



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

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 $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ 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 R

CONFIRMED IN ADDITIONAL MHFD SPREADSHEETS

WQCV Design

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.

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

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)
REVISED TO MATCH PREVIOUS PAGE

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

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

Galloway & Company, Inc.



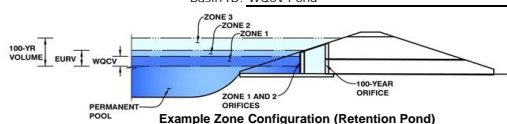
REVISED
Revise/provide Pond Certification Letter with required statements listed in ECM Section 5.10.6.B:

"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.

MHFD-Detention, Version 4.05 (January 2022)

Basin ID: WOCV Pond



Example Zone Configuration (Retention Pond)

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

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

Optional User Overrides

	acre-feet
	acre-feet
1.19	inches
1.50	inches
1.75	inches
2.00	inches
2.25	inches
2.52	inches
3.68	inches

Total detention volume is less than 100-year volume.

Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	

Initial Surge Area (A_{ISV}) = ft²

Surcharge Volume Length (L_{ISV}) =	user	ft
Surcharge Volume Width (W_{ISV}) =	user	ft

Depth of Basin Floor (H_{FLOOR}) =	user	ft
Length of Basin Floor (L_{FLOOR}) =	user	ft

Width of Basin Floor (W_{FLOOR}) =	user	ft
Area of Basin Floor (A_{FLOOR}) =	user	ft ²

Volume of Basin Floor (V_{FLOOR}) =	user	ft ³
Depth of Main Basin (H_{MAIN}) =	user	ft
Length of Main Basin (L_{MAIN}) =	user	ft

Length of Main Basin (L_{MAIN}) =	user	ft
Width of Main Basin (W_{MAIN}) =	user	ft
Area of Main Basin (A_{MAIN}) =	user	sq ft

Area of Main Basin (A_{MAIN})	user	ft
Volume of Main Basin (V_{MAIN})	user	ft ³
Calculated Total Basin Volume (V_{TOT})	USER	ac-ft

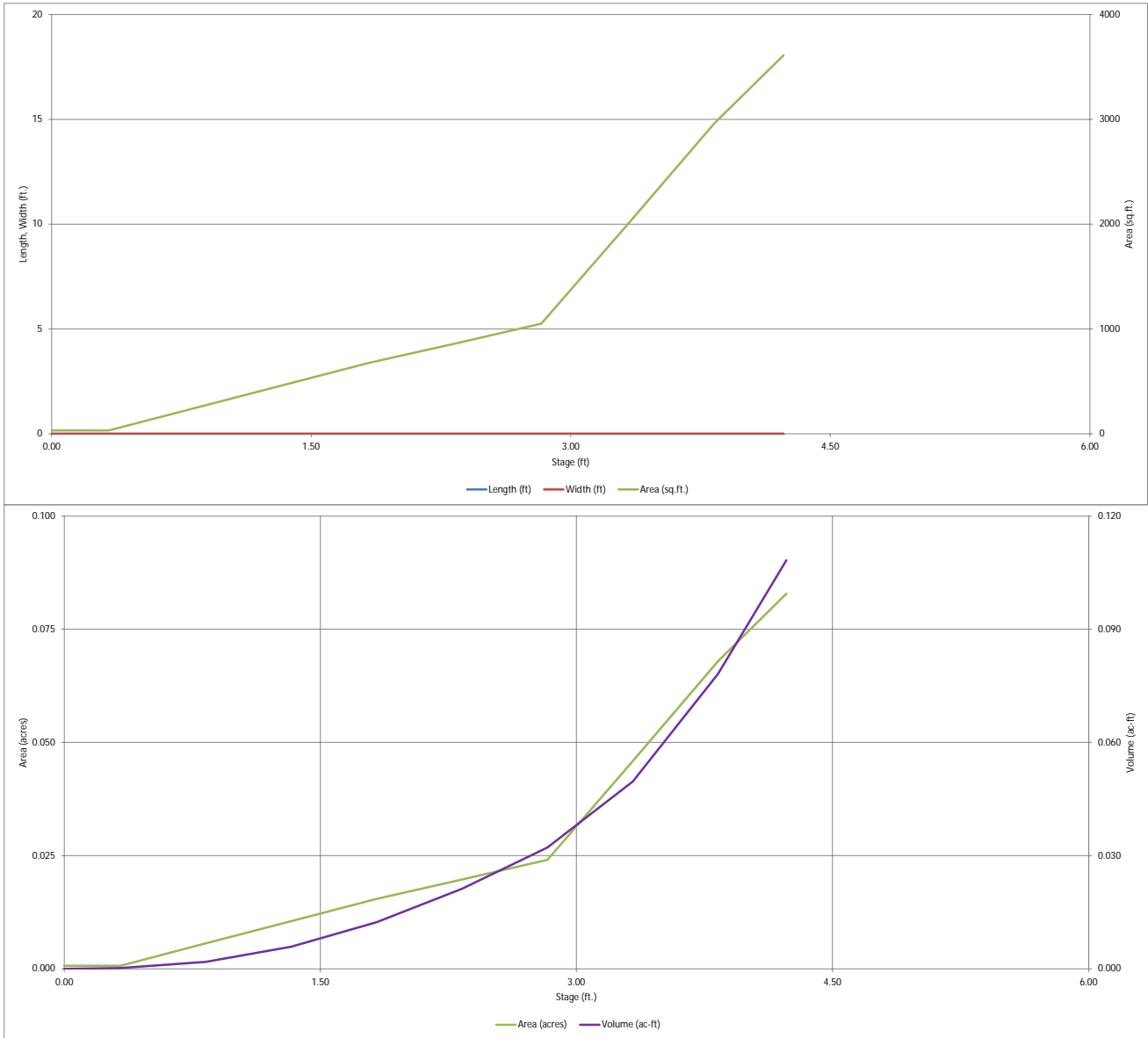
CS **REVISED**

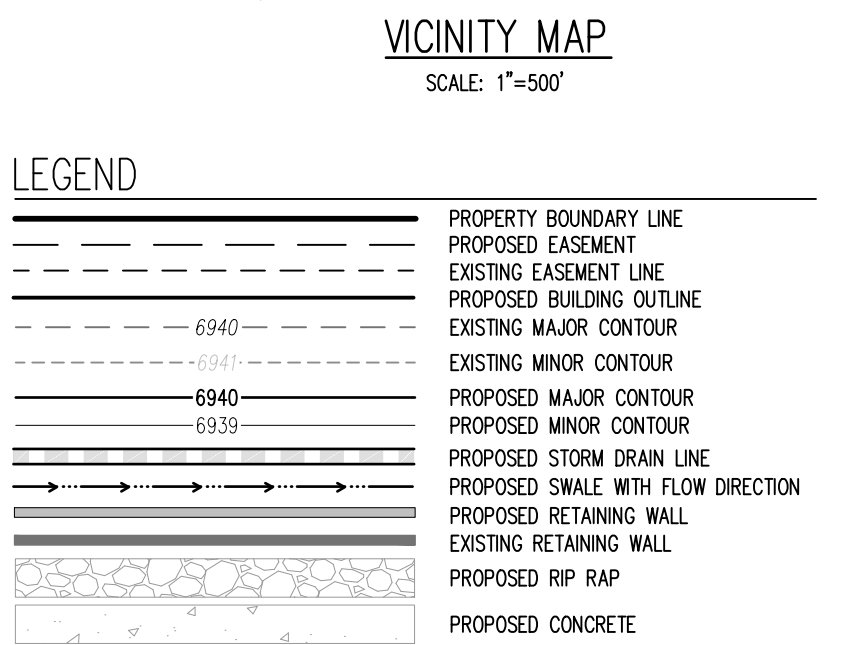
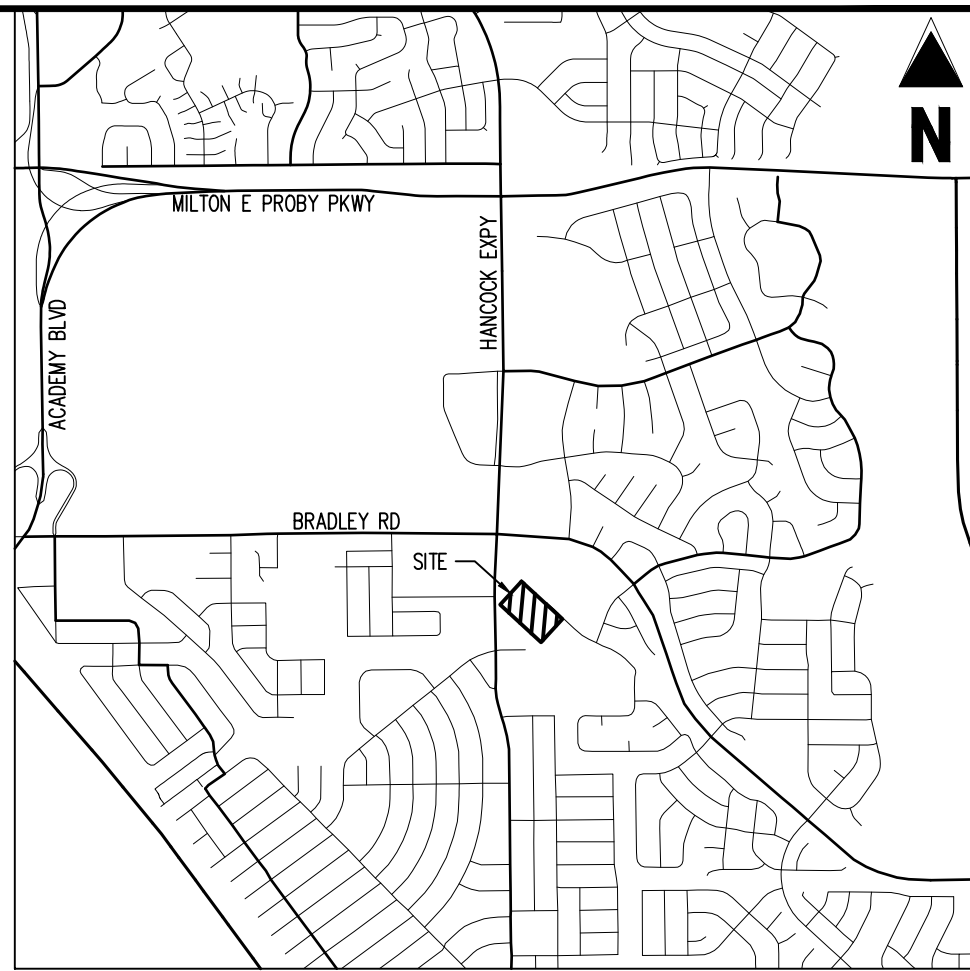
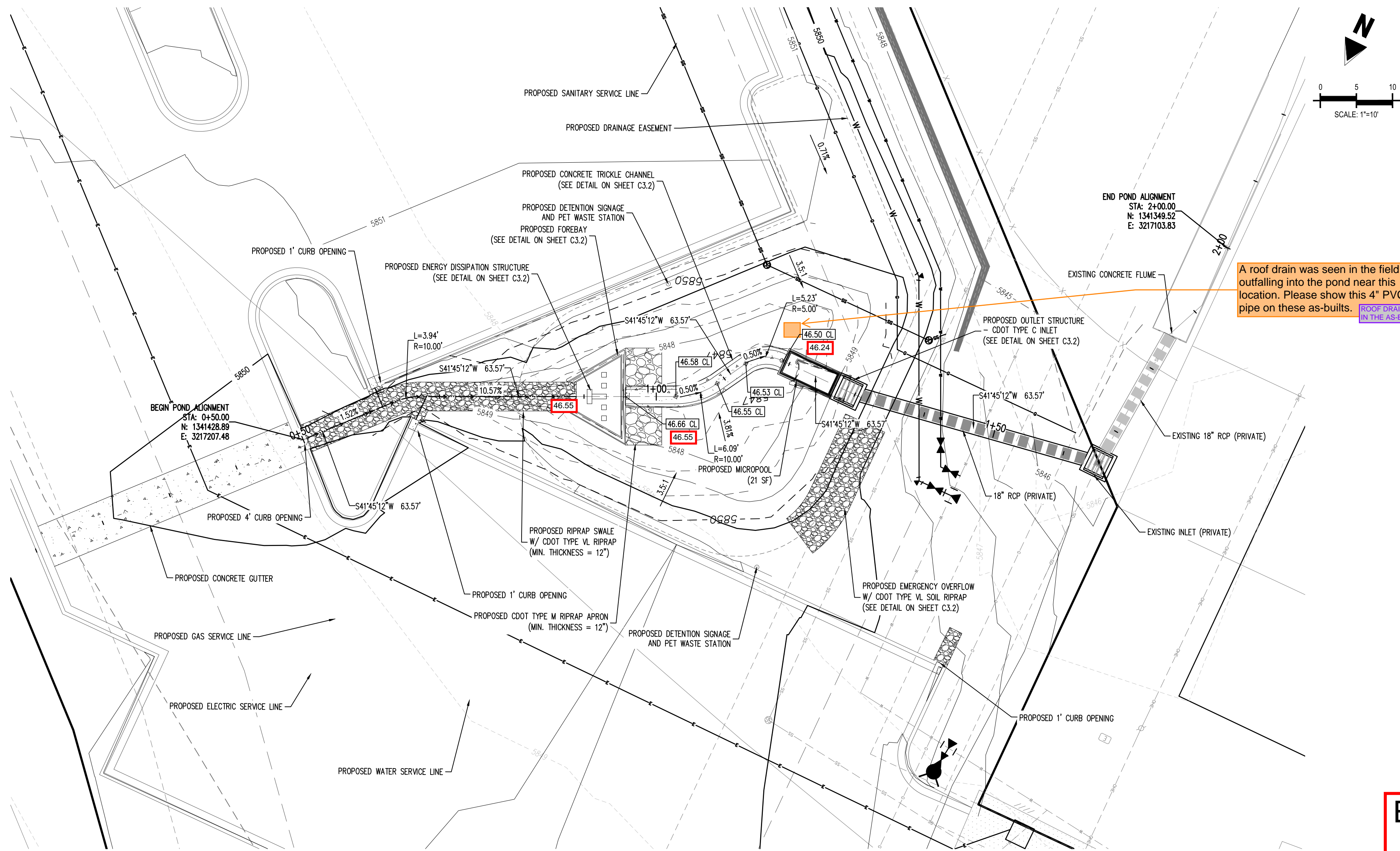
Provide the 3rd page of the calcs that shows the orifice plate input details and the pond design output table.

[illegible]

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

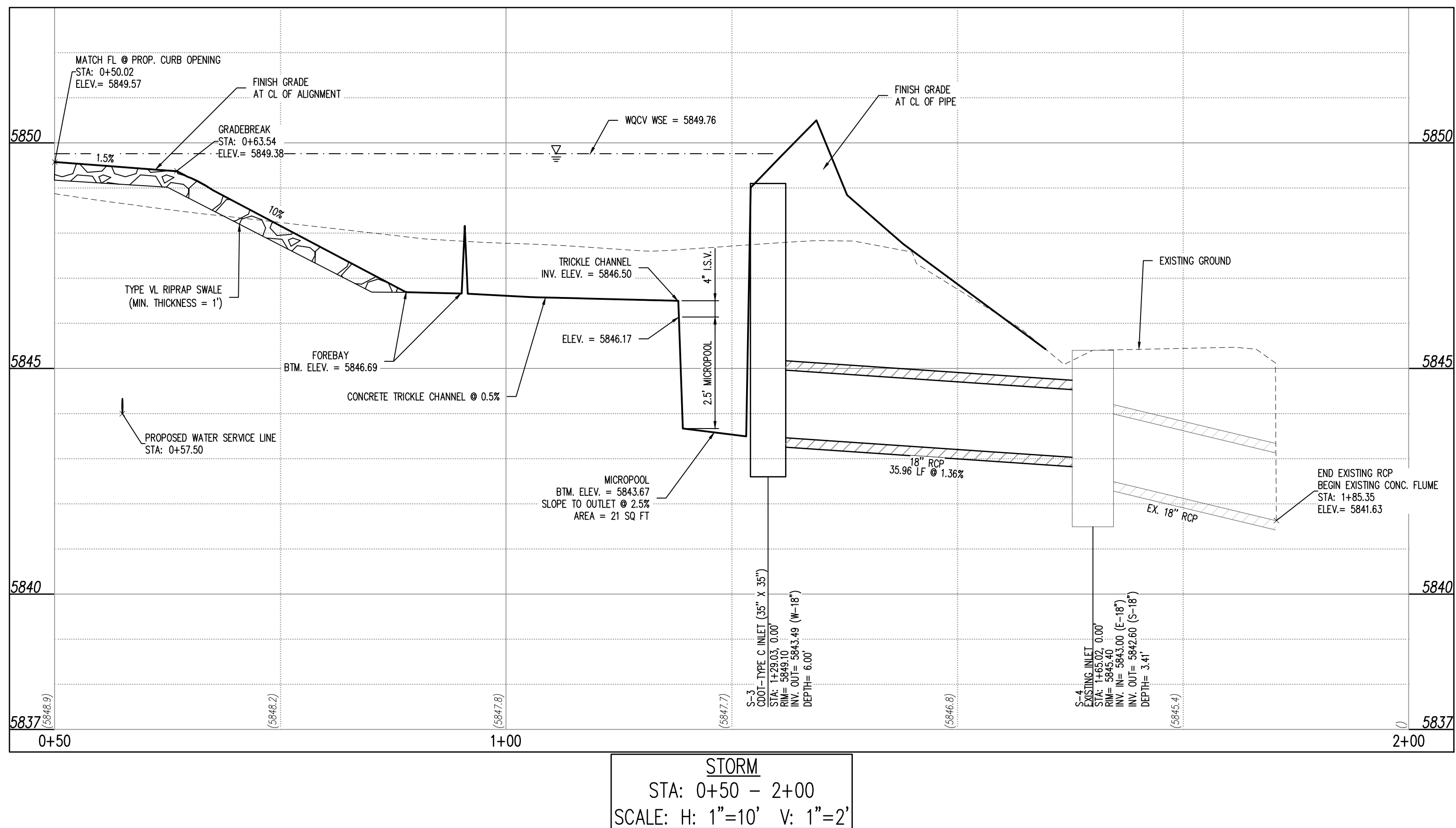
MHFD-Detention, Version 4.05 (January 2022)





- NOTES**
1. ADD 5800 TO ALL SPOT ELEVATIONS
 2. ALL STORM PIPE SHALL BE CLASS 3 RCP OR HDPE IN ACCORDANCE WITH COUNTY STANDARD SPECIFICATIONS, UNLESS OTHERWISE NOTED.

ENGINEERING RECORD DRAWINGS AS-BUILT SURFACE / FEATURES



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. **REVISED**

Galloway

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CONSTRUCTION DOCUMENTS
SMITH PLUMBING & HEATING
FOR
HAMMERS CONSTRUCTION, LLC

1875 MAIN STREET
COLORADO SPRINGS, CO 80911 - EL PASO COUNTY

#	Date	Issue / Description	Init.
1			
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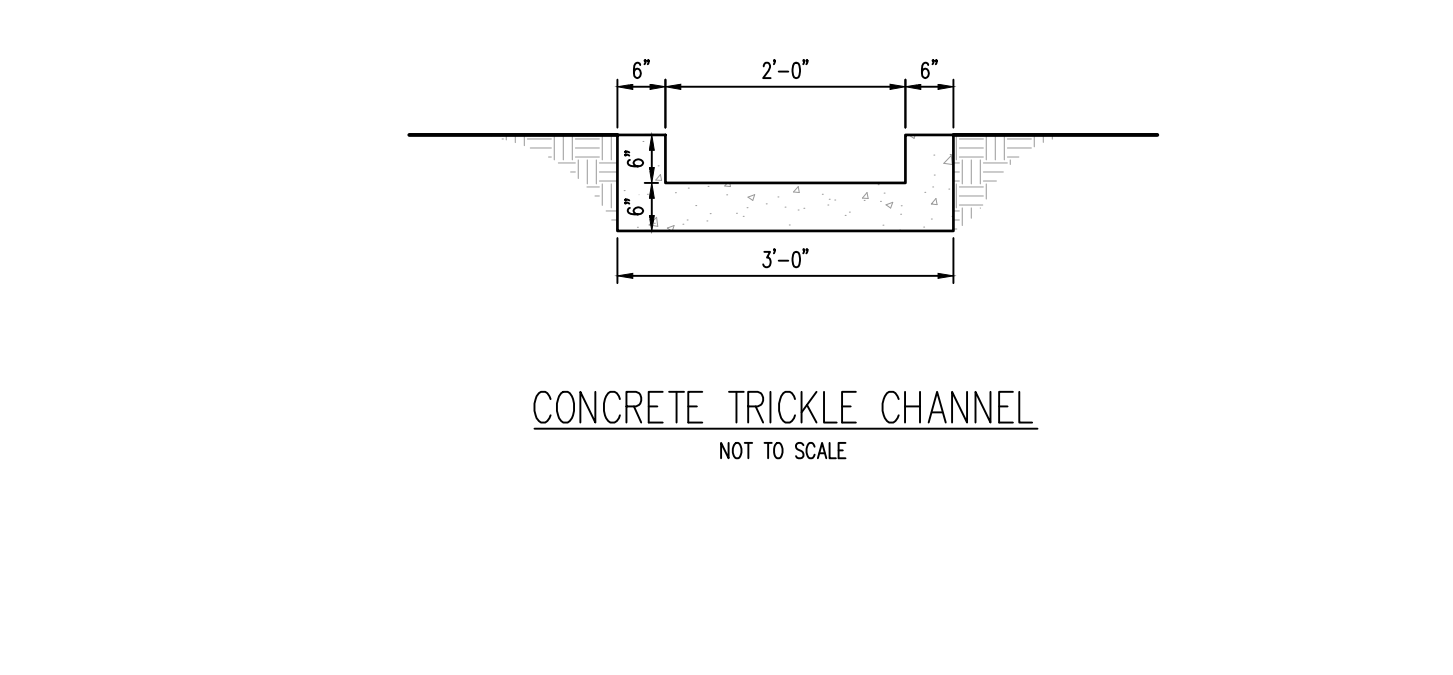
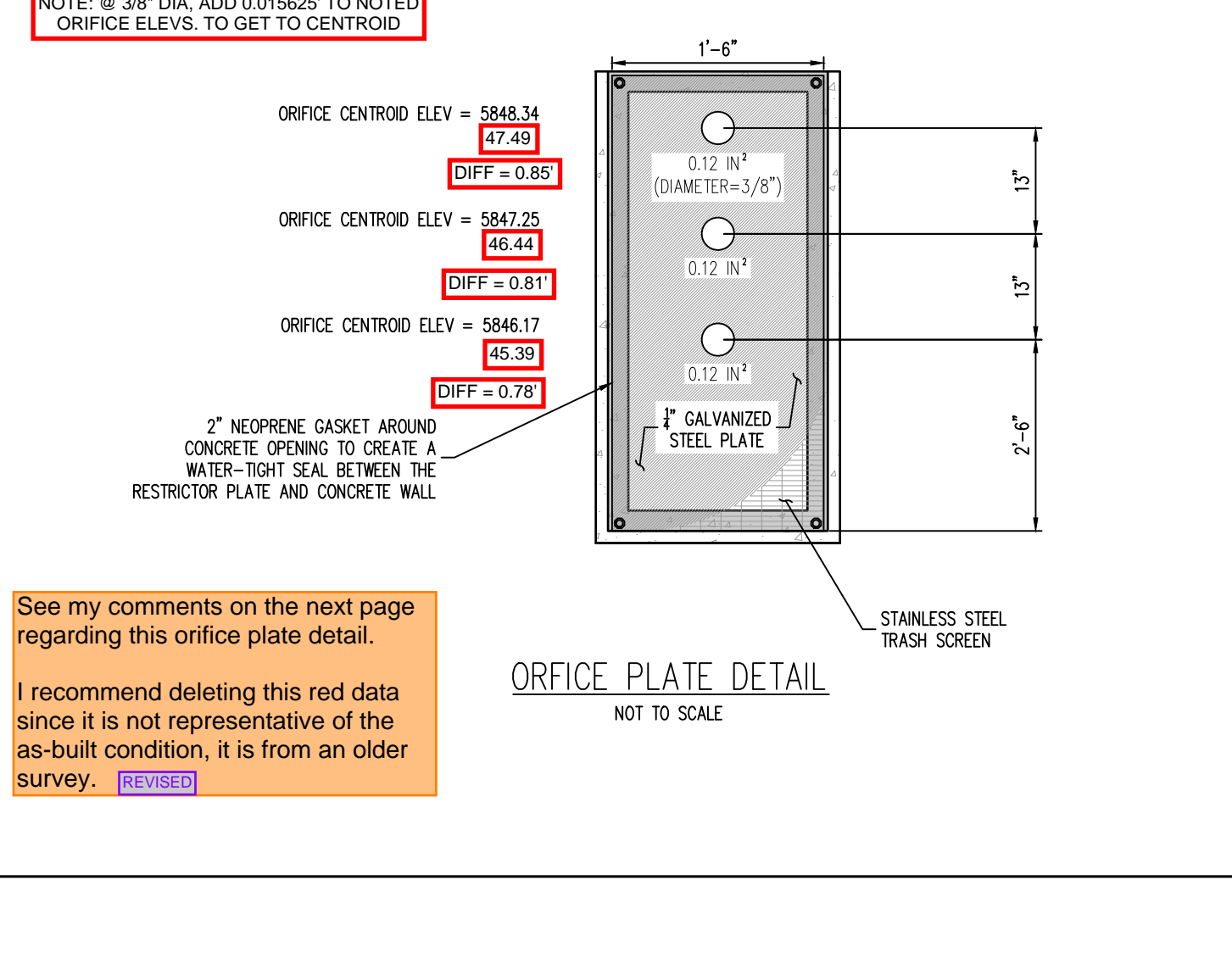
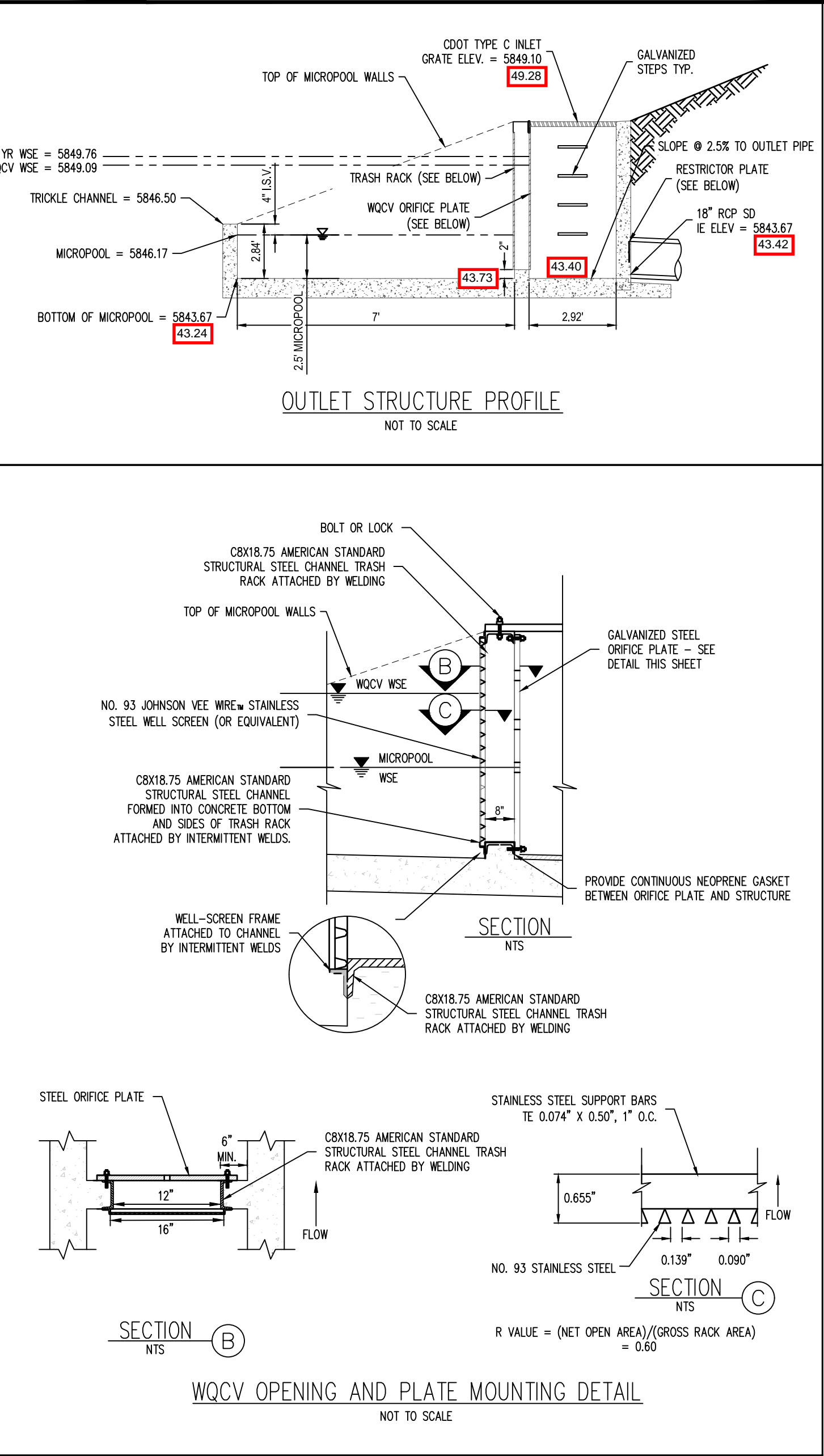
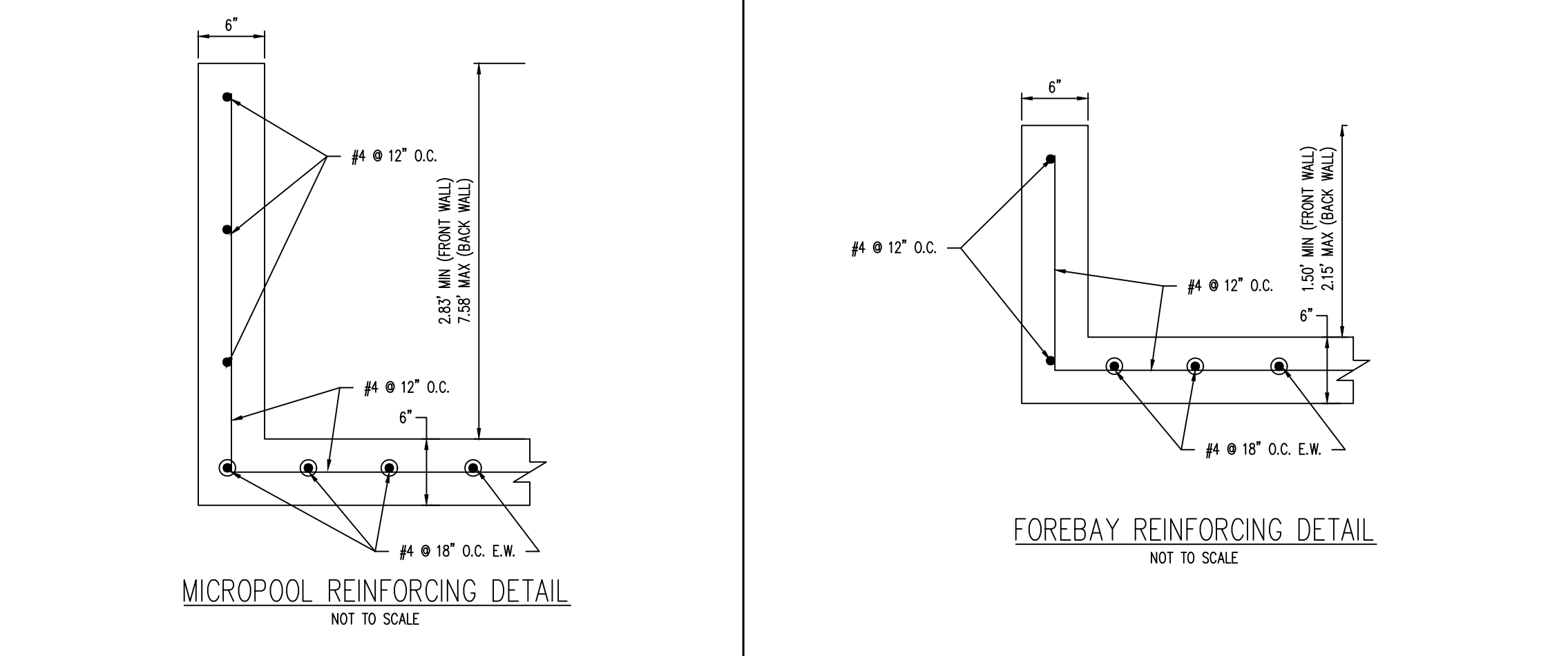
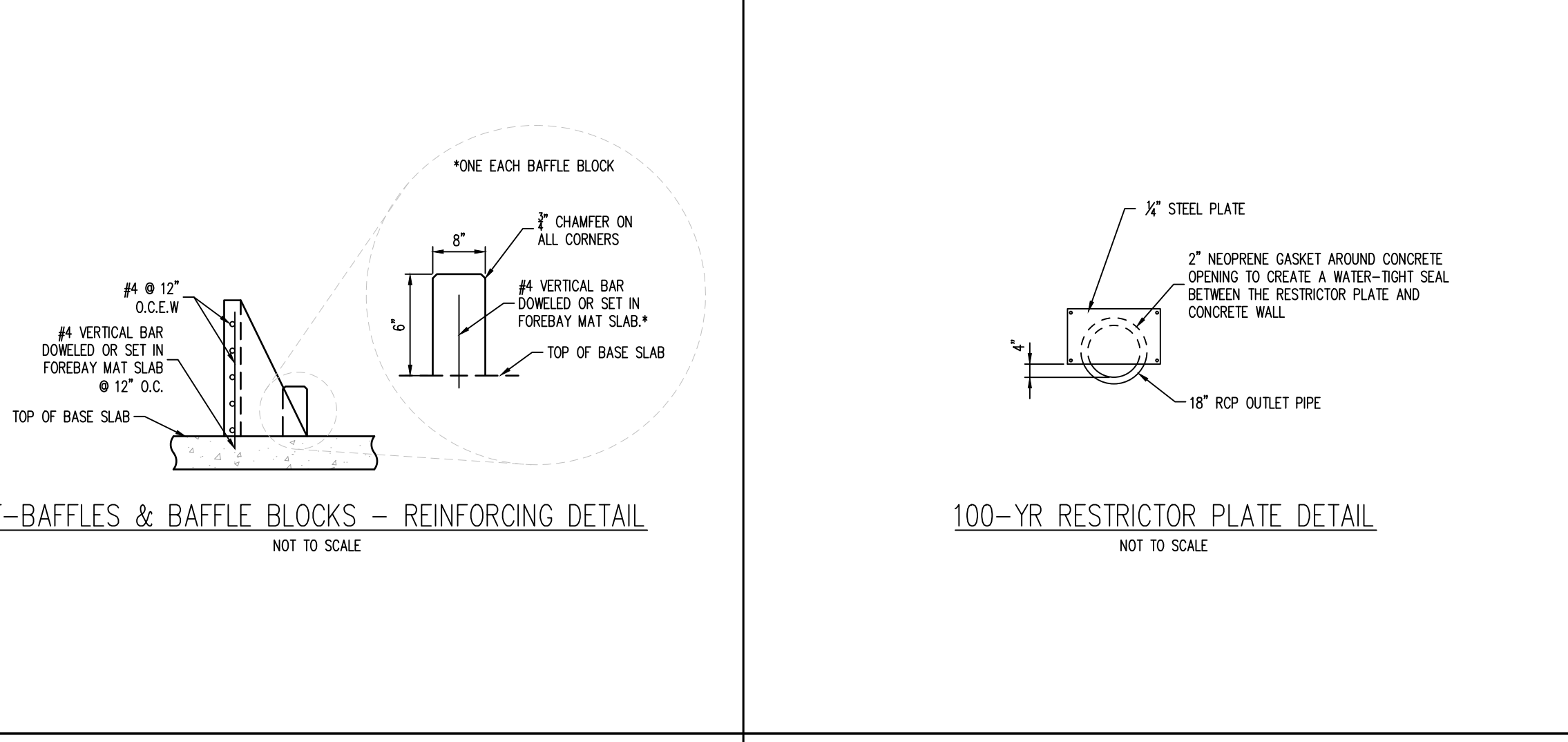
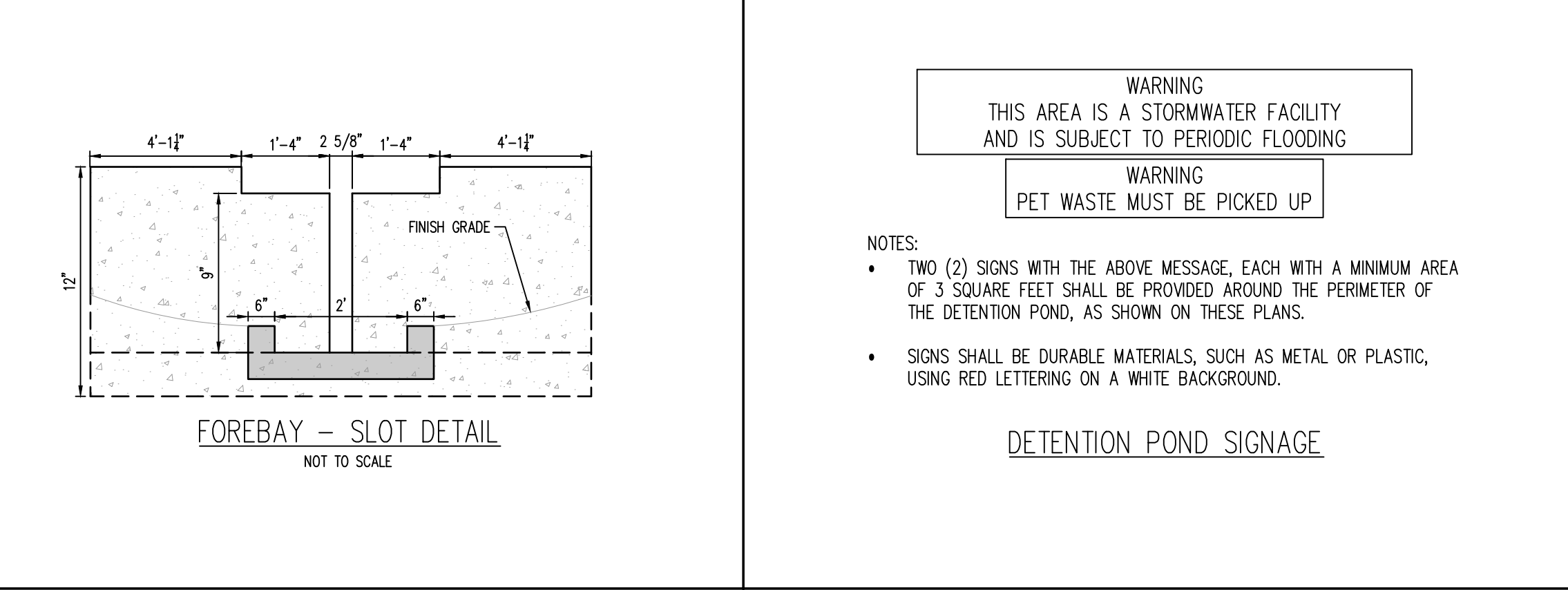
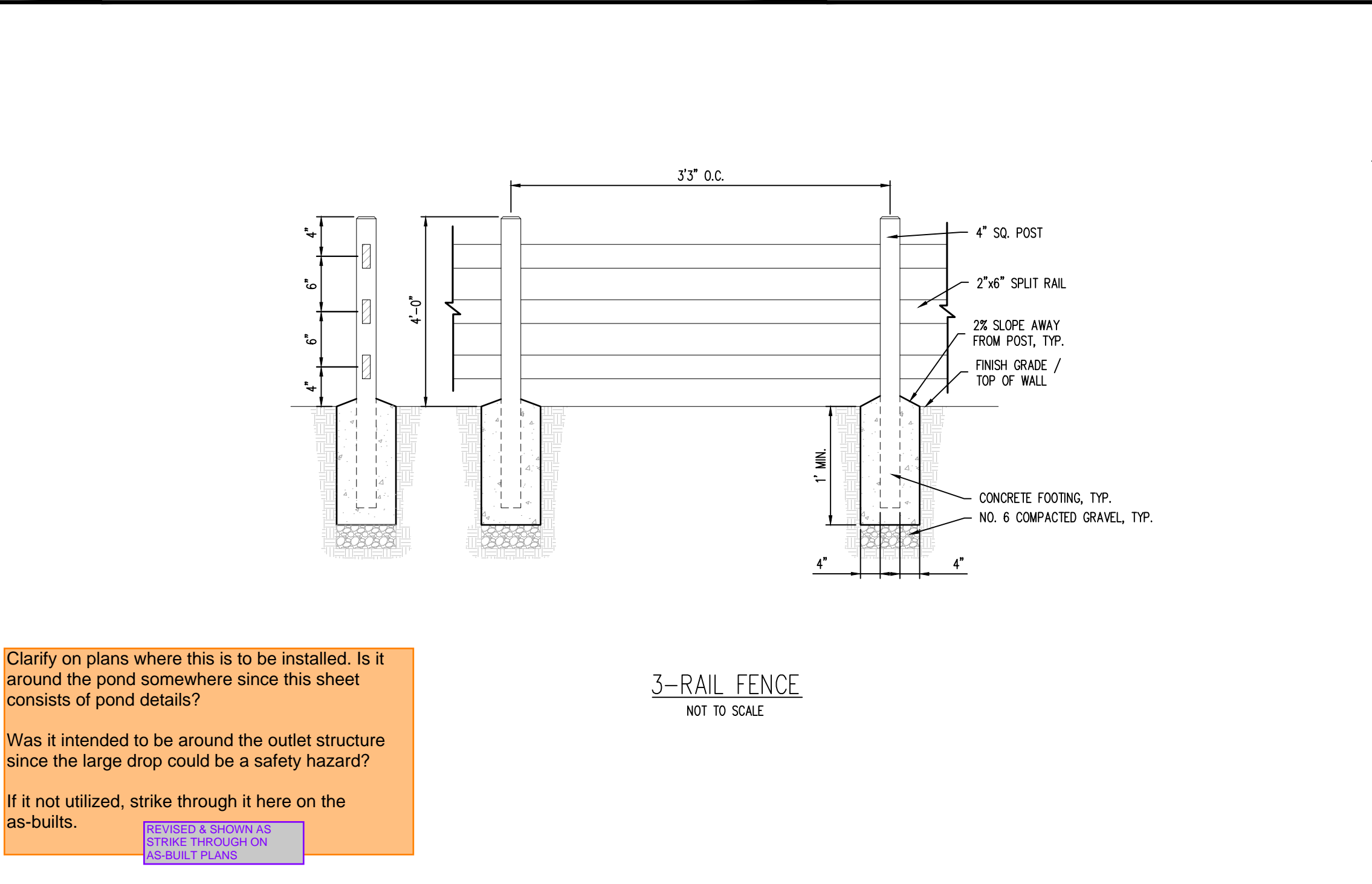
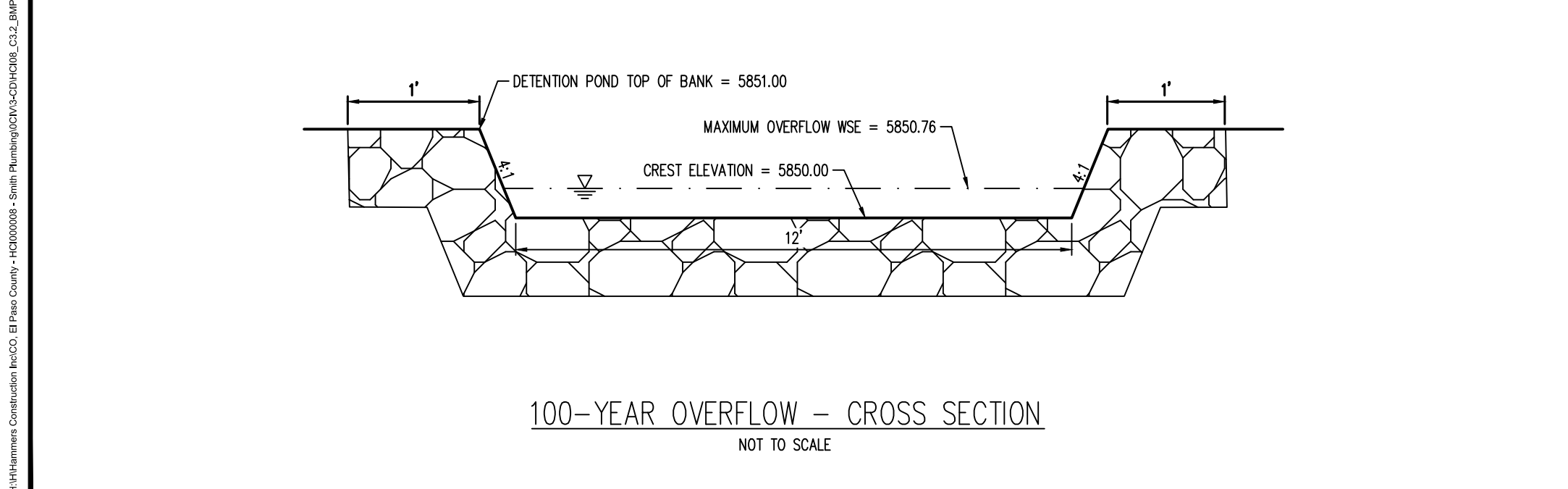
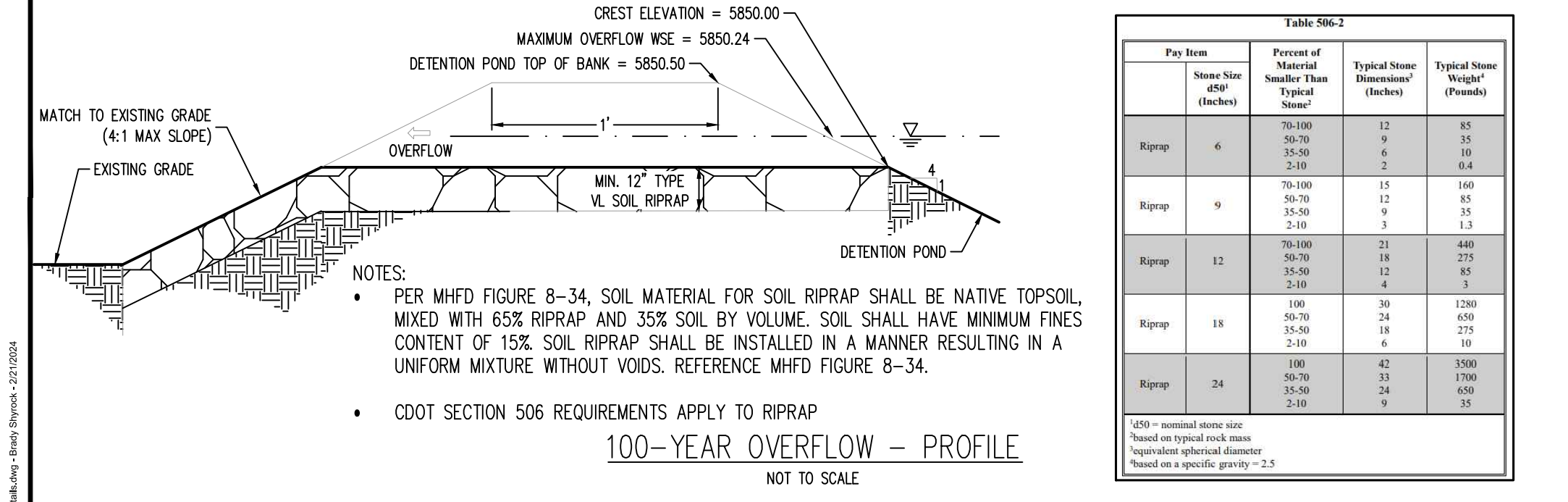
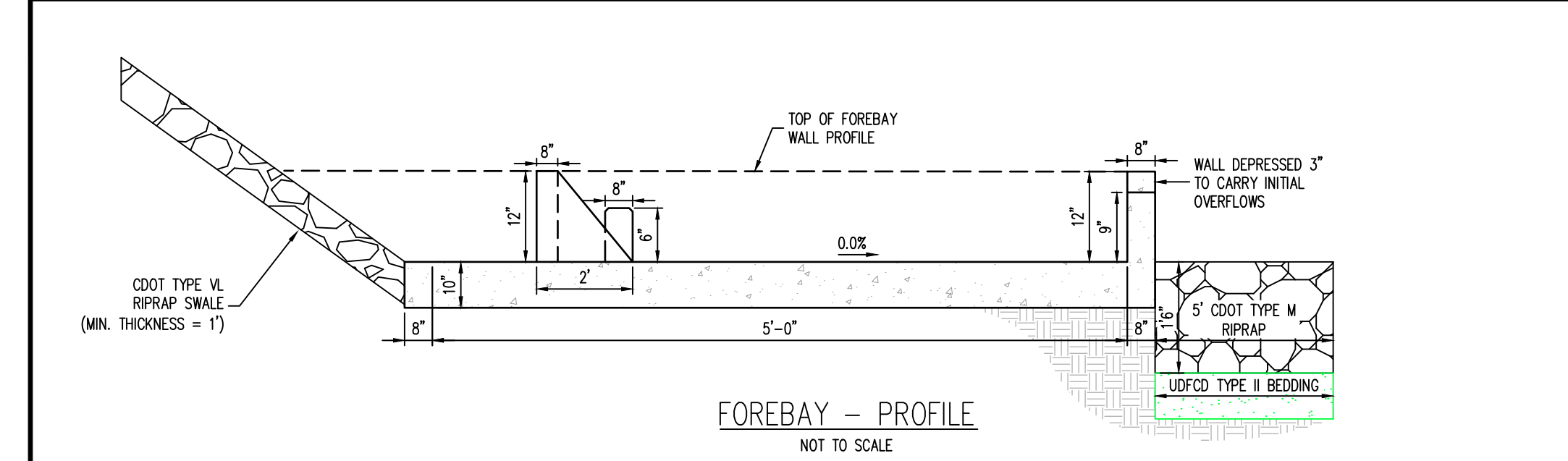
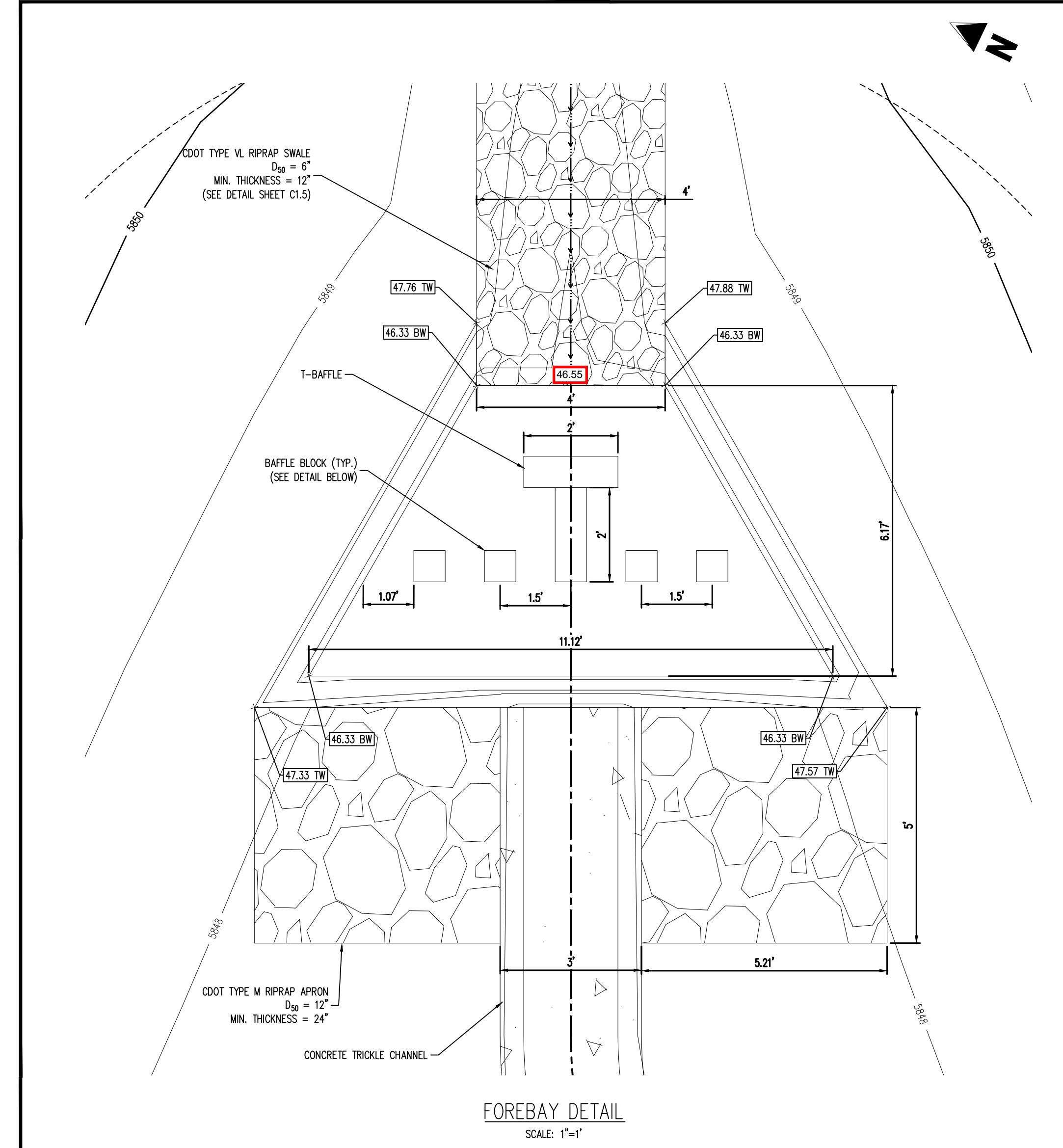
Project No: HCI000008
Drawn By: TPPT
Checked By: CMD
Date: 03/29/2022

**WATER QUALITY
DETENTION POND**

RCD FILING NO. PPR2143

C3.1

Sheet 15 of 18



Clarify what "BAS" means. Because the first page of the letter above states that the pond survey was completed by Ridge Line Land Surveying.

REVISED AS THIS SHEET NO LONGER APPEARS IN THE AS-BUILT PLAN SET. BAS ARE THE INITIALS OF THE CERTIFYING ENGINEER

MEASURE DOWNS FOR NEW ORFICE HOLE LOCATIONS

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

NOTE: @ 3/8" DIA, ADD 0.015625' TO NOTED ORFICE ELEV. TO GET TO CENTROID

To avoid confusion, label the date that this survey data is from to clarify that the blue data is more recent - to show that the plate was modified since this red data was taken.

Or better yet, just delete all of this red data since it is not representative of the as-built condition.

REVISED

ORFICE CENTROID ELEV = 5848.34

47.49

DIFF = 0.85'

ORFICE CENTROID ELEV = 5847.25

46.44

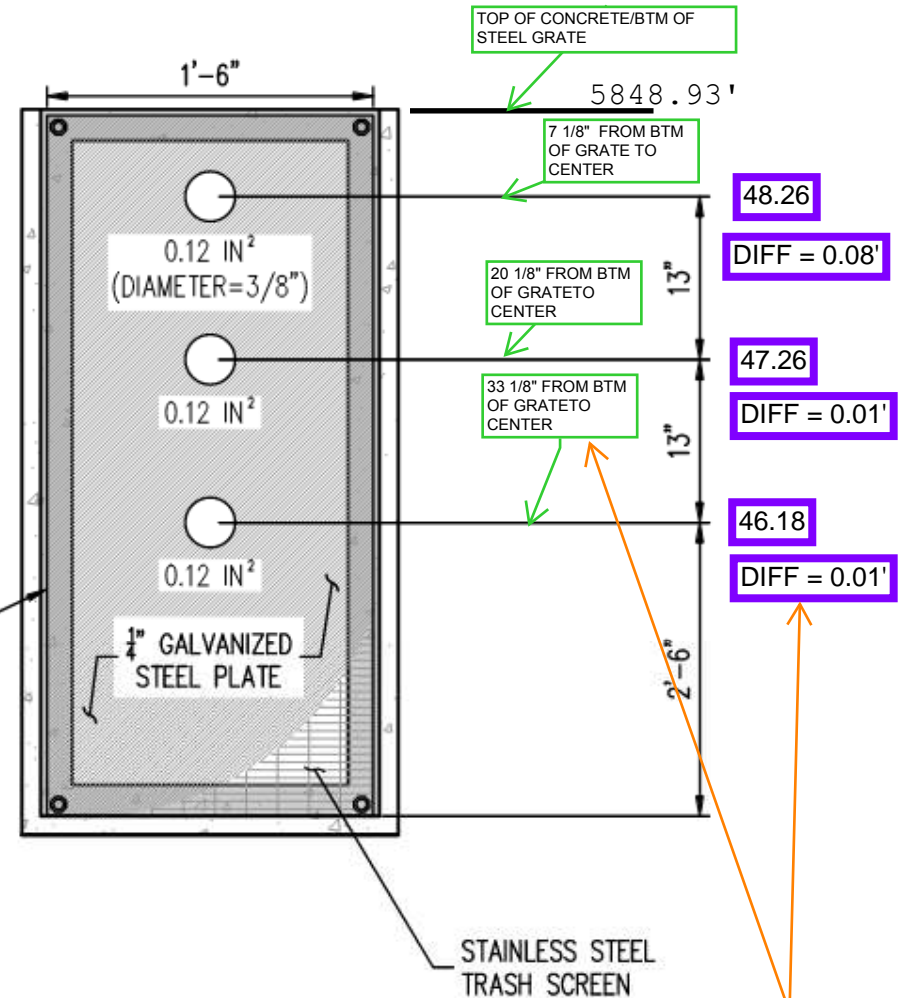
DIFF = 0.81'

ORFICE CENTROID ELEV = 5846.17

45.39

DIFF = 0.78'

2" NEOPRENE GASKET AROUND CONCRETE OPENING TO CREATE A WATER-TIGHT SEAL BETWEEN THE RESTRICTOR PLATE AND CONCRETE WALL



ORFICE PLATE DETAIL

NOT TO SCALE

Please copy all of these green and blue text boxes over to the detail on the previous page or overlay a screenshot of this page on top of the same detail on the previous page.

REVISED AS THIS SHEET NO LONGER APPEARS IN THE AS-BUILT PLAN SET.