

SITE PLAN FOR PROPOSED MULTIFAMILY DEVELOPMENT WALPOLE, MA.

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

SHEET INDEX

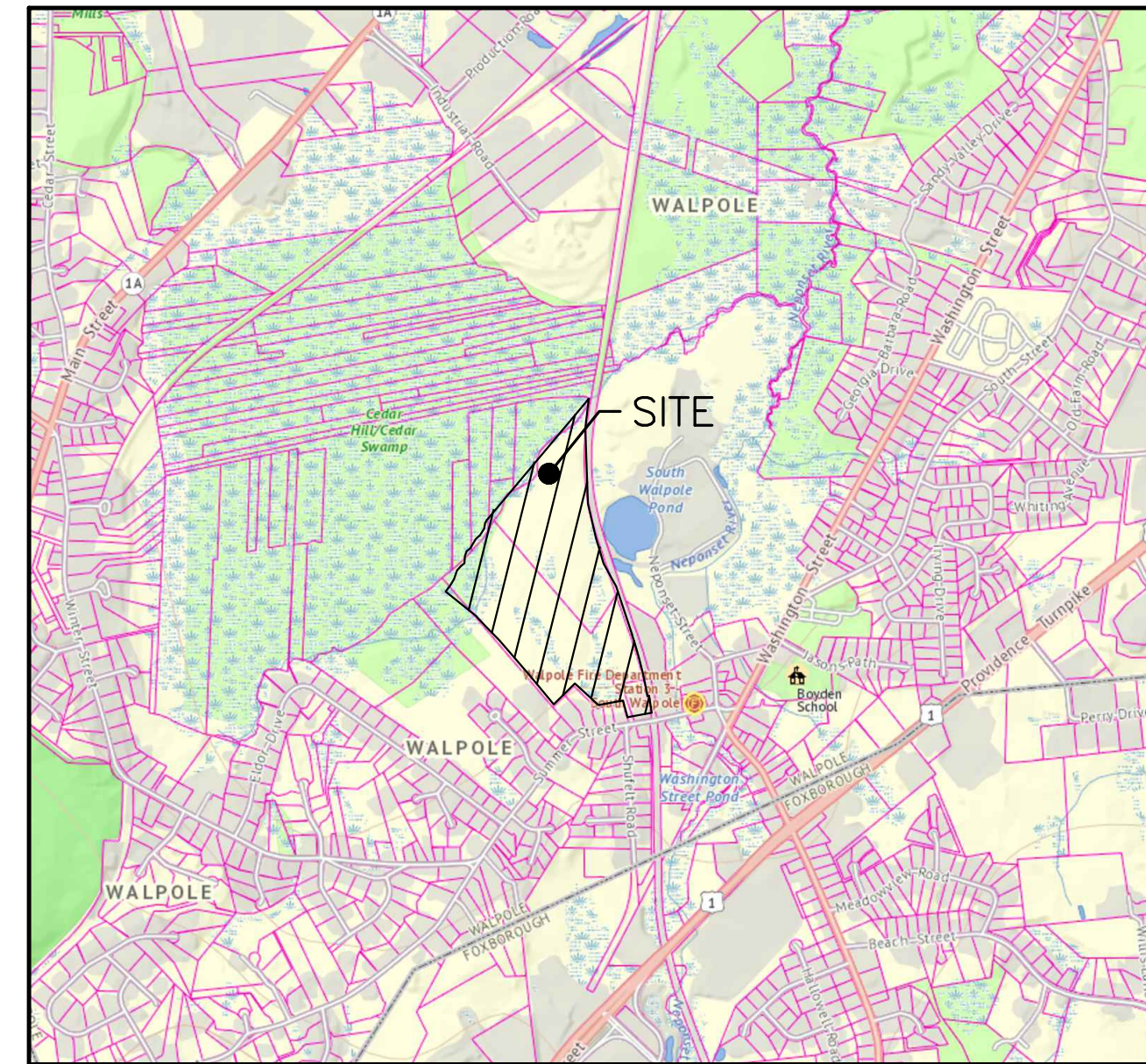
SHEET C.1	COVER SHEET
SHEET C.2-4	SITE PLAN NOTES
SHEET C.5	LOCUS / KEY PLAN
SHEET C.6-10	EXISTING CONDITIONS PLANS 1-5
SHEET C.11	EROSION CONTROL AND DEMOLITION SHEET
SHEET C.12	PROPOSED OVERALL PLAN
SHEET C.13	OPEN SPACE, RECREATION, AND PARKING PLAN
SHEET C.14-18	LAYOUT AND MATERIALS PLAN 1-5
SHEET C.19-23	GRADING AND DRAINAGE PLAN 1-5
SHEET C.24-28	UTILITY PLAN 1-5
SHEET C.29-33	LANDSCAPE PLAN 1-5
SHEET C.34-38	LIGHTING PLAN 1-5
SHEET C.39-65	DETAIL SHEET 1-27

GENERAL NOTES:

- EXISTING PROPERTY LINE AND UTILITY INFORMATION SHOWN IS BASED ON AN EXISTING SURVEY CONDUCTED BY LEGACY ENGINEERING REVISED THROUGH 10-23-22.
 - REGISTRY REFERENCES:
BOOK 37303 PG 11
LAND COURT CERT. OF TITLE 201454
 - DATUM: NAVD88
- 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.
- AS OF FEBRUARY 28, 2023, TREE CLEARING HAS OCCURRED AS DEPICTED ON PREVIOUSLY APPROVED PLANS DATED JANUARY 10, 2020 REVISED THROUGH APRIL 13, 2021.
- 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.
- TOPOGRAPHIC INFORMATION IS APPROXIMATE IN SOME LOCATIONS, CONTRACTOR TO REPORT ANY DISCREPANCIES TO THE ENGINEER.
- THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
- 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.
- 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 REPAIRING.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES EXCEPT THOSE NOTED TO BE ABANDONED, REMOVED AND DISPOSED.
- 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
MCC	MONOLITHIC CONCRETE CURB		PROPERTY LINE
CC	CONCRETE CURB		SETBACK LINE
COB	CAPE COD BERM		RIPARIAN SETBACK LINE
LSA	LANDSCAPED AREA	D	PROPOSED DRAIN LINE
GF	FINISHED FLOOR ELEVATION	S	PROPOSED SEWER LINE
GV	GATE VALVE	FM	PROPOSED FORCE MAIN
SRW	STONE RETAINING WALL	OHW	EXISTING OVERHEAD WIRES
CRW	CONCRETE RETAINING WALL	S	EXISTING SANITARY LINE
INV.	INVERT	G	EXISTING GAS LINE
RCP	REINFORCED CONCRETE PIPE	W	EXISTING WATER LINE
PVC	POLYVINYL CHLORIDE	270	EXISTING INDEX CONTOURS
(R)	RECORD INFORMATION	268	EXISTING INTERMEDIATE CONTOURS
BCC	BIT. CONCRETE CURB		EXISTING TREELINE
VB	VERTICAL BIT. BERM		FEMA FLOOD PLAIN DELINEATION
⊕	EXISTING WATER VALVE		MEAN ANNUAL HIGH WATER LINE
⊕	EXISTING HYDRANT		PROPOSED TREELINE
⊕	EXISTING UTILITY POLE		PROPOSED FENCE
⊕	POST		PROPOSED HYDRANT
⊕	DECIDUOUS TREE		PROPOSED HANDICAP PARKING
⊕	CONIFEROUS TREE		PROPOSED PAVEMENT STRIPING
⊕	CONTROL POINT		PROPOSED CONCRETE SURFACE
⊕	STONE BOUND WITH DRILLHOLE FOUND		PROPOSED DRAINAGE MANHOLE
⊕	CONCRETE BOUND WITH DRILLHOLE FOUND		CB: SINGLE-GRATE CATCH BASIN
⊕	IRON ROD TO BE SET IN 2012		CB: DOUBLE-GRATE CATCH BASIN
⊕	SIGN (SINGLE POSTED)		DMH: DRAIN MANHOLE
⊕	TEST PIT		DRAIN PIPELINE
⊕	CATCH BASIN		SEWER PIPELINE
⊕	EXISTING SEWER MANHOLE		12" D
⊕	WETLAND RESOURCE AREA		8" S
⊕	PROPOSED CATCH BASIN		RCP
FHPT	FALLING HEAD PERMEABILITY TEST		PVC
HSG	HYDROLOGIC SOIL GROUP DETERMINATION PIT		⊕



LOCUS MAP
1" = 1500'

PROJECT TEAM:

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

55 SS LLC
6 LYBERTY WAY
WESTFORD, MA 01886

CIVIL ENGINEER
HOWARD STEIN HUDSON
114 TURNPIKE ROAD
SUITE 2C
CHELMSFORD, MA 01824

SURVEYORS
LEGACY ENGINEERING, LLC
730 MAIN STREET, SUITE 2C
MILLIS, MA 02054

WSP USA, INC.
10 AL PAUL LANE
SUITE 103
MERRIMACK, NH 03054

LIGHTING CONSULTANT
EXPOSURE 2 LIGHTING
6 SCOTT ROAD, UNIT A
HAMPTON, NH 03842

WETLAND SCIENCE
OXBOW ASSOCIATES, INC.
P.O. BOX 971
ACTON, MA 01720

ARCHITECT
CNK ARCHITECTS
3301 AIRPORT FWY STE 220
BEDFORD, TX 76021

PRESSURE SEWER/LIFT STATION DESIGN
ONSITE ENGINEERING INC.
279 EAST CENTRAL STREET
FRANKLIN, MA 02038

LANDSCAPE ARCHITECT
JAMES K. EMMANUEL ASSOCIATES
22 CARLTON ROAD
MARBLEHEAD, MA 01945

- 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

ASSESSORS INFORMATION

PROPERTY 307-52-59
PROPERTY 307-52-60
PORTION OF PROPERTY 307-52-78-3

OWNERS

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

55 SS LLC
6 LYBERTY WAY
WESTFORD, MA 01886

REFERENCES

- EXISTING CONDITIONS SURVEY PREPARED FOR 55 BH LLC, CONDUCTED BY LEGACY ENGINEERING REVISED THROUGH 10-23-22.
- TOWN OF WALPOLE GEOGRAPHIC INFORMATION SYSTEM.
- COMPREHENSIVE PERMIT DATED JULY 14, 2021 AND RECORDED WITH THE REGISTRY IN BOOK 40432, PAGE 517 (THE "COMPREHENSIVE PERMIT")
- APPEALED DECISION FROM THE ZONING BOARD OF APPEALS CASE #3-20, 55 SS LLC DATED MARCH 2, 2022.
- ANR PLAN BY HOWARD STEIN HUDSON REVISED THROUGH 04-15-22 (BOOK 711 PAGE 95 AND 96) AND RECORDED EASEMENT (BOOK 38968 PAGE 99).
- ORDER OF CONDITIONS (MASSDEP FILE #315-1227) ISSUED JUNE 15, 2021 AND RECORDED WITH THE REGISTRY IN BOOK 39655, PAGE 587.
- CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS ON THE NOTICE OF PROJECT CHANGE, CEDAR EDGE AND CEDAR CROSSING, WALPOLE (EEA #163,82).
- DETERMINATION BY THE MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE, NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM THAT THE MASTER PROJECT WILL NOT RESULT IN A PROHIBITED TAKE OF THE STATE-LISTED RARE SPECIES DATED APRIL 1, 2020 (NHESP FILE NO.: 19-38660).

ZONING REQUIREMENTS - PARCEL 1

LM - LIMITED MANUFACTURING

WATER RESOURCE PROTECTION OVERLAY DISTRICT

DIMENSIONAL REQUIREMENTS (WAIVERS AND MULTIFAMILY USE GRANTED UNDER MGL CHAPTER 40B)

REQUIREMENT	PROPOSED - LOT 1	REFERENCE	COMPLIANCE	
MINIMUM LOT AREA	40,000	1,188,281 SF	ZONING BYLAWS TABLE 6-B.1	YES
MINIMUM LOT FRONTAGE	200 FT	86.25 FT	WAIVER SECTION 6-B-1.A	YES
MAXIMUM BUILDING COVERAGE	35%	7%±	ZONING BYLAWS TABLE 6-B.1	YES
MAX. BLDG & IMP. COVERAGE	70%*	25%±	WAIVER SECTION 12.3.A.2.d	YES
MINIMUM OPEN SPACE	N/A	75%±	ZONING BYLAWS TABLE 6-B.1	YES
MINIMUM FRONT YARD	50 FT	692 FT±	ZONING BYLAWS TABLE 6-B.1	YES
MINIMUM SIDE YARD	40 FT	11 FT±	WAIVER SECTION 6-B-1.C	YES
MINIMUM REAR YARD	25 FT	299 FT±	ZONING BYLAWS TABLE 6-B.1	YES
MAXIMUM BUILDING HEIGHT	40 FT*	5 STORIES	WAIVER TABLE 6-B.1	YES

* PLUS ONE (1) FOOT FOR EACH ADDITIONAL FOOT BY WHICH:

- THE SETBACK EXCEEDS THE REQUIRED SETBACK DISTANCE;
- THE NARROWEST SIDE YARD EXCEEDS THE REQUIRED SIDE YARD WIDTH; OR
- THE REAR YARD EXCEEDS THE REQUIRED REAR YARD DEPTH, WHICHEVER OF THE THREE (3) ADDITIONAL DISTANCES IS THE SMALLEST.

** MAXIMUM BUILDING AND IMPERVIOUS COVERAGE OR 15% FOR RESIDENTIAL DEVELOPMENTS WITHIN LIMITED INDUSTRIAL DISTRICT

ZONING REQUIREMENTS - PARCEL 2

LM - LIMITED MANUFACTURING

WATER RESOURCE PROTECTION OVERLAY DISTRICT

DIMENSIONAL REQUIREMENTS (WAIVERS AND MULTIFAMILY USE GRANTED UNDER MGL CHAPTER 40B)

REQUIREMENT	PROPOSED - LOT 2	REFERENCE	COMPLIANCE	
MINIMUM LOT AREA	40,000	1,195,981 SF	ZONING BYLAWS TABLE 6-B.1	YES
MINIMUM LOT FRONTAGE	200 FT	133.26 FT	WAIVER SECTION 6-B-1.A	YES
MAXIMUM BUILDING COVERAGE	35%	3%±	ZONING BYLAWS TABLE 6-B.1	YES
MAX. BLDG & IMP. COVERAGE	70%*	12%±	WAIVER SECTION 12.3.A.2.d	YES
MINIMUM OPEN SPACE	N/A	88%±	ZONING BYLAWS TABLE 6-B.1	YES
MINIMUM FRONT YARD	50 FT	906 FT±	ZONING BYLAWS TABLE 6-B.1	YES
MINIMUM SIDE YARD	40 FT	98 FT±	ZONING BYLAWS TABLE 6-B.1	YES
MINIMUM REAR YARD	25 FT	248 FT±	ZONING BYLAWS TABLE 6-B.1	YES
MAXIMUM BUILDING HEIGHT	40 FT*	4 STORIES	WAIVER TABLE 6-B.1	YES

* PLUS ONE (1) FOOT FOR EACH ADDITIONAL FOOT BY WHICH:

- THE SETBACK EXCEEDS THE REQUIRED SETBACK DISTANCE;
- THE NARROWEST SIDE YARD EXCEEDS THE REQUIRED SIDE YARD WIDTH; OR
- THE REAR YARD EXCEEDS THE REQUIRED REAR YARD DEPTH, WHICHEVER OF THE THREE (3) ADDITIONAL DISTANCES IS THE SMALLEST.

** MAXIMUM BUILDING AND IMPERVIOUS COVERAGE OR 15% FOR RESIDENTIAL DEVELOPMENTS WITHIN LIMITED INDUSTRIAL DISTRICT

DEVELOPMENT SUMMARY

LOT 1

PROPOSED: 160 APARTMENTS AND 36 TOWNHOME UNITS = 196 TOTAL UNITS

PARKING:

PERMITTED: MINIMUM 1.88 SPACES/UNIT (WAIVER SECTION 8.3.1)
196 UNITS x 1.88 SPACES/UNIT = 369 SPACES

PROPOSED: 369 SPACES

(SEE SHEET 13 FOR PARKING SUMMARY BREAKDOWN)

LOT 2

PROPOSED: 56 APARTMENTS AND 16 TOWNHOME UNITS = 72 TOTAL UNITS

PARKING:

PERMITTED: MINIMUM 1.88 SPACES/UNIT (WAIVER SECTION 8.3.1)
72 UNITS x 1.88 SPACES/UNIT = 136 SPACES

PROPOSED: 136 SPACES

(SEE SHEET 13 FOR PARKING SUMMARY BREAKDOWN)

REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW

**PROPOSED MULTIFAMILY
DEVELOPMENT
SUMMER STREET
WALPOLE, MA**



SITE
PLAN

COVER
SHEET

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.1

SEE SHEET 2 FOR SPECIAL
PERMITS AND WAIVERS

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.). 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 PAVEMENT MARKINGS 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 OTHERWISE 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 OTHERWISE 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. 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.
20. SOIL CONDITIONS BELOW THE PROPOSED INFILTRATION SYSTEMS SHALL BE INSPECTED BY A LICENSED SOIL EVALUATOR AT THE TIME OF EXCAVATION AND AN AFFIDAVIT FOR EACH SYSTEM SHALL BE PROVIDED BY A LICENSED ENGINEER CONFIRMING THAT AS-FOUND CONDITIONS ARE CONSISTENT WITH THE DESIGN ASSUMPTIONS USED IN THE MODEL OR ADDITIONAL JUSTIFICATION PROVIDED PROVING PERFORMANCE PRIOR TO THE INSTALLATION OF THE SYSTEMS. IF AS FOUND CONDITIONS VARY FROM DESIGN ASSUMPTIONS, THE ENGINEER WILL NEED TO ADDRESS ANY REQUIRED DESIGN CHANGES IN A MEMO FOR APPROVAL BY THE TOWN. IF THE DESIGN CHANGES ARE SIGNIFICANT, THE CHANGES MAY REQUIRE APPROVAL BY THE CONSERVATION COMMISSION AND/OR THE ZONING BOARD OF APPEALS. IN WHICH CASE THE PROJECT WILL OBTAIN THOSE APPROVALS PRIOR TO PROCEEDING WITH CONSTRUCTION OF THE INFILTRATION SYSTEMS.

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, APPROVED TO ALLOW FOR A MAXIMUM OF FOUR (4) STORIES.
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;
12. 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;
13. WALPOLE ZONING BYLAWS SECTION 6.C.8.D: FENCE WILL NOT HAVE A HEIGHT OF MORE THAN 6 FEET;
14. WALPOLE ZONING BYLAWS SECTION 8.8.A.1: TABLE OF PARKING SPACE AND AISLE DIMENSIONS;
15. 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.
16. 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;
17. 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;
18. WALPOLE ZONING BYLAWS SECTION 13: SITE PLAN REVIEW;
19. SIGNS SECTION 7.6.C.4; SIGNS SHALL BE A MINIMUM OF 8 FEET FROM THE GROUND;
20. ZBA SECTION 3.2.15 - STATEMENT OF IMPACT ON MUNICIPAL FACILITIES AND SERVICES;
21. ZBA SECTION 3.2.16: COMPLIANCE WITH MASTER AND OPEN SPACE PLANS;
22. ZBA SECTION 3.2.17: ROSTER OF DEVELOPMENT TEAM AND LIST OF PRIOR DEVELOPMENTS FOR PAST 10 YEARS;
23. ZBA SECTION 3.2.18: TWENTY (20) PAPER COPIES OF SAID APPLICATION WITH ATTACHMENTS AND EXHIBITS;
24. 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);
25. 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;
26. ZBA SECTION 5.6: BOARD MAY IN ITS DISCRETION COLLECT APPROPRIATE FEES FOR NOTARY PUBLIC OR STENOGRAPHER.



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

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

Table with 4 columns: NO, BY, DATE, DESCRIPTION. Row 1: 1, PB, 08/31/23, REV. PER PEER REVIEW



SITE PLAN

SITE PLAN NOTES

Table with 2 columns: FIELD, DATE. Rows for DATE (JUNE 20, 2023), PROJECT NUMBER (19097), DESIGNED BY (PB/KE/KF), DRAWN BY (PB/MB/KF/KL), CHECKED BY (KE), and SHEET 2 OF 65.

CONSERVATION CONSTRUCTION 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 UPON APPLICATION TO THE ISSUING AUTHORITY AT LEAST 90 DAYS PRIOR TO THE EXPIRATION DATE OF THE ORDER. AN ORDER OF CONDITIONS FOR A TEST PROJECT MAY BE EXTENDED FOR ONE ADDITIONAL YEAR 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, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION [OR "MASS DEP."] FILE NUMBER 315-1227.
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 AND FINAL ORDER SHALL ALSO BE NOTED IN THE REGISTRY OF DEEDS OR THE LAND COURT CERTIFICATE OF TITLE 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/AGENCY 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 RESTORATION 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 TO OBTAIN NECESSARY DATA. THE SUBMITTAL OF ANY DATA DEEMER 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 TITLE OF THE AFFECTED PROPERTY, IN THE CASE OF RECORDED LAND, THE FINAL ORDER SHALL ALSO BE NOTED IN THE REGISTRY OF DEEDS OR THE LAND COURT CERTIFICATE OF TITLE OF THE OWNER OF THE LAND SUBJECT TO THE ORDER OF CONDITIONS. THE RECORDING INFORMATION SHALL BE SUBMITTED TO THE CONSERVATION COMMISSION LISTED BELOW.
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 PERMITS DESIGNEE SHALL INSPECT THE EROSION CONTROLS 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 IF IT MAY BE 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 ADJACENT WHOSE PROPERTY WILL BE USED BY THE APPLICANT SHALL BE SHOWN ON THE FINAL PLANS.
C.19: THE WORK ASSOCIATED WITH THE 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 SEDIMENT CONTROL PLAN (CP) AND THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM CONSTRUCTION GENERAL PERMIT AS REQUIRED BY STORMWATER CONDITION 6. CONSTRUCTION PERIOD EROSION, SEDIMENTATION AND POLLUTION CONTROL MEASURES AND BEST MANAGEMENT PRACTICES (BMPs) SHALL REMAIN IN PLACE UNTIL THE SITE IS 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(C)) SHALL EXECUTE AND SUBMIT TO THE ISSUING AUTHORITY AN OPERATION AND MAINTENANCE PLAN (O&M PLAN) 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 THE PRESUMPTION, THE LANDOWNER OF THE PROPERTY MUST SUBMIT TO THE ISSUING AUTHORITY A LEGALLY BINDING AGREEMENT OF RECORD, ACCEPTABLE TO THE ISSUING AUTHORITY, EVIDENCING 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 BMPs THAT ARE SERVING MORE THAN ONE LOT. THE LEGALLY BINDING AGREEMENT SHALL IDENTIFY THE LOTS THAT WILL BE SERVICED BY THE STORMWATER BMPs. A PLAN AND EASEMENT DEED THAT GRANTS THE RESPONSIBLE PARTY ACCESS 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/AGENCY ("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 OR ALTERED 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 BE MAINTAINED 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 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 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 CONTROL, 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 OF DEEDS OR THE LAND COURT CERTIFICATE OF TITLE OF THE OWNER OF THE LAND SUBJECT TO THE ORDER OF CONDITIONS. THE RECORDING INFORMATION 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, SUBCONTRACTORS, AND OTHER PERSONNEL PERFORMING THE PERMITTED WORK ARE FULLY AWARE OF THE PERMIT'S TERMS AND CONDITIONS. THEREAFTER, THE CONTRACTOR SHALL BE 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 DISCUSS 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 PROBLEM 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 COMPLETED AS SHOWN ON THE PLANS(S) AND DOCUMENTS REFERENCED ABOVE, AND AS CONDITIONED BY THE COMMISSION; AND
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;

- 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), 1, 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 INTO ACCOUNT 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 BUFFER ZONES WILL REQUIRE THAT 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 BUFFER ZONES 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 AREA/LIMIT OF WORK BOUNDARIES SHOWN ON THE 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 WITHIN 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 AND REGULATIONS.
16: ANY SOLID WASTE, OIL AND GAS OR HAZARDOUS MATERIALS ENCOUNTERED DURING CONSTRUCTION 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 AND INTERMITTENT STREAMS, BAY AND RIVERFRONT AREA, AND AT A LOCATION TO PREVENT SUCH MATERIALS FROM ENTERING THOSE RESOURCE AREAS. UNDER NO CIRCUMSTANCES SHALL BE STOCKPILED OF MATERIAL OUT THE PERMITTING LIMIT OF WORK.
18: A CERTIFIED EROSION SPECIALIST ("CES") OR DESIGNATED PERSON EXPERIENCED IN EROSION CONTROL SHALL OVERSEE INSPECTION OF THE EROSION CONTROL BARRIER, THE NAME, PHONE NUMBER, AND CREDENTIALS OF THE CES SHALL BE PROVIDED TO THE CONSERVATION COMMISSION/AGENT AT THE PRECONSTRUCTION MEETING.
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 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, TEMPORARY STREAM CROSSING DETAILS, LOCATION OF LOGS AND LOGS, AND APPROVAL OF THE AGENT. TEMPORARY STREAM CROSSINGS SHALL NOT IMPED 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 EROSION CONTROL MEASURES REQUIRED BY THE SWPPP. DISTURBED AREAS WILL BE GRADED, LOAMED AND SEEDED PRIOR TO NOVEMBER 1 OF EACH YEAR, IF POSSIBLE. NO DISTURBED AREAS OR STOCKPILES SHALL BE LEFT UNPROTECTED OR WITHOUT EROSION CONTROLS DURING WINTER.
24: THE WETLAND REPLICATION AREA CONSISTING OF 7,106 SF DIVIDED INTO FOUR AREAS, AS DEPICTED ON SHEET 52, SHALL BE CONSTRUCTED IN CONJUNCTION WITH THE ADJACENT ROAD CONSTRUCTION. THE PLANTING SHALL BE HELD JOINTLY 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 THE GRADE IS UNEVEN; 4) THE PLANT STOCK TO BE USED AND METHODS FOR PLANTING; AND 5) THE PLANTINGS THAT 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, AND THE REPLICATION AREA MEETS THE REQUIREMENTS OF 310 CMR 10.55(4)(B) AS PROVIDED IN WRITING BY THE WETLAND SPECIALIST.
29: A PRE-CONSTRUCTION MEETING SHALL OCCUR WITH THE APPLICANT, ENGINEER, CONSTRUCTION SUPERVISOR AND THE CONSERVATION AGENT PRIOR TO ANY WORK STARTING AT WHICH TIME THE CONSERVATION AGENT WILL RECEIVE THE NAME(S) AND TELEPHONE NUMBER(S) OF THE PERSON(S) RESPONSIBLE ON SITE FOR COMPLIANCE WITH THIS ORDER.
30: A COPY OF THE FINAL PLAN SET SUBMITTED TO THE ZBA SHALL BE PROVIDED TO THE CONSERVATION COMMISSION/ AGENT ONE WEEK PRIOR TO THE PRECONSTRUCTION MEETING. ANY DESIGN DETAILS DIFFERING FROM THE O&M PLANS-OF-RECORD SHALL BE MADE CLEAR IN WRITING IN A LETTER ACCOMPANYING THE FINAL PLAN SET. THE LETTER SHALL STATE AN OPINION AS TO WHY SAID DESIGN CHANGES WOULD NOT REQUIRE AN AMENDED ORDER OF CONDITIONS OR NEW NOTICE OF INTENT.
31: A COPY OF THIS ORDER OF CONDITIONS, AND FINAL REFERENCE PLANS LAST REVISED DATED 4-13-21 OR LATER AS APPROVED BY THE COMMISSION EITHER BY REFERENCE IN THE FILE OR THROUGH ISSUANCE OF AN AMENDED ORDER OF CONDITIONS OR NEW ORDER OF CONDITIONS, SHALL BE ON THE SITE UPON COMMENCEMENT AND DURING ANY SITE WORK FOR CONTRACTORS TO VIEW AND ADHERE TO.
32: THE CONSERVATION COMMISSION/AGENT SHALL BE PROVIDED A COPY OF THE DRAFT SWPPP FOR REVIEW AND A SIGNED COPY OF THE FINAL SWPPP. PRIOR TO COMMENCEMENT OF ACTIVITIES, THE COMMISSION WILL REQUIRE A TWO-WEEK REVIEW PERIOD FOR THE DRAFT SWPPP REVIEW.

- NO VEHICLE OR OTHER MACHINERY REFUELING, LUBRICATION, OR MAINTENANCE SHALL TAKE PLACE WITHIN 100 FEET OF ANY WETLAND RESOURCE AREA. EQUIPMENT SHALL BE INSPECTED REGULARLY FOR LEAKS. ANY LEAKING HYDRAULIC LINES, CYLINDERS OR ANY OTHER COMPONENTS SHALL BE REPAIRED IMMEDIATELY. A FUEL OR HYDRAULIC OIL SPILL KIT SHALL BE MAINTAINED AT ALL TIMES ON SITE, PER WALPOLE FIRE DEPARTMENT SPECIFICATIONS. IN THE EVENT OF A SPILL, THE APPLICANT SHALL TAKE IMMEDIATE MEASURES TO CONTAIN SUCH SPILL AND SHALL NOTIFY THE LOCAL FIRE DEPARTMENT.
34: SUMMER STREET SHALL BE MAINTAINED IN A CLEAN CONDITION FREE FROM DIRT AND DEBRIS IN ORDER TO KEEP SILTATION FROM ENTERING MUNICIPAL STORM DRAIN SYSTEM OR ADJACENT RESOURCE AREAS.
35: ALL CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. CONSTRUCTION TRASH (MATERIAL THAT CAN BE BLOWN INTO THE ADJACENT LOT BUT TAKING INTO ACCOUNT THE LOT APPLYING FOR THE WORK DAY AND APPROPRIATELY DISPOSED.
36: INVASIVE SPECIES MATERIALS ACCUMULATED DURING SITE WORK SHALL BE REMOVED FROM THE SITE IN AN APPROPRIATE MANNER. INVASIVE PLANT MATERIAL SHALL BE DISPOSED OFFSITE IN AN APPROPRIATE MANNER, REMOVED OFFSITE TO A PROCESSING FACILITY EQUIPPED IN HANDLING INVASIVE PLANT MATERIAL IN COMPLIANCE WITH THE INVASIVE VEGETATION CONTROL PLAN OF THE SUPPLEMENTAL DATA REPORT, DATED JANUARY 2021.
37: THE "ENVIRONMENTALLY SENSITIVE AREA BEYOND THIS POINT-DO NOT ALTER" SIGNS SHALL BE INSTALLED IN CONJUNCTION WITH ROAD CONSTRUCTION AND BACKFILL OF FOUNDATION AND RESTORATION AREAS.
38: THE CONSTRUCTION PERIOD STORMWATER SHALL BE MANAGED TO PREVENT SEDIMENTATION AND EROSION OF THE WETLANDS.
39: FOR EACH OF THE STORMWATER BASINS AND CONSTRUCTED STORMWATER BOWNS, THE CONSERVATION COMMISSION/ AGENT SHALL BE NOTIFIED TWO WEEKS PRIOR TO POST-CONSTRUCTION STORMWATER DISCHARGE FOR AN ON-SITE INSPECTION OF THE BASIN.
40: EXCAVATION OF EACH INFILTRATION BASIN/SYSTEM SHALL BE OBSERVED BY THE CONSERVATION COMMISSION OR COMMISSION'S AGENT PRIOR TO INSPECTION AND BEFORE ANY CONSTRUCTION AND RESTORATION CONSTRUCTION PRIOR TO PLACEMENT OF FINAL LOAM AND SEED SHALL BE DOCUMENTED AND THE INFORMATION PROVIDED IN WRITING FOR THIS INSPECTION. THE CONTRACTOR SHALL PROVIDE A CONSTRUCTION SEQUENCING PLAN AND NARRATIVE TO INCLUDE THE SCHEDULE OF THE STORM WATER SYSTEM INSTALLATION, PROVISIONS TO PROTECT STORMWATER BMPs DURING CONSTRUCTION AND RESTORATION OF DAMAGED AREAS PRIOR TO BMPs COMING ONLINE TO ENSURE THEY OPERATE AS DESIGNED AFTER CONSTRUCTION IS COMPLETE. THE CONSTRUCTION SEQUENCING PLAN SHALL ALSO PROVIDE THE ANTICIPATED LOCATIONS FOR STAGING AND STOCKPILE AREAS, NO STOCKPILING OR EQUIPMENT STAGING SHALL OCCUR WITHIN THE 200-FOOT RIVERFRONT AREA.
41: THE CONSTRUCTION SEQUENCING PLAN SHALL ALSO DESCRIBE THE PHASING FOR SITE CLEARING OF VEGETATION. PRIOR TO CLEARING OF THE NEXT CONSTRUCTION PHASE, THE DISTURBED PORTION OF THE SITE SHALL BE FULLY STABLE.
42: PROVIDE PROVISIONS IN THE DRAFT AND FINAL SWPPP TO PROTECT INFILTRATION BASINS DURING CONSTRUCTION TO ENSURE THEY OPERATE AS DESIGNED AFTER CONSTRUCTION IS COMPLETE.
43: NO FINAL INFILTRATION BASIN OR CONSTRUCTED STORMWATER WETLANDS SHALL BE USED FOR TEMPORARY CONSTRUCTION-RELATED SEDIMENT CONTROL.
44: THE CONTRACTOR SHALL PROVIDE SPECIFICATIONS FOR TEMPORARY AND FINAL SEEDING.
45: THE DRAFT AND FINAL SWPPP SHALL INCLUDE MEASURES TO PREVENT ILLICIT DISCHARGES TO THE STORMWATER MANAGEMENT SYSTEM.
46: THE AREA BETWEEN THE "ENVIRONMENTALLY SENSITIVE AREA BEYOND THIS POINT-DO NOT ALTER" AND THE WETLAND RESOURCE AREA SHALL REMAIN AS NO ALTERATION AREAS IN PERPETUITY. ANY VARIATION SHALL BE SUBMITTED TO THE CONSERVATION COMMISSION/ AGENT FOR REVIEW AND APPROVAL.
47: THE "ENVIRONMENTALLY SENSITIVE AREA BEYOND THIS POINT-DO NOT ALTER" SIGN AND BEHIND SIGN MODELS D, C, AND E ON SHEET C-1 AND SHEET C-3 (3 SIGNS) AND THE SIGN (1 SIGN) LOCATED AT THE THREE PARKING SPOTS AT ROADWAY #4 SHALL BE INSTALLED AT THE TREE LINE/EROSION CONTROL LINE (SHEET C9).
48: THE "ENVIRONMENTALLY SENSITIVE AREA BEYOND THIS POINT -DO NOT ALTER" SIGN (SHEET 52) SHALL BE INSTALLED AT THE LAYOUT AND MATERIALS PLAN (SHEETS C12-C16) AND AS SPECIFIED IN CONDITION #49 SHALL REMAIN IN PERPETUITY AND BE REPLACED IF DAMAGED, REMOVED OR UNREADABLE.
49: ONCE THE RETAINING WALL AND THE CHAIN LINK FENCE AS SHOWN ON SHEET C12 LAYOUT AND MATERIALS PLAN ARE CONSTRUCTED, THE EXISTING TREE LINE BETWEEN THE PARKING LOT, SHALL REMAIN UNALTERED AS A VERNAL POOL SPECIES TRAVEL CORRIDOR.
50: THERE SHALL BE NO ADDITIONAL ALTERATION OF THE RIVERFRONT AREA OTHER THAN THAT NECESSARY TO MAINTAIN THE EXISTING TRAIL IN ITS NATURAL CONDITION AND PROPOSED ACCESS TRAILS.
51: NON-ORGANIC FERTILIZERS, CHEMICAL PESTICIDES, AND CHEMICAL LANDSCAPE CARE PRODUCTS FOR USE IN OUTSIDE AREAS ARE PROHIBITED WITHIN 100-FEET OF WETLAND RESOURCE AREAS.
52: THE DEVELOPMENT'S O&M PLAN SHALL BE ON-SITE WITH THE SITE MANAGER FOR EACH RESIDENTIAL AREA.
53: THE DEVELOPMENT'S O&M PLAN SHALL CLEARLY STATE THE PROHIBITION OF NON-ORGANIC FERTILIZERS AND THE PROHIBITION OF PESTICIDES AND LANDSCAPE CARE CHEMICALS WITHIN 100 FEET OF THE WETLANDS; REQUIREMENTS TO POST SIGNS AS REFERENCED IN CONDITION #49; AND IMPLEMENT DOG CURBING RULES (PICK UP AND PROPER DISPOSAL) TO FURTHER REDUCE NUTRIENT LOADING WITHIN WETLAND RESOURCE AREAS.
54: THE STORMWATER BASINS SHALL BE MANAGED FOR MOSQUITO CONTROL.
55: THE ARBORVITAE PLANTS (OR A COMPARABLE SPECIES) SHOWN ADJACENT TO THE REPLICATION AREAS SHOWN ON SHEET 52 AS WELL AS THOSE SHOWN ON SHEET 31 BEHIND OWNERSHIP UNITS 4 AND 5 (ON LOT 2) SHALL REMAIN IN PERPETUITY AND BE REPLACED IF DAMAGED OR REMOVED.
56: THE DOG PARK SHALL BE MANAGED IN A MANNER TO PREVENT ANY DISCHARGE OF NUTRIENTS TO THE WETLAND RESOURCE AREAS.
57: STORMWATER MANAGEMENT CERTIFICATE: THE CONSERVATION COMMISSION/AGENT SHALL BE PROVIDED AN ANNUAL STORMWATER MANAGEMENT REPORT OF MAINTENANCE WITH INSPECTION DATES AND MAINTENANCE ACTIVITIES LISTED FOR EACH STORMWATER COMPONENT. THE NAME AND CONTACT INFORMATION OF THE PERSON RESPONSIBLE FOR SUCH MAINTENANCE AND REPORT SHALL BE INCLUDED. THE REPORT SHALL BE SUBMITTED NO LATER THAN 12/31 OF EACH YEAR FOR STORMWATER CERTIFICATE.
58: MAINTENANCE OF THE STORMWATER BASINS AS STATED IN THIS ORDER OF CONDITIONS AND THE O & M PLAN SHALL NOT REQUIRE AN ADDITIONAL FILING WITH THE CONSERVATION COMMISSION/AGENT.
59: SIGNED BY CONTRACTOR PRIOR TO BEGINNING ANY ASPECT OF PROJECT.

HOWARD STEIN HUDSON
114 Chelmsford Road, Suite 2C
Tumpikeford, 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

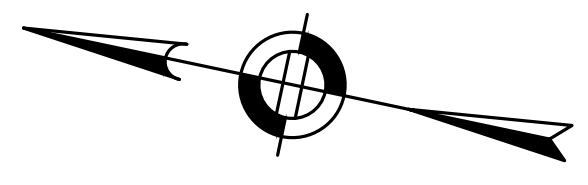
Table with 4 columns: NO, BY, DATE, DESCRIPTION. Row 1: 1, PB, 08/31/23, REV. PER PEER REVIEW.



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.4

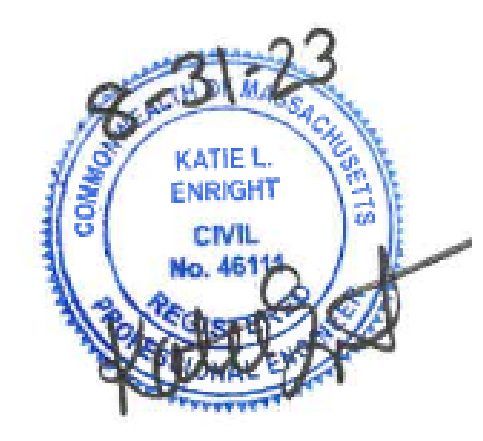


PREPARED FOR:
 FRH REALTY LLC
 c/o FAIRFIELD RESIDENTIAL
 5 BURLINGTON WOODS, SUITE 203
 BURLINGTON, MA 01803

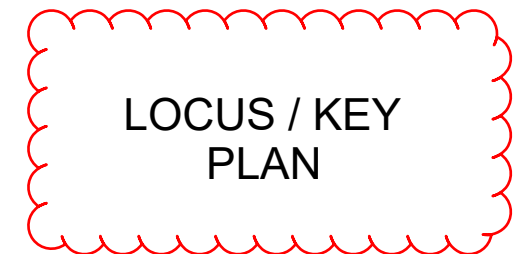
**PROPOSED MULTIFAMILY
 DEVELOPMENT
 SUMMER STREET
 WALPOLE, MA**

REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW

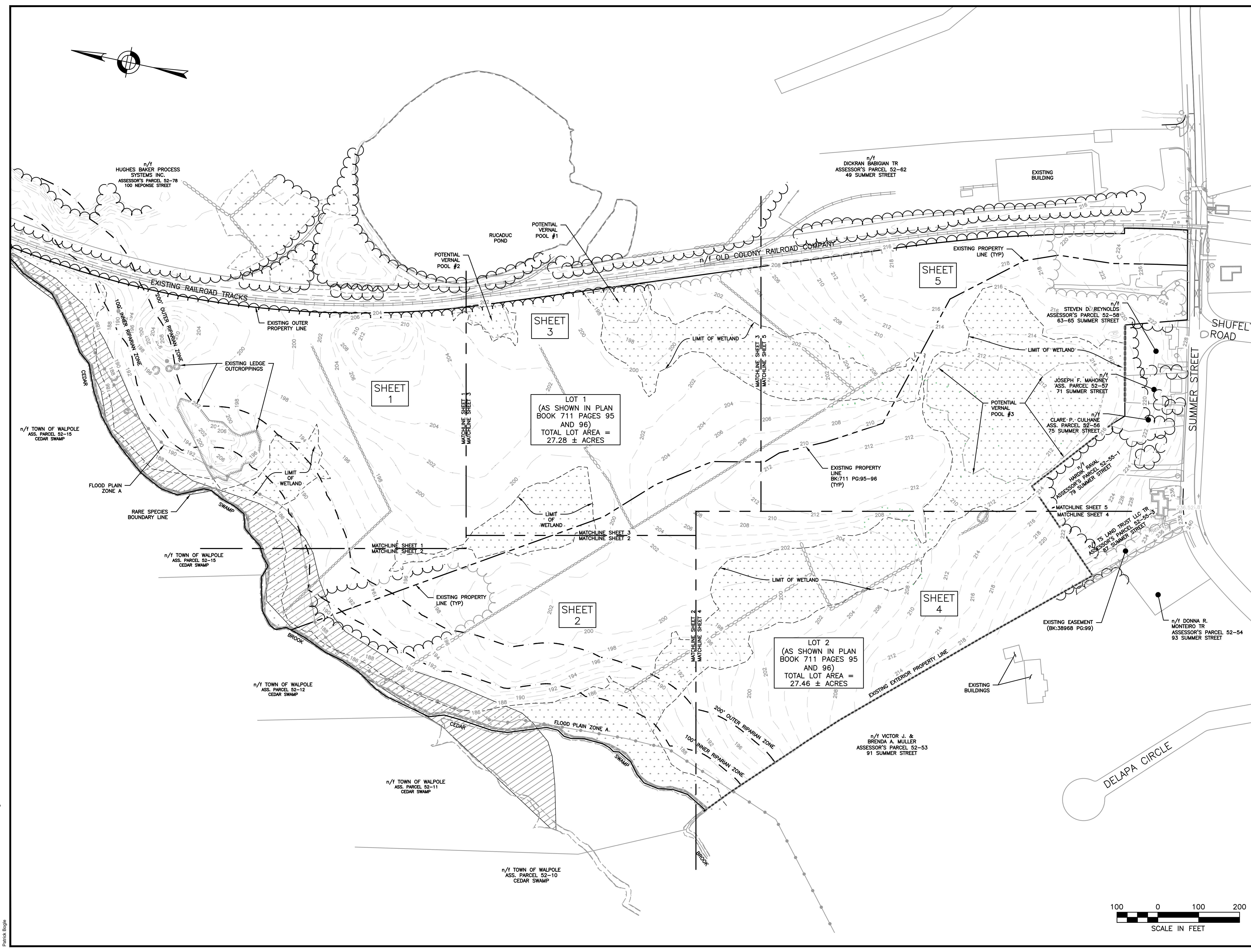


SITE PLAN



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

C.5





HOWARD STEIN HUDSON

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

PREPARED FOR:

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

PROPOSED MULTIFAMILY
DEVELOPMENT
LOT 1 AND COMMON INFRASTRUCTURE
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	02/28/23	100% DD SET

SITE PLAN

EXISTING
CONDITIONS
PLAN 1 OF 5

DATE: FEBRUARY 28, 2023

PROJECT NUMBER: 19097

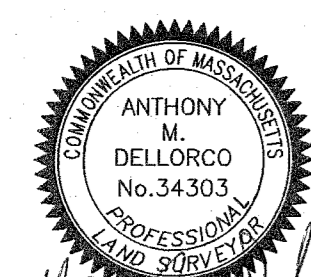
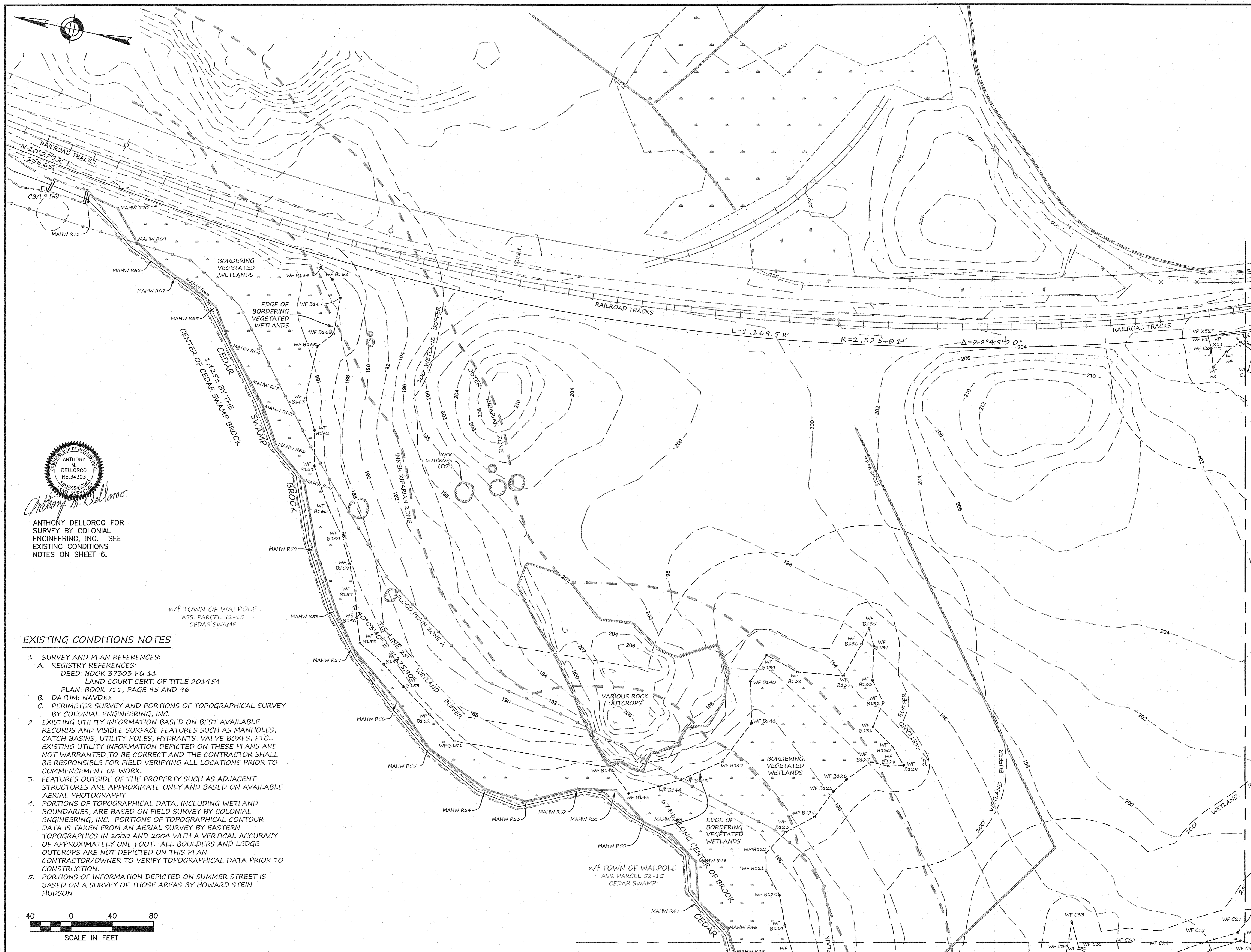
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.6

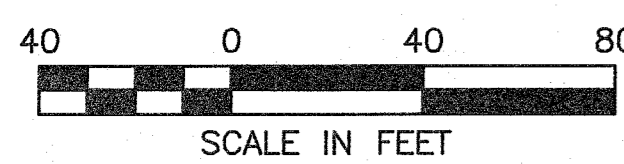
SHEET 6 OF 81



ANTHONY DELLORCO FOR
SURVEY BY COLONIAL
ENGINEERING, INC. SEE
EXISTING CONDITIONS
NOTES ON SHEET 6.

EXISTING CONDITIONS NOTES

- SURVEY AND PLAN REFERENCES:
 - REGISTRY REFERENCES:
DEED: BOOK 37303 PG 11
LAND COURT CERT. OF TITLE 201454
PLAN: BOOK 711, PAGE 95 AND 96
 - DATUM: NAVD83
 - PERIMETER SURVEY AND PORTIONS OF TOPOGRAPHICAL SURVEY BY COLONIAL ENGINEERING, INC.
- EXISTING UTILITY INFORMATION BASED ON BEST AVAILABLE RECORDS AND VISIBLE SURFACE FEATURES SUCH AS MANHOLES, CATCH BASINS, UTILITY POLES, HYDRANTS, VALVE BOXES, ETC... EXISTING UTILITY INFORMATION DEPICTED ON THESE PLANS ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS PRIOR TO COMMENCEMENT OF WORK.
- FEATURES OUTSIDE OF THE PROPERTY SUCH AS ADJACENT STRUCTURES ARE APPROXIMATE ONLY AND BASED ON AVAILABLE AERIAL PHOTOGRAPHY.
- PORTIONS OF TOPOGRAPHICAL DATA, INCLUDING WETLAND BOUNDARIES, ARE BASED ON FIELD SURVEY BY COLONIAL ENGINEERING, INC. PORTIONS OF TOPOGRAPHICAL CONTOUR DATA IS TAKEN FROM AN AERIAL SURVEY BY EASTERN TOPOGRAPHICS IN 2000 AND 2004 WITH A VERTICAL ACCURACY OF APPROXIMATELY ONE FOOT. ALL BOULDERS AND LEDGE OUTCROPS ARE NOT DEPICTED ON THIS PLAN. CONTRACTOR/OWNER TO VERIFY TOPOGRAPHICAL DATA PRIOR TO CONSTRUCTION.
- PORTIONS OF INFORMATION DEPICTED ON SUMMER STREET IS BASED ON A SURVEY OF THOSE AREAS BY HOWARD STEIN HUDSON.



4/18/2023 2:Project\Walpole\Summer Street\2023\FRH\Realty\From Client\2023-04-04\Legacy Modified\19097 - Existing Conditions_LE Mod.dwg



HOWARD STEIN HUDSON

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

PREPARED FOR:
FAIRFIELD SUMMER STREET 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
1	PB	02/28/23	100% DD SET

SITE
PLAN

EXISTING
CONDITIONS
PLAN 2 OF 5

DATE: FEBRUARY 28, 2023

PROJECT NUMBER: 19097

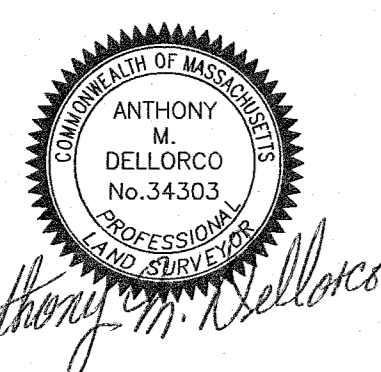
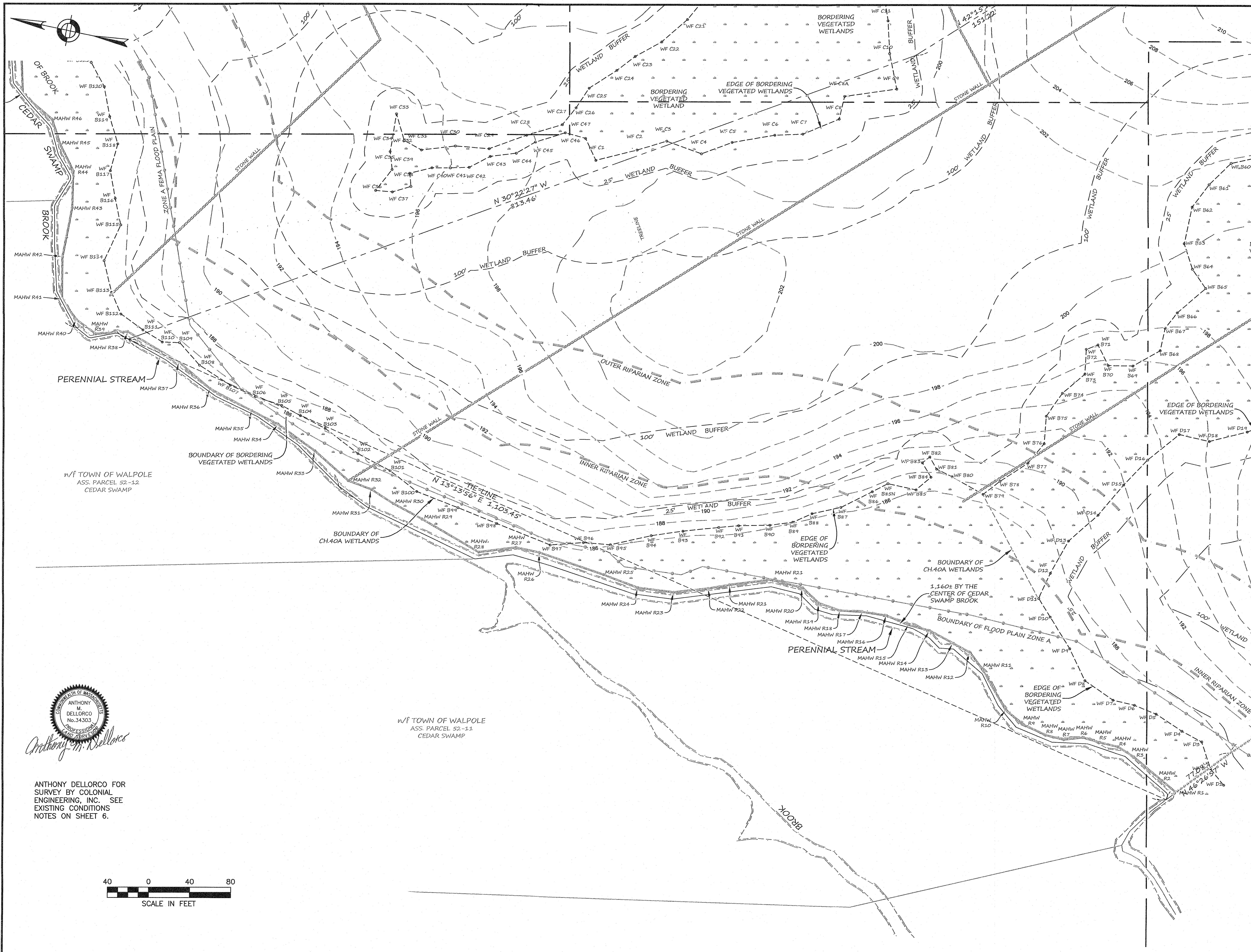
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

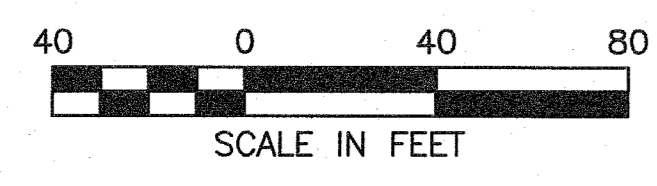
CHECKED BY: KE

C.7

SHEET 7 OF 81



ANTHONY DELLORCO FOR
SURVEY BY COLONIAL
ENGINEERING, INC. SEE
EXISTING CONDITIONS
NOTES ON SHEET 6.



4/19/2023 2: Projects\Walpole\Summer Street\Code\2022-FRM Realty\From Client\2023-04-04\Legacy Modified\19097 - Existing Conditions_LE Mod.dwg
Dm



ANTHONY M. DELLORCO FOR SURVEY BY COLONIAL ENGINEERING, INC. SEE EXISTING CONDITIONS NOTES ON SHEET 6.

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

PROPOSED MULTIFAMILY DEVELOPMENT
LOT 1 AND COMMON INFRASTRUCTURE
SUMMER STREET
WALPOLE, MA

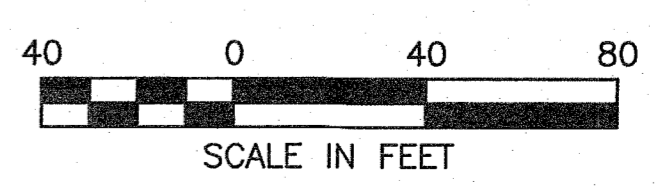
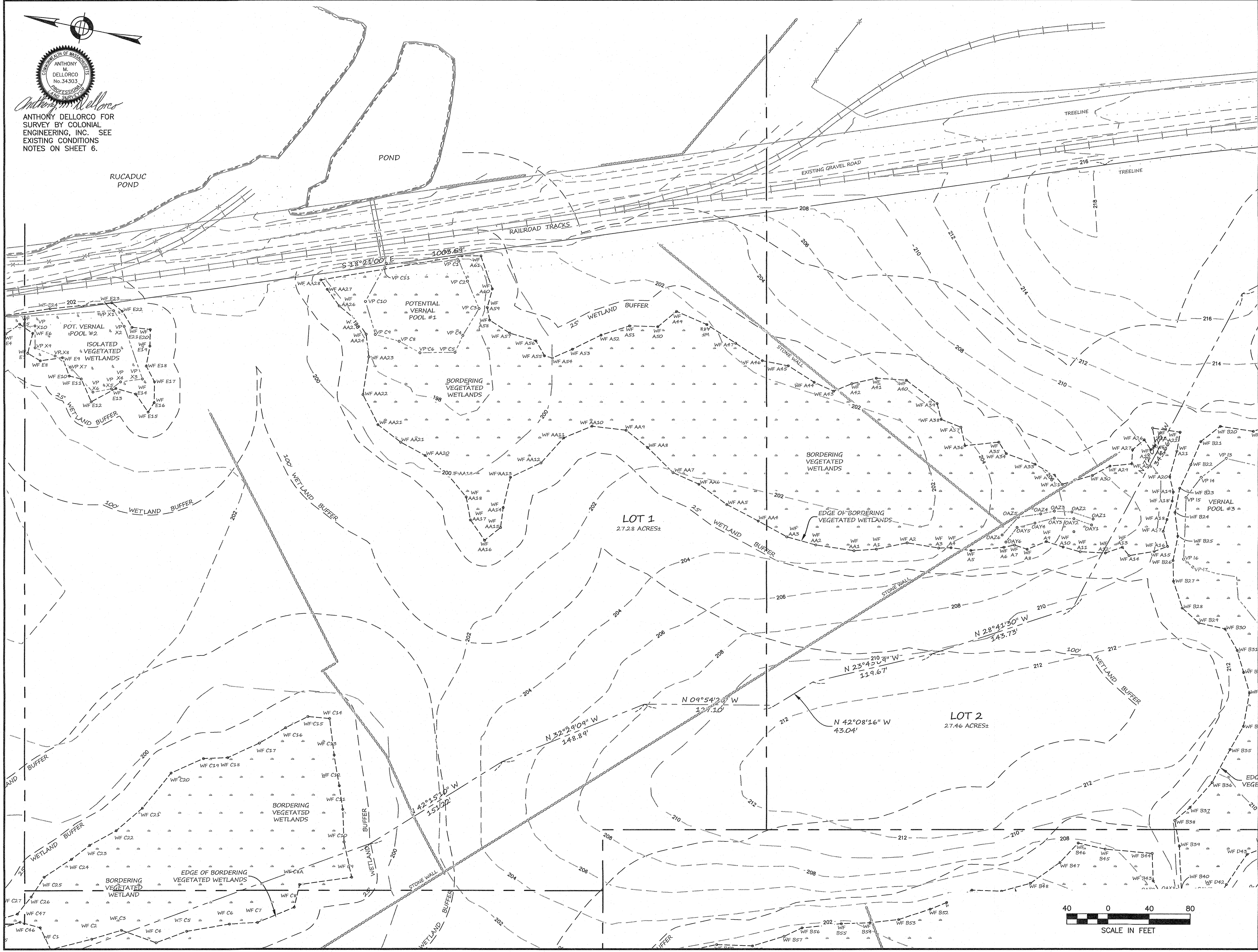
REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	02/28/23	100% DD SET

SITE PLAN

EXISTING CONDITIONS PLAN 3 OF 5

DATE:	FEBRUARY 28, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE
	C.8



4/16/2023 2:10:00 PM \\projects\walpole\summer street\cadd\legwork\modified\19097 - Existing Conditions_LE Mod.dwg



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

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

**PROPOSED MULTIFAMILY
 DEVELOPMENT
 LOT 1 AND COMMON INFRASTRUCTURE
 SUMMER STREET
 WALPOLE, MA**

REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	02/28/23	100% DD SET

SITE PLAN

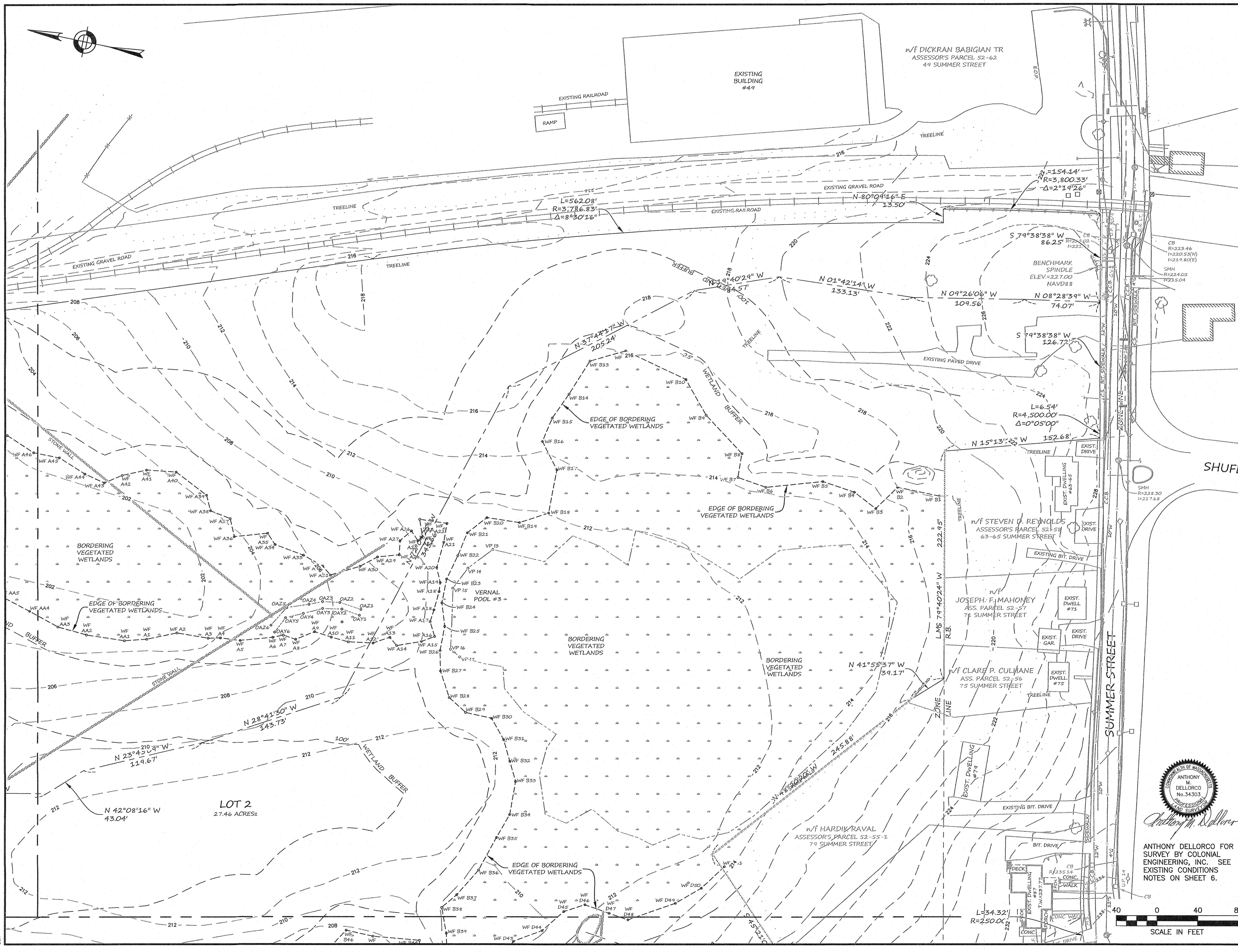
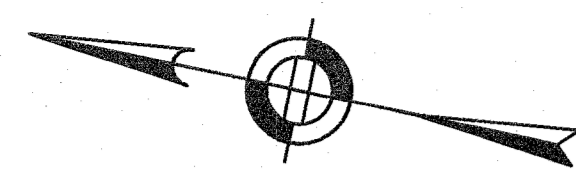
**EXISTING CONDITIONS
 PLAN 4 OF 5**

DATE:	FEBRUARY 28, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE
	C.9
	SHEET 9 OF 81

Anthony M. Dellorco
 ANTHONY DELLORCO FOR
 SURVEY BY COLONIAL
 ENGINEERING, INC. SEE
 EXISTING CONDITIONS
 NOTES ON SHEET 6.

40 0 40 80
 SCALE IN FEET

4/18/2023 2:Project\Walden\Summer Street\CD\2022 FRH\Realty\From Client\2023-04-04\Legacy Modified\18037 - Existing Conditions_LE Mod.dwg
 Dan



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

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

**PROPOSED MULTIFAMILY
 DEVELOPMENT
 LOT 1 AND COMMON INFRASTRUCTURE
 SUMMER STREET
 WALPOLE, MA**

REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	02/28/23	100% DD SET

W/F STEVEN D. REYNOLDS
 ASS. PARCEL 52-54
 63-65 SUMMER STREET

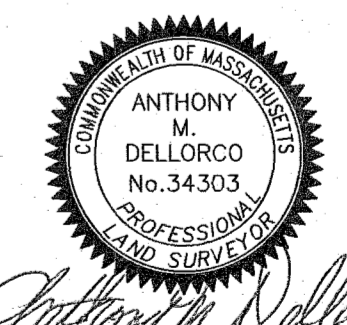
W/F JOSEPH F. MAHONEY
 ASS. PARCEL 52-57
 79 SUMMER STREET

W/F CLARE P. CULHANE
 ASS. PARCEL 52-56
 75 SUMMER STREET

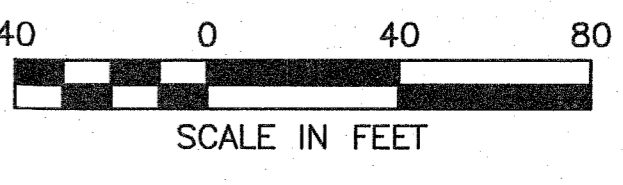
SITE PLAN

**EXISTING CONDITIONS
 PLAN 5 OF 5**

DATE:	FEBRUARY 28, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE



ANTHONY DELLORCO FOR
 SURVEY BY COLONIAL
 ENGINEERING, INC. SEE
 EXISTING CONDITIONS
 NOTES ON SHEET 6.



4/18/2023 2: Projects\Walpole\Summer Street\Colony\2022 FRH\Realty\From Client\2023-04-04\Layout Modified\19097 - Existing Conditions_LE Mod.dwg
 Date



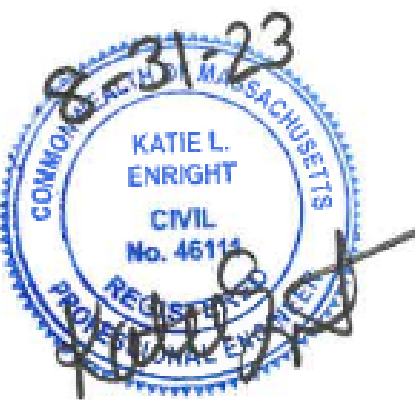
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

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
1	PB	08/31/23	REV. PER PEER REVIEW

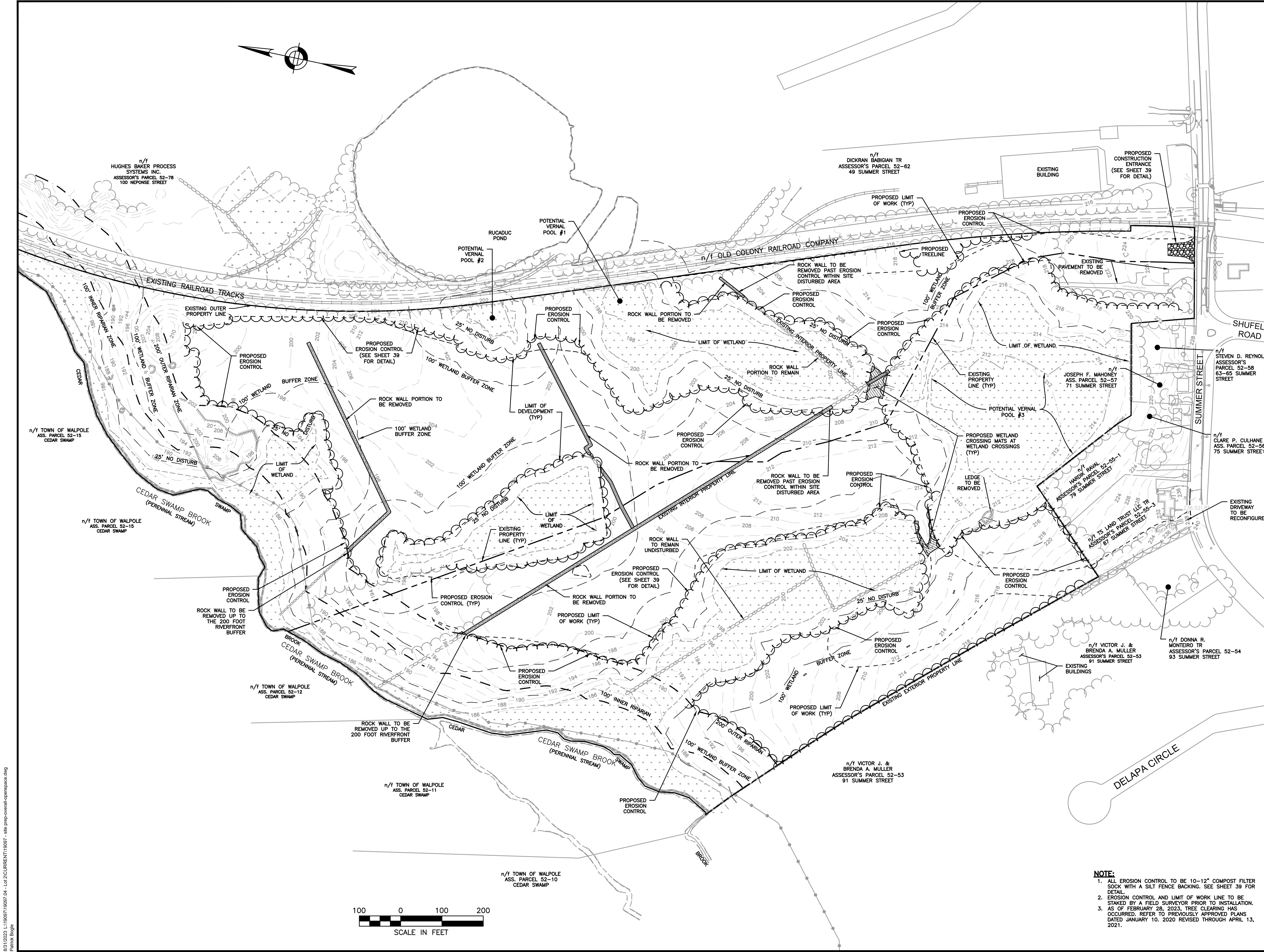


SITE PLAN

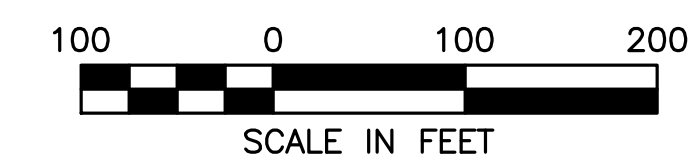
**EROSION
 CONTROL AND
 DEMOLITION PLAN**

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

C.11



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.



8/31/2023 L:\19097\19097_04 - Lot 2\CURRENT\1119097 - site prep-overall-openspace.dwg



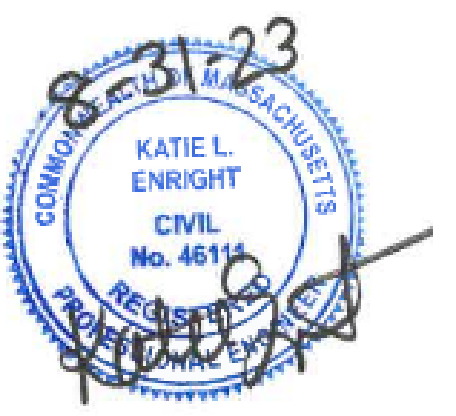
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

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
1	PB	08/31/23	REV. PER PEER REVIEW

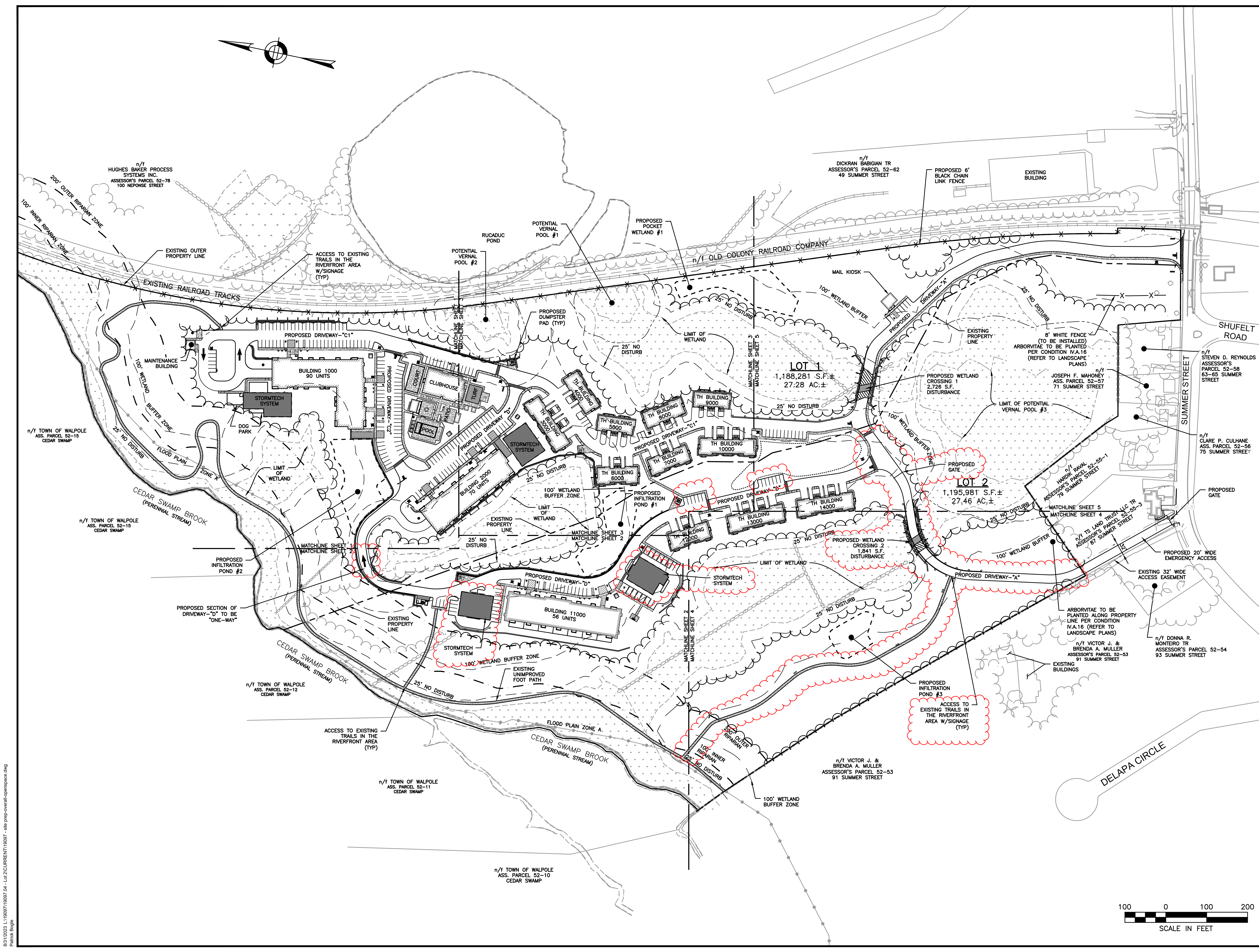


SITE PLAN

PROPOSED 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



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\119097 - site prep-overall-opnspace.dwg
 Patrick Doglio



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
1	PB	08/31/23	REV. PER PEER REVIEW

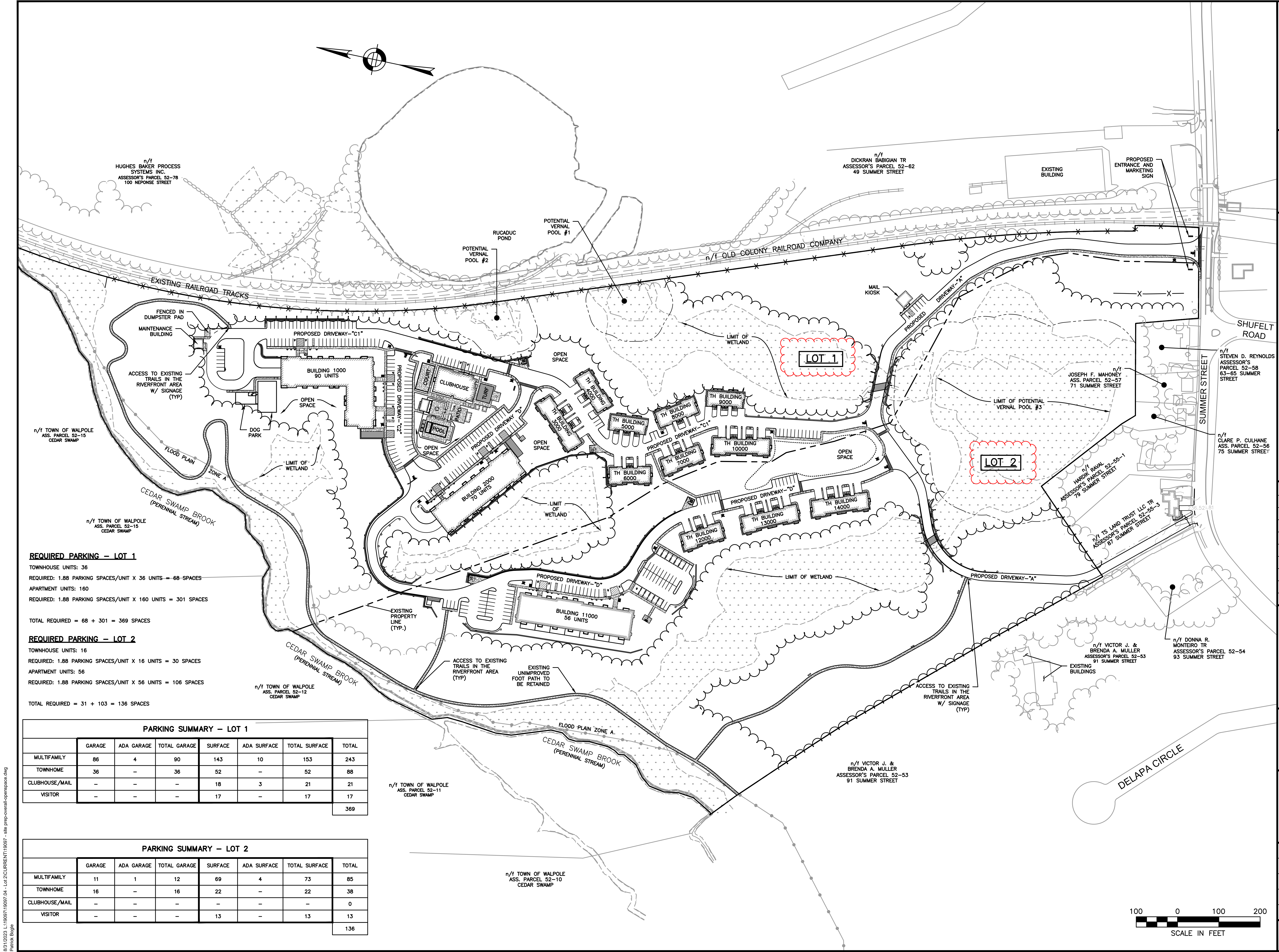


SITE PLAN

OPEN SPACE,
 RECREATION, AND
 PARKING PLAN

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

C.13



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

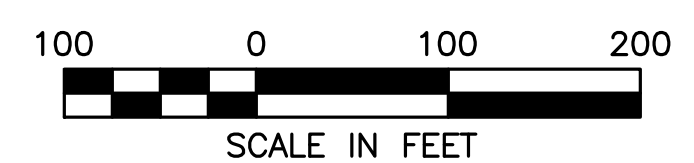
REQUIRED PARKING – LOT 2
 TOWNHOUSE UNITS: 16
 REQUIRED: 1.88 PARKING SPACES/UNIT X 16 UNITS = 30 SPACES
 APARTMENT UNITS: 56
 REQUIRED: 1.88 PARKING SPACES/UNIT X 56 UNITS = 106 SPACES
 TOTAL REQUIRED = 31 + 103 = 136 SPACES

PARKING SUMMARY – LOT 1

	GARAGE	ADA GARAGE	TOTAL GARAGE	SURFACE	ADA SURFACE	TOTAL SURFACE	TOTAL
MULTIFAMILY	86	4	90	143	10	153	243
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	–	–	–	–	–	–	0
VISITOR	–	–	–	13	–	13	13
							136



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\119097 - site prep-overall-openspace.dwg



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
1	PB	08/31/23	REV. PER PEER REVIEW

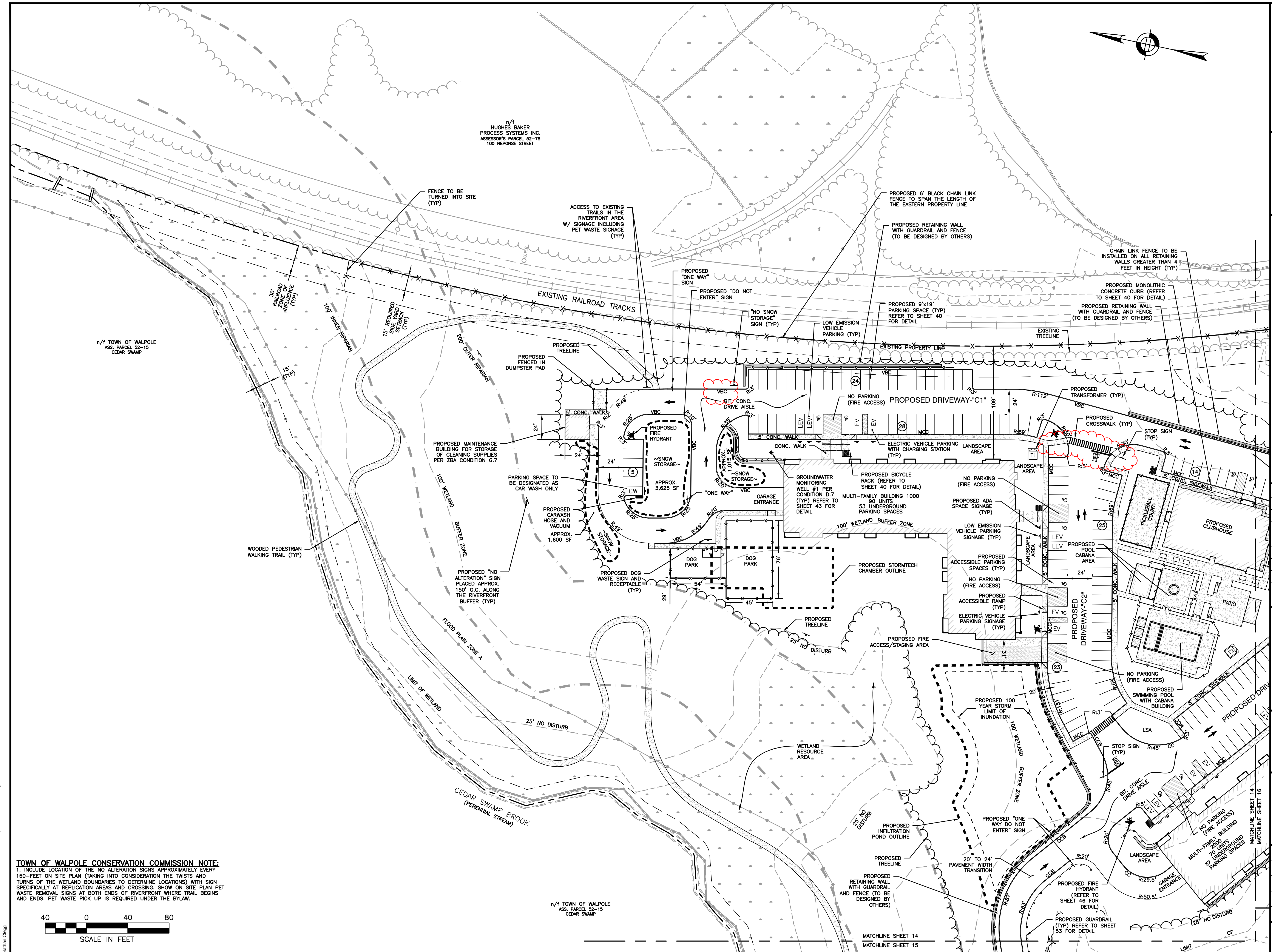


SITE PLAN

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

SHEET 14 OF 65



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.



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - layout and materials.dwg
 Nathan Cheng



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
1	PB	08/31/23	REV. PER PEER REVIEW



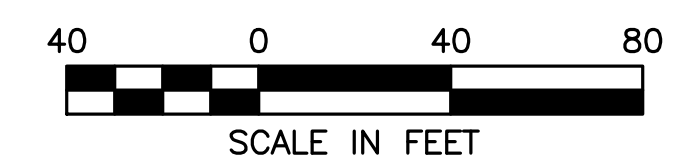
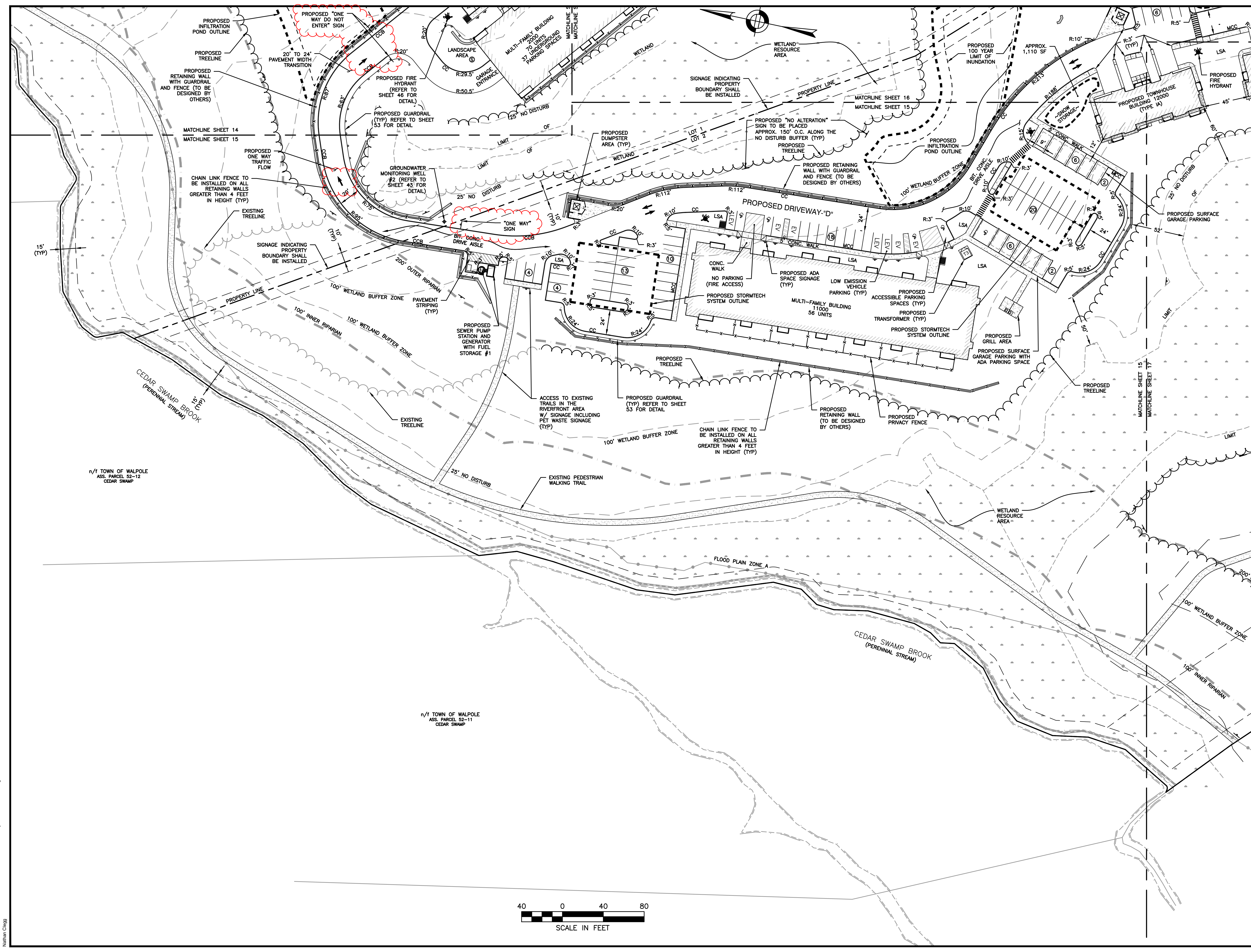
SITE PLAN

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 65



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - layout and materials.dwg
 Nathan Cheng



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**

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW

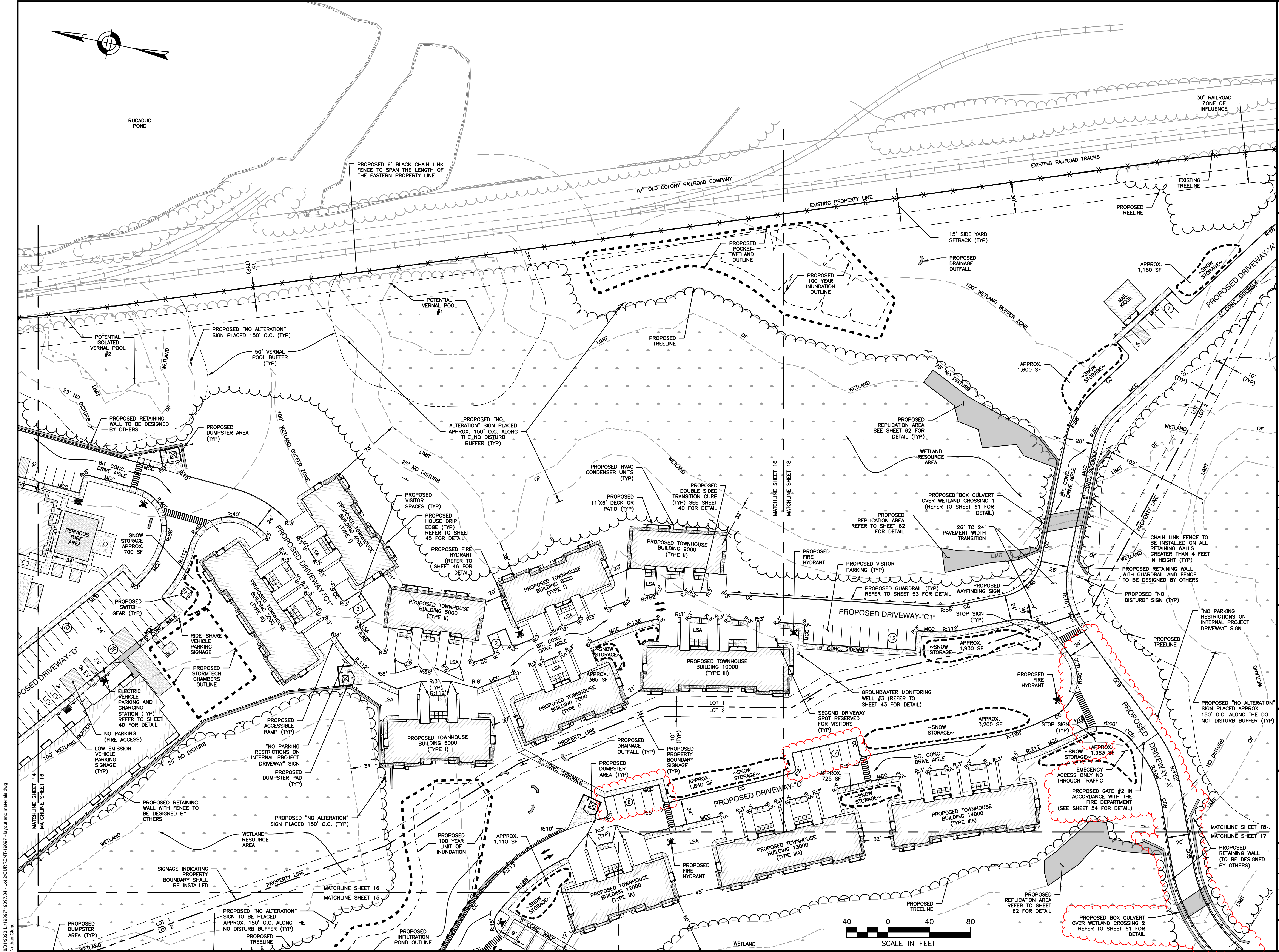


SITE PLAN

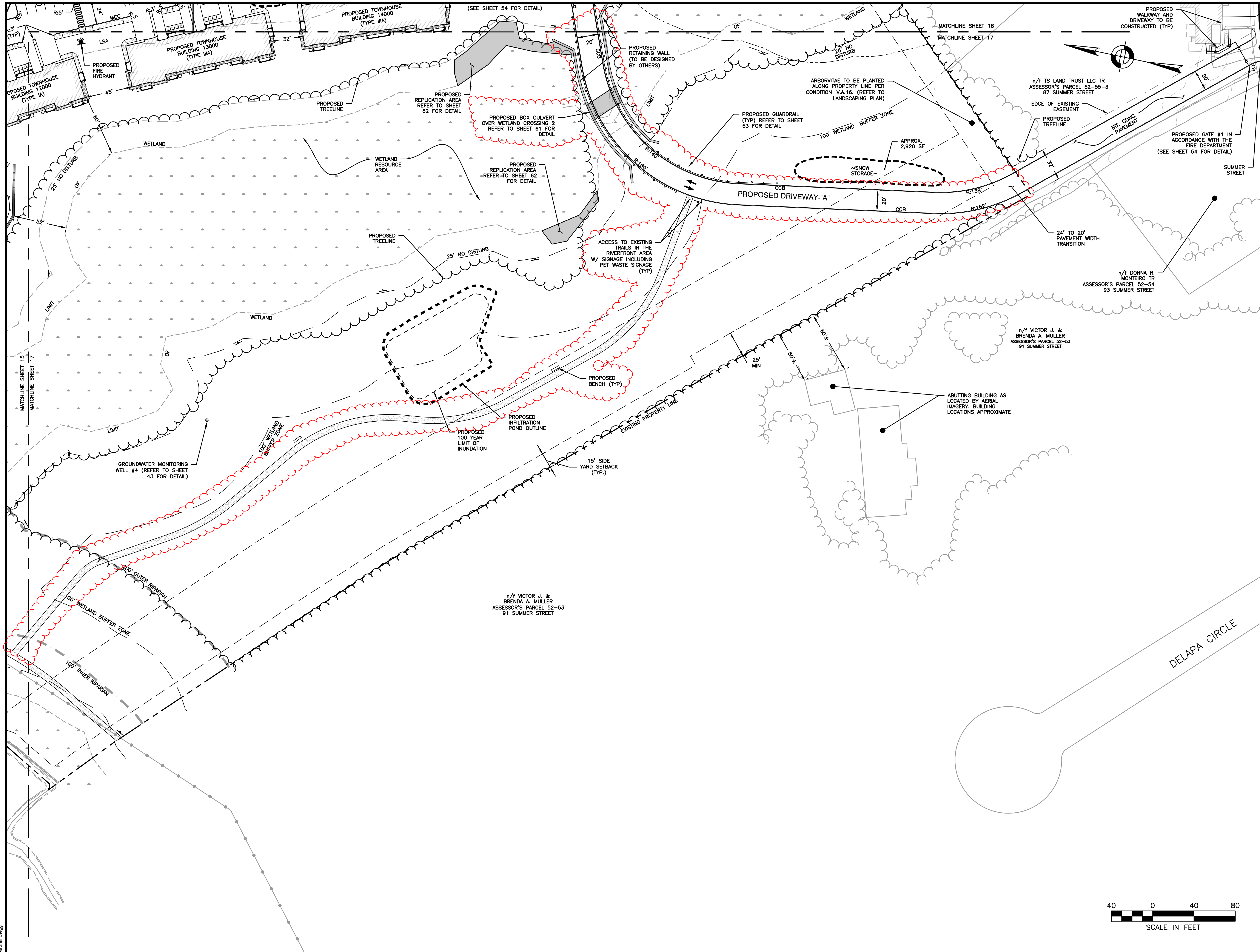
**LAYOUT AND
 MATERIALS PLAN
 3 OF 5**

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE
	C-16

SHEET 16 OF 65



8/31/2023, L1909719097.04 - Lot 2 CURRENT19097 - layout and materials.dwg
 Nathan Cheng



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:

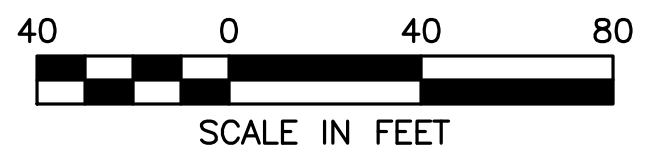
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



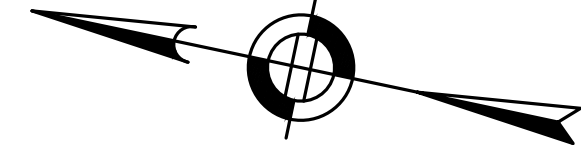
SITE PLAN

**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



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - layout and materials.dwg
 Nathan Cheng



n/1
DICKRAN BABIGIAN TR
ASSESSOR'S PARCEL
52-62
49 SUMMER STREET

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:

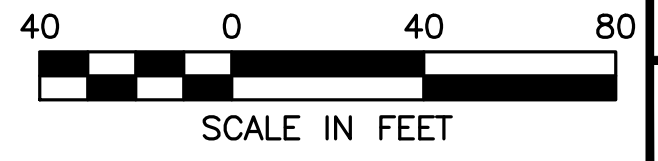
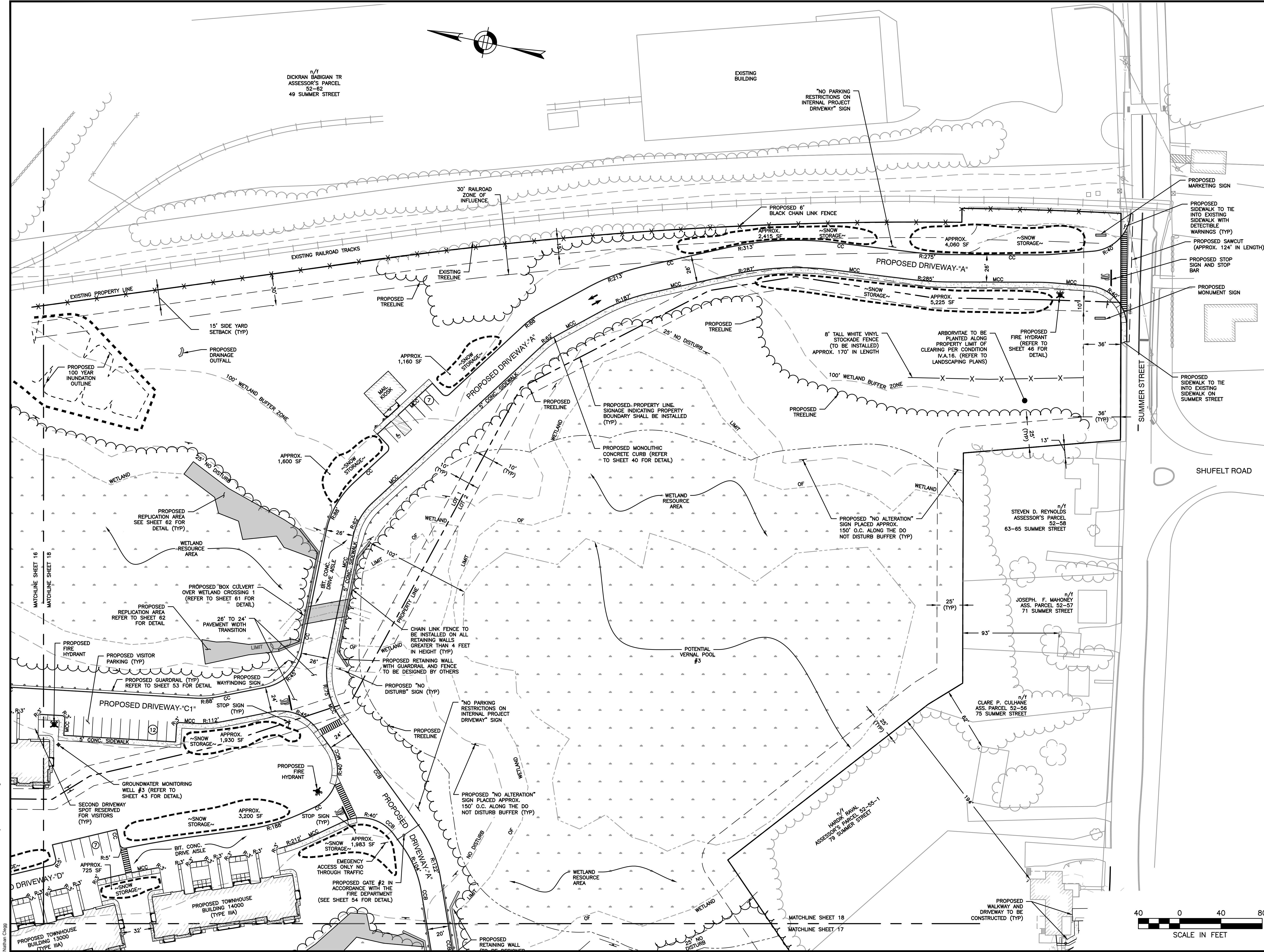
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



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



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - layout and materials.dwg
Nathan Cheng



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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

GRADING AND DRAINAGE PLAN
 1 OF 5

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

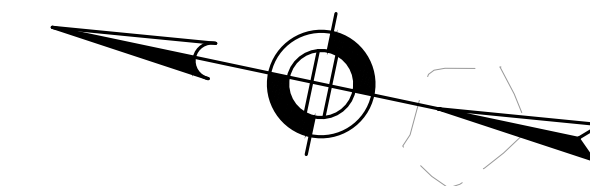
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.19

SHEET 19 OF 65



n/1 HUGHES BAKER
 PROCESS SYSTEMS INC.
 ASSESSOR'S PARCEL 52-78
 100 NEPOSE STREET

n/1 TOWN OF WALPOLE
 ASS. PARCEL 52-15
 CEDAR SWAMP

EXISTING RAILROAD TRACKS

n/1 TOWN OF WALPOLE
 ASS. PARCEL 52-15
 CEDAR SWAMP



STRUCTURE NAME	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 (15" HDPE) = 197.44

8/31/2023 L:\19097\19097_04 - Lot 2\CURRENT\119097 - Grading Plan.dwg
 Nathan Cheng



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:

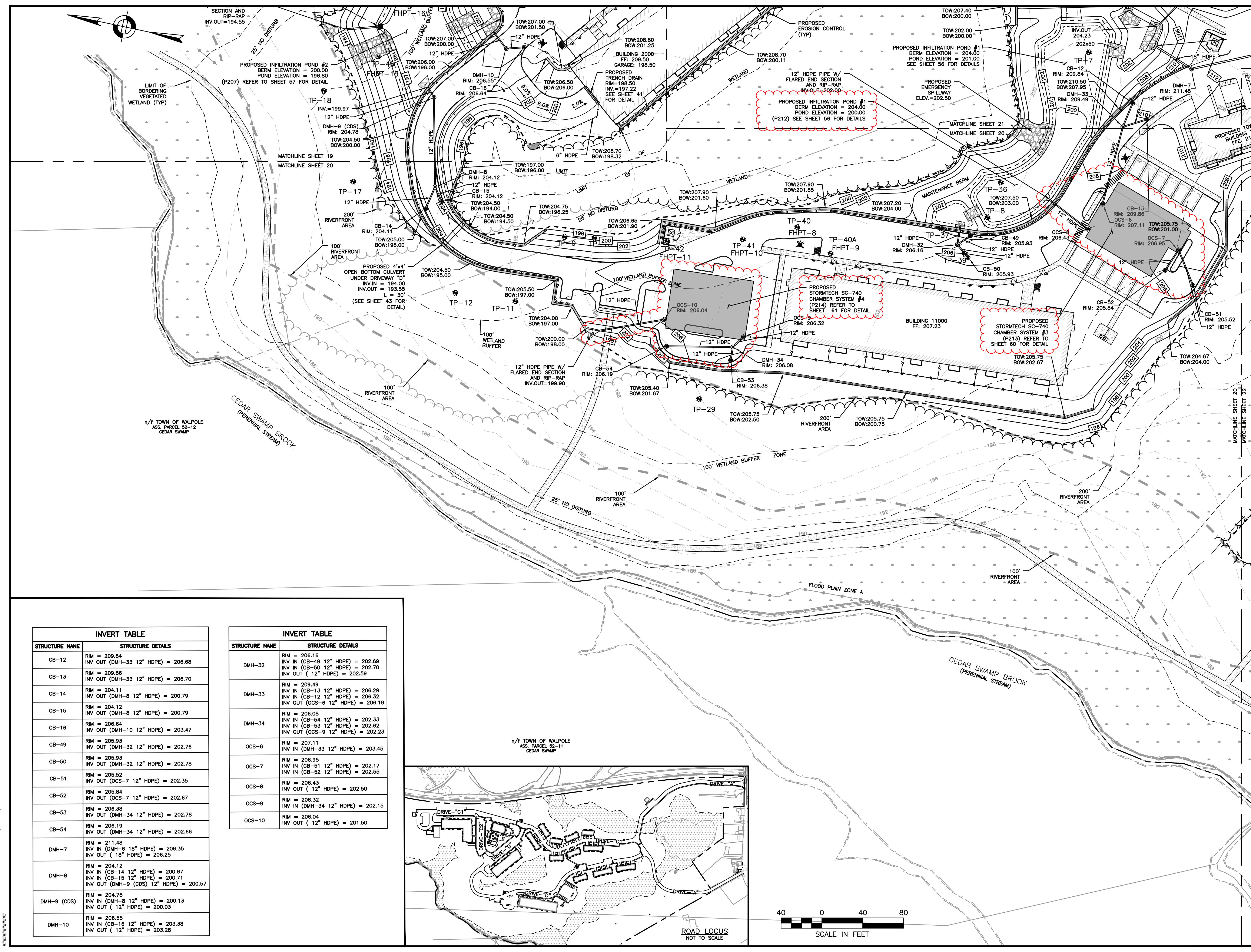
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



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 65

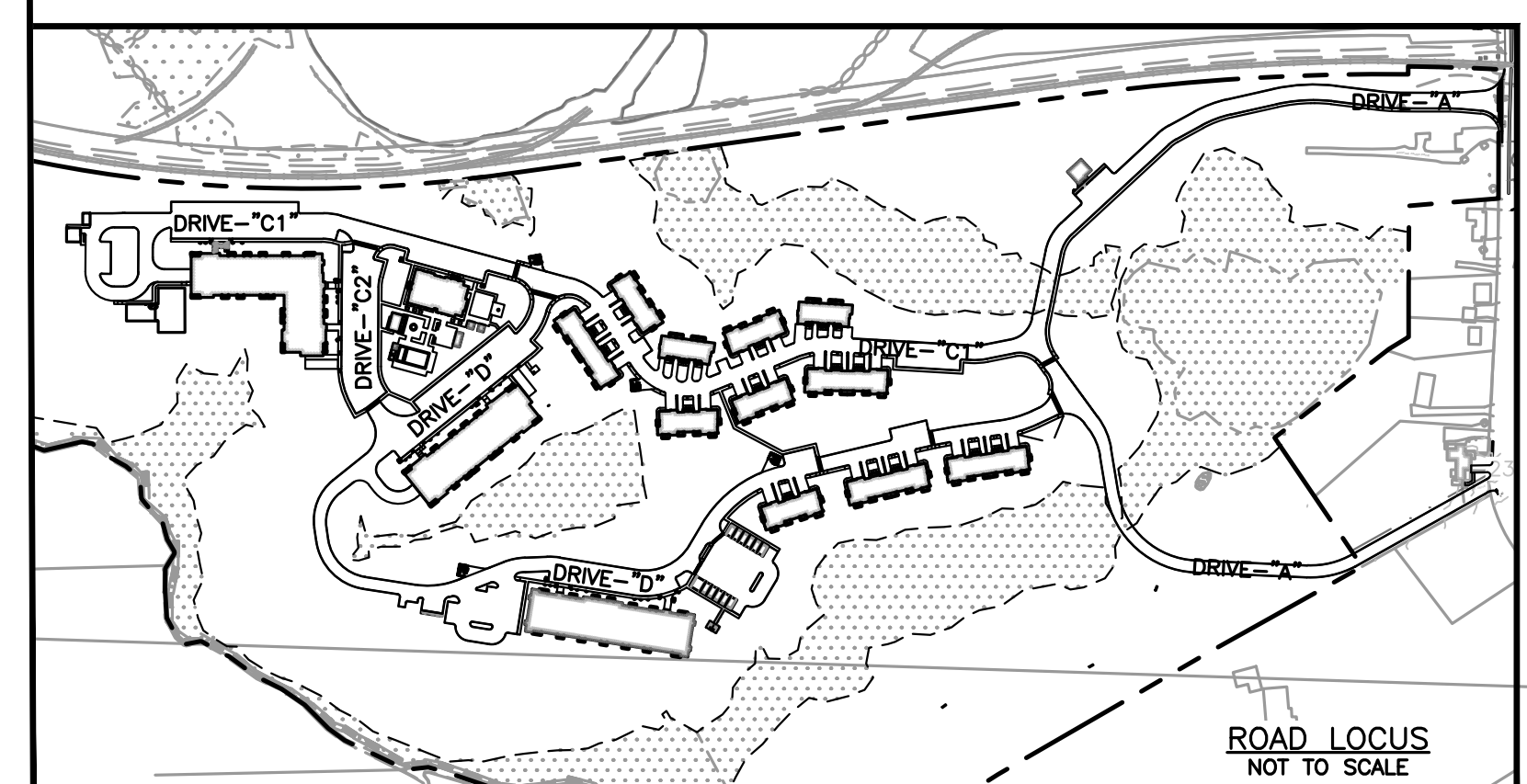


INVERT TABLE

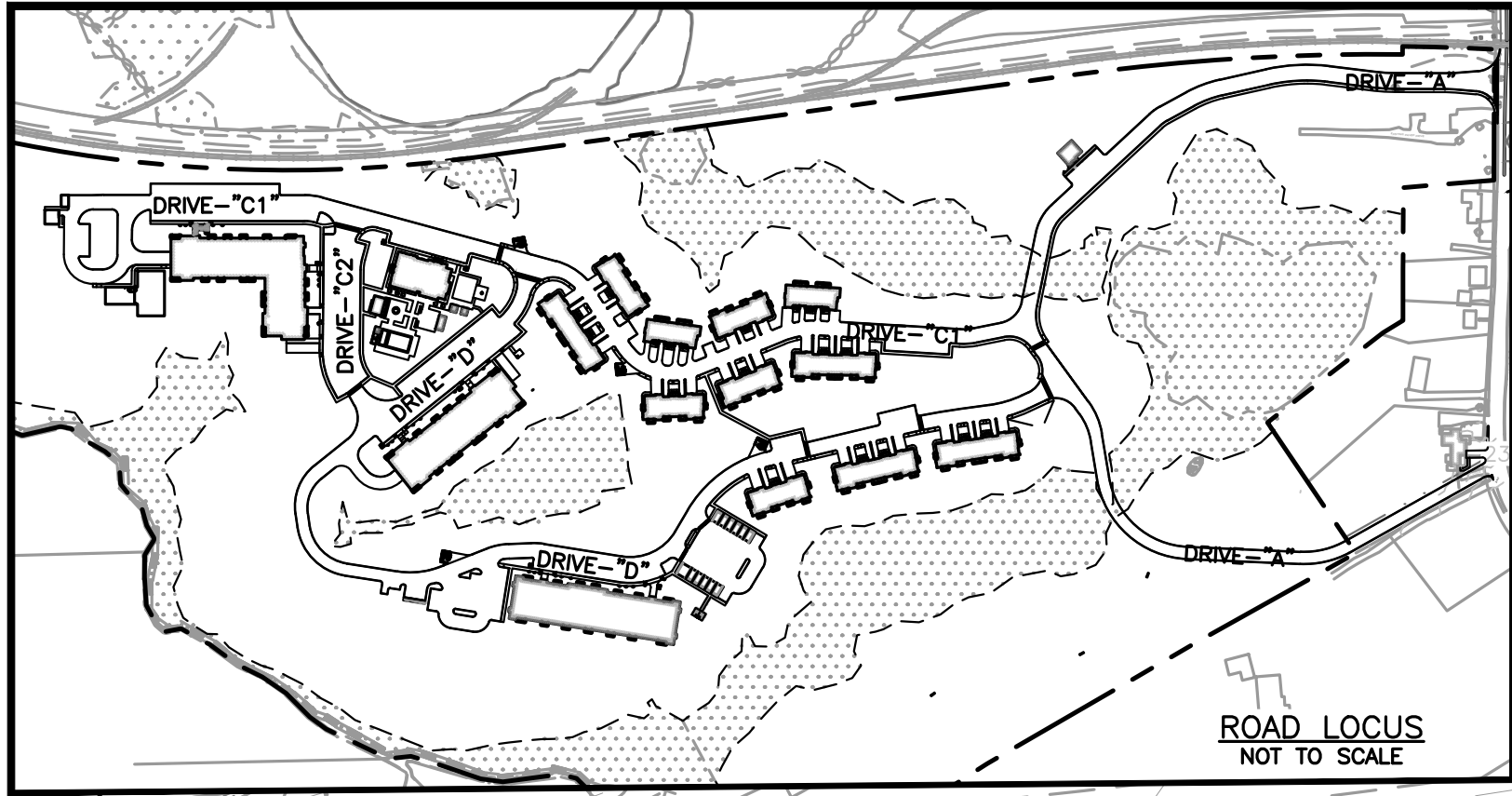
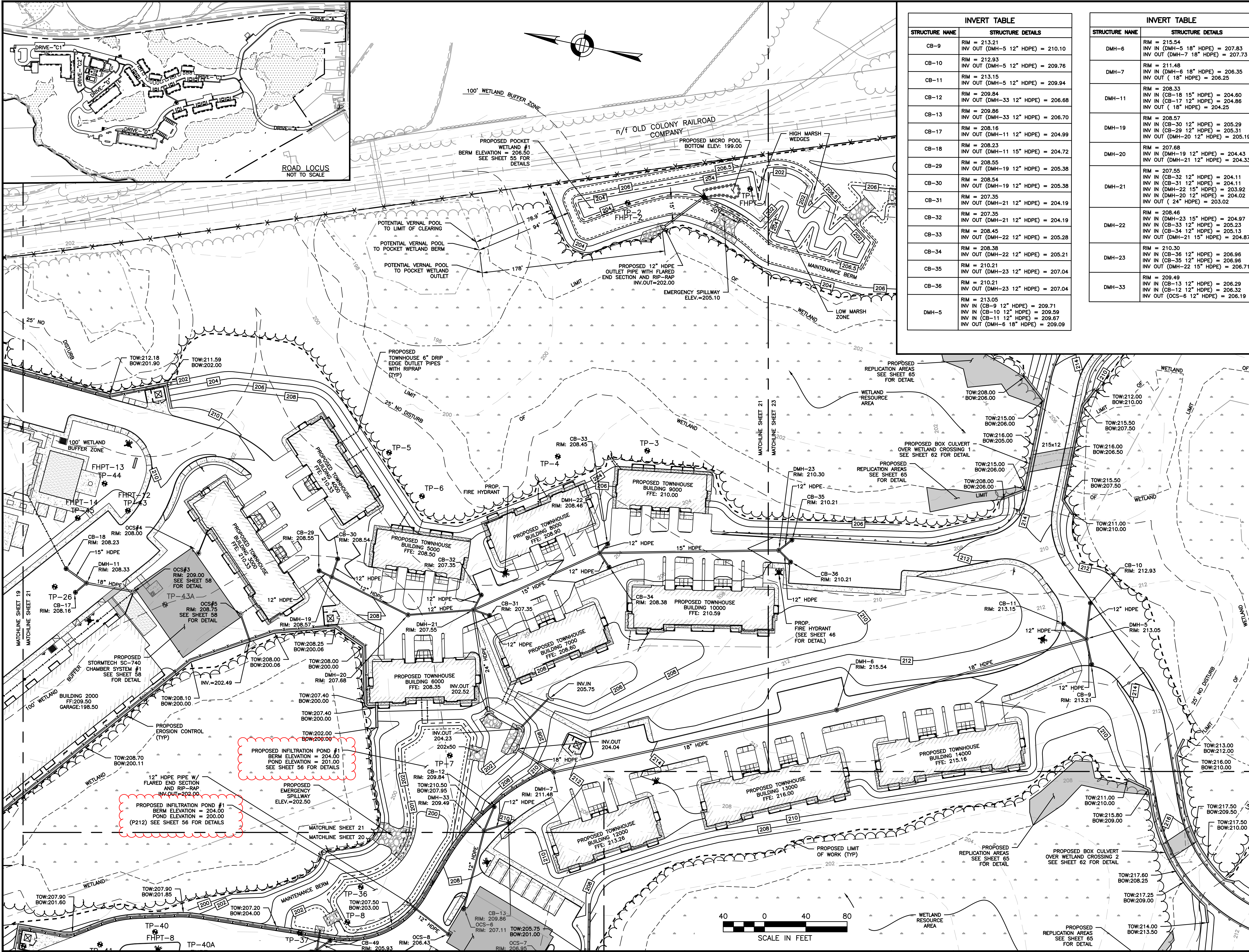
STRUCTURE NAME	STRUCTURE DETAILS
CB-12	RIM = 209.84 INV OUT (DMH-33 12" HDPE) = 206.68
CB-13	RIM = 209.86 INV OUT (DMH-33 12" HDPE) = 206.70
CB-14	RIM = 204.11 INV OUT (DMH-8 12" HDPE) = 200.79
CB-15	RIM = 204.12 INV OUT (DMH-8 12" HDPE) = 200.79
CB-16	RIM = 206.64 INV OUT (DMH-10 12" HDPE) = 203.47
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 NAME	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) = 202.62 INV OUT (OCS-9 12" HDPE) = 202.23
OCS-6	RIM = 207.11 INV IN (DMH-33 12" HDPE) = 203.45
OCS-7	RIM = 206.95 INV IN (CB-51 12" HDPE) = 202.17 INV IN (CB-52 12" HDPE) = 202.55
OCS-8	RIM = 206.43 INV OUT (12" HDPE) = 202.50
OCS-9	RIM = 206.32 INV IN (DMH-34 12" HDPE) = 202.15
OCS-10	RIM = 206.04 INV OUT (12" HDPE) = 201.50



8/31/2023 11:16:07 AM L:\19097\19097\03\CURRENT\19097 - Grading Plan.dwg



INVERT TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB-9	RIM = 213.21 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 = 208.18 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

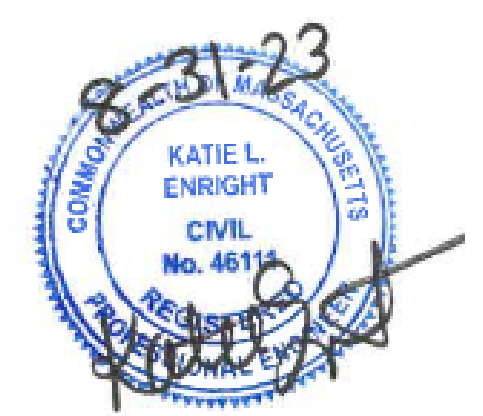
INVERT TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
DMH-6	RIM = 215.54 INV IN (DMH-5 18" HDPE) = 207.83 INV OUT (DMH-7 18" HDPE) = 207.73
DMH-7	RIM = 211.48 INV IN (DMH-6 18" HDPE) = 206.35 INV OUT (18" HDPE) = 206.25
DMH-11	RIM = 208.33 INV IN (CB-18 15" HDPE) = 204.60 INV IN (CB-17 12" HDPE) = 204.86 INV 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
 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
1	PB	08/31/23	REV. PER PEER REVIEW

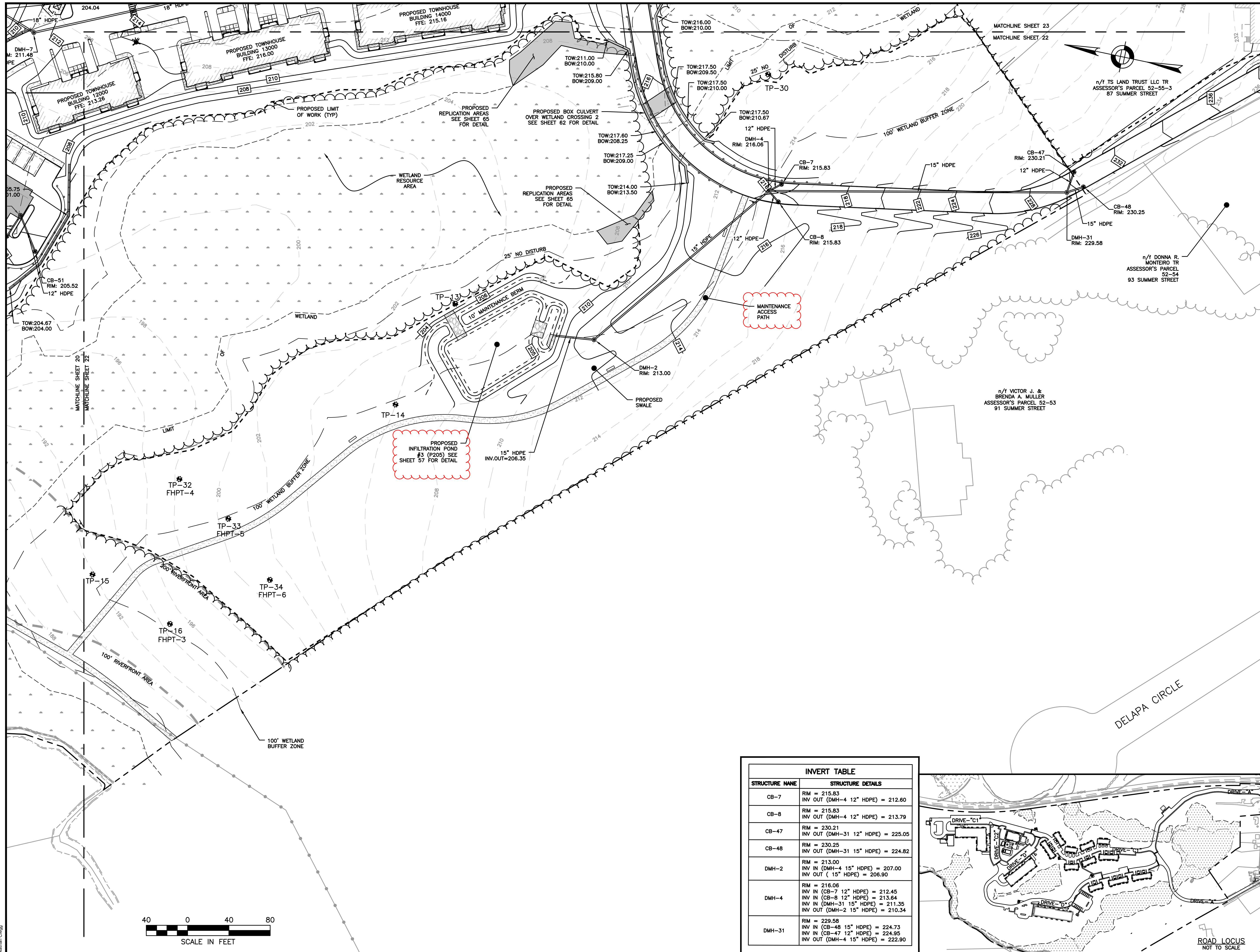


SITE PLAN

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

8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - Grading Plan.dwg
 Nathan Cheng



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
1	PB	08/31/23	REV. PER PEER REVIEW

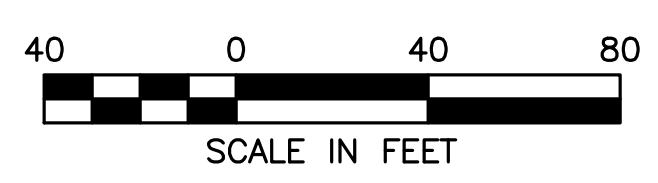
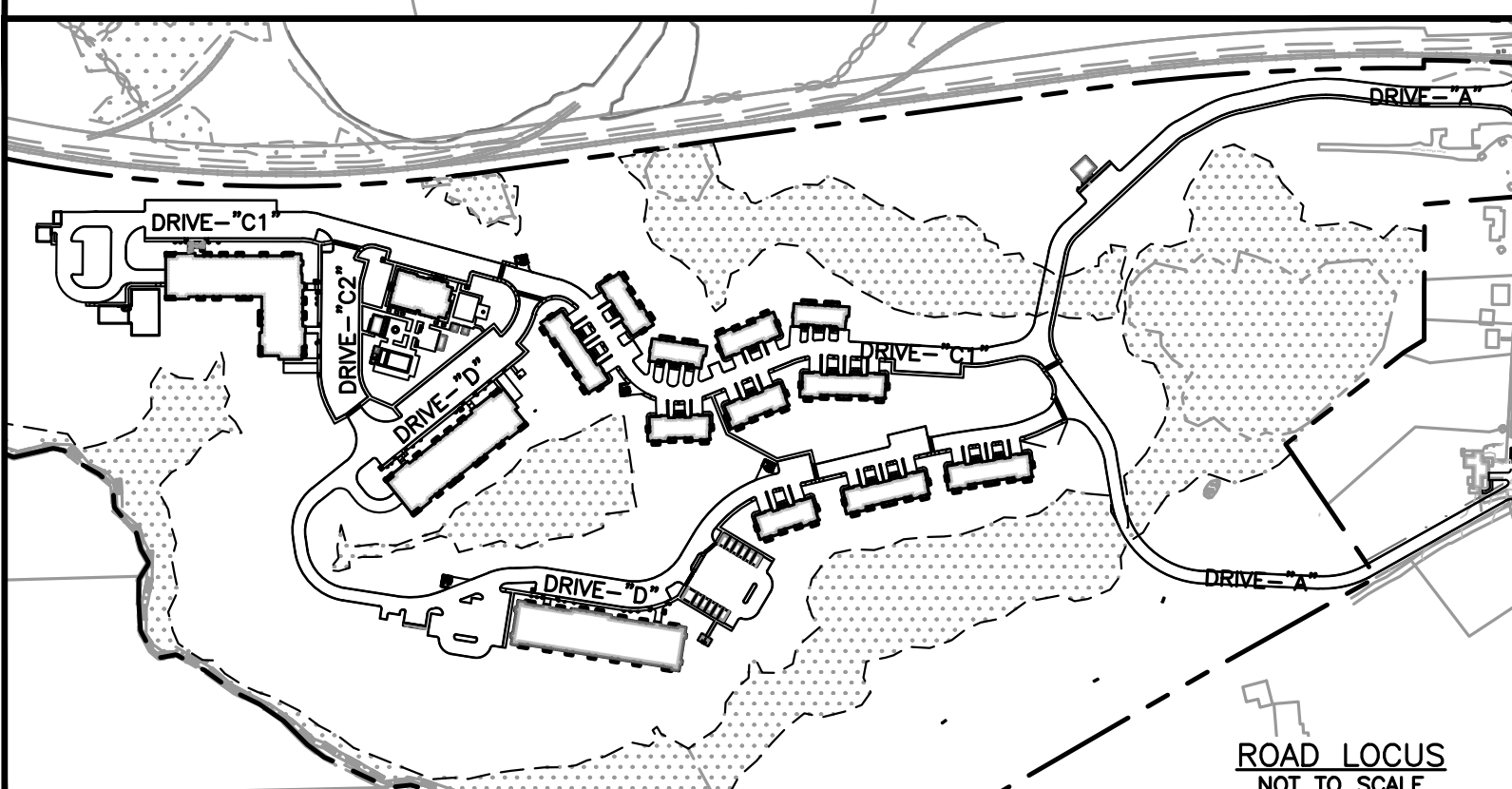


SITE PLAN

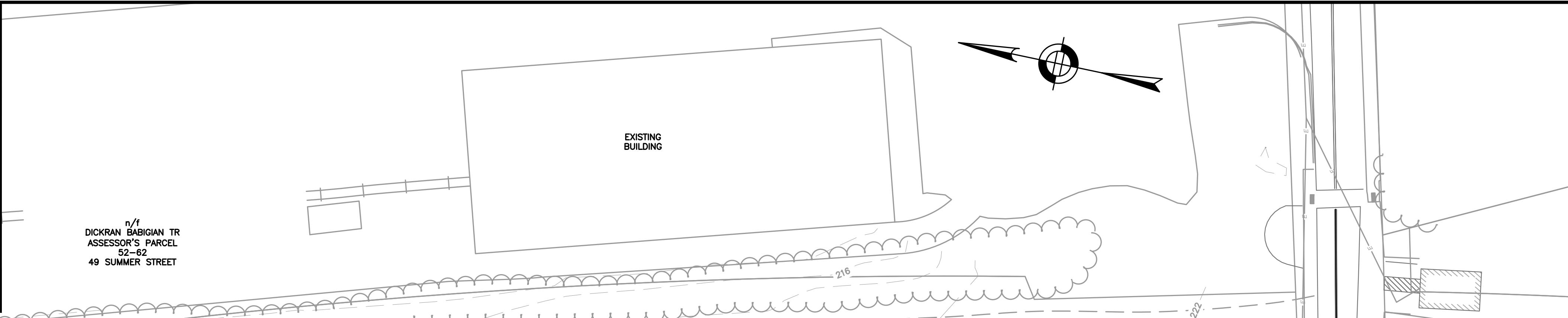
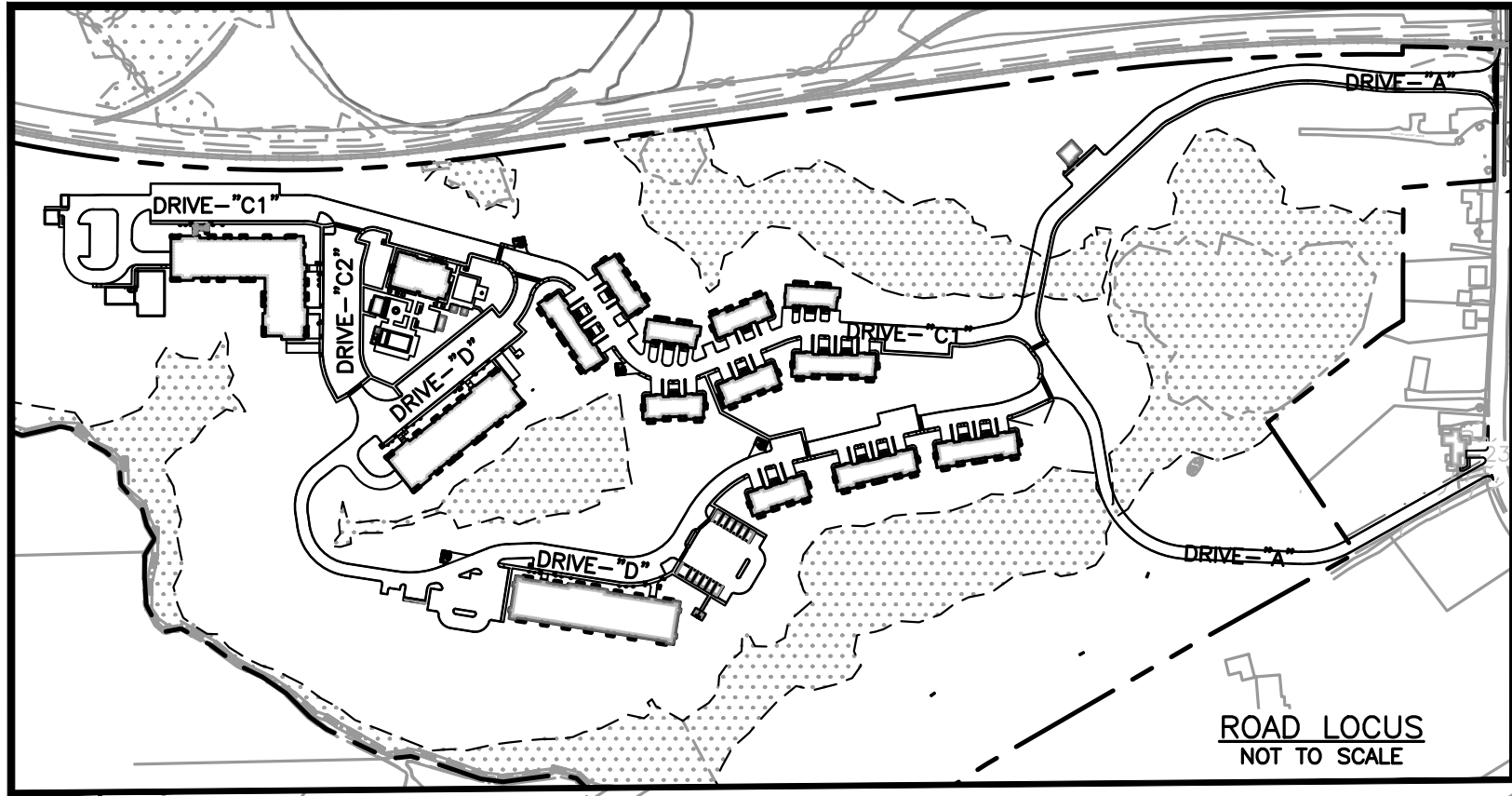
**GRADING AND
 DRAINAGE PLAN
 4 OF 5**

DATE: JUNE 20, 2023
 PROJECT NUMBER: 19097
 DESIGNED BY: PB/KE/KF
 DRAWN BY: PB/MB/KF/KL
 CHECKED BY: KE
 C.22

INVERT TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB-7	RIM = 215.83 INV OUT (DMH-4 12" HDPE) = 212.60
CB-8	RIM = 215.83 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) = 211.35 INV OUT (DMH-2 15" HDPE) = 210.34
DMH-31	RIM = 229.58 INV IN (CB-48 15" HDPE) = 224.73 INV IN (CB-47 12" HDPE) = 224.95 INV OUT (DMH-4 15" HDPE) = 222.90



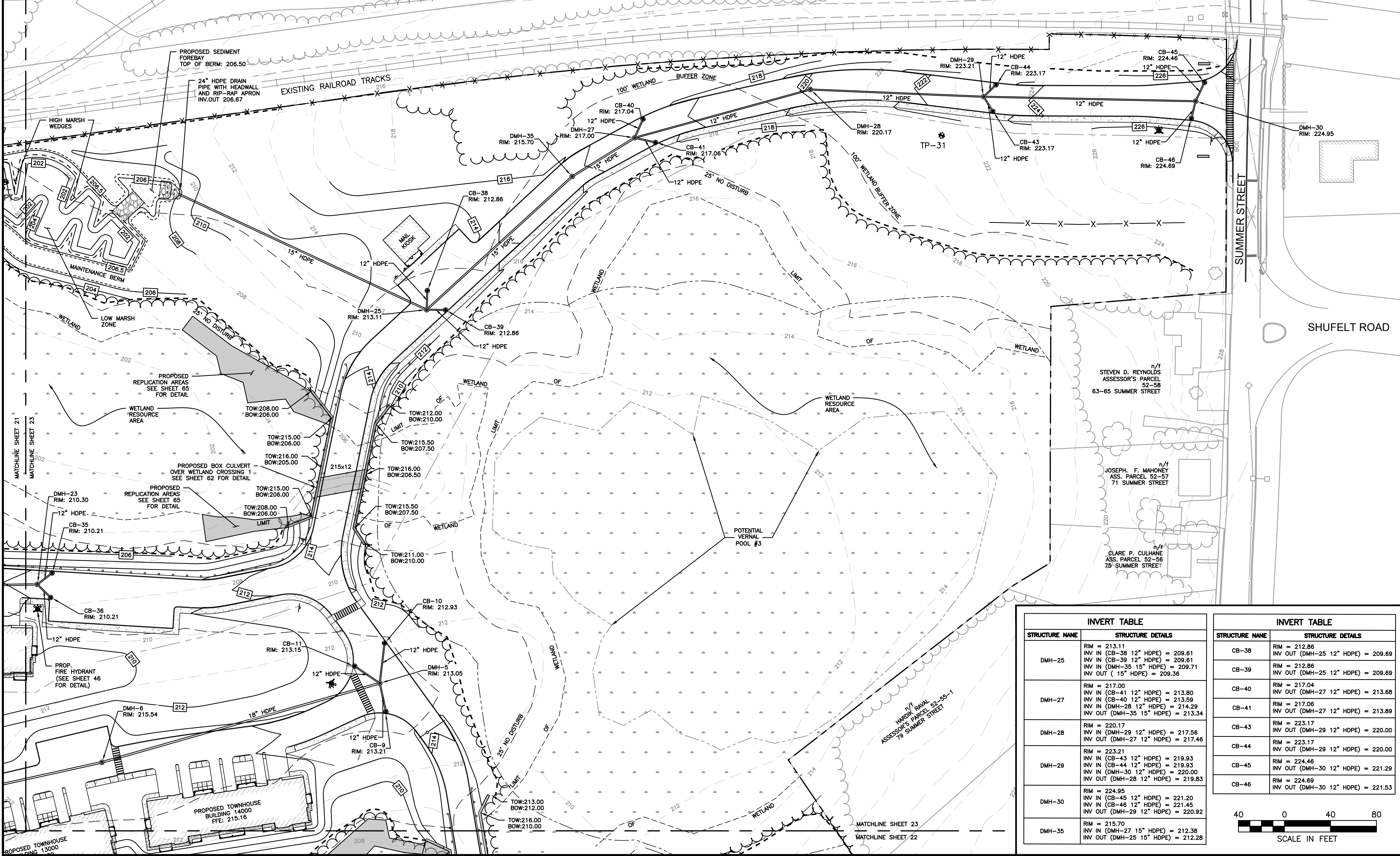
8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - Grading Plan.dwg
 Nathan Cheng



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

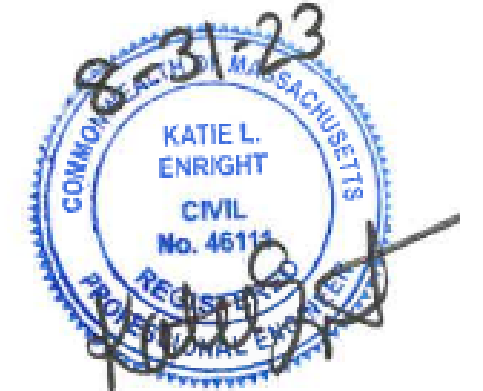
PREPARED FOR:
 FRH REALTY LLC
 c/o FAIRFIELD RESIDENTIAL
 5 BURLINGTON WOODS, SUITE 203
 BURLINGTON, MA 01803

**PROPOSED MULTIFAMILY
 DEVELOPMENT
 SUMMER STREET
 WALPOLE, MA**



REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

**GRADING AND DRAINAGE PLAN
 5 OF 5**

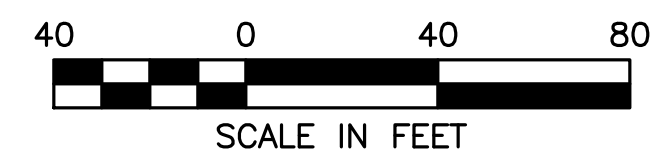
DATE: JUNE 20, 2023
 PROJECT NUMBER: 19097
 DESIGNED BY: PB/KE/KF
 DRAWN BY: PB/MB/KF/KL
 CHECKED BY: KE

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 (DMH-29 12" HDPE) = 213.59 INV IN (DMH-35 15" 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) = 218.93 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



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - Grading Plan.dwg
 Nathan Cheng



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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

UTILITIES PLAN
1 OF 5

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

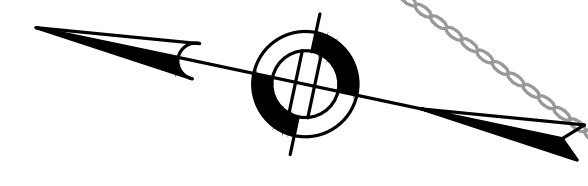
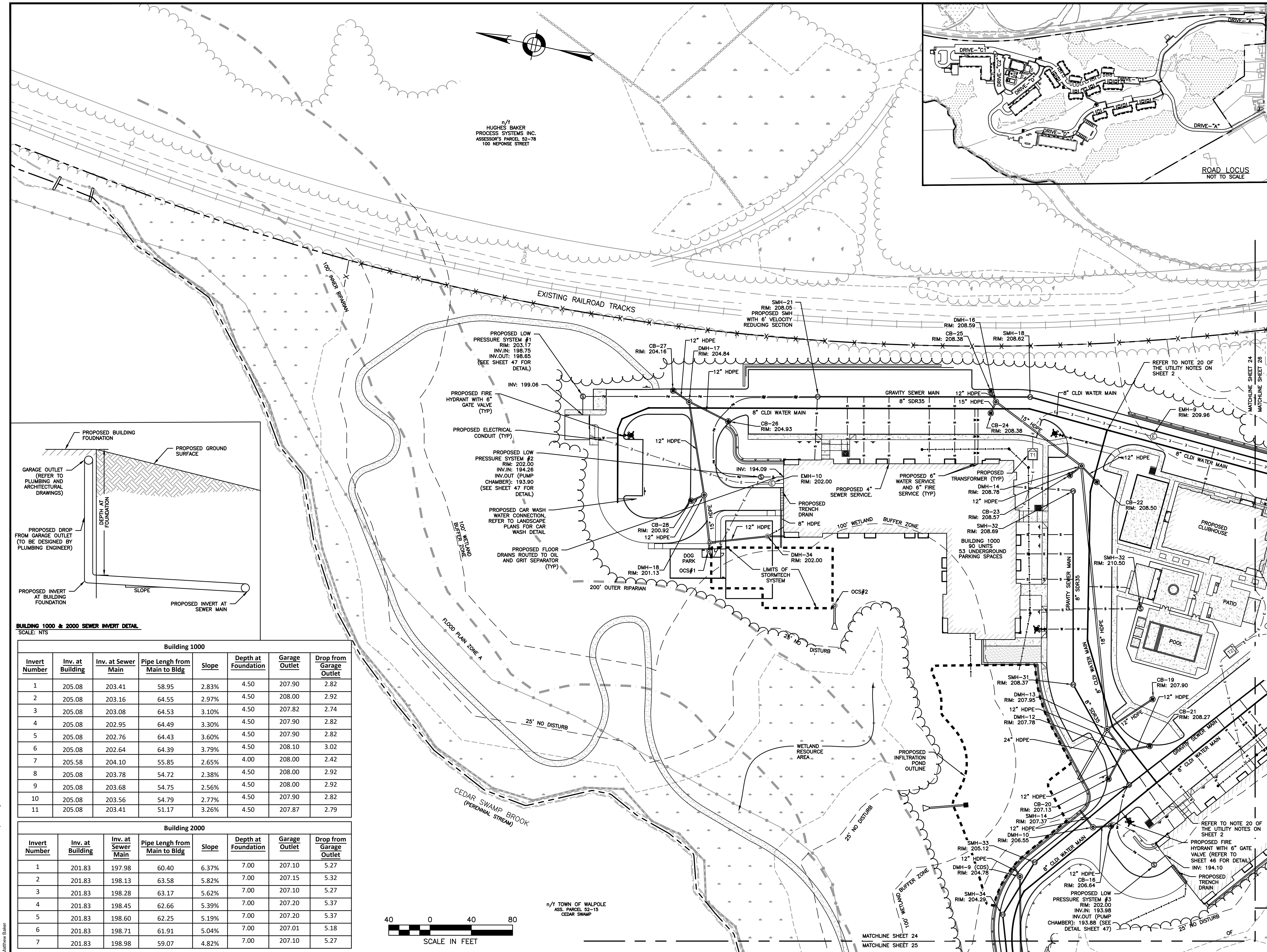
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

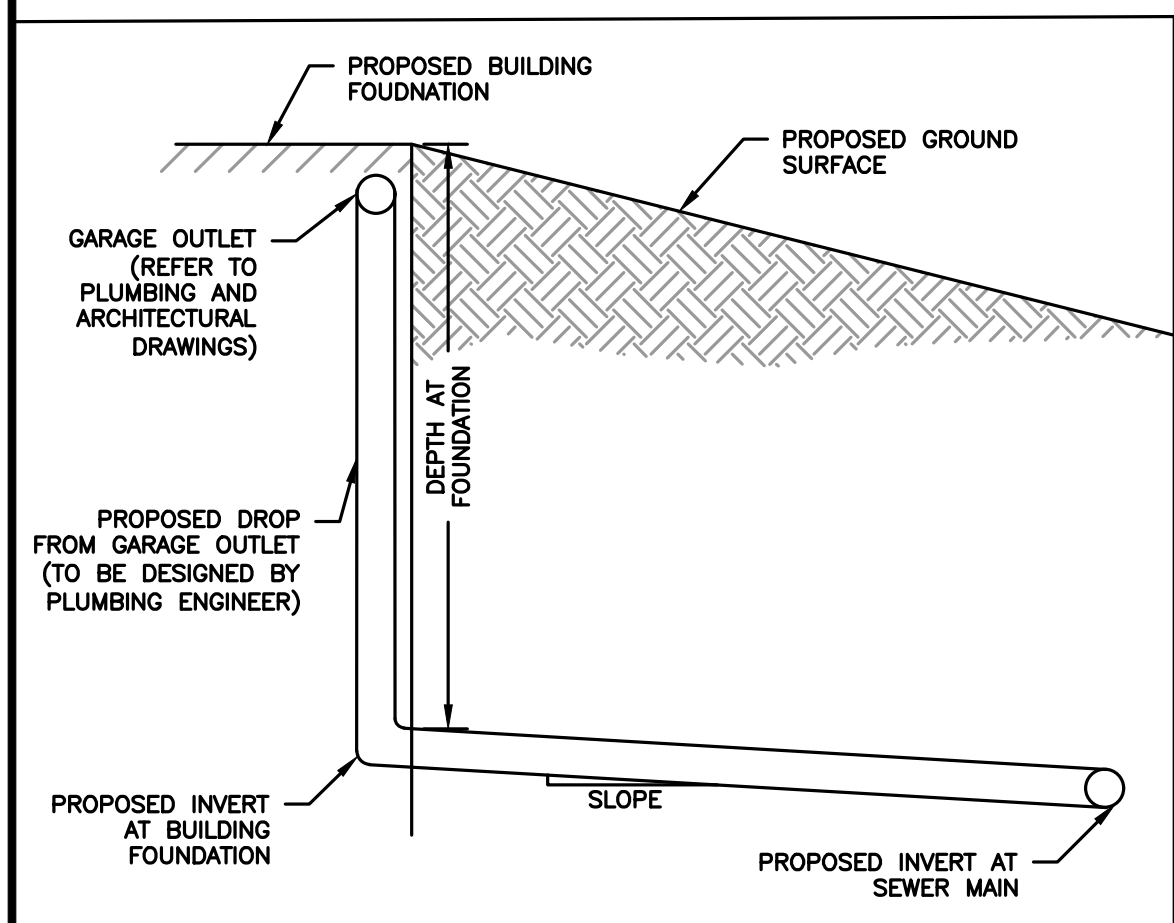
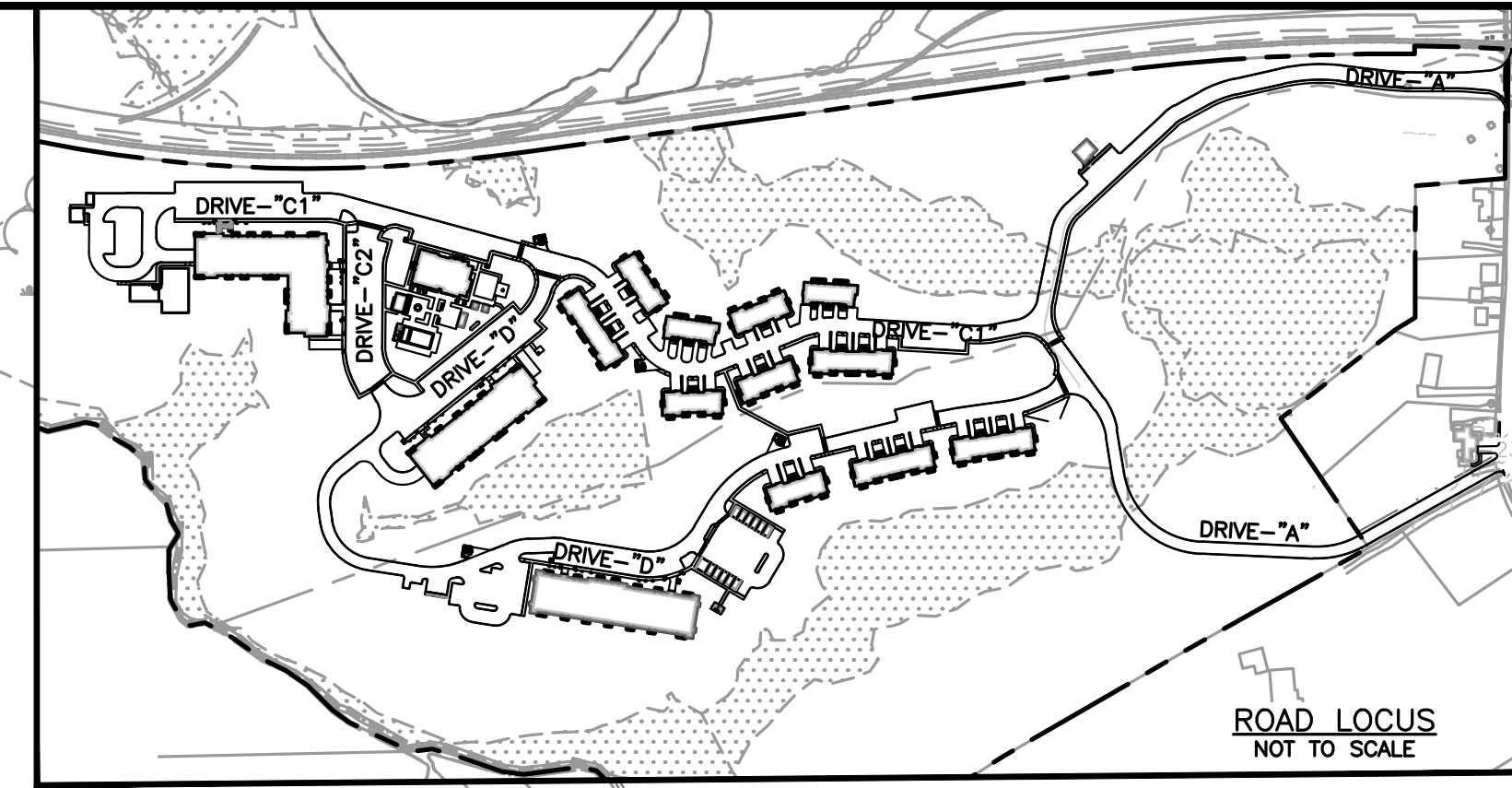
CHECKED BY: KE

C.24

SHEET 24 OF 65



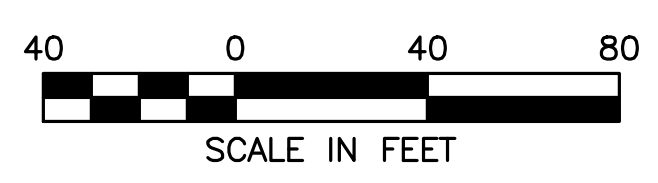
n/1
HUGHES BAKER
PROCESS SYSTEMS INC.
ASSESSOR'S PARCEL 52-78
100 NEPOSE STREET



BUILDING 1000 & 2000 SEWER INVERT DETAIL
SCALE: NTS

Building 1000							
Invert Number	Inv. at Building	Inv. at Sewer Main	Pipe Length 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 Length 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



n/1 TOWN OF WALPOLE
ASS. PARCEL 52-15
CEDAR SWAMP

8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - Utility Plan.dwg
Matthew Baker



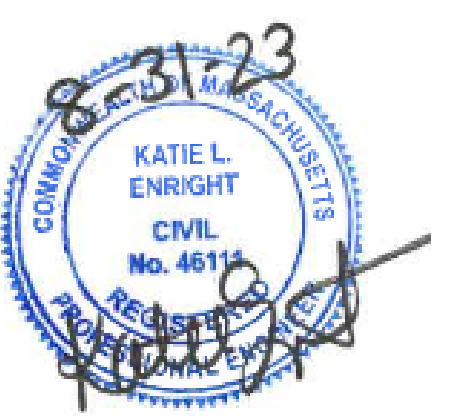
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

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
1	PB	08/31/23	REV. PER PEER REVIEW

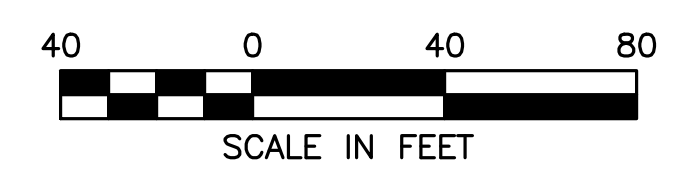
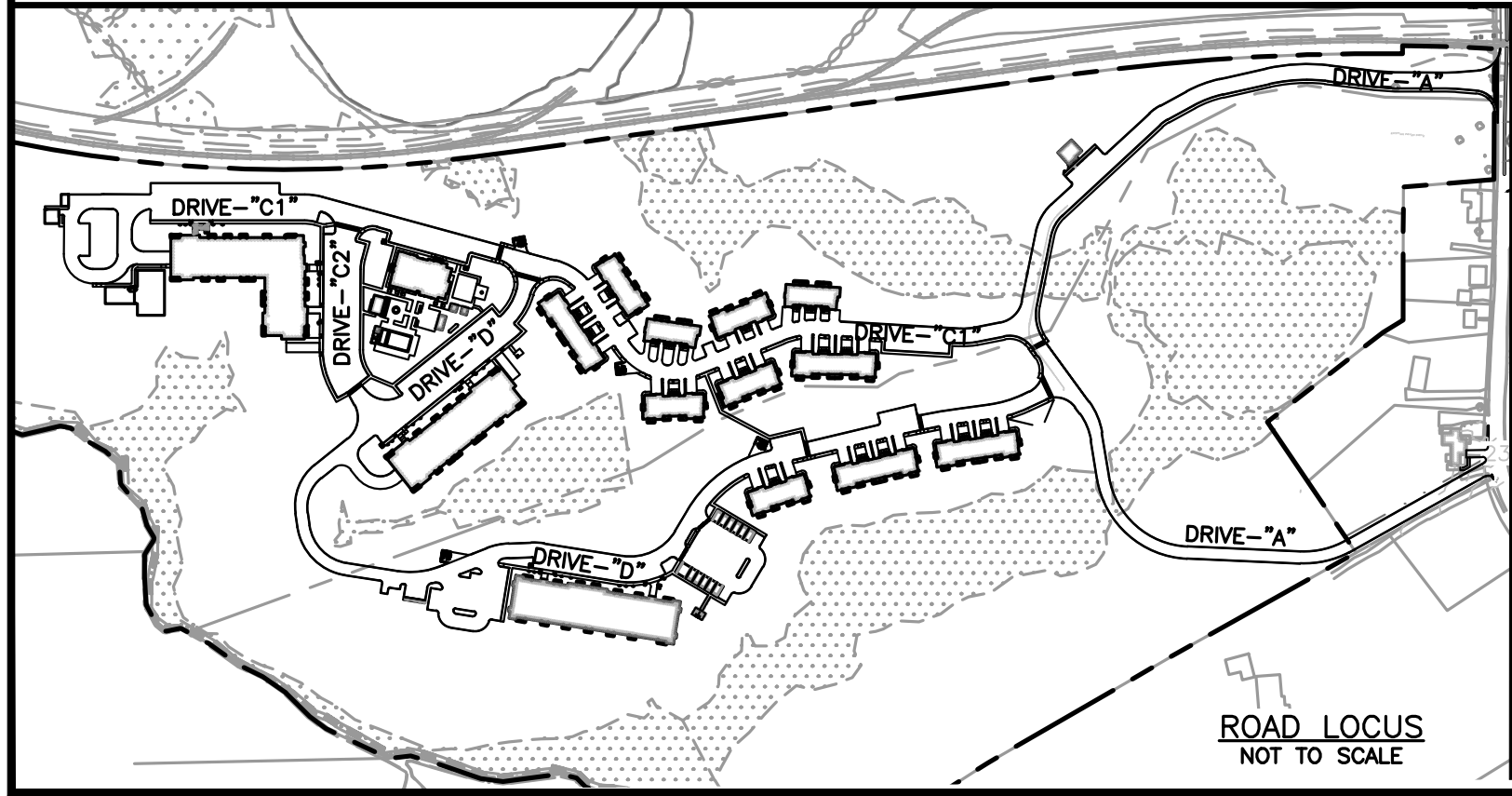
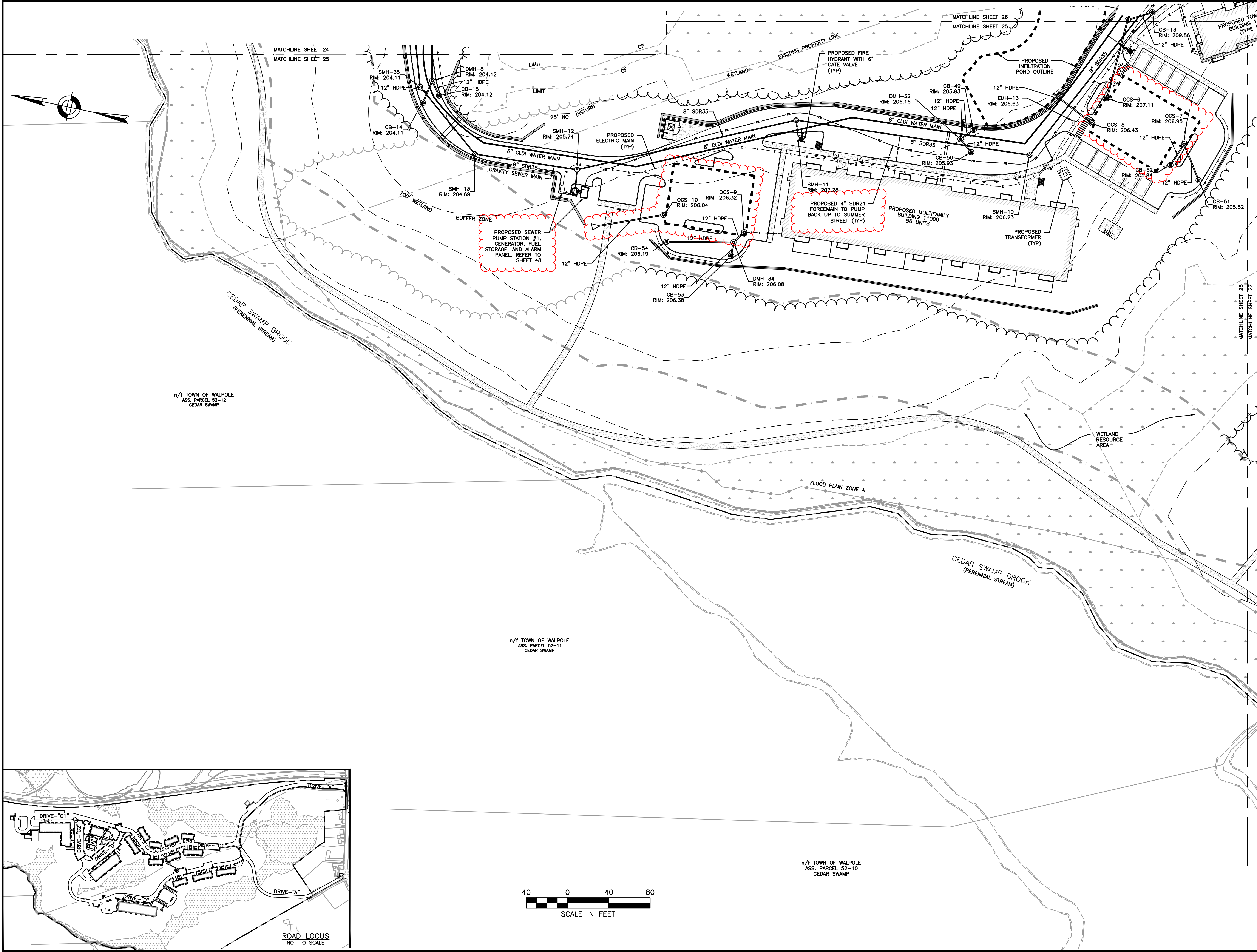


SITE PLAN

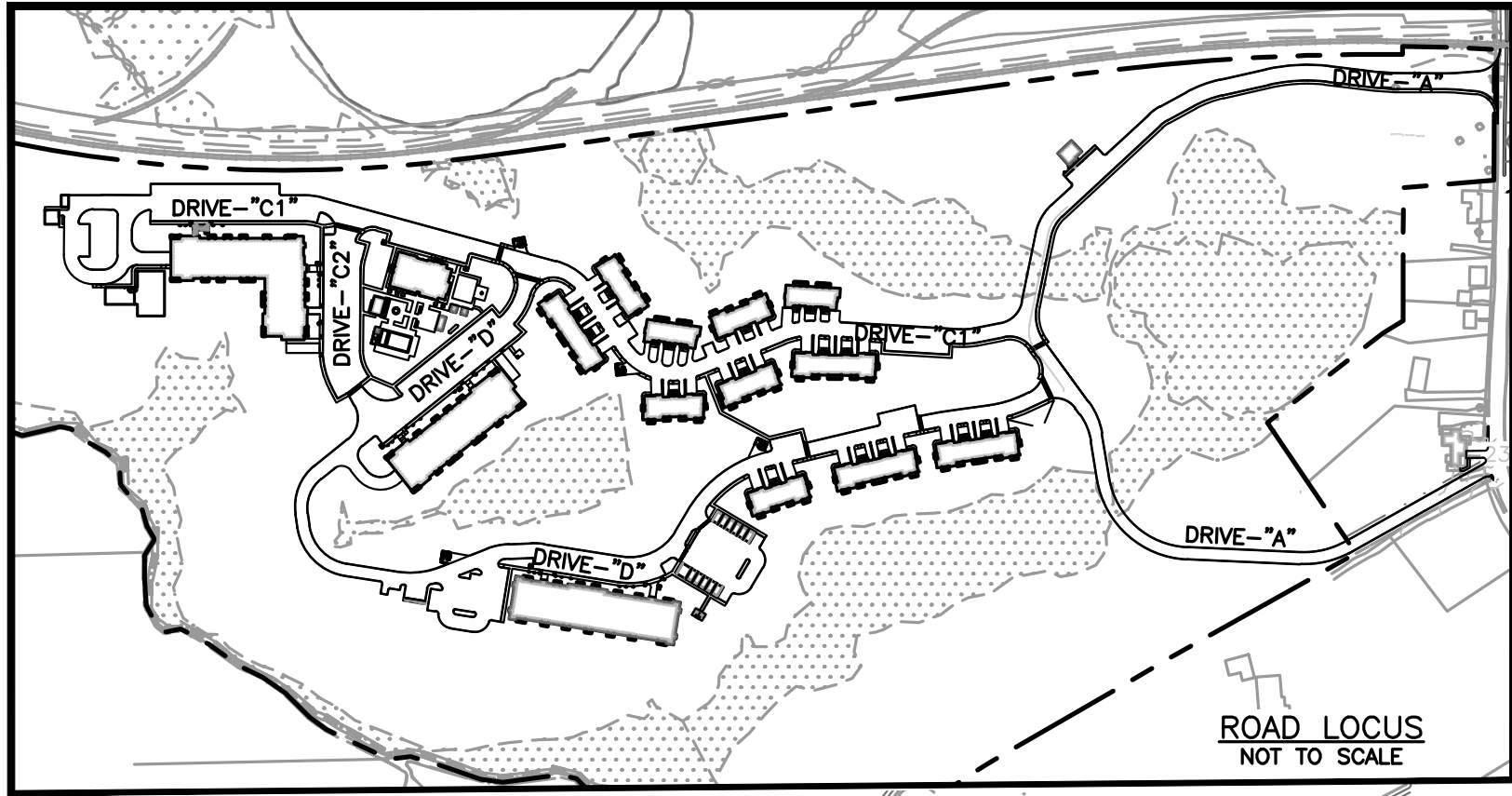
UTILITIES PLAN
 2 OF 5

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

C.25



8/31/2023 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%

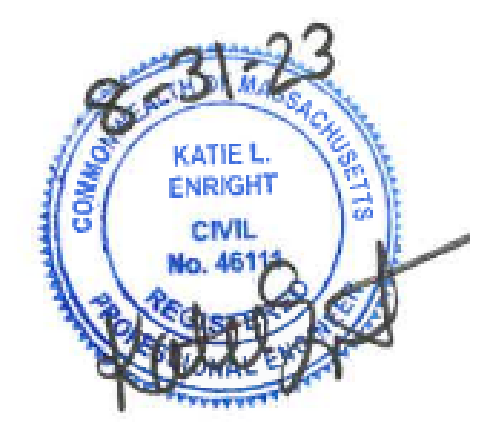
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

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:

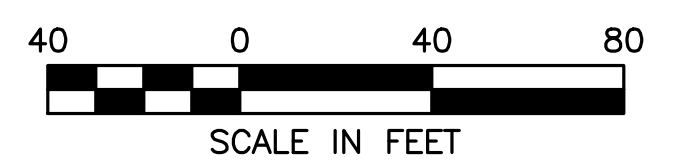
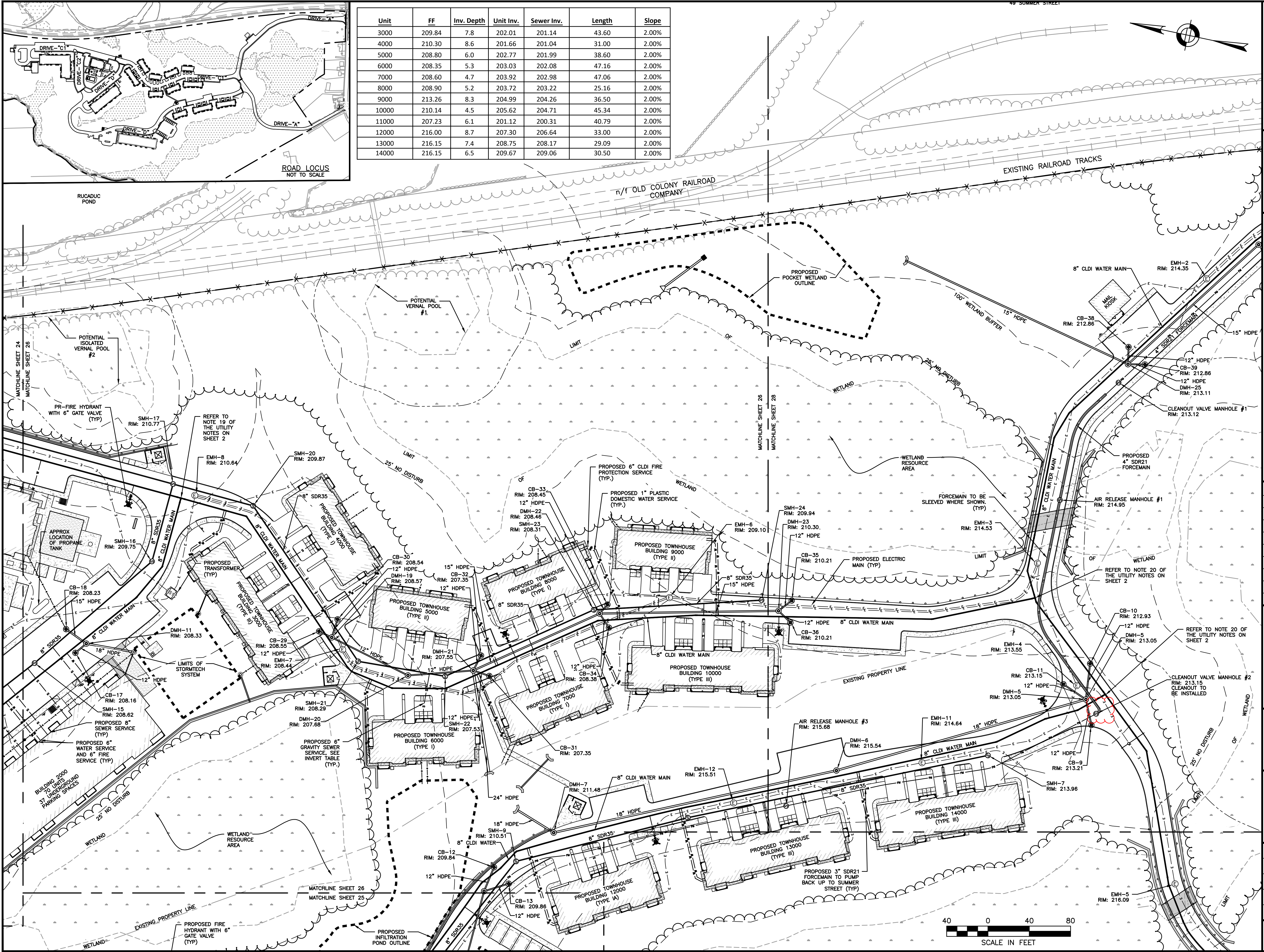
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



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 65



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - Utility Plan.dwg
 Matthew Baker



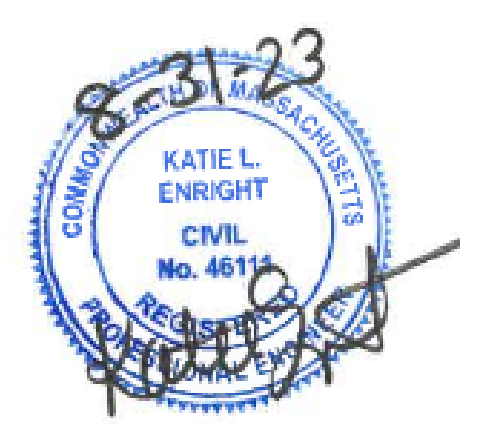
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

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:

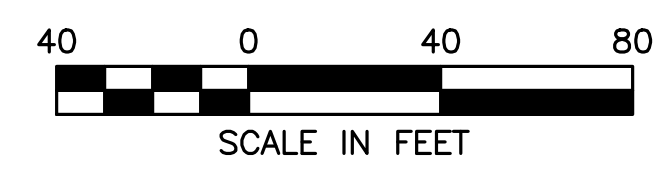
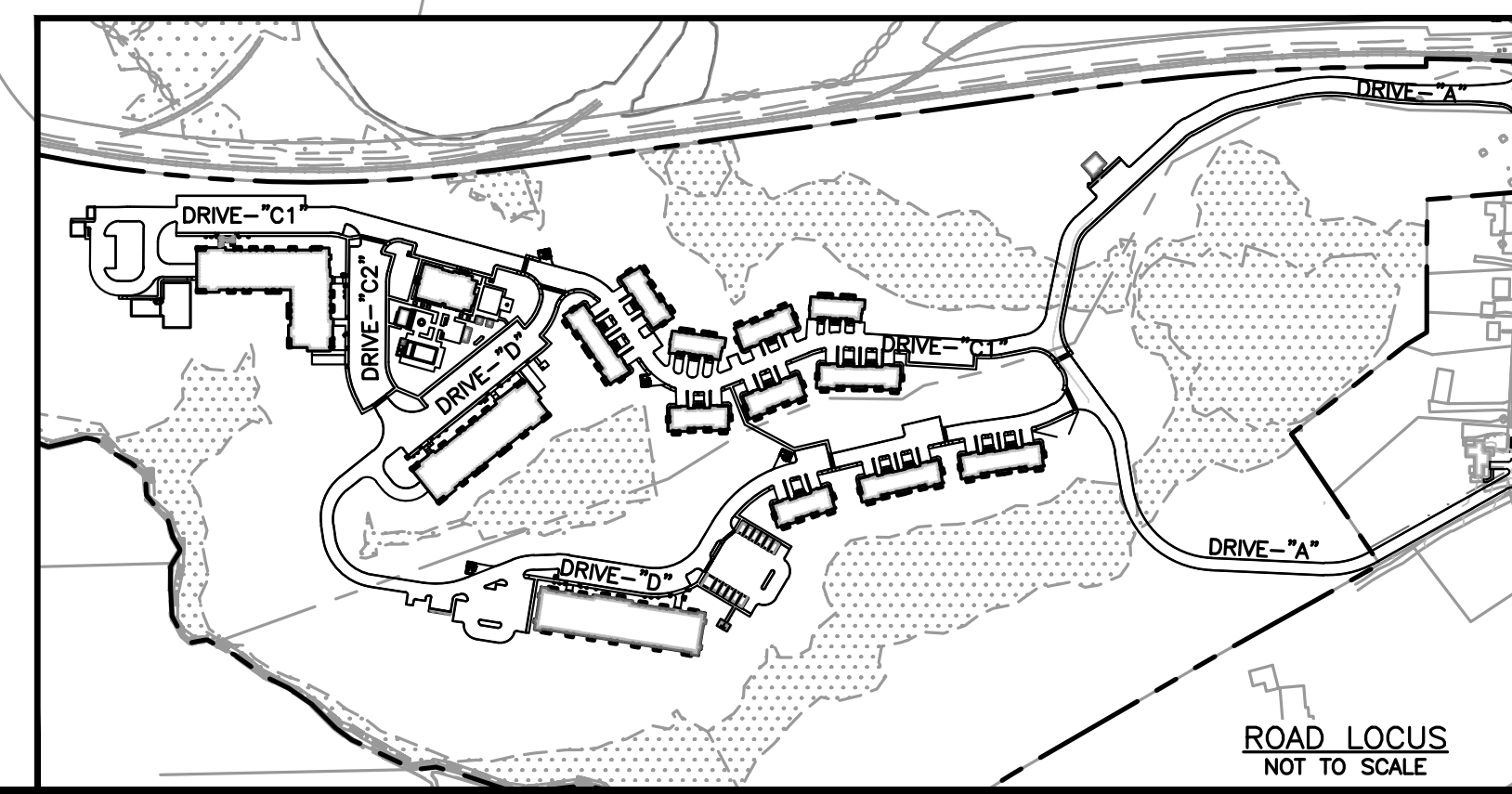
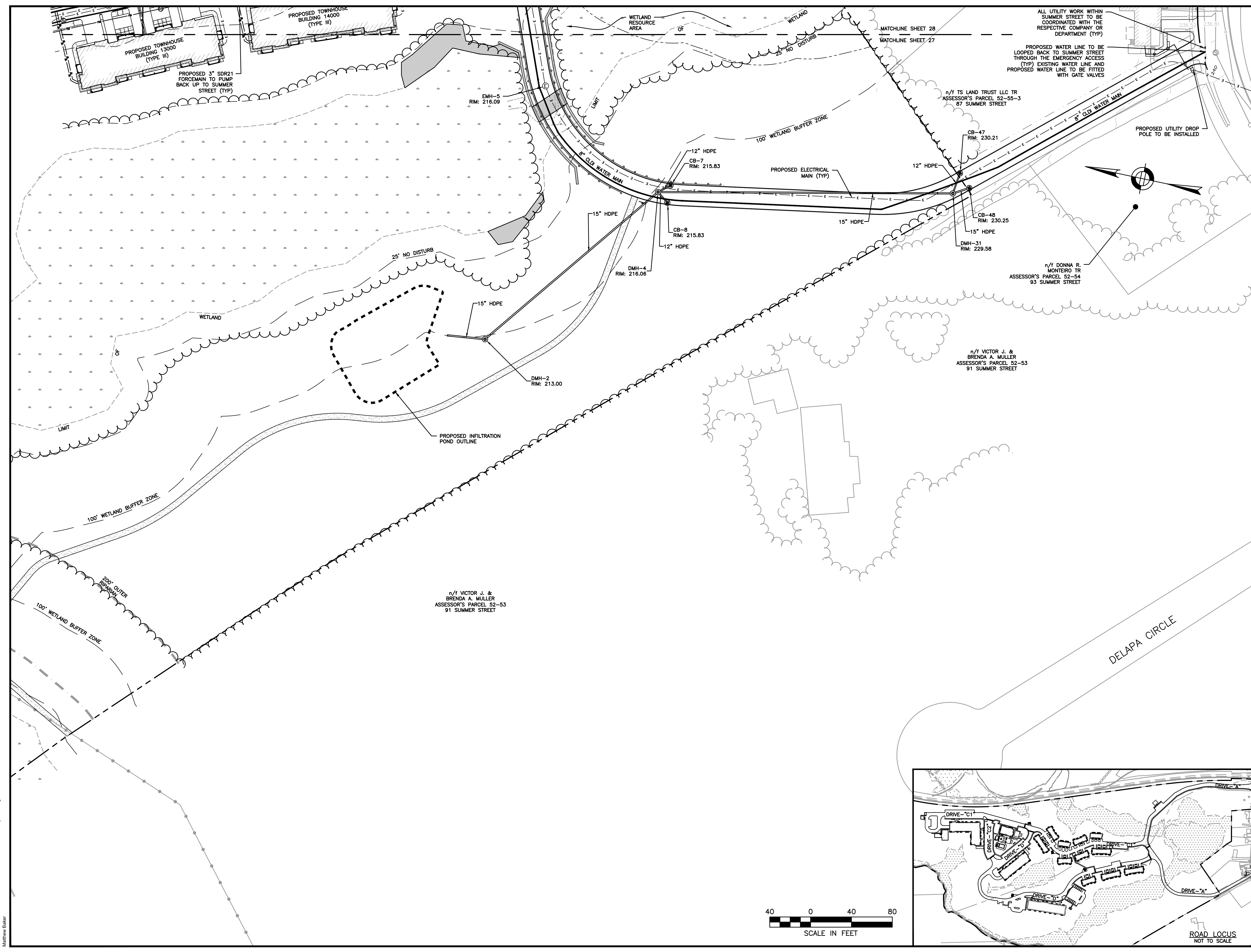
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

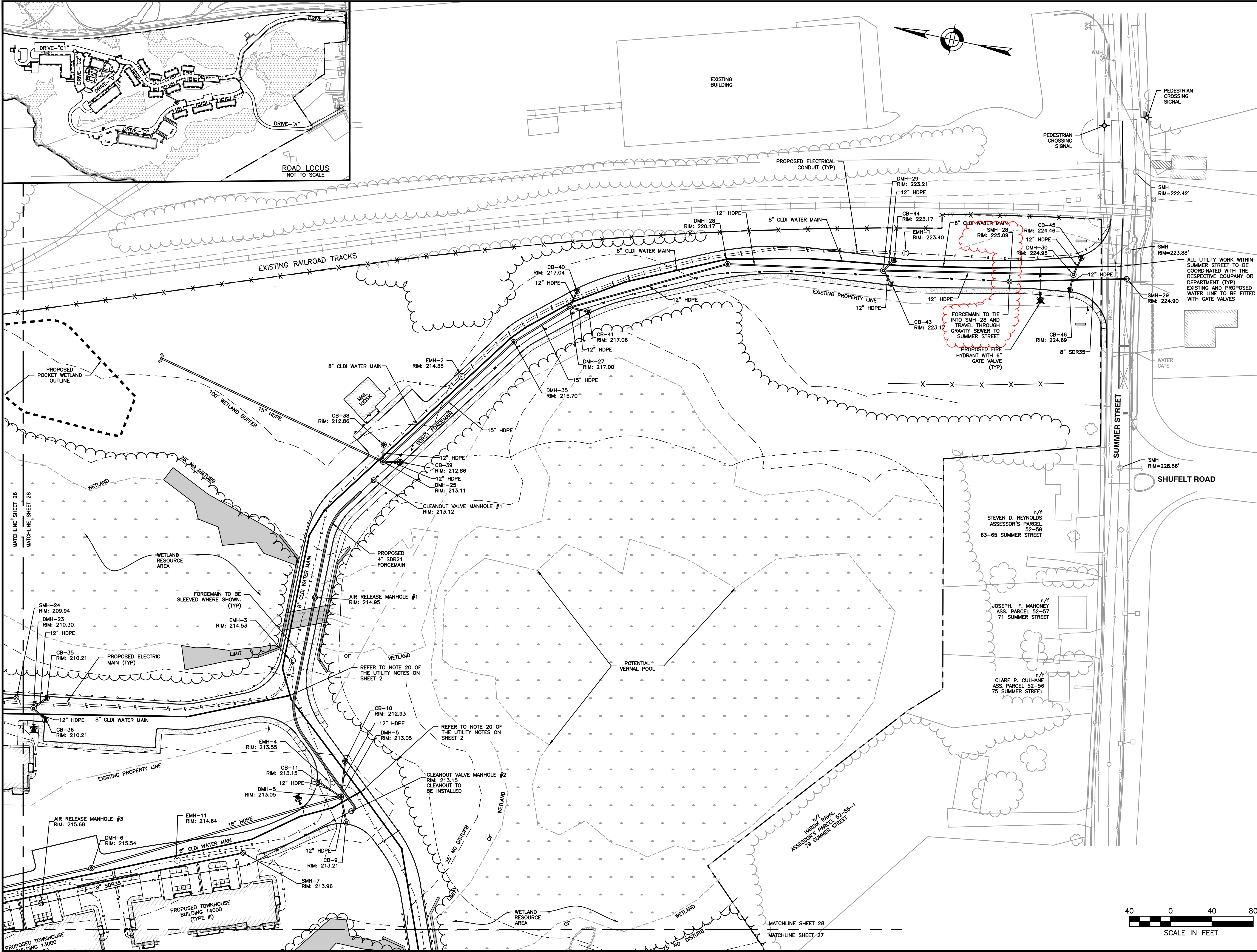
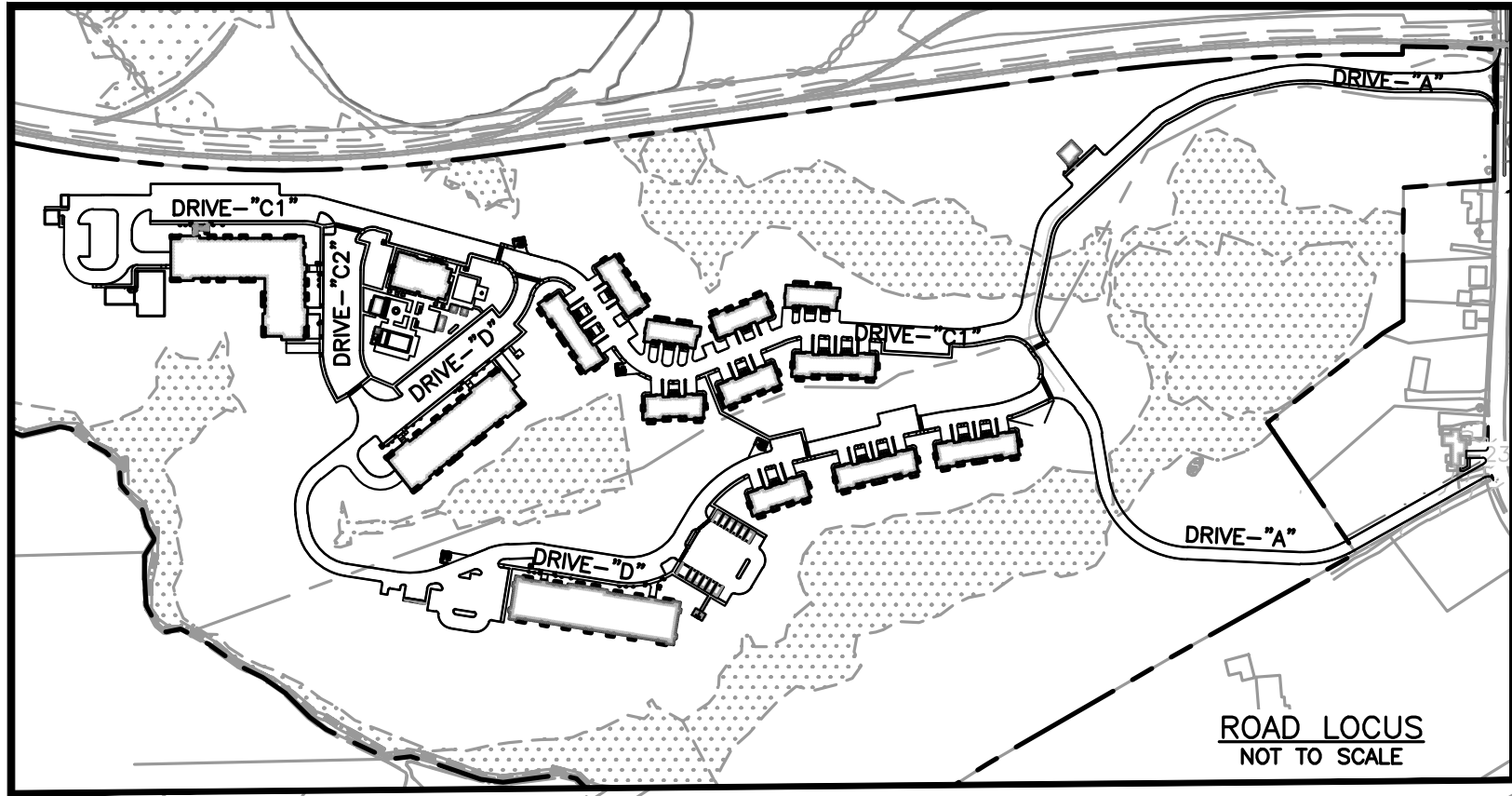
UTILITIES PLAN
 4 OF 5

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE
	C.27



ROAD LOCUS
 NOT TO SCALE

8/31/2023 L:\19097\19097.04 - Lot 2\CURRENT\19097 - Utility Plan.dwg
 Matthew Baker



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**

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

REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



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



8/31/2023 L:\19097\19097.dwg - Lot 2\CURRENT\19097 - Utility Plan.dwg
 Matthew Baker

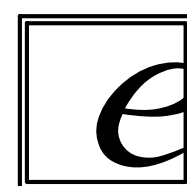
LANDSCAPE LEGEND

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

GENERAL LANDSCAPE NOTES:

- AREAS NOT OTHERWISE DEVELOPED SHALL RECEIVE MINIMUM 6" COMPACTED DEPTH SCREENED LOAM.
- EXISTING LOAM TO BE STOCKPILED FOR REUSE.
- FINISH COVER OVER PLANTING BED SHALL INCLUDE 3" MINIMUM DEPTH PINE MULCH.
- 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.
- 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.
- TURF AREAS TO BE WATERED AND MOWED UNTIL ACCEPTED.
- CONSERVATION SEED MIX AREA TO BE WATERED IF NECESSARY FOR ESTABLISHMENT
- 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.
- 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
LANDSCAPE ARCHITECTS



22 Carlton Rd.
Marblehead, MA 01945
tel. (781) 622-7487

james@jamesemmanuel.com
www.jamesemmanuel.com

PLANTING NOTES

- 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.
- ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.
- PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE.
- 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.
- NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
- 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.
- 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

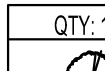
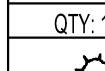

Conservation Seed Mix

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

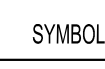



TOWN OF WALPOLE CONSERVATION COMMISSION NOTES:

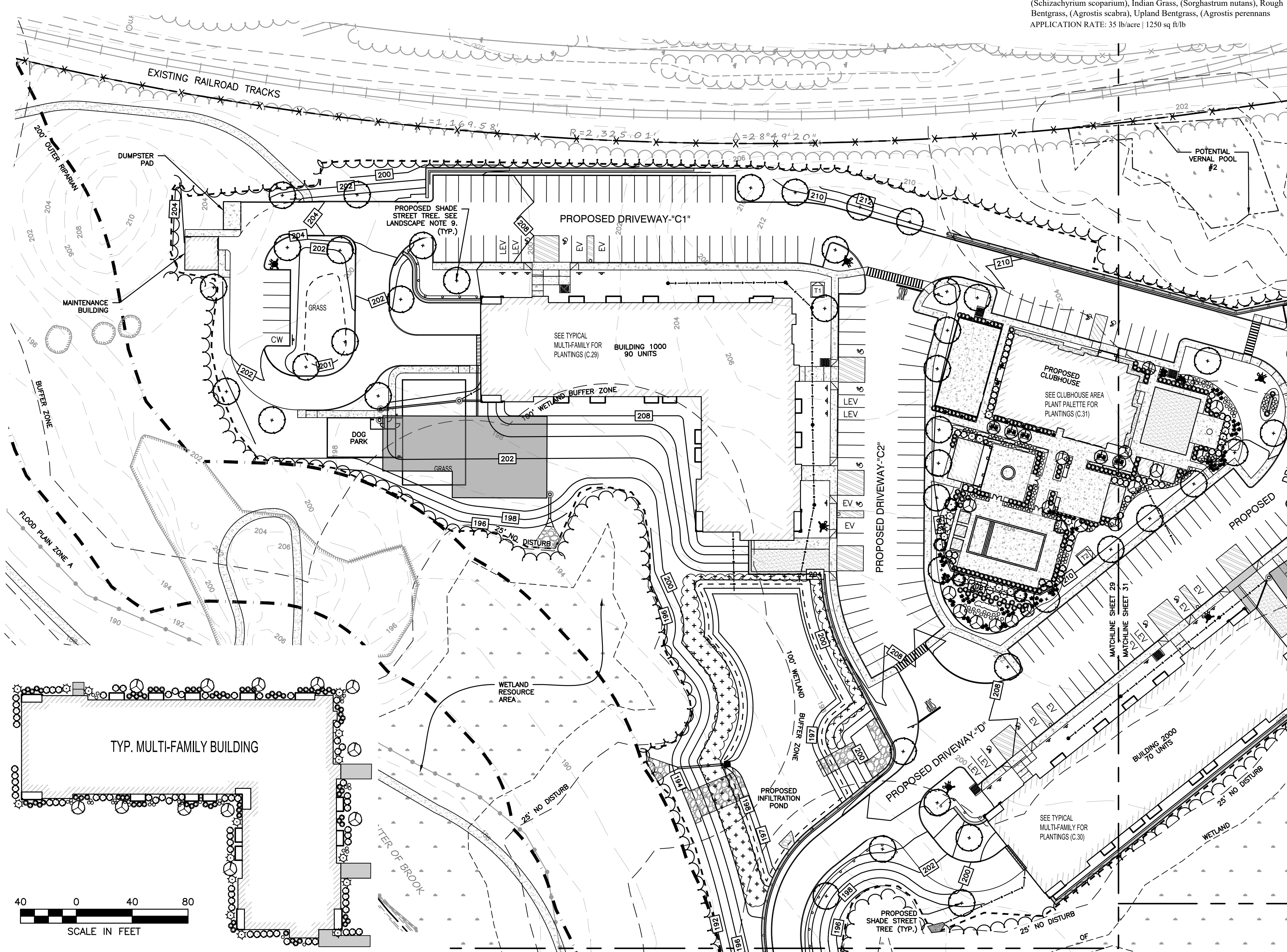
- INCLUDE LANDSCAPE PLAN FOR AREAS WITHIN THE 100-FOOT BUFFER ZONE SPECIFYING INVASIVE SPECIES MAINTENANCE PLAN, REMOVAL OF GRASS CLIPPING AND CUTTINGS OUTSIDE THE BUFFER ZONES, LIMIT USE OF NON-ORGANIC FERTILIZERS AND NO HERBICIDES OR PESTICIDES, AND DROUGHT RESISTANT NATIVE PLANTINGS.

MULTI-FAMILY PLANTINGS

SYMBOL	QTY	DESCRIPTION	Botanical Name	Common Name	Size	
	11	FLOWERING TREE OPTIONS:				
			Cercis canadensis	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	
	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'	
	117	SHRUB OPTIONS:				
			Cornus alba 'Elegantissima'	Variegated 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'	

Clubhouse Area Plant Palette

SYMBOL	QTY	DESCRIPTION	Botanical Name	Common Name	Size	
	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	
	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'	
	300	SHRUB OPTIONS:				
			Cornus alba 'Elegantissima'	Variegated 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"			
	26	FLOWERING TREE OPTIONS:				
			Cercis canadensis	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	



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
1	PB	08/31/23	REV. PER PEER REVIEW

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 65

8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - Landscape Plan.dwg
Matthew Baker



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
1	PB	08/31/23	REV. PER PEER REVIEW

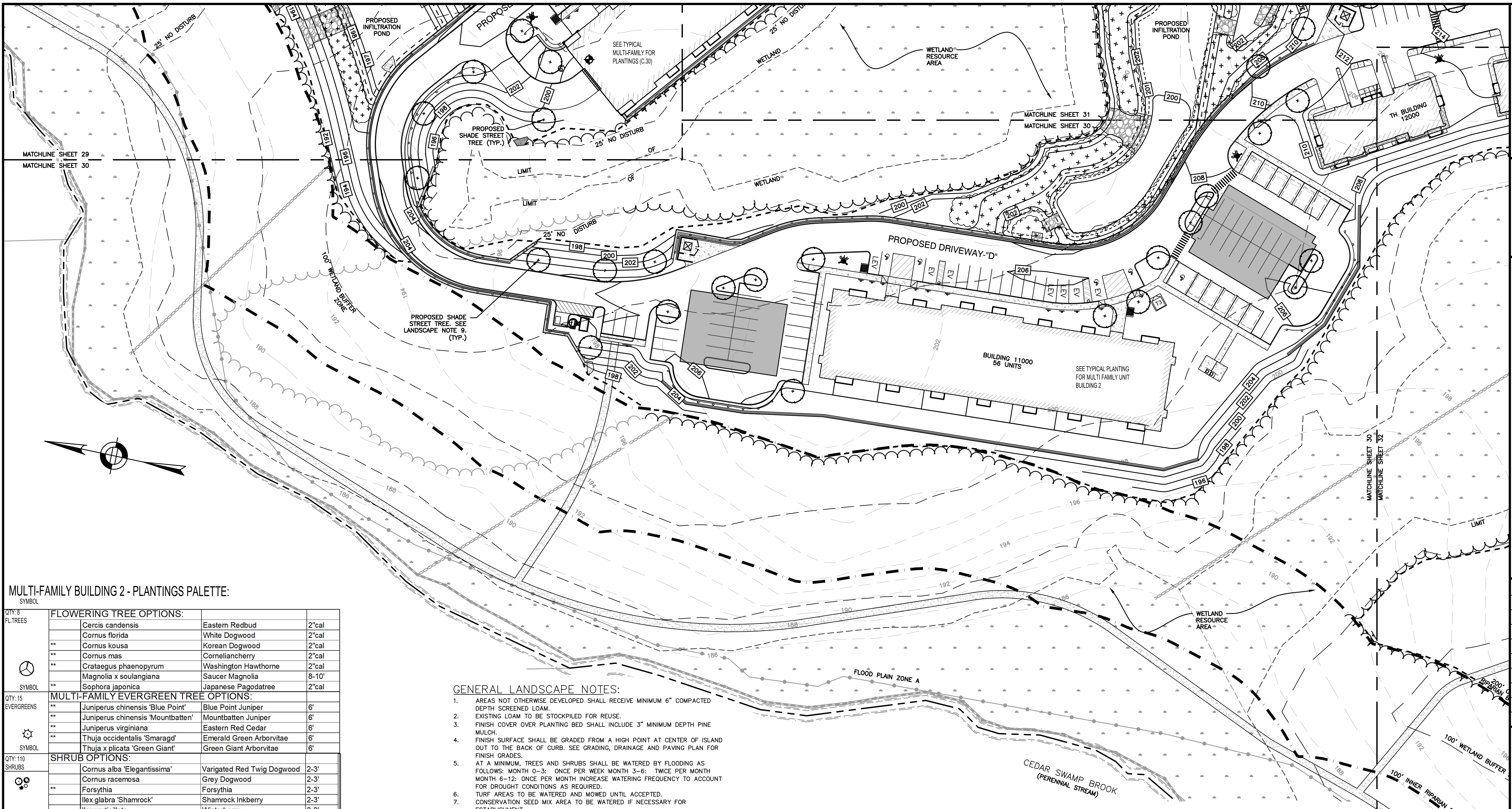
SITE
 PLAN

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 65



MULTI-FAMILY BUILDING 2 - PLANTINGS PALETTE:

SYMBOL	FLOWERING TREE OPTIONS:	SYMBOL	MULTI-FAMILY EVERGREEN TREE OPTIONS:
QTY: 8 FL TREES	Cercis canadensis Eastern Redbud 2"cal	** Juniperus chinensis 'Blue Point' Blue Point Juniper 6'	
	Cornus florida White Dogwood 2"cal	** Juniperus chinensis 'Mountbatten' Mountbatten Juniper 6'	
	Cornus kousa Korean Dogwood 2"cal	** Juniperus virginiana Eastern Red Cedar 6'	
	Cornus mas Corneliancherry 2"cal	** Thuja occidentalis 'Smaragd' Emerald Green Arborvitae 6'	
	Crataegus phaenopyrum Washington Hawthorne 2"cal	** Thuja x plicata 'Green Giant' Green Giant Arborvitae 6'	
	Magnolia x soulangiana Saucer Magnolia 8-10'		
	Sophora japonica Japanese Pagodatree 2"cal		
QTY: 15 EVERGREENS			
SYMBOL			
QTY: 110 SHRUBS			
	Cornus alba 'Elegantissima' Variegated 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 'Monro' Diabolo Ninebark 2-3'		
	Prunus Maratima Beach Plum 2-3'		
	Syringa vulgaris Common Lilac 2-3'		
	Viburnum dentatum Arrowwood 2-3'		

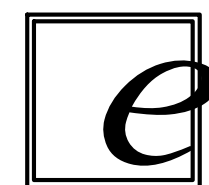
GENERAL LANDSCAPE NOTES:

- AREAS NOT OTHERWISE DEVELOPED SHALL RECEIVE MINIMUM 6" COMPACTED DEPTH SCREENED LOAM.
- EXISTING LOAM TO BE STOCKPILED FOR REUSE.
- FINISH COVER OVER PLANTING BED SHALL INCLUDE 3" MINIMUM DEPTH PINE MULCH.
- 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.
- 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.
- TURF AREAS TO BE WATERED AND MOVED UNTIL ACCEPTED.
- CONSERVATION SEED MIX AREA TO BE WATERED IF NECESSARY FOR ESTABLISHMENT
- 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 ADJUTING PARCELS.
- 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.

PLANTING NOTES

- 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.
- ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.
- PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE.
- 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.
- NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
- 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.
- ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL BE LOAMED 6" AND SEEDED.

james k. emmanuel | associates
 LANDSCAPE ARCHITECTS



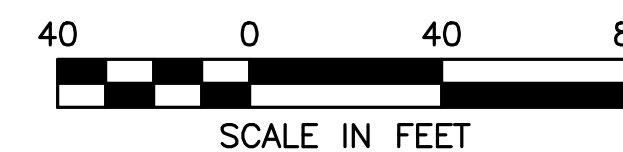
22 Carlton Rd.
 Marblehead, MA 01945
 tel. (781) 622-7487

james@jamesemmanuel.com
 www.jamesemmanuel.com

LANDSCAPE LEGEND

PROPOSED
 DECIDUOUS TREE

PROPOSED
 SHRUBS



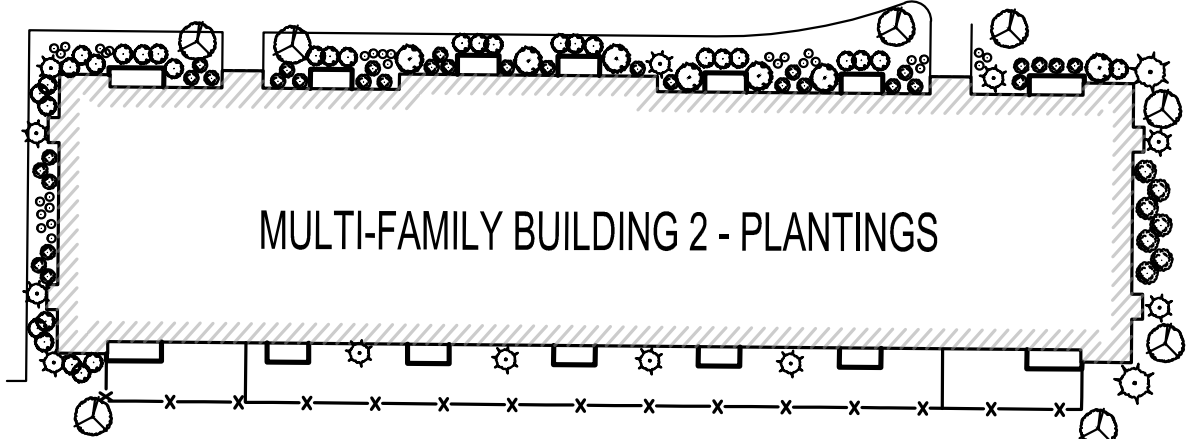
STREET TREE PLANTINGS

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

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.

STREET TREE PLANTINGS

Plant Schedule			
Symbol	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
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	FLOWERING TREE OPTIONS:		
○	Cercis canadensis	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 soulangeana	Saucer Magnolia	8-10'
**	Sophora japonica	Japanese Pagodatree	2"cal
QTY: As Shown	SHRUB OPTIONS:		
○	Cornus alba 'Elegantissima'	Variegated 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 Sweetpire	2-3'
**	Kalmia latifolia	Mountain Laurel	2-3'
**	Myrica pennsylvanica	Northern Bayberry	2-3'
**	Physocarpus opulifolius 'Monlo'	Diablo Ninebark	2-3'
**	Prunus Maratima	Beach Plum	2-3'
**	Syringa vulgaris	Common Lilac	2-3'
**	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 VERNAIN (720 SF±) 2" PLUG

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

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

james k. emmanuel | associates
LANDSCAPE ARCHITECTS



22 Carlton Rd.
Marblehead, MA 01945
tel. (781) 622-7487

james@jamesemmanuel.com
www.jamesemmanuel.com

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

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 ADJUTING 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.

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

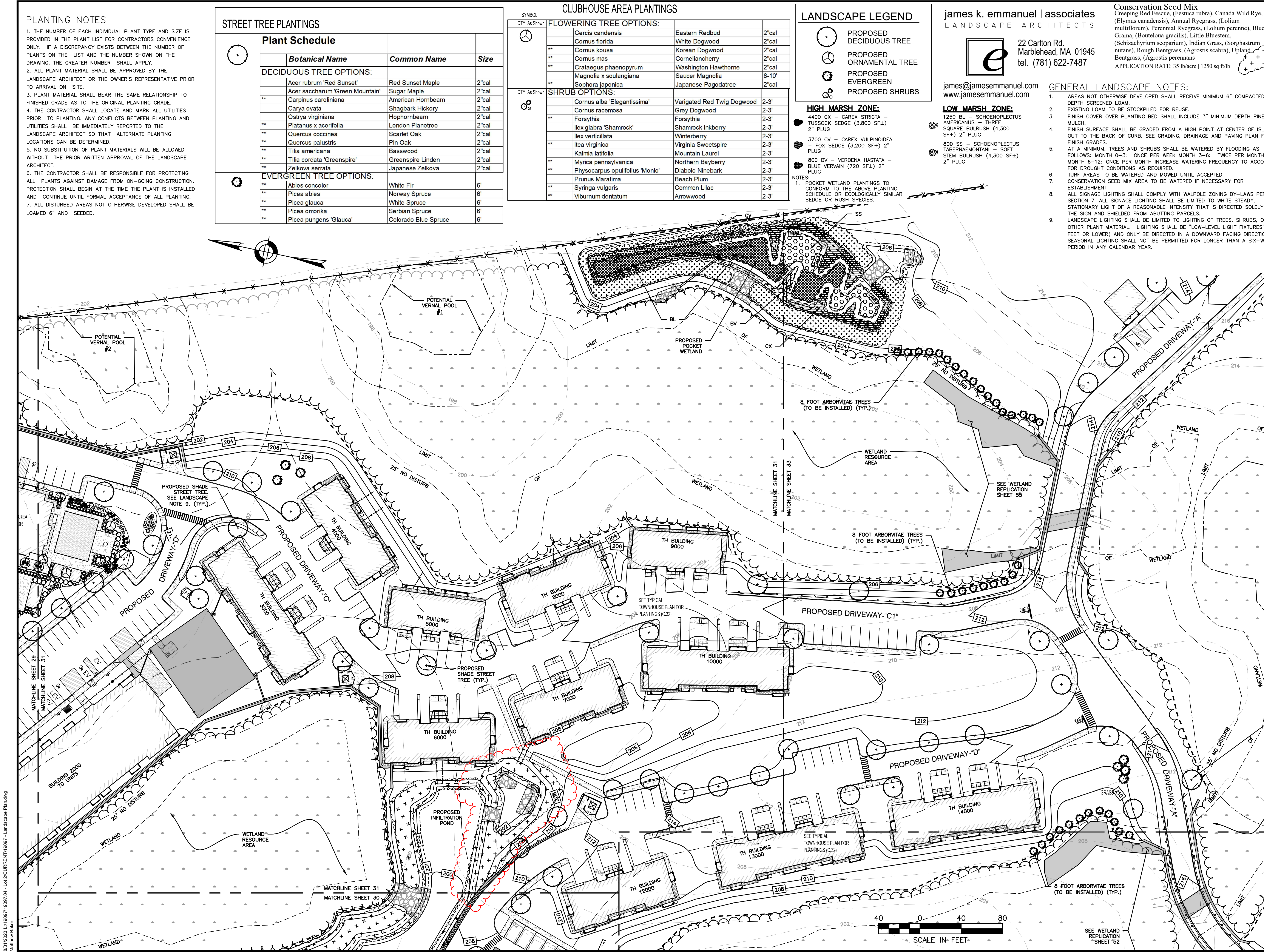
PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:			
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW

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



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - Landscaping Plan.dwg
Matthew Baker



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
1	PB	08/31/23	REV. PER PEER REVIEW

SITE
 PLAN

LANDSCAPING
 PLAN 4 OF 5

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

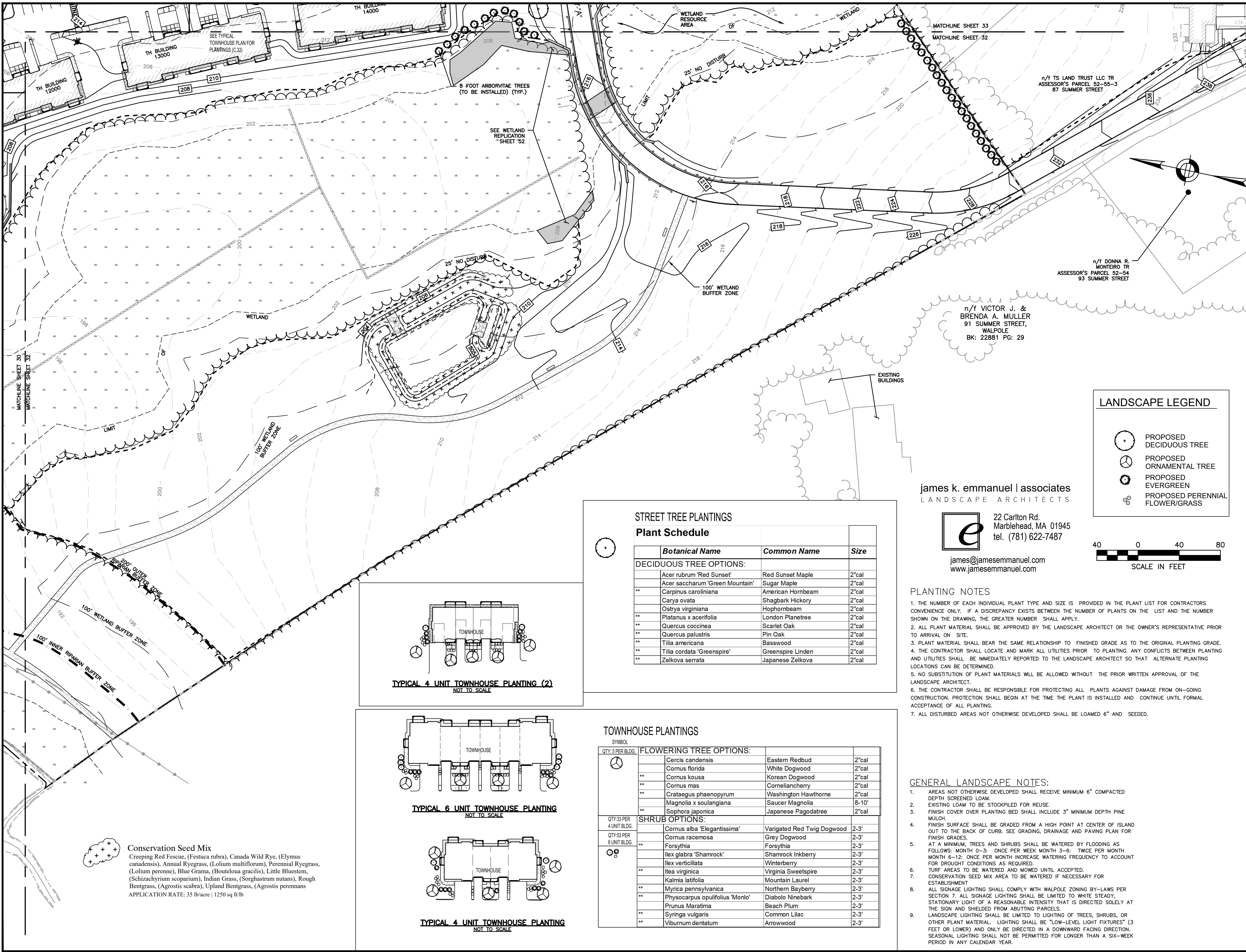
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.32

SHEET 32 OF 65



LANDSCAPE LEGEND

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



james k. emmanuel | associates
 LANDSCAPE ARCHITECTS

22 Carlton Rd.
 Marblehead, MA 01945
 tel. (781) 622-7487

james@jamesemmanuel.com
 www.jamesemmanuel.com

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 SEEDDED.

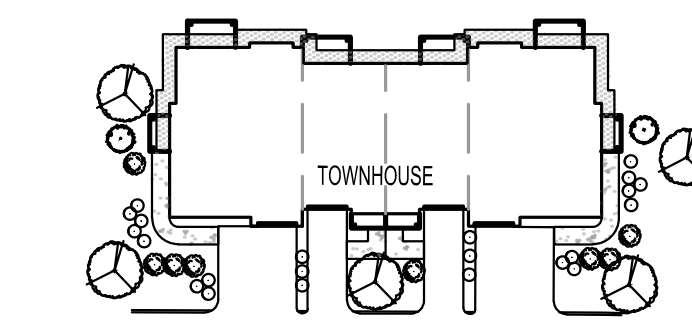
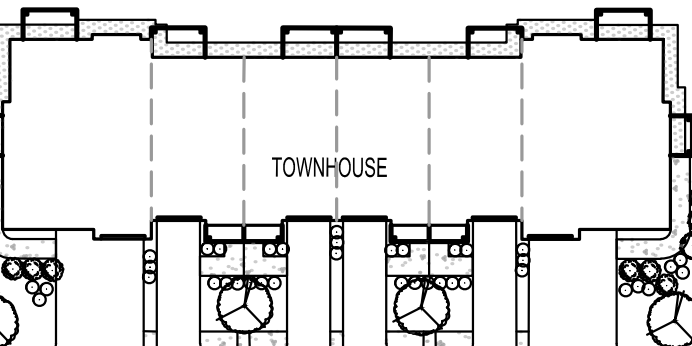
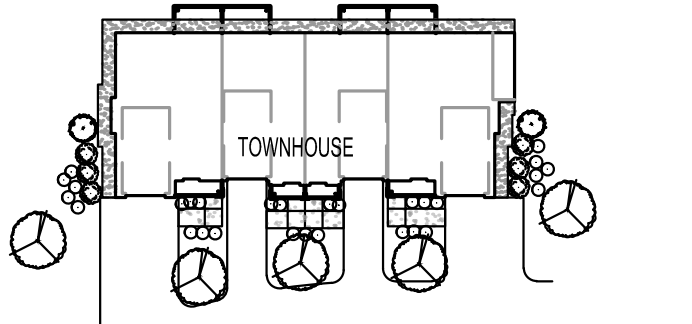
GENERAL LANDSCAPE NOTES:

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 ADJUTING 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.

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



TOWNHOUSE PLANTINGS

SYMBOL	QTY. 6 PER BLDG.	FLOWERING TREE OPTIONS:	Common Name	Size
		Cercis canadensis	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
SYMBOL	QTY. 33 PER 4 UNIT BLDG.	SHRUB OPTIONS:	Common Name	Size
		Cornus alba 'Elegantissima'	Variegated 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'

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

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

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 canadensis	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'

PLANTING NOTES

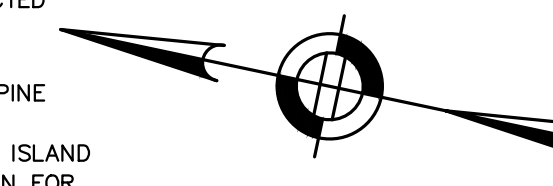
- THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE IS PROVIDED IN THE PLANT LIST FOR CONTRACTORS CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LIST AND THE NUMBER SHOWN ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.
- ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.
- PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE.
- 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.
- NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
- 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.
- ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL BE LOAMED 6" AND SEEDED.

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

GENERAL LANDSCAPE NOTES:

- AREAS NOT OTHERWISE DEVELOPED SHALL RECEIVE MINIMUM 6" COMPACTED DEPTH SCREENED LOAM.
- EXISTING LOAM TO BE STOCKPILED FOR REUSE.
- FINISH COVER OVER PLANTING BED SHALL INCLUDE 3" MINIMUM DEPTH PINE MULCH.
- 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.
- 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.
- TURF AREAS TO BE WATERED AND MOWED UNTIL ACCEPTED.
- CONSERVATION SEED MIX AREA TO BE WATERED IF NECESSARY FOR ESTABLISHMENT.
- 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.
- 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.



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**

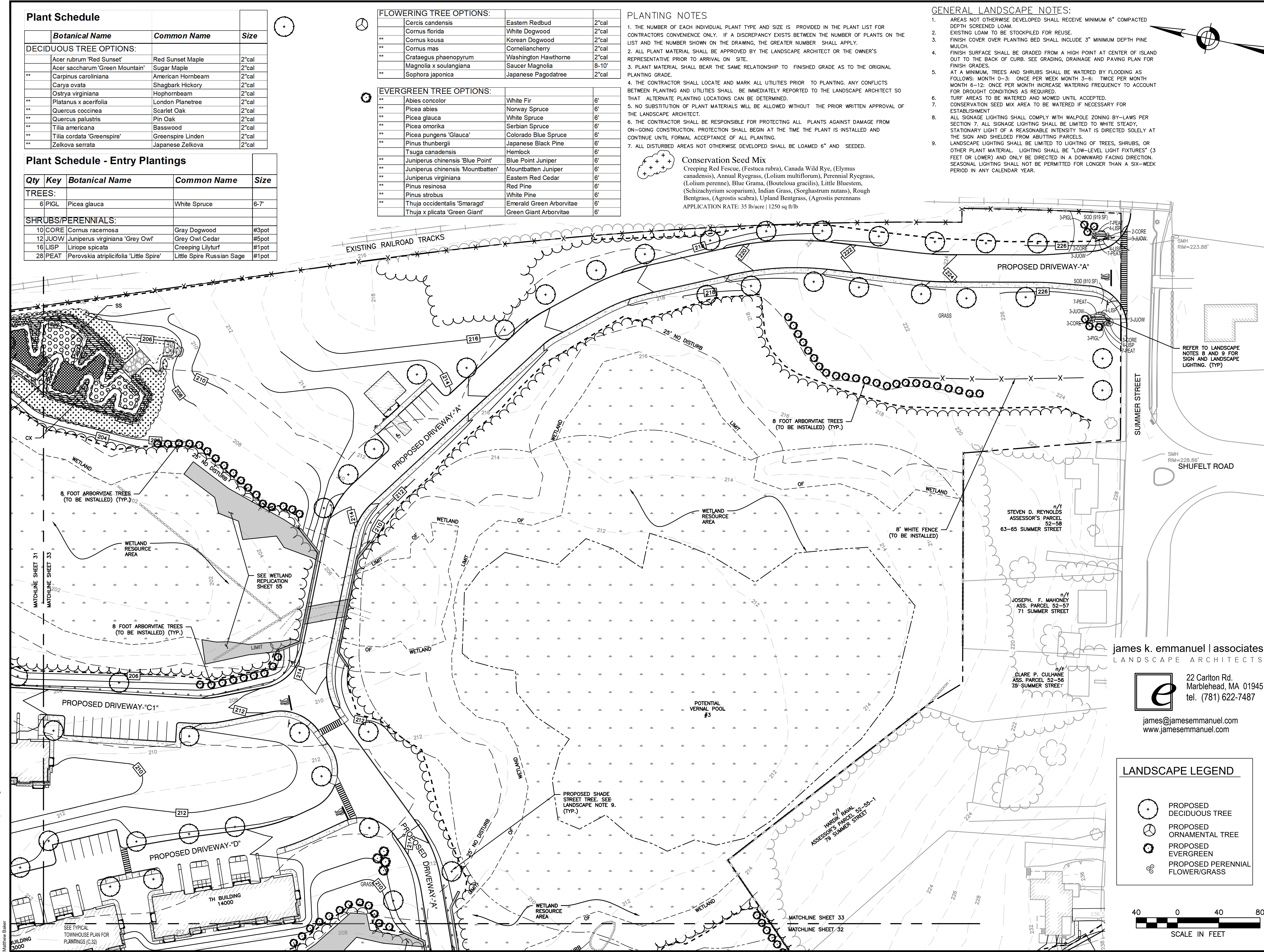
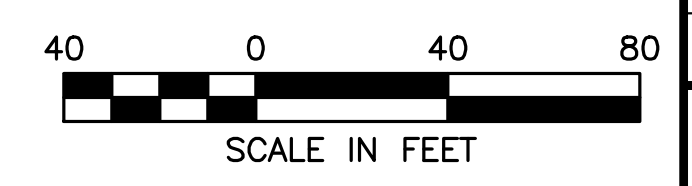
REVISIONS:

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW

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

LANDSCAPE LEGEND

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



8/31/2023, L:\19097\19097_04 - Lot 2\CURRENT\19097 - Landscape Plan.dwg
Matthew Baker

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 65

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
1	PB	08/31/23	REV. PER PEER REVIEW

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

n/f
HUGHES BAKER
PROCESS SYSTEMS INC.
ASSESSOR'S PARCEL 32-78
100 NEPOSE STREET

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

EXISTING RAILROAD TRACKS

FLOOD PLAIN ZONE A

BUILDING 1000
90 UNITS
53 UNDERGROUND
PARKING SPACES

PROPOSED CLUBHOUSE

PROPOSED COURTYARD
LANDSCAPE AND HARDSCAPE
TO BE LIT PER THE
REQUIREMENTS OF SECTION
7 OF THE WALPOLE ZONING
REGULATIONS

BUILDING 200
70 UNITS
37 UNDERGROUND
PARKING SPACES

MATCHLINE SHEET 34
MATCHLINE SHEET 35

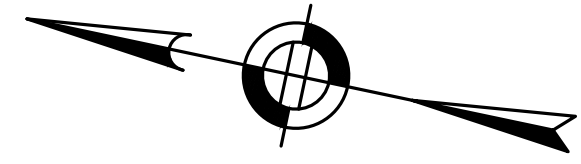


LIGHTING NOTES:

- LIGHTING PREPARED AND DESIGNED BY EXPOSURE 2 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 PERIMETER OF THE SITE OR INTERFERE WITH TRAFFIC. (WALPOLE ZBL SECTION 13 SUB-SECTION 10.A(5))
- 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.).
- 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.
- 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.

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.

Symbol	Qty	Label	Arrangement	Description	(MANUFAC)	Luminaire Lumens	CRI	CCT
⊖	53	P3	Single	XDLN-A-3-LED-LW-WV-BLK-CH-S-IMSBT1-IL / 4RP-I-S10G-12-BLK-GA-GBC (483859CLR) 12' POLE	LSI INDUSTRIES, INC.	6272	70	3000K
⊖	13	P4	Single	XDLN-A-FI-LED-LW-WV-BLK-CH-S-IMSBT1-IL / 4RP-I-S10G-12-BLK-GA-GBC(483859CLR) 12' POLE	LSI INDUSTRIES, INC.	5873	70	3000K
⊖	13	P5	Single	XDLN-A-5W-LED-LW-WV-BLK-CH-S-IMSBT1 / 4RP-I-S10G-12-BLK-GA-GBC(483859CLR) 12' POLE	LSI INDUSTRIES, INC.	7752	70	3000K
⊖	4	T4-	Single	XDLN-A-FI-LED-SS-WV-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		



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-SECTION 10.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.



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:

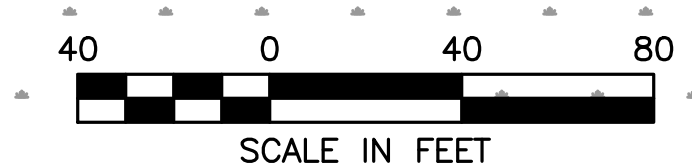
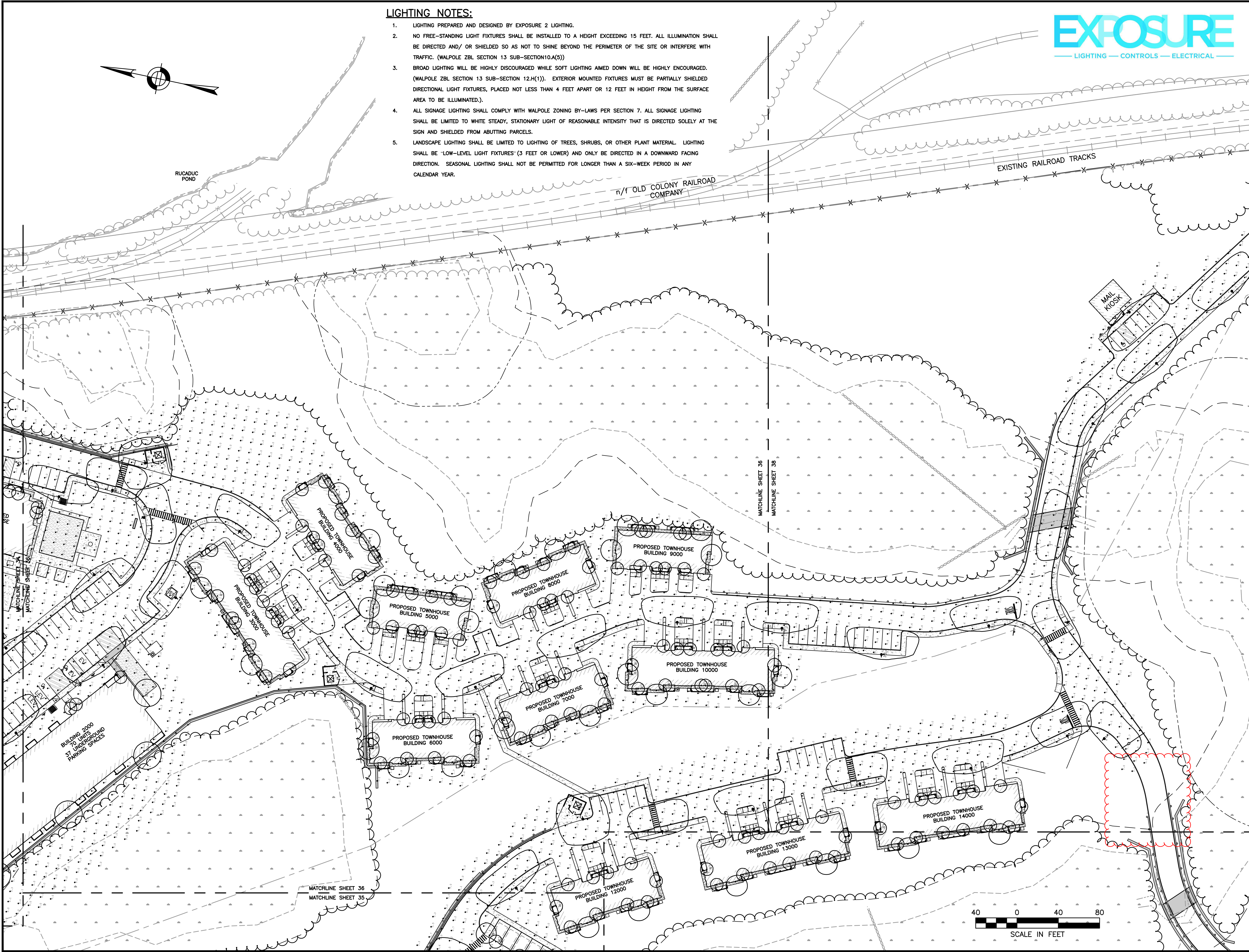
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW

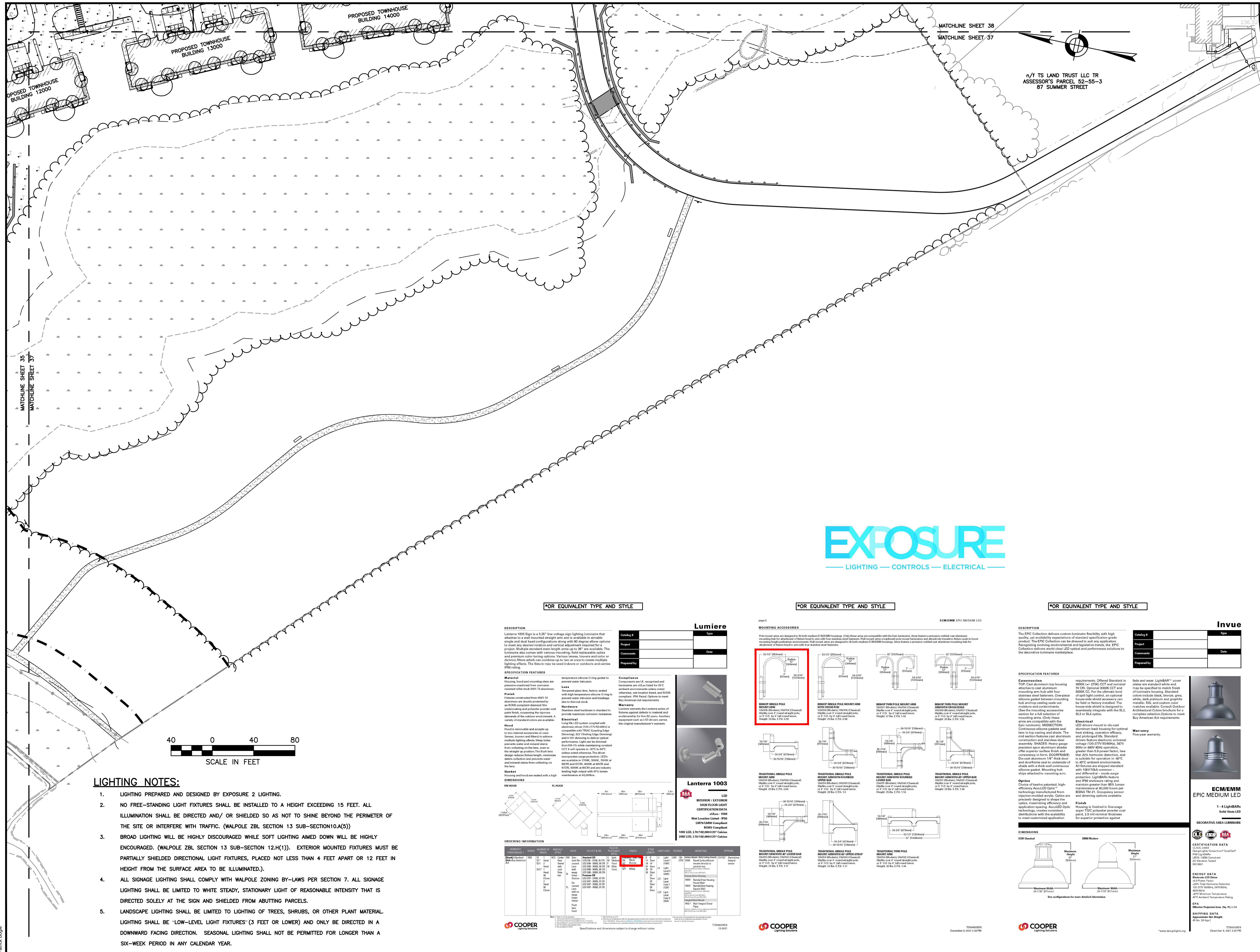
SITE PLAN

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

8/31/2023 L:\19097\19097_04 - Lot 2\CURRENT\19097 - Lighting Plan.dwg
 P:\m\k\ke





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:

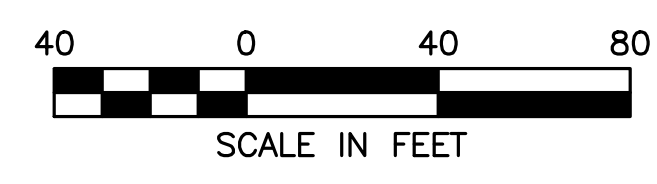
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



FOR EQUIVALENT TYPE AND STYLE

FOR EQUIVALENT TYPE AND STYLE

FOR EQUIVALENT TYPE AND STYLE



LIGHTING NOTES:

- LIGHTING PREPARED AND DESIGNED BY EXPOSURE 2 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 PERIMETER OF THE SITE OR INTERFERE WITH TRAFFIC. (WALPOLE ZBL SECTION 13 SUB-SECTION 10(A)(5))
- 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).
- 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.
- 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.

Lumiere

DESCRIPTION
 Lumiere 1000 Sign is a 2.25" low voltage sign lighting luminaire that attaches to a wall mounted straight arm and is available in standard mounting height configurations. Lumiere 1000 Sign is designed to meet any desired rotation and vertical adjustment required for a project. Multiple standard arm lengths from 18" to 36" are available. The luminaire also comes with various mounting, field replaceable optics and premium color tuning options. Various sensors, sensors and color or distance filters can combine up to two at once to create multiple lighting effects. The fixture may be used indoors or outdoors and carries IP65 rating.

SPECIFICATION FEATURES
Material
 Housing, hood and mounting stem are precision-machined from corrosion resistant 6061-T6 aluminum.
Finish
 Fixtures coated with 4000 CC aluminum for superior corrosion resistance. An RICHTE compliant chemical film undercoating and primer powder coat paint finish, protecting the rigorous demands of the outdoor environment. A variety of standard colors are available.
Head
 Hood is removable and accepts up to three internal accessories at once: lenses, louvers and filters to achieve multiple lighting effects. Hood has pre-wired water and mineral drains from collecting on the lens, even in the straight up position. The flush lens design reduces fixture height, maintains debris collection and prevents water and mineral stains from collecting on the lens.
Glare
 Housing and hood are sealed with a high quality gasketing.
Temperature
 Luminaire allows C-10 gasket to prevent water intrusion.
Lens
 Tempered glass lens, factory sealed with high-temperature silicone O-ring compliant. IP65 rated. Options to meet any desired rotation and vertical adjustment required for a project.
Hardware
 Standard and hardware is standard to provide maximum corrosion resistance.
Electrical
 Core LED system coupled with a high-quality LED driver is compatible with TRAC, leading edge dimming, 0-10V dimming to deliver optimal lighting performance. Light can be dimmed using 0-10V dimming controller. CCT is selectable in 2700K, 3000K, 3500K, 4000K and 5000K. A RICHTE and SDCS fixture at 4000K and any industry leading high color with 90+ CRI.
Compliance
 Components are UL recognized and luminaires are Class II listed to NEC ambient environments unless noted otherwise, and location listed, and RICHTE compliant. IP65 rated. Options to meet any desired rotation and vertical adjustment required for a project.
Warranty
 Lumiere warrants the Lumiere 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
 4000K 1900
 Watt
 100W
 Luminaire
 1000
 Compliance
 1000
 100W LED, 120-150, 0.00025V Celsius
 20W LED, 120-150, 0.00025V Celsius

COOPER Lighting Solutions

ECM/EMM EPIC MEDIUM LED

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

SPECIFICATION FEATURES
Construction
 The EPIC Collection features custom luminaires flexibility with high quality, set availability expectations of standard specification grade product. The EPIC Collection can be directed to suit any application. Recognizing evolving environmental and legislative trends, the EPIC Collection features world class LED optical and performance solutions to the decorative luminaire marketplace.

COOPER Lighting Solutions

Invue

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

COOPER Lighting Solutions

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

LIGHTING NOTES:

- LIGHTING PREPARED AND DESIGNED BY EXPOSURE 2 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 PERIMETER OF THE SITE OR INTERFERE WITH TRAFFIC. (WALPOLE ZBL SECTION 13 SUB-SECTION 10.A(5))
- 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.).
- 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.
- 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.

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



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
1	PB	08/31/23	REV. PER PEER REVIEW

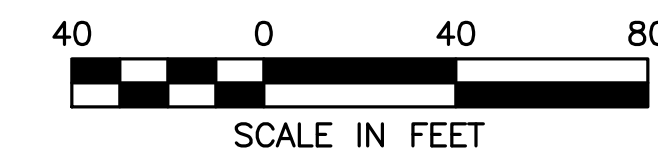
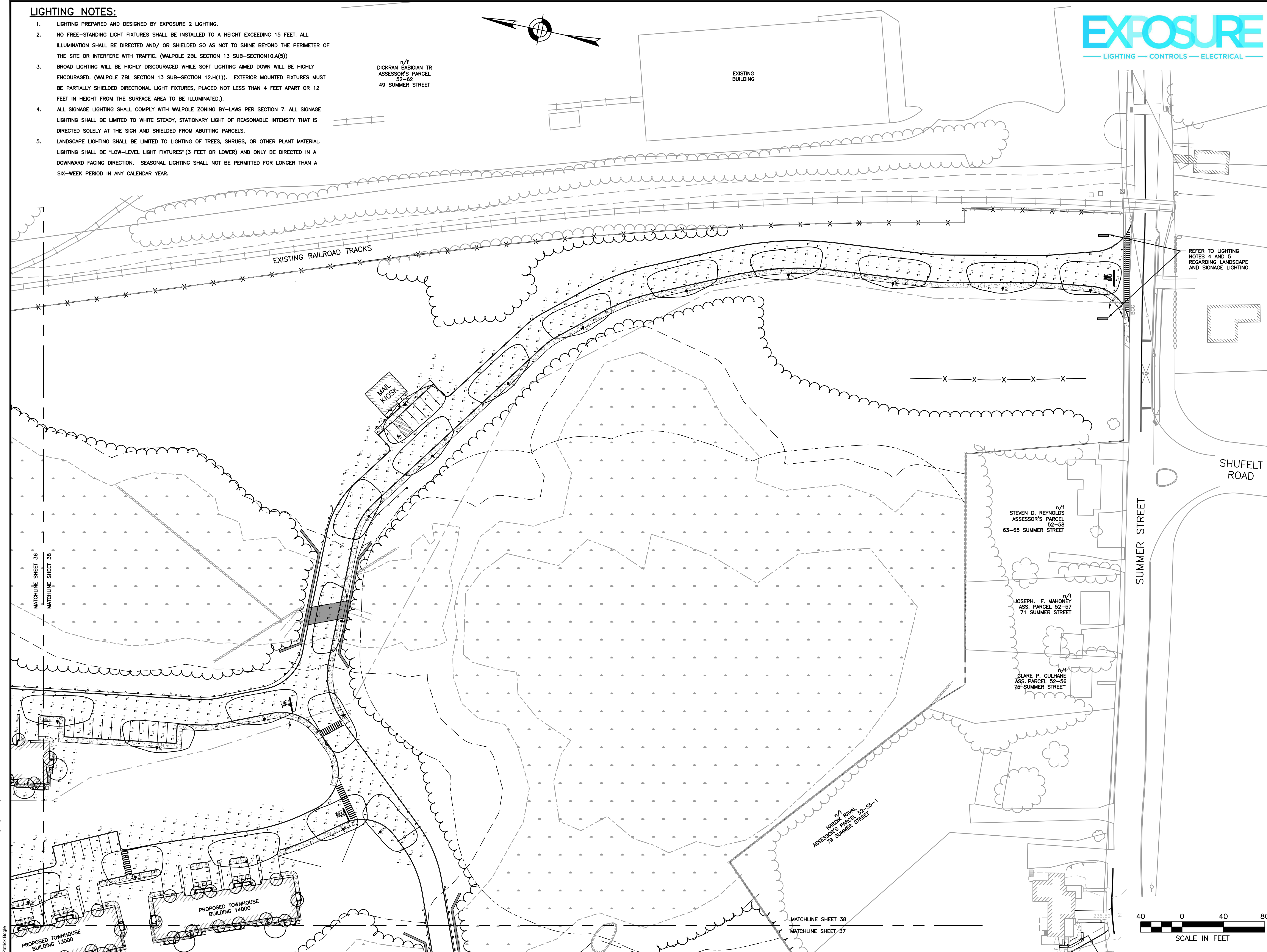
SITE
PLAN

LIGHTING
PLAN 5 OF 5

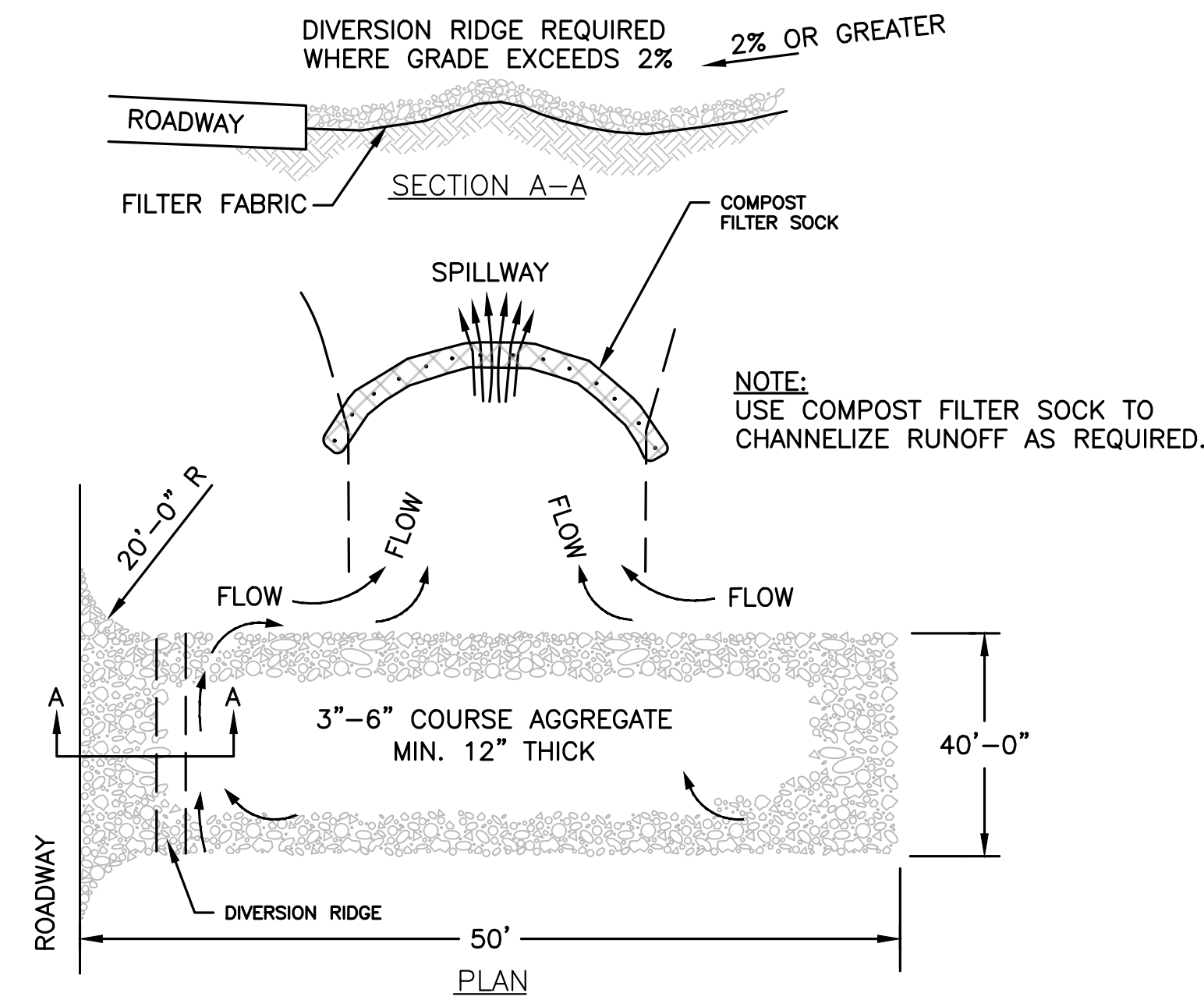
DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.38

SHEET 38 OF 65



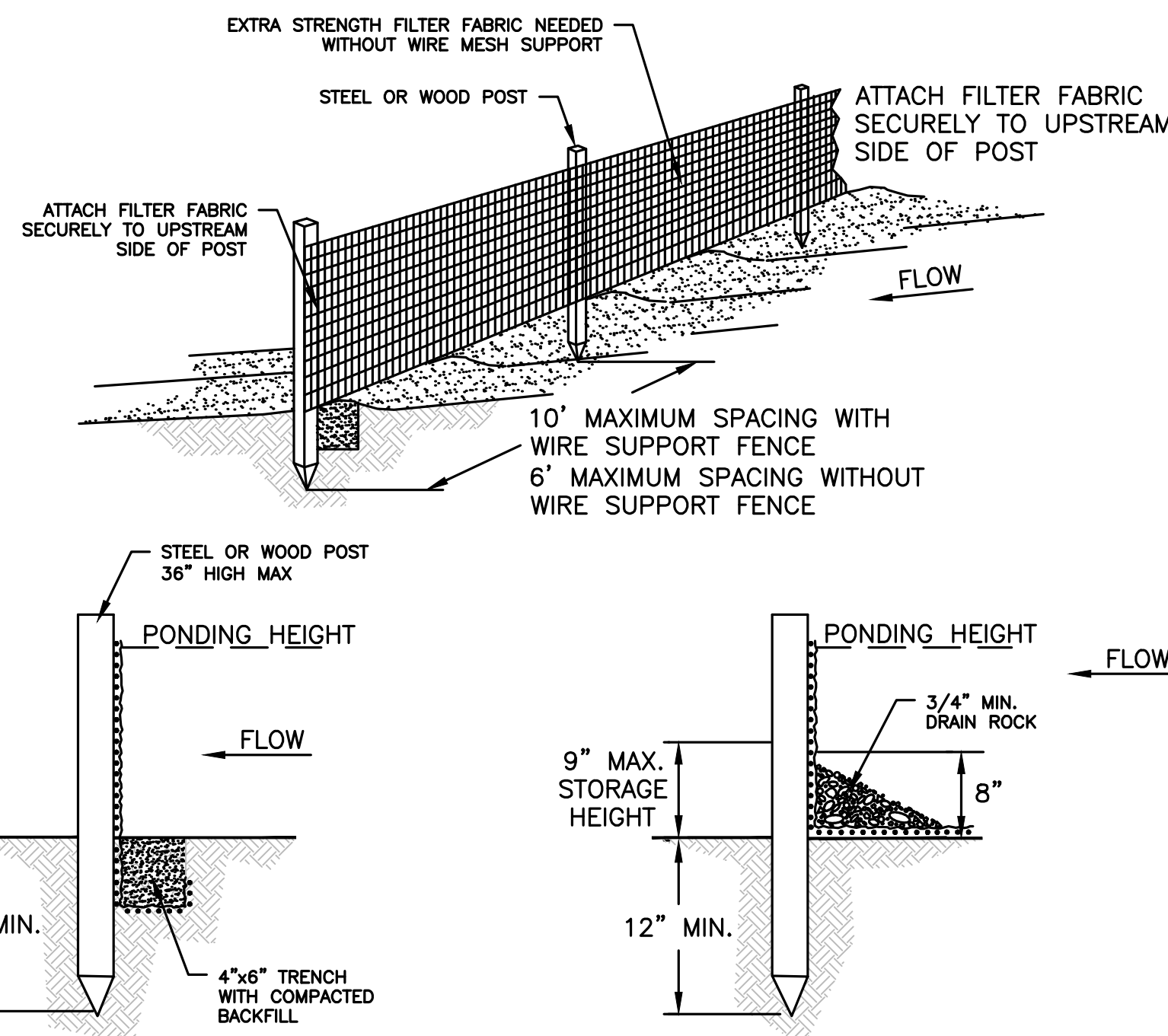
8/31/2023 11:09:07 AM - Lot 2 CURRENT 19097 - Lighting Plan.dwg



- 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

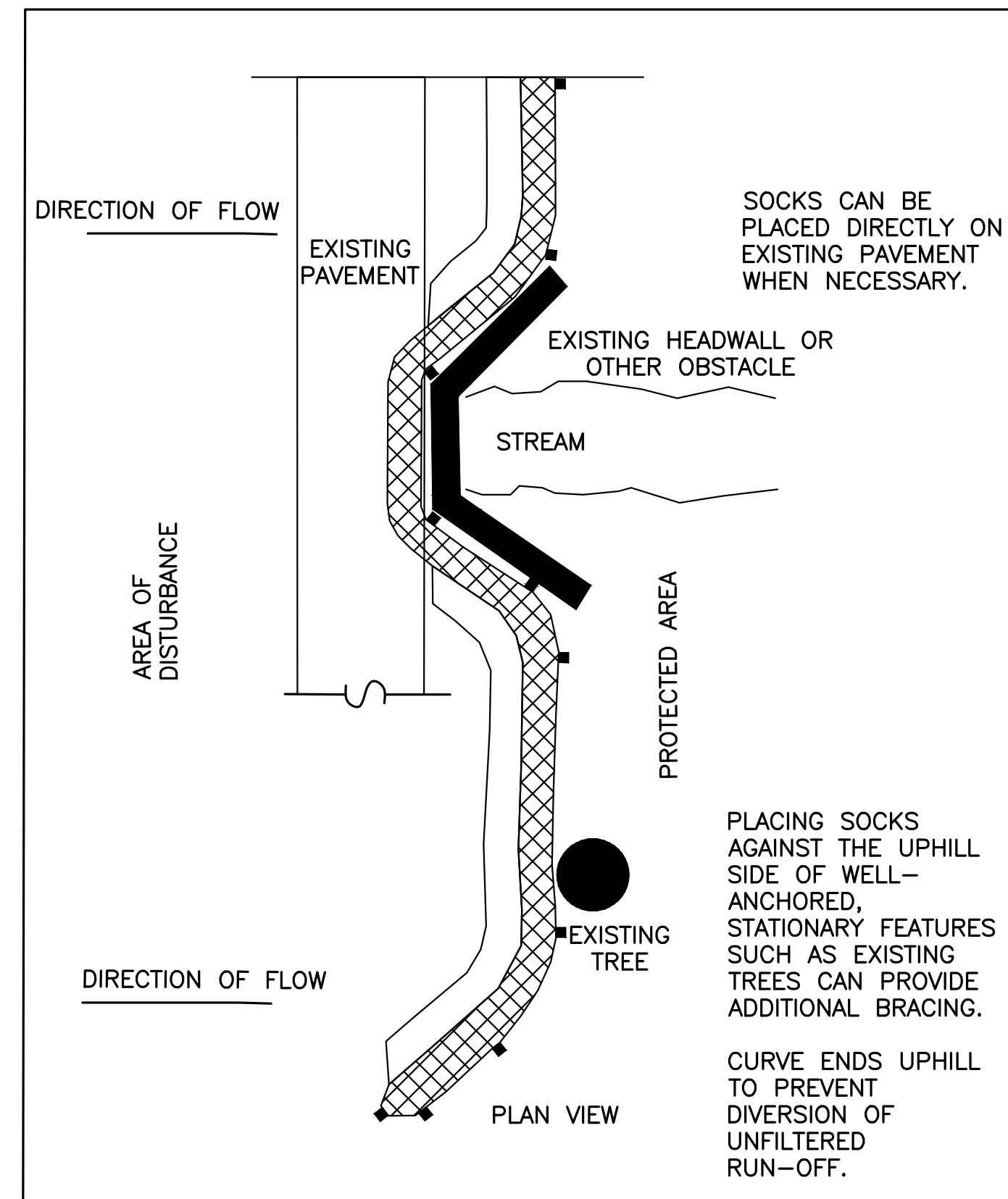
SCALE: N.T.S



- 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



2 IN. (51mm) DEEP x 10-12 IN. (300mm) WIDE LAYER OF LOOSE COMPOST MATERIAL PLACED ON UPHILL/FLOW SIDE OF SOCKS TO FILL SPACE BETWEEN SOIL SURFACE AND SOCKS.

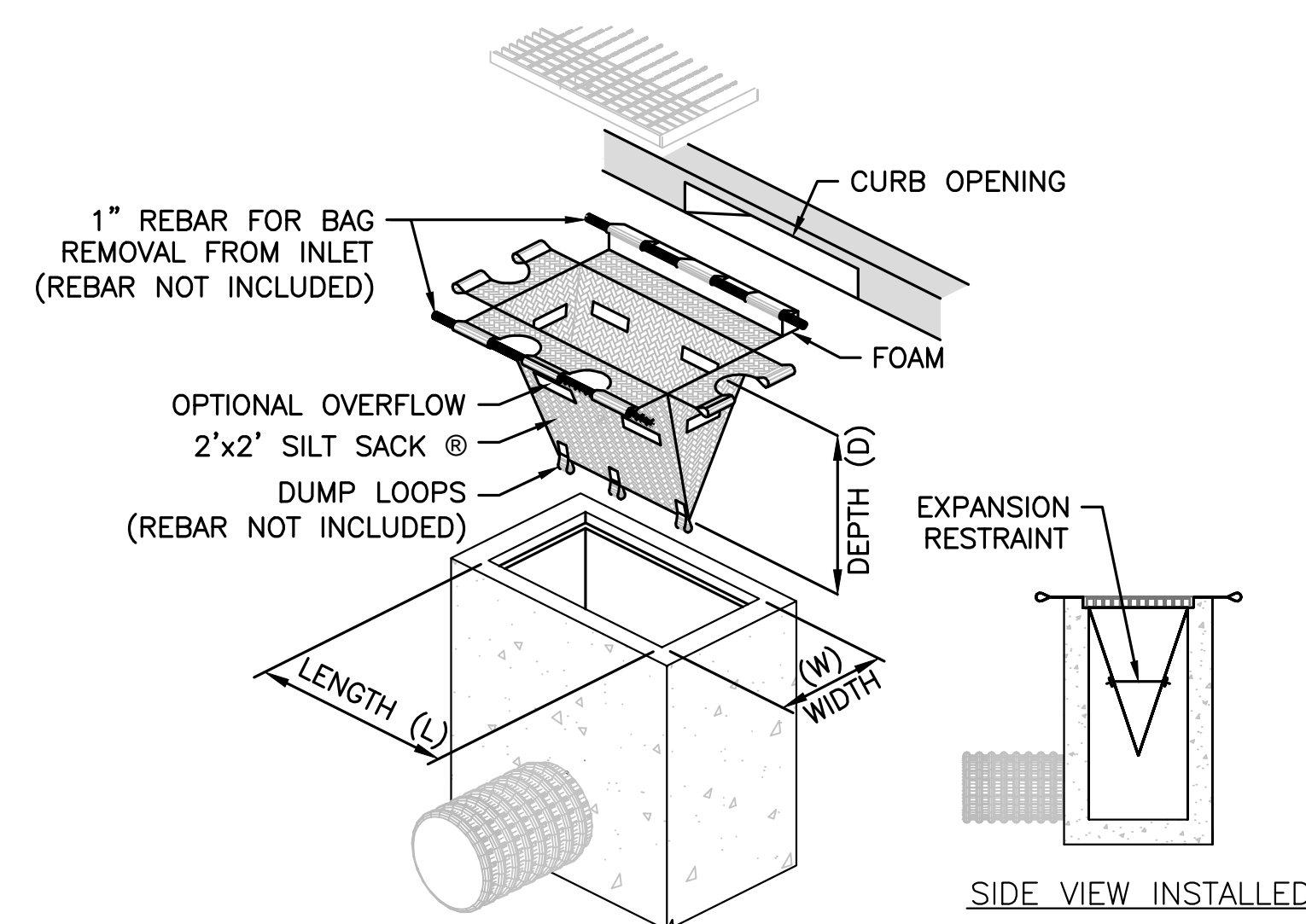
COMPOST FILTER SOCK MINIMUM 10-12 INCHES (300mm) IN DIAMETER WITH AN EFFECTIVE HEIGHT OF 9.5 INCHES (240mm). SOCKS FOR COMPOST FILTERS SHALL BE JUTE MESH OR APPROVED BIODEGRADABLE MATERIAL. ADDITIONAL SOCKS SHALL BE USED AT THE DIRECTION OF THE ENGINEER. TAMP TUBES IN PLACE TO ENSURE GOOD CONTACT WITH SOIL SURFACE. IT IS NOT NECESSARY TO TRENCH SOCKS INTO EXISTING GRADE.

2 INCH X 2 INCH X 3 FEET (51mm X 51mm X 914mm) UNTREATED HARDWOOD STAKES, UP TO 5 FT. (1.5m) APART OR AS REQUIRED TO SECURE TUBES IN PLACE.

WHEN STAKING IS NOT POSSIBLE, SUCH AS WHEN SOCKS MUST BE PLACED ON PAVEMENT, HEAVY CONCRETE OR CINDER BLOCKS CAN BE USED BEHIND SOCKS UP TO 5 FT. (1.5m) APART OR AS REQUIRED TO SECURE SOCKS IN PLACE.

SINGLE COMPOST FILTER TUBE

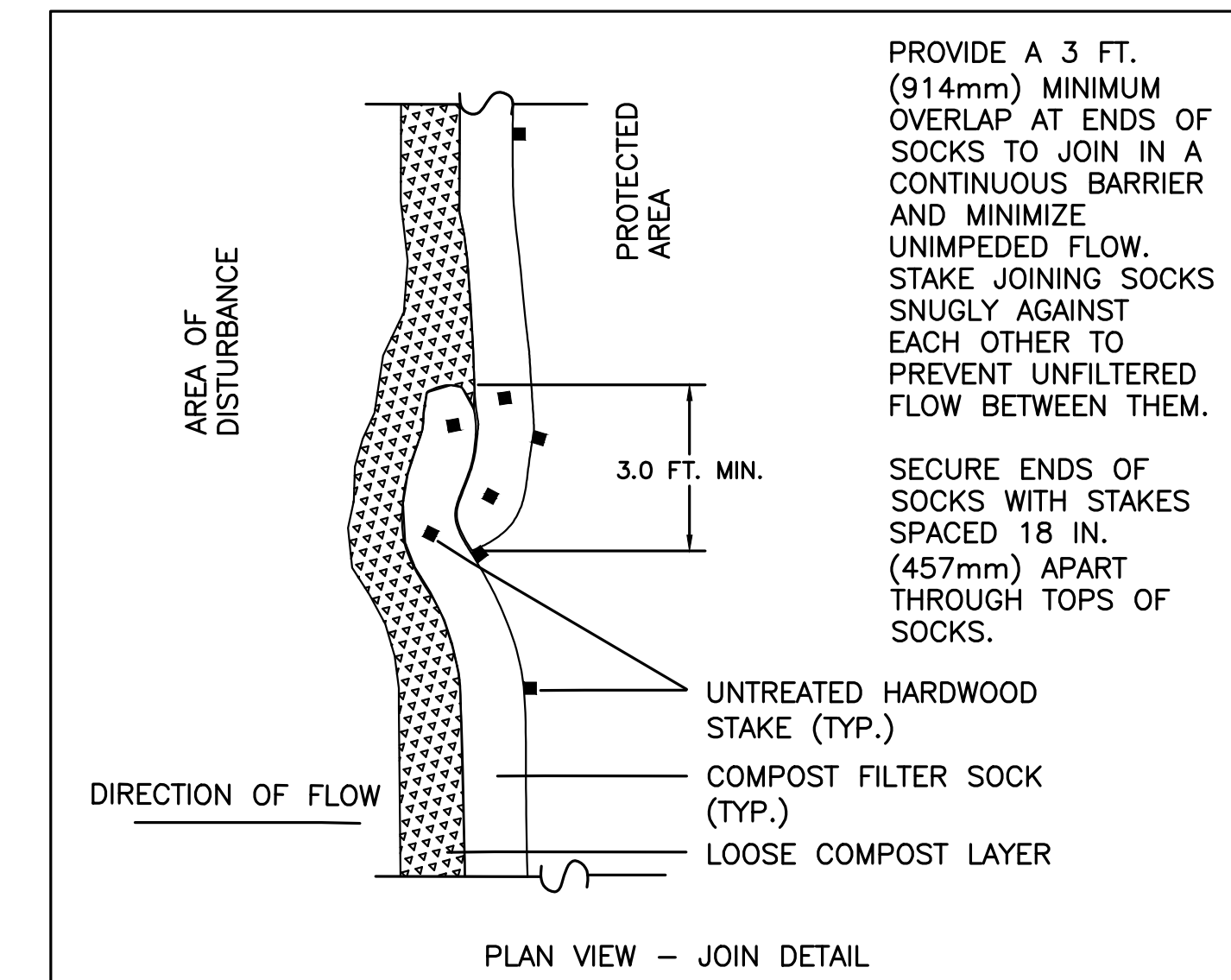
SCALE: N.T.S



TEMPORARY INLET PROTECTION

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.



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

**PROPOSED MULTIFAMILY
 DEVELOPMENT
 SUMMER STREET
 WALPOLE, MA**

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW

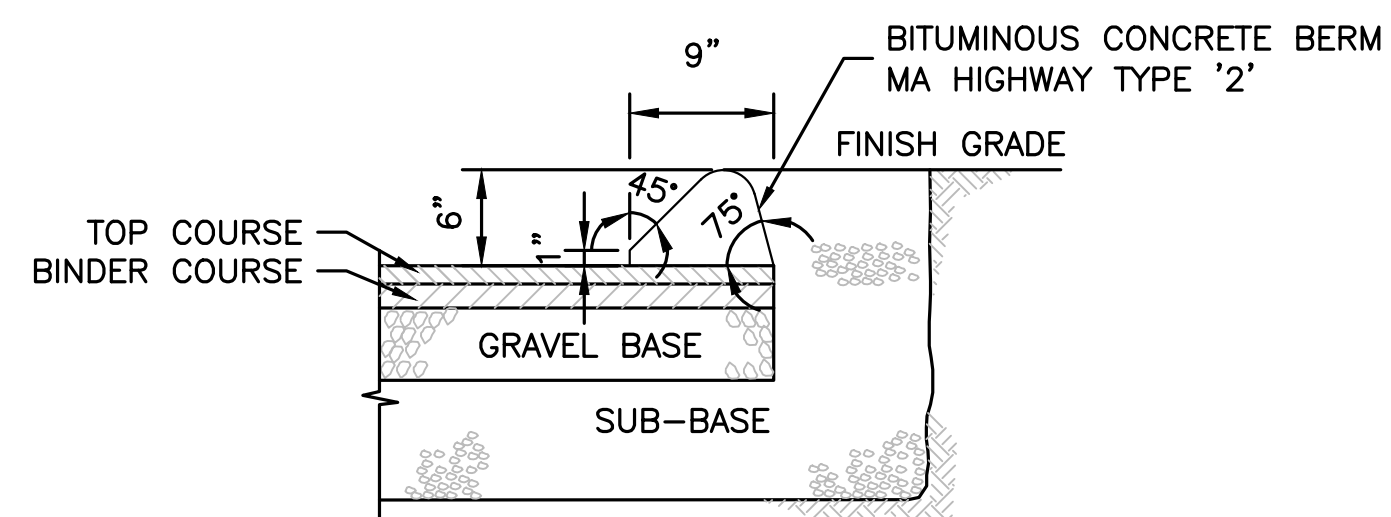


SITE PLAN

**EROSION CONTROL
 DETAILS
 (DETAIL SHEET
 1 OF 27)**

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

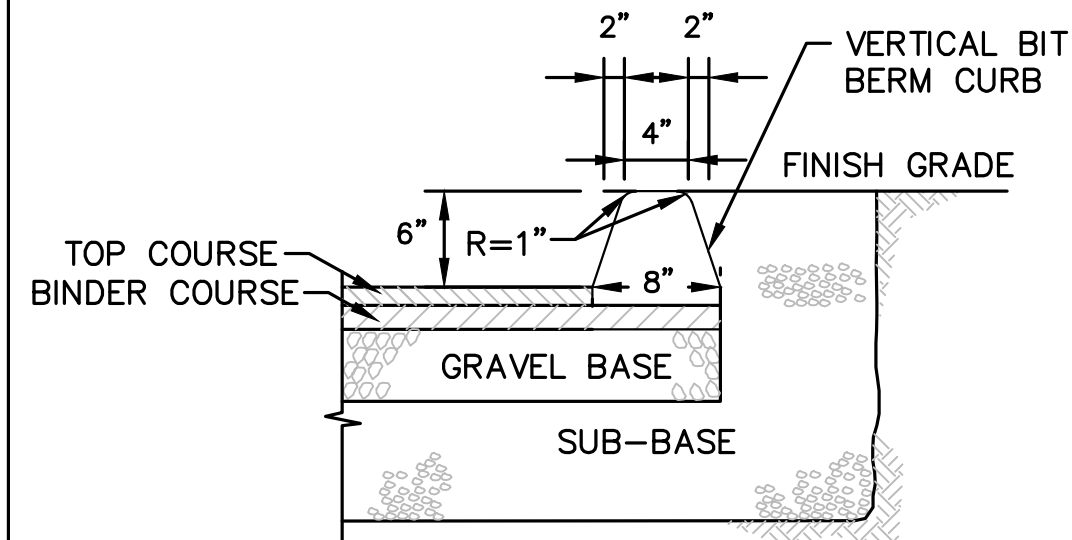
C.39



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

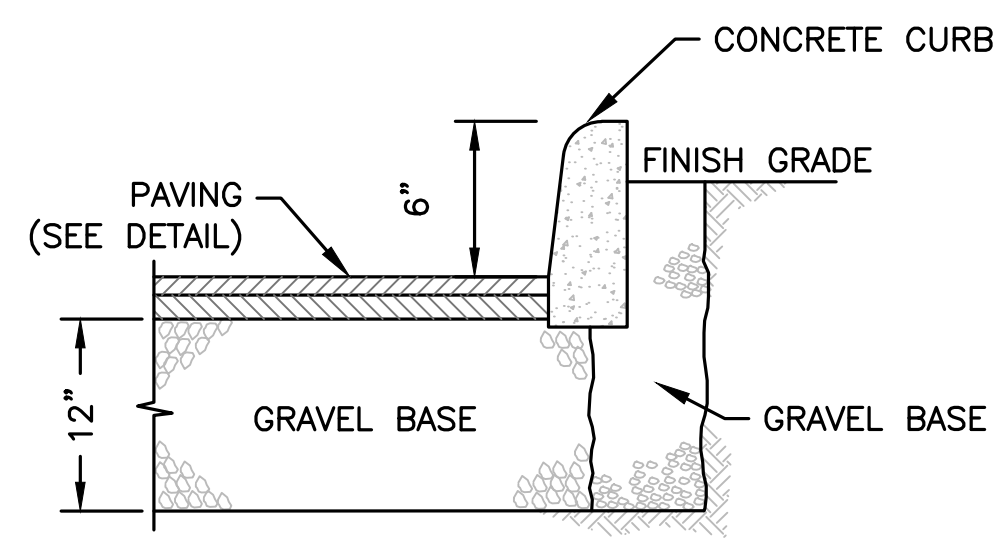
CAPE COD BERM/CURB (CCB)

SCALE: N.T.S.



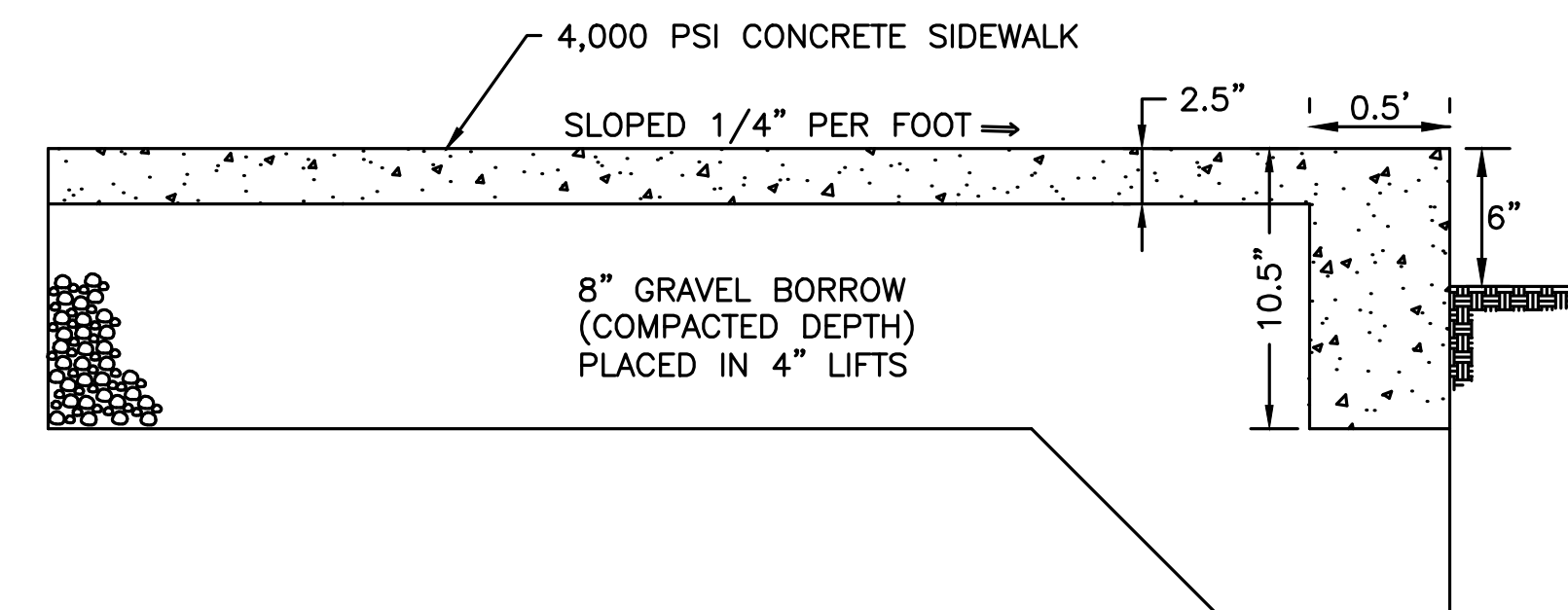
VERTICAL BIT BERM CURB (VBC)

SCALE: N.T.S.



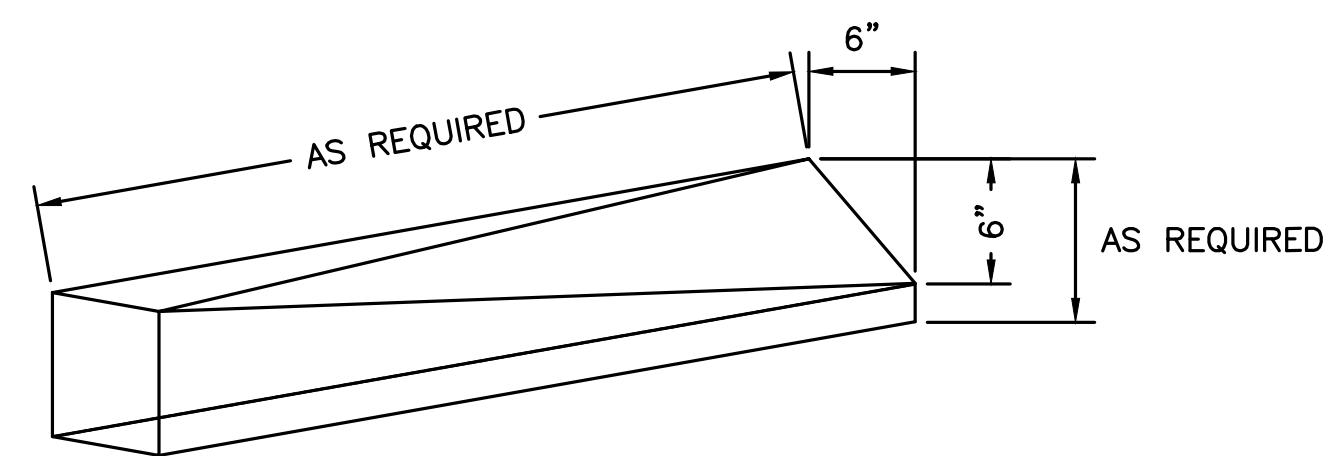
CEMENT CONCRETE CURB (CC)

SCALE: N.T.S.



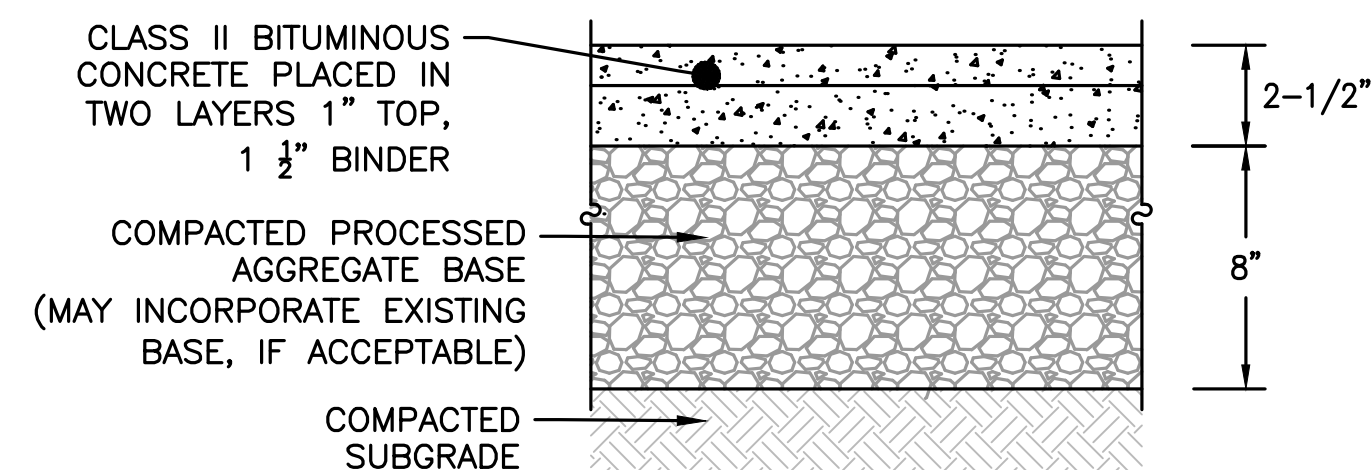
MONOLITHIC CONCRETE CURB AND WALK (MCC)

SCALE: N.T.S.



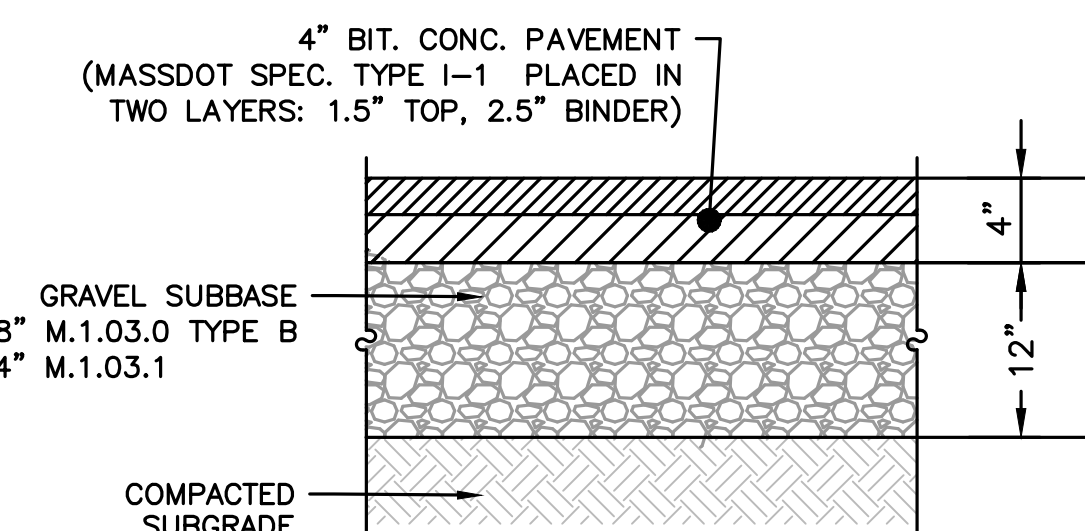
TRANSITION CURB

SCALE: N.T.S.



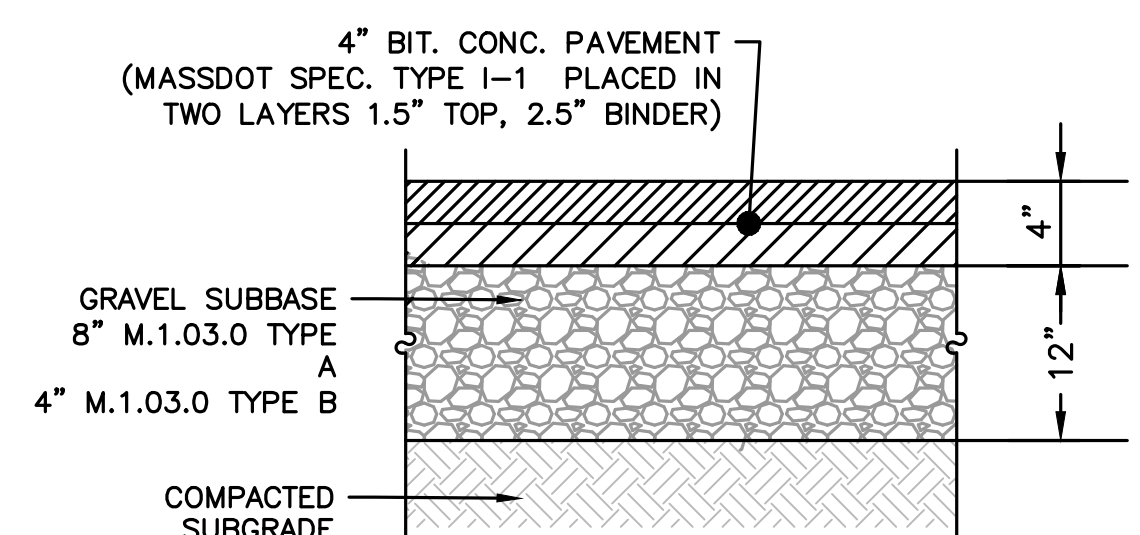
BIT CONC SIDEWALK SECTION

SCALE: N.T.S.



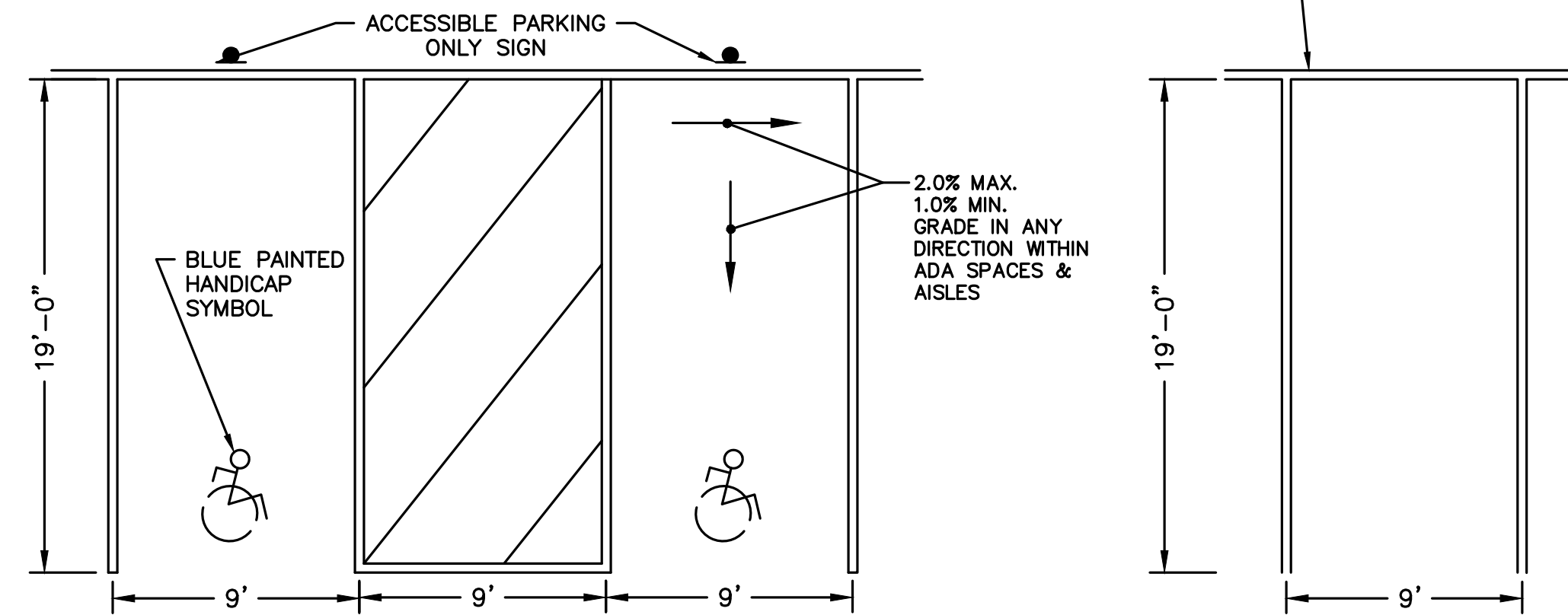
FULL DEPTH ROADWAY PAVEMENT SECTION

SCALE: N.T.S.



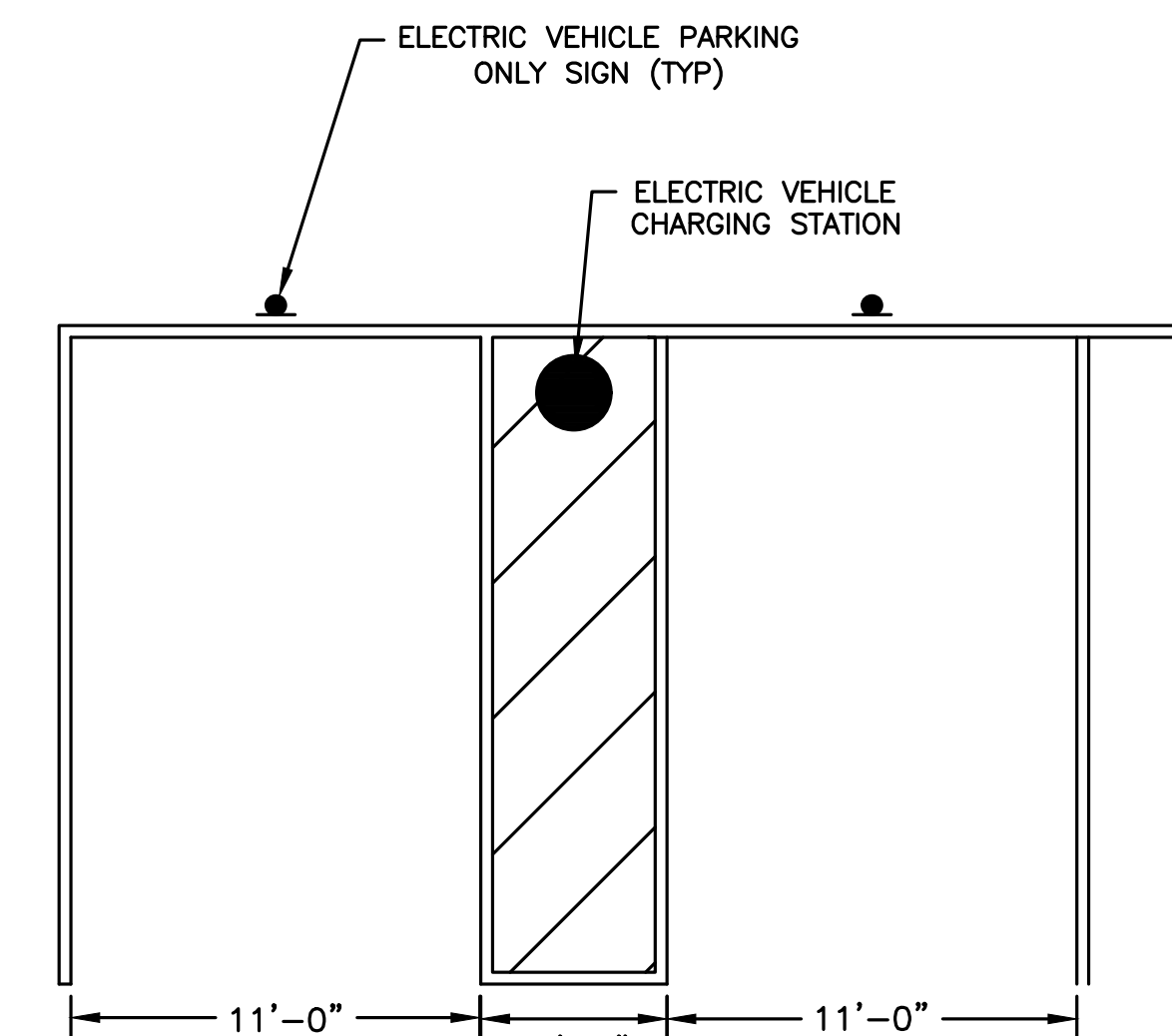
FULL DEPTH PARKING LOT SECTION

SCALE: N.T.S.



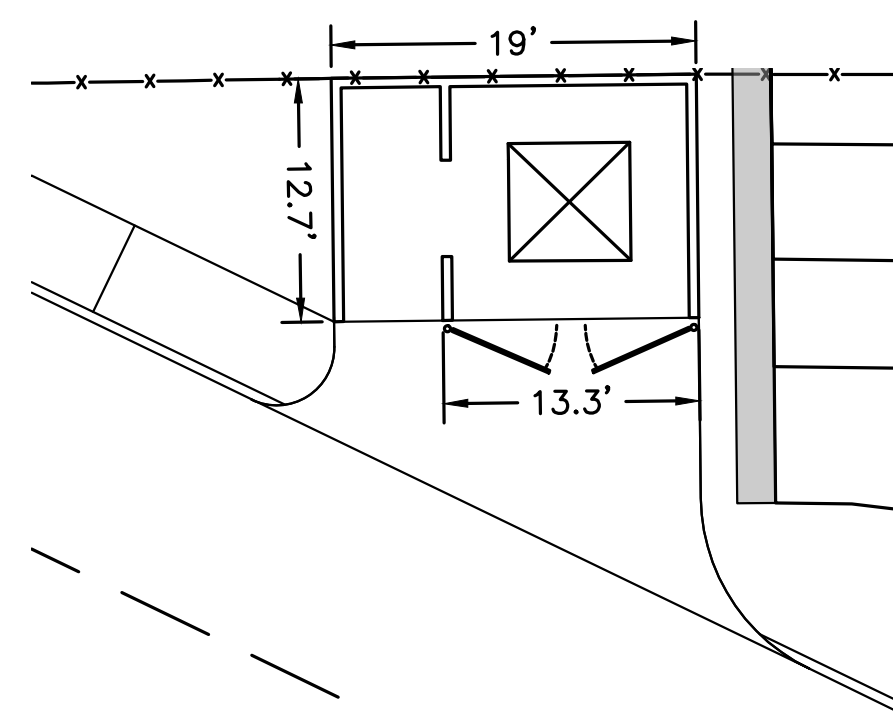
TYPICAL PARKING SPACE

SCALE: N.T.S.



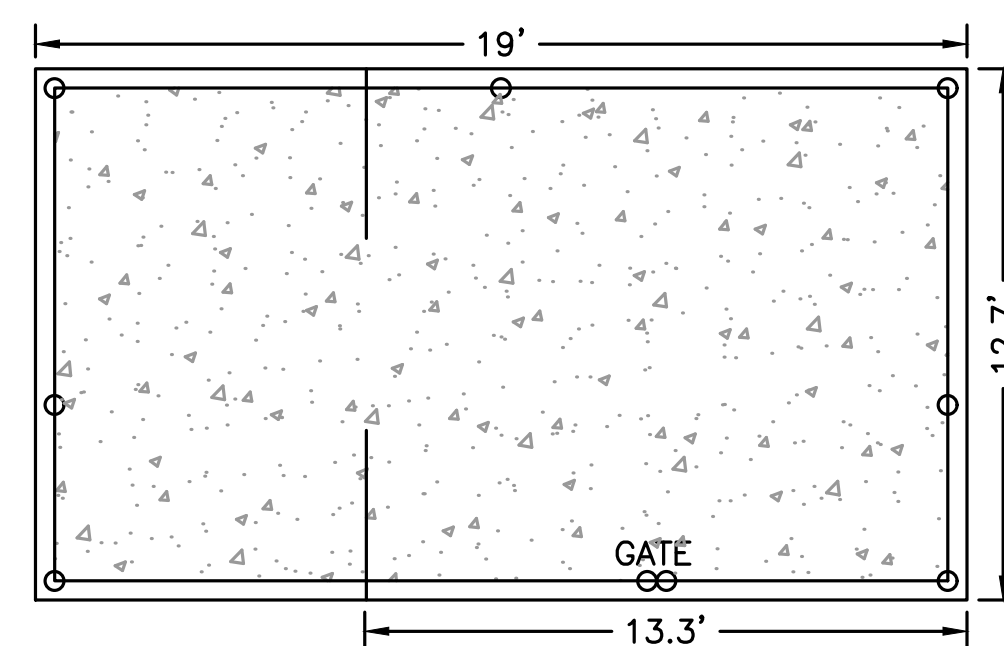
TYPICAL ELECTRIC VEHICLE PARKING SPACE

SCALE: N.T.S.



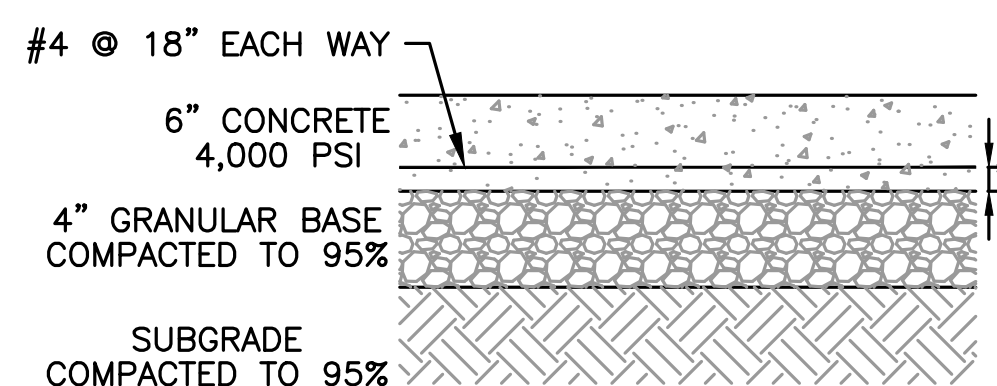
DOUBLE SIDED TRANSITION CURB

SCALE: N.T.S.



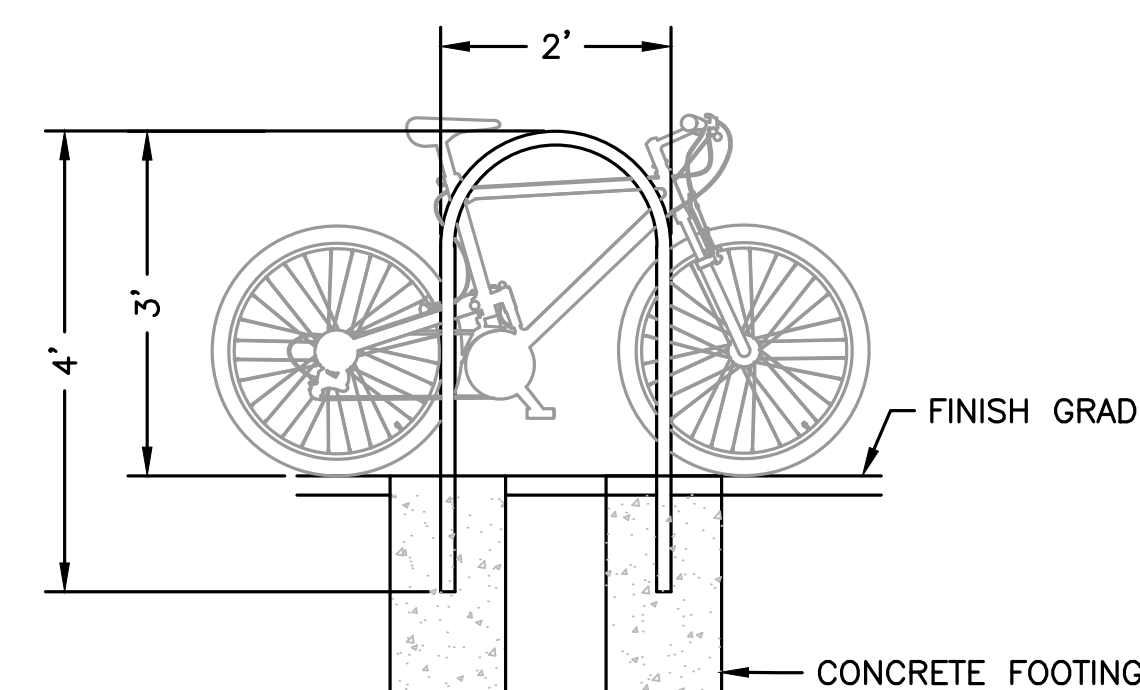
DUMPSTER PAD

SCALE: N.T.S.



INVERTED "U" BICYCLE RACK

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

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



SITE
PLAN

PAVEMENT & CURBING
DETAILS
(DETAIL SHEET
2 OF 27)

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

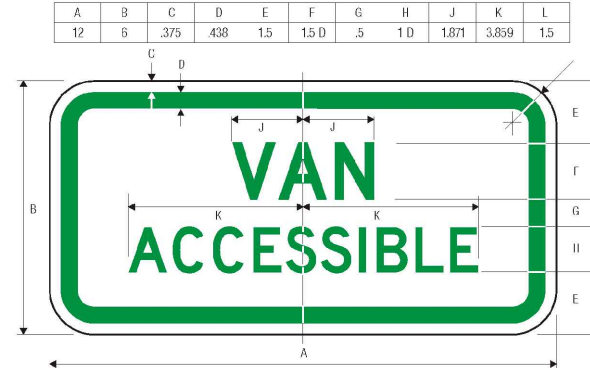
C.40

SHEET 40 OF 65

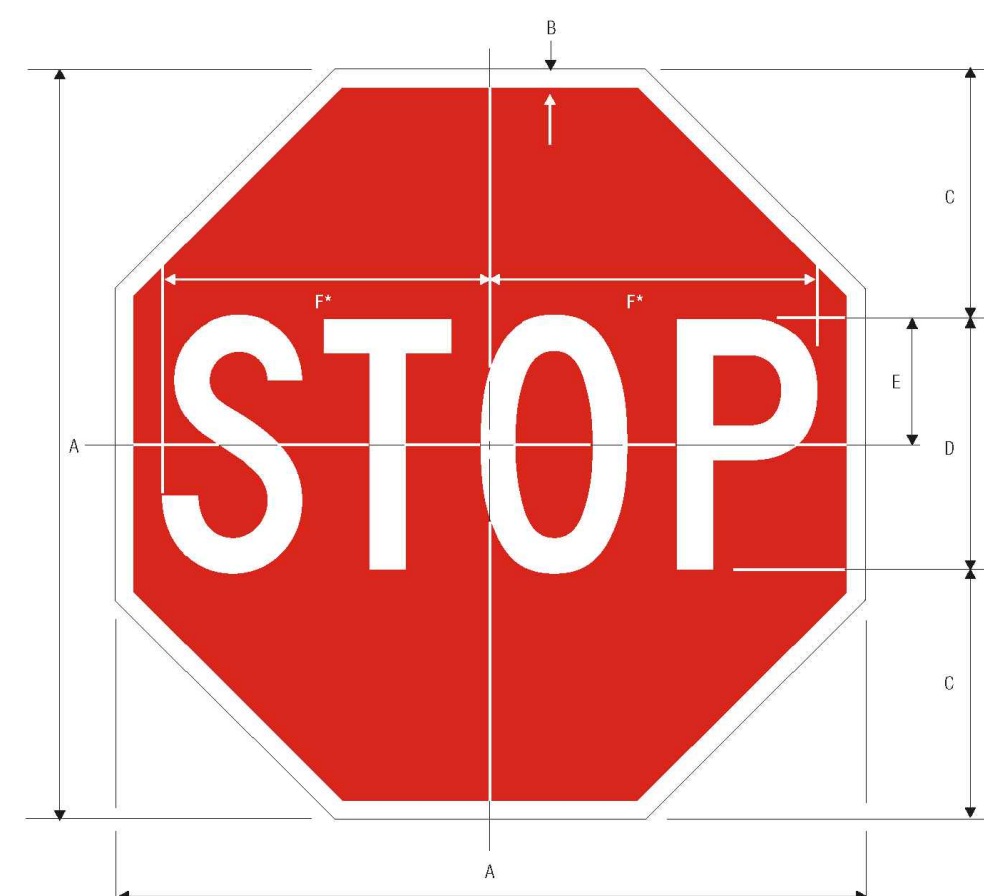
8/31/2023 L:\19097\19097_04 - Lot 2\CURRENT\19097 - Details.dwg
Plot Saved by: M.BAKER
Printed by: Matthew Baker



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



HANDICAP & VAN ACCESSIBLE SIGN
SCALE: N.T.S

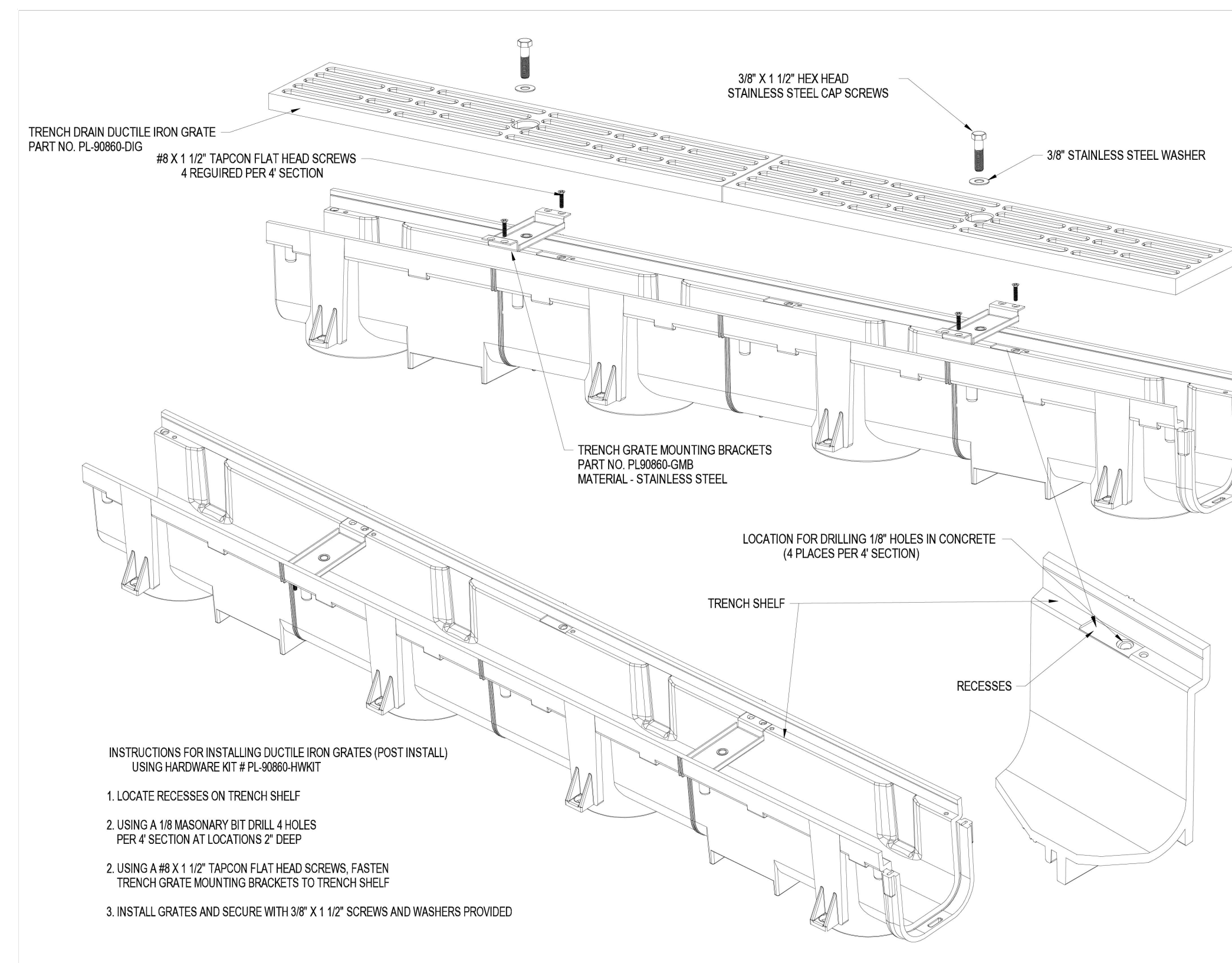


R1-1 STOP *Reduce spacing 40%

A	B	C	D	E	F
18	3.75	6	6.0	3	7.75
24	6.25	8	8.0	4	10
30	7.5	10	10.0	5	12.5
36	8.75	12	12.0	6	15
48	12.5	16	16.0	8	20

COLORS: LEGEND - WHITE (RETROREFLECTIVE), BACKGROUND - RED (RETROREFLECTIVE)
1-1

STOP SIGN
SCALE: N.T.S



INSTRUCTIONS FOR INSTALLING DUCTILE IRON GRATES (POST INSTALL) USING HARDWARE KIT # PL-90860-HWKIT
1. LOCATE RECESSES ON TRENCH SHELF
2. USING A #8 X 1 1/2" TAPCON FLAT HEAD SCREWS, FASTEN TRENCH GRATE MOUNTING BRACKETS TO TRENCH SHELF
3. INSTALL GRATES AND SECURE WITH 3/8" X 1 1/2" SCREWS AND WASHERS PROVIDED

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
1	PB	08/31/23	REV. PER PEER REVIEW



NO EVENT PARKING SIGN
SCALE: N.T.S

ACO DRAIN
Type 476D Longitudinal ductile iron grate (ADA)

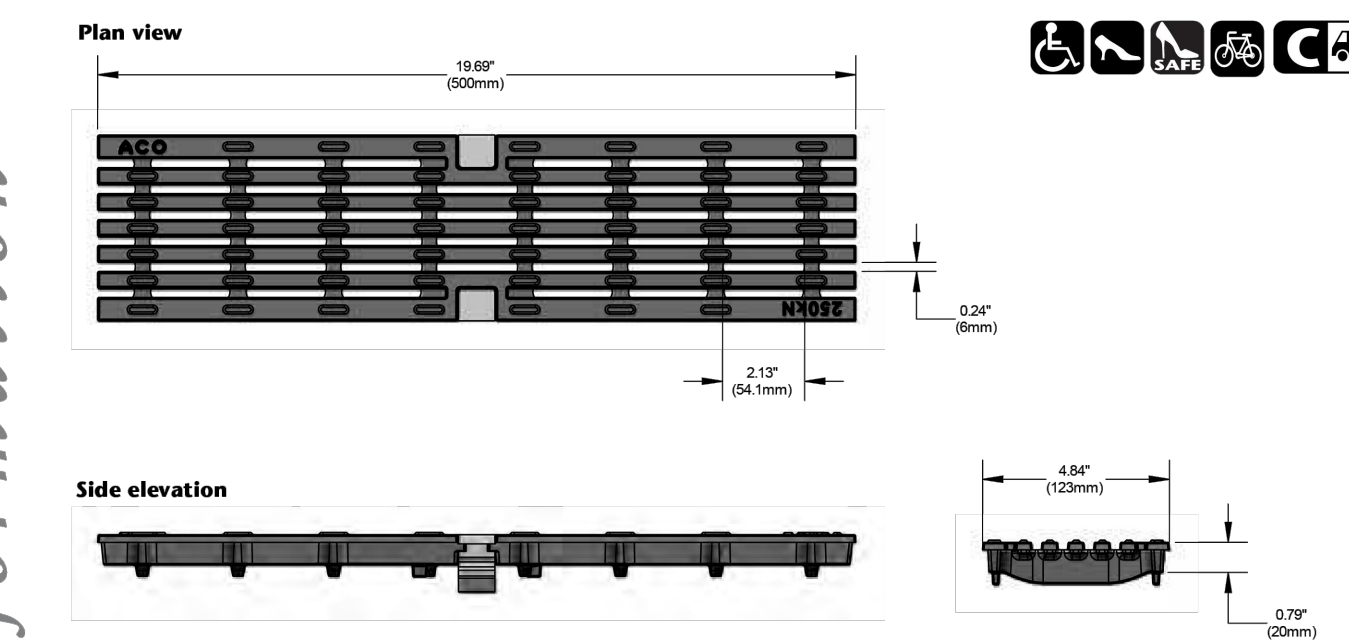
Product Features

- 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



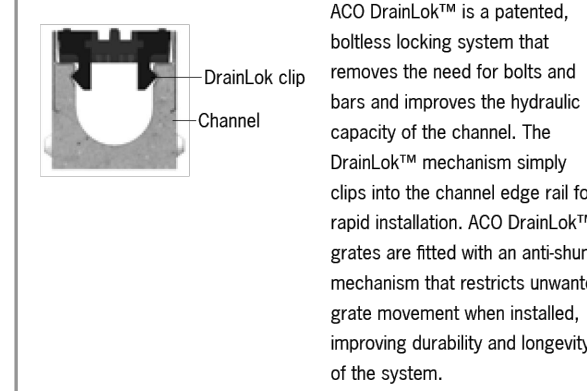
ACO Specification Information

ACO DRAIN
Type 476D Longitudinal ductile iron grate (ADA)



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



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.

April 2018

www.ACODrain.us



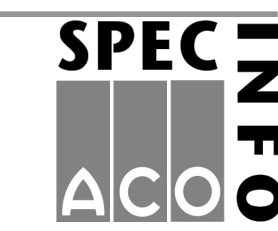
ACO, Inc.
Northeast Sales Office
9470 Pincone Drive
Mentor, OH 44060
Tel: (440) 639-7230
Toll Free: (800) 343-4764
Fax: (440) 639-7235

West Sales Office
529 W. Beacrest St.
Casa Grande, AZ 85122
Tel: (520) 421-9980
Toll Free: (888) 690-9552
Fax: (520) 421-9999

Southeast Sales Office
4211 Pleasant Road
Fort Mill, SC 29708
Tel: (803) 543-4764
Toll Free: (800) 803-1063
Fax: (803) 543-4764

Follow us on
Facebook, LinkedIn, Twitter, YouTube

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



April 2018
www.ACODrain.us

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

TRENCH DRAIN
SCALE: N.T.S

SITE PLAN

SIGNS AND TRENCH
DRAINS
(DETAIL SHEET
3 OF 27)

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.41

SHEET 41 OF 65



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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

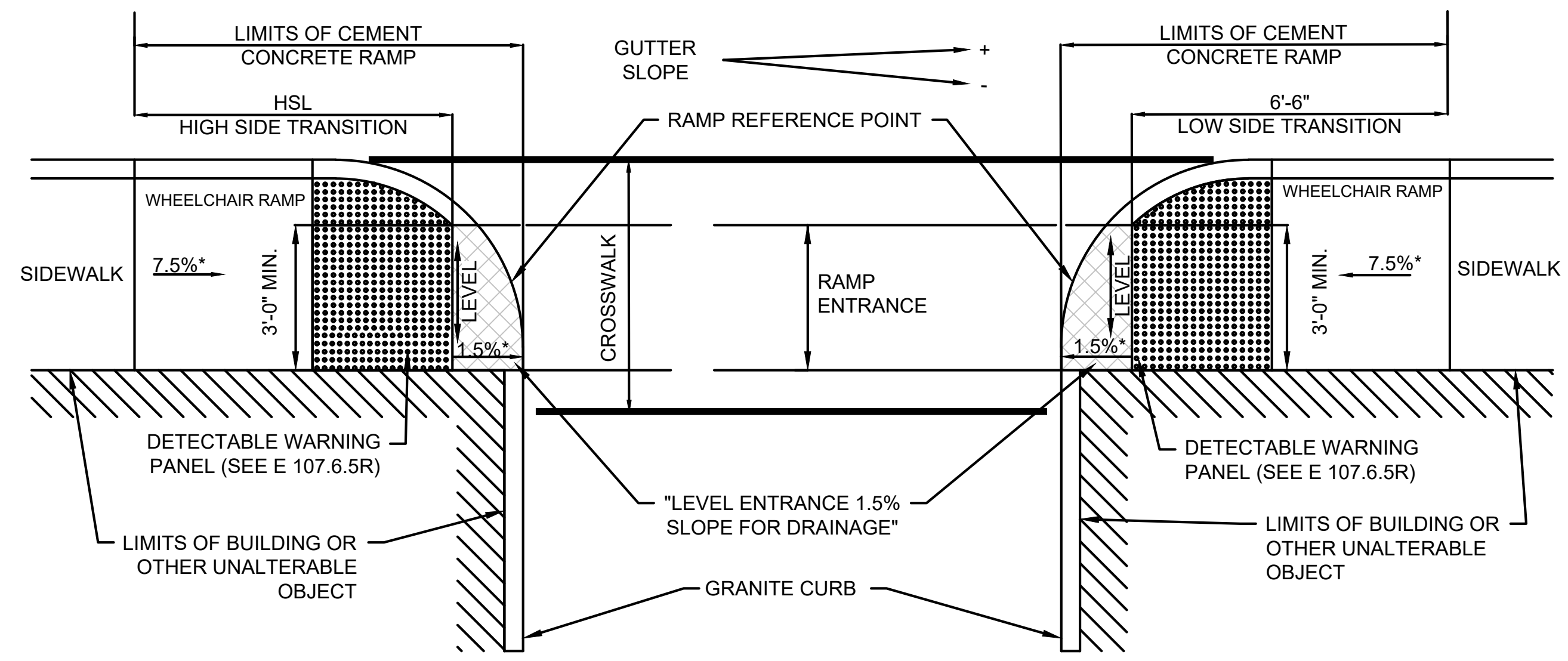
ACCESSIBLE CURB RAMP
 (DETAIL SHEET
 4 OF 27)

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

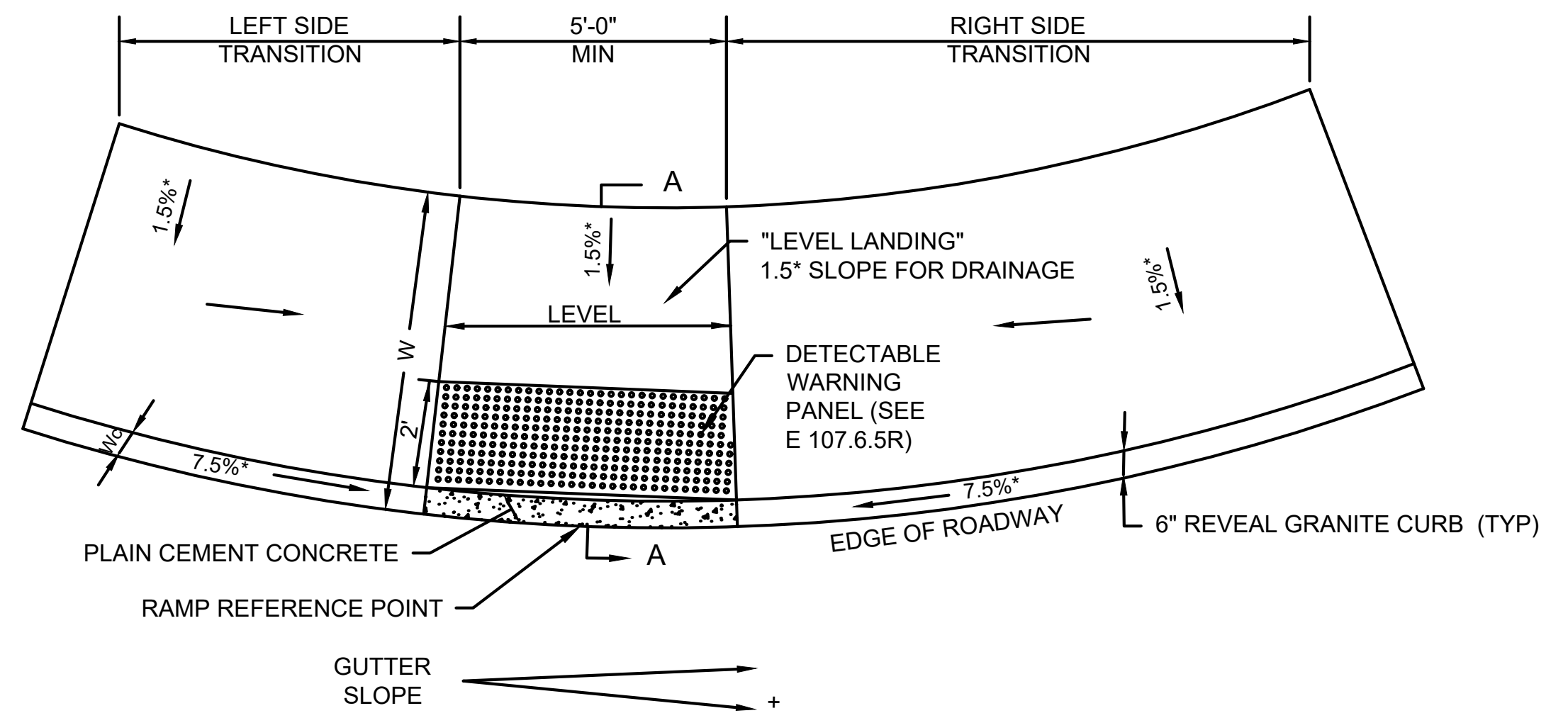
C.42
 SHEET 42 OF 65

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%

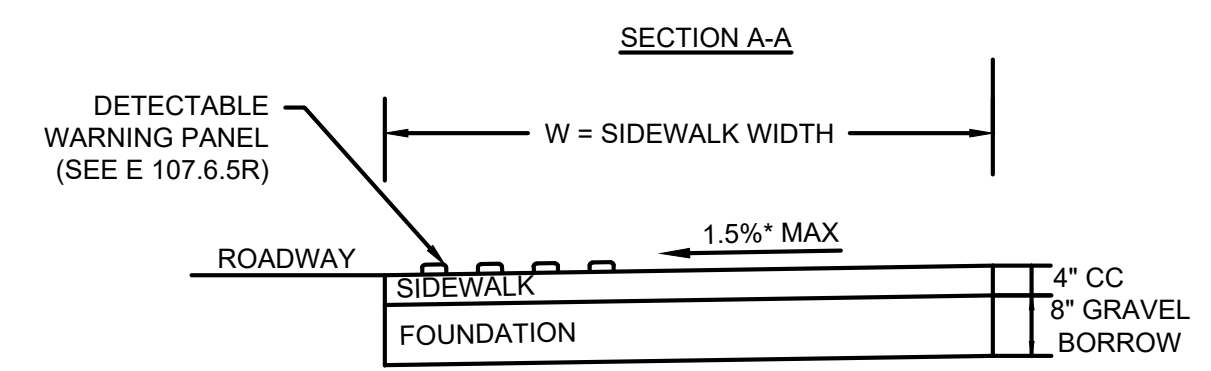


WHEELCHAIR RAMP FOR CONTINUOUS DIRECTION TRAVEL
 SCALE: N.T.S.

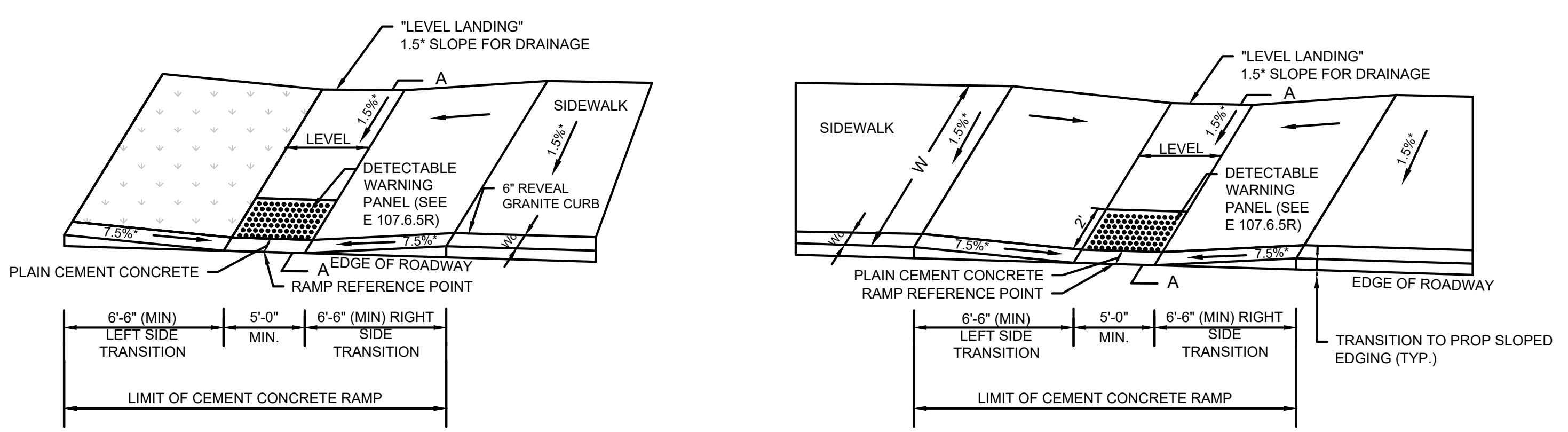


LEGEND:
 HSL = HIGH SIDE TRANSITION (SEE E 107.9.0)
 W = SIDEWALK WIDTH
 Wc = WIDTH OF CURB (6" TYP)
 CC = CEMENT CONCRETE
 * = TOLERANCE FOR CONSTRUCTION ±0.5%

USEABLE SIDEWALK WIDTH PER AAB = W-WC

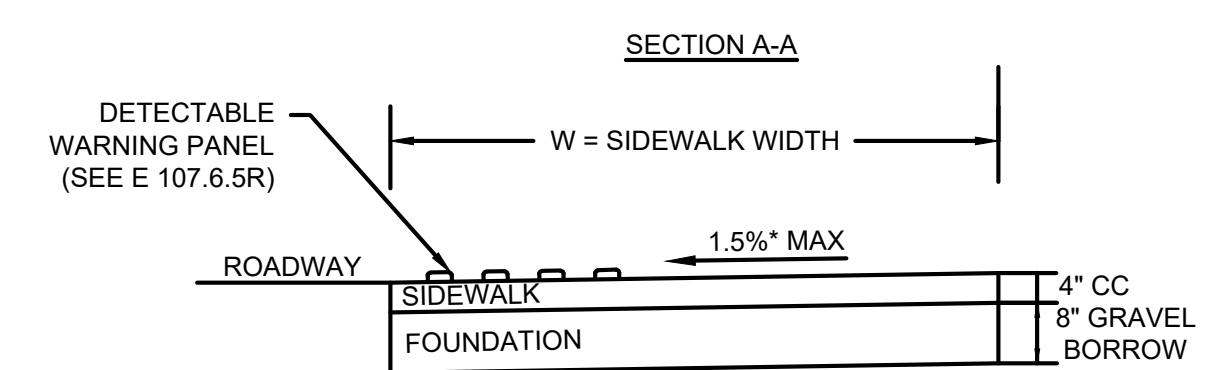


WHEELCHAIR RAMPS ON CURVED SIDEWALK
 SCALE: N.T.S.

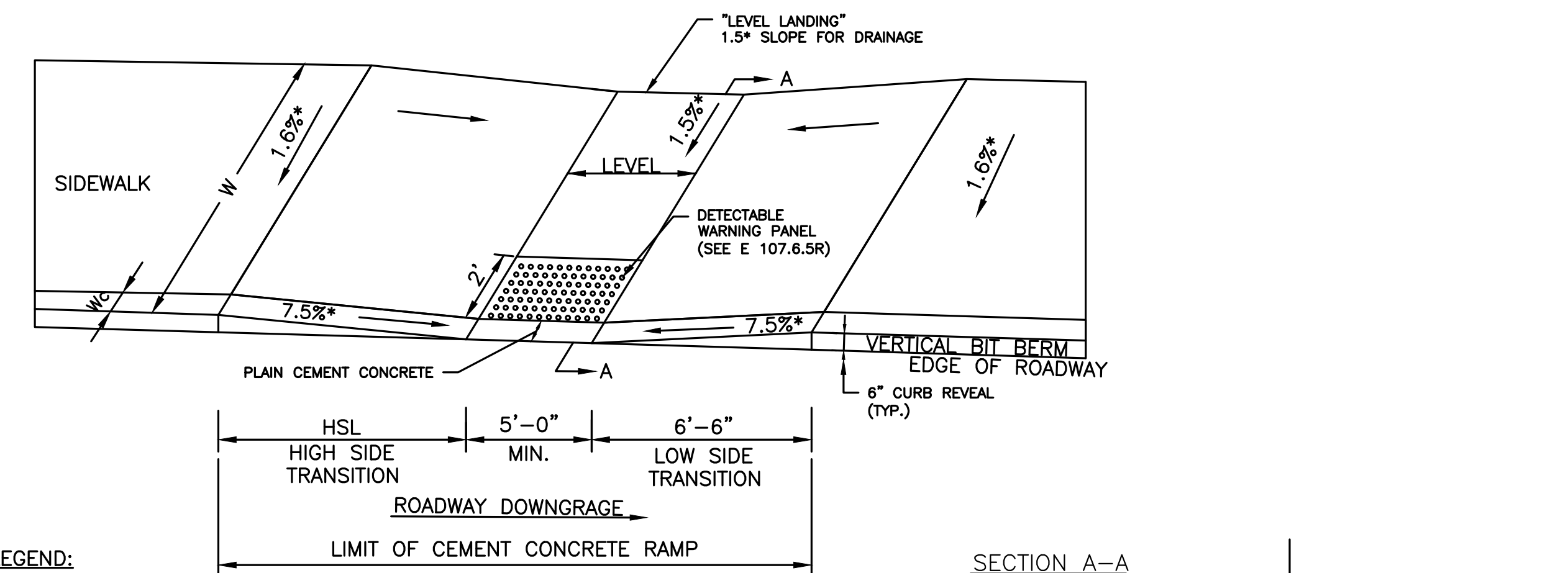


LEGEND:
 HSL = HIGH SIDE TRANSITION (SEE E 107.9.0)
 W = SIDEWALK WIDTH
 Wc = WIDTH OF CURB (6" TYP)
 CC = CEMENT CONCRETE
 * = TOLERANCE FOR CONSTRUCTION ±0.5%

USEABLE SIDEWALK WIDTH PER AAB = W-WC

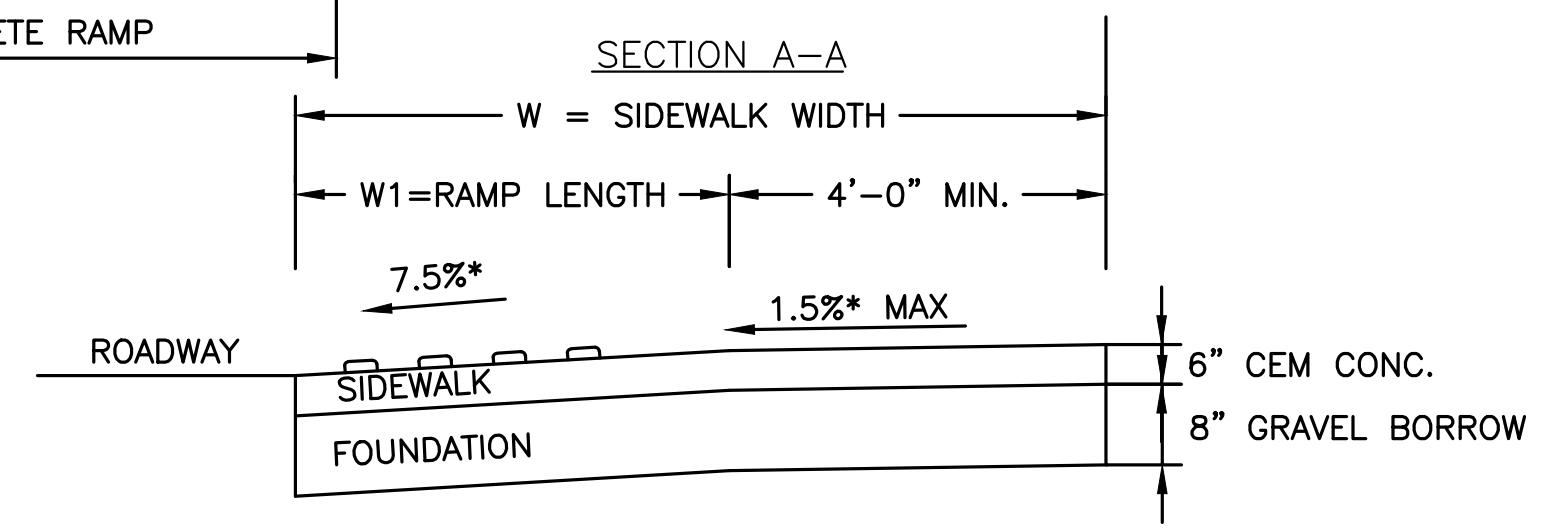


WHEELCHAIR RAMPS ON NARROW SIDEWALK
 SCALE: N.T.S.



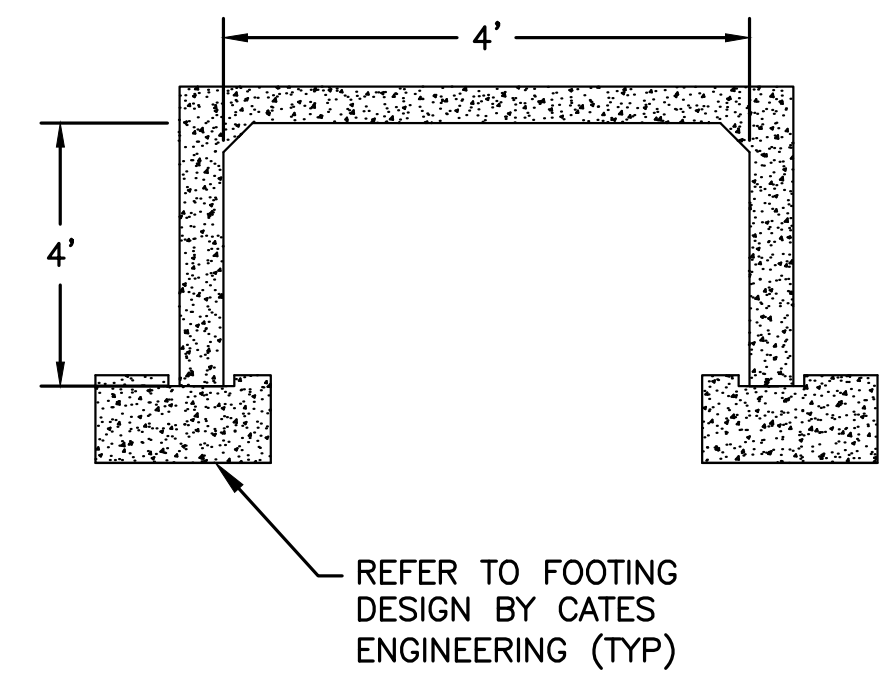
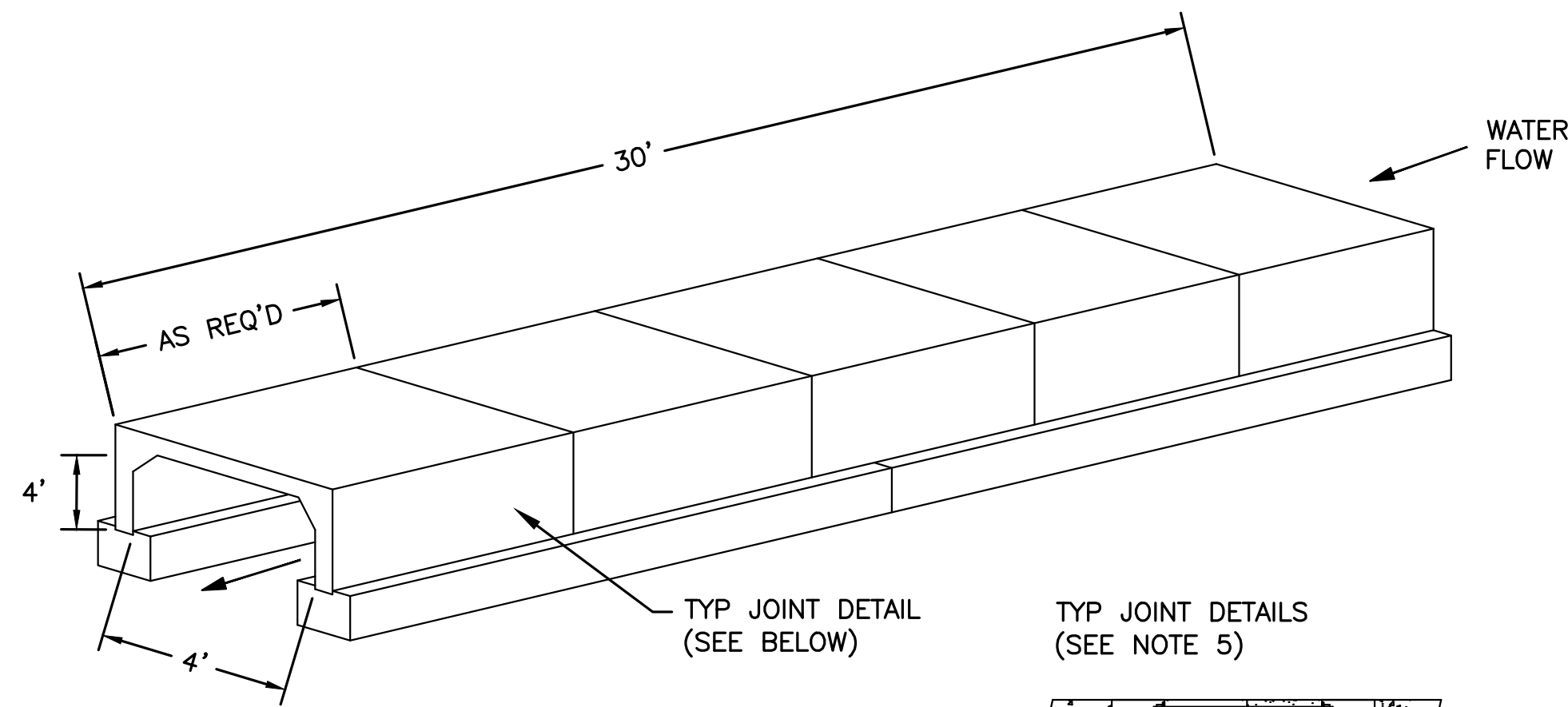
LEGEND:
 HSL = HIGH SIDE TRANSITION (SEE E 107.9.0R)
 W = SIDEWALK WIDTH
 Wc = CURB WIDTH
 W1 = PERPENDICULAR RAMP LENGTH
 CC = CEMENT CONCRETE
 * = TOLERANCE FOR CONSTRUCTION ±0.5%

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



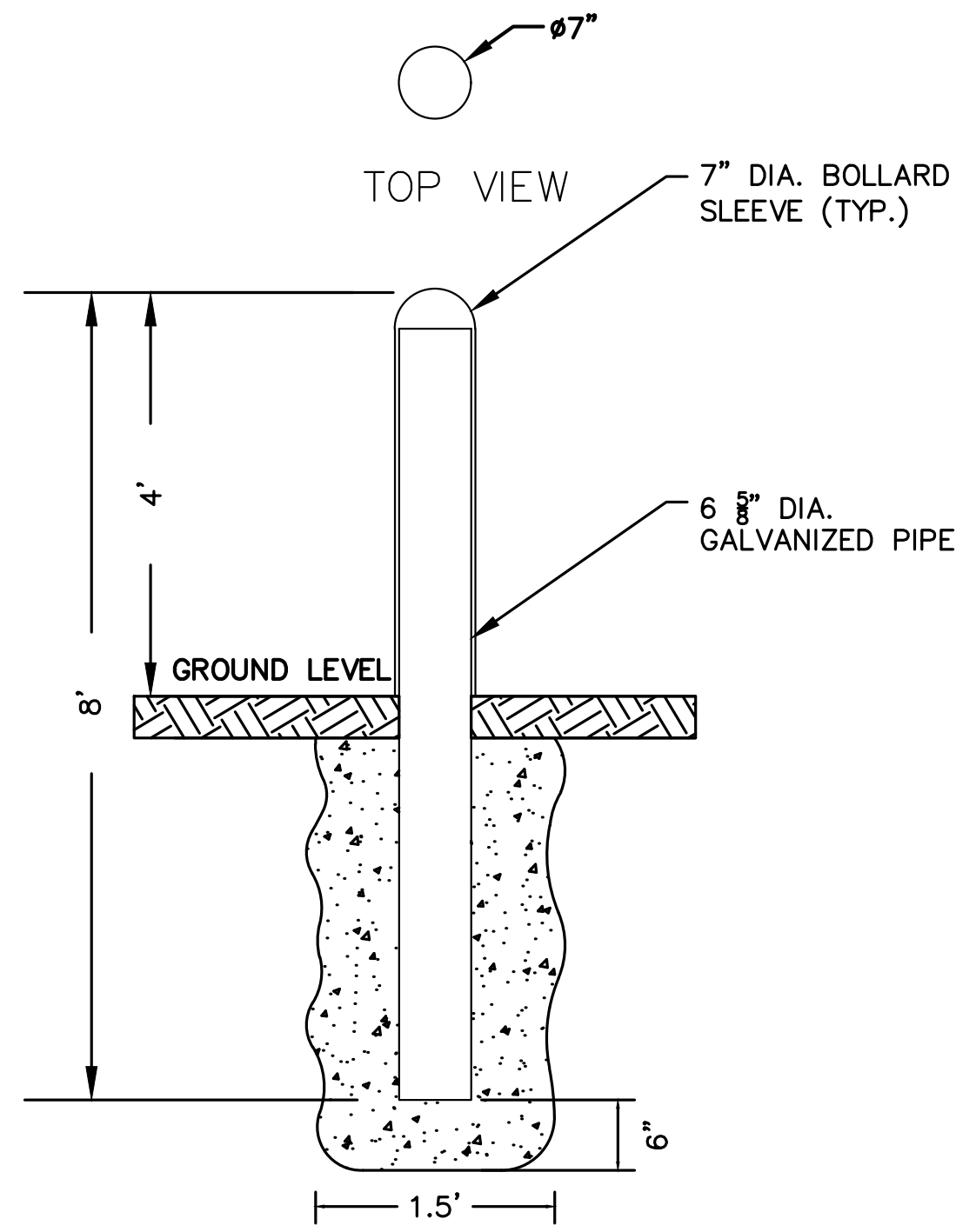
WHEELCHAIR RAMPS ON NARROW SIDEWALK
 SCALE: N.T.S.

8/31/2023 L:\19097\19097 04 - Lot 2\CURRENT\19097 - Details.dwg
 last saved by: MB/KF/KL
 printed by: Matthew Baker



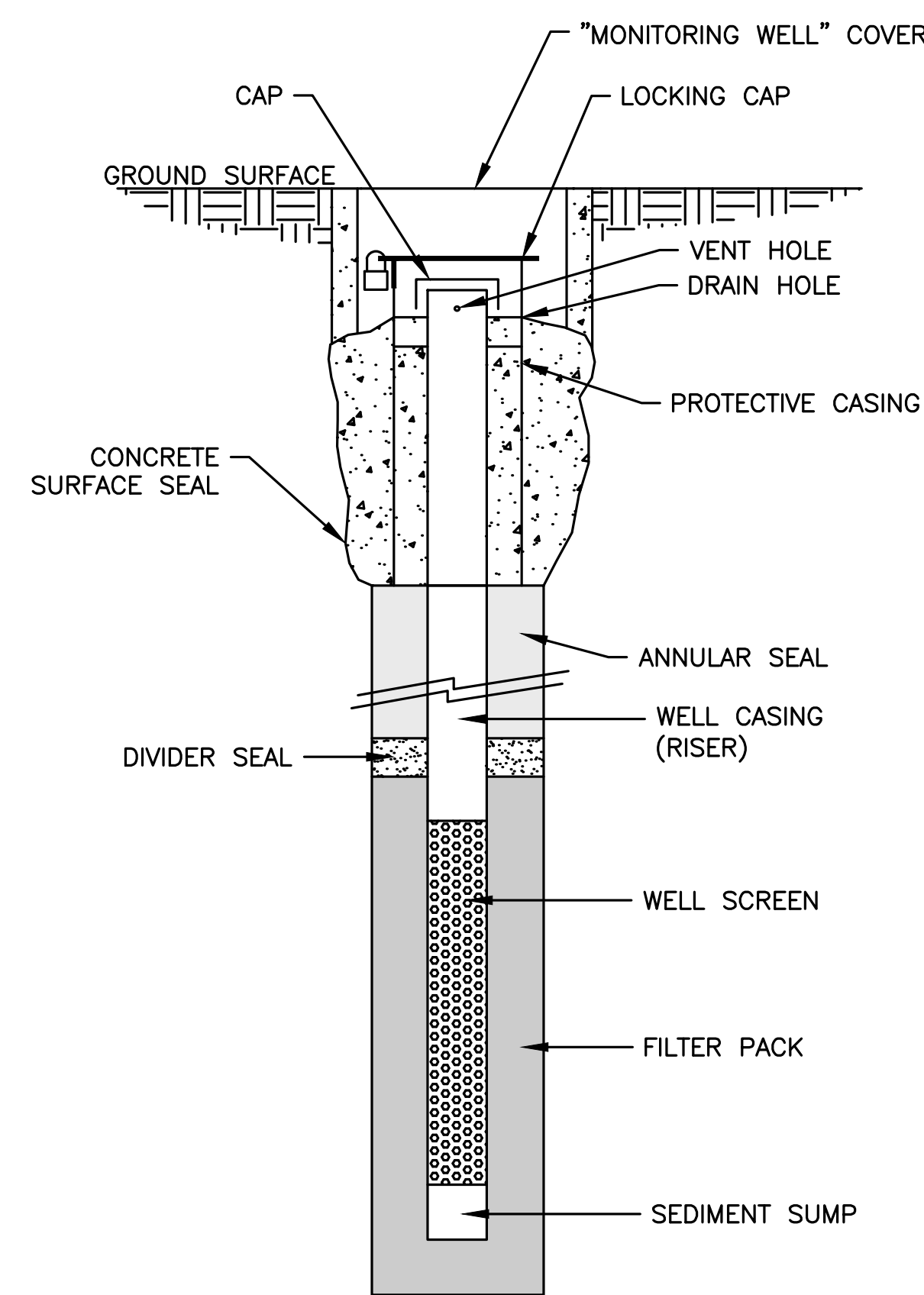
- NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
 2. DESIGN PER ASTM C1504 SPECIFICATION FOR 3-SIDED CULVERT.
 3. ALL REINFORCEMENT PER ASTM A615.
 4. DESIGNED AASHTO HS-20 LOADING OR AS REQUIRED.
 5. TONGUE AND GROOVE JOINT SEALED WITH BUTYL WRAP.
 6. ~~PRECAST FOOTINGS, OPTIONAL~~
 7. EXCAVATE, ROUGH GRADE, BACKFILL AND COMPACT PER SPECIFICATIONS SECTION AND THE GEOTECHNICAL REPORT.

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

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

DRAINAGE STRUCTURES
(DETAIL SHEET
5 OF 27)

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

C.43

8/31/2023 L:\19097\19097_04 - Lot 2\CURRENT\19097 - Details.dwg
Plot Saved by: MBEKER
Printed by: Matthew Baker



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

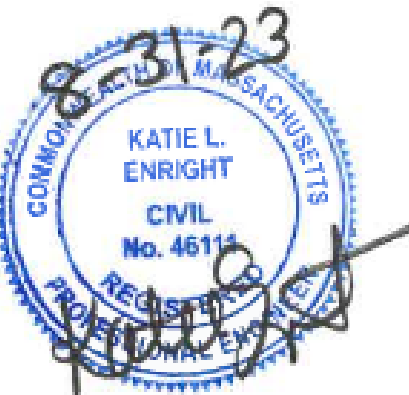
PREPARED FOR:

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE
PLAN

**DRAINAGE STRUCTURES
(DETAIL SHEET
6 OF 27)**

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

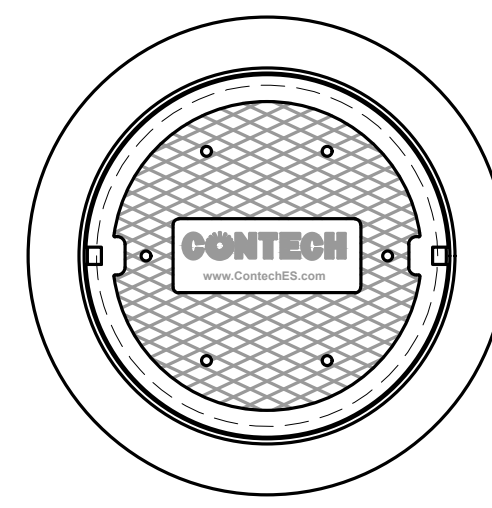
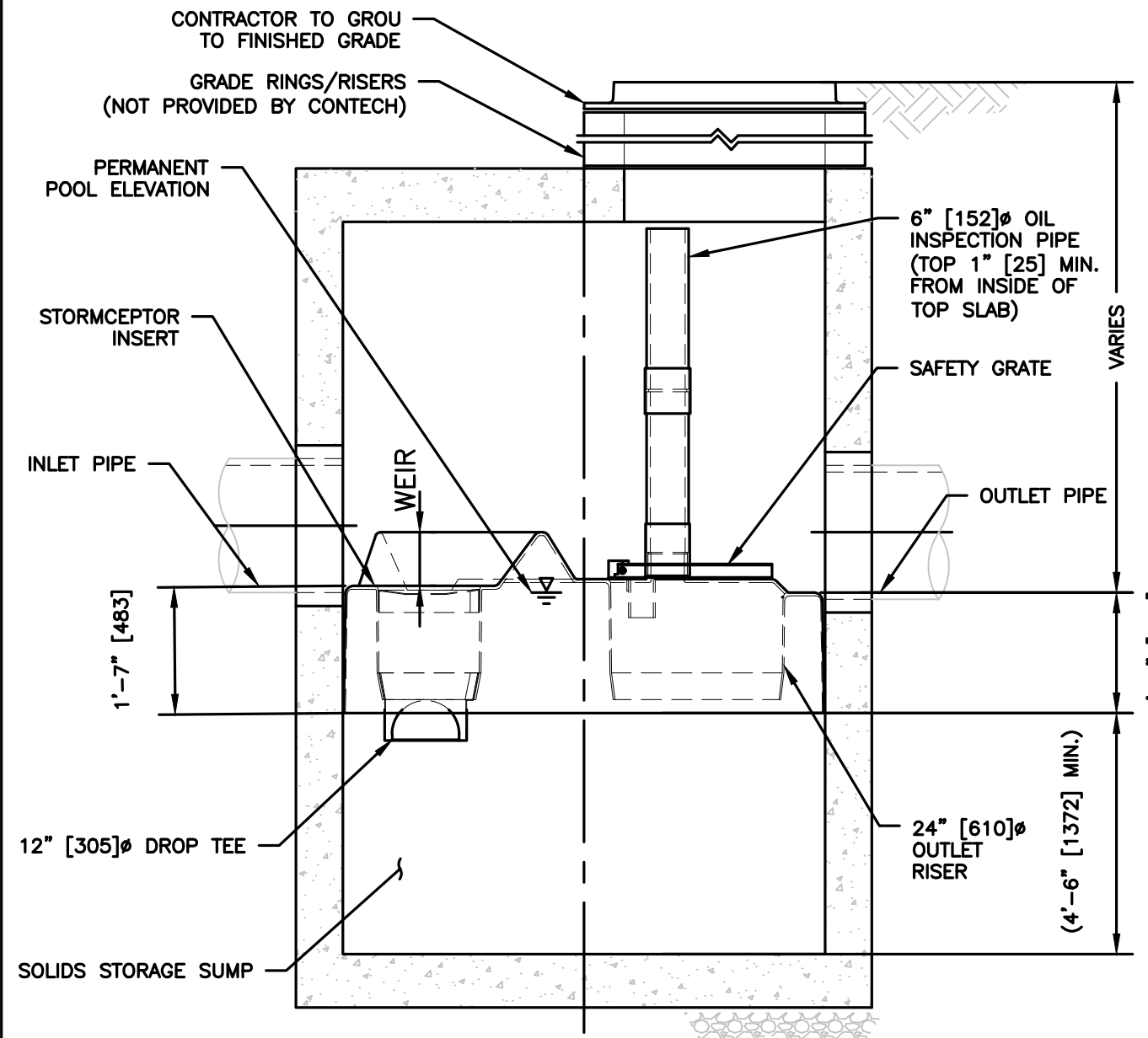
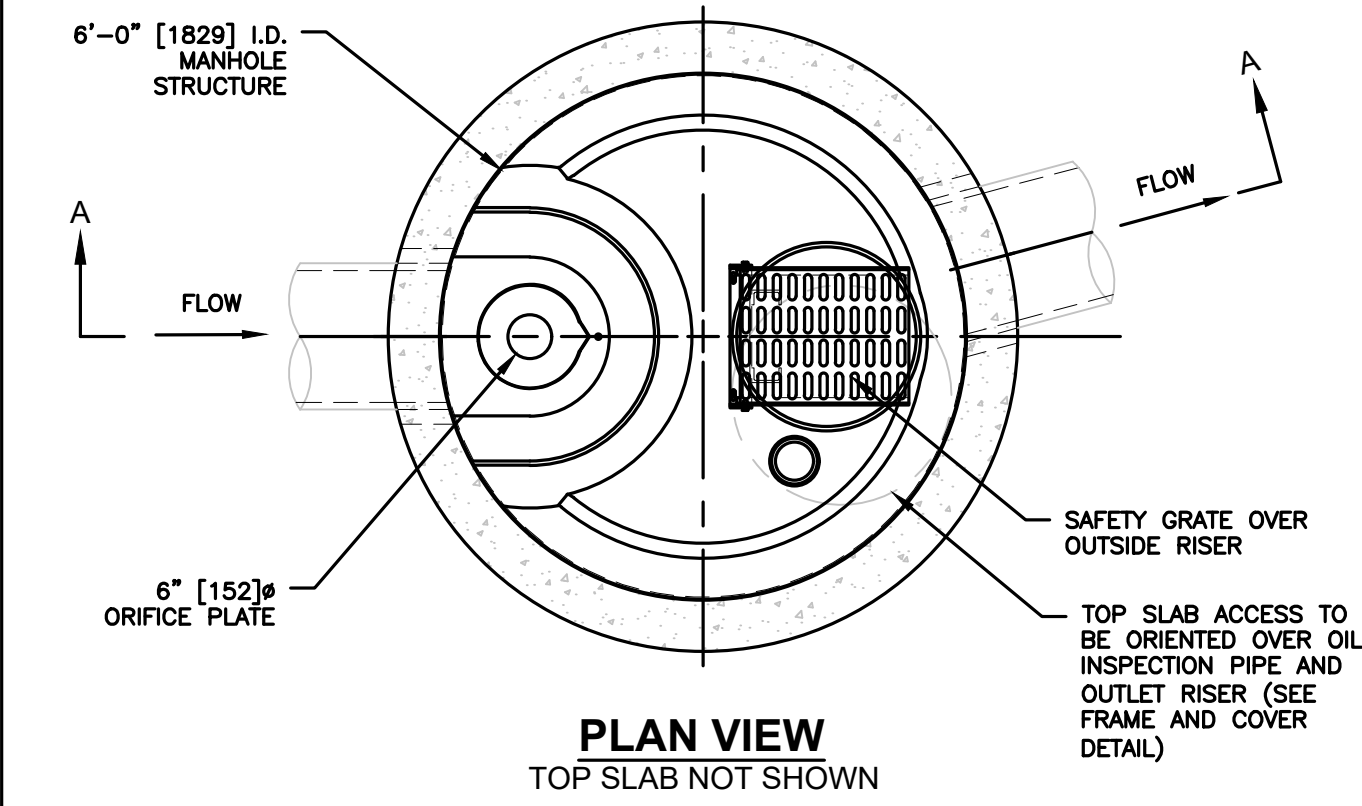
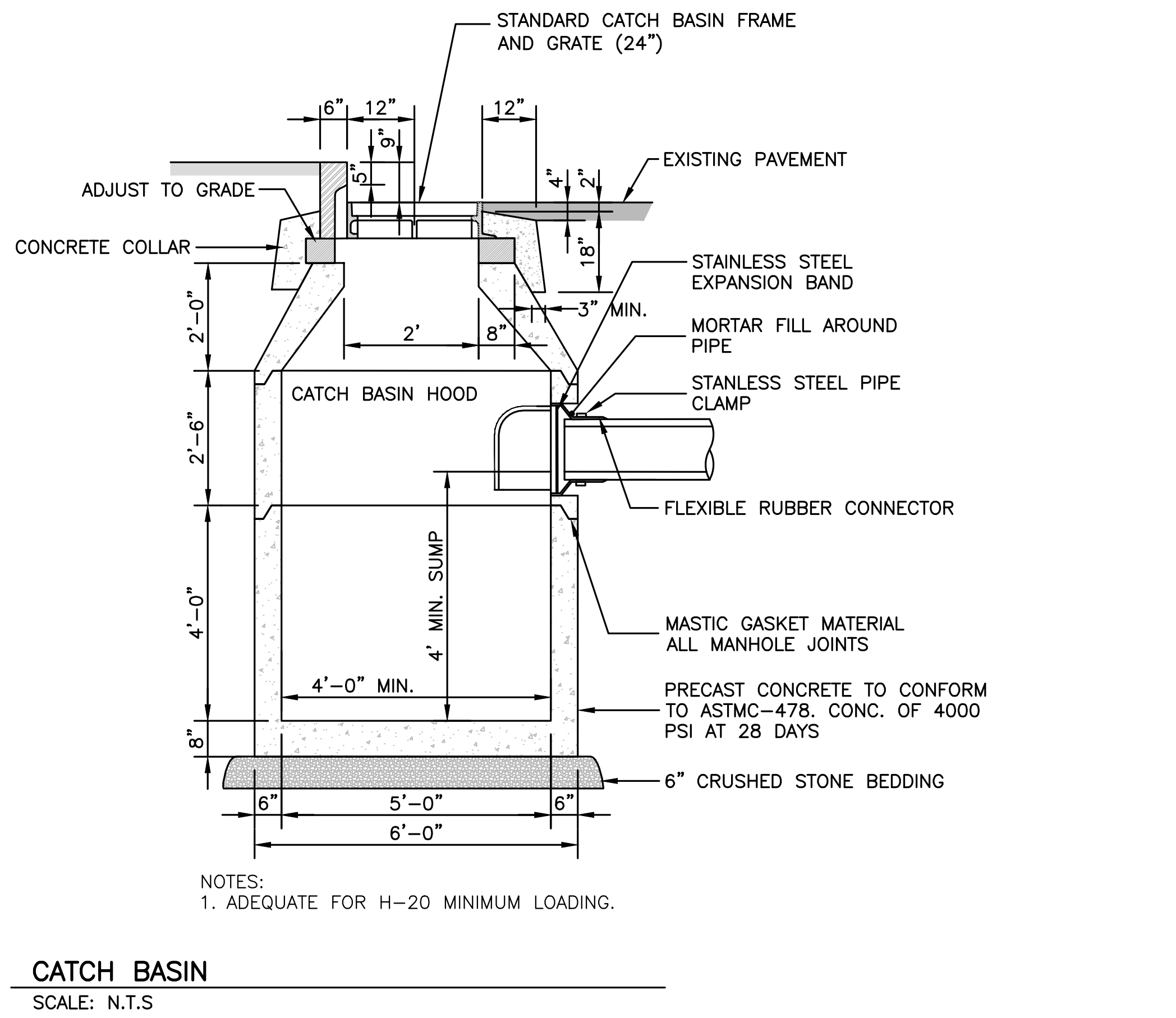
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.44

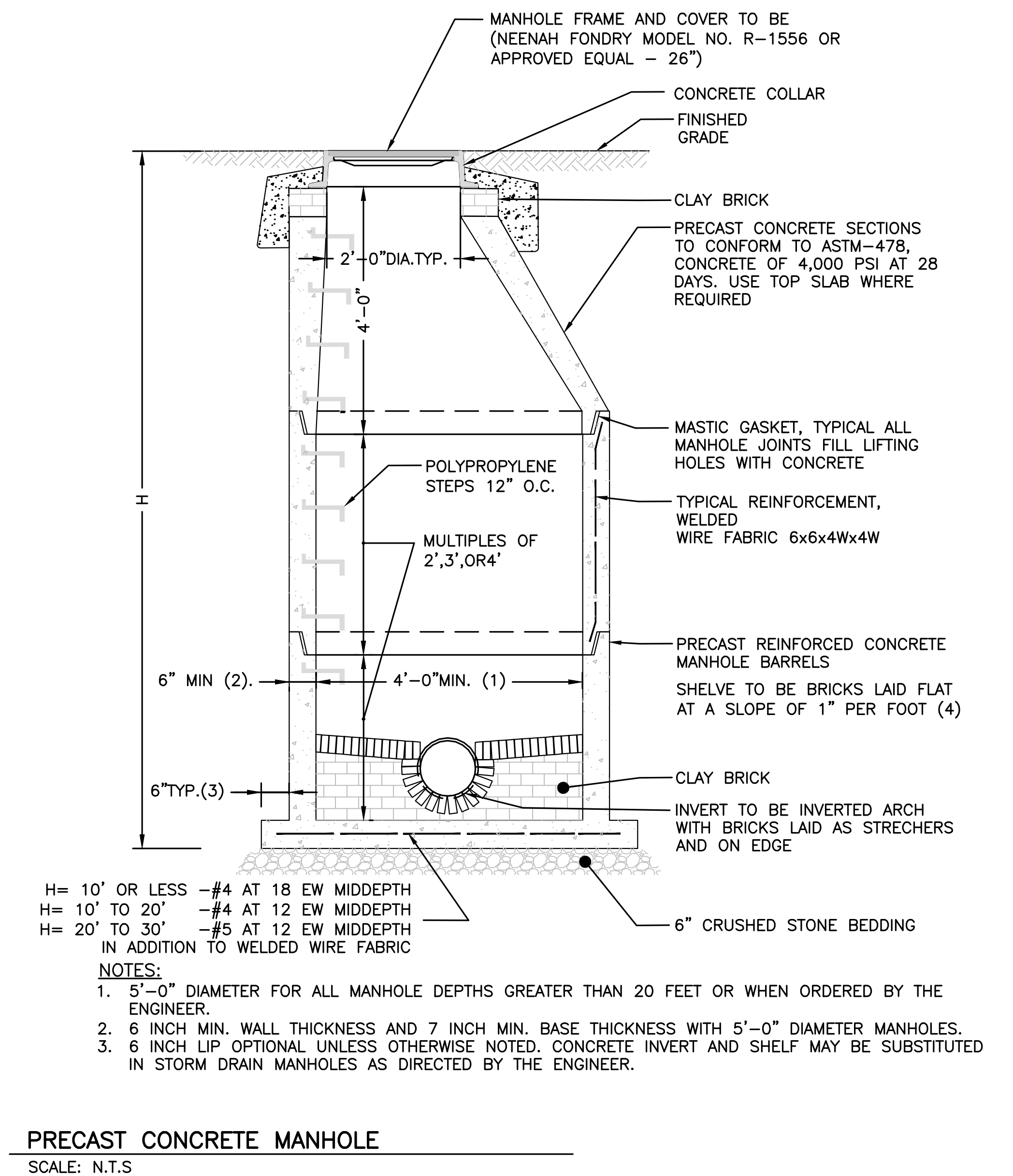
SHEET 44 OF 65



- GENERAL NOTES**
- CONTECH, OR APPROVED EQUAL, TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
 - 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.
 - 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.
 - STORMCEPTOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
 - ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

- INSTALLATION NOTES**
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMCEPTOR MANHOLE STRUCTURE.
 - CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
 - 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.
 - 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



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

8/31/2023 L:\19097\19097-04-LCA\20CURRENT\19097 - Details.dwg
Plot Saved by: MBANKER
Printed by: Matthew Baker



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
1	PB	08/31/23	REV. PER PEER REVIEW



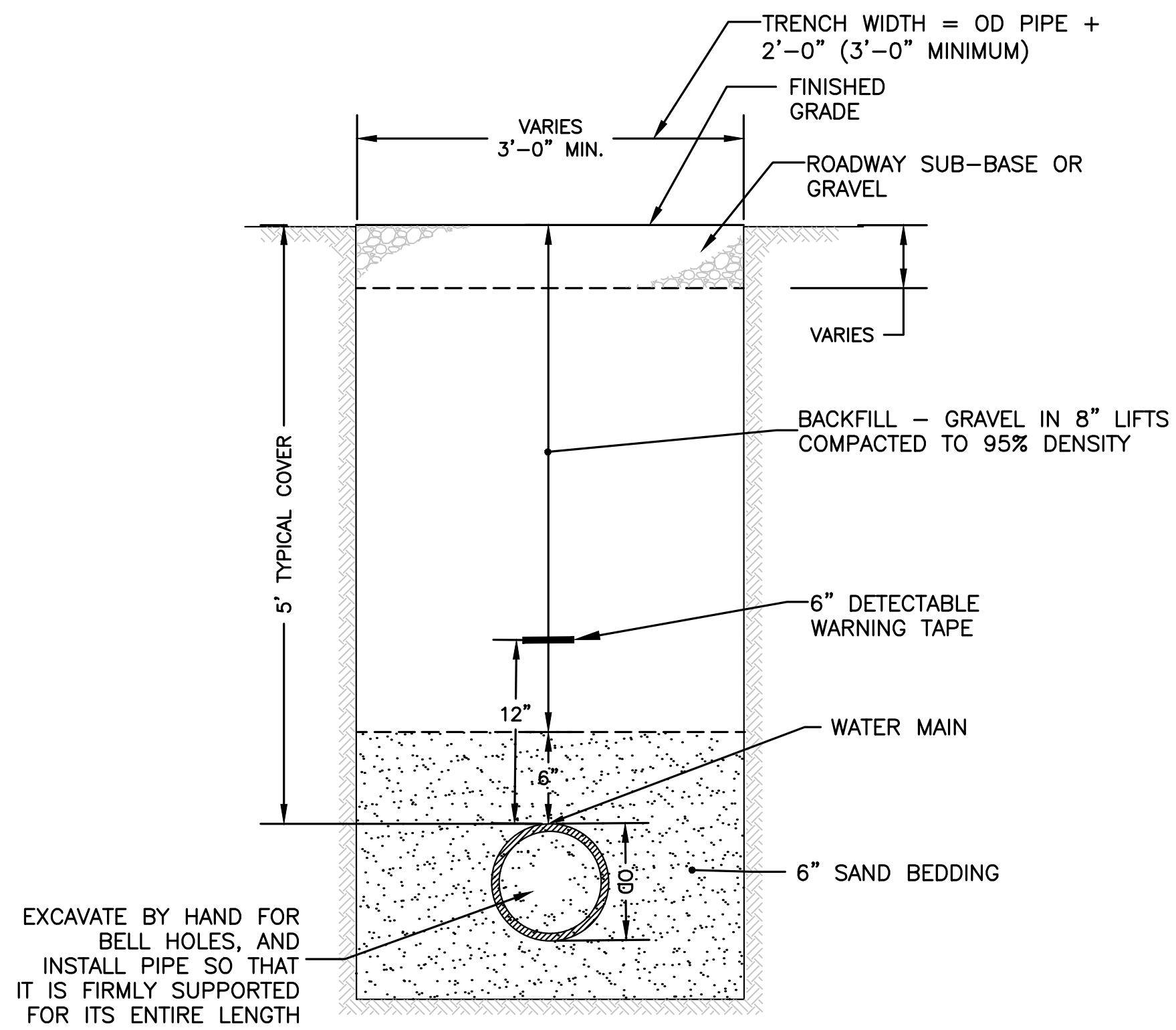
SITE
 PLAN

TRENCH DETAILS
 (DETAIL SHEET
 7 OF 27)

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

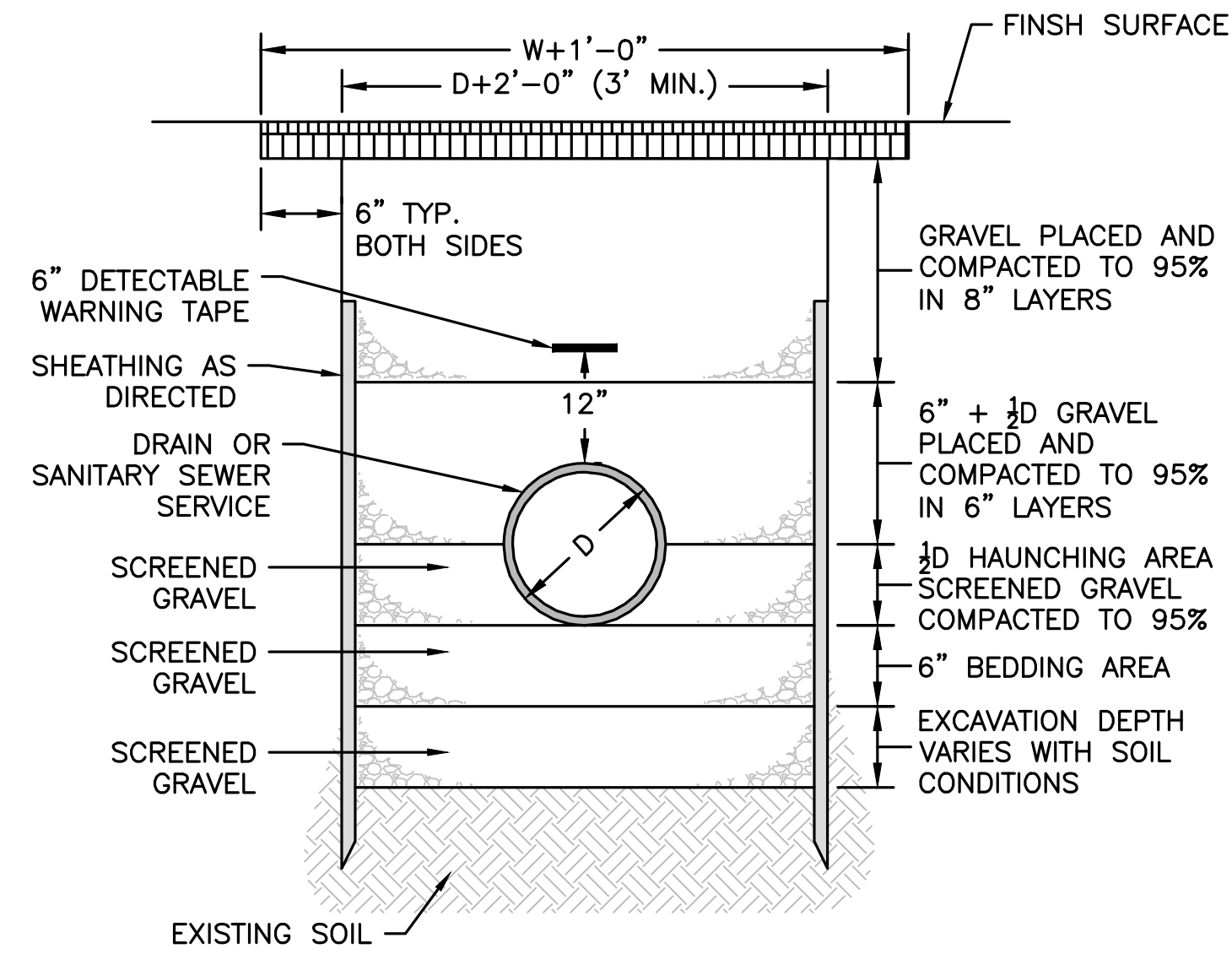
C.45

SHEET 45 OF 65



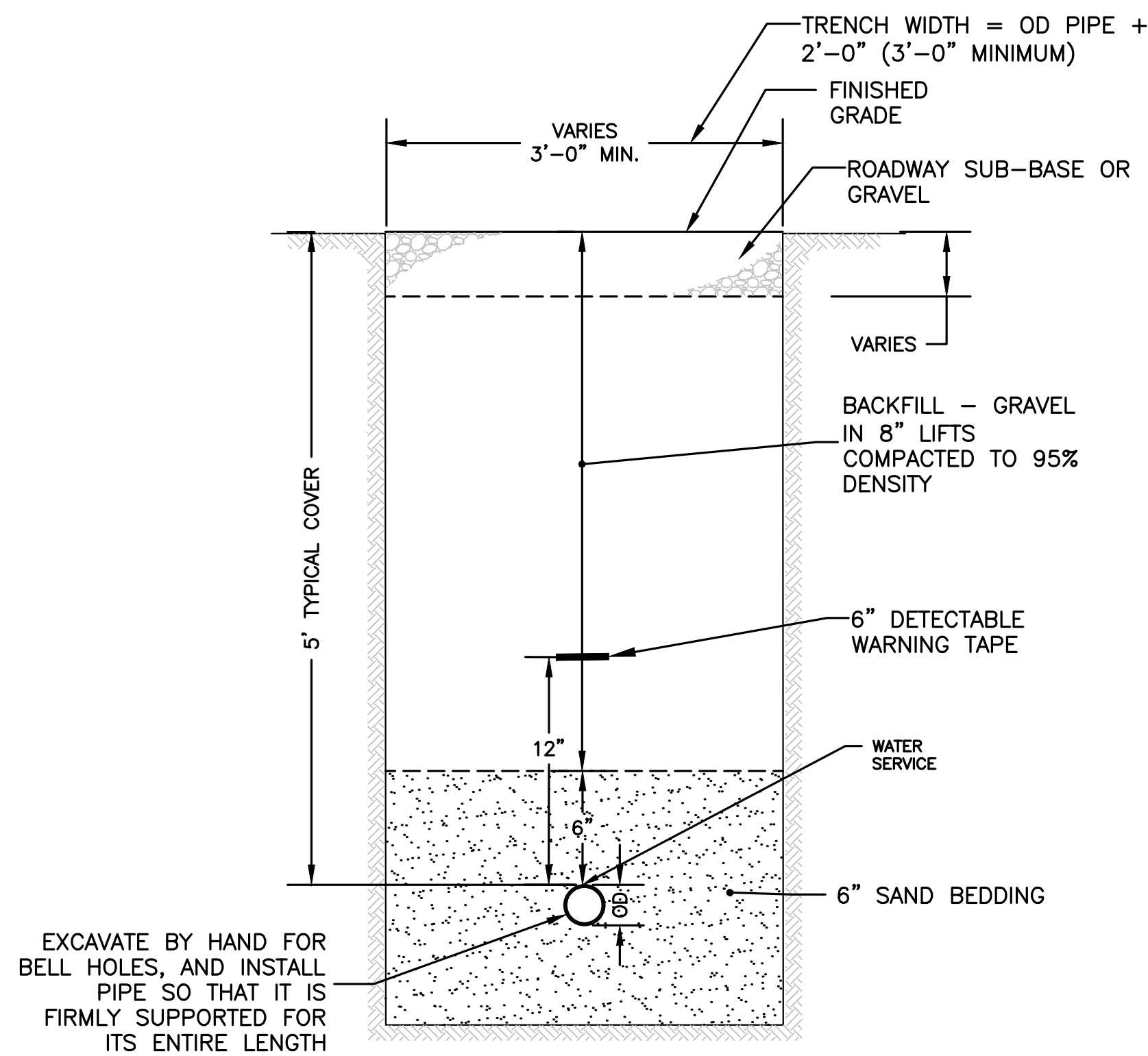
TRENCH DETAIL - WATER MAIN

SCALE: N.T.S



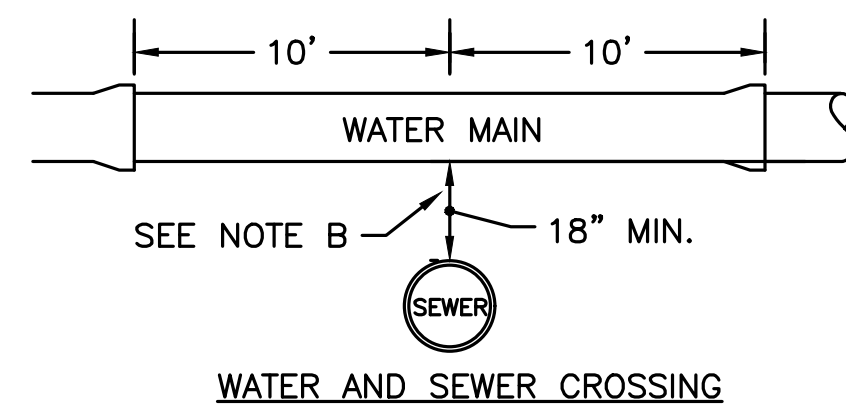
TRENCH DETAIL - DRAINAGE OR SANITARY SEWER SERVICE

SCALE: N.T.S

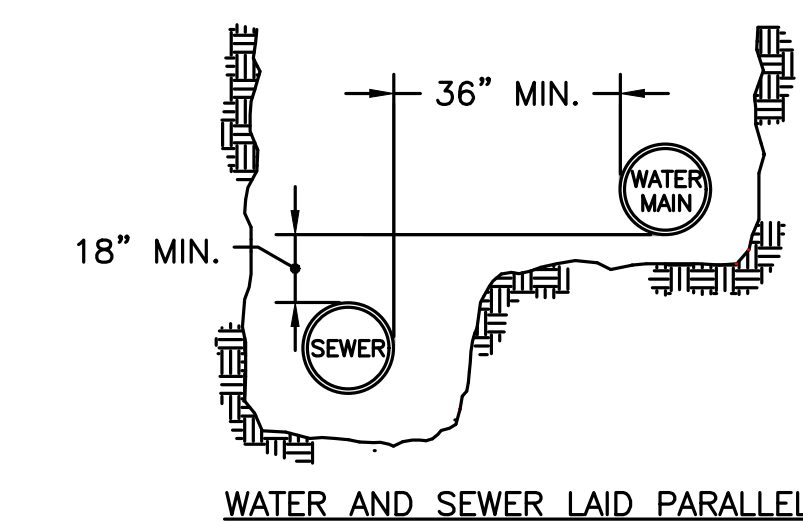


TRENCH DETAIL - WATER SERVICE

SCALE: N.T.S



WATER AND SEWER CROSSING

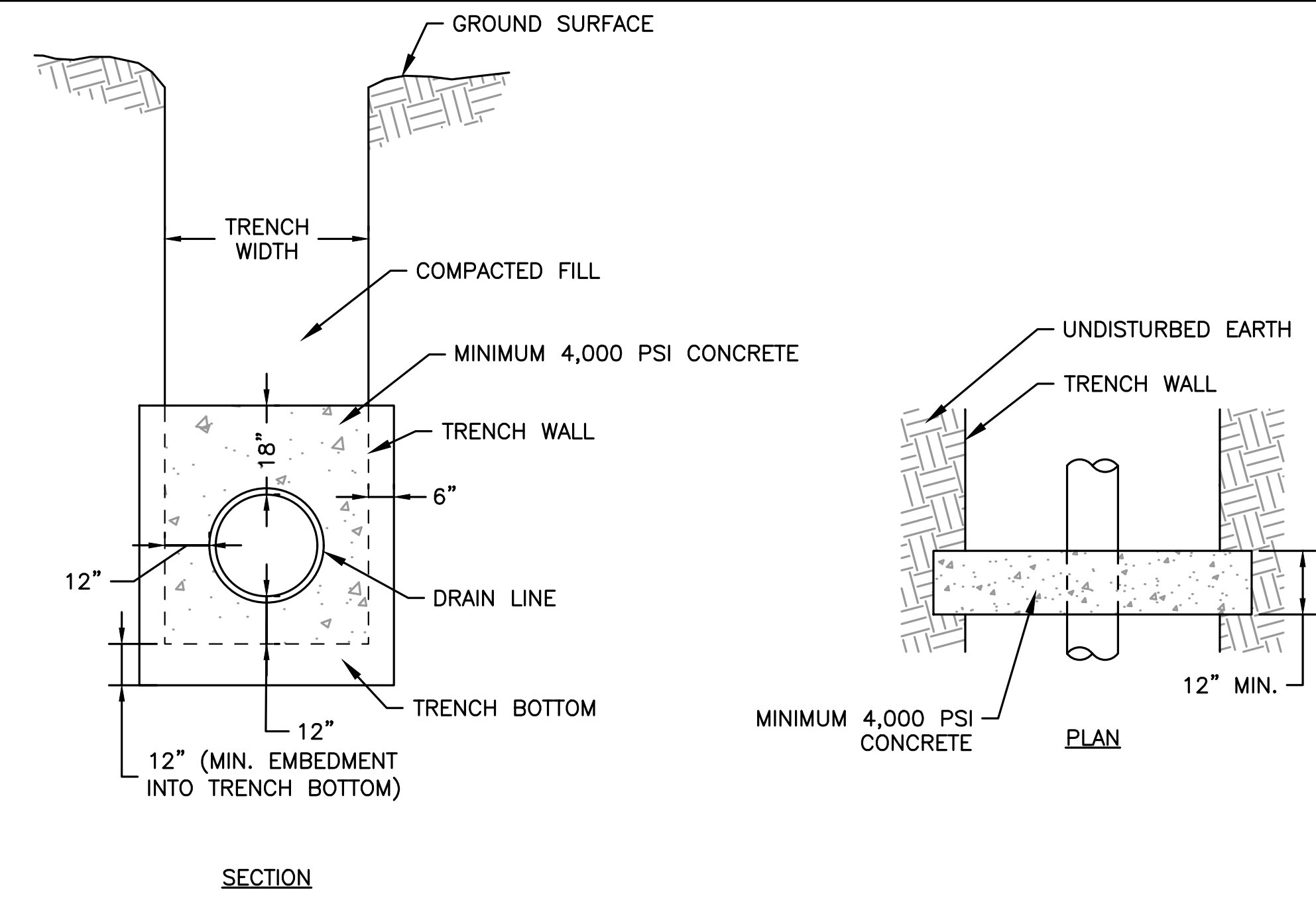


WATER AND SEWER LAID PARALLEL

SEWER/WATER SEPARATION & CROSSING

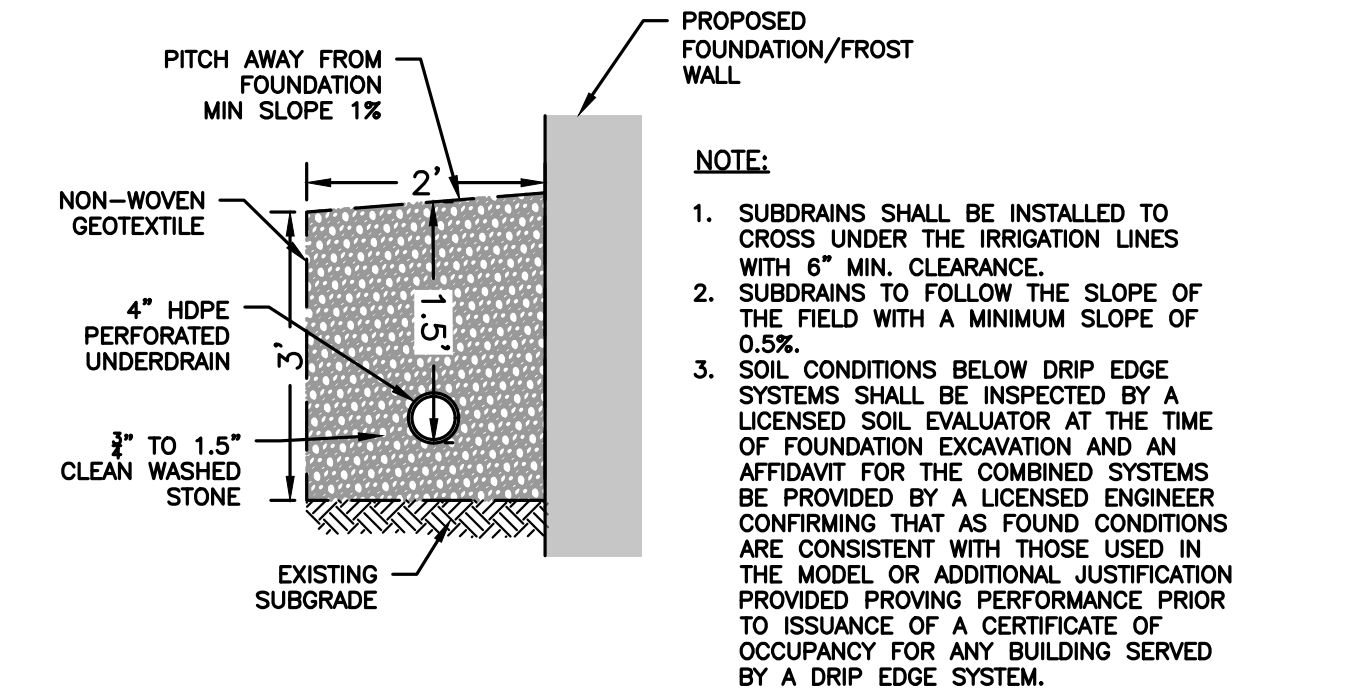
SCALE: N.T.S

- 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.
- 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.



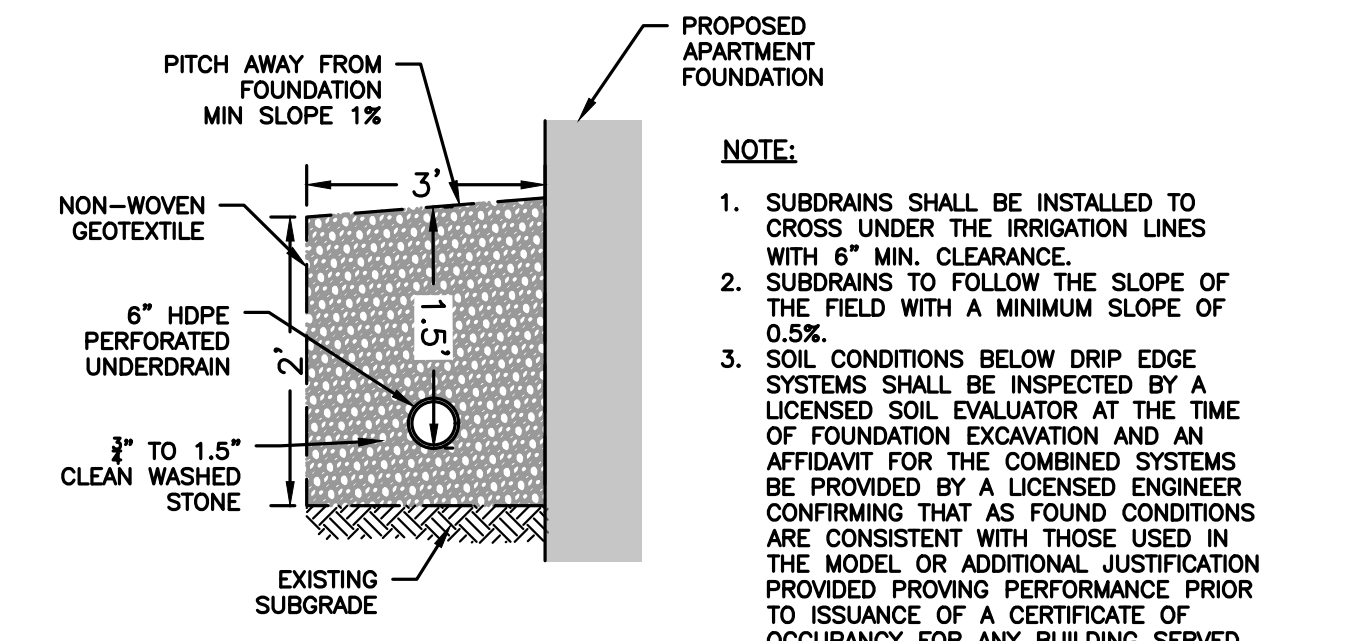
ANTI-SEEP COLLAR

SCALE: N.T.S



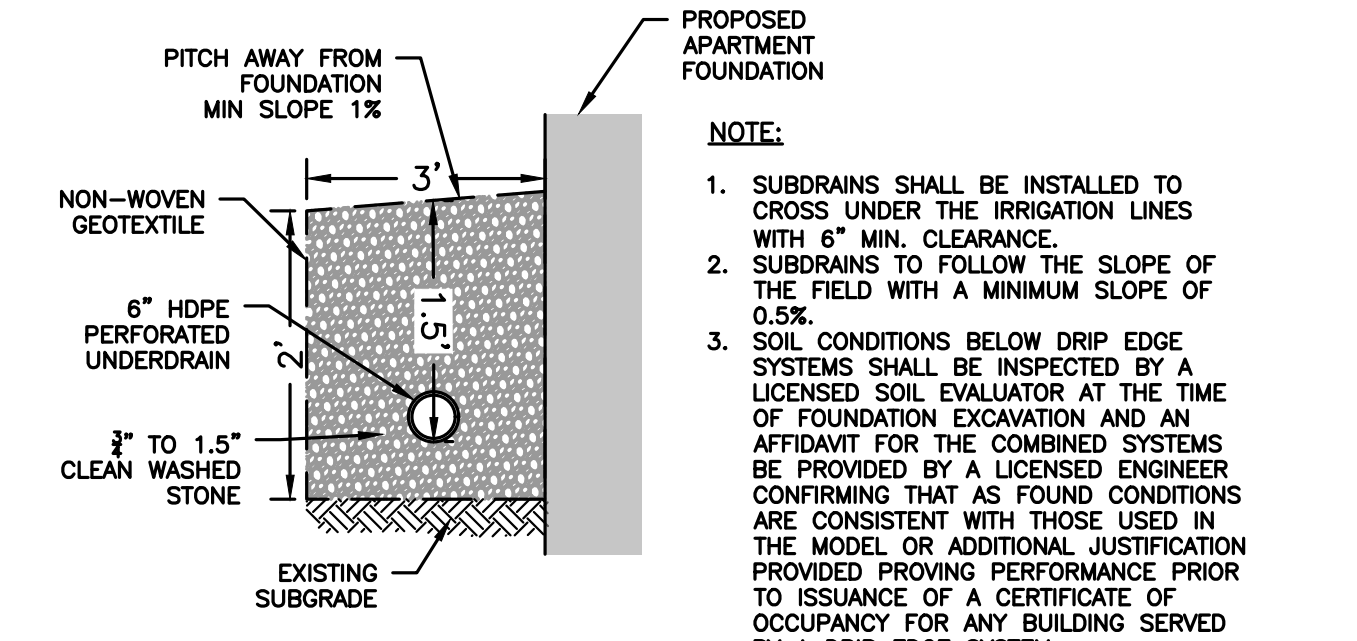
CLUBHOUSE DRIP EDGE SYSTEM

SCALE: N.T.S



4 UNIT TOWNHOUSE DRIP EDGE SYSTEM

SCALE: N.T.S



6 UNIT TOWNHOUSE DRIP EDGE SYSTEM

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
1	PB	08/31/23	REV. PER PEER REVIEW

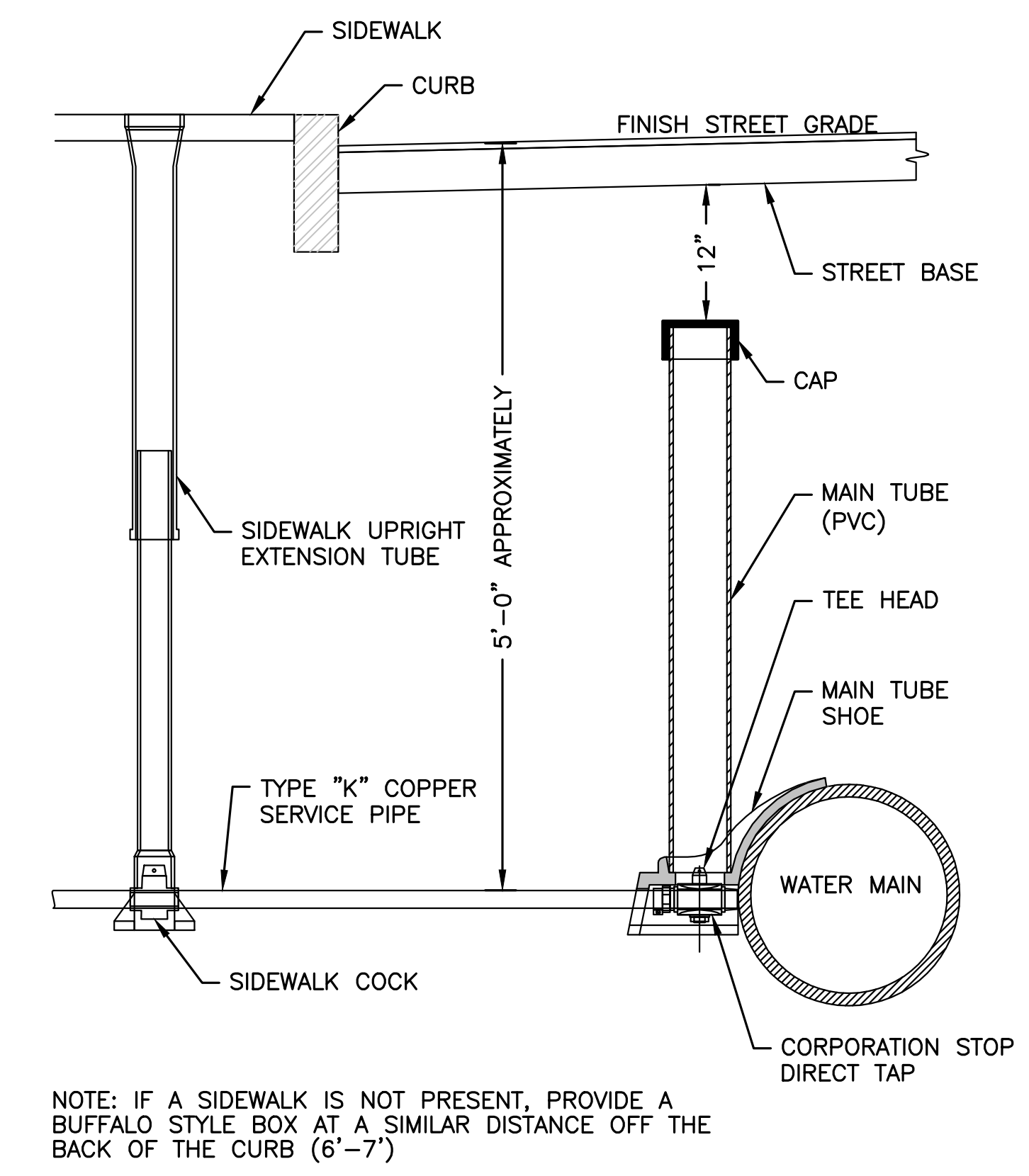


SITE PLAN

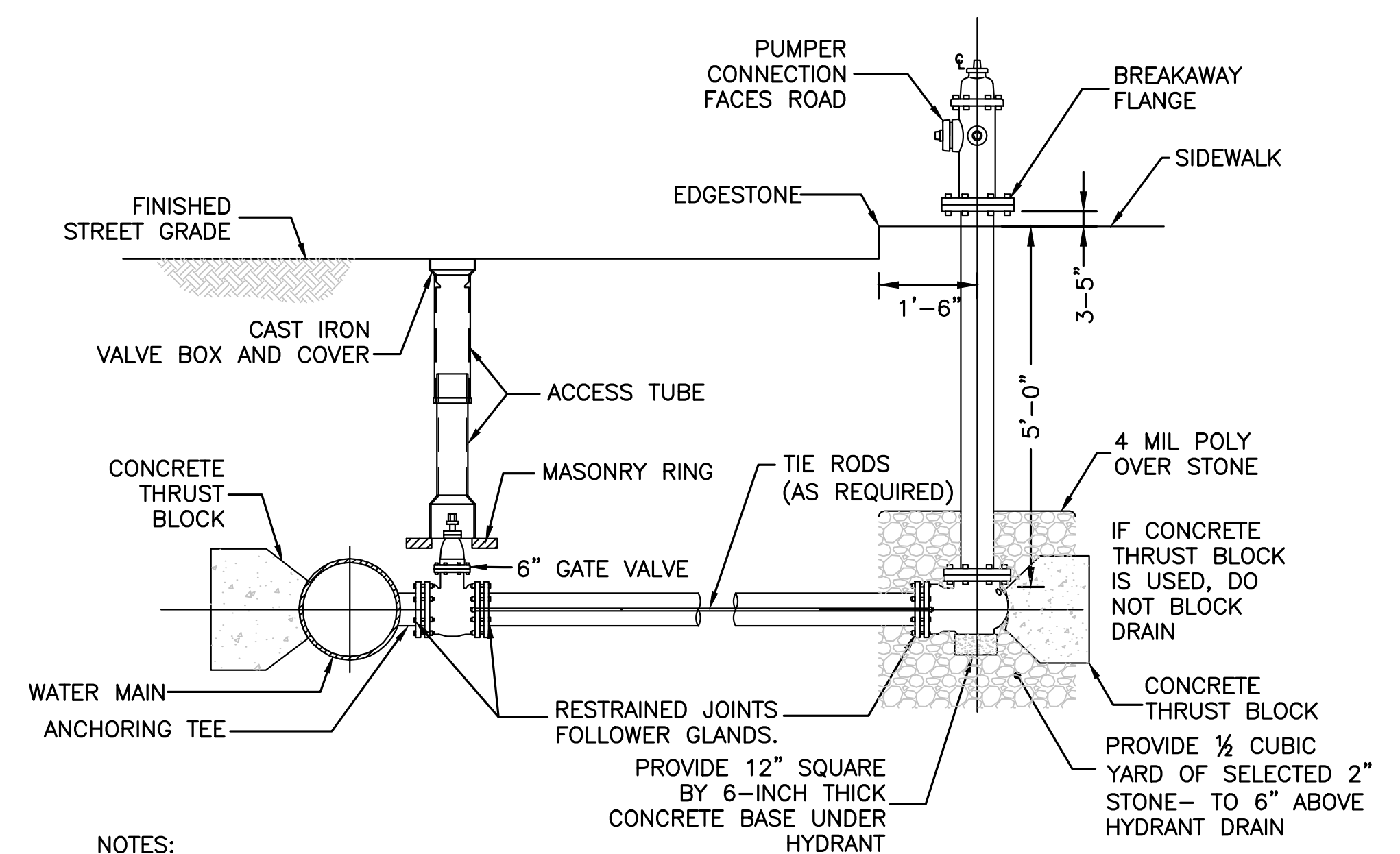
**WATER AND SEWER
 CONNECTIONS
 (DETAIL SHEET
 8 OF 27)**

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

C.46

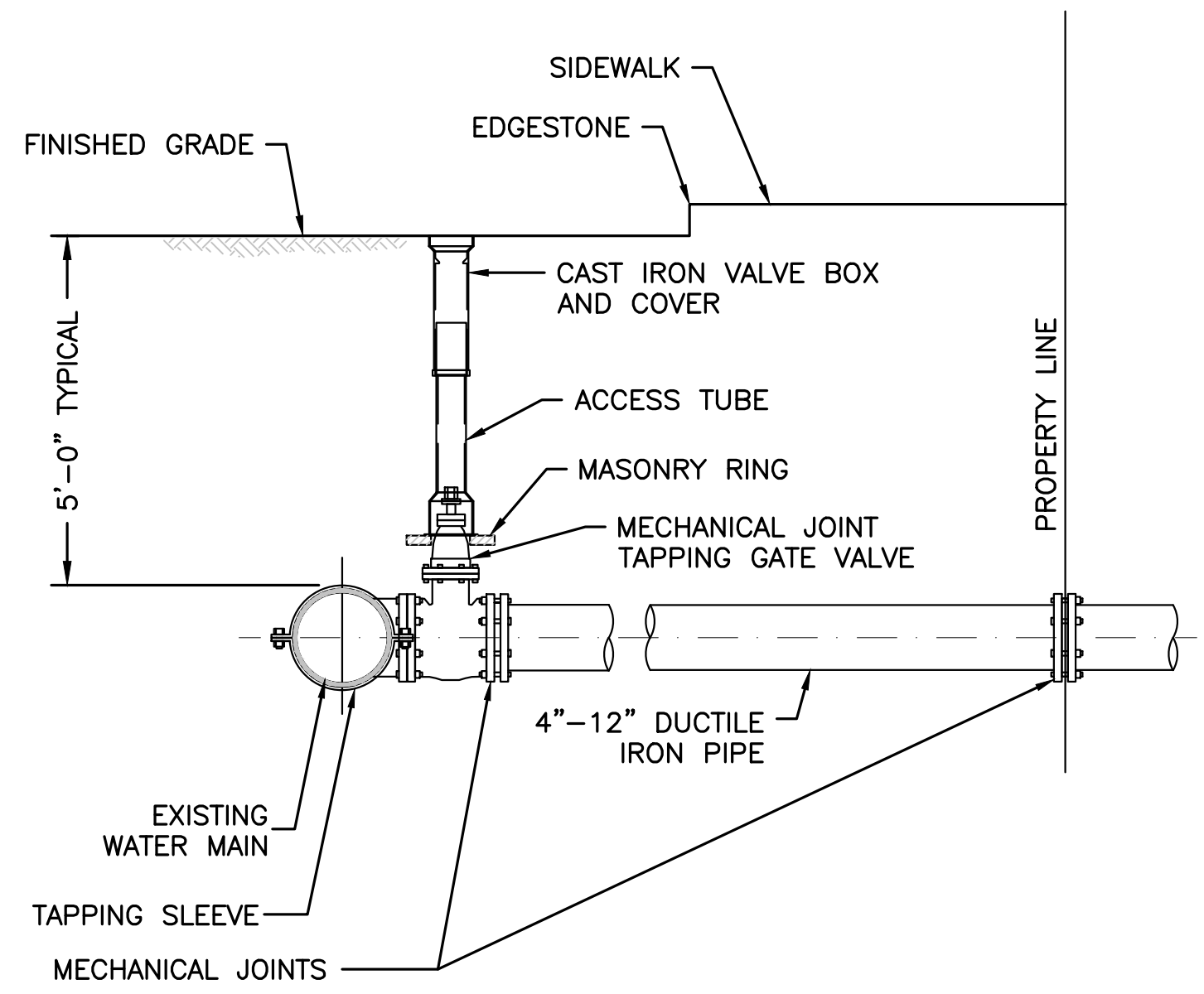


TYPICAL WATER CONNECTION 1" SERVICE PIPE
 SCALE: N.T.S.



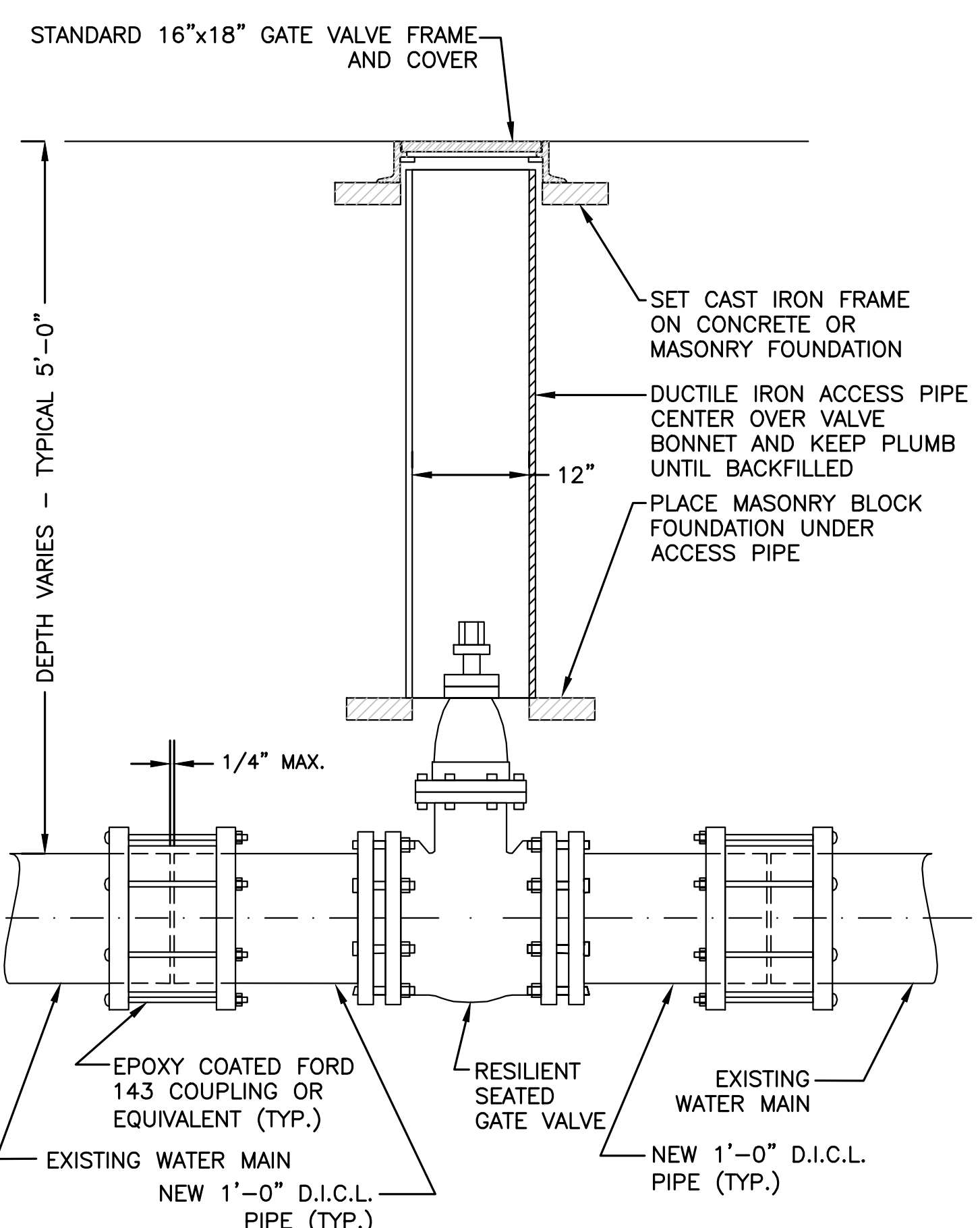
- NOTES:**
- CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH.
 - USE RESTRAINED JOINT FOLLOWER GLANDS, OR TIE RODS, WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE.
 - SIZE OF BLOCK OR FITTING TO BE DESIGNED FOR SPECIFIC CONDITIONS, OR ANY NECESSARY BENDS.

TYPICAL FIRE HYDRANT CONNECTION
 SCALE: N.T.S.



- 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.



- 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.

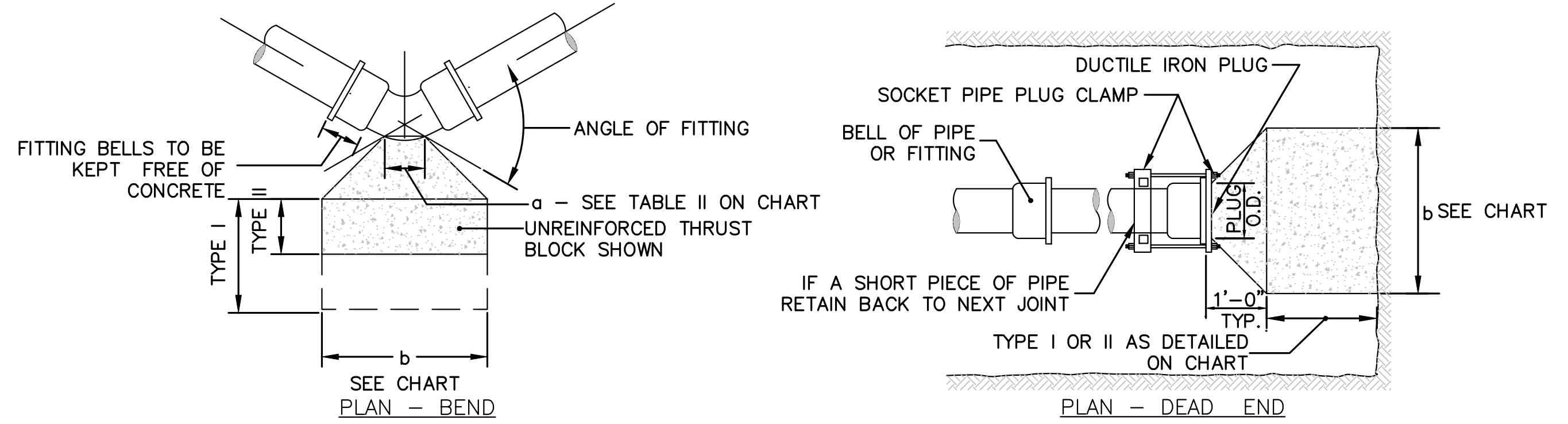


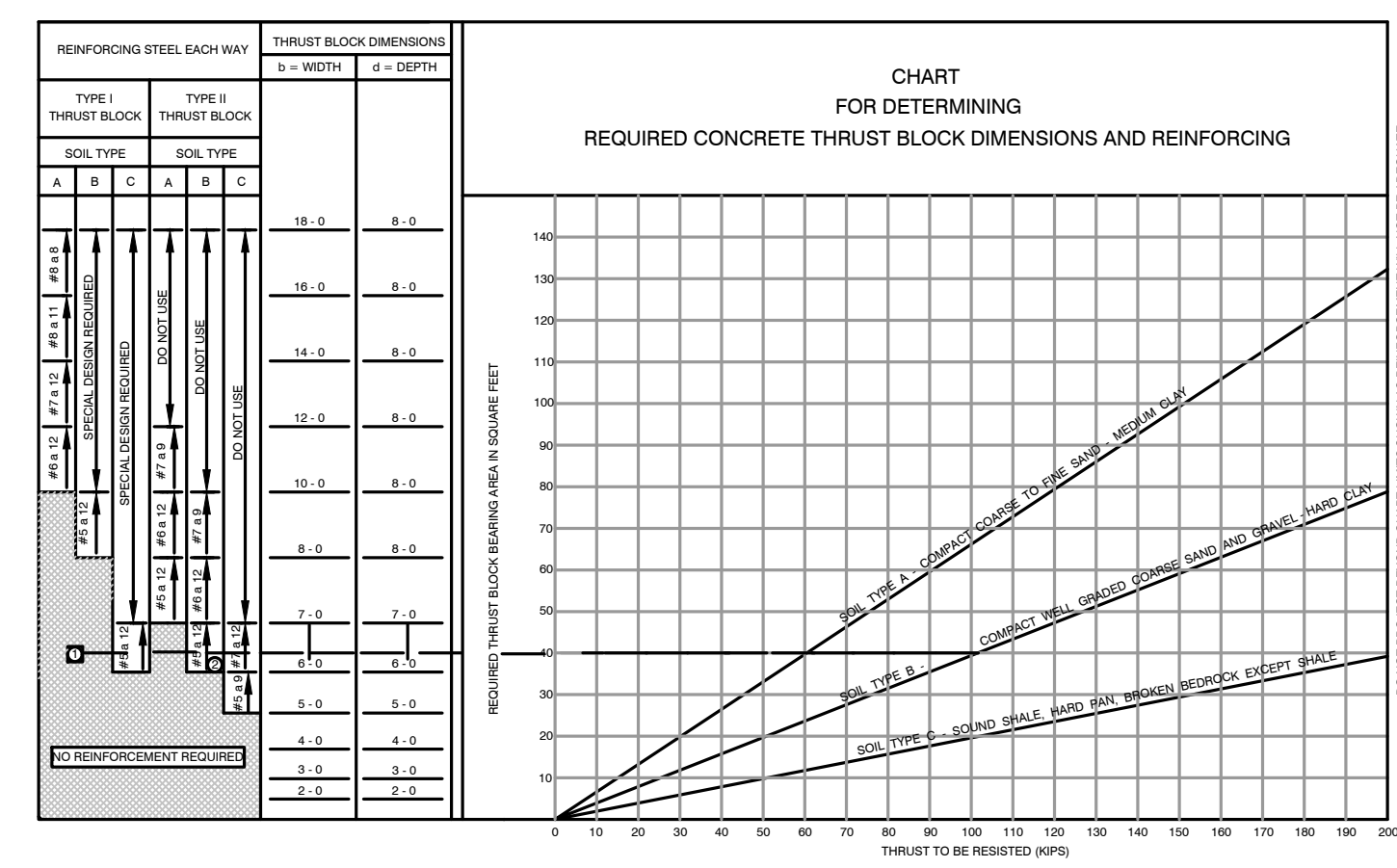
TABLE II - "a" DIMENSION - FEET

PIPE DIAMETER, INCHES	90° FITTING	OTHERS
6, 8, 10 & 12	1-0	1-0
14 & 16	2-0	1-6
20, 24, 30	3-0	2-0

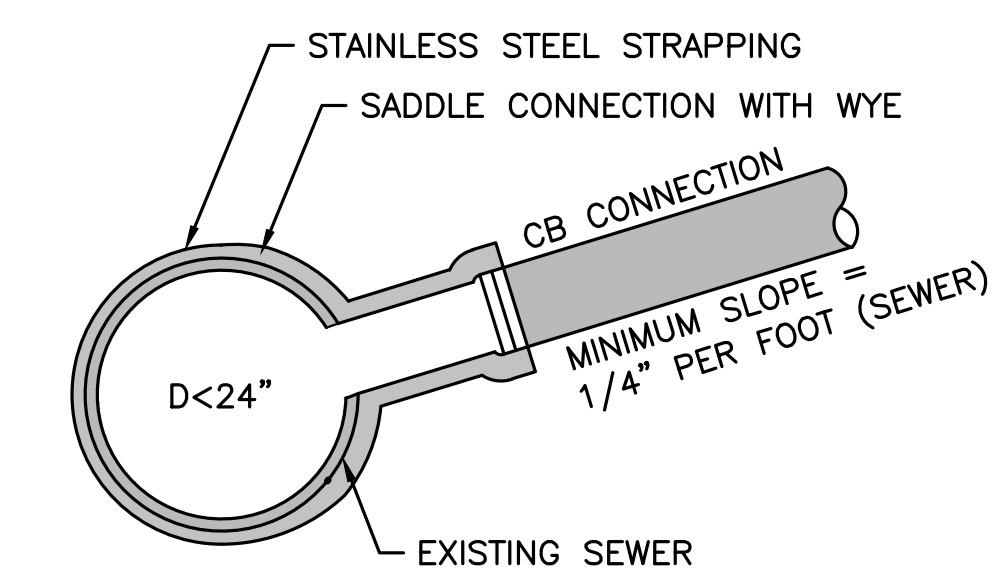
TABLE I - THRUST - KIPS (WATER PRESSURE = 200 P.S.I.)

PIPE DIAMETER (INCHES)	6	8	10	12	14	16	18	20	24	30	36	42
CAST IRON	5.6	10	15.8	22.8	30.8	40.2	50.8	64.4	81.0	101.0	125.0	153.0
DUCTILE IRON	7.8	14.2	21.8	30.8	40.2	50.8	64.4	81.0	101.0	125.0	153.0	187.0
ANGLE FITTINGS												
18" 1/4"			14.9	21.2	27.8	35.2	43.1	52.0	62.0	73.0	85.0	98.0
24"				17.0	24.8	32.8	41.8	51.0	61.0	72.0	84.0	97.0
30" 3/4"					15.1	22.5	30.5	39.5	49.0	59.0	70.0	81.0
36" 1/2"						8.8	12.7	16.5	21.0	26.0	31.0	36.0

DESIGN THRUST BLOCKS OR OTHER SUITABLE ANCHORAGE TO SUIT ACTUAL CONDITIONS

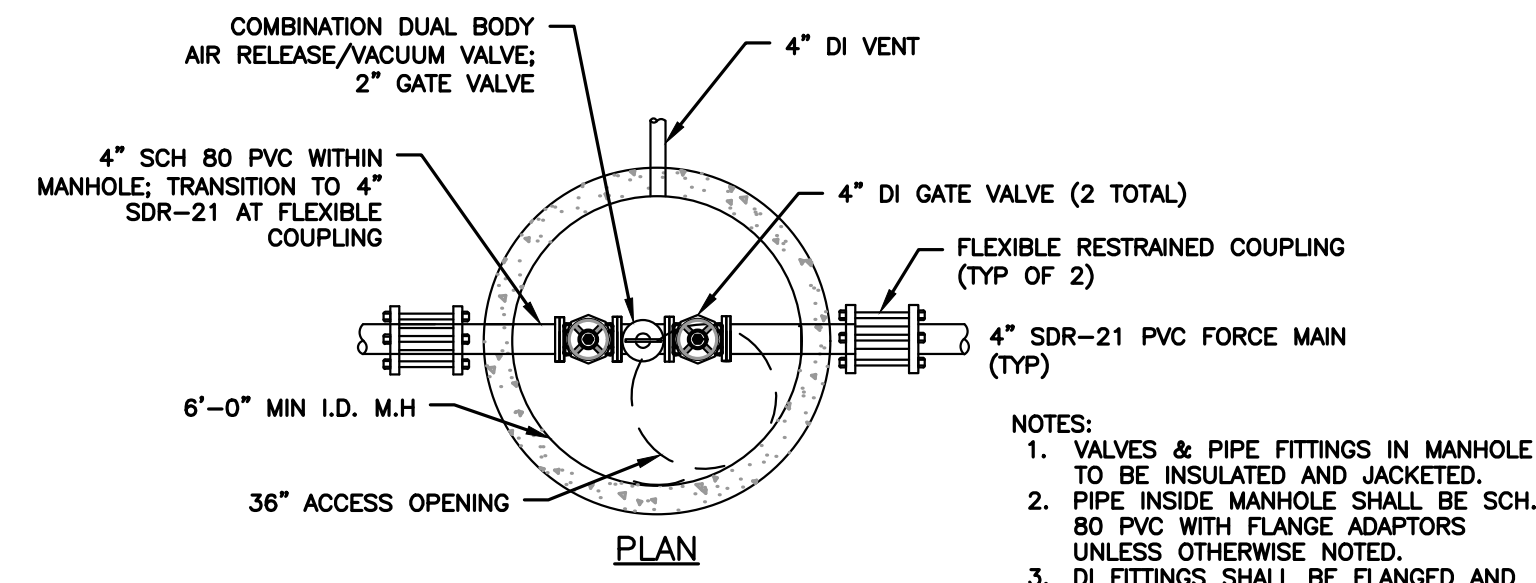


THRUST BLOCK & DIMENSIONS
 SCALE: N.T.S.

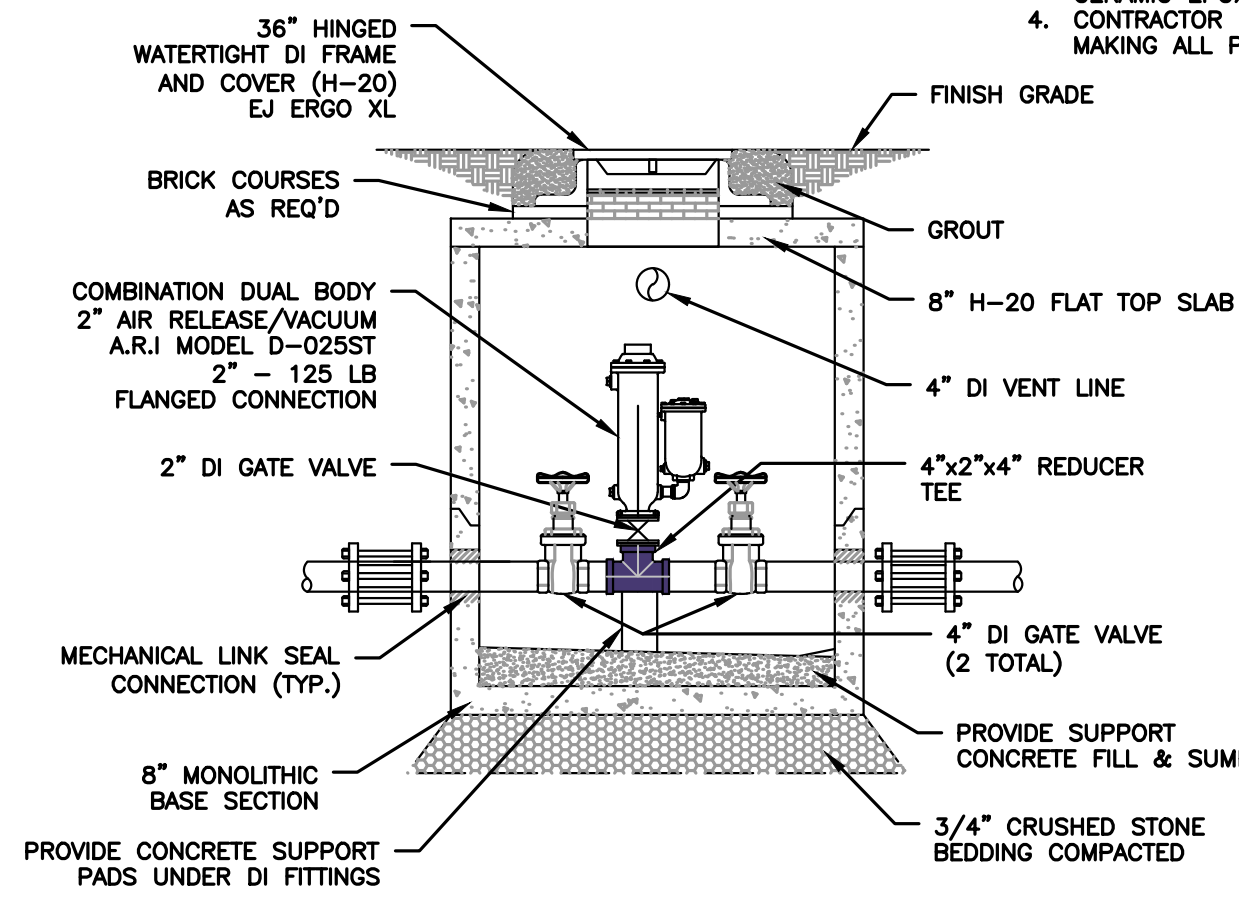


- NOTES:**
1. FULL PVC OR IRON SADDLE MAY BE USED TO CONNECT TO EXISTING PVC, CLAY, CONCRETE, OR IRON PIPE.
 2. SADDLES MUST HAVE RUBBER GASKETS AND SHALL BE TIGHTENED WITH STRAPS. SADDLES WILL NOT BE CEMENTED ONTO THE PIPE.
 3. FULL WYE CONNECTION FITTINGS MAY BE USED.
 4. PIPE SHALL BE CUT TO CONFORM 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.

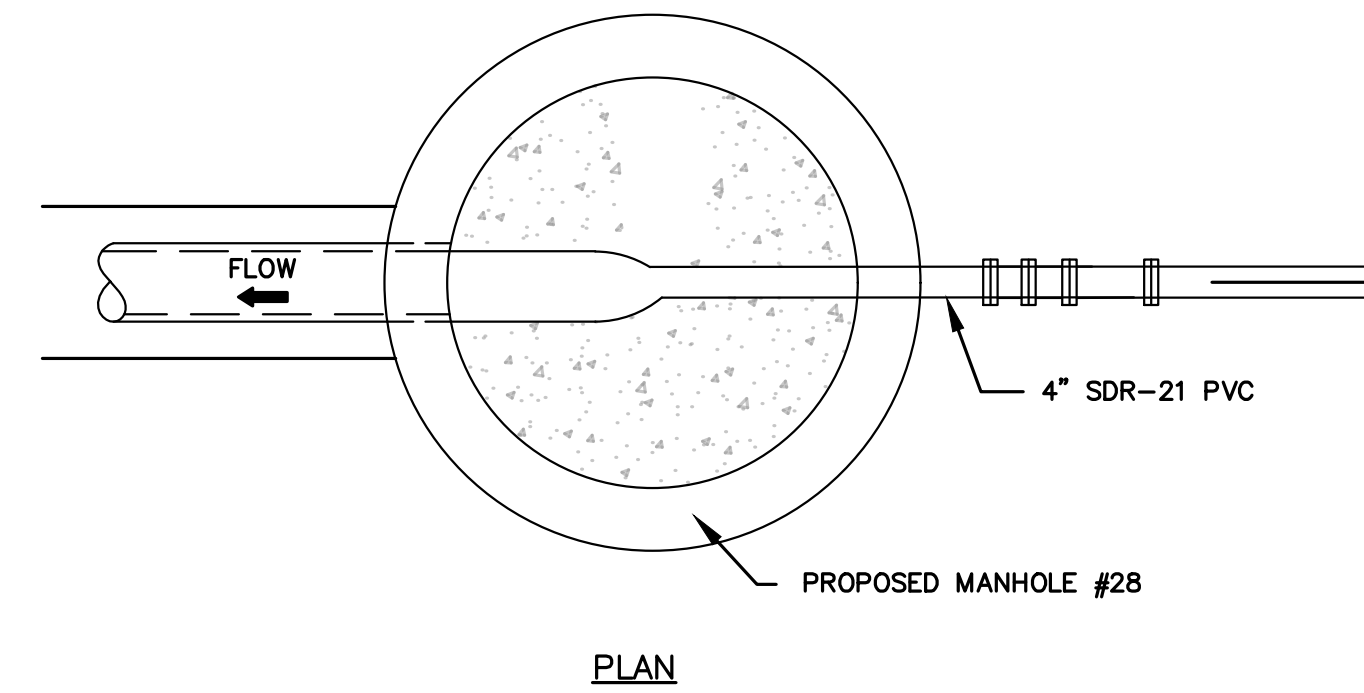
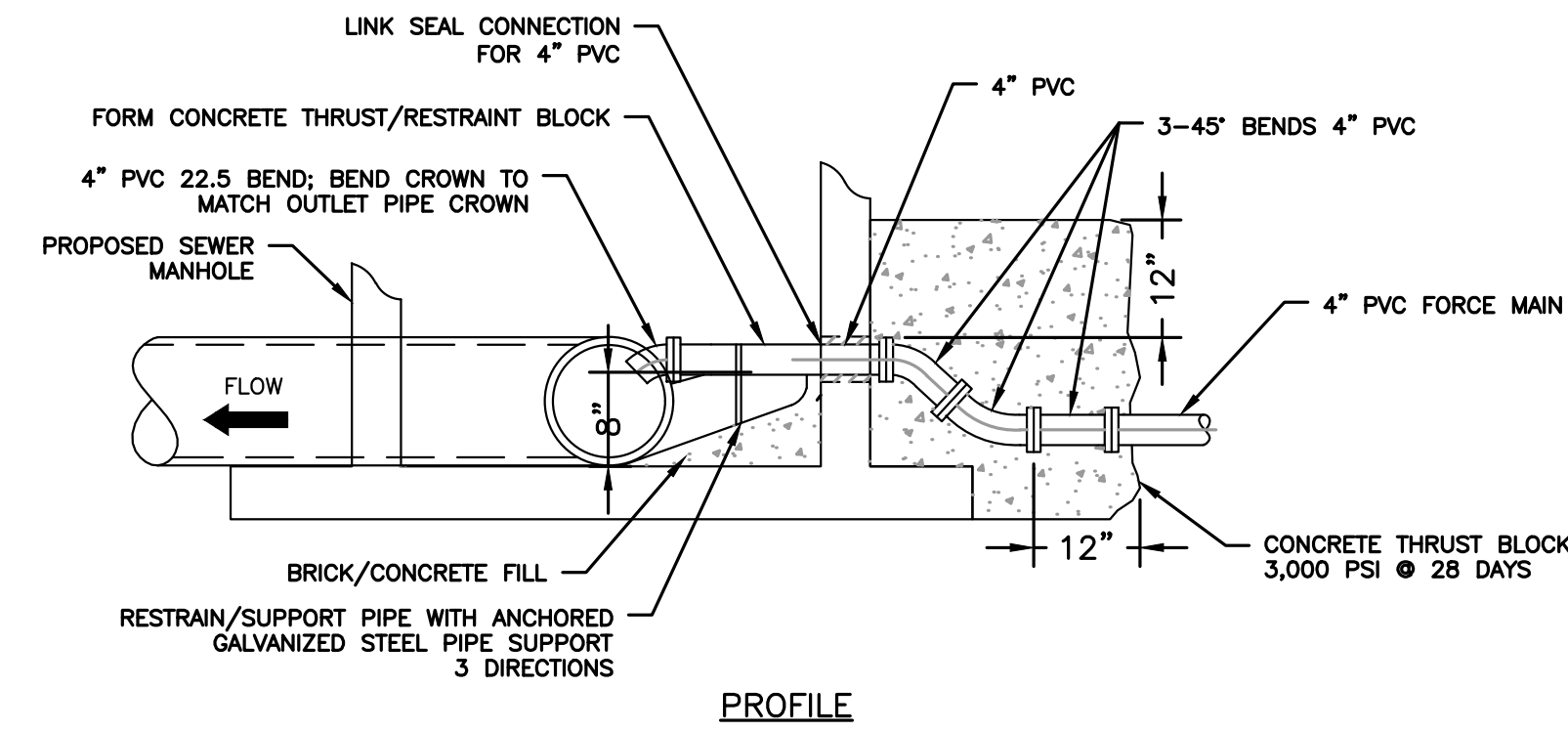


- NOTES:
1. VALVES & PIPE FITTINGS IN MANHOLE TO BE INSULATED AND JACKETED.
 2. PIPE INSIDE MANHOLE SHALL BE SCH. 80 PVC WITH FLANGE ADAPTORS UNLESS OTHERWISE NOTED.
 3. DI FITTINGS SHALL BE FLANGED AND CERAMIC EPOXY LINED.
 4. CONTRACTOR IS RESPONSIBLE FOR MAKING ALL PIECES FIT.



AIR RELEASE MANHOLE

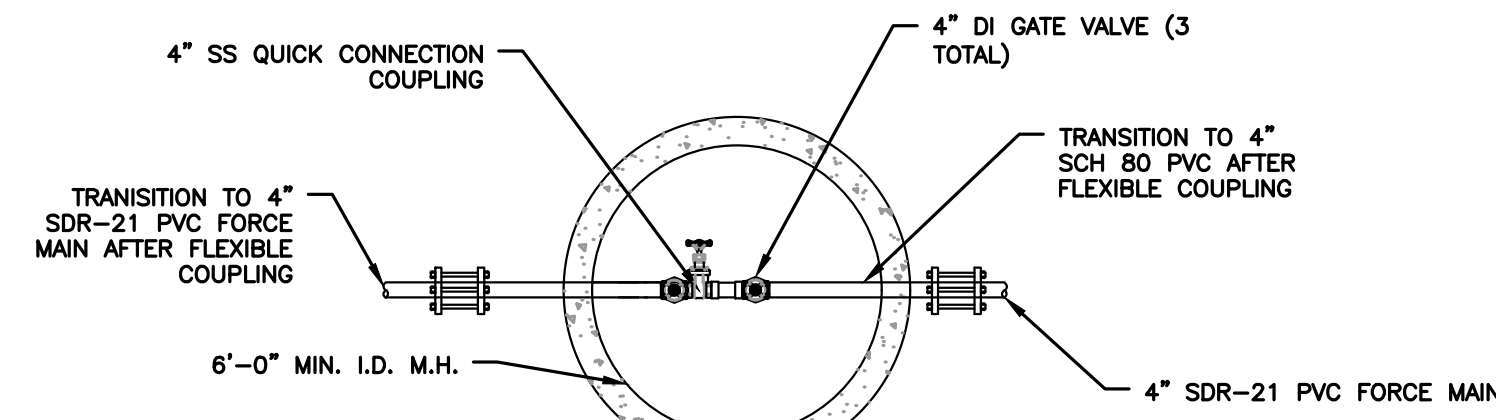
SCALE: N.T.S



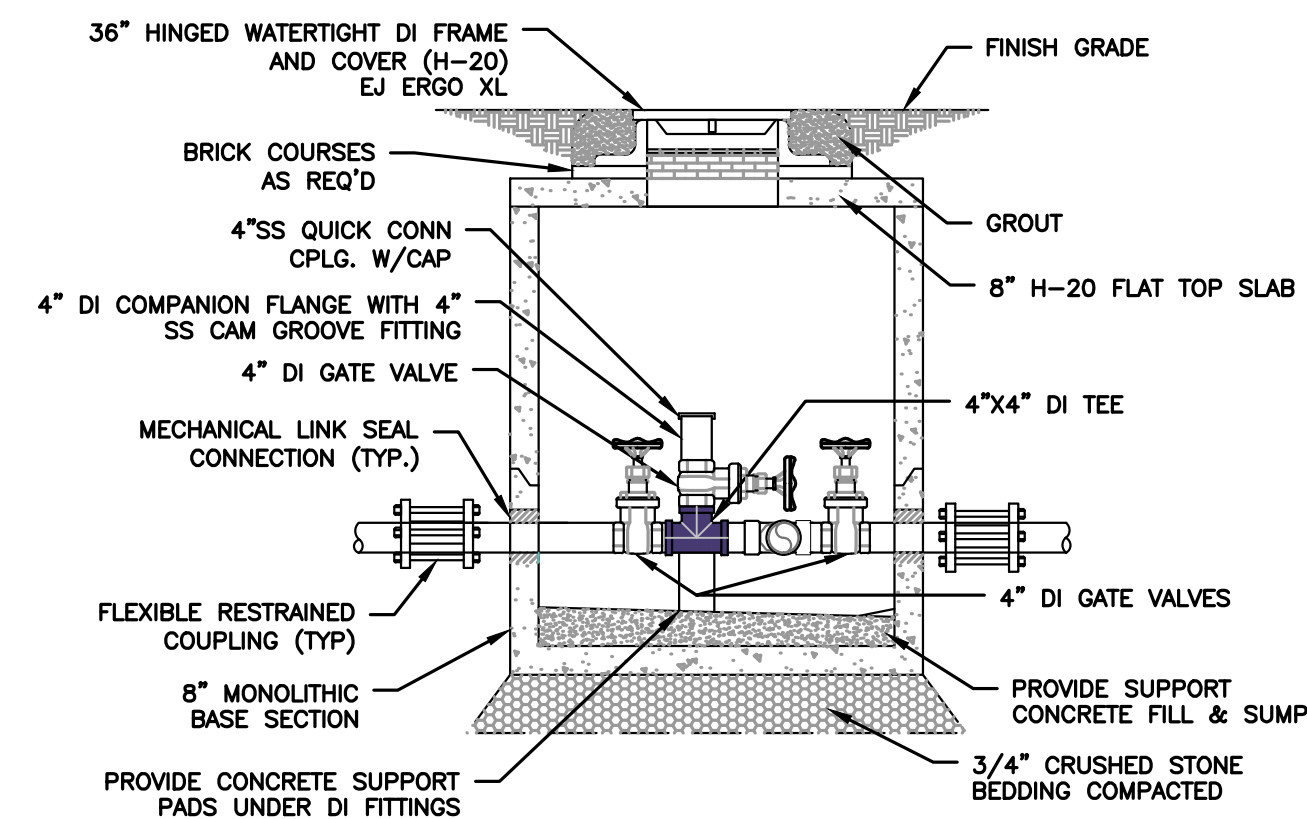
NOTE:
CROWN OF FORCE MAIN TO MATCH CROWN OF 8" PIPE.

SMH #28 FORCE MAIN CONNECTION

SCALE: N.T.S

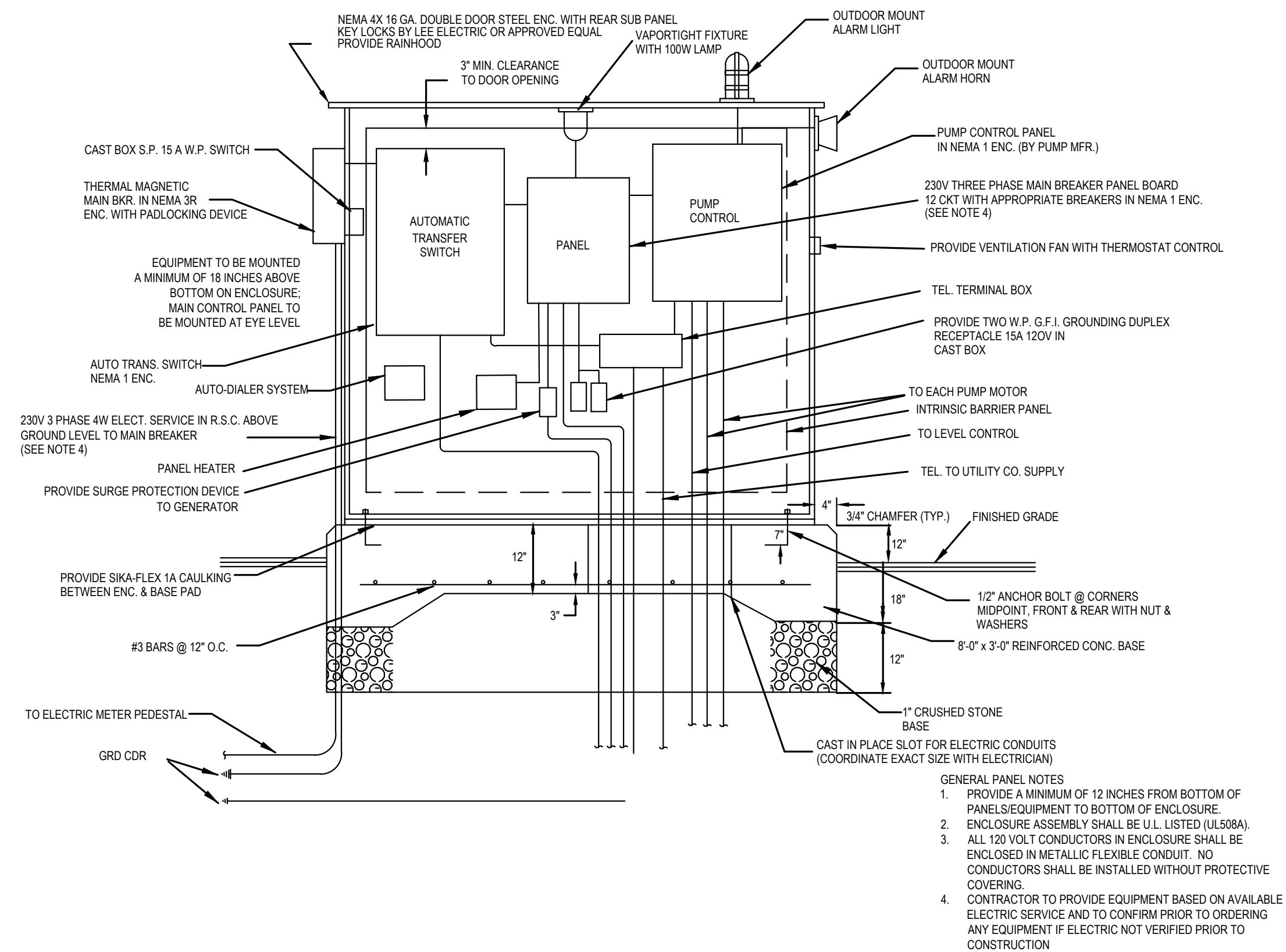


- NOTES:
1. VALVES & PIPE FITTINGS IN MANHOLE TO BE INSULATED AND JACKETED.
 2. PIPE INSIDE MANHOLE SHALL BE SCH. 80 PVC WITH FLANGE ADAPTORS UNLESS OTHERWISE NOTED.
 3. DI FITTINGS SHALL BE FLANGED AND CERAMIC EPOXY LINED.
 4. CONTRACTOR IS RESPONSIBLE FOR MAKING ALL PIECES FIT.



CLEANOUT VALVE MANHOLE

SCALE: N.T.S



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

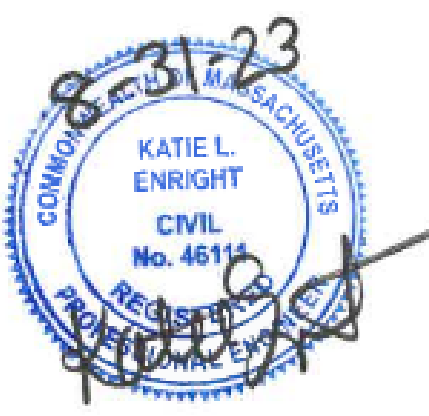
PUMP STATION CONTROL PANEL

SCALE: N.T.S

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

**PROPOSED MULTIFAMILY
DEVELOPMENT
SUMMER STREET
WALPOLE, MA**

NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW

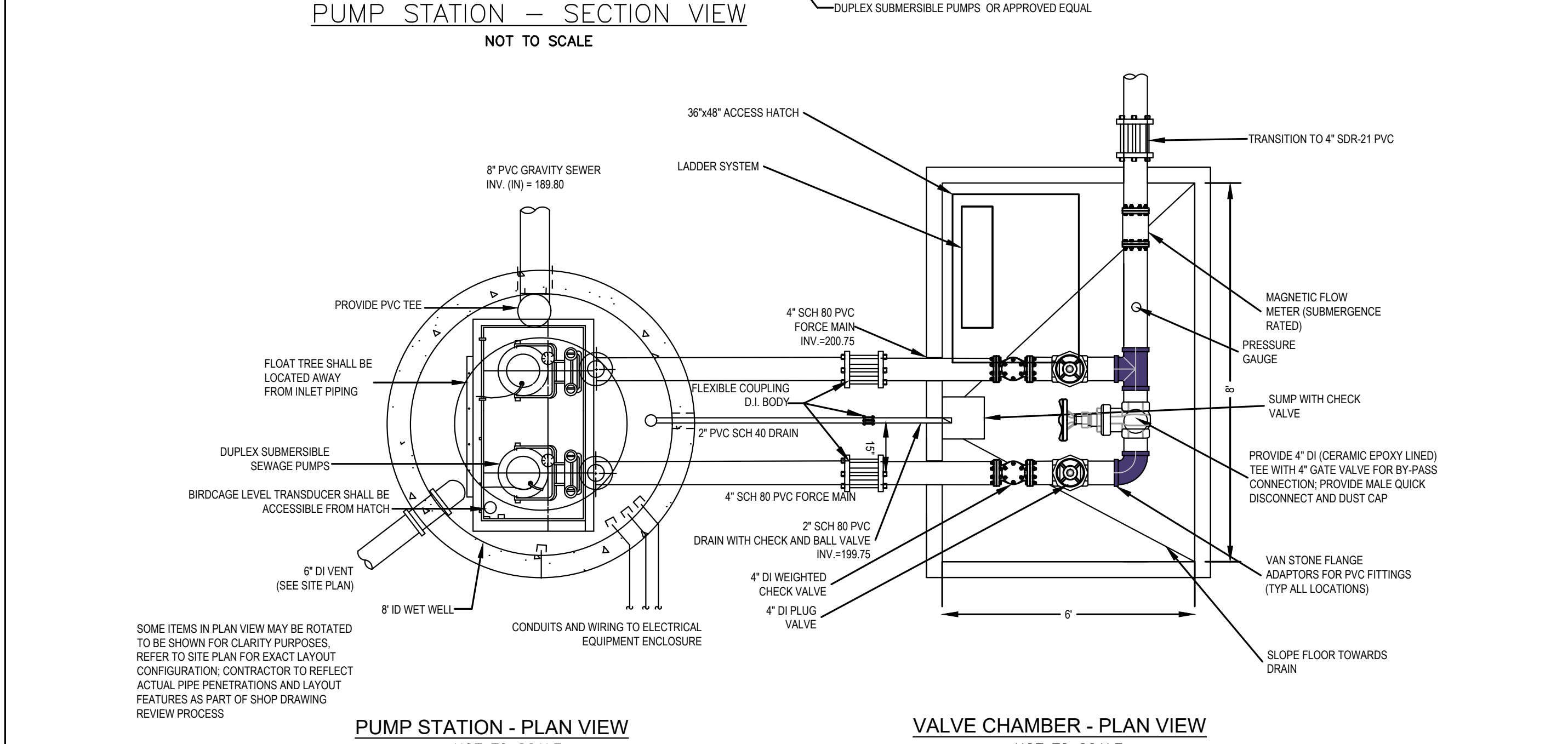
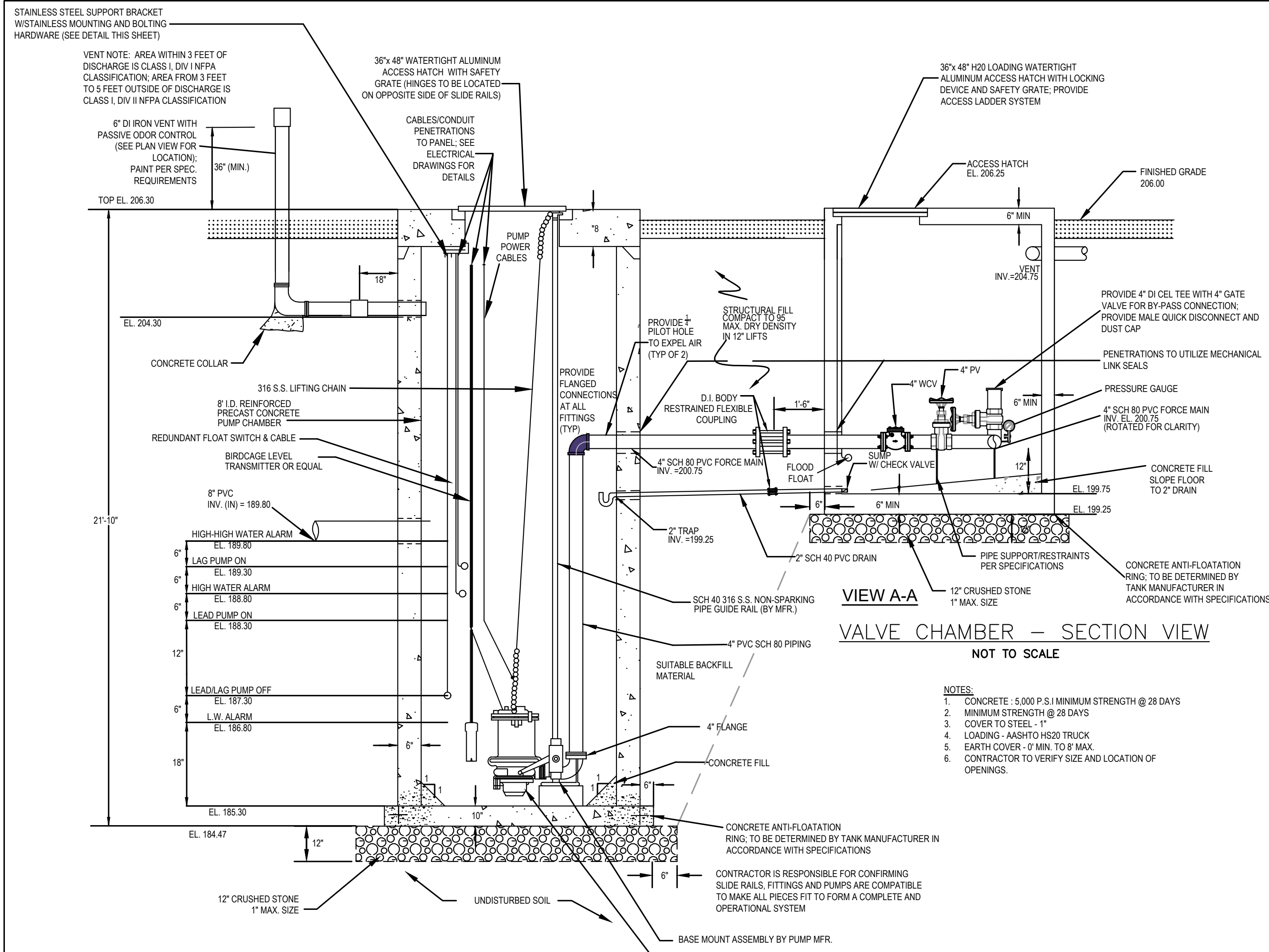


SITE PLAN

**FORCE MAIN AND PUMP
STATION DETAILS
(DETAIL SHEET
9 OF 27)**

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

C.47



- GENERAL REQUIREMENTS**
SEWAGE PUMPS AND VALVES (PUMP STATION #1)
- 1) PUMPS SHALL BE ALTERNATING DUPLEX SUBMERSIBLE EXPLOSION PROOF SUBMERSIBLE NON-CLOG PUMPS CAPABLE OF DELIVERING THE TARGET FLOW OF 120 GPM @ 88 FT T.D.H. (TRIMMING OF IMPELLER MAY BE NECESSARY). PUMP MOTORS SHALL BE 3.0 H.P., 3,450 R.P.M., CONNECTED FOR OPERATION ON A 200 VOLT, 60 HZ, THREE PHASE SERVICE. CONTRACTOR TO PROVIDE EQUIPMENT BASED ON AVAILABLE ELECTRIC SERVICE AND SHALL CONFIRM PRIOR TO ORDERING ANY EQUIPMENT IF ELECTRIC NOT VERIFIED PRIOR TO CONSTRUCTION.
 - 2) DISCHARGE PORT SHALL BE DIRECTLY CONNECTED TO THE HYDRAULIC SEALING FLANGE ON THE BASE MOUNT TO ALLOW FOR REMOVAL OF THE PUMPS WITHOUT LIFTING THE VERTICAL DISCHARGE PIPING.
 - 3) THE PUMP MANUFACTURER SHALL SUPPLY DUPLEX CONTROL PANEL 2 PUMPS WITH NON-SPARKING GUIDE RAILS, LEVEL TRANSDUCER, REDUNDANT FLOAT SWITCHES, LIFTING CHAINS, AND ALL NECESSARY MOUNTING HARDWARE FOR COMPLETE INSTALLATION INSIDE THE WELL.
 - 4) INSTALLATION OF THE PUMPS AND CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND NATIONAL, STATE AND LOCAL ELECTRICAL CODES.
 - 5) PLUG VALVES SHALL BE 4 INCH, DUCTILE IRON BODY, RATED AT 175 P.S.I. WORKING PRESSURE, WITH ANSI B 16.5 (CLASS 150) FLANGED ENDS.
 - 6) CHECK VALVES SHALL BE 4 INCH, DUCTILE IRON BODY, SWING TYPE WITH LEVER AND WEIGHT, RUBBER FACED BRONZE DISC, RATED AT 200 P.S.I. WORKING PRESSURE, WITH ANSI B 16.5 FLANGED ENDS. CHECK VALVES SHALL BE CONSTRUCTED TO PERMIT TOP ENTRY FOR COMPLETE REMOVAL OF INTERNAL COMPONENTS WITHOUT REMOVING THE VALVE FROM THE LINE.

PUMP STATION #1
SCALE: N.T.S

Enclosures



Enclosure Dimensions and Weights

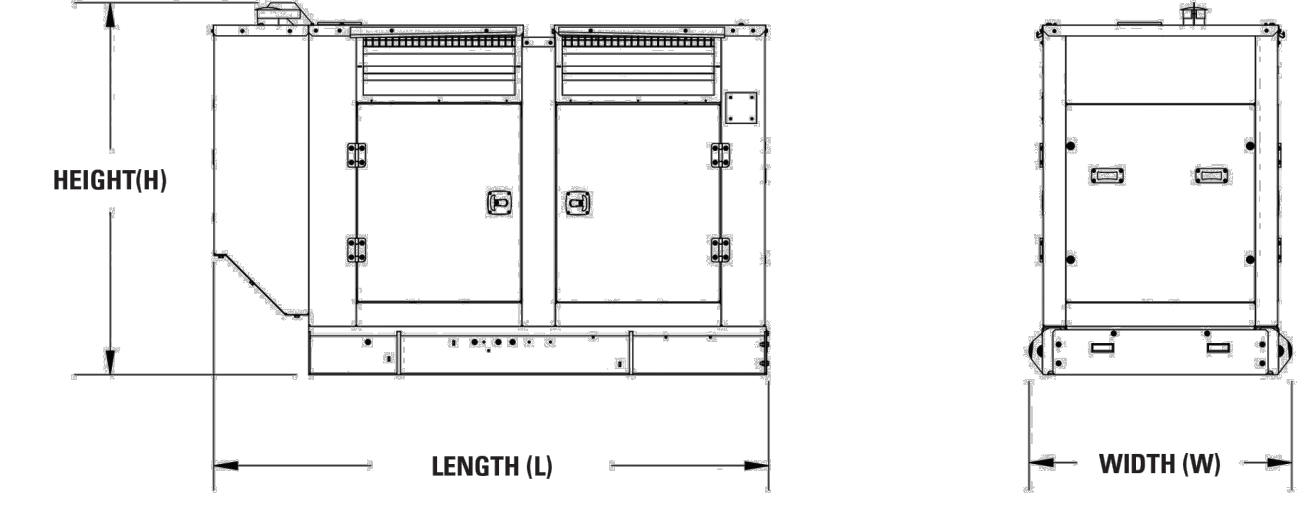


Image represents SA Level 1, SA Level 2 and SA Aluminum enclosures on skid base only

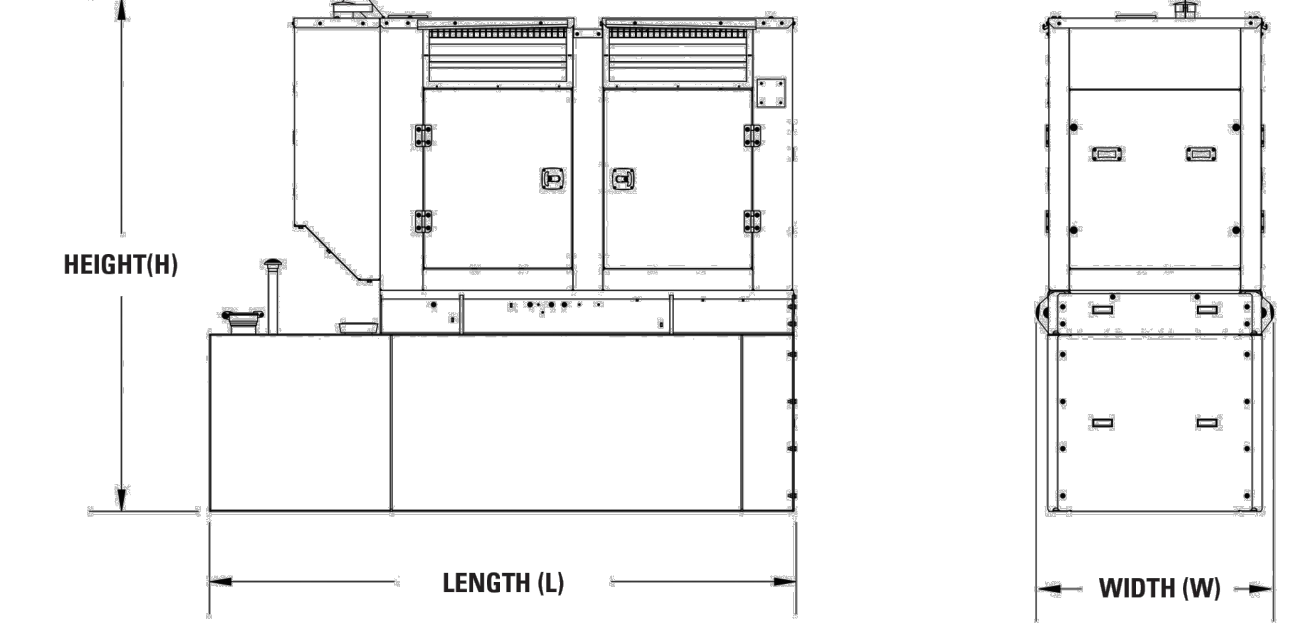


Image represents SA Level 1, SA Level 2 and SA Aluminum enclosures mounted on optional UL listed sub base tank

Model	Standby kW	WP Industrial		SA Level 1		SA Level 2		SA Aluminum	
		kg	lb	kg	lb	kg	lb	kg	lb
D40-2	40								
D50-2	50	121	267	137	302	NA	NA	NA	NA
D60-2	60								
D80-8	80								
D100-8	100	263	580	313	690	321	708	142	312
D125-8	125								
D150-10	150								
D175-4	175	348	768	393	867	406	896	176	387
D200-2	200								

Enclosure weights (includes muffler)

LEH0417-11

4/6

GENERATOR AND FUEL STORAGE*
SCALE: N.T.S

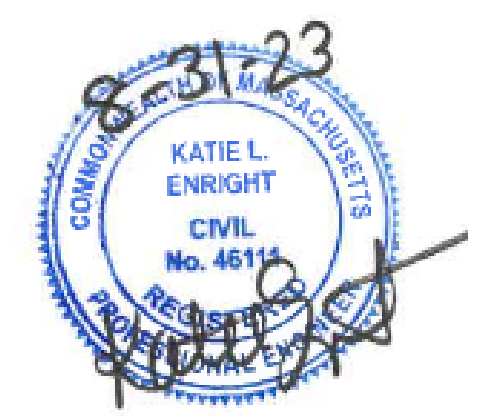
HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

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
1	PB	08/31/23	REV. PER PEER REVIEW



**SITE
PLAN**

**SEWER PUMP STATION
DETAIL
(DETAIL SHEET
10 OF 27)**

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 65

*OR APPROVED EQUAL

8/31/2023 L:\19097\19097_04 - LCA\2\CURRENT\19097 - Details.dwg
Bak Shwed by: MBK
Printed by: MBK



HOWARD STEIN HUDSON

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

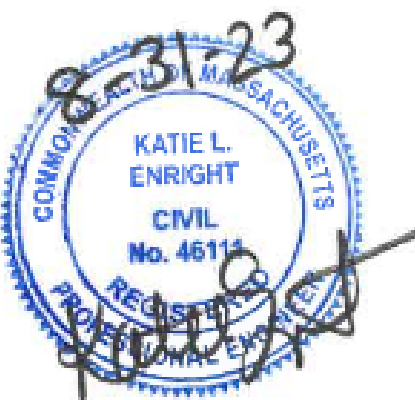
PREPARED FOR:

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE
PLAN

E-ONE CONTROL PANEL
DETAILS
(DETAIL SHEET
11 OF 27)

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

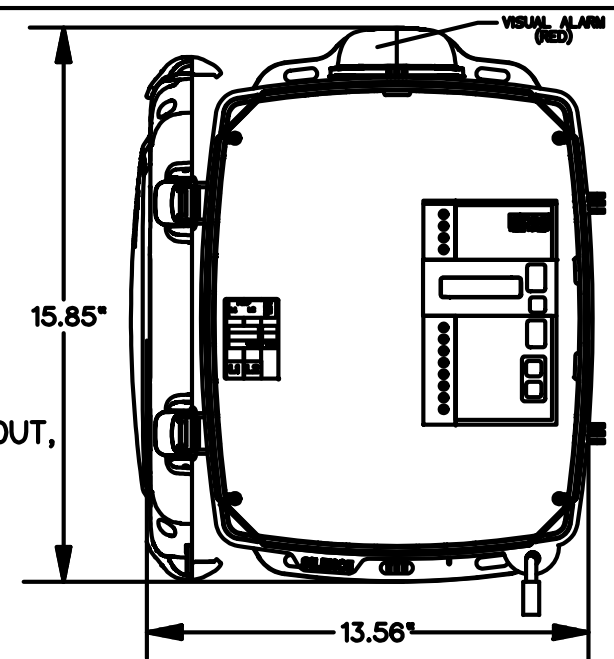
C.49

SHEET 49 OF 65

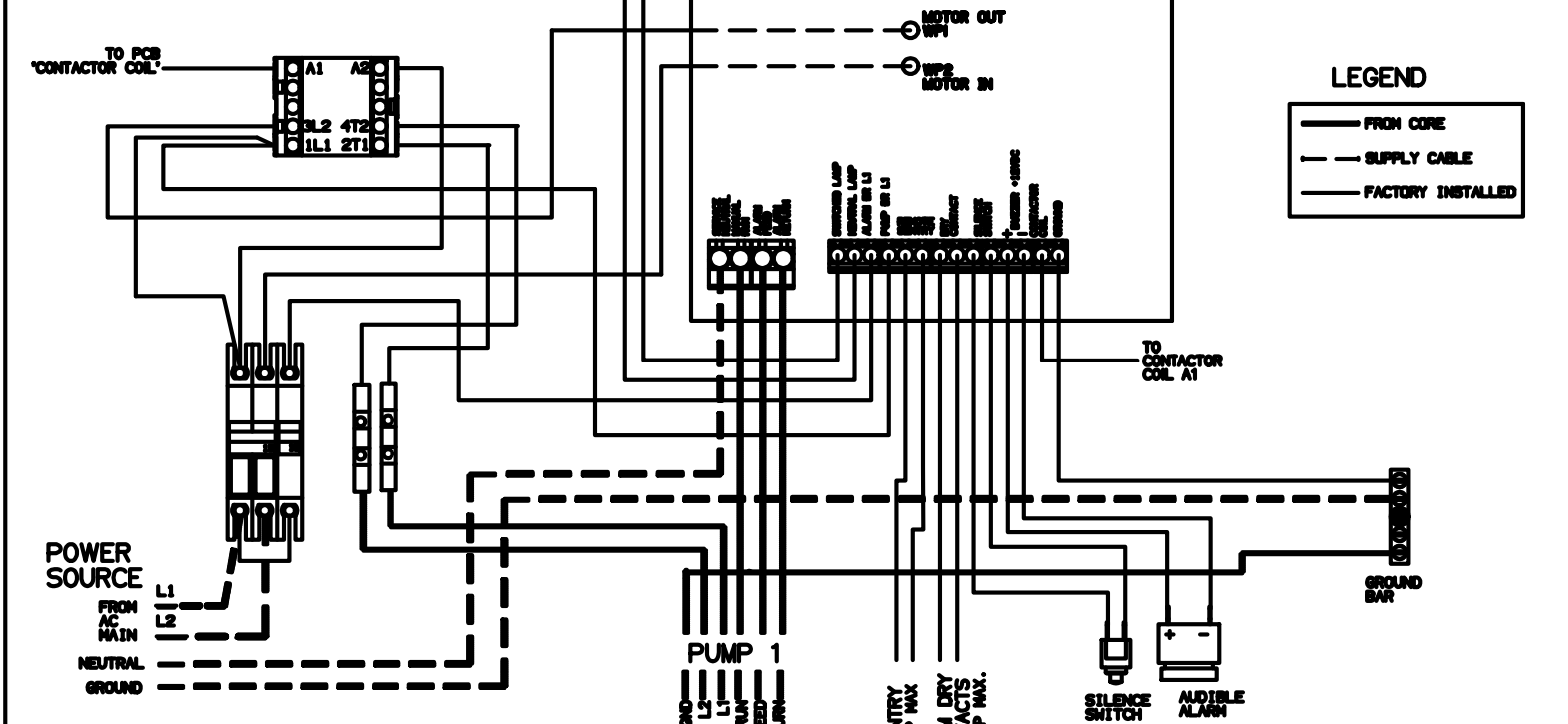
SENTRY PROTECT PLUS SIMPLEX

REDUNDANT RUN (HIGH LEVEL)
EXTERNAL VISUAL & AUDIBLE ALARM
REMOTE SENTRY DRY CONTACTS FOR
OPTIONAL POWER LOSS HIGH LEVEL
ALARM (POWER LOSS ALARM FOR WIRELESS)
MANUAL ALARM SILENCE
MANUAL RUN
STATUS LED'S: NORMAL, PUMP RUNNING, HIGH LEVEL
TROUBLE INDICATIONS: RUN DRY, OVERPRESSURE, BROWNOUT,
VOLTAGE, EXTENDED RUN TIME
DRY CONTACTS
CONFORMAL COATED CIRCUIT BOARD (BOTH SIDES)
PADLOCK
DEAD FRONT
PREDICTIVE ALARMS
REAL TIME PUMP PERFORMANCE
ADJUSTABLE ALARM DELAY
ADJUSTABLE RUN TIME DELAY
HOUR/CYCLE COUNTER
NEMA 4X ENCLOSURE ASSEMBLY

ENCLOSURE:
CORROSION PROOF THERMOPLASTIC
POLYESTER APPROVED BY UL FOR
ELECTRICAL CONTROL ENCLOSURE



DIMENSION FROM
BACK PANEL TO
FRONT OF OPEN
DOOR = 18.02"



LEGEND
 FROM CORE
 SUPPLY CABLE
 FACTORY INSTALLED

OLD / NEW WIRE COLOR MAP			
PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

CONTROL CABLE:
TYPE TO DIRECT BURIAL,
SIX CONDUCTOR

AD	12/14/07	DMS	C	08/23/11
DR BY	DATE	CHK'D	ISSUE	DATE
eone				

SEWER SYSTEMS
SENTRY PROTECT PLUS PANEL, SIMPLEX
240V 60Hz DOUBLE POLE POWER

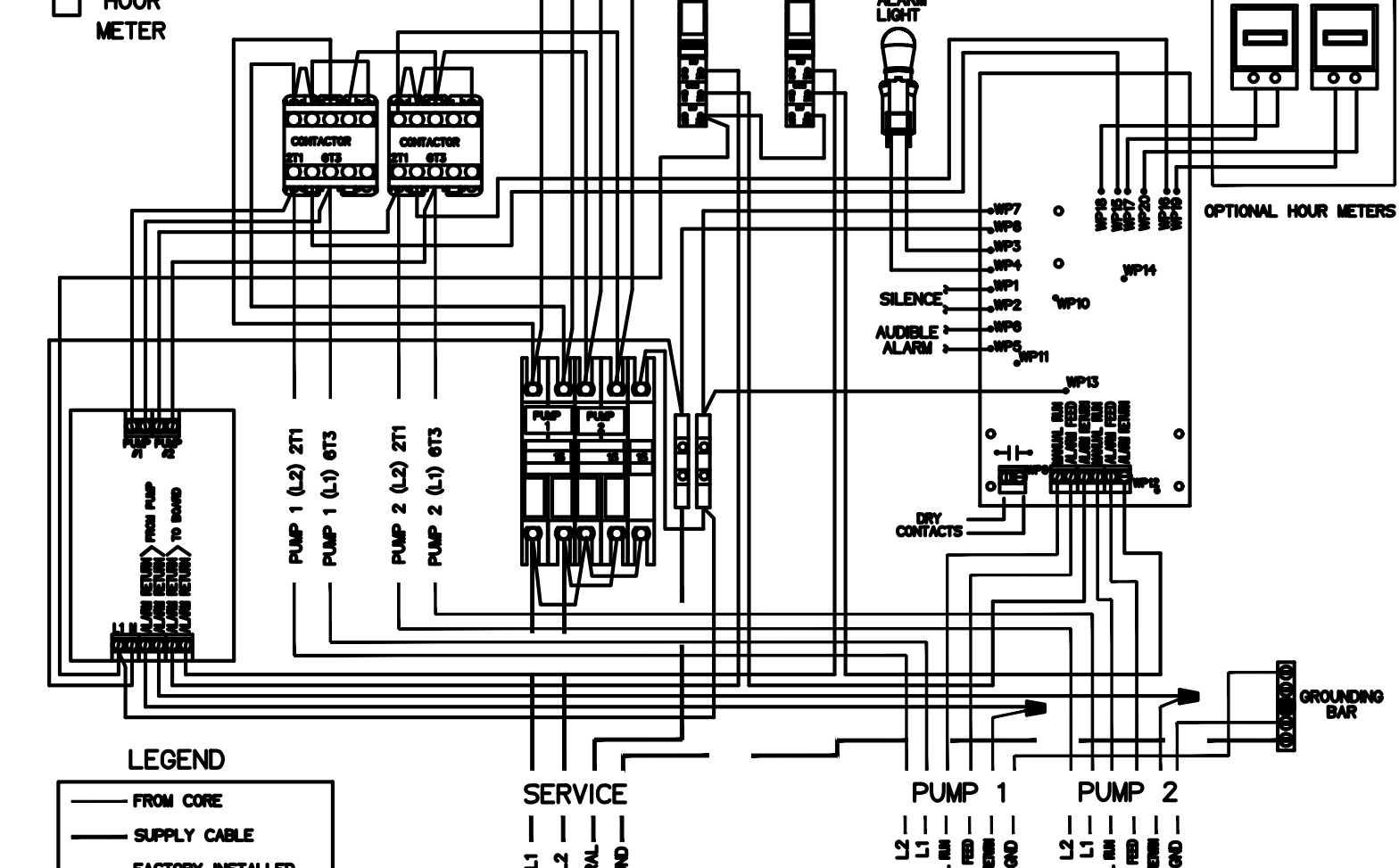
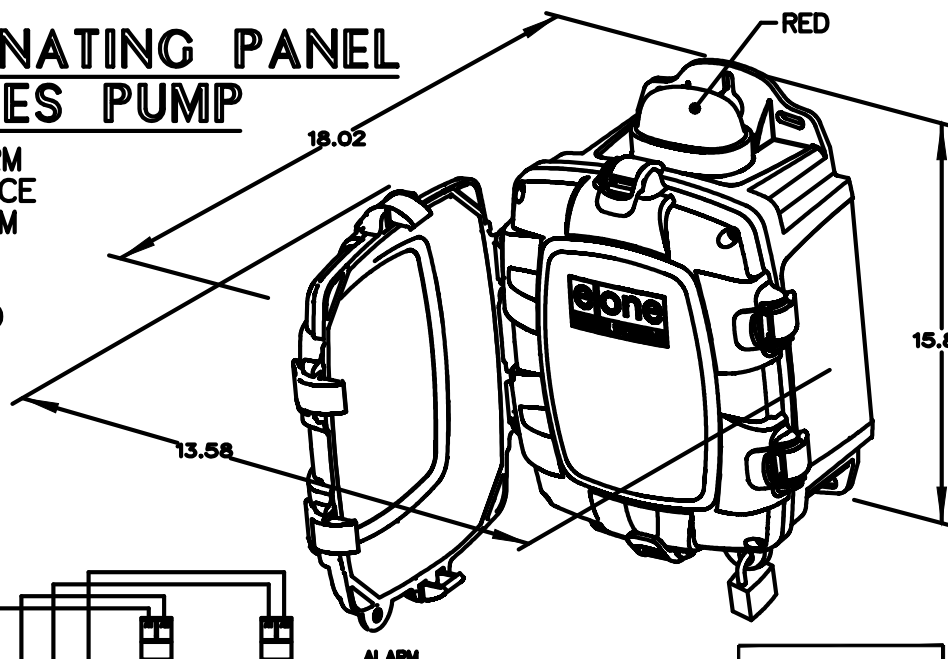
NA0079P03

DUPLEX T260 ALTERNATING PANEL USED WITH WX SERIES PUMP

EXTERNAL VISUAL & AUDIBLE ALARM
EXTERNAL LATCHING MANUAL SILENCE
CORE(PUMP) LEAK DETECTION ALARM
MANUAL RUN
PUMP RUN INDICATORS
CONFORMAL COATED CIRCUIT BOARD
PADLOCK
ALARM DRY CONTACT
NEMA 4X ENCLOSURE ASSEMBLY

CORROSION PROOF THERMOPLASTIC
POLYESTER APPROVED BY UL FOR
ELECTRICAL CONTROL ENCLOSURE

OPTIONS:
 HOUR
 METER



LEGEND			
PIN	FUNCTION	WX PUMP	RF PUMP
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

CONTROL CABLE:
TYPE TO DIRECT BURIAL, 12AWG,
SIX CONDUCTOR

CT	S6S	04/03/08	-	N/A
DR BY	CHK'D	DATE	ISSUE	SCALE
eone				

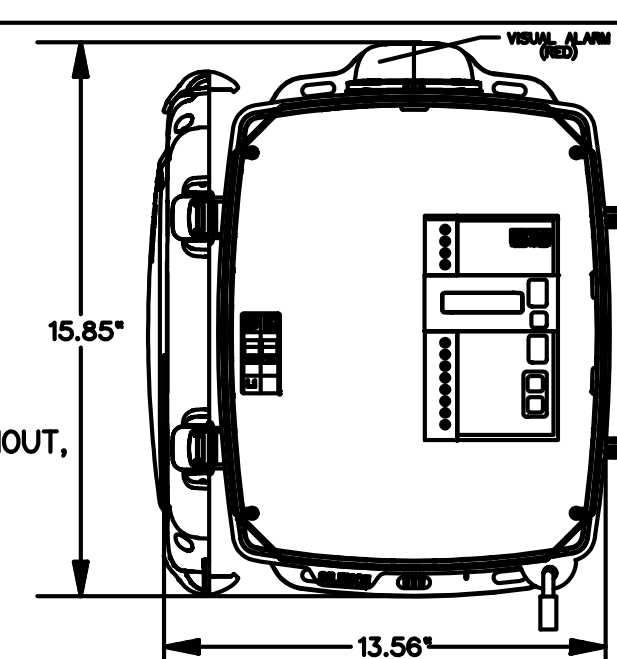
SEWER SYSTEMS
DUPLEX T-260 ALTERNATING PANEL
FOR USE WITH WX SERIES PUMP
240V 60Hz DOUBLE POLE POWER

LM00381

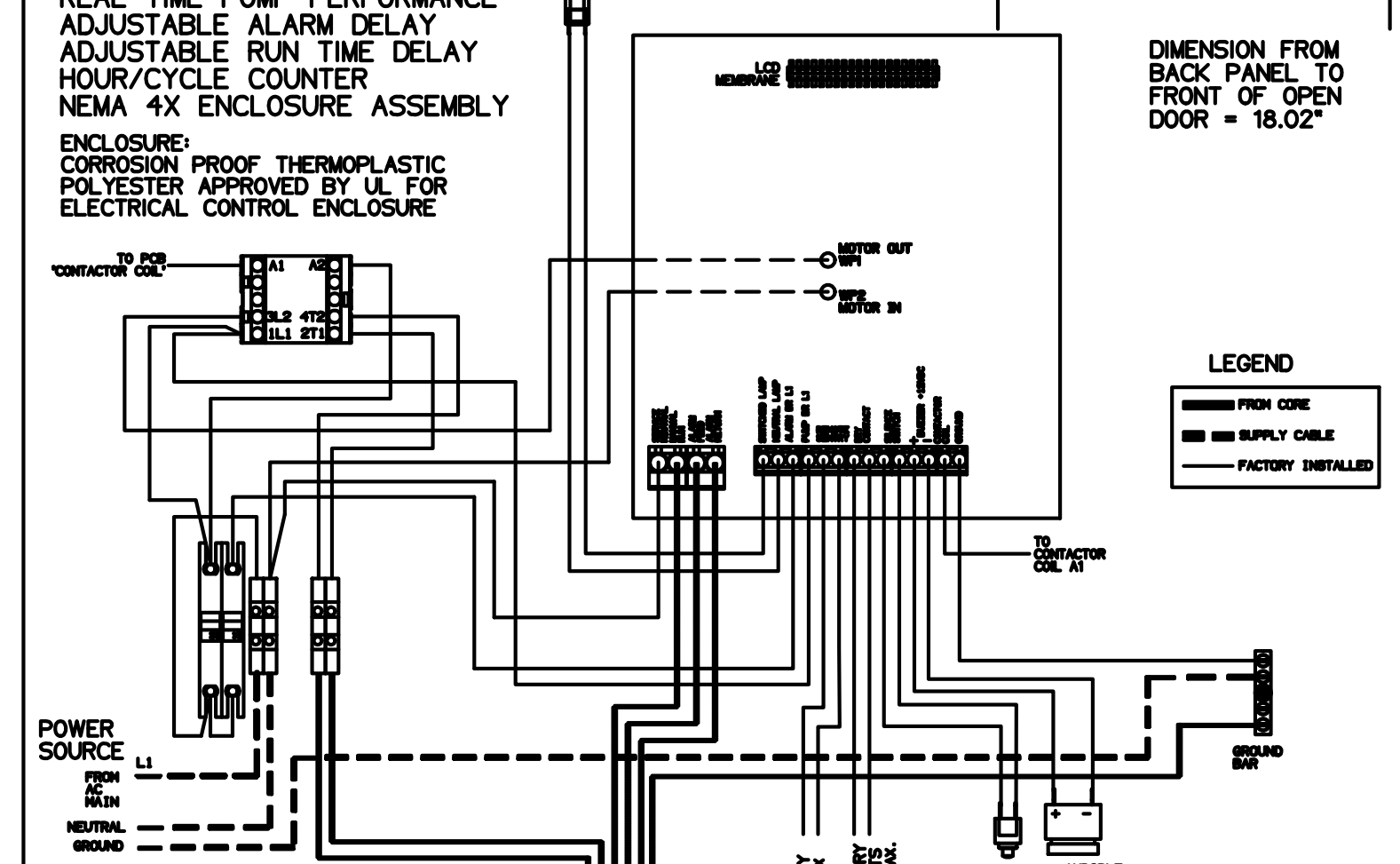
SENTRY PROTECT PLUS SIMPLEX

REDUNDANT RUN (HIGH LEVEL)
EXTERNAL VISUAL & AUDIBLE ALARM
REMOTE SENTRY DRY CONTACTS FOR
OPTIONAL POWER LOSS HIGH LEVEL
ALARM (POWER LOSS ALARM FOR WIRELESS)
MANUAL ALARM SILENCE
MANUAL RUN
STATUS LED'S: NORMAL, PUMP RUNNING, HIGH LEVEL
TROUBLE INDICATIONS: RUN DRY, OVERPRESSURE, BROWNOUT,
VOLTAGE, EXTENDED RUN TIME
DRY CONTACTS
CONFORMAL COATED CIRCUIT BOARD (BOTH SIDES)
PADLOCK
DEAD FRONT
PREDICTIVE ALARMS
REAL TIME PUMP PERFORMANCE
ADJUSTABLE ALARM DELAY
ADJUSTABLE RUN TIME DELAY
HOUR/CYCLE COUNTER
NEMA 4X ENCLOSURE ASSEMBLY

ENCLOSURE:
CORROSION PROOF THERMOPLASTIC
POLYESTER APPROVED BY UL FOR
ELECTRICAL CONTROL ENCLOSURE



DIMENSION FROM
BACK PANEL TO
FRONT OF OPEN
DOOR = 18.02"



LEGEND
 FROM CORE
 SUPPLY CABLE
 FACTORY INSTALLED

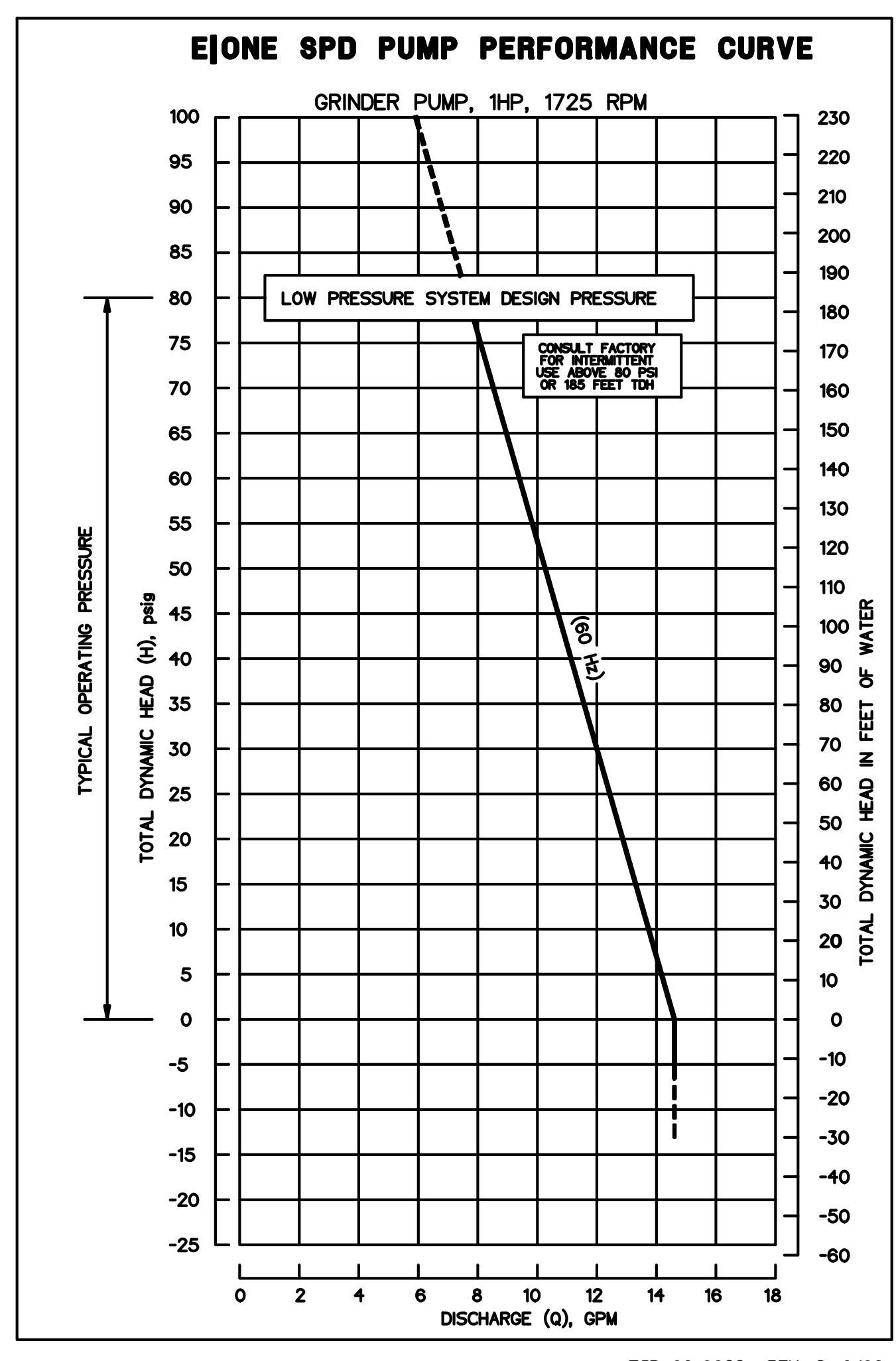
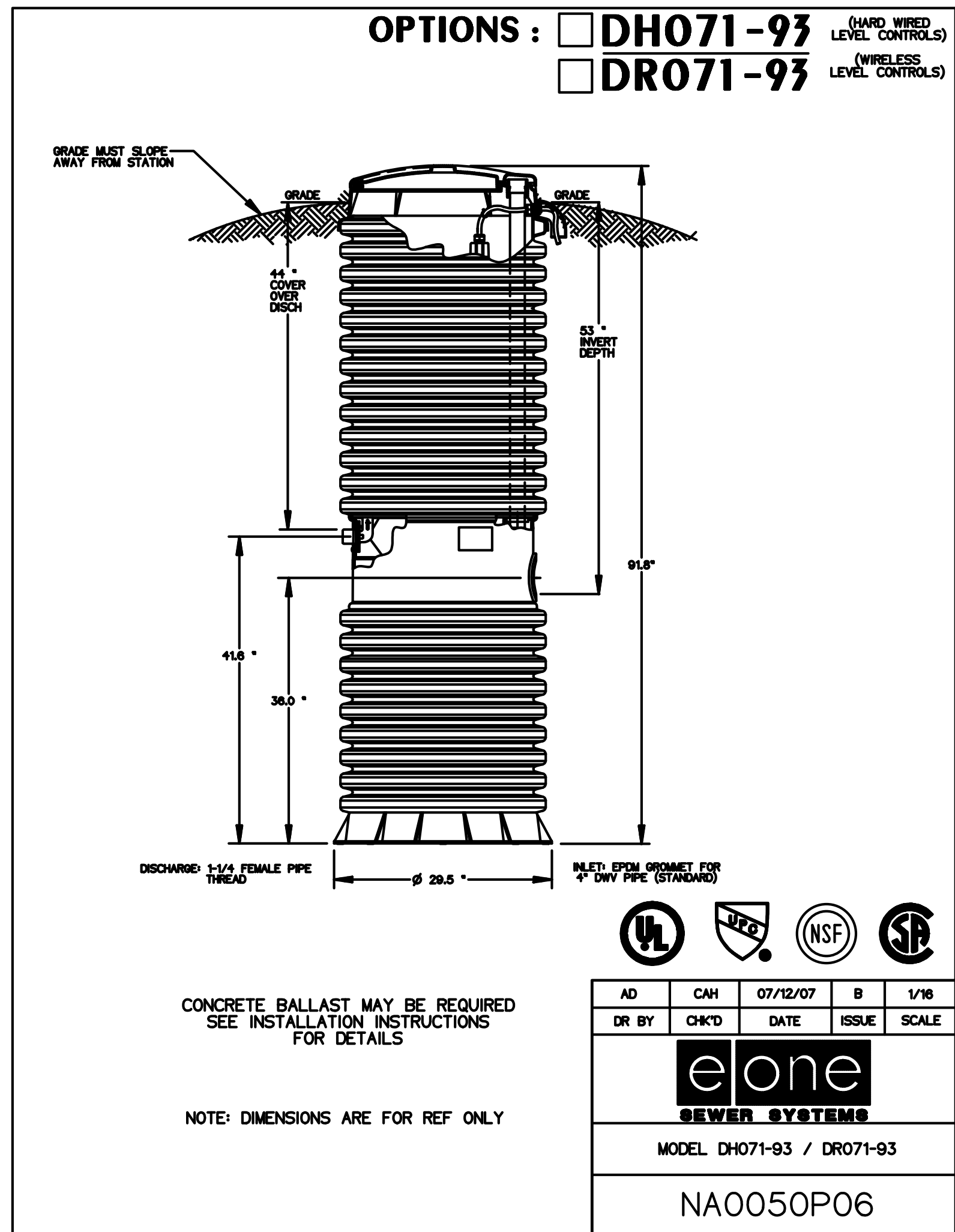
OLD / NEW WIRE COLOR MAP			
PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	NEUTRAL	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

CONTROL CABLE:
TYPE TO DIRECT BURIAL,
SIX CONDUCTOR

AD	01/10/08	DMS	A	08/23/11
DR BY	DATE	CHK'D	ISSUE	DATE
eone				

SEWER SYSTEMS
SENTRY PROTECT PLUS PANEL, SIMPLEX
120V, SINGLE POLE POWER

NA0079P04



MAINTENANCE BUILDING FORCE MAIN CONNECTION
 SCALE: N.T.S.

E-ONE PUMP PERFORMANCE CURVE
 SCALE: N.T.S.

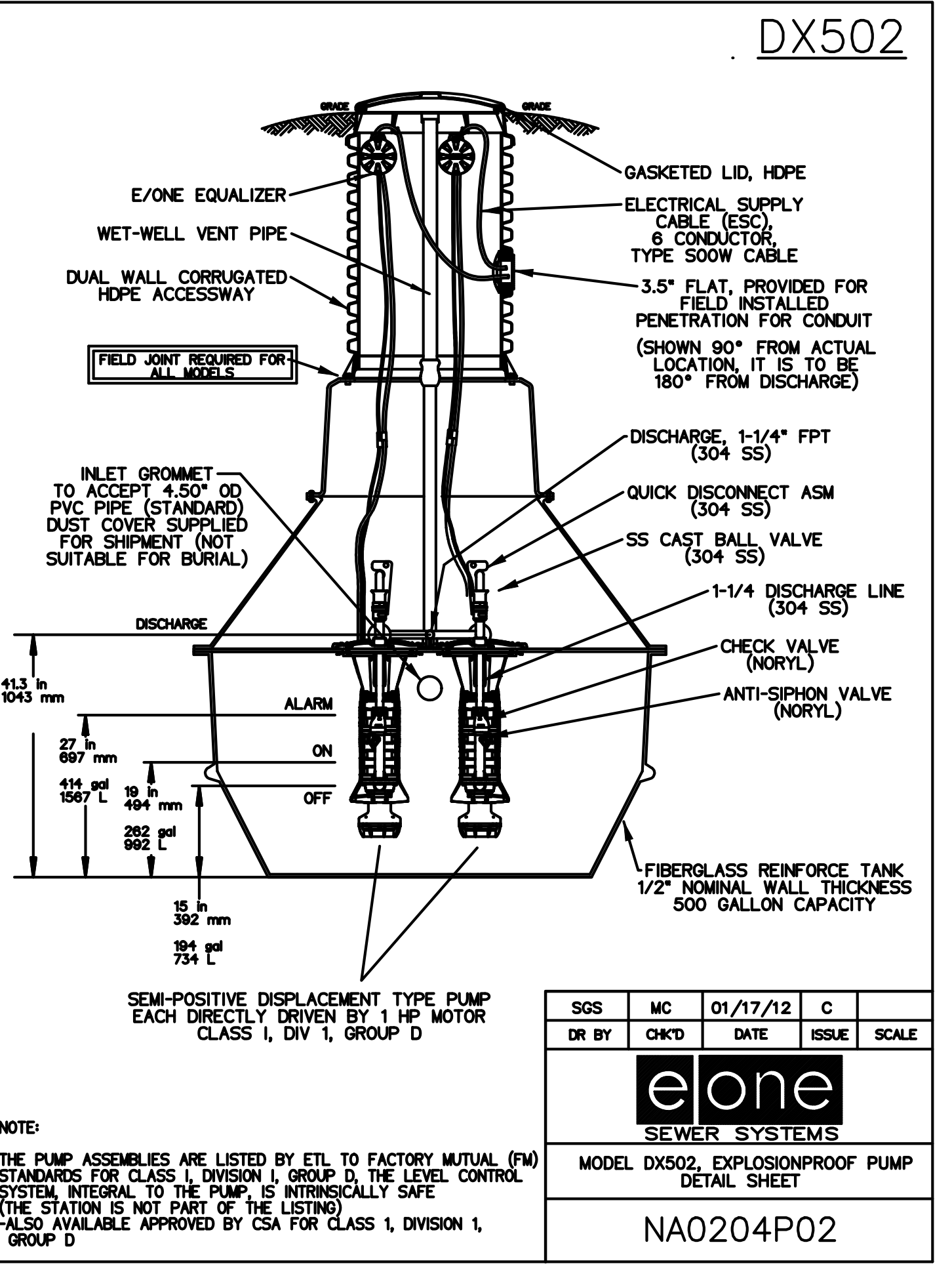
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

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

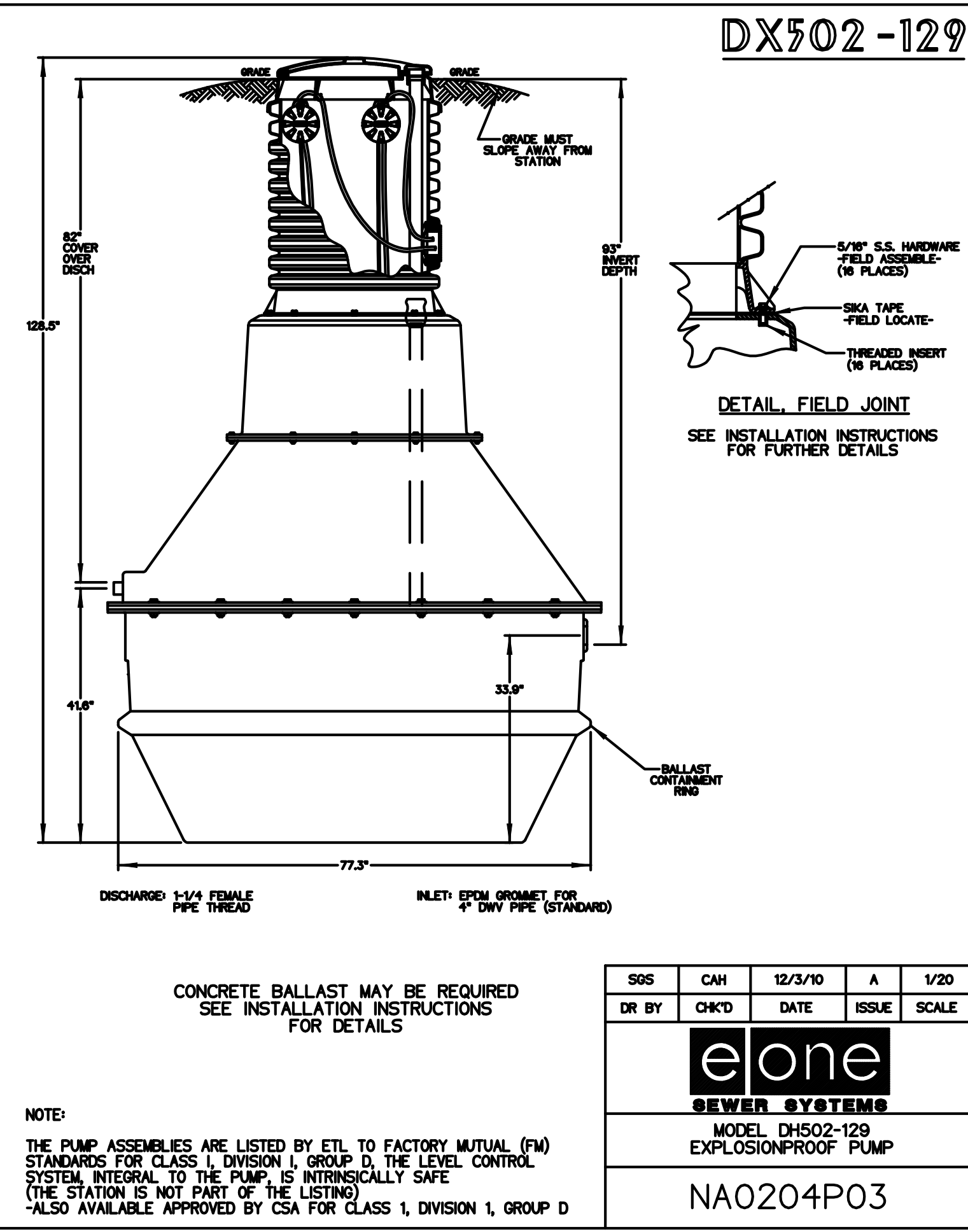
PROPOSED MULTIFAMILY DEVELOPMENT
 SUMMER STREET
 WALPOLE, MA

REVISIONS:

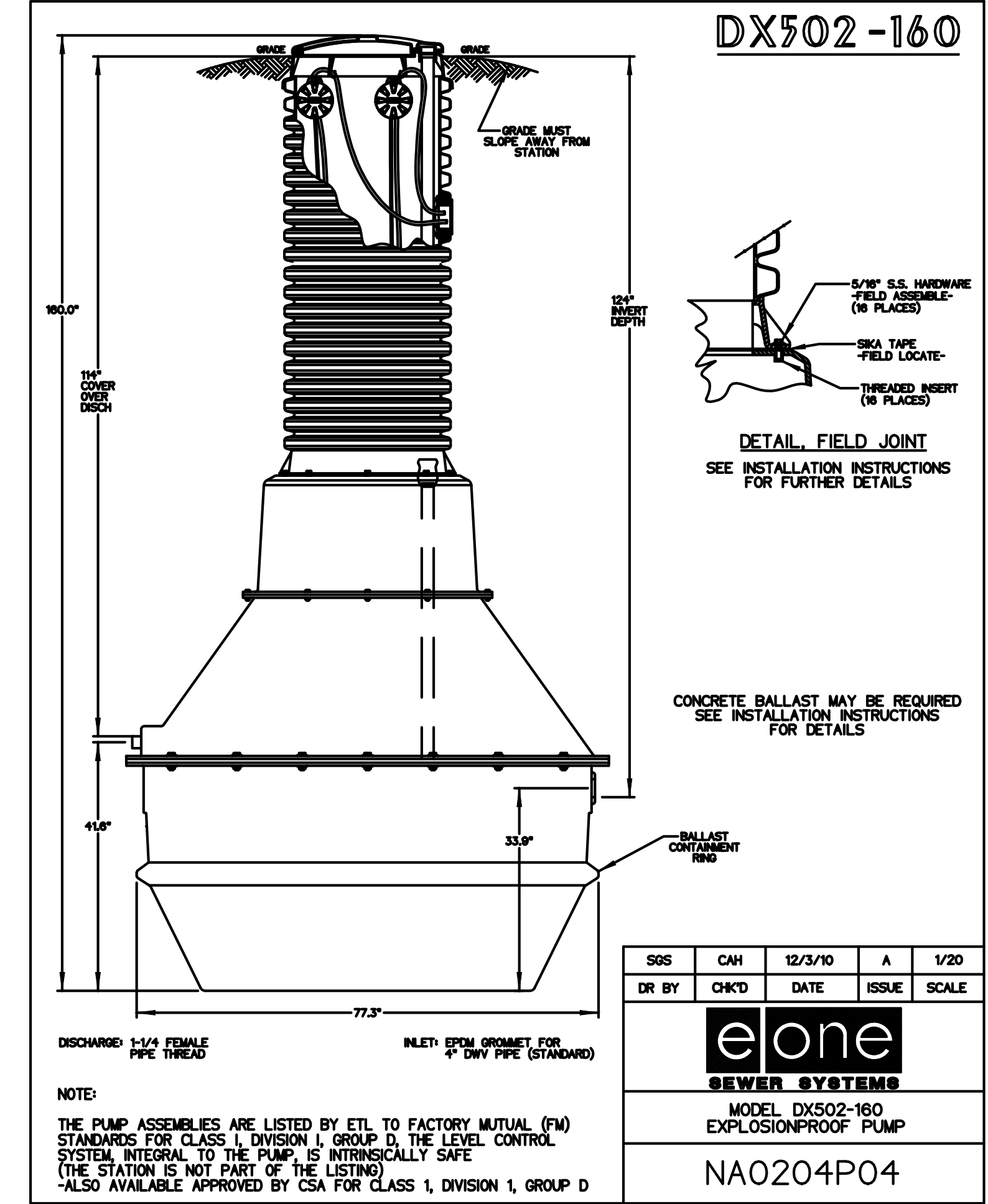
NO	BY	DATE	DESCRIPTION
1	PB	08/31/23	REV. PER PEER REVIEW



GARAGE UNDER SEWER PUMP DETAILS
 SCALE: N.T.S.



GARAGE UNDER SEWER PUMP DETAILS
 SCALE: N.T.S.



GARAGE UNDER SEWER PUMP DETAILS
 SCALE: N.T.S.



SITE PLAN

SEWER PUMP DETAILS
 (DETAIL SHEET 12 OF 27)

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

C.50

8/31/2023 L:\19097\19097_04 - LCA 2\CURRENT\19097 - Details.dwg
 Plot: Served by: BBAKER
 Printed by: Matthew Baker

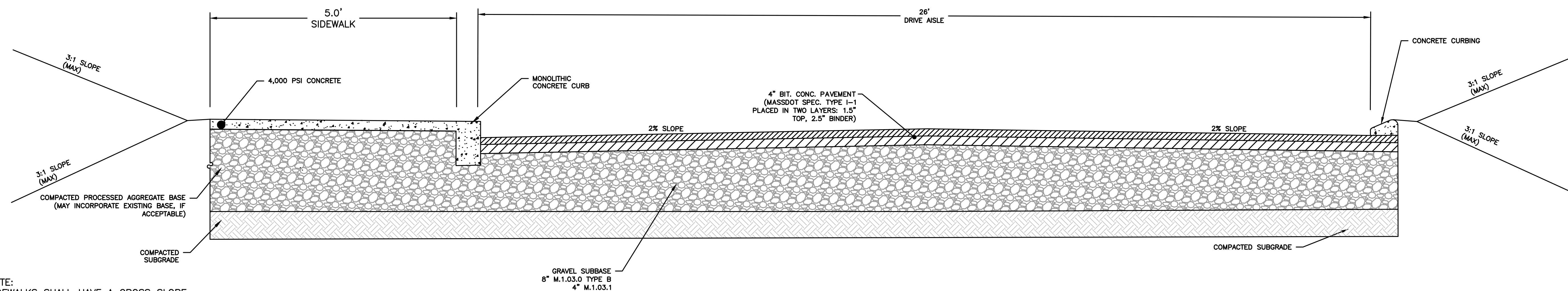
DEEP HOLE TESTING
 12-4-2019 THROUGH 10-21-2020
 SOIL EVALUATOR: KASEY FERREIRA
 WITNESSED BY: CHRIS JOHNSON
 PERMEABILITY TESTING BY: DANIEL J. MERRIKIN, P.E.; KASEY FERREIRA

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	TP9 0"-40" FILL 40"-117" C MED. S ESHW: 40" HSG: A	TP17 0"-9" A L/O 9"-108" C LS ESHW: 18" HSG: A/D	TP25A 0"-8" A L 8"-15" B SL 15"-108" C LS ESHW: 32" HSG: C
TP2 0"-10" A L/O 10"-118" C LS ESHW: 33" HSG: B	TP10 0"-9" A L 9"-23" B SL 23"-96" C CS ESHW: 34" HSG: C	TP18 0"-8" A L 8"-17" B SL 17"-120" C LS ESHW: 26" HSG: C	TP26 0"-10" A L 10"-18" B SL 18"-75" C LS ESHW: 49" REFUSAL @ 75" 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	TP11 0"-8" A L 8"-17" B LS 17"-122" C MED. S ESHW: 30" HSG: B	TP19 0"-8" A L 8"-20" B LS 20"-120" C S ESHW: 50" HSG: A	TP27 0"-8" A L 8"-25" B SL 25"-48" C1 LS 48"-110" C2 LS ESHW: 30" HSG: C
TP3 0"-12" A L 12"-20" B SL 20"-98" C LS ESHW: 31" HSG: C	TP12 0"-9" A L 9"-18" B LS 18"-120" C MED. S ESHW: 29" HSG: B	TP20 0"-7" A L 7"-24" B SL 24"-103" C LS ESHW: 48" HSG: B	TP28 0"-6" A L 6"-24" B SL 24"-99" C LS ESHW: 32" HSG: C
TP4 0"-11" A L/O 11"-96" C LS ESHW: 49" HSG: A	TP13 0"-13" A L 13"-28" B SL 28"-135" C LS ESHW: 43" HSG: B	TP21 0"-9" A L 9"-24" B LS 24"-102" C S ESHW: 43" HSG: A	TP29 0"-13" A L 13"-18" B SL 18"-132" C LS ESHW: 43" HSG: B
TP5 0"-12" A L/O 12"-109" C LS ESHW: 41" HSG: A	TP14 0"-7" A L 7"-13" B LFS 13"-95" C1 CS 95"-120" C2 G ESHW: 95" HSG: A	TP22 0"-6" A L 6"-23" B SL 23"-66" C LS ESHW: 32" HSG: C	TP30 0"-12" A L/O 12"-30" B L 30"-128" C LS ESHW: 36" HSG: C
TP6 0"-11" A L/O 11"-20" B SL 20"-99" C LS ESHW: 26" HSG: C	TP15 0"-5" A L 5"-22" B SL 22"-120" C LS ESHW: 30" HSG: C	TP23 0"-12" A L 12"-24" B LS 24"-118" C S ESHW: 36" HSG: B	TP31 0"-32" FILL 32"-96" C GLS ESHW: 42" HSG: A
TP7 0"-7" A L 7"-122" C LS ESHW: 40" HSG: B	TP16 0"-5" A L 5"-20" B SL 20"-120" C LS ESHW: 36" FHPT: DESIGN K = 0.23 IN/HR	TP24 0"-11" A L 11"-24" B LS 24"-102" C S ESHW: 39" REFUSAL @ 102" HSG: B	TP32 0"-14" A SL 14"-20" B SL 20"-88" C SL ESHW: 30" HSG: C FHPT: DESIGN K = 0.89 IN/HR
TP8 0"-7" A L 7"-18" B SL 18"-139" C LS ESHW: 44" HSG: B		TP25 0"-10" A L 10"-20" B LS 20"-69" C S ESHW: 41" REFUSAL @ 69" HSG: A	

TP33 0"-12" A SL 12"-30" B SL 30"-87" C LS ESHW: 30" HSG: C FHPT: DESIGN K = 0.09 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	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
TP34 0"-10" A SL 10"-24" B SL 24"-72" C LS ESHW: 37" HSG: C FHPT: DESIGN K = 0.30 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	TP48 0"-12" A SL 12"-29" B SL 29"-80" C LS ESHW: 36" HSG: C FHPT: DESIGN K = 6.32 IN/HR
TP36 0"-10" A SL 10"-22" B SL 22"-62" C SL ESHW: 21" HSG: C	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	TP49 0"-10" A SL 10"-24" B SL 24"-60" C LS REFUSAL: 60" HSG: B FHPT: DESIGN K = 2.91 IN/HR
TP37 0"-11" A SL 11"-28" B SL 28"-52" C SL ESHW: 28" HSG: C	TP43A 0"-10" A SL 10"-19" B SL 19"-89" C SL ESHW: 16" HSG: B/D	TP50 0"-12" A SL 12"-25" B SL 25"-67" C LS ESHW: NONE HSG: B FHPT: DESIGN K = 0.59 IN/HR
TP38 0"-12" A SL 12"-28" B SL 28"-72" C S ESHW: 42" HSG: B FHPT: DESIGN K = 10.41 IN/HR	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	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
TP39 0"-14" A SL 14"-37" B SL 37"-66" C LS ESHW: 36" HSG: C	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	TP52 0"-10" A SL 10"-28" B SL 28"-72" C LS ESHW: 53" HSG: B FHPT: DESIGN K = 3.50 IN/HR
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	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	TP53 0"-10" A SL 10"-32" B SL 32"-78" C SL ESHW: 32" HSG: C
TP40A 0"-14" A SL 14"-23" B SL 23"-80" C S ESHW: 40" HSG: C FHPT: DESIGN K = 6.58 IN/HR		

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.

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

**SOIL TESTING & CROSS SECTIONS
 (DETAIL SHEET
 13 OF 27)**

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

C.51



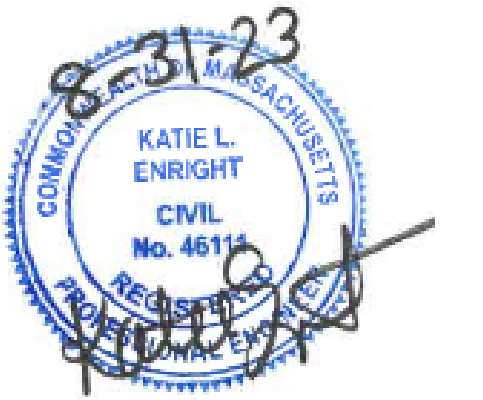
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

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
1	PB	08/31/23	REV. PER PEER REVIEW



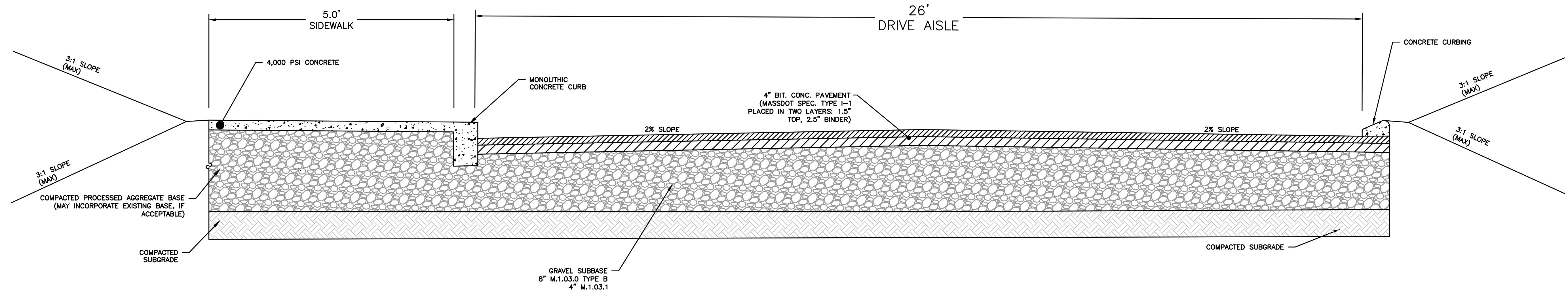
SITE PLAN

ROADWAY CROSS SECTIONS
 (DETAIL SHEET 14 OF 27)

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

C.52

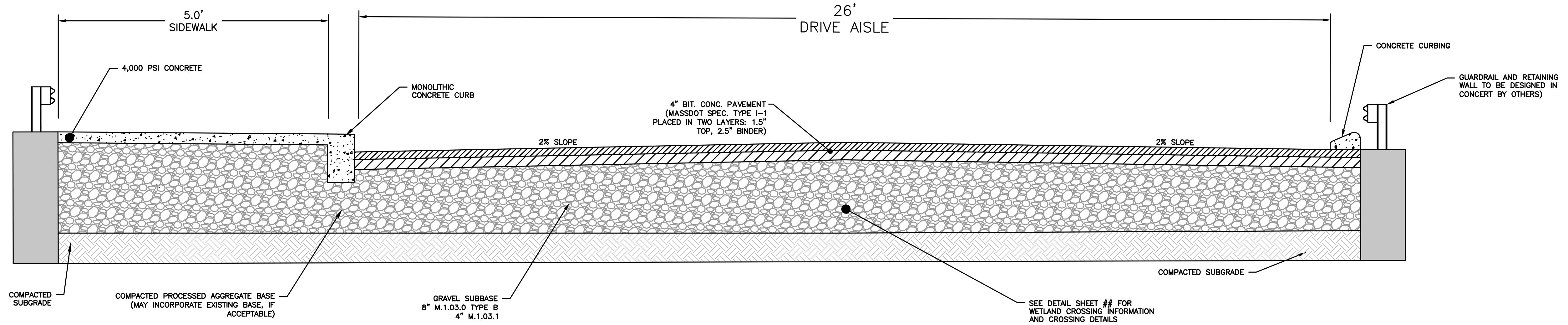
SHEET 52 OF 65



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

TYPICAL DRIVEWAY CROSS SECTION

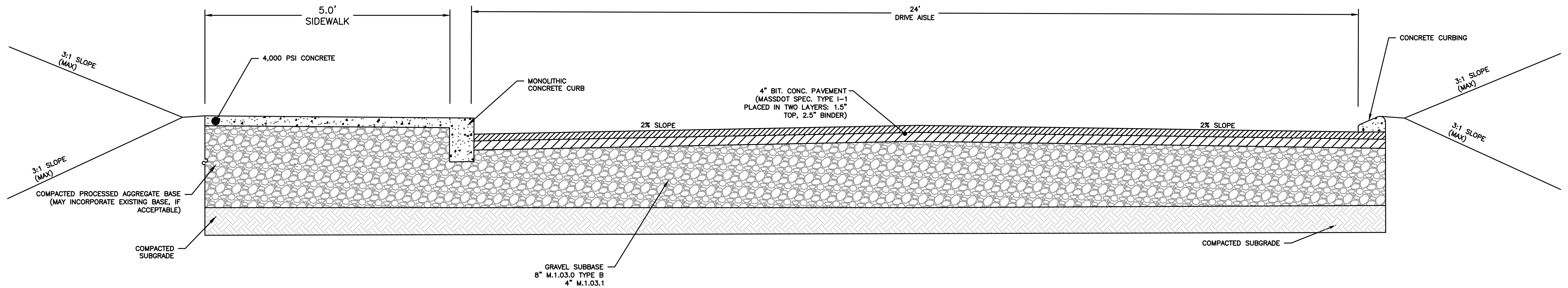
SCALE: N.T.S



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

8/31/2023 L:\19097\19097_04 - Lot 2\CURRENT\19097 - Details.dwg
 last saved by: MB/KF/KL
 printed by: Matthew Baker



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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE
PLAN

RETAINING WALL/
GUARDRAIL DETAILS
(DETAIL SHEET
15 OF 27)

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

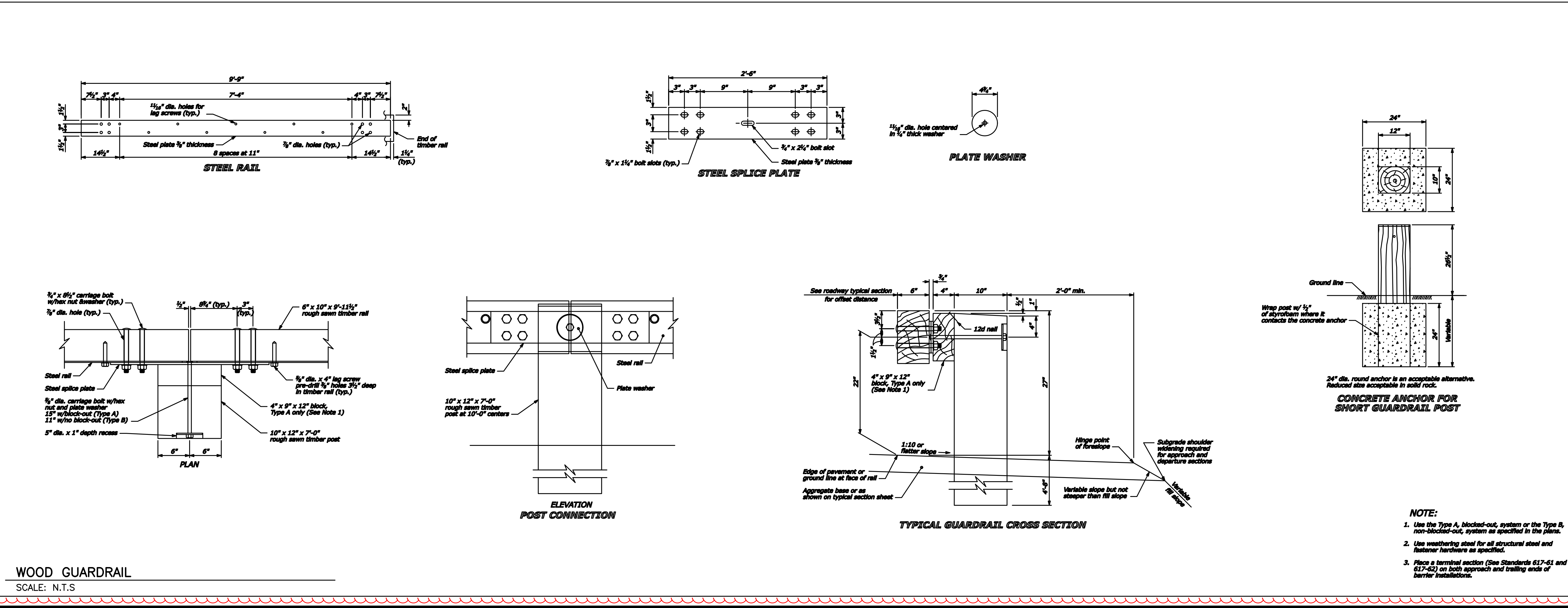
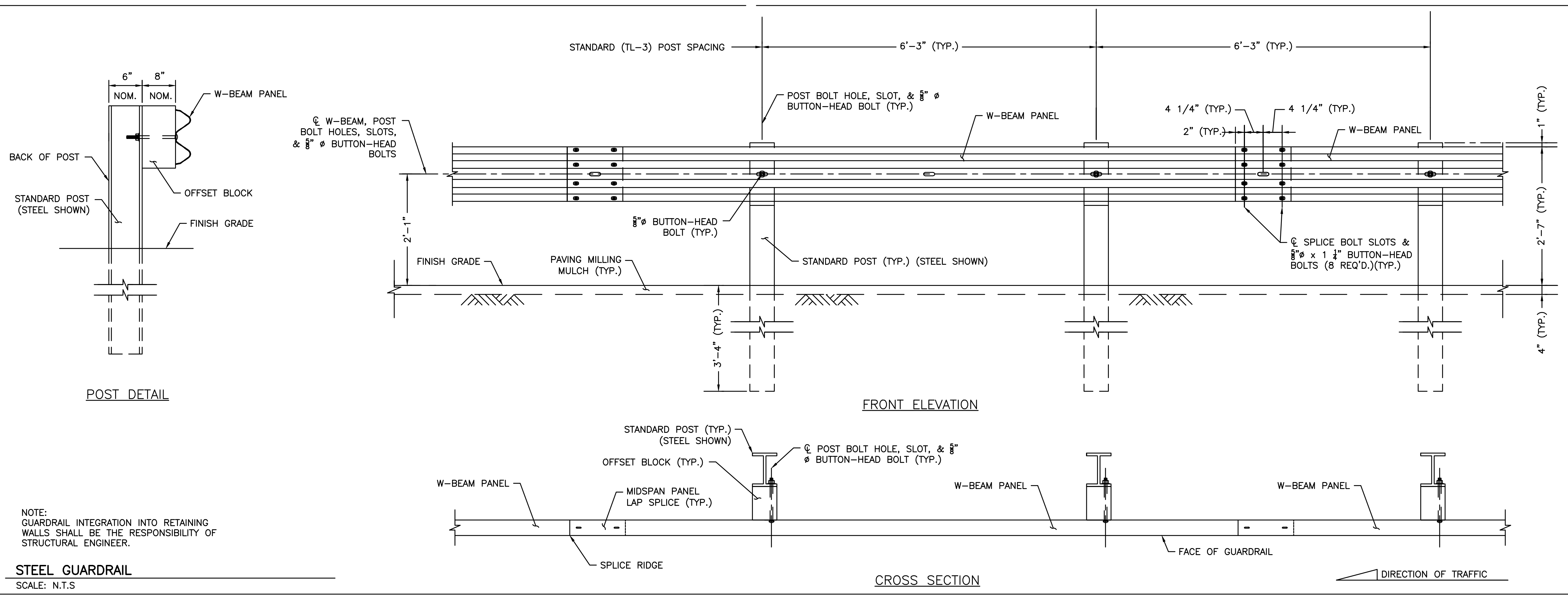
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.53

SHEET 53 OF 65



8/31/2023 11:00:07 AM - L:\2023\CURRENT\19097 - Details.dwg
Plot Saved by: MB/KF/KE
Printed by: Matthew Baker



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

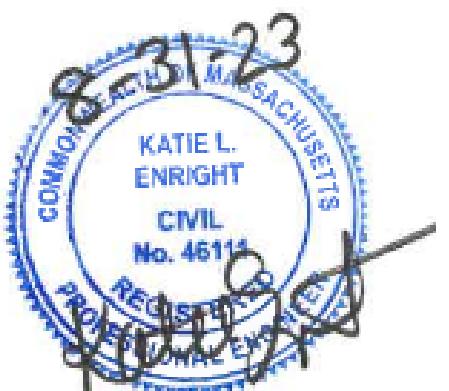
PREPARED FOR:

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

RETAINING WALL/
 GUARDRAIL DETAILS
 (DETAIL SHEET
 16 OF 27)

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

C.54

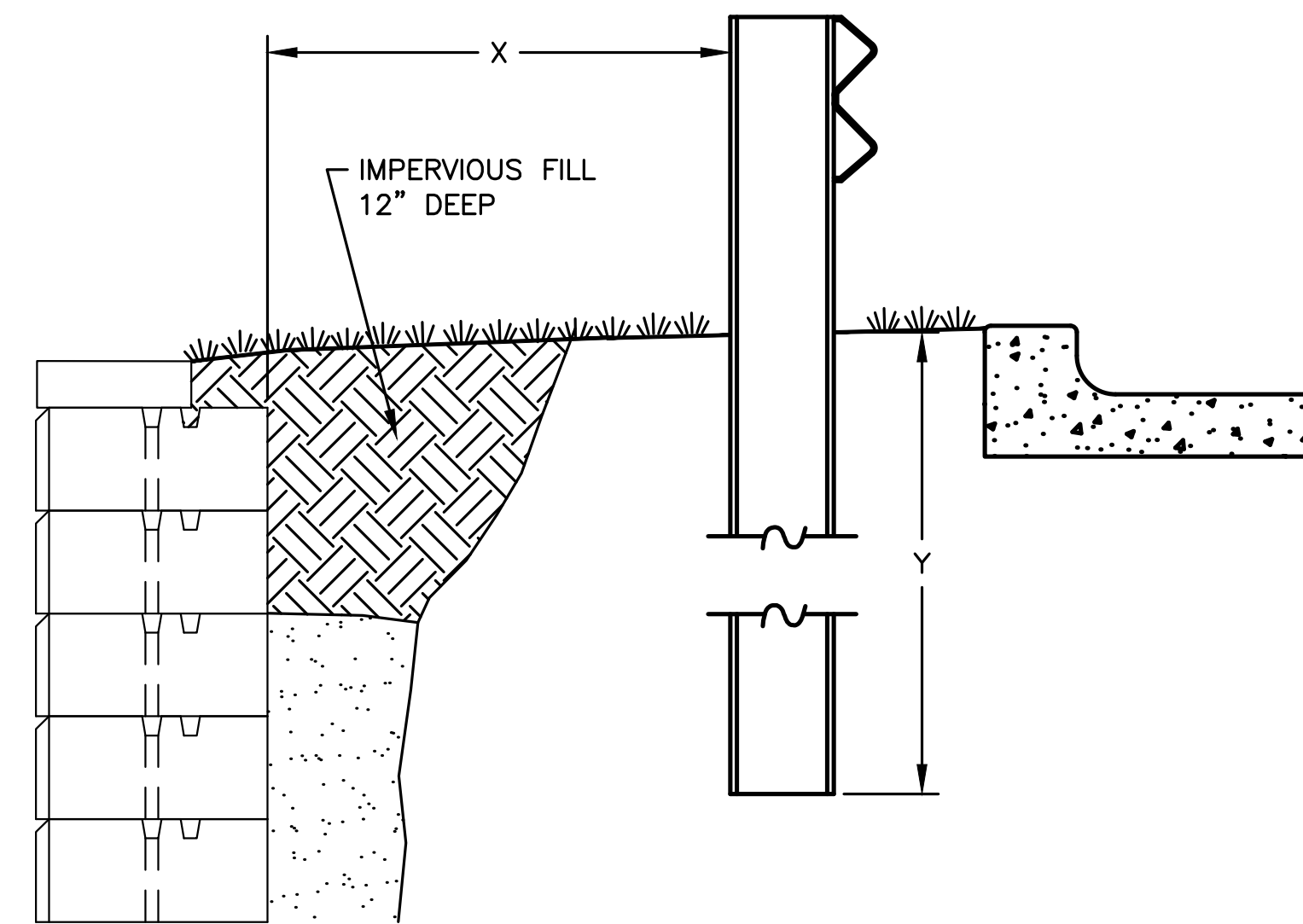
SHEET 54 OF 65

NOTES:

- 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.
- RETAINING WALL AND GUARDRAIL TO BE DESIGNED IN CONCERT.
- RETAINING WALL TO BE DESIGNED AND SIGNED OFF ON BY A LICENSED STRUCTURAL ENGINEER.

GUARDRAIL NOTES:

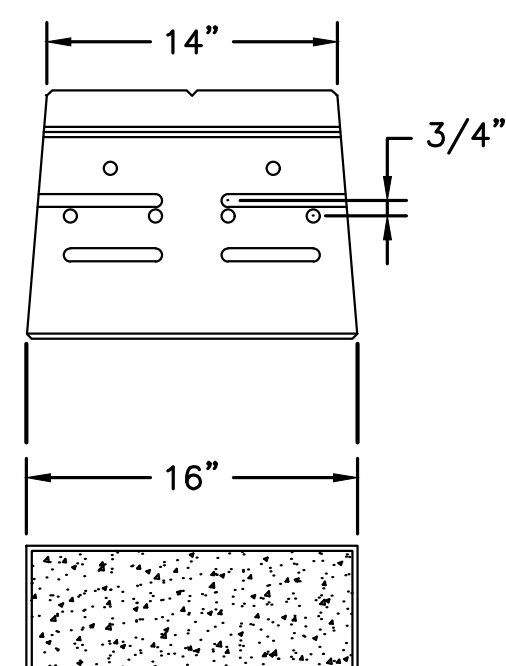
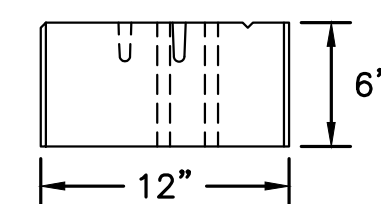
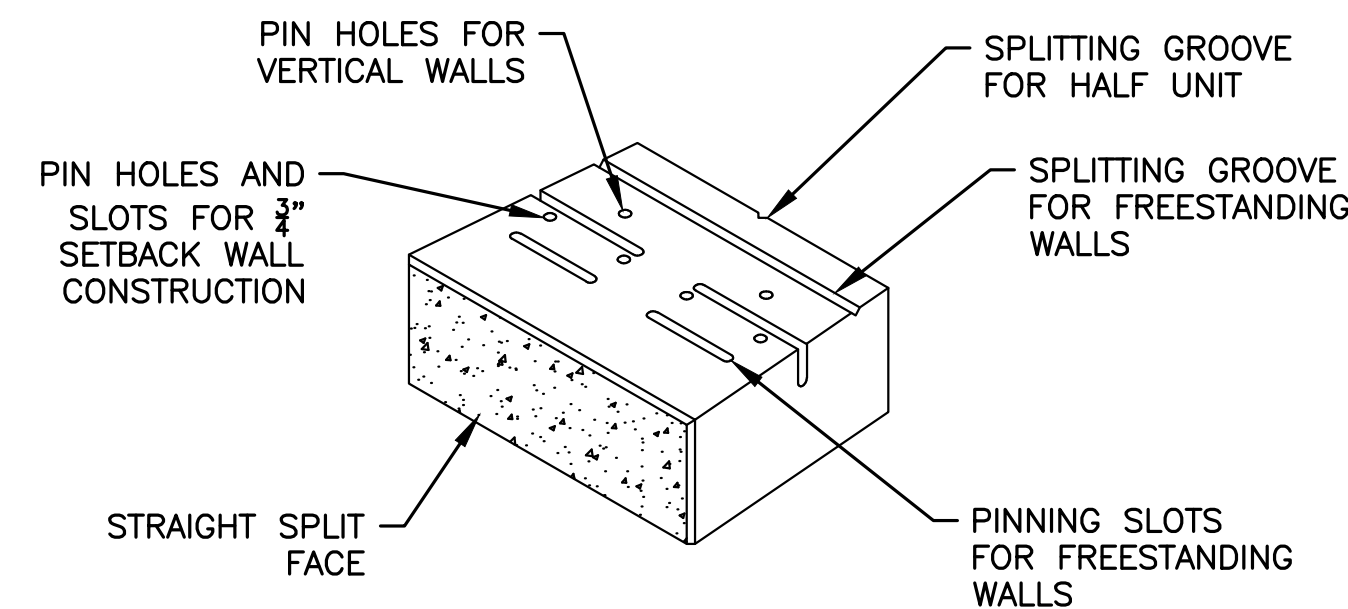
- RETAINING WALL TO BE CERTIFIED BY A PROFESSIONAL ENGINEER PRIOR TO CONSTRUCTION.
- DISTANCE X AND Y TO BE DETERMINED BY A STRUCTURAL ENGINEER.
- GUARDRAIL TO BE SPECIFICALLY SELECTED FOR ENGINEERED RETAINING WALL.
- REFER TO STRUCTURAL ENGINEERING PLANS FOR WALLS GREATER THAN 4 FEET IN HEIGHT.



NOT FOR CONSTRUCTION

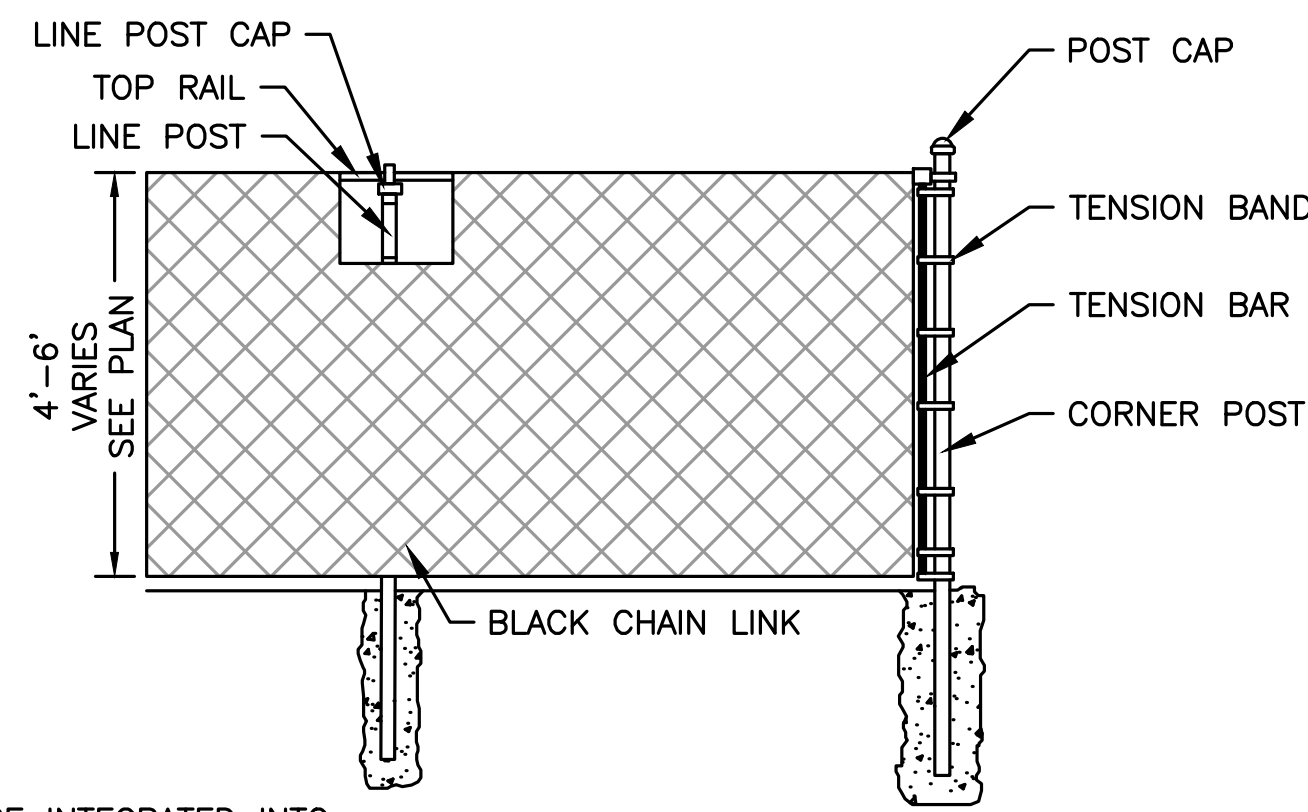
RETAINING WALL WITH GUARDRAIL AND FENCE

SCALE: N.T.S



VERSA-LOK UNIT

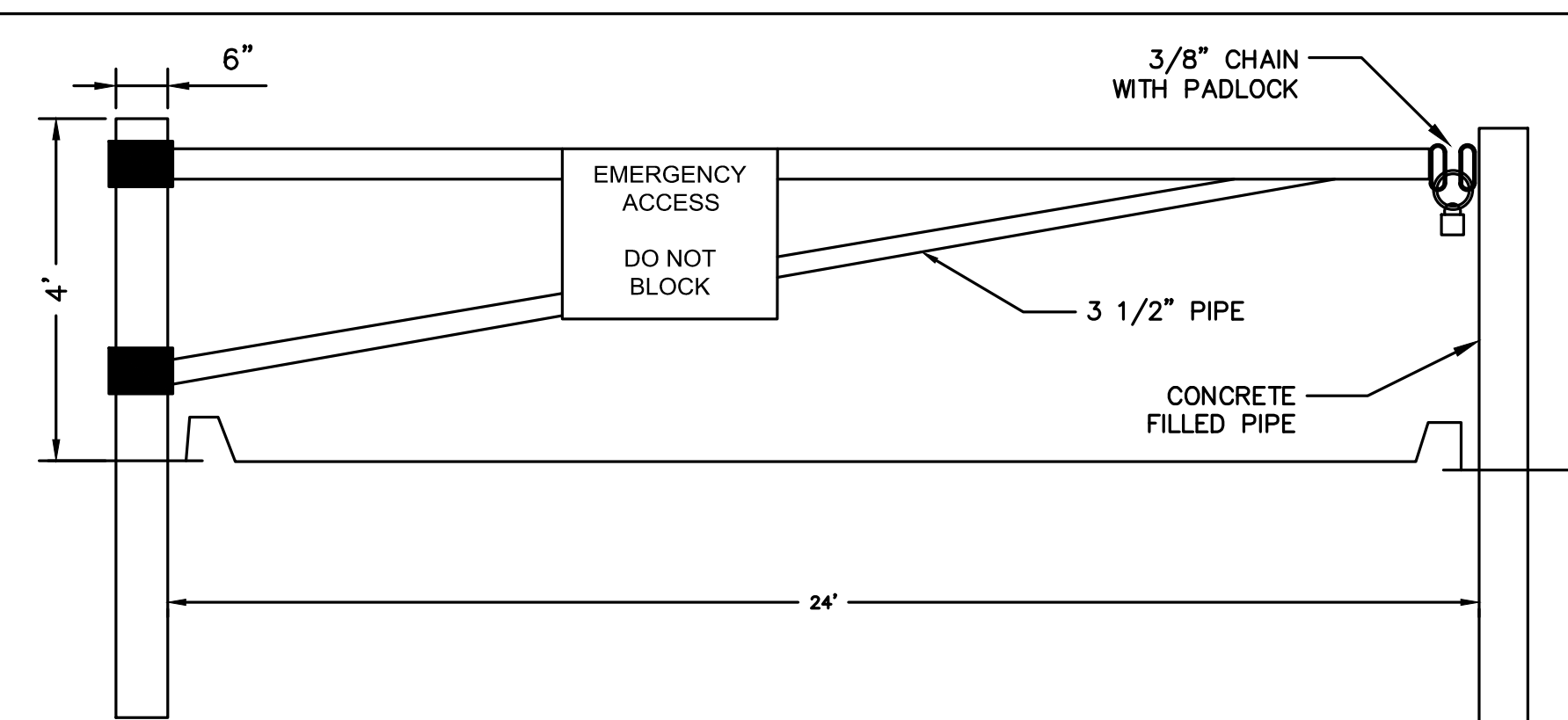
SCALE: N.T.S



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

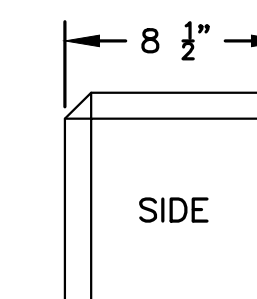
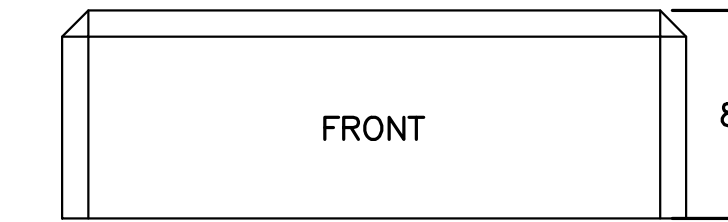
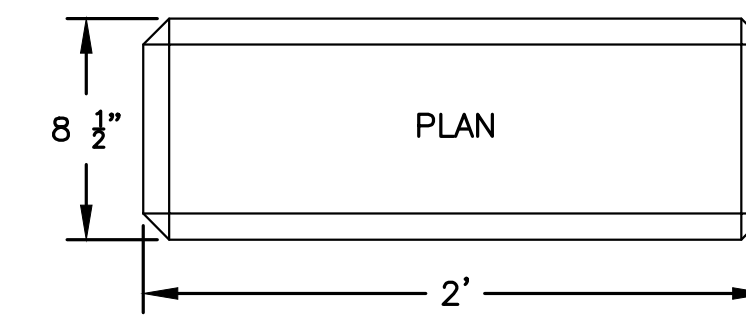
CHAIN LINK FENCE DETAIL

SCALE: N.T.S

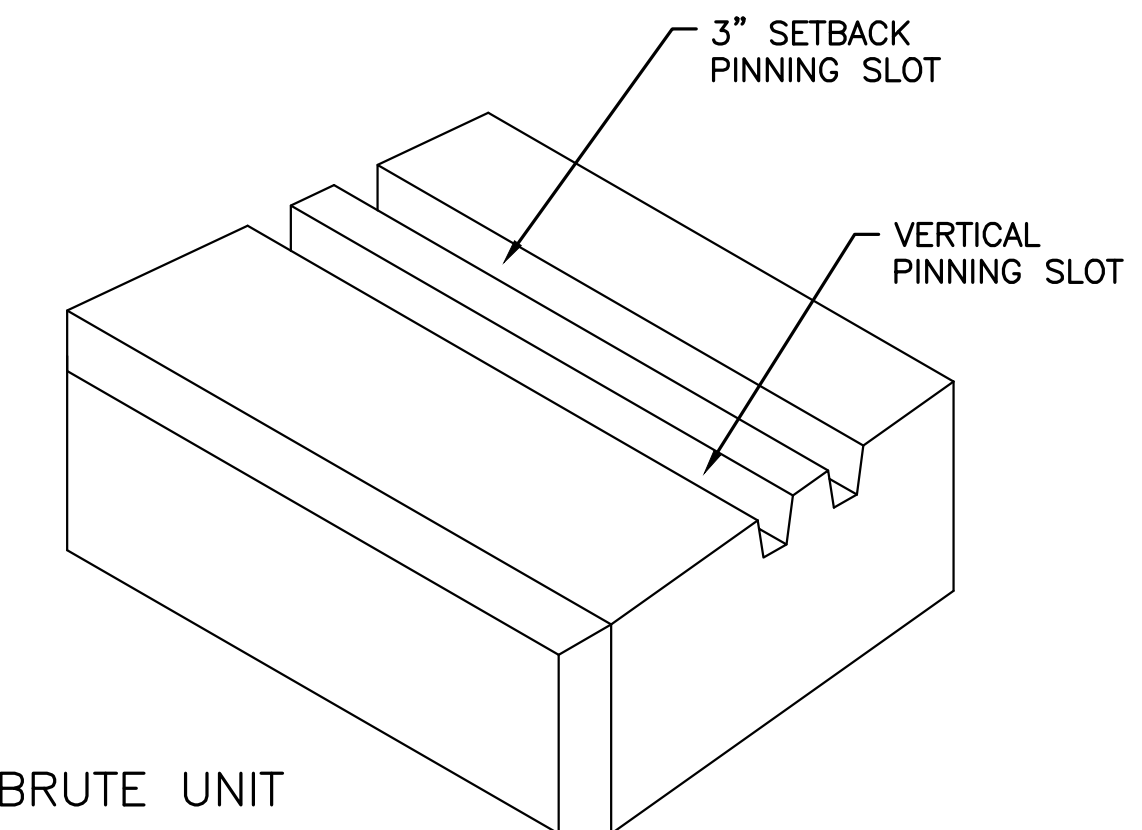
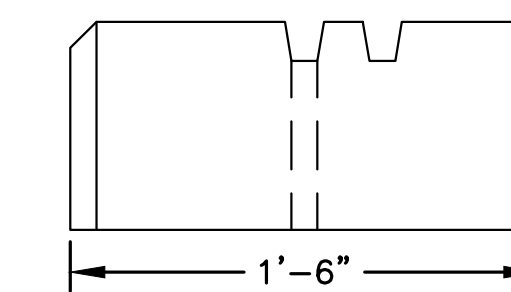
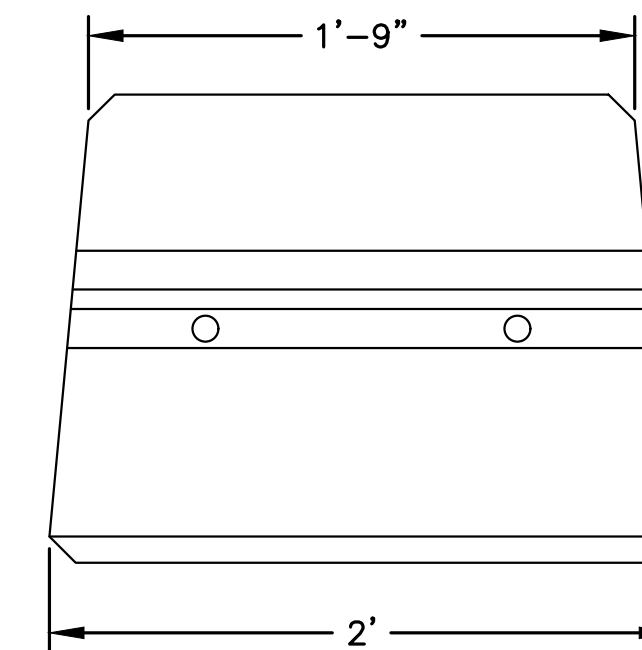


EMERGENCY ACCESS GATE DETAIL

SCALE: N.T.S



VERSA-LOK BRUTE HALF UNIT



VERSA-LOK BRUTE UNIT

VERSA-LOK BRUTE UNIT

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
1	PB	08/31/23	REV. PER PEER REVIEW

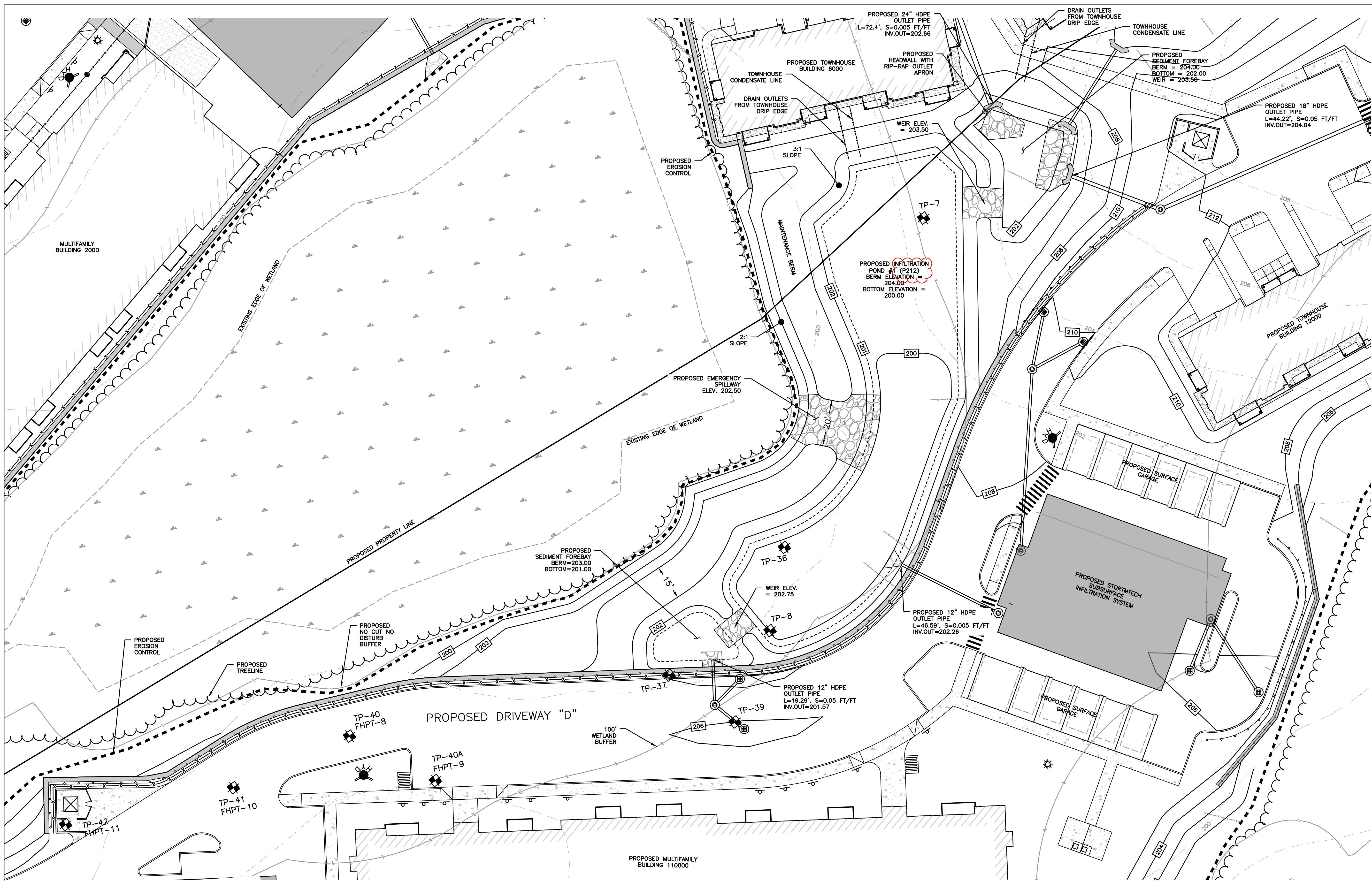


SITE
 PLAN

**INFILTRATION POND
 #1 DETAIL
 (DETAIL SHEET
 18 OF 27)**

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

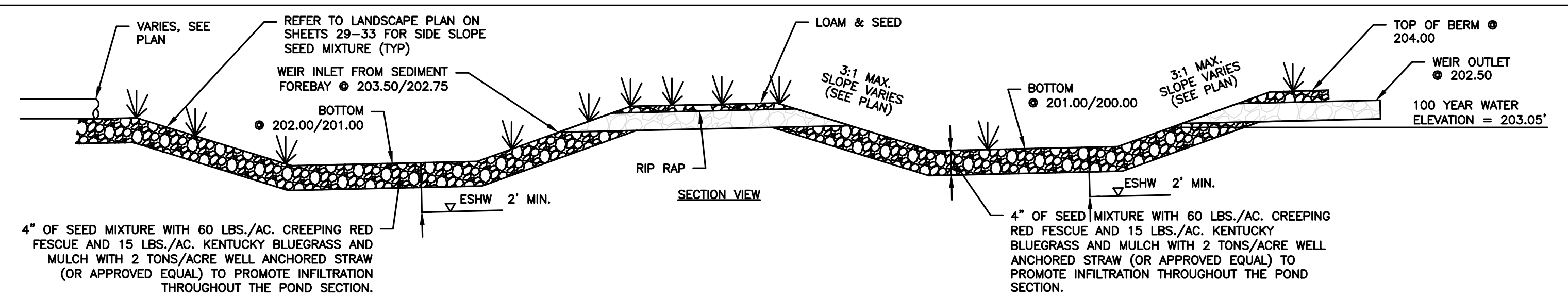
C.56



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.
 3. REFER TO GRADING AND DRAINAGE NOTE 20 ON SHEET 2.

INFILTRATION POND #1 SECTION
 SCALE: NTS





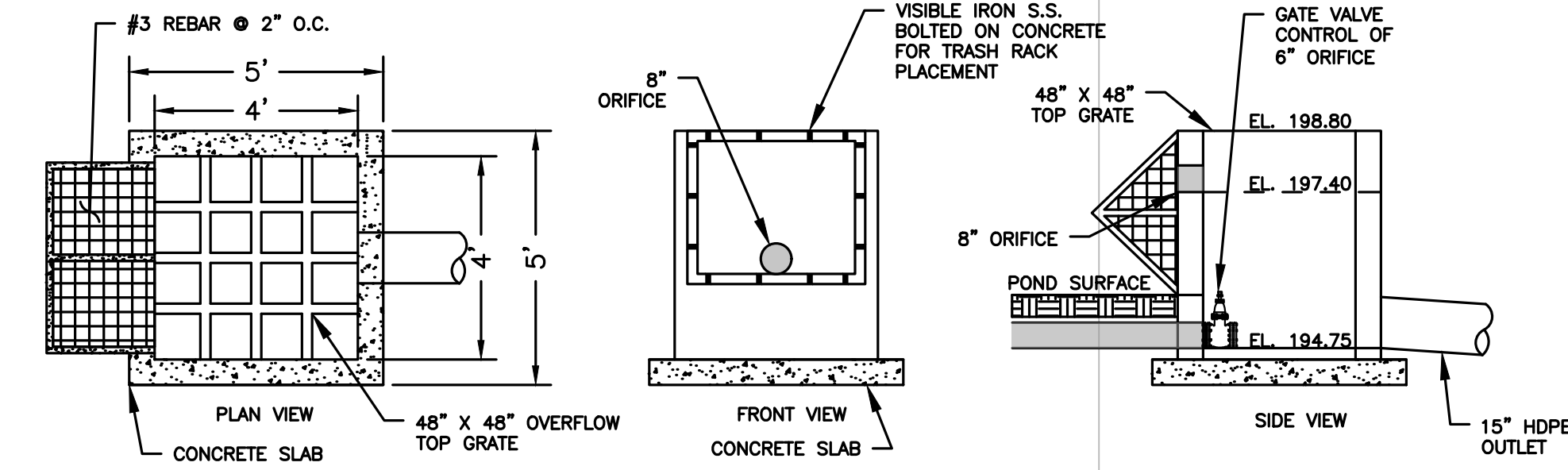
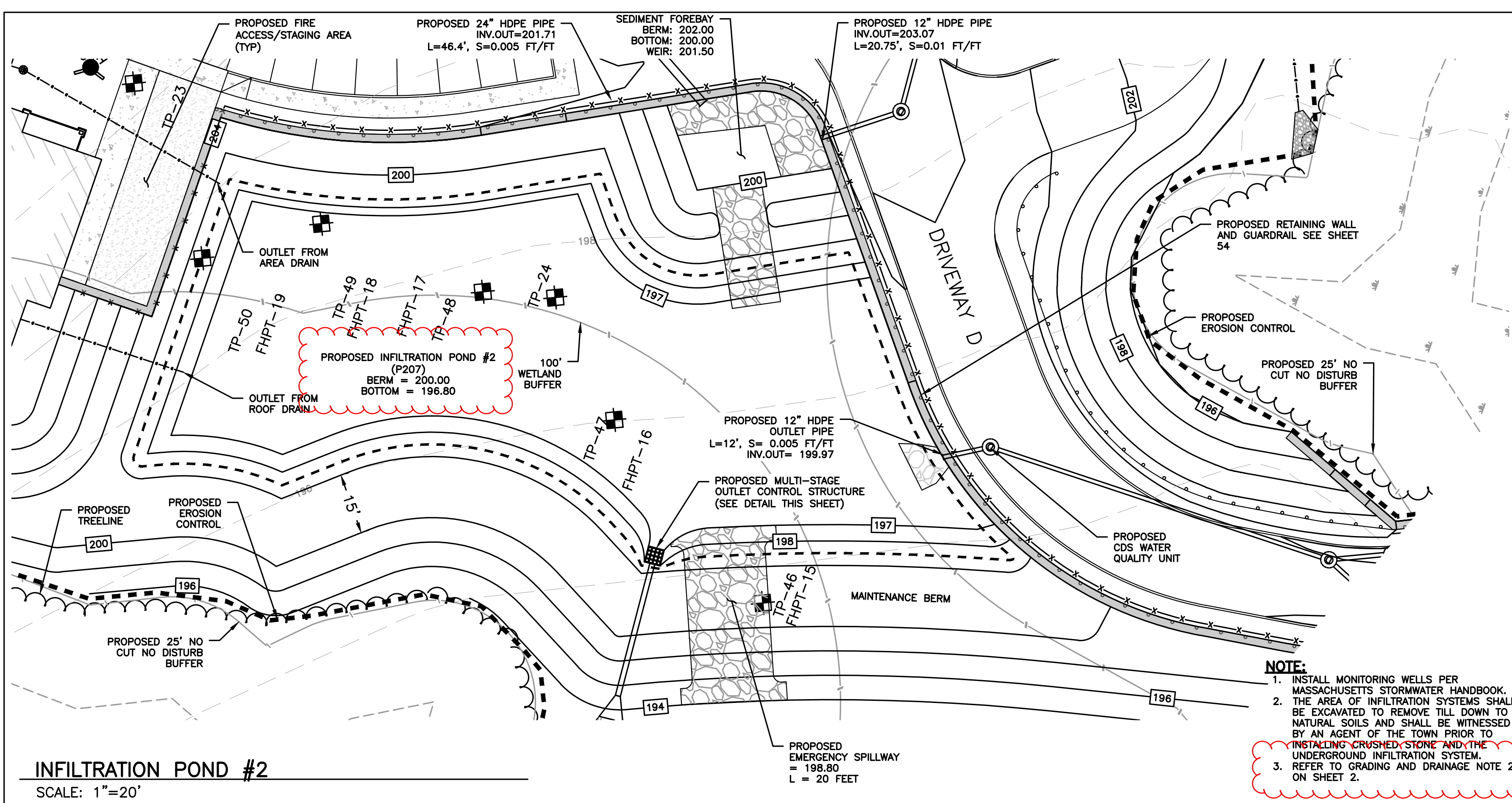
HOWARD STEIN HUDSON

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

PREPARED FOR:

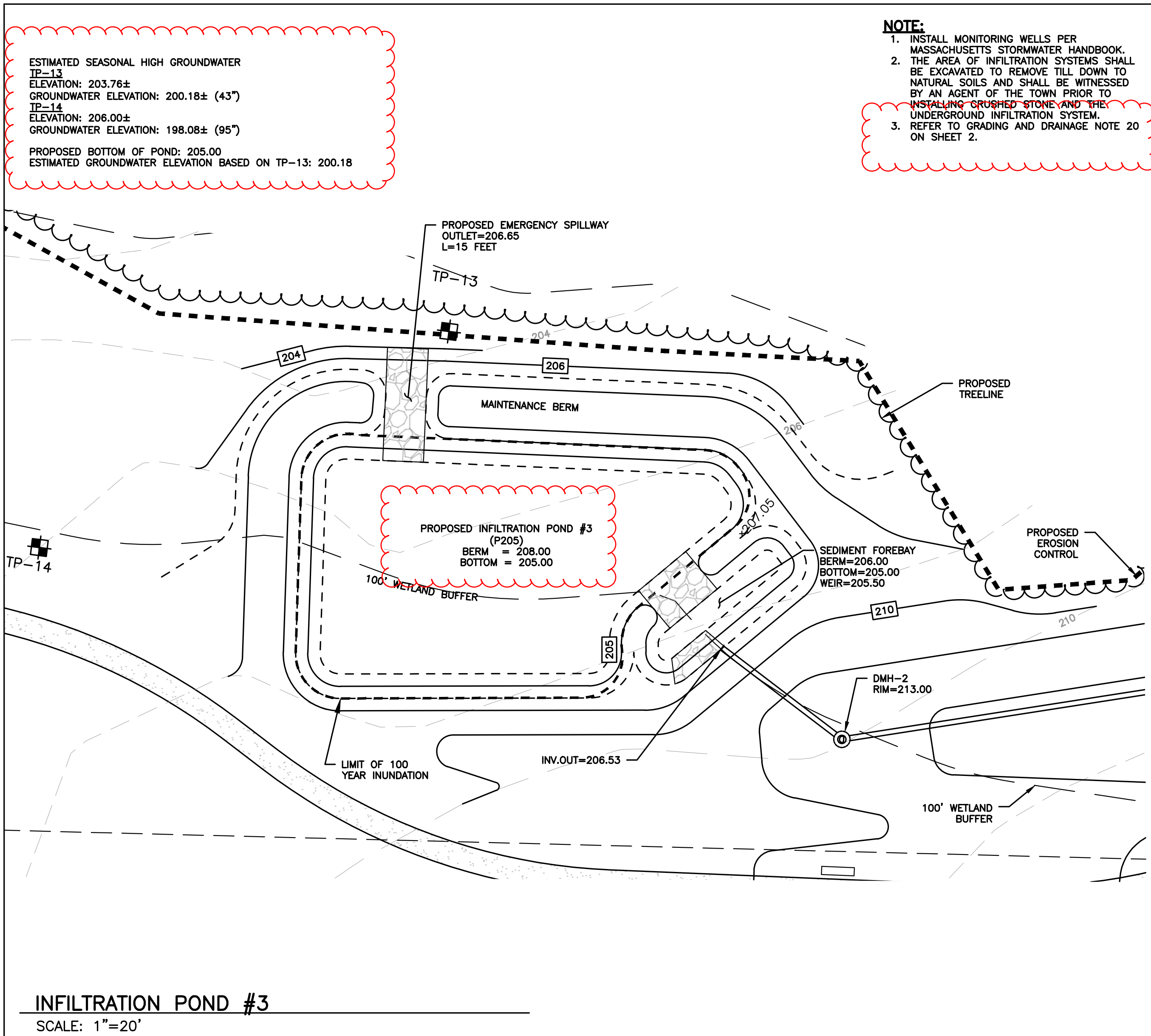
FRH REALTY LLC
c/o FAIRFIELD RESIDENTIAL
5 BURLINGTON WOODS, SUITE 203
BURLINGTON, MA 01803

PROPOSED MULTIFAMILY
DEVELOPMENT
SUMMER STREET
WALPOLE, MA



MULTI-STAGE DISCHARGE OUTLET STRUCTURE #2
SCALE: NTS

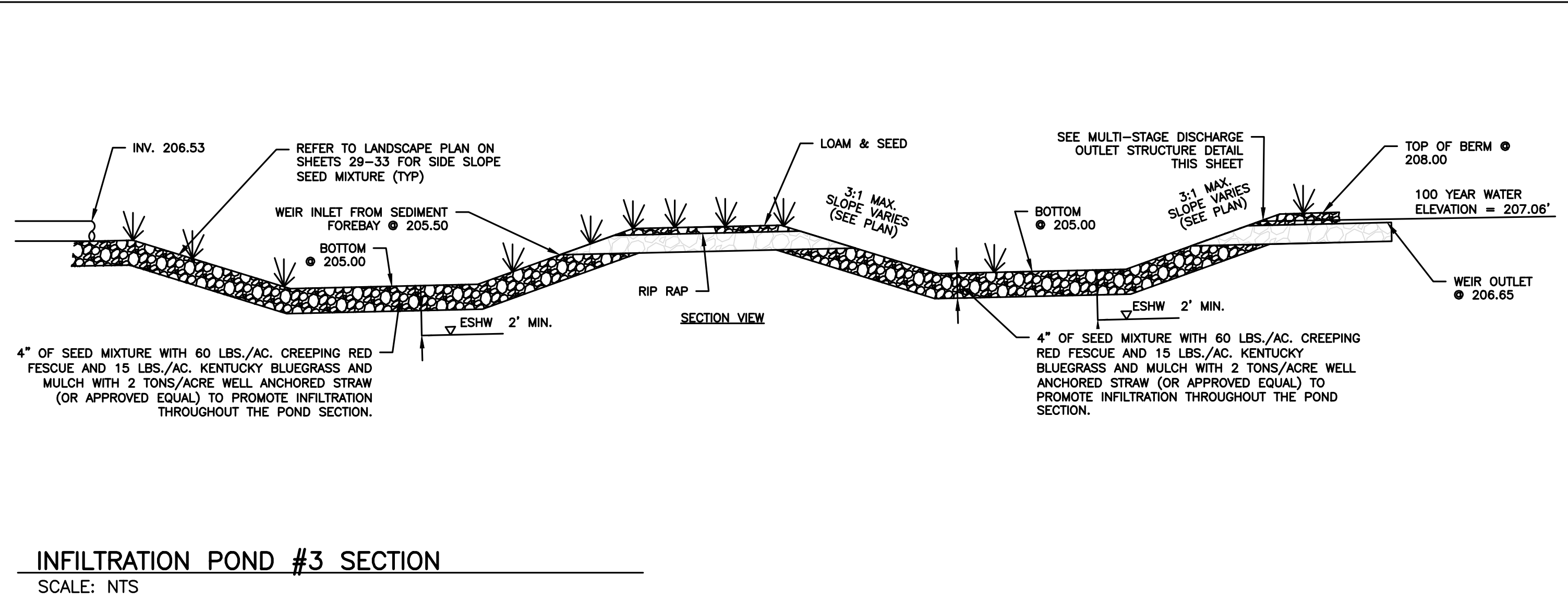
- NOTE:
1. INSTALL MONITORING WELLS PER MASSACHUSETTS STORMWATER HANDBOOK...
2. THE AREA OF INFILTRATION SYSTEMS SHALL BE EXCAVATED TO REMOVE TILL DOWN TO NATURAL SOILS...
3. REFER TO GRADING AND DRAINAGE NOTE 20 ON SHEET 2.



- 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...
3. REFER TO GRADING AND DRAINAGE NOTE 20 ON SHEET 2.

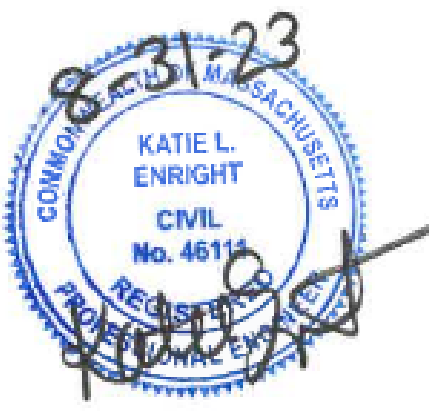
ESTIMATED SEASONAL HIGH GROUNDWATER TP-13 ELEVATION: 203.76± GROUNDWATER ELEVATION: 200.18± (43°) TP-14 ELEVATION: 206.00± GROUNDWATER ELEVATION: 198.08± (95°) PROPOSED BOTTOM OF POND: 205.00 ESTIMATED GROUNDWATER ELEVATION BASED ON TP-13: 200.18

INFILTRATION POND #2 SECTION
SCALE: NTS



INFILTRATION POND #3 SECTION
SCALE: NTS

REVISIONS table with columns: NO, BY, DATE, DESCRIPTION. Row 1: 1, PB, 08/31/23, REV. PER PEER REVIEW



SITE PLAN

INFILTRATION POND DETAILS (DETAIL SHEET 19 OF 27)

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

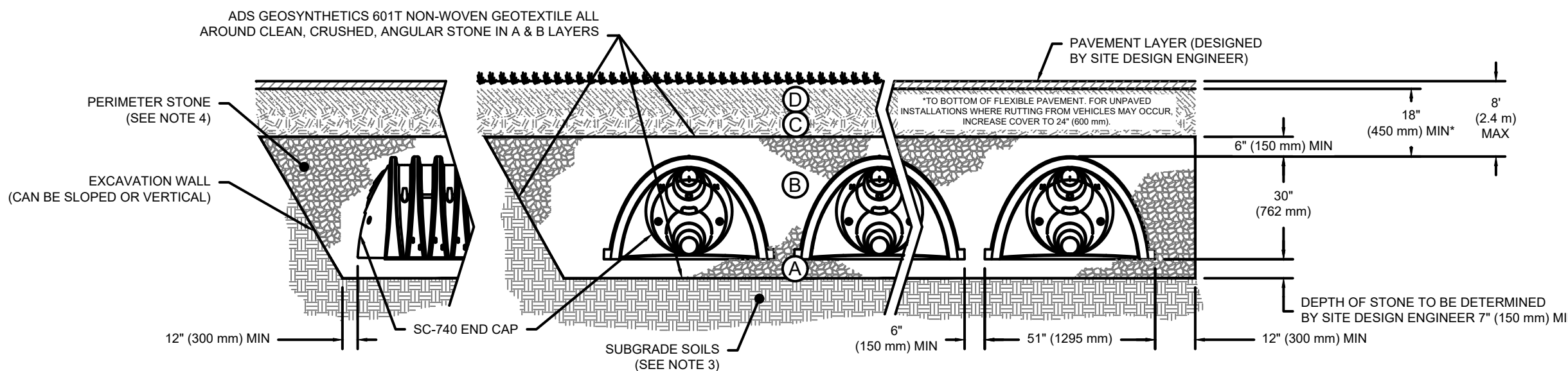
C.57

8/31/2023 11:00:07 AM L:\19097\19097_04 - Lot 2\CURRENT\19097 - Details.dwg

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

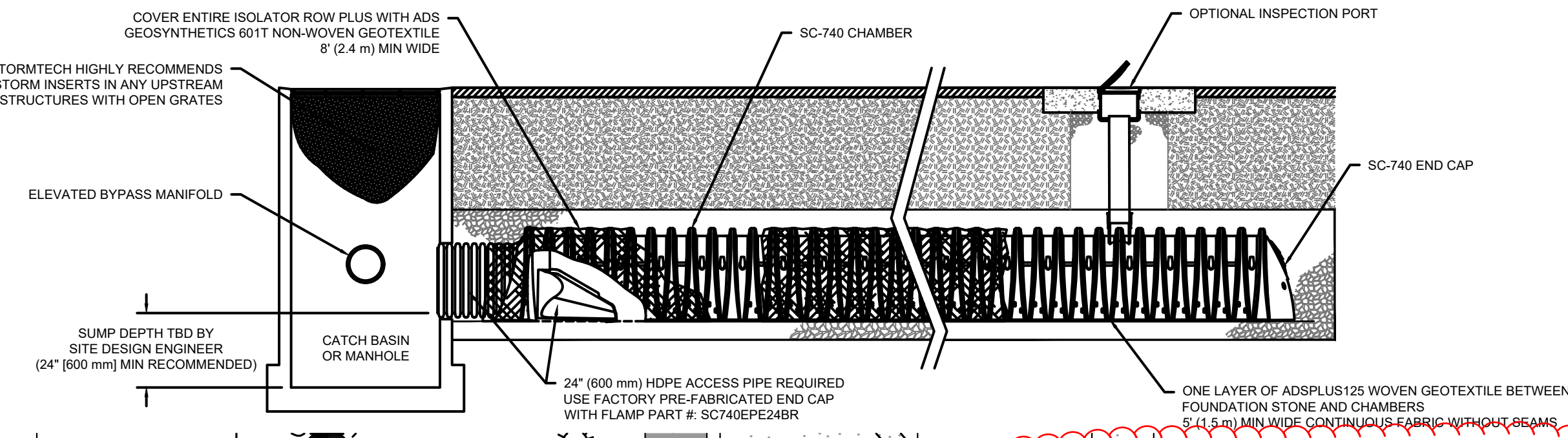
MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'C' LAYER.	N/A	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.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ² 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.	AASHTO M43 ² 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.	AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- PLEASE NOTE:
- 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".
 - 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.
 - 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.
 - 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:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 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, THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/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

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (+1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-RR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- 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, THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR 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.

SYSTEM DETAILS (2024)
PROPOSED LAYOUT INCLUDES 153 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 (UNPAVED W/ TRAFFIC)	207.58
MIN. ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	207.08
TOP OF STONE	206.58
TOP OF SC-740 CHAMBER	205.58
18" TOP MANIFOLD INVERT	203.50
18" BOTTOM CONNECTION INVERT	203.21
24" ISOLATOR ROW INVERT	203.09
BOTTOM OF SC-740 CHAMBER	203.08
BOTTOM OF STONE	202.50

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXFORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR PLUS ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - 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 FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKLUSH WATER IS CLEAR
 - 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

- 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.
- 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

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

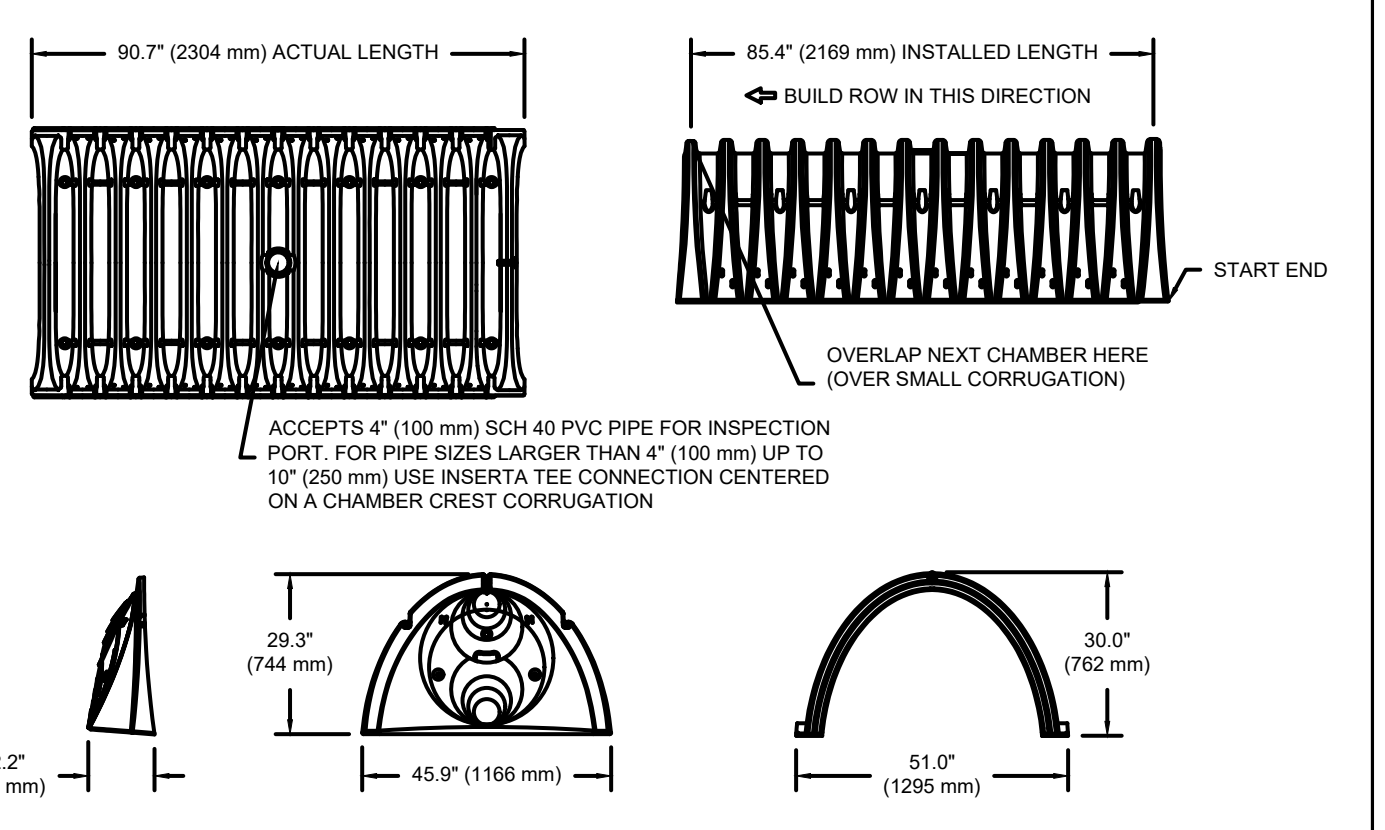
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310SC-740DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310SC-740DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310SC-740DC-780 CONSTRUCTION GUIDE".
- FULL 30" (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



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4" (1300 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

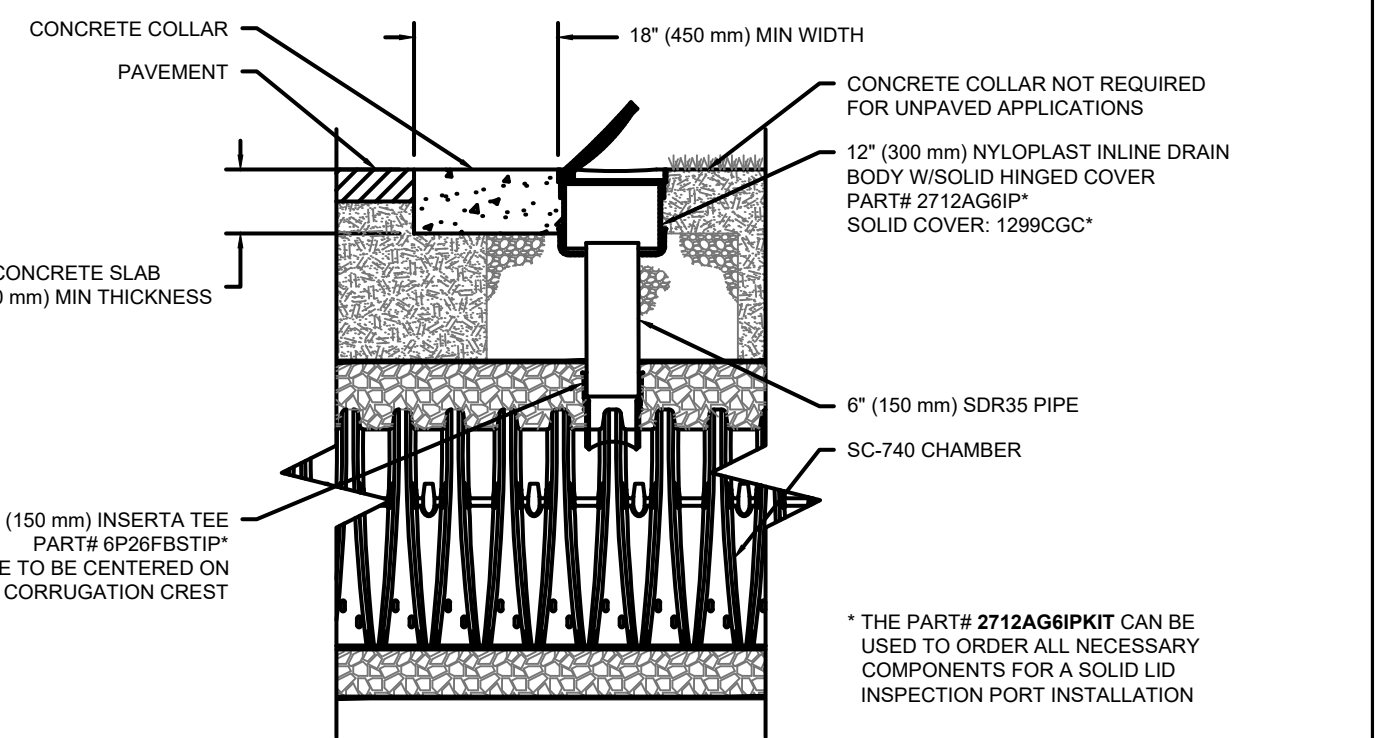
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06BPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	0.5" (13 mm)
SC740EPE08T / SC740EPE08BPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.6" (15 mm)
SC740EPE10T / SC740EPE10BPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	0.7" (18 mm)
SC740EPE12T / SC740EPE12BPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	1.2" (30 mm)
SC740EPE15T / SC740EPE15BPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	1.3" (33 mm)
SC740EPE18T / SC740EPE18BPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	1.6" (41 mm)
SC740EPE24T / SC740EPE24BPC	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



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

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

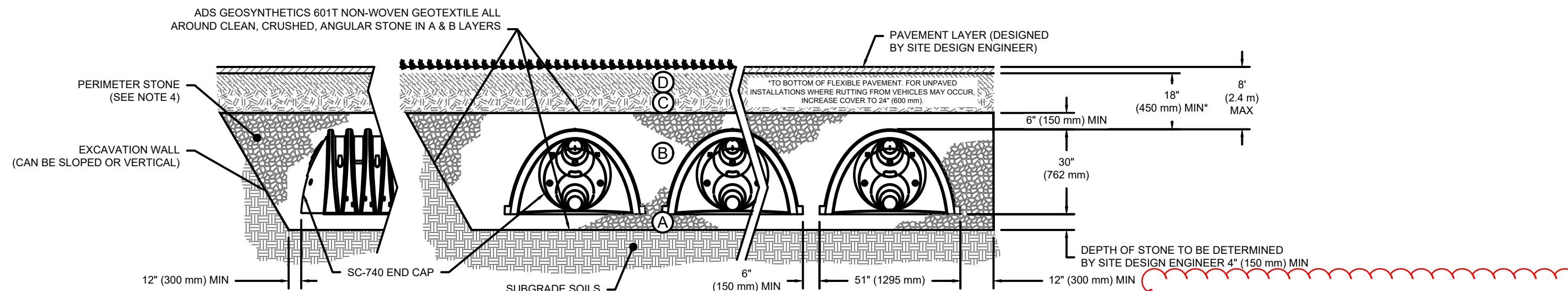
STORMTECH INFILTRATION SYSTEM #1
(DETAIL SHEET 20 OF 27)

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

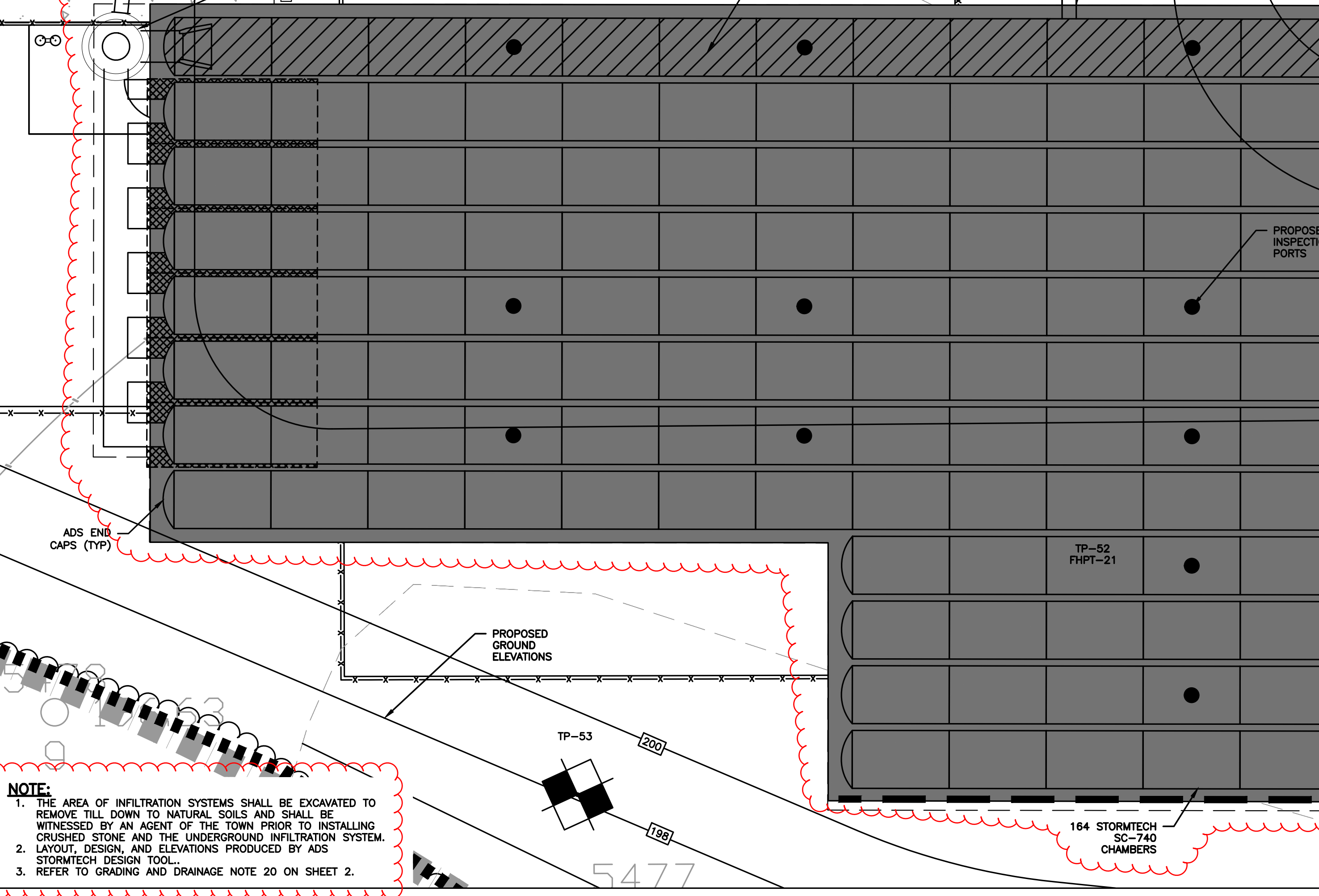
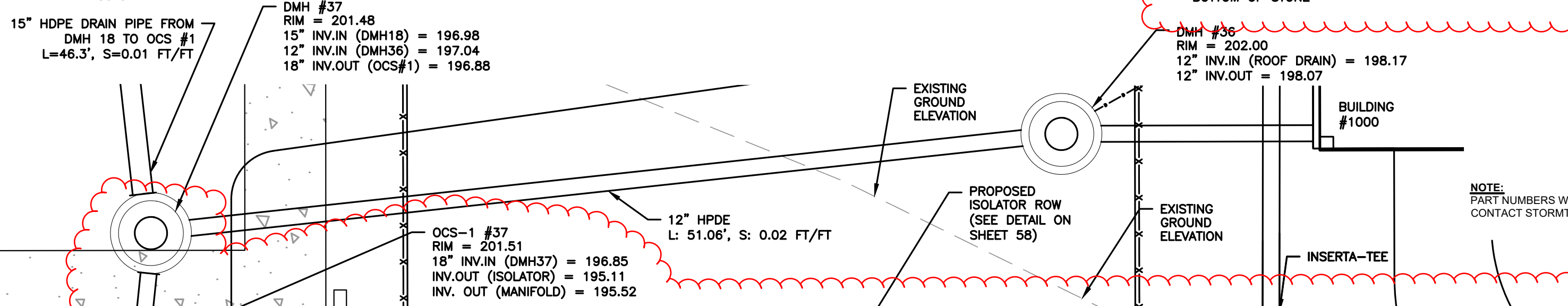
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

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.	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. OR MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	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 90% 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 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	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 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.



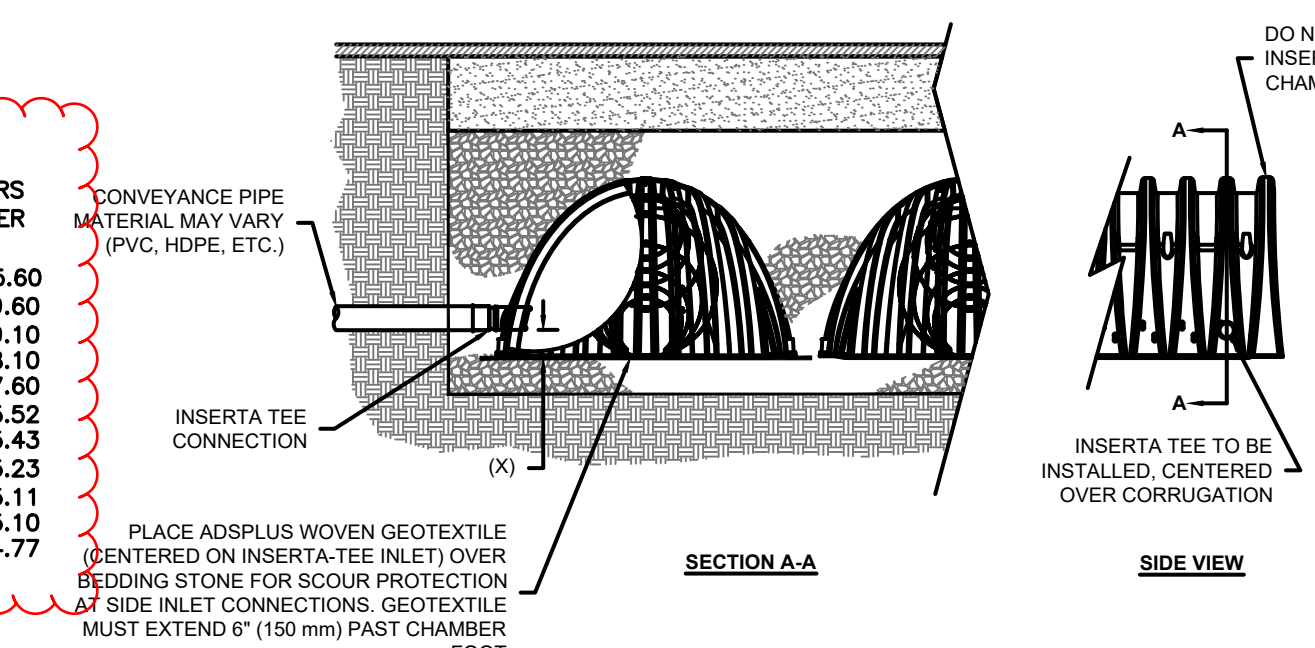
NOTES:
 1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-10a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL 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. 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.



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.
 2. LAYOUT, DESIGN, AND ELEVATIONS PRODUCED BY ADS STORMTECH DESIGN TOOL.
 3. REFER TO GRADING AND DRAINAGE NOTE 20 ON SHEET 2.

SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-10a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- 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. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 • THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 • THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR 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.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.



SYSTEM DETAILS (P208)
 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 (UNPAVED W/ TRAFFIC)	199.60
MIN. ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	199.10
TOP OF STONE	198.10
TOP OF SC-740 CHAMBER	197.60
18" TOP MANIFOLD INVERT	195.52
INSERTA TEE INVERT	195.43
18" BOTTOM CONNECTION INVERT	195.23
24" ISOLATOR ROW INVERT	195.11
BOTTOM OF SC-740 CHAMBER	195.10
BOTTOM OF STONE	194.77

DMH #36
 RIM = 202.00
 12" INV. IN (ROOF DRAIN) = 198.17
 12" INV. OUT = 198.07

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

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

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

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

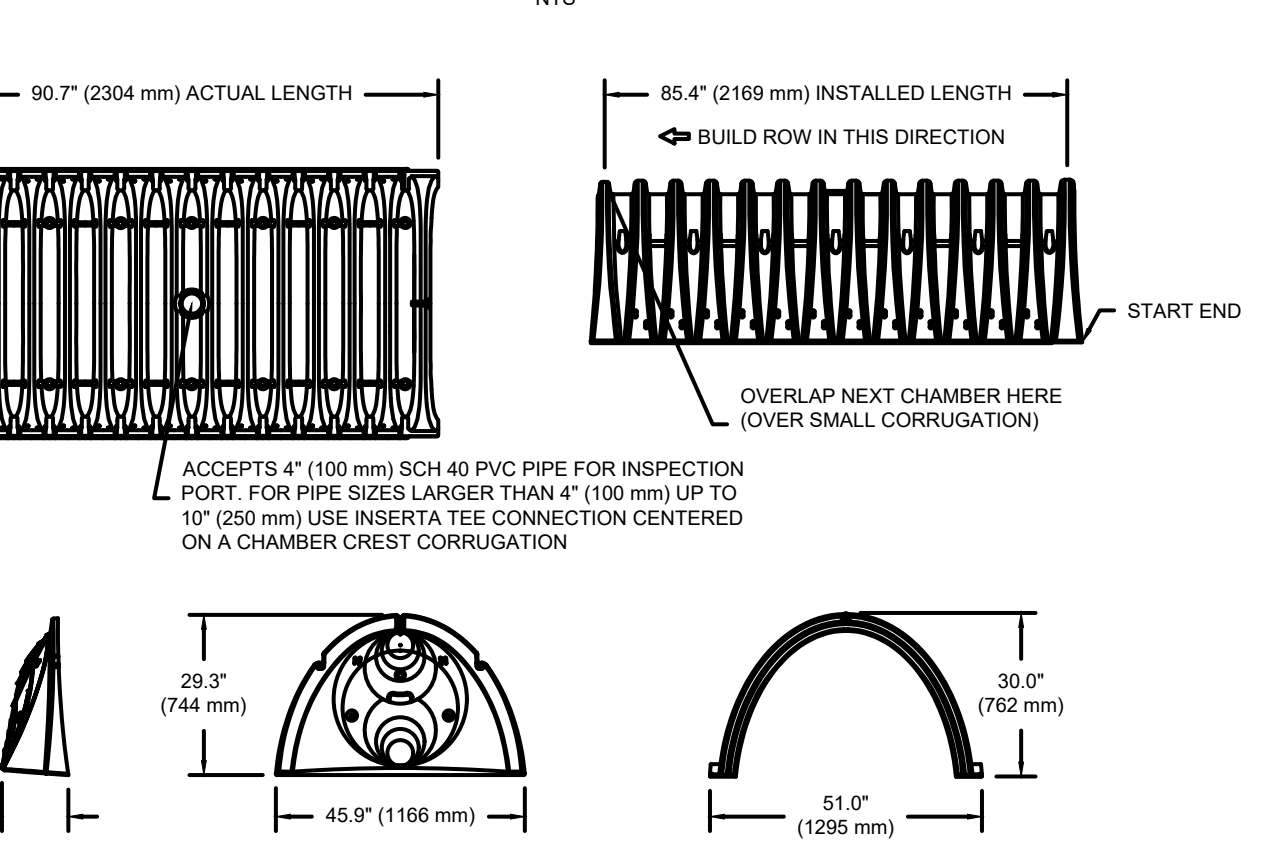
NOTES FOR CONSTRUCTION EQUIPMENT

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

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

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

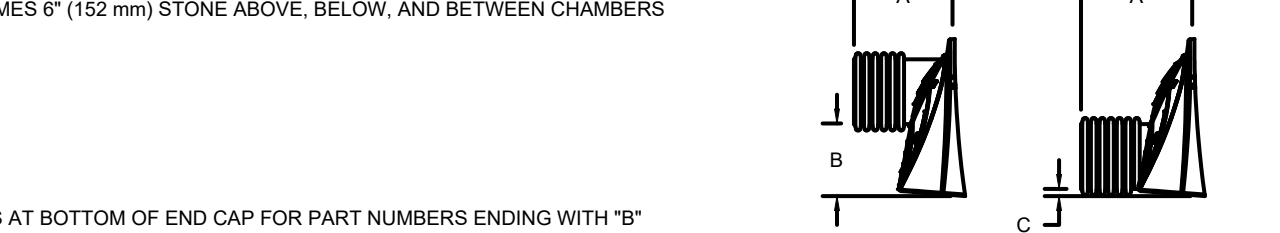
SC-740 TECHNICAL SPECIFICATION



NOMINAL CHAMBER SPECIFICATIONS

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

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



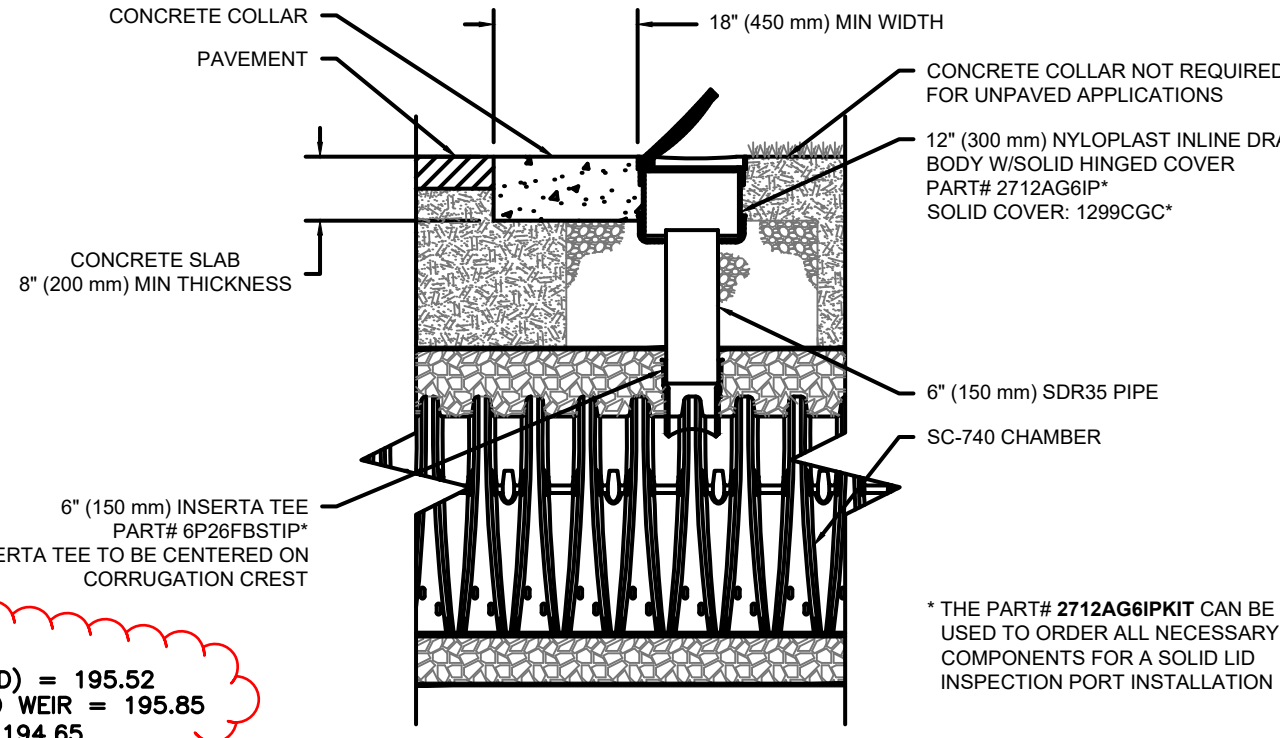
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
 STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "C"

PART #	STUB	A	B	C
SC740EP06T / SC740EP06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EP08B / SC740EP08BPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.5" (13 mm)
SC740EP08T / SC740EP08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EP08B / SC740EP08BPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.0" (15 mm)
SC740EP10T / SC740EP10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	0.7" (18 mm)
SC740EP10B / SC740EP10BPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EP12T / SC740EP12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	1.2" (30 mm)
SC740EP12B / SC740EP12BPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EP15T / SC740EP15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	1.3" (33 mm)
SC740EP15B / SC740EP15BPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EP18T / SC740EP18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	1.6" (41 mm)
SC740EP18B / SC740EP18BPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EP24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EP24B 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 SC740EP24B 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



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

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE PLAN

STORMTECH INFILTRATION SYSTEM #2 (DETAIL SHEET 21 OF 27)

DATE:	JUNE 20, 2023
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE
C.59	

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

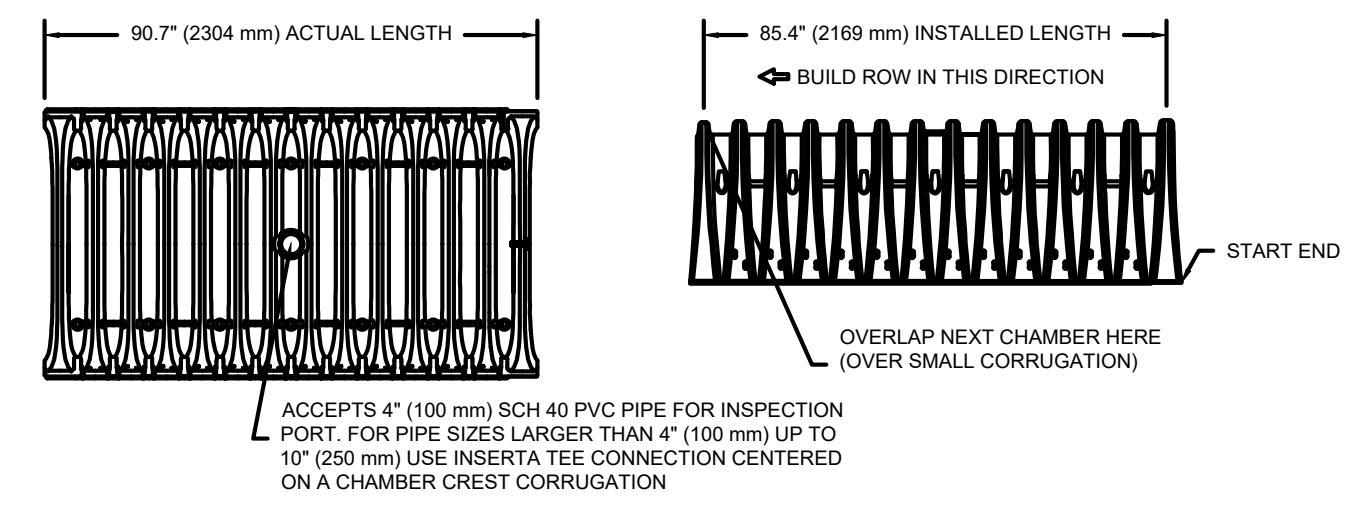
MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	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.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ² 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.	AASHTO M43 ² 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.	AASHTO M43 ² 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.

SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- 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, THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD. THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR 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.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

SC-740 TECHNICAL SPECIFICATION



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

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

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 30" (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.

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
SC740EP06T / SC740EP06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EP06B / SC740EP06BPC	6" (150 mm)	12.2" (310 mm)	16.5" (419 mm)	0.5" (13 mm)
SC740EP08T / SC740EP08TPC	8" (200 mm)	12.2" (310 mm)	14.5" (368 mm)	0.8" (15 mm)
SC740EP08B / SC740EP08BPC	8" (200 mm)	13.4" (340 mm)	14.5" (368 mm)	0.7" (18 mm)
SC740EP10T / SC740EP10TPC	10" (250 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EP10B / SC740EP10BPC	10" (250 mm)	14.7" (373 mm)	12.5" (318 mm)	1.2" (30 mm)
SC740EP12T / SC740EP12TPC	12" (300 mm)	18.4" (467 mm)	9.0" (229 mm)	1.3" (33 mm)
SC740EP12B / SC740EP12BPC	12" (300 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EP15T / SC740EP15TPC	15" (375 mm)	18.5" (470 mm)	5.0" (127 mm)	---
SC740EP15B / SC740EP15BPC	15" (375 mm)	18.5" (470 mm)	5.0" (127 mm)	1.6" (41 mm)
SC740EP18T / SC740EP18TPC	18" (450 mm)	18.5" (470 mm)	---	0.1" (3 mm)
SC740EP18B / SC740EP18BPC	18" (450 mm)	18.5" (470 mm)	---	---
SC740EP24B	24" (600 mm)	---	---	---

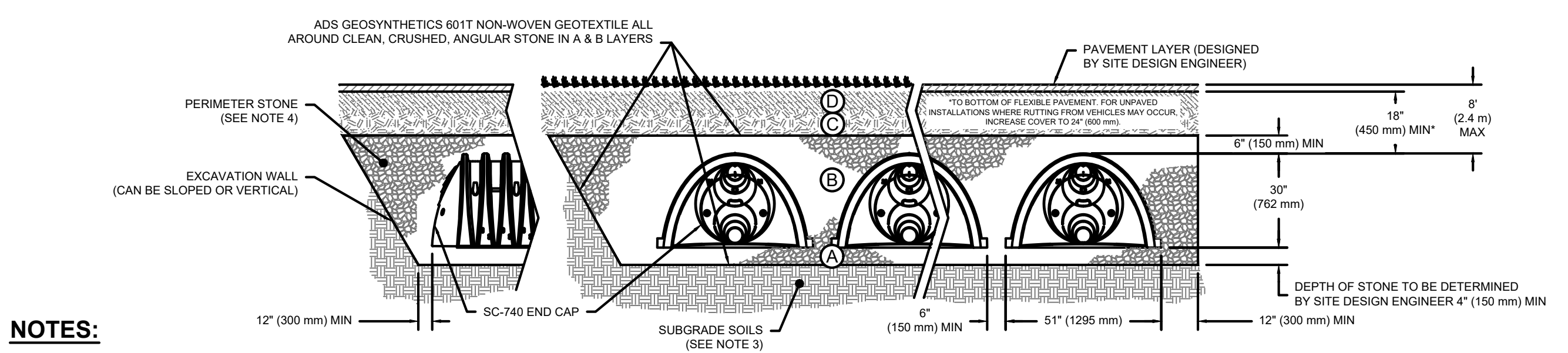
ALL STUBS, EXCEPT FOR THE SC740EP24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EP24B 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.

SYSTEM DETAILS (P213)
 PROPOSED LAYOUT INCLUDES 136 STORMTECH SC-740 CHAMBERS AND 28 ENDCAPS INSTALLED WITH 6" BASE STONE AND 6" COVER STONE. AN ISOLATOR ROW IS ALSO PROPOSED.
 MAX. ALLOWABLE GRADE (TOP OF PAVE/UNPAVED) _____ 211.95
 MIN. ALLOWABLE GRADE (UNPAVED W/ TRAFFIC) _____ 205.95
 MIN. ALLOWABLE GRADE (UNPAVED NO TRAFFIC) _____ 205.45
 TOP OF STONE _____ 204.45
 TOP OF SC-740 CHAMBER _____ 203.95
 18" TOP MANIFOLD INVERT _____ 201.87
 18" BOTTOM CONNECTION INVERT _____ 201.58
 24" ISOLATOR ROW INVERT _____ 201.46
 BOTTOM OF SC-740 CHAMBER _____ 201.45
 BOTTOM OF STONE _____ 200.95

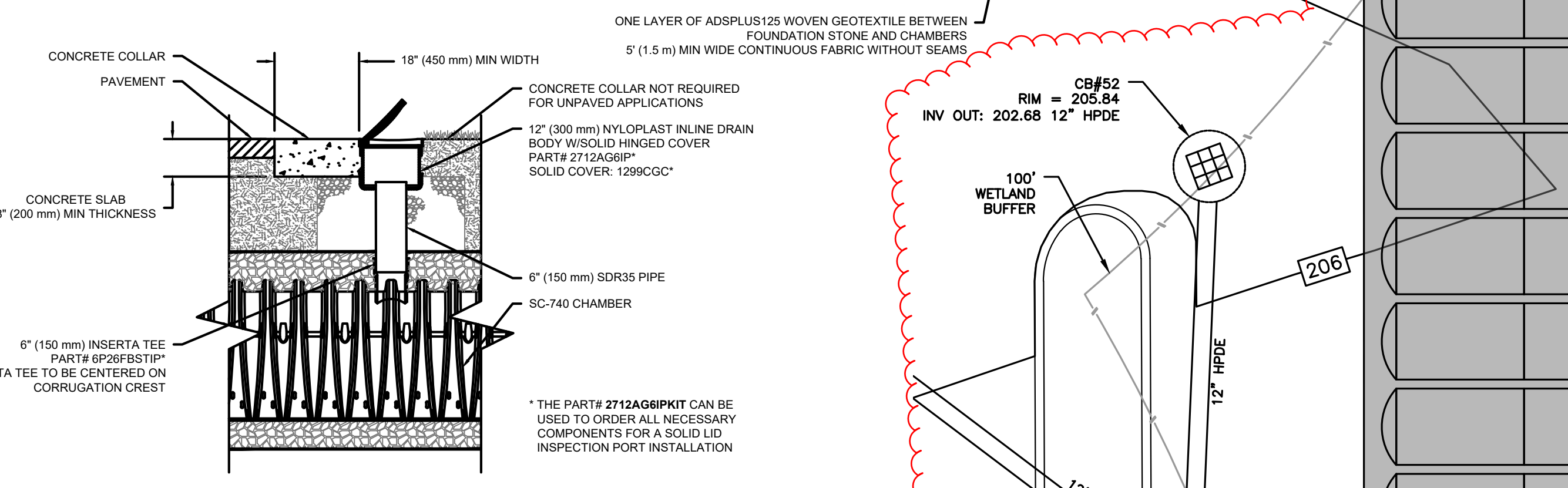
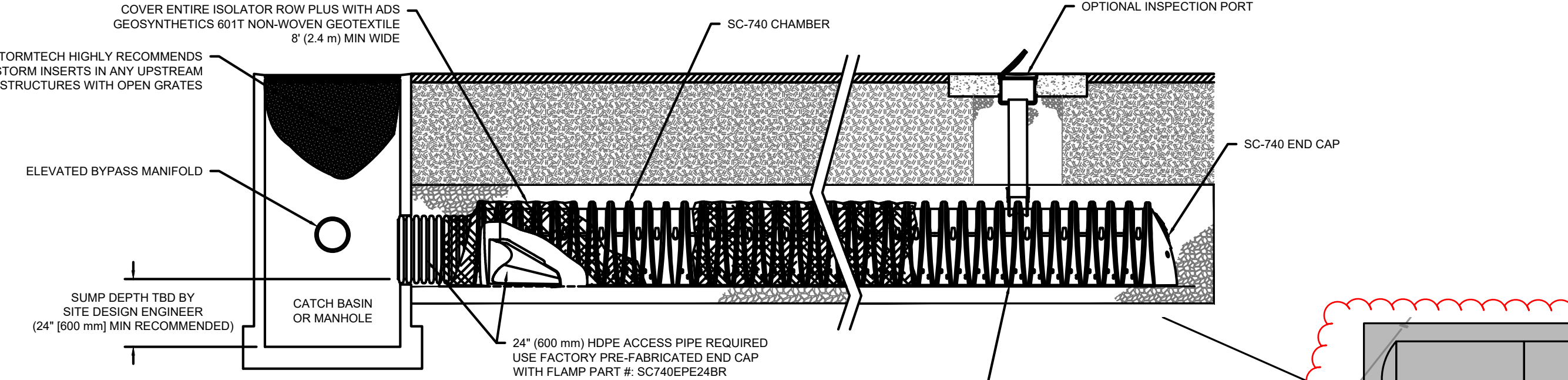
ESTIMATED SEASONAL HIGH GROUNDWATER
 TP-8 ELEVATION: 200.15±
 GROUNDWATER ELEVATION: 196.48± (44")
 TP-39 ELEVATION: 200.13±
 GROUNDWATER ELEVATION: 197.13± (36")
 PROPOSED BOTTOM OF SYSTEM: 200.95
 EXISTING GRADE AT PROPOSED SYSTEM: 201.74±
 ESTIMATED GROUNDWATER ELEVATION: 198.74± (36")

- NOTE:**
- 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.
 - ESTIMATED SEASONAL HIGH GROUNDWATER ASSUMED USING TP-39. REFER TO DETAIL CALCULATION PROVIDED ABOVE.
 - LAYOUT, DESIGN, AND ELEVATIONS PRODUCED BY ADS STORMTECH DESIGN TOOL.
 - REFER TO GRADING AND DRAINAGE NOTE 20 ON SHEET 2.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 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, THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/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 6" (150 mm) INSPECTION PORT DETAIL

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLON/PLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR PLUS ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - 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 FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - 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

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

8/31/2023 11:00:07 AM - Loc 2/CURRENT/19097 - Details.dwg
 Plot Saved by: MBK/KEF
 Printed by: Matthew Baker

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
1	PB	08/31/23	REV. PER PEER REVIEW

SITE PLAN

STORMTECH INFILTRATION SYSTEM #3 (DETAIL SHEET 22 OF 27)

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

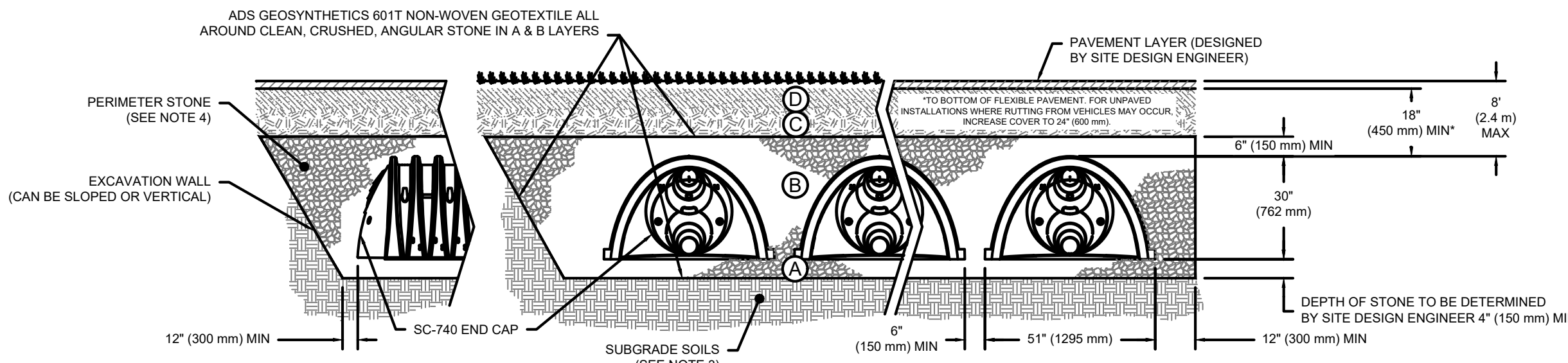
DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

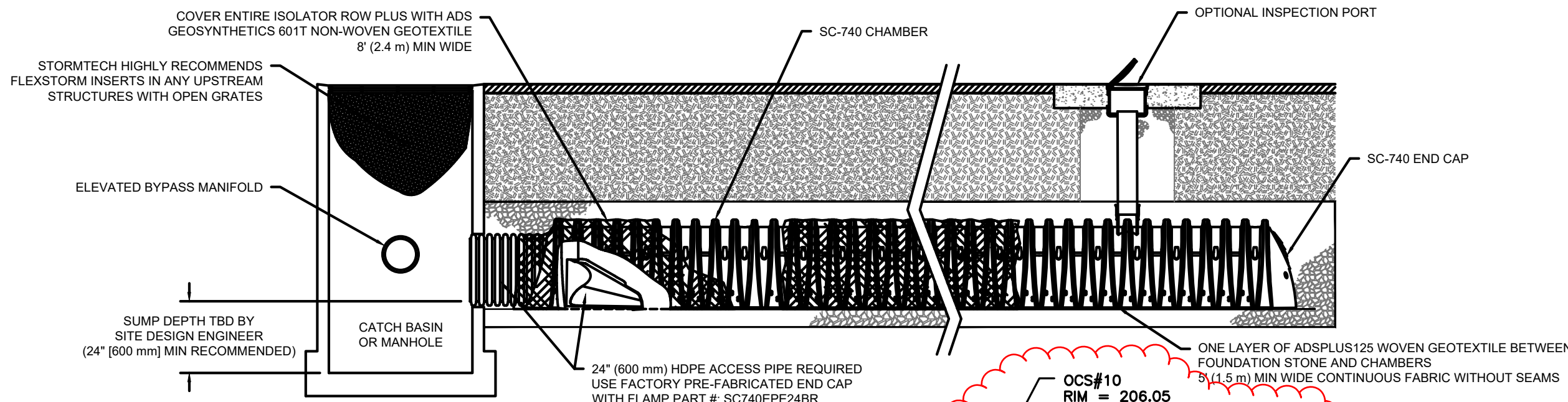
MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	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.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ² 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.	AASHTO M43 ² 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.	AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

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

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 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, THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/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 (P214)

PROPOSED LAYOUT INCLUDES 120 STORMTECH SC-740 CHAMBERS AND 24 ENDCAPS INSTALLED WITH 6" BASE STONE AND 6" COVER STONE. AN ISOLATOR ROW IS ALSO PROPOSED.

MAX. ALLOWABLE GRADE (TOP OF PAVE/UNPAVED)	211.50
MIN. ALLOWABLE GRADE (UNPAVED W/ TRAFFIC)	205.00
MIN. ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	205.00
TOP OF STONE	204.00
TOP OF SC-740 CHAMBER	203.50
18" TOP MANIFOLD INVERT	201.42
18" BOTTOM CONNECTION INVERT	201.13
24" ISOLATOR ROW INVERT	201.01
BOTTOM OF SC-740 CHAMBER	201.00
BOTTOM OF STONE	200.50

ESTIMATED SEASONAL HIGH GROUNDWATER

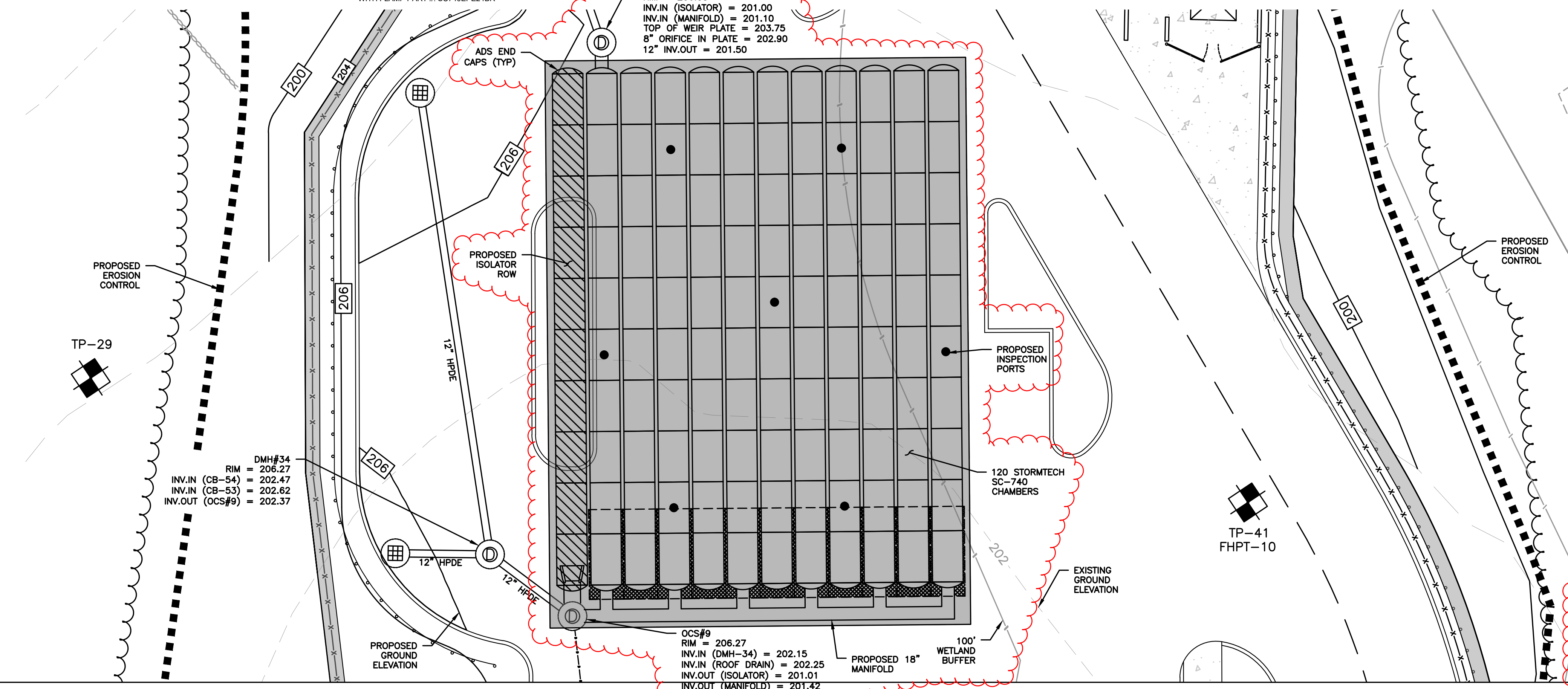
IP-1	ELEVATION: 200.71±
GROUNDWATER ELEVATION:	196.96± (45')
IP-42	ELEVATION: 199.48±
GROUNDWATER ELEVATION:	195.48± (48')
PROPOSED BASE OF SYSTEM:	200.50
EXISTING GRADE AT PROPOSED SYSTEM:	202.20±
ESTIMATED GROUNDWATER ELEVATION:	198.45± (45')

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR PLUS ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - 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 JET/VAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JET/VAC UNTIL BACKFLUSH WATER IS CLEAN
 - 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

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



SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-RP) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- 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, THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR 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.
- 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

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

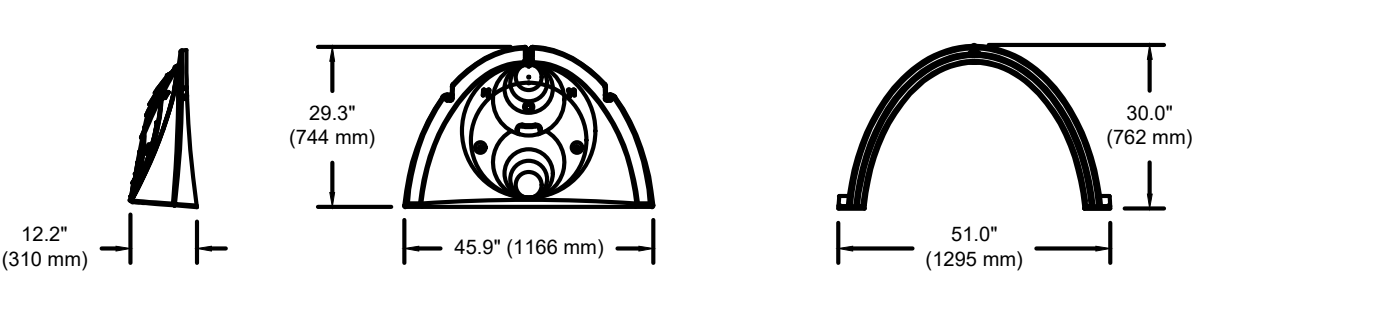
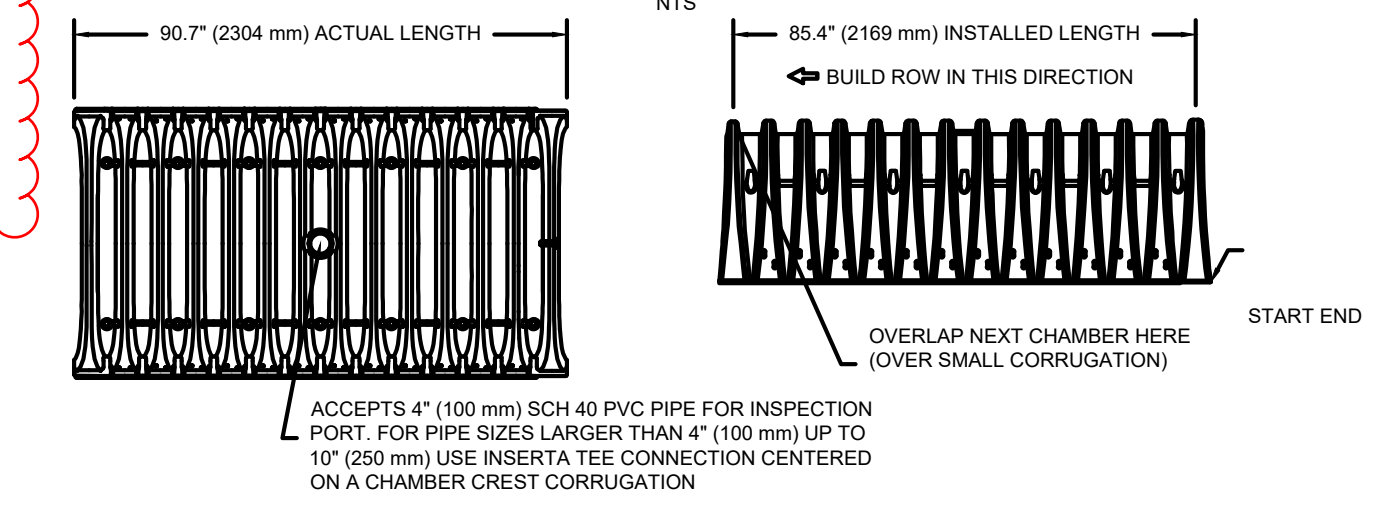
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 30" (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



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 m ³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET (2.12 m ³)
WEIGHT	75.0 lbs. (33.6 kg)

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

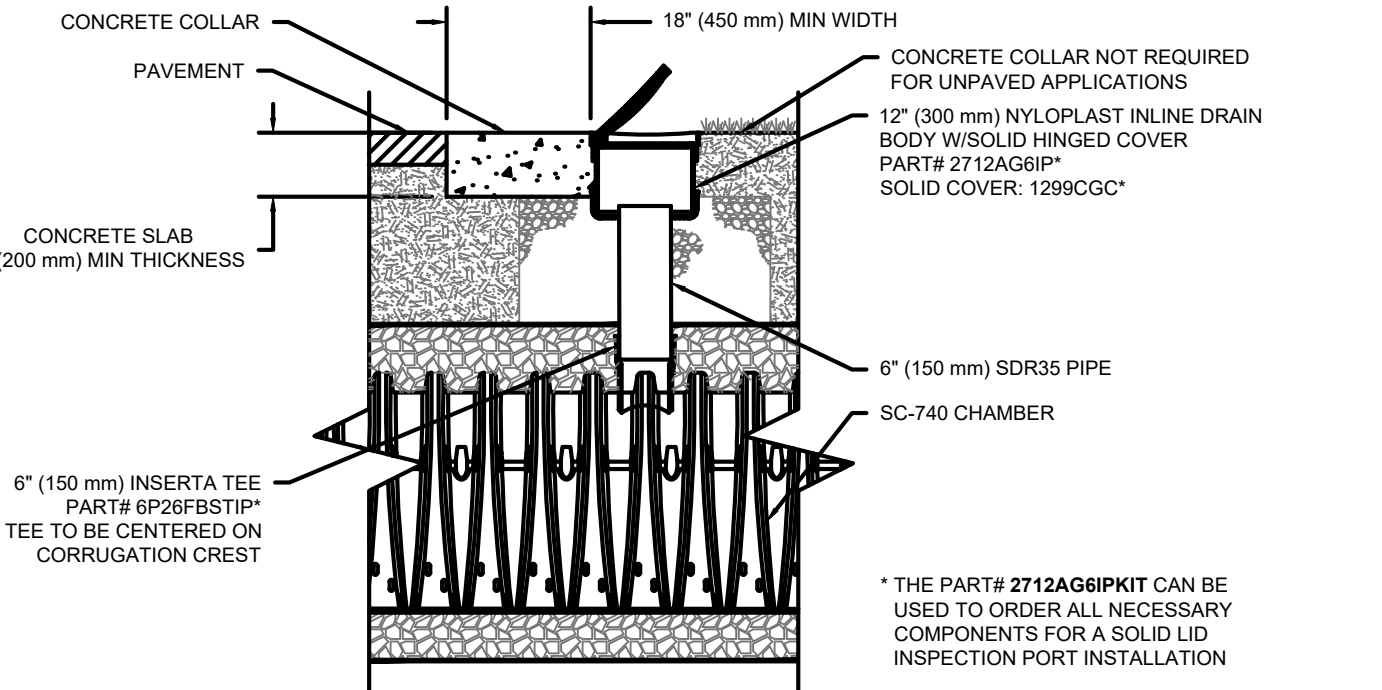
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B" STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EP00T / SC740EP00TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	—
SC740EP00B / SC740EP00BPC	—	—	—	0.5" (13 mm)
SC740EP08T / SC740EP08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	—
SC740EP08B / SC740EP08BPC	—	—	—	0.6" (15 mm)
SC740EP10T / SC740EP10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	—
SC740EP10B / SC740EP10BPC	—	—	—	0.7" (18 mm)
SC740EP12T / SC740EP12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	—
SC740EP12B / SC740EP12BPC	—	—	—	1.2" (30 mm)
SC740EP15T / SC740EP15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	—
SC740EP15B / SC740EP15BPC	—	—	—	1.3" (33 mm)
SC740EP18T / SC740EP18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	—
SC740EP18B / SC740EP18BPC	—	—	—	1.6" (41 mm)
SC740EP24T / SC740EP24TPC	24" (600 mm)	18.5" (470 mm)	—	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EP24B 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 SC740EP24B 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



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

- NOTE:**
- THE AREA OF INFILTRATION SYSTEMS SHALL BE EXCAVATED TO REMOVE TILL DOWN TO NATURAL SOILS AND SHALL BE INSPECTED BY AN AGENT OF THE TOWN PRIOR TO INSTALLING CRUSHED STONE AND THE UNDERGROUND INFILTRATION SYSTEM.
 - ESTIMATED SEASONAL HIGH GROUNDWATER ASSUMED USING TP-41. REFER TO DETAIL CALCULATION PROVIDED ABOVE.
 - LAYOUT, DESIGN, AND ELEVATIONS PRODUCED BY ADS STORMTECH DESIGN TOOL.
 - REFER TO GRADING AND DRAINAGE NOTE 20 ON SHEET 2.

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
1	PB	08/31/23	REV. PER PEER REVIEW

KATIE L. ENRIGHT
CIVIL
No. 4611

SITE PLAN

STORMTECH INFILTRATION SYSTEM #4
(DETAIL SHEET 23 OF 27)

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 65

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.
11. REFER TO SHEET 63 FOR CULVERT CROSSING CUT SHEET.

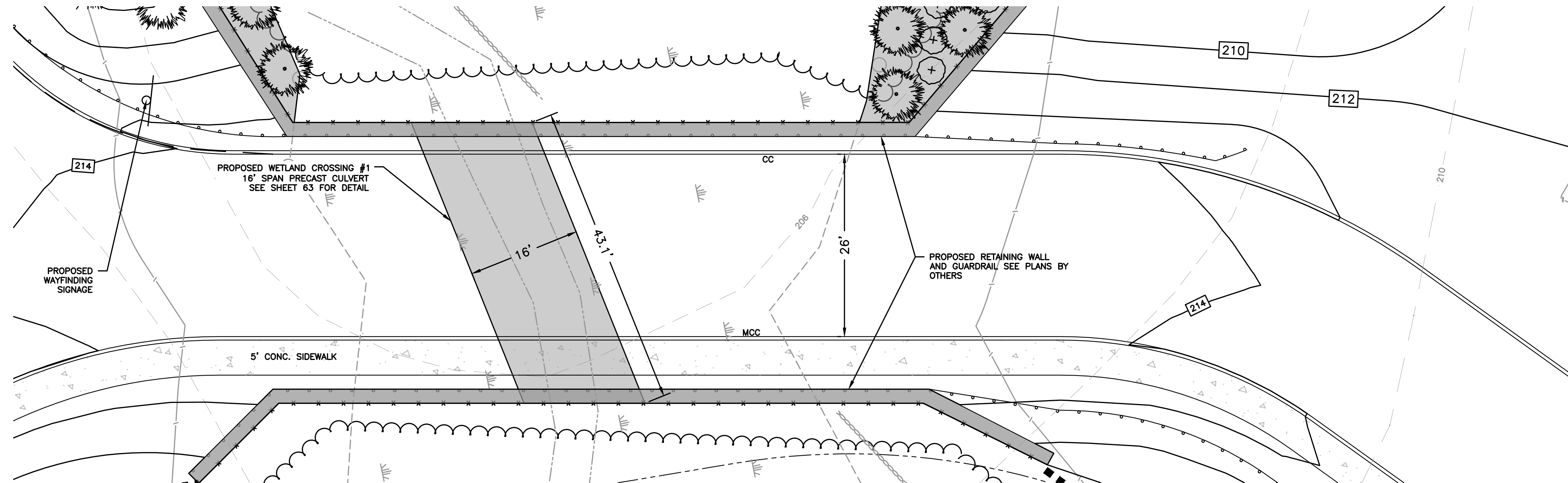
DEWATERING CONTROLS

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:

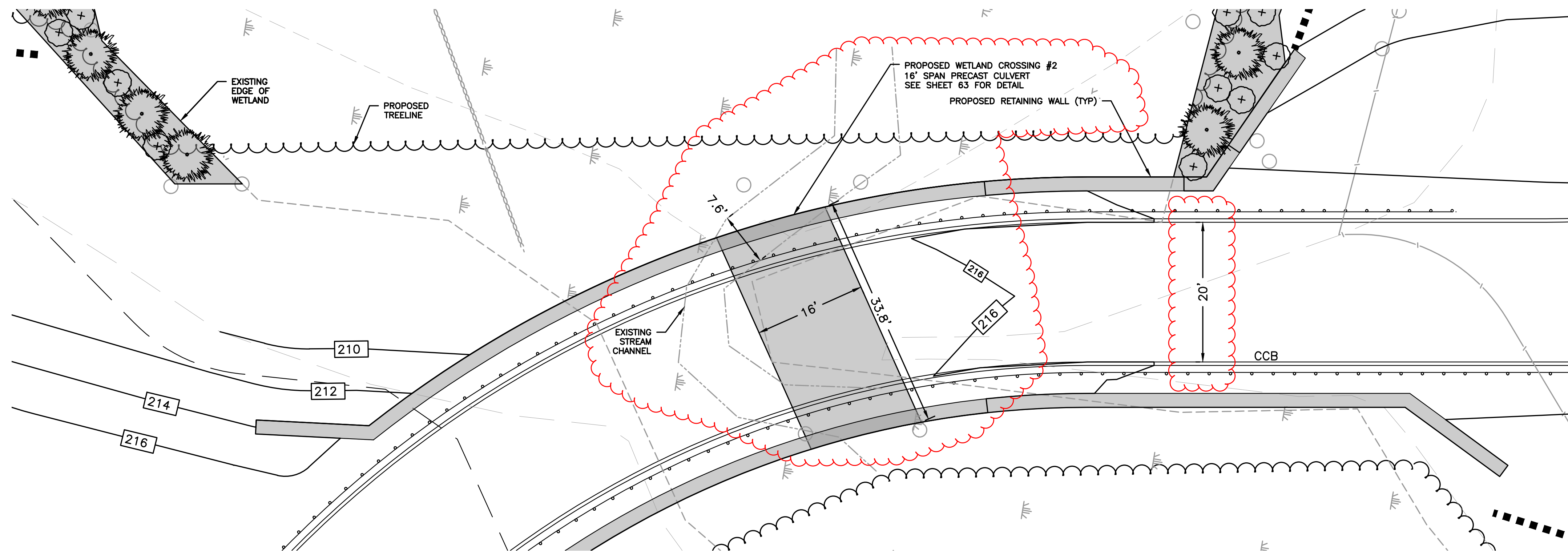
1. CULVERT DESIGN REQUIREMENTS PER NOTE 4
2. TYPE OF CROSSING – MUST BE 3 SIDED BOX CULVERT, OPEN BOTTOM CULVERT OR ARCH
3. EMBEDMENT – ALL CULVERTS MUST BE EMBEDDED A MINIMUM OF 2 FT AND ROUND PIPES AND CULVERTS AT LEAST 25%
4. CROSSING SPAN – A MINIMUM OF 1.2 TIMES THE BANK FULL WIDTH OF STREAM. AT 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 FT² ~ 36 FT². 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 FT² ~ 30 FT². THEREFORE MINIMUM INTERNAL OPEN HEIGHT SHALL BE 2.5 FT. 5 FT HEIGHT PROVIDED



WETLAND CROSSING #2

SCALE: 1"=10'



HOWARD STEIN HUDSON

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

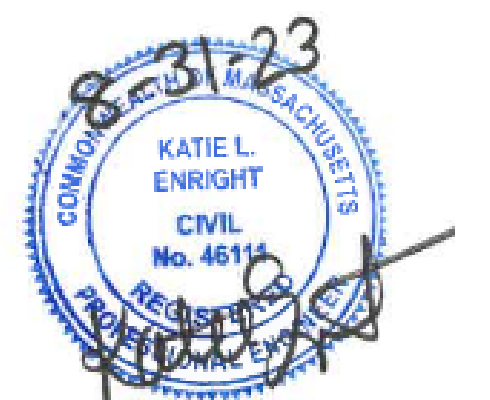
PREPARED FOR:

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE
PLAN

WETLAND CROSSINGS
(DETAIL SHEET
24 OF 27)

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 65



HOWARD STEIN HUDSON

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

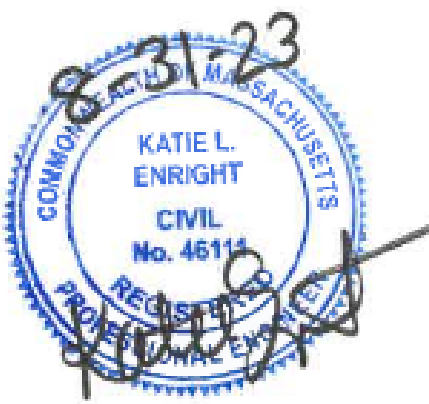
PREPARED FOR:

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
1	PB	08/31/23	REV. PER PEER REVIEW



SITE
PLAN

WETLAND CROSSING
CULVERT
(DETAIL SHEET
25 OF 27)

DATE: JUNE 20, 2023

PROJECT NUMBER: 19097

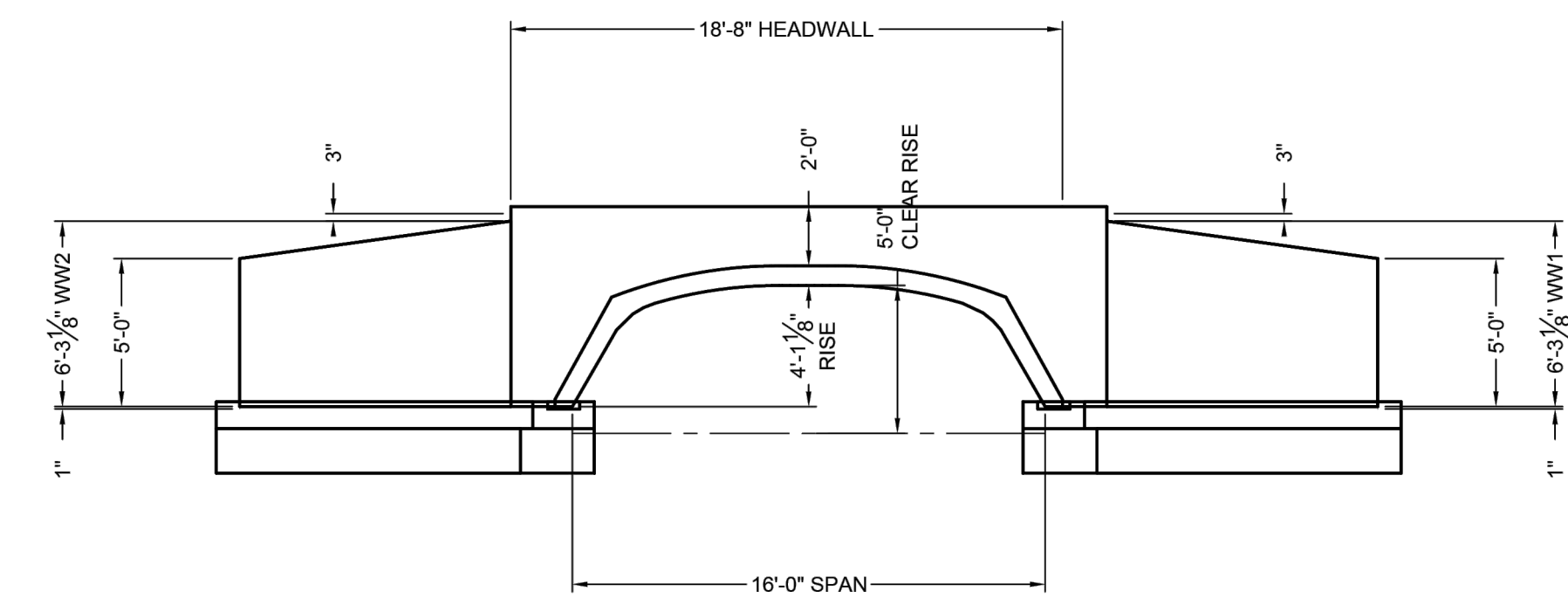
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

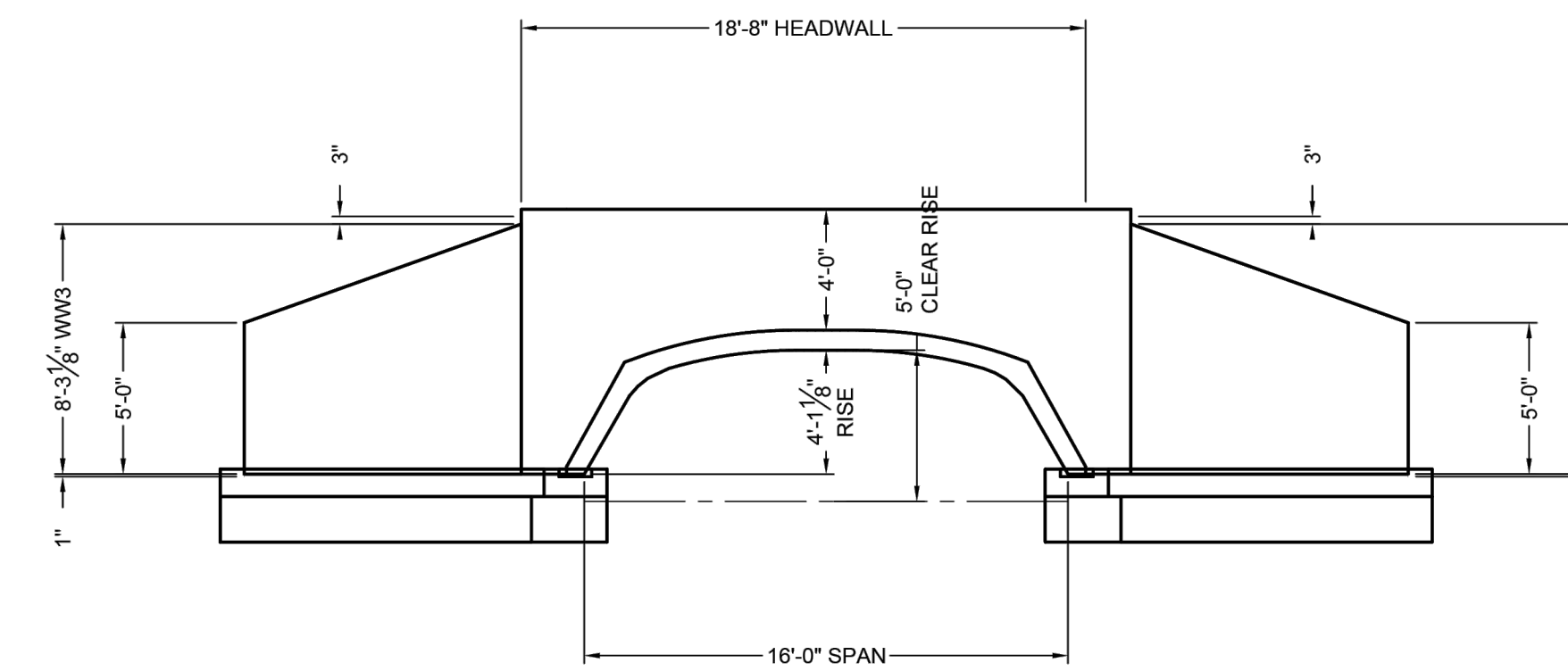
CHECKED BY: KE

C.63

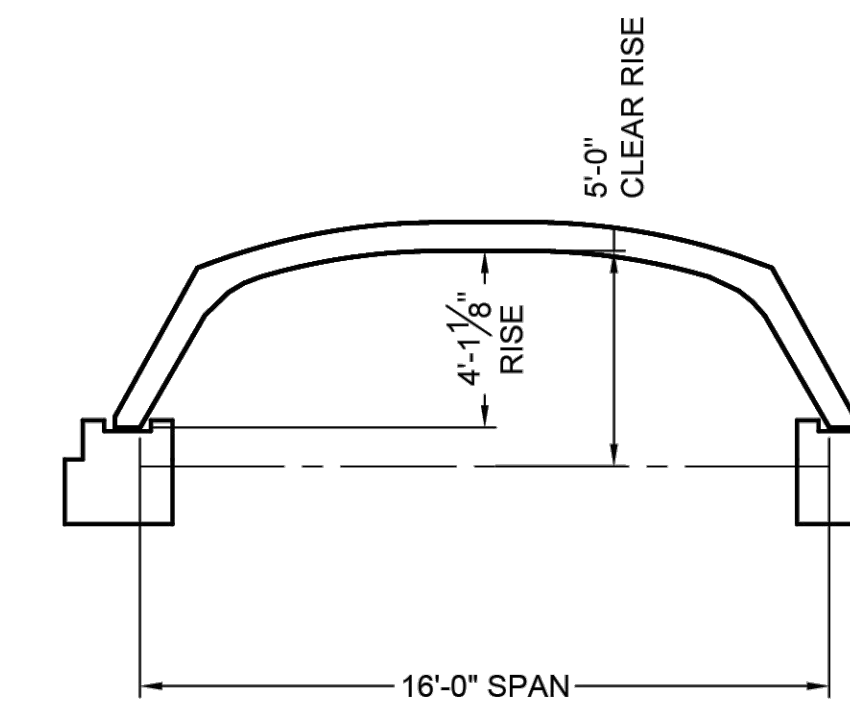
SHEET 63 OF 65



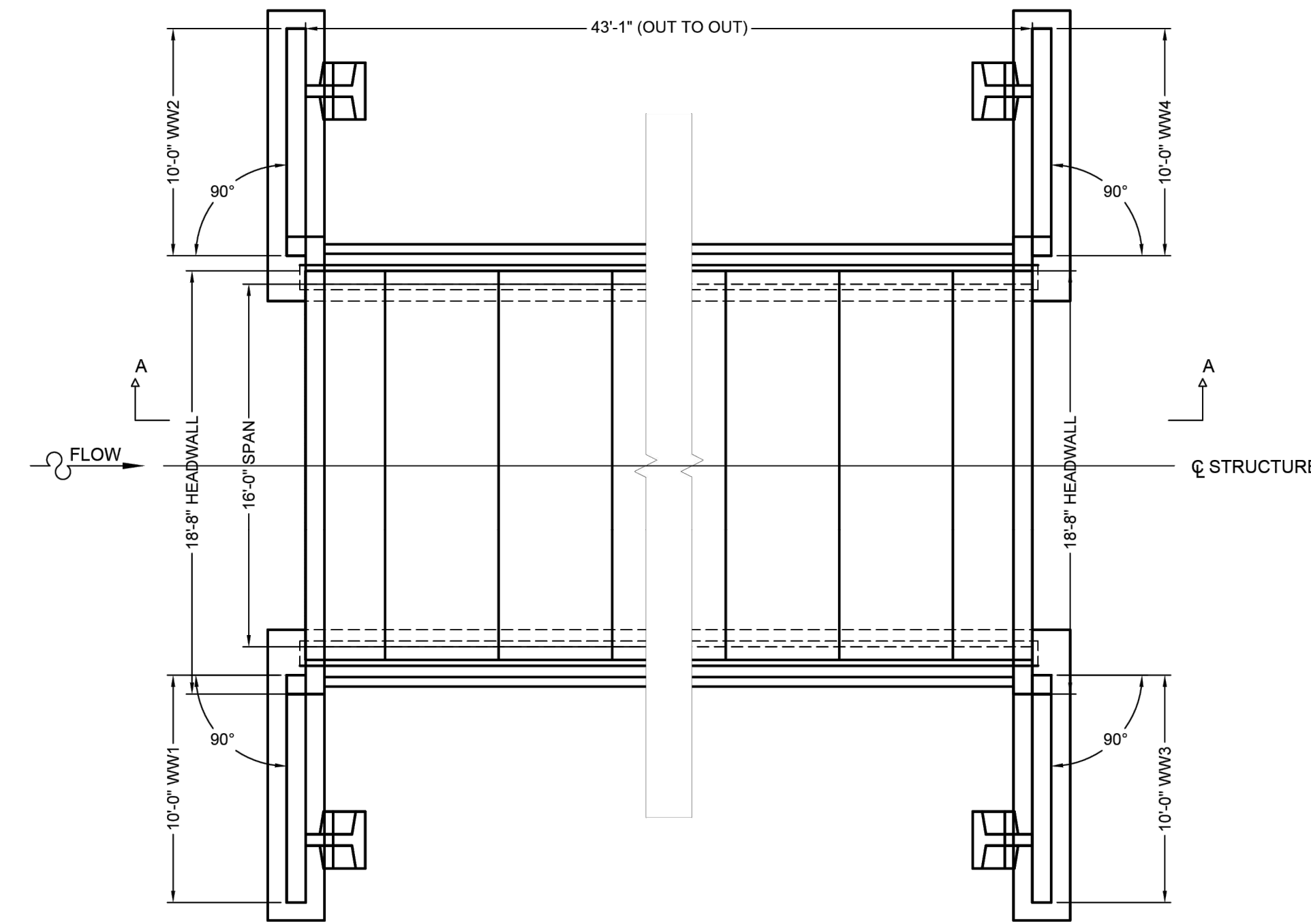
UPSTREAM END ELEVATION



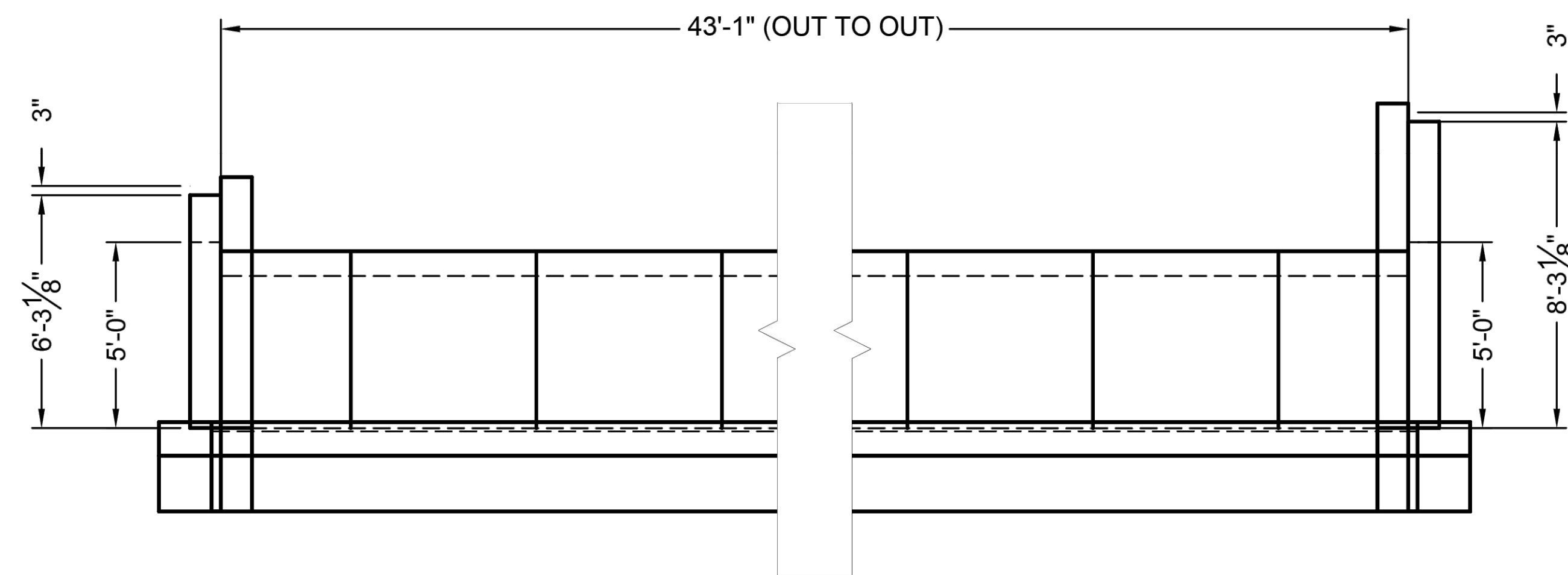
DOWNSTREAM END ELEVATION



CROSS SECTION



BRIDGE PLAN



SECTION A-A

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.
3. REFER TO SHEET 62 FOR BACKFILL, BEDDING, OR BOTTOM CONSTRUCTION.

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



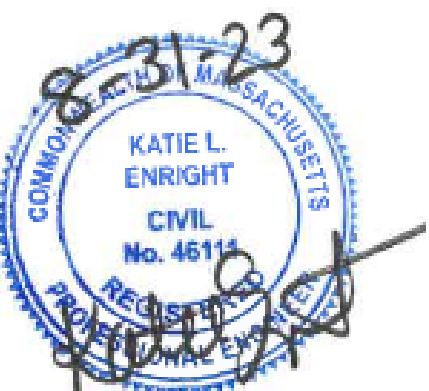
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

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
1	PB	08/31/23	REV. PER PEER REVIEW

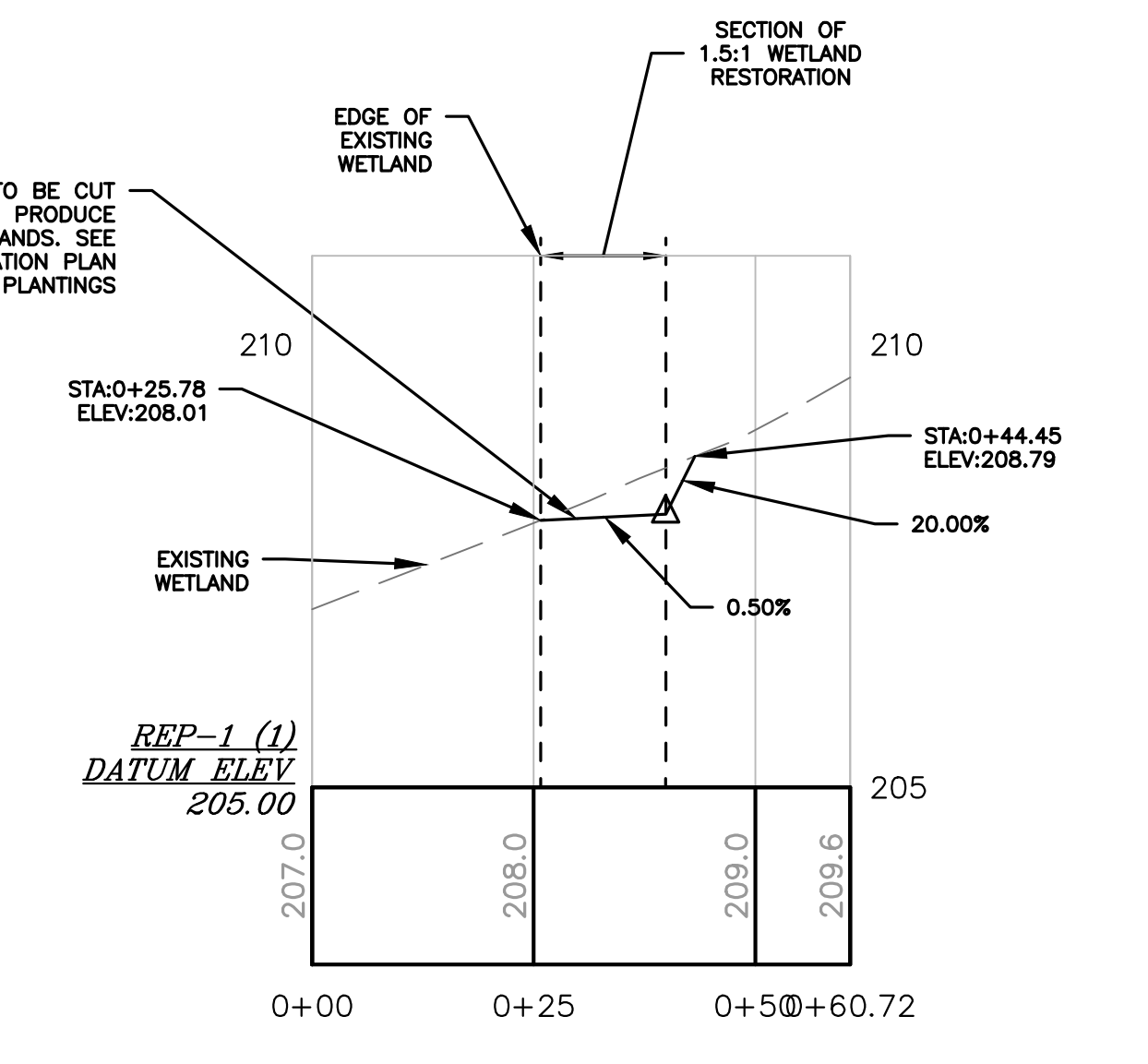
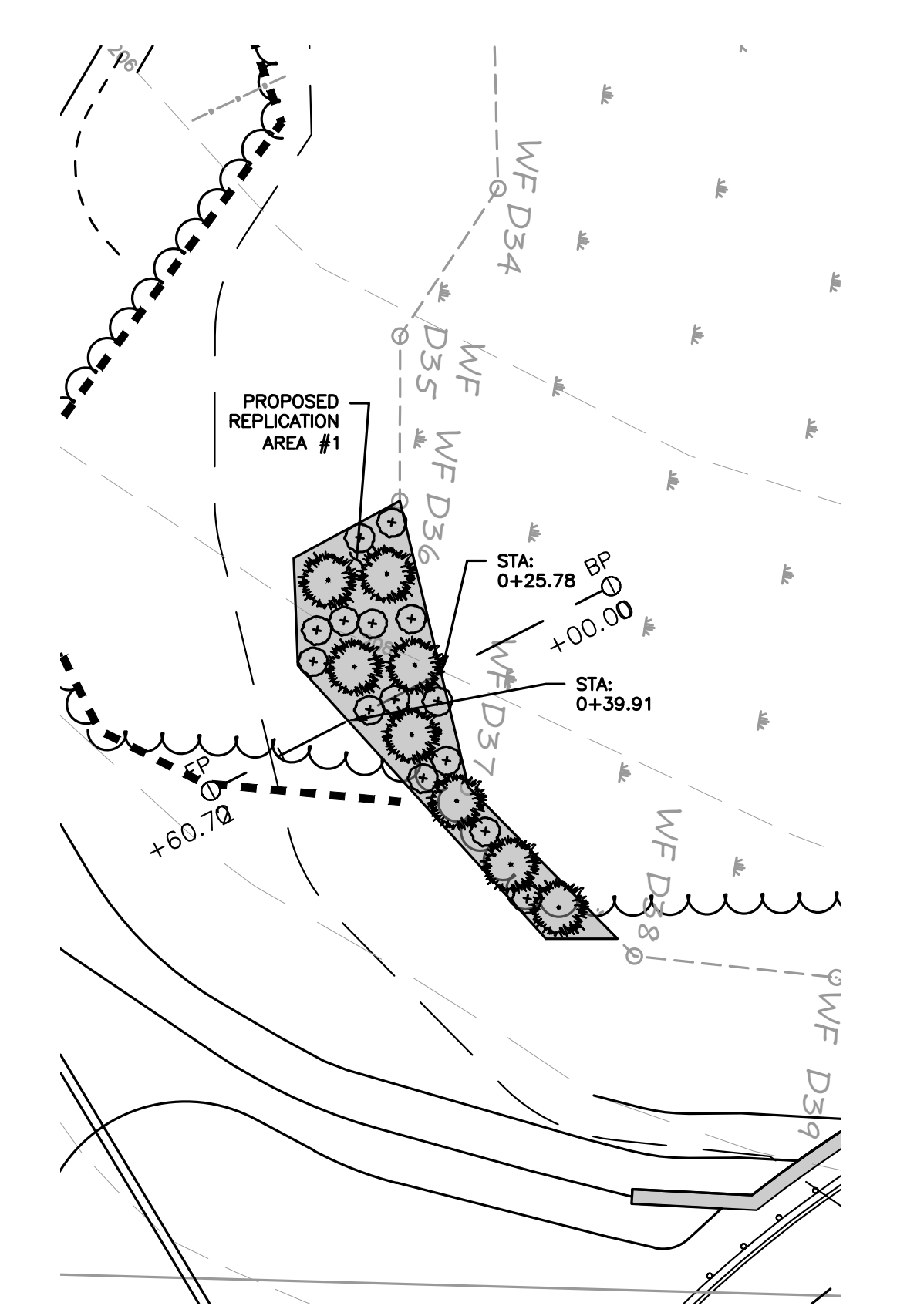
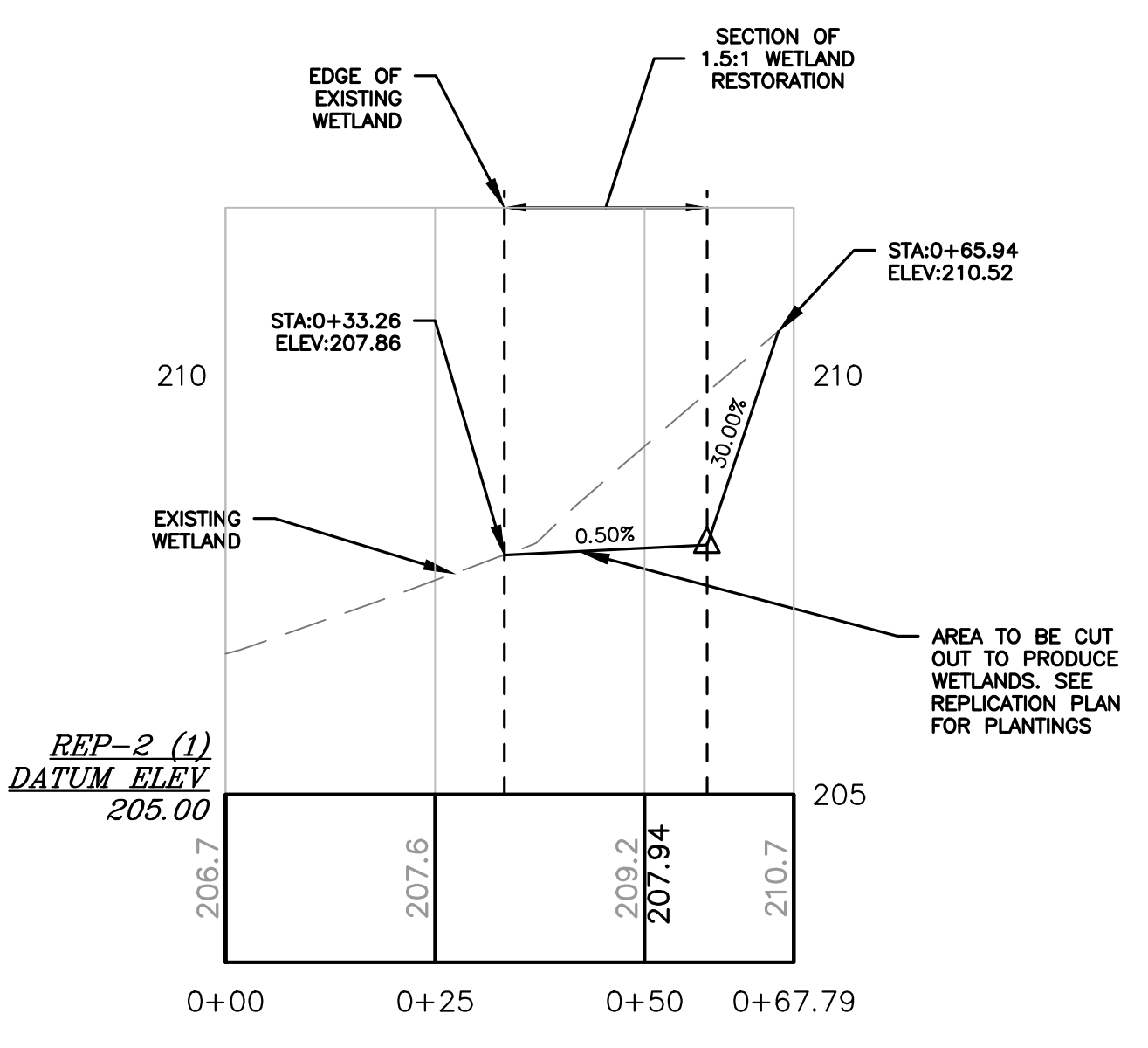
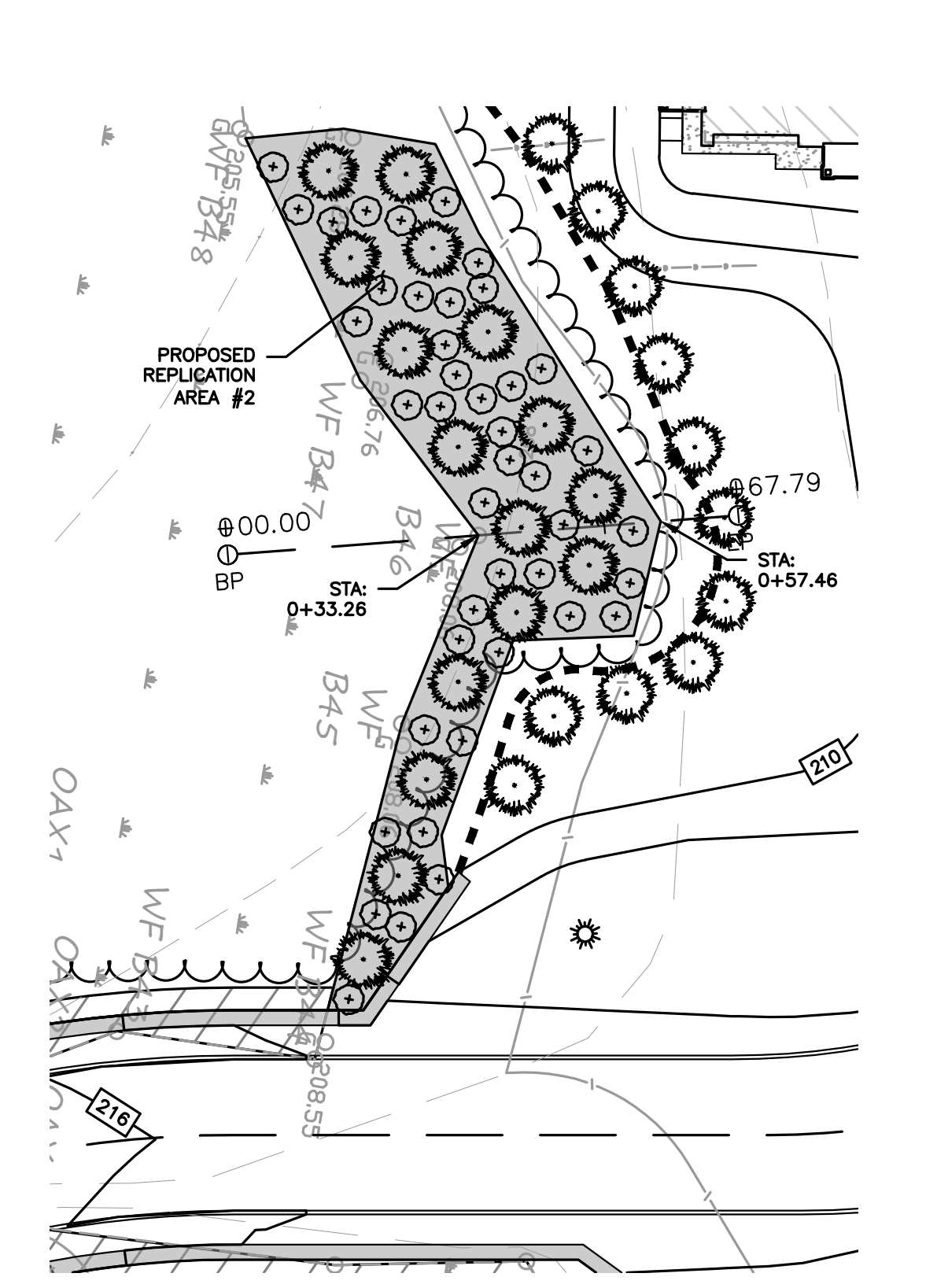
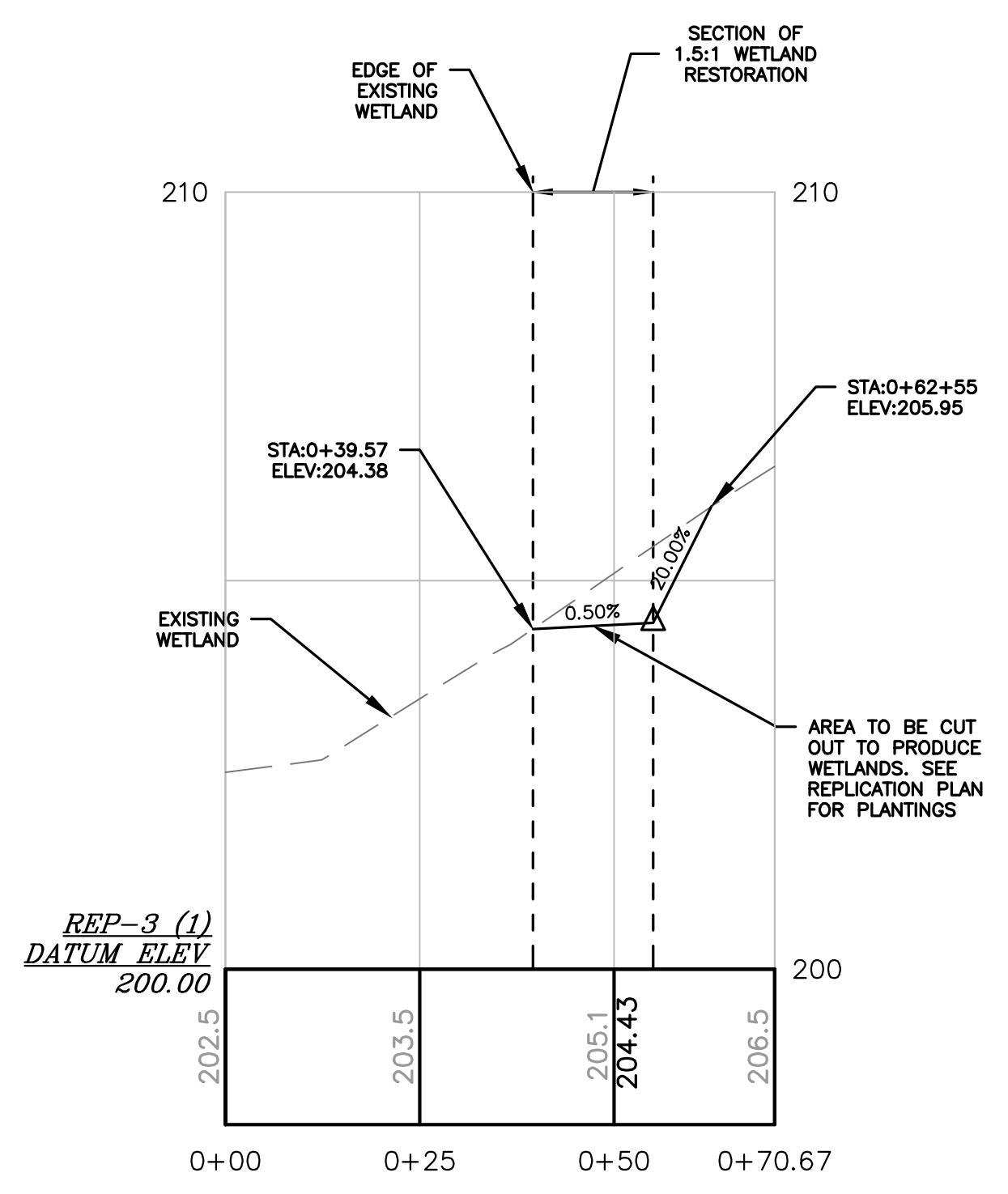
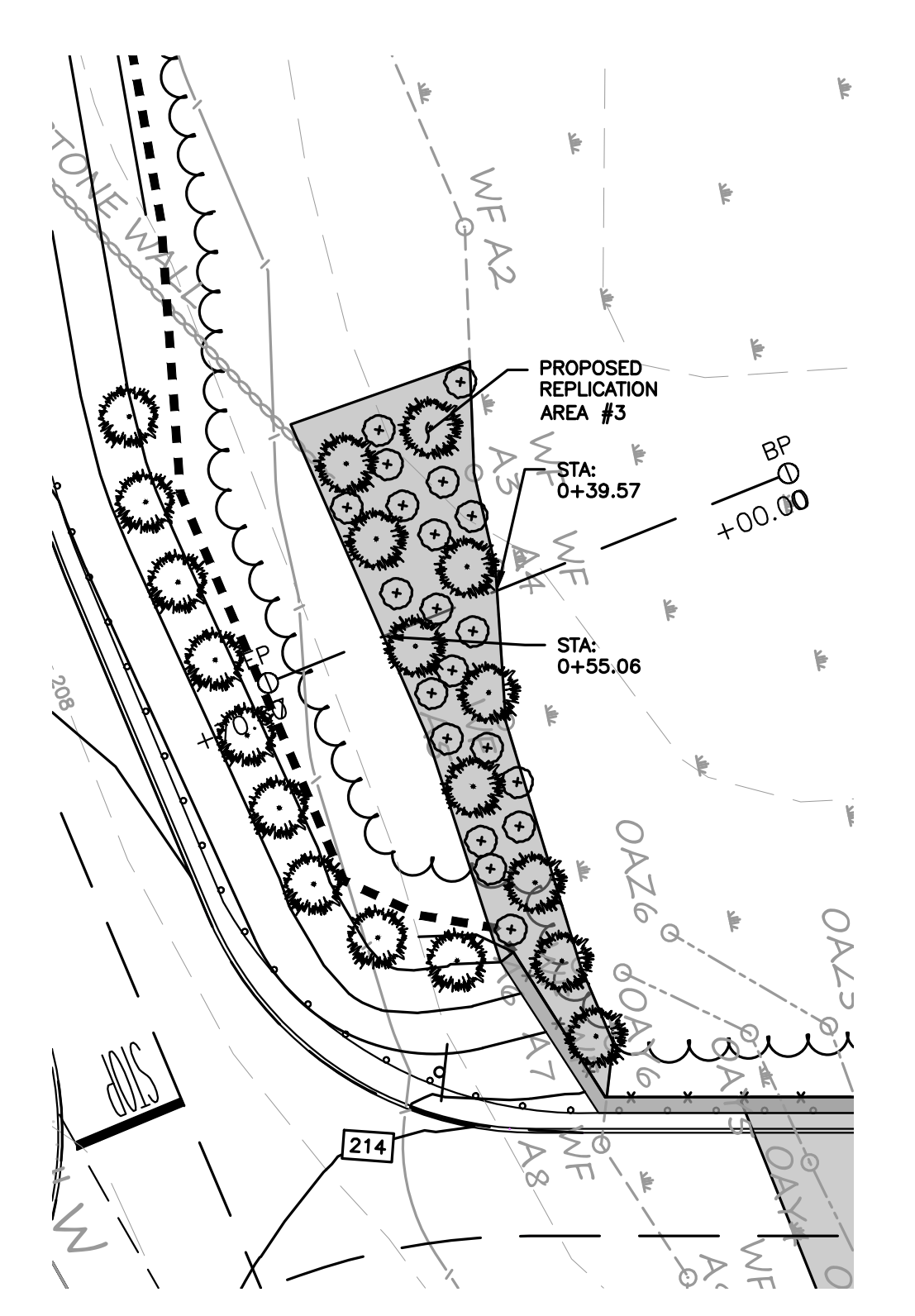
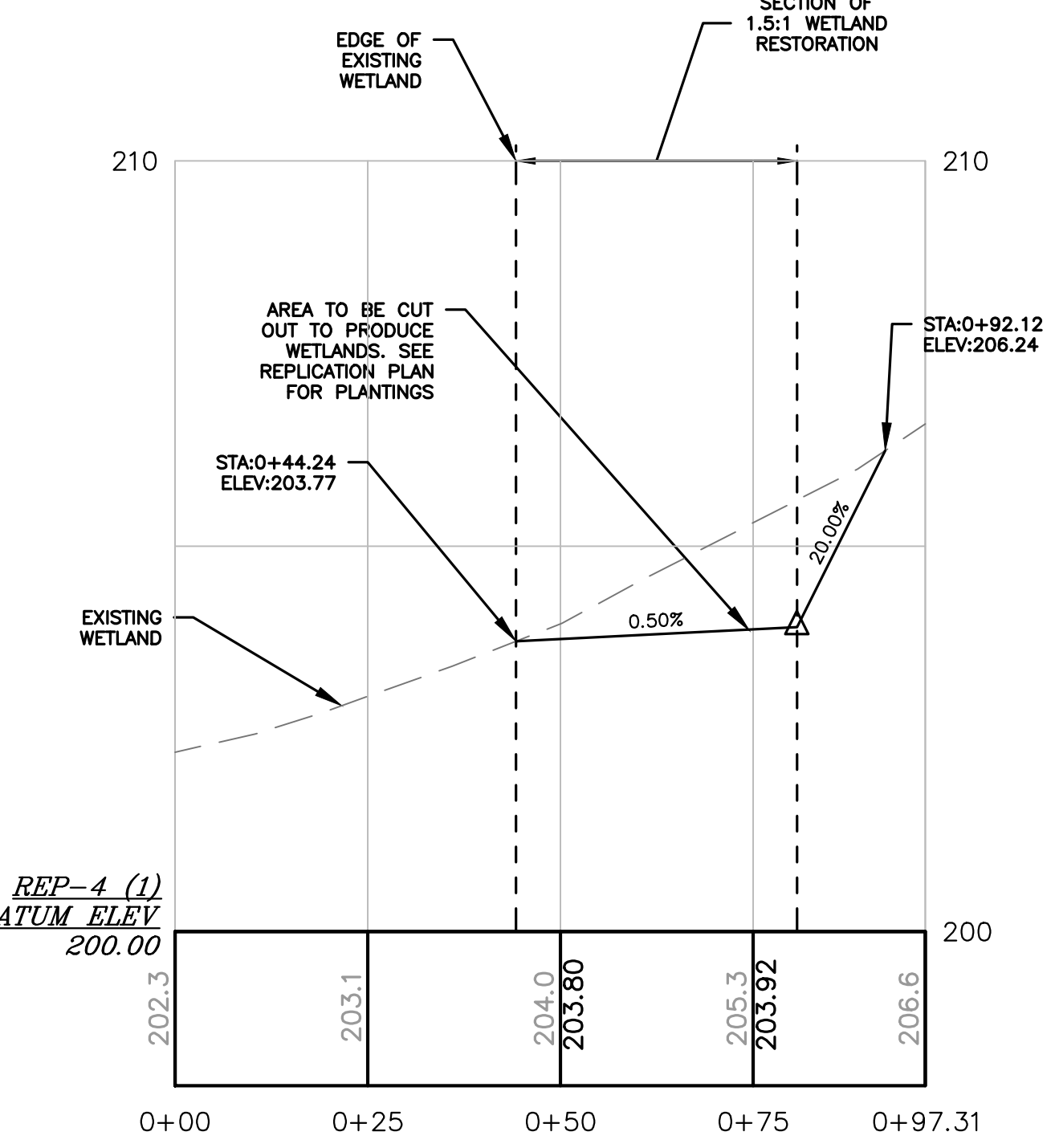
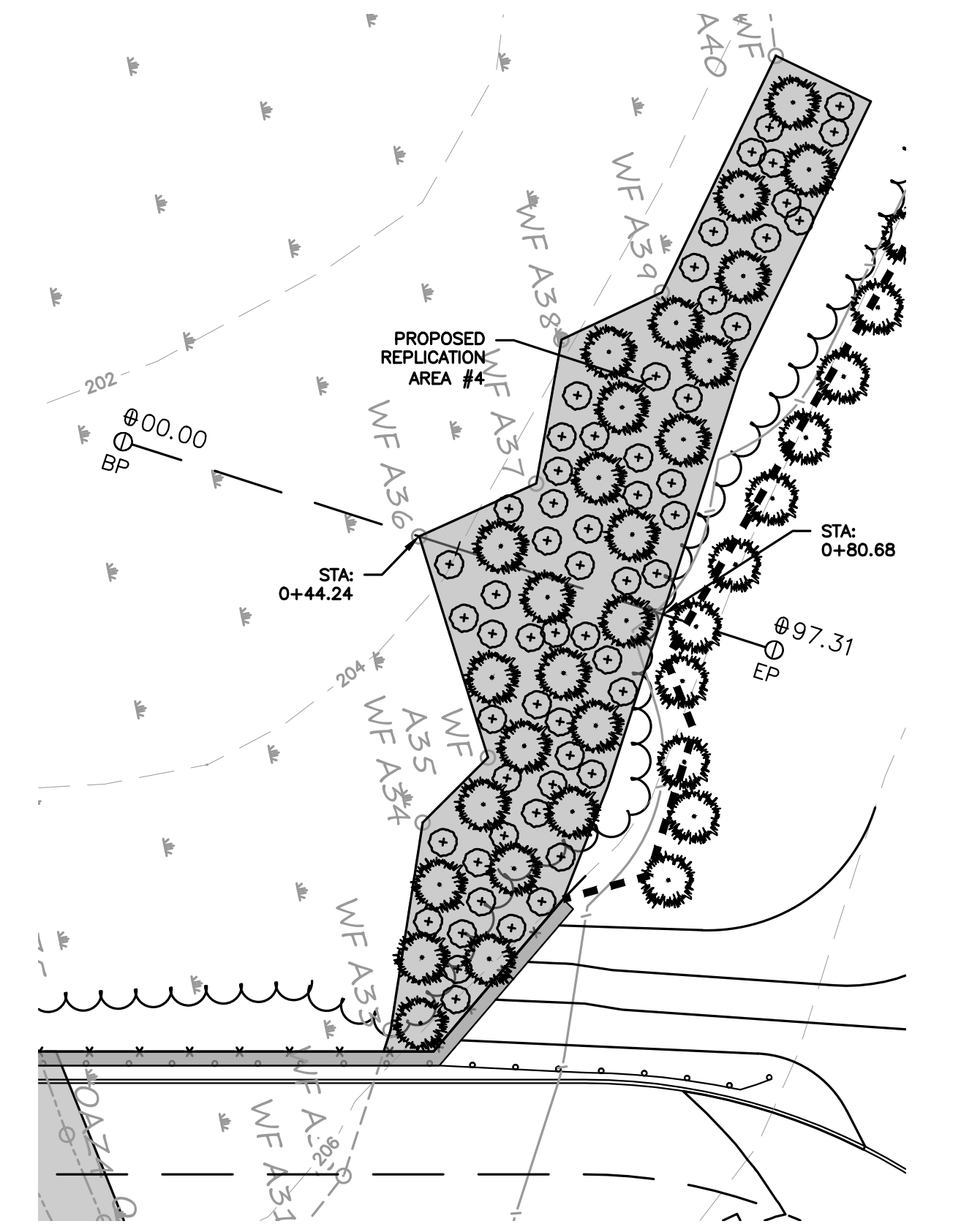


SITE PLAN

REPLICATION AREA
 PROFILES
 (DETAIL SHEET
 27 OF 27)

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

C.65



8/31/2023 11:19:07 AM L:\19097\19097_04 - Lot 2\CURRENT\19097 - Details.dwg
 Plot Saved by: MB/KF/KE
 Printed by: Matthew Baker