



Incorporated 1910

Major Subdivision & MLD Preliminary Plan Application

Please complete all areas of this application in black or blue ink. Submit the completed application to the Cranston Planning Department *together* with all required and supporting documents and materials. Illegible or incomplete applications will not be reviewed.

Project Info

Project InfoProject Name: Calise Development LLC PlatAssessor's Plat(s): 18 Assessor's Lot(s): 714, 684, 798Project Address: 0 Stoneham Court

Contact Information

ApplicantName: Calise Development LLCAddress: PO Box 277, Greenville, RI 02828Phone: 489-6740 Email: dcalise2@yahoo.com**Property Owner** (All owners of record must be included for all lots involved)Name: Calise Development LLCAddress: PO Box 277, Greenville, RI 02828Phone: 489-6740 Email: dcalise2@yahoo.com

(If there are more owners please check here submit an addendum with this application form)

AttorneyName: Robert D. Murray, Esq.Address: 21 Garden City Drive, Cranston, RI 02920Phone: 946-3800 Email: rdmurray@taftmcsally.com

Contact Information

Engineer

Name: Timothy J. Behan, PE -- Commonwealth Engineers

Address: 400 Smith Street, Providence, RI 02908

Phone: 273-6600 Email: tbehan@commonwealth-eng.com

Land Surveyor

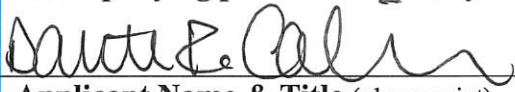
Name: Michael J. McCormick, PLS

Address: 35 Rocky Hollow Road, East Greenwich, RI 02818

Phone: 884-8506 Email: aphasurv@aol.com

Owner/Applicant Signature

I/we hereby certify that I/we own the subject property and seek Major Subdivision and/or Major Land Development Preliminary Plan approval as drafted in the accompanying plans for review by the City Plan Commission.




Calise Development LLC

Applicant Name & Title (please print)

Applicant Signature

Date: 12/2/24



Calise Development LLC

Owner Name (if different than above) (please print)

Owner Signature

Date: 12/2/24

Owner Name (please print)

Owner Signature

Date: _____

(If there are more owners please submit an addendum with this application form)

Certification

MAJOR SUBDIVISION & MAJOR LAND DEVELOPMENT
PRELIMINARY PLAN CHECKLIST

NAME OF PLAT: CALISE DEVELOPMENT LLC PLAT
 FORM COMPLETED BY: DANTE R. CALISE, OWNER DATE: 11/29/24

Please verify applicability of items during the master plan phase.

In addition to paper copies, ALL application documents must be submitted in digital/electronic format.

ITEM	YES	N/A	NO
<u>Required Application Documents:</u> (Submit 1 paper copy unless stipulated otherwise)			
(a) Is the application completed and signed by all owners? (original version)	✓		
(b) Has the Filing Fee (\$500 + \$75 / Unit*) been submitted? (*refer to the Cranston Subdivision and Development Regulations p. 12 for how units are assessed and for other fee information)	✓		
(c) Has a check made out to Beacon Communications for the advertising fees been submitted? (amount TBD at time of application)			
(d) Have Municipal Lien Certificates (MLCs) been filed for all applicable lots? (MLCs submitted within the last 6 months will satisfy this requirement)	✓		
(e) Has a radius map and mailing list of property owners within 100' of site submitted? (for notification)	✓		
(f) Has a narrative text addressing site suitability, identification of problem areas & solutions, soil qualities, drainage, land dedications (streets, detention basins, open space, etc.), deed restrictions, easements & covenants been submitted?	✓		
(g) Has a site suitability/soils analysis been submitted? (3 copies)	✓		
(h) Has a drainage report/analysis been submitted? (3 copies)	✓		
(i) Has City Engineer memo of approval and performance guarantee amount been submitted? (this may be submitted separately prior to public hearing)			
(j) Have notification and copies of the subdivision been sent to public utilities, US Postal Service, and 911 system? (Provide a copy of letters/correspondence sent)			
(k) Have draft HOA documents been submitted? (3 copies)			✓
(l) Is the preliminary plan in compliance with all conditions of the master plan approval? (provide documentation as applicable)	✓		
<u>Are the following permits/approvals attached?</u>			
(a) RIDOT – Physical Alteration Permit		✓	
(b) CRMC Assent		✓	
(c) RIDEM - OWTS		✓	
(d) RIDEM - Wetlands		✓	
(e) U.S. Army Corps of Engineers - Wetland		✓	
(f) Conformance with Scituate Reservoir Watershed Management Plan		✓	
(g) RIHPHC – for potential historic/archeological significant sites		✓	
(h) Water Supply Board availability letter	✓		
(i) Veolia Water approval for public sewer	✓		

ITEM	YES	N/A	NO
<u>PRELIMINARY PLAN REQUIREMENTS</u>			
<u>Number of copies to be submitted:</u>			
(a) (9) plan sets at 24"x 36"			
(b) (2) plan sets at 11" x 17"			
<u>Items to be incorporated in the Preliminary Plan:</u>			
(a) Is the name of plat clearly indicated? (properly cited if replat of existing plat)	✓		
(b) Is the plan identified as a Preliminary Plan?	✓		
(c) Are the names of all applicable owners of record provided?	✓		
(d) Are all revision dates provided?	✓		
(e) Is the plan classified as a Class 1 boundary survey? (Class 4 will be accepted for lot mergers)	✓		
(f) Is the name, stamp and signature of the surveyor provided?	✓		
(g) Is the name, stamp and signature of the engineer provided?	✓		
(h) Is a north arrow provided? (denote True North or Magnetic North)	✓		
(i) Is a scale provided and is the plan accurate to the scale?	✓		
(j) Is a vicinity map / locus map provided?	✓		
(k) Is the zoning district(s) of the parcel(s) provided and are the general requirements of applicable zoning districts denoted? (setbacks, frontage, min. lot area, & max lot coverage)	✓		
(l) Are the names of the abutting property owners & zoning districts shown?	✓		
(m) Are notes provided referencing any previous zoning relief including dates and conditions of approval?		✓	
(n) Are notes provided referencing any relief to be required/requested from the Zoning Board of Review as part of this project?		✓	
(o) Are 2' topo lines provided and 10' topo lines provided in bold?	✓		
(p) Is the plat boundary outlined in bold?	✓		
(q) Are primary control points shown? (at least one must be shown)	✓		
(r) Are the locations of all permanent monuments shown? (at least 2 must be set or recovered for residential surveys less than 1 acre); (not less than 3 must be set or recovered for residential surveys more than 1 acre and all non-residential projects)	✓		
(s) Are all lots numbered or lettered?	✓		
(t) Is there a phasing plan which is clearly denoted?		✓	
(u) Is the total area of the existing plat and all proposed lot areas and open space provided?	✓		
(v) Is the total UPLAND area (land area excluding wetlands) of the existing plat and all proposed lot areas provided?	✓		
(w) Are dimensions for all straight lines, angles, radii, arcs & angles of curves denoted?	✓		
(x) Are all building setbacks labeled and drawn accurately? (dashed lines)	✓		
(y) For lots with multiple fronts, is the primary frontage identified?		✓	
(z) Are all existing and proposed streets labeled and right-of-way dimensions provided?	✓		

ITEM	YES	N/A	NO
(aa) Are the plan and profile of new roadways including location and size of existing and proposed water, storm drain and sewer lines on plat and adjacent properties shown?	✓		
(bb) Is a street index with all applicable street names provided?	✓		
(cc) Are all land area(s) to be dedicated for public use or granted for the use of residents identified?		✓	
(dd) Are soil types and locations of percolation tests denoted?	✓		
(ee) Are all existing improvements shown (buildings, paved areas, accessory structures, fences, retaining walls, etc.)?	✓		
(ff) For structures encroaching into building setbacks, are dimensions to nearest lot lines provided?		✓	
(gg) Other Existing Conditions: Location of natural & man-made features, including rock outcrop, wooded areas, structures, embankments or retaining walls, railroads, power lines, underground storage tanks, or any physical feature that may have an influence on the development of this plat?	✓		
(hh) Have LOD and/or limits of tree removal been delineated?	✓		
(ii) Are flood hazard zones, FIRM Map Panel Numbers, and base flood elevation provided?	✓		
(jj) Are notes provided with the names of abutting record plats?	✓		
(kk) Are existing and proposed easements, including width and purpose, identified and denoted as necessary?	✓		
(ll) Has the proposed drainage pattern been identified?	✓		
(mm) Are surface water detention facilities shown?	✓		
(nn) Are the RIDEM verified wetland edges and buffers/setbacks shown?		✓	
(oo) Is a note provided referencing the RIDEM wetland edge verification Letter and/or RIDEM Alteration Permit?		✓	
(pp) Has the Natural Heritage Survey been checked for rare and endangered plants and animals and has a note been provided declaring such?		✓	
(qq) Are the locations of any environmental hazards identified or a note provided that none are present? (in certain cases, a certificate from an environmental engineer may be required)		✓	
(rr) Where hazards exist, are appropriate federal, state and local agency approvals submitted and are notes provided referring to said approvals?		✓	
(ss) Are all cemetery boundaries and associated buffers identified?		✓	
(tt) For Planned Districts - Has appropriate additional information been included?	✓		
(uu) Is a legend for all abbreviations and symbols provided?	✓		
(vv) Has a truck circulation plan with loading areas been provided?		✓	
(ww) Has a Landscape/Buffer plan been provided?	✓		
(xx) Is the name, stamp and signature of the landscape architect provided?	✓		

Please be aware that there may be a stenographer fee to be assessed for the public hearing.

Staff encourages plans be submitted via emailed for a preliminary review prior to printing full plan sets for submittal. This is not required, but offered as a courtesy to potentially reduce printing costs should revisions be required.

NARRATIVE REPORT
FOR
CALISE DEVELOPMENT, LLC PLAT
WARREN AVENUE
CRANSTON, RI

OWNER/APPLICANT:
CALISE DEVELOPMENT, LLC
PO BOX 277
GREENVILLE, RI 02828

PREPARED BY:



COMMONWEALTH
ENGINEERS & CONSULTANTS, INC.
400 Smith Street
Providence, RI 02908
Tel. (401) 273-6600, Fax (401) 273-6674
www.commonwealth-eng.com

DECEMBER 2024
CEC PROJECT NO. 24049.00

INTRODUCTION

This Narrative Report has been prepared for the proposed Calise Development, LLC Plat development on Warren Avenue in Cranston, Rhode Island. The following are a general description of the existing conditions on and near the subject parcel, and a detailed description of the proposed development.

General Description of Project: The applicant proposes to develop A.P. 18-4, Lot 714 into a six (6) unit condominium development. Three buildings are proposed with each building having two units and parking spaces for at least 2 vehicles/unit. The project will include a paved private driveway and underground utilities.

Existing Property: The Site, identified as A.P. 18-4 Lot 714, is located on Warren Avenue between Allard Street and Wilbur Avenue. The total size of the lot is 1.46 acres +/- . The site is predominately vegetated with lawn & woods and has a paved & gravel driveway (known as Stoneham Court) which provides access to #25 Stoneham Court and #20 & #24 Warren Avenue.

Abutting Properties: The Site is in an A-6 zone in the City of Cranston. This area contains mostly residential lots of approximately 6,000 square feet. The properties surrounding the Site are:

- residential to the south and west
- sparse development to the immediate north with one residential dwelling, and
- bike path to the east.

Natural Resources in the Area: There are no freshwater wetlands in the immediate area.

The subject property is not situated in a sole source aquifer, natural heritage area, groundwater recharge area, well head protection area or groundwater reservoir as depicted on Rhode Island Department of Environmental Management (RIDEM) Geographical Information System.

Flood Zones: The subject property is situated in “Zone X & shaded Zone X” as identified by the Federal Emergency Management Agency map #440007C0426H, effective date October 2, 2015.

Topography: The project site slopes in a generally northwesterly direction, from a localized high point on the southern property boundary (NGVD 88, datum elevation 64 +/-), to the lowest elevation on the parcel (NGVD 88, datum elevation 46 +/-) located at the northwestern corner of the property. The existing topographic contours are depicted on the plans.

Drainage Divides and Soils: The RIDEM GIS map web site indicates the project site is situated in the Pawtuxet River drainage basin. The site is primarily underlain with Hinkley (HkA) soils which are well drained sandy soils. Soil testing was performed on the site to support the stormwater design and the results can be found in the stormwater report.

Stormwater Management System: Management of stormwater runoff from the proposed development has been designed in accordance with the Rhode Island “Stormwater Management Design and Installation Rules” (RISMDIR), latest revision. The stormwater management and treatment systems consist of infiltration chambers and street tree filters. The locations and details of the specific elements of the stormwater management systems are contained in the attached plans.

Wastewater Disposal System: The proposed buildings will be connected to the public sanitary sewer in Warren Avenue.

Abbuter's List: 0 Warren Ave 100' Radius Plat 18 Lots 714, 684, 798

<u>Property ID</u>	<u>Location/Land Use Description</u>	<u>Owner(s)</u>
18-1226-0	25 STONEHAM COURT TWO FAMILY	ARA VARTANIAN ZAROUHI VARTANIAN-HAJINIAN 272 SUMMIT DRIVE CRANSTON, RI 02920-3660
18-1276-0	36 WARREN AVENUE SINGLE FAM MDL01	WILLIAM H WILBER DOROTHY A WILBER 602 WILBUR AVE CRANSTON, RI 02921-1436
18-1329-0	25 ALLARD STREET SINGLE FAM MDL01	DEBORAH VALENTIM EDWARD VALENTIM T/E 25 ALLARD STREET CRANSTON, RI 02920-1607
18-1330-0	29 ALLARD STREET SINGLE FAM MDL01	DAVID LYNCH ANDREW C MAJOT T/E 29 ALLARD ST CRANSTON, RI 02920-1607
18-1331-0	21 ALLARD STREET SINGLE FAM MDL01	PETER J MAGNAN CYNTHIA B MAGNAN T/E 21 ALLARD STREET CRANSTON, RI 02920-1607
18-1332-0	9 ALLARD STREET SINGLE FAM MDL01	ROY KIMBERLY A 9 ALLARD ST CRANSTON, RI 02920
18-1334-0	13 ALLARD STREET SINGLE FAM MDL01	MELISSA KAY STEVENS 13 ALLARD ST CRANSTON, RI 02920-1607
18-1398-0	0 OAKLAWN AVENUE COM LND POT	P&P REALTY LLC 152 EAST HILL DRIVE CRANSTON, RI 02920-3700
18-1418-0	24 WARREN AVENUE SINGLE FAM MDL01	DANIEL T DIBIASIO JOSEPHINE M DIBIASIO T/E 24 WARREN AVE CRANSTON, RI 02920
18-1510-0	23 WARREN AVENUE SINGLE FAM MDL01	ELLEN M FLYNN SCOTT A MOREY JT 23 WARREN AVE CRANSTON, RI 02920-1603
18-1561-0	0 OAKLAWN AVENUE ACC COM LD	CONSTANCE L MARZILLI TRUSTEE C/O RYAN P O BOX 460049 HOUSTON, TX 77056
18-1604-0	44 WARREN AVENUE SINGLE FAM MDL01	KEVIN SILVIA 44 WARREN AVE CRANSTON, RI 02920
18-2059-0	8 STONEHAM STREET SINGLE FAM MDL01	CHRISTOPHER C KHANOYAN 8 STONEHAM ST CRANSTON, RI 02920
18-676-0	38 WILBUR AVENUE TWO FAMILY	JAMES H BELLINI BARBARA L BELLINI T/E 38 WILBUR AVENUE CRANSTON, RI 02920-1630
18-684-0	0 WARREN AVENUE RES LD UND	CALISE DEVELOPMENT LLC P O BOX 277 GREENVILLE, RI 02828-0277
18-714-0	0 WARREN AVENUE RES LD POT	CALISE DEVELOPMENT LLC P O BOX 277 GREENVILLE, RI 02828-0277
18-793-0	0 WILBUR AVENUE MUNICIPAL MDL00	CRANSTON CITY OF 869 PARK AVE CRANSTON, RI 02910
18-795-0	30 WILBUR AVENUE 4 FAMILY MDL01	ELMWOOD REALTY LLC 2077 ELMWOOD AVENUE WARWICK, RI 02888-2405
18-797-0	40 WARREN AVENUE SINGLE FAM MDL01	AMY J BICKFORD 40 WARREN AVE CRANSTON, RI 02920

<u>Property ID</u>	<u>Location/Land Use Description</u>	<u>Owner(s)</u>
18-798-0	0 WARREN AVENUE RES LD DEV MDL00	Calise Development LLC PO Box 277, Greenville, RI 02828
18-808-0	20 WARREN AVENUE SINGLE FAM MDL01	Tatiana Raposo 20 Warren Avenue, Cranston, RI 02920
18-821-0	11 WARREN AVENUE SINGL FAM IN-LAW	PAULINE OKOLOWITCZ 11 WARREN AVENUE CRANSTON, RI 02920-1601
18-9-0	965 OAKLAWN AVENUE LRG BUS MDL94	CONSTANCE L MARZILLI TRUSTEE C/O RYAN P O BOX 460049 HOUSTON, TX 77056
38-7-0	0 BIKE PATH STATE MDL00	STATE OF RHODE ISLAND P O BOX 8268 CRANSTON, RI 02920-0268

Potable Water Source: The proposed buildings will be connected to the Kent County Water Authority water system.

Fire Protection: A fire hydrant is proposed on Warren Avenue as required by the City of Cranston Master Plan decision.

Erosion Control Practices: A detailed soil erosion and sedimentation control (SESC) plan sheet has been prepared in conformance with RI Stormwater Handbook and RIDEM RIPDES permit requirements.

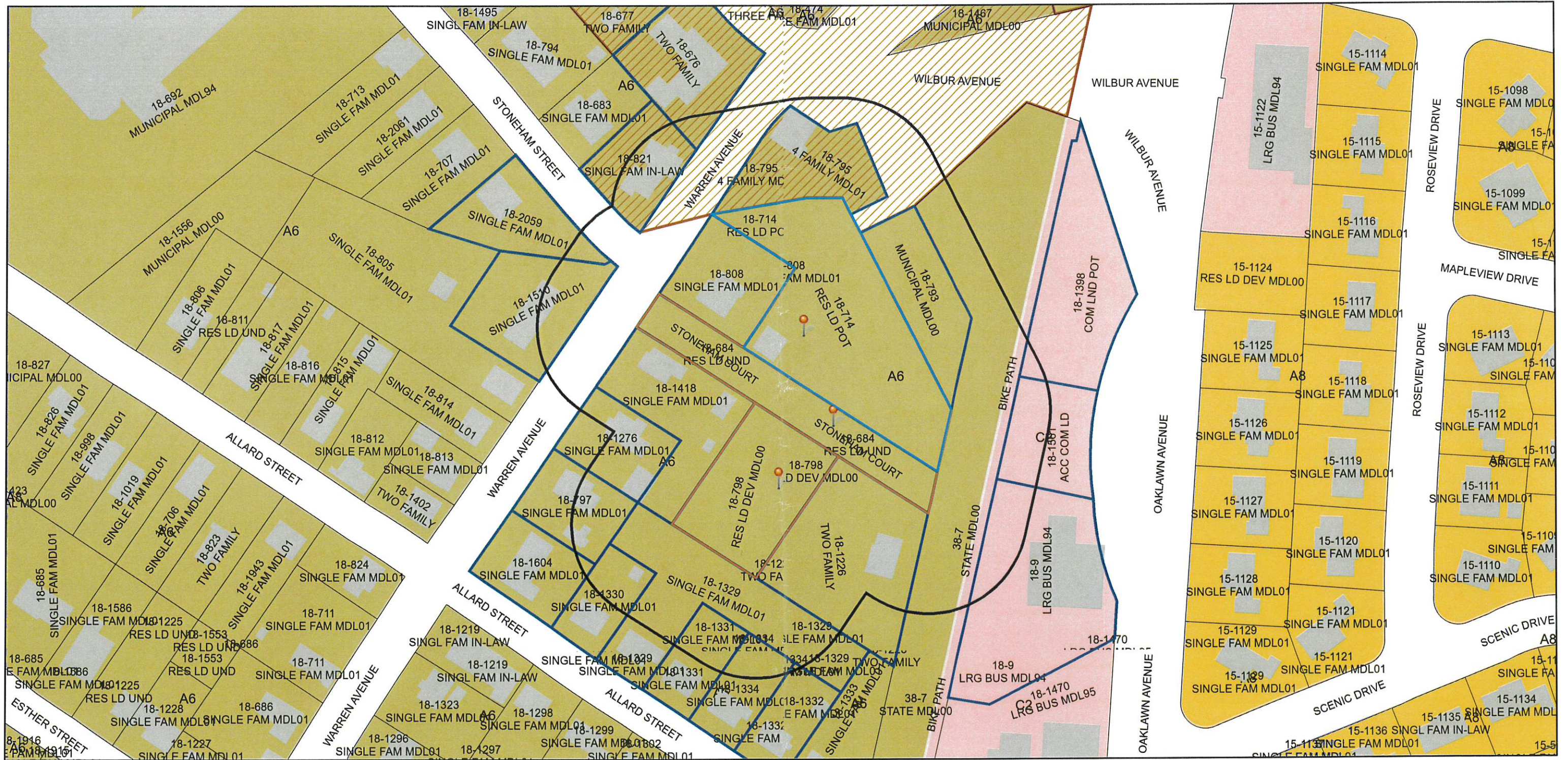
Easements: Easements for access and (utilities where applicable) will be provided to #25 Stoneham Court and #20 & #24 Warren Avenue as required.

State Permits:

1. A RIDEM Stormwater permit is required for the proposed stormwater system.
2. A RIDEM RIPDES permit is required for the proposed construction activities since the area of disturbance exceeds 1 acre.

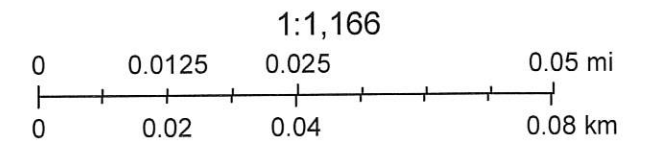
End of Narrative

0 Warren Ave 100' Radius Plat 18 Lots 714, 684, 798



7/16/2024, 9:21:57 AM

Selected Parcels in Buffer		Parcels	A80		B2		M1
Selected Parcels		Buildings	A20		C1		M2
Parcels In Buffer		Zoning Dimensions	A12		C2		EI
Parcel ID Labels		Historic Overlay District	A8		C3		MPD
Streets Names		Zoning	A6		C4		S1
Cranston Boundary		none	B1		C5		Other



City of Cranston

ORIGINAL



**Certificate of Municipal Liens
Under 44-7-11 of the
General Laws of Rhode Island
Cranston City Hall
Tax Collections Dept
869 Park Avenue**

**CERTIFICATE NUMBER: 2023-1440153
ISSUED: 16-May-2024**

**TAX RATE SUMMARY
FISCAL YEAR 2023**

Residential:	18.90
Open Space:	18.90
Commercial:	28.35
Industrial:	28.35
Total Value:	\$7,900

I certify from available information that all taxes, assessments and charges now payable that constitute liens as of the date of this certificate on the parcel of real estate specified in your application are listed below.

**TAFT & MCSALLY
21 GARDEN CITY DR
CRANSTON RI 02920**

Parcel Id: 018-0684-000
Location: WARREN AVENUE
Acreage: .30000
Legal Reference: 6709-23
Assessed Owner(s): CALISE DEVELOPMENT LLC
Current Owner: CALISE DEVELOPMENT LLC

	2023 Bill #0214235001	2022 Bill #0214235001	2021 Bill #0214235001	Prior to 2021				
ASSESSMENTS								
Gross Tax	\$149.31	\$146.23	\$142.20	\$971.54				
Net Tax	\$149.31	\$146.23	\$142.20	\$971.54				
Interest	\$9.40							
Total Net	\$158.71	\$146.23	\$142.20	\$971.54				
PAYMENTS								
Tax Payments	\$149.31	\$146.23	\$142.20	\$971.54				
Interest	\$9.40							
OTHER								
Net Q1 RE Tax	Due: 17-Jul-2023 \$37.32	\$36.55	\$35.55	\$242.86				
Net Q2 RE Tax	Due: 16-Oct-2023 \$37.32	\$36.55	\$35.55	\$242.86				
Net Q3 RE Tax	Due: 16-Jan-2024 \$37.32	\$36.55	\$35.55	\$242.86				
Net Q4 RE Tax	Due: 15-Apr-2024 \$37.35	\$36.58	\$35.55	\$242.96				
UNPAID TAXES								
TOTAL UNPAID TAXES (PER DIEM)	\$0.00	\$0.00	\$0.00					
PAYMENT HISTORY								
	Date	Amount	Date	Amount	Date	Amount	Date	Amount
	10/4/2023	158.71	4/12/2023	36.58	3/15/2022	35.55	3/31/2021	38.96
	-	-	12/28/2022	36.55	10/13/2021	35.55	12/31/2020	38.94
	-	-	10/4/2022	36.55	10/7/2021	35.55	10/6/2020	38.94
	-	-	6/24/2022	36.55	6/28/2021	35.55	7/13/2020	38.94
	-	-	-	-	-	-	4/13/2020	38.96
	-	-	-	-	-	-	1/10/2020	38.94
	-	-	-	-	-	-	10/7/2019	38.94
	-	-	-	-	-	-	7/9/2019	38.94
	-	-	-	-	-	-	4/8/2019	38.06
	-	-	-	-	-	-	1/10/2019	38.04

I HAVE NO KNOWLEDGE OF ANY OTHER LIENS OUTSTANDING AS OF THIS DATE: 5/16/2024

OTHER UNPAID BALANCES

DESCRIPTION	LAST READ	ACCOUNT #	BALANCE DUE	NOTES
Note:				WATER USE SEE PROVIDENCE

This is to certify that the above is true and correct. Said Certification is given in accordance with 44-7-11 of the General Laws of Rhode Island 1956 as of this day 16-May-2024

[Signature]

City Treasurer
City of Cranston

 ORIGINAL



**Certificate of Municipal Liens
Under 44-7-11 of the
General Laws of Rhode Island**

Cranston City Hall
Tax Collections Dept
869 Park Avenue

CERTIFICATE NUMBER: 2023-1440154
ISSUED: 16-May-2024

TAX RATE SUMMARY
FISCAL YEAR 2023

Residential:	18.90
Open Space:	18.90
Commercial:	28.35
Industrial:	28.35
Total Value:	\$65,900

I certify from available information that all taxes, assessments and charges now payable that constitute liens as of the date of this certificate on the parcel of real estate specified in your application are listed below.

TAFT & MCSALLY
21 GARDEN CITY DR
CRANSTON RI 02920

Parcel Id: 018-0714-000
Location: WARREN AVENUE
Acreage: .61001
Legal Reference: 6709-23
Assessed Owner(s): CALISE DEVELOPMENT LLC
Current Owner: CALISE DEVELOPMENT LLC

2023 Bill #0214235002 2022 Bill #0214235002 2021 Bill #0214235002 Prior to 2021


ASSESSMENTS	2023 Bill #0214235002	2022 Bill #0214235002	2021 Bill #0214235002	Prior to 2021				
Gross Tax	\$1,245.51	\$1,219.81	\$1,186.20	\$8,050.88				
Net Tax	\$1,245.51	\$1,219.81	\$1,186.20	\$8,050.88				
Interest	\$42.28							
Total Net	\$1,287.79	\$1,219.81	\$1,186.20	\$8,050.88				
PAYMENTS								
Tax Payments	\$1,245.51	\$1,219.81	\$1,186.20	\$8,050.88				
Interest	\$42.28							
OTHER								
Net Q1 RE Tax Due: 17-Jul-2023	\$311.37	\$304.95	\$296.55	\$2,012.70				
Net Q2 RE Tax Due: 16-Oct-2023	\$311.37	\$304.95	\$296.55	\$2,012.70				
Net Q3 RE Tax Due: 16-Jan-2024	\$311.37	\$304.95	\$296.55	\$2,012.70				
Net Q4 RE Tax Due: 15-Apr-2024	\$311.40	\$304.96	\$296.55	\$2,012.78				
UNPAID TAXES								
TOTAL UNPAID TAXES (PER DIEM)	\$0.00	\$0.00	\$0.00					
PAYMENT HISTORY	Date	Amount	Date	Amount	Date	Amount	Date	Amount
	10/4/2023	1,287.79	4/12/2023	304.96	3/15/2022	296.55	3/31/2021	325.05
	-	-	12/28/2022	304.95	10/13/2021	296.55	12/31/2020	325.05
	-	-	10/4/2022	304.95	10/7/2021	296.55	10/6/2020	325.05
	-	-	6/24/2022	304.95	6/28/2021	296.55	7/13/2020	325.05
	-	-	-	-	-	-	4/13/2020	325.05
	-	-	-	-	-	-	1/10/2020	325.05
	-	-	-	-	-	-	10/7/2019	325.05
	-	-	-	-	-	-	7/9/2019	325.05
	-	-	-	-	-	-	4/8/2019	317.56
	-	-	-	-	-	-	1/10/2019	317.53

I HAVE NO KNOWLEDGE OF ANY OTHER LIENS OUTSTANDING AS OF THIS DATE: 5/16/2024

OTHER UNPAID BALANCES

DESCRIPTION	LAST READ	ACCOUNT #	BALANCE DUE	NOTES
Note:				WATER USE SEE PROVIDENCE

This is to certify that the above is true and correct. Said Certification is given in accordance with 44-7-11 of the General Laws of Rhode Island 1956 as of this day 16-May-2024



City Treasurer
City of Cranston



**Certificate of Municipal Liens
Under 44-7-11 of the
General Laws of Rhode Island
Cranston City Hall
Tax Collections Dept
869 Park Avenue**

**CERTIFICATE NUMBER: 2023-1440155
ISSUED: 16-May-2024**

**TAX RATE SUMMARY
FISCAL YEAR 2023**

Residential:	18.90
Open Space:	18.90
Commercial:	28.35
Industrial:	28.35
Total Value:	\$78,900

I certify from available information that all taxes, assessments and charges now payable that constitute liens as of the date of this certificate on the parcel of real estate specified in your application are listed below.

**TAFT & MCSALLY
21 GARDEN CITY DR
CRANSTON RI 02920**

Parcel Id: 018-0798-000
Location: WARREN AVENUE
Acreage: .34176
Legal Reference: 6714-132
Assessed Owner(s): CARMINE L DUVA REVOCABLE TRUST
CUNNIFF ROBERT E ESTATE
Current Owner: CARMINE L DUVA REVOCABLE TRUST
CUNNIFF ROBERT E ESTATE

2023 Bill #0418090001 2022 Bill #0418090001 2021 Bill #0418090001 Prior to 2021

ASSESSMENTS	2023 Bill #0418090001	2022 Bill #0418090001	2021 Bill #0418090001	Prior to 2021				
Gross Tax	\$1,491.21	\$1,460.44	\$1,420.20	\$9,636.59				
Net Tax	\$1,491.21	\$1,460.44	\$1,420.20	\$9,636.59				
Total Net	\$1,491.21	\$1,460.44	\$1,420.20	\$9,636.59				
PAYMENTS								
Tax Payments	\$1,491.21	\$1,460.44	\$1,420.20	\$9,636.59				
OTHER								
Net Q1 RE Tax Due: 17-Jul-2023	\$372.80	\$365.11	\$355.05	\$2,409.13				
Net Q2 RE Tax Due: 16-Oct-2023	\$372.80	\$365.11	\$355.05	\$2,409.13				
Net Q3 RE Tax Due: 16-Jan-2024	\$372.80	\$365.11	\$355.05	\$2,409.13				
Net Q4 RE Tax Due: 15-Apr-2024	\$372.81	\$365.11	\$355.05	\$2,409.20				
UNPAID TAXES								
TOTAL UNPAID TAXES (PER DIEM)	\$0.00	\$0.00	\$0.00					
PAYMENT HISTORY	Date	Amount	Date	Amount	Date	Amount	Date	Amount
	3/7/2024	372.81	10/19/2022	1,095.33	3/7/2024	.05	4/14/2021	388.94
	1/12/2024	372.80	7/18/2022	365.11	4/7/2022	355.00	1/19/2021	388.91
	10/18/2023	372.80		-	1/6/2022	355.05	10/16/2020	388.91
	7/18/2023	372.80		-	10/20/2021	355.05	7/17/2020	388.91
		-		-	7/15/2021	355.05	4/14/2020	388.94
		-		-		-	1/22/2020	388.91
		-		-		-	10/18/2019	388.91
		-		-		-	7/18/2019	388.91
		-		-		-	4/16/2019	379.93
		-		-		-	1/17/2019	379.93

I HAVE NO KNOWLEDGE OF ANY OTHER LIENS OUTSTANDING AS OF THIS DATE: 5/16/2024

OTHER UNPAID BALANCES

DESCRIPTION	LAST READ	ACCOUNT #	BALANCE DUE	NOTES
Note:				WATER USE SEE PROVIDENCE

This is to certify that the above is true and correct. Said Certification is given in accordance with 44-7-11 of the General Laws of Rhode Island 1956 as of this day 16-May-2024

City Treasurer
 City of Cranston

STORMWATER SITE PLANNING, ANALYSIS AND DESIGN REPORT

FOR

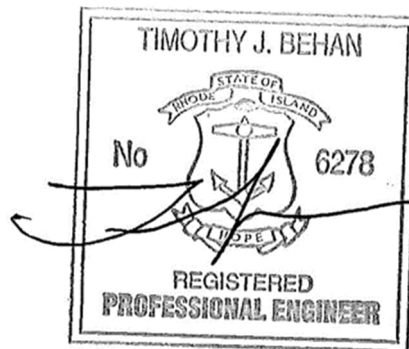
**CALISE DEVELOPMENT, LLC PLAT
WARREN AVENUE
CRANSTON, RI**

OWNER/APPLICANT:

CALISE DEVELOPMENT, LLC

PO BOX 277

GREENVILLE, RI 02828



PREPARED BY:



**COMMONWEALTH
ENGINEERS & CONSULTANTS, INC.**

400 Smith Street
Providence, RI 02908
Tel. (401) 273-6600, Fax (401) 273-6674
www.commonwealth-eng.com

DECEMBER 2024

CEC PROJECT NO. 24049.00

TABLE OF CONTENTS

I-A - GENERAL PROJECT NARRATIVE 2

I-B – PROPOSED STORMWATER COLLECTION AND TREATMENT SYSTEM..... 3

STORMWATER SYSTEM DESIGN:..... 3

CONCLUSION..... 4

APPENDICES:

- A. HYDROCAD PRINT OUTS 1, 10, & 100-YEAR STORMS, EXISTING & PROPOSED HYDROCAD PRINTOUT-1.2” WQV STORM
- B. WATERSHED MAPS
- C. SOIL MAP
- D. TEST PIT LOGS

ATTACHMENTS:

- 1. STORMWATER MANAGEMENT PLAN CHECKLIST AND LID PLANNING REPORT-STORMWATER DESIGN SUMMARY

INTRODUCTION

On behalf of Calise Development, LLC., Commonwealth Engineers & Consultants, Inc. (CEC) has prepared the following Rhode Island Department of Environmental Management (RIDEM) Stormwater Site Planning, Analysis and Design Report for the proposed Calise Development, LLC Plat development on Warren Avenue in Cranston, Rhode Island. This report has been prepared in accordance with the requirements of and guidance provided in the following:

- Rhode Island Stormwater Design and Installation Standards Manual, issued March 2015 (hereinafter referred to as the “RISDISM”),
- RIPDES Construction General Permit.
- RISDISM Stormwater Management Checklist (hereinafter referred to as the “Checklist”)

I-A - General Project Narrative

The following are a general description of the existing conditions on and near the subject parcel, and a detailed description of the proposed development within a portion of same.

General Description of Project: The applicant proposes to develop A.P. 18-4, Lot 714 into a six (6) unit condominium development. Three buildings are proposed with each building having two units and parking spaces for at least 2 vehicles/unit. The project will include a paved private driveway and underground utilities.

Existing Property: The Site, identified as A.P. 18-4 Lot 714, is located on Warren Avenue between Allard Street and Wilbur Avenue. The total size of the lot is 1.46 acres +/- and the proposed limits of disturbance are 1.15 acres +/- . The site is predominately vegetated with lawn & woods and has a paved & gravel driveway (known as Stoneham Court) which provides access to #25 Stoneham Court and #20 & #24 Warren Avenue.

Abutting Properties: The Site is in an A-6 zone in the City of Cranston. This area contains mostly residential lots of approximately 6,000 square feet. The properties surrounding the Site are:

- residential to the south and west
- sparse development to the immediate north with one residential dwelling, and
- bike path to the east.

Natural Resources in the Area: There are no freshwater wetlands in the immediate area.

The subject property is not situated in a sole source aquifer, natural heritage area, groundwater recharge area, well head protection area or groundwater reservoir as depicted on Rhode Island Department of Environmental Management (RIDEM) Geographical Information System.

Flood Zones: The subject property is situated in “Zone X & shaded Zone X” as identified by the Federal Emergency Management Agency map #440007C0426H, effective date October 2, 2015.

Topography: The project site slopes in a generally northwesterly direction, from a localized high point on the southern property boundary (NGVD 88, datum elevation 64 +/-), to the lowest elevation on the parcel (NGVD 88, datum elevation 46 +/-) located at the northwestern corner of the property. The existing topographic contours are depicted on the plans.

Drainage Divides and Soils: The RIDEM GIS map web site indicates the project site is situated in the Pawtuxet River drainage basin. The site is primarily underlain with Hinkley (HkA) soils which are well drained sandy soils. Soil testing was performed on the site to support the stormwater design and the results can be found in the stormwater report.

Stormwater Management System: Management of stormwater runoff from the proposed development has been designed in accordance with the Rhode Island “Stormwater Management Design and Installation Rules” (RISMDIR), latest revision. The stormwater management and treatment systems consist of infiltration chambers and street tree filters. The locations and details of the specific elements of the stormwater management systems are contained in the attached plans.

Wastewater Disposal System: The proposed buildings will be connected to the public sanitary sewer in Warren Avenue.

Potable Water Source: The proposed buildings will be connected to the Kent County Water Authority water system.

Fire Protection: A fire hydrant is proposed on Warren Avenue as required by the City of Cranston Master Plan decision.

Erosion Control Practices: A detailed soil erosion and sedimentation control (SESC) plan sheet has been prepared in conformance with RI Stormwater Handbook and RIDEM RIPDES permit requirements.

I-B – Proposed Stormwater Collection and Treatment system

Stormwater System Design:

The stormwater collection and treatment systems were designed to meet the criteria set forth by RIDEM. The system features the following:

- The minimum standards for Groundwater Recharge, Water Quality Volume, Conveyance and Natural Channel Protection, Overbank Flood Protection, Construction Erosion and Sedimentation Control and Stormwater Management System Operation and Maintenance have been met as well as the additional standards listed in Chapter 3 of RISMDIR.
- The proposed design includes infiltration chambers. The infiltration systems are located a minimum of 4-feet above the estimated seasonal high groundwater. Detailed elevations for the infiltration chamber systems are provided in the construction details sheets of the construction plans.
- Most of the impervious areas (roof tops, driveways and driveway) will discharge to the infiltration area. A small portion of the asphalt driveway area will drain to water quality street tree filters. The Main Infiltration Area will be constructed with ADS StormTech Chambers (171 chambers proposed). The stormwater discharging into the chambers will be pretreated with a sediment forebay.
- The attached HydroCAD analysis reports show that the proposed condition discharge rates and volumes are less than or equal to the existing condition discharge rates and volumes, see summary table below.

TABLE 1: HYDROCAD MODELING SUMMARY TABLE						
AREA 1 - SUMMARY						
	PRE-PROJECT		POST-PROJECT		CHANGE	
	(CFS)	(AC-FT)	(CFS)	(AC-FT)	(CFS)	(AC-FT)
WQ STORM	0.09	0.009	0.06	0.005	-0.03	-0.004
1-YEAR STORM	0.00	0.000	0.00	0.000	-0.00	-0.000
10-YEAR STORM	0.10	0.027	0.09	0.017	-0.01	-0.010
100-YEAR STORM	1.51	0.171	0.90	0.082	-0.61	-0.089

AREA 2 – SUMMARY						
	PRE-PROJECT		POST-PROJECT		CHANGE	
	(CFS)	(AC-FT)	(CFS)	(AC-FT)	(CFS)	(AC-FT)
WQ STORM	0.20	0.018	0.14	0.010	-0.06	-0.008
1-YEAR STORM	0.44	0.032	0.19	0.014	-0.25	-0.018
10-YEAR STORM	0.83	0.078	0.57	0.039	-0.26	-0.039
100-YEAR STORM	1.59	0.217	1.30	0.091	-0.29	-0.126

AREA 3 – SUMMARY						
	PRE-PROJECT		POST-PROJECT		CHANGE	
	(CFS)	(AC-FT)	(CFS)	(AC-FT)	(CFS)	(AC-FT)
WQ STORM	0.20	0.048	0.20	0.047	-0.00	-0.001
1-YEAR STORM	0.16	0.039	0.16	0.039	-0.00	-0.000
10-YEAR STORM	0.68	0.161	0.68	0.158	-0.00	-0.003
100-YEAR STORM	2.47	0.547	2.34	0.522	-0.13	-0.025

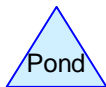
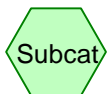
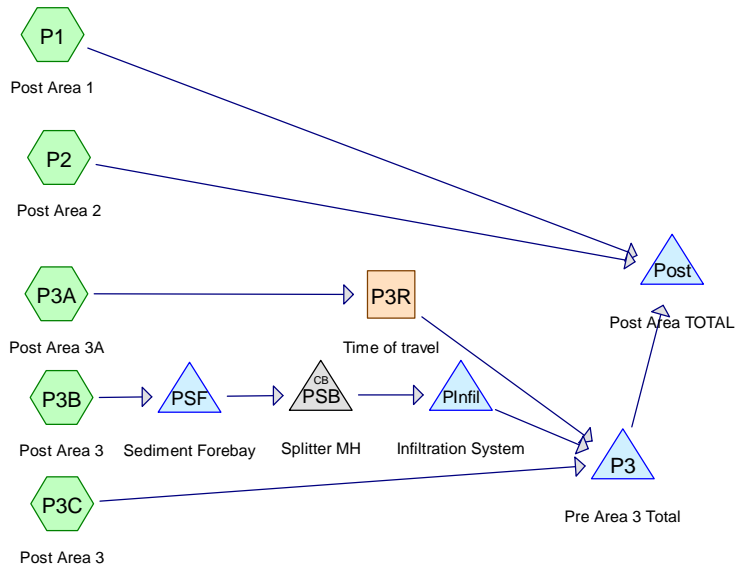
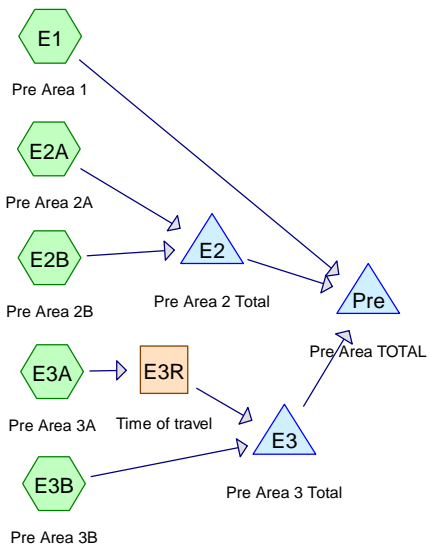
TOTAL OF AREAS 1 THRU 3 - SUMMARY						
	PRE-PROJECT		POST-PROJECT		CHANGE	
	(CFS)	(AC-FT)	(CFS)	(AC-FT)	(CFS)	(AC-FT)
WQ STORM	0.34	0.075	0.26	0.062	-0.08	-0.013
1-YEAR STORM	0.44	0.071	0.19	0.053	-0.25	-0.018
10-YEAR STORM	0.89	0.266	0.76	0.214	-0.13	-0.052
100-YEAR STORM	4.06	0.935	2.67	0.694	-1.39	-0.299

Conclusion

The stormwater collection and treatment system meet the intent of the design criteria set forth by RIDEM. The system will protect the natural resources in the area by providing pollution protection and reduced peak flow rates and volumes.

APPENDIX-A

Proposed Conditions HYDROCAD Printouts 1, 10, 100-Year and WQ Storms



Warren Ave 1 10 100 yr storms 11-23-24

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.290	39	>75% Grass cover, Good, HSG A (E1, E2A, E3A, E3B, P1, P2, P3A, P3B, P3C)
0.200	96	Gravel surface, HSG A (E2B, P3B)
1.990	98	Impervious, HSG A (E1, E2A, E2B, E3A, E3B, P1, P2, P3A, P3B, P3C)
2.360	30	Woods, Good, HSG A (E1, E2A, E3A, E3B, P1, P3A, P3B, P3C)
8.840	51	TOTAL AREA

Warren Ave 1 10 100 yr storms 11-23-24

Type III 24-hr 1-yr Rainfall=2.70"

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Page 3

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Pre Area 1	Runoff Area=1.150 ac 9.57% Impervious Runoff Depth=0.00" Flow Length=450' Tc=13.9 min CN=42 Runoff=0.00 cfs 0.000 af
Subcatchment E2A: Pre Area 2A	Runoff Area=0.720 ac 9.72% Impervious Runoff Depth=0.00" Flow Length=400' Tc=26.3 min CN=41 Runoff=0.00 cfs 0.000 af
Subcatchment E2B: Pre Area 2B	Runoff Area=0.170 ac 23.53% Impervious Runoff Depth=2.26" Tc=5.0 min CN=96 Runoff=0.44 cfs 0.032 af
Subcatchment E3A: Pre Area 3A	Runoff Area=0.780 ac 57.69% Impervious Runoff Depth=0.59" Flow Length=195' Slope=0.0050 1' Tc=73.1 min CN=71 Runoff=0.16 cfs 0.039 af
Subcatchment E3B: Pre Area 3B	Runoff Area=1.600 ac 8.13% Impervious Runoff Depth=0.00" Flow Length=445' Tc=32.1 min CN=40 Runoff=0.00 cfs 0.000 af
Subcatchment P1: Post Area 1	Runoff Area=0.440 ac 13.64% Impervious Runoff Depth=0.01" Flow Length=360' Tc=9.5 min CN=46 Runoff=0.00 cfs 0.000 af
Subcatchment P2: Post Area 2	Runoff Area=0.180 ac 66.67% Impervious Runoff Depth=0.92" Flow Length=150' Tc=5.1 min CN=78 Runoff=0.19 cfs 0.014 af
Subcatchment P3A: Post Area 3A	Runoff Area=0.780 ac 57.69% Impervious Runoff Depth=0.59" Flow Length=195' Slope=0.0050 1' Tc=73.1 min CN=71 Runoff=0.16 cfs 0.039 af
Subcatchment P3B: Post Area 3	Runoff Area=1.610 ac 27.33% Impervious Runoff Depth=0.14" Flow Length=350' Tc=27.5 min CN=56 Runoff=0.05 cfs 0.019 af
Subcatchment P3C: Post Area 3	Runoff Area=1.410 ac 8.51% Impervious Runoff Depth=0.00" Flow Length=435' Tc=31.6 min CN=40 Runoff=0.00 cfs 0.000 af
Reach E3R: Time of travel	Avg. Flow Depth=0.07' Max Vel=0.91 fps Inflow=0.16 cfs 0.039 af n=0.050 L=445.0' S=0.0382 1' Capacity=28.08 cfs Outflow=0.16 cfs 0.039 af
Reach P3R: Time of travel	Avg. Flow Depth=0.07' Max Vel=0.91 fps Inflow=0.16 cfs 0.039 af n=0.050 L=445.0' S=0.0382 1' Capacity=28.08 cfs Outflow=0.16 cfs 0.039 af
Pond E2: Pre Area 2 Total	Inflow=0.44 cfs 0.032 af Primary=0.44 cfs 0.032 af
Pond E3: Pre Area 3 Total	Inflow=0.16 cfs 0.039 af Primary=0.16 cfs 0.039 af
Pond P3: Pre Area 3 Total	Inflow=0.16 cfs 0.039 af Primary=0.16 cfs 0.039 af
Pond PInfil: Infiltration System	Peak Elev=50.00' Storage=0 cf Inflow=0.01 cfs 0.006 af Discarded=0.01 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.006 af

Warren Ave 1 10 100 yr storms 11-23-24

Type III 24-hr 1-yr Rainfall=2.70"

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Page 4

Pond Post: Post Area TOTAL

Inflow=0.19 cfs 0.053 af
Primary=0.19 cfs 0.053 af

Pond Pre: Pre Area TOTAL

Inflow=0.44 cfs 0.071 af
Primary=0.44 cfs 0.071 af

Pond PSB: Splitter MH

Peak Elev=50.65' Inflow=0.01 cfs 0.006 af
Outflow=0.01 cfs 0.006 af

Pond PSF: Sediment Forebay

Peak Elev=50.86' Storage=612 cf Inflow=0.05 cfs 0.019 af
15.0" Round Culvert n=0.012 L=30.0' S=0.0067 '/ Outflow=0.01 cfs 0.006 af

Total Runoff Area = 8.840 ac Runoff Volume = 0.142 af Average Runoff Depth = 0.19"
77.49% Pervious = 6.850 ac 22.51% Impervious = 1.990 ac

Summary for Subcatchment E1: Pre Area 1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.110	98	Impervious, HSG A
0.720	39	>75% Grass cover, Good, HSG A
0.320	30	Woods, Good, HSG A
1.150	42	Weighted Average
1.040		90.43% Pervious Area
0.110		9.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.23		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.30"
5.1	195	0.0650	0.64		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.4	155	0.0150	1.84		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
13.9	450	Total			

Summary for Subcatchment E2A: Pre Area 2A

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.070	98	Impervious, HSG A
0.390	39	>75% Grass cover, Good, HSG A
0.260	30	Woods, Good, HSG A
0.720	41	Weighted Average
0.650		90.28% Pervious Area
0.070		9.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.3	100	0.0700	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	120	0.0780	0.70		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	180	0.0300	2.79		Shallow Concentrated Flow, Shallow Unpaved Kv= 16.1 fps
26.3	400	Total			

Summary for Subcatchment E2B: Pre Area 2B

Runoff = 0.44 cfs @ 12.07 hrs, Volume= 0.032 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.040	98	Impervious, HSG A
0.130	96	Gravel surface, HSG A
0.170	96	Weighted Average
0.130		76.47% Pervious Area
0.040		23.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Summary for Subcatchment E3A: Pre Area 3A

Runoff = 0.16 cfs @ 13.08 hrs, Volume= 0.039 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.450	98	Impervious, HSG A
0.180	39	>75% Grass cover, Good, HSG A
0.150	30	Woods, Good, HSG A
0.780	71	Weighted Average
0.330		42.31% Pervious Area
0.450		57.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.1	100	0.0050	0.03		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
9.0	95	0.0050	0.18		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
73.1	195	Total			

Summary for Subcatchment E3B: Pre Area 3B

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Warren Ave 1 10 100 yr storms 11-23-24

Type III 24-hr 1-yr Rainfall=2.70"

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Area (ac)	CN	Description
* 0.130	98	Impervious, HSG A
0.850	39	>75% Grass cover, Good, HSG A
0.620	30	Woods, Good, HSG A
1.600	40	Weighted Average
1.470		91.87% Pervious Area
0.130		8.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	100	0.0600	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
7.3	220	0.0400	0.50		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	125	0.0160	1.90		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
32.1	445	Total			

Summary for Subcatchment P1: Post Area 1

Runoff = 0.00 cfs @ 21.84 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.060	98	Impervious, HSG A
0.350	39	>75% Grass cover, Good, HSG A
0.030	30	Woods, Good, HSG A
0.440	46	Weighted Average
0.380		86.36% Pervious Area
0.060		13.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.23		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.30"
0.3	50	0.0400	3.00		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
0.8	30	0.0660	0.64		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.0	180	0.0440	3.15		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
9.5	360	Total			

Summary for Subcatchment P2: Post Area 2

Runoff = 0.19 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.120	98	Impervious, HSG A
0.060	39	>75% Grass cover, Good, HSG A
0.180	78	Weighted Average
0.060		33.33% Pervious Area
0.120		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	25	0.0200	0.09		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 3.30"
0.5	125	0.0350	3.80		Shallow Concentrated Flow, Shallow
					Paved Kv= 20.3 fps
5.1	150	Total			

Summary for Subcatchment P3A: Post Area 3A

Runoff = 0.16 cfs @ 13.08 hrs, Volume= 0.039 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.450	98	Impervious, HSG A
0.180	39	>75% Grass cover, Good, HSG A
0.150	30	Woods, Good, HSG A
0.780	71	Weighted Average
0.330		42.31% Pervious Area
0.450		57.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.1	100	0.0050	0.03		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
9.0	95	0.0050	0.18		Shallow Concentrated Flow, Shallow
					Forest w/Heavy Litter Kv= 2.5 fps
73.1	195	Total			

Summary for Subcatchment P3B: Post Area 3

Runoff = 0.05 cfs @ 12.75 hrs, Volume= 0.019 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.440	98	Impervious, HSG A
0.830	39	>75% Grass cover, Good, HSG A
0.270	30	Woods, Good, HSG A
0.070	96	Gravel surface, HSG A
1.610	56	Weighted Average
1.170		72.67% Pervious Area
0.440		27.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.8	85	0.0350	0.05		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	85	0.0170	1.96		Shallow Concentrated Flow, Shallow
					Grassed Waterway Kv= 15.0 fps
0.7	110	0.0170	2.65		Shallow Concentrated Flow, Shallow
					Paved Kv= 20.3 fps
0.3	70	0.0210	4.22	37.94	Channel Flow, Channel
					Area= 9.0 sf Perim= 20.0' r= 0.45'
					n= 0.030 Earth, grassed & winding
27.5	350	Total			

Summary for Subcatchment P3C: Post Area 3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.70"

Area (ac)	CN	Description
* 0.120	98	Impervious, HSG A
0.730	39	>75% Grass cover, Good, HSG A
0.560	30	Woods, Good, HSG A
1.410	40	Weighted Average
1.290		91.49% Pervious Area
0.120		8.51% Impervious Area

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Type III 24-hr 1-yr Rainfall=2.70"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	100	0.0600	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
6.8	210	0.0430	0.52		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	125	0.0160	1.90		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
31.6	435	Total			

Summary for Reach E3R: Time of travel

Inflow Area = 0.780 ac, 57.69% Impervious, Inflow Depth = 0.59" for 1-yr event
 Inflow = 0.16 cfs @ 13.08 hrs, Volume= 0.039 af
 Outflow = 0.16 cfs @ 13.21 hrs, Volume= 0.039 af, Atten= 2%, Lag= 7.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Max. Velocity= 0.91 fps, Min. Travel Time= 8.1 min
 Avg. Velocity = 0.45 fps, Avg. Travel Time= 16.6 min

Peak Storage= 76 cf @ 13.21 hrs
 Average Depth at Peak Storage= 0.07'
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 28.08 cfs

Custom cross-section, Length= 445.0' Slope= 0.0382 '/'
 Constant n= 0.050 Scattered brush, heavy weeds
 Inlet Invert= 63.00', Outlet Invert= 46.00'



Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	1.00	0.00
5.00	0.00	1.00
7.00	0.00	1.00
12.00	1.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
1.00	7.0	12.2	3,115	28.08

Summary for Reach P3R: Time of travel

Inflow Area = 0.780 ac, 57.69% Impervious, Inflow Depth = 0.59" for 1-yr event
 Inflow = 0.16 cfs @ 13.08 hrs, Volume= 0.039 af
 Outflow = 0.16 cfs @ 13.21 hrs, Volume= 0.039 af, Atten= 2%, Lag= 7.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Max. Velocity= 0.91 fps, Min. Travel Time= 8.1 min
 Avg. Velocity = 0.45 fps, Avg. Travel Time= 16.6 min

Peak Storage= 76 cf @ 13.21 hrs
 Average Depth at Peak Storage= 0.07'
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 28.08 cfs

Custom cross-section, Length= 445.0' Slope= 0.0382 '/'
 Constant n= 0.050 Scattered brush, heavy weeds
 Inlet Invert= 63.00', Outlet Invert= 46.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	1.00	0.00
5.00	0.00	1.00
7.00	0.00	1.00
12.00	1.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
1.00	7.0	12.2	3,115	28.08

Summary for Pond E2: Pre Area 2 Total

Inflow Area = 0.890 ac, 12.36% Impervious, Inflow Depth = 0.43" for 1-yr event
 Inflow = 0.44 cfs @ 12.07 hrs, Volume= 0.032 af
 Primary = 0.44 cfs @ 12.07 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond E3: Pre Area 3 Total

Inflow Area = 2.380 ac, 24.37% Impervious, Inflow Depth = 0.19" for 1-yr event
 Inflow = 0.16 cfs @ 13.21 hrs, Volume= 0.039 af
 Primary = 0.16 cfs @ 13.21 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond P3: Pre Area 3 Total

Inflow Area = 3.800 ac, 26.58% Impervious, Inflow Depth = 0.12" for 1-yr event
 Inflow = 0.16 cfs @ 13.21 hrs, Volume= 0.039 af
 Primary = 0.16 cfs @ 13.21 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond Plnfil: Infiltration System

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth > 0.04" for 1-yr event
 Inflow = 0.01 cfs @ 20.24 hrs, Volume= 0.006 af
 Outflow = 0.01 cfs @ 20.24 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 20.24 hrs, Volume= 0.006 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 50.00' @ 0.00 hrs Surf.Area= 4,362 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (1,325.7 - 1,325.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	50.00'	2,527 cf	64.83'W x 67.28'L x 2.33'H Field A 10,178 cf Overall - 2,521 cf Embedded = 7,657 cf x 33.0% Voids
#2A	50.50'	2,521 cf	ADS StormTech SC-310 +Cap x 171 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 171 Chambers in 19 Rows
		5,048 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	52.20'	Custom Weir, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 4.00 4.00
#2	Discarded	50.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 20.24 hrs HW=50.00' (Free Discharge)

↳ **2=Exfiltration** (Passes 0.00 cfs of 0.84 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=0.00' (Dynamic Tailwater)

↳ **1=Custom Weir** (Controls 0.00 cfs)

Summary for Pond Post: Post Area TOTAL

Inflow Area = 4.420 ac, 26.92% Impervious, Inflow Depth = 0.14" for 1-yr event
 Inflow = 0.19 cfs @ 12.08 hrs, Volume= 0.053 af
 Primary = 0.19 cfs @ 12.08 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond Pre: Pre Area TOTAL

Inflow Area = 4.420 ac, 18.10% Impervious, Inflow Depth = 0.19" for 1-yr event
 Inflow = 0.44 cfs @ 12.07 hrs, Volume= 0.071 af
 Primary = 0.44 cfs @ 12.07 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond PSB: Splitter MH

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth > 0.04" for 1-yr event
 Inflow = 0.01 cfs @ 20.24 hrs, Volume= 0.006 af
 Outflow = 0.01 cfs @ 20.24 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.01 cfs @ 20.24 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 50.65' @ 20.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	52.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	50.60'	12.0" Vert. Orifice C= 0.600
#3	Primary	51.35'	12.0" Vert. Orifice C= 0.600

Primary OutFlow Max=0.01 cfs @ 20.24 hrs HW=50.65' TW=50.00' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

↳ **2=Orifice** (Orifice Controls 0.01 cfs @ 0.78 fps)

↳ **3=Orifice** (Controls 0.00 cfs)

Summary for Pond PSF: Sediment Forebay

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth = 0.14" for 1-yr event
 Inflow = 0.05 cfs @ 12.75 hrs, Volume= 0.019 af
 Outflow = 0.01 cfs @ 20.24 hrs, Volume= 0.006 af, Atten= 73%, Lag= 449.5 min
 Primary = 0.01 cfs @ 20.24 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 50.86' @ 20.24 hrs Surf.Area= 645 sf Storage= 612 cf

Plug-Flow detention time= 526.1 min calculated for 0.006 af (30% of inflow)
 Center-of-Mass det. time= 318.5 min (1,325.7 - 1,007.2)

Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	3,011 cf	Swale storage (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
49.00	59	0	0
50.00	339	199	199
50.80	602	376	575
51.00	750	135	711
52.00	1,275	1,013	1,723
53.00	1,300	1,288	3,011

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	15.0" Round Culvert L= 30.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 50.80' / 50.60' S= 0.0067 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.01 cfs @ 20.24 hrs HW=50.86' TW=50.65' (Dynamic Tailwater)
 ↑**1=Culvert** (Outlet Controls 0.01 cfs @ 0.92 fps)

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Pre Area 1	Runoff Area=1.150 ac 9.57% Impervious Runoff Depth=0.29" Flow Length=450' Tc=13.9 min CN=42 Runoff=0.10 cfs 0.027 af
Subcatchment E2A: Pre Area 2A	Runoff Area=0.720 ac 9.72% Impervious Runoff Depth=0.25" Flow Length=400' Tc=26.3 min CN=41 Runoff=0.04 cfs 0.015 af
Subcatchment E2B: Pre Area 2B	Runoff Area=0.170 ac 23.53% Impervious Runoff Depth=4.43" Tc=5.0 min CN=96 Runoff=0.83 cfs 0.063 af
Subcatchment E3A: Pre Area 3A	Runoff Area=0.780 ac 57.69% Impervious Runoff Depth=2.04" Flow Length=195' Slope=0.0050 '/ Tc=73.1 min CN=71 Runoff=0.63 cfs 0.133 af
Subcatchment E3B: Pre Area 3B	Runoff Area=1.600 ac 8.13% Impervious Runoff Depth=0.21" Flow Length=445' Tc=32.1 min CN=40 Runoff=0.05 cfs 0.028 af
Subcatchment P1: Post Area 1	Runoff Area=0.440 ac 13.64% Impervious Runoff Depth=0.46" Flow Length=360' Tc=9.5 min CN=46 Runoff=0.09 cfs 0.017 af
Subcatchment P2: Post Area 2	Runoff Area=0.180 ac 66.67% Impervious Runoff Depth=2.63" Flow Length=150' Tc=5.1 min CN=78 Runoff=0.57 cfs 0.039 af
Subcatchment P3A: Post Area 3A	Runoff Area=0.780 ac 57.69% Impervious Runoff Depth=2.04" Flow Length=195' Slope=0.0050 '/ Tc=73.1 min CN=71 Runoff=0.63 cfs 0.133 af
Subcatchment P3B: Post Area 3	Runoff Area=1.610 ac 27.33% Impervious Runoff Depth=0.99" Flow Length=350' Tc=27.5 min CN=56 Runoff=0.90 cfs 0.133 af
Subcatchment P3C: Post Area 3	Runoff Area=1.410 ac 8.51% Impervious Runoff Depth=0.21" Flow Length=435' Tc=31.6 min CN=40 Runoff=0.05 cfs 0.025 af
Reach E3R: Time of travel	Avg. Flow Depth=0.16' Max Vel=1.43 fps Inflow=0.63 cfs 0.133 af n=0.050 L=445.0' S=0.0382 '/ Capacity=28.08 cfs Outflow=0.63 cfs 0.133 af
Reach P3R: Time of travel	Avg. Flow Depth=0.16' Max Vel=1.43 fps Inflow=0.63 cfs 0.133 af n=0.050 L=445.0' S=0.0382 '/ Capacity=28.08 cfs Outflow=0.63 cfs 0.133 af
Pond E2: Pre Area 2 Total	Inflow=0.83 cfs 0.078 af Primary=0.83 cfs 0.078 af
Pond E3: Pre Area 3 Total	Inflow=0.68 cfs 0.161 af Primary=0.68 cfs 0.161 af
Pond P3: Pre Area 3 Total	Inflow=0.68 cfs 0.158 af Primary=0.68 cfs 0.158 af
Pond PInfil: Infiltration System	Peak Elev=50.00' Storage=0 cf Inflow=0.76 cfs 0.120 af Discarded=0.76 cfs 0.120 af Primary=0.00 cfs 0.000 af Outflow=0.76 cfs 0.120 af

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Type III 24-hr 10-yr Rainfall=4.90"

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Page 16

Pond Post: Post Area TOTAL

Inflow=0.76 cfs 0.214 af
Primary=0.76 cfs 0.214 af

Pond Pre: Pre Area TOTAL

Inflow=0.89 cfs 0.266 af
Primary=0.89 cfs 0.266 af

Pond PSB: Splitter MH

Peak Elev=51.04' Inflow=0.76 cfs 0.120 af
Outflow=0.76 cfs 0.120 af

Pond PSF: Sediment Forebay

Peak Elev=51.29' Storage=950 cf Inflow=0.90 cfs 0.133 af
15.0" Round Culvert n=0.012 L=30.0' S=0.0067 '/ Outflow=0.76 cfs 0.120 af

Total Runoff Area = 8.840 ac Runoff Volume = 0.613 af Average Runoff Depth = 0.83"
77.49% Pervious = 6.850 ac 22.51% Impervious = 1.990 ac

Summary for Subcatchment E1: Pre Area 1

Runoff = 0.10 cfs @ 12.52 hrs, Volume= 0.027 af, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.110	98	Impervious, HSG A
0.720	39	>75% Grass cover, Good, HSG A
0.320	30	Woods, Good, HSG A
1.150	42	Weighted Average
1.040		90.43% Pervious Area
0.110		9.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.23		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 3.30"
5.1	195	0.0650	0.64		Shallow Concentrated Flow, Shallow
					Forest w/Heavy Litter Kv= 2.5 fps
1.4	155	0.0150	1.84		Shallow Concentrated Flow, Shallow
					Grassed Waterway Kv= 15.0 fps
13.9	450	Total			

Summary for Subcatchment E2A: Pre Area 2A

Runoff = 0.04 cfs @ 12.76 hrs, Volume= 0.015 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.070	98	Impervious, HSG A
0.390	39	>75% Grass cover, Good, HSG A
0.260	30	Woods, Good, HSG A
0.720	41	Weighted Average
0.650		90.28% Pervious Area
0.070		9.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.3	100	0.0700	0.07		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	120	0.0780	0.70		Shallow Concentrated Flow, Shallow
					Forest w/Heavy Litter Kv= 2.5 fps
1.1	180	0.0300	2.79		Shallow Concentrated Flow, Shallow
					Unpaved Kv= 16.1 fps
26.3	400	Total			

Summary for Subcatchment E2B: Pre Area 2B

Runoff = 0.83 cfs @ 12.07 hrs, Volume= 0.063 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.040	98	Impervious, HSG A
0.130	96	Gravel surface, HSG A
0.170	96	Weighted Average
0.130		76.47% Pervious Area
0.040		23.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Summary for Subcatchment E3A: Pre Area 3A

Runoff = 0.63 cfs @ 13.00 hrs, Volume= 0.133 af, Depth= 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.450	98	Impervious, HSG A
0.180	39	>75% Grass cover, Good, HSG A
0.150	30	Woods, Good, HSG A
0.780	71	Weighted Average
0.330		42.31% Pervious Area
0.450		57.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.1	100	0.0050	0.03		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
9.0	95	0.0050	0.18		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
73.1	195	Total			

Summary for Subcatchment E3B: Pre Area 3B

Runoff = 0.05 cfs @ 13.09 hrs, Volume= 0.028 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

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Type III 24-hr 10-yr Rainfall=4.90"

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Page 19

Area (ac)	CN	Description
* 0.130	98	Impervious, HSG A
0.850	39	>75% Grass cover, Good, HSG A
0.620	30	Woods, Good, HSG A
1.600	40	Weighted Average
1.470		91.87% Pervious Area
0.130		8.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	100	0.0600	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
7.3	220	0.0400	0.50		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	125	0.0160	1.90		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
32.1	445	Total			

Summary for Subcatchment P1: Post Area 1

Runoff = 0.09 cfs @ 12.34 hrs, Volume= 0.017 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.060	98	Impervious, HSG A
0.350	39	>75% Grass cover, Good, HSG A
0.030	30	Woods, Good, HSG A
0.440	46	Weighted Average
0.380		86.36% Pervious Area
0.060		13.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.23		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.30"
0.3	50	0.0400	3.00		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
0.8	30	0.0660	0.64		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.0	180	0.0440	3.15		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
9.5	360	Total			

Summary for Subcatchment P2: Post Area 2

Runoff = 0.57 cfs @ 12.08 hrs, Volume= 0.039 af, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.120	98	Impervious, HSG A
0.060	39	>75% Grass cover, Good, HSG A
0.180	78	Weighted Average
0.060		33.33% Pervious Area
0.120		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	25	0.0200	0.09		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 3.30"
0.5	125	0.0350	3.80		Shallow Concentrated Flow, Shallow
					Paved Kv= 20.3 fps
5.1	150	Total			

Summary for Subcatchment P3A: Post Area 3A

Runoff = 0.63 cfs @ 13.00 hrs, Volume= 0.133 af, Depth= 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.450	98	Impervious, HSG A
0.180	39	>75% Grass cover, Good, HSG A
0.150	30	Woods, Good, HSG A
0.780	71	Weighted Average
0.330		42.31% Pervious Area
0.450		57.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.1	100	0.0050	0.03		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
9.0	95	0.0050	0.18		Shallow Concentrated Flow, Shallow
					Forest w/Heavy Litter Kv= 2.5 fps
73.1	195	Total			

Summary for Subcatchment P3B: Post Area 3

Runoff = 0.90 cfs @ 12.46 hrs, Volume= 0.133 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.440	98	Impervious, HSG A
0.830	39	>75% Grass cover, Good, HSG A
0.270	30	Woods, Good, HSG A
0.070	96	Gravel surface, HSG A
1.610	56	Weighted Average
1.170		72.67% Pervious Area
0.440		27.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.8	85	0.0350	0.05		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	85	0.0170	1.96		Shallow Concentrated Flow, Shallow
					Grassed Waterway Kv= 15.0 fps
0.7	110	0.0170	2.65		Shallow Concentrated Flow, Shallow
					Paved Kv= 20.3 fps
0.3	70	0.0210	4.22	37.94	Channel Flow, Channel
					Area= 9.0 sf Perim= 20.0' r= 0.45'
					n= 0.030 Earth, grassed & winding
27.5	350	Total			

Summary for Subcatchment P3C: Post Area 3

Runoff = 0.05 cfs @ 13.09 hrs, Volume= 0.025 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (ac)	CN	Description
* 0.120	98	Impervious, HSG A
0.730	39	>75% Grass cover, Good, HSG A
0.560	30	Woods, Good, HSG A
1.410	40	Weighted Average
1.290		91.49% Pervious Area
0.120		8.51% Impervious Area

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Type III 24-hr 10-yr Rainfall=4.90"

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Page 22

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	100	0.0600	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
6.8	210	0.0430	0.52		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	125	0.0160	1.90		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
31.6	435	Total			

Summary for Reach E3R: Time of travel

Inflow Area = 0.780 ac, 57.69% Impervious, Inflow Depth = 2.04" for 10-yr event
 Inflow = 0.63 cfs @ 13.00 hrs, Volume= 0.133 af
 Outflow = 0.63 cfs @ 13.09 hrs, Volume= 0.133 af, Atten= 1%, Lag= 5.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Max. Velocity= 1.43 fps, Min. Travel Time= 5.2 min
 Avg. Velocity= 0.60 fps, Avg. Travel Time= 12.3 min

Peak Storage= 196 cf @ 13.09 hrs
 Average Depth at Peak Storage= 0.16'
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 28.08 cfs

Custom cross-section, Length= 445.0' Slope= 0.0382 '/'
 Constant n= 0.050 Scattered brush, heavy weeds
 Inlet Invert= 63.00', Outlet Invert= 46.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	1.00	0.00
5.00	0.00	1.00
7.00	0.00	1.00
12.00	1.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
1.00	7.0	12.2	3,115	28.08

Summary for Reach P3R: Time of travel

Inflow Area = 0.780 ac, 57.69% Impervious, Inflow Depth = 2.04" for 10-yr event
 Inflow = 0.63 cfs @ 13.00 hrs, Volume= 0.133 af
 Outflow = 0.63 cfs @ 13.09 hrs, Volume= 0.133 af, Atten= 1%, Lag= 5.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Max. Velocity= 1.43 fps, Min. Travel Time= 5.2 min
 Avg. Velocity = 0.60 fps, Avg. Travel Time= 12.3 min

Peak Storage= 196 cf @ 13.09 hrs
 Average Depth at Peak Storage= 0.16'
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 28.08 cfs

Custom cross-section, Length= 445.0' Slope= 0.0382 '/'
 Constant n= 0.050 Scattered brush, heavy weeds
 Inlet Invert= 63.00', Outlet Invert= 46.00'



Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	1.00	0.00
5.00	0.00	1.00
7.00	0.00	1.00
12.00	1.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
1.00	7.0	12.2	3,115	28.08

Summary for Pond E2: Pre Area 2 Total

Inflow Area = 0.890 ac, 12.36% Impervious, Inflow Depth = 1.05" for 10-yr event
 Inflow = 0.83 cfs @ 12.07 hrs, Volume= 0.078 af
 Primary = 0.83 cfs @ 12.07 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond E3: Pre Area 3 Total

Inflow Area = 2.380 ac, 24.37% Impervious, Inflow Depth = 0.81" for 10-yr event
 Inflow = 0.68 cfs @ 13.09 hrs, Volume= 0.161 af
 Primary = 0.68 cfs @ 13.09 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond P3: Pre Area 3 Total

Inflow Area = 3.800 ac, 26.58% Impervious, Inflow Depth = 0.50" for 10-yr event
 Inflow = 0.68 cfs @ 13.09 hrs, Volume= 0.158 af
 Primary = 0.68 cfs @ 13.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond Plnfil: Infiltration System

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth = 0.89" for 10-yr event
 Inflow = 0.76 cfs @ 12.65 hrs, Volume= 0.120 af
 Outflow = 0.76 cfs @ 12.65 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.76 cfs @ 12.65 hrs, Volume= 0.120 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 50.00' @ 12.65 hrs Surf.Area= 4,362 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 0.0 min (946.0 - 945.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	50.00'	2,527 cf	64.83'W x 67.28'L x 2.33'H Field A 10,178 cf Overall - 2,521 cf Embedded = 7,657 cf x 33.0% Voids
#2A	50.50'	2,521 cf	ADS StormTech SC-310 +Cap x 171 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 171 Chambers in 19 Rows
		5,048 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	52.20'	Custom Weir, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 4.00 4.00
#2	Discarded	50.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.84 cfs @ 12.65 hrs HW=50.00' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.84 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=0.00' (Dynamic Tailwater)

↳ **1=Custom Weir** (Controls 0.00 cfs)

Summary for Pond Post: Post Area TOTAL

Inflow Area = 4.420 ac, 26.92% Impervious, Inflow Depth = 0.58" for 10-yr event
 Inflow = 0.76 cfs @ 13.04 hrs, Volume= 0.214 af
 Primary = 0.76 cfs @ 13.04 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond Pre: Pre Area TOTAL

Inflow Area = 4.420 ac, 18.10% Impervious, Inflow Depth = 0.72" for 10-yr event
 Inflow = 0.89 cfs @ 12.07 hrs, Volume= 0.266 af
 Primary = 0.89 cfs @ 12.07 hrs, Volume= 0.266 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond PSB: Splitter MH

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth = 0.89" for 10-yr event
 Inflow = 0.76 cfs @ 12.65 hrs, Volume= 0.120 af
 Outflow = 0.76 cfs @ 12.65 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.76 cfs @ 12.65 hrs, Volume= 0.120 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 51.04' @ 12.65 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	52.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	50.60'	12.0" Vert. Orifice C= 0.600
#3	Primary	51.35'	12.0" Vert. Orifice C= 0.600

Primary OutFlow Max=0.76 cfs @ 12.65 hrs HW=51.04' TW=50.00' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

↳ **2=Orifice** (Orifice Controls 0.76 cfs @ 2.26 fps)

↳ **3=Orifice** (Controls 0.00 cfs)

Summary for Pond PSF: Sediment Forebay

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth = 0.99" for 10-yr event
 Inflow = 0.90 cfs @ 12.46 hrs, Volume= 0.133 af
 Outflow = 0.76 cfs @ 12.65 hrs, Volume= 0.120 af, Atten= 16%, Lag= 11.3 min
 Primary = 0.76 cfs @ 12.65 hrs, Volume= 0.120 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 51.29' @ 12.65 hrs Surf.Area= 902 sf Storage= 950 cf

Plug-Flow detention time= 83.4 min calculated for 0.120 af (90% of inflow)
 Center-of-Mass det. time= 35.3 min (945.9 - 910.7)

Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	3,011 cf	Swale storage (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
49.00	59	0	0
50.00	339	199	199
50.80	602	376	575
51.00	750	135	711
52.00	1,275	1,013	1,723
53.00	1,300	1,288	3,011

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	15.0" Round Culvert L= 30.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 50.80' / 50.60' S= 0.0067 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.76 cfs @ 12.65 hrs HW=51.29' TW=51.04' (Dynamic Tailwater)
 ↑**1=Culvert** (Outlet Controls 0.76 cfs @ 2.52 fps)

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Page 27

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Pre Area 1	Runoff Area=1.150 ac 9.57% Impervious Runoff Depth=1.79" Flow Length=450' Tc=13.9 min CN=42 Runoff=1.51 cfs 0.171 af
Subcatchment E2A: Pre Area 2A	Runoff Area=0.720 ac 9.72% Impervious Runoff Depth=1.68" Flow Length=400' Tc=26.3 min CN=41 Runoff=0.68 cfs 0.101 af
Subcatchment E2B: Pre Area 2B	Runoff Area=0.170 ac 23.53% Impervious Runoff Depth=8.22" Tc=5.0 min CN=96 Runoff=1.50 cfs 0.116 af
Subcatchment E3A: Pre Area 3A	Runoff Area=0.780 ac 57.69% Impervious Runoff Depth=5.19" Flow Length=195' Slope=0.0050 1' Tc=73.1 min CN=71 Runoff=1.65 cfs 0.338 af
Subcatchment E3B: Pre Area 3B	Runoff Area=1.600 ac 8.13% Impervious Runoff Depth=1.57" Flow Length=445' Tc=32.1 min CN=40 Runoff=1.26 cfs 0.209 af
Subcatchment P1: Post Area 1	Runoff Area=0.440 ac 13.64% Impervious Runoff Depth=2.23" Flow Length=360' Tc=9.5 min CN=46 Runoff=0.90 cfs 0.082 af
Subcatchment P2: Post Area 2	Runoff Area=0.180 ac 66.67% Impervious Runoff Depth=6.04" Flow Length=150' Tc=5.1 min CN=78 Runoff=1.30 cfs 0.091 af
Subcatchment P3A: Post Area 3A	Runoff Area=0.780 ac 57.69% Impervious Runoff Depth=5.19" Flow Length=195' Slope=0.0050 1' Tc=73.1 min CN=71 Runoff=1.65 cfs 0.338 af
Subcatchment P3B: Post Area 3	Runoff Area=1.610 ac 27.33% Impervious Runoff Depth=3.39" Flow Length=350' Tc=27.5 min CN=56 Runoff=3.66 cfs 0.455 af
Subcatchment P3C: Post Area 3	Runoff Area=1.410 ac 8.51% Impervious Runoff Depth=1.57" Flow Length=435' Tc=31.6 min CN=40 Runoff=1.12 cfs 0.184 af
Reach E3R: Time of travel	Avg. Flow Depth=0.26' Max Vel=1.89 fps Inflow=1.65 cfs 0.338 af n=0.050 L=445.0' S=0.0382 1' Capacity=28.08 cfs Outflow=1.64 cfs 0.338 af
Reach P3R: Time of travel	Avg. Flow Depth=0.26' Max Vel=1.89 fps Inflow=1.65 cfs 0.338 af n=0.050 L=445.0' S=0.0382 1' Capacity=28.08 cfs Outflow=1.64 cfs 0.338 af
Pond E2: Pre Area 2 Total	Inflow=1.59 cfs 0.217 af Primary=1.59 cfs 0.217 af
Pond E3: Pre Area 3 Total	Inflow=2.47 cfs 0.547 af Primary=2.47 cfs 0.547 af
Pond P3: Pre Area 3 Total	Inflow=2.34 cfs 0.522 af Primary=2.34 cfs 0.522 af
Pond PInfil: Infiltration System	Peak Elev=52.17' Storage=4,815 cf Inflow=3.57 cfs 0.442 af Discarded=0.84 cfs 0.442 af Primary=0.00 cfs 0.000 af Outflow=0.84 cfs 0.442 af

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Type III 24-hr 100-yr Rainfall=8.70"

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Page 28

Pond Post: Post Area TOTAL

Inflow=2.67 cfs 0.694 af
Primary=2.67 cfs 0.694 af

Pond Pre: Pre Area TOTAL

Inflow=4.06 cfs 0.935 af
Primary=4.06 cfs 0.935 af

Pond PSB: Splitter MH

Peak Elev=52.19' Inflow=3.57 cfs 0.442 af
Outflow=3.57 cfs 0.442 af

Pond PSF: Sediment Forebay

Peak Elev=52.21' Storage=1,985 cf Inflow=3.66 cfs 0.455 af
15.0" Round Culvert n=0.012 L=30.0' S=0.0067 '/ Outflow=3.57 cfs 0.442 af

Total Runoff Area = 8.840 ac Runoff Volume = 2.084 af Average Runoff Depth = 2.83"
77.49% Pervious = 6.850 ac 22.51% Impervious = 1.990 ac

Summary for Subcatchment E1: Pre Area 1

Runoff = 1.51 cfs @ 12.22 hrs, Volume= 0.171 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.110	98	Impervious, HSG A
0.720	39	>75% Grass cover, Good, HSG A
0.320	30	Woods, Good, HSG A
1.150	42	Weighted Average
1.040		90.43% Pervious Area
0.110		9.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.23		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.30"
5.1	195	0.0650	0.64		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.4	155	0.0150	1.84		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
13.9	450	Total			

Summary for Subcatchment E2A: Pre Area 2A

Runoff = 0.68 cfs @ 12.45 hrs, Volume= 0.101 af, Depth= 1.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.070	98	Impervious, HSG A
0.390	39	>75% Grass cover, Good, HSG A
0.260	30	Woods, Good, HSG A
0.720	41	Weighted Average
0.650		90.28% Pervious Area
0.070		9.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.3	100	0.0700	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	120	0.0780	0.70		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	180	0.0300	2.79		Shallow Concentrated Flow, Shallow Unpaved Kv= 16.1 fps
26.3	400	Total			

Summary for Subcatchment E2B: Pre Area 2B

Runoff = 1.50 cfs @ 12.07 hrs, Volume= 0.116 af, Depth= 8.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.040	98	Impervious, HSG A
0.130	96	Gravel surface, HSG A
0.170	96	Weighted Average
0.130		76.47% Pervious Area
0.040		23.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Summary for Subcatchment E3A: Pre Area 3A

Runoff = 1.65 cfs @ 12.99 hrs, Volume= 0.338 af, Depth= 5.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.450	98	Impervious, HSG A
0.180	39	>75% Grass cover, Good, HSG A
0.150	30	Woods, Good, HSG A
0.780	71	Weighted Average
0.330		42.31% Pervious Area
0.450		57.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.1	100	0.0050	0.03		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
9.0	95	0.0050	0.18		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
73.1	195	Total			

Summary for Subcatchment E3B: Pre Area 3B

Runoff = 1.26 cfs @ 12.55 hrs, Volume= 0.209 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

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Type III 24-hr 100-yr Rainfall=8.70"

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Area (ac)	CN	Description
* 0.130	98	Impervious, HSG A
0.850	39	>75% Grass cover, Good, HSG A
0.620	30	Woods, Good, HSG A
1.600	40	Weighted Average
1.470		91.87% Pervious Area
0.130		8.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	100	0.0600	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
7.3	220	0.0400	0.50		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	125	0.0160	1.90		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
32.1	445	Total			

Summary for Subcatchment P1: Post Area 1

Runoff = 0.90 cfs @ 12.15 hrs, Volume= 0.082 af, Depth= 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.060	98	Impervious, HSG A
0.350	39	>75% Grass cover, Good, HSG A
0.030	30	Woods, Good, HSG A
0.440	46	Weighted Average
0.380		86.36% Pervious Area
0.060		13.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.23		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.30"
0.3	50	0.0400	3.00		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
0.8	30	0.0660	0.64		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.0	180	0.0440	3.15		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
9.5	360	Total			

Summary for Subcatchment P2: Post Area 2

Runoff = 1.30 cfs @ 12.07 hrs, Volume= 0.091 af, Depth= 6.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.120	98	Impervious, HSG A
0.060	39	>75% Grass cover, Good, HSG A
0.180	78	Weighted Average
0.060		33.33% Pervious Area
0.120		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	25	0.0200	0.09		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 3.30"
0.5	125	0.0350	3.80		Shallow Concentrated Flow, Shallow
					Paved Kv= 20.3 fps
5.1	150	Total			

Summary for Subcatchment P3A: Post Area 3A

Runoff = 1.65 cfs @ 12.99 hrs, Volume= 0.338 af, Depth= 5.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.450	98	Impervious, HSG A
0.180	39	>75% Grass cover, Good, HSG A
0.150	30	Woods, Good, HSG A
0.780	71	Weighted Average
0.330		42.31% Pervious Area
0.450		57.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.1	100	0.0050	0.03		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
9.0	95	0.0050	0.18		Shallow Concentrated Flow, Shallow
					Forest w/Heavy Litter Kv= 2.5 fps
73.1	195	Total			

Summary for Subcatchment P3B: Post Area 3

Runoff = 3.66 cfs @ 12.40 hrs, Volume= 0.455 af, Depth= 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.440	98	Impervious, HSG A
0.830	39	>75% Grass cover, Good, HSG A
0.270	30	Woods, Good, HSG A
0.070	96	Gravel surface, HSG A
1.610	56	Weighted Average
1.170		72.67% Pervious Area
0.440		27.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.8	85	0.0350	0.05		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	85	0.0170	1.96		Shallow Concentrated Flow, Shallow
					Grassed Waterway Kv= 15.0 fps
0.7	110	0.0170	2.65		Shallow Concentrated Flow, Shallow
					Paved Kv= 20.3 fps
0.3	70	0.0210	4.22	37.94	Channel Flow, Channel
					Area= 9.0 sf Perim= 20.0' r= 0.45'
					n= 0.030 Earth, grassed & winding
27.5	350	Total			

Summary for Subcatchment P3C: Post Area 3

Runoff = 1.12 cfs @ 12.54 hrs, Volume= 0.184 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.70"

Area (ac)	CN	Description
* 0.120	98	Impervious, HSG A
0.730	39	>75% Grass cover, Good, HSG A
0.560	30	Woods, Good, HSG A
1.410	40	Weighted Average
1.290		91.49% Pervious Area
0.120		8.51% Impervious Area

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Type III 24-hr 100-yr Rainfall=8.70"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	100	0.0600	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
6.8	210	0.0430	0.52		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	125	0.0160	1.90		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
31.6	435	Total			

Summary for Reach E3R: Time of travel

Inflow Area = 0.780 ac, 57.69% Impervious, Inflow Depth = 5.19" for 100-yr event
 Inflow = 1.65 cfs @ 12.99 hrs, Volume= 0.338 af
 Outflow = 1.64 cfs @ 13.02 hrs, Volume= 0.338 af, Atten= 0%, Lag= 1.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Max. Velocity= 1.89 fps, Min. Travel Time= 3.9 min
 Avg. Velocity = 0.76 fps, Avg. Travel Time= 9.8 min

Peak Storage= 387 cf @ 13.02 hrs
 Average Depth at Peak Storage= 0.26'
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 28.08 cfs

Custom cross-section, Length= 445.0' Slope= 0.0382 '/'
 Constant n= 0.050 Scattered brush, heavy weeds
 Inlet Invert= 63.00', Outlet Invert= 46.00'



Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	1.00	0.00
5.00	0.00	1.00
7.00	0.00	1.00
12.00	1.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
1.00	7.0	12.2	3,115	28.08

Summary for Reach P3R: Time of travel

Inflow Area = 0.780 ac, 57.69% Impervious, Inflow Depth = 5.19" for 100-yr event
 Inflow = 1.65 cfs @ 12.99 hrs, Volume= 0.338 af
 Outflow = 1.64 cfs @ 13.02 hrs, Volume= 0.338 af, Atten= 0%, Lag= 1.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Max. Velocity= 1.89 fps, Min. Travel Time= 3.9 min
 Avg. Velocity = 0.76 fps, Avg. Travel Time= 9.8 min

Peak Storage= 387 cf @ 13.02 hrs
 Average Depth at Peak Storage= 0.26'
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 28.08 cfs

Custom cross-section, Length= 445.0' Slope= 0.0382 '/'
 Constant n= 0.050 Scattered brush, heavy weeds
 Inlet Invert= 63.00', Outlet Invert= 46.00'



Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	1.00	0.00
5.00	0.00	1.00
7.00	0.00	1.00
12.00	1.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
1.00	7.0	12.2	3,115	28.08

Summary for Pond E2: Pre Area 2 Total

Inflow Area = 0.890 ac, 12.36% Impervious, Inflow Depth = 2.93" for 100-yr event
 Inflow = 1.59 cfs @ 12.07 hrs, Volume= 0.217 af
 Primary = 1.59 cfs @ 12.07 hrs, Volume= 0.217 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond E3: Pre Area 3 Total

Inflow Area = 2.380 ac, 24.37% Impervious, Inflow Depth = 2.76" for 100-yr event
 Inflow = 2.47 cfs @ 12.77 hrs, Volume= 0.547 af
 Primary = 2.47 cfs @ 12.77 hrs, Volume= 0.547 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond P3: Pre Area 3 Total

Inflow Area = 3.800 ac, 26.58% Impervious, Inflow Depth = 1.65" for 100-yr event
 Inflow = 2.34 cfs @ 12.80 hrs, Volume= 0.522 af
 Primary = 2.34 cfs @ 12.80 hrs, Volume= 0.522 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond Plnfil: Infiltration System

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth = 3.29" for 100-yr event
 Inflow = 3.57 cfs @ 12.50 hrs, Volume= 0.442 af
 Outflow = 0.84 cfs @ 12.15 hrs, Volume= 0.442 af, Atten= 77%, Lag= 0.0 min
 Discarded = 0.84 cfs @ 12.15 hrs, Volume= 0.442 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 52.17' @ 13.28 hrs Surf.Area= 4,362 sf Storage= 4,815 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 49.0 min (940.5 - 891.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	50.00'	2,527 cf	64.83'W x 67.28'L x 2.33'H Field A 10,178 cf Overall - 2,521 cf Embedded = 7,657 cf x 33.0% Voids
#2A	50.50'	2,521 cf	ADS StormTech SC-310 +Cap x 171 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 171 Chambers in 19 Rows
		5,048 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	52.20'	Custom Weir, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 4.00 4.00
#2	Discarded	50.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.84 cfs @ 12.15 hrs HW=50.03' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.84 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=0.00' (Dynamic Tailwater)

↳ **1=Custom Weir** (Controls 0.00 cfs)

Summary for Pond Post: Post Area TOTAL

Inflow Area = 4.420 ac, 26.92% Impervious, Inflow Depth = 1.89" for 100-yr event
 Inflow = 2.67 cfs @ 12.75 hrs, Volume= 0.694 af
 Primary = 2.67 cfs @ 12.75 hrs, Volume= 0.694 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond Pre: Pre Area TOTAL

Inflow Area = 4.420 ac, 18.10% Impervious, Inflow Depth = 2.54" for 100-yr event
 Inflow = 4.06 cfs @ 12.46 hrs, Volume= 0.935 af
 Primary = 4.06 cfs @ 12.46 hrs, Volume= 0.935 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond PSB: Splitter MH

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth = 3.29" for 100-yr event
 Inflow = 3.57 cfs @ 12.50 hrs, Volume= 0.442 af
 Outflow = 3.57 cfs @ 12.50 hrs, Volume= 0.442 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.57 cfs @ 12.50 hrs, Volume= 0.442 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 52.19' @ 13.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	52.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	50.60'	12.0" Vert. Orifice C= 0.600
#3	Primary	51.35'	12.0" Vert. Orifice C= 0.600

Primary OutFlow Max=3.57 cfs @ 12.50 hrs HW=51.73' TW=50.98' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

↳ **2=Orifice** (Orifice Controls 3.00 cfs @ 3.82 fps)

↳ **3=Orifice** (Orifice Controls 0.57 cfs @ 2.09 fps)

Summary for Pond PSF: Sediment Forebay

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth = 3.39" for 100-yr event
 Inflow = 3.66 cfs @ 12.40 hrs, Volume= 0.455 af
 Outflow = 3.57 cfs @ 12.50 hrs, Volume= 0.442 af, Atten= 3%, Lag= 5.9 min
 Primary = 3.57 cfs @ 12.50 hrs, Volume= 0.442 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 52.21' @ 13.26 hrs Surf.Area= 1,280 sf Storage= 1,985 cf

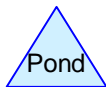
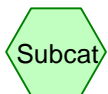
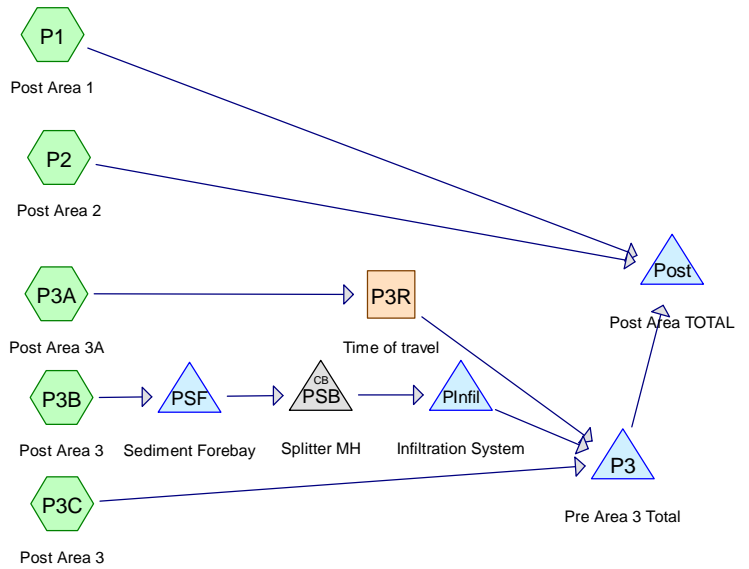
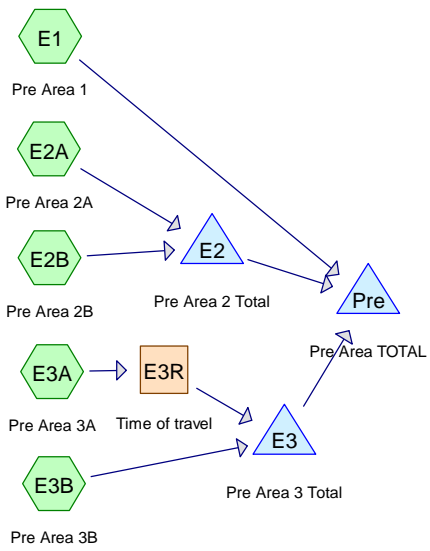
Plug-Flow detention time= 37.3 min calculated for 0.442 af (97% of inflow)
 Center-of-Mass det. time= 21.0 min (891.5 - 870.5)

Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	3,011 cf	Swale storage (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
49.00	59	0	0
50.00	339	199	199
50.80	602	376	575
51.00	750	135	711
52.00	1,275	1,013	1,723
53.00	1,300	1,288	3,011

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	15.0" Round Culvert L= 30.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 50.80' / 50.60' S= 0.0067 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.58 cfs @ 12.50 hrs HW=52.10' TW=51.73' (Dynamic Tailwater)
 ↑**1=Culvert** (Outlet Controls 3.58 cfs @ 3.49 fps)



Warren Ave 1.2 inch storm 11-23-24

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.290	39	>75% Grass cover, Good, HSG A (E1, E2A, E3A, E3B, P1, P2, P3A, P3B, P3C)
0.200	96	Gravel surface, HSG A (E2B, P3B)
1.990	98	Impervious, HSG A (E1, E2A, E2B, E3A, E3B, P1, P2, P3A, P3B, P3C)
2.360	30	Woods, Good, HSG A (E1, E2A, E3A, E3B, P1, P3A, P3B, P3C)
8.840	51	TOTAL AREA

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Type III 24-hr WQV Rainfall=1.20"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Pre Area 1 Runoff Area=1.150 ac 9.57% Impervious Runoff Depth=0.09"
Flow Length=450' Tc=13.9 min CN=36/98 Runoff=0.09 cfs 0.009 af

Subcatchment E2A: Pre Area 2A Runoff Area=0.720 ac 9.72% Impervious Runoff Depth=0.10"
Flow Length=400' Tc=26.3 min CN=35/98 Runoff=0.05 cfs 0.006 af

Subcatchment E2B: Pre Area 2B Runoff Area=0.170 ac 23.53% Impervious Runoff Depth=0.85"
Tc=5.0 min CN=96/98 Runoff=0.17 cfs 0.012 af

Subcatchment E3A: Pre Area 3A Runoff Area=0.780 ac 57.69% Impervious Runoff Depth=0.57"
Flow Length=195' Slope=0.0050 1/1 Tc=73.1 min CN=35/98 Runoff=0.18 cfs 0.037 af

Subcatchment E3B: Pre Area 3B Runoff Area=1.600 ac 8.13% Impervious Runoff Depth=0.08"
Flow Length=445' Tc=32.1 min CN=35/98 Runoff=0.08 cfs 0.011 af

Subcatchment P1: Post Area 1 Runoff Area=0.440 ac 13.64% Impervious Runoff Depth=0.13"
Flow Length=360' Tc=9.5 min CN=38/98 Runoff=0.06 cfs 0.005 af

Subcatchment P2: Post Area 2 Runoff Area=0.180 ac 66.67% Impervious Runoff Depth=0.66"
Flow Length=150' Tc=5.1 min CN=39/98 Runoff=0.14 cfs 0.010 af

Subcatchment P3A: Post Area 3A Runoff Area=0.780 ac 57.69% Impervious Runoff Depth=0.57"
Flow Length=195' Slope=0.0050 1/1 Tc=73.1 min CN=35/98 Runoff=0.18 cfs 0.037 af

Subcatchment P3B: Post Area 3 Runoff Area=1.610 ac 27.33% Impervious Runoff Depth=0.27"
Flow Length=350' Tc=27.5 min CN=40/98 Runoff=0.29 cfs 0.036 af

Subcatchment P3C: Post Area 3 Runoff Area=1.410 ac 8.51% Impervious Runoff Depth=0.08"
Flow Length=435' Tc=31.6 min CN=35/98 Runoff=0.07 cfs 0.010 af

Reach E3R: Time of travel Avg. Flow Depth=0.08' Max Vel=0.95 fps Inflow=0.18 cfs 0.037 af
n=0.050 L=445.0' S=0.0382 1/1 Capacity=28.08 cfs Outflow=0.17 cfs 0.037 af

Reach P3R: Time of travel Avg. Flow Depth=0.08' Max Vel=0.95 fps Inflow=0.18 cfs 0.037 af
n=0.050 L=445.0' S=0.0382 1/1 Capacity=28.08 cfs Outflow=0.17 cfs 0.037 af

Pond E2: Pre Area 2 Total Inflow=0.20 cfs 0.018 af
Primary=0.20 cfs 0.018 af

Pond E3: Pre Area 3 Total Inflow=0.20 cfs 0.048 af
Primary=0.20 cfs 0.048 af

Pond P3: Pre Area 3 Total Inflow=0.20 cfs 0.047 af
Primary=0.20 cfs 0.047 af

Pond PInfil: Infiltration System Peak Elev=50.00' Storage=0 cf Inflow=0.19 cfs 0.023 af
Discarded=0.19 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.023 af

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Type III 24-hr WQV Rainfall=1.20"

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Page 4

Pond Post: Post Area TOTAL

Inflow=0.26 cfs 0.062 af
Primary=0.26 cfs 0.062 af

Pond Pre: Pre Area TOTAL

Inflow=0.34 cfs 0.075 af
Primary=0.34 cfs 0.075 af

Pond PSB: Splitter MH

Peak Elev=50.81' Inflow=0.19 cfs 0.023 af
Outflow=0.19 cfs 0.023 af

Pond PSF: Sediment Forebay

Peak Elev=51.03' Storage=732 cf Inflow=0.29 cfs 0.036 af
15.0" Round Culvert n=0.012 L=30.0' S=0.0067 '/ Outflow=0.19 cfs 0.023 af

Total Runoff Area = 8.840 ac Runoff Volume = 0.172 af Average Runoff Depth = 0.23"
77.49% Pervious = 6.850 ac 22.51% Impervious = 1.990 ac

Summary for Subcatchment E1: Pre Area 1

Runoff = 0.09 cfs @ 12.18 hrs, Volume= 0.009 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.110	98	Impervious, HSG A
0.720	39	>75% Grass cover, Good, HSG A
0.320	30	Woods, Good, HSG A
1.150	42	Weighted Average
1.040	36	90.43% Pervious Area
0.110	98	9.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.23		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 3.30"
5.1	195	0.0650	0.64		Shallow Concentrated Flow, Shallow
					Forest w/Heavy Litter Kv= 2.5 fps
1.4	155	0.0150	1.84		Shallow Concentrated Flow, Shallow
					Grassed Waterway Kv= 15.0 fps
13.9	450	Total			

Summary for Subcatchment E2A: Pre Area 2A

Runoff = 0.05 cfs @ 12.36 hrs, Volume= 0.006 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.070	98	Impervious, HSG A
0.390	39	>75% Grass cover, Good, HSG A
0.260	30	Woods, Good, HSG A
0.720	41	Weighted Average
0.650	35	90.28% Pervious Area
0.070	98	9.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.3	100	0.0700	0.07		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
2.9	120	0.0780	0.70		Shallow Concentrated Flow, Shallow
					Forest w/Heavy Litter Kv= 2.5 fps
1.1	180	0.0300	2.79		Shallow Concentrated Flow, Shallow
					Unpaved Kv= 16.1 fps
26.3	400	Total			

Summary for Subcatchment E2B: Pre Area 2B

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.040	98	Impervious, HSG A
0.130	96	Gravel surface, HSG A
0.170	96	Weighted Average
0.130	96	76.47% Pervious Area
0.040	98	23.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

Summary for Subcatchment E3A: Pre Area 3A

Runoff = 0.18 cfs @ 12.92 hrs, Volume= 0.037 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.450	98	Impervious, HSG A
0.180	39	>75% Grass cover, Good, HSG A
0.150	30	Woods, Good, HSG A
0.780	71	Weighted Average
0.330	35	42.31% Pervious Area
0.450	98	57.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.1	100	0.0050	0.03		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
9.0	95	0.0050	0.18		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
73.1	195	Total			

Summary for Subcatchment E3B: Pre Area 3B

Runoff = 0.08 cfs @ 12.44 hrs, Volume= 0.011 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

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Type III 24-hr WQV Rainfall=1.20"

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Area (ac)	CN	Description
* 0.130	98	Impervious, HSG A
0.850	39	>75% Grass cover, Good, HSG A
0.620	30	Woods, Good, HSG A
1.600	40	Weighted Average
1.470	35	91.87% Pervious Area
0.130	98	8.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	100	0.0600	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
7.3	220	0.0400	0.50		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	125	0.0160	1.90		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
32.1	445	Total			

Summary for Subcatchment P1: Post Area 1

Runoff = 0.06 cfs @ 12.13 hrs, Volume= 0.005 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.060	98	Impervious, HSG A
0.350	39	>75% Grass cover, Good, HSG A
0.030	30	Woods, Good, HSG A
0.440	46	Weighted Average
0.380	38	86.36% Pervious Area
0.060	98	13.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.23		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.30"
0.3	50	0.0400	3.00		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
0.8	30	0.0660	0.64		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.0	180	0.0440	3.15		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
9.5	360	Total			

Warren Ave 1.2 inch storm 11-23-24

Type III 24-hr WQV Rainfall=1.20"

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Page 8

Summary for Subcatchment P2: Post Area 2

Runoff = 0.14 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.120	98	Impervious, HSG A
0.060	39	>75% Grass cover, Good, HSG A
0.180	78	Weighted Average
0.060	39	33.33% Pervious Area
0.120	98	66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	25	0.0200	0.09		Sheet Flow, Sheet
					Grass: Dense n= 0.240 P2= 3.30"
0.5	125	0.0350	3.80		Shallow Concentrated Flow, Shallow
					Paved Kv= 20.3 fps
5.1	150	Total			

Summary for Subcatchment P3A: Post Area 3A

Runoff = 0.18 cfs @ 12.92 hrs, Volume= 0.037 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.450	98	Impervious, HSG A
0.180	39	>75% Grass cover, Good, HSG A
0.150	30	Woods, Good, HSG A
0.780	71	Weighted Average
0.330	35	42.31% Pervious Area
0.450	98	57.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.1	100	0.0050	0.03		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
9.0	95	0.0050	0.18		Shallow Concentrated Flow, Shallow
					Forest w/Heavy Litter Kv= 2.5 fps
73.1	195	Total			

Summary for Subcatchment P3B: Post Area 3

Runoff = 0.29 cfs @ 12.37 hrs, Volume= 0.036 af, Depth= 0.27"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.440	98	Impervious, HSG A
0.830	39	>75% Grass cover, Good, HSG A
0.270	30	Woods, Good, HSG A
0.070	96	Gravel surface, HSG A
1.610	56	Weighted Average
1.170	40	72.67% Pervious Area
0.440	98	27.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.8	85	0.0350	0.05		Sheet Flow, Sheet
					Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	85	0.0170	1.96		Shallow Concentrated Flow, Shallow
					Grassed Waterway Kv= 15.0 fps
0.7	110	0.0170	2.65		Shallow Concentrated Flow, Shallow
					Paved Kv= 20.3 fps
0.3	70	0.0210	4.22	37.94	Channel Flow, Channel
					Area= 9.0 sf Perim= 20.0' r= 0.45'
					n= 0.030 Earth, grassed & winding
27.5	350	Total			

Summary for Subcatchment P3C: Post Area 3

Runoff = 0.07 cfs @ 12.40 hrs, Volume= 0.010 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (ac)	CN	Description
* 0.120	98	Impervious, HSG A
0.730	39	>75% Grass cover, Good, HSG A
0.560	30	Woods, Good, HSG A
1.410	40	Weighted Average
1.290	35	91.49% Pervious Area
0.120	98	8.51% Impervious Area

Warren Ave 1.2 inch storm 11-23-24

Type III 24-hr WQV Rainfall=1.20"

Prepared by HP Inc.

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	100	0.0600	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 3.30"
6.8	210	0.0430	0.52		Shallow Concentrated Flow, Shallow Forest w/Heavy Litter Kv= 2.5 fps
1.1	125	0.0160	1.90		Shallow Concentrated Flow, Shallow Grassed Waterway Kv= 15.0 fps
31.6	435	Total			

Summary for Reach E3R: Time of travel

Inflow Area = 0.780 ac, 57.69% Impervious, Inflow Depth = 0.57" for WQV event
 Inflow = 0.18 cfs @ 12.92 hrs, Volume= 0.037 af
 Outflow = 0.17 cfs @ 13.03 hrs, Volume= 0.037 af, Atten= 2%, Lag= 6.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Max. Velocity= 0.95 fps, Min. Travel Time= 7.8 min
 Avg. Velocity = 0.37 fps, Avg. Travel Time= 19.8 min

Peak Storage= 81 cf @ 13.03 hrs
 Average Depth at Peak Storage= 0.08'
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 28.08 cfs

Custom cross-section, Length= 445.0' Slope= 0.0382 '/'
 Constant n= 0.050 Scattered brush, heavy weeds
 Inlet Invert= 63.00', Outlet Invert= 46.00'



Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	1.00	0.00
5.00	0.00	1.00
7.00	0.00	1.00
12.00	1.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
1.00	7.0	12.2	3,115	28.08

Summary for Reach P3R: Time of travel

Inflow Area = 0.780 ac, 57.69% Impervious, Inflow Depth = 0.57" for WQV event
 Inflow = 0.18 cfs @ 12.92 hrs, Volume= 0.037 af
 Outflow = 0.17 cfs @ 13.03 hrs, Volume= 0.037 af, Atten= 2%, Lag= 6.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Max. Velocity= 0.95 fps, Min. Travel Time= 7.8 min
 Avg. Velocity = 0.37 fps, Avg. Travel Time= 19.8 min

Peak Storage= 81 cf @ 13.03 hrs
 Average Depth at Peak Storage= 0.08'
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 28.08 cfs

Custom cross-section, Length= 445.0' Slope= 0.0382 '/'
 Constant n= 0.050 Scattered brush, heavy weeds
 Inlet Invert= 63.00', Outlet Invert= 46.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	1.00	0.00
5.00	0.00	1.00
7.00	0.00	1.00
12.00	1.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	2.0	0	0.00
1.00	7.0	12.2	3,115	28.08

Summary for Pond E2: Pre Area 2 Total

Inflow Area = 0.890 ac, 12.36% Impervious, Inflow Depth = 0.24" for WQV event
 Inflow = 0.20 cfs @ 12.08 hrs, Volume= 0.018 af
 Primary = 0.20 cfs @ 12.08 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond E3: Pre Area 3 Total

Inflow Area = 2.380 ac, 24.37% Impervious, Inflow Depth = 0.24" for WQV event
 Inflow = 0.20 cfs @ 12.93 hrs, Volume= 0.048 af
 Primary = 0.20 cfs @ 12.93 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond P3: Pre Area 3 Total

Inflow Area = 3.800 ac, 26.58% Impervious, Inflow Depth = 0.15" for WQV event
 Inflow = 0.20 cfs @ 12.93 hrs, Volume= 0.047 af
 Primary = 0.20 cfs @ 12.93 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond Plnfil: Infiltration System

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth > 0.17" for WQV event
 Inflow = 0.19 cfs @ 12.64 hrs, Volume= 0.023 af
 Outflow = 0.19 cfs @ 12.64 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.19 cfs @ 12.64 hrs, Volume= 0.023 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 50.00' @ 0.00 hrs Surf.Area= 4,362 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 0.0 min (914.1 - 914.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	50.00'	2,527 cf	64.83'W x 67.28'L x 2.33'H Field A 10,178 cf Overall - 2,521 cf Embedded = 7,657 cf x 33.0% Voids
#2A	50.50'	2,521 cf	ADS StormTech SC-310 +Cap x 171 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 171 Chambers in 19 Rows
		5,048 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	52.20'	Custom Weir, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 4.00 4.00
#2	Discarded	50.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.64 hrs HW=50.00' (Free Discharge)

↳ **2=Exfiltration** (Passes 0.00 cfs of 0.84 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=0.00' (Dynamic Tailwater)

↳ **1=Custom Weir** (Controls 0.00 cfs)

Summary for Pond Post: Post Area TOTAL

Inflow Area = 4.420 ac, 26.92% Impervious, Inflow Depth = 0.17" for WQV event
 Inflow = 0.26 cfs @ 12.09 hrs, Volume= 0.062 af
 Primary = 0.26 cfs @ 12.09 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond Pre: Pre Area TOTAL

Inflow Area = 4.420 ac, 18.10% Impervious, Inflow Depth = 0.20" for WQV event
 Inflow = 0.34 cfs @ 12.10 hrs, Volume= 0.075 af
 Primary = 0.34 cfs @ 12.10 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Summary for Pond PSB: Splitter MH

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth > 0.17" for WQV event
 Inflow = 0.19 cfs @ 12.64 hrs, Volume= 0.023 af
 Outflow = 0.19 cfs @ 12.64 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.19 cfs @ 12.64 hrs, Volume= 0.023 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 50.81' @ 12.64 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	52.20'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	50.60'	12.0" Vert. Orifice C= 0.600
#3	Primary	51.35'	12.0" Vert. Orifice C= 0.600

Primary OutFlow Max=0.19 cfs @ 12.64 hrs HW=50.81' TW=50.00' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

↳ **2=Orifice** (Orifice Controls 0.19 cfs @ 1.56 fps)

↳ **3=Orifice** (Controls 0.00 cfs)

Summary for Pond PSF: Sediment Forebay

Inflow Area = 1.610 ac, 27.33% Impervious, Inflow Depth = 0.27" for WQV event
 Inflow = 0.29 cfs @ 12.37 hrs, Volume= 0.036 af
 Outflow = 0.19 cfs @ 12.64 hrs, Volume= 0.023 af, Atten= 34%, Lag= 16.3 min
 Primary = 0.19 cfs @ 12.64 hrs, Volume= 0.023 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 51.03' @ 12.64 hrs Surf.Area= 765 sf Storage= 732 cf

Plug-Flow detention time= 212.5 min calculated for 0.023 af (63% of inflow)
 Center-of-Mass det. time= 112.1 min (914.1 - 802.0)

Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	3,011 cf	Swale storage (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
49.00	59	0	0
50.00	339	199	199
50.80	602	376	575
51.00	750	135	711
52.00	1,275	1,013	1,723
53.00	1,300	1,288	3,011

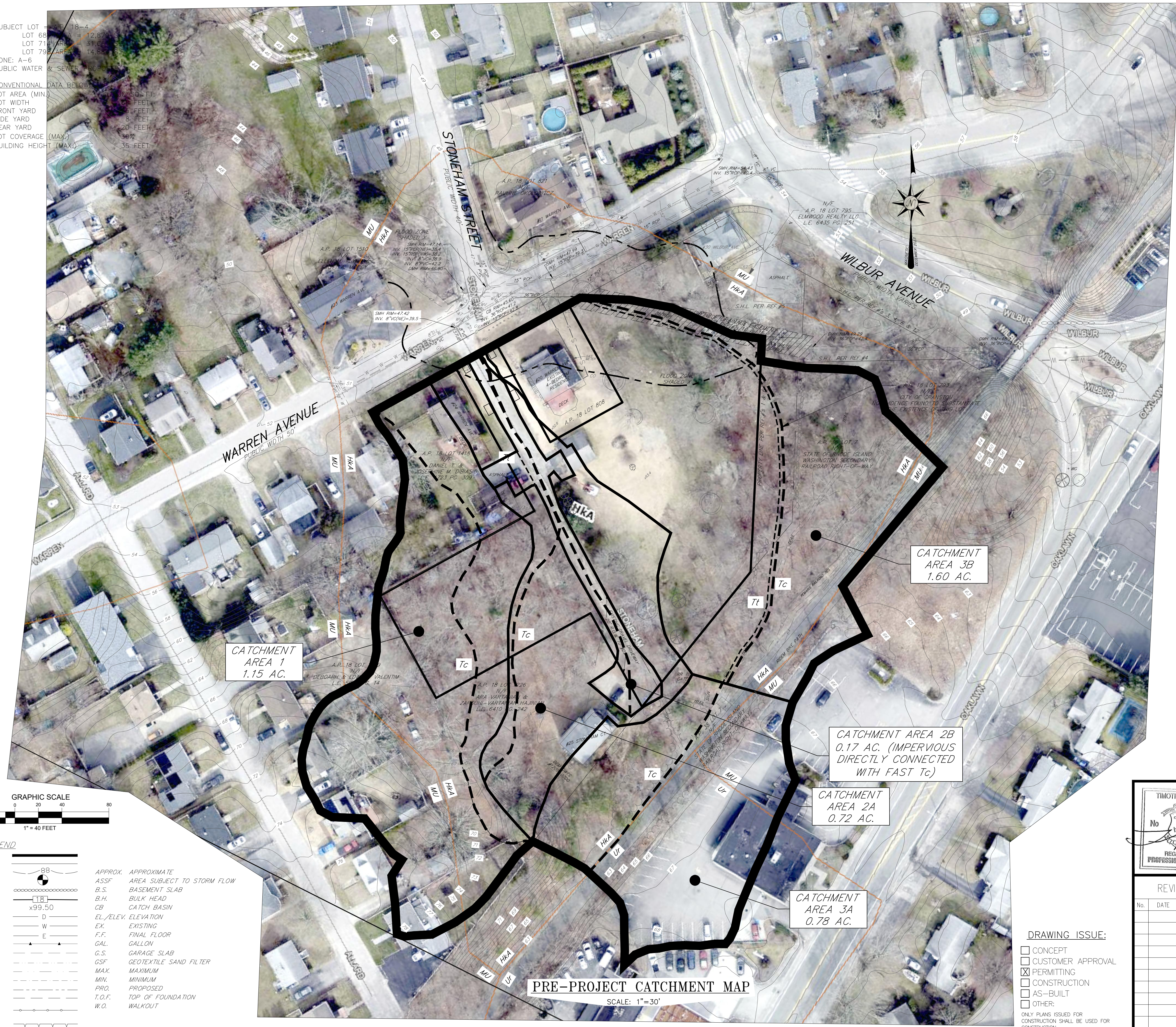
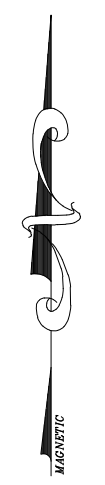
Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	15.0" Round Culvert L= 30.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 50.80' / 50.60' S= 0.0067 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.19 cfs @ 12.64 hrs HW=51.03' TW=50.81' (Dynamic Tailwater)
 ↑**1=Culvert** (Outlet Controls 0.19 cfs @ 1.87 fps)

APPENDIX-B
WATERSHED MAPS

SUBJECT LOT 18-4
 LOT 68 AREA = 12,870 SQ. FT.
 LOT 714 AREA = 31,670 SQ. FT.
 LOT 798 AREA = 14,880 SQ. FT.
 ZONE: A-6
 PUBLIC WATER & SEWER PROVISIONS

CONVENTIONAL DATA BELOW
 LOT AREA (MIN.) 10,500 SQ. FT.
 LOT WIDTH 60 FEET
 FRONT YARD 35 FEET
 SIDE YARD 8 FEET
 REAR YARD 20 FEET
 LOT COVERAGE (MAX.) 50%
 BUILDING HEIGHT (MAX.) 35 FEET



CATCHMENT AREA 3B
1.60 AC.

CATCHMENT AREA 1
1.15 AC.

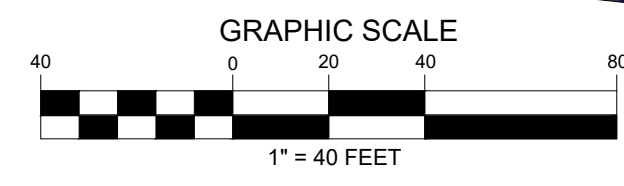
CATCHMENT AREA 2B
0.17 AC. (IMPERVIOUS DIRECTLY CONNECTED WITH FAST Tc)

CATCHMENT AREA 2A
0.72 AC.

CATCHMENT AREA 3A
0.78 AC.

PRE-PROJECT CATCHMENT MAP

SCALE: 1"=30'



LEGEND

- LOT LINE
 - ABUTTER LINE
 - EXISTING CONTOUR
 - TEST HOLE
 - STONEWALL
 - PROPOSED CONTOUR
 - PROPOSED SPOT GRADE
 - DRAIN LINE
 - WATER LINE
 - ELECTRIC LINE
 - WETLAND EDGE
 - 50' PERIMETER WETLAND
 - STREAM
 - 100' RIVERBANK WETLAND
 - 100-YEAR FLOOD PLAIN
 - EASEMENT LINE
 - BUILDING SETBACK LINE
 - COMPOST FILTER SOCK & LIMIT OF DISTURBANCE
 - RETAINING WALL
- APPROX. APPROXIMATE
 - ASSF AREA SUBJECT TO STORM FLOW
 - B.S. BASEMENT SLAB
 - B.H. BULK HEAD
 - CB CATCH BASIN
 - EL./ELEV. ELEVATION
 - E.K. EXISTING
 - F.F. FINAL FLOOR
 - GAL. GALLON
 - G.S. GARAGE SLAB
 - G.S.F. GEOTEXTILE SAND FILTER
 - MAX. MAXIMUM
 - MIN. MINIMUM
 - PRO. PROPOSED
 - T.O.F. TOP OF FOUNDATION
 - W.O. WALKOUT

DRAWING ISSUE:

- CONCEPT
 - CUSTOMER APPROVAL
 - PERMITTING
 - CONSTRUCTION
 - AS-BUILT
 - OTHER:
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

TIMOTHY J. BEHAN
 No. 6278
 REGISTERED PROFESSIONAL ENGINEER

REVISIONS			
No.	DATE	DRWN	CHKD

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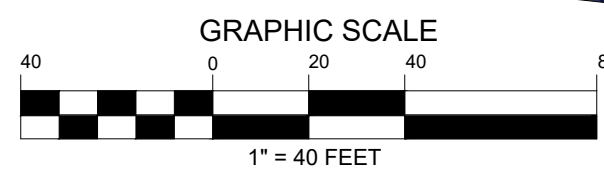
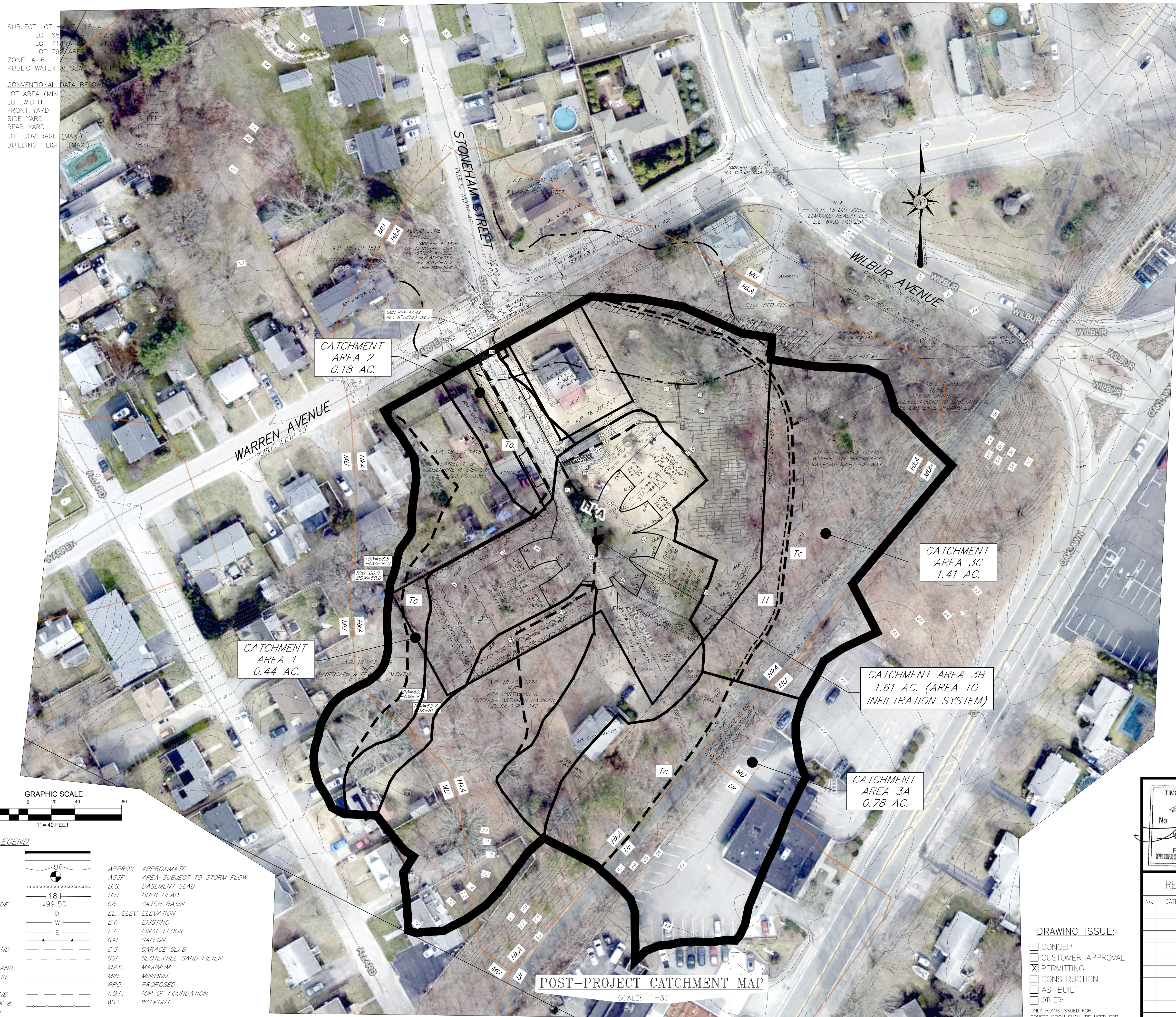
PRE-PROJECT CATCHMENT MAP
 CALISE DEVELOPMENT LLC PLAT
 for
 A.P. 18-4 LOT 714
 WARREN AVENUE
 in
 CRANSTON, RHODE ISLAND

SCALE: AS SHOWN	SHEET NO.: 1 of 1
DRAWN BY: TB	DESIGN BY: TB
DATE: 11/10/24	CHECKED BY: TB
PROJECT NO.: 24049.00	

PREPARED FOR:
 CALISE DEVELOPMENT, LLC
 PO BOX 277
 GREENVILLE, RI 02828

SUBJECT LOT 18-4
 LOT 68 AREA = 12.87 AC.
 LOT 714 AREA = 31.67 AC.
 LOT 798 AREA = 14.81 AC.
 ZONE: A-6
 PUBLIC WATER & SEWER PROVISIONS

CONVENTIONAL DATA BELOW
 LOT AREA (MIN.) 10,500 SQ. FT.
 LOT WIDTH 60 FEET
 FRONT YARD 35 FEET
 SIDE YARD 8 FEET
 REAR YARD 20 FEET
 LOT COVERAGE (MAX.) 50%
 BUILDING HEIGHT (MAX.) 35 FEET



LEGEND

- | | | | |
|--|--------|---------------------|----------------------------|
| LOT LINE | --- | APPROX. APPROXIMATE | --- |
| ABUTTER LINE | --- | ASSF | AREA SUBJECT TO STORM FLOW |
| EXISTING CONTOUR | --- | B.S. | BASEMENT SLAB |
| TEST HOLE | ⊙ | B.H. | BULK HEAD |
| STONEWALL | ⊓ | CB | CATCH BASIN |
| PROPOSED CONTOUR | --- | EL./ELEV. | ELEVATION |
| PROPOSED SPOT GRADE | x99.50 | E.K. | EXISTING |
| DRAIN LINE | D | F.F. | FINAL FLOOR |
| WATER LINE | W | GAL. | GALLON |
| ELECTRIC LINE | E | G.S. | GARAGE SLAB |
| WETLAND EDGE | ▲ | GSF | GEOTEXTILE SAND FILTER |
| 50' PERIMETER WETLAND | --- | MAX. | MAXIMUM |
| STREAM | --- | MIN. | MINIMUM |
| 100' RIVERBANK WETLAND | --- | PRO. | PROPOSED |
| 100-YEAR FLOOD PLAIN | --- | T.O.F. | TOP OF FOUNDATION |
| EASEMENT LINE | --- | W.O. | WALKOUT |
| BUILDING SETBACK LINE | --- | | |
| COMPOST FILTER SOCK & LIMIT OF DISTURBANCE | --- | | |
| RETAINING WALL | --- | | |

POST-PROJECT CATCHMENT MAP
 SCALE: 1" = 30'

- DRAWING ISSUE:
- CONCEPT
 - CUSTOMER APPROVAL
 - PERMITTING
 - CONSTRUCTION
 - AS-BUILT
 - OTHER:
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

TIMOTHY J. BEHAN
 No. 6278
 REGISTERED PROFESSIONAL ENGINEER

REVISIONS			
No.	DATE	DRWN	CHKD

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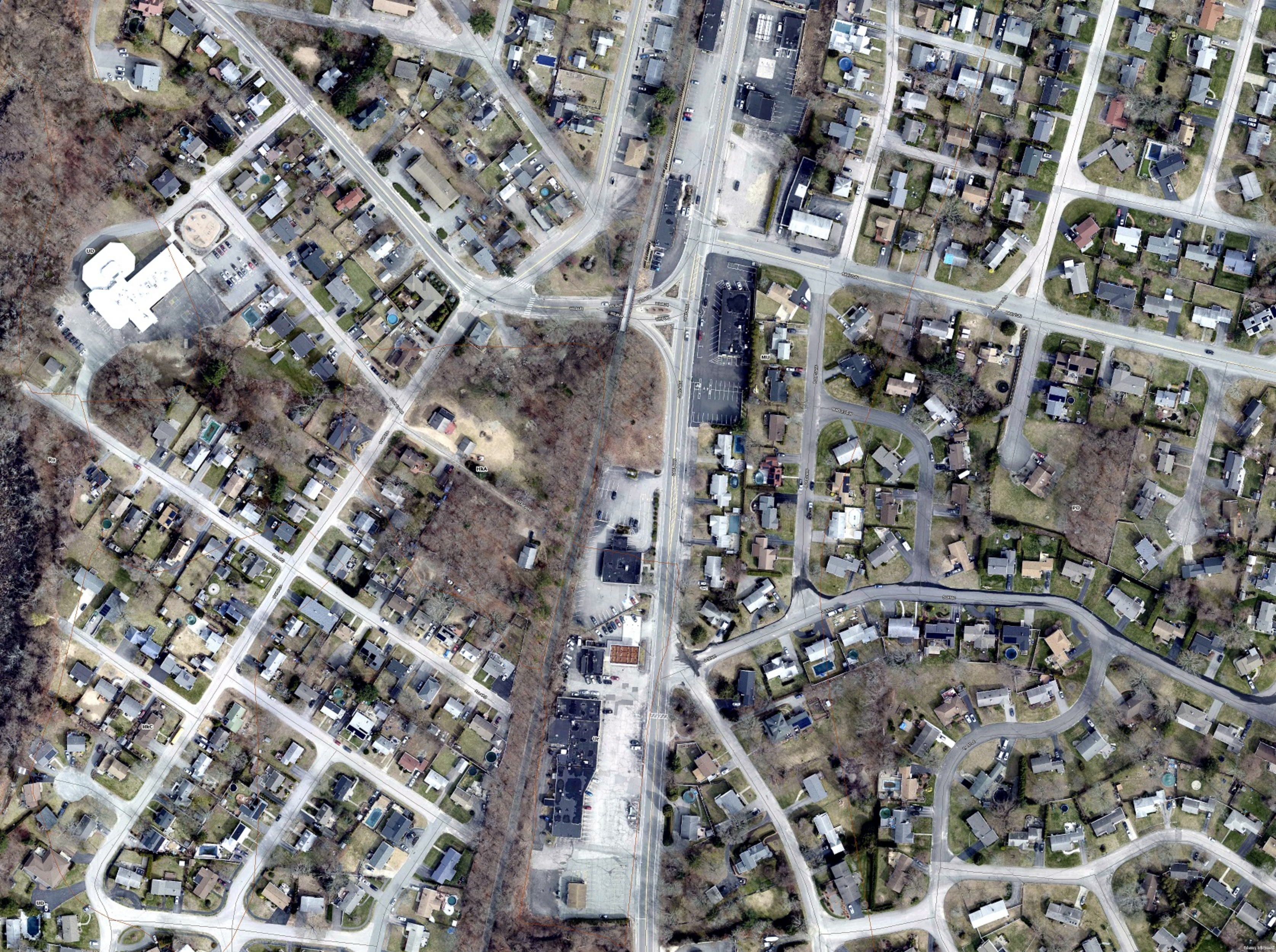
POST-PROJECT CATCHMENT MAP
 CALISE DEVELOPMENT LLC PLAT
 for
 A.P. 18-4 LOT 714
 WARREN AVENUE
 in
 CRANSTON, RHODE ISLAND

SCALE: AS SHOWN	SHEET NO: 1 of 1
DRAWN BY: TB	DESIGN BY: TB
DATE: 11/10/24	CHECKED BY: TB
PROJECT NO.: 24049.00	

PREPARED FOR:
 CALISE DEVELOPMENT, LLC
 PO BOX 277
 GREENVILLE, RI 02828

APPENDIX-C

SOILS MAP



APPENDIX-D
SOIL PIT LOGS



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management

Office of Water Resources



Site Evaluation Form
Part A - Soil Profile Description

Application Number Drainage

Property Owner: Calise Development, LLC

Property Location: Warren Avenue, AP 18 Lot 714, Cranston

Date of Test Hole: March 22, 2024

Soil Evaluator: Kevin Fetzer License Number: D-4029

Weather: Sunny Shaded: Yes [X] No [] Time: 0900

Table with 12 columns: TH Horizon, Depth, Horizon Boundaries (Dist, Topo), Soil Colors (Matrix, Re-Dox Features), Re-Dox Description (Ab., S., Con.), Texture, Structure, Consistence, in/hr ft/min. Contains two soil profile sections (TH 1 and TH 2) with multiple horizons.

Soil Class: Aeolian over Outwash Total Depth of each Test Hole: 96" - 108"

Depth to Groundwater Seepage: SE-1 = 38" SE-2 44" Depth to Impervious or Limiting Layer: None Encountered

Estimated Seasonal High Water Table: SE-1 = 32" SE-2 38" Comments: Base of Hill - Low elevation - evidence of flooding

Pipes read 3/24, 3/25 & 3/26. Evidence of groundwater at the surface of pipes following rainfall.

Readings: 3/24 SE-1 @ 28" SE-2 @ 27" : 3/25 SE-1 @ 48" SE-2 @ 32" : 3/26 SE-1 @ 39" SE-2 @ 37"



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management

Office of Water Resources



Site Evaluation Form
Part A - Soil Profile Description

Application Number Drainage

Property Owner: Calise Development, LLC

Property Location: Warren Avenue, AP 18 Lot 714, Cranston

Date of Test Hole: March 22, 2024

Soil Evaluator: Kevin Fetzer License Number: D-4029

Weather: Sunny Shaded: Yes [X] No [] Time: 0900

Table with 12 columns: TH Horizon, Depth, Horizon Boundaries (Dist, Topo), Soil Colors (Matrix, Re-Dox Features), Re-Dox Description (Ab., S., Con.), Texture, Structure, Consistence, in/hr ft/min. Contains two soil profile sections (TH 3 and TH 4).

Soil Class: Aeolian over Ice Contact Total Depth of each Test Hole: 144" - 180"

Depth to Groundwater Seepage: SE-3 = 130" : SE-4 @ 170" Depth to Impervious or Limiting Layer: None Encountered

Estimated Seasonal High Water Table: SE-3 = 108" : SE-4 @ 149" Comments: Pipes read on 3/24, 3/25 & 3/26

Readings: 3/24 SE-3 @ 108" SE-4 @ 162" : 3/25 SE-3 @ 108" SE-4 @ 149" : 3/26 SE-3 @ 108" SE-4 @ 149"

Higher elevation on property. Loose gravelly sand parent material.



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management

Office of Water Resources



Site Evaluation Form
Part A - Soil Profile Description

Application Number Drainage

Property Owner: Calise Development, LLC

Property Location: Warren Avenue, AP 18 Lot 714, Cranston

Date of Test Hole: March 22, 2024

Soil Evaluator: Kevin Fetzer License Number: D-4029

Weather: Sunny Shaded: Yes [X] No [] Time: 0900

Table with 12 columns: TH Horizon, Depth, Horizon Boundaries (Dist, Topo), Soil Colors (Matrix, Re-Dox Features), Re-Dox Description (Ab., S., Con.), Texture, Structure, Consistence, in/hr ft/min. Contains data for two soil profiles (TH 5 and TH 6).

Soil Class: Aeolian over Ice Contact Total Depth of each Test Hole: 180" - 160"

Depth to Groundwater Seepage: SE-5 = 160" SE-6 @ 140" Depth to Impervious or Limiting Layer: None Encountered

Estimated Seasonal High Water Table: SE-5 = 140" : SE-6 = 110" Comments: Pipes read 3/24, 3/25 & 3/26.

Readings: 3/24 SE-5 @ 141" SE-6 @ 109" : 3/25 SE-5 @ 140" SE-6 @ 112" : 3/26 SE-5 @ 140" SE-6 @ 110"

Highest elevation on property. Loose gravelly sand parent material.

PRELIMINARY PLAN SUBMISSION

FOR

MAJOR LAND DEVELOPMENT PROJECT

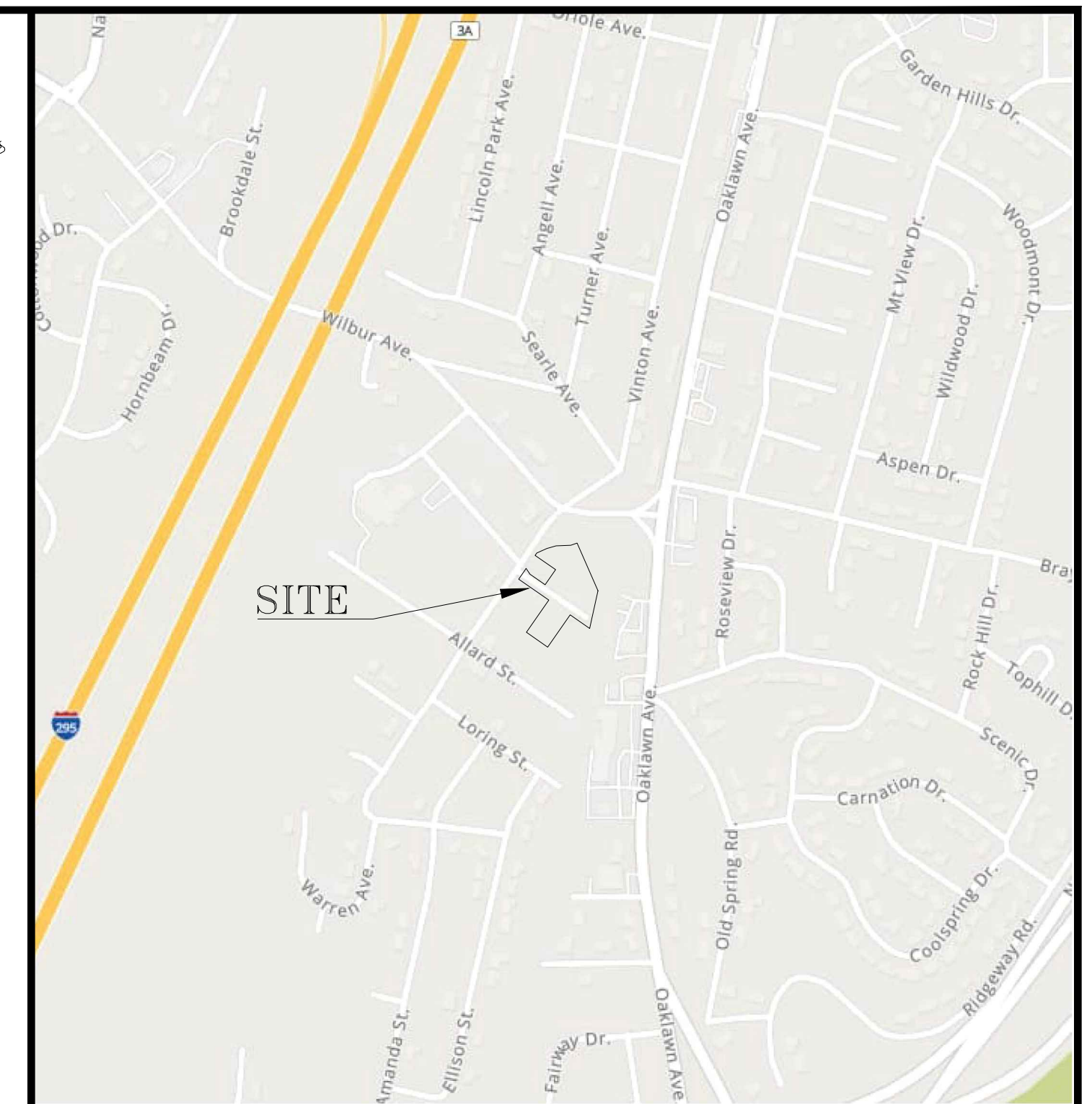
CALISE DEVELOPMENT, LLC PLAT

A.P. 18-4 LOT 714

WARREN AVENUE

in

CRANSTON, RHODE ISLAND



LOCUS MAP

LIST OF DRAWINGS

1. TITLE SHEET
 2. EXISTING CONDITIONS PLAN
 3. PROPOSED LAYOUT PLAN
 4. PROPOSED GRADING/DRAINAGE PLAN
 5. PROPOSED ROAD PLAN/PROFILE
 6. PROPOSED UTILITY PLAN
 7. PROPOSED SOIL EROSION CONTROL PLAN-1
 8. PROPOSED SOIL EROSION CONTROL PLAN-2
 9. PROPOSED DETAILS-1
 10. PROPOSED DETAILS-2
 11. PROPOSED DETAILS-3
 12. PROPOSED DETAILS-4
 13. PROPOSED DETAILS-5
- SHEET 1 OF 1 SURVEY PLAN BY ALPHA ASSOCIATES, LTD

PROJECT DATA

SUBJECT LOT = A.P. 18-4 LOT 714 BK 6709 PG 23
 AREA = 63,530 S.F. (1.458 AC.)
 UPLAND AREA = 63,530 S.F. (1.458 AC.)

ZONE: A-6
 PUBLIC WATER & SEWER PROPOSED

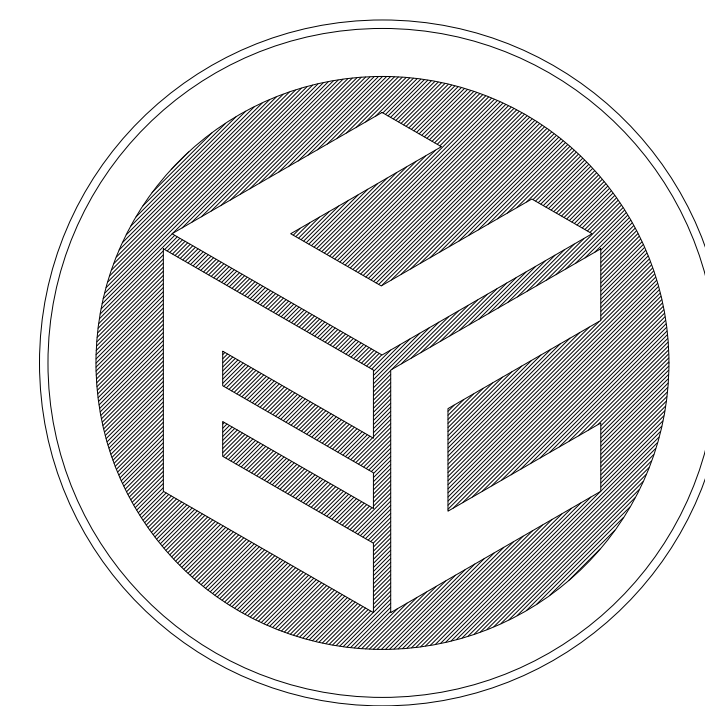
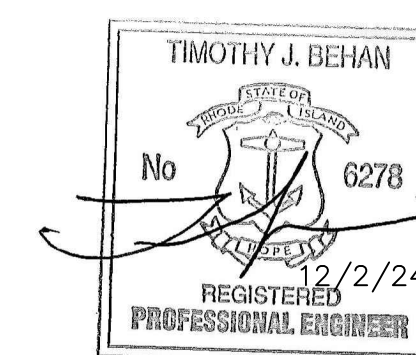
CONVENTIONAL DATA BELOW:

LOT AREA (MIN.)	6,000 SQ. FT.
LOT WIDTH	60 FEET
FRONT YARD	25 FEET
SIDE YARD	8 FEET
REAR YARD	20 FEET
LOT COVERAGE (MAX.)	30%
BUILDING HEIGHT (MAX.)	35 FEET

STATE PERMITS:

1. RIDEM UIC (STORMWATER) PERMIT #XX-XXXX.
2. RIDEM RIPDES PERMIT #RIRXXXXX.

OWNER/APPLICANT:
 CALISE DEVELOPMENT LLC
 P.O. BOX 277
 GREENVILLE, RI 02828
 TELEPHONE: (401) 946-1900



PREPARED BY:
COMMONWEALTH
 ENGINEERS & CONSULTANTS, INC.

 400 SMITH STREET
 PROVIDENCE, RHODE ISLAND 02908
 (401) 273-6600
 DECEMBER 2, 2024

NOTES:

1. THIS IS NOT A SURVEY BOUNDARY PLAN, REFER TO SURVEY PREPARED BY ALPHA ASSOCIATES, LTD IN THIS PLAN SET.
2. THE PARCELS FALL WITHIN ZONES X & SHADED X PER FEMA MAP NUMBER 44007C0426H, EFFECTIVE 10/2/2015.
3. THE ENTIRE PARCEL AND SURROUNDING SITES ARE SOIL CATEGORY 'HKA' HINCKLEY, GRAVELLY SANDY LOAM, 0 TO 3% SLOPES.

DRAWING ISSUE:

- CONCEPT
 - CUSTOMER APPROVAL
 - PERMITTING
 - CONSTRUCTION
 - AS-BUILT
 - OTHER: PRELIM. PLAN
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

LEGEND	
LOT LINE	—————
ABUTTER LINE	—————
EXISTING CONTOUR	——— 88 ———
TEST HOLE	⊙
STONEWALL	⊖
PROPOSED CONTOUR	——— 18 ———
PROPOSED SPOT GRADE	x99.50
DRAIN LINE	— D —
SEWER LINE	— S —
WATER LINE	— W —
ELECTRIC LINE	— E —
WETLAND EDGE	———
50' PERIMETER WETLAND STREAM	———
100' RIVERBANK WETLAND	———
100-YEAR FLOOD PLAIN	———
EASEMENT LINE	———
BUILDING SETBACK LINE	———
RETAINING WALL	———
APPROX. AREA SUBJECT TO STORM FLOW	ASSF
B.S. BASEMENT SLAB	B.S.
B.H. BULK HEAD	B.H.
CB CATCH BASIN	CB
EL./ELEV. ELEVATION	EL./ELEV.
EXISTING	EX.
FINAL FLOOR	F.F.
GALLON	GAL.
GARAGE SLAB	G.S.
GEOTEXTILE SAND FILTER	GSF
MAXIMUM	MAX.
MINIMUM	MIN.
PROPOSED	PRO.
TOP OF FOUNDATION	T.O.F.
WALKOUT	W.O.

SUBJECT LOT = A.P. 18-4 LOT 714 BK 6709 PG 23
 AREA = 63,530 S.F. (1,458 AC.)
 UPLAND AREA = 63,530 S.F. (1,458 AC.)

ZONE: A-6
 PUBLIC WATER & SEWER PROPOSED

CONVENTIONAL DATA BELOW:
 LOT AREA (MIN.) 6,000 SQ. FT.
 LOT WIDTH 60 FEET
 FRONT YARD 25 FEET
 SIDE YARD 8 FEET
 REAR YARD 20 FEET
 LOT COVERAGE (MAX.) 30%
 BUILDING HEIGHT (MAX.) 35 FEET

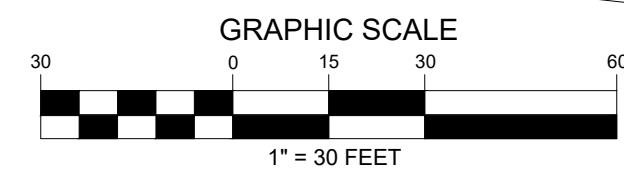
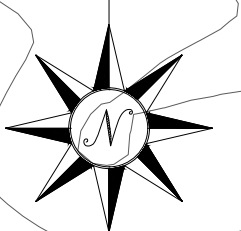
WARREN AVENUE
 PUBLIC WIDTH 50'

STONEHAM STREET
 PUBLIC WIDTH 40'

WILBUR AVENUE
 PUBLIC WIDTH VARIES

FOR BOUNDARY SURVEY
 REFER TO SURVEY PLAN
 AT THE REAR OF THIS
 PLAN SET

A.P. 18 LOT 714
 N/F
 CALISE DEVELOPMENT, LLC
 L.E. 6709 PG 23
 AREA=63,530 S.F.



LEGEND

- | | | | |
|--|--------|--------------|--|
| LOT LINE | --- | APPROX. ASSF | APPROXIMATE AREA SUBJECT TO STORM FLOW |
| ABUTTER LINE | --- | B.S. | BASEMENT SLAB |
| EXISTING CONTOUR | --- | B.H. | BULK HEAD |
| TEST HOLE | ⊙ | BFP | BACK FLOW PREVENTER |
| STONEWALL | ⊞ | CO | CLEAN OUT |
| PROPOSED CONTOUR | --- | CB | CATCH BASIN |
| PROPOSED SPOT GRADE | x99.50 | EL./ELEV. | ELEVATION |
| DRAIN LINE | D | EX | EXISTING |
| WATER LINE | W | F.F. | FINAL FLOOR |
| ELECTRIC LINE | E | GAL. | GALLON |
| WETLAND EDGE | ▲ | G.S. | GARAGE SLAB |
| 50' PERIMETER WETLAND | ▲ | G.S.F. | GEOTEXTILE SAND FILTER |
| STREAM | --- | MAX. | MAXIMUM |
| 100' RIVERBANK WETLAND | --- | MIN. | MINIMUM |
| 100-YEAR FLOOD PLAIN | --- | PRO. | PROPOSED |
| EASEMENT LINE | --- | T.O.F. | TOP OF FOUNDATION |
| BUILDING SETBACK LINE | --- | W.O. | WALKOUT |
| COMPOST FILTER SOCK & LIMIT OF DISTURBANCE | --- | | |
| RETAINING WALL | --- | | |

- DRAWING ISSUE:
- CONCEPT
 - CUSTOMER APPROVAL
 - CONSTRUCTION
 - AS-BUILT
 - OTHER:
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

TIMOTHY J. BEHAN
 No. 6278
 REGISTERED PROFESSIONAL ENGINEER
 12/24

REVISIONS			
No.	DATE	DRWN	CHKD

COMMONWEALTH
 ENGINEERS & CONSULTANTS, INC.
 400 SMITH STREET
 PROVIDENCE, RHODE ISLAND 02908
 401-273-6600

EXISTING CONDITIONS PLAN
 CALISE DEVELOPMENT LLC PLAT
 for
 A.P. 18-4 LOT 714
 WARREN AVENUE
 in
 CRANSTON, RHODE ISLAND

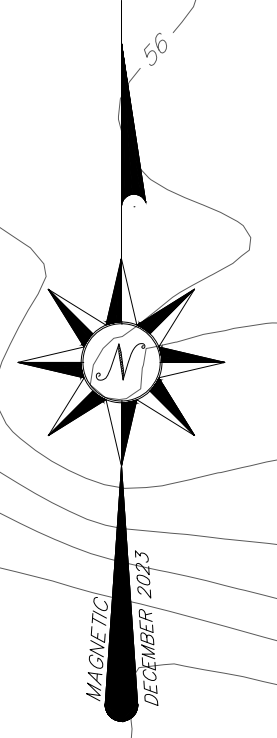
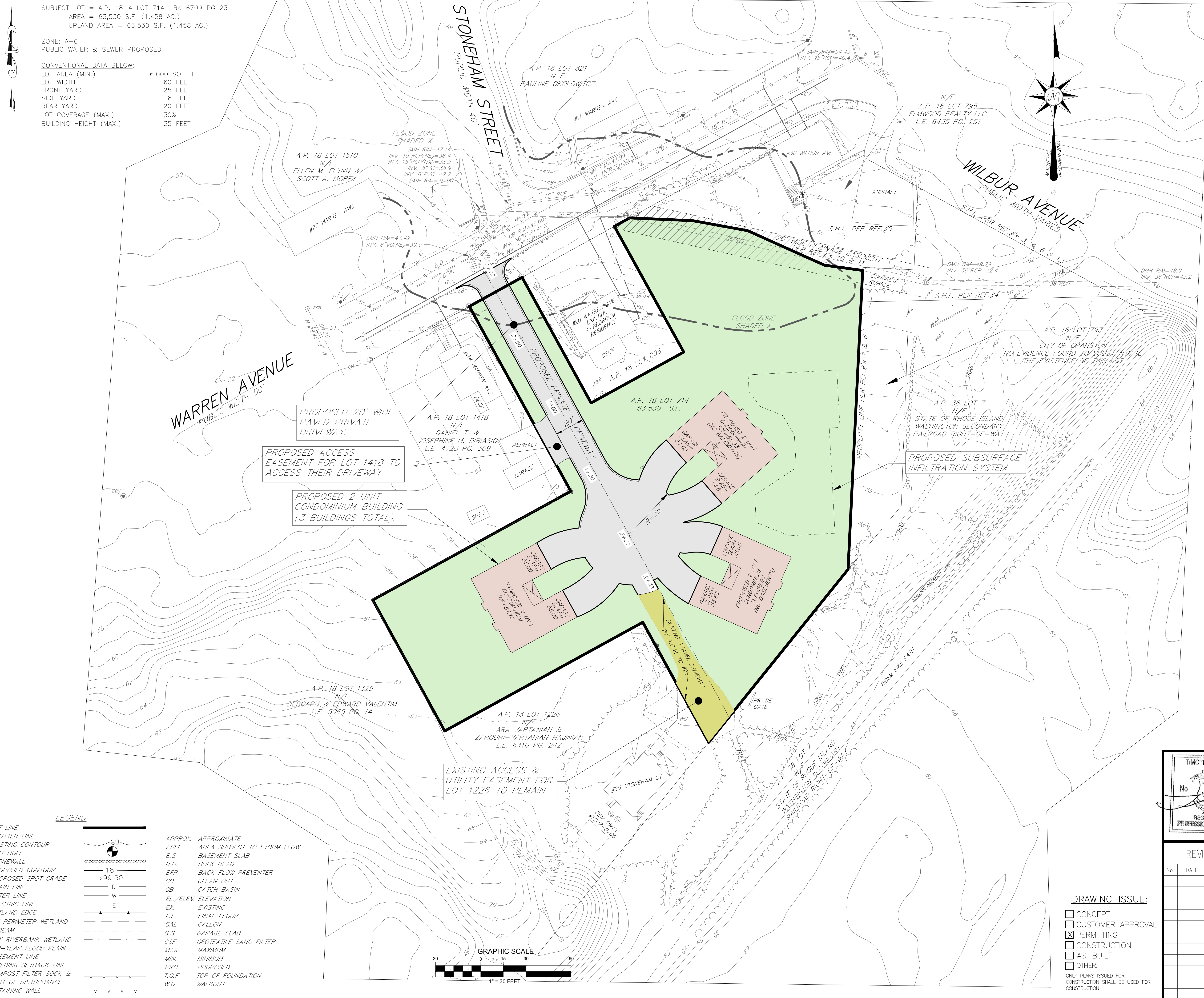
SCALE: AS SHOWN	SHEET NO.: 2 of 13	
DRAWN BY: TB	DESIGN BY: TB	CHECKED BY: TB
DATE: 12/2/24	PROJECT NO.: 24049.00	

PREPARED FOR:
 CALISE DEVELOPMENT, LLC
 PO BOX 277
 GREENVILLE, RI 02828

SUBJECT LOT = A.P. 18-4 LOT 714 BK 6709 PG 23
AREA = 63,530 S.F. (1.458 AC.)
UPLAND AREA = 63,530 S.F. (1.458 AC.)

ZONE: A-6
PUBLIC WATER & SEWER PROPOSED

CONVENTIONAL DATA BELOW:
LOT AREA (MIN.) 6,000 SQ. FT.
LOT WIDTH 60 FEET
FRONT YARD 25 FEET
SIDE YARD 8 FEET
REAR YARD 20 FEET
LOT COVERAGE (MAX.) 30%
BUILDING HEIGHT (MAX.) 35 FEET



PROPOSED 20' WIDE PAVED PRIVATE DRIVEWAY.

PROPOSED ACCESS EASEMENT FOR LOT 1418 TO ACCESS THEIR DRIVEWAY

PROPOSED 2 UNIT CONDOMINIUM BUILDING (3 BUILDINGS TOTAL).

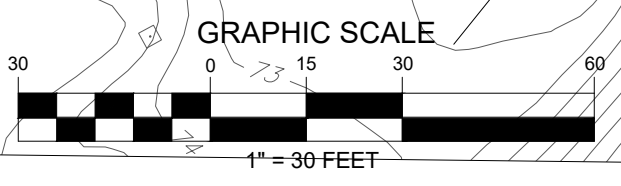
EXISTING ACCESS & UTILITY EASEMENT FOR LOT 1226 TO REMAIN

PROPOSED SUBSURFACE INFILTRATION SYSTEM

LEGEND

- LOT LINE
- ABUTTER LINE
- EXISTING CONTOUR
- TEST HOLE
- STONEWALL
- PROPOSED CONTOUR
- PROPOSED SPOT GRADE
- DRAIN LINE
- WATER LINE
- ELECTRIC LINE
- WETLAND EDGE
- 50' PERIMETER WETLAND STREAM
- 100' RIVERBANK WETLAND
- 100-YEAR FLOOD PLAIN
- EASEMENT LINE
- BUILDING SETBACK LINE
- COMPOST FILTER SOCK & LIMIT OF DISTURBANCE
- RETAINING WALL

- APPROX. APPROXIMATE
- ASSF AREA SUBJECT TO STORM FLOW
- B.S. BASEMENT SLAB
- B.H. BULK HEAD
- BFP BACK FLOW PREVENTER
- CO CLEAN OUT
- CB CATCH BASIN
- EL./ELEV. ELEVATION
- EK. EXISTING
- F.F. FINAL FLOOR
- GAL. GALLON
- G.S. GARAGE SLAB
- GSF GEOTEXTILE SAND FILTER
- MAX. MAXIMUM
- MIN. MINIMUM
- PRO. PROPOSED
- T.O.F. TOP OF FOUNDATION
- W.O. WALKOUT



DRAWING ISSUE:

- CONCEPT
- CUSTOMER APPROVAL
- PERMITTING
- CONSTRUCTION
- AS-BUILT
- OTHER:

ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

TIMOTHY J. BEHAN
No. 6278
12/2/24
REGISTERED PROFESSIONAL ENGINEER

REVISIONS			
No.	DATE	DRWN	CHKD

COMMONWEALTH ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RHODE ISLAND 02908
401-273-6600

PROPOSED LAYOUT PLAN
CALISE DEVELOPMENT LLC PLAT
for
A.P. 18-4 LOT 714
WARREN AVENUE
in
CRANSTON, RHODE ISLAND

SCALE: AS SHOWN SHEET NO.: 3 of 13
DRAWN BY: TB DESIGN BY: TB CHECKED BY: TB
DATE: 12/2/24 PROJECT NO.: 24049.00

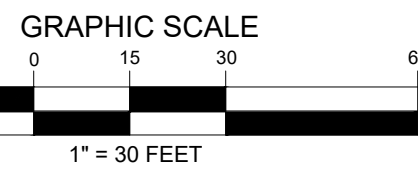
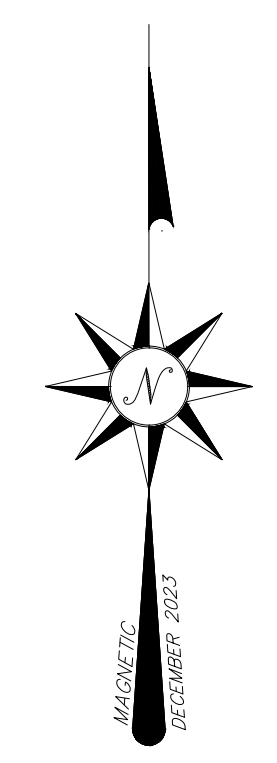
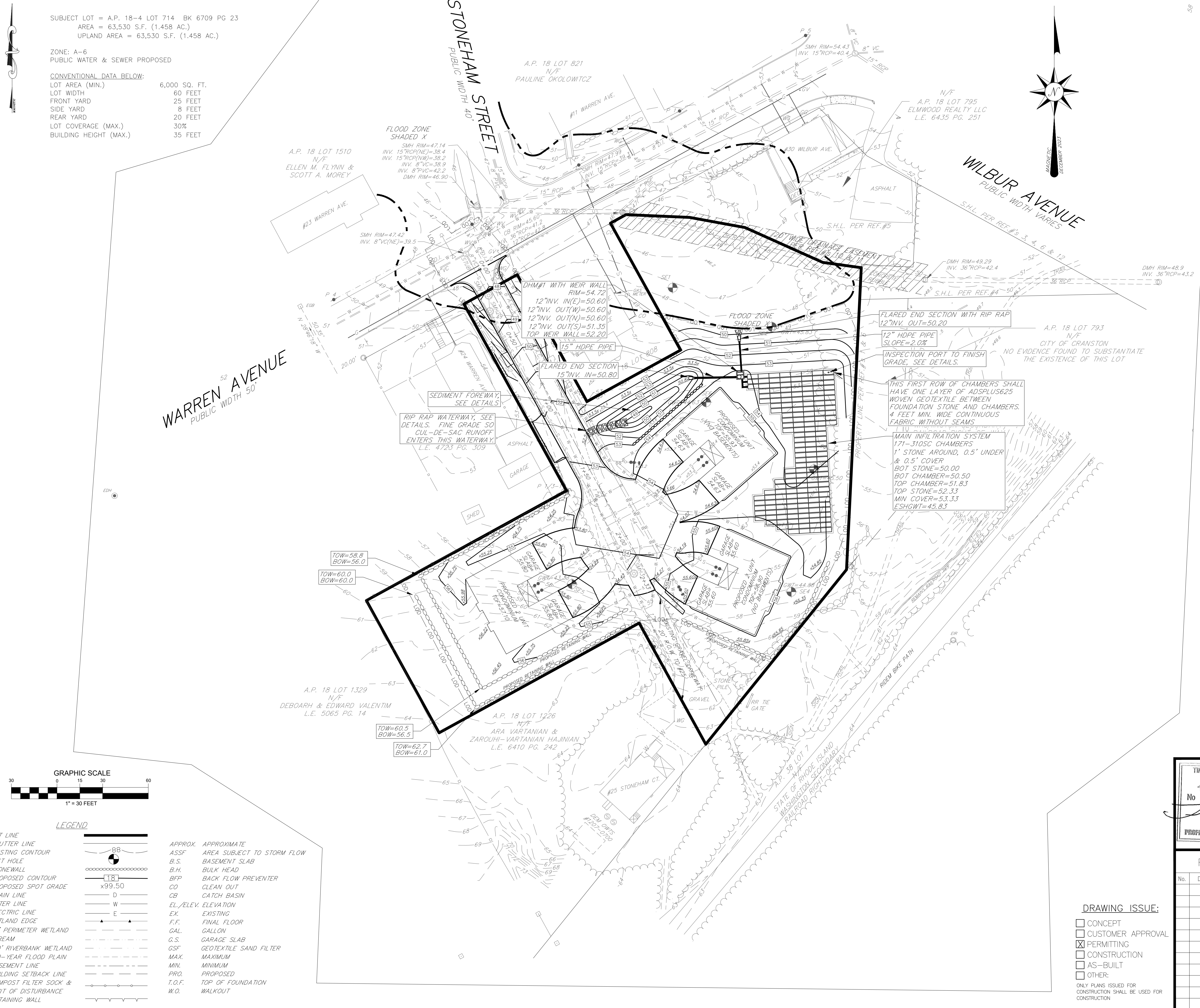
PREPARED FOR:
CALISE DEVELOPMENT, LLC
PO BOX 277
GREENVILLE, RI 02828

SUBJECT LOT = A.P. 18-4 LOT 714 BK 6709 PG 23
 AREA = 63,530 S.F. (1.458 AC.)
 UPLAND AREA = 63,530 S.F. (1.458 AC.)

ZONE: A-6
 PUBLIC WATER & SEWER PROPOSED

CONVENTIONAL DATA BELOW:

LOT AREA (MIN.)	6,000 SQ. FT.
LOT WIDTH	60 FEET
FRONT YARD	25 FEET
SIDE YARD	8 FEET
REAR YARD	20 FEET
LOT COVERAGE (MAX.)	30%
BUILDING HEIGHT (MAX.)	35 FEET



LEGEND

LOT LINE	—	APPROX. APPROXIMATE	—
ABUTTER LINE	—	AREA SUBJECT TO STORM FLOW	—
EXISTING CONTOUR	—	ASSF	—
TEST HOLE	⊙	B.S.	—
STONEWALL	—	B.H.	—
PROPOSED CONTOUR	—	BFP	—
PROPOSED SPOT GRADE	x99.50	CO	—
DRAIN LINE	D	CB	—
WATER LINE	W	EL./ELEV.	—
ELECTRIC LINE	E	EX	—
WETLAND EDGE	—	F.F.	—
50' PERIMETER WETLAND	—	GAL.	—
STREAM	—	G.S.	—
100' RIVERBANK WETLAND	—	GSF	—
100-YEAR FLOOD PLAIN	—	MAX.	—
EASEMENT LINE	—	MIN.	—
BUILDING SETBACK LINE	—	PRO.	—
COMPOST FILTER SOCK & LIMIT OF DISTURBANCE	—	T.O.F.	—
RETAINING WALL	—	W.O.	—

PREPARED FOR:
 CALISE DEVELOPMENT, LLC
 PO BOX 277
 GREENVILLE, RI 02828

TIMOTHY J. BEHAN
 No. 6278
 Registered Professional Engineer
 12/2/24

COMMONWEALTH
 ENGINEERS & CONSULTANTS, INC.
 400 SMITH STREET
 PROVIDENCE, RHODE ISLAND 02908
 401-273-6600

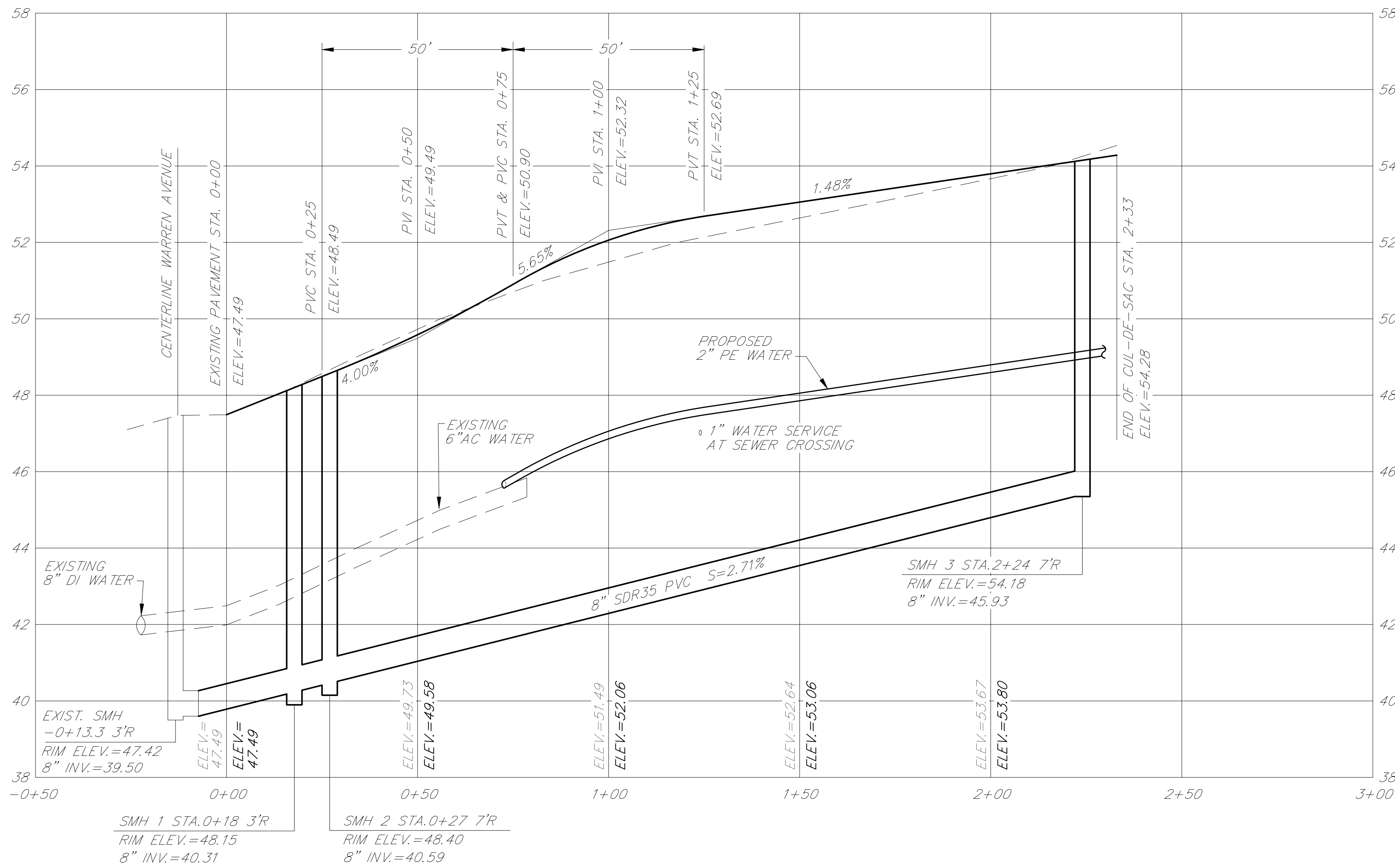
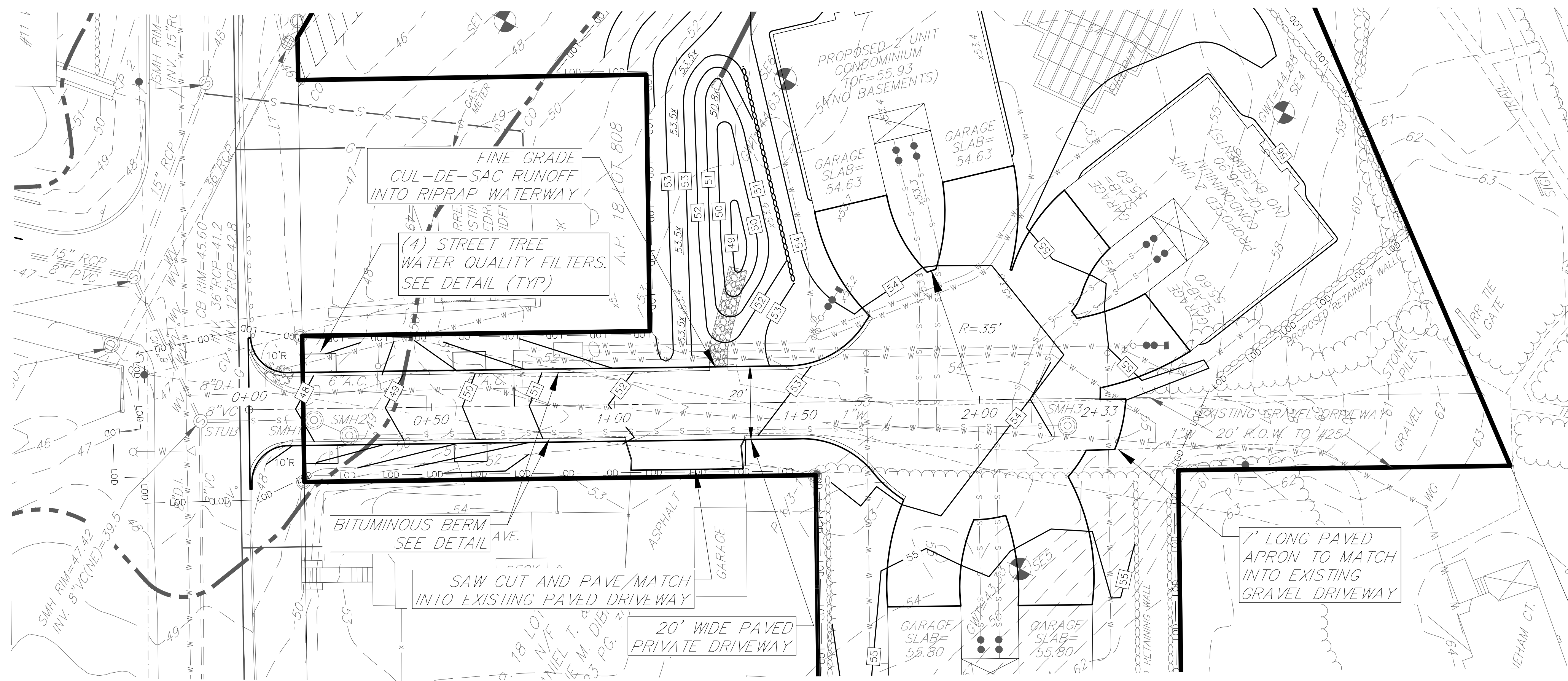
REVISIONS

No.	DATE	DRWN	CHKD

PROPOSED GRADING & DRAINAGE PLAN
CALISE DEVELOPMENT LLC PLAT
 for
A.P. 18-4 LOT 714
WARREN AVENUE
 in
 CRANSTON, RHODE ISLAND

SCALE: AS SHOWN	SHEET NO: 4 of 13
DRAWN BY: TB	DESIGN BY: TB
DATE: 12/2/24	CHECKED BY: TB
PROJECT NO.: 24049.00	

- DRAWING ISSUE:**
- CONCEPT
 - CUSTOMER APPROVAL
 - PERMITTING
 - CONSTRUCTION
 - AS-BUILT
 - OTHER:
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION



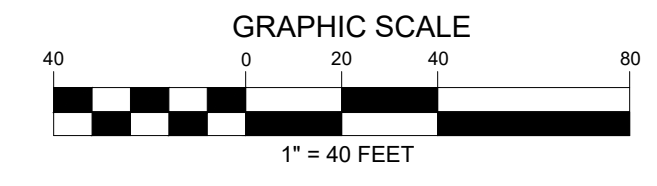
LEGEND

LOT LINE	APPROX. APPROXIMATE
ABUTTER LINE	ASSF AREA SUBJECT TO STORM FLOW
EXISTING CONTOUR	B.S. BASEMENT SLAB
TEST HOLE	B.H. BULK HEAD
STONEWALL	BFP BACK FLOW PREVENTER
PROPOSED CONTOUR	CO CLEAN OUT
PROPOSED SPOT GRADE	CB CATCH BASIN
DRAIN LINE	EL./ELEV. ELEVATION
WATER LINE	EX. EXISTING
ELECTRIC LINE	F.F. FINAL FLOOR
WETLAND EDGE	GAL. GALLON
50' PERIMETER WETLAND	G.S. GARAGE SLAB
STREAM	GSF GEOTEXTILE SAND FILTER
100' RIVERBANK WETLAND	MAX. MAXIMUM
100-YEAR FLOOD PLAIN	MIN. MINIMUM
EASEMENT LINE	PRO. PROPOSED
BUILDING SETBACK LINE	T.O.F. TOP OF FOUNDATION
COMPOST FILTER SOCK & LIMIT OF DISTURBANCE	W.O. WALKOUT
RETAINING WALL	

PREPARED FOR:
CALISE DEVELOPMENT, LLC
PO BOX 277
GREENVILLE, RI 02828

DRAWING ISSUE:

- CONCEPT
 - CUSTOMER APPROVAL
 - PERMITTING
 - CONSTRUCTION
 - AS-BUILT
 - OTHER:
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION



TIMOTHY J. BEHAN
No. 6278
12/2/24
REGISTERED PROFESSIONAL ENGINEER

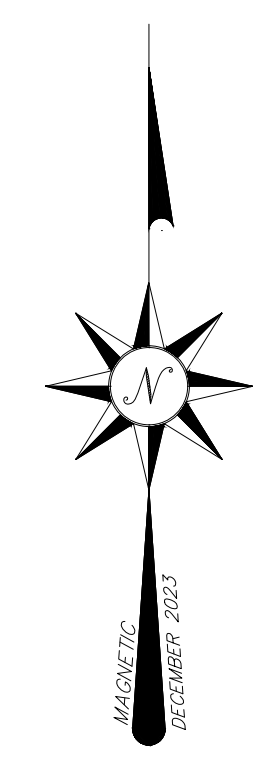
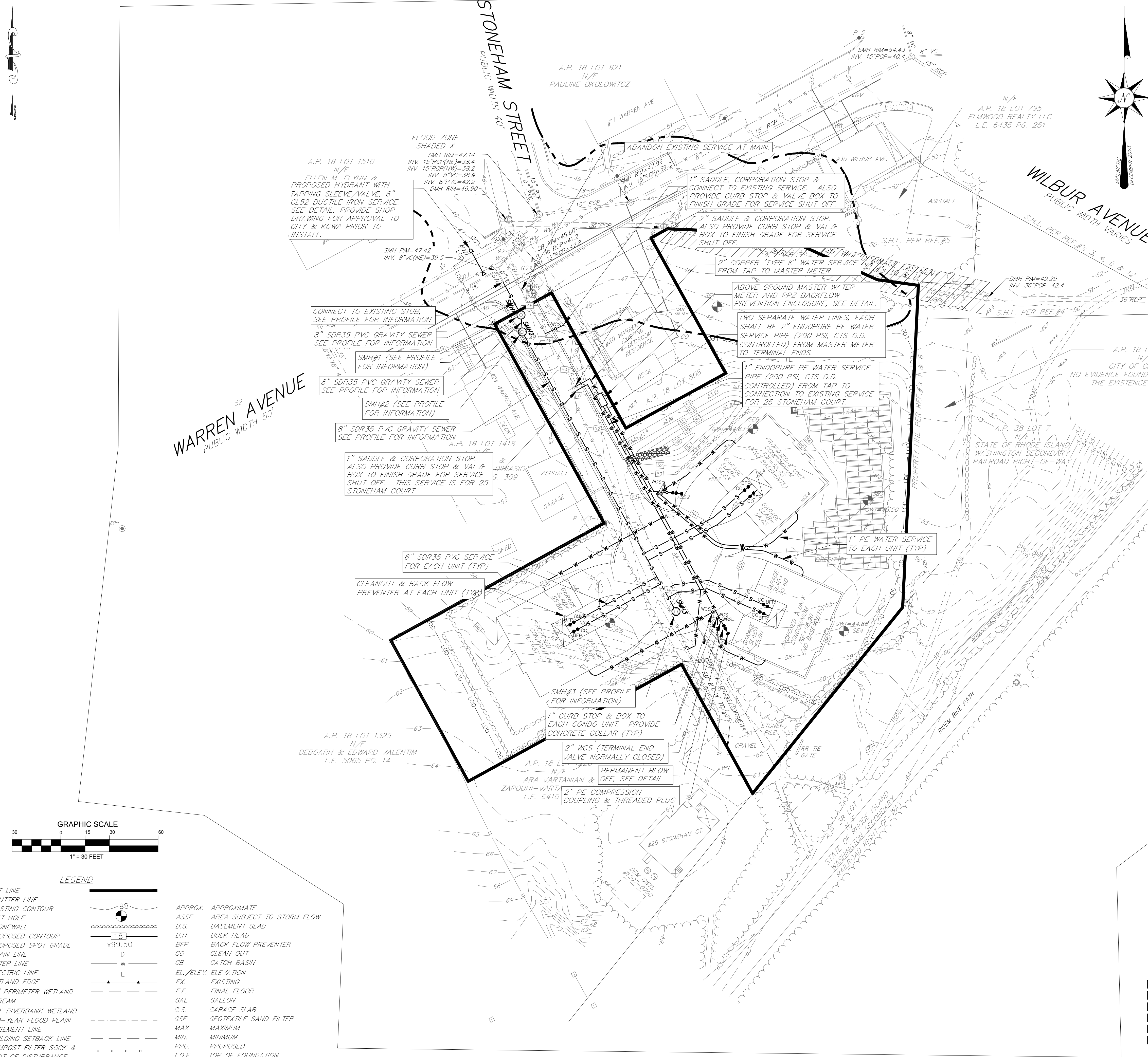
REVISIONS

No.	DATE	DRWN	CHKD

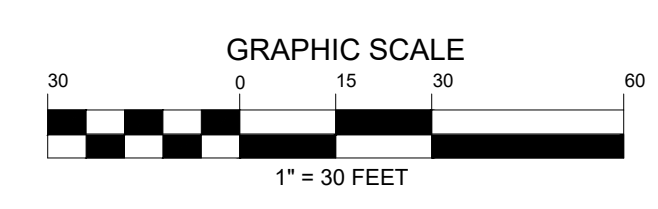
COMMONWEALTH ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RHODE ISLAND 02908
401-273-6600

PROFILE PLAN
CALISE DEVELOPMENT LLC PLAT
for
A.P. 18-4 LOT 714
WARREN AVENUE
in
CRANSTON, RHODE ISLAND

SCALE: AS SHOWN	SHEET NO.: 5 of 13	
DRAWN BY: TB	DESIGN BY: TB	CHECKED BY: TB
DATE: 12/2/24	PROJECT NO.: 24049.00	



59



LEGEND

LOT LINE	—	APPROX. APPROXIMATE	
ABUTTER LINE	—	ASSF AREA SUBJECT TO STORM FLOW	
EXISTING CONTOUR	—	B.S. BASEMENT SLAB	
TEST HOLE	⊙	B.H. BULK HEAD	
STONEWALL	—	BFP BACK FLOW PREVENTER	
PROPOSED CONTOUR	—	CO CLEAN OUT	
PROPOSED SPOT GRADE	x99.50	CB CATCH BASIN	
DRAIN LINE	D	EL./ELEV. ELEVATION	
WATER LINE	W	EX. EXISTING	
ELECTRIC LINE	E	F.F. FINAL FLOOR	
WETLAND EDGE	—	GAL. GALLON	
50' PERIMETER WETLAND	—	G.S. GARAGE SLAB	
STREAM	—	G.SF. GEOTEXTILE SAND FILTER	
100' RIVERBANK WETLAND	—	MAX. MAXIMUM	
100-YEAR FLOOD PLAIN	—	MIN. MINIMUM	
EASEMENT LINE	—	PRO. PROPOSED	
BUILDING SETBACK LINE	—	T.O.F. TOP OF FOUNDATION	
COMPOST FILTER SOCK & LIMIT OF DISTURBANCE	—	W.O. WALKOUT	
RETAINING WALL	—		

PREPARED FOR:
CALISE DEVELOPMENT, LLC
PO BOX 277
GREENVILLE, RI 02828

TIMOTHY J. BEHAN
No. 6278
12/2/24
REGISTERED PROFESSIONAL ENGINEER

COMMONWEALTH
ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RHODE ISLAND 02908
401-273-6600

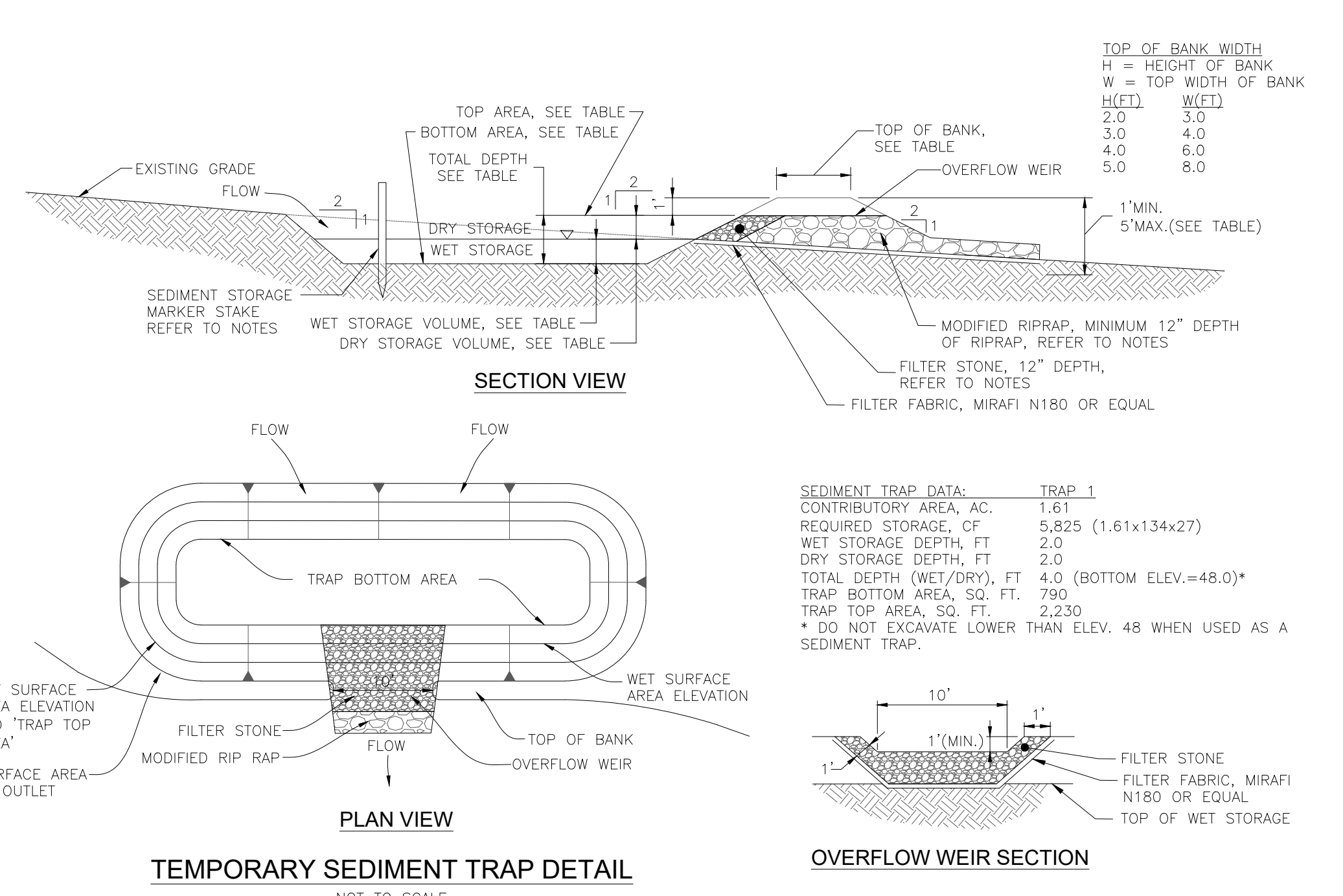
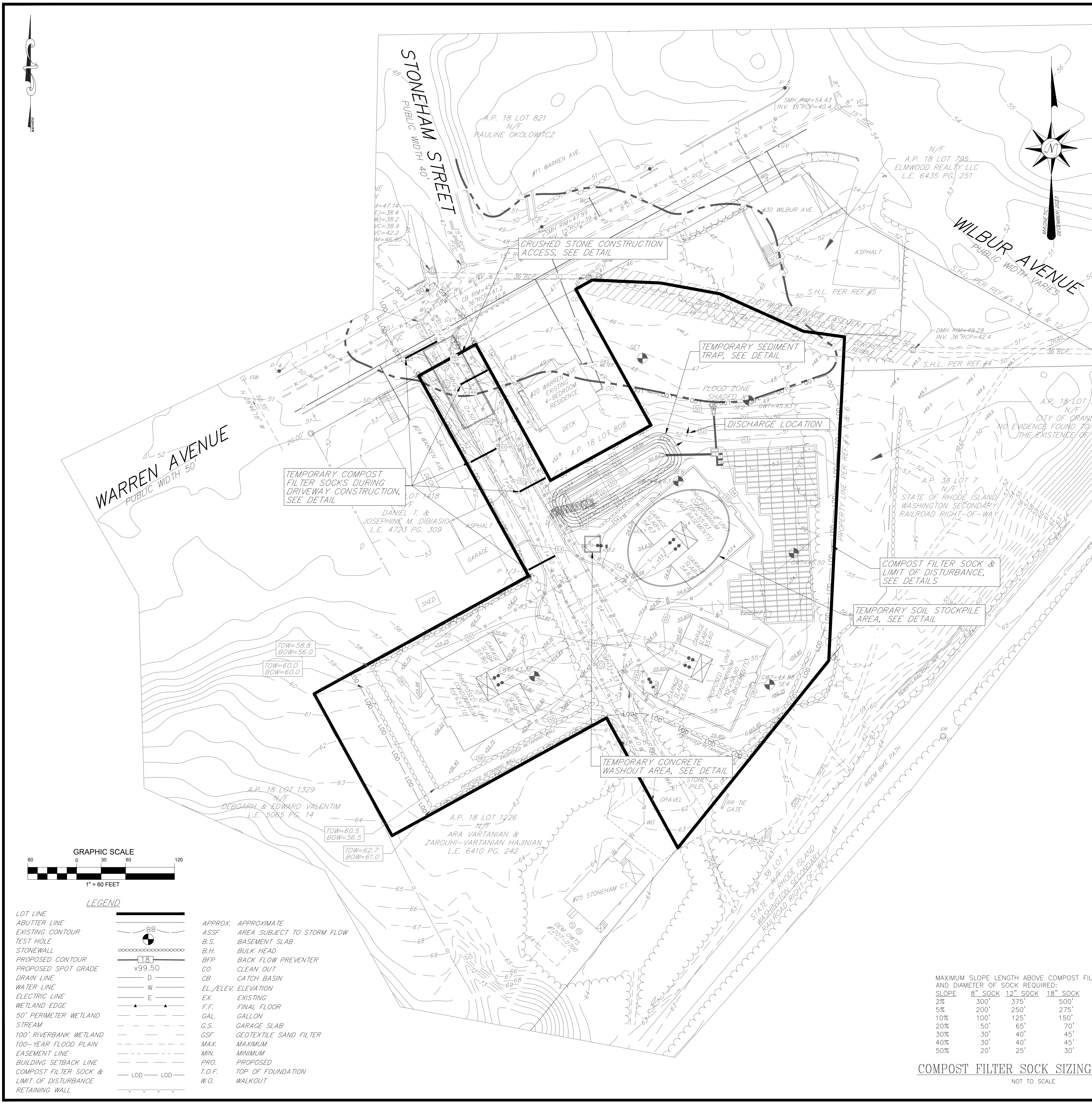
REVISIONS			
No.	DATE	DRWN	CHKD

PROPOSED UTILITY PLAN
CALISE DEVELOPMENT LLC PLAT
for
A.P. 18-4 LOT 714
WARREN AVENUE
in
CRANSTON, RHODE ISLAND

SCALE: AS SHOWN	SHEET NO.: 6 of 13
DRAWN BY: TB	DESIGN BY: TB
DATE: 12/2/24	CHECKED BY: TB
PROJECT NO.: 24049.00	

DRAWING ISSUE:

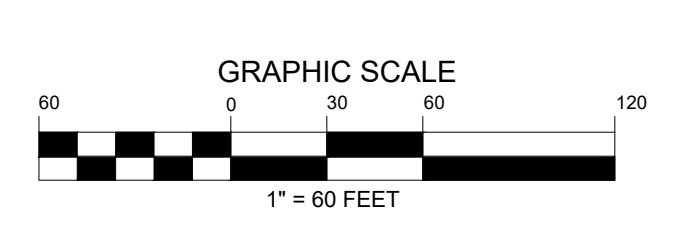
- CONCEPT
 - CUSTOMER APPROVAL
 - PERMITTING
 - CONSTRUCTION
 - AS-BUILT
 - OTHER:
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION



- GENERAL NOTES:**
1. THE TEMPORARY SEDIMENT TRAP SHALL MEET ALL REQUIREMENTS FOR TEMPORARY SEDIMENT TRAPS OUTLINED IN THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK (LATEST REVISION) SECTION SIX: SEDIMENT CONTROL MEASURES.
 2. THE TEMPORARY SEDIMENT TRAP SHALL HAVE AN INITIAL STORAGE VOLUME OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA.
 3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
 4. THE OUTLET SHALL BE LOCATED AT THE MOST DISTANT HYDRAULIC POINT FROM THE INLET.
 5. THE OUTLET CONSISTS OF A PERVIOUS STAKE DIKE WITH A CORE OF MODIFIED RIP RAP AND FACED ON THE UPSTREAM SIDE WITH STONE.
 6. TEMPORARY SEDIMENT TRAPS MUST OUTLET ONTO STABILIZED GROUND.
 7. MAXIMUM HEIGHT OF A TEMPORARY SEDIMENT TRAP EMBANKMENT IS LIMITED TO FIVE FEET.
 8. SIDE SLOPES OF THE EMBANKMENT SHALL BE 2:1 OR FLATTER.
 9. MODIFIED RIP RAP SHALL MEET THE REQUIREMENTS OF RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.10.03.2 AND BE R-4 GRADE RIPRAP.
 10. FILTER STONE SHALL MEET THE REQUIREMENTS OF RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.01.03 TABLE 1 COLUMN V FILTER STONE.

- INSPECTION, MAINTENANCE AND REMOVAL REQUIREMENTS:**
1. INSTALL SEDIMENT STORAGE STAKE WITH A MARKER AT ONE HALF OF THE WET STORAGE VOLUME.
 2. INSPECT THE TEMPORARY SEDIMENT TRAP AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER.
 3. CHECK THE OUTLET TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OF CONSTRUCTION EQUIPMENT.
 4. CHECK FOR SEDIMENT ACCUMULATION AND FILTRATION PERFORMANCE.
 5. WHEN SEDIMENTS HAVE ACCUMULATED TO ONE HALF THE MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATER THE TRAP AS NEEDED, REMOVE SEDIMENTS AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS.
 6. DISPOSE OF THE SEDIMENT REMOVED FROM THE BASIN IN A SUITABLE AREA.
 7. THE TEMPORARY SEDIMENT TRAP MAY BE REMOVED AFTER THE CONTRIBUTING DRAINAGE AREA IS STABILIZED.

- INSTALLATION NOTES:**
1. CLEAR GRUB AND STRIP ANY VEGETATION AND ROOT MAT FROM ANY PROPOSED EMBANKMENT AND OUTLET AREA.
 2. REMOVE STONES AND ROCKS WHOSE DIAMETER IS GREATER THAN 3 INCHES AND OTHER DEBRIS.
 3. EXCAVATE WET STORAGE AND CONSTRUCT THE EMBANKMENT AND/OR OUTLET AS NEEDED TO ATTAIN THE NECESSARY STORAGE REQUIREMENTS.
 4. USE ONLY FILL MATERIAL FOR THE EMBANKMENT THAT IS FREE FROM EXCESSIVE ORGANICS, DEBRIS, LARGE ROCKS (OVER SIX INCHES) OR OTHER UNSUITABLE MATERIALS. COMPACT THE EMBANKMENT IN 9 INCH LAYERS BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
 5. STABILIZE THE EARTHEN EMBANKMENT USING ANY OF THE FOLLOWING MEASURES, SEEDING FOR TEMPORARY VEGETATION COVER, SEEDING FOR PERMANENT VEGETATIVE COVER, OR SLOPE PROTECTION, IMMEDIATELY AFTER INSTALLATION.



LEGEND

LOT LINE	—	APPROX. APPROXIMATE	—
ABUTTER LINE	—	ASSF	AREA SUBJECT TO STORM FLOW
EXISTING CONTOUR	—	B.S.	BASEMENT SLAB
TEST HOLE	⊙	B.H.	BULK HEAD
STONEWALL	—	BFP	BACK FLOW PREVENTER
PROPOSED CONTOUR	—	CO	CLEAN OUT
PROPOSED SPOT GRADE	—	CB	CATCH BASIN
DRAIN LINE	—	EL./ELEV.	ELEVATION
WATER LINE	—	EX.	EXISTING
ELECTRIC LINE	—	F.F.	FINAL FLOOR
WETLAND EDGE	—	GAL.	GALLON
50' PERIMETER WETLAND	—	G.S.	GARAGE SLAB
STREAM	—	GSF	GEOTEXTILE SAND FILTER
100' RIVERBANK WETLAND	—	MAX.	MAXIMUM
100-YEAR FLOOD PLAIN	—	MIN.	MINIMUM
EASEMENT LINE	—	PRO.	PROPOSED
BUILDING SETBACK LINE	—	T.O.F.	TOP OF FOUNDATION
COMPOST FILTER SOCK & LIMIT OF DISTURBANCE	—	W.O.	WALKOUT
RETAINING WALL	—		

COMPOST FILTER SOCK SIZING SCHEDULE
NOT TO SCALE

SLOPE	MAXIMUM SLOPE LENGTH ABOVE COMPOST FILTER SOCK, (FEET)			
	8" SOCK	12" SOCK	18" SOCK	24" SOCK
2%	300'	375'	500'	650'
5%	200'	250'	275'	325'
10%	100'	125'	150'	200'
20%	50'	65'	70'	130'
30%	30'	40'	45'	65'
40%	30'	40'	45'	50'
50%	20'	25'	30'	35'

- DRAWING ISSUE:**
- CONCEPT
 - CUSTOMER APPROVAL
 - PERMITTING
 - CONSTRUCTION
 - AS-BUILT
 - OTHER:
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

TIMOTHY J. BEHAN
REGISTERED PROFESSIONAL ENGINEER
No. 6278
12/24

COMMONWEALTH
ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RHODE ISLAND 02908
401-275-6600

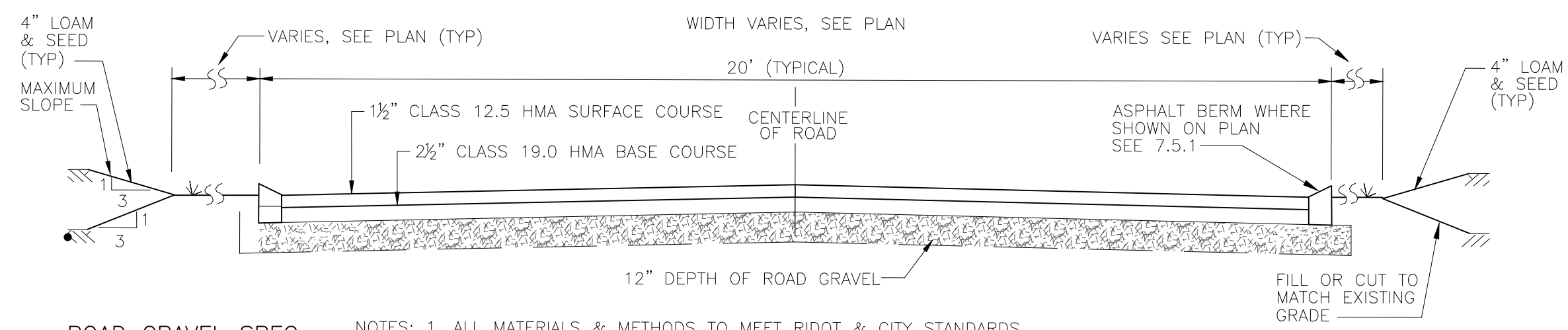
REVISIONS

No.	DATE	DRWN	CHKD

SOIL EROSION CONTROL PLAN-1
CALISE DEVELOPMENT LLC PLAT
for
A.P. 18-4 LOT 714
WARREN AVENUE
in
CRANSTON, RHODE ISLAND

SCALE: AS SHOWN SHEET NO: 7 of 13
DRAWN BY: TB DESIGN BY: TB CHECKED BY: TB
DATE: 12/2/24 PROJECT NO.: 24049.00

PREPARED FOR:
CALISE DEVELOPMENT, LLC
PO BOX 277
GREENVILLE, RI 02828

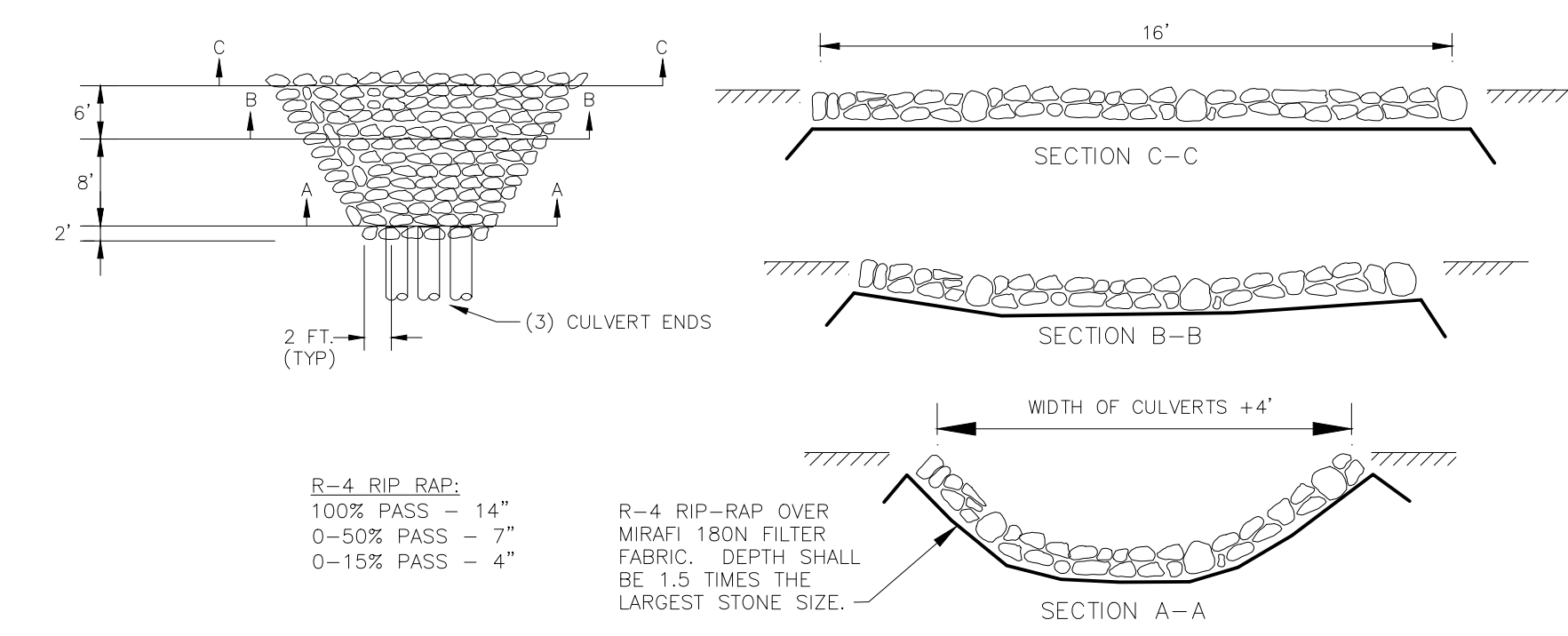


ROAD GRAVEL SPEC.:
GRAVEL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN 4" GRAVEL SHALL MEET THE FOLLOWING:

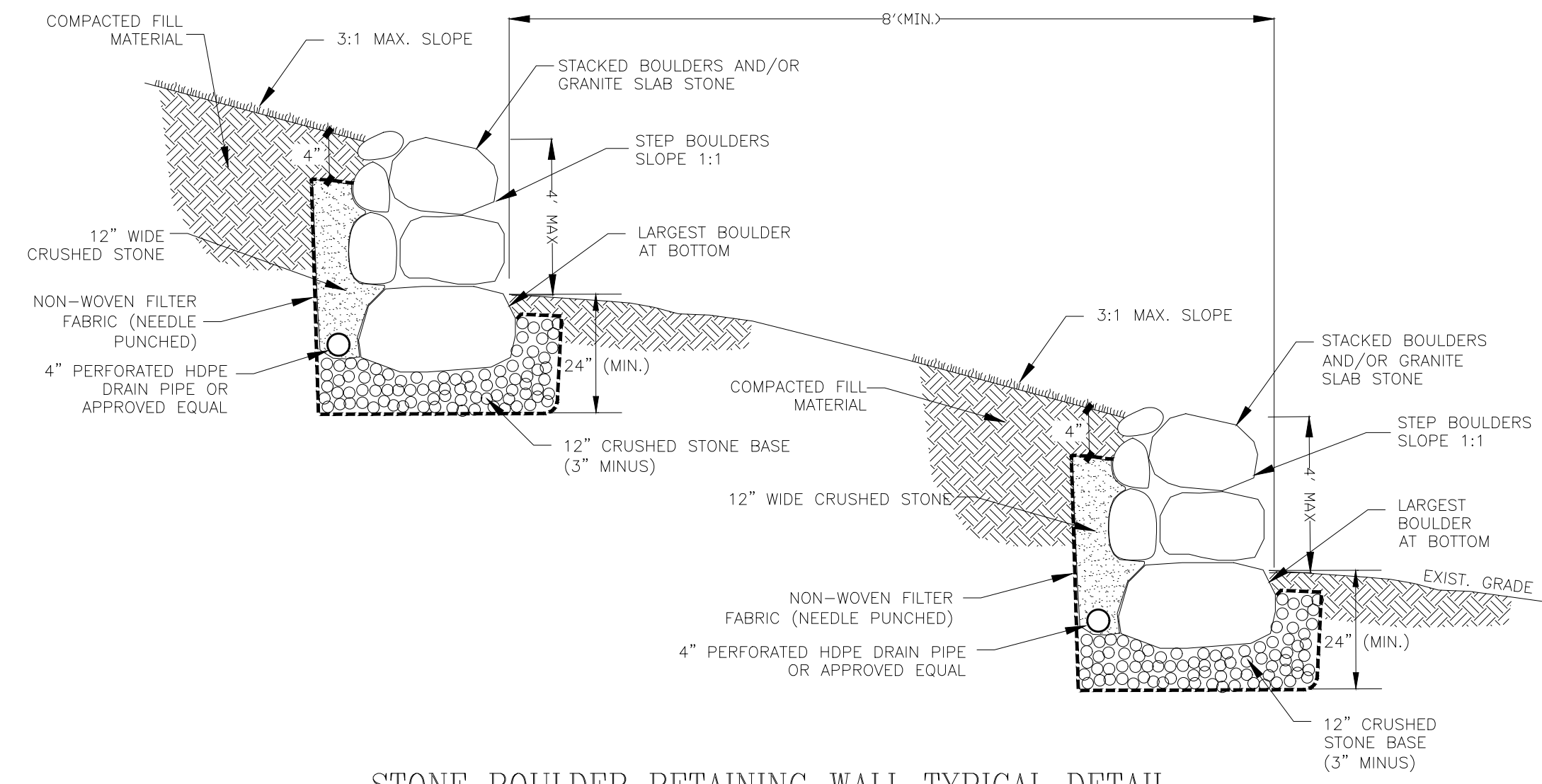
SIEVE SIZE	% PASSING
1.5"	70-100%
0.75"	50%-85%
#4	30%-55%
#50	8%-25%
#200	2%-10%

NOTES: 1. ALL MATERIALS & METHODS TO MEET RIDOT & CITY STANDARDS.
2. ALL EXISTING LOAM, SUBSOIL, TREE ROOTS, ETC. SHALL BE REMOVED.
3. ALL FILL BENEATH ROAD SHALL BE RIDOT GRAVEL COMPACTED TO 95% MAXIMUM DENSITY.

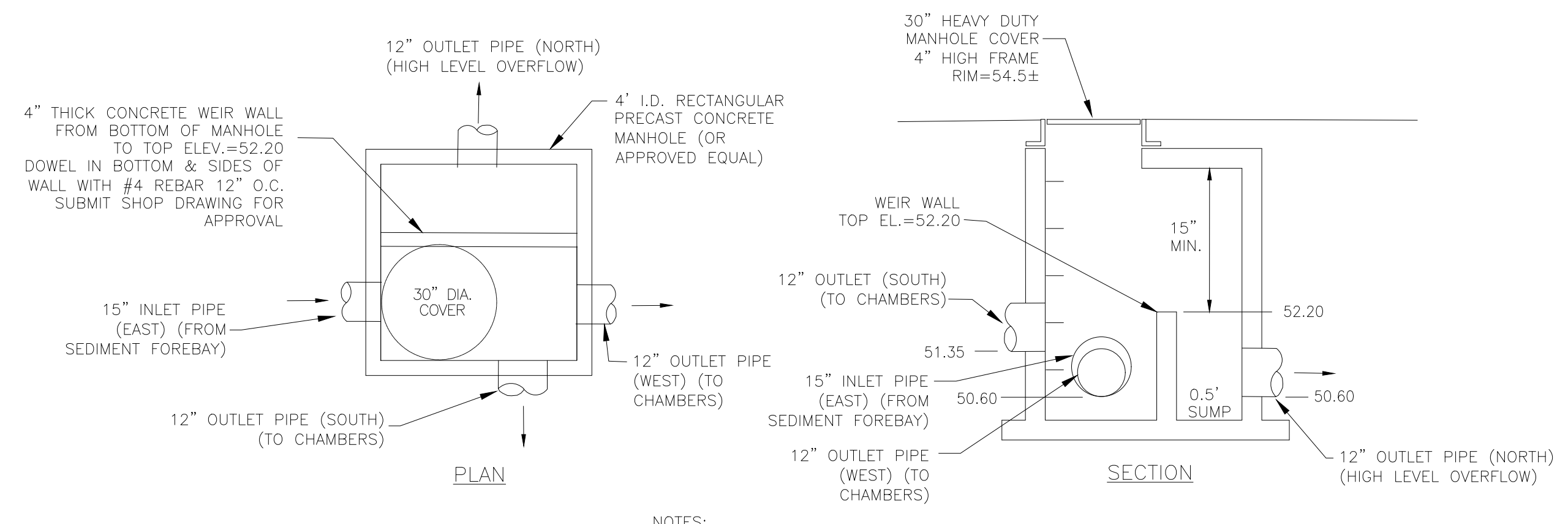
PRIVATE DRIVEWAY TYPICAL DETAIL
NOT TO SCALE



ROCK RIP-RAP @ CULVERT END & SWALE SECTIONS
NOT TO SCALE



STONE BOULDER RETAINING WALL TYPICAL DETAIL
NOT TO SCALE



DMH#1 WITH WEIR WALL
NOT TO SCALE

NOTES:
1. PRECAST CUSTOM CONCRETE BOX MANUFACTURER SHALL SUBMIT SHOP DRAWING OF STRUCTURE FOR REVIEW AND APPROVAL. MUST SUPPORT H-20 LOADING. LOCATE WEIR WALL AND MANHOLE OPENING TO PROVIDE ACCESS TO ALL PIPE PENETRATIONS FOR MAINTENANCE AND ABILITY FOR CLEAN-OUT.

WATER LEVELS INSIDE MH:
WQV=50.81'
1-YR=50.65'
10-YR=51.04'
100-YR=52.19'

NOTES:

- CONSTRUCT AND MAINTAIN IN ACCORDANCE WITH THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, AS AMENDED.
- ALL EMBANKMENT SLOPES, TOP OF BERM AND SIDES OF SEDIMENT FOREBAY SHALL RECEIVE 4" OF LOAM AND EMBANKMENT SEED MIX, SEE SPEC.
- BOTTOM OF SEDIMENT FOREBAY SHALL RECEIVE 4" OF LOAM AND PLANTED WITH DETENTION POND MIX.

EMBANKMENT SEED MIX:
RED FESCUE @ 1.75 LBS/1,000SF
COLONIAL BENTGRASS, "EXETER" @ 0.11 LBS/1,000SF
PERENNIAL RYEGRASS @ 0.11 LBS/1,000SF
BIRDSFOOT TREFLOID, "EMPIRE" @ 0.35 LBS/1,000SF
* USE INOCULATED SEED

SEDIMENT FOREBAY SEED MIX:
PLANT AT BOTTOM OF SEDIMENT FOREBAY:
CREEP RED FESCUE @ 0.45 LBS/1,000SF
TALL FESCUE @ 0.45 LBS/1,000SF

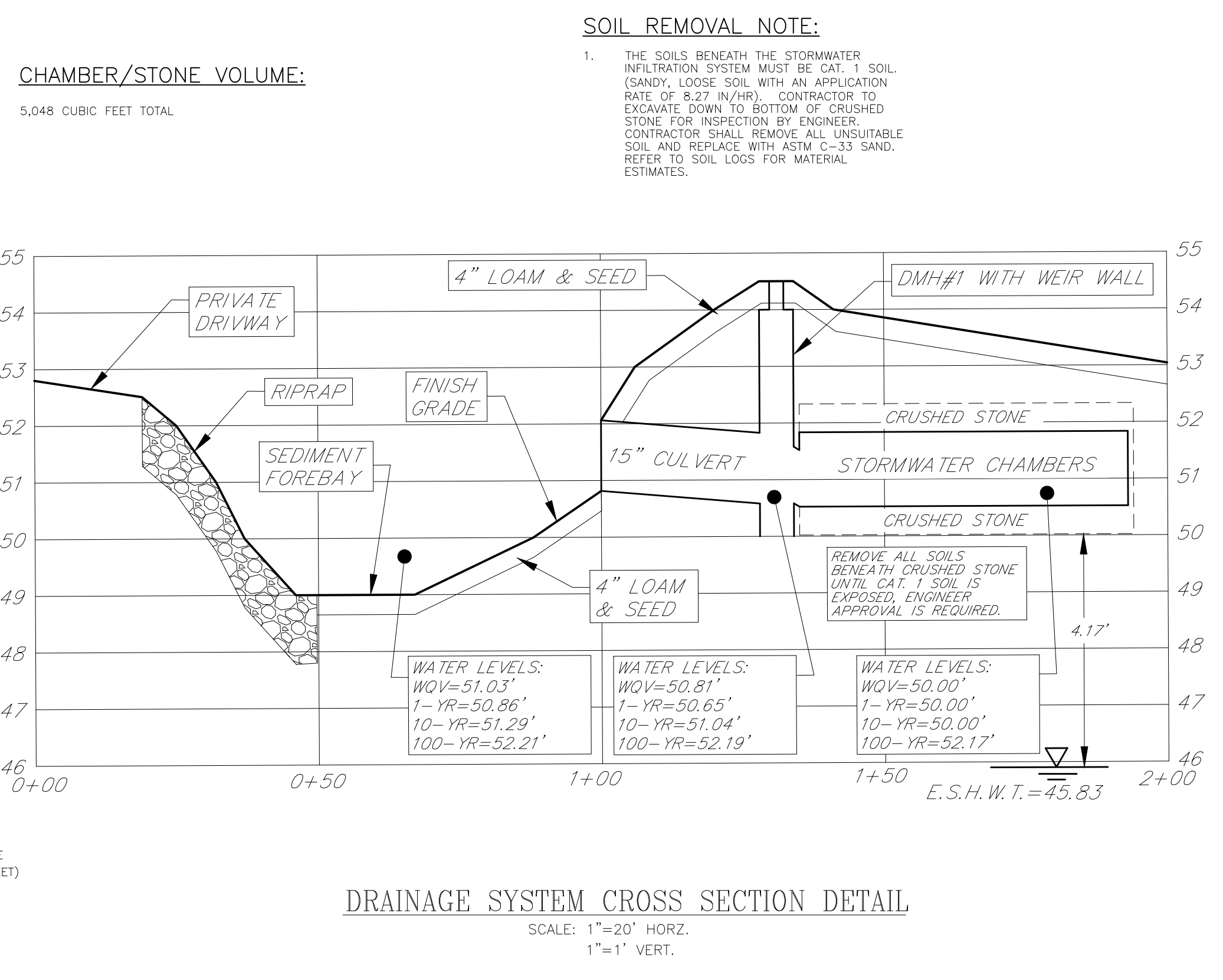
TOPSOIL SPEC.:
TOPSOIL SHALL HAVE A TEXTURE CLASSIFICATION OF LOAM TO SANDY LOAM AND BE FREE OF ROCKS GREATER THAN 3/4", ROOTS, DEBRIS AND ANY UNDESIRABLE MATERIALS AS DETERMINED BY THE TOWN OR ENGINEER.

RIPRAP SPEC.:
RIPRAP SHALL HAVE THE FOLLOWING SIEVE ANALYSIS: BE 1.5 TIMES DEEPER THAN THE LARGEST STONE SIZE AND BE PLACED OVER MIRAFI 180N FILTER FABRIC OR APPROVED EQUAL.

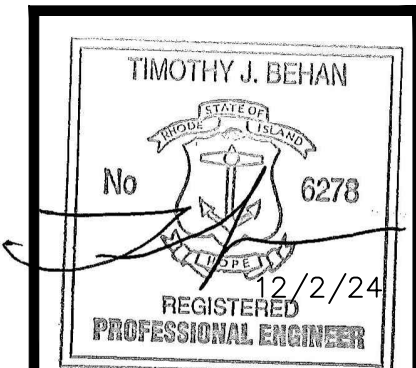
R-4 RIP-RAP:
100% PASS - 14"
0-50% PASS - 7"
0-15% PASS - 4"

SEDIMENT FOREBAY VOLUMES:

ELEVATION (FEET)	SURF AREA (SQ-FT)	INC. STORE (CUBIC- FEET)	CUM. STORE (CUBIC- FEET)
49.00	59	0	0
50.00	339	199	199
50.80	602	376	575
51.00	750	135	711
52.00	1,275	1,013	1,723
53.00	1,300	1,288	3,011



PREPARED FOR:
CALISE DEVELOPMENT, LLC
PO BOX 277
GREENVILLE, RI 02828

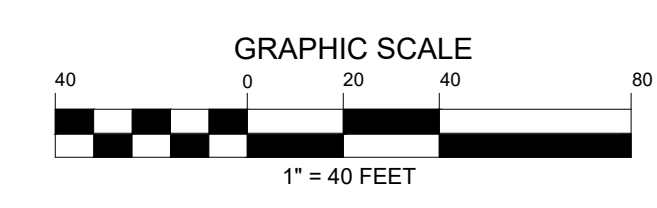


DETAILS-1
CALISE DEVELOPMENT LLC PLAT
for
A.P. 18-4 LOT 714
WARREN AVENUE
in
CRANSTON, RHODE ISLAND

DRAWING ISSUE:

- CONCEPT
- CUSTOMER APPROVAL
- PERMITTING
- CONSTRUCTION
- AS-BUILT
- OTHER:

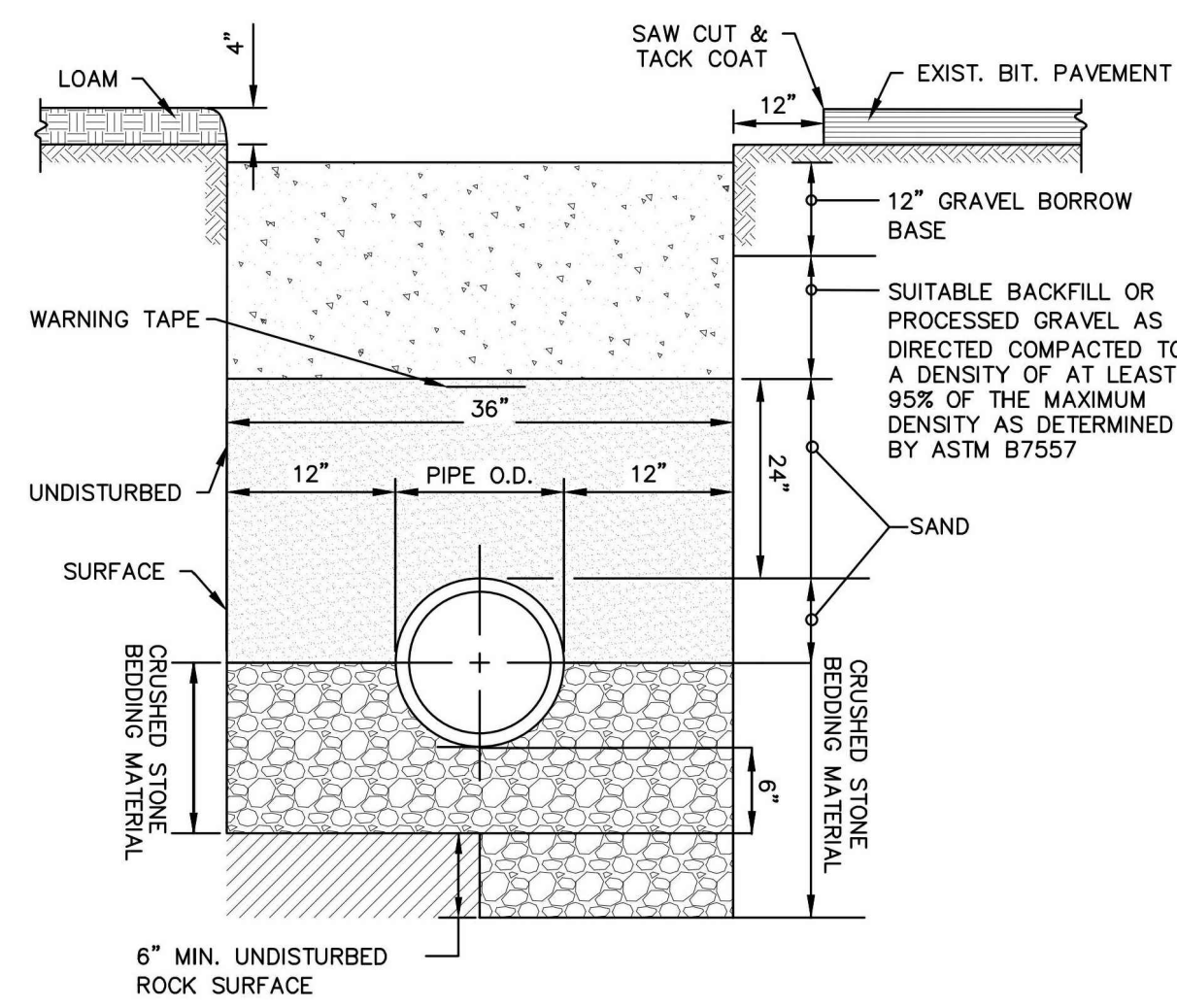
ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION



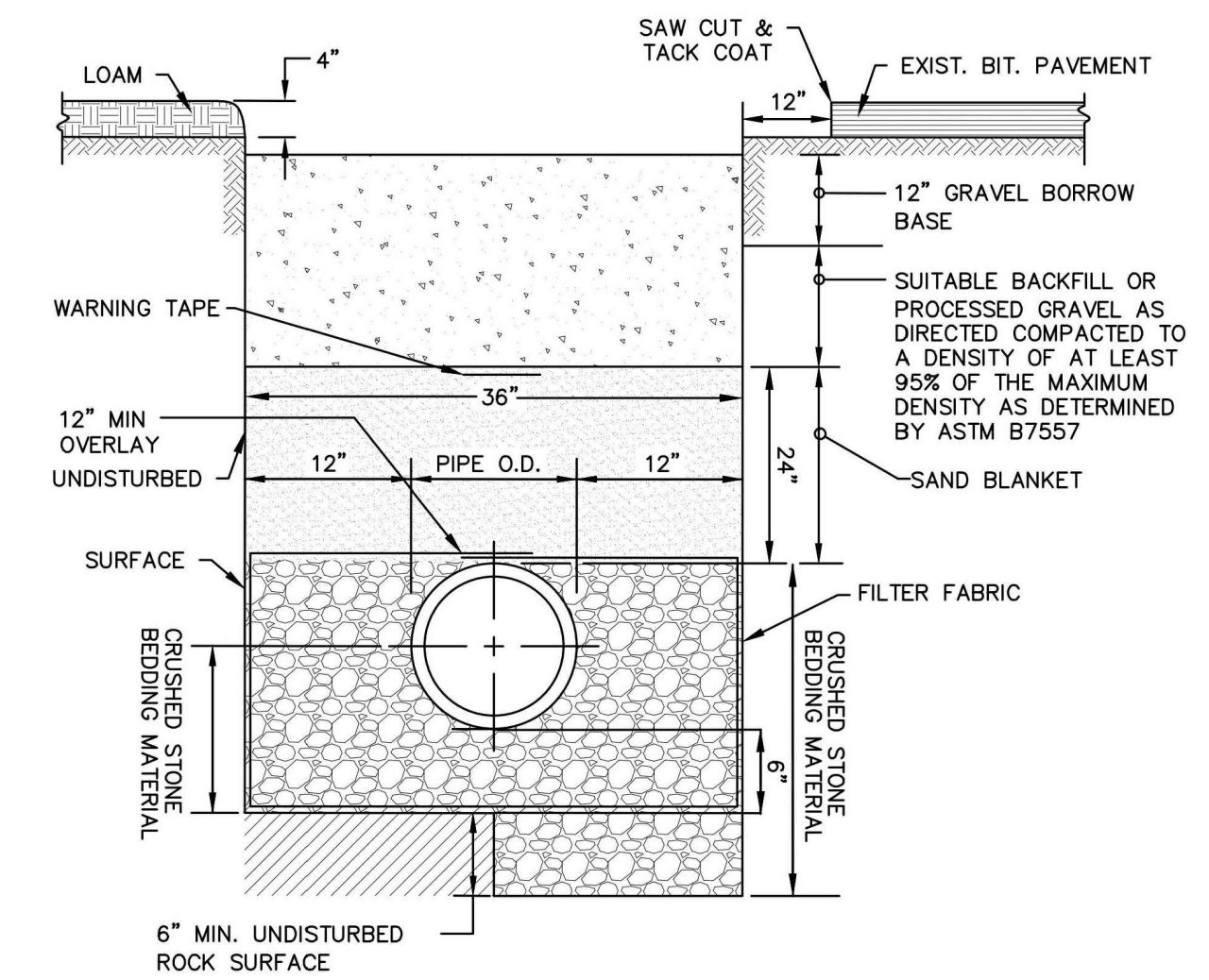
REVISIONS

No.	DATE	DRWN	CHKD

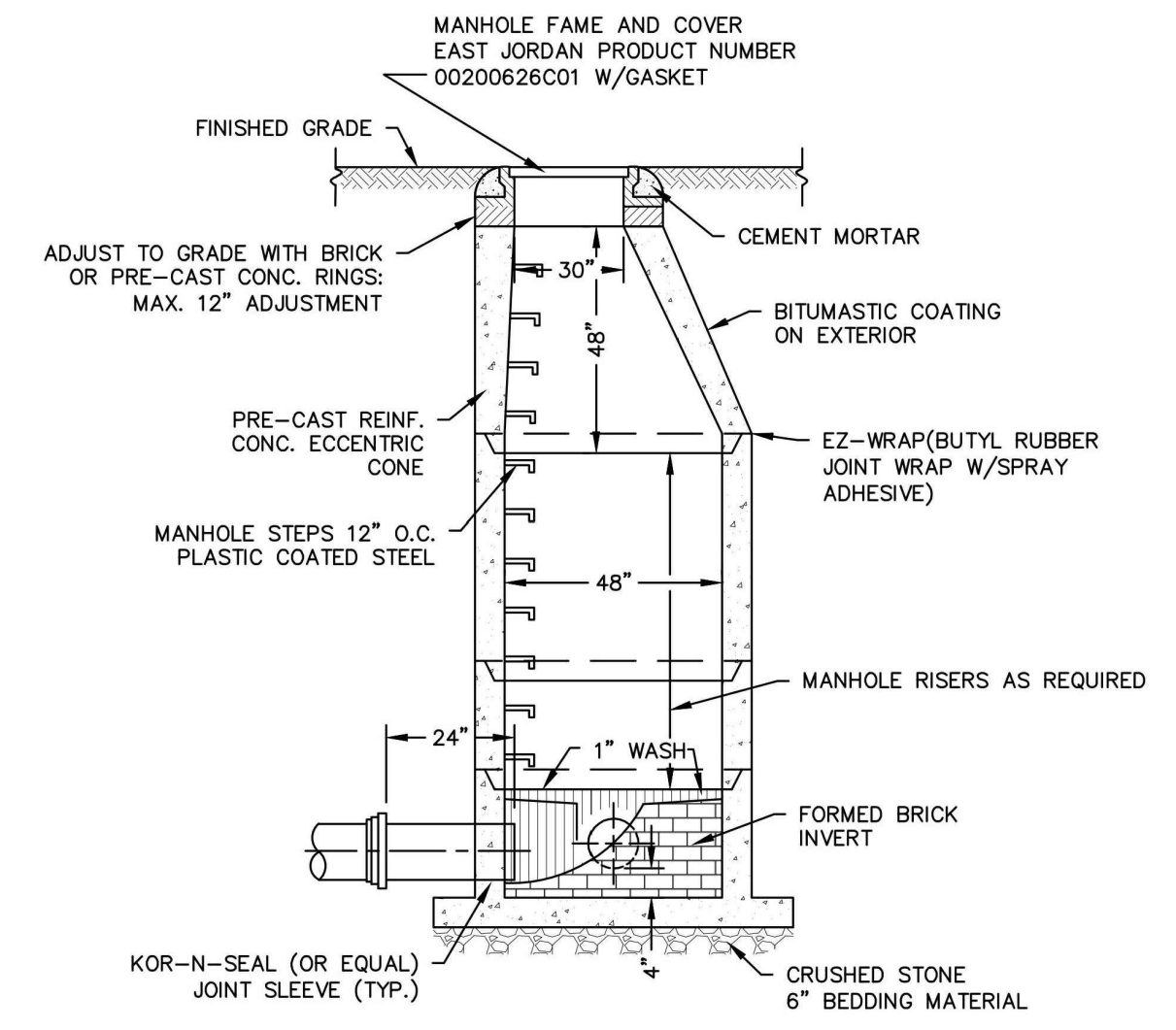
SCALE: AS SHOWN SHEET NO.: 9 of 13
DRAWN BY: TB DESIGN BY: TB CHECKED BY: TB
DATE: 12/2/24 PROJECT NO.: 24049.00



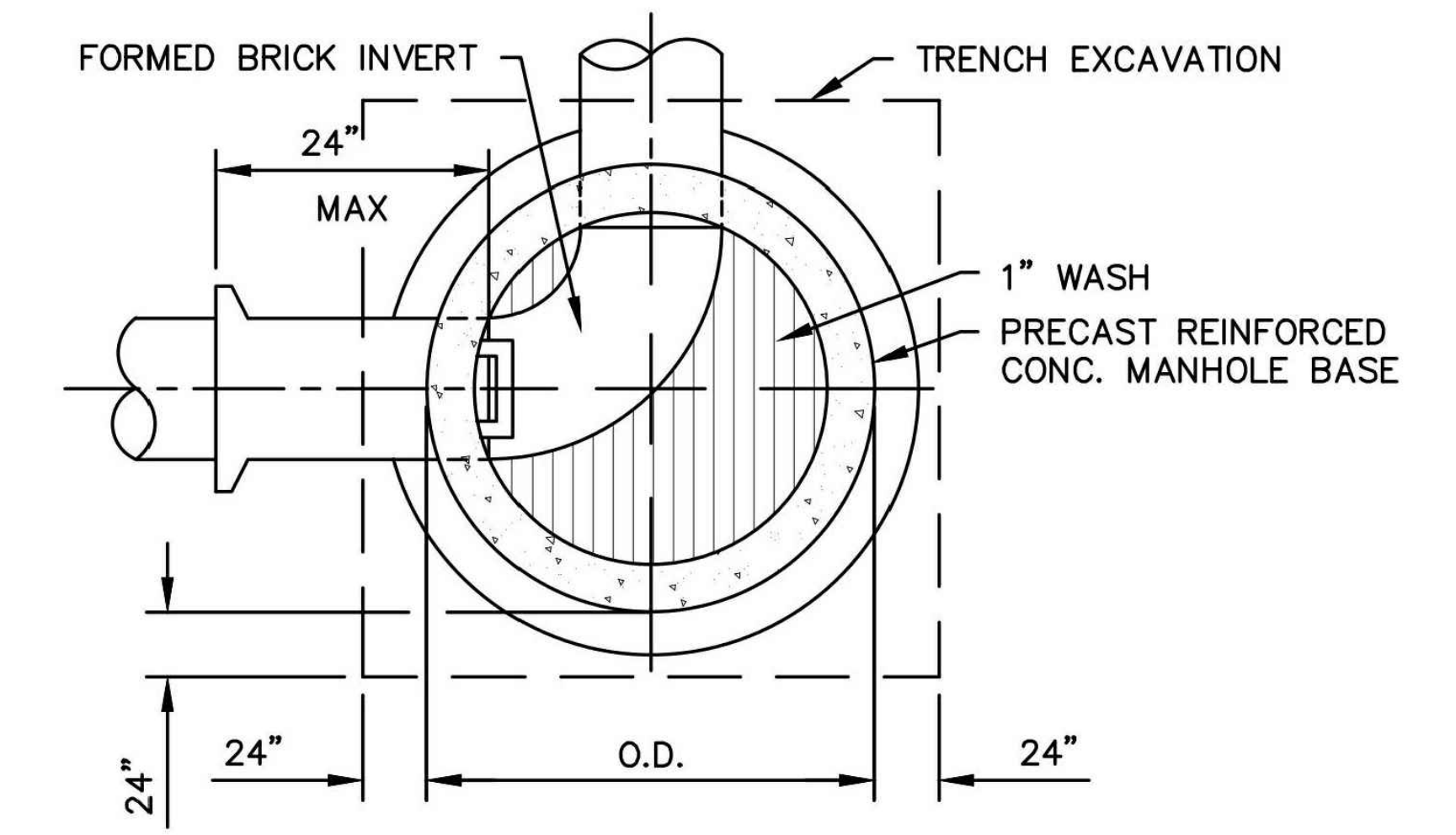
SEWER TRENCH DETAIL
NOT TO SCALE



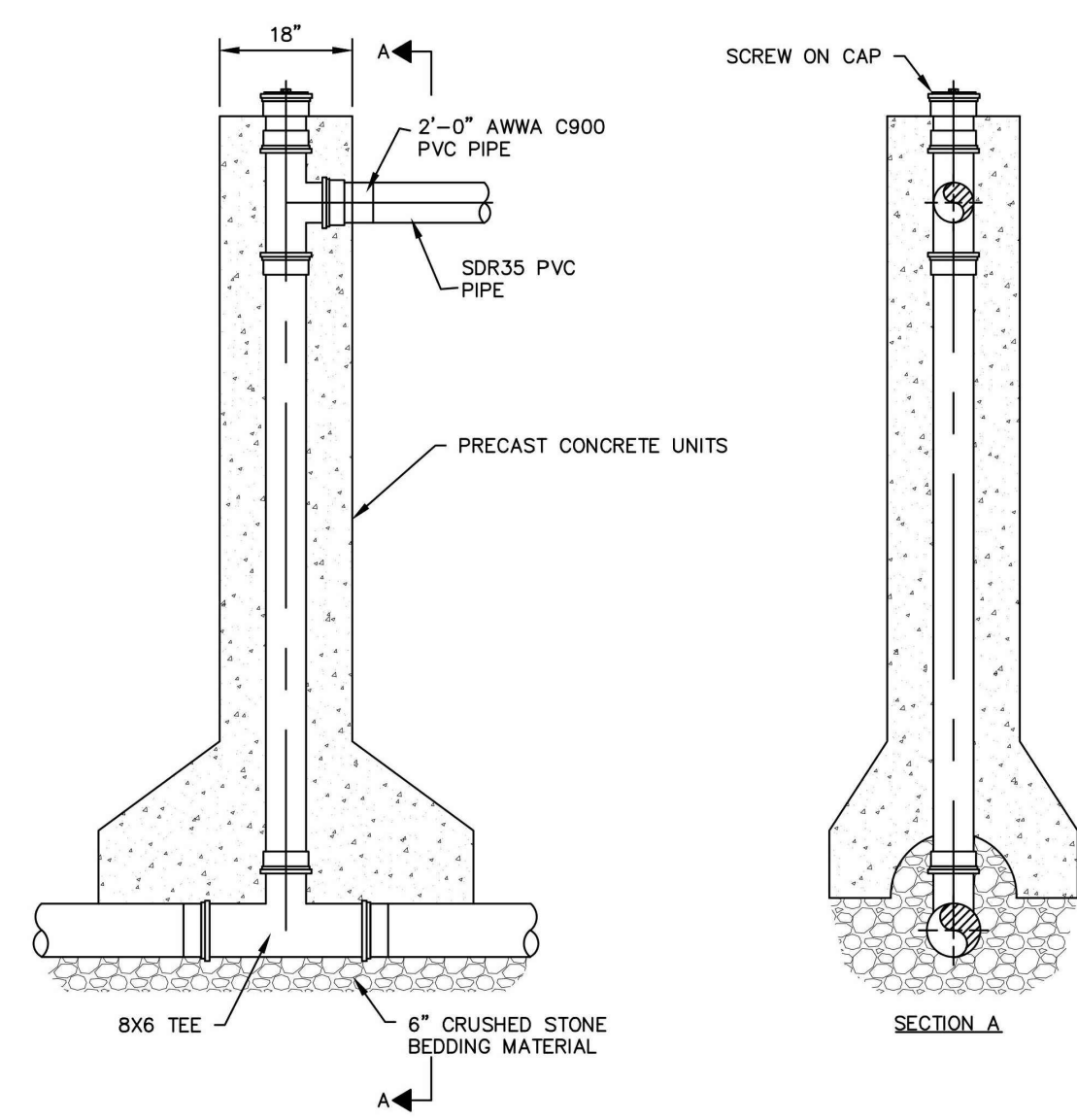
SEWER TRENCH DETAIL (WET CONDITIONS)
NOT TO SCALE



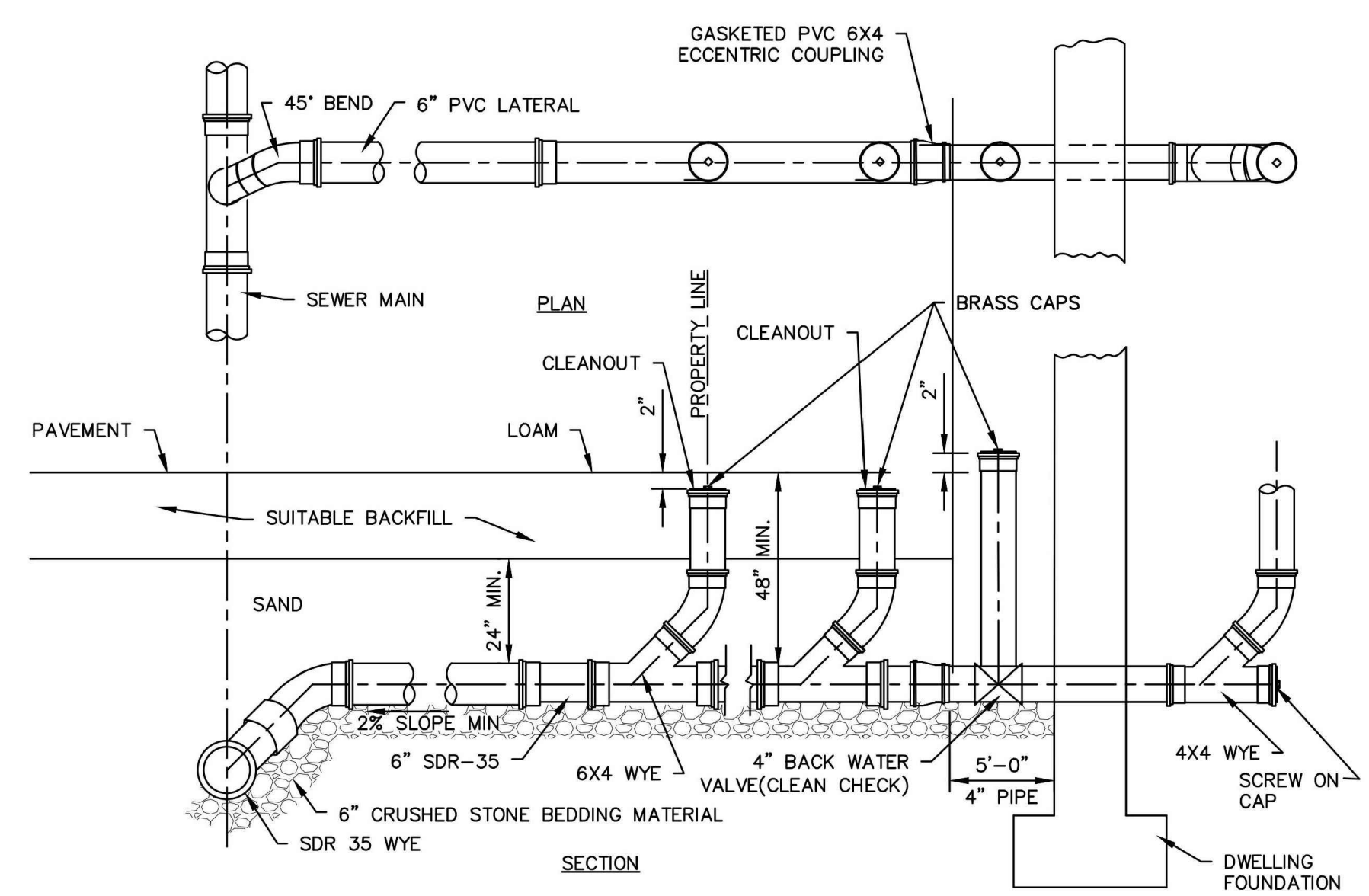
SEWER MANHOLE DETAIL
NOT TO SCALE



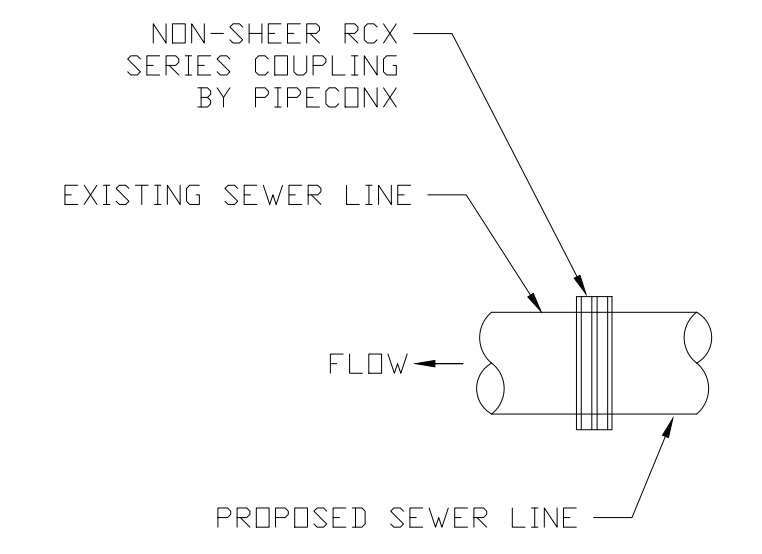
SEWER PRECAST MANHOLE DETAIL
NOT TO SCALE



SEWER STANDARD DEEP HOUSE CONNECTION DETAIL
NOT TO SCALE



SEWER STANDARD HOUSE CONNECTION DETAIL
NOT TO SCALE

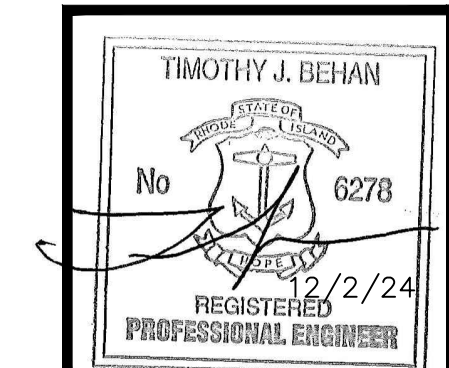
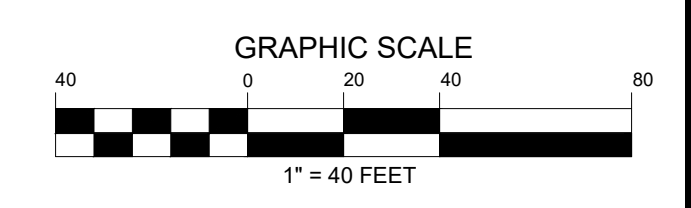


CONNECTION TO EXISTING SEWER MAIN
NOT TO SCALE

WASTEWATER FLOWS:
 AVERAGE DAILY FLOW = 6 UNITS X 3 BEDS/UNIT X 115 GAL/DAY X 50%
 = 1,035 GAL/DAY
 PEAK DAILY FLOW = ADF X 2
 = 2,070 GAL/DAY
 PEAK HOURLY FLOW = ADF X 5.7 (TR-16 PEAK FACTOR)
 = 4.1 GAL./MIN.

SEWER NOTES:
 1. ALL CONSTRUCTION, MATERIALS, SPECIFICATIONS, AND PROCEDURES SHALL CONFORM WITH THE SEWER AUTHORITY STANDARDS. WHERE A CONFLICT BETWEEN THESE PLANS AND THE SEWER AUTHORITY STANDARDS OCCURS THE SEWER AUTHORITY STANDARDS SHALL BE FOLLOWED.

DRAWING ISSUE:
 CONCEPT
 CUSTOMER APPROVAL
 PERMITTING
 CONSTRUCTION
 AS-BUILT
 OTHER:
ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION



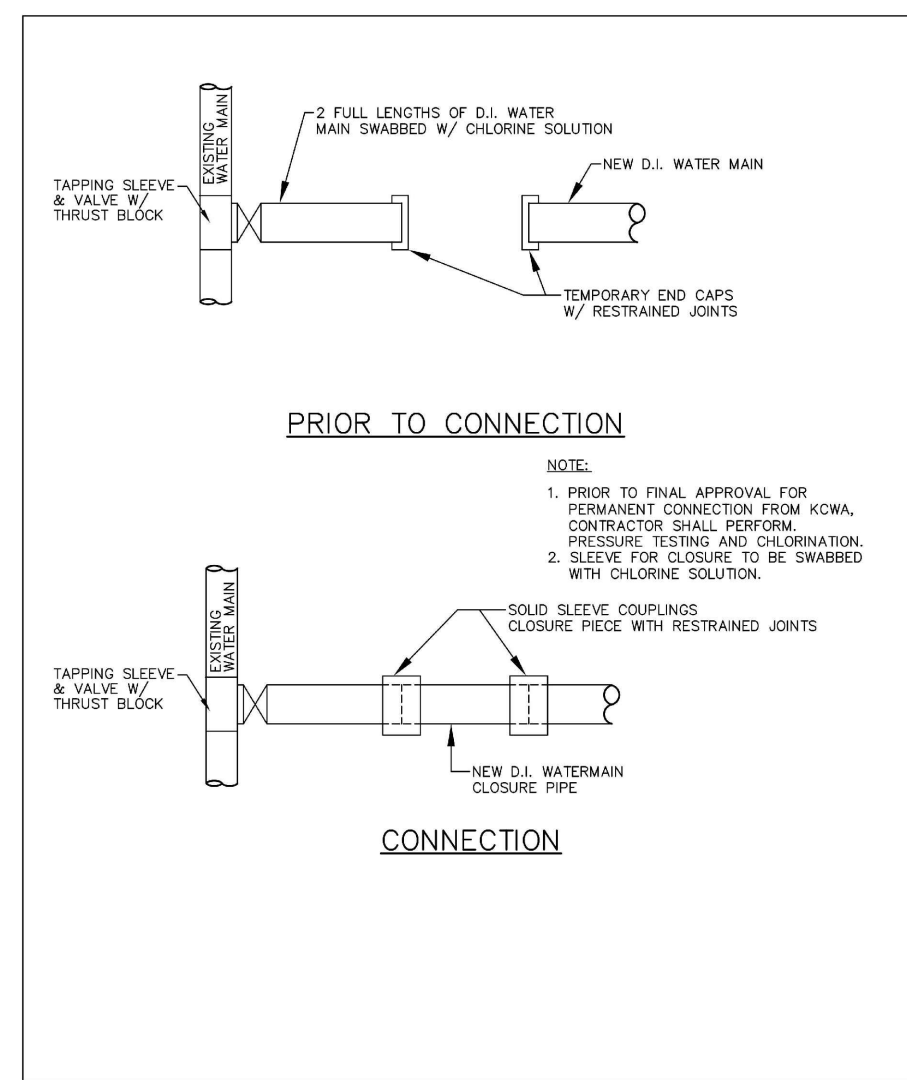
REVISIONS			
No.	DATE	DRWN	CHKD



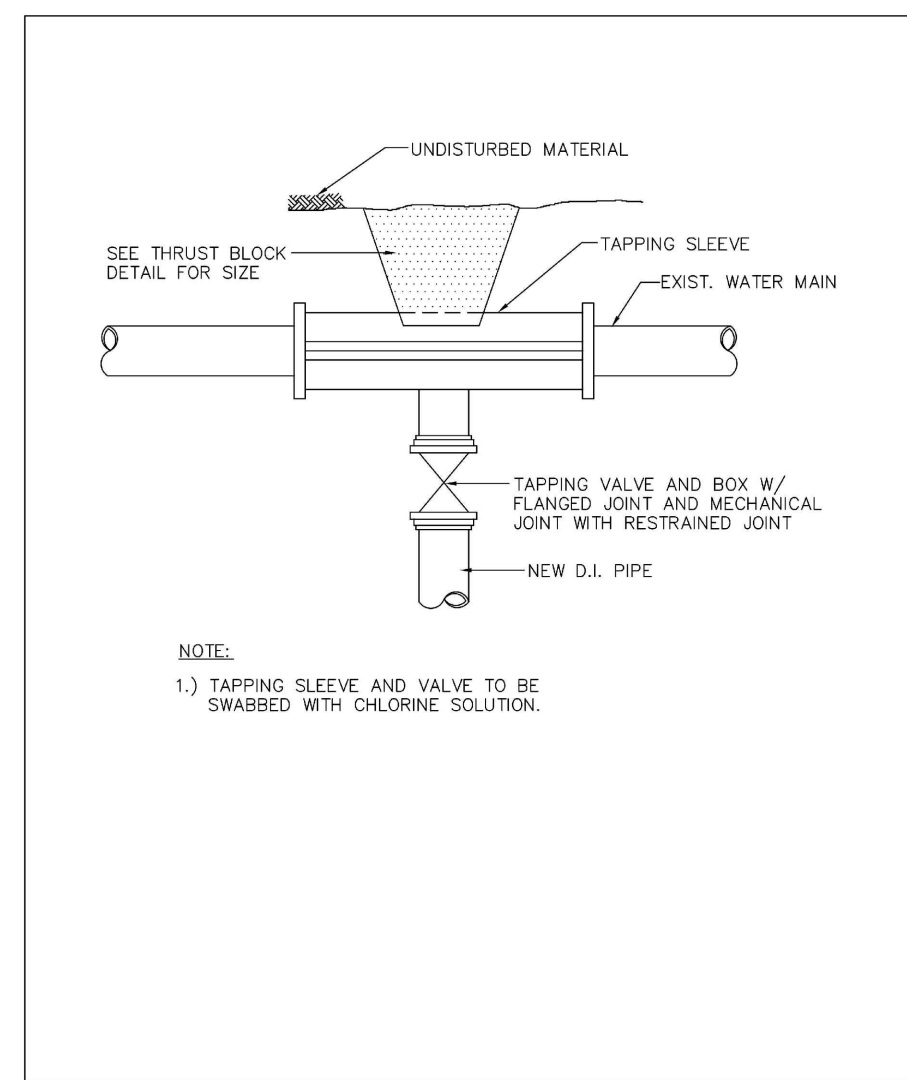
DETAILS-2 (SEWER)
CALISE DEVELOPMENT LLC PLAT
 for
A.P. 18-4 LOT 714
WARREN AVENUE
 in
 CRANSTON, RHODE ISLAND

SCALE: AS SHOWN	SHEET NO: 10 of 13
DRAWN BY: TB	DESIGN BY: TB
CHECKED BY: TB	
DATE: 12/2/24	PROJECT NO.: 24049.00

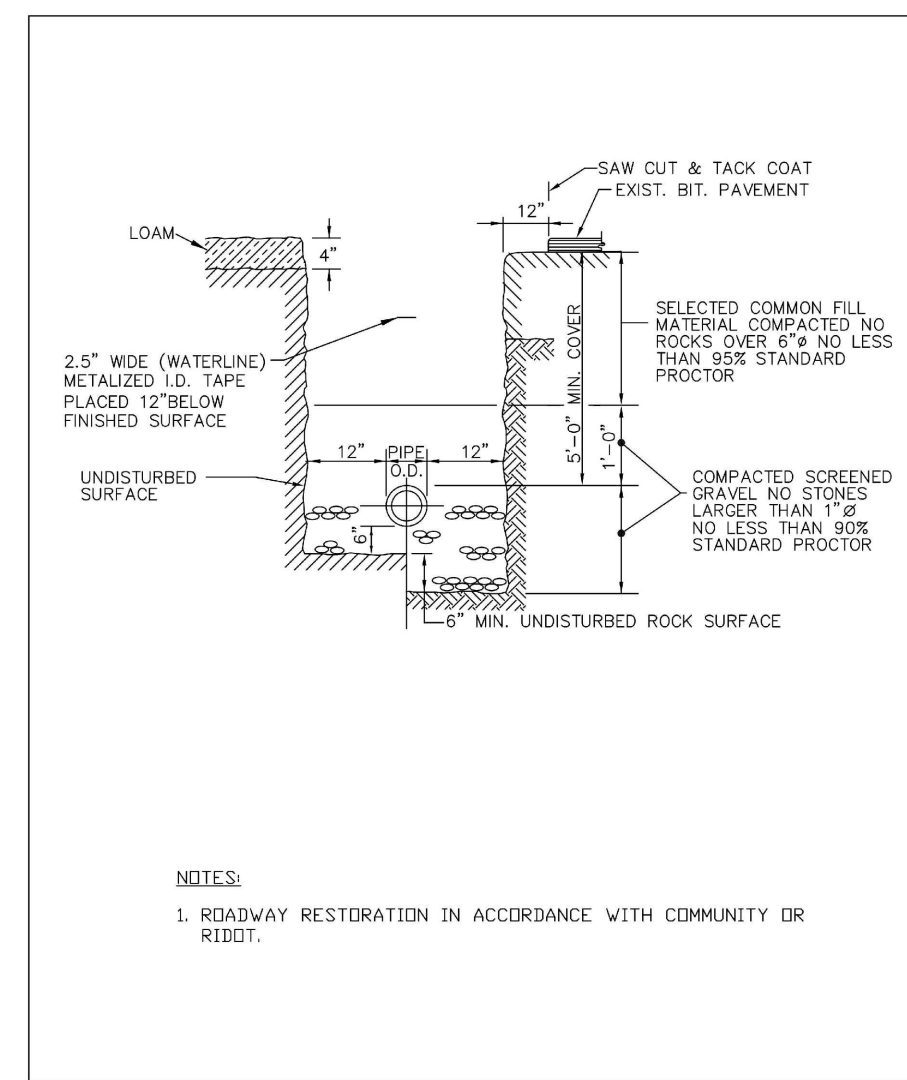
PREPARED FOR:
 CALISE DEVELOPMENT, LLC
 PO BOX 277
 GREENVILLE, RI 02828



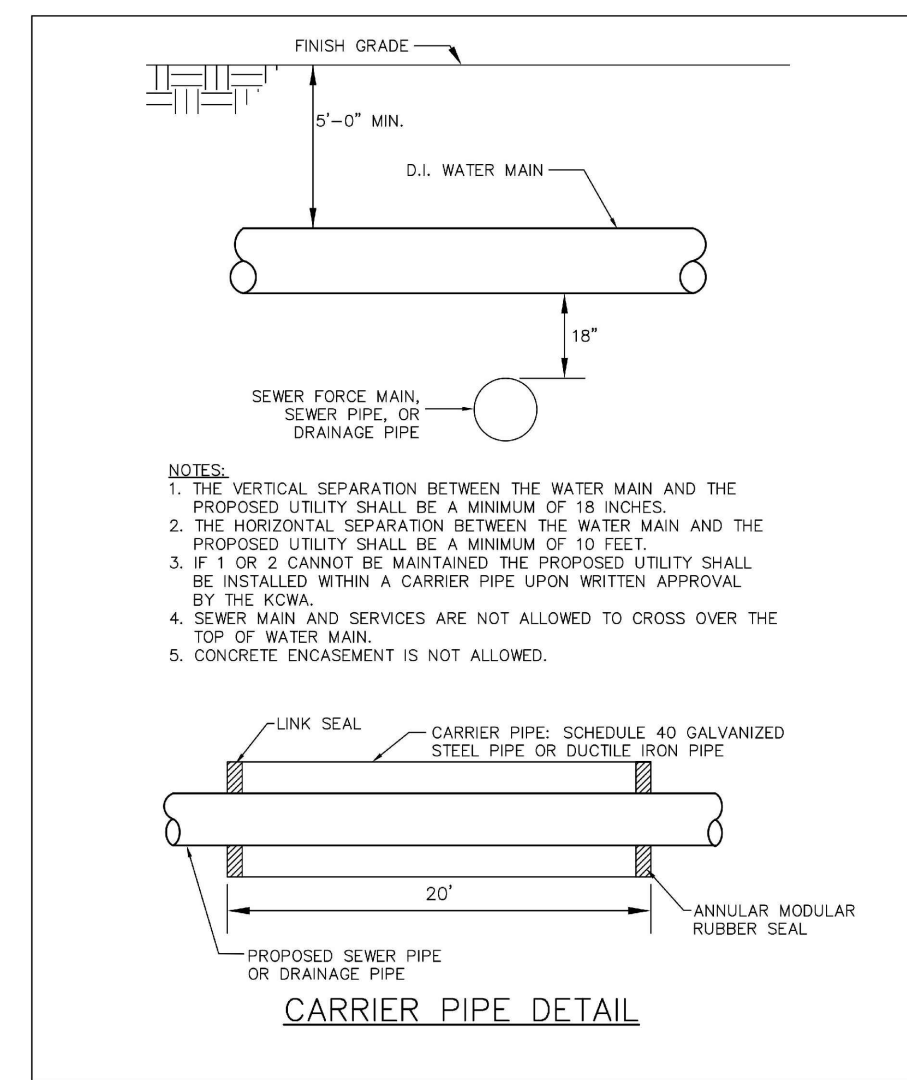
KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
CONNECTION OF NEW WATER MAIN TO EXISTING WATER MAIN
 NOT TO SCALE
 DATE: 09/2006



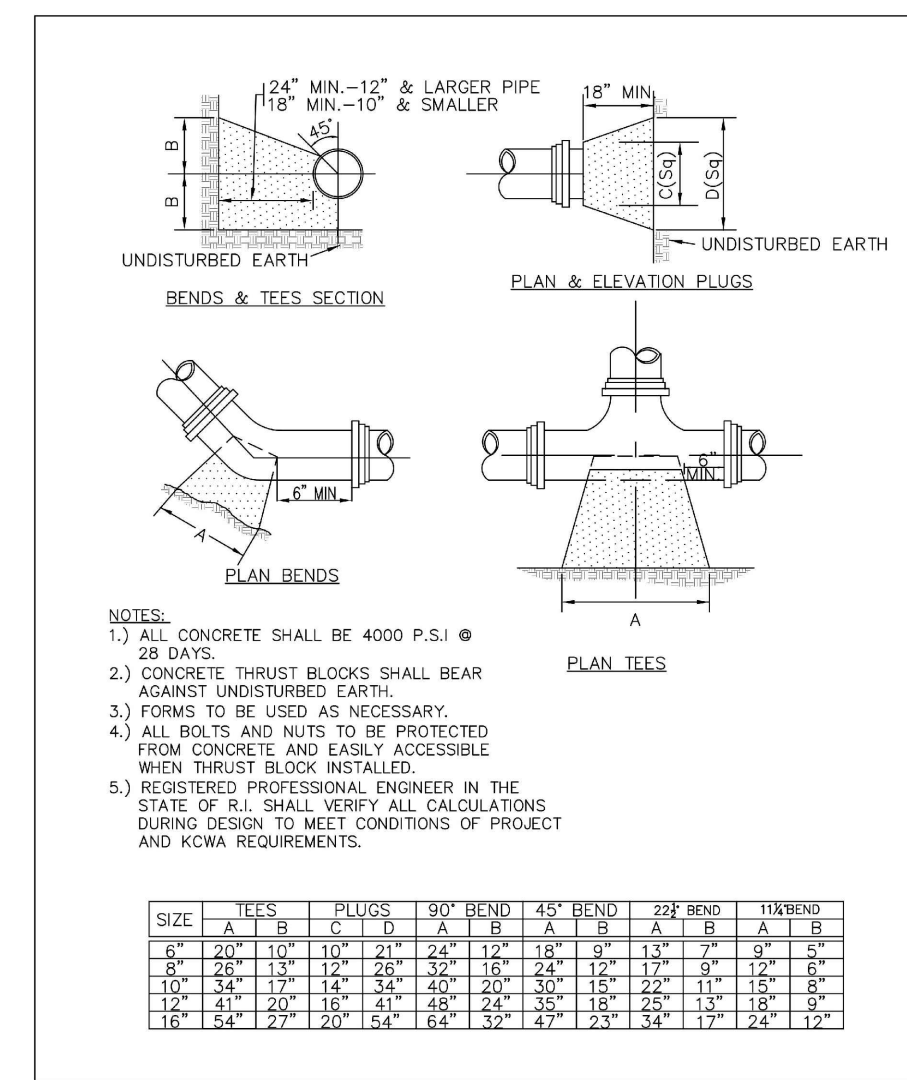
KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
TAPPING SLEEVE AND VALVE
 NOT TO SCALE
 DATE: 09/2006



KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
TRENCH INSTALLATION IN ROCK AND SOIL
 NOT TO SCALE
 DATE: 09/2006



KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
UTILITY SEPERATION
 NOT TO SCALE
 DATE: 09/2006



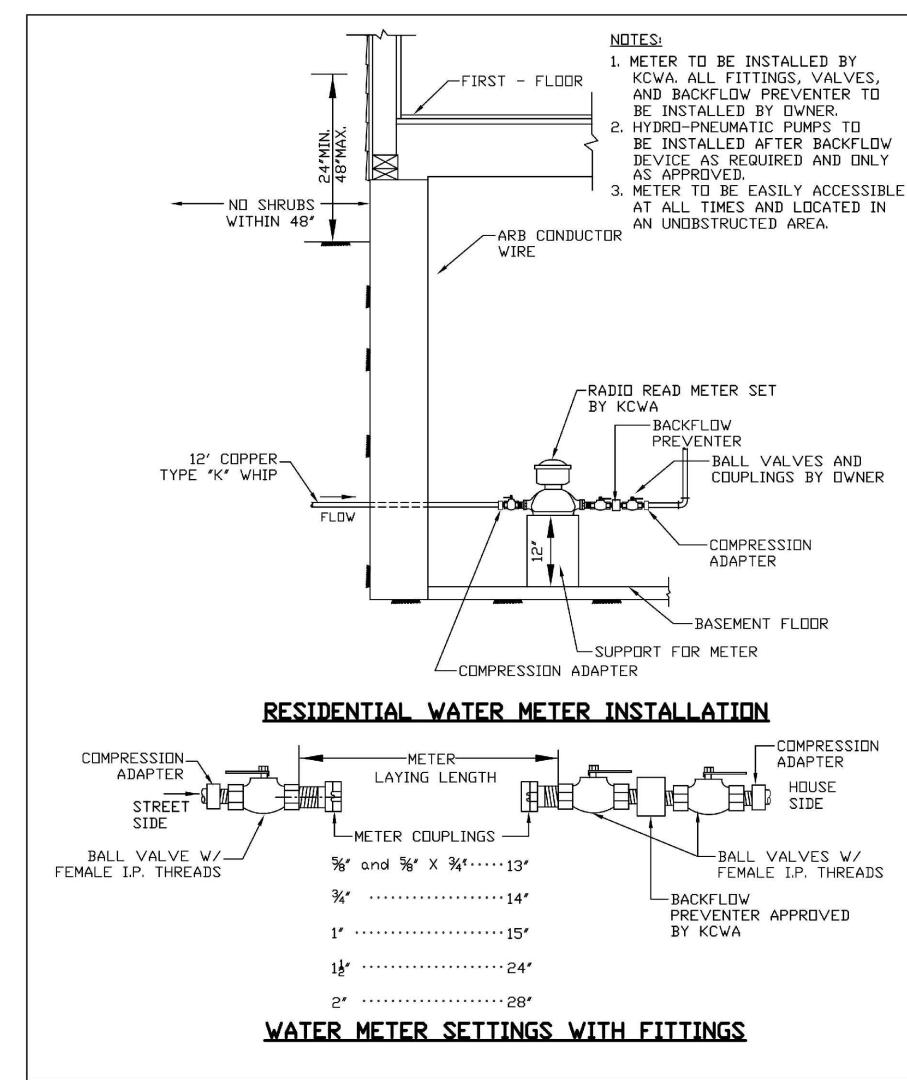
KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
THRUST BLOCK
 NOT TO SCALE
 DATE: 09/2006

RESTRAINED PIPE LENGTHS FOR RESTRAINED FITTINGS

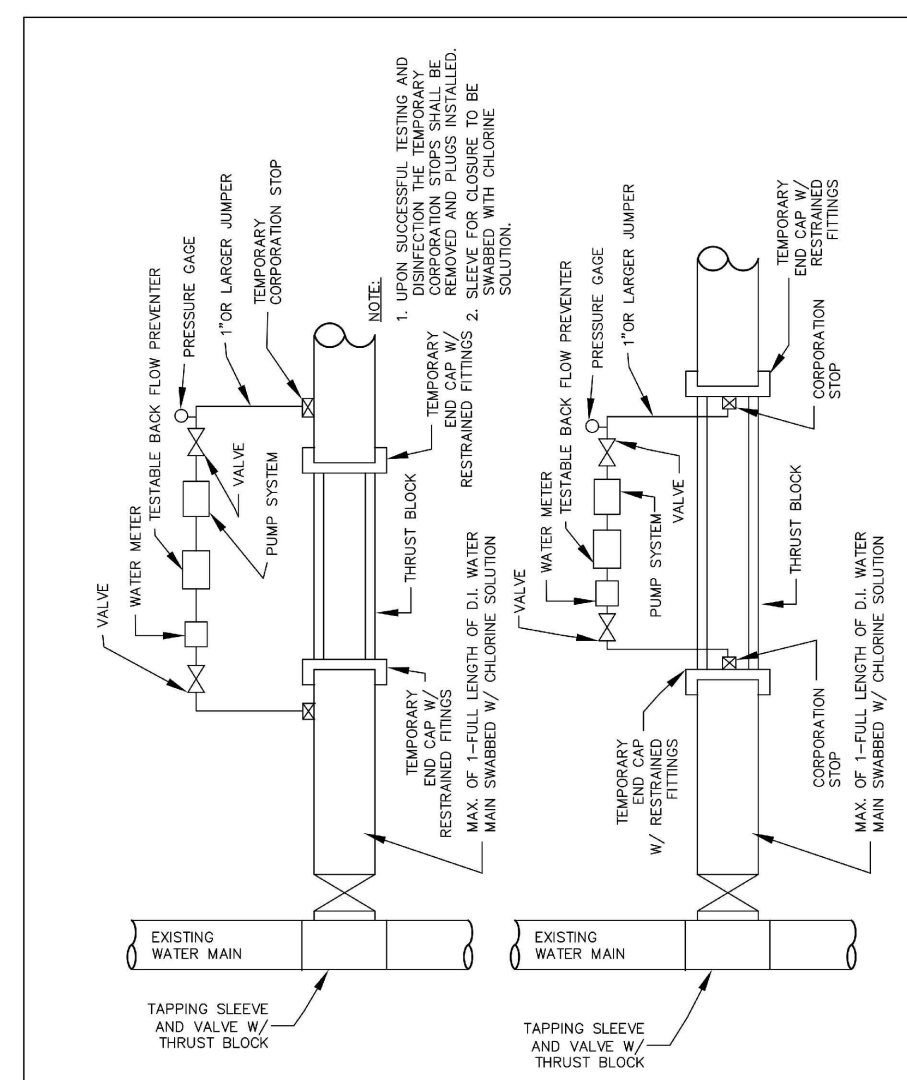
FITTING	RESTRAINED LENGTH
12" PLUS	94"
12" TEE	44"
12" 90°	58"
12" 45°	44"
12" 22 1/2°	32"
12" 11 1/4°	22"
8" PLUS	58"
8" TEE	44"
8" 90°	44"
8" 45°	32"
8" 22 1/2°	22"
8" 11 1/4°	22"
6" X 6"	44"
6" PLUS	44"
6" TEE	22"
6" 90°	22"
6" 45°	22"
6" 22 1/2°	22"
6" 11 1/4°	22"

NOTE:
 1. ALL JOINTS INCLUDING PIPE JOINTS, VALVE JOINTS AND FITTING JOINTS SHALL BE RESTRAINED WITH THE UNITS OF RESTRAINED LENGTHS LISTED ON THIS TABLE. MECHANICAL JOINT PIPE AND MECHANICAL RESTRAINTS SHALL BE IN ACCORDANCE WITH THE ABOVE TABLE.
 2. THE TABLE SHOWS LENGTHS OF PIPES WHICH MUST BE RESTRAINED OR BOTH ENDS OF THE FITTING.
 3. ALL DEAD END PIPE SHALL BE PROPERLY RESTRAINED PRIOR TO PRESSURE TESTING.
 4. REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF R.I. SHALL VERIFY ALL RESTRAINING CALCULATIONS A LENGTHS DESIGN, MEETING ALL REQUIREMENTS OF THE KCWA.

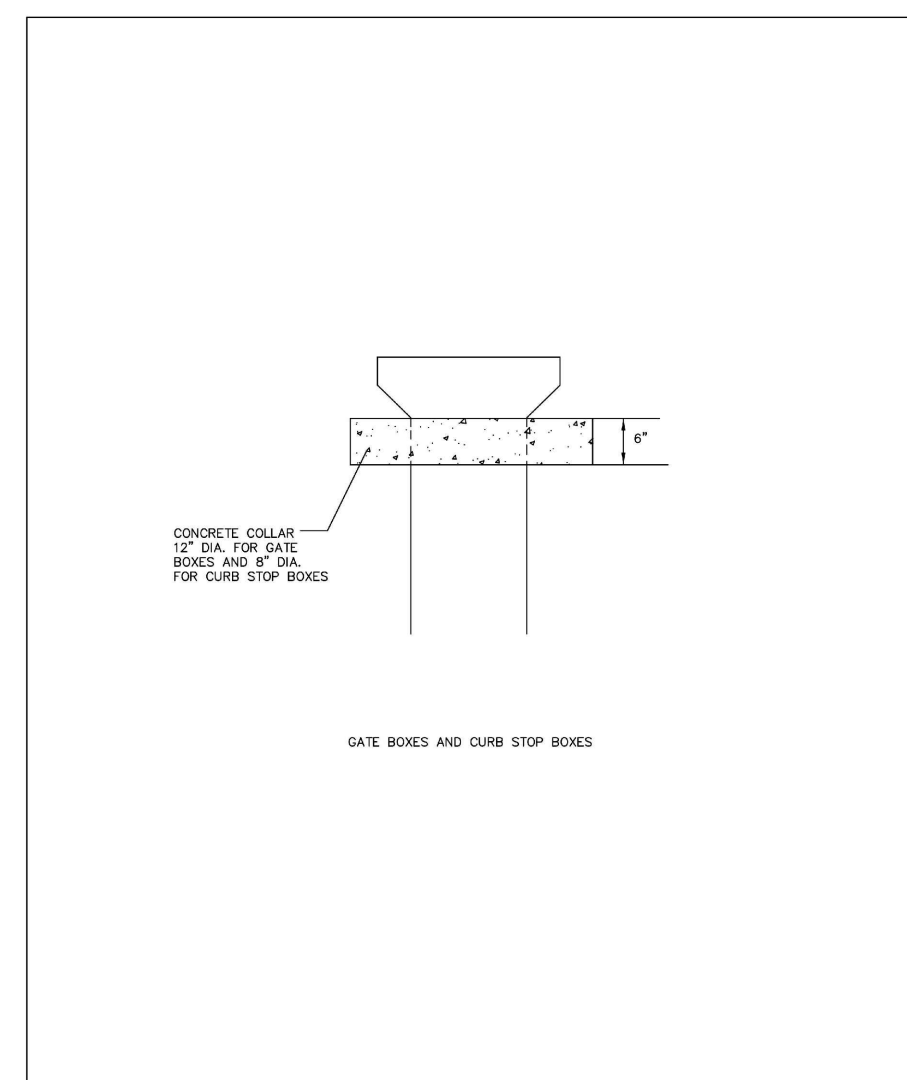
KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
RESTRAINED PIPE LENGTHS
 NOT TO SCALE
 DATE: 09/2006



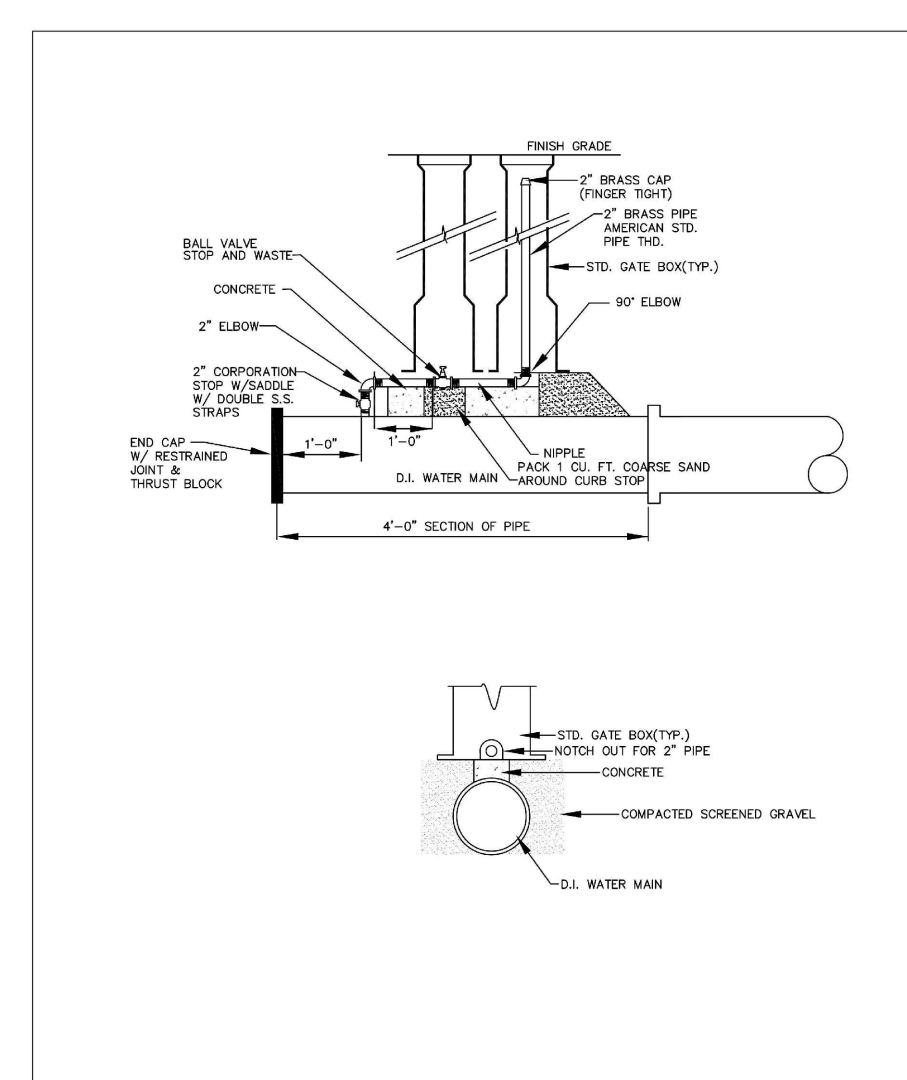
KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
RESIDENTIAL WATER METER
 NOT TO SCALE
 DATE: 09/2006



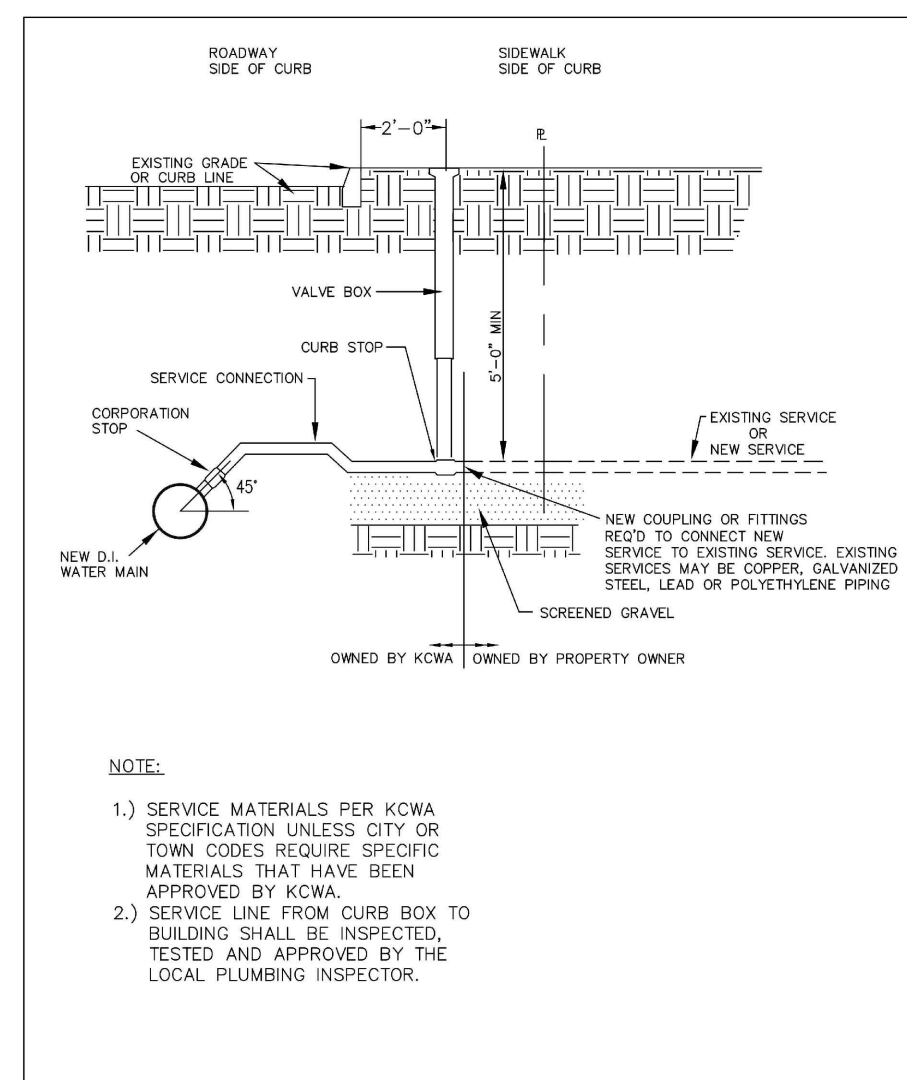
KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
TEMPORARY CONNECTION FOR PRESSURE TESTING AND DISINFECTION
 NOT TO SCALE
 DATE: 09/2006



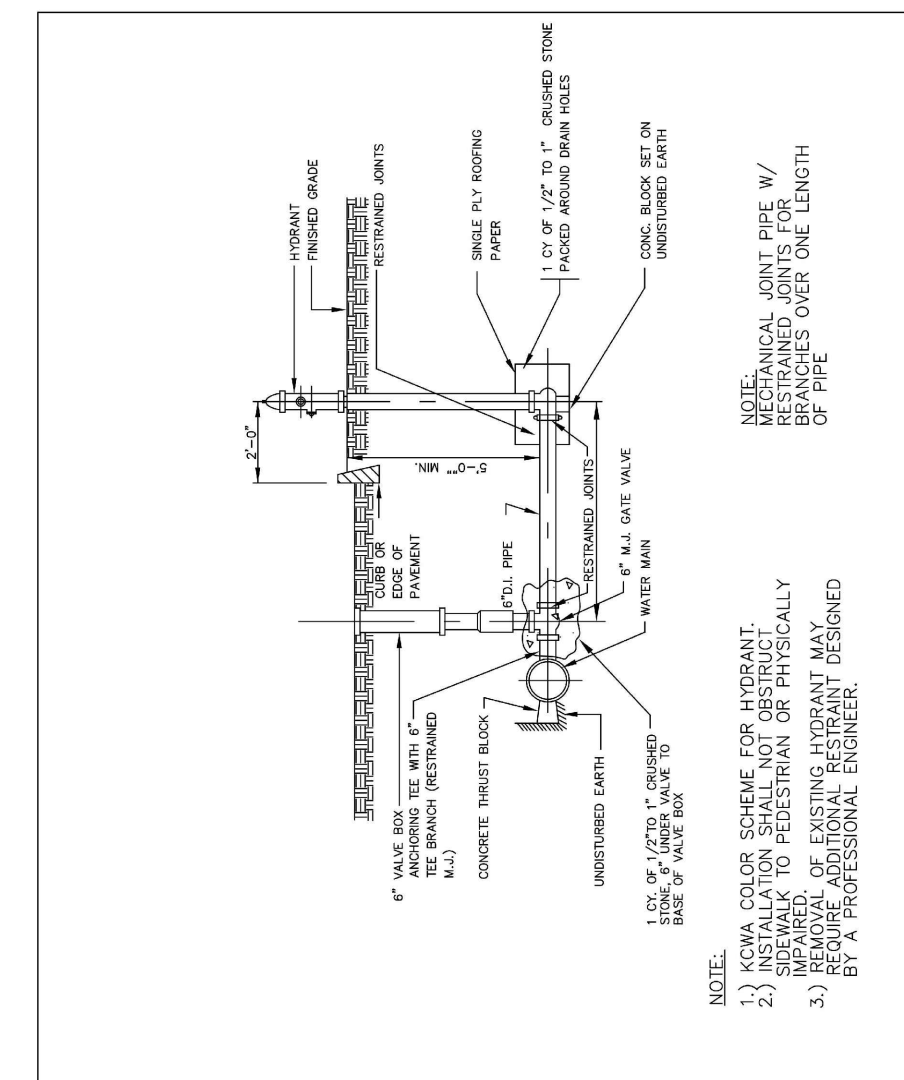
KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
CONCRETE COLLAR
 NOT TO SCALE
 DATE: 09/2006



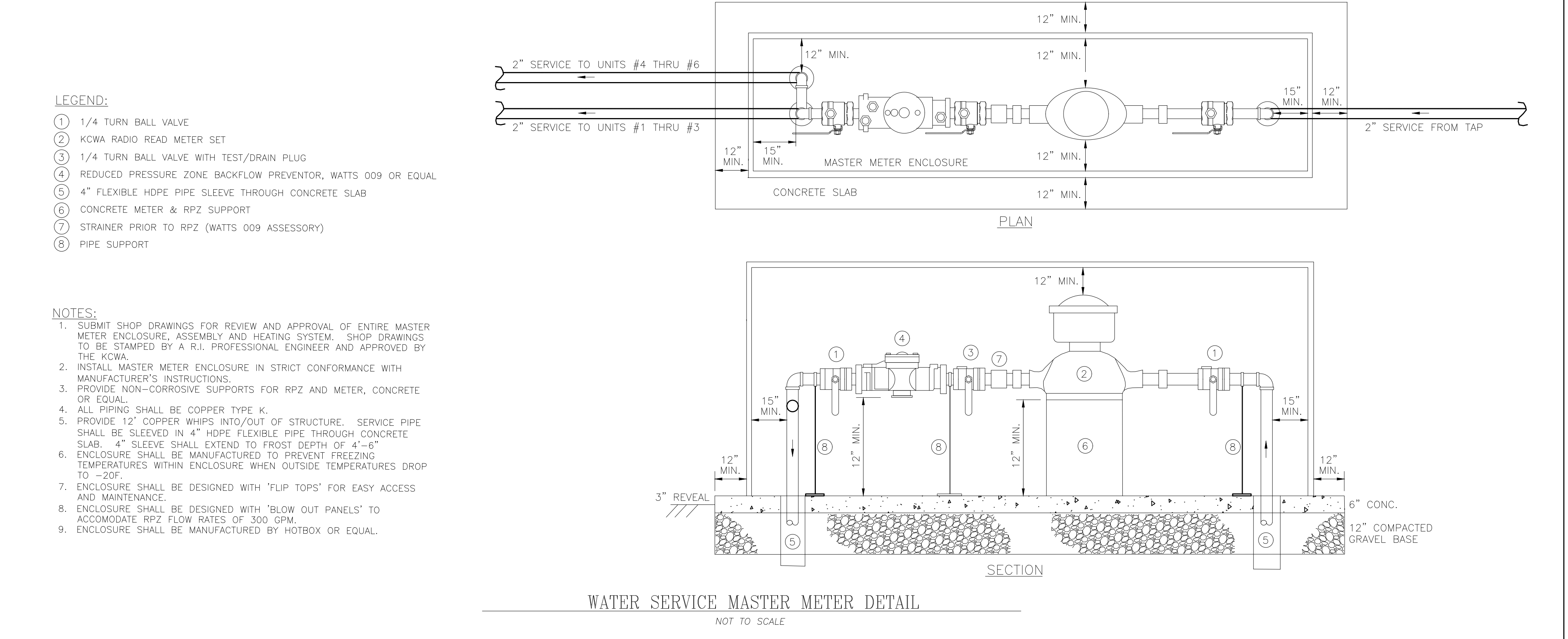
KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
PERMANENT BLOWOFF ASSEMBLY
 NOT TO SCALE
 DATE: 09/2006



KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
SERVICE CONNECTION
 NOT TO SCALE
 DATE: 09/2006



KCWA
 "proudly serving"
 KENT COUNTY WATER AUTHORITY
HYDRANT
 NOT TO SCALE
 DATE: 09/2006



DOMESTIC WATER DEMANDS:

AS PER THE KENT COUNTY RULES & REGULATIONS, PART III:

ASSUME:

- 100 GPD PER PERSON
- 2 PERSONS PER BEDROOM
- 3 BEDROOMS PER UNIT
- 6 UNITS
- MAXIMUM DAY MULTIPLIER = 2.0

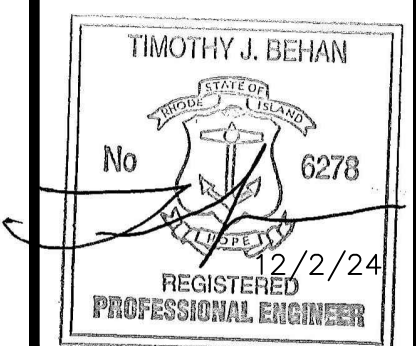
PROPOSED AVERAGE DAILY FLOW:
 (100 GPD/PERSON)*(2 PERSONS/BEDROOM)*(3 BEDROOMS/UNIT)*(6 UNITS) = 3,600 GPD

PROPOSED MAXIMUM DAILY FLOW:
 (100 GPD/PERSON)*(2 PERSONS/BEDROOM)*(3 BEDROOMS/UNIT)*2.0 = 7,200 GPD

PROPOSED PEAK HOURLY FLOW:
 (100 GPD/PERSON)*(2 PERSONS/BEDROOM)*(3 BEDROOMS/UNIT)*5.71/1 = 14,25 GPM

PEAK HOUR FACTOR: "R-16 GUIDES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS" FIGURE 2.1 "RATIO OF EXTREME FLOW TO AVERAGE DAILY FLOW"

PREPARED FOR:
 CALISE DEVELOPMENT, LLC
 PO BOX 277
 GREENVILLE, RI 02828



DETAILS-3 (WATER)
CALISE DEVELOPMENT LLC PLAT
 for
A.P. 18-4 LOT 714
WARREN AVENUE
 in
 CRANSTON, RHODE ISLAND

REVISIONS

No.	DATE	DRWN	CHKD

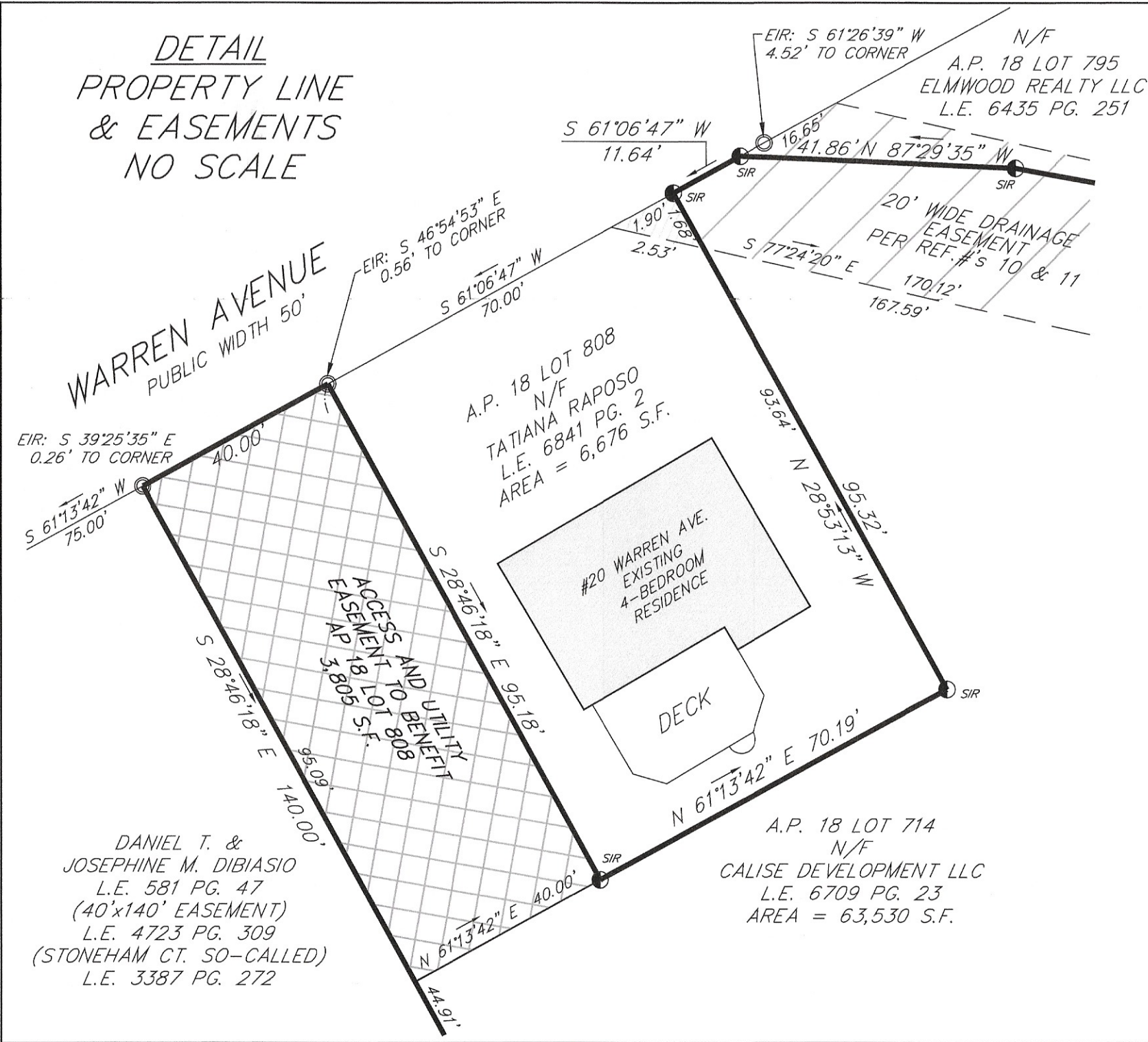
DRAWING ISSUE:

CONCEPT
 CUSTOMER APPROVAL
 PERMITTING
 CONSTRUCTION
 AS-BUILT
 OTHER:

ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

SCALE: AS SHOWN SHEET NO: 11 of 13
 DRAWN BY: TB DESIGN BY: TB CHECKED BY: TB
 DATE: 12/2/24 PROJECT NO.: 24049.00

**DETAIL
PROPERTY LINE
& EASEMENTS
NO SCALE**



PLAN NOTE:
THERE ARE NO KNOWN OR ANTICIPATED ENVIRONMENTAL HAZARDS FOR THIS PROJECT.

PLAN REFERENCES:

- RIGHT OF WAY & TRACK MAP FOR THE NEW YORK, NEW HAVEN & HARTFORD R.R. Co... V.37 50, SHEETS 9, 10 & 11... DATE: JUNE 30, 1915... SCALE 1"=50'...
- STATE HIGHWAY PLAT #616
- STATE HIGHWAY PLAT #799
- STATE HIGHWAY PLAT #829
- STATE HIGHWAY PLAT #1212
- STATE HIGHWAY PLAT #2410 (WASHINGTON SECONDARY RAILROAD RIGHT-OF-WAY)
- PLAT BOOK 14, PAGE 9, CARD 375, "WILBUR TERRACE... SITUATED IN CRANSTON, R.I., BY G.L. ANTHONY, ENGR... DATE: MAY 1950... SCALE 1"=50'..."
- CITY OF CRANSTON ENGINEERS BOOK 17 PAGE 46 (LOTS 793, 474 & 795)
- CITY OF CRANSTON ENGINEERS BOOK 22 PAGE 143 (LOT 795)
- RHODE ISLAND DEPARTMENT OF PUBLIC WORKS, DIVISION OF ROADS & BRIDGES... CRANSTON-WILBUR AVENUE, OAKLAWN... PROPOSED DRAINAGE THRU PROPERTY OF MARY R. BRAZIL IN ACCORDANCE WITH DRAINAGE AGREEMENT NO. 344... DATE: JUNE 1, 1950... SCALE 1"=40'..."
- RHODE ISLAND DEPARTMENT OF PUBLIC WORKS, DIVISION OF ROADS & BRIDGES... CRANSTON-WILBUR AVENUE, OAKLAWN... PROPOSED DRAINAGE THRU PROPERTY OF LEO A. & ROSE A. FRIGON IN ACCORDANCE WITH DRAINAGE AGREEMENT NO. 342... DATE: JUNE 1, 1950... SCALE 1"=40'..."
- STATE OF RHODE ISLAND, DEPARTMENT OF PUBLIC WORKS, DIVISION OF ROADS & BRIDGES... PLAN, PROFILE AND SECTIONS OF PROPOSED STATE HIGHWAY... BRIDGE NO. 420 & APPROACHES COMMONLY KNOWN AS WILBUR AVE. R.R. BRIDGE, CRANSTON, PROVIDENCE COUNTY... FEDERAL AID SECONDARY PROJECT NO. S-0-40 (1) 0.098 MILES... DATE: DEC. 19, 1949...
- RECORD PLAT 1098 "CALISE DEVELOPMENT LLC PLAT, ADMINISTRATIVE SUBDIVISION... ASSESSORS PLAT 18-3, LOTS 684, 714, 798 & 808... PREPARED BY ALPHA ASSOCIATES, LTD... DATE: MAY 13, 2024... SCALE 1"=30'..."

FLOOD NOTE:
THE PARCELS FALL WITHIN ZONES X & SHADED X PER FEMA MAP NUMBER 44007C0426H, EFFECTIVE 10/2/2015.

SOIL NOTE:
THE ENTIRE PARCEL AND SURROUNDING SITES ARE SOIL CATEGORY "HKA" HINCKLEY, LOAMY SAND, GENERAL 0 TO 3% SLOPES.

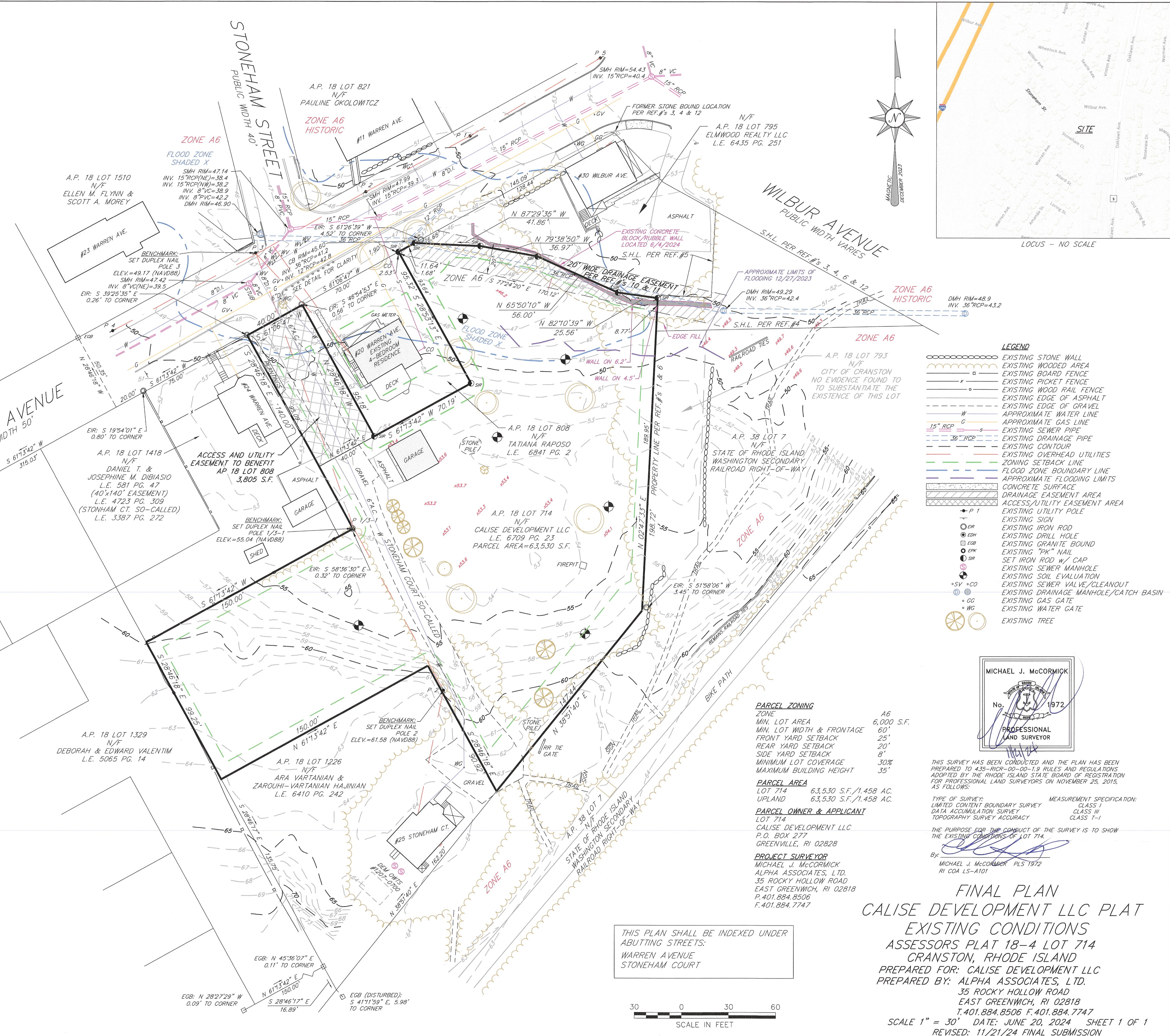
NO.	DATE	DESCRIPTION
1	11/21/24	FINAL SUBMISSION

UTILITY NOTE:
ALPHA ASSOCIATES, LTD. IN NO WAY GUARANTEES THE LOCATION OR CHARACTERISTICS OF THE SHOWN UTILITIES. IT SHALL BE THE CONTRACTOR OR CLIENTS RESPONSIBILITY TO CONTACT INDIVIDUAL UTILITY AGENCIES AND DIG-SAFE PRIOR TO PLANNING OR START OF CONSTRUCTION.

GENERAL NOTE:
THESE PLANS MAY NOT BE MODIFIED FROM THEIR ORIGINAL FORMAT. THESE PLANS MAY NOT BE DISSEMINATED FOR ANY PURPOSE WITHOUT THE CONSENT OF ALPHA ASSOCIATES, LTD. BY ACCEPTING THESE PLANS, THE PROPERTY OWNER / CONTRACTOR AGREES TO ALL ABOVE TERMS.

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THESE DRAWINGS ARE THE PROPERTY OF THE SURVEYOR AND HAVE BEEN PREPARED FOR THIS OWNER. FOR THIS PROJECT AT THIS SITE AND ARE NOT TO BE USED FOR ANY OTHER PURPOSE. LOCATION OR OWNER WITHOUT WRITTEN CONSENT OF THIS OWNER OR ONE OF ITS DIRECTORS.

ALPHA ASSOCIATES, LTD.
PROFESSIONAL LAND SURVEYORS
35 ROCKY HOLLOW ROAD
EAST GREENWICH, RI 02818



- LEGEND**
- EXISTING STONE WALL
 - EXISTING WOODED AREA
 - EXISTING BOARD FENCE
 - EXISTING PICKET FENCE
 - EXISTING WOOD RAIL FENCE
 - EXISTING EDGE OF ASPHALT
 - EXISTING EDGE OF GRAVEL
 - APPROXIMATE WATER LINE
 - APPROXIMATE GAS LINE
 - EXISTING SEWER PIPE
 - EXISTING DRAINAGE PIPE
 - EXISTING CONTOUR
 - EXISTING OVERHEAD UTILITIES
 - WASHINGTON SECONDARY RAILROAD SETBACK LINE
 - FLOOD ZONE BOUNDARY LINE
 - APPROXIMATE FLOODING LIMITS
 - CONCRETE SURFACE
 - DRAINAGE EASEMENT AREA
 - ACCESS/UTILITY EASEMENT AREA
 - EXISTING UTILITY POLE
 - EXISTING SIGN
 - EXISTING IRON ROD
 - EXISTING DRILL HOLE
 - EXISTING GRANITE BOUND
 - EXISTING "PK" NAIL
 - SET IRON ROD W/ CAP
 - EXISTING SEWER MANHOLE
 - EXISTING SOIL EVALUATION
 - EXISTING SEWER VALVE/CLEANOUT
 - EXISTING DRAINAGE MANHOLE/CATCH BASIN
 - EXISTING GAS GATE
 - EXISTING WATER GATE
 - EXISTING TREE

PARCEL ZONING

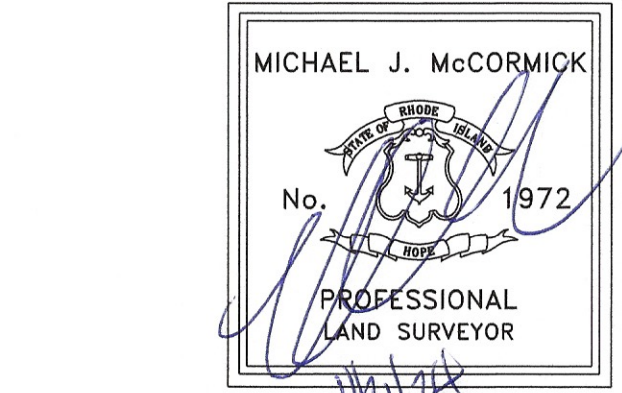
ZONE	A6
MIN. LOT AREA	6,000 S.F.
MIN. LOT WIDTH & FRONTAGE	60'
FRONT YARD SETBACK	25'
REAR YARD SETBACK	20'
SIDE YARD SETBACK	8'
MINIMUM LOT COVERAGE	30%
MAXIMUM BUILDING HEIGHT	35'

PARCEL AREA

LOT 714	63,530 S.F./1.458 AC.
UPLAND	63,530 S.F./1.458 AC.

PARCEL OWNER & APPLICANT
CALISE DEVELOPMENT LLC
P.O. BOX 277
GREENVILLE, RI 02828

PROJECT SURVEYOR
MICHAEL J. McCORMICK
ALPHA ASSOCIATES, LTD.
35 ROCKY HOLLOW ROAD
EAST GREENWICH, RI 02818
P. 401.884.8506
F. 401.884.7747



THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED TO 4.35-RICR-00-00-1.9 RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON NOVEMBER 25, 2015, AS FOLLOWS:

TYPE OF SURVEY:	MEASUREMENT SPECIFICATION:
LIMITED CONTENT BOUNDARY SURVEY	CLASS 1
DATA ACCUMULATION SURVEY	CLASS III
TOPOGRAPHY SURVEY ACCURACY	CLASS T-1

THE PURPOSE FOR THE CONDUCT OF THE SURVEY IS TO SHOW THE EXISTING CONDITIONS OF LOT 714.

BY: MICHAEL J. McCORMICK PLS 1972
RI COA LS-A101

FINAL PLAN
CALISE DEVELOPMENT LLC PLAT
EXISTING CONDITIONS
ASSESSORS PLAT 18-4 LOT 714
CRANSTON, RHODE ISLAND
PREPARED FOR: CALISE DEVELOPMENT LLC
PREPARED BY: ALPHA ASSOCIATES, LTD.
35 ROCKY HOLLOW ROAD
EAST GREENWICH, RI 02818
T.401.884.8506 F.401.884.7747
SCALE 1" = 30' DATE: JUNE 20, 2024 SHEET 1 OF 1
REVISED: 11/21/24 FINAL SUBMISSION

THIS PLAN SHALL BE INDEXED UNDER
ABUTTING STREETS:
WARREN AVENUE
STONEHAM COURT

