PROPOSED SUBDIVISION

799 SOUTH STREET

PORTSMOUTH, NEW HAMPSHIRE

SITE PLANS

PERMIT LIST:
PORTSMOUTH SUBDIVISION

OWNERS:

NOELE M. CLEWS REVOCABLE TRUST
CHRISTOPHER CLEWS, TRUSTEE
67 RIDGES COURT
PORTSMOUTH, NH 03801

CIVIL ENGINEER & LAND SURVEYOR:

AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801
Tel. (603) 430-9282
Fax (603) 436-2315

TRAFFIC ENGINEER:

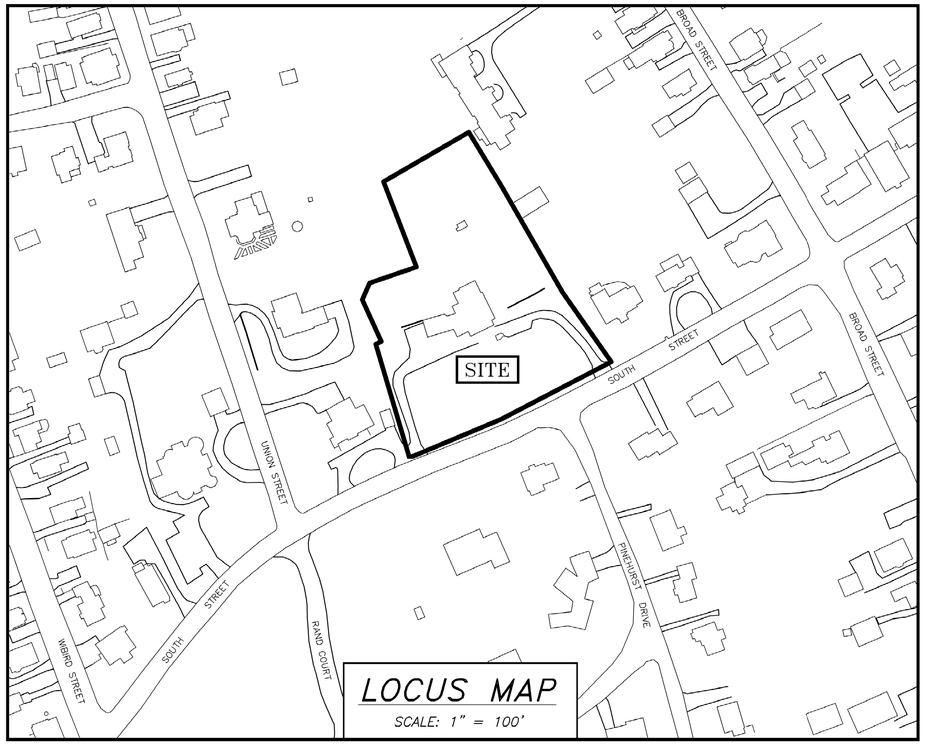
STEPHEN G. PERNAW & COMPANY, INC.
PO BOX 1721
CONCORD, N.H. 03302
Tel. (603) 731-8500
Fax (866) 929-6094

Legend

Character Districts
Character-Based Zoning Area
(Refer to Zoning Map Sheet 2 of 2 Character Districts Regulating Plan)

Residential Districts
R Rural
SRA Single Residence A
SRB Single Residence B
GRA General Residence A
GRB General Residence B
GRC General Residence C
GA/MH Garden Apartment/Mobile Home Park

Mixed Residential Districts
MRO Mixed Residential Office
MRB Mixed Residential Business
G1 Gateway Corridor
G2 Gateway Center



LOCUS MAP
SCALE: 1" = 100'

LEGEND:

EXISTING	PROPOSED	
		PROPERTY LINE
		SETBACK
S	S	SEWER PIPE
SL	SL	SEWER LATERAL
G	G	GAS LINE
D	D	STORM DRAIN
W	W	WATER LINE
WS	WS	WATER SERVICE
UGE	UGE	UNDERGROUND ELECTRIC
OHW	OHW	OVERHEAD ELECTRIC/WIRES
	UD	FOUNDATION DRAIN
		EDGE OF PAVEMENT (EP)
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		UTILITY POLE
		WALL MOUNTED EXTERIOR LIGHTS
		TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD
		SHUT OFFS (WATER/GAS)
	GV	GATE VALVE
	HYD	HYDRANT
CB	CB	CATCH BASIN
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
T	TMH	TELEPHONE MANHOLE
14	14	PARKING SPACE COUNT
PM		PARKING METER
LSA		LANDSCAPED AREA
TBD	TBD	TO BE DETERMINED
CI	CI	CAST IRON PIPE
COP	COP	COPPER PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
AC	–	ASBESTOS CEMENT PIPE
VC	VC	VITRIFIED CLAY PIPE
EP	EP	EDGE OF PAVEMENT
EL.	EL.	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
S =	S =	SLOPE FT/FT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL

DIG SAFE
MA – ME – NH – RI – VT
1-888-344-7233
CALL TOLL FREE

INDEX OF SHEETS

UTILITY CONTACTS

ELECTRIC:
EVERSOURCE
1700 LAFAYETTE ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 436-7708, Ext. 555.5678
ATTN: MICHAEL BUSBY, P.E. (MANAGER)

NATURAL GAS:
UNITIL
325 WEST ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 294-5144
ATTN: DAVE BEAULIEU

CABLE:
COMCAST
155 COMMERCE WAY
PORTSMOUTH, N.H. 03801
Tel. (603) 679-5695 (X1037)
ATTN: MIKE COLLINS

SEWER & WATER:
PORTSMOUTH DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 427-1530
ATTN: JIM TOW

COMMUNICATIONS:
FAIRPOINT COMMUNICATIONS
JOE CONSIDINE
1575 GREENLAND ROAD
GREENLAND, N.H. 03840
Tel. (603) 427-5525

PORTSMOUTH APPROVAL CONDITIONS NOTE:
ALL CONDITIONS ON THIS PLAN SET SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE CITY OF PORTSMOUTH SUBDIVISION REGULATIONS.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

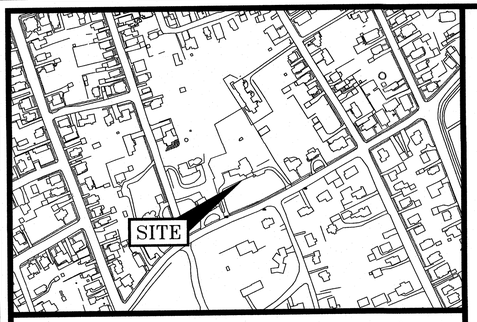
CHAIRMAN _____ DATE _____

TAC SUBMISSION
CLEWS SUBDIVISION
799 SOUTH STREET
PORTSMOUTH, N.H.

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

PLAN SET SUBMITTAL DATE: 8 JULY 2019

J:\JOBS\1700s\1736s\1736 2018 Subdivision\Plans & Specs\Site\1736 COVER.dwg, COVER



LOCATION MAP SCALE:1"=300'

LEGEND:

EXISTING

N/F		NOW OR FORMERLY
RP		RECORD OF PROBATE
RCRD		ROCKINGHAM COUNTY REGISTRY OF DEEDS
11/21		MAP 11 / LOT 21
RR SPK FND	RR SPK SET	RAILROAD SPIKE FOUND/SET
IR FND	IR SET	IRON ROD FOUND/SET
IP FND	IP SET	IRON PIPE FOUND/SET
DH FND	DH SET	DRILL HOLE FOUND/SET
NHHB FND		NHDOT BOUND FOUND
TB FND		TOWN BOUND FOUND
BND w/DH	BND w/DH	BOUND w/ DRILL HOLE
ST BND w/DH	ST BND w/DH	STONE BOUND w/DRILL HOLE
		STORM DRAIN
		UNDERGROUND ELECTRIC
		OVERHEAD ELECTRIC/WIRES
		EDGE OF PAVEMENT (EP)
		WOODS / TREE LINE
		UTILITY POLE (w/ GUY)
WSO		WATER SHUT OFF/CURB STOP
GV		GATE VALVE
HYD		HYDRANT
GWE		METER (GAS, WATER, ELECTRIC)
		CATCH BASIN

PLAN REFERENCES:

1) STANDARD BOUNDARY SURVEY FOR PROPERTY AT 613 UNION STREET, ROCKINGHAM COUNTY, PORTSMOUTH, NEW HAMPSHIRE OWNED BY JOHN R. & ELIZABETH U. FEGELA. DATED 5/15/98 BY EASTERLY SURVEYING. RCRD #D-26381.
2) SITE PLAN, BROAD PARK CONDOMINIUMS OFF BROAD STREET, PORTSMOUTH, N.H. DATED 3/10/81 BY RICHARD P. MILLETTE AND ASSOCIATES. RCRD #D-10137.
3) PLAN OF RAND AND HISLOP LAND, SOUTH, UNION AND SPRING STS., PORTSMOUTH, N.H. DATED OCT. 1943 BY JOHN W. DURGIN. RCRD #01239.
4) PLAN OF LOTS, PORTSMOUTH, N.H. OWNED BY C.W. BREWSTER. DATED OCT. 1931 BY JOHN W. DURGIN. RCRD #0687.

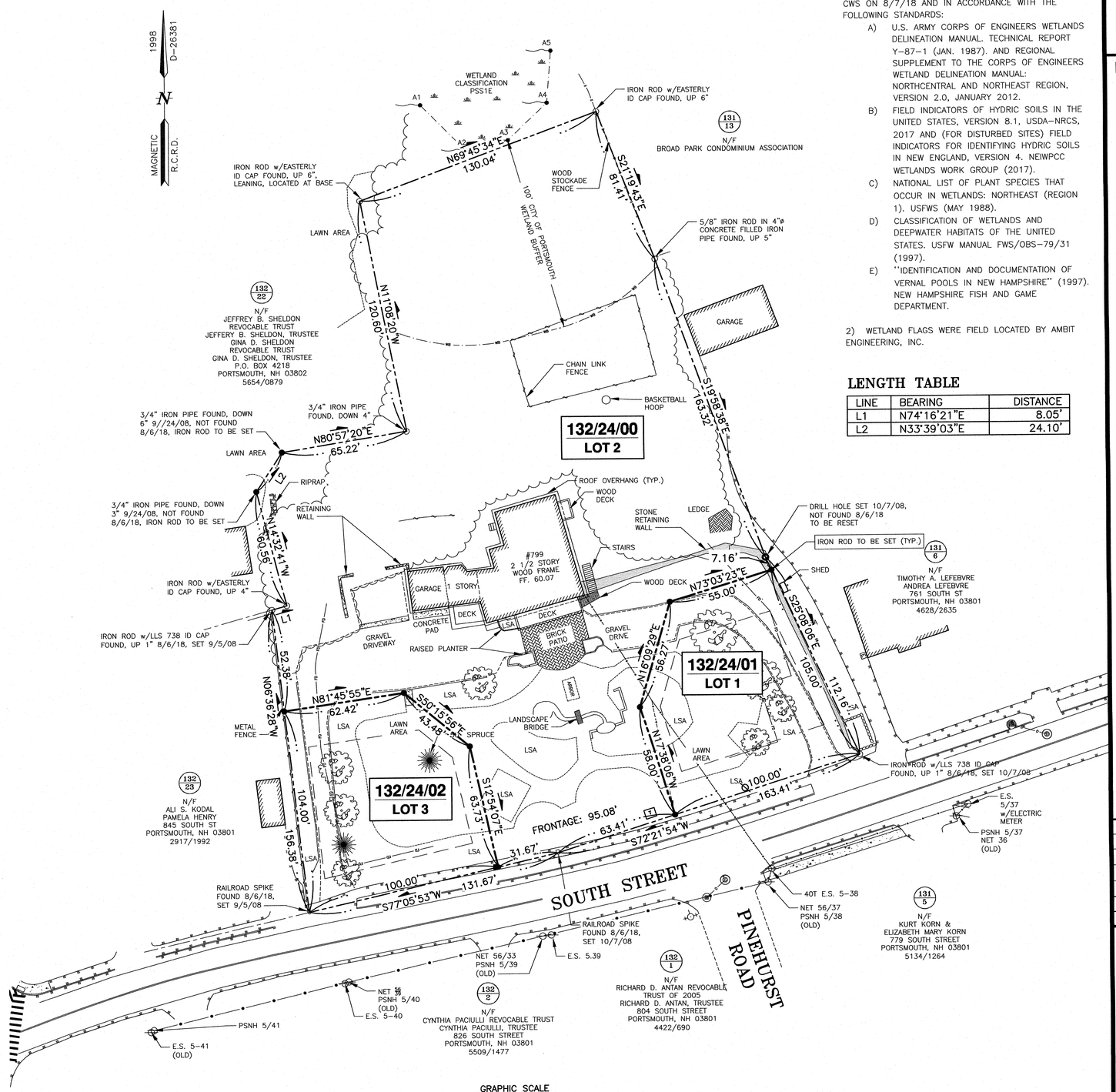
VARIANCE REQUEST:

1) SECTION 10.521–TO ALLOW 95.08' OF FRONTAGE FOR LOT 2, WHERE 100' IS REQUIRED. APPROVED 3–26–19

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

JOHN R. CHAGNON, LLS DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR NO. 738 JOHN R. CHAGNON



GRAPHIC SCALE

30 0 50 100 120 FEET
10 5 0 10 20 30 METERS

WETLAND NOTES:

1) WETLAND LINES DELINEATED BY STEVEN D. RIKER, CWS ON 8/7/18 AND IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
- A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. TECHNICAL REPORT Y–87–1 (JAN. 1987). AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
- B) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.1, USDA–NRCS, 2017 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEIWPCC WETLANDS WORK GROUP (2017).
- C) NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). USFWS (MAY 1988).
- D) CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS–79/31 (1997).
- E) "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE" (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.

2) WETLAND FLAGS WERE FIELD LOCATED BY AMBIT ENGINEERING, INC.

LENGTH TABLE

LINE	BEARING	DISTANCE
L1	N74°16'21"E	8.05'
L2	N33°39'03"E	24.10'

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801–7114
Tel (603) 430–9282
Fax (603) 436–2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S TAX MAP 132 AS LOT 24.

2) OWNERS OF RECORD:
NOELE M. CLEWS REVOCABLE TRUST
CHRISTOPHER CLEWS, TRUSTEE
67 RIDGES COURT
PORTSMOUTH, NH 03801
2338/525

3) PARCEL NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259E. MAY 17, 2005.

4) EXISTING LOT AREA:
76,889 S.F.
1.7651 ACRES

PROPOSED LOT AREAS:
LOT 1: 9,004 S.F. 0.2067 ACRES
LOT 2: 58,885 S.F. 1.3518 ACRES
LOT 3: 9,000 S.F. 0.2066 ACRES

5) PARCEL IS LOCATED IN GENERAL RESIDENCE A (GRA) DISTRICT.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:	7,500 S.F.
FRONTAGE:	100 FEET
MIN. DEPTH	70 FEET
SETBACKS:	
FRONT:	15 FEET
SIDE:	10 FEET
REAR:	20 FEET

MAXIMUM STRUCTURE HEIGHT: 35'
MAXIMUM STRUCTURE COVERAGE: 25%
MINIMUM OPEN SPACE: 30%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE SUBDIVISION OF TAX MAP 132 LOT 24 IN THE CITY OF PORTSMOUTH INTO 3 LOTS.

8) PRIOR TO DISCONTINUANCE OF THE DRIVEWAY ACCESS TO LOT 2 THE NEW LOTS 2 & 3 DRIVEWAY SHALL BE INSTALLED AND MAINTAINED FOR THE OCCUPANTS. ALSO THE DRIVEWAY SHALL BE MAINTAINED TO ITS FULL WIDTH TO ALLOW FIRE TRUCK ACCESS TO 779 SOUTH STREET.

9) A SIDEWALK EASEMENT (TO INCLUDE THE AREA 2' BEYOND FOR CONSTRUCTION & SNOW STORAGE) FOR EXISTING SIDEWALK ON LOTS 2 & 3 WILL BE GRANTED TO THE CITY OF PORTSMOUTH.

NO.	DESCRIPTION	DATE
2	NOTES 8 & 9	7/8/19
1	ISSUED FOR TAC REVIEW	6/17/19
0	ISSUED FOR VARIANCE APPLICATION	2/22/19

REVISIONS

SUBDIVISION PLAN
TAX MAP 132 – LOT 24

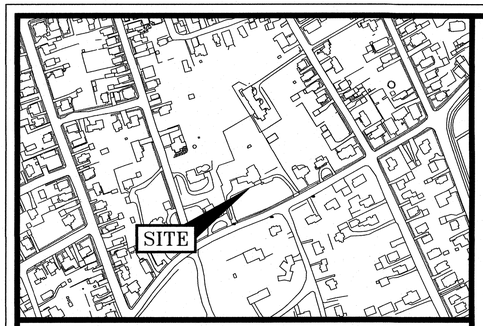
OWNER:
NOELE M. CLEWS
REVOCABLE TRUST
CHRISTOPHER CLEWS, TRUSTEE

PROPERTY LOCATED AT:
799 SOUTH STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE 1" = 30' JUNE 2019

FB 288 PG 22 1736

J:\JOBS1\JN1700s\JN1730s\JN1736\2018 Subdivision\Plans & Specs\Site\1736 SUBDIVISION 2019.dwg, SUBDIV



LOCATION MAP 1"=300'

WETLAND NOTES:

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   - A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. TECHNICAL REPORT Y-87-1 (JAN. 1987). AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
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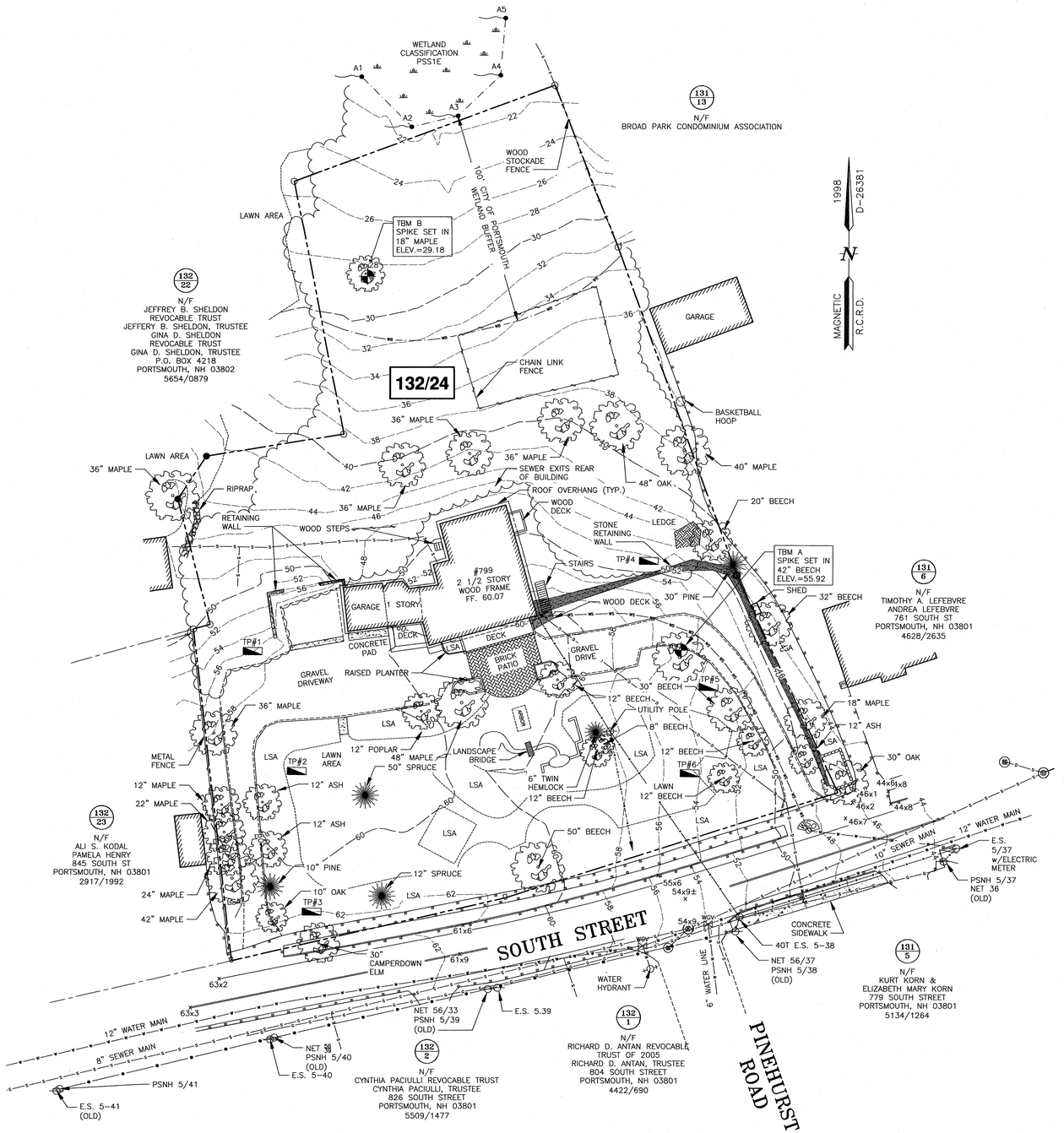
   - E) ''IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE'' (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.

2) WETLAND FLAGS WERE FIELD LOCATED BY AMBIT ENGINEERING, INC.



GRAPHIC SCALE

30 0 50 100 120 FEET

10 5 0 10 20 30 METERS

''I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.''

JOHN R. CHAGNON, LLS — DATE 6-17-19

TEST PIT 1, ELEV.: 56.0

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 42"

DEPTH	DESCRIPTION
0" – 42"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE 20% GRAVEL

TEST PIT 2, ELEV. 59.1

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: 49" MOTTLES 5YR 7/8
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 64"

DEPTH	DESCRIPTION
0" – 30"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE, 15% GRAVEL
30" – 64"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, 20% COBBLES

TEST PIT 3, ELEV.: 62.0

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 37"

DEPTH	DESCRIPTION
0" –18"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE, 20% GRAVEL
18" – 37"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, ROOTS 36"

TEST PIT 4, ELEV. 48.4

Date: 9/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 29"

DEPTH	DESCRIPTION
0" – 13"	10YR 4/3 FINE SANDY LOAM, MASSIVE, FRIABLE
13" – 29"	10YR 4/6 FINE SANDY LOAM, GRANULAR, FRIABLE, ROOTS 26"

TEST PIT 5, ELEV. 53.5

Date: 9/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 25"

DEPTH	DESCRIPTION
0" – 46"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
46" – 72"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, 20% GRAVEL, ROOTS 65"

TEST PIT 6, ELEV. 54.5

Date: 9/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 42"

DEPTH	DESCRIPTION
0" – 42"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON CITY OF PORTSMOUTH ASSESSOR'S TAX MAP 132 AS LOT 24.

2) OWNERS OF RECORD:
NOELE M. CLEWS REVOCABLE TRUST
CHRISTOPHER CLEWS, TRUSTEE
67 RIDGES COURT
PORTSMOUTH, NH 03801
2338/525

3) PARCEL NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259E. MAY 17, 2005.

4) EXISTING LOT AREA:
76,889 S.F.
1.7651 ACRES

5) PARCEL IS LOCATED IN GENERAL RESIDENCE A (GRA) DISTRICT.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:		7,500 S.F.
FRONTAGE:		100 FEET
SETBACKS:	FRONT	15 FEET
	SIDE	10 FEET
	REAR	20 FEET
MAXIMUM STRUCTURE HEIGHT:		35 FEET
MAXIMUM BUILDING COVERAGE:		25%
MINIMUM OPEN SPACE:		30%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON TAX MAP 132 LOT 24 IN THE CITY OF PORTSMOUTH.

8) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

9) VERTICAL DATUM IS MEAN SEA LEVEL NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GPS OBSERVATIONS (±0.2').

10) SEWER LOCATED FROM FIELD INSPECTED BY TED BERRY COMPANY ON APRIL 22, 2019.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ADDED GAS LINE, REVISED WATER LINE	6/17/19
1	ISSUED FOR CITY	4/5/19
0	ISSUED FOR COMMENT	2/22/19

REVISIONS

STATE OF NEW HAMPSHIRE — No. 738 JOHN R. CHAGNON — LICENSED LAND SURVEYOR — SIGNATURE

SCALE 1" = 30' FEBRUARY 2019

EXISTING CONDITIONS PLAN — C1

FB 288 PG 22 — 1736

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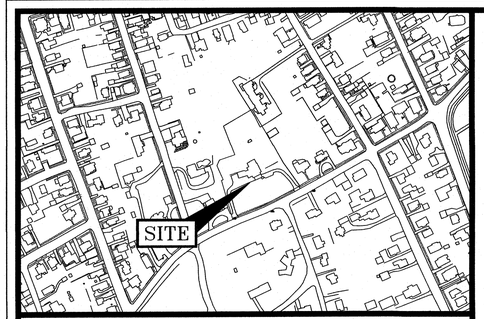
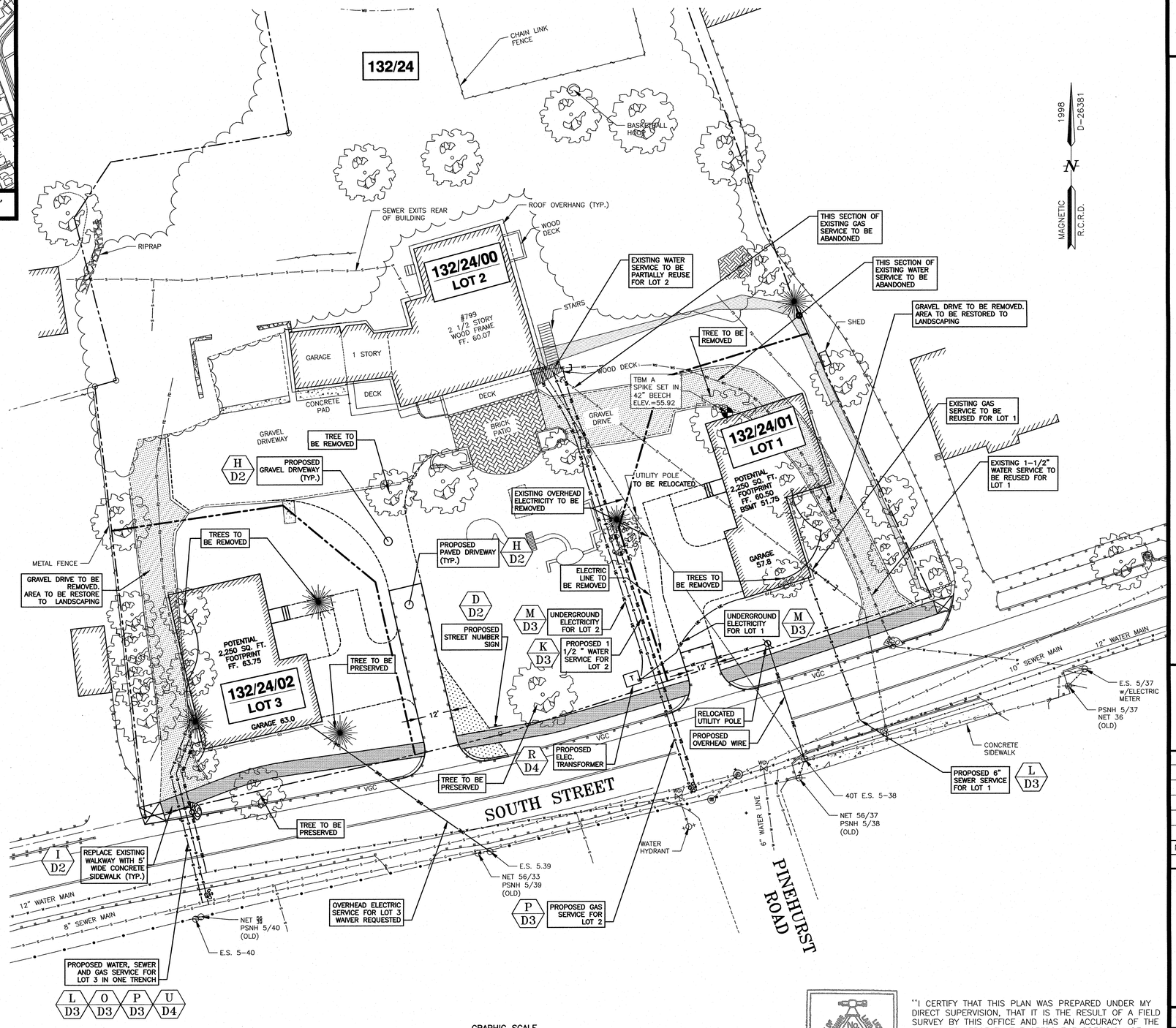


LOCATION MAP 1"=300'

LEGEND:

EXISTING	PROPOSED	
N/F		NOW OR FORMERLY
RP		RECORD OF PROBATE
RCRD		ROCKINGHAM COUNTY REGISTRY OF DEEDS
11/21		MAP 11 / LOT 21
		BOUNDARY
		SETBACK
RR SPK FND	RR SPK SET	RAILROAD SPIKE FOUND/SET
IR FND	IR SET	IRON ROD FOUND/SET
IP FND	IP SET	IRON PIPE FOUND/SET
DH FND	DH SET	DRILL HOLE FOUND/SET
NHHB FND		NHDOT BOUND FOUND
TB FND		TOWN BOUND FOUND
BND w/DH	BND w/DH	BOUND w/ DRILL HOLE
ST BND w/DH	ST BND w/DH	STONE BOUND w/DRILL HOLE
FM	FM	FORCE MAIN
S	S	SEWER LINE
G	G	GAS LINE
D	D	STORM DRAIN
W	W	WATER LINE
E	E	UNDERGROUND ELECTRIC
OHW	OHW	OVERHEAD ELECTRIC/WIRES
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
EP	EP	EDGE OF PAVEMENT (EP)
		WOODS / TREE LINE
		UTILITY POLE (w/ GUY)
GV	GV	GAS SHUT OFF
		WATER SHUT OFF/CURB STOP
HYD	HYD	GATE VALVE
		HYDRANT
G W E	G W E	METER (GAS, WATER, ELECTRIC)
	CB	CATCH BASIN
T	TMH	TELEPHONE MANHOLE
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
W	W	WELL
6		PHOTO LOCATION/DIRECTION
AC	AC	AIR CONDITIONER UNIT
P6		TEST PROBE
MW6		MONITORING WELL
TP 6		TEST PIT
		SIGNS
A–1		EDGE OF WETLAND FLAGGING
		SWAMP / MARSH
AC		ASBESTOS CEMENT PIPE
CI	CI	CAST IRON PIPE
CMP	CMP	CORRUGATED METAL PIPE
CMU	CMU	CONCRETE MASONRY UNIT
COP	COP	COPPER PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
VC	VC	VITRIFIED CLAY PIPE
EL.	EL.	ELEVATION
EP	EP	EDGE OF PAVEMENT
F.F.	F.F.	FINISHED FLOOR
INV.	INV.	INVERT
TBM	TBM	TEMPORARY BENCHMARK
TYP.	TYP.	TYPICAL
VGC/SGC	VGC/SGC	VERTICAL/SLOPED GRANITE CURB
CCB	CCB	CAPE COD BERM
℄	℄	CENTERLINE
LSA	LSA	LANDSCAPED AREA



GRAPHIC SCALE

10 0 20 40 60 80 FEET

5 0 5 10 15 20 25 METERS

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

7-8-19

JOHN R. CHAGNON, LLS DATE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801–7114
Tel (603) 430–9282
Fax (603) 436–2315

NOTES:

1) THE PURPOSE OF THIS PLAN IS TO SHOW THE UTILITIES ASSOCIATED WITH THE SUBDIVISION OF TAX MAP 132 LOT 24 IN THE CITY OF PORTSMOUTH.

2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

4) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

5) VERTICAL DATUM IS MEAN SEA LEVEL NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GPS OBSERVATIONS (±0.2').

6) EVERSOURCE WORK ORDER NUMBER: 3282335

7) BUILDING LOCATIONS ON LOTS 1 & 3 ARE PRELIMINARY AND SUBJECT TO CHANGE.

8) CONSTRUCTION OF UTILITIES AND DRIVEWAYS SHALL IMPACT THE SIDEWALK FOR NO MORE THAN 1 WEEK. SAFE ACCESS SHALL BE RESTORED EACH NIGHT.

9) THE SIDEWALK RECONSTRUCTION SHALL BE COMPLETE WITHIN ONE WEEK. SIDEWALK RECONSTRUCTION SHALL MEET ADA STANDARDS.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
4	ADDED PROPOSED SIDEWALK, NOTE 8 & 9.	7/8/19
3	ADDED TRANSFORMER PER EVERSOURCE	6/18/19
2	ADDED CONCEPTS/UPDATE UTILITIES	6/17/19
1	ISSUED TO CITY	4/5/19
0	ISSUED FOR COMMENT	2/22/19

REVISIONS

STATE OF NEW HAMPSHIRE – JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

SCALE 1" = 20' FEBRUARY 2019

UTILITY SITE PLAN

C2

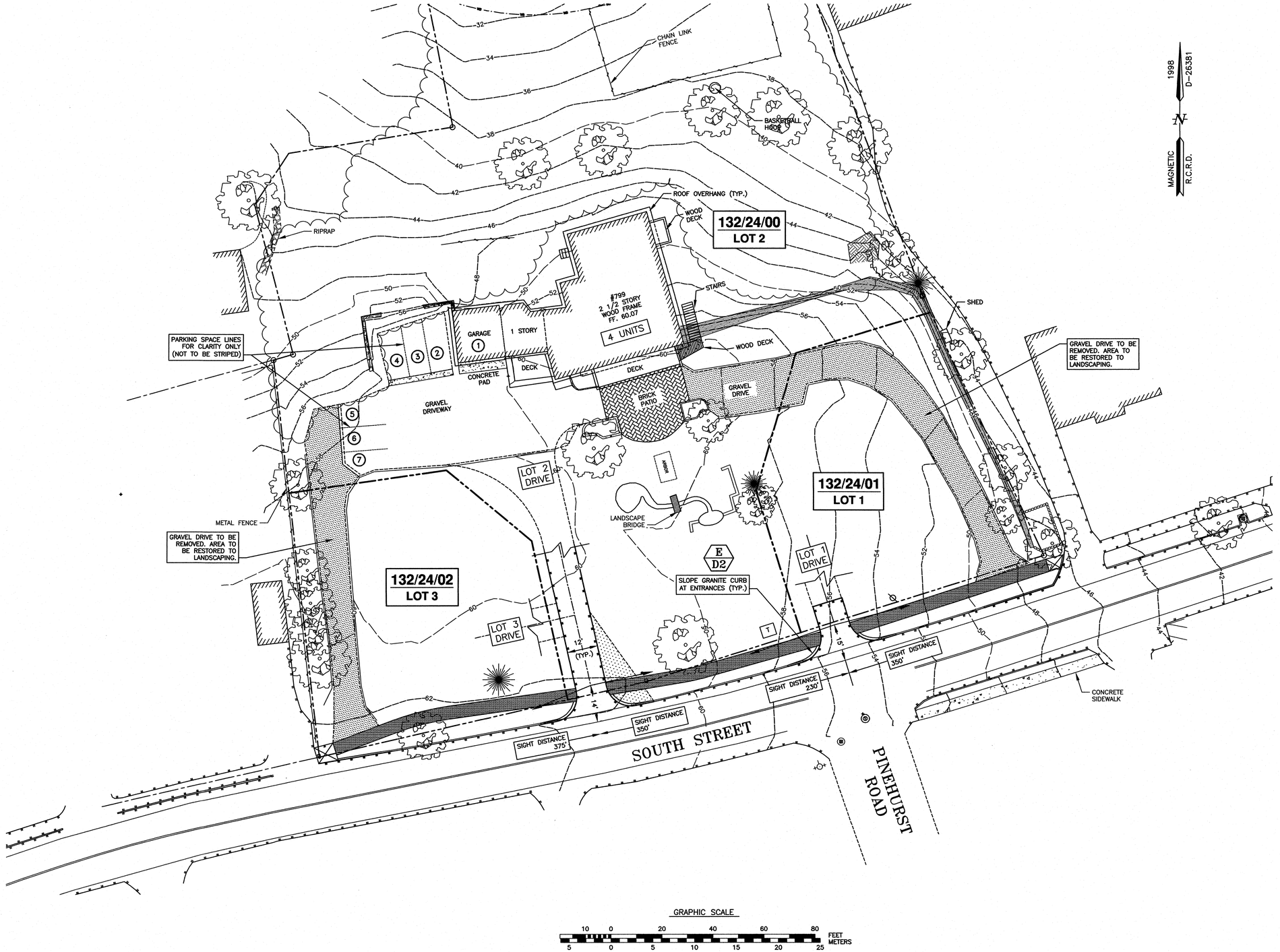
FB 288 PG 22

1736

J:\JOBS1\JN1700s\JN1736s\JN1736\2018 Subdivision\Plans & Specs\Site\1736 SUBDIVISION 2019.dwg, C2 SITE UTIL

LEGEND:

(3) PARKING SPOT #3



GRAPHIC SCALE

10 0 20 40 60 80 FEET

5 0 5 10 15 20 25 METERS

J:\JOBS1\JN1700s\JN1736\2018 Subdivision\Plans & Specs\Site\1736 SUBDIVISION 2019.dwg, C3 DRIVE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) REQUIRED PARKING FOR LOT 2:

UNIT 1:	2,119 SF:	1.3 SPACES
UNIT 2:	505 SF:	1 SPACE
UNIT 3:	1,147 SF:	1.3 SPACES
UNIT 4:	1,493 SF:	1.3 SPACES
TOTAL REQUIRED:		5 SPACES
PROVIDED: 7 SPACES		

5) THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED DRIVEWAY LOCATIONS AND SIGHT DISTANCES FOR THE CLEWS SUBDIVISION.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
4	ADDED PROP. SIDEWALK/ SIGHT DIST. #'S	7/8/19
3	REVISED TREES TO BE REMOVED	7/2/19
2	ISSUED FOR APPROVAL	6/17/19
1	DRIVE LOCATIONS, SIGHT DISTANCE	5/9/19
0	ISSUED FOR COMMENT	4/5/19

REVISIONS

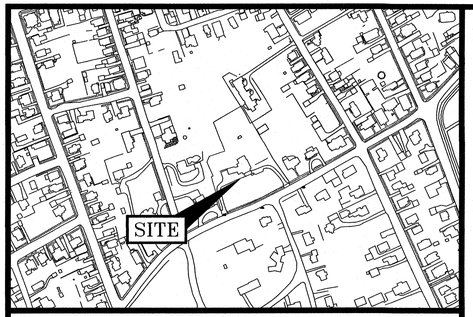
STATE OF NEW HAMPSHIRE — No. 738 JOHN B. CHAGNON — LICENSED LAND SURVEYOR — SIGNATURE

SCALE 1" = 20' MARCH 2019

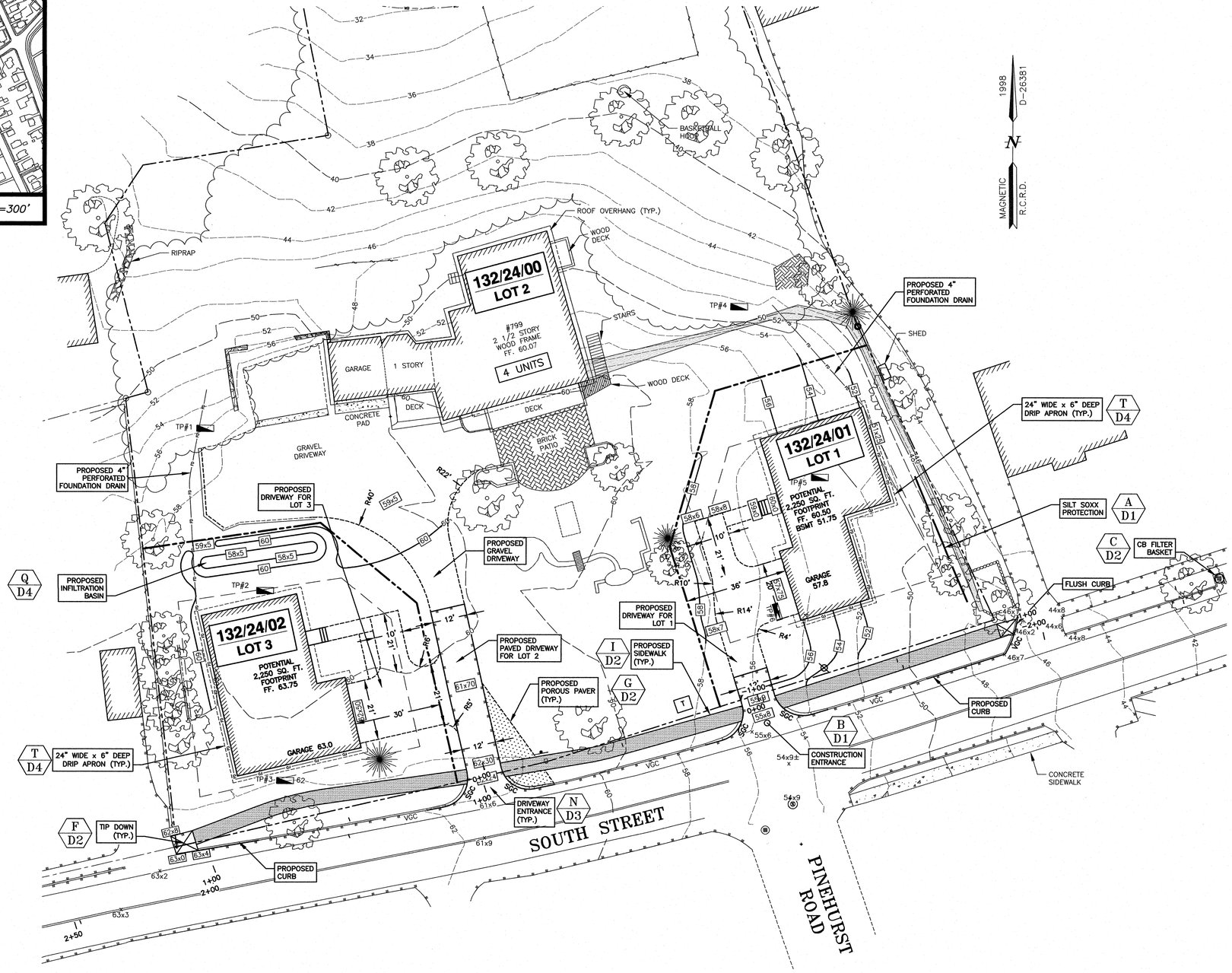
DRIVEWAY PLAN C3

FB 288 PG 22

1736



LOCATION MAP 1"=300'



GRAPHIC SCALE

10 0 20 40 60 80 FEET

5 0 5 10 15 20 25 METERS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
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NOTES:

1) THE PURPOSE OF THIS PLAN IS TO SHOW THE CONCEPTUAL LAYOUT ASSOCIATED WITH THE SUBDIVISION OF TAX MAP 132 LOT 24 IN THE CITY OF PORTSMOUTH.

2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

4) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

5) VERTICAL DATUM IS MEAN SEA LEVEL NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GPS OBSERVATIONS (±0.2').

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE POTENTIAL DEVELOPMENT OF LOTS 1 & 3. BUILDINGS ARE CONCEPTUAL AND SUBJECT TO CHANGE. PROPOSED DRIVEWAY LOCATIONS ARE FIXED AND ARE TO BE CONSTRUCTED PER THIS PLAN.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ADDED PROPOSED SIDEWALK	7/8/19
0	ISSUED FOR COMMENT	6/17/19

REVISIONS

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 738 JOHN R. CHAGNON

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

SCALE 1" = 20' MAY 2019

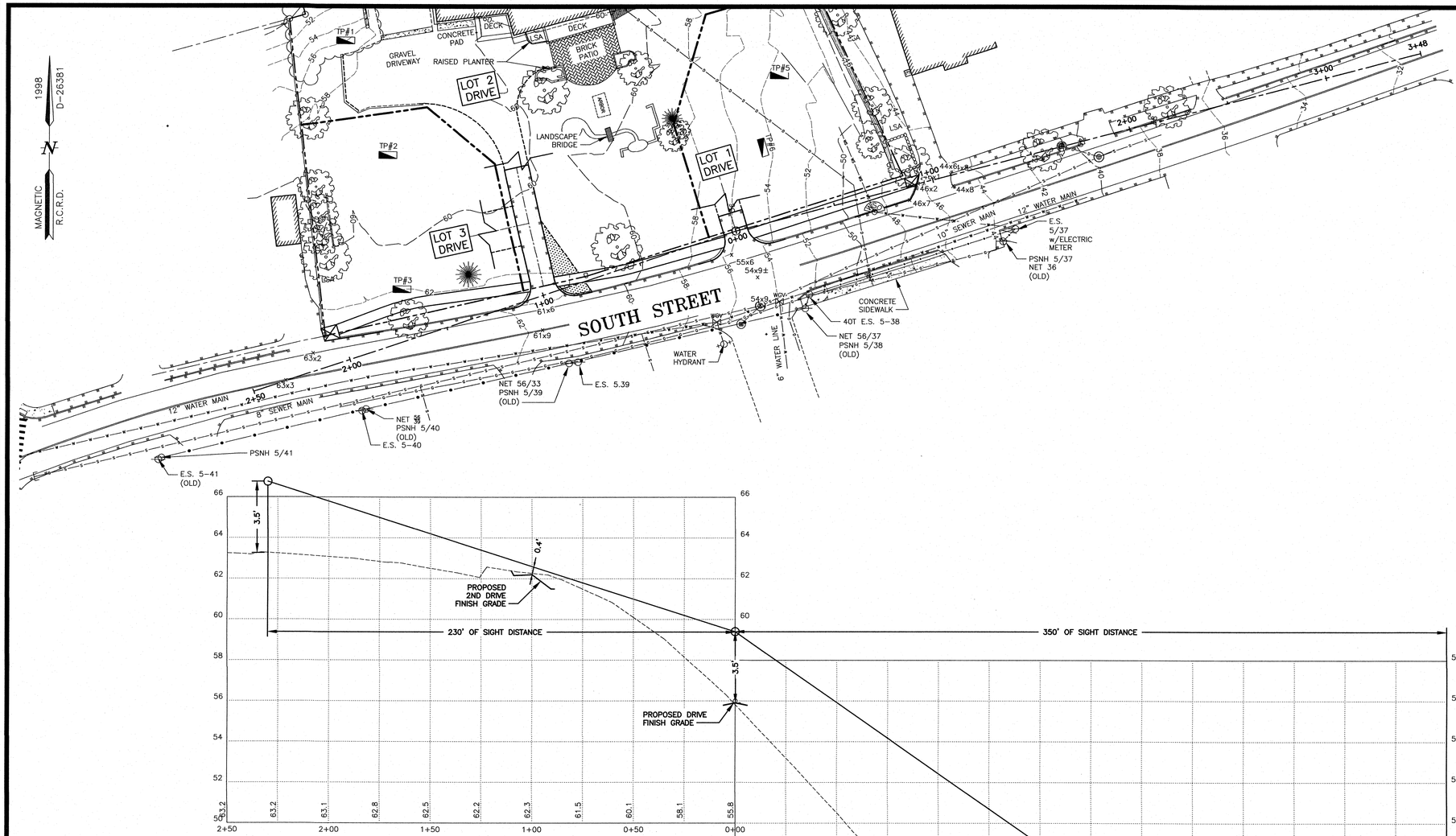
CONCEPT AND GRADING PLAN

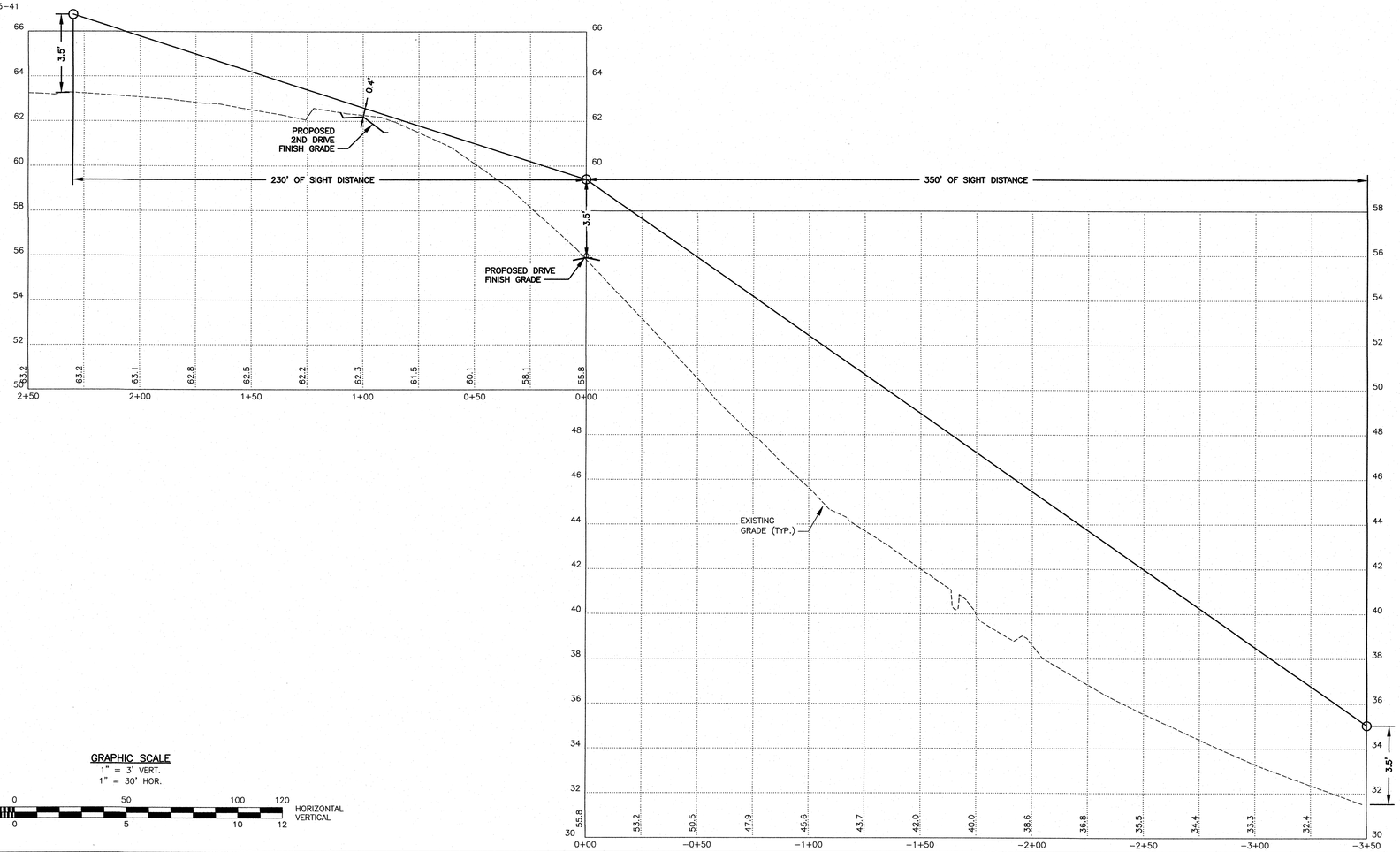
C4

FB 288 PG 22

1736

J:\0851\JN1700s\JN1730s\JN1736\2018 Subdivision\Plans & Specs\Site\1736 SUBDIVISION 2019.dwg, C4_CONCEPT & GRADE





GRAPHIC SCALE
1" = 3' VERT.
1" = 30' HOR.

30 20 10 0 50 100 120 HORIZONTAL
3 2 1 0 5 10 12 VERTICAL

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NOTES:

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4) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED DRIVEWAY LOCATIONS AND SIGHT DISTANCE FOR PROPOSED LOT 1.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	7/8/19

REVISIONS

STATE OF NEW HAMPSHIRE · JOHN R. CHAGNON NO. 7951 · LICENSED PROFESSIONAL ENGINEER ·

SCALE 1"=30' & 1"=3' JULY 2019

LOT 1 SIGHT DISTANCE PLAN & PROFILE

C5

FB 288 PG 22

1736

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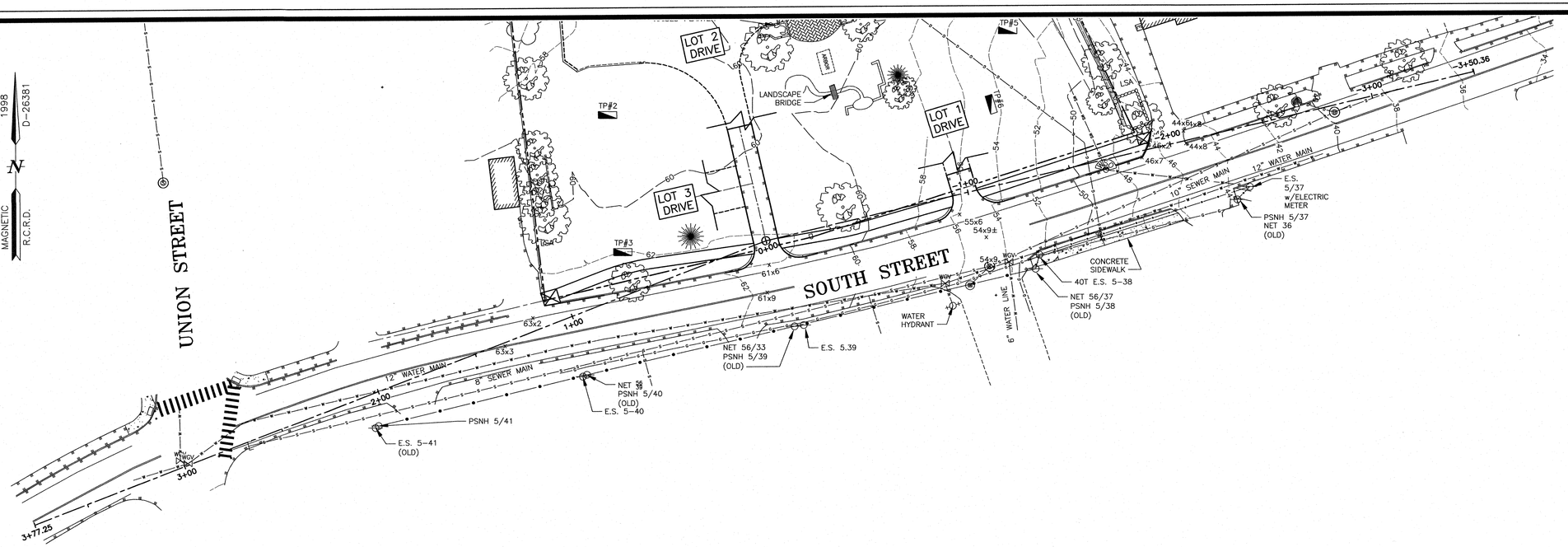

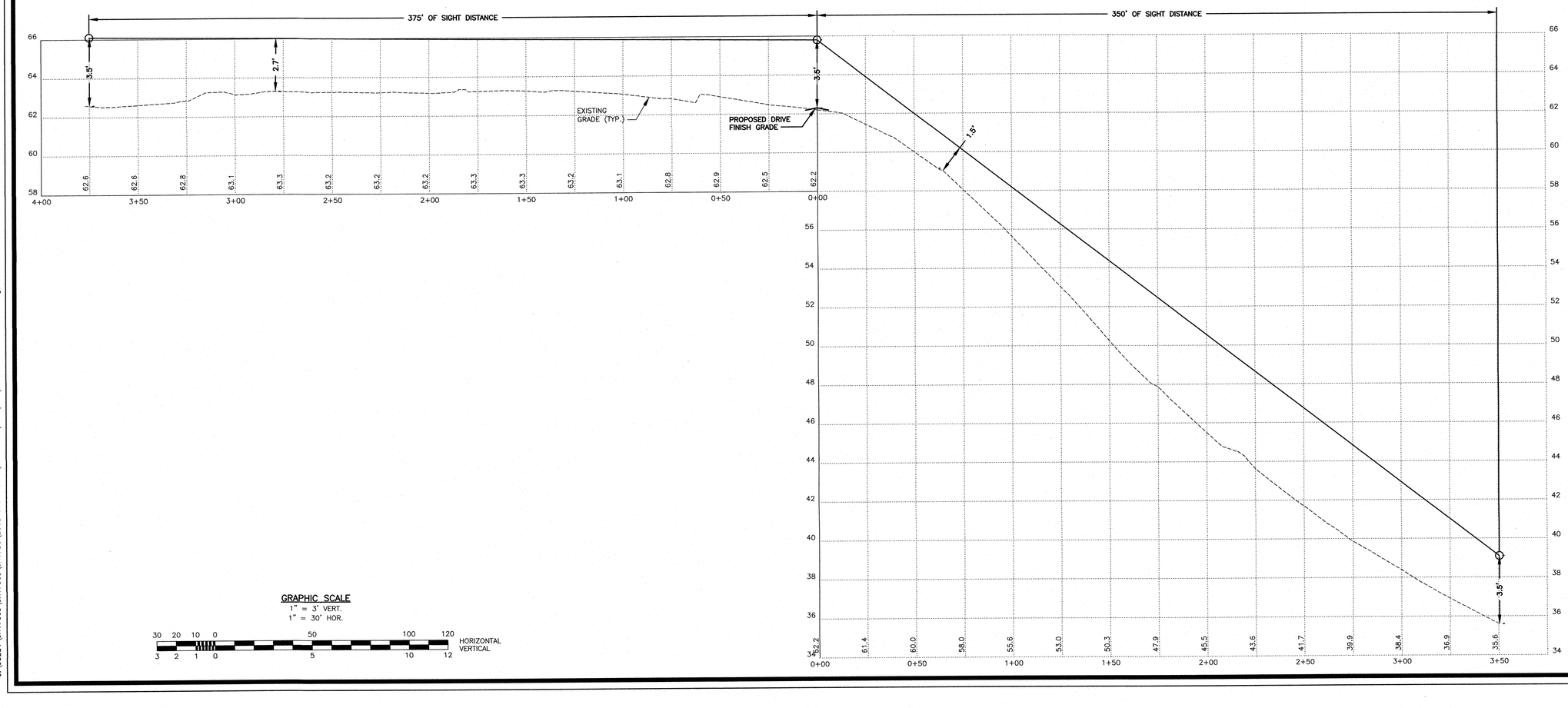

GRAPHIC SCALE
1" = 3' VERT.
1" = 30' HOR.

30 20 10 0 50 100 120 HORIZONTAL
3 2 1 0 5 10 12 VERTICAL

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4) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED DRIVEWAY LOCATION AND SIGHT DISTANCE FOR PROPOSED LOTS 2 & 3.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
	REVISIONS	
0	ISSUED FOR COMMENT	7/8/19

JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE 1"=30' & 1"=3' JULY 2019

LOTS 2 & 3 SIGHT DISTANCE PLAN & PROFILE

C6

FB 288 PG 22

1736

J:\JOBS1\JN1700s\JN1730s\JN1736\2018 Subdivision\Plans & Specs\Site\1736 SUBDIVISION 2019.dwg, C6 SIGHT DIST

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL PERIMETER CONTROLS, i.e., SILT FENCING OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAY BALES IS NOT ALLOWED.

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.

PERFORM CLEARING & GRUBBING

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED.

BULLDOZE TOPSOIL INTO STOCKPILES, AND CIRCLE WITH SILT FENCING OR SILTSOXX. IF EROSION IS EXCESSIVE, THEN COVER WITH MULCH.

CONSTRUCT FILTRATION BASINS AND OUTLET, BUT DO NOT ALLOW INFLOW UNTIL ALL CONTRIBUTING AREAS ARE STABILIZED AND EROSION-FREE. ROUGH GRADE SITE. REMOVE AND CRUSH LEDGE, THEN BACKFILL WITH ONSITE SOILS OR GRAVEL IN 12" LIFTS, TYP. ROUGH GRADE SITE. IN LANDSCAPED AREAS OUT OF THE WAY OF SUBSEQUENT CONSTRUCTION ACTIVITY, INSTALL TOPSOIL, MULCH, SEED AND FERTILIZER. STABILIZE STEEPER SLOPES PER DETAILS.

CONSTRUCT FOUNDATIONS.

CONSTRUCT WALLS.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES TO THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

CONSTRUCT BUILDING FRAMES.

FINISH GRADE SITE, BACKFILL DRIVEWAY & PARKING SUBBASE GRAVEL IN TWO, COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS.

BUILDING EXTERIOR WORK: LIGHT FIXTURES

INSTALL EXTERIOR LIGHT POLE BASES, AND MAKE FINAL CONNECTIONS TO CONDUIT.

ALL PERMANENT FILTRATION BASINS, DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

AFTER BUILDING IS COMPLETED FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT ASPHALT WEARING COURSE.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILT FENCES AND SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

ADDITIONAL TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS---CONSTRUCT SILT FENCE OR SILTSOXX AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED OF IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON-STRUCTURAL, SITE-FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
- EROSION CONTROL BLANKETS HAVE BEEN INSTALLED

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

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.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. 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 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

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 SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	

SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)

CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
MULCH: 1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

THE SILT FENCE OR SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILT FENCING AND SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED 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 INSTALLATION 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 EVENTS.

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 TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

INSPECTION AND MAINTENANCE PLAN

INTRODUCTION

THE INTENT OF THIS IS TO PROVIDE THE 799 SOUTH STREET LOT OWNERS OF LOTS 1, 2 AND 3, WITH A LIST OF PROCEDURES THAT DOCUMENT THE INSPECTION AND MAINTENANCE REQUIREMENTS OF THE STORMWATER MANAGEMENT SYSTEM FOR THIS DEVELOPMENT. SPECIFICALLY, THE FILTRATION BASINS AND ASSOCIATED STRUCTURES ON THE PROJECT SITE (COLLECTIVELY REFERRED TO AS THE "STORMWATER MANAGEMENT SYSTEM")

THE FOLLOWING INSPECTION AND MAINTENANCE PROGRAM IS NECESSARY TO KEEP THE STORMWATER MANAGEMENT SYSTEM FUNCTIONING PROPERLY. THESE MEASURES WILL ALSO HELP MINIMIZE POTENTIAL ENVIRONMENTAL IMPACTS. BY FOLLOWING THE ENCLOSED PROCEDURES, THE OWNER WILL BE ABLE TO MAINTAIN THE FUNCTIONAL DESIGN OF THE STORMWATER MANAGEMENT SYSTEM AND MAXIMIZED ITS ABILITY TO REMOVE SEDIMENT AND OTHER CONTAMINANTS FROM THE SITE GENERATED STORMWATER RUNOFF.

STORMWATER MANAGEMENT SYSTEM COMPONENTS

THE STORMWATER MANAGEMENT SYSTEM IS DESIGNED TO MITIGATE BOTH THE QUANTITY AND QUALITY OF SITE-GENERATED RUNOFF. AS THE RESULT, THE DESIGN INCLUDES THE FOLLOWING ELEMENTS:

NON-STRUCTURAL BMP'S

NON-STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) INCLUDE TEMPORARY AND PERMANENT MEASURES THAT TYPICALLY REQUIRE LESS LABOR AND CAPITAL INPUTS AND ARE INTENDED TO PROVIDE PROTECTION AGAINST EROSION OF SOILS. EXAMPLES OF NON-STRUCTURAL BMP'S ON THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO: TEMPORARY AND PERMANENT MULCHING, TEMPORARY AND PERMANENT GRASS COVER, TREES, SHRUBS AND GROUND OVERS, MISCELLANEOUS LANDSCAPE PLANTINGS, DUST CONTROL, TREE PROTECTION, TOPSOILING, SEDIMENT BARRIERS, AND DURING CONSTRUCTION, STABILIZED CONSTRUCTION ENTRANCES.

STRUCTURAL BMP'S

STRUCTURAL BMP'S REQUIRE MORE SPECIALIZED PERSONNEL TO INSTALL. EXAMPLES ON THE PROJECT INCLUDE BUT ARE NOT LIMITED TO: STORM DRAINS, THE FILTRATION BASIN, AND ASSOCIATED OUTLET CONTROL STRUCTURES, AND INFILTRATION TRENCH DETAIL.

INSPECTION AND MAINTENANCE REQUIREMENTS

THE FOLLOWING SUMMARIZES THE INSPECTION AND MAINTENANCE REQUIREMENTS FOR THE VARIOUS BMP'S THAT MAY BE FOUND ON THIS PROJECT:

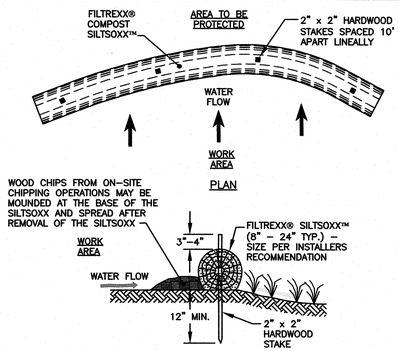
1. GRASSED AREAS: AFTER EACH RAIN EVEN OF 0.5" OR MORE DURING A 24 HOUR PERIOD, INSPECT GRASSED AREAS FOR SIGNS OF DISTURBANCE, SUCH AS EROSION. IF DAMAGED AREAS ARE DISCOVERED, IMMEDIATELY REPAIR THE DAMAGE. REPAIRS MAY INCLUDE ADDING NEW TOPSOIL, LIME, SEED, FERTILIZER AND MULCH.

2. PLANTINGS: PLANTING AND LANDSCAPING (TREES, SHRUBS) SHALL BE MONITORED BI-MONTHLY DURING THE FIRST YEAR TO INSURE VIABILITY AND VIGOROUS GROWTH. REPLACE DEAD OR DYING VEGETATION WITH NEW STOCK AND MAKE ADJUSTMENTS TO THE CONDITIONS THAT CAUSED THE DEAD OR DYING VEGETATION. DURING DRYER TIMES OF THE YEAR, PROVIDED WEEKLY WATERING OR IRRIGATION DURING THE ESTABLISHMENT PERIOD OF THE FIRST YEAR. MAKE NECESSARY ADJUSTMENTS TO ENSURE LONG-TERM HEALTH OF VEGETATED COVER, I.E. PROVIDE MORE PERMANENT MULCH OR COMPOST OR OTHER MEANS OF PROTECTION.

3. STORM DRAIN OUTLETS AND OUTLET CONTROL STRUCTURES: MONITOR DRAIN INLETS AND OUTLET APRONS FOR EXCESSIVE ACCUMULATION OF SEDIMENTS OR MISSING STONE. REMOVE SEDIMENTS AS REQUIRED TO MAINTAIN FILTERING CAPABILITIES OF THE STONE.

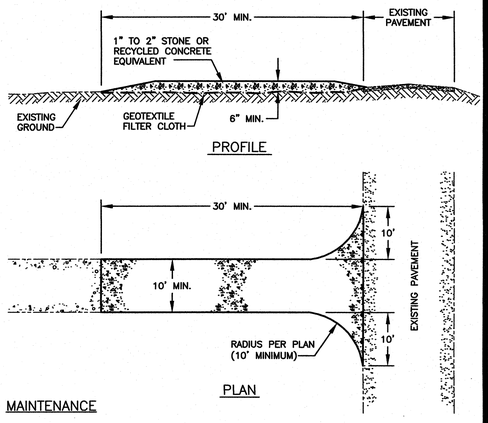
4. FILTRATION BASIN: AFTER ACCEPTANCE OF THE FILTRATION BASIN, PERFORM THE FOLLOWING INSPECTIONS ON A SEMI-ANNUAL BASIS OR AFTER SIGNIFICANT RAINFALL EVENTS (10 YEAR, 24 HR STORMS, OR BACK TO BACK 2 YEAR, 24 HOUR STORMS):
   a. MONITOR FOR EXCESSIVE OR CONCENTRATED ACCUMULATIONS OF DEBRIS, OR EXCESSIVE EROSION. REMOVE DEBRIS AS REQUIRED.
   b. MONITOR THE OUTFALL STRUCTURE FOR PROBLEMS WITH CLOGGED PIPES. REPAIR OR REMOVE CLOGS AS REQUIRED, AND DETERMINE CAUSE OF CLOGGING. PIPES SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR RAINSTORM. BROKEN OR DAMAGE PIPES SHOULD BE REPAIRED OR REPLACED AS NECESSARY.
   c. MONITOR SIDE SLOPES OF POND FOR DAMAGES OR EROSION – REPAIR AS NECESSARY.
   d. MONITOR TURF HEALTH AND KEEP PROTECTED FROM FIRE, GRAZING, TRAFFIC AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY TO PROMOTE GOOD GROWTH AS DETERMINED BY SOIL TESTS. MOWING THE VEGETATED AREAS OF THE BASIN SHOULD BE CARRIED OUT AS NECESSARY.
   e. SEDIMENT ACCUMULATION SHOULD BE CONTINUALLY CHECKED IN THE BASIN. SEDIMENT SHOULD BE REMOVED AS IT IS DISCOVERED PARTICULARLY IF IT HAS ACCUMULATED NEAR THE OUTLET OF THE BASIN.
   f. THE OUTLET CONTROL STRUCTURE SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR RAINSTORM.
   THE OUTLET CONTROL STRUCTURE HAS WITHIN IT A BROAD CRESTED WIER STRUCTURE FOR CONTROLLING FLOW OUT OF BASIN. ANY SEDIMENT OR DEBRIS THAT HAS BUILT UP INSIDE THE OUTLET CONTROL STRUCTURE SHOULD BE REMOVED WHEN DISCOVERED.

5. INVASIVE SPECIES
   MONITOR STORMWATER MANAGEMENT SYSTEM FOR SIGNS OF INVASIVE SPECIES GROWTH. IF CAUGHT EARLIER ENOUGH, THEIR ERADICATION IS MUCH EASIER. THE MOST LIKELY PLACES WHERE INVASIONS START ARE IN WETTER, DISTURBED SOILS OR DETENTION PONDS. SPECIES SUCH AS PHRAGMITES AND PURPLE LOOSE-STRIFE ARE COMMON INVADERS IN THESE WETTER AREAS. IF THEY ARE FOUND THEN THE OWNER SHALL CONTACT A WETLAND SCIENTIST WITH EXPERIENCE IN INVASIVE SPECIES CONTROL TO IMPLEMENT A PLAN OF ACTION TO ERADICATE THE INVADERS. MEASURES THAT DO NOT REQUIRE THE APPLICATION OF CHEMICAL HERBICIDES SHOULD BE THE FIRST LINE OF DEFENSE.



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

A C4 FILTREXX® SILTSOXX™ FILTRATION SYSTEM
(AS NEEDED) NTS



MAINTENANCE

1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 2 TO 4 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 30 FEET FOR A SINGLE RESIDENTIAL LOT.
3) THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4) THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5) GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6) ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

B C4 STABILIZED CONSTRUCTION ENTRANCE
(AS NEEDED) NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

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CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	REVISED NOTES	7/8/19
0	ISSUED FOR COMMENT	6/17/19

REVISIONS

STATE OF NEW HAMPSHIRE – JOHN R. CHAGNON No. 7651 – LICENSED PROFESSIONAL ENGINEER

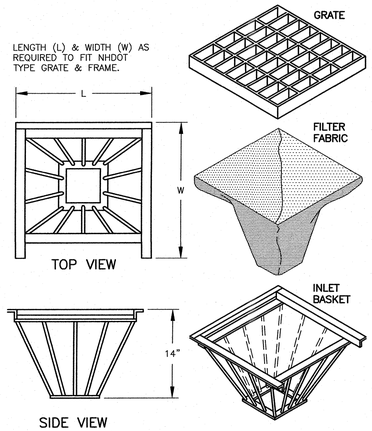
SCALE: AS SHOWN JUNE 2019

EROSION CONTROL NOTES AND DETAILS

D1

FB 288 PG 22

1736



1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.

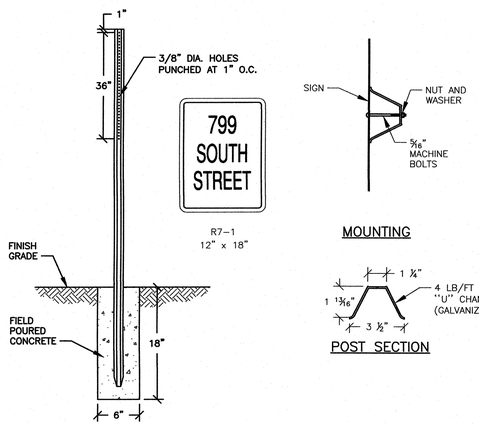
3) THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYMNYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
- RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
- MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)

4) THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/s.f. (MULTIPLY THE PERMITTIVITY IN SEC.-1 FROM ASTM 54491-85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)

5) THE INLET BASKET 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.

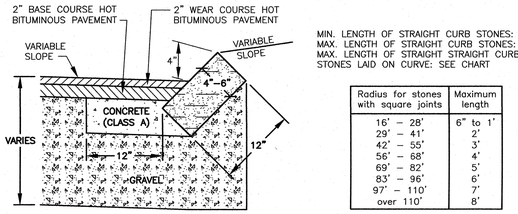
6) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

C / C4 CATCH BASIN INLET BASKET
NTS



POST

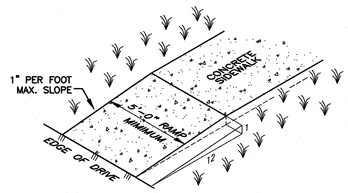
D / C2 SIGN & POST DETAIL
NTS



MIN. LENGTH OF STRAIGHT CURB STONES: 18"
MAX. LENGTH OF STRAIGHT CURB STONES: 8FT.
MAX. LENGTH OF STRAIGHT STRAIGHT CURB STONES LAID ON CURVE: SEE CHART

Radius for stones with square joints	Maximum length
16' – 28'	6" to 1'
29' – 41'	2'
42' – 55'	3'
56' – 68'	4'
69' – 82'	5'
83' – 96'	6'
97' – 110'	7'
over 110'	8'

E / C3 SLOPED GRANITE CURBING DETAILS
NTS

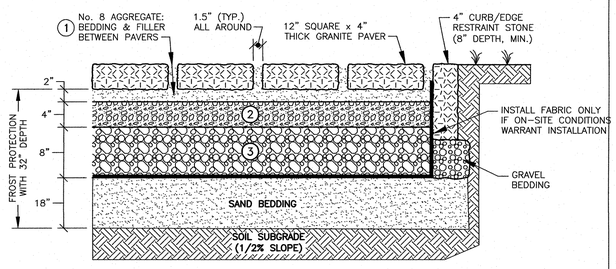


F / C4 TYPICAL SIDEWALK TIP DOWN
NTS

ASTM D 448 GRADATION TABLE

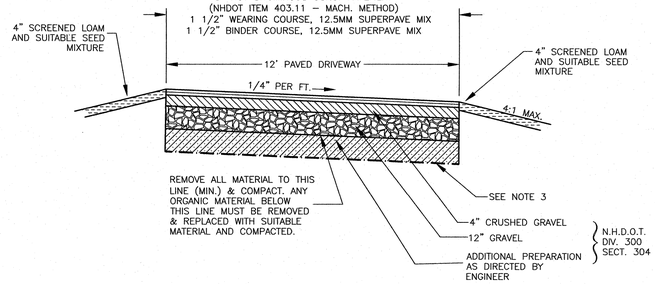
①		②		③	
ASTM No. 8 BEDDING & JOINT FILLER		ASTM No. 57 STONE OPEN GRADED BASE		ASTM No. 2 STONE SUBBASE	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1/2" (12.5mm)	100	1.5" (37.5mm)	100	3" (75mm)	100
3/8" (9.5mm)	85–100	1" (25mm)	95–100	2.5" (63mm)	90–100
No. 4 (4.75mm)	10–30	1/2" (12.5mm)	25–60	2" (50mm)	35–70
No. 8 (2.36mm)	0–10	No. 4 (4.75mm)	0–10	1.5" 37.5mm)	0–15
No. 16 (1.16mm)	0–5	No. 8 (2.36mm)	0–5	3/4" (19mm)	0–5

NOTES:
1) PAVING SYSTEM BASE DESIGN IS SIMILAR TO BASE REQUIRED FOR THE UNI ECO-STONE PAVER. INSTALLATION SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS FOR PLACEMENT OF BASE MATERIALS.
2) ALL STONE SHALL BE ANGULAR, WITH 90% FRACTURED FACES. STONE SHALL BE WASHED WITH LESS THAN 1% PASSING THE 200 SIEVE.
3) CONTRACTOR SHALL SUBMIT SIEVE ANALYSIS FOR EACH COURSE MATERIAL TO PROJECT ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.



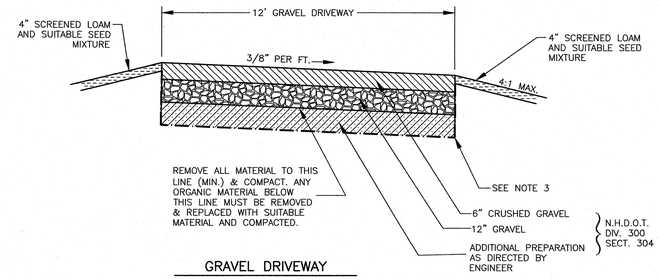
NOTE: PAVEMENT MAY BE SUBSTITUTED FOR PAVERS

G / C4 POROUS PAVER SECTION
12" SQUARE GRANITE PAVERS OR APPROVED EQUAL
NTS



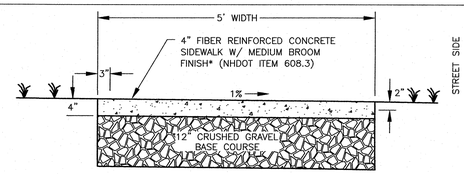
PAVED DRIVEWAY

NOTES:
1) REMOVE LEDGE TO 18" BELOW FINISHED SURFACE.
2) REMOVE CLAY, LOAM AND ANY OTHER UNSUITABLE MATERIALS TO 20" BELOW FINISHED SURFACE.
3) INSTALL GEOTEXTILE FABRIC ABOVE CLAYS AND SILTS OR IN AREAS WHERE EXCAVATION IS BELOW THE SEASONAL HIGH WATER TABLE.

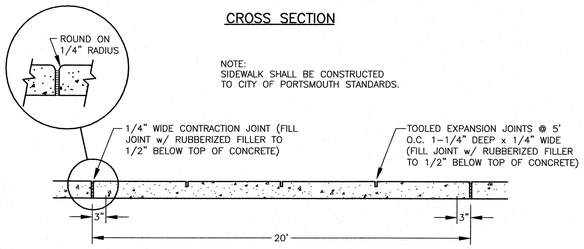


GRAVEL DRIVEWAY

H / C4 TYPICAL DRIVEWAY SECTIONS
NTS



CROSS SECTION



NOTE:
SIDEWALK SHALL BE CONSTRUCTED TO CITY OF PORTSMOUTH STANDARDS.

LONGITUDINAL SECTION

I / C4 CONCRETE SIDEWALK DETAIL
FIBER REINFORCED
NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
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CLEWS SUBDIVISION
799 SOUTH STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	F/C4, G/C4 & I/C4	7/8/19
0	ISSUED FOR COMMENT	6/17/19

REVISIONS

JOHN R. CHAGNON No. 7651 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

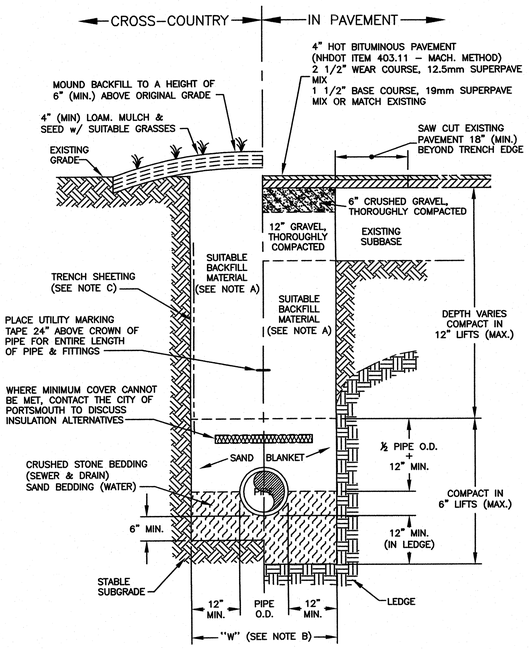
SCALE: AS SHOWN — JUNE 2019

DETAILS — D2

FB 288 PG 22

1736

J:\J0851\JN1700s\JN1730s\JN1736\2018 Subdivision\Plans & Specs\Site\1736 DETAILS.dwg, DETAILS D2



TRENCH NOTES:

A) TRENCH BACKFILL:
– IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.

– IN CROSS–COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.

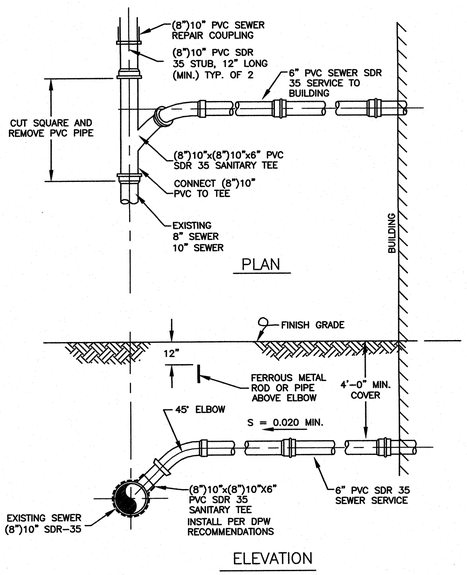
B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..

C) TRENCH SHEETING:
IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID–DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

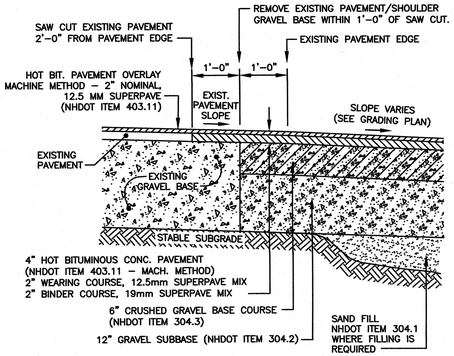
D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):
- 6' MINIMUM FOR SEWER (IN PAVEMENT)
- 4' MINIMUM FOR SEWER (CROSS COUNTRY)
- 3' MINIMUM FOR STORMWATER DRAINS
- 5' MINIMUM FOR WATER MAINS

E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.

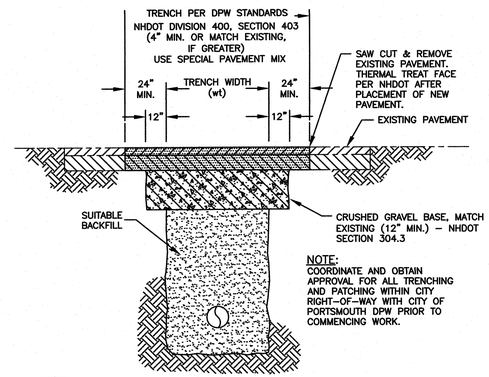
J / C2 TYPICAL PIPE TRENCH
NTS



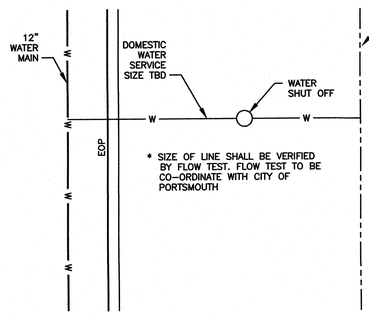
L / C2 TYPE "A" SEWER SERVICE CONNECTION
NTS

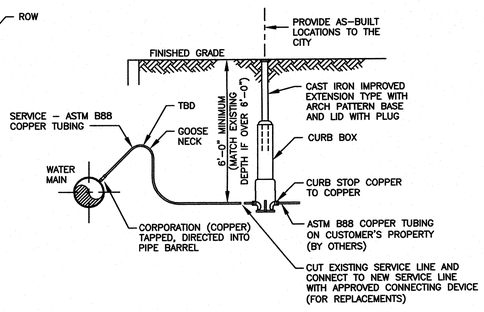


N / C4 FULL DEPTH PAVEMENT SECTION AND PAVEMENT JOINT DETAIL
NTS

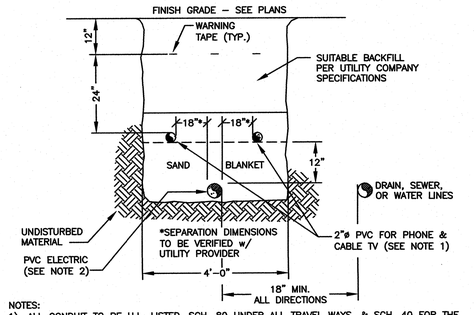


O / C2 TRENCH – PAVEMENT REPLACEMENT
NTS



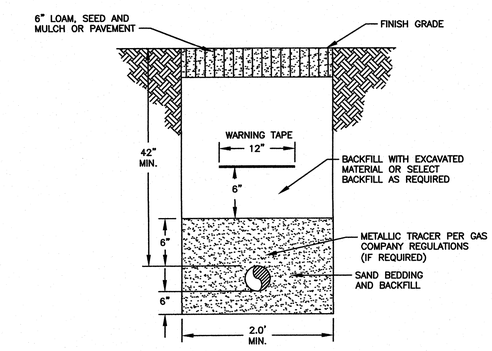


K / C2 TYPICAL WATER SERVICE CONNECTION
NTS



NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
2) NORMAL CONDUIT SIZES FOR PSNH ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

M / C2 UTILITY TRENCH
ELECTRIC/PHONE/CABLE
NTS



P / C2 GAS SERVICE TRENCH
NTS

AMBIT ENGINEERING, INC.
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CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/17/19

REVISIONS

STATE OF NEW HAMPSHIRE – JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

SCALE: AS SHOWN — JUNE 2019

DETAILS — **D3**

FB 288 PG 22

1736

J:\JOBS1\JN1700s\JN1730s\JN1736\2018 Subdivision\Plans & Specs\Site\1736 DETAILS.dwg, DETAILS D3

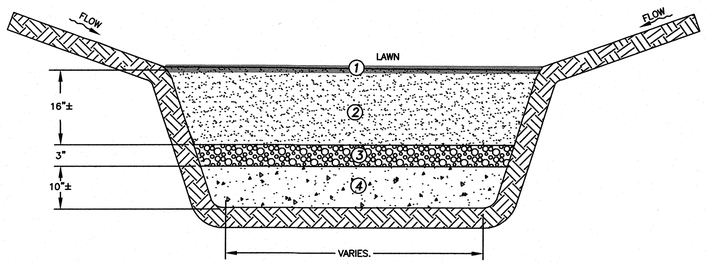
SAND SPECIFICATION	
SIEVE SIZE	ASTM C33 FINE AGGREGATE SPECIFICATION
3/8"	100
#4	95–100
#8	80–100
#10	50–85
#16	50–85
#30	25–60
#40	50–85
#50	5–30
#100	0–10

INFILTRATION BASIN MEDIA

1. WET MEADOW SEED MIX
2. SOIL FILTER LAYER: 20% – 30% MULCH BY VOLUME, MIXED THOROUGHLY WITH LOAMY, COARSE SAND (70% – 80% BY VOLUME) MEETING THE FOLLOWING GRADATION;

SIEVE NO.	% BY WEIGHT, PASSING
10	85 – 100
20	70 –100
60	15 – 40
200	8 – 15

3. 3/8" PEA STONE
4. 0.75"ø – 1.5"ø CRUSHED STONE, WASHED.



Q / C4 INFILTRATION BASIN DETAIL

NTS

FILL BELOW INFILTERATION BASIN

SOILS: SOILS PLACED BELOW FILTER BASIN SHALL BE BANK RUN GRAVEL, MANUFACTURED SAND OR MODIFIED 304.1 BEDDING THE MATERIAL SHALL BE TESTED FOR HYDRAULIC CONDUCTIVITY IN TWO PLACES BY A EITHER BOREHOLE TESTING, DOUBLE RING INFILTROMETER TEST, OR AN AMMOZEMETER IN ACCORDANCE WITH NHDES REGULATIONS ENV–WQ 1500. TO ENSURE THE MIN. KSAT = 10 IN/HR).

INFILTRATION BASIN CONSTRUCTION

SOILS: DO NOT COMPACT SOIL. EXCAVATE BASIN, HAND RAKE STONE, PEA STONE AND MULCH LAYERS.

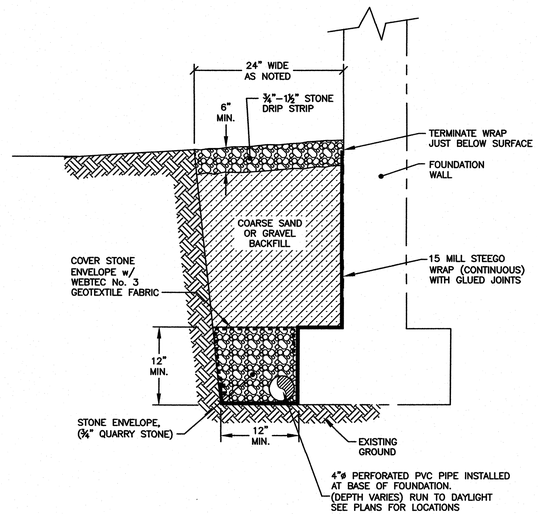
INFILTRATION BASINCONSTRUCTION INSPECTION

INSPECT EACH LAYER OF CONSTRUCTION: CONTACT THE DESIGN ENGINEER FOR INSPECTIONS DURING THE CONSTRUCTION PROCESS. CALL FOR INSPECTION BEFORE FILLING EXCAVATION WITH STONE, PEA STONE AND MULCH.

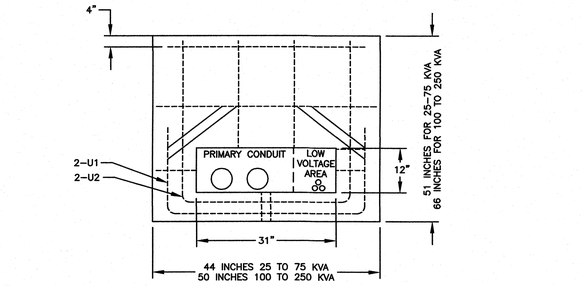
INFILTRATION BASIN MAINTENANCE

SOILS: VISUALLY INSPECT AND REPAIR EROSION MONTHLY. USE SMALL STONES TO STABILIZE EROSION ALONG DRAINAGE PATHS. CHECK THE pH ONCE OR TWICE A YEAR. APPLY AN ALKALINE PRODUCT, SUCH AS LIMESTONE, IF NEEDED.

IF INFILTRATION BASIN FAILS TO EMPTY 72 AFTER A RAINFALL, THE BASIN SHALL BE INSPECTED. IF AFTER INSPECTION IT IS DETERMINED THAT THE ENGINEERED SOIL HAS CLOGGED, THE ENGINEERED SOIL SHALL BE REPLACED. IN THE EVENT OF SOIL REPLACEMENT IN THE INFILTRATION BASIN, AN AIRSPADE SHALL BE USED, TO CAREFULLY REMOVE THE SOILS SURROUNDING ANY TREE ROOTS. TREE ROOTS ARE TO BE PROTECTED FROM DRYING OUT DURING THE PLACEMENT OF NEW SOILS AND NEW SOILS ARE TO BE REPLACED IMMEDIATELY UPON EXPOSING THE ROOT SYSTEMS.



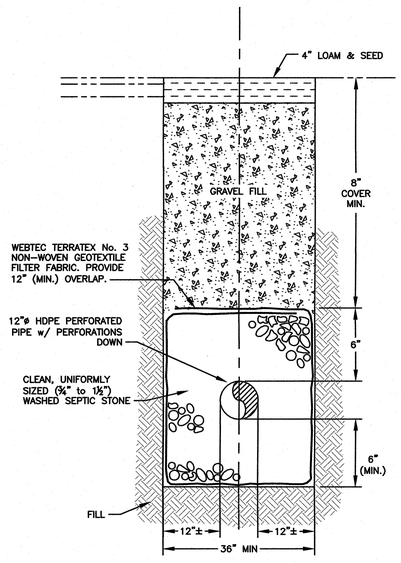
T / C4 STONE DRIP APRON (UNDER BUILDING DRIP LINE) NTS



NOTES
1. SEE SHEET "REQUIREMENTS FOR PAD MOUNTED TRANSFORMER SLAB DETAILS", EVERSOURCE SPECIFICATIONS.
2. SEE DTR 56.223 FOR GROUNDING GRID.
3. 1" PVC CONDUIT SLEEVE FOR GROUND GRID LEADS.
4. ALL REBAR TO BE #6.
5. CONDUITS CUT 4" ABOVE SLAB BASE.

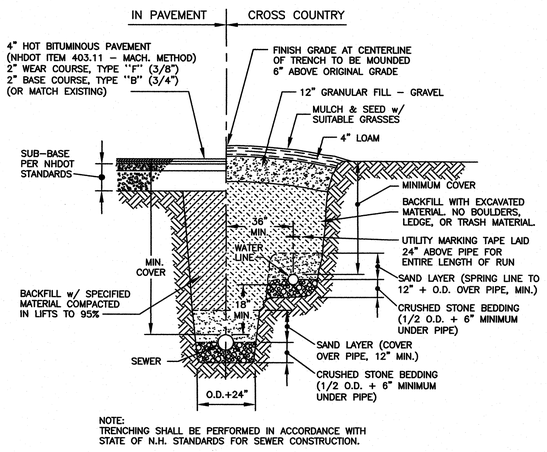
R / C2 TRANSFORMER FOUNDATION SINGLE PHASE

EVERSOURCE NTS



S / C4 INFILTRATION TRENCH DETAIL

NTS



NOTE:
TRENCHING SHALL BE PERFORMED IN ACCORDANCE WITH STATE OF N.H. STANDARDS FOR SEWER CONSTRUCTION.

U / C4 WATER & SEWER IN COMMON TRENCH (WHERE APPROVED ONLY) NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801–7114
Tel (603) 430–9282
Fax (603) 436–2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

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CLEWS SUBDIVISION 799 SOUTH STREET PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	REVISED DETAIL R, TRANSFORMER NEEDED	6/18/19
0	ISSUED FOR COMMENT	6/17/19

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7884 LICENSED PROFESSIONAL ENGINEER

SCALE: AS SHOWN JUNE 2019

DETAILS **D4**

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AMBIT ENGINEERING,INC. CIVIL ENGINEERS AND LAND SURVEYORS
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

9 July 2019

Mr. Dexter Legg, Chair
City of Portsmouth Planning Board
1 Junkins Avenue
Portsmouth, NH 03801

RE: Request for Approval of the Clews Subdivision located at 799 South Street, Tax Map 132 / Lot 24

Chairman Legg and Planning Board Members;

On behalf of the Noele M. Clews Revocable Trust we hereby submit a request for Subdivision Approval at 799 South Street. The project team met with the Technical Advisory Committee on July 2, 2019 to review the proposal. The Technical Advisory Committee voted to recommend Preliminary and Final Subdivision Approval with the stipulations listed herein. Responses to the stipulations are highlighted in **Bold Text**:

1. Change the grass paver to use a surface that is readily apparent as a drivable surface for the Fire Truck access. Add note to plans that this area will be maintained year round to allow fire truck access as necessary. **The drivable area for fire truck turn-in has been revised to granite pavers from grass pavers, with an option to provide asphalt paving. Also see Note 8 on the Subdivision Plan.**
2. The sight distances in both directions at each driveway should be verified on a profile plan of the roadway to be reviewed and confirmed by Eric Eby, the City's Transportation and Parking Engineer. **Site distance profiles have been provided in the plan set to show that adequate driveway site distance is available in both directions at both driveways. We will follow up with the Parking and Transportation Engineer, Eric Eby, when he returns from vacation.**
3. Update plans to be consistent regarding the number of mature trees proposed to be removed for this project. Every effort should be made to preserve existing mature trees. **Plans have been revised to consistently show 10 trees to be removed for lot development.**
4. Relocate the utility pole on the plan to the spot approved by the City. **The utility pole has been relocated to reflect the spot approved by the city, see the Utility Plan Sheet C2.**
5. Add note to plans that construction of utilities and driveways shall impact the sidewalk for no more than 1 week. Safe access shall be restored each night. **Note #8 has been added to Sheet C2.**
6. The sidewalk in front of the property up to the nearest adjacent driveways shall be

replaced with concrete meeting the City's specifications. This work shall take no more than 1 week to full restoration. All sidewalk construction shall meet ADA standards. **Note #9 has been added to Sheet C2.**

7. Update turning template for fire truck to show cars parked in proposed parking spaces. **The turning template for the fire truck has been updated showing movements with cars parked in the proposed parking space. See the Fire Truck Turning Plan submitted herewith.**
8. The plans shall note that the removal of the existing and construction of the proposed driveways shall be done in a sequence that will maintain driveway access to existing residences at all times. **Note #8 of the Subdivision Plan states "Prior to discontinuance of the driveway access to Lot 2, the new Lot 2 / 3 Driveway shall be installed and maintained for the occupants."**

To be included as stipulations of Planning Board approval:

1. An easement shall be provided to benefit the City wherever the sidewalk crosses private property including a 2' paralleling the sidewalk to allow for snow storage. **Note #9 on the Subdivision Plan states that an easement shall be provided.**

Also submitted herewith is a Waiver Request to allow an overhead electrical service to the proposed structure on Lot 3.

We are available to meet with City Staff should you have any questions or concerns. We look forward to your approval of this proposed subdivision at the July Planning Board meeting.

Sincerely,

John R. Chagnon, PE

CC: Christopher Kit Clews, Bernie Pelech, File

J:\JOBS1\JN1700s\JN1730s\JN1736\2018 Subdivision\Applications\City of Portsmouth Subdivision and Site\00 Submission Draft to Client 10-26-18\Planning Board Submission Letter 07-9-19.doc

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

9 July, 2019

Mr. Dexter Legg, Chair
City of Portsmouth Planning Board
1 Junkins Avenue
Portsmouth, NH 03801

RE: Request for Waiver of the Clews Subdivision located at 799 South Street, Tax Map 132 / Lot 24 to allow relocation of existing utility pole and overhead utility service to Lot 3.

Chairman Legg and Planning Board Members;

In conjunction with the application for Subdivision Approval for the above referenced property a waiver is hereby requested to the City of Portsmouth Subdivision Regulations Section VI,9. A. 1.2. The waiver is to allow an Eversource Utility pole to be relocated just inside the property line to service the existing residential facility on Lot 2 and Lot 1. A waiver is also being requested to service Lot 3 directly from a pole on the opposite side of South Street.

We have had discussions with the PSNH and DPW regarding connections to the existing utilities in the street. Placing of the pole and allowing overhead utilities will allow for a workmanlike utility design.

We hereby respectfully request that you vote in the affirmative to grant the requested waiver.

Sincerely,

John R. Chagnon, PE

CC: Christopher Kit Clews, Bernie Pelech, File

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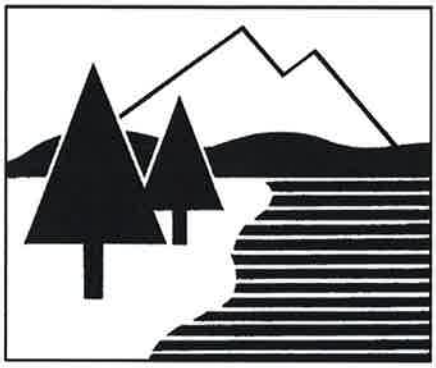
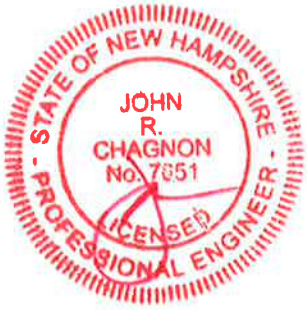
DRAINAGE ANALYSIS
CLEWS SUBDIVISION

799 SOUTH STREET
PORTSMOUTH, NH



JUNE 17, 2019

Revised July 8, 2019



Ambit Engineering, Inc.

Civil Engineers and Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 436.2315
E-mail: djl@ambitengineering.com

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This drainage analysis examines the existing and proposed condition stormwater drainage patterns for construction of two single residential structures on South Street in Portsmouth, as shown on the City of Portsmouth Assessor's Map 132, Lot 24. The plan is to subdivide 1 lot into Proposed Lot 1, 2 and 3. The existing lot is 76,889 square-feet (1.7651 ac) in area.

The development will add two single-family residences, with buried utilities and a partially paved and partially graveled driveway on proposed Lots 1, 2 and 3. The future development of Lot 1 and 3 has been added in the post construction drainage model in a conceptual design. We have used the maximum allowable impervious building area of 25% on Lots 1 and 3 to be conservative. Lots 1, 2 and 3 will be serviced by City water and sewer.

The development has the potential to increase stormwater runoff to adjacent properties, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by removing a large portion of gravel driveway and adding infiltration around each new structure.

The design of the stormwater management system not only detains runoff but treats it to the maximum extent possible via infiltration.

DRAINAGE ANALYSIS

PROPOSED 3 LOT SUBDIVISION

799 SOUTH STREET

PORTSMOUTH, NH

INTRODUCTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on City of Portsmouth Assessor's Map 132 as Lot 24. The proposed development will construct two new single family residences, paved driveway aprons, gravel driveways, and other improvements.

This report includes information about the existing site and the proposed site necessary to analyze stormwater runoff and design mitigation. The report includes maps of existing and proposed subcatchments and calculations of runoff. The report will provide a brief narrative description of the storm water runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management and treatment structures and methods will also be described. To fully understand the proposed site development the reader should review a complete site plan set as well as this report.

Runoff from the impervious roof areas will be diverted to a stone drip edges that will infiltrate, cool, and outlet stormwater runoff. The design infiltration rate used for design and modeling purposes is 6" per hour. In situ tests performed on similar sites suggest a much higher infiltration rate, however, the average hydraulic conductivity value of 12 was used and a safety factor of 2 was applied for design purposes.

METHODOLOGY

This report uses the US Soil Conservation Service Method for prediction of storm water runoff. The SCS method is published in The National Engineering Handbook, Section 4 "Hydrology", in Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release-55 (TR-55) "Urban Hydrology for Small Watersheds". This report uses the HydroCAD program, written by Applied

Microcomputer Systems, Chocorua, N.H., to apply these methods. Rainfall data is taken from the Extreme Precipitation Tables, Northeast Regional Climate Center, Cornell University x 1.15 safety factor for NH Seacoast Communities. Runoff curve numbers are taken from the Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing areas in NH.

SITE SPECIFIC INFORMATION

Located on South Street in Portsmouth, the existing 1.765-acre site (three proposed lots) had soils examined via test pits by Douglas J. LaRosa of Ambit Engineering, Inc. on May 30, 2019.

The soils were typical of the soils shown on the site SCS soil maps.

According to the SCS soils the site is exclusively 799 Canton complex, 3 to 15 percent slopes. The existing site is approximately 14.99% impervious. The "developed" sites is approximated to have impervious cover of 16.11% or an increase of 2.12% in area of impervious across the three lots.

The building sites will be located east and west of the existing building in the front yard. Existing driveways will be removed, and two new driveways will be constructed in the area of greatest sight distance. A common drive will be used to access Lot 3 and the existing building. This drive will be sloped away from the street. Runoff from this new driveway will be captured in an infiltration basin located in rear of the new home (see sheet W2).

DRAINAGE ANALYSIS

This drainage analysis consists of two sections, an analysis of the stormwater runoff from the site in the existing or pre-developed condition, and an analysis of the stormwater runoff from the same area along with the associated proposed development. Areas and drainage information were taken from an existing conditions plan, and site topographic map prepared by Ambit Engineering. Test pits to determine soils and depth to groundwater were carried out by Douglas LaRosa on May 5, 2019 and SCS Ksat values were used to determine infiltration potential for the Stone Drip Edges.

Existing or Pre-Developed Site Runoff

The existing conditions for this site can be defined by subcatchments (ES1-ES5). Subcatchments were delineated by topography and critical areas of concern. In the pre-developed or existing conditions.

The flow paths used in the stormwater model for this site are primarily shallow concentrated flow due to the small size of the lot and a lack of any well defined drainage channels. The flow paths chosen in both the pre and post developed analysis are meant to be the longest time of concentration flow paths (woods or porous surfaces have longer times of concentration as compared to pavement or lawns), not the longest length of flow path. **See "Preconstruction Drainage Plan" – W1.**

Proposed or Post-Developed Site Runoff

The lot will be developed with the additions of two single family residences with a driveway, walkways and associated development. This will increase impervious area that will generate more stormwater runoff. To offset this increase, the stormwater will be infiltrated, so that the post development peak runoff is similar to the pre-developed conditions.

The proposed conditions for this site are defined by seven subcatchments (Ps1, Ps2, Ps2a Ps3, Ps4, Ps4a, and Ps5).

The proposed plan was designed to mimic the existing drainage patterns to the greatest extent possible. See Sheet W2 for flow paths.

See the attached drainage calculations for postconstruction drainage analysis.

Peak Flow Rates

One of the main goals of any stormwater runoff analysis is to maintain peak runoff amounts at or below pre-developed levels. For this development, this is accomplished at all property boundaries using a Stone Drip Edges and infiltration trenches which detain and infiltrate and treat runoff. The following summary describes the peak flow and runoff from the existing to developed conditions:

	Q2 (CFS)		Q10 (CFS)		Q25 (CFS)		Q50 (CFS)	
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
DP1	0.26	0.10	0.65	0.30	1.01	0.50	1.36	0.69
DP2	1.03	0.63	2.46	1.93	3.73	3.16	4.96	4.38
DP3	0.01	0.01	0.03	0.03	0.06	0.06	0.09	0.09
DP4	0.13	0.14	0.52	0.48	0.88	0.81	1.24	1.14
DP5	0.28	0.22	0.76	0.61	1.21	0.97	1.64	1.33

The 2, 10, 25 and 50 year Post development peak rate of run-off shows the rate maintaining or decreasing from Pre-development peak rate of run-off which complies with City of Portsmouth requirements.

Conclusion

The proposed Clews Subdivision can be developed with the proposed site improvements and stormwater features described herein and create no negative impacts on abutting properties. The undeveloped Lots 1 and 3 can be developed with no negative impacts on abutting properties. This is possible because runoff from the site is being detained and infiltrated. This is consistent with NHDES goals of infiltrating runoff from new developments. This meets the requirements of the City of Portsmouth in terms of stormwater management and treatment.

Map Scale: 1:2,170 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 20, Sep 7, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Jun 14, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
799	Urban land-Canton complex, 3 to 15 percent slopes	10.5	100.0%
Totals for Area of Interest		**10.5**	**100.0%**

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

TECHNICAL REPORT OF WETLAND DELINEATION, CLASSIFICATION & IDENTIFICATION

Ambit Engineering Project No.: 1736 Date(s) of Delineation: 8/7/18 Date of Report: 8/16/18

Field Delineator: Steven D. Riker, CWS 219 Compiled by: Steven D. Riker, CWS 219

Project Location/Tax Map & Lot: 799 South Street, Portsmouth, NH. Tax Map 132, Lot 24.

Prepared for: Kit Clews, 67 Ridges Court, Portsmouth, NH 03801.

Site Area Observed: Entire lot.

Site Conditions: Portion of lot is developed, remainder is forested.

Weather/Seasonal Conditions: 85 sunny. Summer conditions.

Site Disturbance: Only in areas of development.

Wetlands Present: Wetlands exist in low lying depressions or drainageways.

Wetland conditions/atypical situation/problem area: None.

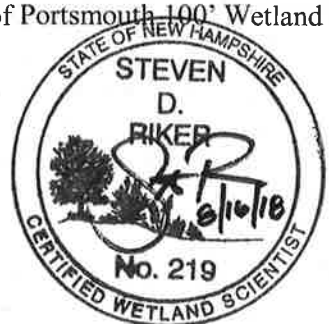
Hydric Soil Criterion: A11. Field Indicators of Hydric Soils in the United States, Version 8.1.

Delineation Standards Utilized:

1. *US Army Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1 (Jan 1987). **AND** Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0, January 2012.
2. Field Indicators of Hydric Soils in the United States, Version 8.1, USDA-NRCS, 2010 **AND (for disturbed sites)** *Field Indicators for Identifying Hydric Soils in New England,* Version 3. NEIWPCC Wetlands Work Group (April 2004).
3. *National List of Plant Species That Occur in Wetlands: Northeast (Region 1).* USFWS (May 1988).

Ambit Engineering, Inc. delineated jurisdictional wetland boundaries utilizing fluorescent pink flagging tape, labeled alpha-numerically for aid in survey location.

Notes: A1-A5 stop would be classified as a palustrine scrub shrub broad leaved deciduous wetland system that is seasonally flooded and or saturated (PSS1E). This wetland boundary is located on the abutting lot but would be subject to the City of Portsmouth 100' Wetland Buffer.



Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	71.050 degrees West
Latitude	42.993 degrees North
Elevation	0 feet
Date/Time	Mon, 03 Jun 2019 11:04:40 -0400

Storm Event	Rainfall(Inches)	X	1.15	=	Adjusted (inches)
2	3.14	X	1.15	=	3.61
10	4.79	X	1.15	=	5.51
25	6.10	X	1.15	=	7.02
50	7.32	X	1.15	=	8.42

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.66	0.82	1.04	**1yr**	0.71	0.99	1.21	1.56	2.02	2.63	2.82	**1yr**	2.33	2.71	3.12	3.82	4.43	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.51	1.92	2.45	3.14	3.48	**2yr**	2.78	3.35	3.86	4.58	5.22	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.42	3.11	4.00	4.48	**5yr**	3.54	4.30	4.92	5.85	6.61	**5yr**
10yr	0.42	0.66	0.83	1.13	1.46	1.90	**10yr**	1.26	1.73	2.24	2.89	3.72	4.79	5.42	**10yr**	4.24	5.21	5.92	7.05	7.91	**10yr**
25yr	0.49	0.77	0.98	1.36	1.80	2.37	**25yr**	1.56	2.15	2.80	3.64	4.72	6.10	6.98	**25yr**	5.40	6.71	7.55	9.02	10.04	**25yr**
50yr	0.55	0.88	1.12	1.57	2.11	2.80	**50yr**	1.82	2.54	3.34	4.36	5.66	7.32	8.45	**50yr**	6.48	8.13	9.08	10.88	12.04	**50yr**
100yr	0.61	0.99	1.28	1.81	2.48	3.32	**100yr**	2.14	3.00	3.97	5.21	6.78	8.79	10.24	**100yr**	7.78	9.85	10.93	13.14	14.43	**100yr**
200yr	0.70	1.14	1.47	2.11	2.91	3.93	**200yr**	2.51	3.55	4.72	6.22	8.12	10.56	12.41	**200yr**	9.35	11.93	13.15	15.88	17.32	**200yr**
500yr	0.82	1.35	1.76	2.56	3.60	4.92	**500yr**	3.11	4.44	5.93	7.87	10.33	13.46	16.01	**500yr**	11.91	15.39	16.80	20.41	22.05	**500yr**

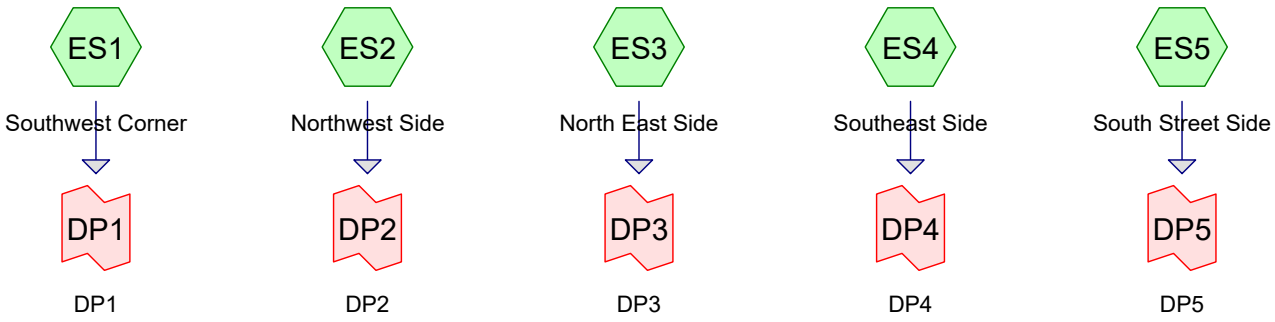
Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.36	0.44	0.60	0.73	0.89	**1yr**	0.63	0.87	0.98	1.27	1.54	2.19	2.54	**1yr**	1.94	2.44	2.86	3.52	3.96	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.80	2.31	3.05	3.35	**2yr**	2.70	3.22	3.73	4.39	5.02	**2yr**
5yr	0.36	0.55	0.68	0.93	1.19	1.41	**5yr**	1.02	1.38	1.61	2.11	2.71	3.63	4.01	**5yr**	3.21	3.86	4.42	5.48	6.00	**5yr**
10yr	0.39	0.60	0.75	1.05	1.35	1.62	**10yr**	1.17	1.58	1.81	2.39	3.05	4.12	4.58	**10yr**	3.65	4.40	5.03	6.42	6.79	**10yr**

APPENDIX A

HydroCAD Pre & Post

Runoff Models



Subcat Reach Pond Link

Routing Diagram for 1736-Pre
Prepared by AMBIT ENGINEERING, INC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.350	61	>75% Grass cover, Good, HSG B (ES1, ES2)
0.162	96	Gravel surface, HSG B (ES1, ES2, ES5)
0.115	98	Paved parking, HSG B (ES1, ES2, ES5)
0.104	98	Roofs, HSG B (ES2, ES4, ES5)
0.020	98	Unconnected pavement, HSG B (ES4, ES5)
0.026	98	Unconnected roofs, HSG B (ES2)
0.995	58	Woods/grass comb., Good, HSG B (ES1, ES2, ES3, ES4, ES5)
1.773	**68**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.773	HSG B	ES1, ES2, ES3, ES4, ES5
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.773		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.350	0.000	0.000	0.000	0.350	>75% Grass cover, Good	ES1, ES2
0.000	0.162	0.000	0.000	0.000	0.162	Gravel surface	ES1, ES2, ES5
0.000	0.115	0.000	0.000	0.000	0.115	Paved parking	ES1, ES2, ES5
0.000	0.104	0.000	0.000	0.000	0.104	Roofs	ES2, ES4, ES5
0.000	0.020	0.000	0.000	0.000	0.020	Unconnected pavement	ES4, ES5
0.000	0.026	0.000	0.000	0.000	0.026	Unconnected roofs	ES2
0.000	0.995	0.000	0.000	0.000	0.995	Woods/grass comb., Good	ES1, ES2, ES3, ES4, ES5
0.000	**1.773**	**0.000**	**0.000**	**0.000**	**1.773**	**TOTAL AREA**	

Time span=5.00-30.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Southwest Corner Runoff Area=12,869 sf 4.56% Impervious Runoff Depth=0.97"
Flow Length=168' Tc=10.6 min CN=68 Runoff=0.26 cfs 0.024 af

Subcatchment ES2: Northwest Side Runoff Area=37,092 sf 23.88% Impervious Runoff Depth=1.08"
Flow Length=325' Tc=5.2 min UI Adjusted CN=70 Runoff=1.03 cfs 0.076 af

Subcatchment ES3: North East Side Runoff Area=1,130 sf 0.00% Impervious Runoff Depth=0.50"
Flow Length=141' Tc=10.5 min CN=58 Runoff=0.01 cfs 0.001 af

Subcatchment ES4: Southeast Side Runoff Area=12,325 sf 11.47% Impervious Runoff Depth=0.62"
Flow Length=126' Tc=6.0 min UI Adjusted CN=61 Runoff=0.15 cfs 0.015 af

Subcatchment ES5: South Street Side Runoff Area=13,799 sf 5.20% Impervious Runoff Depth=0.86"
Flow Length=141' Tc=5.6 min CN=66 Runoff=0.28 cfs 0.023 af

Link DP1: DP1 Inflow=0.26 cfs 0.024 af
Primary=0.26 cfs 0.024 af

Link DP2: DP2 Inflow=1.03 cfs 0.076 af
Primary=1.03 cfs 0.076 af

Link DP3: DP3 Inflow=0.01 cfs 0.001 af
Primary=0.01 cfs 0.001 af

Link DP4: DP4 Inflow=0.15 cfs 0.015 af
Primary=0.15 cfs 0.015 af

Link DP5: DP5 Inflow=0.28 cfs 0.023 af
Primary=0.28 cfs 0.023 af

Total Runoff Area = 1.773 ac Runoff Volume = 0.139 af Average Runoff Depth = 0.94"
85.01% Pervious = 1.507 ac 14.99% Impervious = 0.266 ac

Time span=5.00-30.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Southwest Corner Runoff Area=12,869 sf 4.56% Impervious Runoff Depth=2.25"
Flow Length=168' Tc=10.6 min CN=68 Runoff=0.65 cfs 0.055 af

Subcatchment ES2: Northwest Side Runoff Area=37,092 sf 23.88% Impervious Runoff Depth=2.42"
Flow Length=325' Tc=5.2 min UI Adjusted CN=70 Runoff=2.46 cfs 0.172 af

Subcatchment ES3: North East Side Runoff Area=1,130 sf 0.00% Impervious Runoff Depth=1.46"
Flow Length=141' Tc=10.5 min CN=58 Runoff=0.03 cfs 0.003 af

Subcatchment ES4: Southeast Side Runoff Area=12,325 sf 11.47% Impervious Runoff Depth=1.69"
Flow Length=126' Tc=6.0 min UI Adjusted CN=61 Runoff=0.52 cfs 0.040 af

Subcatchment ES5: South Street Side Runoff Area=13,799 sf 5.20% Impervious Runoff Depth=2.08"
Flow Length=141' Tc=5.6 min CN=66 Runoff=0.76 cfs 0.055 af

Link DP1: DP1 Inflow=0.65 cfs 0.055 af
Primary=0.65 cfs 0.055 af

Link DP2: DP2 Inflow=2.46 cfs 0.172 af
Primary=2.46 cfs 0.172 af

Link DP3: DP3 Inflow=0.03 cfs 0.003 af
Primary=0.03 cfs 0.003 af

Link DP4: DP4 Inflow=0.52 cfs 0.040 af
Primary=0.52 cfs 0.040 af

Link DP5: DP5 Inflow=0.76 cfs 0.055 af
Primary=0.76 cfs 0.055 af

Total Runoff Area = 1.773 ac Runoff Volume = 0.325 af Average Runoff Depth = 2.20"
85.01% Pervious = 1.507 ac 14.99% Impervious = 0.266 ac

Time span=5.00-30.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Southwest Corner Runoff Area=12,869 sf 4.56% Impervious Runoff Depth=3.43"
Flow Length=168' Tc=10.6 min CN=68 Runoff=1.01 cfs 0.084 af

Subcatchment ES2: Northwest Side Runoff Area=37,092 sf 23.88% Impervious Runoff Depth=3.64"
Flow Length=325' Tc=5.2 min UI Adjusted CN=70 Runoff=3.73 cfs 0.258 af

Subcatchment ES3: North East Side Runoff Area=1,130 sf 0.00% Impervious Runoff Depth=2.42"
Flow Length=141' Tc=10.5 min CN=58 Runoff=0.06 cfs 0.005 af

Subcatchment ES4: Southeast Side Runoff Area=12,325 sf 11.47% Impervious Runoff Depth=2.72"
Flow Length=126' Tc=6.0 min UI Adjusted CN=61 Runoff=0.88 cfs 0.064 af

Subcatchment ES5: South Street Side Runoff Area=13,799 sf 5.20% Impervious Runoff Depth=3.22"
Flow Length=141' Tc=5.6 min CN=66 Runoff=1.21 cfs 0.085 af

Link DP1: DP1 Inflow=1.01 cfs 0.084 af
Primary=1.01 cfs 0.084 af

Link DP2: DP2 Inflow=3.73 cfs 0.258 af
Primary=3.73 cfs 0.258 af

Link DP3: DP3 Inflow=0.06 cfs 0.005 af
Primary=0.06 cfs 0.005 af

Link DP4: DP4 Inflow=0.88 cfs 0.064 af
Primary=0.88 cfs 0.064 af

Link DP5: DP5 Inflow=1.21 cfs 0.085 af
Primary=1.21 cfs 0.085 af

Total Runoff Area = 1.773 ac Runoff Volume = 0.497 af Average Runoff Depth = 3.36"
85.01% Pervious = 1.507 ac 14.99% Impervious = 0.266 ac

Time span=5.00-30.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Southwest Corner Runoff Area=12,869 sf 4.56% Impervious Runoff Depth=4.59"
Flow Length=168' Tc=10.6 min CN=68 Runoff=1.36 cfs 0.113 af

Subcatchment ES2: Northwest Side Runoff Area=37,092 sf 23.88% Impervious Runoff Depth=4.83"
Flow Length=325' Tc=5.2 min UI Adjusted CN=70 Runoff=4.96 cfs 0.343 af

Subcatchment ES3: North East Side Runoff Area=1,130 sf 0.00% Impervious Runoff Depth=3.42"
Flow Length=141' Tc=10.5 min CN=58 Runoff=0.09 cfs 0.007 af

Subcatchment ES4: Southeast Side Runoff Area=12,325 sf 11.47% Impervious Runoff Depth=3.77"
Flow Length=126' Tc=6.0 min UI Adjusted CN=61 Runoff=1.24 cfs 0.089 af

Subcatchment ES5: South Street Side Runoff Area=13,799 sf 5.20% Impervious Runoff Depth=4.35"
Flow Length=141' Tc=5.6 min CN=66 Runoff=1.64 cfs 0.115 af

Link DP1: DP1 Inflow=1.36 cfs 0.113 af
Primary=1.36 cfs 0.113 af

Link DP2: DP2 Inflow=4.96 cfs 0.343 af
Primary=4.96 cfs 0.343 af

Link DP3: DP3 Inflow=0.09 cfs 0.007 af
Primary=0.09 cfs 0.007 af

Link DP4: DP4 Inflow=1.24 cfs 0.089 af
Primary=1.24 cfs 0.089 af

Link DP5: DP5 Inflow=1.64 cfs 0.115 af
Primary=1.64 cfs 0.115 af

Total Runoff Area = 1.773 ac Runoff Volume = 0.667 af Average Runoff Depth = 4.51"
85.01% Pervious = 1.507 ac 14.99% Impervious = 0.266 ac

Summary for Subcatchment ES1: Southwest Corner

Runoff = 0.65 cfs @ 12.15 hrs, Volume= 0.055 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Description
587	98	Paved parking, HSG B
2,003	96	Gravel surface, HSG B
8,903	61	>75% Grass cover, Good, HSG B
1,376	58	Woods/grass comb., Good, HSG B
12,869	68	Weighted Average
12,282		95.44% Pervious Area
587		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0147	0.16		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.61"
0.2	68	0.1191	5.56		**Shallow Concentrated Flow, Shallow concentrated** Unpaved Kv= 16.1 fps
10.6	168	Total			

Summary for Subcatchment ES2: Northwest Side

Runoff = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Adj	Description
4,056	98		Paved parking, HSG B
3,686	98		Roofs, HSG B
2,732	96		Gravel surface, HSG B
6,335	61		>75% Grass cover, Good, HSG B
19,166	58		Woods/grass comb., Good, HSG B
1,117	98		Unconnected roofs, HSG B
37,092	71	70	Weighted Average, UI Adjusted
28,233			76.12% Pervious Area
8,859			23.88% Impervious Area
1,117			12.61% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	100	0.0292	0.51		**Sheet Flow, Sheet flow** Fallow n= 0.050 P2= 3.61"
1.9	225	0.1504	1.94		**Shallow Concentrated Flow, Shallow concentrated** Woodland Kv= 5.0 fps
5.2	325	Total			

Summary for Subcatchment ES3: North East Side

Runoff = 0.03 cfs @ 12.16 hrs, Volume= 0.003 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Description
1,130	58	Woods/grass comb., Good, HSG B
1,130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.1159	0.17		**Sheet Flow, Sheet flow** Woods: Light underbrush n= 0.400 P2= 3.61"
0.5	41	0.0834	1.44		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
10.5	141	Total			

Summary for Subcatchment ES4: Southeast Side

Runoff = 0.52 cfs @ 12.10 hrs, Volume= 0.040 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Adj	Description
632	98		Roofs, HSG B
10,911	58		Woods/grass comb., Good, HSG B
782	98		Unconnected pavement, HSG B
12,325	63	61	Weighted Average, UI Adjusted
10,911			88.53% Pervious Area
1,414			11.47% Impervious Area
782			55.30% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.1665	0.17		**Sheet Flow, Sheet flow** Woods: Light underbrush n= 0.400 P2= 3.61"
1.0	76	0.0711	1.33		**Shallow Concentrated Flow, Shallow Concentrated Flow** Woodland Kv= 5.0 fps
6.0	126	Total			

Summary for Subcatchment ES5: South Street Side

Runoff = 0.76 cfs @ 12.09 hrs, Volume= 0.055 af, Depth= 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Description
388	98	Paved parking, HSG B
220	98	Roofs, HSG B
2,309	96	Gravel surface, HSG B
10,772	58	Woods/grass comb., Good, HSG B
110	98	Unconnected pavement, HSG B
13,799	66	Weighted Average
13,081		94.80% Pervious Area
718		5.20% Impervious Area
110		15.32% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0803	0.32		**Sheet Flow, Sheet flow** Grass: Short n= 0.150 P2= 3.61"
0.3	41	0.1054	2.27		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
5.6	141	Total			

Summary for Link DP1: DP1

Inflow Area = 0.295 ac, 4.56% Impervious, Inflow Depth = 2.25" for 10YRX event
Inflow = 0.65 cfs @ 12.15 hrs, Volume= 0.055 af
Primary = 0.65 cfs @ 12.15 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs

Summary for Link DP2: DP2

Inflow Area = 0.852 ac, 23.88% Impervious, Inflow Depth = 2.42" for 10YRX event
Inflow = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af
Primary = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs

Summary for Link DP3: DP3

Inflow Area = 0.026 ac, 0.00% Impervious, Inflow Depth = 1.46" for 10YRX event
Inflow = 0.03 cfs @ 12.16 hrs, Volume= 0.003 af
Primary = 0.03 cfs @ 12.16 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs

Summary for Link DP4: DP4

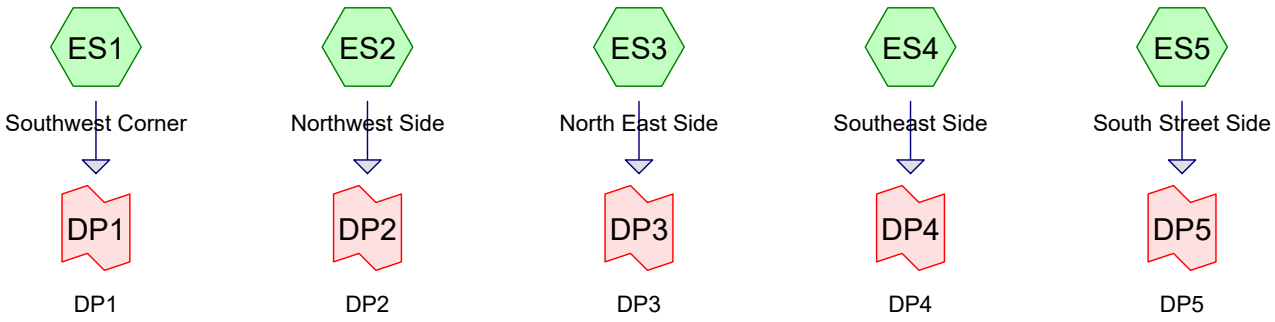
Inflow Area = 0.283 ac, 11.47% Impervious, Inflow Depth = 1.69" for 10YRX event
Inflow = 0.52 cfs @ 12.10 hrs, Volume= 0.040 af
Primary = 0.52 cfs @ 12.10 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs

Summary for Link DP5: DP5

Inflow Area = 0.317 ac, 5.20% Impervious, Inflow Depth = 2.08" for 10YRX event
Inflow = 0.76 cfs @ 12.09 hrs, Volume= 0.055 af
Primary = 0.76 cfs @ 12.09 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 1736-Pre
Prepared by AMBIT ENGINEERING, INC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.350	61	>75% Grass cover, Good, HSG B (ES1, ES2)
0.162	96	Gravel surface, HSG B (ES1, ES2, ES5)
0.115	98	Paved parking, HSG B (ES1, ES2, ES5)
0.104	98	Roofs, HSG B (ES2, ES4, ES5)
0.020	98	Unconnected pavement, HSG B (ES4, ES5)
0.026	98	Unconnected roofs, HSG B (ES2)
0.995	58	Woods/grass comb., Good, HSG B (ES1, ES2, ES3, ES4, ES5)
1.773	**68**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.773	HSG B	ES1, ES2, ES3, ES4, ES5
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.773		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.350	0.000	0.000	0.000	0.350	>75% Grass cover, Good	ES1, ES2
0.000	0.162	0.000	0.000	0.000	0.162	Gravel surface	ES1, ES2, ES5
0.000	0.115	0.000	0.000	0.000	0.115	Paved parking	ES1, ES2, ES5
0.000	0.104	0.000	0.000	0.000	0.104	Roofs	ES2, ES4, ES5
0.000	0.020	0.000	0.000	0.000	0.020	Unconnected pavement	ES4, ES5
0.000	0.026	0.000	0.000	0.000	0.026	Unconnected roofs	ES2
0.000	0.995	0.000	0.000	0.000	0.995	Woods/grass comb., Good	ES1, ES2, ES3, ES4, ES5
0.000	**1.773**	**0.000**	**0.000**	**0.000**	**1.773**	**TOTAL AREA**	

Time span=5.00-30.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Southwest Corner Runoff Area=12,869 sf 4.56% Impervious Runoff Depth=0.97"
Flow Length=168' Tc=10.6 min CN=68 Runoff=0.26 cfs 0.024 af

Subcatchment ES2: Northwest Side Runoff Area=37,092 sf 23.88% Impervious Runoff Depth=1.08"
Flow Length=325' Tc=5.2 min UI Adjusted CN=70 Runoff=1.03 cfs 0.076 af

Subcatchment ES3: North East Side Runoff Area=1,130 sf 0.00% Impervious Runoff Depth=0.50"
Flow Length=141' Tc=10.5 min CN=58 Runoff=0.01 cfs 0.001 af

Subcatchment ES4: Southeast Side Runoff Area=12,325 sf 11.47% Impervious Runoff Depth=0.62"
Flow Length=126' Tc=6.0 min UI Adjusted CN=61 Runoff=0.15 cfs 0.015 af

Subcatchment ES5: South Street Side Runoff Area=13,799 sf 5.20% Impervious Runoff Depth=0.86"
Flow Length=141' Tc=5.6 min CN=66 Runoff=0.28 cfs 0.023 af

Link DP1: DP1 Inflow=0.26 cfs 0.024 af
Primary=0.26 cfs 0.024 af

Link DP2: DP2 Inflow=1.03 cfs 0.076 af
Primary=1.03 cfs 0.076 af

Link DP3: DP3 Inflow=0.01 cfs 0.001 af
Primary=0.01 cfs 0.001 af

Link DP4: DP4 Inflow=0.15 cfs 0.015 af
Primary=0.15 cfs 0.015 af

Link DP5: DP5 Inflow=0.28 cfs 0.023 af
Primary=0.28 cfs 0.023 af

Total Runoff Area = 1.773 ac Runoff Volume = 0.139 af Average Runoff Depth = 0.94"
85.01% Pervious = 1.507 ac 14.99% Impervious = 0.266 ac

Time span=5.00-30.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Southwest Corner Runoff Area=12,869 sf 4.56% Impervious Runoff Depth=2.25"
Flow Length=168' Tc=10.6 min CN=68 Runoff=0.65 cfs 0.055 af

Subcatchment ES2: Northwest Side Runoff Area=37,092 sf 23.88% Impervious Runoff Depth=2.42"
Flow Length=325' Tc=5.2 min UI Adjusted CN=70 Runoff=2.46 cfs 0.172 af

Subcatchment ES3: North East Side Runoff Area=1,130 sf 0.00% Impervious Runoff Depth=1.46"
Flow Length=141' Tc=10.5 min CN=58 Runoff=0.03 cfs 0.003 af

Subcatchment ES4: Southeast Side Runoff Area=12,325 sf 11.47% Impervious Runoff Depth=1.69"
Flow Length=126' Tc=6.0 min UI Adjusted CN=61 Runoff=0.52 cfs 0.040 af

Subcatchment ES5: South Street Side Runoff Area=13,799 sf 5.20% Impervious Runoff Depth=2.08"
Flow Length=141' Tc=5.6 min CN=66 Runoff=0.76 cfs 0.055 af

Link DP1: DP1 Inflow=0.65 cfs 0.055 af
Primary=0.65 cfs 0.055 af

Link DP2: DP2 Inflow=2.46 cfs 0.172 af
Primary=2.46 cfs 0.172 af

Link DP3: DP3 Inflow=0.03 cfs 0.003 af
Primary=0.03 cfs 0.003 af

Link DP4: DP4 Inflow=0.52 cfs 0.040 af
Primary=0.52 cfs 0.040 af

Link DP5: DP5 Inflow=0.76 cfs 0.055 af
Primary=0.76 cfs 0.055 af

Total Runoff Area = 1.773 ac Runoff Volume = 0.325 af Average Runoff Depth = 2.20"
85.01% Pervious = 1.507 ac 14.99% Impervious = 0.266 ac

Time span=5.00-30.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Southwest Corner Runoff Area=12,869 sf 4.56% Impervious Runoff Depth=3.43"
Flow Length=168' Tc=10.6 min CN=68 Runoff=1.01 cfs 0.084 af

Subcatchment ES2: Northwest Side Runoff Area=37,092 sf 23.88% Impervious Runoff Depth=3.64"
Flow Length=325' Tc=5.2 min UI Adjusted CN=70 Runoff=3.73 cfs 0.258 af

Subcatchment ES3: North East Side Runoff Area=1,130 sf 0.00% Impervious Runoff Depth=2.42"
Flow Length=141' Tc=10.5 min CN=58 Runoff=0.06 cfs 0.005 af

Subcatchment ES4: Southeast Side Runoff Area=12,325 sf 11.47% Impervious Runoff Depth=2.72"
Flow Length=126' Tc=6.0 min UI Adjusted CN=61 Runoff=0.88 cfs 0.064 af

Subcatchment ES5: South Street Side Runoff Area=13,799 sf 5.20% Impervious Runoff Depth=3.22"
Flow Length=141' Tc=5.6 min CN=66 Runoff=1.21 cfs 0.085 af

Link DP1: DP1 Inflow=1.01 cfs 0.084 af
Primary=1.01 cfs 0.084 af

Link DP2: DP2 Inflow=3.73 cfs 0.258 af
Primary=3.73 cfs 0.258 af

Link DP3: DP3 Inflow=0.06 cfs 0.005 af
Primary=0.06 cfs 0.005 af

Link DP4: DP4 Inflow=0.88 cfs 0.064 af
Primary=0.88 cfs 0.064 af

Link DP5: DP5 Inflow=1.21 cfs 0.085 af
Primary=1.21 cfs 0.085 af

Total Runoff Area = 1.773 ac Runoff Volume = 0.497 af Average Runoff Depth = 3.36"
85.01% Pervious = 1.507 ac 14.99% Impervious = 0.266 ac

Time span=5.00-30.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Southwest Corner Runoff Area=12,869 sf 4.56% Impervious Runoff Depth=4.59"
Flow Length=168' Tc=10.6 min CN=68 Runoff=1.36 cfs 0.113 af

Subcatchment ES2: Northwest Side Runoff Area=37,092 sf 23.88% Impervious Runoff Depth=4.83"
Flow Length=325' Tc=5.2 min UI Adjusted CN=70 Runoff=4.96 cfs 0.343 af

Subcatchment ES3: North East Side Runoff Area=1,130 sf 0.00% Impervious Runoff Depth=3.42"
Flow Length=141' Tc=10.5 min CN=58 Runoff=0.09 cfs 0.007 af

Subcatchment ES4: Southeast Side Runoff Area=12,325 sf 11.47% Impervious Runoff Depth=3.77"
Flow Length=126' Tc=6.0 min UI Adjusted CN=61 Runoff=1.24 cfs 0.089 af

Subcatchment ES5: South Street Side Runoff Area=13,799 sf 5.20% Impervious Runoff Depth=4.35"
Flow Length=141' Tc=5.6 min CN=66 Runoff=1.64 cfs 0.115 af

Link DP1: DP1 Inflow=1.36 cfs 0.113 af
Primary=1.36 cfs 0.113 af

Link DP2: DP2 Inflow=4.96 cfs 0.343 af
Primary=4.96 cfs 0.343 af

Link DP3: DP3 Inflow=0.09 cfs 0.007 af
Primary=0.09 cfs 0.007 af

Link DP4: DP4 Inflow=1.24 cfs 0.089 af
Primary=1.24 cfs 0.089 af

Link DP5: DP5 Inflow=1.64 cfs 0.115 af
Primary=1.64 cfs 0.115 af

Total Runoff Area = 1.773 ac Runoff Volume = 0.667 af Average Runoff Depth = 4.51"
85.01% Pervious = 1.507 ac 14.99% Impervious = 0.266 ac

Summary for Subcatchment PS1: Southwest Corner

Runoff = 0.30 cfs @ 12.16 hrs, Volume= 0.026 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Description
413	98	Paved parking, HSG B
303	96	Gravel surface, HSG B
2,586	61	>75% Grass cover, Good, HSG B
4,200	58	Woods/grass comb., Good, HSG B
7,502	63	Weighted Average
7,089		94.49% Pervious Area
413		5.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0147	0.16		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.61"
0.2	68	0.1191	5.56		**Shallow Concentrated Flow, Shallow concentrated** Unpaved Kv= 16.1 fps
10.6	168	Total			

Summary for Subcatchment PS2: Northwest Side

Runoff = 1.93 cfs @ 12.08 hrs, Volume= 0.140 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

	Area (sf)	CN	Adj	Description
	685	98		Paved parking, HSG B
	3,686	98		Roofs, HSG B
*	686	50		Drip Edge, HSG B
	3,428	61		>75% Grass cover, Good, HSG B
	30,068	58		Woods/grass comb., Good, HSG B
	1,117	98		Unconnected roofs, HSG B
	39,670	64	63	Weighted Average, UI Adjusted
	34,182			86.17% Pervious Area
	5,488			13.83% Impervious Area
	1,117			20.35% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	100	0.0292	0.51		**Sheet Flow, Sheet flow** Fallow n= 0.050 P2= 3.61"
1.9	225	0.1504	1.94		**Shallow Concentrated Flow, Shallow concentrated** Woodland Kv= 5.0 fps
5.2	325	Total			

Summary for Subcatchment PS2a: Northwest Side

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 5.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Description
2,250	98	Unconnected roofs, HSG B
2,250		100.00% Impervious Area
2,250		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	100	0.0292	0.51		**Sheet Flow, Sheet flow** Fallow n= 0.050 P2= 3.61"
1.9	225	0.1504	1.94		**Shallow Concentrated Flow, Shallow concentrated** Woodland Kv= 5.0 fps
5.2	325	Total			

Summary for Subcatchment PS3: North East Side

Runoff = 0.03 cfs @ 12.16 hrs, Volume= 0.003 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Description
1,130	58	Woods/grass comb., Good, HSG B
1,130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.1159	0.17		**Sheet Flow, Sheet flow** Woods: Light underbrush n= 0.400 P2= 3.61"
0.5	41	0.0834	1.44		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
10.5	141	Total			

Summary for Subcatchment PS4: Southeast Side

Runoff = 0.48 cfs @ 12.15 hrs, Volume= 0.042 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

	Area (sf)	CN	Description
	632	98	Roofs, HSG B
*	308	50	Drip Edge, HSG B
	509	96	Gravel surface, HSG B
	471	61	>75% Grass cover, Good, HSG B
	11,018	58	Woods/grass comb., Good, HSG B
	12,938	61	Weighted Average
	12,306		95.12% Pervious Area
	632		4.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.1665	0.19		**Sheet Flow, Sheet flow** Woods: Light underbrush n= 0.400 P2= 3.61"
1.0	76	0.0711	1.33		**Shallow Concentrated Flow, Shallow Concentrated Flow** Woodland Kv= 5.0 fps
9.7	176	Total			

Summary for Subcatchment PS4a: Southeast Side

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 5.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

Area (sf)	CN	Description
2,250	98	Roofs, HSG B
2,250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 Min**

Summary for Subcatchment PS5: South Street Side

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.044 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YRX Rainfall=5.51"

	Area (sf)	CN	Adj	Description
	535	98		Paved parking, HSG B
	220	98		Roofs, HSG B
*	36	50		Dripe Edge, HSG B
	1,041	96		Gravel surface, HSG B
	464	61		>75% Grass cover, Good, HSG B
	8,526	58		Woods/grass comb., Good, HSG B
	653	98		Unconnected pavement, HSG B
	11,475	66	65	Weighted Average, UI Adjusted
	10,067			87.73% Pervious Area
	1,408			12.27% Impervious Area
	653			46.38% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.0248	0.17		**Sheet Flow, Sheet flow** Grass: Short n= 0.150 P2= 3.61"
0.7	99	0.1100	2.32		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
5.6	149	Total			

Summary for Pond I1: DRIP EDGE

Inflow Area = 0.052 ac,100.00% Impervious, Inflow Depth = 5.27" for 10YRX event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.26 cfs @ 12.11 hrs, Volume= 0.023 af, Atten= 10%, Lag= 2.2 min
Discarded = 0.26 cfs @ 12.11 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 55.03' @ 12.11 hrs Surf.Area= 0.088 ac Storage= 0.001 af

Plug-Flow detention time= 2.7 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 2.7 min (748.4 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	0.212 af	**24.00'W x 160.00'L x 6.00'H Prismatoid** 0.529 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	55.00'	**6.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 54.00'

Discarded OutFlow Max=0.55 cfs @ 12.11 hrs HW=55.03' (Free Discharge)
1=Exfiltration (Controls 0.55 cfs)

Summary for Pond I2: DRIP EDGE

Inflow Area = 0.052 ac,100.00% Impervious, Inflow Depth = 5.27" for 10YRX event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.06 cfs @ 11.73 hrs, Volume= 0.023 af, Atten= 79%, Lag= 0.0 min
Discarded = 0.06 cfs @ 11.73 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.35' @ 12.47 hrs Surf.Area= 0.009 ac Storage= 0.005 af

Plug-Flow detention time= 18.5 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 18.5 min (764.0 - 745.5)

Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	0.022 af	**2.00'W x 200.00'L x 6.00'H Prismatoid** 0.055 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	51.00'	**0.06 cfs Exfiltration at all elevations**

Discarded OutFlow Max=0.06 cfs @ 11.73 hrs HW=51.06' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.06 cfs)

Summary for Link DP1: DP1

Inflow Area = 0.172 ac, 5.51% Impervious, Inflow Depth = 1.84" for 10YRX event
Inflow = 0.30 cfs @ 12.16 hrs, Volume= 0.026 af
Primary = 0.30 cfs @ 12.16 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link DP2: DP2

Inflow Area = 0.962 ac, 18.46% Impervious, Inflow Depth = 1.74" for 10YRX event
Inflow = 1.93 cfs @ 12.08 hrs, Volume= 0.140 af
Primary = 1.93 cfs @ 12.08 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link DP3: DP3

Inflow Area = 0.026 ac, 0.00% Impervious, Inflow Depth = 1.46" for 10YRX event
Inflow = 0.03 cfs @ 12.16 hrs, Volume= 0.003 af
Primary = 0.03 cfs @ 12.16 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link DP4: DP4

Inflow Area = 0.349 ac, 18.98% Impervious, Inflow Depth = 1.44" for 10YRX event
Inflow = 0.48 cfs @ 12.15 hrs, Volume= 0.042 af
Primary = 0.48 cfs @ 12.15 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Link DP5: DP5

Inflow Area = 0.263 ac, 12.27% Impervious, Inflow Depth = 2.00" for 10YRX event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.044 af
Primary = 0.61 cfs @ 12.09 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL PERIMETER CONTROLS, i.e., SILT FENCING OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAY BALES IS NOT ALLOWED.

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.

PERFORM CLEARING & GRUBBING

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED.

BULLDOZE TOPSOIL INTO STOCKPILES, AND CIRCLE WITH SILT FENCING OR SILTSOXX. IF EROSION IS EXCESSIVE, THEN COVER WITH MULCH.

CONSTRUCT FILTRATION BASINS AND OUTLET, BUT DO NOT ALLOW INFLOW UNTIL ALL CONTRIBUTING AREAS ARE STABILIZED AND EROSION-FREE. ROUGH GRADE SITE. REMOVE AND CRUSH LEDGE, THEN BACKFILL WITH ONSITE SOILS OR GRAVEL IN 12" LIFTS, TYP. ROUGH GRADE SITE. IN LANDSCAPED AREAS OUT OF THE WAY OF SUBSEQUENT CONSTRUCTION ACTIVITY, INSTALL TOPSOIL, MULCH, SEED AND FERTILIZER. STABILIZE STEEPER SLOPES PER DETAILS.

CONSTRUCT FOUNDATIONS.

CONSTRUCT WALLS.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES TO THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

CONSTRUCT BUILDING FRAMES.

FINISH GRADE SITE, BACKFILL DRIVEWAY & PARKING SUBBASE GRAVEL IN TWO, COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS.

BUILDING EXTERIOR WORK: LIGHT FIXTURES

INSTALL EXTERIOR LIGHT POLE BASES, AND MAKE FINAL CONNECTIONS TO CONDUIT.

ALL PERMANENT FILTRATION BASINS, DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

AFTER BUILDING IS COMPLETED FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT ASPHALT WEARING COURSE.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILT FENCES AND SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

ADDITIONAL TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS--CONSTRUCT SILT FENCE OR SILTSOXX AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED OF IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON-STRUCTURAL, SITE-FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
- EROSION CONTROL BLANKETS HAVE BEEN INSTALLED

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

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.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. 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 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

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 SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	
SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)		
CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
MULCH: 1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

THE SILT FENCE OR SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILT FENCING AND SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED 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 INSTALLATION 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 EVENTS.

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 TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

INSPECTION AND MAINTENANCE PLAN

INTRODUCTION

THE INTENT OF THIS IS TO PROVIDE THE 799 SOUTH STREET LOT OWNERS OF LOTS 1, 2 AND 3, WITH A LIST OF PROCEDURES THAT DOCUMENT THE INSPECTION AND MAINTENANCE REQUIREMENTS OF THE STORMWATER MANAGEMENT SYSTEM FOR THIS DEVELOPMENT. SPECIFICALLY, THE FILTRATION BASINS AND ASSOCIATED STRUCTURES ON THE PROJECT SITE (COLLECTIVELY REFERRED TO AS THE "STORMWATER MANAGEMENT SYSTEM")

THE FOLLOWING INSPECTION AND MAINTENANCE PROGRAM IS NECESSARY TO KEEP THE STORMWATER MANAGEMENT SYSTEM FUNCTIONING PROPERLY. THESE MEASURES WILL ALSO HELP MINIMIZE POTENTIAL ENVIRONMENTAL IMPACTS. BY FOLLOWING THE ENCLOSED PROCEDURES, THE OWNER WILL BE ABLE TO MAINTAIN THE FUNCTIONAL DESIGN OF THE STORMWATER MANAGEMENT SYSTEM AND MAXIMIZED ITS ABILITY TO REMOVE SEDIMENT AND OTHER CONTAMINANTS FROM THE SITE GENERATED STORMWATER RUNOFF.

STORMWATER MANAGEMENT SYSTEM COMPONENTS

THE STORMWATER MANAGEMENT SYSTEM IS DESIGNED TO MITIGATE BOTH THE QUANTITY AND QUALITY OF SITE-GENERATED RUNOFF. AS THE RESULT, THE DESIGN INCLUDES THE FOLLOWING ELEMENTS:

NON-STRUCTURAL BMP'S

NON-STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) INCLUDE TEMPORARY AND PERMANENT MEASURES THAT TYPICALLY REQUIRE LESS LABOR AND CAPITAL INPUTS AND ARE INTENDED TO PROVIDE PROTECTION AGAINST EROSION OF SOILS. EXAMPLES OF NON-STRUCTURAL BMP'S ON THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO: TEMPORARY AND PERMANENT MULCHING, TEMPORARY AND PERMANENT GRASS COVER, TREES, SHRUBS AND GROUND OVERS, MISCELLANEOUS LANDSCAPE PLANTINGS, DUST CONTROL, TREE PROTECTION, TOPSOILING, SEDIMENT BARRIERS, AND DURING CONSTRUCTION, STABILIZED CONSTRUCTION ENTRANCES.

STRUCTURAL BMP'S

STRUCTURAL BMP'S REQUIRE MORE SPECIALIZED PERSONNEL TO INSTALL. EXAMPLES ON THE PROJECT INCLUDE BUT ARE NOT LIMITED TO: STORM DRAINS, THE FILTRATION BASIN, AND ASSOCIATED OUTLET CONTROL STRUCTURES, AND INFILTRATION TRENCH DETAIL.

INSPECTION AND MAINTENANCE REQUIREMENTS

THE FOLLOWING SUMMARIZES THE INSPECTION AND MAINTENANCE REQUIREMENTS FOR THE VARIOUS BMP'S THAT MAY BE FOUND ON THIS PROJECT:

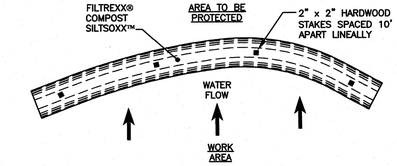
1. GRASSED AREAS: AFTER EACH RAIN EVEN OF 0.5" OR MORE DURING A 24 HOUR PERIOD, INSPECT GRASSED AREAS FOR SIGNS OF DISTURBANCE, SUCH AS EROSION. IF DAMAGED AREAS ARE DISCOVERED, IMMEDIATELY REPAIR THE DAMAGE. REPAIRS MAY INCLUDE ADDING NEW TOPSOIL, LIME, SEED, FERTILIZER AND MULCH.

2. PLANTINGS: PLANTING AND LANDSCAPING (TREES, SHRUBS) SHALL BE MONITORED BI-MONTHLY DURING THE FIRST YEAR TO INSURE VIABILITY AND VIGOROUS GROWTH. REPLACE DEAD OR DYING VEGETATION WITH NEW STOCK AND MAKE ADJUSTMENTS TO THE CONDITIONS THAT CAUSED THE DEAD OR DYING VEGETATION. DURING DRYER TIMES OF THE YEAR, PROVIDED WEEKLY WATERING OR IRRIGATION DURING THE ESTABLISHMENT PERIOD OF THE FIRST YEAR. MAKE NECESSARY ADJUSTMENTS TO ENSURE LONG-TERM HEALTH OF VEGETATED COVER, I.E. PROVIDE MORE PERMANENT MULCH OR COMPOST OR OTHER MEANS OF PROTECTION.

3. STORM DRAIN OUTLETS AND OUTLET CONTROL STRUCTURES: MONITOR DRAIN INLETS AND OUTLET APRONS FOR EXCESSIVE ACCUMULATION OF SEDIMENTS OR MISSING STONE. REMOVE SEDIMENTS AS REQUIRED TO MAINTAIN FILTERING CAPABILITIES OF THE STONE.

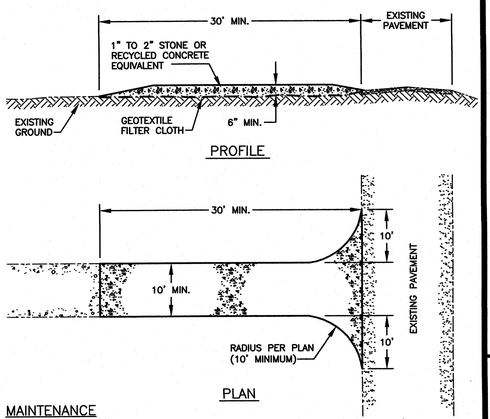
4. FILTRATION BASIN: AFTER ACCEPTANCE OF THE FILTRATION BASIN, PERFORM THE FOLLOWING INSPECTIONS ON A SEMI-ANNUAL BASIS OR AFTER SIGNIFICANT RAINFALL EVENTS (10 YEAR, 24 HR STORMS, OR BACK TO BACK 2 YEAR, 24 HOUR STORMS):
   a. MONITOR FOR EXCESSIVE OR CONCENTRATED ACCUMULATIONS OF DEBRIS, OR EXCESSIVE EROSION. REMOVE DEBRIS AS REQUIRED.
   b. MONITOR THE OUTFALL STRUCTURE FOR PROBLEMS WITH CLOGGED PIPES. REPAIR OR REMOVE CLOGS AS REQUIRED, AND DETERMINE CAUSE OF CLOGGING. PIPES SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR RAINSTORM. BROKEN OR DAMAGE PIPES SHOULD BE REPAIRED OR REPLACED AS NECESSARY.
   c. MONITOR SIDE SLOPES OF POND FOR DAMAGES OR EROSION - REPAIR AS NECESSARY.
   d. MONITOR TURF HEALTH AND KEEP PROTECTED FROM FIRE, GRAZING, TRAFFIC AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY TO PROMOTE GOOD GROWTH AS DETERMINED BY SOIL TESTS. MOWING THE VEGETATED AREAS OF THE BASIN SHOULD BE CARRIED OUT AS NECESSARY.
   e. SEDIMENT ACCUMULATION SHOULD BE CONTINUALLY CHECKED IN THE BASIN. SEDIMENT SHOULD BE REMOVED AS IT IS DISCOVERED PARTICULARLY IF IT HAS ACCUMULATED NEAR THE OUTLET OF THE BASIN.
   f. THE OUTLET CONTROL STRUCTURE SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR RAINSTORM.
   THE OUTLET CONTROL STRUCTURE HAS WITHIN IT A BROAD CRESTED WIER STRUCTURE FOR CONTROLLING FLOW OUT OF BASIN. ANY SEDIMENT OR DEBRIS THAT HAS BUILT UP INSIDE THE OUTLET CONTROL STRUCTURE SHOULD BE REMOVED WHEN DISCOVERED.

5. INVASIVE SPECIES
   MONITOR STORMWATER MANAGEMENT SYSTEM FOR SIGNS OF INVASIVE SPECIES GROWTH. IF CAUGHT EARLIER ENOUGH, THEIR ERADICATION IS MUCH EASIER. THE MOST LIKELY PLACES WHERE INVASIONS START ARE IN WETTER, DISTURBED SOILS OR DETENTION PONDS. SPECIES SUCH AS PHRAGMITES AND PURPLE LOOSE-STRIFE ARE COMMON INVADERS IN THESE WETTER AREAS. IF THEY ARE FOUND THEN THE OWNER SHALL CONTACT A WETLAND SCIENTIST WITH EXPERIENCE IN INVASIVE SPECIES CONTROL TO IMPLEMENT A PLAN OF ACTION TO ERADICATE THE INVADERS. MEASURES THAT DO NOT REQUIRE THE APPLICATION OF CHEMICAL HERBICIDES SHOULD BE THE FIRST LINE OF DEFENSE.



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

A / C4 FILTREXX® SILTSOXX™ FILTRATION SYSTEM (AS NEEDED) NTS



MAINTENANCE

1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 2 TO 4 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 30 FEET FOR A SINGLE RESIDENTIAL LOT.
3) THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4) THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5) GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6) ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

B / C4 STABILIZED CONSTRUCTION ENTRANCE (AS NEEDED) NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:
1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

CLEWS SUBDIVISION
799 SOUTH STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	REVISED NOTES	7/8/19
0	ISSUED FOR COMMENT	6/17/19

REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7051
LICENSED PROFESSIONAL ENGINEER

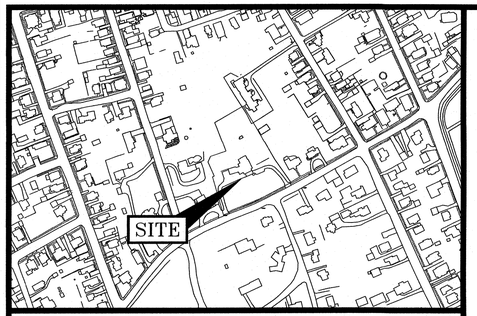
SCALE: AS SHOWN JUNE 2019

EROSION CONTROL NOTES AND DETAILS

D1

FB 288 PG 22

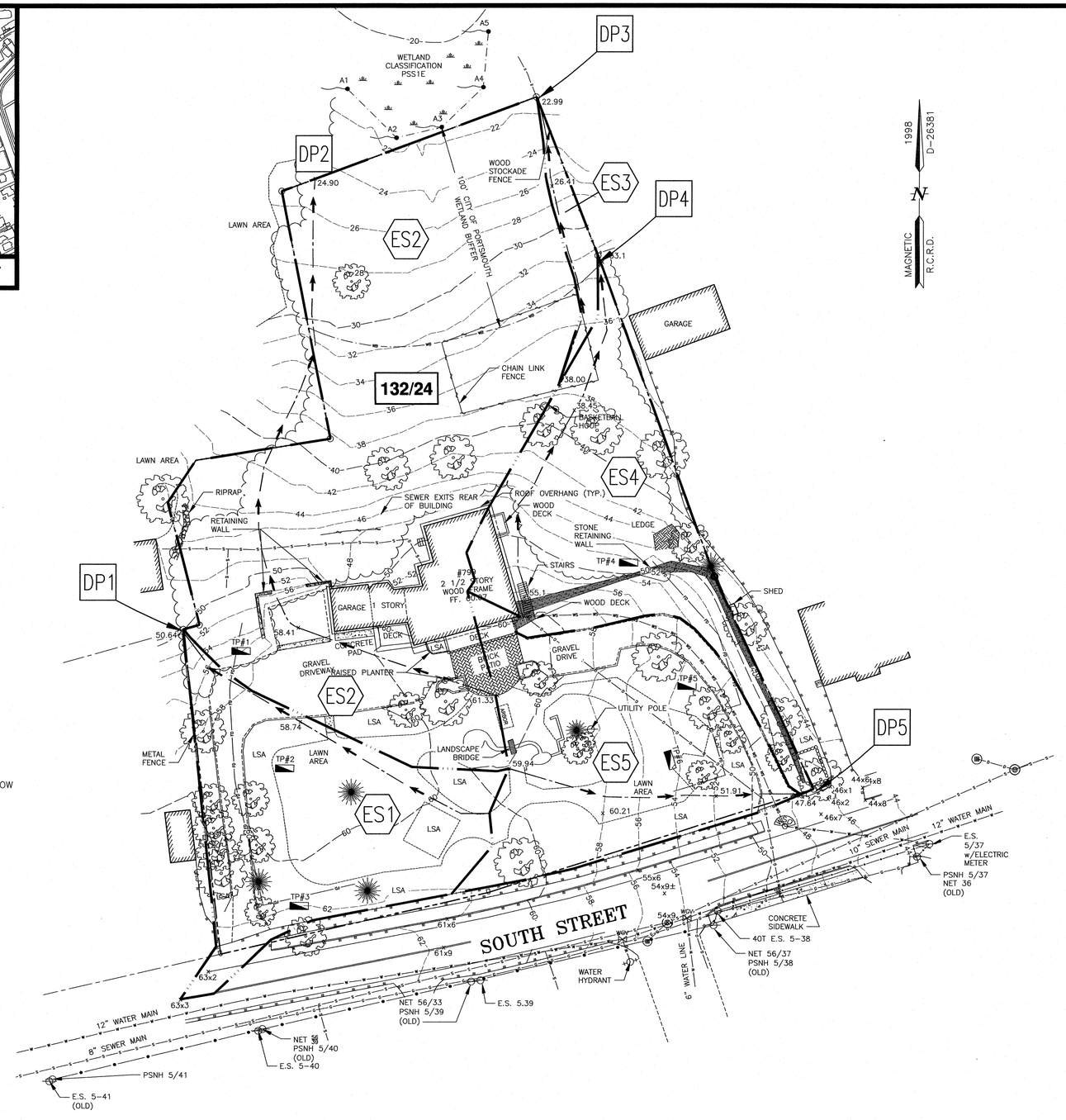
1736



LOCATION MAP 1"=300'

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
D	D	STORM DRAIN
		SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
ES1	PS1	SUBCATCHMENT NUMBER
1234 WOODS	1234 WOODS	AREA IN SQUARE FEET DESCRIPTION OF COVER
1	1	POND (DESIGN MODEL)
DP1	DP1	REACH (DESIGN MODEL)
		DRAINAGE VECTOR
		EDGE OF WOODS / TREES
		CATCH BASIN
		DRAIN MANHOLE
W	W	WELL
EL.	EL.	ELEVATION
EP	EP	EDGE OF PAVEMENT
FF	FF	FINISHED FLOOR
INV	INV	INVERT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL
		Tc PATH
SF	SF	SHEET FLOW
SCF	SCF	SHALLOW CONCENTRATED FLOW
CHANNEL	CHANNEL	CHANNEL FLOW
HSG	HSG	HYDROLGIC SOIL GROUP



GRAPHIC SCALE

30 0 50 100 120 FEET

10 5 0 10 20 30 METERS

TEST PIT 1, ELEV.: 56.0

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 42"

DEPTH	DESCRIPTION
0" – 42"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE 20% GRAVEL

TEST PIT 2, ELEV. 59.1

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: 49" MOTTLES 5YR 7/8
Observed Water: NONE
Percolation Rate: 5 MIN/INCH;12 INCH/HR
Restrictive layer: NONE
REFUSAL: LEDGE AT 64"

DEPTH	DESCRIPTION
0" – 30"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE, 15% GRAVEL
30" – 64"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, 20% COBBLES

TEST PIT 3, ELEV.: 62.0

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Percolation Rate: 5 MIN/INCH;12 INCH/HR
Restrictive layer: NONE
REFUSAL: LEDGE AT 37"

DEPTH	DESCRIPTION
0" –18"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE, 20% GRAVEL
18" – 37"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, ROOTS 36"

TEST PIT 4, ELEV. 48.4

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 29"

DEPTH	DESCRIPTION
0" – 13"	10YR 4/3 FINE SANDY LOAM, MASSIVE, FRIABLE
13" – 29"	10YR 4/6 FINE SANDY LOAM, GRANULAR, FRIABLE, ROOTS 26"

TEST PIT 5, ELEV. 53.5

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Percolation Rate: 5 MIN/INCH;12 INCH/HR
Restrictive layer: NONE
REFUSAL: LEDGE AT 25"

DEPTH	DESCRIPTION
0" – 46"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
46" – 72"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, 20% GRAVEL, ROOTS 65"

TEST PIT 6, ELEV. 54.5

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Percolation Rate: 5 MIN/INCH;12 INCH/HR
Restrictive layer: NONE
REFUSAL: LEDGE AT 42"

DEPTH	DESCRIPTION
0" – 42"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
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3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) THIS PLAN IS FOR RUNOFF ANALYSIS ONLY AND SHALL BE USED ONLY AS A GUIDE FOR CONSTRUCTION.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/17/19

REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CRAGNON No. 7851
LICENSED PROFESSIONAL ENGINEER

SCALE 1" = 30' JUNE 2019

PRE-CONSTRUCTION DRAINAGE PLAN

W1

FB 288 PG 22

1736

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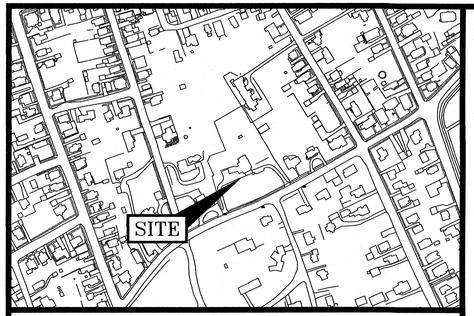
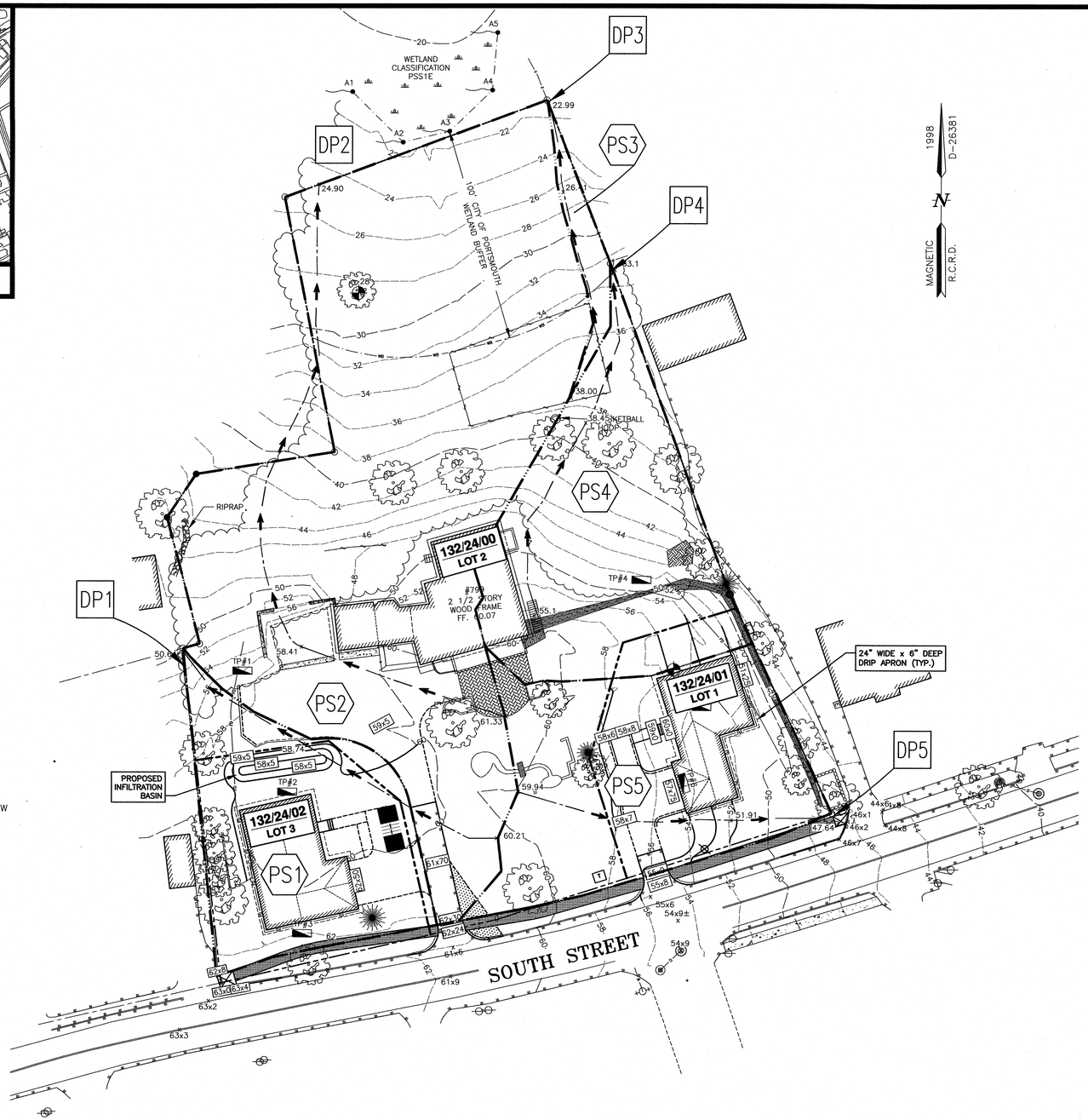


LOCATION MAP 1"=300'

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
D	D	STORM DRAIN
x x x x x	x x x x x	SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
ES1	PS1	SUBCATCHMENT NUMBER
1234 WOODS	1234 WOODS	AREA IN SQUARE FEET DESCRIPTION OF COVER
1	1	POND (DESIGN MODEL)
DP1	DP1	REACH (DESIGN MODEL)
		DRAINAGE VECTOR
		EDGE OF WOODS / TREES
		CATCH BASIN
		DRAIN MANHOLE
W	W	WELL
EL.	EL.	ELEVATION
EP	EP	EDGE OF PAVEMENT
FF	FF	FINISHED FLOOR
INV	INV	INVERT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL
		Tc PATH
SF	SF	SHEET FLOW
SCF	SCF	SHALLOW CONCENTRATED FLOW
CHANNEL	CHANNEL	CHANNEL FLOW
HSG	HSG	HYDROLGIC SOIL GROUP



GRAPHIC SCALE

30 0 50 100 120 FEET
10 5 0 10 20 30 METERS

TEST PIT 1, ELEV.: 56.0

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 42"

DEPTH	DESCRIPTION
0" – 42"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE 20% GRAVEL

TEST PIT 2, ELEV. 59.1

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: 49" MOTTLES 5YR 7/8
Observed Water: NONE
Percolation Rate: 5 MIN/INCH;12 INCH/HR
Restrictive layer: NONE
REFUSAL: LEDGE AT 64"

DEPTH	DESCRIPTION
0" – 30"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE, 15% GRAVEL
30" – 64"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, 20% COBBLES

TEST PIT 3, ELEV.: 62.0

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Percolation Rate: 5 MIN/INCH;12 INCH/HR
Restrictive layer: NONE
REFUSAL: LEDGE AT 37"

DEPTH	DESCRIPTION
0" –18"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE, 20% GRAVEL
18" – 37"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, ROOTS 36"

TEST PIT 4, ELEV. 48.4

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 29"

DEPTH	DESCRIPTION
0" – 13"	10YR 4/3 FINE SANDY LOAM, MASSIVE, FRIABLE
13" – 29"	10YR 4/6 FINE SANDY LOAM, GRANULAR, FRIABLE, ROOTS 26"

TEST PIT 5, ELEV. 53.5

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Percolation Rate: 5 MIN/INCH;12 INCH/HR
Restrictive layer: NONE
REFUSAL: LEDGE AT 25"

DEPTH	DESCRIPTION
0" – 46"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
46" – 72"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE, 20% GRAVEL, ROOTS 65"

TEST PIT 6, ELEV. 54.5

Date: 5/30/19
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Percolation Rate: 5 MIN/INCH;12 INCH/HR
Restrictive layer: NONE
REFUSAL: LEDGE AT 42"

DEPTH	DESCRIPTION
0" – 42"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) THIS PLAN IS FOR RUNOFF ANALYSIS ONLY AND SHALL BE USED ONLY AS A GUIDE FOR CONSTRUCTION.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	REVISED SIDEWALK	7/9/19
0	ISSUED FOR COMMENT	6/17/19

REVISIONS

STATE OF NEW HAMPSHIRE · JOHN R. CHAGNON No. 7661 LICENSED PROFESSIONAL ENGINEER

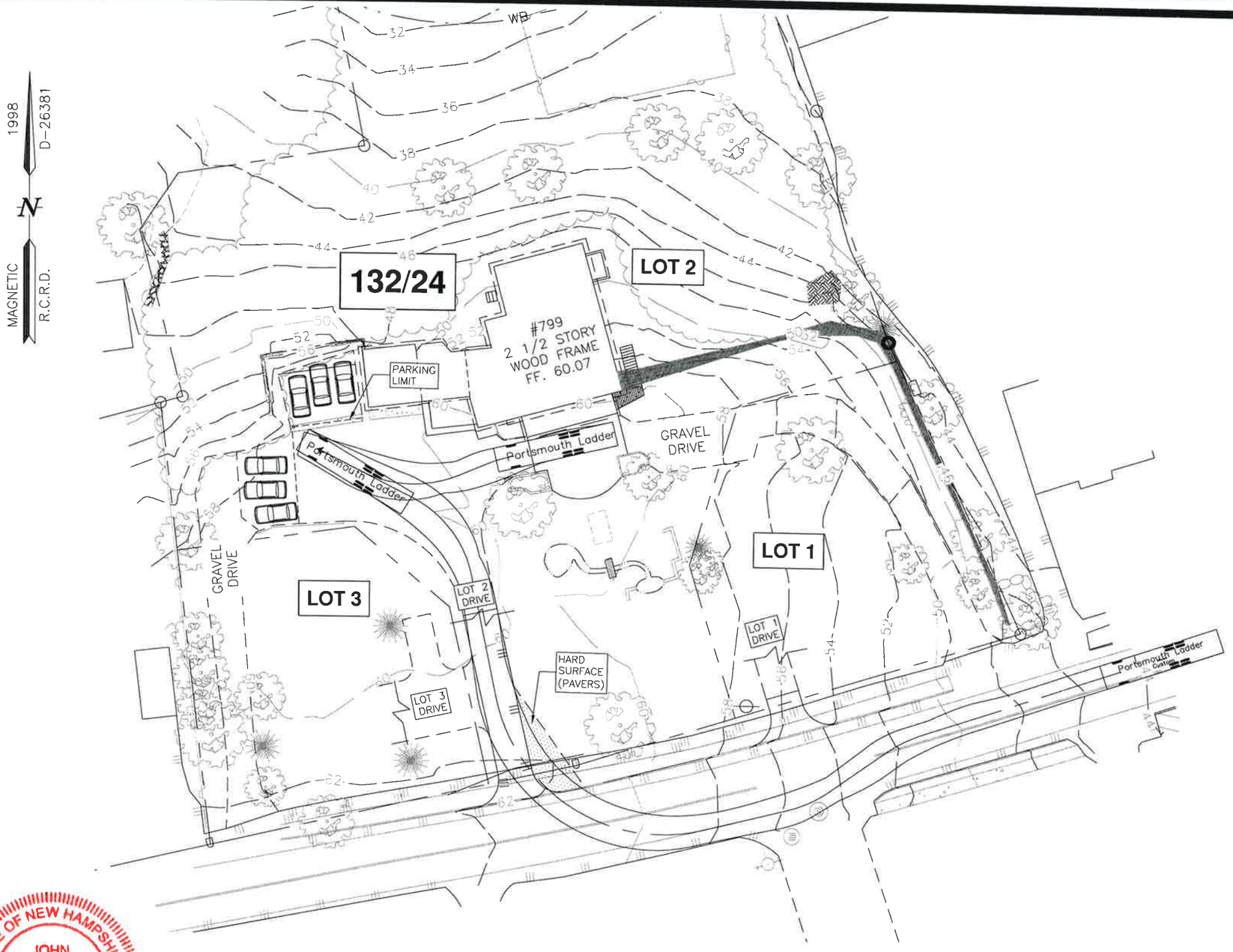
SCALE 1" = 30' FEBRUARY 2019

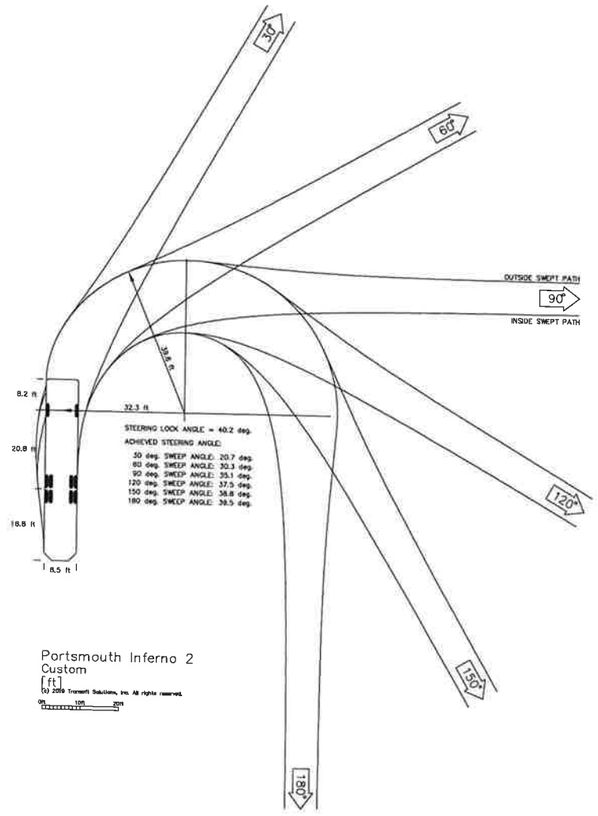
POST-CONSTRUCTION DRAINAGE PLAN

W2

FB 288 PG 22

1736





GRAPHIC SCALE

10 0 20 40 60 80 FEET

3 0 5 10 15 20 25 METERS

FIRE TRUCK TURNING PLAN
FOR

CLEWS SUBDIVISION
799 SOUTH STREET
PORTSMOUTH, N.H.

SCALE: 1"= 40' MAY 2019; REV. #1, 7-8-19

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7851
LICENSED
PROFESSIONAL ENGINEER

J:\OBS1\JN1700s\JN1730s\JN17362018 Subdivision\Plans & Specs\Site\fire Truck Turn\1736 SUBDIVISION AUTOTURN CAD 2018.dwg, TURN

City of Portsmouth, New Hampshire

Subdivision Application Checklist

This subdivision application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision review requirements. Please refer to the Subdivision review regulations for full details.

Applicant Responsibilities (Section III.C): Applicable fees are due upon application submittal along with required number of copies of the Preliminary or final plat and supporting documents and studies. Please consult with Planning staff for submittal requirements.

Owner: Noele M. Clews Revocable Trust Date Submitted: 7-9-2019

Applicant: Christopher Clews, Trustee

Phone Number: 603-867-7801 E-mail: kit@clews.org

Site Address 1: 799 South Street Map: 132 Lot: 24

Site Address 2: _____ Map: _____ Lot: 24

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☑	Completed Application form. **(III.C.2-3)**		N/A
☑	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF) on compact disc, DVD or flash drive. **(III.C.4)**	Submitted	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☑	Name and address of record owner, any option holders, descriptive name of subdivision, engineer and/or surveyor or name of person who prepared the plat. **(Section IV.1/V.1)**	Cover Sheet, C1	☑ Preliminary Plat ☑ Final Plat	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✓	**Preliminary Plat** Names and addresses of all adjoining property owners. **(Section IV.2)** **Final Plat** Names and addresses of all abutting property owners, locations of buildings within one hundred (100) feet of the parcel, and any new house numbers within the subdivision. **(Section V.2)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A
✓	North point, date, and bar scale. **(Section IV.3/V3)**	Required on all Plan Sheets	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Zoning classification and minimum yard dimensions required. **(Section IV.4/V.4)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A
✓	**Preliminary Plat** Scale (not to be smaller than one hundred (100) feet = 1 inch) and location map (at a scale of 1" = 1000'). **(Section IV.5)** **Final Plat** Scale (not to be smaller than 1"=100'), Location map (at a scale of 1"=1,000') showing the property being subdivided and its relation to the surrounding area within a radius of 2,000 feet. Said location map shall delineate all streets and other major physical features that my either affect or be affected by the proposed development. **(Section V.5)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Location and approximate dimensions of all existing and proposed property lines including the entire area proposed to be subdivided, the areas of proposed lots, and any adjacent parcels in the same ownership. **(Section IV.6)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	
✓	Dimensions and areas of all lots and any and all property to be dedicated or reserved for schools, parks, playgrounds, or other public purpose. Dimensions shall include radii and length of all arcs and calculated bearing for all straight lines. **(Section V.6/ IV.7)**	Subdivision Plan	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Location, names, and present widths of all adjacent streets, with a designation as to whether public or private and approximate location of existing utilities to be used. Curbs and sidewalks shall be shown. **(Section IV.8/V.7)**	Subdivision Plan Utility Plan- C2	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☑	Location of significant physical features, including bodies of water, watercourses, wetlands, railroads, important vegetation, stone walls and soils types that my influence the design of the subdivision. **(Section IV.9/V.8)**	Existing conditions- C1	☑ Preliminary Plat ☑ Final Plat	
☑	**Preliminary Plat** Proposed locations, widths and other dimensions of all new streets and utilities, including water mains, storm and sanitary sewer mains, catch basins and culverts, street lights, fire hydrants, sewerage pump stations, etc. **(Section IV.10)** **Final Plat** Proposed locations and profiles of all proposed streets and utilities, including water mains, storm and sanitary sewer mains, catchbasins and culverts, together with typical cross sections. Profiles shall be drawn to a horizontal scale of 1"=50' and a vertical scale of 1"=5', showing existing centerline grade, existing left and right sideline grades, and proposed centerline grade. **(Section V.9)**	Utility Plan- C2 No new mains- Utility connections only	☑ Preliminary Plat ☑ Final Plat	
☐	When required by the Board, the plat shall be accompanied by profiles of proposed street grades, including extensions for a reasonable distance beyond the subject land; also grades and sizes of proposed utilities. **(Section IV.10)**	N/A	☑ Preliminary Plat ☑ Final Plat	
☐	Base flood elevation (BFE) for subdivisions involving greater than five (5) acres or fifty (50) lots. **(Section IV.11)**	N/A	☑ Preliminary Plat ☑ Final Plat	
☑	For subdivisions of five (5) lots or more, or at the discretion of the Board otherwise, the preliminary plat shall show contours at intervals no greater than two (2) feet. Contours shall be shown in dotted lines for existing natural surface and in solid lines for proposed final grade, together with the final grade elevations shown in figures at all lot corners. If existing grades are not to be changed, then the contours in these areas shall be solid lines. **(Section IV.12/ V.12)**	Existing Conditions- C1	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☑	Dates and permit numbers of all necessary permits from governmental agencies from which approval is required by Federal or State law. **(Section V.10)**	Cover Sheet, None Required	☐ Preliminary Plat ☑ Final Plat	
☑	For subdivisions involving greater than five (5) acres or fifty (50) lots, the final plat shall show hazard zones and shall include elevation data for flood hazard zones. **(Section V.11)**	N/A: Not in SFHA	☐ Preliminary Plat ☑ Final Plat	
☑	Location of all permanent monuments. **(Section V.12)**	Subdivision Plan	☐ Preliminary Plat ☑ Final Plat	

General Requirements[1]			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	**1. Basic Requirements: (VI.1)**	Subdivision, Existing conditions- C1	
☑	a. Conformity to Official Plan or Map		
☑	b. Hazards		
☑	c. Relation to Topography		
☑	d. Planned Unit Development		
☑	**2. Lots: (VI.2)**	Subdivision	
☑	a. Lot Arrangement		
☑	b. Lot sizes		
☐	c. Commercial and Industrial Lots		
☑	**3. Streets: (VI.3)**	Driveway Plan- C3	
☑	a. Relation to adjoining Street System		
☑	b. Street Rights-of-Way		
☑	c. Access		
☐	d. Parallel Service Roads		
☐	e. Street Intersection Angles		
☐	f. Merging Streets		
☐	g. Street Deflections and Vertical Alignment		
☐	h. Marginal Access Streets		
☐	i. Cul-de-Sacs		
☐	j. Rounding Street Corners		
☐	k. Street Name Signs		
☐	l. Street Names		
☐	m. Block Lengths		
☐	n. Block Widths		
☐	o. Grade of Streets		
☐	p. Grass Strips		
☑	**4. Curbing: (VI.4)**	Sheet C3	
☑	**5. Driveways: (VI.5)**	Sheet C3	
☑	**6. Drainage Improvements: (VI.6)**	Sheet C4	
☑	**7. Municipal Water Service: (VI.7)**	Sheet C2	
☑	**8. Municipal Sewer Service: (VI.8)**	Sheet C2	
☑	**9. Installation of Utilities: (VI.9)**	Sheet C2, D3, D4	
☑	a. All Districts		
☑	b. Indicator Tape		
☐	**10. On-Site Water Supply: (VI.10)**	N/A	
☐	**11. On-Site Sewage Disposal Systems: (VI.11)**	N/A	
☐	**12. Open Space: (VI.12)**	N/A	
☐	a. Natural Features		
☐	b. Buffer Strips		
☐	c. Parks		
☐	d. Tree Planting		
☐	**13. Flood Hazard Areas: (VI.13)**	N/A	
☐	a. Permits		
☐	b. Minimization of Flood Damage		
☐	c. Elevation and Flood-Proofing Records		
☐	d. Alteration of Watercourses		
☑	**14. Erosion and Sedimentation Control (VI.14)**	Sheet C4 & D1	

☑	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
☑	**15. Easements (VI.15)**	Sidewalk, Subdivison Plan	
☐	a. Utilities		
☐	b. Drainage		
☑	**16. Monuments: (VI.16)**	Subdivison	
☑	**17. Benchmarks: (VI.17)**	Sheet C1	
☐	**18. House Numbers (VI.18)**	TBD	

Design Standards			
	Required Items for Submittal	**Indicate compliance and/or provide explanation as to alternative design**	**Waiver Requested**
☐	**1. Streets have been designed according to the design standards required under Section (VII.1).** a. Clearing b. Excavation c. Rough Grade and Preparation of Sub-Grade d. Base Course e. Street Paving f. Side Slopes g. Approval Specifications h. Curbing i. Sidewalks j. Inspection and Methods	N/A	
☑	**2. Storm water Sewers and Other Drainage Appurtenances have been designed according to the design standards required under Section (VII.2).** a. Design b. Standards of Construction	Yes- Design is conceptual	
☑	**3. Sanitary Sewers have been designed according to the design standards required under Section (VII.3).** a. Design b. Lift Stations c. Materials d. Construction Standards	Connections/ no mains	
☑	**4. Water Mains and Fire Hydrants have been designed according to the design standards required under Section (VII.4).** a. Connections to Lots b. Design and Construction c. Materials d. Notification Prior to Construction	No mains	

Applicant's/Representative's Signature: _____ **Date:** 7-9-2019

[1] See City of Portsmouth, NH Subdivision Rules and Regulations for details.

Unitil

June 5, 2019

Douglas J. LaRosa
Ambit Engineering
200 Griffin Road
Unit 3
Portsmouth, NH 03801

RE: Natural Gas Availability to 799 South St Portsmouth NH

Dear Doug,

Unitil's natural gas division has reviewed the requested site for natural gas service.

Unitil hereby confirms natural gas service will be available to 799 South St Portsmouth, NH. Installation is pending an authorized installation agreement with Noel M. Clews Revocable Trust and a street opening approval from the City of Portsmouth DPW. This Will Serve letter is not an agreement to install natural gas.

Let me know if you have any questions. You can email me at oliver@unitil.com. My phone number is 603-294-5174.

Sincerely,

Janet Oliver
Business Development Representative

EVERSOURCE ENERGY

June 19,2019

1700 Lafayette Road
Portsmouth, NH 03801

Michael J Busby
603-436-7708 x555-5678
michael.busby@eversource.com

Douglas J. LaRosa
Ambit Engineering
200 Griffin Road, Unit 3
Portsmouth, NH 03801

Dear Douglas:

I am responding to your request to confirm the availability of electric service for the proposed 799 South Street project being constructed for/by The Clews Family Trust.

The proposed project consists of an existing 2-story building with 4 residential units and two new residential lots. The proposed development will be constructed along 799 South Street.

The developer will be responsible for the installation of all underground facilities and infrastructure required to service the new building. The service will be as shown on attached marked up Utility Plan C2. The proposed building service will be fed from Poles and Underground as depicted on utility plan C2. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed overhead/underground facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached drawing titled "Clews Subdivision, 799 South Street, Portsmouth, NH Utility Site Plan" dated 06/18/2019, shows transformer location to service your proposed project.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Portsmouth Office, 603-436-7708 Ext. 555-5678

Respectfully.

Michael J. Busby, PE
NH Eastern Regional Engineering and Design Manager, Eversource

cc: (via e-mail)
Michael Lee, Eastern Region Operations Manager, Eversource
Mary Jo Hanson, Field Supervisor, Electric Design, Eversource

Stephen G. Pernaw & Company, Inc.

P.O. Box 1721 • Concord, NH 03302
tel: (603) 731-8500 • fax: (866) 929-6094 • sgp@ pernaw.com

Transportation: Engineering • Planning • Design

M E M O R A N D U M

Ref: 1911A

To: John Chagnon, P.E., LLS
Ambit Engineering

From: Stephen G. Pernaw, P.E., PTOE

Subject: Clews Subdivision
Portsmouth, New Hampshire

Date: June 5, 2019

As requested, our office conducted a travel speed survey on South Street, for the Clews Subdivision in Portsmouth, New Hampshire for the purpose of evaluating the minimum safe stopping sight distance requirements for vehicles approaching the two proposed residential driveways on South Street. The plan entitled *"Driveway Plan,"* Sheet C3, dated March 2019 (revised 5/9/19) that was prepared by your office indicates that the available sight distances at the Lot 1 Driveway are 226-feet looking right, and 345-feet looking left. Similarly, the sight distances at the Lot 2&3 Driveway are 437 feet looking right and 324 feet looking left (see Attachment 1). The purpose of this memorandum is to summarize the results of our survey, analysis, and findings.

Vehicle Speeds - The speed survey was conducted on South Street adjacent to the subject site in March 2019. The speed limit is posted at 20 mph on this section of South Street. The results of the speed survey are summarized below and show that both the average and 85th percentile speeds exceed the posted speed limit:

Travel Speed Summary - March 2019

	85th Percentile Speeds		Average Speeds	
Day	Eastbound	Westbound	Eastbound	Westbound
Monday*	30.0	33.5	26.6	28.8
Tuesday	30.7	33.7	26.8	29.1
Wednesday	30.6	33.8	26.7	29.3
Thursday	30.9	33.7	26.9	29.3
Friday*	30.6	34.3	26.5	29.8
Average	30.6 mph	33.8 mph	26.7 mph	29.3 mph

*Partial Days

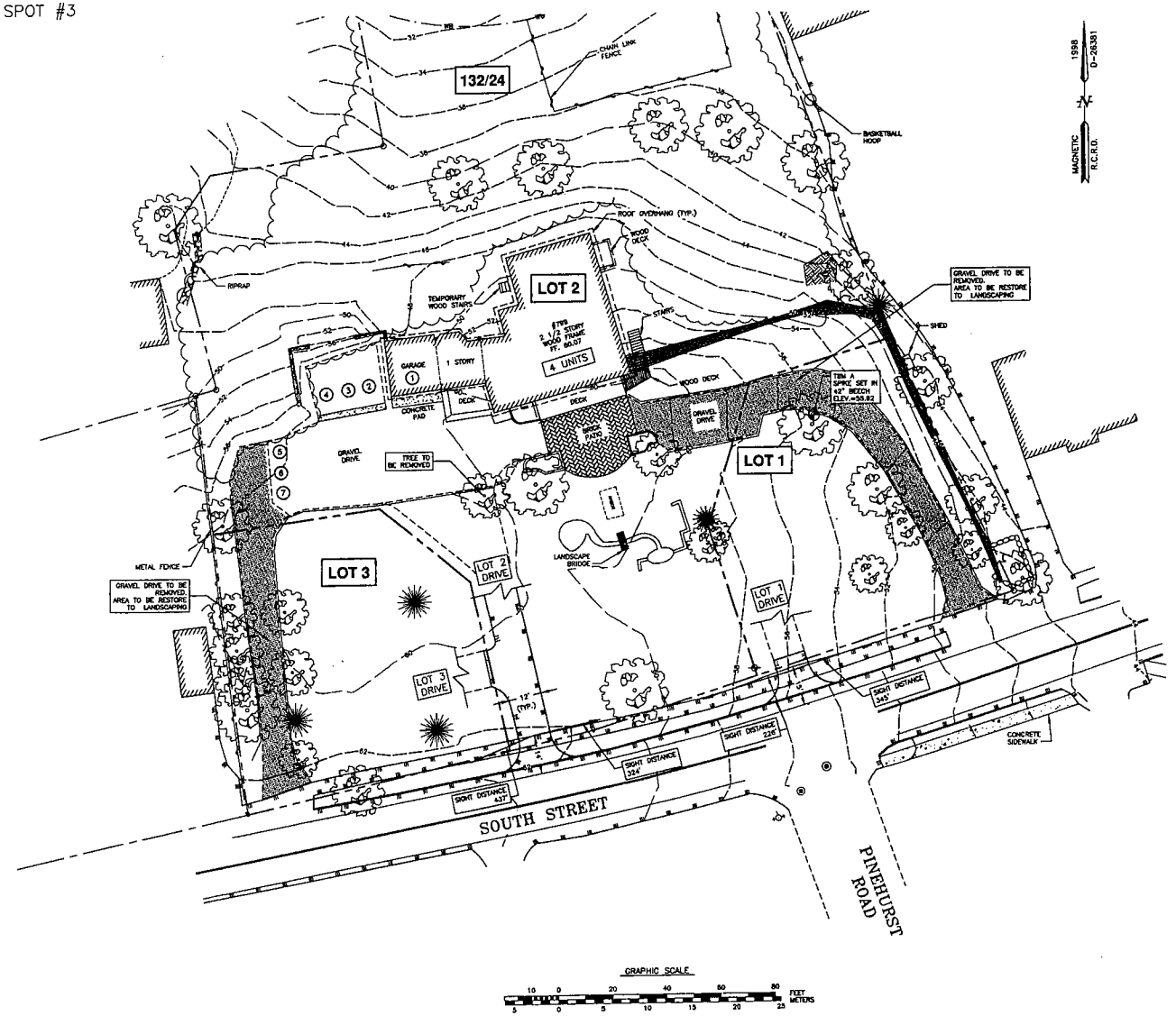
The raw speed data and other statistical summaries are attached (see Attachments 2-11).

Sight Distance Evaluation - The minimum safe stopping sight distance calculations contained herein are comprised of the distance traveled during the "perception-reaction time" plus the distance traveled during "braking." These computations are based on the 85th percentile approach speeds and the average approach grades on South Street (where breaking occurs). The attached calculations (see Attachments 12 & 13) demonstrate that the available stopping sight distances looking left and looking right from both residential driveways exceeds the minimum stopping sight distance requirements for the 85th percentile speed.

Attachments

LEGEND:

(3) PARKING SPOT #3



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4) REQUIRED PARKING FOR LOT 2:

UNIT 1:	2,119 SF:	1.3 SPACES
UNIT 2:	505 SF:	1 SPACE
UNIT 3:	1,147 SF:	1.3 SPACES
UNIT 4:	1,493 SF:	1.3 SPACES
TOTAL REQUIRED:		5 SPACES
PROVIDED: 7 SPACES		

5) THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED DRIVEWAY LOCATIONS AND SIGHT DISTANCES FOR THE CLEWS SUBDIVISION.

CLEWS SUBDIVISION
799 SOUTH STREET
PORTMSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	DRIVE LOCATIONS, SIGHT DISTANCE	5/9/19
0	ISSUED FOR COMMENT	4/5/19

REVISIONS

JOHN R. CHAGNON No. 7631 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE 1" = 20' MARCH 2019

DRIVEWAY PLAN C3

FB 288 PG 22 1736

J:\JOBS\1736\Jn1736\Jn1736\Jn1736 Subdivision Plans & Specs\Site\1736 SUBDIVISION 2019.dwg, C3_DRIVE

Attachment 1

Daily Eastbound Speeds (MPH)

Study Date: Monday, 03/18/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 - 01:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 - 02:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 - 03:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 - 04:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 - 05:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 - 06:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 - 07:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 - 08:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 - 09:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:59	1	4	29	33	5	0	0	1	0	0	0	0	0	0	0	73
15:00 - 15:59	1	6	105	183	32	2	0	1	0	0	0	0	0	0	0	330
16:00 - 16:59	1	9	82	181	38	1	1	0	0	0	0	0	0	0	0	313
17:00 - 17:59	0	6	63	126	34	2	0	0	0	0	0	0	0	0	0	231
18:00 - 18:59	0	5	42	114	32	2	0	1	0	1	0	0	0	0	0	197
19:00 - 19:59	0	3	33	45	20	1	0	0	1	0	0	0	0	0	0	103
20:00 - 20:59	0	3	17	24	8	3	0	1	0	0	0	0	0	0	0	56
21:00 - 21:59	0	1	9	20	8	1	0	0	0	0	0	0	0	0	0	39
22:00 - 22:59	0	2	9	8	8	1	0	0	0	0	0	0	0	0	0	28
23:00 - 23:59	0	1	4	9	2	0	0	0	0	0	0	0	0	0	0	16
Totals	**3**	**40**	**393**	**743**	**187**	**13**	**1**	**4**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1386**
ercent of Total	**0.2**	**2.9**	**28.4**	**53.6**	**13.5**	**0.9**	**0.1**	**0.3**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of AM	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of PM	**0.2**	**2.9**	**28.4**	**53.6**	**13.5**	**0.9**	**0.1**	**0.3**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 4.3 MPH
Mean Speed: 26.6 MPH
Median Speed: 26.7 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 20 to 29 MPH
Percent in Ten Mile Pace: 82.0%

85th Percentile: 30.0 MPH
15th Percentile: 22.1 MPH
90th Percentile: 31.8 MPH
95th Percentile: 33.7 MPH

Daily Eastbound Speeds (MPH)

Study Date: Tuesday, 03/19/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	0	0	3	5	2	1	0	0	0	0	0	0	0	0	0	11
01:00 - 01:59	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3
02:00 - 02:59	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00 - 03:59	0	1	3	1	1	0	1	0	0	0	0	0	0	0	0	7
04:00 - 04:59	0	0	10	10	4	1	0	0	0	0	0	0	0	0	0	25
05:00 - 05:59	1	1	18	19	9	2	0	0	0	0	0	0	0	0	0	50
06:00 - 06:59	0	6	29	70	12	2	0	0	0	0	0	0	0	0	0	119
07:00 - 07:59	0	13	79	133	38	4	2	0	0	1	0	0	0	0	0	270
08:00 - 08:59	1	13	116	149	35	2	1	1	0	0	0	0	0	0	1	319
09:00 - 09:59	2	2	57	104	37	2	1	0	0	0	0	0	0	0	0	205
10:00 - 10:59	0	8	41	89	30	3	0	0	0	1	0	0	0	0	0	172
11:00 - 11:59	0	9	64	96	39	2	0	0	0	0	0	0	0	0	0	210
12:00 - 12:59	0	9	62	119	41	1	0	0	0	0	0	0	1	0	0	233
13:00 - 13:59	2	5	44	123	36	3	0	0	1	0	0	0	0	0	0	214
14:00 - 14:59	0	8	64	137	36	4	0	1	0	0	0	1	0	0	1	252
15:00 - 15:59	1	14	91	156	56	1	0	0	0	0	0	0	1	0	0	320
16:00 - 16:59	0	4	75	201	37	0	2	0	0	0	0	0	0	0	0	319
17:00 - 17:59	0	8	54	128	45	4	0	0	0	0	0	0	0	0	0	239
18:00 - 18:59	0	6	47	104	26	2	0	0	0	0	0	0	0	0	0	185
19:00 - 19:59	0	3	32	51	15	1	0	0	0	0	0	0	0	0	0	102
20:00 - 20:59	1	1	18	31	12	1	0	0	0	0	0	0	0	0	0	64
21:00 - 21:59	0	0	12	25	9	1	0	0	0	0	0	0	0	0	0	47
22:00 - 22:59	1	2	8	12	5	2	0	0	0	0	0	0	0	0	0	30
23:00 - 23:59	0	1	8	7	2	0	0	0	0	0	0	0	0	0	0	18
Totals	**9**	**115**	**935**	**1774**	**527**	**39**	**7**	**2**	**1**	**2**	**0**	**1**	**2**	**0**	**2**	**3416**
ercent of Total	**0.3**	**3.4**	**27.4**	**51.9**	**15.4**	**1.1**	**0.2**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.1**	**0.0**	**0.1**	**100**
ercent of AM	**0.3**	**3.9**	**30.2**	**48.8**	**14.9**	**1.4**	**0.4**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**100**
ercent of PM	**0.2**	**3.0**	**25.5**	**54.1**	**15.8**	**1.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**100**

Standard Deviation: 4.8 MPH
Mean Speed: 26.8 MPH
Median Speed: 26.8 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 20 to 29 MPH
Percent in Ten Mile Pace: 79.3%

85th Percentile: 30.7 MPH
15th Percentile: 22.1 MPH
90th Percentile: 32.3 MPH
95th Percentile: 33.9 MPH

Daily Eastbound Speeds (MPH)

Study Date: Wednesday, 03/20/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	0	0	3	4	1	2	0	0	0	0	0	0	0	0	0	10
01:00 - 01:59	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3
02:00 - 02:59	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
03:00 - 03:59	0	2	3	1	0	1	0	0	0	0	0	0	0	0	0	7
04:00 - 04:59	0	1	6	7	3	2	0	0	0	0	0	0	0	0	0	19
05:00 - 05:59	0	4	13	22	6	1	0	0	0	0	0	0	0	0	0	46
06:00 - 06:59	0	7	28	60	25	1	0	0	0	0	0	0	0	0	0	121
07:00 - 07:59	1	6	67	146	47	3	0	0	0	0	0	0	0	1	0	271
08:00 - 08:59	0	11	105	163	39	2	2	0	0	0	0	0	0	0	0	322
09:00 - 09:59	1	10	65	103	30	4	0	1	0	0	0	0	0	0	0	214
10:00 - 10:59	0	8	56	101	32	2	0	0	0	0	0	0	0	0	0	199
11:00 - 11:59	0	4	36	137	51	3	0	0	1	0	0	0	0	0	0	232
12:00 - 12:59	0	10	75	134	41	1	0	0	0	0	1	1	0	0	0	263
13:00 - 13:59	1	5	67	111	32	2	0	1	0	0	0	0	0	0	0	219
14:00 - 14:59	1	6	78	125	32	2	0	0	0	0	0	0	1	0	1	246
15:00 - 15:59	1	12	107	171	32	1	0	0	0	0	0	0	0	0	0	324
16:00 - 16:59	0	7	70	149	61	1	0	0	0	0	0	0	0	0	0	288
17:00 - 17:59	0	7	78	140	36	2	0	0	0	0	0	0	0	0	0	263
18:00 - 18:59	0	7	48	89	26	4	0	0	0	0	0	0	0	0	0	174
19:00 - 19:59	0	8	62	62	25	0	0	0	1	1	0	0	0	0	0	159
20:00 - 20:59	0	1	21	46	9	0	0	0	0	0	0	0	0	0	0	77
21:00 - 21:59	0	3	14	24	7	0	0	0	0	0	0	0	0	0	0	48
22:00 - 22:59	0	0	4	10	10	1	1	0	1	0	0	0	0	0	0	27
23:00 - 23:59	0	1	7	13	6	1	0	0	1	0	0	0	0	0	0	29
Totals	**5**	**120**	**1014**	**1820**	**552**	**37**	**3**	**2**	**4**	**1**	**1**	**1**	**1**	**1**	**1**	**3563**
ercent of Total	**0.1**	**3.4**	**28.5**	**51.1**	**15.5**	**1.0**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of AM	**0.1**	**3.7**	**26.5**	**51.6**	**16.3**	**1.5**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**100**
ercent of PM	**0.1**	**3.2**	**29.8**	**50.7**	**15.0**	**0.7**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 4.7 MPH
Mean Speed: 26.7 MPH
Median Speed: 26.8 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 20 to 29 MPH
Percent in Ten Mile Pace: 79.5%

85th Percentile: 30.6 MPH
15th Percentile: 22.0 MPH
90th Percentile: 32.2 MPH
95th Percentile: 33.9 MPH

Daily Eastbound Speeds (MPH)

Study Date: Thursday, 03/21/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	0	0	4	2	2	2	1	0	0	0	0	0	0	0	0	11
01:00 - 01:59	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	6
02:00 - 02:59	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	4
03:00 - 03:59	0	1	1	3	2	1	0	0	0	0	0	0	0	0	0	8
04:00 - 04:59	0	0	3	4	3	2	0	0	0	0	0	0	0	0	0	12
05:00 - 05:59	0	1	17	34	9	0	0	0	0	0	0	0	0	0	0	61
06:00 - 06:59	0	1	30	54	23	3	0	0	0	0	0	0	0	0	0	111
07:00 - 07:59	0	4	65	153	41	3	0	0	0	0	0	0	0	0	0	266
08:00 - 08:59	0	9	104	190	47	1	0	0	0	0	0	0	0	0	0	351
09:00 - 09:59	0	10	59	117	36	1	0	0	1	0	0	0	0	0	0	224
10:00 - 10:59	1	9	51	121	48	2	1	0	0	0	0	0	0	0	0	233
11:00 - 11:59	1	5	32	115	35	3	0	0	0	0	0	0	0	0	0	191
12:00 - 12:59	0	5	52	125	35	2	0	0	0	0	0	0	0	0	0	219
13:00 - 13:59	1	6	53	126	30	4	0	0	1	0	0	0	0	0	1	222
14:00 - 14:59	2	8	83	121	40	2	0	1	0	0	0	0	0	0	0	257
15:00 - 15:59	0	9	91	160	43	3	0	0	0	0	0	0	0	0	0	306
16:00 - 16:59	1	6	70	144	53	2	0	0	1	0	0	0	0	0	0	277
17:00 - 17:59	1	6	58	132	45	4	0	0	1	0	0	0	0	0	0	247
18:00 - 18:59	0	3	53	124	35	3	1	0	0	0	0	0	0	0	0	219
19:00 - 19:59	0	1	66	58	18	2	0	0	0	0	0	0	0	0	0	145
20:00 - 20:59	0	0	29	35	16	2	0	0	0	0	0	0	0	0	0	82
21:00 - 21:59	0	3	17	24	12	1	0	0	0	0	0	0	0	0	0	57
22:00 - 22:59	0	2	7	16	8	0	0	0	0	0	0	0	0	0	0	33
23:00 - 23:59	1	3	6	19	2	1	0	0	0	0	0	0	0	0	0	32
Totals	**8**	**92**	**953**	**1882**	**585**	**45**	**3**	**1**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**3574**
ercent of Total	**0.2**	**2.6**	**26.7**	**52.7**	**16.4**	**1.3**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of AM	**0.1**	**2.7**	**24.9**	**54.0**	**16.8**	**1.3**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of PM	**0.3**	**2.5**	**27.9**	**51.7**	**16.1**	**1.2**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 4.4 MPH
Mean Speed: 26.9 MPH
Median Speed: 26.9 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 20 to 29 MPH
Percent in Ten Mile Pace: 79.3%

85th Percentile: 30.9 MPH
15th Percentile: 22.3 MPH
90th Percentile: 32.4 MPH
95th Percentile: 33.9 MPH

Daily Eastbound Speeds (MPH)

Study Date: Friday, 03/22/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	0	1	2	7	1	0	0	0	0	0	0	0	0	0	0	11
01:00 - 01:59	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
02:00 - 02:59	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	4
03:00 - 03:59	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3
04:00 - 04:59	0	0	2	11	2	2	0	0	0	0	0	0	0	0	0	17
05:00 - 05:59	0	2	12	20	7	1	0	0	0	0	0	0	0	0	0	42
06:00 - 06:59	0	6	32	56	13	1	0	0	0	0	0	0	0	0	0	108
07:00 - 07:59	0	9	62	108	32	4	0	0	0	0	0	0	0	0	0	215
08:00 - 08:59	1	6	25	47	18	0	0	0	0	0	0	0	0	0	0	97
09:00 - 09:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 - 10:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 - 11:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 - 12:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13:00 - 13:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14:00 - 14:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15:00 - 15:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16:00 - 16:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17:00 - 17:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18:00 - 18:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19:00 - 19:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20:00 - 20:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21:00 - 21:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22:00 - 22:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23:00 - 23:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	**1**	**25**	**139**	**252**	**76**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**502**
ercent of Total	**0.2**	**5.0**	**27.7**	**50.2**	**15.1**	**1.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of AM	**0.2**	**5.0**	**27.7**	**50.2**	**15.1**	**1.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of PM	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 4.4 MPH
Mean Speed: 26.5 MPH
Median Speed: 26.7 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 20 to 29 MPH
Percent in Ten Mile Pace: 77.9%

85th Percentile: 30.6 MPH
15th Percentile: 21.8 MPH
90th Percentile: 32.3 MPH
95th Percentile: 33.9 MPH

Daily Westbound Speeds (MPH)

Study Date: Monday, 03/18/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 - 01:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 - 02:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 - 03:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 - 04:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 - 05:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 - 06:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 - 07:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 - 08:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 - 09:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:59	0	6	8	25	31	3	0	0	0	0	0	0	0	0	0	73
15:00 - 15:59	0	4	39	133	94	13	1	1	0	0	0	0	0	0	0	285
16:00 - 16:59	0	5	33	127	109	13	1	0	0	0	0	0	0	0	0	288
17:00 - 17:59	1	2	42	184	94	11	0	0	0	0	0	0	0	0	0	334
18:00 - 18:59	0	5	29	116	92	11	2	0	0	0	0	0	0	0	0	255
19:00 - 19:59	0	4	16	65	54	11	0	0	0	0	0	0	0	0	0	150
20:00 - 20:59	0	2	18	49	29	2	0	0	0	0	0	0	0	0	0	100
21:00 - 21:59	0	0	10	39	16	1	0	0	0	0	0	0	0	0	0	66
22:00 - 22:59	0	0	9	13	12	2	0	0	0	0	0	0	0	0	0	36
23:00 - 23:59	0	0	3	7	6	2	1	0	0	0	0	0	0	0	0	19
Totals	**1**	**28**	**207**	**758**	**537**	**69**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1606**
ercent of Total	**0.1**	**1.7**	**12.9**	**47.2**	**33.4**	**4.3**	**0.3**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of AM	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of PM	**0.1**	**1.7**	**12.9**	**47.2**	**33.4**	**4.3**	**0.3**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 4.4 MPH
Mean Speed: 28.8 MPH
Median Speed: 28.7 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 25 to 34 MPH
Percent in Ten Mile Pace: 80.6%

85th Percentile: 33.5 MPH
15th Percentile: 25.0 MPH
90th Percentile: 34.2 MPH
95th Percentile: 34.9 MPH

Daily Westbound Speeds (MPH)

Study Date: Tuesday, 03/19/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	0	0	2	5	5	0	0	0	0	0	0	0	0	0	0	12
01:00 - 01:59	0	0	0	5	4	1	0	0	0	0	0	0	0	0	0	10
02:00 - 02:59	0	0	1	2	0	2	0	0	0	0	0	0	0	0	0	5
03:00 - 03:59	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	4
04:00 - 04:59	0	0	2	5	2	1	0	0	0	0	0	0	0	0	0	10
05:00 - 05:59	0	1	2	5	2	2	0	0	0	0	0	0	0	0	0	12
06:00 - 06:59	0	1	12	36	33	5	0	0	0	0	0	0	0	0	0	87
07:00 - 07:59	0	2	26	89	78	17	3	0	0	0	0	0	0	0	0	215
08:00 - 08:59	5	15	41	132	55	9	0	0	1	0	0	1	0	0	0	259
09:00 - 09:59	0	1	14	79	80	8	2	0	0	0	0	0	0	0	0	184
10:00 - 10:59	0	2	14	87	75	17	0	0	0	0	0	0	0	0	0	195
11:00 - 11:59	1	1	25	96	67	7	0	1	0	0	0	0	0	0	0	198
12:00 - 12:59	0	1	14	106	68	12	1	0	0	0	0	0	0	0	0	202
13:00 - 13:59	0	5	20	92	89	10	0	0	0	0	0	0	0	0	1	217
14:00 - 14:59	0	4	16	134	104	11	0	0	0	0	0	0	0	0	0	269
15:00 - 15:59	3	7	27	126	79	21	1	0	0	0	0	0	0	0	1	265
16:00 - 16:59	0	5	35	137	101	9	2	0	1	1	0	0	0	0	0	291
17:00 - 17:59	0	2	27	158	102	12	1	0	0	0	0	0	0	0	0	302
18:00 - 18:59	1	2	15	84	82	17	1	0	0	0	0	0	0	0	0	202
19:00 - 19:59	0	1	21	84	54	6	0	0	0	0	0	0	0	0	0	166
20:00 - 20:59	2	1	22	62	31	2	0	0	0	0	0	0	0	0	0	120
21:00 - 21:59	1	0	9	45	13	4	1	0	0	0	0	0	0	0	0	73
22:00 - 22:59	0	0	4	14	13	2	0	0	0	0	0	0	0	0	0	33
23:00 - 23:59	0	0	4	5	6	3	1	0	0	0	0	0	0	0	0	19
Totals	**13**	**51**	**354**	**1589**	**1145**	**178**	**13**	**1**	**2**	**1**	**0**	**1**	**0**	**0**	**2**	**3350**
ercent of Total	**0.4**	**1.5**	**10.6**	**47.4**	**34.2**	**5.3**	**0.4**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**100**
ercent of AM	**0.5**	**1.9**	**11.8**	**45.5**	**33.8**	**5.8**	**0.4**	**0.1**	**0.1**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**100**
ercent of PM	**0.3**	**1.3**	**9.9**	**48.5**	**34.4**	**5.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**100**

Standard Deviation: 4.8 MPH
Mean Speed: 29.1 MPH
Median Speed: 29.0 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 25 to 34 MPH
Percent in Ten Mile Pace: 81.6%

85th Percentile: 33.7 MPH
15th Percentile: 25.3 MPH
90th Percentile: 34.4 MPH
95th Percentile: 35.8 MPH

Daily Westbound Speeds (MPH)

Study Date: Wednesday, 03/20/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	8
01:00 - 01:59	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00 - 02:59	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00 - 03:59	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	4
04:00 - 04:59	0	0	1	3	3	3	0	0	0	0	0	0	0	0	0	10
05:00 - 05:59	0	1	2	9	2	5	0	0	0	0	0	0	0	0	0	19
06:00 - 06:59	0	1	7	25	45	10	1	0	0	0	0	0	0	0	0	89
07:00 - 07:59	0	3	13	92	80	14	1	1	0	0	0	0	0	0	0	204
08:00 - 08:59	0	4	28	125	78	15	0	1	0	0	0	0	0	0	0	251
09:00 - 09:59	0	1	17	74	77	20	2	0	0	0	0	1	0	0	0	192
10:00 - 10:59	0	1	8	82	70	6	2	0	0	0	0	0	0	0	0	169
11:00 - 11:59	0	1	13	101	77	18	1	0	0	0	0	0	0	0	0	211
12:00 - 12:59	0	3	25	87	67	16	0	0	0	0	0	0	0	0	0	198
13:00 - 13:59	1	3	27	115	79	7	0	0	0	0	0	0	0	0	0	232
14:00 - 14:59	0	2	16	130	104	10	1	0	0	0	0	0	0	0	0	263
15:00 - 15:59	1	5	33	137	97	9	2	0	0	0	0	0	0	0	0	284
16:00 - 16:59	0	2	36	118	111	15	1	0	0	0	0	0	0	0	0	283
17:00 - 17:59	0	4	36	195	105	16	1	0	0	0	0	0	0	0	0	357
18:00 - 18:59	1	2	19	92	107	12	1	0	0	0	0	0	0	0	0	234
19:00 - 19:59	3	3	22	61	35	4	2	0	0	0	0	0	0	0	0	130
20:00 - 20:59	0	8	22	64	30	1	0	0	0	0	0	0	0	0	0	125
21:00 - 21:59	0	2	19	29	36	3	0	0	0	0	0	0	0	0	0	89
22:00 - 22:59	0	0	3	22	10	5	0	0	0	0	0	0	0	0	0	40
23:00 - 23:59	0	0	4	14	14	3	0	0	0	0	0	0	0	0	0	35
Totals	**6**	**46**	**352**	**1587**	**1231**	**192**	**15**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3432**
ercent of Total	**0.2**	**1.3**	**10.3**	**46.2**	**35.9**	**5.6**	**0.4**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of AM	**0.0**	**1.0**	**7.7**	**45.0**	**37.5**	**7.8**	**0.6**	**0.2**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**100**
ercent of PM	**0.3**	**1.5**	**11.5**	**46.9**	**35.0**	**4.4**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 4.4 MPH
Mean Speed: 29.3 MPH
Median Speed: 29.1 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 25 to 34 MPH
Percent in Ten Mile Pace: 82.1%

85th Percentile: 33.8 MPH
15th Percentile: 25.3 MPH
90th Percentile: 34.5 MPH
95th Percentile: 36.0 MPH

Daily Westbound Speeds (MPH)

Study Date: Thursday, 03/21/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	0	1	0	5	2	0	0	0	0	0	0	0	0	0	0	8
01:00 - 01:59	0	0	0	3	2	1	2	0	0	0	0	0	0	0	0	8
02:00 - 02:59	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	4
03:00 - 03:59	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3
04:00 - 04:59	0	0	1	4	1	0	0	0	0	0	0	0	0	0	0	6
05:00 - 05:59	0	0	2	5	7	0	0	0	0	0	0	0	0	0	0	14
06:00 - 06:59	1	0	9	40	31	11	0	0	0	0	0	0	0	0	0	92
07:00 - 07:59	0	0	10	92	69	17	0	0	0	0	0	0	0	0	0	188
08:00 - 08:59	0	2	15	107	113	9	0	0	0	0	0	0	0	0	0	246
09:00 - 09:59	0	2	21	84	72	13	0	0	0	0	0	0	0	0	0	192
10:00 - 10:59	1	5	26	87	65	9	1	0	0	0	0	0	0	0	0	194
11:00 - 11:59	0	1	27	95	87	8	0	0	0	0	0	0	0	0	0	218
12:00 - 12:59	0	8	14	93	87	20	1	0	0	0	0	0	0	0	0	223
13:00 - 13:59	1	1	27	106	83	8	0	0	0	0	0	0	0	0	0	226
14:00 - 14:59	0	2	15	101	106	10	1	0	0	0	0	0	0	0	0	235
15:00 - 15:59	1	6	33	136	101	11	2	0	0	0	0	0	0	0	0	290
16:00 - 16:59	0	6	28	150	106	13	0	0	1	0	0	0	0	0	0	304
17:00 - 17:59	0	3	29	147	131	20	1	0	0	0	0	0	0	0	0	331
18:00 - 18:59	1	3	8	113	105	10	1	0	0	0	1	0	0	0	0	242
19:00 - 19:59	0	1	30	106	39	2	0	0	0	0	0	0	0	0	0	178
20:00 - 20:59	0	2	16	58	32	4	0	0	0	0	0	0	0	0	0	112
21:00 - 21:59	1	3	8	33	24	1	0	1	0	0	0	0	0	0	0	71
22:00 - 22:59	0	0	6	21	14	3	2	0	0	0	0	0	0	0	0	46
23:00 - 23:59	0	1	7	17	14	1	0	0	0	0	0	0	0	0	0	40
Totals	**6**	**47**	**333**	**1606**	**1293**	**172**	**11**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**3471**
ercent of Total	**0.2**	**1.4**	**9.6**	**46.3**	**37.3**	**5.0**	**0.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of AM	**0.2**	**0.9**	**9.5**	**44.8**	**38.4**	**5.9**	**0.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of PM	**0.2**	**1.6**	**9.6**	**47.0**	**36.6**	**4.5**	**0.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 4.3 MPH
Mean Speed: 29.3 MPH
Median Speed: 29.2 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 25 to 34 MPH
Percent in Ten Mile Pace: 83.5%

85th Percentile: 33.7 MPH
15th Percentile: 25.4 MPH
90th Percentile: 34.4 MPH
95th Percentile: 35.3 MPH

Daily Westbound Speeds (MPH)

Study Date: Friday, 03/22/2019
Unit ID: SGP12
Location: South Street, Portsmouth, NH
Posted Speed: 20

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
00:00 - 00:59	0	0	2	5	3	2	0	0	0	0	0	0	0	0	0	12
01:00 - 01:59	0	1	0	1	3	0	0	0	0	0	0	0	0	0	0	5
02:00 - 02:59	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4
03:00 - 03:59	0	0	1	0	2	1	1	0	0	0	0	0	0	0	0	5
04:00 - 04:59	0	0	2	5	2	0	0	0	0	0	0	0	0	0	0	9
05:00 - 05:59	0	0	1	10	3	1	1	0	0	0	0	0	0	0	0	16
06:00 - 06:59	0	1	4	31	41	5	0	0	0	0	0	0	0	0	0	82
07:00 - 07:59	0	3	16	68	52	13	2	0	0	0	0	0	0	0	0	154
08:00 - 08:59	0	1	6	26	24	8	0	0	0	0	0	0	0	0	0	65
09:00 - 09:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 - 10:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 - 11:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 - 12:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13:00 - 13:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14:00 - 14:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15:00 - 15:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16:00 - 16:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17:00 - 17:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18:00 - 18:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19:00 - 19:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20:00 - 20:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21:00 - 21:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22:00 - 22:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23:00 - 23:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	**0**	**6**	**32**	**148**	**132**	**30**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**352**
ercent of Total	**0.0**	**1.7**	**9.1**	**42.0**	**37.5**	**8.5**	**1.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of AM	**0.0**	**1.7**	**9.1**	**42.0**	**37.5**	**8.5**	**1.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**
ercent of PM	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 4.6 MPH
Mean Speed: 29.8 MPH
Median Speed: 29.6 MPH
Modal Speed: 27.5 MPH

Ten Mile Pace: 25 to 34 MPH
Percent in Ten Mile Pace: 79.5%

85th Percentile: 34.3 MPH
15th Percentile: 25.5 MPH
90th Percentile: 34.9 MPH
95th Percentile: 37.7 MPH

Stephen G. Pernaw & Company, Inc.

Sight Distance Calculations - South Street / Proposed Lot 1 Driveway

May 30, 2019

Given:

A. 85th percentile EB speed = 30.6 mph (Pernaw & Co., Inc. speed survey)
B. 85th percentile WB speed = 33.8 mph (Pernaw & Co., Inc. speed survey)
C. Available sight distance "looking right" = 226 feet (Ambit "Driveway Plan," Sheet C3, dated March 2019, revised 5/9/19.)
D. Available sight distance "looking left" = 345 feet (Ambit "Driveway Plan," Sheet C3, dated March 2019, revised 5/9/19.)

Calculate distance traveled during perception-reaction time

EB = 1.47 X 30.6 X 2.5 = 112.5 feet (113' rounded)
WB = 1.47 X 33.8 X 2.5 = 124.2 feet (125' rounded)

Calculate average grade during braking distance

EB average roadway grade = (62 - 56) / 104' = - 0.058%
WB average roadway grade = (54 - 46) / 90' = +0.089%

Calculate braking distance

$$EB = \frac{(30.6)^2}{30\ (11.2 / 32.2 - .058)} = 107.7 \text{ feet (108' rounded)}$$

$$WB = \frac{(33.8)^2}{30\ (11.2 / 32.2 + .089)} = 87.2 \text{ feet (88' rounded)}$$

Calculate required stopping sight distance:

EB:	Distance during perception-reaction time =	113 feet
EB:	Braking distance =	108 feet
EB:	Total SSD =	221 feet
WB:	Distance during perception-reaction time =	125 feet
WB:	Braking distance =	88 feet
WB:	Total SSD =	213 feet

Conclusions:

1. The available stopping sight distance looking right from the Lot 1 Driveway (226 feet) exceeds the minimum stopping sight distance for 85th percentile speed (221 feet) and is therefore adequate.

2. The available stopping sight distance looking left from the Lot 1 Driveway (345 feet) exceeds the minimum stopping sight distance for 85th percentile speed (213 feet) and is therefore adequate.

Stephen G. Pernaw & Company, Inc.

Sight Distance Calculations - South Street / Proposed Lot 2&3 Driveway

May 30, 2019

Given:

A. 85th percentile EB speed = 30.6 mph (Pernaw & Co., Inc. speed survey)
B. 85th percentile WB speed = 33.8 mph (Pernaw & Co., Inc. speed survey)
C. Available sight distance "looking right" = 437 feet (Ambit "Driveway Plan," Sheet C3, dated March 2019, revised 5/9/19.)
D. Available sight distance "looking left" = 324 feet (Ambit "Driveway Plan," Sheet C3, dated March 2019, revised 5/9/19.)

Calculate distance traveled during perception-reaction time

EB = 1.47 X 30.6 X 2.5 = 112.5 feet (113' rounded)
WB = 1.47 X 33.8 X 2.5 = 124.2 feet (125' rounded)

Calculate average grade during braking distance

EB average roadway grade = 0.0%
WB average roadway grade = (61 - 52) / 120' = +0.075%

Calculate braking distance

$$EB = \frac{(30.6)^2}{30\,(11.2 / 32.2 - .000)} = 89.7 \text{ feet (90' rounded)}$$

$$WB = \frac{(33.8)^2}{30\,(11.2 / 32.2 + .075)} = 90.1 \text{ feet (91' rounded)}$$

Calculate required stopping sight distance:

EB:	Distance during perception-reaction time =	113 feet
EB:	Braking distance =	90 feet
EB:	Total SSD =	203 feet
WB:	Distance during perception-reaction time =	125 feet
WB:	Braking distance =	91 feet
WB:	Total SSD =	216 feet

Conclusions:

1. The available stopping sight distance looking right from the Lot 2&3 Driveway (437 feet) exceeds the minimum stopping sight distance for 85th percentile speed (203 feet) and is therefore adequate.

2. The available stopping sight distance looking left from the Lot 2&3 Driveway (324 feet) exceeds the minimum stopping sight distance for 85th percentile speed (216 feet) and is therefore adequate.