SITE PLAN FOR RICHMOND PROPERTY GROUP
ALPHA TAU OMEGA FRATERNITY
DURHAM TAX MAP 2 LOT 12-12
18 GARRISON AVENUE
DURHAM, NH 03824

CLIENT/OWNER
RICHMOND PROPERTY GROUP
333 N. ALABAMA STREET
INDIANAPOLIS, IN 46204

CIVIL ENGINEER
EMANUEL ENGINEERING, INC.
118 PORTSMOUTH AVENUE, SUITE A202
STRATHAM, NH 03885

LAND SURVEYOR
DOUCET SURVEY, INC.
102 KENT PLACE
NEWMARKET, NH 03857

SOIL SCIENTIST
GZA GEOENVIRONMENTAL
5 COMMERCE PARK NORTH, SUITE 201
BEDFORD, NH 03110

ARCHITECT
KRITTENBRINK ARCHITECTURE
119 W. MAIN STREET
NORMAN, OK 73069

LIGHTING PLAN
KRITTENBRINK ARCHITECTURE
119 W. MAIN STREET
NORMAN, OK 73069

GEOTECHNICAL ENGINEER
S.W. COLE ENGINEERING, INC.
10 CENTRE ROAD
SOMERSWORTH, NH 03878

LANDSCAPE ARCHITECT
WOODBURN & COMPANY
103 KENT PLACE
NEWMARKET, NH 03857

WAIVERS GRANTED BY THE TOWN OF DURHAM ZONING BOARD ON MARCH 17, 2020:

- ZONING ORDINANCE 175.62 - PARKING WITHIN WCOD
- ZONING ORDINANCE 175.11 - PARKING WITHIN FRONT COURT OF BUILDING

PROJECT LOCUS PLAN
1" = 1,000 '

PROJECT DRAWING SET:

	COVER SHEET
1	EXISTING CONDITIONS PLAN (BY DOUCET SURVEY, INC.)
C2	SITE PLAN
C3	GRADING & DRAINAGE PLAN
C4	PAVING & CURBING PLAN
D1 - D2	NOTES
D3 - D5	DETAILS
CS1	CONSTRUCTION SEQUENCING PLAN
SK1	SITE PLAN W/ AERIAL OVERLAY
SK2	COLORED SITE PLAN
E001 - E002	ELECTRICAL SITE PLAN
L1	PRELIMINARY LANDSCAPE CONCEPT
A201 - A203	FLOOR PLANS
A301 - A302	EXTERIOR ELEVATIONS

APPROVED BY THE TOWN OF DURHAM PLANNING BOARD

CHAIRPERSON DATE

SEAL:

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
4/24/20

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
3	APR 24, 2020	FOR APPROVAL	
2	MAR 24, 2020	FOR APPROVAL	
1	MAR 11, 2020	FOR APPROVAL	

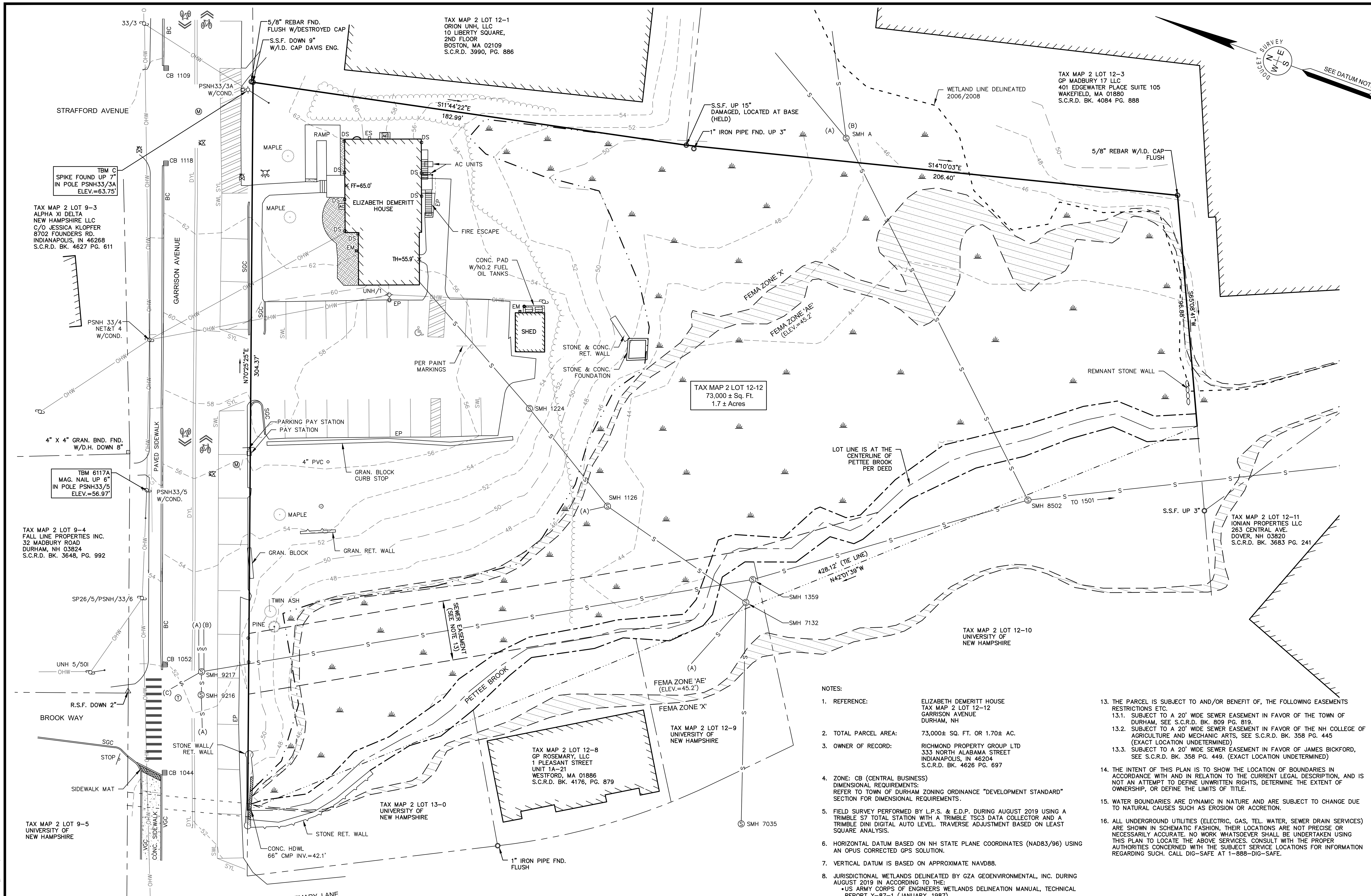
DRAWN: JJM	DESIGN: JJM
CHECKED: BDS	CHECKED: BDS

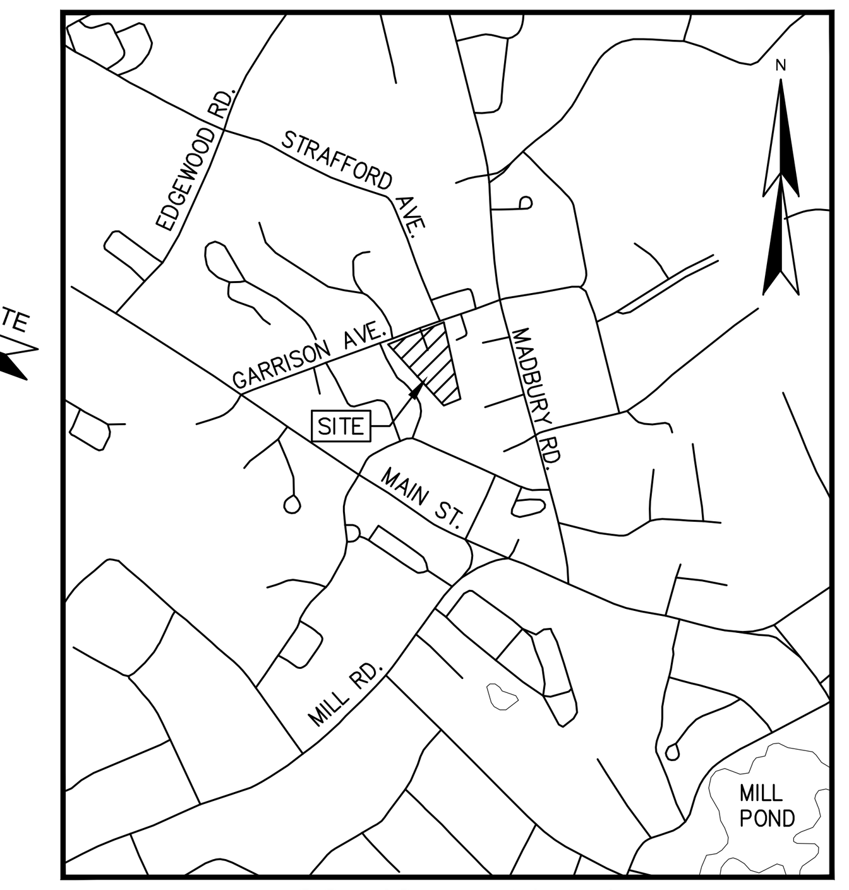
EMANUEL ENGINEERING
civil & structural consultants, land planners
118 Portsmouth Avenue, A202
Stratham, NH 03885
P: 603-772-4400 F: 603-772-4487
www.emanuelengineering.com

CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

TITLE:
COVER
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	AS SHOWN	COVER





LOCATION MAP (n.t.s.)

LEGEND

- LOT LINE
- APPROXIMATE ABUTTERS LOT LINE
- EXISTING EASEMENT LINE
- APPROXIMATE CENTERLINE OF BROOK
- EDGE OF BROOK
- RETAINING WALL
- STONE WALL
- OHW — OVERHEAD WIRE
- S — SEWER LINE
- D — DRAIN LINE
- G — GAS LINE
- 50 — MAJOR CONTOUR LINE
- 48 — MINOR CONTOUR LINE
- TREE LINE
- EDGE OF DELINEATED WETLAND (2019)
- EDGE OF DELINEATED WETLAND (2006/2008)
- WETLAND AREA
- CONCRETE
- LANDSCAPED AREA
- FEMA ZONE 'X' 0.2% ANNUAL CHANCE FLOOD HAZARD
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- UTILITY POLE W/LIGHT
- SIGN
- IRON PIPE/ROD FOUND
- FIRE HYDRANT
- WATER GATE VALVE
- CATCH BASIN
- MANHOLE
- TELEPHONE MANHOLE
- SEWER MANHOLE
- WOODED POST
- BOLLARD
- CONIFEROUS TREE
- DECIDUOUS TREE
- TYP. — TYPICAL
- S.S.F. — STEEL STAKE FOUND
- CONC. — CONCRETE
- GRAN. — GRANITE
- HDWL — HEADWALL
- FF — FINISHED FLOOR ELEVATION
- TH — THRESHOLD ELEVATION
- EP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- EM — ELECTRIC METER
- ES — ELECTRIC SWITCH
- BC — BITUMINOUS CURB
- SWL — SINGLE WHITE LINE
- SYL — SINGLE YELLOW LINE
- DYL — DOUBLE YELLOW LINE
- DS — DOWN SPOUT
- CC — CENTERLINE CHANNEL
- BUILDING

20 0 20 40
SCALE: 1 INCH = 20 FT.

NOTES:

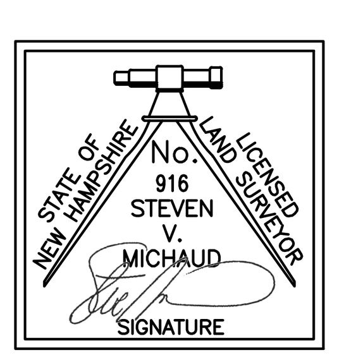
1. REFERENCE: ELIZABETH DEMERITT HOUSE
TAX MAP 2 LOT 12-12
GARRISON AVENUE
DURHAM, NH
2. TOTAL PARCEL AREA: 73,000± SQ. FT. OR 1.70± AC.
3. OWNER OF RECORD: RICHMOND PROPERTY GROUP LTD
333 NORTH ALABAMA STREET
INDIANAPOLIS, IN 46204
S.C.R.D. BK. 4626 PG. 697
4. ZONE: CB (CENTRAL BUSINESS)
DIMENSIONAL REQUIREMENTS:
REFER TO TOWN OF DURHAM ZONING ORDINANCE "DEVELOPMENT STANDARD" SECTION FOR DIMENSIONAL REQUIREMENTS.
5. FIELD SURVEY PERFORMED BY L.P.S. & E.D.P. DURING AUGUST 2019 USING A TRIMBLE S7 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR AND A TRIMBLE DINI DIGITAL AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
6. HORIZONTAL DATUM BASED ON NH STATE PLANE COORDINATES (NAD83/96) USING AN OPUS CORRECTED GPS SOLUTION.
7. VERTICAL DATUM IS BASED ON APPROXIMATE NAVD88.
8. JURISDICTIONAL WETLANDS DELINEATED BY GZA GEOENVIRONMENTAL, INC. DURING AUGUST 2019 IN ACCORDING TO THE:
   - US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JANUARY, 1987).
   - INTERIM REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (OCTOBER 2009).
   - NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). U.S. FISH AND WILDLIFE SERVICE (MAY 1988).
   - CODE OF ADMINISTRATIVE RULES. WETLANDS BOARD, STATE OF NEW HAMPSHIRE (CURRENT).
9. FLOOD HAZARD ZONES: "X" & "AE", PER FIRM MAP #33017C0318E, DATED 9/15/15.
10. PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 2' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY. WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
11. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVED PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.
12. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
13. THE PARCEL IS SUBJECT TO AND/OR BENEFIT OF, THE FOLLOWING EASEMENTS RESTRICTIONS ETC.
   - 13.1. SUBJECT TO A 20' WIDE SEWER EASEMENT IN FAVOR OF THE TOWN OF DURHAM, SEE S.C.R.D. BK. 809 PG. 819.
   - 13.2. SUBJECT TO A 20' WIDE SEWER EASEMENT IN FAVOR OF THE NH COLLEGE OF AGRICULTURE AND MECHANIC ARTS, SEE S.C.R.D. BK. 358 PG. 445 (EXACT LOCATION UNDETERMINED)
   - 13.3. SUBJECT TO A 20' WIDE SEWER EASEMENT IN FAVOR OF JAMES BICKFORD, SEE S.C.R.D. BK. 358 PG. 449. (EXACT LOCATION UNDETERMINED)
14. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH AND IN RELATION TO THE CURRENT LEGAL DESCRIPTION, AND IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP, OR DEFINE THE LIMITS OF TITLE.
15. WATER BOUNDARIES ARE DYNAMIC IN NATURE AND ARE SUBJECT TO CHANGE DUE TO NATURAL CAUSES SUCH AS EROSION OR ACCRETION.
16. ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL. WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.

REFERENCE PLANS:

1. "PLAN OF LAND, LAND OF THE UNIVERSITY OF NEW HAMPSHIRE FOR GAMMA THETA CORPORATION, GARRISON AVENUE, (NO TAX MAP/LOT NUMBER ASSIGNED) DURHAM, NEW HAMPSHIRE" DATED JULY 11, 2014 BY DOUCET SURVEY, INC. S.C.R.D. PLAN 108-020.
2. "EXISTING CONDITIONS PLAN OF 17 & 21 MADBURY ROAD FOR AG ARCHITECTS, PC" DATED MAY 11, 2006 BY DOUCET SURVEY, INC.
3. "TOWN OF DURHAM SEWER EASEMENTS, PETTEE BROOK INTERCEPTOR" DATED NOVEMBER 1964 BY G.L. DAVIS & ASSOCIATES S.C.R.D. POCKET 4 FOLDER 4 PLAN 26.
4. "RE-SUBDIVISION OF LAND IN DURHAM, NH PREPARED FOR THETA GAMMA OF DELTA ZETA HOUSE CORP." DATED AUGUST 4, 1980 BY JOHN W. DURGIN ASSOCIATES, INC. S.C.R.D. DRAWER 21, PLAN 86.
5. "PLAN OF LAND FOR ERNEST CUTTER" DATED OCTOBER 1977 BY JOHN W. DURGIN ASSOCIATES, INC.
6. "UNIVERSITY OF NEW HAMPSHIRE GARRISON AVENUE AREA" DATED SEPTEMBER 16, 1957 BY G.L. DAVIS & ASSOCIATES.

SEWER STRUCTURES

SMH A	SMH 1224	SMH 7132	SMH 9216
RIM ELEV.=46.3'	RIM ELEV.=54.6'	RIM ELEV.=45.3'	RIM ELEV.=52.3'
(A) 8" CIP INV.=42.2'	(BLDG) 6" PVC INV.=47.8'	(A) 8" PVC INV.=38.5'	(A) 8" UNK. INV.=39.6'
(B) 6" CIP INV.=42.5'	(1226) 6" PVC INV.=47.8'	(7035) 8" PVC INV.=38.5'	(9217) 8" UNK. INV.=39.6'
(8502) 8" CIP=42.2'		(1126) 8" PVC INV.=38.5'	
	SMH 1359	(1359) 10" UNK. INV.=38.5'	SMH 9217
SMH 1126	RIM ELEV.=44.6'		RIM ELEV.=52.5'
RIM ELEV.=44.8'	(7132) 10" PVC INV.=36.4'	SMH 8502	(A) 8" CLAY INV.=45.7'
(A) UNK. PVC=39.2'	(9217) 18" PVC INV.=35.6'	RIM ELEV.=42.9'	(B) 8" UNK. INV.=37.3'
(1224) 6" PVC=39.1'	(8502) 18" PVC INV.=35.6'	(SMH A) CC ELEV.=36.1'	(9216) 8" UNK. INV.=37.2'
(7132) 8" PVC=39.1'		(1359) CC ELEV.=35.1'	(C) 18" UNK. CC ELEV.=36.6'
		(1501) CC ELEV.=35.1'	(1359) 18" UNK. CC ELEV.=36.6'



PURSUANT TO RSA 676:18, III:

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION AND FALLS UNDER THE URBAN SURVEY CLASSIFICATION OF THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. RANDOM TRAVERSE SURVEY BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000."

________ L.L.S. #916

3/26/2020 DATE

THE CERTIFICATIONS SHOWN HEREON ARE INTENDED TO MEET REGISTRY OF DEED REQUIREMENTS AND ARE NOT A CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.

EXISTING CONDITIONS PLAN

FOR

EMANUEL ENGINEERING

OF THE

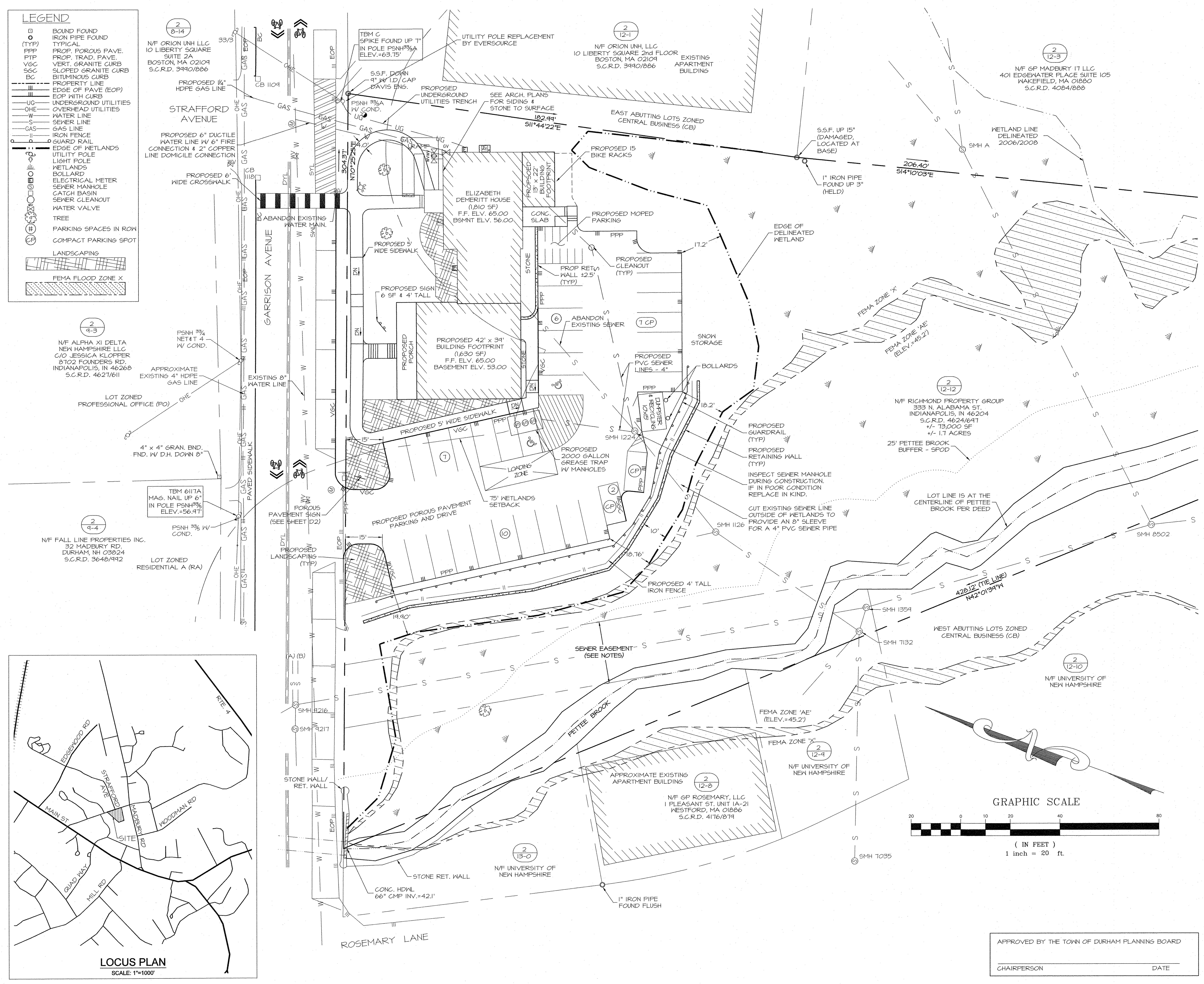
ELIZABETH DEMERITT HOUSE

TAX MAP 2 LOT 12-12
18 GARRISON AVENUE
DURHAM, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY

DRAWN BY: M.T.L.	DATE: AUGUST 2019
CHECKED BY: S.V.M.	DRAWING NO. 6117A
JOB NO. 6117	SHEET 1 OF 1

DOUCET SURVEY LLC
Serving Your Professional Surveying & Mapping Needs
102 Kent Place, Newmarket, NH 03857 (603) 659-6560
2 Commerce Drive (Suite 202) Bedford, NH 03110 (603) 614-4060
10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
http://www.doucetsurvey.com



LEGEND
BOUND FOUND
IRON PIPE FOUND
(TYP) TYPICAL
PPP PROP. POROUS PAVE.
PTP PROP. TRAD. PAVE.
VGC VERT. GRANITE CURB
SGC SLOPED GRANITE CURB
BC BITUMINOUS CURB
PROPERTY LINE
EDGE OF PAVE (EOP)
EOP WITH CURB
UNDERGROUND UTILITIES
OVERHEAD UTILITIES
WATER LINE
SEWER LINE
GAS LINE
IRON FENCE
GUARD RAIL
EDGE OF WETLANDS
UTILITY POLE
LIGHT POLE
WETLANDS
BOLLARD
ELECTRICAL METER
SEWER MANHOLE
CATCH BASIN
SEWER CLEANOUT
WATER VALVE
TREE
PARKING SPACES IN ROW
COMPACT PARKING SPOT
LANDSCAPING
FEMA FLOOD ZONE X
STRAFFORD AVENUE
GARRISON AVENUE
ROSEMARY LANE
PETTEE BROOK
ELIZABETH DEMERITT HOUSE (1,810 SF) F.F. ELV. 65.00 BSMNT ELV. 56.00
PROPOSED 42' x 34' BUILDING FOOTPRINT (1,630 SF) F.F. ELV. 65.00 BASEMENT ELV. 53.00
PROPOSED POROUS PAVEMENT PARKING AND DRIVE
N/F ORION UNH LLC 10 LIBERTY SQUARE SUITE 2A BOSTON, MA 02109 S.C.R.D. 3990/886
N/F ORION UNH, LLC 10 LIBERTY SQUARE 2nd FLOOR BOSTON, MA 02109 S.C.R.D. 3990/886
N/F GP MADBURY 17 LLC 401 EDGEWATER PLACE SUITE 105 WAKEFIELD, MA 01880 S.C.R.D. 4084/888
N/F ALPHA XI DELTA NEW HAMPSHIRE LLC C/O JESSICA KLOPPER 8702 FOUNDERS RD. INDIANAPOLIS, IN 46268 S.C.R.D. 4627/611
N/F FALL LINE PROPERTIES INC. 32 MADBURY RD. DURHAM, NH 03824 S.C.R.D. 3648/492
N/F RICHMOND PROPERTY GROUP 333 N. ALABAMA ST. INDIANAPOLIS, IN 46204 S.C.R.D. 4624/697 +/- 73,000 SF +/- 1.7 ACRES
N/F GP ROSEMARY, LLC 1 PLEASANT ST. UNIT 1A-21 WESTFORD, MA 01886 S.C.R.D. 4176/879
N/F UNIVERSITY OF NEW HAMPSHIRE
EAST ABUTTING LOTS ZONED CENTRAL BUSINESS (CB)
WEST ABUTTING LOTS ZONED CENTRAL BUSINESS (CB)
LOT ZONED PROFESSIONAL OFFICE (PO)
LOT ZONED RESIDENTIAL A (RA)
SEWER EASEMENT (SEE NOTES)
FEMA ZONE 'AE' (ELEV.=45.2')
FEMA ZONE 'X'
WETLAND LINE DELINEATED 2006/2008
25' PETTEE BROOK BUFFER - SPOD
75' WETLANDS SETBACK
LOT LINE IS AT THE CENTERLINE OF PETTEE BROOK PER DEED
PROPOSED 2000 GALLON GREASE TRAP W/ MANHOLES
PROPOSED 5' WIDE SIDEWALK
PROPOSED 15 BIKE RACKS
PROPOSED MOPED PARKING
PROPOSED 4' TALL IRON FENCE
APPROXIMATE EXISTING APARTMENT BUILDING
GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
APPROVED BY THE TOWN OF DURHAM PLANNING BOARD
CHAIRPERSON
DATE
EDGEWOOD RD
STRAFFORD AVE
MAIN ST
MADBURY RD
WOODMAN RD
SITE
RTE 4
QUAD WAY
MILL RD

LOCUS PLAN

SCALE: 1"=1000'

NOTES:

1. OWNER OF RECORD:
   TAX MAP 2, LOT 12-12
   RICHMOND PROPERTY GROUP
   333 N. ALABAMA ST.
   INDIANAPOLIS, IN 46204
   SCRD BK 4626 PG 697
2. THE INTENT OF THIS PLAN IS TO SHOW A PRELIMINARY PROPOSED SITE PLAN FOR A FRATERNITY, DEPICTING BUILDING, DRIVEWAY, DRAINAGE, AND SITE IMPROVEMENTS.
3. PARCEL IS ZONED CENTRAL BUSINESS (CB) PER THE 2006 DURHAM ZONING DISTRICT MAP.
4. A PORTION OF THE PARCEL IS IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33017C0318E, DATED SEPTEMBER 30, 2015.
5. SURVEY FIELDWORK CONDUCTED BY DOUCET SURVEY, LLC IN AUGUST, 2019.
6. SOILS AND WETLANDS WERE DELINEATED BY GZA GEOENVIRONMENTAL, INC. DURING AUGUST, 2019.
7. PROPERTY TO BE SERVICED BY TOWN WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. THIS PARCEL IS SUBJECT TO AND/OR BENEFIT OF EASEMENTS, RESTRICTIONS, ETC. FOR MORE INFORMATION, SEE EXISTING CONDITIONS PLAN BY DOUCET SURVEY, AS PART OF THIS PLAN SET.

REFERENCE PLANS:

1. "PLAN OF LAND, LAND OF THE UNIVERSITY OF NEW HAMPSHIRE FOR GAMMA THETA CORPORATION, GARRISON AVENUE, (NO TAX MAP/LOT NUMBER ASSIGNED) DURHAM, NEW HAMPSHIRE" DATED JULY 11, 2014 BY DOUCET SURVEY, INC. S.C.R.D. PLAN 108-020.
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5. "PLAN OF LAND FOR ERNEST CUTTER" DATED OCTOBER 1977 BY JOHN W. DURGIN ASSOCIATES, INC.
6. "UNIVERSITY OF NEW HAMPSHIRE GARRISON AVENUE AREA" DATED SEPTEMBER 16, 1957 BY G.L. DAVIS & ASSOCIATES.

NOTES (CONT.):

14. ANNUAL REPORT TO TOWN ON POROUS PAVEMENT MAINTENANCE IS REQUIRED.
15. THE WETLAND MEADOW SHOULD BE MOWED APPROXIMATELY 2 TIMES PER YEAR TO PREVENT INVASIVE SPECIES FROM INHABITING WETLANDS.
16. THE FOLLOWING CB DISTRICT REQUIREMENTS ARE PER THE TOWN OF DURHAM'S SITE PLAN REGULATIONS AND ZONING ORDINANCE; DATED 2019:

*TOTAL NUMBER OF RESIDENTS AND ON-SITE EMPLOYEES FOR THE PROPOSED FRATERNITY IS 44.

1.) MINIMUM ONE PARKING SPACE PER RESIDENT (CB DISTRICT EXEMPT W/ FEES)
- REQUIRED = 44 SPACES
- PROPOSED = 32 SPACES

2.) MAXIMUM 30% OF PARKING ARE COMPACT SPACES
- MAX = 9 SPACES
- PROPOSED = 9 SPACES

3.) ONE HANDICAP PARKING SPACE PER 25 SPACES
- REQUIRED = 2 SPACES
- PROPOSED = 2 SPACES

4.) MINIMUM PARKING SPACE DIMENSIONS:
- PERPENDICULAR = 9'x18'
- PARALLEL = 8'x22'
- COMPACT = 8'x16'
- HANDICAP = 8'x18'

5.) PARKING LOTS AT THE SIDE OF PRINCIPLE BUILDINGS SHALL BE SET BACK AS FAR AS THE FRONT OF THE BUILDING OR 15 FT, WHICHEVER IS GREATER
- REQUIREMENT NOT MET
- VARIANCE GRANTED MARCH 17, 2020

6.) MINIMUM AMOUNT OF BIKE RACKS IS 1/3 OF REQUIRED PARKING SPACES
- REQUIRED = 15 BIKE RACKS

7.) MAXIMUM BUILDING HEIGHT IS 30 FT
- HEIGHT = 34.5'

8.) MINIMUM LOT FRONTAGE = 50 FT
- PROVIDED = 304 FT

9.) MINIMUM LOT SIZE = 5,000 SF
- PROVIDED = 73,000 SF

10.) WETLAND SETBACK(BUFFER) = 75 FT
- PROVIDED < 75 FT
- VARIANCE GRANTED MARCH 17, 2020, & CONDITIONAL USE APPLICATION IN PROCESS.

AREA CALCULATIONS

TOTAL AREA OF LOT*	EXISTING IMPERVIOUS AREA	PROPOSED IMPERVIOUS AREA**	PROPOSED POROUS PAVE. AREA
77,900 SF	9,507 SF	6,410 SF	10,070 SF

* - TOTAL AREA OF LOT IS MEASURED BY TIE LINE, NOT PETTEE BROOK.
**- PROPOSED IMPERVIOUS AREA EXCLUDES POROUS PAVE. PARKING LOT & DRIVEWAY.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
3	MAY 07, 2020	FOR APPROVAL	
2	APR 24, 2020	FOR APPROVAL	
1	MAR 24, 2020	FOR APPROVAL	

DRAWN: MCV	DESIGN: MCV
CHECKED: BDS	CHECKED: BDS

EMANUEL ENGINEERING
civil & structural consultants, land planners
118 PORTSMOUTH AVENUE, A202
STRATHAM, NH 03885
P: 603-772-4400 F: 603-772-4487
WWW.EMANUELENGINEERING.COM

CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

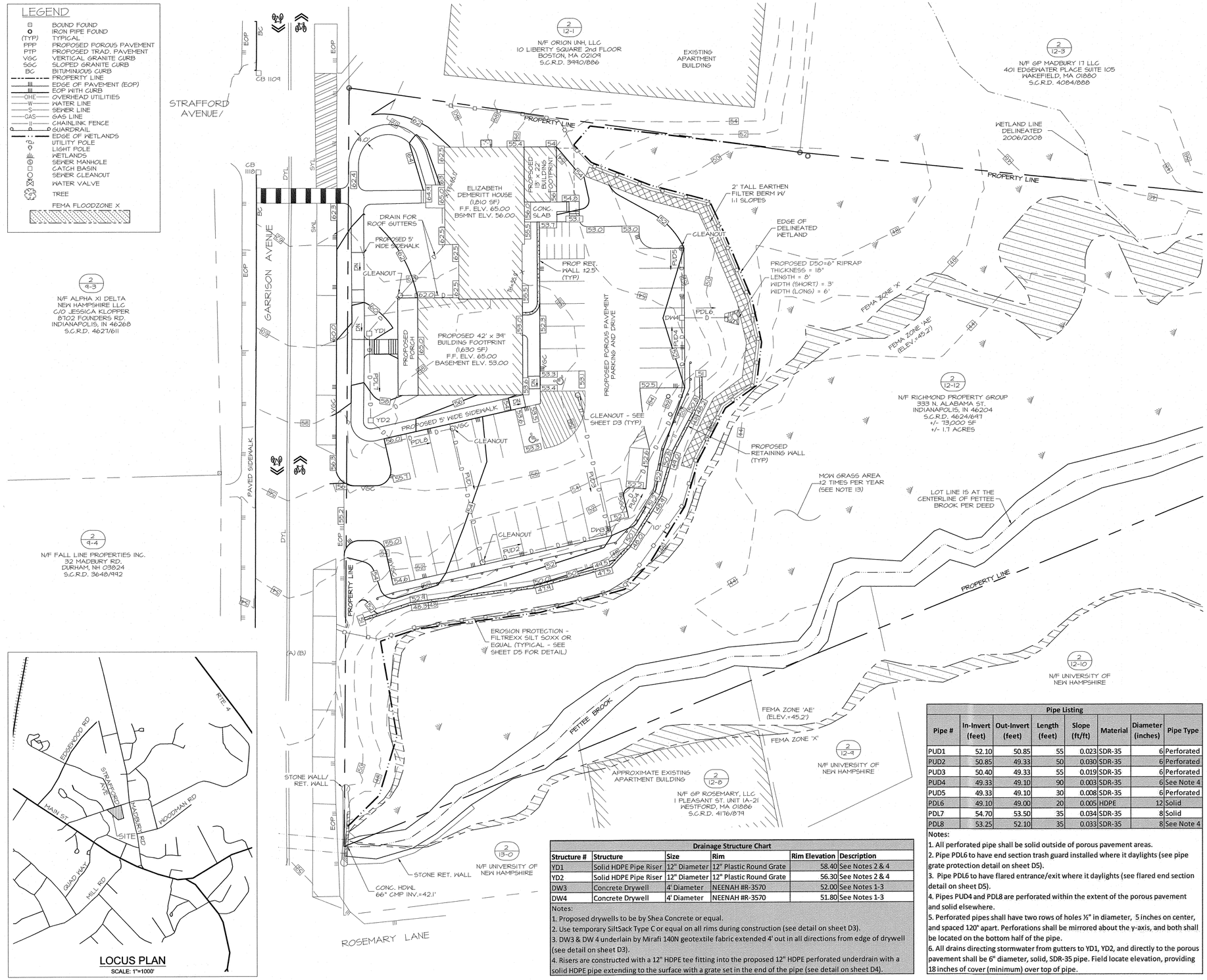
SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/7/20

TITLE:
SITE PLAN
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	1"=20'	C2

LEGEND

⊡	BOUND FOUND
o	IRON PIPE FOUND
(TYP)	TYPICAL
PPP	PROPOSED POROUS PAVEMENT
PTP	PROPOSED TRAD. PAVEMENT
VGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
BC	BITUMINOUS CURB
	PROPERTY LINE
	EDGE OF PAVEMENT (EOP)
	EOP WITH CURB
OHE	OVERHEAD UTILITIES
W	WATER LINE
S	SEWER LINE
GAS	GAS LINE
	CHAINLINK FENCE
	GUARDRAIL
	EDGE OF WETLANDS
	UTILITY POLE
	LIGHT POLE
	WETLANDS
	SEWER MANHOLE
	CATCH BASIN
	SEWER CLEANOUT
	WATER VALVE
	TREE
	FEMA FLOODZONE X



LOCUS PLAN
SCALE: 1"=1000'

Drainage Structure Chart					
Structure #	Structure	Size	Rim	Rim Elevation	Description
YD1	Solid HDPE Pipe Riser	12" Diameter	12" Plastic Round Grate	58.40	See Notes 2 & 4
YD2	Solid HDPE Pipe Riser	12" Diameter	12" Plastic Round Grate	56.30	See Notes 2 & 4
DW3	Concrete Drywell	4' Diameter	NEENAH #R-3570	52.00	See Notes 1-3
DW4	Concrete Drywell	4' Diameter	NEENAH #R-3570	51.80	See Notes 1-3

Notes:
1. Proposed drywells to be by Shea Concrete or equal.
2. Use temporary SiltSack Type C or equal on all rims during construction (see detail on sheet D3).
3. DW3 & DW 4 underlain by Mirafi 140N geotextile fabric extended 4' out in all directions from edge of drywell (see detail on sheet D3).
4. Risers are constructed with a 12" HDPE tee fitting into the proposed 12" HDPE perforated underdrain with a solid HDPE pipe extending to the surface with a grate set in the end of the pipe (see detail on sheet D4).

Pipe Listing							
Pipe #	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	Material	Diameter (inches)	Pipe Type
PUD1	52.10	50.85	55	0.023	SDR-35	6	Perforated
PUD2	50.85	49.33	50	0.030	SDR-35	6	Perforated
PUD3	50.40	49.33	55	0.019	SDR-35	6	Perforated
PUD4	49.33	49.10	90	0.003	SDR-35	6	See Note 4
PUD5	49.33	49.10	30	0.008	SDR-35	6	Perforated
PDL6	49.10	49.00	20	0.005	HDPE	12	Solid
PDL7	54.70	53.50	35	0.034	SDR-35	8	Solid
PDL8	53.25	52.10	35	0.033	SDR-35	8	See Note 4

Notes:
1. All perforated pipe shall be solid outside of porous pavement areas.
2. Pipe PDL6 to have end section trash guard installed where it daylights (see pipe grate protection detail on sheet D5).
3. Pipe PDL6 to have flared entrance/exit where it daylights (see flared end section detail on sheet D5).
4. Pipes PUD4 and PDL8 are perforated within the extent of the porous pavement and solid elsewhere.
5. Perforated pipes shall have two rows of holes ½" in diameter, 5 inches on center, and spaced 120° apart. Perforations shall be mirrored about the y-axis, and both shall be located on the bottom half of the pipe.
6. All drains directing stormwater from gutters to YD1, YD2, and directly to the porous pavement shall be 6" diameter, solid, SDR-35 pipe. Field locate elevation, providing 18 inches of cover (minimum) over top of pipe.

NOTES:

1. OWNER OF RECORD:
   TAX MAP 2, LOT 12-12
   RICHMOND PROPERTY GROUP
   333 N. ALABAMA ST.
   INDIANAPOLIS, IN 46204
   SCRD BK 4626 PG 697
2. THE INTENT OF THIS PLAN IS TO SHOW THE DRAINAGE STRUCTURES AND PROPOSED GRADING ASSOCIATED WITH THE SITE IMPROVEMENTS.
3. PARCEL IS ZONED CENTRAL BUSINESS (CB) PER THE 2006 DURHAM ZONING DISTRICT MAP.
4. A PORTION OF THE PARCEL IS IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33017C0318E, DATED SEPTEMBER 30, 2015.
5. SURVEY FIELDWORK CONDUCTED BY DOUCET SURVEY, LLC IN AUGUST, 2019.
6. SOILS AND WETLANDS WERE DELINEATED BY GZA GEOENVIRONMENTAL, INC. DURING AUGUST, 2019.
7. PROPERTY TO BE SERVICED BY TOWN WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. HOUSE ROOF GUTTERS OR DRIP EDGES DRAIN INTO POROUS PAVEMENT. ALL DOWNSPOUT LEADERS TO HAVE A LEADER ADAPTER/GAP INSTALLED TO ALLOW FOR OVERFLOW AT THE SURFACE.
13. THE WETLAND MEADOW SHOULD BE MOWED APPROXIMATELY 2 TIMES PER YEAR TO PREVENT INVASIVE SPECIES FROM INHABITING WETLANDS.

REFERENCE PLANS:

1. "PLAN OF LAND, LAND OF THE UNIVERSITY OF NEW HAMPSHIRE FOR GAMMA THETA CORPORATION, GARRISON AVENUE, (NO TAX MAP/LOT NUMBER ASSIGNED) DURHAM, NEW HAMPSHIRE" DATED JULY 11, 2014 BY DOUCET SURVEY, INC. S.C.R.D. PLAN 108-020.
2. "EXISTING CONDITIONS PLAN OF 17 & 21 MADBURY ROAD FOR AG ARCHITECTS, PC" DATED MAY 11, 2006 BY DOUCET SURVEY, INC.
3. "TOWN OF DURHAM SEWER EASEMENTS, PETTEE BROOK INTERCEPTOR" DATED NOVEMBER 1964 BY G.L. DAVIS & ASSOCIATES S.C.R.D. POCKET 4 FOLDER 4 PLAN 26.
4. "RE-SUBDIVISION OF LAND IN DURHAM, NH PREPARED FOR THETA GAMMA OF DELTA ZETA HOUSE CORP." DATED AUGUST 4, 1980 BY JOHN W. DURGIN ASSOCIATES, INC. S.C.R.D. DRAWER 21, PLAN 86.
5. "PLAN OF LAND FOR ERNEST GUTTER" DATED OCTOBER 1977 BY JOHN W. DURGIN ASSOCIATES, INC.
6. "UNIVERSITY OF NEW HAMPSHIRE GARRISON AVENUE AREA" DATED SEPTEMBER 16, 1957 BY G.L. DAVIS & ASSOCIATES.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
3	MAY 07, 2020	FOR APPROVAL	
2	APR 24, 2020	FOR APPROVAL	
1	MAR 24, 2020	FOR APPROVAL	

DRAWN: JJM | DESIGN: JJM
CHECKED: BDS | CHECKED: BDS

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CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

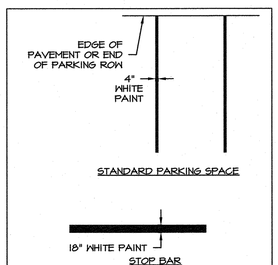
SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/7/20

TITLE:
GRADING & DRAINAGE PLAN
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	1"=20'	C3

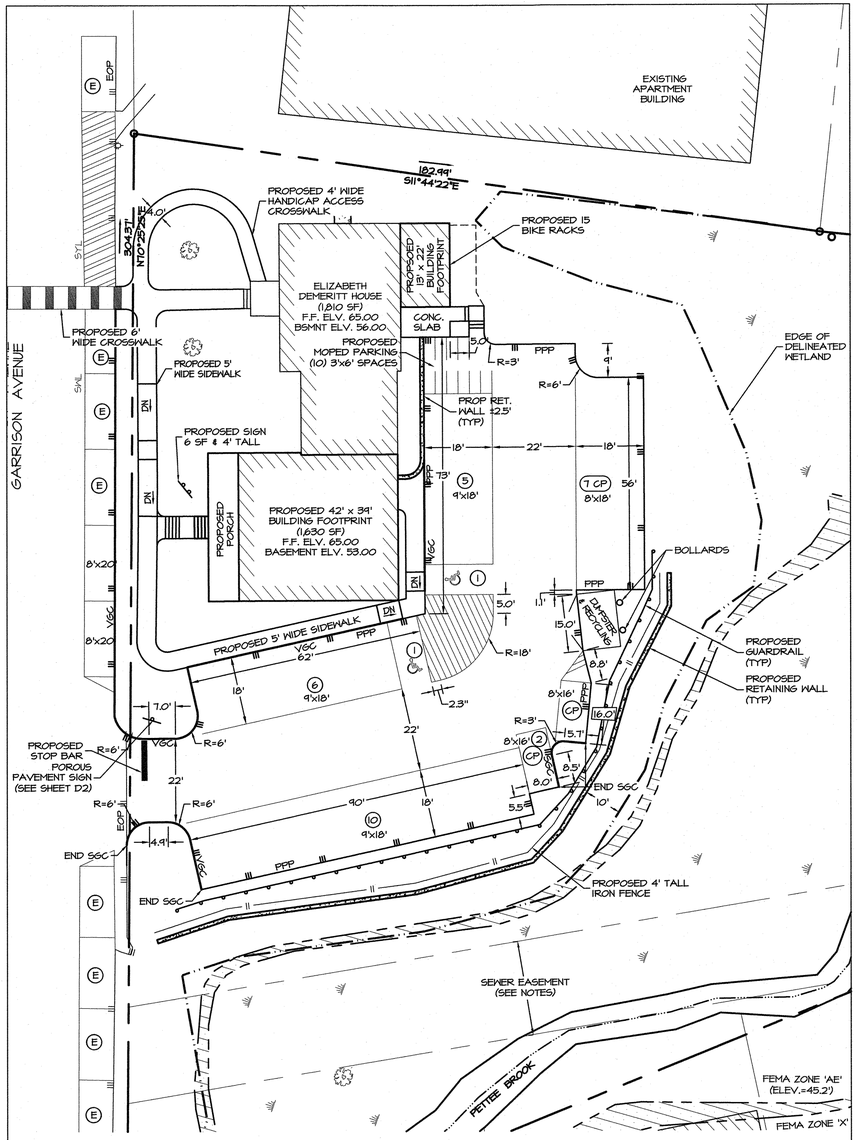
LEGEND

⊡	BOUND FOUND
○	IRON PIPE FOUND
(TYP)	TYPICAL
PPP	PROPOSED POROUS PAVEMENT
PTP	PROPOSED TRAD. PAVEMENT
VGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
BC	BITUMINOUS CURB
	PROPERTY LINE
	EDGE OF PAVEMENT (EOP)
	EOP WITH CURB
UG	UNDERGROUND UTILITIES
OHE	OVERHEAD UTILITIES
W	WATER LINE
S	SEWER LINE
GAS	GAS LINE
II	IRON FENCE
	GUARD RAIL
	EDGE OF WETLANDS
	UTILITY POLE
	LIGHT POLE
	WETLANDS
	BOLLARD
E	ELECTRICAL METER
S	SEWER MANHOLE
	CATCH BASIN
	SEWER CLEANOUT
	WATER VALVE
	TREE
#	PARKING SPACES IN ROW
CP	COMPACT PARKING SPOT
	LANDSCAPING
	FEMA FLOOD ZONE X

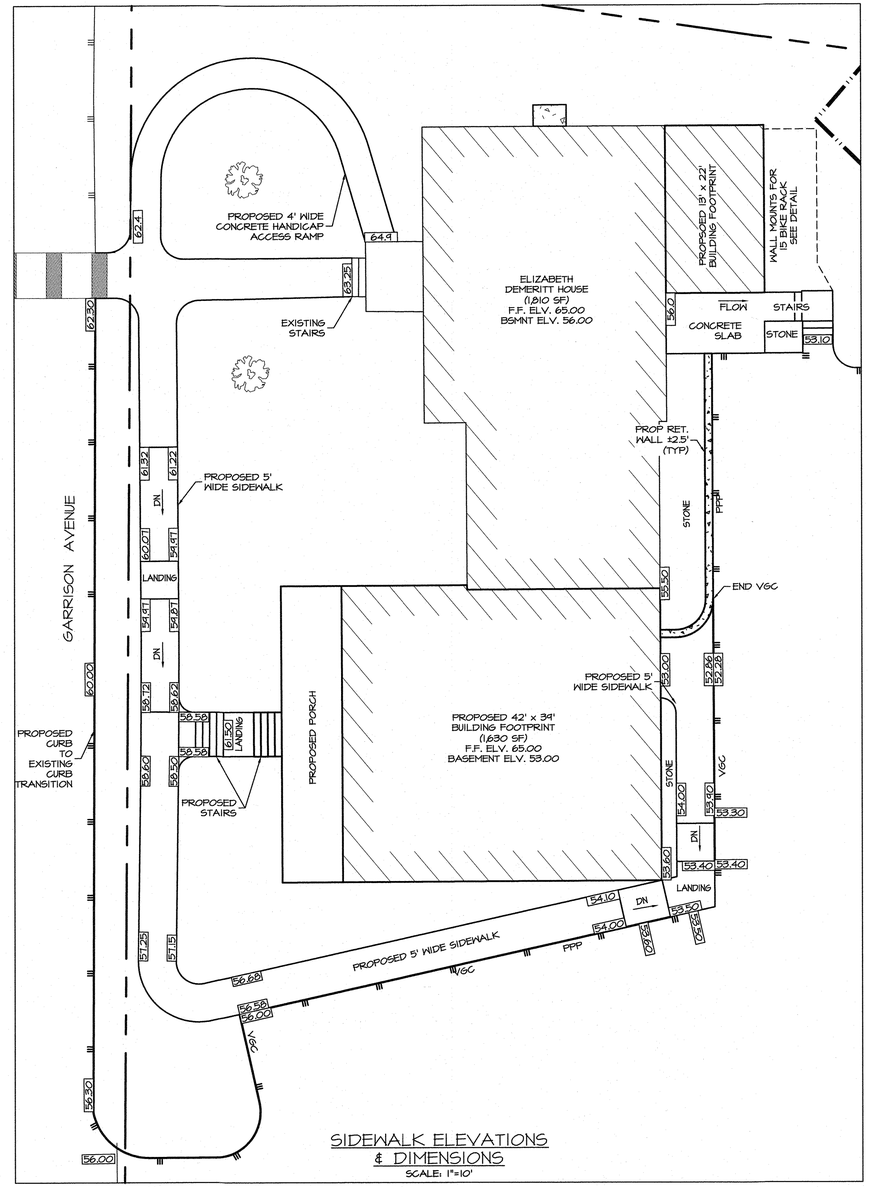


PAINTING NOTES:
1. ALL PAINTING TO BE REFLECTIVE.
2. SEE SHEET D4 FOR DETAILS ON PARKING STALLS FOR THE PHYSICALLY CHALLENGED.
3. SEE PLAN FOR STANDARD AND COMPACT PARKING STALL DIMENSIONS.

PAINT STRIPING DETAILS
NOT TO SCALE

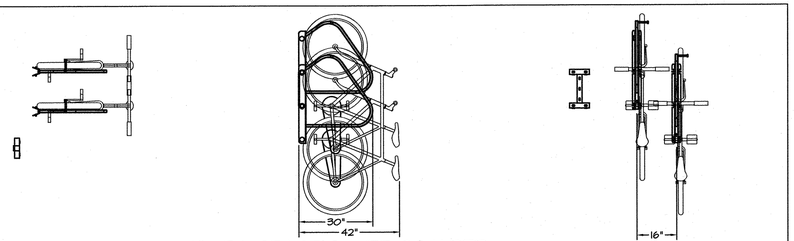


PAVING DIMENSIONS
SCALE: 1"=20'



SIDEWALK ELEVATIONS & DIMENSIONS
SCALE: 1"=10'

LOCUS PLAN
SCALE: 1"=1000'



ULTRA SPACE SAVER SQUARED WALL-MOUNTED BIKE RACK BY DERO
NOT TO SCALE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTES:

1. OWNER OF RECORD:
   TAX MAP 2, LOT 12-12
   RICHMOND PROPERTY GROUP
   333 N. ALABAMA ST.
   INDIANAPOLIS, IN 46204
   SCRD BK 4626 PG 647
2. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION, SIZE, PAVING, AND RADII OF THE DRIVEWAY, PARKING LOT, CURBING, AND SIDEWALKS WITHIN THE SITE.
3. PARCEL IS ZONED CENTRAL BUSINESS (CB) PER THE 2006 DURHAM ZONING DISTRICT MAP.
4. A PORTION OF THE PARCEL IS IN A FLOOD HAZARD ZONE, REFERENCE FLOOD INSURANCE RATE MAP 33011C0318E, DATED SEPTEMBER 30, 2015.
5. SURVEY FIELDWORK CONDUCTED BY DOUCET SURVEY, LLC IN AUGUST, 2019.
6. SOILS AND WETLANDS WERE DELINEATED BY GZA GEOENVIRONMENTAL, INC. DURING AUGUST, 2019.
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8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
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11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

REFERENCE PLANS:

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6. "UNIVERSITY OF NEW HAMPSHIRE GARRISON AVENUE AREA" DATED SEPTEMBER 16, 1951 BY G.L. DAVIS & ASSOCIATES.

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TITLE:
PAVING & CURBING PLAN
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ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	AS SHOWN	C4

EROSION AND SEDIMENTATION CONTROL CONSTRUCTION PHASING AND SEQUENCING:

1. SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
2. INSTALL SILT FENCING AND/OR HAY BALE BARRIERS AS PER DETAILS AND AT SEDIMENT MIGRATION.
3. CONSTRUCT TREATMENT SWALES , LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S) AS PER DETAIL AND AT LOCATIONS SHOWN ON THE DRAWINGS. MAINTAIN (TOP DRESS) REGULARLY TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS.
5. STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL.
6. ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
7. FINISH GRADE AND COMPACT SITE.
8. RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
9. STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
10. RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
11. SILT FENCING AND HAY BALES TO REMAIN AND BE MAINTAINED FOR TWENTY FOUR MONTHS AFTER CONSTRUCTION TO INSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT FENCING, HAY BALES AND TRAPPED SILT ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
12. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
13. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
14. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
15. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
16. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
17. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

WINTER CONSTRUCTION NOTES (OCTOBER 15 TO MAY 1):

1. 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 COMPETED IN ADVANCE OF THAW OR SPRING MELT EVENT.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 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.

GRASS SWALE MAINTENANCE:

1. TIMELY MAINTENANCE IS IMPORTANT TO KEEP THE VEGETATION IN THE SWALE IN GOOD CONDITION. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO KEEP THE VEGETATION IN VIGOROUS CONDITION AND TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION, HOWEVER, IT SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE FILTERING EFFECT. FERTILIZE ON AN "AS NEEDED" BASIS TO KEEP THE GRASS HEALTHY. OVER FERTILIZATION CAN RESULT IN THE SWALE BECOMING A SOURCE OF POLLUTION.
2. THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE SWALE. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND RE-VEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:

1. CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON NEW HAMPSHIRE STORMWATER MANUAL, VOLUMES 1-3: DATED DECEMBER 2008, PREPARED BY NHDES.
3. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
   - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED.
   - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED.
   - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
4. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
5. SEE WINTER CONSTRUCTION NOTES IF SCHEDULE AND DATES ARE APPLICABLE.
6. ALL DITCHES, SWALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
7. ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED IN THE SHORTEST PRACTICAL TIME. ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE.
8. EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED.
9. TEMPORARY & LONG TERM SEEDING: USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
10. STRAW OR HAY BALE BARRIERS AND SILTATION FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILT FENCE AND ANY EDGE OF WET AREA.
11. SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
12. SEDIMENT BASIN(S), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
13. STRAW BALE AND/OR SILT FENCE BARRIERS WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
14. TREATMENT SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
15. 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.
16. TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC.) MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.

SEEDING AND STABILIZATION FOR LOAMED SITE:

1. FOR TEMPORARY & LONG TERM SEEDINGS (BY SEPTEMBER 15 OF THE SAME YEAR OF DISTURBANCE) USE AGWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL.
2. COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE.
3. FERTILIZER & LIME:
   NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P205) 100 LBS/ACRE, POTASH (K20) 100 LBS/ACRE, LIME 2000 LBS/ACRE.
4. MULCH: HAY OR STRAW 1.5-2 TONS/ACRE.
5. GRADING AND SHAPING:
   SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
6. SEED BED PREPARATION
   - SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
   - STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

STABILIZATION CONSTRUCTION ENTRANCE SPECIFICATIONS:

1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE (MINIMUM), RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 75 FEET (OR 50 FEET WITH A 3 TO 6 INCH MOUNTABLE BERM).
3. THE THICKNESS OF THE STONE FOR THE STABILIZATION 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, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARDS 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 OF 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 RIGHTS-OF-WAY MUST BE REMOVED PROMPTLY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

FILTREXX LAND IMPROVEMENT SYSTEMS INSPECTION & MAINTENANCE:

1. CONSULT FILTREXX SWPP CUT SHEETS FOR ALL FILTREXX PRODUCTS PRIOR TO INSTALLATION AND FOR MAINTENANCE GUIDELINES. HTTP://WWW.FILTREXX.COM/DESIGN_CUT_SHEETS.HTM
2. ROUTINE INSPECTION SHOULD BE CONDUCTED WITHIN 24 HRS OF A RUNOFF EVENT OR AS DESIGNATED BY THE REGULATING AUTHORITY. UNITS SHOULD BE REGULARLY INSPECTED TO MAKE SURE THEY MAINTAIN THEIR SHAPE AND ARE PRODUCING ADEQUATE HYDRAULIC FLOW-THROUGH, DITCH/CHANNEL EROSION CONTROL, AND SEDIMENT REMOVAL.
3. IF PONDING BECOMES EXCESSIVE, ADDITIONAL CHECK DAMS, LEVEL SPREADERS, OR SEDIMENT CONTROL UNITS FOR SEDIMENT REMOVAL MAY BE REQUIRED.
4. SEDIMENT ACCUMULATION SHOULD BE REMOVED ONCE IT REACHES THE HEIGHT OF THE CHECK DAM OR UNIT. ALTERNATIVELY, ANOTHER UNIT MAY BE INSTALLED SLIGHTLY UPSLOPE, ON TOP OF THE EXISTING ONE. THIS PROCESS IS NOT CONSIDERED A SOIL DISTURBING ACTIVITY.
5. STORM DEBRIS ACCUMULATION BEHIND CHECK DAMS, LEVEL SPREADER, SEDIMENT CONTROL UNIT, ETC. SHOULD NEVER BE HIGHER THAN THE SIDES OF THE CHECK DAM/UNIT. STORM RUNOFF OVERFLOW SHALL MAINTAIN THE UNITS IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
6. IF A UNIT HAS BEEN DAMAGED, IT SHALL BE REPAIRED, OR REPLACED IF BEYOND REPAIR.
7. THE CONTRACTOR SHALL REMOVE SEDIMENT AT THE BASE OF THE UPSLOPE SIDE OF UNITS WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE SOXX, OR AS DIRECTED BY THE ENGINEER.
8. AS AN ALTERNATIVE, ANOTHER SOXX UNIT MAY BE INSTALLED ADJACENT AND PARALLEL TO THE UPSLOPE SIDE OF THE ORIGINAL TO INCREASE SEDIMENT STORAGE CAPACITY. SOXX SEDIMENT BACKUP IN CENTER OF THE DITCH/CHANNEL SHALL REMAIN LOWER THAN THE SIDES.
9. IF SOXX UNIT BECOMES CLOGGED WITH DEBRIS AND SEDIMENT, IMMEDIATE REMOVAL OF DEBRIS AND SEDIMENT SHOULD BE CONDUCTED TO ASSURE PROPER DRAINAGE AND WATER FLOW THROUGH THE DITCH OR CHANNEL. STORM RUNOFF OVERFLOW OF THE SOXX UNIT IS ACCEPTABLE.
10. SOXX UNITS SHALL BE MAINTAINED UNTIL DISTURBED AREA AROUND THE DEVICE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.
11. THE FILTERMEDIATM MAY BE DISPERSED ON SITE ONCE DISTURBED AREA HAS PERMANENTLY STABILIZED, CONSTRUCTION ACTIVITY CEASED, OR DETERMINED BY THE ENGINEER.
12. PERMANENT VEGETATED FILTER STRIPS WILL BE LEFT INTACT.

SECTION I- GENERAL (POROUS ASPHALT PAVEMENTS)

1.01 SUBMITTALS
A. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE PROPOSED SOURCE AND QUALIFICATIONS OF THE PROPOSED SOURCE(S) OF THE HOT MIX ASPHALT AT LEAST 14 DAYS IN ADVANCE OF ANTICIPATED PAVING DATE.
B. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE PROPOSED INSTALLER QUALIFICATIONS AT LEAST 14 DAYS IN ADVANCE OF ANTICIPATED PAVING DATE.
C. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE CONTRACTOR'S PROPOSED CONSTRUCTION PHASING PLAN AT LEAST 14 DAYS IN ADVANCE OF MOBILIZING TO THE SITE FOR CONSTRUCTION. UPDATES TO THE CONSTRUCTION PHASING PLAN SHALL BE PROVIDED TO THE SUPERVISORY ENGINEER AT LEAST 48 HOURS IN ADVANCE OF THE PROPOSED. THE CONSTRUCTION PHASING PLAN SHALL CONTAIN THE ELEMENTS AS DETAILED WITHIN THIS SECTION AND DRAWINGS.
D. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE PROPOSED THIRD PARTY QUALITY CONTROL FIRM TO CONDUCT THIRD PARTY QUALITY CONTROL OF THE ASPHALT HOT MIX PLANT PRODUCTION AT LEAST 14 DAYS IN ADVANCE OF ANTICIPATED PAVING DATE.
E. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE QUALITY CONTROL RESULTS AND JOB MIX FORMULA FOR THE POROUS ASPHALT MATERIAL AT LEAST 14 DAYS IN ADVANCE OF THE ANTICIPATED PAVING DATE.

1.02 QUALIFICATIONS
A. THE POROUS ASPHALT SHALL BE SUPPLIED FROM A HOT MIX MATERIAL PROVIDER THAT HAS THE FOLLOWING MINIMUM QUALIFICATIONS:
1. SHALL HAVE SUCCESSFULLY PRODUCED A MINIMUM OF THREE (3) POROUS ASPHALT PAVING JOBS IN THE PAST FIVE (5) YEARS.
2. CAPABLE OF PRODUCING POROUS ASPHALT WITH A PG76-28 BINDER; UNDER NO CIRCUMSTANCES IS A PGAB 64-28 ACCEPTABLE IN REPLACE OF PG 76-28.
3. CAPABLE OF CONDUCTING THE MATERIALS TESTING FOR QUALITY CONTROL AS DOCUMENTED IN SECTION IV PART 4, TABLE 3, TABLE 4, TABLE 5;
4. CAPABLE OF PROVIDING MATERIAL CERTIFICATES SIGNED BY THE PLANTS' AUTHORIZED REPRESENTATIVE; AND
5. CAPABLE OF PROVIDING THE MOST RECENT ANNUAL PLANT SCALE TESTING DOCUMENTATION.
B. THE POROUS ASPHALT INSTALLER SHALL HAVE THE FOLLOWING MINIMUM QUALIFICATIONS:
1. SHALL HAVE SUCCESSFULLY COMPLETED A MINIMUM OF THREE (3) POROUS ASPHALT PAVING JOBS IN THE PAST FIVE (5) YEARS.
2. PROVIDE A SITE SUPERINTENDENT THAT WILL BE ON-SITE DURING THE PROJECT THAT HAS SUCCESSFULLY COMPLETED A MINIMUM OF THREE (3) POROUS ASPHALT PAVING JOBS IN THE PAST FIVE (5) YEARS.

1.03 TRANSPORTATION AND SHIPPING
A. POROUS ASPHALT MATERIALS SHALL BE TRANSPORTED TO THE SITE SUCH THAT THE TEMPERATURE OF THE ASPHALT AT THE TIME OF DISCHARGE FROM THE HAUL VEHICLE SHALL BE AS PER SECTION IV - 3.05 E TEMPERATURE REQUIREMENTS, UNLESS OTHERWISE SPECIFIED BY THE HOT MIX PLANT AND APPROVED BY THE SUPERVISORY ENGINEER.

1.04 ENVIRONMENTAL CONDITIONS
A. THE ASPHALT PAVING CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY EROSION AND SEDIMENT CONTROLS THAT ARE DAMAGED FROM PAVING ACTIVITIES.
B. WASTE GENERATED DURING ASPHALT PAVING SHALL BE PROPERLY DISPOSED OF ACCORDING TO THE PROJECT SPECIFICATIONS AND LOCAL, STATE, AND FEDERAL REGULATIONS.
C. ASPHALT HAUL TRUCKS SHALL EXIT THE SITE THROUGH THE DESIGNATED STABILIZED CONSTRUCTION ENTRANCE TO PREVENT TRACK OUT.

1.05 SCHEDULE FOR CONSTRUCTION DATES
A. AFTER MAY 15 OR THE DATE OF ASPHALT PLANT OPENING UNTIL DECEMBER 1 OR THE DATE OF ASPHALT PLANT CLOSURE OR PER APPROVAL OF SUPERVISING ENGINEER.

1.06 REQUIREMENTS FOR CONSTRUCTION PHASING
A. CONSTRUCTION PHASING, SEQUENCING AND ENGINEERING OVERSIGHT IS REQUIRED TO ENSURE THE SUCCESSFUL PRODUCTION, INSTALLATION, AND LONG-TERM PERFORMANCE OF POROUS PAVEMENT SYSTEMS. PROPER COORDINATION OF THESE PROCEDURES WITH THE CONTRACTOR AND INSPECTION OF THE PAVEMENT SUBGRADE DURING CONSTRUCTION IS CRITICAL TO PROVIDE ACCESS AND PREVENT DAMAGE TO POROUS PAVEMENT SYSTEM COMPONENTS. TEMPORARY CONSTRUCTION METHODS AND PHASING CONSIDERATIONS ACCOUNT FOR THE NECESSARY USE OF LARGE CONSTRUCTION EQUIPMENT OVER THE POROUS PAVEMENT LAYERS WHILE MAINTAINING ITS STRUCTURAL INTEGRITY AND INFILTRATIVE CAPACITY. THE CONTRACTOR'S CONSTRUCTION PHASING SEQUENCE PLAN SHALL INCLUDE PROTECTIVE AND CORRECTIVE ACTIONS DETAILED BELOW FOR EXPECTED IMPACTS FROM CONSTRUCTION ACTIVITIES.
B. THE FOLLOWING CONSTRUCTION PHASING IS INTENDED AS A GUIDE. PHASING MUST BE PLANNED SUCH THAT NO CONSTRUCTION TRAFFIC IS PERMITTED ON A COMPLETED POROUS ASPHALT WEARING COURSE SURFACE AREA. CONSTRUCTION TRAFFIC IS PERMITTED ON THE TEMPORARY CONSTRUCTION ROAD, SUBGRADE AND ON THE SUBBASE DURING PREPARATION. THE USE OF A TEMPORARY POROUS ASPHALT CONSTRUCTION ROAD SHOULD ENABLE CONSTRUCTION TRAFFIC TO PROCEED WITH PHASED COMPLETION AND CLOSURE OF AREAS. INFILTRATION BEDS WILL NEED TO BE PROTECTED FROM EROSION AND SEDIMENTATION RUN-ON. IT IS RECOMMENDED THAT AREAS ARE COMPLETED INCREMENTALLY UNTIL PAVING IS COMPLETED. THE PHASING PLAN WILL BE ADAPTED BASED ON FEEDBACK WITH THE CLIENT, THE SUPERVISORY ENGINEER, AND THE CONTRACTOR.
C. THE CONTRACTOR SHALL INCLUDE THE ELEMENTS OF THIS PHASING IN THE CONTRACTOR'S CONSTRUCTION PHASING PLAN.
1. CONTRACTOR SUBMITTALS AND APPROVALS
2. HOST A PRE-CONSTRUCTION MEETING AT THE SITE
3. EROSION AND SEDIMENTATION CONTROL BMPS ESTABLISHED INCLUDING SEDIMENTATION POND AT DOWNHILL END OF SITE. POROUS PAVEMENT RESERVOIRS MAY BE USED FOR TEMPORARY SEDIMENTATION PONDS. ACCUMULATED FINES SHALL BE REMOVED PRIOR TO PLACEMENT OF AGGREGATE AND APPROVED BY THE SUPERVISING ENGINEER.
4. ROUGH GRADE SITE (CUT/FILL)
5. FINE GRADE SUBGRADE
6. PERFORM TOPOGRAPHICAL SURVEY OF SUBGRADE
7. SUPERVISORY ENGINEER TO INSPECT SUBGRADE AND PERFORM INFILTRATION TESTS TO VERIFY SUITABILITY OF SUBGRADE FROM COMPACTION DURING CONSTRUCTION OR WHERE EROSION HAS CAUSED ACCUMULATION OF FINE MATERIALS. REWORK MATERIALS THAT DO NOT MEET INFILTRATION REQUIREMENTS PER THE DRAWINGS AND SPECIFICATIONS. THESE MATERIALS SHALL BE REMOVED AND/OR SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES, AND RETESTED FOR COMPACTION AND INFILTRATION AS PER SPECIFICATIONS.
8. INSTALL GEOTEXTILE VERTICAL BARRIERS PLACED ALONG PERIMETER OF POROUS PAVEMENT PARKING AREA PER THE DRAWINGS.
9. INSTALL CAPILLARY BARRIER AND GEOTEXTILE INTERNAL GRADE CONTROLS
10. PLACE UTILITIES LINES OVER THE GRADED CAPILLARY BARRIER LAYER
11. PLACE AND COMPACT FILTER COURSE PER THIS SECTION
12. SUPERVISORY ENGINEER TO INSPECT FILTER COURSE AND PERFORM INFILTRATION TESTS TO VERIFY SUITABILITY OF COMPACTION AND INFILTRATION PER THIS SECTION.
13. PLACE AND GRADE CHOKER COARSE
14. PLACE AND COMPACT POROUS ASPHALT BINDER COURSE.

1.07 PLACEMENT OF TEMPORARY ROAD OF POROUS ASPHALT BINDER COURSE (OPTIONAL)
A. INSTALL AT THICKNESS INDICATED ON DRAWINGS (IN PLACE) LAYER OF BINDER COURSE PER THIS SECTION.
B. INSTALL FRAME, GRATES, AND LANDSCAPING. SPECIAL CARE IS TO BE TAKEN TO PROTECT FRESH BINDER COURSE.
C. ALL TRUCKS (INCLUDING CONCRETE TRUCKS) WILL BE STOPPED PRIOR TO ENTERING THE SITE AND INSTRUCTED AS TO SPECIAL CONCERNS FOR PAVEMENT DURABILITY.
D. A WASHOUT AREA FOR ALL CONCRETE TRUCKS SHALL BE DESIGNATED OUTSIDE OF POROUS PAVEMENT AREA ON THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN.
E. POROUS PAVEMENT SURFACE SHALL BE PROTECTED ON HOT DAYS DURING THE PAVEMENT CURE PERIOD (2-3 DAYS). SURFACE TEMPERATURES CAN QUICKLY REACH OVER 145°F IN DIRECT SUN.
F. A TEMPERATURE GUN SHALL BE AVAILABLE ONSITE TO ASSESS PAVEMENT SURFACE TEMPERATURES. PAVEMENT TEMPERATURES GREATER THAN 100°F SHOULD BE OBSERVED CAREFULLY FOR PAVEMENT DURABILITY. AS NEEDED, COOLING OF PAVEMENT SURFACE BY APPLICATION OF WATER FROM A WATER TRUCK SHOULD OCCUR WHEN HEAVY VEHICULAR TRAFFIC IS EXPECTED SUCH AS CONCRETE TRUCKS FOR DRY WELL FRAME AND GRATE INSTALLATION. IN THE EVENT THIS IS INEFFECTIVE FOR COOLING AND PAVEMENT DEFORMATION IS STILL OBSERVED, THE USE OF 3/4" PLYWOOD UNDER LARGE VEHICLE WHEELS MAY BE REQUIRED.
G. TRUCKS AND OTHER CONSTRUCTION TRAFFIC WILL NOT BE ALLOWED TO ACCESS THE SITE WHILE THE PAVEMENT IS EXCESSIVELY HOT >130°F OR IF UNACCEPTABLE DAMAGE IS OBSERVED. COSMETIC DAMAGE TO BINDER COURSE IS ACCEPTABLE NOT INCLUDING LOSS OF INFILTRATION CAPACITY.
H. NO STOCKPILING OF MATERIALS (E.G. SOIL, STONE, LANDSCAPING MATERIALS) WILL BE ALLOWED ON POROUS PAVEMENTS.
I. MATERIALS EXCAVATED FOR FINISH WORKS SHALL BE PLACED OUTSIDE OF POROUS PAVEMENT AREAS.
J. VACUUMING THROUGHOUT CONSTRUCTION MAY BE NECESSARY FOR SURROUNDING PAVED AREAS TO PREVENT RUN-ON OR TRACKING ONTO POROUS PAVEMENTS. FREQUENCY SHALL BE ADJUSTED AS NEEDED.
K. REPEAT PHASE 1 AND 2 INCREMENTALLY UNTIL FULL PAVING IS COMPLETED.

SECTION II-PAVEMENT SUBGRADE (POROUS ASPHALT PAVEMENTS)

PART I EXECUTION
1.01 EXAMINATION
A. EXAMINE SPACES TO BE FILLED BEFOREHAND AND REMOVE ALL UNSUITABLE MATERIALS AND DEBRIS INCLUDING SHEETING, FORMS, TRASH, STUMPS, PLANT LIFE, ETC.
B. INSPECT BACKFILL AND FILL MATERIALS BEFOREHAND AND REMOVE ALL ROOTS, VEGETATION, ORGANIC MATTER, OR OTHER FOREIGN DEBRIS. STONES LARGER THAN 12 INCHES IN ANY DIMENSION SHALL ALSO BE REMOVED OR BROKEN INTO SMALLER PIECES.
C. NO BACKFILL OR FILL MATERIAL SHALL BE PLACED ON FROZEN GROUND NOR SHALL THE MATERIAL ITSELF BE FROZEN OR CONTAIN FROZEN SOIL FRAGMENTS.
D. SPACES TO BE FILLED SHALL BE FREE FROM STANDING WATER SO THAT PLACEMENT AND COMPACTION OF THE FILL MATERIALS CAN BE ACCOMPLISHED IN "DRY" CONDITIONS.
E. ALL UNDERGROUND UTILITY INSTALLATIONS, INCLUDING CULVERTS, SHALL BE COMPLETED, BACKFILLED AND COMPACTED PRIOR TO COMPLETION OF SUBGRADE.
F. VERIFY THAT TRAFFIC CONTROLS AND EROSION AND SEDIMENT CONTROLS ARE IN PLACE.

1.02 PREPARATION
A. TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF SUBGRADE.
B. TAKE ANY OTHER NECESSARY STEPS TO PREVENT SEDIMENT FROM WASHING INTO INFILTRATION BEDS DURING CONSTRUCTION. WHEN THE SITE IS FULLY STABILIZED, TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED.
C. TEMPORARY DRAINS AND DITCHES SHALL BE CONSTRUCTED AS NECESSARY TO REMOVE WATER FROM THE SUBGRADE AREA.
1. TEMPORARY DRAINAGE OPENINGS IN EXISTING CATCH BASINS MAY BE MADE IN A MANNER ACCEPTABLE TO THE ENGINEER. SUCH OPENINGS TO BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.
2. CONTRACTOR TO PREVENT THE ENTRANCE OF DEBRIS, STONES AND SILT FROM ENTERING DRAINAGE SYSTEMS, INCLUDING THE USE OF BALES OF HAY, SCREENS AND OTHER DESILTING METHODS.
D. BACKFILLED AREAS SHALL BE RETESTED AT THE DISCRETION OF THE ENGINEER.
E. MINIMIZE TRAFFIC AND COMPACTION UPON SUBGRADE.
F. IN MOST INSTANCES TRAVEL UPON SUBGRADE IS UNAVOIDABLE, AND A CAREFUL ASSESSMENT OF DEGREE OF SUBGRADE COMPACTION IS NEEDED. TILLING AND OR REMOVAL OF COMPACTED SUBGRADE MAY BE NEEDED.
G. SUBGRADE COMPACTED DURING EXCAVATION OR WHERE EROSION HAS CAUSED ACCUMULATION OF FINE MATERIALS, THIS MATERIAL SHALL BE REMOVED AND/OR SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES.
H. PRIOR TO PLACEMENT OF THE AGGREGATE RESERVOIR (AGGREGATE BASE COURSE), THE INFILTRATION RATE OF THE SUBGRADE SHALL BE DETERMINED BY ASTM D3385 OR APPROVED ALTERNATE AT THE DISCRETION OF THE ENGINEER. THE INFILTRATION RATE SHALL BE NO LESS 5-30 FT/DAY OR 50% OF THE HYDRAULIC CONDUCTIVITY (D2434) AT 95% STANDARD PROCTOR COMPACTION.
I. SEE TABLE 2 FOR COMPACTION AND INFILTRATION REQUIREMENTS.
J. THE DENSITY OF SUBGRADE COURSES SHALL BE DETERMINED BY AASHTO T 191 (SAND-CONE METHOD), AASHTO T 204 (DRIVE CYLINDER METHOD), OR AASHTO T 238 (NUCLEAR METHODS), OR OTHER APPROVED METHODS AT THE DISCRETION OF THE ENGINEER.
K. UNSUITABLE MATERIALS SHALL BE REMOVED AND REWORKED TO THE SATISFACTION OF THE ONSITE ENGINEER.
L. UPON COMPLETION OF SUBGRADE WORK, THE ENGINEER SHALL BE NOTIFIED AND SHALL INSPECT AT HIS/HER DISCRETION BEFORE PROCEEDING WITH THE POROUS MEDIA BED INSTALLATION.

1.03 FIELD QUALITY CONTROL
A. FOR COMPACTION REQUIREMENTS SEE TABLE 2.
B. TOLERANCES - THE FINAL SUBGRADE SURFACE SHALL NOT VARY MORE THAN ±1/2 INCH FROM THE DESIGN GRADE ELEVATION AT ANY LOCATION, PARALLEL TO THE FINAL ROAD SURFACE AS DEFINED BY THE TOTAL ROADWAY THICKNESS.
C. PROOF ROLLED - PRIOR TO THE PLACEMENT OF THE NEXT PAVEMENT COURSE, THE SUBGRADE SURFACE SHALL BE PROOF ROLLED TO LOCATE AREAS OF INADEQUATE COMPACTION OR DEFECTIONS OR SOFT OR RUTTING AREAS REQUIRING UNDERCUTTING, WITH 8- TO 10-TON PNEUMATIC TIRE COMPACTORS.
1. AREAS OF INADEQUATE COMPACTION TO BE RECOMPACTED.
2. IF ADDITIONAL ROLLING DOES NOT CORRECT AN AREA OF UNSTABLE CONDITION, THEN THIS AREA AND SOFT OR RUTTED AREAS SHALL BE REMOVED AND REPLACED WITH SELECT ON-SITE MATERIAL AND COMPACTED.
3. WHERE NO SUITABLE ON-SITE MATERIAL IS AVAILABLE, GRANULAR MATERIALS SHALL BE INSTALLED AND COMPACTED; AREAS INACCESSIBLE TO ROLLERS TO BE COMPACTED BY MECHANICAL METHODS.

SECTION III: AGGREGATE BASE COURSE (POROUS ASPHALT PAVEMENTS)

PART I EXECUTION
1.01 EXAMINATION
A. VERIFY PAVEMENT SUBGRADE HAS BEEN ACCEPTED FOR PLACEMENT OF AGGREGATE BASE COURSE.
1. GRADIENTS, CROWNS AND ELEVATIONS ARE CORRECT.
2. SUBGRADE IS DRY.
3. PRIOR TO PLACEMENT OF THE AGGREGATE, THE INFILTRATION RATE OF THE SUBGRADE SHALL BE DETERMINED BY ASTM D3385 OR APPROVED ALTERNATE AT THE DISCRETION OF THE ENGINEER. THE INFILTRATION RATE SHALL BE NO LESS 5-30 FT/DAY OR 50% OF THE HYDRAULIC CONDUCTIVITY (D2434) AT 95% STANDARD PROCTOR COMPACTION.
B. VERIFY THAT TRAFFIC CONTROLS ARE IN PLACE.

1.02 EDGE LINER INSTALLATION
A. EDGE GEOTEXTILE OR PVC LINER SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION.
B. THE EDGE LINER IS TO BE PLACED ALONG THE ENTIRE PERIMETER OF THE VERTICAL WALLS OF BOTH SIDES OF THE EXCAVATION AND LOCATED BEHIND THE CURB, SIDEWALK, OR TRANSITION ELEMENT TO THE DIMENSIONS AND LOCATIONS AS SHOWN WITHIN THE CONTRACT DRAWINGS.
C. THE LINER IS TO BE PLACED BEHIND THE CURB OR TRANSITION WITHIN CONCRETE FOOTING.
D. THE EDGE LINER SHOULD TEMPORARILY BE STAKED VERTICALLY AT 12-18" ABOVE THE SUBGRADE, PRIOR TO PLACEMENT BEHIND CURB, TO FUNCTION AS EROSION CONTROL MEASURE TO PREVENT FINES FROM WASHING INTO RESERVOIR BASE.
E. PENETRATIONS TO THE PVC LINER SHALL BE WRAPPED WITH A STAINLESS STEEL PIPE CLAMP, SEALED BY HEAT-SHRINK, OR SIMILAR METHOD TO ACHIEVE LOW PRESSURE WATER TIGHT SEAL OR APPROVED EQUAL TO PREVENT THE MIGRATION OF SEDIMENT ACROSS THE PENETRATION.
F. INTERNAL GRADE PVC LINER GRADE CONTROL TO BE PLACED EVERY 12" OF GRADE LOSS AT EQUAL ELEVATION ALONG THE CONTOUR. THE INTERNAL GRADE CONTROL ARE TO CONTAIN THE FLOW ON SLOPE WITHIN THE PAVEMENT RESERVOIR AND MUST BE KEYED INTO EDGE PVC LINER AND CONTAIN THE RESERVOIR BED AND SUBGRADE.
B. THE INTERNAL GRADE CONTROL PVC LINER IS TO BE PLACED ALONG AN EQUAL ELEVATION CONTOUR AS PER THE DIMENSIONS AND LOCATIONS AS SHOWN WITHIN THE CONTRACT DRAWINGS.
C. PENETRATIONS FROM UTILITIES TO THE PVC LINER ARE TO BE MINIMIZED AND LOCATED BENEATH THE PVC LINER IF POSSIBLE.
D. UTILITY PIPING WITHIN THE ROADBED SHALL BE WATERTIGHT AND SEALED WITH FOAM, CAULKING, OR OTHER SUITABLE METHOD.
E. ALL UTILITY TRENCHES THAT INTERSECT OR TRAVEL BELOW THE PAVEMENT SUBBASE SHALL HAVE CONSIDERATIONS TO PREVENT SOIL PIPING AND INFILTRATION AND INFLOW. THIS MAY INCLUDE SEEPAGE COLLAR, COVER WITH LINER, OR OTHER METHOD APPROVED BY ENGINEER.
F. IN AREAS WHERE THE LINER IS NOT CONTINUOUS, A 12-INCH OVERLAP IS REQUIRED.

1.03 FILTER COURSE PREPARATION
A. RESERVOIR COURSE AND CAPILLARY BARRIER AGGREGATE SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF EDGE GEOTEXTILE. ANY ACCUMULATION OF DEBRIS OR SEDIMENT WHICH HAS TAKEN PLACE AFTER APPROVAL OF SUBGRADE SHALL BE REMOVED PRIOR TO INSTALLATION OF GEOTEXTILE AT NO EXTRA COST TO THE OWNER.
B. SEE TABLE 1 FOR SPECIFICATIONS FOR FILTER COURSE AND RESERVOIR COURSE / CAPILLARY BARRIER.
C. SEE TABLE 2 FOR COMPACTION AND INFILTRATION REQUIREMENTS OF SUBBASE.
D. INSTALL FILTER COURSE AGGREGATE IN 12-INCH MAXIMUM LIFTS TO 95 TO 98% STANDARD PROCTOR COMPACTION (ASTM D698 / AASHTO T99). INSTALL AGGREGATE TO GRADES INDICATED ON THE DRAWINGS.
E. THE INFILTRATION RATE OF THE FILTER COURSE SHALL BE DETERMINED BY ASTM D3385 OR APPROVED ALTERNATE AT THE DISCRETION OF THE SUPERVISING ENGINEER. THE INFILTRATION RATE SHALL BE NO LESS 5-30 FT/DAY OR 50% OF THE HYDRAULIC CONDUCTIVITY (D2434) AT 95% STANDARD PROCTOR COMPACTION.
F. THE DENSITY OF FILTER COURSE SHALL BE DETERMINED BY AASHTO T 191 (SAND-CONE METHOD), AASHTO T 204 (DRIVE CYLINDER METHOD), OR AASHTO T 238 (NUCLEAR METHODS), OR OTHER APPROVED METHODS AT THE DISCRETION OF THE SUPERVISING ENGINEER.
G. VIBRATORY COMPACTION SHALL BE PERFORMED USING TWO-AXLE TANDEM ROLLERS WITH A GROSS MASS (WEIGHT) OF NOT LESS THAN 5 METRIC TONS (5.5 TONS) AND NOT MORE THAN 10 METRIC TONS (12 TONS) AND SHALL BE CAPABLE OF PROVIDING A MINIMUM COMPACTIVE EFFORT OF 44 KN/M (250 POUNDS PER INCH) OF WIDTH OF THE DRIVE ROLL. ALL ROLLS SHALL BE AT LEAST 1 M (42 INCHES) IN DIAMETER.
H. COMPACTION OF SUBGRADE COURSE MATERIAL SHALL BE DONE WITH A METHOD AND ADEQUATE WATER TO MEET THE REQUIREMENTS. ROLLING AND SHAPING SHALL CONTINUE UNTIL THE REQUIRED DENSITY IS ATTAINED. WATER SHALL BE UNIFORMLY APPLIED OVER THE SUBBASE COURSE MATERIALS DURING COMPACTION IN THE AMOUNT NECESSARY FOR PROPER CONSOLIDATION.

1.04 POROUS AGGREGATE SUBBASE INSTALLATION
A. RESERVOIR BED AGGREGATE SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF EDGE PVC LINER. ANY ACCUMULATION OF DEBRIS OR SEDIMENT WHICH HAS TAKEN PLACE AFTER APPROVAL OF SUBGRADE SHALL BE REMOVED PRIOR TO INSTALLATION OF PVC LINER AT NO EXTRA COST TO THE OWNER.
B. SEE TABLE 2 FOR COMPACTION AND INFILTRATION REQUIREMENTS.
C. INSTALL RESERVOIR BED AGGREGATE IN 12-INCH MAXIMUM LIFTS TO 95 TO 98% STANDARD PROCTOR COMPACTION (ASTM D698 / AASHTO T99). INSTALL AGGREGATE TO GRADES INDICATED ON THE DRAWINGS.
D. VIBRATORY COMPACTION SHALL BE PERFORMED USING TWO-AXLE TANDEM ROLLERS WITH A GROSS MASS (WEIGHT) OF NOT LESS THAN 5 METRIC TONS (5.5 TONS) AND NOT MORE THAN 10 METRIC TONS (12 TONS) AND SHALL BE CAPABLE OF PROVIDING A MINIMUM COMPACTIVE EFFORT OF 44 KN/M (250 POUNDS PER INCH) OF WIDTH OF THE DRIVE ROLL. ALL ROLLS SHALL BE AT LEAST 1 M (42 INCHES) IN DIAMETER.
E. COMPACTION OF SUBGRADE COURSE MATERIAL SHALL BE DONE WITH A METHOD AND ADEQUATE WATER TO MEET THE REQUIREMENTS. ROLLING AND SHAPING SHALL CONTINUE UNTIL THE REQUIRED DENSITY IS ATTAINED. WATER SHALL BE UNIFORMLY APPLIED OVER THE SUBBASE COURSE MATERIALS DURING COMPACTION IN THE AMOUNT NECESSARY FOR PROPER CONSOLIDATION.
F. ADD SMALL QUANTITIES OF FINE AGGREGATE TO COARSE AGGREGATE AS APPROPRIATE TO ASSIST COMPACTION.
G. IF EXCESS WATER IS APPARENT, REMOVE AGGREGATE AND AERATE TO REDUCE MOISTURE CONTENT.
H. USE MECHANICAL VIBRATING TAMPING IN AREAS INACCESSIBLE TO COMPACTION EQUIPMENT.
I. THE ENGINEER SHALL BE NOTIFIED AND SHALL INSPECT THE LINER AND SUBBASE INFILTRATION CAPACITY AT HIS/HER DISCRETION BEFORE PROCEEDING WITH THE PLACEMENT OF SELECT ROAD BASE MATERIALS.
J. INSPECTION OF INFILTRATION CAPACITY WILL VERIFY SUITABILITY OF SUBBASE FROM COMPACTION DURING CONSTRUCTION OR WHERE EROSION HAS CAUSED ACCUMULATION OF FINE MATERIALS. IF NEEDED, COMPACTED/ACCUMULATED MATERIALS SHALL BE REMOVED AND/OR SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES AND RETESTED FOR COMPACTION AND INFILTRATION AS PER SPECIFICATIONS.
K. INSTALL INFILTRATION TRENCH PER CONSTRUCTION DETAIL. INFILTRATION TRENCH MAY BE ELIMINATED IN THE EVENT OF SHALLOW UTILITIES THAT WILL INTERSECT THE EXCAVATION.

1.05 PROTECTION
A. IN THE EVENT THE SUBBASE IS USED FOR MAINTENANCE OF TRAFFIC OR IS DISTURBED OR LOOSENED BY ANY CAUSE, THEN PRIOR TO PLACING OF THE NEXT PAVING COURSE, THE SUBBASE SHALL BE REGRADED AND RECOMPACTED TO ITS FINISHED GRADE AND SPECIFIED DENSITY.

SEAL

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED
PROFESSIONAL ENGINEER
3/25/20

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAR 24, 2020	FOR APPROVAL	
1	MAR 11, 2020	PRELIMINARY	

DRAWN:	MCV	DESIGN:	MCV
CHECKED:	BDS	CHECKED:	BDS

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19-083	AS SHOWN	D1

SECTION IV- POROUS ASPHALT PAVING (POROUS ASPHALT PAVEMENTS)

DR. ROBERT ROSEEN OF WATERSTONE ENGINEERING, INC. (OR EQUAL) SHALL REVIEW ALL ASPECTS OF PREPARATION, INSTALLATION, AND TESTING FOR THE POROUS PAVEMENT SECTIONS. PHONE: (603) 686-2488

PART 1
1.01 SCHEDULING
A. SCHEDULE THE PAVING OPERATIONS SUCH THAT ALL PAVING NECESSARY TO PROVIDE SAFE AND ADEQUATE MAINTENANCE AND PROTECTION OF TRAFFIC OR FOR PROTECTION OF PREVIOUSLY LAID COURSES IS COMPLETED WITHIN THE WEATHER AND SEASONAL LIMITATIONS.
1. SUCH SCHEDULING SHALL INCLUDE EXPEDITING CONSTRUCTION OPERATIONS TO PERMIT PAVING BEFORE THE SEASONAL LIMITATIONS OR BY LIMITING THE LENGTH OF WORK TO THAT WHICH CAN BE COMPLETED BEFORE THE SEASONAL SHUTDOWN.
2. THE COST OF SCHEDULING AND SEQUENCING OF WORK TO CONFORM TO THE SEASONAL LIMITATIONS SHALL BE REFLECTED IN THE BID PRICES FOR THE RELATED CONTRACT ITEMS.

PART 2 PRODUCTS
2.01 ASPHALT CONCRETE
A. BINDER COURSE - THE PAVEMENT BINDER COURSE SHALL BE CONSTRUCTED OF THE FOLLOWING TYPE AND TO THE WIDTHS AND DEPTHS AS SHOWN ON THE DRAWINGS.
1. THIS BINDER COURSE SHALL BE IN ACCORDANCE WITH NHDOT SPECIFICATION FOR BITUMINOUS CONCRETE.
B. PAVEMENT WEARING COURSE (SURFACE COURSE) - PAVEMENT WEARING COURSE SHALL BE CONSTRUCTED OF THE FOLLOWING TYPE AND TO THE WIDTH AND DEPTH AS SHOWN ON THE DRAWINGS.
1. THIS WEARING COURSE SHALL BE IN ACCORDANCE WITH NHDOT SPECIFICATION FOR BITUMINOUS CONCRETE.
C. PAINTED TRAFFIC MARKINGS - CONTRACTOR SHALL REPLACE ALL MARKINGS IN ACCORDANCE WITH LOCAL, COUNTY, OR STATE SPECIFICATIONS (DEPENDING ON JURISDICTION).

2.02 POROUS ASPHALT
A. THIS IS A PERFORMANCE SPECIFICATION; ALTERNATIVES CAN BE SUBSTITUTED IF THE MIX DESIGN MEETS THE MINIMUM QC PERFORMANCE CRITERIA FOR GRADATION, ASPHALT CONCRETE (AC) CONTENT, PERCENT (%) VOID SPACE, % DRAIN DOWN, RETAINED TENSILE STRENGTH (TSR), AND CANTABRO WEAR TEST AND ACCEPTED IN WRITING BY THE ENGINEER.
B. POLYMER MODIFIED PERFORMANCE GRADED ASPHALT BINDER AND MIX DESIGNS
1. POROUS ASPHALT WEARING COURSE: GRADATION, AC CONTENT, % VOID SPACE, % DRAIN DOWN, TSR, CANTABRO AS INDICATED IN TABLE 3. THE ASPHALT BINDER SHALL BE A TERMINAL BLENDED PG76-28 MODIFIED WITH A STYRENE BUTADIENE STYRENE.
2. POROUS ASPHALT BINDER COURSE: GRADATION, AC CONTENT, % VOID SPACE, % DRAIN DOWN, TSR, CANTABRO AS INDICATED IN TABLE 3. THE ASPHALT BINDER SHALL BE A TERMINAL BLENDED PG76-28 MODIFIED WITH A STYRENE BUTADIENE STYRENE.
3. POROUS ASPHALT MIX DESIGNS: THE CONTRACTOR SHALL SIZE, UNIFORMLY GRADE, AND COMBINE THE AGGREGATE FRACTIONS IN PROPORTIONS THAT PROVIDE A MIXTURE MEETING THE REQUIREMENTS SPECIFIED.

PART 3 EXECUTION
3.01 PREPARATION - RESET MANHOLE FRAMES
A. PRIOR TO PLACING WEARING (TOP) COURSE, MAKE FINAL ADJUSTMENTS OF MANHOLE FRAMES, CATCH BASIN FRAMES, VALVE BOXES AND ANY OTHER UTILITY STRUCTURES LOCATED IN THE PAVEMENT IN RELATION TO FINISHED GRADE.
1. MANHOLE FRAMES, VALVE BOXES, ETC. TO SET 1/2 INCH BELOW FINISHED GRADE AND PARALLEL TO FINISHED CROWN.
2. CATCH BASIN FRAMES TO SET 1 INCH BELOW FINISHED GRADE AND PARALLEL TO FINISHED CROWN.
a. BEVEL SLOPE OF WEARING COURSE (FOR 6-INCH WIDTH) AROUND CATCH BASIN FRAME.

3.02 POROUS ASPHALT BINDER COURSE INSTALLATION
A. TEST STRIP (OPTIONAL)
1. AN OPTIONAL TEST STRIP SHALL BE CONDUCTED TO DETERMINE OPTIMAL COMPACTION PROCEDURES FOR THE BINDER COURSE AT A THICKNESS AS INDICATED IN THE DRAWINGS. THE TEST STRIP WILL BE CONSTRUCTED IN A PORTION OF THE SITE TO ESTABLISH AND ENSURE THE PROPER MIX DESIGN, PRODUCTION AND PLACEMENT.
2. THE TEST STRIP SHALL BE OVERSEEN BY THE ENGINEER.
3. TWO MIX SAMPLES SHALL BE COLLECTED AT THE ASPHALT PLANT BY A 3RD PARTY QC TECHNICIAN DURING BINDER COURSE PRODUCTION FROM EACH TEST STRIP FOR ASPHALT CONTENT, AND GRADATION.
4. FIELD TESTING OF INFILTRATION CAPACITY SHALL BE PERFORMED ON THE TEST STRIP FOR INFILTRATION BY THE ENGINEER.
5. TWO CORES SHALL BE COLLECTED FROM EACH TEST STRIP AND EVALUATED FOR COMPACTION, DENSITY, AND POROSITY.
6. THESE CRITERIA ONCE ESTABLISHED WILL BE APPLIED TO ALL POROUS ASPHALT INSTALLATIONS.
B. CONDITIONING OF EXISTING SURFACE
1. THE CONTRACTOR SHALL THOROUGHLY CLEAN THE SURFACE UPON WHICH THE BINDER COURSE IS TO BE PLACED OF ALL OBJECTIONABLE MATERIAL.
C. PREPARATION OF AGGREGATES
1. THE CONTRACTOR SHALL DRY AND HEAT THE AGGREGATES FOR THE BINDER COURSE TO THE REQUIRED TEMPERATURE.
D. MIXING
1. THE CONTRACTOR SHALL COMBINE THE DRIED AGGREGATE IN THE MIXER IN THE AMOUNT OF EACH FRACTION OF AGGREGATE REQUIRED TO MEET THE SPECIFICATIONS. ONCE MIXED THE BINDER COURSE SHALL BE PLACED AS SOON AS POSSIBLE.
E. SPREADING AND FINISHING
1. ON AREAS WHERE IRREGULARITIES OR UNAVOIDABLE OBSTACLES MAKE THE USE OF MECHANICAL SPREADING AND FINISHING IMPRACTICABLE, THE CONTRACTOR SHALL SPREAD AND RAKE THE BINDER COURSE WITH HAND TOOLS TO PROVIDE THE REQUIRED COMPACTED THICKNESS.
2. SOLVENT BASED AGENTS DEVELOPED TO STRIP ASPHALTS FROM AGGREGATES WILL NOT BE ALLOWED AS A RELEASE AGENT.
3. JOINTS SHALL BE FULLY COATED WITH PGAB 76-28 JUST PRIOR TO THE PLACEMENT OF THE ADJOINING COURSE. AREAS THAT BECOME CONTAMINATED OR STRIPPED OF ASPHALT COATING WILL BE RETREATED WITH ASPHALT PRIOR TO PLACING THE ADJOINING COARSE.
F. COMPACTION
1. THE ACTUAL METHODS AND EQUIPMENT USED TO COMPACT THE BINDER COURSE WILL BE DETERMINED DURING THE PLACEMENT AND COMPACTION OF THE TEST STRIP AND AS TABLE 2.
2. IMMEDIATELY AFTER THE ASPHALT TREATED PERMEABLE BASE HAS BEEN SPREAD, STRUCK OFF, AND ANY SURFACE IRREGULARITIES ADJUSTED, THE CONTRACTOR SHALL THOROUGHLY AND UNIFORMLY COMPACT THE BINDER COURSE BY ROLLING.
3. THE BINDER COURSE SHALL BE COMPACTED BY A MAXIMUM OF THREE COMPLETE PASSES OF A STEEL ROLLER HAVING A MINIMUM WEIGHT OF 12 TONS OPERATED IN STATIC MODE, OR 10 TONS IF EQUIPPED WITH OSCILLATORY COMPACTION AND OPERATED IN LOW FREQUENCY, LOW AMPLITUDE MODE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PNEUMATIC ROLLERS WILL NOT BE USED TO COMPACT THE BINDER COURSE.
4. THE CONTRACTOR SHALL ROLL THE SURFACE WHEN THE MIXTURE IS IN THE PROPER CONDITION AND WHEN THE ROLLING DOES NOT CAUSE UNDUE DISPLACEMENT, CRACKING, OR SHOVING. THE CONTRACTOR SHALL PREVENT ADHESION OF THE BINDER COURSE TO THE ROLLERS OR VIBRATING COMPACTORS WITHOUT THE USE OF FUEL OIL OR OTHER PETROLEUM, OR SOLVENT BASED RELEASE AGENTS. SOLVENTS DESIGNED TO STRIP ASPHALT BINDERS FROM AGGREGATES WILL NOT BE PERMITTED AS RELEASE AGENTS ON EQUIPMENT, TOOLS OR BINDER COURSE SURFACES.
5. THE CONTRACTOR SHALL IMMEDIATELY CORRECT ANY DISPLACEMENT OCCURRING AS A RESULT OF THE REVERSING OF THE DIRECTION OF A ROLLER OR FROM OTHER CAUSES TO THE SATISFACTION OF THE ENGINEER.
6. ANY OPERATION THAT RESULTS IN BREAKDOWN OF THE AGGREGATE SHALL BE DISCONTINUED.
G. TRAFFIC
1. AFTER A 24 HOUR CURING PERIOD OF THE BINDER COURSE, LIMITED TRAFFIC MAY BE ROUTED OVER THE BINDER COURSE SURFACE. UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, CONSTRUCTION EQUIPMENT, AND TRAFFIC SHALL BE PROHIBITED FROM TRAVELING OVER THE BINDER COURSE SURFACE UNTIL THE ENTIRE PAVEMENT STRUCTURE IS IN PLACE.
2. DAMAGE TO THE BINDER COURSE LAYER CAUSED BY CONSTRUCTION EQUIPMENT OR TRAFFIC SHALL BE REMEDIED BY COMPLETE REMOVAL REPLACEMENT OF THE DAMAGED AREA TO THE LIMITS DETERMINED BY THE ENGINEER. THERE WILL BE NO ADDITIONAL PAYMENT FOR REPAIRS, OR ASSOCIATED WORK.

3.03 PLACEMENT OF POROUS ASPHALT BINDER COURSE
A. INSTALL THE BINDER COURSE COURSE AT A THICKNESS AS INDICATED IN DRAWINGS.
B. INSTALL FRAME, GRATES, AND LANDSCAPING. SPECIAL CARE IS TO BE TAKEN TO PROTECT FRESH BINDER COURSE.
C. ALL TRUCKS (INCLUDING CONCRETE TRUCKS) WILL BE STOPPED PRIOR TO ENTERING THE SITE AND INSTRUCTED AS TO SPECIAL CONCERNS FOR PAVEMENT DURABILITY.
D. A WASHOUT AREA FOR ALL CONCRETE TRUCKS SHALL BE DESIGNATED OUTSIDE OF POROUS PAVEMENT AREA ON THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN OR ON DETAIL SHEET.
E. POROUS PAVEMENT SURFACE SHALL BE PROTECTED ON HOT DAYS DURING THE PAVEMENT CURE PERIOD (2-3 DAYS). SURFACE TEMPERATURES CAN QUICKLY REACH OVER 145°F IN DIRECT SUN.
F. A TEMPERATURE GUN SHALL BE AVAILABLE ONSITE TO ASSESS PAVEMENT SURFACE TEMPERATURES. PAVEMENT TEMPERATURES GREATER THAN 100°F SHOULD BE OBSERVED CAREFULLY FOR PAVEMENT DURABILITY. AS NEEDED, COOLING OF PAVEMENT SURFACE BY APPLICATION OF WATER FROM A WATER TRUCK SHOULD OCCUR WHEN HEAVY VEHICULAR TRAFFIC IS EXPECTED SUCH AS CONCRETE TRUCKS FOR DRY WELL FRAME AND GRATE INSTALLATION. IN THE EVENT THIS IS INEFFECTIVE FOR COOLING AND PAVEMENT DEFORMATION IS STILL OBSERVED, THE USE OF 3/4" PLYWOOD UNDER LARGE VEHICLE WHEELS MAY BE REQUIRED.
G. TRUCKS AND OTHER CONSTRUCTION TRAFFIC WILL NOT BE ALLOWED TO ACCESS THE SITE WHILE THE PAVEMENT IS EXCESSIVELY HOT >130°F.
H. NO STOCKPILING OF MATERIALS (E.G. SOIL, STONE, LANDSCAPING MATERIALS) WILL BE ALLOWED ON POROUS PAVEMENTS.
I. MATERIALS EXCAVATED FOR FINISH WORKS SHALL BE PLACED OUTSIDE OF POROUS PAVEMENT AREAS.
J. VACUUMING THROUGHOUT CONSTRUCTION MAY BE NECESSARY FOR SURROUNDING PAVED AREAS TO PREVENT RUN-ON OR TRACKING ONTO POROUS PAVEMENTS. FREQUENCY SHALL BE ADJUSTED AS NEEDED.

3.04 INSPECTION, CORRECTIVE ACTION, REMOVAL AND REPLACEMENT OF BINDER COURSE
A. PRIOR TO INSTALLATION OF THE POROUS ASPHALT WEARING COURSE, THE BINDER COURSE WILL BE INSPECTED FOR DAMAGE AND REDUCED INFILTRATION CAPACITY.
B. BINDER COURSE CLOGGING WILL BE CORRECTED BY VACUUM AND PRESSURE WASHING TO THE SATISFACTION OF THE ENGINEER.
C. BINDER COURSE AREAS WILL BE REMOVED AND REPLACED IN AREAS WHERE STRUCTURAL DAMAGE OR INFILTRATION CAPACITY IS SUBSTANTIALLY COMPROMISED AT THE DISCRETION OF THE ENGINEER.
D. THE CHOKER COURSE SHALL BE INSPECTED FOR VOIDS AND FINES PRIOR TO REPLACEMENT OF THE BINDER COURSE. IF VOID SPACE IS COMPROMISED, STONE WILL BE ADDED AND/OR REPLACED FOR CORRECTIVE ACTION.
E. THERE WILL BE NO ADDITIONAL PAYMENT FOR BINDER COURSE REPAIRS, CLEANING, REPLACEMENT, OR ASSOCIATED WORK.

3.05 POROUS ASPHALT WEARING COURSE INSTALLATION
A. GENERAL
1. VERIFY BINDER COURSE CONDITION AND PREPARATION FOLLOWING CONSTRUCTION PRIOR TO PAVING THE POROUS ASPHALT WEARING COURSE AS DESCRIBED IN SECTION 3.07.
2. THE ENGINEER SHALL BE NOTIFIED AND INSPECT THE BINDER COURSE AT THEIR DISCRETION PRIOR TO PAVING THE POROUS ASPHALT WEARING COURSE.
3. TEMPORARY CONSTRUCTION FENCING WILL BE USED TO CLOSE POROUS PAVEMENT AREAS TO CONSTRUCTION TRAFFIC AFTER PAVING DURING PROJECT COMPLETION.
B. TEST STRIP
1. A TEST STRIP SHALL BE CONDUCTED TO DETERMINE OPTIMAL COMPACTION PROCEDURES OF THE POROUS ASPHALT AT A THICKNESS AS INDICATED IN THE DRAWINGS. THE TEST STRIP WILL BE CONSTRUCTED IN A PORTION OF THE SITE TO ESTABLISH AND ENSURE THE PROPER MIX DESIGN, PRODUCTION AND PLACEMENT.
2. THE TEST STRIP SHALL BE OVERSEEN BY THE ENGINEER.
3. TWO MIX SAMPLES SHALL BE COLLECTED AT THE ASPHALT PLANT BY A 3RD PARTY QC TECHNICIAN DURING PRODUCTION FROM EACH TEST STRIP FOR ASPHALT CONTENT, GRADATION, AND CANTABRO WEAR.
4. FIELD TESTING OF INFILTRATION CAPACITY SHALL BE PERFORMED ON THE TEST STRIP FOR INFILTRATION BY THE ENGINEER.
5. TWO CORES SHALL BE COLLECTED FROM EACH TEST STRIP AND EVALUATED FOR COMPACTION, DENSITY, AND POROSITY.
6. THESE CRITERIA ONCE ESTABLISHED WILL BE APPLIED TO ALL POROUS ASPHALT INSTALLATIONS.
C. ROLLERS
1. ROLLERS OR OSCILLATING VIBRATORY ROLLERS, RANGING FROM 8-12 TONS, SHALL BE USED FOR COMPACTION, AND 1-2 TONS ROLLER FOR FINISHING. THE NUMBER, MASS (WEIGHT), AND TYPE OF ROLLERS FURNISHED SHALL BE SUFFICIENT TO OBTAIN THE REQUIRED COMPACTION WHILE THE MIXTURE IS IN A WORKABLE CONDITION. GENERALLY, ONE BREAKDOWN ROLLER WILL BE NEEDED FOR EACH PAVER USED IN THE SPREADING OPERATION.
2. ADDITIONAL ROLLING MAY BE EXCESSIVE, CAUSING A BREAK IN THE BOND OF ASPHALT BETWEEN AGGREGATE PARTICLES, PARTICULARLY AFTER THE MIX HAS COOLED.
3. TO PREVENT ADHESION OF THE MIXTURE TO THE ROLLS, ROLLS SHALL BE KEPT MOIST WITH WATER OR WATER MIXED WITH VERY SMALL QUANTITIES OF DETERGENT OR OTHER APPROVED MATERIAL. EXCESS LIQUID WILL NOT BE PERMITTED.
4. OTHER COMBINATIONS OF ROLLERS AND/OR METHODS OF COMPACTING MAY BE USED IF APPROVED IN WRITING BY THE ENGINEER, PROVIDED THE COMPACTION REQUIREMENTS ARE MET. THE SPEED OF THE ROLLER SHALL BE SLOW AND UNIFORM TO AVOID DISPLACEMENT OF THE MIXTURE, AND THE ROLLER SHOULD BE KEPT IN AS CONTINUOUS OPERATION AS PRACTICAL. ROLLING SHALL CONTINUE UNTIL ALL ROLLER MARKS AND RIDGES HAVE BEEN ELIMINATED.
5. ROLLERS WILL NOT BE STOPPED OR PARKED ON THE FRESHLY PLACED MAT. THE SPEED OF THE ROLLER SHALL BE SLOW AND UNIFORM TO AVOID DISPLACEMENT OF THE MIXTURE, AND THE ROLLER SHOULD BE KEPT IN AS CONTINUOUS OPERATION AS PRACTICAL. ROLLING SHALL CONTINUE UNTIL ALL ROLLER MARKS AND RIDGES HAVE BEEN ELIMINATED.
6. ROLLERS WILL NOT BE STOPPED OR PARKED ON THE FRESHLY PLACED MAT.
D. CONDITIONING OF EXISTING SURFACE
1. CONTACT SURFACES SUCH AS CURBING, GUTTERS, AND MANHOLES SHALL BE PAINTED WITH A THIN, UNIFORM COAT OF TYPE RS-1 EMULSIFIED ASPHALT IMMEDIATELY BEFORE THE ASPHALT MIXTURE IS PLACED AGAINST THEM.
E. TEMPERATURE REQUIREMENTS
1. THE TEMPERATURE OF THE ASPHALT MIXTURE, AT THE TIME OF DISCHARGE FROM THE HAUL VEHICLE AND AT THE PAVER, SHALL BE BETWEEN 135-163°C (275 TO 325°F), WITHIN 6 °C (10 °F) OF THE COMPACTION TEMPERATURE FOR THE APPROVED MIX DESIGN.
2. THE TEMPERATURE OF THE ASPHALT MIXTURE, AT THE TIME OF DISCHARGE FROM THE HAUL VEHICLE AND AT THE PAVER, SHALL BE BETWEEN 135-163°C (275 TO 325°F), WITHIN 6 °C (10 °F) OF THE COMPACTION TEMPERATURE FOR THE APPROVED MIX DESIGN.
3. BREAKDOWN ROLLING SHALL OCCUR WHEN THE MIX TEMPERATURE IS BETWEEN 135-163°C (275 TO 325°F).
4. INTERMEDIATE ROLLING SHALL OCCUR WHEN THE MIX TEMPERATURE IS BETWEEN 93-135°C (200 TO 275°F).
5. FINISH ROLLING SHALL OCCUR WHEN THE MIX TEMPERATURE IS BETWEEN 66-93°C (150 TO 200°F)
F. SPREADING AND FINISHING
1. THE POROUS ASPHALT WEARING COURSE SHALL BE PLACED IN ONE APPLICATION TO A THICKNESS AS INDICATED ON THE DRAWINGS.
2. THE CONTRACTOR SHALL PROTECT ALL EXPOSED SURFACES THAT ARE NOT TO BE TREATED FROM DAMAGE DURING ALL PHASES OF THE PAVEMENT OPERATION.
3. NO TRAFFIC WILL BE PERMITTED ON MATERIAL PLACED UNTIL THE MATERIAL HAS BEEN THOROUGHLY COMPACTED AND HAS BEEN PERMITTED TO COOL TO BELOW 38 °C (100 °F). THE ENGINEER RESERVES THE RIGHT TO REQUIRE THAT ALL WORK ADJACENT TO THE PAVEMENT, SUCH AS GUARDRAIL, CLEANUP, AND TURF ESTABLISHMENT, IS COMPLETED PRIOR TO PLACING THE WEARING COURSE WHEN THIS WORK COULD CAUSE DAMAGE TO THE PAVEMENT.
G. COMPACTION
1. PLACING MIX IN AN APPROPRIATE AMBIENT TEMPERATURE AND ON A SURFACE SUFFICIENTLY WARM TO MINIMIZE THE RISK OF EXCESSIVE COOLING BEFORE COMPLETION OF ROLLING IS OF PARAMOUNT IMPORTANCE. HOLDING THE AGGREGATE PARTICLES IN PLACE IS SOLELY THE FUNCTION OF THE FILM OF ASPHALT. THE ASPHALT CANNOT PERFORM THIS FUNCTION PROPERLY IF THE MIX IS TOO COOL WHEN ROLLED.
2. IT IS IMPORTANT TO KEEP THE TIME BETWEEN THE POROUS ASPHALT AND WEARING COURSE AND BINDER COURSE PLACEMENTS SHALL BE MINIMAL AND KEEP THE FIRST LAYER CLEAR FROM DUST AND MOISTURE, AND MINIMIZE TRAFFIC ON THE FIRST LAYER.
3. A THIN COURSE COMPRESSES VERY LITTLE UNDER THE ROLLER AND, AS IT COOLS QUICKLY, IT MUST BE ROLLED AS SOON AS POSSIBLE.
4. A HIGH DEGREE OF DENSIFICATION IS NOT THE GOAL WITH THIS TYPE OF MIX; THE AIM IS FIRM SEATING AND CONTACT OF THE AGGREGATE PARTICLES.
5. WHEN OVERTAKEN BY SUDDEN STORMS, THE ENGINEER MAY PERMIT WORK TO CONTINUE UP TO THE AMOUNT WHICH MAY BE IN TRANSIT FROM THE PLANT AT THE TIME, PROVIDED THE MIXTURE IS WITHIN TEMPERATURE LIMITS SPECIFIED.
6. IMMEDIATELY AFTER THE ASPHALT MIXTURE HAS BEEN SPREAD, STRUCK OFF, AND SURFACE IRREGULARITIES ADJUSTED, IT SHALL BE THOROUGHLY AND UNIFORMLY COMPACTED BY ROLLING. THE COMPACTION OBJECTIVE IS 18% - 22% IN PLACE VOID CONTENT (CORELOCK). GREAT CARE SHALL BE TAKEN TO AVOID OVER-COMPACTION.
7. IF THE ENGINEER DETERMINES THAT UNSATISFACTORY COMPACTION OR SURFACE DISTORTION IS BEING OBTAINED OR DAMAGE TO HIGHWAY COMPONENTS AND/OR ADJACENT PROPERTY IS OCCURRING USING VIBRATORY COMPACTION EQUIPMENT, THE CONTRACTOR SHALL IMMEDIATELY CEASE USING THIS EQUIPMENT AND PROCEED WITH THE WORK IN ACCORDANCE WITH THE FIFTH PARAGRAPH OF THIS SUBSECTION.
8. ALONG FORMS, CURBS, HEADERS, WALLS, AND OTHER PLACES NOT ACCESSIBLE TO THE ROLLERS, THE MIXTURE SHALL BE THOROUGHLY COMPACTED WITH HOT OR LIGHTLY OILED HAND TAMPERS, SMOOTHING IRONS OR WITH MECHANICAL TAMPERS. ON DEPRESSED AREAS, EITHER A TRENCH ROLLER OR CLEATED COMPRESSION STRIPS MAY BE USED UNDER THE ROLLER TO TRANSMIT COMPRESSION TO THE DEPRESSED AREA.
H. JOINTS
1. UNLESS OTHERWISE SPECIFIED, THE LONGITUDINAL JOINTS SHALL BE ROLLED FIRST. NEXT, THE CONTRACTOR SHALL BEGIN ROLLING AT THE LOW SIDE OF THE PAVEMENT AND SHALL PROCEED TOWARDS THE CENTER OR HIGH SIDE WITH LAPPED ROLLINGS PARALLEL TO THE CENTERLINE.
2. PLACEMENT OF THE SURFACE COURSE SHALL BE CAREFULLY PLANNED TO ASSURE THAT THE LONGITUDINAL JOINTS IN THE SURFACE COURSE WILL CORRESPOND WITH THE EDGES OF THE PROPOSED TRAFFIC LANES. THEY SHALL NOT BE LOCATED WITHIN THE NORMAL WHEELPATH OF VEHICULAR TRAFFIC.
3. WHEN PAVING ADJOINING LANES, THE ASPHALT CONCRETE SHALL BE LAID SUCH THAT IT UNIFORMLY OVERLAPS THE ADJACENT LANE 2 INCHES TO 3 INCHES. THE THICKNESS OF THE OVERLAP MATERIAL SHALL BE APPROXIMATELY 1/4 THE COMPACTED THICKNESS OF THE COURSE, SO AS TO RESULT IN A SMOOTH AND WELL COMPACTED JOINT AFTER ROLLING. THE OVERLAPPED MATERIAL SHALL BE BROOMED OR RAKED BACK ONTO THE ADJACENT HOT LANE SO THAT THE ROLLER OPERATOR CAN CROWD THE SMALL EXCESS INTO THE HOT SIDE OF THE JOINT. IF THE OVERLAP IS EXCESSIVE, THE EXCESS MATERIAL SHALL BE TRIMMED OFF SO THAT THE MATERIAL ALONG THE JOINT IS UNIFORM.
4. THE COARSE PARTICLES OF AGGREGATE IN THE OVERLAP MATERIAL SHALL BE REMOVED AND WASTED IF DEEMED NECESSARY BY THE ENGINEER.
5. TRANSVERSE JOINTS SHALL BE STAGGERED A MINIMUM OF 10 FEET FROM ADJACENT LANES.
I. TRAFFIC
1. ALL TRUCKS (INCLUDING CONCRETE TRUCKS) WILL BE STOPPED PRIOR TO ENTERING THE SITE AND INSTRUCTED AS TO SPECIAL CONCERNS FOR PAVEMENT DURABILITY.
2. TRUCKS AND OTHER CONSTRUCTION TRAFFIC WILL NOT BE ALLOWED TO ACCESS THE SITE WHILE THE PAVEMENT IS EXCESSIVELY HOT.
3. POROUS PAVEMENT SURFACE SHALL BE PROTECTED ON HOT DAYS DURING THE PAVEMENT CURE PERIOD (1-2 WEEKS).
4. A TEMPERATURE GUN SHALL BE AVAILABLE ONSITE TO ASSESS PAVEMENT SURFACE TEMPERATURES. PAVEMENT TEMPERATURES IN EXCESS OF 100OF SHOULD BE OBSERVED CAREFULLY FOR PAVEMENT DURABILITY.
5. COOLING OF PAVEMENT SURFACE BY APPLICATION OF WATER FROM A WATER TRUCK SHOULD OCCUR WHEN HEAVY VEHICULAR TRAFFIC IS EXPECTED, SUCH AS CONCRETE TRUCKS FOR CURB INSTALLATION. IN THE EVENT THIS IS INEFFECTIVE FOR COOLING AND PAVEMENT DEFORMATION IS STILL OBSERVED, 3/4" PLYWOOD SHALL BE PLACED ON TOP OF THE PAVEMENT.
6. AFTER A 24 HOUR CURING PERIOD OF THE POROUS ASPHALT WEARING COURSE, LIMITED TRAFFIC MAY BE ROUTED OVER THE FINISHED SURFACE.
7. TRAVEL OF CONSTRUCTION EQUIPMENT, AND TRAFFIC IS ALLOWED OVER THE BINDER COURSE ROAD.
8. TRACKING OF DEBRIS SHALL BE MINIMIZED TO A FEASIBLE EXTENT DURING CONSTRUCTION THROUGH THE USE OF STONE ENTRANCES, AND ROUTINE PAVEMENT VACUUMING.
9. UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, CONSTRUCTION EQUIPMENT, AND TRAFFIC SHALL BE PROHIBITED FROM TRAVELING OVER THE COMPLETED POROUS ASPHALT SURFACE UNTIL THE ENTIRE PAVEMENT STRUCTURE IS IN PLACE.
10. DAMAGE TO THE BINDER COURSE LAYER CAUSED BY CONSTRUCTION EQUIPMENT OR TRAFFIC SHALL BE REMEDIED BY COMPLETE REMOVAL AND REPLACEMENT OF THE DAMAGED AREA TO THE LIMITS DETERMINED BY THE ENGINEER.
J. OTHER
1. OTHER COMBINATIONS OF ROLLERS AND/OR METHODS OF COMPACTING MAY BE USED IF APPROVED IN WRITING BY THE ENGINEER, PROVIDED THE COMPACTION REQUIREMENTS ARE MET.
2. A WASHOUT AREA FOR ALL CONCRETE TRUCKS SHALL BE DESIGNATED OUTSIDE OF POROUS PAVEMENT AREA ON EROSION CONTROL PLAN.
3. NO STOCKPILING OF MATERIALS (SOIL, STONE, LANDSCAPING MATERIALS, ETC.) WILL BE ALLOWED ON POROUS PAVEMENTS.
4. MATERIALS EXCAVATED FOR CURB INSTALLATION AND LANDSCAPING STOCKPILES SHALL BE PLACED OUTSIDE OF POROUS PAVEMENT AREA.
5. WEEKLY VACUUMING OF THE POROUS PAVEMENT AND SURROUNDING AREAS (20-FEET BEYOND LIMITS OF POROUS PAVEMENT) SHALL BE PERFORMED BY THE CONTRACTOR AS NECESSARY. FREQUENCY SHALL BE INCREASED IF REQUIRED BY CONSTRUCTION ACTIVITIES.

3.06 DRIVEWAYS AND PARKING AREAS
A. PAVING MATERIALS, TYPE OF PAVING, DEPTH OF VARIOUS COURSES, ETC., SHALL BE AS SHOWN ON THE DRAWINGS.
1. THE DRIVEWAYS AND PARKING AREAS SHALL BE CUT BACK 12 INCHES FROM OUTSIDE DISTURBED OR DAMAGED AREAS AS DESCRIBED ABOVE.
2. THE MINIMUM DEPTH OF SUBBASE SHALL BE AS INDICATED ON THE DRAWINGS AND NHDOT AGGREGATE SPECIFICATIONS.
3. THE WORK SHALL INCLUDE PROPER COMPACTION OF ANY NECESSARY SUBBASE, BASE COURSE AND PAVING COURSES.
B. BITUMINOUS SURFACES SHALL BE RESTORED WITH ASPHALT CONCRETE MATCHING EXISTING, BUT IN NO CASE SHALL BE LESS THAN 2 INCHES OF BINDER AND 1 INCH OF TOP COURSE AS SPECIFIED IN THE APPLICABLE ARTICLES OF THIS SECTION.
C. NON-BITUMINOUS SURFACES - WHERE SHOWN ON THE DRAWINGS, CONSTRUCT NEW DRIVEWAYS AND PARKING AREAS OR RESTORE EXISTING DRIVEWAYS AND PARKING AREAS AS FOLLOWS:
1. GRAVEL SURFACES SHALL BE RESTORED USING SCREENED GRAVEL, MATCHING EXISTING, BUT IN NO CASE SHALL BE LESS THAN 6 INCHES THICK. THE GRAVEL SHALL BE GRADED, SHAPED AND COMPACTED. LOOSE STONES SHALL BE REMOVED.
2. CRUSHED STONE SURFACES SHALL BE RESTORED MATCHING EXISTING STONE, BUT IN NO CASE SHALL BE LESS THAN 1 INCH THICKNESS OF STONE. STONE SHALL BE COMPACTED WITH A ROLLER.

3.07 SEAL AND TACK COAT
A. APPLY SEAL COAT TO DENSE MIX ASPHALT AND ASPHALT CURBS ONLY AND IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS.
B. SEAL COAT APPLICATION TO POROUS PAVEMENTS IS PROHIBITED.
C. BITUMINOUS MATERIAL FOR THE TACK COAT SHALL BE EMULSIFIED ASPHALT, GRADE RS-1 CONFORMING TO NHDOT SPECIFICATION.

3.08 TOLERANCES
A. SURFACE TOLERANCE - THE PAVEMENT SURFACE SHALL BE CONSTRUCTED TO A 1/4-INCH TOLERANCE. IF, IN THE OPINION OF THE ENGINEER, THE PAVEMENT SURFACE IS NOT BEING CONSTRUCTED OR HAS NOT BEEN CONSTRUCTED TO THIS TOLERANCE BASED UPON VISUAL OBSERVATION OR UPON RIDING QUALITY, HE MAY TEST THE SURFACE WITH A 16-FOOT STRAIGHT EDGE (FURNISHED BY THE CONTRACTOR) OR STRING LINE PLACED PARALLEL TO THE CENTERLINE OF THE PAVEMENT AND WITH A 10-FOOT STRAIGHT EDGE OR STRING LINE PLACED TRANSVERSELY TO THE CENTERLINE OF THE PAVEMENT ON ANY PORTION OF THE PAVEMENT.
1. VARIATIONS EXCEEDING 1/4-INCH SHALL BE SATISFACTORILY CORRECTED OR THE PAVEMENT RELAYED AT NO ADDITIONAL COST AS ORDERED BY THE ENGINEER.
B. THICKNESS TOLERANCE - THE THICKNESS INDICATED FOR EACH OF THE VARIOUS COURSES OF BITUMINOUS PAVEMENT IS THE NOMINAL THICKNESS. THE PAVEMENT SHALL BE SO CONSTRUCTED THAT THE FINAL COMPACTED THICKNESS IS AS NEAR TO THE NOMINAL THICKNESS AS IS PRACTICAL, AND WITHIN THE TOLERANCES SPECIFIED BELOW.
1. MATERIAL WHICH IS PART OF A TRUING OR LEVELING COURSE OR SHIM COURSE WILL NOT BE CONSIDERED IN PAVEMENT THICKNESS DETERMINATIONS.
2. A TOLERANCE NOT TO EXCEED 1/4-INCH FROM THE NOMINAL THICKNESS REQUIRED FOR THE COURSE SPECIFIED UNDER ONE PAY ITEM WILL BE ACCEPTABLE WHERE THE REQUIRED NOMINAL THICKNESS IS 4 INCHES OR LESS. A TOLERANCE NOT TO EXCEED 1/2-INCH FROM THE NOMINAL THICKNESS REQUIRED FOR THE COURSE OR COURSES SPECIFIED UNDER ONE PAY ITEM WILL BE ACCEPTABLE WHERE THE REQUIRED NOMINAL THICKNESS IS OVER 4 INCHES. IN ADDITION, THE SUM TOTAL THICKNESS OF ALL BITUMINOUS MIXTURE COURSES SHALL NOT VARY FROM THE TOTAL OF THE NOMINAL THICKNESS INDICATED ON THE PLANS BY MORE THAN 1/4-INCH WHERE THE TOTAL NOMINAL THICKNESS IS 4 INCHES OR LESS; OR MORE THAN 1/2-INCH WHERE THE TOTAL NOMINAL THICKNESS IS OVER 4 INCHES BUT NOT MORE THAN 8 INCHES; AND BY NOT MORE THAN 5/8-INCH WHERE THE TOTAL NOMINAL THICKNESS IS MORE THAN 8 INCHES.

3.09 PROTECTION
A. ANY PAVEMENT, CONSTRUCTED OR RECONSTRUCTED, WHICH IS SUBSEQUENTLY DAMAGED DUE TO ACTIVITY OF WORK UNDER THIS CONTRACT, SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
B. PROTECT PAVEMENT FROM VEHICULAR TRAFFIC UNTIL COMPACTION IS COMPLETED.

3.10 PAVEMENT MARKING
A. PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATION.
B. STRIPING PAINT FOR POROUS ASPHALT SHALL BE LATEX, WATER-BASE EMULSION, READY-MIXED, AND COMPLYING WITH PAVEMENT MARKING SPECIFICATIONS PS TT-P-1952 AND IN ACCORDANCE WITH UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS, REV. OCTOBER 2009 OR MOST RECENT UPDATE LOCATED AT HTTP://WWW.UNH.EDU/UNHSC/SPECS-AND-FACT-SHEETS-0

PART 4: QUALITY ASSURANCE AND QUALITY CONTROL
4.01 GENERAL
A. PERFORM WORK IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, AS AMENDED TO DATE AND AS THEY APPLY TO THE FOLLOWING AND UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS OR MOST RECENT UPDATE LOCATED AT HTTP://WWW.UNH.EDU/UNHSC/SPECS-AND-FACT-SHEETS-0.:
3. MATERIALS AND BATCH PLANT REQUIREMENTS.
4. CONSTRUCTION PROCEDURES EXCEPT AS MODIFIED HEREIN.
5. WEATHER AND SEASONAL LIMITATIONS EXCEPT AS MODIFIED HEREIN.
A. PAVING WORK SHALL BE PERFORMED BY A QUALIFIED PAVING CONTRACTOR OR SUBCONTRACTOR ACCEPTABLE TO THE OWNER AND ENGINEER.
B. OBTAIN ASPHALT CONCRETE MATERIALS FROM SAME SOURCE THROUGHOUT PROJECT.

4.02 QUALITY ASSURANCE/CONTROL DURING SUBBASE AND SUBGRADE PREPARATION

4.03 THIRD PARTY QUALITY CONTROL OF HOT MIX PLANT PRODUCTION
A. THE CONTRACTOR SHALL PROVIDE AT CONTRACTOR'S EXPENSE AND THE ENGINEER'S APPROVAL A THIRD PARTY QUALITY CONTROL INSPECTOR TO OVERSEE AND DOCUMENT BOTH 1) MIX PRODUCTION OF THE POROUS ASPHALT WEARING COURSE AND BINDER COURSE MATERIALS USED FOR THE PROJECT, AND 2) FIELD TESTING FOR IN PLACE MATERIALS, AS PER TABLE 5.
B. ALL MIX TESTING RESULTS DURING PRODUCTION SHOULD BE SUBMITTED TO THE ENGINEER ON A DAILY BASIS.
C. QUALITY ASSURANCE FIELD TESTING SHALL BE CONDUCTED FOR IN-PLACE MATERIALS FOR THE POROUS ASPHALT SYSTEM BY A THIRD PARTY AT THE CONTRACTOR'S EXPENSE IN COORDINATION WITH THE ENGINEER.
D. THE CONTRACTOR SHALL COORDINATE WITH THE THIRD PARTY QUALITY CONTROL FIRM TO SUBMIT RESULTS TO THE ENGINEER DAILY AND ON AN ON-GOING BASIS.

4.04 REVIEW SUBMITTALS OF QUALITY ASSURANCE/CONTROL OF PRODUCTION
A. PROVIDE CERTIFICATION OF APPROVED JOB MIX FORMULAS FOR TYPES TO BE USED ON THIS PROJECT.
B. THE MIXING PLANT SHALL EMPLOY A QUALITY CONTROL INSPECTOR. THE INSPECTOR WILL PERFORM QA/QC TESTING AND WILL BE CERTIFIED IN THE DISCIPLINE OF HMA PLANT TECHNICIAN BY THE RELEVANT CERTIFYING AGENCY (E.G. NETTCP IN NEW ENGLAND). THE CONTRACTOR SHALL SAMPLE, TEST AND EVALUATE THE MIX IN ACCORDANCE WITH THE METHODS AND MINIMUM FREQUENCIES SUMMARIZED IN TABLE 5.
C. IF AN ANALYZED SAMPLE IS OUTSIDE THE TESTING TOLERANCES IMMEDIATE CORRECTIVE ACTION WILL BE TAKEN. AFTER THE CORRECTIVE ACTION HAD BEEN TAKEN THE RESULTING MIX WILL BE SAMPLED AND TESTED. IF THE RE-SAMPLED MIX TEST VALUES ARE OUTSIDE THE TOLERANCES THE ENGINEER WILL BE IMMEDIATELY INFORMED. THE ENGINEER MAY DETERMINE THAT IT IS IN THE BEST INTEREST OF THE PROJECT THAT PRODUCTION IS CEASED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL MIX PRODUCED FOR THE PROJECT.
D. TESTING TOLERANCES DURING CONSTRUCTION. THE PAVING MIXTURE PRODUCED SHOULD NOT VARY FROM THE DESIGN CRITERIA FOR AGGREGATE GRADATION AND BINDER CONTENT BY MORE THAN +/- 5 PERCENT (%) OR APPROVAL BY ENGINEER.
E. SHOULD THE PAVING MIXTURE PRODUCED VARY FROM THE DESIGNATED GRADING AND ASPHALT CONTENT SPECIFIED BY MORE THAN THE ABOVE TOLERANCES, THE APPROPRIATE PRODUCTION MODIFICATIONS ARE TO BE MADE UNTIL THE POROUS ASPHALT MIX IS WITHIN THESE TOLERANCES.

4.05 QUALITY ASSURANCE/CONTROL DURING PAVING
A. QA/QC REQUIREMENTS DURING PAVING ARE SUMMARIZED IN TABLE 4 AND TABLE 5
B. MONITOR QUALITY CONTROL OVER SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS, AND WORKMANSHIP, TO PRODUCE WORK OF SPECIFIED QUALITY.

PART 5: SIGNAGE FOR OPERATIONS AND MAINTENANCE

RECOMMENDED SIGNAGE SHOULD READ AS FOLLOWS:
POROUS PAVEMENT PARKING FACILITY FOR STORMWATER MANAGEMENT
POROUS ASPHALT ROADWAY-ENVIRONMENTALLY FRIENDLY STREET
- REDUCES POLLUTION AND FLOODING FROM STORMWATER
- PROTECTS AND CONSERVES WATER RESOURCES
- REDUCES EXCESS URBAN HEAT
- REDUCES WINTER SALT FOR DEICING

ROUTINE MAINTENANCE
- SANDING, SEALCOATING, AND CRACKSEALING PROHIBITED.
- DO NOT STORE STOCKPILES ON POROUS SURFACE SUCH AS SAND, SALT, MULCH, LOAM, OR GRASS CLIPPINGS.
- VACUUM 3X PER YEAR (SPRING, SUMMER, FALL) OR AS NEEDED.
- POWER-WASH AT A 45° ANGLE FOR CHRONICALLY CLOGGED AREAS.
- ALL SWEEPINGS MUST BE DISPOSED OF IN A LEGAL MANNER.
- PREVENT RUN-ON OF SEDIMENT AND DEBRIS THROUGH EROSION CONTROL OF NEARBY AREAS.

WINTER MAINTENANCE
- MECHANICAL REMOVAL OF SNOW AND ICE BY SNOW PLOW.
- APPLY DEICING TREATMENTS DURING, AND AFTER STORMS AS NECESSARY TO CONTROL COMPACT SNOW AND ICE NOT REMOVED BY PLOWING.
- LITTLE OR NO ROAD SALT MAY BE NECESSARY BETWEEN STORMS. UP TO 75% REDUCED USE OF ROAD SALT MAY BE FEASIBLE AND MINIMIZE POTENTIAL IMPACT TO GROUNDWATER AND WETLAND RESOURCES.
- NO DEICING MATERIALS SHALL BE STORED ON SITE.

TABLE 1: SUB-BASE MATERIAL GRADATION REQUIREMENTS

MATERIAL TYPE	CHOKER COURSE	RESERVOIR COURSE PEA GRAVEL ASTM NO. 67	FILTER COURSE (NHDOT 304.1 MODIFIED)
SIEVE DESIGNATION (INCH/MM)	PERCENT PASSING (%), CRITERIA	PERCENT PASSING (%), CRITERIA	PERCENT PASSING (%), CRITERIA
6/150			100
2/50			
1½/37.5	100		
1/25	75 – 100	100	
¾/19	45 - 65	90-100	
½/12.5	20 - 35		
⅜/9.5	0- 25	20-55	
#4/4.75		0-10	70-100
#8/2.36		0-5	
#200/0.075			0-6**
VOIDS (ASTM C29)	>40%	>40%	

* ALL RANGE +/-5% OR APPROVAL BY REVIEW ENGINEER
**PREFERABLY LESS THAN 4% FINES

TABLE 2: TESTING REQUIREMENTS FOR COMPACTION AND INFILTRATION FOR SUBGRADE AND SUBBASE

CONSTRUCTION ELEMENT	LAYER THICKNESS (IN)	FIELD TESTING REQ.	COMPACTION LEVEL STANDARD PROCTOR (D698)	INFILTRATION RATE (FT/DAY)	FREQUENCY 1X PER SF
I. EMBANKMENTS AND FILLS					
A. NON-POROUS AREAS FILL AND SUBGRADE UNDER STREETS, PARKING AREAS, AND OTHER PAVED AREAS	12	T138	95%	N/A	
B. POROUS AREAS FILL AND SUBGRADE	12	T138 D3385	95-99%	>5-30'	10,000
C. POROUS AREAS SUBBASE (FILTER COURSE)	12	T138 D3385	95-99%	>5-30'	40,000
D. ROUGH SITE GRADING	24	T138	85%	N/A	
II. TRENCHES					
A. PIPE SIDEFILLS AND TOP 4 FEET OF PIPE BACKFILL UNDER PAVEMENTS*	12	T138	93%	N/A	
B. BACKFILL BELOW 4 FEET UNDER PAVEMENT	18	T138	90%	N/A	

*THE INFILTRATION RATE SHALL BE NO LESS 5-30 FT/DAY OR 50% OF THE HYDRAULIC CONDUCTIVITY (D2434) AT 95% STANDARD PROCTOR COMPACTION; SUBGRADE REFERS TO EVERYTHING 2' BELOW FINISHED GRADE OF PAVEMENT; SUBBASE REFERS TO CONSTRUCTED PAVEMENT MATERIALS ABOVE SUBGRADE AND BELOW PAVEMENT SURFACE.

TABLE 3: POROUS ASPHALT MIX DESIGN CRITERIA.

SIEVE DESIGNATION (INCH/MM)	PERCENT PASSING (%), CRITERIA
0.75/19	100
0.50/12.5	85-100
0.375/9.5	55-75
NO.4/4.75	10-25
NO.8/2.36	5-10
NO.200/0.075 (#200)	2-4
PGAB CONTENT (AASHTO T164)	5.7-6.2%
MIXING TEMPERATURE RANGE	290°F-350°F OR AS PER PGAB SUPPLIER
PGAB GRADE	PG 76-28
STYRENE BUTADIENE STYRENE (SBS)	3% OR TBD
AIR VOID CONTENT (ASTM D6752/AASHTO T275)	18.0-22.0%
DRAINDOWN (ASTM D6390)	< 0.3 %
RETAINED TENSILE STRENGTH (TSR) (AASHTO 283)	> 80 %
CANTABRO ABRASION TEST ON UNAGED SAMPLES (ASTM D7064-04)	< 12%

*TESTING TOLERANCES SHOULD BE WITHIN THE SPECIFIED RANGE, OR FOR SINGLE CRITERIA SHOULD NOT VARY BY MORE THAN +/- 5 PERCENT (%) OR BY APPROVAL OF ENGINEER.
**CELLULOSE OR MINERAL FIBERS MAY BE USED TO REDUCE DRAINDOWN.
***IF THE TSR (RETAINED TENSILE STRENGTH) VALUES FALL BELOW 80% WHEN TESTED PER NAPA IS 131 (WITH A SINGLE FREEZE THAW CYCLE RATHER THAN 5), THEN IN STEP 4, THE CONTRACTOR SHALL EMPLOY AN ANTISTRIP ADDITIVE, SUCH AS HYDRATED LIME (ASTM C977) OR A FATTY AMINE, TO RAISE THE TSR VALUE ABOVE 80%.
****UNDER NO CIRCUMSTANCES IS A PGAB 64-28 ACCEPTABLE IN REPLACE OF PG 76-28.

TABLE 4: QA/QC REQUIREMENTS DURING PAVING

ACTIVITY	SCHEDULE/ FREQUENCY	TOLERANCE
INSPECT TRUCK BEDS FOR POOLING (DRAIN DOWN)	EVERY TRUCK	N/A
TAKE SURFACE TEMP. BEHIND JOINT HEATER	EACH PULL	6°C (10°F) OF COMPACTION TEMP.
CONSULT WITH ENGINEER TO DETERMINE LOCATIONS OF BUTT JOINTS	AS NEEDED	N/A
TEST SURFACE SMOOTHNESS & POSITIVE DRAINAGE WITH 10 FT STRAIGHTEDGE	AFTER COMPACTION	4.5 MM (3/16")
CONSULT WITH ENGINEER TO MARK CORE LOCATIONS FOR QA TESTING	AFTER COMPACTION	N/A

TABLE 5: QA/QC TESTING REQUIREMENTS BY SAMPLES AT ASPHALT PLANT AND FIELD SAMPLES BY CORE

TEST	POROUS ASPHALT WEARING COURSE RANGE/SAMPLE LOCATION	ASPHALT TREATED PERMEABLE BASE RANGE/SAMPLE LOCATION	FREQUENCY MINIMUM X PER DAY, CRITERIA
BINDER CONTENT (AASHTO T164)	5.7 – 6.25%, ASPHALT PLANT	2.7%, ASPHALT PLANT	2X, PER 500 TONS
AIR VOID CONTENT (ASTM D6752/AASHTO T275)	16 – 22%, FIELD CORE	>27%, FIELD CORES	2X, PER 500 TONS
DRAINDOWN (ASTM D6390)	≤0.3%, ASPHALT PLANT	N/A	2X, PER 500 TONS
CANTABRO ABRASION TEST ON UNAGED SAMPLES (ASTM D7064-04)	≤12%, ASPHALT PLANT	N/A	2X, PER 500 TONS
INFILTRATION RATE (HOSE TEST)*	>1000 IN/HR	>3000 IN/HR	2X, PER 500 TONS

*INFILTRATION WILL BE REDUCED FOR TESTS PERFORMED ON SLOPE; HOSE TESTS WILL BE PERFORMED BY USE OF A WATER TRUCK WITH HOSE AND MEASURED FLOW, AND DETERMINED BY DIAMETER OF PUDDLE.
**INFILTRATION TESTS WILL BE COLLOCATED WITH CORE SAMPLES.
***TESTING TOLERANCES SHOULD NOT VARY FROM THE DESIGN CRITERIA BY MORE THAN +/- 5 PERCENT (%) OR APPROVAL BY ENGINEER

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAR 24, 2020	FOR APPROVAL	
1	MAR 11, 2020	PRELIMINARY	

DRAWN: MCV | DESIGN: MCV
CHECKED: BDS | CHECKED: BDS

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SEAL
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BRUCE D. SCAMMAN
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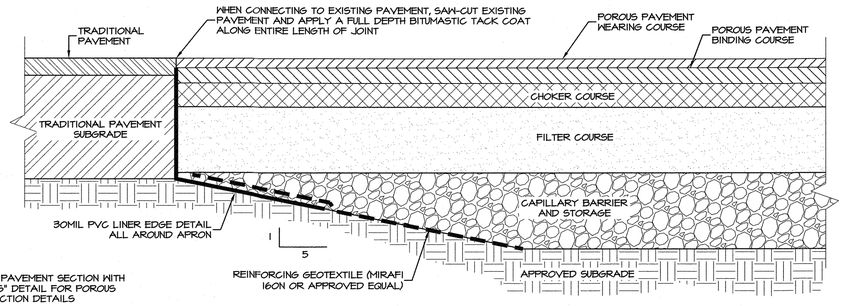
3/25/20

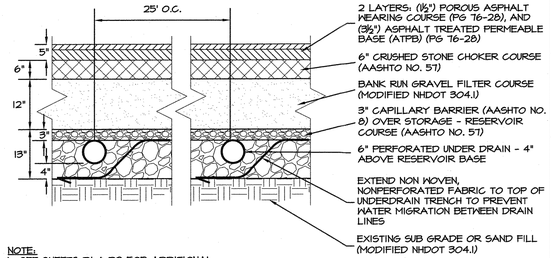
TITLE:
NOTES
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT: 19-083 | SCALE: AS SHOWN | SHEET: D2



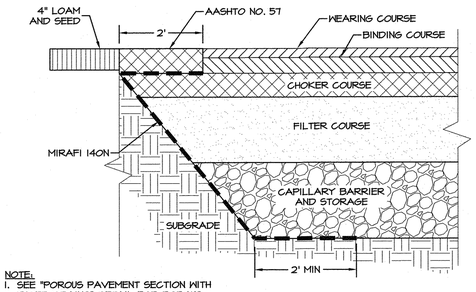
NOTE:
1. SEE "POROUS PAVEMENT SECTION WITH UNDER DRAINS" DETAIL FOR POROUS PAVEMENT SECTION DETAILS

POROUS PAVEMENT TRANSITION TO TRADITIONAL PAVEMENT OR CONCRETE DETAIL
N.T.S.



NOTE:
1. SEE SHEETS D1 & D2 FOR ADDITIONAL NOTES ON POROUS PAVEMENT, AND TABLE 1 SEPCIFICALLY FOR MODIFIED NHDOT 304.1 GRADATION.

POROUS PAVEMENT SECTION WITH UNDER DRAINS
N.T.S.



NOTE:
1. SEE "POROUS PAVEMENT SECTION WITH UNDER DRAINS" DETAIL FOR POROUS PAVEMENT SECTION DETAILS

POROUS PAVEMENT EDGE DETAIL
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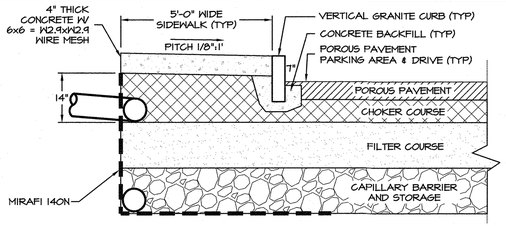
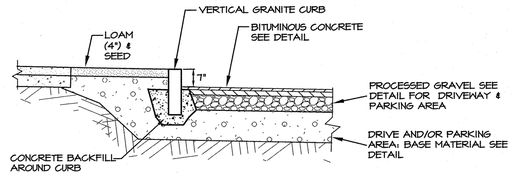


CONCRETE NOTES:
1. CONCRETE WORK SHALL CONFORM TO THE FOLLOWING NOTES AND SPECIFICATIONS.
   - "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" - ACI 301-05.
   - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" - ACI 318-05.
2. COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 4000 PSI AFTER 28 DAYS WITH 5 - 7% AIR ENTRAINMENT, W.R. GRACE "ECLIPSE PLUS" SHRINKAGE ADMIXTURE, AND W.R. GRACE "DCI-S" CORROSION INHIBITOR, AND A MIDRANGE WATER REDUCER.
3. FINISH CONCRETE W/ BROOM FINISH, TOOLED CONTROL JOINTS @ 5'-0" MAX SPACING, AND TOOLED JOINT ALONG ALL EDGES OF SIDEWALK.
4. SLAB SHALL BE WATER CURED FOR A MINIMUM OF 5 DAYS USING WET BURLAP.

TYPICAL CONCRETE SIDEWALK DETAIL
N.T.S.



VERTICAL CURB DETAIL
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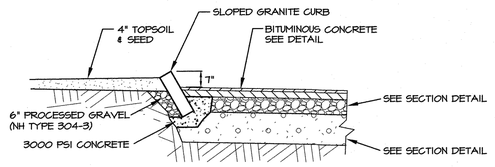

SLOPED CURB DETAIL
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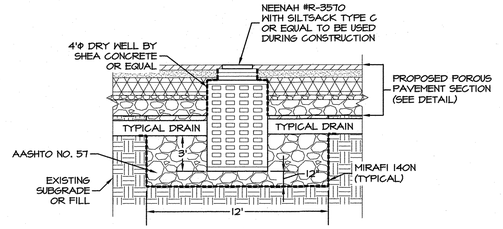

TYPICAL DRYWELL SECTION
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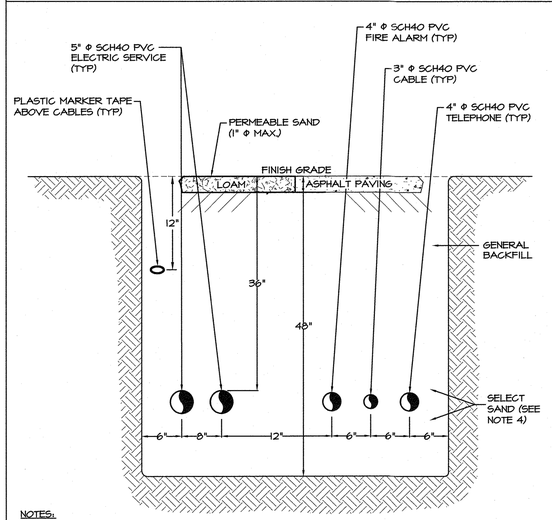
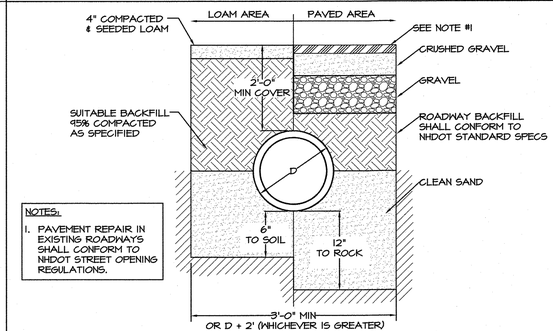


NOTES:

VERIFY NUMBER OF CONDUIT RUNS AND TYPES OF CONDUITS REQUIRED WITH ELECTRICAL AND MECHANICAL DESIGNERS BEFORE INSTALLATION

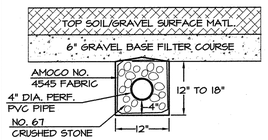
1. ALL UTILITIES SHALL BE REVIEWED AND APPROVED BY APPROPRIATE UTILITY COMPANY.
2. SERVICE BOX CONNECTIONS SHALL BE "FLUSH MOUNT" TO GREATEST EXTENT POSSIBLE AND LOCATED AT PROPERTY LINE CORNERS.
3. PIPE SIZES ARE MINIMUM SIZES TO BE INSTALLED.
4. BACKFILL: SHALL BE SELECTED SAND, 100% SHALL PASS THROUGH 1/4" SCREEN, UP TO 1% MAY BE ROUNDED PEBBLES UP TO 3/8" IN SIZE.
5. TRENCH WIDTH IS TO BE 12" MINIMUM, DEPENDING ON NUMBER OF UTILITIES IN TRENCH, UNLESS CABLE IS PLOWED IN.
6. UTILITIES ARE TO BE LOCATED IN ROAD SHOULDERS AND ROWS AS DETERMINED BY PLANS. ALL WORK TO BE COORDINATED WITH UTILITY COMPANIES.
7. THERE MAY BE MORE OR LESS SERVICES TO BE INSTALLED IN TRENCH VERIFY WITH UTILITIES PLAN.
8. VERIFY & REFER TO PROJECT ELECTRICAL DRAWINGS AND DETAILS FOR SPECIFICS.

TYPICAL UTILITY TRENCH DETAIL
N.T.S.



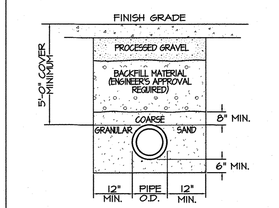
NOTES:
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO NHDOT STREET OPENING REGULATIONS.

DRIVEWAY & PARKING LOT TYPICAL PIPE-RUN SECTION
N.T.S.



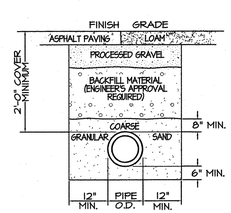
NOTE:
1. SUB DRAINS SHALL DRAIN TO DRAINAGE STRUCTURE OR TO DAYLIGHT.

SUBSOIL DRAIN DETAIL
N.T.S.



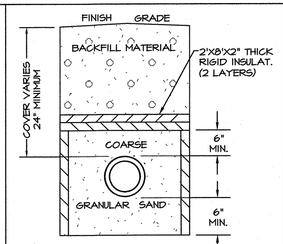
NOTE:
1. SEE SITE PLAN FOR PIPE SIZES AND SERVICES.

WATERLINE INSTALLATION
N.T.S.



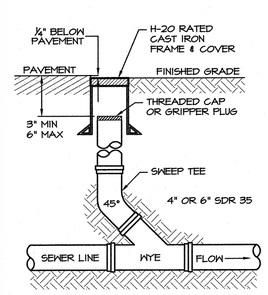
NOTES:
1. ALL CONSTRUCTION AND CONNECTIONS TO BE IN ACCORDANCE WITH LOCAL STANDARDS.
2. SEE MECHANICAL DRAWINGS FOR PIPE SIZES, SCHEDULES, AND PITCH REQUIREMENTS.

SEWER LINE INSTALLATION
N.T.S.



NOTES:
1. INSULATE SEWER OR FORCE MAIN WHERE PIPE WILL BE LESS THAN 6' BELOW PLOWED AREAS OR LESS THAN 4' BELOW AREAS RUNNING CROSS COUNTRY.
2. GAPS BETWEEN SECTIONS OF INSULATION TO BE COVERED WITH 2'x2'x2" PIECE OF INSULATION CENTERED OVER GAP.

PIPE INSTALLATION DETAIL
N.T.S.



SERVICE CLEANOUT DETAIL
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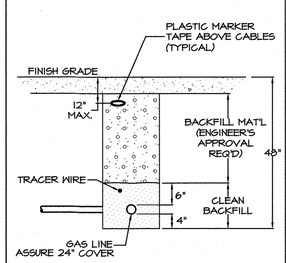

GAS LINE INSTALLATION
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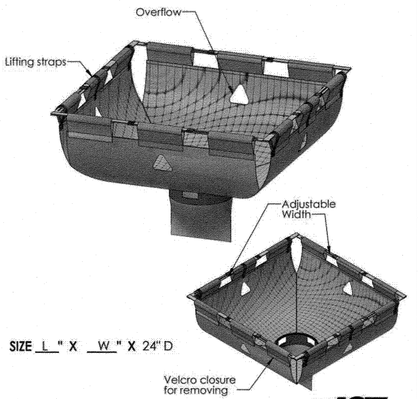
Silt Sack - Type C



SIZE L " X W " X 24" D

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ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAR 24, 2020	FOR APPROVAL	
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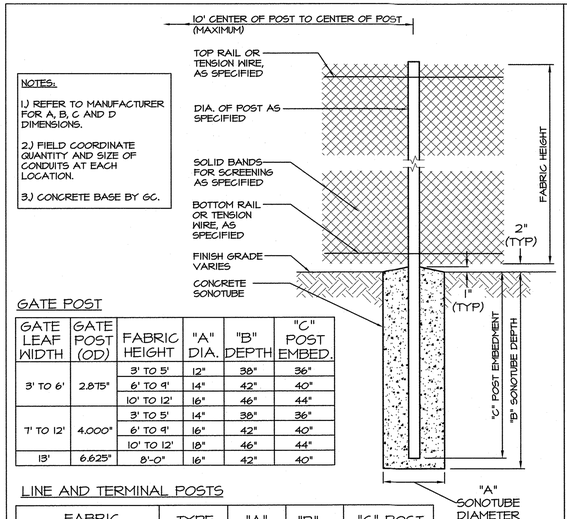
SEAL

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
3/25/20

TITLE:
DETAILS
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	AS SHOWN	D3



NOTES:

1.) REFER TO MANUFACTURER FOR A, B, C AND D DIMENSIONS.

2.) FIELD COORDINATE QUANTITY AND SIZE OF CONDUITS AT EACH LOCATION.

3.) CONCRETE BASE BY GC.

GATE POST

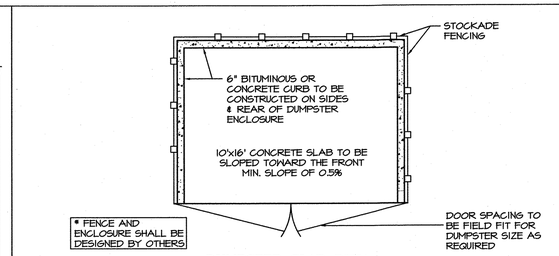
GATE LEAF WIDTH	GATE POST (OD)	FABRIC HEIGHT	"A" DIA.	"B" DEPTH	"C" POST EMBED.
3' TO 6'	2.875"	3' TO 5'	12"	38"	36"
		6' TO 9'	14"	42"	40"
		10' TO 12'	16"	46"	44"
7' TO 12'	4.000"	3' TO 5'	14"	38"	36"
		6' TO 9'	16"	42"	40"
		10' TO 12'	18"	46"	44"
13'	6.625"	8'-0"	16"	42"	40"

LINE AND TERMINAL POSTS

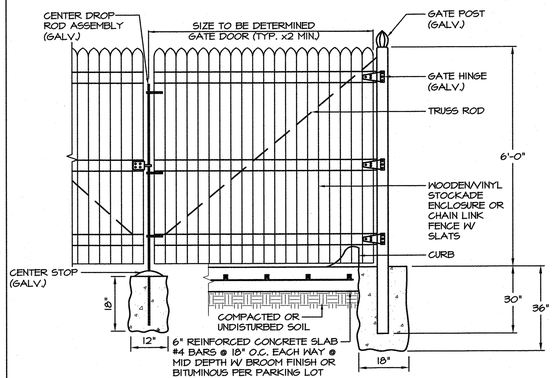
FABRIC HEIGHT	TYPE POST	"A" DIAM	"B" DEPTH	"C" POST EMBEDMENT
3'-0" TO 4'-0"	LINE	6"	26"	24"
	TERMINAL	10"	32"	30"
5'-0"	LINE	8"	32"	30"
	TERMINAL	10"	32"	30"
6'-0" TO 9'-0"	LINE	12"	38"	36"
	TERMINAL	12"	38"	36"
10'-0" TO 12'-0"	LINE	18"	38"	36"
	TERMINAL	18"	38"	36"
13'-0" TO 18'-0"	LINE	24"	42"	40"
	TERMINAL	24"	42"	40"

NOTE: TERMINAL POSTS INCLUDE END, CORNER, AND PULL POSTS

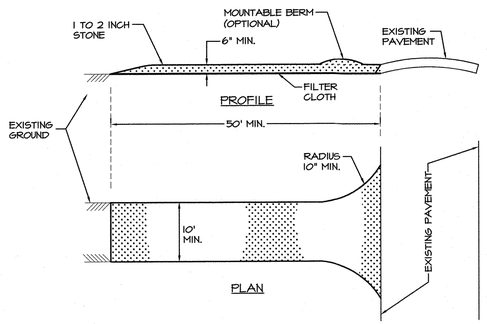
CHAIN LINK FENCE FOUNDATION
N.T.S.



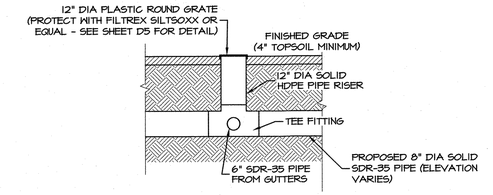
DUMPSTER SLAB DETAIL



STOCKADE DUMPSTER ENCLOSURE DETAIL
N.T.S.



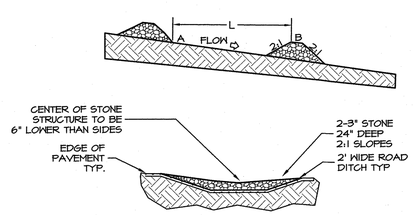
STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



PROPOSED HDPE PIPE RISER DETAIL
NOT TO SCALE

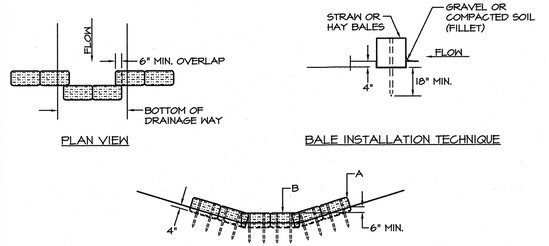
SPACING BETWEEN STRUCTURES

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION.



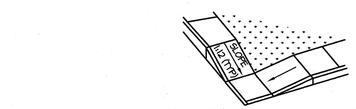
CONSTRUCTION NOTES:
STONE STRUCTURES SHOULD BE CONSTRUCTED OF 2-3" STONE. THE STONE SHOULD BE PLACED ACCORDING TO ABOVE DETAIL. CAREFUL PLACEMENT WILL BE NECESSARY TO ACHIEVE COMPLETE COVERAGE OF THE DITCH OR SWALE AND TO INSURE THAT THE CENTER OF THE STRUCTURE IS LOWER THAN THE EDGES.

TEMPORARY GRADE STABILIZATION STRUCTURE
N.T.S.

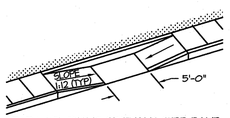


THE ELEVATION OF POINT "A" MUST BE A MINIMUM OF 6" ABOVE POINT "B".

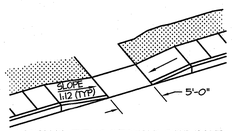
STRAW OR HAY BALE GRADE STABILIZATION STRUCTURE
N.T.S.



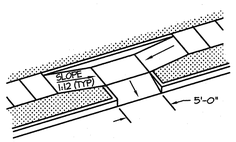
COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP AT SIDEWALK CORNER
N.T.S.



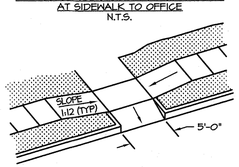
PARALLEL PUBLIC SIDEWALK CURB RAMP
N.T.S.



PARALLEL PUBLIC SIDEWALK CURB RAMP AT SIDEWALK TO OFFICE
N.T.S.



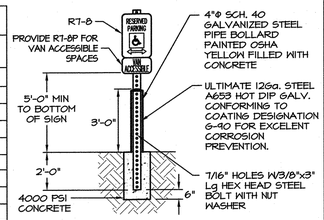
COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP
N.T.S.



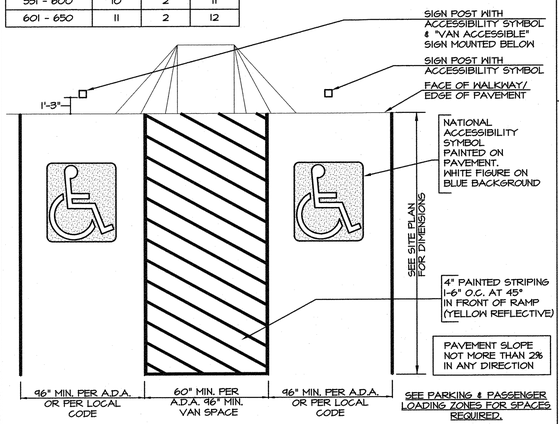
COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP AT SIDEWALK TO OFFICE
N.T.S.

ACCESSIBILITY RAMP DETAILS
N.T.S.

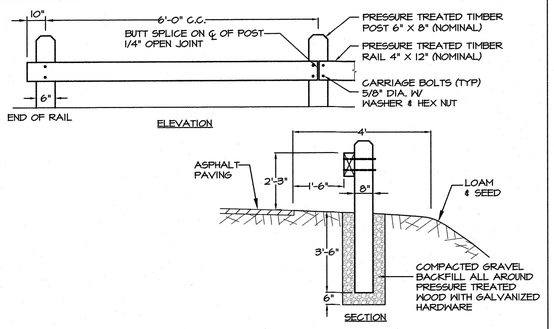
PARKING & PASSENGER LOADING ZONES			
TOTAL # PARKING SPACES	MINIMUM ACCESSIBLE SPACES		
	STAND.	VAN	TOTAL
1 - 25	0	1	1
26 - 50	1	1	2
51 -75	2	1	3
76 - 100	3	1	4
101 - 150	4	1	5
151 - 200	5	1	6
201 - 300	6	1	7
301 - 400	7	1	8
401 - 500	8	2	9
501 - 550	9	2	10
551 - 600	10	2	11
601 - 650	11	2	12



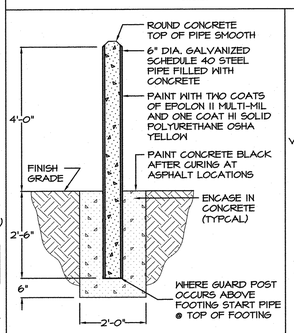
ACCESSIBILITY SIGN MOUNTING DETAIL



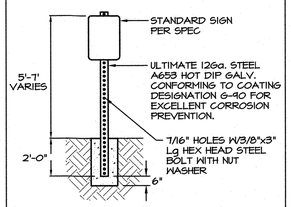
PARKING STALL FOR THE PHYSICALLY CHALLENGED
N.T.S.



TIMBER GUARD RAIL DETAIL
N.T.S.



BOLLARD DETAIL
N.T.S.



STANDARD SIGN MOUNTING DETAIL
N.T.S.

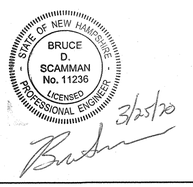
ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAR 24, 2020	FOR APPROVAL	
1	MAR 11, 2020	PRELIMINARY	

DRAWN: MCV | DESIGN: MCV
CHECKED: BDS | CHECKED: BDS

EMANUEL ENGINEERING
civil & structural consultants, land planners
118 Portsmouth Avenue, A202
Stratham, NH 03885
P: 603-772-4400 F: 603-772-4497
www.emanuelengineering.com

CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

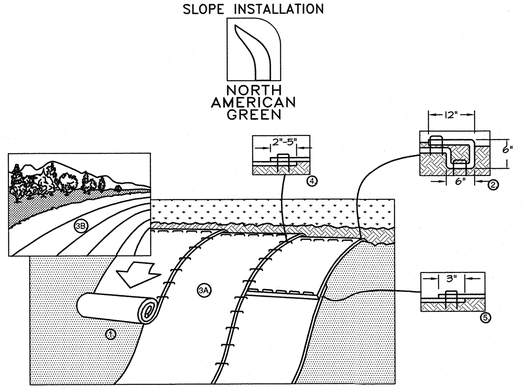
SEAL



TITLE:
DETAILS
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT: 19-083 | SCALE: AS SHOWN | SHEET: D4

SLOPE INSTALLATION



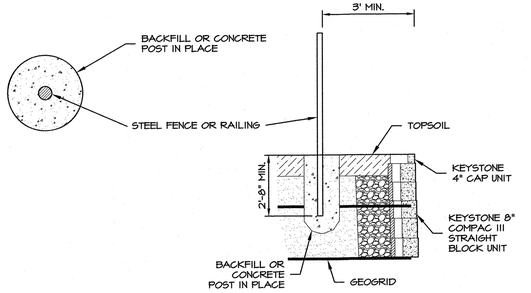
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

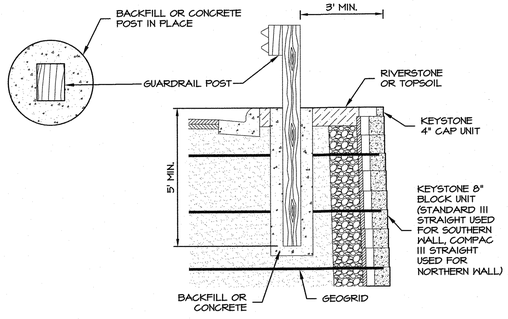
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENTHS IN EXCESS OF 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

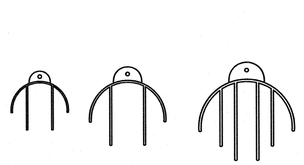
1464B HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725
USA 1-800-772-2040 CANADA 1-800-448-2040
www.nagreen.com



TYPICAL FENCE POST OFFSET
N.T.S.

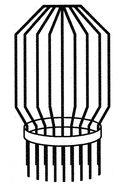


TYPICAL GUARD RAIL CROSS-SECTION
N.T.S.



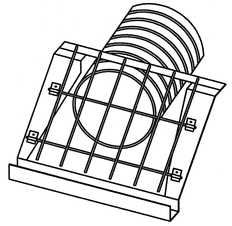
ANIMAL GUARD GRATE
(FINGER STYLE)

STANDARD SIZES:
4", 6", 8", 10", 12", 15", 18", 24", 30", 36" & 42"



INLET BAR GUARD/GRATE

STANDARD SIZES:
4", 6", 8", 10", 12", 15", 18", 24", 30" & 36"



END SECTION TRASH GUARD/GRATE

STANDARD SIZES:
12", 15", 18", 24", 30", & 36"

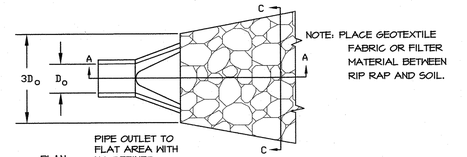
NOTES:

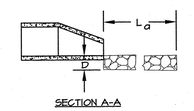
1.) PRODUCTS SHOWN MANUFACTURED BY ADVANCE DRAINAGE SYSTEM INC. WWW.ADS-PIPE.COM

2.) USE ADVANCE DRAINAGE SYSTEM INC. OR EQUAL

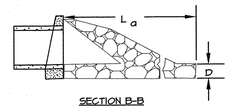
3.) FOLLOW MANUFACTURER INSTALLATION INSTRUCTIONS

PIPE GRATE PROTECTION DETAIL
N.T.S.

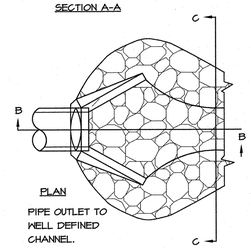


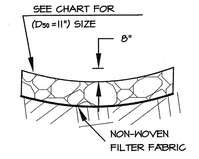


SECTION A-A



SECTION B-B





SECTION C-C

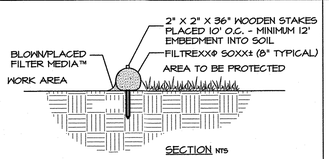
RIP RAP (D50) SIZE CHART

% OF WT. SMALLER THAN GIVEN SIZE	SIZE INCHES
100	15.4-21.2
85	13.8-19.1
50	10.6-15.9
15	3.2-5.3

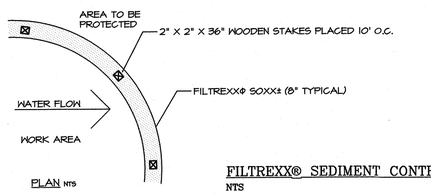
CONSTRUCTION SPECIFICATIONS:
1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OF GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE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

PIPE OUTLET PROTECTION
N.T.S.

NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
7. ADDITIONAL INFO AVAILABLE AT HTTP://WWW.FILTREXX.COM

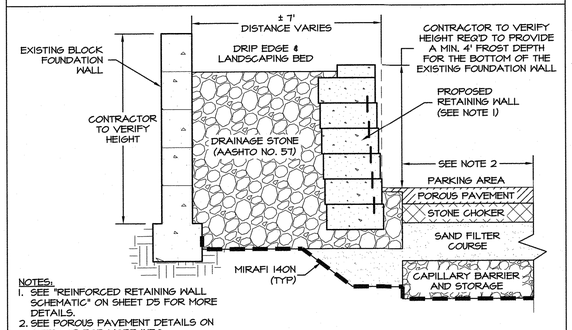


SECTION NTS



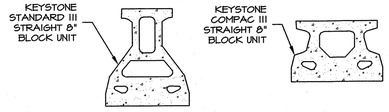
PLAN NTS

FILTREXX® SEDIMENT CONTROL
NTS



NOTES:
1. SEE "REINFORCED RETAINING WALL SCHEMATIC" ON SHEET D5 FOR MORE DETAILS.
2. SEE POROUS PAVEMENT DETAILS ON SHEET D3 FOR MORE INFO.

RETAINING WALL - DRIP EDGE DETAIL
N.T.S.

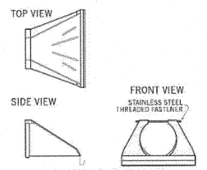


REINFORCED RETAINING WALL SCHEMATIC
N.T.S.

NOTES:
1. RETAINING WALL DESIGN BY OTHER. COORDINATE WITH MANUFACTURER ON USE AND LOCATION OF REINFORCEMENT.
2. WALL HEIGHT (H) IS THE TOTAL HEIGHT FROM TOP OF LEVELING PAD TO TOP OF WALL.
3. MINIMUM WALL EMBEDMENT IS 12 INCHES FROM TOP OF LEVELING PAD.
4. SUBSURFACE SOILS MUST BE CAPABLE OF SUPPORTING WALL SYSTEM.
5. UNIT DRAINAGE FILL IS ¾ INCH CLEAN WASHED CRUSHED STONE. FILL ALL OPEN SPACES BETWEEN UNITS AND OPEN CAVITIES/CORES WITH SAME UNIT DRAINAGE MATERIALS EXCEPT WHERE FENCE POSTS ARE PRESENT. VOIDS IN BLOCKS HOLDING FENCE POSTS SHALL BE FILLED WITH NON-SHRINK GROUT, AND LOCATIONS SHALL BE VERIFIED WITH THE FENCE COMPANY.
6. LEVELING PAD IS CRUSHED STONE BASE MATERIAL.
7. ALL BACKFILL MATERIALS ARE COMPACTED IN 8" LIFTS TO 95% STANDARD PROCTOR DENSITY OR 92% MODIFIED PROCTOR DENSITY.
8. GEOGRIDS MUST BE OF APPROPRIATE TYPE AND LENGTH PER DESIGN.
9. FINISHED GRADE MUST PROVIDE POSITIVE DRAINAGE.
10. STEP THE LEVELING PAD IN 8" INCREMENTS AT THE APPROPRIATE ELEVATION CHANGE IN THE FOUNDATION.
11. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR ADDITIONAL DETAILS INCLUDING CORNERS AND CURVES.
12. REFER TO TENCATE MIRAFI INSTALLATION GUIDELINES FOR ORIENTATION OF GEOGRID AND CONNECTION OF PANELS.

FLARED END SECTIONS

SIZE	PRODUCT CODE
10" (250mm)	1015NP
12" (300mm) / 15" (375mm)	1215NP
18" (450mm)	1810NP
24" (600mm)	2410NP
30" (750mm)	3015NP
36" (900mm)	3615NP



FLARED END SECTION

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAR 24, 2020	FOR APPROVAL	
1	MAR 11, 2020	PRELIMINARY	

DRAWN: MCV | DESIGN: MCV
CHECKED: BDS | CHECKED: BDS

EMANUEL ENGINEERING
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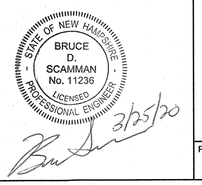
STRATHAM, NH 03885
P: 603-772-4400 F: 603-772-4487
WWW.EMANUELENGINEERING.COM

CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

SEAL

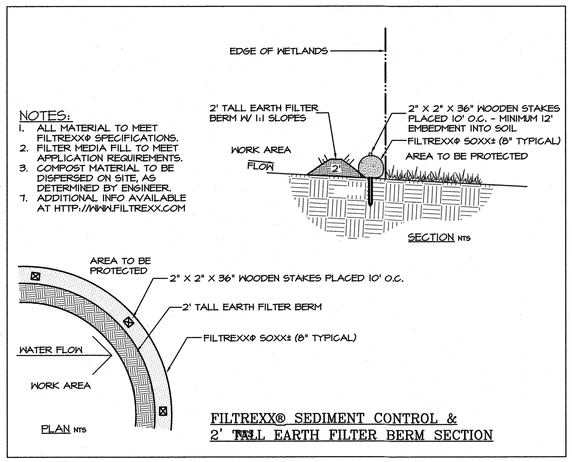


TITLE:
DETAILS
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	AS SHOWN	D5

LEGEND

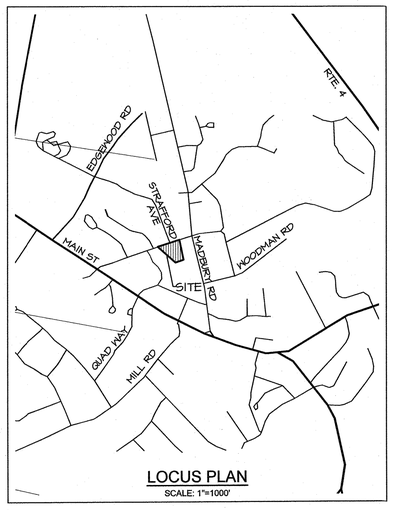
- BOUND FOUND
- IRON PIPE FOUND
- (TYP) TYPICAL
- PPP PROPOSED POROUS PAVEMENT
- PTP PROPOSED TRAD. PAVEMENT
- VGC VERTICAL GRANITE CURB
- SGC SLOPED GRANITE CURB
- BC BITUMINOUS CURB
- PROPERTY LINE
- EDGE OF PAVEMENT (EOP)
- EOP WITH CURB
- UG UNDERGROUND UTILITIES
- OHE OVERHEAD UTILITIES
- W WATER LINE
- S SEWER LINE
- GAS GAS LINE
- IRON FENCE
- GUARD RAIL
- EDGE OF WETLANDS
- UTILITY POLE
- LIGHT POLE
- WETLANDS
- BOLLARD
- ELECTRICAL METER
- SEWER MANHOLE
- CATCH BASIN
- SEWER CLEANOUT
- WATER VALVE
- TREE
- (#) PARKING SPACES IN ROW
- (CP) COMPACT PARKING SPOT
- LANDSCAPING
- FEMA FLOOD ZONE X



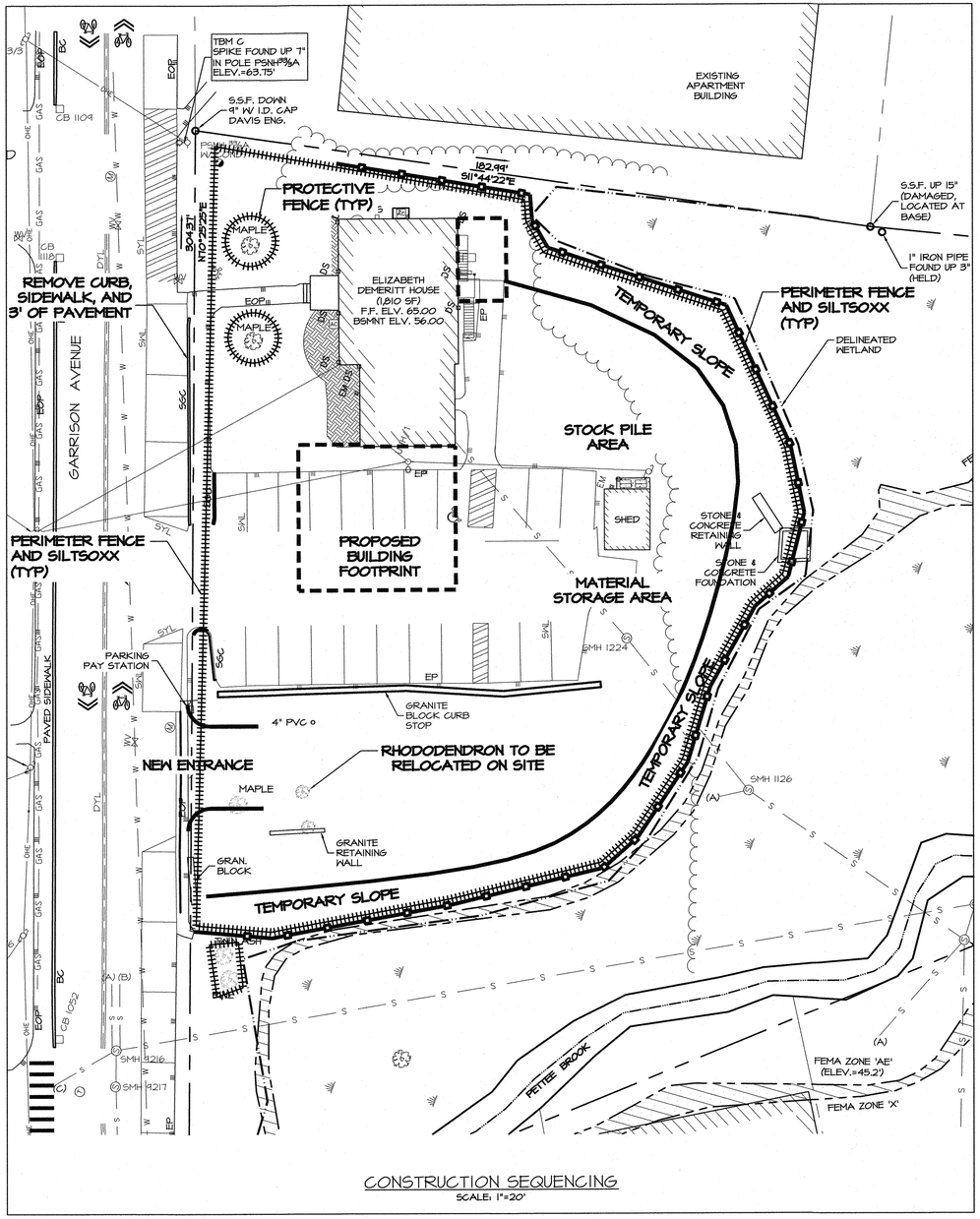
NOTES:

1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
7. ADDITIONAL INFO AVAILABLE AT HTTP://WWW.FILTREXX.COM

FILTREXX® SEDIMENT CONTROL & 2' TALL EARTH FILTER BERM SECTION



LOCUS PLAN
SCALE: 1"=1000'



CONSTRUCTION SEQUENCING
SCALE: 1"=20'

CONSTRUCTION SEQUENCE:

1. PRE-CONSTRUCTION WALK THROUGH IS REQUIRED WITH LANDSCAPE ARCHITECT, TOWN OFFICIALS, AND DESIGN ENGINEER. INVASIVE SPECIES TO BE IDENTIFIED AND REMOVED PER BMP STANDARDS.
2. INSTALL PROTECTIVE FENCING AROUND EXISTING TREES TO REMAIN, PER LANDSCAPING PLAN.
3. REMOVE VEGETATION TO INSTALL FENCING AND SILTSOXXS AROUND SITE PERIMETER.
4. REMOVE REMAINING VEGETATION IN AREAS TO BE DISTURBED AND PER LANDSCAPING PLAN.
5. REMOVE SHED, AND CONCRETE FOUNDATION & WALL ABUTTING EDGE OF WETLANDS.
6. REMOVE PAVEMENT.
7. LEVEL SITE TO CREATE LAY-DOWN AREA.
8. CONSTRUCT NEW SITE ENTRANCE TO LATER BE NEW POROUS PAVEMENT DRIVEWAY.
9. EXCAVATE NEW FOUNDATION FOOTPRINT.
10. BUILD NEW STRUCTURE.
11. DO NOT CONSTRUCT PARKING AREA UNTIL SITE IS STABILIZED AND EXTERIOR OF NEW STRUCTURE IS COMPLETE (NO SILTING OF BASE MATERIALS OR PAVEMENT.)
12. PAVEMENT CONSTRUCTION TO BE REVIEWED/MONITORED BY Dr. ROBERT ROSEEN OR EQUAL. CONTACT: 603-686-2488
13. CONTRACTOR IS RESPONSIBLE FOR CLEANING POROUS PAVEMENT WHEN CONSTRUCTION IS FINISHED.

NOTES:

1. OWNER OF RECORD:
   TAX MAP 2, LOT 12-12
   RICHMOND PROPERTY GROUP
   333 N. ALABAMA ST.
   INDIANAPOLIS, IN 46204
   SCRD BK 4626 PG 647
2. THE INTENT OF THIS PLAN IS TO SHOW CONSTRUCTION SEQUENCING NOTES AND LOCATION OF SAID NOTES WITHIN THE SITE.
3. PARCEL IS ZONED CENTRAL BUSINESS (CB) PER THE 2006 DURHAM ZONING DISTRICT MAP.
4. A PORTION OF THE PARCEL IS IN A FLOOD HAZARD ZONE, REFERENCE FLOOD INSURANCE RATE MAP 33017C0318E, DATED SEPTEMBER 30, 2015.
5. SURVEY FIELDWORK CONDUCTED BY DOUCET SURVEY, LLC IN AUGUST, 2019.
6. SOILS AND WETLANDS WERE DELINEATED BY GZA GEOENVIRONMENTAL, INC. DURING AUGUST, 2019.
7. PROPERTY TO BE SERVICED BY TOWN WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

REFERENCE PLANS:

1. "PLAN OF LAND, LAND OF THE UNIVERSITY OF NEW HAMPSHIRE FOR GAMMA THETA CORPORATION, GARRISON AVENUE, (NO TAX MAP/LOT NUMBER ASSIGNED) DURHAM, NEW HAMPSHIRE" DATED JULY 11, 2014 BY DOUCET SURVEY, INC. S.C.R.D. PLAN 108-020.
2. "EXISTING CONDITIONS PLAN OF 17 & 21 MADBURY ROAD FOR AG ARCHITECTS, PC" DATED MAY 11, 2006 BY DOUCET SURVEY, INC.
3. "TOWN OF DURHAM SEWER EASEMENTS, PETTEE BROOK INTERCEPTOR" DATED NOVEMBER 1964 BY G.L. DAVIS & ASSOCIATES S.C.R.D. POCKET 4 FOLDER 4 PLAN 26.
4. "RE-SUBDIVISION OF LAND IN DURHAM, NH PREPARED FOR THETA GAMMA OF DELTA ZETA HOUSE CORP." DATED AUGUST 4, 1980 BY JOHN W. DURGIN ASSOCIATES, INC. S.C.R.D. DRAWER 21, PLAN 86.
5. "PLAN OF LAND FOR ERNEST CUTTER" DATED OCTOBER 1977 BY JOHN W. DURGIN ASSOCIATES, INC.
6. "UNIVERSITY OF NEW HAMPSHIRE GARRISON AVENUE AREA" DATED SEPTEMBER 16, 1957 BY G.L. DAVIS & ASSOCIATES.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAY 07, 2020	FOR APPROVAL	
1	APR 24, 2020	FOR APPROVAL	

DRAWN: MCV | DESIGN: MCV
CHECKED: BDS | CHECKED: BDS

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civil & structural consultants, land planners
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STRATHAM, NH 03885
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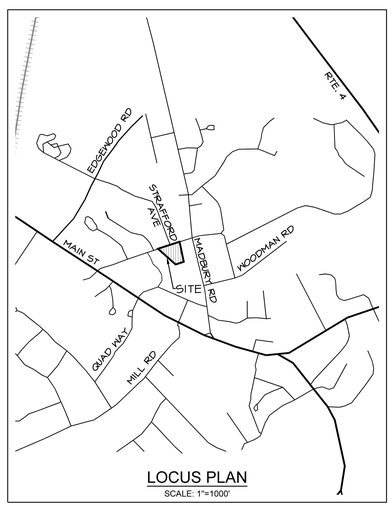
CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
5/7/20

TITLE:
CONSTRUCTION SEQUENCING PLAN
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	AS SHOWN	CS1



LOCUS PLAN
SCALE: 1"=1000'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTES:

1. OWNER OF RECORD:
   TAX MAP 2, LOT 12-12
   RICHMOND PROPERTY GROUP
   333 N. ALABAMA ST.
   INDIANAPOLIS, IN 46204
   SCRD BK 4626 PG 697
2. THE INTENT OF THIS PLAN IS TO SHOW PROPOSED SITE CONDITIONS FOR A FRATERNITY, DEPICTING BUILDING, DRIVEWAY, DRAINAGE, AND SITE IMPROVEMENTS IN RELATION TO AN OVERLAY OF THE EXISTING SITE.
3. PARCEL IS ZONED CENTRAL BUSINESS (CB) PER THE 2006 DURHAM ZONING DISTRICT MAP.
4. A PORTION OF THE PARCEL IS IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33017C0318E, DATED SEPTEMBER 30, 2015.
5. SURVEY FIELDWORK CONDUCTED BY DOUCET SURVEY, LLC IN AUGUST, 2019.
6. SOILS AND WETLANDS WERE DELINEATED BY GZA GEOENVIRONMENTAL, INC. DURING AUGUST, 2019.

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5. "PLAN OF LAND FOR ERNEST CUTTER" DATED OCTOBER 1971 BY JOHN W. DURGIN ASSOCIATES, INC.
6. "UNIVERSITY OF NEW HAMPSHIRE GARRISON AVENUE AREA" DATED SEPTEMBER 16, 1957 BY G.L. DAVIS & ASSOCIATES.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAR 25, 2020	FOR APPROVAL	
1	MAR 9, 2020	PRELIMINARY	

DRAWN: MCV	DESIGN: MCV
CHECKED: BDS	CHECKED: BDS

EMANUEL ENGINEERING
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Stratham, NH 03885
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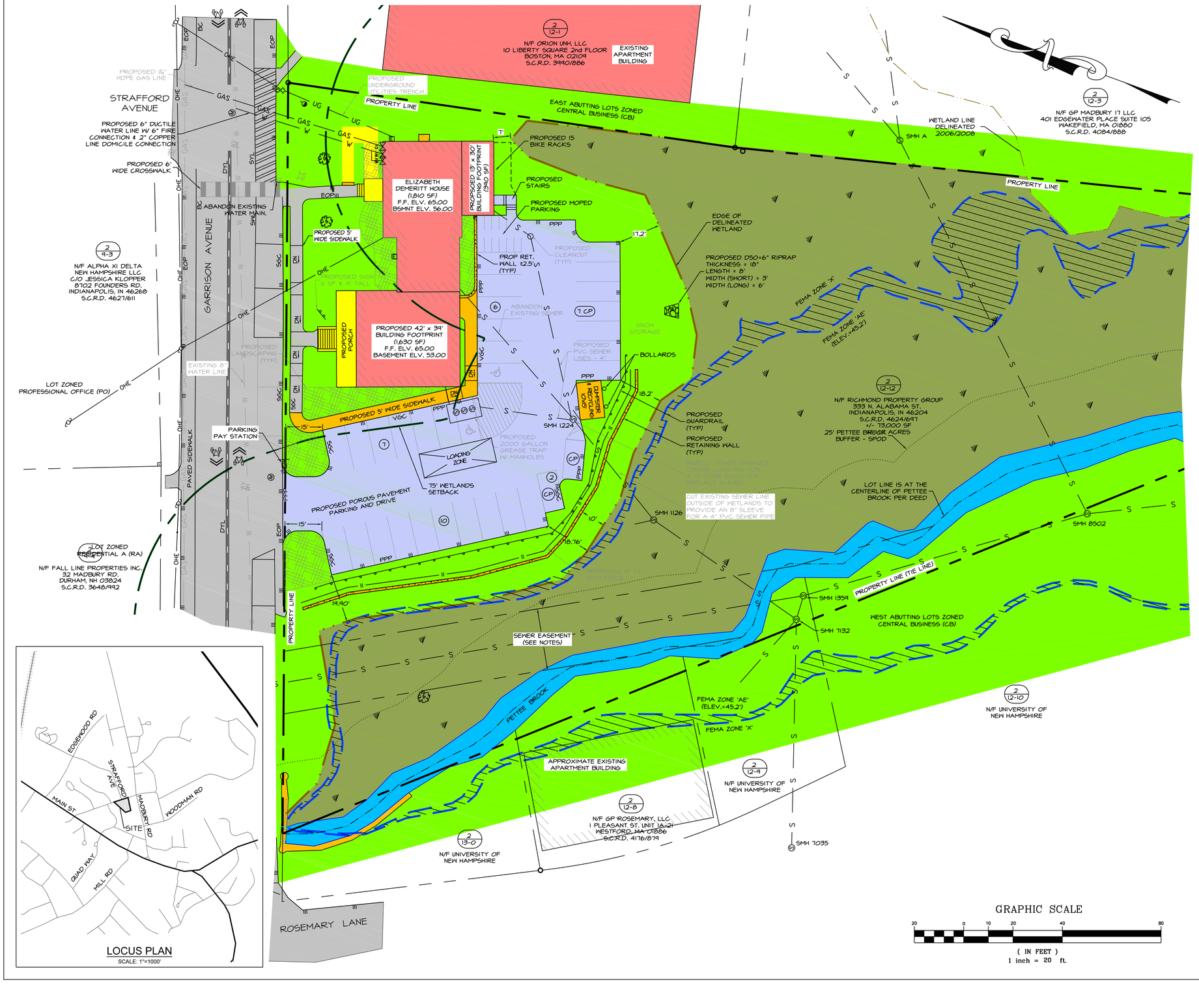
www.emanuelengineering.com

CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

SEAL:

TITLE:
SITE PLAN W/ AERIAL OVERLAY
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	1"=20'	SK1



LOCUS PLAN
SCALE: 1"=1000'

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

REFERENCE PLANS:

1. "PLAN OF LAND, LAND OF THE UNIVERSITY OF NEW HAMPSHIRE FOR GAMMA THETA CORPORATION, GARRISON AVENUE, (NO TAX MAP/LOT NUMBER ASSIGNED) DURHAM, NEW HAMPSHIRE" DATED JULY 11, 2014 BY DOUCET SURVEY, INC. S.C.R.D. PLAN 108-020.
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NOTES:

1. OWNER OF RECORD:
   TAX MAP 2, LOT 12-12
   RICHMOND PROPERTY GROUP
   333 N. ALABAMA ST.
   INDIANAPOLIS, IN 46204
   SCRD BK 4626 PG 697
2. THE INTENT OF THIS PLAN IS TO SHOW PROPOSED SITE CONDITIONS FOR A FRATERNITY, DEPICTING BUILDING, DRIVEWAY, DRAINAGE, AND SITE IMPROVEMENTS.
3. PARCEL IS ZONED CENTRAL BUSINESS (CB) PER THE 2006 DURHAM ZONING DISTRICT MAP.
4. A PORTION OF THE PARCEL IS IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33017C0318E, DATED SEPTEMBER 30, 2015.
5. SURVEY FIELDWORK CONDUCTED BY DOUCET SURVEY, LLC IN AUGUST, 2019.
6. SOILS AND WETLANDS WERE DELINEATED BY GZA GEOENVIRONMENTAL, INC. DURING AUGUST, 2019.
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. PARKING REQUIREMENTS (PER TOWN OF DURHAM SITE PLAN REGULATIONS, DATED 2019):
    - ONE SPACE PER RESIDENT (CB DISTRICT EXEMPT WITH FEE)
    - ONE HANDICAP SPACE PER TWENTY-FIVE SPACES
    - FRONT SETBACK = 15' OR BEHIND FRONT OF BUILDING; WHICHEVER IS GREATER

    PARKING SPACE DIMENSIONAL REQUIREMENTS:
    - 9'x18' PERPENDICULAR TO DRIVEWAY
    - 8'x22' PARALLEL TO DRIVEWAY
13. THIS PARCEL IS SUBJECT TO AND/OR BENEFIT OF EASEMENTS RESTRICTIONS ETC. SEE EXISTING CONDITIONS PLAN BY DOUCET SURVEY, AS PART OF THIS PLAN SET, FOR MORE INFORMATION.

LEGEND:

- REBAR FOUND
- IRON PIPE FOUND
- VGC VERTICAL GRANITE CURB
- SGC SLOPED GRANITE CURB
- PPP PROPOSED POROUS PAVEMENT
- PTP PROPOSED TRADITIONAL PAVEMENT
- EDGE OF PAVEMENT
- OHE OVERHEAD UTILITIES
- S SEWER LINE
- GUARD RAIL
- UTILITY POLE
- LIGHT POLE
- WETLANDS
- PROPERTY LINE
- EDGE OF WETLANDS
- 75' WETLANDS SETBACK

FEMA ZONE 'X' | PROPOSED POROUS PAVEMENT

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	APR 24, 2020	FOR APPROVAL	
1	MAR 24, 2020	FOR APPROVAL	

DRAWN:	MCV	DESIGN:	MCV
CHECKED:	BDS	CHECKED:	BDS

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CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

SEAL:

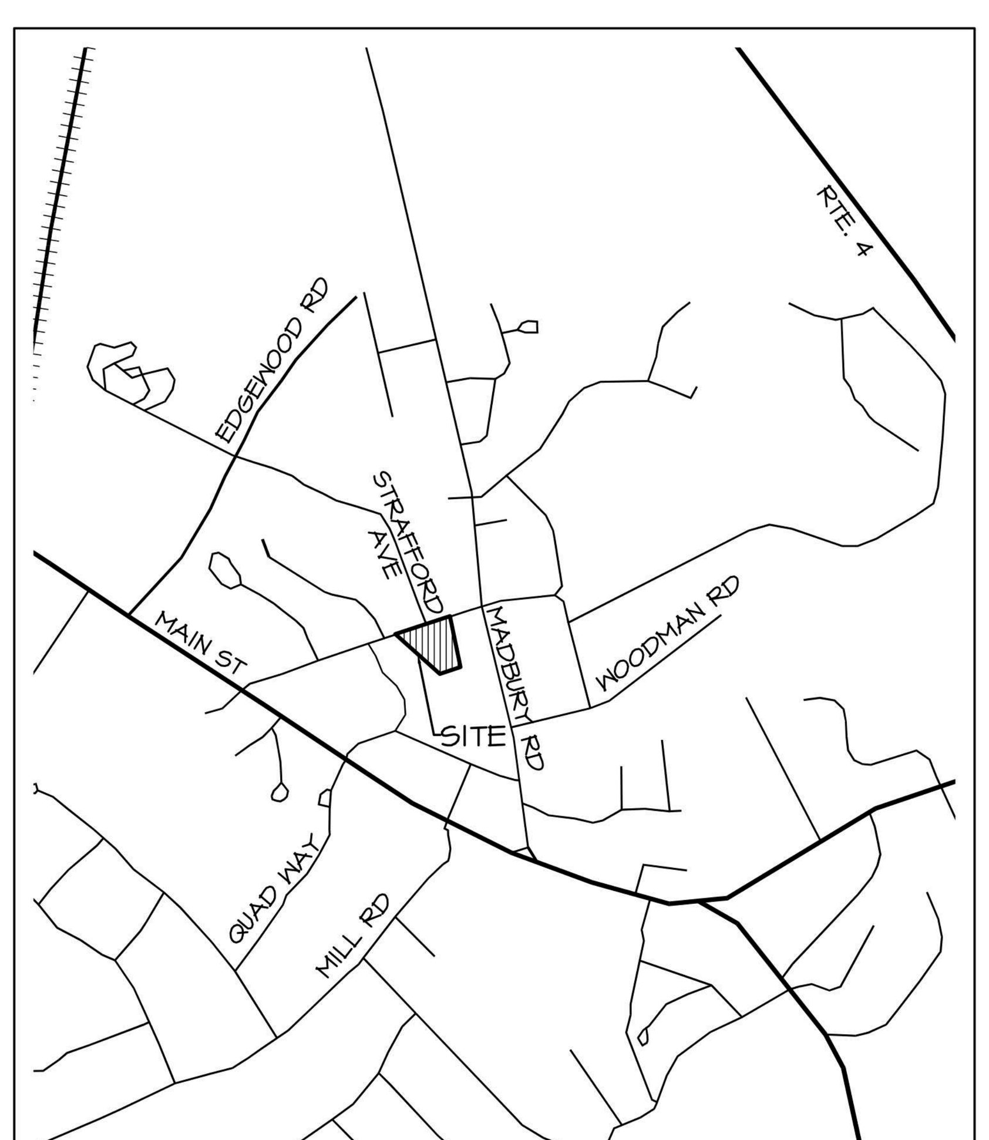
TITLE:
COLORED SITE PLAN
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT:	SCALE:	SHEET:
19-083	1"=20'	SK2

LEGEND

⊡	BOUND FOUND
○	IRON PIPE FOUND
(TYP)	TYPICAL
PPP	PROPOSED POROUS PAVEMENT
PTP	PROPOSED TRAD. PAVEMENT
VGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
BC	BITUMINOUS CURB
	PROPERTY LINE
	EDGE OF PAVEMENT (EOP)
	EOP WITH CURB
OHE	OVERHEAD UTILITIES
W	WATER LINE
S	SEWER LINE
GAS	GAS LINE
	CHAINLINK FENCE
	GUARDRAIL
	EDGE OF WETLANDS
	UTILITY POLE
	LIGHT POLE
	WETLANDS
	SEWER MANHOLE
	CATCH BASIN
	SEWER CLEANOUT
	WATER VALVE
	TREE
	LANDSCAPING
	FEMA FLOODZONE X

STRAFFORD AVENUE
GARRISON AVENUE
PAVED SIDEWALK
ROSEMARY LANE
N/F ALPHA XI DELTA NEW HAMPSHIRE LLC C/O JESSICA KLOPPER 8702 FOUNDERS RD. INDIANAPOLIS, IN 46268 S.C.R.D. 4627/611
N/F FALL LINE PROPERTIES INC. 32 MADBURY RD. DURHAM, NH 03824 S.C.R.D. 3648/992
N/F GP MADBURY 17 LLC 401 EDGEWATER PLACE SUITE 105 WAKEFIELD, MA 01880 S.C.R.D. 4084/888
N/F RICHMOND PROPERTY GROUP 333 N. ALABAMA ST. INDIANAPOLIS, IN 46204 S.C.R.D. 4624/697 +/- 73,000 SF +/- 1.7 ACRES
N/F GP ROSEMARY, LLC 1 PLEASANT ST. UNIT 1A-21 WESTFORD, MA 01886 S.C.R.D. 4176/879
N/F UNIVERSITY OF NEW HAMPSHIRE
ELIZABETH DEMERITT HOUSE (1,810 SF)
PROPOSED 42' x 39' BUILDING FOOTPRINT (1,680 SF)
PROPOSED POROUS PAVEMENT PARKING AND DRIVE
PROPOSED STAIRS
PROPOSED GUARDRAIL (TYP)
PROPOSED RETAINING WALL
PROPOSED 4' TALL CHAINLINK FENCE
EDGE OF DELINEATED WETLAND
WETLAND LINE DELINEATED 2006/2008
PROPERTY LINE
FEMA ZONE 'X'
FEMA ZONE 'AE' (ELEV.=45.2')
LOT LINE IS AT THE CENTERLINE OF PETTEE BROOK PER DEED
Low Maint Fescue Seed Mix
Existing Grass Area
STONE RET. WALL
CONC. HDWL 66" CMP INV.=42.1'



LOCUS PLAN
SCALE: 1"=1000'

NOTES:

1. OWNER OF RECORD: TAX MAP 2, LOT 12-12 RICHMOND PROPERTY GROUP 333 N. ALABAMA ST. INDIANAPOLIS, IN 46204 SCRD BK 4626 PG 697
2. THE INTENT OF THIS PLAN IS TO SHOW THE DRAINAGE STRUCTURES AND PROPOSED GRADING ASSOCIATED WITH THE SITE IMPOVEMENTS.
3. PARCEL IS ZONED CENTRAL BUSINESS (CB) PER THE 2006 DURHAM ZONING DISTRICT MAP.
4. A PORTION OF THE PARCEL IS IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33017C0318E, DATED SEPTEMBER 30, 2015.
5. SURVEY FIELDWORK CONDUCTED BY DOUCET SURVEY, LLC IN AUGUST, 2019.
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7. PROPERTY TO BE SERVICED BY TOWN WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

REFERENCE PLANS:

1. "PLAN OF LAND, LAND OF THE UNIVERSITY OF NEW HAMPSHIRE FOR GAMMA THETA CORPORATION, GARRISON AVENUE, (NO TAX MAP/LOT NUMBER ASSIGNED) DURHAM, NEW HAMPSHIRE" DATED JULY 11, 2014 BY DOUCET SURVEY, INC. S.C.R.D. PLAN 108-020.
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3. "TOWN OF DURHAM SEWER EASEMENTS, PETTEE BROOK INTERCEPTOR" DATED NOVEMBER 1964 BY G.L. DAVIS & ASSOCIATES S.C.R.D. POCKET 4 FOLDER 4 PLAN 26.
4. "RE-SUBDIVISION OF LAND IN DURHAM, NH PREPARED FOR THETA GAMMA OF DELTA ZETA HOUSE CORP." DATED AUGUST 4, 1980 BY JOHN W. DURGIN ASSOCIATES, INC. S.C.R.D. DRAWER 21, PLAN 86.
5. "PLAN OF LAND FOR ERNEST CUTTER" DATED OCTOBER 1977 BY JOHN W. DURGIN ASSOCIATES, INC.
6. "UNIVERSITY OF NEW HAMPSHIRE GARRISON AVENUE AREA" DATED SEPTEMBER 16, 1957 BY G.L. DAVIS & ASSOCIATES.

Plant List

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Am	*Amelanchier x grandiflora 'Autumn Brilliance'*	Autumn Brilliance Serviceberry	1	8-10' ht.	multistemmed B&B
Bn	*Betula nigra 'Heritage'*	Heritage River Birch	4	10-12' ht.	multistemmed B&B
Ham	*Hamamelis x intermedia "Arnold promise"*	Arnold Promise Witchhazel	1	7-8' ht.	multistemmed B&B
Sn	*Salix nigra*	Black Willow	1	2.5-3" cal.	BB
Uap	*Ulmus americana 'Princeton'*	Princeton American Elm	4	2.5-3" cal.	BB

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
CL	*Clethra alnifolia 'Hummingbird'*	Hummingbird Compact Summersweet	5	3 gal	
Hyl	*Hydrangea arborescens 'Incrediball'*	Incrediball Hydrangea	10	7gal	full
ImB	*Ilex meserve 'Blue Maid'*	Blue Maid Holly (female conical)	1	4-5' ht.	BB
ImC	*Ilex meserve 'China Girl'*	China Girl Holly	1	2.5-3'	BB
JcSG	*Juniperus chinensis 'Seagreen'*	Seagreen Juniper	6	7-8' ht	BB
Tax	*Taxus media 'Ever-Low'*	Ever-Low Yew	12	18'24" wide	BB

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
VM	*Vinca minor 'Bowles'*	Bowles Periwinkle	500	2.25" pots	

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAR 11, 2020	PRELIMINARY	
1	MAR 6, 2020	PRELIMINARY	

DRAWN: JJM DESIGN: JJM
CHECKED: BDS CHECKED: BDS

EMANUEL ENGINEERING
civil & structural consultants, land planners
118 Portsmouth Avenue, A202
Stratham, NH 03885
P: 603-772-4400 F: 603-772-4487
www.emanuelengineering.com

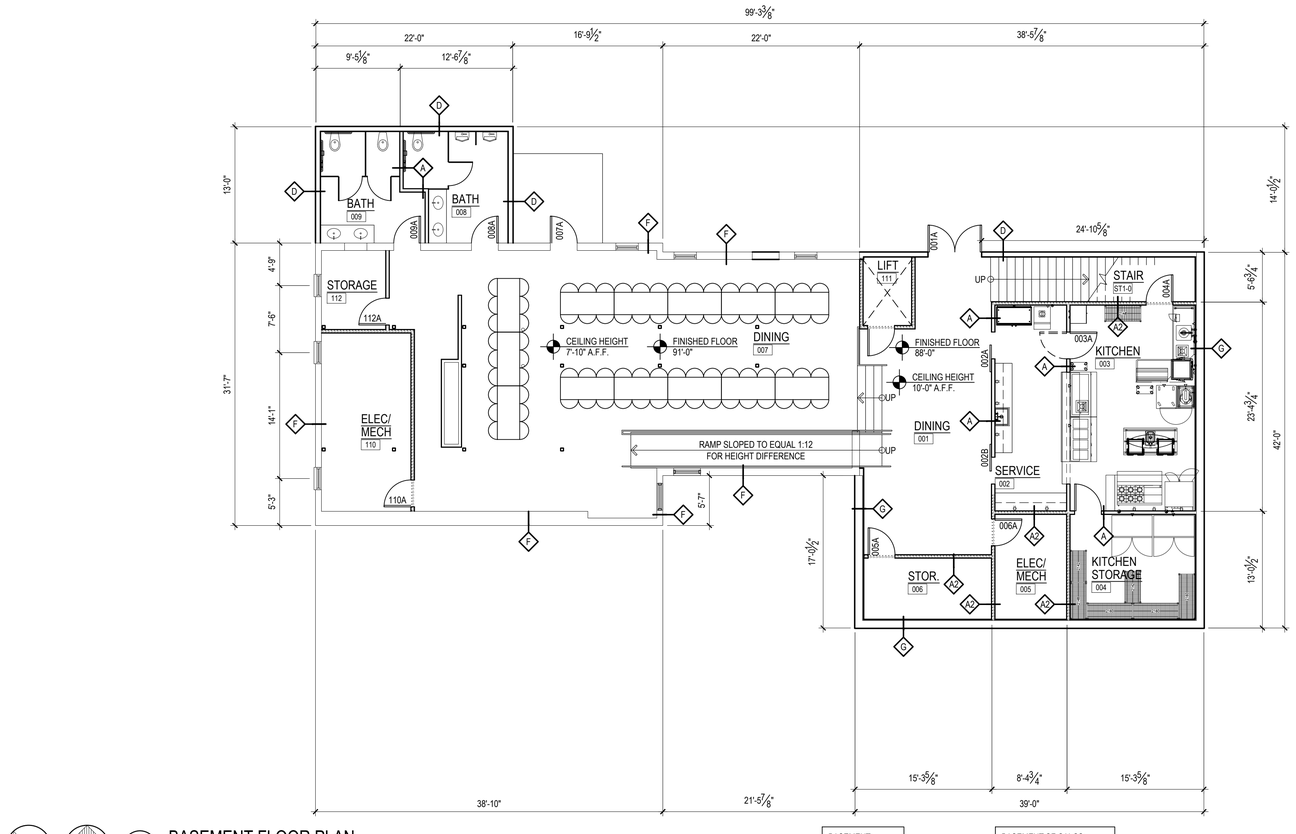
CLIENT:
RICHMOND PROPERTY GROUP
333 N. ALABAMA ST.
INDIANAPOLIS, IN 46204

SEAL:

PRELIMINARY

TITLE:
PRELIMINARY LANDSCAPE CONCEPT
FOR
RICHMOND PROPERTY GROUP
ELIZABETH DEMERITT HOUSE
18 GARRISON AVENUE (SITE)
DURHAM, NH 03824

PROJECT: 19-083 SCALE: 1"=20' SHEET: L-1



N TRUE NORTH

N PLAN NORTH

1 BASEMENT FLOOR PLAN

SCALE: 1/8" = 1'-0"

BASEMENT:	
BEDS:	8-10
SHOWERS:	3
LAVS:	3
SINKS:	3

BASEMENT SF CALCS:	
EXISTING:	1,777sf
REAR ADDITION:	390sf
SIDE ADDITION:	1,626sf

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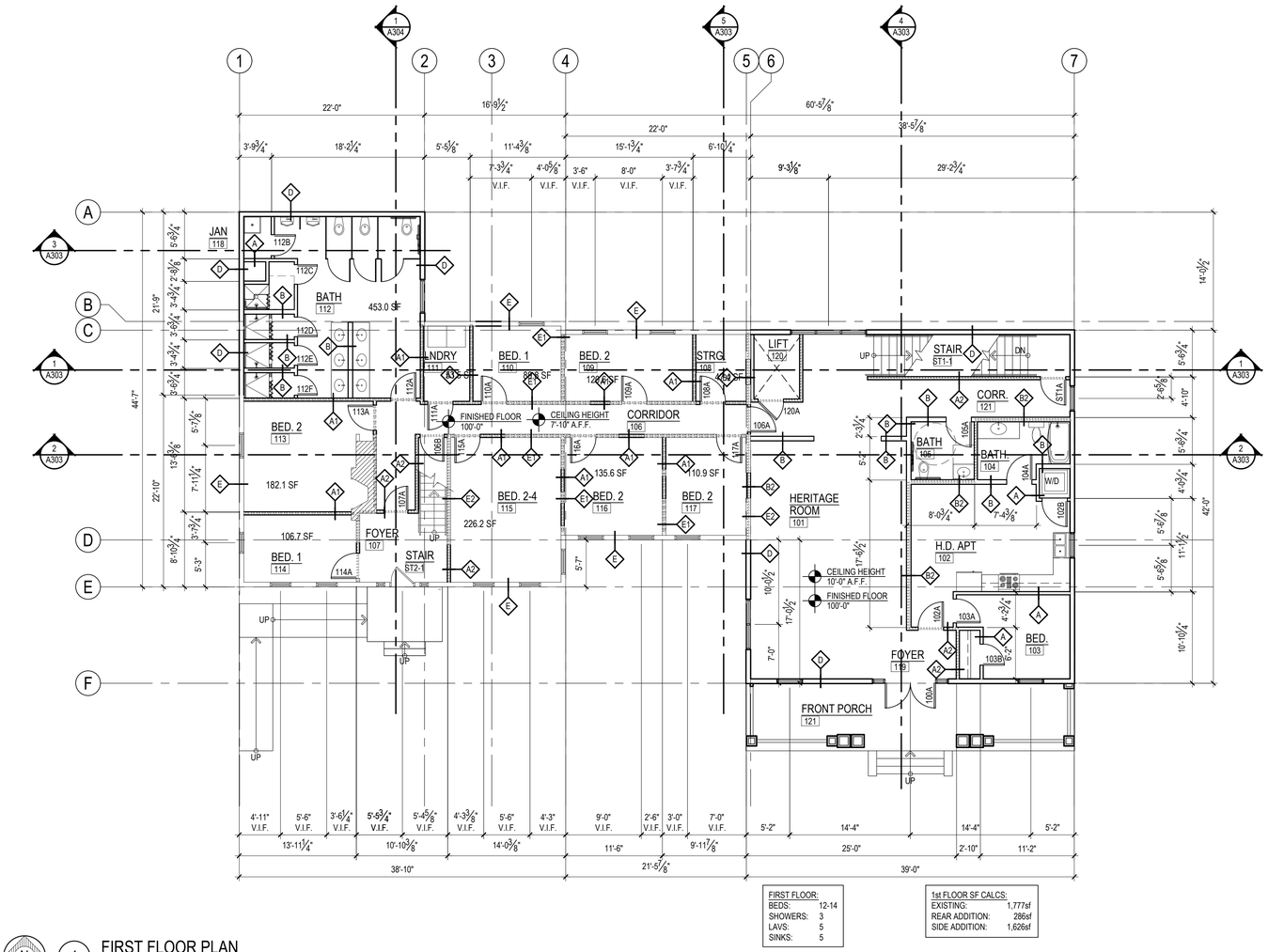
SHEET TITLE:
BASEMENT
FLOOR PLAN

SHEET NO.:
A201



FIRST FLOOR:	
BEDS:	12-14
SHOWERS:	3
LAVS:	5
SINKS:	5

1st FLOOR SF CALCS:	
EXISTING:	1,777sf
REAR ADDITION:	286sf
SIDE ADDITION:	1,626sf

TRUE NORTH

PLAN NORTH

1 FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"

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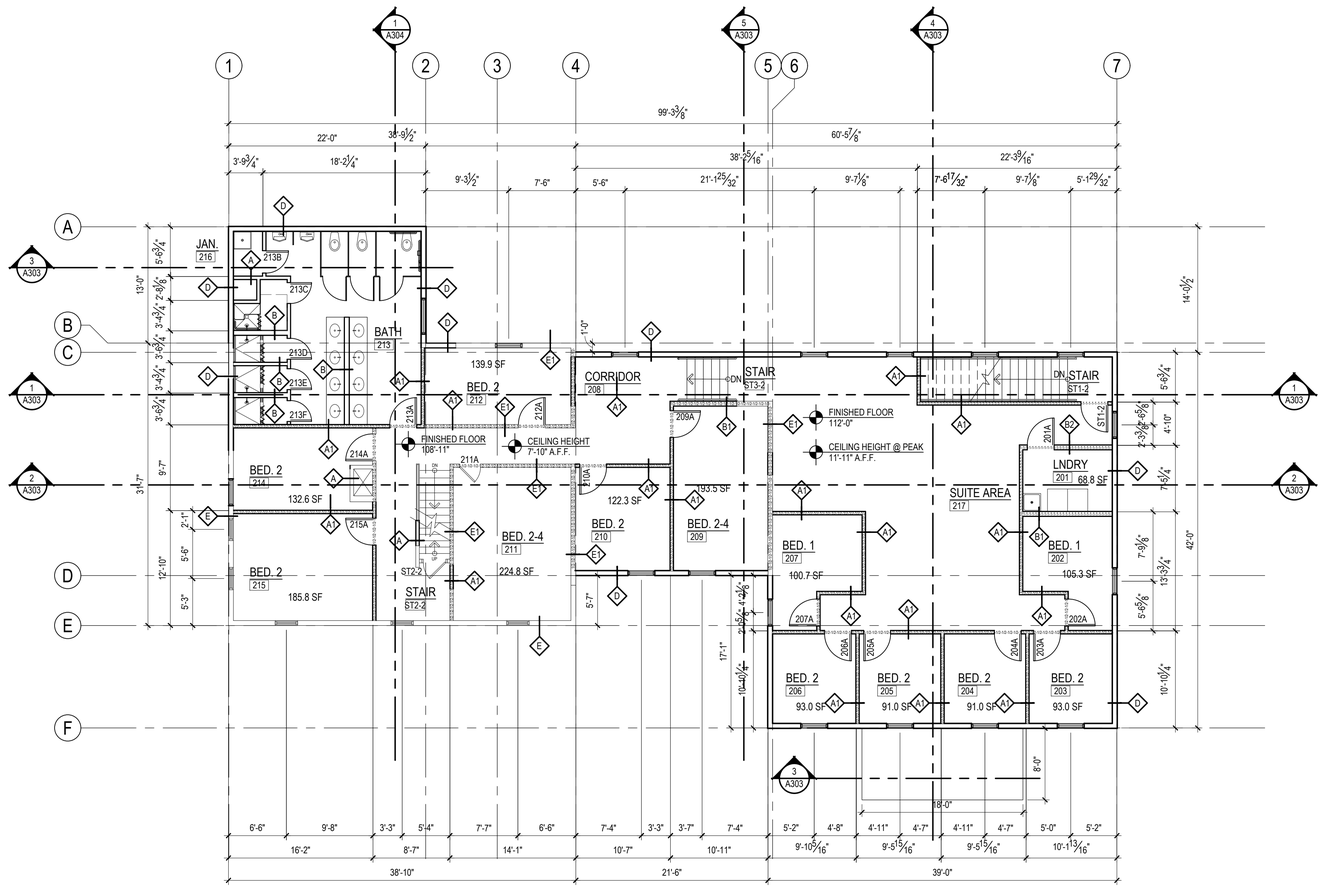
SHEET TITLE:
FIRST
FLOOR PLAN

SHEET NO.:
A202



N TRUE NORTH

N PLAN NORTH

1 SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0"

SECOND FLOOR:	
BEDS:	26-30
SHOWERS:	3
LAVS:	3
SINKS:	3

2nd FLOOR SF CALCS:	
EXISTING:	1,656sf
REAR ADDITION:	286sf
SIDE ADDITION:	1,625sf

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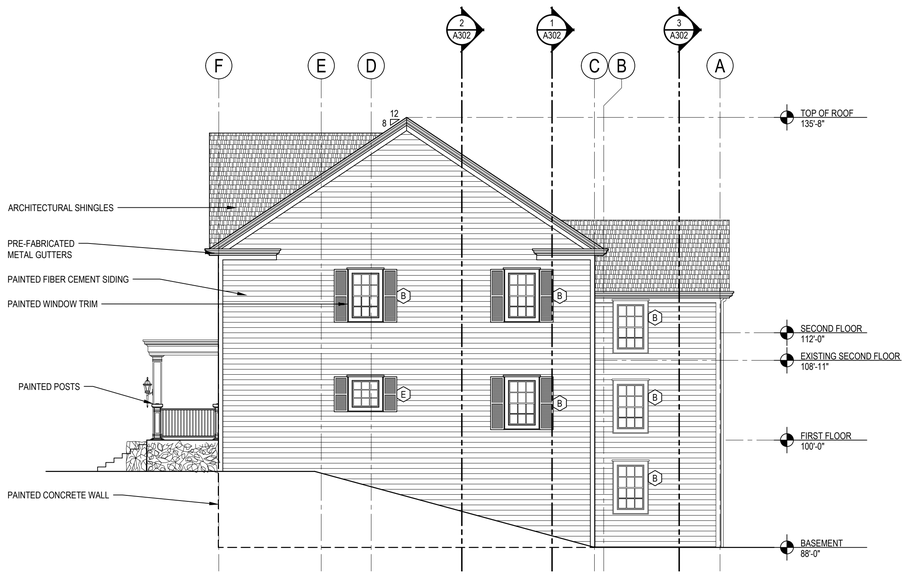
SHEET TITLE:
SECOND
FLOOR PLAN

SHEET NO.:
A203

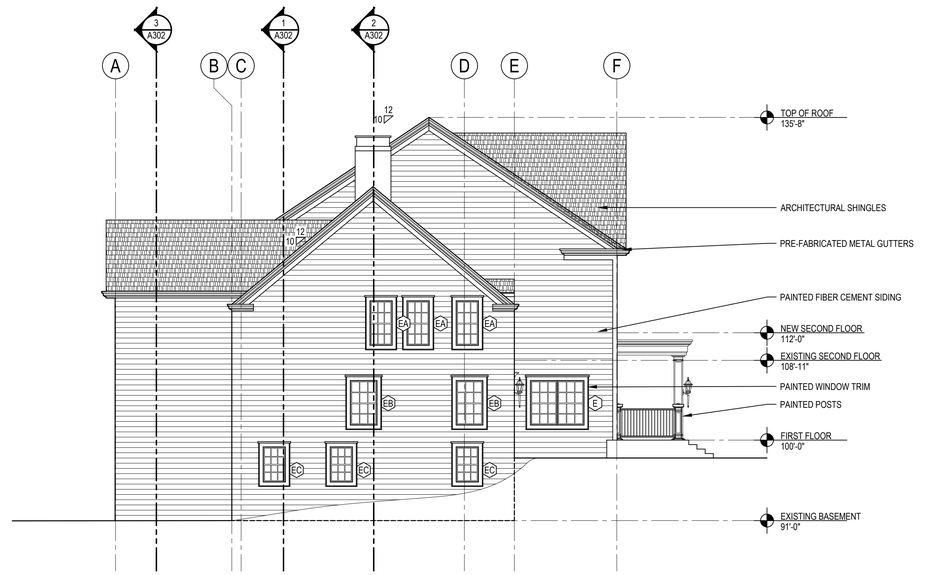
1 NORTH ELEVATION

SCALE: 1/8" = 1'-0"



2 WEST ELEVATION

SCALE: 1/8" = 1'-0"



3 EAST ELEVATION

SCALE: 1/8" = 1'-0"

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SHEET TITLE:
EXTERIOR
ELEVATIONS

SHEET NO.:
A301

1 SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

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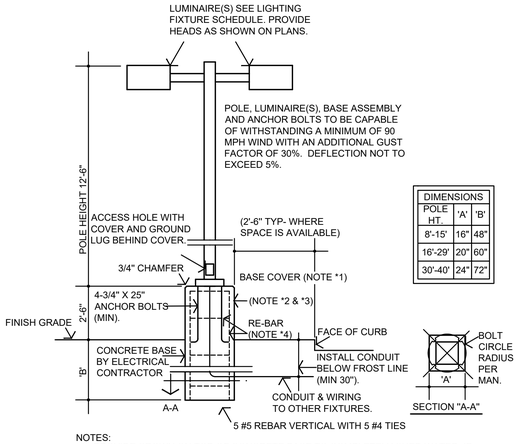
SHEET TITLE:
EXTERIOR
ELEVATIONS

SHEET NO.:
A302



DIMENSIONS		
POLE HT.	'A'	'B'
8'-15'	16"	48"
16'-29'	20"	60"
30'-40'	24"	72"

NOTES:
*1 - PROVIDE CROWN ON TOP OF CONCRETE BASE TO COMPLETELY SHED WATER. IF WATERSHED IS NOT PROVIDED, THEN GROUTING WITH NON-SHRINK GROUT IS REQUIRED. GROUT UNDER BASE PLATE.

*2 - PROVIDE A 3/4"X10'-0" LONG COPPER GROUND ROD FOR EACH LIGHTING STANDARD WHERE REQUIRED BY APPLICABLE CODES.

*3 - PAINT CONCRETE BASE TRAFFIC YELLOW WHERE LOCATED IN PAVED AREAS.

*4 - PROVIDE (5) #5 RE-BAR WITH (5) #4 TIES.

1 POLE & POLE BASE DETAIL

N.T.S.

LIGHTING LUMINAIRE SCHEDULE

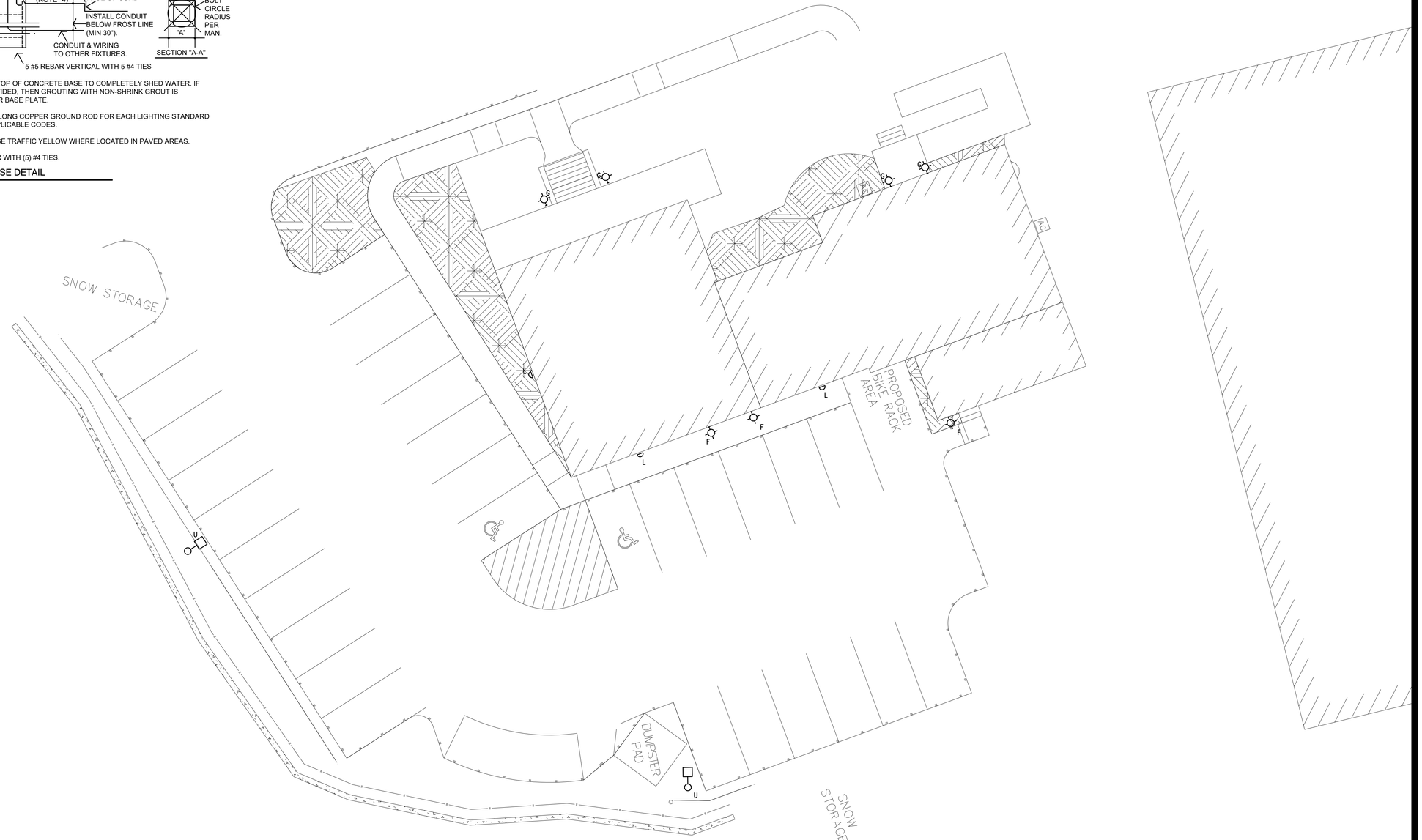
FIXTURE TYPE	DESCRIPTION	MANUFACTURER	MODEL #	VOLTS	MOUNTING	LAMP	NOTES
F	SCONCE W/LED LAMP	HINKLEY	1449BK	120V 1P 2W	SURFACE	(1) 60W EQ. LED 760LM 30K	1,3
G	SCONCE W/LED LAMP	HINKLEY	1470BK	120V 1P 2W	SURFACE	(1) 60W EQ. LED 760LM 30K	1,3
L	EXTERIOR LED	LSI	XWM-FT-LED-8L-30-UE-BRZ	120V 1P 2W	SURFACE	62W LED 7345L 30K	2
U	LED POLE MOUNTED PARKING LOT FIXTURE W/INTERNAL LOUVER	LSI	MRM-LED-7L-SIL-FT-UNV-30-70CRI	120V 1P 2W	POLE W/OAH 15'-0"	53W LED 4334L 30K	4

LIGHT FIXTURE SCHEDULE GENERAL NOTES:
1. FINAL FIXTURE HOUSING COLORS AND FINISH SELECTIONS BY ARCHITECT. SOME MAY BE DETERMINED DURING SUBMITTAL PROCESS.

LIGHT FIXTURE SCHEDULE KEYED NOTES:
1. PROVIDE LAMP QUANTITY AS STATED, MODEL: GE 60W LED EQUIVALENT WARM WHITE A19 FROSTED LAMP (OR EQUIVALENT).
2. FIXTURE SHALL BE MOUNTED 20'-0" AFF TO TOP OF FIXTURE.
3. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.
4. FIXTURE SHALL HAVE AN OVERALL MOUNTING HEIGHT INCLUDUNG THE POLE BASE OF 15'-0" TO THE TOP OF THE FIXTURE

GENERAL NOTES:

1. CONNECT ALL EXTERIOR LIGHTING WITH #10 IN 1" PVC BURIED A MINIMUM OF 24" BELOW GRADE UNLESS NOTED OTHERWISE.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT REQUIREMENTS WITH UTILITY TO PROVIDE ALL PARTS, TRENCHING, AND PAY ALL FEES NECESSARY TO BRING SERVICE TO NEW BUILDING. ANY/ALL COSTS INCURRED FROM UTILITY FOR INSTALLATION OF THE NEW ELECTRICAL SERVICE SHALL BE INCLUDED IN CONTRACTOR'S BID.
3. REFER TO LIGHTING PLANS FOR BUILDING MOUNTED LIGHTING CIRCUITING AND EMERGENCY EGRESS REQUIREMENTS.



N TRUE NORTH / N PLAN NORTH — A ELEC. SITE PLAN

SITE SCALE:1"=10'-0"

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SHEET TITLE:
ELECTRICAL SITE PLAN

ALLEN CONSULTING INCORPORATED
ACI Project No. 146.19
CA/2741 Expires: 12/31/2019
110 N. Mercedes Dr., Suite 100
Norman, Ok. 73069-6578
Ph.(405)447-2282, Fax(405)447-2284

SHEET NO.:
E001

GENERAL NOTES:

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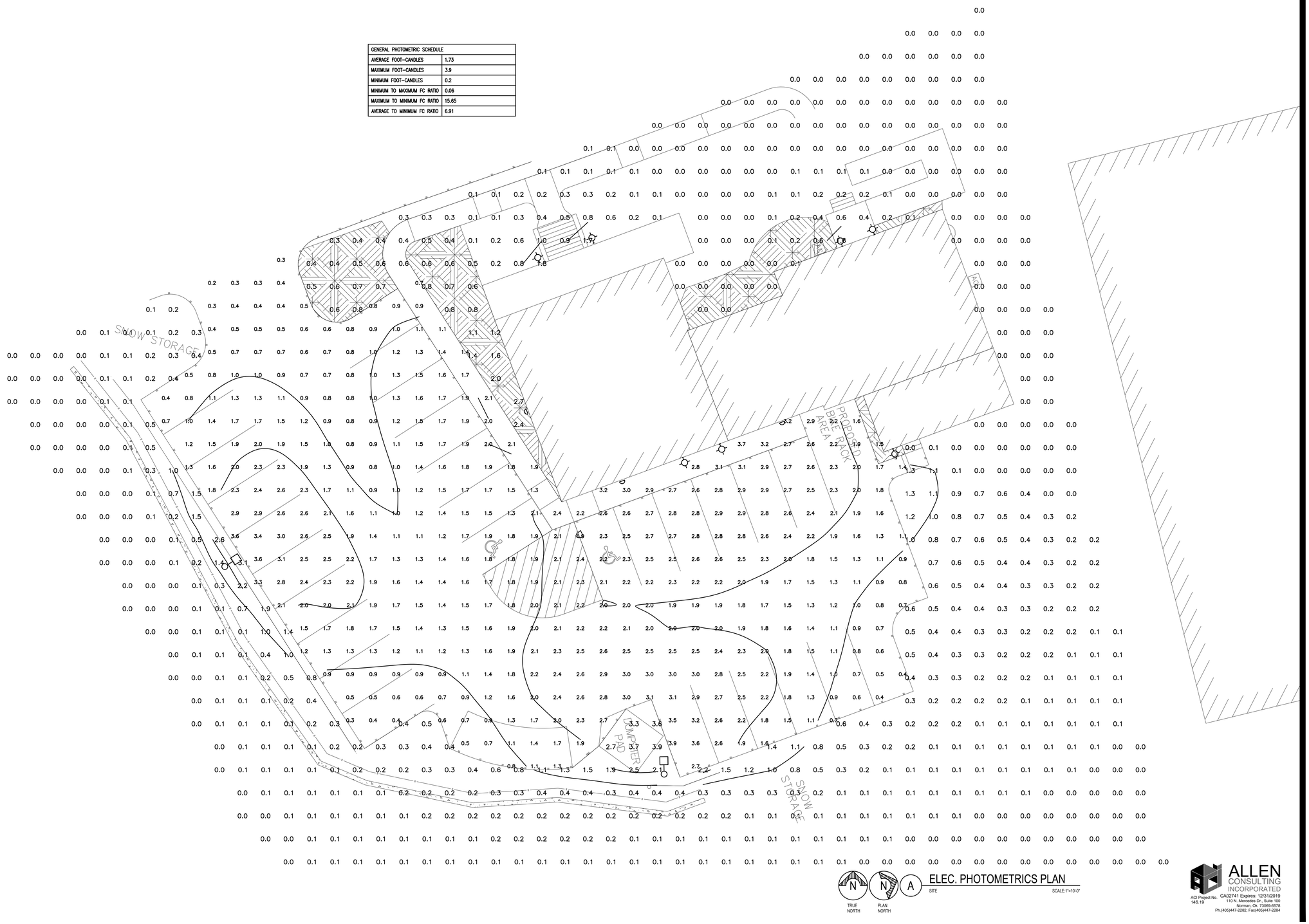
3. REFER TO LIGHTING PLANS FOR BUILDING MOUNTED LIGHTING CIRCUITING AND EMERGENCY EGRESS REQUIREMENTS.

GENERAL PHOTOMETRIC SCHEDULE	
AVERAGE FOOT-CANDLES	1.73
MAXIMUM FOOT-CANDLES	3.9
MINIMUM FOOT-CANDLES	0.2
MINIMUM TO MAXIMUM FC RATIO	0.06
MAXIMUM TO MINIMUM FC RATIO	15.65
AVERAGE TO MINIMUM FC RATIO	6.91



N TRUE NORTH
N PLAN NORTH
A ELEC. PHOTOMETRICS PLAN
SITE
SCALE:1"=10'-0"

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E002