ADMINISTRATIVE FLOODWAY ANALYSIS

FOR

PADELFORD WASH FLOODPLAIN DELINEATION STUDY

August 26, 2002

Flood Control District of Maricopa County

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by

Michael W. Duncan, P.E., C.F.M.

of

Flood Control District of Maricopa County

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ANALYSIS BASIS

This notebook contains the background materials for the "ADMINISTRATIVE FLOODWAYS" that appear on the work-study maps of the Padelford Wash Floodplain Delineation Study by A-N West Consulting Engineers. The Administrative Floodway Analysis was performed by the Flood Control District of Maricopa County, and the Administrative Floodways were incorporated into the work-study maps by A-N West.

In the lower part of the Padelford Wash FDS, conventional floodway analysis techniques are not suitable, due to the distributary and braided watercourse features. To provide guidance for the Floodplain Use Permitting process, "Administrative Floodways" (as opposed to Regulatory Floodway) were developed. The intend of the Administrative Floodway is that it is administered by the local floodplain management personnel, and treated like a typical floodway, even though it may not be shown on a Flood Insurance Rate Map as a Regulatory Floodway.

The Floodplain Regulations of Maricopa County provide for regulated development within Zone A or Zone AE floodplains that do not have delineated floodways. This regulated development is allowed when the base flood is not more than 2 feet above the existing ground, and when it is demonstrated that the cumulative effect of existing and future development does not cause an increase in the base flood of more than one foot. This "not more than 2 feet" concept was used as a starting point for the administrative floodway analysis.

ANALYSIS PROCEDURE

The procedure for determining the administrative floodways followed these steps:

1. Find areas of the floodplain with 100-year storm-water depths of 2 feet or greater.

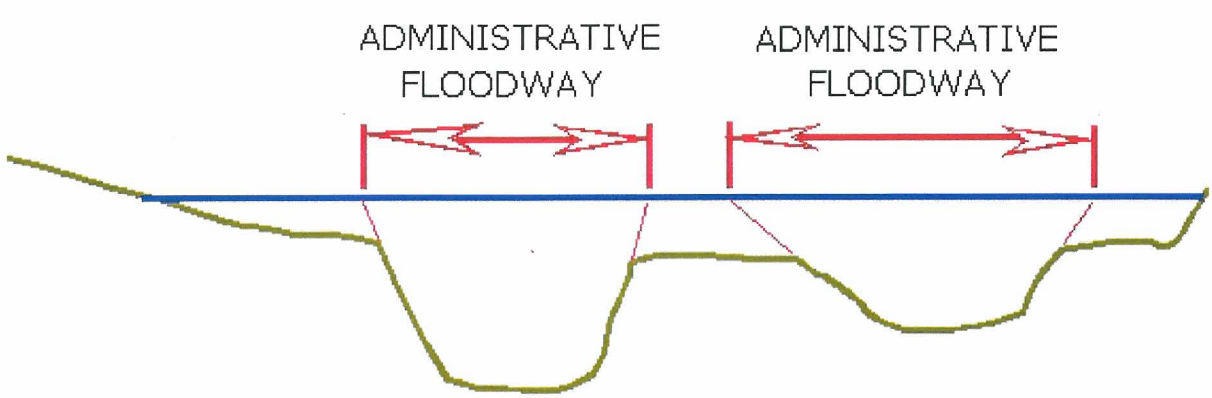
2. Extend these "deep" areas upward by continuing the bank slopes upward at the same-as-natural slopes, as shown in the cross-section of Figure 1.

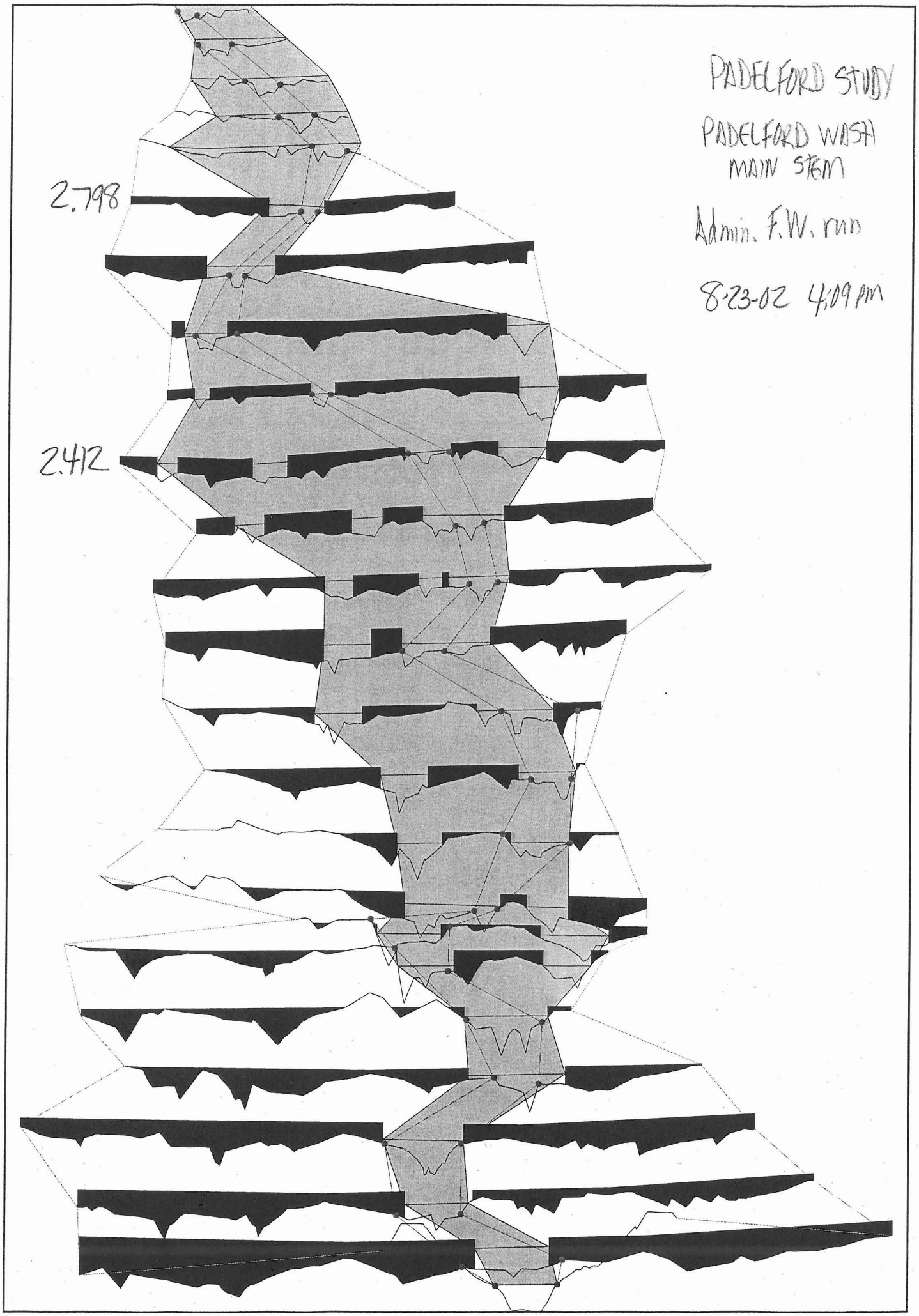
3. Add significant storm-water conveyances with less than 2 feet of depth, based on topography and aerial photography.

4. Add blocks (blocked out cross-section areas) to the RAS models to simulate the Administrative Floodways.

5. Run the modified RAS models, and compare water surface elevations to those of the unmodified RAS models. If water surfaces rise 1 foot or more due to blocking, adjust the nearby blocks and re-run the RAS.

FIGURE 1

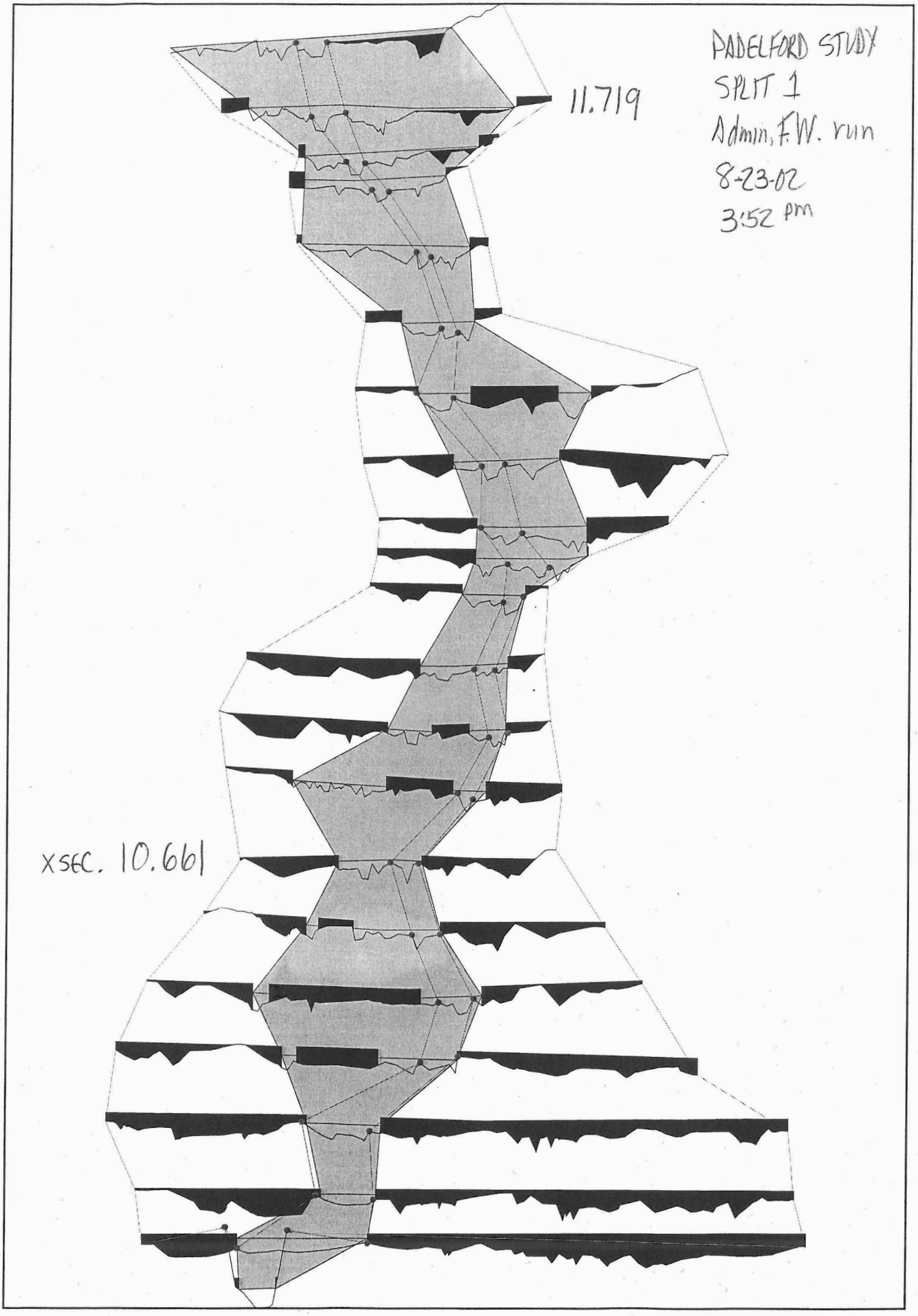



PADELFORD STUDY
PADELFORD WASH
MAIN STEM
Admin. F.W. run
8-23-02 4:09 pm
2.798
2.412

Padelford Wash FDS | Administrative Floodway Analysis | M. Duncan
05 Aug 02

PADELFORD (main stem)

Riv Sta	FP WS El	Admin Fldwy El	Delta WS
4.624	1739.36	1739.36	0
4.546	1735.53	1735.53	0
4.452	1729.83	1729.83	0
4.378	1725.88	1725.88	0
4.28	1720.18	1720.18	0
4.182	1714	1714	0
4.084	1709.11	1709.11	0
3.968	1704.39	1704.39	0
3.876	1699.06	1699.06	0
3.78	1694.24	1694.24	0
3.681	1688.39	1688.39	0
3.584	1682.77	1682.77	0
3.536	1679.67	1679.67	0
3.489	1677.64	1677.64	0
3.441	1675.01	1675.01	0
3.393	1673.28	1673.28	0
3.343	1669.41	1669.41	0
3.3	1666.29	1666.29	0
3.254	1664.19	1664.19	0
3.205	1661.74	1661.74	0
3.156	1658.83	1658.83	0
3.108	1656.05	1656.05	0
3.061	1652.83	1652.83	0
3.003	1648.95	1649.01	0.06
2.949	1645.82	1645.76	-0.06
2.897	1643.08	1643.24	0.16
2.798	1637.03	1637.82	0.79
2.702	1631.49	1632.23	0.74
2.61	1625.68	1625.91	0.23
2.51	1619.94	1620.2	0.26
2.412	1614.07	1614.94	0.87
2.307	1609.04	1609.5	0.46
2.209	1603.26	1604.19	0.93
2.098	1597.83	1598.36	0.53
1.996	1591.22	1591.85	0.63
1.896	1586.24	1586.64	0.4
1.796	1579.77	1580.28	0.51
1.692	1574.85	1575.03	0.18
1.631	1572.09	1572.41	0.32
1.585	1569.61	1569.4	-0.21
1.492	1565.02	1565.43	0.41
1.398	1560.18	1560.76	0.58
1.279	1554.55	1555.21	0.66
1.181	1549.53	1549.87	0.34
1.084	1546.52	1547.5	0.98
1.005	1545.58	1545.58	0

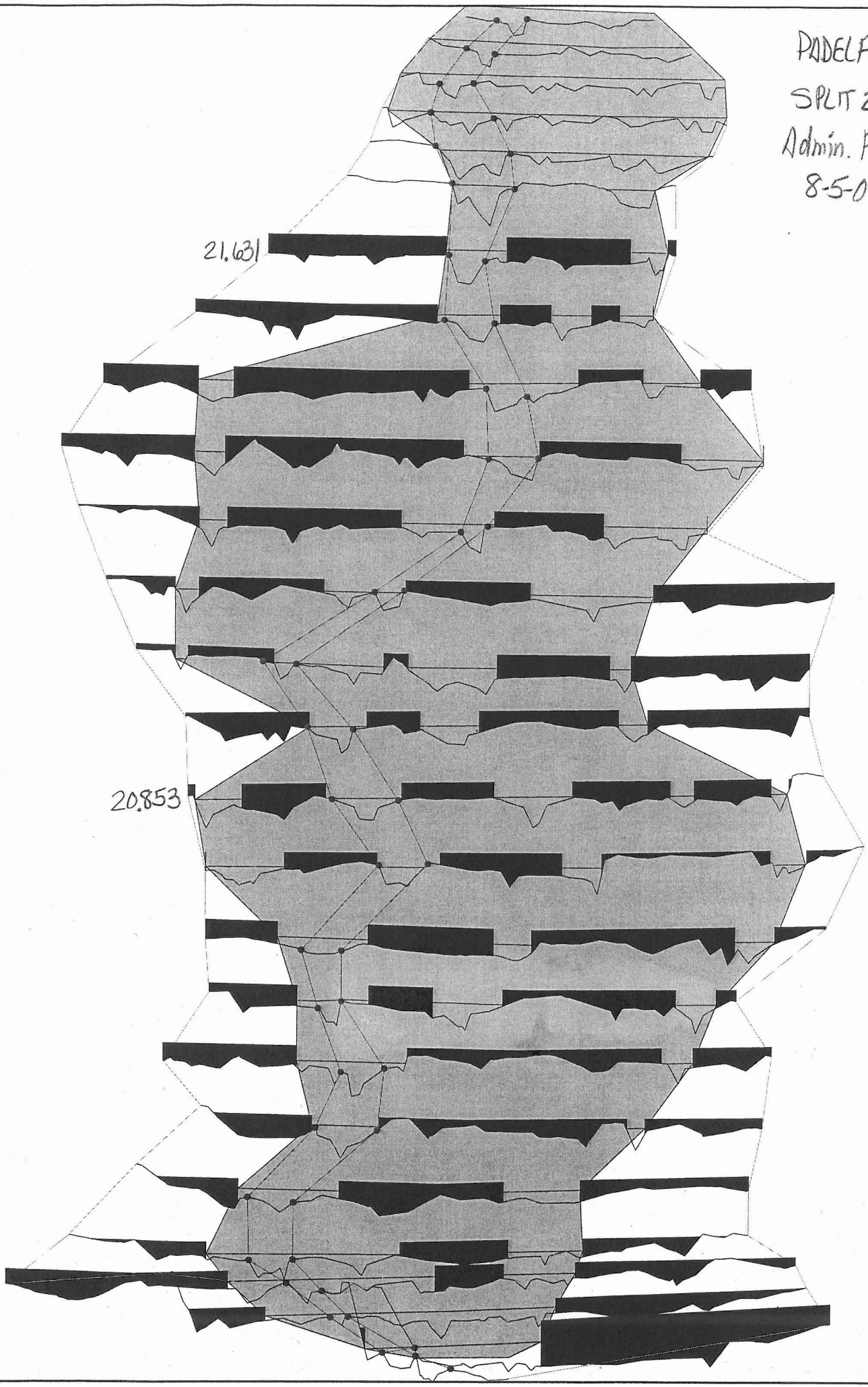

PADELFORD STUDY
SPLIT 1
Admin, F.W. run
8-23-02
3:52 pm
11.719
XSEC. 10.661

Padelford Wash FDS | Administrative Floodway Analysis | M. Duncan
23 Aug 02

SPLIT 1

Riv Sta	FP WS El	Admin Fldwy El	Delta WS
12.066	1658.52	1658.52	0
12.019	1656.09	1656.09	0
11.973	1652.58	1652.58	0
11.924	1649.76	1649.76	0
11.869	1646.23	1646.23	0
11.816	1642.33	1642.33	0
11.719	1637.07	1636.96	-0.11
11.656	1632.7	1632.77	0.07
11.621	1630.35	1630.42	0.07
11.523	1625.25	1625.24	-0.01
11.423	1618.52	1618.52	0
11.329	1612.2	1612.65	0.45
11.233	1607.06	1607.4	0.34
11.14	1602.14	1602.34	0.2
11.093	1600.17	1600.19	0.02
11.044	1597.09	1597.08	-0.01
10.946	1591.13	1591.62	0.49
10.849	1586.39	1586.66	0.27
10.761	1581.61	1582.06	0.45
10.661	1575.2	1575.91	0.71
10.566	1569.82	1570.48	0.66
10.471	1564.75	1565.2	0.45
10.383	1559.73	1560.3	0.57
10.27	1555.01	1555.42	0.41
10.169	1549.25	1549.99	0.74
10.099	1546.1	1547.09	0.99
10.004	1544.8	1544.8	0

PADELFORD WASH
SPLIT 2
Admin. F.W. run
8-5-02 12:08 PM



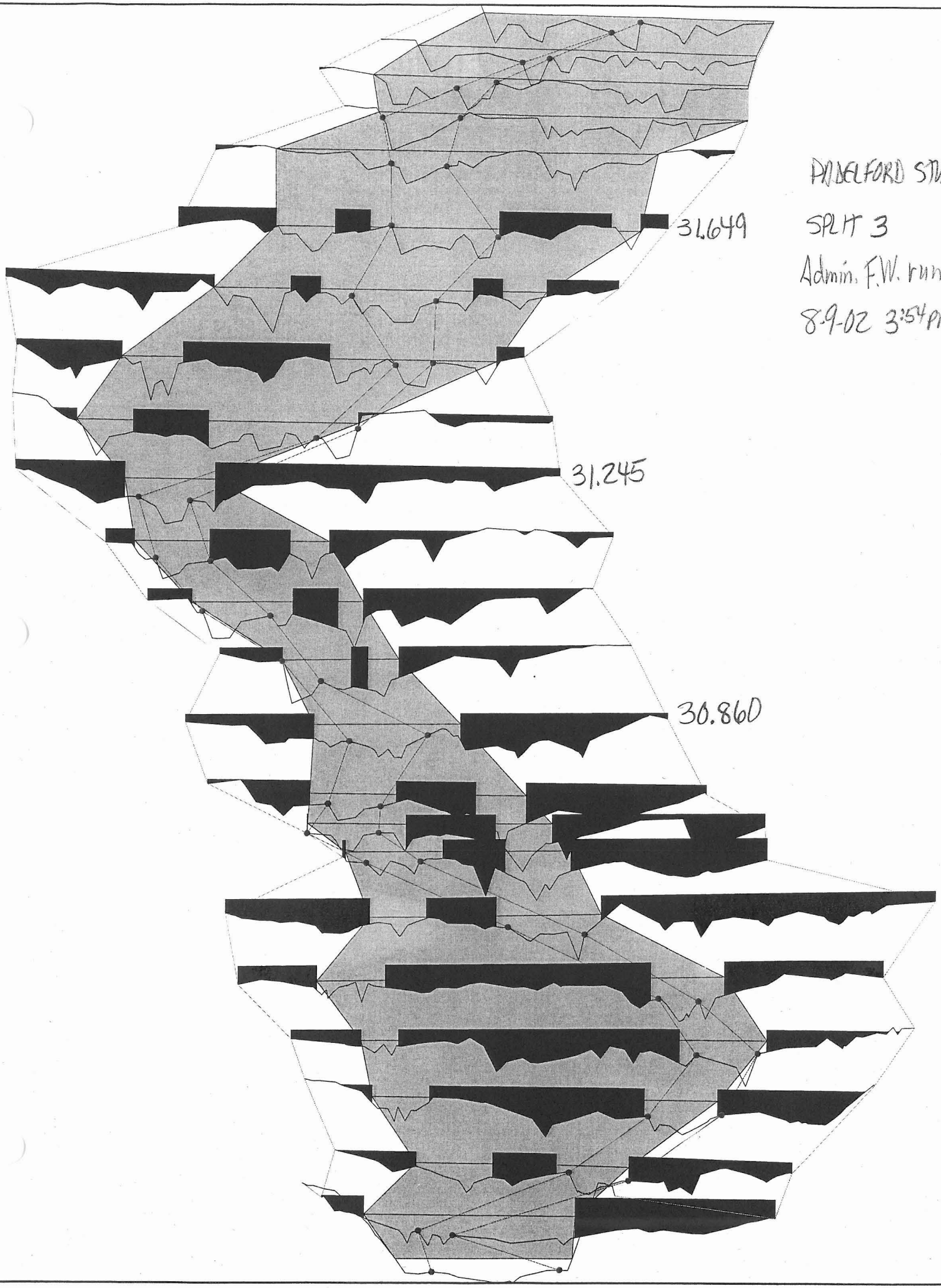
Padelford Wash FDS

Administrative Floodway Analysis

M. Duncan
05 Aug 02

SPLIT 2

Riv Sta	FP WS El	Admin Fldwy El	Delta WS
22.212	1672.62	1672.62	0
22.161	1669.94	1669.94	0
22.114	1666.92	1666.92	0
22.066	1664.32	1664.32	0
22.019	1661.15	1661.15	0
21.97	1658.68	1658.68	0
21.923	1655.78	1655.78	0
21.875	1653.08	1653.08	0
21.827	1649.71	1649.71	0
21.774	1646.5	1646.36	-0.14
21.719	1643.16	1643.49	0.33
21.631	1637.64	1638.04	0.4
21.544	1632.06	1632.49	0.43
21.443	1626.44	1626.99	0.55
21.346	1620.43	1620.68	0.25
21.248	1614.84	1615.08	0.24
21.152	1608.75	1609.21	0.46
21.055	1602.6	1603.01	0.41
20.95	1597.5	1597.84	0.34
20.853	1591.54	1591.77	0.23
20.76	1585.69	1585.92	0.23
20.663	1579.43	1579.83	0.4
20.569	1574.52	1574.79	0.27
20.477	1569.62	1569.78	0.16
20.383	1564.1	1564.67	0.57
20.288	1558.95	1559.56	0.61
20.19	1554.05	1554.23	0.18
20.144	1552.22	1552.43	0.21
20.092	1548.89	1549.69	0.8
20.021	1547.71	1547.91	0.2
20.004	1547.01	1547.01	0



PANELFORD STUDY

SPLIT 3

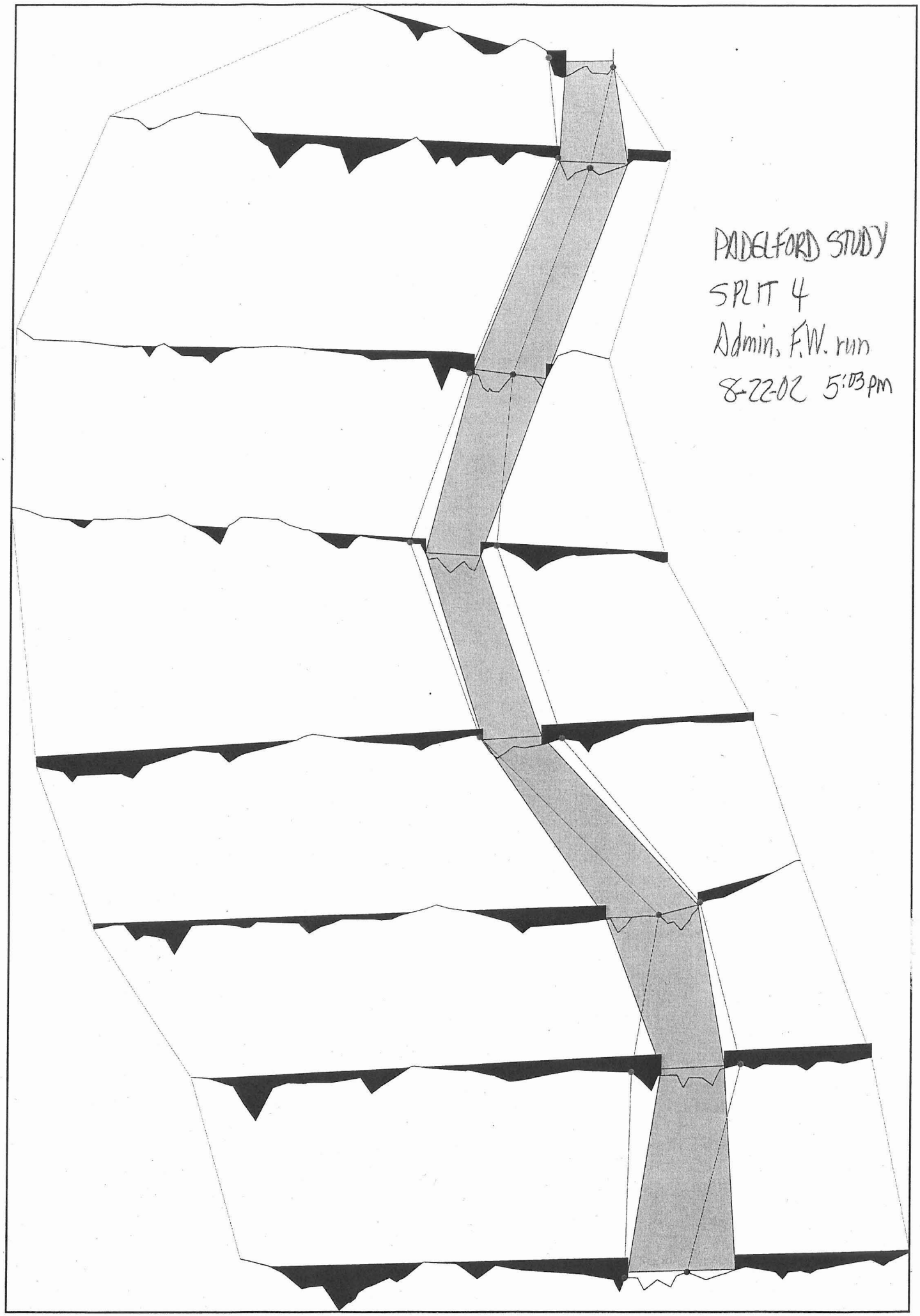
Admin. F.W. run

8-9-02 3:54 PM

Padelford Wash FDS | Administrative Floodway Analysis | M. Duncan
06 Aug 02

SPLIT 3

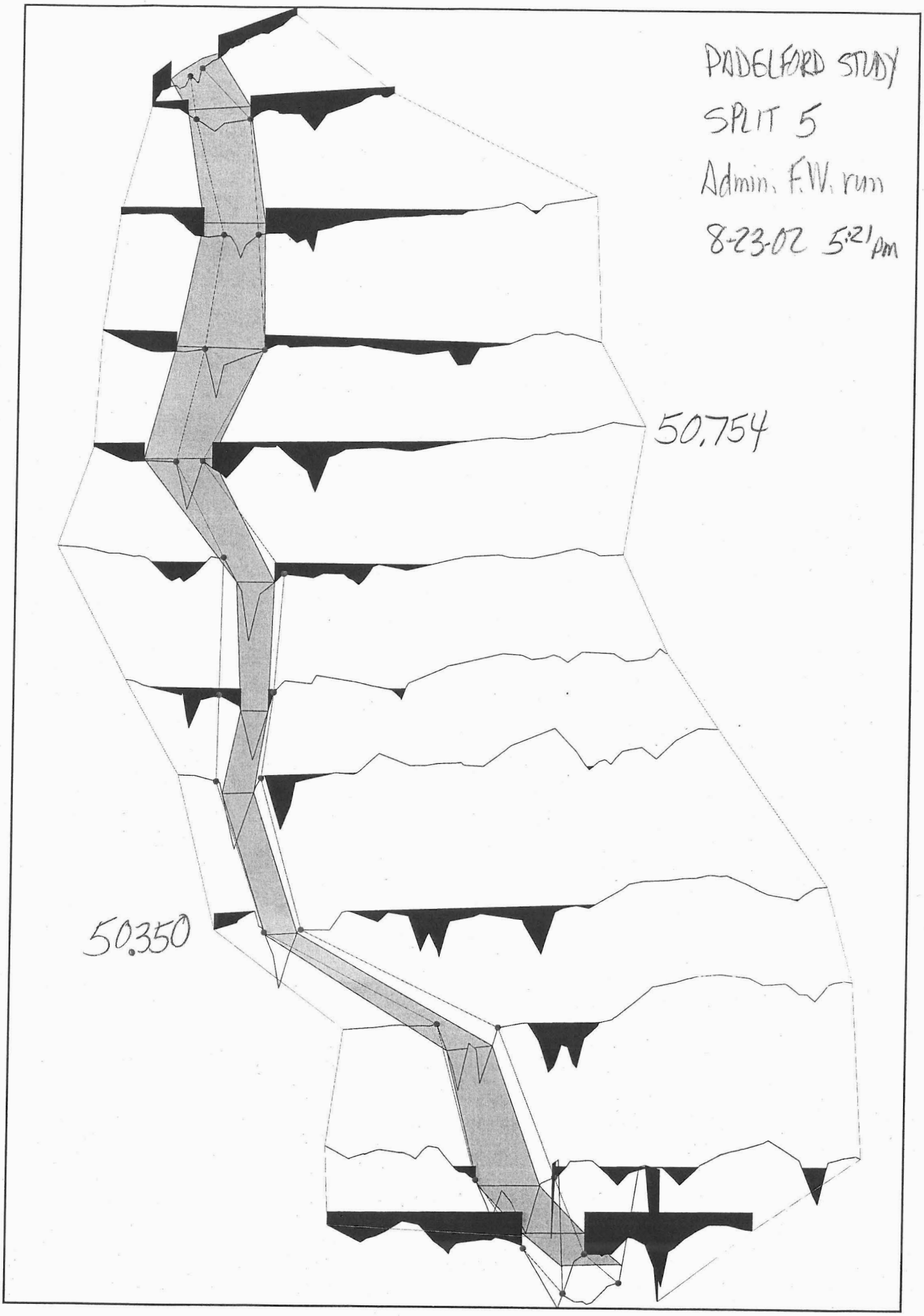
Riv Sta	FP WS El	Admin Fldwy El	Delta WS
32.443	1682.51	1682.51	0
32.39	1679.4	1679.4	0
32.343	1676.8	1676.8	0
32.301	1674.93	1674.93	0
32.257	1672.09	1672.09	0
32.206	1669.35	1669.35	0
32.156	1666.71	1666.71	0
32.108	1664.16	1664.16	0
32.06	1661.63	1661.63	0
32.012	1658.89	1658.89	0
31.964	1656.14	1656.14	0
31.914	1653.05	1653.05	0
31.867	1650.27	1650.44	0.17
31.809	1647.49	1647.32	-0.17
31.75	1643.83	1644.01	0.18
31.649	1636.87	1636.77	-0.1
31.552	1631.24	1631.36	0.12
31.452	1624.74	1625.09	0.35
31.351	1619.28	1619.61	0.33
31.245	1614.32	1614.85	0.53
31.148	1608.65	1609.52	0.87
31.053	1603.92	1604.29	0.37
30.958	1598.9	1599.37	0.47
30.86	1592.65	1593.65	1
30.765	1586.82	1587.34	0.52
30.717	1584.24	1584.82	0.58
30.669	1581.58	1582.49	0.91
30.573	1576.32	1576.59	0.27
30.475	1570.54	1571.04	0.5
30.376	1564.74	1565.64	0.9
30.281	1559.73	1560.52	0.79
30.183	1554.03	1554.59	0.56
30.085	1550.41	1550.63	0.22
30.003	1547.12	1547.12	0


PADELFORD STUDY
SPLIT 4
Admin. F.W. run
8-22-02 5:03 pm

Padelford Wash FDS | Administrative Floodway Analysis | M. Duncan
22 Aug 02

SPLIT 4

Riv Sta	FP WS El	Admin Fldwy El	Delta WS
30.841	1584.23	1584.44	0.21
30.793	1580.9	1580.95	0.05
30.69	1574.91	1574.95	0.04
30.603	1569.98	1570.07	0.09
30.512	1565.28	1565.52	0.24
30.412	1560.06	1560.31	0.25
30.335	1555.72	1556.01	0.29
30.233	1550.9	1551.01	0.11


PADELFORD STUDY
SPLIT 5
Admin. F.W. run
8-23-02 5:21 PM
50,754
50,350

Padelford Wash FDS Administrative Floodway Analysis M. Duncan
23 Aug 02

SPLIT 5

Riv Sta	FP WS El	Admin Fldv	Delta WS
51.088	1599.79	1599.94	0.15
51.047	1597.28	1597.8	0.52
50.951	1592.01	1592.26	0.25
50.846	1586.2	1586.35	0.15
50.754	1581.02	1581.18	0.16
50.639	1574.79	1574.78	-0.01
50.547	1567.54	1567.54	0
50.475	1564.02	1564.02	0
50.35	1557.91	1557.91	0
50.253	1550.95	1550.95	0
50.125	1544.61	1544.82	0.21
50.051	1544.61	1544.61	0
50.01	1544.33	1544.33	0