

DETROIT WATER TEMPERATURE CONTROL AND DOWNSTREAM PASSAGE

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WFFDWG Mtg
CENWP
04 Dec 2018



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NOTE:
TAMTER GATE

AGENDA

FSS Layout – 90% DDR

Revised FSS Layout – 95% DDR

FHF Layout Changes (Direct Loading)

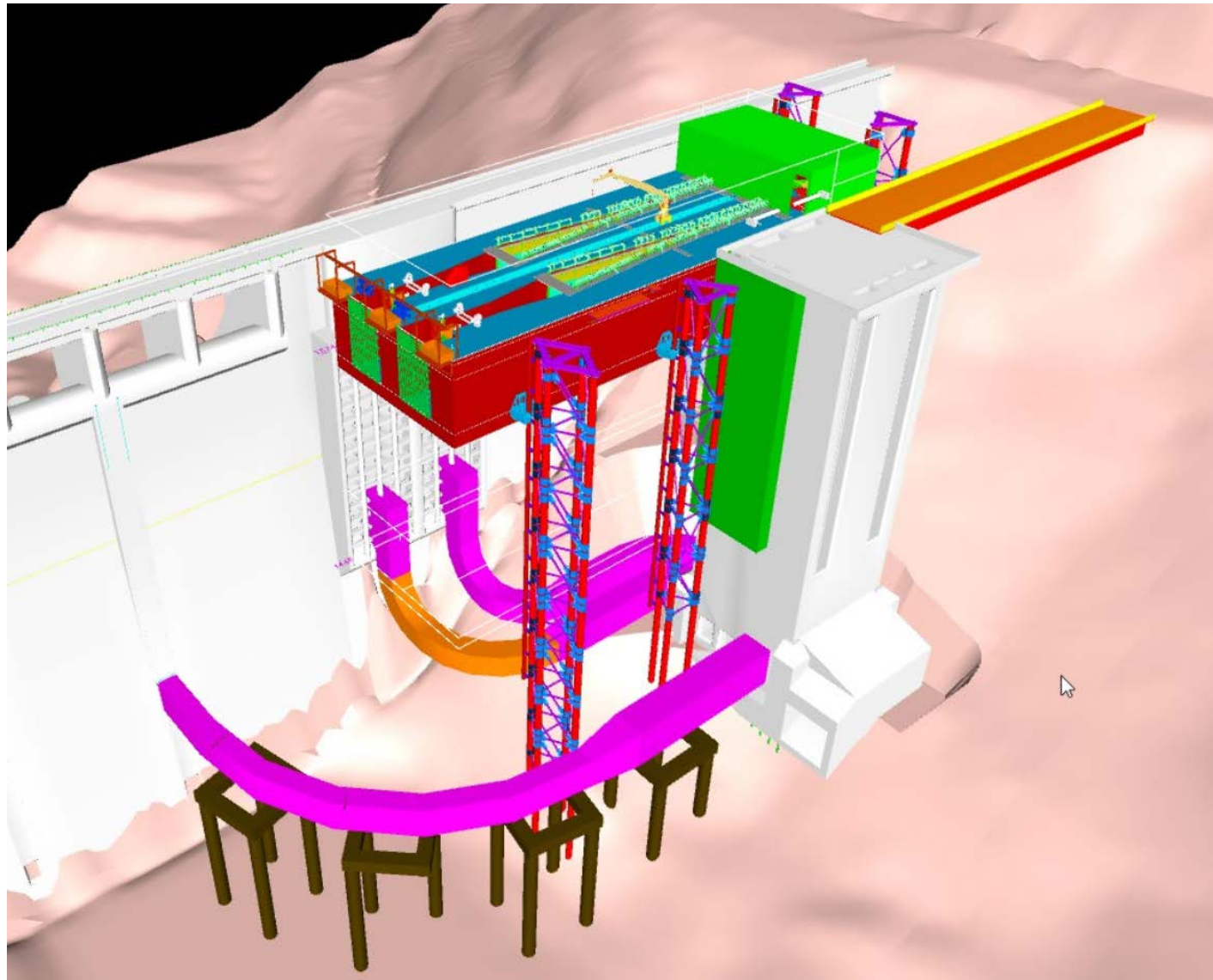
Entrance Designs Considered

AE Screen Size Investigation

Fish Transport



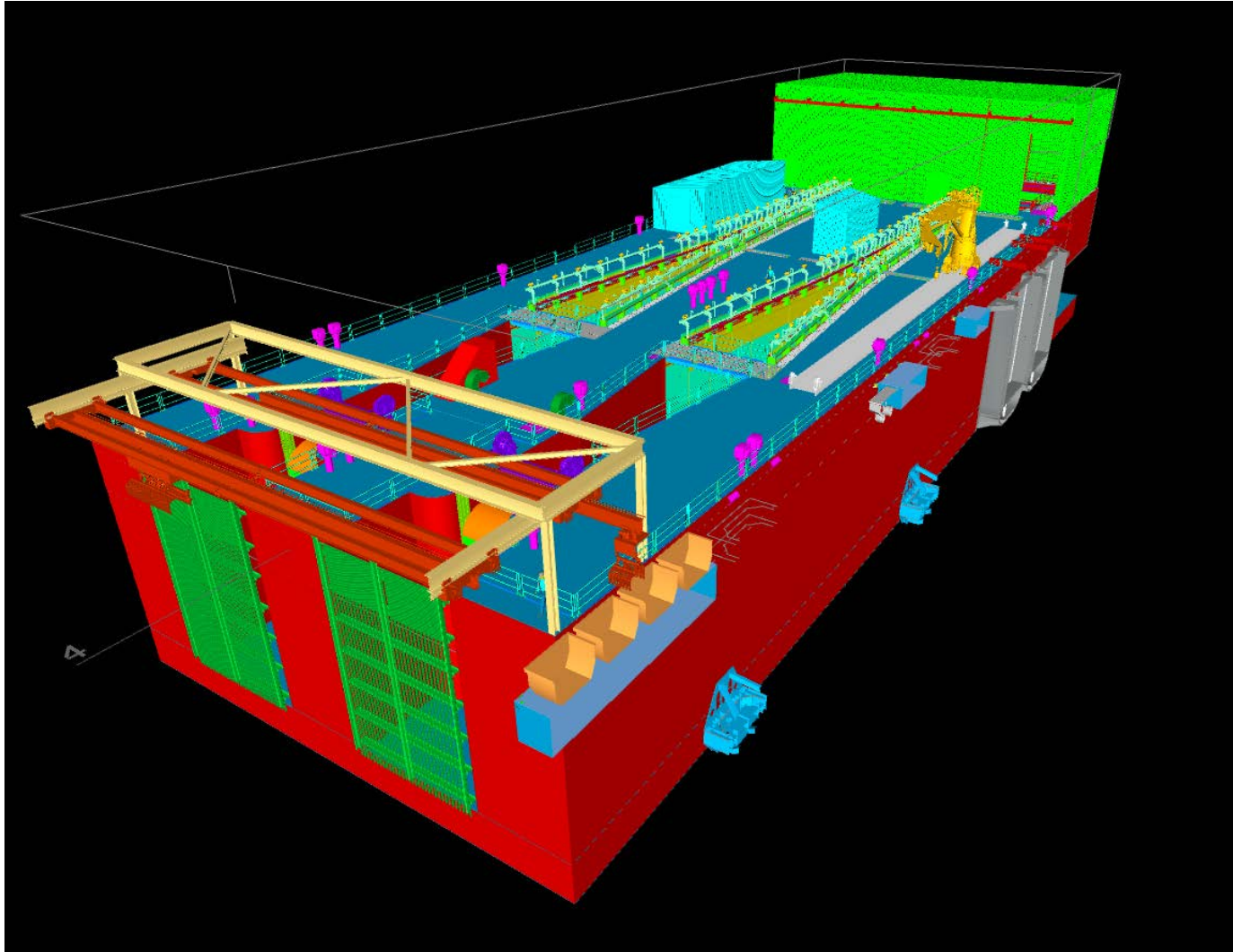
FSS AND SWS (90% DDR)



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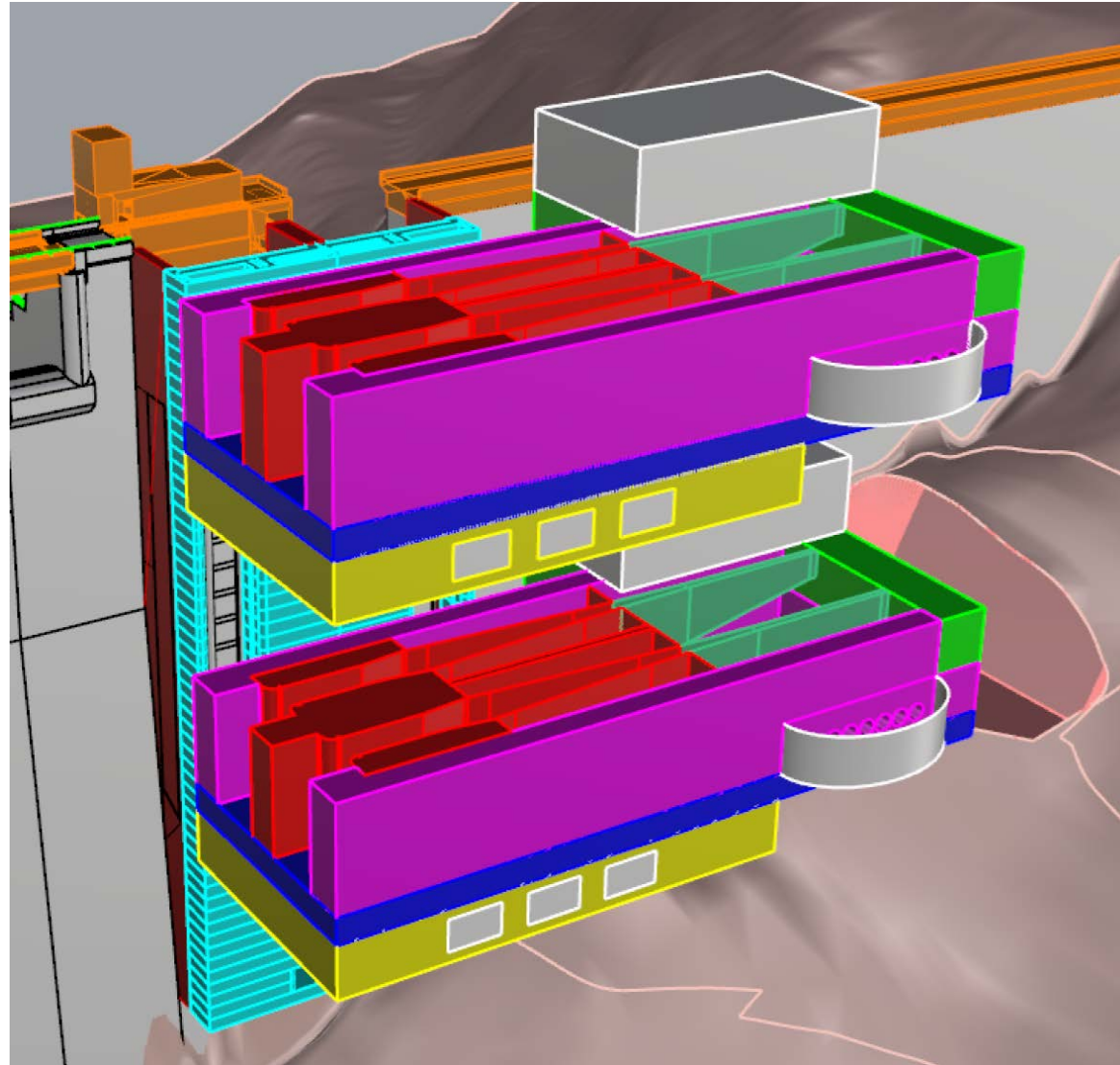
FSS (90% DDR)



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REVISED FSS (95% DDR)



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FISH HANDLING FACILITY

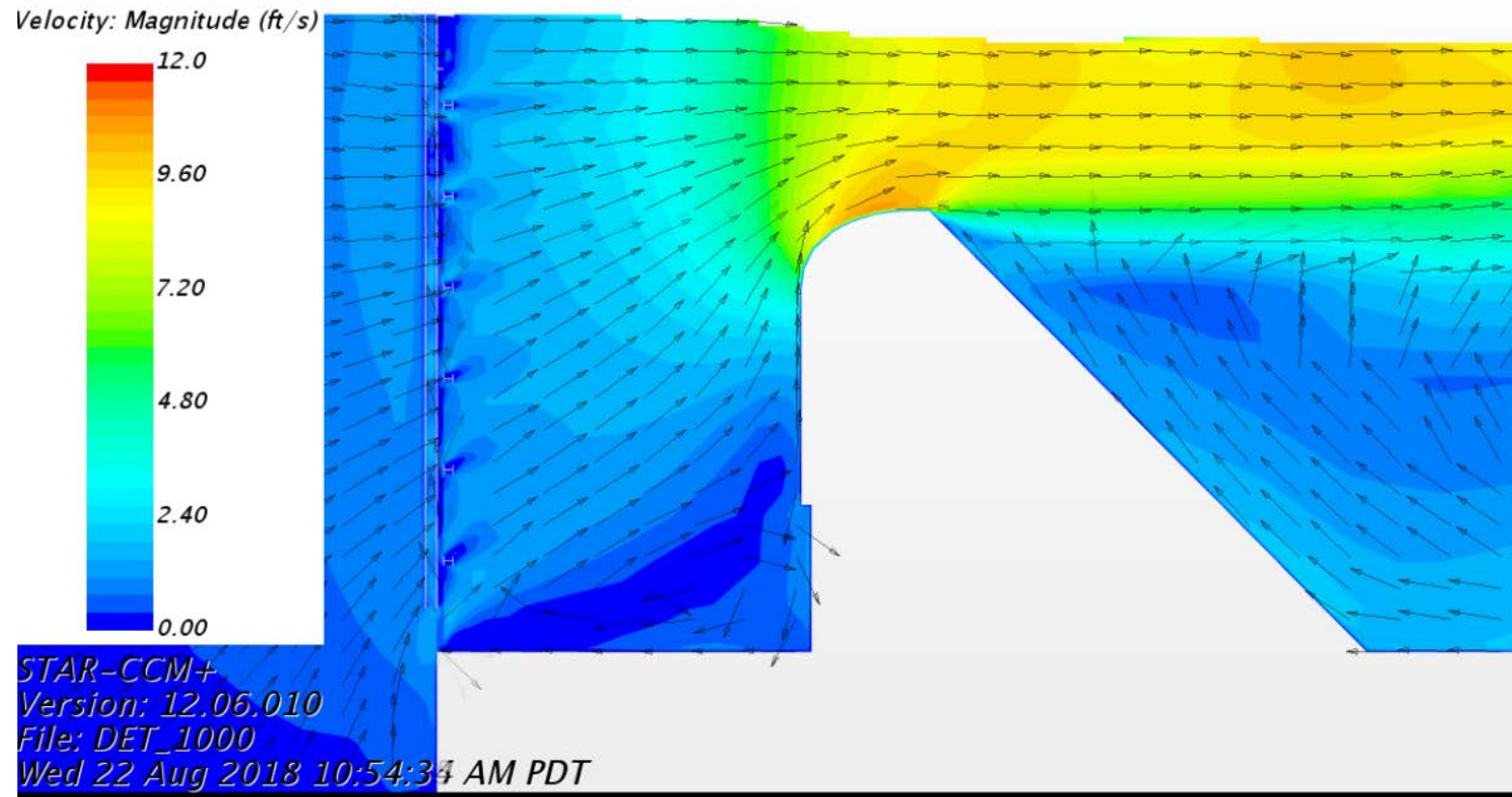


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ENTRANCE DESIGN 60% REVIEW

*Outlet Flowrate: 1068.89 (ft³/s)
Velocity Plane Near CL of Weir*



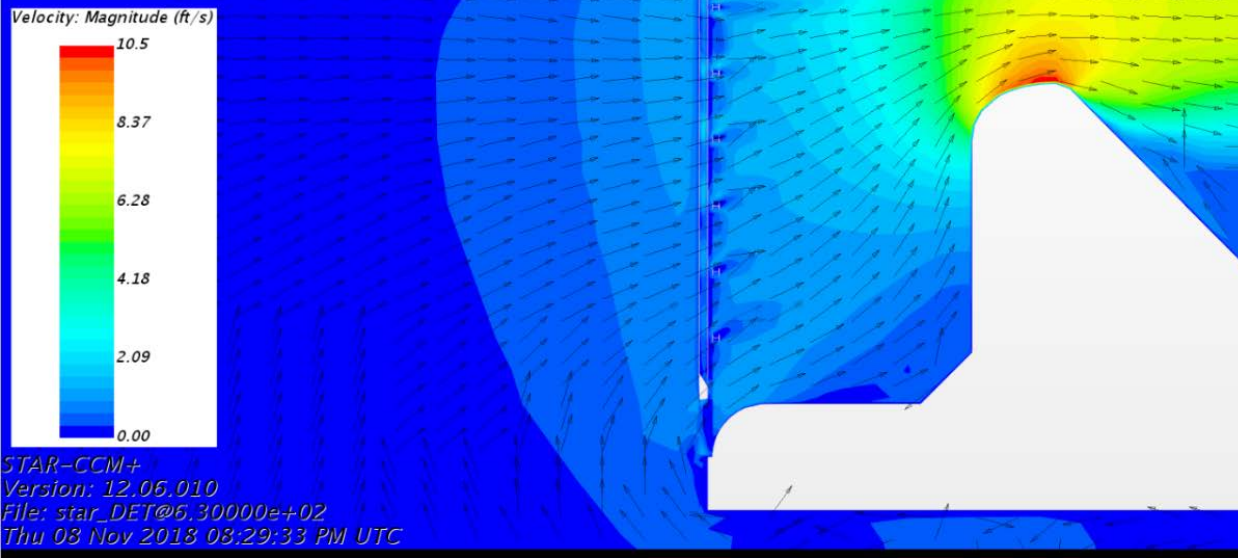
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ENTRANCE DESIGN 90% REVIEW

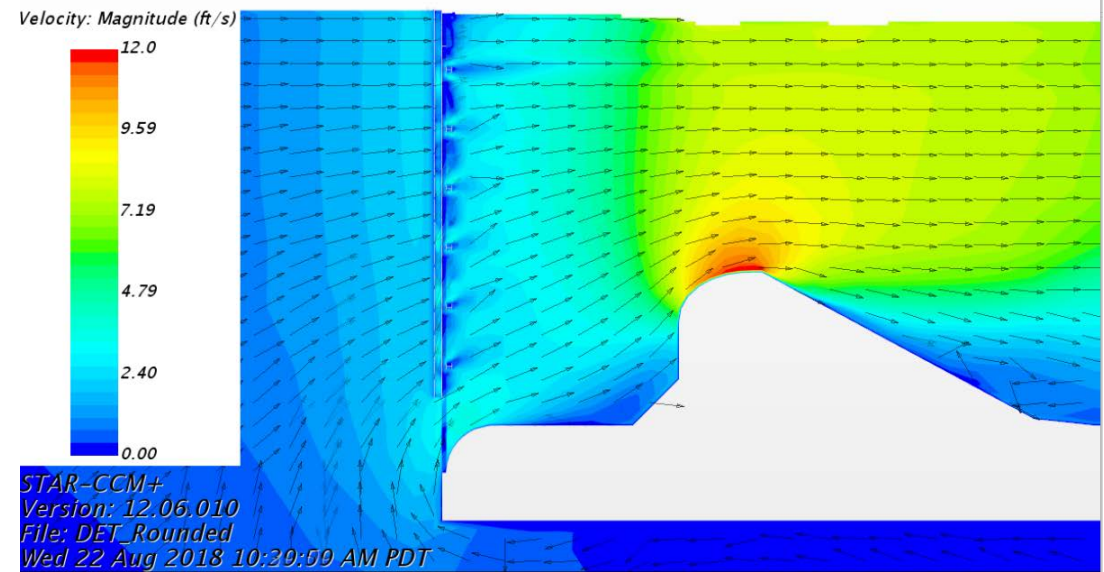
Outlet Flowrate: 979.179 (ft³/s)

Velocity Plane Near CL of Weir



Outlet Flowrate: 4381.78 (ft³/s)

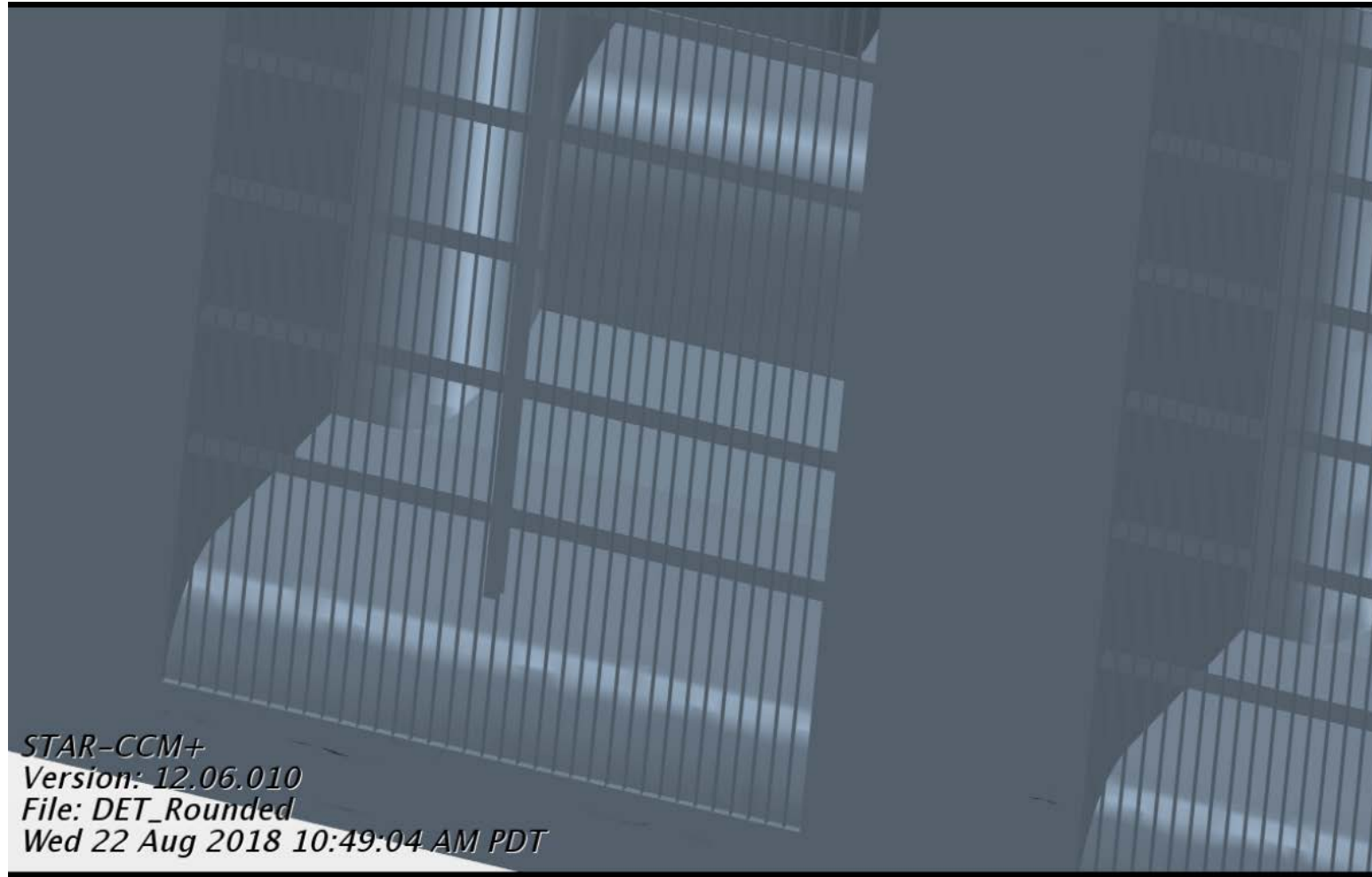
Velocity Plane Near CL of Weir



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DETROIT FSS ROUNDED ENTRANCE GEOMETRY



STAR-CCM+
Version: 12.06.010
File: DET_Rounded
Wed 22 Aug 2018 10:49:04 AM PDT



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SCREEN CHANNEL HYDRAULICS

Detroit FSS 60% & 90% Design									
	FFS Flow	Number of OP Barrels	FSS wier		Primary screen		Secondary screen		
			subm (ft)	Velocity (ft/s)	Velocities (ft/s)		Velocities (ft/s)		
					U/s End	D/S End	U/s End	Acc Cha.	D/S End
Max Criteria	4500	2	22.1	9.0	3.3	4.5	4.5	6.9	2.1
Max Q	5600	2	26.8	8.9	4.1	5.5	5.5	8.6	2.1
Min Q	1000	1	10.8	8.5	1.5	2.0	2.0	3.1	2.1
Detroit FSS 95% Design									
	FFS Flow	Number of OP Barrels	FSS wier		Primary screen		Secondary screen		
			subm (ft)	Velocity (ft/s)	Velocities (ft/s)		Velocities (ft/s)		
					U/s End	D/S End	U/s End	Acc Cha.	D/S End
Max Criteria	4500	2	22.1	9.0	4.2	5.8	5.8	7.8	2.7
Max Q	5600	2	26.8	8.9	5.33	5.9	5.9	8.0	2.2
Min Q	1000	1	10.8	8.5	1.8	5.9	5.9	8.8	1.8



Questions?



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