

Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists



September 17, 2024,

Peter Britz, Planning Director City of Portsmouth 2 Junkins Avenue Portsmouth, NH 03801

Re: TAC - Parking Lot Expansion for 1900 Lafayette Road, Portsmouth, NH TFMoran Project: 45407.17

Dear Peter:

On behalf of our client, Hammes Realty Services, LLC., we would like to submit the following updated plans and material for review by the Technical Advisory Committee (TAC). Included with this letter are the following materials:

- 1 Copy Letter of Authorization;
- 1 Copy Drainage Memo, last updated August 16, 2024
- 1 Copy 22" x 34" copy of the Atlantic Orthopaedics Parking Expansion Plans 1900 Lafayette Road, Tax Map 267 – Lot 8, Portsmouth, New Hampshire, Owned by and Prepared for Hammes Realty Services, LLC, dated January 24, 2024, Last Revised September 17, 2024;
- 1 Copy 11"x17" copy of the Atlantic Orthopaedics Parking Expansion Plans 1900 Lafayette Road, Tax Map 267 – Lot 8, Portsmouth, New Hampshire, Owned by and Prepared for Hammes Realty Services, LLC, dated January 24, 2024, Last Revised September 17, 2024;

The proposal is for an additional 22 Parking Spaces to meet parking demands. Per the September 10, 2024 TAC Work Session, we have added a turnaround to the end of the parking area and included an Overall Site Layout Plan showing the Open Space and Impervious Cover.

We look forward to discussing this project with you at the TAC Work Session on October 1, 2024.

Sincerely, TFMoran, Inc. Jack McTigue, PE, CPESC Project Manager

cc: Hammes Realty Services, LLC.





Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists



Letter of Authorization

I, <u>J. Patrick Hammes</u>, of HPIII Boston Portsmouth, LLC hereby authorize TFMoran, Inc., 170 Commerce Way, Suite 102, Portsmouth, NH, to act on my behalf concerning property owned by HPIII Boston Portsmouth, LLC, 1900 Lafayette Road, Portsmouth, New Hampshire, known as Tax Map 267, Lot 8.

I hereby appoint TFMoran, Inc. as my agent to act on my behalf in the review process, to include any required signatures.

Client Name: J. Patrick Hammes Title: Its Authorized Representative

Witness Name: Rachael R. Lang

August 9, 2024 Date

August 9, 2024 Date



PROJECT NARRATIVE

The subject property is located at 1900 Lafayette Road, Portsmouth, NH, identified as Map 267, Lot 8 on the Portsmouth assessor's maps. The current owner of the lot is Hammes Realty Services. The lot's current use is Medical. The lot contains a 2 Story Medical Office and a 2 Story Ambulatory Care Center.

The HydroCAD model has the full site integrated into it (497,281 SF). This report only looks at the area that is being impacted by the parking expansions and the area of the asbuilt infiltration basin (47,764 SF).

The development includes the moving the existing Trash Enclosure and the construction of a 7,653 SF parking extension. Associated improvements include and are not limited to access, grading, utilities, stormwater management system, lighting, and landscaping. The project proposes 7,816 SF of impervious area within the property lines and approximately 21,683 SF of disturbance.

In the pre-development condition, the total impervious area in the impacted area is 5,041 SF over a total drainage analysis area of 47,764 SF. In the post-development condition, the total impervious area is 12,503 SF over a total drainage analysis area of 47,764 SF. Stormwater runoff from the site primarily infiltrates into the Udorthents, smoothed soils via an underground infiltration system Stormwater runoff is pretreated by deep sump catch basins and the ADS isolation row, which is part of the Subsurface Storage and infiltration System (PSuS3). It either infiltrates into the soil or discharges to the (north) of the development into the As-built Infiltration Basin (ADP01) and through the As-built Headwall (HW-02). The Headwall is used as the point of Interest.

The following table summarizes the pre- and post-development peak runoff rates for the 2-year, 10-year, 25-year and 50-year 24-hour Type III storm events for all discharges:

SURFACE WATER PEAK RUNOFF RATE COMPARISON					
POIN	IT OF		DESIGN STORM		
INTE	REST	2-year	10-year 25-year 50-year		
AHW02	Pre	0.62	2.56	5.36	8.23
	Post	0.62	2.28	4.98	8.10

 Table 1 – Surface Water Peak Runoff Rate Comparison

(All flow rates shown are in cubic feet per second)

The following table summarizes the pre- and post-development peak runoff volume for the 2-year 24-hour Type III storm events for all discharges:

SURFACE WATER PEAK RUNOFF VOLUME COMPARISON		
POINT OF DESIGN		
INTEREST		STORM
2-year		
AHW02	Pre	20,224
	Post	19,150

 Table 2 – Surface Water Peak Runoff Volume Comparison
 (All flow rates shown are in cubic feet)

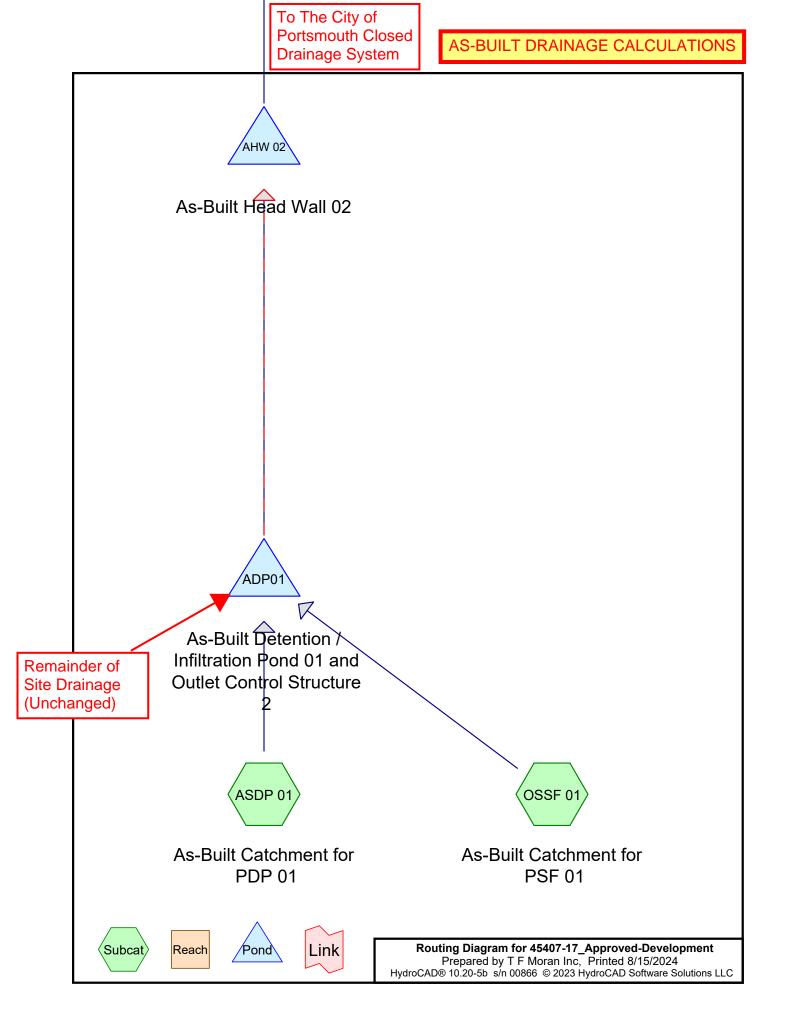
The proposed project reduces peak rates of runoff compared to existing conditions for all storm events, in accordance with AoT requirements. Additionally, the 2-year 24-hour storm does not result in an increased peak flow volume from the pre-development to post-development condition. There will be no adverse effects on the abutting properties from the proposed stormwater management system.

If you have any questions or concerns, please do not hesitate to contact us.

Respectfully,

/ igue Jack McTigue, F/E, CPES

Project Manager



As-Built Expansion

45407-17_Approved-Development Prepared by T F Moran Inc HydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software Solutions LLC

Printed 8/15/2024 Page 2

Area Listing (selected nodes)

Area	CN	Description
(sq-ft)		(subcatchment-numbers)
32,312	61	>75% Grass cover, Good, HSG B (ASDP 01, OSSF 01)
10,411	74	>75% Grass cover, Good, HSG C (ASDP 01)
1,185	98	Paved parking, HSG B (ASDP 01)
178	98	Paved parking, HSG C (ASDP 01)
1,016	98	Paved parking, HSG D (OSSF 01)
2,662	98	Roofs, HSG D (OSSF 01)
<mark>47,764</mark>	68	TOTAL AREA

45407-17_Approved-Development Prepared by T F Moran Inc HydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software Solutions LLC

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Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
33,497	HSG B	ASDP 01, OSSF 01
10,589	HSG C	ASDP 01
3,678	HSG D	OSSF 01
0	Other	
47,764		TOTAL AREA

45407-17_Approved-DevelopmentTypPrepared by T F Moran IncHydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software Solutions LLC	As-Built Expansion e III 24-hr <mark>2-Year Rainfall=3.23"</mark> Printed 8/15/2024 <u>Page 4</u>
Time span=0.00-48.00 hrs, dt=0.03 hrs, 1601 Runoff by SCS TR-20 method, UH=SCS, Weig Reach routing by Dyn-Stor-Ind method , Pond routing by	ghted-CN
	7% Impervious Runoff Depth=0.90" 1 CN=71 Runoff=0.46 cfs 1,344 cf
	6% Impervious Runoff Depth=0.66" n CN=66 Runoff=0.42 cfs 1,633 cf
Pond ADP01: As-Built Detention / Infiltration Peak Elev=50.41' Storage Primary=0.49 cfs 18,526 cf Secondary=0.00 d	
Peak Elev=48.24' Stora Peak Elev=48.24' Stora 18.0" Round Culvert x 2.00 n=0.012 L=18.0' S=0.	age=16 cf Inflow=0.62 cfs 20,237 cf 0650 '/' <mark>Outflow=0.62 cfs 20,224 cf</mark>

Total Runoff Area = 47,764 sf Runoff Volume = 2,977 cfAverage Runoff Depth = 0.75"89.45% Pervious = 42,723 sf10.55% Impervious = 5,041 sf

45407-17_Approved-Development Prepared by T F Moran Inc HydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software Solu	As-Built Expansion Type III 24-hr 10-Year Rainfall=4.91" Printed 8/15/2024 tions LLC Page 5
Time span=0.00-48.00 hrs, dt=0.03 h Runoff by SCS TR-20 method, UH=S Reach routing by Dyn-Stor-Ind method - Pond r	SCS, Weighted-CN
	997 sf 7.57% Impervious Runoff Depth=2.05" Tc=0.7 min CN=71 Runoff=1.13 cfs 3,073 cf
	07 sf 12.36% Impervious Runoff Depth=1.67" Tc=6.7 min CN=66 Runoff=1.23 cfs 4,134 cf
Pond ADP01: As-Built Detention / Infiltration Peak Elev=51.17 Primary=2.41 cfs 37,787 cf Second	7' Storage=6,592 cf Inflow=3.39 cfs 40,112 cf lary=0.00 cfs 0 cf Outflow=2.41 cfs 37,787 cf
	3.51' Storage=20 cf Inflow=2.56 cfs 41,268 cf 18.0' S=0.0650 '/' <mark>Outflow=2.56 cfs 4</mark> 1,254 cf

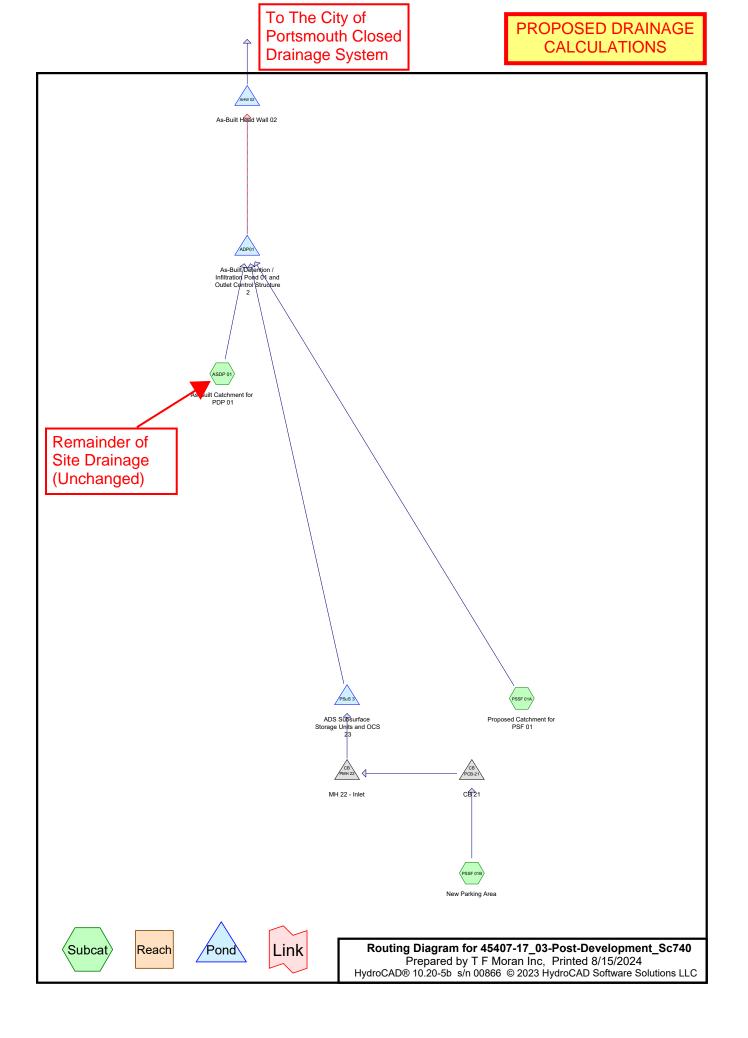
Total Runoff Area = 47,764 sf Runoff Volume = 7,207 cfAverage Runoff Depth = 1.81"89.45% Pervious = 42,723 sf10.55% Impervious = 5,041 sf

45407-17_Approved-Development Prepared by T F Moran Inc <u>HydroCAD® 10.20-5b_s/n 00866_© 2023 HydroCAD Software</u>	As-Built Expansion (Type III 24-hr 25-Year Rainfall=6.23") Printed 8/15/2024 Solutions LLC Page 6
Time span=0.00-48.00 hrs, dt=0 Runoff by SCS TR-20 method, I Reach routing by Dyn-Stor-Ind method - P	JH=SCS, Weighted-CN
	=17,997 sf 7.57% Impervious Runoff Depth=3.09") '/' Tc=0.7 min CN=71 Runoff=1.73 cfs 4,627 cf
	29,767 sf 12.36% Impervious Runoff Depth=2.61" 7 '/' Tc=6.7 min CN=66 Runoff=2.00 cfs 6,479 cf
Pond ADP01: As-Built Detention / Infiltration Peak Elev= Primary=4.83 cfs 54,357 cf Se	51.43' Storage=7,817 cf Inflow=6.15 cfs 56,684 cf econdary=0.00 cfs 0 cf Outflow=4.83 cfs 54,357 cf
	ev=48.76' Storage=47 cf Inflow=5.36 cfs 59,352 cf 2 L=18.0' S=0.0650 '/' <mark>Outflow=5.36 cfs</mark> 59,339 cf

Total Runoff Area = 47,764 sfRunoff Volume = 11,106 cfAverage Runoff Depth = 2.79"89.45% Pervious = 42,723 sf10.55% Impervious = 5,041 sf

45407-17_Approved-Development Prepared by T F Moran Inc <u>HydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software Solut</u>	As-Built Expansion (Type III 24-hr 50-Year Rainfall=7.46") Printed 8/15/2024 ions LLC Page 7
Time span=0.00-48.00 hrs, dt=0.03 hr Runoff by SCS TR-20 method, UH=S Reach routing by Dyn-Stor-Ind method - Pond ro	CS, Weighted-CN
	97 sf 7.57% Impervious Runoff Depth=4.11" c=0.7 min CN=71 Runoff=2.31 cfs 6,170 cf
	7 sf 12.36% Impervious Runoff Depth=3.57" c=6.7 min CN=66 Runoff=2.77 cfs 8,855 cf
Pond ADP01: As-Built Detention / Infiltration Peak Elev=51.51 Primary=7.44 cfs 72,274 cf Seconda	' Storage=8,233 cf Inflow=8.66 cfs 74,603 cf ary=0.00 cfs 0 cf Outflow=7.44 cfs 72,274 cf
	98' Storage=142 cf Inflow=8.24 cfs 78,737 cf 8.0' S=0.0650 '/' <mark>Outflow=8.23 cfs</mark> 78,723 cf

Total Runoff Area = 47,764 sfRunoff Volume = 15,024 cfAverage Runoff Depth = 3.77"89.45% Pervious = 42,723 sf10.55% Impervious = 5,041 sf



45407-17_03-Post-Development_Sc740

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Area Listing (selected nodes)

Area	CN	Description
(sq-ft)		(subcatchment-numbers)
24,850	61	>75% Grass cover, Good, HSG B (ASDP 01, PSSF 01A, PSSF 01B)
10,411	74	>75% Grass cover, Good, HSG C (ASDP 01)
8,647	98	Paved parking, HSG B (ASDP 01, PSSF 01B)
178	98	Paved parking, HSG C (ASDP 01)
1,246	98	Paved parking, HSG D (PSSF 01A, PSSF 01B)
2,432	98	Roofs, HSG D (PSSF 01B)
<mark>47,764</mark>	74	TOTAL AREA

45407-17_03-Post-Development_Sc740

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Soil Listing (selected nodes)

Area	Soil	Subcatchment
(sq-ft)	Group	Numbers
0	HSG A	
33,497	HSG B	ASDP 01, PSSF 01A, PSSF 01B
10,589	HSG C	ASDP 01
<mark>3,678</mark>	HSG D	PSSF 01A, PSSF 01B
0	Other	
47,764		TOTAL AREA

45407-17_03-Post-Development_Sc740TyPrepared by T F Moran IncHydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software Solutions LL	Proposed Expansion ype III 24-hr <mark>2-Year Rainfall=3.2</mark> 3" Printed 8/15/2024 <u>C Page 4</u>
Time span=0.00-48.00 hrs, dt=0.03 hrs, 160 Runoff by SCS TR-20 method, UH=SCS, We Reach routing by Dyn-Stor-Ind method - Pond routing b	eighted-CN
	7.57% Impervious Runoff Depth=0.90" nin CN=71 Runoff=0.46 cfs 1,344 cf
	1.44% Impervious Runoff Depth=0.49") min CN=62 Runoff=0.13 cfs 560 cf
	7.74% Impervious Runoff Depth=1.86" min CN=86 Runoff=0.83 cfs 2,506 cf
Pond ADP01: As-Built Detention / Infiltration Peak Elev=50.38' Storage Primary=0.45 cfs 17,453 cf Secondary=0.00	
Pond AHW 02: As-Built Head Wall 02 Peak Elev=48.24' Store 18.0" Round Culvert x 2.00 n=0.012 L=18.0' S=	orage=16 cf Inflow=0.62 cfs 19,164 cf =0.0650 '/' <mark>Outflow=0.62 cfs</mark> 19,150 cf
Pond PCB-21: CB 21 Peak 12.0" Round Culvert n=0.013 L=27.0' S	k Elev=56.88' Inflow=0.83 cfs 2,506 cf S=0.0074 '/' Outflow=0.83 cfs 2,506 cf
Pond PMH 22: MH 22 - Inlet Peak 24.0" Round Culvert n=0.013 L=4.0' S	k Elev=56.85' Inflow=0.83 cfs 2,506 cf S=0.0000 '/' Outflow=0.83 cfs 2,506 cf
Pond PSuS 3: ADS Subsurface Storage Units Peak Elev=56.85' Stora Discarded=0.07 cfs 2,506 cf Primary=0.0	

Total Runoff Area = 47,764 sf Runoff Volume = 4,410 cf Average Runoff Depth = 1.11" 73.82% Pervious = 35,261 sf 26.18% Impervious = 12,503 sf

Proposed ExpansionIS407-17_03-Post-Development_Sc740Type III 24-hr10-Year Rainfall=4.91"Prepared by T F Moran IncPrinted 8/15/2024HydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software Solutions LLCPage 5
Time span=0.00-48.00 hrs, dt=0.03 hrs, 1601 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
SubcatchmentASDP 01: As-BuiltRunoff Area=17,997 sf7.57% ImperviousRunoff Depth=2.05"Flow Length=53'Slope=0.2870 '/'Tc=0.7 minCN=71Runoff=1.13 cfs3,073 cf
SubcatchmentPSSF 01A: ProposedRunoff Area=13,611 sf1.44% ImperviousRunoff Depth=1.38"Flow Length=326'Slope=0.1786 '/'Tc=5.0 minCN=62Runoff=0.48 cfs1,569 cf
SubcatchmentPSSF 01B: New Parking Runoff Area=16,156 sf 67.74% Impervious Runoff Depth=3.38" Tc=5.0 min CN=86 Runoff=1.49 cfs 4,555 cf
Pond ADP01: As-Built Detention / Infiltration Peak Elev=51.09' Storage=6,203 cf Inflow=2.85 cfs 37,726 cf Primary=2.15 cfs 35,401 cf Secondary=0.00 cfs 0 cf Outflow=2.15 cfs 35,401 cf
Pond AHW 02: As-Built Head Wall 02 18.0" Round Culvert x 2.00 n=0.012 L=18.0' S=0.0650 '/' Outflow=2.28 cfs 38,882 cf 2.28 cfs 38,882 cf 38,869 cf
Pond PCB-21: CB 21 Peak Elev=59.18' Inflow=1.49 cfs 4,555 cf 12.0" Round Culvert n=0.013 L=27.0' S=0.0074 '/' Outflow=1.49 cfs 4,555 cf
Pond PMH 22: MH 22 - Inlet 24.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=1.49 cfs 4,555 cf 24.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=1.49 cfs 4,548 cf
Pond PSuS 3: ADS Subsurface Storage Units Peak Elev=59.18' Storage=2,174 cf Inflow=1.49 cfs 4,548 cf Discarded=0.07 cfs 4,416 cf Primary=0.04 cfs 132 cf Outflow=0.11 cfs 4,548 cf

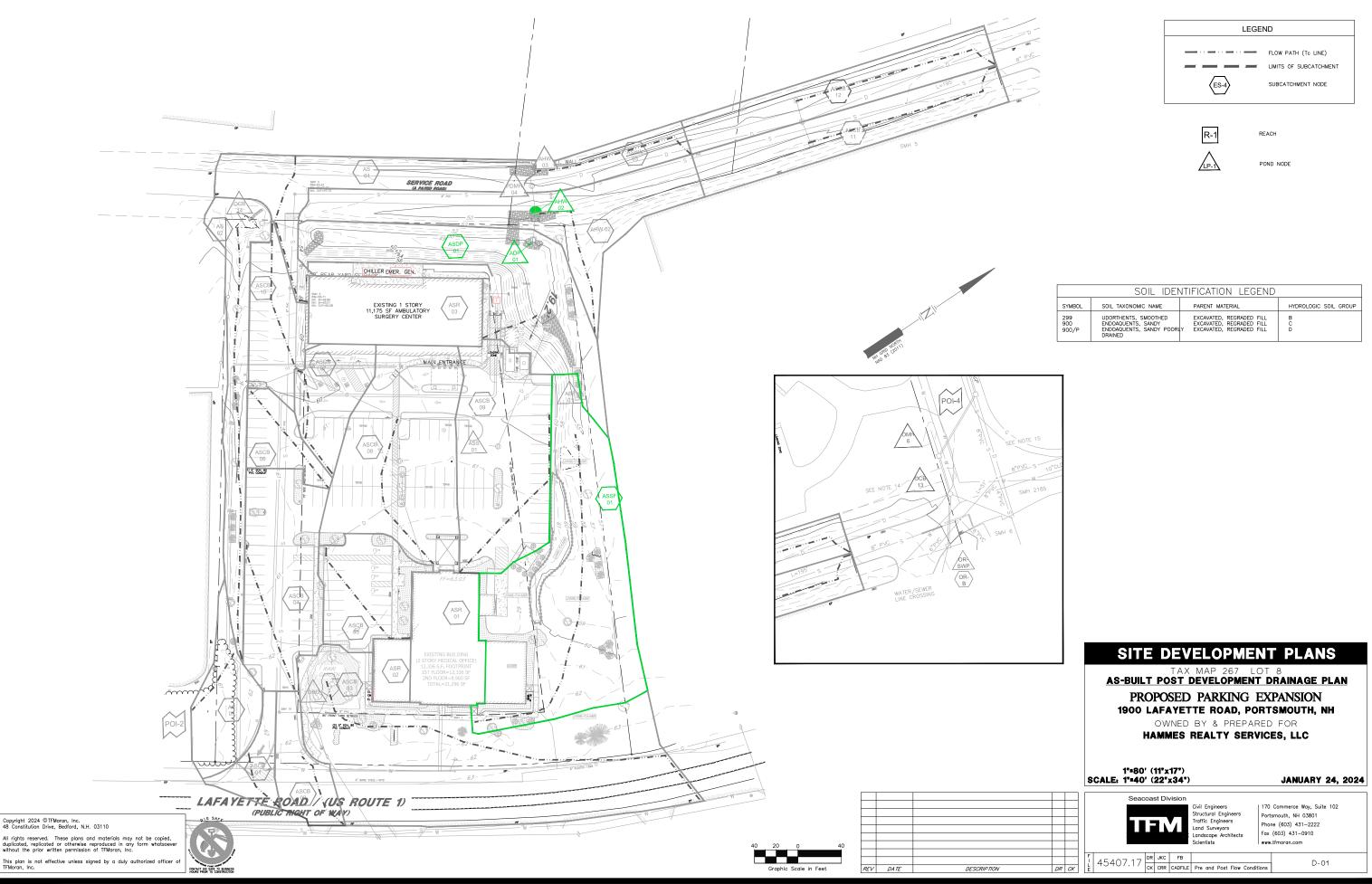
Total Runoff Area = 47,764 sf Runoff Volume = 9,196 cf Average Runoff Depth = 2.31" 73.82% Pervious = 35,261 sf 26.18% Impervious = 12,503 sf

45407-17_03-Post-Development_Sc740 Prepared by T F Moran Inc HydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software	Proposed Expansion <i>Type III 24-hr <mark>25-Year Rainfall=6.23"</mark> Printed 8/15/2024 Solutions LLC Page 6</i>
Time span=0.00-48.00 hrs, dt=0. Runoff by SCS TR-20 method, U Reach routing by Dyn-Stor-Ind method - Po	H=SCS, Weighted-CN
	:17,997 sf 7.57% Impervious Runoff Depth=3.09" '/' Tc=0.7 min CN=71 Runoff=1.73 cfs 4,627 cf
	13,611 sf
SubcatchmentPSSF 01B: New Parking Runoff Area=1	6,156 sf 67.74% Impervious Runoff Depth=4.63" Tc=5.0 min CN=86 Runoff=2.02 cfs 6,231 cf
Pond ADP01: As-Built Detention / Infiltration Peak Elev=5 Primary=4.58 cfs 52,025 cf Sec	51.42' Storage=7,770 cf Inflow=5.46 cfs 54,353 cf condary=0.00 cfs 0 cf Outflow=4.58 cfs 52,025 cf
	v=48.73' Storage=40 cf Inflow=4.98 cfs 57,021 cf L=18.0' S=0.0650 '/' <mark>Outflow=4.98 cfs</mark> 57,007 cf
Pond PCB-21: CB 21 12.0" Round Culvert n=0.01	Peak Elev=59.42' Inflow=2.02 cfs 6,231 cf 3 L=27.0' S=0.0074 '/' Outflow=2.02 cfs 6,231 cf
Pond PMH 22: MH 22 - Inlet 24.0" Round Culvert n=0.0	Peak Elev=59.37' Inflow=2.02 cfs 6,231 cf 13 L=4.0' S=0.0000 '/' Outflow=2.02 cfs 6,227 cf
Pond PSuS 3: ADS Subsurface Storage Units Peak Elev= Discarded=0.07 cfs 4,880 cf Prir	59.37' Storage=2,220 cf Inflow=2.02 cfs 6,227 cf nary=1.05 cfs 1,347 cf Outflow=1.12 cfs 6,227 cf

Total Runoff Area = 47,764 sf Runoff Volume = 13,410 cf Average Runoff Depth = 3.37" 73.82% Pervious = 35,261 sf 26.18% Impervious = 12,503 sf

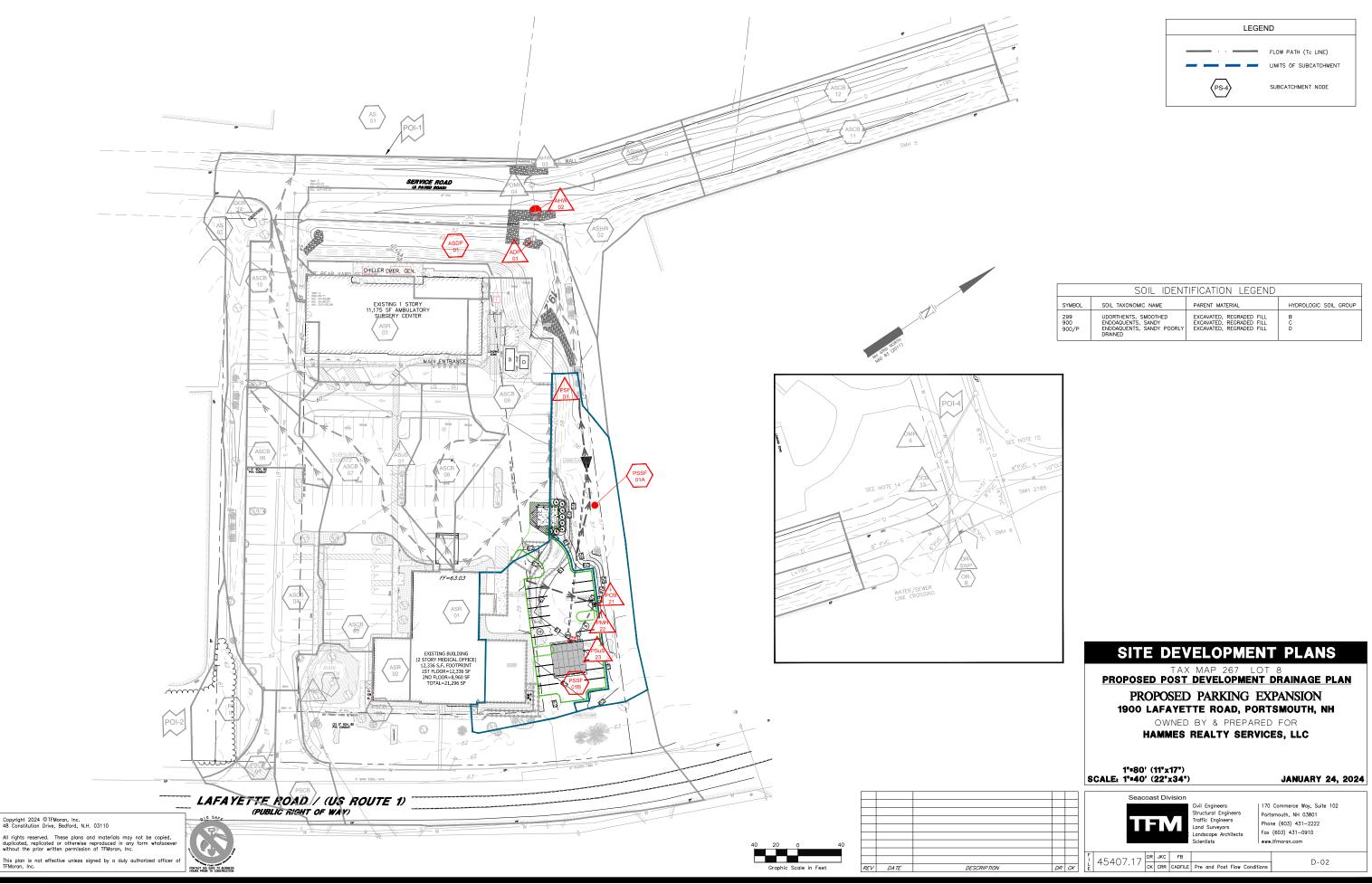
45407-17_03-Post-Development_Sc740Type III 24-hr50-Year Rainfall=7.46" Printed 8/15/2024Prepared by T F Moran Inc HydroCAD® 10.20-5b s/n 00866 © 2023 HydroCAD Software Solutions LLCPrinted 8/15/2024 Page 7Time span=0.00-48.00 hrs, dt=0.03 hrs, 1601 points x 2 Runoff by SCS TR-20 method, UH=SCS, Weighted-CNProposed Expansion
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method
SubcatchmentASDP 01: As-BuiltRunoff Area=17,997 sf7.57% ImperviousRunoff Depth=4.11"Flow Length=53'Slope=0.2870 '/'Tc=0.7 minCN=71Runoff=2.31 cfs6,170 cf
SubcatchmentPSSF 01A: ProposedRunoff Area=13,611 sf1.44% ImperviousRunoff Depth=3.14"Flow Length=326'Slope=0.1786 '/'Tc=5.0 minCN=62Runoff=1.17 cfs3,566 cf
SubcatchmentPSSF 01B: New Parking Runoff Area=16,156 sf 67.74% Impervious Runoff Depth=5.81" Tc=5.0 min CN=86 Runoff=2.51 cfs 7,821 cf
Pond ADP01: As-Built Detention / Infiltration Peak Elev=51.51' Storage=8,245 cf Inflow=9.00 cfs 72,206 cf Primary=7.53 cfs 69,876 cf Secondary=0.00 cfs 0 cf Outflow=7.53 cfs 69,876 cf
Pond AHW 02: As-Built Head Wall 02 Peak Elev=48.97' Storage=136 cf Inflow=8.16 cfs 76,339 cf 18.0" Round Culvert x 2.00 n=0.012 L=18.0' S=0.0650 '/' Outflow=8.10 cfs 76,326 cf
Pond PCB-21: CB 21 Peak Elev=59.91' Inflow=2.51 cfs 7,821 cf 12.0" Round Culvert n=0.013 L=27.0' S=0.0074 '/' Outflow=2.51 cfs 7,821 cf
Pond PMH 22: MH 22 - Inlet 24.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=2.51 cfs 7,817 cf
Pond PSuS 3: ADS Subsurface Storage Units Peak Elev=59.70' Storage=2,270 cf Inflow=2.51 cfs 7,817 cf Discarded=0.07 cfs 5,247 cf Primary=2.85 cfs 2,570 cf Outflow=2.92 cfs 7,817 cf

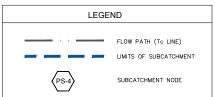
Total Runoff Area = 47,764 sf Runoff Volume = 17,556 cf Average Runoff Depth = 4.41" 73.82% Pervious = 35,261 sf 26.18% Impervious = 12,503 sf



SOIL IDENTIFICATION LEGEND						
SYMBOL	SOIL TAXONOMIC NAME	PARENT MATERIAL	HYDROLOGIC SOIL GROUP			
299 900 900/P	UDORTHENTS, SMOOTHED ENDOAQUENTS, SANDY ENDOAQUENTS, SANDY POORI DRAINED	EXCAVATED, REGRADED FILL EXCAVATED, REGRADED FILL Y EXCAVATED, REGRADED FILL	B C D			

August 16, 2024





SOIL IDENTIFICATION LEGEND					
SYMBOL	SOIL TAXONOMIC NAME	PARENT MATERIAL	HYDROLOGIC SOIL GROUP		
299 900 900/P	UDORTHENTS, SMOOTHED ENDOAQUENTS, SANDY ENDOAQUENTS, SANDY POORLY DRAINED	EXCAVATED, REGRADED FILL EXCAVATED, REGRADED FILL EXCAVATED, REGRADED FILL	B C D		

August 16, 2024

GENERAL INFORMATION

OWNER

HPIII BOSTON PORTSMOUTH LLC C/O HAMMES REALTY SERVICE LLC 1400 N. WATER STREET, SUITE 500 MILWAUKEE, WISCONSIN 53202

RESOURCE LIST

PLANNING/ ZONING DEPARTMENT 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 (603) 610-7216 PETER BRITS, DIRECTOR OF PLANNING AND SUSTAINABILITY

BUILDING DEPARTMENT 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 (603) 610-7243 SHANTI WOLPH, CHIEF BUILDING INSPECTOR

PUBLIC WORKS 680 PEVERLY HILL ROAD PORTSMOUTH, NH 03801 (603) 427-1530 PETER RICE, DIRECTOR

POLICE DEPARTMENT 3 JUNKINS AVENUE PORTSMOUTH, NH 03801 (603) 427-1500 CHIEF MARK NEWPORT

FIRE DEPARTMENT 170 COURT STREET PORTSMOUTH, NH 03801 (603) 427-1515

LIGHTING CONTRACTOR EXPOSURE ESS 501 ISLINGTON STREET PORTSMOUTH, NH 03801 (603) 459-1043 KEN SWEENEY, APPLICANT ENGINEER



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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

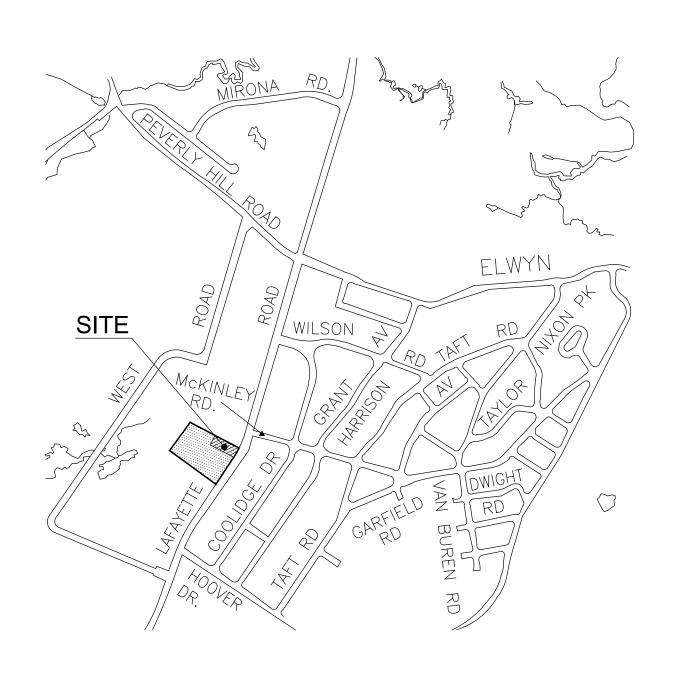


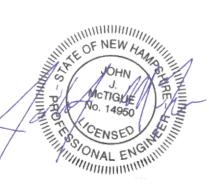


ATLANTIC ORTHOPAEDICS PARKING EXPANSION

1900 LAFAYETTE ROAD PORTSMOUTH, NH **JANUARY 24, 2024** LAST REVISED SEPTEMBER 17, 2024

VICINITY PLAN





						S	eacoa	st Di	vision			
3	9/17/2024	UPDATE SHEET INDEX	JJM	CRR					R	Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists	Ports Phor Fax	Commerce Way, Suite 102 smouth, NH 03801 ne (603) 431-2222 (603) 431-0910 .tfmoran.com
2	9/9/2024	UPDATE DATES	JJM			I				Ι		
1	7/31/2024	REVISED INDEX OF SHEETS	BCH		F	45407.		JKC	FB			C-00
REV	DA TE	DESCRIPTION	DR	СК	LE		' ск	CRR	CADFILE	45407-17_Cover	.dwg	

	INDEX OF SHEETS
SHEET	SHEET TITLE
C-00	COVER
S-01	EXISTING CONDITIONS PLAN
C-01	NOTES & LEGEND
C-02	SITE PREPARATION PLAN
C-03	OVERALL SITE LAYOUT PLAN
C-04	SITE LAYOUT PLAN
C-05	GRADING AND DRAINAGE PLAN
C-06	LANDSCAPE PLAN
C-07	LANDSCAPE DETAILS
C-08	LIGHTING PLAN
C-09	EROSION CONTROL NOTES
C-10 to C-13	DETAIL SHEET 1S

PERMITS/APPROVALS

CITY OF PORTSMOUTH SITE PLAN APPROVAL		NUMBER	APPROVED	EXPIRES	
		-	-	-	
NHDES ALT. OF TERRAIN	NHDES ALT. OF TERRAIN	-	-	-	



TAX MAP 267 LOT 8 COVER

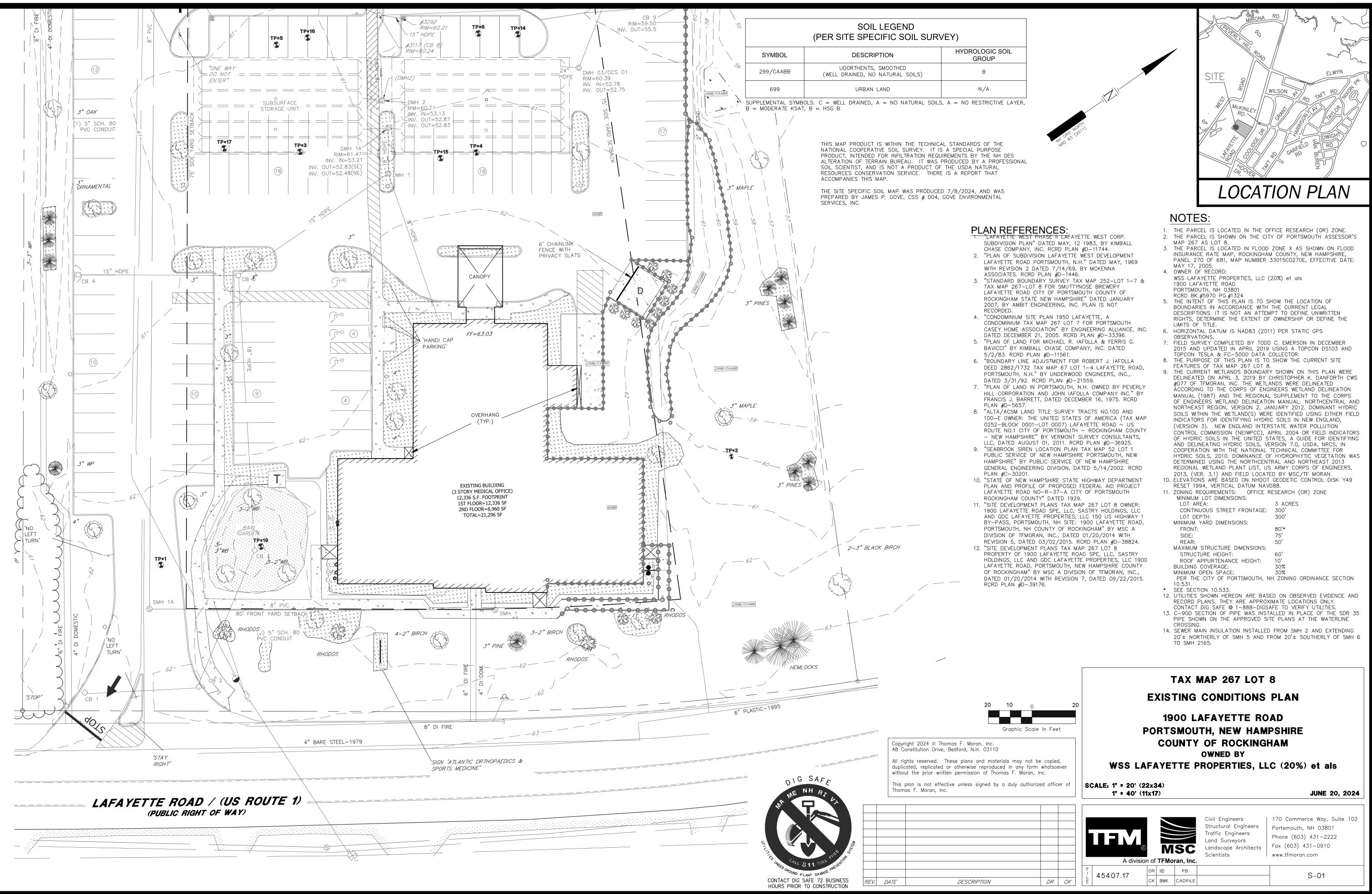
PROPOSED PARKING EXPANSION 1900 LAFAYETTE ROAD, PORTSMOUTH, NH OWNED BY & PREPARED FOR

HAMMES REALTY SERVICES, LLC

SCALE: NTS

JANUARY 24, 2024

Suite 102





11.	ZUNING KLQUIKL		NESLANON		ZONL
	MINIMUM LOT E	DIMENSIONS:			
	LOT AREA:		3 ACRES	5	

	0 / 0 / 10
CONTINUOUS STREET FRONTAGE:	300'
LOT DEPTH:	300'
MINIMUM YARD DIMENSIONS:	
FRONT:	80'*
SIDE:	75'
REAR:	50'
MAXIMUM STRUCTURE DIMENSIONS:	
STRUCTURE HEIGHT:	60'
ROOF APPLIRTENANCE HEIGHT	10'

BUILDING	COVE	RAGE:	30%
MINIMUM	OPEN	SPACE:	30%

PROPOSED		PROPOSED	
	PROPERTY LINE ZONING LINE		CONCRETE GRAVEL
	EASEMENT		HEAVY DUTY PAVEMENT
			CONSTRUCTION ENTRANCE
· · · · · · · ·	EDGE OF WETLAND		SNOW STORAGE
	SETBACK (WETLAND) SETBACK (STRUCTURE)		RIPRAP
	· · · · ·		INLET PROTECTION
		RIDGE	FLOW ARROW
	GRAVEL ROAD		grade break ridge
EOP	EDGE OF PAVEMENT	=======================================	DRAIN LINE
VGC	VERTICAL GRANITE CURB		STORMWATER BMP
	CAMOUT	S	SEWER LINE
	SAWCUT	FM	SEWER FORCE MAIN LINE
	BUILDING	W G	WATER LINE GAS LINE
	BUILDING ROOF OVERHANG	OHE	OVERHEAD UTILITY LINE
	BUILDING FOUNDATION	UGE	UNDERGROUND UTILITY LINE
	BUILDING ENTRANCE		CATCH BASIN
	OVERHEAD DOOR		
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	TREE LINE	( • ) (0CS)	OUTLET CONTROL STRUCTURE
	STONE WALL RETAINING WALL	•	DRAIN CLEANOUT
x x x	SILT FENCE		DRAIN MANHOLE
SS SS SS	SILT SOCK	<b>D</b>	FARED END SECTION
2003	SOIL BOUNDARY		SEWER CLEAN OUT
·····	LIMIT OF GRADING		SEWER CLEAN OUT
100	CONTOUR		
TC100.50 BC100.00 OR 0 100.00	SPOT GRADE		DRAIN/SEWER/WATER PLUG OR CAP
		<b>~</b>	HYDRANT
(##)	PARKING COUNT	Y Y	FIRE DEPARTMENT CONNECTION
DSLY	YELLOW DOUBLE SOLID LINE		WATER GATE VALVE
SSLY	YELLOW SINGLE SOLID LINE	<i>₩</i>	WATER SHUTOFF
SSLW	WHITE SINGLE SOLID LINE		
SBLW	WHITE SINGLE BROKEN LINE		GAS GATE VALVE GAS SHUT OFF
	STOP BAR		
JIUF		D E	TELEPHONE MANHOLE ELECTRIC MANHOLE
·/////////	CROSSWALK		TRAFFIC CONTROL CABINET
শি	ACCESSIBLE PARKING SYMBOL	*	LIGHT POLE
			UTILITY POLE GUY POLE
<b>     1 (7</b>	PAVEMENT ARROW	Г	TRANSFORMER PAD
- <b>-</b> -			
	TRAFFIC FLOW ARROW (NOT PAINTED)	TP-#	TEST PIT LOCATION
-	SIGN (SINGLE POST)		
<del></del>	SIGN (DOUBLE POST) SIGN (PYLON)		
	SIGN (MONUMENT)		
Ô			
D	DUMPSTER PAD		
© D	BOLLARD DUMPSTER PAD		

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This plan is not effective unless signed by a duly authorized officer o FMoran, Inc.

ΤΥΡ UG WCR

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

		I
ON CENTER PAVEMENT PERFORATED PROPOSED RADIUS REMOVE AND DISPOSE REMOVE AND RESET REMOVE RETAIN RIM ELEVATION RIGHT OF WAY SLOPE SQUARE FEET SIDEWALK TEMPORARY BENCHMARK TOP OF CURB TEST PIT	CB CIP CMP CO COND DCB DIP DMH F&C F&G FES GT HDPE HH HW HYD LP	CATCH CAST IF CORRUC CLEANO CONDUI DOUBLE DUCTILE DRAIN M FRAME FLARED GREASE HIGH DE HANDHO HEADWA HYDRAN LIGHT F
TOP OF WALL TYPICAL	OCS PVC	OUTLET
UNDERGROUND ACCESSIBLE WHEELCHAIR RAMP WITH	RCP RD SMH	REINFOF ROOF D SEWER
	SOS TSV	SEDIMEN TAPPINO

l pipe SIN ON YETHYLENE PIPE POLE CONTROL STRUCTURE INYL CHLORIDE PIPE DRCED CONCRETE PIPE DRAIN MANHOLE ENT OIL SEPARATOR NG SLEEVE, VALVE, AND BOX UTILITY POLE

### **GENERAL NOTES**

- 1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
- 2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
- 3. THE SITE LAYOUT PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
- 4. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE CITY PLANNING BOARD.
- 5. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF PORTSMOUTH, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE CITY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE CITY, COUNTY, AND/OR STATE AGENCY.
- 6. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
- 7. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
- 8. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
- 9. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
- 10. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
- 11. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
- 12. TEMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
- 13. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
- 14. ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
- 15. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
- 16. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
- 17. CONTRACTOR'S GENERAL RESPONSIBILITIES:
- A. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
- B. TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST, AND UNSIGHTLY DEBRIS.
- C. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
- D. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
- E. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
- F. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- G. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
- H. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
- VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE AND/OR WETLAND SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
- J. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE PLANNING DIRECTOR AND PER CITY REGULATIONS.
- K. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS. AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.

L. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS. [IF AOT PERMIT IT REQUIRED, SUBSTITUTE THE PREVIOUS STATEMENT WITH THE FOLLOWING THIS PROJECT IS SUBJECT TO THE AOT PERMIT LISTED ON THE COVER SHEET. THE CONTRACTOR SHALL CONFORM TO ALL CONDITIONS OF THE PERMIT AND PROVIDE THE FOLLOWING DOCUMENTATION TO OWNER AND

ENGINEER:

- 1) ADVANCE WRITTEN NOTICE AT LEAST ONE WEEK PRIOR TO COMMENCING ANY WORK UNDER THE PERMIT AND NOTIFICATION TO AOT VIA THE START OF CONSTRUCTION FORM.
- 2) IF ANY UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS WERE INSTALLED, FOR EACH SUCH SYSTEM: A) REPRESENTATIVE PHOTOGRAPHS OF THE SYSTEM AFTER COMPLETION BUT PRIOR TO BACKFILLING; AND
  - B) A LETTER SIGNED BY A QUALIFIED ENGINEER WHO OBSERVED THE SYSTEM PRIOR TO BACKFILLING, THAT THE SYSTEM CONFORMS TO THE APPROVED PLANS AND SPECIFICATIONS.
- 3) UPON COMPLETION OF CONSTRUCTION, NOTIFICATION TO AOT VIA THE COMPLETION OF CONSTRUCTION FORM AND WRITTEN CERTIFICATION THAT: A) ALL WORK UNDER THE PERMIT HAS BEEN CONSTRUCTED IN ACCORDANCE
  - WITH THE APPROVED PLANS AND SPECIFICATIONS. B) IF ANY DEVIATIONS FROM THE APPROVED PLANS WERE MADE, WRITTEN
  - DESCRIPTIONS AND AS-BUILT DRAWINGS OF ALL SUCH DEVIATIONS, STAMPED BY A QUALIFIED ENGINEER, SHALL BE PROVIDED.

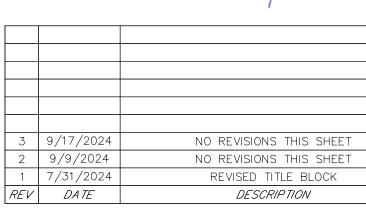
### **GRADING & DRAINAGE NOTES**

- 1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
- 2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
- 3. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE. INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
- 4. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
- 5. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING ARFAS.
- 6. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
- 7. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
- 8. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
- 9. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
- 10. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
- 11. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
- 12. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- 13. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6"
- 14. DENSITY REQUIREMENTS: MINIMUM DENSITY*

LOAM, SEED, FERTILIZER, AND MULCH.

LOCATION BELOW PAVED OR CONCRETE AREAS

95% TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL 95% 90% BELOW LOAM AND SEED AREAS *ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.



# UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.

2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.

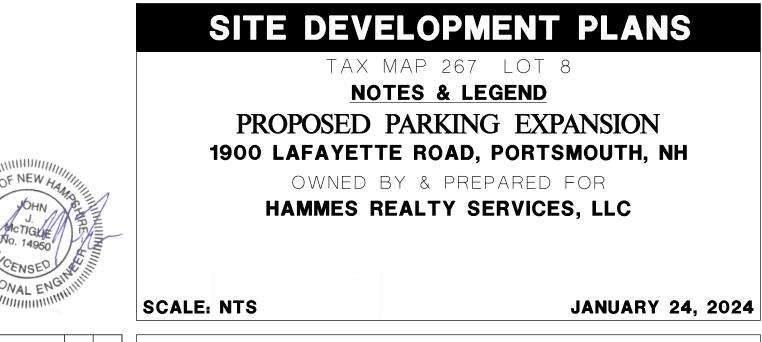
3. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.

4. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.

5. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING: DRAIN

DF	RAINAGE	PRIVATE
SE	EWER	MUNICIPAL
W,	ATER	MUNICIPAL
G	AS	UNITIL
ΕL	ECTRIC	EVERSOURCE
TE	ELEPHONE	CONSOLIDATE
CA	ABLE	COMCAST

TED COMMUNICATIONS AKA FAIRPOINT COMMUNICATIONS COMCAS



Seacoast Division JJM L JJM BCH JJM DR JKC FB 45407 CK CRR CADFILE DR CK

Civil Engineers Structural Engineers raffic Engineers and Surveyors _andscape Architects cientists

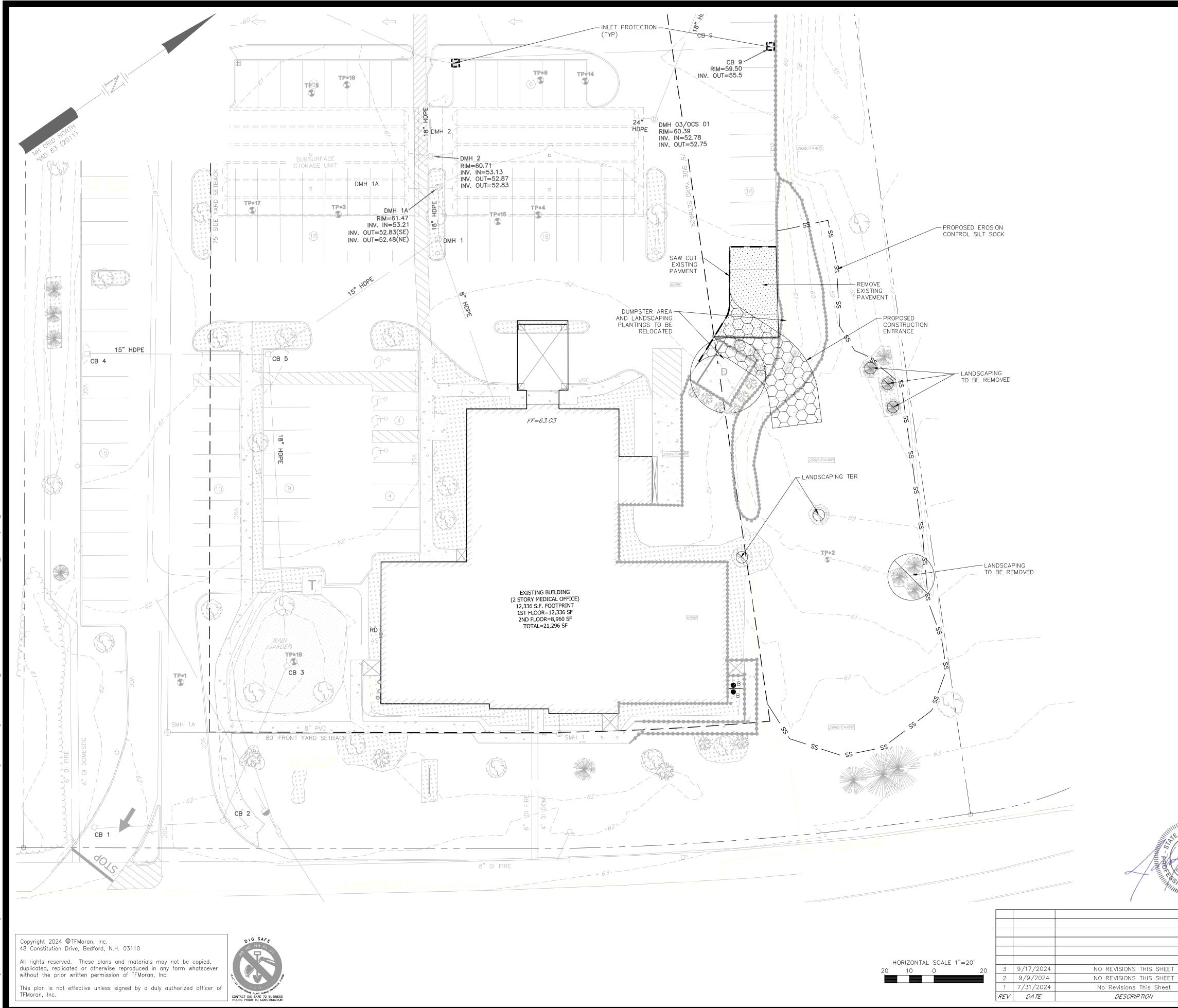
45407-17_NOTES

Phone (603) 431-2222 Fax (603) 431-0910 www.tfmoran.com

C - 01

170 Commerce Way, Suite 102

Portsmouth, NH 03801



### NOTES

- 1. SEE NOTES ON SHEET C-01.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATIONS, SIZE, AND ELEVATIONS OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS PRIOR TO THE START OF ANY DEMOLITION. THE LOCATIONS SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED DEMOLITION TO DETERMINE APPROPRIATE ACTION TO BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
- 3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
- 4. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
- 5. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
- 6. CONSTRUCTION DEBRIS AND INVASIVE SPECIES SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER. 7. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL PLACE ORANGE CONSTRUCTION FENCING
- AROUND EACH TREE TO BE RETAINED THROUGHOUT CONSTRUCTION. NO STOCKPILES OF MATERIAL ARE PERMITTED WITHIN THE DRIP LINE OF THE TREES TO BE SAVED.
- 8. CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY IF ANY TREES ARE DAMAGED DURING CONSTRUCTION.

### **CONSTRUCTION SEQUENCE NOTES**

TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.

MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.

THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.

THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.

DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.

DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

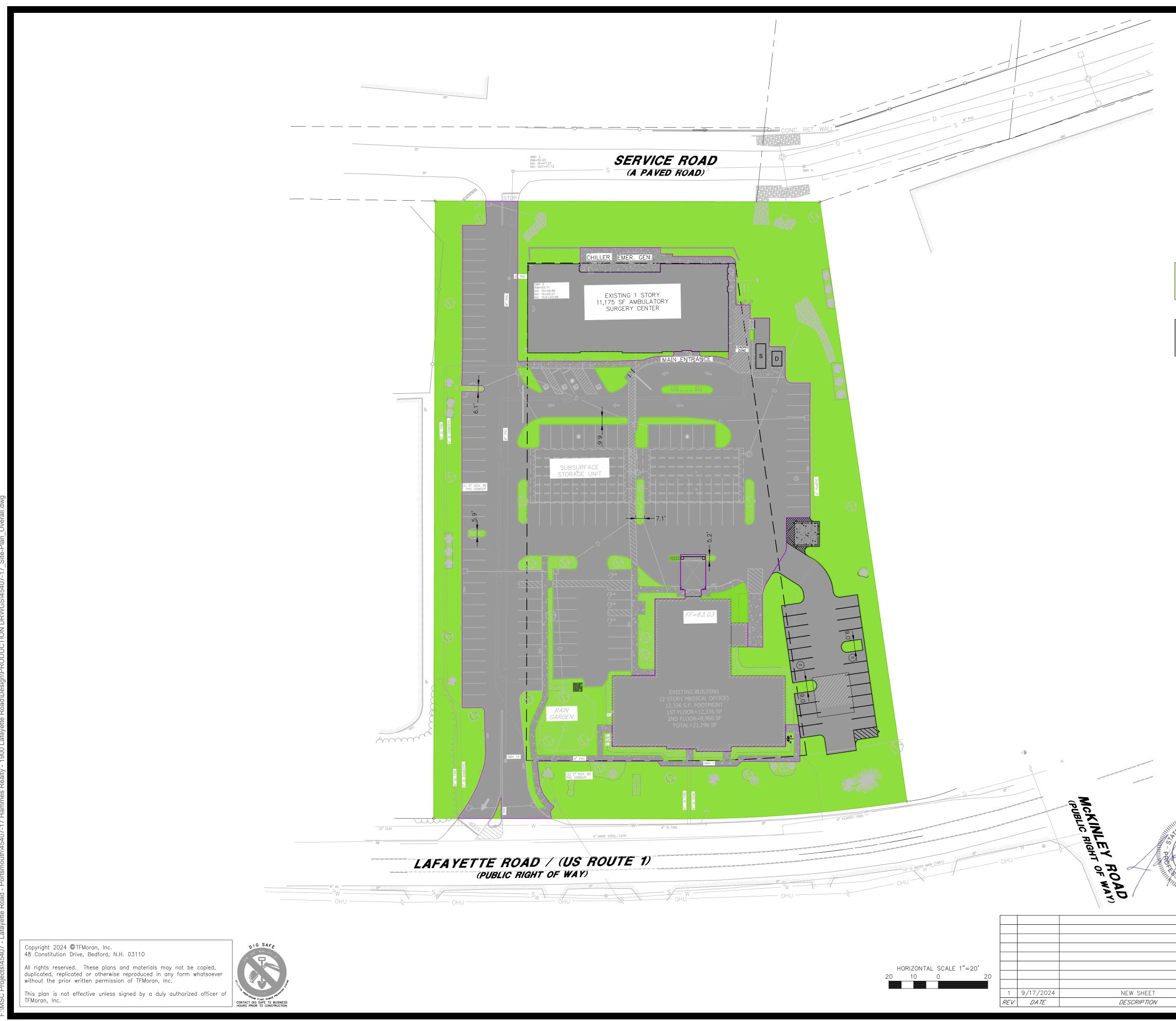
AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.

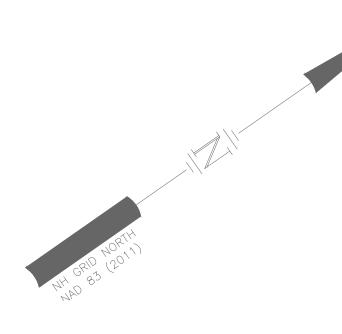
- 1. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
- 2. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SIT
- 4. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY. 5. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED A
- A RATE OF 2.5 LBS/1000 SF SHALL BE USED). 6. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
- 7. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA. 8. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
- 9. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED. 10. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.

11. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. 12. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE,

- DRAINAGE FACILITIES, ETC.).
- 13. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM
- 14. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS. 15. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY
- HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT. 16. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
- 17. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION
- OPERATIONS. 18. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.

NEW HAADON J. TIQUE 14950 NSED AL ENGINIUM	TAX MAP 267 TAX MAP 267 SITE PREPARATION PROPOSED PARKING 1900 LAFAYETTE ROAD, F OWNED BY & PREP HAMMES REALTY SE 1"=40' (11"X17") SCALE: 1"=20' (22"X34")	LOT 8 <u>DN PLAN</u> <b>EXPANSION</b> <b>PORTSMOUTH, NH</b> Ared For
	Seacoast Division	
JJM	Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists	170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.tfmoran.com
JJM DR CK	F L E45407.17DR DRJKCFB-CKCRRCADFILE45407-17_SITE-P	кер С-02





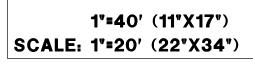
OPEN SPACE (67,500sf  $\pm$  = 39%)

IMPERVIOUS AREA (105,900sf  $\pm$  = 61%)

# SITE DEVELOPMENT PLANS

TAX MAP 267 LOT 8 **OVERALL SITE LAYOUT PLAN** PROPOSED PARKING EXPANSION 1900 LAFAYETTE ROAD, PORTSMOUTH, NH OWNED BY & PREPARED FOR

HAMMES REALTY SERVICES, LLC

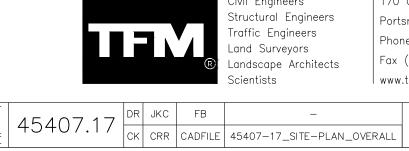


SEPTEMBER 17, 2024

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MINIMUM MARK.							

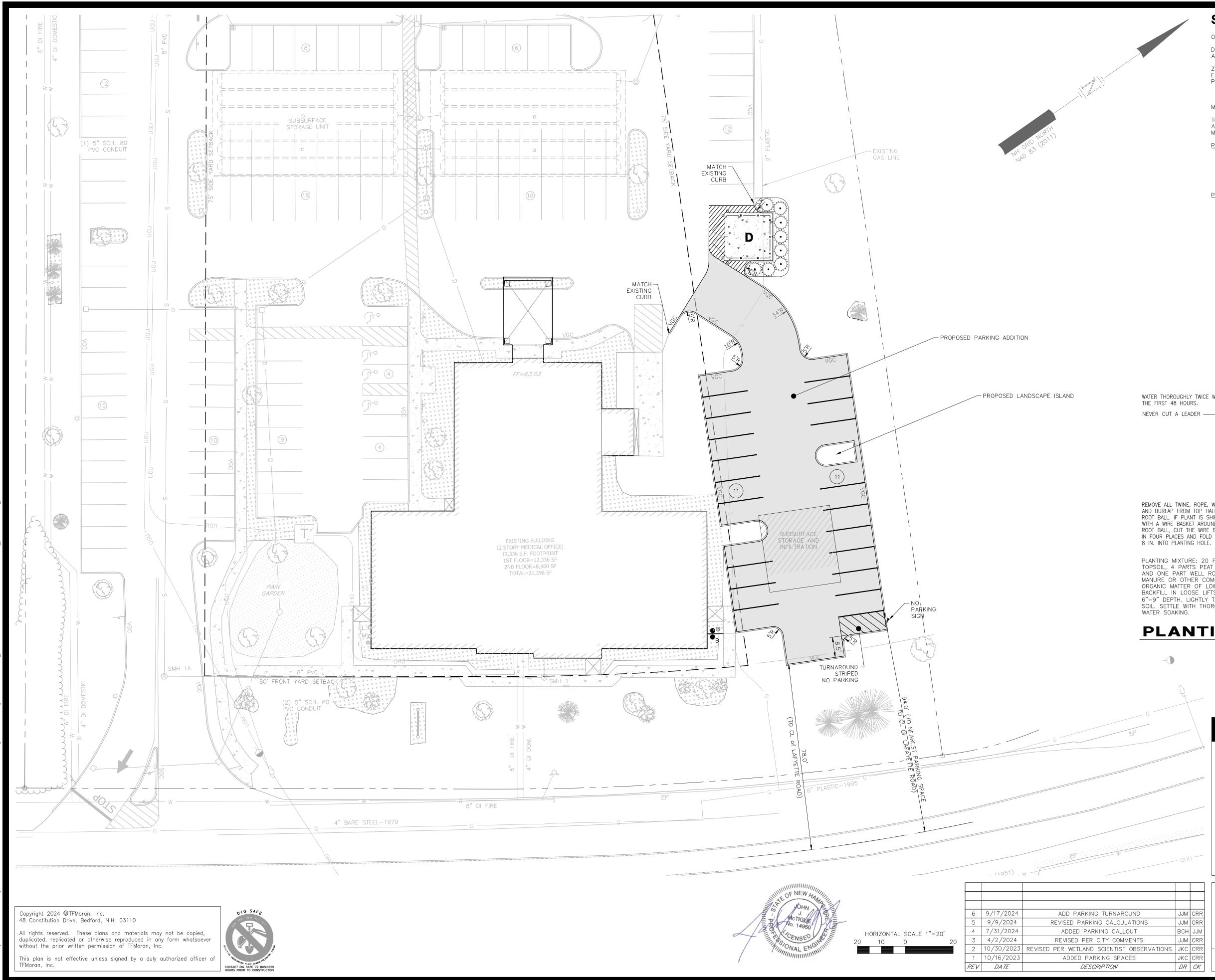
JJM CRR DR CK



Seacoast Division

Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists

C-03

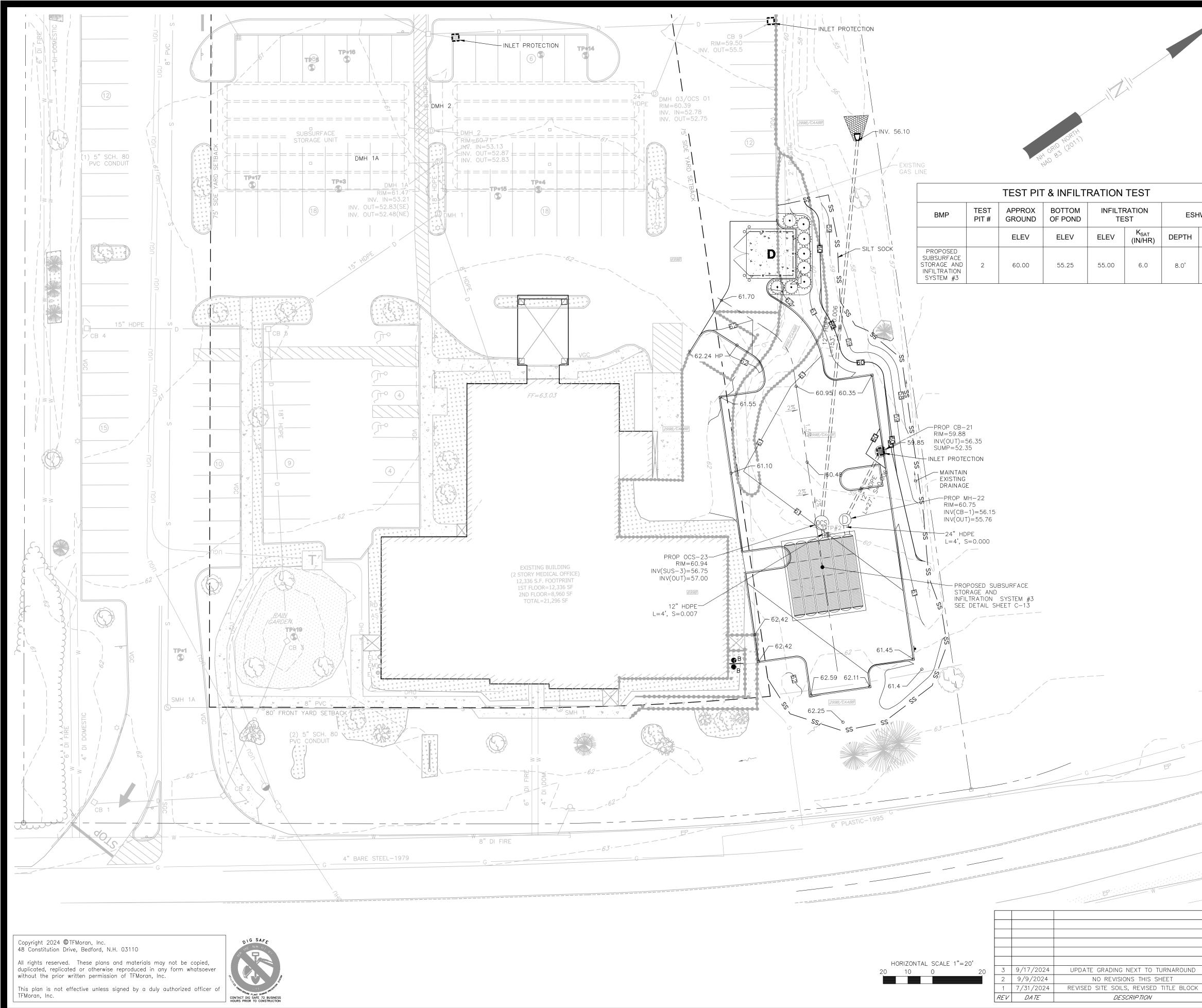


# SITE DATA

	OWNER OF RECORE DEED REFERENCE AREA OF PARCEL	TO PARCEL	SE IS BK 6431 PG 15	ERVICES LLC 522	LLC C/O HAMMES REALT	ΓY
	ZONED: EXISTING USE: PROPOSED USE:		USE			
				EQUIRED:	PROPOSED:	
	MINIMUM OPEN SP			N%	39% 5 TO THE EXISTING USE.	
	ASSOCIATED IMPRO	DVEMENTS IN TEMS, UTILII	NCLUDE AND ARE	NOT LIMITED TO ACCES	SS, GRADING, STORMWAT	
	PARKING CHANGES	<u>}</u>	REQUIRED	EXISTING:	PROPOSED:	
	PARKING SPA ACCESSIBLE S PARKING SPA AISLE WIDTH	SPACES	130–156 SPACES 6 SPACE 9 FT X 19 FT 24 FT	139 SPACES 8 SPACES 8.5 FT X 19 F 24 FT	8 SPACES	
		KING RATIO: OFFICE:	1	SPACE PER 250 SF G SPACE PER 250 SF G		
		2 STORY M			250 SF = 85 SPACES 250 SF = <u>45 SPACES</u> 130 SPACES	<u>S</u>
	MAXIMUM NUME	ber of paf		20% OF MINIMUM NUM 20% X 130 SPACES =	BER OF PARKING SPACE	
				20% X 130 SPACES =	IJO SPACES	
ER THOROUGHLY TWICE	WITHIN					
FIRST 48 HOURS.						_
VER CUT A LEADER —			2	#12 GA. GALV. TWIST AROUND TREE AT 2/	TED WIRE IN RUBBER HOSE 13 HEIGHT OF TREE	-
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		J.H.	- AND			
		JW X-X	Sector CM > CM		MULCH. DO NOT PLACE MU	LCH I
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NOVE ALL TWINE, ROPE,	WIRE,	ᢅᠧ᠊ᢅ᠘				
) BURLAP FROM TOP HA DT BALL. IF PLANT IS SI	ALF OF			(KEEP OUT OF DEPF		
H A WIRE BASKET AROU DT BALL, CUT THE WIRE	ND THE	16"		3 INCH HIGH EARTH	SAUCER BEYOND	
FOUR PLACES AND FOLE N. INTO PLANTING HOLE.	DOWN	MIN				
N. INTO FLANTING HOLE.					ALL FLUSH TO GRADE OR SLOWLY DRAINING SOILS.	
ANTING MIXTURE: 20 PSOIL, 4 PARTS PEA						
d one part well f	ROTTED		~~~~~~	OF EXCAVATION. PLA UNEXCAVATED OR TA	CE ROOT BALL ON	
NURE OR OTHER CO GANIC MATTER OF LO	DW PH.			UNEXCAVATED OK TA	MIFED SUL.	
CKFILL IN LOOSE LIF -9" DEPTH. LIGHTLY						
IL. SETTLE WITH THO TER SOAKING.						
TER SOARING.						
<b>LANT</b>	ING D	ET/	AIL			
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2						
Provide the second seco						
	Sľ		DEVEL	OPMENT	PLANS	
				267 LOT		
				YOUT PLAN	-	
	<b>F</b>	PROPC	DSED PAI	RKING EXI	PANSION	
	190	O LAF	AYETTE F	ROAD, PORTS	S <b>M</b> OUTH, NH	
_				& PREPARED	2	
				TY SERVICE		
		ПАМ	MES REAL	IT SERVICE	:3, LLC	

SCALE: 1"=20' (22"X34") **JANUARY 24, 2024** Seacoast Division | 170 Commerce Way, Suite 102 Civil Engineers Structural Engineers Portsmouth, NH 03801 Traffic Engineers Phone (603) 431-2222 Land Surveyors Fax (603) 431-0910 Landscape Architects www.tfmoran.com Scientists 45407.17 dr jkc fb -ck crr cadfile 45407-17_site-plan C-04

1"=40' (11"X17")



### **GRADING AND DRAINAGE NOTES**

- 1. SEE NOTES ON SHEET C-01.
- 2. PROPOSED SPOT GRADES ARE PROVIDED TO THE NEAREST 0.05. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE FINISHED GRADES MEET ADA STANDARDS FOR WHEEL CHAIR RAMPS, HANDICAP SPACES AND ACCESS AISLES, CROSSWALKS, SIDEWALKS, ETC.
- 3. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
- 4. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
- 7. ALL PROPOSED DRAINAGE PIPES SHALL BE 12" AND HDPE, UNLESS OTHERWISE NOTED ON THE PLAN.
- 8. DRAINAGE PIPES WITH LESS THAN 3' COVER SHALL BE INSULATED (SEE UTILITY TRENCH DETAIL) AND DRAINAGE CATCH BASINS WITH LESS THAN 3.5' OF COVER OVER INVERTS SHALL USE SLAB TOP CATCH BASIN (SEE DETAILS).
- 9. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND ARCHITECTURAL PLANS FOR SUBDRAINAGE SYSTEMS FOR THE BUILDING FOUNDATION. SUBDRAINAGE MUST DAYLIGHT OR TIE INTO THE STORMWATER MANAGEMENT SYSTEM. COORDINATE SUBDRAINAGE SYSMTEM DESIGN WITH THE ENGINEER OF RECORD.

### **EROSION CONTROL NOTES**

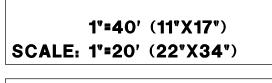
- 1. SEE NOTES ON SHEET C-01, EROSION CONTROL NOTES ON SHEET C-09, EROSION CONTROL DETAILS ON SHEET C-10, AND THE APPROVED SWPPP, AS APPLICABLE.
- 2. INSTALL SILT BARRIER ALONG THE PERIMETER OF THE AREA TO BE DISTURBED AS FIRST ORDER OF WORK.
- 3. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED. INLET PROTECTION BARRIERS SHALL BE IN PLACE AT ALL CATCH BASINS PRIOR TO THE DISTURBANCE OF SOIL.
- 4. DUST CONTROL SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. IT SHALL BE ACCOMPLISHED BY THE UNIFORM APPLICATION OF CALCIUM CHLORIDE AT THE RATE OF 1-1/2 POUNDS PER SQUARE YARD BY MEANS OF A LIME SPREADER OR OTHER APPROVED METHOD. WATER MAY ALSO BE USED FOR DUST CONTROL, AND APPLIED BY SPRINKLING WITH WATER TRUCK DISTRIBUTORS, AS REQUIRED.
- 5. SILT PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS CONTAINED IN THIS PLAN SET.
- 6. EROSION CONTROL MIX, AS SPECIFIED IN THE DETAILS, CAN BE USED IN PLACE OF SILT SOCK. 7. CONSTRUCT JUTE MATTING ON ALL SLOPES STEEPER THAN 3:1, DISTURBED AREAS SLOPING TOWARDS WETLANDS AND ALL LOCATIONS SHOWN ON PLAN.
- 8. INSPECT EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAIN STORM OF 0.25" OR GREATER. REPAIR/MODIFY SILT BARRIER AS NECESSARY TO MAXIMIZE FILTER EFFICIENCY. REMOVE SEDIMENT WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
- 9. PROVIDE SILT BARRIERS AT THE BASE OF CUT AND FILL SLOPES UNTIL COMPLETION OF THE PROJECT OR UNTIL VEGETATION BECOMES ESTABLISHED ON SLOPES. EROSION PROTECTION BELOW FILL SLOPES SHALL BE PLACED IMMEDIATELY AFTER CLEARING, PRIOR TO EMBANKMENT CONSTRUCTION.
- 10. ALL DISTURBED AREAS SHALL BE REVEGETATED AS QUICKLY AS POSSIBLE. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
- 11. ALL WORK AREAS TO BE STABILIZED AT THE END OF EACH WORK DAY AND PRIOR TO ANY
- PREDICTED SIGNIFICANT RAIN EVENT. 12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED: A. BASE COURSE GRAVELS, WHICH MEET THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD
- AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2, ARE INSTALLED IN AREAS TO BE PAVED B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED
- D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
- 13. ALL CATCH BASINS, MANHOLES, AND DRAIN LINES SHALL BE THOROUGHLY CLEANED OF ALL SEDIMENT AND DEBRIS AFTER ALL AREAS HAVE BEEN STABILIZED.
- 14. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SLOPE STABILITY DURING CONSTRUCTION.
- 15. THE EROSION CONTROL PRACTICES SHOWN ON THESE PLANS ARE ILLUSTRATIVE ONLY AND SHALL BE SUPPLEMENTED BY THE SITE CONTRACTOR AS NEEDED.

SOIL LEGEND (PER SITE SPECIFIC SOIL SURVEY)					
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP			
299/CAABB	UDORTHENTS, SMOOTHED (WELL DRAINED, NO NATURAL SOILS)	В			
699	URBAN LAND	N/A			

# SITE DEVELOPMENT PLANS

TAX MAP 267 LOT 8 GRADING AND DRAINAGE PLAN PROPOSED PARKING EXPANSION 1900 LAFAYETTE ROAD, PORTSMOUTH, NH OWNED BY & PREPARED FOR

HAMMES REALTY SERVICES, LLC



**JANUARY 24, 2024** 

C-05

Seacoast Division 

45407.17

DR JKC FB

JJM CRF

BCH JJM

DR CK

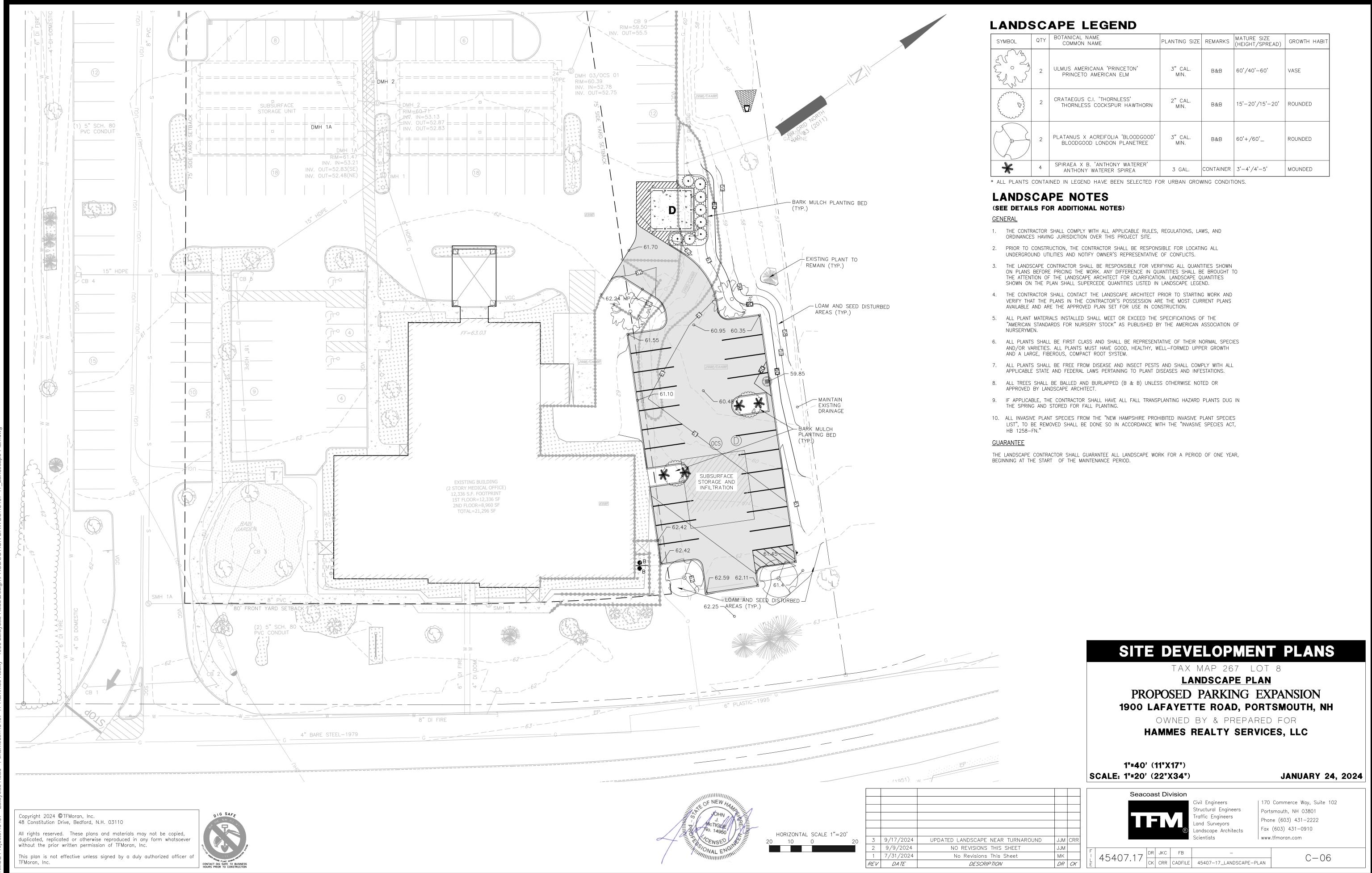
JJM

Civil Engineers Structural Engineers Traffic Engineers _and Surveyors _andscape Architects cientists

CK CRR CADFILE 45407-17_GRADING-DRAINAGE-PLAN

170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.tfmoran.com

ESHWR DEPTH ELEV 8.0' 52.00'



DS	DSCAPE LEGEND							
	QTY	BOTANICAL NAME COMMON NAME	PLANTING SIZE	REMARKS	MATURE SIZE (HEIGHT/SPREAD)	growth habit		
M Sold	2	ULMUS AMERICANA 'PRINCETON' PRINCETO AMERICAN ELM	3" CAL. MIN.	B&B	60'/40'-60'	VASE		
	2	CRATAEGUS C.I. 'THORNLESS' THORNLESS COCKSPUR HAWTHORN	2"CAL. MIN.	B&B	15'-20'/15'-20'	ROUNDED		
$\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{$	2	PLATANUS X ACREIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANETREE	3" CAL. MIN.	B&B	60'+/60'_	ROUNDED		
	4	SPIRAEA X B. 'ANTHONY WATERER' ANTHONY WATERER SPIREA	3 GAL.	CONTAINER	3'-4'/4'-5'	MOUNDED		

## LANDSCAPE SPECIFICATIONS

SITE AND SOIL PREPARATION

- 1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.
- 2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.
- 3. LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.6. LOAM SHALL CONTAIN A MINIMUM OF THREE PERCENT (3%) AND A MAXIMUM OF TWENTY PERCENT (20%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.
- 4. NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.
- 5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.
- 6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.
- 7. THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

#### <u>PLANTING</u>

- 1. EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.
- 2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE POCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.
- 3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.
- 4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.
- 5. DISH TOP OF BACKFILL TO ALLOW FOR MULCH PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6' DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2' BEYOND THE OUTER MOST BRANCHES.
- 6. MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT LESS THAN 3" THICKNESS OF BARK MULCH, 3/8"-2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJACENT FINISH GRADES AS DIRECTED IN THE FIELD.
- 7. STAKE AND GUY TREES IMMEDIATELY AFTER PLANTING (TREE SUPPORT STAKES SHALL BE 2" X 3" X 8', WOOD STAKES. GUYING WIRE SHALL BE NO. 12 GAUGE GALVANIZED SOFT STEEL WIRE. HOSE FOR COVERING WIRE SHALL BE NEW OR USED TWO PLY RUBBER HOSE NOT LESS THAN 1/2 INCH INSIDE DIAMETER. (PLASTIC "CINCH-TIES" OR EQUIVALENT FASTENING DEVICE MAY BE AN ACCEPTABLE GUY WIRE AND HOSE PROTECTOR SUBSTITUTE.)
- 8. TREEGATOR WATERING SYSTEM OR APPROVED EQUAL SHALL BE INSTALLED FOR ALL DECIDUOUS TREES AT TIME OF PLANTING AND REMOVED BEFORE FROST. WATERING RATE TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.
- 9. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.
- 10. TREES TO REMAIN STAKED FOR 1 FULL GROWING SEASON.
- 11. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

#### <u>SEEDING</u>

- 1. SLOPES UP TO AND INCLUDING 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA.
- 2. SLOPES STEEPER THAN 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA. SEE CIVIL FOR ADDITIONAL EROSION CONTROL MEASURES.
- 3. GENERAL SEED WILL BE NHDOT SPECIFICATION SECTION 644, TABLE 644-1-PARK SEED TYPE 15, INCLUDING NOTES TO TABLE 1, 2 & 3.

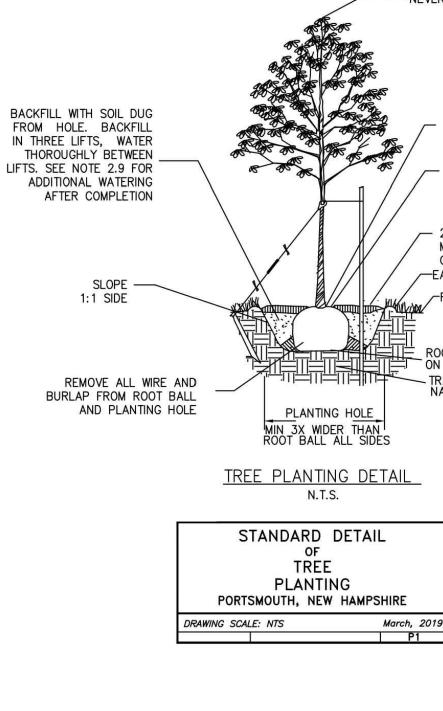
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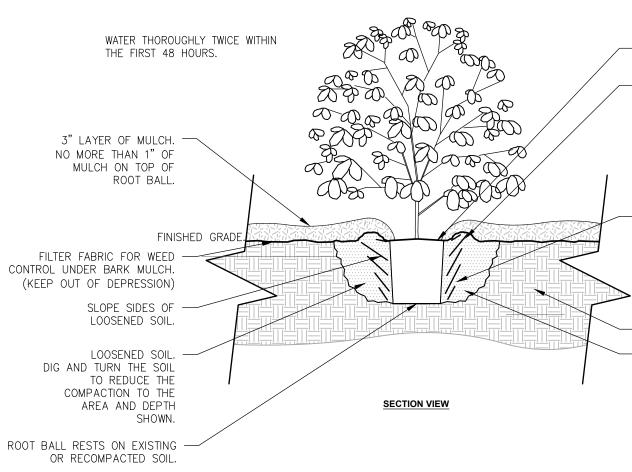
6" LOAM (ITEM 641)

SEED (ITEM 644) LIMESTONE (ITEM 642) FERTILIZER (ITEM 643.11) APPLY RATIOS OF LIMESTONE AND FERTILIZER PER MANUFACTURERS - SPECIFICATION BASED ON SOIL TEST RESULTS. STRAW MULCH SHALL BE UTILIZED FOR EROSION CONTROL AT A RATE OF 3 TONS PER ACRE. HYDROSEEDING MAYBE UTILIZED AS AN

ALTERNATE METHOD. (SEE HYDROSEEDING NOTES) LOAM & SEED

NOT TO SCALE





SHRUB PLANTING

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- NEVER CUT A LEADER

ROOT COLLAR TREE SHALL BE SET SO THE ROOT COLLAR IS 2"-3" ABOVE

FINISH GRADE

2"-3" SHREDDED UNTREATED BARK MULCH PLACED ABOVE FINISH GRADE OVER PLANTING HOLE -EARTH SAUCER (TREE RING)

-FINISH GRADE

ROOT BALL TO SIT DIRECTLY ON UNDISTURBED SOIL - TRANSITIONAL ZONE OF UNCOMPRESSED

#### PART 1 - GENERAL:

1.1 THE BASE OF THE CITY OF PORTSMOUTH TREE PLANTING REQUIREMENTS IS THE ANSI A300 PART 6 STANDARD PRACTICES FOR PLANTING AND TRANSPLANTING. ANSI A300 PART 6 LAYS OUT TERMS AND BASIC STANDARDS AS SET FORTH BY INDUSTRY BUT IT IS NOT THE "END ALL" FOR THE CITY OF PORTSMOUTH. THE FOLLOWING ARE THE CITY OF PORTSMOUTH, NH TREE PLANTING REQUIREMENTS THAT ARE IN ADDITION TO OR THAT GO BEYOND THE ANSI A300 PART 6.

PART 2 - EXECUTION:

- 2.1 ALL PLANTING HOLES SHALL BE DUG BY HAND NO MACHINES. THE ONLY EXCEPTIONS ARE NEW CONSTRUCTION WHERE NEW PLANTING PITS, PLANTING BEDS WITH GRANITE CURBING, AND PLANTING SITES WITH SILVA CELLS ARE BEING CREATED. IF A MACHINE IS USED TO DIG IN ANY OF THESE SITUATIONS AND PLANTING DEPTH NEEDS TO BE RAISED THE MATERIAL IN THE BOTTOM OF THE PLANTING HOLE MUST BE FIRMED WITH MACHINE TO PREVENT SINKING OF THE ROOT BALL.
- 2.2 ALL WIRE AND BURLAP SHALL BE REMOVED FROM THE ROOT BALL AND PLANTING HOLE.
- 2.3 THE ROOT BALL OF THE TREE SHALL BE WORKED SO THAT THE ROOT COLLAR OF THE TREE IS VISIBLE AND NO GIRDLING ROOTS ARE PRESENT.
- 2.4 THE ROOT COLLAR OF THE TREE SHALL BE 2"-3" ABOVE GRADE OF PLANTING HOLE FOR FINISHING DEPTH.
- 2.5 ALL PLANTINGS SHALL BE BACKFILLED WITH SOIL FROM THE SITE AND AMENDED NO MORE THAN 20% WITH ORGANIC COMPOST. THE ONLY EXCEPTIONS ARE NEW CONSTRUCTION WHERE ENGINEERED SOIL IS BEING USED IN CONJUNCTION WITH SILVA CELLS AND WHERE NEW PLANTING BEDS ARE BEING CREATED.
- 2.6 ALL PLANTINGS SHALL BE BACKFILLED IN THREE LIFTS AND ALL LIFTS SHALL BE WATERED SO THE PLANTING WILL BE SET AND FREE OF AIR POCKETS - NO EXCEPTIONS.
- 2.7 AN EARTH BERM SHALL BE PLACED AROUND THE PERIMETER OF THE PLANTING HOLE EXCEPT WHERE CURBED PLANTING BEDS OR PITS ARE BEING USED.
- 2.8 2"-3" OF MULCH SHALL BE PLACED OVER THE PLANTING AREA.
- 2.9 AT THE TIME OF PLANTING IS COMPLETE THE PLANTING SHALL RECEIVE ADDITIONAL WATER TO ENSURE COMPLETE HYDRATION OF THE ROOTS, BACKFILL MATERIAL AND MULCH LAYER.
- 2.10 STAKES AND GUYS SHALL BE USED WHERE APPROPRIATE AND/OR NECESSARY. GUY MATERIAL SHALL BE NON-DAMAGING TO THE TREE.
- 2.11 ALL PLANTING STOCK SHALL BE SPECIMEN QUALITY, FREE OF DEFECTS. AND DISEASE OR INJURY. THE CITY OF PORTSMOUTH, NH RESERVES THE RIGHT TO REFUSE/REJECT ANY PLANT MATERIAL OR PLANTING ACTION THAT FAILS TO MEET THE STANDARDS SET FORTH IN THE ANSI A300 PART 6 STANDARD PRACTICES FOR PLANTING AND TRANSPORTATION AND/OR THE CITY OF PORTSMOUTH, NH PLANTING REQUIREMENTS.

#### - ROOTBALL

← 4" HIGH X 8" WIDE ROUND - TOPPED BERM ABOVE ROOT BALL SURFACE SHALL BE CONSTRUCTED AROUND THE ROOT BERM SHALL BEGIN AT ROOT BALL PERIPHERY.

PRIOR TO MULCHING, LIGHTLY TAMP SOIL AROUND THE ROOT BALL IN 6" LIFTS TO BRACE SHRUB. DO NOT OVER COMPACT. WHEN THE PLANTING HOLE HAS BEEN BACKFILLED, POUR WATER AROUND THE ROOT BALL TO SETTLE THE SOIL

#### — EXISTING SOIL.

-PLANTING MIXTURE: 20 PARTS TOPSOIL, 4 PARTS PEAT MOSS AND ONE PART WELL ROTTED MANURE OR OTHER COMPOSTED ORGANIC MATTER OF LOW PH. BACKFILL IN LOOSE LIFTS OF 6"-9" DEPTH. LIGHTLY TAMP SOIL. SETTLE with thorough water SOAKING.

NOT TO SCALE

2	9/9/2024	NO REVISIONS THIS SHEET
1	7/31/2024	No Revisions This Sheet
REV	DA TE	DESCRIP TION

# SITE DEVELOPMENT PLANS

TAX MAP 267 LOT 8 LANDSCAPE DETAILS PROPOSED PARKING EXPANSION 1900 LAFAYETTE ROAD, PORTSMOUTH, NH OWNED BY & PREPARED FOR

HAMMES REALTY SERVICES, LLC

**1"=40'** (**11"X17**") SCALE: 1"=20' (22"X34")



170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.tfmoran.com

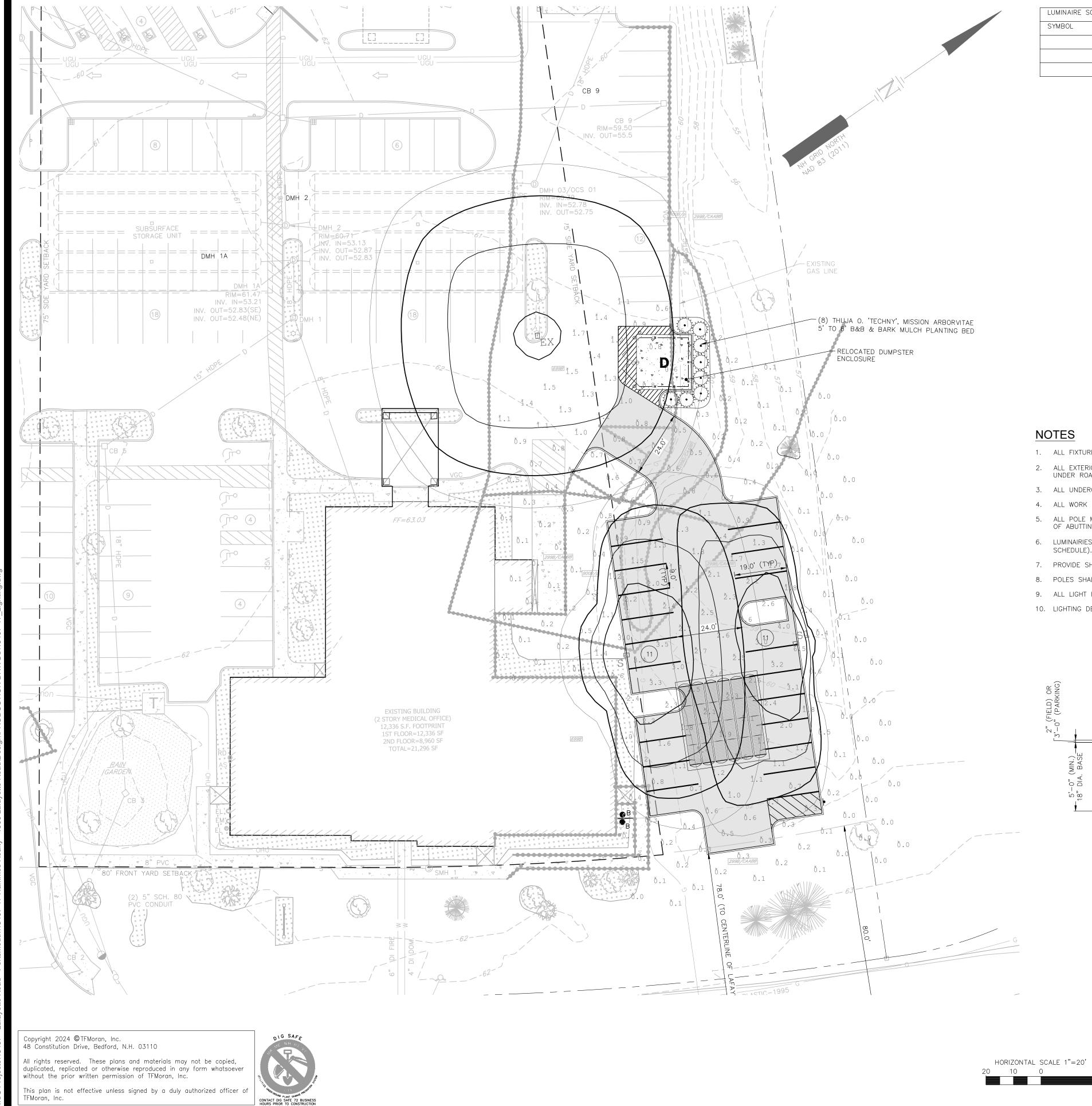
JJM МК DR CK



Civil Engineers Structural Engineers Traffic Engineers _and Surveyors _andscape Architects cientists

CK CRR CADFILE 45407-17_LANDSCAPE-PLAN

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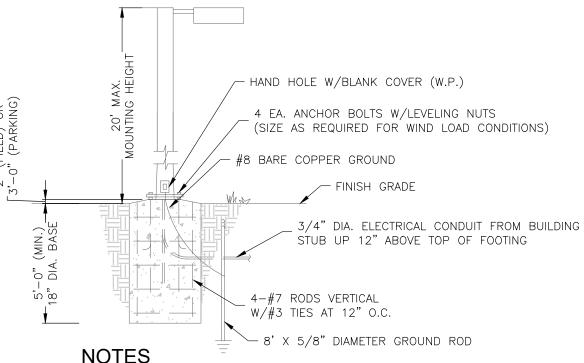
SYMBOL	QTY	LABEL	ARRANGEMENT	DESCRIPTION
	1	S	SINGLE	GLEON-SA2A-740-U-T3 / 20' AFG
	1	S1	SINGLE	GLEON-SA2A-740-U-SL3-HSS / 20' AFG
	1	EX	SINGLE	EXISTING FIXTURE ON 20' POLE

- 21-3/4" (553mm) -

Dimensional Details

#### NOTES

- 1. ALL FIXTURES SHALL BE LED FIXUTRES MEETING FULL CUT-OFF, DARK-SKY COMPLIANCE.
- 2. ALL EXTERIOR CONDUITS FOR LIGHTING SHALL BE A MINIMUM 1 1/2" DIAMETER SCHEDULE 40 PVC. ALL CONDUITS UNDER ROADWAYS AND PARKING AREAS SHALL HAVE MINIMUM COVER OF 24 INCHES.
- 3. ALL UNDERGROUND CONDUITS WILL HAVE NYLON PULL ROPE.
- 4. ALL WORK SHALL MEET REQUIREMENTS OF NATIONAL ELECTRIC CODE.
- 5. ALL POLE MOUNTED LIGHT FIXTURES SHALL BE RECESSED TO SHIELD THE ILLUMINATION SOURCE FROM THE VIEW OF ABUTTING PROPERTIES.
- 6. LUMINAIRIES AND FIXTURE MOUNTING HEIGHT SHALL BE SET AT A MAXIMUM OF A 20 FEET HIGH (SEE LUMINAIRE SCHEDULE).
- 7. PROVIDE SHIMS AS REQUIRED AND SET ALL POLES PLUMB. PROVIDE FULL ANCHOR BOLT COVERS.
- 8. POLES SHALL BE FACTORY CUT AS REQUIRED TO PROVIDE REQUIRED FIXTURE MOUNTING HEIGHT.
- 9. ALL LIGHT BASES TO BE SQUARE.
- 10. LIGHTING DESIGN, CALCULATIONS AND PHOTOMETRICS PROVIDED BY CHARRON, INC.



#### NOTES

- 1. BASE SHOWN IS PROTOTYPICAL. VERIFY THAT LIGHT POLE BASE INSTALLED MEETS LIGHT POLE MANUFACTURER'S SPECIFICATIONS. COORDINATE WITH ELECTRICAL CONTRACTOR.
- 2. WHERE LIGHT POLE BASES ARE PLACED IN AREAS NOT PROTECTED BY CURBING, A 3'-O" REVEAL OF BASE IS REQUIRED WITH REVEAL TO BE PAINTED SAFETY YELLOW. WHERE LIGHT POLE BASES ARE PLACED IN
- FIELD APPLICATIONS OR PROTECTED BY CURBING, THE BASE IS TO BE PLACED 2" ABOVE FINISHED GRADE.
- BASE CONCRETE TO BE 4,000 PSI, SMOOTH FINISH.
   POLES SHALL BE FACTORY CUT TO PROVIDE REQUIRED MOUNTING HEIGHTS.
- 5. POLES AND LIGHT FIXTURES TO BE BRONZE.

#### LIGHT POLE BASE NOT TO SCALE

)	3	9/17/2024	NO REVISIONS THIS SHEET
	2	9/9/2024	NO REVISIONS THIS SHEET
	1	7/31/2024	No Revisions This Sheet
	REV	DA TE	DESCRIPTION

#### PARKING LOT

ILLUMINANCE (FC)
AVERAGE = $2.02$
MAXIMUM = 6.5
MINIMUM = 0.6
AVG/MIN RATIO = $3.37$
MAX/MIN RATIO = 10.83

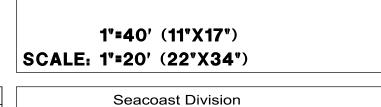
Number of Light Squares	'A' Width	"B" Standard Arm Length	"B" Extended Ann Length 1	"B" QM Arm Length	'B' QML Length	"B" QMEA Length
1-4	15-1/2*	7*	10*	10-5/8"		16-9/16
5-6	21-5/8*	7*	10*	10-5/8*		16-9/16
7-8	27-5/8*	7"	13*	10-5/8*	10-5/16*	H)
9-10	33-3/4*	7*	16*		10-5/16*	



# SITE DEVELOPMENT PLANS

TAX MAP 267 LOT 8 LIGHTING PLAN PROPOSED PARKING EXPANSION 1900 LAFAYETTE ROAD, PORTSMOUTH, NH OWNED BY & PREPARED FOR

### HAMMES REALTY SERVICES, LLC



 DR
 JKC
 FB

 CK
 CRR
 CADFILE

**JANUARY 24, 2024** 

170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.tfmoran.com

JJM I JJM 45407.17 DR CK

45407-17_LIGHTING

Civil Engineers Structural Engineers

Traffic Engineers

Land Surveyors

icientists

Landscape Architects

C-08

#### <u>SOIL CHARACTERISTICS</u>

THE SOIL IN THE VICINITY OF THE SITE CONSIST OF UDORTHENTS (SMOOTHED) AND URBAN LAND, THE MAJORITY OF THE SOIL IS HSG TYPE B.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 13,510 SQUARE FEET (0.311 ACRES).

CRITICAL NOTE: THIS DRAWING IS PROVIDED FOR GENERAL GUIDANCE. ALL SPECIAL EROSION CONTROL MEASURES MUST BE EXECUTED IN ACCORDANCE WITH APPLICABLE CURRENT STATE AND LOCAL REGULATIONS, APPROVED SWPPP, AND PERMIT REQUIREMENTS.

SEQUENCE OF MAJOR ACTIVITIES

- 1. INSTALL PERIMETER CONTROLS, STABILIZED CONSTRUCTION ENTRANCE, AND TEMPORARY EROSION CONTROL MEASURES PER APPROVED SITE DEVELOPMENT PLANS, PERMITS, OR SWPPP IF REQUIRED, PRIOR TO EARTH MOVING OPERATIONS
- 2. DEMOLISH EXISTING SITE WORK DESIGNATED FOR REMOVAL. INSTALL STORMWATER TREATMENT PONDS AND SWALES BEFORE ROUGH GRADING THE SITE.
- . COMPLETE MAJOR GRADING OF SITE. 5. CONSTRUCT PARKING AREAS.
- 3. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED, REMOVE ALL INLET PROTECTION, SILT BARRIERS, AND SEDIMENT THAT HAS BEEN TRAPPED BY THESE DEVICES. 7. CONSULT APPLICABLE REGULATIONS, PERMITS, AND CONDITIONS.

EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES AND DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR MORE THAN TWENTY ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. ALL DISTURBED AREAS SHALL D. BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

- 1. BASE COURSE GRAVELS, WHICH MEET THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE
- CONSTRUCTION, 2016, ITEM 304.2, HAVE BEEN INSTALLED IN AREAS TO BE PAVED; 2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
- 3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR 4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE, SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT BARRIERS, ALL STORM DRAIN INLETS SHALL BE PROVIDED WITH BARRIER FILTERS. STONE RIPRAP SHALL BE PROVIDED AT THE OUTLETS OF DRAINAGE PIPES WHERE EROSIVE VELOCITIES ARE ENCOUNTERED.

OFF SITE VEHICLE TRACKING

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED.

INSTALLATION, MAINTENANCE, AND INSPECTION OF EROSION AND SEDIMENT CONTROLS

- A. <u>GENERAL</u>
- THESE ARE THE GENERAL INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO IMPLEMENT THE PLAN.
- 1. STABILIZATION OF ALL SWALES, DITCHES, AND PONDS IS REQUIRED PRIOR TO DIRECTING FLOW TO THEM.
- 2. THE SMALLEST PRACTICAL PORTION OF THE SITE WILL BE DENUDED AT ONE TIME. (5 AC MAX)
- 3. ALL CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH APPLICABLE REGULATIONS, PERMITS, AND CONDITIONS AND AT LEAST EVERY 7 DAYS OR EVERY 14 DAYS AND AFTER A 0.25 INCHES RAIN EVENT OR GREATER
- 4. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
- 5. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT BARRIER WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE BARRIER.
- 6. ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
- 7. TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.
- 8. A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
- 9. THE CONTRACTOR'S SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE, AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

### <u>FILTERS / BARRIERS</u>

- 1. SILT SOCKS
- A. KNOTTED MESH NETTING MATERIAL SHALL BE DELIVERED TO SITE IN A 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" MATERIAL, FILLED WITH COMPOST CONFORMING TO THE FOLLOWING REQUIREMENTS: PHYSICAL PROPERTY TEST REQUIREMENTS

PH	TMECC 04.11-A	5.0 TO 8.0
PARTICLE SIZE	TMECC 02.02-B	2" SIEVE AND MIN. 60% GREATER

- THAN THE 3" SIEVE MOISTURE CONTENT STND TESTING < 60%
- MATERIAL SHALL BE RELATIVELY FREE OF INERT OR FOREIGN MAN-MADE MATERIALS
- MATERIAL SHALL BE WEED FREE AND DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, FREE FROM ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH.
- B. SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK SHALL BE REMOVED ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE SILT SOCK.
- C. SILT BARRIER SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAS BEEN PERMANENTLY STABILIZED.
- 2. SEQUENCE OF INSTALLATION

SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.

#### 3. MAINTENANCE

- A. SILT BARRIERS SHALL BE INSPECTED WEEKLY AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
- B. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
- C. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) THE HEIGHT OF THE BARRIER.
- D. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFIRM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

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C. MULCHING

- 1. TIMING
- IN ORDER FOR MULCH TO BE EFFECTIVE, IT MUST BE IN PLACE PRIOR TO MAJOR STORM EVENTS. THERE ARE TWO (2) TYPES OF STANDARDS WHICH SHALL BE USED TO ASSURE THIS:
- A. APPLY MULCH PRIOR TO ANY STORM EVENT. THIS IS APPLICABLE WHEN WORKING WITHIN 100' OF WETLANDS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS, USUALLY BY CONTACTING THE NATIONAL WEATHER SERVICE, TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
- B. REQUIRED MULCHING WITHIN A SPECIFIED TIME PERIOD.

TIME RESTRICTION.

- 2. GUIDELINES FOR WINTER MULCH APPLICATION.
- 3. MAINTENANCE

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.

- VEGETATIVE PRACTICE
- SITE SUBCONTRACTOR.
- 2. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, DEBRIS, GLASS, STUMPS, LITTER, AND OTHER FOREIGN 2. HAZARDOUS WASTE MATERIAL, AS WELL AS STONES OVER 1" IN DIAMETER, SHALL BE REMOVED FROM THE LOAM AND DISPOSED OF ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OFF SITE. THE LOAM SHALL BE RAKED SMOOTH AND EVEN. OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
- 3. THE LOAM SHALL BE PREPARED TO RECEIVE SEED BY REMOVING STONES, FOREIGN OBJECTS AND GRADING TO 3. SANITARY WASTE ELIMINATE WATER POCKETS AND IRREGULARITIES PRIOR TO PLACING SEED. FINISH GRADING SHALL RESULT IN ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A STRAIGHT UNIFORM GRADES AND SMOOTH, EVEN SURFACES WITHOUT IRREGULARITIES TO LOW POINTS. LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.
- 4. SHAPE THE AREAS TO THE LINES AND GRADES REQUIRED. THE SITE SUBCONTRACTOR'S ATTENTION IS DIRECTED TO THE SCHEDULING OF LOAMING AND SEEDING OF GRADED AREAS TO PERMIT SUFFICIENT TIME FOR THE STABILIZATION OF THESE AREAS. IT SHALL BE THE SITE SUBCONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE AREAS DURING THE CONSTRUCTION PERIOD AND REGRADE, LOAM AND RESEED ANY DAMAGED AREAS.
- 5. ALL AREAS DISTURBED BY CONSTRUCTION WITHIN THE PROPERTY LINES AND NOT COVERED BY STRUCTURES, PAVEMENT, OR MULCH SHALL BE LOAMED AND SEEDED.
- 6. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.
- 7. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.
- 8. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4 1/2 POUNDS AND 5 1/2 POUNDS PER INCH OF WIDTH.
- 9. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING. THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4" AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF
- TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.
- 11. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.
- 12. THE SITE SUBCONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED, INCLUDING CUTTING, AS SPECIFIED HEREIN AFTER UNDER MAINTENANCE AND PROTECTION.
- 13. UNLESS OTHERWISE APPROVED, SEEDING SHALL BE DONE DURING THE APPROXIMATE PERIODS OF EARLY SPRING TO SEPTEMBER 30, WHEN SOIL CONDITIONS AND WEATHER ARE SUITABLE FOR SUCH WORK. IN NO CASE SHALL THE WEED CONTENT EXCEED 1 PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. FOR TEMPORARY PLANTINGS AFTER SEPTEMBER 30, TO EARLY SPRING AND FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
- A. FOLLOW ABOVE SLOPE, LOAM DEPTH AND GRADING REQUIREMENTS. B. FERTILIZER SHALL BE SPREAD AND WORKED INTO THE SURFACE AT A RATE OF 500 POUNDS PER ACRE.
- MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES: WINTER RYE (FALL SEEDING) OATS (SPRING SEEDING) MULCH
- CATCH BASIN INLET PROTECTION 1. INLET BASKET STRUCTURE

  - A. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY PRIOR TO DISTURBING PAVEMENT AND SHALL REMAIN IN PLACE AND MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.
  - B. MOLD 6X6, 42 LB. WIRE SUPPORT AROUND INLET FRAME AND GRATE AND EXTEND 6" BEYOND SIDES. SECURE FILTER FABRIC TO WIRE SUPPORT.
  - C. THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
  - MULLEN BURST STRENGTH: MIN. 60PSI (ASTM D774) MINIMUM PERMEABILITY OF 120 GPM.
  - E. THE INLET PROTECTION SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.
  - BECOMES CLOGGED

F. WINTER CONSTRUCTION SEQUENCE

THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON AN AREA, WHERE THE LENGTH OF TIME VARIES WITH SITE CONDITIONS. PROFESSIONAL JUDGMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE

A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH.

1. AFTER ROUGH GRADING OF THE SUBGRADE HAS BEEN COMPLETED AND APPROVED, THE SUB GRADE SURFACE SHALL BE SCARIFIED TO A DEPTH OF 4". THEN, FURNISH AND INSTALL A LAYER OF LOAM PROVIDING A ROLLED FHICKNESS AS SPECIFIED IN THESE PLANS. ANY DEPRESSIONS WHICH MAY OCCUR DURING ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM, REGRADED AND REROLLED UNTIL THE SURFACE IS TRUE TO THE FINISHED LINES AND GRADES. ALL LOAM NECESSARY TO COMPLETE THE WORK UNDER THIS SECTION SHALL BE SUPPLIED BY THE

10. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE. MULCH THAT BLOWS OR WASHES AWAY SHALL BE REPLACED IMMEDIATELY AND ANCHORED USING APPROPRIATE

- 2.5 LBS/1,000 SF 2.0 LBS/1,000 SF
- 1.5 TONS/ACRE
- GRAB STRENGTH: 45 LB. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D1682)
- D. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A
- F. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC

- 1. ALL PROPOSED POST-DEVELOPMENT LANDSCAPED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1 AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENT.
- 2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- 3. AFTER OCTOBER 15TH, INCOMPLETE PARKING AREAS WHERE ACTIVE CONSTRUCTION HAS STOPPED FOR THE WINTER ALL TRAVEL SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOWFALL AFTER EACH STORM EVENT.

#### TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT BARRIERS AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.

> FOR SINGLE/DUPLEX FAMILY SUBDIVISIONS, WHEN LOT DEVELOPMENT IS NOT PART OF THE PERMIT, THEN LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

WASTE DISPOSAL

WASTE MATERIALS ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES HE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:

GOOD HOUSEKEEPING. THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:

- A. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB. B. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER
- (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
- C. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
- D. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
- E. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER. F. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
- HAZARDOUS PRODUCTS THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS: A. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
- B. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT
- SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
- PRODUCT SPECIFICATION PRACTICES THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

INFORMATION.

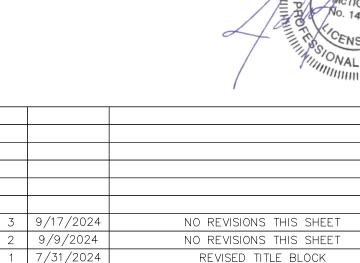
ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

REV DATE

CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA DESIGNATED ON SITE.



DESCRIPTION

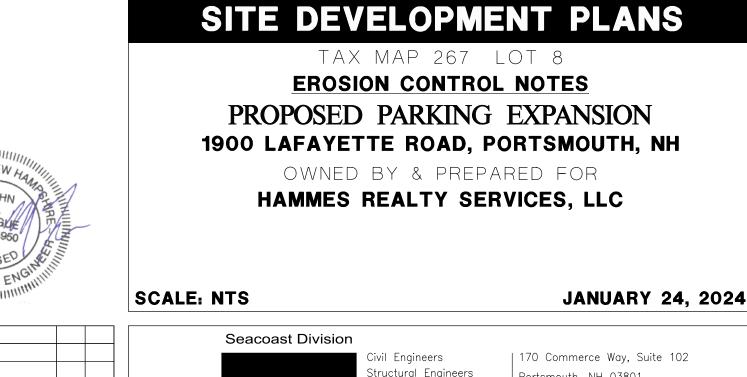
SPILL CONTROL PRACTICES

IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

- A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- C. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- D. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- E. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
- F. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT RECURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
- G. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

#### <u>DUST CONTROL</u>

THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL METHODS SHALL INCLUDE, BUT NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.



Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.tfmoran.com



45407.17

DR JKC FB

JJM L

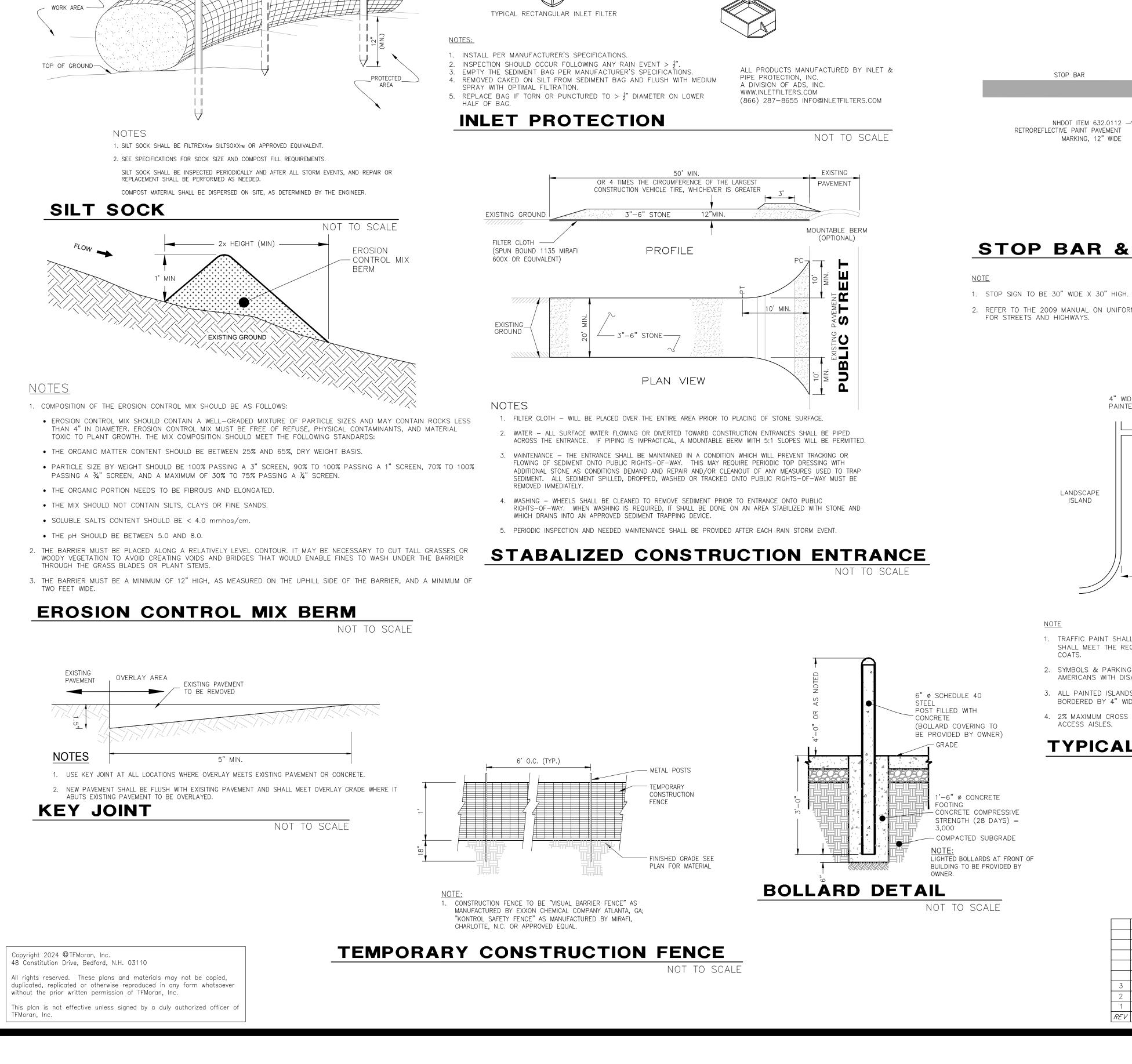
JJM ВСН ЈЈМ

DR CK

Structural Engineers raffic Engineers and Surveyors _andscape Architects cientists

CK CRR CADFILE 45407-17_EROSION-CTR_NOTES

C - 09



STANDARD 2" OVERFLOW AREA

COMPOST FILLED SILT SOCK

3"−4" ABOVE

TOP OF SOCK

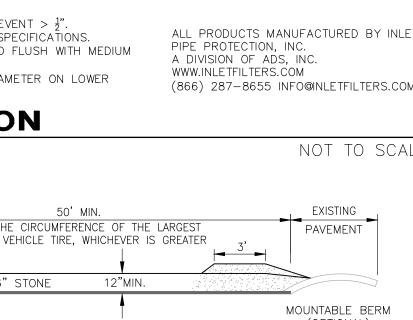
2"x 2" WOOD STAKE PLACED

FLOW

4' O.C. ON ALTERNATING

SIDES OF SOCK

(12"-18" TYP.)



# **STOP BAR & STOP SIGN**

STOP BAR

RETROREFLECTIVE PAINT PAVEMENT

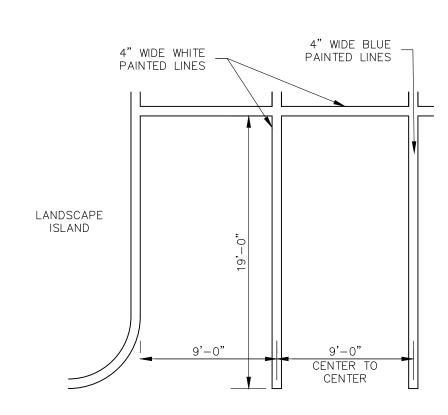
NHDOT ITEM 632.0112 -

MARKING, 12" WIDE

NOT TO SCALE

STOP SIGN

2. REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS.



<u>NOTE</u>

1. TRAFFIC PAINT SHALL BE APPLIED AS SPECIFIED BY THE MANUFACTURER AND SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F". APPLY TWO COATS.

AMERICANS WITH DISABILITIES ACT, LATEST EDITION.

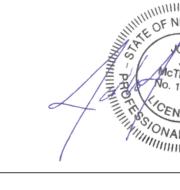
2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE

3. ALL PAINTED ISLANDS SHALL BE 4" WIDE DIAGONAL LINES AT 3'-O" OC

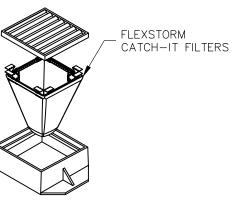
BORDERED BY 4" WIDE LINES. 4. 2% MAXIMUM CROSS SLOPE ALLOWED IN ACCESSIBLE PARKING SPACES AND

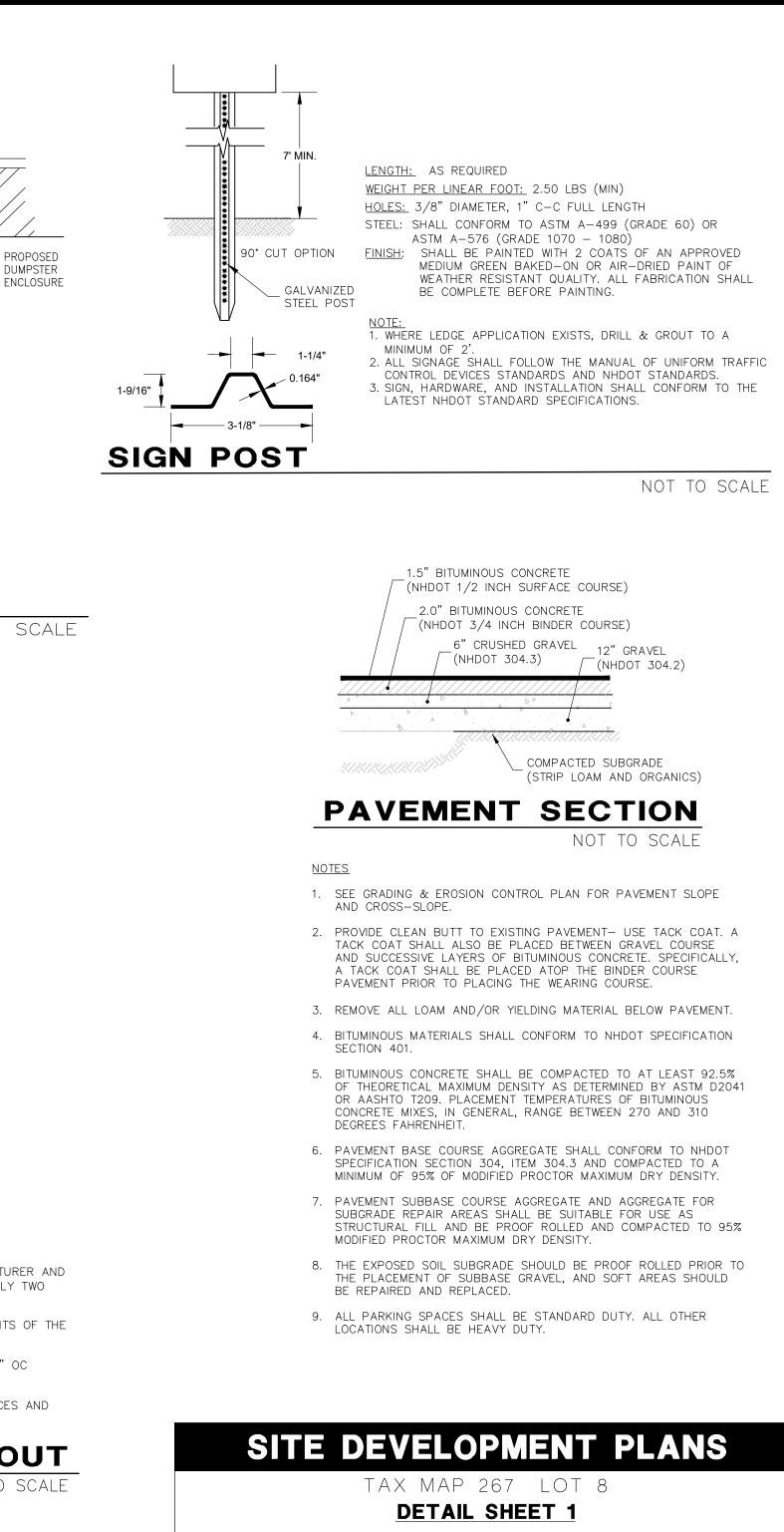
ACCESS AISLES. **TYPICAL PARKING LAYOUT** 

NOT TO SCALE



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PROPOSED PARKING EXPANSION 1900 LAFAYETTE ROAD, PORTSMOUTH, NH OWNED BY & PREPARED FOR HAMMES REALTY SERVICES, LLC

> Civil Engineers Structural Engineers

Traffic Engineers

_andscape Architects

Land Surveyors

cientists

#### SCALE: NTS

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JJM I

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DR CK

Seacoast Division

DR JKC FB

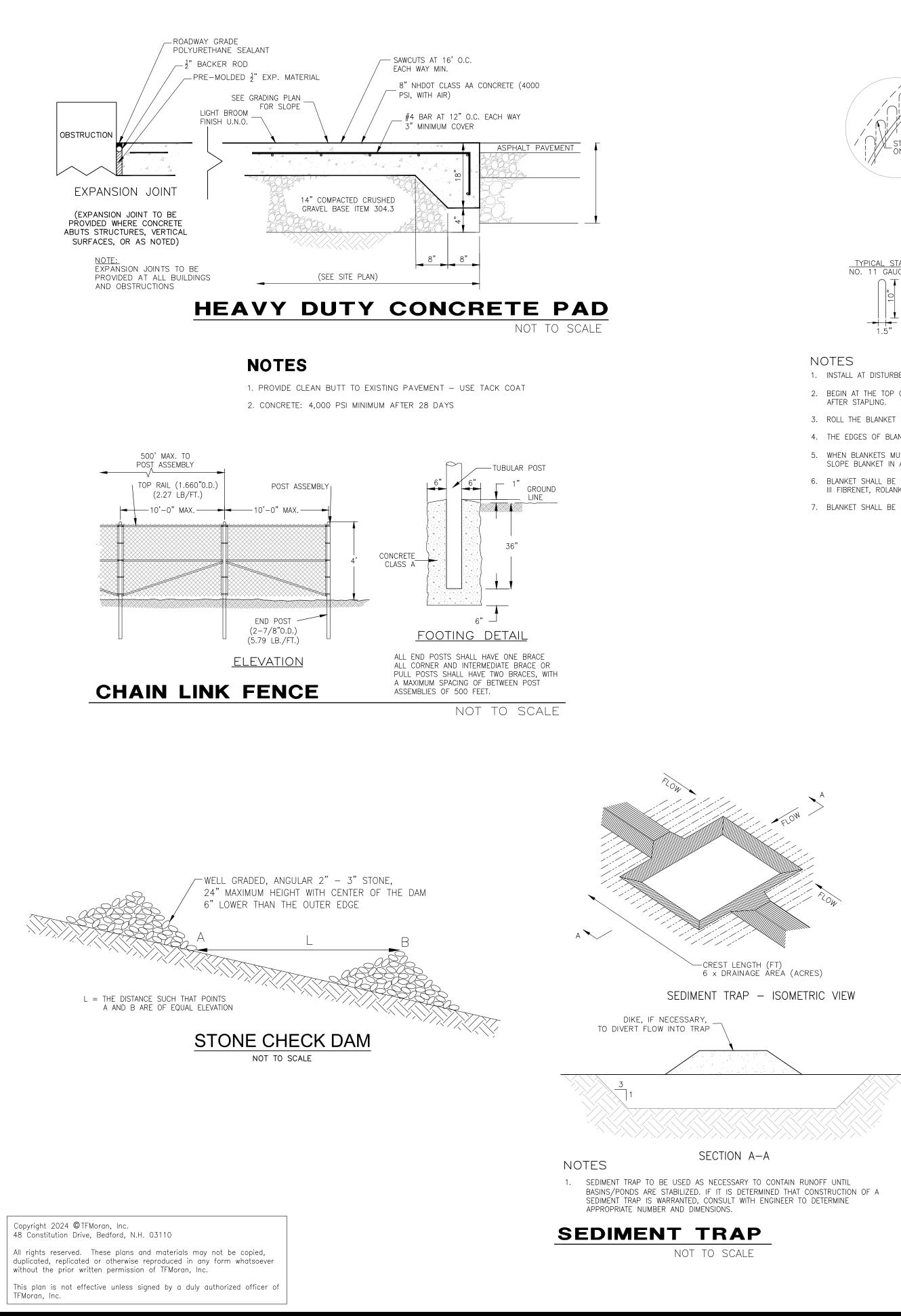
CK CRR CADFILE

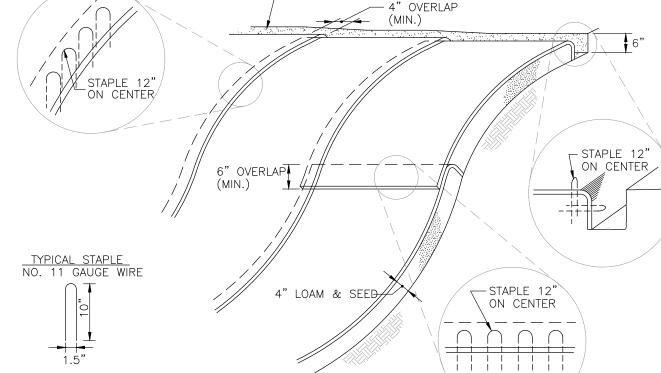
# **JANUARY 24, 2024**

C-10

170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.tfmoran.com

45407-17_DETAILS





– BACKFILL AND COMPACT TRENCH AFTER INSTALLATION

1. INSTALL AT DISTURBED LOCATIONS WITH 2:1 SLOPES OR GREATER AND AS INDICATED PER PLANS.

2. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH

- 3. ROLL THE BLANKET DOWN THE SLOPE OR SWALE IN THE DIRECTION OF THE WATER FLOW.
- 4. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.

- 5. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
- 6. BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC-2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD-OCF 30, OR APPROVED EQUAL.
- 7. BLANKET SHALL BE PLACED WITHIN 24-HRS AFTER SOWING SEE IN THE AREA BEING COVERED

# **EROSION CONTROL BLANKET**

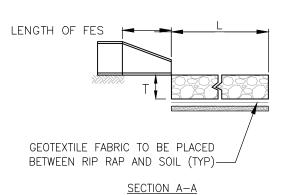
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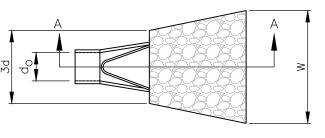
#### MAINTENANCE:

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

CONSTRUCTION SPECIFICATIONS:

- 1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- 2. THE ROCK OR GRAVEL USED FOR FILTER OR RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
- 3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12".
- 4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
- 5. ADD ANIMAL SCREEN TO FLARED END SECTION OUTLET.





FES-21

9.0'

6.5'

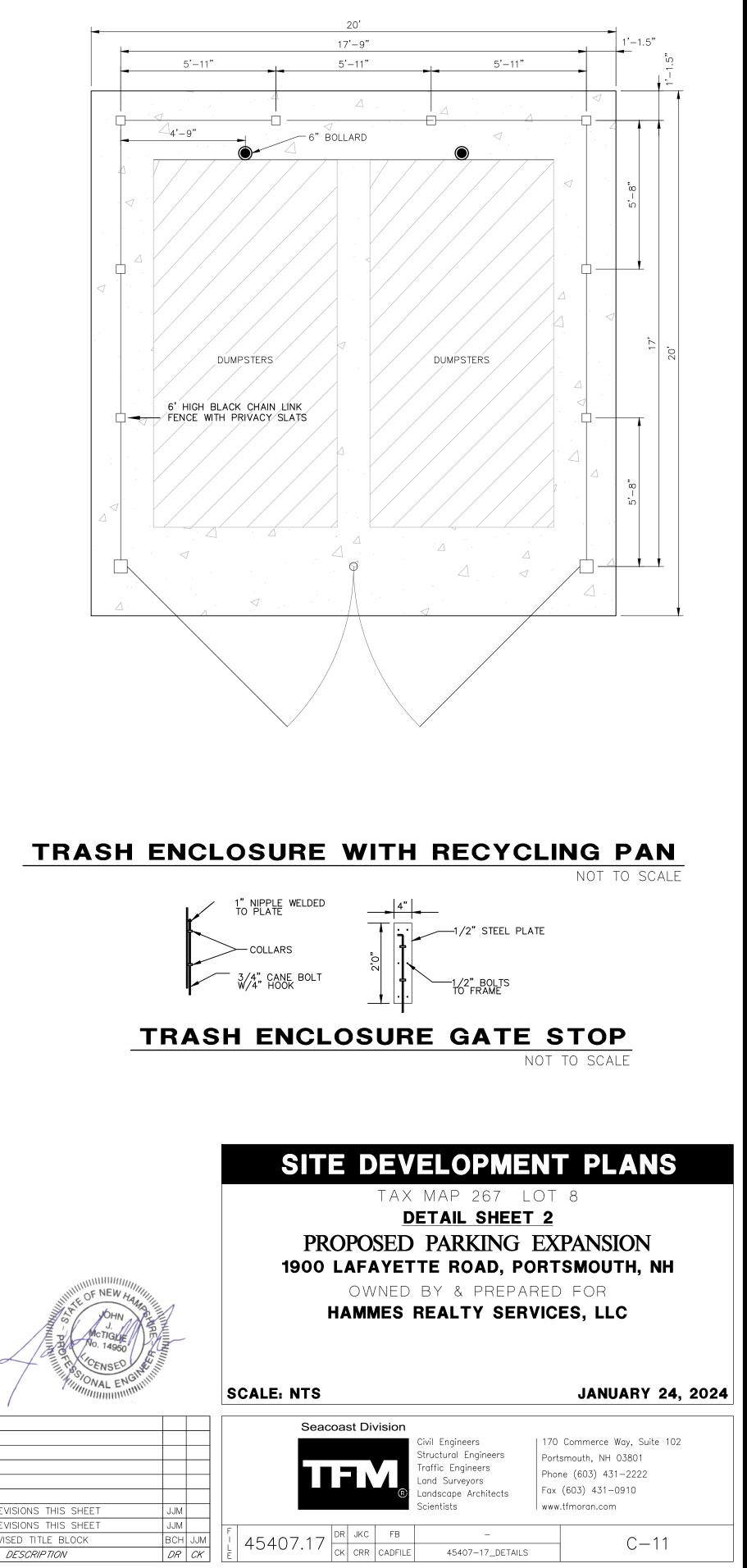
<u>RIP RAP DIMENSIONS</u>

LOCATION
d50 STONE SIZE:
LENGTH OF APRON (L):
WIDTH OF APRON (W): DEPTH OF RIP RAP (T):
DEPTH OF RIP RAP (1):

<u>% of weight sm</u>	1ALLEF	<u>२</u>				
THAN THE GIVEN	SIZE	<u>SIZE</u>	OF	STONE	(INC)	CHES)
100				9.00	ΤO	12.00
85				7.80	ΤO	10.80
50				6.00	ΤO	9.00
15				1.80	TO	3.00

# **RIP RAP AND FLARED END SECTION** WITH OUTLET PROTECTION

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#### **SC-740 STORMTECH CHAMBER SPECIFICATIONS**

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS. UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN
- REQUIREMENTS FOR HANDLING AND INSTALLATION: • TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
- TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2". TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550
- LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS
- FOLLOWS: • THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD. THE MINIMUM REQUIRED BY
- ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPIASTIC PIPE • THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT
- DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

#### **IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740** SYSTEM

- 1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS
- 2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- 3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
- BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE. BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- 5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2"
- 7. (20-50 mm)
- 8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF

#### NOTES FOR CONSTRUCTION EQUIPMENT

2.

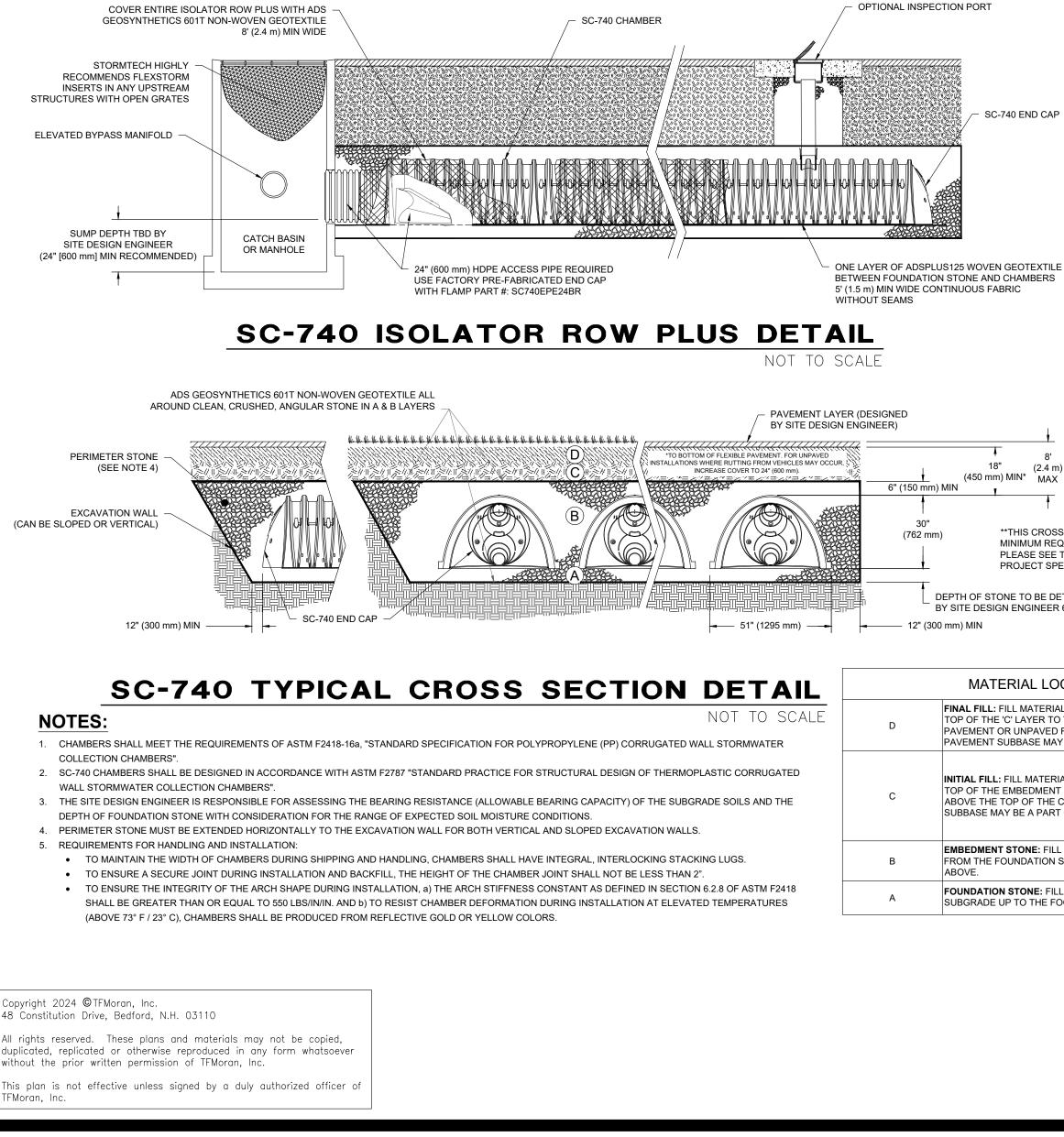
3.

STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".

- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
- NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS. • NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL
- DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE" • WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



SC-740 END CAP

INODEOTION & MAINTE

CTION & MAINTENANCE
<ul> <li>INSPECT ISOLATOR ROW PLUS FOR SEDIMENT</li> <li>A. INSPECTION PORTS (IF PRESENT)</li> <li>A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN</li> <li>A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED</li> <li>A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG</li> <li>A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)</li> <li>A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.</li> <li>B. ALL ISOLATOR PLUS ROWS</li> <li>B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS</li> <li>B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE <ul> <li>i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY</li> <li>ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE</li> </ul> </li> <li>B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.</li> </ul>
<ul> <li>CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS</li> <li>A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED</li> <li>B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN</li> <li>C. VACUUM STRUCTURE SUMP AS REQUIRED</li> </ul>
REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.
6
ECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION RVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ATIONS. DUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS ISSARY.
CONCRETE COLLAR NOT REQUIRED FOR UNPAVED APPLICATIONS PAVEMENT PAVEMENT NCRETE SLAB im) MIN THICKNESS CONCRETE COLLAR NOT REQUIRED FOR UNPAVED APPLICATIONS 8" NYLOPLAST INSPECTION PORT BODY (PART# 2708AG4IPKIT) OR TRAFFIC RATED BOX W/SOLID LOCKING COVER 4" (100 mm) SDR 35 PIPE 4" (100 mm) INSERTA TEE TO BE CENTERED ON

INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

**4" INSPECTION PORT DETAIL** 

NOT TO SCAL

18' (2.4 m (450 mm) MIN* MAX

> **THIS CROSS SECTION DETAIL REPRESENTS MINIMUM REQUIREMENTS FOR INSTALLATION PLEASE SEE THE LAYOUT SHEET(S) FOR PROJECT SPECIFIC REQUIREMENTS.

DEPTH OF STONE TO BE DETERMINED

BY SITE DESIGN ENGINEER 6" (150 mm) MIN

#### ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUI
NAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE OP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE AVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT AVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLA INSTALLATIONS MAY HAVE STRINGENT MAT PREPARATION REQUIREMENTS.
IITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE OP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) BOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT UBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M1451 A-1, A-2-4, A-3 OR AASHTO M431 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF M/ THE CHAMBERS IS REACHED. COMPACT ADDITIC 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR WELL GRADED MATERIAL AND 95% RELATIVE I PROCESSED AGGREGATE MATERIALS. ROLL VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 FORCE NOT TO EXCEED 20,000 lbs (89
MBEDMENT STONE: FILL SURROUNDING THE CHAMBERS ROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER BOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
DUNDATION STONE: FILL BELOW CHAMBERS FROM THE UBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT

PLEASE NOTE

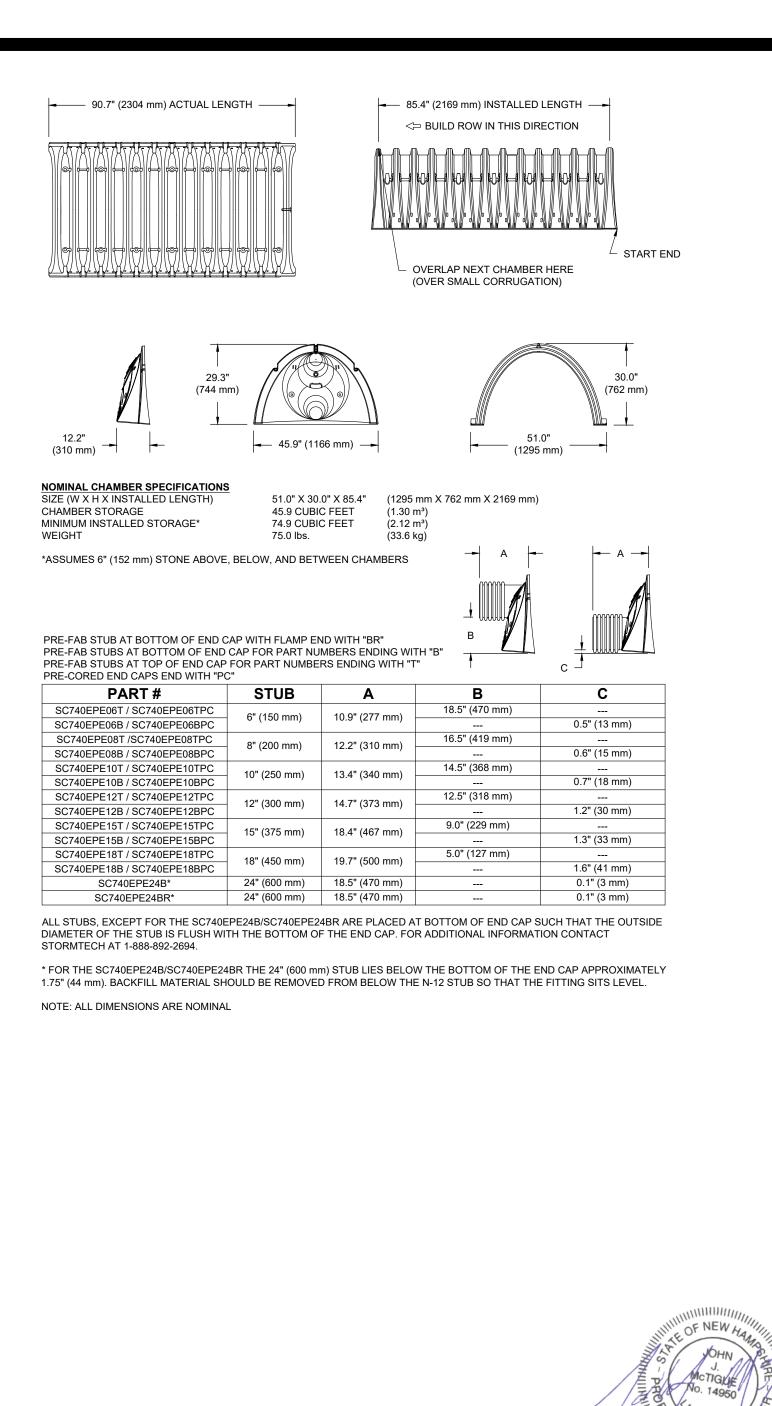
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE"

2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.

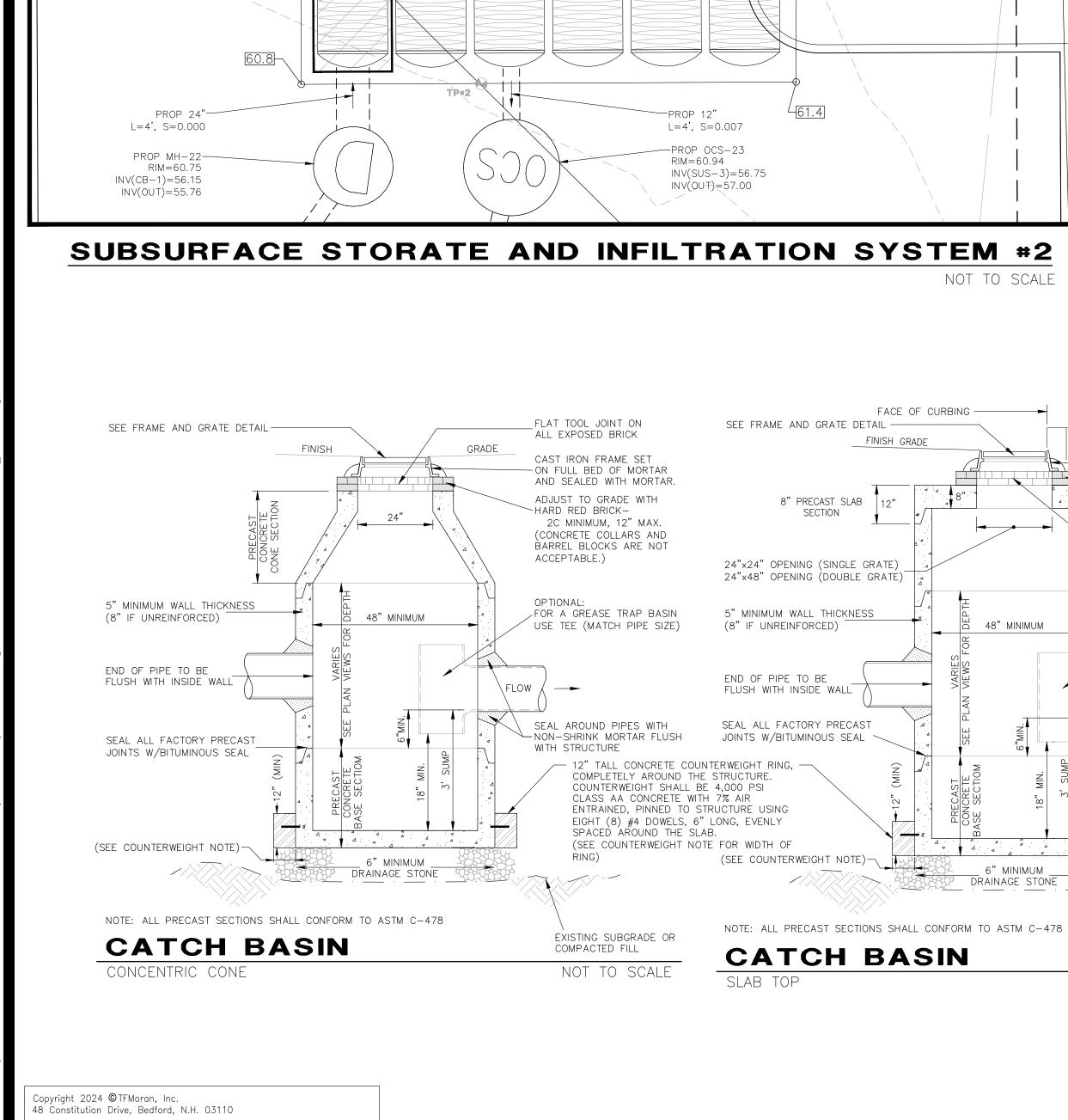
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION

REQUIREMENTS 4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

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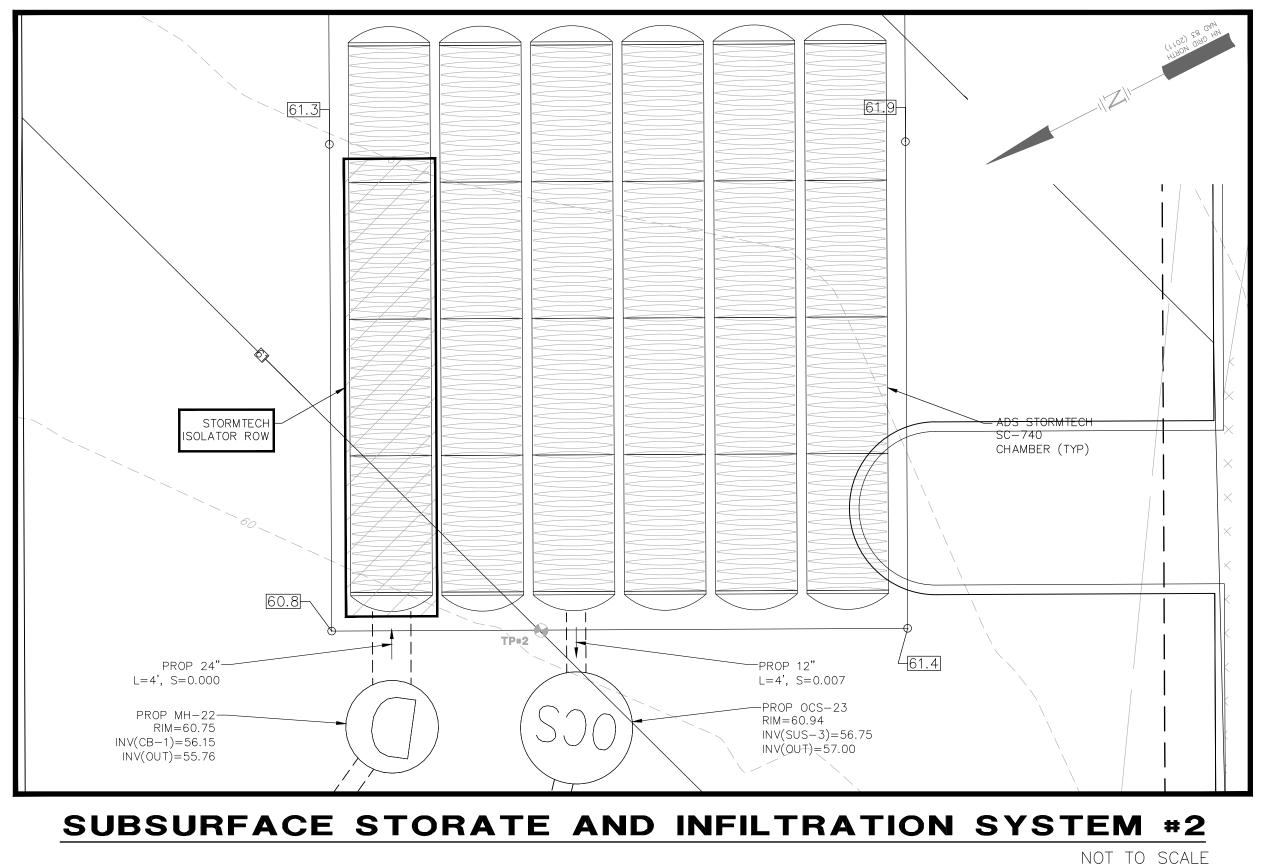


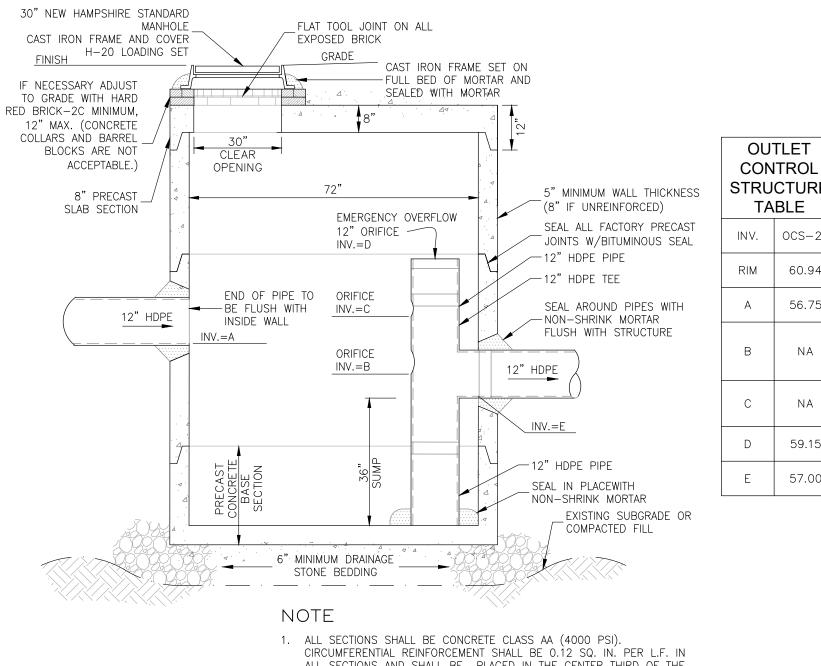




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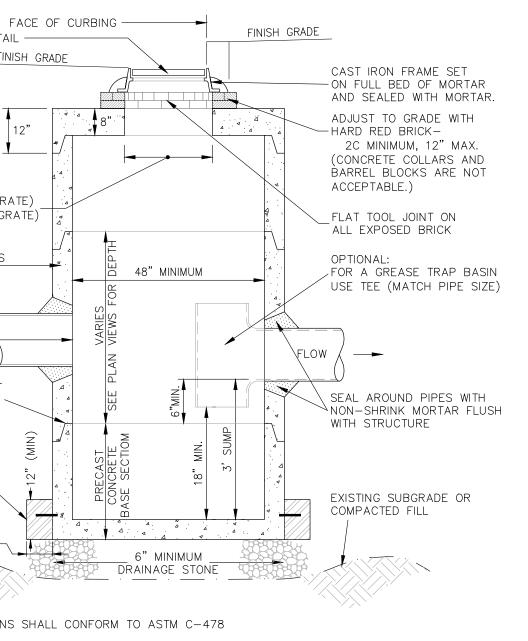


6	STRUCTUF TABLE		
	INV.	0CS-23	
	RIM	60.94	
	А	56.75	
	В	NA	
	С	NA	
	D	59.15	
	E	57.00	

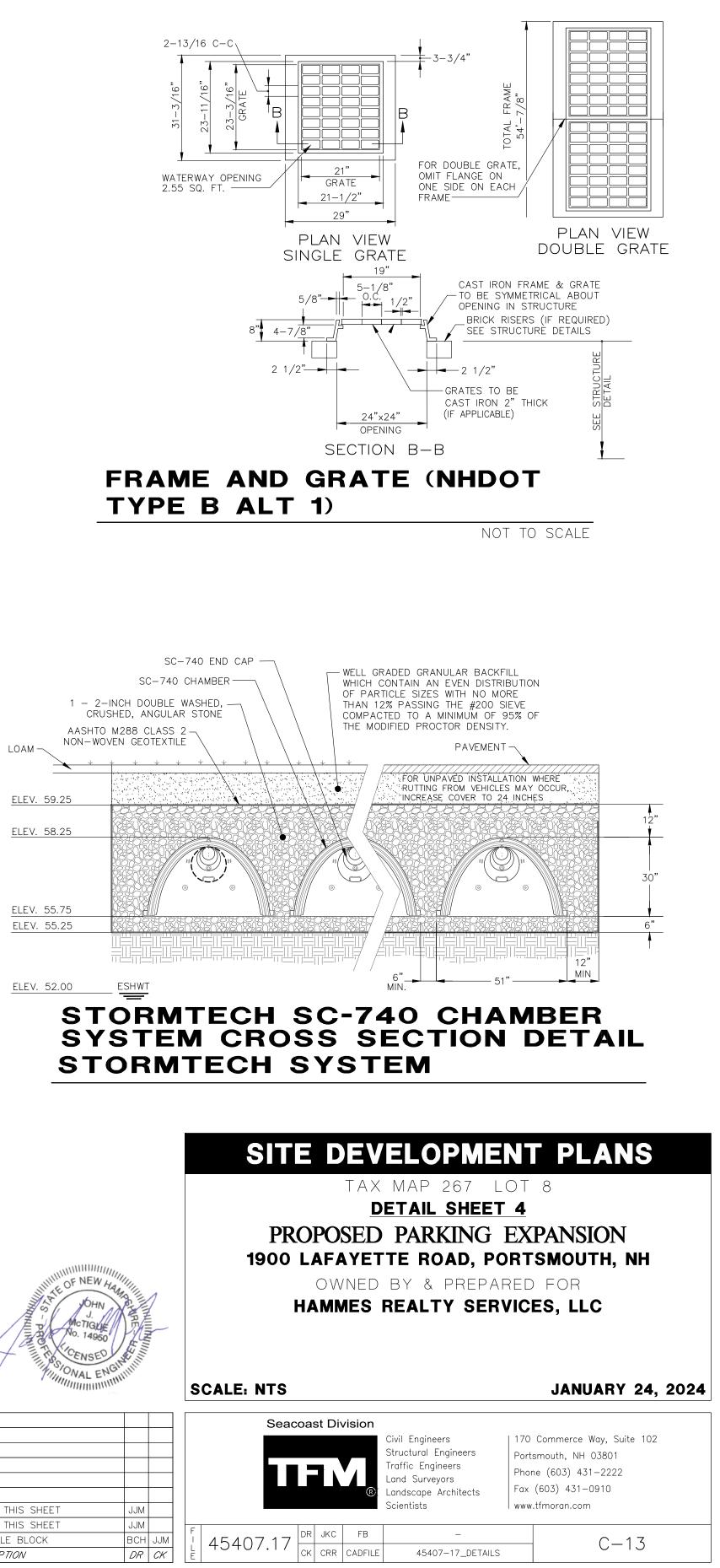
- ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE
- LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER 2. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478

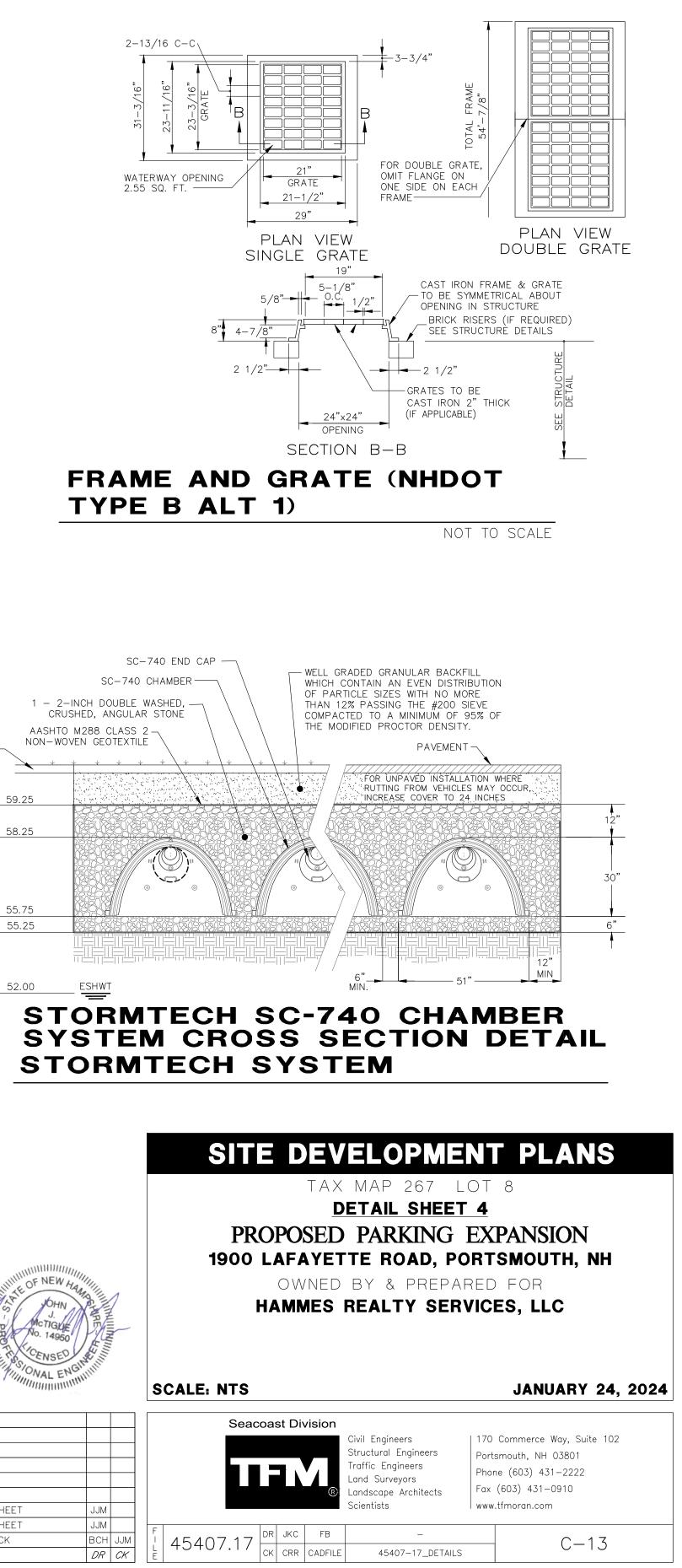


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