



Geosyntec Consultants of NC, P.C.
NC License No.: C-3500 and C-295

INTERIM SEEP REMEDIATION SEEP D EFFECTIVENESS DEMONSTRATION REPORT Chemours Fayetteville Works

Prepared for

The Chemours Company FC, LLC
22828 NC Highway 87
Fayetteville, NC 28306

Prepared by

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Geosyntec Project Number TR0795A

October 21, 2021



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LIST OF ACRONYMS AND ABBREVIATIONS

CO Addendum	Addendum to Consent Order Paragraph 12
ESB	Effluent Stilling Basin
FTC	flow-through cell
GAC	granular activated carbon
gpm	gallons per minute
HFPO-DA	hexafluoropropylene oxide dimer
IC	Inlet Chamber
ISB	influent Stilling Basin
ng/L	nanograms per liter
NCDEQ	North Carolina Department of Environmental Quality
NCDPS	North Carolina Department of Public Safety
NCNFIP	Division of Emergency Management National Flood Insurance Program
O&M	Operations and Maintenance
PFAS	per- and polyfluoroalkyl substances
PFMOAA	perfluoro-2-methoxyacetic acid
PMPA	perfluoromethoxypropyl carboxylic acid
USACE	United States Army Corps of Engineers
WQC	Water Quality Certification

1 INTRODUCTION

Geosyntec Consultants of NC, P.C. (Geosyntec) has prepared this Interim Seep Remediation Seep D Effectiveness Demonstration Report (“Effectiveness Report”) on behalf of The Chemours Company FC, LLC (Chemours). This report provides a record of construction completion and demonstration of interim effectiveness for the flow-through cell (FTC) installed as the interim remediation system at Seep D at the Chemours Fayetteville Works Site (the Site).

Pursuant to requirements of Paragraph 2(a)(vi) of the Addendum to Consent Order Paragraph 12 (CO Addendum), within four months after the construction of each seep’s FTC, Chemours shall submit a report demonstrating that:

- i. the FTC intercepted total base flow (during dry weather flow) at each seep; and
- ii. removed per- and polyfluoroalkyl substances (PFAS) - as measured by influent and effluent concentrations of indicator parameters hexafluoropropylene oxide dimer (HFPO-DA), perfluoromethoxypropyl carboxylic acid (PMPA), and perfluoro-2-methoxyacetic acid (PFMOAA) - at a minimum removal efficiency of 80% on a monthly average basis (the “Interim Effectiveness Demonstration”) for each of the second and third full calendar months of operation.

Construction was complete at Seep D on June 24, 2021, and startup commenced thereafter. Therefore, this Effectiveness Report details the performance record of August and September 2021 (the second and third full calendar months of operation, respectively). Note that the fourth Operations and Maintenance (O&M) Report was submitted on September 30, 2021 (O&M Report #4, Geosyntec, 2021) for the reporting period of July 1, 2021 through August 31, 2021; therefore, some overlap in data presentation (August 2021) is included herein.

As the O&M Report #1 from March 31, 2021 presented performance data for the first time, information was provided that is generally applicable to all four FTCs regarding hydraulic mechanics, flood management practices, data collection methodology and reduction process, and flow calculation formulas. As a simplifying step for presentation clarity, at various sections in this Effectiveness Report, reference is made to these details in O&M Report #1. For an overview of the hydraulic functionality of the system, see Section 1.1 of O&M Report #1.

2 SEEP D CONSTRUCTION

This section describes the regulatory permits that were obtained for the Seep D FTC, and the construction and startup sequence that was performed immediately following.

2.1 Permits Obtained

The following permits were obtained prior to construction:

- December 18, 2020: Section 401 Water Quality Certification (WQC) and Section 404 Permit, permit modification to SAW-2019-00206, from NCDEQ and the United States Army Corps of Engineers (USACE) respectively, was previously provided in Appendix A of the Seep A Effectiveness Report (Geosyntec 2021). The original permit was authorized for Seep C on October 5, 2020, and was modified for Seeps A, B, and D. Proof of payment of stream and wetland mitigation credits for Seeps A, B, and D was submitted on December 29, 2020 and the USACE issued approval for in-stream construction that same day. The Certificate of Completion for Seeps A, B, and D is provided in Appendix A.
- January 14, 2021: Stormwater discharge (i.e., land disturbance) permit from Bladen County, North Carolina Department of Environmental Quality (NCDEQ), project ID BLADE-2021-009 (for Seep D), provided herein as Appendix B.

2.2 Construction and Startup Sequence

Construction initiated with access road and laydown area clearing and grading on March 16, 2021. In-stream construction began on April 8, 2021 and was completed on April 12, with sheet pile installation beginning immediately after. As shown in the civil as-built record drawings (Appendix C), two rows of sheet pile were installed (the upgradient and downgradient faces of the FTC). Concrete formwork began on April 26, with the slab and walls poured on May 20. Mechanical work (piping and valving) began on May 28. The mechanical as-built record drawings are provided in Appendix D. Hydrostatic testing to evaluate the water tightness of each FTC chamber was performed on June 22. The FTC was put into service on June 24.

3 SEEP D PERFORMANCE EVALUATION

The following sections describe the evaluation of base flow capture and PFAS removal efficiency, per the requirements of Paragraph 2(a)(vi).

The elevation of the Cape Fear River relative to key elevations of the FTC for the August – September reporting period is shown in Figure 1. The river elevation was not a factor that affected the Seep D FTC performance during the reporting period but is shown for consistency between other Seep reports.

3.1 Base Flow Capture

3.1.1 System Flowrate

A detailed discussion of pressure transducer water level measurements in the Effluent Stilling Basin (ESB), and the data reduction process to convert these levels to flow rates, is provided in Sections 3.1, 3.4.1, and 4.1.1 of O&M Report #1 (March 31, 2021). This data reduction process, updated for the Effectiveness Report period of August - September 2021, is provided in Appendix E.

Figure 2 shows the measurable discharge flowrates through the FTC over the reporting period. The median of the measured flowrate through the FTC during the reporting period was 122 gallons per minute (gpm), as compared to the pre-design median value of 150 gpm (from flumes prior to construction). It should be noted that due to schedule limitations, the available pre-design data set for Seep D was much smaller than the other Seeps (only 7 days of dry weather and 7 days of wet weather data were available). Therefore, this pre-design median value of 150 gpm may have been biased high.

The calculated 95th percentile value of treated flow over the reporting period was 304 gpm, as compared to the 95th percentile value of pre-design dry weather base flow (the design basis treatment flow) of 183 gpm. The higher value of calculated 95th percentile of treated flow, as compared to the design basis dry weather flow, is attributed to capture of wet weather flow by the system. Based on these results, the system is capable of treating more than the design basis under favorable hydraulic conditions.

Using the measured flowrate calculations, approximately 12,600,000 gallons of water was treated by the FTC from August 1 through September 30, 2021.

3.1.2 Bypass Flow

A detailed discussion of pressure transducer water level measurements in the FTC Influent Stilling Basin (ISB), and the data reduction process to convert these levels to the elevation of the bypass spillway, is provided in Section 3.1, 3.4.1, and 4.1.2 of O&M Report #1. This data reduction process, updated for the Effectiveness Report period of August - September 2021, is provided in Appendix E.

The resulting figure for influent water level elevation is provided in Figure 3. As shown, there was no bypass flow in August and September. This is attributed to fairly dry conditions in these two months and continued improvement in FTC operations. In August, approximately 2.73 inches of rain fell, which is approximately half the historical average of 5.24 inches. In September, approximately 2.68 inches of rain fell, which is approximately two-thirds the historical average of 4.30 inches. Overall, the total rainfall in the reporting period (5.41 inches) was approximately half the historical average (9.53 inches).

Three separate rain events with at least 0.5 inches of rainfall occurred in August and September. Maintenance events were conducted following each rain event to maintain good working conditions. A total of seven GAC maintenance events were conducted to improve the processing capacity of the system.

3.2 PFAS Removal

The sections that follow discuss the FTC performance monitoring sampling procedures, and analytical results, and the overall efficiency of PFAS removal by the FTC.

3.2.1 Performance Monitoring Sampling

Five performance monitoring samples – a minimum of twice per calendar month per CO Addendum Paragraph 2(a)(iii) – were collected during this reporting period (Table 1). Sampling procedures using the Teledyne autosamplers are described in Section 3.3.1 in the O&M Report #1. Samples were stored on wet ice in a cooler until shipment to an external laboratory (Eurofins TestAmerica Laboratories Sacramento or Lancaster). Chain-of-custody documents were completed and included with each shipment. Performance monitoring samples were analyzed for Table 3+ PFAS, as outlined in the *Interim Seep Remediation System Plan* (Geosyntec, 2020). The Laboratory Analytical Data Review Narrative is provided in Appendix F. Full lab reports will be uploaded to OneDrive and EquIS.

3.2.2 Performance Monitoring Sampling Results

Analytical results for the five composite performance monitoring samples are provided in Table 2 and described below.

Total Table 3+ PFAS compounds (17 compounds) in the influent ranged from 89,000 to 180,000 nanograms per liter (ng/L). The average and median total Table 3+ (17 compounds) concentrations were approximately 110,000 and 100,000 ng/L, respectively. Within each influent sample, the constituents of highest concentration were PFMOAA, PFO2HxA, and HFPO-DA.

Total Table 3+ PFAS compounds (17 compounds) in the effluent ranged from non-detect in all compounds, up to 36 ng/L, representing a minimum removal efficiency of 99.97% in the five composite samples.

3.2.3 System Effectiveness

System effectiveness, defined by the percentage removal of the combined concentrations of the three indicator parameters (HFPO-DA, PFMOAA and PMPA), is determined on a monthly

average basis for the system using volume weighted concentrations of the influent and effluent samples. Volume weighted concentrations were developed so that if either the influent and effluent autosamplers have different compositing durations or that the two composite sampling periods in the month have different durations (e.g., 14 days and 10 days). Both circumstances could arise due to a potential equipment malfunction or severe weather event. Weighting by volume provides a representative assessment of mass present in both the influent and effluent over time; samples corresponding to greater flow volumes will have a proportionately higher weight. System effectiveness is calculated using the equation presented in Section 4.3 of the O&M Report #1.

Based on the system flowrate data (Section 3.1.1) and the performance monitoring composite sample data of the three indicator compounds (Section 3.2.2), the monthly average system effectiveness was calculated to be 99.99% and >99.99% for August and September 2021, respectively. This value is similar to the Table 3+ removal efficiency described in Section 3.2.2 which is due to the fact that the removal efficiency was mostly steady throughout the reporting period, and that the influent and effluent composite periods were nearly identical.

4 SUMMARY

The following summarizes the evaluation of Seep D FTC's effectiveness at capturing total baseflow and removing PFAS for the second and third full calendar months of operation (August and September 2021).

- Flow data from the FTC demonstrates the system can treat more than the design basis flow rate under favorable hydraulic conditions (i.e., the 95th percentile of measured flow was 304 gpm as compared to the pre-construction estimated 95th percentile of dry weather flow value of 183 gpm). The Seep D FTC treated both dry and wet weather flow intercepted by the FTC during the reporting period.
- Performance monitoring results from the composite samples indicate the removal efficiency, based on the Total Table 3+ 17 Compounds, was at least 99.97% and on average was 99.99%. The System Effectiveness flow-weighted calculation yielded a similar result (99.99% in August and >99.99% in September). The system prevented an estimated 11.55 lbs of PFAS from being discharged to the Cape Fear River during the reporting period.

5 REFERENCES

- Geosyntec, 2020. Interim Seep Remediation System Plan. Chemours Fayetteville Works. 31 August 2020.
- Geosyntec, 2021. Interim Seep Remediation System Plan Operations and Maintenance Report #1. Chemours Fayetteville Works. 31 March 2021.
- Geosyntec, 2021. Interim Seep Remediation Seep C Effectiveness Demonstration Report. Chemours Fayetteville Works. 16 April 2021.
- Geosyntec, 2021. Interim Seep Remediation System Plan Operations and Maintenance Report #2. Chemours Fayetteville Works. 28 May 2021.
- Geosyntec, 2021. Interim Seep Remediation System Plan Operations and Maintenance Report #3. Chemours Fayetteville Works. 30 July 2021.
- Geosyntec, 2021. Interim Seep Remediation Seep A Effectiveness Demonstration Report. Chemours Fayetteville Works. 26 August 2021.
- Geosyntec, 2021. Interim Seep Remediation System Plan Operations and Maintenance Report #4. Chemours Fayetteville Works. 30 September 2021.

TABLES

Table 1
Sampling Summary - Seep D
(August - September 2021)
 Chemours Fayetteville Works
 Fayetteville, North Carolina

Performance Monitoring Composite Samples

Sample ID	Composite Period	Sample Date
SEEP-D-INFLUENT-306-081721 SEEP-D-EFFLUENT-336-081721	August 3 - August 17, 2021	August 17, 2021
SEEP-D-INFLUENT-24-082021 SEEP-D-EFFLUENT-24-082021	August 19 - August 20, 2021	August 20, 2021
SEEP-D-INFLUENT-24-082821 SEEP-D-EFFLUENT-24-082821	August 27 - August 28, 2021	August 28, 2021
SEEP-D-INFLUENT-318-091421 SEEP-D-EFFLUENT-336-091421	September 1 - September 14, 2021	September 14, 2021
SEEP-D-INFLUENT-336-100121 SEEP-D-EFFLUENT-330-100121	September 17 - October 1, 2021	October 1, 2021

Wet Weather Composite Sample

Sample ID	Sample Date	Sample Time	Cumulative Rainfall (inches)
SEEP-D-INFLUENT-RAIN-24-081821 SEEP-D-EFFLUENT-RAIN-24-081821	August 18, 2021	19:00	0.43
SEEP-D-INFLUENT-RAIN-24-092321 SEEP-D-EFFLUENT-RAIN-24-092321	September 23, 2021	11:13	0.79

Notes

- 1 The Seep A autosamplers malfunctioned from August 17-19, interrupting the collection of aliquots early in the 14-day composite cycle. O&M staff re-programmed the Seep D samplers to be consistent with Seep A and collect two, 24-hour composites on August 20 and 28 to complete the monthly sampling program.
- 2 Sample Identification Label Key: "Seep - [A, B, C, or D] - [Sample Location Inside FTC] - [# of Aliquots in Composite Sample] - [MMDDYY]"
- 3 Precipitation data obtained from the USGS gauge #02105500 at the William O. Huske Lock and Dam

Table 2
Summary of Performance Monitoring Analytical Results - Seep D
(August - September 2021)
 Chemours Fayetteville Works
 Fayetteville, NC

	SEEP-D-INFLUENT- 306-081721 Sample Date: 17-Aug-21	SEEP-D-EFFLUENT- 336-081721 Sample Date: 17-Aug-21	Percent Removal	SEEP-D-INFLUENT- 24-082021 Sample Date: 20-Aug-21	SEEP-D-EFFLUENT- 24-082021 Sample Date: 20-Aug-21	Percent Removal	SEEP-D-INFLUENT- 24-082821 Sample Date: 28-Aug-21	SEEP-D-EFFLUENT- 24-082821 Sample Date: 28-Aug-21	Percent Removal
<i>Table 3 + SOP (ng/L)</i>									
Hfpo Dimer Acid	11,000	<2.0	100.0%	13,000	5.3	> 99.9%	12,000	<2.0	100.0%
PFMOAA	55,000	<2.0 UJ	100.0%	60,000	15	> 99.9%	45,000	<2.0	100.0%
PFO2HxA	18,000	<2.0	100.0%	18,000	11	99.9%	17,000	<2.0	100.0%
PFO3OA	5,100	<2.0	100.0%	5,500	4.4	99.9%	5,000	<2.0	100.0%
PFO4DA	1,400	<2.0	100.0%	1,600	<2.0	100.0%	1,500	<2.0	100.0%
PFO5DA	<78	<2.0	100.0%	110	<2.0	100.0%	<78	<2.0	100.0%
PMPA	7,100	<10	100.0%	7,000	<10	100.0%	5,100	<10	100.0%
PEPA	1,600	<20	100.0%	1,900	<20	100.0%	1,700	<20	100.0%
PS Acid	<20	<2.0	100.0%	<20	<2.0	100.0%	<20	<2.0	100.0%
Hydro-PS Acid	220	<2.0	100.0%	270	<2.0	100.0%	250	<2.0	100.0%
R-PSDA	730 J	<2.0	100.0%	560 J	<2.0	100.0%	430 J	<2.0	100.0%
Hydrolyzed PSDA	2,000	<2.0	100.0%	1,300 J	<2.0	100.0%	980 J	<2.0	100.0%
R-PSDCA	<17	<2.0	100.0%	<17	<2.0	100.0%	<17	<2.0	100.0%
NVHOS, Acid Form	720	<2.0	100.0%	630	<2.0	100.0%	560	<2.0	100.0%
EVE Acid	<17	<2.0	100.0%	<17	<2.0	100.0%	<17	<2.0	100.0%
Hydro-EVE Acid	830	<2.0	100.0%	950	<2.0	100.0%	870	<2.0	100.0%
R-EVE	730	<2.0	100.0%	580 J	<2.0	100.0%	320 J	<2.0	100.0%
PES	<6.7	<2.0	100.0%	<6.7	<2.0	100.0%	<6.7	<2.0	100.0%
PFECA B	<27	<2.0	100.0%	<27	<2.0	100.0%	<27	<2.0	100.0%
PFECA-G	<48	<2.0	100.0%	<48	<2.0	100.0%	<48	<2.0	100.0%
Total Table 3+ (17 compounds)^{1,2}	100,000	ND	100.0%	110,000	36	> 99.9%	89,000	ND	100.0%
Total Table 3+ (20 compounds)¹	100,000	ND	100.0%	110,000	36	> 99.9%	91,000	ND	100.0%

Notes

1 - Total Table 3+ was calculated including J qualified data but not non-detect data. The Total Table 3+ sum is rounded to two significant figures.

2 - Total Table 3+ (17 Compounds) does not include R-PSDA, Hydrolyzed PSDA and R-EVE.

Bold - Analyte detected above associated reporting limit.

J - Analyte detected. Reported value may not be accurate or precise.

ng/L - nanograms per liter

QA/QC - Quality assurance/ quality control

SOP - standard operating procedure

UJ - Analyte not detected. Reporting limit may not be accurate or precise.

< - Analyte not detected above associated reporting limit.

ND - No Table 3+ compounds were detected above their associated reporting limits.

Sample Identification Label Key: "Seep - [A, B, C, or D] - [Sample Location Inside FTC] - [# of Aliquots in Composite Sample] - [MMDDYY]"

Table 2
Summary of Performance Monitoring Analytical Results - Seep D
(August - September 2021)
 Chemours Fayetteville Works
 Fayetteville, NC

	SEEP-D-INFLUENT- 318-091421 Sample Date: 14-Sept-21	SEEP-D-EFFLUENT- 336-091421 Sample Date: 14-Sept-21	Percent Removal	SEEP-D-INFLUENT- 336-100121 Sample Date: 01-Oct-21	SEEP-D-EFFLUENT- 330-100121 Sample Date: 01-Oct-21	Percent Removal
<i>Table 3 + SOP (ng/L)</i>						
Hfpo Dimer Acid	12,000	<2.0	100.0%	25,000	<2.0	100.0%
PFMOAA	46,000	<2.0	100.0%	86,000	<2.0	100.0%
PFO2HxA	21,000	<2.0	100.0%	36,000	<2.0	100.0%
PFO3OA	6,400	<2.0	100.0%	10,000	<2.0	100.0%
PFO4DA	1,700	<2.0	100.0%	2,900	<2.0	100.0%
PFO5DA	<78	<2.0	100.0%	160	<2.0	100.0%
PMPA	7,000	<10	100.0%	11,000	<10	100.0%
PEPA	2,300	<20	100.0%	3,700	<20	100.0%
PS Acid	<20	<2.0	100.0%	<20	<2.0	100.0%
Hydro-PS Acid	250	<2.0	100.0%	430	<2.0	100.0%
R-PSDA	540 J	<2.0	100.0%	1,200 J	<2.0	100.0%
Hydrolyzed PSDA	1,300 J	<2.0	100.0%	2,600 J	<2.0	100.0%
R-PSDCA	<17	<2.0	100.0%	<17	<2.0	100.0%
NVHOS, Acid Form	590	<2.0	100.0%	1,100	<2.0	100.0%
EVE Acid	<17	<2.0	100.0%	<17	<2.0	100.0%
Hydro-EVE Acid	860	<2.0	100.0%	1,500	<2.0	100.0%
R-EVE	620 J	<2.0	100.0%	1,100 J	<2.0	100.0%
PES	<6.7	<2.0	100.0%	<6.7	<2.0	100.0%
PFECA B	<27	<2.0	100.0%	<27	<2.0	100.0%
PFECA-G	<48	<2.0	100.0%	<48	<2.0	100.0%
Total Table 3+ (17 compounds)^{1,2}	98,000	ND	100.0%	180,000	ND	100.0%
Total Table 3+ (20 compounds)¹	100,000	ND	100.0%	180,000	ND	100.0%

Notes

1 - Total Table 3+ was calculated including J qualified data but not non-detect data.

The Total Table 3+ sum is rounded to two significant figures.

2 - Total Table 3+ (17 Compounds) does not include R-PSDA, Hydrolyzed PSDA and R-EVE.

Bold - Analyte detected above associated reporting limit.

J - Analyte detected. Reported value may not be accurate or precise.

ng/L - nanograms per liter

QA/QC - Quality assurance/ quality control

SOP - standard operating procedure

UJ - Analyte not detected. Reporting limit may not be accurate or precise.

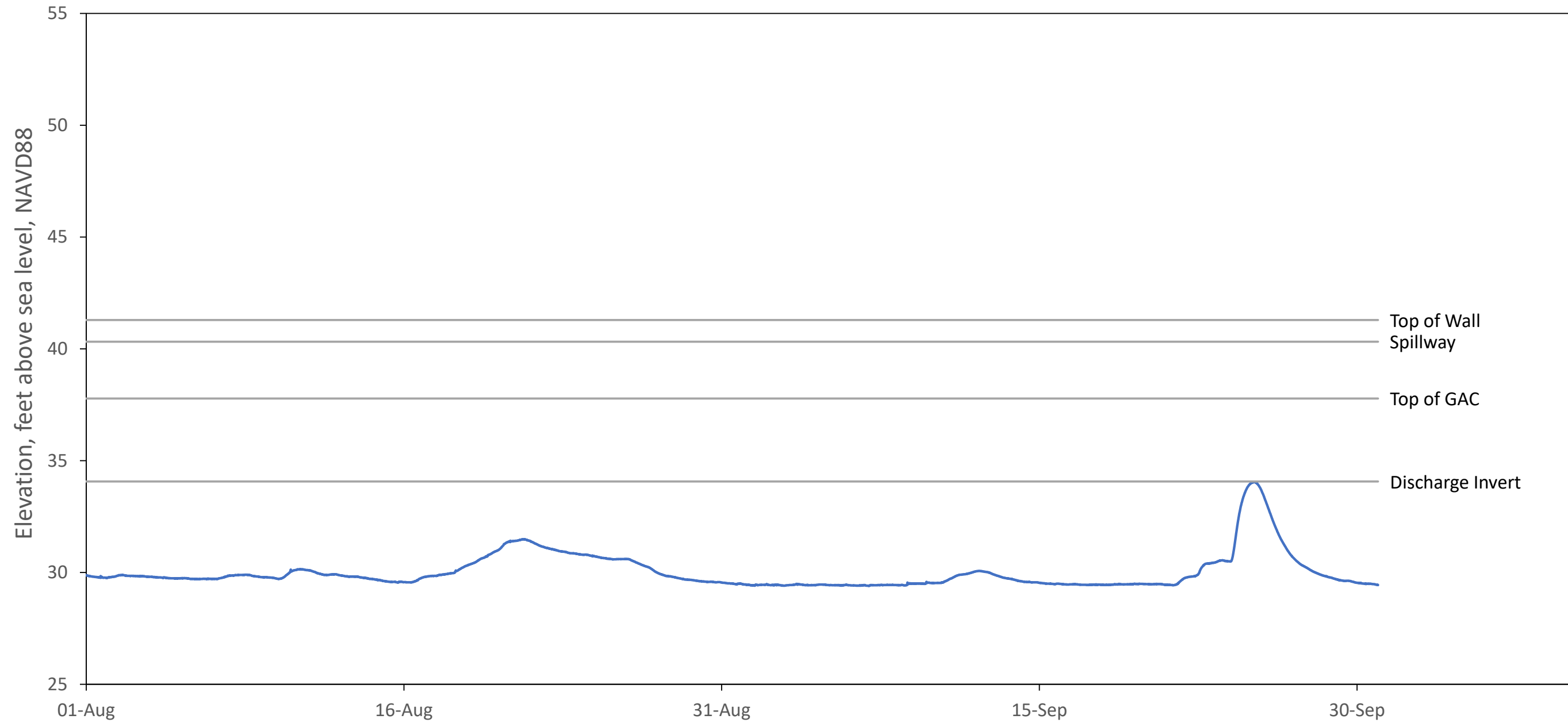
< - Analyte not detected above associated reporting limit.

ND - No Table 3+ compounds were detected above their associated reporting limits.

Sample Identification Label Key: "Seep - [A, B, C, or D] - [Sample Location Inside FTC] - [# of Aliquots in Composite Sample] - [MMDDYY]"

FIGURES

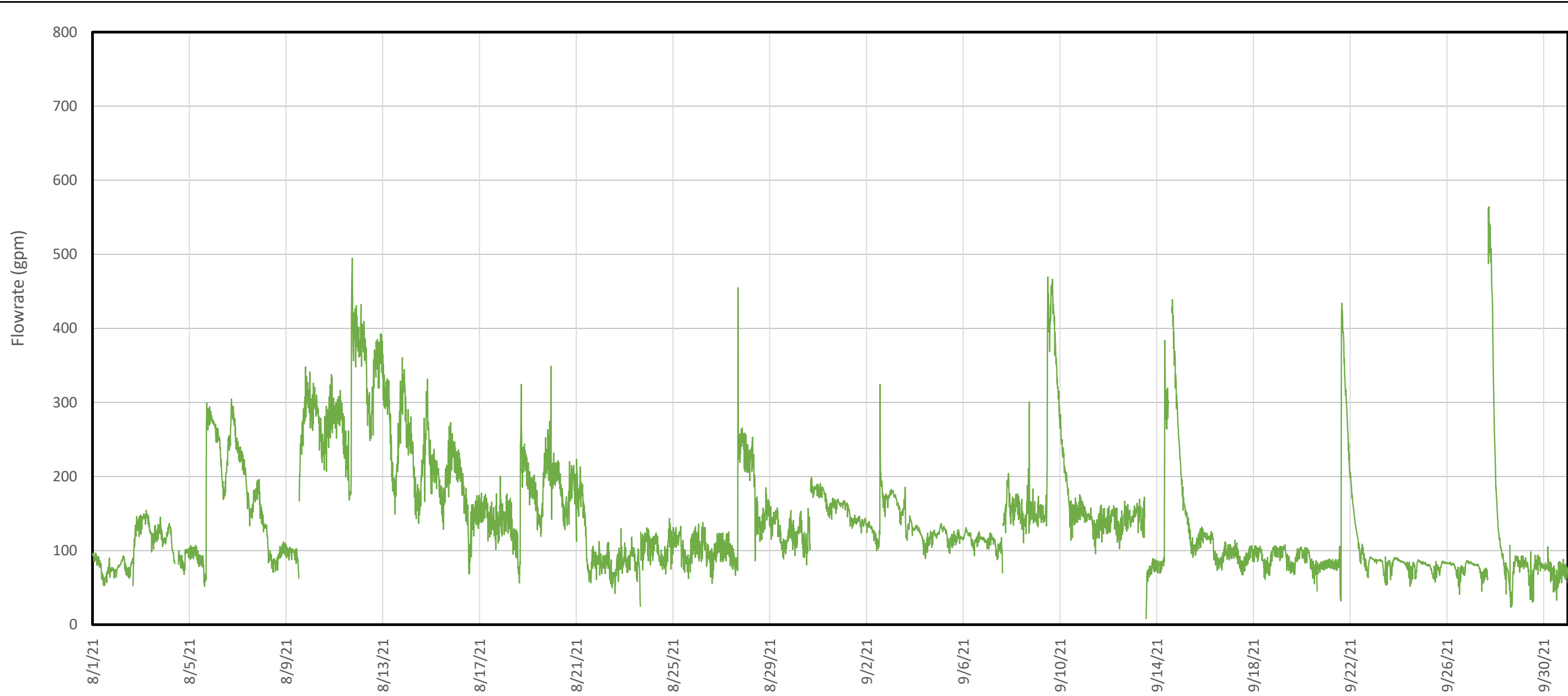
River Elevation During Seep D Flow Through Cell Operation (8/01/2021 through 09/30/2021)



Legend
— River

Notes:
 As-built survey information from RMA Surveying October 2020 and Donaldson Garrett & Associates August 2021.
 River elevation from USGS W.O. Huske Lock and Dam site 02105500, converted to NAVD88.
 GAC = Granular Activated Carbon

River Level & FTC As-Built Elevations - Seep D	
Chemours Fayetteville Works Fayetteville, North Carolina	
Geosyntec consultants	Figure
Raleigh, NC	1



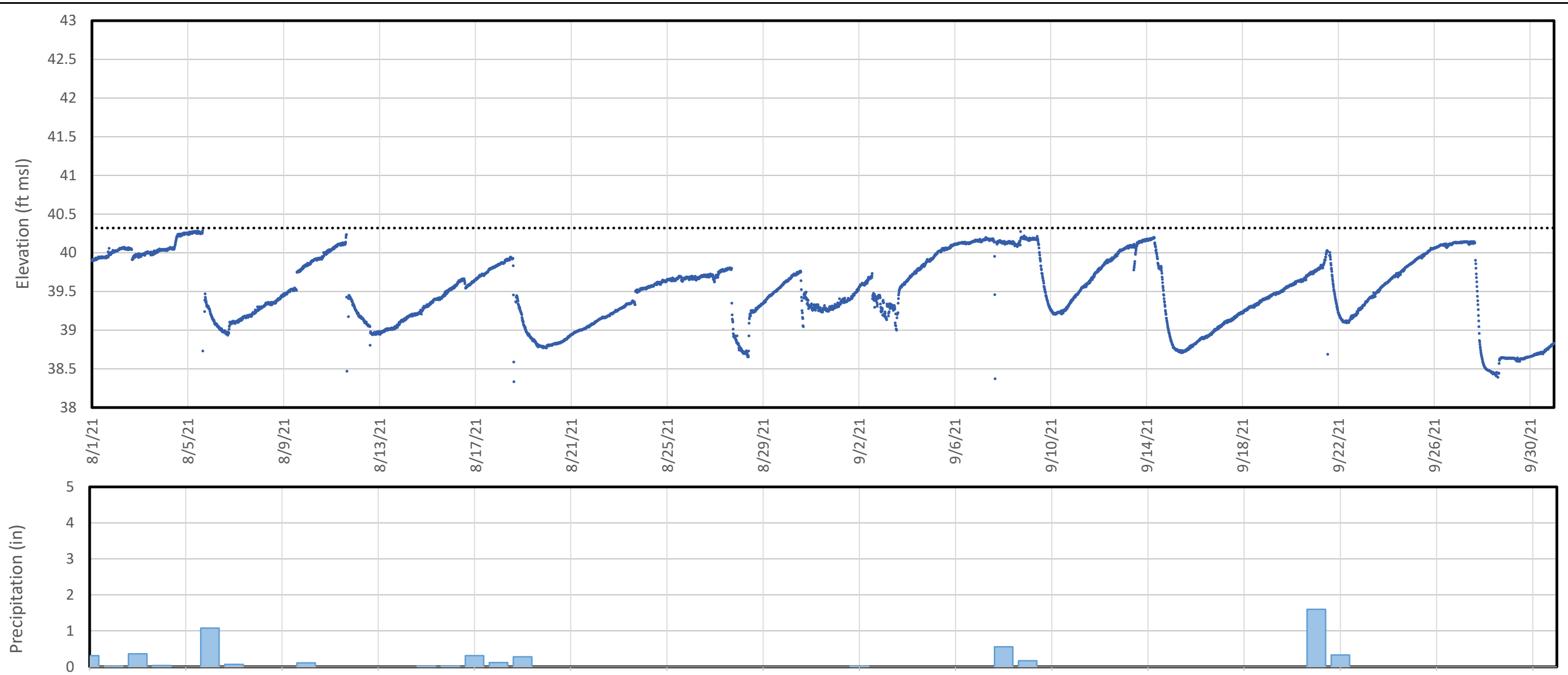
Legend
 — Measured Discharge Flowrate

Flowrate Statistics (gpm)

	(08/01 - 09/30)	Since Startup
Median	122	138
95 th percentile	304	323
Max	564	763

Notes:
 gpm - gallons per minute
 Figure 2 depicts the measured discharge flowrate of water processed through the filter beds calculated using the Effluent Stilling Basin transducer data.

Measured Discharge Flowrate - Seep D	
Chemours Fayetteville Works Fayetteville, North Carolina	
Geosyntec consultants	<small>Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295</small>
Raleigh, NC	October 2021
Figure 2	



Legend

- Inflow Chamber/Impoundment Water Elevation
- Precipitation (daily totals)
- ◆◆ Bypass Spillway Elevation

Notes:

Figure 3 shows the influent transducer data that was collected during the reporting period (blue line). Instances of impoundment bypass flow are shown in orange. Precipitation data obtained from USGS gauge# 02105500 at the William O. Huske Lock and Dam.

Influent Water Elevation - Seep D	
Chemours Fayetteville Works Fayetteville, North Carolina	
Geosyntec [®] consultants	Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295
Raleigh, NC	October 2021
Figure 3	

APPENDIX A
Section 401 WQC/Section 404 Certificate of
Completion

CERTIFICATE OF COMPLETION

Action ID Number: SAW-2019-00206

County: Bladen

Permittee: Chemours Chemical, Christel Compton

Project Name: Chemours Chemical PFAS Remediation Project

Date Verification Issued: 10/5/2020 for Seep C and modified 12/18/2020 for Seeps ABD

Project Manager: Emily Greer

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

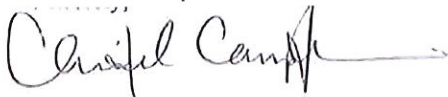
US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Emily Greer
Wilmington Regulatory Office
U.S Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403
or
emily.c.greer@usace.army.mil

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

Seep C certificate signed by Christel Compton and transmitted to Emily Greer, USACE, on April 16, 2021.

Christel Compton



Supplemental: Seeps ABD certificate signed by Christel Compton and transmitted to Emily Greer, USACE, on October 20, 2021.



APPENDIX B
Bladen County NCDEQ Stormwater Permit

Certificate of Coverage

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES

GENERAL PERMIT NO. NCG010000

NC Reference No. NCG01-2021-0287
Certificate of Coverage No. NCC210287

STORMWATER DISCHARGES

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

The Chemours Company

is hereby authorized to discharge stormwater associated with CONSTRUCTION ACTIVITIES to surface waters of North Carolina from a site located at:

Seep D Remediation System
22828 NC-87
Hollow
Bladen County

in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in N.C. General Permit No. NCG010000.

This Certificate of Coverage is affiliated with **E&SC Plan Project No.** BLADE-2021-009

This Certificate of Coverage shall become effective 1/21/2021.

This Certificate of Coverage shall remain in effect until rescinded or expired.

This Certificate of Coverage will expire on the anniversary of its effective date unless it is renewed by payment of the annual administration and compliance fee.



for Brian Wrenn
Director, Division of Energy, Mineral, and Land Resources
By the Authority of the Environmental Management Commission

APPENDIX C
Civil As-Built Record Drawings

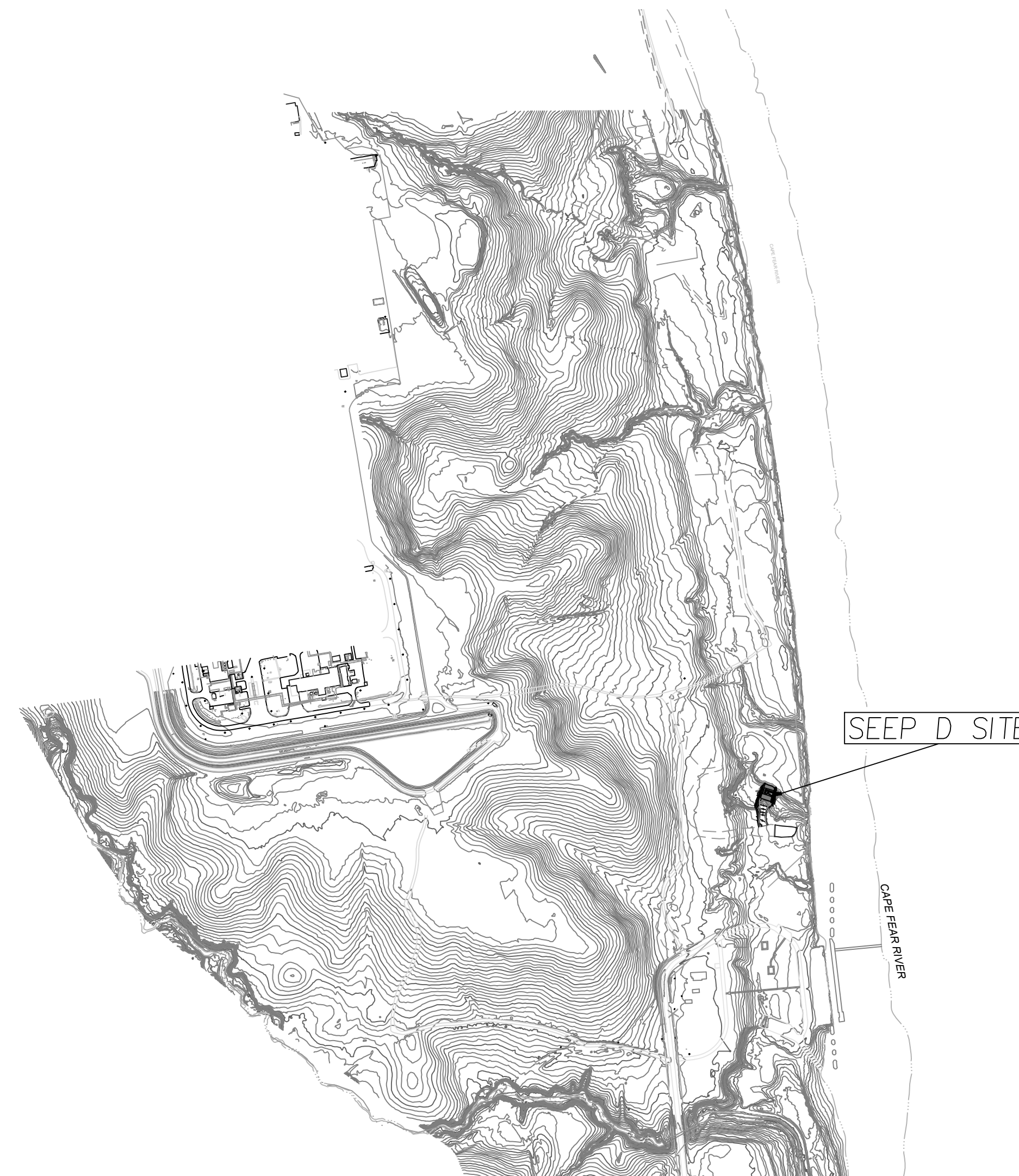
The Chemours Company

Fayetteville, North Carolina

Seep D Interim Remediation System

As-Built

November 9, 2020



DRAWING INDEX

GENERAL

G-1 COVER SHEET

CIVIL

- C-1 CIVIL SITE PLAN
- C-2 ACCESS PLAN
- C-3 CROSS SECTIONS
- C-4 SHEET PILE PLAN AND PROFILE
- C-5 IMPOUNDMENT SECTIONS

TYPICAL DETAILS

- D-1 TYPICAL DETAILS
- D-2 TYPICAL DETAILS



COVER SHEET

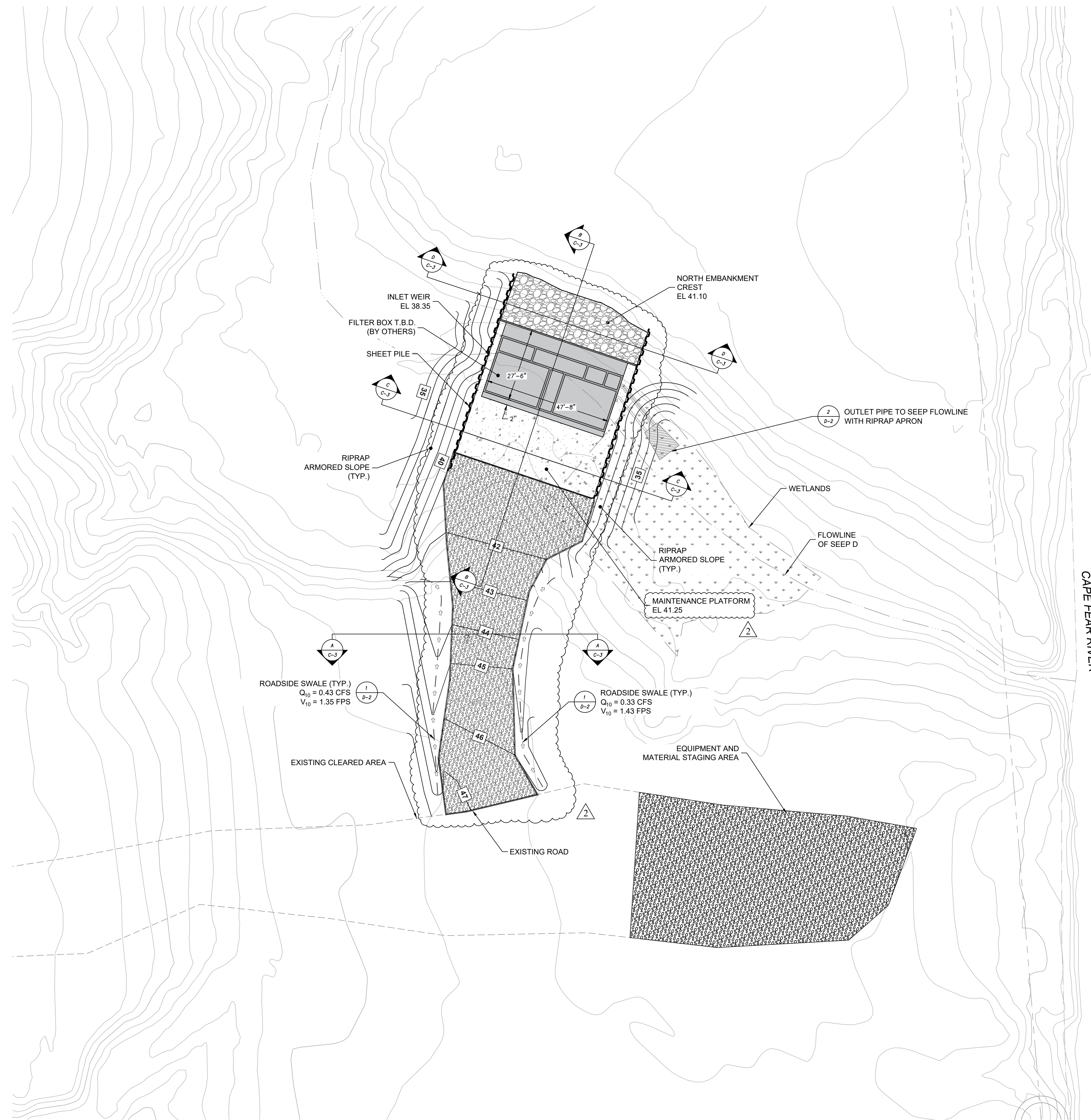
Chemours Interim Seep D Remediation Project
Fayetteville, North Carolina

DRAWN BY: NSS	REVIEWED BY: DKK
DESIGNED BY: TJD	APPROVED BY: DAH

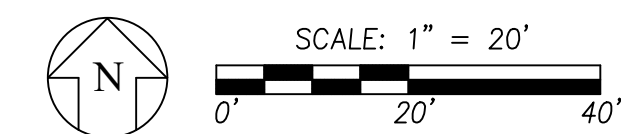
SCALE: AS SHOWN
DATE: November 9, 2020

Revisions		No.	Date	Description	By:
		1	4/13/2021	RI	NSS
		2	8/30/2021	As-Built	NSS
		3			
		4			
		5			
		6			

DRAWING: **G-1**
PROJECT NUMBER: 43-20631D



LEGEND:
 DRAINAGE SWALE



CIVIL SITE PLAN

Chemours Interim Seep D Remediation Project
 Fayetteville, North Carolina

DRAWN BY: NSS	REVIEWED BY: DKK
DESIGNED BY: TJD	APPROVED BY: DAH

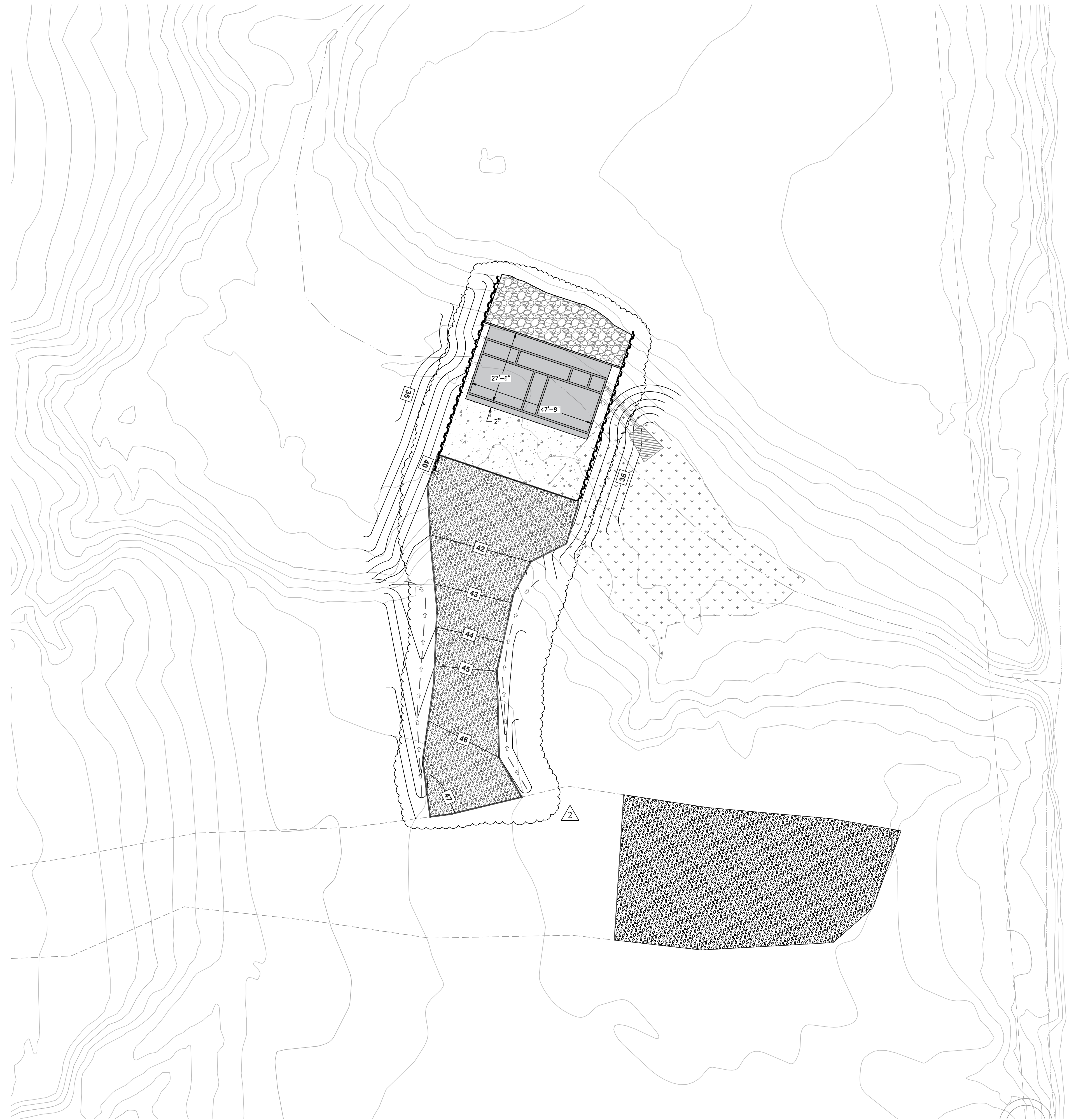
SCALE:
AS SHOWN

DATE:
November 9, 2020

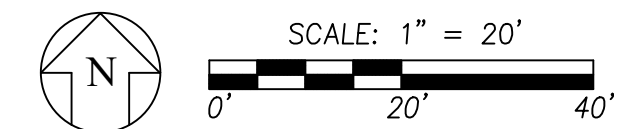
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2	8/30/2021	As-Built		
3				
4				
5				
6				

DRAWING:
C-1

PROJECT NUMBER:
 43-20631D



LEGEND:
 DRAINAGE SWALE



ACCESS PLAN

Chemours Interim Seep D Remediation Project
 Fayetteville, North Carolina

DRAWN BY: NSS	REVIEWED BY: DKK
DESIGNED BY: TJD	APPROVED BY: DAH

SCALE:
AS SHOWN

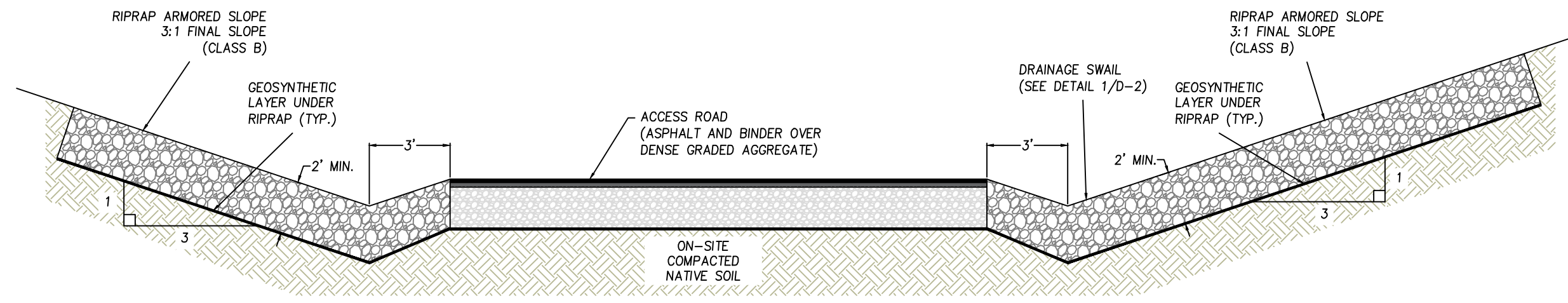
DATE:
November 9, 2020

No.	Date	Revisions	
		Description	By:
1	4/13/2021	RI	NSS
2	8/30/2021	As-Built	NSS
3			
4			
5			
6			

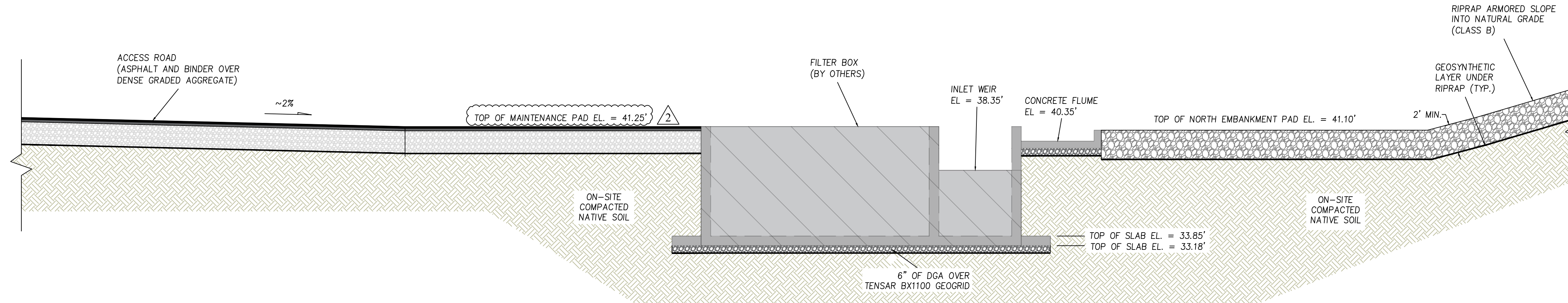
DRAWING:
C-2

PROJECT NUMBER:
 43-20631D

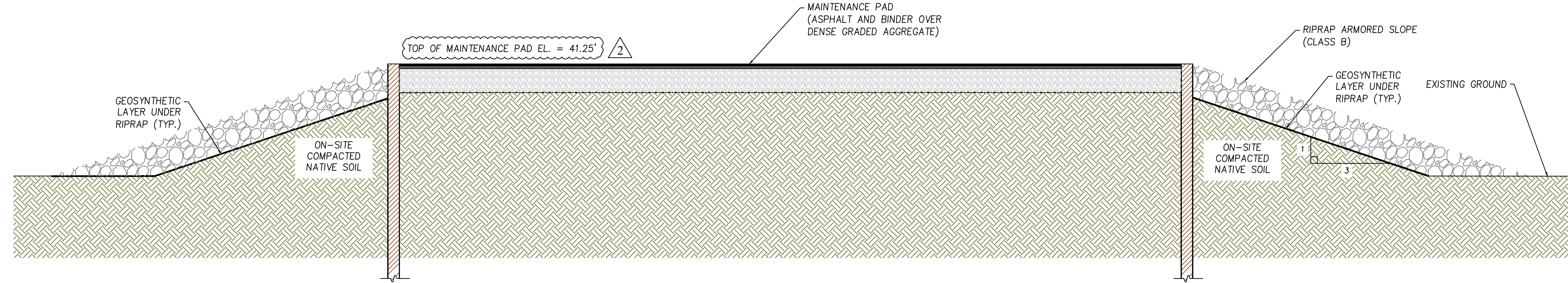
- NOTES:
1. ALL ON-SITE COMPACTED NATIVE SOILS SHALL BE COMPACTED TO 98% MAX DRY DENSITY FROM PROCTOR TESTING.
 2. ALL RIPRAP SHALL BE NCDOT CLASS B.
 3. ALL GEOGRID SHALL BE TENSAR BX1100 OR APPROVED EQUIVALENT.
 4. ALL GEOSYNTHETIC LAYERS SHALL BE NON-WOVEN WITH 5.0 OZ MINIMUM.



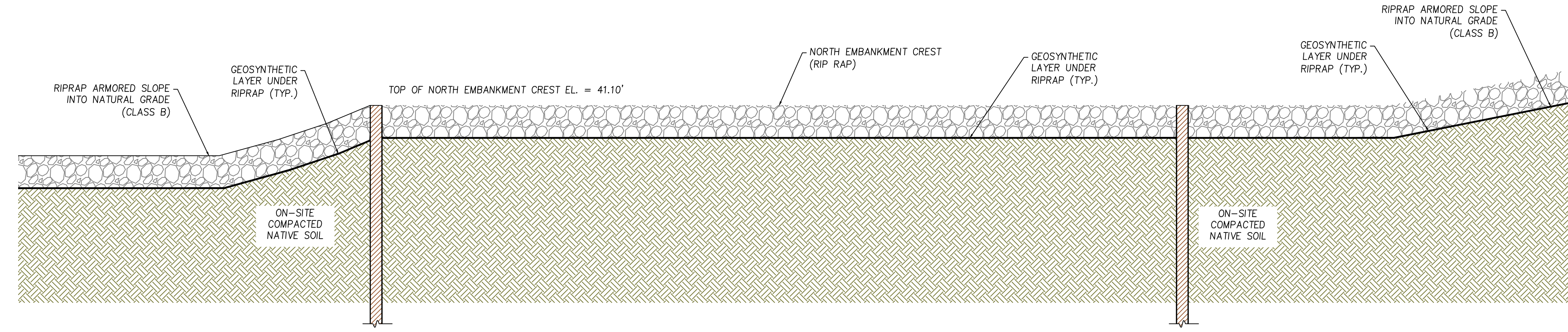
1 SECTION A-A
C-3 SCALE: NTS



2 SECTION B-B
C-3 SCALE: NTS



3 SECTION C-C
C-3 SCALE: NTS



4 SECTION D-D
C-3 SCALE: NTS

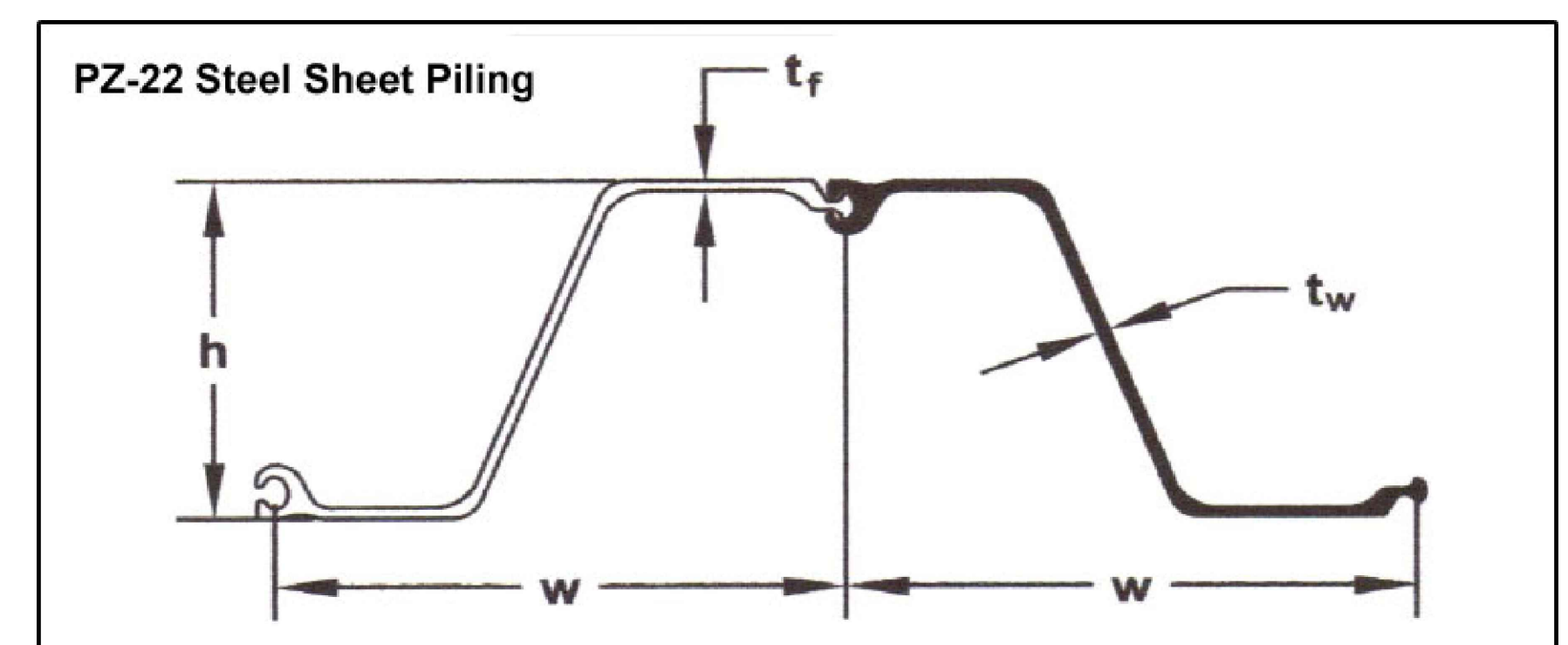
DRAWN BY:	REVIEWED BY:
NSS	DKK
DESIGNED BY:	APPROVED BY:
TJD	DAH
SCALE: AS SHOWN	
DATE: November 9, 2020	

No.	Date	By:	
		NSS	NSS
1	4/13/2021	RI	
2	8/30/2021	As-Built	
3			
4			
5			
6			

Drawn By:	Reviewed By:
NSS	DKK
Designed By:	Approved By:
TJD	DAH
Scale:	AS SHOWN
Date:	November 9, 2020

Revisions	
No.	Description
1	By: NSS Date: 4/13/2021
2	By: NSS Date: 8/30/2021
3	By: NSS Date: 8/30/2021
4	By: NSS Date: 8/30/2021
5	By: NSS Date: 8/30/2021
6	By: NSS Date: 8/30/2021

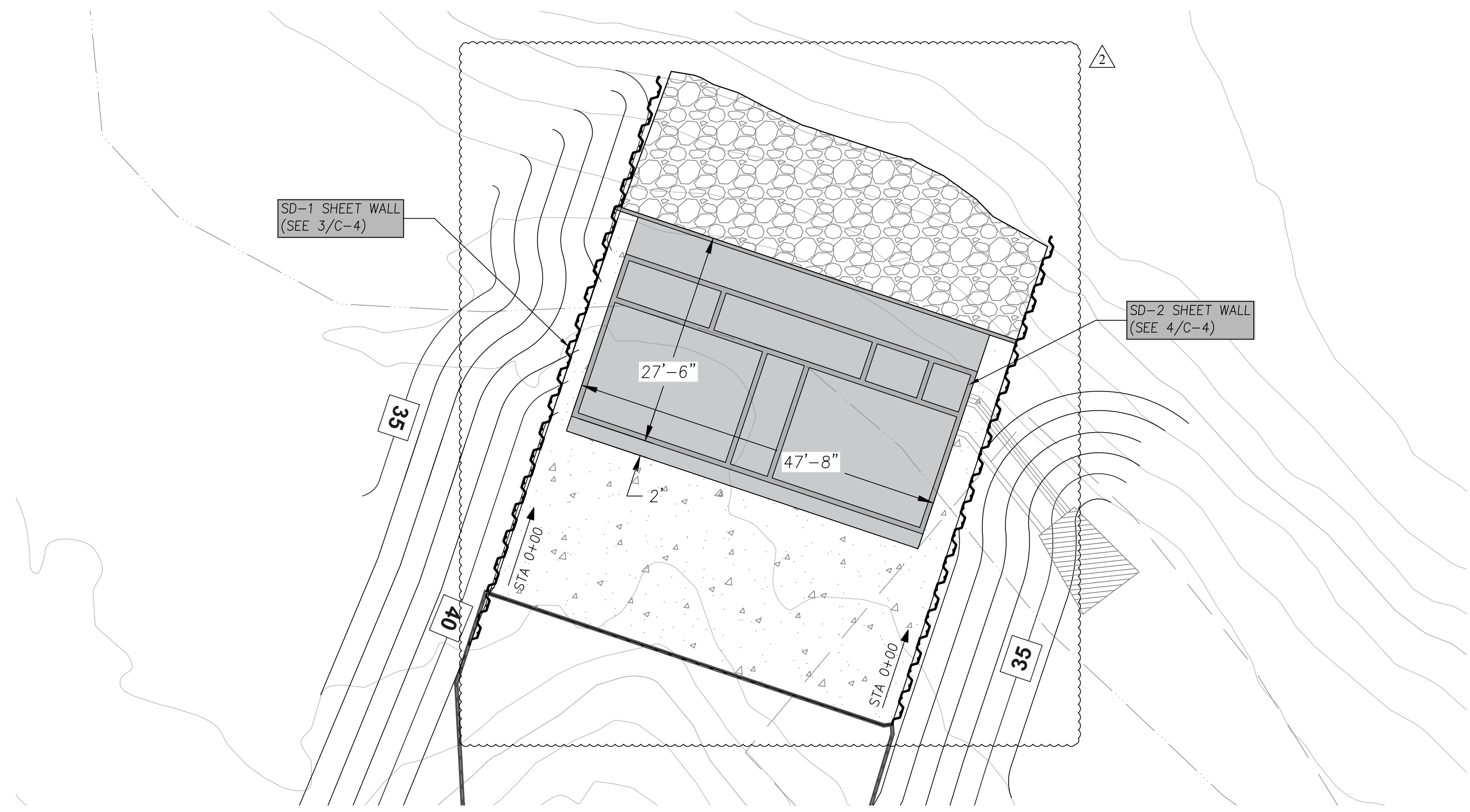
Reference:
PZ-22 dimensions from Piling and Equipment and Meever USA



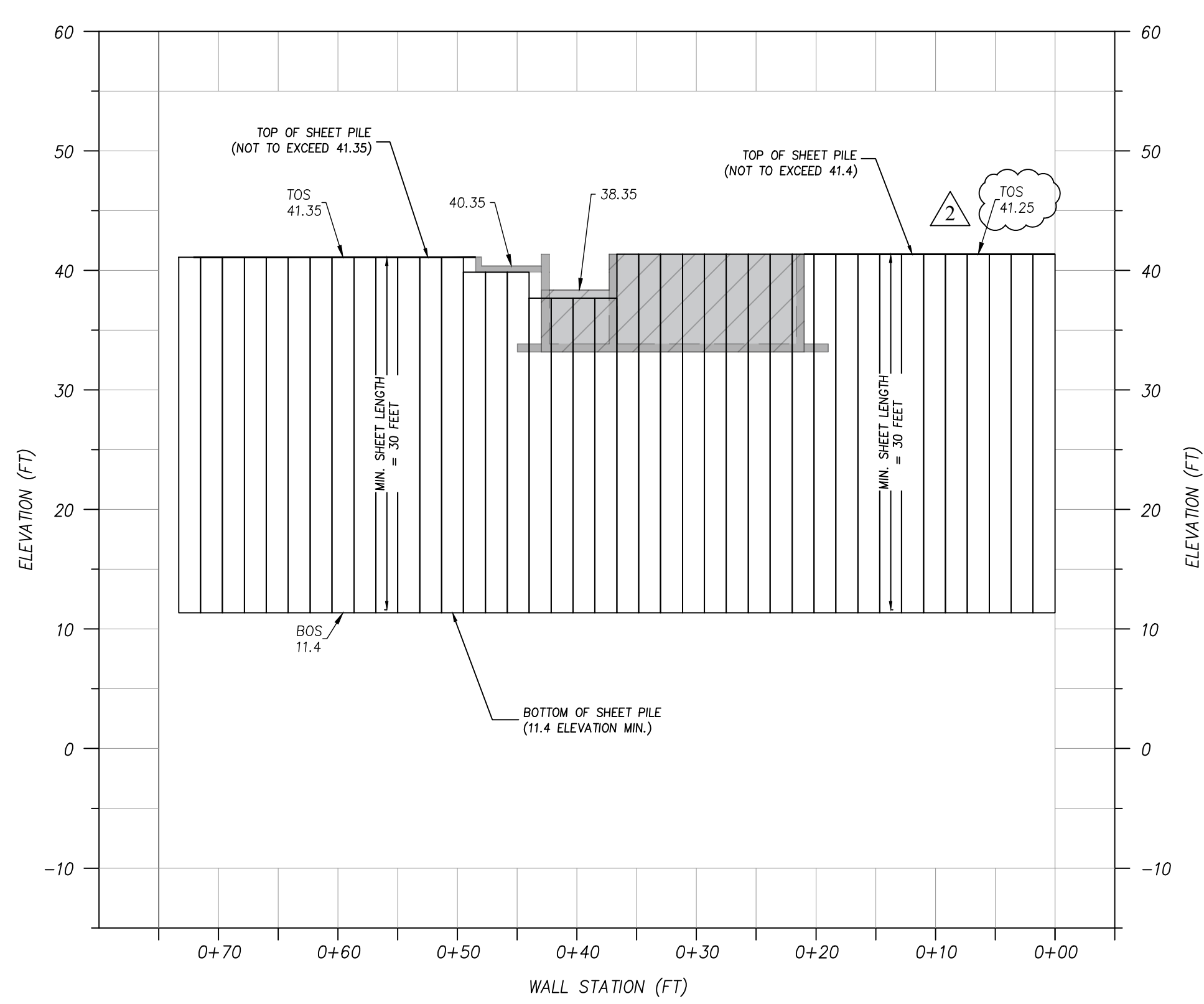
Specification: ASTM A572 Grade 50

Section	Width w in (mm)	Height h in (mm)	Thickness tf in (mm)	Cross Sectional Area in ² /ft (cm ² /m)	Weight		Section Modulus in ³ /ft (cm ³ /m)	Moment of Inertia in ⁴ /ft (cm ⁴ /m)	Coating Area Both ft ² /ft (m ² /m)	Coating Area ft ² /ft ² (m ² /m ²)
					Pile lb/ft (kg/m)	Wall lb/ft ² (kg/m ²)				
PZ-22	22.00 559	9.00 229	0.375 9.50	11.86 (cm ² /m)	40.30 60.00	22.00 107.40	18.10 973	84.40 11500	4.48 1.37	1.22 1.22

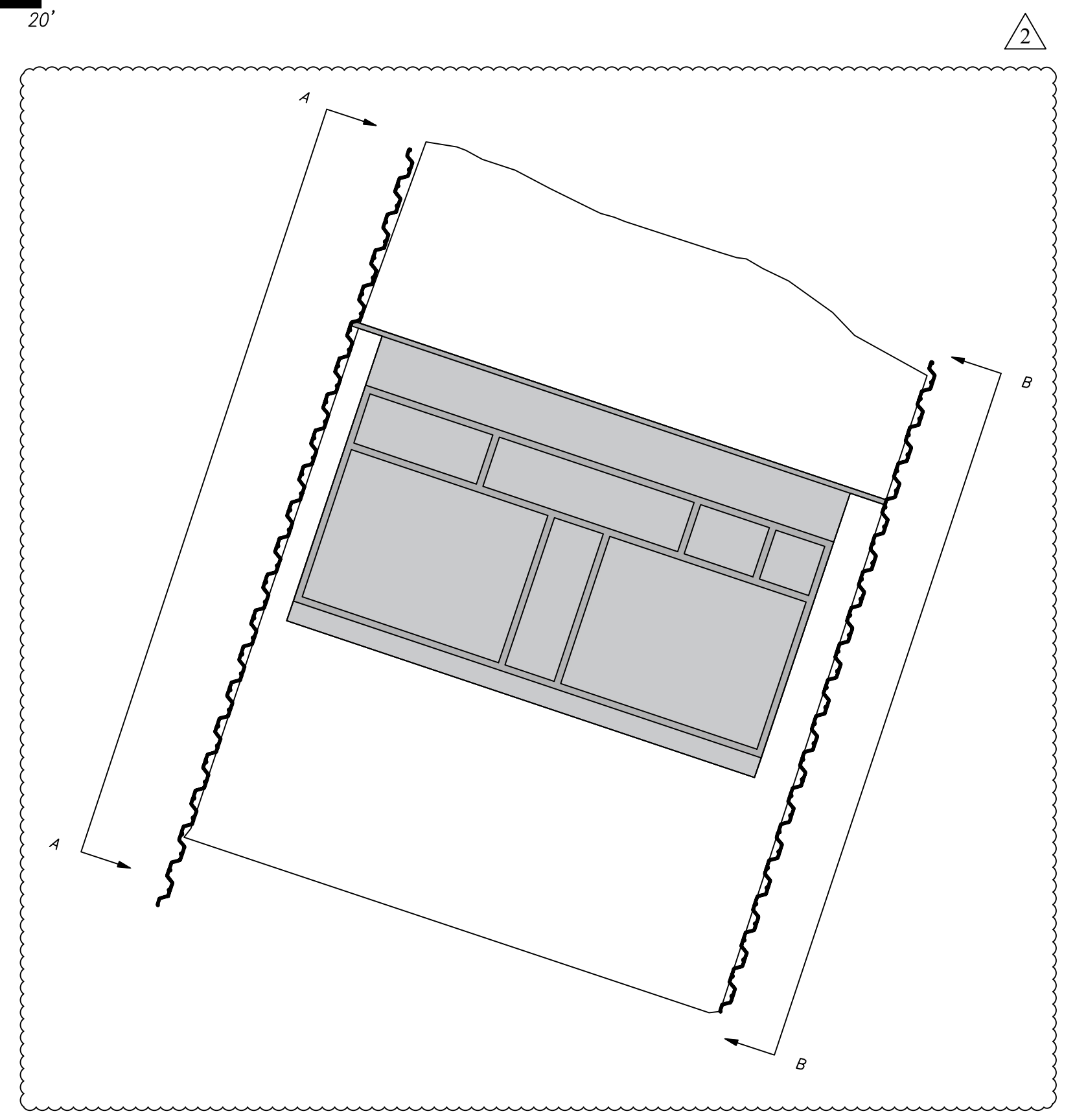
2 PZ-22 SHEET PILE DIMENSIONS
SCALE: NTS



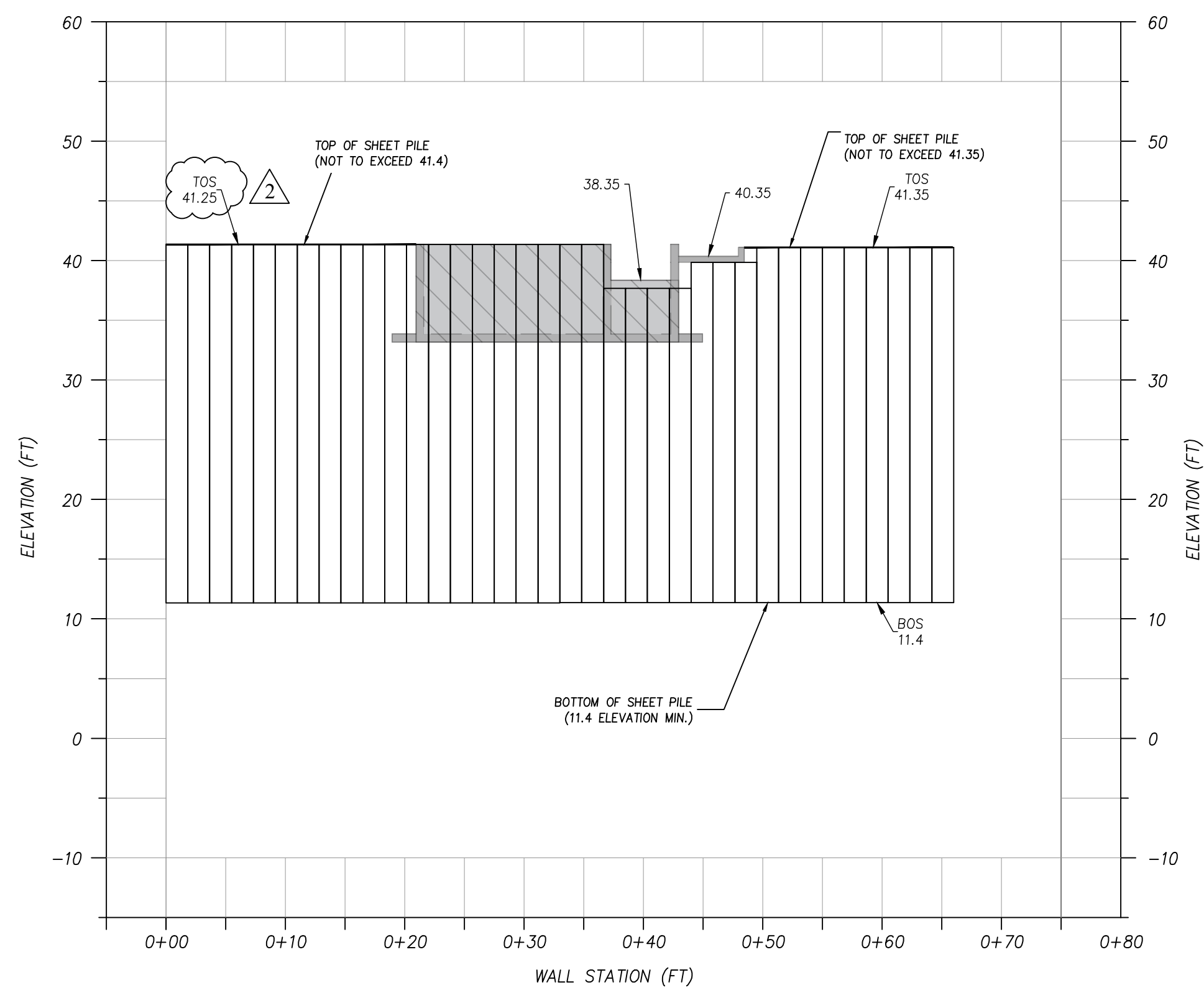
1 IMPOUNDMENT PLAN VIEW
SCALE: 1" = 10'



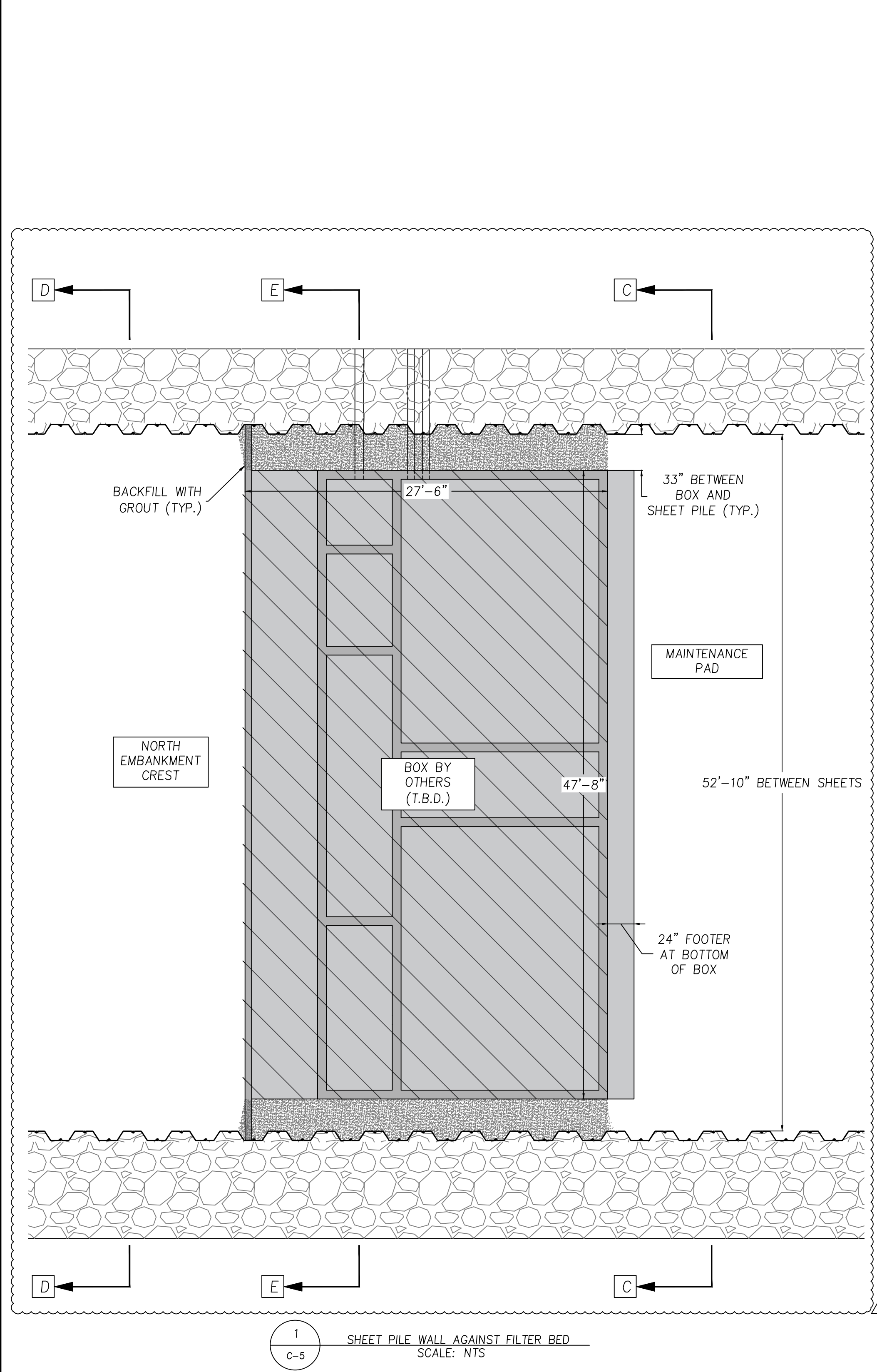
3 SECTION A-A, SD-1 SHEET PILE PROFILE
SCALE: 1" = 10'



SEEP B SHEET PILE QUANTITIES				
Sheet Wall	No. Of Piles	Pile Type	Min. Length (ft)	Approximate Total Length of Wall (ft)
SD-1	40	PZ-22	30	73.33
SD-2	36	PZ-22	30	66.00

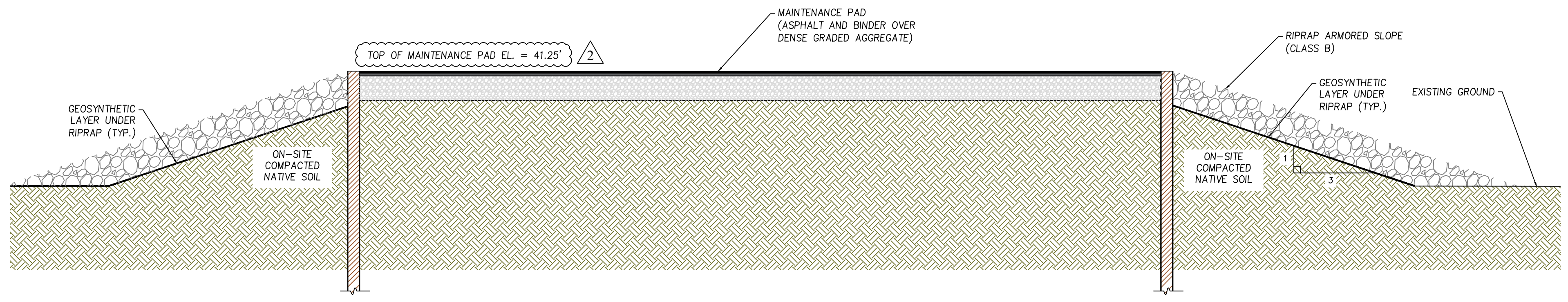


4 SECTION B-B, SD-2 SHEET PILE PROFILE
SCALE: 1" = 10'

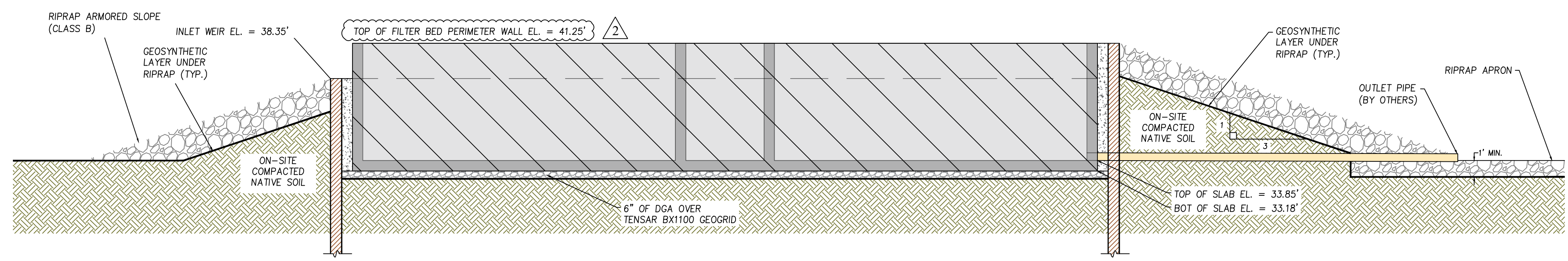


1 SECTION C-C
SCALE: NTS
SHEET PILE WALL AGAINST FILTER BED

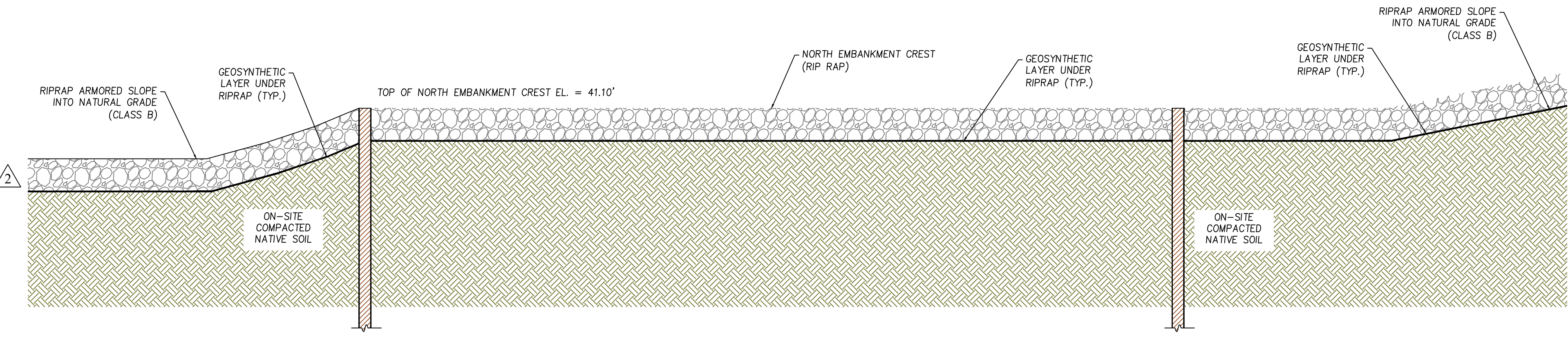
- NOTES:**
1. ALL ON-SITE COMPACTED NATIVE SOILS SHALL BE COMPACTED TO 98% MAX DRY DENSITY FROM PROCTOR TESTING.
 2. ALL RIPRAP SHALL BE NCDOT CLASS B.
 3. ALL GEOGRID SHALL BE TENSAR BX1100 OR APPROVED EQUIVALENT.
 4. ALL GEOSYNTHETIC LAYERS SHALL BE NON-WOVEN WITH 5.0 OZ MINIMUM.



2 SECTION C-C
SCALE: NTS



3 SECTION F-F
SCALE: NTS

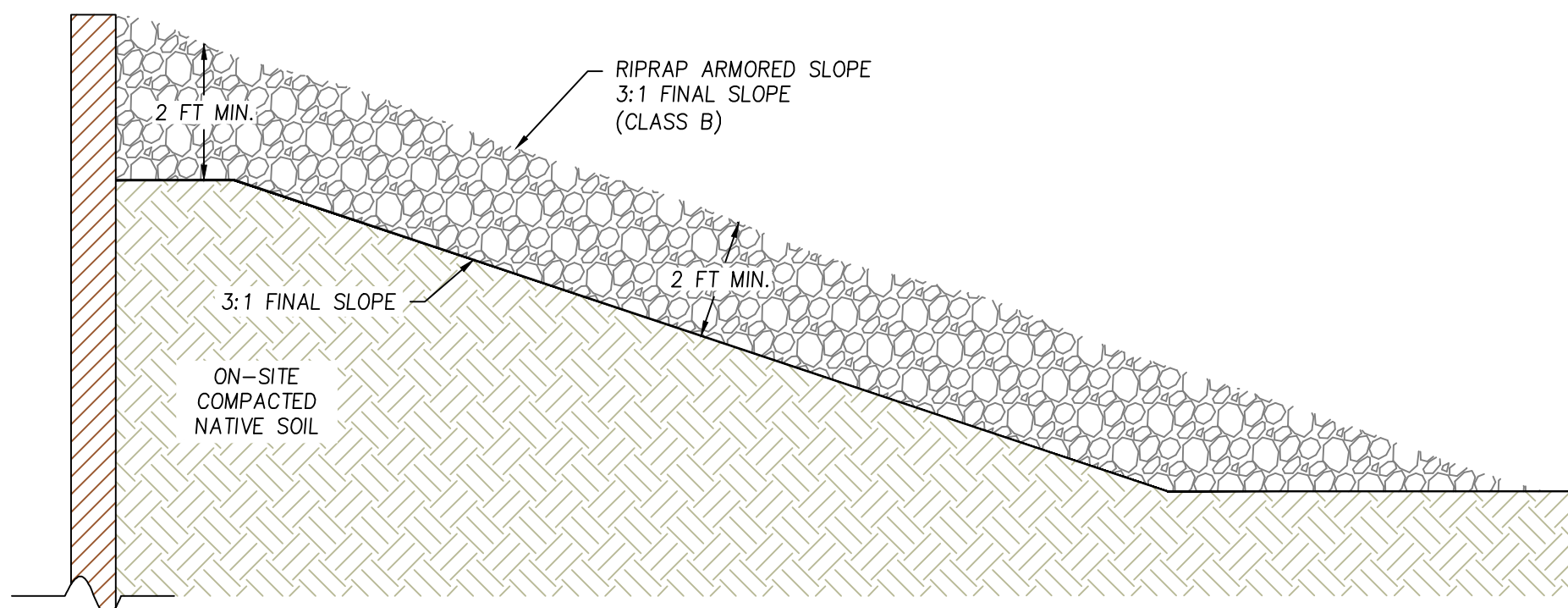


4 SECTION D-D
SCALE: NTS

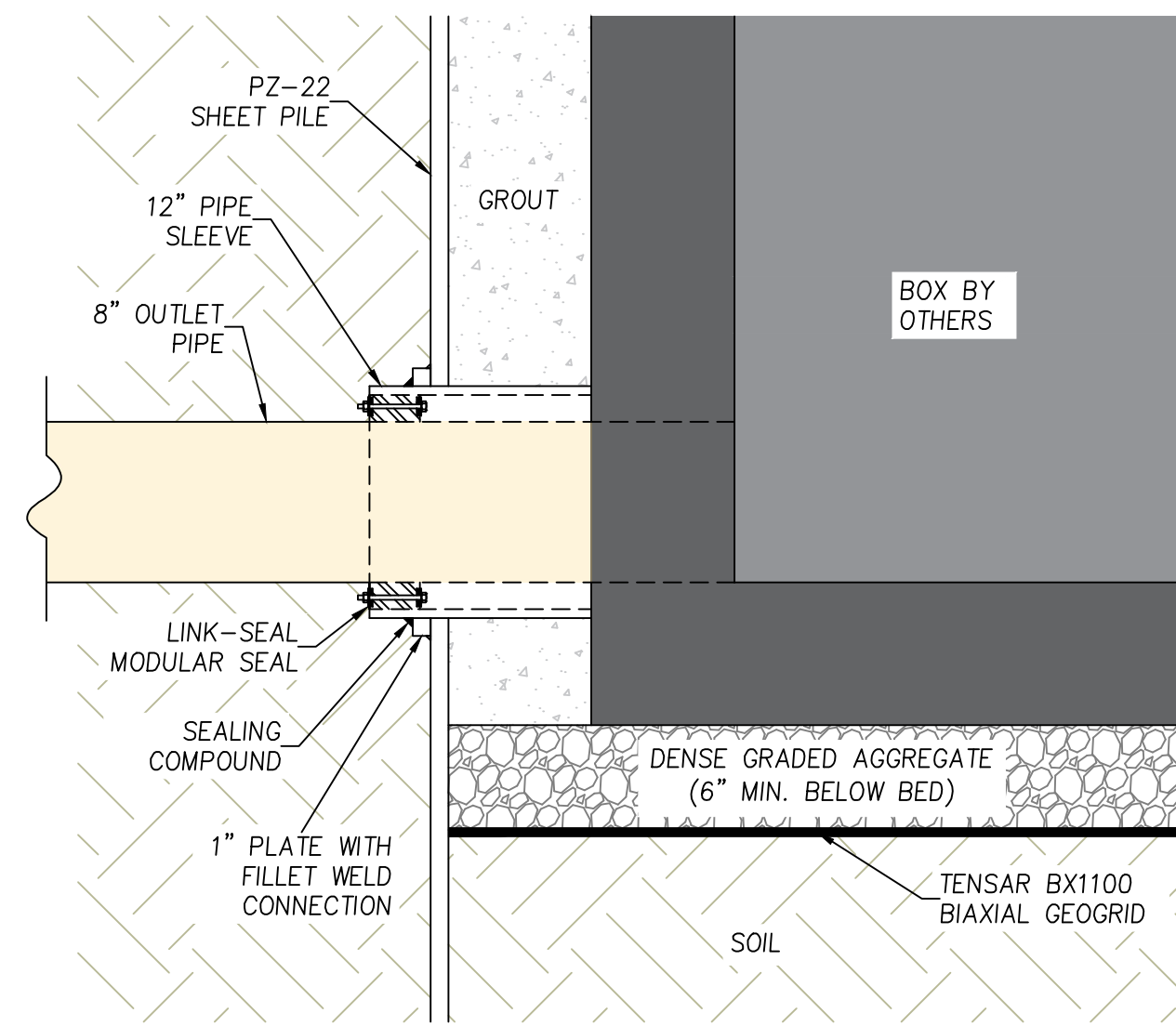
DRAWN BY:	REVIEWED BY:
NSS	DKK
DESIGNED BY:	APPROVED BY:
TJD	DAH
SCALE: AS SHOWN	
DATE: November 9, 2020	

No.	Date	By:	
		NSS	DKK
1	4/13/2021	RI	
2	8/30/2021	Av-Built	
3			
4			
5			
6			

PROJECT NUMBER: **C-5**
43-20631D

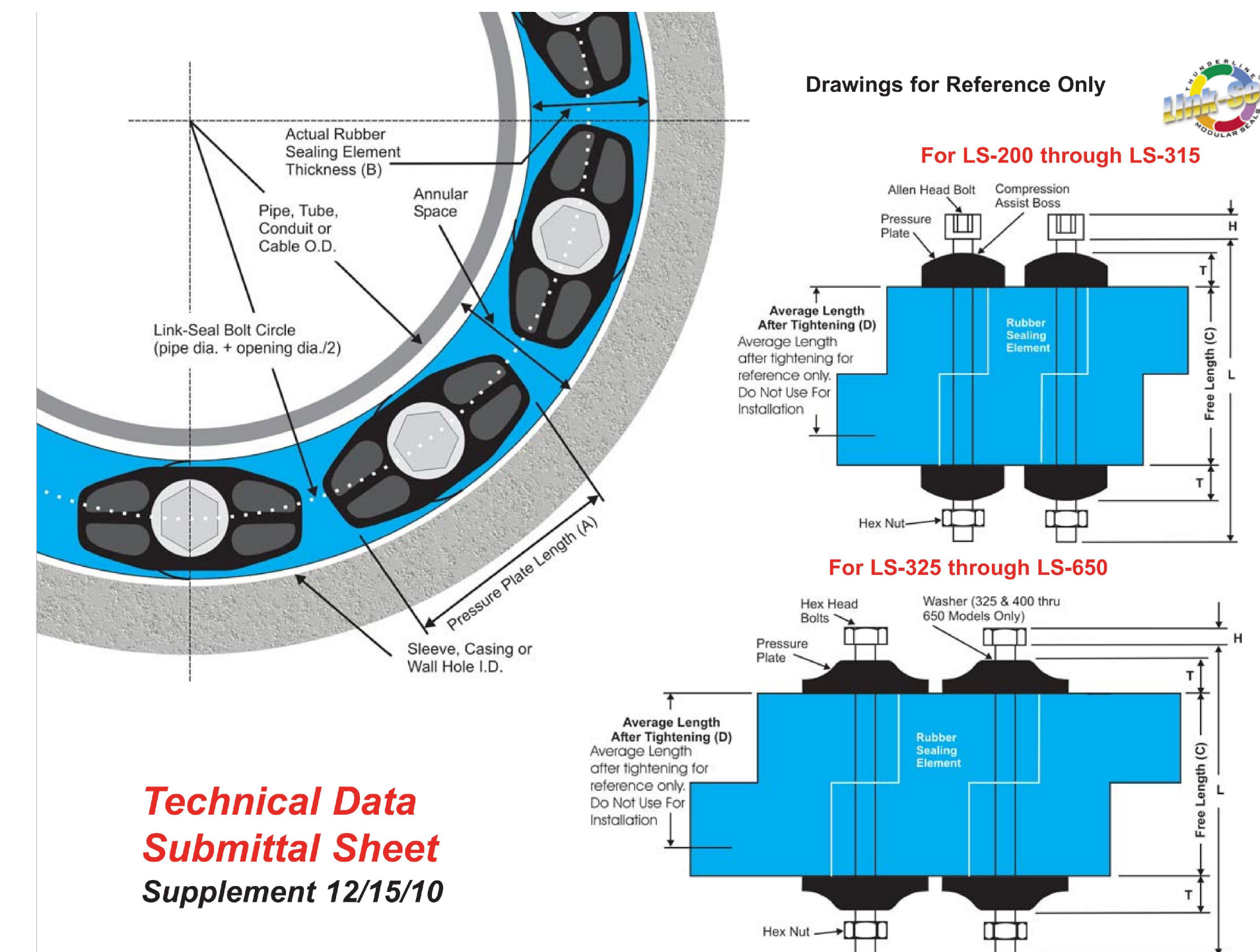
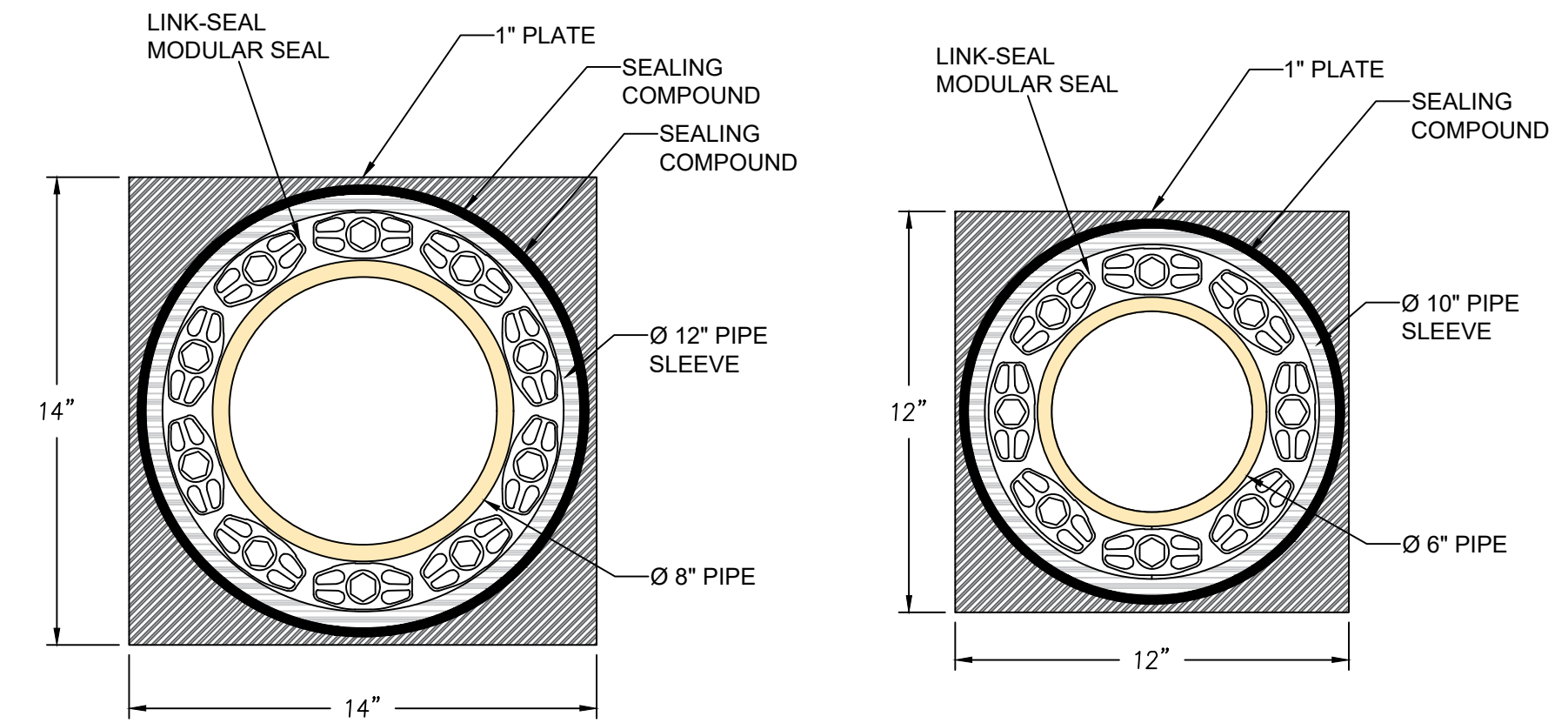


1 RIPRAP ARMORED SLOPE
SCALE: NTS



2 LINK-SEAL PIPE THROUGH WALL CONNECTION
SCALE: NTS

REFERENCE: DETAIL FROM PVC PIPE SUPPLIES, <https://pvcpipesupplies.com/stainless-steel-ls-300-s.html>



Technical Data
Submittal Sheet
Supplement 12/15/10

***Dimensional Data for Models C, L, O, S-316, LS-316 and OS-316**

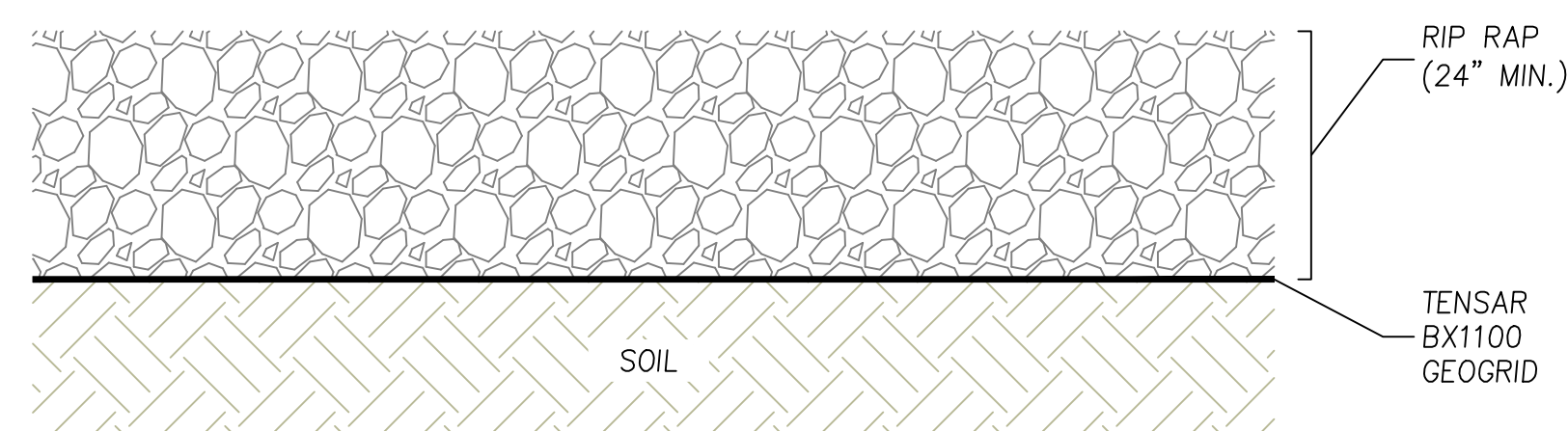
LINK-SEAL MODEL NO.	RUBBER SEALING ELEMENT			PRESSURE PLATE		BOLT				WEIGHT FOR 10 LINK SECTION (LBS)	MIN. REQUIRED SEATING WIDTH
	ACTUAL THICKNESS (B)	FREE LENGTH (C)	AVG. LENGTH AFTER TIGHTENING (D)	(A)	(T)	ALLEN HEAD HEX ACROSS FLATS (H)	THREAD SIZE (I)	(L)			
LS-200*	0.48"	1.75"	1.38"	1.06"	0.31"	4mm Allen (0.157")	4.95mm (0.195")	M5-0.8	70mm (2.755")	0.70	2.25"
LS-275*	0.61"	1.75"	1.38"	0.97"	0.31"	4mm Allen (0.157")	4.95mm (0.195")	M5-0.8	70mm (2.755")	0.75	2.25"
LS-300*	0.69"	2.37"	1.87"	1.56"	0.44"	6mm Allen (0.236")	7.87mm (0.310")	M8-1.25	90mm (3.543")	2.15	3.00"
LS-315*	0.81"	2.37"	1.87"	1.44"	0.44"	6mm Allen (0.236")	7.87mm (0.310")	M8-1.25	90mm (3.543")	2.30	3.00"
LS-325*	0.88"	2.63"	2.00"	1.31"	1.00"	13mm (0.511")	5.30mm (0.215")	M8-1.25	90mm (3.543")	5.50	4.00"
LS-340*	1.00"	2.70"	2.25"	1.48"	0.66"	13mm (0.511")	5.30mm (0.215")	M8-1.25	120mm (4.720")	3.30	4.00"
LS-360*	1.24"	2.70"	2.25"	2.05"	0.77"	13mm (0.511")	5.30mm (0.215")	M8-1.25	120mm (4.720")	5.10	4.00"
LS-400*	1.38"	3.50"	2.75"	3.50"	1.06"	17mm (0.669")	6.40mm (0.250")	M10-1.5	130mm (5.118")	12.00	5.00"
LS-410*	1.43"	3.37"	2.87"	2.52"	0.88"	17mm (0.669")	6.40mm (0.250")	M10-1.5	130mm (5.118")	8.20	5.00"
LS-425*	1.06"	3.00"	2.25"	3.50"	1.19"	17mm (0.669")	6.40mm (0.250")	M10-1.5	130mm (5.118")	10.00	5.00"
LS-475*	1.56"	3.38"	2.63"	2.63"	0.88"	17mm (0.669")	6.40mm (0.250")	M10-1.5	130mm (5.118")	10.00	5.00"
LS-500*	2.25"	3.75"	2.75"	3.63"	1.06"	19mm (0.748")	7.50mm (0.300")	M12-1.75	140mm (5.511")	22.50	5.00"
LS-525*	2.06"	3.75"	2.87"	3.63"	1.06"	19mm (0.748")	7.50mm (0.300")	M12-1.75	140mm (5.511")	21.00	5.00"
LS-575*	1.81"	3.75"	3.00"	3.00"	1.00"	19mm (0.748")	7.50mm (0.300")	M12-1.75	140mm (5.511")	15.50	5.00"
LS-600*	3.09"	4.00"	3.00"	6.00"	1.90"	30mm (0.748")	12.50mm (0.490")	M20-2.5	180mm (7.088")	60.60	6.00"
LS-650*	2.71"	3.98"	3.00"	3.96"	1.19"	19mm (0.748")	7.50mm (0.300")	M12-1.75	140mm (5.511")	26.10	6.00"



VISIT WWW.LINKSEAL.COM FOR LITERATURE AND INSTALLATION INSTRUCTIONS

3 LINK-SEAL PIPE THROUGH WALL CONNECTION
SCALE: NTS

REFERENCE: DETAIL FROM PVC PIPE SUPPLIES, <https://pvcpipesupplies.com/stainless-steel-ls-300-s.html>



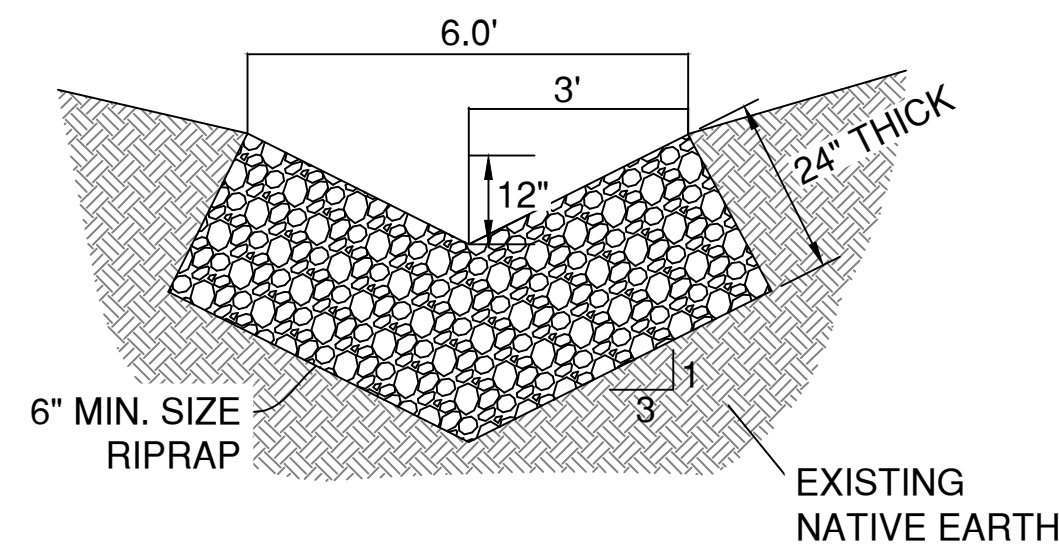
4 NORTH EMBANKMENT CREST DETAIL
SCALE: NTS



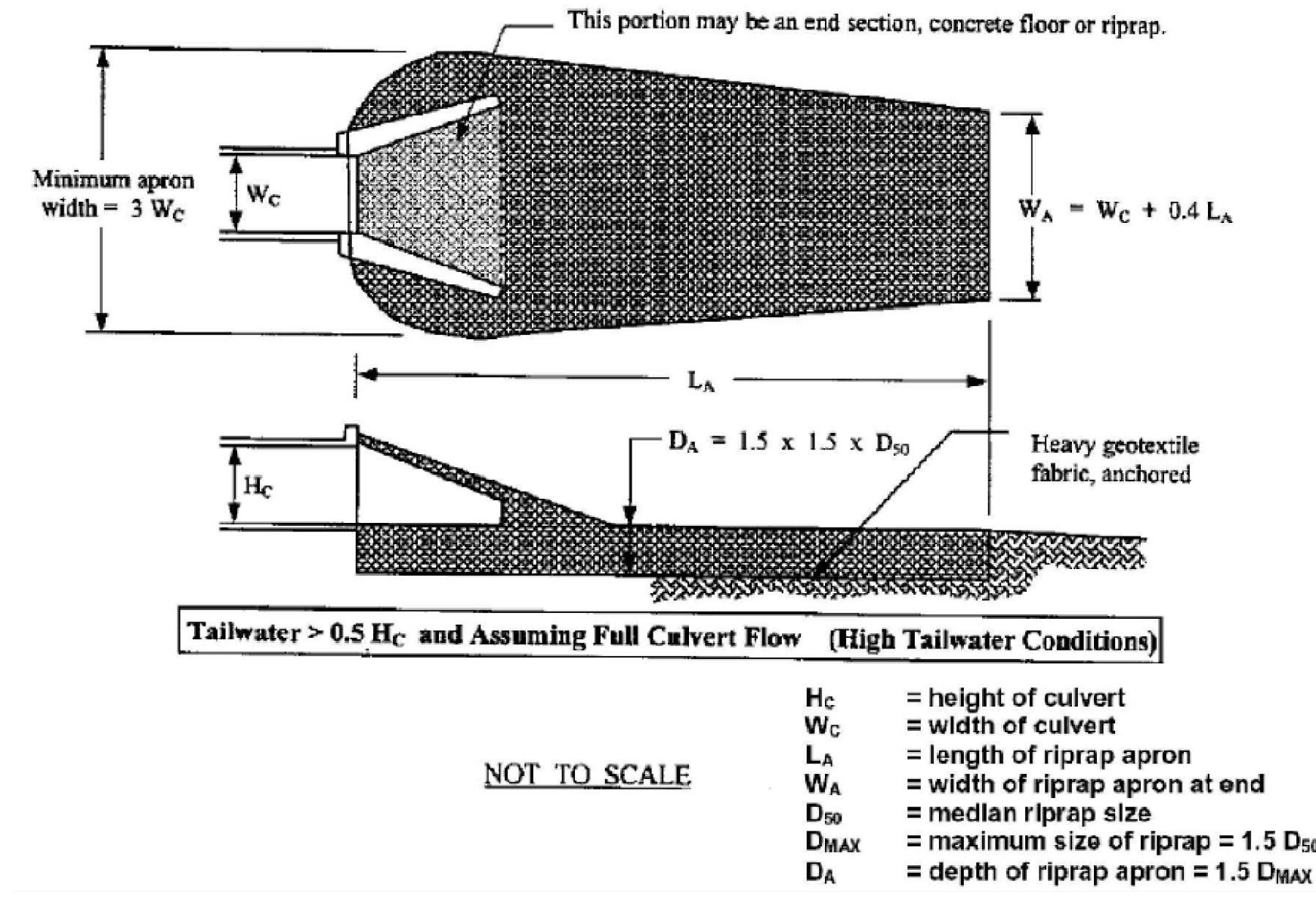
5 ACCESS ROAD, STAGING AREA, & MAINTENANCE PAD SURFACING
SCALE: NTS

DRAWN BY:	REVIEWED BY:
NSS	DKK
DESIGNED BY:	APPROVED BY:
TJD	DAH
SCALE:	AS SHOWN
DATE:	November 9, 2020

No.	Date	Description	By:	
			NSS	DKK
1	4/13/2021	RI		
2	8/30/2021	As-Built		
3				
4				
5				
6				



1
D-2
ROADSIDE SWAIL SECTION DETAIL
SCALE: NTS



Culvert Diameter *	Lowest value			Intermediate values to interpolate from									Highest value		
	Q	L_A	D_{50}	Q	L_A	D_{50}	Q	L_A	D_{50}	Q	L_A	D_{50}	Q	L_A	D_{50}
	Cfs	Ft	In	Cfs	Ft	In	Cfs	Ft	In	Cfs	Ft	In	Cfs	Ft	In
12"	4	8	2	6	18	2.5	9	28	4.5	12	36	7	14	40	8
15"	7	8	2	10	20	2.5	15	34	5	20	42	7.5	25	50	10
18"	10	8	2	15	22	3	20	34	5	30	50	9	40	60	11
21"	15	8	2	25	32	4.5	35	48	7	45	58	11	60	72	14
24"	20	8	2	35	36	5	50	55	8.5	65	68	12	80	80	15
27"	27	10	2	50	41	6	70	58	10	90	70	14	110	82	17
30"	36	11	2	60	42	6	90	64	11	120	80	15	140	90	18
36"	56	13	2.5	100	60	7	140	85	13	180	104	18	220	120	23
42"	82	15	2.5	120	50	6	160	75	10	200	96	14	260	120	19
48"	120	20	2.5	170	58	7	220	85	12	270	105	16	320	120	20

Table 7.23-1 Riprap outlet protection design parameters for low tailwater and high tailwater conditions (Source: Knoxville Engineering Department)

*USE 12" Ø CULVERT VALUES IN TABLE FOR 8" Ø PIPE DOWNSTREAM OF FILTER BED (TYP) TO CONSTRUCT OUTLET PROTECTION.

2
D-2
RIPRAP APRON DETAIL
SCALE: NTS

DRAWN BY:	REVIEWED BY:
NSS	DKK
DESIGNED BY:	APPROVED BY:
TJD	DAH
SCALE:	AS SHOWN
DATE:	November 9, 2020

No.	Date	Description	By:	
			NSS	NSS
1	4/13/2021	RI		
2	8/30/2021	As-Built		
3				
4				
5				
6				

APPENDIX D
Mechanical As-Built Record Drawings

THE CHEMOURS COMPANY

FAYETTEVILLE WORKS PROJECT

SEEP D REMEDIATION SYSTEM

MECHANICAL RECORD DRAWINGS

WILLIS CREEK AND CAPE FEAR RIVER CORRIDOR

FAYETTEVILLE, BLADEN AND CUMBERLAND COUNTIES

STATE OF NORTH CAROLINA

OCTOBER 2021



SOURCE: U.S. BUREAU OF THE CENSUS
VICINITY MAP
 SCALE: 1" = 30 MILES

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
G-01	COVER SHEET
G-02	NOTES AND SYMBOLS
C-01	CONSTRUCTION DETAILS I
C-02	CONSTRUCTION DETAILS II
C-03	CONSTRUCTION DETAILS III
C-04	CONSTRUCTION DETAILS IV
C-05	PLATFORM DETAILS
D-01	PROCESS FLOW DIAGRAM



SOURCE: MICROSOFT CORPORATION BING MAPS 2017
LOCATION MAP
 SCALE: 1" = 3,000'
 SCALE IN FEET

PREPARED FOR:



22828 NC-87
 FAYETTEVILLE, NC 28306
 910.483.4681

PREPARED BY:



Geosyntec Consultants of NC, P.C.
 NC License No.: C-3500 and C-295
 ATRIUM AT BLUE RIDGE
 2501 BLUE RIDGE ROAD, SUITE 430
 RALEIGH, NC 27607
 919.870.0576

REV	DATE	DESCRIPTION	DRN	APP
0	10.29.21	AS-BUILT CONSTRUCTION RECORD DRAWING SUBMITTAL	JFH	CAS

Geosyntec consultants
 Geosyntec Consultants of NC, P.C.
 NC License No.: C-3500 and C-295
 ATRIUM AT BLUE RIDGE
 2501 BLUE RIDGE ROAD, SUITE 430
 RALEIGH, NC 27607
 919.870.0576

TITLE: **COVER SHEET**

PROJECT: **THE CHEMOURS COMPANY
SEEP D INTERIM REMEDIATION SYSTEM**

SITE: **FAYETTEVILLE WORKS SITE**

DESIGN BY: CMDS	DATE: OCTOBER 2021
DRAWN BY: JFH	PROJECT NO.: TR0795A
CHECKED BY: JWE	FILE: TR0795-G01.dwg
REVIEWED BY: JJD	DRAWING NO.: G-01
APPROVED BY: CAS	

SIGNATURE _____
 DATE _____

AS-BUILT CONSTRUCTION
 RECORD DRAWINGS

G:\PROJECTS\2021\10\29\21\FAYETTEVILLE\DRAWINGS\MECHANICAL\G-01.dwg

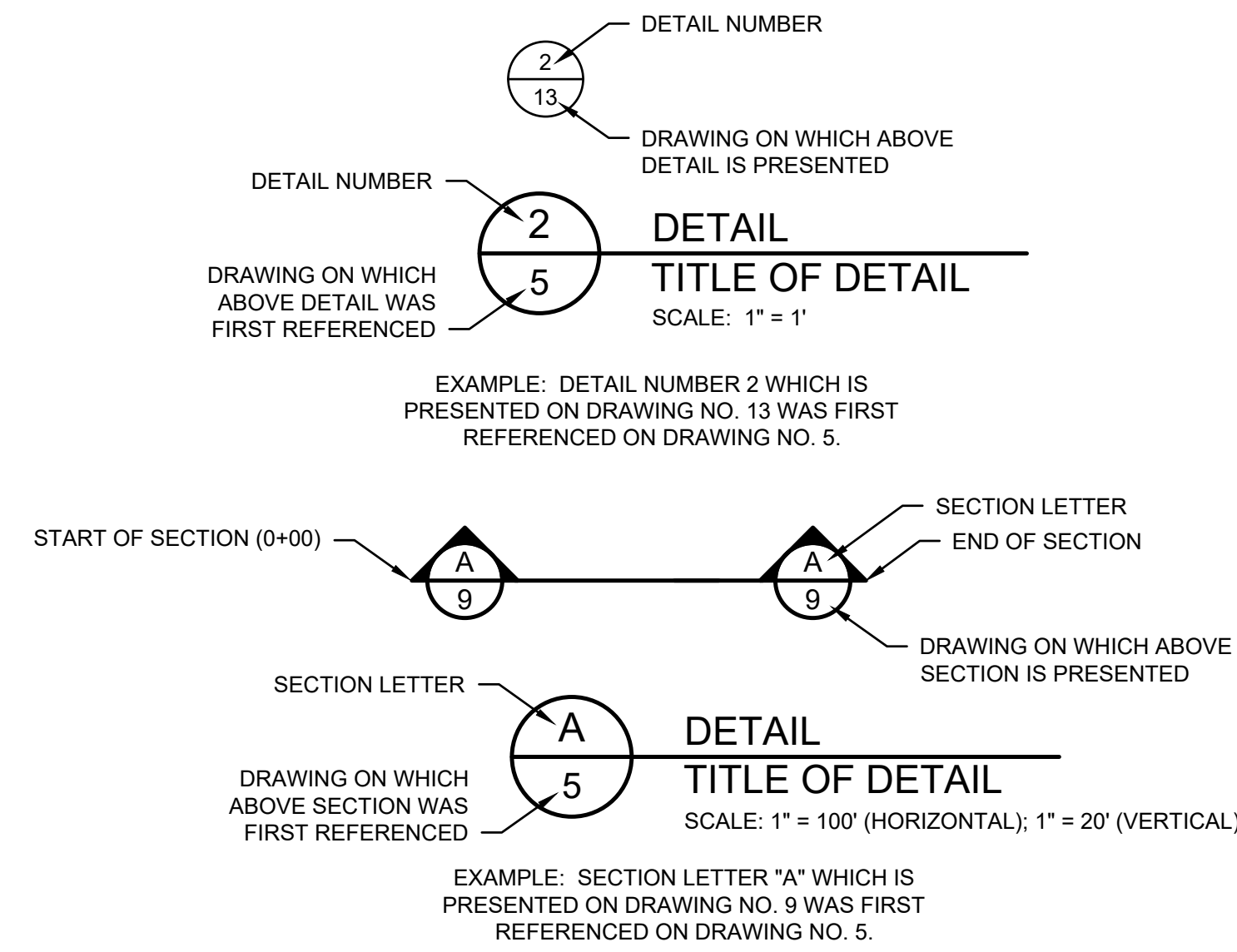
HATCH PATTERN LEGEND

	CONCRETE
	GRANULAR ACTIVATED CARBON
	GRAVEL
	PIPE EMBEDMENT FILL
	RIPRAP
	TRENCH BACKFILL/ EARTHEN FILL

ABBREVIATIONS

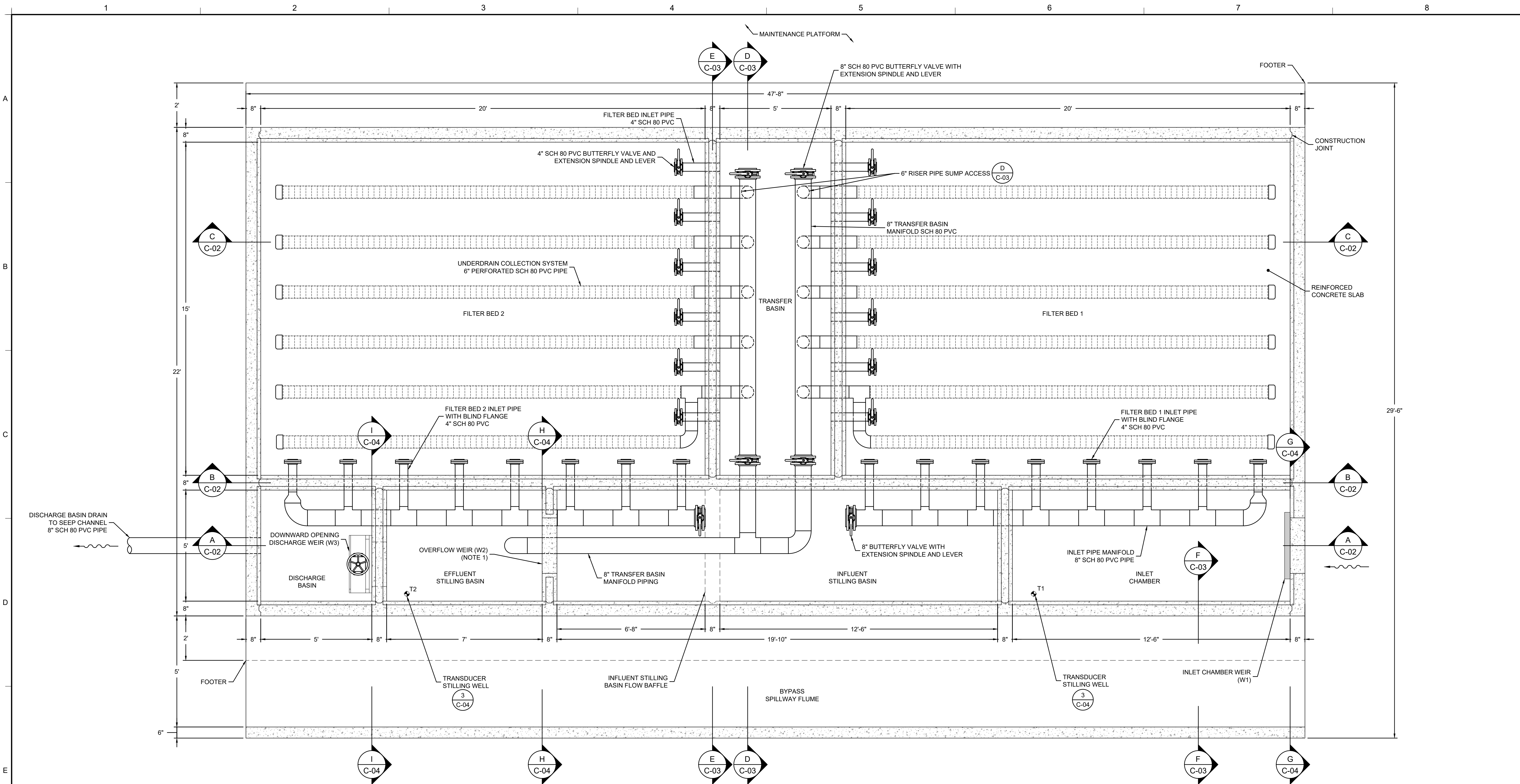
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
APP	APPROVED BY
¢	CENTER LINE
DRN	DRAWN BY
DWG	DRAWING
E	EAST OR EASTING
EL	ELEVATION
FT	FEET
HDPE	HIGH DENSITY POLYETHYLENE
H:V	HORIZONTAL TO VERTICAL LENGTH RATIO FOR A SLOPE
HWY	HIGHWAY
IN	INCH
INV	INVERT
MAX	MAXIMUM
MIN	MINIMUM
MSL	MEAN SEA LEVEL
N	NORTH OR NORTHING
NAD	NORTH AMERICAN DATUM
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
NCDEQ	NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY
NO.	NUMBER
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
N.S.A.	NATIONAL STONE ASSOCIATION
NTS	NOT TO SCALE
OC	ON CENTER
OZ	OUNCE
PFAS	PER- AND POLYFLUOROALKYL SUBSTANCES
PROJ	PROJECT
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REV	REVISION
S	SOUTH
SWP	STORMWATER PIPE
TYP	TYPICAL
U.S.	UNITED STATES
USEPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
W	WEST
W.S.	WATER SURFACE
%	PERCENT OR PERCENTILE

DETAIL AND SECTION IDENTIFICATION LEGEND

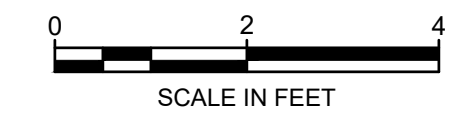


AS-BUILT CONSTRUCTION RECORD DRAWINGS

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TITLE:	NOTES AND SYMBOLS			
PROJECT:	THE CHEMOURS COMPANY SEEP D INTERIM REMEDIATION SYSTEM			
SITE:	FAYETTEVILLE WORKS SITE			
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.		DESIGN BY: CMDS	DATE: OCTOBER 2021	
SIGNATURE		DRAWN BY: JFH	PROJECT NO.: TR0795A	
DATE		CHECKED BY: JWE	FILE: TR0795-G02.dwg	
		REVIEWED BY: JJD	DRAWING NO.: G-02	
		APPROVED BY: CAS		



1 PLAN
 C-01 FLOW THROUGH CELL
 SCALE: 1" = 2'



NOTES:
 1. WEIR 2 (W2) WALL OPENING WAS FILLED WITH REINFORCED CONCRETE.

REV	DATE	DESCRIPTION	JFH	CAS
0	10.29.21	AS-BUILT CONSTRUCTION RECORD DRAWING SUBMITTAL	JFH	CAS
			DRN	APP

Geosyntec consultants
 Geosyntec Consultants of NC, P.C.
 NC License No.: C-3500 and C-295

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 2501 BLUE RIDGE ROAD, SUITE 430
 RALEIGH, NC 27607
 919.870.0576

TITLE: CONSTRUCTION DETAILS I
 PROJECT: THE CHEMOURS COMPANY SEEP D INTERIM REMEDIATION SYSTEM
 SITE: FAYETTEVILLE WORKS SITE

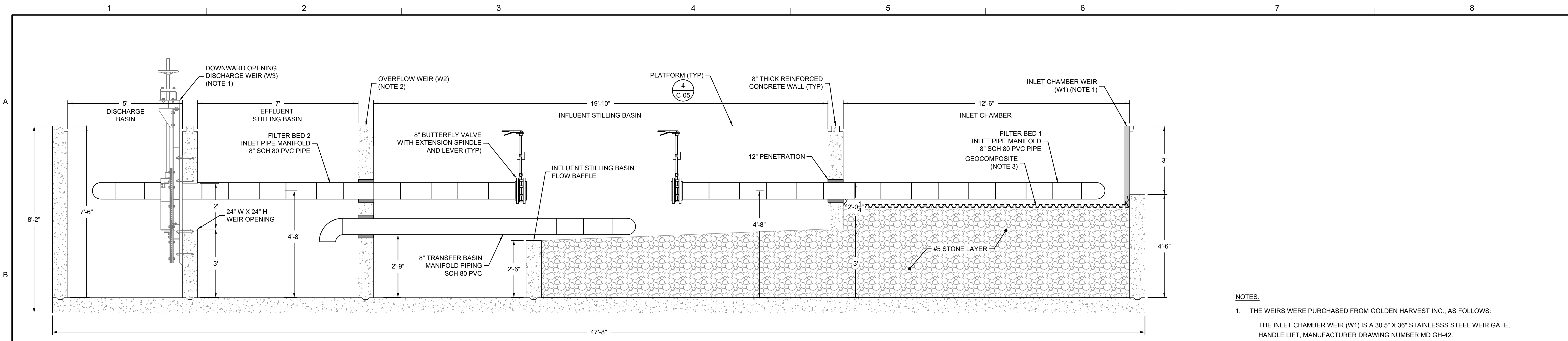
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DRAWN BY:	JFH	PROJECT NO.:	TR0795A
CHECKED BY:	JWE	FILE:	TR0795-C01.dwg
REVIEWED BY:	JJD	DRAWING NO.:	C-01
APPROVED BY:	CAS		

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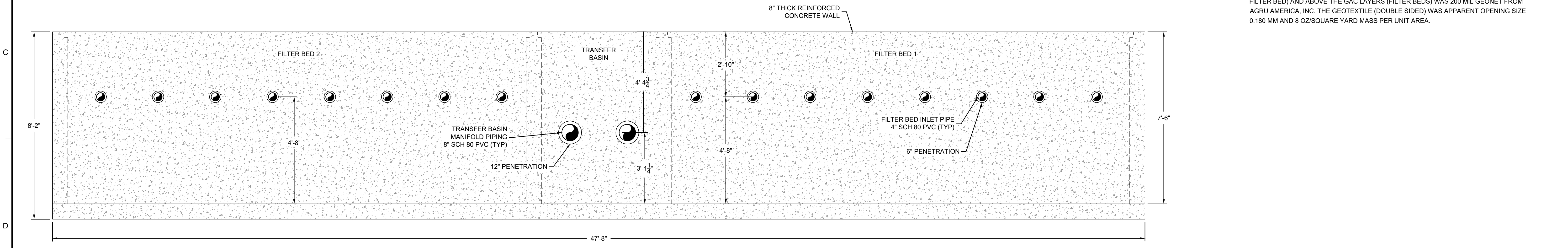
SIGNATURE _____
 DATE _____

AS-BUILT CONSTRUCTION RECORD DRAWINGS

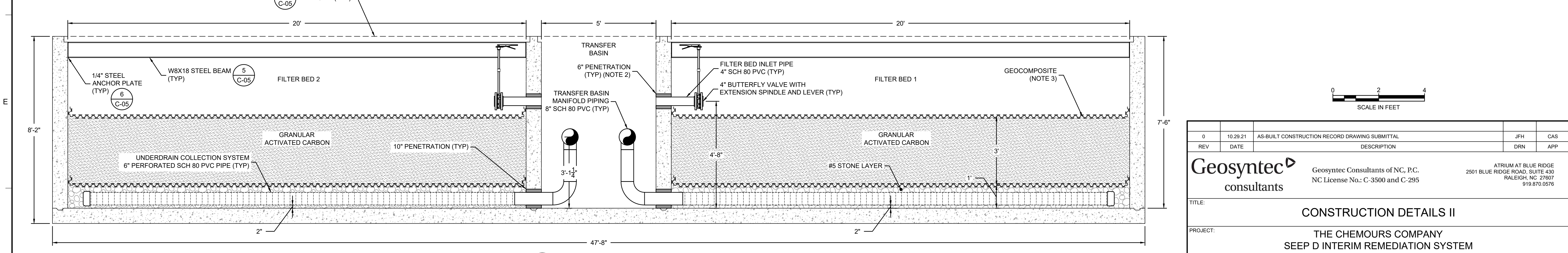
GEOSYNTEC\PROJECTS\CONSTRUCTION\SEEP D\INTERIM REMEDIATION SYSTEM\DRAWINGS\SEEP D\DRAWINGS\SEEP D\TR0795-C01



A
SECTION
C-01
FLOW THROUGH CELL SECTION A
SCALE: 1" = 2'

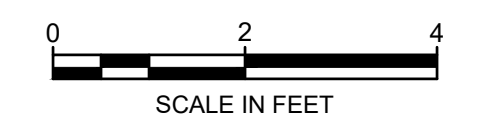


B
SECTION
C-01
FLOW THROUGH CELL SECTION B
SCALE: 1" = 2'



C
SECTION
C-01
FLOW THROUGH CELL SECTION C
SCALE: 1" = 2'

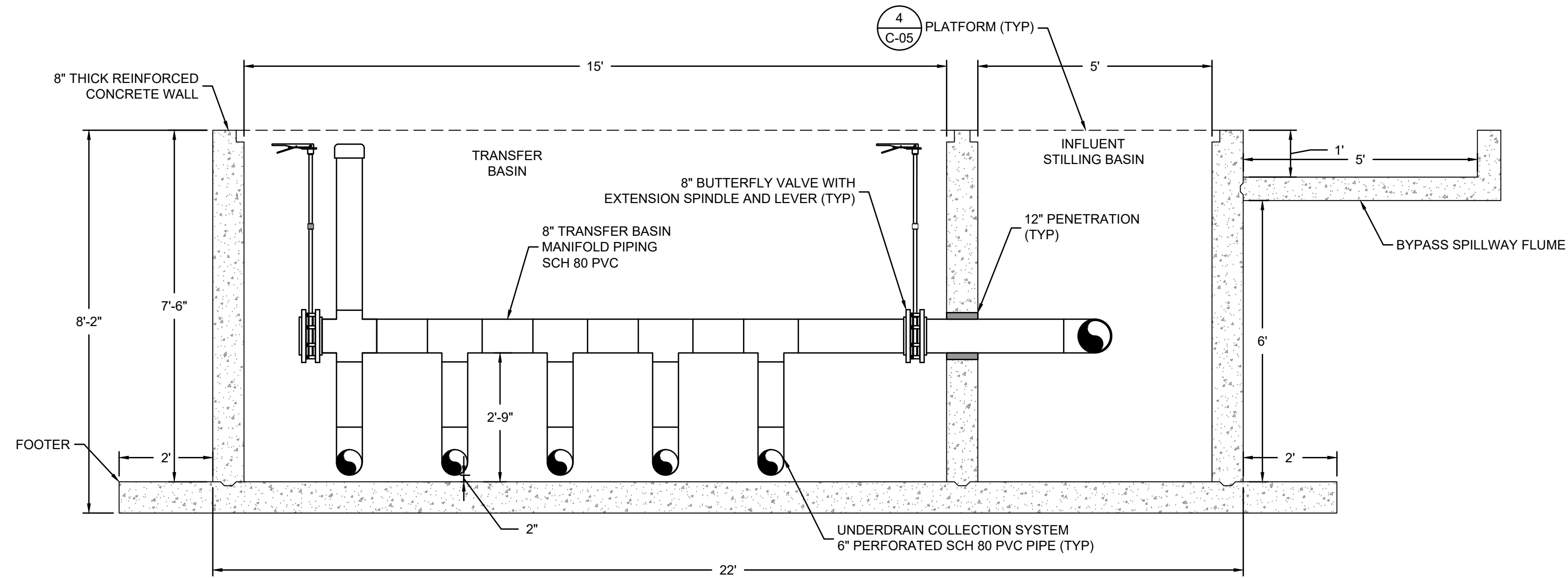
- NOTES:**
- THE WEIRS WERE PURCHASED FROM GOLDEN HARVEST INC., AS FOLLOWS:
 THE INLET CHAMBER WEIR (W1) IS A 30.5" X 36" STAINLESS STEEL WEIR GATE, HANDLE LIFT, MANUFACTURER DRAWING NUMBER MD GH-42.
 THE DOWNWARD OPENING DISCHARGE WEIR (W3) IS A 24"X24" STAINLESS STEEL WEIR GATE, GEAR OPERATED, MANUFACTURER DRAWING NUMBER MD GH-66.
 - WEIR 2 (W2) WALL OPENING WAS FILLED WITH REINFORCED CONCRETE.
 - THE GEOCOMPOSITE INSTALLED ABOVE THE STONE LAYERS (INLET CHAMBER AND EACH FILTER BED) AND ABOVE THE GAC LAYERS (FILTER BEDS) WAS 200 MIL GEONET FROM AGRU AMERICA, INC. THE GEOTEXTILE (DOUBLE SIDED) WAS APPARENT OPENING SIZE 0.180 MM AND 8 OZ/SQUARE YARD MASS PER UNIT AREA.



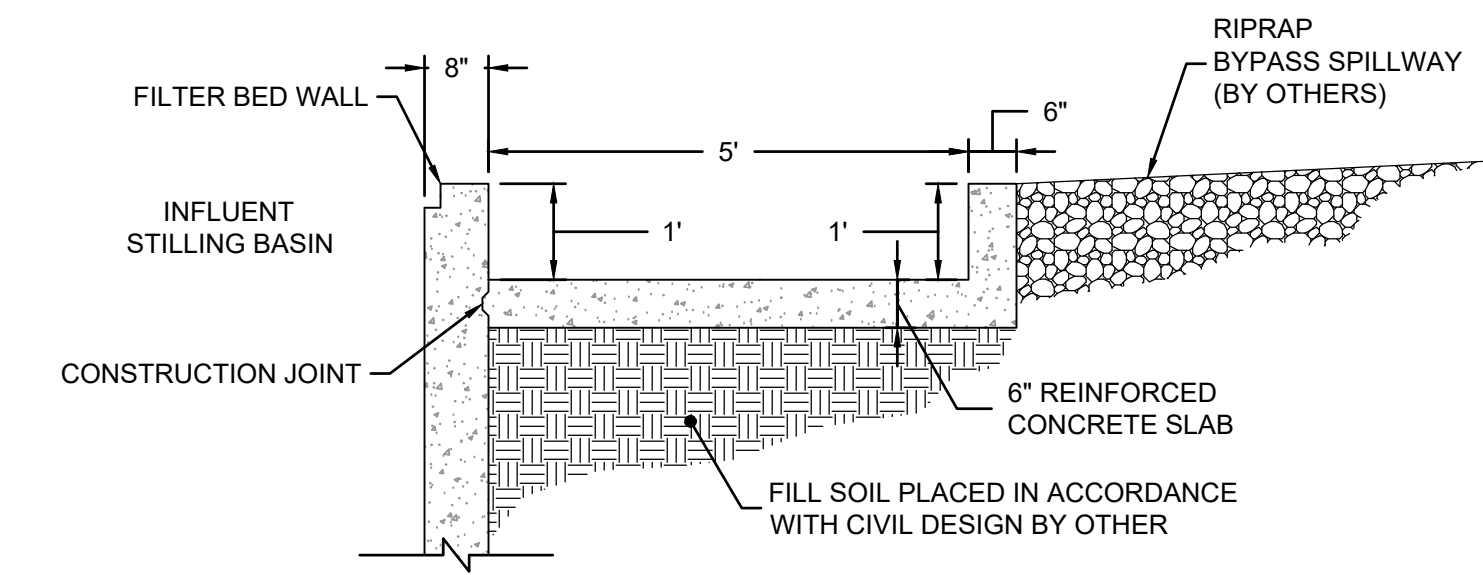
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REV	DATE	DESCRIPTION	DRN	APP
Geosyntec consultants		Geosyntec Consultants of NC, P.C. NC License No.: C-3500 and C-295	ATRIUM AT BLUE RIDGE 2501 BLUE RIDGE ROAD, SUITE 430 RALEIGH, NC 27607 919.870.0576	
TITLE: CONSTRUCTION DETAILS II				
PROJECT: THE CHEMOURS COMPANY SEEP D INTERIM REMEDIATION SYSTEM				
SITE: FAYETTEVILLE WORKS SITE				
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.		DESIGN BY: CMDS	DATE: OCTOBER 2021	
SIGNATURE		DRAWN BY: JFH	PROJECT NO.: TR0795A	
DATE		CHECKED BY: JWE	FILE: TR0795-C02.dwg	
		REVIEWED BY: JJD	DRAWING NO.:	
		APPROVED BY: CAS	C-02	

AS-BUILT CONSTRUCTION RECORD DRAWINGS

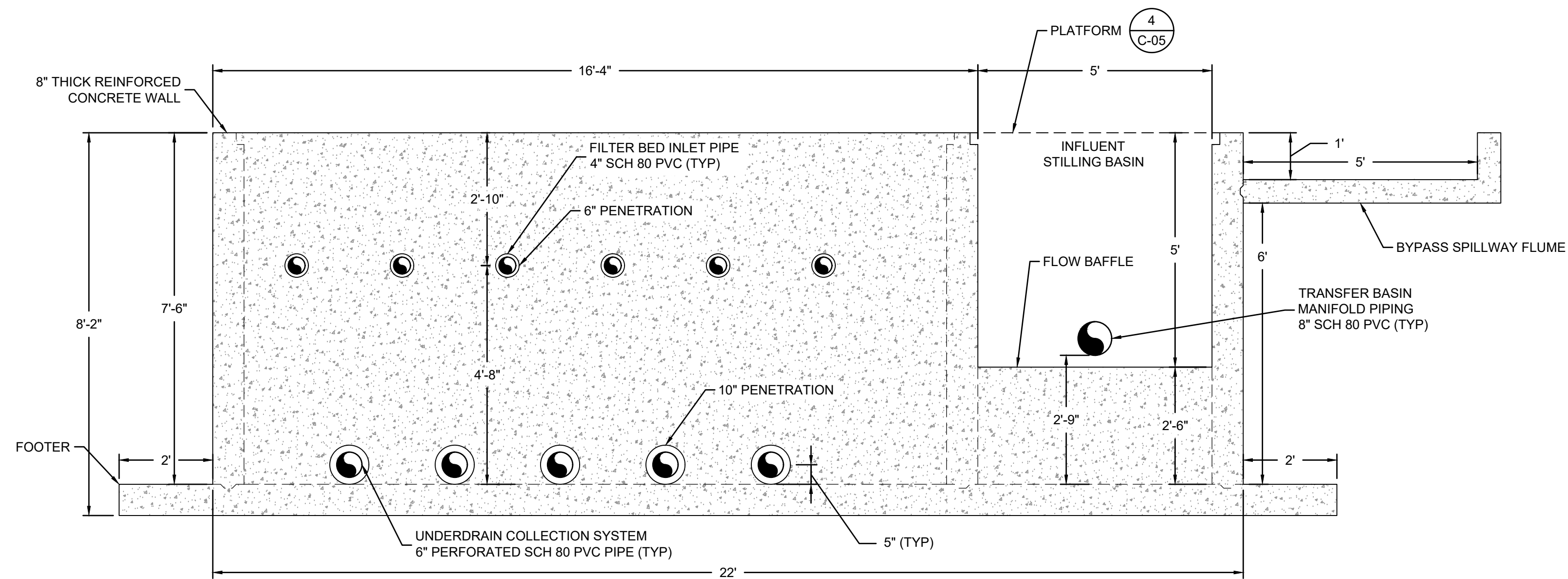
GEOSYNTEC\PROJECTS\DOCUMENTS\CLIENTS\CHEMOURS\SEEP D\INTERIM REMEDIATION DESIGN - SEEP D\DRAWINGS\SHEETS\TR0795-C02



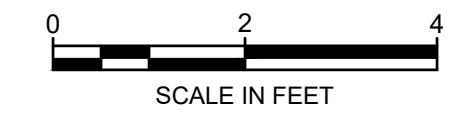
D SECTION
C-01 FLOW THROUGH CELL SECTION D
SCALE: 1" = 2'



F SECTION
C-01 BYPASS SPILLWAY FLOW MEASUREMENT FLUME
SCALE: 1" = 2'



E SECTION
C-01 FLOW THROUGH CELL SECTION E
SCALE: 1" = 2'



REV	DATE	DESCRIPTION	JFH	CAS
0	10.29.21	AS-BUILT CONSTRUCTION RECORD DRAWING SUBMITTAL	JFH	CAS
			DRN	APP

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Geosyntec Consultants of NC, P.C.
NC License No.: C-3500 and C-295

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RALEIGH, NC 27607
919.870.0576

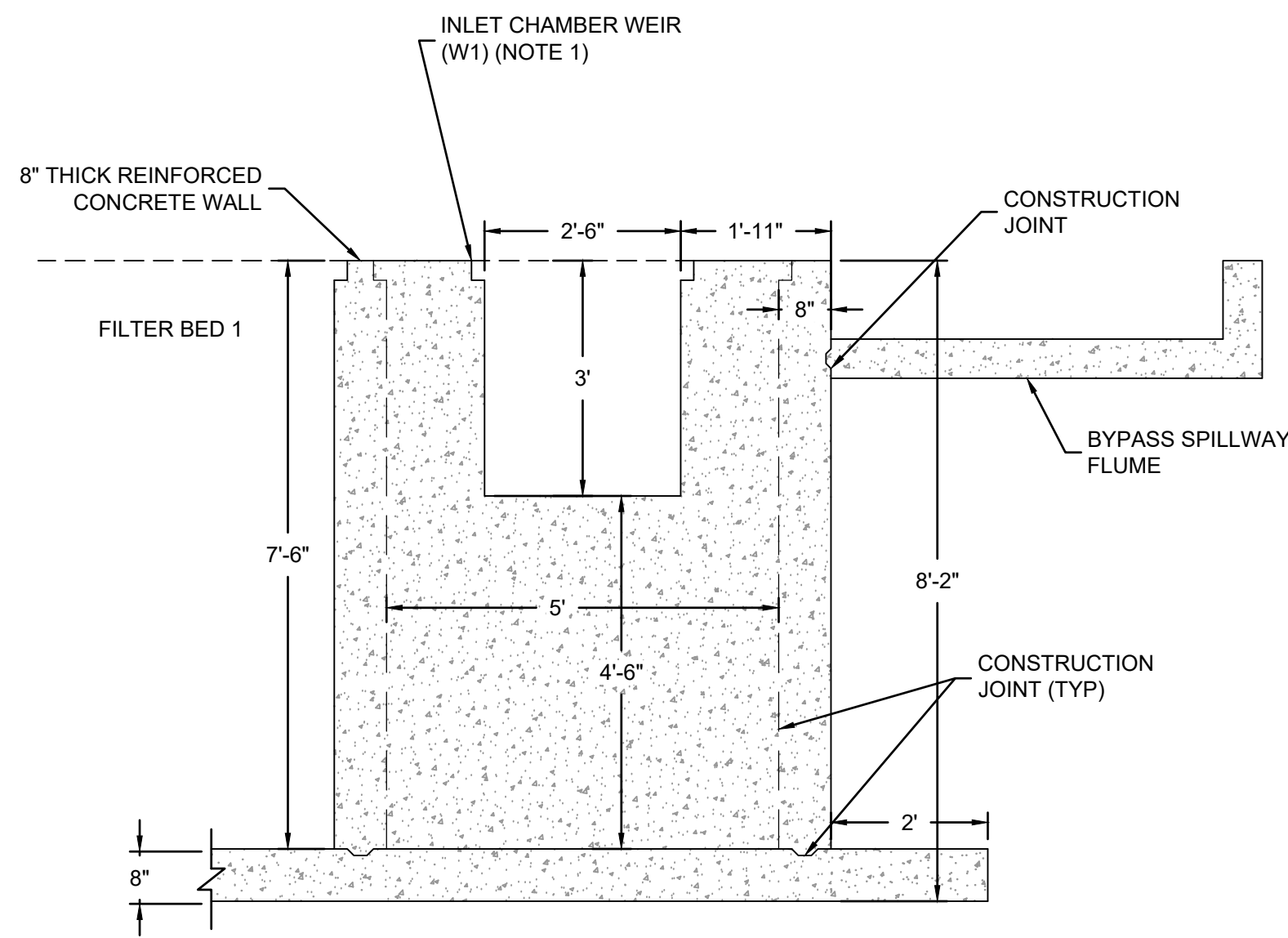
TITLE: CONSTRUCTION DETAILS III
PROJECT: THE CHEMOURS COMPANY SEEP D INTERIM REMEDIATION SYSTEM
SITE: FAYETTEVILLE WORKS SITE

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

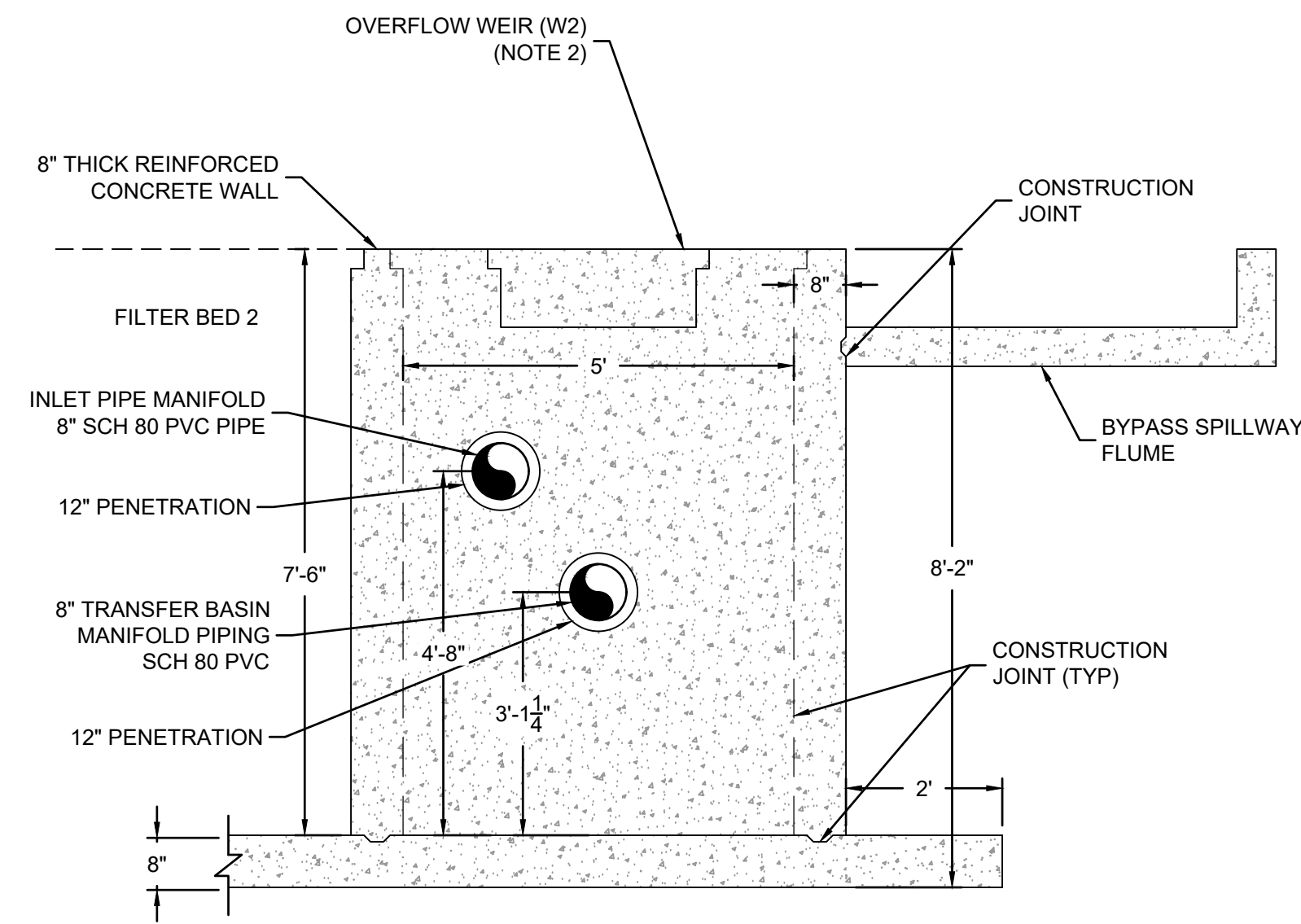
DESIGN BY: CMDS DATE: OCTOBER 2021
DRAWN BY: JFH PROJECT NO.: TR0795A
CHECKED BY: JWE FILE: TR0795-C03.dwg
REVIEWED BY: JJD DRAWING NO.:
APPROVED BY: CAS **C-03**

AS-BUILT CONSTRUCTION
RECORD DRAWINGS

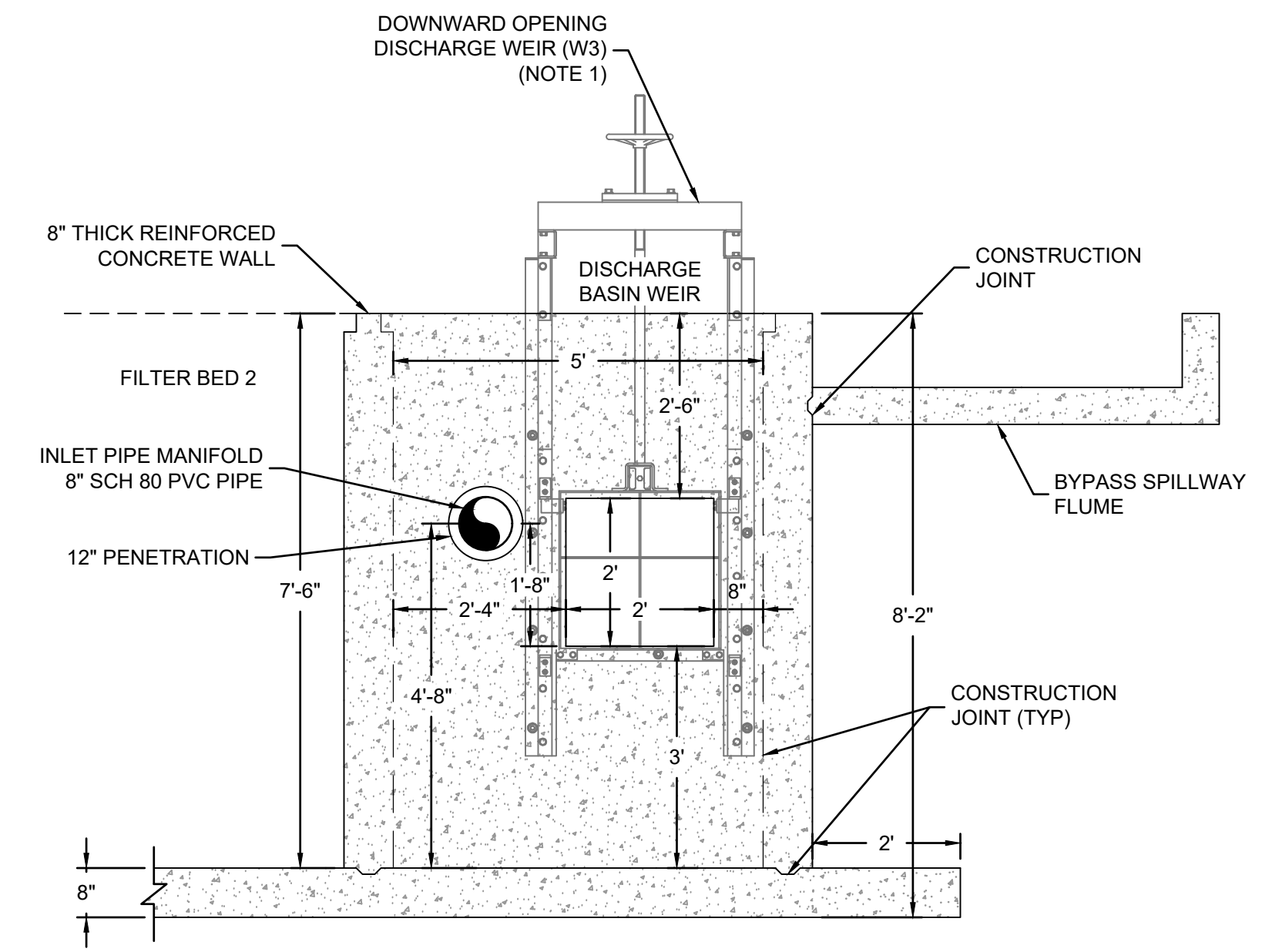
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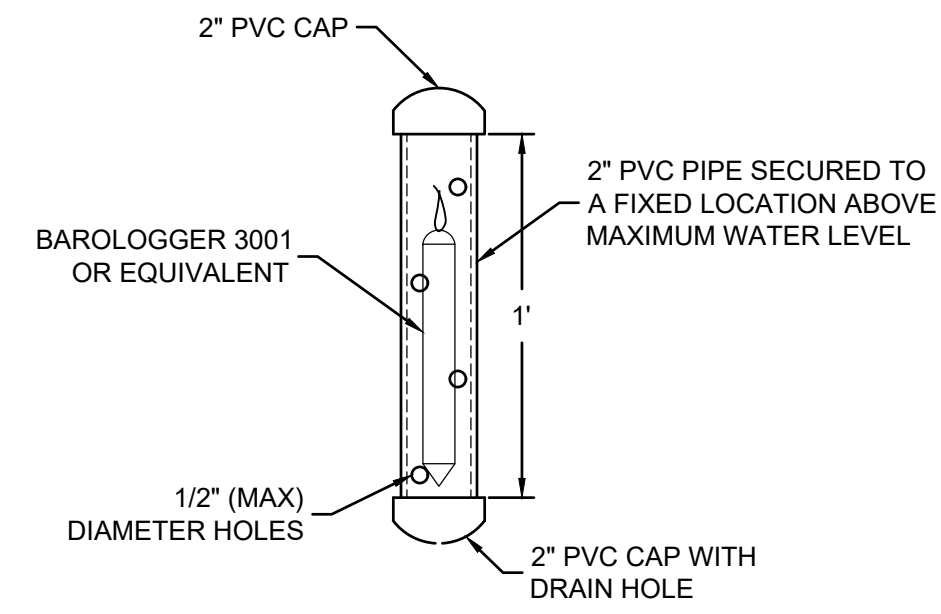
G SECTION
C-01 INLET CHAMBER WEIR (W1)
 SCALE: 1" = 2'



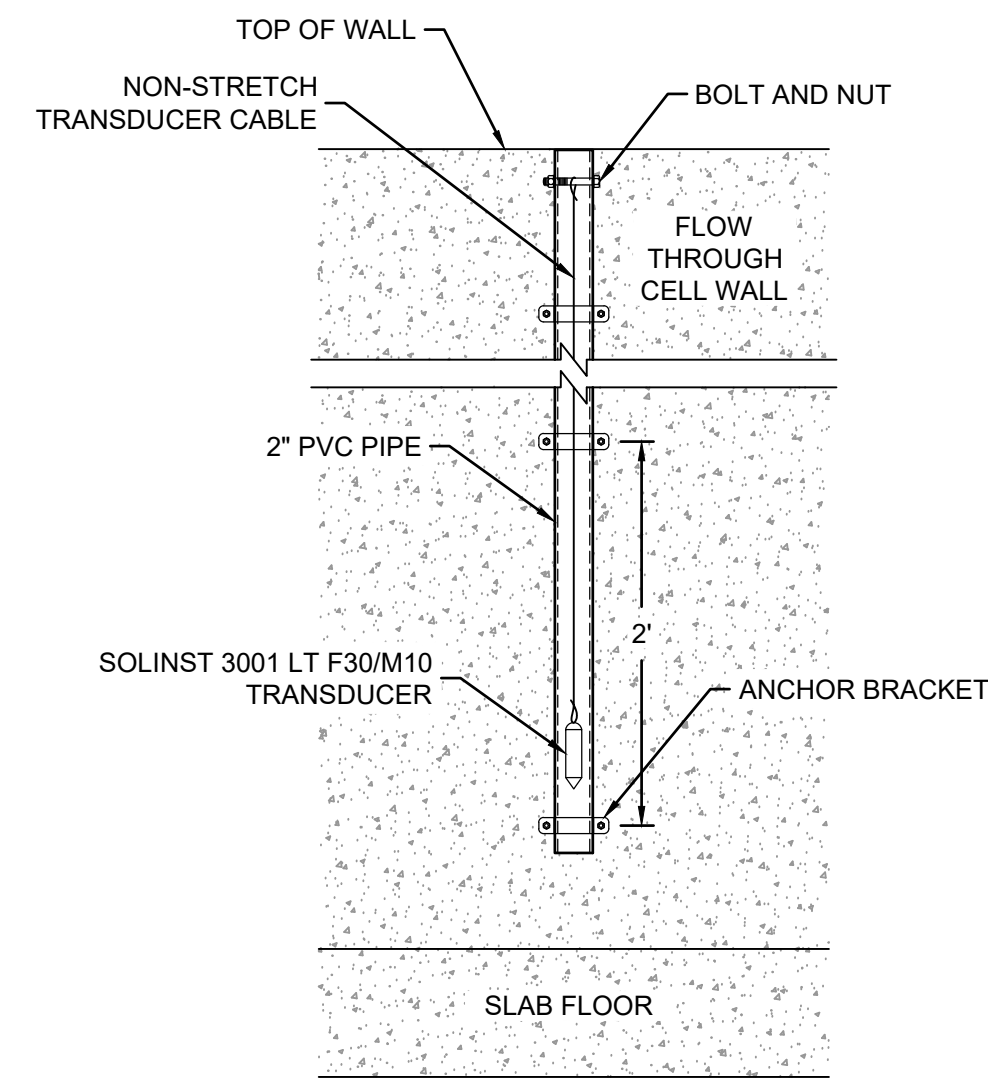
H SECTION
C-01 OVERFLOW WEIR (W2)
 SCALE: 1" = 2'



I SECTION
C-01 DOWNWARD OPENING DISCHARGE WEIR (W3)
 SCALE: 1" = 2'



2 DETAIL
C-04 BAROMETRIC PRESSURE
 TRANSDUCER ENCLOSURE
 SCALE: 1" = 6"



3 DETAIL
C-01 TRANSDUCER STILLING WELL
 SCALE: 1" = 1'

- NOTES:**
- THE WEIRS WERE PURCHASED FROM GOLDEN HARVEST INC., AS FOLLOWS:
 THE INLET CHAMBER WEIR (W1) IS A 30.5" X 36" STAINLESSS STEEL WEIR GATE, HANDLE LIFT, MANUFACTURER DRAWING NUMBER MD GH-42.
 THE DOWNWARD OPENING DISCHARGE WEIR (W3) IS A 24"X24" STAINLESS STEEL WEIR GATE, GEAR OPERATED, MANUFACTURER DRAWING NUMBER MD GH-66.
 - WEIR 2 (W2) WALL OPENING WAS FILLED WITH REINFORCED CONCRETE.

REV	DATE	DESCRIPTION	JFH	CAS
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			DRN	APP

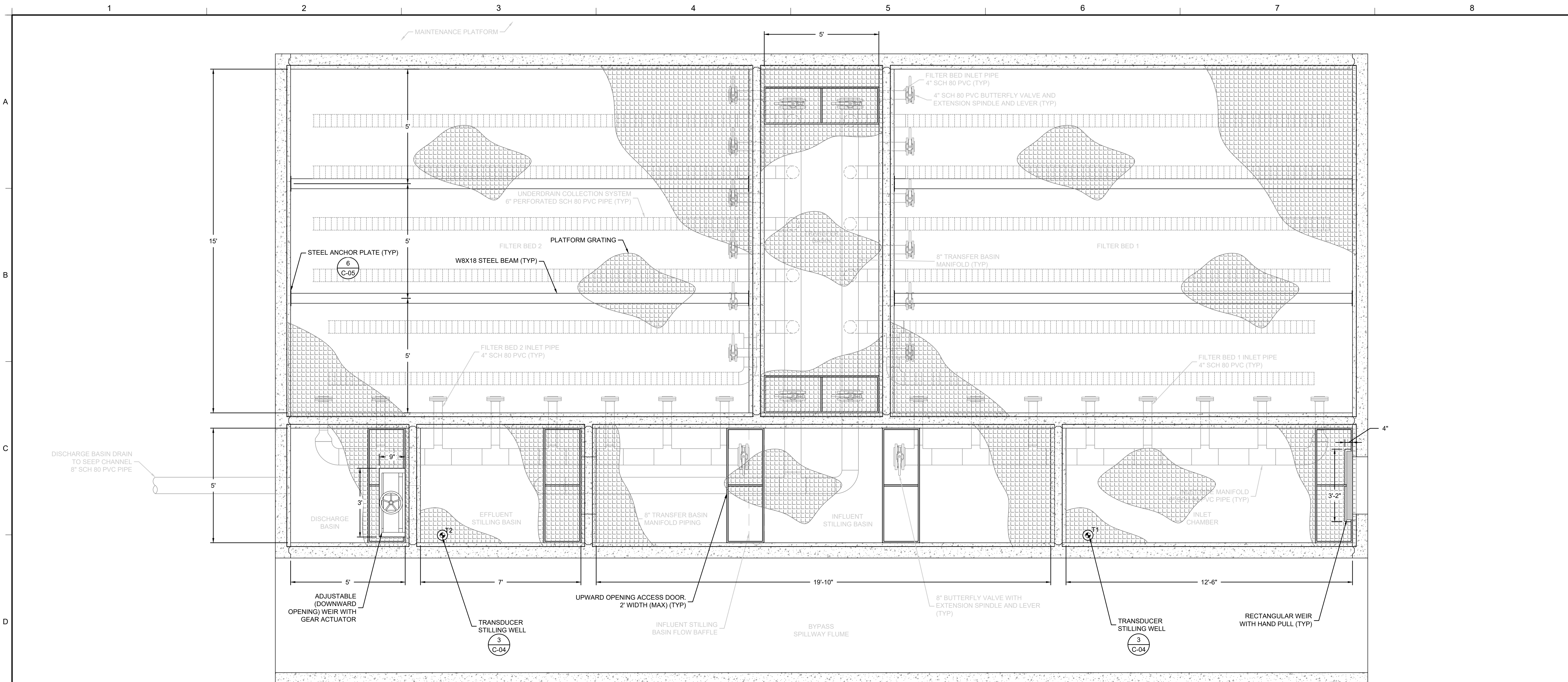
Geosyntec consultants
 Geosyntec Consultants of NC, P.C.
 NC License No.: C-3500 and C-295

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 2501 BLUE RIDGE ROAD, SUITE 430
 RALEIGH, NC 27607
 919.870.0576

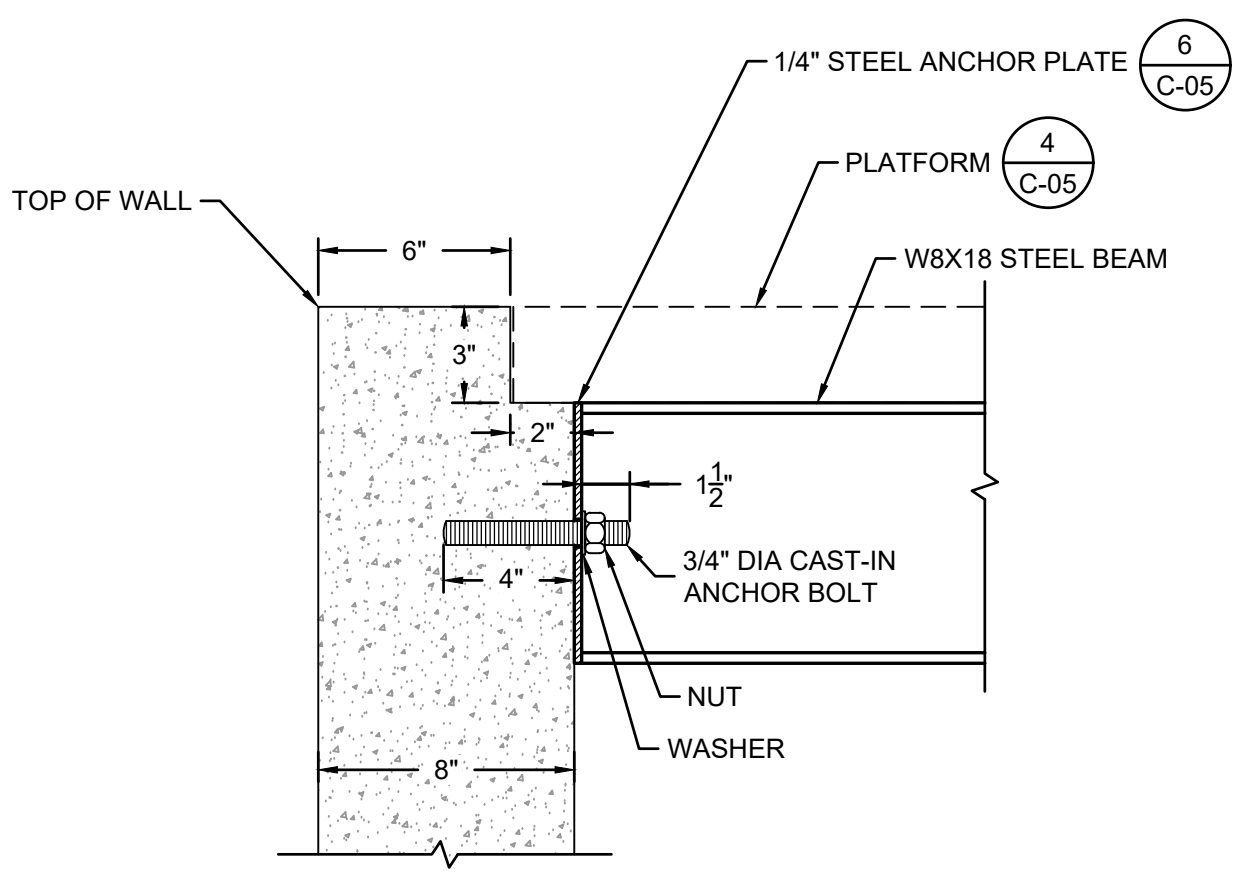
TITLE: CONSTRUCTION DETAILS IV
PROJECT: THE CHEMOURS COMPANY SEEP D INTERIM REMEDIATION SYSTEM
SITE: FAYETTEVILLE WORKS SITE

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.	DESIGN BY: CMDS	DATE: OCTOBER 2021
	DRAWN BY: JFH	PROJECT NO.: TR0795A
	CHECKED BY: JWE	FILE: TR0795-C04.dwg
	REVIEWED BY: JJD	DRAWING NO.: C-04
	APPROVED BY: CAS	

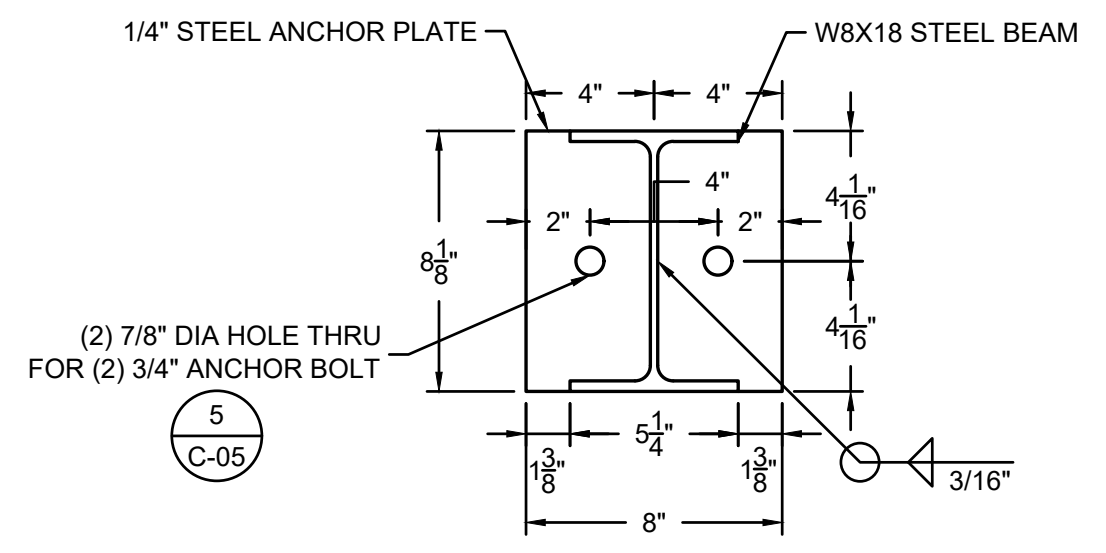
AS-BUILT CONSTRUCTION RECORD DRAWINGS



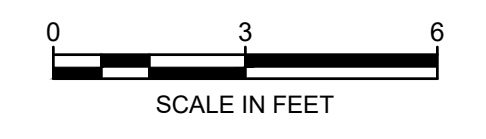
4 PLAN
C-02 PLATFORM INSTALLATION
 SCALE: 1" = 2'



5 DETAIL
C-05 ANCHOR BOLT DETAIL
 SCALE: 1" = 6"



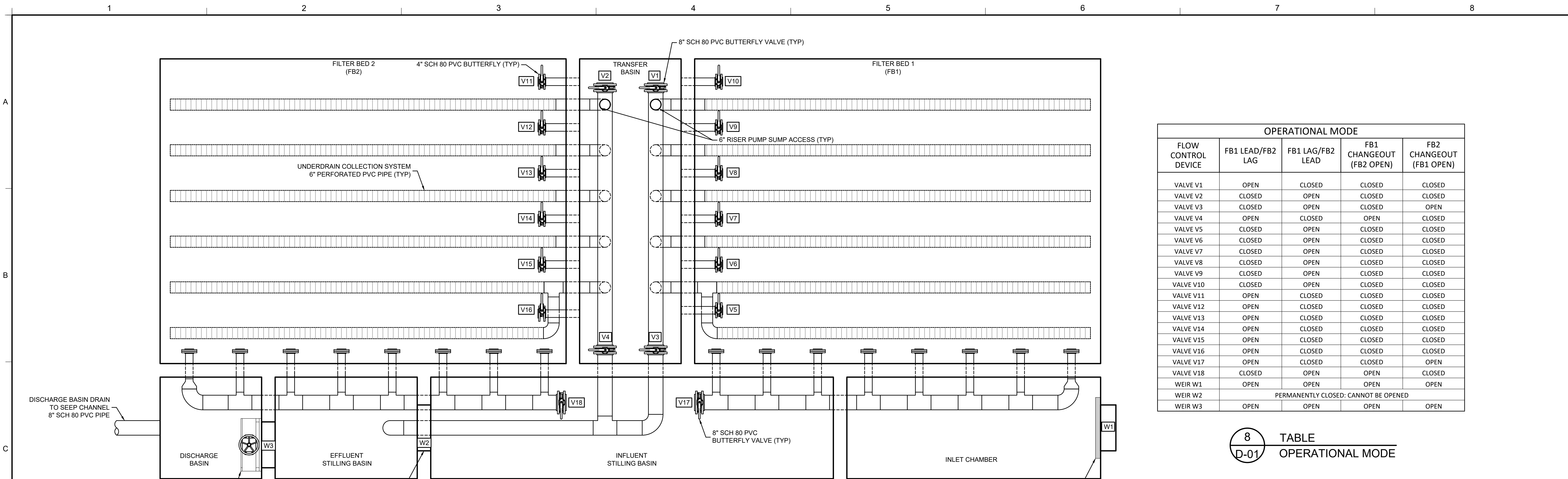
6 DETAIL
C-05 STEEL ANCHOR PLATE
 SCALE: 1" = 6"



0	10.29.21	AS-BUILT CONSTRUCTION RECORD DRAWING SUBMITTAL	JFH	CAS	
REV	DATE	DESCRIPTION	DRN	APP	
		Geosyntec Consultants of NC, P.C. NC License No.: C-3500 and C-295	ATRIUM AT BLUE RIDGE 2501 BLUE RIDGE ROAD, SUITE 430 RALEIGH, NC 27607 919.870.0576		
PLATFORM DETAILS					
PROJECT: THE CHEMOURS COMPANY SEEP D INTERIM REMEDIATION SYSTEM					
SITE: FAYETTEVILLE WORKS SITE					
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.		DESIGN BY: CMDS DRAWN BY: JFH CHECKED BY: JWE REVIEWED BY: JJD APPROVED BY: CAS	DATE: OCTOBER 2021 PROJECT NO.: TR0795A FILE: TR0795-C06.dwg DRAWING NO.: C-05		

AS-BUILT CONSTRUCTION RECORD DRAWINGS

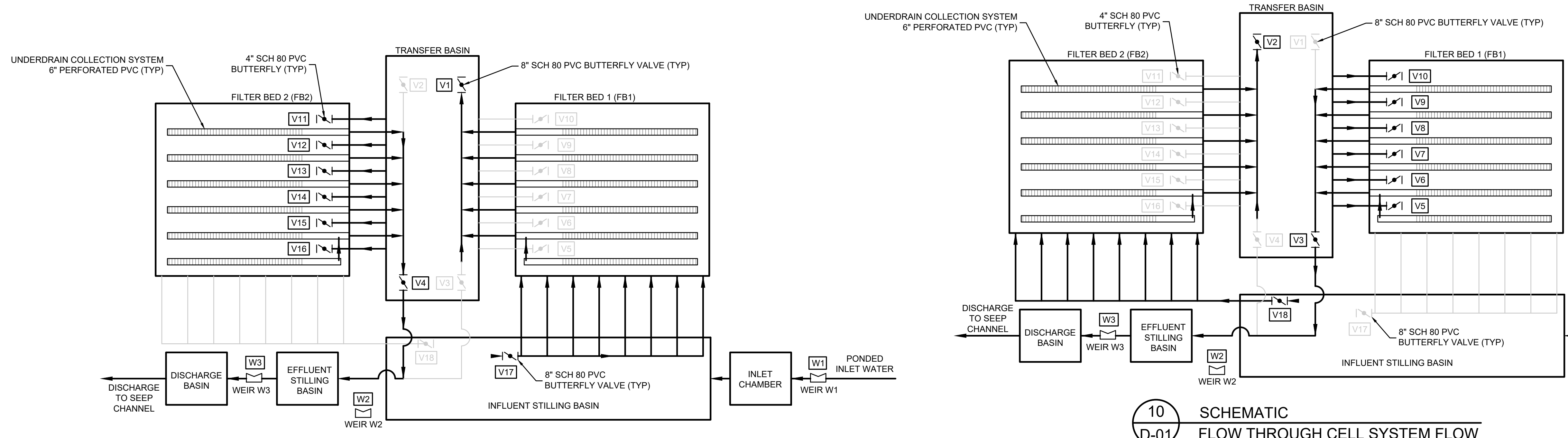
GEOSYNTEC\\FA1\DOCUMENTS\CLIENTS\CHEMOURS\2795A - CHEMOURS\CAD\05 - INTERIM REMEDIAL DESIGN - SEEP D DRAWINGS\SHEETS\TR0795-C06



OPERATIONAL MODE				
FLOW CONTROL DEVICE	FB1 LEAD/FB2 LAG	FB1 LAG/FB2 LEAD	FB1 CHANGEOUT (FB2 OPEN)	FB2 CHANGEOUT (FB1 OPEN)
VALVE V1	OPEN	CLOSED	CLOSED	CLOSED
VALVE V2	CLOSED	OPEN	CLOSED	CLOSED
VALVE V3	CLOSED	OPEN	CLOSED	OPEN
VALVE V4	OPEN	CLOSED	OPEN	CLOSED
VALVE V5	CLOSED	OPEN	CLOSED	CLOSED
VALVE V6	CLOSED	OPEN	CLOSED	CLOSED
VALVE V7	CLOSED	OPEN	CLOSED	CLOSED
VALVE V8	CLOSED	OPEN	CLOSED	CLOSED
VALVE V9	CLOSED	OPEN	CLOSED	CLOSED
VALVE V10	CLOSED	OPEN	CLOSED	CLOSED
VALVE V11	OPEN	CLOSED	CLOSED	CLOSED
VALVE V12	OPEN	CLOSED	CLOSED	CLOSED
VALVE V13	OPEN	CLOSED	CLOSED	CLOSED
VALVE V14	OPEN	CLOSED	CLOSED	CLOSED
VALVE V15	OPEN	CLOSED	CLOSED	CLOSED
VALVE V16	OPEN	CLOSED	CLOSED	CLOSED
VALVE V17	OPEN	CLOSED	CLOSED	OPEN
VALVE V18	CLOSED	OPEN	OPEN	CLOSED
WEIR W1	OPEN	OPEN	OPEN	OPEN
WEIR W2	PERMANENTLY CLOSED; CANNOT BE OPENED			
WEIR W3	OPEN	OPEN	OPEN	OPEN

8 TABLE OPERATIONAL MODE

7 PLAN FLOW THROUGH CELL VALVE SCHEMATIC



9 SCHEMATIC FLOW THROUGH CELL SYSTEM FLOW WITH FILTER BED 1 IN LEAD POSITION AND FILTER BED 2 IN LAG POSITION

10 SCHEMATIC FLOW THROUGH CELL SYSTEM FLOW WITH FILTER BED 2 IN LEAD POSITION AND FILTER BED 1 IN LAG POSITION

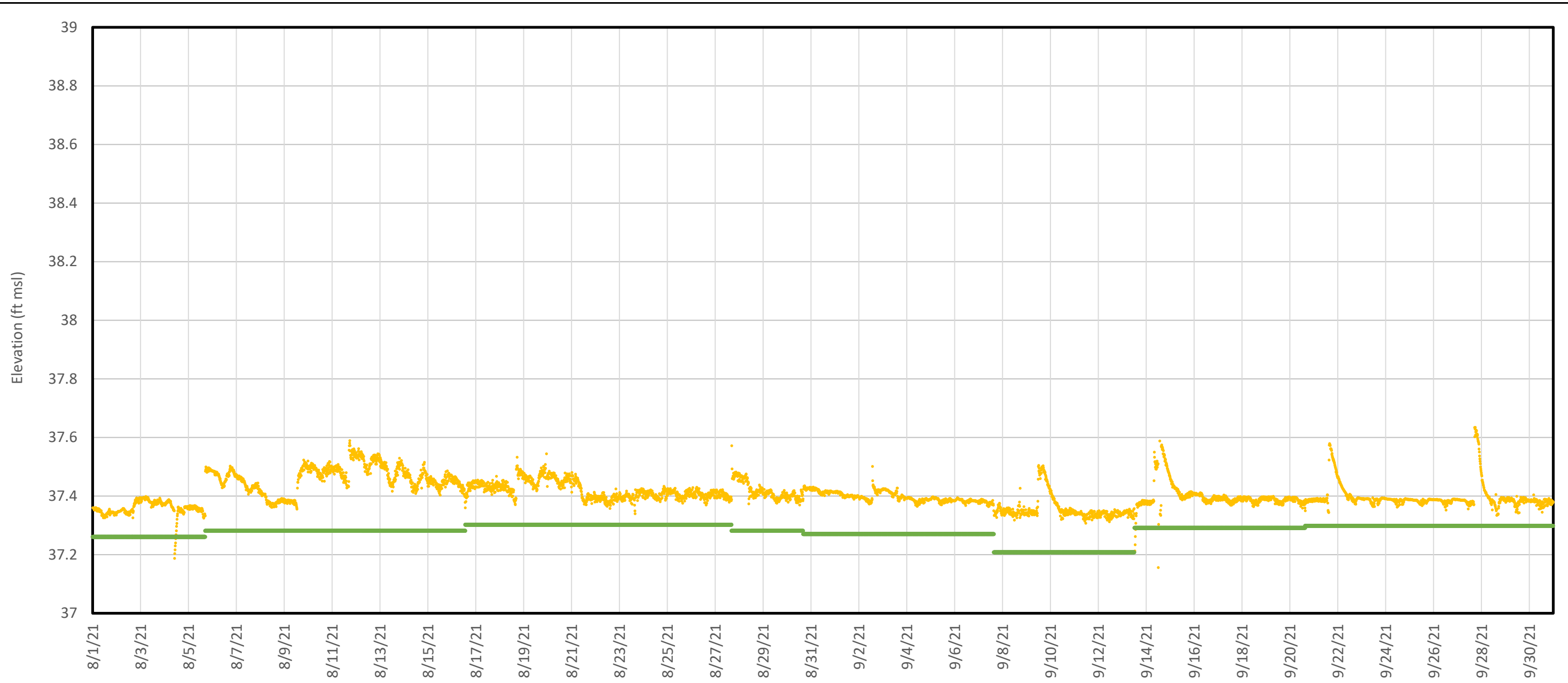
NOTES:
1. WEIR 2 (W2) WALL OPENING WAS FILLED WITH REINFORCED CONCRETE.

0	10.29.21	AS-BUILT CONSTRUCTION RECORD DRAWING SUBMITTAL	JFH	CAS
REV	DATE	DESCRIPTION	DRN	APP
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TITLE: PROCESS FLOW DIAGRAM				
PROJECT: THE CHEMOURS COMPANY SEEP D INTERIM REMEDIATION SYSTEM				
SITE: FAYETTEVILLE WORKS SITE				
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.		DESIGN BY: CMDS	DATE: OCTOBER 2021	
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DATE _____		CHECKED BY: JWE	FILE: TR0795-D01.dwg	
		REVIEWED BY: JJD	DRAWING NO.: D-01	
		APPROVED BY: CAS		

AS-BUILT CONSTRUCTION RECORD DRAWINGS

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APPENDIX E
Transducer Data Reduction



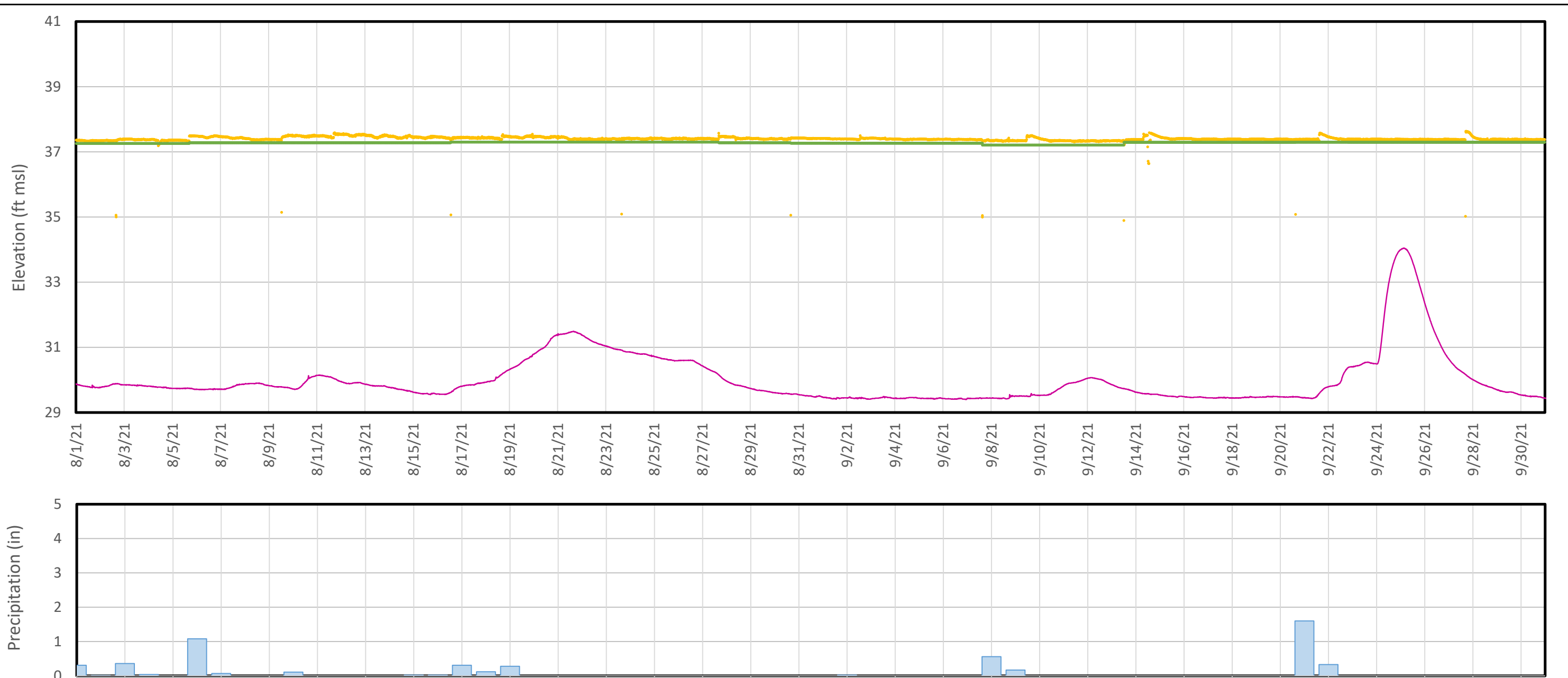
Legend

- Discharge Basin Elevation
- Weir 3 Elevation

Notes:

Figure E1 shows the discharge basin transducer data that was collected during the reporting period.

Discharge Basin Water Elevation - Seep D		Figure E1
Chemours Fayetteville Works Fayetteville, North Carolina		
Geosyntec [®] consultants	Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295	
Raleigh, NC	October 2021	



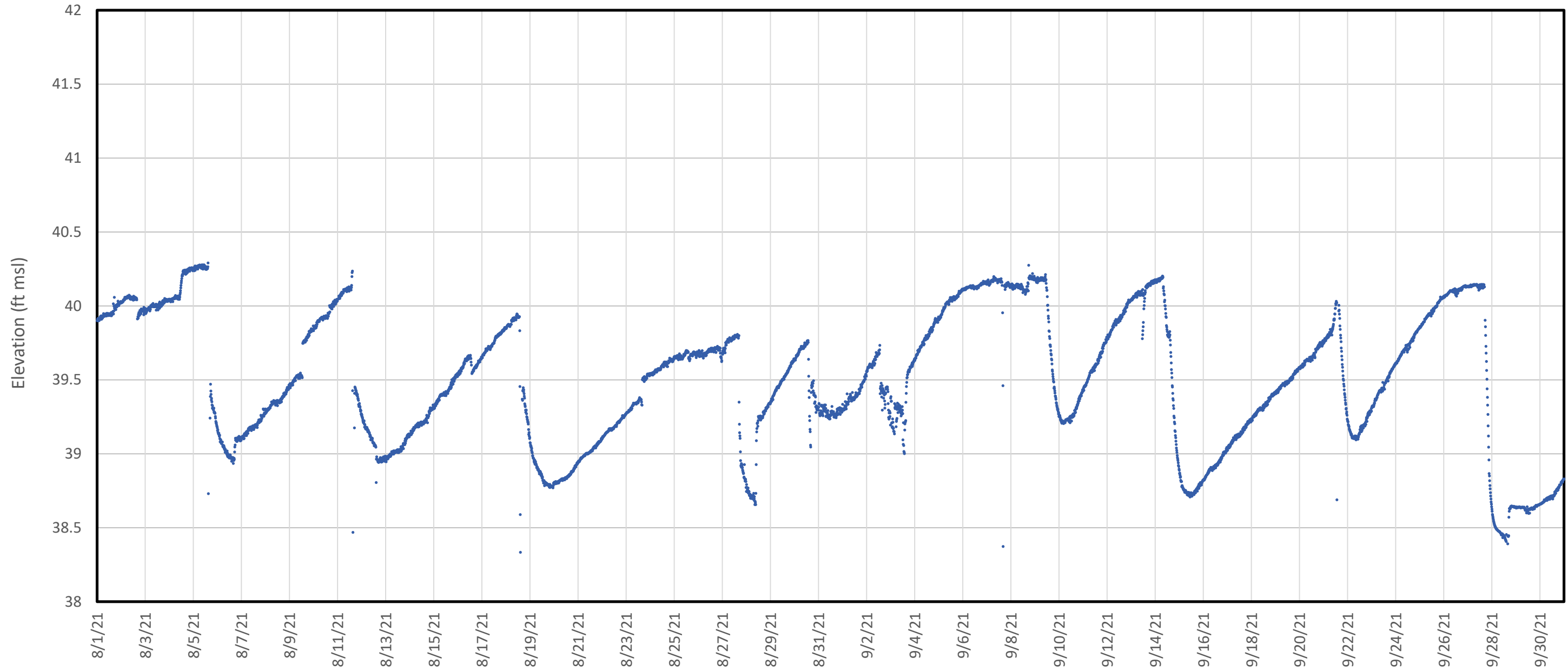
Legend

- Discharge Basin Water Elevation
- River Stage
- Weir 3 Elevation
- █ Precipitation (daily totals)

Notes:

As water can flow through the flow-through cell both as a result of wet weather inflow and elevated river levels from flooding, Figure E2 compares the available transducer data to precipitation and river stage elevation data available from the USGS Huske Lock and Dam.

Discharge Basin Water Elevation and External Forcings - Seep D Chemours Fayetteville Works Fayetteville, North Carolina	
Geosyntec consultants	Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295
Raleigh, NC	October 2021
Figure E2	



Legend

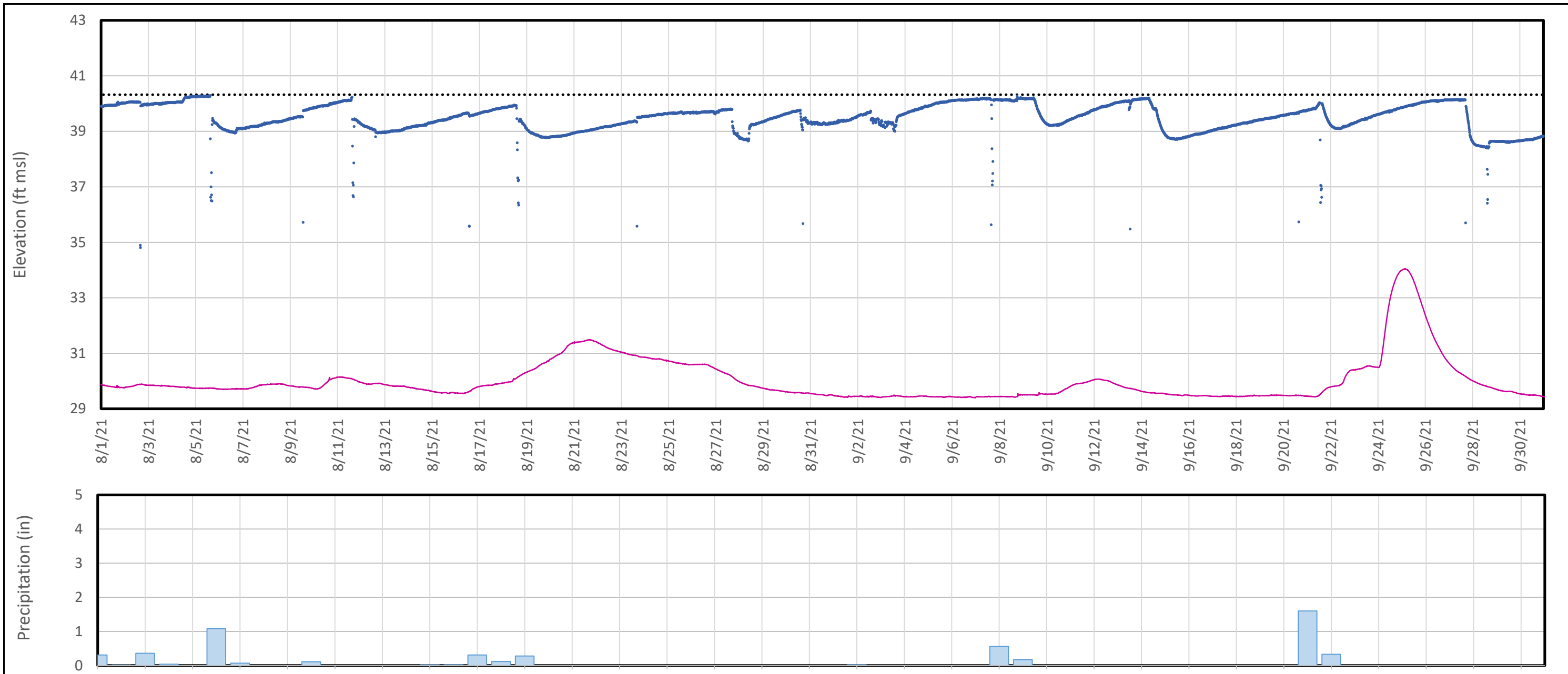
— Inlet Chamber/Impoundment Elevation

Notes:

Figure E3 shows the influent transducer data that was collected during the reporting period.

Inlet Chamber Water Elevation - Seep D Chemours Fayetteville Works Fayetteville, North Carolina	
Geosyntec consultants	<small>Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295</small>
Raleigh, NC	October 2021

**Figure
E3**



- Legend**
- Inlet Chamber Water Elevation
 - River Stage
 - ◆◆◆ Bypass Spillway Elevation
 - █ Precipitation (daily totals)

Notes:
 As water can flow through the Bypass Spillway both as a result of wet weather inflow and elevated river levels from flooding, Figure E4 compares the available transducer data to precipitation and river stage elevation data available from the USGS Huske Lock and Dam.

Inlet Chamber Water Elevation and External Forcings - Seep D	
Chemours Fayetteville Works Fayetteville, North Carolina	
Geosyntec [®] consultants	<small>Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295</small>
Raleigh, NC	October 2021
Figure E4	

APPENDIX F
Laboratory Analytical Data Review Narratives
(Full lab reports to be uploaded to OneDrive and EQuIS)

ADQM Data Review

Site: Chemours Fayetteville

Project: Seep Flow Through Cell Sampling 2021 (select lots)

Project Reviewer: Michael Aucoin

Sample Summary

Field Sample ID	Lab Sample ID	Sample Matrix	Filtered	Sample Date	Sample Time	Sample Purpose
SEEP-A-INFLUENT-336-081721	320-77803-1	Other liquid	N	08/17/2021	10:00	FS
SEEP-D-EFFLUENT-336-081721-D	320-77803-10	Other liquid	N	08/17/2021	10:00	DUP
SEEP-A-EFFLUENT-306-081721	320-77803-2	Other liquid	N	08/17/2021	10:00	FS
SEEP-C-INFLUENT-336-081721	320-77803-3	Other liquid	N	08/17/2021	10:00	FS
SEEP-C-EFFLUENT-336-081721	320-77803-4	Other liquid	N	08/17/2021	10:00	FS
SEEP-D-INFLUENT-306-081721	320-77803-5	Other liquid	N	08/17/2021	10:00	FS
SEEP-D-EFFLUENT-336-081721	320-77803-6	Other liquid	N	08/17/2021	10:00	FS
SEEP-B-INFLUNET-336-081721	320-77803-7	Other liquid	N	08/17/2021	10:00	FS
SEEP-B-EFFLUENT-336-081721	320-77803-8	Other liquid	N	08/17/2021	10:00	FS
SEEP-FBLK-081721	320-77803-9	Blank Water	N	08/17/2021	10:00	FB
SEEP-A-INFLUENT-24-082021	320-78111-1	Surface Water	N	08/20/2021	19:00	FS
SEEP-A-EFFLUENT-24-082021	320-78111-2	Surface Water	N	08/20/2021	19:00	FS
SEEP-C-INFLUENT-24-082021	320-78111-3	Surface Water	N	08/20/2021	19:00	FS
SEEP-C-EFFLUENT-24-082021	320-78111-4	Surface Water	N	08/20/2021	19:00	FS
SEEP-D-INFLUENT-24-082021	320-78111-5	Surface Water	N	08/20/2021	19:00	FS
SEEP-D-EFFLUENT-24-082021	320-78111-6	Surface Water	N	08/20/2021	19:00	FS
SEEP-B-INFLUENT-24-082021	320-78111-7	Surface Water	N	08/20/2021	19:00	FS

SEEP-B-EFFLUENT-24-082021	320-78111-8	Surface Water	N	08/20/2021	19:00	FS
SEEP-A-INFLUENT-24-082821	320-78428-1	Other liquid	N	08/28/2021	19:00	FS
SEEP-A-EFFLUENT-24-082821	320-78428-2	Other liquid	N	08/28/2021	19:00	FS
SEEP-C-INFLUENT-24-082821	320-78428-3	Other liquid	N	08/28/2021	19:00	FS
SEEP-C-EFFLUENT-24-082821	320-78428-4	Other liquid	N	08/28/2021	19:00	FS
SEEP-D-INFLUENT-24-082821	320-78428-5	Other liquid	N	08/28/2021	19:00	FS
SEEP-D-EFFLUENT-24-082821	320-78428-6	Other liquid	N	08/28/2021	19:00	FS
SEEP-B-INFLUENT-24-082821	320-78428-7	Other liquid	N	08/28/2021	19:00	FS
SEEP-B-EFFLUENT-24-082821	320-78428-8	Other liquid	N	08/28/2021	19:00	FS
SEEP-A-INFLUENT-336-091421	320-79069-1	Other liquid	N	09/14/2021	18:00	FS
SEEP-A-EFFLUENT-336-091421	320-79069-2	Other liquid	N	09/14/2021	18:00	FS
SEEP-C-INFLUENT-336-091421	320-79069-3	Other liquid	N	09/14/2021	18:00	FS
SEEP-C-EFFLUENT-336-091421	320-79069-4	Other liquid	N	09/14/2021	18:00	FS
SEEP-D-INFLUENT-318-091421	320-79069-5	Other liquid	N	09/14/2021	18:00	FS
SEEP-D-EFFLUENT-336-091421	320-79069-6	Other liquid	N	09/14/2021	18:00	FS
SEEP-A-EFFLUENT-336-091421-D	320-79069-7	Other liquid	N	09/14/2021	18:00	DUP
SEEP-FBLK-091421	320-79069-8	Blank Water	N	09/14/2021	17:00	FB
SEEP-D-INFLUENT-336-100121	320-79696-7	Other liquid	N	10/01/2021	12:01	FS

SEEP-D- EFFLUENT- 330-100121	320-79696- 9	Other liquid	N	10/01/2021	06:01	FS
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* FS=Field Sample
DUP=Field Duplicate
FB=Field Blank
EB=Equipment Blank
TB=Trip Blank

Analytical Protocol

Lab Name	Lab Method	Parameter Category	Sampling Program
Eurofins TestAmerica, Sacramento	Cl. Spec. Table 3 Compound SOP	Per- and Polyfluorinated Alkyl Substances (PFAS)	Seep Flow Through Cell Sampling 2021

ADQM Data Review Checklist

Item	Description	Yes	No*	DVM Narrative Report	Laboratory Report	Exception Report (ER) #
A	Did samples meet laboratory acceptability requirements upon receipt (i.e., intact, within temperature, properly preserved, and no headspace where applicable)?	X				
B	Were samples received by the laboratory in agreement with the associated chain of custody?	X				
C	Was the chain of custody properly completed by the laboratory and/or field team?	X				
D	Were samples prepped/analyzed by the laboratory within method holding times?	X				
E	Were QA/QC criteria met by the laboratory (method blanks, LCSs/LCSDs, MSs/MSDs, PDSs, SDs, duplicates/replicates, surrogates, total/dissolved differences/RPDs, sample results within calibration range)?		X	X		
F	Were field/equipment/trip blanks (if collected) detected at levels not requiring sample data qualification?	X				
G	Were all data usable and not R qualified?	X				
ER#	Description:					
Other QA/QC Items to Note:						

* See DVM Narrative Report, Lab Report, or ER # for further details as indicated.

The electronic data submitted for this project was reviewed via the Data Verification Module (DVM) process. The data is acceptable for use without qualification, except as noted on the attached DVM Narrative Report.

The lab reports due to a large page count are stored on a network shared drive and are available to be posted on external shared drives, or on a flash drive.

Data Verification Module (DVM)

The DVM is an internal review process used by the ADQM group to assist with the determination of data usability. The electronic data deliverables received from the laboratory are loaded into the Locus EIM™ database and processed through a series of data quality checks, which are a combination of software (Locus EIM™ database Data Verification Module (DVM)) and manual reviewer evaluations. The data is evaluated against the following data usability checks:

- Field and laboratory blank contamination
- US EPA hold time criteria
- Missing Quality Control (QC) samples
- Matrix spike (MS)/matrix spike duplicate (MSD) recoveries and the relative percent differences (RPDs) between these spikes
- Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries and the RPD between these spikes
- Surrogate spike recoveries for organic analyses
- Difference/RPD between field duplicate sample pairs
- RPD between laboratory replicates for inorganic analyses
- Difference/percent difference between total and dissolved sample pairs

There are two qualifier fields in EIM:

Lab Qualifier is the qualifier assigned by the lab and may not reflect the usability of the data. This qualifier may have many different meanings and can vary between labs and over time within the same lab. Please refer to the laboratory report for a description of the lab qualifiers. As they are lab descriptors they are not to be used when evaluating the data.

Validation Qualifier is the 3rd party formal validation qualifier if this was performed. Otherwise this field contains the qualifier resulting from the ADQM DVM review process. This qualifier assesses the usability of the data and may not equal the lab qualifier. The DVM applies the following data evaluation qualifiers to analysis results, as warranted:

Qualifier	Definition
B	Not detected substantially above the level reported in the laboratory or field blanks.
R	Unusable result. Analyte may or may not be present in the sample.
J	Analyte present. Reported value may not be accurate or precise.
UJ	Not detected. Reporting limit may not be accurate or precise.

The **Validation Status Code** field is set to “DVM” if the ADQM DVM process has been performed. If the DVM has not been run, the field will be blank.

If the DVM has been run (**Validation Status Code** equals “DVM”), use the **Validation Qualifier**.

If the data has been validated by a third party, the field “**Validated By**” will be set to the validator (e.g., ESI for Environmental Standards, Inc.).

DVM Narrative Report

Site: Fayetteville

Sampling Program: Seep Flow Through Cell Sampling 2021

Validation Options: LABSTATS

Validation Reason

Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the lower control limit. The actual detection limits may be higher than reported.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
SEEP-D-EFFLUENT-336-081721	08/17/2021	320-77803-6	PFMOAA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-EFFLUENT-336-081721	08/17/2021	320-77803-6	PFMOAA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason

Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values higher than the upper control limit. The reported result may be biased high.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
SEEP-D-INFLUENT-306-081721	08/17/2021	320-77803-5	R-PSDA	0.73	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-336-081721	08/17/2021	320-77803-1	R-PSDA	2.1	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-INFLUNET-336-081721	08/17/2021	320-77803-7	R-PSDA	4.8	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-336-081721	08/17/2021	320-77803-3	R-PSDA	0.88	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason

Uncertainty around the analysis of R-PSDA, Hydrolyzed PSDA and R-EVE; J-qualifier added to all detects in the data set, even if there was no matrix spike analyzed for that particular sample.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
SEEP-D-INFLUENT-306-081721	08/17/2021	320-77803-5	Hydrolyzed PSDA	2.0	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-306-081721	08/17/2021	320-77803-5	R-EVE	0.73	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-EFFLUENT-24-082021	08/20/2021	320-78111-2	Hydrolyzed PSDA	0.0022	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-24-082021	08/20/2021	320-78111-1	R-PSDA	1.7	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-24-082021	08/20/2021	320-78111-1	Hydrolyzed PSDA	19	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-24-082021	08/20/2021	320-78111-1	R-EVE	0.97	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-INFLUENT-24-082021	08/20/2021	320-78111-7	R-PSDA	4.0	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-INFLUENT-24-082021	08/20/2021	320-78111-7	Hydrolyzed PSDA	29	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-INFLUENT-24-082021	08/20/2021	320-78111-7	R-EVE	3.2	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-24-082021	08/20/2021	320-78111-3	R-PSDA	0.58	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-24-082021	08/20/2021	320-78111-3	Hydrolyzed PSDA	0.70	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-24-082021	08/20/2021	320-78111-3	R-EVE	0.55	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-24-082021	08/20/2021	320-78111-5	R-PSDA	0.56	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-24-082021	08/20/2021	320-78111-5	Hydrolyzed PSDA	1.3	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-24-082021	08/20/2021	320-78111-5	R-EVE	0.58	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-EFFLUENT-24-082821	08/28/2021	320-78428-2	R-PSDA	0.0075	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason Uncertainty around the analysis of R-PSDA, Hydrolyzed PSDA and R-EVE; J-qualifier added to all detects in the data set, even if there was no matrix spike analyzed for that particular sample.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
SEEP-A-EFFLUENT-24-082821	08/28/2021	320-78428-2	Hydrolyzed PSDA	0.073	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-EFFLUENT-24-082821	08/28/2021	320-78428-2	R-EVE	0.0053	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-24-082821	08/28/2021	320-78428-1	R-PSDA	2.2	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-24-082821	08/28/2021	320-78428-1	Hydrolyzed PSDA	23	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-24-082821	08/28/2021	320-78428-1	R-EVE	1.0	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-INFLUENT-24-082821	08/28/2021	320-78428-7	R-PSDA	3.6	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-INFLUENT-24-082821	08/28/2021	320-78428-7	Hydrolyzed PSDA	23	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-INFLUENT-24-082821	08/28/2021	320-78428-7	R-EVE	2.2	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-EFFLUENT-336-091421	09/14/2021	320-79069-2	Hydrolyzed PSDA	0.0063	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-EFFLUENT-336-091421	09/14/2021	320-79069-2	Hydrolyzed PSDA	0.0065	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-EFFLUENT-336-091421-D	09/14/2021	320-79069-7	Hydrolyzed PSDA	0.0057	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-336-091421	09/14/2021	320-79069-1	R-PSDA	2.3	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-336-091421	09/14/2021	320-79069-1	Hydrolyzed PSDA	26	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-336-091421	09/14/2021	320-79069-1	R-EVE	1.1	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-24-082821	08/28/2021	320-78428-3	R-PSDA	0.79	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-24-082821	08/28/2021	320-78428-3	Hydrolyzed PSDA	0.92	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-24-082821	08/28/2021	320-78428-3	R-EVE	0.64	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound		PFAS_DI_Prep

Validation Reason Uncertainty around the analysis of R-PSDA, Hydrolyzed PSDA and R-EVE; J-qualifier added to all detects in the data set, even if there was no matrix spike analyzed for that particular sample.

Field Sample ID	Date		Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
	Sampled	Lab Sample ID										
SEEP-C-INFLUENT-336-091421	09/14/2021	320-79069-3	R-PSDA	0.63	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-336-091421	09/14/2021	320-79069-3	Hydrolyzed PSDA	0.86	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-336-091421	09/14/2021	320-79069-3	R-EVE	0.61	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-24-082821	08/28/2021	320-78428-5	R-PSDA	0.43	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-24-082821	08/28/2021	320-78428-5	Hydrolyzed PSDA	0.98	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-24-082821	08/28/2021	320-78428-5	R-EVE	0.32	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-318-091421	09/14/2021	320-79069-5	R-PSDA	0.54	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-318-091421	09/14/2021	320-79069-5	Hydrolyzed PSDA	1.3	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-318-091421	09/14/2021	320-79069-5	R-EVE	0.62	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-336-100121	10/01/2021	320-79696-7	R-PSDA	1.2	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-336-100121	10/01/2021	320-79696-7	Hydrolyzed PSDA	2.6	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-D-INFLUENT-336-100121	10/01/2021	320-79696-7	R-EVE	1.1	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-EFFLUENT-306-081721	08/17/2021	320-77803-2	Hydrolyzed PSDA	0.0058	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-336-081721	08/17/2021	320-77803-1	Hydrolyzed PSDA	23	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-INFLUENT-336-081721	08/17/2021	320-77803-1	R-EVE	0.81	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-INFLUNET-336-081721	08/17/2021	320-77803-7	Hydrolyzed PSDA	32	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason

Uncertainty around the analysis of R-PSDA, Hydrolyzed PSDA and R-EVE; J-qualifier added to all detects in the data set, even if there was no matrix spike analyzed for that particular sample.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
SEEP-B-INFLUNET-336-081721	08/17/2021	320-77803-7	R-EVE	2.8	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-336-081721	08/17/2021	320-77803-3	Hydrolyzed PSDA	1.2	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-C-INFLUENT-336-081721	08/17/2021	320-77803-3	R-EVE	0.80	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep