PRELIMINARY
TECHNICAL
DRAINAGE STUDY

BAXTER VILLAGE
HOTEL DEVELOPMENT

Wildomar, California
February 21, 2020

Revision History	
1st Submittal	March 2020

Prepared for:

Strata Equity Group
4370 La Jolla Village Drive, Suite 960
San Diego, CA 92122
(951) 676-8042 ph.
Attn.: Eric Flodine

Report Prepared By:

Michael Baker
INTERNATIONAL

40810 County Center Drive, Suite 200
Temecula, California 92591-4679
951.676.8042 telephone
951.676.7240 fax

Engineer of Work/ Contact Person:

Miguel Gonzalez, PE

MIGUEL V. GONZALEZ-GALLO
No. 61561

JN 133555

Table of Contents

Main Report
- I. Introduction
- II. Hydrologic Methodology
- III. Hydrology/Hydraulic Analysis
- IV. Conclusions
- V. References

List of Figures
- Figure- 1: Vicinity Map
- Figure- 2: Hydrology Map – Pre-Developed Project Conditions
- Figure- 3: Hydrology Map – Post-Developed Project Conditions

List of Appendices

Appendix A: Existing Hydrology Analysis, Report Prepared by AAE dated October 2008
- Phase I & Phase II Development
- Figure-2: Hydrology Map – Pre-Development Conditions

Appendix B: Proposed Access Road Development Hydrology Analysis, Rational Method
- Developed Conditions 100-year storm
- Developed Conditions 10-year storm
- Figure-3: Hydrology Map – Post-Developed Project Conditions

Appendix C: Reference Information
- Reference Plans
- Soil Information

I. INTRODUCTION

1.1 BACKGROUND

Michael Baker International has been retained by Strata Equity Group to prepare an onsite drainage study for the proposed Hotel site located at the southern entrance to the Baxter Village Development. Other improvements will include widening of Baxter Road and an access road leading to the Hotel entrance. The project site is in the City of Wildomar, California and is located west of Interstate 15 just north of Baxter Road (see Figure 1).

The project limits comprise of approximately 2.40-acres of new development. Currently the land is vacant with no existing structures. Runoff from the site generally flows to the south, crosses Baxter Road through an underground pipe, and outlets to the property just south of the site. Runoff disperses over the open area. The proposed improvements will closely mimic the existing conditions, treating the runoff with a proposed bio-filtration basin before connecting to a proposed storm drain system (see Figure 2).

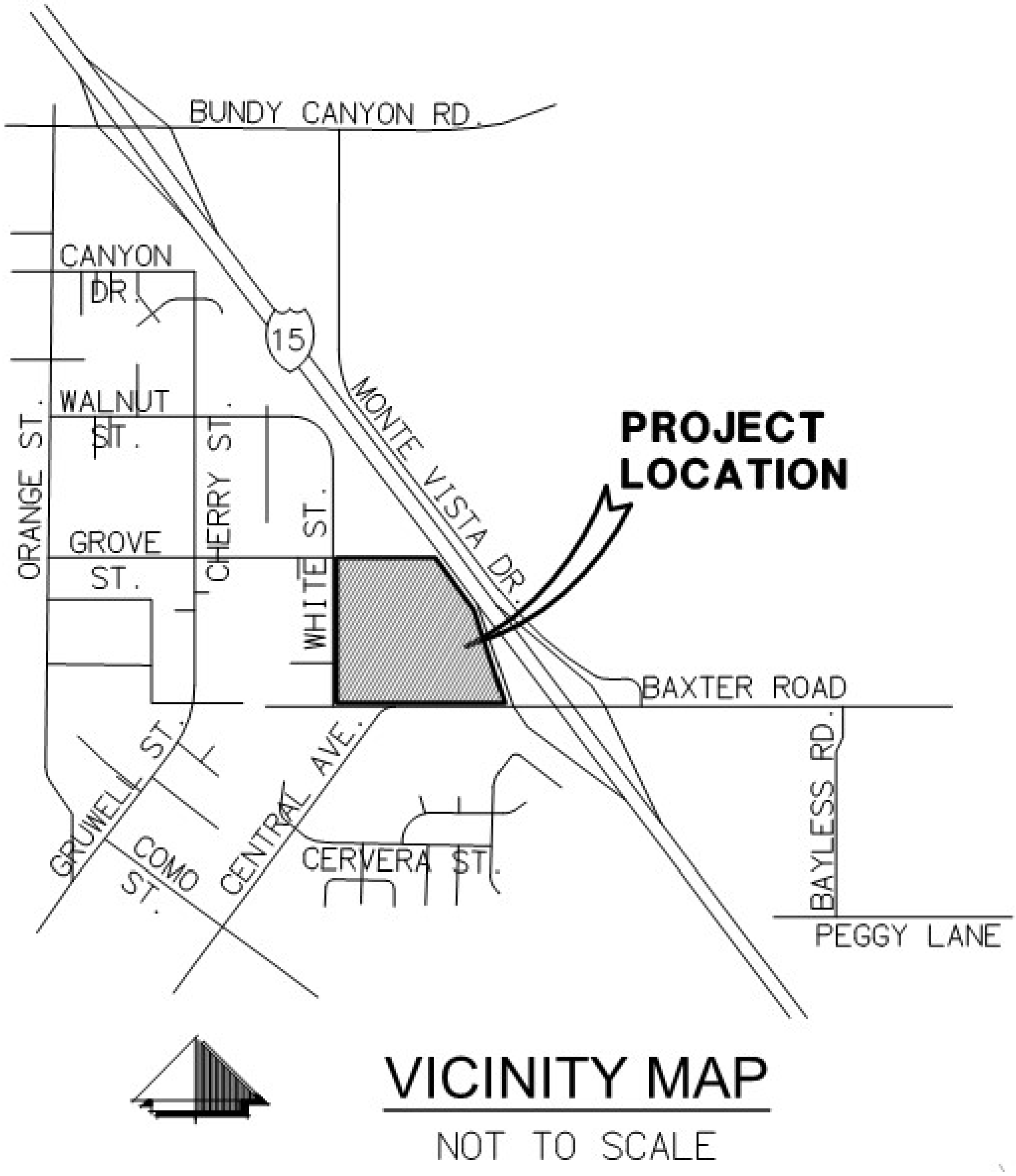
Water quality for the proposed conditions will consist of two bio-filtration basins. Please refer to the WQMP for this project for further details.

1.2 OBJECTIVE

The objectives of this drainage study are the following:

- Based on the proposed drainage patterns, ground slope, land use and soil type, and following the criteria and procedures described in the Riverside County Flood Control and Water Conservation District (RCFCD&WCD) Hydrology Manual (April 1978), perform hydrologic calculations to determine the 10-year storm and 100-year storm discharges to be contained within the curb, and street right-of-way, respectively.
- Identify the required storm drain facilities for the project improvements based upon the grading plans and delineate areas tributary to each proposed inlet/concentration point.
- Based on drainage patterns, ground slope, land use, soil type, and using the County of Riverside Rational Method, perform a hydrologic analysis to provide the design flow rates used to size the proposed storm drain facilities.
- Comply with the NPDES requirements that all impervious areas will drain to an appropriate Best Management Practice (BMP) or equally effective alternative. Identify and size the required BMP's in order to meet the NPDES requirements. This will be addressed in a separate Water Quality Management Plan (WQMP).

Figure 1: Vicinity Map



II. HYDROLOGIC METHODOLOGY

The methodology presented in this study is in compliance with the Riverside County Flood Control and Water Conservation District Hydrology Manual 1978 edition (Reference 1), hereinafter referred to as the Manual.

2.1 **MODEL DESCRIPTIONS** -The CivilCADD/CivilDesign Engineering Software Rational Method Hydrology System Model Version 9.0, (Reference 6) was used to generate the peak 100-year and 10-year onsite flows.

2.2 **SOIL TYPE -** The Manual utilizes the Soil Conservation Service (SCS) soil classification system, which classifies soils into four (4) hydrological soil groups (HSG): A through D, with D being the least impervious. See Figure 2 and Appendix C for soil classification.

2.3 **DEVELOPMENT TYPE -** The proposed development model was based on commercial land use which has higher impervious areas.

2.4 **INTENSITY -** The 10-minute / 60-minute intensity values (inches/hour) for the 10-year and 100-year storm events, obtained from Plate D-4.1 (4 of 6) of the Manual, are 2.36/0.88 and 3.48/1.30, respectively (see Appendix D).

2.5 **DRAINAGE AREAS AND FLOW PATTERNS -** The drainage areas and flow patterns for proposed conditions were mapped using aerial topography (Cadd) and the design data per the Grading Plan, respectively. The areas were measured using the computer capabilities of AutoCAD.

III. HYDROLOGY/HYDRAULIC ANALYSIS RESULTS

3.1 HYDROLOGY RESULTS

A hydrologic analysis was performed for the developed conditions using the rational method. The CivilDesign hydrology software was used to generate the 100-year and 10-year peak discharges. Table 1 summarize the results per the County of Riverside Standards. The existing and proposed detailed rational method calculations are included in Appendix A & B.

Table 1 Post-Developed Conditions Hydrology Summary Table

Watershed Area	Node Number	Location	Area (acre)	100-Year Discharge (cfs)	10-Year Discharge (cfs)
DMA 1	2	Flow is conveyed through the parking lot to a proposed bio-filtration basin.	0.44	1.87	1.21
DMA 2	11	Flow is conveyed through the parking lot to a proposed bio-filtration basin.	1.95	7.20	4.64

Table 2 Pre-Developed Conditions Hydrology Summary Table

Watershed Area	Node Number	Location	Area (acre)	100-Year Discharge (cfs)	10-Year Discharge (cfs)
DMA 1	2	Flow is conveyed through the site to an open area	0.72	2.13	1.30
DMA 2	11	Flow is conveyed through the site to an existing pipe	1.67	4.87	2.96

Figures 2 in appendix B show the drainage patterns for this project

IV. CONCLUSIONS

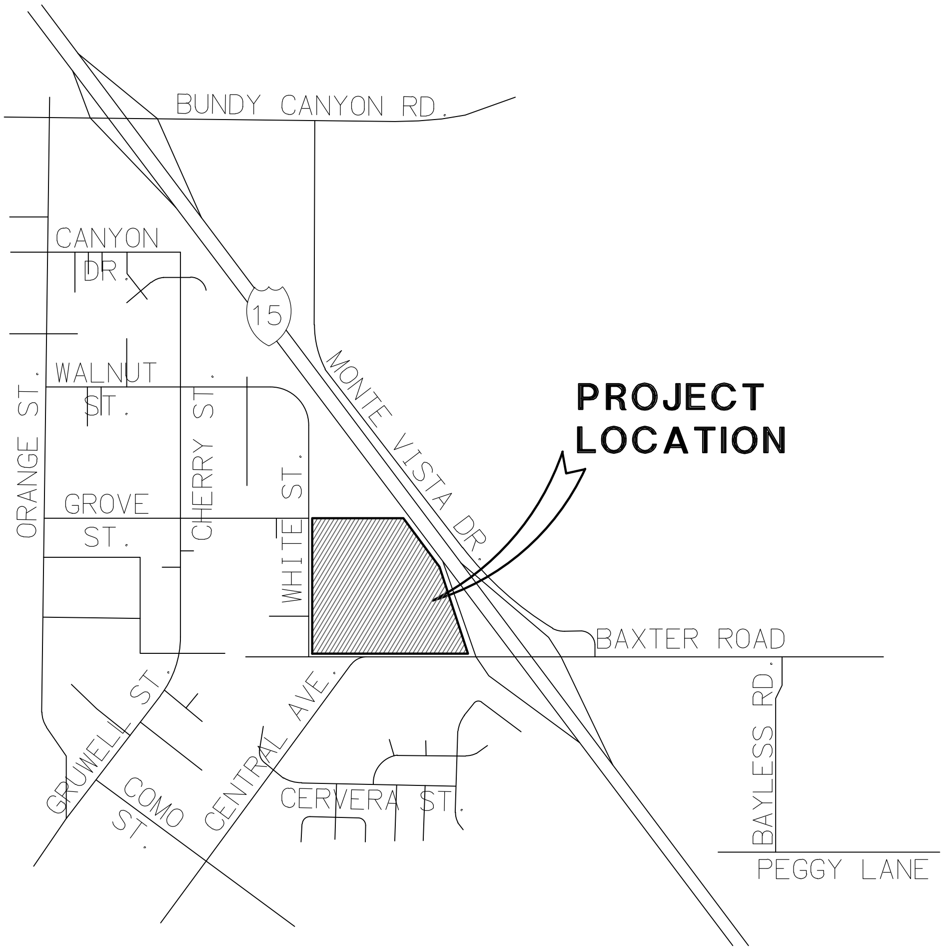
1. Methodology used in this report is in compliance with the Riverside County Flood Control and Water Conservation District.
2. The 10-year storm event flows are mitigated on-site and do not exceed the pre-developed conditions.

VI. REFERENCES

1. Riverside County Flood Control and Water Conservation District (RCFC&WCD) Hydrology Manual, 1978.

2. CivilDesign Engineering Software, Rational Method Hydrology System Model Version 9.0.

3. L.A. County Flood Control District "Water Surface Pressure Gradient" (WSPG) Software, Prepared by CivilDesign, Corp. Version 14.06 Copyright © 1987-2002



VICINITY MAP

NOT TO SCALE

Michael Baker
INTERNATIONAL

40810 COUNTY CENTER DR.,
SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

BAXTER VILLAGE

VICINITY MAP

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APPENDIX A

Pre Development Conditions

```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/21/20
File:133555existbasin1.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE - HOTEL SITE
        BASIN 1 - EXISTING CONDITIONS
        100-YEAR STORM EVENT
        JN 133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------



        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800





        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station        1.000 to Point/Station        2.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   321.000(Ft.)
Top (of initial area) elevation =  1337.000(Ft.)
Bottom (of initial area) elevation =  1329.000(Ft.)
Difference in elevation =     8.000(Ft.)
Slope =    0.02492  s(percent)=       2.49
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.157 min.
Rainfall intensity =      3.363(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.879
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  94.40
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      2.129(CFS)
Total initial stream area =       0.720(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            0.72 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  86.0
```

```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/21/20
File:133555existbasin2.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE - HOTEL SITE
        BASIN 2 - EXISTING CONDITIONS
        100-YEAR STORM EVENT
        JN 133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------


        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800





        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       10.000 to Point/Station       11.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   432.000(Ft.)
Top (of initial area) elevation =  1344.000(Ft.)
Bottom (of initial area) elevation =  1327.000(Ft.)
Difference in elevation =    17.000(Ft.)
Slope =    0.03935  s(percent)=       3.94
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.468 min.
Rainfall intensity =      3.319(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.879
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  94.40
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      4.873(CFS)
Total initial stream area =        1.670(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            1.67 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  86.0
```

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
        Rational Hydrology Study       Date: 02/21/20
File:133555EXISTBASIN1.out
------------------------------------------------------------------------
BAXTER VILLAGE - HOTEL SITE
BASIN 1 - EXISTING CONDITIONS
10-YEAR STORM EVENT
JN 133555
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6388

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Elsinore-Wildomar ] area used.
10 year storm 10 minute intensity =  2.320(In/Hr)
10 year storm 60 minute intensity =  0.980(In/Hr)
100 year storm 10 minute intensity =  3.540(In/Hr)
100 year storm 60 minute intensity =  1.500(In/Hr)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.980(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       1.000 to Point/Station       2.000
**** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   321.000(Ft.)
Top (of initial area) elevation =  1337.000(Ft.)
Bottom (of initial area) elevation =  1329.000(Ft.)
Difference in elevation =     8.000(Ft.)
Slope =    0.02492  s(percent)=       2.49
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.157 min.
Rainfall intensity =      2.197(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.819
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      1.296(CFS)
Total initial stream area =        0.720(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            0.72 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  86.0
```

```
                  Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/21/20
File:133555EXISTBASIN2.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE - HOTEL SITE
        BASIN 2 - EXISTING CONDITIONS
        10-YEAR STORM EVENT
        JN 133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------



        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =   10.00 Antecedent Moisture Condition = 2

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year =  10.0
        Calculated rainfall intensity data:
        1 hour intensity =  0.980(In/Hr)
        Slope of intensity duration curve = 0.4800





        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       10.000 to Point/Station       11.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   432.000(Ft.)
Top (of initial area) elevation =  1344.000(Ft.)
Bottom (of initial area) elevation =  1327.000(Ft.)
Difference in elevation =    17.000(Ft.)
Slope =    0.03935  s(percent)=       3.94
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.468 min.
Rainfall intensity =      2.169(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      2.963(CFS)
Total initial stream area =        1.670(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            1.67 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  86.0
```

LEGEND

DRAINAGE BOUNDARY

FLOW PATH

SUBAREA BOUNDARY

A-1 / 1.1 SUBAREA DESIGNATION
AREA (ACRES)

① NODE I.D.

Michael Baker
INTERNATIONAL

40810 COUNTY CENTER DR.,
SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

BAXTER VILLAGE - HOTEL SITE

DRAINAGE STUDY SITE PLAN - EXISTING CONDITIONS
CITY OF WILDOMAR

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INTERIM CONDITIONS

Pre Development Conditions

NODE 31 = A + B + C + D = 28.99 CFS

NODE 41 = NODE 405 + E + F = 71.21 CFS

PT D = NODE 405 + 0.5(NODE 31) + 0.5(E + F) = 81.81 CFS

```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/17/20
File:EXISTbasinASD.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE
        EXISTING CONDITIONS
        BASIN A - SD PIPE CALCS
        133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------


        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800




        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station        1.000 to Point/Station        2.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   402.000(Ft.)
Top (of initial area) elevation =  1355.000(Ft.)
Bottom (of initial area) elevation =  1340.000(Ft.)
Difference in elevation =    15.000(Ft.)
Slope =    0.03731  s(percent)=       3.73
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.261 min.
Rainfall intensity =      3.348(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 3)  =  95.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     10.328(CFS)
Total initial stream area =        3.490(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            3.49 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  89.0
```

```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/17/20
File:EXISTbasinBSD.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE
        EXISTING CONDITIONS
        BASIN B - SD PIPE CALCS
        133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------


        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800




        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       10.000 to Point/Station       11.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   578.000(Ft.)
Top (of initial area) elevation =  1370.500(Ft.)
Bottom (of initial area) elevation =  1339.000(Ft.)
Difference in elevation =    31.500(Ft.)
Slope =    0.05450  s(percent)=       5.45
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.072 min.
Rainfall intensity =      3.239(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.883
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 3)  =  95.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      4.033(CFS)
Total initial stream area =        1.410(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            1.41 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  89.0
```

```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/17/20
File:EXISTbasinCSD.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE
        EXISTING CONDITIONS
        BASIN C - SD PIPE CALCS
        133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------


        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800




        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       20.000 to Point/Station       21.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   510.000(Ft.)
Top (of initial area) elevation =  1366.500(Ft.)
Bottom (of initial area) elevation =  1347.500(Ft.)
Difference in elevation =    19.000(Ft.)
Slope =    0.03725  s(percent)=       3.73
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.390 min.
Rainfall intensity =      3.198(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.883
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 3)  =  95.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      2.570(CFS)
Total initial stream area =        0.910(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       21.000 to Point/Station       22.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1347.500(Ft.)
End of natural channel elevation =   1324.500(Ft.)
Length of natural channel  =   537.000(Ft.)
Estimated mean flow rate at midpoint of channel =      4.166(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   4.18(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0428
Corrected/adjusted channel slope =  0.0428
Travel time =    2.14 min.     TC =   14.53  min.


 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
```

```
Decimal fraction soil group D = 1.000
RI index for soil(AMC 3)  =  95.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.963(In/Hr) for a   100.0 year storm
Subarea runoff =      2.952(CFS) for      1.130(Ac.)
Total runoff =      5.522(CFS)  Total area =       2.040(Ac.)
End of computations, total study area =           2.04 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  89.0
```

```
                  Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study       Date: 02/17/20
File:EXISTbasinDSD.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE
        EXISTING CONDITIONS
        BASIN D - SD PIPE CALCS
        133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------


        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800




        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       30.000 to Point/Station       31.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   779.000(Ft.)
Top (of initial area) elevation =  1372.000(Ft.)
Bottom (of initial area) elevation =  1338.000(Ft.)
Difference in elevation =    34.000(Ft.)
Slope =    0.04365  s(percent)=       4.36
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   14.220 min.
Rainfall intensity =      2.994(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 3)  =  95.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      9.109(CFS)
Total initial stream area =        3.450(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            3.45 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  89.0
```

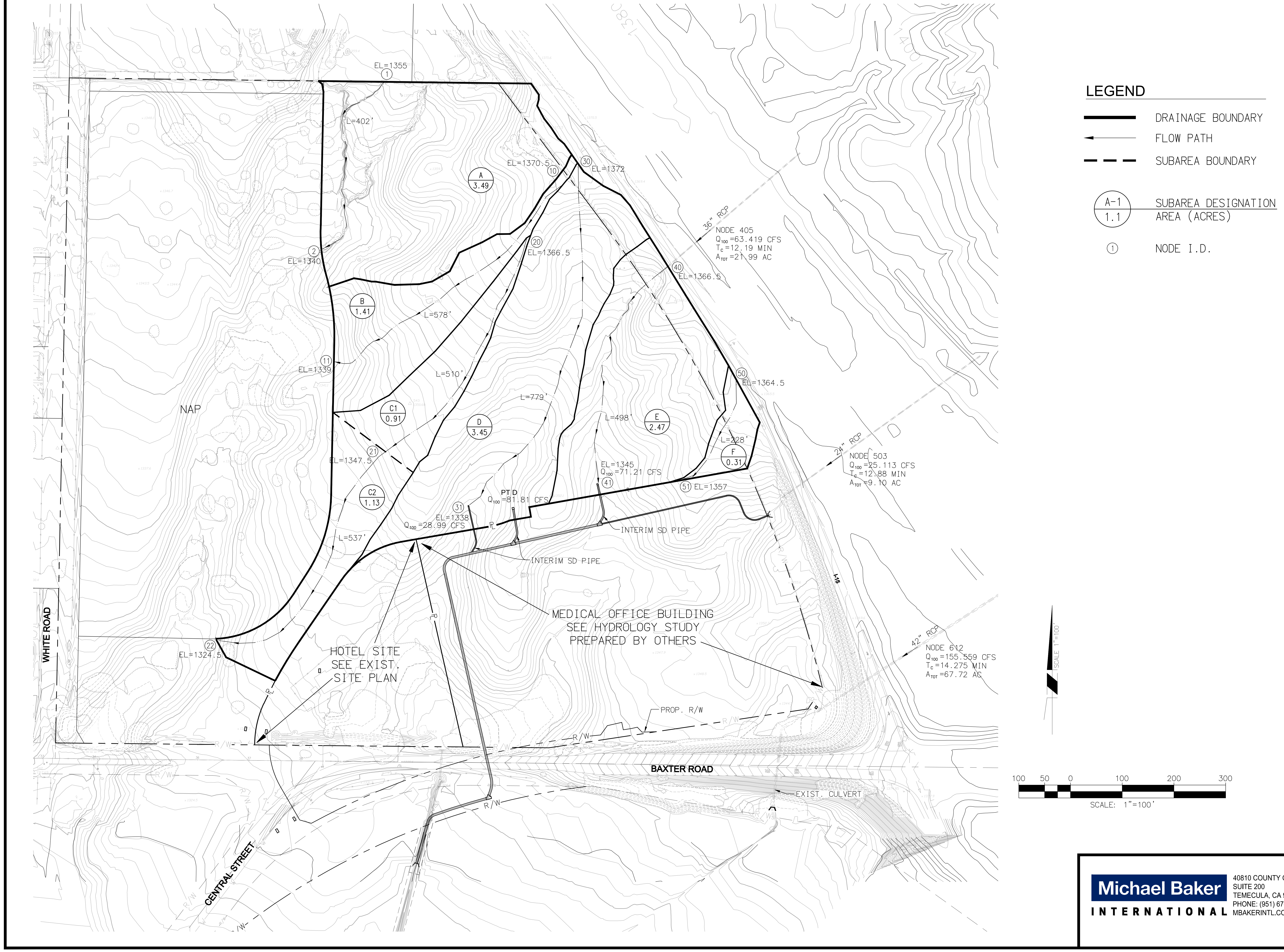
```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/17/20
File:EXISTbasinESD.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE
        EXISTING CONDITIONS
        BASIN E - SD PIPE CALCS
        133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------


        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800




        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station      405.000 to Point/Station       40.000
        **** USER DEFINED FLOW INFORMATION AT A POINT ****
```

```
Rainfall intensity =      3.223(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.893
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.370
Decimal fraction soil group C = 0.160
Decimal fraction soil group D = 0.470
RI index for soil(AMC 3)  =  83.21
Pervious area fraction =  0.100; Impervious fraction =  0.900
User specified values are as follows:
TC =  12.19 min.  Rain intensity =       3.22(In/Hr)
Total area =        21.99(Ac.)  Total runoff =     63.42(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       40.000 to Point/Station       41.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1366.500(Ft.)
End of natural channel elevation =   1345.000(Ft.)
Length of natural channel  =   498.000(Ft.)
Estimated mean flow rate at midpoint of channel =     66.981(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   8.76(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0432
Corrected/adjusted channel slope =  0.0432
Travel time =    0.95 min.     TC =   13.14  min.


 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.883
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 3)  =  95.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.110(In/Hr) for a   100.0 year storm
Subarea runoff =      6.779(CFS) for      2.470(Ac.)
Total runoff =     70.198(CFS)  Total area =      24.460(Ac.)
End of computations, total study area =           24.46 (Ac.)
```

```
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.191
Area averaged RI index number =  69.2
```

```
                    Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study       Date: 02/17/20
File:EXISTbasinFSD.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE
        EXISTING CONDITIONS
        BASIN F - SD PIPE CALCS
        133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------


        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800




        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       50.000 to Point/Station       51.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   228.000(Ft.)
Top (of initial area) elevation =  1364.500(Ft.)
Bottom (of initial area) elevation =  1357.000(Ft.)
Difference in elevation =     7.500(Ft.)
Slope =    0.03289  s(percent)=       3.29
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.205 min.
Rainfall intensity =      3.689(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 3)  =  95.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      1.012(CFS)
Total initial stream area =        0.310(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            0.31 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  89.0
```



Michael Baker
INTERNATIONAL

40810 COUNTY CENTER DR.,
SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

BAXTER VILLAGE - TTM 36674 PHASE I

DRAINAGE STUDY INTERIM SD DESIGN - EXISTING CONDITIONS
CITY OF WILDOMAR

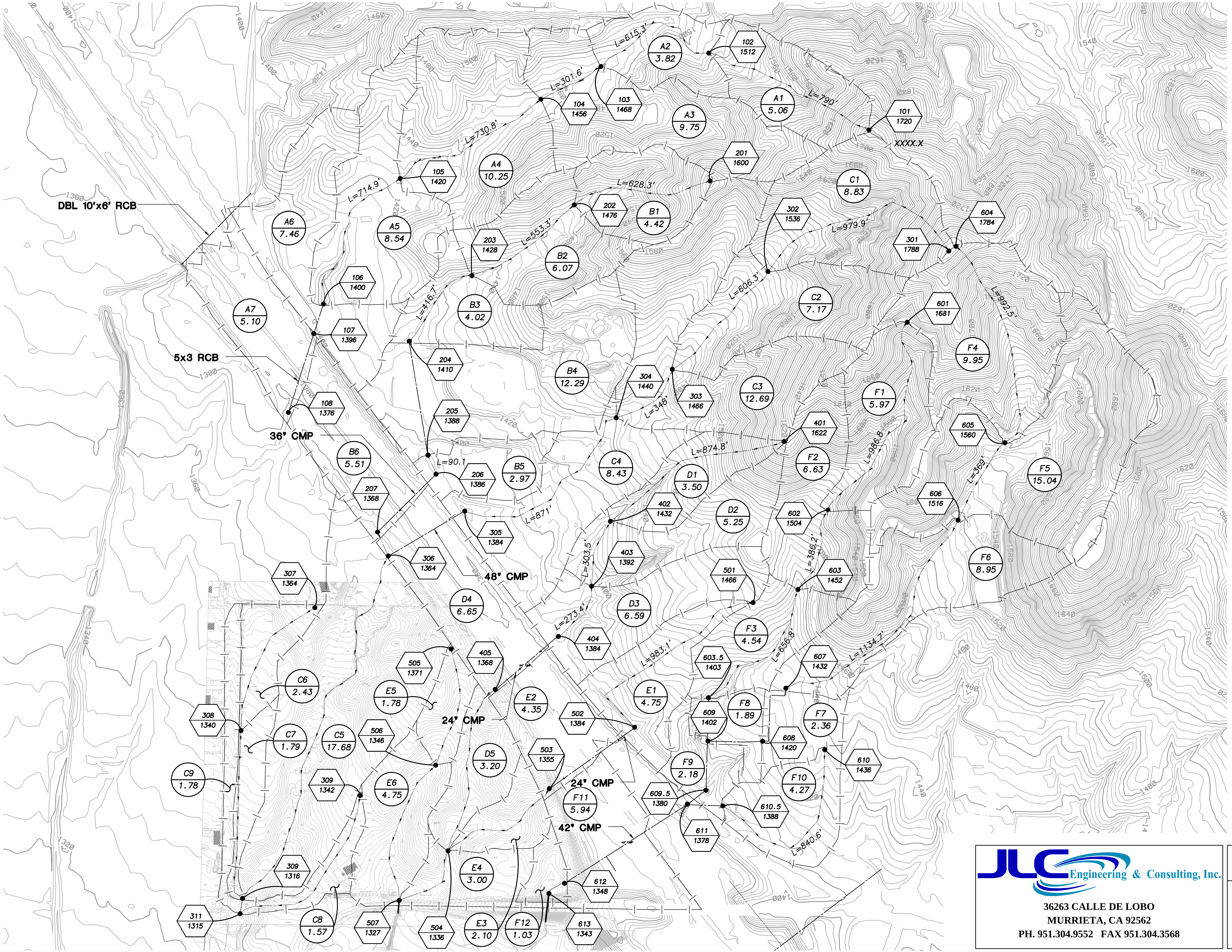
H:\PDATA\133555\ADMIN\REPORTS\DRAINAGE STUDY\DWG\133555 - HYDRO - EXIST CONDITIONS.DWG JESSICA.JONES 3/6/20 3:44 pm

SHEET 1 OF 1

BAXTER VILLAGE

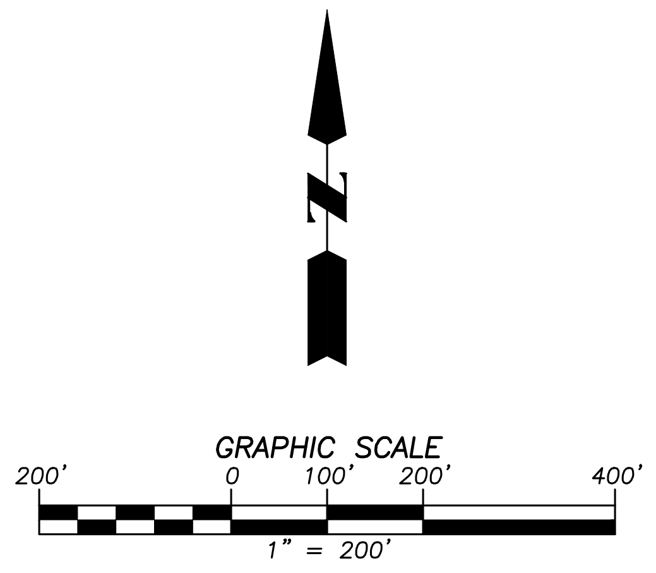
IN THE CITY OF WILDOMAR, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

PRE-PROJECT CONDITION HYDROLOGY MAP



LEGEND:

XXX.X XXXX	NODE/CONCENTRATION POINT FLOWLINE ELEVATION
XXXX.X	APPROXIMATE INVERT ELEVATION
XXX X.X	SUB AREA ACRES
L=XXX'	FLOW DISTANCE
—·—◄—·—	FLOW PATH
——|——|——	WATERSHED SUB-BOUNDARY
——‖——‖——	WATERSHED BOUNDARY



JLC Engineering & Consulting, Inc.

36263 CALLE DE LOBO
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

EXHIBIT "A"

BAXTER VILLAGE

PRE-PROJECT CONDITION HYDROLOGY MAP

Drawing Name: O:\108.23.13\Engineering\Hydrology_Plan\Exhibits\Exhibit_A_Hydrology Map-Including Onsite.dwg
Last Opened: Jun 06, 2014 - 3:04pm by jcarver

NODE 405

RATIONAL METHOD ANALYSIS, AREA “DE” – 100-YEAR STORM EVENT

```
               Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
       Rational Hydrology Study       Date: 11/06/13  File:ARDEEX100.out
------------------------------------------------------------------------
Baxter Road Property
100 Year Storm Event - Area D


------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6269

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Elsinore-Wildomar ] area used.
10 year storm 10 minute intensity =  2.320(In/Hr)
10 year storm 60 minute intensity =  0.980(In/Hr)
100 year storm 10 minute intensity =  3.540(In/Hr)
100 year storm 60 minute intensity =  1.500(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.500(In/Hr)
Slope of intensity duration curve = 0.4800





++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      401.000 to Point/Station      402.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   875.000(Ft.)
Top (of initial area) elevation =  1622.000(Ft.)
Bottom (of initial area) elevation =  1432.000(Ft.)
Difference in elevation =   190.000(Ft.)
Slope =    0.21714  s(percent)=      21.71
TC = k(0.462)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.421 min.
Rainfall intensity =      3.648(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.861
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.010
Decimal fraction soil group C = 0.580
Decimal fraction soil group D = 0.410
RI index for soil(AMC 2)  =  85.40
Pervious area fraction =  0.740; Impervious fraction =  0.260
Initial subarea runoff =     10.991(CFS)
Total initial stream area =       3.500(Ac.)
Pervious area fraction = 0.740


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      403.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
```

```
______________________________________________________________________
Top of natural channel elevation =   1432.000(Ft.)
End of natural channel elevation =   1392.000(Ft.)
Length of natural channel  =   304.000(Ft.)
Estimated mean flow rate at midpoint of channel =     19.234(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.17(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1316
Corrected/adjusted channel slope =  0.1221
Travel time =    0.98 min.     TC =   10.40  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.855
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.590
Decimal fraction soil group D = 0.410
RI index for soil(AMC 2)  =  82.30
Pervious area fraction =  0.660; Impervious fraction =  0.340
Rainfall intensity =      3.479(In/Hr) for a   100.0 year storm
Subarea runoff =     15.610(CFS) for      5.250(Ac.)
Total runoff =     26.601(CFS)       Total area =       8.750(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      403.000 to Point/Station      404.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1392.000(Ft.)
End of natural channel elevation =   1384.000(Ft.)
Length of natural channel  =   274.000(Ft.)
Estimated mean flow rate at midpoint of channel =     36.618(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.16(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0292
Corrected/adjusted channel slope =  0.0292
Travel time =    1.44 min.     TC =   11.85  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.856
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.010
Decimal fraction soil group C = 0.410
Decimal fraction soil group D = 0.580
RI index for soil(AMC 2)  =  84.90
Pervious area fraction =  0.730; Impervious fraction =  0.270
Rainfall intensity =      3.268(In/Hr) for a   100.0 year storm
Subarea runoff =     18.425(CFS) for      6.590(Ac.)
Total runoff =     45.026(CFS)       Total area =      15.340(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      404.000 to Point/Station      405.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
```

```
Upstream point/station elevation =  1384.000(Ft.)
Downstream point/station elevation =  1368.000(Ft.)
Pipe length  =   357.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    45.026(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    45.026(CFS)
Normal flow depth in pipe =   18.49(In.)
Flow top width inside pipe =   20.18(In.)
Critical depth could not be calculated.
Pipe flow velocity =     17.33(Ft/s)
Travel time through pipe =    0.34 min.
Time of concentration (TC) =    12.19 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      404.000 to Point/Station      405.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.858
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.370
Decimal fraction soil group C = 0.160
Decimal fraction soil group D = 0.470
RI index for soil(AMC 2)  =  82.00
Pervious area fraction =  0.560; Impervious fraction =  0.440
Time of concentration =    12.19 min.
Rainfall intensity =      3.223(In/Hr) for a   100.0 year storm
Subarea runoff =     18.393(CFS) for      6.650(Ac.)
Total runoff =     63.419(CFS)       Total area =      21.990(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      504.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1368.000(Ft.)
End of natural channel elevation =   1336.000(Ft.)
Length of natural channel  =   766.000(Ft.)
Estimated mean flow rate at midpoint of channel =     68.033(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   8.65(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0418
Corrected/adjusted channel slope =  0.0418
Travel time =    1.48 min.     TC =   13.67  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.833
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.260
Decimal fraction soil group D = 0.540
RI index for soil(AMC 2)  =  84.54
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.051(In/Hr) for a   100.0 year storm
Subarea runoff =      8.138(CFS) for      3.200(Ac.)
Total runoff =     71.557(CFS)       Total area =      25.190(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      504.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
```

```
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     25.190(Ac.)
Runoff from this stream =     71.557(CFS)
Time of concentration =   13.67 min.
Rainfall intensity =     3.051(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      501.000 to Point/Station      502.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   983.000(Ft.)
Top (of initial area) elevation =  1466.000(Ft.)
Bottom (of initial area) elevation =  1384.000(Ft.)
Difference in elevation =    82.000(Ft.)
Slope =    0.08342  s(percent)=       8.34
TC = k(0.477)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.339 min.
Rainfall intensity =      3.205(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.858
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.280
Decimal fraction soil group D = 0.720
RI index for soil(AMC 2)  =  86.90
Pervious area fraction =  0.790; Impervious fraction =  0.210
Initial subarea runoff =     13.061(CFS)
Total initial stream area =        4.750(Ac.)
Pervious area fraction = 0.790


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1384.000(Ft.)
Downstream point/station elevation =  1355.000(Ft.)
Pipe length  =   471.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.061(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    13.061(CFS)
Normal flow depth in pipe =   10.29(In.)
Flow top width inside pipe =   13.92(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.56(Ft/s)
Travel time through pipe =    0.54 min.
Time of concentration (TC) =    12.88 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.240
Decimal fraction soil group C = 0.610
Decimal fraction soil group D = 0.150
RI index for soil(AMC 2)  =  84.50
Pervious area fraction =  0.270; Impervious fraction =  0.730
Time of concentration =    12.88 min.
Rainfall intensity =      3.140(In/Hr) for a   100.0 year storm
Subarea runoff =     12.052(CFS) for      4.350(Ac.)
Total runoff =     25.113(CFS)       Total area =       9.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      504.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
```

```
Top of natural channel elevation =   1355.000(Ft.)
End of natural channel elevation =   1336.000(Ft.)
Length of natural channel  =   555.000(Ft.)
Estimated mean flow rate at midpoint of channel =     28.011(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   6.08(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0342
Corrected/adjusted channel slope =  0.0342
Travel time =    1.52 min.     TC =   14.40  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.811
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.530
Decimal fraction soil group C = 0.350
Decimal fraction soil group D = 0.120
RI index for soil(AMC 2)  =  80.24
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.976(In/Hr) for a   100.0 year storm
Subarea runoff =      5.065(CFS) for      2.100(Ac.)
Total runoff =     30.178(CFS)       Total area =      11.200(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      504.000
**** CONFLUENCE OF MINOR STREAMS ****

Along Main Stream number: 1 in normal stream number 2
Stream flow area =     11.200(Ac.)
Runoff from this stream =     30.178(CFS)
Time of concentration =   14.40 min.
Rainfall intensity =     2.976(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       71.557     13.67                 3.051
2       30.178     14.40                 2.976
Largest stream flow has longer or shorter time of concentration
Qp =     71.557 + sum of
         Qa          Tb/Ta
         30.178 *    0.949 =     28.638
Qp =    100.195

Total of 2 streams to confluence:
Flow rates before confluence point:
      71.557      30.178
Area of streams before confluence:
       25.190       11.200
Results of confluence:
Total flow rate =    100.195(CFS)
Time of concentration =    13.665 min.
Effective stream area after confluence =     36.390(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      507.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation =   1336.000(Ft.)
```

```
End of natural channel elevation =   1327.000(Ft.)
Length of natural channel  =   346.000(Ft.)
Estimated mean flow rate at midpoint of channel =    104.325(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   7.75(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0260
Corrected/adjusted channel slope =  0.0260
Travel time =    0.74 min.     TC =   14.41  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.813
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.610
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.390
RI index for soil(AMC 2)  =  80.68
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.975(In/Hr) for a   100.0 year storm
Subarea runoff =      7.253(CFS) for      3.000(Ac.)
Total runoff =    107.448(CFS)       Total area =      39.390(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      507.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     39.390(Ac.)
Runoff from this stream =    107.448(CFS)
Time of concentration =   14.41 min.
Rainfall intensity =     2.975(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      505.000 to Point/Station      506.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   535.000(Ft.)
Top (of initial area) elevation =  1371.000(Ft.)
Bottom (of initial area) elevation =  1346.000(Ft.)
Difference in elevation =    25.000(Ft.)
Slope =    0.04673  s(percent)=       4.67
TC = k(0.557)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.695 min.
Rainfall intensity =      3.161(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.826
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.460
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.540
RI index for soil(AMC 2)  =  82.57
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      4.650(CFS)
Total initial stream area =       1.780(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      507.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1346.000(Ft.)
```

```
End of natural channel elevation =   1327.000(Ft.)
Length of natural channel  =   660.000(Ft.)
Estimated mean flow rate at midpoint of channel =     10.855(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   4.33(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0288
Corrected/adjusted channel slope =  0.0288
Travel time =    2.54 min.     TC =   15.24  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.797
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.820
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.180
RI index for soil(AMC 2)  =  78.16
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.896(In/Hr) for a   100.0 year storm
Subarea runoff =     10.970(CFS) for      4.750(Ac.)
Total runoff =     15.620(CFS)       Total area =       6.530(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      507.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      6.530(Ac.)
Runoff from this stream =     15.620(CFS)
Time of concentration =   15.24 min.
Rainfall intensity =     2.896(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1      107.448     14.41                  2.975
2       15.620     15.24                  2.896
Largest stream flow has longer or shorter time of concentration
Qp =    107.448 + sum of
         Qa          Tb/Ta
         15.620 *    0.946 =     14.773
Qp =    122.222

Total of 2 streams to confluence:
Flow rates before confluence point:
     107.448      15.620
Area of streams before confluence:
       39.390        6.530
Results of confluence:
Total flow rate =    122.222(CFS)
Time of concentration =    14.409 min.
Effective stream area after confluence =     45.920(Ac.)
End of computations, total study area =          45.92 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.748
Area averaged RI index number =  83.1
```

NODE 503

RATIONAL METHOD ANALYSIS, AREA “DE” – 100-YEAR STORM EVENT

```
               Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
       Rational Hydrology Study        Date: 11/06/13  File:ARDEEX100.out
------------------------------------------------------------------------
Baxter Road Property
100 Year Storm Event - Area D


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 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

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Program License Serial Number 6269

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Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Elsinore-Wildomar ] area used.
10 year storm 10 minute intensity =  2.320(In/Hr)
10 year storm 60 minute intensity =  0.980(In/Hr)
100 year storm 10 minute intensity =  3.540(In/Hr)
100 year storm 60 minute intensity =  1.500(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.500(In/Hr)
Slope of intensity duration curve = 0.4800






++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      401.000 to Point/Station      402.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   875.000(Ft.)
Top (of initial area) elevation =  1622.000(Ft.)
Bottom (of initial area) elevation =  1432.000(Ft.)
Difference in elevation =   190.000(Ft.)
Slope =    0.21714  s(percent)=      21.71
TC = k(0.462)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.421 min.
Rainfall intensity =      3.648(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.861
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.010
Decimal fraction soil group C = 0.580
Decimal fraction soil group D = 0.410
RI index for soil(AMC 2)  =  85.40
Pervious area fraction =  0.740; Impervious fraction =  0.260
Initial subarea runoff =     10.991(CFS)
Total initial stream area =       3.500(Ac.)
Pervious area fraction = 0.740


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      403.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
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______________________________________________________________________
Top of natural channel elevation =   1432.000(Ft.)
End of natural channel elevation =   1392.000(Ft.)
Length of natural channel  =   304.000(Ft.)
Estimated mean flow rate at midpoint of channel =     19.234(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.17(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1316
Corrected/adjusted channel slope =  0.1221
Travel time =    0.98 min.     TC =   10.40  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.855
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.590
Decimal fraction soil group D = 0.410
RI index for soil(AMC 2)  =  82.30
Pervious area fraction =  0.660; Impervious fraction =  0.340
Rainfall intensity =      3.479(In/Hr) for a   100.0 year storm
Subarea runoff =     15.610(CFS) for      5.250(Ac.)
Total runoff =     26.601(CFS)       Total area =       8.750(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      403.000 to Point/Station      404.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1392.000(Ft.)
End of natural channel elevation =   1384.000(Ft.)
Length of natural channel  =   274.000(Ft.)
Estimated mean flow rate at midpoint of channel =     36.618(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.16(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0292
Corrected/adjusted channel slope =  0.0292
Travel time =    1.44 min.     TC =   11.85  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.856
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.010
Decimal fraction soil group C = 0.410
Decimal fraction soil group D = 0.580
RI index for soil(AMC 2)  =  84.90
Pervious area fraction =  0.730; Impervious fraction =  0.270
Rainfall intensity =      3.268(In/Hr) for a   100.0 year storm
Subarea runoff =     18.425(CFS) for      6.590(Ac.)
Total runoff =     45.026(CFS)       Total area =      15.340(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      404.000 to Point/Station      405.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
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Upstream point/station elevation =  1384.000(Ft.)
Downstream point/station elevation =  1368.000(Ft.)
Pipe length  =   357.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    45.026(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    45.026(CFS)
Normal flow depth in pipe =   18.49(In.)
Flow top width inside pipe =   20.18(In.)
Critical depth could not be calculated.
Pipe flow velocity =     17.33(Ft/s)
Travel time through pipe =    0.34 min.
Time of concentration (TC) =    12.19 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      404.000 to Point/Station      405.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.858
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.370
Decimal fraction soil group C = 0.160
Decimal fraction soil group D = 0.470
RI index for soil(AMC 2)  =  82.00
Pervious area fraction =  0.560; Impervious fraction =  0.440
Time of concentration =    12.19 min.
Rainfall intensity =      3.223(In/Hr) for a   100.0 year storm
Subarea runoff =     18.393(CFS) for      6.650(Ac.)
Total runoff =     63.419(CFS)       Total area =      21.990(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      504.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1368.000(Ft.)
End of natural channel elevation =   1336.000(Ft.)
Length of natural channel  =   766.000(Ft.)
Estimated mean flow rate at midpoint of channel =     68.033(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   8.65(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0418
Corrected/adjusted channel slope =  0.0418
Travel time =    1.48 min.     TC =   13.67  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.833
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.260
Decimal fraction soil group D = 0.540
RI index for soil(AMC 2)  =  84.54
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.051(In/Hr) for a   100.0 year storm
Subarea runoff =      8.138(CFS) for      3.200(Ac.)
Total runoff =     71.557(CFS)       Total area =      25.190(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      504.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
```

```
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     25.190(Ac.)
Runoff from this stream =     71.557(CFS)
Time of concentration =   13.67 min.
Rainfall intensity =     3.051(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      501.000 to Point/Station      502.000
**** INITIAL AREA EVALUATION ****

______________________________________________________________________
Initial area flow distance =   983.000(Ft.)
Top (of initial area) elevation =  1466.000(Ft.)
Bottom (of initial area) elevation =  1384.000(Ft.)
Difference in elevation =    82.000(Ft.)
Slope =    0.08342  s(percent)=       8.34
TC = k(0.477)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.339 min.
Rainfall intensity =      3.205(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.858
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.280
Decimal fraction soil group D = 0.720
RI index for soil(AMC 2)  =  86.90
Pervious area fraction =  0.790; Impervious fraction =  0.210
Initial subarea runoff =     13.061(CFS)
Total initial stream area =        4.750(Ac.)
Pervious area fraction = 0.790


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

______________________________________________________________________
Upstream point/station elevation =  1384.000(Ft.)
Downstream point/station elevation =  1355.000(Ft.)
Pipe length  =   471.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.061(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    13.061(CFS)
Normal flow depth in pipe =   10.29(In.)
Flow top width inside pipe =   13.92(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.56(Ft/s)
Travel time through pipe =    0.54 min.
Time of concentration (TC) =    12.88 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** SUBAREA FLOW ADDITION ****

______________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.240
Decimal fraction soil group C = 0.610
Decimal fraction soil group D = 0.150
RI index for soil(AMC 2)  =  84.50
Pervious area fraction =  0.270; Impervious fraction =  0.730
Time of concentration =    12.88 min.
Rainfall intensity =      3.140(In/Hr) for a   100.0 year storm
Subarea runoff =     12.052(CFS) for      4.350(Ac.)
Total runoff =     25.113(CFS)       Total area =       9.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      504.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
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______________________________________________________________________
Top of natural channel elevation =   1355.000(Ft.)
End of natural channel elevation =   1336.000(Ft.)
Length of natural channel  =   555.000(Ft.)
Estimated mean flow rate at midpoint of channel =     28.011(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   6.08(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0342
Corrected/adjusted channel slope =  0.0342
Travel time =    1.52 min.     TC =   14.40  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.811
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.530
Decimal fraction soil group C = 0.350
Decimal fraction soil group D = 0.120
RI index for soil(AMC 2)  =  80.24
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.976(In/Hr) for a   100.0 year storm
Subarea runoff =      5.065(CFS) for      2.100(Ac.)
Total runoff =     30.178(CFS)       Total area =      11.200(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      504.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     11.200(Ac.)
Runoff from this stream =     30.178(CFS)
Time of concentration =   14.40 min.
Rainfall intensity =     2.976(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       71.557     13.67                 3.051
2       30.178     14.40                 2.976
Largest stream flow has longer or shorter time of concentration
Qp =     71.557 + sum of
         Qa          Tb/Ta
         30.178 *    0.949 =     28.638
Qp =    100.195

Total of 2 streams to confluence:
Flow rates before confluence point:
      71.557      30.178
Area of streams before confluence:
       25.190       11.200
Results of confluence:
Total flow rate =    100.195(CFS)
Time of concentration =    13.665 min.
Effective stream area after confluence =     36.390(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      507.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1336.000(Ft.)
```

```
End of natural channel elevation =   1327.000(Ft.)
Length of natural channel  =   346.000(Ft.)
Estimated mean flow rate at midpoint of channel =    104.325(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   7.75(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0260
Corrected/adjusted channel slope =  0.0260
Travel time =    0.74 min.     TC =   14.41  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.813
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.610
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.390
RI index for soil(AMC 2)  =  80.68
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.975(In/Hr) for a   100.0 year storm
Subarea runoff =      7.253(CFS) for      3.000(Ac.)
Total runoff =    107.448(CFS)       Total area =      39.390(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      507.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     39.390(Ac.)
Runoff from this stream =    107.448(CFS)
Time of concentration =   14.41 min.
Rainfall intensity =     2.975(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      505.000 to Point/Station      506.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   535.000(Ft.)
Top (of initial area) elevation =  1371.000(Ft.)
Bottom (of initial area) elevation =  1346.000(Ft.)
Difference in elevation =    25.000(Ft.)
Slope =    0.04673  s(percent)=       4.67
TC = k(0.557)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.695 min.
Rainfall intensity =      3.161(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.826
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.460
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.540
RI index for soil(AMC 2)  =  82.57
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      4.650(CFS)
Total initial stream area =       1.780(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      507.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1346.000(Ft.)
```

```
End of natural channel elevation =   1327.000(Ft.)
Length of natural channel  =   660.000(Ft.)
Estimated mean flow rate at midpoint of channel =     10.855(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   4.33(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0288
Corrected/adjusted channel slope =  0.0288
Travel time =    2.54 min.     TC =   15.24  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.797
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.820
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.180
RI index for soil(AMC 2)  =  78.16
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.896(In/Hr) for a   100.0 year storm
Subarea runoff =     10.970(CFS) for      4.750(Ac.)
Total runoff =     15.620(CFS)       Total area =       6.530(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      507.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      6.530(Ac.)
Runoff from this stream =     15.620(CFS)
Time of concentration =   15.24 min.
Rainfall intensity =     2.896(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1      107.448     14.41                 2.975
2       15.620     15.24                 2.896
Largest stream flow has longer or shorter time of concentration
Qp =    107.448 + sum of
         Qa          Tb/Ta
         15.620 *    0.946 =     14.773
Qp =    122.222

Total of 2 streams to confluence:
Flow rates before confluence point:
     107.448      15.620
Area of streams before confluence:
       39.390        6.530
Results of confluence:
Total flow rate =    122.222(CFS)
Time of concentration =    14.409 min.
Effective stream area after confluence =     45.920(Ac.)
End of computations, total study area =          45.92 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.748
Area averaged RI index number =  83.1
```

NODE 612

RATIONAL METHOD ANALYSIS, AREA “F” – 100-YEAR STORM EVENT

```
               Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
       Rational Hydrology Study        Date: 11/07/13  File:ARFEX100.out
------------------------------------------------------------------------
Baxter Road Property
100 Year Storm Event   Area F


------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

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Program License Serial Number 6269

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Elsinore-Wildomar ] area used.
10 year storm 10 minute intensity =  2.320(In/Hr)
10 year storm 60 minute intensity =  0.980(In/Hr)
100 year storm 10 minute intensity =  3.540(In/Hr)
100 year storm 60 minute intensity =  1.500(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.500(In/Hr)
Slope of intensity duration curve = 0.4800





++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      601.000 to Point/Station      602.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   987.000(Ft.)
Top (of initial area) elevation =  1681.000(Ft.)
Bottom (of initial area) elevation =  1504.000(Ft.)
Difference in elevation =   177.000(Ft.)
Slope =    0.17933  s(percent)=      17.93
TC = k(0.735)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   16.345 min.
Rainfall intensity =      2.800(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.746
Decimal fraction soil group A = 0.170
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.830
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.70
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     12.465(CFS)
Total initial stream area =        5.970(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      602.000 to Point/Station      603.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
```

```
______________________________________________________________________
Top of natural channel elevation =   1504.000(Ft.)
End of natural channel elevation =   1452.000(Ft.)
Length of natural channel  =   386.000(Ft.)
Estimated mean flow rate at midpoint of channel =     19.387(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.23(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1347
Corrected/adjusted channel slope =  0.1243
Travel time =    1.23 min.     TC =   17.58  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.714
Decimal fraction soil group A = 0.220
Decimal fraction soil group B = 0.780
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  65.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.704(In/Hr) for a   100.0 year storm
Subarea runoff =     12.809(CFS) for      6.630(Ac.)
Total runoff =     25.274(CFS)       Total area =      12.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.000 to Point/Station      603.500
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1452.000(Ft.)
End of natural channel elevation =   1403.000(Ft.)
Length of natural channel  =   657.000(Ft.)
Estimated mean flow rate at midpoint of channel =     29.828(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.69(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0746
Corrected/adjusted channel slope =  0.0746
Travel time =    2.34 min.     TC =   19.91  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.807
Decimal fraction soil group A = 0.020
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.980
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.547(In/Hr) for a   100.0 year storm
Subarea runoff =      9.334(CFS) for      4.540(Ac.)
Total runoff =     34.609(CFS)       Total area =      17.140(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.500 to Point/Station      609.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
```

```
Upstream point/station elevation =  1403.000(Ft.)
Downstream point/station elevation =  1402.000(Ft.)
Pipe length  =   192.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    34.609(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    34.609(CFS)
Normal flow depth in pipe =   24.63(In.)
Flow top width inside pipe =   28.71(In.)
Critical Depth =   23.49(In.)
Pipe flow velocity =      7.28(Ft/s)
Travel time through pipe =    0.44 min.
Time of concentration (TC) =    20.35 min.


+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.500 to Point/Station      609.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     17.140(Ac.)
Runoff from this stream =     34.609(CFS)
Time of concentration =   20.35 min.
Rainfall intensity =     2.520(In/Hr)


+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      604.000 to Point/Station      605.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   993.000(Ft.)
Top (of initial area) elevation =  1784.000(Ft.)
Bottom (of initial area) elevation =  1560.000(Ft.)
Difference in elevation =   224.000(Ft.)
Slope =    0.22558  s(percent)=      22.56
TC = k(0.551)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.732 min.
Rainfall intensity =      3.283(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.831
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.040
Decimal fraction soil group C = 0.960
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.10
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     27.158(CFS)
Total initial stream area =        9.950(Ac.)
Pervious area fraction = 1.000


+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      605.000 to Point/Station      606.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1560.000(Ft.)
End of natural channel elevation =   1516.000(Ft.)
Length of natural channel  =   369.000(Ft.)
Estimated mean flow rate at midpoint of channel =     47.684(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   6.72(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1192
Corrected/adjusted channel slope =  0.1135
Travel time =    0.91 min.     TC =   12.65  min.
```

```
 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.830
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.160
Decimal fraction soil group C = 0.840
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  81.20
Pervious area fraction =  0.880; Impervious fraction =  0.120
Rainfall intensity =      3.167(In/Hr) for a   100.0 year storm
Subarea runoff =     39.518(CFS) for     15.040(Ac.)
Total runoff =     66.676(CFS)       Total area =      24.990(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      606.000 to Point/Station      607.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1516.000(Ft.)
End of natural channel elevation =   1432.000(Ft.)
Length of natural channel  =  1135.000(Ft.)
Estimated mean flow rate at midpoint of channel =     78.616(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   6.43(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0740
Corrected/adjusted channel slope =  0.0740
Travel time =    2.94 min.     TC =   15.59  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.845
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.180
Decimal fraction soil group C = 0.820
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  85.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Rainfall intensity =      2.864(In/Hr) for a   100.0 year storm
Subarea runoff =     21.672(CFS) for      8.950(Ac.)
Total runoff =     88.348(CFS)       Total area =      33.940(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      607.000 to Point/Station      608.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1432.000(Ft.)
Downstream point/station elevation =  1420.000(Ft.)
Pipe length  =   328.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    88.348(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    88.348(CFS)
Normal flow depth in pipe =   23.86(In.)
Flow top width inside pipe =   29.54(In.)
Critical depth could not be calculated.
Pipe flow velocity =     19.19(Ft/s)
Travel time through pipe =    0.28 min.
Time of concentration (TC) =    15.88 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      607.000 to Point/Station      608.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
```

```
USER INPUT of soil data for subarea
Runoff Coefficient = 0.800
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.710
Decimal fraction soil group C = 0.290
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  68.30
Pervious area fraction =  0.620; Impervious fraction =  0.380
Time of concentration =    15.88 min.
Rainfall intensity =      2.840(In/Hr) for a   100.0 year storm
Subarea runoff =      5.362(CFS) for      2.360(Ac.)
Total runoff =     93.710(CFS)       Total area =      36.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      608.000 to Point/Station      609.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1420.000(Ft.)
Downstream point/station elevation =  1402.000(Ft.)
Pipe length  =   241.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    93.710(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    93.710(CFS)
Normal flow depth in pipe =   20.98(In.)
Flow top width inside pipe =   27.52(In.)
Critical depth could not be calculated.
Pipe flow velocity =     25.57(Ft/s)
Travel time through pipe =    0.16 min.
Time of concentration (TC) =    16.03 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      608.000 to Point/Station      609.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     36.300(Ac.)
Runoff from this stream =     93.710(CFS)
Time of concentration =   16.03 min.
Rainfall intensity =     2.826(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       34.609     20.35                 2.520
2       93.710     16.03                 2.826
Largest stream flow has longer or shorter time of concentration
Qp =     93.710 + sum of
         Qa          Tb/Ta
         34.609 *    0.788 =     27.262
Qp =    120.972

Total of 2 streams to confluence:
Flow rates before confluence point:
      34.609      93.710
Area of streams before confluence:
       17.140       36.300
Results of confluence:
Total flow rate =    120.972(CFS)
Time of concentration =    16.032 min.
Effective stream area after confluence =     53.440(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      608.000 to Point/Station      609.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
USER INPUT of soil data for subarea
```

```
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.990
Decimal fraction soil group D = 0.010
RI index for soil(AMC 2)  =  69.10
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    16.03 min.
Rainfall intensity =      2.826(In/Hr) for a   100.0 year storm
Subarea runoff =      4.724(CFS) for      1.890(Ac.)
Total runoff =    125.696(CFS)       Total area =      55.330(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      609.000 to Point/Station      609.500
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1402.000(Ft.)
Downstream point/station elevation =  1380.000(Ft.)
Pipe length  =   214.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   125.696(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =   125.696(CFS)
Normal flow depth in pipe =   23.48(In.)
Flow top width inside pipe =   24.74(In.)
Critical depth could not be calculated.
Pipe flow velocity =     30.50(Ft/s)
Travel time through pipe =    0.12 min.
Time of concentration (TC) =    16.15 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      609.000 to Point/Station      609.500
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.899
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.960
Decimal fraction soil group C = 0.040
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  75.70
Pervious area fraction =  0.010; Impervious fraction =  0.990
Time of concentration =    16.15 min.
Rainfall intensity =      2.816(In/Hr) for a   100.0 year storm
Subarea runoff =      5.518(CFS) for      2.180(Ac.)
Total runoff =    131.214(CFS)       Total area =      57.510(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      609.500 to Point/Station      611.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1380.000(Ft.)
Downstream point/station elevation =  1378.000(Ft.)
Pipe length  =   104.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   131.214(CFS)
Nearest computed pipe diameter  =     42.00(In.)
Calculated individual pipe flow  =   131.214(CFS)
Normal flow depth in pipe =   32.39(In.)
Flow top width inside pipe =   35.28(In.)
Critical Depth =   39.79(In.)
Pipe flow velocity =     16.49(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =    16.25 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      609.500 to Point/Station      611.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
```

```
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     57.510(Ac.)
Runoff from this stream =    131.214(CFS)
Time of concentration =   16.25 min.
Rainfall intensity =     2.808(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      610.000 to Point/Station      610.500
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   841.000(Ft.)
Top (of initial area) elevation =  1436.000(Ft.)
Bottom (of initial area) elevation =  1388.000(Ft.)
Difference in elevation =    48.000(Ft.)
Slope =    0.05707  s(percent)=       5.71
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.902 min.
Rainfall intensity =      3.026(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.835
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.780
Decimal fraction soil group D = 0.220
RI index for soil(AMC 2)  =  84.90
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     10.785(CFS)
Total initial stream area =        4.270(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      610.500 to Point/Station      611.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1388.000(Ft.)
Downstream point/station elevation =  1378.000(Ft.)
Pipe length  =   158.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.785(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    10.785(CFS)
Normal flow depth in pipe =    8.93(In.)
Flow top width inside pipe =   14.72(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.16(Ft/s)
Travel time through pipe =    0.19 min.
Time of concentration (TC) =    14.09 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      610.500 to Point/Station      611.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      4.270(Ac.)
Runoff from this stream =     10.785(CFS)
Time of concentration =   14.09 min.
Rainfall intensity =     3.007(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1      131.214     16.25                 2.808
2       10.785     14.09                 3.007
Largest stream flow has longer time of concentration
Qp =    131.214 + sum of
          Qb         Ia/Ib
          10.785 *    0.934 =     10.070
```

```
Qp =    141.284

Total of 2 streams to confluence:
Flow rates before confluence point:
     131.214      10.785
Area of streams before confluence:
       57.510        4.270
Results of confluence:
Total flow rate =    141.284(CFS)
Time of concentration =    16.254 min.
Effective stream area after confluence =     61.780(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      611.000 to Point/Station      612.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1378.000(Ft.)
Downstream point/station elevation =  1348.000(Ft.)
Pipe length  =   641.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   141.284(CFS)
Nearest computed pipe diameter  =     36.00(In.)
Calculated individual pipe flow  =   141.284(CFS)
Normal flow depth in pipe =   28.88(In.)
Flow top width inside pipe =   28.69(In.)
Critical depth could not be calculated.
Pipe flow velocity =     23.27(Ft/s)
Travel time through pipe =    0.46 min.
Time of concentration (TC) =    16.71 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      611.000 to Point/Station      612.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.867
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.080
Decimal fraction soil group C = 0.760
Decimal fraction soil group D = 0.160
RI index for soil(AMC 2)  =  85.80
Pervious area fraction =  0.490; Impervious fraction =  0.510
Time of concentration =    16.71 min.
Rainfall intensity =      2.770(In/Hr) for a   100.0 year storm
Subarea runoff =     14.275(CFS) for      5.940(Ac.)
Total runoff =    155.559(CFS)       Total area =      67.720(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      612.000 to Point/Station      613.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of natural channel elevation =   1348.000(Ft.)
End of natural channel elevation =   1343.000(Ft.)
Length of natural channel  =    85.000(Ft.)
Estimated mean flow rate at midpoint of channel =    156.742(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.19(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0588
Corrected/adjusted channel slope =  0.0588
Travel time =    0.11 min.     TC =   16.82  min.


 Adding area flow to channel
```

```
USER INPUT of soil data for subarea
Runoff Coefficient = 0.786
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.080
Decimal fraction soil group D = 0.020
RI index for soil(AMC 2)  =  76.88
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.762(In/Hr) for a   100.0 year storm
Subarea runoff =      2.236(CFS) for      1.030(Ac.)
Total runoff =    157.795(CFS)       Total area =      68.750(Ac.)
End of computations, total study area =           68.75 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.834
Area averaged RI index number =  79.1
```

APPENDIX B

Post Development 100-Year & 10-Year Rational Method

```
                  Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/21/20
File:133555PROPBASIN1.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE - HOTEL SITE
        BASIN 1 - PROPOSED CONDITIONS
        100-YEAR STORM EVENT
        JN 133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------



        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800





        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       1.000 to Point/Station       2.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   192.000(Ft.)
Top (of initial area) elevation =  1345.500(Ft.)
Bottom (of initial area) elevation =  1342.000(Ft.)
Difference in elevation =     3.500(Ft.)
Slope =    0.01823  s(percent)=       1.82
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.474 min.
Rainfall intensity =      4.734(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.896
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      1.865(CFS)
Total initial stream area =        0.440(Ac.)
Pervious area fraction = 0.100
End of computations, total study area =            0.44 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
```

```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/21/20
File:133555PROPBASIN2.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE - HOTEL SITE
        BASIN 2 - PROPOSED CONDITIONS
        100-YEAR STORM EVENT
        JN 133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------


        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =  100.00 Antecedent Moisture Condition = 3

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year = 100.0
        Calculated rainfall intensity data:
        1 hour intensity =  1.500(In/Hr)
        Slope of intensity duration curve = 0.4800




        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       10.000 to Point/Station       11.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   324.000(Ft.)
Top (of initial area) elevation =  1344.000(Ft.)
Bottom (of initial area) elevation =  1340.000(Ft.)
Difference in elevation =     4.000(Ft.)
Slope =    0.01235  s(percent)=       1.23
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.295 min.
Rainfall intensity =      4.124(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.895
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      7.197(CFS)
Total initial stream area =        1.950(Ac.)
Pervious area fraction = 0.100
End of computations, total study area =            1.95 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
```

```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/21/20
File:133555PROPBASIN1.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE - HOTEL SITE
        BASIN 1 - PROPOSED CONDITIONS
        10-YEAR STORM EVENT
        JN 133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------



        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =   10.00 Antecedent Moisture Condition = 2

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year =  10.0
        Calculated rainfall intensity data:
        1 hour intensity =  0.980(In/Hr)
        Slope of intensity duration curve = 0.4800





        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       1.000 to Point/Station       2.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   192.000(Ft.)
Top (of initial area) elevation =  1345.500(Ft.)
Bottom (of initial area) elevation =  1342.000(Ft.)
Difference in elevation =     3.500(Ft.)
Slope =    0.01823  s(percent)=       1.82
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.474 min.
Rainfall intensity =      3.093(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      1.205(CFS)
Total initial stream area =        0.440(Ac.)
Pervious area fraction = 0.100
End of computations, total study area =            0.44 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
```

```
                        Riverside County Rational Hydrology Program

        CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2014 Version 9.0
                Rational Hydrology Study        Date: 02/21/20
File:133555PROPBASIN2.out
        ------------------------------------------------------------------------
        BAXTER VILLAGE - HOTEL SITE
        BASIN 2 - PROPOSED CONDITIONS
        10-YEAR STORM EVENT
        JN 133555
        ------------------------------------------------------------------------
         *********   Hydrology Study Control Information **********

         English (in-lb) Units used in input data file

        ------------------------------------------------------------------------



        Program License Serial Number 6388

        ------------------------------------------------------------------------
        Rational Method Hydrology Program based on
        Riverside County Flood Control & Water Conservation District
        1978 hydrology manual

        Storm event (year) =   10.00 Antecedent Moisture Condition = 2

        Standard intensity-duration curves data (Plate D-4.1)
        For the [ Elsinore-Wildomar ] area used.
        10 year storm 10 minute intensity =  2.320(In/Hr)
        10 year storm 60 minute intensity =  0.980(In/Hr)
        100 year storm 10 minute intensity =  3.540(In/Hr)
        100 year storm 60 minute intensity =  1.500(In/Hr)

        Storm event year =  10.0
        Calculated rainfall intensity data:
        1 hour intensity =  0.980(In/Hr)
        Slope of intensity duration curve = 0.4800




        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Process from Point/Station       10.000 to Point/Station       11.000
        **** INITIAL AREA EVALUATION ****
```

```
Initial area flow distance =   324.000(Ft.)
Top (of initial area) elevation =  1344.000(Ft.)
Bottom (of initial area) elevation =  1340.000(Ft.)
Difference in elevation =     4.000(Ft.)
Slope =    0.01235  s(percent)=       1.23
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.295 min.
Rainfall intensity =      2.695(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      4.643(CFS)
Total initial stream area =        1.950(Ac.)
Pervious area fraction = 0.100
End of computations, total study area =            1.95 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
```

LEGEND

DRAINAGE BOUNDARY

FLOW PATH

SUBAREA BOUNDARY

A-1 / 1.1 — SUBAREA DESIGNATION / AREA (ACRES)

① NODE I.D.

40 20 0 40 80 120

SCALE: 1"=40'

Michael Baker
INTERNATIONAL
40810 COUNTY CENTER DR.,
SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

BAXTER VILLAGE - HOTEL SITE

DRAINAGE STUDY SITE PLAN - PROPOSED CONDITIONS
CITY OF WILDOMAR

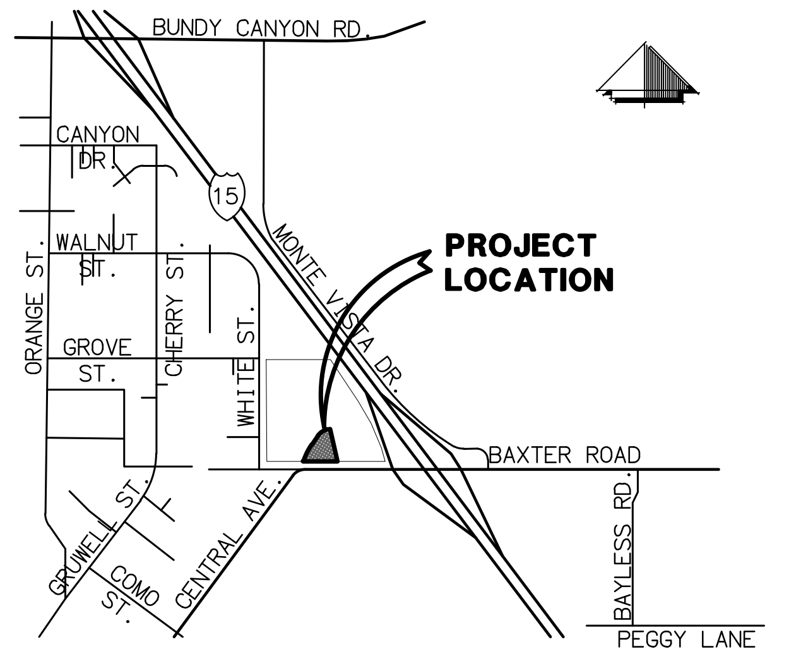
H:\PDATA\133555\ADMIN\REPORTS\DRAINAGE STUDY\DWG\133555-PROP CONDITIONS-HOTEL.DWG JESSICA.JONES 2/21/20 3:51 pm

APPENDIX C

Reference Materials

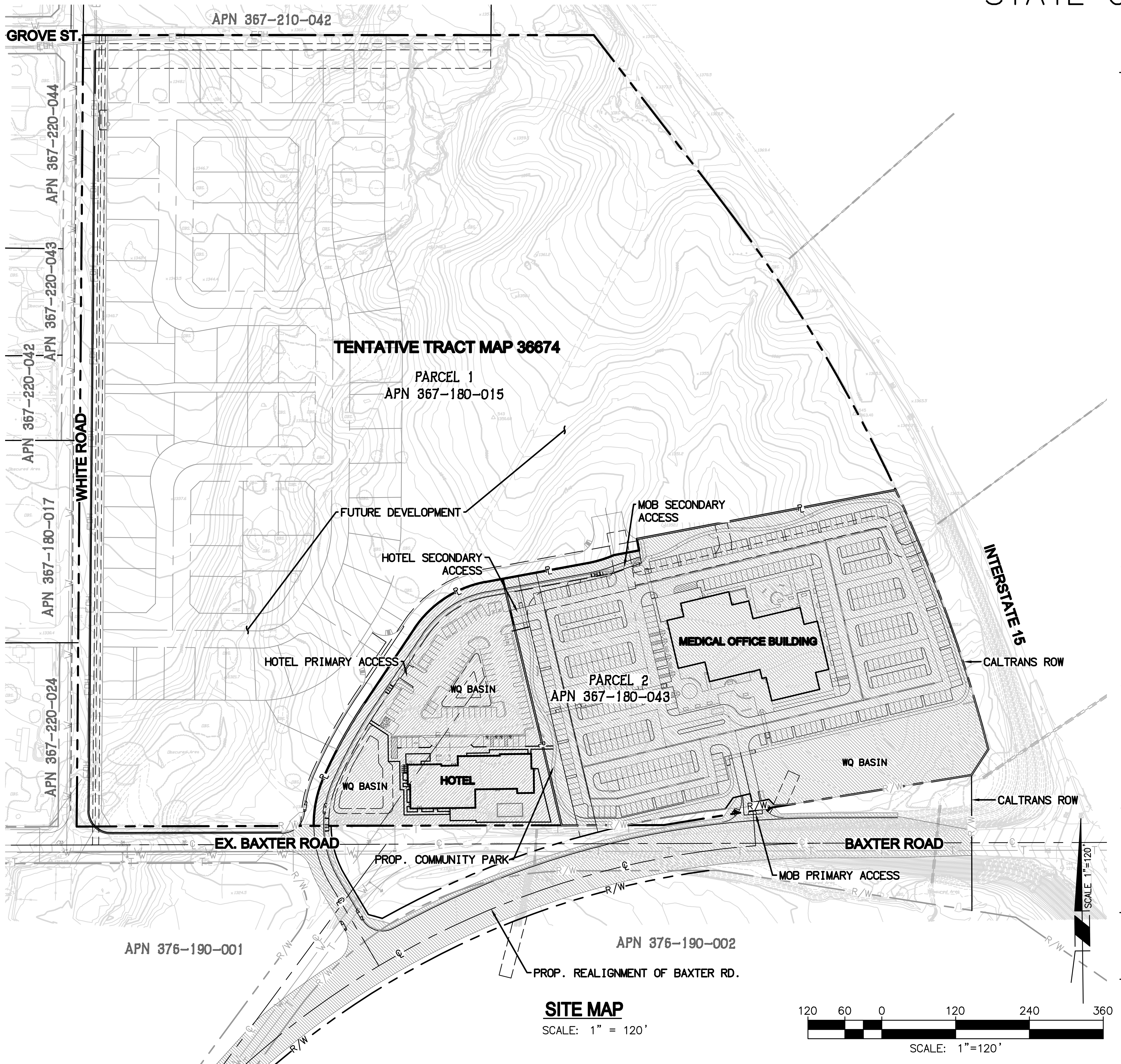
BAXTER VILLAGE
SITE PLAN OF DEVELOPMENT
FOR THE HOTEL AND MEDICAL OFFICE BUILDING SITES
OF TENTATIVE TRACT MAP # 36674

CITY OF WILDOMAR, COUNTY OF RIVERSIDE
STATE OF CALIFORNIA



VICINITY MAP

NOT TO SCALE
TOWNSHIP 6 S, RANGE 4 W, SECTION 26
THOMAS GUIDE RIV CO 2008
897 C5, C6, D5, D6



SITE MAP

SCALE: 1" = 120'

LIGHTING REQUIREMENTS

AT A MINIMUM, THE LIGHTING IMPROVEMENTS WITHIN THIS SITE ARE TO ADHERE TO THE FOLLOWING CRITERIA:

1. IN COMPLIANCE WITH TITLE 8, CHAPTER 8.64 (LIGHT POLLUTION OF THE CITY MUNICIPAL CODE) DETAILED LIGHTING PLANS AND OTHER REQUIRED ITEMS SHALL BE SUBMITTED PRIOR TO GRADING OR BUILDING PERMIT APPROVALS.
2. FOOT CANDLE LEVELS FOR EACH AREA (TRAILS, SIDEWALKS, STREETS, ETC.) SHALL BE BASED ON IES STANDARDS.
3. LIGHTING CONTROL PER CA. TITLE 24 REQUIREMENTS.

GENERAL DESCRIPTION

1. EXISTING LAND USE: VACANT
2. GENERAL PLAN: MUPA – MIXED USE PLANNING AREA
3. PROPOSED GENERAL PLAN – COMMERCIAL RETAIL (CR)
4. EXISTING ZONING: SCENIC HIGHWAY COMMERCIAL
5. PROPOSED ZONING: SCENIC HIGHWAY COMMERCIAL
6. PROPOSED LAND USE: COMMERCIAL RETAIL
7. PROPOSED WATER AND SEWER SERVICE WILL BE PROVIDED BY:
   ELSINORE VALLEY MUNICIPAL WATER DISTRICT
8. ALL UTILITIES WILL BE UNDERGROUND
   GAS ---------------------- SOUTHERN CALIFORNIA GAS COMPANY
   ELECTRIC ------------------ SOUTHERN CALIFORNIA EDISON
   TELEPHONE ---------------- VERIZON
9. SCHOOL DISTRICT: LAKE ELSINORE UNIFIED SCHOOL DISTRICT
10. PROPOSED NUMBER OF LOTS: 8 COMMERCIAL, 1 OPEN SPACE & 2 BASINS
11. THIS TENTATIVE MAP IS EXCLUSIVELY UNDER THE OWNERSHIP OF THE SUBDIVIDER AND INCLUDES THE ENTIRE CONTIGUOUS OWNERSHIP OF THE SUBDIVIDER.
12. THOMAS BROTHER'S GUIDE – PAGE 897, COORDINATES C & D, AND 5 & 6
13. SITE INFORMATION:

GROSS AREA HOTEL	2.4 AC
MOB	7.19 AC
TOTAL GROSS AREA	9.58 AC
TOTAL FLA	XX,000 SF
PARKING REQ'D	XX SPACES (XX/1000 SF)
PARKING PROVIDED	XX SPACES

NOTE: WITH THE EXCEPTION OF EMERGENCY VEHICLE ACCESS POINTS, THERE ARE NO GATES PROPOSED FOR THIS COMMUNITY.

LEGAL DESCRIPTION FOR APN # 367-180-015

PARCEL 1

THE WEST ONE–HALF OF THE SOUTHWEST ONE–QUARTER OF THE SOUTHEAST ONE–QUARTER OF SECTION 26, TOWNSHIP 6 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, ACCORDING TO THE UNITED STATES GOVERNMENT SURVEY THEREOF.

LEGAL DESCRIPTION FOR APN # 367-180-043

PARCEL 2

PARCEL 2 OF LOT LINE ADJUSTMENT NO. 2017–005, IN THE CITY OF WILDOMAR, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, RECORDED OCTOBER 31, 2017 AS INSTRUMENT NO. 2017–0453307 OF OFFICIAL RECORDS IN THE OFFICE OF THE COUNTY RECORDER OF SAID RIVERSIDE COUNTY.

PROPOSED EASEMENT NOTES

△1 INDICATES AN EASEMENT FOR ACCESS AND PUBLIC UTILITIES TO BE RESERVED ON THE FINAL MAP.

△2 INDICATES AN EASEMENT FOR STORM DRAIN PURPOSES TO BE RESERVED ON FINAL MAP.

BENCHMARK

RIV. CO. BM. # E–6–70
ELEVATION=1304.204
DATUM=NGVD29

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE VI, NAD83 (EPOCH 2007.0) AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS OPERATING REFERENCE STATIONS (CORS) BILL AND DVLS BEING N05–05–38.82E AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC) AND/OR NATIONAL GEODETIC SURVEY (NGS), RESPECTIVELY.

SOURCE OF TOPOGRAPHY

ASSOCIATED DATA COMPILED FROM AERIAL PHOTOGRAPHY
DATED 01–22–13 BY:

INLAND AERIAL SURVEYS, INC.
7117 ARLINGTON AVENUE, SUITE A
RIVERSIDE, CA 92503
Ph (951) 687–4252 Fx (951) 687–4120
ias@inlandaerial.com

OWNER / APPLICANT

STRATA BAXTER, LLC
4370 LA JOLLA VILLAGE DRIVE #960
SAN DIEGO, CA 92122
(858)546–0900 (p)
(858)546–8725 (f)

HOTEL SITE:

ARCHITECT

AO ARCHITECTS
144 N. ORANGE ST.,
ORANGE, CA 92866
(714)639–9860 (p)

ENGINEER

MICHAEL BAKER INTERNATIONAL
40810 COUNTY CENTER DRIVE, SUITE 200
TEMECULA, CALIFORNIA 92591–6022
PHONE: 951.676.8042 FAX: 951.676.7240

MOB SITE:

ARCHITECT

CANNON DESIGN
2355 MAIN ST., SUITE 220
IRVINE, CALIFORNIA 92614
(949)265–8970

ENGINEER

VCA ENGINEERS, INC.
2151 MICHELSON DRIVE, SUITE 242
IRVINE, CALIFORNIA 92612
PHONE: 949.679.0870 FAX: 949.679.9370

UTILITIES

SEWER:	ELSINORE VALLEY MUNICIPAL WATER DISTRICT
WATER:	ELSINORE VALLEY MUNICIPAL WATER DISTRICT
GAS:	SOUTHERN CALIFORNIA GAS COMPANY
ELECTRIC:	SOUTHERN CALIFORNIA EDISON COMPANY
TELEPHONE:	GENERAL TELEPHONE
CABLE TELEVISION:	SOUTHLAND CABLEVISION

JOB ADDRESS

THE SITE IS BORDERED BY BAXTER ROAD TO THE SOUTH, WHITE ROAD TO THE WEST AND THE 15 FWY. TO THE EAST/ NORTHEAST AND APN 367–210–042 TO THE NORTH.

ASSESORS PARCEL NUMBERS

367–180–015, 043

ABBREVIATIONS

AC	ASPHALT CONCRETE
CL	CENTERLINE
RL	RIDGELINE
TS	TOP OF SLOPE
TC	TOP OF CURB
FL	FLOW LINE
HP	HIGH POINT
LP	LOW POINT
EG	EXISTING GRADE
FG	FINISHED GRADE
FS	FINISHED SURFACE
GB	GRADE BREAK
FH	FIRE HYDRANT
STLT	STREET LIGHT
C&G	CURB & GUTTER
R/W	RIGHT OF WAY
S/W	SIDEWALK
SD	STORM DRAIN
EX	EXISTING
PROP	PROPOSED
PL	PROPERTY LINE
FF	FINISH FLOOR
WTR	WATER
SWR	SEWER

LEGEND

FINISHED CONTOUR	1190
EXISTING CONTOUR	(1190)
TOP	
TOE	
DAYLIGHT	
LOT NUMBERS	25
PAD ELEVATION	PE = 18.5
PROPOSED FINISHED GRADE	17.0
PROPOSED RATE OF GRADE	1.0%
BOUNDARRY LINE	
RIGHT OF WAY	
CENTERLINE	
PROPOSED LOT LINE	
PROPOSED EASEMENT	
RESTRICTED ACCESS	
PROPOSED STORM DRAIN	SD PROP CATCH BASIN
PROPOSED SEWER LINE	S
PROPOSED WATER LINE	W
SIDEWALK	
FIRE HYDRANT	
FIRE TURN TEMPLATE	R=37'
DIRECTION OF FLOW	→
BROW DITCH	⇒
ENTRY MONUMENT (PER LANDSCAPE PLANS)	
BIKE RACKS	
SECURE BIKE RACKS	▦
ELECTRIC VEHICLE PARKING	Ⓔ

INDEX OF SHEETS:

SHEET No.	DESCRIPTION
1.	TITLE SHEET, INDEX MAP
2.	TYPICAL SECTIONS AND DETAILS
3.	TOPOGRAPHY MAP AND EXISTING UTILITIES
4.	HOTEL AND MOB SITE PLAN
5.	CONCEPTUAL GRADING PLAN BAXTER RD. & LOOP RD.
6.	CONCEPTUAL GRADING PLAN FOR HOTEL SITE
7.	UTILITIES PLAN FOR BAXTER RD. AND HOTEL SITE
8.	PEDESTRIAN CIRCULATION EXHIBIT – PHASE 1
9.	LANDSCAPE PLAN FOR HOTEL SITE

UNADJUSTED TOTAL EARTHWORK QUANTITIES

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after city acceptance or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for acceptance by the city.

MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				CITY	

CITY OF WILDOMAR
ACCEPTED BY:
Date:
Daniel A. York, Director of Public Works/ City Engineer, PE 43212
ACCEPTANCE AS TO CONFORMANCE WITH APPLICABLE CITY STANDARDS AND PRACTICES

SEAL-ENGINEER:
JOHN D. TANNER III
No. 60132

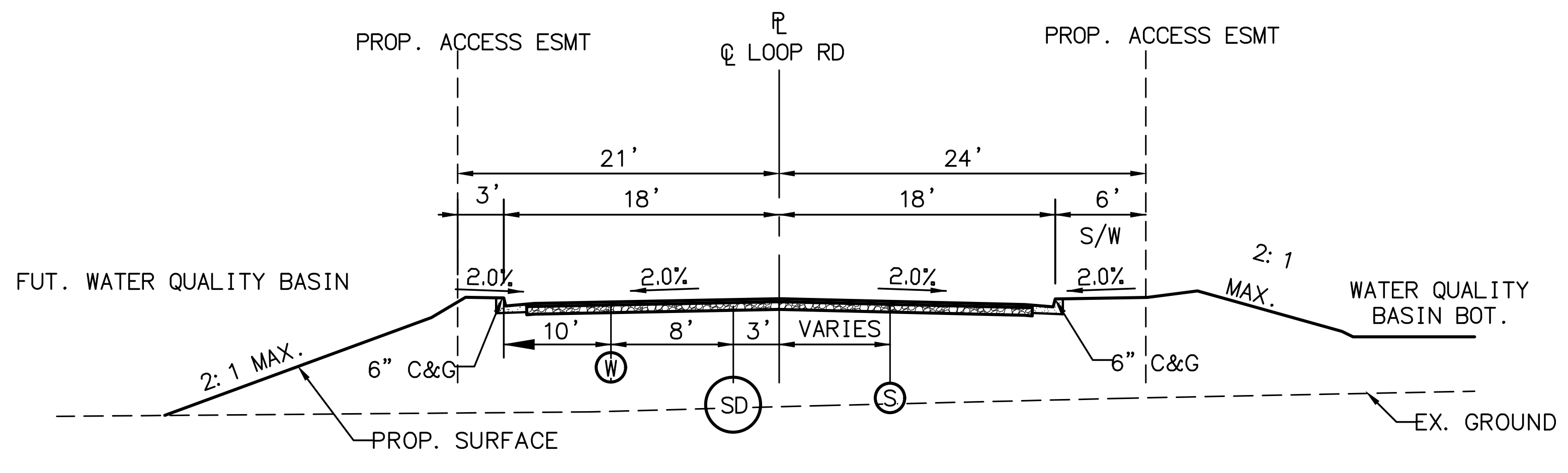
Michael Baker INTERNATIONAL
40810 COUNTY CENTER DRIVE, SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042 · MBAKERINTL.COM
PREPARED BY: JOHN D. TANNER III
R.C.E. No. 60132 DATE

BENCHMARK:
Elevation = 1304.204
Datum = NGVD29
BENCHMARK # E-6-70
THIS SURVEY WAS PERFORMED ON 01/22/13 BY INLAND AERIAL SURVEYS, INC.
L.S. (number), EXP. (date)
SCALE:
H: As Noted V: As Noted

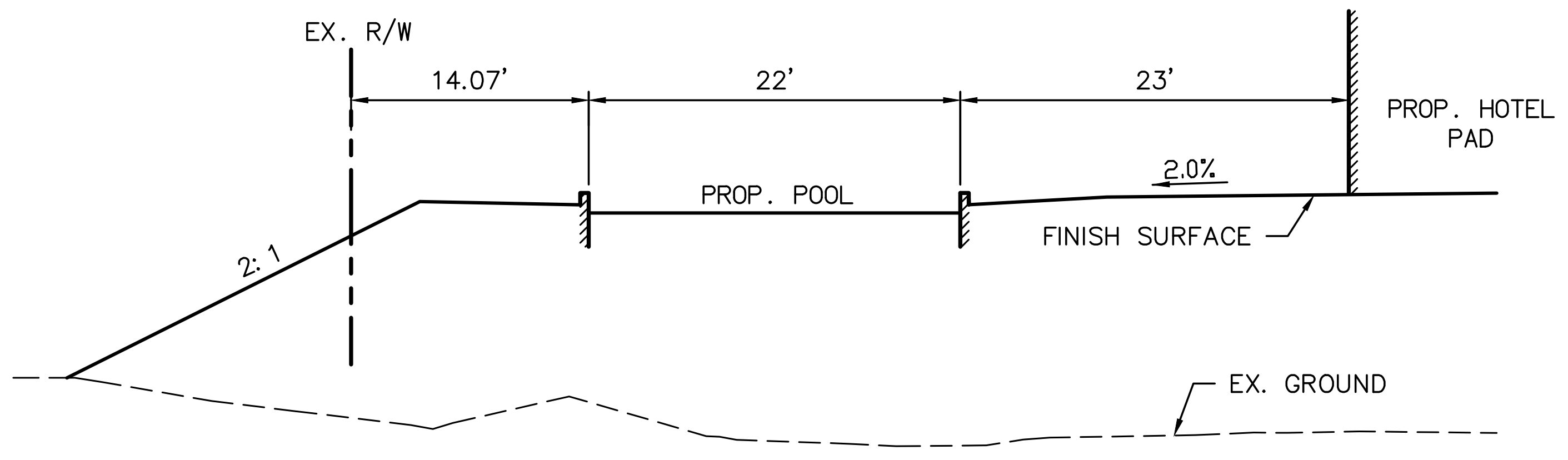
PA NO. 14-0002
CITY OF WILDOMAR
BAXTER VILLAGE - HOTEL & MOB
SITE PLAN OF DEVELOPMENT
TITLE SHEET, NOTES, INDEX MAP

SHEET No.
1
OF X SHTS

H:\PDATA\133555\CADD\LAND\DLV\GRADING\CONCEPTUAL\HOTEL\133555-CG-HOTEL-001.DWG OLGA.SHEVCHENKO 3/6/20 3:02 PM



SECTION A-A
TYPICAL UTILITY LOCATION
NOT TO SCALE



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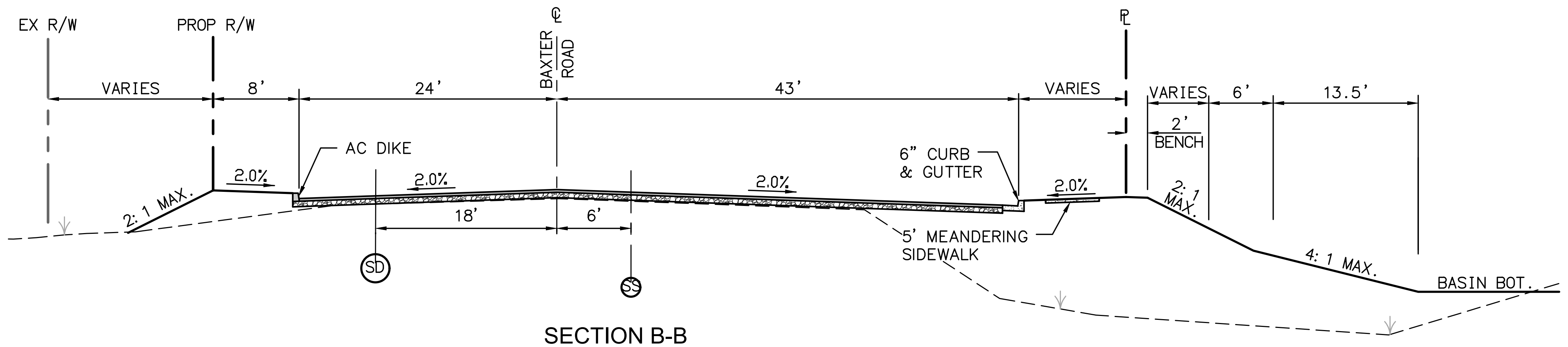
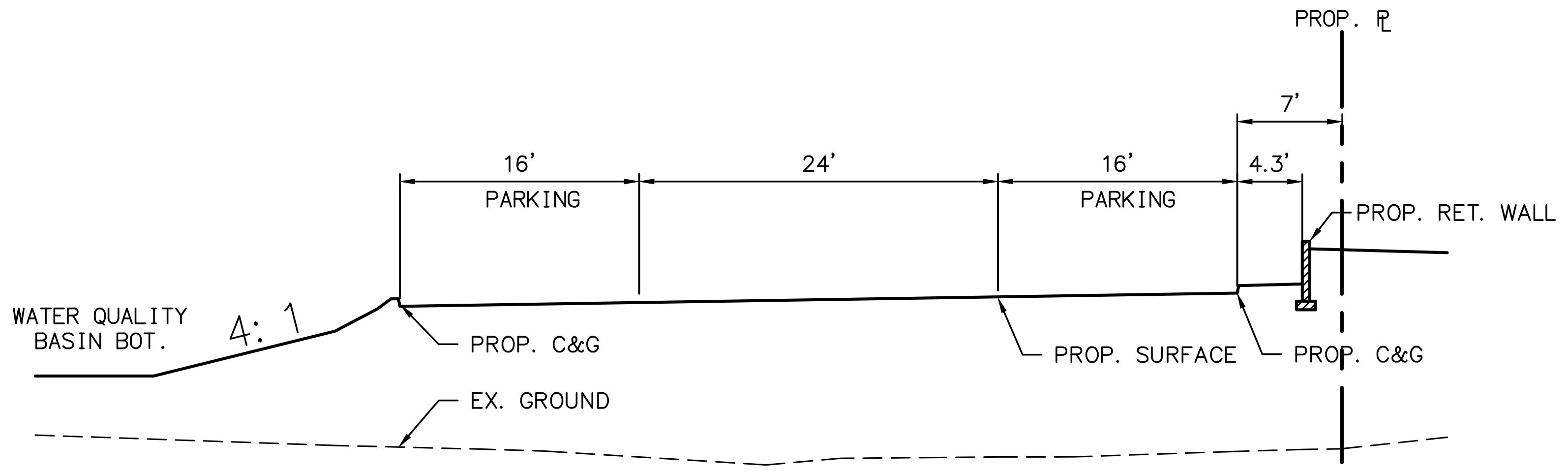
NOT TO SCALE



SECTION B-B
TYPICAL UTILITY LOCATION
NOT TO SCALE



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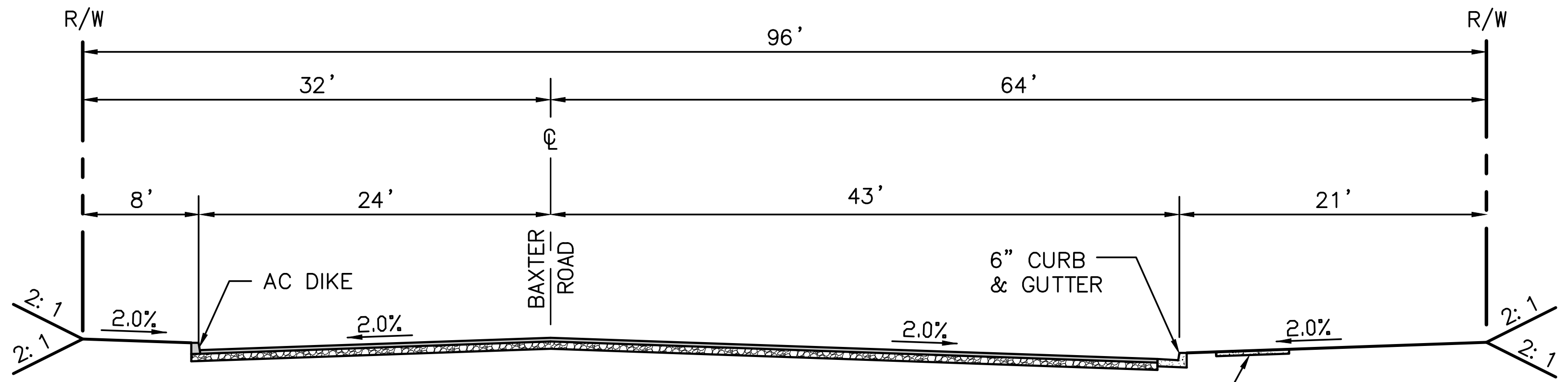
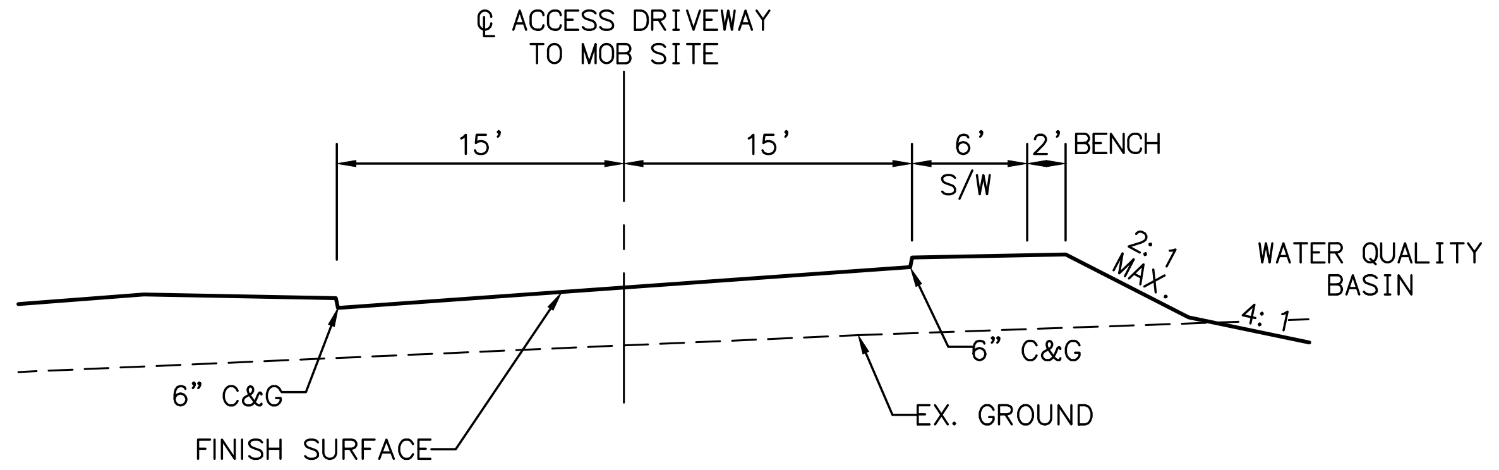
NOT TO SCALE



SECTION C-C
NOT TO SCALE



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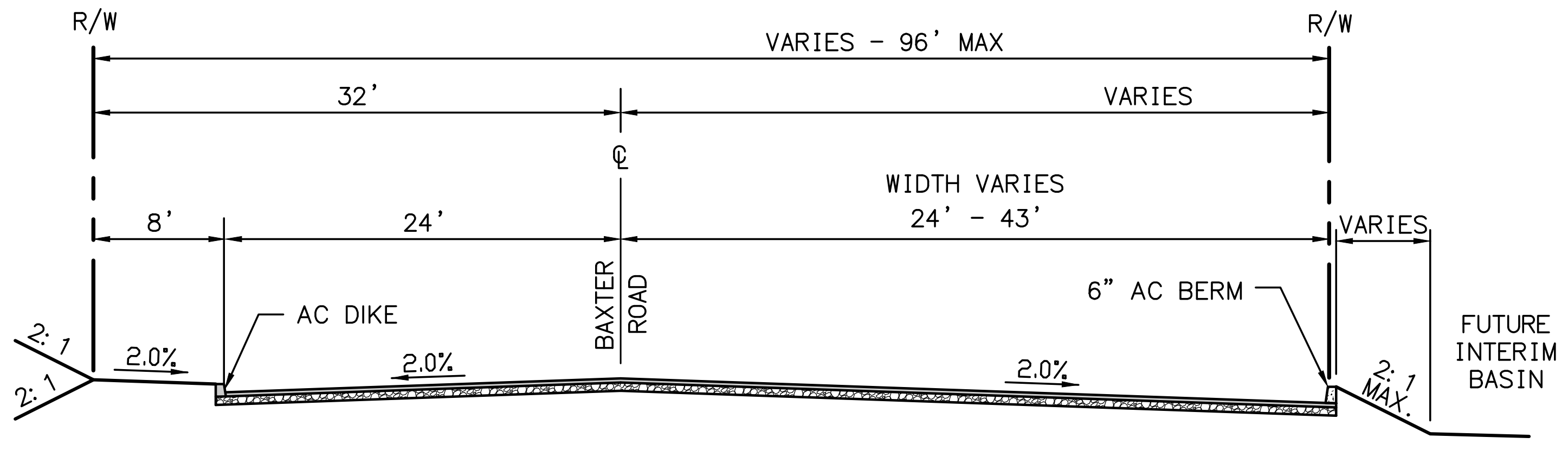
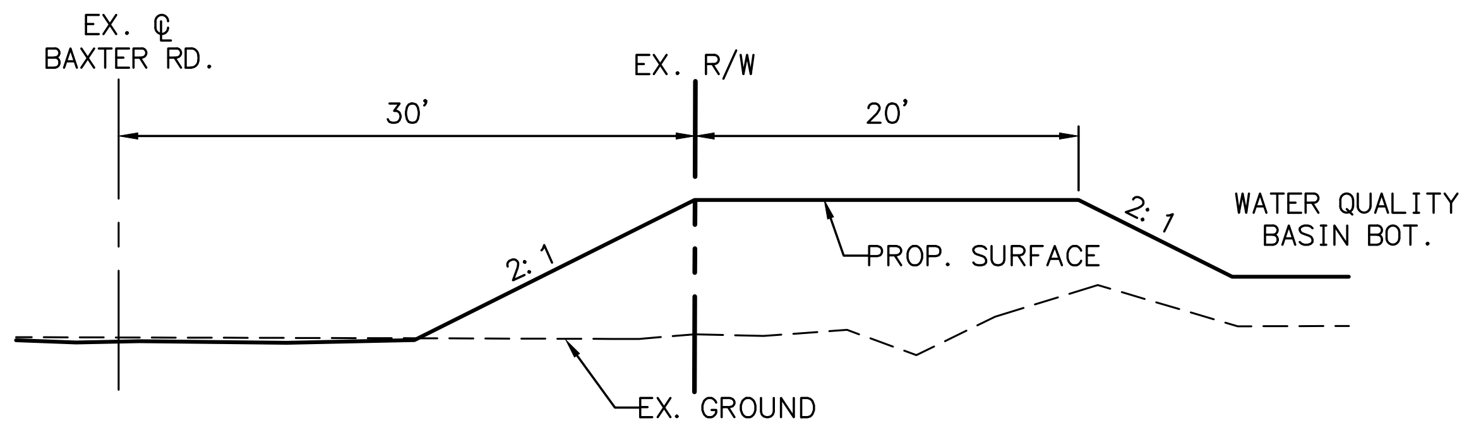
NOT TO SCALE



SECTION D-D
NOT TO SCALE



SECTION E-E
NOT TO SCALE

DIGALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY
UNDERGROUND SERVICE ALERT

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after city acceptance or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for acceptance by the city.

MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				CITY	

CITY OF WILDOMAR
ACCEPTED BY:
Date:
Daniel A. York, Director of Public Works/
City Engineer, PE 43212
ACCEPTANCE AS TO CONFORMANCE WITH APPLICABLE CITY STANDARDS AND PRACTICES

SEAL-ENGINEER:
No. 60132

Michael Baker
INTERNATIONAL
40810 COUNTY CENTER DRIVE, SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042 · MBAKERINTL.COM
PREPARED BY: JOHN D. TANNER III
R.C.E. No. 60132 DATE

BENCHMARK:
Elevation = 1304.204
Datum = NGVD29
BENCHMARK # E-6-70

THIS SURVEY WAS PERFORMED
ON 01/22/13
BY INLAND AERIAL SURVEYS, INC.

L.S. (number), EXP. (date)

SCALE:
H: As Noted V: As Noted

PA NO. 14-0002
CITY OF WILDOMAR
BAXTER VILLAGE - HOTEL & MOB
SITE PLAN OF DEVELOPMENT
TYPICAL DETAILS, SECTIONS

SHEET No.
2
OF X SHTS

H:\PDATA\133555\CADD\LAND\DLV\GRADING\CONCEPTUAL\HOTEL\133555-CG-HOTEL-002.DWG OLGA.SHEVCHENKO 3/6/20 2:48 PM

DIGALERT

DIAL BEFORE YOU DIG

TWO WORKING DAYS BEFORE YOU DIG

TOLL FREE 1-800-227-2600

A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:

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ENGINEER				CITY	

CITY OF WILDOMAR
ACCEPTED BY:

Date:

Daniel A. York, Director of Public Works/
City Engineer, PE 43212

ACCEPTANCE AS TO CONFORMANCE WITH APPLICABLE CITY STANDARDS AND PRACTICES

SEAL-ENGINEER:
JOHN D. TANNER III
No. 60132

Michael Baker
INTERNATIONAL
40810 COUNTY CENTER DRIVE, SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042 · MBAKERINTL.COM

PREPARED BY: JOHN D. TANNER III

R.C.E. No. 60132 DATE

BENCHMARK:
Elevation = 1304.204
Datum = NGVD29
BENCHMARK # E-6-70

THIS SURVEY WAS PERFORMED ON 01/22/13 BY INLAND AERIAL SURVEYS, INC.

L.S. (number), EXP. (date)

SCALE:
H: As Noted V: As Noted

PA NO. 14-0002

CITY OF WILDOMAR
BAXTER VILLAGE - HOTEL & MOB
SITE PLAN OF DEVELOPMENT
TOPOGRAPHY MAP AND EXISTING UTILITIES

SHEET No.
3
OF X SHTS

H:\PDATA\133555\CADD\LAND\DLV\GRADING\CONCEPTUAL\HOTEL\133555-CG-HOTEL-003.DWG OLGA.SHEVCHENKO 3/6/20 2:49 PM

DIGALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY
UNDERGROUND SERVICE ALERT

NOTE:
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MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				CITY	

CITY OF WILDOMAR
ACCEPTED BY:
Date:
Daniel A. York, Director of Public Works/
City Engineer, PE 43212
ACCEPTANCE AS TO CONFORMANCE WITH APPLICABLE CITY STANDARDS AND PRACTICES

SEAL-ENGINEER:
JOHN D. TANNER III
No. 60132

Michael Baker
INTERNATIONAL
40810 COUNTY CENTER DRIVE, SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042 · MBAKERINTL.COM
PREPARED BY: JOHN D. TANNER III
R.C.E. No. 60132 DATE

BENCHMARK:
Elevation = 1304.204
Datum = NGVD29
BENCHMARK # E-6-70
THIS SURVEY WAS PERFORMED ON 01/22/13 BY INLAND AERIAL SURVEYS, INC.
L.S. (number), EXP. (date)
SCALE:
H: As Noted V: As Noted

PA NO. 14-0002

CITY OF WILDOMAR
BAXTER VILLAGE - HOTEL & MOB
SITE PLAN OF DEVELOPMENT
HOTEL AND MOB SITE PLAN

SHEET No.
4
OF X SHTS

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PROPOSED EASEMENT NOTES

△1 INDICATES AN EASEMENT FOR ACCESS AND PUBLIC UTILITIES TO BE RESERVED ON THE FINAL MAP.

△2 INDICATES AN EASEMENT FOR STORM DRAIN PURPOSES TO BE RESERVED ON FINAL MAP.

SCALE: 1"=40'

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A PUBLIC SERVICE BY
UNDERGROUND SERVICE ALERT

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The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after city acceptance or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for acceptance by the city.

MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				CITY	

CITY OF WILDOMAR
ACCEPTED BY:
Date:
Daniel A. York, Director of Public Works/
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R.C.E. No. 60132 DATE

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L.S. (number), EXP. (date)
SCALE:
H: As Noted V: As Noted

PA NO. 14-0002

CITY OF WILDOMAR
BAXTER VILLAGE - HOTEL & MOB
SITE PLAN OF DEVELOPMENT
CONCEPTUAL GRADING PLAN BAXTER RD. & LOOP RD.

SHEET No.
5
OF X SHTS

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ENGINEER				CITY	

CITY OF WILDOMAR
ACCEPTED BY:

Date:

Daniel A. York, Director of Public Works/
City Engineer, PE 43212

ACCEPTANCE AS TO CONFORMANCE WITH APPLICABLE CITY STANDARDS AND PRACTICES

SEAL-ENGINEER:
JOHN D. TANNER III
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Michael Baker
INTERNATIONAL
40810 COUNTY CENTER DRIVE, SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042 · MBAKERINTL.COM

PREPARED BY: JOHN D. TANNER III

R.C.E. No. 60132 DATE

BENCHMARK:
Elevation = 1304.204
Datum = NGVD29
BENCHMARK # E-6-70

THIS SURVEY WAS PERFORMED ON 01/22/13
BY INLAND AERIAL SURVEYS, INC.

L.S. (number), EXP. (date)

SCALE:
H: As Noted V: As Noted

PA NO. 14-0002

CITY OF WILDOMAR
BAXTER VILLAGE - HOTEL & MOB
SITE PLAN OF DEVELOPMENT
CONCEPTUAL GRADING PLAN FOR HOTEL SITE

SHEET No. 6
OF X SHTS

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PROPOSED SEWER TO CONTINUE SOUTHERLY ON CENTRAL STREET (4,300 LF +/-) TO CONNECTION POINT AT THE FRONT STREET INTERSECTION. EXISTING SEWER INVERT ELEVATION AT CONNECTION POINT = 1228.6 PER TRACT 30114 WILDOMAR CHANNEL OFFSITE SEWER IMPROVEMENT PLANS (IP 030054)

PROPOSED EASEMENT NOTES

1 INDICATES AN EASEMENT FOR ACCESS AND PUBLIC UTILITIES TO BE RESERVED ON THE FINAL MAP.

2 INDICATES AN EASEMENT FOR STORM DRAIN PURPOSES TO BE RESERVED ON FINAL MAP.

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MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				CITY	

CITY OF WILDOMAR
ACCEPTED BY:
Date:
Daniel A. York, Director of Public Works/
City Engineer, PE 43212
ACCEPTANCE AS TO CONFORMANCE WITH APPLICABLE CITY STANDARDS AND PRACTICES

SEAL-ENGINEER:
JOHN D. TANNER III
No. 60132

Michael Baker
INTERNATIONAL
40810 COUNTY CENTER DRIVE, SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042 · MBAKERINTL.COM
PREPARED BY: JOHN D. TANNER III
R.C.E. No. 60132 DATE

BENCHMARK:
Elevation = 1304.204
Datum = NGVD29
BENCHMARK # E-6-70
THIS SURVEY WAS PERFORMED ON 01/22/13 BY INLAND AERIAL SURVEYS, INC.
L.S. (number), EXP. (date)
SCALE:
H: As Noted V: As Noted

PA NO. 14-0002

CITY OF WILDOMAR

BAXTER VILLAGE - HOTEL & MOB

SITE PLAN OF DEVELOPMENT

UTILITY PLAN FOR BAXTER RD. AND HOTEL SITE

SHEET No.
7
OF X SHTS

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NOTE:
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UNDERGROUND SERVICE ALERT

MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				CITY	

CITY OF WILDOMAR
ACCEPTED BY:
Date:
Daniel A. York, Director of Public Works/
City Engineer, PE 43212
ACCEPTANCE AS TO CONFORMANCE WITH APPLICABLE CITY STANDARDS AND PRACTICES

SEAL-ENGINEER:
JOHN D. TANNER III
No. 60132

Michael Baker
INTERNATIONAL
40810 COUNTY CENTER DRIVE, SUITE 200
TEMECULA, CA 92591
PHONE: (951) 676-8042 · MBAKERINTL.COM
PREPARED BY: JOHN D. TANNER III
R.C.E. No. 60132 DATE

BENCHMARK:
Elevation = 1304.204
Datum = NGVD29
BENCHMARK # E-6-70
THIS SURVEY WAS PERFORMED ON 01/22/13 BY INLAND AERIAL SURVEYS, INC.
L.S. (number), EXP. (date)
SCALE:
H: As Noted V: As Noted

PA NO. 14-0002
CITY OF WILDOMAR
BAXTER VILLAGE - HOTEL & MOB
SITE PLAN OF DEVELOPMENT
PEDESTRIAN CIRCULATION EXHIBIT - PHASE 1

SHEET No.
8
OF X SHTS

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GEOCON
WEST, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. T2540-22-03
November 26, 2019

Strata Equity Group
4370 La Jolla Village Drive, Suite 960
San Diego, California 92122

Attention: Mr. Eric Flodine

Subject: PERCOLATION TEST RESULTS
BAXTER CENTRAL
TRACT 34301
NWC BAXTER ROAD AND INTERSTATE 15
WILDOMAR, CALIFORNIA

References: 1. Michael Baker International, *Baxter Central Basin Sizing Minimum Requirements*, dated October 10, 2019.

2. Geocon West, Inc., *Preliminary Geotechnical and Fault Rupture Hazard Investigation Tract 34301 NWC Baxter Road and Interstate 15 Wildomar, California.*, revised March 26, 2015.

Dear Mr. Flodine:

In accordance with the authorization of our proposal IE-2491 dated October 28, 2019, Geocon West, Inc. (Geocon) herein submits the results of our percolation testing for proposed infiltration basins A, B, 1, 2, 3, and 4 associated with Tact 34301 in Wildomar, California (*Vicinity Map*, Figure 1). Percolation testing for the proposed infiltration basins was performed in accordance with the Riverside County Flood Control and Water Conservation District *Design Handbook for Low Impact Development Best Management Practices Appendix A-Infiltration Testing (Handbook).*

Field work included excavating 5 deep geotechnical borings and 14 percolation borings utilizing a CME 75 truck-mounted drill rig with an 8-inch diameter hollow stem auger on November 11 and 12, 2019. Percolation testing was performed on November 12 through 14. One deep geotechnical boring was excavated within each of the proposed basins, with the exception of Basin 1, where a previous boring (see Reference 2) was used. Percolation testing was performed 2 feet below the bottom of the proposed basins for Basins A, B, 1, and 3. Groundwater was encountered at an elevation of 1,339 and 1,334 feet above mean seal level for Basins 2 and 4, respectively. After consultation with the design team, percolation testing in Basins 2 and 4 was performed at approximately 10 feet above the encountered groundwater level.

Geologic units encountered during excavation include alluvium (Qal) and Pauba Formation (Qps). The alluvium consists of loose to medium dense, dry to damp, silty sand that varies in color from light yellow brown to brown. The Pauba Formation consists of medium dense to hard, dry to saturated, silty sandstone to sandy siltstone that are light reddish brown to dark brown. Minor amounts of olive claystone were also encountered.

The bottoms of the percolation test holes were covered with 2 inches of gravel. A 3-inch diameter perforated pipe fitted with a filter fabric sock was placed in the hole to mitigate potential caving. Additional gravel was placed around the annular space between the pipe and the boring wall to prevent the pipe from floating when water was added to the holes. The basin test holes were presoaked with 5 gallons of water. Locations of the percolation tests are shown on the *Percolation Test Location Map*, Figure 2, which used the Basin Sizing Minimum Requirements Plan (Reference 1) as a base. Boring logs are included as Figures 3 through 22, with Figure 22 being the previous geotechnical boring from Reference 2. Field data sheets for the percolation tests are included as Figures 23 through 36. Grain size analyses are included as Figures 37 through 50. Test results for the infiltration basins are provided in the table below. All test holes had a radius of 4 inches and were read every 30 mins. A safety factor of 3 is required per the Handbook.

INFILTRATION TEST RESULTS

Percolation Test Number	**Proposed Basin**	**Depth (ft)**	**Change in head over time: ΔH (inches)**	**Average head: Havg (inches)**	**Percolation Rate (Min/inches)**	**Infiltration Rate: It (inches/hour)**
P-1	3	15.0	0.4	49.6	83.3	0.03
P-2	3	11.0	1.6	36.9	19.2	0.16
P-3	1	14.0	0.1	63.9	250.0	0.01
P-4	1	10.0	4.4	39.4	6.8	0.43
P-5	1	11.0	1.3	35.9	22.7	0.29
P-6	B	12.0	0.4	40.5	83.3	0.03
P-7	B	11.0	0.5	31.0	62.5	0.06
P-8	2	8.0	1.8	27.9	16.7	0.24
P-9	2	2.0	0.1	16.1	250.0	0.08
P-10	4	4.0	0.0	34.6	*	*
P-11	4	7.0	0.1	47.2	250.0	0.02
P-12	A	20.0	0.0	66.0	*	*
P-13	A	21.0	1.2	74.2	25.0	0.06
P-14	A	22.0	0.8	31.6	35.7	0.10

**Indicates a rate slower than the accuracy required by the Handbook.*

Compaction of soils should not be performed at the bottom of the proposed infiltration systems, as this could impact the actual infiltration rate.

An on-going maintenance program for the infiltration systems should be implemented to remove silt build-up within the system, as the migration of silt particles into the system over time can reduce the effectiveness of the system.

Should you have any questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON WEST, INC.

Luke C. Weidman
Staff Geologist, GIT 891

Paul D. Theriault
CEG 2374

PROFESSIONAL GEOLOGIST
PAUL D. THERIAULT
No. 2374
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

LIMITATIONS AND UNIFORMITY OF CONDITIONS

Attachments:
- Figure 1, Vicinity Map
- Figure 2, Percolation Test Location Map
- Figures 3 to 22, Boring Logs
- Figures 23 to 36, Percolation Test Data
- Figures 37 to 50, Grain Size Analyses

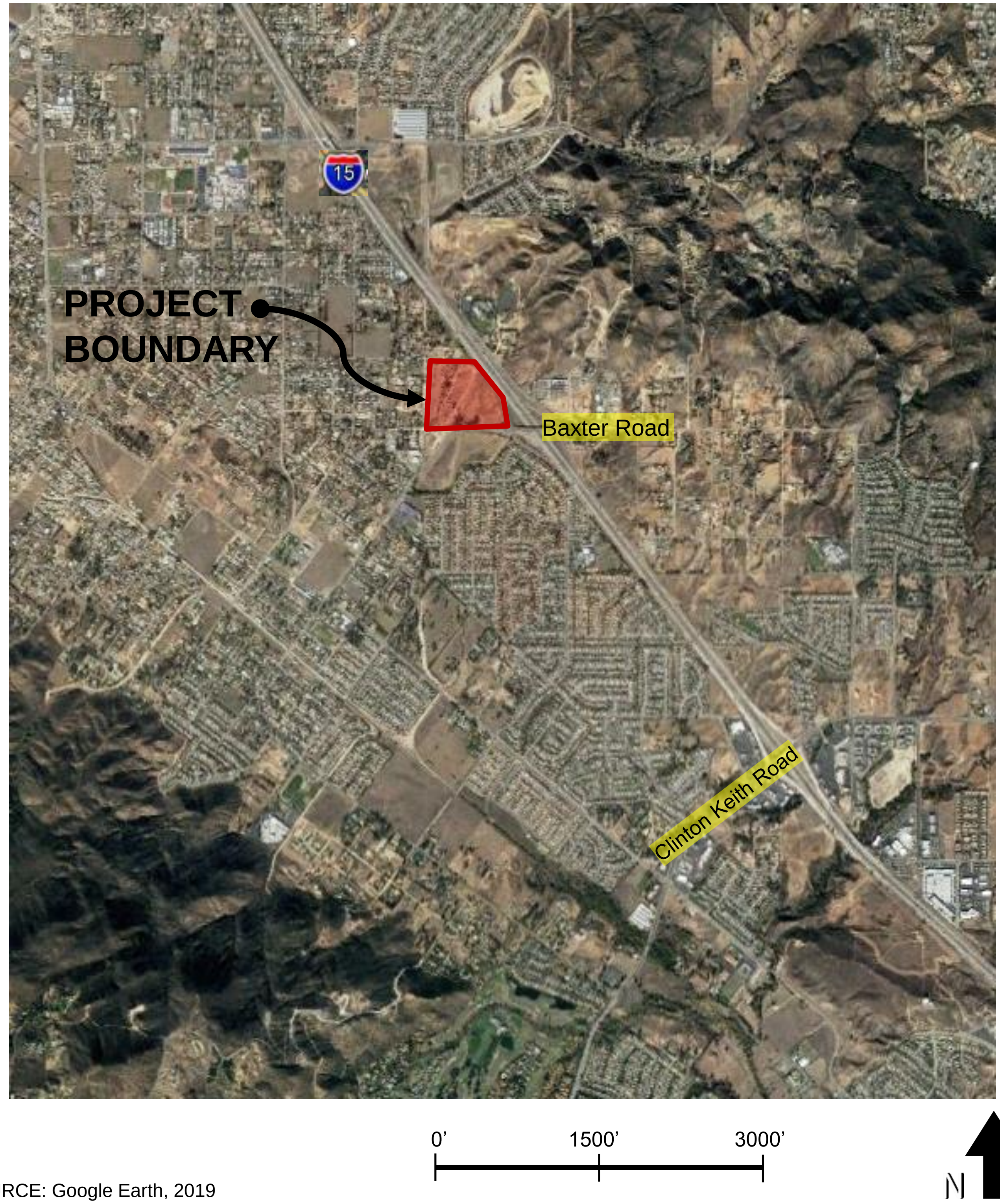
LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in this and the referenced investigations. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous materials was not part of the scope of services provided by Geocon.

2. This report is issued with the understanding that it is the responsibility of the owner, or of their representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. The findings of this report are valid as of the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

4. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.



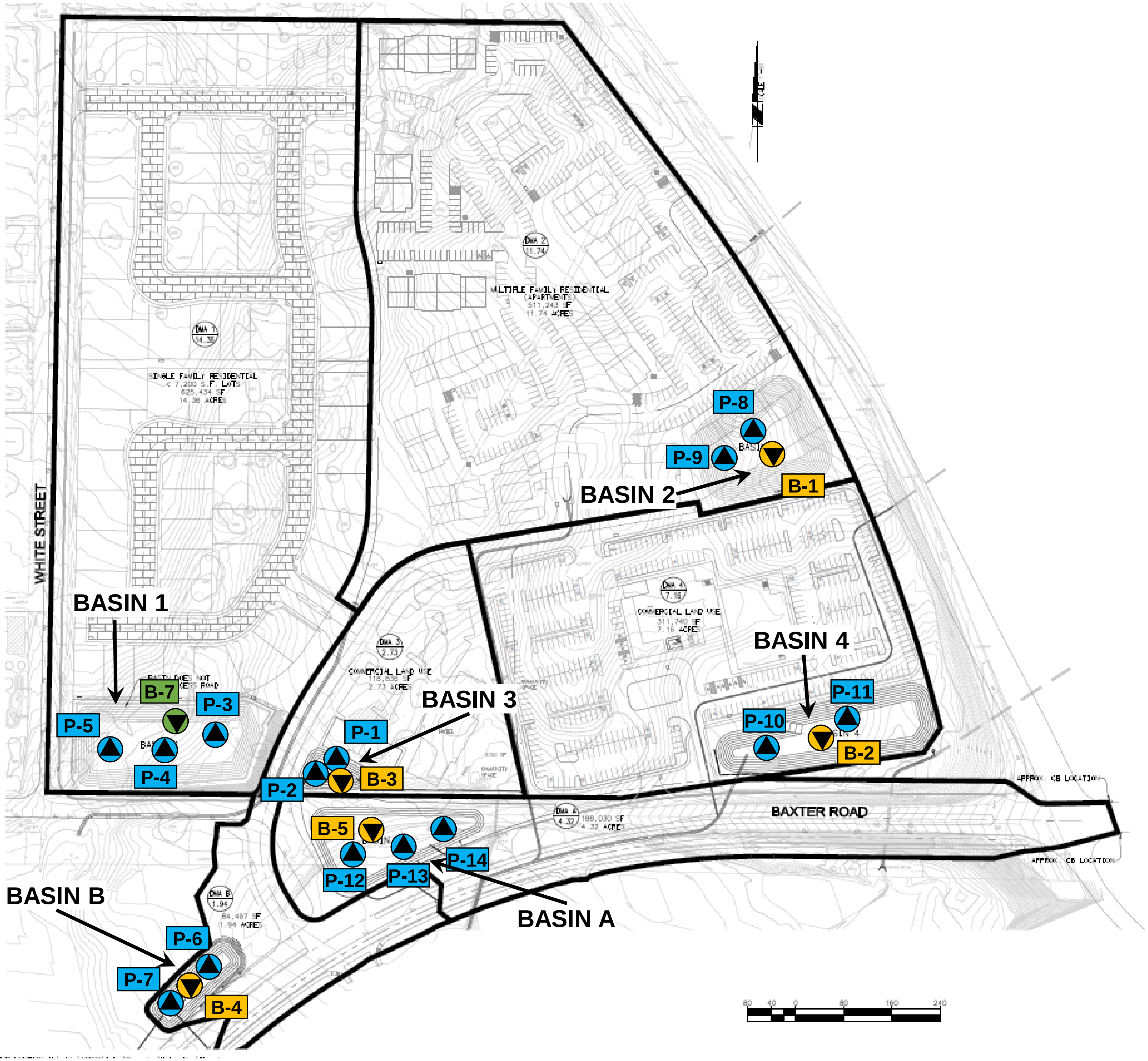
SOURCE: Google Earth, 2019

VICINITY MAP

GEOCON
W E S T, I N C.
GEOTECHNICAL, ENVIRONMENTAL, MATERIALS
41571 CORNING PLACE #101, MURRIETA, CALIFORNIA 92562
PHONE 951-304-2300 FAX 951-304-2392

BAXTER CENTRAL
TRACT 34301
NWC BAXTER ROAD AND INTERSTATE 15
WILDOMAR, CALIFORNIA

LCW			NOVEMBER 2019	PROJECT NO. T2540-22-03	FIG. 1



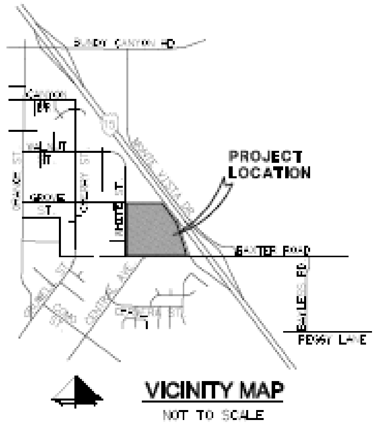
GEOCON LEGEND

Locations are approximate

P-14 ▲ .... PERCOLATION TEST LOCATION, THIS REPORT

B-5 ▼ .... GEOTECHNICAL BORING LOCATION, THIS REPORT

B-7 ▼ .... GEOTECHNICAL BORING LOCATION, GEOCON, 2015



Source: Michael Baker International, *Baxter Central*, October 3, 2019.

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LCW

PERCOLATION TEST LOCATION MAP

BAXTER CENTRAL
TRACT 34301
NWC BAXTER ROAD AND INTERSTATE 15
WILDOMAR, CALIFORNIA

NOVEMBER 2019 | PROJECT NO. T2540-22-03 | FIG. 2

PROJECT NO. T2540-22-03

BORING B-1

ELEV. (MSL.) **1355** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, brown; fine to coarse sand, upper foot plowed.			
2				SC	Clayey SAND, damp, reddish brown; fine to coarse sand			
4				SM	Silty SAND, moist, yellowish brown; fine to medium sand			
6					-Becomes reddish brown; fine to coarse sand			
8					- Becomes olive; fine to medium sand; some coarse sand			
				SC	Clayey SAND, olive; fine to medium sand			
10								
				SM	Silty SAND, olive; fine to coarse sand; some gravel; slow advance. H2O added to extract cuttings.			
12								
14								
16			▼					
				CL	Sandy CLAY, moist, olive; fine to medium sand			
18								
20								
22					- Some gravel			
24				SC	Clayey SAND with gravel, moist, olive; fine to coarse sand			
26								
28								

Figure 3,
Log of Boring B-1, Page 1 of 2

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
☒ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2540-22-03

BORING B-1

ELEV. (MSL.) **1355** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30		▨						
32		▨						
34		▨						
36		▨						
					Total Depth = 37' Groundwater encountered at elevation 1339 Backfilled with cuttings 11/11/2019			

Figure 3,
Log of Boring B-1, Page 2 of 2

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
☒ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. T2540-22-03

BORING B-2

ELEV. (MSL.) **1348** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, yellowish brown; fine to coarse sand, some gravel, upper foot plowed.			
2								
4								
6								
					- Becomes moist			
8								
					- Slow advance			
10								
12								
					- Some clay			
14			▼					
16								
18								
20								
22				SM	Silty SAND with fine gravel, light brown			
24								
26								
				GS	Sandy GRAVEL; ~90% gravel, fine to medium sand; some silt			
28								

Figure 4,
Log of Boring B-2, Page 1 of 2

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS
☐ ... SAMPLING UNSUCCESSFUL
▨ ... DISTURBED OR BAG SAMPLE
◧ ... STANDARD PENETRATION TEST
◪ ... CHUNK SAMPLE
■ ... DRIVE SAMPLE (UNDISTURBED)
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

BORING B-2

ELEV. (MSL.) 1348 DATE COMPLETED 11/11/19

EQUIPMENT CME 75 4x4 BY: Theriault

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					Total Depth = 30' Groundwater encountered at elevation 1334 Backfilled with cuttings 11/11/2019			

Figure 4,
Log of Boring B-2, Page 2 of 2

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
⊠ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

PROJECT NO. T2540-22-03

BORING B-3

ELEV. (MSL.) **1331** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, reddish brown; fine to coarse sand, upper foot plowed.			
2								
4								
6								
8								
10					- Becomes moist; strong brown; slow advance			
12								
14				SC	Clayey SAND, moist, reddish brown; fine to coarse sand			
16								
18								
20								
22								
24								
					Total Depth = 25' Groundwater not encountered Backfilled with cuttings 11/11/2019			

Figure 5,
Log of Boring B-3, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
☒ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. T2540-22-03

BORING B-4

ELEV. (MSL.) **1323** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, dark reddish brown; fine to medium sand; some coarse sand.			
2								
4								
					-Becomes damp			
6								
8								
10								
12								
14								
				CL	Sandy CLAY hard, olive moist; fine to coarse sand			
16								
18								
20								
22					Total Depth = 22' Groundwater not encountered Backfilled with cuttings 11/11/2019			

Figure 6,
Log of Boring B-4, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
☒ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

BORING B-5

ELEV. (MSL.) **1331** DATE COMPLETED **11/12/19**

EQUIPMENT **CME 75 4x4** BY: **Battiato**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**ALLUVIUM (Qal)** Silty SAND, medium dense, dry, light brown; fine to coarse sand			
2								
4				SM	**PAUBA FORMATION (Qps)** Silty SAND, dense, damp, light brown; coarse sand. -Slow advance			
6								
8					- Becomes reddish brown; increase in coarse sand			
10								
12								
14								
16								
18				ML	SILT, hard, damp, yellowish brown; difficulty drilling			
20								
22								
24								
26								
28								

Figure 7,
Log of Boring B-5, Page 1 of 2

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
☒ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

BORING B-5

ELEV. (MSL.) **1331** DATE COMPLETED **11/12/19**

EQUIPMENT **CME 75 4x4** BY: **Battiato**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30								
32					Total Depth = 32' Groundwater not encountered Backfilled with cuttings 11/12/2019			

Figure 7,
Log of Boring B-5, Page 2 of 2

SAMPLE SYMBOLS			
	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	⊠ ... DISTURBED OR BAG SAMPLE	◪ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

BORING P-1

ELEV. (MSL.) **1331** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, reddish brown; fine to medium sand; some coarse sand; trace gravel.			
2								
4								
					-Becomes damp			
6								
					- Becomes strong brown; moist			
8								
10								
12								
14	P1@14-15 ▨							
					Total Depth = 15' Groundwater not encountered Backfilled with cuttings 11/12/2019			

Figure 8,
Log of Boring P-1, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL

◧ ... STANDARD PENETRATION TEST

■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE

◪ ... CHUNK SAMPLE

▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

BORING P-2

ELEV. (MSL.) **1331** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, reddish brown; fine to medium sand; some coarse sand; trace gravel.			
2								
4								
					-Becomes damp			
6								
8								
10	P-2@10-11 ☒							

Total Depth = 11'
Groundwater not encountered
Backfilled with cuttings 11/12/2019

Figure 9,
Log of Boring P-2, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS			
SAMPLE SYMBOLS	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	☒ ... DISTURBED OR BAG SAMPLE	◪ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2540-22-03

BORING P-3

ELEV. (MSL.) **1325** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**ALLUVIUM (Qal)** Silty SAND, loose, dry, brown; fine to coarse sand			
2								
4				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, damp, reddish brown; fine to medium sand; some coarse sand.			
6								
8					-Becomes moist; some clay			
10								
12								
14	P3@14-15 ▨							

Total Depth =15'
Groundwater not encountered
Backfilled with cuttings 11/12/2019

Figure 10,
Log of Boring P-3, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS			
	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	▨ ... DISTURBED OR BAG SAMPLE	◪ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

BORING P-4

ELEV. (MSL.) **1320** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**ALLUVIUM (Qal)** Silty SAND, loose, dry, brown; fine to coarse sand			
2								
4								
6				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, damp, reddish brown; fine to medium sand; some coarse sand, trace gravel.			
8								
	P-4@9-10 ⊠							
10					Total Depth =10' Groundwater not encountered Backfilled with cuttings 11/12/2019			

Figure 11,
Log of Boring P-4, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS			
	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	☒ ... DISTURBED OR BAG SAMPLE	◩ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2540-22-03

BORING P-5

ELEV. (MSL.) **1318** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**ALLUVIUM (Qal)** Silty SAND, loose, dry, brown; fine to coarse sand			
2								
4								
6					-Becomes damp			
8				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, moist, dark brown; fine to medium sand; some coarse sand; few gravel.			
10	P-5@10-11 ☒							

Total Depth =11'
Groundwater not encountered
Backfilled with cuttings 11/12/2019

Figure 12,
Log of Boring P-5, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS			
	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	☒ ... DISTURBED OR BAG SAMPLE	◪ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING P-6** ELEV. (MSL.) **1325** DATE COMPLETED **11/11/19** EQUIPMENT **CME 75 4x4** BY: **Theriault**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, moist, dark brown; fine to medium sand; some coarse sand.			
2								
4								
					-Becomes damp			
6								
8								
10								
	P-6@11-12 ▨				-Few gravel			
12					Total Depth =12' Groundwater not encountered Backfilled with cuttings 11/12/2019			

Figure 13,
Log of Boring P-6, Page 1 of 1

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
▨ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2540-22-03

BORING P-7

ELEV. (MSL.) **1322** DATE COMPLETED **11/11/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, dark reddish brown; fine to coarse sand.			
2								
4								
6								
					-Becomes moist			
8								
					-Trace gravel			
10	P-7@10-11 ☒							

Total Depth =11'
Groundwater not encountered
Backfilled with cuttings 11/12/2019

Figure 14,
Log of Boring P-7, Page 1 of 1

SAMPLE SYMBOLS			
	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	☒ ... DISTURBED OR BAG SAMPLE	◩ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

BORING P-8

ELEV. (MSL.) **1355** DATE COMPLETED **11/12/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, light reddish brown; fine to medium sand; trace coarse sand			
2								
					-Becomes damp			
4					-Becomes dark yellowish brown; fine to coarse sand; trace gravel and cobble			
6								
	P-9@7-8 ☒							
8					Total Depth =8' Groundwater not encountered Backfilled with cuttings 11/13/2019			

Figure 15,
Log of Boring P-8, Page 1 of 1

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
☒ ... DISTURBED OR BAG SAMPLE	◪ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2540-22-03

BORING P-9

ELEV. (MSL.) 1351 DATE COMPLETED 11/12/19

EQUIPMENT CME 75 4x4 BY: Theriault

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, light reddish brown; fine to medium sand; some coarse sand; trace gravel			
	P-10@1-2 ⊠							
2					Total Depth =2' Groundwater not encountered Backfilled with cuttings 11/13/2019			

Figure 16,
Log of Boring P-9, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL

◧ ... STANDARD PENETRATION TEST

■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE

◪ ... CHUNK SAMPLE

▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

BORING P-10

ELEV. (MSL.) **1347** DATE COMPLETED **11/12/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, light reddish brown; fine to medium sand; some coarse sand; trace gravel			
2								
4	P-11@3-4 ☒							
					Total Depth =4' Groundwater not encountered Backfilled with cuttings 11/13/2019			

Figure 17,
Log of Boring P-10, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
☒ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

BORING P-11

ELEV. (MSL.) **1350** DATE COMPLETED **11/12/19**

EQUIPMENT **CME 75 4x4** BY: **Theriault**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, medium dense, dry, reddish brown; fine to coarse sand			
2								
					-Becomes damp			
4								
6	P-12@6-7 ☒				-Trace gravel			
					Total Depth =7' Groundwater not encountered Backfilled with cuttings 11/13/2019			

Figure 18,
Log of Boring P-11, Page 1 of 1

SAMPLE SYMBOLS			
	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	☒ ... DISTURBED OR BAG SAMPLE	◪ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2540-22-03

BORING P-12

ELEV. (MSL.) **1329** DATE COMPLETED **11/12/19**

EQUIPMENT **CME 75 4x4** BY: **Battiato**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, loose to medium dense, dry, light yellowish brown; fine to coarse sand			
2								
4								
6								
8					-Becomes light reddish brown			
10								
12								
14								
16								
18					-Trace gravel			
20	P-14@20							

Total Depth =21.5'
Groundwater not encountered
Backfilled with cuttings 11/14/2019

Figure 19,
Log of Boring P-12, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
▩ ... DISTURBED OR BAG SAMPLE
◩ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

BORING P-13

ELEV. (MSL.) **1330** DATE COMPLETED **11/12/19**

EQUIPMENT **CME 75 4x4** BY: **Battiato**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**ALLUVIUM (Qal)** Silty SAND, loose, dry, light yellow brown; fine to coarse sand			
2								
				SM	**PAUBA FORMATION (Qps)** Silty SAND, loose, dry, brown; fine to coarse sand			
4								
6								
8								
10								
12								
14								
16								
18					- Becomes dark brown			
20								
	P-15@21 ☒				-Becomes very dense; moist reddish brown with mottling; trace gravel			
22								
					Total Depth =22.5' Groundwater not encountered Backfilled with cuttings 11/14/2019			

Figure 20,
Log of Boring P-13, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS			
	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	☒ ... DISTURBED OR BAG SAMPLE	◪ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. T2540-22-03

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING P-14** ELEV. (MSL.) **1330** DATE COMPLETED **11/12/19** EQUIPMENT **CME 75 4x4** BY: **Theriault**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SM	**PAUBA FORMATION (Qps)** Silty SAND, loose, dry, brown; fine to coarse sand			
2								
4								
					-Becomes damp; medium dense			
6								
8								
10								
12								
14					-Becomes dense; slow advance			
16								
18								
20					-Becomes olive brown; trace gravel			
	P-15@21 ☒							
22					Total Depth =22' Groundwater not encountered Backfilled with cuttings 11/14/2019			

Figure 21,
Log of Boring P-14, Page 1 of 1

T2540-22-03 BORING LOGS.GPJ

SAMPLE SYMBOLS			
	☐ ... SAMPLING UNSUCCESSFUL	◧ ... STANDARD PENETRATION TEST	■ ... DRIVE SAMPLE (UNDISTURBED)
	☒ ... DISTURBED OR BAG SAMPLE	◪ ... CHUNK SAMPLE	▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2540-22-02

BORING B-7

ELEV. (MSL.) **1320** DATE COMPLETED **11/7/2012**

EQUIPMENT **CME 75 HSA** BY: **PDT**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	☒ B7@0-5				**PAUBA SANDSTONE (Qps):** Silty SANDSTONE, dense, damp, brown, fine to medium grained, trace coarse grained sand, weakly cemented, porous up to 1/8", rootlets			
2								
	■ B7@2.5					57	132.2	6.3
4								
	■ B7@5				-becomes olive brown, non porous	48	116.0	5.3
6								
8	■ B7@7.5				-becomes damp, light grayish brown, fine to coarse grained	69		
10	■ B7@10				-becomes reddish brown	50/5"		
12								
	■ B7@12.5					50/4"		
14					Clayey SANDSTONE, medium dense, moist, reddish brown, fine to coarse grained, weakly cemented			
	■ B7@15					45		
16					-becomes brown			
					-becomes reddish brown with orange mottling			
18								
20	■ B7@20					72		

Total depth: 21'
No groundwater encountered
No caving
Backfilled with cuttings and tamped
Penetration resistance for 140-lb hammer falling 30 inches by auto-hammer

Figure 22,
Log of Boring B-7, Page 1 of 1

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
☒ ... DISTURBED OR BAG SAMPLE
◧ ... STANDARD PENETRATION TEST
◩ ... CHUNK SAMPLE
■ ... DRIVE SAMPLE (UNDISTURBED)
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-1	**Date Excavated:**	11/11/2019
Length of Test Pipe:	180.0 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	9.6 inches	**Presoak Date:**	11/11/2019
Depth of Test Hole:	170.4 inches	**Perc Test Date:**	11/12/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weldman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:28 AM 9:53 AM	25	25	46.1	45.1	1.0	26.0
2	9:53 AM 10:18 AM	25	50	45.1	44.6	0.5	52.1

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:18 AM 10:48 AM	30	30	54.2	53.5	0.7	41.7
2	10:48 AM 11:18 AM	30	60	53.5	53.0	0.5	62.5
3	11:18 AM 11:48 AM	30	90	53.0	52.6	0.5	62.5
4	11:48 AM 12:18 PM	30	120	52.6	52.1	0.5	62.5
5	12:18 PM 12:48 PM	30	150	52.1	51.6	0.5	62.5
6	12:48 PM 1:18 PM	30	180	51.6	51.5	0.1	250.0
7	1:18 PM 1:48 PM	30	210	51.5	51.0	0.5	62.5
8	1:48 PM 2:18 PM	30	240	51.0	50.8	0.2	125.0
9	2:18 PM 2:48 PM	30	270	50.8	50.4	0.4	83.3
10	2:48 PM 3:18 PM	30	300	50.4	50.2	0.2	125.0
11	3:18 PM 3:48 PM	30	330	50.2	49.8	0.4	83.3
12	3:48 PM 4:18 PM	30	360	49.8	49.4	0.4	83.3

Infiltration Rate (in/hr):	0.03
Radius of test hole (in):	4
Average Head (in):	49.6

Figure 23

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-2	**Date Excavated:**	11/11/2019
Length of Test Pipe:	134.6 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	7.2 inches	**Presoak Date:**	11/11/2019
Depth of Test Hole:	127.4 inches	**Perc Test Date:**	11/12/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:28 AM 9:53 AM	25	25	37.2	35.2	2.0	12.3
2	9:53 AM 10:18 AM	25	50	35.2	34.1	1.1	23.1

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:18 AM 10:48 AM	30	30	41.3	40.1	1.2	25.0
2	10:48 AM 11:18 AM	30	60	40.1	39.2	0.8	35.7
3	11:18 AM 11:48 AM	30	90	39.2	38.0	1.2	25.0
4	11:48 AM 12:18 PM	30	120	38.0	35.2	2.9	10.4
5	12:18 PM 12:48 PM	30	150	35.2	31.7	3.5	8.6
6	12:48 PM 1:18 PM	30	180	31.7	29.4	2.3	13.2
7	1:18 PM 1:48 PM	30	210	29.4	26.9	2.5	11.9
8	1:48 PM 2:18 PM	30	240	26.9	26.5	0.4	83.3
9	2:18 PM 2:48 PM	30	270	40.9	39.8	1.1	27.8
10	2:48 PM 3:18 PM	30	300	39.8	38.8	1.1	27.8
11	3:18 PM 3:48 PM	30	330	38.8	37.7	1.1	27.8
12	3:48 PM 4:18 PM	30	360	37.7	36.1	1.6	19.2

Infiltration Rate (in/hr):	0.16	
Radius of test hole (in):	4	**Figure 24**
Average Head (in):	36.9	

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-3	**Date Excavated:**	11/11/2019
Length of Test Pipe:	166.6 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	6.0 inches	**Presoak Date:**	11/11/2019
Depth of Test Hole:	160.6 inches	**Perc Test Date:**	11/12/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:32 AM 9:57 AM	25	25	61.1	60.6	0.5	52.1
2	9:57 AM 10:22 AM	25	50	60.6	60.4	0.2	104.2

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:22 AM 10:52 AM	30	30	66.4	66.0	0.4	83.3
2	10:52 AM 11:22 AM	30	60	66.0	65.8	0.2	125.0
3	11:22 AM 11:52 AM	30	90	65.8	65.6	0.1	250.0
4	11:52 AM 12:22 PM	30	120	65.6	65.3	0.4	83.3
5	12:22 PM 12:52 PM	30	150	65.3	65.2	0.1	250.0
6	12:52 PM 1:22 PM	30	180	65.2	64.9	0.2	125.0
7	1:22 PM 1:52 PM	30	210	64.9	64.8	0.1	250.0
8	1:52 PM 2:22 PM	30	240	64.8	64.7	0.1	250.0
9	2:22 PM 2:52 PM	30	270	64.7	64.4	0.2	125.0
10	2:52 PM 3:22 PM	30	300	64.4	64.2	0.2	125.0
11	3:22 PM 3:52 PM	30	330	64.2	64.0	0.2	125.0
12	3:52 PM 4:22 PM	30	360	64.0	63.8	0.1	250.0

Infiltration Rate (in/hr):	0.01
Radius of test hole (in):	4
Average Head (in):	63.9

Figure 25

PERCOLATION TEST REPORT

Project Name:		Baxter and Central			**Project No.:**		T2540-22-03
Test Hole No.:		P-4			**Date Excavated:**		11/11/2019
Length of Test Pipe:			122.2	inches	**Soil Classification:**		SM
Height of Pipe above Ground:			6.0	inches	**Presoak Date:**		11/11/2019
Depth of Test Hole:			116.2	inches	**Perc Test Date:**		11/12/2019
Check for Sandy Soil Criteria Tested by:				Weidman	**Percolation Tested by:**		Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:33 AM 9:58 AM	25	25	34.8	33.0	1.8	13.9
2	9:58 AM 10:23 AM	25	50	33.0	31.6	1.4	17.4

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:23 AM 10:53 AM	30	30	37.6	31.8	5.8	5.2
2	10:53 AM 11:23 AM	30	60	31.8	25.0	6.8	4.4
3	11:23 AM 11:53 AM	30	90	43.7	40.7	3.0	10.0
4	11:53 AM 12:23 PM	30	120	40.7	34.8	5.9	5.1
5	12:23 PM 12:53 PM	30	150	34.8	27.2	7.6	4.0
6	12:53 PM 1:23 PM	30	180	27.1	21.0	6.1	4.9
7	1:23 PM 1:53 PM	30	210	44.9	42.1	2.8	10.9
8	1:53 PM 2:23 PM	30	240	42.1	36.6	5.5	5.4
9	2:23 PM 2:53 PM	30	270	36.6	32.8	3.8	7.8
10	2:53 PM 3:23 PM	30	300	32.8	23.8	9.0	3.3
11	3:23 PM 3:53 PM	30	330	44.2	41.6	2.5	11.9
12	3:53 PM 4:23 PM	30	360	41.6	37.2	4.4	6.8

Infiltration Rate (in/hr):			0.43				
Radius of test hole (in):			4				**Figure 26**
Average Head (in):			39.4				

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-5	**Date Excavated:**	11/11/2019
Length of Test Pipe:	134.2 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	3.6 inches	**Presoak Date:**	11/11/2019
Depth of Test Hole:	130.6 inches	**Perc Test Date:**	11/12/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:34 AM 9:59 AM	25	25	62.8	62.8	0.0	#DIV/0!
2	9:59 AM 10:24 AM	25	50	59.8	53.0	6.7	3.7

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:24 AM 10:54 AM	30	30	56.6	50.5	6.1	4.9
2	10:54 AM 11:24 AM	30	60	50.5	47.3	3.2	9.3
3	11:24 AM 11:54 AM	30	90	47.3	43.8	3.5	8.6
4	11:54 AM 12:24 PM	30	120	43.8	40.2	3.6	8.3
5	12:24 PM 12:54 PM	30	150	40.2	37.3	2.9	10.4
6	12:54 PM 1:24 PM	30	180	37.3	34.6	2.8	10.9
7	1:24 PM 1:54 PM	30	210	34.6	32.2	2.4	12.5
8	1:54 PM 2:24 PM	30	240	32.2	30.2	1.9	15.6
9	2:24 PM 2:54 PM	30	270	30.2	28.8	1.4	20.8
10	2:54 PM 3:24 PM	30	300	28.8	27.0	1.8	16.7
11	3:24 PM 3:54 PM	30	330	27.0	25.2	1.8	16.7
12	3:54 PM 4:24 PM	30	360	25.2	23.9	1.3	22.7

Infiltration Rate (in/hr):	0.29
Radius of test hole (in):	4
Average Head (in):	35.9

Figure 27

PERCOLATION TEST REPORT

Project Name:	Baxter and Central		**Project No.:**	T2540-22-03
Test Hole No.:	P-6		**Date Excavated:**	11/11/2019
Length of Test Pipe:	144.0	inches	**Soil Classification:**	SM
Height of Pipe above Ground:	7.2	inches	**Presoak Date:**	11/11/2019
Depth of Test Hole:	136.8	inches	**Perc Test Date:**	11/12/2019
Check for Sandy Soil Criteria Tested by:		Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:25 AM 9:50 AM	25	25	38.4	37.7	0.7	34.7
2	9:50 AM 10:15 AM	25	50	37.7	37.1	0.6	41.7

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:15 AM 10:45 AM	30	30	44.3	43.8	0.5	62.5
2	10:45 AM 11:15 AM	30	60	43.8	43.3	0.5	62.5
3	11:15 AM 11:45 AM	30	90	43.3	43.0	0.4	83.3
4	11:45 AM 12:15 PM	30	120	43.0	42.5	0.5	62.5
5	12:15 PM 12:45 PM	30	150	42.5	42.0	0.5	62.5
6	12:45 PM 1:15 PM	30	180	42.0	41.9	0.1	250.0
7	1:15 PM 1:45 PM	30	210	41.9	41.6	0.2	125.0
8	1:45 PM 2:15 PM	30	240	41.6	41.5	0.1	250.0
9	2:15 PM 2:45 PM	30	270	41.5	41.4	0.1	250.0
10	2:45 PM 3:15 PM	30	300	41.4	41.0	0.4	83.3
11	3:15 PM 3:45 PM	30	330	41.0	40.7	0.4	83.3
12	3:45 PM 4:15 PM	30	360	40.7	40.3	0.4	83.3

Infiltration Rate (in/hr):	0.03	
Radius of test hole (in):	4	**Figure 28**
Average Head (in):	40.5	

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-7	**Date Excavated:**	11/11/2019
Length of Test Pipe:	133.7 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	6.0 inches	**Presoak Date:**	11/11/2019
Depth of Test Hole:	127.7 inches	**Perc Test Date:**	11/12/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:25 AM 9:50 AM	25	25	28.6	27.0	1.6	16.0
2	9:50 AM 10:15 AM	25	50	27.0	26.2	0.8	29.8

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:15 AM 10:45 AM	30	30	32.2	31.6	0.6	50.0
2	10:45 AM 11:15 AM	30	60	31.6	30.7	0.8	35.7
3	11:15 AM 11:45 AM	30	90	30.7	30.2	0.5	62.5
4	11:45 AM 12:15 PM	30	120	30.1	29.5	0.6	50.0
5	12:15 PM 12:45 PM	30	150	29.5	28.9	0.6	50.0
6	12:45 PM 1:15 PM	30	180	28.9	26.3	2.6	11.4
7	1:15 PM 1:45 PM	30	210	26.3	23.5	2.8	10.9
8	1:45 PM 2:15 PM	30	240	23.5	21.7	1.8	16.7
9	2:15 PM 2:45 PM	30	270	32.8	32.3	0.5	62.5
10	2:45 PM 3:15 PM	30	300	32.3	31.7	0.6	50.0
11	3:15 PM 3:45 PM	30	330	31.7	31.2	0.5	62.5
12	3:45 PM 4:15 PM	30	360	31.2	30.7	0.5	62.5

Infiltration Rate (in/hr):	0.06
Radius of test hole (in):	4
Average Head (in):	31.0

Figure 29

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-8	**Date Excavated:**	11/11/2019
Length of Test Pipe:	98.2 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	13.4 inches	**Presoak Date:**	11/12/2019
Depth of Test Hole:	84.7 inches	**Perc Test Date:**	11/13/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:26 AM	25	25	24.7	23.2	1.6	16.0
	9:51 AM						
2	9:51 AM	25	50	23.2	22.3	0.8	29.8
	10:16 AM						

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:16 AM	30	30	35.8	35.2	0.6	50.0
	10:46 AM						
2	10:46 AM	30	60	35.2	34.6	0.6	50.0
	11:16 AM						
3	11:16 AM	30	90	34.6	34.3	0.2	125.0
	11:46 AM						
4	11:46 AM	30	120	34.3	34.0	0.4	83.3
	12:16 PM						
5	12:16 PM	30	150	34.0	33.7	0.2	125.0
	12:46 PM						
6	12:46 PM	30	180	33.7	33.5	0.2	125.0
	1:16 PM						
7	1:16 PM	30	210	33.5	33.4	0.1	250.0
	1:46 PM						
8	1:46 PM	30	240	33.4	32.5	0.8	35.7
	2:16 PM						
9	2:16 PM	30	270	32.5	31.9	0.6	50.0
	2:46 PM						
10	2:46 PM	30	300	31.9	31.4	0.5	62.5
	3:16 PM						
11	3:16 PM	30	330	31.4	28.8	2.6	11.4
	3:46 PM						
12	3:46 PM	30	360	28.8	27.0	1.8	16.7
	4:16 PM						

Infiltration Rate (in/hr):	0.24
Radius of test hole (in):	4
Average Head (in):	27.9

Figure 30

PERCOLATION TEST REPORT

Project Name:		Baxter and Central			**Project No.:**		T2540-22-03
Test Hole No.:		P-9			**Date Excavated:**		11/11/2019
Length of Test Pipe:			24.6	inches	**Soil Classification:**		SM
Height of Pipe above Ground:			3.6	inches	**Presoak Date:**		11/12/2019
Depth of Test Hole:			21.0	inches	**Perc Test Date:**		11/13/2019
Check for Sandy Soil Criteria Tested by:				Weidman	**Percolation Tested by:**		Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:27 AM 9:52 AM	25	25	18.0	13.8	4.2	6.0
2	9:52 AM 10:17 AM	25	50	13.8	12.4	1.4	17.4

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:17 AM 10:47 AM	30	30	16.0	14.4	1.6	19.2
2	10:47 AM 11:17 AM	30	60	14.0	13.6	0.5	62.5
3	11:17 AM 11:47 AM	30	90	13.6	13.2	0.4	83.3
4	11:47 AM 12:17 PM	30	120	14.4	13.9	0.5	62.5
5	12:17 PM 12:47 PM	30	150	13.9	13.2	0.7	41.7
6	12:47 PM 1:17 PM	30	180	16.3	16.0	0.4	83.3
7	1:17 PM 1:47 PM	30	210	16.0	15.5	0.5	62.5
8	1:47 PM 2:17 PM	30	240	15.5	15.0	0.5	62.5
9	2:17 PM 2:47 PM	30	270	15.0	13.7	1.3	22.7
10	2:47 PM 3:17 PM	30	300	13.7	13.3	0.4	83.3
11	3:17 PM 3:47 PM	30	330	15.1	15.0	0.1	250.0
12	3:47 PM 4:17 PM	30	360	15.0	14.9	0.1	250.0

Infiltration Rate (in/hr):	0.08
Radius of test hole (in):	4
Average Head (in):	16.1

Figure 31

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-10	**Date Excavated:**	11/11/2019
Length of Test Pipe:	48.6 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	7.4 inches	**Presoak Date:**	11/12/2019
Depth of Test Hole:	41.2 inches	**Perc Test Date:**	11/13/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:29 AM 9:54 AM	25	25	30.4	28.8	1.6	16.0
2	9:54 AM 10:19 AM	25	50	28.8	28.7	0.1	208.3

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:19 AM 10:49 AM	30	30	36.1	35.8	0.4	83.3
2	10:49 AM 11:19 AM	30	60	35.8	35.3	0.5	62.5
3	11:19 AM 11:49 AM	30	90	35.3	35.0	0.2	125.0
4	11:49 AM 12:19 PM	30	120	35.0	34.8	0.2	125.0
5	12:19 PM 12:49 PM	30	150	34.8	34.7	0.1	250.0
6	12:49 PM 1:19 PM	30	180	34.7	34.7	0.0	2500.0
7	1:19 PM 1:49 PM	30	210	34.7	34.6	0.0	1250.0
8	1:49 PM 2:19 PM	30	240	34.6	34.6	0.0	1250.0
9	2:19 PM 2:49 PM	30	270	34.6	34.6	0.0	1250.0
10	2:49 PM 3:19 PM	30	300	34.6	34.6	0.0	1250.0
11	3:19 PM 3:49 PM	30	330	34.6	34.6	0.0	2500.0
12	3:49 PM 4:19 PM	30	360	34.6	34.5	0.0	2500.0

Infiltration Rate (in/hr):	0.00
Radius of test hole (in):	4
Average Head (in):	34.6

Figure 32

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-11	**Date Excavated:**	11/11/2019
Length of Test Pipe:	84.6 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	4.8 inches	**Presoak Date:**	11/12/2019
Depth of Test Hole:	79.8 inches	**Perc Test Date:**	11/13/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:30 AM 9:55 AM	25	25	45.5	44.2	1.3	18.9
2	9:55 AM 10:20 AM	25	50	44.2	43.7	0.5	52.1

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:20 AM 10:50 AM	30	30	48.5	48.2	0.2	125.0
2	10:50 AM 11:20 AM	30	60	48.2	48.0	0.2	125.0
3	11:20 AM 11:50 AM	30	90	48.0	47.6	0.4	83.3
4	11:50 AM 12:20 PM	30	120	47.6	47.4	0.2	125.0
5	12:20 PM 12:50 PM	30	150	47.4	47.3	0.1	250.0
6	12:50 PM 1:20 PM	30	180	47.3	47.0	0.2	125.0
7	1:20 PM 1:50 PM	30	210	47.0	47.0	0.0	1250.0
8	1:50 PM 2:20 PM	30	240	47.0	47.0	0.0	1250.0
9	2:20 PM 2:50 PM	30	270	47.0	47.0	0.0	1250.0
10	2:50 PM 3:20 PM	30	300	47.0	46.9	0.0	1250.0
11	3:20 PM 3:50 PM	30	330	46.9	46.9	0.0	1250.0
12	3:50 PM 4:20 PM	30	360	46.9	46.8	0.1	250.0

Infiltration Rate (in/hr):	0.02
Radius of test hole (in):	4
Average Head (in):	47.2

Figure 33

PERCOLATION TEST REPORT

Project Name:	Baxter and Central	**Project No.:**	T2540-22-03
Test Hole No.:	P-12	**Date Excavated:**	11/11/2019
Length of Test Pipe:	242.5 inches	**Soil Classification:**	SM
Height of Pipe above Ground:	7.2 inches	**Presoak Date:**	11/13/2019
Depth of Test Hole:	235.3 inches	**Perc Test Date:**	11/14/2019
Check for Sandy Soil Criteria Tested by:	Weidman	**Percolation Tested by:**	Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:15 AM	25	25	66.0	66.0	0.0	#DIV/0!
	9:40 AM						
2	9:40 AM	25	50	66.0	66.0	0.0	#DIV/0!
	10:05 AM						

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:05 AM	30	30	66.0	66.0	0.0	25000.0
	10:35 AM						
2	10:35 AM	30	60	66.0	66.0	0.0	25000.0
	11:05 AM						
3	11:05 AM	30	90	66.0	66.0	0.0	25000.0
	11:35 AM						
4	11:35 AM	30	120	66.0	66.0	0.0	25000.0
	12:05 PM						
5	12:05 PM	30	150	66.0	66.0	0.0	25000.0
	12:35 PM						
6	12:35 PM	30	180	66.0	66.0	0.0	25000.0
	1:05 PM						
7	1:05 PM	30	210	66.0	66.0	0.0	25000.0
	1:35 PM						
8	1:35 PM	30	240	66.0	66.0	0.0	25000.0
	2:05 PM						
9	2:05 PM	30	270	66.0	66.0	0.0	25000.0
	2:35 PM						
10	2:35 PM	30	300	66.0	66.0	0.0	25000.0
	3:05 PM						
11	3:05 PM	30	330	66.0	66.0	0.0	25000.0
	3:35 PM						
12	3:35 PM	30	360	66.0	66.0	0.0	25000.0
	4:05 PM						

Infiltration Rate (in/hr):	0.00	
Radius of test hole (in):	4	**Figure 34**
Average Head (in):	66.0	

PERCOLATION TEST REPORT

Project Name:		Baxter and Central			**Project No.:**		T2540-22-03
Test Hole No.:		P-13			**Date Excavated:**		11/11/2019
Length of Test Pipe:			253.9	inches	**Soil Classification:**		SM
Height of Pipe above Ground:			2.4	inches	**Presoak Date:**		11/13/2019
Depth of Test Hole:			251.5	inches	**Perc Test Date:**		11/14/2019
Check for Sandy Soil Criteria Tested by:				Weidman	**Percolation Tested by:**		Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:16 AM 9:41 AM	25	25	95.0	92.8	2.3	11.0
2	9:41 AM 10:06 AM	25	50	92.8	89.6	3.1	8.0

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:06 AM 10:36 AM	30	30	92.0	89.5	2.5	11.9
2	10:36 AM 11:06 AM	30	60	89.5	87.4	2.2	13.9
3	11:06 AM 11:36 AM	30	90	87.4	85.9	1.4	20.8
4	11:36 AM 12:06 PM	30	120	85.9	83.5	2.4	12.5
5	12:06 PM 12:36 PM	30	150	83.5	82.3	1.2	25.0
6	12:36 PM 1:06 PM	30	180	82.3	81.0	1.3	22.7
7	1:06 PM 1:36 PM	30	210	81.0	79.8	1.2	25.0
8	1:36 PM 2:06 PM	30	240	79.8	78.5	1.3	22.7
9	2:06 PM 2:36 PM	30	270	78.5	77.3	1.2	25.0
10	2:36 PM 3:06 PM	30	300	77.3	76.1	1.2	25.0
11	3:06 PM 3:36 PM	30	330	76.1	74.8	1.3	22.7
12	3:36 PM 4:06 PM	30	360	74.8	73.6	1.2	25.0

Infiltration Rate (in/hr):	0.06
Radius of test hole (in):	4
Average Head (in):	74.2

Figure 35

PERCOLATION TEST REPORT

Project Name:	Baxter and Central		**Project No.:**		T2540-22-03
Test Hole No.:	P-14		**Date Excavated:**		11/11/2019
Length of Test Pipe:	265.1	inches	**Soil Classification:**		SM
Height of Pipe above Ground:	6.0	inches	**Presoak Date:**		11/13/2019
Depth of Test Hole:	259.1	inches	**Perc Test Date:**		11/14/2019
Check for Sandy Soil Criteria Tested by:		Weidman	**Percolation Tested by:**		Weidman

Water level measured from BOTTOM of hole

Sandy Soil Criteria Test

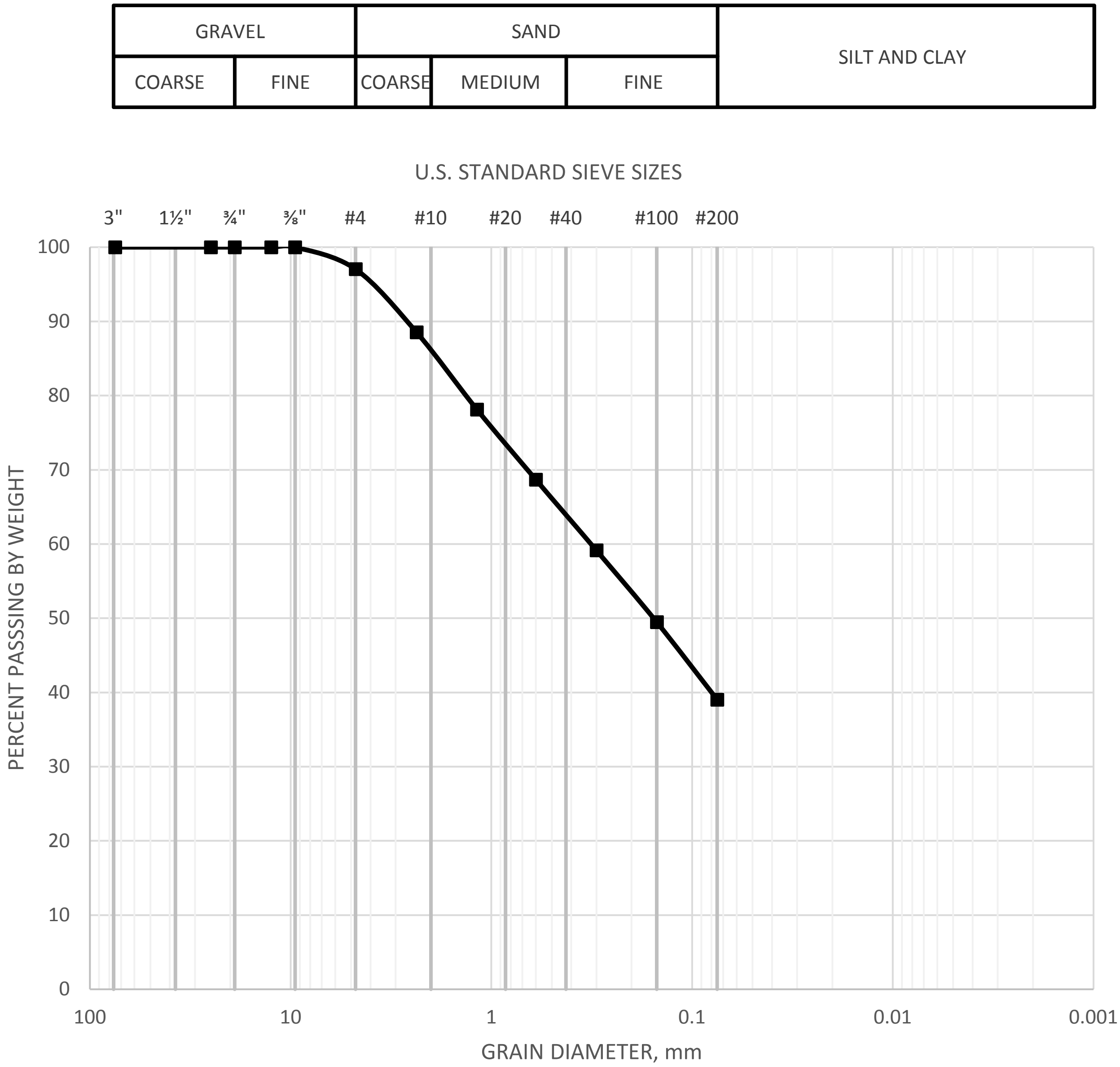
Trial No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Level (in)	Final Water Level (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	9:17 AM 9:42 AM	25	25	52.7	47.5	5.2	4.8
2	9:42 AM 10:07 AM	25	50	47.5	43.0	4.6	5.5

Soil Criteria: Normal

Percolation Test

Reading No.	Time	Time Interval (min)	Total Elapsed Time (min)	Initial Water Head (in)	Final Water Head (in)	Δ in Water Level (in)	Percolation Rate (min/inch)
1	10:07 AM 10:37 AM	30	30	49.0	46.1	2.9	10.4
2	10:37 AM 11:07 AM	30	60	46.1	43.6	2.5	11.9
3	11:07 AM 11:37 AM	30	90	43.6	41.8	1.8	16.7
4	11:37 AM 12:07 PM	30	120	41.8	39.6	2.2	13.9
5	12:07 PM 12:37 PM	30	150	39.6	38.2	1.4	20.8
6	12:37 PM 1:07 PM	30	180	38.2	37.1	1.1	27.8
7	1:07 PM 1:37 PM	30	210	37.1	36.0	1.1	27.8
8	1:37 PM 2:07 PM	30	240	36.0	34.4	1.6	19.2
9	2:07 PM 2:37 PM	30	270	34.4	33.6	0.8	35.7
10	2:37 PM 3:07 PM	30	300	33.6	32.8	0.8	35.7
11	3:07 PM 3:37 PM	30	330	32.8	32.0	0.7	41.7
12	3:37 PM 4:07 PM	30	360	32.0	31.2	0.8	35.7

Infiltration Rate (in/hr):	0.10	
Radius of test hole (in):	4	**Figure 36**
Average Head (in):	31.6	



SAMPLE	CLASSIFICATION	D60	D30	D10
P-1	silty SAND with trace gravel (SM), reddish brown			

GRAIN SIZE DISTRIBUTION

ASTM D-422

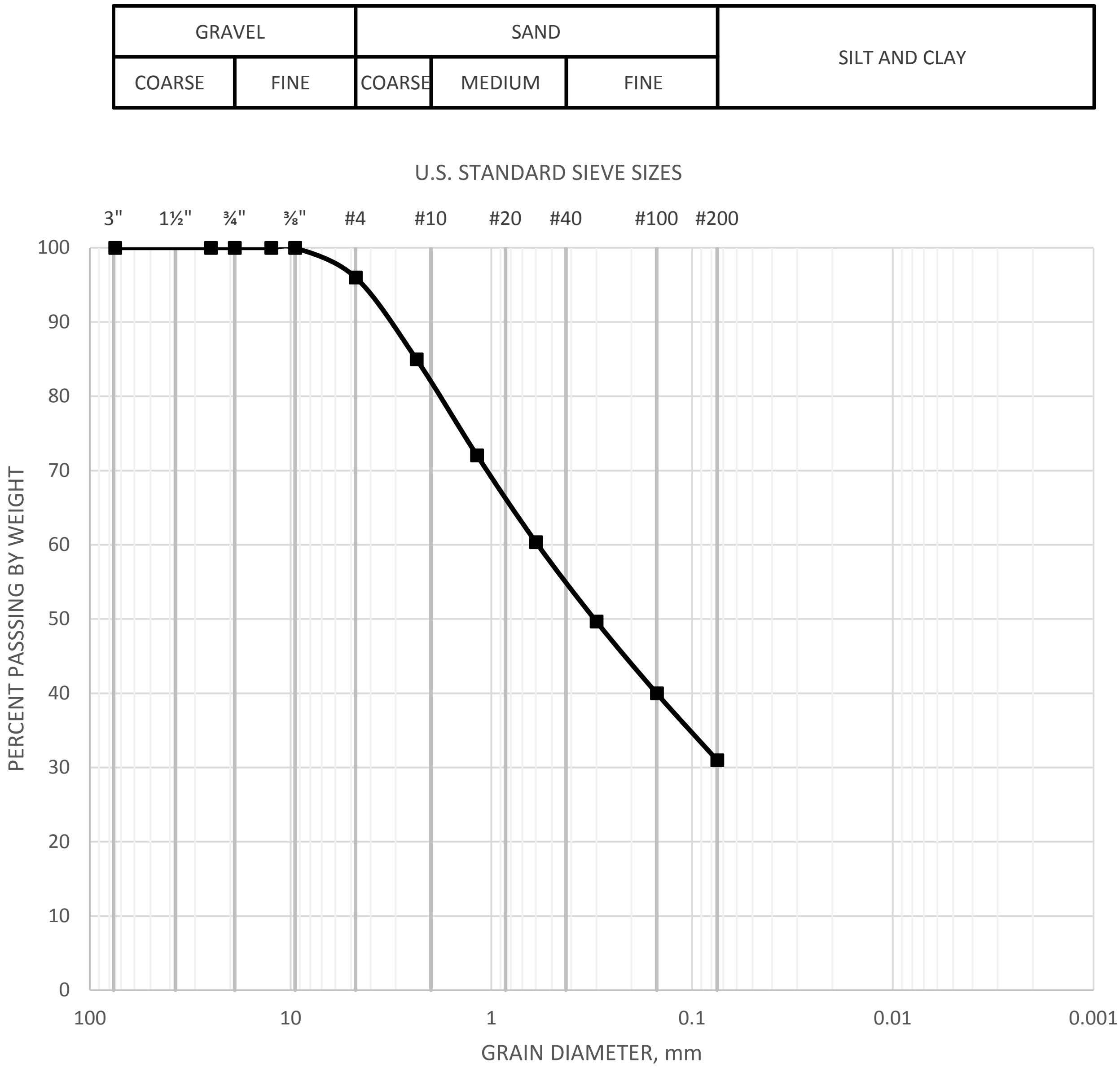
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 37



SAMPLE	CLASSIFICATION	D60	D30	D10
P-2	silty SAND with trace gravel (SM), reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

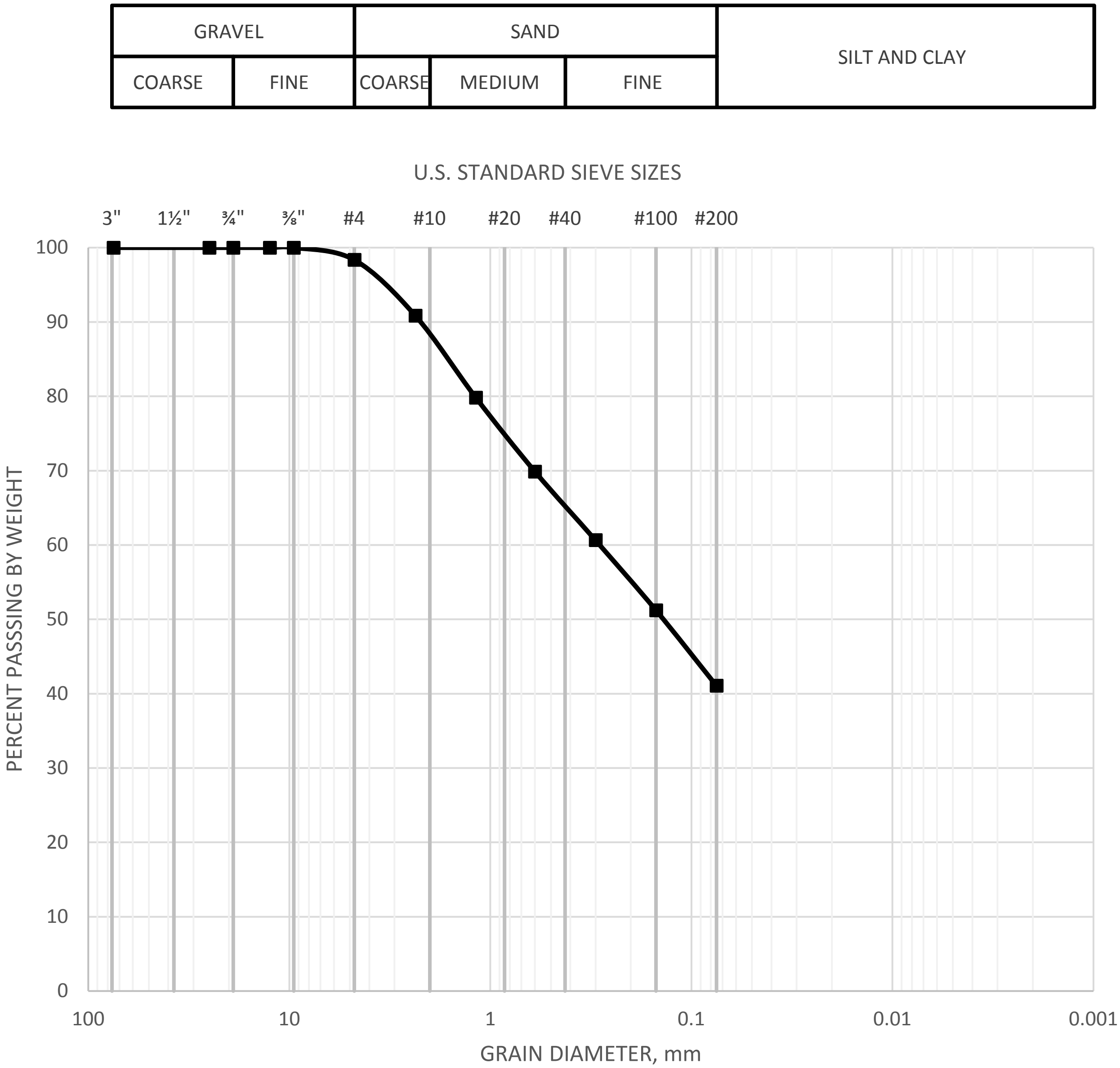
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 38



SAMPLE	CLASSIFICATION	D60	D30	D10
P-3	silty SAND with trace gravel (SM), reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

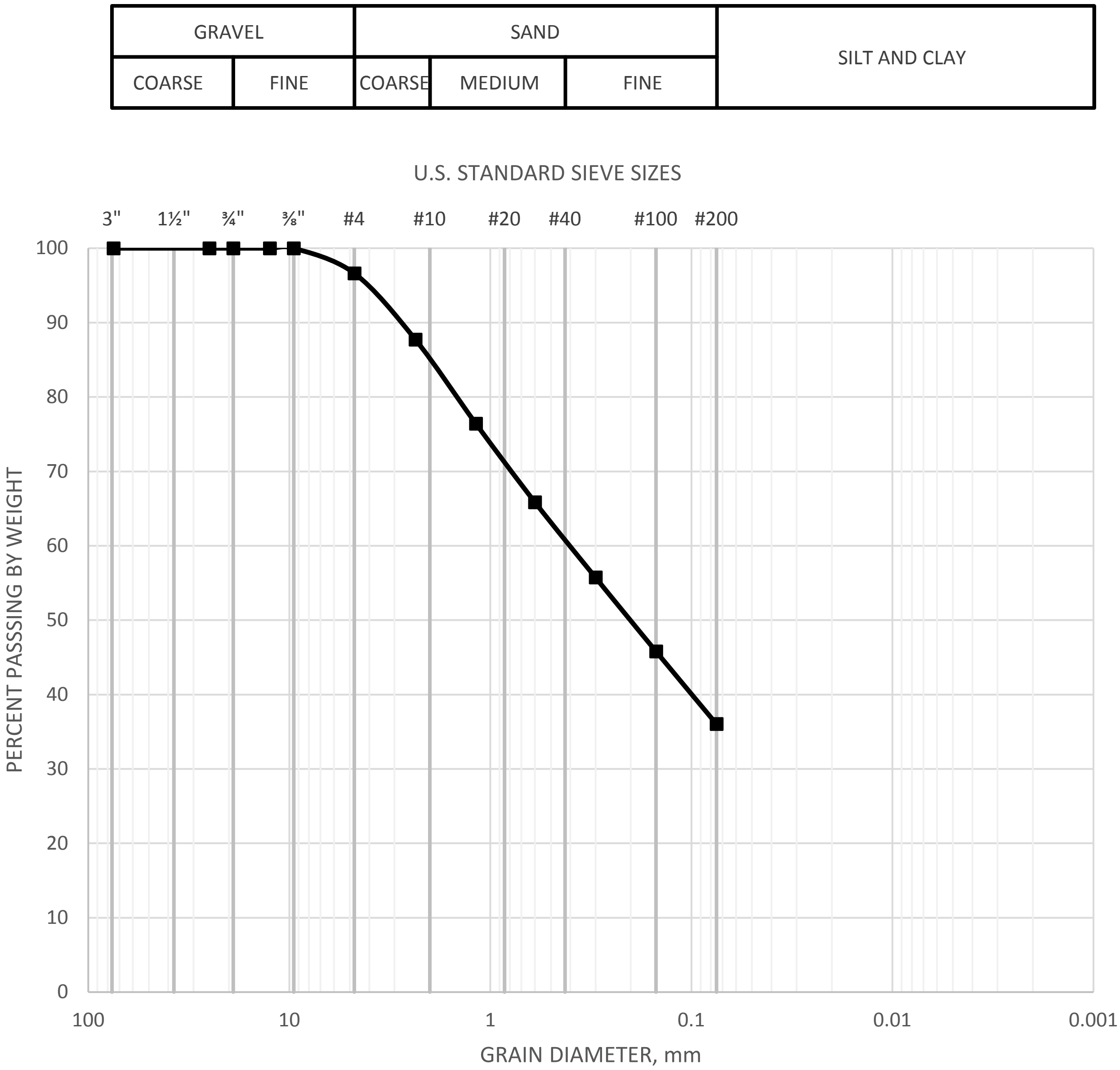
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 39



SAMPLE	CLASSIFICATION	D60	D30	D10
P-4	silty SAND with trace gravel (SM), reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

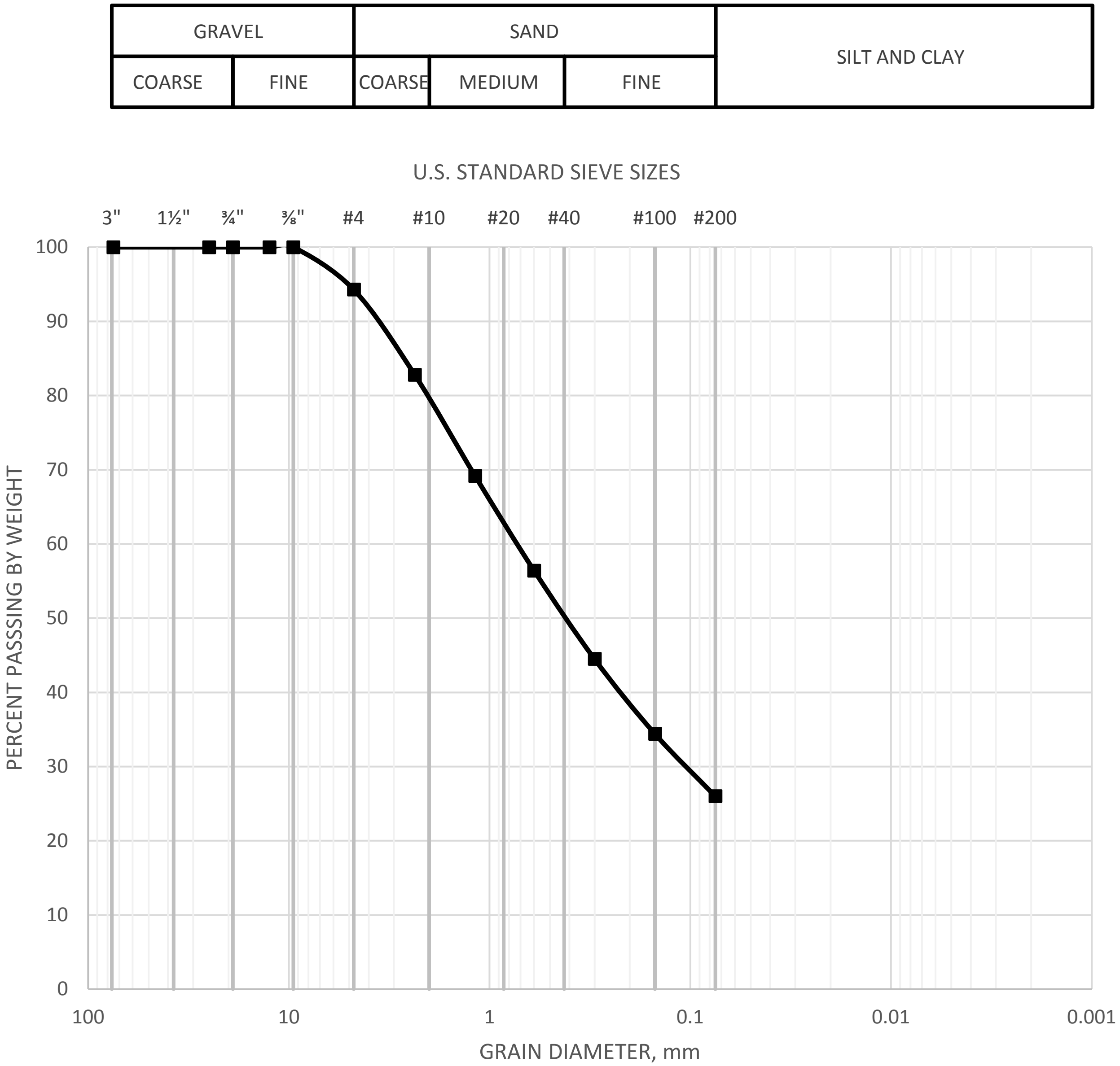
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 40



SAMPLE	CLASSIFICATION	D60	D30	D10
P-5	silty SAND with few gravel (SM), dark brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

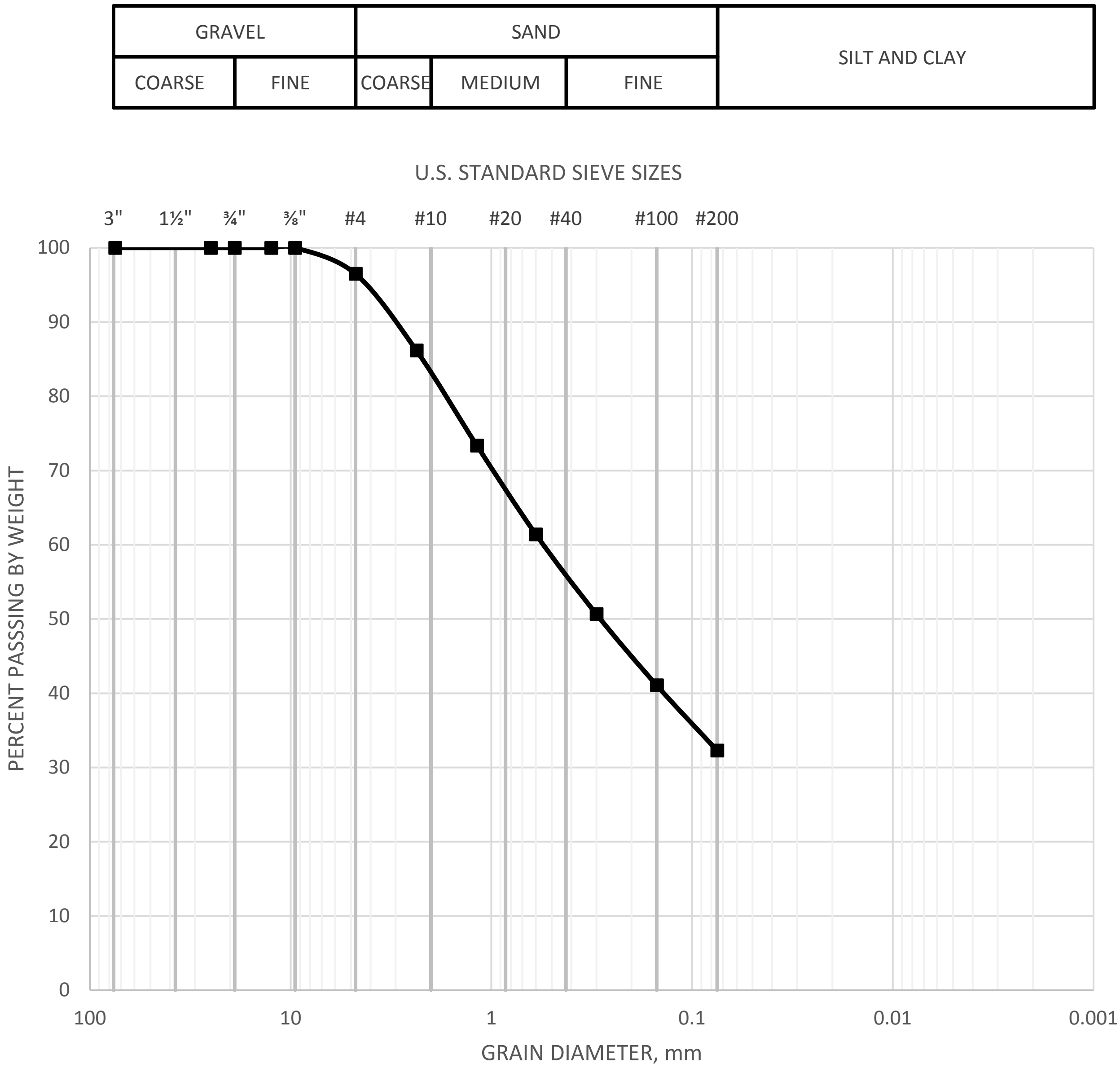
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 41



SAMPLE	CLASSIFICATION	D60	D30	D10
P-6	silty SAND with few gravel (SM), dark brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

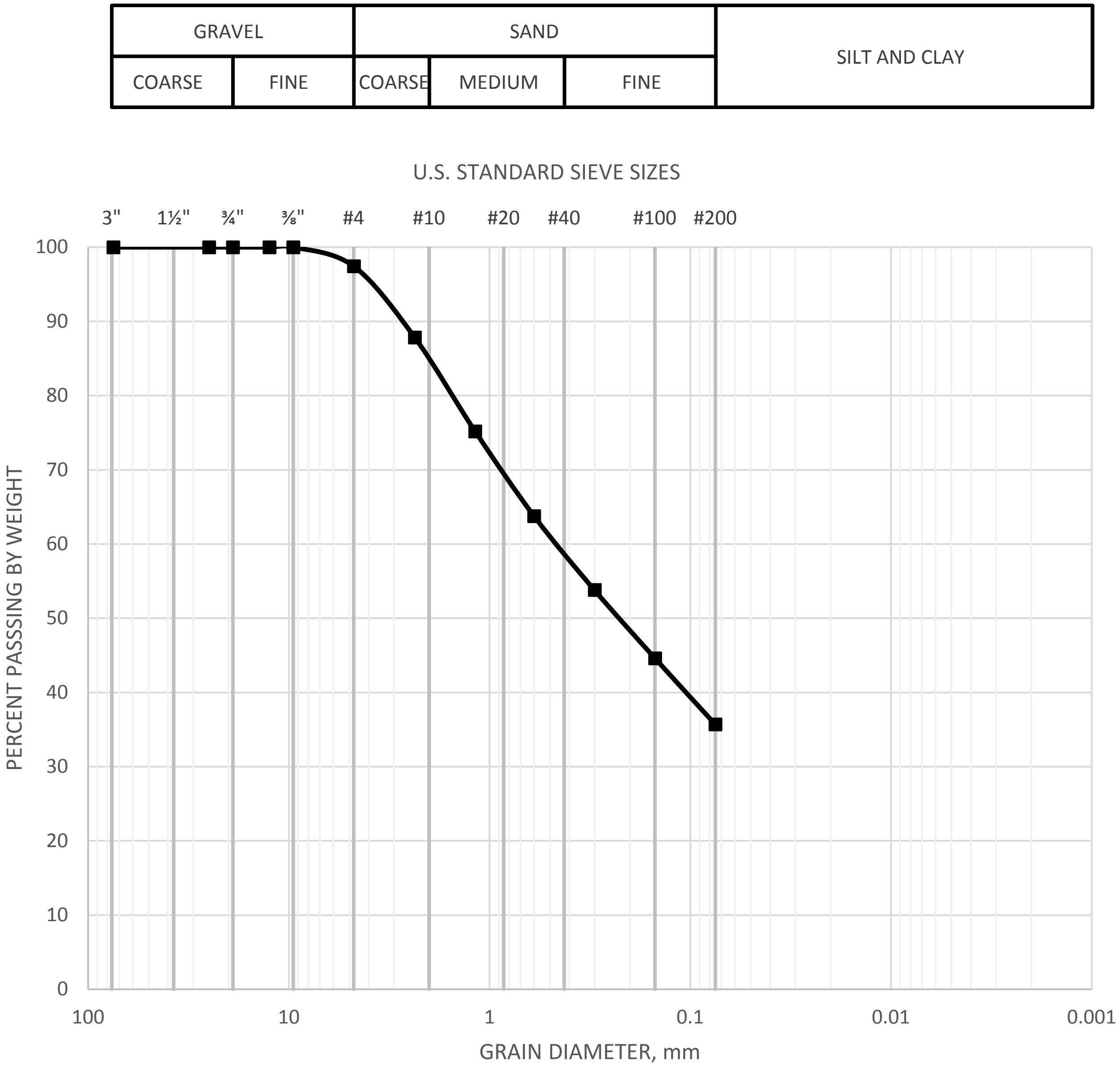
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 42



SAMPLE	CLASSIFICATION	D60	D30	D10
P-7	silty SAND with trace gravel (SM), dark reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

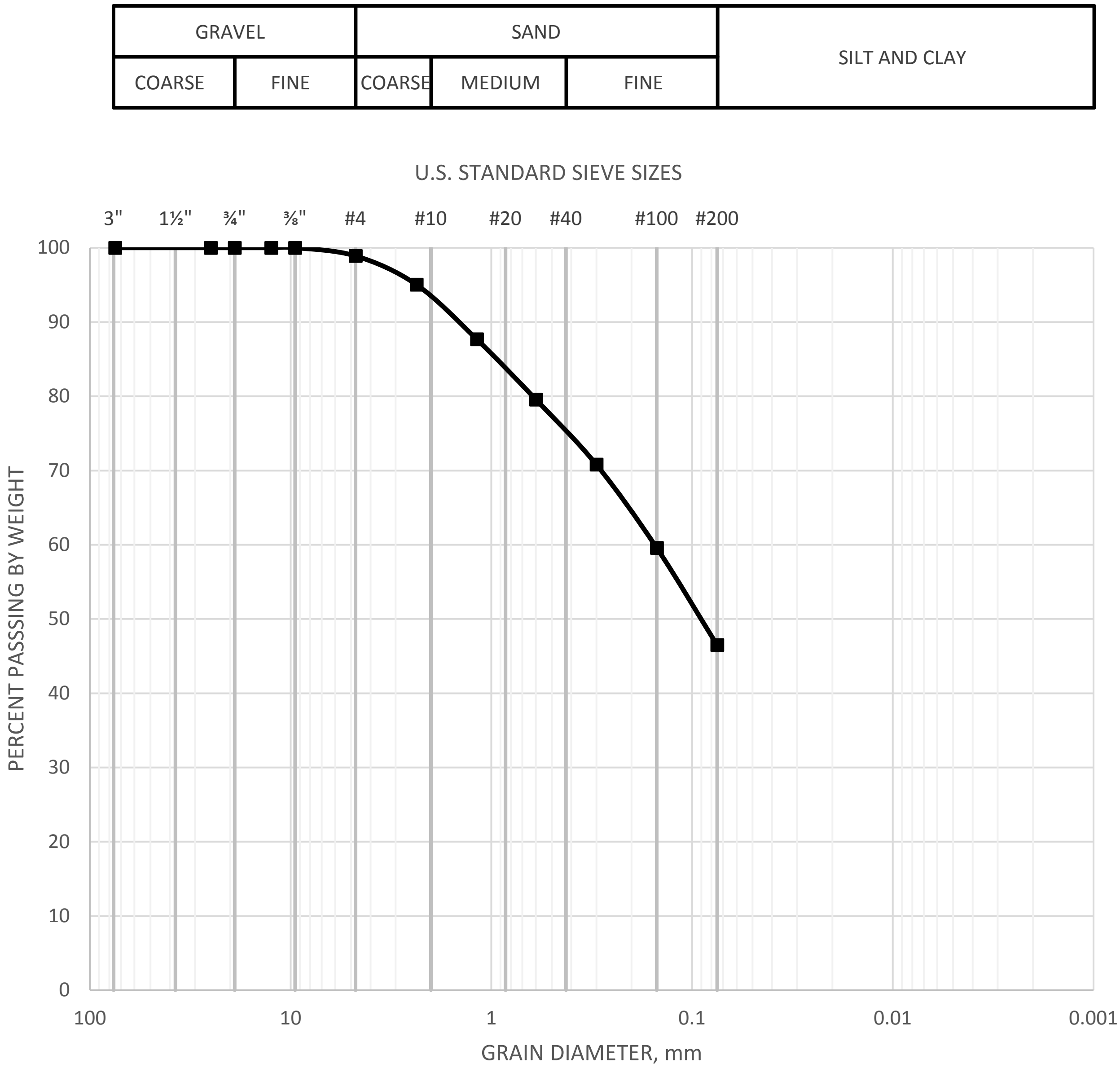
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 43



SAMPLE	CLASSIFICATION	D60	D30	D10
P-8	silty SAND with trace gravel (SM), dark yellowish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

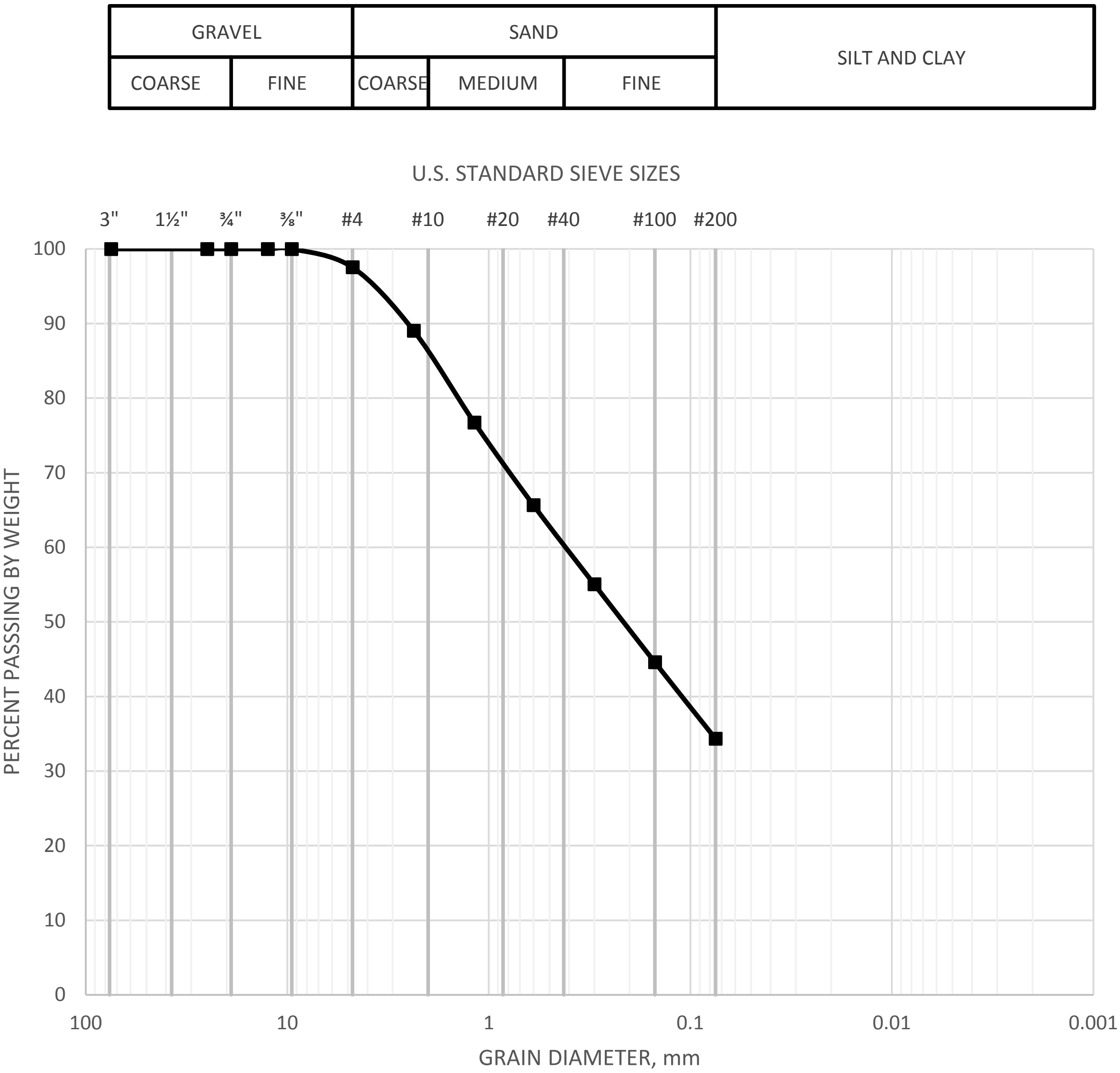
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 44



SAMPLE	CLASSIFICATION	D60	D30	D10
P-9	silty SAND with trace gravel (SM), light reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

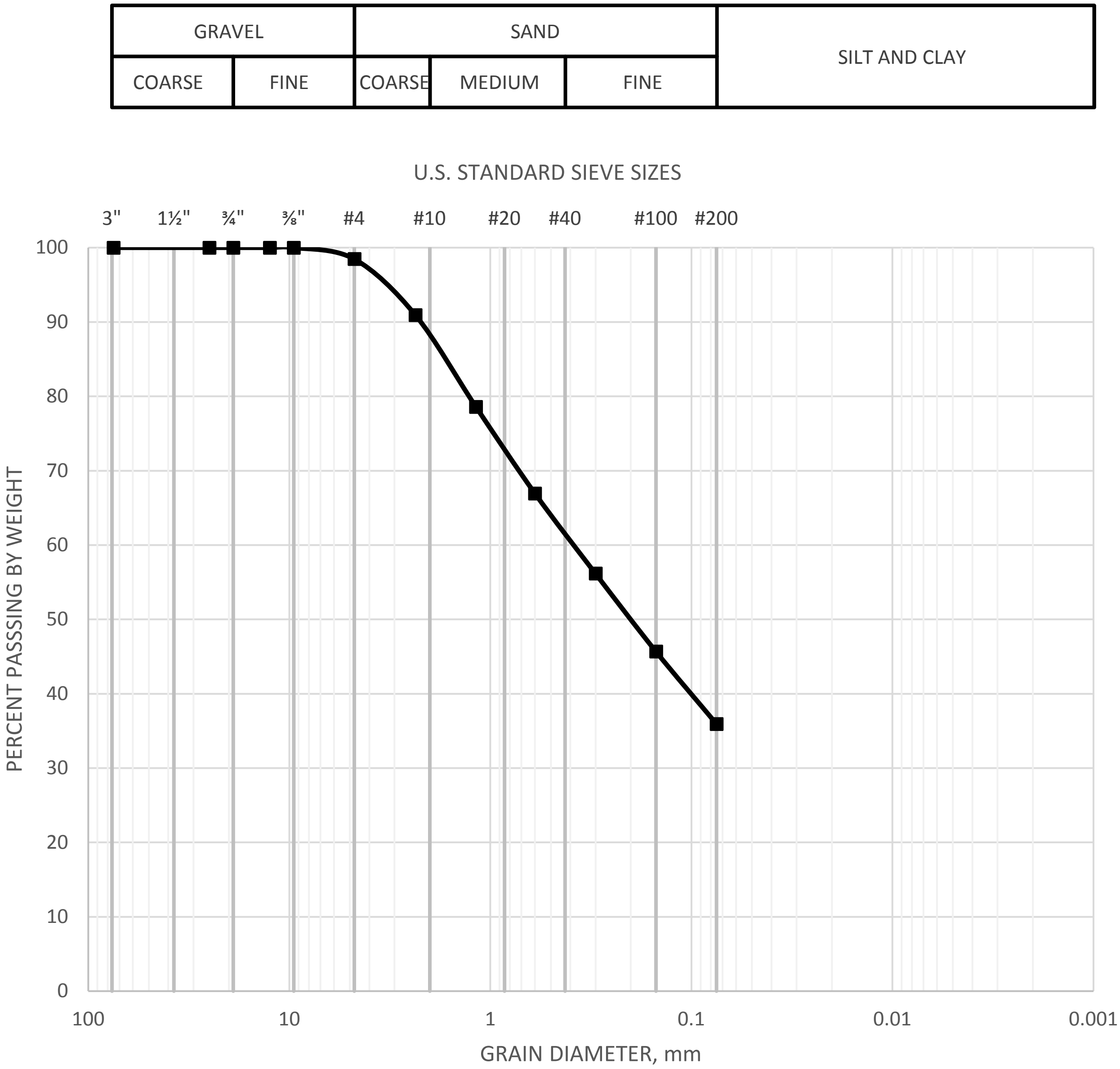
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 45



SAMPLE	CLASSIFICATION	D60	D30	D10
P-10	silty SAND with trace gravel (SM), light reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

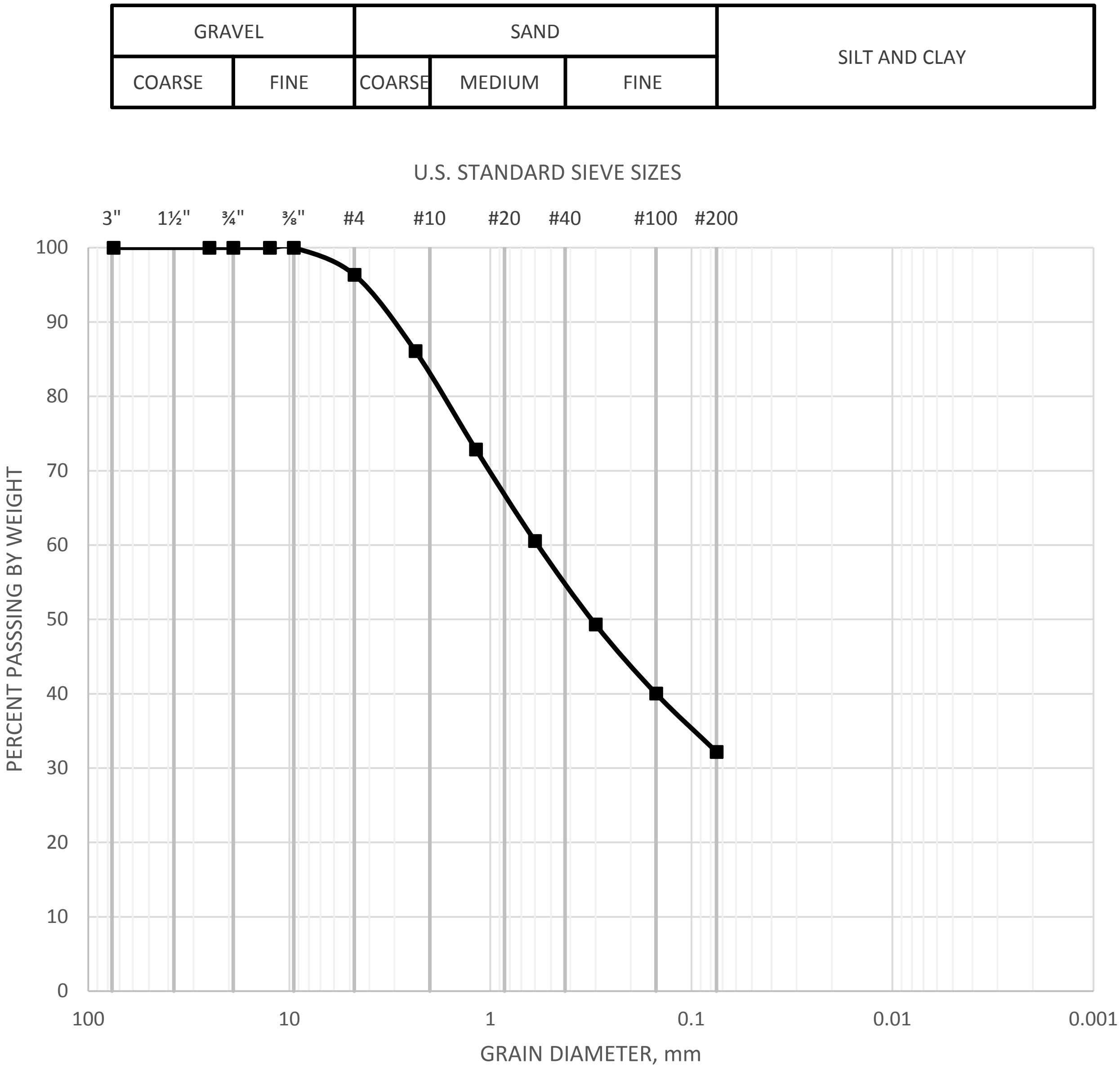
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 46



SAMPLE	CLASSIFICATION	D60	D30	D10
P-11	silty SAND with trace gravel (SM), reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

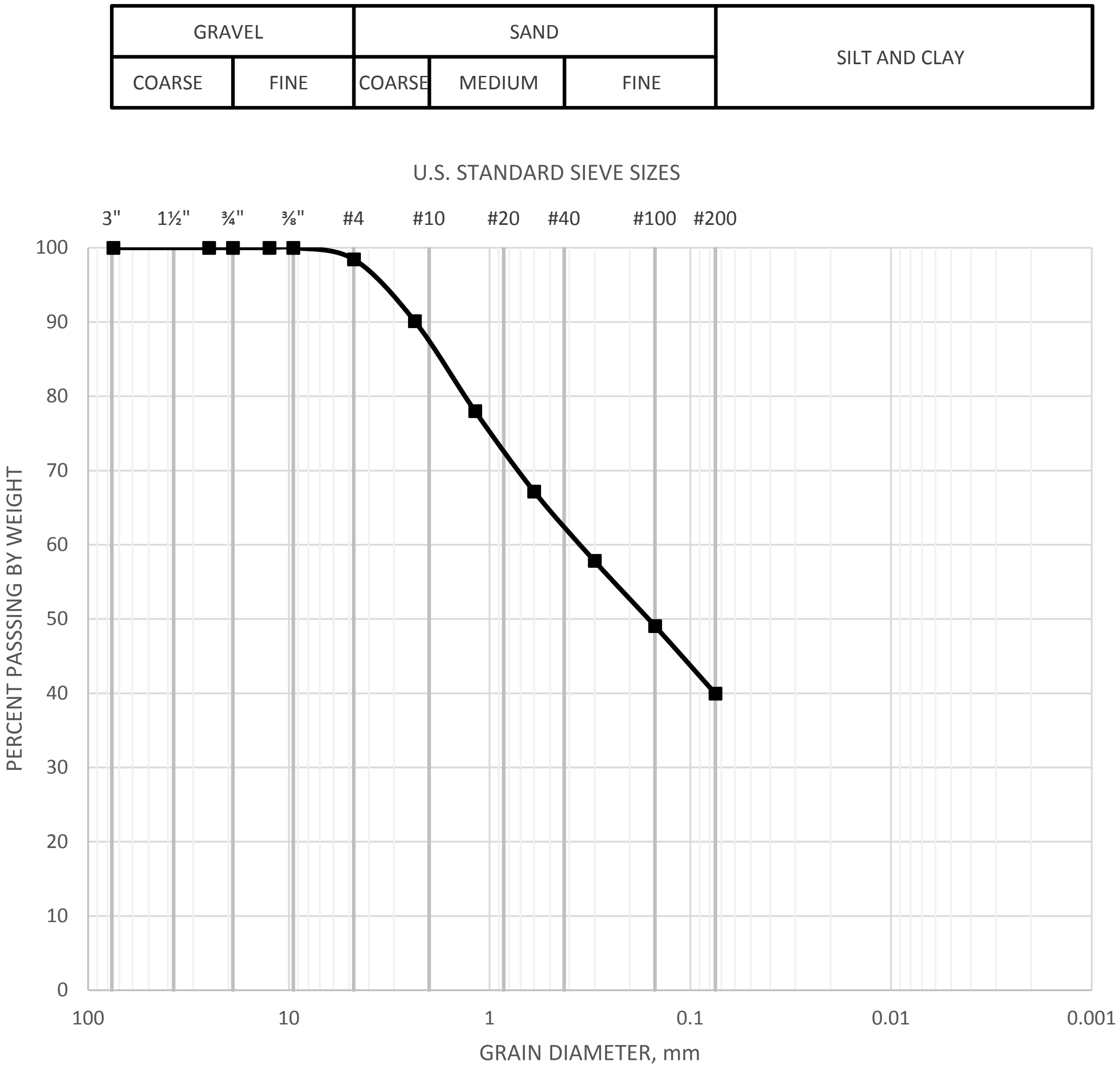
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 47



SAMPLE	CLASSIFICATION	D60	D30	D10
P-12	silty SAND with trace gravel (SM), light reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

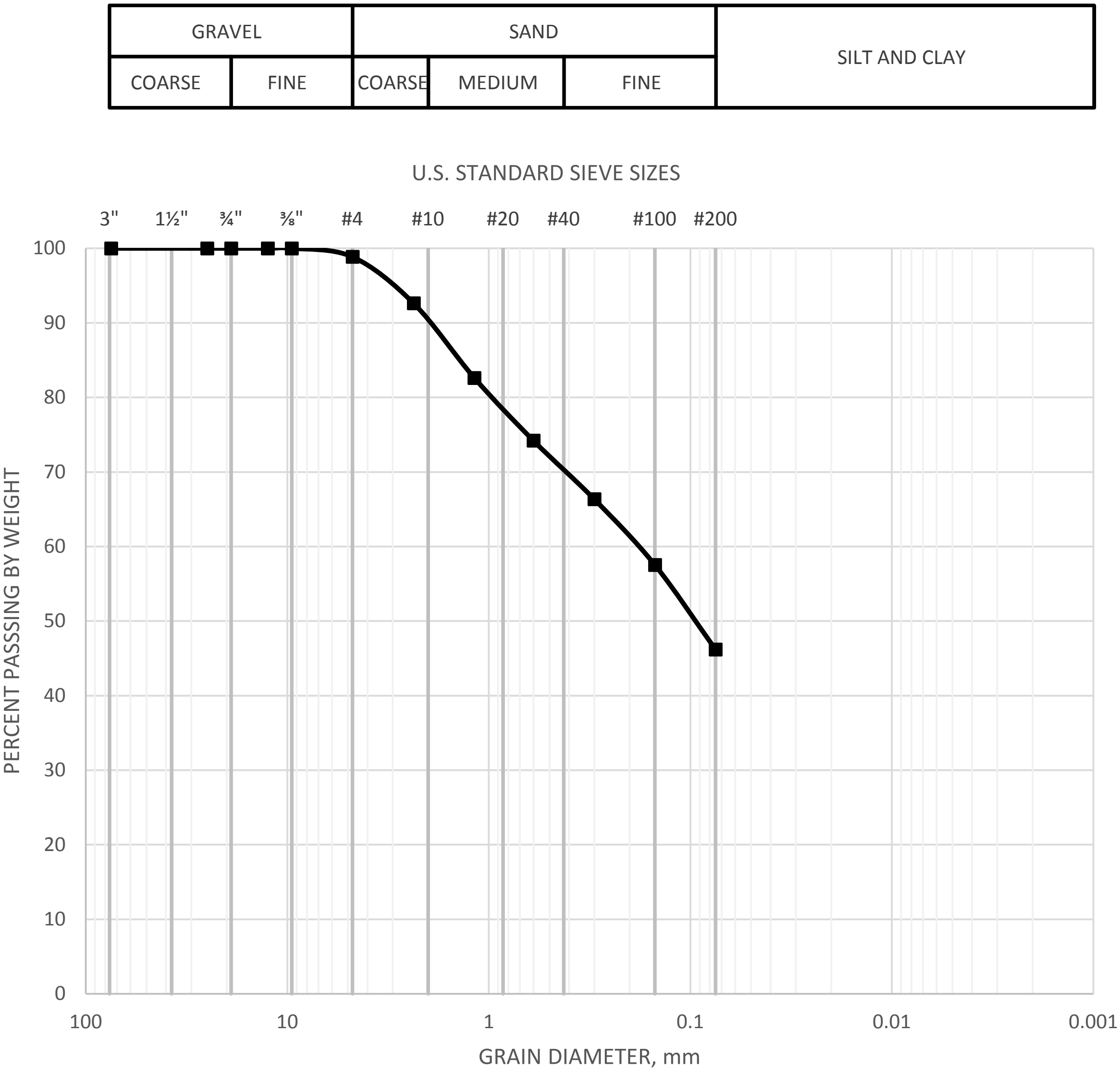
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 48



SAMPLE	CLASSIFICATION	D60	D30	D10
P-13	silty SAND with trace gravel (SM), reddish brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

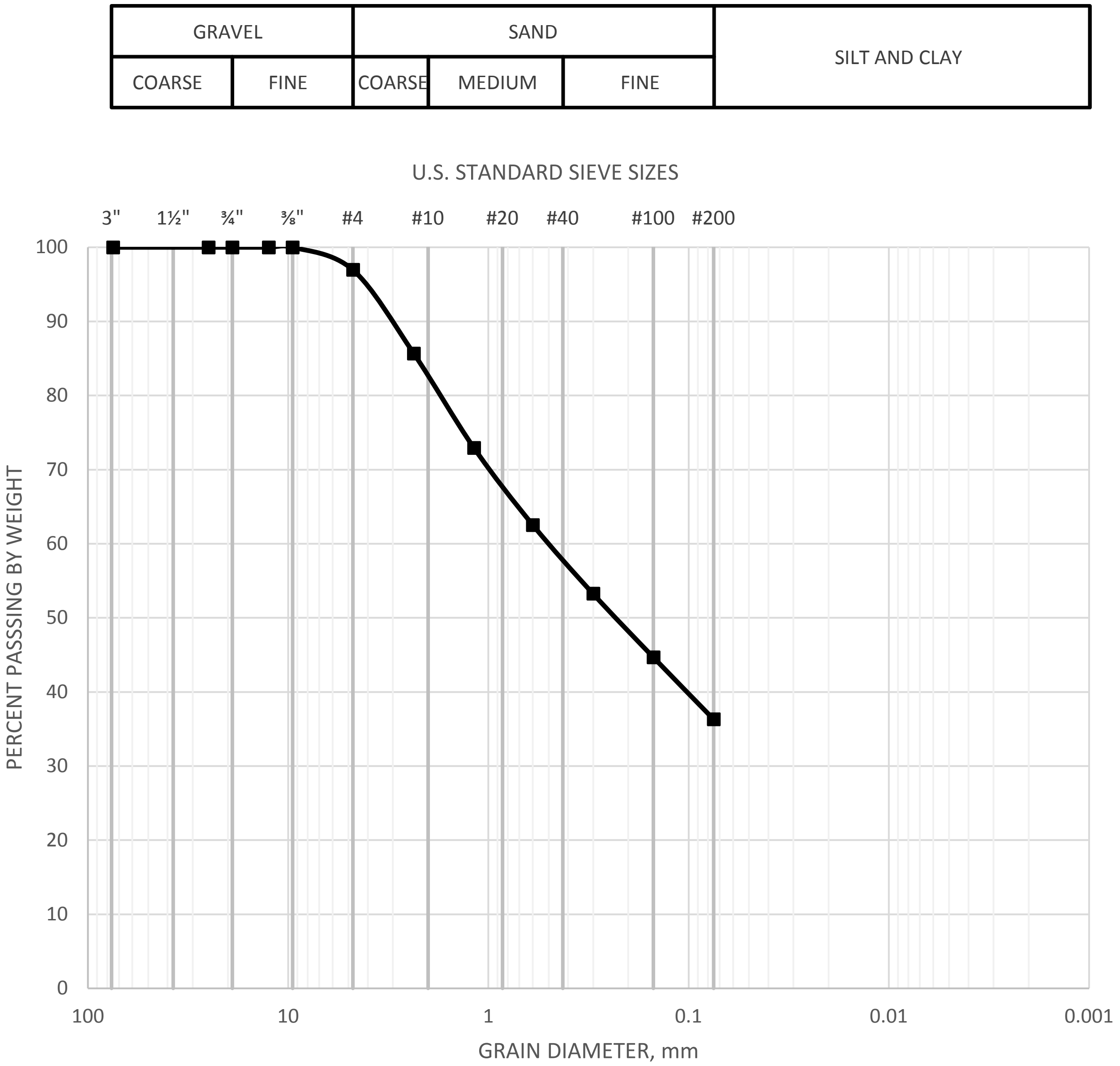
Checked by:

Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 49



SAMPLE	CLASSIFICATION	D60	D30	D10
P-14	silty SAND with trace gravel (SM), olive brown			

GEOCON

GRAIN SIZE DISTRIBUTION

ASTM D-422

Checked by:

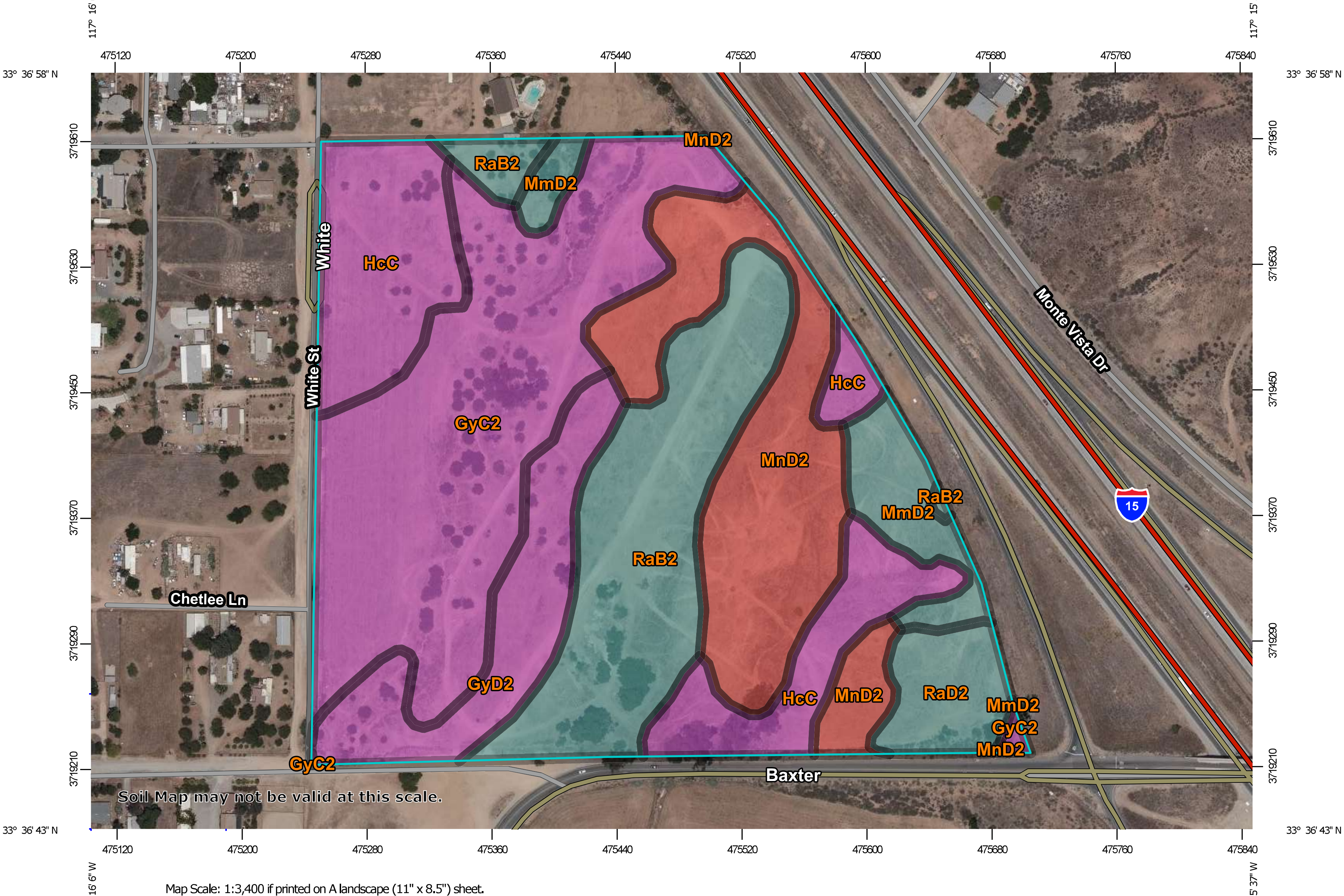
Project No.: T2540-22-03

Strata Baxter Tract 34301
NWC Baxter Rd and I-15
Wildomar, California

Nov 19

Figure 50

Hydrologic Soil Group—Western Riverside Area, California



Map Scale: 1:3,400 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- ▭ Area of Interest (AOI)

Soils

Soil Rating Polygons

- ■ A
- ■ A/D
- ■ B
- ■ B/D
- ■ C
- ■ C/D
- ■ D
- □ Not rated or not available

Soil Rating Lines

- 〰 A
- 〰 A/D
- 〰 B
- 〰 B/D
- 〰 C
- 〰 C/D
- 〰 D
- 〰 Not rated or not available

Soil Rating Points

- ▣ A
- ▣ A/D
- ▣ B
- ▣ B/D
- ▣ C
- ▣ C/D
- ▣ D
- ▣ Not rated or not available

Water Features

- 〰 Streams and Canals

Transportation

- ┼┼┼ Rails
- 〰 Interstate Highways
- 〰 US Routes
- 〰 Major Roads
- 〰 Local Roads

Background

- ■ Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 12, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 25, 2019—Jun 25, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	A	10.6	29.0%
GyD2	Greenfield sandy loam, 8 to 15 percent slopes, eroded	A	3.3	8.9%
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	A	5.9	16.1%
MmD2	Monserate sandy loam, 8 to 15 percent slopes, eroded	C	1.9	5.1%
MnD2	Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded	D	6.7	18.3%
RaB2	Ramona sandy loam, 2 to 5 percent slopes, eroded	C	6.8	18.5%
RaD2	Ramona sandy loam, 8 to 15 percent slopes, eroded	C	1.5	4.1%
Totals for Area of Interest			**36.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher