



Photo 7-6

Location, Orientation: XS 7, Downstream looking up

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 9:34 AM

Description: View looking upstream at Cross Section 7 from a downstream position

Cross Section 8

<i>Location</i>	<i>Latitude</i>	<i>Longitude</i>
Left Bank	36.998831	-79.856019
Right Bank	36.998555	-79.856062

Description: Cross Section 8 is located approximately 2,000 feet downstream of the dam, or 1,400 feet downstream of Cross Section 7, due north of the existing Town of Rocky Mount Sewage Treatment Plant. Vehicular access was gained via farm field roads on treatment plant property. The cross section is bounded on the left bank by forest and on the right bank by a narrow band of trees along the top of bank with agricultural fields just beyond. This section had mature woody vegetation to within one foot of the baseflow water surface elevation. The water surface width at this section was consistent with that seen at Cross Section 7, but no side channel bars or recent deposits of sediment were visible above the observed water surface elevation. Banks were relatively stable due to good coverage by woody root structure. Fine sediment released from behind the dam buried bed features and filled the thalweg, resulting in little variation in flow depth across the section.

The instrument setup for this cross section was at the right bank (HI = 2.87 ft.). The cross section plot is on Sheet 8 of Appendix B. No thalweg survey was performed at this cross section during Post-Construction monitoring since depth measurements were uniformly flat with the thalweg measurement taken during cross section survey. Thalweg information from the cross section survey was plotted for comparison with longitudinal survey data collected during Year-1 monitoring. Local scour pockets were observed only around isolated pieces of woody debris. No pebble count was taken at this location due the uniform fine-grained (sandy) nature of bed sediments.



Photo 8-1

Location, Orientation: XS 8, Looking Upstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 11:07 AM

Description: View looking upstream from the middle of Cross Section 8

Woody Debris: 4



Photo 8-2

Location, Orientation: XS 8, Looking Downstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 11:07 AM

Description: View looking downstream from the middle of Cross Section 8
Woody Debris: 3



Photo 8-3

Location, Orientation: XS 8, Left Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 11:07 AM

Description: View looking left from the middle of Cross Section 8
Vegetation: 30% herbaceous cover, saplings, small trees



Photo 8-4

Location, Orientation: XS 8, Right Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 11:08 AM

Description: View looking right from the middle of Cross Section 8

Vegetation: 10% herbaceous plants, trees



Photo 8-5

Location, Orientation: XS 8, Upstream looking down

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 11:11 AM

Description: View looking downstream at Cross Section 8 from an upstream position



Photo 8-6

Location, Orientation: XS 8, Downstream looking up

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 11:09 AM

Description: View looking upstream at Cross Section 8 from a downstream position



Photo 8-7

Location, Orientation: XS 8, Bed Material

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 11:08 AM

Description: Bed material at Cross Section 8 was almost entirely silt

Cross Section 9

<i>Location</i>	<i>Latitude</i>	<i>Longitude</i>
Left Bank	36.995239	-79.856860
Right Bank	36.995536	-79.856751

Description: Cross Section 9 is located approximately 1.0 mi downstream of the dam, or 3,300 feet downstream of Cross Section 8. The section was located at the southwest corner of the field at the downstream boundary of sewage treatment plant property, just before a sharp left meander. Vehicular access was gained via Hudson Farm Lane.

The cross section was bounded on both banks by a narrow band of trees along the top of bank with agricultural fields just beyond. Woody root structure made the steep banks relatively stable, despite significant incision (~14-ft bank heights). The water surface width at this section was consistent with that seen at Cross Section 8. Sediment deposition of sand was noted at or just above the observed water surface. Banks were relatively stable due to good coverage by woody root structure. Fine sediment had buried bed features and filled the thalweg, resulting in little variation in flow depth across the section.

The instrument setup for this cross section was at the right bank (HI = 2.82 ft.). The cross section plot is on Sheet 9 of Appendix B. No thalweg survey was performed at this cross section during Post-Construction monitoring since depth measurements were uniformly flat with the thalweg measurement taken during cross section survey. Thalweg information from the cross section survey was plotted for comparison with longitudinal survey data collected during Year-1 monitoring. No pebble count was taken at this location due the uniform fine-grained (sandy) nature of bed sediments.



Photo 9-1

Location, Orientation: XS 9, Looking Upstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 1:33 PM

Description: View looking upstream from the middle of Cross Section 9
Woody Debris: 4



Photo 9-2

Location, Orientation: XS 9, Looking Downstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 1:34 PM

Description: View looking downstream from the middle of Cross Section 9

Woody Debris: 5



Photo 9-3

Location, Orientation: XS 9, Left Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 1:34 PM

Description: View looking left from the middle of Cross Section 9

Vegetation: 40% herbaceous cover with small trees on top of bank



Photo 9-4

Location, Orientation: XS 9, Right Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 1:35 PM

Description: View looking right from the middle of Cross Section 9

Vegetation: 90% herbaceous cover on bank



Photo 9-5

Location, Orientation: XS 9, Upstream looking down

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 1:38 PM

Description: View looking downstream at Cross Section 9 from an upstream position



Photo 9-6

Location, Orientation: XS 9, Downstream looking up

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 1:36 PM

Description: View looking upstream at Cross Section 9 from a downstream position

Cross Section 10

<i>Location</i>	<i>Latitude</i>	<i>Longitude</i>
Left Bank	36.990961	-79.850516
Right Bank	36.990694	-79.850709

Description: Cross Section 10 is located approximately 1.5 mi. downstream of the dam, or 2,700 feet downstream of Cross Section 9, east of Power Dam Road and north of the power line easement. Accessed via vehicle from Hudson Farm Lane. The section is flanked by fields on both sides, with a narrow band of trees along the tops of bank. Mature trees dotted the banks down to the edge of the observed water surface and root structure afforded good bank stability despite steep slopes and an incised section (~12-ft bank height). The water surface width at this section was consistent with that seen at Cross Section 9. Sediment deposition of sand was noted at or just above the observed water surface. Banks were relatively stable due to good coverage by woody root structure. Fine sediment had buried bed features and filled the thalweg, resulting in little variation in flow depth across the section.

The instrument setup for this cross section was at the left bank (HI = 3.54 ft.). The cross section plot is on Sheet 10 of Appendix B. No pebble count was taken at this location due the uniform fine-grained (sandy) nature of bed sediments. The small gravel (~1-in diameter) area was not representative of the overall bed conditions.



Photo 10-1

Location, Orientation: XS 10, Looking Upstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 12:23 PM

Description: View looking upstream from the middle of Cross Section 10

Woody Debris: 2



Photo 10-2

Location, Orientation: XS 10, Looking Downstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 12:23 PM

Description: View looking downstream from the middle of Cross Section 10

Woody Debris: 4



Photo 10-3

Location, Orientation: XS 10, Left Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 12:26 PM

Description: View looking left from the middle of Cross Section 10

Vegetation: 30% herbaceous cover, trees



Photo 10-4

Location, Orientation: XS 10, Right Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 12:23 PM

Description: View looking right from the middle of Cross Section 10

Vegetation: 60% herbaceous cover, some trees higher on bank



Photo 10-5

Location, Orientation: XS 10, Upstream looking down

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 12:28 PM

Description: View looking downstream at Cross Section 10 from an upstream position



Photo 10-6

Location, Orientation: XS 10, Downstream looking up

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 12:25 PM

Description: View looking upstream at Cross Section 10 from a downstream position

Cross Section 11

<i>Location</i>	<i>Latitude</i>	<i>Longitude</i>
Left Bank	36.991708	-79.845110
Right Bank	36.991595	-79.845424

Description: Cross Section 11 is located approximately 2.6 miles downstream of the dam, or 1.1 miles downstream of Cross Section 10, north of the power line easement and approximately 1/3rd mile east of Cross Section 10 (as the crow flies). Accessed via vehicle from Hudson Farm Lane. The section was flanked by fields on the left bank and dense forest on the right bank, with a narrow band of trees along the left top of bank. Mature trees grew along the banks to within a few feet of the observed water surface elevation. Banks were stable and slopes much more gradual than other cross sections (generally 2:1 or less). Top of bank height on the right bank was significantly lower than in previous sections (approx. 5 ft). The water surface width at this section was consistent with that seen at Cross Section 10. Minor bank erosion and sand deposits were observed along the edge of water on right bank. Estimated 5% of coarse bed material exposed within cross section. Riffle above cross section embedded by roughly .10 ft. of sandy material.

The instrument setup for this cross section was at the left bank (HI = 3.32 ft.). The cross section plot is on Sheet 11 of Appendix B and the thalweg plot is on Sheet 11 of Appendix C. Pebble count information is summarized on Sheet 1 of Appendix D and indicates a gravel-dominated bed composition.



Photo 11-1

Location, Orientation: XS 11, Looking Upstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 2:38 PM

Description: View looking upstream from the middle of Cross Section 11

Woody Debris: 2



Photo 11-2

Location, Orientation: XS 11, Looking Downstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 2:37 PM

Description: View looking downstream from the middle of Cross Section 11

Woody Debris: 3



Photo 11-3

Location, Orientation: XS 11, Left Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 2:40 PM

Description: View looking left from the middle of Cross Section 11

Vegetation: 40% herbaceous cover, trees



Photo 11-4

Location, Orientation: XS 11, Right Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 2:39 PM

Description: View looking right from the middle of Cross Section 11

Vegetation: 60% herbaceous cover and small trees going up slope, bamboo/forest at bankfull



Photo 11-5

Location, Orientation: XS 11, Upstream looking down

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 2:44 PM

Description: View looking downstream at Cross Section 11 from an upstream position



Photo 11-6

Location, Orientation: XS 11, Downstream looking up

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/04/17, 2:42 PM

Description: View looking upstream at Cross Section 11 from a downstream position

Cross Section 12

<i>Location</i>	<i>Latitude</i>	<i>Longitude</i>
Left Bank	37.002258	-79.825398
Right Bank	37.002247	-79.825677

Description: Cross Section 12 is located approximately 5.2 mi downstream of the dam, or 2.6 mi downstream of Cross Section 11, approximately 300 feet downstream of the Chestnut Hill Road bridge. The section was accessed by parking along the Chestnut Hill Road and walking through the private property on the right bank (with permission). The section is flanked by turf/fields on the right bank (with a narrow band of trees at the top of bank) and forest on the left bank. Banks were steep (~1:1), but stable due to stability afforded by mature woody vegetation and root mass. The section is located at the head of a riffle feature. The top of bank height was greater than the that seen in Cross Section 11, but generally less than other sections downstream of the dam. The water surface width was approximately 50% wider than in previous sections – partially due to the larger watershed area which includes Power Mill Creek. Fine sediment deposition was observed at the cross section with an estimated 50% of coarse bed material exposed.

The instrument setup for this cross section was at the right bank (HI = 3.42 ft.). The cross section plot is on Sheet 11 of Appendix B and the thalweg plot is on Sheet 12 of Appendix C. Pebble count information is summarized on Sheet 2 of Appendix D and indicates a gravel-dominated bed composition.



Photo 12-1

Location, Orientation: XS 12, Looking Upstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 12:58 PM

Description: View looking upstream from the middle of Cross Section 12

Woody Debris: 2



Photo 12-2

Location, Orientation: XS 12, Looking Downstream

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 12:58 PM

Description: View looking downstream from the middle of Cross Section 12

Woody Debris: 2



Photo 12-3

Location, Orientation: XS 12, Left Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 1:00 PM

Description: View looking left from the middle of Cross Section 12

Vegetation: 80% herbaceous cover, trees



Photo 12-4

Location, Orientation: XS 12, Right Bank

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 12:59 PM

Description: View looking right from the middle of Cross Section 12

Vegetation: 60% herbaceous cover, trees at top of bank

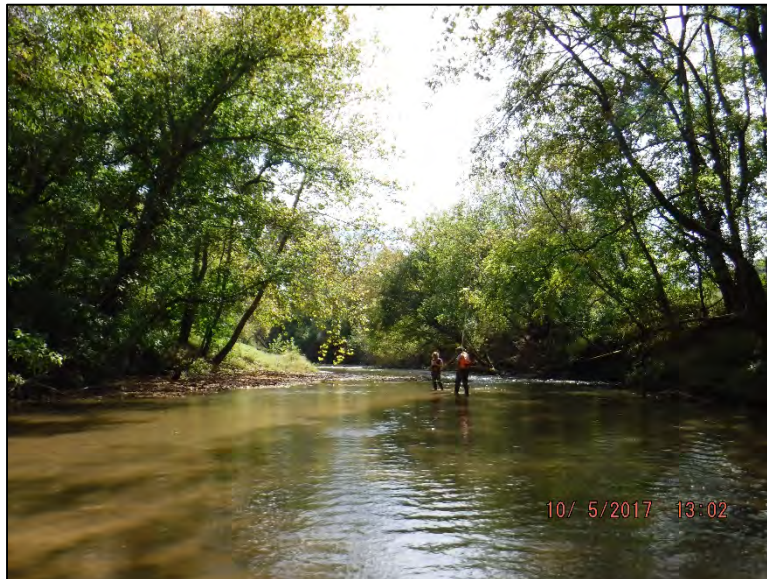


Photo 12-5

Location, Orientation: XS 12, Upstream looking down

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 1:02 PM

Description: View looking downstream at Cross Section 12 from an upstream position



Photo 12-6

Location, Orientation: XS 12, Downstream looking up

Permit Number: JPA #15-1551

Wetland Data Sheet Reference: n/a

10/05/17, 1:03 PM

Description: View looking upstream at Cross Section 12 from a downstream position



Photo 12-7

Location, Orientation: XS 12, Bed Material

Permit Number: JPA #15-1551

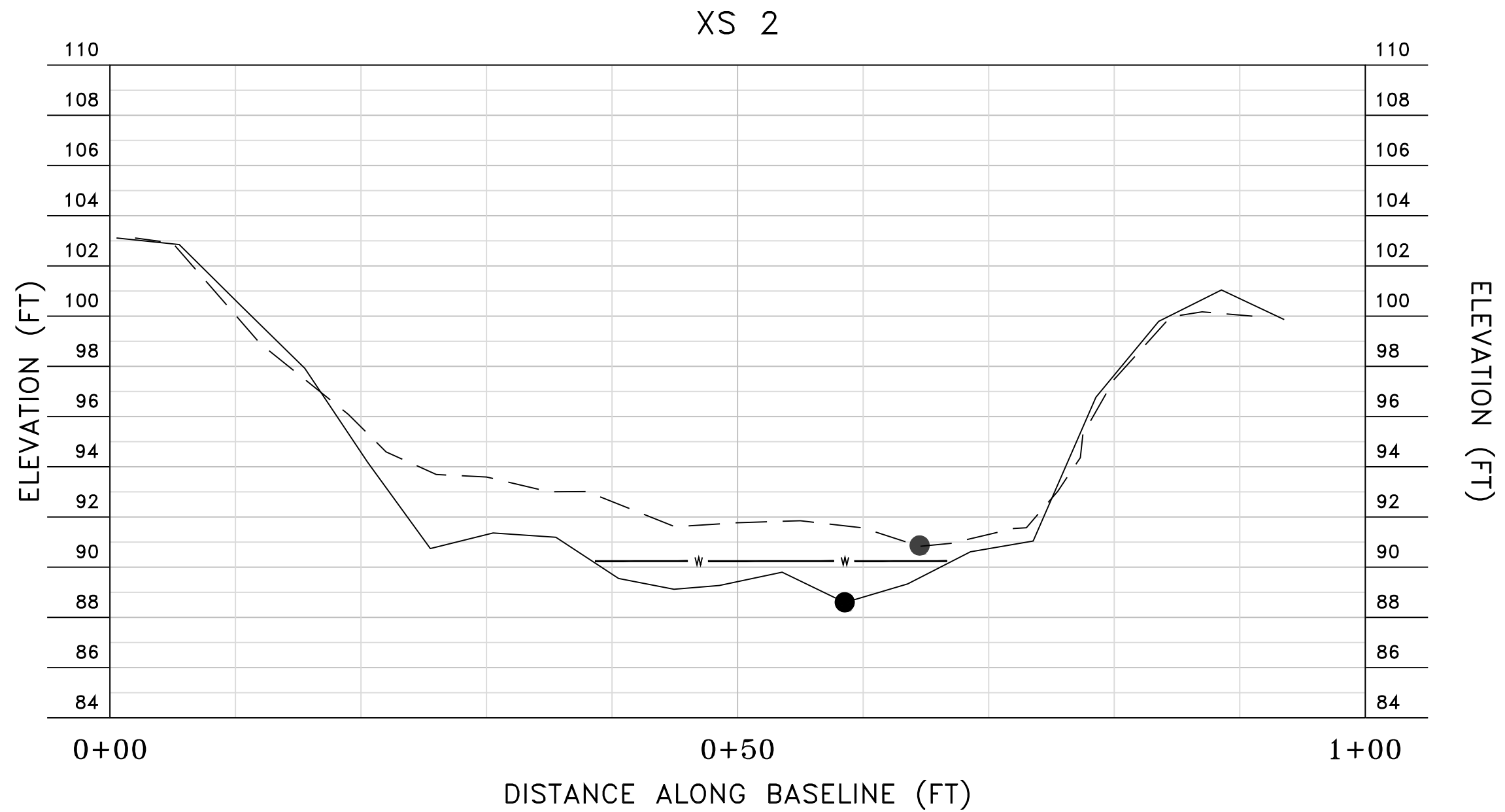
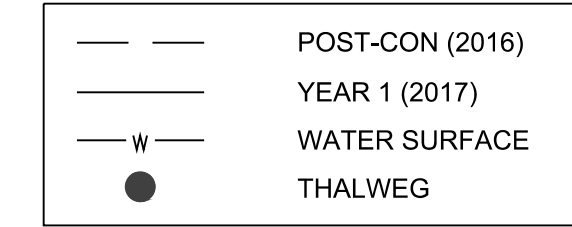
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10/05/17, 1:01 PM

Description: Bed material at Cross Section 12 was sand and coarse gravel

Appendix B

(Elevations given in the following plots are all taken relative to the adjacent end pin location corresponding to the subject cross section. An assumed end pin elevation of 100 ft. was used for all cross sections.)



PROFILE SCALE:
HORIZ: 1"=10'
VERT: 1"=5'
(ELEV. RELATIVE TO ASSUMED XS END PIN AT 100.)

Wetland

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Pigg River Dam Removal Restoration - Monitoring
Rocky Mount, Virginia

Year 1 - XS 2

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REVISIONS		Rev. By	App. By
No.	Date	Description	

DATE: DEC 2017

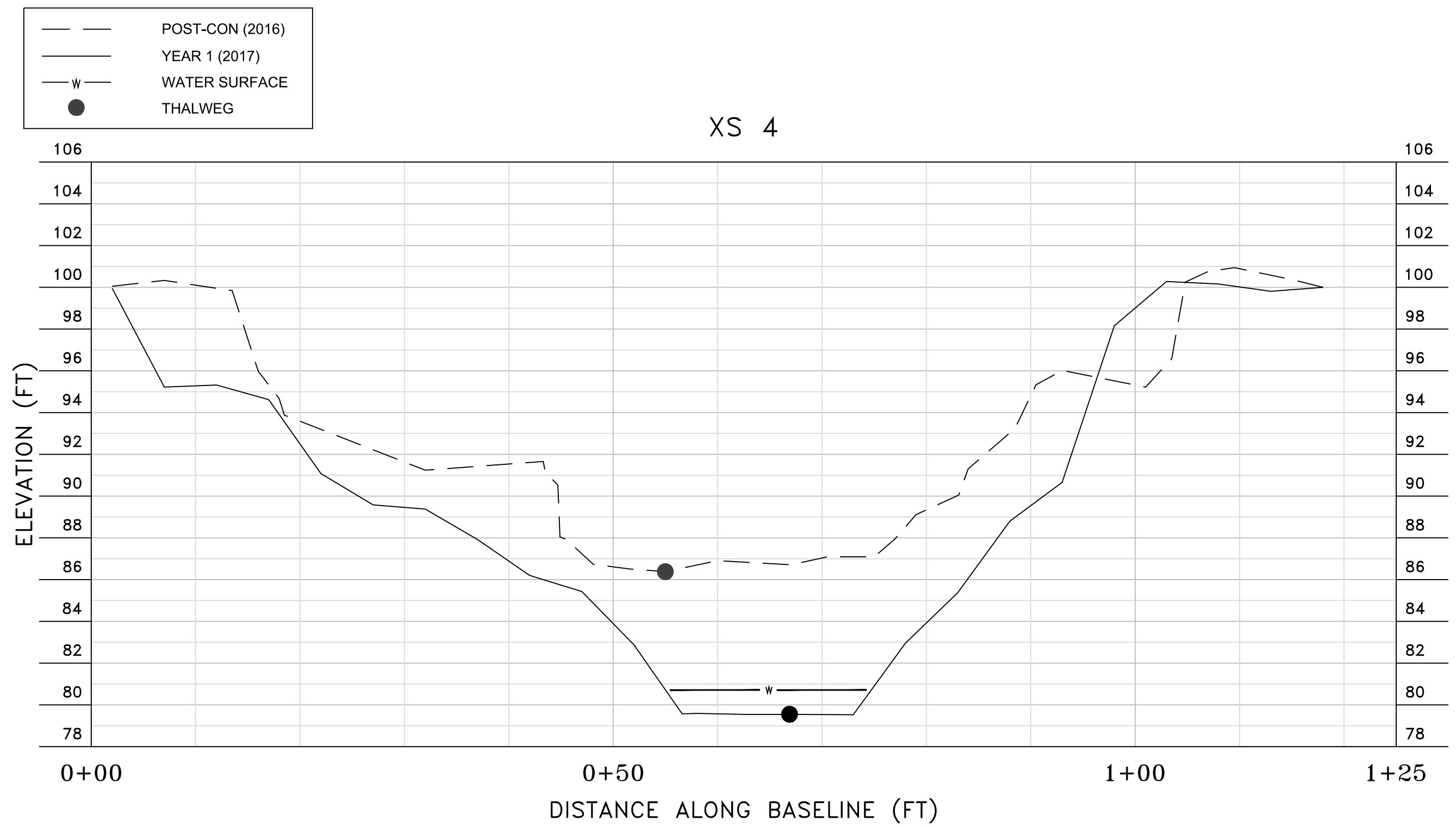
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Boundary and Topo Source:
WSSI and Orange Digital Data

Design	Draft	Approved
NAS	NAS	NAS

Sheet #
2 of 11

Computer File Name:
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PROFILE SCALE:
HORIZ: 1"=10'
VERT: 1"=5'
(ELEV. RELATIVE TO ASSUMED XS END PIN AT 100.)

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Rocky Mount, Virginia

Year 1 - XS 4

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REVISIONS		
No.	Date	Description

DATE: DEC 2017

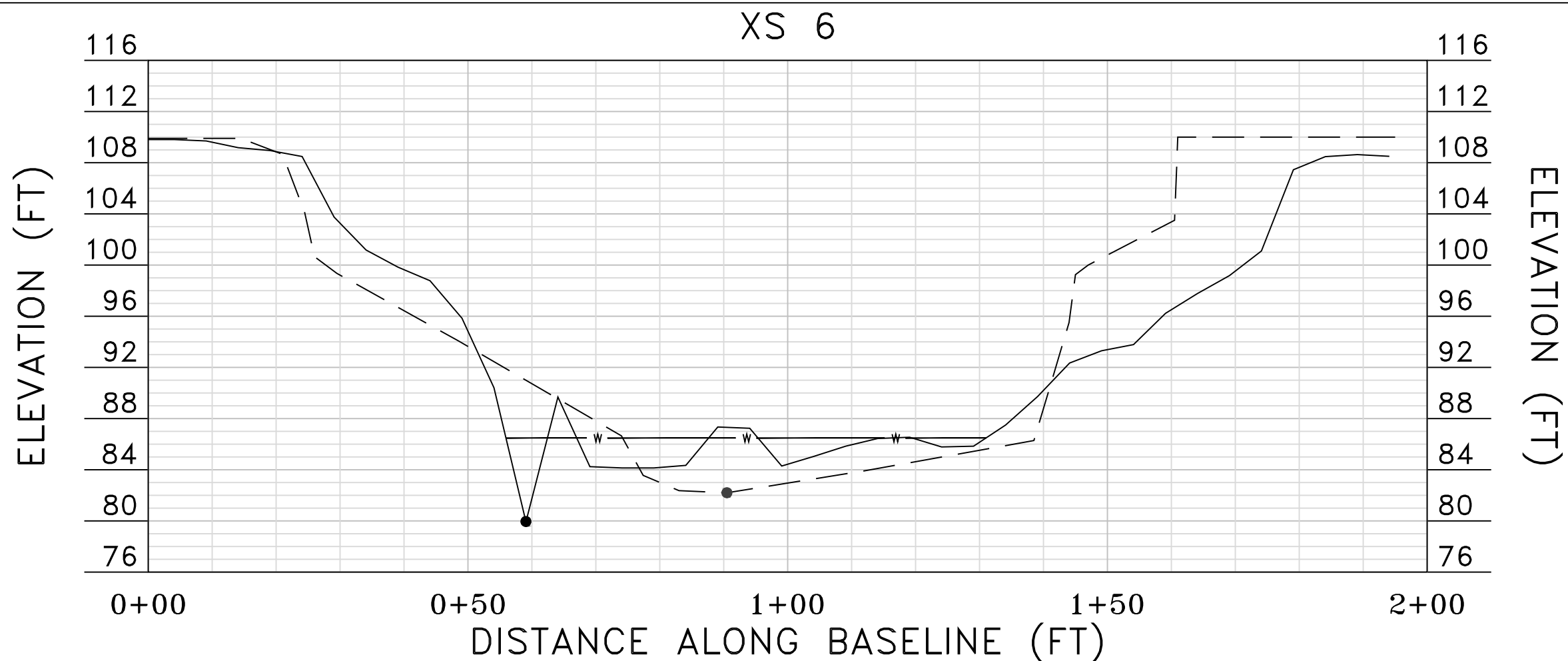
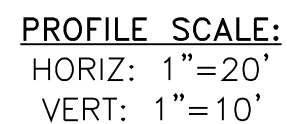
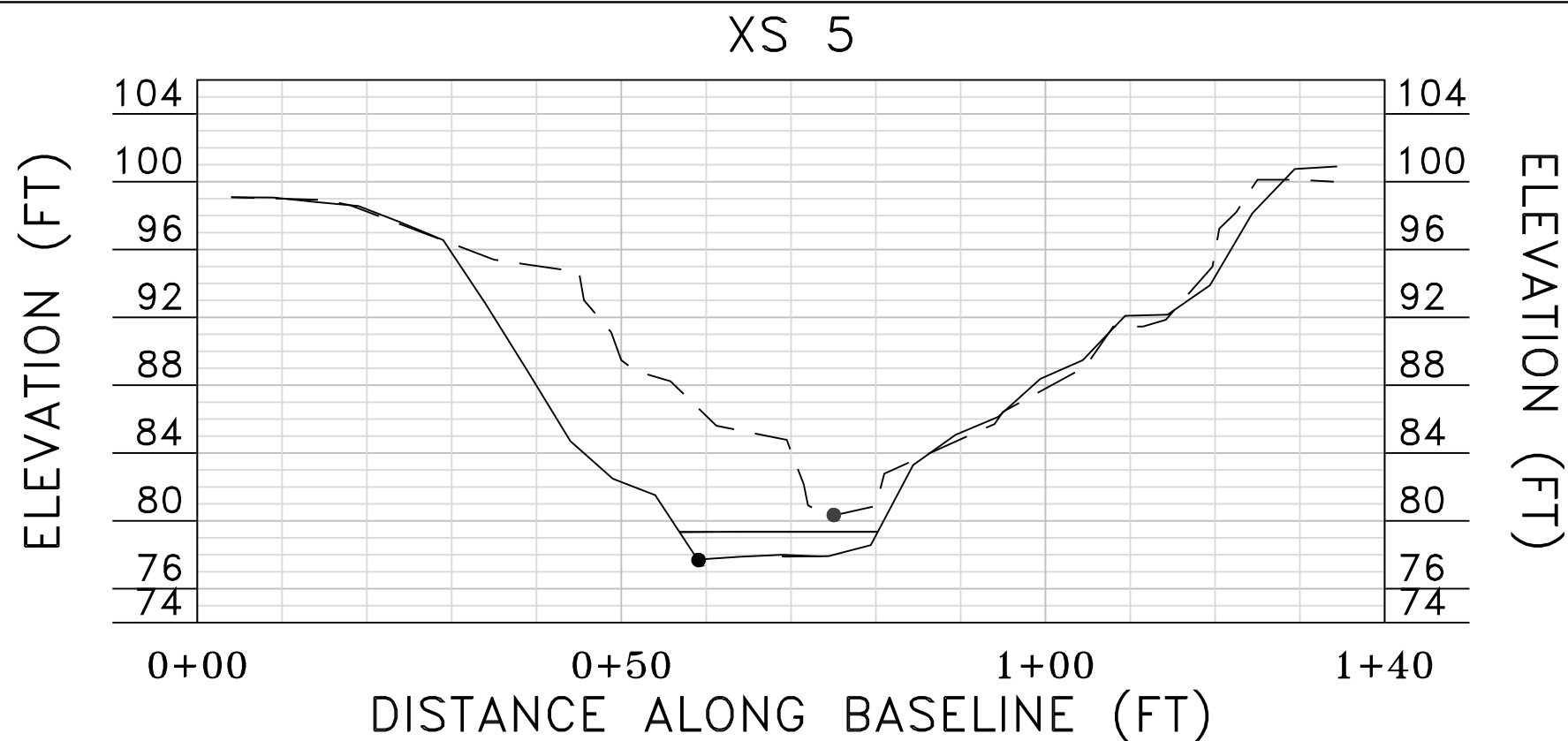
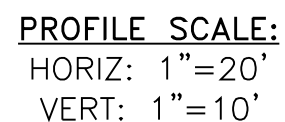
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Boundary and Topo Source:
WSSI and Orange Digital Data

Design	Draft	Approved
NAS	NAS	NAS

Sheet #
4 of 11

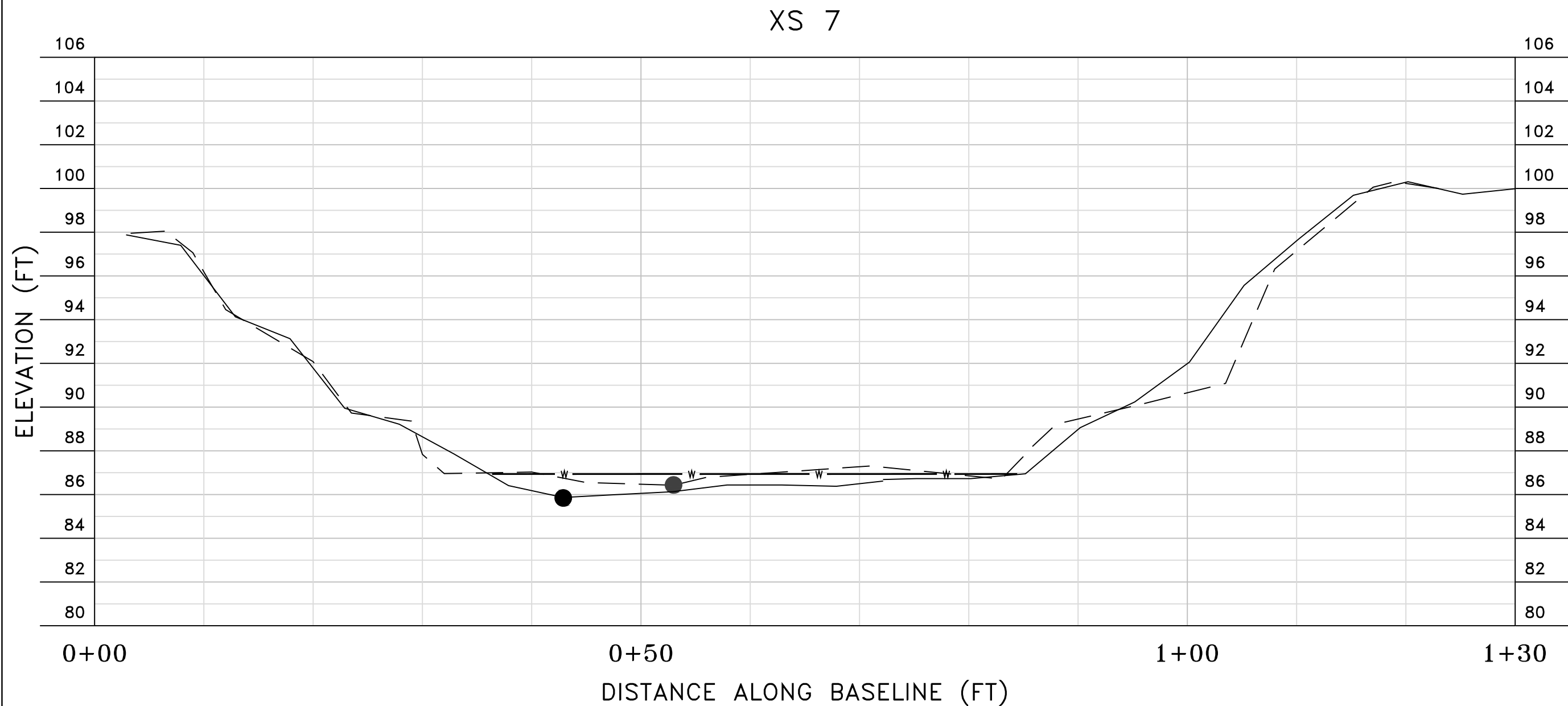
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[illegible]Boundary and Topo Source:
WSSI and Orange Digital Data

Design	Draft	Approved
NAS	NAS	NAS

Sheet #
5 of 11

Computer File Name:



XS 7

PROFILE SCALE:

HORIZ: 1'' = 10'

VERT: $1'' = 5'$

(ELEV. RELATIVE TO ASSUMED XS END PIN AT 100.)

[illegible]

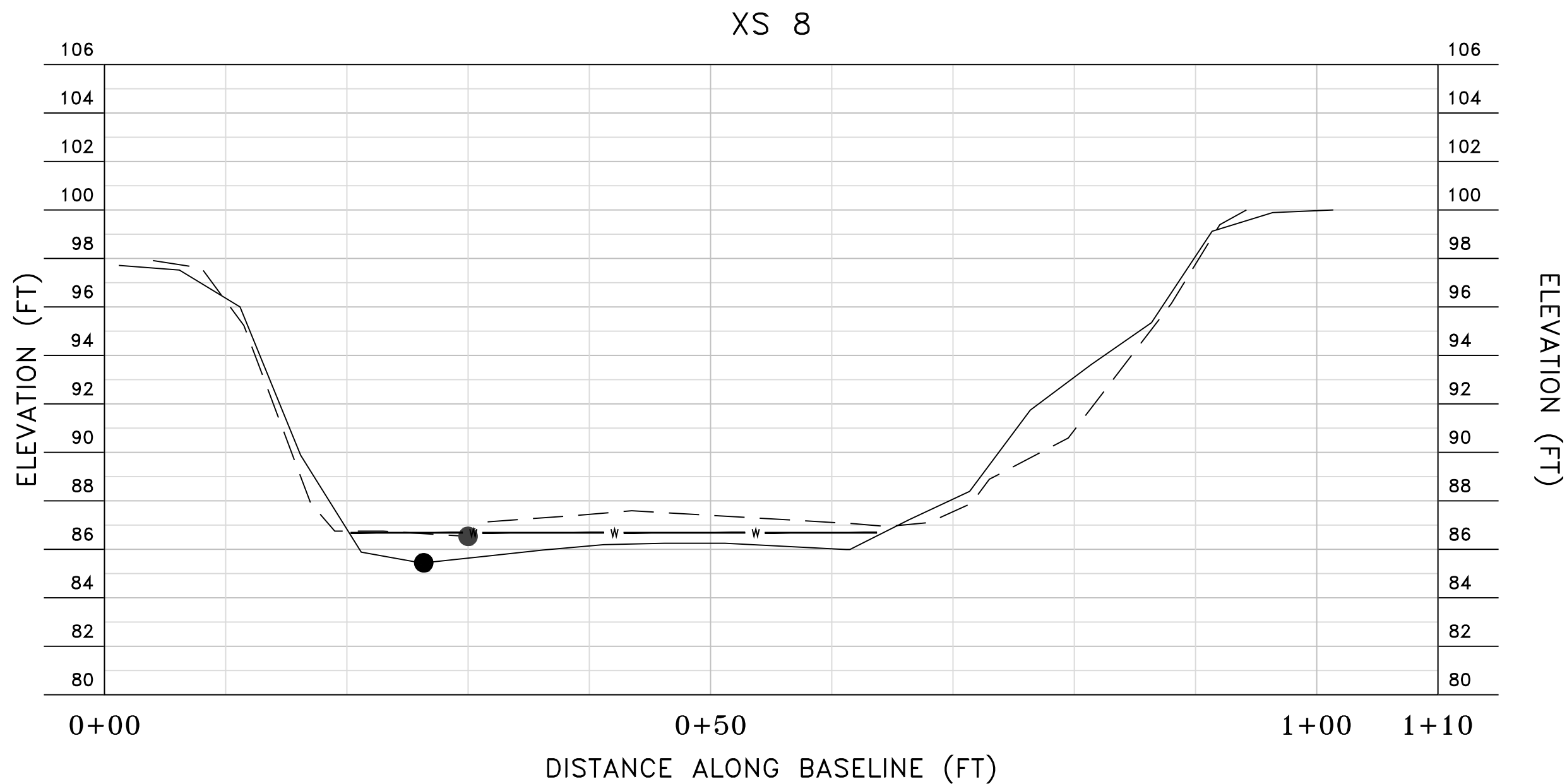
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VSSI and Orange Digital Data

Design	Draft	Approved
NAS	NAS	NAS

Sheet #

of 11

Computer File Name: (12/2000)22200022506.01\CAD3.04-ENGR



PROFILE SCALE:

VERT: $1'' = 5'$

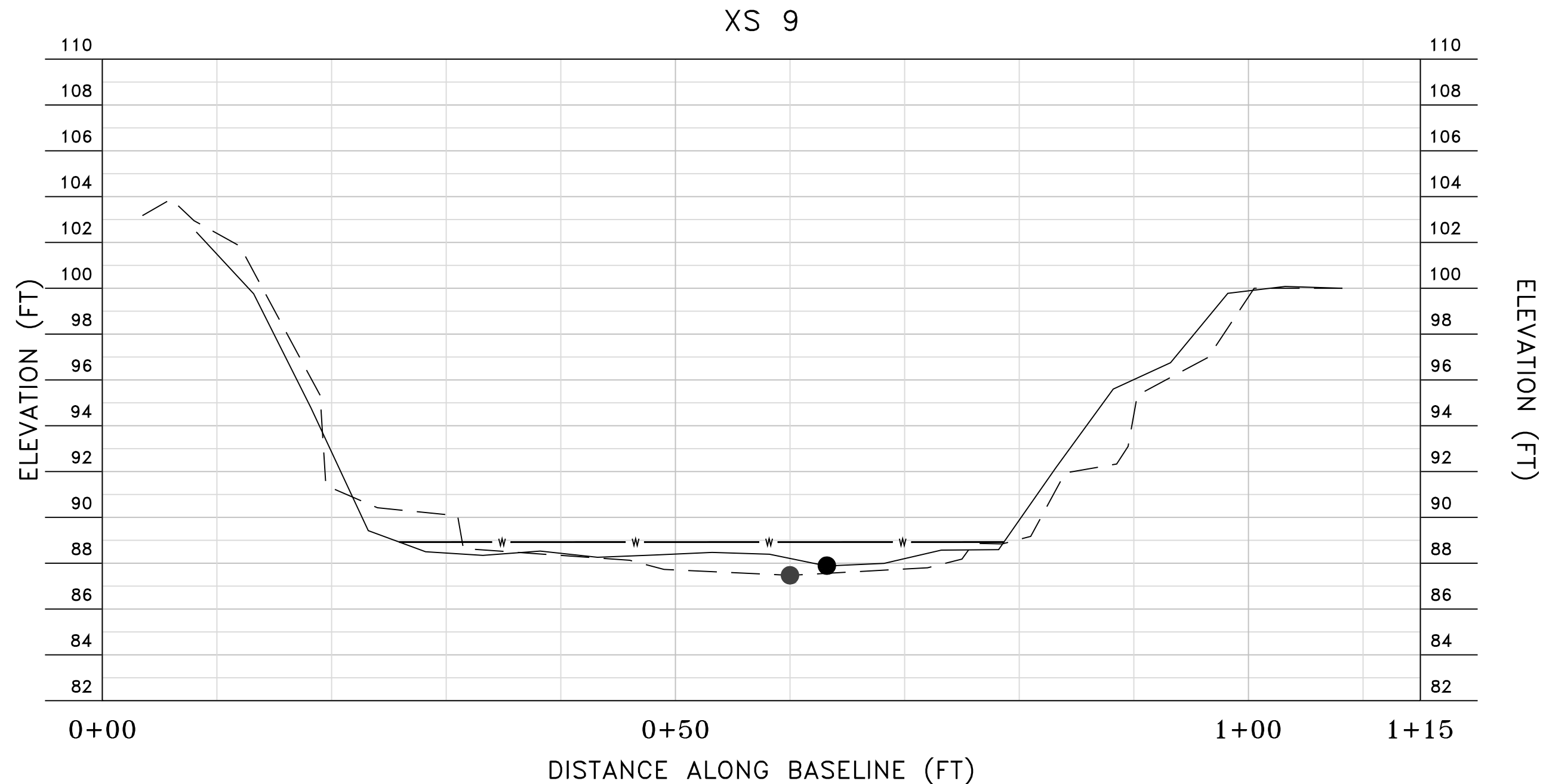
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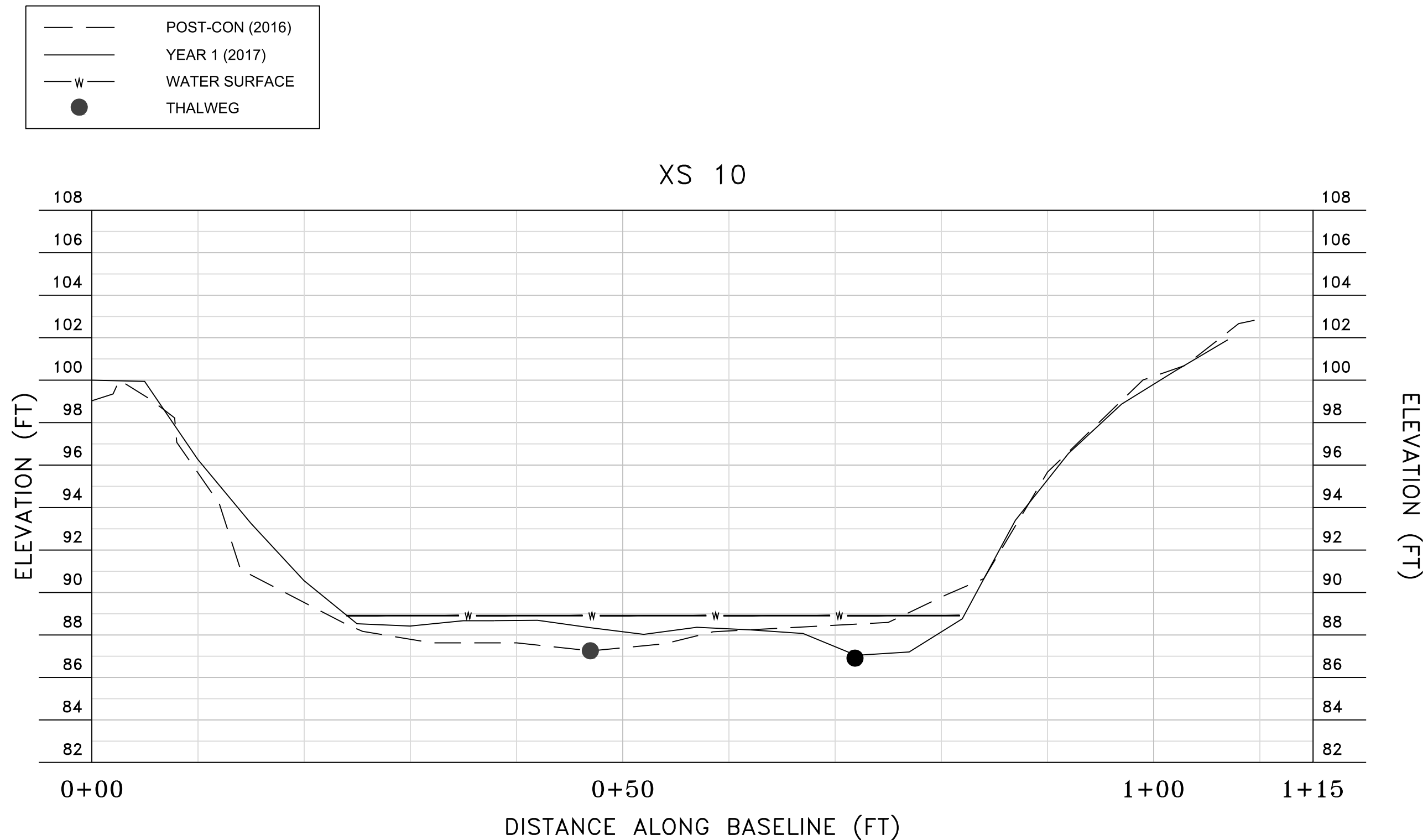
Design	Draft	Approved
NAS	NAS	NAS

Sheet #

7 of 11



(ELEV. RELATIVE TO ASSUMED XS END PIN AT 100.)



XS 10

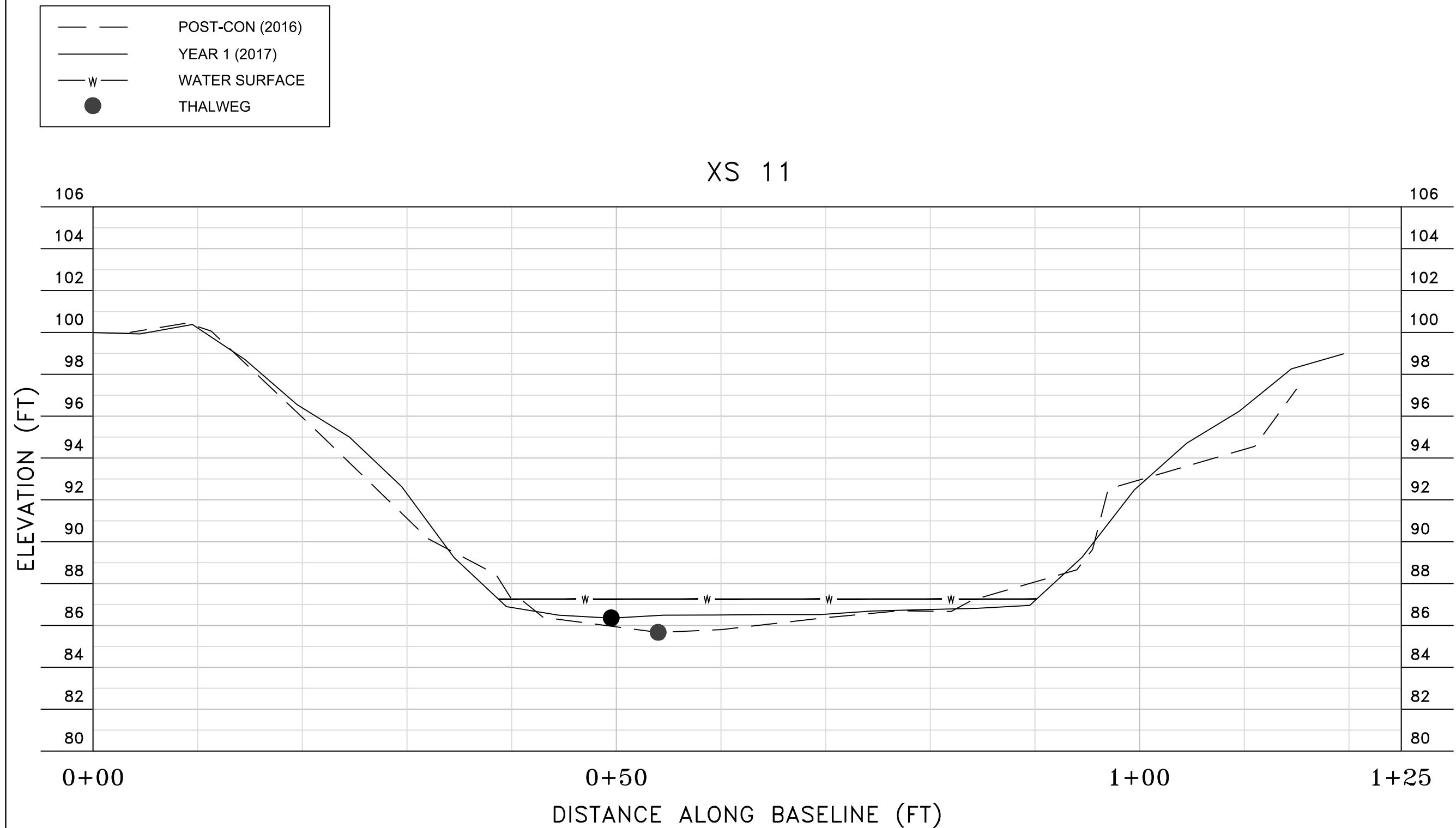
ELEVATION (FT)

PROFILE SCALE:

HORIZ: 1"=10'

VERT: $1'' = 5'$

(ELEV. RELATIVE TO ASSUMED XS END PIN AT 100.)



PROFILE SCALE:
HORIZ: 1"=10'
VERT: 1"=5'
(ELEV. RELATIVE TO ASSUMED XS END PIN AT 100.)

[illegible]Boundary and Topo Source:
VSSI and Orange Digital Data

Design	Draft	Approved
NAS	NAS	NAS

Sheet #
0 of 11

Computer File Name:
122000-22000-22500-01C-ADDI04-ENG

