Construction Documents

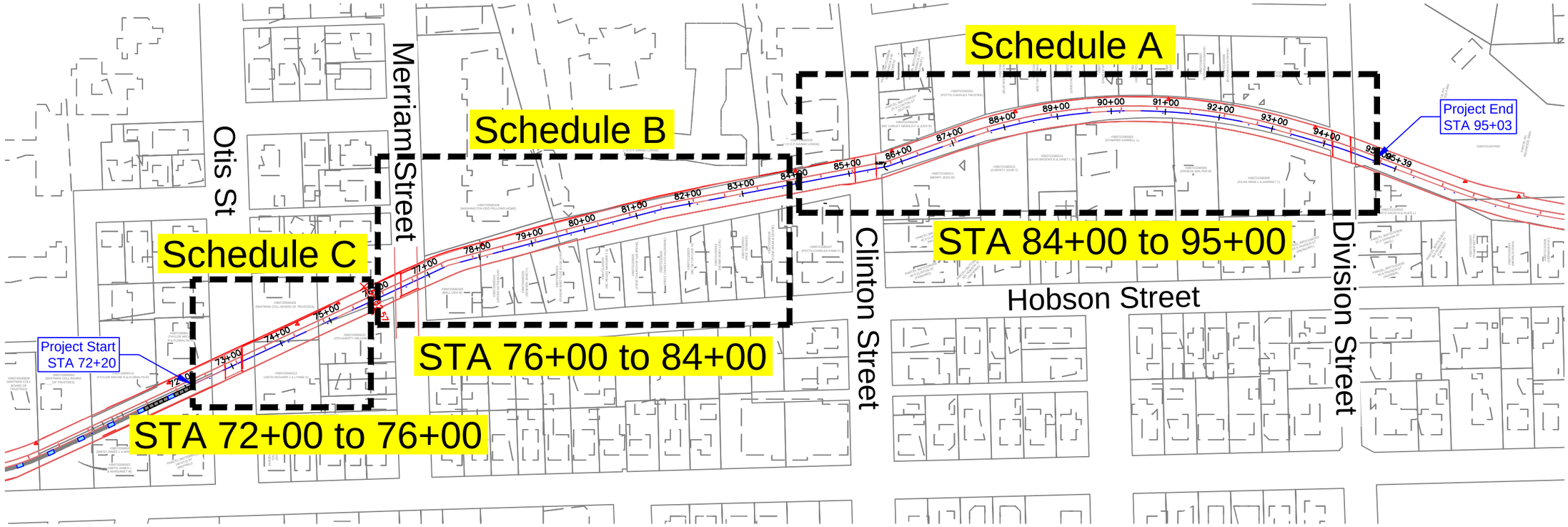
Mill Creek Fish Passage

Otis St to Division St

PROJECT NUMBER 19-1718

STA 72+20 to 95+03 (2283 Feet)

DRAWING INDEX:



Mill Creek Flood Control Channel

OVERALL MAP

1" = 100'

Mill Creek Fish Passage Otis Street to Division Street	12/30/2020	12/30/2020	**Cover Sheet**

REVISIONS

REV	DATE	BY	APP'D	DESCRIPTION

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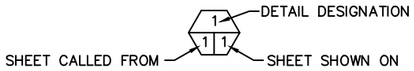
DESIGNED BY: WATERFALL ENGINEERING
CHINOOK ENGINEERING
DRAWN BY:
DATE: 12/31/2020

SHEET 1 OF 26

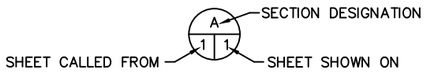
ABBREVIATIONS

"	–	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

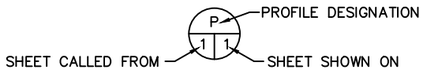
SHEET SYMBOLS



DETAIL CALLOUT

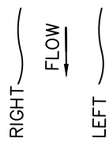


SECTION CALLOUT



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
	OVERHEAD POWER
	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
Otis Street to Division Street

12/30/2020

12/30/2020

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION

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DRAWN BY:
DATE: 12/31/20

Legend and Notes

SHEET 2 OF 26

Traffic Path (Typical)

Traffic and Access Plan

1" = 100'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/30/2020	12/30/2020	REVISIONS REV | DATE | BY | APP'D | DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/31/20	**Site Plan - Construction Access**	SHEET 3 OF 26

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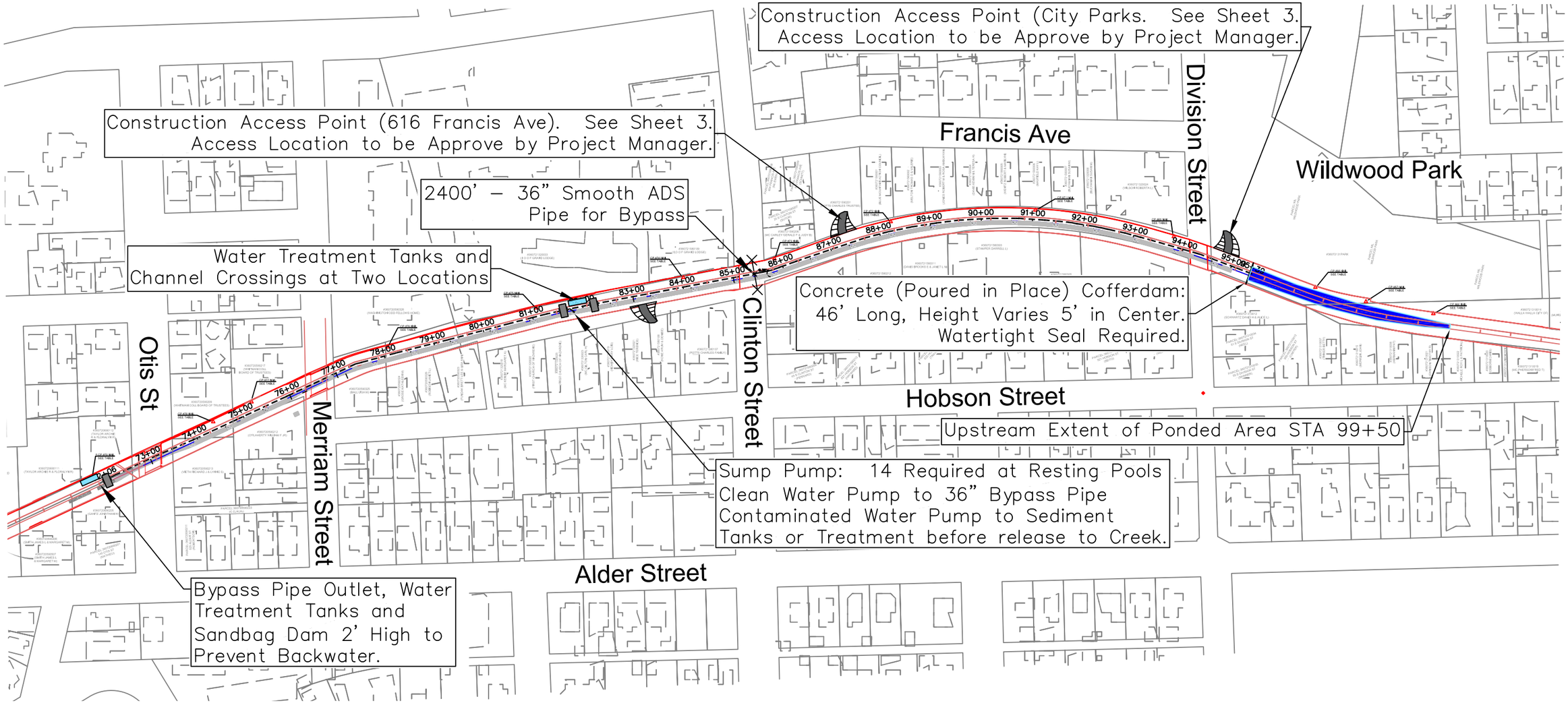

Dewatering Plan
SCALE 1"= 100'

Construction Notes:

1. Dewatering plan shown is approved. Other Options may be proposed by contractor if reviewed and approve by Engineers.
   Minimum Requirements 1) Work Area Isolated from flowing water, 2) Sump Pump water discharged into bypass pipe, 3) water contaminated with concrete pumped into Water Quality Tanks.
2. If baffles are not removed, bypass pipe shown will require supports one foot high between existing baffles. Spacing to Approved by Engineer.
3. Two Water Treatment Tanks with Channel Crossings Required.

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Otis Street to Division Street

12/30/2020

12/30/2020

REVISIONS				
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Dewatering Plan

SHEET 4 OF 26

OTIS ST

Nearly Vertical Concrete Walls
Heigth Varies 5 to 8 feet

5:1 Sloped Concrete Overbank
Width Varies 17 to 20 feet

#360720590217
(WHITMAN COLL
BOARD OF TRUSTEES)

#360720590209
(WHITMAN COLL BOARD OF TRUSTEES)

#360720690112
(TAYLOR ARCHIE
R & FLORALYN R)

'N R)

#360720590213
(VIETH RICHARD J & LYNNE S)

#360720590325
(BALL LISA M)

#360720690205
(GANTZ JONATHAN W)

(O'

6" CAST IRON PIPE

3" GALV PIPE

CP #77 NAIL
SEE TABLE

CP #78 NAIL
SEE TABLE

CP #79 NAIL
SEE TABLE

8" PVC DRAIN
IE 988.91

12" PVC DRAIN
IE 986.67

8" PVC DRAIN
IE 988.11

8" RCP DRAIN

ARCHED BRIDGE
ARCH HI-PT ELEV 994.17 (W)
ARCH HI-PT ELEV 994.46 (E)

ARCHED BRIDGE
ARCH HI-POINT ELEV 990.02 (W)
ARCH HI-POINT ELEV 989.54 (E)

ENTIRE HEIGHT OF
BULKHEAD JOGS 1' SE'LY
FROM THIS POINT EAST

6" CAST IRON PIPE

Concrete Demolition

9' Wide Trench, 1'–9" High

Project Stationing Left Trench Wall

Overall Channel Width 48 to 50 feet

77+00
77+82.57
76+00
75+00
74+00
73+86
73+60
73+40
73+20
73+00
72+80
72+60
72+40
72+20
72+06

MERRIAM ST

Existing Site Plan

SCALE 1"= 20'

Mill Creek Fish Passage
Otis Street to Division Street

12/30/2020

12/30/2020

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION

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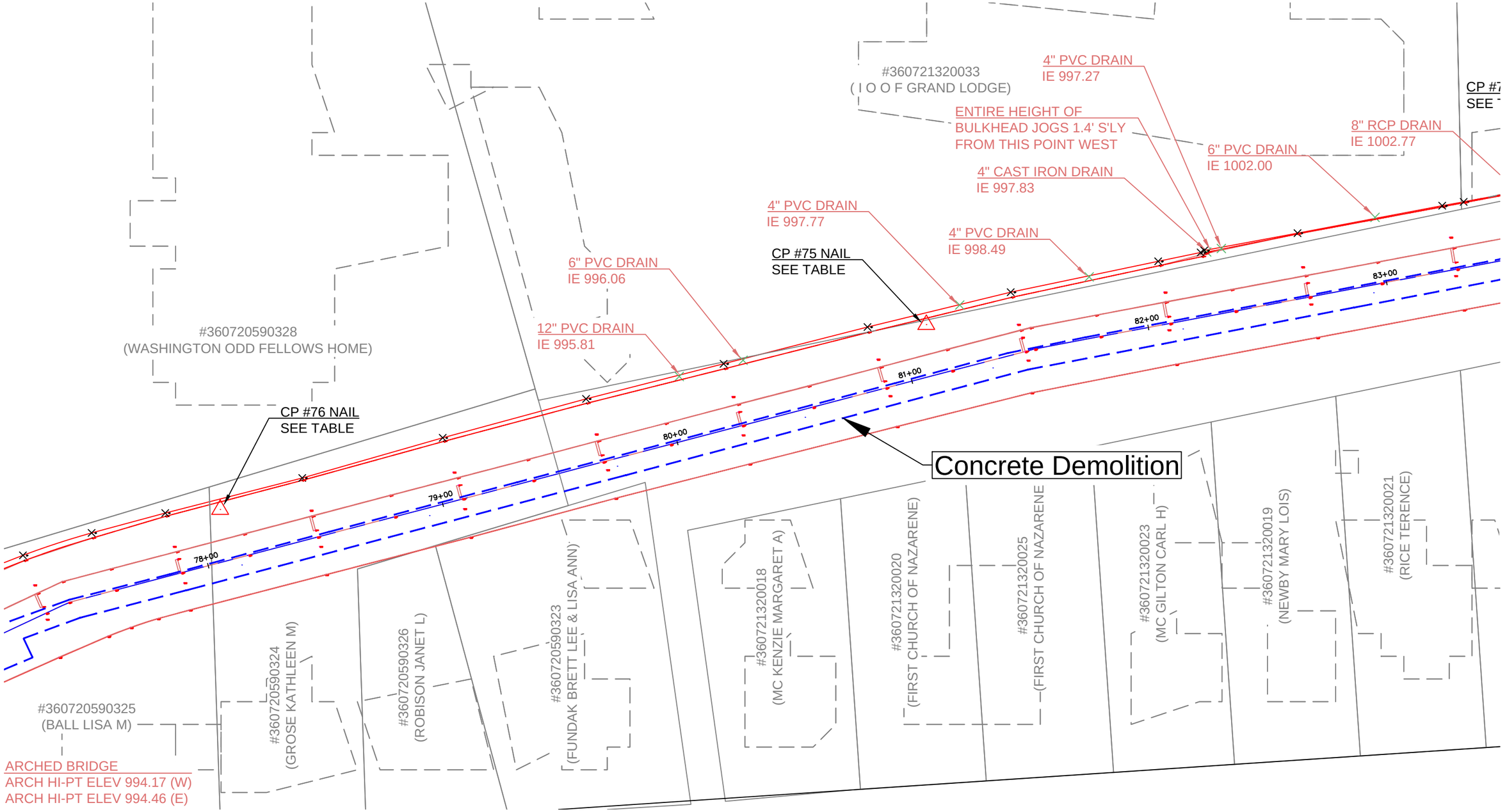
Existing Conditions
STA 72+00 to 77+00

SHEET 5 OF 26



Existing Site Plan
SCALE 1"= 20'

Mill Creek Fish Passage
Otis Street to Division Street

12/30/2020

12/30/2020

REVISIONS				
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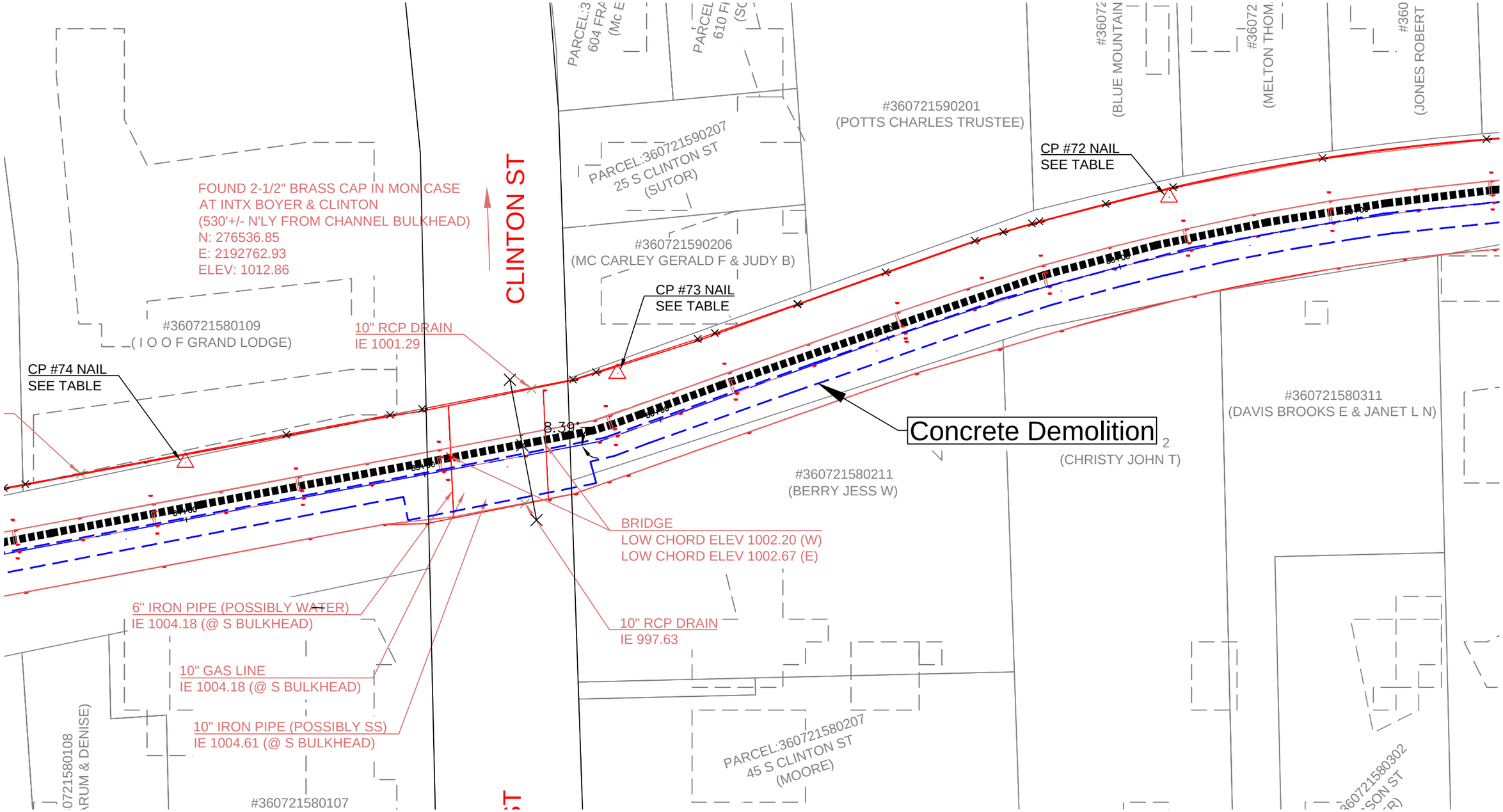
Existing Conditions
STA 78+00 to 83+00

SHEET 6 OF 26



Existing Site Plan

SCALE 1"= 20'

Mill Creek Fish Passage Otis Street to Division Street	12/30/2020	12/30/2020	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/31/2020	Existing Conditions STA 83+00 to 90+00	SHEET 7 OF 26

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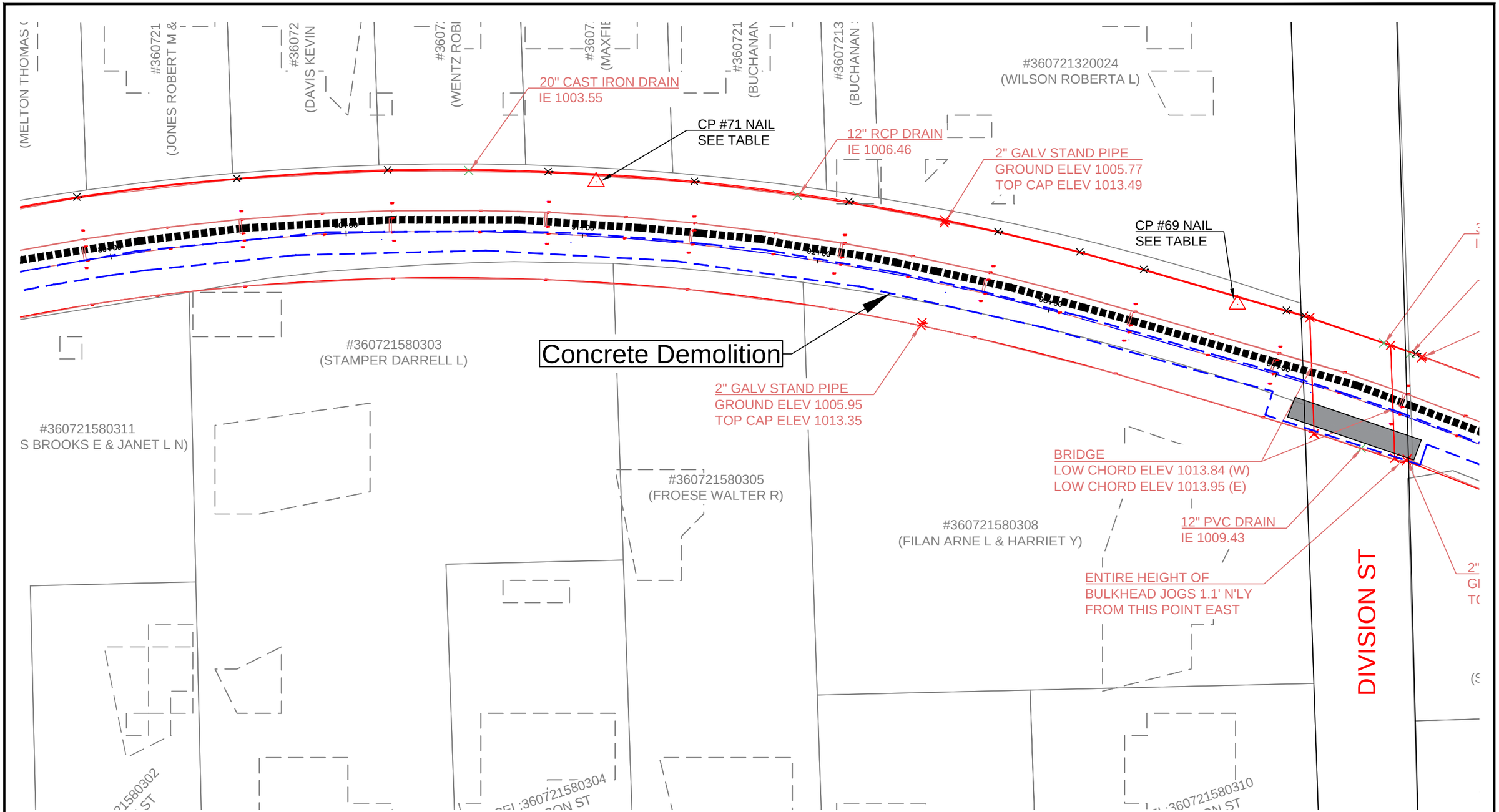

Existing Site Plan
SCALE 1"= 20'

Mill Creek Fish Passage
Otis Street to Division Street

12/30/2020

12/30/2020

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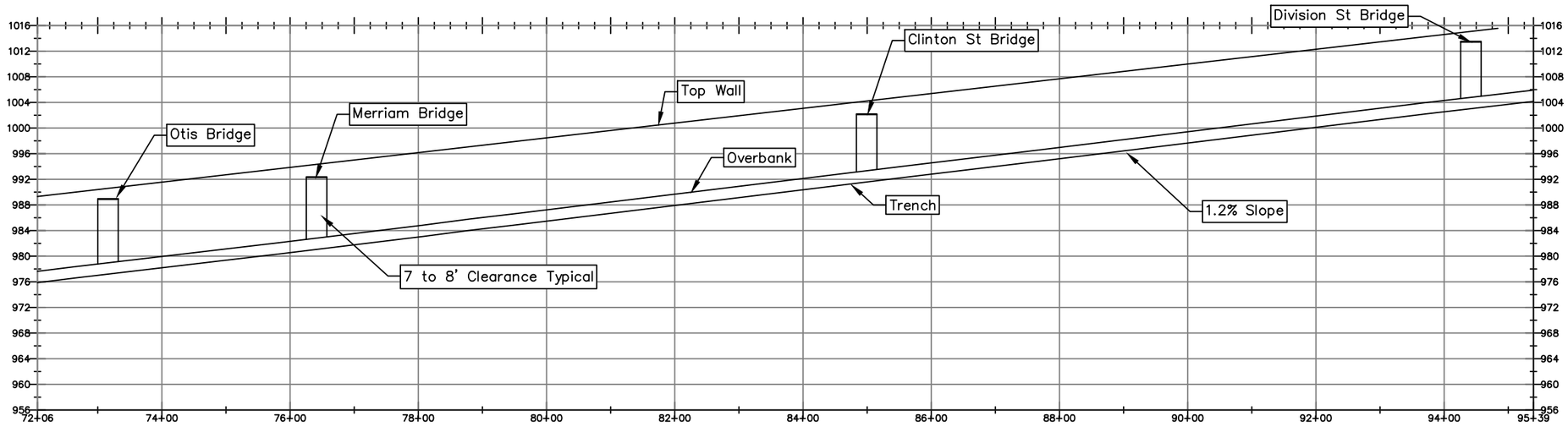
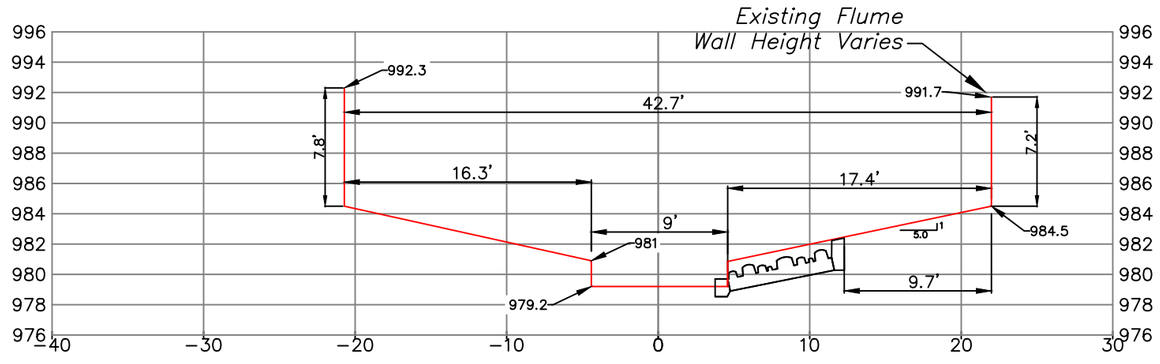
Existing Conditions
STA 83+00 to 90+00

SHEET 8 OF 26



Profile - Left Trench

Scale Horizontal 1" = 100', Vertical 1" = 10'

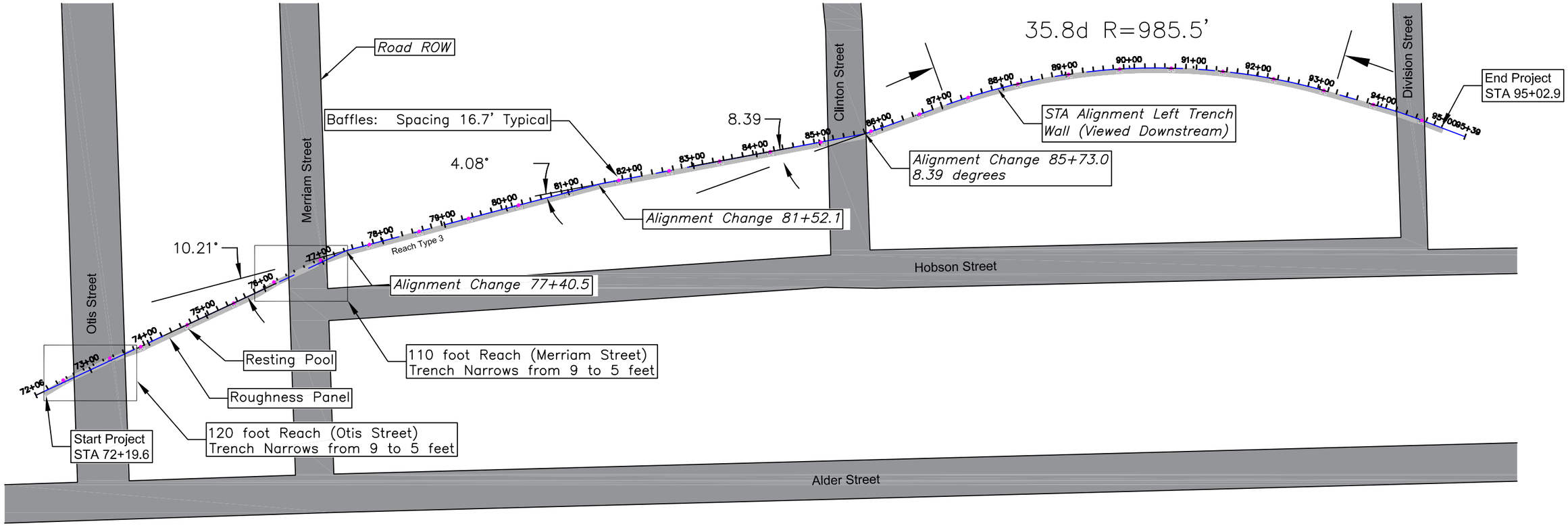


Looking Upstream

Typical Channel Section Sta 74+89

Scale: 1" = 5'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis to Division Street	12/30/2020	12/30/2020	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/30/20	**Overall Profile and Typ Sections**	SHEET 9 OF 26
				BAR IS ONE INCH ON ORIGINAL DRAWING. SCALE VERIFICATION 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.			



Site Plan - Left Bank Trench Wall for Layout

Scale 1" = 80'

Project Layout Information:

Length: 2283'
Resting Pools: 28 (Spacing Varies 75 to 80 feet)
Roughness Panels: 199
Roughness Panel Spacing: Minimum 5" (0.42')
Alignment Changes: 7 (Engineer to Approve Roughness Panel and Resting Pool Layout).

Mill Creek Fish Passage Otis Street to Division Street	12/20/2020	12/20/2020	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/31/20	**Overall Layout**	SHEET 10 OF 26

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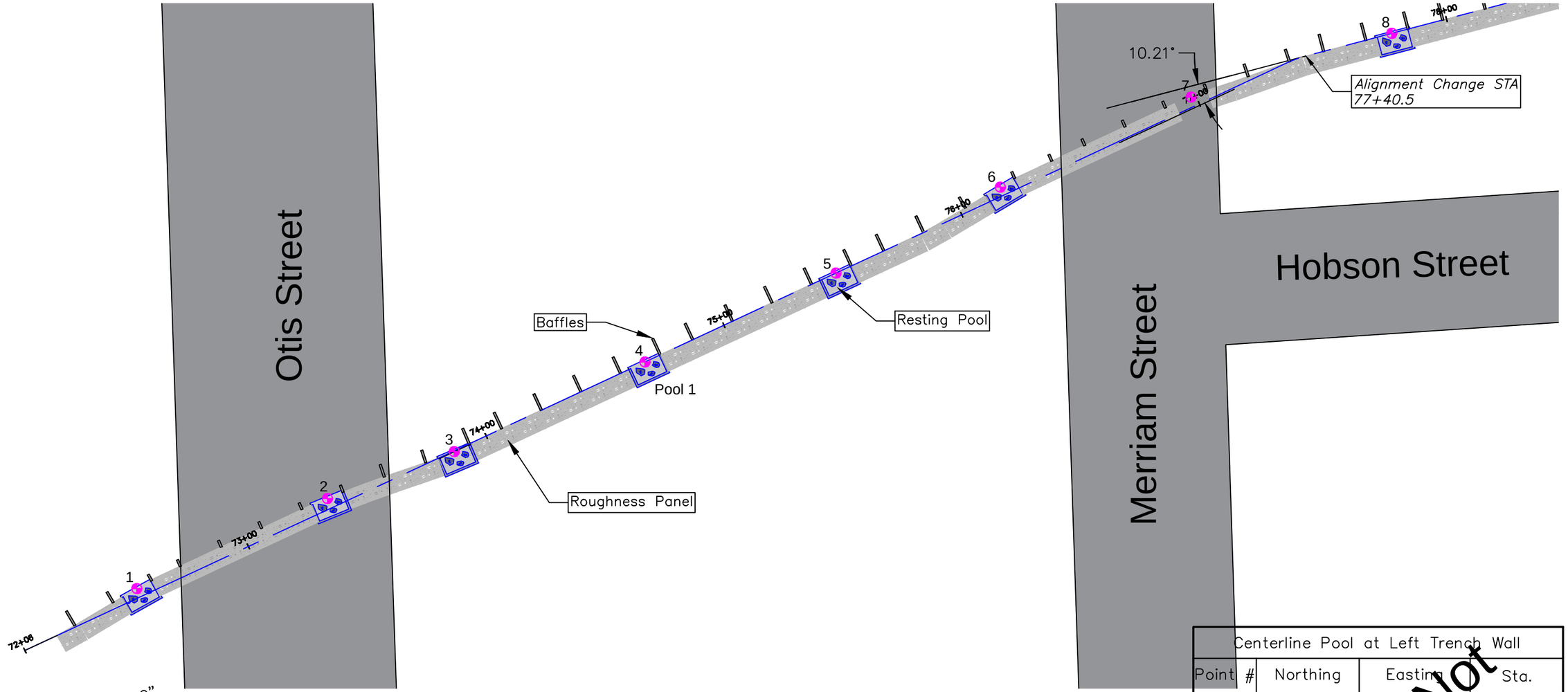
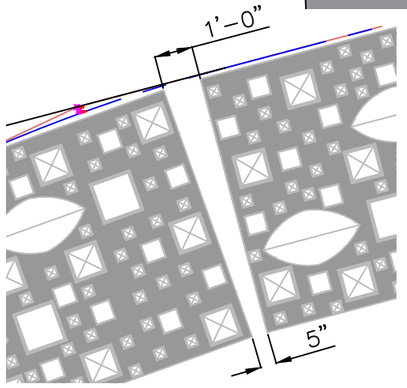


Site Plan - Otis to Merriam Reach
Scale 1" = 20'



STA 77+40.5 Alignment Change
Scale 1" = 2'

Centerline Pool at Left Trench Wall			
Point #	Northing	Easting	Sta.
1	275546.87	2190856.28	64+40
2	275502.60	2190897.15	65+01
3	275470.03	2190947.46	65+62
4	275447.52	2191006.62	66+24
5	275433.69	2191062.40	66+85
6	275428.50	2191122.98	67+46
7	275434.60	2191183.20	68+07
8	275449.16	2191241.83	68+68

Numbers Not Yet Entered

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Otis Street to Division Street

12/31/20

12/3/1/20

REVISIONS

REV	DATE	BY	APP'D	DESCRIPTION

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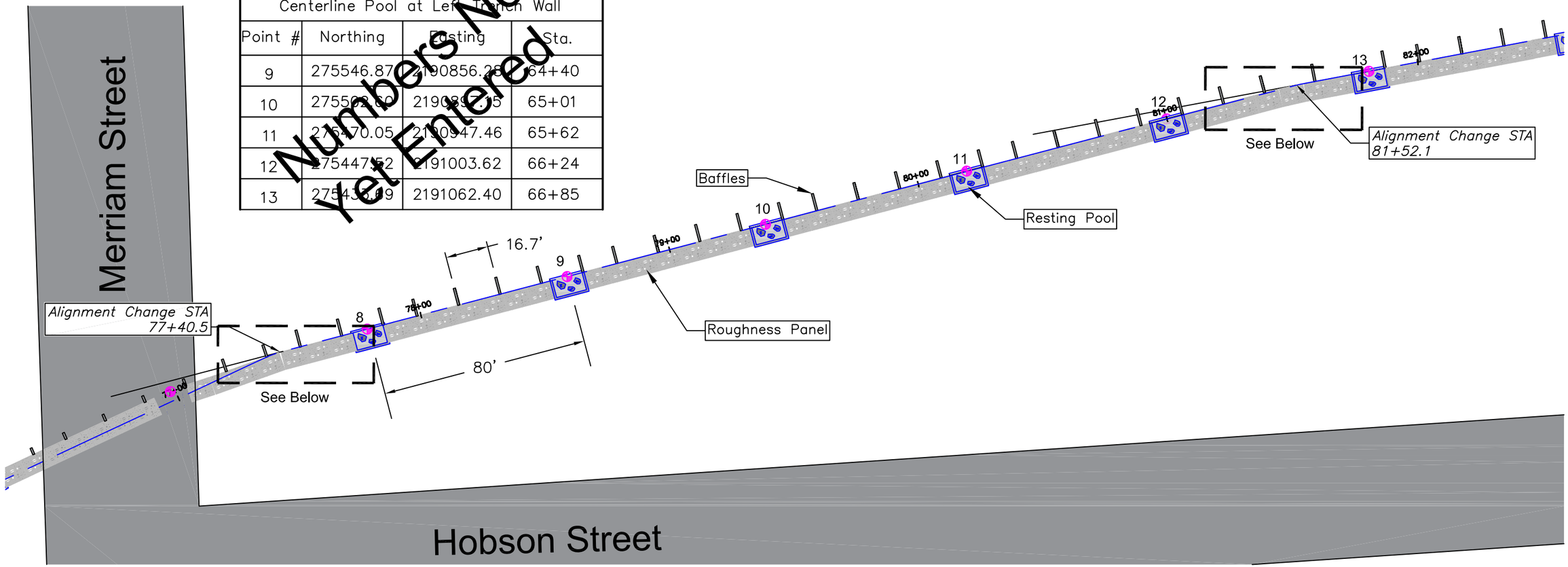
DRAWN BY:
DATE: 12/31/20

Site Plan
STA 72+00 to 78+00

SHEET 11 OF 26

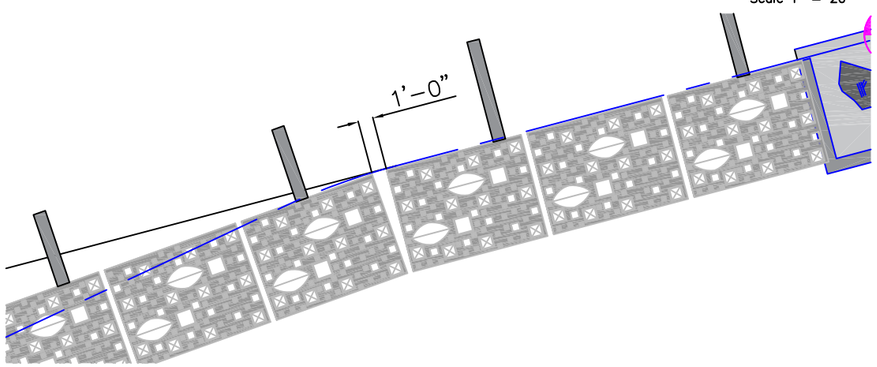
Centerline Pool at Left Trimen Wall			
Point #	Northing	Easting	Sta.
9	275546.87	2190856.28	64+40
10	275502.60	2190895.15	65+01
11	275470.05	2190947.46	65+62
12	275447.52	2191003.62	66+24
13	275436.49	2191062.40	66+85

Numbers Not Yet Entered



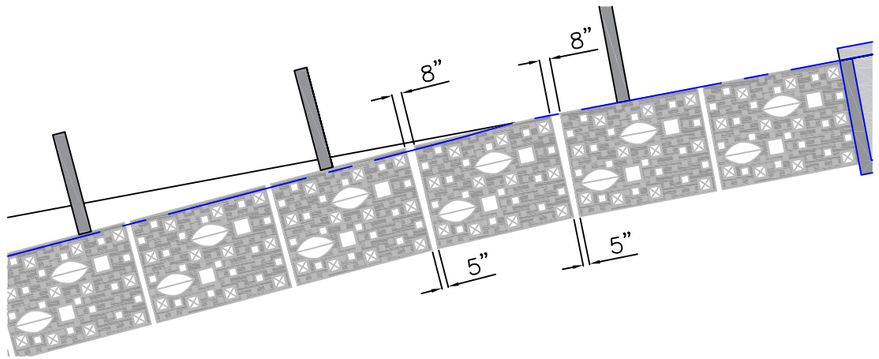
Layout - Merriam Reach Upstream - STA 77+00 to 82+00

Scale 1" = 20'



STA 77+40.5 - Alignment Change

Scale 1" = 5'



STA 81+52.1 Alignment Change

Scale 1" = 5'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/20/2020	12/20/2020	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/31/20	**Layout** **STA 77+00 to 82+00**	SHEET 12 OF 26

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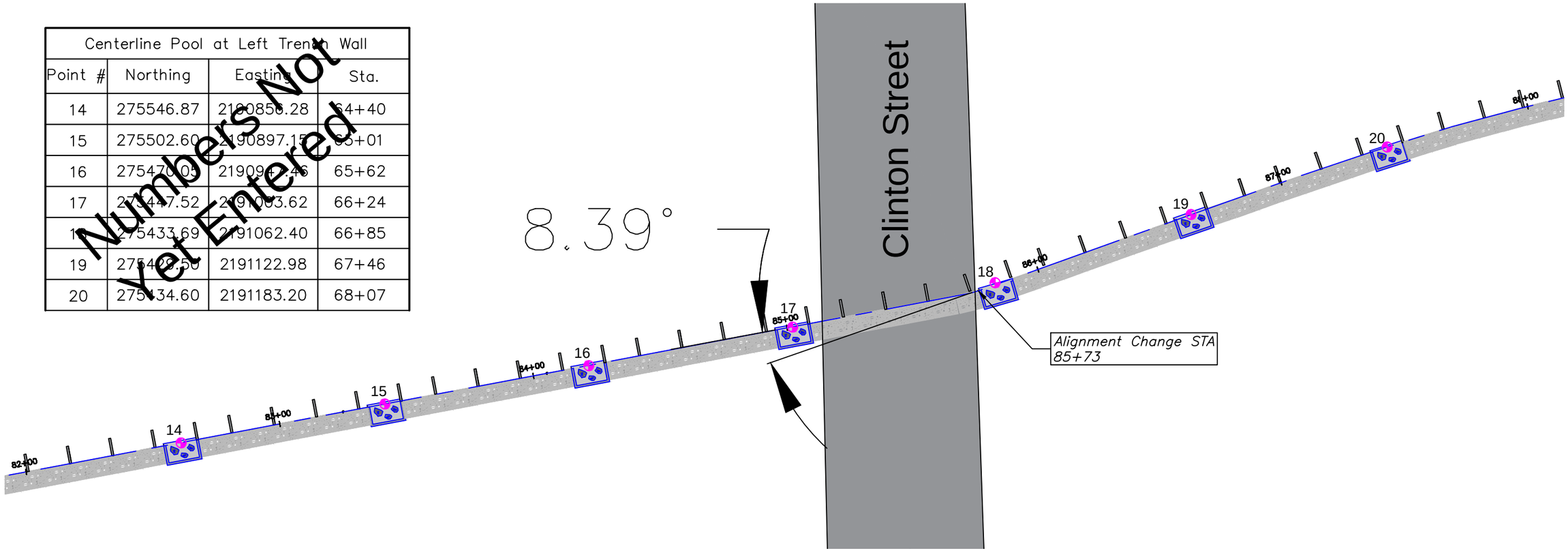
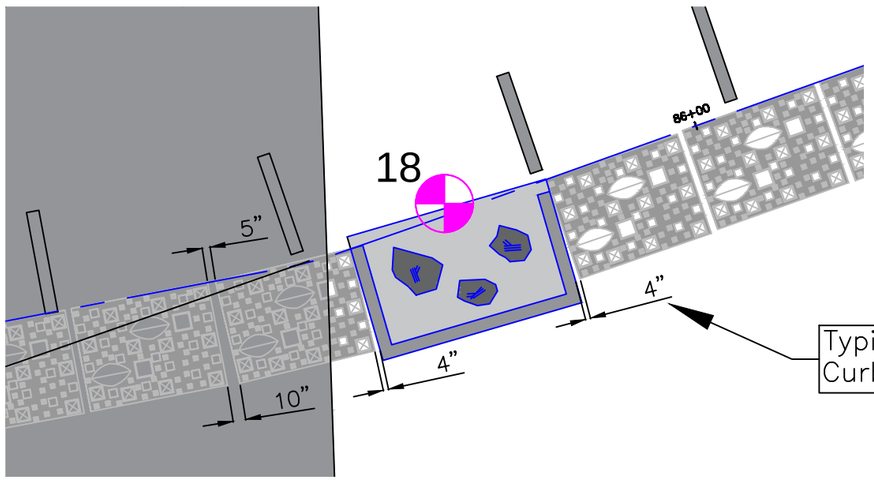
Centerline Pool at Left Trench Wall			
Point #	Northing	Easting	Sta.
14	275546.87	2190856.28	84+40
15	275502.60	2190897.15	85+01
16	275470.05	2190934.46	85+62
17	275447.52	2191003.62	86+24
18	275433.69	2191062.40	86+85
19	275426.50	2191122.98	87+46
20	275434.60	2191183.20	88+07

Numbers Not Yet Entered



Layout - Clinton Street - STA 82+00 to 88+00

Scale 1" = 20'



Typical Adjustments to Resting Pool Walls and Roughness Panels Curbs to Adjust for Alignment Changes

STA 85+73 Angle Change 8.39 degrees

Scale 1" = 5'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/20/2020	12/20/2020	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/31/20	**Layout** **STA 82+00 to 88+00**	13 SHEET 26 OF

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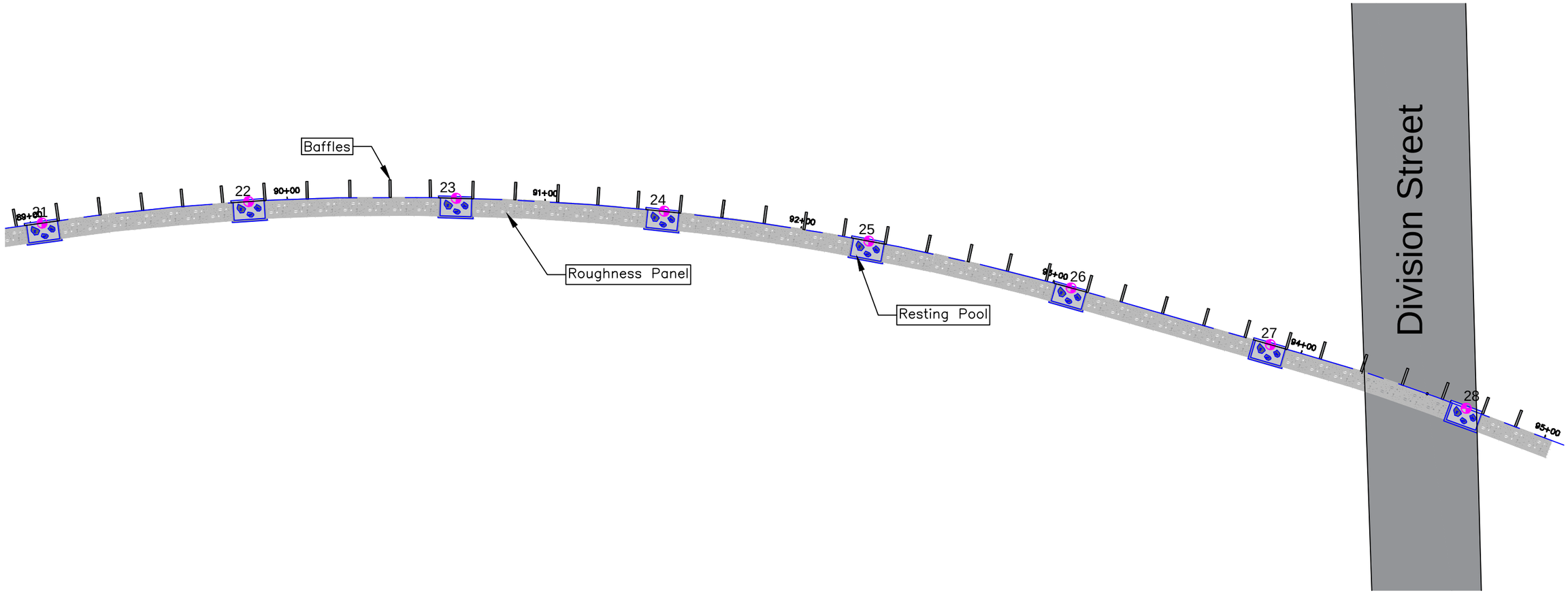

Centerline Pool at Left Trench Wall			
Point #	Northing	Easting	Sta.
21	275546.87	2190856.28	64+40
22	275502.60	2190897.15	65+01
23	275470.05	2190947.45	65+62
24	275447.52	2191009.62	66+24
25	275433.69	2191062.40	66+85
26	275429.50	2191122.98	67+46
27	275434.80	2191183.20	68+07
28			

Numbers Not Yet Entered

Layout - Division Street - STA 89+00 to 95+00

Scale 1" = 20'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/20/2020	12/20/2020	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/31/20	**Layout** **STA 89+00 to 95+00**	SHEET 14 OF 26

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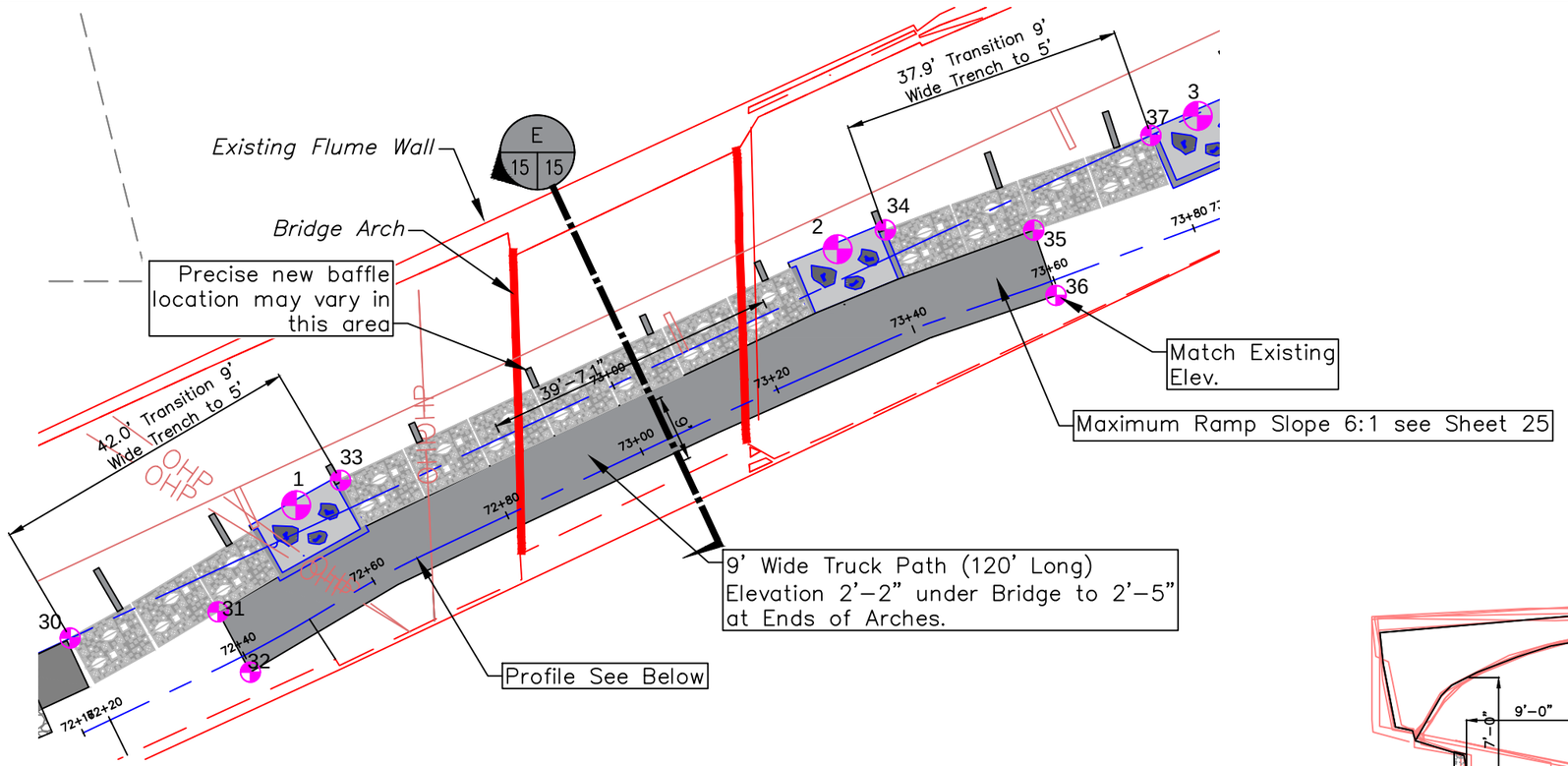
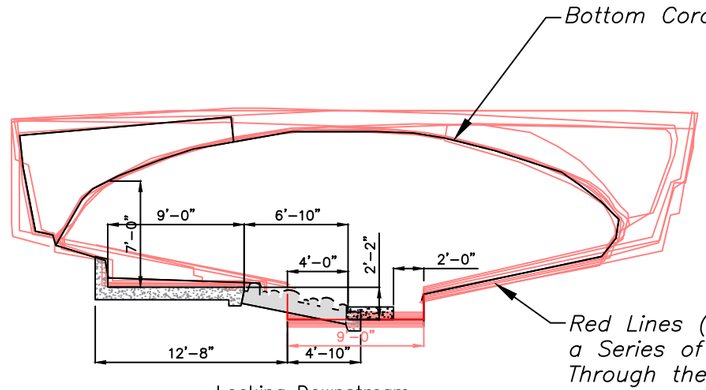


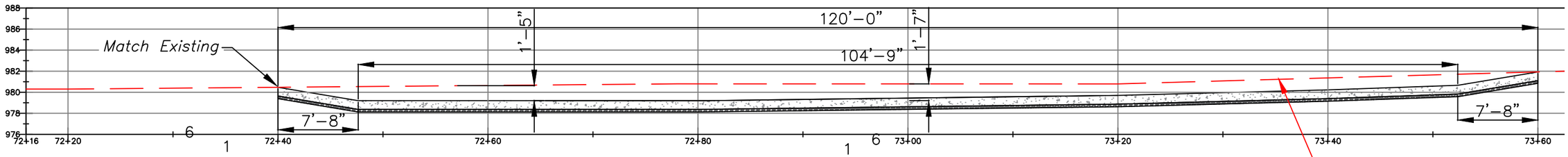
Otis St Bridge
SCALE 1"=10'

Layout Points for Otis Bridge			
Point #	Northing	Easting	Sta.
30	275546.87	2190856.28	64+40
31	275502.60	2190897.15	65+01
32	275470.05	2190947.46	65+62
33	275447.52	2191003.62	66+24
34	275546.87	2190856.28	64+40
35	275502.60	2190897.15	65+01
36	275470.05	2190947.46	65+62
37	275447.52	2191003.62	66+24

Numbers Not Yet Entered



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



Otis Street Bridge - Truck Path Alignment Profile
SCALE 1"= 5'

Flow Direction

Existing Concrete Channel

Note:
1. All Final Dimensions and Locations to be Staked in Field by Engineer.
2. See Sheet 21 for Rebar Placement Detail

TRI-STATE STEELHEADERS

Mill Creek Fish Passage
Otis Street to Division Street

12/30/2020

12/30/2020

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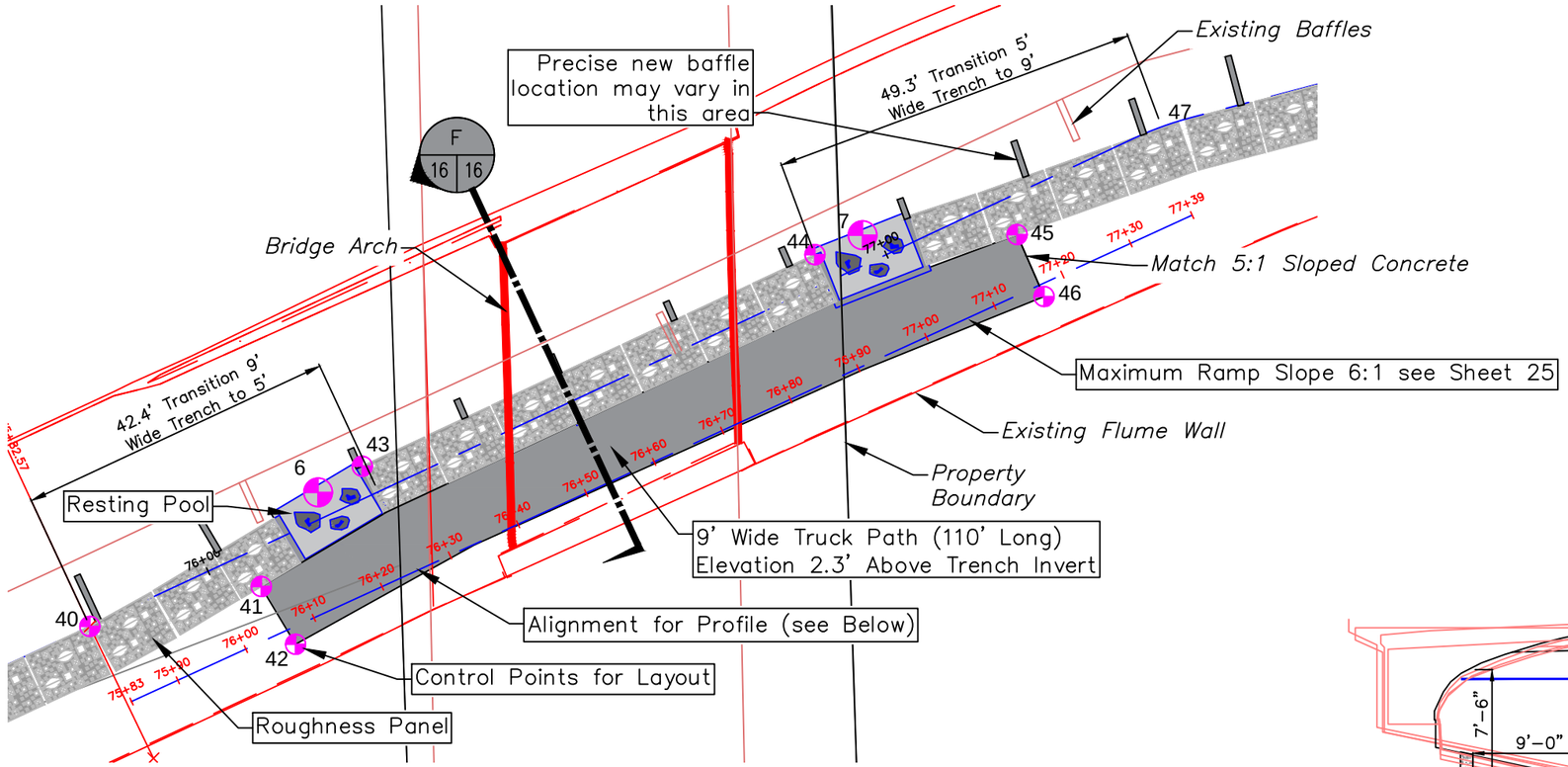
DATE: 12/30/20

Plan and Sections Otis St Bridge

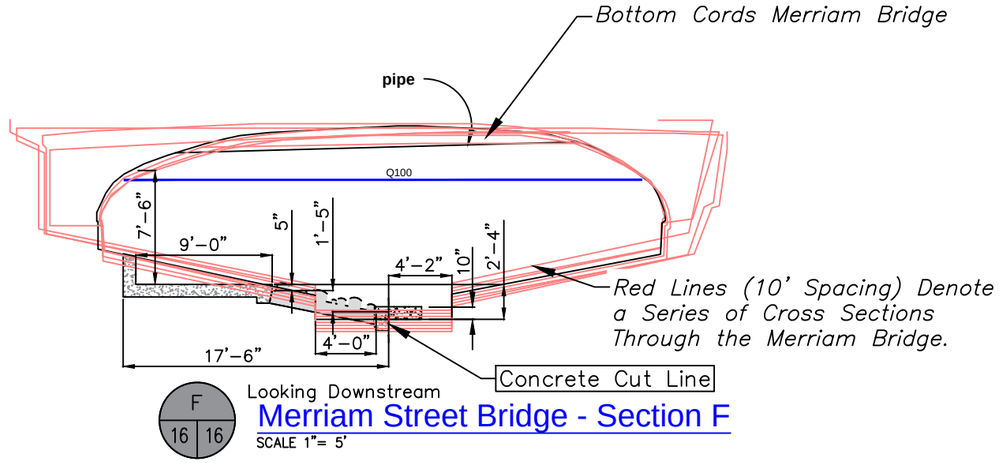
SHEET 15 OF 26



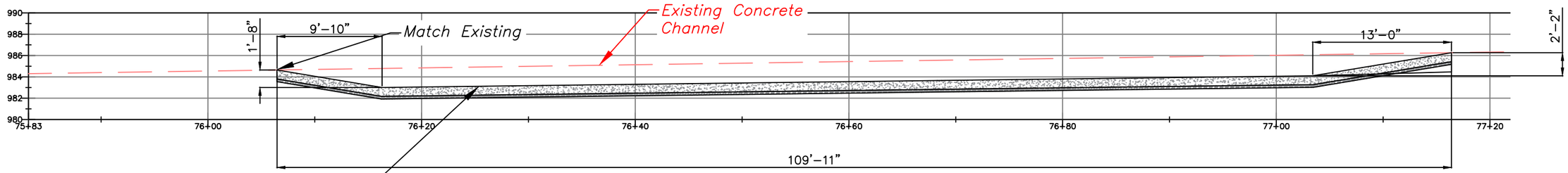
Merriam St Bridge
SCALE 1"=10'

Layout Points for Merriam Bridge			
Point #	Northing	Easting	Sta.
40	275546.87	2190856.28	64+40
41	275502.60	2190897.15	65+01
42	275470.05	2190947.46	65+62
43	275447.52	2191003.62	66+24
44	275546.87	2190856.28	64+40
45	275502.60	2190897.15	65+01
46	275470.05	2190947.46	65+62
47	275447.52	2191003.62	66+24

Numbers Not Yet Entered



Merriam Street Bridge - Section F
SCALE 1"= 5'



Merriam Street Bridge - Truck Path Alignment Profile
SCALE 1"= 5'

Flow Direction

Note:
1. All Final Dimensions and Locations to be Staked in Field by Engineer.
2. See Sheet 21 for Detail of Concrete and Rebar Placement/Design

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/30/20	12/30/20	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/31/20	**Plan and Sections Merriam Street Bridge**	16 SHEET 26 OF

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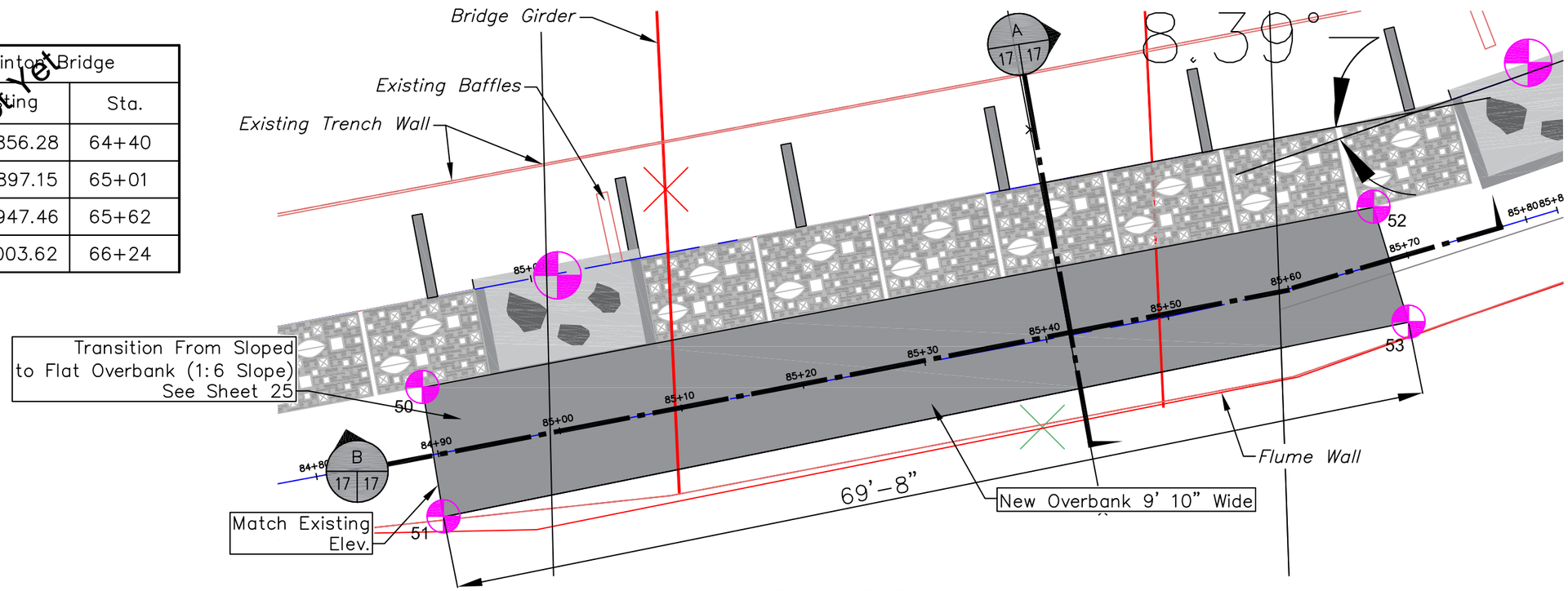
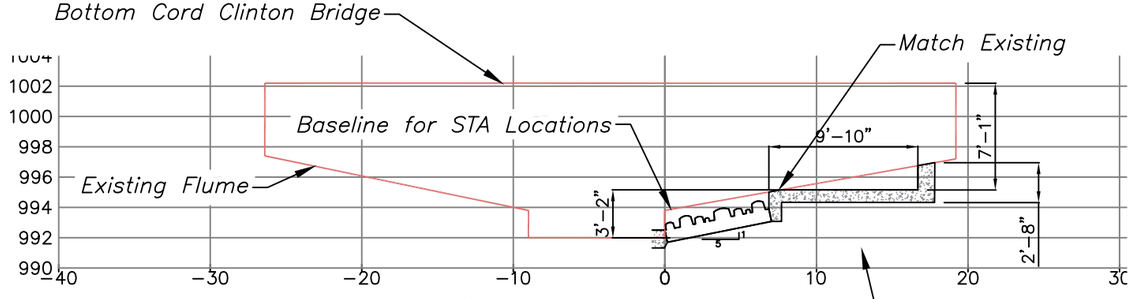
Layout Points for Clinton Bridge			
Point #	Northing	Easting	Sta.
50	275546.87	2190856.28	64+40
51	275503.00	2190897.15	65+01
52	275470.00	2190947.46	65+62
53	275447.52	2191003.62	66+24

Numbers Not Yet Entered

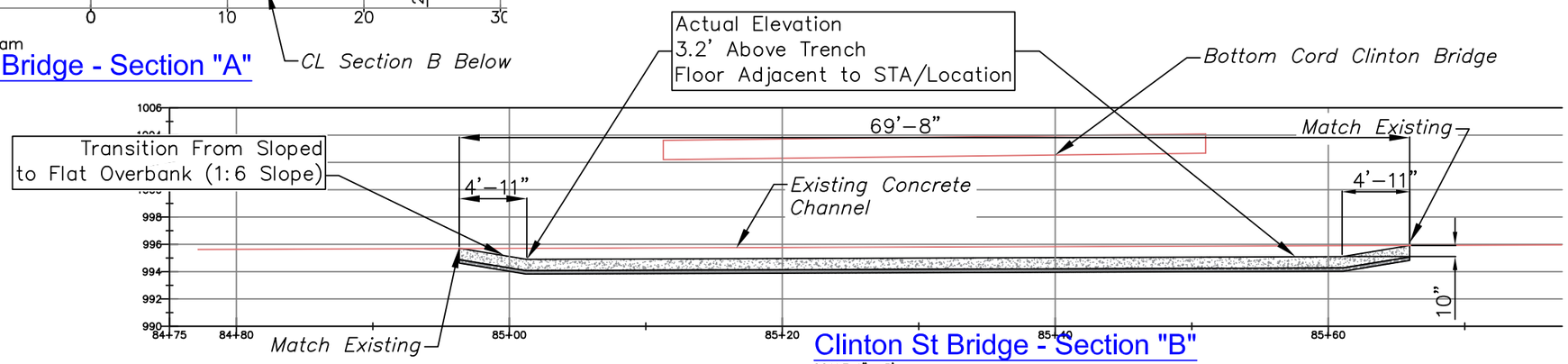


Clinton St Bridge
SCALE 1"= 5'



Clinton St Bridge - Section "A"
SCALE 1"= 5'

Note:
1. All Final Dimensions and Locations to be Staked in Field by Engineer.
2. See Sheet 21 for Rebar Pacement/Design



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

Mill Creek Fish Passage
Otis Street to Division Street

12/30/20

12/30/20

REVISIONS

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DRAWN BY:
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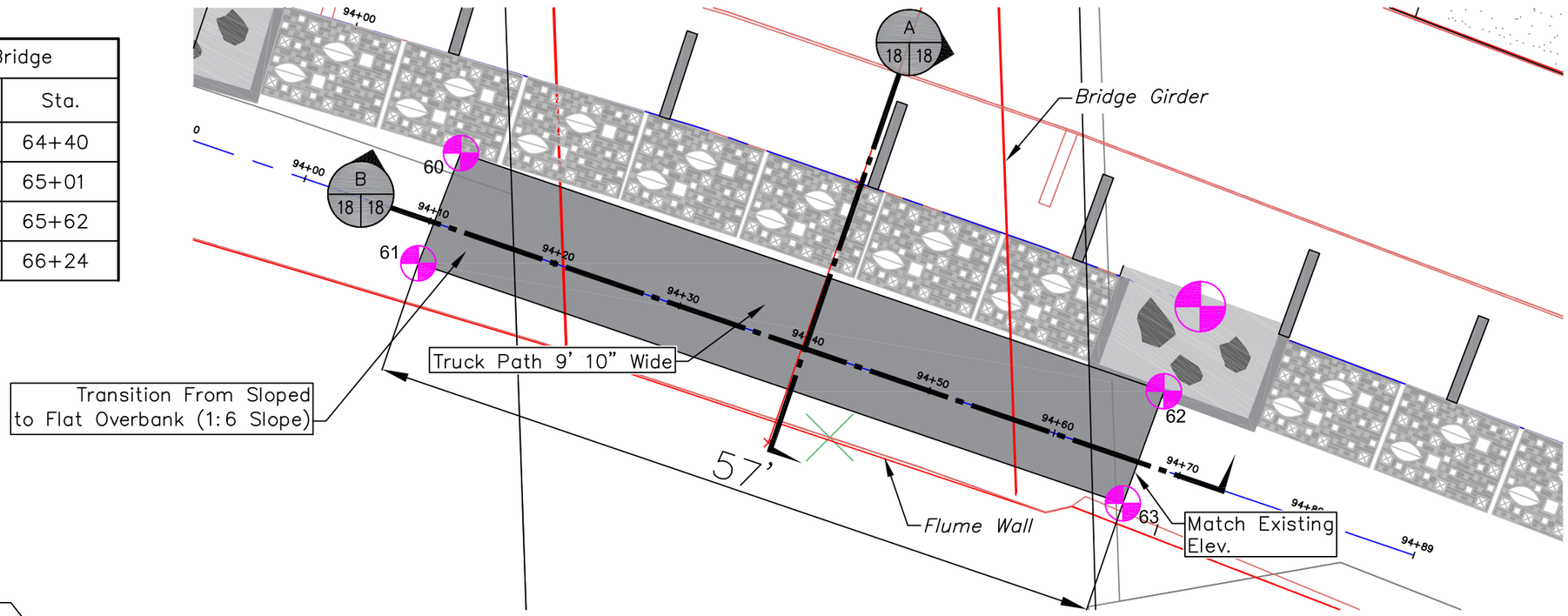
Plan and Sections
Clinton Street Bridge

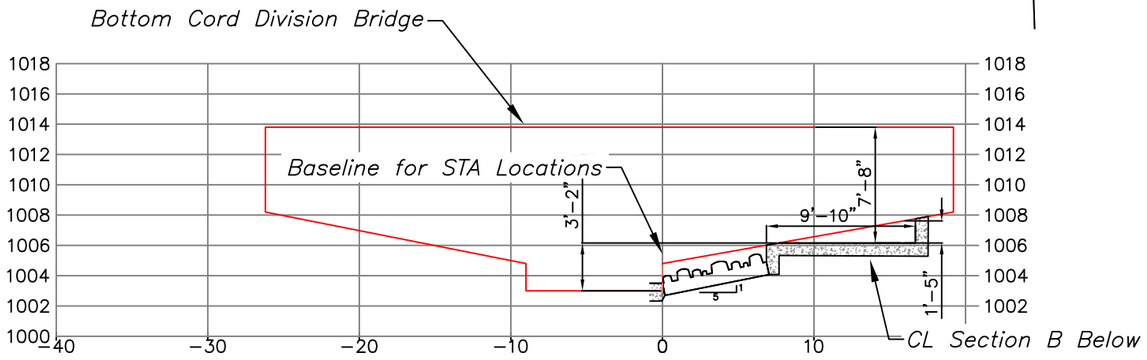
SHEET 17 OF 26

Layout Points for Division Bridge			
Point #	Northing	Easting	Sta.
60	275546.87	2190856.28	64+40
61	275502.80	2190897.15	65+01
62	275470.05	2190947.46	65+62
63	275447.52	2191003.62	66+24

Numbers Not Yet Entered



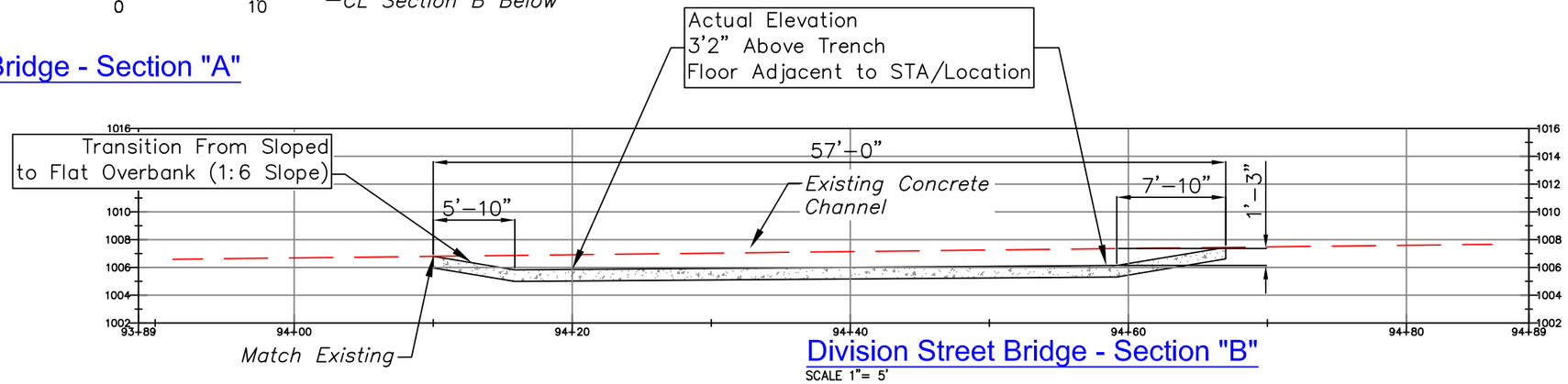
Division Street Bridge
SCALE 1"= 5'



Looking Upstream

Division Street St Bridge - Section "A"
SCALE 1"= 5'

Note:
1. All Final Dimensions and Locations to be Staked in Field by Engineer.
2. See Sheet 21 for Rebar Pacement/Design



Division Street Bridge - Section "B"
SCALE 1"= 5'

Mill Creek Fish Passage
Otis Street to Division Street

12/30/20

12/30/20

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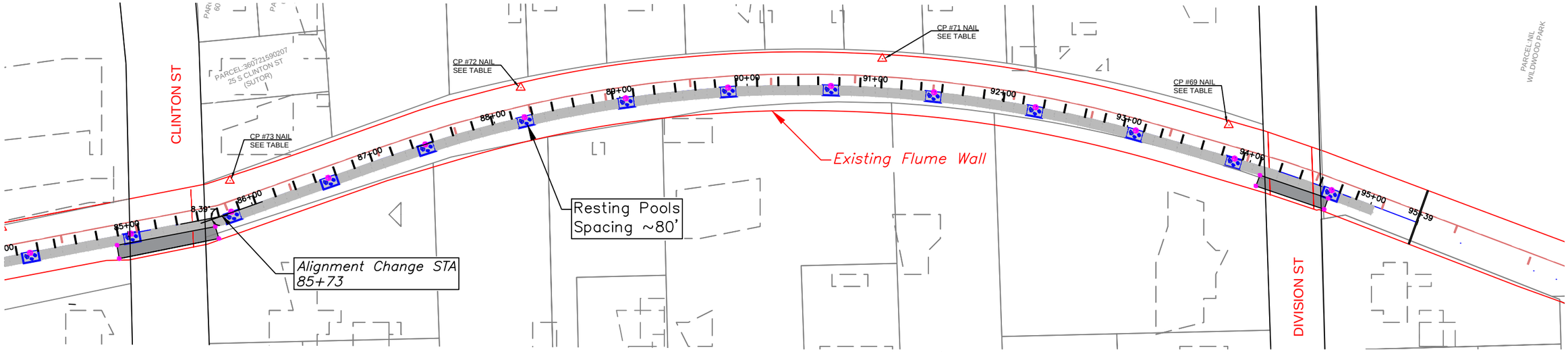
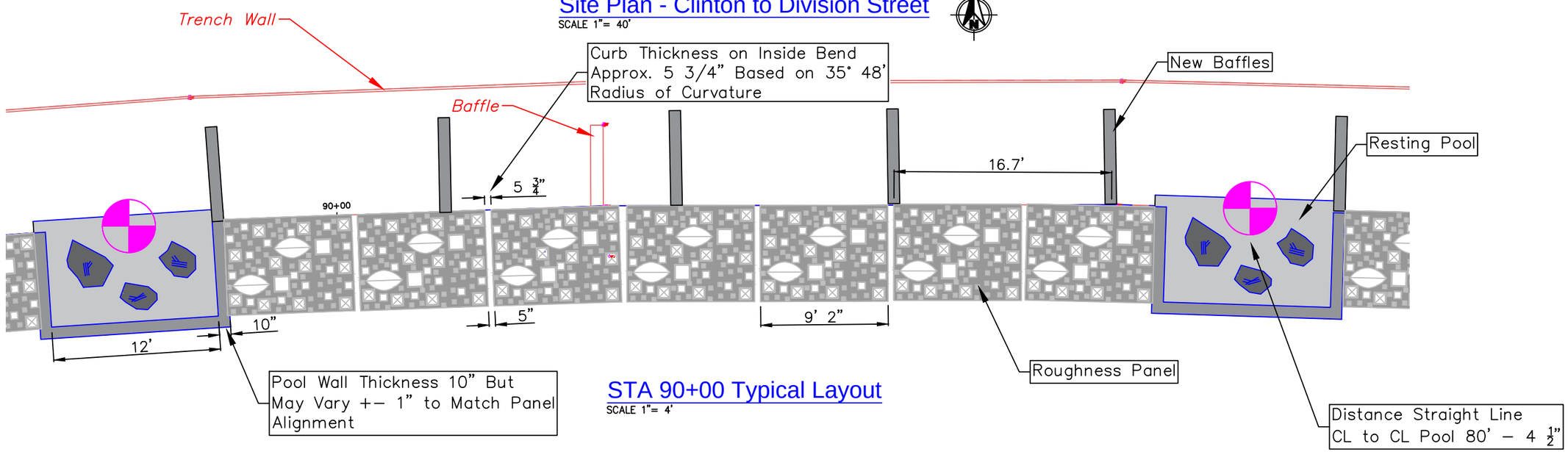
Plan and Sections
Division Street Bridge

SHEET 18 OF 26



Site Plan - Clinton to Division Street

SCALE 1"= 40'



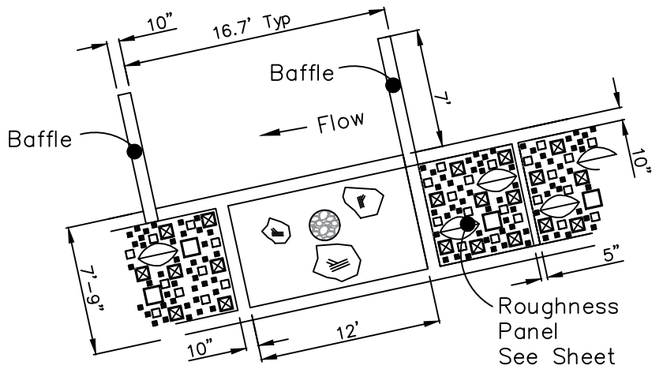
STA 90+00 Typical Layout

SCALE 1"= 4'

Construction Layout Note:

1. Locate Resting Pools Based on Point Coordinates (Staked by Engineer)
2. Layout Roughness Panel to Provide 10" Curb at Pool/Roughness Panel Transition, 9' From Trench Wall.
3. Adjust 5" Panel to Panel Curb Thickness Along Left Trench as Needed.

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/30/2020	12/30/2020	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: DATE: 12/30/20	**Clinton to Division Enlarged View**	SHEET 19 OF 26



RESTING POOL PLAN VIEW

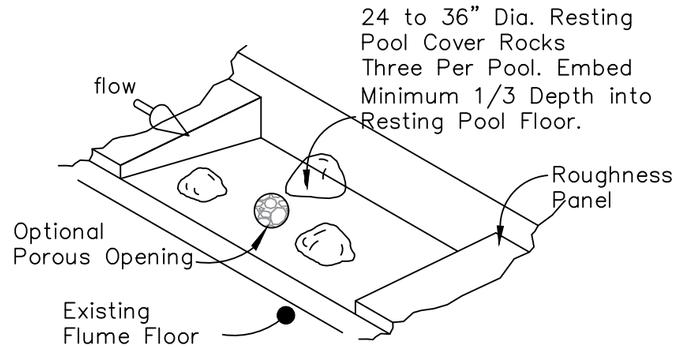
Note:
1. All saw cut concrete with exposed rebar shall be chipped back to expose 3" length of steel.

2. Steel rebar shall be cut off and the concrete cone shaped hole patched with Hilti Hit HY200 epoxy. minimize hole diameter to cut steel rebar.

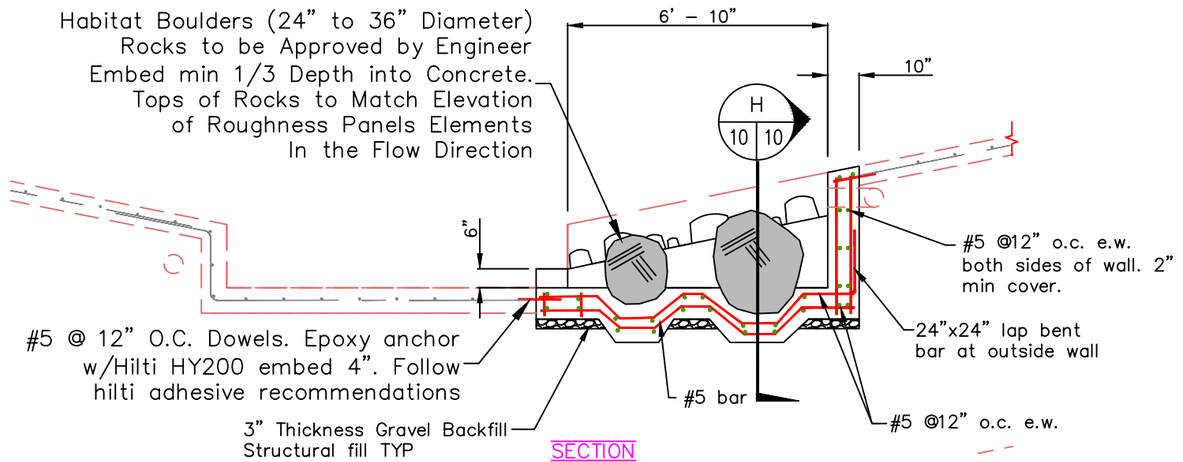
3. Final epoxy cover over steel shall be 1 1/2" minimum

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.

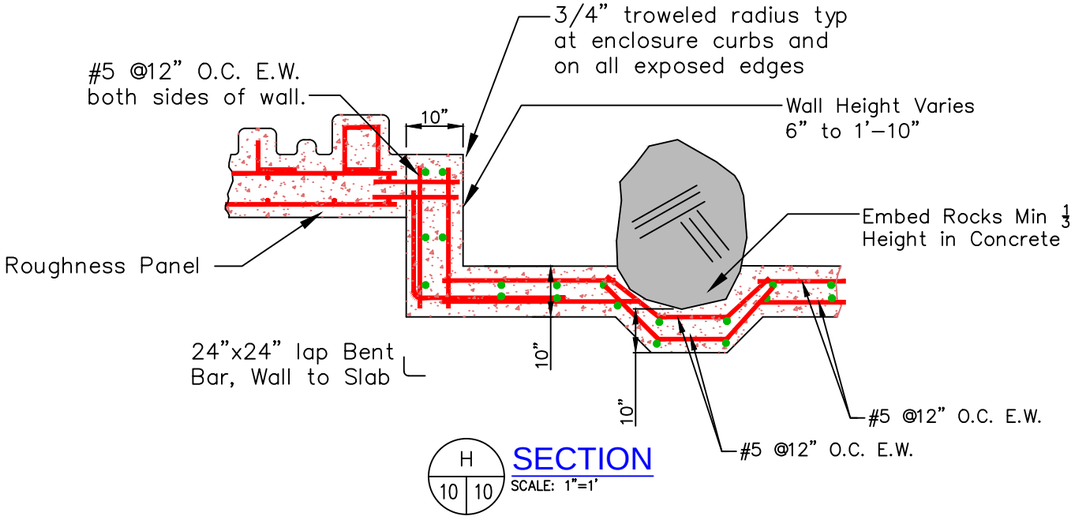


ISOMETRIC
NOT TO SCALE

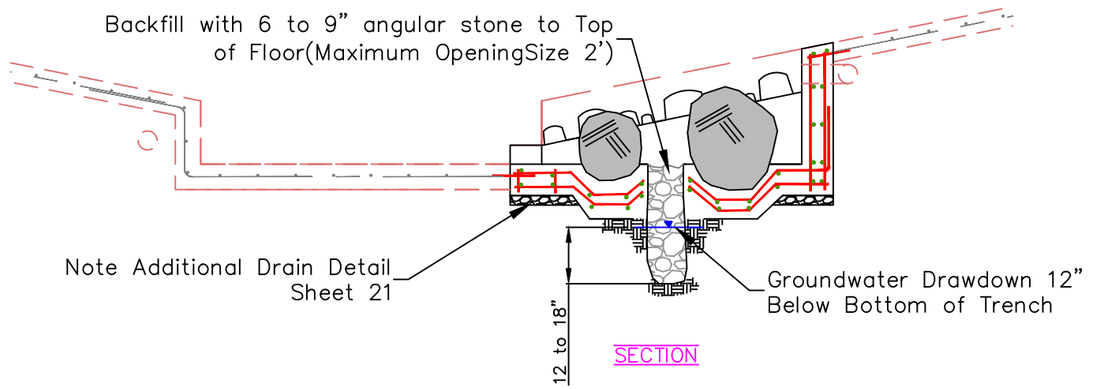


SECTION

Typical Resting Pool
SCALE 1"=2"



SECTION
SCALE: 1"=1'



SECTION

Alternate Resting Pool
SCALE 1"=2"

Mill Creek Fish Passage
Otis Street to Division Street

12/30/2020

12/30/2020

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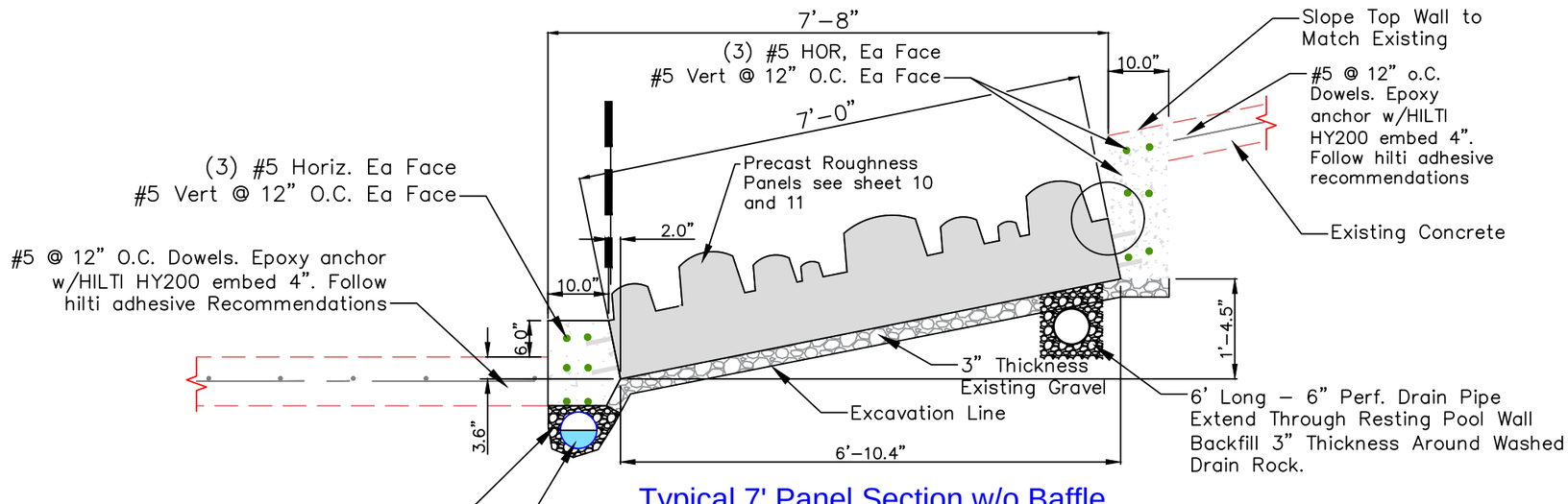
Resting Pool Details

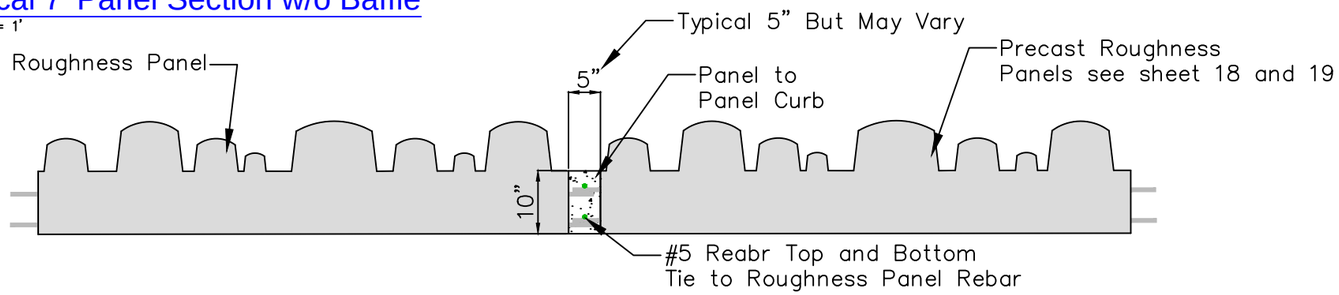
SHEET 20 OF 26



Typical 7' Panel Section w/o Baffle

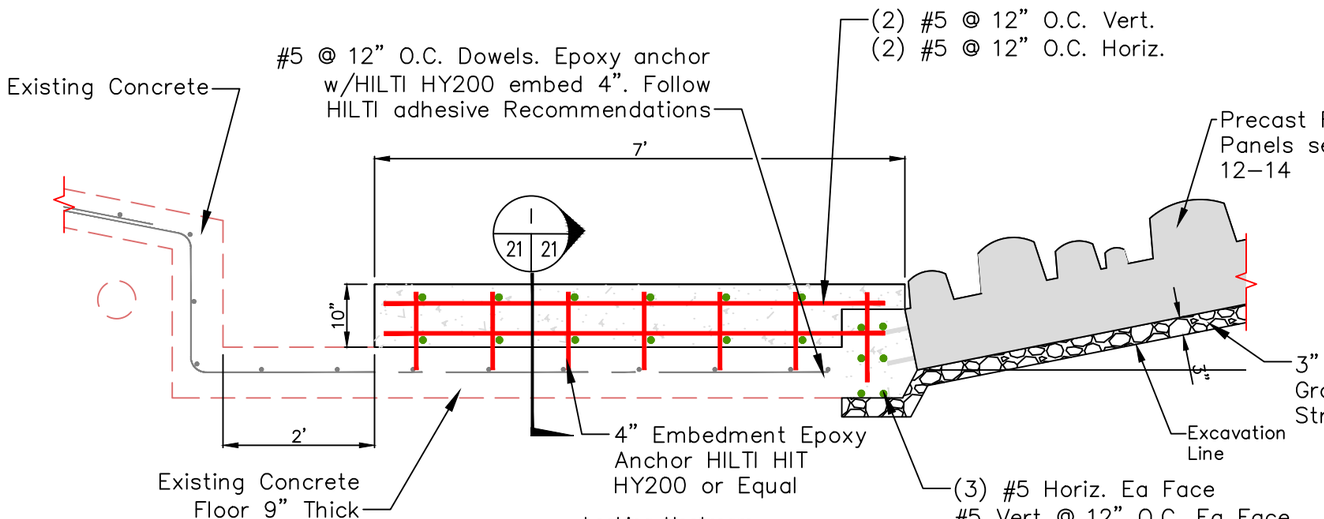
SCALE 1"= 1'

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"



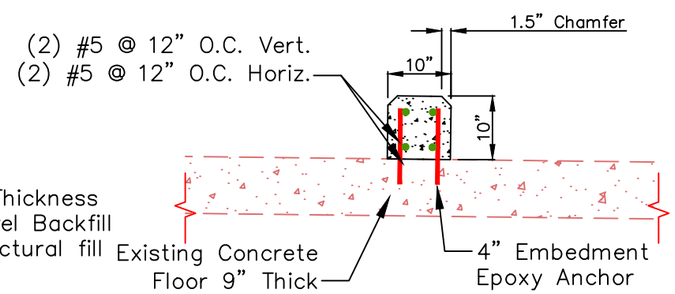
Panel to Panel Section

SCALE: 1"=1'



Typical Section with Baffle

SCALE 1"= 1'



Baffle Spacing: 16.7 Typ

1
21 21

Baffle Section

SCALE: 1"=1'

Mill Creek Fish Passage
Otis Street to Division Street

12/30/2020

12/30/2020

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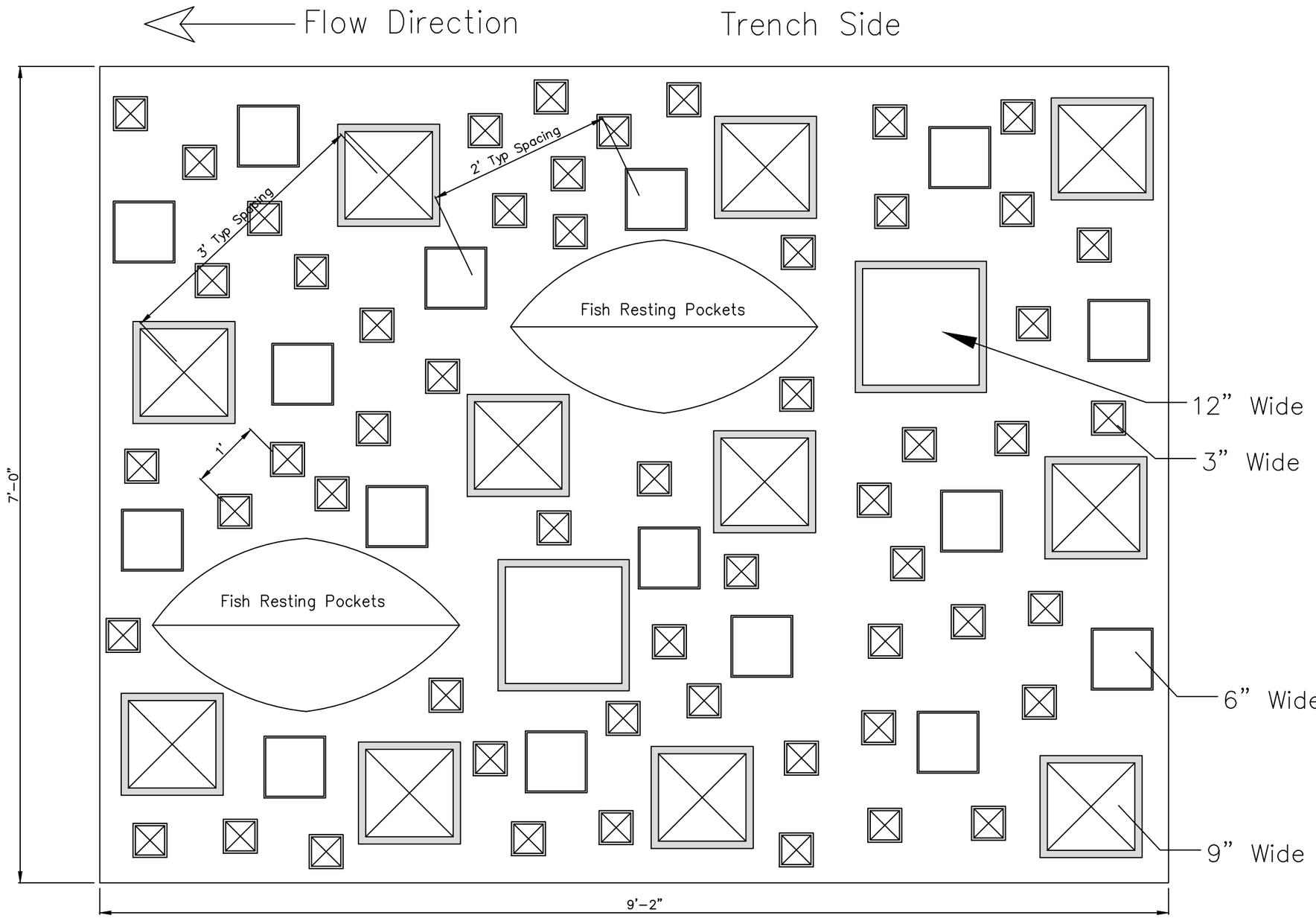
Roughness Panel Connection
Baffle Details

SHEET 21 OF 26



Roughness Panel Layout

Not to Scale

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/30/2020	12/30/2020	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/30/20	**Roughness Panel Details**	SHEET 22	OF 26

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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.

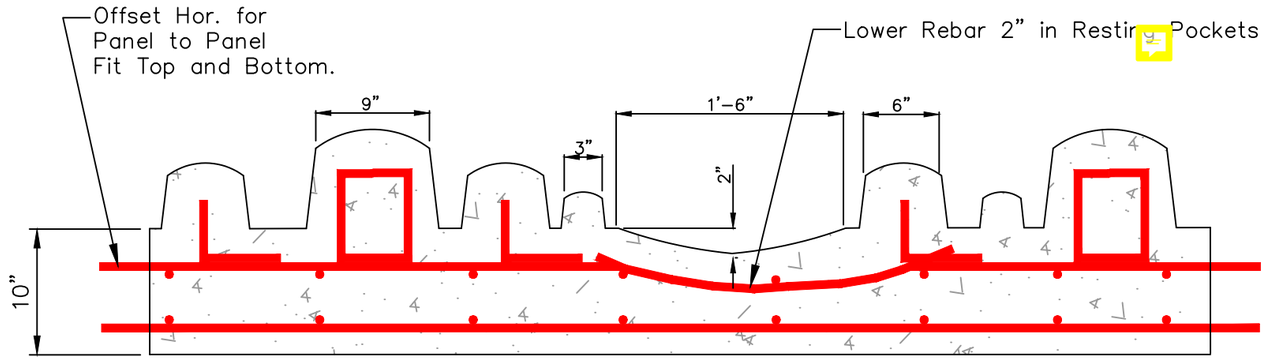
2. The Roughness panels shall be precast concrete panels.

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

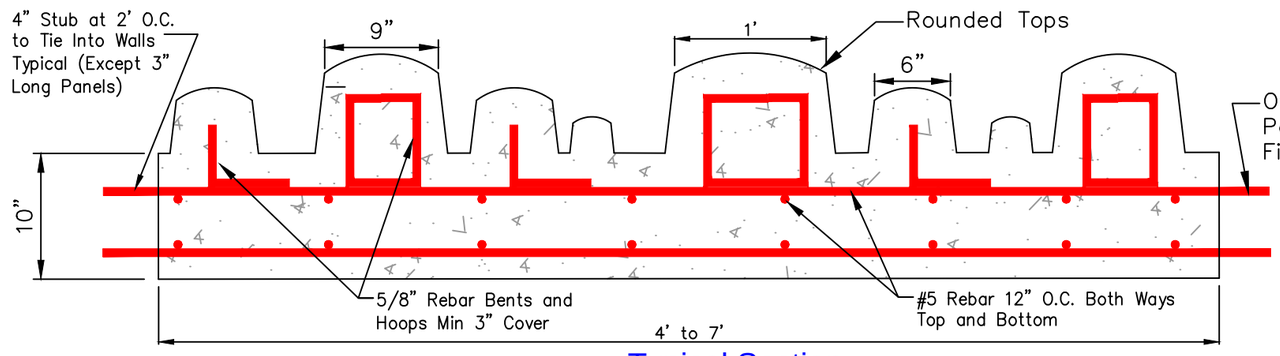
4. Precast panels shall be drawn, and described in formal shop drawings approved in writing by the engineer prior to casting.

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.

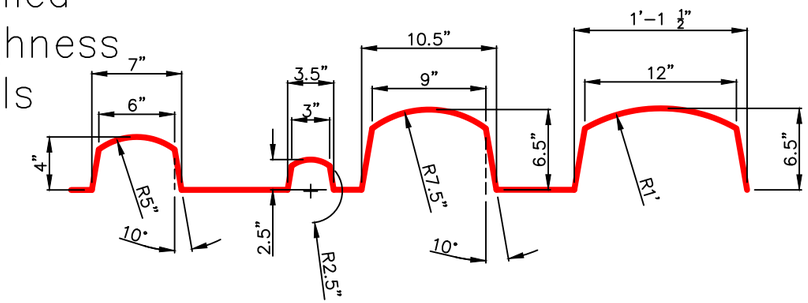


Typical Section Showing 2" Depression
Not To Scale

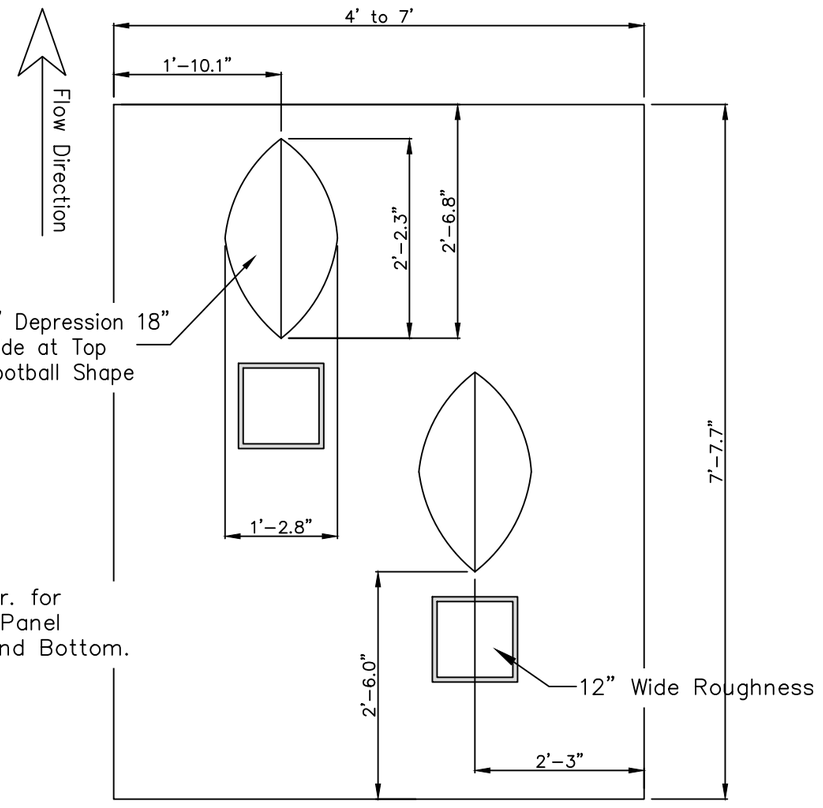


Typical Section
Not To Scale

Sponsor Supplied Roughness Panels

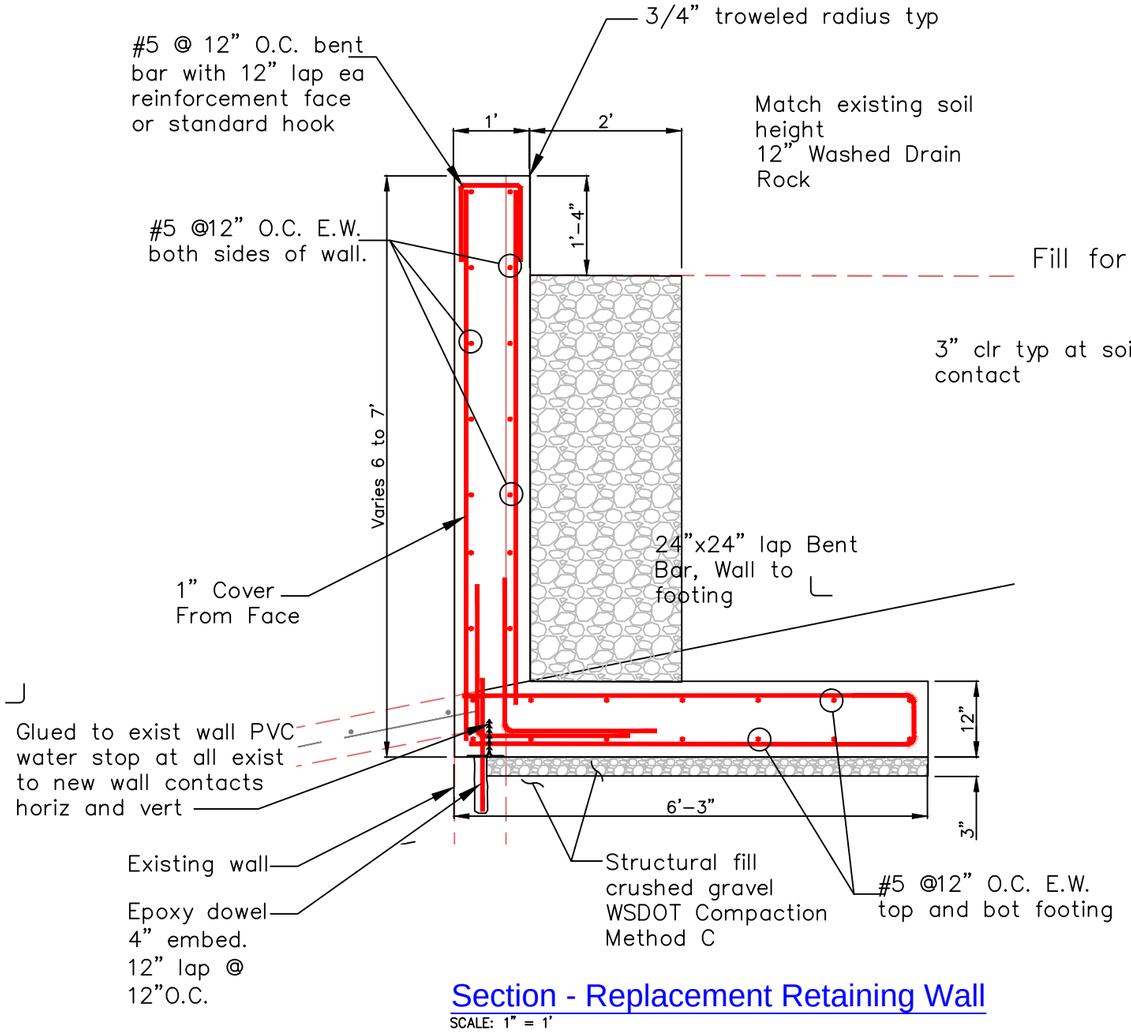


Roughness Detail
Not To Scale



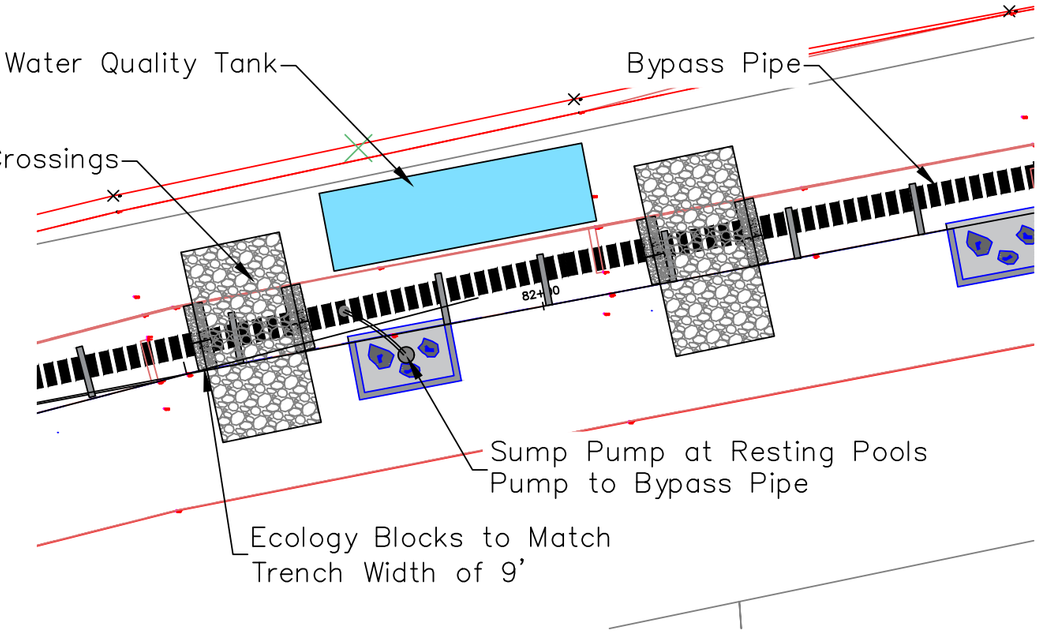
Roughness Panel Plan - Layout For 12" Roughness
Not to Scale

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/30/2020	12/30/2020	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: DATE: 12/30/20	**Roughness Panel Details**	SHEET 23 OF 26



Section - Replacement Retaining Wall

SCALE: 1" = 1'



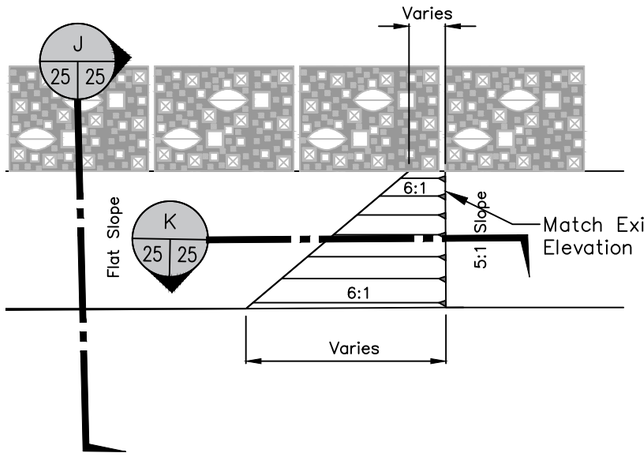
Detail - Dewatering Plan

SCALE: 1" = 10'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/30/2020	12/30/2020	REVISIONS REV / DATE / BY / APP'D / DESCRIPTION	DESIGNED BY: WATERFALL ENGINEERING CHINOOK ENGINEERING DRAWN BY: DATE: 12/31/20
				BAR IS ONE INCH ON ORIGINAL DRAWING. SCALE VERIFICATION 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	

Details

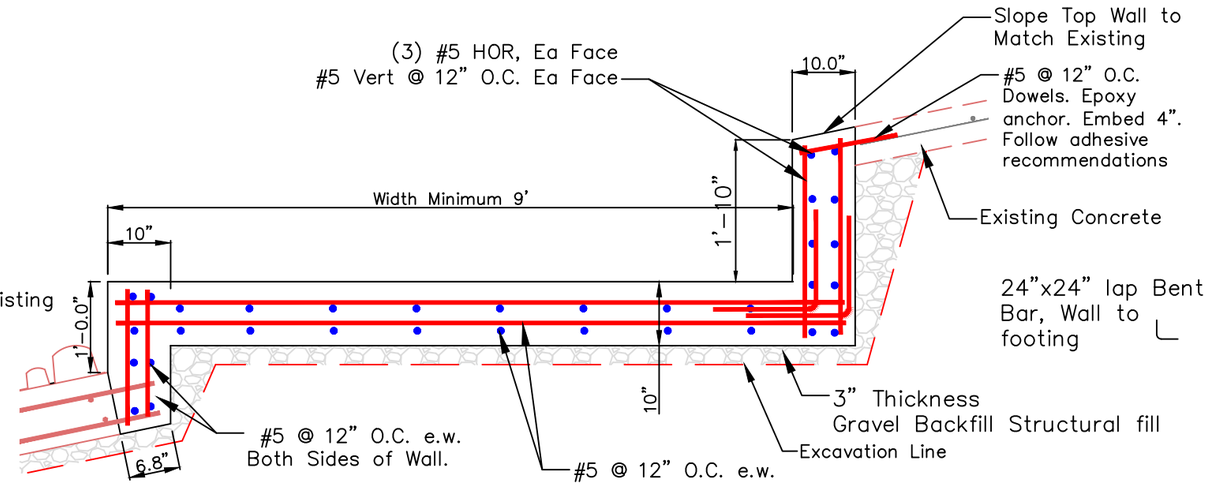
SHEET 24 OF 26



Overbank Ramp Transition Typical

SCALE: 1"= 5'

Note: Only Upstream Side of Ramp Shown, Downstream Side Opposite. Two Ramp each at Otis, Merriam, Clinton and Division.



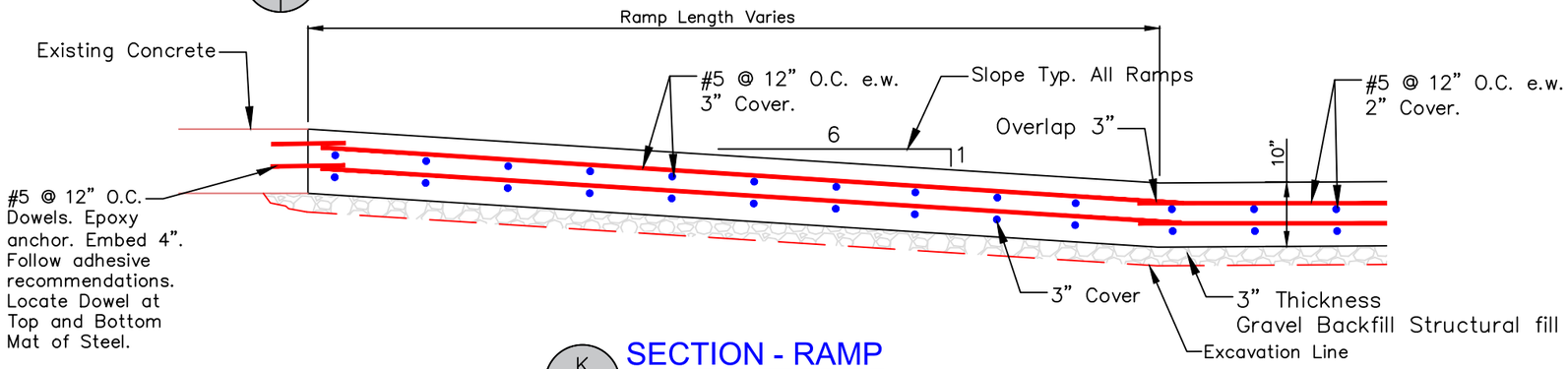
Note:
1. All gravel backfill and new construction backfill shall be compacted as structural fill as per WSDOT 2-03.3(14)C Method C.
2. All embankment compactions are called out as structural fill.
3. See specifications for details of material and WSDOT M41-10
4. Concrete cover as follows:
   Ground Contact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

Looking Upstream

J
25 25

SECTION - OVERBANK

SCALE: 1"=1'

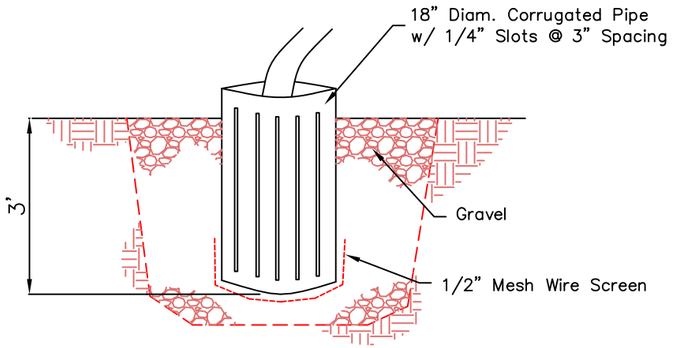


K
25 25

SECTION - RAMP

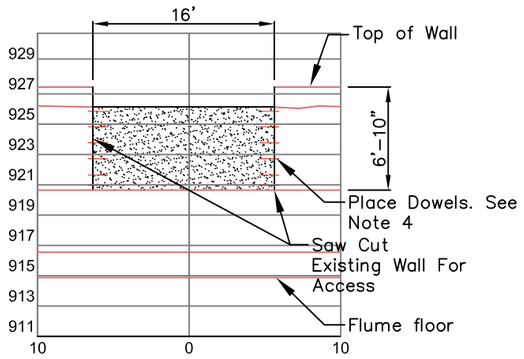
SCALE: 1"=1'

TRI-STATE STEELHEADERS	Mill Creek Fish Passage Otis Street to Division Street	12/20/2020	12/20/2020	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: DATE: 12/31/20	**Details**	SHEET 25 OF 26		



SUMP PUMP DETAIL

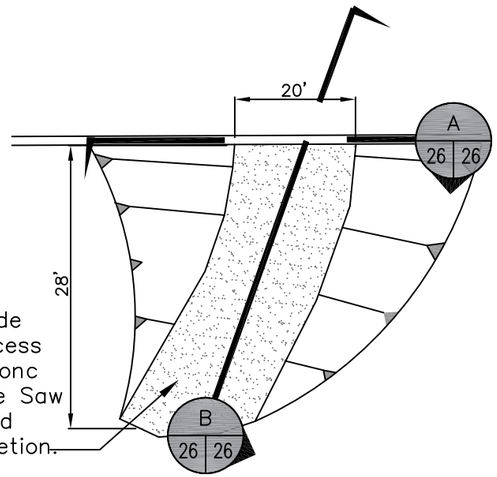
NOT TO SCALE



A
26 | 26

ACCESS SECTION

SCALE: 1"=5'

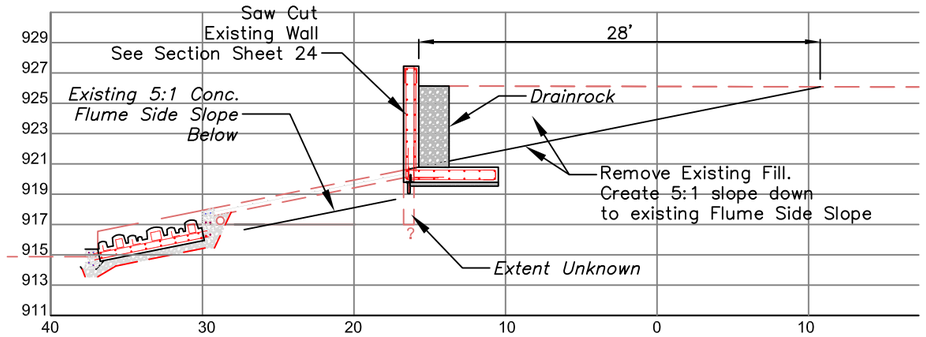


Proposed 20' Wide Construction Access Road. Existing Conc Flume Wall to be Saw Cut and Replaced after Job Completion.

Plan View Access

SCALE: 1"=5'

Typical – Actual layout and location will vary.



B
26 | 26

CONSTRUCTION ACCESS SECTION

SCALE: 1"=5'

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

Mill Creek Fish Passage
Otis Street to Division Street

12/20/2020

12/20/2020

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:
DATE: 12/31/20

Details

SHEET 26 OF 26