SITE PLAN FOR PROPOSED MULTIFAMILY DEVELOPMENT WALPOLE, MA.

SHEET INDEX

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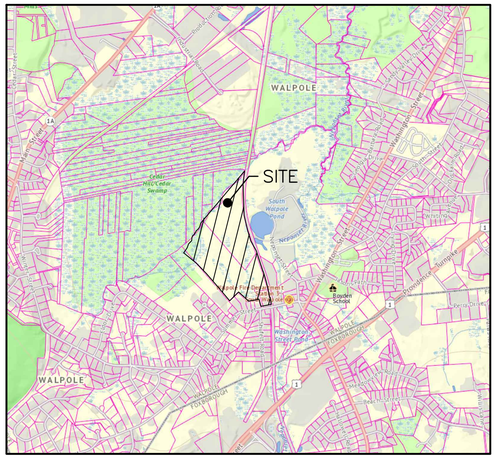
GENERAL NOTES:

1. EXISTING PROPERTY LINE AND UTILITY INFORMATION SHOWN IS BASED ON AN EXISTING SURVEY CONDUCTED BY LEGACY ENGINEERING REVISED THROUGH 10–23–22.
   A. REGISTRY REFERENCES:
      BOOK 37303 PG 11
      LAND COURT CERT. OF TITLE 201454
   B. DATUM: NAVD88
2. SHEETS C6–C10 WITHIN THIS PLAN SET ARE FOR REFERENCE ONLY. THE INFORMATION CONTAINED WITHIN HAS BEEN PREPARED BY AND IS THE RESPONSIBILITY OF LEGACY ENGINEERING. REFER TO STAMPED EXISTING CONDITIONS PLAN DATED MAY 6, 2021, REVISED THROUGH OCTOBER 23, 2022.
2. AS OF FEBRUARY 28, 2023, TREE CLEARING HAS OCCURRED AS DEPICTED ON PREVIOUSLY APPROVED PLANS DATED JANUARY 10, 2020 REVISED THROUGH APRIL 13, 2021.
3. THE ACCURACY AND COMPLETENESS OF THE UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION, SIZE, TYPE, ETC. OF ALL UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE WORK. AT LEAST 72 HOURS BEFORE EXCAVATION, THE CONTRACTOR SHALL BE REQUIRED TO CONTACT DIGSAFE AT 1–888–344–7233.
4. TOPOGRAPHIC INFORMATION IS APPROXIMATE IN SOME LOCATIONS, CONTRACTOR TO REPORT ANY DISCREPANCIES TO THE ENGINEER.
5. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
6. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE APPROPRIATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION.
7. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE WITHIN THE VICINITY OF SITE LOCUS IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, PRIOR TO EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION OR REPAVING.
8. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES EXCEPT THOSE NOTED TO BE ABANDONED, REMOVED AND DISPOSED.
9. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS AT HIS/HER OWN EXPENSE, OUTSIDE OF THE PROJECT LIMITS.

LEGEND & ABBREVIATIONS

LSA	LANDSCAPE AREA	198	PROPOSED MINOR CONTOUR
EOP	EDGE OF PAVEMENT	200	PROPOSED MAJOR CONTOUR
CCB	CAPE COD BERM		PROPERTY LINE
LSA	LANDSCAPED AREA		SETBACK LINE
FFE	FINISHED FLOOR ELEVATION		RIPARIAN SETBACK LINE
GV	GATE VALVE	D	PROPOSED DRAIN LINE
SRW	STONE RETAINING WALL	S	PROPOSED SEWER LINE
CRW	CONCRETE RETAINING WALL	FM FM	PROPOSED FORCE MAIN
INV.	INVERT	OHW	EXISTING OVERHEAD WIRES
RCP	REINFORCED CONCRETE PIPE	S	EXISTING SANITARY LINE
PVC	POLYVINYL CHLORIDE	G	EXISTING GAS LINE
(R)	RECORD INFORMATION	W	EXISTING WATER LINE
BCC	BIT. CONCRETE CURB	270	EXISTING INDEX CONTOURS
VBB	VERTICAL BIT. BERM	268	EXISTING INTERMEDIATE CONTOURS
	EXISTNG WATER VALVE		EXISTING TREELINE
	EXISTNG HYDRANT		FEMA FLOOD PLAIN DELINEATION
	EXISTING UTILITY POLE		MEAN ANNUAL HIGH WATER LINE
	POST		PROPOSED TREELINE
	DECIDUOUS TREE		PROPOSED FENCE
	CONIFEROUS TREE		PROPOSED HYDRANT
	CONTROL POINT		PROPOSED HANDICAP PARKING
SBDH	STONE BOUND WITH DRILLHOLE FOUND		PROPOSED PAVEMENT STRIPING
CBDH	CONCRETE BOUND WITH DRILLHOLE FOUND		PROPOSED CONCRETE SURFACE
IRS	IRON ROD TO BE SET IN 2012		PROPOSED DRAINAGE MANHOLE
	SIGN (SINGLE POSTED)		CB: SINGLE–GRATE CATCH BASIN
	TEST PIT		CB: DOUBLE–GRATE CATCH BASIN
	CATCH BASIN		DMH: DRAIN MANHOLE
	EXISTING SEWER MANHOLE	12"D	DRAIN PIPELINE
	WETLAND RESOURCE AREA	8" S	SEWER PIPELINE
	PROPOSED CATCH BASIN	RCP	REINFORCED CONCRETE PIPE
FHPT	FALLING HEAD PERMEABILITY TEST	PVC	POLYVINYL CHLORIDE PIPE
HSG	HYDROLOGIC SOIL GROUP DETERMINATION PIT		SMH: SEWER MANHOLE

	C.O.: SEWER SERVICE CLEANOUT
6" W	WATER MAIN
	HYD: HYDRANT
	G.V.: WATER GATE VALVE
	C.S.: WATER SERVICE CURB STOP
	M.B.: WATER SERVICE METER BOX
G	GAS PIPELINE
E	ELECTRIC CONDUIT
	L.P.: LIGHT POLE
	U.P.: UTILITY POLE
	G.Y.: GUY WIRE
	S.P.: TRAFFIC SIGNAL POLE


WALPOLE
SITE
South Walpole Pond
WALPOLE
WALPOLE
Boyden School
Washington Street Park
Old Colony Railroad
Old Colony Railroad
Old Colony Railroad
Old Colony Railroad
Washington Street
Washington Street
Main Street
Main Street
Main

EROSION CONTROL PLAN NOTES:

1. REMOVAL OF EXISTING STRUCTURES SHALL INCLUDE ALL EXISTING PAVEMENT, FOOTINGS, AND UTILITY CONNECTIONS.
2. IT IS THE RESPONSIBILITY OF THE CHOSEN CONTRACTOR TO ENSURE ALL STORMWATER INLETS DOWNSTREAM OF CONSTRUCTION ARE FITTED WITH TEMPORARY INLET PROTECTION.
3. ALL PROPOSED CATCH BASINS AND MANHOLES SHALL BE FITTED WITH INLET PROTECTIONS DURING CONSTRUCTION AS TO MINIMIZE EROSION AND SEDIMENTATION WITHIN THE PROPOSED STORMWATER MANAGEMENT SYSTEM.
4. ALL EXISTING SITE FEATURES NOT PROPOSED TO BE REMOVED SHALL BE PROTECTED DURING CONSTRUCTION TO THE MAXIMUM EXTENT FEASIBLE. ANY DAMAGE SHALL BE REPAIRED TO THE EXISTING CONDITION.
5. EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND MAINTAINED AND UPGRADED AS NECESSARY DURING CONSTRUCTION BY THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND INSTALL ADDITIONAL CONTROL MEASURES AS NEEDED DURING CONSTRUCTION.
6. STABILIZATION OF ALL RE-GRADED AND SOIL STOCKPILE AREAS MUST BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
7. SEDIMENT REMOVED FROM EROSION AND SEDIMENT CONTROL DEVICES MUST BE PROPERLY REMOVED AND DISPOSED. ALL DAMAGED CONTROLS MUST BE REMOVED AND REPLACED.
8. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THE EROSION AND SEDIMENT CONTROL PLAN. THIS INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFYING THE PROPER TOWN AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING WIND EROSION AND DUST THROUGHOUT THE LIFE OF HIS CONTRACT. DUST CONTROL MAY INCLUDE, BUT IS NOT LIMITED TO, SPRINKLING OF WATER ON EXPOSED SOILS AND STREET SWEEPING WITHIN ADJACENT ROADWAYS.
10. IF FINAL GRADING IS TO BE DELAYED FOR MORE THAN 21 DAYS AFTER LAND DISTURBANCE ACTIVITIES CEASE, TEMPORARY VEGETATION OR MULCH SHALL BE USED TO STABILIZE SOILS WITHIN 14 DAYS OF THE LAST DISTURBANCE.
11. IF A DISTURBED AREA WILL BE EXPOSED FOR GREATER THAN ONE YEAR, PERMANENT GRASSES OR OTHER APPROVED COVER MUST BE INSTALLED.
12. THE CONTRACTOR MUST KEEP ON-SITE AT ALL TIMES ADDITIONAL COMPOST FILTER TUBE AND SILT FENCE FOR THE INSTALLATION AT THE DIRECTION OF THE ENGINEER, OR THE TOWN, TO MITIGATE ANY EMERGENCY CONDITION.
13. THE CONSTRUCTION FENCING AND EROSION AND SEDIMENT CONTROLS AS SHOWN MAY NOT BE PRACTICAL DURING ALL STAGES OF CONSTRUCTION. EARTHWORK ACTIVITY ON-SITE MUST BE DONE IN A MANNER SUCH THAT RUNOFF IS DIRECTED TO A SEDIMENT CONTROL DEVICE OR INFILTRATED TO THE GROUND.
14. DEMOLITION AND CONSTRUCTION DEBRIS MUST BE PROPERLY CONTAINED AND DISPOSED OF.
15. DISPOSAL OF ALL DEMOLISHED MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE HAULED OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS.
16. NON-ORGANIC FERTILIZERS AND CHEMICAL PESTICIDES IN OUTSIDE AREAS WITHIN 100-FEET OF WETLAND PROTECTED AREAS ARE PROHIBITED FROM USE.
17. AN INVASIVE SPECIES PLAN IS TO BE PUT IN PLACE DURING CONSTRUCTION TO ADDRESS THE REMOVAL OF INVASIVE SPECIES AND INVASIVE SPECIES DISTURBED DURING CONSTRUCTION ARE TO BE DISPOSED OF APPROPRIATELY.
18. REFER TO THE PROJECT SPECIFIC STORMWATER POLLUTION PREVENTION PLAN.
19. REFER TO PHASING PLANS DATED 10/12/2022 FOR GENERAL CONSTRUCTION SEQUENCE.

SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO CONSTRUCT A MULTIFAMILY HOUSING DEVELOPMENT CONSISTING OF APARTMENT BUILDINGS AND TOWNHOUSES FOR RENT. THIS PROJECT IS TO BE SERVICED BY MUNICIPAL UTILITIES.
2. ALL CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE TOWN, STATE, AND FEDERAL STANDARDS AND REGULATIONS.
3. ALTHOUGH NO WORK IS PROPOSED IN THE FLOOD PLAIN, THIS PROPERTY IS PARTIALLY WITHIN FLOOD ZONE A. REFER TO COMMUNITY PANEL NUMBER 25021C0332E, DATED JULY 17, 2012.
4. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.P.). THIS DOCUMENT IS TO BE KEPT ONSITE AT ALL TIMES AND UPDATED AS REQUIRED.
5. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES, AND BONDS.
6. ALL PROPOSED SIGNAGE SHALL CONFORM WITH THE TOWN ZONING REGULATIONS, UNLESS APPROVED AS PART OF THIS APPLICATION.
7. ALL SIGNAGE AND PAVEMARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND MASSDOT STANDARDS AND SPECIFICATIONS, UNLESS OTHERWISE NOTED.
8. ALL PARKING STALLS SHALL BE SEPARATED USING 4" WIDE SOLID STRIPES. STRIPING SHALL HAVE TWO COATS OF PAINT, ALKYD BASED SYNTHETIC RESIN, FEDERAL SPECIFICATION TTP-115 TYPE 1 IN A COLOR OF WHITE (OR APPROVED EQUAL). REFER TO SHEET 40 FOR DETAIL.
9. ALL NEW CURBING TO BE INSTALLED BY RADIUS AND MATERIALS AS NOTED ON THE LAYOUT AND MATERIALS SHEETS 14 – 18 ON THE SITE PLAN.
10. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PROVIDED BY THE OWNER. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE START OF CONSTRUCTION. BUILDING DIMENSIONS ARE MEASURED TO THE OUTSIDE OF THE FOUNDATION UNLESS OTHERWISE NOTED.
11. SNOW TO BE STORED AT EDGE OF PAVEMENT, UNLESS OTHERWISE DESIGNATED. ALL SNOW IN EXCESS OF THESE DESIGNATIONS SHALL BE TRUCKED OFF SITE TO AN APPROVED SNOW DUMPING LOCATION.
12. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
13. ALL ACCESSIBLE RAMPS SHALL HAVE A SLOPE OF 1:12 OR LESS, HAVE VERTICAL TO FLUSH TRANSITION CURB ON BOTH SIDES OF THE LEVEL LANDING EXITING THE SIDEWALK, AND BE FITTED WITH A DETECTABLE WARNING PANEL AT ROAD INTERSECTIONS.
14. ALL PROPOSED RETAINING WALLS ARE SHOWN FOR LOCATION AND GRADING PURPOSES ONLY. EACH RETAINING WALL IS TO BE DESIGNED BY A STRUCTURAL ENGINEER AS PART OF THE CONSTRUCTION DOCUMENTS.
15. ALL WETLAND CROSSINGS ARE DESIGNED TO MEET MASSACHUSETTS DEP STREAM CROSSING STANDARDS.

GRADING AND DRAINAGE NOTES:

1. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER HOWARD STEIN HUDSON, NOR ANY OTHER EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 888-DIG-SAFE
2. ALL BENCHMARKS SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
3. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. REFER TO THE CONSTRUCTION SEQUENCE.
4. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECTS LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS AND PROPERTY LINES. A MINIMUM OF 72 HOURS NOTICE IS REQUIRED.
5. ALL SWALES AND INFILTRATION PONDS ARE TO BE STABILIZED PRIOR TO ACCEPTING RUNOFF.
6. PROPOSED RIM ELEVATIONS OF DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
7. ALL SWALES AND ANY SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH NORTH AMERICAN GREEN EROSION CONTROL S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER), UNLESS OTHER SPECIFIED.
8. ALL DRAINAGE AND SANITARY STRUCTURES INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS. CATCH BASINS SHALL HAVE 4' DEEP SUMPS WITH GREASE HOODS, UNLESS OTHER NOTED. REFER TO SHEET 44 FOR DETAILS.
9. ALL DRAINAGE STRUCTURES SHALL BE PRECAST, UNLESS OTHERWISE SPECIFIED. SEE DETAIL SHEETS FOR DRAINAGE DETAILS.
10. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE EROSION CONTROL IS NOT REQUIRED.
11. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY ALL GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE EPA SWPPP DURING CONSTRUCTION OPERATIONS.
12. ALL EXPOSED AREAS SHALL BE SEEDED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING.
13. SHOULD CONSTRUCTION STOP FOR LONGER THAN 14 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED.
14. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE, AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
15. CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE TO THE EXTENT POSSIBLE THROUGHOUT CONSTRUCTION. IF THE INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
16. SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
17. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEMED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.
18. MONITORING WELLS ARE TO BE PROVIDED AT EACH INFILTRATION BASIN PER THE REQUIREMENT OF THE MASSACHUSETTS STORMWATER HANDBOOK.
19. EACH INFILTRATION BASIN/SYSTEM TO BE OBSERVED DURING EXCAVATION BY A TOWN AGENT PRIOR TO THE INSTALLATION OF LOAM AND SEED. REFER TO CONDITION 40 IN THE RECORDED ORDER OF CONDITIONS.

UTILITY NOTES:

1. THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES, AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
2. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, WATER, GAS AND SEWER).
3. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
4. BUILDING TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
5. THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
6. AS-BUILT PLANS SHALL BE SUBMITTED TO THE ALL MUNICIPAL DEPARTMENTS SPECIFIED BY CONDITIONS OF APPROVAL.
7. CONTRACTOR SHALL PLACE 2" WIDE METAL WIRE IMPREGNATED RED PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS, SERVICES, AND FORCE MAINS.
8. ALL SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS.
9. PROPOSED RIM ELEVATIONS OF DRAINAGE AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
10. WATER MAINS SHALL BE HYDROSTATICALLY PRESSURE TESTED FOR LEAKAGE PRIOR TO ACCEPTANCE.
11. THRUST BLOCKS SHALL BE INSTALLED AT ALL BENDS, TEES, MECHANICAL JOINTS, AND FIRE HYDRANTS.
12. DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
13. EXISTING UTILITIES SHALL BE DIGSAFED AND PRIVATE UTILITY LOCATOR SERVICES SHOULD BE UTILIZED PRIOR TO CONSTRUCTION.
14. ALL FIRE SUPPRESSION WATER LINES SHALL HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
15. THE CONTRACTOR SHALL MINIMIZE THE DISRUPTIONS TO THE EXISTING SEWER FLOWS AND THOSE INTERRUPTIONS SHALL BE LIMITED TO LOCAL SEWER DEPARTMENT REGULATIONS.
16. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
17. ALL FIRE HYDRANTS SHALL BE PROVIDED WITH AN APPROVED GATE VALVE.
18. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO USERS AT ALL TIMES. REQUIREMENTS BY THE TOWN WATER DEPARTMENT REGARDING NOTIFICATION FOR INTERRUPTION OF SERVICE SHOULD BE INCLUDED (TYPICALLY 24 HOURS) AND ALLOWABLE INTERRUPTION DURATION. WATER TESTING AND DISINFECTION REQUIREMENTS SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
19. TRIPLE WATER GATE ASSEMBLIES SHALL BE INSTALLED AT ALL INTERSECTING WAYS INCLUDING THE CONNECTION WITHIN SUMMER STREET. THE TRIPLE VALVE ASSEMBLY IN SUMMER STREET SHALL BE CONNECTED TO EXISTING MAIN WITH LONG BODY SOLID SLEEVES. ALL OTHER TRIPLE GATE INTERSECTION SHALL BE A TEE, NIPPLE WITH MEGA-LUGS AND THE (OPEN LEFT) WATER GATE INSTALLED AS AN ASSEMBLY
20. ALL WATER AND SEWER INSTALLATION SHALL BE COORDINATED WITH THE TOWN OF WALPOLE, MA

SPECIAL PERMITS AND WAIVERS – LOT 1

1. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS SECTION 449 OF THE WALPOLE GENERAL BYLAWS – ARTICLE XXIX STORMWATER MANAGEMENT AND EROSION CONTROL BYLAW.
2. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS SECTION 561, DIVISION 2 OF THE GENERAL BYLAW.
3. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS 1.4.1: NO ALTERATION ZONE: THE COMMISSION SHALL REQUIRE THE APPLICANT TO MAINTAIN A 25 FOOT WIDE CONTIGUOUS, UNDISTURBED, VEGETATIVE BUFFER MEASURED FROM, AND PARALLEL TO, THE WETLAND RESOURCE BOUNDARY, AS A MINIMUM;
4. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS 1.5.2: REPLICATION REQUIREMENTS.
5. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS 2.3: PLANS AND SUPPORTING DOCUMENTS;
6. WALPOLE ZONING BYLAWS TABLE 5-B.1.3.D; RESIDENTIAL USE PROHIBITED IN LIMITED MANUFACTURING ZONE.
7. WALPOLE ZONING BYLAWS TABLE 5-B.1.3.D.iii; IF THERE IS TO BE MORE THAN ONE PRINCIPLE BUILDING ON A LOT, THERE SHALL BE A MINIMUM OF 10,000 S.F. OF LATE AREA PER DWELLING UNIT.
8. WALPOLE ZONING BYLAWS SECTION 6-B-1: IN ALL DISTRICTS NO BUILDING SHALL BE CONSTRUCTED ON ANY PART OF A LOT WHICH DOES NOT HAVE AN AREA IN WHICH A CIRCLE, THE DIAMETER OF WHICH IS NOT LESS THAN 80% OF THE MINIMUM REQUIRED LOT FRONTAGE, TANGENT TO THE EXTERIOR STREET LINE FROM WHICH THE REQUIRED FRONTAGE AND MINIMUM SETBACK ARE DERIVED AND WITHIN ALL OTHER LOT LINES, MAY BE LOCATED.
9. WALPOLE ZONING BYLAWS SECTION 6-B-1.A: IN ALL DISTRICTS NO BUILDING SHALL BE CONSTRUCTED ON A LOT HAVING LESS THAN THE REQUIRED FRONTAGE.
10. WALPOLE ZONING BYLAWS SECTION 6-B-1.C: IN ALL DISTRICTS NO BUILDING SHALL BE CONSTRUCTED SO AS TO BE NEARER TO THE SIDE LINES OF ITS LOT THAN THE REQUIRED SIDE YARD WIDTH.
11. WALPOLE ZONING BYLAWS TABLE 6-B.1 AND 6-C.3.A: REQUIRED LOT FRONTAGE FOR A LOT IN THE LIMITED MANUFACTURING ZONE.
12. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED MINIMUM SIDE YARD SETBACK FOR A LOT IN THE LIMITED MANUFACTURING ZONE.
13. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED MAXIMUM BUILDING HEIGHT FOR A LOT IN THE LIMITED MANUFACTURING ZONE.
14. WALPOLE ZONING BYLAWS SECTION 6-C-11: PROJECTIONS.
15. WALPOLE ZONING BYLAWS SECTION 6-C.4.B: NUMBER OF BUILDINGS PER LOT.
16. WALPOLE ZONING BYLAWS SECTION 8.3.1: TOWNHOUSES & APARTMENTS ARE CLASSIFIED AS PARKING CODE 1 PER TABLE 6-B.1.
17. WALPOLE ZONING BYLAWS SECTION 8.3.1: 2 SPACES FOR EACH UNIT.
18. WALPOLE ZONING BYLAWS SECTION 8.8.A.1: TABLE OF PARKING SPACE AND AISLE DIMENSIONS.
19. WALPOLE ZONING BYLAWS SECTION 8.8.B-3 PARKING AISLES: THE ENDS OF PARKING AISLES THAT ARE MORE THAN 15 SPACES IN LENGTH SHALL INCORPORATE LANDSCAPE ISLANDS AT EITHER END OF THE ROW. WHERE THE LENGTH OF A PARKING AISLE EXCEEDS 25 SPACES, ADDITIONAL LANDSCAPED ISLANDS SHALL BE INSTALLED AT REGULAR INTERVALS. THIS INTERVAL SHALL NOT BE MORE THAN EVERY 13 SPACES. THE WIDTH OF LANDSCAPED ISLANDS PERPENDICULAR TO ADJACENT SPACES SHALL BE NO LESS THAN 8 FEET AT THEIR WIDEST POINT.
20. WALPOLE ZONING BYLAWS SECTION 12.3.A.2.D: RESIDENTIAL DEVELOPMENT OF SINGLE FAMILY DWELLINGS ARE PERMITTED BY RIGHT IF NO MORE THAN 15% OR 2,500 S.F., WHICHEVER IS GREATER, OF THE BUILDING LOT IS RENDERED IMPERVIOUS.
21. WALPOLE ZONING BYLAWS SECTION 12.3.C.3: IN AREAS 3 & 4, ANY USES IN WRPOD OTHER THAN A SINGLE-FAMILY DWELLING WITH A SEWAGE FLOW EXCEEDING 110 GPD PER 10,000 S.F. OF LOT AREA OR EXCEEDING 15,000 GPD TOTAL REQUIRES A SPECIAL PERMIT
22. WALPOLE ZONING BYLAWS SECTION 12.3.C.5: ANY RESIDENTIAL USE IN WRPOD THAT WILL RENDER IMPERVIOUS MORE THAN 15% OR 2,500 S.F. OF ANY LOT REQUIRES A SPECIAL PERMIT.
23. WALPOLE ZONING BYLAWS SECTION 13: SITE PLAN REVIEW;
24. ZBA SECTION 3.2.15 – STATEMENT OF IMPACT ON MUNICIPAL FACILITIES AND SERVICES.
25. ZBA SECTION 3.2.16: COMPLIANCE WITH MASTER AND OPEN SPACE PLANS.
26. ZBA SECTION 3.2.17: ROSTER OF DEVELOPMENT TEAM AND LIST OF PRIOR DEVELOPMENTS FOR PAST 10 YEARS.
27. ZBA SECTION 3.2.18: TWENTY (20) PAPER COPIES OF SAID APPLICATION WITH ATTACHMENTS AND EXHIBITS.
28. ZBA SECTION 3.2.5.4: SAID PLAN SHALL INCLUDE THE FOLLOWING INFORMATION: EXISTING SIGNIFICANT ENVIRONMENTAL FEATURES SUCH AS LEDGE OUTCROPS, SCENIC VIEWS AND LARGE TREES (I.E. GREATER THAN 24" DBH)
29. ZBA SECTION 5.5: ANY PROFESSIONAL EXPERT OR OTHER WITNESS THAT PARTICIPATED IN THE DRAFTING OF THE PROPOSED PROJECT PLANS OR OTHER ELEMENTS SHALL BE PRESENT AT EACH PUBLIC HEARING.
30. ZBA SECTION 5.6: BOARD MAY IN ITS DISCRETION COLLECT APPROPRIATE FEES FOR NOTARY PUBLIC OR STENOGRAPHER.

SPECIAL PERMITS AND WAIVERS – LOT 2

1. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS SECTION 449 OF THE WALPOLE GENERAL BYLAWS – ARTICLE XXIX STORMWATER MANAGEMENT AND EROSION CONTROL BYLAW;
2. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS SECTION 561, DIVISION 2 OF THE GENERAL BYLAW;
3. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS 1.4.1: NO ALTERATION ZONE: THE COMMISSION SHALL REQUIRE THE APPLICANT TO MAINTAIN A 25 FOOT WIDE CONTIGUOUS, UNDISTURBED, VEGETATIVE BUFFER MEASURED FROM, AND PARALLEL TO, THE WETLAND RESOURCE BOUNDARY, AS A MINIMUM;
4. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS 1.5.2: REPLICATION REQUIREMENTS;
5. WALPOLE WETLANDS PROTECTION BYLAWS REGULATIONS 2.3: PLANS AND SUPPORTING DOCUMENTS;
6. WALPOLE ZONING BYLAWS TABLE 5-B.1.3.A; RESIDENTIAL USE PROHIBITED IN LIMITED MANUFACTURING ZONE;
7. WALPOLE ZONING BYLAWS SECTION 6-B-1: IN ALL DISTRICTS NO BUILDING SHALL BE CONSTRUCTED ON ANY PART OF A LOT WHICH DOES NOT HAVE AN AREA IN WHICH A CIRCLE, THE DIAMETER OF WHICH IS NOT LESS THAN 80% OF THE MINIMUM REQUIRED LOT FRONTAGE, TANGENT TO THE EXTERIOR STREET LINE FROM WHICH THE REQUIRED FRONTAGE AND MINIMUM SETBACK ARE DERIVED AND WITHIN ALL OTHER LOT LINES, MAY BE LOCATED;
8. WALPOLE ZONING BYLAWS SECTION 6-B-1.A: IN ALL DISTRICTS NO BUILDING SHALL BE CONSTRUCTED ON A LOT HAVING LESS THAN THE REQUIRED FRONTAGE;
9. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED MAXIMUM BUILDING HEIGHT FOR A LOT IN THE LIMITED MANUFACTURING ZONE,
10. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED LOT FRONTAGE FOR A LOT IN THE LIMITED MANUFACTURING ZONE;
11. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED MINIMUM FRONT YARD SETBACK FOR A LOT IN THE LIMITED MANUFACTURING ZONE;
15. WALPOLE ZONING BYLAWS SECTION 6-C.4.B: NUMBER OF BUILDINGS PER LOT. COMMERCIAL/MIXED-USE – PROVIDED THEY ARE IN COMPLIANCE WITH ALL DIMENSIONAL REGULATIONS LISTED IN SECTION 6-C, MORE THAN ONE (1) BUILDING MAY BE CONSTRUCTED AND LOCATED ON EACH LOT IN ALL COMMERCIAL ZONES;
16. WALPOLE ZONING BYLAWS SECTION 6.C.8.D: FENCE WILL NOT HAVE A HEIGHT OF MORE THAN 6 FEET;
17. WALPOLE ZONING BYLAWS SECTION 8.8.A.1: TABLE OF PARKING SPACE AND AISLE DIMENSIONS;
18. WALPOLE ZONING BYLAWS SECTION 12.3.A.2.D: RESIDENTIAL DEVELOPMENT OF SINGLE FAMILY DWELLINGS ARE PERMITTED BY RIGHT IF NO MORE THAN 15% OR 2,500 S.F., WHICHEVER IS GREATER, OF THE BUILDING LOT IS RENDERED IMPERVIOUS.
19. WALPOLE ZONING BYLAWS SECTION 12.3.C.3: IN AREAS 3 & 4, ANY USES IN WRPOD OTHER THAN A SINGLE-FAMILY DWELLING WITH A SEWAGE FLOW EXCEEDING 110 GPD PER 10,000 S.F. OF LOT AREA OR EXCEEDING 15,000 GPD TOTAL REQUIRES A SPECIAL PERMIT;
20. WALPOLE ZONING BYLAWS SECTION 12.3.C.5: ANY RESIDENTIAL USE IN WRPOD THAT WILL RENDER IMPERVIOUS MORE THAN 15% OR 2,500 S.F. OF ANY LOT REQUIRES A SPECIAL PERMIT;
21. WALPOLE ZONING BYLAWS SECTION 13: SITE PLAN REVIEW;
22. SIGNS SECTION 7.6.C.4; SIGNS SHALL BE A MINIMUM OF 8 FEET FROM THE GROUND;
23. ZBA SECTION 3.2.15 – STATEMENT OF IMPACT ON MUNICIPAL FACILITIES AND SERVICES;
24. ZBA SECTION 3.2.16: COMPLIANCE WITH MASTER AND OPEN SPACE PLANS;
25. ZBA SECTION 3.2.17: ROSTER OF DEVELOPMENT TEAM AND LIST OF PRIOR DEVELOPMENTS FOR PAST 10 YEARS;
26. ZBA SECTION 3.2.18: TWENTY (20) PAPER COPIES OF SAID APPLICATION WITH ATTACHMENTS AND EXHIBITS;
27. ZBA SECTION 3.2.5.4: SAID PLAN SHALL INCLUDE THE FOLLOWING INFORMATION: EXISTING SIGNIFICANT ENVIRONMENTAL FEATURES SUCH AS LEDGE OUTCROPS, SCENIC VIEWS AND LARGE TREES (I.E. GREATER THAN 24" DBH);
28. ZBA SECTION 5.5: ANY PROFESSIONAL EXPERT OR OTHER WITNESS THAT PARTICIPATED IN THE DRAFTING OF THE PROPOSED PROJECT PLANS OR OTHER ELEMENTS SHALL BE PRESENT AT EACH PUBLIC HEARING;
29. ZBA SECTION 5.6: BOARD MAY IN ITS DISCRETION COLLECT APPROPRIATE FEES FOR NOTARY PUBLIC OR STENOGRAPHER.

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PREPARED FOR:

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c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

SITE PLAN NOTES

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.2

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - COVER.dwg
Matthew Baker

ZONING BOARD OF APPEALS CONDITIONS (PRE-MODIFICATION):

A. GENERAL

A.1 EXCEPT AS MAY BE PROVIDED FOR IN THE FOLLOWING CONDITIONS, PARTICULARLY CONDITION A.3 BELOW, OR IN THE FINAL PLANS REFERENCED BELOW, THE PROJECT, INCLUDING ALL PROJECT DRIVEWAYS AND EMERGENCY VEHICLE ACCESS/STAGING ACCOMMODATIONS, SHALL BE CONSTRUCTED SUBSTANTIALLY IN CONFORMANCE WITH THE PLANS AND DRAWINGS LISTED BELOW IN THIS CONDITION A.1, WHICH FOR PURPOSES OF THIS COMPREHENSIVE PERMIT SHALL BE CONSIDERED THE APPROVED PLANS FOR THE PROJECT ('APPROVED PLANS'). THE APPROVED PLANS CONSIST OF THE FOLLOWING:

'PROPOSED MULTIFAMILY DEVELOPMENT, SUMMER STREET, WALPOLE MA', PREPARED BY HOWARD STEIN HUDSON, 114 TURNPIKE ROAD, CHELMSFORD, MA 01824, DATED JANUARY 10, 2020, WITH REVISIONS THROUGH APRIL 13, 2021.

A.2 THE APPLICANT SHALL BE A LIMITED DIVIDEND ORGANIZATION AS REQUIRED BY CHAPTER 40B AND IT AND ITS SUCCESSORS AND ASSIGNS, SHALL COMPLY WITH THE LIMITED DIVIDEND AND OTHER APPLICABLE REQUIREMENTS OF CHAPTER 40B AND THE REGULATIONS ADOPTED THEREUNDER.

A.3 THE PROJECT SHALL CONSIST OF NOT MORE THAN TWO HUNDRED AND SIXTY-EIGHT (268) UNITS IN THE FOLLOWING CONFIGURATION:
LOT 1: BUILDING 1, FIVE STORIES MAXIMUM HEIGHT WITH 90 APARTMENT UNITS;
BUILDING 2, FIVE STORIES MAXIMUM HEIGHT WITH 70 APARTMENT UNITS;
FOUR (4) BUILDINGS CONTAINING SIX TOWNHOUSE UNITS EACH;
SEVEN (7) BUILDINGS CONTAINING FOUR TOWNHOUSE UNITS EACH; AND
ONE (1) CLUBHOUSE BUILDING.
ONE (1) MAINTENANCE BUILDING
ONE (1) MAIL HUT
LOT 2: THIRTY-EIGHT (38) SINGLE-FAMILY HOMES; AND
NINE (9) DUPLEX BUILDINGS WITH TWO TOWNHOUSE UNITS EACH.
ONE (1) MAIL HUT

THE NUMBER OF PARKING SPACES SHALL BE AT LEAST 1.88 PARKING SPACES PER DWELLING UNIT.

A.4 ALL PARKING SPACES ARE TO BE SHOWN ON THE FINAL PLAN AS HEREINAFTER DEFINED IN GENERAL CONFORMANCE TO THE SAME CONFIGURATION AS SHOWN ON THE APPROVED PLANS. VISITOR PARKING, EXCEPT AS DESIGNATED ON THE APPROVED PLAN, AND ALL OTHER FORMS OF PARKING ARE PROHIBITED IN THE PROJECT DRIVEWAY. THE APPLICANT AND/OR ANY SUBSEQUENTLY ESTABLISHED HOMEOWNER'S ASSOCIATION IS REQUIRED TO PROVIDE RESIDENT AND VISITOR PARKING STICKERS TO ALL RESIDENTS. ANY PARKED VEHICLE WITHOUT A STICKER WILL BE SUBJECT TO TOWING BY THE HOMEOWNER'S ASSOCIATION. THE APPLICANT AND/OR ANY SUBSEQUENTLY ESTABLISHED HOMEOWNER'S ASSOCIATION SHALL WORK WITH THE WALPOLE POLICE DEPARTMENT TO CREATE A PLAN WITH REGARD TO EVENTS AT GILLETTE STADIUM. SAID PLAN SHALL BE ADMINISTRATIVELY APPROVED BY THE BOARD.

A.5 AFFORDABLE UNITS SHALL BE INTERSPERSED EVENLY THROUGHOUT THE PROJECT, AS APPROVED BY THE SUBSIDIZING AGENCY DURING FINAL APPROVAL.

A.6 PURSUANT TO THE REVISED WAIVER LIST SUBMITTED TO THE BOARD AND ATTACHED HERETO AS EXHIBIT A, THE APPLICANT HAS REQUESTED, AND THE BOARD HAS GRANTED, THOSE WAIVERS FROM THE WALPOLE ZONING BYLAW AND OTHER LOCAL BY-LAWS AND REGULATIONS AS SPECIFICALLY SET FORTH THEREIN. THOSE WAIVERS GRANTED BY THE BOARD HAVE BEEN GRANTED CONDITIONALLY, AS SET FORTH IN EXHIBIT A. THOSE CONDITIONS ARE EXPRESSLY INCORPORATED BY REFERENCE AS CONDITIONS OF APPROVAL TO THIS COMPREHENSIVE PERMIT. NO WAIVERS OR EXCEPTIONS FROM REQUIREMENTS THAT ARE BEYOND THE PURVIEW OF G.L. C. 40B, §§20-23, AND NO WAIVERS OF ANY REQUIREMENTS OTHERWISE WITHIN THE SCOPE OF THE EXCEPTIONS UNDER G.L. C.40B, §§20-23 HAVE BEEN GRANTED EXCEPT FOR THOSE EXPRESSLY GRANTED BY THE BOARD AS SET FORTH IN EXHIBIT A. TO THE EXTENT THE APPROVED PLANS REFLECT A WAIVER NOT EXPRESSLY GRANTED IN EXHIBIT A AND CONDITIONS OF EXHIBIT A, SUCH WAIVER SHALL GOVERN. NO WAIVER OF BUILDING PERMIT OR INSPECTION FEES HAS BEEN GRANTED EXCEPT AS SPECIFICALLY STATED AND CONDITIONED. ANY SUBSEQUENT NON-DE MINIMIS REVISION TO THE FINAL PLANS, INCLUDING BUT NOT LIMITED TO REVISIONS THAT ARE APPARENT IN THE FINAL PLANS THAT REQUIRE ADDITIONAL OR MORE EXPANSIVE WAIVERS OF ANY LOCAL BY-LAWS OR REGULATIONS, MUST BE APPROVED BY THE BOARD IN ACCORDANCE WITH 760 CMR 56.05(11).

A.7 THE PROJECT SHALL COMPLY WITH ALL LOCAL REGULATIONS OF THE TOWN OF WALPOLE AND ITS BOARDS, COMMISSIONS AND DEPARTMENTS UNLESS SPECIFICALLY WAIVED HEREIN.

A.8 THE APPLICANT SHALL COPY THE BOARD, THROUGH THE BOARD SECRETARY AND THE COMMUNITY AND ECONOMIC DEVELOPMENT DIRECTOR, ON ALL CORRESPONDENCE BETWEEN THE APPLICANT AND ANY FEDERAL, STATE OR TOWN OFFICIAL, BOARD, OR COMMISSION CONCERNING THE CONDITIONS SET FORTH IN THIS DECISION, INCLUDING BUT NOT LIMITED TO ALL TESTING RESULTS, OFFICIAL FILINGS, ENVIRONMENTAL APPROVALS, PERMITS AND PERMITS ISSUED AND/OR THE PROJECT.

A.9 EXCEPT AS OTHERWISE SPECIFICALLY PROVIDED HEREIN, WHERE THIS DECISION PROVIDES FOR THE SUBMISSION OF PLANS OR OTHER DOCUMENTS FOR APPROVAL BY THE BUILDING INSPECTOR OR OTHER TOWN DEPARTMENTS, THE BUILDING INSPECTOR OR APPLICABLE DEPARTMENT HEAD WILL USE REASONABLE EFFORTS TO REVIEW AND PROVIDE A WRITTEN RESPONSE WITHIN THIRTY (30) DAYS FOLLOWING SUBMISSION. FOR SUBMISSIONS THAT REQUIRE ASSISTANCE FROM AN OUTSIDE CONSULTANT, AS DETERMINED BY THE BUILDING INSPECTOR OR APPLICABLE DEPARTMENT HEAD, THE THIRTY-DAY TIME PERIOD SHALL NOT BEGIN UNTIL THE CONSULTANT'S FEE HAS BEEN FULLY FUNDED BY THE APPLICANT.

A.10 THE PROVISIONS OF THIS COMPREHENSIVE PERMIT DECISION AND CONDITIONS SHALL BE BINDING UPON THE SUCCESSORS AND ASSIGNS OF THE APPLICANT, AND THE OBLIGATIONS SHALL RUN WITH THE LAND. IN THE EVENT THAT THE APPLICANT SELLS, TRANSFERS, OR ASSIGNS ITS INTEREST IN THE DEVELOPMENT, THIS COMPREHENSIVE PERMIT SHALL BE BINDING UPON THE PURCHASER, TRANSFEREE, OR ASSIGNEE AND ANY SUCCESSOR PURCHASERS, TRANSFEREES OR ASSIGNEES. THE LIMITED DIVIDEND RESTRICTIONS SHALL APPLY TO THE OWNER OF THE PROJECT REGARDLESS OF SALE, TRANSFER, OR ASSIGNMENT OF THE PROJECT.

A.11 THE SIDEWALKS, DRIVEWAYS, ROADS, UTILITIES, DRAINAGE SYSTEMS, AND ALL OTHER INFRASTRUCTURE SHOWN ON THE APPROVED PLANS AS SERVING THE PROJECT SHALL REMAIN PRIVATE IN PERPETUITY, AND THE TOWN OF WALPOLE SHALL NOT HAVE, NOW OR IN THE FUTURE, ANY LEGAL RESPONSIBILITY FOR THE OPERATION OR MAINTENANCE OF THE INFRASTRUCTURE, INCLUDING BUT NOT LIMITED TO SNOW REMOVAL, DRAINAGE AND LANDSCAPE MAINTENANCE. IN THIS REGARD, THE DRIVEWAY WITHIN THE PROJECT SHALL NOT BE DEDICATED TO OR ACCEPTED BY THE TOWN.

A.12 UNLESS OTHERWISE INDICATED HEREIN, THE BOARD MAY DESIGNATE AN AGENT TO REVIEW AND APPROVE MATTERS ON THE BOARD'S BEHALF SUBSEQUENT TO THIS DECISION.

A.14 APPLICANT MUST OBTAIN RIGHTS OF ACCESS FOR WORK PROPOSED ON ANY PROPERTY OUTSIDE OF ITS OWNERSHIP AND/OR CONTROL AND THAT ANY MITIGATION REQUESTED BY ABUTTERS WHOSE PROPERTY WILL BE USED BY THE APPLICANT SHALL BE SHOWN ON THE FINAL PLANS.

A.15 THERE SHALL BE NO OTHER PERMANENT MARKETING OR IDENTIFICATION SIGNAGE OTHER THAN THAT SHOWN ON THE FINAL PLAN CONSISTING OF TWO SIGNS.

A.16 SIGNAGE INDICATING PROPERTY BOUNDARY SHALL BE INSTALLED.

A.17 ACCESS TO EXISTING TRAILS IN THE RIVER FRONT AREA – BETWEEN 30 MINUTES BEFORE SUNRISE AND 30 MINUTES AFTER SUNSET, AND WITH SUCH REASONABLE RESTRICTIONS AS IMPOSED BY THE HOA, THE PUBLIC SHALL HAVE PEDESTRIAN ACCESS TO AND THE RIGHT TO PASS OVER THE TRAILS IN THE RIVER FRONT AREA. THE PEDESTRIAN ACCESS TO THE UNIMPROVED TRAILS SHALL BE VIA THE TRAILS ON THE PROPERTY OF OTHERS, OR OVER THE PROPERTY DRIVEWAYS VIA THREE LOCATIONS: 1) THE NORTHERN CULL DE SAC OF DRIVEWAY E, 2) THE ONE-WAY SECTION OF DRIVEWAY D, AND 3) ALONG THE NORTHEASTERN SIDE OF DRIVEWAY C IN THE GENERAL VICINITY OF THE DOG PARK. IN ADDITION, WITH REASONABLE NOTICE TO THE HOA, REPRESENTATIVES OF THE WALPOLE TRAILS COMMITTEE OR THE WALPOLE CONSERVATION COMMISSION MAY MAINTAIN THE TRAILS SO LONG AS ALL WORK IS DONE LAWFULLY, AND ANY REQUIRED PERMITS ARE OBTAINED. IT IS UNDERSTOOD THAT NEITHER THE HOA NOR ANY ASSOCIATED PROPERTY OWNERS WILL BE RESPONSIBLE TO OBTAIN ANY PERMITS, OR HAVE ANY RESPONSIBILITY OR ANY LIABILITY, FOR SUCH MAINTENANCE WORK.

A.18 TRAIL ACCESS SIGNS –A SIGN, NOT LESS THAN 8" X 12" WILL BE SET AT EACH OF THE 3 ABOVE MENTIONED LOCATIONS WHERE ACCESS IS ALLOWED TO THE UNIMPROVED TRAILS AT THE INTERSECTIONS WITH THE COMMON DRIVEWAYS. THE SIGN SHALL READ "WALKING TRAIL ACCESS – UNIMPROVED TRAIL –FOOTING MAY BE SOFT OR UNEVEN. PLEASE REMOVE DOG WASTE AND TRASH" OR AS MUTUALLY AGREED WITH THE WALPOLE CONSERVATION COMMISSION.

B. AFFORDABILITY

B.1 A MINIMUM OF 25% OF BOTH THE RENTAL AND THE HOME OWNERSHIP UNITS SHALL BE LOW- OR MODERATE-INCOME UNITS, MEANING THAT THEY SHALL BE SOLD OR RENTED TO, AND OCCUPIED BY, HOUSEHOLDS WHOSE INCOME IS NOT MORE THAN 80% OF THE AREA MEDIAN INCOME ('AMI'); AS DETERMINED BY THE UNITED STATES DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT ('HUD') AND DHCD ('AFFORDABLE UNITS'). AFFORDABLE UNITS SHALL BE DISPERSED THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE GUIDELINES OF THE SUBSIDIZING AGENCY. THE APPLICANT SHALL BE RESPONSIBLE FOR MAINTAINING RECORDS SUFFICIENT TO COMPLY WITH DHCD GUIDELINES FOR THE LOCATION OF AFFORDABLE UNITS IN THE PROJECT AND OCCUPANCY OF SUCH UNITS BY INCOME-ELIGIBLE HOUSEHOLDS.

B.2 UPON COMPLETION OF THE PROJECT, AND IN PERPETUITY, 100% OF THE RENTAL UNITS (BOTH APARTMENT AND TOWNHOUSE UNITS); 4 HOMEOWNERSHIP DUPLEX UNITS; AND 10 SINGLE-FAMILY HOME OWNERSHIP DWELLINGS SHALL MEET THE CRITERIA FOR INCLUSION IN THE DHCD'S SUBSIDIZED HOUSING INVENTORY.

B.3 THE APPLICANT SHALL OBTAIN APPROVAL BY THE SUBSIDIZING AGENCY OF AN AFFIRMATIVE FAIR HOUSING MARKETING PLAN PRIOR TO THE SALE OR RENTAL OF ANY UNITS AND SHALL ENSURE THAT THE PROJECT COMPLIES WITH THE SUBSIDIZING AGENCY'S FAIR HOUSING REQUIREMENTS.

C. SUBMISSION REQUIREMENTS

C.2 PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS, THE APPLICANT SHALL:

a. RECORD THIS COMPREHENSIVE PERMIT WITH THE NORFOLK REGISTRY OF DEEDS, AT THE APPLICANT'S EXPENSE, AND PROVIDE PROOF OF SUCH RECORDING WITH THE WALPOLE BUILDING INSPECTOR, COMMUNITY AND ECONOMIC DEVELOPMENT DIRECTOR AND TOWN CLERK.

b. SUBMIT TO THE BOARD AND THE BUILDING INSPECTOR EVIDENCE OF FINAL APPROVAL FROM THE SUBSIDIZING AGENCY, MASSHOUSING, AS REQUIRED BY THE PROJECT ELIGIBILITY LETTERS AND THE CHAPTER 40B REGULATIONS.

c. SUBMIT TO THE BOARD AND THE BUILDING INSPECTOR FULLY EXECUTED COPY OF THE REGULATORY AGREEMENT AND MONITORING SERVICES AGREEMENT FOR EACH OR THE OWNERSHIP AND RENTAL PORTIONS OF THE PROJECT AND EVIDENCE OF RECORDING THE SAME. THE BUILDING INSPECTOR SHALL ALSO BE PROVIDED WITH EVIDENCE OF A SUBSIDY FUNDING COMMITMENT BY MASSHOUSING OR AN APPROVED NEW ENGLAND FUND LENDER PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT.

d. SUBMIT A SIGN APPLICATION TO THE BUILDING INSPECTOR AND INCLUDE LOCATION AND DETAILS OF EVERY SIGN TO CONFIRM ITS COMPLIANCE WITH THIS DECISION.

e. SUBMIT FINAL PLANS AND REQUIRED SUPPORTING MATERIAL TO THE BOARD AND FIRE DEPARTMENT FOR ITS REVIEW AND APPROVAL BY THE FIRE DEPARTMENT PRIOR TO THE SUBMITTAL OF ANY BUILDING PERMITS OR CONSTRUCTION OF ANY UTILITY INFRASTRUCTURE.

f. OBTAIN AND FILE WITH THE BUILDING INSPECTOR A COPY OF ALL REQUIRED FEDERAL, STATE, AND LOCAL PERMITS AND APPROVALS REQUIRED TO BEGIN CONSTRUCTION OF THE PROJECT.

g. OBTAIN ALL NECESSARY ELECTRICAL, PLUMBING, AND OTHER PERMITS REQUIRED TO BEGIN CONSTRUCTION ON THE BUILDING FOR WHICH THE BUILDING PERMIT IS SOUGHT.

C.3 STAGING AREA(S) FOR CONSTRUCTION EQUIPMENT AND DELIVERIES MUST BE CONSTRUCTED BEFORE ANY BUILDINGS ARE ERECTED, AND SUCH AREA(S) MUST BE ON THE PROPERTY AND NOT BLOCK ACCESS IN AND OUT OF THE PROPERTY.

D. CONSTRUCTION COMPLETION/CERTIFICATE OF OCCUPANCY

D.1 THE APPLICANT SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL LAWS REGARDING NOISE, VIBRATION, DUST, AND BLOCKING OF TOWN ROADS.

D.2 THE APPLICANT SHALL ADHERE TO STRICT COMPLIANCE WITH THIS DECISION TO MINIMIZE INCONVENIENCE TO RESIDENTS IN THE GENERAL AREA.

D.3 ADEQUATE PROVISIONS SHALL BE MADE BY THE APPLICANT TO CONTROL AND MINIMIZE DUST ON THE PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH THE CONSTRUCTION MANAGEMENT PLAN. THE APPLICANT SHALL KEEP ALL PORTIONS OF ANY PUBLIC WAY USED AS ACCESS/EGRESS TO THE PROJECT FREE OF SOIL, MUD OR DEBRIS DEPOSITED DUE TO USE BY CONSTRUCTION VEHICLES ASSOCIATED WITH THE PROJECT AND SHALL EMPLOY WATER-BASED STREET SWEEPING SO AS TO AVOID CLOUDS OF DUST IN AND AROUND THE PUBLIC AND PRIVATE WAYS AND SURROUNDING NEIGHBORHOOD.

D.4 DURING THE CONSTRUCTION PROCESS, UP-TO-DATE MATERIAL SAFETY DATA SHEET MUST BE KEPT ON SITE WITH ANY MATERIALS BROUGHT ONTO THE SITE AND USED ON SITE BY THE CONSTRUCTION TEAM.

D.5 PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR SPECIFIC DWELLING UNIT(S), THE APPLICANT SHALL WITH RESPECT TO SAID DWELLING UNIT(S) AS APPLICABLE TO THE PORTION OF THE SITE WHERE THE DWELLING UNIT(S) IS/ARE LOCATED:

a. SUBMIT ENGINEER'S INTERIM CERTIFICATION OF COMPLIANCE WITH UTILITIES PLAN AND PROFILES (AS APPLICABLE) TO THE WALPOLE BUILDING INSPECTOR.

b. PROVIDE A LETTER TO THE BOARD, SIGNED BY THE APPLICANT'S CIVIL ENGINEER, CERTIFYING THAT THE AS-BUILT PROJECT HAS BEEN CONSTRUCTED IN COMPLIANCE WITH THE FINAL PLANS IN ALL MATERIAL RESPECTS, OR NOTING WHERE THERE ARE DIFFERENCES.

c. OBTAIN ACCEPTANCE FROM THE WALPOLE FIRE DEPARTMENT OF TESTING OF ALL FIRE PROTECTION SYSTEMS, FIRE ALARM SYSTEMS, FIRE SPRINKLER SYSTEMS, AND LOCAL SMOKE ALARMS WITHIN THE DWELLINGS AND THAT ALL FIRE HYDRANTS ARE IN PLACE AT PROPER GRADE AND FUNCTIONING.

D. PRIOR TO THE FIRST CERTIFICATE OF OCCUPANCY FOR THE FIRST DWELLING UNIT, SUBMIT TO THE BOARD'S COUNSEL THE HOMEOWNER'S ASSOCIATION DOCUMENTS FOR LOTS 1 AND 2 AND THE CONDOMINIUM MASTER DEED, CONDOMINIUM DECLARATION OF TRUST AND ACCOMPANYING CONDOMINIUM PLANS (TOGETHER, THE 'CONDOMINIUM DOCUMENTS') FOR LOT 2. SUCH HOMEOWNER'S ASSOCIATION DOCUMENTS AND CONDOMINIUM DOCUMENTS SHALL INCORPORATE ALL THE CONDITIONS OF THIS DECISION BY REFERENCE.

E. SUBMIT AS-BUILT PLAN OF STORMWATER BASINS AND INFILTRATION UNITS ASSOCIATED WITH THE PORTION OF THE SITE SEEKING A CERTIFICATE OF OCCUPANCY ALONG WITH CERTIFICATION BY APPLICANT'S CIVIL ENGINEER OF COMPLIANCE WITH THE CONDITIONS OF APPROVAL FOR THE STORMWATER MANAGEMENT SYSTEM SET FORTH IN THE FINAL APPROVED STORMWATER MANAGEMENT PLANS THAT HAVE BEEN APPROVED BY THE TOWN'S PEER REVIEW ENGINEER.

D.6 PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY FOR THE LAST RESIDENTIAL UNIT, THE APPLICANT SHALL:

a. SUBMIT TO THE BUILDING INSPECTOR, IN DIGITAL FILE FORMAT, A FINAL AS-BUILT UTILITIES PLAN SHOWING ACTUAL-IN GROUND INSTALLATION OF ALL UTILITIES, RIM AND INVERT ELEVATIONS, ROADWAY, SIDEWALK AND ASSOCIATED CONSTRUCTION. THE FILE FORMAT SHALL BE IN A FORM ACCEPTABLE TO THE BUILDING DEPARTMENT. AUTOCAD FILE DELIVERY SHALL BE IN FULL MODEL VIEW AND INDIVIDUAL SHEET VIEWS. THE DIGITAL FILE SHALL INCLUDE PROPERTY BOUNDARIES, DIMENSIONS, EASEMENTS, RIGHTS-OF-WAY, EDGE OF PAVEMENT, EDGE OF SIDEWALK, EDGE OF WATER BODIES, WETLAND BOUNDARIES, TOPOGRAPHIC CONTOURS, SPOT ELEVATIONS, PARKING AREAS, ROAD CENTERLINE AND ASSOCIATED TEXT. SAID DIGITAL DATA SHALL BE DELIVERED IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 AND NORTH AMERICAN VERTICAL DATUM 1988, IN U.S. SURVEY FEET.

b. SUBMIT TO THE BUILDING INSPECTOR AS-BUILT PLANS FOR ALL BUILDINGS IN THE PROJECT.

c. SUBMIT TO THE BOARD, BUILDING INSPECTOR AND CHIEF OF POLICE ALL INFORMATION RELATING TO THE HOMEOWNER'S ASSOCIATION RULES AND REGULATIONS AND THE MANAGEMENT COMPANY BEING RETAINED TO ACT AS THE PROPERTY MANAGER THAT THE APPLICANT SUBMITS TO THE SUBSIDIZING AGENCY AS PART OF THE FINAL APPROVAL PROCESS. SUCH PROPERTY MANAGEMENT AGREEMENT AND HOMEOWNER'S ASSOCIATION RULES AND REGULATIONS SHALL, AT A MINIMUM, ADDRESS PARKING AND SECURITY, PUBLIC ACCESS, PET POLICY, STAFFING, TRASH REMOVAL, SMOKING POLICIES, SNOW AND ICE REMOVAL, AND SNOW STORAGE.

d. SUBMIT VERIFICATION THAT THE STORMWATER MANAGEMENT SYSTEM INCLUDING BUT NOT LIMITED TO CATCH BASINS, INFILTRATION UNITS, PIPES AND DETENTION BASIN, HAS BEEN INSPECTED AND CLEANED.

e. SUBMIT TO THE BOARD A CERTIFICATION OF COMPLIANCE WITH ALL TERMS AND CONDITIONS OF THIS COMPREHENSIVE PERMIT.

f. CERTIFICATION BY THE TOWN ENGINEERING DEPARTMENT THAT ALL OFF-SITE MEASURES (IF ANY) ARE COMPLETE.

G. CERTIFICATION FROM THE TOWN'S DPW WATER AND SEWER DEPARTMENT THAT ALL SEWER AND WATER SYSTEMS HAVE BEEN INSTALLED, TESTED, AND THAT ALL VALVE COVERS AND OTHER RELATED ITEMS ARE AT GRADE AND ARE IN PROPER WORKING CONDITION.

D.7 ANY EVIDENCE OF ILLEGAL DUMPING OR CONTAMINATION OF SOIL OR GROUNDWATER ENCOUNTERED DURING CONSTRUCTION SHALL BE REPORTED AS REQUIRED UNDER APPLICABLE FEDERAL, STATE OR MUNICIPAL REGULATIONS TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION ('MASSDEP') AND THE WALPOLE BOARD OF HEALTH. AT LEAST FOUR (4) MONITORING WELLS BE MAINTAINED ON SITE AT LOCATIONS APPROVED BY A LICENSED SITE PROFESSIONAL WHICH ARE SUITABLE FOR MONITORING GROUNDWATER ACROSS THE SITE.

E. PROJECT DESIGN AND CONSTRUCTION

E.1 PRIOR TO THE COMMENCEMENT OF ANY WORK ON THE SITE, THE APPLICANT AND THE SITE GENERAL CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE BUILDING INSPECTOR AND OTHER TOWN STAFF. IF APPLICANT HAS OBTAINED A DEMOLITION PERMIT, APPLICANT MAY PROCEED WITH DEMOLITION OF EXISTING STRUCTURES IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT. APPLICANT SHALL FURTHER MEET MONTHLY WITH THE BUILDING INSPECTOR AND OTHER TOWN STAFF IF REQUESTED BY THE BUILDING INSPECTOR AND/OR ANY OTHER TOWN STAFF MEMBER UNTIL CONSTRUCTION IS COMPLETE.

E.2 AT REASONABLE TIMES AND AFTER NOTICE TO THE APPLICANT, REPRESENTATIVES OF THE BOARD MAY OBSERVE AND INSPECT THE PROPERTY AND CONSTRUCTION PROGRESS UNTIL SUCH TIME AS THE PROJECT HAS BEEN COMPLETED AT THEIR OWN RISK.

E.3 THE PROPOSED CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE FEDERAL AND STATE LAWS, RULES AND REGULATIONS.

E.4 ALL SITE RETAINING WALLS FOUR (4) FEET OR GREATER IN HEIGHT SHALL BE DESIGNED BY A MASSACHUSETTS PROFESSIONAL STRUCTURAL ENGINEER AND SHALL BE EQUIPPED WITH A 4 FOOT CHAIN LINK FENCE FOR SAFETY PURPOSES.

E.5 DURING CONSTRUCTION, THE APPLICANT SHALL COMPLY WITH THE CONSTRUCTION MANAGEMENT PLAN REFERENCED IN CONDITION C.1.

E.6 APPROPRIATE SIGNAGE SHALL BE SHOWN ON THE FINAL PLANS. THE BOARD HAS APPROVED CERTAIN WAIVERS FROM THE TOWN OF WALPOLE BYLAWS REGARDING SIGNS. ALL OTHER SIGN REGULATIONS SHALL BE ABIDED BY.

E.7 THE LOCATION OF ALL UTILITIES, INCLUDING BUT NOT LIMITED TO ELECTRIC, TELEPHONE, AND CABLE, SHALL BE SHOWN ON THE FINAL PLANS PROVIDED TO THE BOARD AND BUILDING INSPECTOR.

E.8 IF THE APPLICANT USES NATURAL GAS FOR THE PROJECT OR ANY PART THEREOF, GAS SERVICE LOCATIONS SHALL BE INCLUDED ON THE FINAL PLANS.

E.9 LIGHTING SHALL BE INSTALLED AS FOLLOWS:

a. ALL PROPOSED EXTERIOR LIGHTING SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS, INCLUDING BUT NOT LIMITED TO APPLICABLE SECTIONS OF THE MASSACHUSETTS BUILDING CODE, THE WALPOLE ZONING BYLAWS, AND THE WALPOLE TOWN BYLAWS. IN EVENT OF A CONFLICT AMONG SUCH REQUIREMENTS, THE MOST RESTRICTIVE PROVISION SHALL APPLY. A PROPOSED LIGHTING PLAN SHALL BE SUBMITTED TO THE BUILDING INSPECTOR AND BOARD. THE LIGHTING PLAN SUBMITTED SHALL SHOW ALL LOCATIONS OF PROPOSED STREET LIGHTING FIXTURES, EXTERIOR MOUNTED LIGHT FIXTURES, SIGNAGE LIGHTING, AND LANDSCAPE LIGHTING. THE LIGHTING PLAN PROPOSED SHALL INCLUDE, BUT NOT BE LIMITED TO, A SITE PLAN DEPICTING THE PROPERTY LINES OF ALL PROPERTIES FOR WHICH LIGHTING IS PROPOSED, THE LOCATION AND SPECIFICATION OF ALL EXTERIOR LIGHT FIXTURES TO BE INSTALLED WITHIN THE PROPERTY, THEIR LUMEN VALUES, MOUNTING HEIGHTS, SHIELDING, DIRECTIONALITY AND CONTROLS, PROTECTIONS PROVIDED TO MINIMIZE LIGHT POLLUTION, THE USES OF PROPERTIES ASSOCIATED WITH PARTIES IN INTEREST, OTHER RELEVANT SITE CONDITIONS, AND ANY ADDITIONAL INFORMATION REQUIRED TO DEMONSTRATE COMPLIANCE WITH APPLICABLE STANDARDS. THE LIGHTING PLAN SUBMITTED SHALL INCLUDE A PROPOSED PHOTOMETRIC CALCULATION TO ENSURE PUBLIC SAFETY AND MINIMIZE LIGHT TRESPASS FROM THE PROPOSED PROJECT PROPERTY LINE.

b. PERMANENT STREET LIGHTING
NO FREE-STANDING LIGHT FIXTURES SHALL BE INSTALLED TO A HEIGHT EXCEEDING 15 FEET. ALL ILLUMINATION SHALL BE DIRECTED AND/ OR SHIELDED SO AS NOT TO SHINE BEYOND THE INTERIOR OF THE SITE OR INTERFERE WITH TRAFFIC. (WALPOLE ZBL SECTION 13 SUB-SECTION10.A(5))

c. PERMANENT EXTERIOR LIGHTING MOUNTED TO BUILDING STRUCTURES
BROAD LIGHTING WILL BE HIGHLY DISCOURAGED WHILE SOFT LIGHTING AIMED DOWN WILL BE HIGHLY ENCOURAGED. (WALPOLE ZBL SECTION 13 SUB-SECTION 12.H(1)). EXTERIOR MOUNTED FIXTURES MUST BE FINALLY SHIELDED DIRECTIONAL LIGHT FIXTURES, PLACED NOT LESS THAN 4 FEET APART OR 12 FEET IN HEIGHT FROM THE SURFACE AREA TO BE ILLUMINATED.).

d. SIGNAGE LIGHTING
ALL SIGNAGE LIGHTING SHALL COMPLY WITH WALPOLE ZONING BY-LAWS PER SECTION 7. ALL SIGNAGE LIGHTING SHALL BE LIMITED TO WHITE STEADY, STATIONARY LIGHT OF REASONABLE INTENSITY THAT IS DIRECTED SOLELY AT THE SIGN AND SHIELDED FROM ABUTTING PARCELS.

e. SEASONAL LIGHTING & LANDSCAPE LIGHTING
LANDSCAPE LIGHTING SHALL BE LIMITED TO LIGHTING OF TREES, SHRUBS, OR OTHER PLANT MATERIAL. LIGHTING SHALL BE 'LOW-LEVEL LIGHT FIXTURES' (3 FEET OR LOWER) AND ONLY BE DIRECTED IN A DOWNWARD FACING DIRECTION. SEASONAL LIGHTING SHALL NOT BE PERMITTED FOR LONGER THAN A SIX-WEEK PERIOD IN ANY CALENDAR YEAR.

f. CONSTRUCTION & TEMPORARY LIGHTING
TEMPORARY LIGHTING USED FOR SECURITY OR ILLUMINATION PURPOSES SHALL BE SHIELDED AND DOWNWARD FACING. TEMPORARY LIGHTING OF THE INTERIOR BUILDINGS MUST BE CONTAINED WITH-IN THE BUILDING STRUCTURE OR SHUT OFF BETWEEN THE HOURS OF 10:00 PM TO 6:00 AM.

g. PHOTOMETRIC SURVEY:
UPON COMPLETION OF SAID PROJECT A PHOTOMETRIC STUDY SHALL BE CONDUCTED BY A REGISTERED PROFESSIONAL ENGINEER LICENSE IN THE COMMONWEALTH OF MASSACHUSETTS AT THE COST OF THE APPLICANT TO ENSURE COMPLIANCE WITH THE CONDITIONS OF THIS SECTION. ALL EXTERIOR LIGHT FIXTURES SHALL BE CERTIFIED WITH IDA FIXTURE SEAL OF APPROVAL. ALL PROPOSED LIGHTING SHALL PROMOTE DARK SKIES AND MINIMIZE GLARE WHILE REDUCING LIGHT TRESPASS AND SKYGLOW. ALL PRODUCTS THE APPLICANT SHALL INSTALL BE FULL CUT-OFF AND ALL WITHIN THE AMOUNT OF BLUE-LIGHT IN THE NIGHTTIME ENVIRONMENT. LIGHT TRESPASS SHALL BE LIMITED TO 0.5 FOOT-CANDLE AT THE PROPERTY LINE AND THERE SHALL BE NO TRESPASS AT THE TOWN'S SOURCE. LIGHT SHALL NOT DISTURB ADJACENT STREETS AND PROPERTIES.
E.10 UTILITIES, INCLUDING BUT NOT LIMITED TO TELEPHONE, ELECTRIC, AND CABLE, SHALL BE LOCATED UNDERGROUND FROM SUMMER STREET.

E.11 NO EXTERIOR WORK SHALL BE CONDUCTED EXCEPT SNOW MANAGEMENT OR WORK TO PREPARE THE SITE FOR A WEATHER EVENT, ON SUNDAY OR ON THE FOLLOWING NATIONAL HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, FOURTH OF JULY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS.

E.12 DUE TO CLOSE PROXIMITY TO EXISTING RESIDENCES, ALONG WITH SCHOOL CHILDREN AND PEOPLE WALKING ABOUT THE AREA ON WEEKDAYS, CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED BETWEEN THE HOURS OF 8:00 A.M. AND 7:00 P.M., MONDAY THROUGH FRIDAY. CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED BETWEEN THE HOURS OF 7:00 A.M. AND 7:00 P.M. ON SATURDAYS. WHEN WALPOLE PUBLIC SCHOOLS ARE NOT IN SESSION AND SCHOOL BREAKS, SUMMERS AND CERTAIN HOLIDAYS NOT LISTED BELOW, CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED BETWEEN THE HOURS OF 7:00 A.M. AND 7:00 P.M., MONDAY THROUGH FRIDAY. INTERIOR CONSTRUCTION ACTIVITIES MAY BE CONDUCTED AT ANY TIME. ADDITIONALLY, THE CONSTRUCTION MANAGEMENT PLAN SHALL TAKE INTO ACCOUNT THE BOYDEN SCHOOL PICKUP AND DROP-OFF HOURS AND SHALL RESTRICT VEHICLES LARGER THAN A PICKUP TRUCK FROM PASSING BY THE BOYDEN SCHOOL DURING ITS PICKUP AND DROP OFF TIMES. UPON THE DIRECTION OF THE BUILDING INSPECTOR AND/OR POLICE DEPARTMENT, THE APPLICANT SHALL UTILIZE A UNIFORM POLICE DETAIL AT THE ENTRANCE OF THE CONSTR

CONSERVATION COMMISSION ORDER OF CONDITIONS

(PRE–MODIFICATION):

C: GENERAL CONDITIONS UNDER MASSACHUSETTS WETLANDS PROTECTION ACT

C.1: FAILURE TO COMPLY WITH ALL CONDITIONS STATED HEREIN, AND WITH ALL RELATED STATUTES AND OTHER REGULATORY MEASURES, SHALL BE DEEMED CAUSE TO REVOKE OR MODIFY THIS ORDER.

C.2: THE ORDER DOES NOT GRANT ANY PROPERTY RIGHTS OR ANY EXCLUSIVE PRIVILEGES; IT DOES NOT AUTHORIZE ANY INJURY TO PRIVATE PROPERTY OR INVASION OF PRIVATE RIGHTS.

C.3: THIS ORDER DOES NOT RELIEVE THE PERMITTEE OR ANY OTHER PERSON OF THE NECESSITY OF COMPLYING WITH ALL OTHER APPLICABLE FEDERAL, STATE, OR LOCAL STATUTES, ORDINANCES, BYLAWS, OR REGULATIONS.

C.4: THE WORK AUTHORIZED HEREUNDER SHALL BE COMPLETED WITHIN THREE YEARS FROM THE DATE OF THIS ORDER UNLESS EITHER OF THE FOLLOWING APPLY:

C.4A: THE WORK IS A MAINTENANCE DREDGING PROJECT AS PROVIDED FOR IN THE ACT; OR

C.4B: THE TIME FOR COMPLETION HAS BEEN EXTENDED TO A SPECIFIED DATE MORE THAN THREE YEARS, BUT LESS THAN FIVE YEARS, FROM THE DATE OF ISSUANCE. IF THIS ORDER IS INTENDED TO BE VALID FOR MORE THAN THREE YEARS, THE EXTENSION DATE AND THE SPECIAL CIRCUMSTANCES WARRANTING THE EXTENDED TIME PERIOD ARE SET FORTH AS A SPECIAL CONDITION IN THIS ORDER.

C.4C: IF THE WORK IS FOR A TEST PROJECT, THIS ORDER OF CONDITIONS SHALL BE VALID FOR NO MORE THAN ONE YEAR.

C.5: THIS ORDER MAY BE EXTENDED BY THE ISSUING AUTHORITY FOR ONE OR MORE PERIODS OF UP TO THREE YEARS EACH UPON APPLICATION TO THE ISSUING AUTHORITY AT LEAST 30 DAYS PRIOR TO THE EXPIRATION DATE OF THE ORDER. AN ORDER OF CONDITIONS FOR A TEST PROJECT MAY BE EXTENDED FOR ONE ADDITIONAL YEAR ONLY UPON WRITTEN APPLICATION BY THE APPLICANT, SUBJECT TO THE PROVISIONS OF 310 CMR 10.05(11)(F).

C.6: IF THIS ORDER CONSTITUTES AN AMENDED ORDER OF CONDITIONS, THIS AMENDED ORDER OF CONDITIONS DOES NOT EXTEND THE ISSUANCE DATE OF THE ORIGINAL FINAL ORDER OF CONDITIONS AND THE ORDER WILL EXPIRE ON _____. UNLESS EXTENDED IN WRITING BY THE DEPARTMENT

C.7: ANY FILL USED IN CONNECTION WITH THIS PROJECT SHALL BE CLEAN FILL. ANY FILL SHALL CONTAIN NO TRASH, REFUSE, RUBBISH, OR DEBRIS, INCLUDING BUT NOT LIMITED TO LUMBER, BRICKS, PLASTER, WIRE, LATH, PAPER, CARDBOARD, PIPE, TIRES, ASHES, REFRIGERATORS, MOTOR VEHICLES, OR PARTS OF ANY OF THE FOREGOING.

C.8: THIS ORDER IS NOT FINAL UNTIL ALL ADMINISTRATIVE APPEAL PERIODS FROM THIS ORDER HAVE ELAPSED, OR IF SUCH AN APPEAL HAS BEEN TAKEN, UNTIL ALL PROCEEDINGS BEFORE THE DEPARTMENT HAVE BEEN COMPLETED.

C.9: NO WORK SHALL BE UNDERTAKEN UNTIL THE ORDER HAS BECOME FINAL AND THEN HAS BEEN RECORDED IN THE REGISTRY OF DEEDS OR THE LAND COURT FOR THE DISTRICT IN WHICH THE LAND IS LOCATED, WITHIN THE CHAIN OF TITLE OF THE AFFECTED PROPERTY. IN THE CASE OF RECORDED LAND, THE FINAL ORDER SHALL ALSO BE NOTED IN THE REGISTRY'S GRANTOR INDEX UNDER THE NAME OF THE OWNER OF THE LAND UPON WHICH THE PROPOSED WORK IS TO BE DONE. IN THE CASE OF THE REGISTERED LAND, THE FINAL ORDER SHALL ALSO BE NOTED ON THE LAND COURT CERTIFICATE OF TITLE OF THE OWNER OF THE LAND UPON WHICH THE PROPOSED WORK IS DONE. THE RECORDING INFORMATION SHALL BE SUBMITTED TO THE CONSERVATION COMMISSION ON THE FORM AT THE END OF THIS ORDER, WHICH FORM MUST BE STAMPED BY THE REGISTRY OF DEEDS, PRIOR TO THE COMMENCEMENT OF WORK.

C.10: A SIGN SHALL BE DISPLAYED AT THE SITE NOT LESS THAN TWO SQUARE FEET OR MORE THAN THREE SQUARE FEET IN SIZE BEARING THE WORDS, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION" [OR, "MASS DEP"] FILE NUMBER 315–1227

C.11: WHERE THE DEPARTMENT OF ENVIRONMENTAL PROTECTION IS REQUESTED TO ISSUE A SUPERSEDING ORDER, THE CONSERVATION COMMISSION SHALL BE A PARTY TO ALL AGENCY PROCEEDINGS AND HEARINGS BEFORE MASSDEP.

C.12: WHERE THE DEPARTMENT OF ENVIRONMENTAL PROTECTION IS REQUESTED TO ISSUE A SUPERSEDING ORDER, THE CONSERVATION COMMISSION SHALL BE A PARTY TO ALL AGENCY PROCEEDINGS AND HEARINGS BEFORE MASSDEP.

C.13: THE WORK SHALL CONFORM TO THE PLANS AND SPECIAL CONDITIONS REFERENCED IN THIS ORDER.

C.14: ANY CHANGE IN THE PLANS IDENTIFIED IN CONDITION #13 ABOVE SHALL REQUIRE THE APPLICANT TO INQUIRE OF THE CONSERVATION COMMISSION IN WRITING WHETHER THE CHANGE IS SIGNIFICANT ENOUGH TO REQUIRE THE FILING OF A NEW NOTICE OF INTENT.

C.15: THE AGENT OR MEMBERS OF THE CONSERVATION COMMISSION AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION SHALL HAVE THE RIGHT TO ENTER AND INSPECT THE AREA SUBJECT TO THIS ORDER AT REASONABLE HOURS TO EVALUATE COMPLIANCE WITH THE CONDITIONS STATED IN THIS ORDER AND OOC CONDITIONS.DOCXMAY REQUIRE THE SUBMITTAL OF ANY DATA DEEMED NECESSARY BY THE CONSERVATION COMMISSION OR DEPARTMENT FOR THAT EVALUATION.

C.16: THIS ORDER OF CONDITIONS SHALL APPLY TO ANY SUCCESSOR IN INTEREST OR SUCCESSOR IN CONTROL OF THE PROPERTY SUBJECT TO THIS ORDER AND TO ANY CONTRACTOR OR OTHER PERSON PERFORMING WORK CONDITIONED BY THIS ORDER.

C.17: PRIOR TO THE START OF WORK, AND IF THE PROJECT INVOLVES WORK ADJACENT TO A BORDERING VEGETATED WETLAND, THE BOUNDARY OF THE WETLAND IN THE VICINITY OF THE PROPOSED WORK AREA SHALL BE MARKED BY WOODEN STAKES OR FLAGGING. ONCE IN PLACE, THE WETLAND BOUNDARY MARKERS SHALL BE MAINTAINED UNTIL A CERTIFICATE OF COMPLIANCE HAS BEEN ISSUED BY THE CONSERVATION COMMISSION.

C.18: ALL SEDIMENTATION BARRIERS SHALL BE MAINTAINED IN GOOD REPAIR UNTIL ALL DISTURBED AREAS HAVE BEEN FULLY STABILIZED WITH VEGETATION OR OTHER MEANS. AT NO TIME SHALL SEDIMENTS BE DEPOSITED IN A WETLAND OR WATER BODY. DURING CONSTRUCTION, THE APPLICANT OR HIS/HER DESIGNEE SHALL INSPECT THE BARRIERS ON A DAILY BASIS AND SHALL REMOVE ACCUMULATED SEDIMENTS AS NEEDED. THE APPLICANT SHALL IMMEDIATELY CONTROL ANY EROSION PROBLEMS THAT OCCUR AT THE SITE AND SHALL ALSO IMMEDIATELY NOTIFY THE CONSERVATION COMMISSION, WHICH RESERVES THE RIGHT TO REQUIRE ADDITIONAL EROSION AND/OR DAMAGE PREVENTION CONTROLS IT MAY DEEM NECESSARY. SEDIMENTATION BARRIERS SHALL SERVE AS THE LIMIT OF WORK UNLESS ANOTHER LIMIT OF WORK LINE HAS BEEN APPROVED BY THIS ORDER.

C.18: APPLICANT MUST OBTAIN RIGHTS OF ACCESS FOR WORK PROPOSED ON ANY PROPERTY OUTSIDE OF ITS OWNERSHIP AND/OR CONTROL AND THAT ANY MITIGATION REQUESTED BY ABUTTERS WHOSE PROPERTY WILL BE USED BY THE APPLICANT SHALL BE SHOWN ON THE FINAL PLANS.

C.19: THE WORK ASSOCIATED WITH THIE ORDER ("THE PROJECT"):
(1) X IS SUBJECT TO THE MASSACHUSETTS STORMWATER STANDARDS
(2) _ IS NOT SUBJECT TO THE MASSACHUSETTS STORMWATER STANDARDS
IF THE WORK IS SUBJECT TO THE STORMWATER STANDARDS, THE PROJECT IS SUBJECT TO THE FOLLOWING CONDITIONS:

C.19A: ALL WORK, INCLUDING SITE PREPARATION, LAND DISTURBANCE, CONSTRUCTION AND REDEVELOPMENT, SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE CONSTRUCTION PERIOD POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL PLAN AND, IF APPLICABLE, THE STORMWATER POLLUTION PREVENTION PLAN REQUIRED BY THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM CONSTRUCTION GENERAL PERMIT AS REQUIRED BY STORMWATER CONDITION 8. CONSTRUCTION PERIOD EROSION, SEDIMENTATION AND POLLUTION CONTROL MEASURES AND BEST MANAGEMENT PRACTICES (BMPS) SHALL REMAIN IN PLACE UNTIL THE SITE IS FULLY STABILIZED.

C.19B: NO STORMWATER RUNOFF MAY BE DISCHARGED TO THE POST–CONSTRUCTION STORMWATER BMPS UNLESS AND UNTIL A REGISTERED PROFESSIONAL ENGINEER PROVIDES A CERTIFICATION THAT:

C.19B.I: ALL CONSTRUCTION PERIOD BMPS HAVE BEEN REMOVED OR WILL BE REMOVED BY A DATE CERTAIN SPECIFIED IN THE CERTIFICATION. FOR ANY CONSTRUCTION PERIOD BMPS INTENDED TO BE CONVERTED TO POST CONSTRUCTION OPERATION FOR STORMWATER ATTENUATION, RECHARGE, AND/OR TREATMENT, THE CONVERSION IS ALLOWED BY THE MASSDEP STORMWATER HANDBOOK BMP SPECIFICATIONS AND THAT THE BMP HAS BEEN PROPERLY CLEANED OR PREPARED FOR POST CONSTRUCTION OPERATION, INCLUDING REMOVAL OF ALL CONSTRUCTION PERIOD SEDIMENT TRAPPED IN INLET AND OUTLET CONTROL STRUCTURES;

C.19B.II: AS–BUILT FINAL CONSTRUCTION BMP PLANS ARE INCLUDED, SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER, CERTIFYING THE SITE IS FULLY STABILIZED;

C.19B.III: ANY ILLICIT DISCHARGES TO THE STORMWATER MANAGEMENT SYSTEM HAVE BEEN REMOVED, AS PER THE REQUIREMENTS OF STORMWATER STANDARD 10;

C.19B.IV: ALL POST–CONSTRUCTION STORMWATER BMPS ARE INSTALLED IN ACCORDANCE WITH THE PLANS (INCLUDING ALL PLANTING PLANS) APPROVED BY THE ISSUING AUTHORITY, AND HAVE BEEN INSPECTED TO ENSURE THAT THEY ARE NOT DAMAGED AND THAT THEY ARE IN PROPER WORKING CONDITION;

C.19B.V: ANY VEGETATION ASSOCIATED WITH POST–CONSTRUCTION BMPS IS SUITABLY ESTABLISHED TO WITHSTAND EROSION.

C.19C: THE LANDOWNER IS RESPONSIBLE FOR BMP MAINTENANCE UNTIL THE ISSUING AUTHORITY IS NOTIFIED THAT ANOTHER PARTY HAS LEGALLY ASSUMED RESPONSIBILITY FOR BMP MAINTENANCE. PRIOR TO REQUESTING A CERTIFICATE OF COMPLIANCE, OR PARTIAL CERTIFICATE OF COMPLIANCE, THE RESPONSIBLE PARTY (DEFINED IN GENERAL CONDITION 18(E)) SHALL EXECUTE AND SUBMIT TO THE ISSUING AUTHORITY AN OPERATION AND MAINTENANCE COMPLIANCE STATEMENT ("O&M STATEMENT") FOR THE STORMWATER BMPS IDENTIFYING THE PARTY RESPONSIBLE FOR IMPLEMENTING THE STORMWATER BMP OPERATION AND MAINTENANCE PLAN ("O&M PLAN") AND CERTIFYING THE FOLLOWING:

C.19C.I: THE O&M PLAN IS COMPLETE AND WILL BE IMPLEMENTED UPON RECEIPT OF THE CERTIFICATE OF COMPLIANCE, AND

C.19C.II: THE FUTURE RESPONSIBLE PARTIES SHALL BE NOTIFIED IN WRITING OF THEIR ONGOING LEGAL RESPONSIBILITY TO OPERATE AND MAINTAIN THE STORMWATER MANAGEMENT BMPS AND IMPLEMENT THE STORMWATER POLLUTION PREVENTION PLAN.

C.19D: POST–CONSTRUCTION POLLUTION PREVENTION AND SOURCE CONTROL SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE LONG–TERM POLLUTION PREVENTION PLAN SECTION OF THE APPROVED STORMWATER REPORT AND, IF APPLICABLE, THE STORMWATER POLLUTION PREVENTION PLAN REQUIRED BY THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM MULTI–SECTOR GENERAL PERMIT.

C.19E: UNLESS AND UNTIL ANOTHER PARTY ACCEPTS RESPONSIBILITY, THE LANDOWNER, OR OWNER OF ANY DRAINAGE EASEMENT, ASSUMES RESPONSIBILITY FOR MAINTAINING EACH BMP. TO OVERCOME THIS PRESUMPTION, THE LANDOWNER OF THE PROPERTY MUST SUBMIT TO THE ISSUING AUTHORITY A LEGALLY BINDING AGREEMENT OF RECORD, ACCEPTABLE TO THE ISSUING AUTHORITY, EXPRESSING THAT ANOTHER ENTITY HAS ACCEPTED RESPONSIBILITY FOR MAINTAINING THE BMP, AND THAT THE PROPOSED RESPONSIBLE PARTY SHALL BE TREATED AS A PERMITTEE FOR PURPOSES OF IMPLEMENTING THE REQUIREMENTS OF CONDITIONS 18(F) THROUGH 18(K) WITH RESPECT TO THAT BMP. ANY FAILURE OF THE PROPOSED RESPONSIBLE PARTY TO IMPLEMENT THE REQUIREMENTS OF CONDITIONS 18(F) THROUGH 18(K) WITH RESPECT TO THAT BMP SHALL BE A VIOLATION OF THE ORDER OF CONDITIONS OR CERTIFICATE OF COMPLIANCE IN THE CASE OF STORMWATER SYSTEM THAT ARE SERVING MORE THAN ONE LOT, THE LEGALLY BINDING AGREEMENT SHALL ALSO IDENTIFY THE LOTS THAT WILL BE SERVICED BY THE STORMWATER BMPS. A PLAN AND EASEMENT DEED THAT GRANTS THE RESPONSIBLE PARTY THE PERMITTEE WORK AND ENTRY TO PERFORM THE REQUIRED OPERATION AND MAINTENANCE MUST BE SUBMITTED ALONG WITH THE LEGALLY BINDING AGREEMENT.

C.19F: THE RESPONSIBLE PARTY SHALL OPERATE AND MAINTAIN ALL STORMWATER BMPS IN ACCORDANCE WITH THE DESIGN PLANS, THE O&M PLAN, AND THE REQUIREMENTS OF THE MASSACHUSETTS STORMWATER HANDBOOK.

C.19G.1: THE RESPONSIBLE PARTY SHALL:
MAINTAIN AN OPERATION AND MAINTENANCE LOG FOR THE LAST THREE (3) CONSECUTIVE CALENDAR YEARS OF INSPECTIONS, REPAIRS, MAINTENANCE AND/OR REPLACEMENT OF THE STORMWATER MANAGEMENT SYSTEM OR ANY PART THEREOF, AND DISPOSAL (FOR DISPOSAL THE LOG SHALL INDICATE THE TYPE OF MATERIAL AND THE DISPOSAL LOCATION);

C.19G.2: MAKE THE MAINTENANCE LOG AVAILABLE TO MASSDEP AND THE CONSERVATION COMMISSION ("COMMISSION") UPON REQUEST; AND

C.19G.3: ALLOW MEMBERS AND AGENTS OF THE MASSDEP AND THE COMMISSION TO ENTER AND INSPECT THE SITE TO EVALUATE AND ENSURE THAT THE RESPONSIBLE PARTY IS IN COMPLIANCE WITH THE REQUIREMENTS FOR EACH BMP ESTABLISHED IN THE O&M PLAN APPROVED BY THE ISSUING AUTHORITY.

C.19H: ALL SEDIMENT OR OTHER CONTAMINANTS REMOVED FROM STORMWATER BMPS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

C.19I: ILLICIT DISCHARGES TO THE STORMWATER MANAGEMENT SYSTEM AS DEFINED IN 310 CMR 10.04 ARE PROHIBITED.

C.19J: THE STORMWATER MANAGEMENT SYSTEM APPROVED IN THE ORDER OF CONDITIONS SHALL NOT BE CHANGED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ISSUING AUTHORITY.

C.19K: AREAS DESIGNATED AS QUALIFYING PERVIOUS AREAS FOR THE PURPOSE OF THE LOW IMPACT SITE DESIGN CREDIT (AS DEFINED IN THE MASSDEP STORMWATER HANDBOOK, VOLUME 3, CHAPTER 1, LOW IMPACT DEVELOPMENT SITE DESIGN CREDITS) SHALL NOT BE ALTERED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ISSUING AUTHORITY.

C.19L: ACCESS FOR MAINTENANCE, REPAIR, AND/OR REPLACEMENT OF BMPS SHALL NOT BE WITHHELD. ANY FENCING SHALL NOT BE CONSTRUCTED AROUND STORMWATER BMPS SHALL INCLUDE ACCESS GATES AND SHALL BE AT LEAST SIX INCHES ABOVE GRADE TO ALLOW FOR WILDLIFE PASSAGE.

C.20: FOR TEST PROJECTS SUBJECT TO 310 CMR 10.05(11), THE APPLICANT SHALL ALSO IMPLEMENT THE MONITORING PLAN AND THE RESTORATION PLAN SUBMITTED WITH THE NOTICE OF INTENT. IF THE CONSERVATION COMMISSION OR DEPARTMENT DETERMINES THAT THE TEST PROJECT THREATENS THE PUBLIC HEALTH, SAFETY OR THE ENVIRONMENT, THE APPLICANT SHALL IMPLEMENT THE REMOVAL PLAN SUBMITTED WITH THE NOTICE OF INTENT OR MODIFY THE PROJECT AS DIRECTED BY THE CONSERVATION COMMISSION OR THE DEPARTMENT.

D.1: IS A MUNICIPAL BYLAW OR ORDINANCE APPLICABLE _____YES _X__NO

D.3: THE COMMISSION ORDERS THAT ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING CONDITIONS AND WITH THE NOTICE OF INTENT REFERENCED ABOVE. TO THE EXTENT THAT THE FOLLOWING CONDITIONS MODIFY OR DIFFER FROM THE PLANS, SPECIFICATIONS, OR OTHER PROPOSALS SUBMITTED WITH THE NOTICE OF INTENT, THE CONDITIONS SHALL CONTROL. THE SPECIAL CONDITIONS RELATING TO MUNICIPAL ORDINANCE OR BYLAW ARE AS FOLLOWS (IF YOU NEED MORE SPACE FOR ADDITIONAL CONDITIONS, ATTACH A TEXT DOCUMENT)

G: PRIOR TO COMMENCEMENT OF WORK, THIS ORDER OF CONDITIONS MUST BE RECORDED IN THE REGISTRY OF DEEDS OR THE LAND COURT FOR THE DISTRICT IN WHICH THE LAND IS LOCATED, WITHIN THE CHAIN OF TITLE OF THE AFFECTED PROPERTY. IN THE CASE OF RECORDED LAND, THE FINAL ORDER SHALL ALSO BE NOTED IN THE REGISTRY'S GRANTOR INDEX UNDER THE NAME OF THE OWNER OF THE LAND SUBJECT TO THE ORDER. IN THE CASE OF REGISTERED LAND, THIS ORDER SHALL ALSO BE NOTED ON THE LAND COURT CERTIFICATE OF TITLE OF THE OWNER OF THE LAND SUBJECT TO THE ORDER OF CONDITIONS. THE RECORDING INFORMATION ON THIS PAGE SHALL BE SUBMITTED TO THE CONSERVATION COMMISSION LISTED BELOW.

1: THIS DOCUMENT SHALL BE INCLUDED IN ALL CONSTRUCTION CONTRACTS, SUBCONTRACTS, AND SPECIFICATIONS DEALING WITH THE WORK PROPOSED AND SHALL SUPERSEDE ANY CONFLICTING CONTRACT REQUIREMENTS. THE APPLICANT SHALL ASSURE THAT ALL CONTRACTORS, SUBCONTRACTOR AND OTHER PERSONNEL PERFORMING THE PERMITTEE WORK ARE FULLY AWARE OF THE PERMIT'S TERMS AND CONDITIONS. THEREAFTER, THE CONTRACTOR WILL BE HELD JOINTLY LIABLE FOR ANY VIOLATION OF THIS ORDER RESULTING FROM FAILURE TO COMPLY WITH ITS CONDITIONS.

2: A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE APPLICANT AND CONTRACTOR NO LATER THAN 72 HOURS (THREE BUSINESS DAYS) PRIOR TO STARTING ANY ASPECT OF THE PROJECT. AT THIS MEETING THE CONTRACTOR SHALL:

1.a: FURNISH THE CONSERVATION AGENT WITH THEIR NAMES, ADDRESS AND 24–HOUR TELEPHONE CONTACT NUMBER;

1.b: SIGN SHEET ATTACHED AT THE END OF THIS ORDER OF CONDITIONS;

1.c: SUBMIT FINAL SWPPP THAT INCLUDES SPECIAL CONDITIONS LISTED HEREIN AND SPECIFIES PLAN FOR EROSION CONTROL AND STORMWATER MAINTENANCE DURING CONSTRUCTION INCLUDING PLAN FOR ADDITIONAL EROSION CONTROLS IF REQUIRED;

1.d: PROVIDE EPA NPDES PERMIT NUMBER AND WRITTEN AUTHORIZATION.

3: TO ASSURE AN IMMEDIATE RESPONSE TO THE COMMISSION/AGENT, THE APPLICANT SHALL PROVIDE THE WALPOLE CONSERVATION COMMISSION/AGENT WITH THE NAME AND A 24–HOUR PHONE NUMBER OF THE ON–SITE CONSTRUCTION SUPERVISOR WHO WILL BE RESPONSIBLE TO COORDINATE THE CONSTRUCTION AND ENSURE COMPLIANCE WITH THIS ORDER.

4: IF UNFORESEEN PROBLEMS OCCUR DURING CONSTRUCTION WHICH MAY AFFECT THE STATUTORY INTERESTS OF THE WETLANDS PROTECTION ACT OR UPON DISCOVERY BY EITHER THE CONSERVATION COMMISSION, ITS AGENT, OR THE APPLICANT, SUCH PROBLEM SHALL REQUIRE IMMEDIATE NOTIFICATION TO THE COMMISSION AND AN IMMEDIATE MEETING SHALL BE HELD BETWEEN THE COMMISSION OR ITS AGENT, THE APPLICANT, AND OTHER CONCERNED PARTIES TO DETERMINE THE CORRECT MEASURES TO BE EMPLOYED. THE APPLICANT SHALL THEN ACT TO CORRECT THE PROBLEMS USING THE CORRECTIVE MEASURES AGREED UPON BY THE APPLICANT AND AGENT OF THE COMMISSION. SUBSEQUENT TO RESOLUTION, THE ACTIVITY AND RESULTING ACTIONS SHALL BE DOCUMENTED IN WRITING.

5: UPON COMPLETION OF THIS PROJECT, THE APPLICANT SHALL SUBMIT THE FOLLOWING TO THE CONSERVATION COMMISSION/ AGENT TO RECEIVE A CERTIFICATE OF COMPLIANCE.

1.a: DEP FORM (8A) REQUESTING A CERTIFICATE OF COMPLIANCE.

1.b: A WRITTEN STATEMENT FROM A REGISTERED PROFESSIONAL ENGINEER OF THE COMMONWEALTH CERTIFYING THAT THE WORK HAS BEEN CONDUCTED AS SHOWN ON THE PLAN(S) AND DOCUMENTS REFERENCED ABOVE, AND AS CONDITIONED BY THE COMMISSION;

1.c: COMPLIANCE WITH DEP CONDITIONS #18 AND #19

1.d: AN "AS–BUILT" PLAN PREPARED AND SIGNED AND STAMPED BY REGISTERED PROFESSIONAL LAND SURVEYOR OF THE COMMONWEALTH FOR THE PUBLIC RECORD;

1.e: A FINAL REPORT FROM A BOTANIST OR WETLAND PROFESSIONAL DOCUMENTING IN WRITING AND PICTURES HOW THE WETLAND RESTORATION AREAS MEET THE REQUIREMENTS OF THIS ORDER;

1.f: A FINAL REPORT FROM A QUALIFIED PROFESSIONAL DOCUMENTING COMPLIANCE WITH THE PROJECT'S APPROVED INVASIVE SPECIES CONTROL PLAN.

1.g: THE APPLICANT SHALL HAVE SUBMITTED TO NHESP THE REQUIRED VERNAL POOL CERTIFICATION DOCUMENTS AND RECEIVED NHESP'S DETERMINATION RELATIVE TO POTENTIAL VERNAL POOL" (PVP), I, 2 AND 3 AS SHOWN ON THE PLANS.

5H: THE APPLICANT MAY RECEIVE A PARTIAL CERTIFICATE OF COMPLIANCE (PARTIAL) FOR THE RENTAL (LOT 1) SO LONG AS THE LOT IN QUESTION IS IN COMPLIANCE WITH A–G ABOVE AND ANY STORM WATER INFRASTRUCTURE ON THE ADJACENT LOT BUT TAKING FLOW FROM THE LOT APPLYING FOR THE PARTIAL IS IN PLACE AND IN COMPLIANCE WITH THE PLANS.

6: IT IS THE RESPONSIBILITY OF THE APPLICANT TO PROCURE ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL PERMITS AND APPROVALS ASSOCIATED WITH THIS PROJECT AND TO PROVIDE COPIES TO THE CONSERVATION COMMISSION/ AGENT.

7: ANY FUTURE WORK NOT COVERED BY THIS ORDER OF CONDITIONS WITHIN WETLAND RESOURCE AREAS OR BUFFER ZONES WILL REQUIRE THAT A NEW NOTICE OF INTENT OR REQUEST FOR DETERMINATION OF APPLICABILITY BE FILED WITH THE COMMISSION.

8: NO 200–FOOT RIVERFRONT AREA IMPACTS ARE PERMITTED BY THIS ORDER OF CONDITIONS. THE COMMISSION DETERMINED THAT THE PROJECT SITE PROVIDED ADEQUATE ALTERNATIVES AND LAND AREA TO MEET THE OVERALL PROJECT PURPOSE WITH NO RIVERFRONT IMPACTS.

9: PRIOR TO BEGINNING ANY WORK, THE VEGETATED WETLAND BOUNDARIES, VERNAL POOL BOUNDARIES, 200–FOOT RIVERFRONT AREA BOUNDARY AND NOT ALTERATION ARA/LIMIT OF WORK BOUNDARIES SHOWN ON THESE ABOVE PLAN OF RECORD SHALL BE STAKED OR FLAGGED IN THE FIELD AND SHALL REMAIN IN PLACE UNTIL THE EARLIER OF THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE OR DIRECTED BY THE CONSERVATION AGENT. ALL FLAGS USED FOR THE ABOVE PURPOSES SHALL BE A OF A COLOR DIFFERENT FROM OTHER FLAGGING USED ON THE SITE.

10: THE LOCATION OF THE EROSION CONTROL BARRIER SHALL BE SURVEY STAKED IN THE FIELD AND APPROVED BY THE CONSERVATION COMMISSION/AGENT PRIOR TO TREE CUTTING

11: PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES, THE EROSION CONTROL BARRIER (COMPOST TUBE MINIMUM 10–12–INCHES) SHALL BE INSTALLED AS SHOWN ON THE EROSION CONTROL AND DEMOLITION PLAN SHEET 9 OF THE REFERENCED PLAN OF RECORD AND DETAIL SHEET 38.

12: THE EROSION CONTROL BARRIER AS SHOWN ON THE PLAN OF RECORD SHALL SERVE AS THE LIMIT OF WORK, AND LIMIT OF CLEARING AND GRADING.

13: THE EROSION CONTROL BARRIER SHALL BE MAINTAINED UNTIL ALL DISTURBED SOILS HAVE BEEN PERMANENTLY STABILIZED AND THE CONSERVATION COMMISSION'S AGENT AGREED. IN WRITING THAT THEY ARE NO LONGER NEEDED.

14: THE CONSERVATION COMMISSION'S AGENT MAY REQUIRE ADDITIONAL EROSION CONTROLS AND AS PER THE GENERAL CONDITIONS IN THE ORDER.

15: UPON COMPLETION OF THE PROJECT AND APPROVAL OF THE CONSERVATION COMMISSION/AGENT, THE EROSION CONTROL BARRIER SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND BYLAWS.

16: ANY SOLID WASTE, OIL AND GAS OR HAZARDOUS MATERIALS ENCOUNTERED DURING CONSTRUCTION ACTIVITIES SHALL BE REMOVED FROM ALL WETLAND RESOURCE AREAS AND REUSED, RECYCLED OR DISPOSED OF IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND BYLAWS.

17: ANY SUPPLIES, DEBRIS, FILL OR OTHER MATERIALS SHALL BE STOCKPILED AWAY FROM THE INLAND BANK TO THE RIVER AND INTERMITTENT STREAMS, BVW AND RIVERFRONT AREA, AND AT A LOCATION TO PREVENT SUCH MATERIALS FROM ENTERING WETLAND RESOURCE AREAS. UNDER NO CIRCUMSTANCES SHALL THERE BE STOCKPILING OF MATERIAL OUT THE PERMITTING LIMIT OF WORK.

18: A CERTIFIED EROSION SPECIALIST ("CES") OR DESIGNATED PERSON EXPERIENCED IN EROSION CONTROL SHALL INSPECT EROSION CONTROL BARRIER AT LEAST WEEKLY AND PRIOR TO AND AFTER STORM EVENTS OF 1" OR GREATER UNTIL A CERTIFICATE OF COMPLIANCE IS ISSUED.

19: THE CES OR DESIGNATED PERSON EXPERIENCED IN EROSION CONTROL SHALL INSPECT EROSION CONTROL BARRIER AT LEAST WEEKLY AND PRIOR TO AND AFTER STORM EVENTS OF 1" OR GREATER UNTIL A CERTIFICATE OF COMPLIANCE IS ISSUED.

20: THE WEEKLY EROSION CONTROL INSPECTION REPORTS SHALL BE MADE AVAILABLE TO THE CONSERVATION COMMISSION/AGENT UPON REQUEST UNTIL A CERTIFICATE OF COMPLIANCE IS ISSUED. THE NAME AND CONTACT NUMBER OF THE INSPECTOR SHALL BE PROVIDED IN EACH REPORT.

21: IN PROXIMITY TO RESOURCE AREAS, SITE GRADING AND CONSTRUCTION SHALL BE SCHEDULED DURING THE DRY SEASON WHENEVER POSSIBLE, TO AVOID PERIODS OF HIGH SURFACE WATER. ONCE BEGUN, GRADING AND CONSTRUCTION SHALL MOVE UNINTERRUPTED TO COMPLETION TO AVOID EROSION AND SILTATION INTO THE WETLAND. A CONSTRUCTION PHASING PLAN INDICATING THE SEQUENCING OF VEGETATION CLEARINGS SHALL BE PROVIDED TO THE AGENT PRIOR TO CONDUCTING ANY ON–SITE CLEARING

22: A DESCRIPTION OF LOGGING / TREE REMOVAL OPERATIONS SHALL BE PROVIDED TO THE COMMISSION/ AGENT THAT INCLUDES TEMPORARY LOGGING ROAD LOCATIONS, THE REGISTRY OF DEEDS BOOK AND PAGE NUMBER OF LANDINGS ETC. FOR REVIEW AND APPROVAL OF THE AGENT. TEMPORARY STREAM CROSSINGS SHALL NOT IMPEDE WATER FLOW OR IMPACT WATER QUALITY WITHIN THE SURFACE WATERS.

23: ALL DISTURBED AREAS AND SLOPES SHALL BE LOAMED AND SEEDED OR STABILIZED THROUGH THE USE OF EROSION CONTROL BLANKETS OR OTHER APPROVED MEANS AS PER THE TIMING REQUIRED BY THE SWPPP. ALL DISTURBED AREAS WILL BE LOAMED AND SEEDED PRIOR TO NOVEMBER 1 OF EACH YEAR, IF POSSIBLE. NO DISTURBED AREAS OR STOCKPILED MATERIAL WILL BE LEFT UNPROTECTED OR WITHOUT EROSION CONTROLS DURING WINTER.

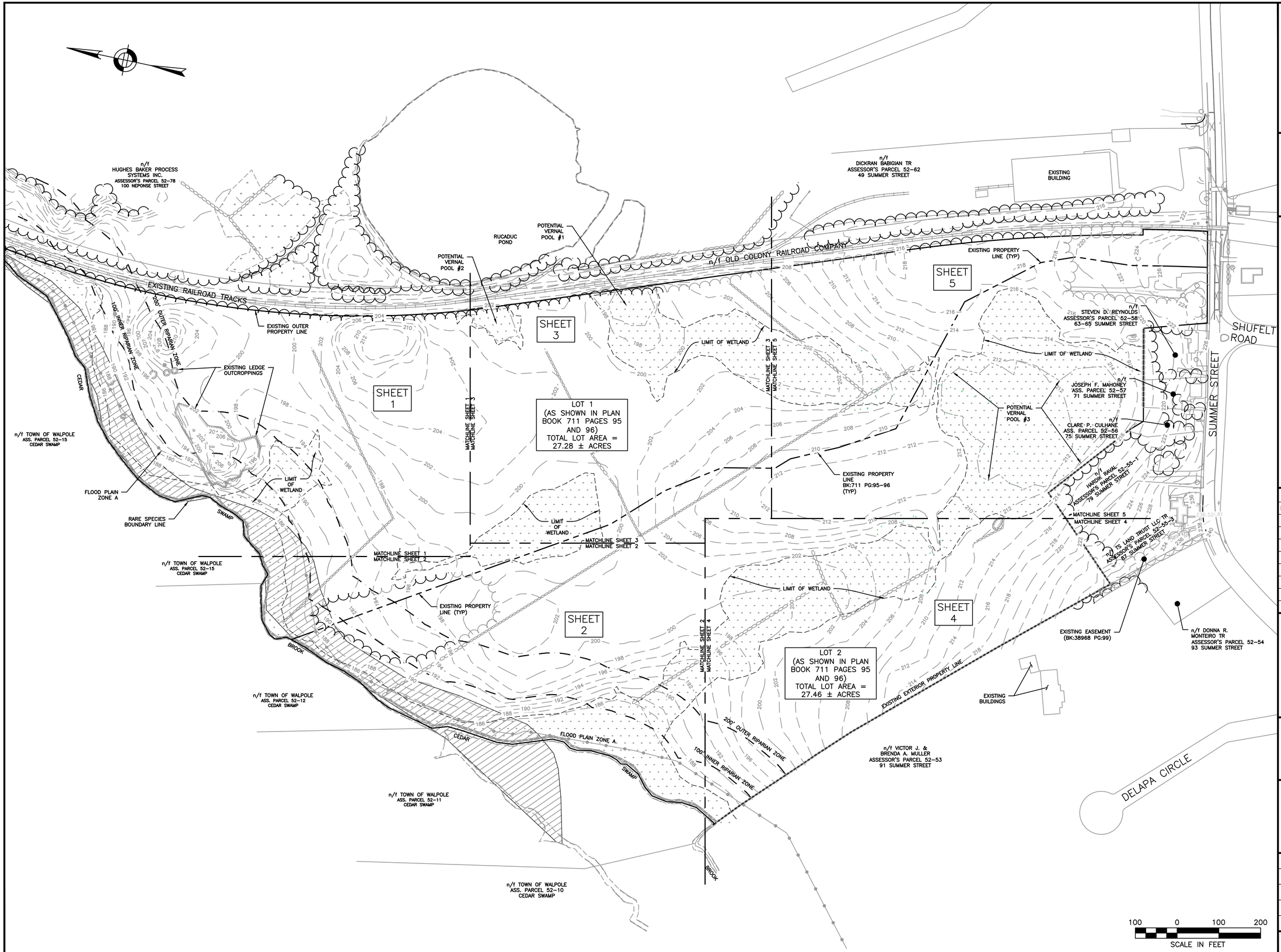
24: THE WETLAND REPLICATION AREA CONSISTING OF 7,106 S.F DIVIDED INTO FOUR AREAS, AS DEPICTED ON SHEET 52, SHALL BE CONSTRUCTED IN CONJUNCTION WITH THE ADJACENT ROAD CONSTRUCTION. THE PLANTING SHALL BE COMPLETED DURING THE FIRST GROWING SEASON AFTER START OF SITE CONSTRUCTION.

25: THE WETLAND FILL AND CROSSING SHALL CONFORM TO THE APPROVED PLAN (SHEETS 10, 50 & 51) ANY CHANGES OR ALTERATION TO THE APPROVED PLAN SHALL BE SUBMITTED IN WRITING TO THE CONSERVATION COMMISSION/ AGENT.

26: A WETLAND SPECIALIST SHALL MONITOR THE PROGRESS OF THE REPLICATION AREA PROVIDING THE CONSERVATION COMMISSION/AGENT WITH A WRITTEN REPORT DOCUMENTING THE FOLLOWING REVIEW AND APPROVAL STAGES: 1) THE ELEVATION AND SOIL PROFILE OF THE SUBGRADE EXCAVATED 12–INCHES BELOW ADJACENT WETLANDS; 2) THE ORGANIC SOILS TO BE USED FOR FINAL GRADE; 3) MAKING NOTE THAT THE FINAL GRADE HAS NOT BEEN COMPACTED AND THAT THE GRADE IS UNDER 4) THE PLANT STOCK TO BE USED AND METHODS FOR PLANTING; AND 5) THE PLANTINGS HAVE BEEN MADE.

27: THE WETLAND SPECIALIST SHALL PROVIDE THE CONSERVATION COMMISSION/AGENT WITH INSPECTION REPORTS IN EARLY SPRING (MAY–JUNE) AND EARLY FALL (SEPT–OCT) WITH PHOTOGRAPHS AND WRITTEN DOCUMENTATION OF PLANT GROWTH, SOIL DEVELOPMENT, AND RECOMMENDATIONS TO ACHIEVE COMPLIANCE WITH THE REPLICATION REQUIREMENTS UNTIL TWO YEARS AFTER THE INITIAL PLANTING.

28: THE REPLICATION AREA WILL NOT BE CONSIDERED COMPLETE UNTIL TWO YEARS HAVE PASSED SINCE THE INITIAL PLANTINGS OCCURRED



HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

LOCUS PLAN

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.5

6/13/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - COVER.dwg
Matthew Baker

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PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

MATCHLINE SHEET 6
MATCHLINE SHEET 8

SITE PLAN

EXISTING CONDITIONS PLAN 1 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

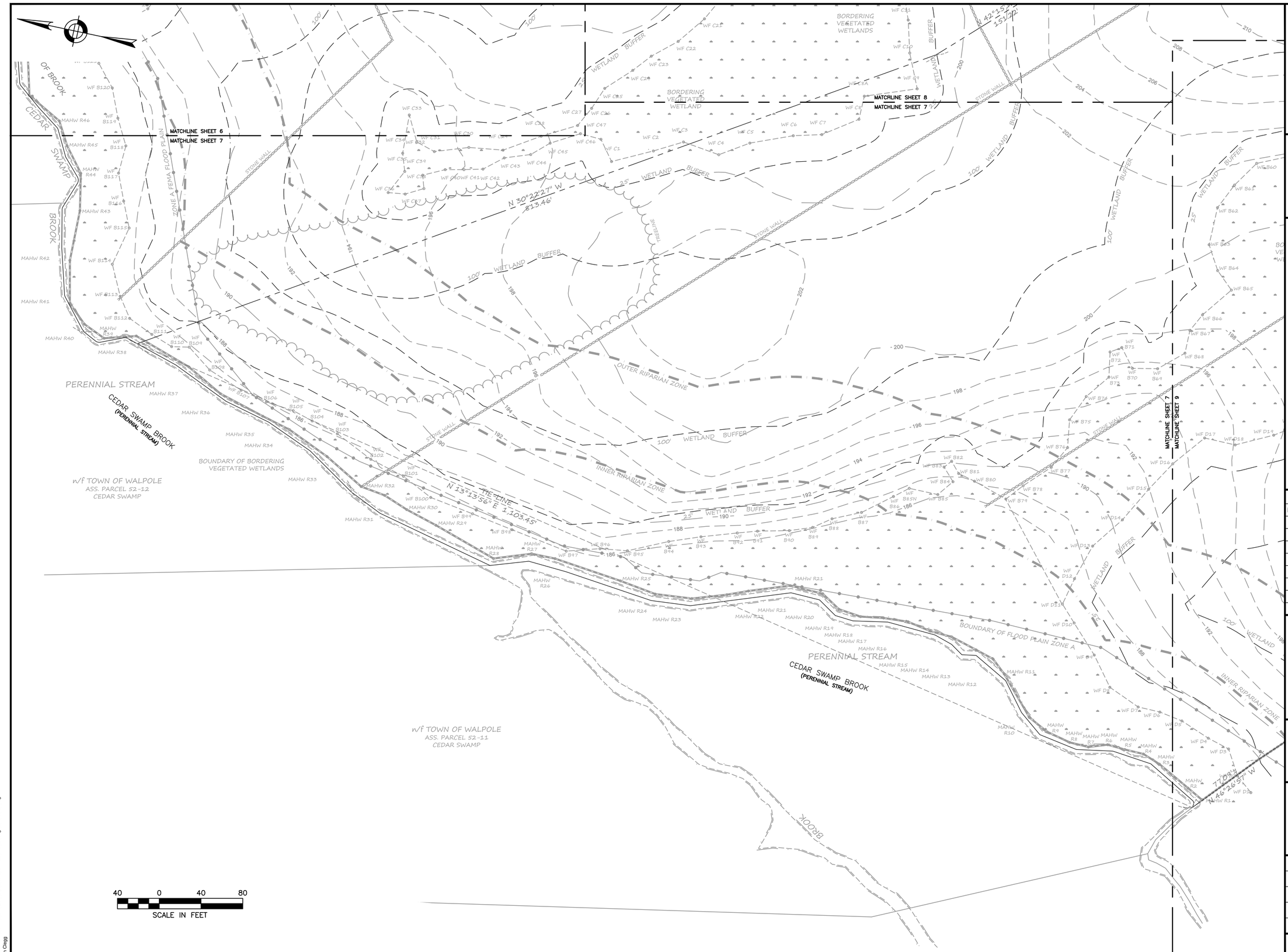
C.6

SHEET 6 OF 62

RAILROAD TRACKS
N 10°28'47" E
1,869.65'
CB/LP FND
MAHW R70
MAHW R71
MAHW R69
MAHW R68
MAHW R67
MAHW R66
MAHW R65
MAHW R64
MAHW R63
MAHW R62
MAHW R61
MAHW R60
MAHW R59
MAHW R58
MAHW R57
MAHW R56
MAHW R55
MAHW R54
MAHW R53
MAHW R52
MAHW R51
MAHW R50
MAHW R49
MAHW R48
MAHW R47
MAHW R46
MAHW R45
BORDERING VEGETATED WETLANDS
WF B167
WF B166
WF B165
WF B164
WF B163
WF B162
WF B161
WF B160
WF B159
WF B158
WF B157
WF B156
WF B155
WF B154
WF B153
WF B152
WF B151
WF B144
WF B145
WF B146
WF B147
WF B148
WF B149
WF B150
WF B131
WF B130
WF B128
WF B129
WF B126
WF B125
WF B124
WF B123
WF B122
WF B121
WF B120
WF B119
WF B118
WF B135
WF B136
WF B134
WF B139
WF B138
WF B137
WF B133
WF B132
WF B140
WF B141
WF B142
WF B143
WF E4
WF E3
WF X23
WF C33
WF C34
WF C32
WF C30
WF C28
WF C27
WF C46
CEDAR SWAMP BROOK
1,425'± BY THE CENTER OF CEDAR SWAMP BROOK
CEDAR SWAMP
(PERENNIAL STREAM)
674'± ALONG CENTER OF BROOK
CEDAR
N 30°05'10" E
115.90'
115' WETLAND BUFFER
100' WETLAND BUFFER
INNER RIPARIAN ZONE
OUTER RIPARIAN ZONE
FLOOD PLAIN ZONE A
200' WETLAND BUFFER
VARIOUS ROCK OUTCROPS
w/f TOWN OF WALPOLE
ASS. PARCEL 52-15
CEDAR SWAMP
L=1,169.58'
R=2,325.01'
Δ=28°49'26"
MATCHLINE SHEET 6
MATCHLINE SHEET 7

40 0 40 80
SCALE IN FEET

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - Existing Conditions.dwg
Nathan Clegg



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c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

EXISTING CONDITIONS PLAN 2 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.7

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - Existing Conditions.dwg
Nathan Clegg

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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

EXISTING CONDITIONS PLAN 3 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.8

SHEET 8 OF 62

SCALE IN FEET: 40 0 40 80

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Existing Conditions.dwg
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BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

EXISTING CONDITIONS PLAN 4 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.9

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - Existing Conditions.dwg
Nathan Clegg

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BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

EXISTING CONDITIONS PLAN 5 OF 5

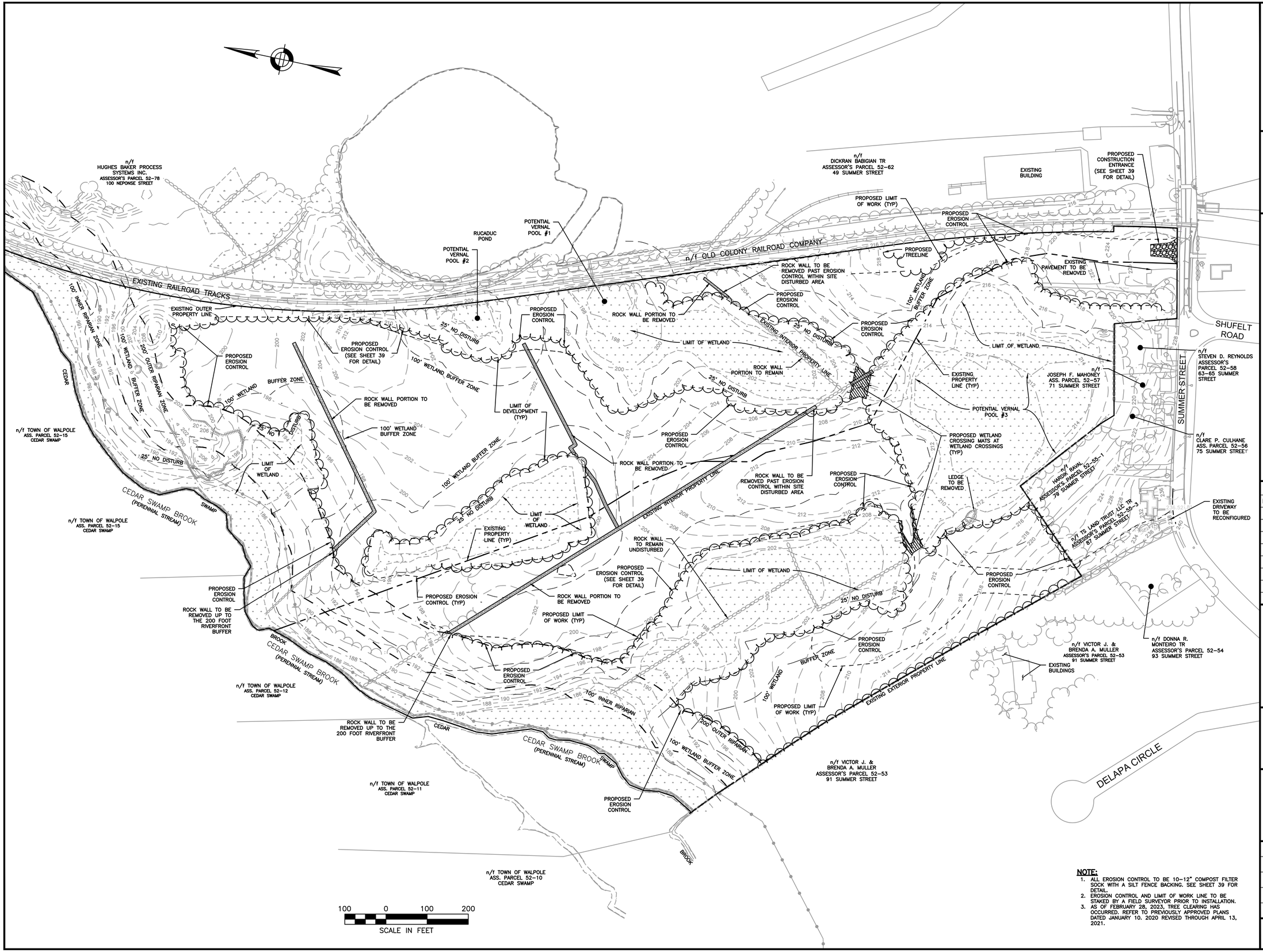
DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.10

SHEET 10 OF 62

40 0 40 80
SCALE IN FEET

01/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Existing Conditions.dwg
Nathan Clegg



NOTE:

1. ALL EROSION CONTROL TO BE 10-12" COMPOST FILTER SOCK WITH A SILT FENCE BACKING. SEE SHEET 39 FOR DETAIL.
2. EROSION CONTROL AND LIMIT OF WORK LINE TO BE STAKED BY A FIELD SURVEYOR PRIOR TO INSTALLATION.
3. AS OF FEBRUARY 28, 2023, TREE CLEARING HAS OCCURRED. REFER TO PREVIOUSLY APPROVED PLANS DATED JANUARY 10, 2020 REVISED THROUGH APRIL 13, 2021.

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5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

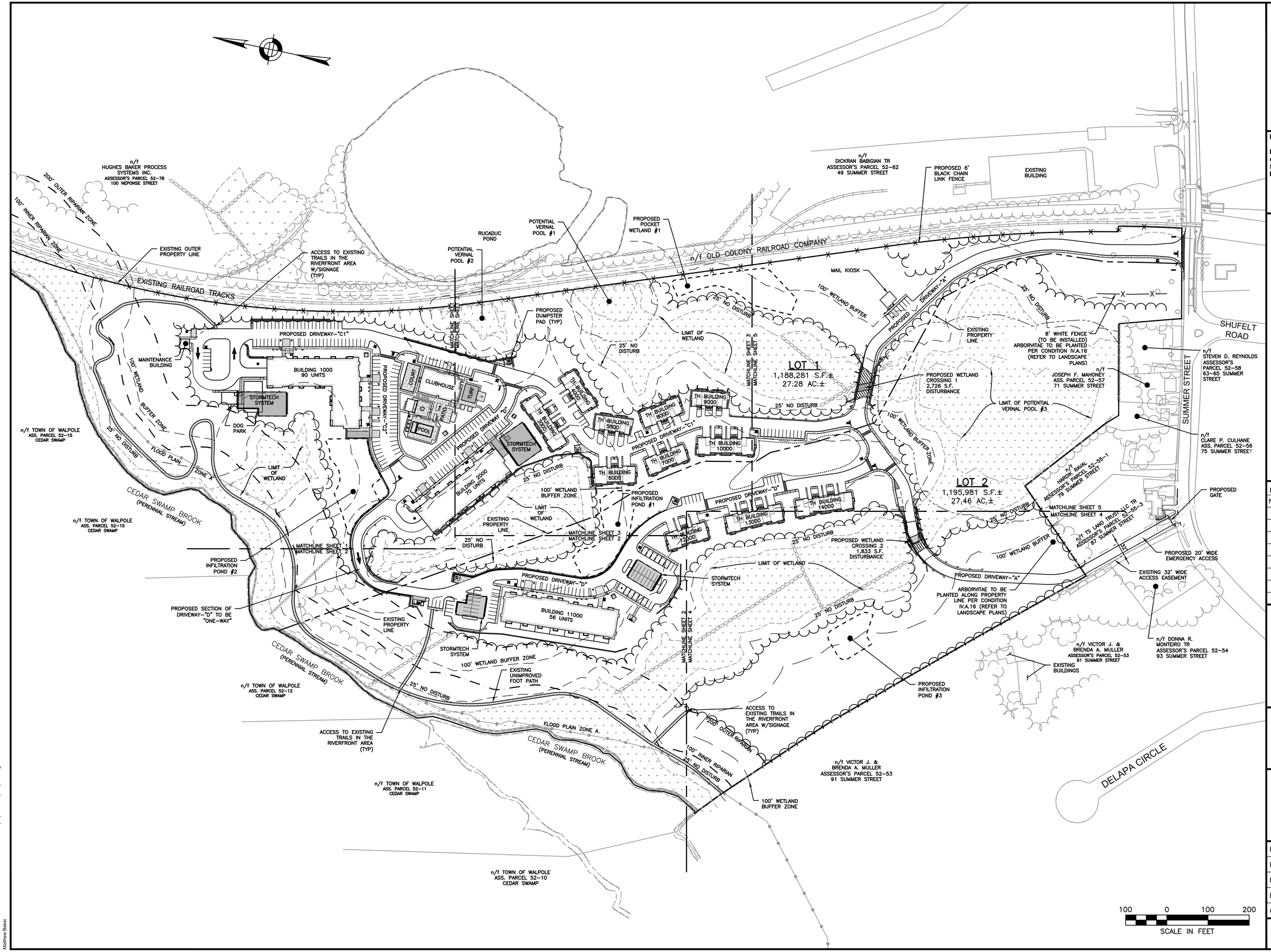
SITE PLAN

EROSION CONTROL AND DEMOLITION PLAN

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.11

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - site prep-overall-openspace.dwg
Matthew Baker



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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/20/23
KEVIN E. FORMAN
CIVIL
No. 41611
REGISTERED PROFESSIONAL ENGINEER

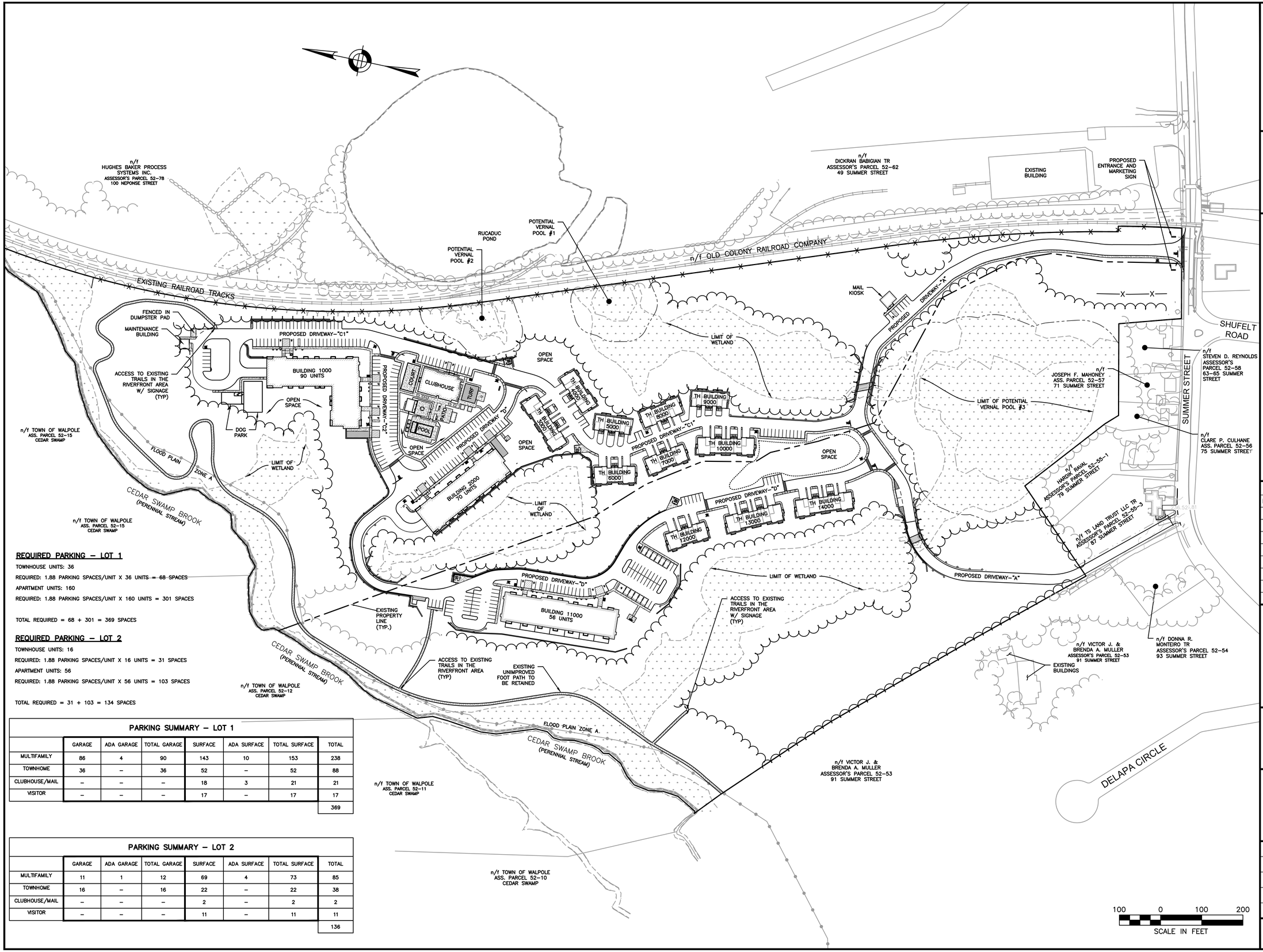
SITE PLAN

PROPOSED SUBDIVISION / OVERALL PLAN

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.12

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - site prep-overall-openspace.dwg
Matthew Blake



REQUIRED PARKING – LOT 1

TOWNHOUSE UNITS: 36

REQUIRED: 1.88 PARKING SPACES/UNIT X 36 UNITS = 68 SPACES

APARTMENT UNITS: 160

REQUIRED: 1.88 PARKING SPACES/UNIT X 160 UNITS = 301 SPACES

TOTAL REQUIRED = 68 + 301 = 369 SPACES

REQUIRED PARKING – LOT 2

TOWNHOUSE UNITS: 16

REQUIRED: 1.88 PARKING SPACES/UNIT X 16 UNITS = 31 SPACES

APARTMENT UNITS: 56

REQUIRED: 1.88 PARKING SPACES/UNIT X 56 UNITS = 103 SPACES

TOTAL REQUIRED = 31 + 103 = 134 SPACES

PARKING SUMMARY – LOT 1

	GARAGE	ADA GARAGE	TOTAL GARAGE	SURFACE	ADA SURFACE	TOTAL SURFACE	TOTAL
MULTIFAMILY	86	4	90	143	10	153	238
TOWNHOME	36	–	36	52	–	52	88
CLUBHOUSE/MAIL	–	–	–	18	3	21	21
VISITOR	–	–	–	17	–	17	17
							369

PARKING SUMMARY – LOT 2

	GARAGE	ADA GARAGE	TOTAL GARAGE	SURFACE	ADA SURFACE	TOTAL SURFACE	TOTAL
MULTIFAMILY	11	1	12	69	4	73	85
TOWNHOME	16	–	16	22	–	22	38
CLUBHOUSE/MAIL	–	–	–	2	–	2	2
VISITOR	–	–	–	11	–	11	11
							136

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5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

KEVIN A. ENRIGHT CIVIL No. 46078 REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

OPEN SPACE AND RECREATION PLAN

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.13

SHEET 13 OF 62

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - site prep-overall-openspace.dwg
Matthew Baker

n/f
HUGHES BAKER
PROCESS SYSTEMS INC.
ASSESSOR'S PARCEL 52-78
100 NEPONSE STREET

n/f TOWN OF WALPOLE
ASS. PARCEL 52-15
CEDAR SWAMP

FENCE TO BE TURNED INTO SITE (TYP)

ACCESS TO EXISTING TRAILS IN THE RIVERFRONT AREA W/ SIGNAGE INCLUDING PET WASTE SIGNAGE (TYP)

30' RAILROAD ZONE OF INFLUENCE (TYP)

EXISTING RAILROAD TRACKS

15' REQUIRED SIDE YARD SETBACK (TYP)

100' INNER RIPARIAN

200' OUTER RIPARIAN

15' (TYP)

PROPOSED "ONE WAY" SIGN

PROPOSED "DO NOT ENTER" SIGN

"NO SNOW STORAGE" SIGN (TYP)

LOW EMISSION VEHICLE PARKING (TYP)

PROPOSED 6' BLACK CHAIN LINK FENCE TO SPAN THE LENGTH OF THE EASTERN PROPERTY LINE

PROPOSED RETAINING WALL WITH GUARDRAIL AND FENCE (TO BE DESIGNED BY OTHERS)

PROPOSED 9'x19' PARKING SPACE (TYP) REFER TO SHEET 40 FOR DETAIL

EXISTING PROPERTY LINE

CHAIN LINK FENCE TO BE INSTALLED ON ALL RETAINING WALLS GREATER THAN 4 FEET IN HEIGHT (TYP)

PROPOSED MONOLITHIC CONCRETE CURB (REFER TO SHEET 40 FOR DETAIL)

PROPOSED RETAINING WALL WITH GUARDRAIL AND FENCE (TO BE DESIGNED BY OTHERS)

EXISTING TREELINE

PROPOSED TREELINE

PROPOSED FENCED IN DUMPSTER PAD

PROPOSED MAINTENANCE BUILDING FOR STORAGE OF CLEANING SUPPLIES PER ZBA CONDITION G.7

PROPOSED FIRE HYDRANT

~SNOW STORAGE~

APPROX. 3,625 SF

PARKING SPACE TO BE DESIGNATED AS CAR WASH ONLY

PROPOSED CARWASH HOSE AND VACUUM

APPROX. 1,600 SF

"ONE WAY"

GARAGE ENTRANCE

BIT. CONC. DRIVE AISLE

PROPOSED DRIVEWAY-"C1"

NO PARKING (FIRE ACCESS)

5' CONC. WALK

CONC. WALK

ELECTRIC VEHICLE PARKING WITH CHARGING STATION (TYP)

LANDSCAPE AREA

PROPOSED BICYCLE RACK (REFER TO SHEET 40 FOR DETAIL)

GROUNDWATER MONITORING WELL #1 PER CONDITION D.7 (TYP) REFER TO SHEET 43 FOR DETAIL

MULTI-FAMILY BUILDING 1000
90 UNITS
53 UNDERGROUND PARKING SPACES

100' WETLAND BUFFER ZONE

PROPOSED TRANSFORMER (TYP)

PROPOSED CROSSWALK (TYP)

STOP SIGN (TYP)

5' CONC. SIDEWALK

PICKLEBALL COURT

PROPOSED CLUBHOUSE

PATIO

PROPOSED POOL CABANA AREA

PROPOSED ADA SPACE SIGNAGE (TYP)

LOW EMISSION VEHICLE PARKING SIGNAGE (TYP)

PROPOSED ACCESSIBLE PARKING SPACES (TYP)

PROPOSED ACCESSIBLE RAMP (TYP)

ELECTRIC VEHICLE PARKING SIGNAGE (TYP)

PROPOSED DRIVEWAY-"C2"

PROPOSED SWIMMING POOL WITH CABANA BUILDING

PROPOSED DRIVEWAY-"C3"

WOODED PEDESTRIAN WALKING TRAIL (TYP)

PROPOSED "NO ALTERATION" SIGN PLACED APPROX. 150' O.C. ALONG THE RIVERFRONT BUFFER (TYP)

PROPOSED DOG WASTE SIGN AND RECEPTACLE (TYP)

DOG PARK

PROPOSED STORMTECH CHAMBER OUTLINE

FLOOD PLAIN ZONE A

LIMIT OF WETLAND

25' NO DISTURB

PROPOSED TREELINE

PROPOSED FIRE ACCESS/STAGING AREA

WETLAND RESOURCE AREA

PROPOSED 100 YEAR STORM LIMIT OF INUNDATION

100' WETLAND BUFFER ZONE

LSA

STOP SIGN (TYP)

BIT. CONC. DRIVE AISLE

PROPOSED INFILTRATION POND OUTLINE

"ONE WAY" SIGN

20' TO 24' PAVEMENT WIDTH TRANSITION

PROPOSED TREELINE

PROPOSED RETAINING WALL WITH GUARDRAIL AND FENCE (TO BE DESIGNED BY OTHERS)

PROPOSED FIRE HYDRANT (REFER TO SHEET 46 FOR DETAIL)

PROPOSED GUARDRAIL (TYP) REFER TO SHEET 50 FOR DETAIL

MULTI-FAMILY BUILDING
2000
37 UNDERGROUND PARKING SPACES

LANDSCAPE AREA

GARAGE ENTRANCE

n/f TOWN OF WALPOLE
ASS. PARCEL 52-15
CEDAR SWAMP

CEDAR SWAMP BROOK
(PERENNIAL STREAM)

MATCHLINE SHEET 14
MATCHLINE SHEET 15

MATCHLINE SHEET 14
MATCHLINE SHEET 16

TOWN OF WALPOLE CONSERVATION COMMISSION NOTE:
1. INCLUDE LOCATION OF THE NO ALTERATION SIGNS APPROXIMATELY EVERY 150-FEET ON SITE PLAN (TAKING INTO CONSIDERATION THE TWISTS AND TURNS OF THE WETLAND BOUNDARIES TO DETERMINE LOCATIONS) WITH SIGN SPECIFICALLY AT REPLICATION AREAS AND CROSSING. SHOW ON SITE PLAN PET WASTE REMOVAL SIGNS AT BOTH ENDS OF RIVERFRONT WHERE TRAIL BEGINS AND ENDS. PET WASTE PICK UP IS REQUIRED UNDER THE BYLAW.

40 0 40 80
SCALE IN FEET

6/19/2023 L:\19097\19097\04 - Lot 2\CURRENT\19097 - layout and materials.dwg
Nathan Clegg

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

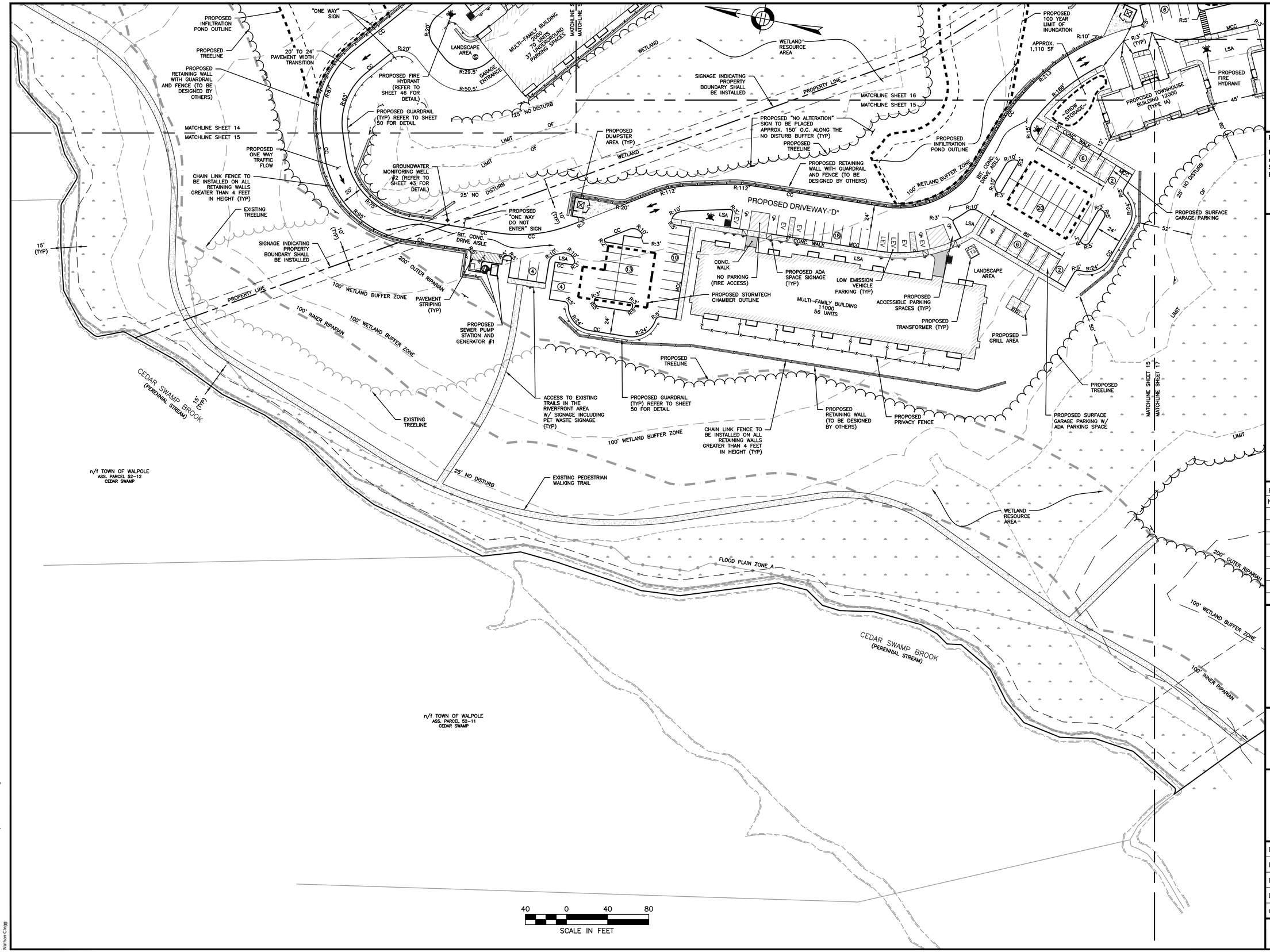
CIVIL ENGINEER
No. 49417
REGISTERED PROFESSIONAL ENGINEER
6/20/23

SITE PLAN

LAYOUT AND MATERIALS PLAN
1 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.14



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FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

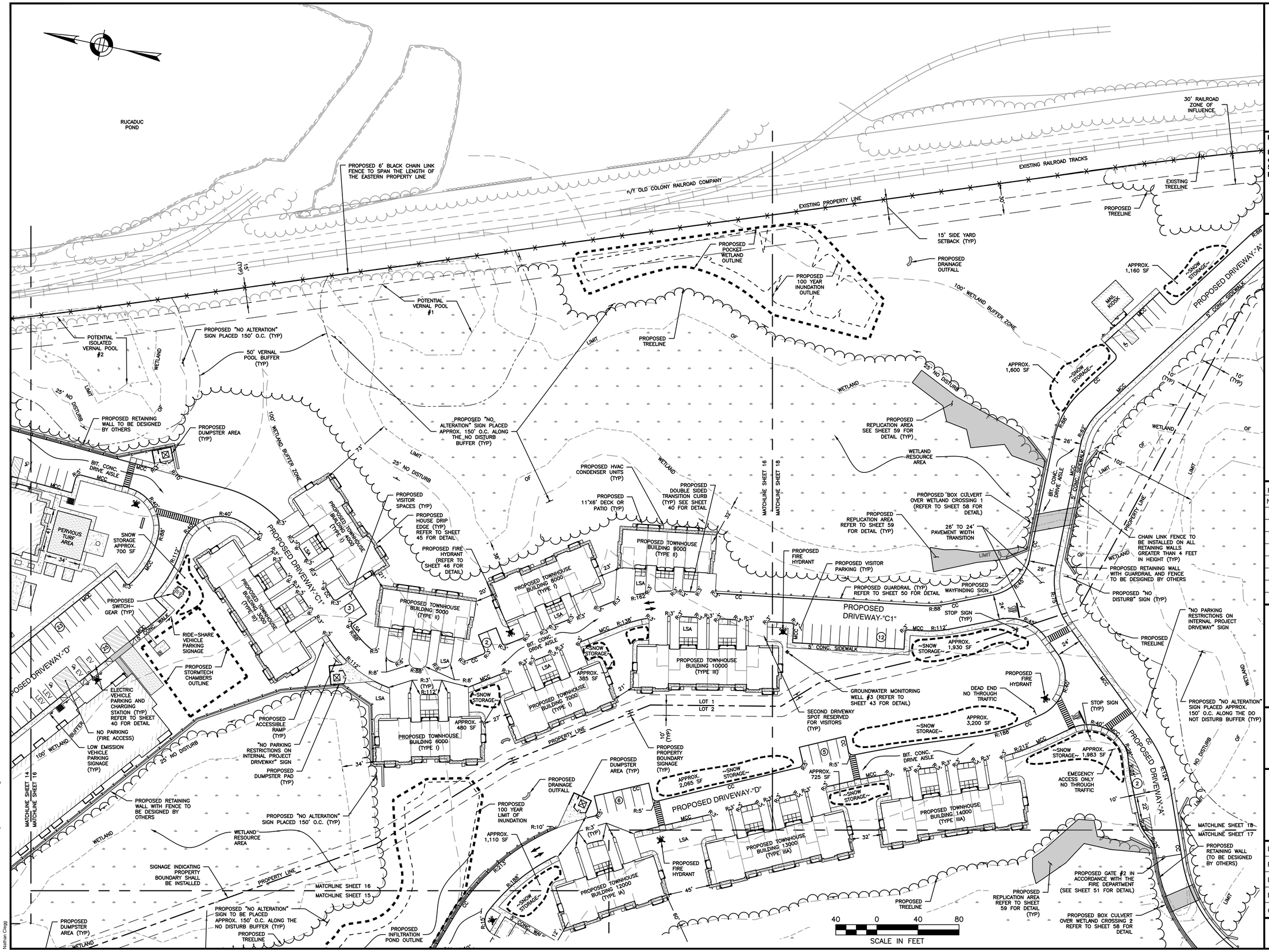
LAYOUT AND MATERIALS PLAN
2 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.15

SHEET 15 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - layout and materials.dwg
Nathan Clegg



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5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

LAYOUT AND MATERIALS PLAN
3 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.16

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - layout and materials.dwg
Nathan Clegg

PROPOSED TOWNHOUSE BUILDING 14000 (TYPE IIIA)
PROPOSED TOWNHOUSE BUILDING 13000 (TYPE IIIA)
PROPOSED TOWNHOUSE BUILDING 12000 (TYPE IA)
R:5'
R:3' (TYP)
MCC
LSA
PROPOSED FIRE HYDRANT
32'
45'
80'
PROPOSED TREELINE
PROPOSED GATE #2 IN ACCORDANCE WITH THE FIRE DEPARTMENT (SEE SHEET 51 FOR DETAIL)
PROPOSED REPLICATION AREA REFER TO SHEET 59 FOR DETAIL (TYP)
PROPOSED BOX CULVERT OVER WETLAND CROSSING 2 REFER TO SHEET 58 FOR DETAIL
PROPOSED RETAINING WALL (TO BE DESIGNED BY OTHERS)
22'
R:30'
R:25'
WETLAND
OF
25' NO DISTURB
LIMIT
WETLAND RESOURCE AREA
PROPOSED REPLICATION AREA REFER TO SHEET 59 FOR DETAIL (TYP)
52'
PROPOSED TREELINE
25' NO DISTURB
MATCHLINE SHEET 18
MATCHLINE SHEET 17
ARBORVITAE TO BE PLANTED BEHIND PROPERTY LINE PER CONDITION IV.A.16. (REFER TO LANDSCAPING PLAN)
PROPOSED GUARDRAIL (TYP) REFER TO SHEET 50 FOR DETAIL
100' WETLAND BUFFER ZONE
APPROX. 2,920 SF
~SNOW STORAGE~
R:138'
R:162'
CC
PROPOSED DRIVEWAY-"A"
24'
PROPOSED WALKWAY AND DRIVEWAY TO BE CONSTRUCTED (TYP)
n/f TS LAND TRUST LLC TR
ASSESSOR'S PARCEL 52-55-3
87 SUMMER STREET
EDGE OF EXISTING EASEMENT
PROPOSED TREELINE
BIT. CONC. PAVEMENT
29'
PROPOSED GATE #1 IN ACCORDANCE WITH THE FIRE DEPARTMENT (SEE SHEET 51 FOR DETAIL)
SUMMER STREET
24' TO 20' PAVEMENT WIDTH TRANSITION
n/f DONNA R. MONTEIRO TR
ASSESSOR'S PARCEL 52-54
93 SUMMER STREET
n/f VICTOR J. & BRENDA A. MULLER
ASSESSOR'S PARCEL 52-53
91 SUMMER STREET
25' MIN
50'±
60'±
ABUTTING BUILDING AS LOCATED BY AERIAL IMAGERY. BUILDING LOCATIONS APPROXIMATE
EXISTING PROPERTY LINE
15' SIDE YARD SETBACK (TYP.)
PROPOSED INFILTRATION POND OUTLINE (REFER TO SHEET
PROPOSED 100 YEAR LIMIT OF INUNDATION
GROUNDWATER MONITORING WELL #4 (REFER TO SHEET 43 FOR DETAIL)
MATCHLINE SHEET 15
MATCHLINE SHEET 17
200' OUTER RIPARIAN
100' WETLAND BUFFER ZONE
100' INNER RIPARIAN
n/f VICTOR J. & BRENDA A. MULLER
ASSESSOR'S PARCEL 52-53
91 SUMMER STREET
DELAPA CIRCLE

40 0 40 80
SCALE IN FEET

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - layout and materials.dwg
Nathan Clegg

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PREPARED FOR:
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c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

COMMONWEALTH OF MASSACHUSETTS
JOSEPH ENRIGHT
CIVIL
No. 49617
REGISTERED PROFESSIONAL ENGINEER
6/19/2023

SITE PLAN

LAYOUT AND MATERIALS PLAN
4 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.17

n/f
DICKRAN BABIGIAN TR
ASSESSOR'S PARCEL
52-62
49 SUMMER STREET

EXISTING BUILDING

"NO PARKING RESTRICTIONS ON INTERNAL PROJECT DRIVEWAY" SIGN

30' RAILROAD ZONE OF INFLUENCE

EXISTING RAILROAD TRACKS

EXISTING PROPERTY LINE

EXISTING TREELINE

PROPOSED TREELINE

PROPOSED 6' BLACK CHAIN LINK FENCE

APPROX. 2,415 SF

~SNOW STORAGE~

APPROX. 4,060 SF

~SNOW STORAGE~

PROPOSED DRIVEWAY-"A"

APPROX. 5,225 SF

~SNOW STORAGE~

PROPOSED MARKETING SIGN SEE ARCH. PLANS

PROPOSED SIDEWALK TO TIE INTO EXISTING SIDEWALK WITH DETECTIBLE WARNINGS (TYP)

PROPOSED SAWCUT (APPROX. 124' IN LENGTH)

PROPOSED STOP SIGN AND STOP BAR

PROPOSED MONUMENT SIGN SEE ARCH. PLANS

PROPOSED SIDEWALK TO TIE INTO EXISTING SIDEWALK ON SUMMER STREET

15' SIDE YARD SETBACK (TYP)

PROPOSED DRAINAGE OUTFALL

PROPOSED 100 YEAR INUNDATION OUTLINE

100' WETLAND BUFFER ZONE

APPROX. 1,160 SF

~SNOW STORAGE~

MAIL KIOSK

PROPOSED DRIVEWAY-"A"

5' CONC. SIDEWALK

PROPOSED TREELINE

PROPOSED PROPERTY LINE. SIGNAGE INDICATING PROPERTY BOUNDARY SHALL BE INSTALLED (TYP)

PROPOSED MONOLITHIC CONCRETE CURB (REFER TO SHEET 40 FOR DETAIL)

25' NO DISTURB

8' TALL WHITE VINYL STOCKADE FENCE (TO BE INSTALLED) APPROX. 170' IN LENGTH

ARBORVITAE TO BE PLANTED ALONG PROPERTY LIMIT OF CLEARING PER CONDITION IV.A.16. (REFER TO LANDSCAPING PLANS)

PROPOSED FIRE HYDRANT (REFER TO SHEET 46 FOR DETAIL)

100' WETLAND BUFFER ZONE

PROPOSED TREELINE

SUMMER STREET

SHUFELT ROAD

WETLAND

APPROX. 1,600 SF

~SNOW STORAGE~

PROPOSED REPLICATION AREA SEE SHEET 59 FOR DETAIL (TYP)

WETLAND RESOURCE AREA

WETLAND RESOURCE AREA

PROPOSED "NO ALTERATION" SIGN PLACED APPROX. 150' O.C. ALONG THE DO NOT DISTURB BUFFER (TYP)

n/f
STEVEN D. REYNOLDS
ASSESSOR'S PARCEL
52-58
63-65 SUMMER STREET

MATCHLINE SHEET 16

MATCHLINE SHEET 18

PROPOSED "BOX CULVERT OVER WETLAND CROSSING 1 (REFER TO SHEET 58 FOR DETAIL)

PROPOSED REPLICATION AREA REFER TO SHEET 59 FOR DETAIL (TYP)

26' TO 24' PAVEMENT WIDTH TRANSITION

BIT. CONC. DRIVE AISLE

5' CONC. SIDEWALK

CHAIN LINK FENCE TO BE INSTALLED ON ALL RETAINING WALLS GREATER THAN 4 FEET IN HEIGHT (TYP)

PROPOSED RETAINING WALL WITH GUARDRAIL AND FENCE TO BE DESIGNED BY OTHERS

PROPOSED "NO DISTURB" SIGN (TYP)

POTENTIAL VERNAL POOL #3

n/f
JOSEPH. F. MAHONEY
ASS. PARCEL 52-57
71 SUMMER STREET

PROPOSED FIRE HYDRANT

PROPOSED VISITOR PARKING (TYP)

PROPOSED GUARDRAIL (TYP) REFER TO SHEET 50 FOR DETAIL

PROPOSED WAYFINDING SIGN

PROPOSED DRIVEWAY-"C1"

STOP SIGN (TYP)

~SNOW STORAGE~

APPROX. 1,930 SF

5' CONC. SIDEWALK

"NO PARKING RESTRICTIONS ON INTERNAL PROJECT DRIVEWAY" SIGN

PROPOSED TREELINE

n/f
CLARE P. CULHANE
ASS. PARCEL 52-56
75 SUMMER STREET

GROUNDWATER MONITORING WELL #3 (REFER TO SHEET 43 FOR DETAIL)

SECOND DRIVEWAY SPOT RESERVED FOR VISITORS (TYP)

DEAD END NO THROUGH TRAFFIC

PROPOSED FIRE HYDRANT

STOP SIGN (TYP)

~SNOW STORAGE~

APPROX. 3,200 SF

PROPOSED "NO ALTERATION" SIGN PLACED APPROX. 150' O.C. ALONG THE DO NOT DISTURB BUFFER (TYP)

PROPOSED DRIVEWAY-"A"

HARON/ RAVAL
ASSESSOR'S PARCEL 52-55-1
79 SUMMER STREET

BIT. CONC. DRIVE AISLE

~SNOW STORAGE~

APPROX. 725 SF

EMEGENCY ACCESS ONLY NO THROUGH TRAFFIC

~SNOW STORAGE~

APPROX. 1,983 SF

PROPOSED TOWNHOUSE BUILDING 14000 (TYPE IIIA)

PROPOSED TOWNHOUSE BUILDING 13900 (TYPE IIIA)

PROPOSED RETAINING WALL (TO BE DESIGNED

PROPOSED WALKWAY AND DRIVEWAY TO BE CONSTRUCTED (TYP)

MATCHLINE SHEET 18

MATCHLINE SHEET 17

40 0 40 80

SCALE IN FEET

HOWARD STEIN HUDSON
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Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

KEVIN J. ENRIGHT
CIVIL
No. 49470
REGISTERED PROFESSIONAL ENGINEER
6/28/23

SITE PLAN

LAYOUT AND MATERIALS PLAN
5 OF 5

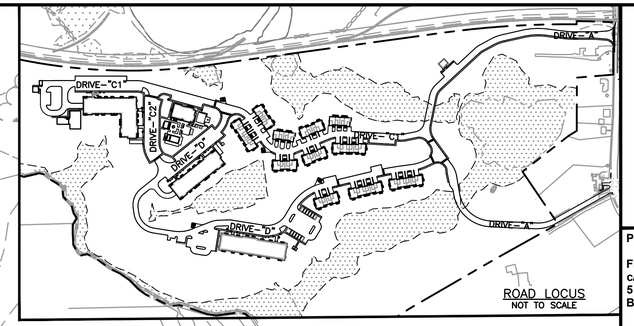
DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.18

SHEET 18 OF 62

6/19/2023 L:\19097\19097-04 - Lot 2\CURRENT\19097 - layout and materials.dwg
Mathew Clegg

INVERT TABLE	
STRUCTURE NANE	**STRUCTURE DETAILS**
CB-16	RIM = 206.64 INV OUT (DMH-10 12" HDPE) = 203.47
CB-19	RIM = 207.90 INV OUT (DMH-13 12" HDPE) = 203.25
CB-20	RIM = 207.13 INV OUT (DMH-12 12" HDPE) = 203.97
CB-21	RIM = 208.27 INV OUT (DMH-12 12" HDPE) = 204.32
CB-22	RIM = 208.50 INV OUT (DMH-14 12" HDPE) = 205.33
CB-23	RIM = 208.57 INV OUT (DMH-14 12" HDPE) = 205.41
CB-24	RIM = 208.38 INV OUT (DMH-16 15" HDPE) = 205.21
CB-25	RIM = 208.38 INV OUT (DMH-16 12" HDPE) = 205.22
CB-26	RIM = 204.93 INV OUT (DMH-17 12" HDPE) = 201.77
CB-27	RIM = 204.16 INV OUT (DMH-17 12" HDPE) = 201.00
CB-28	RIM = 200.92 INV OUT (DMH-18 12" HDPE) = 197.75
DMH-9 (CDS)	RIM = 204.78 INV IN (DMH-8 12" HDPE) = 200.13 INV OUT (12" HDPE) = 200.03
DMH-10	RIM = 206.55 INV IN (CB-16 12" HDPE) = 203.38 INV OUT (12" HDPE) = 203.28
DMH-12	RIM = 207.78 INV IN (CB-20 12" HDPE) = 203.81 INV IN (CB-21 12" HDPE) = 204.19 INV OUT (DMH-13 12" HDPE) = 203.21
DMH-13	RIM = 207.95 INV IN (DMH-14 18" HDPE) = 202.85 INV IN (DMH-12 12" HDPE) = 203.08 INV IN (CB-19 12" HDPE) = 202.99 INV OUT (24" HDPE) = 201.94
DMH-14	RIM = 208.78 INV IN (CB-22 12" HDPE) = 205.22 INV IN (CB-23 12" HDPE) = 205.33 INV IN (DMH-16 15" HDPE) = 204.38 INV OUT (DMH-13 18" HDPE) = 204.13
DMH-16	RIM = 208.59 INV IN (CB-25 12" HDPE) = 205.16 INV IN (CB-24 15" HDPE) = 205.15 INV OUT (DMH-14 15" HDPE) = 204.90
DMH-17	RIM = 204.84 INV IN (CB-26 12" HDPE) = 201.55 INV IN (CB-27 12" HDPE) = 200.90 INV OUT (DMH-18 12" HDPE) = 200.55
DMH-18	RIM = 201.13 INV IN (CB-28 12" HDPE) = 197.69 INV IN (DMH-17 12" HDPE) = 197.69 INV OUT (OCS-1 15" HDPE) = 197.44
OCS-1	RIM = 201.48 INV IN (DMH-18 15" HDPE) = 197.20



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PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

GRADING AND DRAINAGE PLAN
1 OF 5

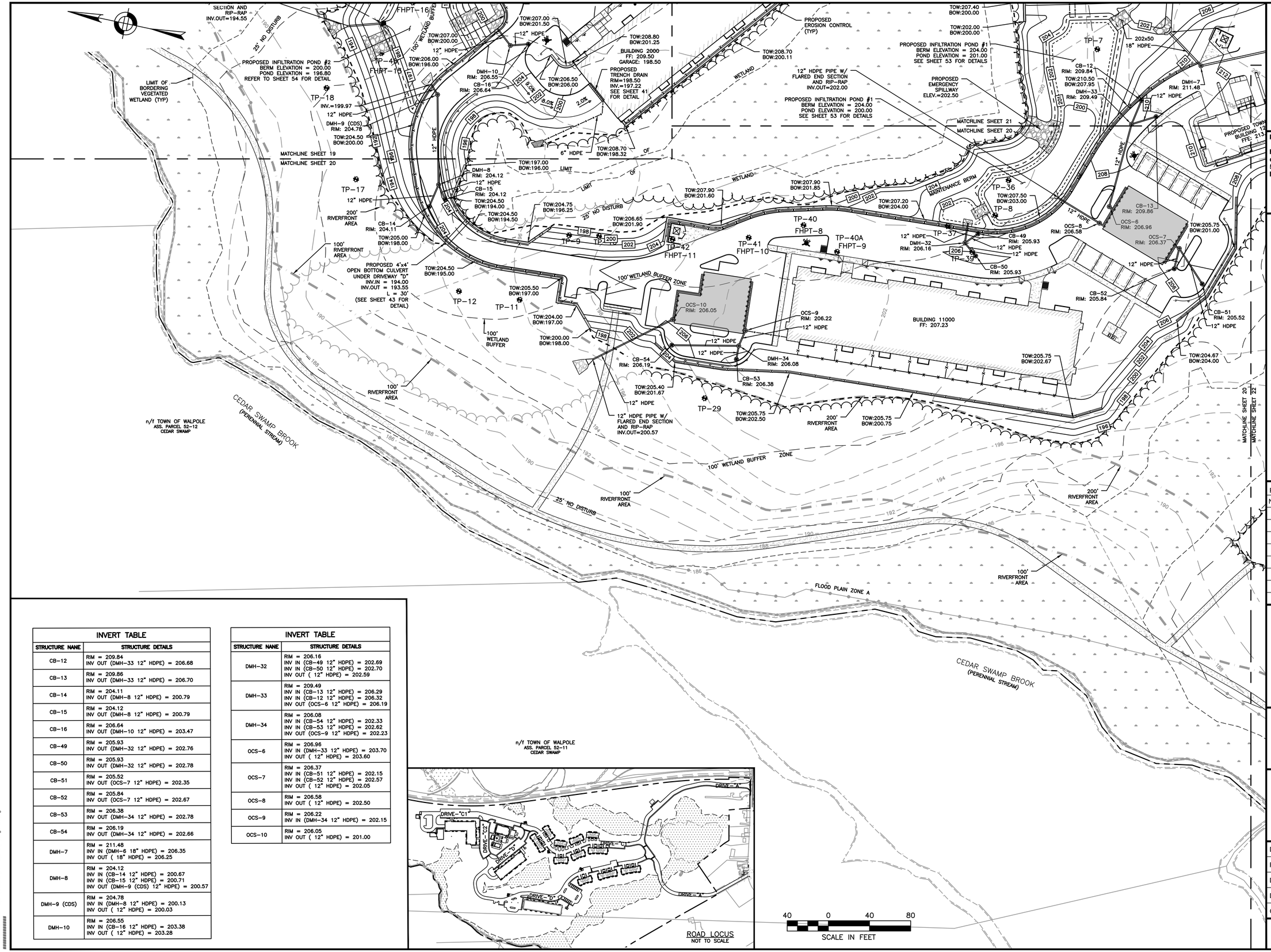
DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.19

SHEET 19 OF 62

40 0 40 80
SCALE IN FEET

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - Grading Plan.dwg
Nathan Clegg



INVERT TABLE	
STRUCTURE NANE	STRUCTURE DETAILS
CB-12	RIM = 209.84 INV OUT (DMH-33 12" HDPE) = 206.68
CB-13	RIM = 209.86 INV OUT (DMH-33 12" HDPE) = 206.70
CB-14	RIM = 204.11 INV OUT (DMH-8 12" HDPE) = 200.79
CB-15	RIM = 204.12 INV OUT (DMH-8 12" HDPE) = 200.79
CB-16	RIM = 206.64 INV OUT (DMH-10 12" HDPE) = 203.47
CB-49	RIM = 205.93 INV OUT (DMH-32 12" HDPE) = 202.76
CB-50	RIM = 205.93 INV OUT (DMH-32 12" HDPE) = 202.78
CB-51	RIM = 205.52 INV OUT (OCS-7 12" HDPE) = 202.35
CB-52	RIM = 205.84 INV OUT (OCS-7 12" HDPE) = 202.67
CB-53	RIM = 206.38 INV OUT (DMH-34 12" HDPE) = 202.78
CB-54	RIM = 206.19 INV OUT (DMH-34 12" HDPE) = 202.66
DMH-7	RIM = 211.48 INV IN (DMH-6 18" HDPE) = 206.35 INV OUT (18" HDPE) = 206.25
DMH-8	RIM = 204.12 INV IN (CB-14 12" HDPE) = 200.67 INV IN (CB-15 12" HDPE) = 200.71 INV OUT (DMH-9 (CDS) 12" HDPE) = 200.57
DMH-9 (CDS)	RIM = 204.78 INV IN (DMH-8 12" HDPE) = 200.13 INV OUT (12" HDPE) = 200.03
DMH-10	RIM = 206.55 INV IN (CB-16 12" HDPE) = 203.38 INV OUT (12" HDPE) = 203.28

INVERT TABLE	
STRUCTURE NANE	STRUCTURE DETAILS
DMH-32	RIM = 206.16 INV IN (CB-49 12" HDPE) = 202.69 INV IN (CB-50 12" HDPE) = 202.70 INV OUT (12" HDPE) = 202.59
DMH-33	RIM = 209.49 INV IN (CB-13 12" HDPE) = 206.29 INV IN (CB-12 12" HDPE) = 206.32 INV OUT (OCS-6 12" HDPE) = 206.19
DMH-34	RIM = 206.08 INV IN (CB-54 12" HDPE) = 202.33 INV IN (CB-53 12" HDPE) = 202.82 INV OUT (OCS-9 12" HDPE) = 202.23
OCS-6	RIM = 206.96 INV IN (DMH-33 12" HDPE) = 203.70 INV OUT (12" HDPE) = 203.60
OCS-7	RIM = 206.37 INV IN (CB-51 12" HDPE) = 202.15 INV IN (CB-52 12" HDPE) = 202.57 INV OUT (12" HDPE) = 202.05
OCS-8	RIM = 206.58 INV OUT (12" HDPE) = 202.50
OCS-9	RIM = 206.22 INV IN (DMH-34 12" HDPE) = 202.15
OCS-10	RIM = 206.05 INV OUT (12" HDPE) = 201.00

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BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/20/23
KYLE E. ENGHOFF
CIVIL
No. 46
REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

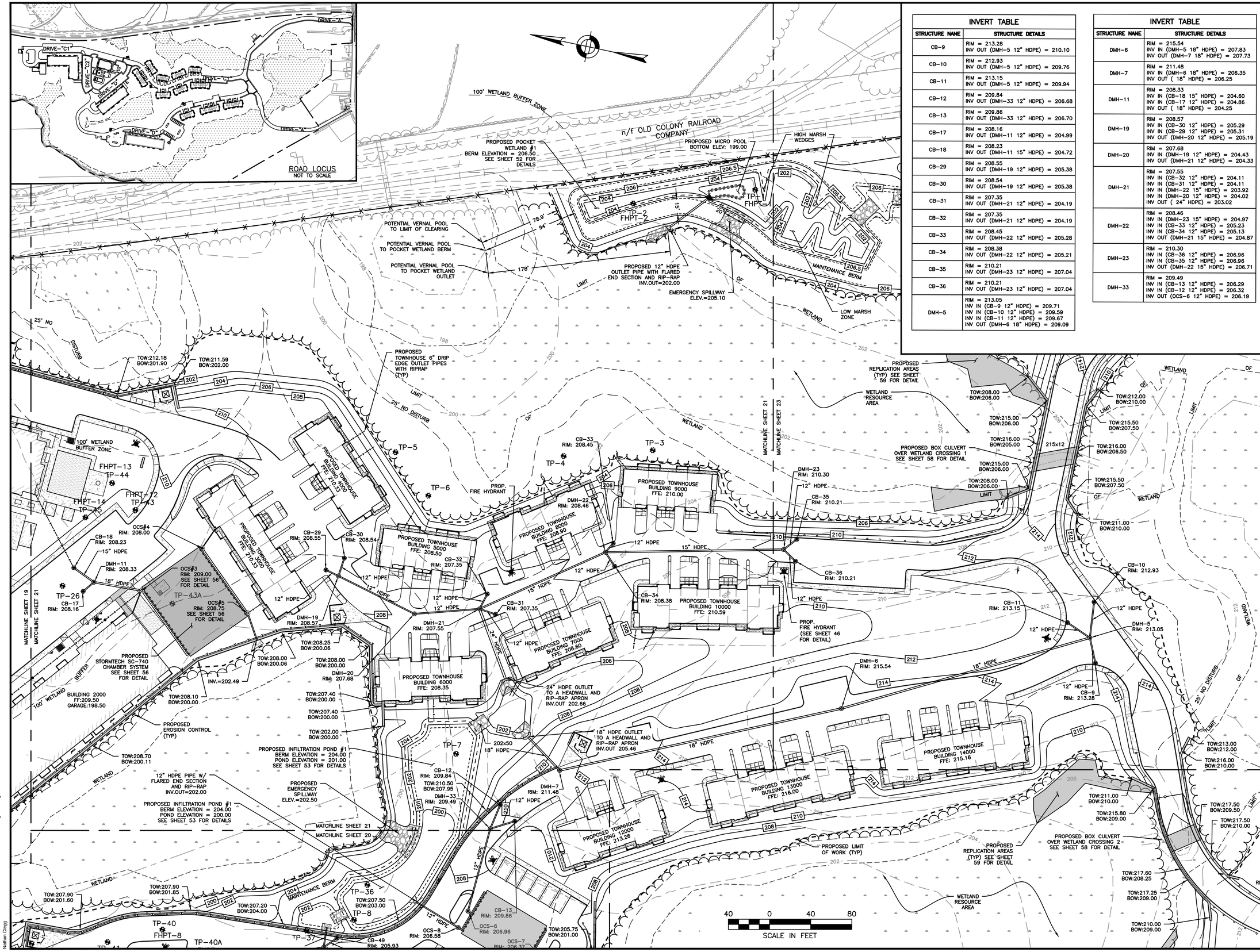
GRADING AND DRAINAGE PLAN
2 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.20

SHEET 20 OF 62

6/19/2023 L:\19097\19097.03\CURRENT\19097 - Grading Plan.dwg
mbertolami



INVERT TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB-9	RIM = 213.28 INV OUT (DMH-5 12" HDPE) = 210.10
CB-10	RIM = 212.93 INV OUT (DMH-5 12" HDPE) = 209.76
CB-11	RIM = 213.15 INV OUT (DMH-5 12" HDPE) = 209.94
CB-12	RIM = 209.84 INV OUT (DMH-33 12" HDPE) = 206.68
CB-13	RIM = 209.86 INV OUT (DMH-33 12" HDPE) = 206.70
CB-17	RIM = 208.16 INV OUT (DMH-11 12" HDPE) = 204.99
CB-18	RIM = 208.23 INV OUT (DMH-11 15" HDPE) = 204.72
CB-29	RIM = 208.55 INV OUT (DMH-19 12" HDPE) = 205.38
CB-30	RIM = 208.54 INV OUT (DMH-19 12" HDPE) = 205.38
CB-31	RIM = 207.35 INV OUT (DMH-21 12" HDPE) = 204.19
CB-32	RIM = 207.35 INV OUT (DMH-21 12" HDPE) = 204.19
CB-33	RIM = 208.45 INV OUT (DMH-22 12" HDPE) = 205.28
CB-34	RIM = 208.38 INV OUT (DMH-22 12" HDPE) = 205.21
CB-35	RIM = 210.21 INV OUT (DMH-23 12" HDPE) = 207.04
CB-36	RIM = 210.21 INV OUT (DMH-23 12" HDPE) = 207.04
DMH-5	RIM = 213.05 INV IN (CB-9 12" HDPE) = 209.71 INV IN (CB-10 12" HDPE) = 209.59 INV IN (CB-11 12" HDPE) = 209.67 INV OUT (DMH-6 18" HDPE) = 209.09

INVERT TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
DMH-6	RIM = 215.54 INV IN (DMH-5 18" HDPE) = 207.83 INV OUT (DMH-7 18" HDPE) = 207.73
DMH-7	RIM = 211.48 INV IN (DMH-6 18" HDPE) = 206.35 INV OUT (18" HDPE) = 206.25
DMH-11	RIM = 208.33 INV IN (CB-18 15" HDPE) = 204.60 INV IN (CB-17 12" HDPE) = 204.86 INV OUT (18" HDPE) = 204.25
DMH-19	RIM = 208.57 INV IN (CB-30 12" HDPE) = 205.29 INV IN (CB-29 12" HDPE) = 205.31 INV OUT (DMH-20 12" HDPE) = 205.19
DMH-20	RIM = 207.68 INV IN (DMH-19 12" HDPE) = 204.43 INV OUT (DMH-21 12" HDPE) = 204.33
DMH-21	RIM = 207.55 INV IN (CB-32 12" HDPE) = 204.11 INV IN (CB-31 12" HDPE) = 204.11 INV IN (DMH-22 15" HDPE) = 203.92 INV IN (DMH-20 12" HDPE) = 204.02 INV OUT (24" HDPE) = 203.02
DMH-22	RIM = 208.46 INV IN (DMH-23 15" HDPE) = 204.97 INV IN (CB-33 12" HDPE) = 205.23 INV IN (CB-34 12" HDPE) = 205.13 INV OUT (DMH-21 15" HDPE) = 204.87
DMH-23	RIM = 210.30 INV IN (CB-36 12" HDPE) = 206.96 INV IN (CB-35 12" HDPE) = 206.96 INV OUT (DMH-22 15" HDPE) = 206.71
DMH-33	RIM = 209.49 INV IN (CB-13 12" HDPE) = 206.29 INV IN (CB-12 12" HDPE) = 206.32 INV OUT (OCS-6 12" HDPE) = 206.19

HOWARD STEIN HUDSON
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PREPARED FOR:

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5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

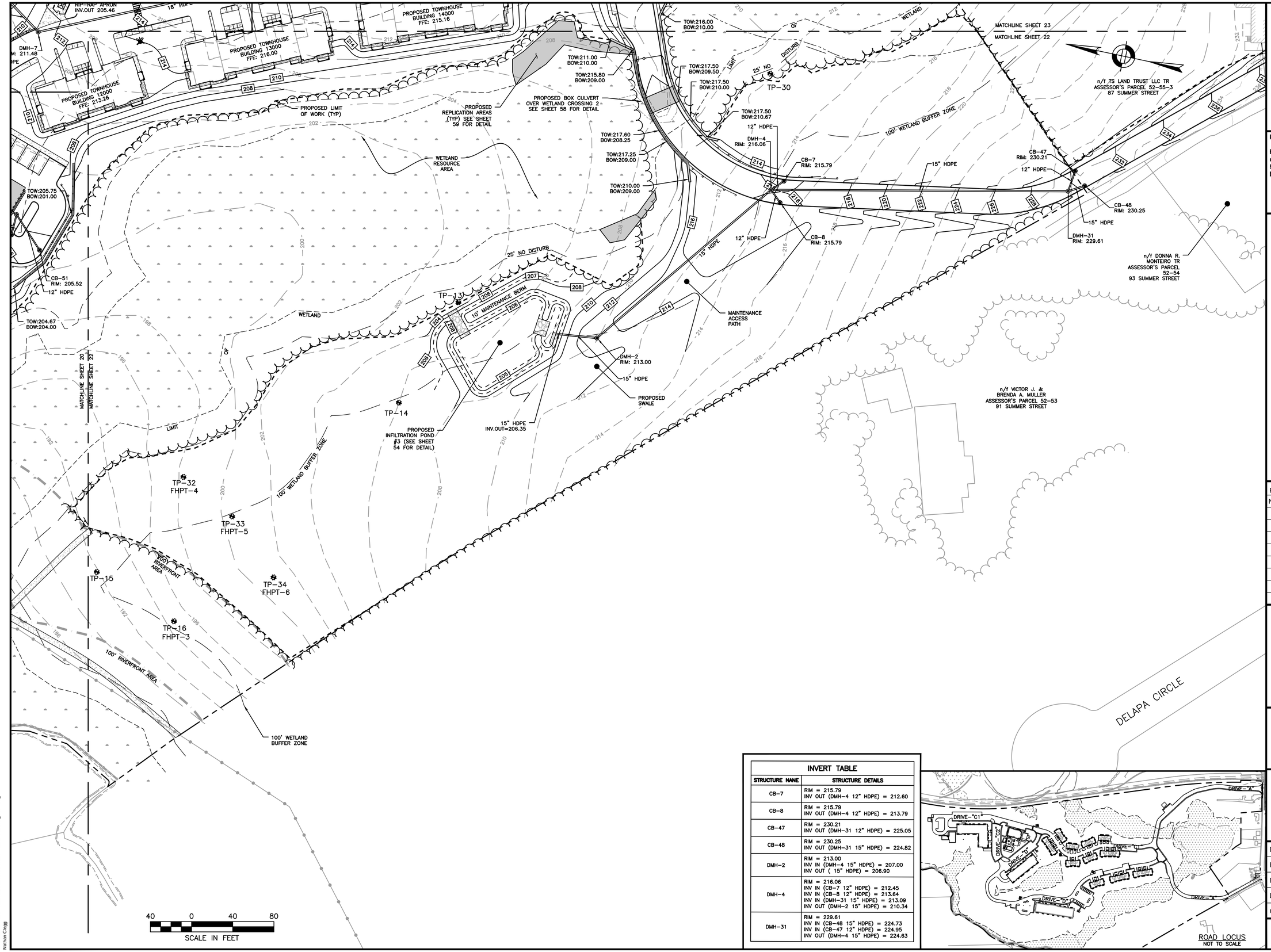
GRADING AND DRAINAGE PLAN
3 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.21

SHEET 21 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Grading Plan.dwg
Nathan Clegg



INVERT TABLE	
STRUCTURE NAME	**STRUCTURE DETAILS**
CB-7	RIM = 215.79 INV OUT (DMH-4 12" HDPE) = 212.60
CB-8	RIM = 215.79 INV OUT (DMH-4 12" HDPE) = 213.79
CB-47	RIM = 230.21 INV OUT (DMH-31 12" HDPE) = 225.05
CB-48	RIM = 230.25 INV OUT (DMH-31 15" HDPE) = 224.82
DMH-2	RIM = 213.00 INV IN (DMH-4 15" HDPE) = 207.00 INV OUT (15" HDPE) = 206.90
DMH-4	RIM = 216.06 INV IN (CB-7 12" HDPE) = 212.45 INV IN (CB-8 12" HDPE) = 213.64 INV IN (DMH-31 15" HDPE) = 213.09 INV OUT (DMH-2 15" HDPE) = 210.34
DMH-31	RIM = 229.61 INV IN (CB-48 15" HDPE) = 224.73 INV IN (CB-47 12" HDPE) = 224.95 INV OUT (DMH-4 15" HDPE) = 224.63

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
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PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

GRADING AND DRAINAGE PLAN
4 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.22

SHEET 22 OF 62

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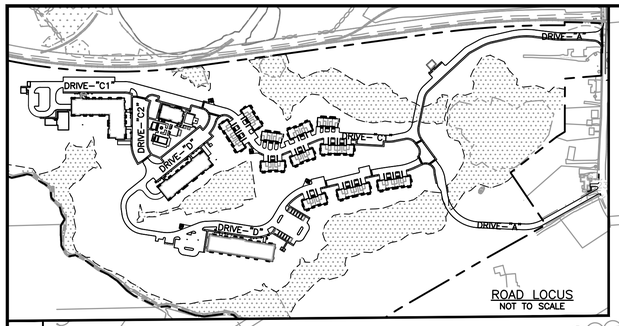

ROAD LOCUS
NOT TO SCALE

n/f
DICKRAN BABIGIAN TR
ASSESSOR'S PARCEL
52-62
49 SUMMER STREET

EXISTING BUILDING

EXISTING RAILROAD TRACKS

PROPOSED SEDIMENT FOREBAY TOP OF BERM: 206.50

24" HDPE DRAIN PIPE WITH HEADWALL AND RIP-RAP APRON INV.OUT 206.67

HIGH MARSH WEDGES

MAINTENANCE BERM

LOW MARSH ZONE

WETLAND

25' NO DISTURB

100' WETLAND BUFFER ZONE

PROPOSED REPLICATION AREAS (TYP) SEE SHEET 59 FOR DETAIL

WETLAND RESOURCE AREA

MATCHLINE SHEET 21

MATCHLINE SHEET 23

PROPOSED BOX CULVERT OVER WETLAND CROSSING 1 SEE SHEET 58 FOR DETAIL

215x12

DMH-23
RIM: 210.30

CB-35
RIM: 210.21

CB-36
RIM: 210.21

PROP. FIRE HYDRANT (SEE SHEET 46 FOR DETAIL)

PROPOSED TOWNHOUSE BUILDING 13000

PROPOSED TOWNHOUSE BUILDING 14000
FFE: 215.16

CB-38
RIM: 212.86

CB-39
RIM: 212.86

DMH-25
RIM: 213.11

DMH-27
RIM: 217.00

DMH-35
RIM: 215.70

CB-40
RIM: 217.04

CB-41
RIM: 217.06

DMH-28
RIM: 220.17

DMH-29
RIM: 223.21

CB-44
RIM: 223.17

CB-45
RIM: 224.46

CB-43
RIM: 223.17

CB-46
RIM: 224.69

DMH-30
RIM: 224.95

CB-10
RIM: 212.93

CB-11
RIM: 213.15

DMH-5
RIM: 213.05

DMH-6
RIM: 215.54

CB-9
RIM: 213.28

MAIL KIOSK

TP-31

12" HDPE
15" HDPE
18" HDPE

TOW:208.00 BOW:206.00
TOW:215.00 BOW:206.00
TOW:216.00 BOW:205.00
TOW:215.00 BOW:206.00
TOW:208.00 BOW:206.00
TOW:212.00 BOW:210.00
TOW:215.50 BOW:207.50
TOW:216.00 BOW:206.50
TOW:215.50 BOW:207.50
TOW:211.00 BOW:210.00
TOW:213.00 BOW:212.00
TOW:216.00 BOW:210.00

WETLAND RESOURCE AREA

POTENTIAL VERNAL POOL #3

n/f
HARRIK RAVAL
ASSESSOR'S PARCEL 52-55-1
79 SUMMER STREET

SUMMER STREET

SHUFELT ROAD

n/f
STEVEN D. REYNOLDS
ASSESSOR'S PARCEL
52-58
63-65 SUMMER STREET

n/f
JOSEPH. F. MAHONEY
ASS. PARCEL 52-57
71 SUMMER STREET

n/f
CLARE P. CULHANE
ASS. PARCEL 52-56
75 SUMMER STREET

MATCHLINE SHEET 23

MATCHLINE SHEET 22

INVERT TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
DMH-25	RIM = 213.11 INV IN (CB-38 12" HDPE) = 209.61 INV IN (CB-39 12" HDPE) = 209.61 INV IN (DMH-35 15" HDPE) = 209.71 INV OUT (15" HDPE) = 209.36
DMH-27	RIM = 217.00 INV IN (CB-41 12" HDPE) = 213.80 INV IN (CB-40 12" HDPE) = 213.59 INV IN (DMH-28 12" HDPE) = 214.29 INV OUT (DMH-35 15" HDPE) = 213.34
DMH-28	RIM = 220.17 INV IN (DMH-29 12" HDPE) = 217.56 INV OUT (DMH-27 12" HDPE) = 217.46
DMH-29	RIM = 223.21 INV IN (CB-43 12" HDPE) = 219.93 INV IN (CB-44 12" HDPE) = 219.93 INV IN (DMH-30 12" HDPE) = 220.00 INV OUT (DMH-28 12" HDPE) = 219.83
DMH-30	RIM = 224.95 INV IN (CB-45 12" HDPE) = 221.20 INV IN (CB-46 12" HDPE) = 221.45 INV OUT (DMH-29 12" HDPE) = 220.92
DMH-35	RIM = 215.70 INV IN (DMH-27 15" HDPE) = 212.38 INV OUT (DMH-25 15" HDPE) = 212.28

INVERT TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB-38	RIM = 212.86 INV OUT (DMH-25 12" HDPE) = 209.69
CB-39	RIM = 212.86 INV OUT (DMH-25 12" HDPE) = 209.69
CB-40	RIM = 217.04 INV OUT (DMH-27 12" HDPE) = 213.68
CB-41	RIM = 217.06 INV OUT (DMH-27 12" HDPE) = 213.89
CB-43	RIM = 223.17 INV OUT (DMH-29 12" HDPE) = 220.00
CB-44	RIM = 223.17 INV OUT (DMH-29 12" HDPE) = 220.00
CB-45	RIM = 224.46 INV OUT (DMH-30 12" HDPE) = 221.29
CB-46	RIM = 224.69 INV OUT (DMH-30 12" HDPE) = 221.53

40 0 40 80
SCALE IN FEET

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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

CHRISTOPHER J. ENRIGHT
CIVIL
No. 46011
REGISTERED PROFESSIONAL ENGINEER
6/20/23

SITE PLAN

GRADING AND DRAINAGE PLAN
5 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.23

SHEET 23 OF 62

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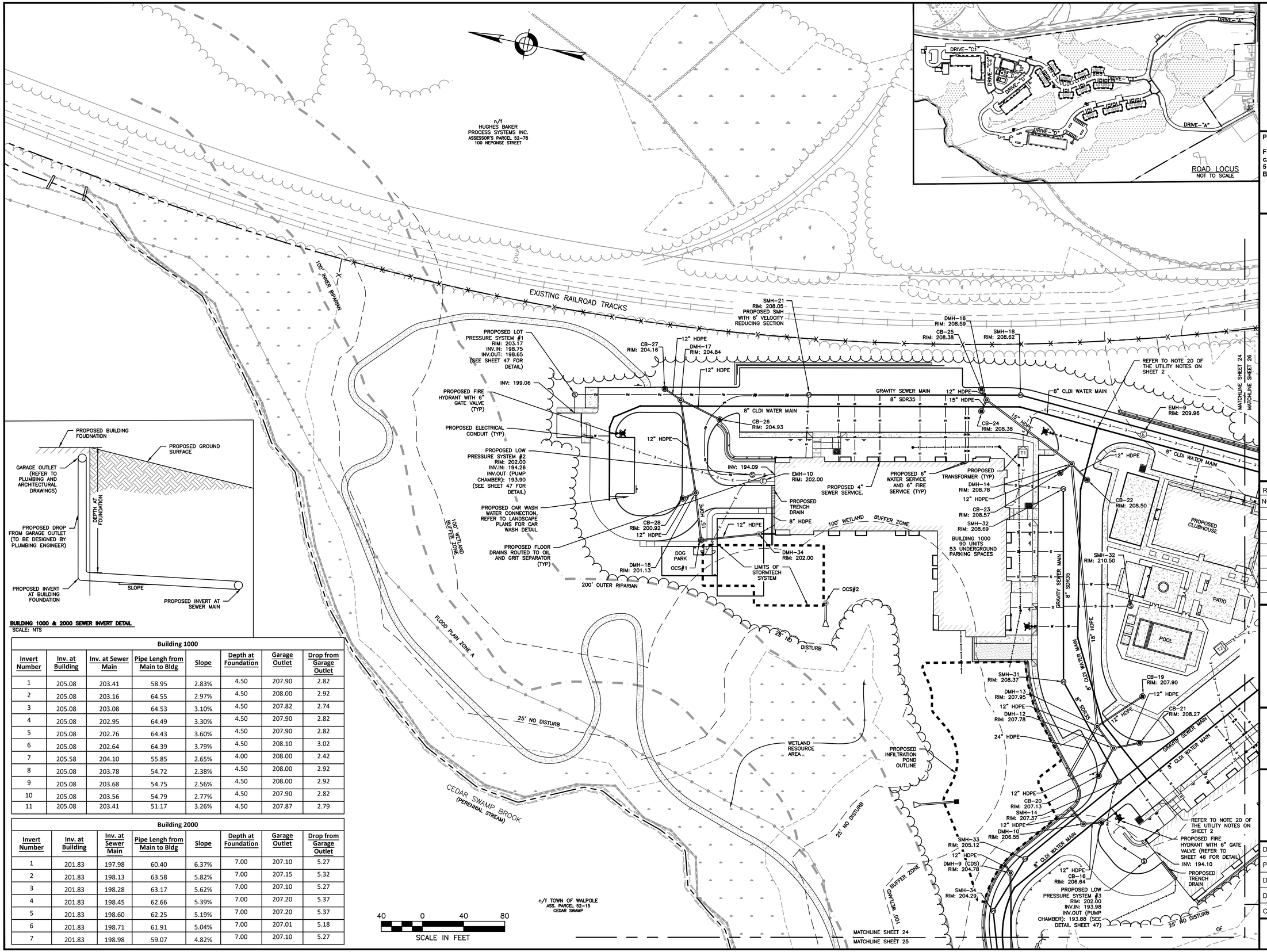

BUILDING 1000 & 2000 SEWER INVERT DETAIL
SCALE: NTS

Building 1000

Invert Number	Inv. at Building	Inv. at Sewer Main	Pipe Lengh from Main to Bldg	Slope	Depth at Foundation	Garage Outlet	Drop from Garage Outlet
1	205.08	203.41	58.95	2.83%	4.50	207.90	2.82
2	205.08	203.16	64.55	2.97%	4.50	208.00	2.92
3	205.08	203.08	64.53	3.10%	4.50	207.82	2.74
4	205.08	202.95	64.49	3.30%	4.50	207.90	2.82
5	205.08	202.76	64.43	3.60%	4.50	207.90	2.82
6	205.08	202.64	64.39	3.79%	4.50	208.10	3.02
7	205.58	204.10	55.85	2.65%	4.00	208.00	2.42
8	205.08	203.78	54.72	2.38%	4.50	208.00	2.92
9	205.08	203.68	54.75	2.56%	4.50	208.00	2.92
10	205.08	203.56	54.79	2.77%	4.50	207.90	2.82
11	205.08	203.41	51.17	3.26%	4.50	207.87	2.79

Building 2000

Invert Number	Inv. at Building	Inv. at Sewer Main	Pipe Lengh from Main to Bldg	Slope	Depth at Foundation	Garage Outlet	Drop from Garage Outlet
1	201.83	197.98	60.40	6.37%	7.00	207.10	5.27
2	201.83	198.13	63.58	5.82%	7.00	207.15	5.32
3	201.83	198.28	63.17	5.62%	7.00	207.10	5.27
4	201.83	198.45	62.66	5.39%	7.00	207.20	5.37
5	201.83	198.60	62.25	5.19%	7.00	207.20	5.37
6	201.83	198.71	61.91	5.04%	7.00	207.01	5.18
7	201.83	198.98	59.07	4.82%	7.00	207.10	5.27

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BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

UTILITIES PLAN
1 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.24

SHEET 24 OF 62

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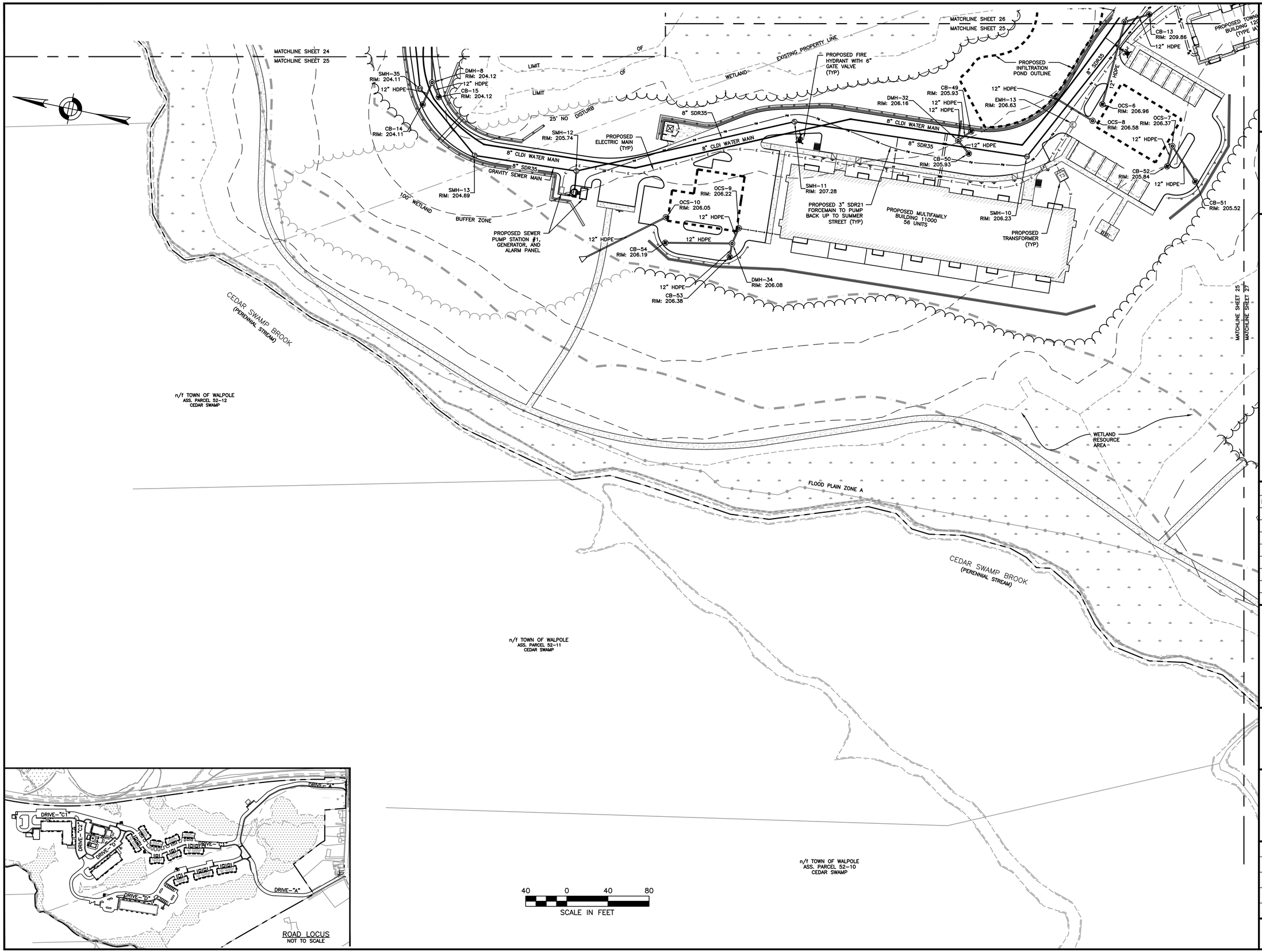
Matthew Blaker



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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

UTILITIES PLAN
2 OF 5

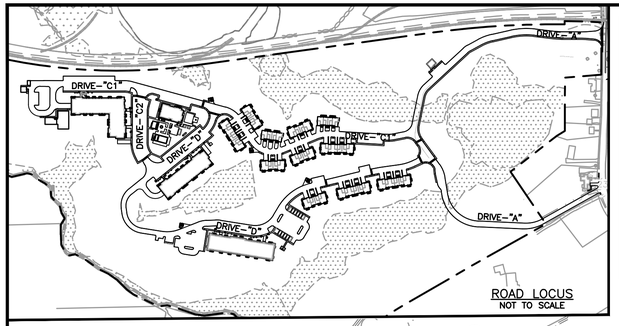
DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.25

SHEET 25 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Utility Plan.dwg
Matthew Baker

Unit	FF	Inv. Depth	Unit Inv.	Sewer Inv.	Length	Slope
3000	209.84	7.8	202.01	201.14	43.60	2.00%
4000	210.30	8.6	201.66	201.04	31.00	2.00%
5000	208.80	6.0	202.77	201.99	38.60	2.00%
6000	208.35	5.3	203.03	202.08	47.16	2.00%
7000	208.60	4.7	203.92	202.98	47.06	2.00%
8000	208.90	5.2	203.72	203.22	25.16	2.00%
9000	213.26	8.3	204.99	204.26	36.50	2.00%
10000	210.14	4.5	205.62	204.71	45.34	2.00%
11000	207.23	6.1	201.12	200.31	40.79	2.00%
12000	216.00	8.7	207.30	206.64	33.00	2.00%
13000	216.15	7.4	208.75	208.17	29.09	2.00%
14000	216.15	6.5	209.67	209.06	30.50	2.00%



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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

UTILITIES PLAN
3 OF 5

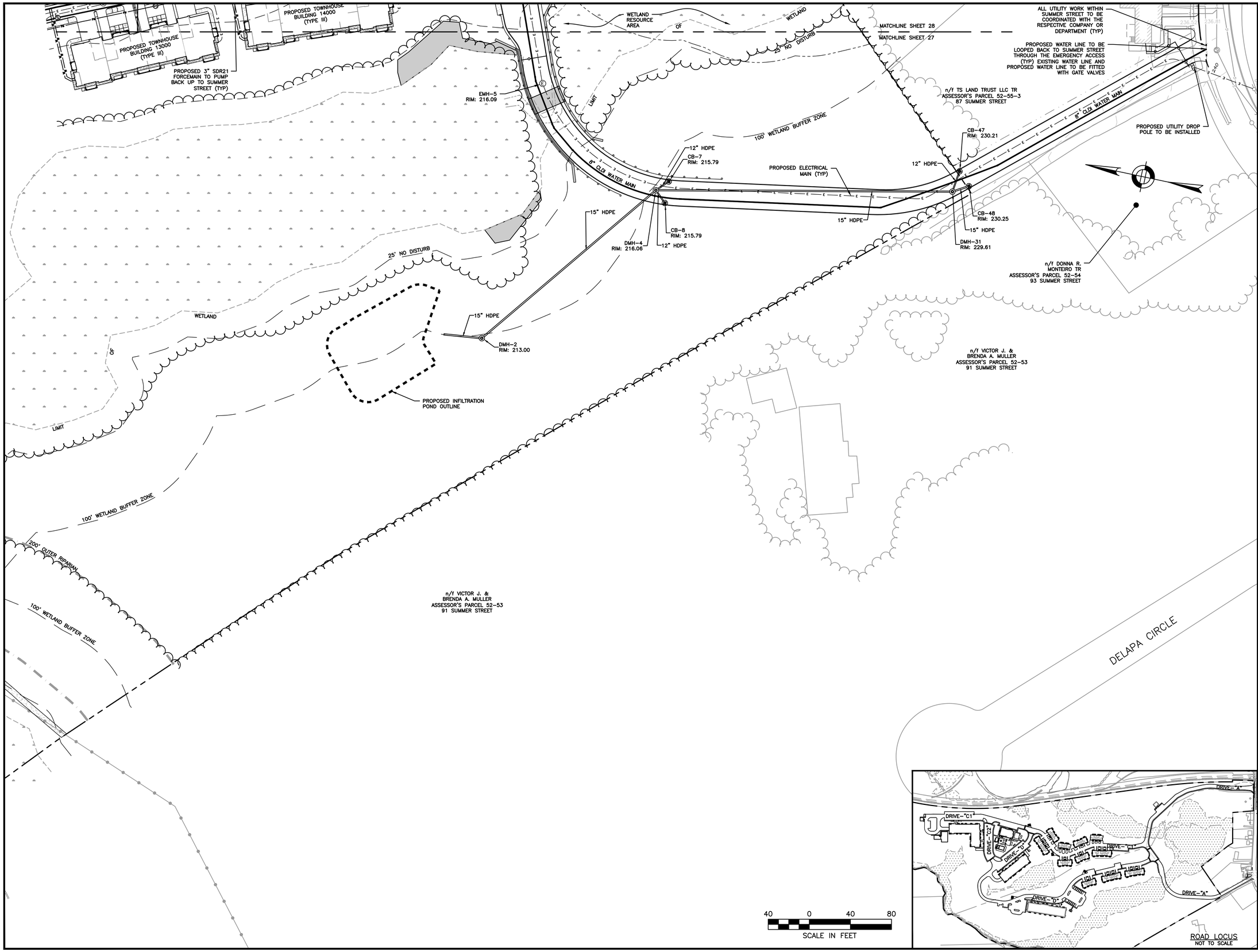
DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.26

SHEET 26 OF 62

RUCADUC POND
49 SUMMER STREET
n/f OLD COLONY RAILROAD COMPANY
EXISTING RAILROAD TRACKS
POTENTIAL VERNAL POOL #1
POTENTIAL ISOLATED VERNAL POOL #2
PROPOSED POCKET WETLAND OUTLINE
100' WETLAND BUFFER
25' NO DISTURB
LIMIT OF WETLAND
WETLAND RESOURCE AREA
MATCHLINE SHEET 24
MATCHLINE SHEET 26
MATCHLINE SHEET 25
MATCHLINE SHEET 28
EXISTING PROPERTY LINE
PROPOSED INFILTRATION POND OUTLINE
APPROX LOCATION OF PROPANE TANK
BUILDING 2000 UNITS 37 UNDERGROUND PARKING SPACES
LIMITS OF STORMTECH SYSTEM
PROPOSED TOWNHOUSE BUILDING 2000 (TYPE I)
PROPOSED TOWNHOUSE BUILDING 3000 (TYPE IA)
PROPOSED TOWNHOUSE BUILDING 5000 (TYPE II)
PROPOSED TOWNHOUSE BUILDING 6000 (TYPE I)
PROPOSED TOWNHOUSE BUILDING 7000 (TYPE I)
PROPOSED TOWNHOUSE BUILDING 8000 (TYPE I)
PROPOSED TOWNHOUSE BUILDING 9000 (TYPE II)
PROPOSED TOWNHOUSE BUILDING 10000 (TYPE III)
PROPOSED TOWNHOUSE BUILDING 12000 (TYPE IA)
PROPOSED TOWNHOUSE BUILDING 13000 (TYPE III)
PROPOSED TOWNHOUSE BUILDING 14000 (TYPE III)
PR-FIRE HYDRANT WITH 6" GATE VALVE (TYP)
PROPOSED FIRE HYDRANT WITH 6" GATE VALVE (TYP)
PROPOSED TRANSFORMER (TYP)
PROPOSED 8" SEWER SERVICE (TYP)
PROPOSED 6" WATER SERVICE AND 6" FIRE SERVICE (TYP)
PROPOSED 6" GRAVITY SEWER SERVICE, SEE INVERT TABLE (TYP.)
PROPOSED 6" CLDI FIRE PROTECTION SERVICE (TYP.)
PROPOSED 1" PLASTIC DOMESTIC WATER SERVICE (TYP.)
PROPOSED ELECTRIC MAIN (TYP)
FORCEMAIN TO BE SLEEVED WHERE SHOWN. (TYP)
PROPOSED 3" SDR21 FORCEMAIN TO PUMP BACK UP TO SUMMER STREET (TYP)
PROPOSED 4" SDR21 FORCEMAIN
REFER TO NOTE 19 OF THE UTILITY NOTES ON SHEET 2
REFER TO NOTE 20 OF THE UTILITY NOTES ON SHEET 2
8" CLDI WATER MAIN
8" SDR35
15" HDPE
18" HDPE
12" HDPE
24" HDPE
MAIL KIOSK
SMH-17 RIM: 210.77
EMH-8 RIM: 210.64
SMH-20 RIM: 209.87
SMH-16 RIM: 209.75
CB-18 RIM: 208.23
DMH-11 RIM: 208.33
CB-17 RIM: 208.16
SMH-15 RIM: 208.62
CB-30 RIM: 208.54
DMH-19 RIM: 208.57
CB-32 RIM: 207.35
CB-29 RIM: 208.55
EMH-7 RIM: 208.44
DMH-21 RIM: 207.55
SMH-21 RIM: 208.29
DMH-20 RIM: 207.68
SMH-22 RIM: 207.53
CB-31 RIM: 207.35
CB-33 RIM: 208.45
DMH-22 RIM: 208.46
SMH-23 RIM: 208.31
CB-34 RIM: 208.38
EMH-6 RIM: 209.10
SMH-24 RIM: 209.94
DMH-23 RIM: 210.30
CB-35 RIM: 210.21
CB-36 RIM: 210.21
EMH-4 RIM: 213.55
CB-11 RIM: 213.15
DMH-5 RIM: 213.05
EMH-2 RIM: 214.35
CB-38 RIM: 212.86
CB-39 RIM: 212.86
DMH-25 RIM: 213.11
CLEANOUT VALVE MANHOLE #1 RIM: 213.12
AIR RELEASE MANHOLE #1 RIM: 214.95
EMH-3 RIM: 214.53
CB-10 RIM: 212.93
DMH-5 RIM: 213.05
CLEANOUT VALVE MANHOLE #2 RIM: 213.19 CLEANOUT TO BE INSTALLED
AIR RELEASE MANHOLE #3 RIM: 215.68
DMH-6 RIM: 215.54
EMH-11 RIM: 214.64
CB-9 RIM: 213.28
SMH-7 RIM: 213.96
EMH-12 RIM: 215.51
DMH-7 RIM: 211.48
SMH-9 RIM: 210.51
CB-12 RIM: 209.84
CB-13 RIM: 209.86
EMH-5 RIM: 216.09
40 0 40 80
SCALE IN FEET

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Utility Plan.dwg
Matthew Bieber



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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

UTILITIES PLAN
4 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
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DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.27

SHEET 27 OF 62

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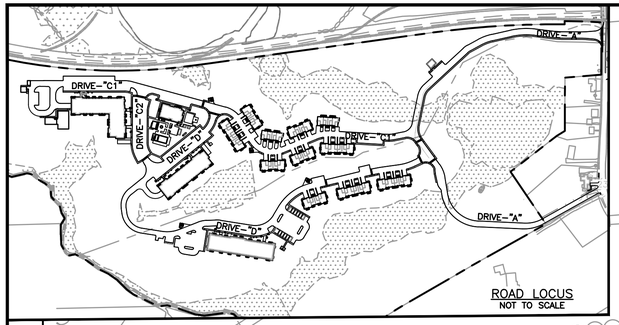
Matthew Baker



EXISTING BUILDING

EXISTING RAILROAD TRACKS

PROPOSED ELECTRICAL CONDUIT (TYP)

PEDESTRIAN CROSSING SIGNAL

PEDESTRIAN CROSSING SIGNAL

SMH RIM=222.42'

DMH-29 RIM: 223.21
12" HDPE

DMH-28 RIM: 220.17
12" HDPE

8" CLDI WATER MAIN

CB-44 RIM: 223.17

EMH-1 RIM: 223.40

8" CLDI WATER MAIN

SMH-28 RIM: 225.09

CB-45 RIM: 224.46

12" HDPE

DMH-30 RIM: 224.95

SMH RIM=223.88'

ALL UTILITY WORK WITHIN SUMMER STREET TO BE COORDINATED WITH THE RESPECTIVE COMPANY OR DEPARTMENT (TYP) EXISTING AND PROPOSED WATER LINE TO BE FITTED WITH GATE VALVES

8" CLDI WATER MAIN

CB-40 RIM: 217.04
12" HDPE

12" HDPE

FORCEMAIN TO TIE INTO SMH-27 AND TRAVEL THROUGH GRAVITY SEWER TO SUMMER STREET

8" SDR35

12" HDPE

12" HDPE

EXISTING PROPERTY LINE

SMH-27 RIM: 221.88

CB-43 RIM: 223.17

PROPOSED FIRE HYDRANT WITH 6" GATE VALVE (TYP)

CB-46 RIM: 224.69

8" SDR35

SMH-29 RIM: 224.90

WATER GATE

CB-41 RIM: 217.06

12" HDPE

DMH-27 RIM: 217.00

15" HDPE

DMH-35 RIM: 215.70

EMH-2 RIM: 214.35

8" CLDI WATER MAIN

MAIL KIOSK

CB-38 RIM: 212.86

15" HDPE

15" HDPE

PROPOSED POCKET WETLAND OUTLINE

100' WETLAND BUFFER

15" HDPE

4" SDR21 FORCEMAIN

SUMMER STREET

SMH RIM=228.86'

SHUFELT ROAD

12" HDPE

CB-39 RIM: 212.86

12" HDPE

DMH-25 RIM: 213.11

CLEANOUT VALVE MANHOLE #1 RIM: 213.12

25' NO DISTURB

WETLAND

WETLAND RESOURCE AREA

PROPOSED 4" SDR21 FORCEMAIN

8" CLDI WATER MAIN

AIR RELEASE MANHOLE #1 RIM: 214.95

FORCEMAIN TO BE SLEEVED WHERE SHOWN. (TYP)

SMH-24 RIM: 209.94

DMH-23 RIM: 210.30

12" HDPE

EMH-3 RIM: 214.53

LIMIT OF WETLAND

CB-35 RIM: 210.21

PROPOSED ELECTRIC MAIN (TYP)

REFER TO NOTE 20 OF THE UTILITY NOTES ON SHEET 2

POTENTIAL VERNAL POOL

CB-10 RIM: 212.93

12" HDPE

DMH-5 RIM: 213.05

REFER TO NOTE 20 OF THE UTILITY NOTES ON SHEET 2

12" HDPE

8" CLDI WATER MAIN

CB-36 RIM: 210.21

EMH-4 RIM: 213.55

EXISTING PROPERTY LINE

CB-11 RIM: 213.15

12" HDPE

DMH-5 RIM: 213.05

CLEANOUT VALVE MANHOLE #2 RIM: 213.19 CLEANOUT TO BE INSTALLED

AIR RELEASE MANHOLE #3 RIM: 215.68

DMH-6 RIM: 215.54

EMH-11 RIM: 214.64

18" HDPE

8" CLDI WATER MAIN

12" HDPE

CB-9 RIM: 213.28

SMH-7 RIM: 213.96

8" SDR35

PROPOSED TOWNHOUSE BUILDING 14000 (TYPE III)

PROPOSED TOWNHOUSE BUILDING 13000

25' NO DISTURB

WETLAND

LIMIT OF WETLAND

WETLAND RESOURCE AREA

MATCHLINE SHEET 28

MATCHLINE SHEET 27

MATCHLINE SHEET 26

MATCHLINE SHEET 28

n/f STEVEN D. REYNOLDS ASSESSOR'S PARCEL 52-58 63-65 SUMMER STREET

n/f JOSEPH. F. MAHONEY ASS. PARCEL 52-57 71 SUMMER STREET

n/f CLARE P. CULHANE ASS. PARCEL 52-56 75 SUMMER STREET

n/f HARDIK RAVAL ASSESSOR'S PARCEL 52-55-1 79 SUMMER STREET

40 0 40 80
SCALE IN FEET

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER L. ENRIGHT
CIVIL
No. 44
REGISTERED PROFESSIONAL ENGINEER
6/20/23

SITE PLAN

UTILITIES PLAN
5 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.28

SHEET 28 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Utility Plan.dwg
Matthew Blake

LANDSCAPE LEGEND

- PROPOSED DECIDUOUS TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN
- PROPOSED SHRUBS

GENERAL LANDSCAPE NOTES:

1. AREAS NOT OTHERWISE DEVELOPED SHALL RECEIVE MINIMUM 6" COMPACTED DEPTH SCREENED LOAM.
2. EXISTING LOAM TO BE STOCKPILED FOR REUSE.
3. FINISH COVER OVER PLANTING BED SHALL INCLUDE 3" MINIMUM DEPTH PINE MULCH.
4. FINISH SURFACE SHALL BE GRADED FROM A HIGH POINT AT CENTER OF ISLAND OUT TO THE BACK OF CURB. SEE GRADING, DRAINAGE AND PAVING PLAN FOR FINISH GRADES.
5. AT A MINIMUM, TREES AND SHRUBS SHALL BE WATERED BY FLOODING AS FOLLOWS: MONTH 0–3: ONCE PER WEEK MONTH 3–6: TWICE PER MONTH MONTH 6–12: ONCE PER MONTH INCREASE WATERING FREQUENCY TO ACCOUNT FOR DROUGHT CONDITIONS AS REQUIRED.
6. TURF AREAS TO BE WATERED AND MOWED UNTIL ACCEPTED.
7. CONSERVATION SEED MIX AREA TO BE WATERED IF NECESSARY FOR ESTABLISHMENT
8. ALL SIGNAGE LIGHTING SHALL COMPLY WITH WALPOLE ZONING BY–LAWS PER SECTION 7. ALL SIGNAGE LIGHTING SHALL BE LIMITED TO WHITE STEADY, STATIONARY LIGHT OF A REASONABLE INTENSITY THAT IS DIRECTED SOLELY AT THE SIGN AND SHIELDED FROM ABUTTING PARCELS.
9. LANDSCAPE LIGHTING SHALL BE LIMITED TO LIGHTING OF TREES, SHRUBS, OR OTHER PLANT MATERIAL. LIGHTING SHALL BE "LOW–LEVEL LIGHT FIXTURES" (3 FEET OR LOWER) AND ONLY BE DIRECTED IN A DOWNWARD FACING DIRECTION. SEASONAL LIGHTING SHALL NOT BE PERMITTED FOR LONGER THAN A SIX–WEEK PERIOD IN ANY CALENDAR YEAR.

james k. emmanuel | associates
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22 Carlton Rd.
Marblehead, MA 01945
tel. (781) 622-7487
james@jamesemmanuel.com
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PLANTING NOTES

1. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE IS PROVIDED IN THE PLANT LIST FOR CONTRACTORS CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LIST AND THE NUMBER SHOWN ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.
2. ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.
3. PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE.
4. THE CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES PRIOR TO PLANTING. ANY CONFLICTS BETWEEN PLANTING AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
5. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTS AGAINST DAMAGE FROM ON–GOING CONSTRUCTION. PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL FORMAL ACCEPTANCE OF ALL PLANTING.
7. ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL BE LOAMED 6" AND SEEDED.

STREET TREE PLANTINGS

Plant Schedule

	Botanical Name	Common Name	Size
DECIDUOUS TREE OPTIONS:			
	Acer rubrum 'Red Sunset'	Red Sunset Maple	2"cal
	Acer saccharum 'Green Mountain'	Sugar Maple	2"cal
**	Carpinus caroliniana	American Hornbeam	2"cal
	Carya ovata	Shagbark Hickory	2"cal
	Ostrya virginiana	Hophornbeam	2"cal
**	Platanus x acerifolia	London Planetree	2"cal
**	Quercus coccinea	Scarlet Oak	2"cal
**	Quercus palustris	Pin Oak	2"cal
**	Tilia americana	Basswood	2"cal
**	Tilia cordata 'Greenspire'	Greenspire Linden	2"cal
**	Zelkova serrata	Japanese Zelkova	2"cal

TOWN OF WALPOLE CONSERVATION COMMISSION NOTES:

1. INCLUDE LANDSCAPE PLAN FOR AREAS WITHIN THE 100–FOOT BUFFER ZONE SPECIFYING INVASIVE SPECIES MAINTENANCE PLAN, REMOVAL OF GRASS CLIPPING AND CUTTINGS OUTSIDE THE BUFFER ZONES, LIMIT USE OF NON–ORGANIC FERTILIZERS AND NO HERBICIDES OR PESTICIDES, AND DROUGHT RESISTANT NATIVE PLANTINGS.

Conservation Seed Mix

Creeping Red Fescue, (Festuca rubra), Canada Wild Rye, (Elymus canadensis), Annual Ryegrass, (Lolium multiflorum), Perennial Ryegrass, (Lolium perenne), Blue Grama, (Bouteloua gracilis), Little Bluestem, (Schizachyrium scoparium), Indian Grass, (Sorghastrum nutans), Rough Bentgrass, (Agrostis scabra), Upland Bentgrass, (Agrostis perennans

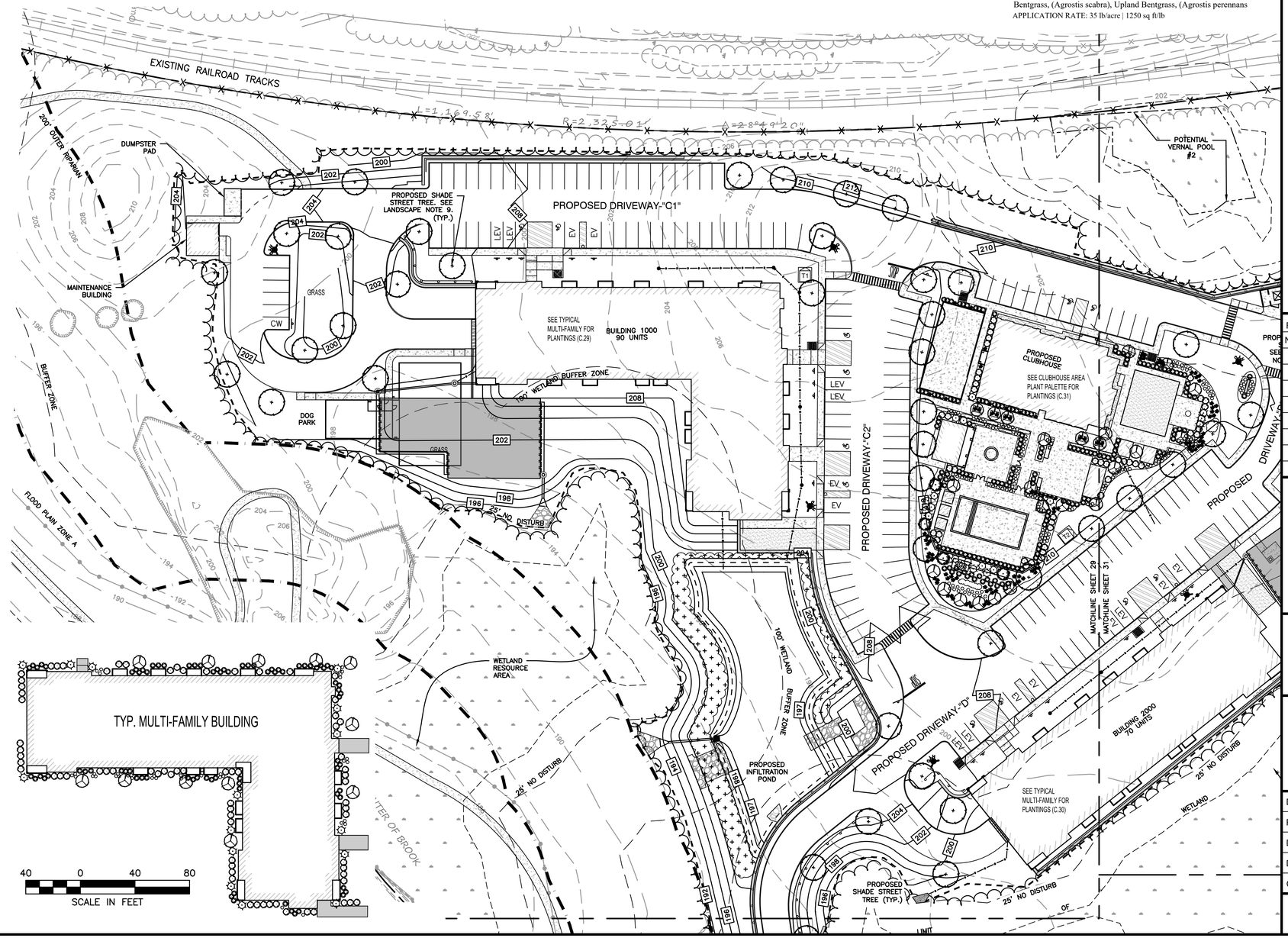
APPLICATION RATE: 35 lb/acre | 1250 sq ft/lb

MULTI-FAMILY PLANTINGS

SYMBOL				
QTY: 11	FLOWERING TREE OPTIONS:			
		Cercis candensis	Eastern Redbud	2"cal
		Cornus florida	White Dogwood	2"cal
	**	Cornus kousa	Korean Dogwood	2"cal
	**	Cornus mas	Corneliancherry	2"cal
	**	Crataegus phaenopyrum	Washington Hawthorne	2"cal
		Magnolia x soulangiana	Saucer Magnolia	8-10'
	**	Sophora japonica	Japanese Pagodatree	2"cal
QTY: 12	MULTI-FAMILY EVERGREEN TREE OPTIONS:			
	**	Juniperus chinensis 'Blue Point'	Blue Point Juniper	6'
	**	Juniperus chinensis 'Mountbatten'	Mountbatten Juniper	6'
	**	Juniperus virginiana	Eastern Red Cedar	6'
	**	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6'
		Thuja x plicata 'Green Giant'	Green Giant Arborvitae	6'
QTY: 117	SHRUB OPTIONS:			
		Cornus alba 'Elegantissima'	Varigated Red Twig Dogwood	2-3'
		Cornus racemosa	Grey Dogwood	2-3'
	**	Forsythia	Forsythia	2-3'
		Ilex glabra 'Shamrock'	Shamrock Inkberry	2-3'
		Ilex verticillata	Winterberry	2-3'
	**	Itea virginica	Virginia Sweetspire	2-3'
		Kalmia latifolia	Mountain Laurel	2-3'
	**	Myrica pennsylvanica	Northern Bayberry	2-3'
	**	Physocarpus opulifolius 'Monlo'	Diabolo Ninebark	2-3'
		Prunus Maratima	Beach Plum	2-3'
	**	Syringa vulgaris	Common Lilac	2-3'
	**	Viburnum dentatum	Arrowwood	2-3'

Clubhouse Area Plant Palette

SYMBOL		Botanical Name	Common Name	Size
QTY: 14	DECIDUOUS TREE OPTIONS:			
		Acer rubrum 'Red Sunset'	Red Sunset Maple	2"cal
	**	Platanus x acerifolia	London Planetree	2"cal
	**	Quercus coccinea	Scarlet Oak	2"cal
	**	Quercus palustris	Pin Oak	2"cal
	**	Tilia americana	Basswood	2"cal
	**	Tilia cordata 'Greenspire'	Greenspire Linden	2"cal
	**	Zelkova serrata	Japanese Zelkova	2"cal
QTY: 27	EVERGREEN TREE OPTIONS:			
	**	Abies concolor	White Fir	6'
	**	Picea glauca	White Spruce	6'
	**	Picea pungens 'Bakeri'	Bakers Blue Spruce3	6'
	**	Juniperus chinensis 'Blue Point'	Blue Point Juniper	6'
	**	Juniperus virginiana	Eastern Red Cedar	6'
	**	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6'
		Thuja x plicata 'Green Giant'	Green Giant Arborvitae	6'
QTY: 500	SHRUB OPTIONS:			
		Cornus alba 'Elegantissima'	Varigated Red Twig Dogwood	2-3'
		Cornus racemosa	Grey Dogwood	2-3'
	**	Forsythia	Forsythia	2-3'
		Ilex glabra 'Shamrock'	Shamrock Inkberry	2-3'
		Ilex verticillata	Winterberry	2-3'
	**	Itea virginica	Virginia Sweetspire	2-3'
		Kalmia latifolia	Mountain Laurel	2-3'
	**	Myrica pennsylvanica	Northern Bayberry	2-3'
	**	Physocarpus opulifolius 'Monlo'	Diabolo Ninebark	2-3'
		Prunus Maratima	Beach Plum	2-3'
	**	Syringa vulgaris	Common Lilac	2-3'
	**	Viburnum dentatum	Arrowwood	2-3'
		Rhus aromatica 'Gro-Low'	Grow Low Sumac	18-24"
		Kalmia angustifolia	Sheep Laurel	18-24"
		Buxus sempervirens	Green Velvet Boxwood	18-24"
		Taxus medai 'Greenwave'	Greenwave Yew	18-24"
QTY: 26	FLOWERING TREE OPTIONS:			
		Cercis candensis	Eastern Redbud	2"cal
		Cornus florida	White Dogwood	2"cal
	**	Cornus kousa	Korean Dogwood	2"cal
	**	Cornus mas	Corneliancherry	2"cal
	**	Crataegus phaenopyrum	Washington Hawthorne	2"cal
		Magnolia x soulangiana	Saucer Magnolia	8-10'
	**	Sophora japonica	Japanese Pagodatree	2"cal



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PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

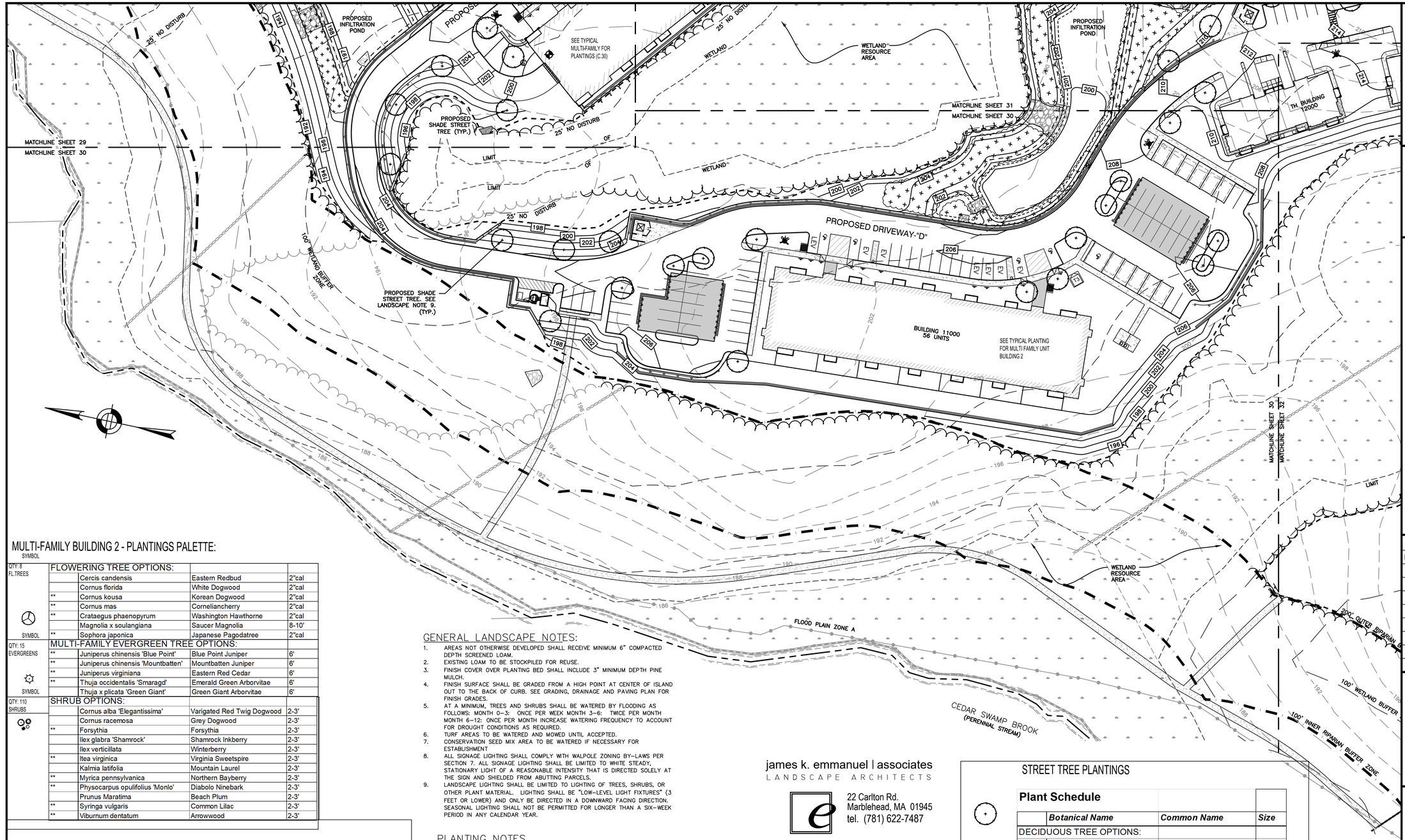
LANDSCAPING PLAN 1 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.29

SHEET 29 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Landscape Plan.dwg
Matthew Baker



MULTI-FAMILY BUILDING 2 - PLANTINGS PALETTE:

SYMBOL				
QTY: 8 FL.TREES	FLOWERING TREE OPTIONS:			
		Cercis candensis	Eastern Redbud	2"cal
		Cornus florida	White Dogwood	2"cal
	**	Cornus kousa	Korean Dogwood	2"cal
	**	Cornus mas	Corneliancherry	2"cal
	**	Crataegus phaenopyrum	Washington Hawthorne	2"cal
		Magnolia x soulangiana	Saucer Magnolia	8-10'
SYMBOL	**	Sophora japonica	Japanese Pagodatree	2"cal
QTY: 15 EVERGREENS	MULTI-FAMILY EVERGREEN TREE OPTIONS:			
	**	Juniperus chinensis 'Blue Point'	Blue Point Juniper	6'
	**	Juniperus chinensis 'Mountbatten'	Mountbatten Juniper	6'
	**	Juniperus virginiana	Eastern Red Cedar	6'
	**	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6'
SYMBOL		Thuja x plicata 'Green Giant'	Green Giant Arborvitae	6'
QTY: 110 SHRUBS	SHRUB OPTIONS:			
		Cornus alba 'Elegantissima'	Varigated Red Twig Dogwood	2-3'
		Cornus racemosa	Grey Dogwood	2-3'
	**	Forsythia	Forsythia	2-3'
		Ilex glabra 'Shamrock'	Shamrock Inkberry	2-3'
		Ilex verticillata	Winterberry	2-3'
	**	Itea virginica	Virginia Sweetspire	2-3'
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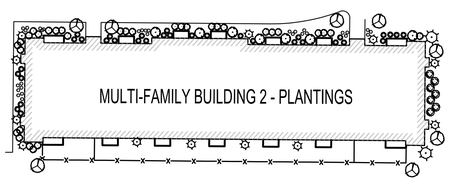
	**	Myrica pennsylvanica	Northern Bayberry	2-3'
	**	Physocarpus opulifolius 'Monlo'	Diabolo Ninebark	2-3'
		Prunus Maratima	Beach Plum	2-3'
	**	Syringa vulgaris	Common Lilac	2-3'
	**	Viburnum dentatum	Arrowwood	2-3'



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LANDSCAPE LEGEND

PROPOSED DECIDUOUS TREE

PROPOSED SHRUBS

40 0 40 80
SCALE IN FEET

STREET TREE PLANTINGS

Plant Schedule

	Botanical Name	Common Name	Size
DECIDUOUS TREE OPTIONS:			
	Acer rubrum 'Red Sunset'	Red Sunset Maple	2"cal
	Acer saccharum 'Green Mountain'	Sugar Maple	2"cal
**	Carpinus caroliniana	American Hornbeam	2"cal
	Carya ovata	Shagbark Hickory	2"cal
	Ostrya virginiana	Hophornbeam	2"cal
**	Platanus x acerifolia	London Planetree	2"cal
**	Quercus coccinea	Scarlet Oak	2"cal
**	Quercus palustris	Pin Oak	2"cal
**	Tilia americana	Basswood	2"cal
**	Tilia cordata 'Greenspire'	Greenspire Linden	2"cal
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Conservation Seed Mix

Creeping Red Fescue, (Festuca rubra), Canada Wild Rye, (Elymus canadensis), Annual Ryegrass, (Lolium multiflorum), Perennial Ryegrass, (Lolium perenne), Blue Grama, (Bouteloua gracilis), Little Bluestem, (Schizachyrium scoparium), Indian Grass, (Sorghastrum nutans), Rough Bentgrass, (Agrostis scabra), Upland Bentgrass, (Agrostis perennans

APPLICATION RATE: 35 lb/acre | 1250 sq ft/lb

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PREPARED FOR:

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PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

LANDSCAPING PLAN 2 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.30

SHEET 30 OF 62

6/13/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Landscape Plan.dwg
Matthew Baker

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STREET TREE PLANTINGS

Plant Schedule

	Botanical Name	Common Name	Size
DECIDUOUS TREE OPTIONS:			
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**	Platanus x acerifolia	London Planetree	2"cal
**	Quercus coccinea	Scarlet Oak	2"cal
**	Quercus palustris	Pin Oak	2"cal
**	Tilia americana	Basswood	2"cal
**	Tilia cordata 'Greenspire'	Greenspire Linden	2"cal
**	Zelkova serrata	Japanese Zelkova	2"cal
EVERGREEN TREE OPTIONS:			
**	Abies concolor	White Fir	6'
**	Picea abies	Norway Spruce	6'
**	Picea glauca	White Spruce	6'
**	Picea omorika	Serbian Spruce	6'
**	Picea pungens 'Glauca'	Colorado Blue Spruce	6'

CLUBHOUSE AREA PLANTINGS

SYMBOL				
QTY: As Shown	FLOWERING TREE OPTIONS:			
		Cercis candensis	Eastern Redbud	2"cal
		Cornus florida	White Dogwood	2"cal
	**	Cornus kousa	Korean Dogwood	2"cal
	**	Cornus mas	Corneliancherry	2"cal
	**	Crataegus phaenopyrum	Washington Hawthorne	2"cal
		Magnolia x soulangiana	Saucer Magnolia	8-10'
	**	Sophora japonica	Japanese Pagodatree	2"cal
QTY: As Shown	SHRUB OPTIONS:			
		Cornus alba 'Elegantissima'	Varigated Red Twig Dogwood	2-3'
		Cornus racemosa	Grey Dogwood	2-3'
	**	Forsythia	Forsythia	2-3'
		Ilex glabra 'Shamrock'	Shamrock Inkberry	2-3'
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	**	Viburnum dentatum	Arrowwood	2-3'

LANDSCAPE LEGEND

- PROPOSED DECIDUOUS TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN
- PROPOSED SHRUBS

HIGH MARSH ZONE:

- 4400 CX – CAREX STRICTA – TUSSOCK SEDGE (3,800 SF±) 2" PLUG
- 3700 CV – CAREX VULPINOIDEA – FOX SEDGE (3,200 SF±) 2" PLUG
- 800 BV – VERBENA HASTATA – BLUE VERVAIN (720 SF±) 2" PLUG

NOTES:
1. POCKET WETLAND PLANTINGS TO CONFORM TO THE ABOVE PLANTING SCHEDULE OR ECOLOGICALLY SIMILAR SEDGE OR RUSH SPECIES.

LOW MARSH ZONE:

- 1250 BL – SCHOENOPLECTUS AMERICANUS – THREE SQUARE BULRUSH (4,300 SF±) 2" PLUG
- 800 SS – SCHOENOPLECTUS TABERNAEMONTANI – SOFT STEM BULRUSH (4,300 SF±) 2" PLUG

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Conservation Seed Mix

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APPLICATION RATE: 35 lb/acre | 1250 sq ft/lb

GENERAL LANDSCAPE NOTES:

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2. EXISTING LOAM TO BE STOCKPILED FOR REUSE.
3. FINISH COVER OVER PLANTING BED SHALL INCLUDE 3" MINIMUM DEPTH PINE MULCH.
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7. CONSERVATION SEED MIX AREA TO BE WATERED IF NECESSARY FOR ESTABLISHMENT
8. ALL SIGNAGE LIGHTING SHALL COMPLY WITH WALPOLE ZONING BY–LAWS PER SECTION 7. ALL SIGNAGE LIGHTING SHALL BE LIMITED TO WHITE STEADY, STATIONARY LIGHT OF A REASONABLE INTENSITY THAT IS DIRECTED SOLELY AT THE SIGN AND SHIELDED FROM ABUTTING PARCELS.
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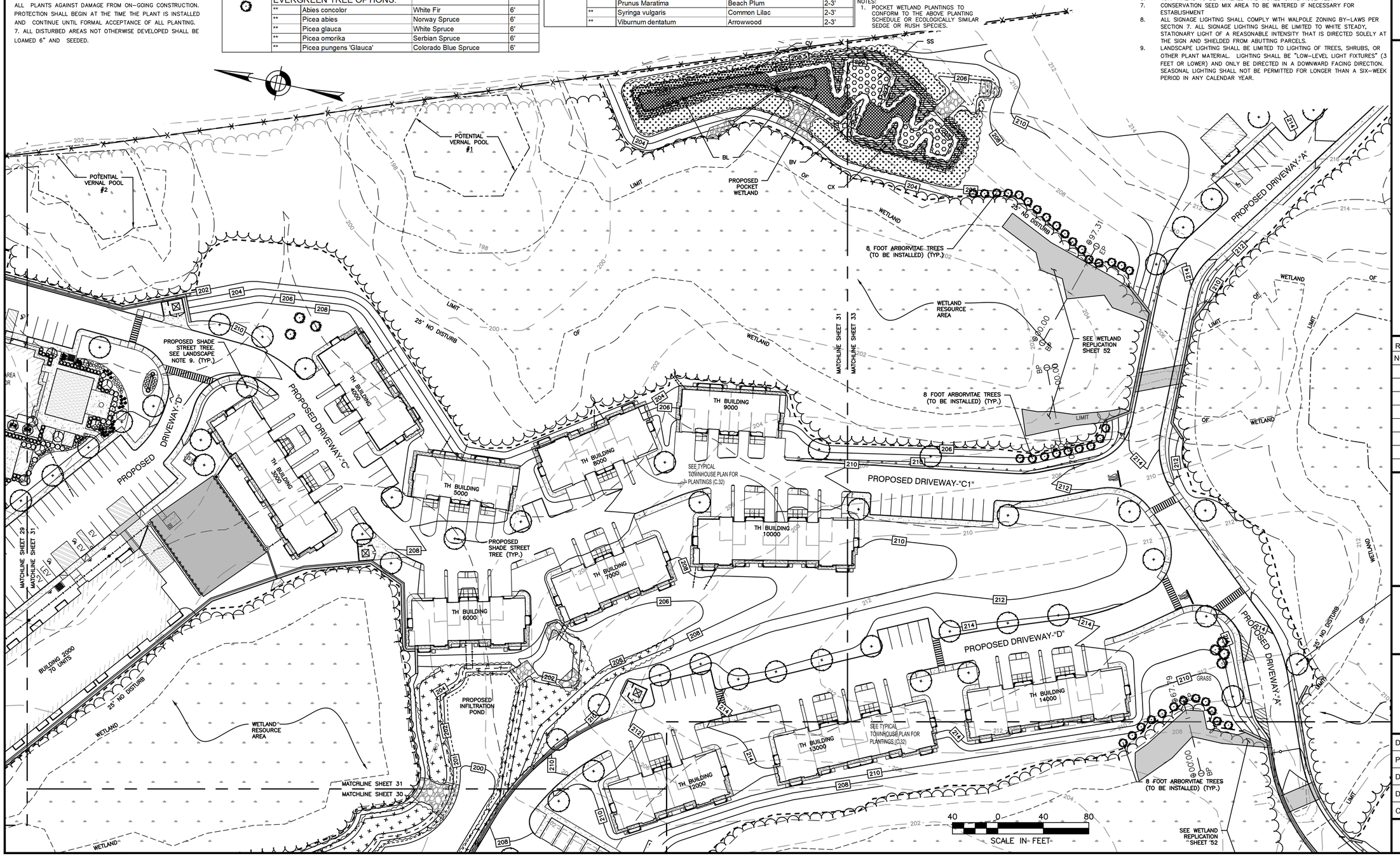

HOWARD STEIN HUDSON
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www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

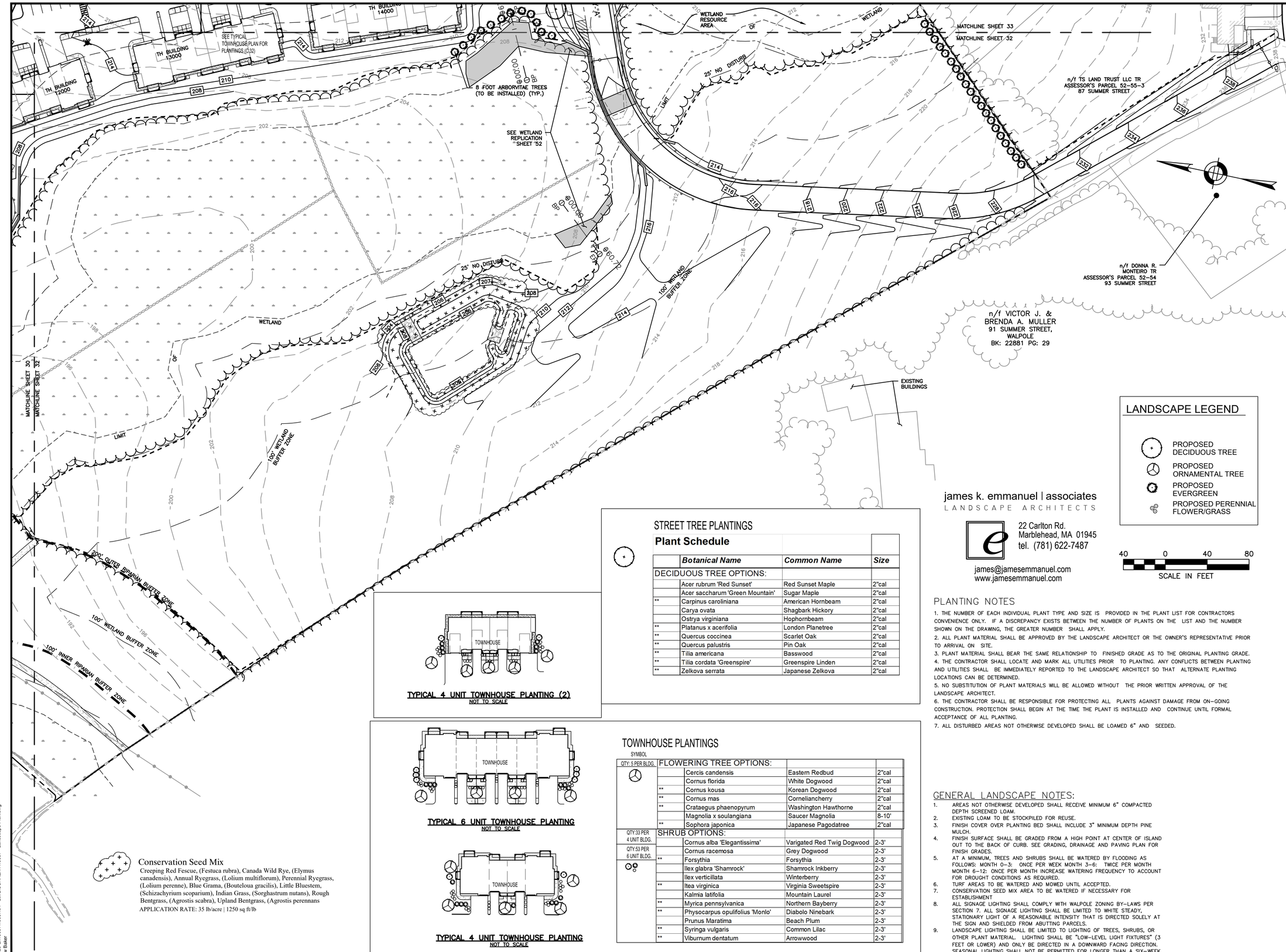
LANDSCAPING PLAN 3 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.31

SHEET 31 OF 62

01/18/2023 L:\1\1909\1\19097.04 - Lot 2\CURRENT\19097 - Landscape Plan.dwg
Matthew Baker



LANDSCAPE LEGEND

- PROPOSED DECIDUOUS TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN
- PROPOSED PERENNIAL FLOWER/GRASS

40 0 40 80
SCALE IN FEET

STREET TREE PLANTINGS

Plant Schedule

	Botanical Name	Common Name	Size
DECIDUOUS TREE OPTIONS:			
	Acer rubrum 'Red Sunset'	Red Sunset Maple	2"cal
	Acer saccharum 'Green Mountain'	Sugar Maple	2"cal
**	Carpinus caroliniana	American Hornbeam	2"cal
	Carya ovata	Shagbark Hickory	2"cal
	Ostrya virginiana	Hophornbeam	2"cal
**	Platanus x acerifolia	London Planetree	2"cal
**	Quercus coccinea	Scarlet Oak	2"cal
**	Quercus palustris	Pin Oak	2"cal
**	Tilia americana	Basswood	2"cal
**	Tilia cordata 'Greenspire'	Greenspire Linden	2"cal
**	Zelkova serrata	Japanese Zelkova	2"cal

TYPICAL 4 UNIT TOWNHOUSE PLANTING (2)
NOT TO SCALE

TYPICAL 6 UNIT TOWNHOUSE PLANTING
NOT TO SCALE

TYPICAL 4 UNIT TOWNHOUSE PLANTING
NOT TO SCALE

TOWNHOUSE PLANTINGS

SYMBOL		Botanical Name	Common Name	Size
QTY: 5 PER BLDG.	FLOWERING TREE OPTIONS:			
		Cercis candensis	Eastern Redbud	2"cal
		Cornus florida	White Dogwood	2"cal
	**	Cornus kousa	Korean Dogwood	2"cal
	**	Cornus mas	Corneliancherry	2"cal
	**	Crataegus phaenopyrum	Washington Hawthorne	2"cal
		Magnolia x soulangiana	Saucer Magnolia	8-10'
	**	Sophora japonica	Japanese Pagodatree	2"cal
QTY:33 PER 4 UNIT BLDG.	SHRUB OPTIONS:			
		Cornus alba 'Elegantissima'	Varigated Red Twig Dogwood	2-3'
		Cornus racemosa	Grey Dogwood	2-3'
QTY:53 PER 6 UNIT BLDG.	**	Forsythia	Forsythia	2-3'
		Ilex glabra 'Shamrock'	Shamrock Inkberry	2-3'
		Ilex verticillata	Winterberry	2-3'
	**	Itea virginica	Virginia Sweetspire	2-3'
		Kalmia latifolia	Mountain Laurel	2-3'
	**	Myrica pennsylvanica	Northern Bayberry	2-3'
	**	Physocarpus opulifolius 'Monlo'	Diabolo Ninebark	2-3'
		Prunus Maratima	Beach Plum	2-3'
	**	Syringa vulgaris	Common Lilac	2-3'
	**	Viburnum dentatum	Arrowwood	2-3'

Conservation Seed Mix
Creeping Red Fescue, (Festuca rubra), Canada Wild Rye, (Elymus canadensis), Annual Ryegrass, (Lolium multiflorum), Perennial Ryegrass, (Lolium perenne), Blue Grama, (Bouteloua gracilis), Little Bluestem, (Schizachyrium scoparium), Indian Grass, (Sorghastrum nutans), Rough Bentgrass, (Agrostis scabra), Upland Bentgrass, (Agrostis perennans
APPLICATION RATE: 35 lb/acre | 1250 sq ft/lb

PLANTING NOTES

1. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE IS PROVIDED IN THE PLANT LIST FOR CONTRACTORS CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LIST AND THE NUMBER SHOWN ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.
2. ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.
3. PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE.
4. THE CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES PRIOR TO PLANTING. ANY CONFLICTS BETWEEN PLANTING AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
5. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTS AGAINST DAMAGE FROM ON-GOING CONSTRUCTION. PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL FORMAL ACCEPTANCE OF ALL PLANTING.
7. ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL BE LOAMED 6" AND SEEDED.

GENERAL LANDSCAPE NOTES:

1. AREAS NOT OTHERWISE DEVELOPED SHALL RECEIVE MINIMUM 6" COMPACTED DEPTH SCREENED LOAM.
2. EXISTING LOAM TO BE STOCKPILED FOR REUSE.
3. FINISH COVER OVER PLANTING BED SHALL INCLUDE 3" MINIMUM DEPTH PINE MULCH.
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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

LANDSCAPING PLAN 4 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.32

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - Landscape Plan.dwg
Matthew Bialler

Plant Schedule

	Botanical Name	Common Name	Size
DECIDUOUS TREE OPTIONS:			
	Acer rubrum 'Red Sunset'	Red Sunset Maple	2"cal
	Acer saccharum 'Green Mountain'	Sugar Maple	2"cal
**	Carpinus caroliniana	American Hornbeam	2"cal
	Carya ovata	Shagbark Hickory	2"cal
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**	Platanus x acerifolia	London Planetree	2"cal
**	Quercus coccinea	Scarlet Oak	2"cal
**	Quercus palustris	Pin Oak	2"cal
**	Tilia americana	Basswood	2"cal
**	Tilia cordata 'Greenspire'	Greenspire Linden	2"cal
**	Zelkova serrata	Japanese Zelkova	2"cal

Plant Schedule - Entry Plantings

Qty	Key	Botanical Name	Common Name	Size
TREES:				
6	PIGL	Picea glauca	White Spruce	6-7'
SHRUBS/PERENNIALS:				
10	CORE	Cornus racemosa	Gray Dogwood	#3pot
12	JUOW	Juniperus virginiana 'Grey Owl'	Grey Owl Cedar	#5pot
16	LISP	Liriope spicata	Creeping Lilyturf	#1pot
28	PEAT	Perovskia atriplicifolia 'Little Spire'	Little Spire Russian Sage	#1pot

FLOWERING TREE OPTIONS:			
	Cercis candensis	Eastern Redbud	2"cal
	Cornus florida	White Dogwood	2"cal
**	Cornus kousa	Korean Dogwood	2"cal
**	Cornus mas	Corneliancherry	2"cal
**	Crataegus phaenopyrum	Washington Hawthorne	2"cal
	Magnolia x soulangiana	Saucer Magnolia	8-10'
**	Sophora japonica	Japanese Pagodatree	2"cal

EVERGREEN TREE OPTIONS:			
**	Abies concolor	White Fir	6'
**	Picea abies	Norway Spruce	6'
**	Picea glauca	White Spruce	6'
**	Picea omorika	Serbian Spruce	6'
**	Picea pungens 'Glauca'	Colorado Blue Spruce	6'
**	Pinus thunbergii	Japanese Black Pine	6'
	Tsuga canadensis	Hemlock	6'
**	Juniperus chinensis 'Blue Point'	Blue Point Juniper	6'
**	Juniperus chinensis 'Mountbatten'	Mountbatten Juniper	6'
**	Juniperus virginiana	Eastern Red Cedar	6'
**	Pinus resinosa	Red Pine	6'
**	Pinus strobus	White Pine	6'
**	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6'
	Thuja x plicata 'Green Giant'	Green Giant Arborvitae	6'

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Conservation Seed Mix

Creeping Red Fescue, (Festuca rubra), Canada Wild Rye, (Elymus canadensis), Annual Ryegrass, (Lolium multiflorum), Perennial Ryegrass, (Lolium perenne), Blue Grama, (Bouteloua gracilis), Little Bluestem, (Schizachyrium scoparium), Indian Grass, (Sorghastrum nutans), Rough Bentgrass, (Agrostis scabra), Upland Bentgrass, (Agrostis perennans

APPLICATION RATE: 35 lb/acre | 1250 sq ft/lb

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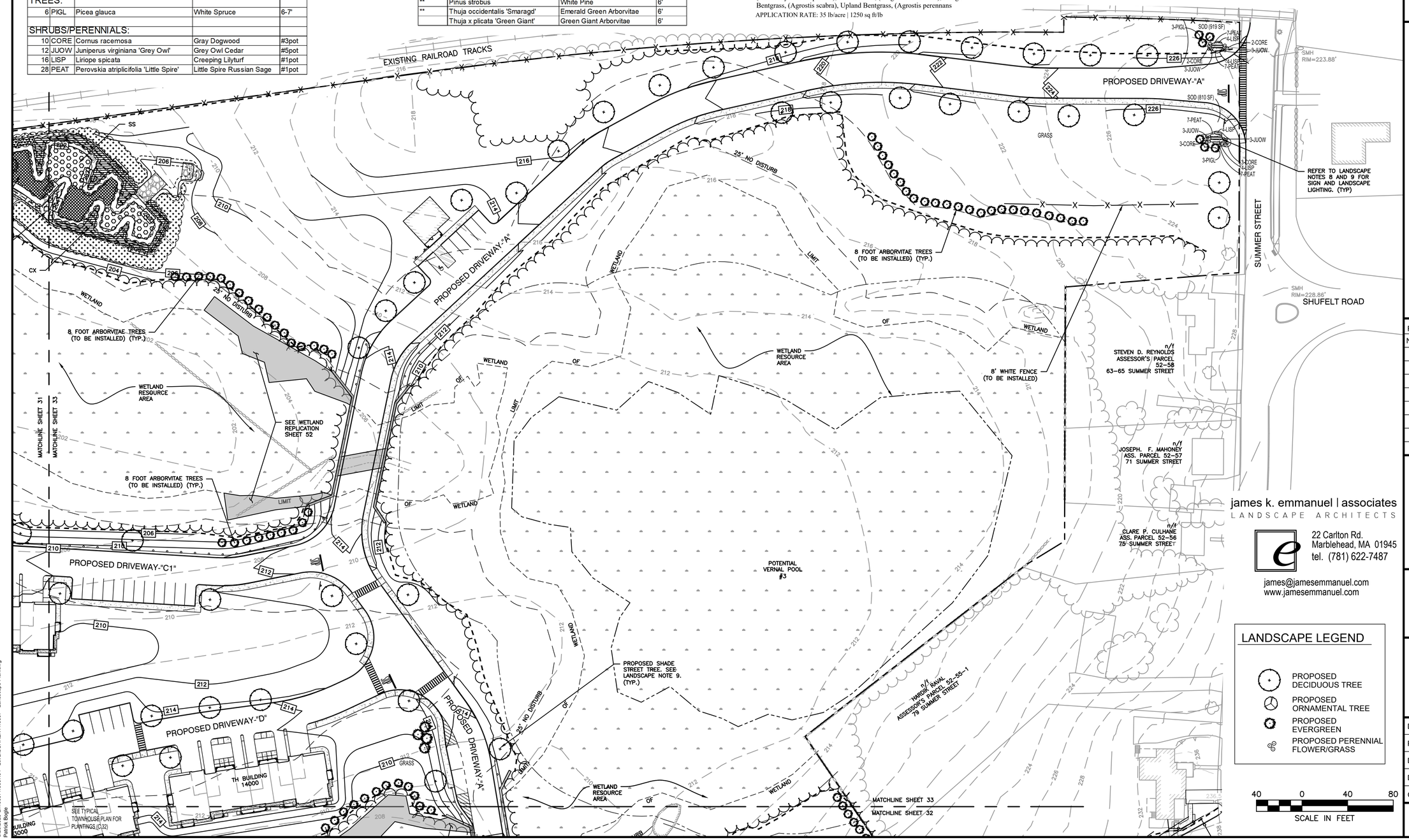

LANDSCAPE LEGEND

- PROPOSED DECIDUOUS TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN
- PROPOSED PERENNIAL FLOWER/GRASS

40 0 40 80
SCALE IN FEET

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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

james k. emmanuel | associates
LANDSCAPE ARCHITECTS
22 Carlton Rd.
Marblehead, MA 01945
tel. (781) 622-7487
james@jamesemmanuel.com
www.jamesemmanuel.com

SITE PLAN

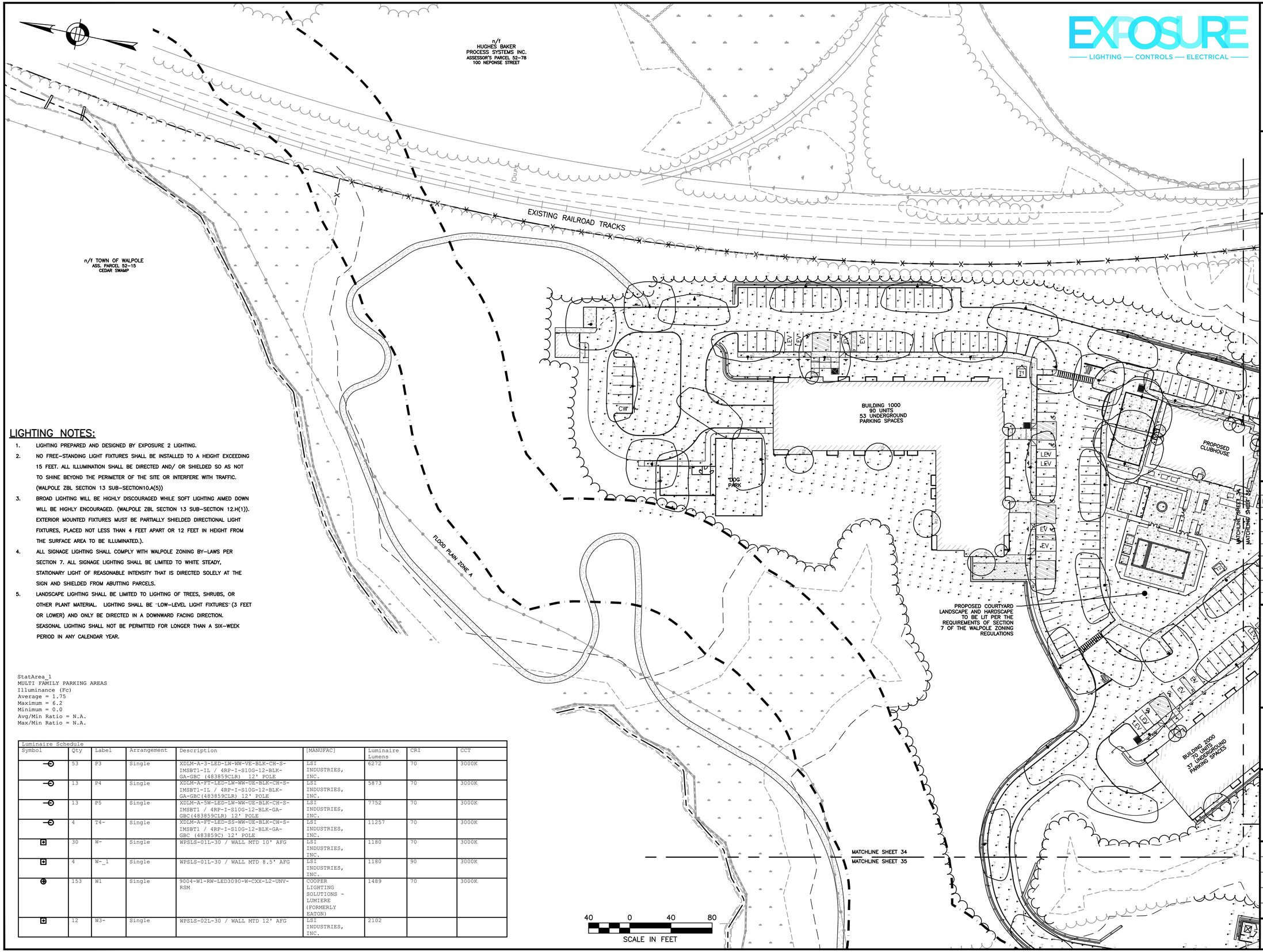
LANDSCAPING PLAN 5 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.33

SHEET 33 OF 62

6/20/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Landscape Plan.dwg
Plotted: Bigler



LIGHTING NOTES:

1. LIGHTING PREPARED AND DESIGNED BY EXPOSURE 2 LIGHTING.
2. NO FREE-STANDING LIGHT FIXTURES SHALL BE INSTALLED TO A HEIGHT EXCEEDING 15 FEET. ALL ILLUMINATION SHALL BE DIRECTED AND/ OR SHIELDED SO AS NOT TO SHINE BEYOND THE PERIMETER OF THE SITE OR INTERFERE WITH TRAFFIC. (WALPOLE ZBL SECTION 13 SUB-SECTION10.A(5))
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StatArea_1
MULTI FAMILY PARKING AREAS
Illuminance (Fc)
Average = 1.75
Maximum = 6.2
Minimum = 0.0
Avg/Min Ratio = N.A.
Max/Min Ratio = N.A.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description	[MANUFAC]	Luminaire Lumens	CRI	CCT
	53	P3	Single	XDLM-A-3-LED-LW-WW-VE-BLK-CH-S-IMSBT1-IL / 4RP-I-S10G-12-BLK-GA-GBC (483859CLR) 12' POLE	LSI INDUSTRIES, INC.	6272	70	3000K
	13	P4	Single	XDLM-A-PT-LED-LW-WW-UE-BLK-CH-S-IMSBT1-IL / 4RP-I-S10G-12-BLK-GA-GBC(483859CLR) 12' POLE	LSI INDUSTRIES, INC.	5873	70	3000K
	13	P5	Single	XDLM-A-5W-LED-LW-WW-UE-BLK-CH-S-IMSBT1 / 4RP-I-S10G-12-BLK-GA-GBC(483859CLR) 12' POLE	LSI INDUSTRIES, INC.	7752	70	3000K
	4	T4-	Single	XDLM-A-PT-LED-SS-WW-UE-BLK-CH-S-IMSBT1 / 4RP-I-S10G-12-BLK-GA-GBC (483859C) 12' POLE	LSI INDUSTRIES, INC.	11257	70	3000K
	30	W-	Single	WPSLS-01L-30 / WALL MTD 10' AFG	LSI INDUSTRIES, INC.	1180	70	3000K
	4	W-_1	Single	WPSLS-01L-30 / WALL MTD 8.5' AFG	LSI INDUSTRIES, INC.	1180	90	3000K
	153	W1	Single	9004-W1-RW-LED3090-W-CXX-L2-UNV-RSM	COOPER LIGHTING SOLUTIONS - LUMIERE (FORMERLY EATON)	1489	70	3000K
	12	W3-	Single	WPSLS-02L-30 / WALL MTD 12' AFG	LSI INDUSTRIES, INC.	2102		

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Lighting Plan.dwg
Matthew Bieber

EXPOSURE
LIGHTING — CONTROLS — ELECTRICAL

HOWARD STEIN HUDSON
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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

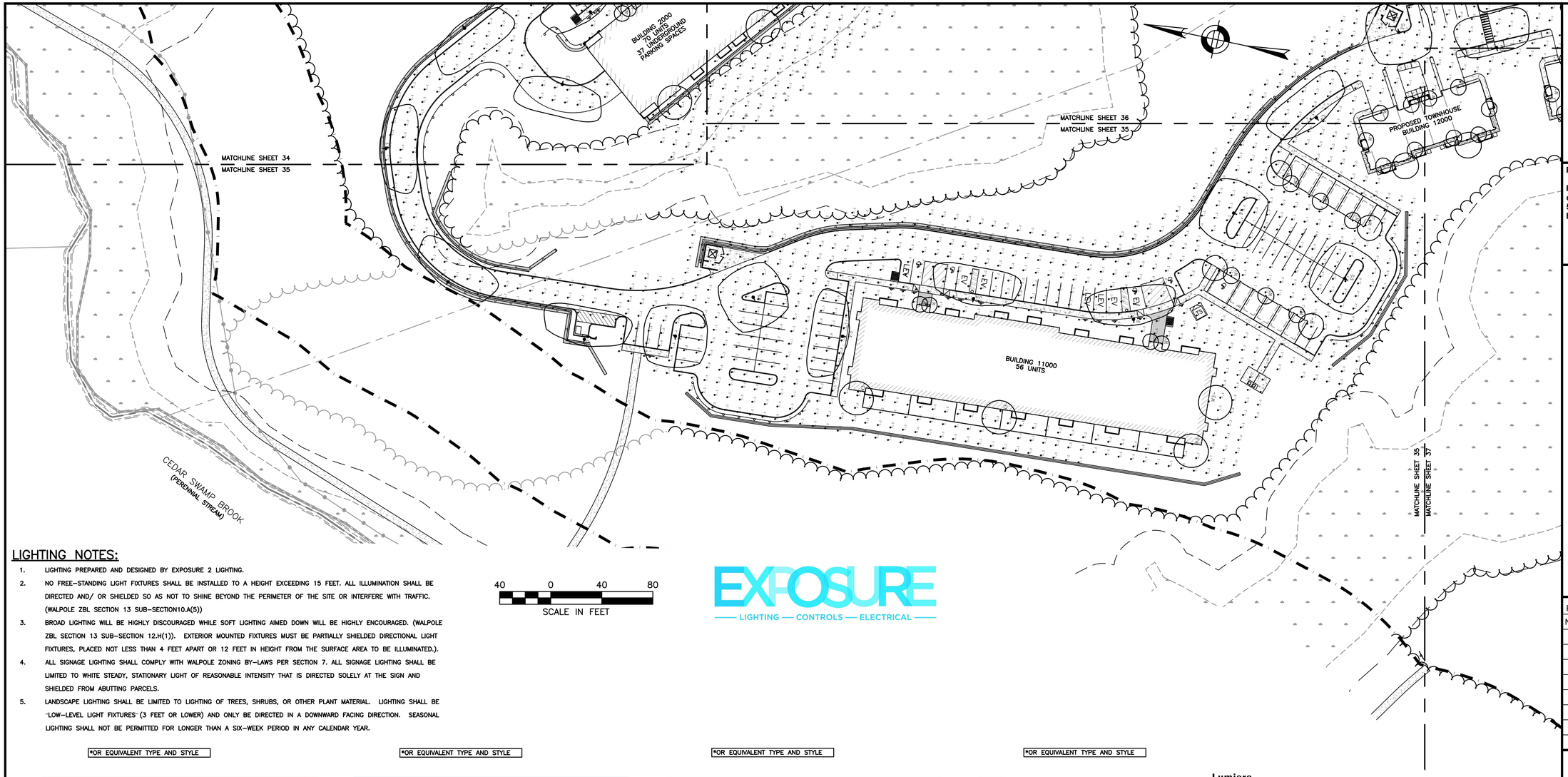
NO	BY	DATE	DESCRIPTION

SITE PLAN

LIGHTING PLAN 1 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.34



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40 0 40 80
SCALE IN FEET

EXPOSURE
LIGHTING — CONTROLS — ELECTRICAL

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SITE PLAN

LIGHTING PLAN 2 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.35

SHEET 35 OF 62

*OR EQUIVALENT TYPE AND STYLE

Project		Catalog #		Type	
Prepared by		Notes		Date	

Lumark
Axcent
Wall Mount Luminaire

Product Features

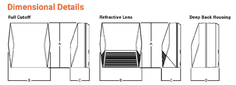
Interactive Menu
- Ordering Information page 2
- Mounting Details page 3
- Product Specifications page 4
- Energy and Performance Data page 4
- Control Options page 5

Product Certifications

Quick Facts
- Available in 14W - 123W (1,800 - 17,000 lumens) models
- Full cutoff and refractive lens models available
- Energy and maintenance savings up to 95% compared to HID
- Energy efficient illumination results in up to 144 LPW
- Replaces 70W up to 450W HID equivalents

Connected Systems
- WaveLinx Lite
- Enlighted

Dimensional Details



Dimensional Data

	AXCS Small	AXCL Large
A	8" [202mm]	11-1/2" [292mm]
B	7-1/2" [190mm]	10-3/4" [273mm]
C	3-5/8" [84mm]	4-7/8" [124mm]
D	9-1/8" [135mm]	7-1/8" [181mm]

*OR EQUIVALENT TYPE AND STYLE

Project		Catalog #		Type	
Prepared by		Notes		Date	

Lumière
EON 303-B1-LEDB1
Bollard

Typical Applications
• Hospitality • Commerical Landscape • Outdoor Area/Site • Residential • Architectural

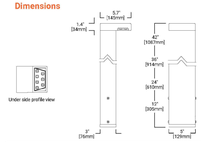
Interactive Menu
- Order Information page 2
- Product Specifications page 2
- Lumen Maintenance page 3
- Product Warranty

Product Certification

Product Features

Top Product Features
- Full Cut Off downlight, 12", 24", 36" or 42" height
- 2700K, 3000K or 3500 or 4000K Color Temperature and Amber (585-595nm)
- Type II, Type IV or Type V Optics with clear glass sealed lens
- Patented AccuLED OpticsTM System
- Universal Input LED Driver Included (120 - 277V, 50/60 Hz)
- ELV or 0-10 Dimming

Dimensions



TECHNICAL DATA
50°C Maximum Temperature Rating
External Supply Wiring 90°C Minimum

*OR EQUIVALENT TYPE AND STYLE

Project		Catalog #		Type	
Prepared by		Notes		Date	

Lumière
EON 303-S1-LEDB1
Ceiling / Wall Mount

Typical Applications
• Hospitality • Commerical Landscape • Outdoor Area/Site • Residential • Architectural

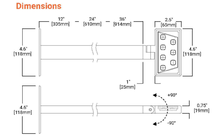
Interactive Menu
- Order Information page 2
- Product Specifications page 2
- Lumen Maintenance page 3
- Product Warranty

Product Certification

Product Features

Top Product Features
- 180° Adjustability at the knuckle
- 2700K, 3000K, 3500K or 4000K Color Temperature and Amber (585-595nm)
- Forward/Lateral Throw or Flood Optics with diffuse glass sealed lens
- Patented AccuLED OpticsTM System
- Universal Input LED Driver Included (120 - 277V, 50/60 Hz)
- ELV or 0-10 Dimming

Dimensions



TECHNICAL DATA
40°C Maximum Temperature Rating
External Supply Wiring 90°C Minimum

*OR EQUIVALENT TYPE AND STYLE

Lumiere

Catalog #		Type
Project		
Comments		Date
Prepared by		

DESCRIPTION

Lanterra 9004-W1 (Up or Down) and 9004-W2 (Up and Down) are 4.25" O.D., line voltage cylinder fixtures with dimmable LED. The luminaire comes in various mountings, surface mount with integral driver in the housing, remote driver mount with round and square wall plates and square wall integral driver, all of which can be mounted over standard 4 inch J-box. The luminaire also comes with various field replaceable optics and premium color tuning option. It also comes with various lens, louvers and colors or dichroic filters, which can combine up to two at once to create multiple lighting effects. The fixture may be used indoors or outdoors and comes IP66 rating.

SPECIFICATION FEATURES

Material
Housing, hood and mounting stem are precision-machined from corrosion resistant billet stock 6061-T6 aluminum.

Finish
Fixtures constructed from 6061-T6 aluminum are double protected by an MIL-810 compliant premium PVD undercoating and polyester powder coat paint finish, surpassing the rigorous demands of the outdoor environment. A variety of standard colors are available.

Hood
Hood is removable and accepts up to two internal accessories at once (lenses, louvers and filters) to achieve multiple lighting effects. Hoop holes prevents water and mineral stains from collecting on the lens, even in the straight up position. The flush lens design reduces fixture height, minimizes debris collection and prevents water and mineral stains from collecting on the lens.

Gasket
Housing and hood are sealed with a high temperature silicone O-ring gasket to prevent water intrusion.

Lens
Tempered glass lens, factory sealed with high temperature silicone O-ring to prevent water intrusion and breakage due to thermal shock.

Hardware
Stainless steel hardware is standard to provide maximum corrosion resistance.

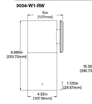
Electrical
Long life LED system coupled with electronic driver (120-277/50-60Hz) is compatible with TRIAC (Trailing Edge), ELV (forward phase) and 0-10V dimming to deliver optical performance. Light can be dimmed from 100-1% while maintaining constant CCT. It will operate in -30°C to 50°C unless noted otherwise. The driver incorporates surge protection. LED's are available in 2700K, 3000K, 3500K, at 90CRI and 5700K, 4000K, at 80CRI and 97CRI, 3500K at 90CRI and are industry leading high output with 97% lumen maintenance at 40,000hrs.

Compliance
Luminaires are UL recognized and luminaires are cULus listed for 50°C ambient environments unless noted otherwise, wet location listed, and FCSHS compliant. IP66 Rated. Options to meet Buy American Act requirements

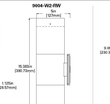
Warranty
Lumiere warrants the Lanterra series of fixtures against defects in material and workmanship for five (5) years. Auxiliary equipment such as LED drivers carries the original manufacturer's warranty.

DIMENSIONS

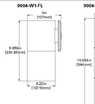
9004-W1-RW



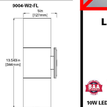
9004-W2-RW

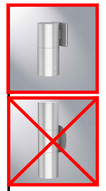


9004-W1-FL



9004-W2-FL





Lanterra 9004

LED
INTERIOR / EXTERIOR
CYLINDER FLOOD LIGHT
CERTIFICATION DATA
cULus - 1598
Wet Location Listed - IP66
LM79/LM80 Compliant
ROHS Compliant
10W LED, L70/102,000 @25° Celcius
20W LED, L70/102,000 @25° Celcius
30W LED, L70/102,000 @25° Celcius

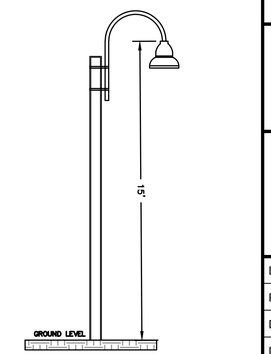
ORDERING INFORMATION

DOMESTIC PREFERENCES	SERIES	DIRECTION	HEAD	LED (CCT) & CRI	FIELD ADJUST.	FIELD ROTATE	FINISH	LIGHT LEVEL	VOLTAGE	MOUNTING	OPTIONS
Blank=Standard BAA=Buy American Act	9004	W1= Wall Mount W2= Wall Mount	Up or Down Up and Down	Standard CRI (2027K): 2700K, 80 CRI (3027K): 3000K, 80 CRI (3527K): 3500K, 80 CRI (4027K): 4000K, 80 CRI (5027K): 5000K, 80 CRI	S Spot M Medium F Flood W Wide Flood	S Spot M Medium F Flood W Wide Flood	Standard Paint Finish BK Black SV Sky Grey WT White	Light Level 1 (L1) Light Level 2 (L2) Light Level 3 (L3) Light Level Color 1 (LC1) Light Level Color 2 (LC2)	120- 277V	Surface Mount- Wall, Ceiling, Ground RSM Round Surface Mount- mounts directly to junction box Terminal Block Included (Standard) WM-BT-sm-C-xx 9004-SV WM-BT-sm-C-xx 9004-WT WM-BT-sm-C-xx 9004-BK1 Remote Driver Housing SRH - Remote Driver Housing - Round Wall Plate SRHS - Remote Driver Housing - Square Wall Plate Thermal Insulation (when otherwise noted NO) WM-BT-sm-C-xx 9004-BK WM-BT-sm-C-xx 9004-SV1 WM-BT-sm-C-xx 9004-WT1 Recessed SREC - Mini Integral Driver Plate Thermal Insulation (when otherwise noted NO) WM-BT-sm-C-xx 9004-BK WM-BT-sm-C-xx 9004-SV1 WM-BT-sm-C-xx 9004-WT1	STPTCP Short-stem integral sensor

Notes: 1. Not all combinations are available.
2. Lumens may vary ±10% and wattage may vary ±10% within published CCT and CRI.
3. Not all options are available in CCT, CRI and finish.
4. Not all options are available in CCT, CRI and finish.
5. Not all combinations are available. Consult factory for availability.
6. Not all combinations are available. Consult factory for availability.
7. Not all combinations are available. Consult factory for availability.
8. Not all combinations are available. Consult factory for availability.
9. Not all combinations are available. Consult factory for availability.
10. Not all combinations are available. Consult factory for availability.

Specifications and dimensions subject to change without notice.

NOTES:
1. REFER TO STRUCTURAL ENGINEER FOR LIGHT POLE BASE DESIGN.
2. THIS DETAIL IS FOR LIGHT POLE FIXTURE HEIGHT DETERMINATION ONLY.



TYPICAL LIGHT POST
SCALE: NOT TO SCALE

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - Lighting Plan.dwg
Matthew Baker

LIGHTING NOTES:

1. LIGHTING PREPARED AND DESIGNED BY EXPOSURE 2 LIGHTING.
2. NO FREE-STANDING LIGHT FIXTURES SHALL BE INSTALLED TO A HEIGHT EXCEEDING 15 FEET. ALL ILLUMINATION SHALL BE DIRECTED AND/ OR SHIELDED SO AS NOT TO SHINE BEYOND THE PERIMETER OF THE SITE OR INTERFERE WITH TRAFFIC. (WALPOLE ZBL SECTION 13 SUB-SECTION10.A(5))
3. BROAD LIGHTING WILL BE HIGHLY DISCOURAGED WHILE SOFT LIGHTING AIMED DOWN WILL BE HIGHLY ENCOURAGED. (WALPOLE ZBL SECTION 13 SUB-SECTION 12.H(1)). EXTERIOR MOUNTED FIXTURES MUST BE PARTIALLY SHIELDED DIRECTIONAL LIGHT FIXTURES, PLACED NOT LESS THAN 4 FEET APART OR 12 FEET IN HEIGHT FROM THE SURFACE AREA TO BE ILLUMINATED.).
4. ALL SIGNAGE LIGHTING SHALL COMPLY WITH WALPOLE ZONING BY-LAWS PER SECTION 7. ALL SIGNAGE LIGHTING SHALL BE LIMITED TO WHITE STEADY, STATIONARY LIGHT OF REASONABLE INTENSITY THAT IS DIRECTED SOLELY AT THE SIGN AND SHIELDED FROM ABUTTING PARCELS.
5. LANDSCAPE LIGHTING SHALL BE LIMITED TO LIGHTING OF TREES, SHRUBS, OR OTHER PLANT MATERIAL. LIGHTING SHALL BE "LOW-LEVEL LIGHT FIXTURES" (3 FEET OR LOWER) AND ONLY BE DIRECTED IN A DOWNWARD FACING DIRECTION. SEASONAL LIGHTING SHALL NOT BE PERMITTED FOR LONGER THAN A SIX-WEEK PERIOD IN ANY CALENDAR YEAR.

EXPOSURE
LIGHTING — CONTROLS — ELECTRICAL

RUCADUC POND

n/f OLD COLONY RAILROAD COMPANY

EXISTING RAILROAD TRACKS

MAIL KIOSK

MATCHLINE SHEET 36
MATCHLINE SHEET 38

MATCHLINE SHEET 34
MATCHLINE SHEET 35

PROPOSED TOWNHOUSE BUILDING 4000
PROPOSED TOWNHOUSE BUILDING 3000
PROPOSED TOWNHOUSE BUILDING 5000
PROPOSED TOWNHOUSE BUILDING 6000
PROPOSED TOWNHOUSE BUILDING 7000
PROPOSED TOWNHOUSE BUILDING 8000
PROPOSED TOWNHOUSE BUILDING 9000
PROPOSED TOWNHOUSE BUILDING 10000
PROPOSED TOWNHOUSE BUILDING 12000
PROPOSED TOWNHOUSE BUILDING 13000
PROPOSED TOWNHOUSE BUILDING 14000

BUILDING 2000
70 UNITS
37 UNDERGROUND PARKING SPACES

MATCHLINE SHEET 36
MATCHLINE SHEET 35

40 0 40 80
SCALE IN FEET

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

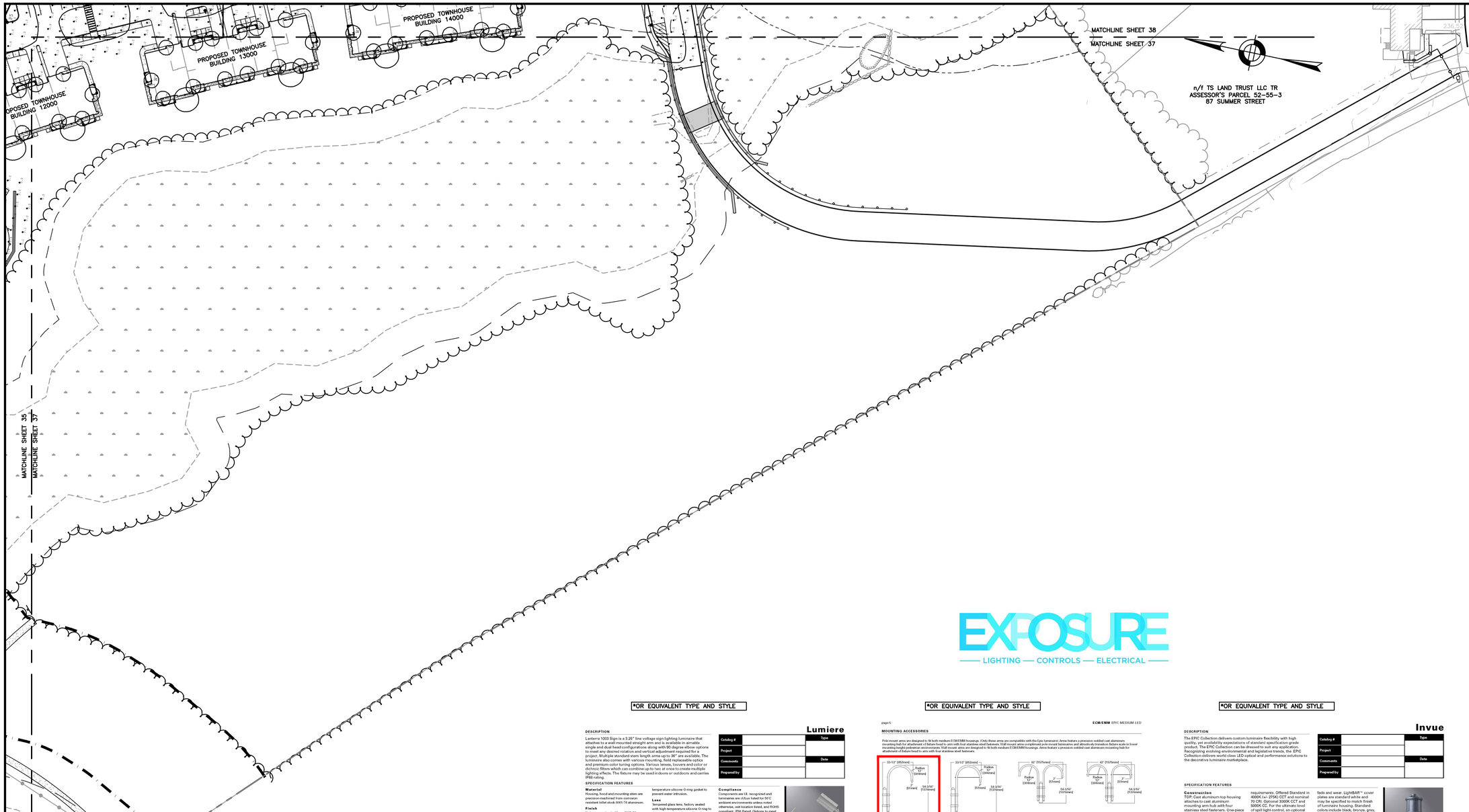
LIGHTING PLAN 3 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.36

SHEET 36 OF 62

6/19/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - Lighting Plan.dwg
Matthew Baker



LIGHTING NOTES:

1. LIGHTING PREPARED AND DESIGNED BY EXPOSURE 2 LIGHTING.
2. NO FREE-STANDING LIGHT FIXTURES SHALL BE INSTALLED TO A HEIGHT EXCEEDING 15 FEET. ALL ILLUMINATION SHALL BE DIRECTED AND/ OR SHIELDED SO AS NOT TO SHINE BEYOND THE PERIMETER OF THE SITE OR INTERFERE WITH TRAFFIC. (WALPOLE ZBL SECTION 13 SUB-SECTION10.A(5))
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4. ALL SIGNAGE LIGHTING SHALL COMPLY WITH WALPOLE ZONING BY-LAWS PER SECTION 7. ALL SIGNAGE LIGHTING SHALL BE LIMITED TO WHITE STEADY, STATIONARY LIGHT OF REASONABLE INTENSITY THAT IS DIRECTED SOLELY AT THE SIGN AND SHIELDED FROM ABUTTING PARCELS.
5. LANDSCAPE LIGHTING SHALL BE LIMITED TO LIGHTING OF TREES, SHRUBS, OR OTHER PLANT MATERIAL. LIGHTING SHALL BE "LOW-LEVEL LIGHT FIXTURES" (3 FEET OR LOWER) AND ONLY BE DIRECTED IN A DOWNWARD FACING DIRECTION. SEASONAL LIGHTING SHALL NOT BE PERMITTED FOR LONGER THAN A SIX-WEEK PERIOD IN ANY CALENDAR YEAR.

*OR EQUIVALENT TYPE AND STYLE

Lumiere

Catalog #		Type
Project		
Comments		Date
Prepared by		

DESCRIPTION

Lanterra 1003 Sign is a 3.25" line voltage sign lighting luminaire that attaches to a wall mounted straight arm and is available in armable single and dual head configurations along with 90 degree elbow options to meet any desired rotation and vertical adjustment required for a project. Multiple standard stem length arms up to 36" are available. The luminaire also comes with various mounting, field replaceable optics and premium color toning options. Various lenses, louvers and color or dichroic filters which can combine up to two at once to create multiple lighting effects. The fixture may be used indoors or outdoors and carries IP66 rating.

SPECIFICATION FEATURES

Material
Housing, hood and mounting stem are precision-machined from corrosion resistant billet stock 6061-T6 aluminum.

Finish
Fixtures constructed from 6061-T6 aluminum are double-protected by an ROHS compliant chemical film undercoating and polyester powder coat paint finish, surpassing the rigorous requirements of the outdoor environment. A variety of standard colors are available.

Hood
Hood is removable and accepts up to two optional accessories: Louvers, lenses, louvers and filters) to achieve multiple lighting effects. Weep holes prevents water and material stains from collecting on the lens, even in the straight up position. The flush lens design reduces fixture length, minimizes debris collection and prevents water and mineral stains from collecting on the lens.

Gasket
Housing and hood are sealed with a high temperature silicone O-ring gasket to prevent water intrusion.

Lens
Tempered glass lens, factory sealed with high temperature silicone O-ring to prevent water intrusion and breakage due to thermal stock.

Hardware
Stainless steel hardware is standard to provide maximum corrosion resistance.

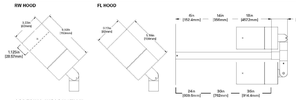
Electrical
Long life LED system coupled with electronic driver (120-277/50-60Hz) is compatible with TRIAC (Leading Edge Dimming), ELV (Trailing Edge Dimming) and 0-10V dimming to deliver optical performance. Light can be dimmed from 100-1% while maintaining constant CCT. Standard CCT is 3000K, 4000K unless noted otherwise. The driver incorporates surge protection, LED's are available in 2700K, 3000K, 3500K at 90CRI and 97CRI, 4000K at 80CRI and 97CRI, 5000K at 80CRI and are industry leading high output with 87% lumen maintenance at 60,000hrs.

Compliance
Components are UL recognized and luminaires are cULus listed for 55°C ambient environments unless noted otherwise, wet location listed, and ROHS compliant. IP66 Rated. Options to meet Buy American Act requirements

Warranty
Warranty supports the Lanterra series of fixtures against defects in material and workmanship for five (5) years. Auxiliary equipment such as LED drivers carries the original manufacturer's warranty.

Lanterra 1003

LED
INTERIOR / EXTERIOR
SIGN FLOOD LIGHT
CERTIFICATION DATA
cULus - 1598
Wet Location Listed - IP66
LM79/LM80 Compliant
ROHS Compliant
100W LED, L70/102,000@25° Celcius
20W LED, L70/162,000@25° Celcius



ORDERING INFORMATION

DOMESTIC PROVISIONS ▼	SERIES	NUMBER OF HEADS	MOUNTING STYLE	HOOD	OPTICS ▼	FINISH ▼	STEM LENGTH	LIGHT LEVEL	VOLTAGE	MOUNTING	OPTIONS
Blank Standard BAA Buy American Act	1003	S1 Single Head S2 Double Head 90 Elbow	ACS Center Rear Swivel with Cable Mounting Plate	Blank Standard Lens with Hood WP Lens with Hood - Outdoor RL Recessed Lens with Hood - Indoor FL Flush lens Hood	Standard CRI (70CRI, 80 CRI and 90CRI) 3500K, 4000K, 5000K 3500K, 4000K, 5000K 3500K, 4000K, 5000K Premium CRI (90CRI, 97 CRI) 3500K, 4000K, 5000K 3500K, 4000K, 5000K 3500K, 4000K, 5000K	Exterior Finish DB Dark Bronze WT White	12 12in 18 18in 24 24in 30 30in 36 36in	L1 Light Level 1 (50W) L2 Light Level 2 (100W) LC1 Light Level Color 1 (50W) LC2 Light Level Color 2 (100W)	120 120V	Surface Mount - Wall Ceiling Mount ECM Round Surface Mount mounts directly to junction box. Pedestal Pedestal Base Pedestal Driver Housing - Round Wall Mount WM Wall Mount Housing - Square Wall Mount Integral Integral Wall Mount WH Wall Integral Driver Pkg	SA1021 Standalone integral sensor

Notes: 1. Order 2 when requesting a matched pair. 2. Not available with 120V. 3. Not available with 347V. 4. Not available with 120V, 277V, 347V or 480V. 5. Not available with 347V or 480V. 6. Not available with 120V, 277V, 347V or 480V. 7. Not available with 120V, 277V, 347V or 480V. 8. Not available with 120V, 277V, 347V or 480V.

Note: Not all combinations are available for all products. Please refer to the Product Configurator Tool for the most accurate information. Actual appearance may vary depending on computer screen and electrical conditions.

Specifications and dimensions subject to change without notice.

COOPER Lighting Solutions

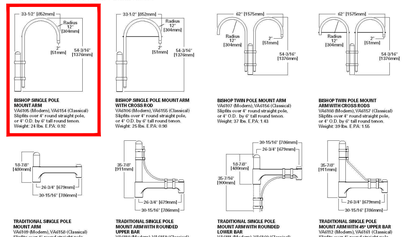
T25W060RFN
13 2021

*OR EQUIVALENT TYPE AND STYLE

ECM/EMM EPIC MEDIUM LED

MOUNTING ACCESSORIES

Pole-mount arms are designed to fit both medium ECM/EMM housings. (Only these arms are compatible with the Epic luminaire). Arms feature a precision welded cast aluminum mounting hub for attachment of fixture head to arm with four stainless steel fasteners. Wall mount arms compliment pole mount luminaires and attractively transition fixture scale to lower mounting height pedestrian environments. Wall mount arms are designed to fit both medium ECM/EMM housings. Arms feature a precision welded cast aluminum mounting hub for attachment of fixture head to arm with four stainless steel fasteners.


33-1/2" [852mm]
Radius 12" [304mm]
54-3/16" [1376mm]
BISHOP SINGLE POLE MOUNT ARM
VMA198 (Medium), VMA154 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 24 lbs. E.PA. 0.92
33-1/2" [852mm]
Radius 12" [304mm]
54-3/16" [1376mm]
BISHOP SINGLE POLE MOUNT ARM WITH CROSS ROD
VMA198 (Medium), VMA155 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 25 lbs. E.PA. 0.98
42" [1075mm]
Radius 12" [304mm]
7" [178mm]
54-3/16" [1376mm]
BISHOP TWIN POLE MOUNT ARM
VMA191 (Medium), VMA156 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 32 lbs. E.PA. 1.45
42" [1075mm]
Radius 12" [304mm]
7" [178mm]
54-3/16" [1376mm]
BISHOP TWIN POLE MOUNT ARM WITH CROSS RODS
VMA189 (Medium), VMA157 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 34 lbs. E.PA. 1.50
18.5"[470mm]
26-3/4" [679mm]
30-15/16" [786mm]
TRADITIONAL SINGLE POLE MOUNT ARM
VMA199 (Medium), VMA158 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 26 lbs. E.PA. 1.17
26-3/4" [679mm]
35-7/16" [900mm]
30-15/16" [786mm]
TRADITIONAL SINGLE POLE MOUNT ARM WITH ROUNDED UPPER BAR
VMA199 (Medium), VMA159 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 28 lbs. E.PA. 1.4
26-3/4" [679mm]
35-7/16" [900mm]
30-15/16" [786mm]
TRADITIONAL SINGLE POLE MOUNT ARM WITH SQUARED LOWER BAR
VMA199 (Medium), VMA160 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 28 lbs. E.PA. 1.4
26-3/4" [679mm]
35-7/16" [900mm]
30-15/16" [786mm]
TRADITIONAL SINGLE POLE MOUNT ARM WITH SQUARED UPPER BAR
VMA199 (Medium), VMA161 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" round tenon.
Weight: 28 lbs. E.PA. 1.30
18.5"[470mm]
26-3/4" [679mm]
30-15/16" [786mm]
TRADITIONAL SINGLE POLE MOUNT ARM WITH SQUARED UPPER BAR AND DECORATIVE STRAP
VMA199 (Medium), VMA162 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 26 lbs. E.PA. 1.17
26-3/4" [679mm]
35-7/16" [900mm]
30-15/16" [786mm]
TRADITIONAL SINGLE POLE MOUNT ARM WITH SQUARED LOWER STRAP
VMA199 (Medium), VMA163 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 24 lbs. E.PA. 1.17
18.5"[470mm]
26-3/4" [679mm]
53-1/2" [1359mm]
62" [1574mm]
TRADITIONAL TYPE MOUNT ARM
VMA196 (Medium), VMA164 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 4" tall round tenon.
Weight: 36 lbs. E.PA. 1.44

COOPER Lighting Solutions

T25W060RFN
December 6, 2021 2:20 PM

*OR EQUIVALENT TYPE AND STYLE

Invue

Catalog #		Type
Project		
Comments		Date
Prepared by		

DESCRIPTION

The EPIC Collection delivers custom luminaire flexibility with high quality, yet availability expectations of standard specification grade product. The EPIC Collection can be dressed to suit any application. Recognizing evolving environmental and legislative trends, the EPIC Collection delivers world class LED optical and performance solutions to the decorative luminaire marketplace.

SPECIFICATION FEATURES

Construction
EPIC one aluminum top housing attaches to cast aluminum mounting arm hub with four stainless steel fasteners. One-piece silicone gasket between mounting hub and top casting seals out moisture and contaminants. (See the mounting accessories section for a full selection of mounting arms. (Only these arms are compatible with the Epic luminaire). MIDSECTION: Continuous silicone gaskets seal the mid section to the top and base. The mid section features cast aluminum construction and stainless steel assembly. SHADES: Heavy gauge precision spun aluminum shades offer superior surface finish and consistency in form. DOORFRAME: Die-cast aluminum 1.5lb** thick door and doorframe seat to underside of shade with a thick wall continuous silicone gasket. Mounting hub ships attached to mounting arm.

Optics
Choice of twelve patented, high-efficiency AccuLED Optic™ technology manufactured from injection-molded acrylic. Optics are precisely designed to shape the optics, maximizing efficiency and application spacing. AccuLED Optic technology, creates consistent distribution with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and nominal 70 CRI. Optional 3000K CCT and 5000K CC. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2, SL3 or SL4 optics.

Electrical
LED drivers mount to die-cast aluminum LED housing for optimal thermal cooling, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less that 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – mode/differential surge protection. LightBARs feature and IP66 enclosure rating and maintain greater than 98% lumen maintenance at 60,000 hours per IESNA TM-21. Occupancy sensor and dimming options available.

Finish
Housing is finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. LightBAR™ cover plates are standard white and may be specified to match finish of luminaire housing. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult Outdoor Architectural Colors brochure for a complete selection.Options to meet Buy American Act requirements

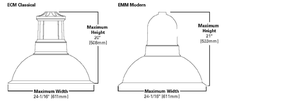
Warranty
Five-year warranty.

ECM/EMM
EPIC MEDIUM LED

1 - 4 LightBARs
Solid State LED

DECORATIVE AREA LUMINAIRE

DIMENSIONS



See configurations for more detailed information.

CERTIFICATION DATA
cULus Listed
DesignLights Consortium® Qualified*
IP66 Rated
LM79 / LM80 Compliant
3G Vibration Tested
ISO 9001

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

EPA
Effective Projected Area: (Sq. Ft.) 0.94

SHIPPING DATA
Approximate Net Weight:
45 lbs. (20.5 kg.)

*www.designlights.org

COOPER Lighting Solutions

T25W060RFN
December 6, 2021 2:20 PM

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

LIGHTING PLAN 4 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.37

8/18/2023, L:\19097\19097.04 - Lot 2\CURRENT\19097 - Lighting Plan.dwg
Matthew Baker

LIGHTING NOTES:

1. LIGHTING PREPARED AND DESIGNED BY EXPOSURE 2 LIGHTING.
2. NO FREE-STANDING LIGHT FIXTURES SHALL BE INSTALLED TO A HEIGHT EXCEEDING 15 FEET. ALL ILLUMINATION SHALL BE DIRECTED AND/ OR SHIELDED SO AS NOT TO SHINE BEYOND THE PERIMETER OF THE SITE OR INTERFERE WITH TRAFFIC. (WALPOLE ZBL SECTION 13 SUB-SECTION10.A(5))
3. BROAD LIGHTING WILL BE HIGHLY DISCOURAGED WHILE SOFT LIGHTING AIMED DOWN WILL BE HIGHLY ENCOURAGED. (WALPOLE ZBL SECTION 13 SUB-SECTION 12.H(1)). EXTERIOR MOUNTED FIXTURES MUST BE PARTIALLY SHIELDED DIRECTIONAL LIGHT FIXTURES, PLACED NOT LESS THAN 4 FEET APART OR 12 FEET IN HEIGHT FROM THE SURFACE AREA TO BE ILLUMINATED.).
4. ALL SIGNAGE LIGHTING SHALL COMPLY WITH WALPOLE ZONING BY-LAWS PER SECTION 7. ALL SIGNAGE LIGHTING SHALL BE LIMITED TO WHITE STEADY, STATIONARY LIGHT OF REASONABLE INTENSITY THAT IS DIRECTED SOLELY AT THE SIGN AND SHIELDED FROM ABUTTING PARCELS.
5. LANDSCAPE LIGHTING SHALL BE LIMITED TO LIGHTING OF TREES, SHRUBS, OR OTHER PLANT MATERIAL. LIGHTING SHALL BE "LOW-LEVEL LIGHT FIXTURES" (3 FEET OR LOWER) AND ONLY BE DIRECTED IN A DOWNWARD FACING DIRECTION. SEASONAL LIGHTING SHALL NOT BE PERMITTED FOR LONGER THAN A SIX-WEEK PERIOD IN ANY CALENDAR YEAR.

EXPOSURE
LIGHTING — CONTROLS — ELECTRICAL

n/f
DICKRAN BABIGIAN TR
ASSESSOR'S PARCEL
52-62
49 SUMMER STREET

EXISTING BUILDING

EXISTING RAILROAD TRACKS

REFER TO LIGHTING NOTES 4 AND 5 REGARDING LANDSCAPE AND SIGNAGE LIGHTING.

MAIL KIOSK

SHUFELT ROAD

SUMMER STREET

n/f
STEVEN D. REYNOLDS
ASSESSOR'S PARCEL
52-58
63-65 SUMMER STREET

n/f
JOSEPH. F. MAHONEY
ASS. PARCEL 52-57
71 SUMMER STREET

n/f
CLARE P. CULHANE
ASS. PARCEL 52-56
75 SUMMER STREET

n/f
HARDIK RAVAL
ASSESSOR'S PARCEL 52-55-1
79 SUMMER STREET

MATCHLINE SHEET 35

MATCHLINE SHEET 38

MATCHLINE SHEET 38

MATCHLINE SHEET 37

PROPOSED TOWNHOUSE BUILDING 13000

PROPOSED TOWNHOUSE BUILDING 14000

40 0 40 80
SCALE IN FEET

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

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FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

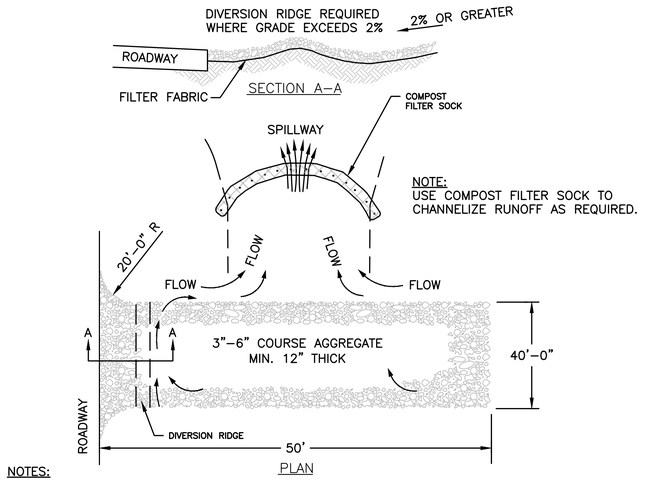
LIGHTING PLAN 5 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.38

SHEET 38 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Lighting Plan.dwg
Matthew Blade

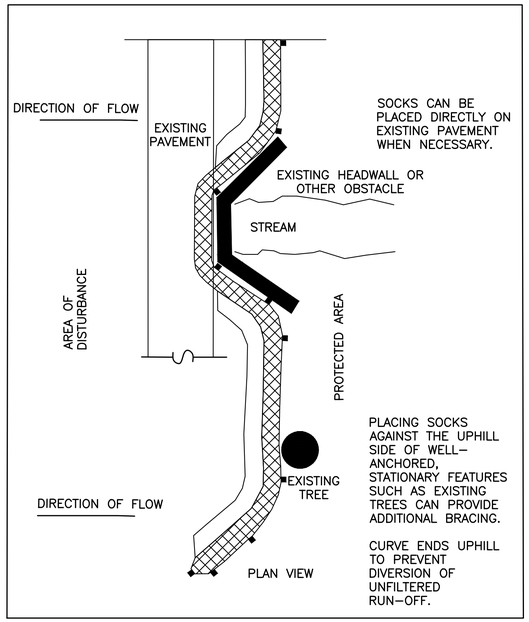


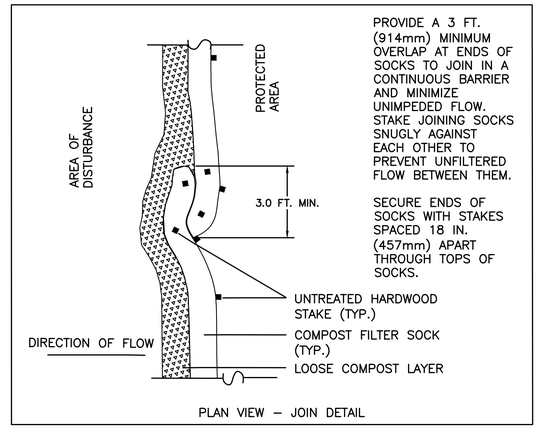
NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE APPLIED WHERE NECESSARY TO KEEP PUBLIC WAYS FREE OF SEDIMENT INCLUDING STAGING AREAS

STABILIZED CONSTRUCTION ENTRANCE

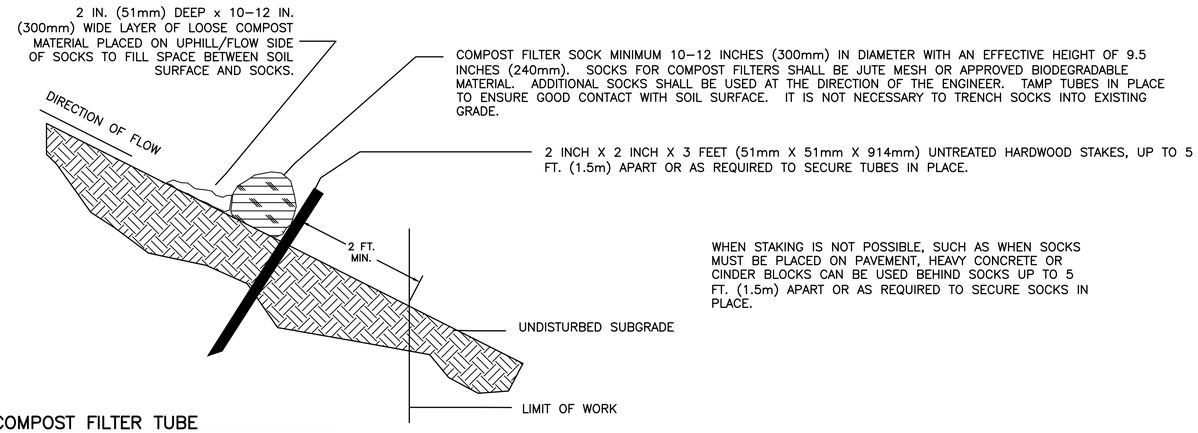
SCALE: N.T.S





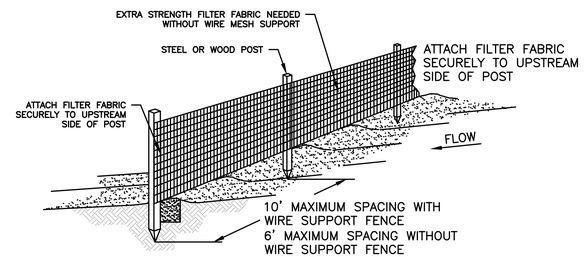
GENERAL NOTES:

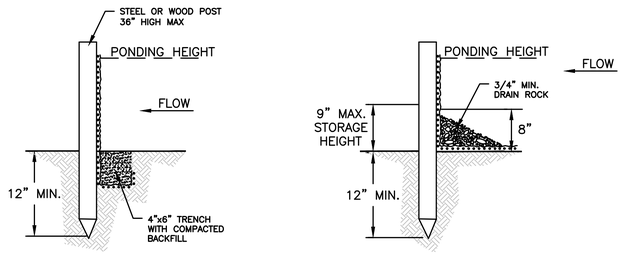
1. PROVIDE A MINIMUM SOCK DIAMETER OF 10–12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER SOCK DIAMETER OR ADDITIONAL COURSING OF FILTER SOCK TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL SOCKS ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE SOCKS AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN–OFF.



SINGLE COMPOST FILTER TUBE

SCALE: N.T.S



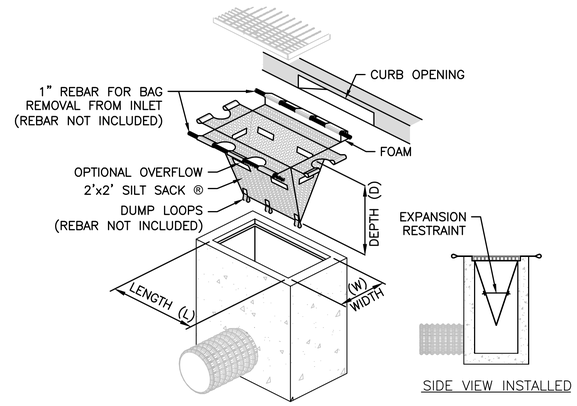


NOTES:

1. EROSION CONTROL BARRIER (SILT FENCE OR EROSION STOCK) SHALL BE PLACED AROUND ALL MATERIAL STOCKPILE AREAS AND MAINTAINED AT STAGING AREAS TO ASSURE NO SILTATION ONTO PUBLIC OR PRIVATE WAYS OR PROPERTY.

EROSION CONTROL BARRIER

SCALE: N.T.S



TEMPORARY INLET PROTECTION

SCALE: N.T.S

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www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/26/23

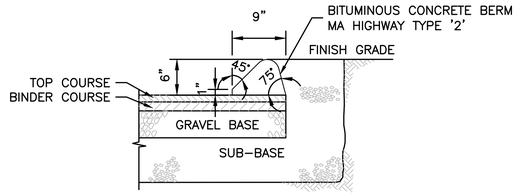
SITE PLAN

EROSION CONTROL DETAILS (DETAIL SHEET 1 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.39

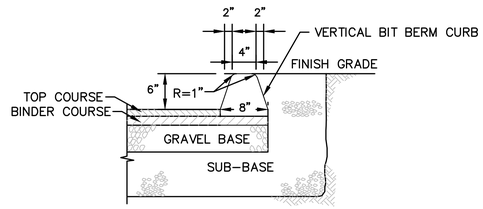
6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: MBAKER
Printed by: Matthew Baker



NOTE:
DETAIL DEVELOPED FROM MA HIGHWAY CONSTRUCTION STANDARDS DRAWING NUMBER 106.2.0 "BITUMINOUS CONCRETE BERM – TYPE '2'

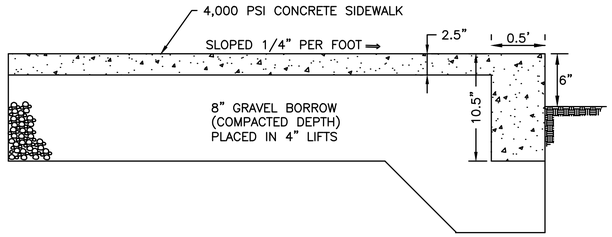
CAPE COD BERM/CURB

SCALE: N.T.S



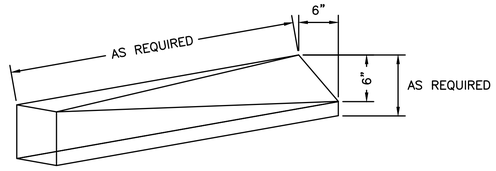
VERTICAL BIT BERM CURB

SCALE: N.T.S



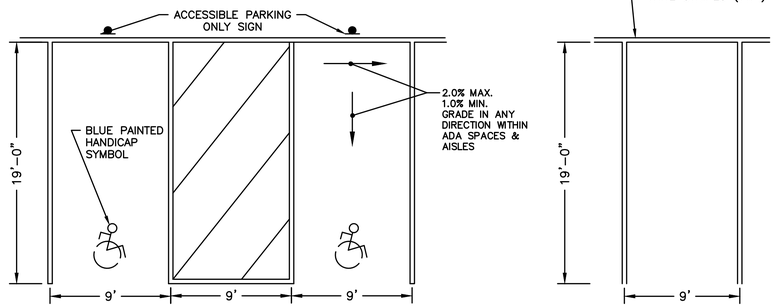
MONOLITHIC CONCRETE CURB AND WALK

SCALE: N.T.S



TRANSITION CURB

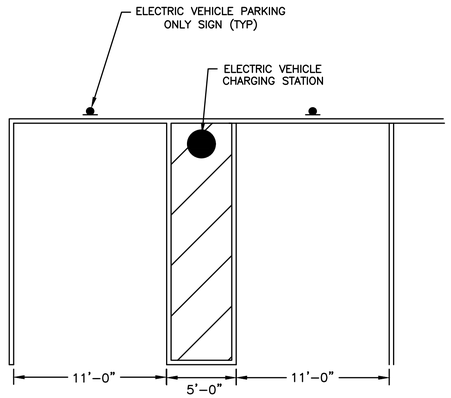
SCALE: N.T.S



NOTE:
* GRADING WITHIN THE HANDICAP PARKING SPACE SHALL NOT EXCEED 2.0% IN ANY DIRECTION.

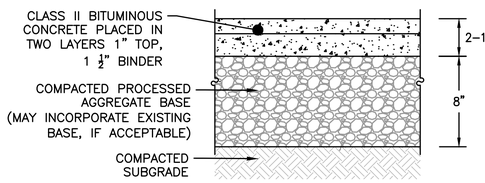
TYPICAL PARKING SPACE

SCALE: N.T.S



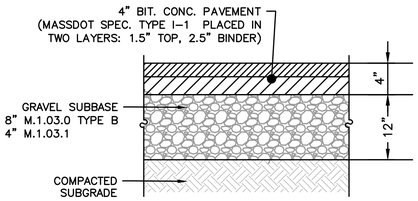
TYPICAL ELECTRIC VEHICLE PARKING SPACE

SCALE: N.T.S



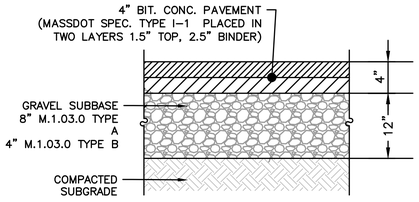
BIT CONC SIDEWALK SECTION

SCALE: N.T.S



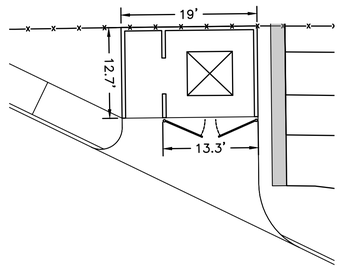
FULL DEPTH ROADWAY PAVEMENT SECTION

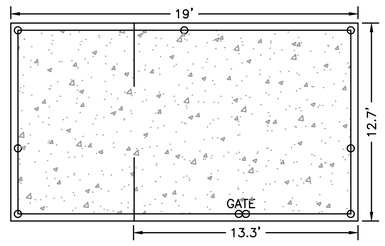
SCALE: N.T.S



FULL DEPTH PARKING LOT SECTION

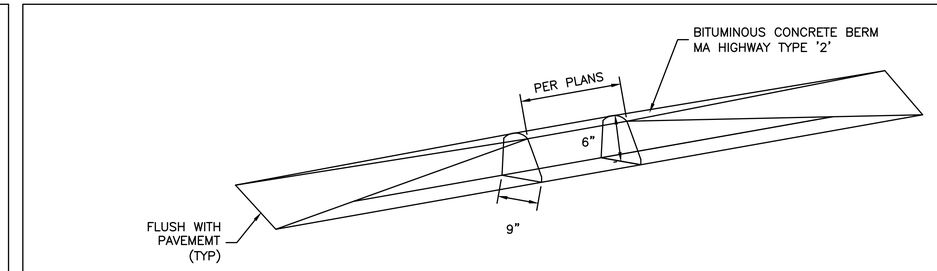
SCALE: N.T.S





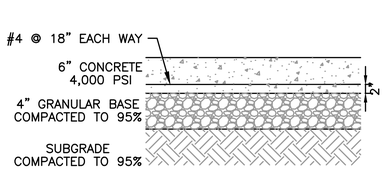
DUMPSTER PAD

SCALE: N.T.S

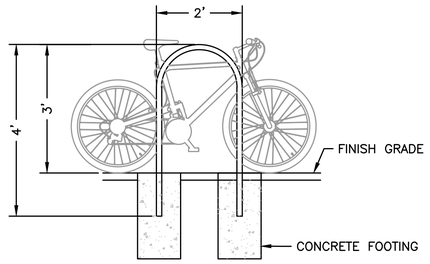


DOUBLE SIDED TRANSITION CURB

SCALE: N.T.S



NOTE: SEE LANDSCAPE AND ARCHITECTURAL PLANS FOR FINAL DETAILS



INVERTED "U" BICYCLE RACK

SCALE: N.T.S

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c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/30/2023
GREGORY J. ENRIGHT
CIVIL
No. 49437
REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

PAVEMENT & CURBING DETAILS
(DETAIL SHEET 2 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.40

SHEET 40 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved By: MBAKER
Printed by: Matthew Baker

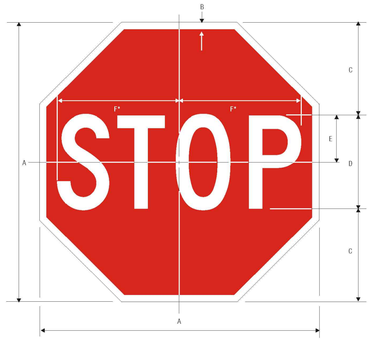
R7-8 NO PARKING

LEGEND – GREEN (RETROREFL), WHITE SYMBOL ON BLUE (RETROREFL)
BACKGROUND – WHITE (RETROREFL)

	A	B	C	D	E	F	G	H	J	K	L
12	18	6	.375	.438	1.5	13.0	3	1.0	1.83	3.659	1.5
18	24	8	.625	.8	2.0	17.5	4	1.5	2.44	4.878	2.0
24	30	10	.75	1.0	2.5	22.0	5	2.0	3.05	6.098	2.5

HANDICAP & VAN ACCESSIBLE SIGN

SCALE: N.T.S



R1-1
STOP

*Reduce spacing 40%

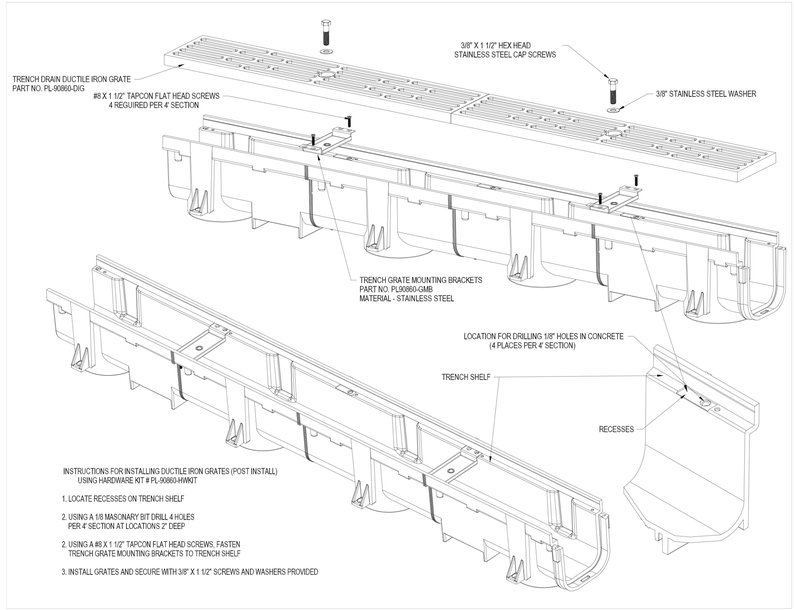
	A	B	C	D	E	F
	18	.375	6	6 C	3	7.75
	24	.625	8	8 C	4	10
C	30	.75	10	10 C	5	12.5
	36	.875	12	12 C	6	15
	48	1.25	16	16 C	8	20

COLORS: LEGEND – WHITE (RETROREFLECTIVE)
BACKGROUND – RED (RETROREFLECTIVE)

1-1

STOP SIGN

SCALE: N.T.S



NO EVENT PARKING SIGN

SCALE: N.T.S

TRAIL ACCESS
UNIMPROVED TRAIL— FOOTING MAY BE UNEVEN
PASS AT OWN RISK

TRAIL RULES

- TRAIL OPEN 30 MINUTES BEFORE SUNRISE UNTIL 30 MINUTES AFTER SUNSET
- MOTORIZED VEHICLES PROHIBITED
- STAY ON TRAIL
- PETS MUST BE LEASHED
- REMOVE PET WASTE AND TRASH FROM TRAIL

THANK YOU

TRAIL SIGN

SCALE: N.T.S

ACO DRAIN

Type 476D Longitudinal ductile iron grate (ADA)

Product Features

- Certified to EN 1433 Load Class C - 56,000 lbs - 1,162 psi
- Uses 'DrainLok' boltless locking system
- Suitable for use with K100, KS100, and H100K-8 channels
- Manufactured from ductile iron to ASTM A 536-84 - Grade 65-45-12
- E- coated for improved resistance against rust
- Complies with ADA - American Disabilities Act of 1990 Section 4.5.4
- Bicycle Tire Penetration Resistant to AS 3996 - 2006

Specifications

General
The surface drainage system shall be ACO Drain K100, KS100, and H100K-8 channels*, complete with ACO Type 476D longitudinal ductile iron grate with 'DrainLok' locking as manufactured by ACO, Inc. or similar approved.

Materials
The covers shall be manufactured from ductile iron and have **minimum** properties as follows:

- ***Independently certified to meet Load Class C to EN 1433 - 56,000 lbs - 1,162 psi***
- ***Ductile iron to ASTM A 536-84 - Grade 65-45-12***
- ***Intake area of 22.6 sq. in. (145.16 cm²) per half meter of grate***

The overall width of 4.85" (123mm) and overall length of 19.69" (500mm). Slots measure at 2.1" (53.34mm) by 0.24" (6.09mm).

Installation
The trench drain system and grates shall be installed in accordance with the manufacturer's installation instructions and recommendations.
* delete as appropriate

April 2018

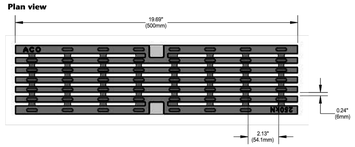
www.ACODrain.us

ACO Specification Information

ACO DRAIN

Type 476D Longitudinal ductile iron grate (ADA)

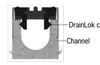
Plan view



Side elevation

Description	Part No.	Length inches (mm)	Width inches (mm)	Weight lbs.
DrainLok grate Type 476D Ductile iron longitudinal grate	**142171**	19.69 (500)	4.85 (123.1)	7.0

'DrainLok' locking mechanism



ACO DrainLok™ is a patented, boltless locking system that removes the need for bolts and bars and improves the hydraulic capacity of the channel. The DrainLok™ mechanism simply clips into the channel edge rail for rapid installation. ACO DrainLok™ grates are fitted with an anti-shunt mechanism that restricts unwanted grate movement when installed, improving durability and longevity of the system.

ACO, Inc.
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Mentor, OH 44060
Tel: (440) 639-7230
Toll free: (800) 543-4764
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West Sales Office
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Tel: (520) 421-9988
Toll Free: (888) 490-9552
Fax: (520) 421-9899

Southeast Sales Office
4211 Pleasant Road
Fort Mill, SC 29708
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Fax: (803) 802-1063

Follow us on

Electronic Contact:
info@ACODrain.us
www.ACODrain.us

© April 2018, ACO, Inc. This information is believed to be accurate but it is not guaranteed to be so. We cannot assume liability for results that buyer obtains with our product since conditions of use are beyond the control of the company. It is the customer's responsibility to evaluate suitability and safety of product for his own use. ACO, Inc. reserves the right to change the product and specifications without notice.

April 2018

www.ACODrain.us

ACO Specification Information

TRENCH DRAIN

SCALE: N.T.S

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PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

SIGNS AND TRENCH DRAINS (DETAIL SHEET 3 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.41

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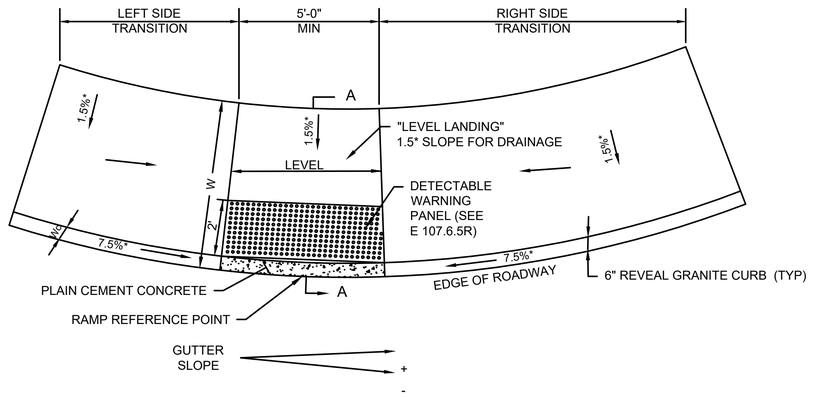
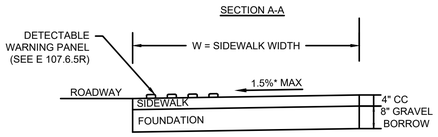


LEGEND:

HSL = HIGH SIDE TRANSITION (SEE E 107.9.0)
W = SIDEWALK WIDTH
Wc = WIDTH OF CURB (6" TYP)
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

USEABLE SIDEWALK WIDTH PER AAB = W-WC



WHEELCHAIR RAMPS ON CURVED SIDEWALK

SCALE: N.T.S

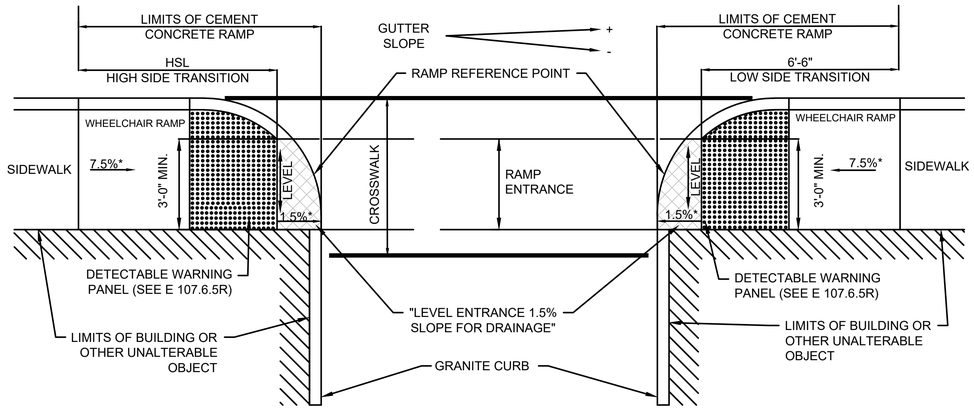
NOTES:
DETECTABLE WARNING PANEL LOCATED NOT LESS THAN 6" OR MORE THAN 24" FROM ROADWAY EDGE (GUTTER LINE). TRUNCATED DOMES TO BE ALIGNED WITH DIRECTION OF TRAVEL.

FOR DETAILS OF TRUNCATED DOMES SEE DRAWING E 107.6.5.

ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.

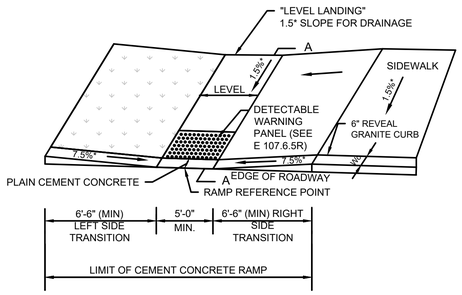
LEGEND:

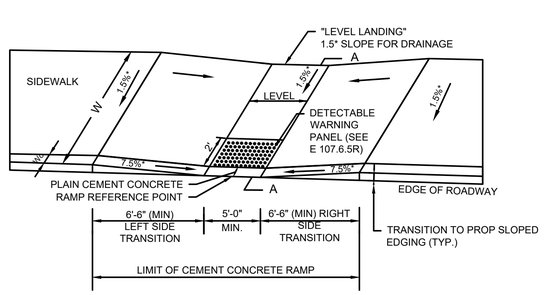
HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
* = TOLERANCE FOR CONSTRUCTION ±0.5%



WHEELCHAIR RAMP FOR CONTINUOUS DIRECTION TRAVEL

SCALE: N.T.S

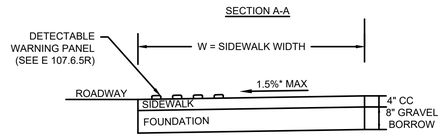




LEGEND:

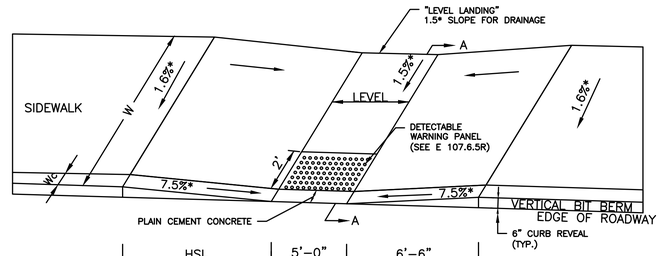
HSL = HIGH SIDE TRANSITION (SEE E 107.9.0)
W = SIDEWALK WIDTH
Wc = WIDTH OF CURB (6" TYP)
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

USEABLE SIDEWALK WIDTH PER AAB = W-WC



WHEELCHAIR RAMPS ON NARROW SIDEWALK

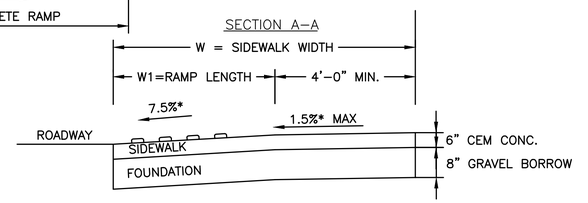
SCALE: N.T.S



LEGEND:

HSL = HIGH SIDE TRANSITION (SEE E 107.9.0R)
W = SIDEWALK WIDTH
Wc = CURB WIDTH
W1 = PERPENDICULAR RAMP LENGTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

USEABLE SIDEWALK WIDTH PER AAB = W-WC
RAMP LENGTH = W1 = W – 4"-0" MIN



WHEELCHAIR RAMPS ON NARROW SIDEWALK

SCALE: N.T.S

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BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

ACCESSIBLE CURB RAMPS (DETAIL SHEET 4 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.42

SHEET 42 OF 62

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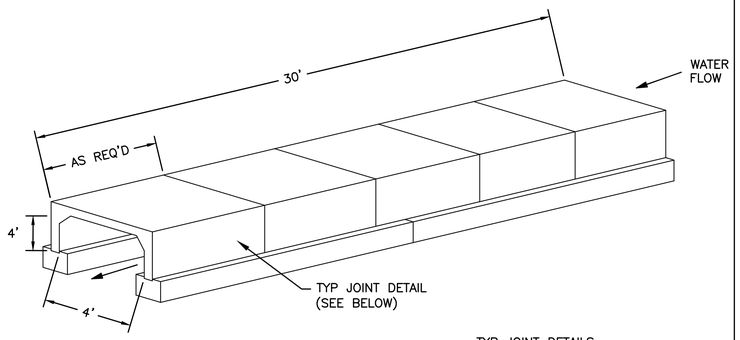
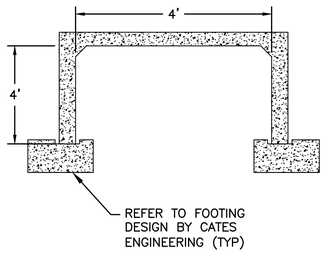


END VIEW



TYP JOINT DETAILS (SEE NOTE 5)

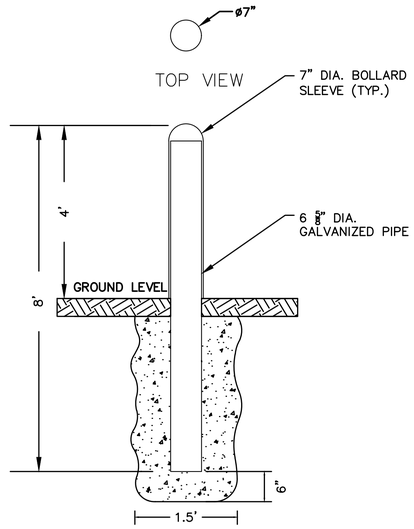
BOLTED POCKET +BUTYL WRAP

NOTES:

1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN PER ASTM C1504 SPECIFICATION FOR 3–SIDED CULVERT.
3. ALL REINFORCEMENT PER ASTM A615.
4. DESIGNED AASHTO HS–20 LOADING OR AS REQUIRED.
5. TONGUE AND GROOVE JOINT SEALED WITH BUTYL WRAP.
6. PRECAST FOOTINGS OPTIONAL

3–SIDED CULVERT

SCALE: N.T.S

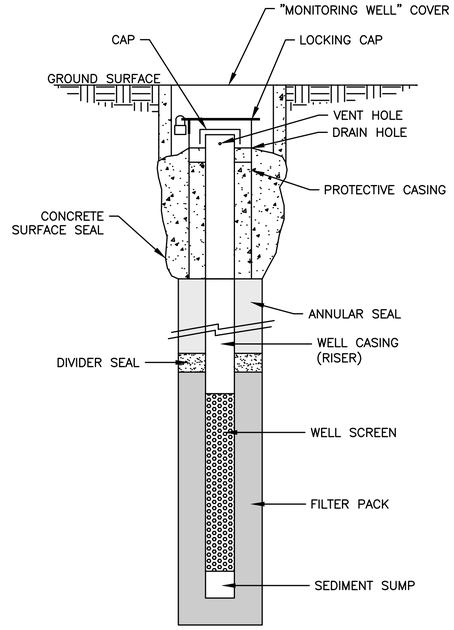


NOTES:

1. BOLLARD PIPE TO BE FILLED WITH MINIMUM 3,000 PSI CONCRETE.
2. BOLLARD SLEEVE COLOR SELECTION BY OWNER.

BOLLARD

SCALE: N.T.S



NOTES:

1. FOUR GROUND–WATER MONITORING WELLS ARE REQUIRED TO BE INSTALLED PER THE COMP PERMIT C.1.H AND D.7. INSTALLATION IS TO BE COORDINATED WITH THE OWNER'S LSP. THE APPROXIMATE LOCATIONS OF THESE WELLS ARE SHOWN ON SHEETS 14 THROUGH 18.
2. UNLESS OTHERWISE SPECIFIED, WELL MATERIALS ARE THREADED, ONE OR TWO–INCH DIAMETER, FLUSH JOINTED, SCHEDULE 40, POLYVINYL CHLORIDE (PVC). WELL SCREEN LENGTH IS TEN FEET AND SCREEN SLOT WIDTH IS 0.010–INCH. NO PVC SOLVENTS OR GLUES ARE TO BE USED AT ANY POINT DURING THE MONITORING WELL CONSTRUCTION.
3. WELL BORINGS ARE TYPICALLY ADVANCED FIVE FEET BELOW THE WATER TABLE OR TO REFUSAL. IF GROUND WATER IS ENCOUNTERED AT OR NEAR REFUSAL, ATTEMPTS MAY BE MADE TO ADVANCE THE BORING SEVERAL FEET INTO THE REFUSAL USING SPECIALIZED DRILLING METHODS. UNLESS OTHERWISE SPECIFIED, ALL WELL BORING ARE ADVANCED IN ACCORDANCE WITH THE LSP'S SOIL BORING PROTOCOL.
4. THE WELL SCREEN IS SET TO INTERCEPT THE WATER TABLE SURFACE, THE TOP OF THE WELL SCREEN IS TO BE SET ABOVE THE HIGHEST ANTICIPATED SEASONAL WATER TABLE, WHILE THE BOTTOM OF THE WELL SCREEN IS SET AT THE BASE OF THE BORING.
5. THE ANNULAR SPACE AROUND THE WELL SCREEN IS BACKFILLED WITH CLEAN SILICA SAND TO APPROXIMATELY ONE FOOT ABOVE THE TOP OF THE WELL SCREEN AS NECESSARY AND IF POSSIBLE, A BENTONITE SEAL (TYPICALLY ONE–FOOT THICK) IS PLACED ABOVE THE SILICA SAND. THE REMAINING ANNULAR SPACE AROUND THE WELL CASING IS TO BE BACKFILLED WITH NATIVE MATERIAL TO APPROXIMATELY SIX–TWELVE INCHES BELOW GRADE. A PROTECTIVE ROADBOX AND LOCKING CAP ARE INSTALLED AT THE TOP OF THE WELL CASING FLUSH WITH THE GROUND SURFACE. THE REMAINING ANNULAR SPACE IS FILLED WITH CONCRETE TO A LEVEL FLUSH WITH THE GROUND SURFACE. PROTECTIVE STANDPIPES OR OTHER WELL FINISHING TECHNIQUES ARE ACCEPTABLE IN LIEU OF THE STANDARD ROADBOXES FOR SITE SPECIFIC PURPOSES.

MONITORING WELL

SCALE: N.T.S

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BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

DRAINAGE STRUCTURES (DETAIL SHEET 5 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.43

SHEET 43 OF 62

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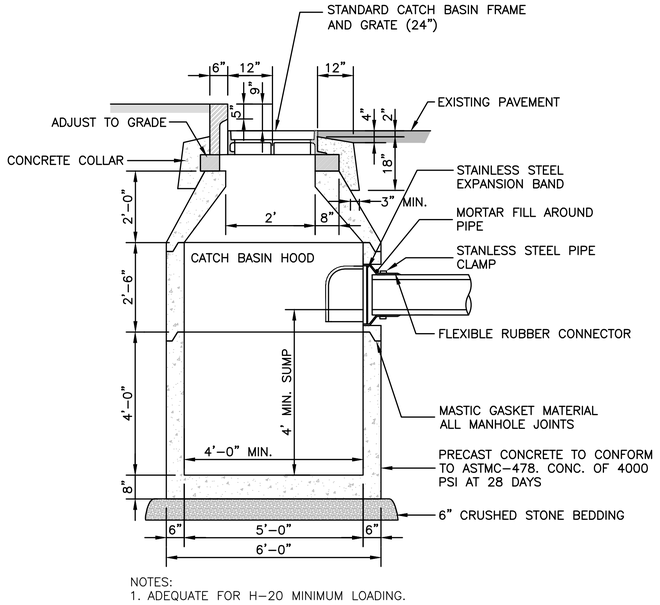
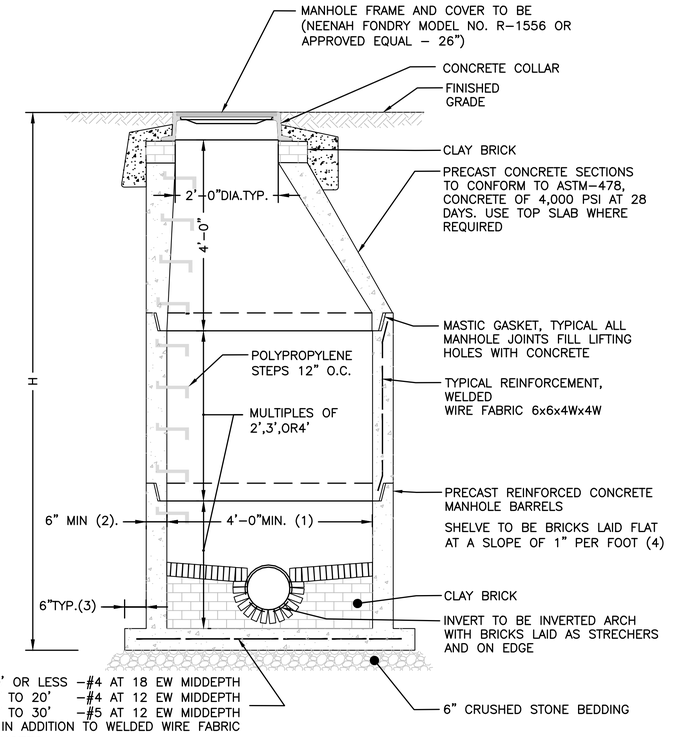


NOTES:
1. ADEQUATE FOR H-20 MINIMUM LOADING.

CATCH BASIN

SCALE: N.T.S

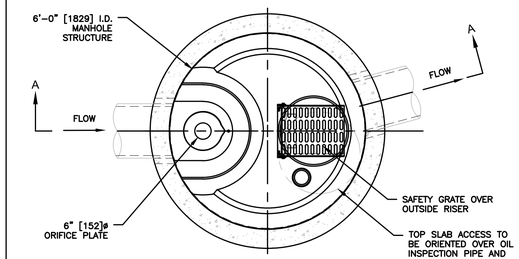


H= 10' OR LESS -#4 AT 18 EW MIDDEPTH
H= 10' TO 20' -#4 AT 12 EW MIDDEPTH
H= 20' TO 30' -#5 AT 12 EW MIDDEPTH
IN ADDITION TO WELDED WIRE FABRIC

NOTES:
1. 5'-0" DIAMETER FOR ALL MANHOLE DEPTHS GREATER THAN 20 FEET OR WHEN ORDERED BY THE ENGINEER.
2. 6 INCH MIN. WALL THICKNESS AND 7 INCH MIN. BASE THICKNESS WITH 5'-0" DIAMETER MANHOLES.
3. 6 INCH LIP OPTIONAL UNLESS OTHERWISE NOTED. CONCRETE INVERT AND SHELF MAY BE SUBSTITUTED IN STORM DRAIN MANHOLES AS DIRECTED BY THE ENGINEER.

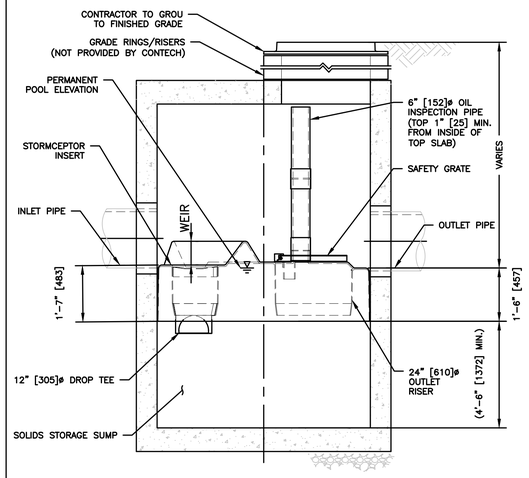
PRECAST CONCRETE MANHOLE

SCALE: N.T.S

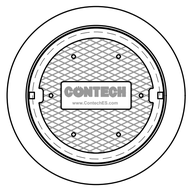


PLAN VIEW

TOP SLAB NOT SHOWN



SECTION A-A



FRAME AND COVER

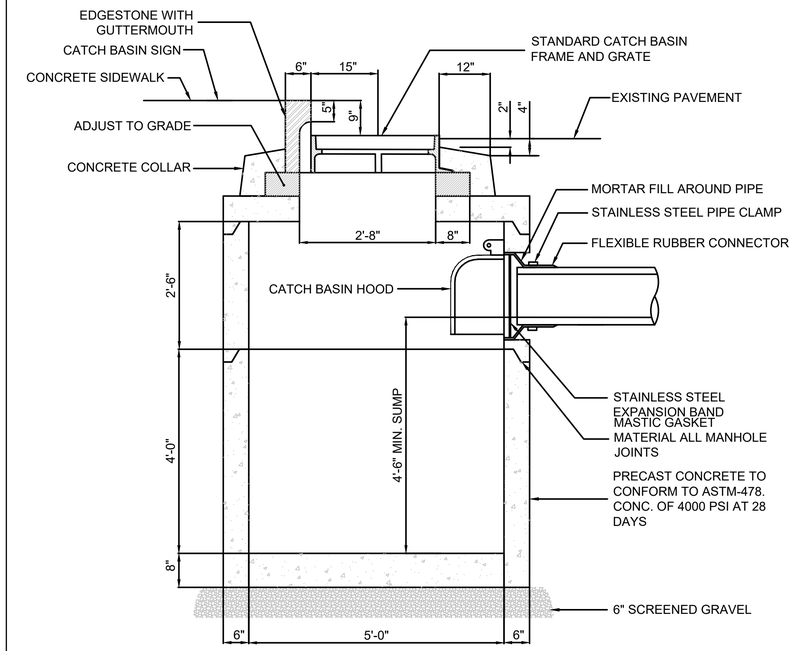
(MAY VARY)
NOT TO SCALE

GENERAL NOTES
1. CONTECH, OR APPROVED EQUAL, TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STORMCEPTOR STRUCTURE SHALL MEET AASHTO **HS20** LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO **M306** AND BE CAST WITH THE CONTECH LOGO.
5. STORMCEPTOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMCEPTOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

WATER QUALITY UNIT - STC 900 (DMH-9)

SCALE: N.T.S OR APPROVED EQUAL



SHALLOW CATCH BASIN

SCALE: N.T.S

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PREPARED FOR:

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c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

DRAINAGE STRUCTURES (DETAIL SHEET 6 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.44

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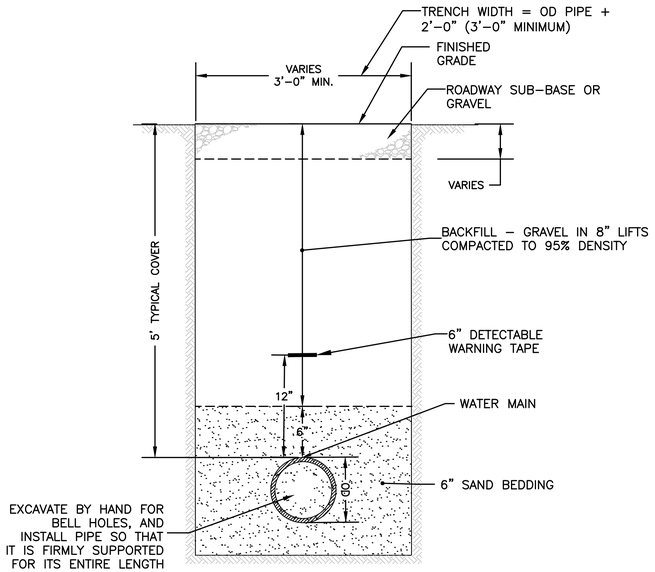
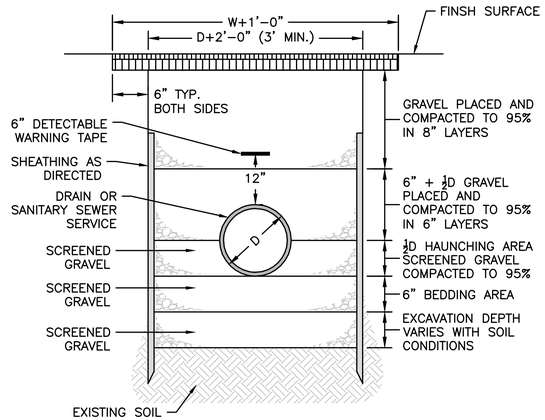


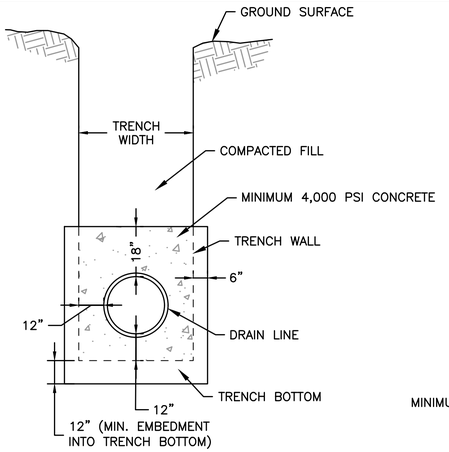
TRENCH DETAIL – WATER MAIN

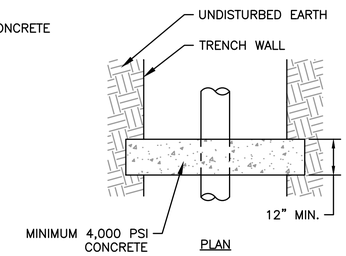
SCALE: N.T.S



TRENCH DETAIL – DRAINAGE OR SANITARY SEWER SERVICE

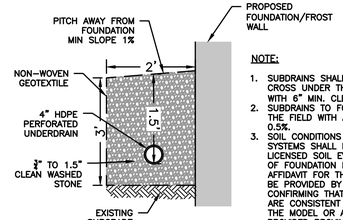
SCALE: N.T.S





ANTI–SEEP COLLAR

SCALE: N.T.S

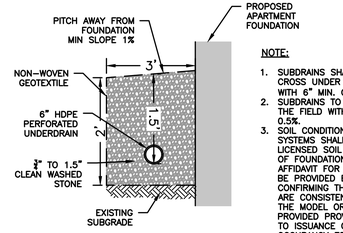


NOTE:

1. SUBDRAINS SHALL BE INSTALLED TO CROSS UNDER THE IRRIGATION LINES WITH 6" MIN. CLEARANCE.
2. SUBDRAINS TO FOLLOW THE SLOPE OF THE FIELD WITH A MINIMUM SLOPE OF 0.5%.
3. SOIL CONDITIONS BELOW DRIP EDGE SYSTEMS SHALL BE INSPECTED BY A LICENSED SOIL EVALUATOR AT THE TIME OF FOUNDATION EXCAVATION AND AN AFFIDAVIT FOR THE COMBINED SYSTEMS BE PROVIDED BY A LICENSED ENGINEER CONFIRMING THAT AS FOUND CONDITIONS ARE CONSISTENT WITH THOSE USED IN THE MODEL OR ADDITIONAL JUSTIFICATION PROVIDED PROVING PERFORMANCE PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR ANY BUILDING SERVED BY A DRIP EDGE SYSTEM.

CLUBHOUSE DRIP EDGE SYSTEM

SCALE: N.T.S

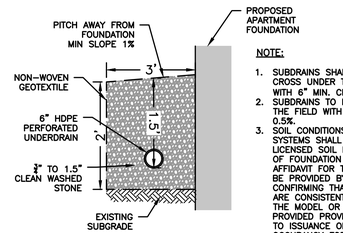


NOTE:

1. SUBDRAINS SHALL BE INSTALLED TO CROSS UNDER THE IRRIGATION LINES WITH 6" MIN. CLEARANCE.
2. SUBDRAINS TO FOLLOW THE SLOPE OF THE FIELD WITH A MINIMUM SLOPE OF 0.5%.
3. SOIL CONDITIONS BELOW DRIP EDGE SYSTEMS SHALL BE INSPECTED BY A LICENSED SOIL EVALUATOR AT THE TIME OF FOUNDATION EXCAVATION AND AN AFFIDAVIT FOR THE COMBINED SYSTEMS BE PROVIDED BY A LICENSED ENGINEER CONFIRMING THAT AS FOUND CONDITIONS ARE CONSISTENT WITH THOSE USED IN THE MODEL OR ADDITIONAL JUSTIFICATION PROVIDED PROVING PERFORMANCE PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR ANY BUILDING SERVED BY A DRIP EDGE SYSTEM.

4 UNIT TOWNHOUSE DRIP EDGE SYSTEM

SCALE: N.T.S

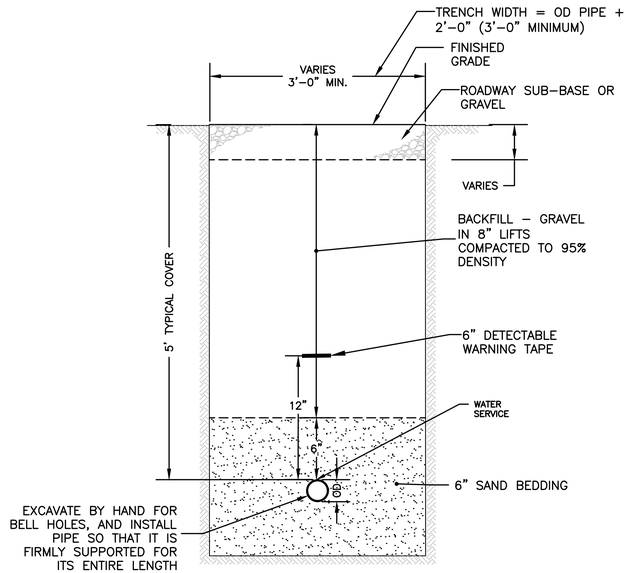


NOTE:

1. SUBDRAINS SHALL BE INSTALLED TO CROSS UNDER THE IRRIGATION LINES WITH 6" MIN. CLEARANCE.
2. SUBDRAINS TO FOLLOW THE SLOPE OF THE FIELD WITH A MINIMUM SLOPE OF 0.5%.
3. SOIL CONDITIONS BELOW DRIP EDGE SYSTEMS SHALL BE INSPECTED BY A LICENSED SOIL EVALUATOR AT THE TIME OF FOUNDATION EXCAVATION AND AN AFFIDAVIT FOR THE COMBINED SYSTEMS BE PROVIDED BY A LICENSED ENGINEER CONFIRMING THAT AS FOUND CONDITIONS ARE CONSISTENT WITH THOSE USED IN THE MODEL OR ADDITIONAL JUSTIFICATION PROVIDED PROVING PERFORMANCE PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR ANY BUILDING SERVED BY A DRIP EDGE SYSTEM.

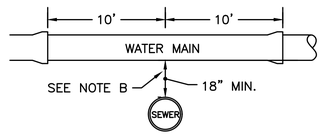
6 UNIT TOWNHOUSE DRIP EDGE SYSTEM

SCALE: N.T.S

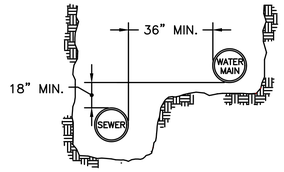


TRENCH DETAIL – WATER SERVICE

SCALE: N.T.S



WATER AND SEWER CROSSING



WATER AND SEWER LAID PARALLEL

NOTES:
THE SEPARATION OF WATER MAINS AND SEWERS SHALL COMPLY WITH THE FOLLOWING GENERAL REQUIREMENTS.

A. PARALLEL INSTALLATION:
- NORMAL CONDITIONS: THE INSIDE EDGE OF A WATER MAIN SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.
- WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, ONE OF TWO METHODS MAY BE EMPLOYED. IN BOTH CASES THE INVERT OF THE WATER LINE MUST BE AT LEAST 18" ABOVE THE CROWN OF THE SEWER LINE.

1. LAY WATER AND SEWER IN SEPARATE TRENCHES
2. LAY THE WATER AND SEWER IN THE SAME TRENCH WITH THE WATER MAIN AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH WITH A MINIMUM HORIZONTAL SEPARATION FROM INSIDE PIPE TO INSIDE PIPE OF 36"

B. CROSSINGS:
- WHEN SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER LAID SUCH THAT THE INVERT OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER LINE.
- WHEN THE SEWER ELEVATION CANNOT BE VARIED TO MEET THE REQUIREMENT, THE WATER LINE MUST BE RELOCATED OR RECONSTRUCTED WITH MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10 ft ON EACH SIDE OF THE SEWER.
- WHEN IT IS IMPOSSIBLE TO OBTAIN EITHER OR BOTH OF THE ABOVE REQUIREMENTS, BOTH THE WATER AND SEWER LINES SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT MATERIAL. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS OR BOTH PIPES SHALL BE ENCASED IN CONCRETE.

SEWER/WATER SEPARATION & CROSSING

SCALE: N.T.S

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

TRENCH DETAILS (DETAIL SHEET 7 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.45

SHEET 45 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
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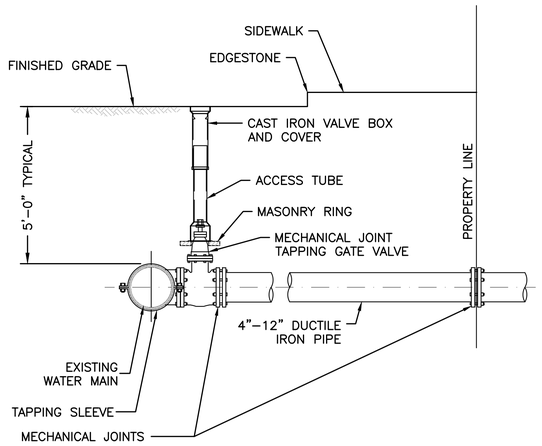
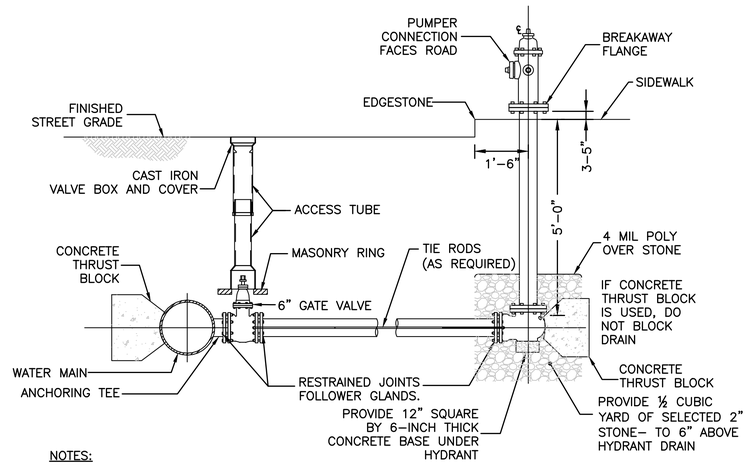


NOTES:

1. CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH.
2. USE RESTRAINED JOINT FITTINGS OR TIE RODS WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE.
3. SIZE OF BLOCK OR MEGALUG TO BE DESIGNED FOR SPECIFIC CONDITIONS.

TAPPING SLEEVE & VALVE

SCALE: N.T.S

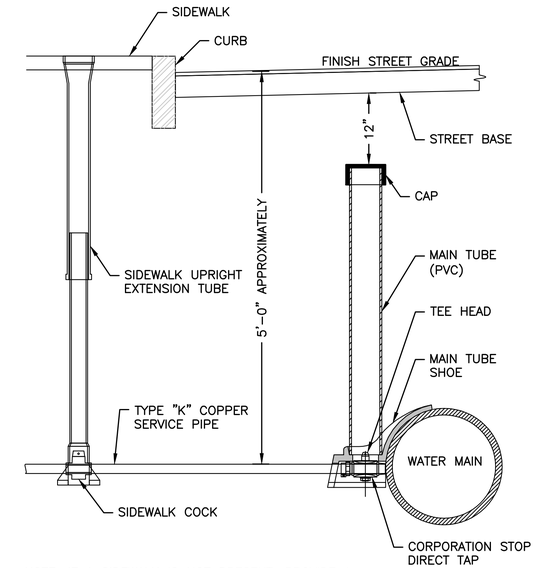


NOTES:

- CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH.
- USE RESTRAINED JOINT FOLLOWER GLANDS, OR TIE RODS. WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE.
- SIZE OF BLOCK OR FITTING TO BE DESIGNED FOR SPECIFIC CONDITIONS, OR ANY NECESSARY BENDS.

TYPICAL FIRE HYDRANT CONNECTION

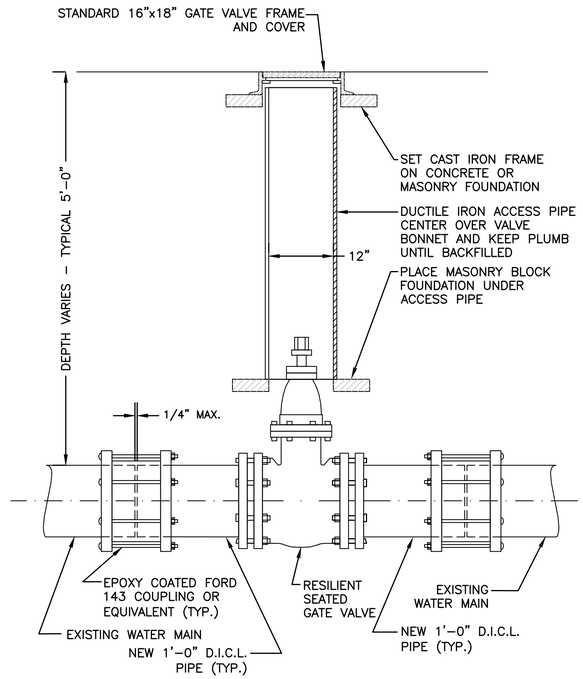
SCALE: N.T.S



NOTE: IF A SIDEWALK IS NOT PRESENT, PROVIDE A BUFFALO STYLE BOX AT A SIMILAR DISTANCE OFF THE BACK OF THE CURB (6'–7')

TYPICAL WATER CONNECTION 1" SERVICE PIPE

SCALE: N.T.S

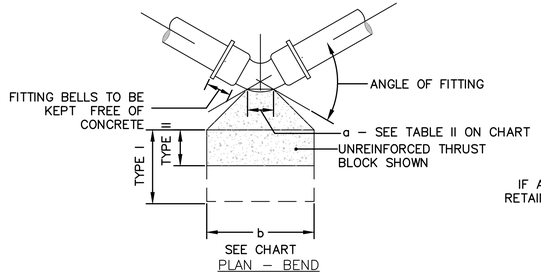


NOTE:

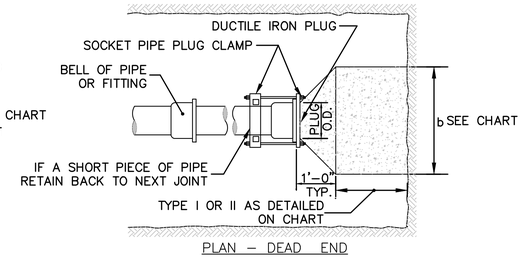
1. ALL EXCAVATION AND BACKFILLING AND PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON REQUIREMENTS.

TYPICAL GATE VALVE INSTALLATION

SCALE: N.T.S



PLAN – BEND



PLAN – DEAD END

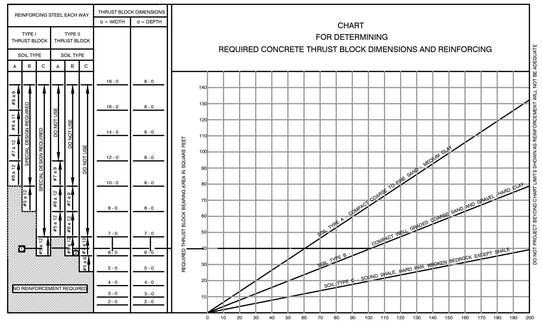
TABLE II - "a" DIMENSION - FEET

PIPE DIAMETER - INCHES	90° FITTING	OTHERS
6, 8, 10 & 12	1 - 6	1 - 0
16 & 20	2 - 4	1 - 6
24" - 30"	3 - 0	2 - 0

TABLE I - THRUST - KIPS (WATER PRESSURE = 200 P.S.I.)

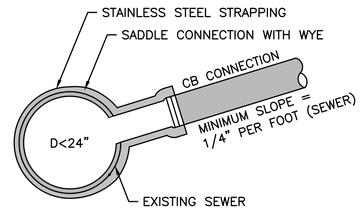
PIPE DIAMETER INCHES		6	8	10	12	16	20	24	30	36	42
DEAD ENDS AND TEES		5.6	10	15.8	22.6	40.2	62.8	90.4	141.0	203.6	277.0
HORIZ. FITTINGS	90°	7.9	14.2	22.4	32.0	56.8	88.8	127.7	199.0	286.0	392.0
	67 1/2°	-	11.1	17.6	25.1	44.7	70.0	100.2	157.0	226.0	308.0
	45 1/4°	-	-	14.9	21.2	37.9	59.2	85.1	133.0	192.0	261.0
	22 1/2°	-	-	-	17.3	30.8	48.1	69.0	108.0	156.0	212.0
	11 1/4°	-	-	-	13.1	23.3	36.3	52.5	82.0	118.0	161.0
	5 1/2°	-	-	-	8.8	15.7	24.5	35.2	55.0	79.5	108.0

DESIGN THRUST BLOCKS OR OTHER SUITABLE ANCHORAGE TO SUIT ACTUAL CONDITIONS



THRUST BLOCK & DIMENSIONS

SCALE: N.T.S



NOTES:

1. FULL PVC OR IRON SADDLE MAY BE USED TO CONNECT TO EXISTING PVC, CLAY, CONCRETE, OR IRON PIPE.
2. SADDLES MUST HAVE RUBBER GASKETS AND SHALL BE TIGHTENED WITH STRAPS. SADDLES WILL NOT BE CEMENTED ONTO THE PIPE.
3. FULL WYE CONNECTION FITTINGS MAY BE USED.
4. PIPE SHALL BE CUT TO CONFORM TO THE OPENING IN THE SADDLE.
5. CONNECTIONS DIRECTLY INTO THE EXISTING PIPE WITHOUT A SADDLE OR A FULL WYE FITTING ARE NOT ALLOWED.

TYPICAL SADDLE CONNECTION TO SEWER

SCALE: N.T.S

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

WATER AND SEWER CONNECTIONS (DETAIL SHEET 8 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.46

SHEET 46 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
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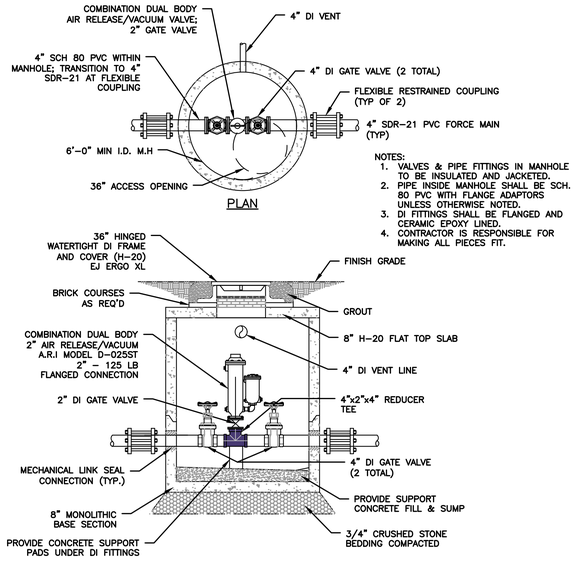
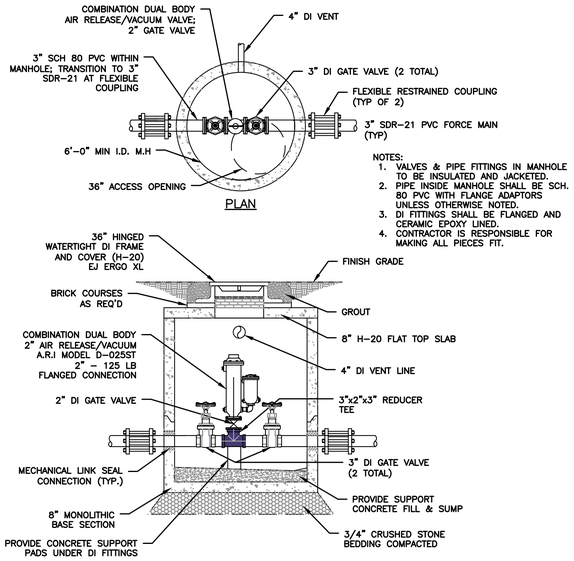


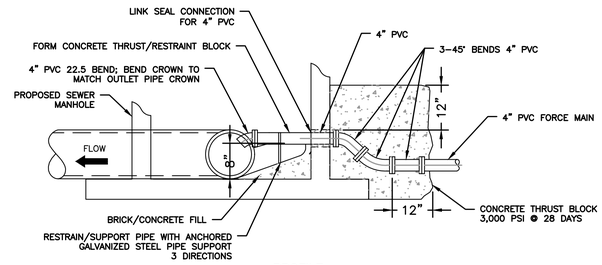
AIR RELEASE MANHOLE #1

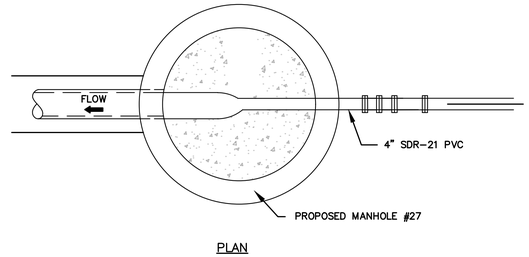
SCALE: N.T.S



AIR RELEASE MANHOLE #2 & #3

SCALE: N.T.S

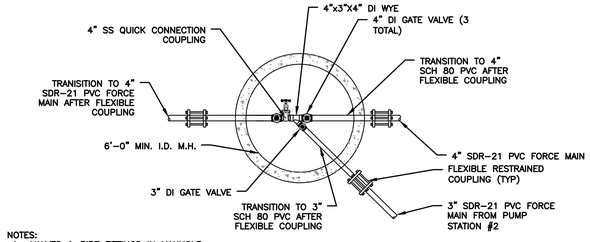




NOTE:
CROWN OF FORCE MAIN TO MATCH CROWN OF 8" PIPE.

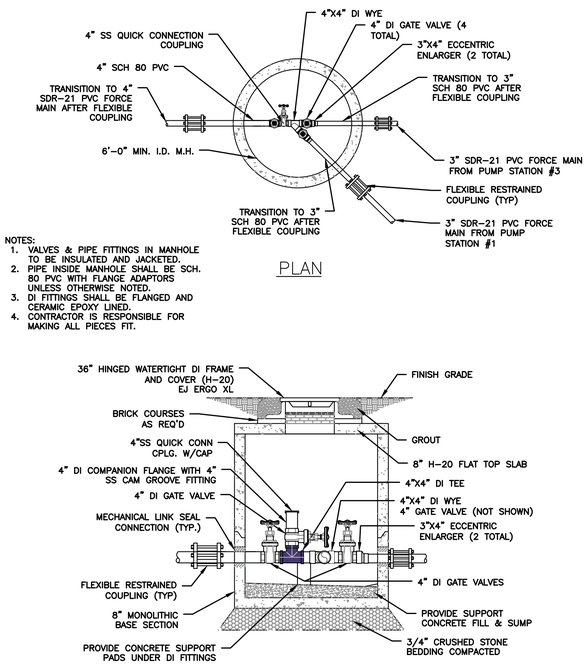
SMH #27 FORCE MAIN CONNECTION

SCALE: N.T.S



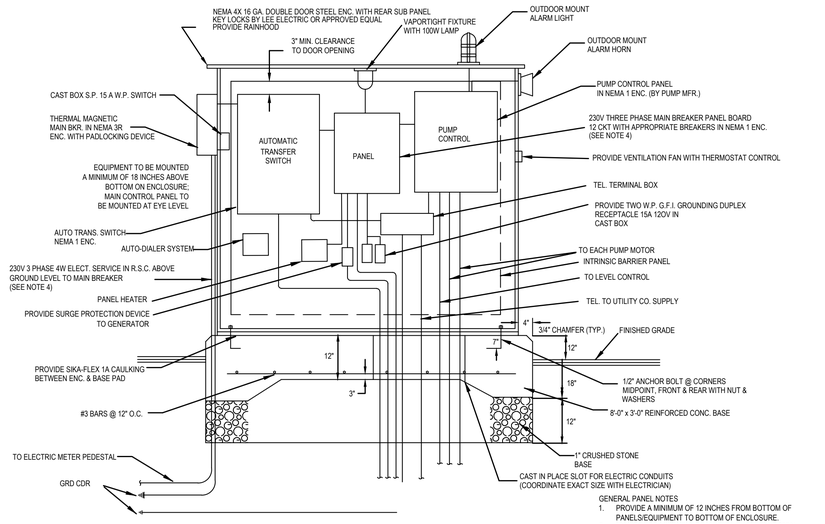
CLEANOUT VALVE MANHOLE #1

SCALE: N.T.S



CLEANOUT VALVE MANHOLE #2

SCALE: N.T.S



NOTE:
PRIOR TO CONTRACTOR BIDDING, SPECS SHALL BE REQUESTED FROM ONSITE ENGINEERING INC.

PUMP STATION CONTROL PANEL

SCALE: N.T.S

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/1/2023
COMMONWEALTH OF MASSACHUSETTS
KEVIN J. ENRIGHT
CIVIL
No. 48
REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

FORCE MAIN AND PUMP STATION DETAILS (DETAIL SHEET 9 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.47

SHEET 47 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: MBAKER
Printed by: Matthew Baker

DEEP HOLE TESTING
12-4-2019 THROUGH 10-21-2020
SOIL EVALUATOR: KASEY FERREIRA
WITNESSED BY: CHRIS JOHNSON
PERMEABILITY TESTING BY: DANIEL J. MERRIKIN, P.E.; KASEY FERREIRA

TP1
0"–13" A L/O
13"–23" B SL
23"–120" C LS
ESHW: 24"
HSG: C
FHPT: DESIGN K = 0.11 IN/HR

TP2
0"–10" A L/O
10"–118" C LS
ESHW: 33"
HSG: B

TP2A
0"–14" A SL
14"–28" B SL
28"–72" C SL
ESHW: 25"
HSG: C
FHPT: DESIGN K = 0.21 IN/HR

TP3
0"–12" A L
12"–20" B SL
20"–98" C LS
ESHW: 31"
HSG: C

TP4
0"–11" A L/O
11"–96" C LS
ESHW: 49"
HSG: A

TP5
0"–12" A L/O
12"–109" C LS
ESHW: 41"
HSG: A

TP6
0"–11" A L/O
11"–20" B SL
20"–99" C LS
ESHW: 26"
HSG: C

TP7
0"–7" A L
7"–122" C LS
ESHW: 40"
HSG: B

TP8
0"–7" A L
7"–18" B SL
18"–139" C LS
ESHW: 44"
HSG: B

TP9
0"–40" FILL
40"–117" C MED. S
ESHW: 40"
HSG: A

TP10
0"–9" A L
9"–23" B SL
23"–96" C CS
ESHW: 34"
HSG: C

TP11
0"–8" A L
8"–17" B LS
17"–122" C MED. S
ESHW: 30"
HSG: B

TP12
0"–9" A L
9"–18" B LS
18"–120" C MED. S
ESHW: 29"
HSG: B

TP13
0"–13" A L
13"–28" B SL
28"–135" C LS
ESHW: 43"
HSG: B

TP14
0"–7" A L
7"–13" B LFS
13"–95" C1 CS
95"–120" C2 G
ESHW: 95"
HSG: A

TP15
0"–5" A L
5"–22" B SL
22"–120" C LS
ESHW: 30"
HSG: C

TP16
0"–5" A L
5"–20" B SL
20"–120" C LS
ESHW: 36"
HSG: C
FHPT: DESIGN K = 0.23 IN/HR

TP17
0"–9" A L/O
9"–108" C LS
ESHW: 18"
HSG: A/D

TP18
0"–8" A L
8"–17" B SL
17"–120" C LS
ESHW: 26"
HSG: C

TP19
0"–8" A L
8"–20" B LS
20"–120" C S
ESHW: 50"
HSG: A

TP20
0"–7" A L
7"–24" B SL
24"–103" C LS
ESHW: 48"
HSG: B

TP21
0"–9" A L
9"–24" B LS
24"–102" C S
ESHW: 43"
HSG: A

TP22
0"–6" A L
6"–23" B SL
23"–66" C LS
ESHW: 32"
HSG: C

TP23
0"–12" A L
12"–24" B LS
24"–118" C S
ESHW: 36"
HSG: B

TP24
0"–11" A L
11"–24" B LS
24"–102" C S
ESHW: 39" REFUSAL @ 102"
HSG: B

TP25
0"–10" A L
10"–20" B LS
20"–69" C S
ESHW: 41" REFUSAL @ 69"
HSG: A

TP25A
0"–8" A L
8"–15" B SL
15"–108" C LS
ESHW: 32"
HSG: C

TP26
0"–10" A L
10"–18" B SL
18"–75" C LS
ESHW: 49" REFUSAL @ 75"
HSG: B

TP27
0"–8" A L
8"–25" B SL
25"–48" C1 LS
48"–110" C2 LS
ESHW: 30"
HSG: C

TP28
0"–6" A L
6"–24" B SL
24"–99" C LS
ESHW: 32"
HSG: C

TP29
0"–13" A L
13"–18" B SL
18"–132" C LS
ESHW: 43"
HSG: B

TP30
0"–12" A L/O
12"–30" B L
30"–128" C LS
ESHW: 36"
HSG: C

TP31
0"–32" FILL
32"–96" C GLS
ESHW: 42"
HSG: A

TP32
0"–14" A SL
14"–20" B SL
20"–88" C SL
ESHW: 30"
HSG: C
FHPT: DESIGN K = 0.89 IN/HR

TP33
0"–12" A SL
12"–30" B SL
30"–87" C LS
ESHW: 30"
HSG: C
FHPT: DESIGN K = 0.09 IN/HR

TP34
0"–10" A SL
10"–24" B SL
24"–72" C LS
ESHW: 37"
HSG: C
FHPT: DESIGN K = 0.30 IN/HR

TP36
0"–10" A SL
10"–22" B SL
22"–62" C SL
ESHW: 21"
HSG: C

TP37
0"–11" A SL
11"–28" B SL
28"–52" C SL
ESHW: 28"
HSG: C

TP38
0"–12" A SL
12"–28" B SL
28"–72" C S
ESHW: 42"
HSG: B
FHPT: DESIGN K = 10.41 IN/HR

TP39
0"–14" A SL
14"–37" B SL
37"–66" C LS
ESHW: 36"
HSG: C

TP40
0"–14" A SL
14"–30" B SL
30"–59" C1 S
59"–98" C2 LS
ESHW: 28"
HSG: C
FHPT: DESIGN K = 5.13 IN/HR

TP40A
0"–14" A SL
14"–23" B SL
23"–80" C S
ESHW: 40"
HSG: C
FHPT: DESIGN K = 6.58 IN/HR

TP41
0"–9" A SL
9"–20" B SL
20"–88" C S
ESHW: 45"
HSG: B
FHPT: DESIGN K = 8.28 IN/HR

TP42
0"–10" A SL
10"–28" B SL
28"–86" C S
ESHW: 48"
HSG: B
FHPT (IN C1): DESIGN K = 3.27 IN/HR
FHPT (IN C2): DESIGN K = 10.74 IN/HR

TP43
0"–10" A SL
10"–26" B SL
26"–64" C1 SL
64"–100" C2 LS
ESHW: 26"
HSG: C
FHPT (IN C2): DESIGN K = 0.66 IN/HR

TP43A
0"–10" A SL
10"–19" B SL
19"–89" C SL
ESHW: 16"
HSG: B/D

TP44
0"–10" A SL
10"–35" B SL
35"–52" C1 SL
52"–76" C2 LS
ESHW: 35"
HSG: C
FHPT (IN C2): DESIGN K = 8.95 IN/HR

TP45
0"–12" A SL
12"–27" B SL
27"–56" C1 SL
56"–91" C2 LS
ESHW: N/A
HSG: N/A
FHPT (IN C2): DESIGN K = 0.35 IN/HR

TP46
0"–12" A SL
12"–27" B SL
27"–52" C1 SL
52"–100" C2 LS
ESHW: 18"
HSG: B/D
FHPT (IN C2): DESIGN K = 0.59 IN/HR

TP47
0"–12" A SL
12"–34" B SL
34"–48" C1 SL
48"–102" C2 LS
ESHW: 30"
HSG: C
FHPT (IN C2): DESIGN K = 3.69 IN/HR

TP48
0"–12" A SL
12"–29" B SL
29"–80" C LS
ESHW: 36"
HSG: C
FHPT: DESIGN K = 6.32 IN/HR

TP49
0"–10" A SL
10"–24" B SL
24"–60" C LS
REFUSAL: 60"
HSG: B
FHPT: DESIGN K = 2.91 IN/HR

TP50
0"–12" A SL
12"–25" B SL
25"–67" C LS
ESHW: NONE
HSG: B
FHPT: DESIGN K = 0.59 IN/HR

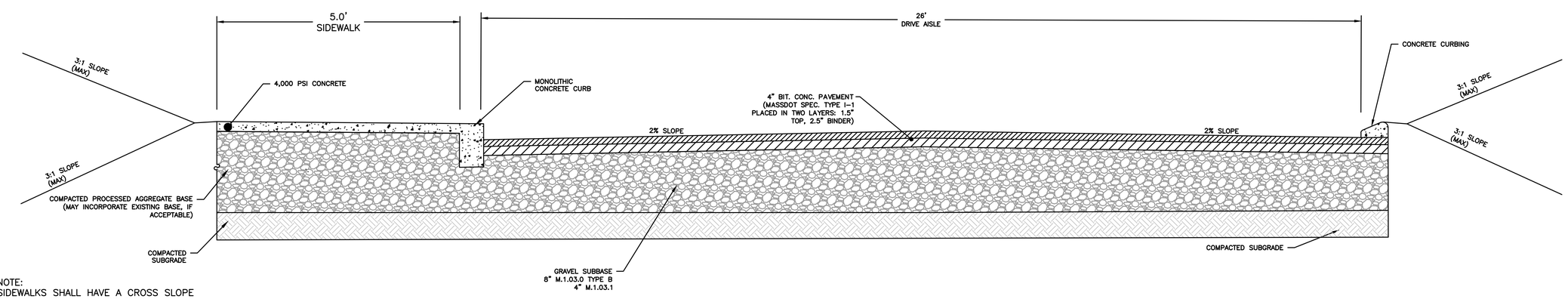
TP51
0"–12" A SL
12"–34" B SL
34"–65" C LS
ESHW: 21"
HSG: B/D
FHPT (IN C2): DESIGN K = 1.40 IN/HR

TP52
0"–10" A SL
10"–28" B SL
28"–72" C LS
ESHW: 53"
HSG: B
FHPT: DESIGN K = 3.50 IN/HR

TP53
0"–10" A SL
10"–32" B SL
32"–78" C SL
ESHW: 32"
HSG: C

SOIL TESTING RESULTS

SCALE: N.T.S



NOTE:
SIDEWALKS SHALL HAVE A CROSS SLOPE
OF 1.6% WITH A MAX OF 2.0%.

TYPICAL DRIVEWAY CROSS SECTION

SCALE: N.T.S

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/20/23
KASEY E. FERREIRA
CIVIL
No. 49
REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

SOIL TESTING & CROSS SECTIONS (DETAIL SHEET 10 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.48
SHEET 48 OF 62

6/19/2023 L:\19097\19097 04 - Lot 2\CURRENT\19097 - Details.dwg
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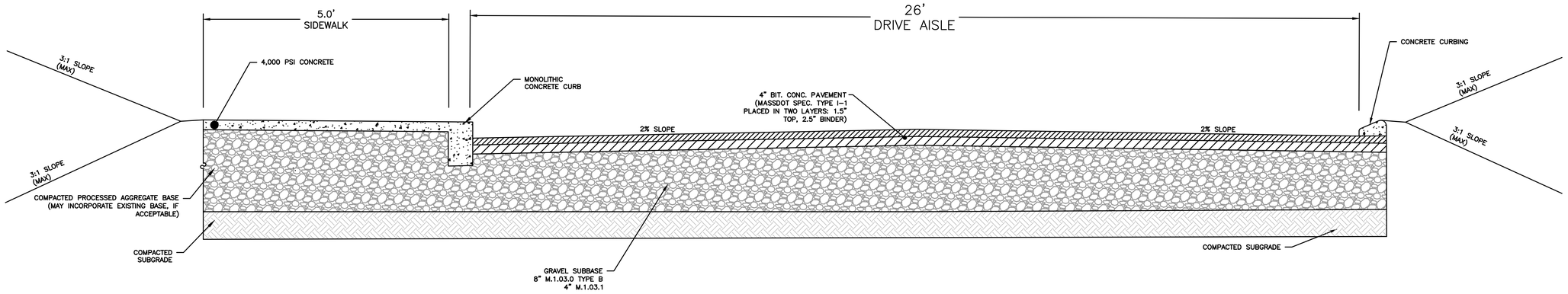
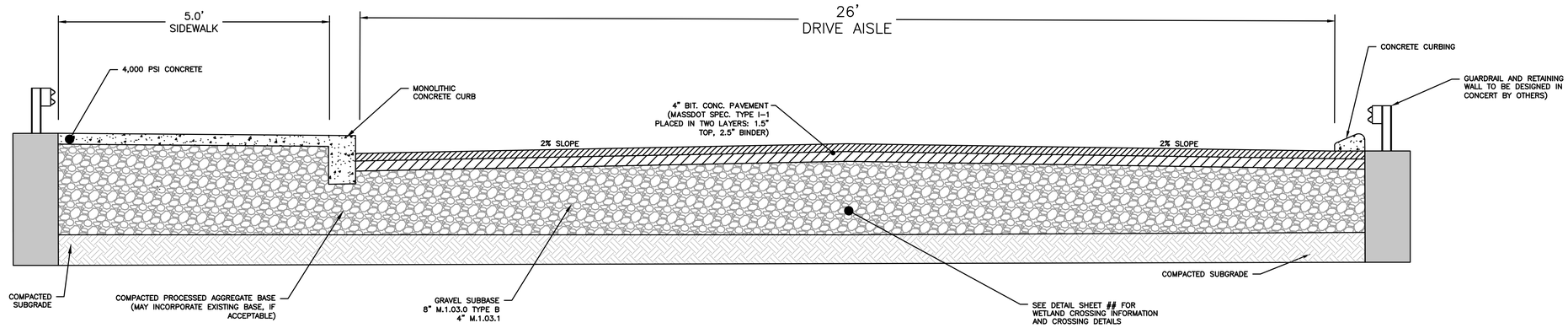


NOTE:
SIDEWALKS SHALL HAVE A CROSS SLOPE OF 1.6% WITH A MAX OF 2.0%.

TYPICAL DRIVEWAY CROSS SECTION

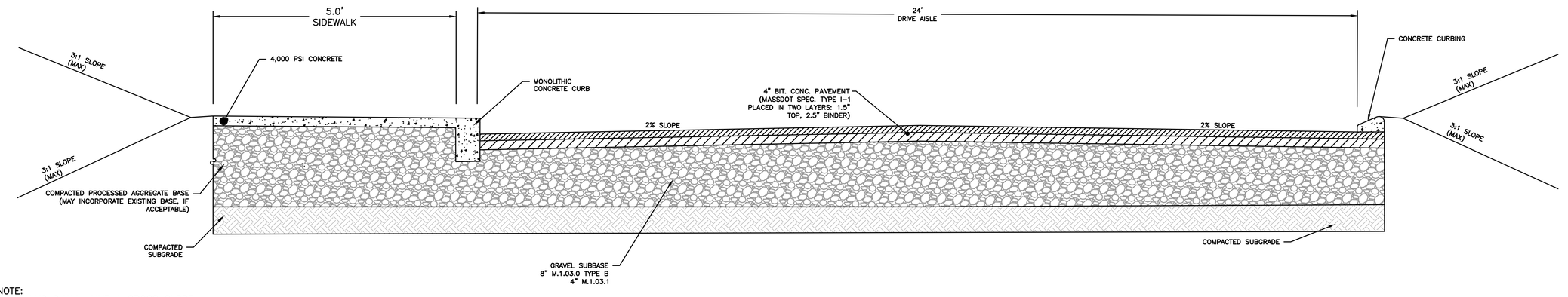
SCALE: N.T.S



NOTE:
SIDEWALKS SHALL HAVE A CROSS SLOPE OF 1.6% WITH A MAX OF 2.0%.

WETLAND CROSSING CROSS SECTION

SCALE: N.T.S



NOTE:
SIDEWALKS SHALL HAVE A CROSS SLOPE OF 1.6% WITH A MAX OF 2.0%.

TYPICAL DRIVEWAY CROSS SECTION

SCALE: N.T.S

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114 Turnpike Road, Suite 2C
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PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

ROADWAY CROSS SECTIONS (DETAIL SHEET 11 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.49

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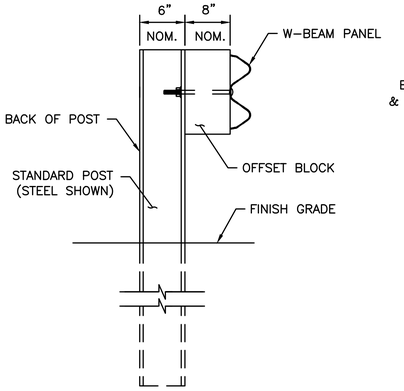
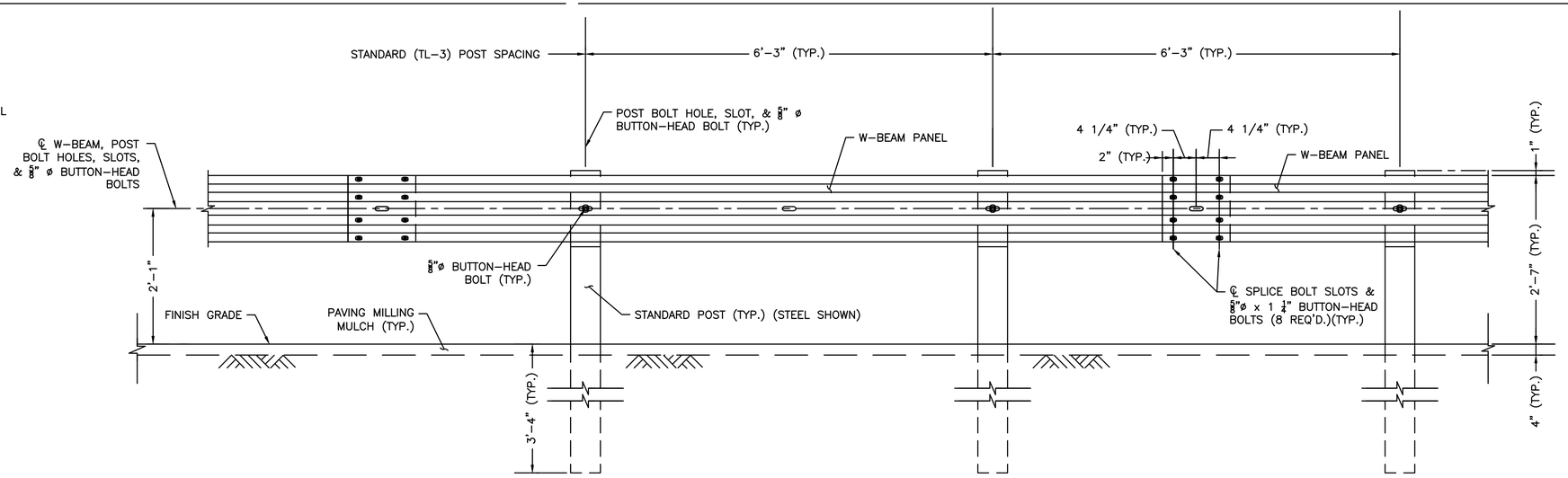
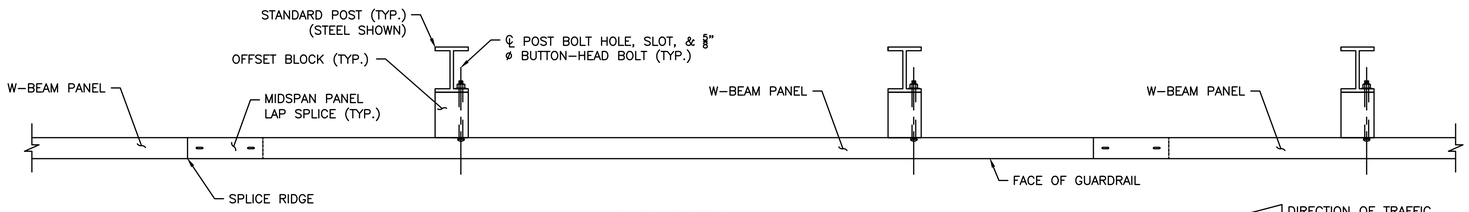


POST DETAIL



FRONT ELEVATION

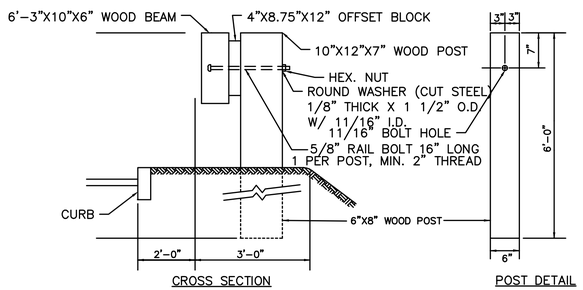


CROSS SECTION

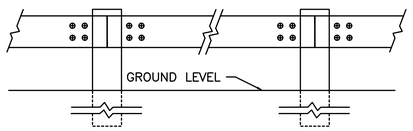
NOTE:
GUARDRAIL INTEGRATION INTO RETAINING WALLS SHALL BE THE RESPONSIBILITY OF STRUCTURAL ENGINEER.

STEEL GUARDRAIL

SCALE: N.T.S



CROSS SECTION POST DETAIL



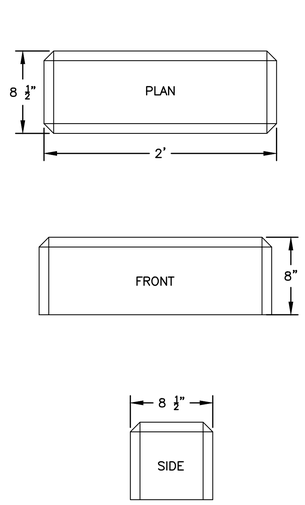
FRONT ELEVATION

NOTES:
1. ALL NUTS, BOLTS AND WASHERS ARE TO BE GALVANIZED
2. ALL SPLICES ARE TO BE MADE AT POSTS
3. FOR THE TYPE OF WOOD AND WOOD TREATMENT, OTHER MATERIALS & METHODS OF CONSTRUCTION, SEE SPECIFICATIONS AND SPECIAL PROVISIONS
4. BACK-UP PLATE IS PLACED BEHIND RAIL ELEMENTS AT INTERMEDIATE POSTS I.E. NON SPLICE LOCATION.
5. STEEL POSTS ARE TO BE SUBSTITUTED AT THE SAME BID PRICE, FOR CERTAIN WOOD POSTS IN A WOOD POST RUN WHEN CEMENT CONCRETE EMBEDMENT IS REQUIRED

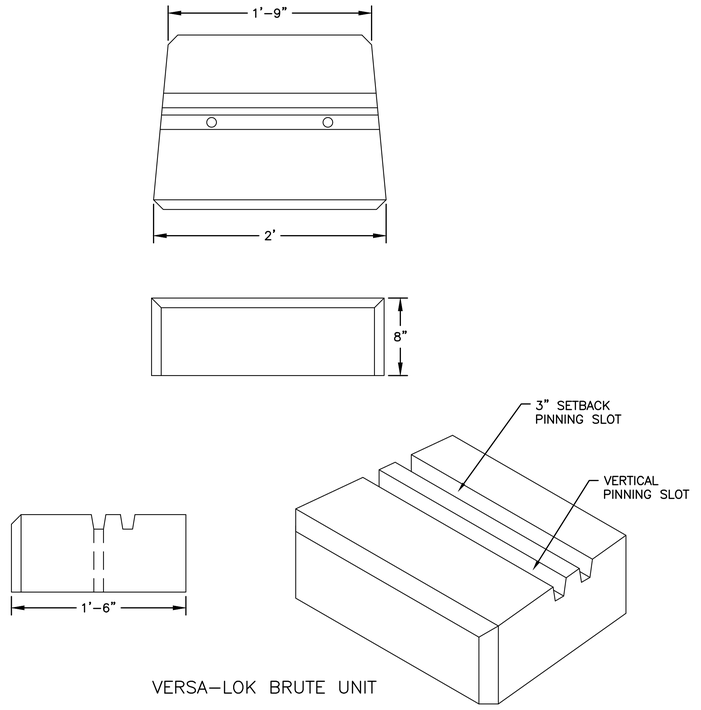
NOTE:
GUARDRAIL INTEGRATION INTO RETAINING WALLS SHALL BE THE RESPONSIBILITY OF STRUCTURAL ENGINEER.

WOOD GUARDRAIL

SCALE: N.T.S



VERSA-LOK BRUTE HALF UNIT



VERSA-LOK BRUTE UNIT

VERSA-LOK RETAINING WALL

SCALE: N.T.S

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FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

RETAINING WALL/ GUARDRAIL DETAILS (DETAIL SHEET 12 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.50

SHEET 50 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
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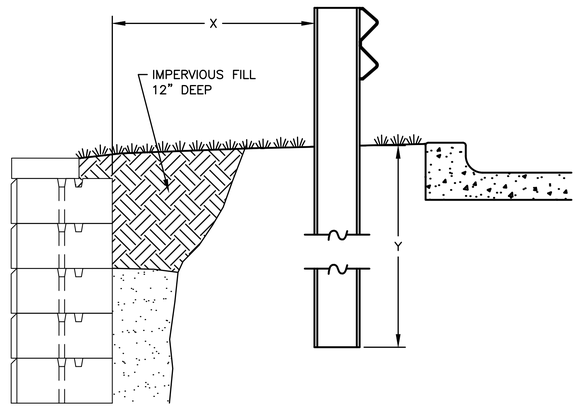
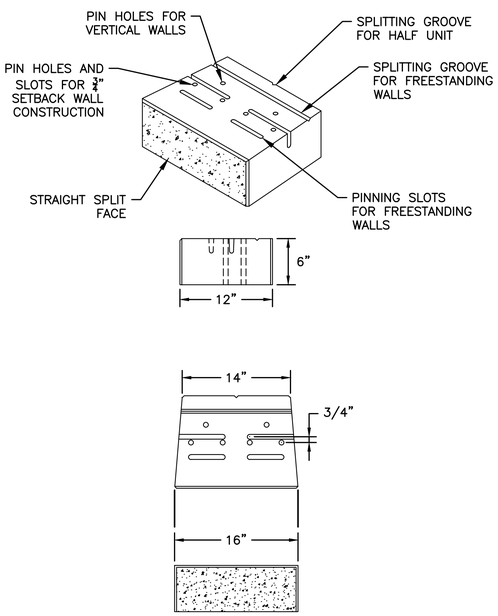
NOTES:
1. ALL LOCATIONS, DIMENSIONS, MATERIALS OF RETAINING WALL AND GUARDRAIL TO BE DESIGNED AND DETERMINED BY A STRUCTURAL ENGINEER BASED ON THE CRITERIA LISTED WITHIN THE GRADING AND DRAINAGE AND LAYOUT AND MATERIAL PLANS.
2. RETAINING WALL AND GUARDRAIL TO BE DESIGNED IN CONCERT.
3. RETAINING WALL TO BE DESIGNED AND SIGNED OFF ON BY A LICENSED STRUCTURAL ENGINEER.

GUARDRAIL NOTES:
1. RETAINING WALL TO BE CERTIFIED BY A PROFESSIONAL ENGINEER PRIOR TO CONSTRUCTION.
2. DISTANCE X AND Y TO BE DETERMINED BY A STRUCTURAL ENGINEER.
3. GUARDRAIL TO BE SPECIFICALLY SELECTED FOR ENGINEERED RETAINING WALL.
4. REFER TO STRUCTURAL ENGINEERING PLANS FOR WALLS GREATER THAN 4 FEET IN HEIGHT.

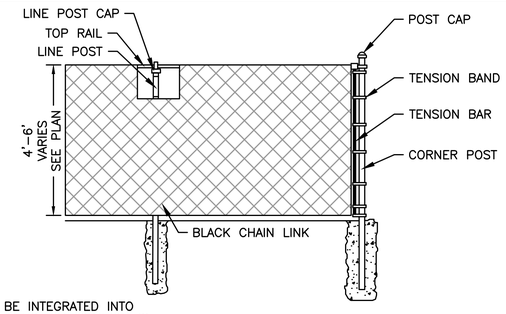


NOT FOR CONSTRUCTION

RETAINING WALL WITH GUARDRAIL AND FENCE
SCALE: N.T.S

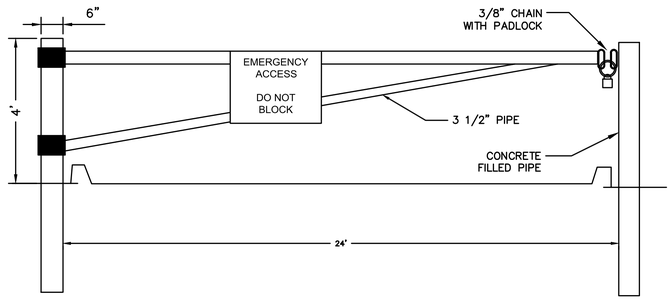


VERSA–LOK UNIT
SCALE: N.T.S



NOTE:
IF FENCE IS TO BE INTEGRATED INTO RETAINING WALL, FENCE INTEGRATION IS TO BE DETAILED ON STRUCTURAL ENGINEERS PLANS

CHAIN LINK FENCE DETAIL
SCALE: N.T.S



EMERGENCY ACCESS GATE DETAIL
SCALE: N.T.S

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Chelmsford, MA 01824
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c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

RETAINING WALL/ GUARDRAIL DETAILS (DETAIL SHEET 13 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.51

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
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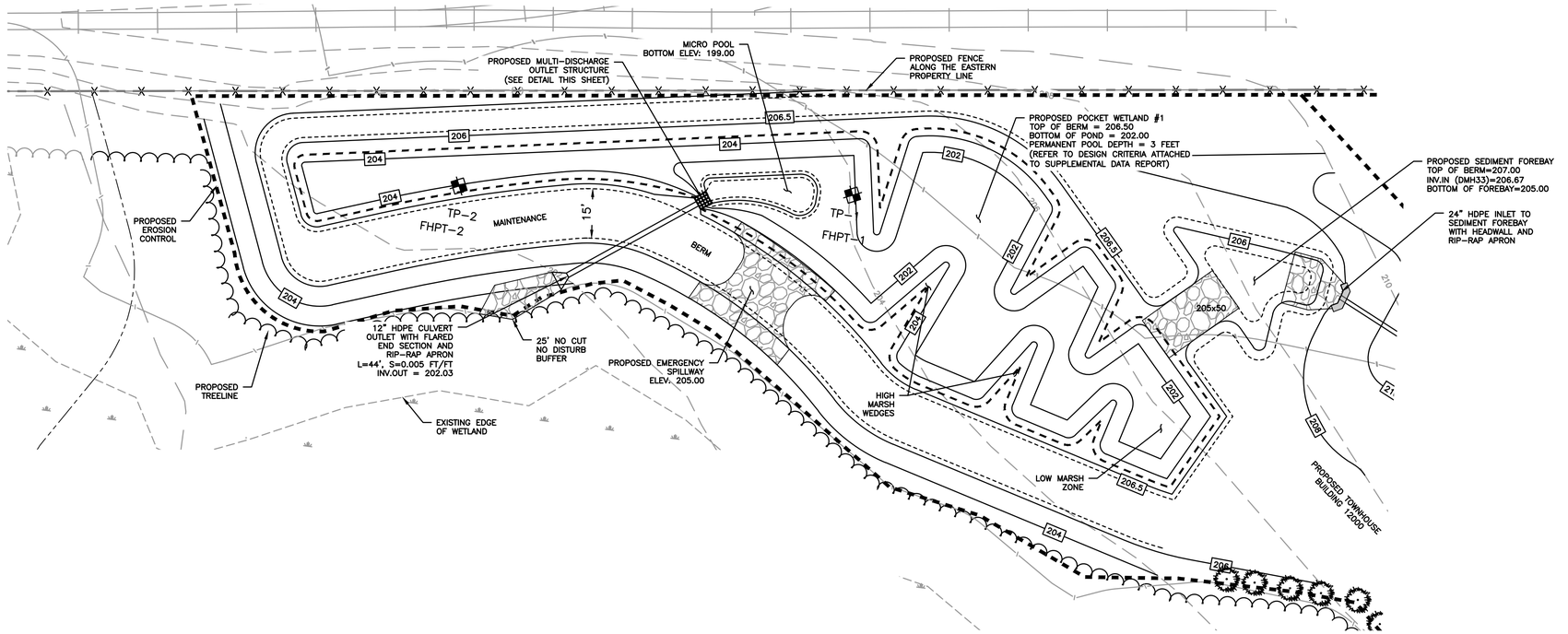
CONSTRUCTION

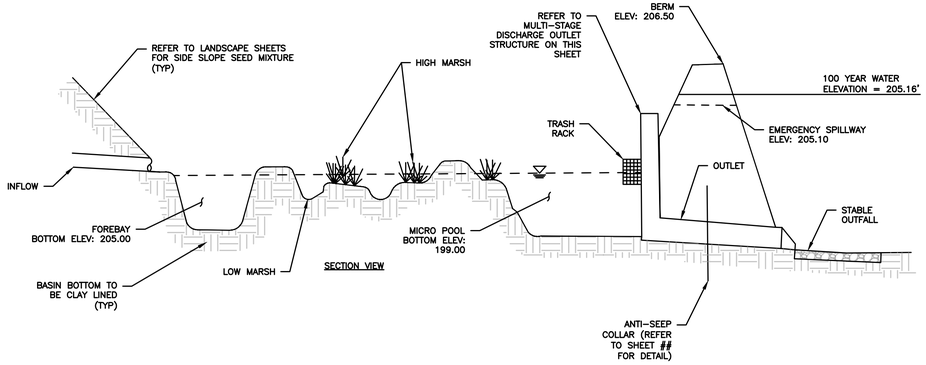
A SEVEN–STEP PROCESS TO PREPARE A WETLAND BE PRIOR TO PLANTING (SHUELER 1992):

1. PREPARE FINAL POND–SCAPING AND GRADING PLANS FOR THE CONSTRUCTED STORMWATER WETLAND. AT THE SAME TIME, ORDER WETLAND PLANT STOCKS FROM AQUATIC NURSERIES.
2. ONCE THE CONSTRUCTED STORMWATER WETLAND WETLAND VOLUME HAS BEEN EXCAVATED, GRADE THE WETLAND TO CREATE THE MAJOR INTERNAL FEATURES (POOL, AQUATIC BENCH, DEEP WATER CHANNELS, ETC.).
3. BECAUSE DEEP SUBSOILS OFTEN LACK THE NUTRIENTS AND ORGANIC MATTER NEEDED TO SUPPORT VIGOROUS PLANT GROWTH, ADD TOPSOIL AND/OR WETLAND MULCH TO THE WETLAND EXCAVATION. IF AVAILABLE, WETLAND MULCH IS PREFERABLE TO TOPSOIL.
4. AFTER THE MULCH OR TOPSOIL HAS BEEN ADDED, GRADE THE CONSTRUCTED STORMWATER WETLAND TO ITS FINAL ELEVATIONS. TEMPORARILY STABILIZE ALL WETLAND FEATURES ABOVE THE NORMAL POOL. AFTER FINAL GRADING, CLOSE THE POOL DRAIN TO ALLOW THE POOL TO FILL. MASSDEP RECOMMENDS EVALUATING THE WETLAND ELEVATIONS DURING A STANDING PERIOD OF APPROXIMATELY SIX MONTHS TO ASSESS HOW THE CONSTRUCTED STORMWATER WETLAND RESPONDS TO STORM FLOWS AND INUNDATION, WHERE THE POND–SCAPING ZONES ARE LOCATED, AND WHETHER THE FINAL GRADE AND MICRO–TOPOGRAPHY WILL PERSIST OVER TIME.
5. BEFORE PLANTING, MEASURE THE CONSTRUCTED STORMWATER WETLAND DEPTH. IF NECESSARY, MODIFY THE POND–SCAPE PLAN AT THIS TIME TO REFLECT ALTERED DEPTHS OR AVAILABILITY OF PLANT STOCK.
6. AGGRESSIVELY APPLY EROSION CONTROLS DURING THE STANDING AND PLANTING PERIODS. STABILIZE THE VEGETATION IN ALL AREAS ABOVE THE NORMAL POOL ELEVATION DURING THE STANDING PERIOD (TYPICALLY BY HYDROSEEDING).
7. DEWATER THE CONSTRUCTED STORMWATER WETLAND AT LEAST THREE DAYS BEFORE PLANTING, BECAUSE A DRY WETLAND IS EASIER TO PLANT THAN A WET ONE.



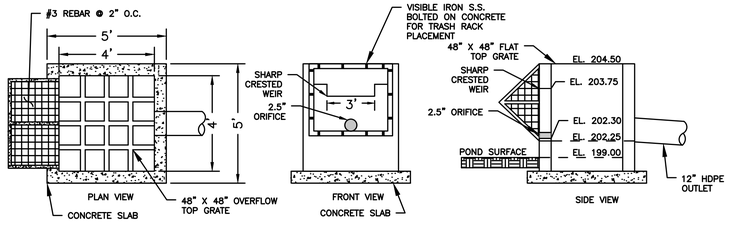
POCKET WETLAND

SCALE: 1"=20'



POCKET WETLAND SECTION

SCALE: N.T.S



MULTI–STAGE DISCHARGE OUTLET STRUCTURE

SCALE: NTS

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/20/23
KATHLEEN C. ENRIGHT
CIVIL
No. 49511
REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

POCKET WETLAND DETAIL (DETAIL SHEET 14 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.52

SHEET 52 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved By: KBAKER
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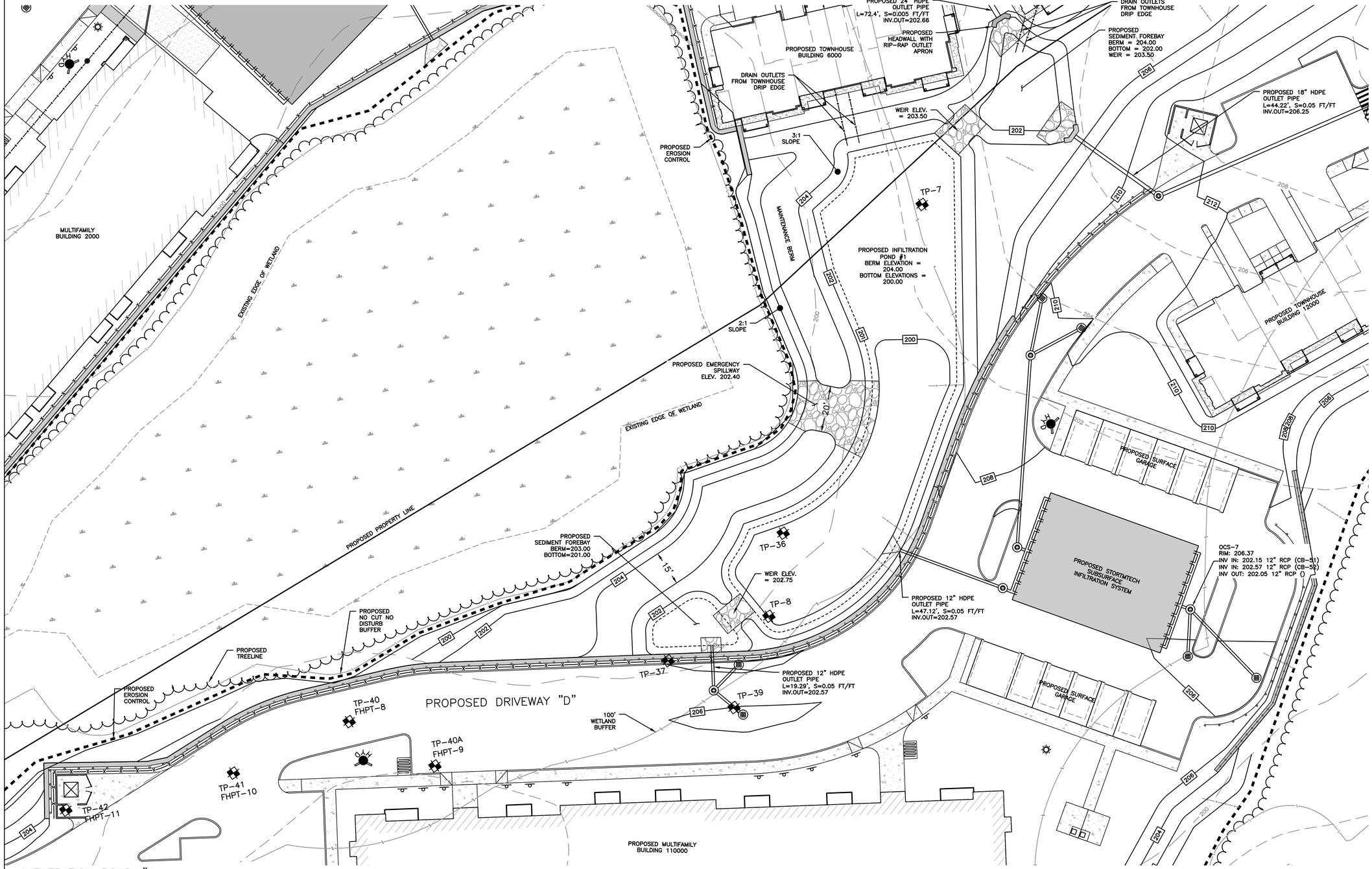
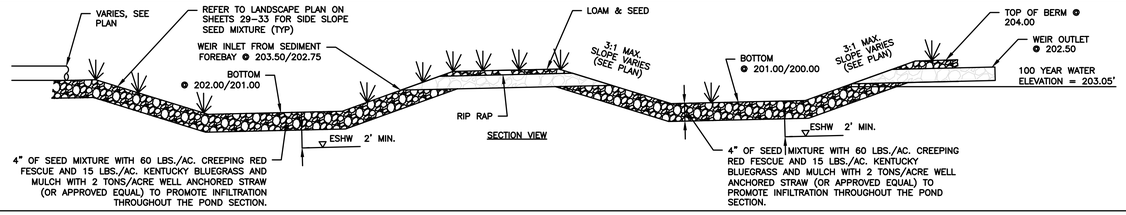


INFILTRATION POND #1

SCALE: 1"=20'

NOTE:

1. INSTALL MONITORING WELLS PER MASSACHUSETTS STORMWATER HANDBOOK.
2. THE AREA OF INFILTRATION SYSTEMS SHALL BE EXCAVATED TO REMOVE TILL DOWN TO NATURAL SOILS AND SHALL BE WITNESSED BY AN AGENT OF THE TOWN PRIOR TO INSTALLING OF CRUSHED STONE AND THE UNDERGROUND INFILTRATION SYSTEM.



INFILTRATION POND #1 SECTION

SCALE: NTS

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114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

INFILTRATION POND #1 DETAIL (DETAIL SHEET 15 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.53

SHEET 53 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
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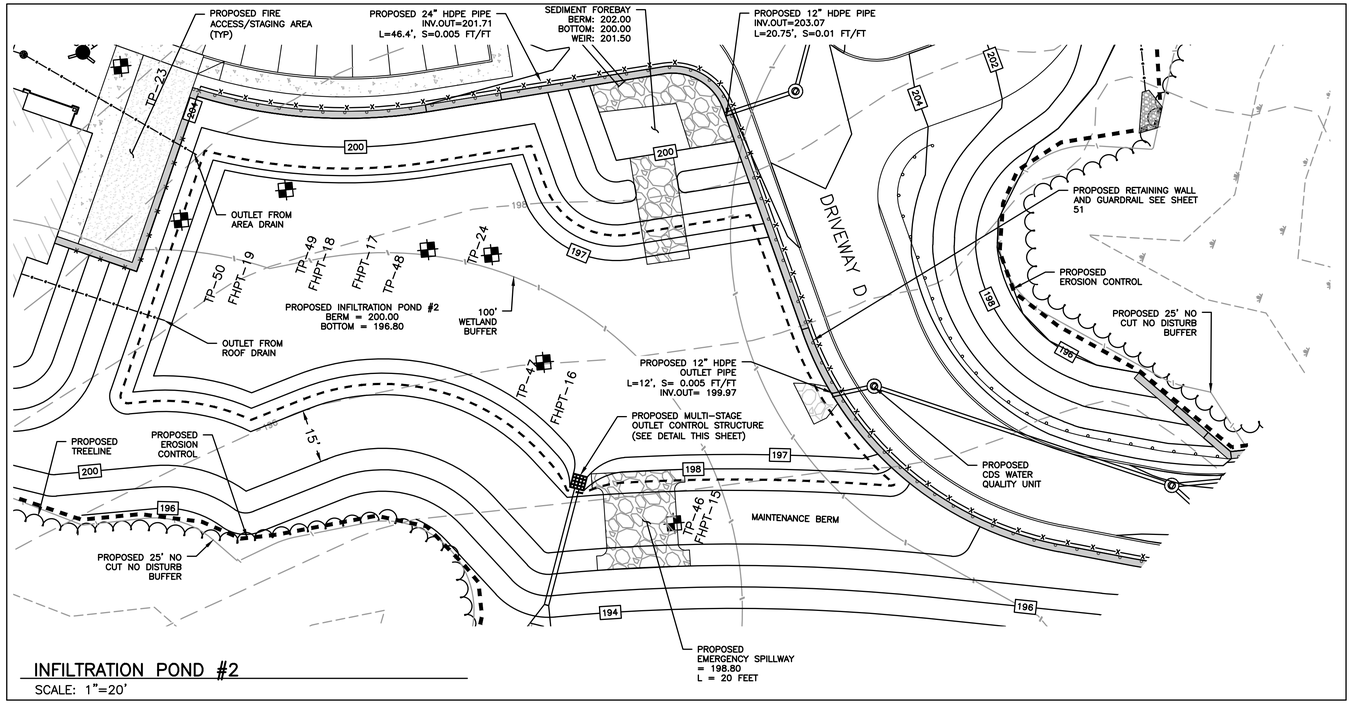
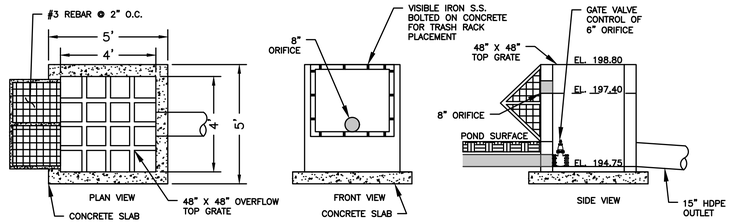


INFILTRATION POND #2

SCALE: 1"=20'

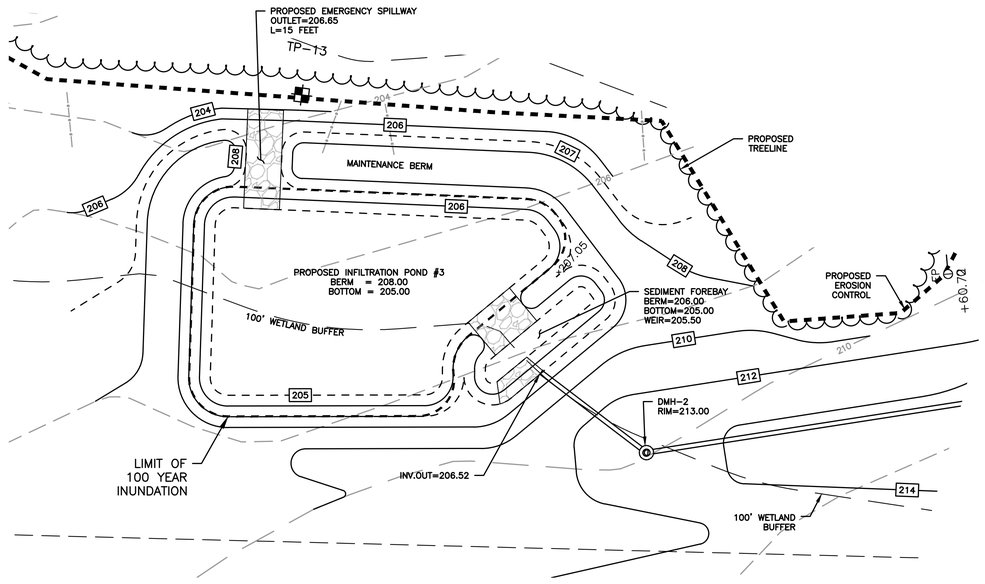


NOTE:

1. INSTALL MONITORING WELLS PER MASSACHUSETTS STORMWATER HANDBOOK.
2. THE AREA OF INFILTRATION SYSTEMS SHALL BE EXCAVATED TO REMOVE TILL DOWN TO NATURAL SOILS AND SHALL BE WITNESSED BY AN AGENT OF THE TOWN PRIOR TO INSTALLING CRUSHED STONE AND THE UNDERGROUND INFILTRATION SYSTEM.

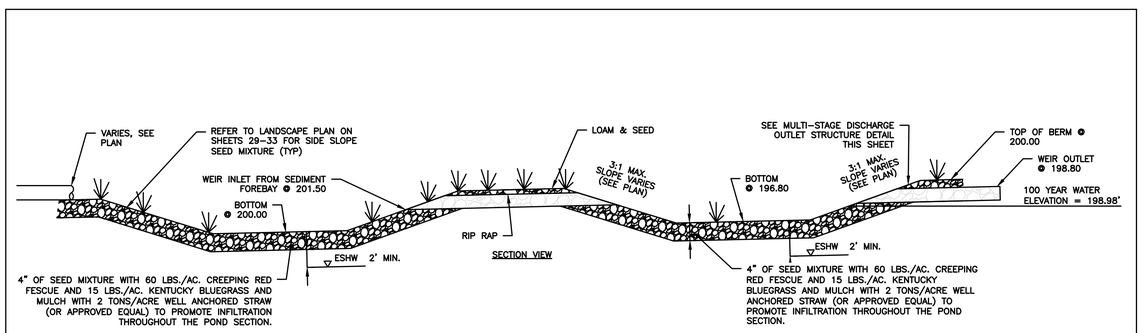
MULTI-STAGE DISCHARGE OUTLET STRUCTURE #2

SCALE: NTS



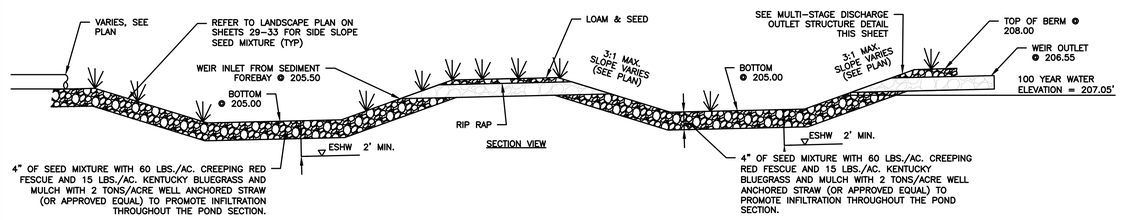
INFILTRATION POND #3

SCALE: 1"=20'



INFILTRATION POND #2 SECTION

SCALE: NTS



INFILTRATION POND #3 SECTION

SCALE: NTS

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/26/23
PAUL E. KNIGHT
CIVIL
No. 49611
REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

INFILTRATION POND DETAILS (DETAIL SHEET 16 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.54

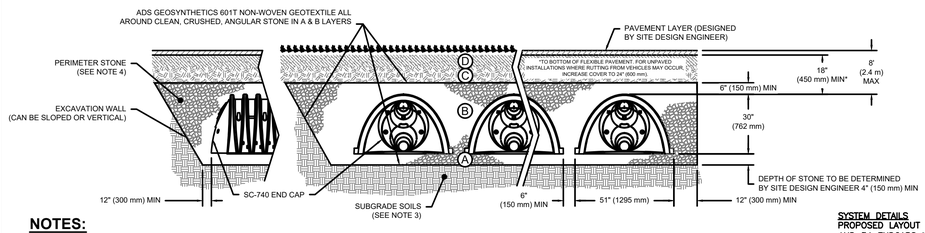
SHEET 54 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: MBAKER
Printed by: Matthew Baker

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
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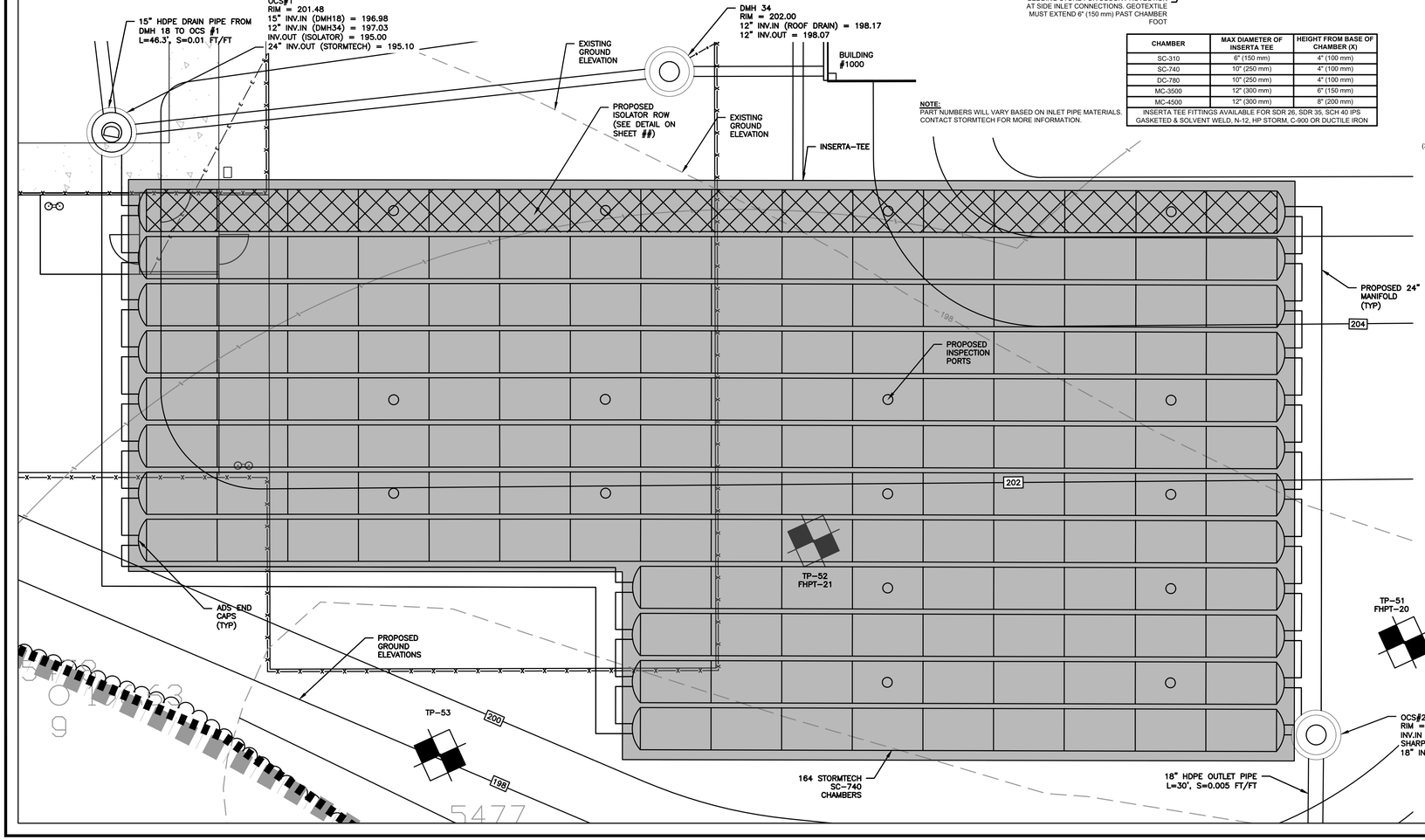
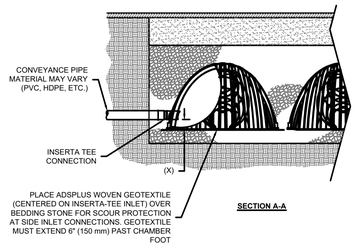
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SYSTEM DETAILS
PROPOSED LAYOUT INCLUDES 164 STORMTECH SC-740 CHAMBERS AND 34 ENDCAPS INSTALLED WITH 4" BASE STONE AND 6" COVER STONE. AN ISOLATOR ROW IS ALSO PROPOSED.

MAX. ALLOWABLE GRADE (TOP OF PAVE/UNPAVED)	205.60
MIN. ALLOWABLE GRADE (PAVED W/ TRAFFIC)	199.60
MIN. ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	199.10
TOP OF STONE	198.10
TOP OF SC-740 CHAMBER	197.60
BOTTOM MANIFOLD INVERT	195.10
ISOLATOR ROW	195.00
BOTTOM OF SC-740 CHAMBER	195.10
BOTTOM OF STONE	194.77



NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.



SECTION A-A

SIDE VIEW

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)

INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON

SC-740 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
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8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

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

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

NOTES FOR CONSTRUCTION EQUIPMENT

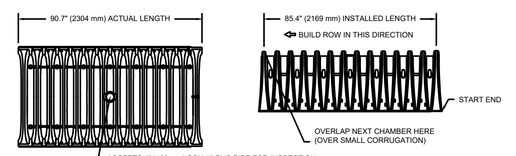
1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE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

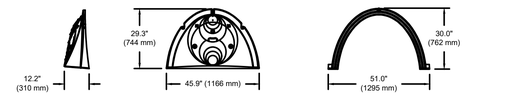
USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

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

SC-740 TECHNICAL SPECIFICATION

NTS

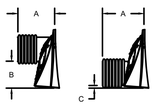




NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



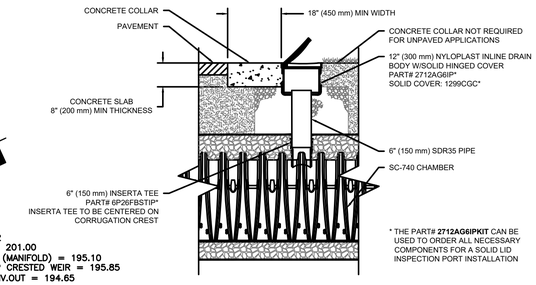
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL



* THE PART# **2712AG6IPKIT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

SC-740 6" (150 mm) INSPECTION PORT DETAIL
NTS

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

COMMONWEALTH OF MASSACHUSETTS
KEVIN E. ENRIGHT
CIVIL
No. 49617
REGISTERED PROFESSIONAL ENGINEER
6/20/2023

SITE PLAN

STORMTECH INFILTRATION SYSTEM (DETAIL SHEET 17 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.55

SHEET 55 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved By: KBAKER
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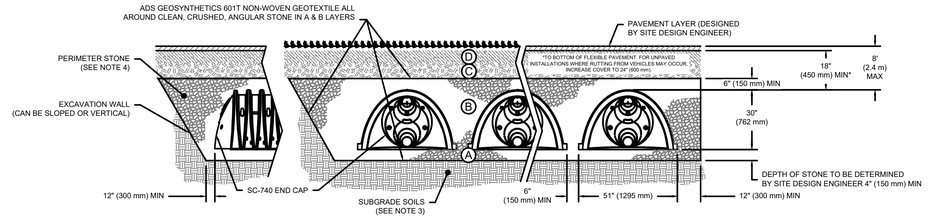

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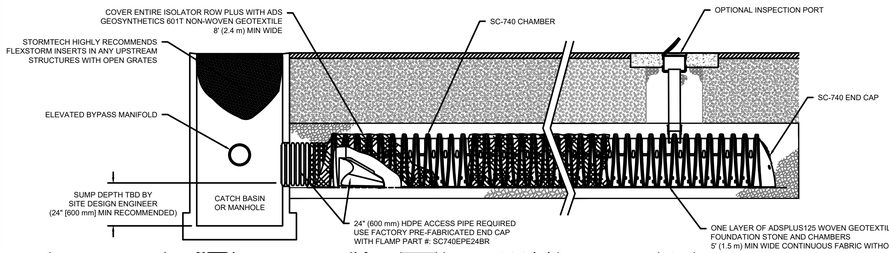
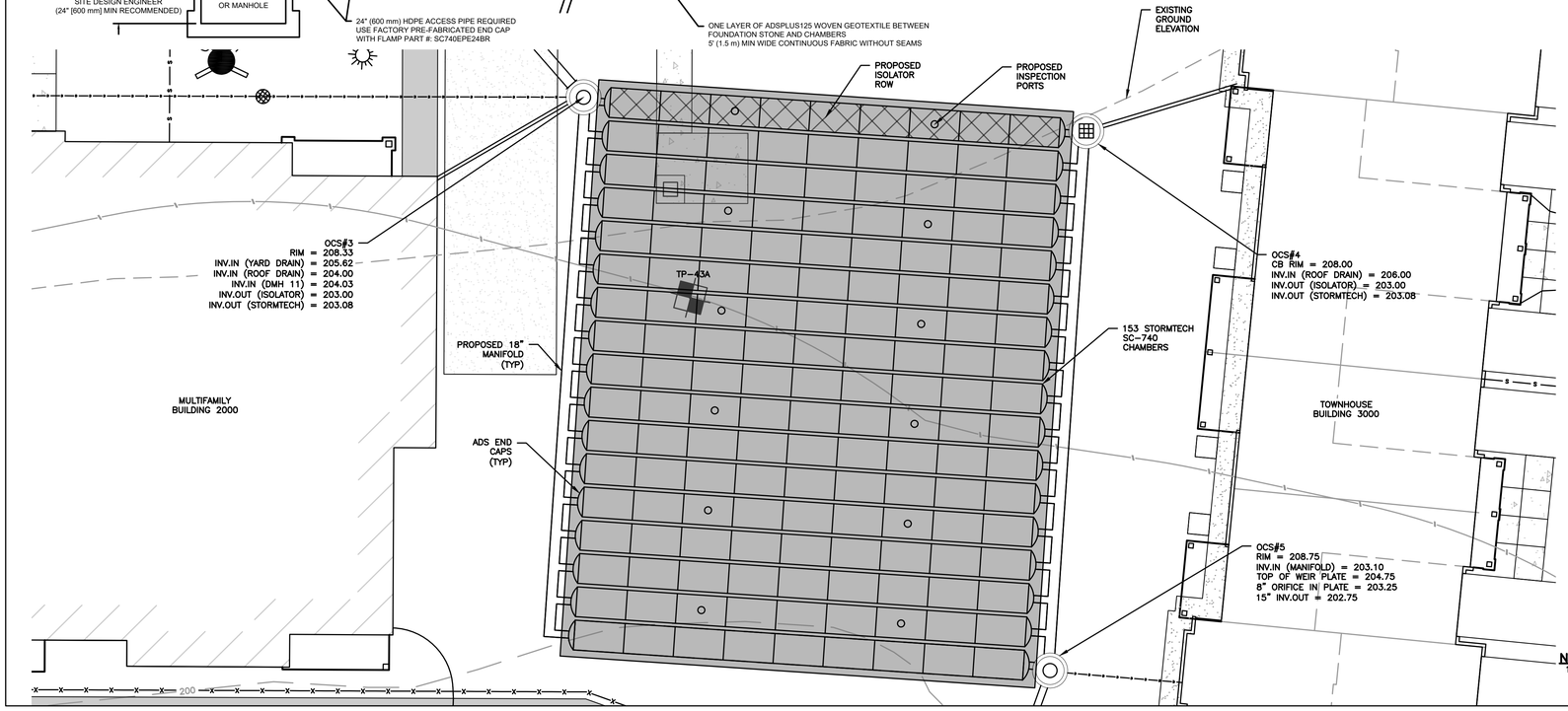
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.





SC-740 STORMTECH CHAMBER SPECIFICATIONS

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

SYSTEM DETAILS
PROPOSED LAYOUT INCLUDES 144 STORMTECH SC-740 CHAMBERS AND 34 ENDCAPS INSTALLED WITH 7" BASE STONE AND 12" COVER STONE. AN ISOLATOR ROW IS ALSO PROPOSED.

MAX. ALLOWABLE GRADE (TOP OF PAVE/UNPAVED)	213.58
MIN. ALLOWABLE GRADE (PAVED W/ TRAFFIC)	207.58
MIN. ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	207.08
TOP OF STONE	206.58
TOP OF SC-740 CHAMBER	205.58
BOTTOM MANIFOLD INVERT	203.08
ISOLATOR ROW	203.00
BOTTOM OF SC-740 CHAMBER	203.08
BOTTOM OF STONE	202.50

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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

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

NOTES FOR CONSTRUCTION EQUIPMENT

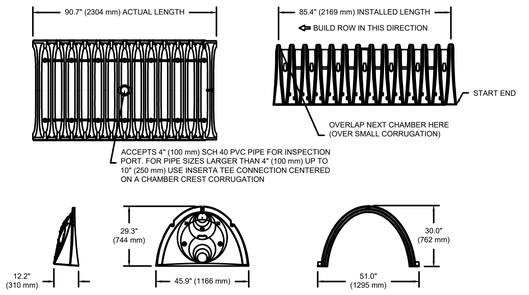
1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE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

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

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

SC-740 TECHNICAL SPECIFICATION

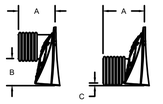
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



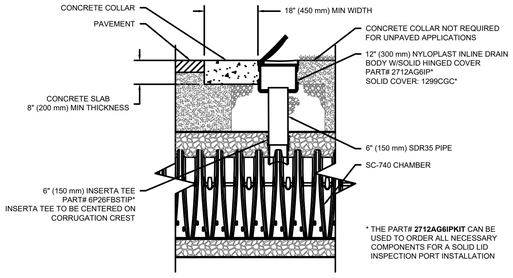
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL



* THE PART# **2712AG6IPKIT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

SC-740 6" (150 mm) INSPECTION PORT DETAIL

NTS

NOTE:
1. **THE AREA OF INFILTRATION SYSTEMS SHALL BE EXCAVATED TO REMOVE TILL DOWN TO NATURAL SOILS AND SHALL BE WITNESSED BY AN AGENT OF THE TOWN PRIOR TO INSTALLING CRUSHED STONE AND THE UNDERGROUND INFILTRATION SYSTEM.**

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

COMMONWEALTH OF MASSACHUSETTS
KEVIN J. ENRIGHT
CIVIL
No. 41611
REGISTERED PROFESSIONAL ENGINEER
6/20/2023

SITE PLAN

STORMTECH INFILTRATION SYSTEM (DETAIL SHEET 18 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.56

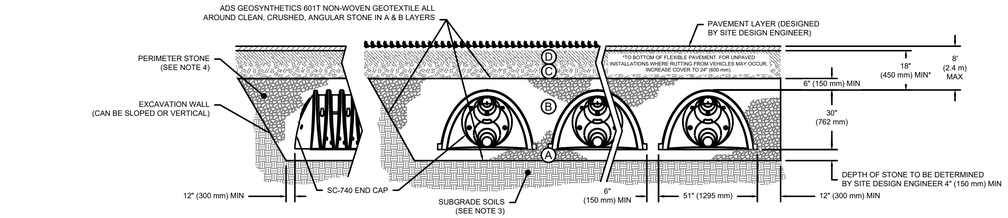
SHEET 56 OF 62

6/19/2023 L:\19097\15807.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: MBAKER
Printed by: Matthew Baker

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SC-740 STORMTECH CHAMBER SPECIFICATIONS

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

SYSTEM DETAILS
PROPOSED LAYOUT INCLUDES 90 STORMTECH SC-740 CHAMBERS AND 20 ENDCAPS INSTALLED WITH 6" BASE STONE AND 12" COVER STONE. AN ISOLATOR ROW IS ALSO PROPOSED.

MAX. ALLOWABLE GRADE (TOP OF PAVE/UNPAVED)	211.95
MIN. ALLOWABLE GRADE (PAVED W/ TRAFFIC)	205.78
MIN. ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	205.45
TOP OF STONE	204.45
TOP OF SC-740 CHAMBER	203.95
BOTTOM MANIFOLD INVERT	201.55
ISOLATOR ROW	201.45
BOTTOM OF SC-740 CHAMBER	201.55
BOTTOM OF STONE	200.95

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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

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

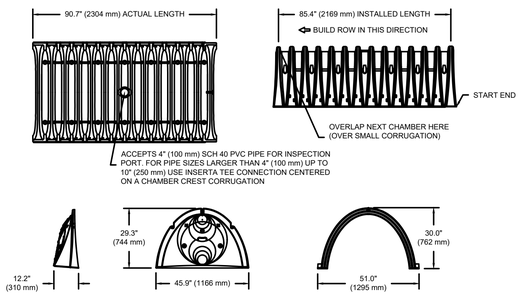
NOTES FOR CONSTRUCTION EQUIPMENT

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

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

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

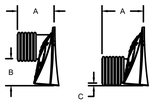
SC-740 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



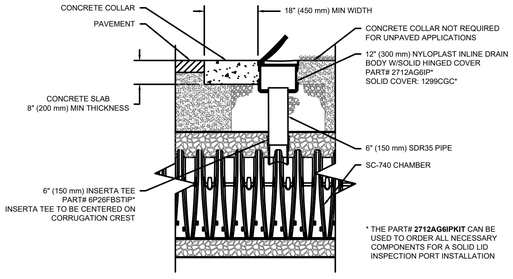
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL



* THE PART# **2712AG6IPKIT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

SC-740 6" (150 mm) INSPECTION PORT DETAIL
NTS

NOTE:
1. **THE AREA OF INFILTRATION SYSTEMS SHALL BE EXCAVATED TO REMOVE TILL DOWN TO NATURAL SOILS AND SHALL BE WITNESSED BY AN AGENT OF THE TOWN PRIOR TO INSTALLING CRUSHED STONE AND THE UNDERGROUND INFILTRATION SYSTEM.**

HOWARD STEIN HUDSON
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Chelmsford, MA 01824
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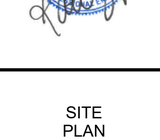
PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION



SITE PLAN

STORMTECH INFILTRATION SYSTEM (DETAIL SHEET 19 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.57

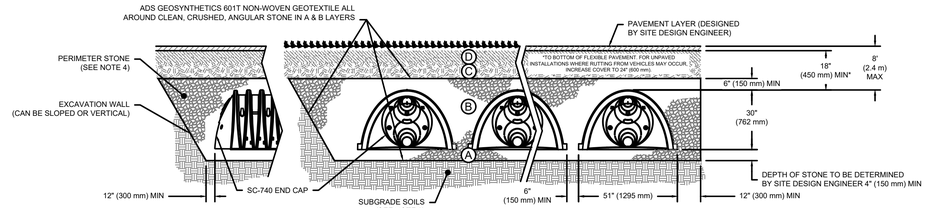
SHEET 57 OF 62

6/19/2023 - L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: MBAKER
Printed by: Matthew Baker

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

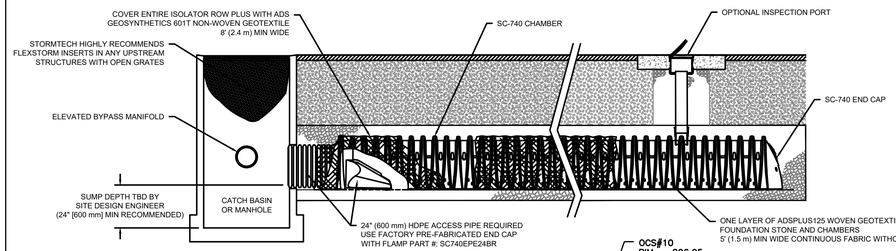
MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

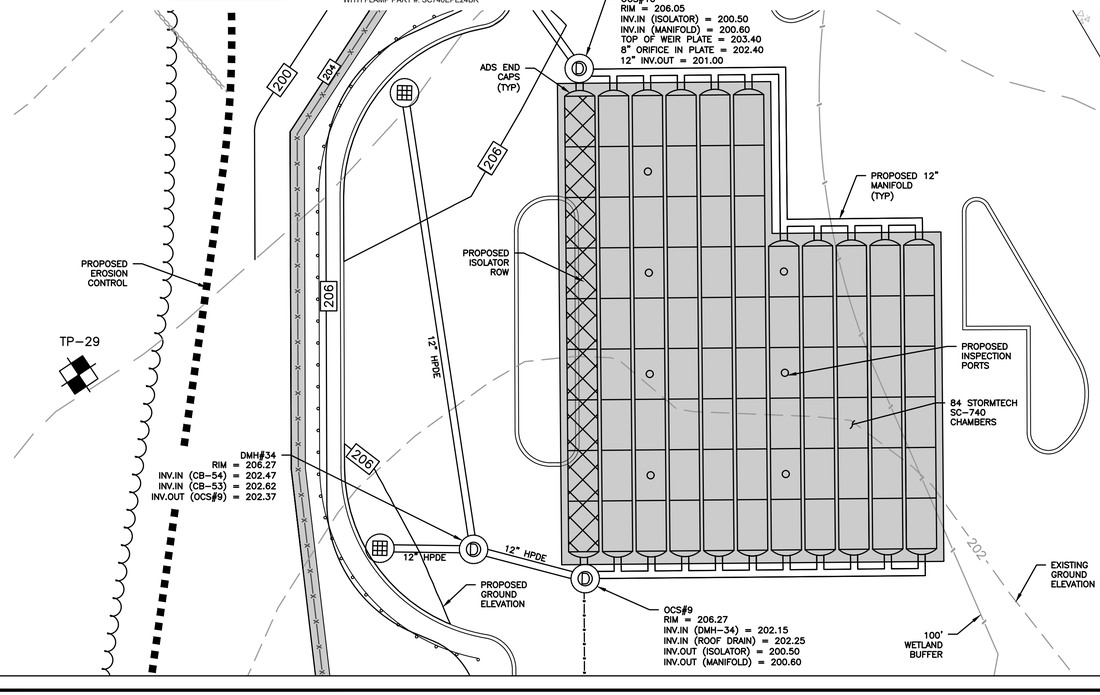
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.





SC-740 STORMTECH CHAMBER SPECIFICATIONS

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

SYSTEM DETAILS
PROPOSED LAYOUT INCLUDES 84 STORMTECH SC-740 CHAMBERS AND 34 ENDCAPS INSTALLED WITH 7" BASE STONE AND 12" COVER STONE. AN ISOLATOR ROW IS ALSO PROPOSED.

MAX. ALLOWABLE GRADE (TOP OF PAVE/UNPAVED)	211.08
MIN. ALLOWABLE GRADE (PAVED W/ TRAFFIC)	205.08
MIN. ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	204.58
TOP OF STONE	203.58
TOP OF SC-740 CHAMBER	203.08
BOTTOM MANIFOLD INVERT	200.60
ISOLATOR ROW	200.50
BOTTOM OF SC-740 CHAMBER	200.58
BOTTOM OF STONE	200.00

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

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2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
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8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
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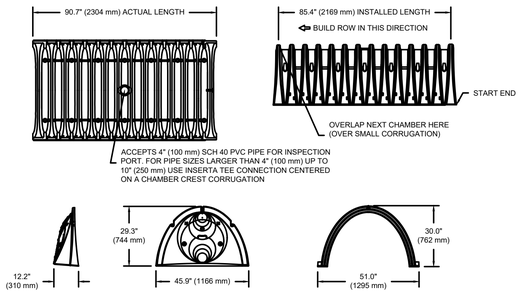
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

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

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

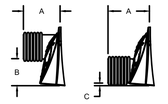
SC-740 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



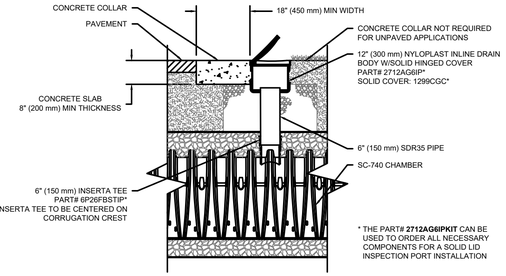
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T / SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL



* THE PART# **2712AG6IPKIT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

SC-740 6" (150 mm) INSPECTION PORT DETAIL
NTS

NOTE:
1. **THE AREA OF INFILTRATION SYSTEMS SHALL BE EXCAVATED TO REMOVE TILL DOWN TO NATURAL SOILS AND SHALL BE WITNESSED BY AN AGENT OF THE TOWN PRIOR TO INSTALLING CRUSHED STONE AND THE UNDERGROUND INFILTRATION SYSTEM.**

HOWARD STEIN HUDSON
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PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/26/23
CHRISTOPHER M. ENRIGHT
CIVIL
No. 46
REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

STORMTECH INFILTRATION SYSTEM (DETAIL SHEET 20 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.58

SHEET 58 OF 62

6/19/2023 - L:\19097\1906\7.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: MBAKER
Printed by: Matthew Baker

NOTE:

1. THESE CULVERT DESIGNS HAVE BEEN PREPARED IN ACCORDANCE WITH THE MASSACHUSETTS STREAM CROSSING STANDARDS HANDBOOK BY THE DIVISION OF ECOLOGICAL RESTORATION 2ND ADDITION DATED JUNE 2012.

GENERAL CONSTRUCTION SEQUENCE

1. ESTABLISH DOWNSTREAM EROSION CONTROLS
2. PERFORM APPROXIMATE GRADING FOR APPROACH ON BOTH SIDES OF CULVERT.
3. STOCK PILE FILL MATERIALS WITHIN THE UPLAND AREA ADJACENT TO EITHER CULVERT INSTALLATION. INSTALL EROSION CONTROLS AROUND THE BASE OF THE PILE.
4. ESTABLISH STREAM BED WITH GRAVEL AND RIP RAP IN A NATURALISTIC PATTERN.
5. PLACE EROSION CONTROLS BETWEEN THE LOCATION OF THE FOOTINGS AND THE STREAM EDGE ON BOTH THE NORTH AND SOUTH SIDES.
6. EXCAVATE THE AREA FOR CONSTRUCTION OF THE FOOTINGS AND ESTABLISH DEWATERING PROTOCOLS,
7. FORM, POUR, CURE AND BACKFILL FOOTINGS AND WING WALL FOOTINGS.
8. CONSTRUCT CULVERT PER RECOMMENDATION OF CULVERT MANUFACTURER.
9. BACKFILL CULVERT TO TIE IN WITH APPROACHES PREVIOUSLY GRADED ON BOTH SIDES.
10. LOAM AND SEED AFFECTED AREAS WITH AN APPROPRIATE WETLAND SEED MIX.

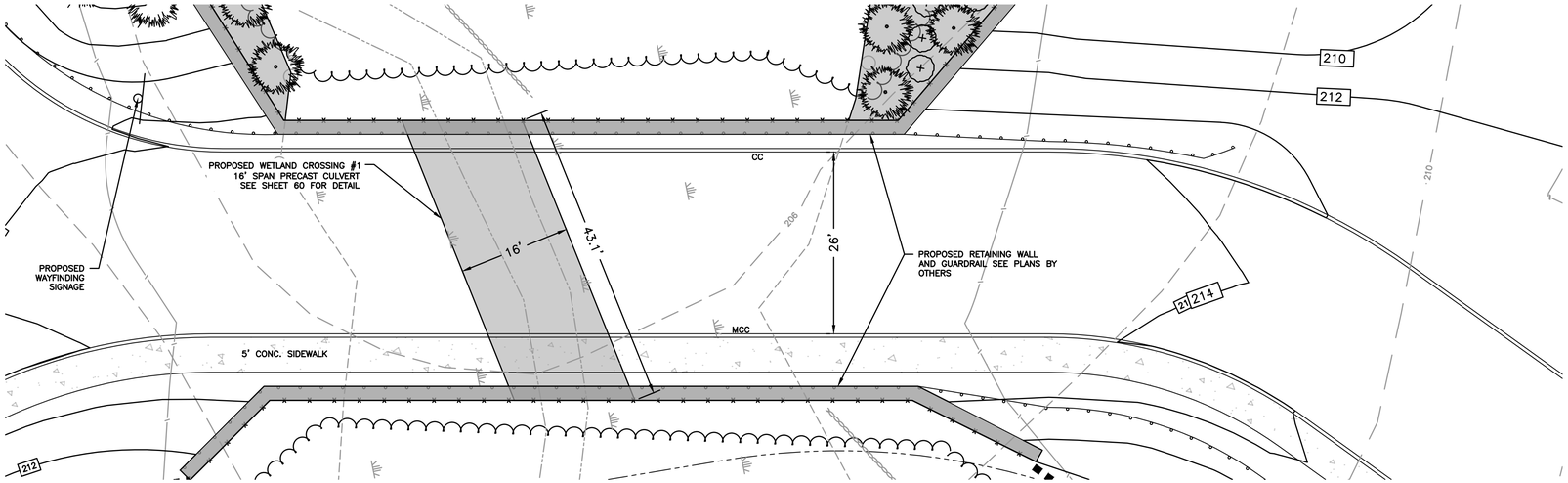
DEWATERING CONTROLS

DEWATERING ACTIVITIES MUST BE PROVIDED IN AN APPROPRIATE MANNER TO AVOID SOIL EROSION DURING CONSTRUCTION.

IF GROUNDWATER IS PRESENT WHEN EXCAVATING FOR THE PROPOSED FOOTINGS A WATER PUMP DRAINING THROUGH A DEWATERING BAG, MADE OF GEOTEXTILE FABRIC, WILL BE USED TO REMOVE SEDIMENTS AND ALLOW THE FLOW TO DISCHARGE OVER A LARGER AREA ON THE LAWN AREA UPHILL FROM THE PROPOSED CONSTRUCTION.

PRECAUTIONS:

1. WATER SHOULD NOT BE PUMPED DIRECTLY ONTO SLOPES
2. DEWATERING ACTIVITIES SHOULD BE DIRECTED TO VEGETATED AREAS
3. REVIEW AREA FOR EROSION AND INSTABILITY
4. NEVER DISCHARGE WATER THAT HAS BEEN CONTAMINATED WITH OIL, GREASE, OR CHEMICAL PRODUCTS.



DESIGN NOTES:

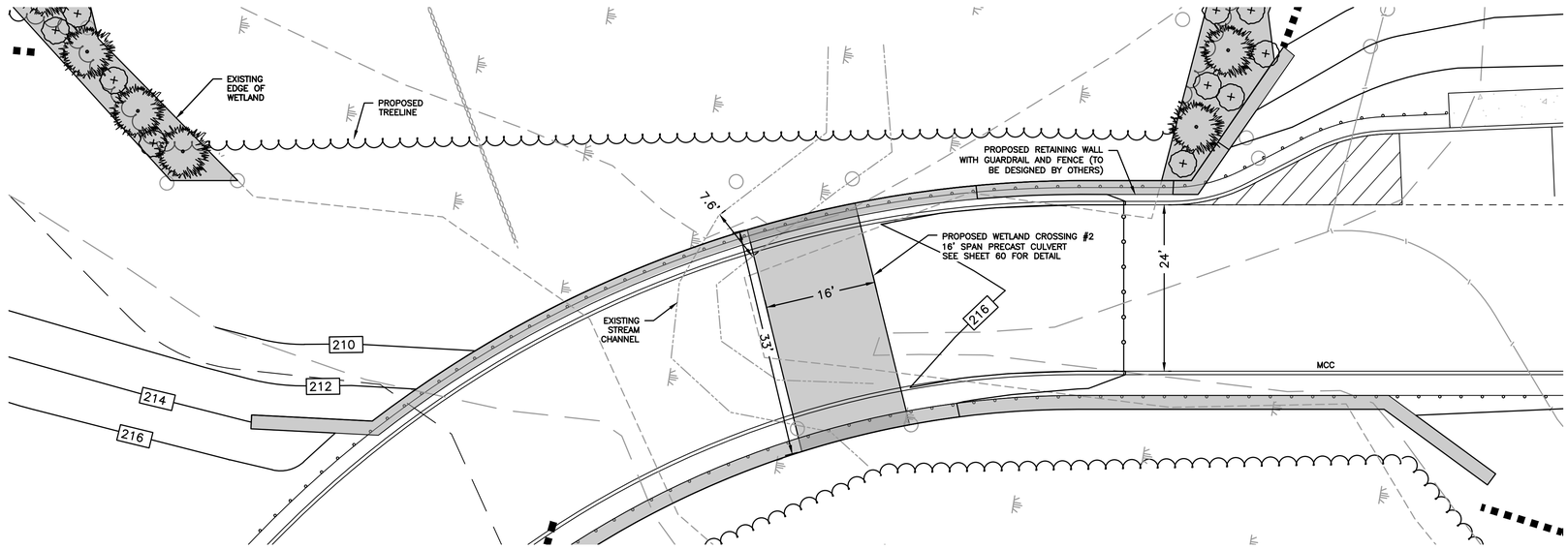
1. CULVERT DESIGN REQUIREMENTS PER NOTE 4
2. TYPE OF CROSSING – MUST BE 3 SIDED BOX CULVERT, OPEN BOTTOM CULVERT OR ARCH
3. EMBEDMENT – ALL CULVERTS MUST BE EMBEDDED A MINIMUM OF 2 FT AND ROUND PIPES AND CULVERTS AT LEAST 25%
4. CROSSING SPAN – A MINIMUM OF 1.2 TIMES THE BANK FULL WIDTH OF STREAM. AT WEST SIDE OF CULVERT STREAM WIDTH IS 8.6 FEET THEREFORE MINIMUM WIDTH IS 10.3 FT ~ 12 FT. 16' IS PROPOSED.
5. OPENNESS RATIO – RATIO OF CROSS SECTIONAL AREA TO CROSSING LENGTH MUST BE AT LEAST 0.82 FT. EXISTING LENGTH IS 43.5 FEET THEREFORE THE MINIMUM CROSS SECTIONAL AREA IS 35.7 FT^2 ~ 36 FT^2. THEREFORE MINIMUM INTERNAL OPEN HEIGHT SHALL BE AT LEAST 3 FT. 5 FT HEIGHT PROVIDED

WETLAND CROSSING #1

SCALE: 1"=10'

DESIGN NOTES:

1. CULVERT DESIGN REQUIREMENTS PER NOTE 4
2. TYPE OF CROSSING – MUST BE 3 SIDED BOX CULVERT, OPEN BOTTOM CULVERT OR ARCH
3. EMBEDMENT – ALL CULVERTS MUST BE EMBEDDED A MINIMUM OF 2 FT AND ROUND PIPES AND CULVERTS AT LEAST 25%
4. CROSSING SPAN – A MINIMUM OF 1.2 TIMES THE BANK FULL WIDTH OF STREAM. AT WEST SIDE OF CULVERT STREAM WIDTH IS 7.6 FEET THEREFORE MINIMUM WIDTH IS 9.1 FEET ~ 10 FT. 16' IS PROPOSED.
5. OPENNESS RATIO – RATIO OF CROSS SECTIONAL AREA TO CROSSING LENGTH MUST BE AT LEAST 0.82 FT. EXISTING LENGTH IS 33 FEET THEREFORE THE MINIMUM CROSS SECTIONAL AREA IS 27.1 FT^2 ~ 30 FT^2. THEREFORE MINIMUM INTERNAL OPEN HEIGHT SHALL BE 2.5 FT. 5 FT HEIGHT PROVIDED



WETLAND CROSSING #2

SCALE: 1"=10'

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PREPARED FOR:

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5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT

SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

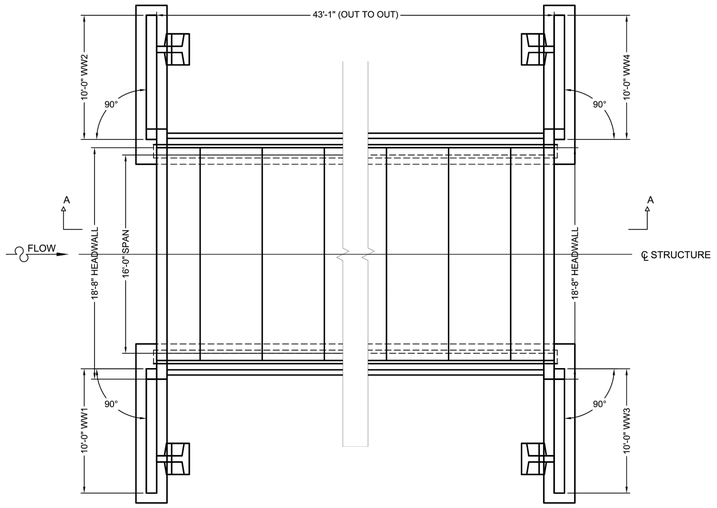
WETLAND CROSSINGS (DETAIL SHEET 21 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

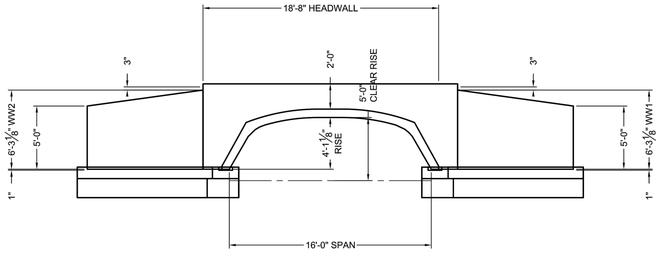
C.59

SHEET 59 OF 62

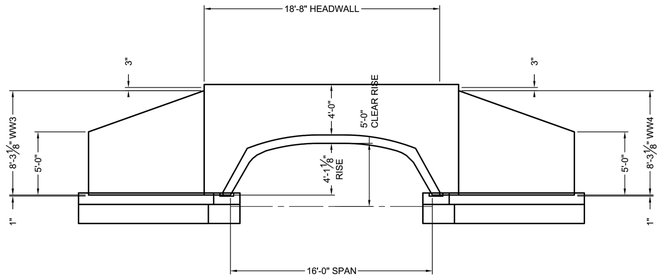
6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: KEVIN KERR
Printed by: Matthew Baker



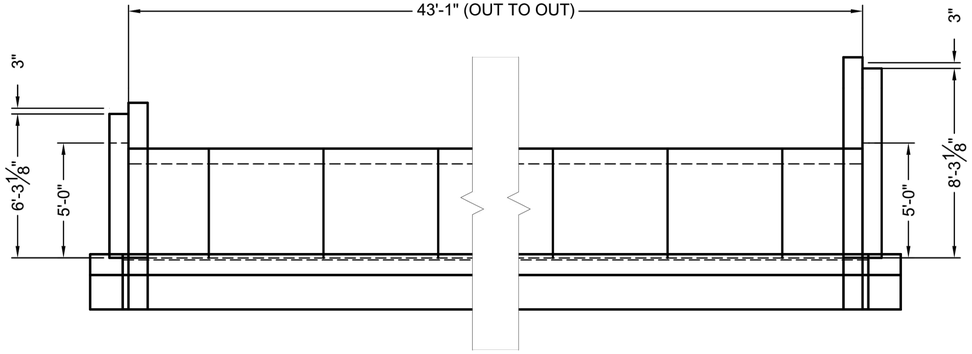
BRIDGE PLAN



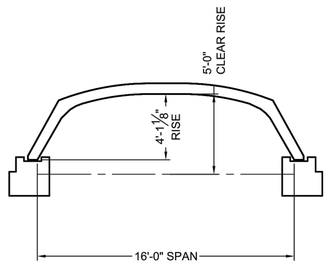
UPSTREAM END ELEVATION



DOWNSTREAM END ELEVATION



SECTION A-A



CROSS SECTION

NOTES:
1. DETAILS PROVIDED THROUGH CONTECH DESIGN YOUR OWN BRIDGE TOOL. DETAILS ARE PRELIMINARY IN NATURE AND NOT INTENDED FOR CONSTRUCTION. REFER TO STRUCTURAL ENGINEERING PLANS FOR FINAL DETAILS.
2. CONSPAN CULVERT OR APPROVED EQUAL TO BE USED.

WETLAND CROSSING CONSPAN O–SERIES 16' SPAN CULVERT
SCALE: N.T.S

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PREPARED FOR:
FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

WETLAND CROSSING CULVERT (DETAIL SHEET 22 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.60

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Last Saved by: MBAKER
Printed by: Matthew Baker

CEDAR RIDGE WETLAND REPLICATION PLAN

1. THE REPLICATION AREA PLANTING HAS BEEN PRODUCED BY BRIAN BUTLER OF OXBOW ASSOCIATES.
2. THE CONSTRUCTION OF COMPENSATORY WETLAND FOR ALTERATION OF BORDERING VEGETATED WETLAND (BVW) IS PROPOSED IN 4 LOCATIONS. THE LOCATIONS CHOSEN AND THE METHODOLOGY EMPLOYED FOR THE REPLICATION EFFORT ARE COMPLIANT WITH THE APPLICABLE STANDARDS AT 310 CMR 10.55 (4) (B):

2.1. THE SURFACE OF THE REPLACEMENT AREA TO BE CREATED ("THE REPLACEMENT AREA") SHALL BE EQUAL TO THAT OF THE AREA THAT WILL BE LOST ("THE LOST AREA");

3. THE AGGREGATE ALTERED AREA EQUALS LESS THAN 4,559 SQUARE FEET WITH THE REDUCTION OF THE CROSSING 1 FOOTPRINT. THE PROPOSED 7,106 SQ. FT. REPLICATION EXCEEDS AN IMPACT TO REPLICATION RATION OF 1:1.51.

3.1. THE GROUND WATER AND SURFACE ELEVATION OF THE REPLACEMENT AREA SHALL BE APPROXIMATELY EQUAL TO THAT OF THE LOST AREA;

4. THE LOCATIONS (4) WERE CHOSEN BOTH FOR ADJACENCY AND CONSISTENCY WITH THE SAME SUBDRAINAGE, AS WELL AS TO APPROXIMATE THE IMPACTED ELEVATIONS AND AMBIENT GROUNDWATER CONDITIONS. THE ALTERATION AT CROSSING 1 IS AT +/– 206 ELEVATION, AS ARE THE PROPOSED REPLICATION AREAS. SIMILARLY, CROSSING 2 IS AT +/– 208 ELEVATION AND FINAL GRADES ARE ANTICIPATED TO BE BETWEEN 206 AND 208.

4.1. THE OVERALL HORIZONTAL CONFIGURATION AND LOCATION OF THE REPLACEMENT AREA WITH RESPECT TO THE BANK SHALL BE SIMILAR TO THAT OF THE LOST AREA;

5. THE LOCATIONS WERE ADAPTED SO AS TO BE ADJACENT AND PARALLEL TO THE IMPACTED SYSTEMS (SEE SHEET C.87, REV. 9/14/20).

5.1. THE REPLACEMENT AREA SHALL HAVE AN UNRESTRICTED HYDRAULIC CONNECTION TO THE SAME WATER BODY OR WATERWAY ASSOCIATED WITH THE LOST AREA;

6. THE LOCALITIES CHOSEN FOR THE COMPENSATORY REPLICATION WERE IDENTIFIED BASED UPON THEIR ADHERENCE TO THIS CRITERIA. THEY ARE WITHIN FEET OF THE IMPACT AND ANNECTANT OR CONFLUENT WITH THE PARENT RESOURCE AREA(S).

6.1. THE REPLACEMENT AREA SHALL BE LOCATED WITHIN THE SAME GENERAL AREA OF THE WATER BODY OR REACH OF THE WATERWAY AS THE LOST AREA;

7. THE LOCATION OF THE 4 REPLICATION POLYGONS IS IMMEDIATELY ADJACENT TO THE IMPACTED AREAS AND THEREFORE MEETS THIS STANDARD.

7.1. AT LEAST 75% OF THE SURFACE OF THE REPLACEMENT AREA SHALL BE REESTABLISHED WITH INDIGENOUS WETLAND PLANT SPECIES WITHIN TWO GROWING SEASONS, AND PRIOR TO SAID VEGETATIVE REESTABLISHMENT ANY EXPOSED SOIL IN THE REPLACEMENT AREA SHALL BE TEMPORARILY STABILIZED TO PREVENT EROSION IN ACCORDANCE WITH STANDARD U.S. SOIL CONSERVATION SERVICE METHODS;

8. THE PROPOSED REPLICATION PLANS, QUANTIFIED IN THE ACCOMPANYING TABLES WILL MEET THE 75% THRESHOLD, OR, IF NECESSARY WILL BE SUPPLANTED DURING THE TWO–SEASON MONITORING PERIOD. THE SPECIES COMPOSITION AND PREFERRED GROUND TREATMENT (USE OF NATIVE LITTER IF POSSIBLE) ARE IN KEEPING WITH SPECIES NATIVE TO THE AREA AND THE SITE.

8.1. THE REPLACEMENT AREA SHALL BE PROVIDED IN A MANNER WHICH IS CONSISTENT WITH ALL OTHER GENERAL PERFORMANCE STANDARDS FOR EACH RESOURCE AREA IN PART III OF 310 CMR 10.00. THE REPLACEMENT AREA MEETS OR EXCEEDS THE APPLICABLE STANDARDS.

SITE PREPARATION AND PLANTING

TOPOGRAPHY IN EACH REPLICATION SITE (4) IS VARIABLE. THE ADJACENT FACES (TO WETLAND) ARE CONTIGUOUS WITH EXISTING BVW AND THE ADJACENT CONSTRUCTION OF THE AREAS WILL PROVIDE A 'BORDERING' CONDITION IN KEEPING WITH THE REPLICATION STANDARDS.

EACH REPLICATION SITE HAS BEEN EXAMINED FOR PRACTICALITY OF IMPLEMENTATION; SPECIFICALLY, THAT NO RADICAL CUTS, ROCK OUTCROPS OR OTHER OBSTACLES TO THE REQUIRED GRADING ARE PRESENT. EACH SITE WILL BE ISOLATED, AT THE BVW BOUNDARY WITH STAKED SILTATION FENCE AND STRAW WATTLES TO FORM A LIMIT OF WORK AND EROSION BARRIER. TREES AND VEGETATION WILL BE CUT AND STUMPS REMOVED AS NEEDED. LEAF LITTER WILL BE GATHERED AND STOCKPILED IF SEASONALLY PRACTICAL.

SOIL WILL BE REMOVED FROM EACH AREA TO A POINT AT LEAST 12 INCHES BELOW SEASONAL HIGH GROUNDWATER. EXAMINATION OF SOILS CHARACTERISTICS BY A WETLAND SCIENTIST WILL SET THE FINAL, OVER–EXCAVATED ELEVATION, ASSURING RELIABLE INTERCEPTION OF LOCAL SEASONAL GROUNDWATER. SOIL FROM THE IMPACT AREAS WILL NOT BE UTILIZED IN THE REPLACEMENT AREAS OWING TO THE PRESENCE OF INVASIVE PROPAGULES AND THE RELATIVELY LOW ORGANIC CONTENT OF THE IMPACT AREA SOILS. CLEAN, WEED–FREE LOAM WITH UP TO 40% HOT–COMPOSTED MATERIAL WILL BE SPREAD AT A DEPTH OF APPROXIMATELY 6' THROUGHOUT THE REPLICATION AREAS AND LIGHTLY COMPACTED.

DURING A SUITABLE SEASONAL PERIOD (AVOIDING MID–WINTER AND LATE SUMMER) TREE AND SHRUB PLANTINGS WILL BE INSTALLED. SPECIES WILL BE DRAWN FROM THE LIST IN TABLE 2, WITH NOT LESS THAN THREE SPECIES IN EACH CATEGORY. PLANTINGS WILL BE WATERED AND/OR STAKED AS NECESSARY. AT THE COMPLETION OF PLANTING ONE OF TWO FINISH TREATMENTS WILL BE APPLIED. IF SUFFICIENT LEAF–LITTER FROM UPLAND SITE AREAS EXHIBITING LOW INVASIVES (BUCKTHORN, BARBERRY, HONEYSUCKLE) CAN BE GATHERED AND STOCKPILED WITHOUT BEING LOST TO COMPOSTING ACTION, THIS WILL BE THE PREFERRED GROUND COVER. TREES AND SHRUBS WILL BE PLANTED PRIOR TO GROUND COVER; HERBACEOUS PLUGS WILL BE INSTALLED THROUGH THE LEAF LITTER.

IF RETENTION OF SUITABLE LEAF LITTER MATERIAL IS IMPRACTICAL DUE TO SEASONAL SCHEDULING, OR IF IT CAN ONLY BE SOURCED ON SITE WHERE INVASIVE SPECIES MAY BE PROBLEMATIC, THE SOIL SURFACE WILL BE RAKED, AND SEEDED AT TWO TIMES THE RECOMMENDED RATE WITH A NATIVE NEW ENGLAND WETLAND SEED MIX (NE WETLAND PLANTS OR APPROVED EQUIVALENT). PLUG PLANTINGS WILL FOLLOW THIS TREATMENT. SEEDLESS STRAW MAY BE UTILIZED TO RETAIN SOIL MOISTURE AND DISCOURAGE SEED LOSS, PARTICULARLY IF SEEDING IS LATE IN THE SEASON.

THE REPLICATION AREAS SHALL BE CONSTRUCTED IN CONJUNCTION WITH THE ADJACENT ROAD CONSTRUCTION. THE PLANTING SHALL BE COMPLETED DURING THE FIRST GROWING SEASON AFTER START OF SITE CONSTRUCTION.

MONITORING

ALL GROWTH WILL BE MONITORED TWICE PER YEAR FOR TWO COMPLETE GROWING SEASONS FOLLOWING INSTALLATIONS. IN THE EVENT THAT LESS THAN 80% OF PLANTINGS SURVIVE, REPLACEMENTS WILL BE INSTALLED TO ASSURE A MINIMUM OF 75% HYDROPHYTIC COVERAGE.

PLANTING DENSITIES PROPOSED ANTICIPATE MATURITY OF TREE AND SHRUB SPECIMENS, DELIBERATELY AVOIDING OVERSHADING OF UNDERSTORY PLANTINGS UNTIL THEY HAVE HAD MULTIPLE SEASONS OF GROWTH WITH ADEQUATE INSOLATION TO BECOME ESTABLISHED.

Table 1. Planting densities for the respective replication areas (see plan set).

Planting Category	Repl. Area 1E	Repl. Area 1W	Repl. Area 2E	Repl. Area 2W
Trees	25	10	16	8
Shrub	170	60	125	40
Herbaceous Plugs	320	130	250	80
Native Wet Mix*	2x recommended	2x recommended	2x recommended	2x recommended

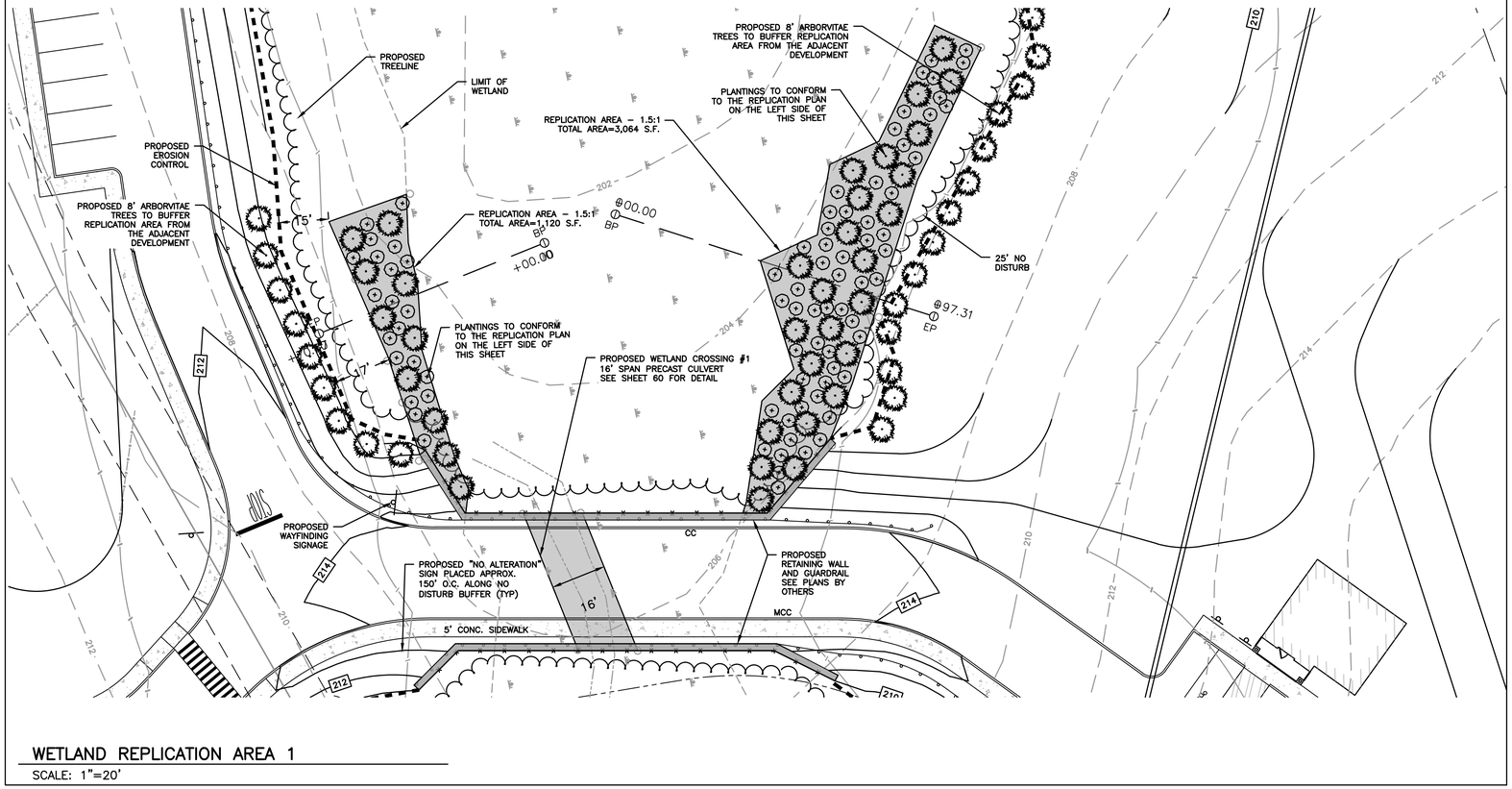
Table 2. Species List of acceptable plantings – at least 3 of tree and shrub species to be planted.

Category	Species	Common Name	Notes
Tree	*Acer rubrum*	Red Maple	Only specimens >8'
Tree	*Fraxinus pennsylvanicum*	Green Ash	
Tree	*Quercus bicolor*	Swamp White Oak	
Tree	*Quercus palustris*	Pin Oak	
Tree	*Ulmus americana**	American Elm*	*Resistant hybrid only
Shrub	*Lindera benzoin*	Spicebush	
Shrub	*Ilex verticillata*	Winterberry Holly	Plant in groups of 2-4.
Shrub	*Viburnum recognitum*	Northern Arrowwood	Plant in groups of 2-4.
Shrub	*Vaccinum corymbosum*	Highbush blueberry	Plant in groups of 2-4.
Shrub	*Viburnum trilobum*	Highbush cranberry	Plant in groups of 2-4.
Herb. Plugs	*Onoclea sensibilis*	Sensitive fern	
Herb. Plugs	*Osmundnastrum cinnamomeum*	Cinnamon fern	
Herb. Plugs	*Osmunda regalis*	Royal fern	
Herb. Plugs	*Carex stricta*	Tussock sedge	
Seed Mix	New England Native Wet Mix	NE Wetland Plants	Or approved mix.
Alt. Ground Cover	Salvaged native leaf mulch*		*Subs for seed mix if possible.

*NOTE: PLANTINGS MAY BE BUMPED UP BY 10% TO INCREASE DENSITY IF DESIRED

TOWN OF WALPOLE CONSERVATION COMMISSION NOTES:

1. INCLUDE LOCATION OF THE NO ALTERATION SIGNS APPROXIMATELY EVERY 150–FEET ON SITE PLAN (TAKING INTO CONSIDERATION THE TWISTS AND TURNS OF THE WETLAND BOUNDARIES TO DETERMINE LOCATIONS) WITH SIGN SPECIFICALLY AT REPLICATION AREAS AND CROSSING. SHOW ON SITE PLAN PET WASTE REMOVAL SIGNS AT BOTH ENDS OF RIVERFRONT WHERE TRAIL BEGINS AND ENDS. PET WASTE PICK UP IS REQUIRED UNDER THE BYLAW.
2. INCLUDE LANDSCAPE PLAN FOR AREAS WITHIN THE 100–FOOT BUFFER ZONE SPECIFYING INVASIVE SPECIES MAINTENANCE PLAN, REMOVAL OF GRASS CLIPPING AND CUTTINGS OUTSIDE THE BUFFER ZONES, LIMIT USE OF NON–ORGANIC FERTILIZERS AND NO HERBICIDES OR PESTICIDES, AND DROUGHT RESISTANT NATIVE PLANTINGS.

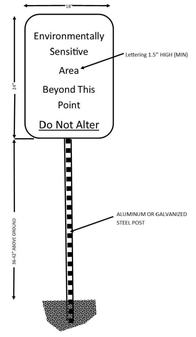


WETLAND REPLICATION AREA 1

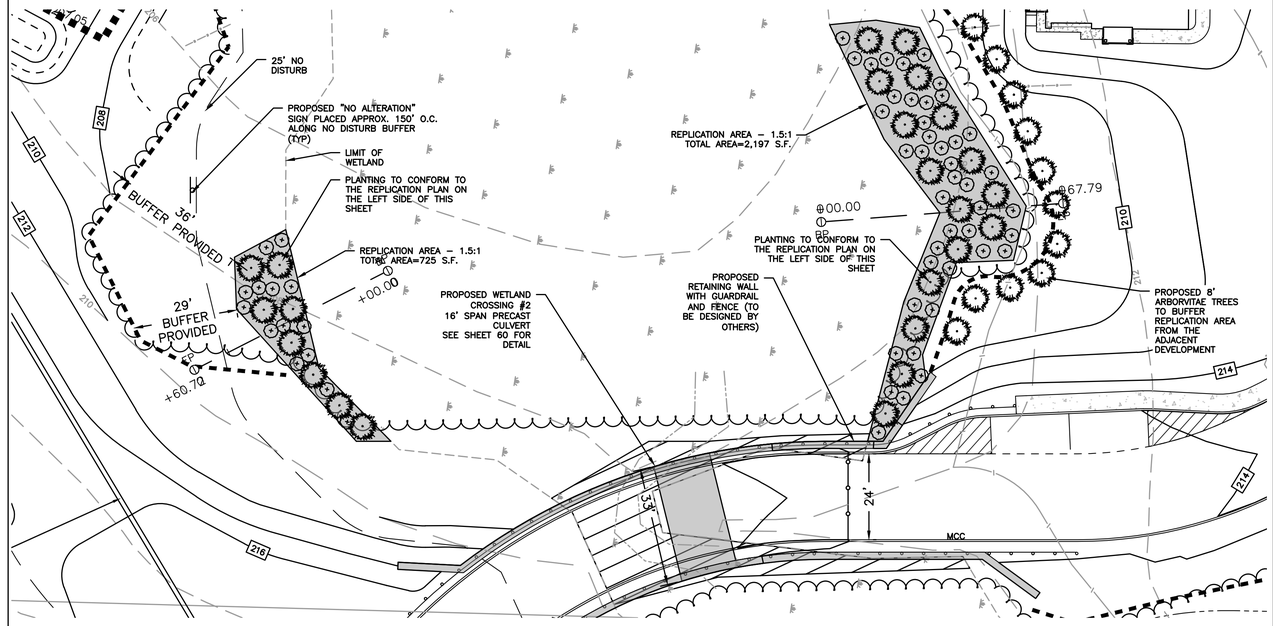
SCALE: 1"=20'

NOTE:

1. WETLAND REPLICATION AREA – 1.5:1.
   TOTAL REPLICATION AREA = 7,106 S.F.



NO ALTERATION SIGN DETAIL
NOT TO SCALE



WETLAND REPLICATION AREA 2

SCALE: 1"=20'

HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

6/19/2023
KEVIN E. FOLEY
No. 49187
REGISTERED PROFESSIONAL ENGINEER
CIVIL
6/20/23

SITE PLAN

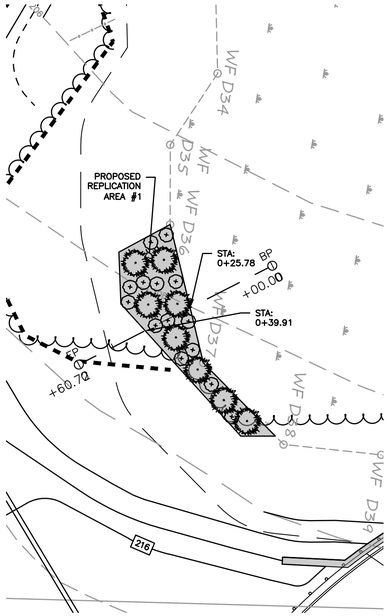
WETLAND REPLICATION AREAS (DETAIL SHEET 23 OF 24)

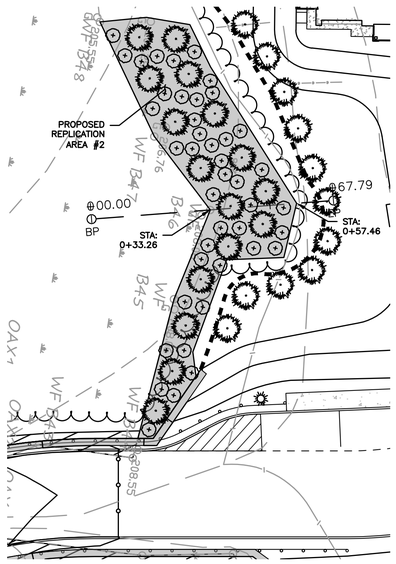
DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

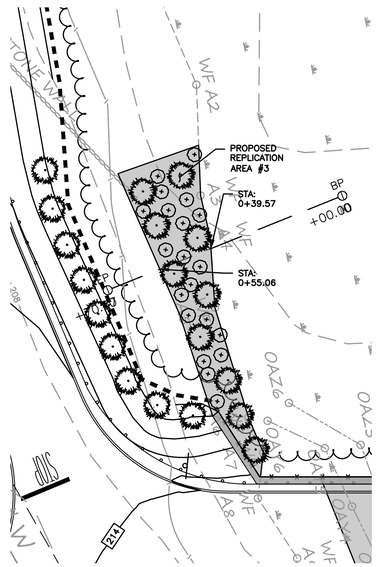
C.61

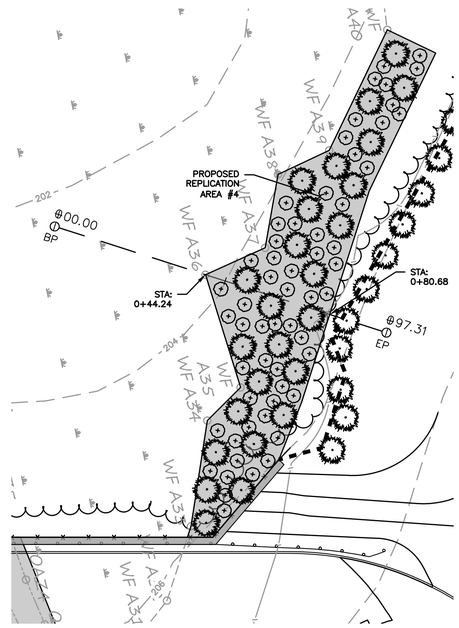
SHEET 61 OF 62

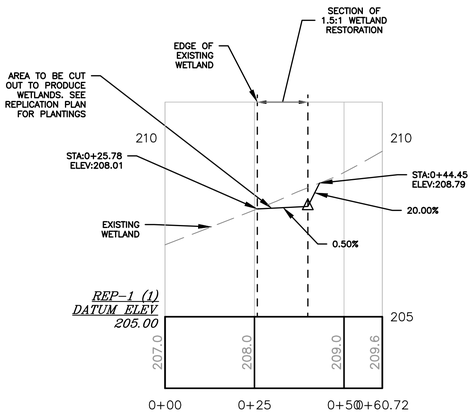
6/19/2023 L:\19097\19097 04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: MBAKER
Printed by: Matthew Baker

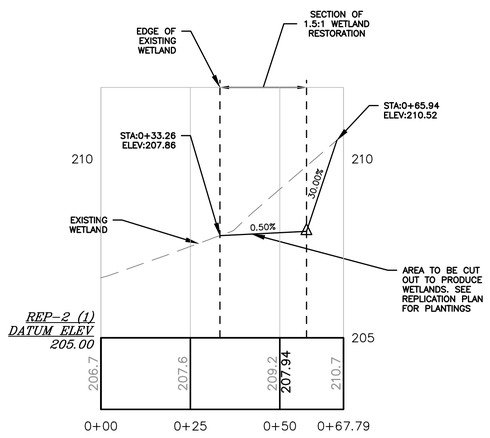


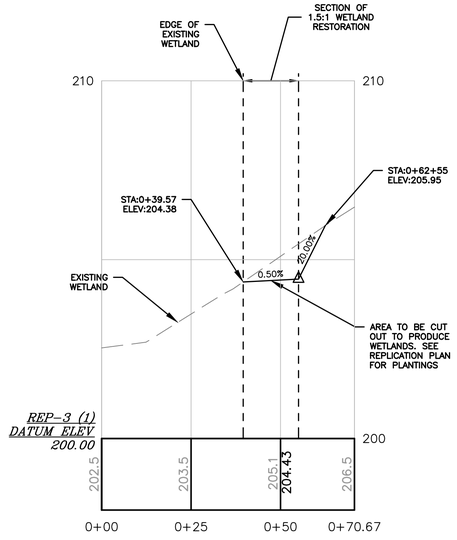


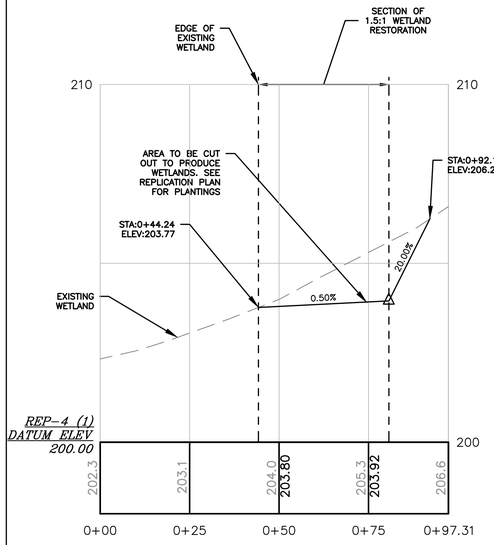












HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
2 0 2 4

HOWARD STEIN HUDSON
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Chelmsford, MA 01824
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5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION

CHRISTOPHER L. ENRIGHT
CIVIL
No. 44013
REGISTERED PROFESSIONAL ENGINEER
6/26/23

SITE PLAN

REPLICATION AREA PROFILES (DETAIL SHEET 24 OF 24)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.62
SHEET 62 OF 62

6/19/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Details.dwg
Last Saved by: KEVIN KERR
Printed by: Matthew Baker