



April 8, 2024

Brady Shyrock, on Behalf of Galloway 1155 Kelly Johnson Blvd., Suite 305 Colorado Springs, CO 80920

RE: Lot 2 Elm Grove Villa - Smith Plumbing & Heating; Water Quality Detention Pond Certification

Dear Natahsa Grimaldo,

Please accept this letter as formal documentation of conformance of the Water Quality Detention Pond for stormwater quality and detention at the Lot 2 Elm Grove Villa - Smith Plumbing & Heating development. The Lot 2 Elm Grove Villa - Smith Plumbing & Heating (Site) is located at 1875 Main Street, Colorado Springs within El Paso County, Colorado. The project site is located east of Main Street, which is also designated as Hancock Expressway and south/southwest of Bradley Road. The Site is located in the Southwest ¼ of the Southwest ¼ of Section 01, Township 15 South, Range 66 West of the 6th Principal Meridian, City of Colorado Springs, County of El Paso, State of Colorado.

Survey data detailing the Water Quality Detention Pond at the site was provided to Galloway & Company, Inc. on February 14, 2024 and updated February 23, 2024 & March 12, 2024, by Ridge Line Land Surveying. The pond was constructed based on the pond design prepared by Galloway, Inc. in the approved Lot 2 Elm Grove Villa Subdivision Final Drainage Report dated March, 2022.

WQCV Design

Note to self: once additional -MHFD calcs page is provided, check these values.

The WQCV has a volume of 0.030-acre feet and a depth of 2.74 feet. The WQCV has a 99% drain time of 45 hours which is in conformance with MHFD Criteria and City of Colorado Springs Criteria.

EURV, 5-Year, & 100-Year Design

Per the approved FDR, the EURV and 100-year volumes will be conveyed via the Modified CDOT Type C Outlet structure to the existing inlet, downstream to the existing concrete flume, and outfalls into the existing 6' concrete valley pan flowing in a southward direction within the townhome site. concrete pan and Elm Grove Drive roadway section with curb & gutter). The proposed development does not increase runoff being discharged from the site, therefore the pond release flows can sufficiently be handled by the existing conveyance system as originally intended. Runoff then sheet flows across Elm Grove Drive (to the east) to an existing low point on the east side of Elm Grove Drive (existing concrete chase), to the existing concrete rundown structure and into the existing pond situated to the south of the existing townhomes. Storm events larger than the 100-year storm will overtop the emergency overflow weir and free release into the structures as described below.



Lot 2 Elm Grove Villa Water Quality Detention Pond Certification April 8, 2024 Clarify. This appears to contradict what is stated on the previous page (45hrs)

Clarify that it is also less than 20% of the total site, which is the other half to this <1ac exclude-able area.

The water quality volume release will be controlled with an orifice plate that will release over a period of 40 hours. The water quality pond will release treated flows into the existing flume and existing 6' concrete valley pan within the Elm Grove Villa townhome development to the south as described above. According to the approved **FDR**, the existing detention pond to the south was designed to accommodate runoff from this development and is functioning as intended.

Total area which will not be treated via the on-site facility is less than 1.0 acre, as required.

Miscellaneous

As-builts were also conducted to verify the construction of the forebay and trickle channel. Based on those as-builts the forebay and trickle channel are in substantial compliance with the approved design.

Conclusion

In summary I, Brady Shyrock, a registered professional engineer in the State of Colorado, do hereby affirm, to the best of my knowledge, based on the as-built survey provided by Ridge Line Land Surveying and information provided to date by the general contractor, the Water Quality Detention Pond for Lot 2 Elm Grove Villa - Smith Plumbing & Heating and associated drainage facilities were constructed in accordance with the design intent of the approved drainage report and construction drawings, and in accordance with local standards and specifications, regional jurisdictional design criteria and state statutes.

Should you have any further questions, or require additional information, please do not hesitate to contact me at (719) 900-7220.

Sincerely, GALLOWAY

Brady Shyrock, PE
Project Manager
BradyShyrock@GallowayUS.com

cc: John Radcliffe, PE
Principal & Regional Office Manager
JohnRadcliffe@GallowayUS.com

Attached Documents:

- MHFD WQ Detention Pond Calculations
- As-Built Drawings

Revise/provide Pond Certification Letter with required statements listed in ECM Section 5.10.6.B:

"The site and adjacent properties (as affected by work performed under the County permit) are stable with respect to settlement and subsidence, sloughing of cut and fill slopes, revegetation or other ground cover, and that the improvements (public improvements, common development improvements, site grading and paving) meet or exceed the minimum design requirements."

For sites including detention and/or water quality facilities, the certification letter shall include a statement that the facilities provide the required storage volume and will meet the required release rates (as documented by an attached MHFD design form), the stage areas, elevations, and outlet dimensions.

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.05 (January 2022)

acre-feet acre-feet inches inches

inches

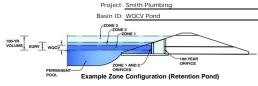
inches

2.00

2.25

2.52 inches

3.68 inches



Watershed Information

Selected BMP Type =	EDB	
Watershed Area =	1.00	acres
Watershed Length =	520	ft
Watershed Length to Centroid =	55	ft
Watershed Slope =	0.030	ft/ft
Watershed Imperviousness =	84.60%	percent
Percentage Hydrologic Soil Group A =	100.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	User Input	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

,	, ,	
Water Quality Capture Volume (WQCV) =	0.030	acre-feet
Excess Urban Runoff Volume (EURV) =	0.113	acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	0.073	acre-feet
5-yr Runoff Volume (P1 = 1.5 in.) =	0.094	acre-feet
10-yr Runoff Volume (P1 = 1.75 in.) =	0.111	acre-feet
25-yr Runoff Volume (P1 = 2 in.) =	0.131	acre-feet
50-yr Runoff Volume (P1 = 2.25 in.) =	0.150	acre-feet
100-yr Runoff Volume (P1 = 2.52 in.) =	0.171	acre-feet
500-yr Runoff Volume (P1 = 3.68 in.) =	0.262	acre-feet
Approximate 2-yr Detention Volume =	0.074	acre-feet
Approximate 5-yr Detention Volume =	0.097	acre-feet
Approximate 10-yr Detention Volume =	0.115	acre-feet
Approximate 25-yr Detention Volume =	0.136	acre-feet
Approximate 50-yr Detention Volume =	0.148	acre-feet
Approximate 100-yr Detention Volume =	0.159	acre-feet
·•		

Define Zones and Basin Geometry

acre-fe	0.030	Zone 1 Volume (WQCV) =
acre-fe	0.020	Zone 2 Volume (User Defined - Zone 1) =
acre-fe		Select Zone 3 Storage Volume (Optional) =
acre-fe	0.050	Total Detention Basin Volume =
ft 3	user	Initial Surcharge Volume (ISV) =
ft	user	Initial Surcharge Depth (ISD) =
ft	user	Total Available Detention Depth (H _{total}) =
ft	user	Depth of Trickle Channel (H _{TC}) =
ft/ft	user	Slope of Trickle Channel (S _{TC}) =
H:V	user	Slopes of Main Basin Sides (Smain) =
	user	Basin Length-to-Width Ratio (R _{L/W}) =

Initial Surcharge Area (A_{ISV}) : user Surcharge Volume Length (LISV) : user Surcharge Volume Width (W_{ISV}) user Depth of Basin Floor (H_{FLOOR}) Length of Basin Floor (L_{FLOOR}) Width of Basin Floor (W_{FLOOR}) Area of Basin Floor (A_{FLOOR}) Volume of Basin Floor (V_{FLOOR}) Depth of Main Basin (H_{MAIN}) user Length of Main Basin (L_{MAIN}) Width of Main Basin (W_{MAIN}) user Area of Main Basin (A_{MAIN}) user Volume of Main Basin (V_{MAIN}) Calculated Total Basin Volume (V_{total}) =

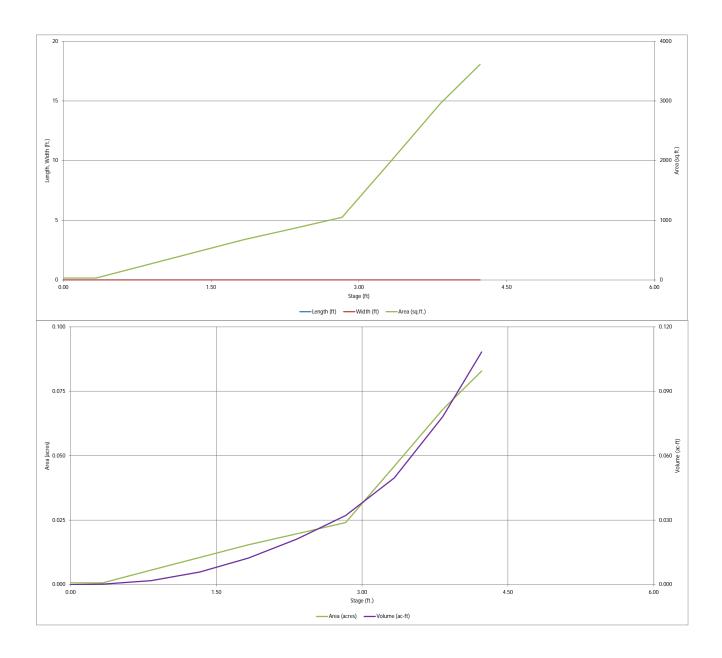
Highlight in red any changes to this page from the original design calcs

Provide the 3rd page of the calcs that shows the orifice plate input details and the pond design output table.

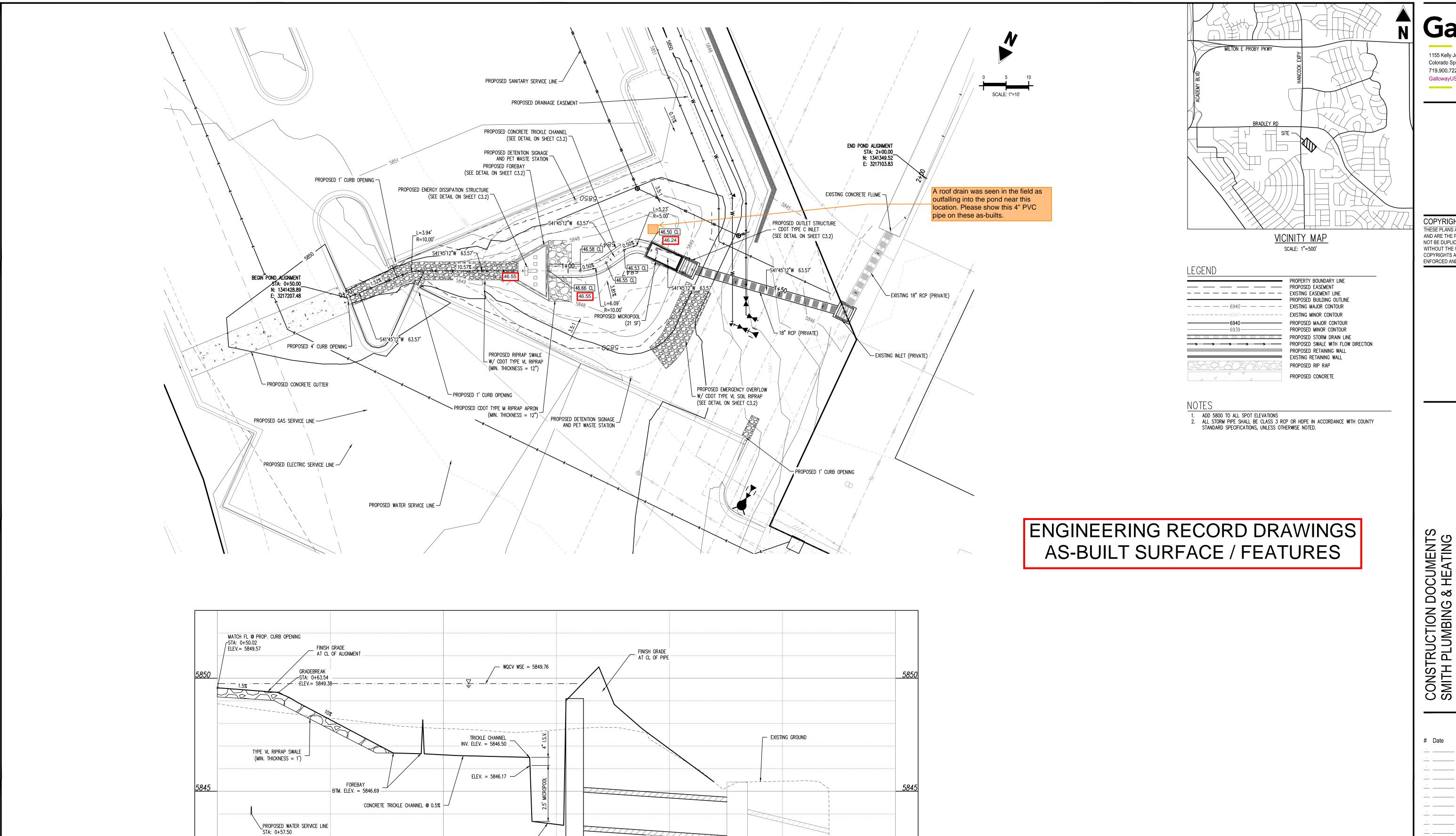
	Deptil ilicicilicit =		14							
	Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft ²)	Optional Override Area (ft ²)	Area (acre)	Volume (ft 3)	Volume (ac-ft)
5846.17	Top of Micropool		0.00				32	0.001		
5846.5			0.33				32	0.001	11	0.000
	5847		0.83				246	0.006	80	0.002
	5847.5	-	1.33	-			460	0.011	257	0.006
	5848	-	1.83	-			674	0.015	540	0.012
	5848.5		2.33				861	0.020	924	0.021
	5849		2.83				1,050	0.024	1,402	0.032
	5849.5		3.33				2,000	0.046	2,164	0.050
	5850		3.83				2,961	0.068	3,404	0.078
	5850.4		4.23				3,610	0.083	4,719	0.108
		-		-						
verrides										
cre-feet										
cre-feet										
ches										
ches										
ches										
ches										
ches										
ches										
ches										
		l		l				l	l	

Total detention vois less than 100-ye volume.

<u> </u>			-			
			-			
			-			
	**					
	**					
				-		
			1			
				-		
						2/29/2024



1cfs Detention Option_AS-BUILT.xlsm, Basin 2/29/2024, 1:45 PM



18" RCP 35.96 LF @ 1.36%

MICROPOOL BTM. ELEV. = 5843.67

STORM STA: 0+50 - 2+00 SCALE: H: 1"=10' V: 1"=2'

1+00

0+50

END EXISTING RCP

BEGIN EXISTING CONC. FLUME
STA: 1+85.35
ELEV.= 5841.63

2+00

Even if everything was built exactly per plan on the other sheets that you did not provide with this submittal, we need an electronic PDF of the original drawings to be signed, dated, and stamped with "As-Built" on every sheet.

1155 Kelly Johnson Blvd., Suite 305 Colorado Springs, CO 80920 719.900.7220 GallowayUS.com

> COPYRIGHT THESE PLANS ARE AN INSTRUMENT OF SERVICE

AND ARE THE PROPERTY OF GALLOWAY, AND MAY NOT BE DUPLICATED, DISCLOSED, OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF GALLOWAY. COPYRIGHTS AND INFRINGEMENTS WILL BE ENFORCED AND PROSECUTED.

CONSTRUCTION DOCUMENTS SMITH PLUMBING & HEATING FOR HAMMERS CONSTRUCTION, I

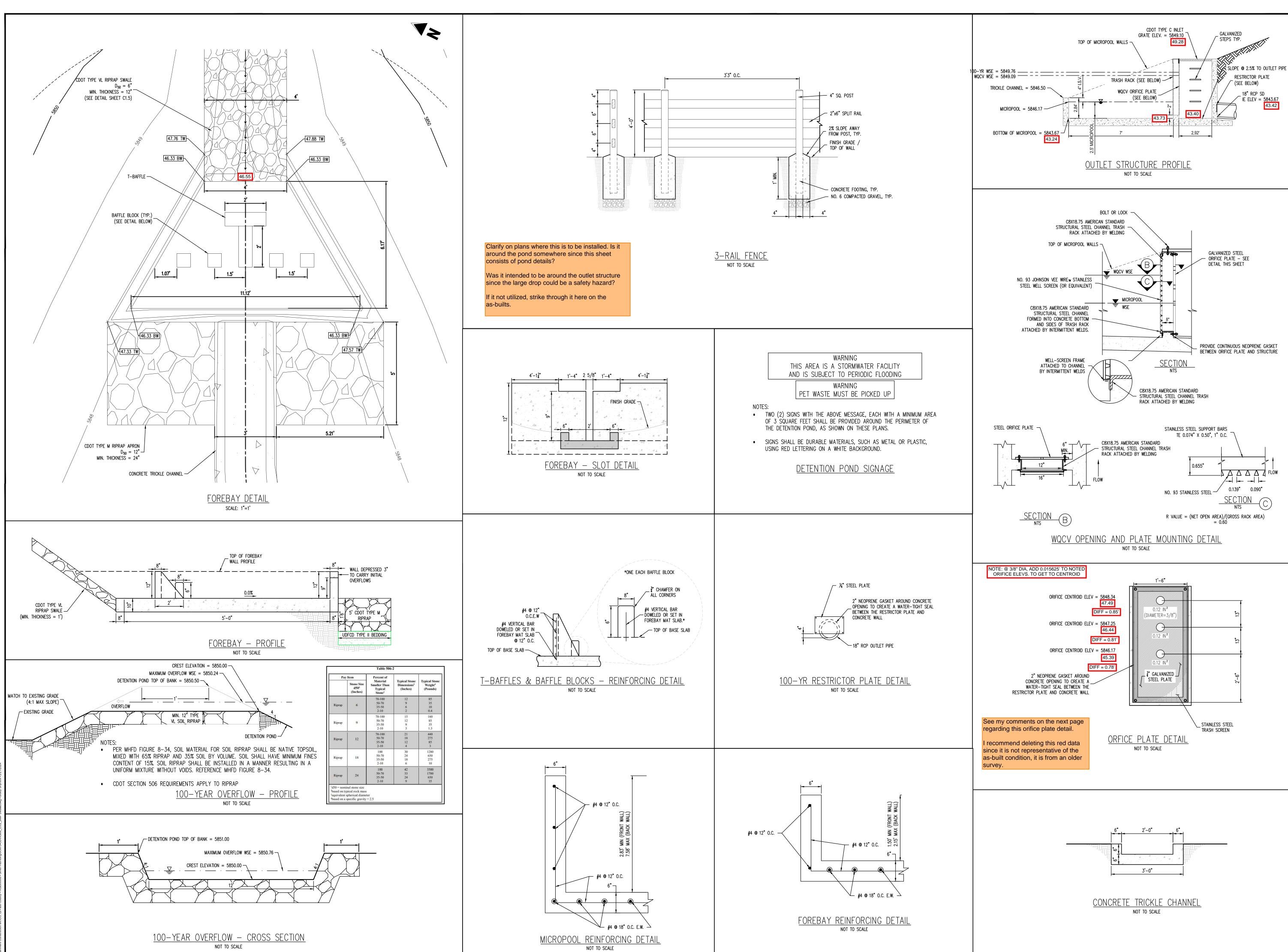
Date Issue / Description

HCI000008 03/29/2022

WATER QUALITY **DETENTION POND**

PCD FILING NO. PPR2143

Sheet 15 of 18



1155 Kelly Johnson Blvd., Suite 305 Colorado Springs, CO 80920 719.900.7220 GallowayUS.com

COPYRIGHT

THESE PLANS ARE AN INSTRUMENT OF SERVICE

AND ARE THE PROPERTY OF GALLOWAY, AND MAY NOT BE DUPLICATED, DISCLOSED, OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF GALLOWAY. COPYRIGHTS AND INFRINGEMENTS WILL BE ENFORCED AND PROSECUTED.

TS G CONSTRUCTION DOCUMENTS SMITH PLUMBING & HEATING FOR HAMMERS CONSTRUCTION, I

Date Issue / Description

HCI000008 CMD Checked By 03/29/2022

POND DETAILS

PCD FILING NO. PPR2143

Sheet 16 of 18

MEASURE DOWNS FOR NEW ORFICE HOLE LOCATIONS

BAS SITE VISIT @ 04.08.2024 W/ MEASURE DOWNS FROM TOP OF GRATE

