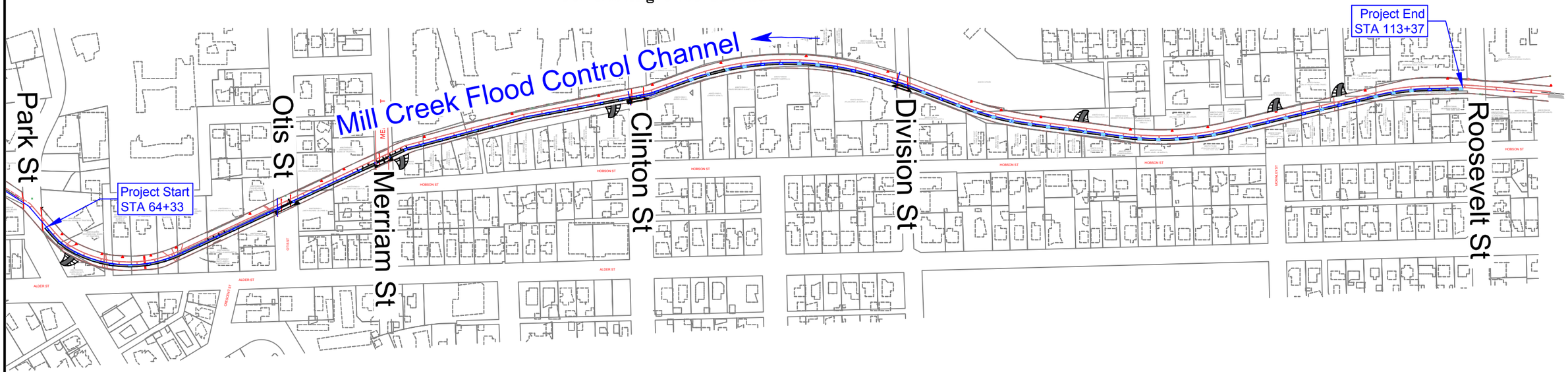
Construction Documents

Mill Creek Fish Passage

Park St to Roosevelt St

PROJECT NUMBER 15-1324

DRAWING INDEX:



Project Work Area:
STA 64+33 to 113+37

OVERALL MAP

1" = 166'

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION

BAR IS ONE INCH ON ORIGINAL DRAWING.

SCALE VERIFICATION
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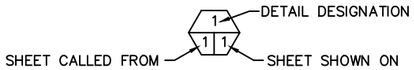
Cover Sheet

SHEET 1 OF 20

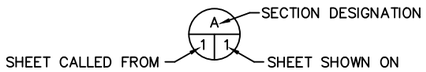
ABBREVIATIONS

"	–	INCHES
'	–	FEET
APPROX.	–	APPROXIMATELY
B&B	–	BALLED AND BURLAPPED
BM	–	BENCH MARK
℄	–	CENTERLINE
CAL.	–	CALIPER
CFS	–	CUBIC FEET PER SECOND
CLR.	–	CLEARANCE
CMP	–	CORRUGATED METAL PIPE
CONC.	–	CONCRETE
DIA.	–	DIAMETER
ELEV.	–	ELEVATION
EQ.	–	EQUAL
FTG.	–	FOOTING
HDPE	–	HIGH DENSITY POLYETHYLENE
HT.	–	HEIGHT
GAL.	–	GALLON
I.D.	–	INSIDE DIAMETER
I.E.	–	INVERT ELEVATION
LBS.	–	POUNDS
LWD	–	LARGE WOODY DEBRIS
MAX.	–	MAXIMUM
MFG.	–	MANUFACTURER'S
MHW	–	MEAN HIGH WATER
MHHW	–	MEAN HIGHER HIGH WATER
MIN.	–	MINIMUM
MISC.	–	MISCELLANEOUS
MISC.	–	MISCELLANEOUS
MPH	–	MILES PER HOUR
O.C.	–	ON CENTER
O.D.	–	OUTSIDE DIAMETER
OHW	–	ORDINARY HIGH WATER
PK	–	PARKER–KALON
R.O.W.	–	RIGHT OF WAY
REQ'D	–	REQUIRED
SEC.	–	SECTION
S.F.	–	SQUARE FEET
SHT.	–	SHEET
SPEC'S.	–	PROJECT SPECIFICATIONS
STA.	–	STATION
SS	–	STAINLESS STEEL
TEMP.	–	TEMPORARY
TYP.	–	TYPICAL
W.S.	–	WATER SURFACE
WSDOT	–	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WSEL	–	WATER SURFACE ELEVATION

SHEET SYMBOLS



DETAIL CALLOUT



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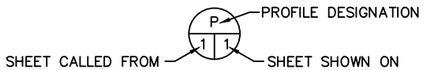
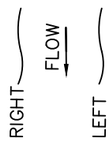


PROFILE CALLOUT

References to Right and Left as viewed downstream



Survey Notes:

BASIS OF BEARINGS AND ELEVATIONS:
A BEARING OF N 01°12'06" W BETWEEN FOUND MONUMENTS ON ROOSEVELT STREET AT THE INTERSECTIONS WITH HOBSON STREET & FRANCIS AVENUE WAS ESTABLISHED BASED ON THE CITY OF WALLA WALLA G.I.S. AS ESTABLISHED BY SURVEY RECORDED IN BOOK 6 OF SURVEYS AT PAGE 263 UNDER AUDITORS FILE NUMBER 9604535, WHICH IS IN TURN BASED ON THE WASHINGTON STATE SOUTH ZONE GRID COORDINATE SYSTEM, NAD 83-91, AND UPON THE NAVD 1988 VERTICAL DATUM.

***BUILDING & PARCEL BOUNDARY NOTE**
BUILDING & PARCEL BOUNDARIES SHOWN ON THIS MAP ARE APPROXIMATE PER CITY OF WALLA WALLA GIS LAYERS AND SHOULD NOT BE USED USED AS NOR DOES IT CONSTITUTE A BOUNDARY SURVEY. DATA LAYERS WERE PROVIDED BY CITY STAFF ON MARCH 10, 2016 WITH THE FOLLOWING DISCLAIMER:

"THE CITY OF WALLA WALLA DOES NOT WARRANT, GUARANTEE OR ACCEPT ANY LIABILITY FOR THE ACCURACY, PRECISION OR COMPLETENESS OF ANY INFORMATION SHOWN HEREON OR ANY INFERENCES MADE THEREFROM. THIS REPRESENTATION OF THE CITY UTILITY DATA IS THE BEST AVAILABLE INFORMATION TO DATE. THE CITY RECOGNIZES THAT FURTHER FIELD VERIFICATION MAY REVEAL INFORMATION THAT IS CONTRARY TO THIS MAP."

LEGEND

	SURVEY POINT
MAPLE 36"	EXISTING TREES TO REMAIN
BM1	PROJECT BENCH MARK
B–1	BORING LOCATIONS
	PARCEL BOUNDARY
	BUILDING BOUNDARY
	CHANNEL BULKHEAD (SINGLE OR DOUBLE LINE)
	CHANNEL CENTERLINE
OHP	OVERHEAD POWER
OHP	OVERHEAD SERVICE LINE
145	INDEX CONTOUR LINE
	SURVEY MONUMENT AS NOTED
	PROJECT CONTROL POINT
	POWER POLE
	MANHOLE
	UTILITY CABINET
	LIGHT POST
	TREE
	WATER VALVE
	Existing Concrete
	Proposed Concrete
	ELEVATION MARKER
	TREE TO BE REMOVED
	TREE TO REMAIN
TEXT	*EXISTING CALLOUT*
TEXT	NEW CALLOUT
1	NOTE CALLOUT
2+00	STATION CALLOUT
1	PHOTO CALLOUT
	SANDBAGS

CONTROL POINT (CP) TABLE

CP#	NORTHING	EASTING	ELEV.	DESC.
49	276014.76	2195838.69	1034.94	SET NAIL
60	276037.73	2195495.73	1031.24	SET NAIL
61	275998.11	2195222.23	1026.74	SET NAIL
62	275928.34	2194926.25	1023.23	SET NAIL
63	275877.24	2194699.71	1020.58	SET NAIL
64	275864.79	2194581.44	1018.91	SET NAIL
65	275869.09	2194443.00	1017.23	SET NAIL
66	275909.90	2194145.83	1013.73	SET NAIL
67	275933.27	2194013.93	1012.13	SET NAIL
68	275961.29	2193914.95	1010.65	SET NAIL
69	276060.78	2193638.01	1007.06	SET NAIL
71	276112.59	2193366.92	1003.50	SET NAIL
72	276090.00	2193084.01	1000.14	SET NAIL
73	276017.27	2192856.41	997.48	SET NAIL
74	275980.59	2192678.20	994.99	SET NAIL
75	275921.03	2192390.60	990.93	SET NAIL
76	275844.76	2192099.43	987.90	SET NAIL
77	275737.12	2191833.19	984.31	SET NAIL
78	275698.14	2191758.18	982.66	SET NAIL
79	275589.71	2191520.80	979.84	SET NAIL
80	275477.76	2191275.61	977.30	SET NAIL
81	275451.36	2191191.70	976.58	SET NAIL
82	275446.52	2191097.91	975.57	SET NAIL
83	275456.12	2191029.42	974.84	SET NAIL
84	275489.52	2190944.08	973.88	SET NAIL
85	275522.24	2190896.84	973.09	SET NAIL
86	275717.51	2190670.54	970.16	SET NAIL
87	275793.38	2190494.97	967.95	SET NAIL
88	275704.60	2190282.35	966.10	SET NAIL
89	275708.22	2190241.99	965.77	SET NAIL
90	275767.76	2190139.93	963.43	SET NAIL
91	275839.00	2189945.41	973.66	SET NAIL
113	275732.89	2190568.71	969.97	SET NAIL
114	275754.70	2190488.99	968.58	SET NAIL
115	275742.25	2190439.06	967.86	SET NAIL
116	275665.40	2190243.60	966.42	SET NAIL
117	275747.10	2190108.13	962.92	SET NAIL

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS

REV	DATE	BY	APP'D	DESCRIPTION

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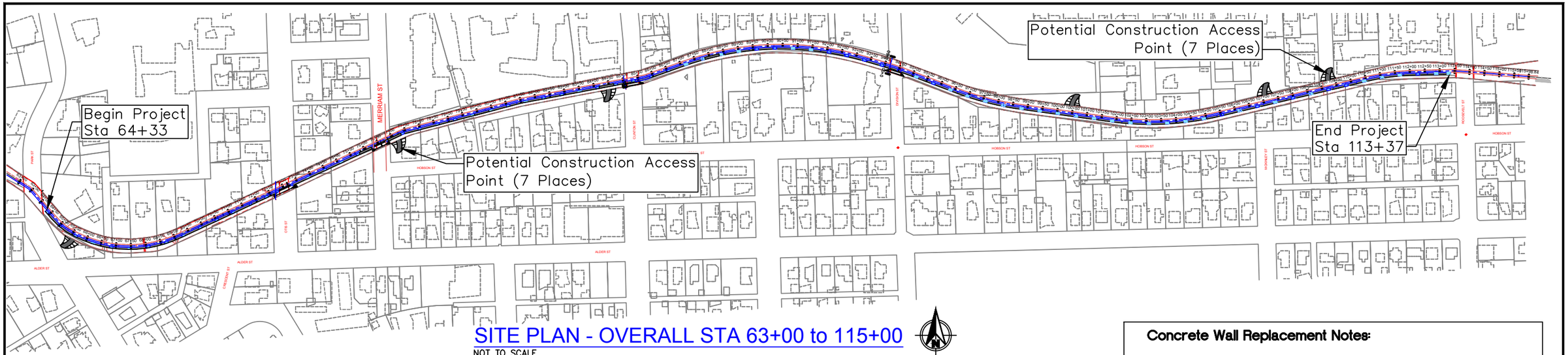
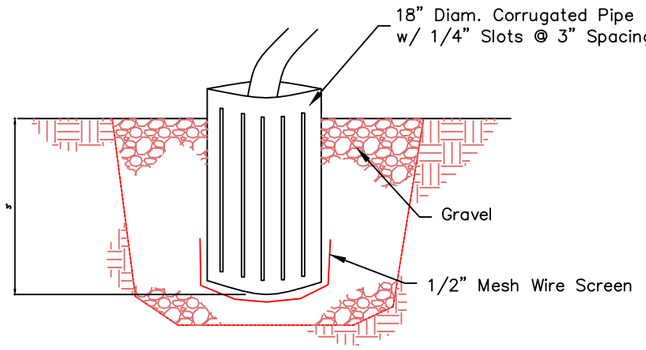
Legend and Notes

SHEET 2 OF 20



SITE PLAN - OVERALL STA 63+00 to 115+00

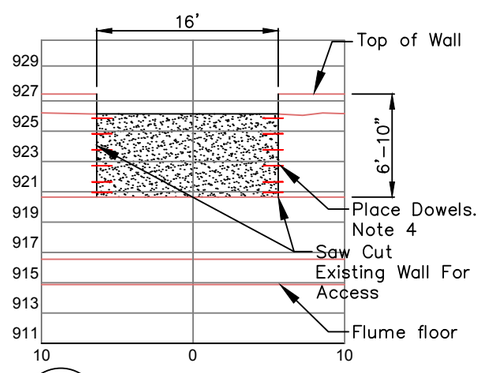
NOT TO SCALE



1 / 3 3 **SUMP PUMP DETAIL**

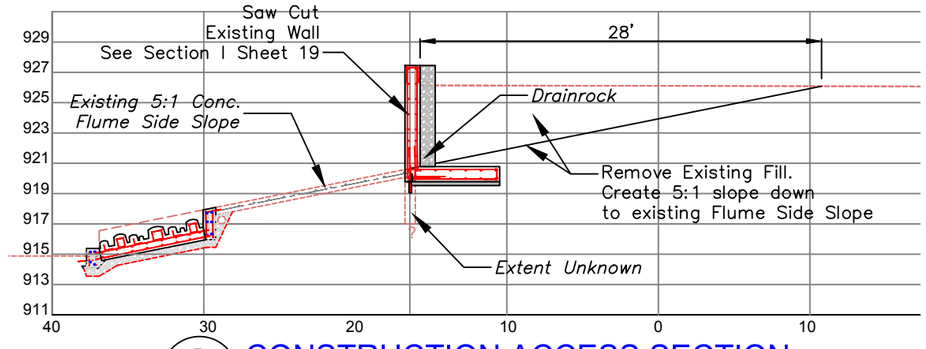
NOT TO SCALE

Locate at Resting Pools



A / 3 3 **ACCESS SECTION**

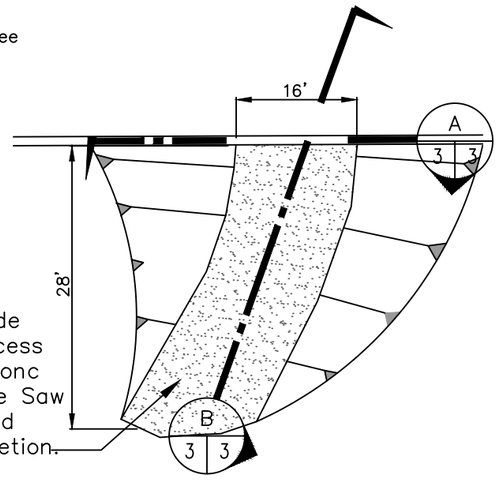
SCALE: 1"=5'



B / 3 3 **CONSTRUCTION ACCESS SECTION**

SCALE: 1"=5'

Proposed 16' Wide Construction Access Road. Existing Conc Flume Wall to be Saw Cut and Replaced after Job Completion.



Typical – Actual layout and location will vary.

CONSTRUCTION ACCESS PLAN

SCALE: 1"=20'

0 10

SCALE

Concrete Wall Replacement Notes:

1. Sawcut Existing Concrete wall. Remove fill from behind for access. When replacing if concrete is competent as determined by engineer, rotary drill and epoxy 4" min embedment #5 rebar to tie into new wall at new rebar locations.

2. No drilling shall be allowed until approved by the engineer.

3. All saw cut concrete edges to new concrete placement contacts shall be coated with concrete bonding agent prior to placement of new concrete.

4. All dowels shall be epoxy anchored rebar with a minimum embedment of 4" into existing concrete wall.

5. All rebar shall be #5 bars.

6. Epoxy Shall be Hilti HIT HY 200 or Simpson SET XP or Equal.

7. Final design of replacement retaining wall will be determined upon inspection of existing wall steel and concrete condition but should follow this detail unless field inspection determines different arrangement.

8. Provide 2' thick layer of free draining ¾" drain rock on backfilled side full height of retaining wall.

9. All vertical edges shall receive ¾" chamfer strip and top edges may be hand troweled ¾" radius.

10. Provide PVC water stop at all exist to new wall contacts

TRI-STATE STEELHEADERS

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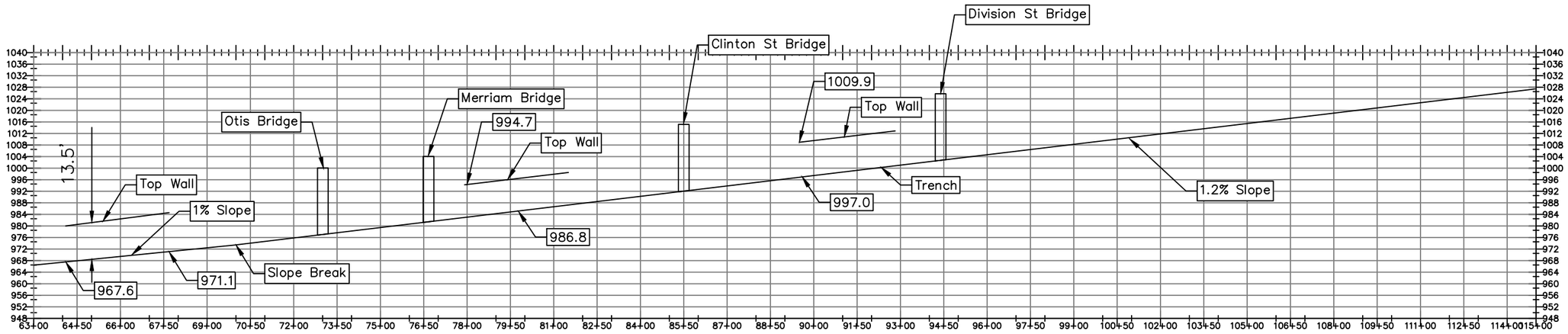
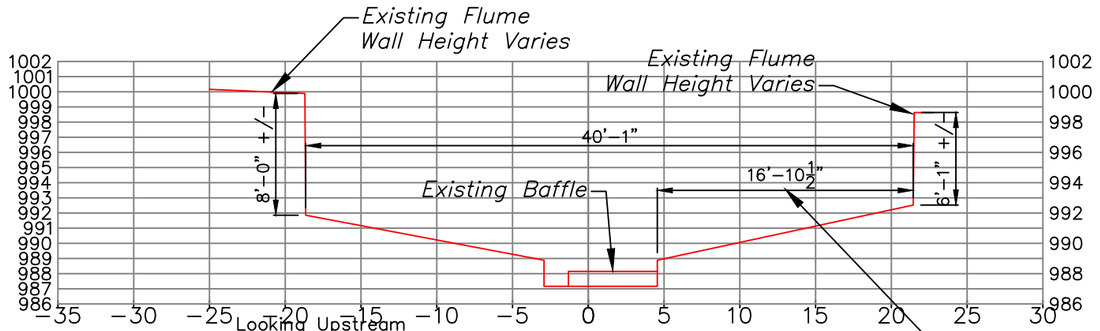
Site Plan - Construction Access

SHEET 3 OF 20



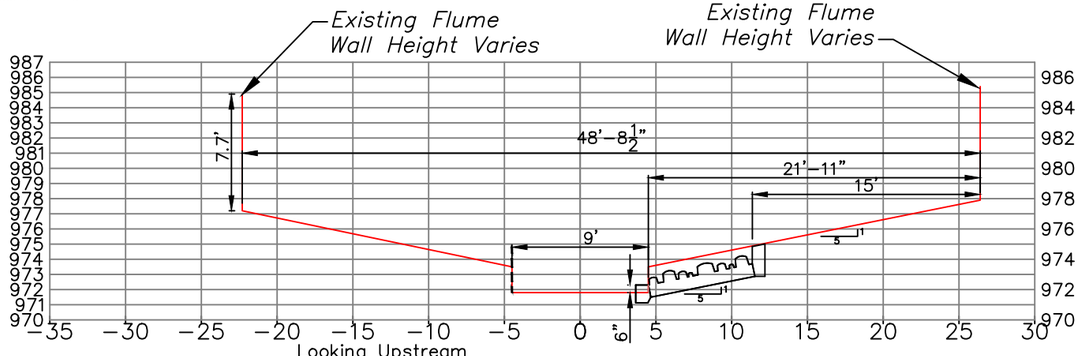
Profile - Trench/Partial Top Wall

Scale Horizontal 1" = 200', Vertical 1" = 20'



Typical Existing Channel Section Sta 81+49

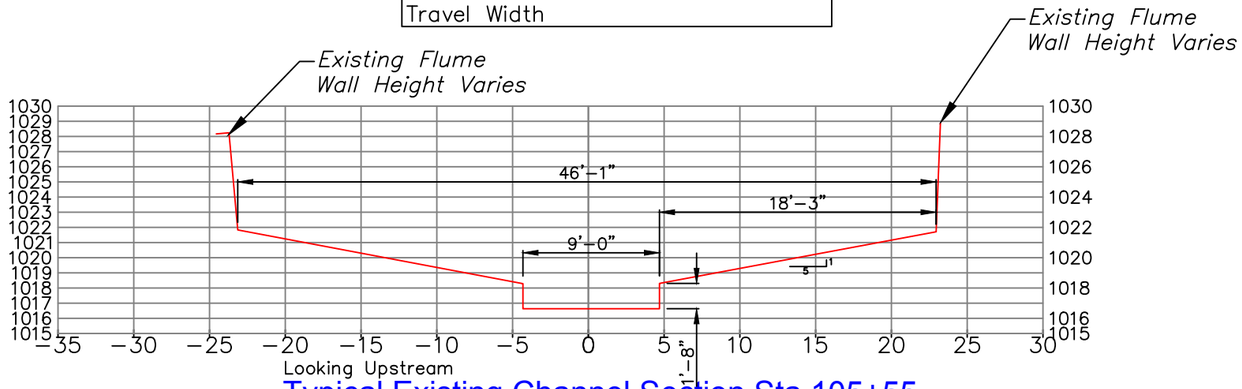
Scale: 1" = 5'



Typical Channel Section Sta 68+29

Scale: 1" = 5'

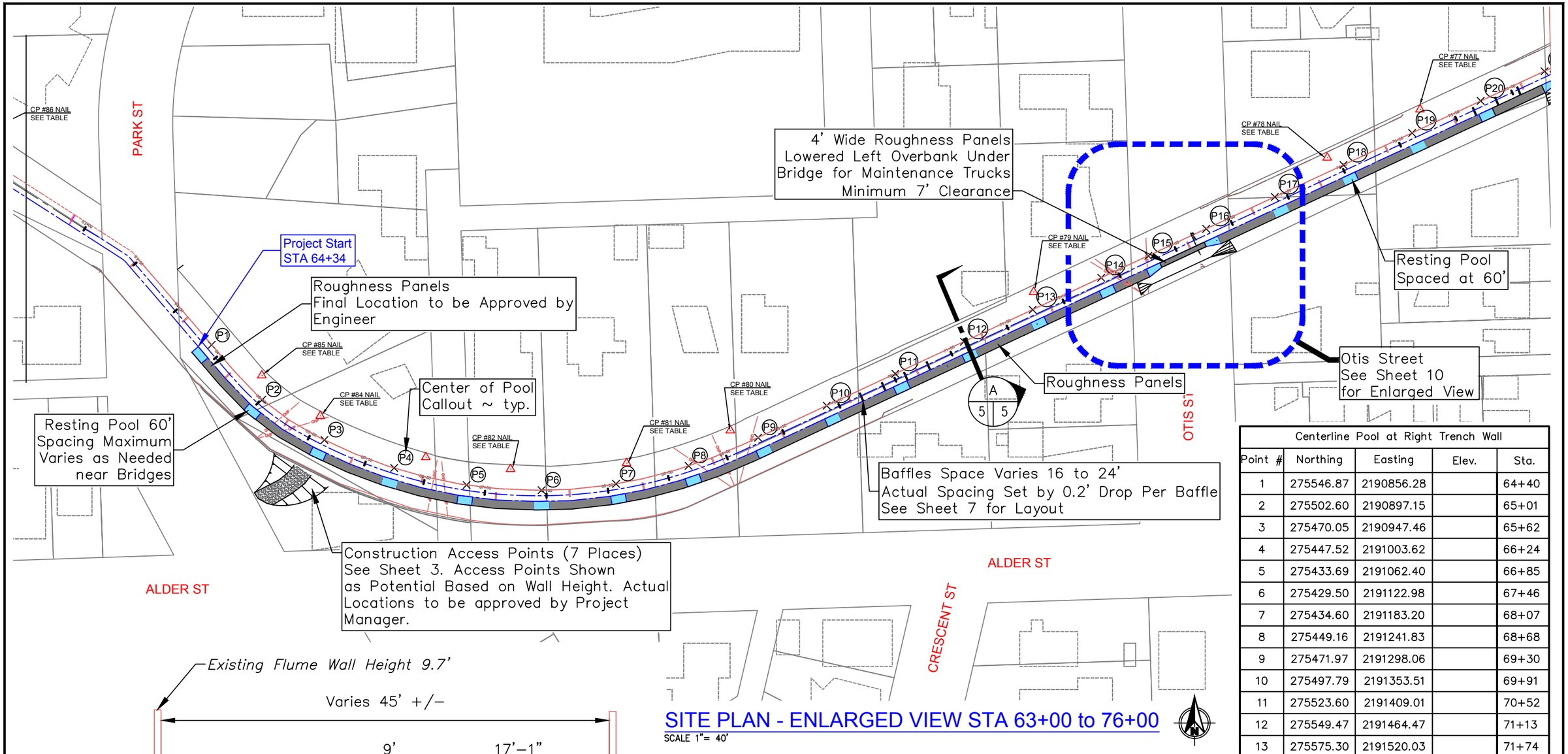
Note: Minimum of 15'–10" Needed to fit Panels and Provide a 9' Travel Width



Typical Existing Channel Section Sta 105+55

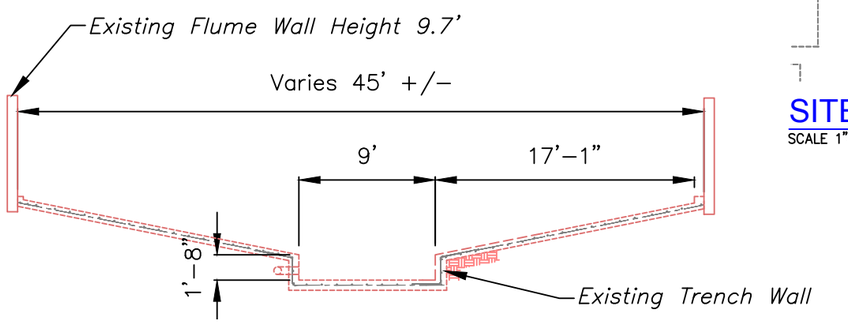
Scale: 1" = 5'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Park Street to Roosevelt Street	12/1/2017	12/1/2017	REVISIONS REV | DATE | BY | APP'D | DESCRIPTION SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DIMENSIONS DRAFTING & DESIGN DATE: 12/01/2017	**Overall Profile and Typ Sections**	SHEET 4 OF 20		



SITE PLAN - ENLARGED VIEW STA 63+00 to 76+00

SCALE 1"= 40'



Looking Upstream

A
5 5

EXISTING CONC. FLUME TYPICAL SECTION - STA 71+10

SCALE: 1"=5'

Centerline Pool at Right Trench Wall				
Point #	Northing	Easting	Elev.	Sta.
1	275546.87	2190856.28		64+40
2	275502.60	2190897.15		65+01
3	275470.05	2190947.46		65+62
4	275447.52	2191003.62		66+24
5	275433.69	2191062.40		66+85
6	275429.50	2191122.98		67+46
7	275434.60	2191183.20		68+07
8	275449.16	2191241.83		68+68
9	275471.97	2191298.06		69+30
10	275497.79	2191353.51		69+91
11	275523.60	2191409.01		70+52
12	275549.47	2191464.47		71+13
13	275575.30	2191520.03		71+74
14	275601.12	2191575.43		72+36
15	275618.83	2191613.51		72+78
16	275640.65	2191660.29		73+29
17	275666.41	2191715.79		73+90
18	275692.21	2191771.27		74+52
19	275718.09	2191826.75		75+13
20	275744.03	2191882.18		75+74

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

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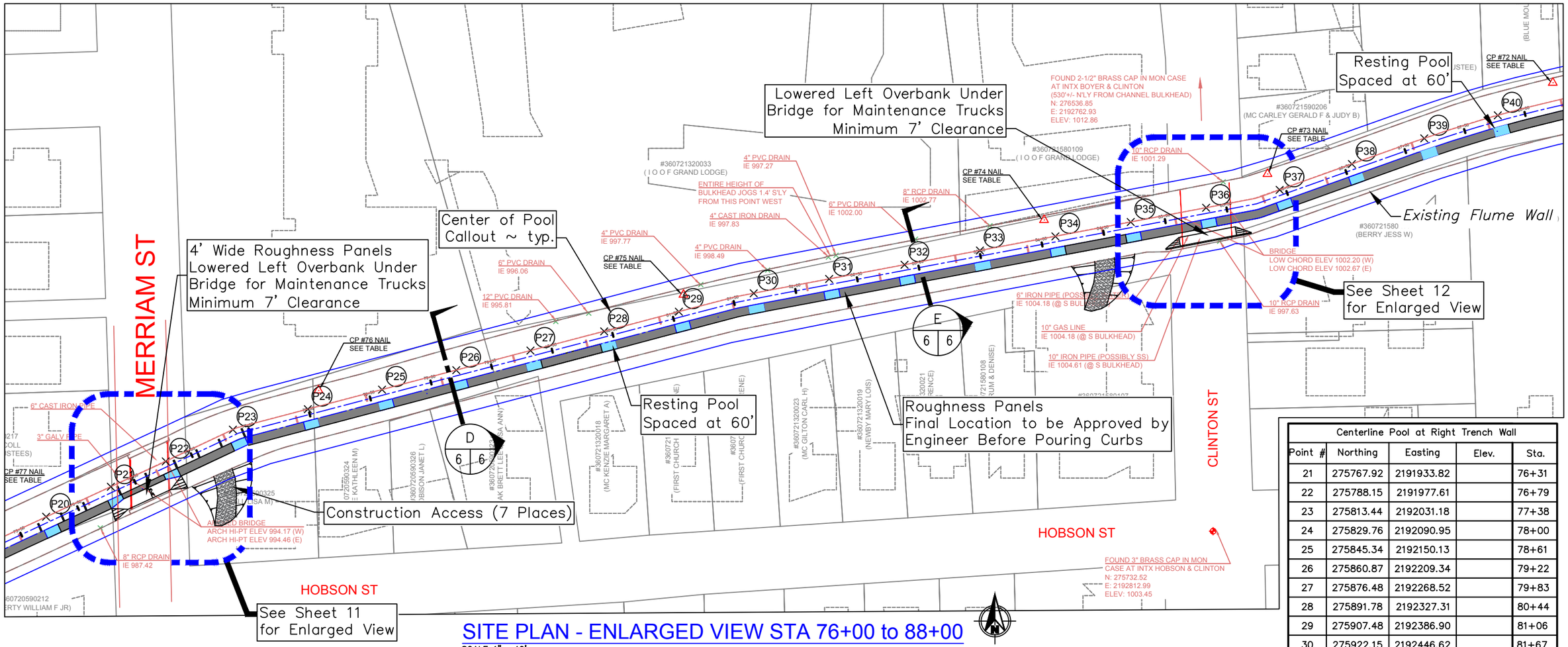
Site Plan - Enlarged View 63+00 to 76+00

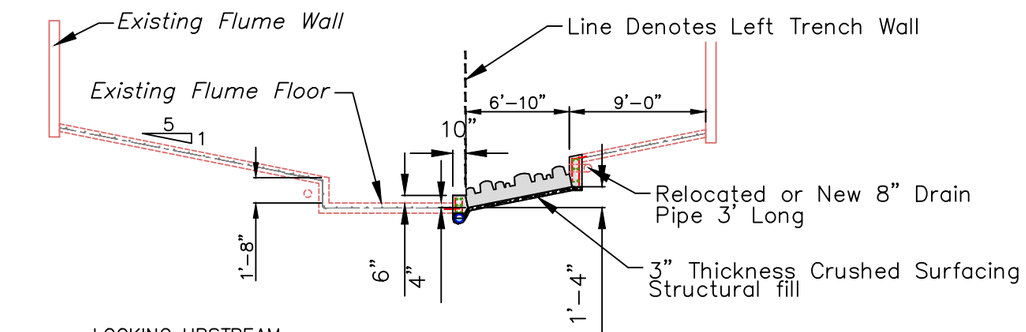
SHEET 5 OF 20



SITE PLAN - ENLARGED VIEW STA 76+00 to 88+00

SCALE 1"= 40'

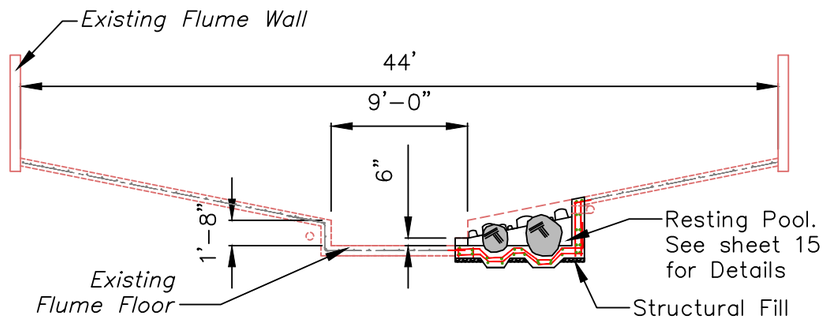
Centerline Pool at Right Trench Wall				
Point #	Northing	Easting	Elev.	Sta.
21	275767.92	2191933.82		76+31
22	275788.15	2191977.61		76+79
23	275813.44	2192031.18		77+38
24	275829.76	2192090.95		78+00
25	275845.34	2192150.13		78+61
26	275860.87	2192209.34		79+22
27	275876.48	2192268.52		79+83
28	275891.78	2192327.31		80+44
29	275907.48	2192386.90		81+06
30	275922.15	2192446.62		81+67
31	275933.54	2192506.77		82+28
32	275944.88	2192566.90		82+89
33	275956.24	2192627.04		83+50
34	275967.50	2192687.20		84+12
35	275978.93	2192747.32		84+73
36	275990.31	2192807.46		85+34
37	276004.57	2192866.12		85+95
38	276025.20	2192923.74		86+56
39	276045.63	2192981.45		87+18
40	276063.97	2193040.12		87+79



D 6 6 LOOKING UPSTREAM

CONC. FLUME TYPICAL SECTION - STA 79+15

SCALE: 1"=5'



E 6 6 LOOKING UPSTREAM

CONC. FLUME TYPICAL SECTION - STA 83+00

SCALE: 1"=5'

TRI-STATE STEELHEADERS

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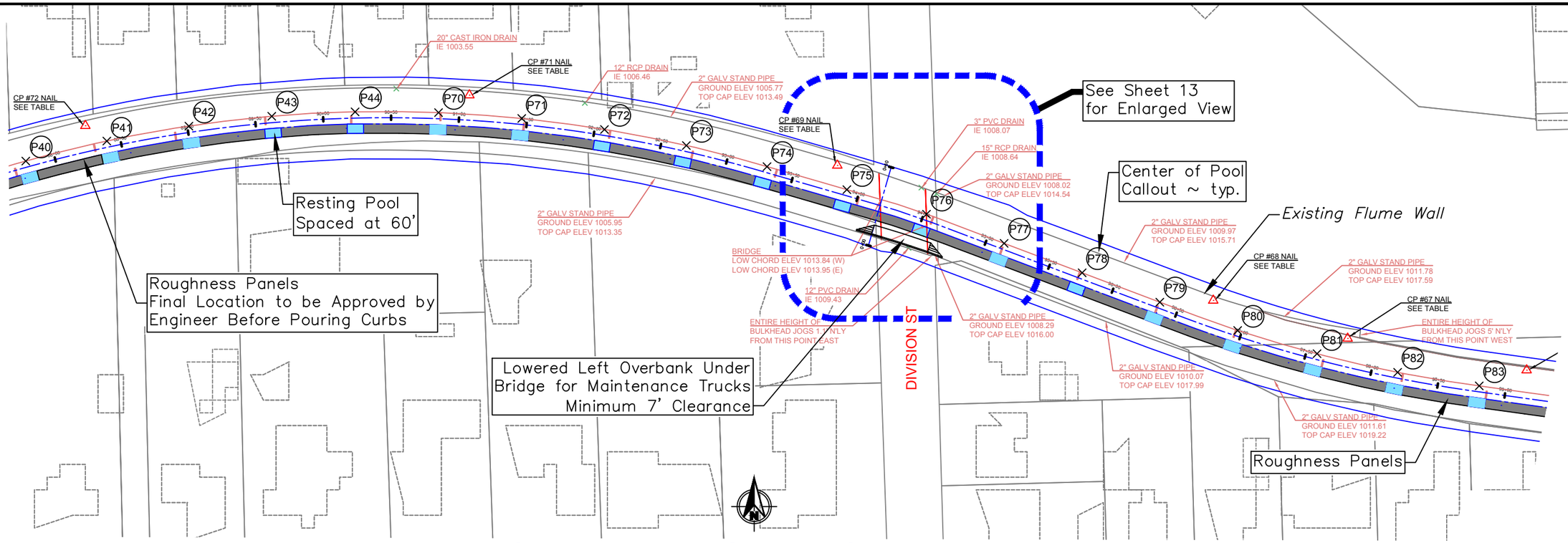
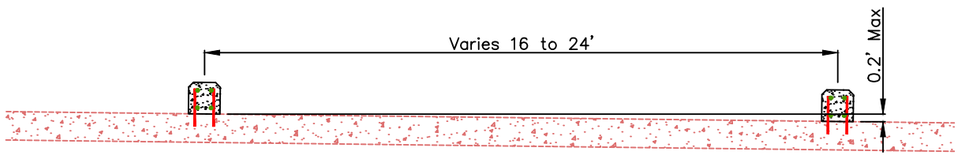
Site Plan - Enlarged View STA 76+00 to 88+00

SHEET 6 OF 20



SITE PLAN - ENLARGED VIEW STA 88+00 to 99+00

SCALE 1"= 40'



Baffle Spacing

SCALE 1"= 20'

Centerline Pool at Right Trench Wall				
Point #	Northing	Easting	Elev.	Sta.
41	276078.72	2193099.82		88+40
42	276089.70	2193160.29		89+01
43	276096.98	2193221.34		89+62
44	276100.25	2193282.72		90+24
70	276099.70	2193344.20		90+85
71	276095.34	2193405.51		91+46
72	276087.24	2193466.44		92+07
73	276075.45	2193526.76		92+68
74	276059.87	2193586.19		93+30
75	276042.92	2193644.99		93+91
76	276024.82	2193703.68		94+52
77	276003.34	2193760.88		95+13
78	275981.65	2193818.34		95+74
79	275959.99	2193875.57		96+36
80	275939.14	2193932.91		96+97
81	275922.04	2193991.40		97+58
82	275908.30	2194050.77		98+19
83	275898.33	2194110.89		98+80
84	275889.95	2194171.50		99+42
85	275881.60	2194232.14		100+02

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

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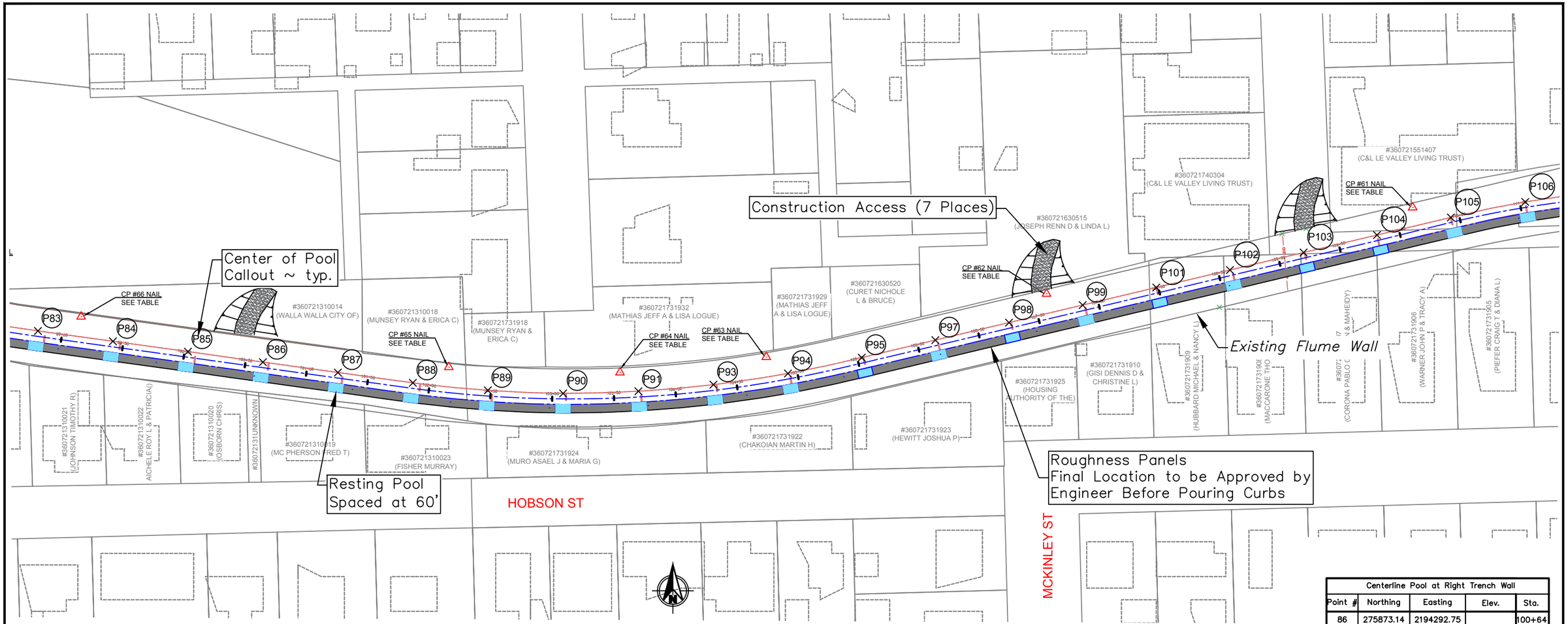
DATE:
12/01/2017

Site Plan - Enlarged View STA 88+00 to 99+00

SHEET 7 OF 20



SITE PLAN - ENLARGED VIEW STA 99+00 to 111+00

SCALE 1"= 40'

Centerline Pool at Right Trench Wall				
Point #	Northing	Easting	Elev.	Sta.
86	275873.14	2194292.75		100+64
87	275864.71	2194353.36		101+25
88	275856.40	2194413.98		101+86
89	275850.34	2194474.58		102+48
90	275847.85	2194535.43		103+09
91	275849.61	2194596.31		103+70
93	275854.91	2194656.97		104+31
94	275863.96	2194717.20		104+92
95	275876.75	2194776.83		105+54
97	275890.93	2194836.36		106+15
98	275905.05	2194895.90		106+76
99	275919.20	2194955.44		107+37
101	275933.41	2195014.97		107+98
102	275947.54	2195074.52		108+60
103	275961.68	2195134.06		109+21
104	275975.80	2195193.40		109+82
105	275990.00	2195253.11		110+43
106	276002.53	2195313.26		111+24

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS

REV	DATE	BY	APP'D	DESCRIPTION

BAR IS ONE INCH ON ORIGINAL DRAWING.

SCALE VERIFICATION

0 1"

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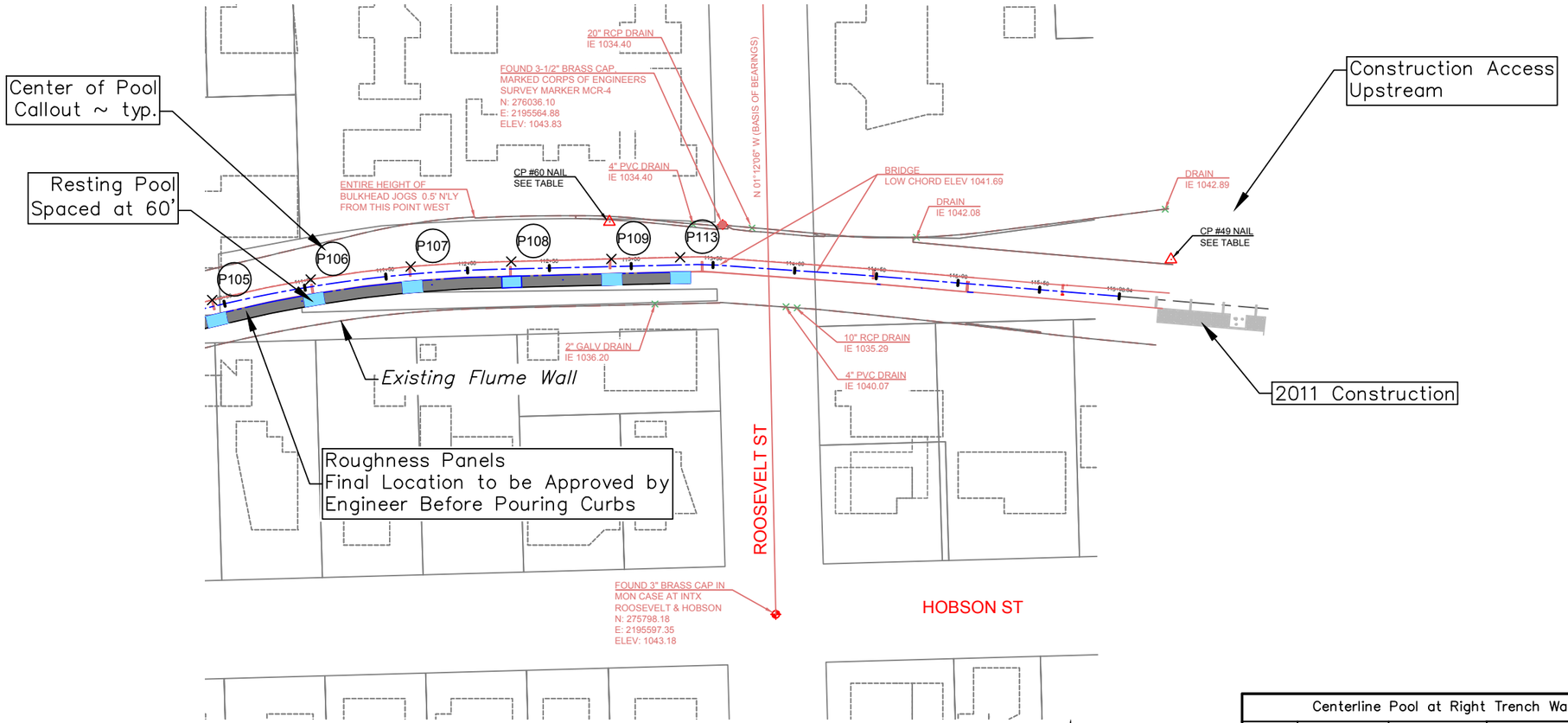
CHINOOK ENGINEERING
DRAWN BY:
DIMENSIONS DRAFTING & DESIGN
DATE:
12/01/2017

Site Plan - Enlarged View STA 99+00 to 111+00

SHEET 8 OF 20



SITE PLAN - ENLARGED VIEW STA 111+00 to 116+00

SCALE 1"= 40'

Centerline Pool at Right Trench Wall				
Point #	Northing	Easting	Elev.	Sta.
107	276010.48	2195374.34		111+66
108	276013.48	2195435.74		112+27
109	276015.08	2195496.92		112+88
113	276016.08	2195538.91		113+30

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS

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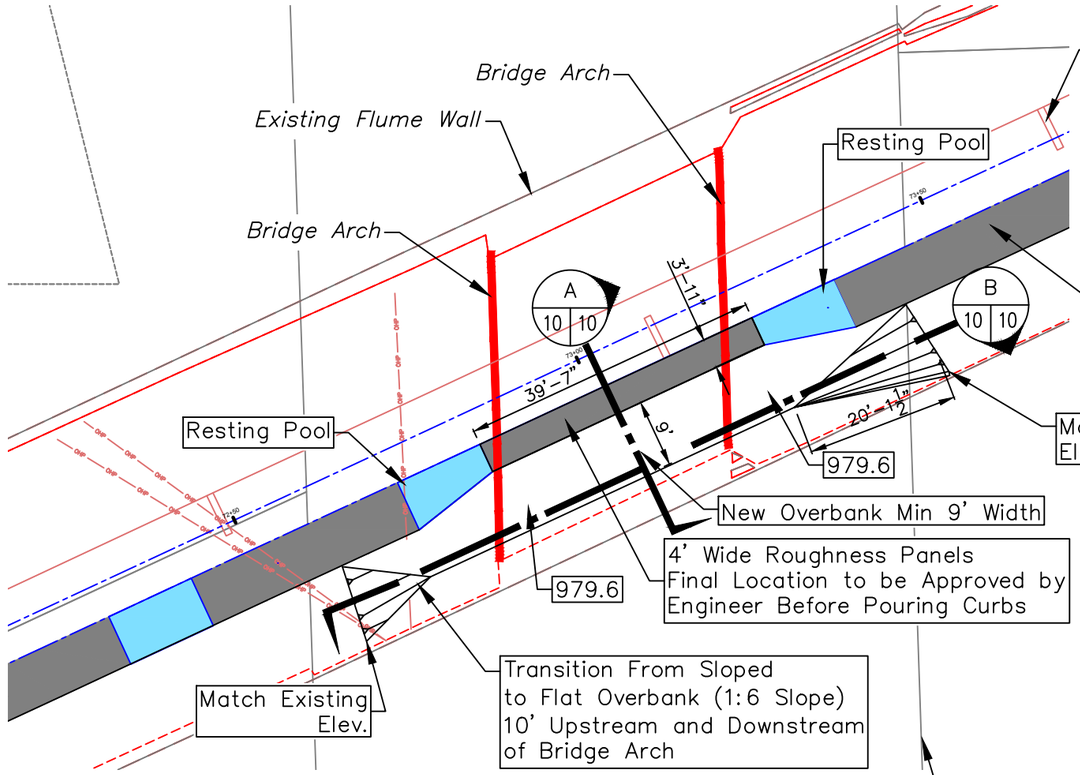
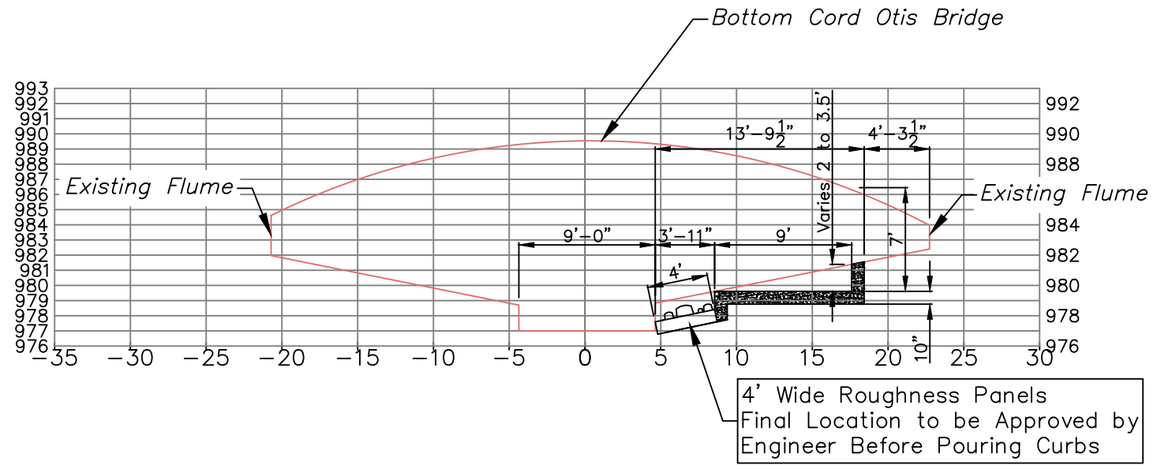
Site Plan - Enlarged View STA 111+00 to 116+00

SHEET 9 OF 20

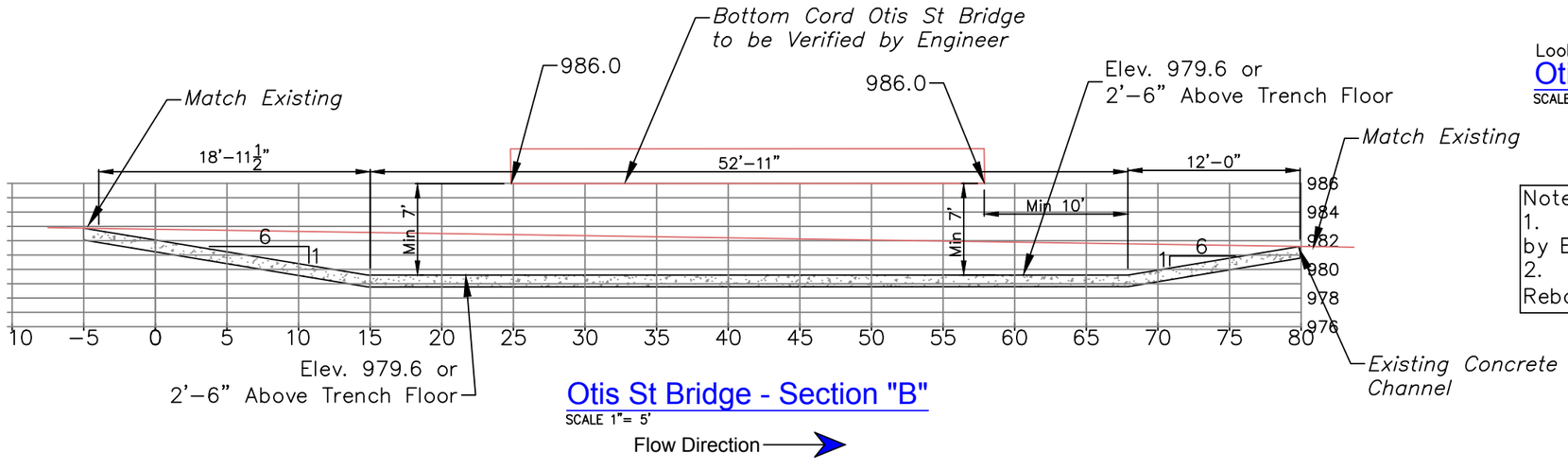


Otis St Bridge
SCALE 1"=10'

Transition from 4' Wide Panel to 7' Wide with Resting Pool. Slope Overbank at 7' Wide Panel to Match New Surface Under Bridge



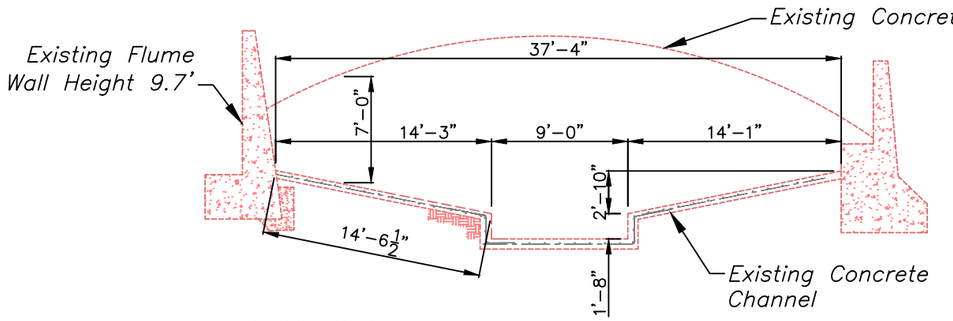
Looking Upstream
Otis St Bridge - Section "A"
SCALE 1"= 5'



Otis St Bridge - Section "B"
SCALE 1"= 5'

Note:
1. All Final Dimensions and Locations to be Staked in Field by Engineer.
2. See Sheet 20 for Rebar Pacement/Design

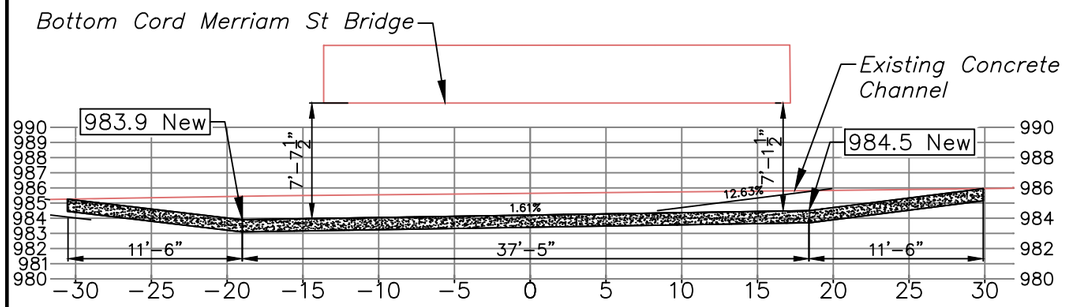
TRI-STATE STEELHEADERS	Mill Creek Fish Passage Park Street to Roosevelt Street	12/1/2017	12/1/2017	REVISIONS: REV / DATE / BY / APP'D / DESCRIPTION BAR IS ONE INCH ON ORIGINAL DRAWING. SCALE VERIFICATION 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	DESIGNED BY: WATERFALL ENGINEERING / CHINOOK ENGINEERING DRAWN BY: DIMENSIONS DRAFTING & DESIGN DATE: 12/01/2017	**Plan and Sections Otis St Bridge**	SHEET 10 OF 20



Looking Upstream

EXISTING MERRIAM ST BRIDGE SECTION

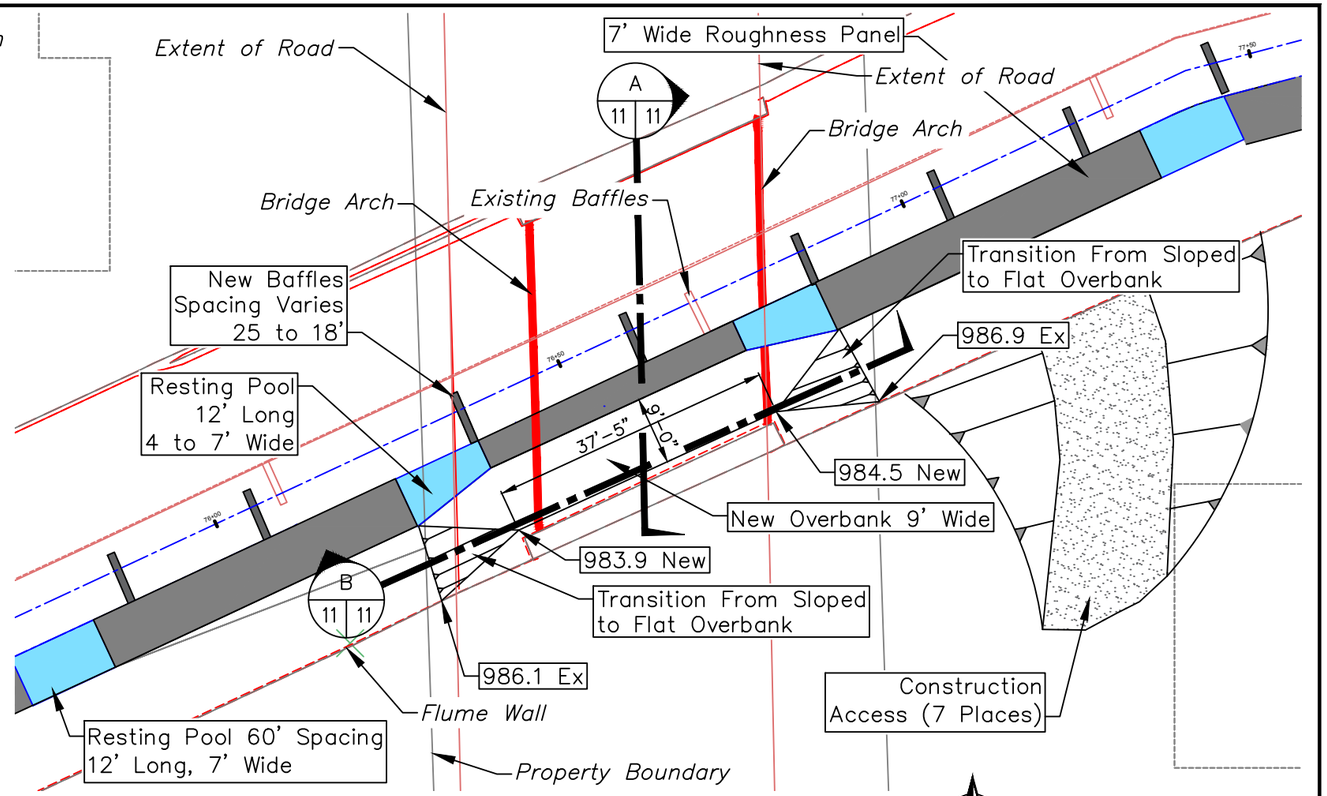
SCALE 1"= 10'



Merriam St Bridge Profile (Section B)

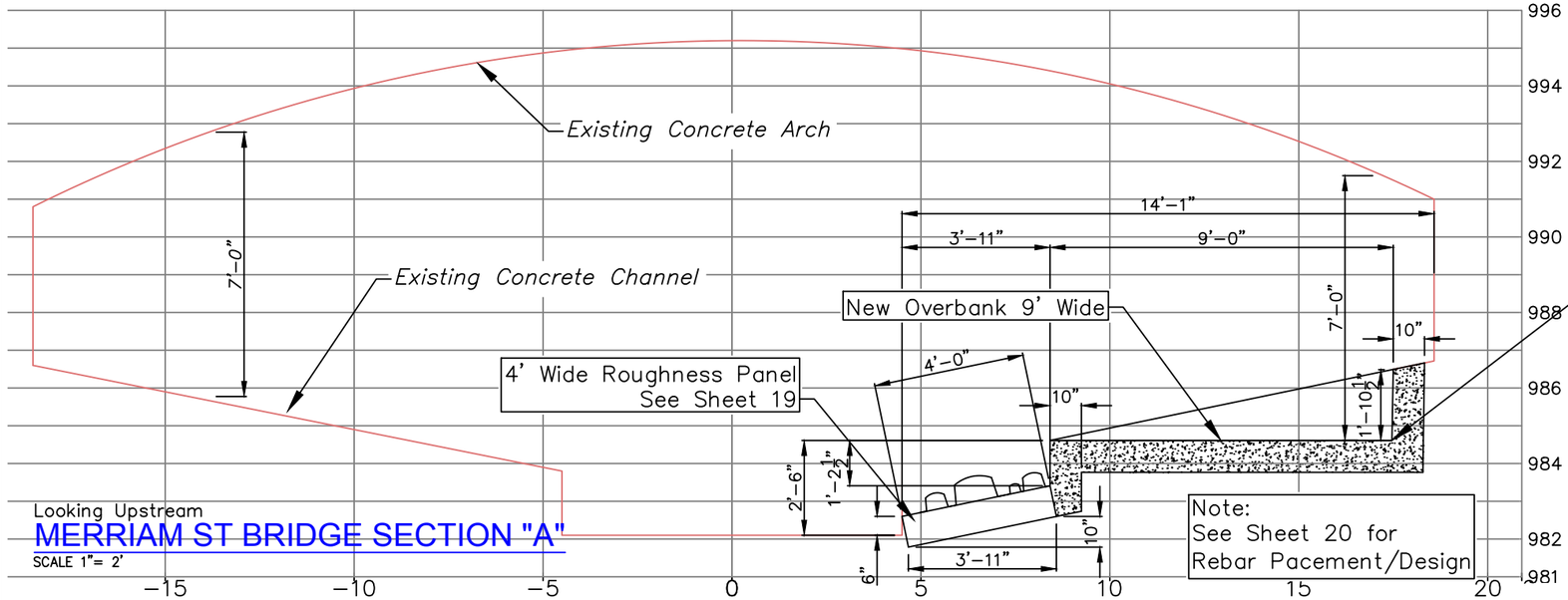
SCALE 1"= 5'

Flow Direction



MERRIAM ST BRIDGE

SCALE 1"= 10'



Looking Upstream

MERRIAM ST BRIDGE SECTION "A"

SCALE 1"= 2'

Note:
1. All Final Dimensions and Locations to be Staked in Field by Engineer.
2. See Sheet 20 for Rebar Pacement/Design

983.9 to 984.5.
Note:
Elev. for Reference Only
Actual Elevations Based On Measured Distance.

Note:
See Sheet 20 for Rebar Pacement/Design

Transition from 4' Wide Panel to 7' Wide with Resting Pool. Slope Overbank at 7' Wide Panel to Match New Surface Under Bridge

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS

REV	DATE	BY	APP'D	DESCRIPTION

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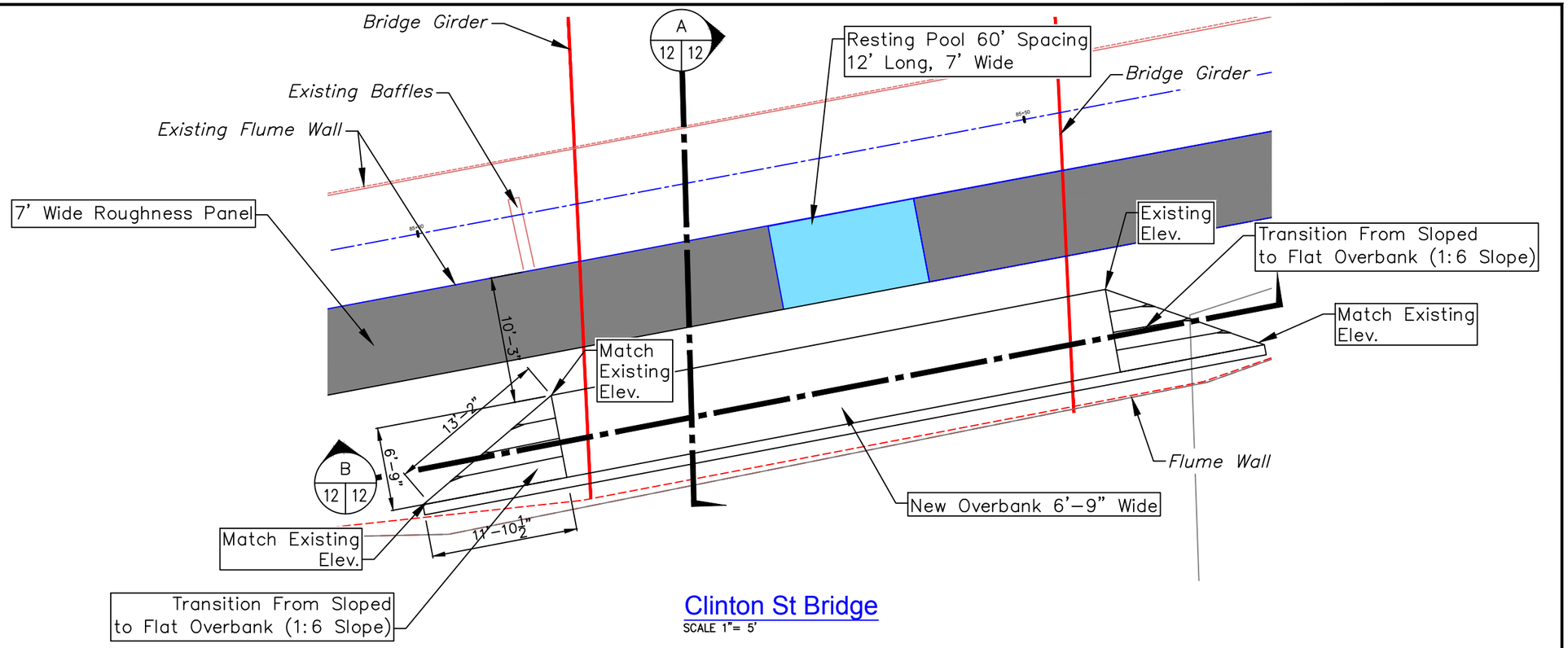
Merriam St Bridge

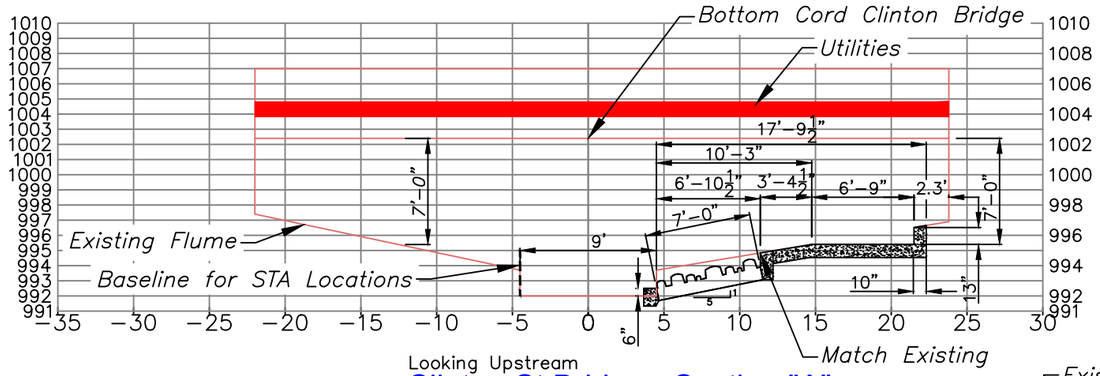
SHEET 11 OF 20



Clinton St Bridge

SCALE 1"= 5'

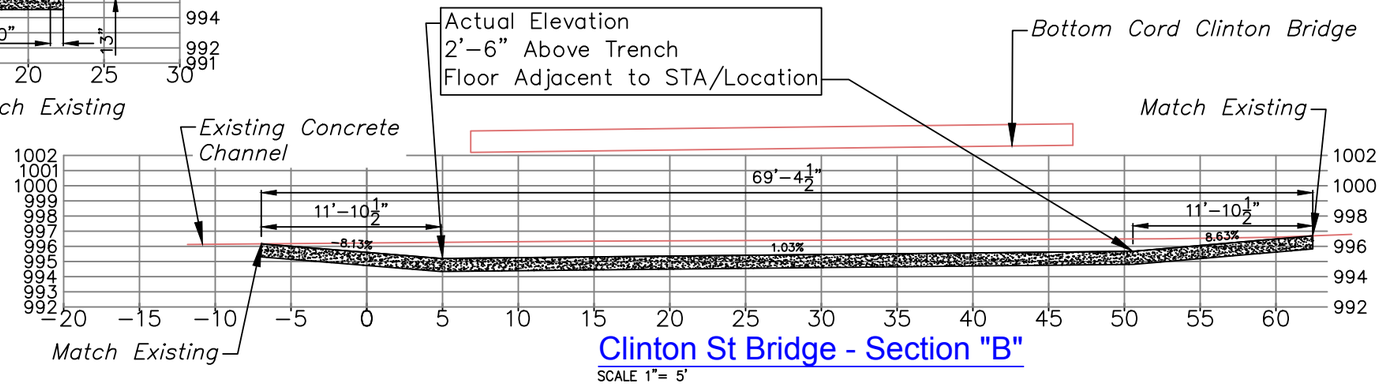
Note:
1. All Final Dimensions and Locations to be Staked in Field by Engineer.
2. See Sheet 20 for Rebar Pacement/Design



Looking Upstream

Clinton St Bridge - Section "A"

SCALE 1"= 5'



Clinton St Bridge - Section "B"

SCALE 1"= 5'

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION

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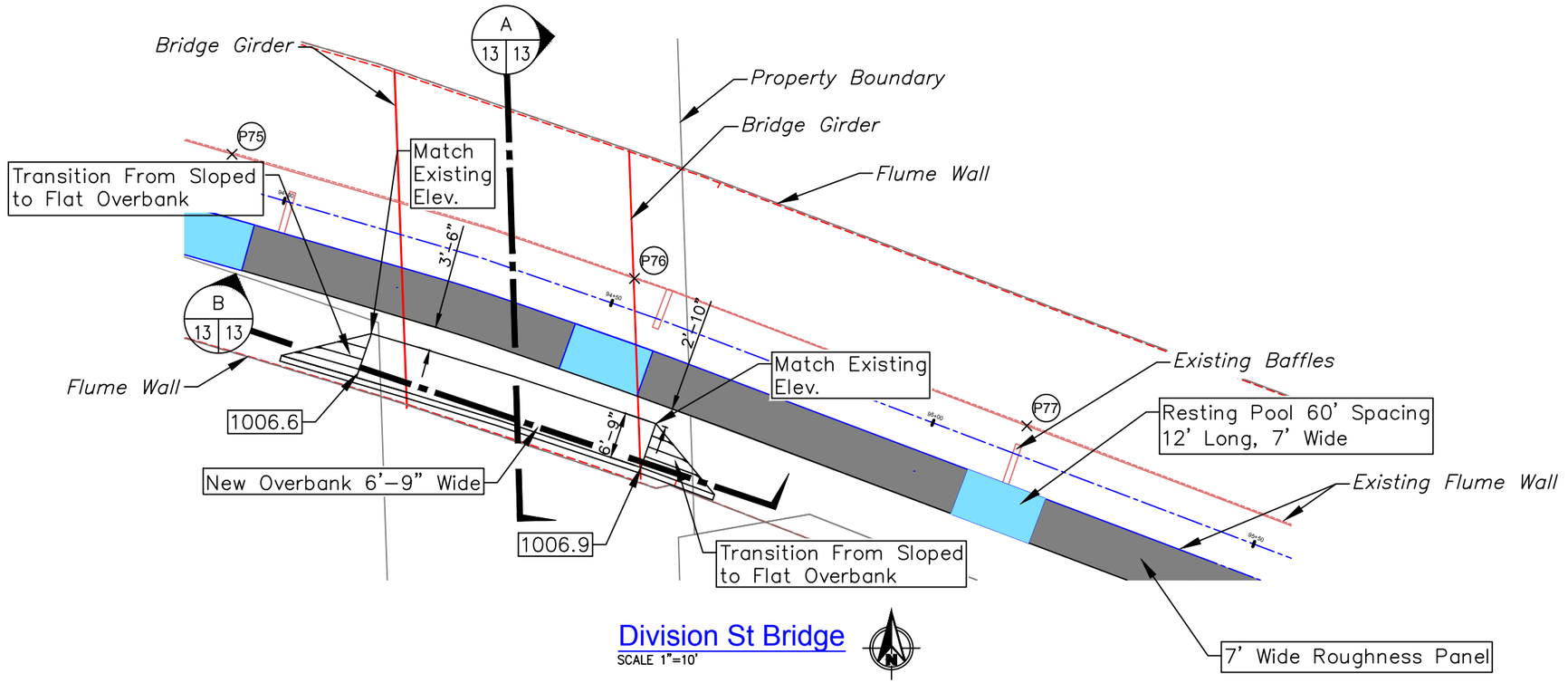
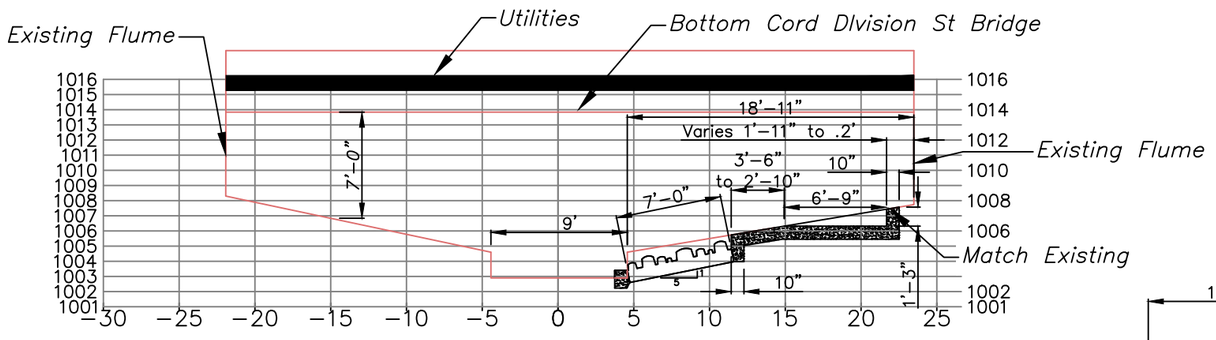
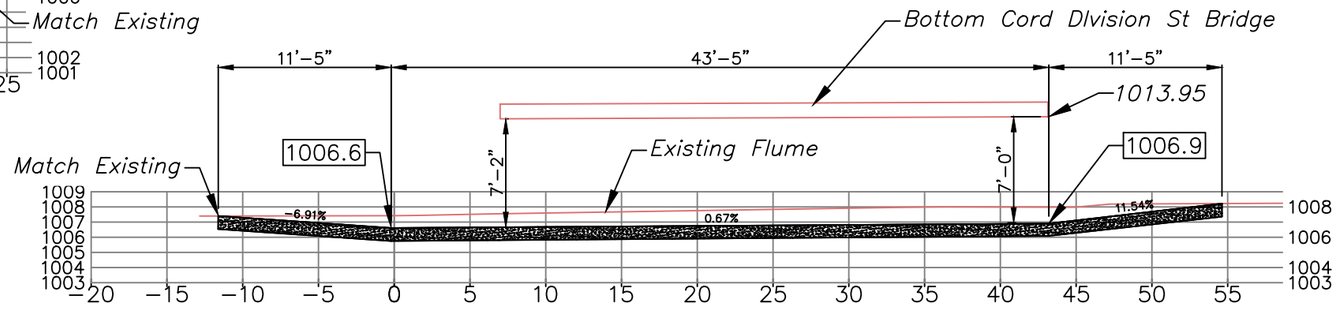
Plan and Sections Clinton St Bridge

SHEET 12 OF 20

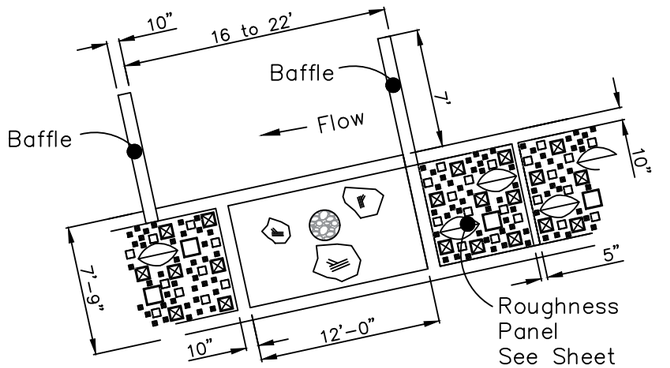




Note:
1. All Final Dimensions and Locations to be Staked in Field by Engineer.
2. See Sheet 20 for Rebar Pacement/Design



TRI-STATE STEELHEADERS	Mill Creek Fish Passage Park Street to Roosevelt Street	12/1/2017	12/1/2017	REVISIONS REV | DATE | BY | APP'D | DESCRIPTION SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DIMENSIONS DRAFTING & DESIGN DATE: 12/01/2017	**Plan and Sections Division St Bridge**	SHEET 13 OF 20



RESTING POOL PLAN VIEW

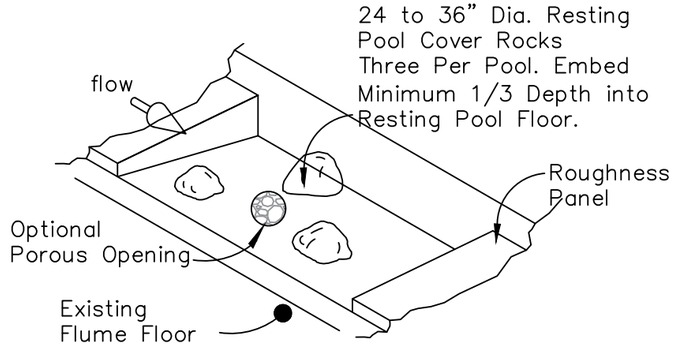
Note:
1. All saw cut concrete with exposed rebar shall be chipped back to expose 3" length of steel.

2. Steel rebar shall be cut off and the concrete cone shaped hole patched with Hilti Hit HY150 epoxy. minimize hole diameter to cut steel rebar.

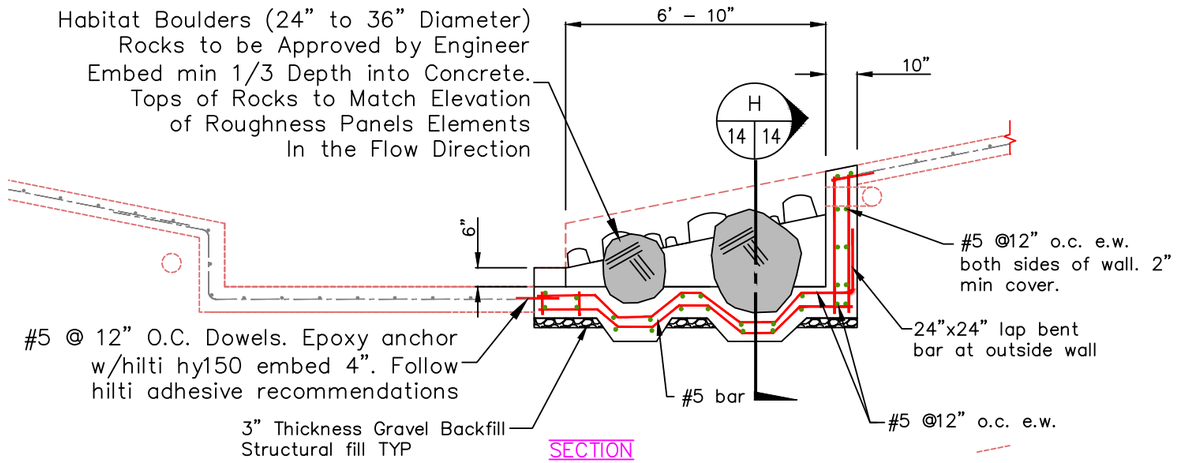
3. Final epoxy cover over steel shall be 1 1/2" minimum

4. All saw cut concrete edges to new concrete placement contacts shall be provided with concrete bonding agent prior to placement of new concrete

Top of Resting Pool Rocks to Match Average Height of Roughness Elements on Panels. Actual Rock Shape and Placement Shall be Approved by Engineer Prior to Delivery and Placement.

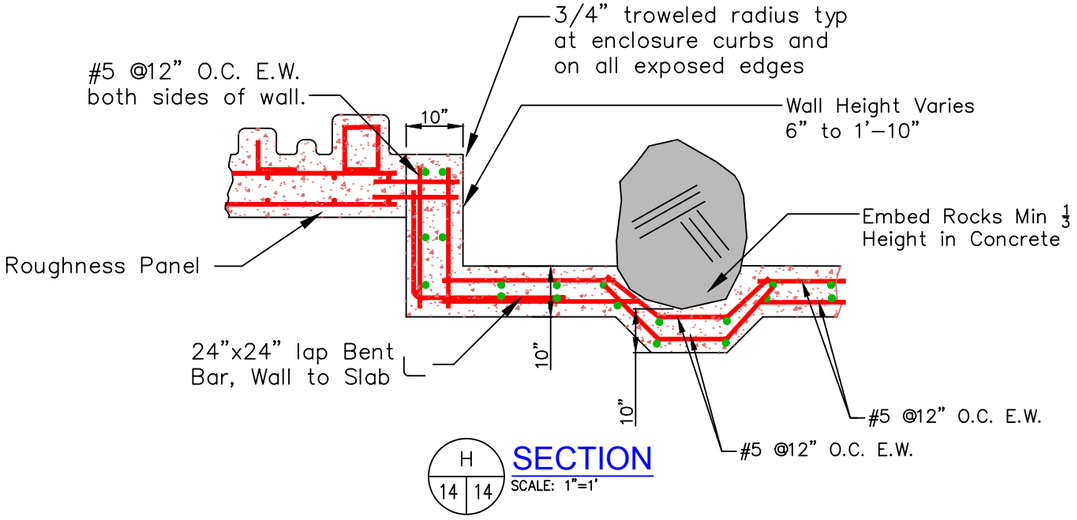


ISOMETRIC
NOT TO SCALE

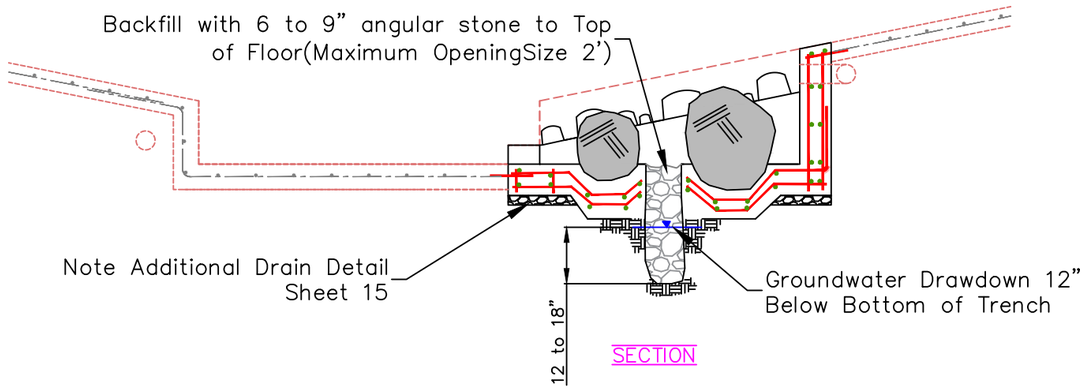


SECTION

Typical Resting Pool
SCALE 1"=2"



SECTION
SCALE: 1"=1'



SECTION

Alternate Resting Pool
SCALE 1"=2"

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION

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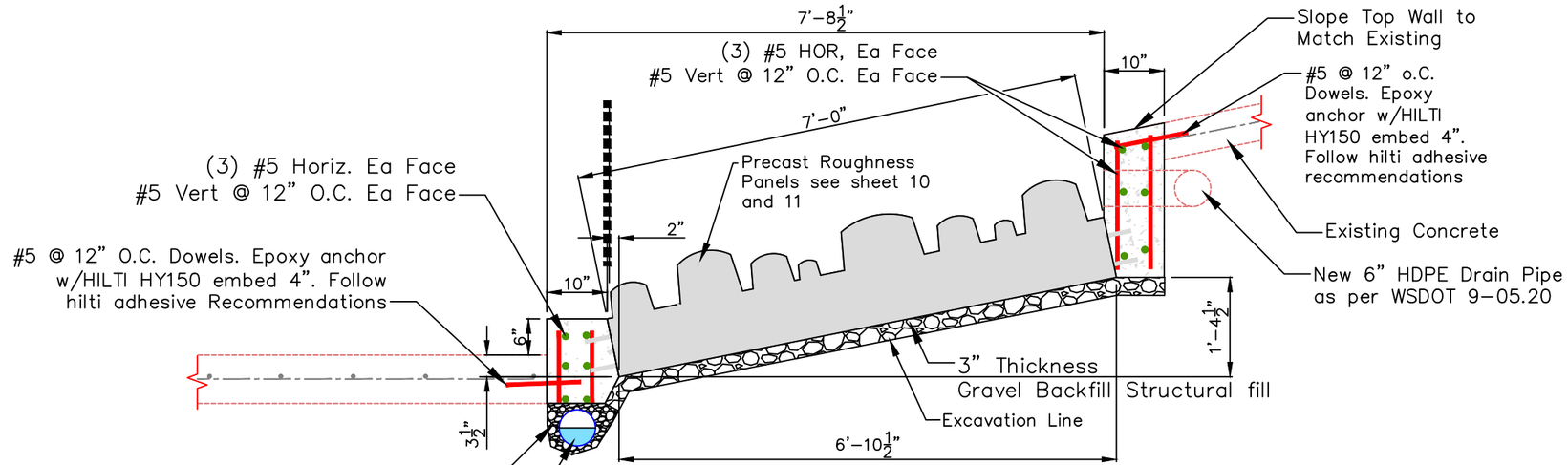
Resting Pool Details

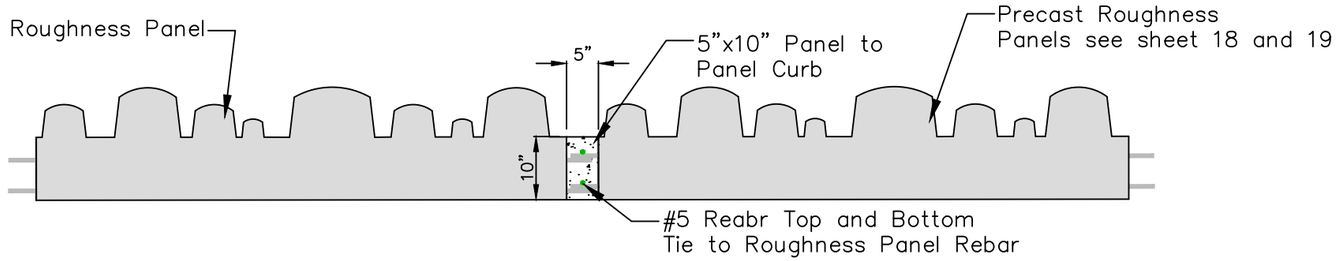
SHEET 14 OF 20



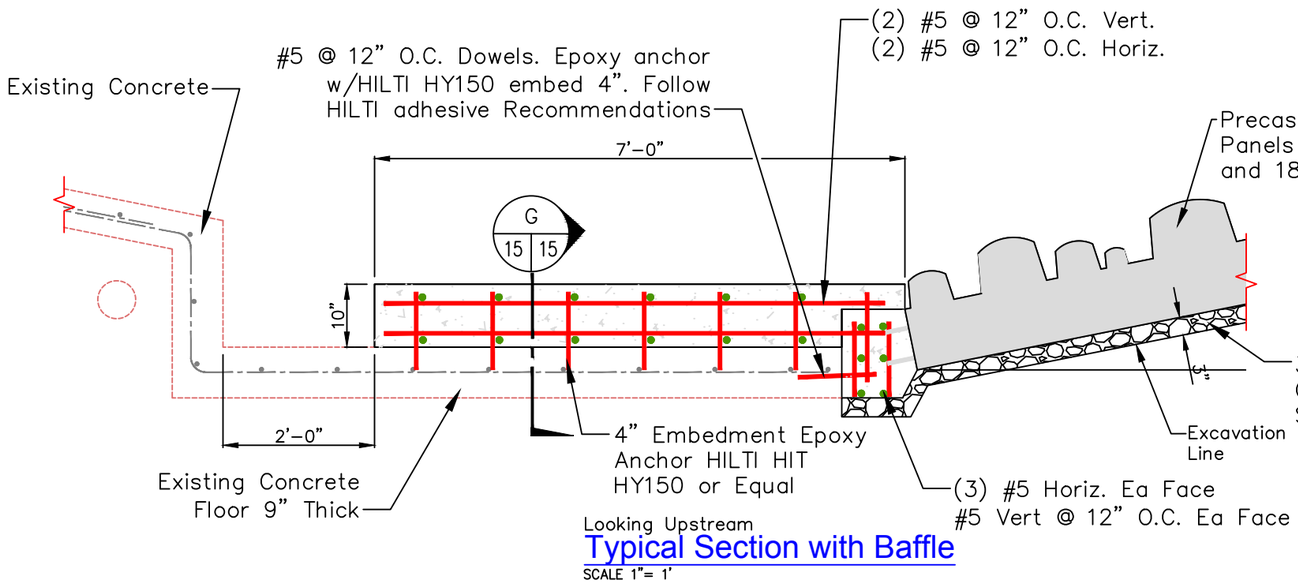
Typical 7' Panel Section w/o Baffle

SCALE 1"= 1'

Note:
1. All gravel backfill and new construction backfill shall be compacted as structural fill as per WSDOT 2-03.3(14)C Method C.
2. All embankment compactions are called out as structural fill.
3. See specifications for details of material and WSDOT M41-10
4. Concrete Cover as Follows:
   Ground Contact 3"
   Walls and Curbs 2"

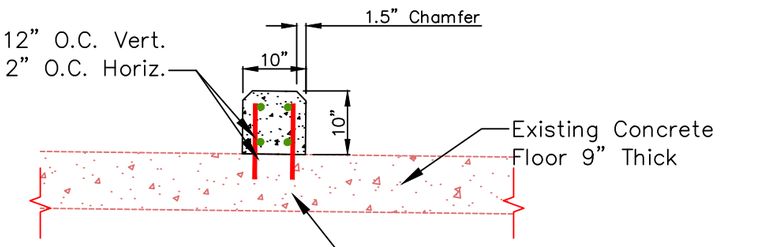


F / – / 15 — Panel to Panel Section
SCALE: 1"=1'



Typical Section with Baffle

SCALE 1"= 1'



G / 15 / 15 — Section/Sheet 7 for Layout
SCALE: 1"=1'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Park Street to Roosevelt Street	12/1/2017	12/1/2017

REVISIONS

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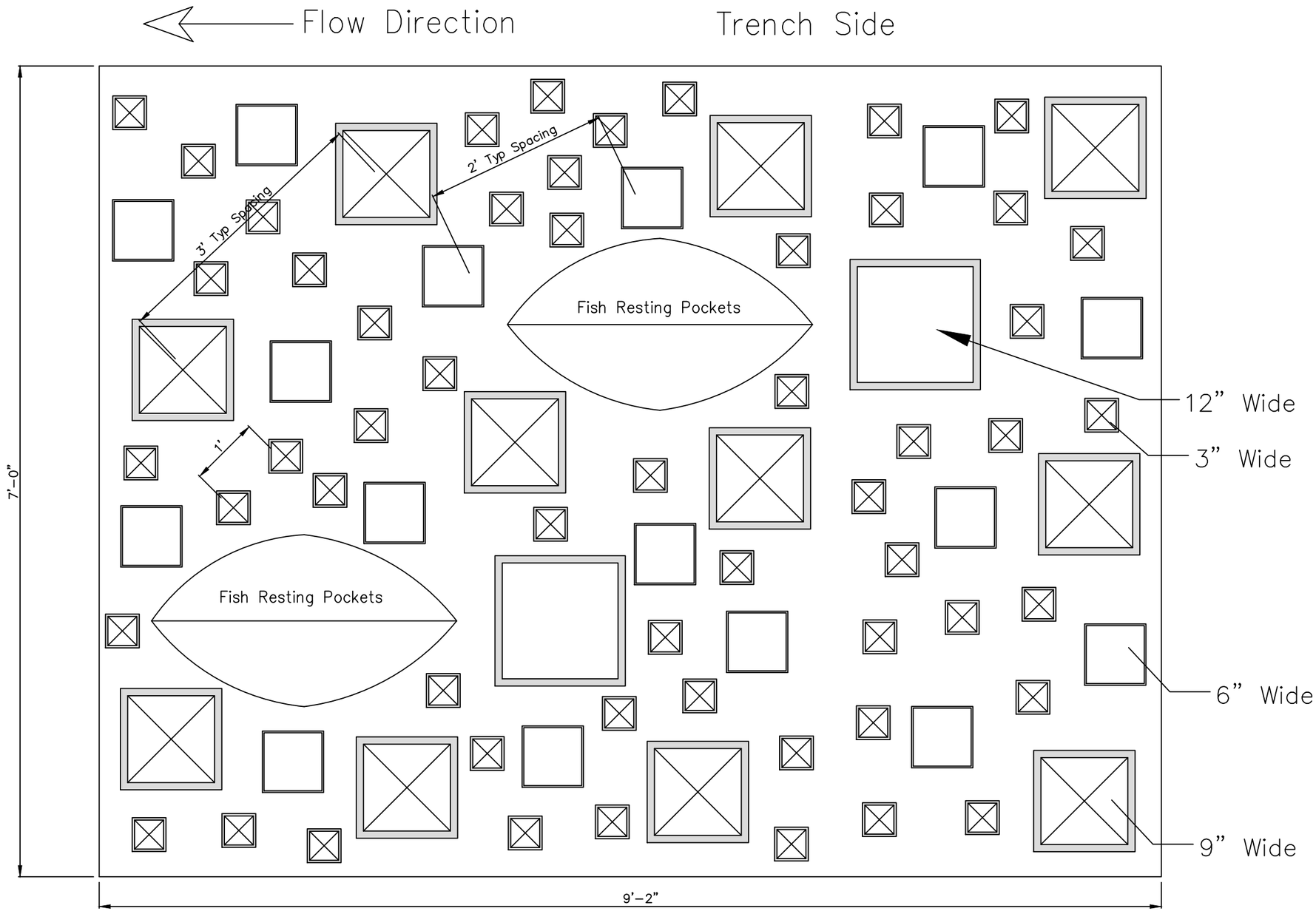
Roughness Panel / Baffle Details

SHEET 15 OF 20



Roughness Panel Layout

Not to Scale

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Park Street to Roosevelt Street	12/1/2017	12/1/2017	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DIMENSIONS DRAFTING & DESIGN DATE: 12/01/2017	**7' Concrete Panel Detail**	SHEET 16	OF 20

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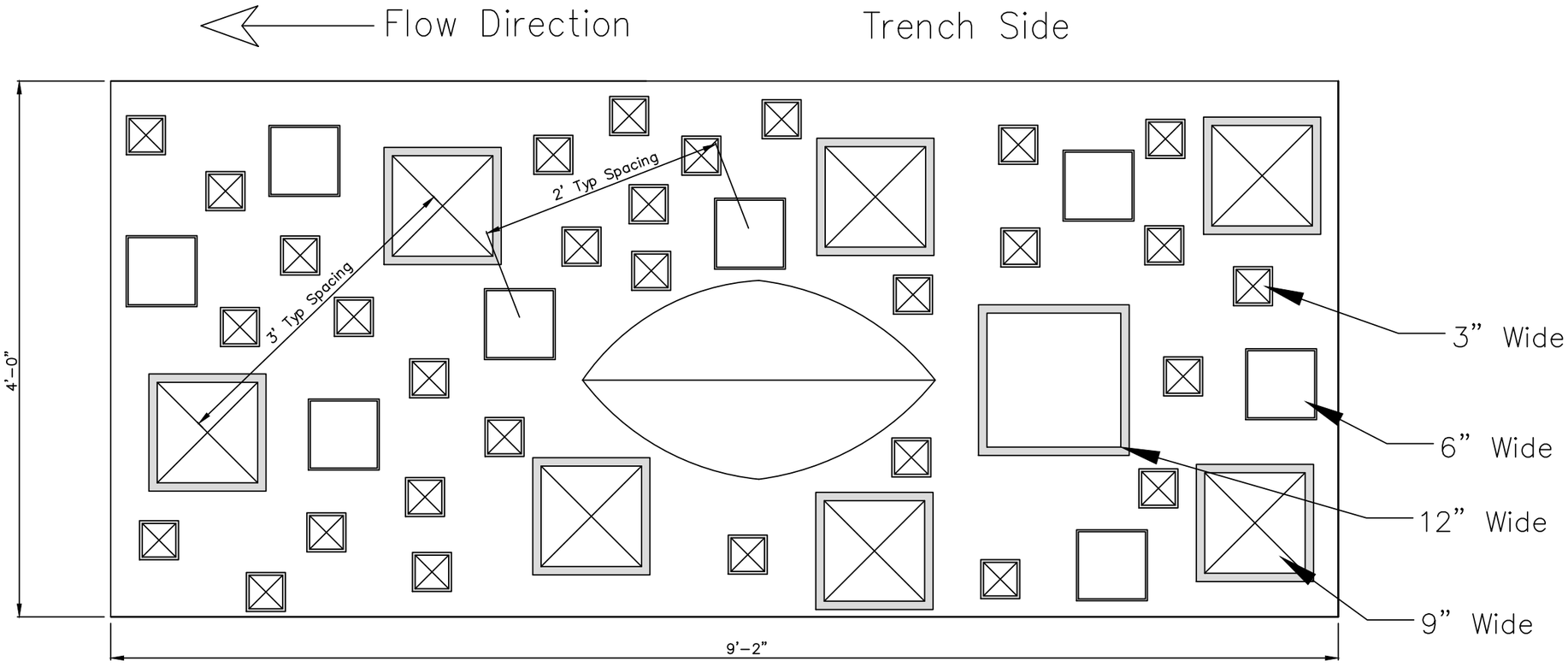
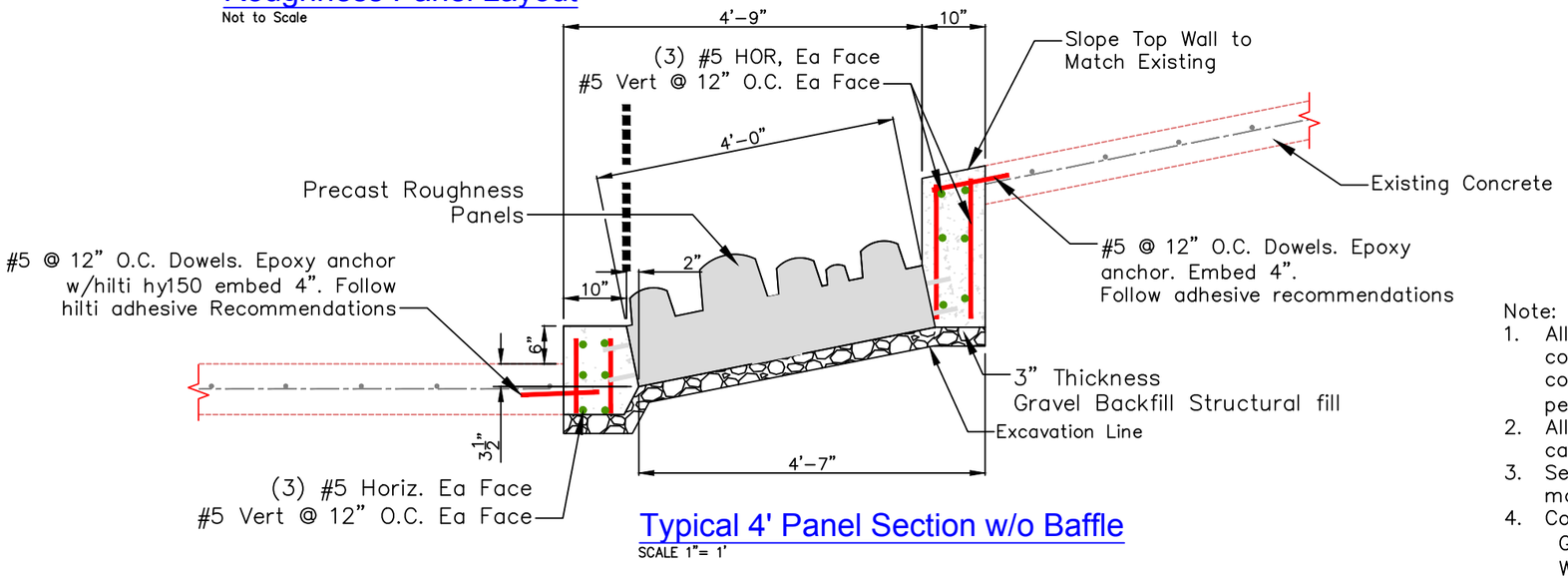


Roughness Panel Layout

Not to Scale



Typical 4' Panel Section w/o Baffle

SCALE 1"= 1'

Note:

1. All gravel backfill and new construction backfill shall be compacted as structural fill as per WSDOT 2-03.3(14)C Method C.
2. All embankment compactions are called out as structural fill.
3. See specifications for details of material and WSDOT M41-10
4. Concrete Cover as Follows:
   Ground Contact 3"
   Walls and Curbs 2"

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS

REV	DATE	BY	APP'D	DESCRIPTION

BAR IS ONE INCH ON ORIGINAL DRAWING.

SCALE VERIFICATION

0 1"

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4' Concrete Panel Detail

SHEET 17 OF 20

Construction Notes:

1. Layout of roughness elements shall be similar to plan view sketch. Start with location of 12" largest elements and depressions and then proceed with 9", 6" etc on down at spacing shown. Final layout to be approved by Engineer.

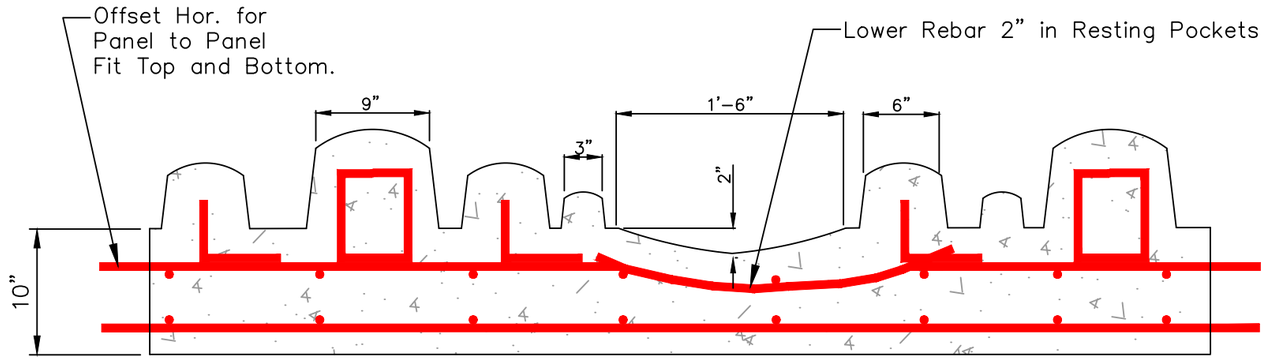
2. The Roughness panels shall be precast concrete panels.

3. Concrete Panels may be Removed From Forms After concrete strength has reach 4500 psi or greater.

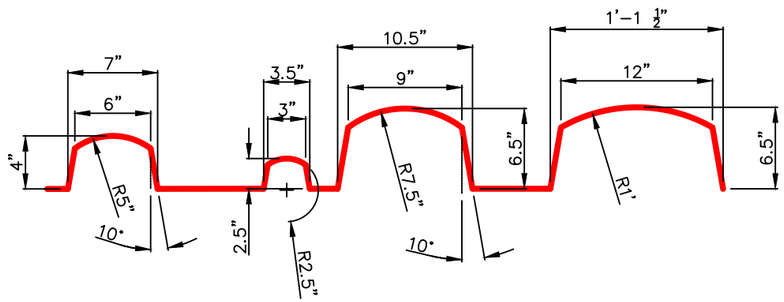
4. Precast panels shall be drawn, and described in formal shop drawings approved in writing by the engineer prior to casting.

5. All precast panel shop drawings shall clearly show the weight and dimensions of each panel. lifting systems shall also be called out and specified by the precast plant.

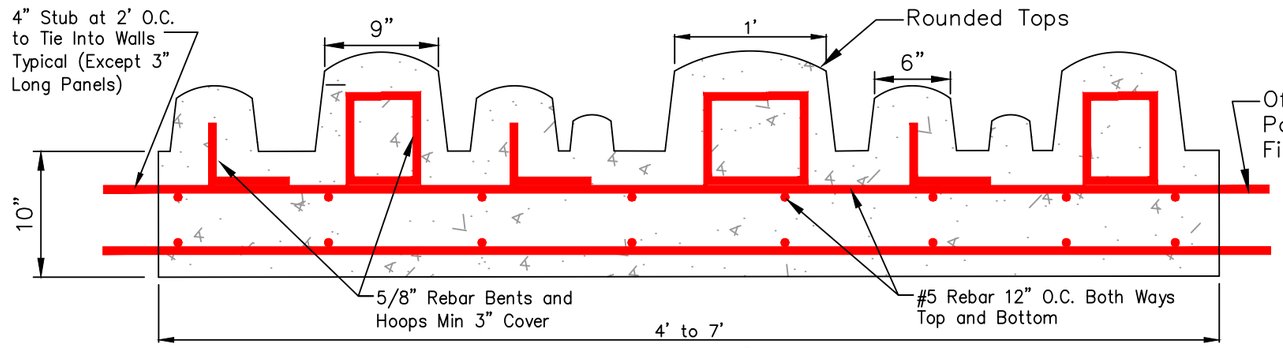
6. Panel maximum length shall not exceed 10' and shorter panels are acceptable. Shop drawings shall identify a configuration in plan view and for each panel length.



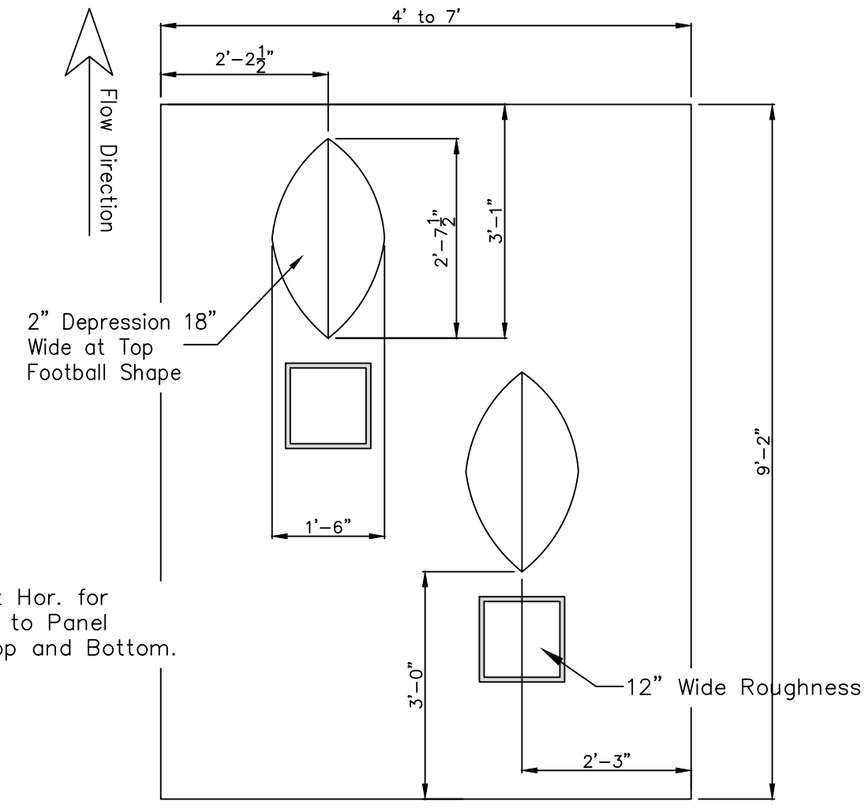
Typical Section Showing 2" Depression
Not To Scale



Roughness Detail
Not To Scale



Typical Section
Not To Scale



Roughness Panel Plan - Layout For 12" Roughness
Not to Scale

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Park Street to Roosevelt Street	12/1/2017	12/1/2017	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DIMENSIONS DRAFTING & DESIGN DATE: 12/01/2017	**Concrete Panel Details**	SHEET 18 OF 20

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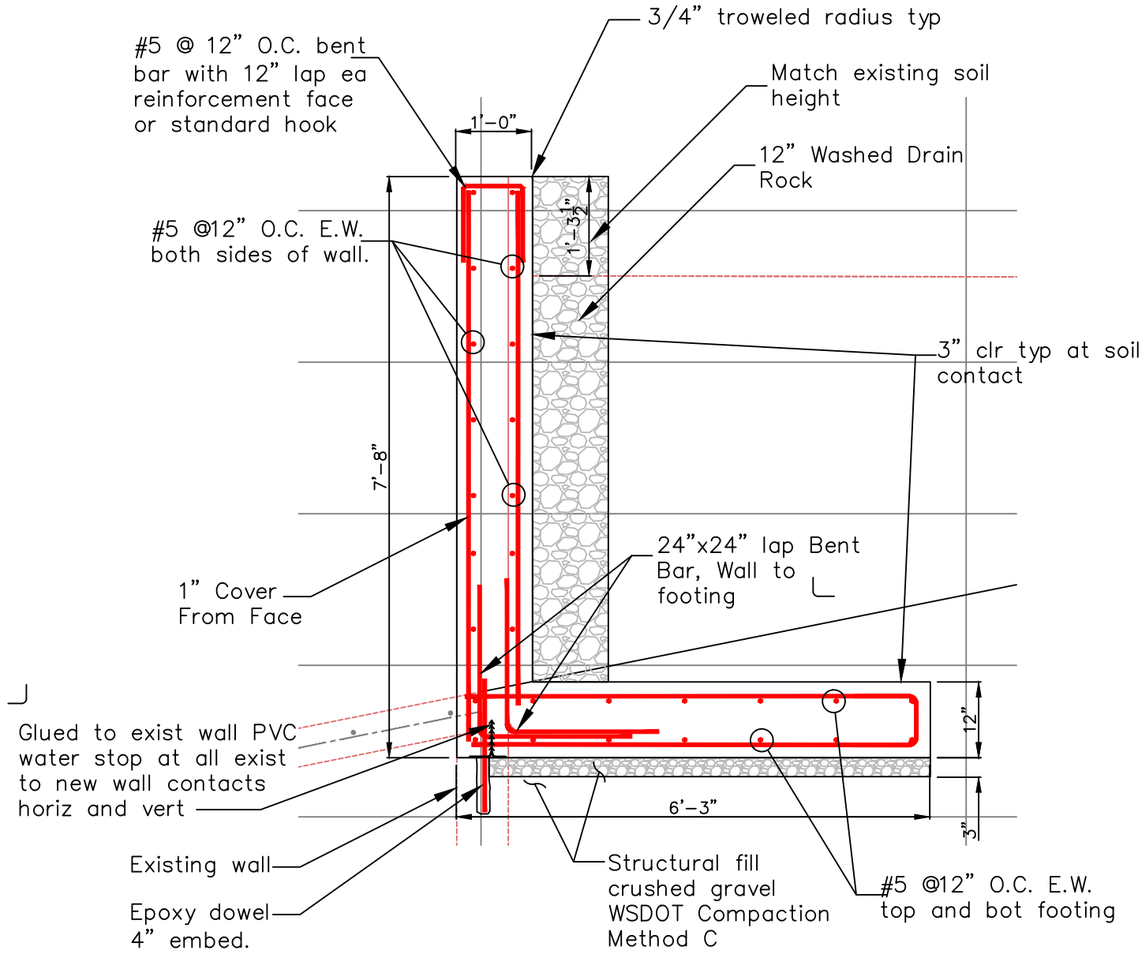

1/3 19

SECTION - REPLACEMENT RETAINING WALL

SCALE: 1/2"=1'

Mill Creek Fish Passage Park Street to Roosevelt Street	12/1/2017	12/1/2017	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DIMENSIONS DRAFTING & DESIGN DATE: 12/01/2017	**Details**

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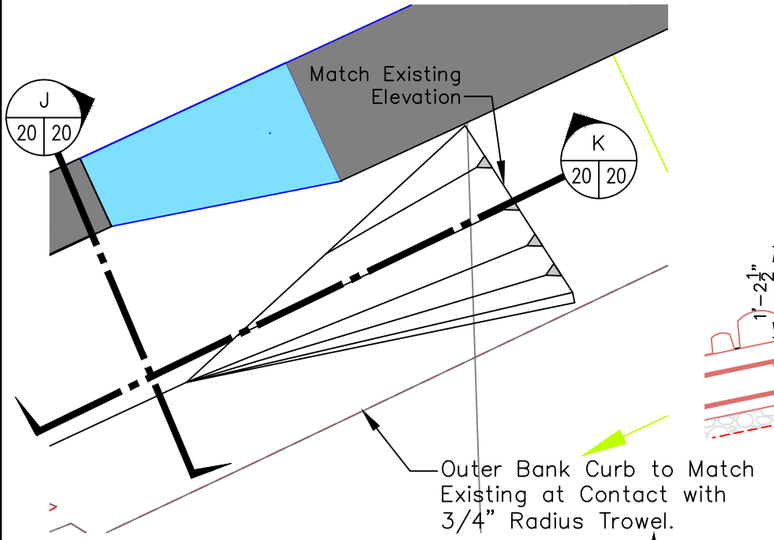
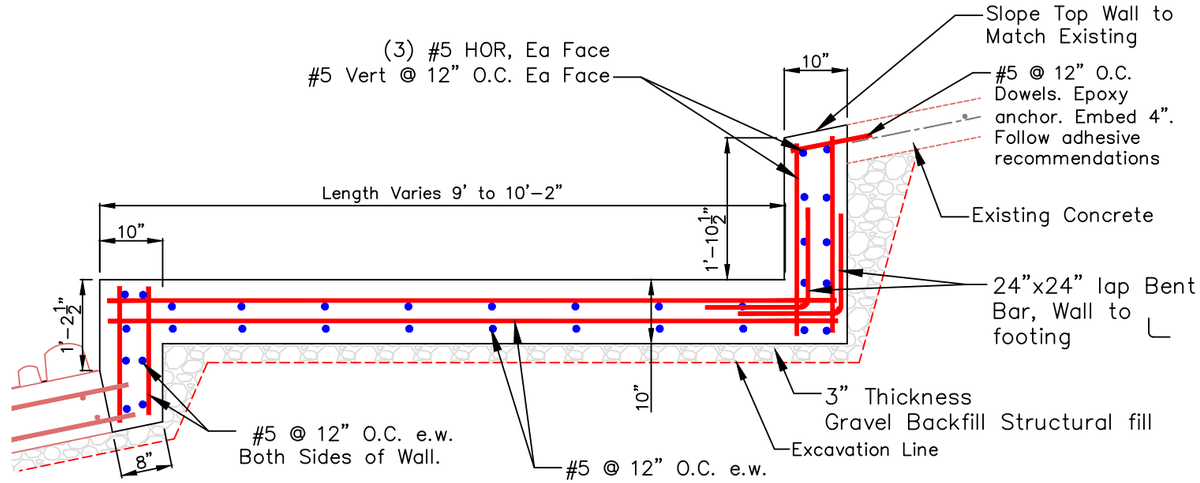
SHEET 19 OF 20



OVERBANK PLAN VIEW TYPE 1

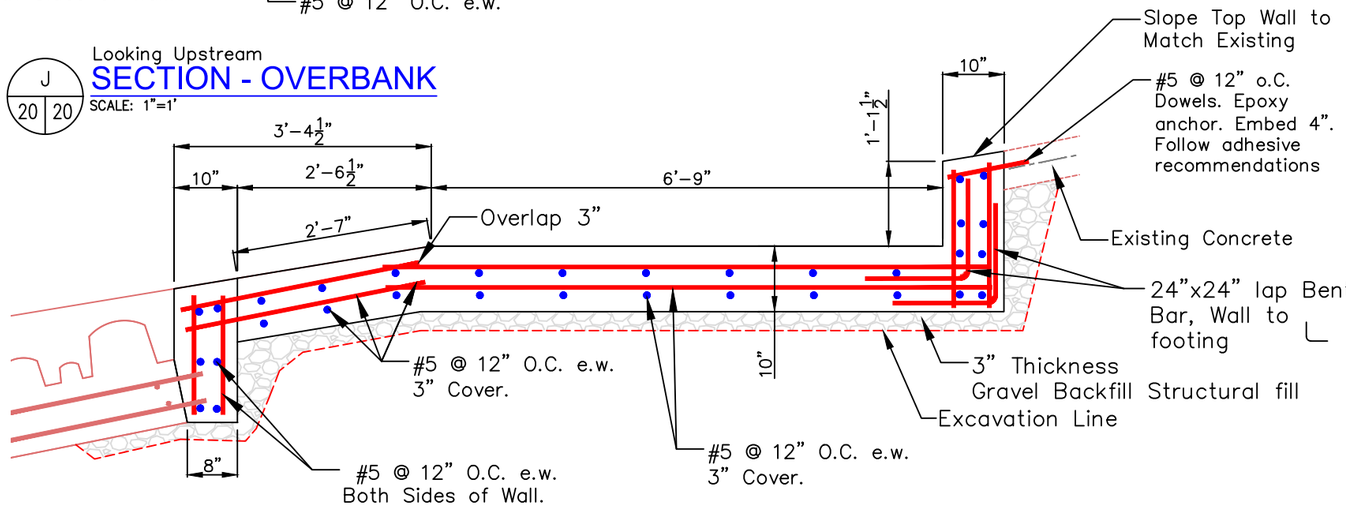
SCALE: 1"=4'

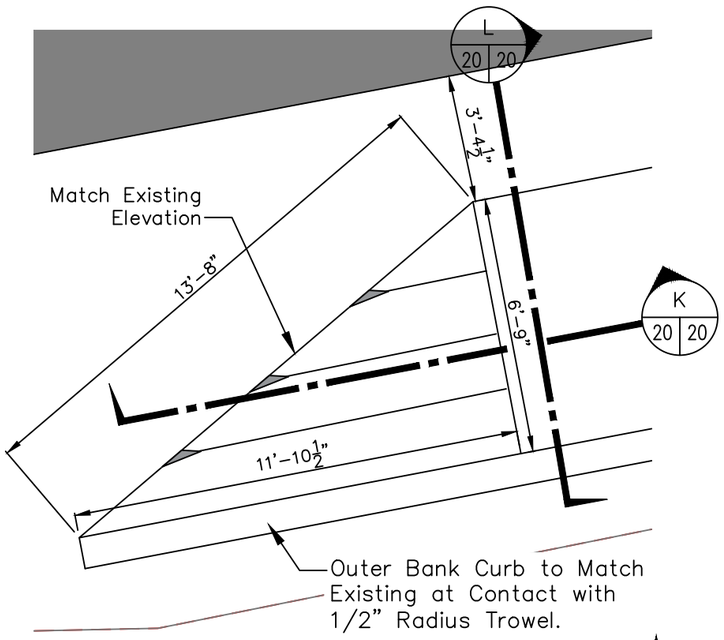
OTIS & MERRIAM ST



Note:

1. All gravel backfill and new construction backfill shall be compacted as structural fill as per WSDOT 2-03.3(14)C Method C.
2. All embankment compactions are called out as structural fill.
3. See specifications for details of material and WSDOT M41-10
4. Concrete cover as follows:
   Ground Contact 3"
   Walls and Curbs 2"
5. All lap splices shall be Class A. Min 2'-0" for #5 Bar and Class 4000 Concrete.
6. All Final Dimensions to be Staked in Field by Engineer.

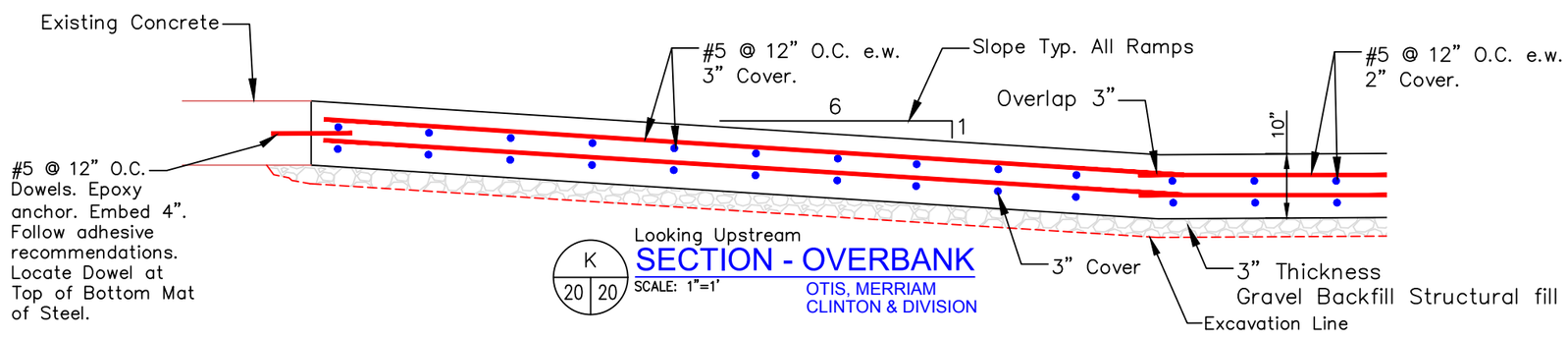




OVERBANK PLAN VIEW TYPE 2

SCALE: 1"=2'

CLINTON & DIVISION



K
20 20
Looking Upstream
SECTION - OVERBANK
SCALE: 1"=1'

OTIS, MERRIAM
CLINTON & DIVISION

L
20 20
Looking Upstream
SECTION - OVERBANK
SCALE: 1"=1'

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Park Street to Roosevelt Street

12/1/2017

12/1/2017

REVISIONS

REV	DATE	BY	APP'D	DESCRIPTION

BAR IS ONE INCH ON ORIGINAL DRAWING. SCALE VERIFICATION 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGNED BY: WATERFALL ENGINEERING
CHINOOK ENGINEERING
DRAWN BY: DIMENSIONS DRAFTING & DESIGN
DATE: 12/01/2017

Details

SHEET 20 OF 20