

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 SOCK 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.

SITE NOTES:

- 1. THE INTENT OF THIS PLAN IS TO CONSTRUCT A MULTIFAMILY HOUSING DEVELOPMENT CONSISTING OF APARTMENT BUILDINGS AND TOWNHOUSES FOR RENT AND SINGLE FAMILY HOMES WHICH WILL BE INDIVIDUALLY OWNED. THIS PROJECT IS TO BE SERVICED BY MUNICIPAL UTILITIES.
- 2. ALL CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE TOWN AND STATE STANDARDS AND REGULATIONS.
- 3. THIS PROPERTY IS PARTIALLY WITHIN FLOOD ZONE A REFER TO COMMUNITY PANEL NUMBER 25021C0332E, DATED JULY 17, 2012.
- 4. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.P.), THIS DOCUMENT IS TO BE KEPT ON-SITE AT ALL TIMES AND UPDATED AS REQUIRED.
- 5. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT, AND/OR OWNER, IN ORDER TO 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).
- 9. ALL NEW CURBING TO BE INSTALLED BY RADIUS AND MATERIALS AS NOTED ON THE LAYOUT AND MATERIALS SHEETS 12 - 16 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. SNOW STORAGE IS NOT LIMITED TO THE AREAS DENOTED IN THE LAYOUT AND MATERIALS PLANS. ALL SNOW STORAGE SHALL BE A MINIMUM OF 50' FROM ANY WETLAND.
- 13. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
- 14. ALL ACCESSIBLE RAMPS SHALL HAVE A SLOPE OF 1:12 OR LESS, BE FITTED WITH A DETECTABLE WARNING PANEL, AND HAVE VERTICAL TO FLUSH TRANSITION CURB ON BOTH SIDES OF THE LEVEL LANDING EXITING THE SIDEWALK.
- 15. ALL PROPOSED RETAINING WALLS ARE SHOWN FOR LOCATION AND GRADING PURPOSES ONLY. EACH RETAINING WALL IS TO BE DESIGNED BY OTHERS. HOWARD STEIN HUDSON TAKES NO RESPONSIBILITY OVER THE DESIGN OF THE RETAINING WALLS DEPICTED HEREIN.
- 16. ALL WETLAND CROSSINGS SHALL 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 AND TOPOGRAPHY 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.
- 9. ALL DRAINAGE STRUCTURES SHALL BE PRECAST, UNLESS OTHERWISE SPECIFIED. SEE DETAIL SHEETS FOR DRAINAGE DETAILS.
- 10. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE EROSION CONTROL IS NOT REQUIRED.
- 11. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY ALL GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE EPA SWPPP DURING CONSTRUCTION OPERATIONS.
- 12. ALL EXPOSED AREAS SHALL BE SEEDED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING.
- 13. SHOULD CONSTRUCTION STOP FOR LONGER THAN 14 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED.
- 14. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE, AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- 15. CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE TO THE EXTENT POSSIBLE THROUGHOUT CONSTRUCTION. IF THE INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
- 16. SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
- 17. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEDED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.
- 18. ALL EXISTING CATCH BASINS ON SITE SHALL BE FITTED WITH HOODS, IF NOT ALREADY PRESENT, WHERE POSSIBLE.
- 19. MONITORING WELLS ARE TO BE PROVIDED AT EACH INFILTRATION BASIN PER THE REQUIREMENT OF THE MASSACHUSETTS STORM WATER HANDBOOK.

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. CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPLICATE TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- 14. EXISTING UTILITIES SHALL BE DIGSAFED AND PRIVATE UTILITY LOCATOR SERVICES SHOULD BE UTILIZED PRIOR TO CONSTRUCTION.
- 15. ALL FIRE SUPPRESSION WATER LINES SHALL HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
- 16. THE CONTRACTOR SHALL MINIMIZE THE DISRUPTIONS TO THE EXISTING SEWER FLOWS AND THOSE INTERRUPTIONS SHALL BE LIMITED TO LOCAL SEWER DEPARTMENT REGULATIONS.
- 17. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
- 18. ALL FIRE HYDRANTS SHALL BE PROVIDED WITH AN APPROVED GATE VALVE.
- 19. 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.
- 20. 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
- 21. ALL WATER AND SEWER INSTALLATION SHALL BE COORDINATED WITH THE TOWN OF WALPOLE, MA



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

REQUESTED SPECIAL PERMITS AND VARIANCES – LOT 1

- 1. 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;
- 2. WALPOLE ZONING BYLAWS TABLE 5-B.1.3.D; USE PROHIBITED IN LIMITED MANUFACTURING ZONE;
- 3. WALPOLE ZONING BYLAWS TABLE 5-B.1.3.D.iii; A FIFTY-FOOT BUFFER SHALL BE REQUIRED WHERE THE ADJACENT LOT(S) HAS A SINGLE-FAMILY DWELLING OR IS A VACANT LOT;
- 4. 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;
- 5. 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;
- 6. 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;
- 7. WALPOLE ZONING BYLAWS TABLE 6-B.1 AND 6-C.3.A: REQUIRED LOT FRONTAGE FOR A LOT IN THE LIMITED MANUFACTURING ZONE;
- 8. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED MINIMUM SIDE YARD SETBACK FOR A LOT IN THE LIMITED MANUFACTURING ZONE;
- 9. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED MAXIMUM BUILDING HEIGHT FOR A LOT IN THE LIMITED MANUFACTURING ZONE;
- 10. WALPOLE ZONING BYLAWS SECTION 6-C-11: PROJECTIONS;
- 11. WALPOLE ZONING BYLAWS SECTION 8.3.1: TOWNHOUSES & APARTMENTS ARE CLASSIFIED AS PARKING CODE 1 PER TABLE 6-B-1;
- 12. 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;
- 13. 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;
- 14. WALPOLE ZONING BYLAWS SECTIONS 12.3.B.1.F, 12.3.C.6 AND 12.4.D.5: STORAGE, USE, AND REPORTING OF HAZARDOUS MATERIAL;
- 15. WALPOLE ZONING BYLAWS SECTION 12.3.B.1.J: REMOVAL OF SOIL, LOAM, SAND, GRAVEL OR ANY OTHER MINERAL SUBSTANCES WITHIN FOUR FEET OF THE HISTORICAL HIGH GROUNDWATER TABLE ELEVATION IS PROHIBITED;
- 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 7.5.C.5: ONE(1) DOUBLE FACED FREE STANDING SIGN;
- 20. WATER AND SEWER DEPARTMENT INFLOW AND INFILTRATION FEES: INFLOW AND INFILTRATION FEE 2.3:1 RATIO \$13.60;
- 21. WATER AND SEWER DEPARTMENT WATER ENTRANCE FEE: SYSTEM DEVELOPMENT CHARGE OF \$2,440 PER RESIDENTIAL HOUSING UNIT;
- 22. WATER AND SEWER DEPARTMENT NON-ASSESSED SEWER ENTRANCE FEE-RESIDENTIAL: SYSTEM DEVELOPMENT CHARGE OF \$1,670 PER RESIDENTIAL HOUSING UNIT;
- 23. ZBA SECTION 3.2.15 - STATEMENT OF IMPACT ON MUNICIPAL FACILITIES AND SERVICES;
- 24. ZBA SECTION 3.2.16: COMPLIANCE WITH MASTER AND OPEN SPACE PLANS;
- 25. ZBA SECTION 3.2.17: ROSTER OF DEVELOPMENT TEAM AND LIST OF PRIOR DEVELOPMENTS FOR PAST 10 YEARS;
- 26. ZBA SECTION 3.2.18: TWENTY (20) PAPER COPIES OF SAID APPLICATION WITH ATTACHMENTS AND EXHIBITS;
- 27. ZBA SECTION 3.2.19: PAYMENT OF FILING FEE. 1. FOR LIMITED DIVIDEND ORGANIZATIONS: \$5,000 BASE FEE PLUS, IF THE TOTAL PROJECT CONTAINS MORE THAN 6 MARKET RATE UNITS, \$200.00 PER MARKET RATE IS PROPOSED;
- 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.

REQUESTED SPECIAL PERMITS AND VARIANCES – LOT 2

- 1. 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;
- 2. WALPOLE ZONING BYLAWS TABLE 5-B.1.3.A; USE PROHIBITED IN LIMITED MANUFACTURING ZONE;
- 3. 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;
- 4. 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;
- 5. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED LOT FRONTAGE FOR A LOT IN THE LIMITED MANUFACTURING ZONE;
- 6. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED MINIMUM FRONT SETBACK FOR A LOT IN THE LIMITED MANUFACTURING ZONE;
- 7. WALPOLE ZONING BYLAWS TABLE 6-B.1: REQUIRED MINIMUM SIDE YARD SETBACK FOR A LOT IN THE LIMITED MANUFACTURING ZONE;
- 8. WALPOLE ZONING BYLAWS SECTION 6-C-11: PROJECTIONS;
- 9. 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.
- 10. WALPOLE ZONING BYLAWS SECTION 12.3.B.1.J: REMOVAL OF SOIL, LOAM, SAND, GRAVEL OR ANY OTHER MINERAL SUBSTANCES WITHIN FOUR FEET OF THE HISTORICAL HIGH GROUNDWATER TABLE ELEVATION IS PROHIBITED;
- 11. 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;
- 12. 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;
- 13. WALPOLE ZONING BYLAWS SECTION 13: SITE PLAN REVIEW;
- 14. SIGNS SECTION 7.5.C.4: SIGNS SHALL BE A MINIMUM OF 8 FEET FROM THE GROUND;
- 15. WATER AND SEWER DEPARTMENT INFLOW AND INFILTRATION FEES: INFLOW AND INFILTRATION FEE 2.3:1 RATIO \$13.60;
- 16. WATER AND SEWER DEPARTMENT WATER ENTRANCE FEE: SYSTEM DEVELOPMENT CHARGE OF \$2,440 PER RESIDENTIAL HOUSING UNIT;
- 17. WATER AND SEWER DEPARTMENT NON-ASSESSED SEWER ENTRANCE FEE-RESIDENTIAL: SYSTEM DEVELOPMENT CHARGE OF \$1,670 PER RESIDENTIAL HOUSING UNIT;
- 18. ZBA SECTION 3.2.15 - STATEMENT OF IMPACT ON MUNICIPAL FACILITIES AND SERVICES;
- 19. ZBA SECTION 3.2.16: COMPLIANCE WITH MASTER AND OPEN SPACE PLANS;
- 20. ZBA SECTION 3.2.17: ROSTER OF DEVELOPMENT TEAM AND LIST OF PRIOR DEVELOPMENTS FOR PAST 10 YEARS;
- 21. ZBA SECTION 3.2.18: TWENTY (20) PAPER COPIES OF SAID APPLICATION WITH ATTACHMENTS AND EXHIBITS;
- 22. ZBA SECTION 3.2.19: PAYMENT OF FILING FEE. 1. FOR LIMITED DIVIDEND ORGANIZATIONS: \$5,000 BASE FEE PLUS, IF THE TOTAL PROJECT CONTAINS MORE THAN 6 MARKET RATE UNITS, \$200.00 PER MARKET RATE IS PROPOSED;
- 23. 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);
- 24. 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;
- 25. ZBA SECTION 5.6: BOARD MAY IN ITS DISCRETION COLLECT APPROPRIATE FEES FOR NOTARY PUBLIC OR STENOGRAPHER.

REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
5	PB	12/16/20	EMERGENCY ACCESS
6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

**SITE
PLAN**

**SITE PLAN
NOTES**

DATE: JANUARY 10, 2020

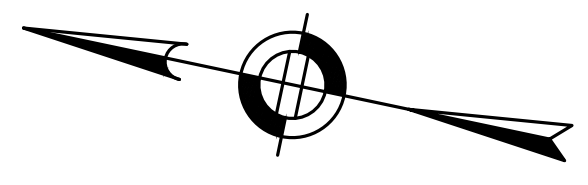
PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.2



PREPARED FOR:
56 BH LLC
 6 LYBERTY WAY, SUITE 203
 WESTFORD, MA 01886

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

REVISIONS:

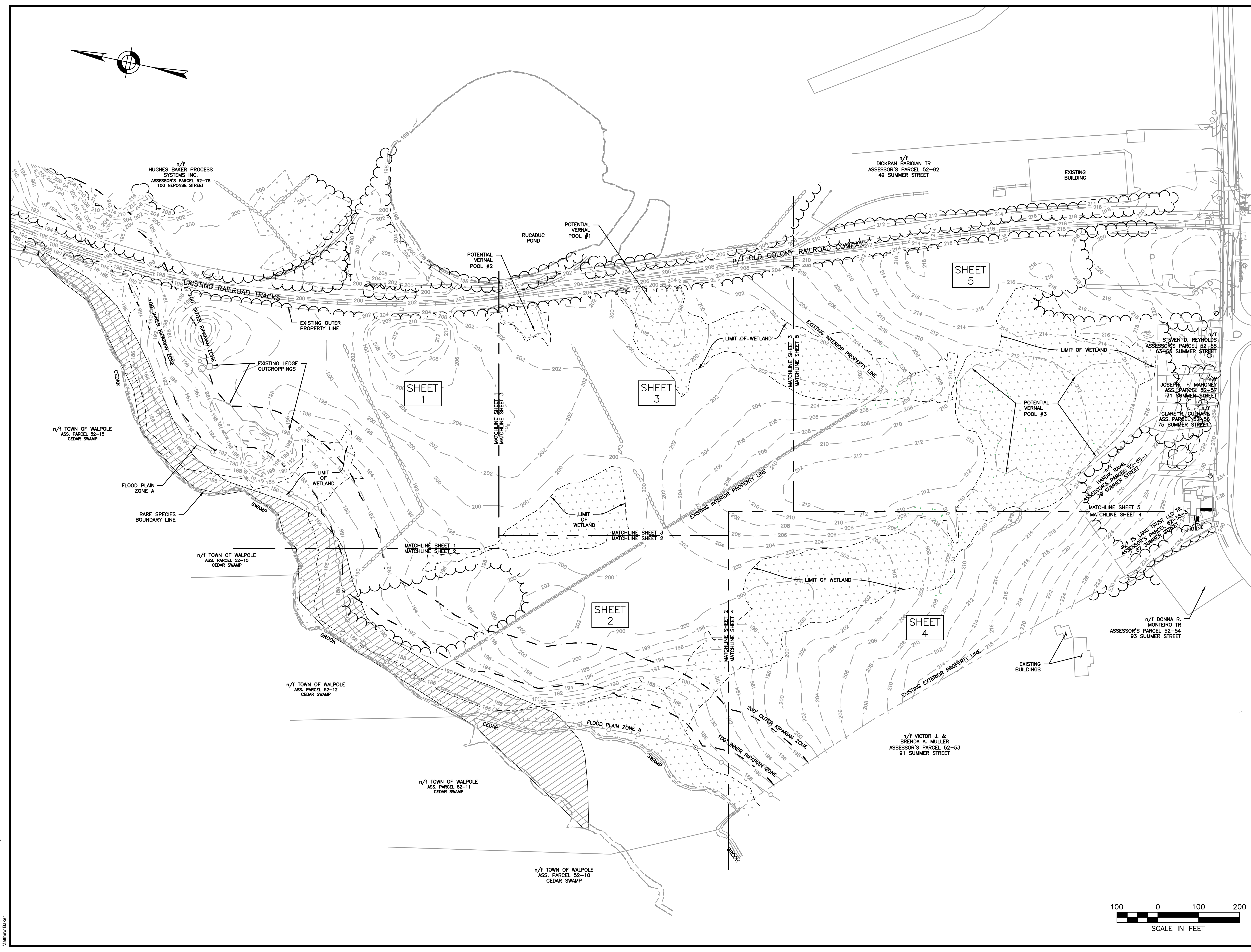
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5	PB	12/16/20	EMERGENCY ACCESS
6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

LOCUS PLAN

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.3





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 WESTFORD, MA 01886

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

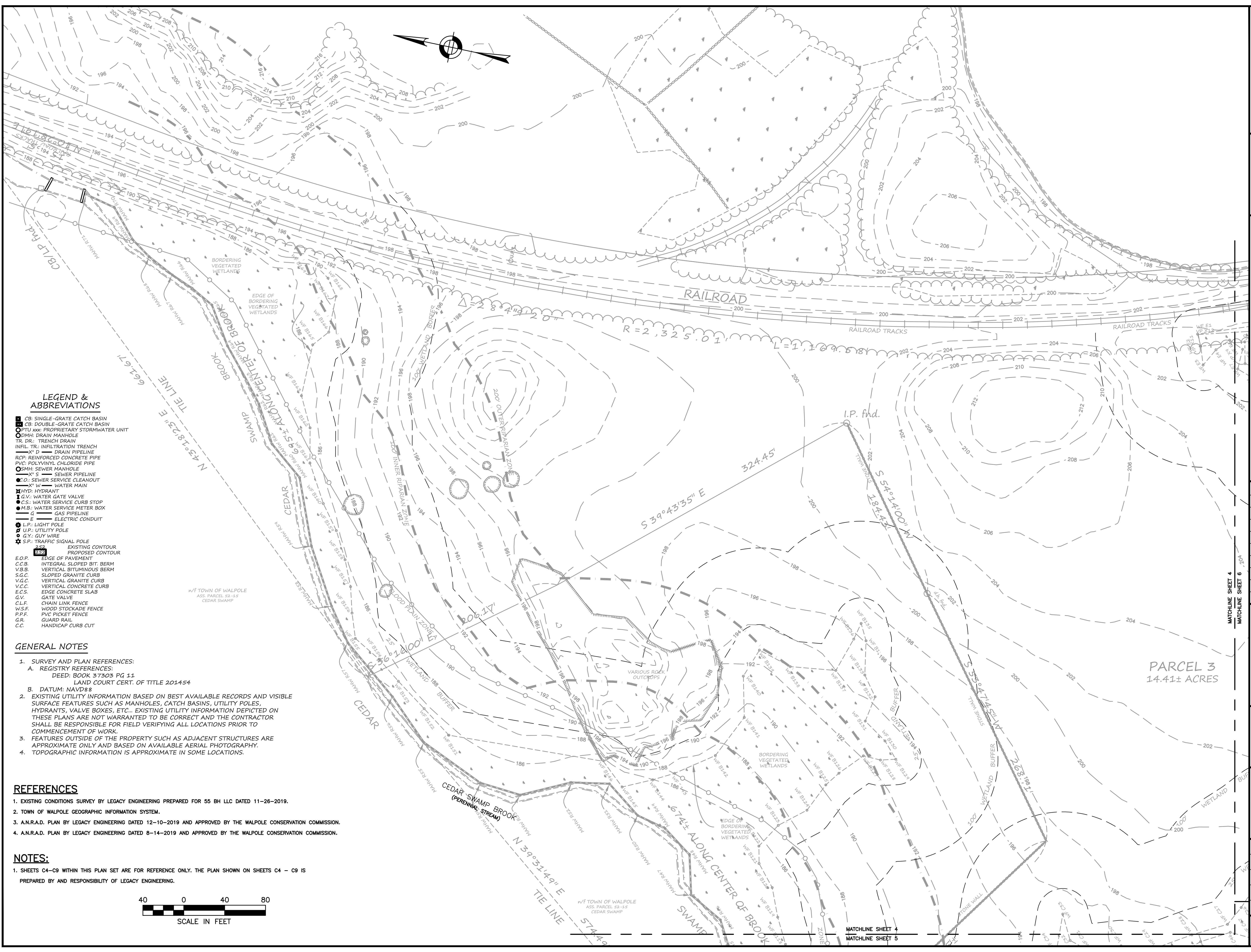
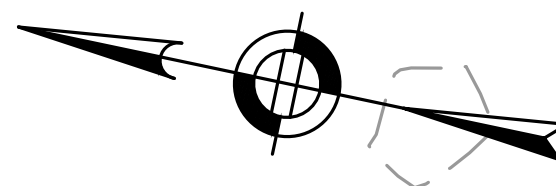
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SITE PLAN

EXISTING
 CONDITIONS
 PLAN 1 OF 5

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE
	C.4



LEGEND & ABBREVIATIONS

- CB: SINGLE-GRATE CATCH BASIN
- CB: DOUBLE-GRATE CATCH BASIN
- STU: PROPRIETARY STORMWATER UNIT
- DMH: DRAIN MANHOLE
- TR: TRENCH DRAIN
- INFIL TR.: INFILTRATION TRENCH
- X-D: DRAIN PIPELINE
- RCP: REINFORCED CONCRETE PIPE
- PVC: POLYVINYL CHLORIDE PIPE
- SMH: SEWER MANHOLE
- X-S: SEWER PIPELINE
- CS: SEWER SERVICE CLEANOUT
- X-W: WATER MAIN
- HYD: HYDRANT
- GV: WATER GATE VALVE
- CS: WATER SERVICE CURB STOP
- MB: WATER SERVICE METER BOX
- G: GAS PIPELINE
- E: ELECTRIC CONDUIT
- LP: LIGHT POLE
- UP: UTILITY POLE
- GY: GUY WIRE
- SP: TRAFFIC SIGNAL POLE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- E.O.P.: EDGE OF PAVEMENT
- C.C.B.: INTEGRAL SLOPED BIT. BERM
- V.B.B.: VERTICAL BITUMINOUS BERM
- S.G.C.: SLOPED GRANITE CURB
- V.G.C.: VERTICAL GRANITE CURB
- V.C.C.: VERTICAL CONCRETE CURB
- E.C.S.: EDGE CONCRETE SLAB
- GV: GATE VALVE
- C.L.F.: CHAIN LINK FENCE
- W.S.F.: WOOD STOCKADE FENCE
- P.P.F.: PVC PICKET FENCE
- GR: GUARD RAIL
- C.C.: HANDICAP CURB CUT

GENERAL NOTES

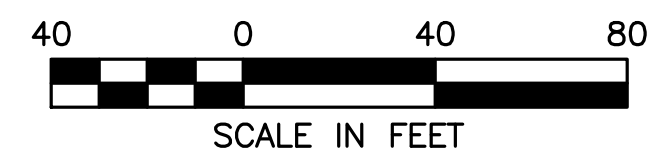
- SURVEY AND PLAN REFERENCES:
 - REGISTRY REFERENCES:
 DEED: BOOK 37303 PG 11
 LAND COURT CERT. OF TITLE 201454
 - DATUM: NAVD88
- EXISTING UTILITY INFORMATION BASED ON BEST AVAILABLE RECORDS AND VISIBLE SURFACE FEATURES SUCH AS MANHOLES, CATCH BASINS, UTILITY POLES, HYDRANTS, VALVE BOXES, ETC... EXISTING 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.
- TOPOGRAPHIC INFORMATION IS APPROXIMATE IN SOME LOCATIONS.

REFERENCES

- EXISTING CONDITIONS SURVEY BY LEGACY ENGINEERING PREPARED FOR 55 BH LLC DATED 11-26-2019.
- TOWN OF WALPOLE GEOGRAPHIC INFORMATION SYSTEM.
- A.N.R.A.D. PLAN BY LEGACY ENGINEERING DATED 12-10-2019 AND APPROVED BY THE WALPOLE CONSERVATION COMMISSION.
- A.N.R.A.D. PLAN BY LEGACY ENGINEERING DATED 8-14-2019 AND APPROVED BY THE WALPOLE CONSERVATION COMMISSION.

NOTES:

- SHEETS C4-C9 WITHIN THIS PLAN SET ARE FOR REFERENCE ONLY. THE PLAN SHOWN ON SHEETS C4 - C9 IS PREPARED BY AND RESPONSIBILITY OF LEGACY ENGINEERING.





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

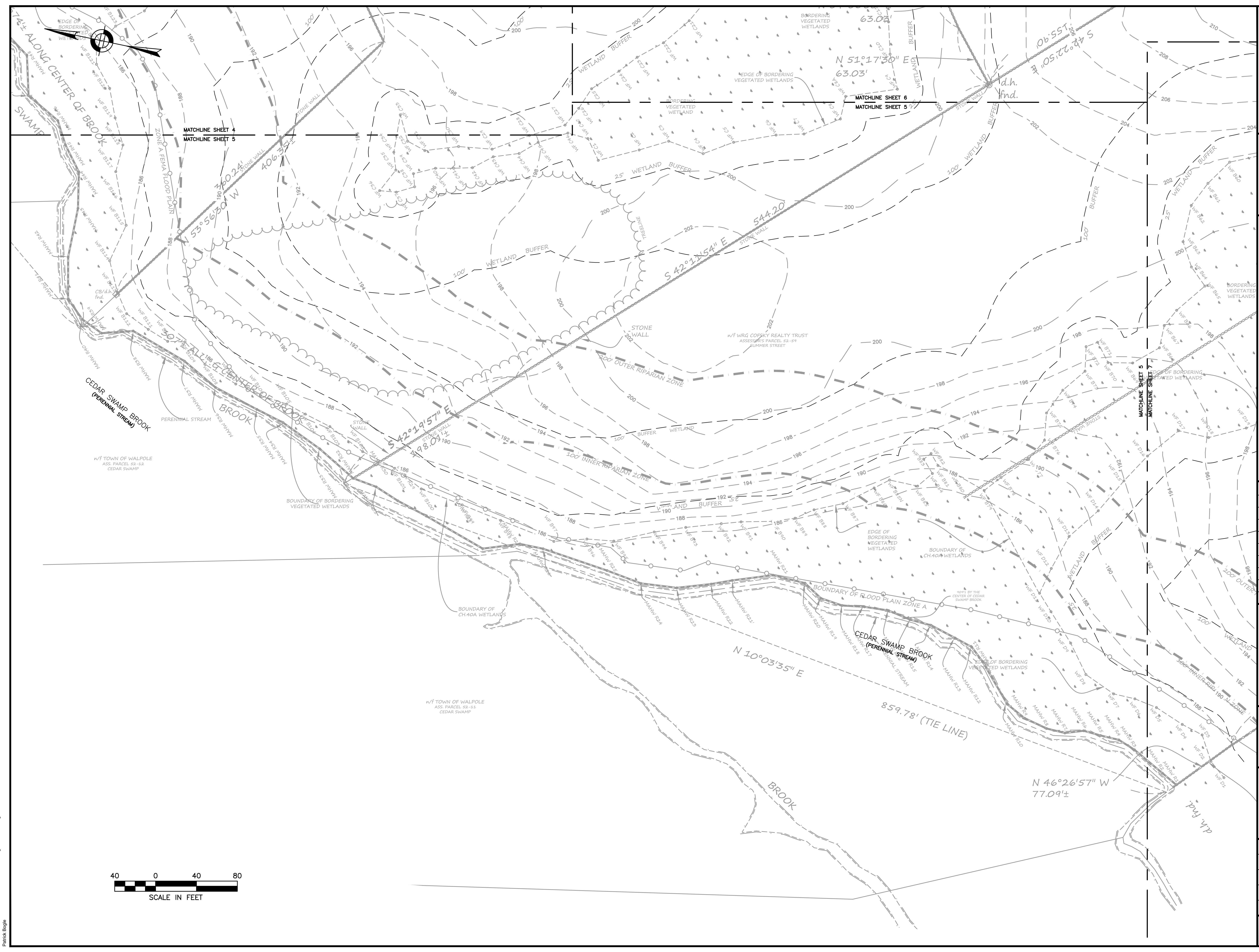
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10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

EXISTING CONDITIONS
 PLAN 2 OF 5

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE
	C.5



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SITE PLAN

EXISTING
 CONDITIONS
 PLAN 3 OF 5

DATE: JANUARY 10, 2020

PROJECT NUMBER: 19097

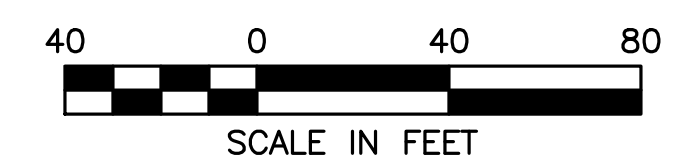
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C.6

SHEET 6 OF 93



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 DEVELOPMENT**
 SUMMER STREET
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SITE PLAN

EXISTING CONDITIONS
 PLAN 4 OF 5

DATE: JANUARY 10, 2020
 PROJECT NUMBER: 19097
 DESIGNED BY: PB/KE/KF
 DRAWN BY: PB/KF
 CHECKED BY: KE

C.7





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10	PB	1/27/21	REV. SITE PLAN

SITE
PLAN

EROSION
CONTROL AND
DEMOLITION PLAN

DATE: JANUARY 10, 2020

PROJECT NUMBER: 19097

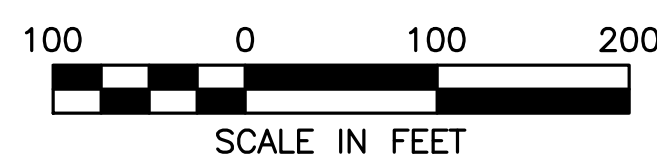
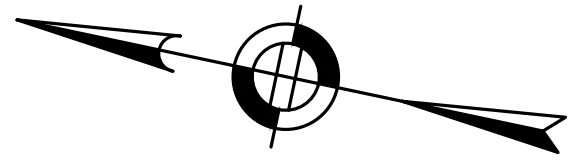
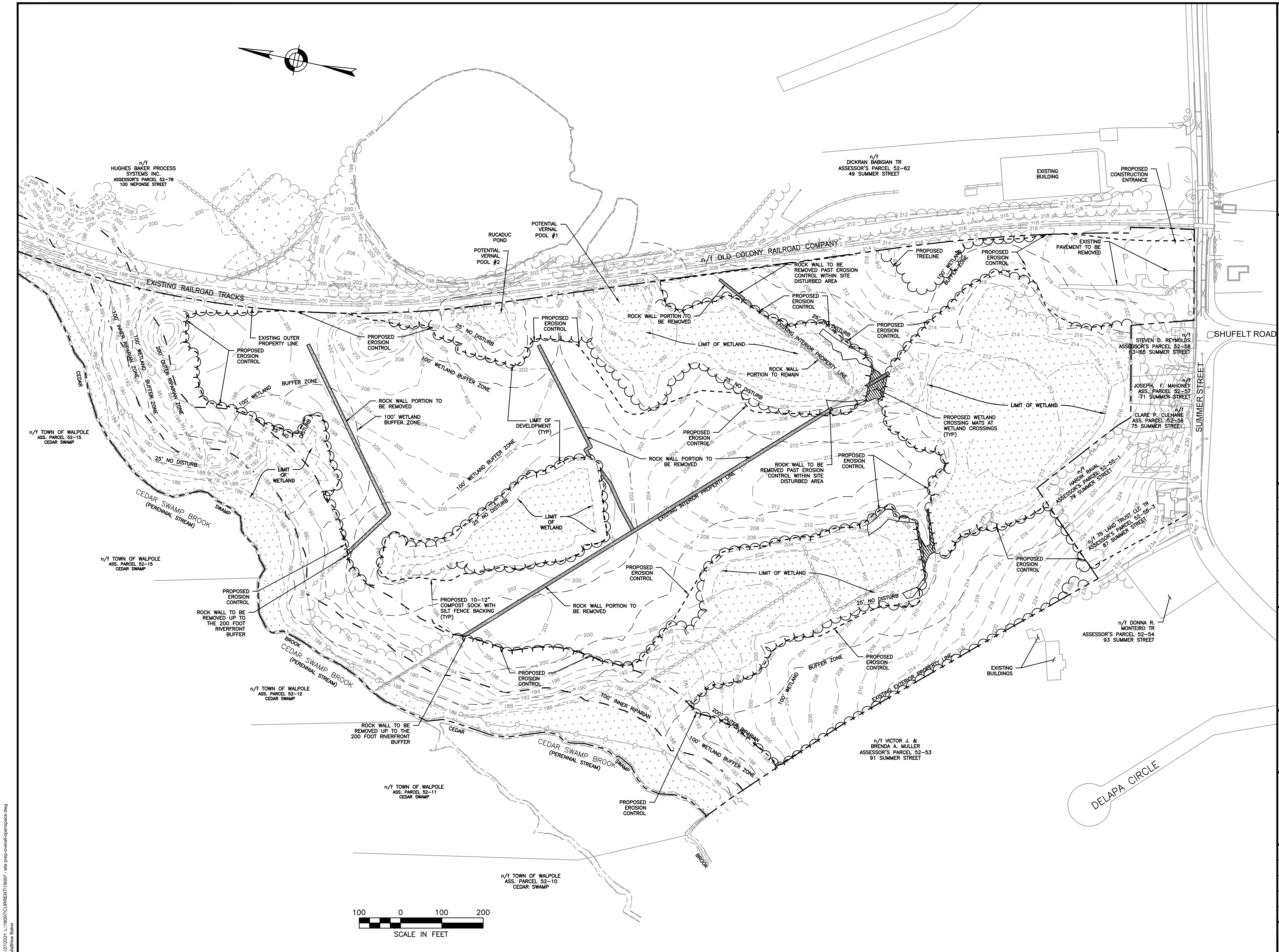
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C.9

SHEET 9 OF 93





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

REVISIONS:

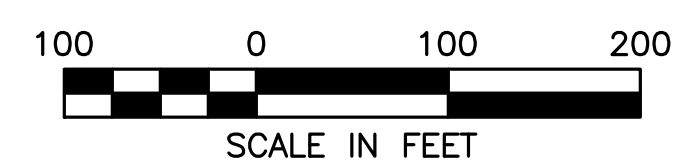
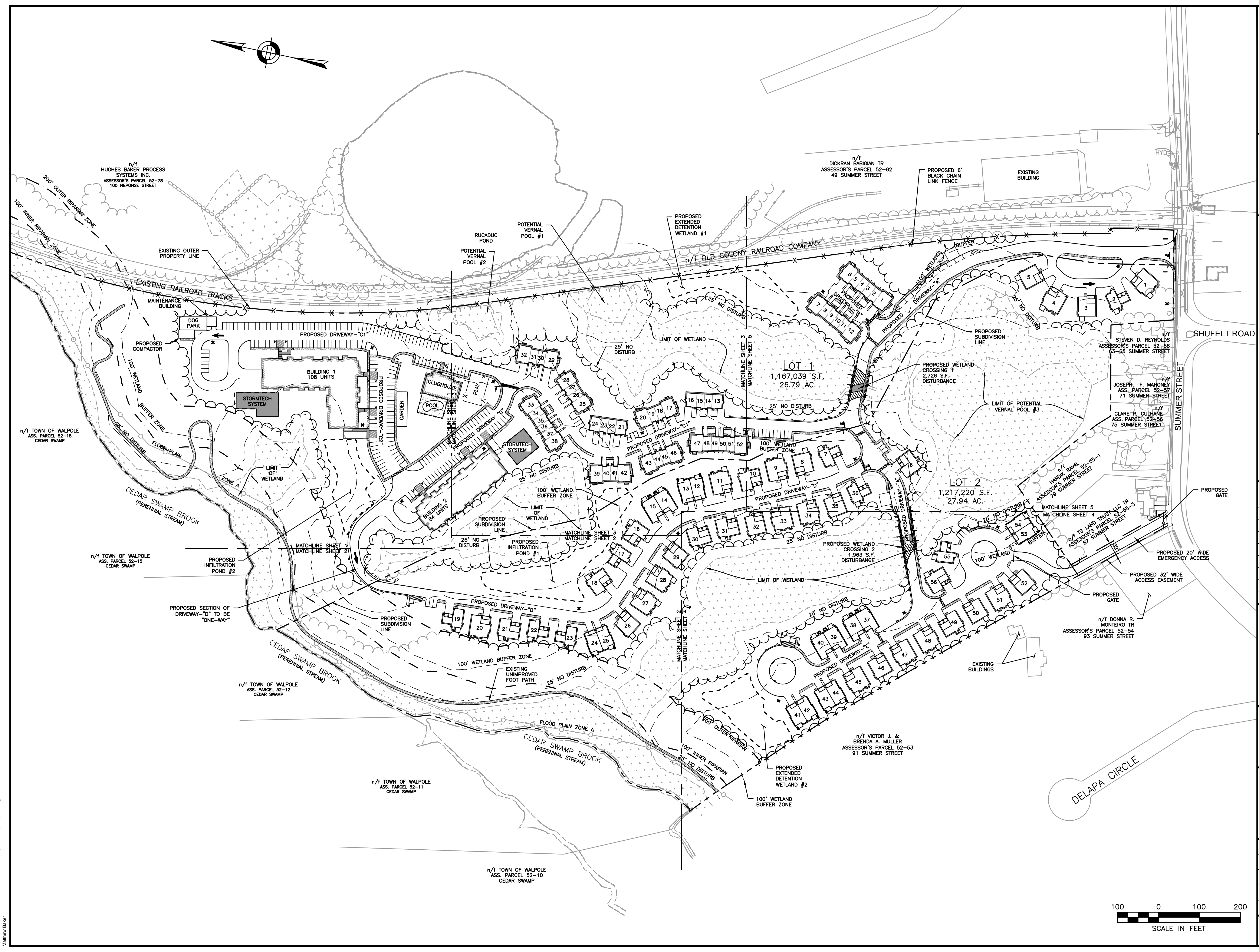
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10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

**PROPOSED
 SUBDIVISION /
 OVERALL PLAN**

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
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C.10



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

REVISIONS:

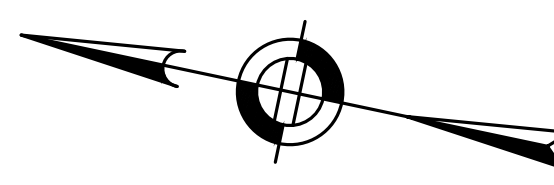
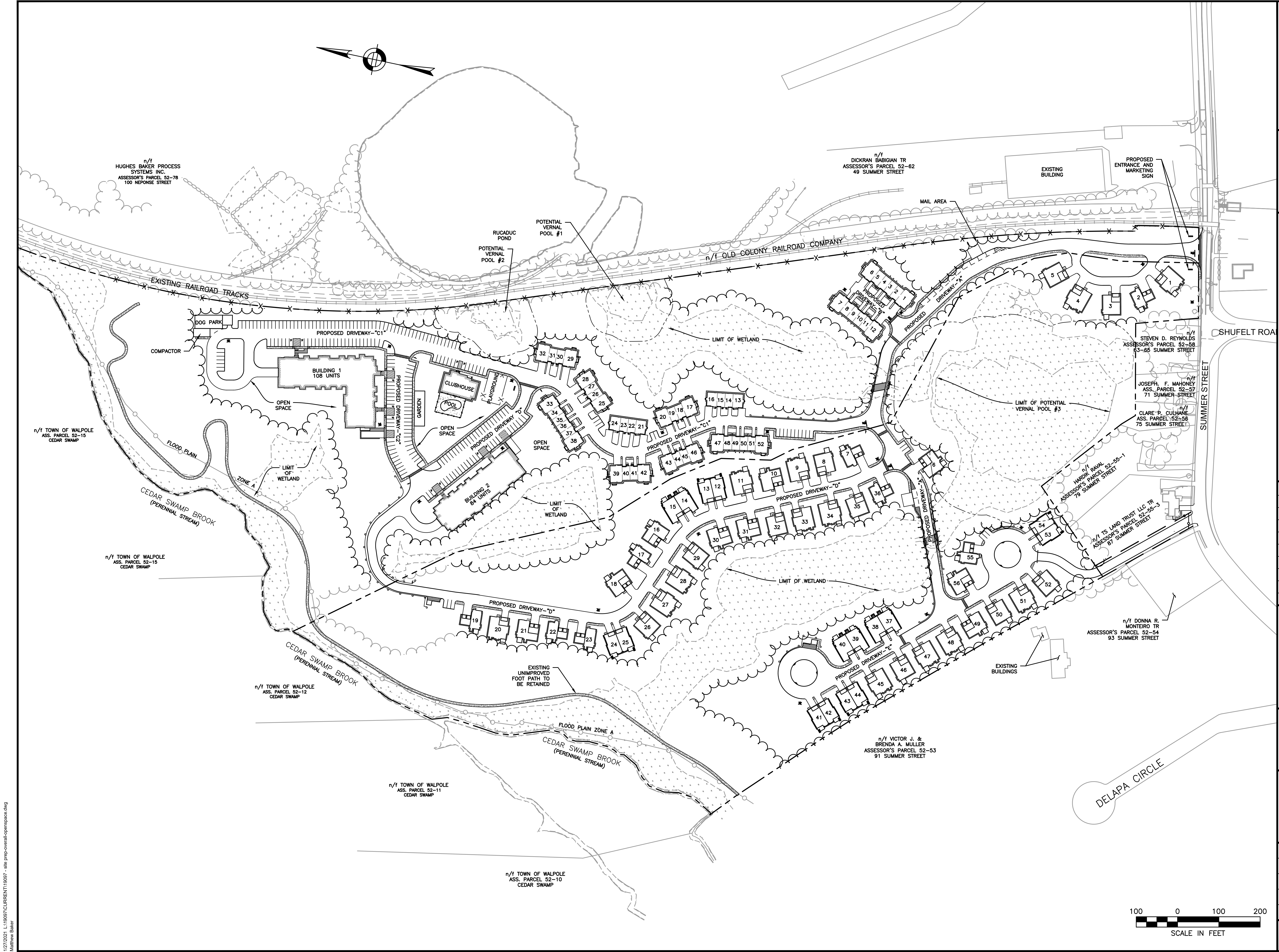
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10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

**OPEN SPACE
 AND RECREATION
 PLAN**

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
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C.11



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 WESTFORD, MA 01886

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

REVISIONS:

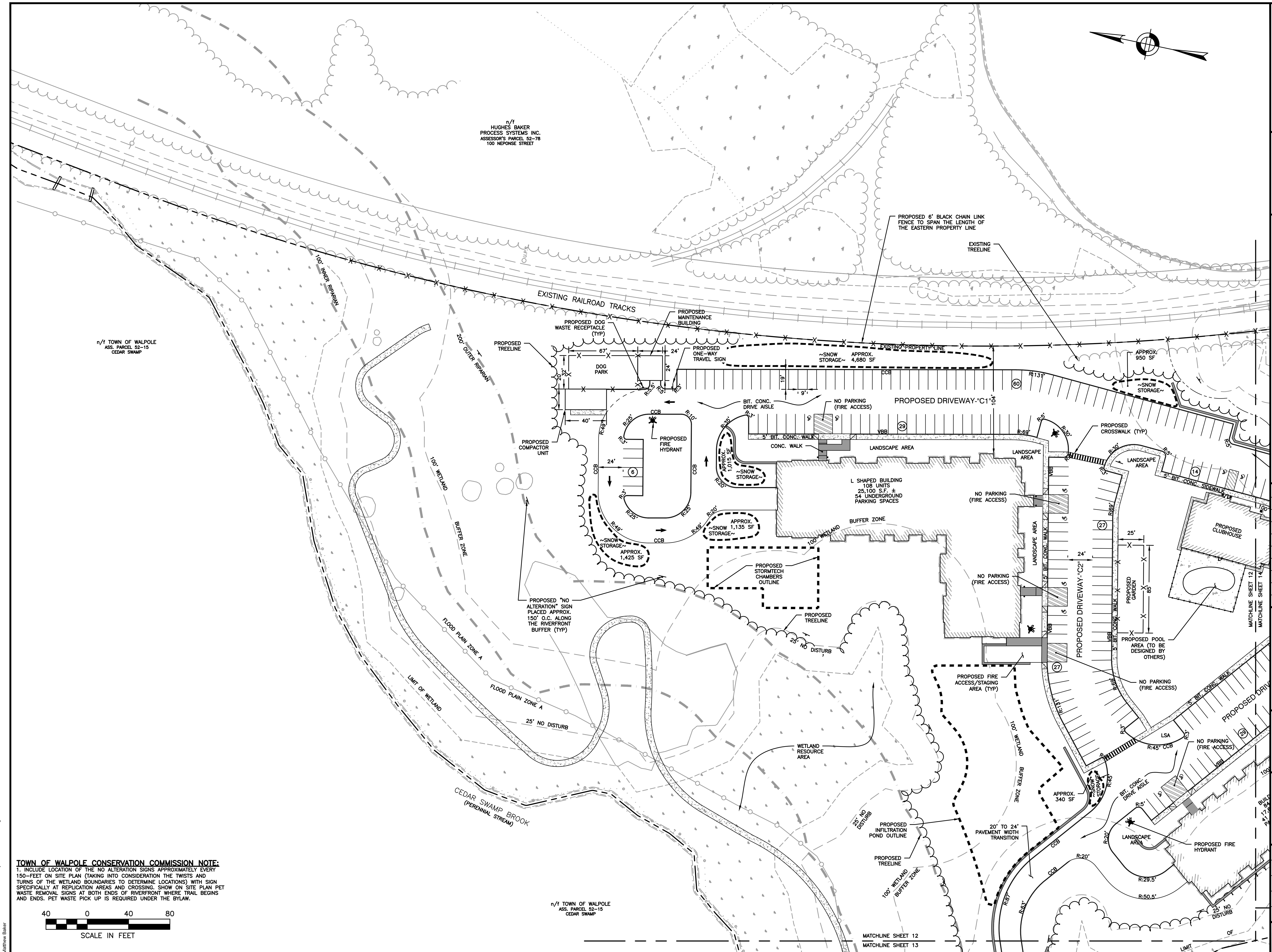
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SITE PLAN

LAYOUT AND MATERIALS PLAN
 1 OF 5

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE
	C.12

SHEET 12 OF 93



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.



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

MATCHLINE SHEET 12
 MATCHLINE SHEET 13



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**PROPOSED MULTIFAMILY
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 SUMMER STREET
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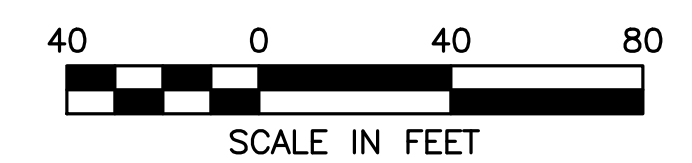
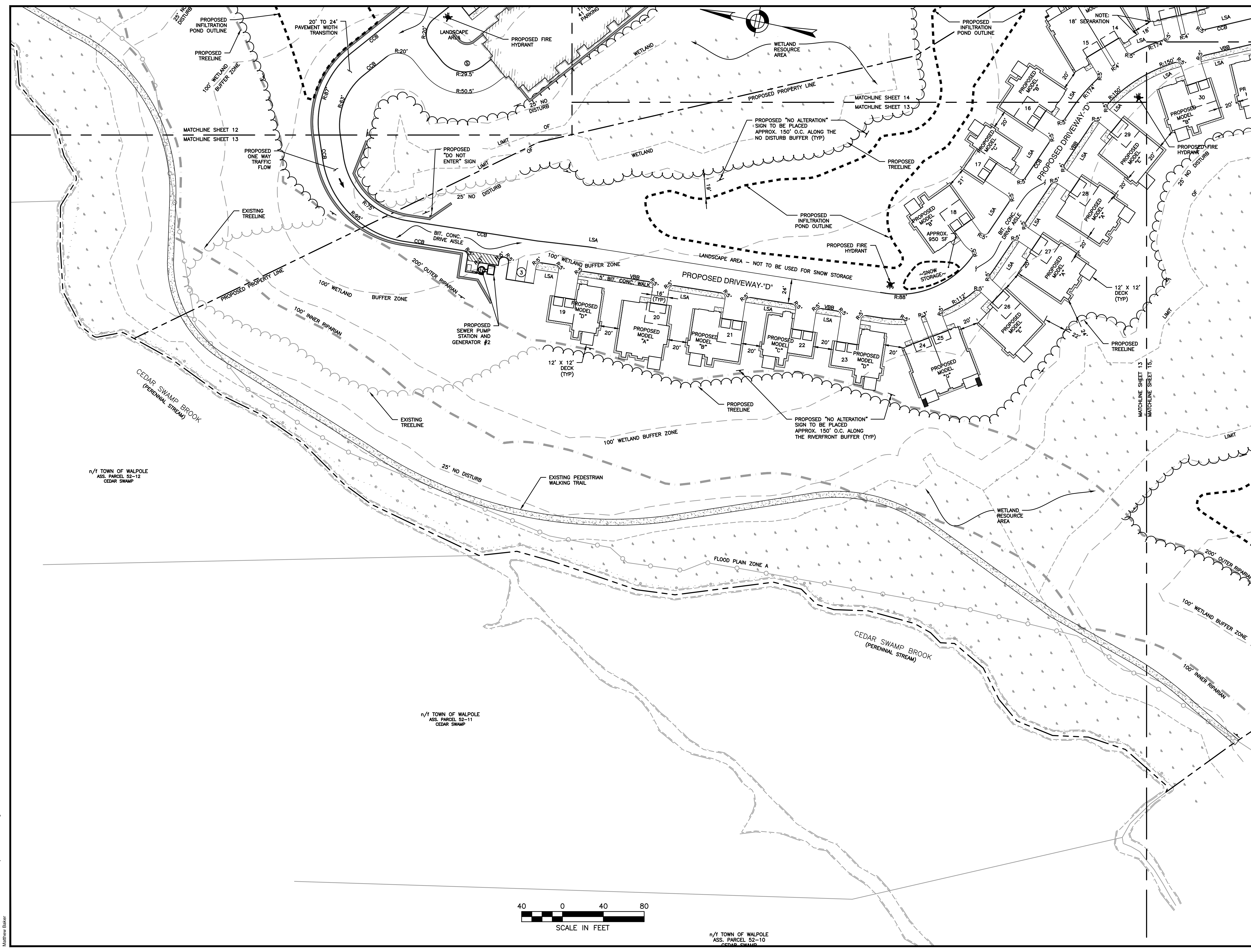
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SITE PLAN

LAYOUT AND MATERIALS PLAN
 2 OF 5

DATE:	JANUARY 10, 2020
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	C.13

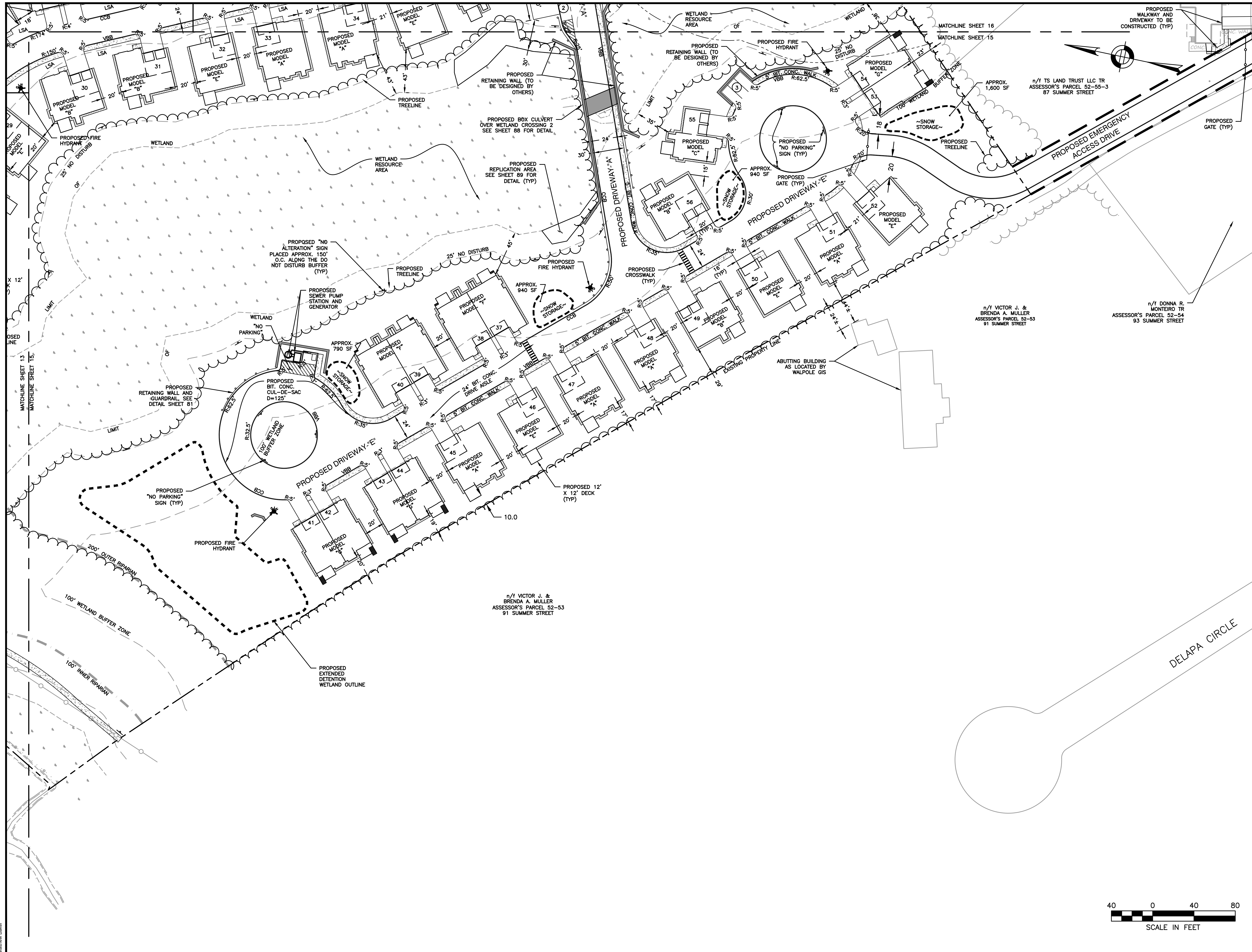


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 Matthew Baker

n/t TOWN OF WALPOLE
 ASS. PARCEL 52-12
 CEDAR SWAMP

n/t TOWN OF WALPOLE
 ASS. PARCEL 52-11
 CEDAR SWAMP

n/t TOWN OF WALPOLE
 ASS. PARCEL 52-10
 CEDAR SWAMP



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SITE PLAN

LAYOUT AND MATERIALS PLAN
 4 OF 5

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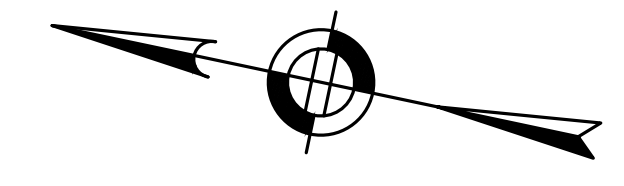
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SITE PLAN

**LAYOUT AND MATERIALS PLAN
 5 OF 5**

DATE:	JANUARY 10, 2020
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DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE
	C.16



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

EXISTING BUILDING

PEDESTRIAN CROSSING SIGNAL

PEDESTRIAN CROSSING SIGNAL

PROPOSED MARKETING SIGN TO BE POSTED ON EXTERIOR OF FENCE SEE ARCH. PLANS

PROPOSED MARKETING SIGN SEE ARCH. PLANS

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

PROPOSED STOP SIGN AND STOP BAR

PROPOSED MONUMENTAL SIGN SEE ARCH. PLANS

PROPOSED SIDEWALK TO TIE INTO EXISTING SIDEWALK ON SUMMER STREET

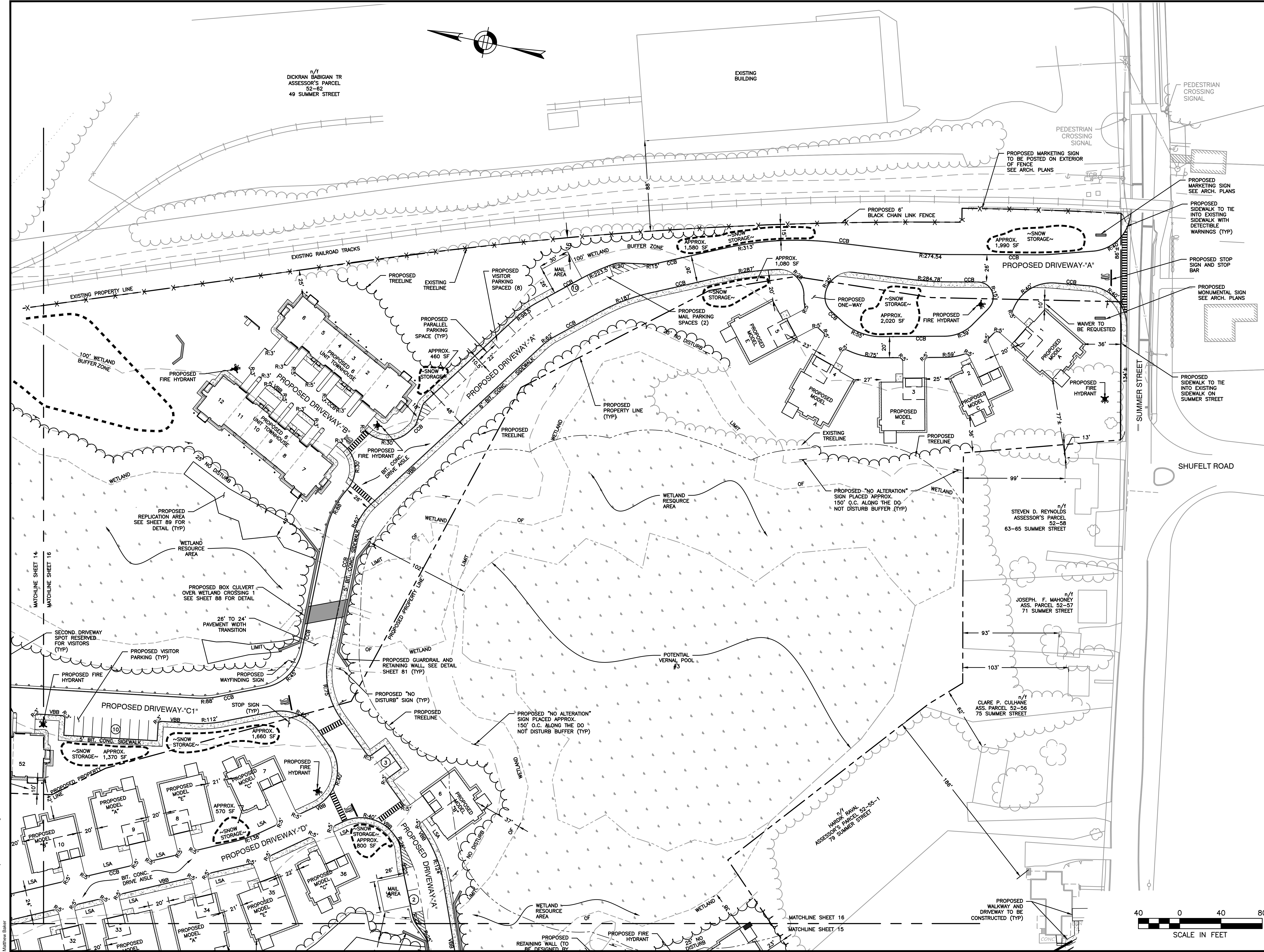
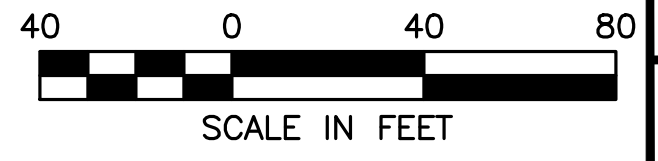
SHUFELT ROAD

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

JOSEPH. F. MAHONEY n/1 ASS. PARCEL 52-57 71 SUMMER STREET

CLARE P. CULHANE n/1 ASS. PARCEL 52-56 75 SUMMER STREET

n/1 HIRSH BAIN ASSESSOR'S PARCEL 52-55-1 79 SUMMER STREET



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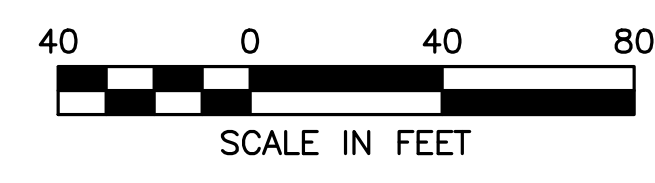
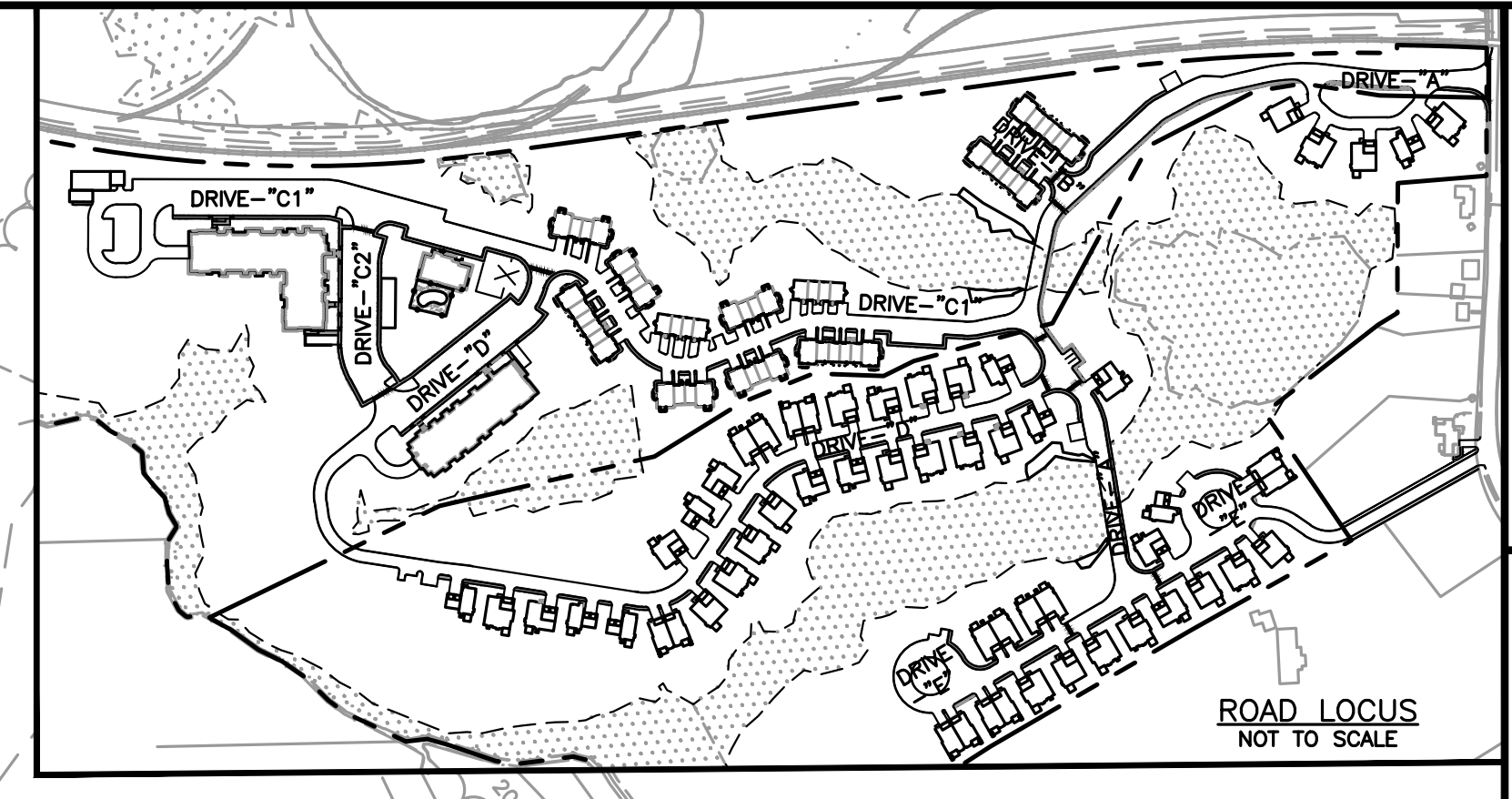
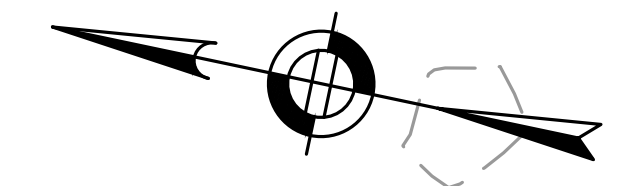
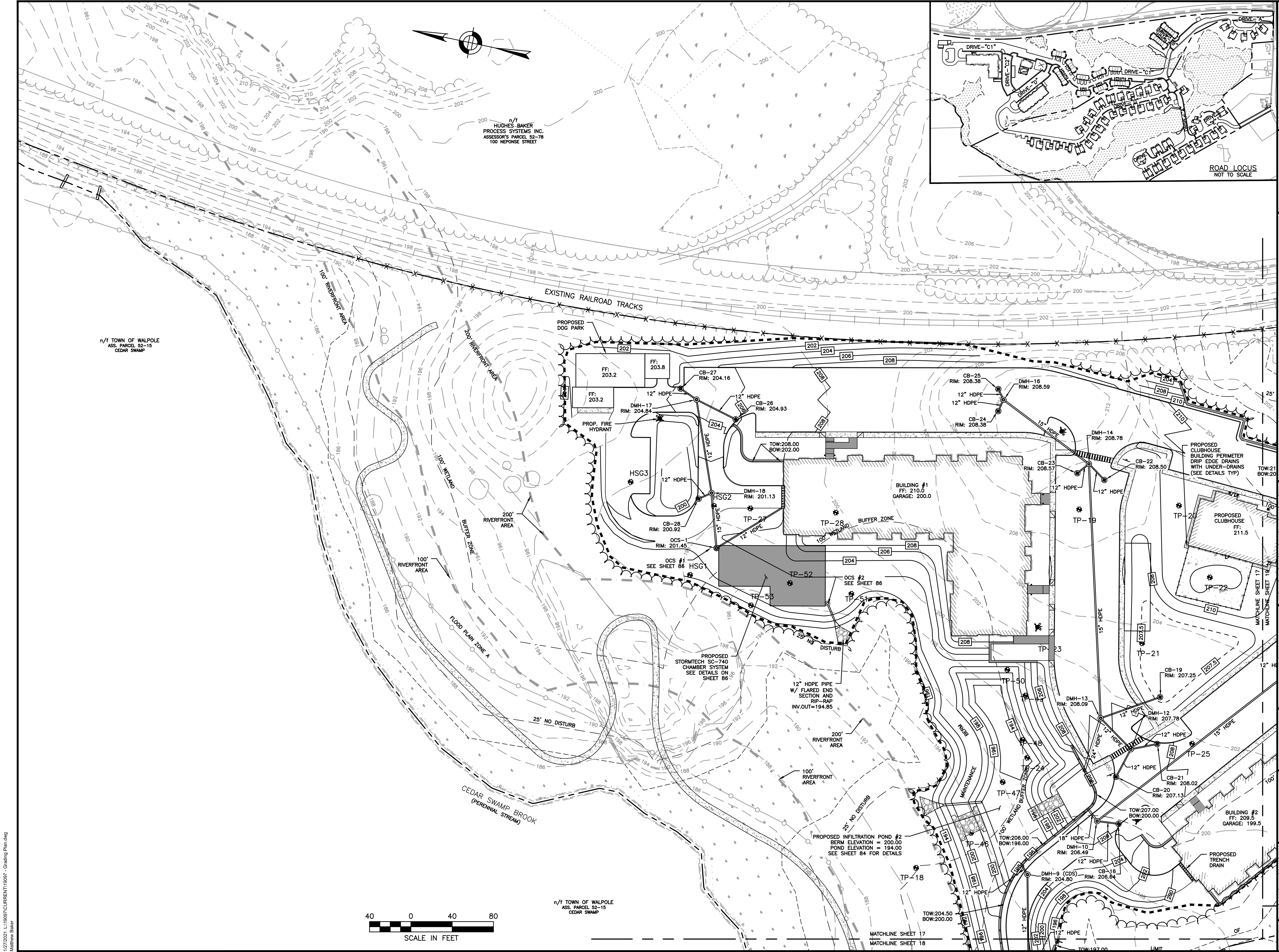
SITE PLAN

GRADING AND DRAINAGE PLAN
 1 OF 5

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C.17

SHEET 17 OF 93



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 PROCESS SYSTEMS INC.
 ASSESSOR'S PARCEL 52-78
 100 NEPOSE STREET

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

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



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 6 LYBERRY WAY, SUITE 203
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 DEVELOPMENT
 SUMMER STREET
 WALPOLE, MA**

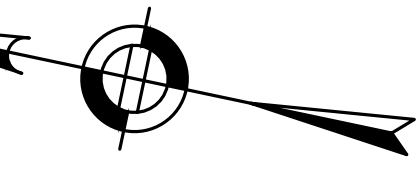
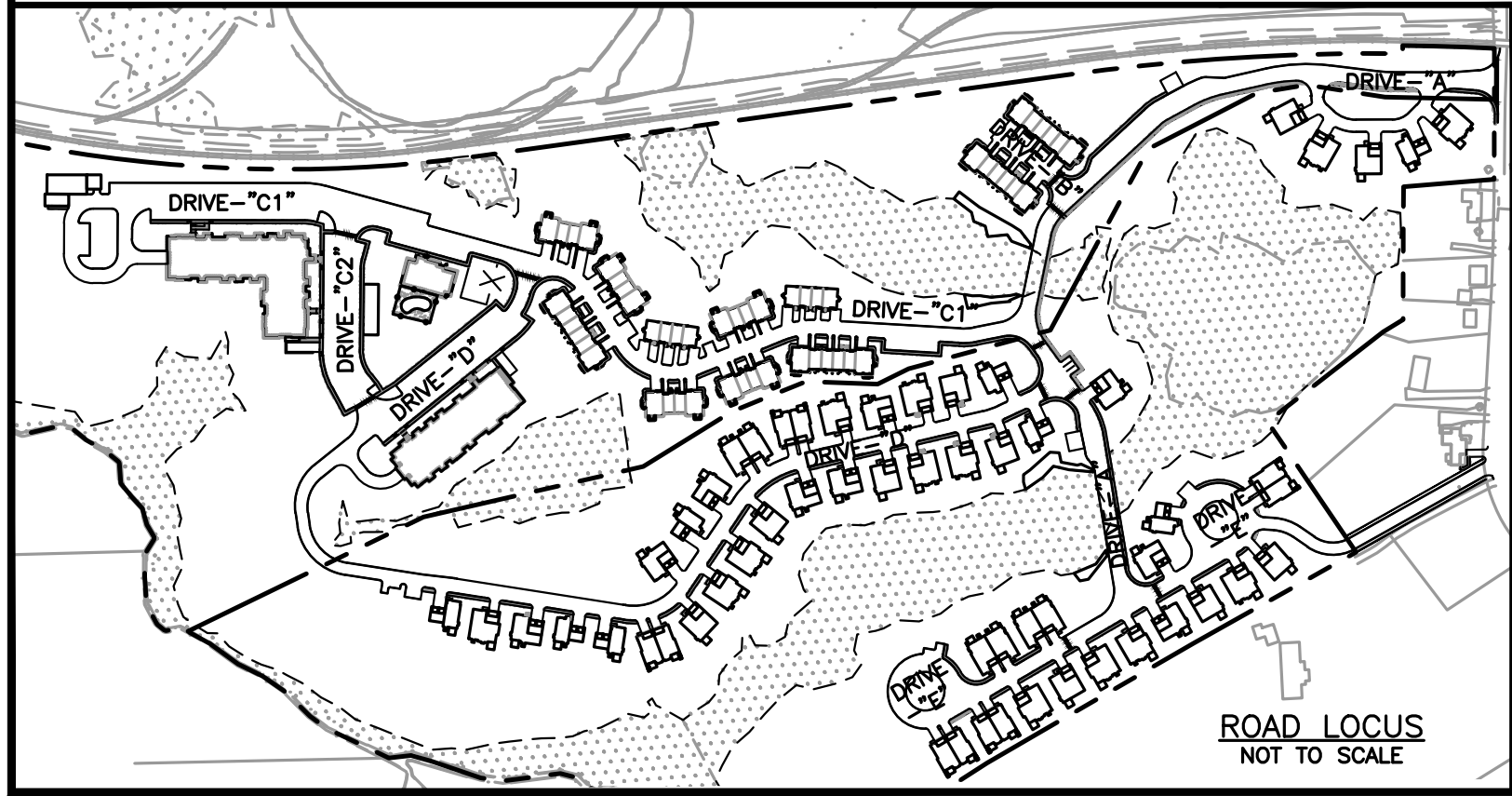
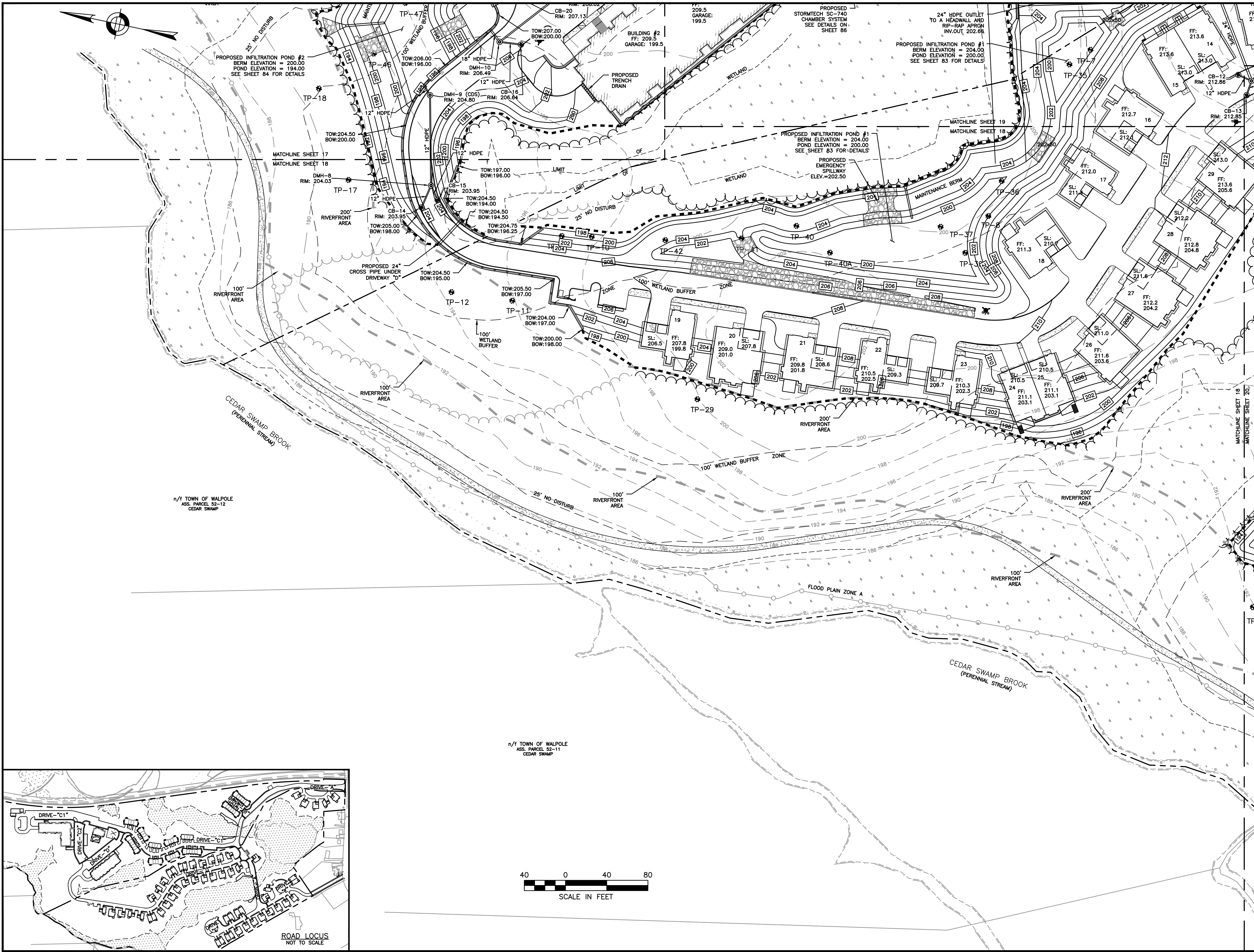
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SITE PLAN

GRADING AND DRAINAGE PLAN
 2 OF 5

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n/f TOWN OF WALPOLE
 ASS. PARCEL 52-12
 CEDAR SWAMP

n/f TOWN OF WALPOLE
 ASS. PARCEL 52-11
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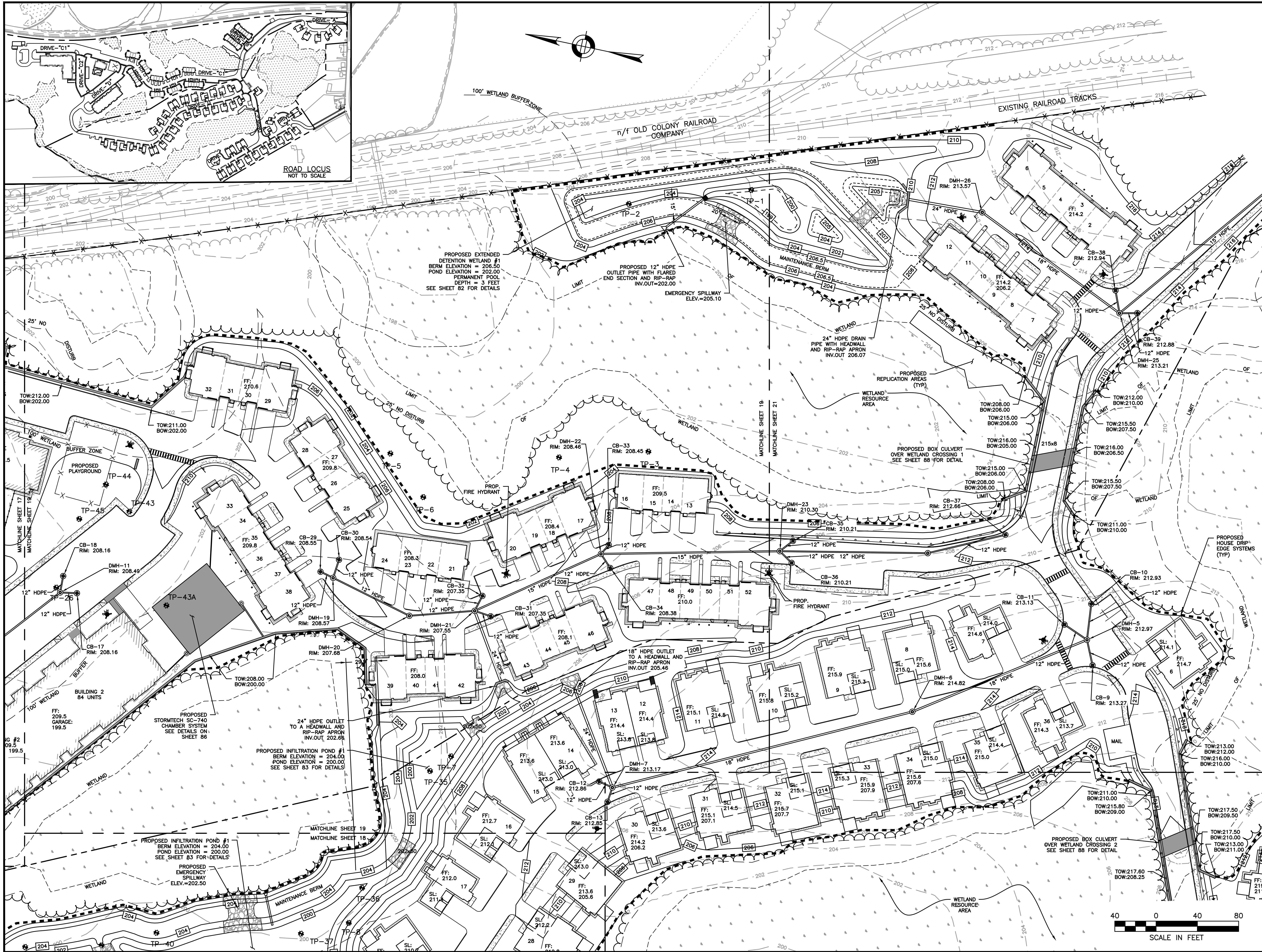
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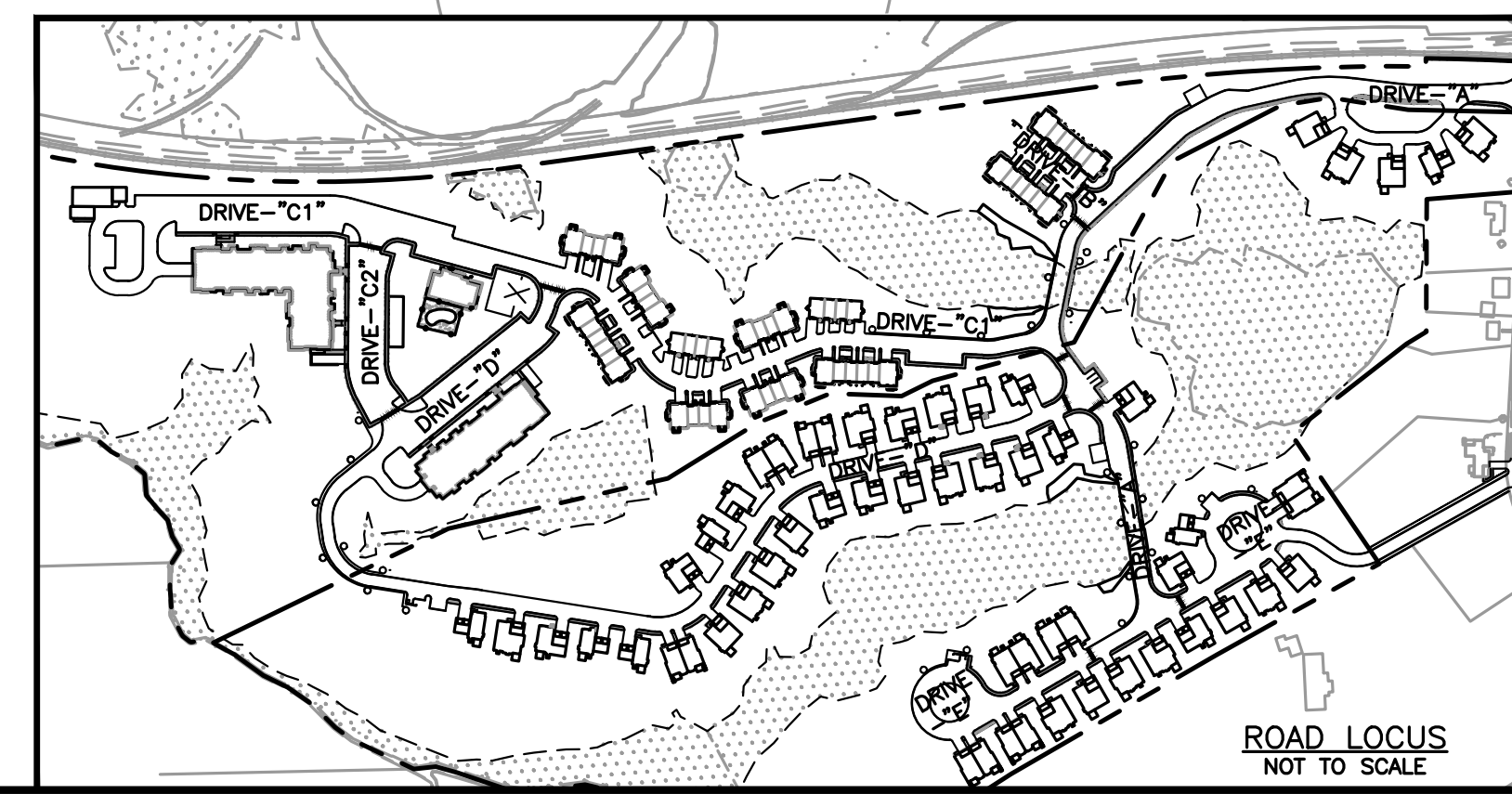
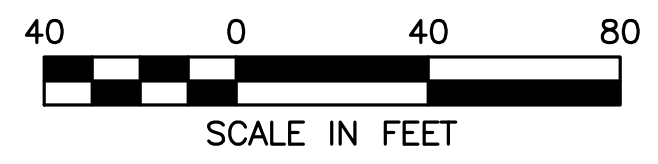
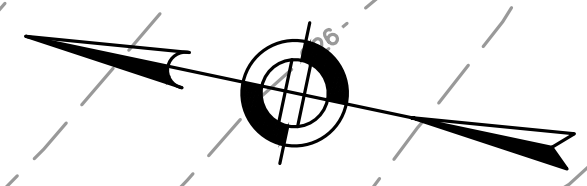
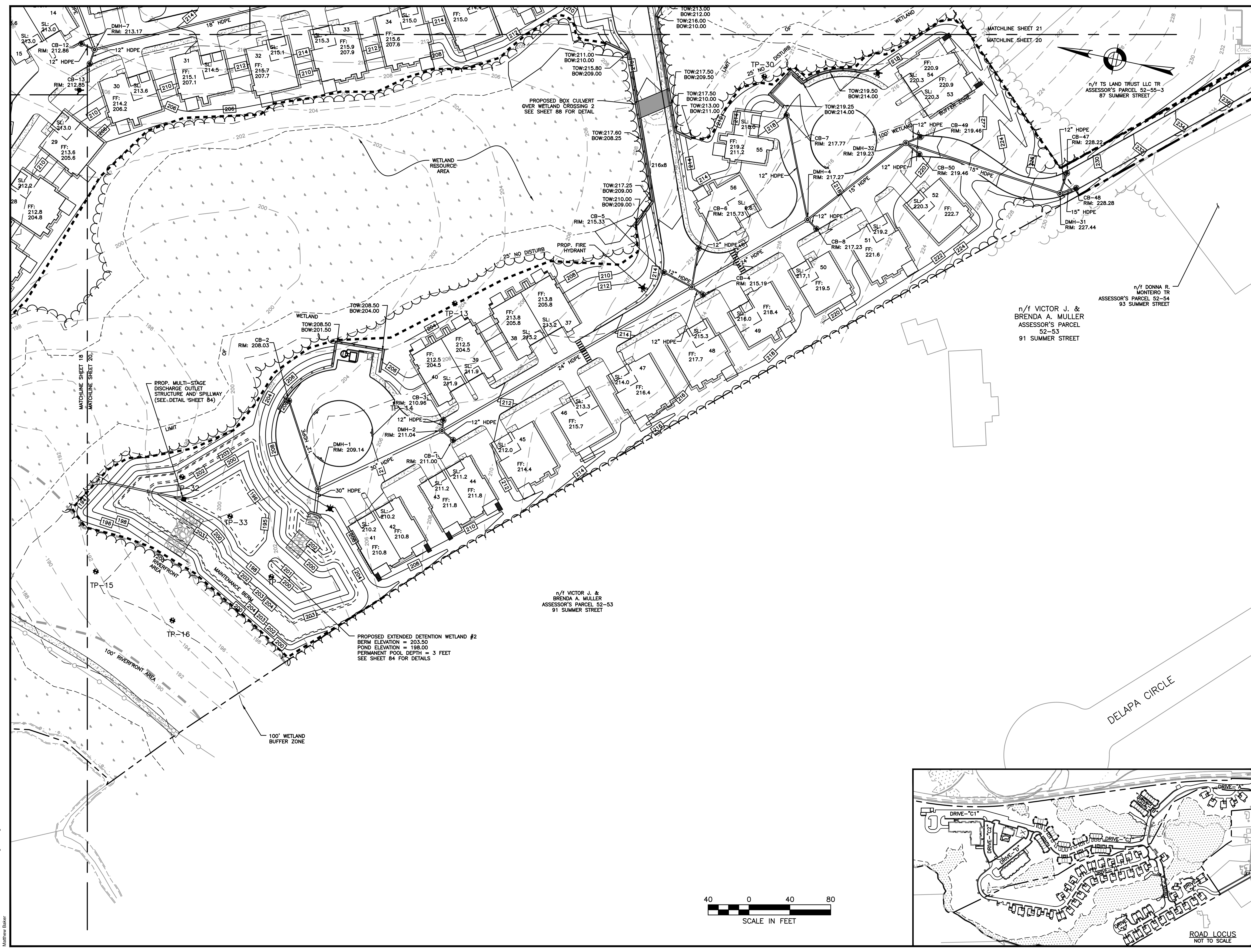
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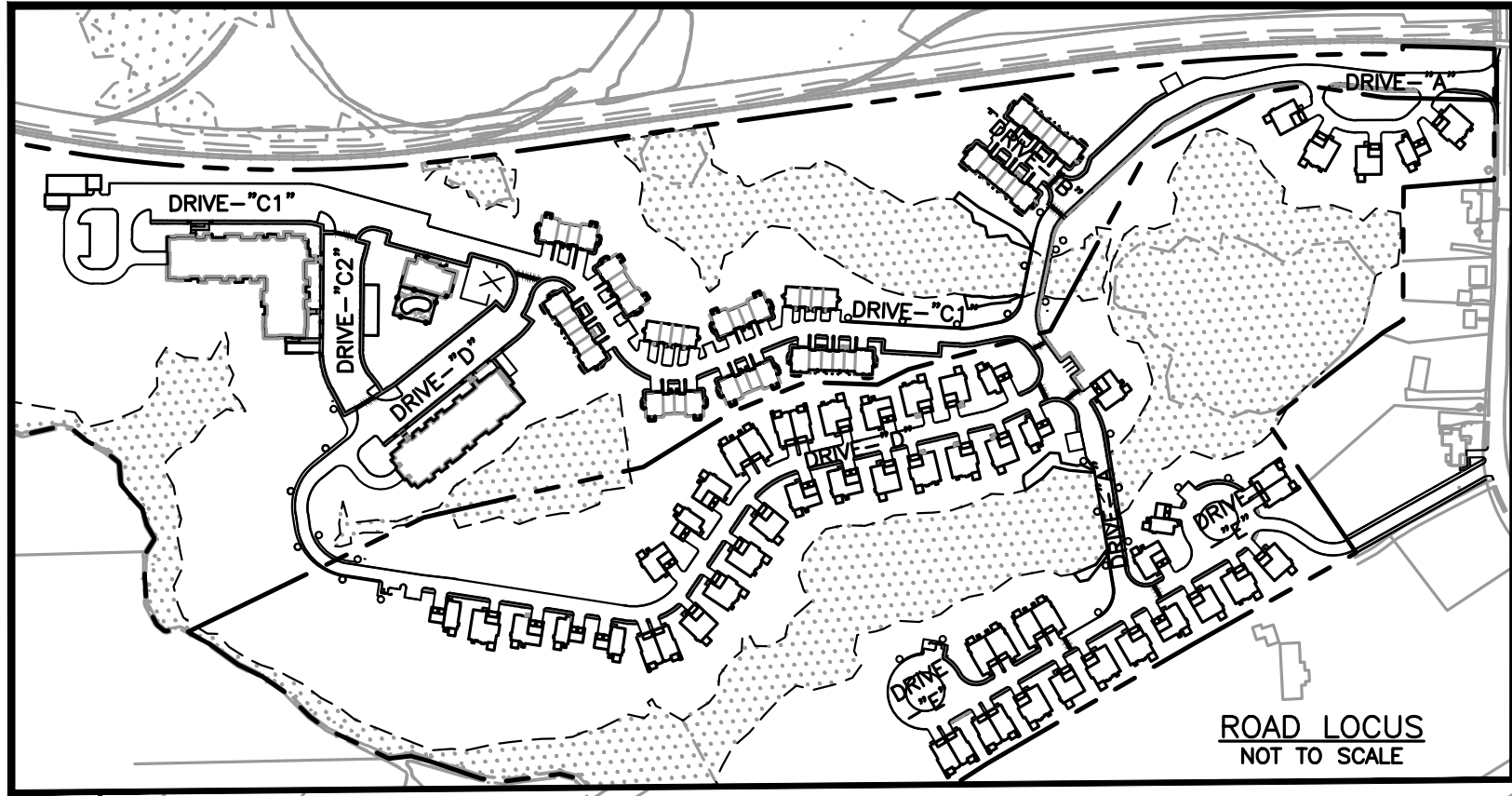
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GRADING AND DRAINAGE PLAN
 4 OF 5

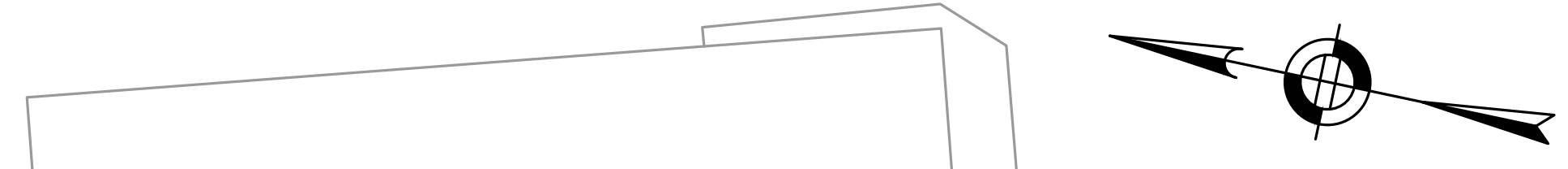
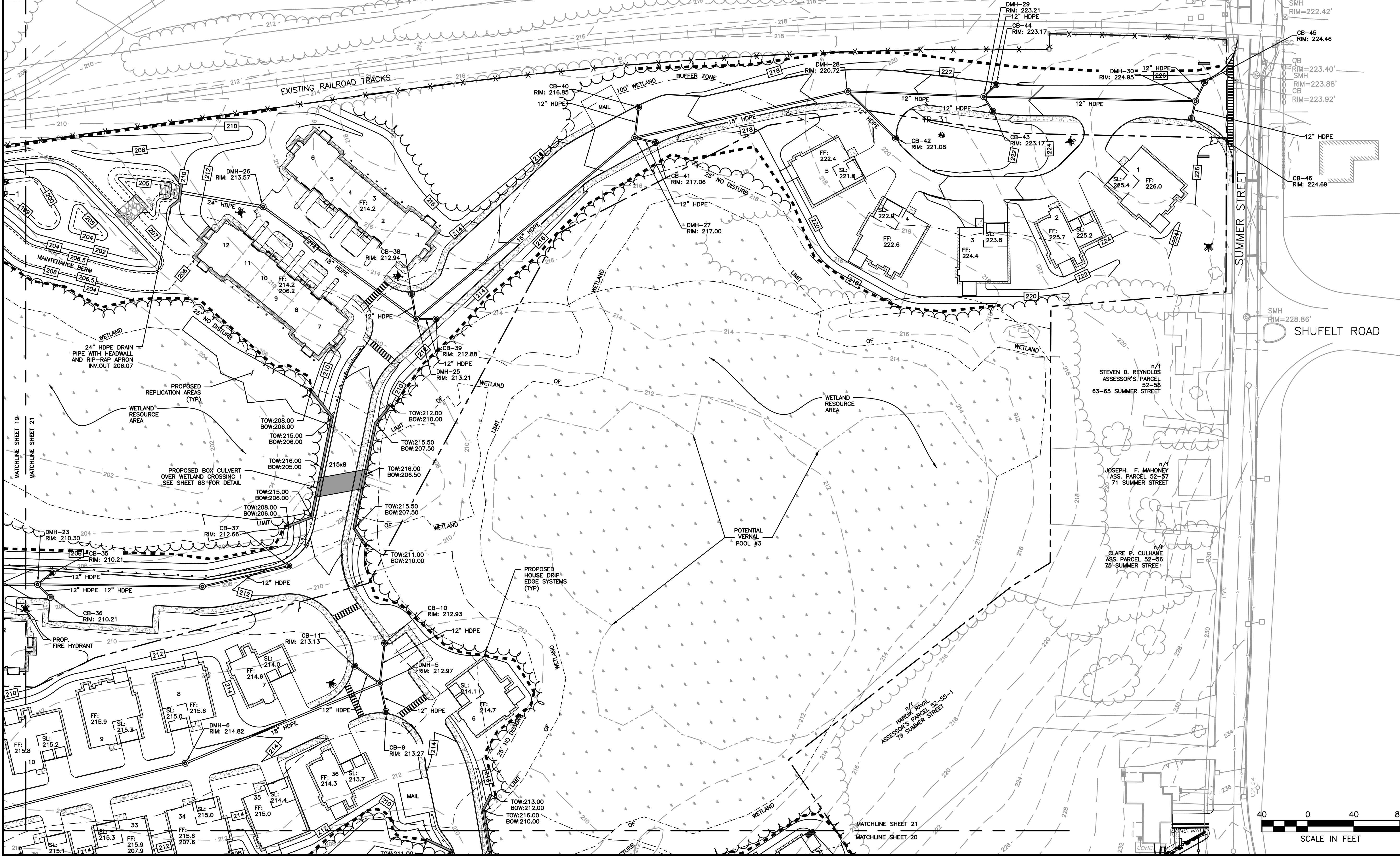
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n/1
DICKRAN BABIGIAN TR
ASSESSOR'S PARCEL
52-62
49 SUMMER STREET

ROAD LOCUS
NOT TO SCALE



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DEVELOPMENT
SUMMER STREET
WALPOLE, MA**

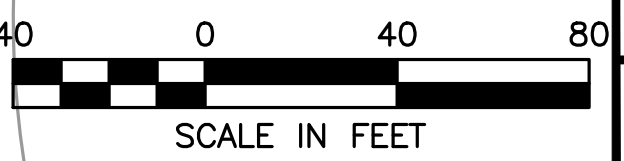
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SITE
PLAN

GRADING AND
DRAINAGE PLAN
5 OF 5

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SCALE IN FEET



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SITE PLAN

UTILITIES PLAN
 1 OF 5

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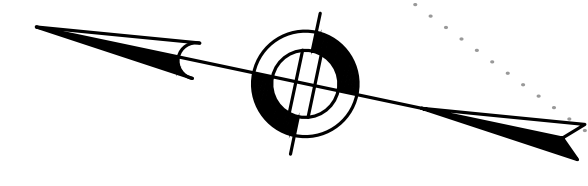
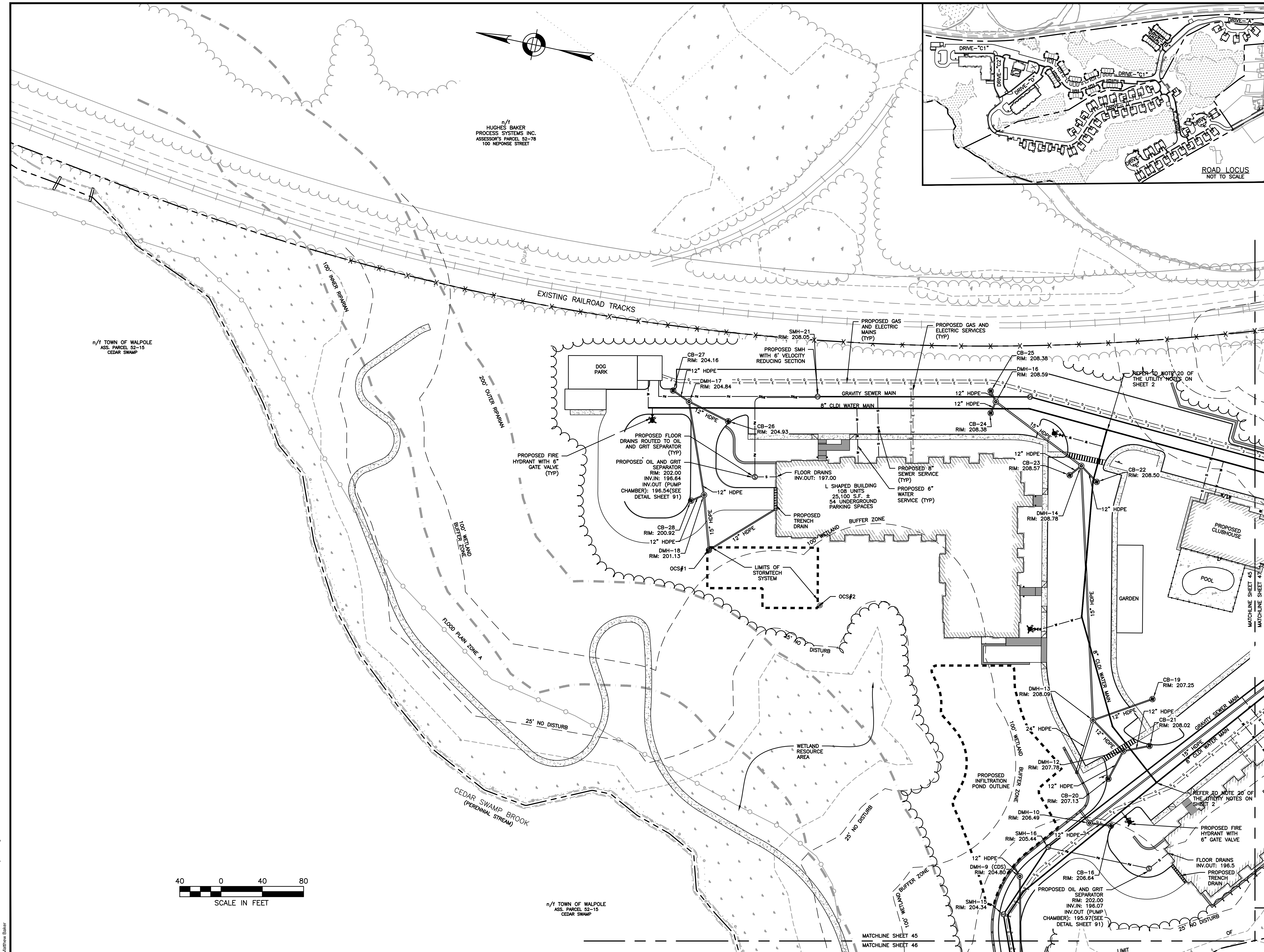
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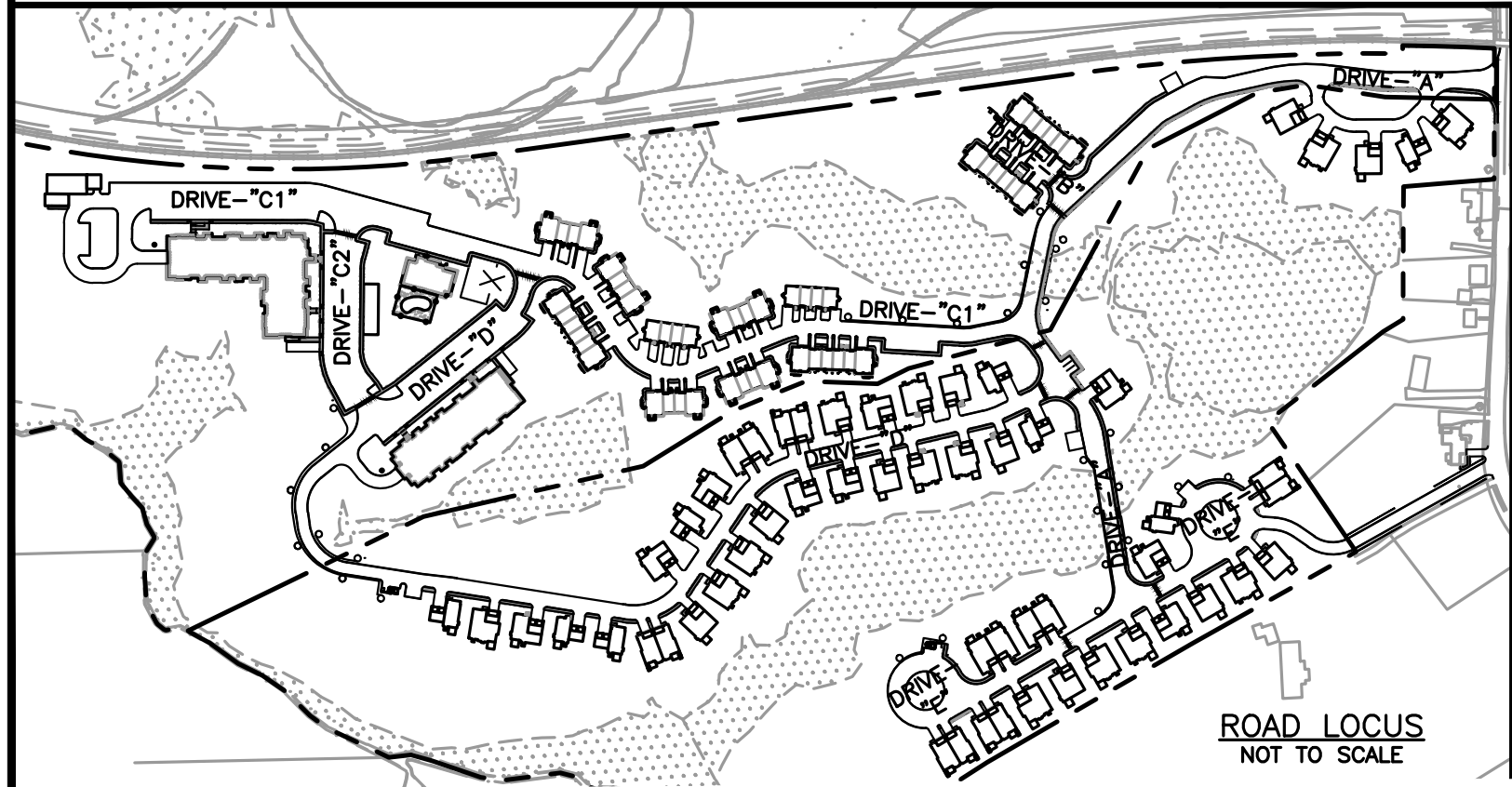
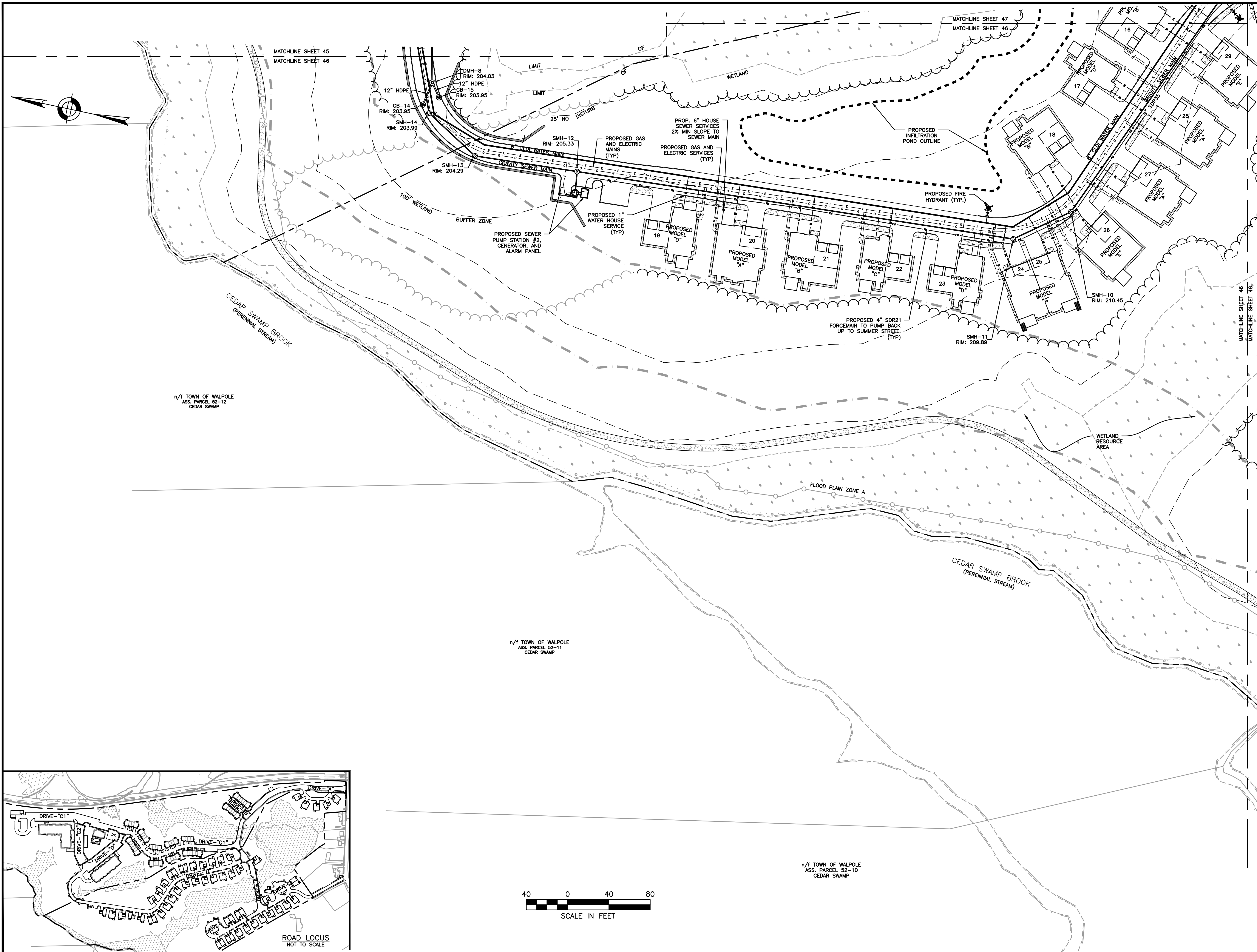
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UTILITIES PLAN
 2 OF 5

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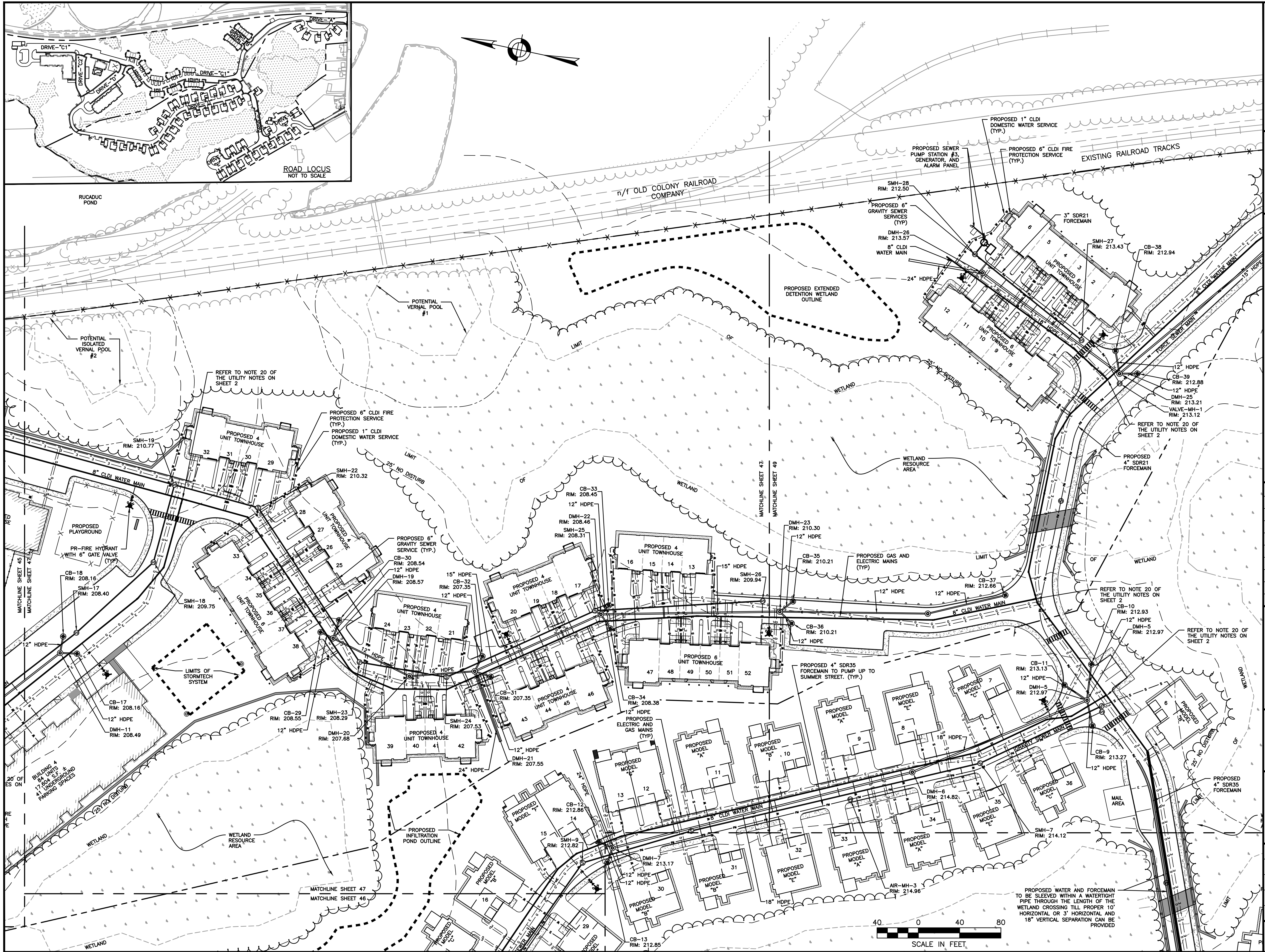
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UTILITIES PLAN
 3 OF 5

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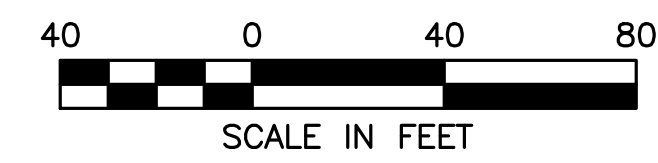
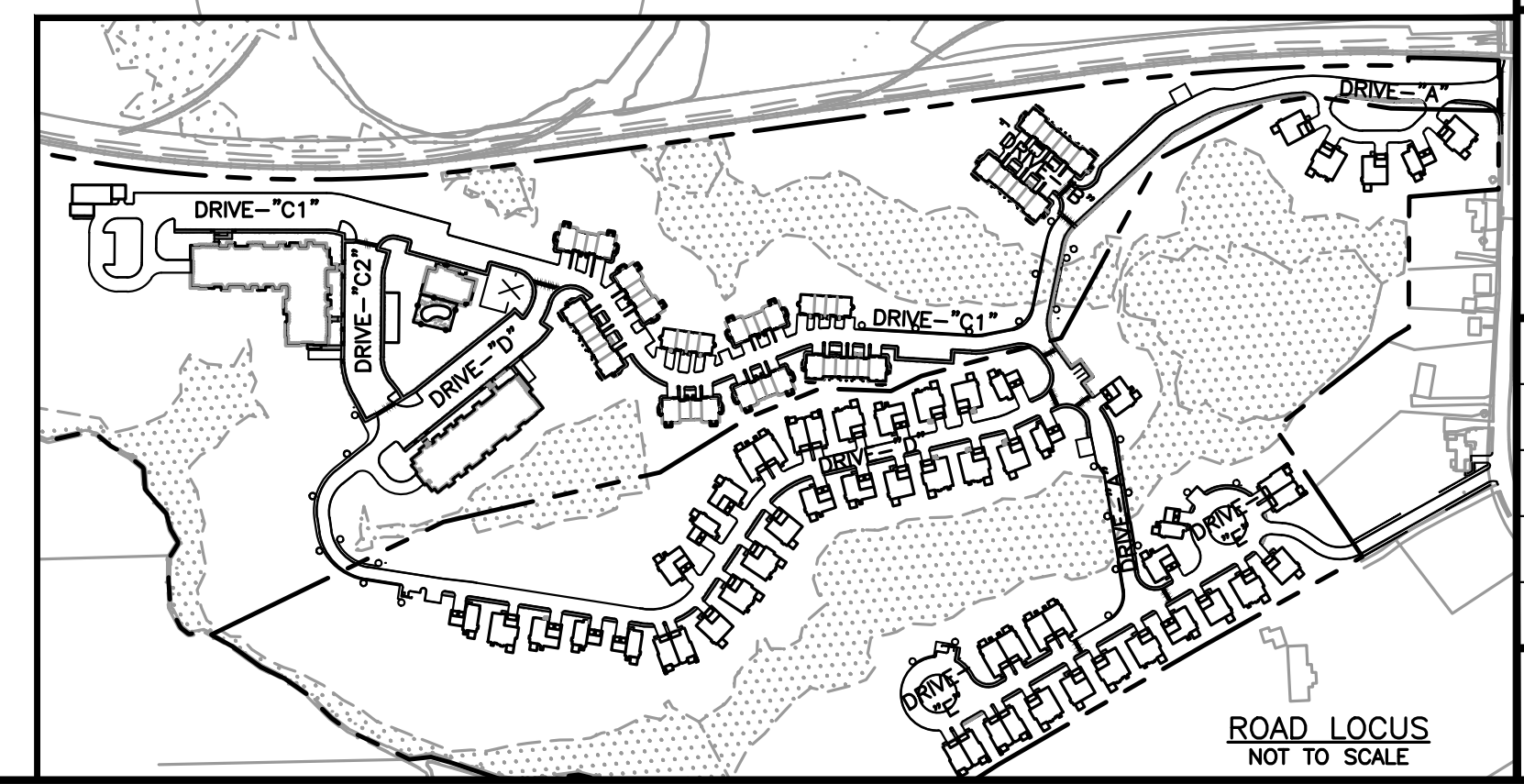
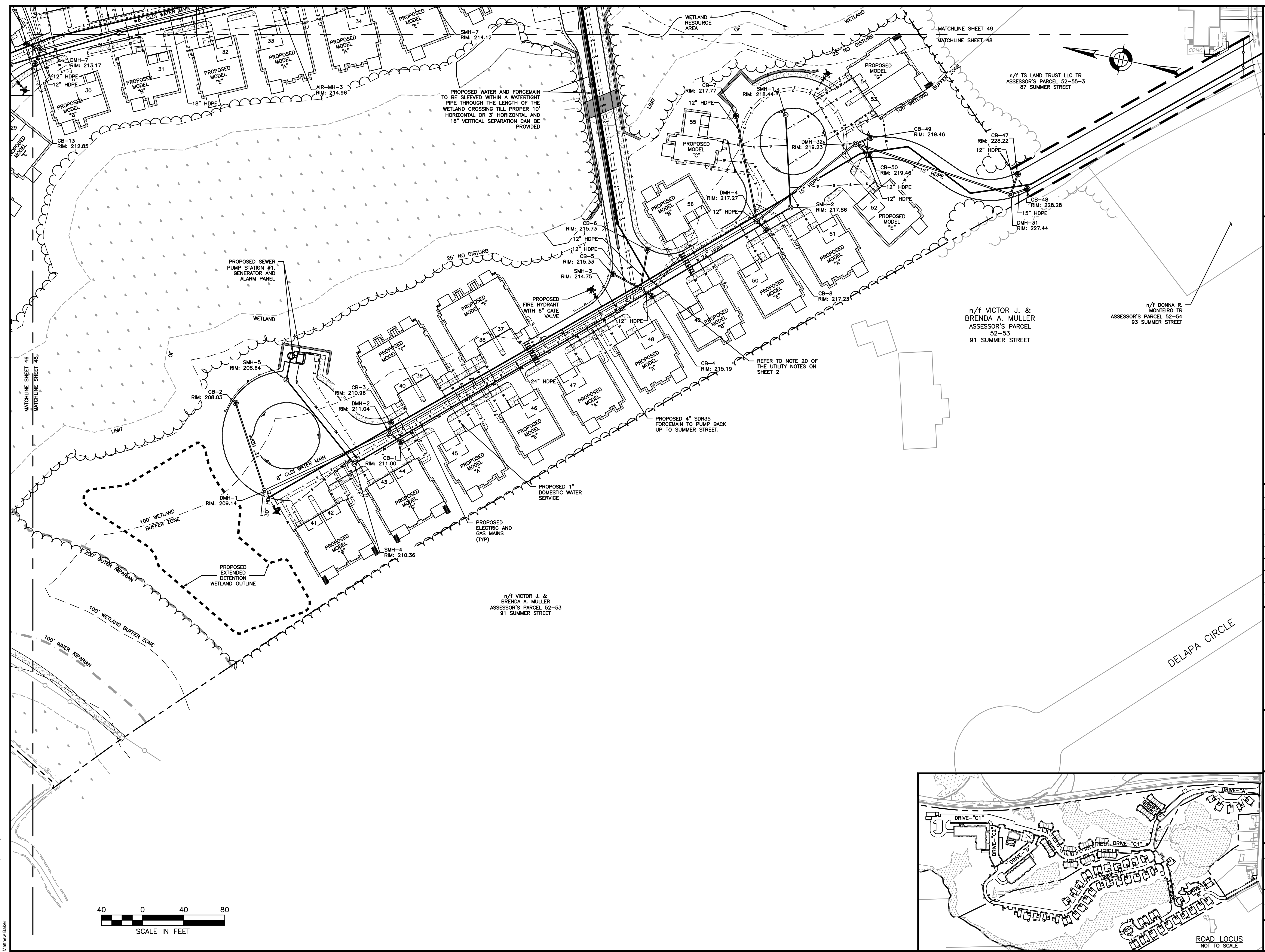
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UTILITIES PLAN
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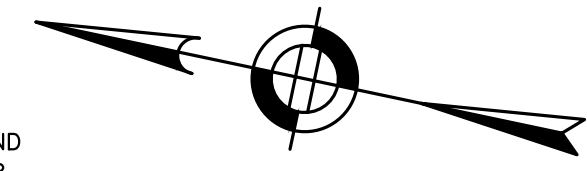
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 Matthew Baker

LANDSCAPE LEGEND

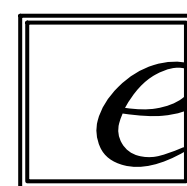
-  PROPOSED DECIDUOUS TREE
-  PROPOSED ORNAMENTAL TREE
-  PROPOSED EVERGREEN
-  PROPOSED SHRUBS

GENERAL LANDSCAPE NOTES:

1. AREAS NOT OTHERWISE DEVELOPED SHALL RECEIVE MINIMUM 6" COMPACTED DEPTH SCREENED LOAM.
2. EXISTING LOAM TO BE STOCKPILED FOR REUSE.
3. FINISH COVER OVER PLANTING BED SHALL INCLUDE 3" MINIMUM DEPTH PINE MULCH.
4. FINISH SURFACE SHALL BE GRADED FROM A HIGH POINT AT CENTER OF ISLAND OUT TO THE BACK OF CURB. SEE GRADING, DRAINAGE AND PAVING PLAN FOR FINISH GRADES.
5. AT A MINIMUM, TREES AND SHRUBS SHALL BE WATERED BY FLOODING AS FOLLOWS: MONTH 0-3: ONCE PER WEEK MONTH 3-6: TWICE PER MONTH MONTH 6-12: ONCE PER MONTH INCREASE WATERING FREQUENCY TO ACCOUNT FOR DROUGHT CONDITIONS AS REQUIRED.
6. TURF AREAS TO BE WATERED AND MOWED UNTIL ACCEPTED.
7. CONSERVATION SEED MIX AREA TO BE WATERED IF NECESSARY FOR ESTABLISHMENT



james k. emmanuel | associates
LANDSCAPE ARCHITECTS



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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 SEEDED.

TOWN OF WALPOLE CONSERVATION COMMISSION NOTES:

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

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

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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

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LANDSCAPING PLAN 1 OF 5

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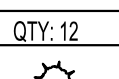

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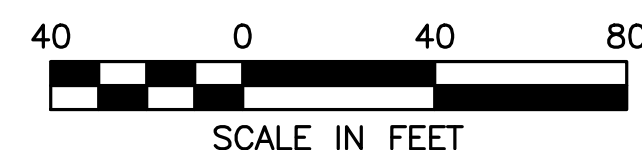
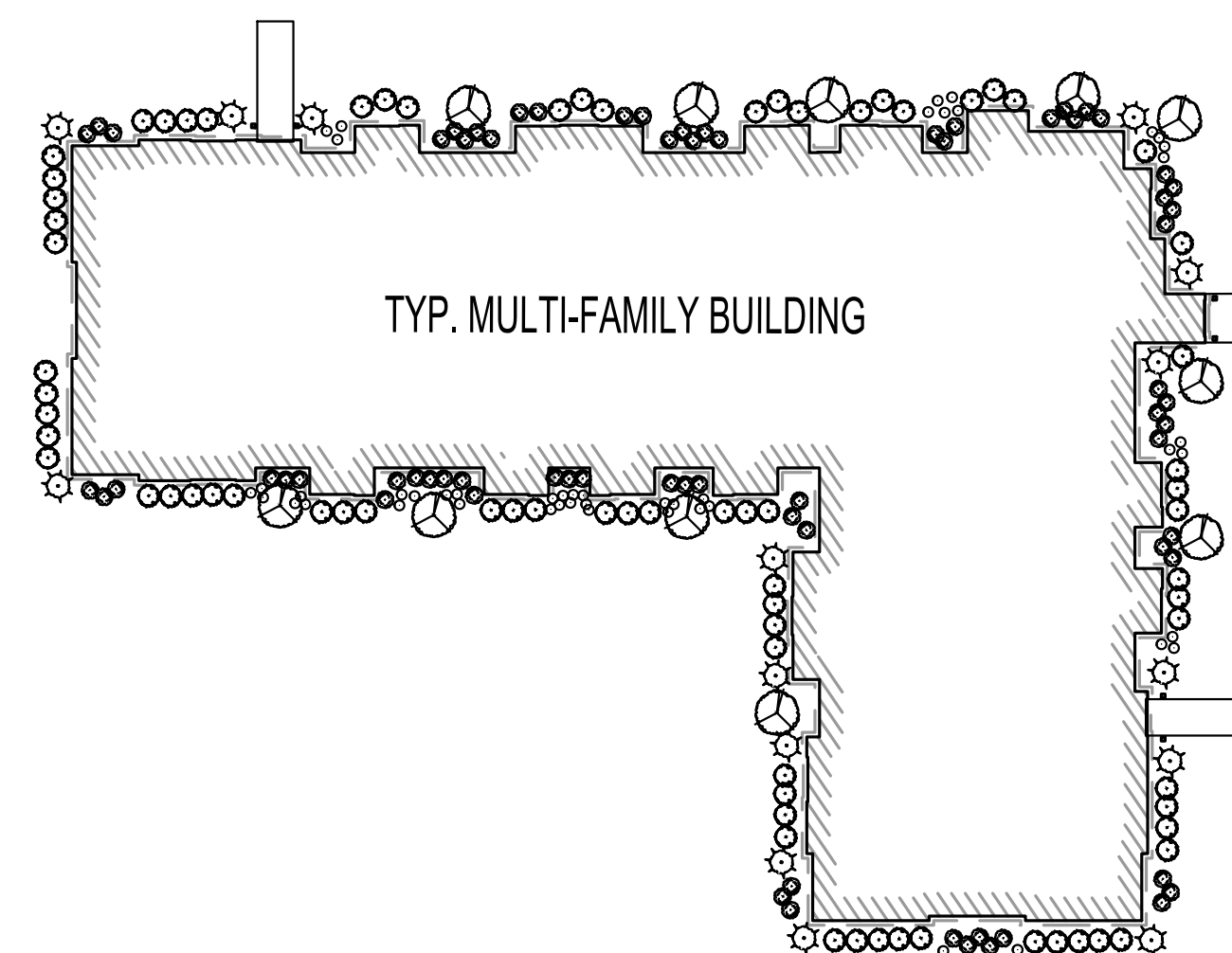
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SHEET 50 OF 93

MULTI-FAMILY PLANTINGS

QTY:	SYMBOL	FLOWERING TREE OPTIONS:		
11		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	Sacer Magnolia	8-10'
		Sophora japonica	Japanese Pagodatree	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'
		Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6'
		Thuja x plicata 'Green Giant'	Green Giant Arborvitae	6'
117		SHRUB OPTIONS:		
		Cornus alba 'Elegantissima'	Varigated Red Twig Dogwood	2-3'
		Cornus racemosa	Grey Dogwood	2-3'
		Forsythia	Forsythia	2-3'
		Ilex glabra 'Shamrock'	Shamrock Inkberry	2-3'
		Ilex verticillata	Winterberry	2-3'
		Itea virginica	Virginia Sweetpire	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'



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

MATCHLINE SHEET 50
MATCHLINE SHEET 51



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

PREPARED FOR:

56 BH LLC
6 LYBERRY WAY, SUITE 203
WESTFORD, MA 01886

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

REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
5	PB	12/16/20	EMERGENCY ACCESS
6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

**SITE
PLAN**

**LANDSCAPING
PLAN 2 OF 5**

DATE: JANUARY 10, 2020

PROJECT NUMBER: 19097

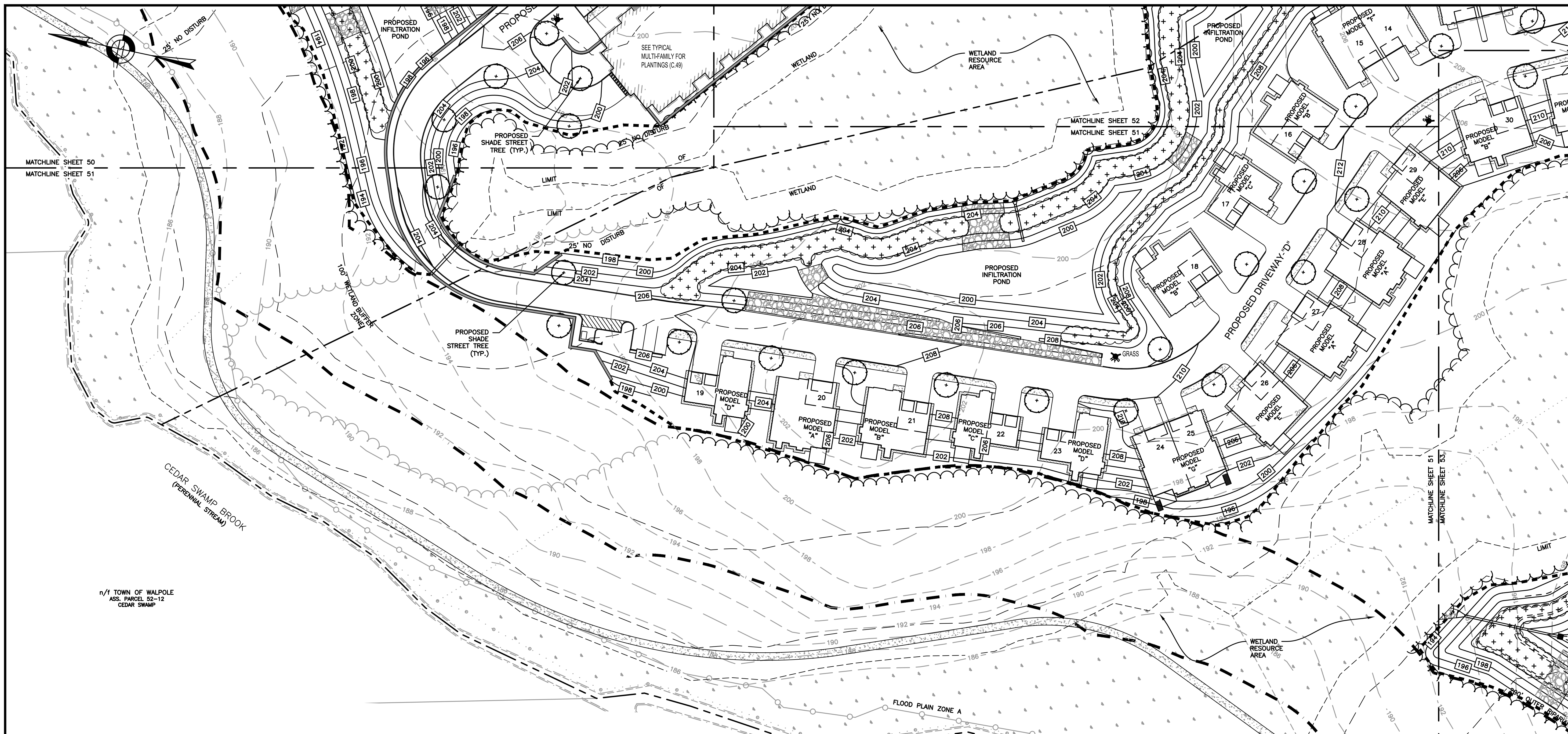
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.51

SHEET 51 OF 93



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

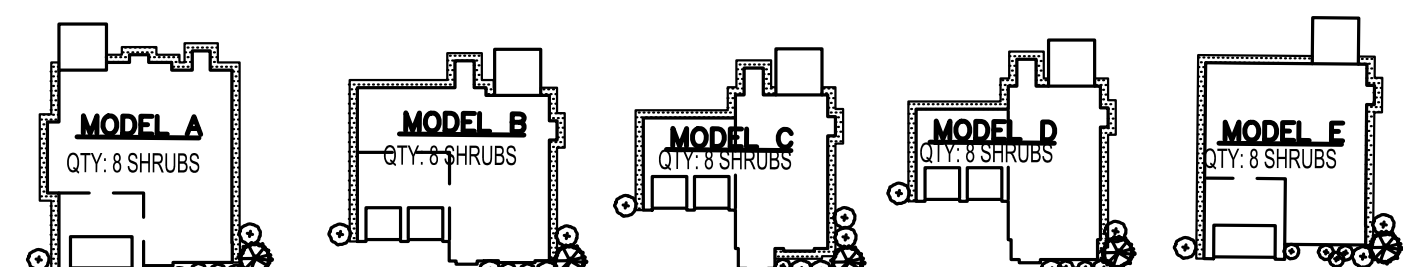
PLANTING NOTES

- 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.
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- 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.

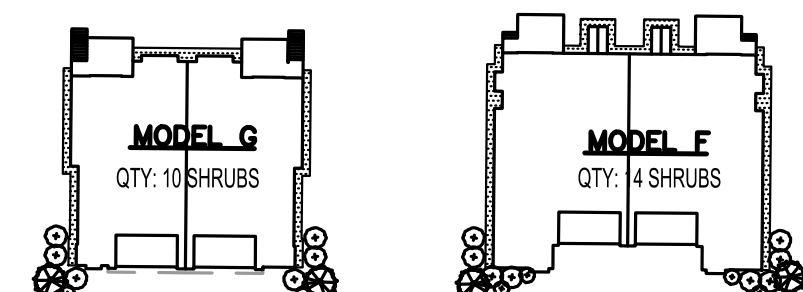


SINGLE FAMILY / DUPLEX UNIT PLANTINGS

SYMBOL	SHRUB OPTIONS:	QTY: 8 SHRUBS PER UNIT
* (Symbol)	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'	Diablo Ninebark 2'-3'
	Prunus Maratima	Beach Plum 2'-3'
	Syringa vulgaris	Common Lilac 2'-3'
	Viburnum dentatum	Arrowwood 2'-3'

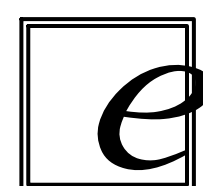


TYPICAL SINGLE FAMILY HOME PLANTING NOT TO SCALE



TYPICAL DUPLEX PLANTING NOT TO SCALE

james k. emmanuel | associates
LANDSCAPE ARCHITECTS



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

james@jamesemmanuel.com
www.jamesemmanuel.com

LANDSCAPE LEGEND

- (Symbol) PROPOSED DECIDUOUS TREE
- (Symbol) 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.
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STREET TREE PLANTINGS

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**	Quercus palustris	Pin Oak	2"cal
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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'

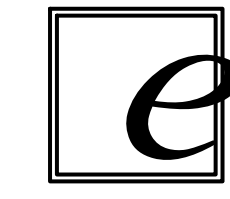
CLUBHOUSE AREA PLANTINGS

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 soulangiana	Saucer Magnolia	8-10'
**	Sophora japonica	Japanese Pagodatree	2"cal
QTY: 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'
**	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

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7. CONSERVATION SEED MIX AREA TO BE WATERED IF NECESSARY FOR ESTABLISHMENT.

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

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PROPOSED MULTIFAMILY DEVELOPMENT SUMMER STREET WALPOLE, MA

REVISIONS:

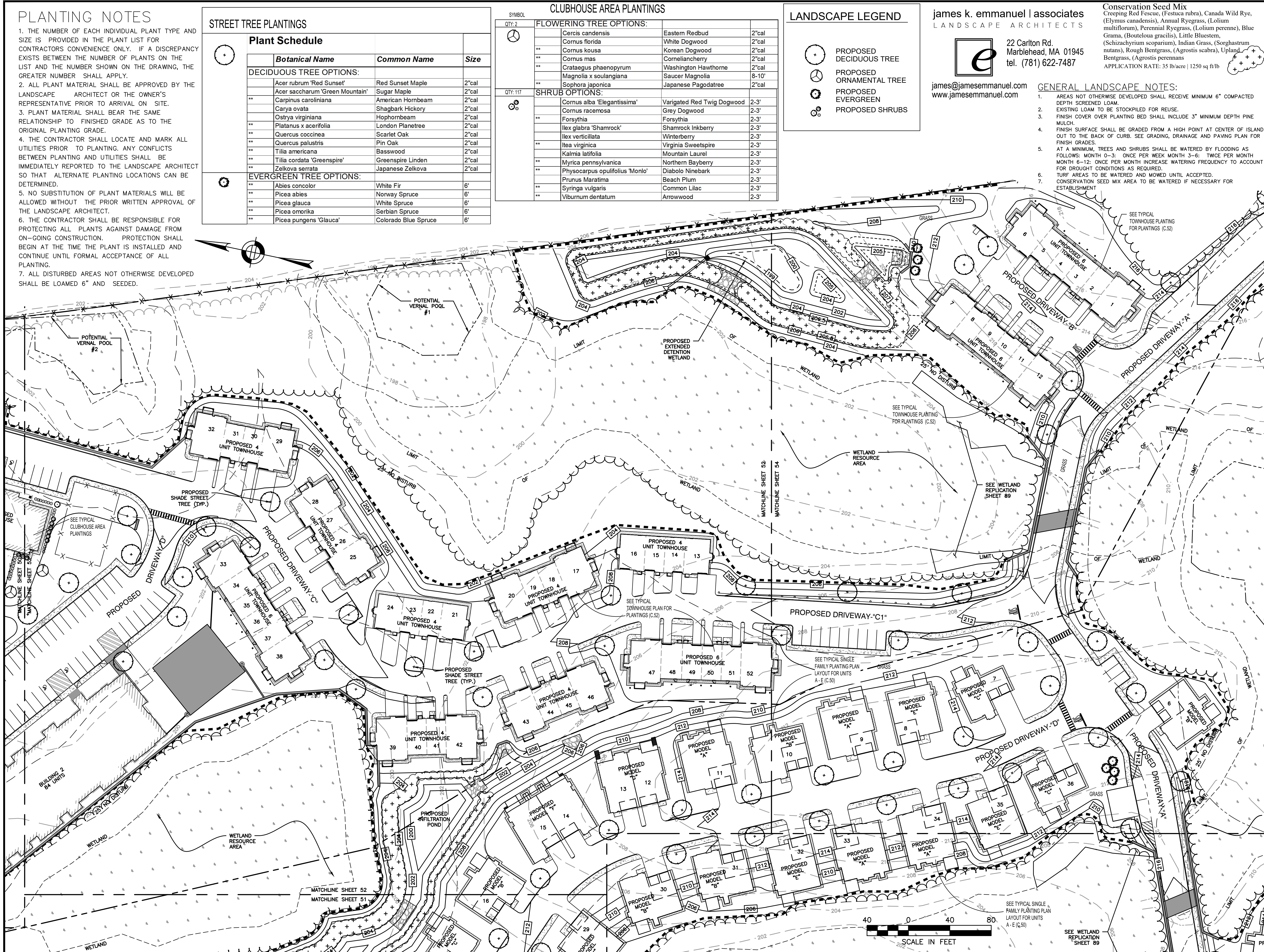
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6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

LANDSCAPING PLAN 3 OF 5

DATE: JANUARY 10, 2020
PROJECT NUMBER: 19097
DESIGNED BY: PB/KE/KF
DRAWN BY: PB/MB/KF/KL
CHECKED BY: KE
C.52

SHEET 52 OF 93





HOWARD STEIN HUDSON
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PREPARED FOR:
 56 BH LLC
 6 LYBERRY WAY, SUITE 203
 WESTFORD, MA 01886

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

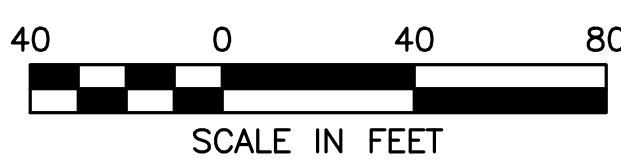
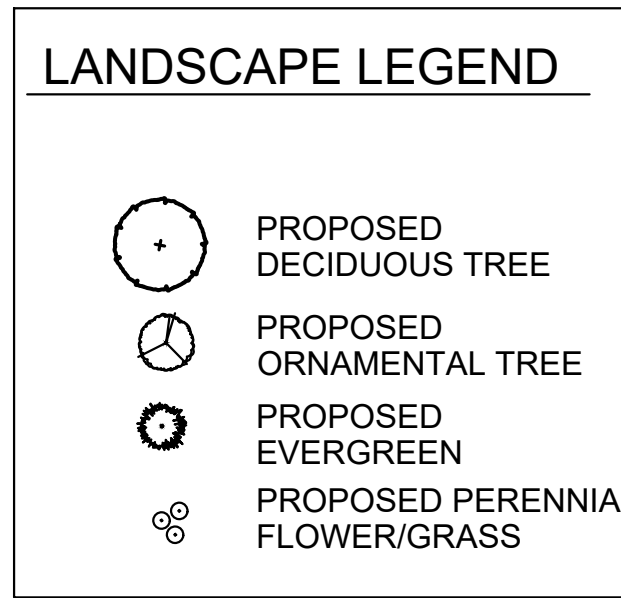
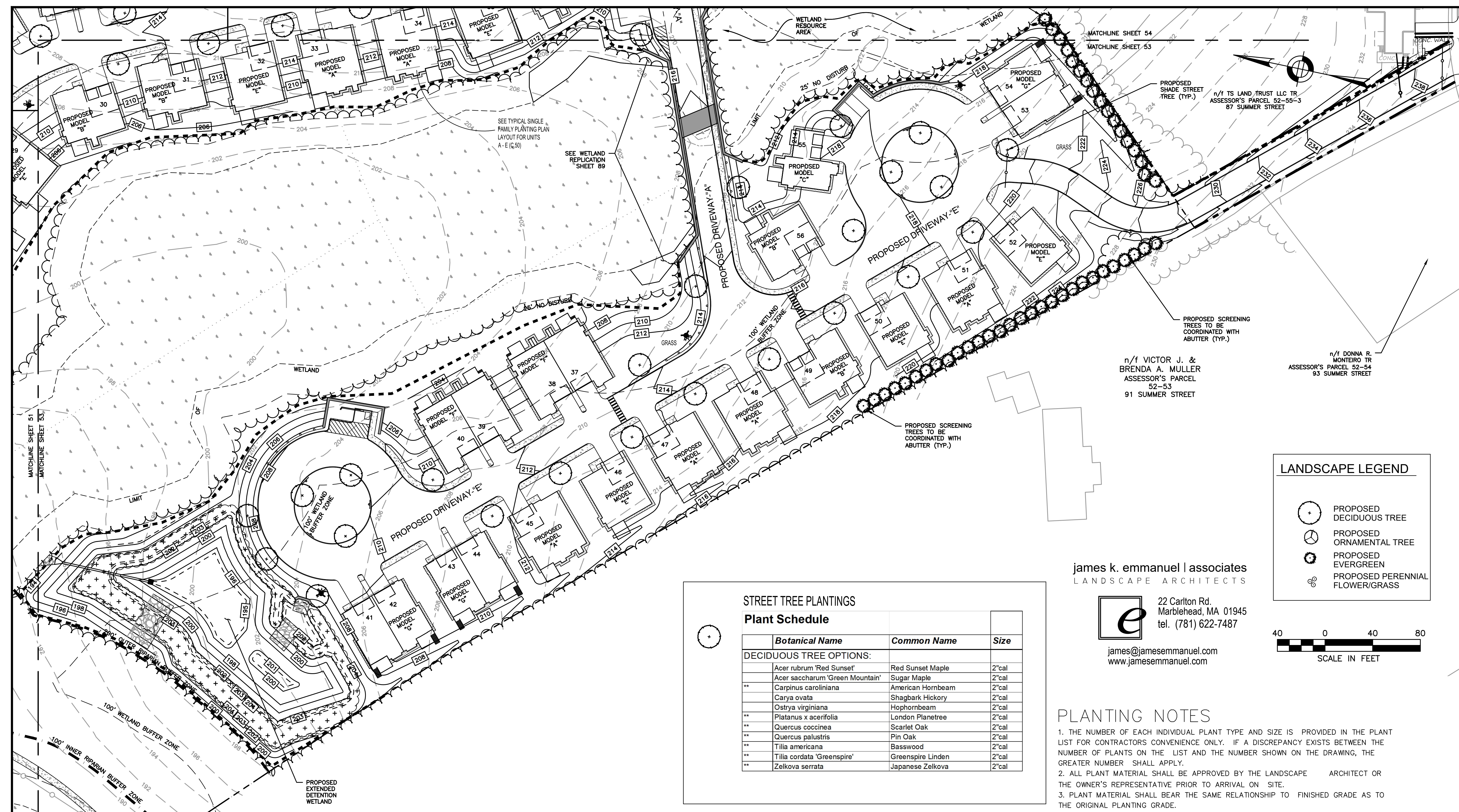
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SITE PLAN

LANDSCAPING PLAN 4 OF 5

DATE: JANUARY 10, 2020
 PROJECT NUMBER: 19097
 DESIGNED BY: PB/KE/KF
 DRAWN BY: PB/MB/KF/KL
 CHECKED BY: KE
 C.53

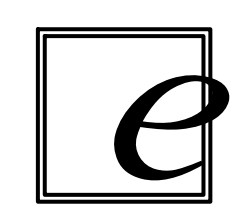


STREET TREE PLANTINGS

Plant Schedule

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PLANTING NOTES

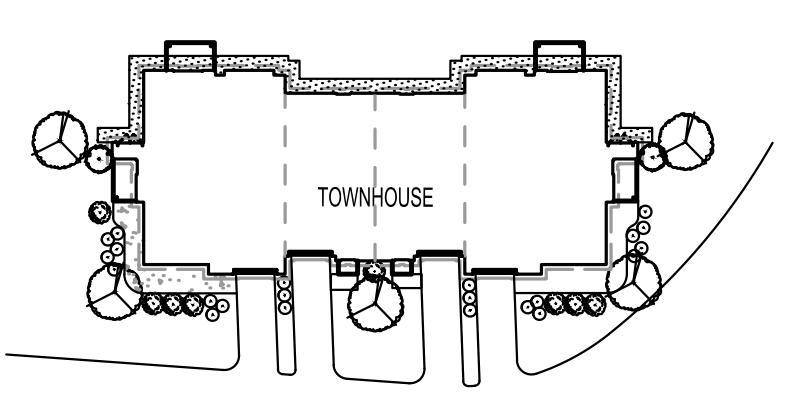
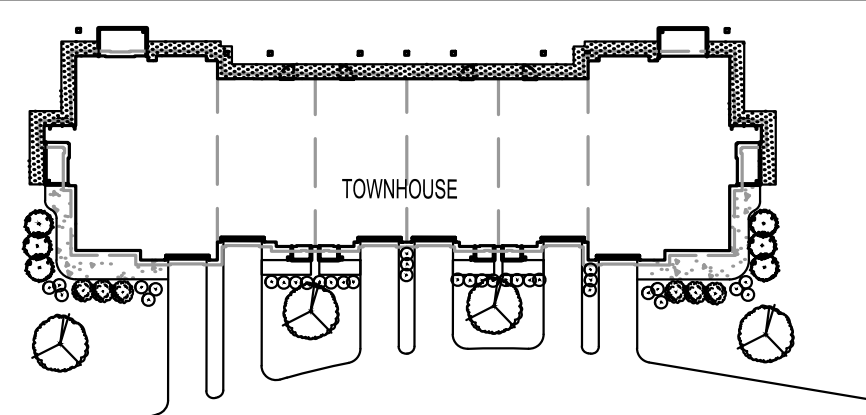
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TOWNHOUSE PLANTINGS

SYMBOL	FLOWERING TREE OPTIONS:	SHRUB OPTIONS:
QTY: 5	Cercis canadensis Eastern Redbud 2"cal	Cornus alba 'Elegantissima' Variegated Red Twig Dogwood 2-3'
	Cornus florida White Dogwood 2"cal	Cornus racemosa Grey Dogwood 2-3'
**	Cornus kousa Korean Dogwood 2"cal	Forsythia Forsythia 2-3'
**	Cornus mas Corneliancherry 2"cal	Ilex glabra 'Shamrock' Shamrock Inkberry 2-3'
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**	Magnolia x soulangiana Saucer Magnolia 8-10'	Itea virginica Virginia Sweetspire 2-3'
**	Sophora japonica Japanese Pagodatree 2"cal	Kalmia latifolia Mountain Laurel 2-3'
QTY: 117		Myrica pennsylvanica Northern Bayberry 2-3'
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Picea omorika	Serbian Spruce	6'
Picea pungens 'Glauca'	Colorado Blue Spruce	6'
Pinus thunbergii	Japanese Black Pine	6'
Tsuga canadensis	Hemlock	6'
Juniperus chinensis 'Blue Point'	Blue Point Juniper	6'
Juniperus chinensis 'Mountbatten'	Mountbatten Juniper	6'
Juniperus virginiana	Eastern Red Cedar	6'
Pinus resinosa	Red Pine	6'
Pinus strobus	White Pine	6'
Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6'
Thuja x plicata 'Green Giant'	Green Giant Arborvitae	6'

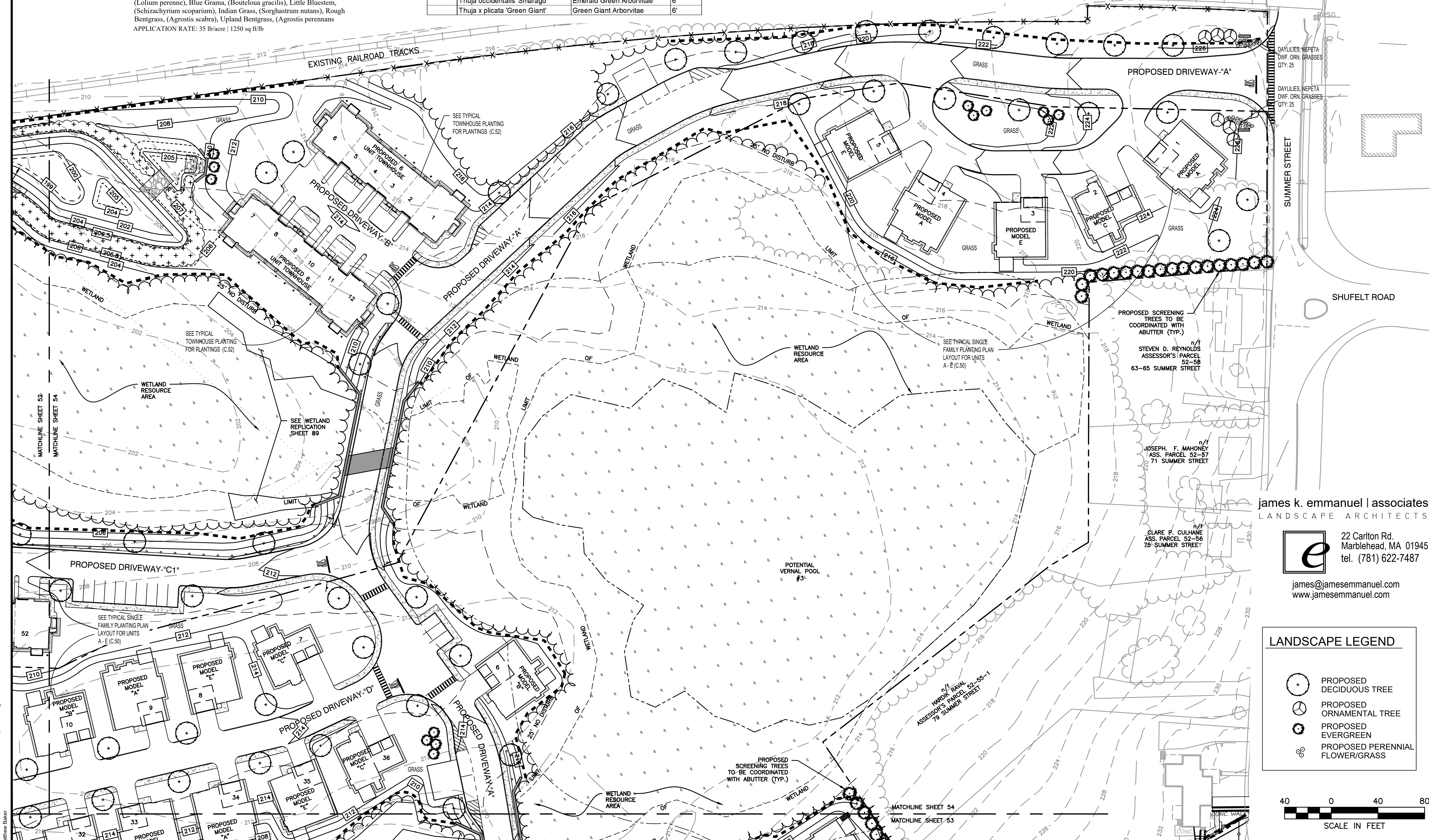
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7. CONSERVATION SEED MIX AREA TO BE WATERED IF NECESSARY FOR ESTABLISHMENT

Conservation Seed Mix
 Creeping Red Fescue, (Festuca rubra), Canada Wild Rye, (Elymus canadensis), Annual Ryegrass, (Lolium multiflorum), Perennial Ryegrass, (Lolium perenne), Blue Gramma, (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



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

PREPARED FOR:
 56 BH LLC
 6 LYBERRY WAY, SUITE 203
 WESTFORD, MA 01886

PROPOSED MULTIFAMILY DEVELOPMENT
 SUMMER STREET
 WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
5	PB	12/16/20	EMERGENCY ACCESS
6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

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

LANDSCAPE LEGEND

(Symbol: Circle with a dot)	PROPOSED DECIDUOUS TREE
(Symbol: Circle with a cross)	PROPOSED ORNAMENTAL TREE
(Symbol: Circle with a star)	PROPOSED EVERGREEN
(Symbol: Circle with a horizontal line)	PROPOSED PERENNIAL FLOWER/GRASS



SITE PLAN

LANDSCAPING PLAN 5 OF 5

DATE: JANUARY 10, 2020
 PROJECT NUMBER: 19097
 DESIGNED BY: PB/KE/KF
 DRAWN BY: PB/MB/KF/KL
 CHECKED BY: KE
 C.54
 SHEET 54 OF 93

1/27/2021, L:\19097\CURRENT\19097 - Landscape Plan.dwg
 Matthew Baker



PREPARED FOR:

55 BH LLC
6 LYBERRY WAY, SUITE 203
WESTFORD, MA 01886

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

REVISIONS:

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10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

LIGHTING PLAN 1 OF 5

DATE: JANUARY 10, 2020

PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

DRAWN BY: PB/MB/KF/KL

CHECKED BY: KE

C.55

SHEET 55 OF 93

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

L SHAPED BUILDING
108 UNITS
25,100 S.F. ±
54 UNDERGROUND
PARKING SPACES

PROPOSED CLUBHOUSE

CEDAR SWAMP BROOK
(PERENNIAL STREAM)

MATCHLINE SHEET 55
MATCHLINE SHEET 56

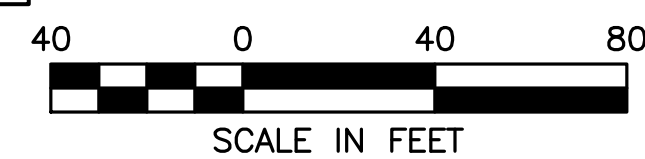
n/1 TOWN OF WALPOLE
ASS. PARCEL 52-15
CEDAR SWAMP

LIGHTING NOTES:

- LIGHTING CUT SHEETS AND RENDERINGS CAN BE FOUND ON SHEET 58.
- LIGHTING PREPARED AND DESIGNED BY PROGRESS LIGHTING OUT OF GREENVILLE, SC.

CALCULATION SUMMARY							
AREA	CALCTYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
PERIMETER	Illuminance	Fc	0.00	0.1	0.0	N.A.	N.A.
SITE	Illuminance	Fc	0.38	12.6	0.0	N.A.	N.A.
APARTMENTS	Illuminance	Fc	1.06	11.1	0.0	N.A.	N.A.
DOG PARK	Illuminance	Fc	1.09	2.9	0.2	5.45	14.50
ENTRANCE	Illuminance	Fc	0.71	2.3	0.0	N.A.	N.A.
LOWER RESIDENTIAL	Illuminance	Fc	0.50	3.2	0.0	N.A.	N.A.
MAIN RESIDENTIAL	Illuminance	Fc	0.81	3.2	0.0	N.A.	N.A.
RESIDENTIAL CIRCLE	Illuminance	Fc	0.86	2.6	0.0	N.A.	N.A.

LIGHTING SCHEDULE						
TYPE	QTY	PART NUMBER	MH	LUMENS	LLF	DESCRIPTION
A	110	P563000-020-30K	SINGLE	905	1.000	3 IN WALL-MOUNT CYLINDER
B	74	PCPTD-55LED-4K-3	SINGLE	4641	1.000	55W 4000K LED WITH TYPE 3 OPTICS
D	9	PCPTD-55LED-4K-5	SINGLE	4735	0.750	55W 4000K LED WITH TYPE 3 OPTICS
E	2	PCPTD-80LED-4K-5	SINGLE	7102	1.000	80W 4000K LED WITH TYPE 5 OPTICS





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

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 55 BH LLC
 6 LYBERTY WAY, SUITE 203
 WESTFORD, MA 01886

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

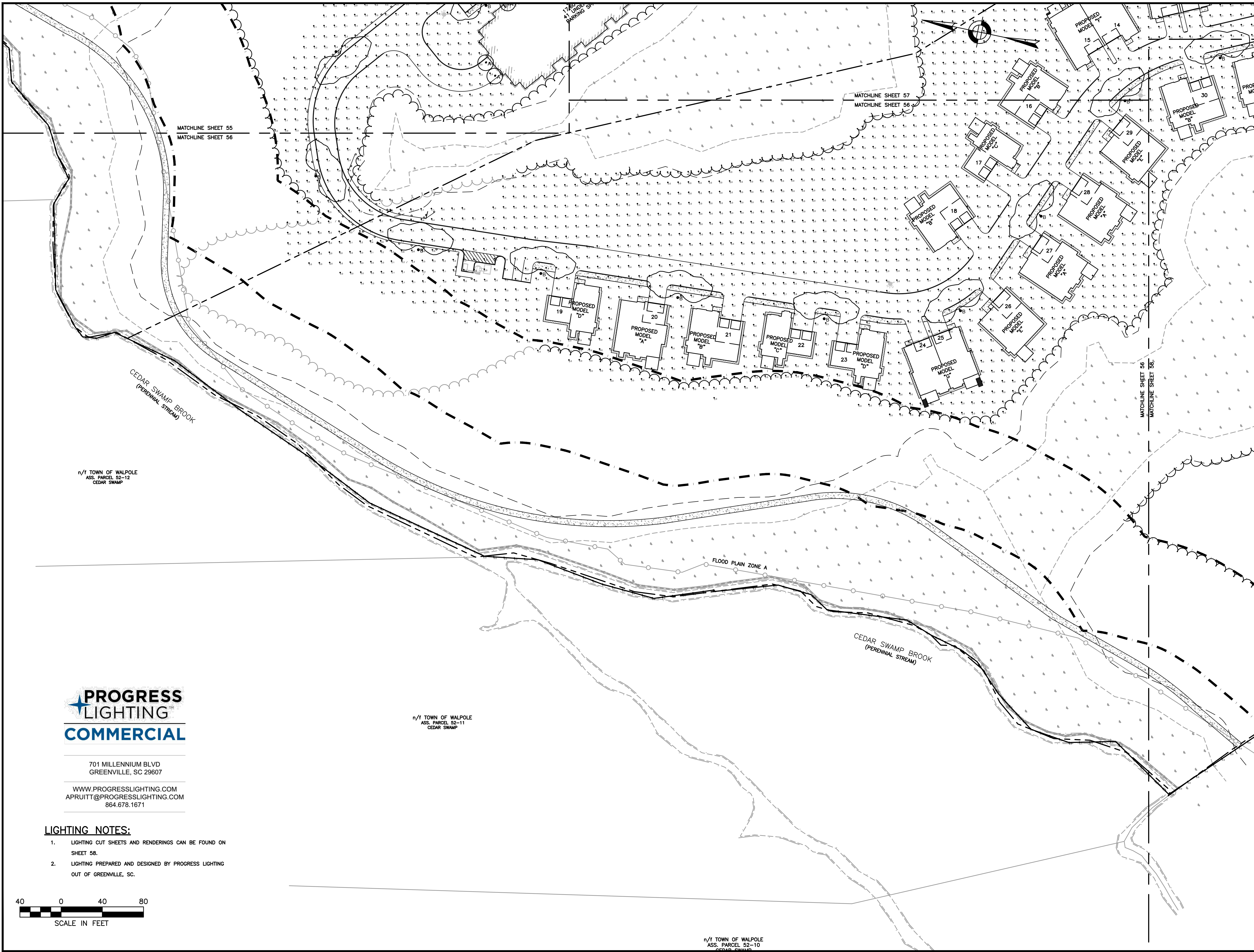
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10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

LIGHTING PLAN 2 OF 5

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE
	C.56

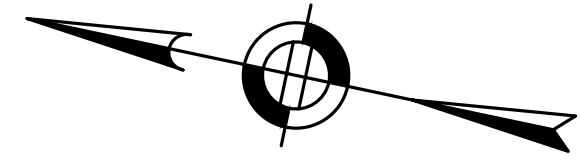


701 MILLENNIUM BLVD
 GREENVILLE, SC 29607
 WWW.PROGRESSLIGHTING.COM
 APRUITT@PROGRESSLIGHTING.COM
 864.678.1671

LIGHTING NOTES:

- LIGHTING CUT SHEETS AND RENDERINGS CAN BE FOUND ON SHEET 58.
- LIGHTING PREPARED AND DESIGNED BY PROGRESS LIGHTING OUT OF GREENVILLE, SC.





LIGHTING NOTES:

1. LIGHTING CUT SHEETS AND RENDERINGS CAN BE FOUND ON SHEET 58.
2. LIGHTING PREPARED AND DESIGNED BY PROGRESS LIGHTING OUT OF GREENVILLE, SC.

PROGRESS LIGHTING
COMMERCIAL

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PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

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10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

LIGHTING PLAN 3 OF 5

DATE: JANUARY 10, 2020

PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

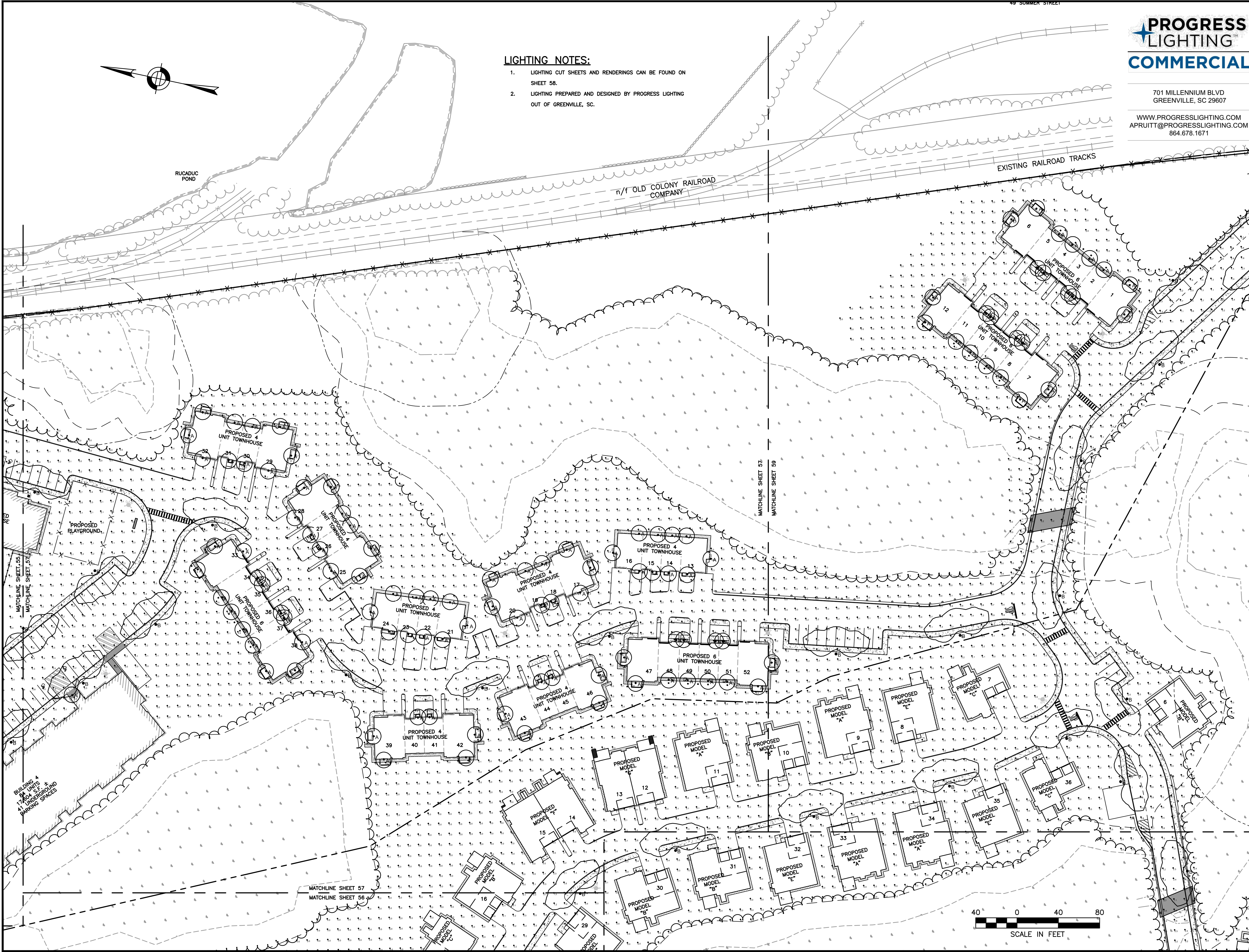
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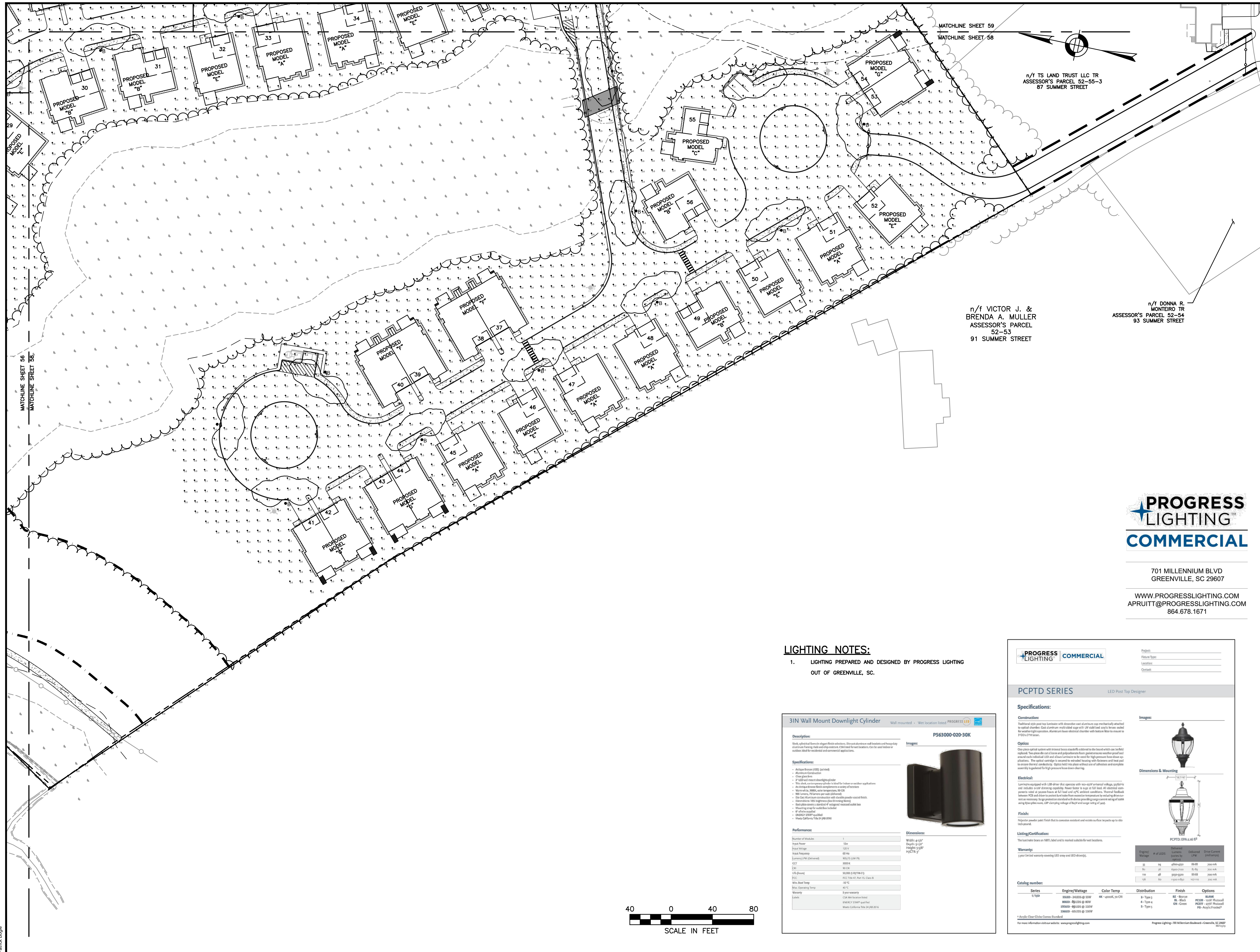
CHECKED BY: KE

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SHEET 57 OF 93

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PREPARED FOR:
56 BH LLC
 6 LYBERTY WAY, SUITE 203
 WESTFORD, MA 01886

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

REVISIONS:

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10	PB	1/27/21	REV. SITE PLAN



701 MILLENNIUM BLVD
 GREENVILLE, SC 29607
 WWW.PROGRESSLIGHTING.COM
 APRUITT@PROGRESSLIGHTING.COM
 864.678.1671

LIGHTING NOTES:
 1. LIGHTING PREPARED AND DESIGNED BY PROGRESS LIGHTING
 OUT OF GREENVILLE, SC.

3IN Wall Mount Downlight Cylinder P563000-020-30K

Wall mounted • Wet location listed

Description:
 Sleek, cylindrical three or eight foot fixtures. Sleek aluminum wall brackets and heavy-duty aluminum housing with end caps. CEILING FIXTURES ONLY. See notes for end cap and outdoor cutters list for residential and commercial applications.

Specifications:

- Antique Bronze (020) (printed)
- Aluminum Construction
- Clear glass lens
- 2 LED watt maximum downlight application
- The 3IN wall mount downlight is ideal for indoor or outdoor applications
- Available in 3000K, 4000K, and 5000K color temperatures
- 3000K, 4000K, and 5000K color temperatures
- The Clear Aluminum construction with powder coated metal finish.
- Operates on 120V AC (single phase) (line voltage)
- Mounting surface is aluminum or stainless steel metal
- 2" of wall depth
- UL ENEC 120V qualified
- Made in California 7/19/20 30 30K

Performance:

Number of Modules	1
Input Power	12W
Input Voltage	120V
Input Frequency	60 Hz
Efficiency (lm/W)	100 (typical)
Color	3000K
Beam Spread	30°
FCC	FCC Title 47, Part 15, Class B
Min. Start Temp	-20°C
Max. Operating Temp	40°C
Warranty	5-year warranty
Notes	See notes on backsheet 6000K/5000K qualified Mean Well LED Driver 24 24 20 20 20

Dimensions:
 Width: 4-1/2"
 Depth: 2-1/2"
 Height: 3-1/2"
 HxCTH: 3"

PROGRESS LIGHTING COMMERCIAL

Project: _____
 Fixture Type: _____
 Location: _____
 Contact: _____

PCPTD SERIES LED Post Top Designer

Specifications:

Construction:
 Traditional style post top lantern with domed clear aluminum cap mechanically attached to optical chamber. Cast aluminum multi-sided legs with UV stable acrylic lenses sealed for weather tightness. Aluminum base electrical chamber with bottom flange to mount in 3" O.D. x 5 1/2" diam.

Optics:
 Clear optical quality lenses with internal brass coated substrate for the lens with low heat reflector. Two piece die cast glass and polycarbonate lens provide maximum weather proof seal around each individual LED and clear surface is treated for high pressure washdown applications. The optical cut edge is secured to sealed housing with fasteners and heat pad to ensure thermal conductivity. Optics used are glass without use of adhesives and complete assembly is guaranteed for high pressure washdown cleaning.

Electrical:
 Luminaire equipped with LED driver that operates with 120-277V universal voltage, 50/60Hz and includes overload dimming capability. Mean Well is used as LED driver. All electrical components rated at 3000V AC at full load and 40°C ambient conditions. Thermal feedback between LED and driver prevents further heat accumulation and maintains the luminaire as necessary. Single protection provided with driver providing surge current and high surge current protection. LED driver voltage output and surge rating 120V.

Finish:
 High quality powder paint finish that is corrosion resistant and resists surface to parks up to six feet high.

Listing/Certification:
 The luminaire bears an NRTL label and is listed on UL product listings.

Warranty:
 5-year limited warranty covering LED and LED driver(s).

Dimensions & Mounting:

PCPTD: EPA L16 60"

Fixture # of LEDs	Delivered Lumens (lm)	Delivered LPW	Drive Current (mA)
30	4000	133	300 mA
40	5000	125	300 mA
50	6000	120	300 mA
60	7000	117	300 mA
70	8000	114	300 mA
80	9000	113	300 mA

Catalog numbers:

Series	Engine/Wattage	Color Temp.	Distribution	Finish	Options
3-Typ3	3000K-2000lm @ 120V	4000K, 5000K, 20 CR	3-Typ3	BR-Black	MB-3000
4-Typ4	4000K-3000lm @ 120V	4-Typ4	4-Typ4	BR-Black	MB-3000
5-Typ5	5000K-4000lm @ 120V	5-Typ5	5-Typ5	BR-Black	MB-3000
6-Typ6	6000K-5000lm @ 120V	6-Typ6	6-Typ6	BR-Black	MB-3000

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 For more information visit our website: www.progresslighting.com
 Progress Lighting • 701 Millennium Boulevard • Greenville, SC 29607

SITE PLAN

LIGHTING PLAN 4 OF 5

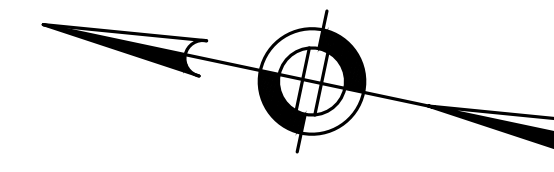
DATE: JANUARY 10, 2020
 PROJECT NUMBER: 19097
 DESIGNED BY: PB/KE/KF
 DRAWN BY: PB/MB/KF/KL
 CHECKED BY: KE



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

LIGHTING NOTES:

1. LIGHTING CUT SHEETS AND RENDERINGS CAN BE FOUND ON SHEET 58.
2. LIGHTING PREPARED AND DESIGNED BY PROGRESS LIGHTING OUT OF GREENVILLE, SC.



PREPARED FOR:
56 BH LLC
6 LYBERTY WAY, SUITE 203
WESTFORD, MA 01886

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

REVISIONS:

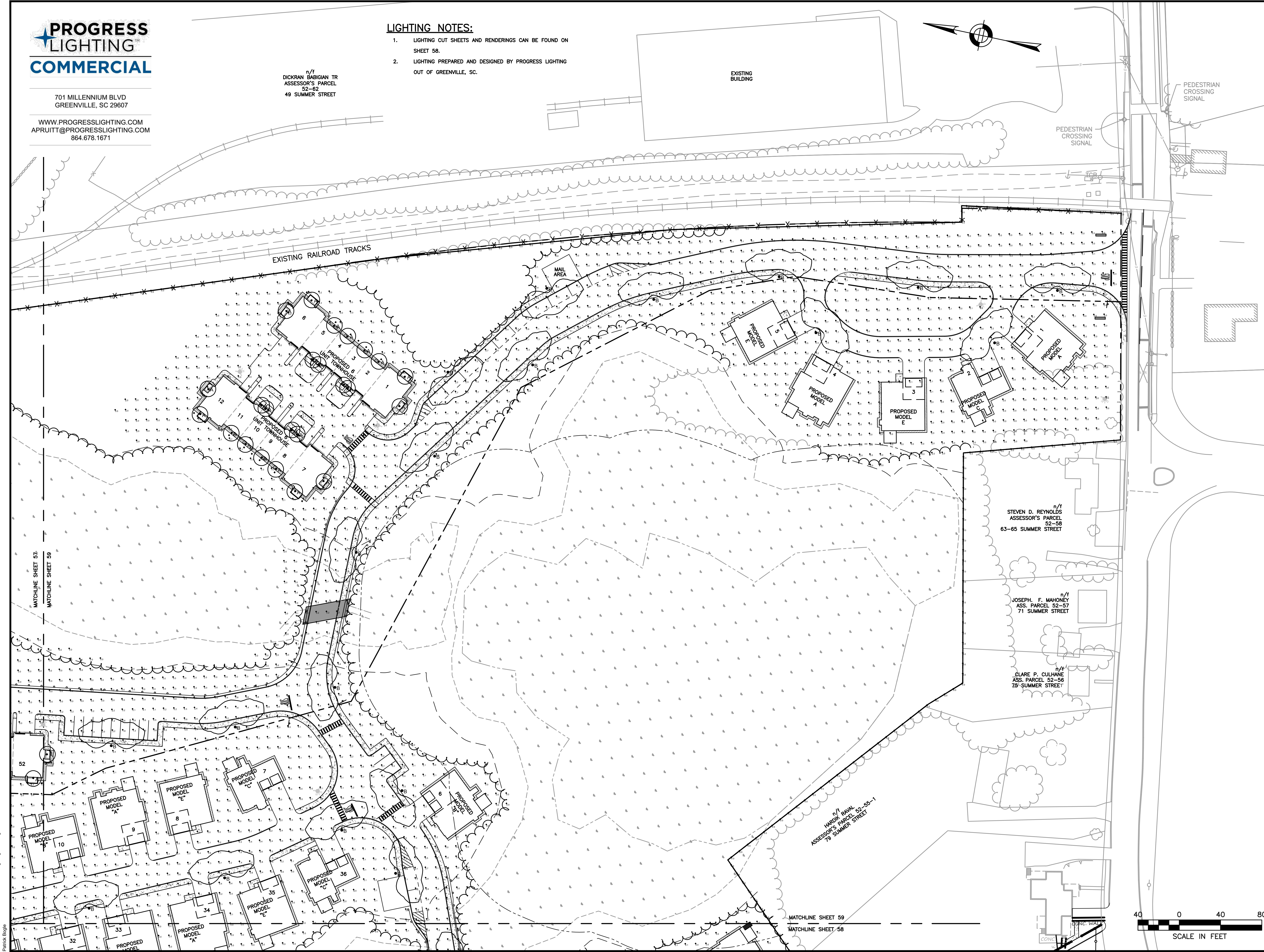
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SITE PLAN

LIGHTING PLAN 5 OF 5

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/MB/KF/KL
CHECKED BY:	KE

C.59



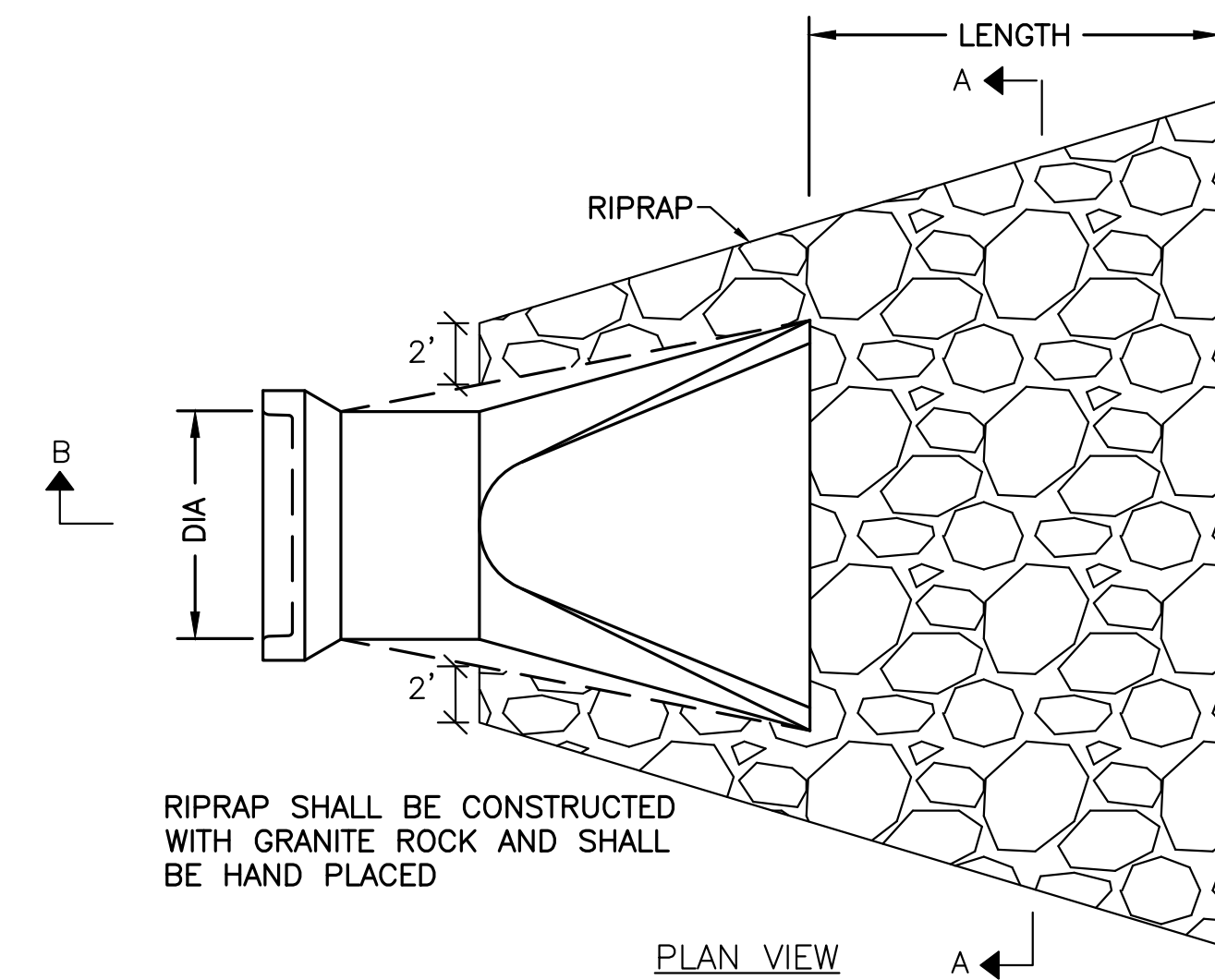
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EROSION AND SEDIMENT CONTROL NOTES

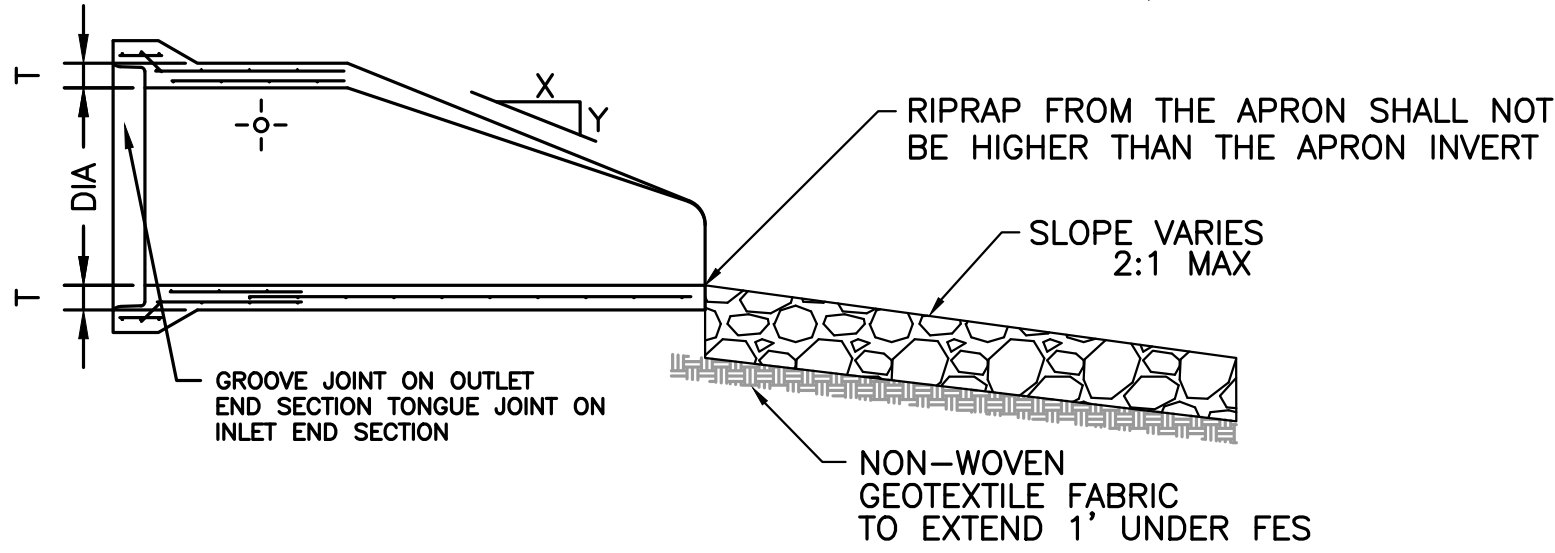
1. EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND MAINTAINED AND UPGRADED AS NECESSARY DURING CONSTRUCTION BY THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND INSTALL ADDITIONAL CONTROL MEASURES AS NEEDED DURING CONSTRUCTION.
2. ALL CATCH BASINS RECEIVING DRAINAGE FROM THE PROJECT SITE MUST BE PROVIDED WITH A CATCH BASIN FILTER.
3. STABILIZATION OF ALL RE-GRADED AND SOIL STOCKPILE AREAS MUST BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
4. SEDIMENT REMOVED FROM EROSION AND SEDIMENT CONTROL DEVICES MUST BE PROPERLY REMOVED AND DISPOSED. ALL DAMAGED CONTROLS MUST BE REMOVED AND REPLACED.
5. 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.
6. 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 ADJACENT ROADWAYS.
7. 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 STABILIZED SOILS WITHIN 14 DAYS OF THE LAST DISTURBANCE.
8. IF A DISTURBED AREA WILL BE EXPOSED FOR GREATER THAN ONE YEAR, PERMANENT GRASSES OR OTHER APPROVED COVER MUST BE INSTALLED.
9. THE CONTRACTOR MUST KEEP ON-SITE AT ALL TIMES ADDITIONAL SILT FENCE, STRAW WATTLE, AND HAY BALES FOR THE INSTALLATION AT THE DIRECTION OF THE ENGINEER OR THE TOWN TO MITIGATE ANY EMERGENCY CONDITION.
10. 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.
11. DEMOLITION AND CONSTRUCTION DEBRIS MUST BE PROPERLY CONTAINED AND DISPOSED OF.
12. 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.

GENERAL CONSTRUCTION SEQUENCE

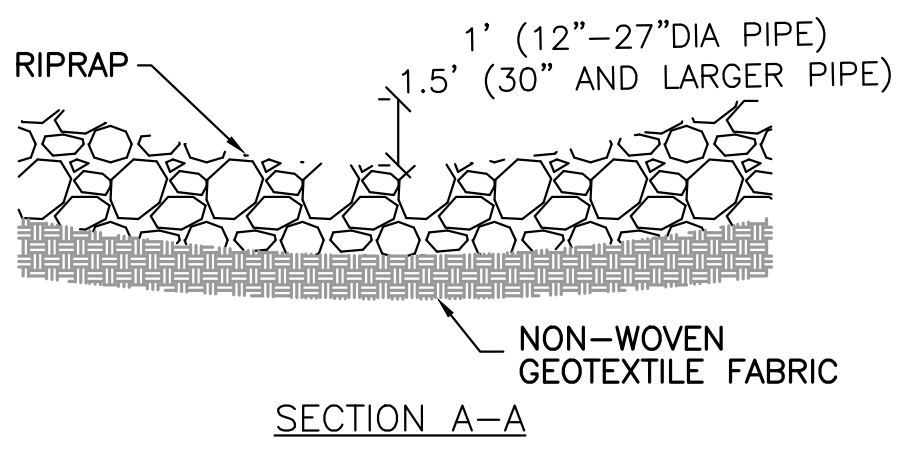
1. INSTALL EROSION AND SEDIMENT CONTROLS PRIOR TO STARTING ANY EARTHWORKS ACTIVITY.
2. INSTALL CONSTRUCTION ENTRANCE.
3. BEGIN CLEARING AND GRUBBING.
4. CONSTRUCT STORMWATER MANAGEMENT SYSTEM.
5. INSTALL SITE FURNISHINGS.
6. INSTALL PAVEMENT AND CURBS.
7. INSTALL LANDSCAPING.
8. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED UNTIL PERMANENT COVER IS ESTABLISHED.



RIPRAP SHALL BE CONSTRUCTED WITH GRANITE ROCK AND SHALL BE HAND PLACED

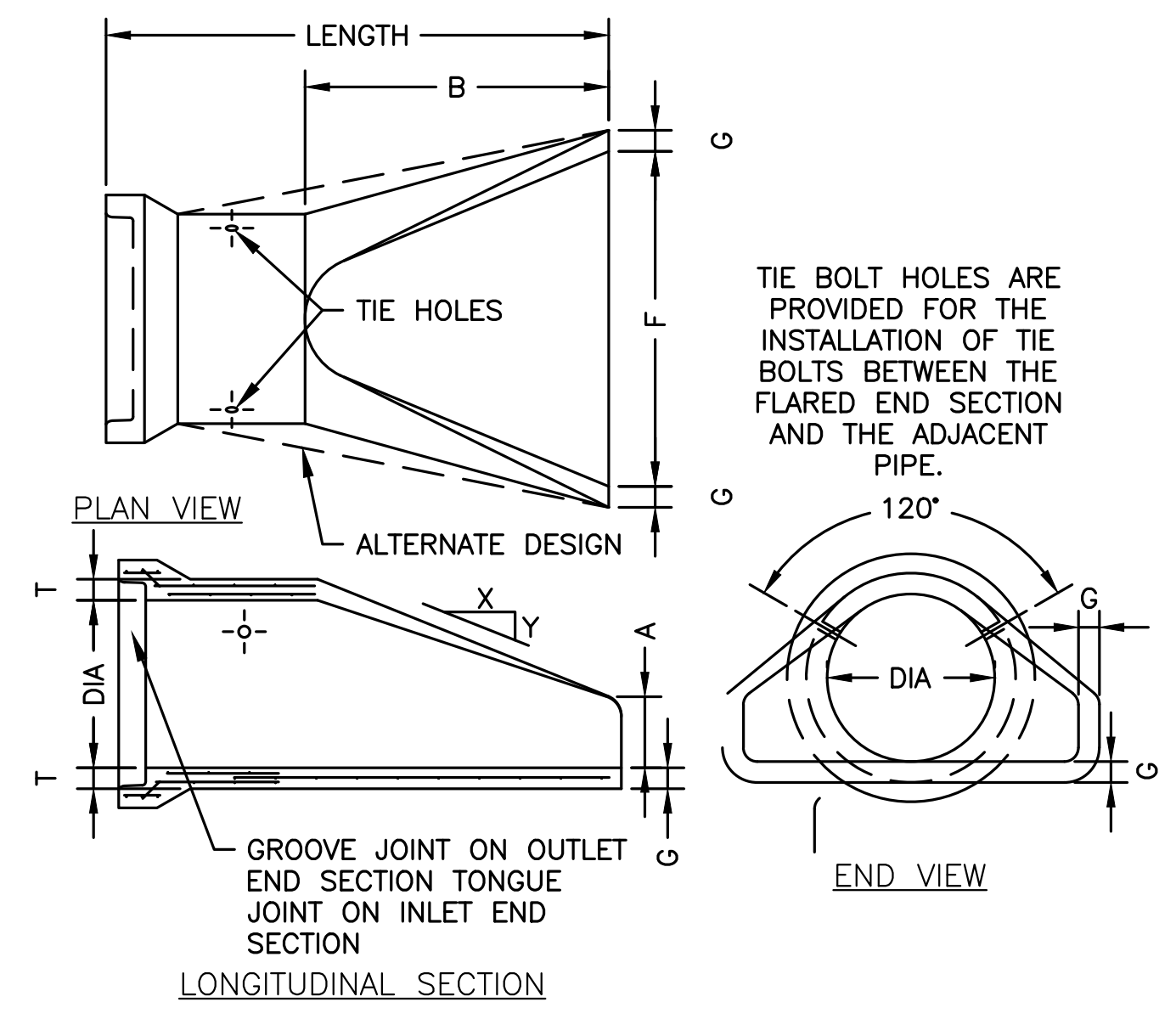


NOTE: ONE CUBIC YARD IS APPROXIMATELY 1.4 TONS.



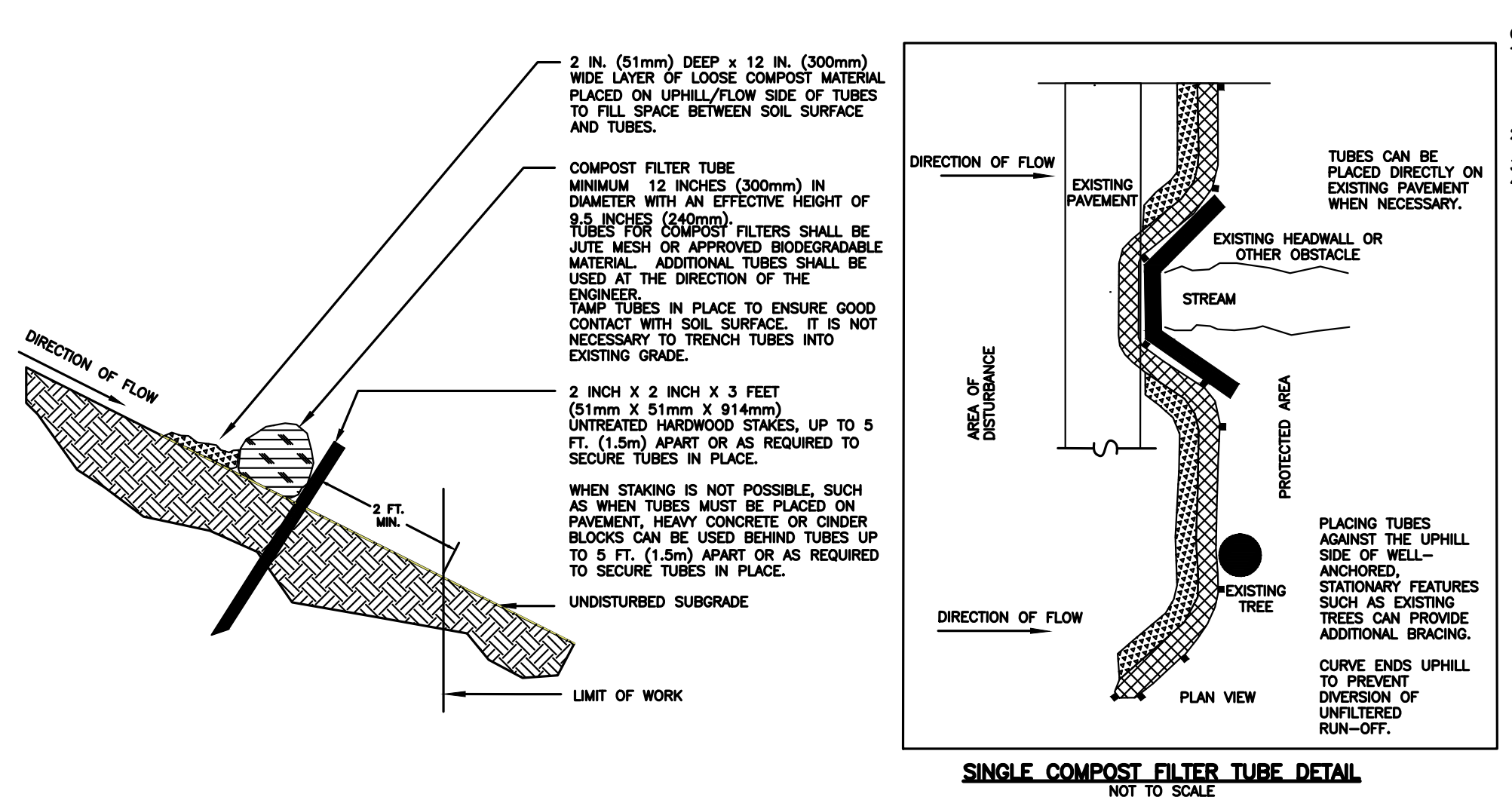
MINIMUM RIPRAP REQUIRED			
PIPE DIA (IN.)	LENGTH (FT.)	QUANTITY (C.Y.)	CLASS
12"	8'	5	III
15"	8'	5	III
18"	10'	6	III
24"	12'	8	III
30"	14'	12	III
36"	16'	14	III
42"	18'	22	IV
48"	20'	26	IV
>48"	22'-28'	30-40	IV

RIPRAP FOR FLARED END SECTION
NOT TO SCALE



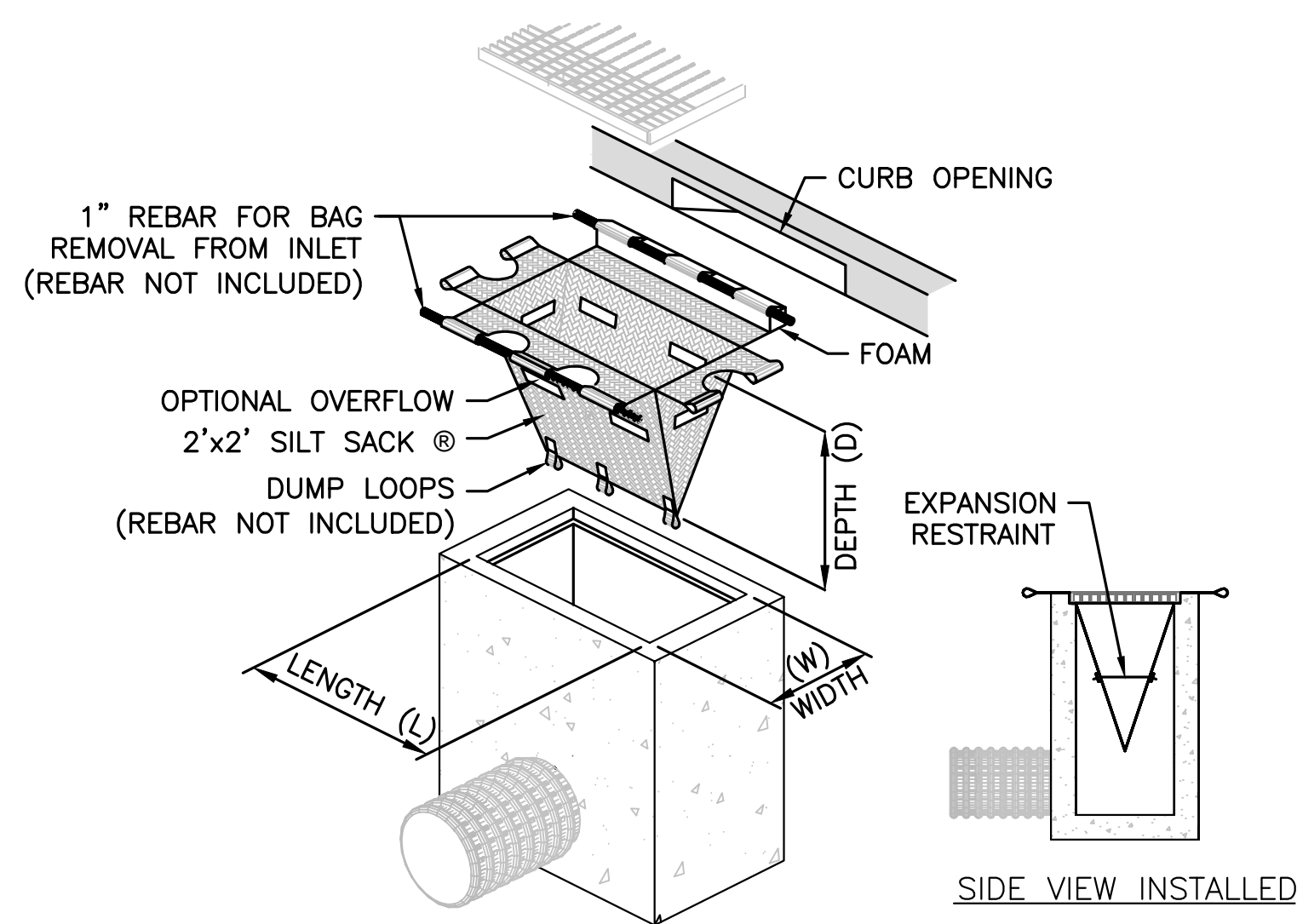
PIPE DIA	LENGTH		SLOPE (X TO Y)	T	A	B	F	G	WEIGHT/SECTION (LBS)
	OUTLET	INLET							
12"	6'-0"	6'-0"	2.4 TO 1	2"	4"	24"	24"	2"	530
15"	6'-0"	6'-0"	2.4 TO 1	2 1/2"	6"	27"	30"	2 1/2"	740
18"	6'-0"	6'-0"	2.3 TO 1	2 1/2"	9"	27"	36"	2 1/2"	990
21"	6'-0"	6'-0"	2.4 TO 1	2 3/4"	9"	36"	42"	2 3/4"	1280
24"	6'-0"	6'-0"	2.5 TO 1	3"	9 1/2"	43 1/2"	48"	3"	1520

FLARED END OUTLET
NOT TO SCALE

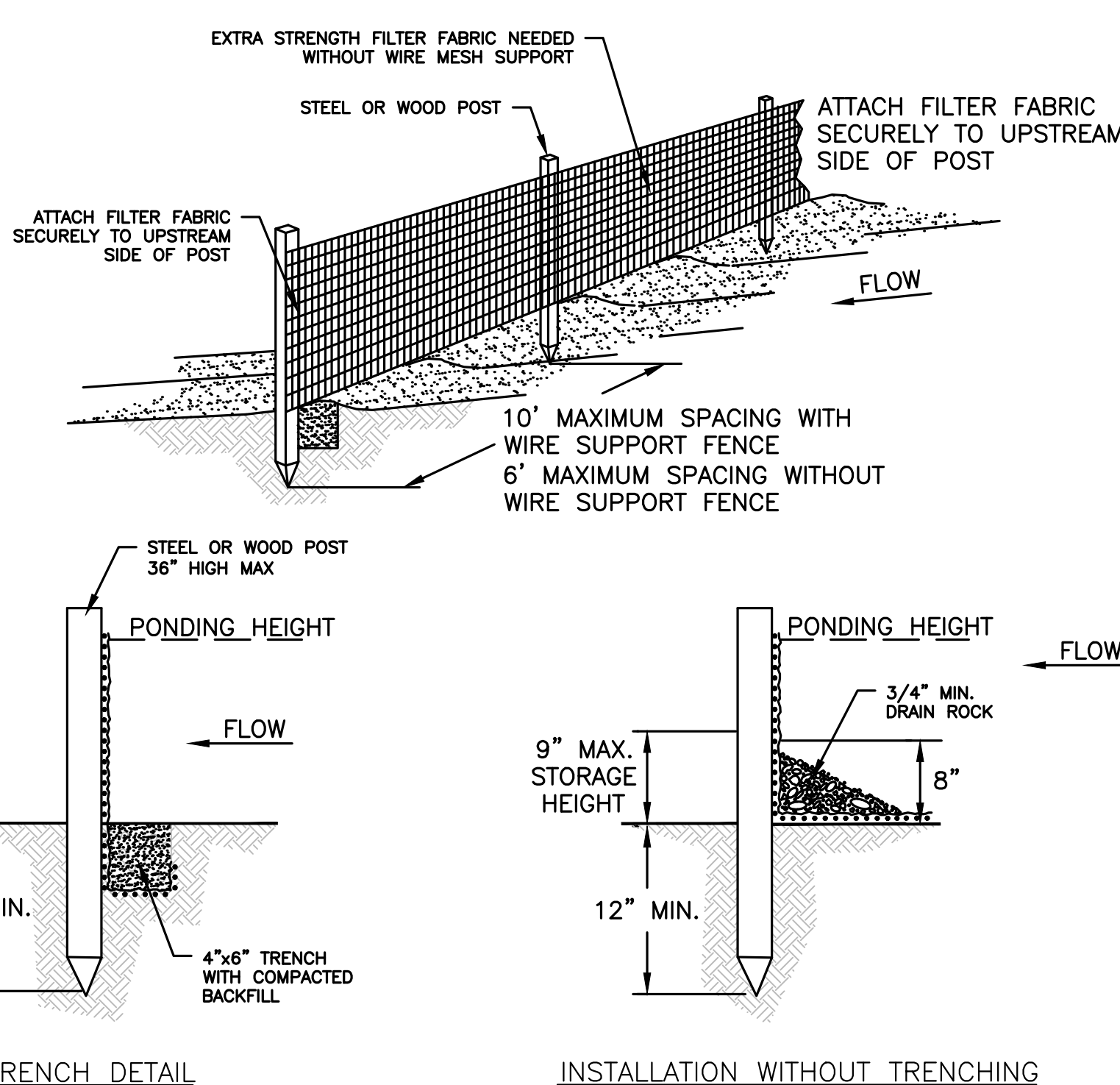


SINGLE COMPOST FILTER TUBE DETAIL
NOT TO SCALE

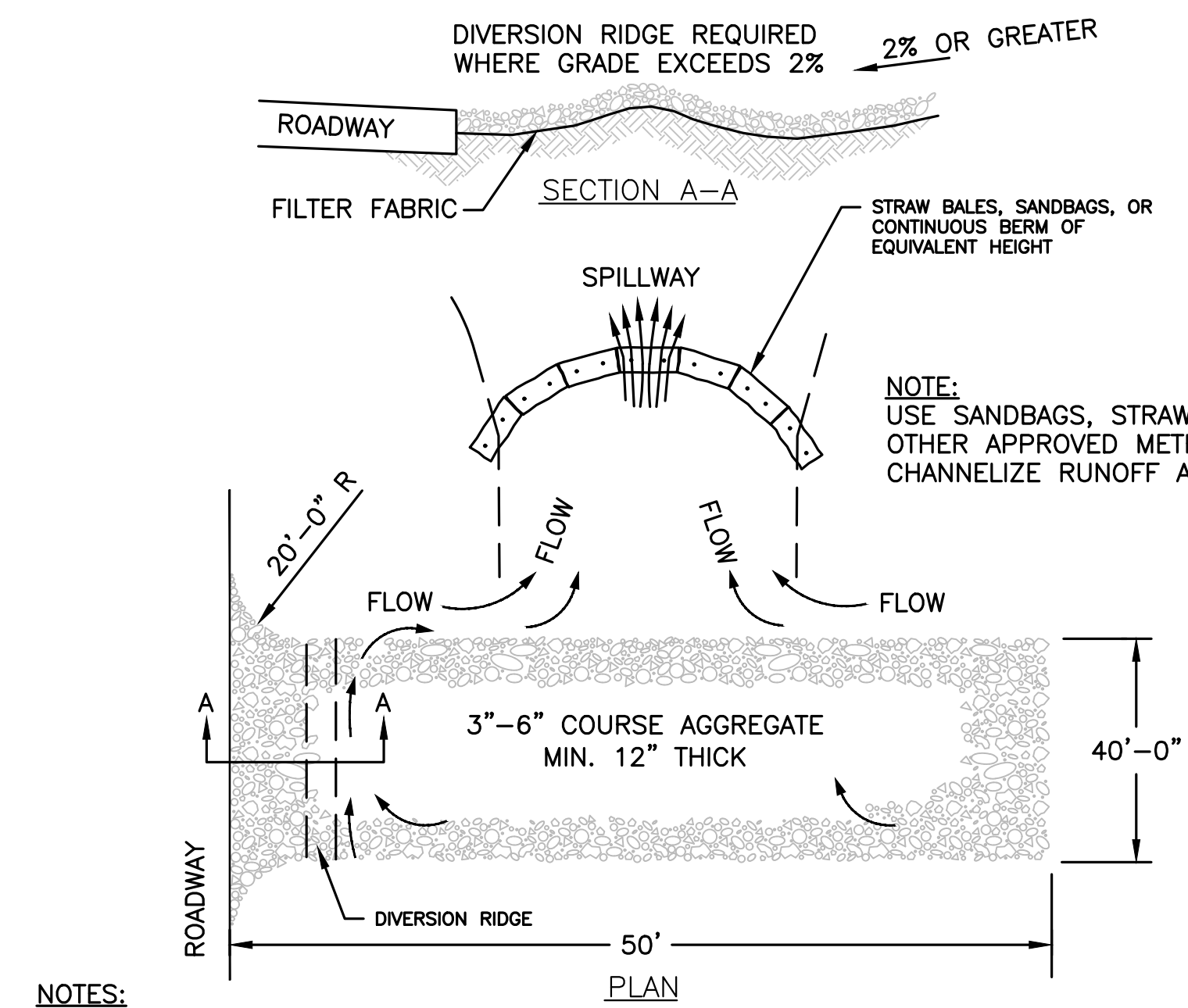
- GENERAL NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSEING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S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



TEMPORARY INLET PROTECTION
NOT TO SCALE



EROSION CONTROL BARRIER
NOT TO SCALE



STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

- 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

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

PREPARED FOR:
55 BH LLC
6 LYBERTY WAY, SUITE 203
WESTFORD, MA 01886

PROPOSED MULTIFAMILY DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

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9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

DETAIL SHEET
1 OF 20

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE
	C.74



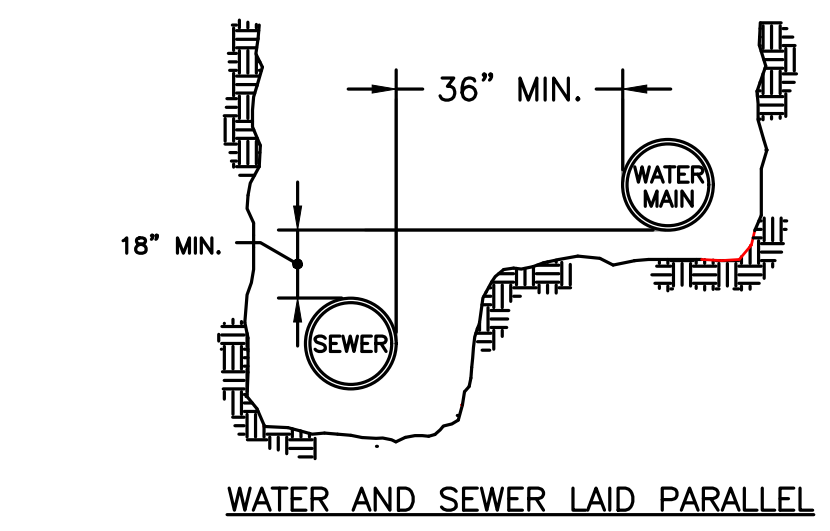
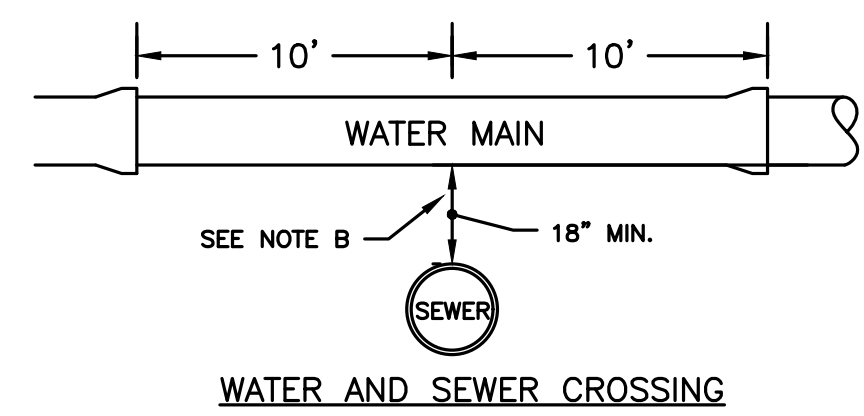
HOWARD STEIN HUDSON
 114 Turnpike Road, Suite 2C
 Chelmsford, MA 01824
 www.hshassoc.com

PREPARED FOR:
 55 BH LLC
 6 LYBERTY WAY, SUITE 203
 WESTFORD, MA 01886

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

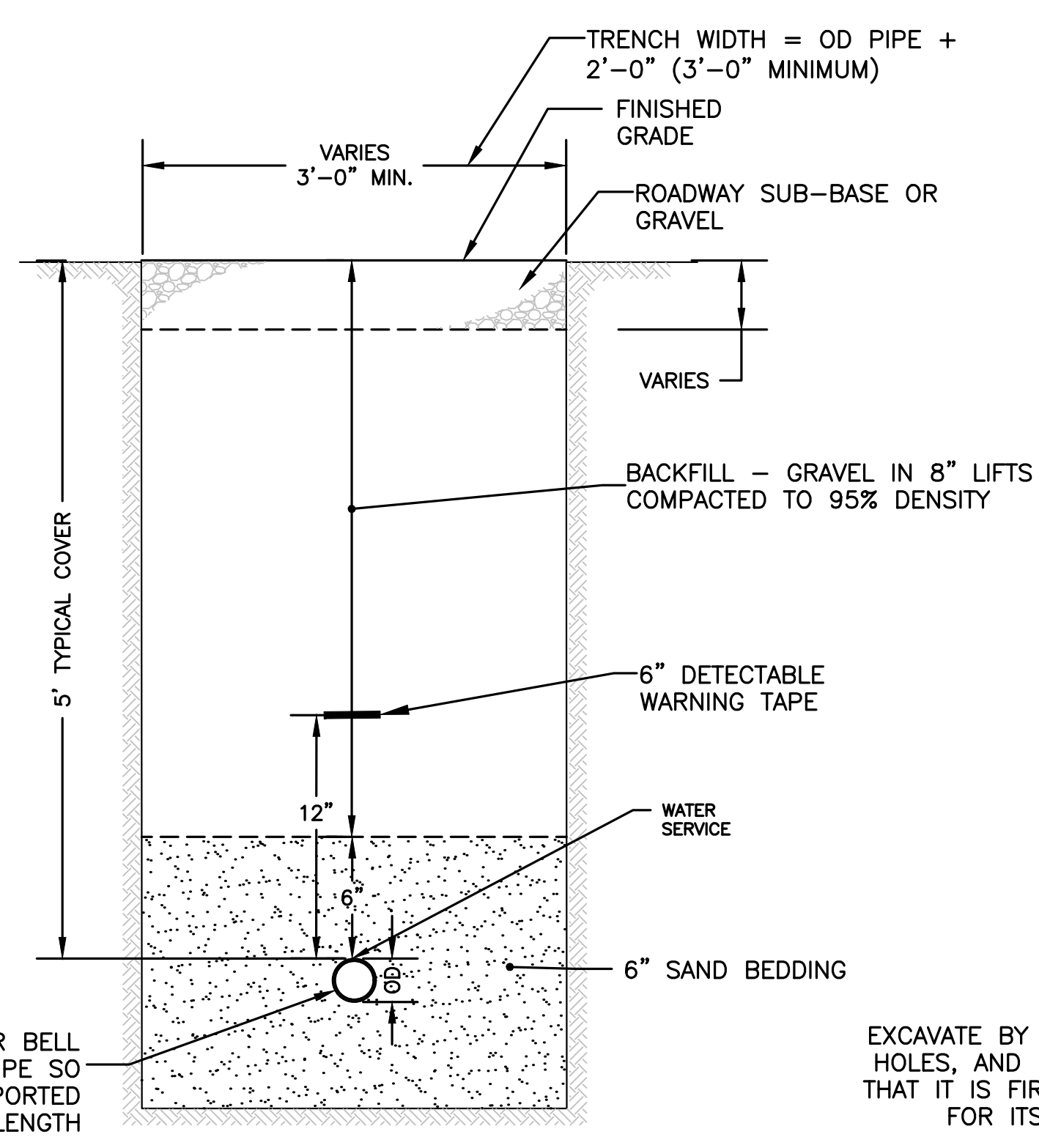
REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
5	PB	12/16/20	EMERGENCY ACCESS
6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

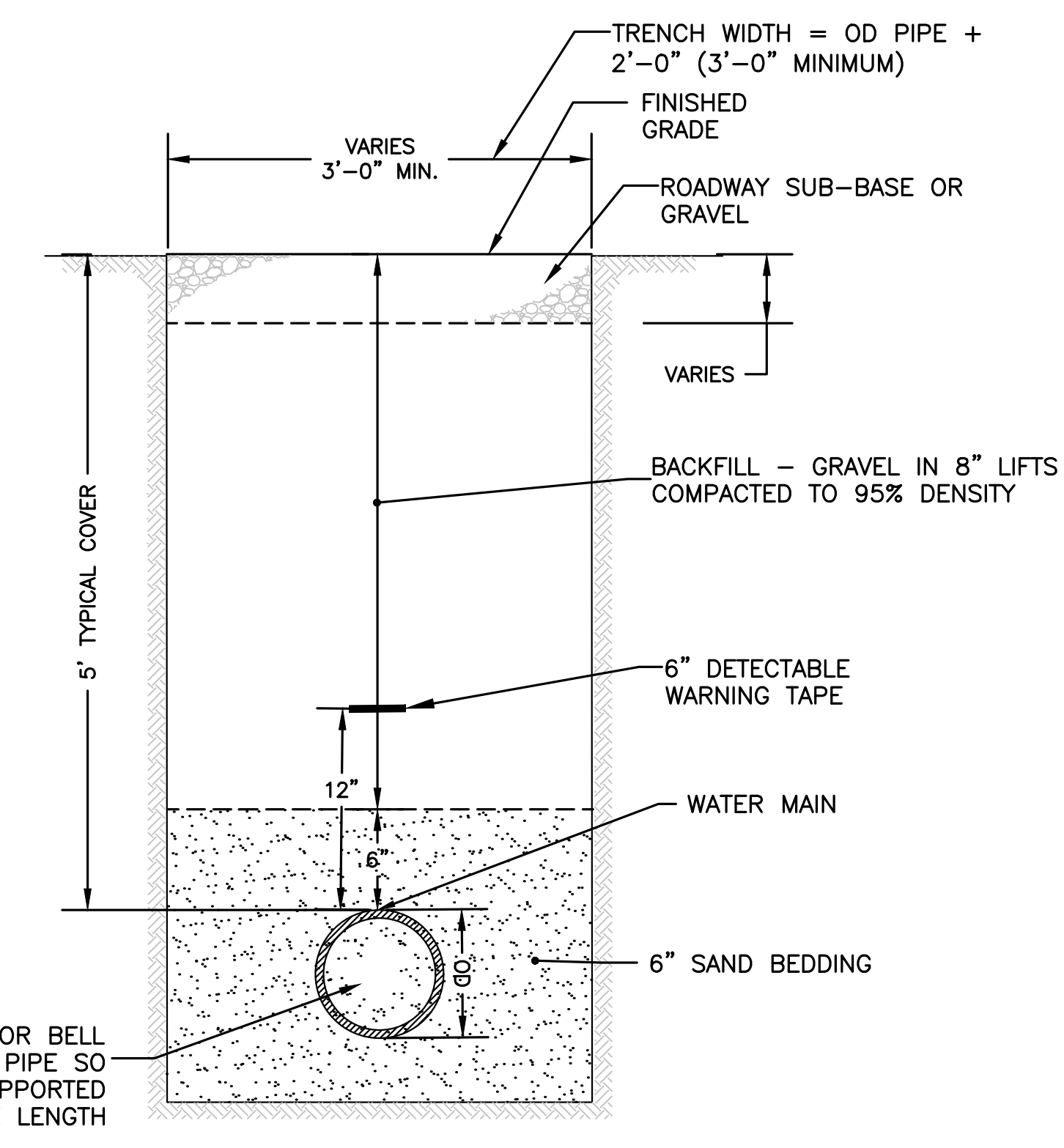


- NOTES:**
 THE SEPARATION OF WATER MAINS AND SEWERS SHALL COMPLY WITH THE FOLLOWING GENERAL REQUIREMENTS.
- A. PARALLEL INSTALLATION:**
- NORMAL CONDITIONS: THE INSIDE EDGE OF A WATER MAIN SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.
 - WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, ONE OF TWO METHODS MAY BE EMPLOYED. IN BOTH CASES THE INVERT OF THE WATER LINE MUST BE AT LEAST 18" ABOVE THE CROWN OF THE SEWER LINE.
- 1. LAY WATER AND SEWER IN SEPARATE TRENCHES**
- 2. LAY THE WATER AND SEWER IN THE SAME TRENCH WITH THE WATER MAIN AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH WITH A MINIMUM HORIZONTAL SEPARATION FROM INSIDE PIPE TO INSIDE PIPE OF 36" CROSSINGS:**
- WHEN SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER LAID SUCH THAT THE INVERT OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER LINE.
 - WHEN THE SEWER ELEVATION CANNOT BE VARIED TO MEET THE REQUIREMENT, THE WATER LINE MUST BE RELOCATED OR RECONSTRUCTED WITH MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10 FT ON EACH SIDE OF THE SEWER.
 - WHEN IT IS IMPOSSIBLE TO OBTAIN EITHER OR BOTH OF THE ABOVE REQUIREMENTS, BOTH THE WATER AND SEWER LINES SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT MATERIAL. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS OR BOTH PIPES SHALL BE ENCASED IN CONCRETE.

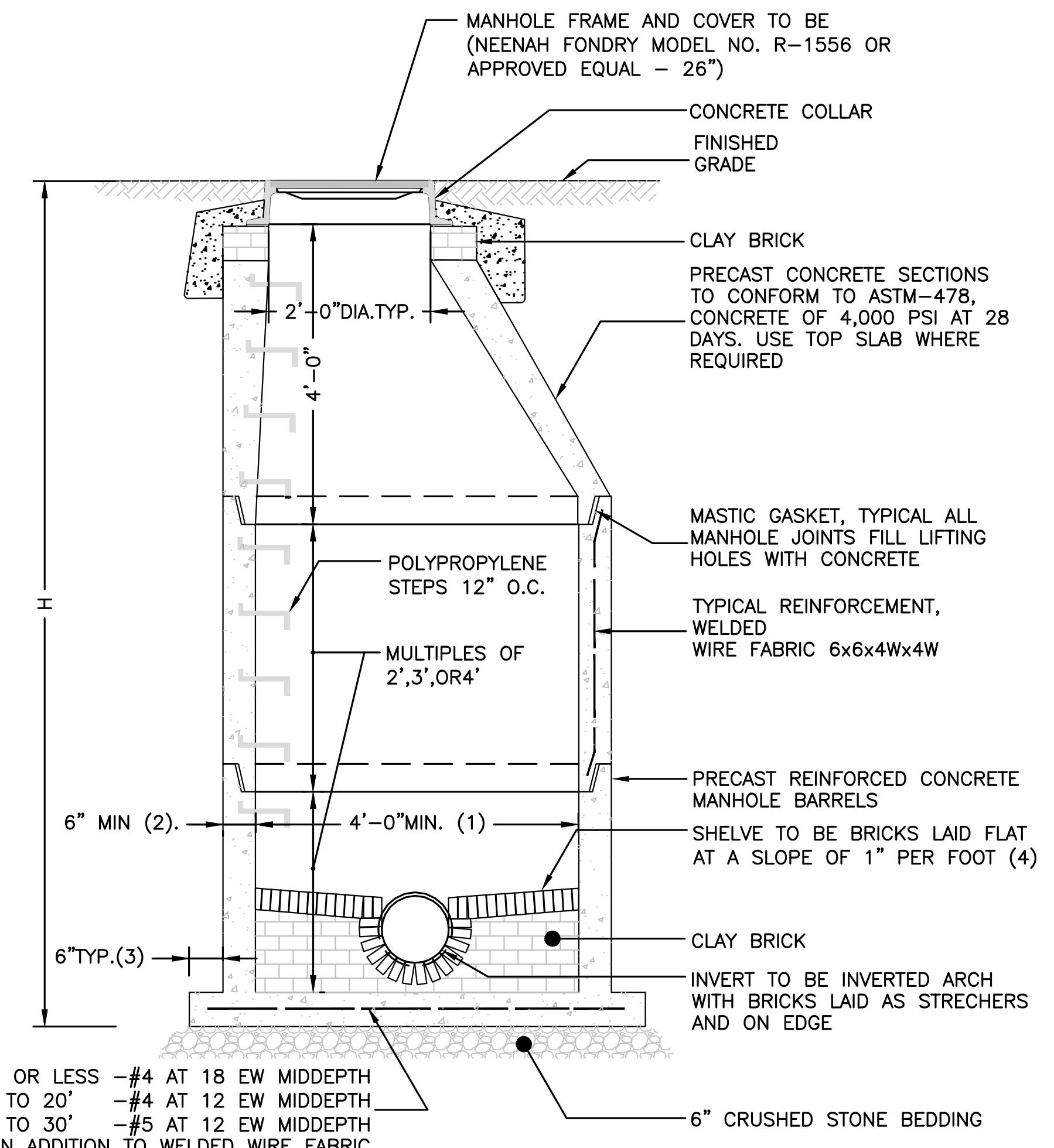
SEWER/WATER SEPARATION & CROSSING DETAIL
 NOT TO SCALE



TRENCH DETAIL - WATER SERVICE
 NOT TO SCALE

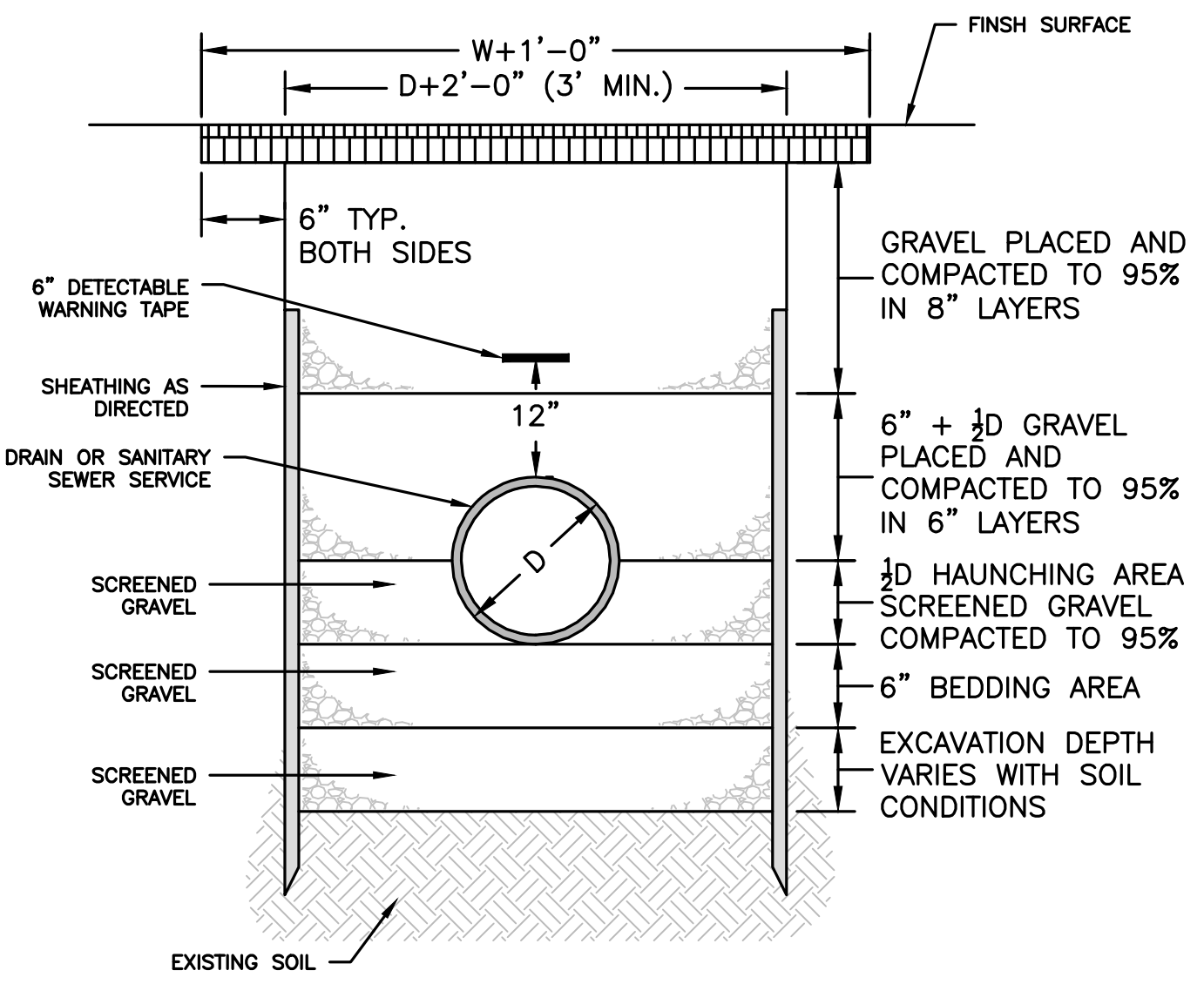


TRENCH DETAIL - WATER MAIN
 NOT TO SCALE

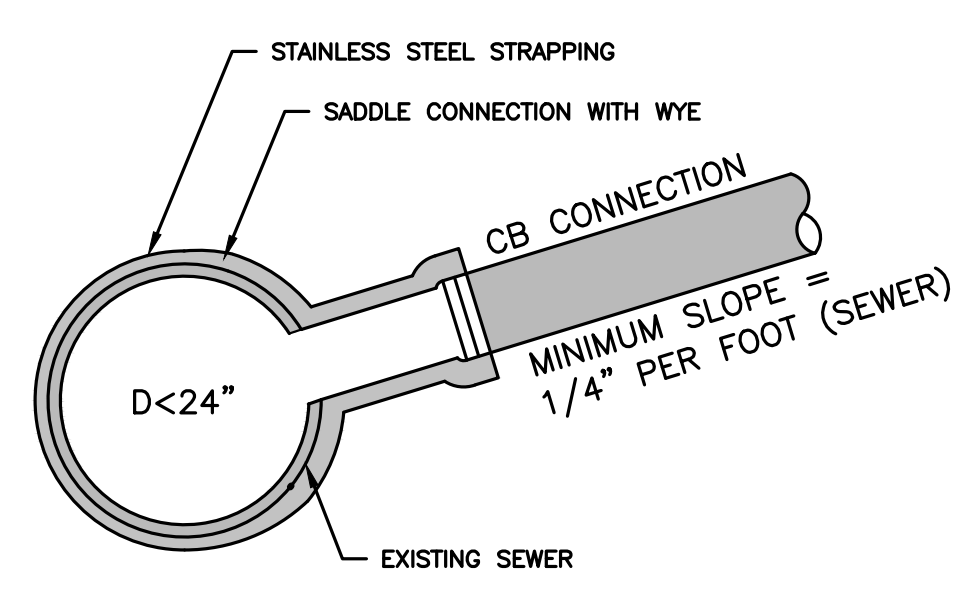


- H= 10' OR LESS --#4 AT 18 EW MIDDEPTH
 H= 10' TO 20' --#4 AT 12 EW MIDDEPTH
 H= 20' TO 30' --#5 AT 12 EW MIDDEPTH
 IN ADDITION TO WELDED WIRE FABRIC
- NOTES:**
- 5'-0" DIAMETER FOR ALL MANHOLE DEPTHS GREATER THAN 20 FEET OR WHEN ORDERED BY THE ENGINEER.
 - 6 INCH MIN. WALL THICKNESS AND 7 INCH MIN. 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.

PRECAST CONCRETE MANHOLE
 NOT TO SCALE

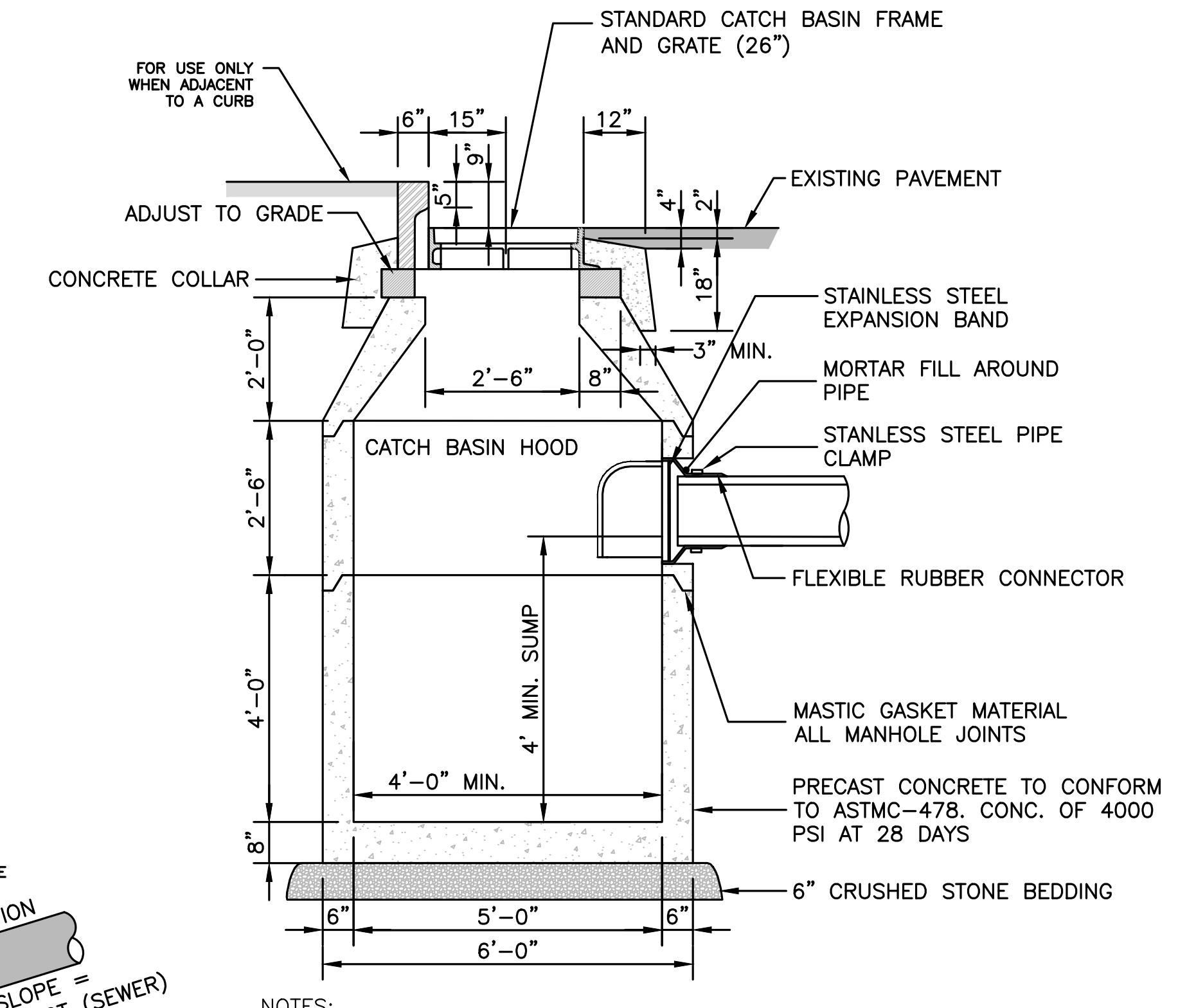


TRENCH DETAIL - DRAINAGE OR SANITARY SEWER SERVICE
 NOT TO SCALE



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

TYPICAL SADDLE CONNECTION TO SEWER
 NOT TO SCALE



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

CATCH BASIN
 NOT TO SCALE

SITE PLAN

DETAIL SHEET
 3 OF 20

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE
	C.76



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PREPARED FOR:

55 BH LLC
 6 LYBERRY WAY, SUITE 203
 WESTFORD, MA 01886

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

REVISIONS:

NO	BY	DATE	DESCRIPTION
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4	PB	10/14/20	REV. LAYOUT
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10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

DETAIL SHEET
 4 OF 20

DATE: JANUARY 10, 2020

PROJECT NUMBER: 19097

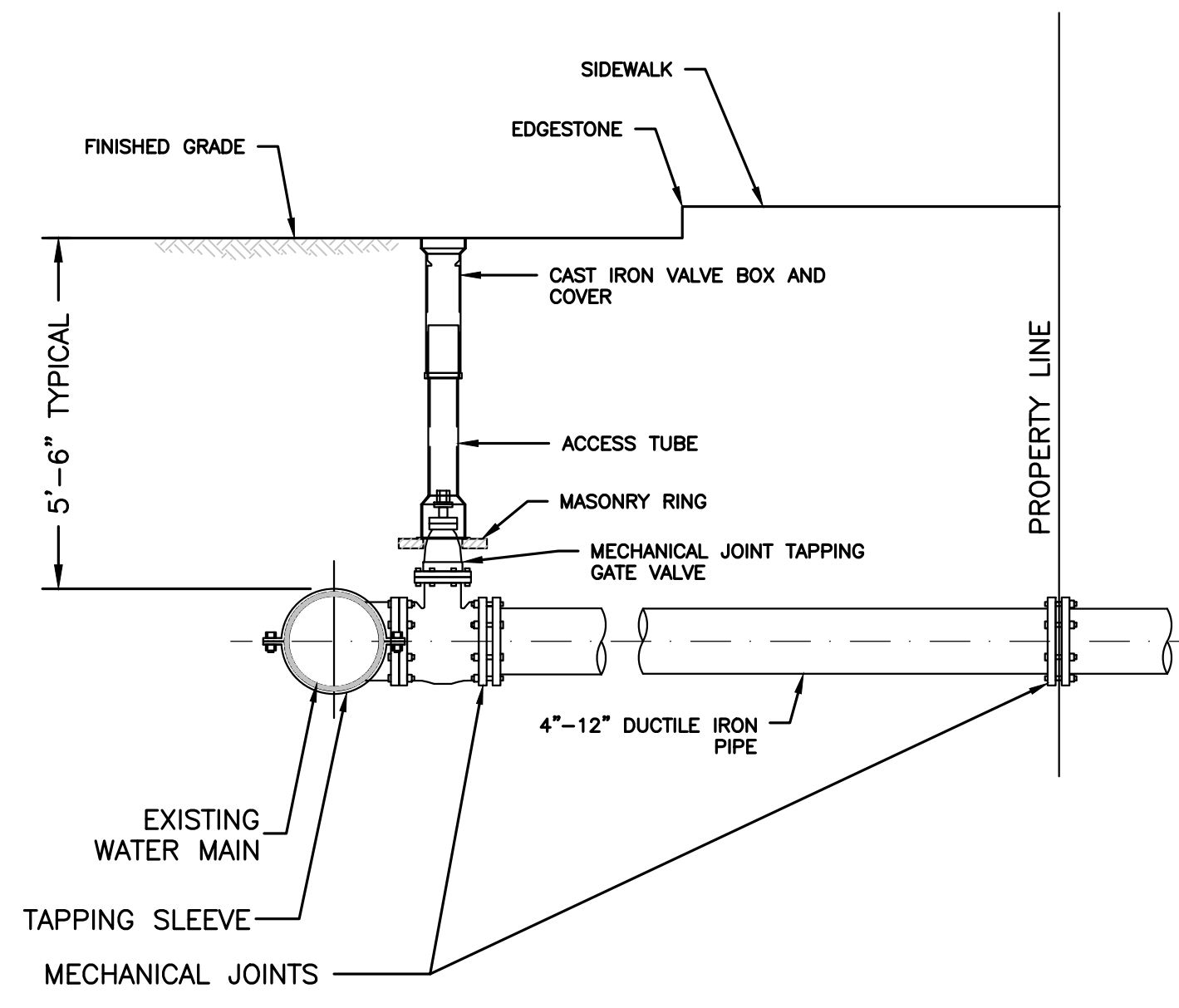
DESIGNED BY: PB/KE/KF

DRAWN BY: PB/KF

CHECKED BY: KE

C.77

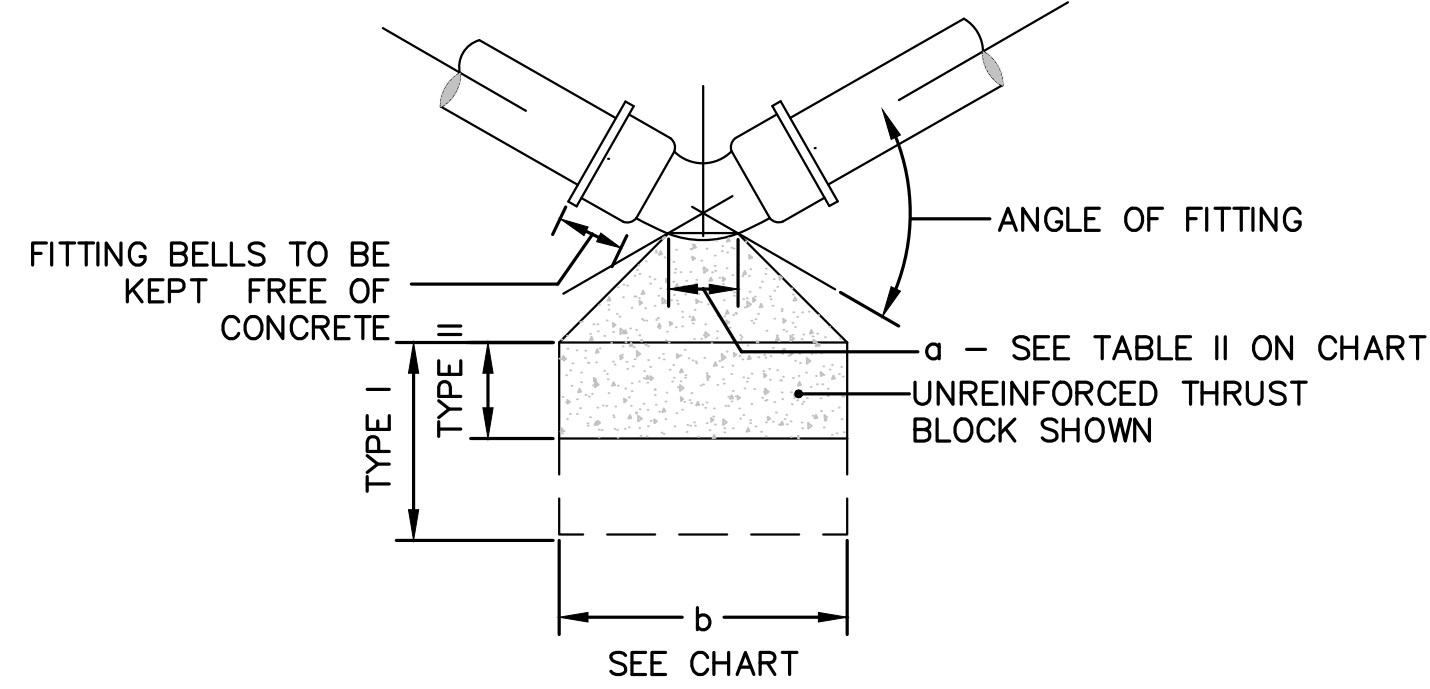
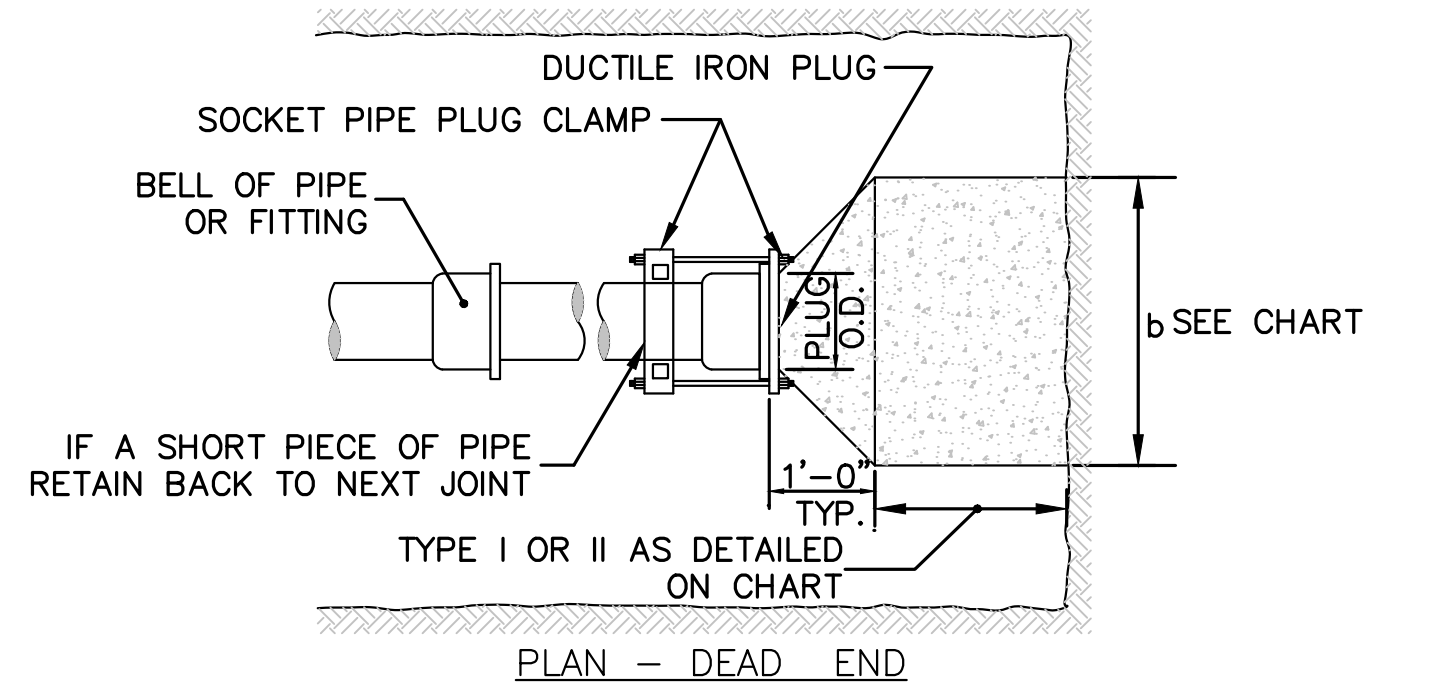
SHEET 77 OF 93



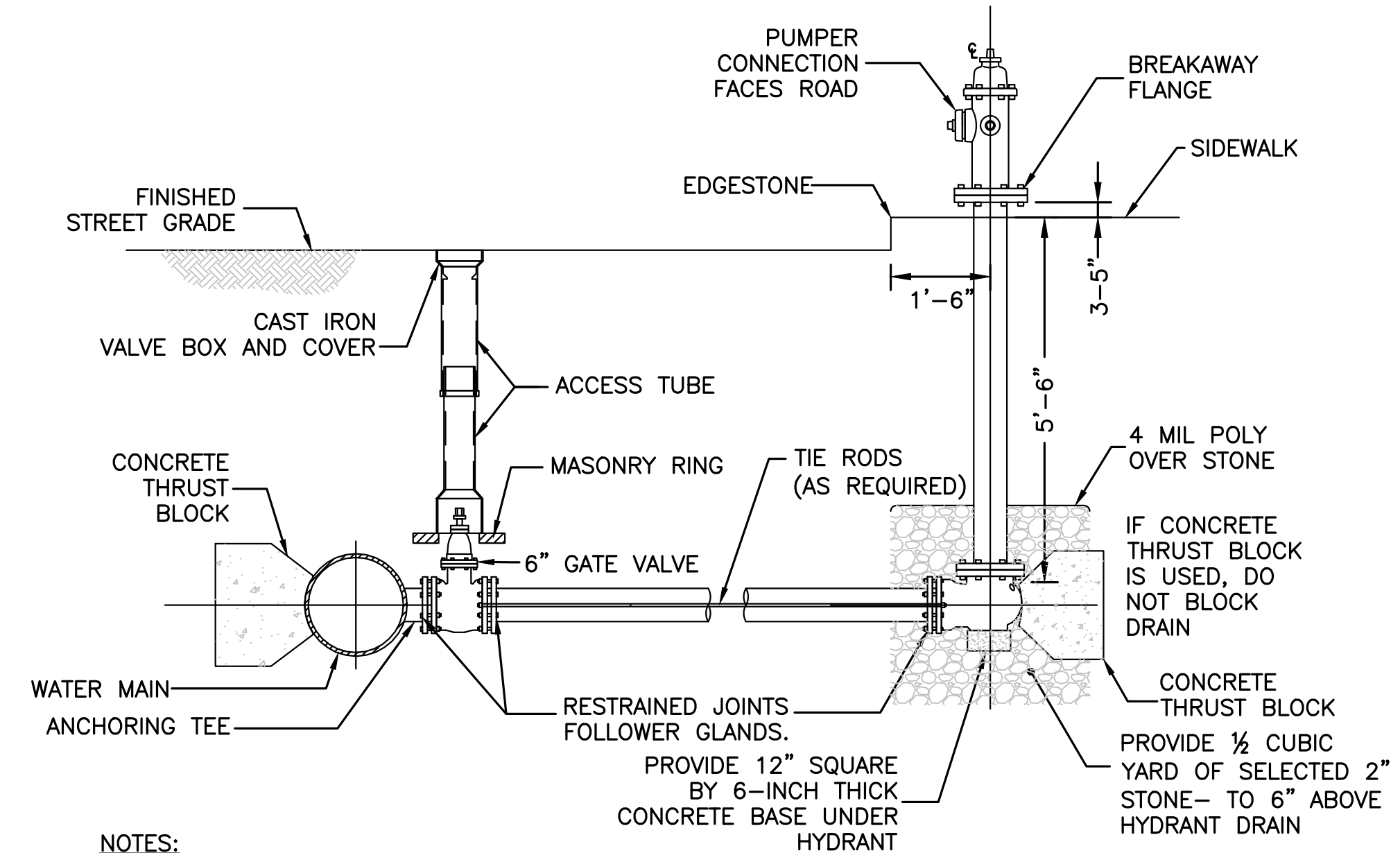
NOTES:

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
 NOT TO SCALE



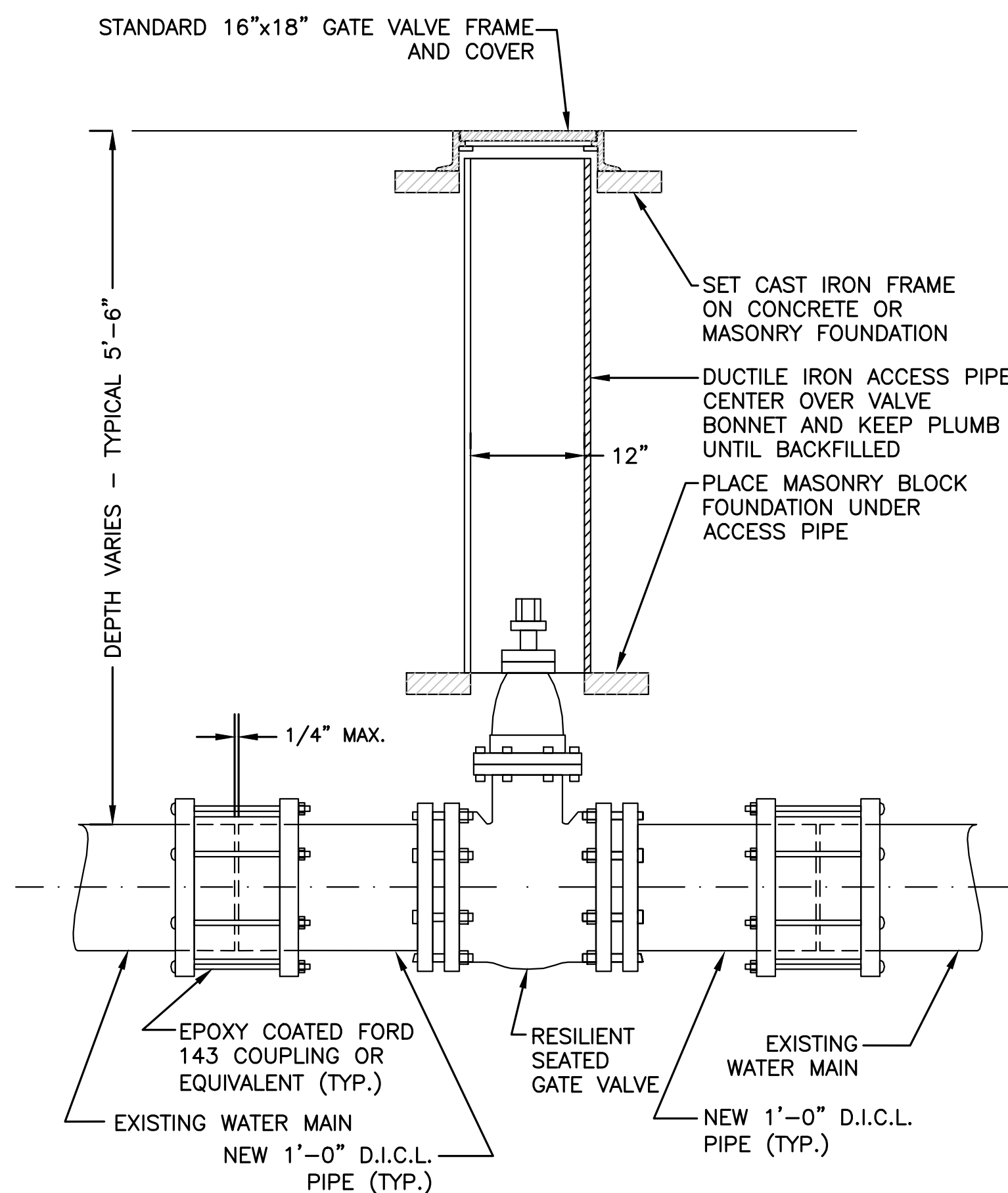
THRUST BLOCK
 NOT TO SCALE



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.

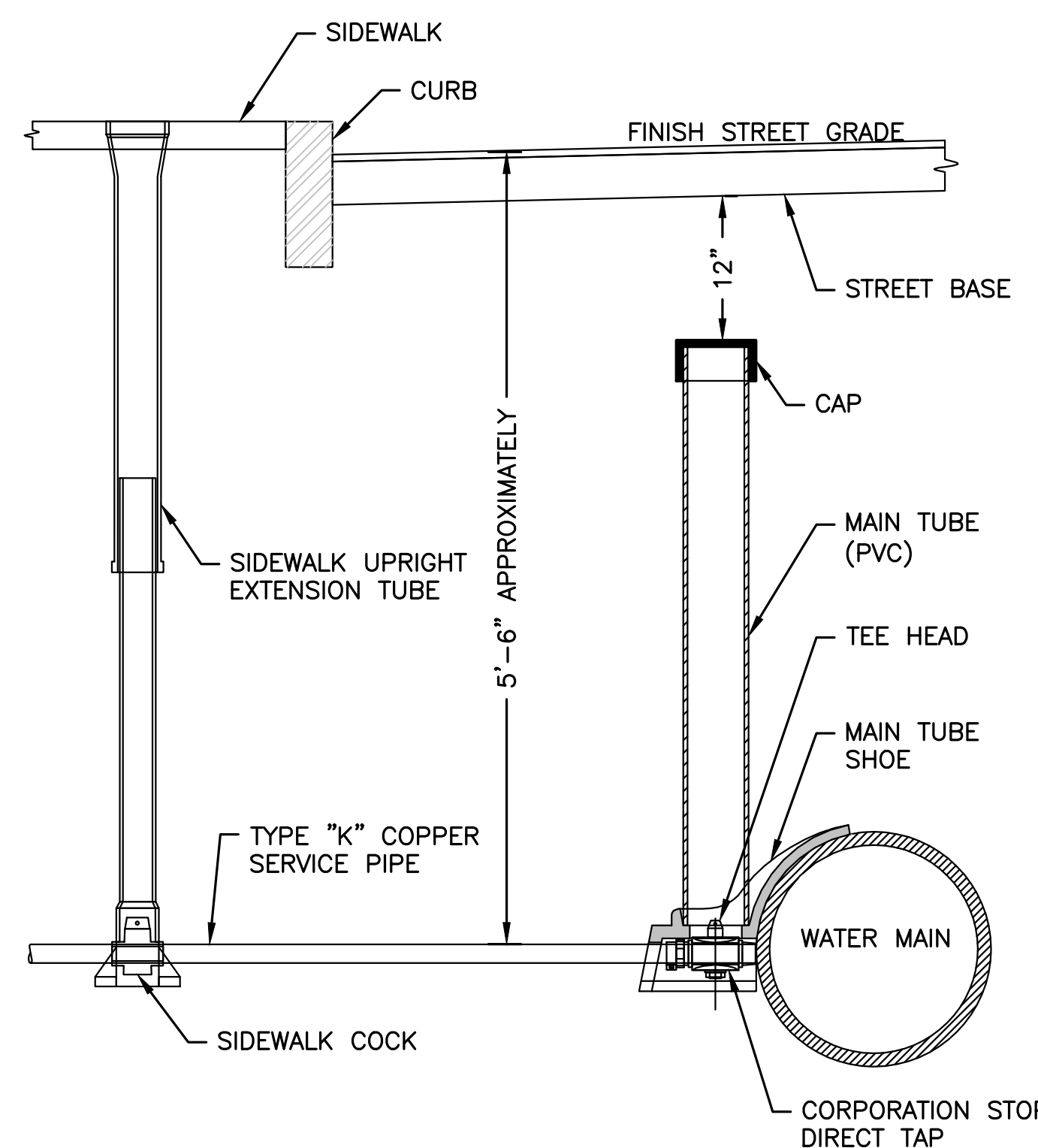
**TYPICAL FIRE HYDRANT CONNECTION FOR
 HIGH OR LOW SERVICE LINE**
 NOT TO SCALE



NOTE:

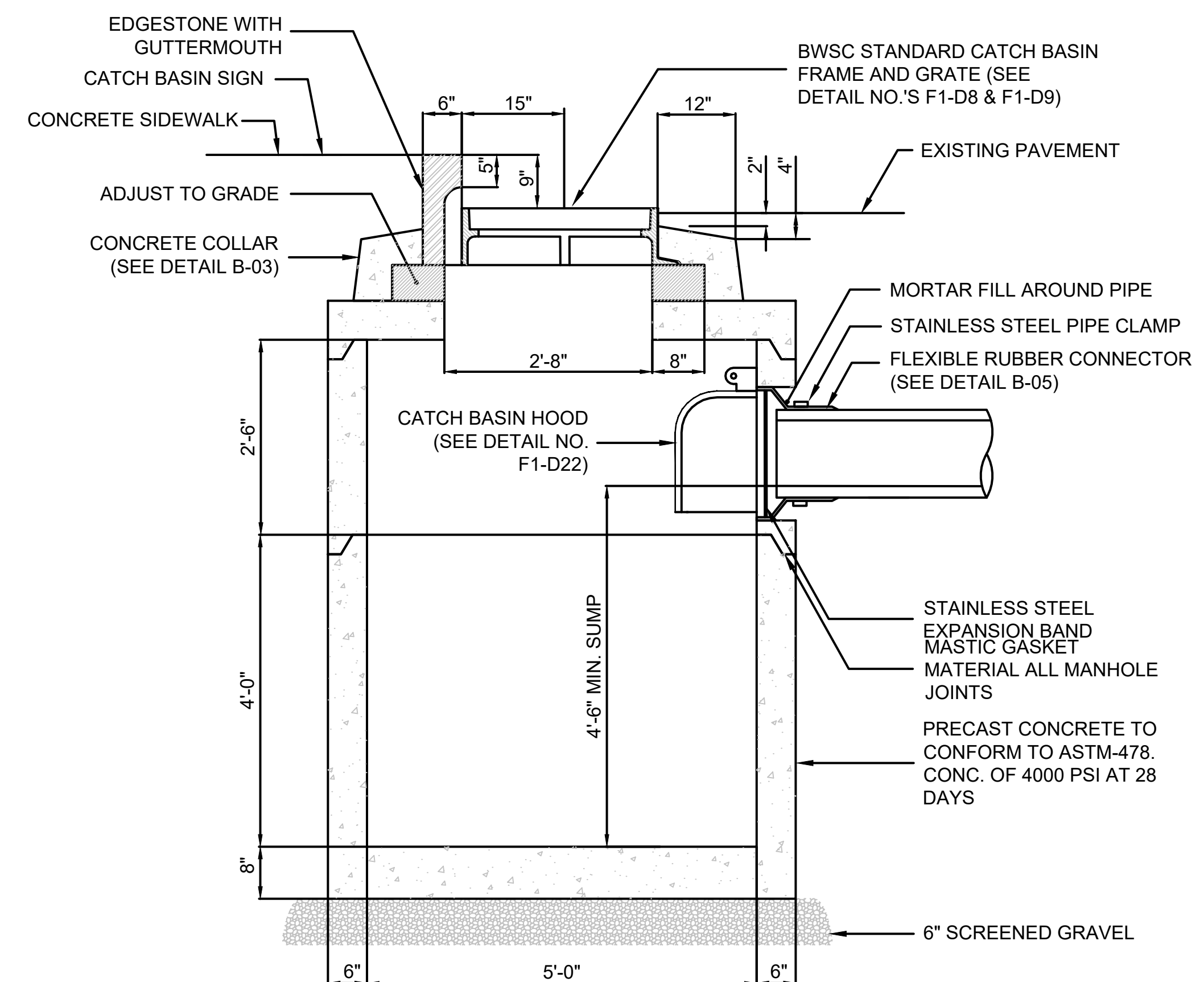
1. ALL EXCAVATION AND BACKFILLING AND PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON REQUIREMENTS.

TYPICAL GATE VALVE INSTALLATION
 NOT TO SCALE



**TYPICAL WATER CONNECTION
 1\"/>
 NOT TO SCALE**

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



SHALLOW CATCH BASIN (B-01d)
 NOT TO SCALE

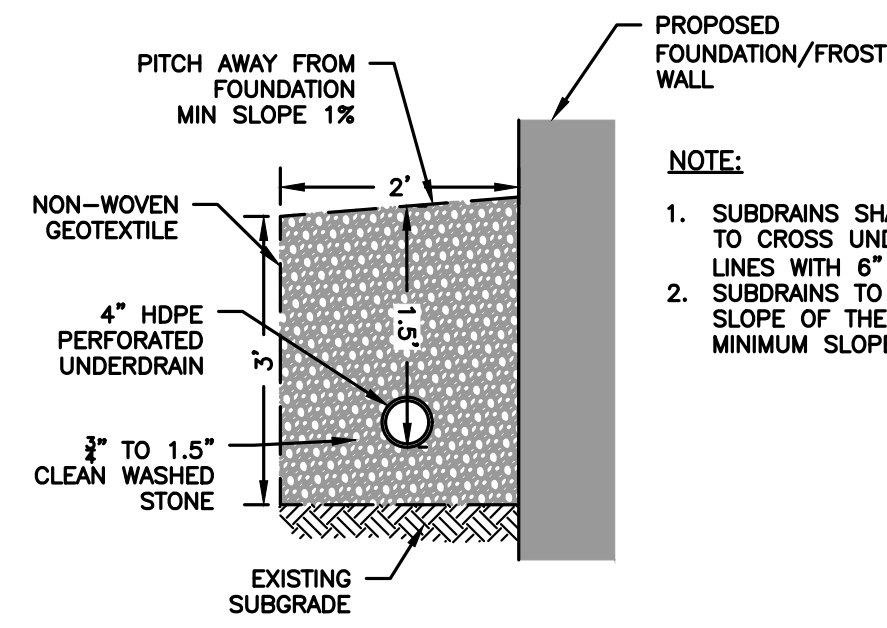


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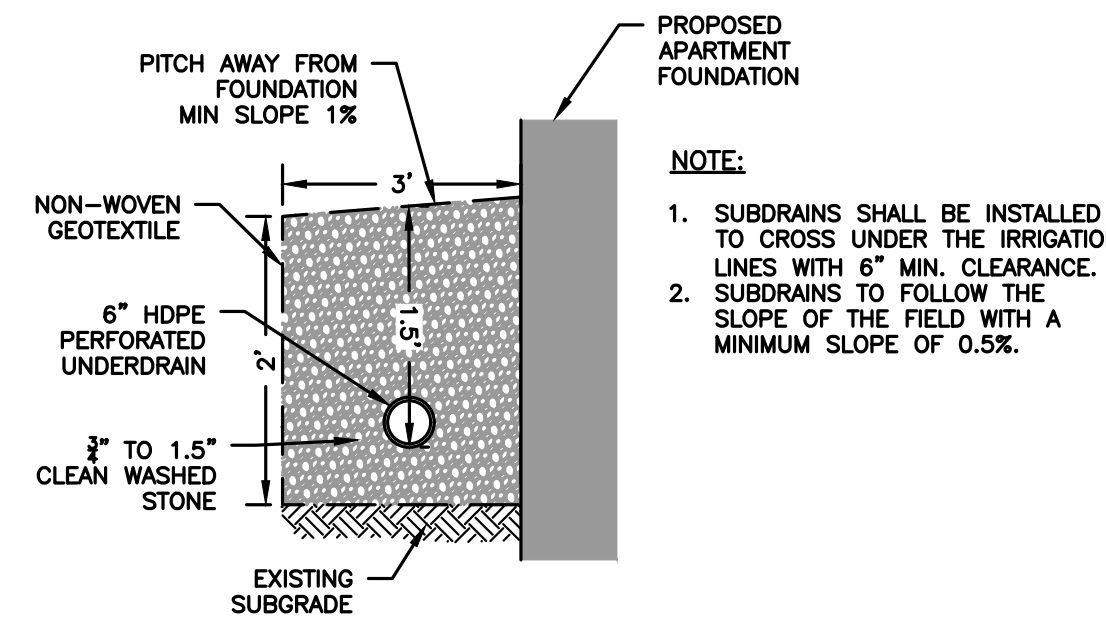
PREPARED FOR:

55 BH LLC
 6 LYBERRY WAY, SUITE 203
 WESTFORD, MA 01886

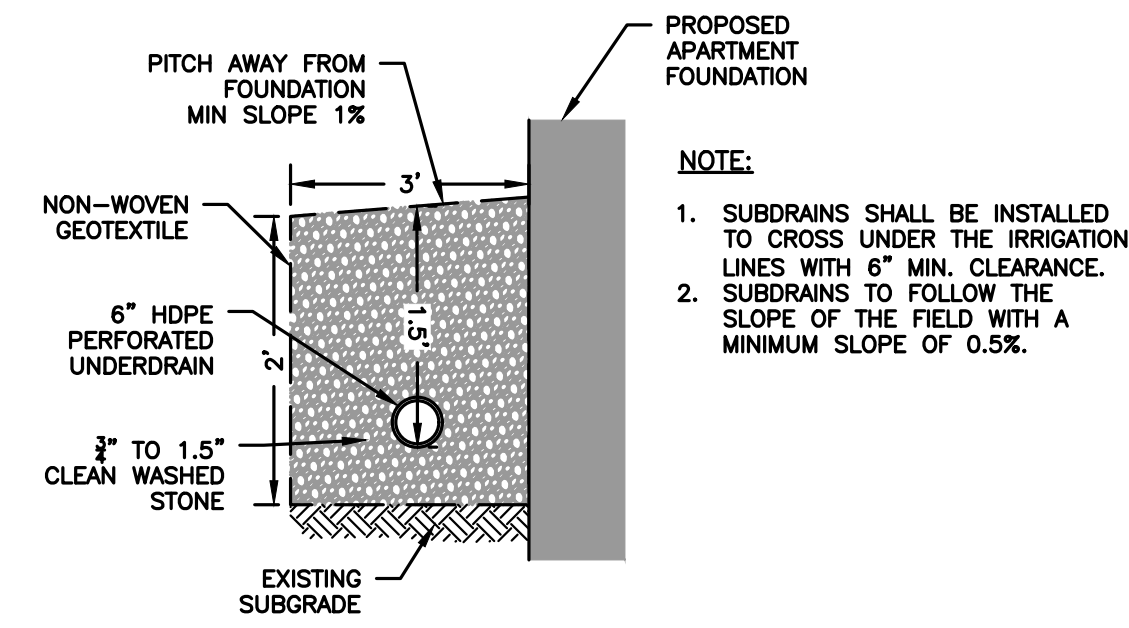
**PROPOSED MULTIFAMILY
 DEVELOPMENT
 SUMMER STREET
 WALPOLE, MA**



**HOUSE/CLUBHOUSE
 DRIP EDGE SYSTEM**
 NOT TO SCALE



**4 UNIT TOWNHOUSE
 DRIP EDGE SYSTEM**
 NOT TO SCALE



**6 UNIT TOWNHOUSE
 DRIP EDGE SYSTEM**
 NOT TO SCALE

PRELIMINARY DEEP HOLE TESTING
 12-4-2019 THROUGH 10-21-2020
 SOIL EVALUATOR: KASEY FERREIRA
 WITNESSED BY: CHRIS JOHNSON

TP1 0'-13" 13'-23" 23'-120" ESHW: 24" HSG: C	A B C	L/O SL LS	TP8 0'-7" 7'-18" 18'-139" ESHW: 44" HSG: B	A B C	L SL LS	TP15 0'-5" 5'-22" 22'-120" ESHW: 30" HSG: C	A B C	L SL LS	TP22 0'-6" 6'-23" 23'-66" ESHW: 32" HSG: C	A B C	L SL LS	TP28 0'-6" 6'-24" 24'-99" ESHW: 32" HSG: C	A B C	L SL LS	TP36 0'-10" 10'-22" 22'-62" ESHW: 21" HSG: C	A B C	SL SL SL	TP42 0'-10" 10'-28" 28'-86" ESHW: 48" HSG: B	A B C	SL SL S	TP47 0'-12" 12'-34" 34'-48" 48'-102" ESHW: 30" HSG: C	A B C1 C2	SL SL SL LS	
TP2 0'-10" 10'-118" ESHW: 33" HSG: B	A C	L/O LS	TP9 0'-40" 40'-117" 20'-120" ESHW: 40" HSG: A	FILL C	MED. S	TP16 0'-5" 5'-20" 20'-120" ESHW: 36" HSG: C	A B C	L SL LS	TP23 0'-12" 12'-24" 24'-118" ESHW: 36" HSG: B	A B C	L SL S	TP29 0'-13" 13'-18" 18'-132" ESHW: 43" HSG: B	A B C	L SL LS	TP37 0'-11" 11'-28" 28'-52" ESHW: 28" HSG: C	A B C	SL SL SL	TP43 0'-10" 10'-26" 26'-64" 64'-100" ESHW: 26" HSG: C	A B C1 C2	SL SL SL LS	TP48 0'-12" 12'-29" 29'-80" ESHW: 36" HSG: C	A B C	SL SL LS	
TP2A 0'-14" 14'-28" 28'-72" ESHW: 25" HSG: C	A B C	SL SL SL	TP10 0'-9" 9'-23" 23'-96" ESHW: 34" HSG: C	A B C	L SL CS	TP17 0'-9" 9'-108" ESHW: 18" HSG: A/D	A C	L/O LS	TP24 0'-11" 11'-24" 24'-102" ESHW: 39" HSG: B	A B C	L LS S	TP30 0'-12" 12'-30" 30'-128" ESHW: 36" HSG: C	A B C	L/O L LS	TP38 0'-12" 12'-28" 28'-72" ESHW: 42" HSG: B	A B C	SL SL S	TP43A 0'-10" 10'-19" 19'-89" ESHW: 16" HSG: B/D	A B C	SL SL SL	TP49 0'-10" 10'-24" 24'-60" REFUSAL: 60" HSG: B	A B C	SL SL LS	
TP3 0'-12" 12'-20" 20'-98" ESHW: 31" HSG: C	A B C	L SL LS	TP11 0'-8" 8'-17" 17'-122" ESHW: 30" HSG: B	A B C	L LS MED. S	TP18 0'-8" 8'-17" 17'-120" ESHW: 26" HSG: C	A B C	L SL LS	TP25 0'-10" 10'-20" 20'-69" ESHW: 41" HSG: A	A B C	L LS S	TP31 0'-32" 32'-96" 20'-69" ESHW: 42" HSG: A	FILL C	GLS	TP39 0'-14" 14'-37" 37'-66" ESHW: 36" HSG: C	A B C	SL SL LS	TP44 0'-10" 10'-35" 35'-52" 52'-76" ESHW: 35" HSG: C	A B C1 C2	SL SL SL LS	TP50 0'-12" 12'-25" 25'-67" ESHW: NONE HSG: B	A B C	SL SL LS	
TP4 0'-11" 11'-96" ESHW: 49" HSG: A	A C	L/O LS	TP12 0'-9" 9'-18" 18'-120" ESHW: 29" HSG: B	A B C	L LS MED. S	TP19 0'-8" 8'-20" 20'-120" ESHW: 50" HSG: A	A B C	L LS S	TP25A 0'-8" 8'-15" 15'-108" ESHW: 32" HSG: C	A B C	L SL LS	TP32 0'-14" 14'-20" 20'-88" ESHW: 30" HSG: C	A B C	SL SL SL	TP40 0'-14" 14'-30" 30'-59" 59'-98" ESHW: 28" HSG: C	A B C1 C2	SL SL S LS	TP45 0'-12" 12'-27" 27'-56" 56'-91" ESHW: N/A HSG: N/A	A B C1 C2	SL SL SL LS	TP51 0'-12" 12'-34" 34'-65" ESHW: 21" HSG: B/D	A B C	SL SL LS	
TP5 0'-12" 12'-109" ESHW: 41" HSG: A	A C	L/O LS	TP13 0'-13" 13'-28" 28'-135" ESHW: 43" HSG: B	A B C	L SL LS	TP20 0'-7" 7'-24" 24'-103" ESHW: 48" HSG: B	A B C	L SL LS	TP26 0'-10" 10'-18" 18'-75" ESHW: 49" HSG: B	A B C	L SL LS	TP33 0'-12" 12'-30" 30'-87" ESHW: 30" HSG: C	A B C	SL SL LS	TP40A 0'-14" 14'-23" 23'-80" ESHW: 40" HSG: C	A B C	SL SL S	TP46 0'-12" 12'-27" 27'-52" 52'-100" ESHW: 18" HSG: B/D	A B C1 C2	SL SL SL LS	TP52 0'-10" 10'-28" 28'-72" ESHW: 53" HSG: B	A B C	SL SL LS	
TP6 0'-11" 11'-20" 20'-99" ESHW: 26" HSG: C	A B C	L/O SL LS	TP14 0'-7" 7'-13" 13'-95" 95'-120" ESHW: 95" HSG: A	A B C1 C2	L LFS CS G	TP21 0'-9" 9'-24" 24'-102" ESHW: 43" HSG: A	A B C	L LS S	TP27 0'-8" 8'-25" 25'-48" 48'-110" ESHW: 30" HSG: C	A B C1 C2	L SL LS LS	TP34 0'-10" 10'-24" 24'-72" ESHW: 37" HSG: C	A B C	SL SL LS	TP41 0'-9" 9'-20" 20'-88" ESHW: 45" HSG: B	A B C	SL SL S	TP46 0'-12" 12'-27" 27'-52" 52'-100" ESHW: 18" HSG: B/D	A B C1 C2	SL SL SL LS	TP53 0'-10" 10'-32" 32'-78" ESHW: 32" HSG: C	A B C	SL SL LS	
TP7 0'-7" 7'-122" ESHW: 40" HSG: B	A C	L LS																						

REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
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8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

**SITE
 PLAN**

**DETAIL SHEET
 5 OF 20**

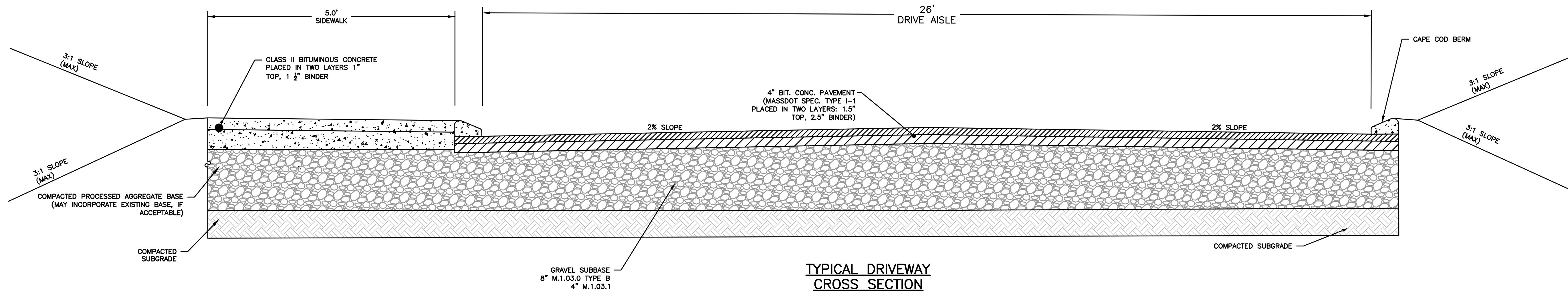
DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE
	C.78



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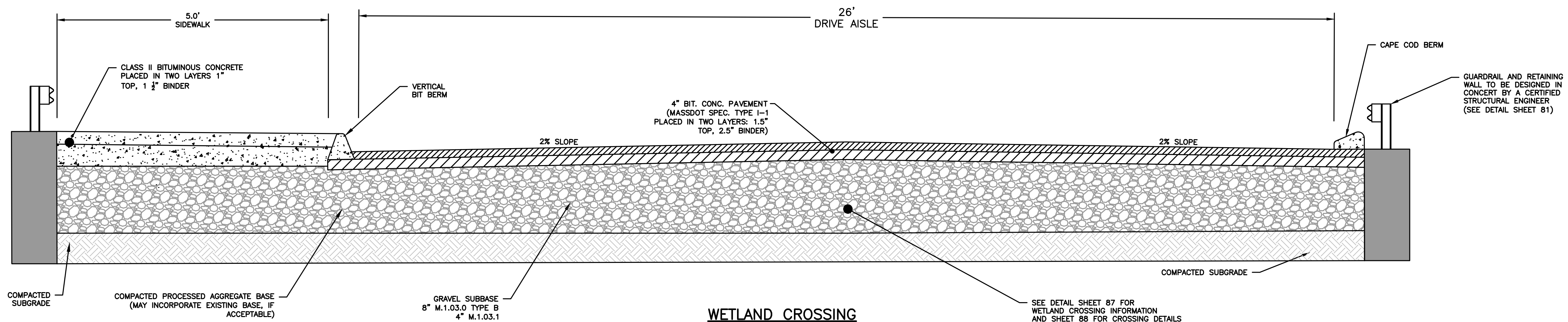
PROPOSED MULTIFAMILY
 DEVELOPMENT
 SUMMER STREET
 WALPOLE, MA



**TYPICAL DRIVEWAY
 CROSS SECTION**
 NOT TO SCALE
 NOTE: SIDEWALK SHALL HAVE A CROSS SLOPE
 OF 1.6% WITH A MAX OF 2.0%

REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
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WETLAND CROSSING
 NOT TO SCALE
 NOTE: SIDEWALK SHALL HAVE A CROSS SLOPE
 OF 1.6% WITH A MAX OF 2.0%

SEE DETAIL SHEET 87 FOR
 WETLAND CROSSING INFORMATION
 AND SHEET 88 FOR CROSSING DETAILS

SITE
 PLAN

DETAIL SHEET
 6 OF 20

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE

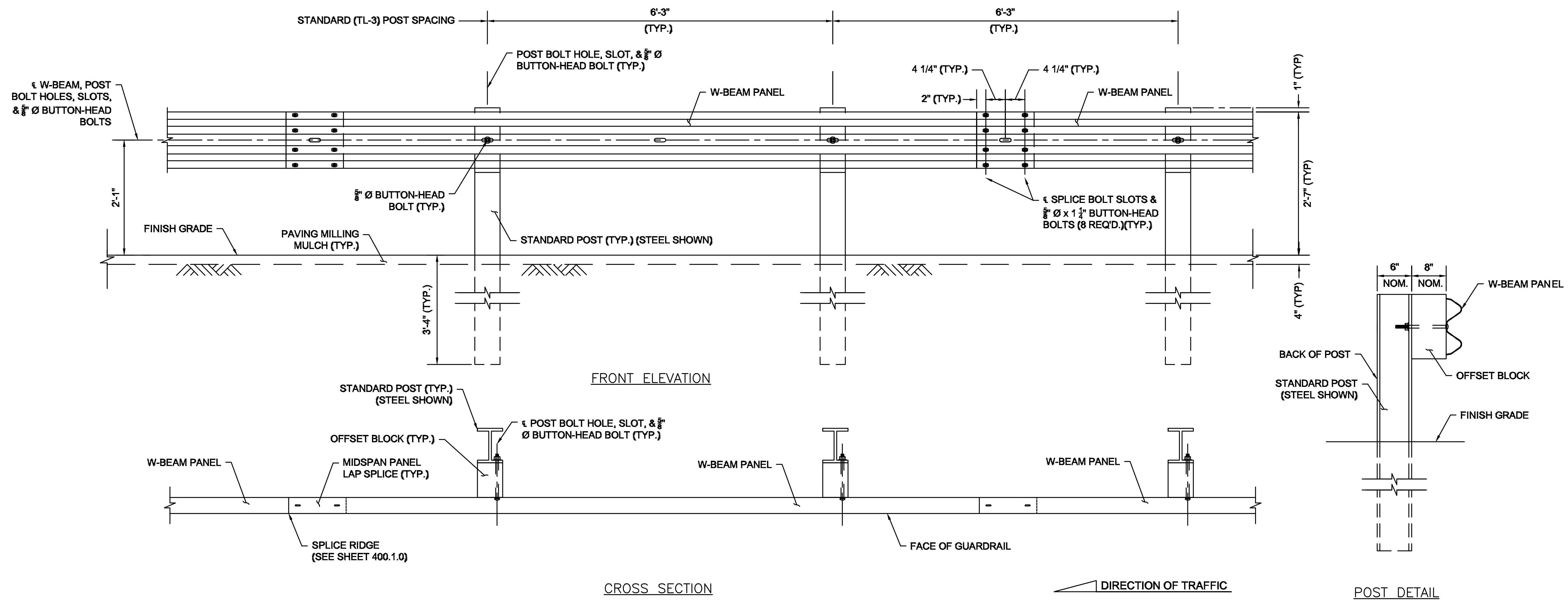
C.79



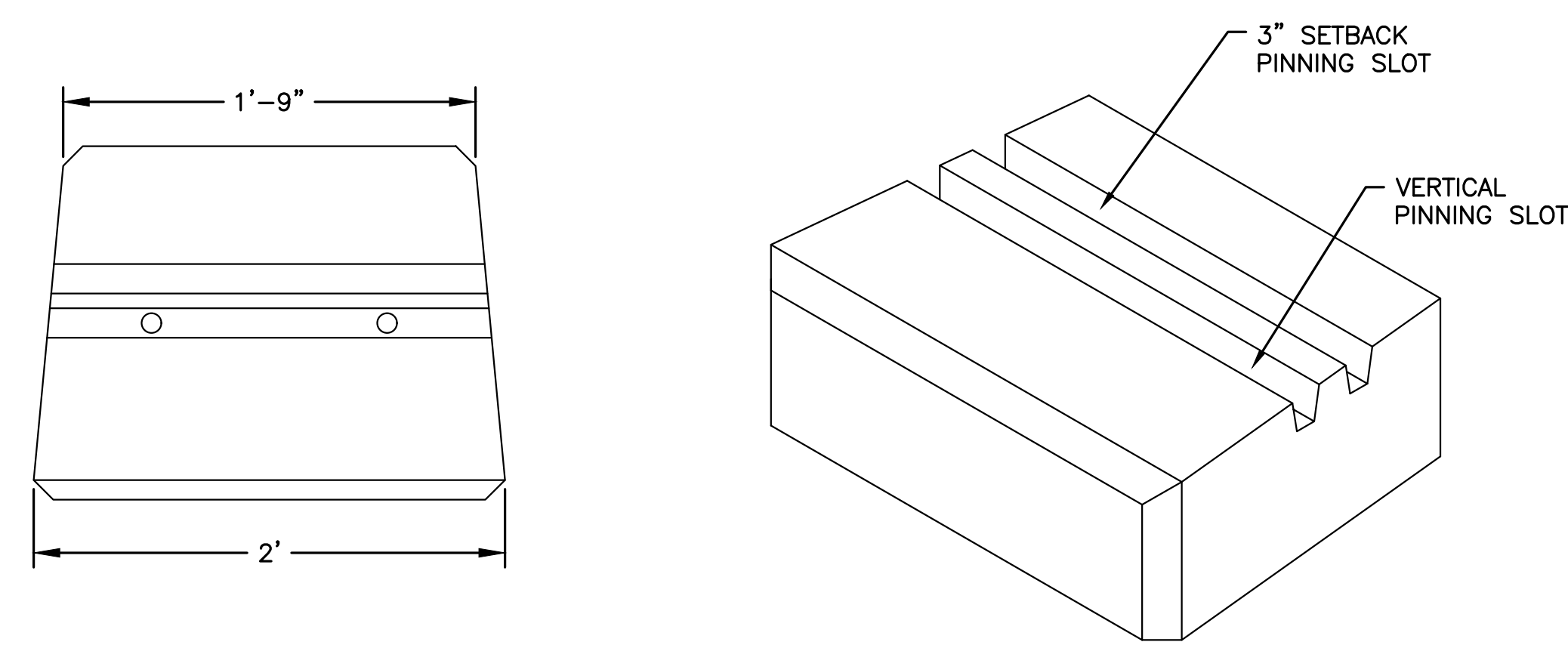
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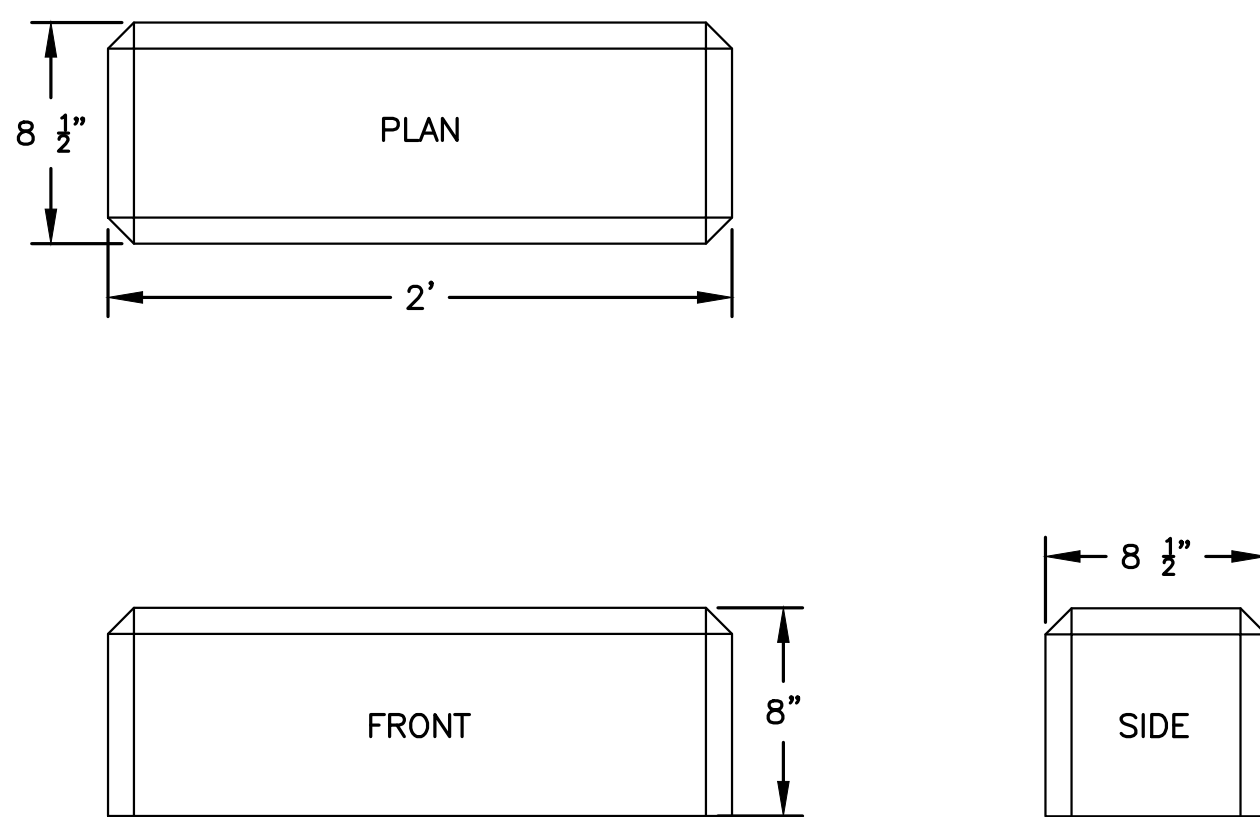
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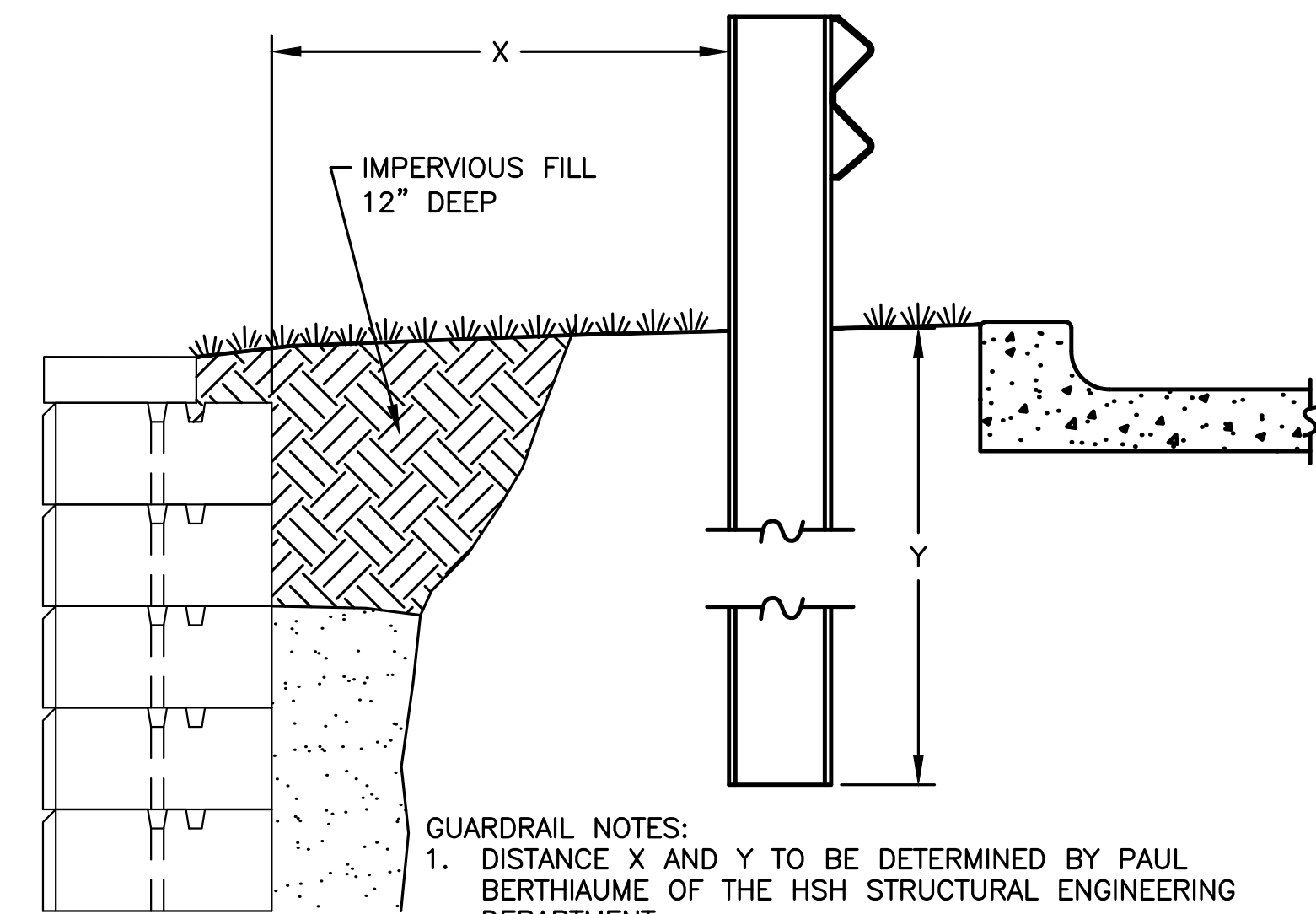
STEEL GUARDRAIL DETAIL
 NOT TO SCALE



VERSA-LOK BRUTE UNIT
 NOT TO SCALE



VERSA-LOK BRUTE HALF UNIT
 NOT TO SCALE



- GUARDRAIL NOTES:**
1. DISTANCE X AND Y TO BE DETERMINED BY PAUL BERTHIAUME OF THE HSH STRUCTURAL ENGINEERING DEPARTMENT.
 2. PAUL BERTHIAUME, PE TO WORK WITH THE MANUFACTURER, OR DESIGN A SIMILAR WALL, TO DETERMINE THE FINAL SIZE, HEIGHT, STRUCTURAL COMPONENTS, LOCATION OF GUARDRAIL, ETC OF THE RETAINING WALLS SO THAT THEY FIT WITHIN THE CONSTRAINTS SHOWN WITHIN THE LAYOUT AND MATERIAL AND THE GRADING AND DRAINAGE PLANS
 3. GUARDRAIL TO BE SPECIFICALLY SELECTED FOR ENGINEERED RETAINING WALL

NOT FOR CONSTRUCTION

RETAINING WALL AND GUARDRAIL CUT SECTION DETAIL
 NOT TO SCALE

- NOTES:**
1. ALL LOCATIONS, DIMENSIONS, MATERIALS OF RETAINING WALL AND GUARDRAIL TO BE DESIGNED AND DETERMINED BY A STRUCTURAL ENGINEER BASED ON THE CRITERIA LISTED WITHIN THE GRADING AND DRAINAGE AND LAYOUT AND MATERIAL PLANS.
 2. RETAINING WALL AND GUARDRAIL TO BE DESIGNED IN CONCERT.

REVISIONS:			
NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
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10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

DETAIL SHEET
 8 OF 20

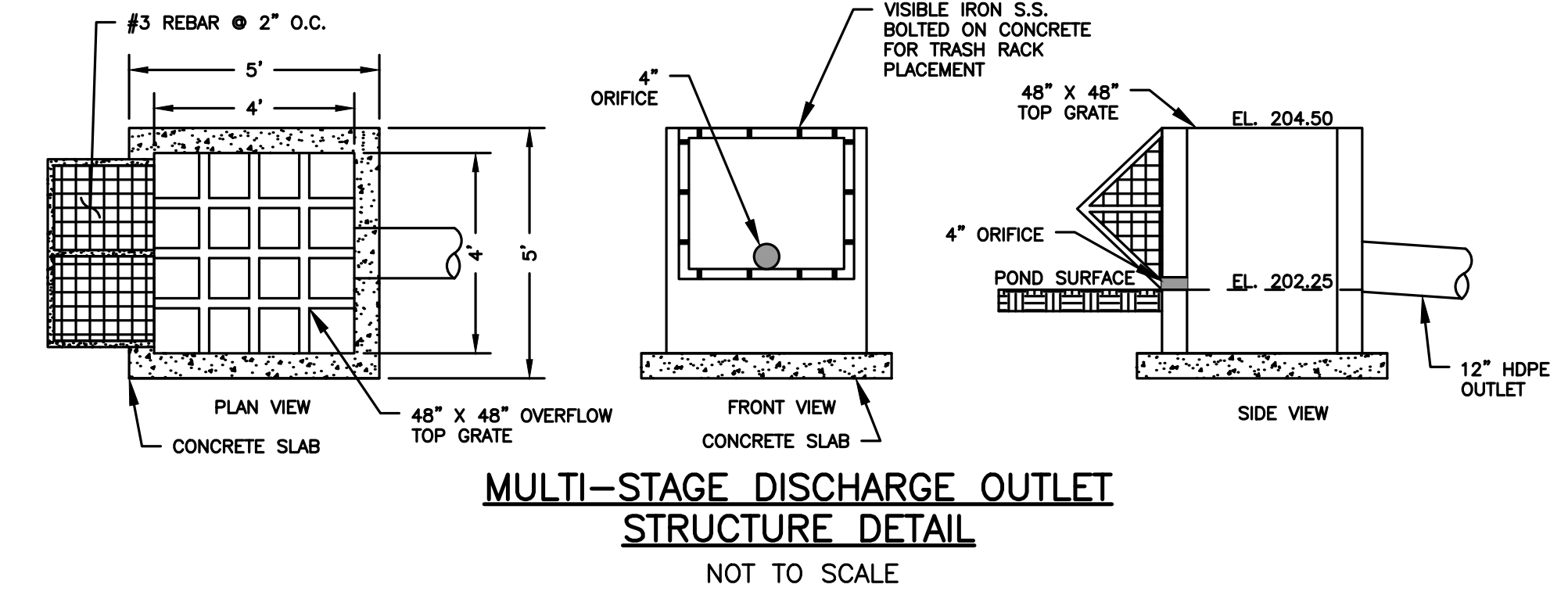
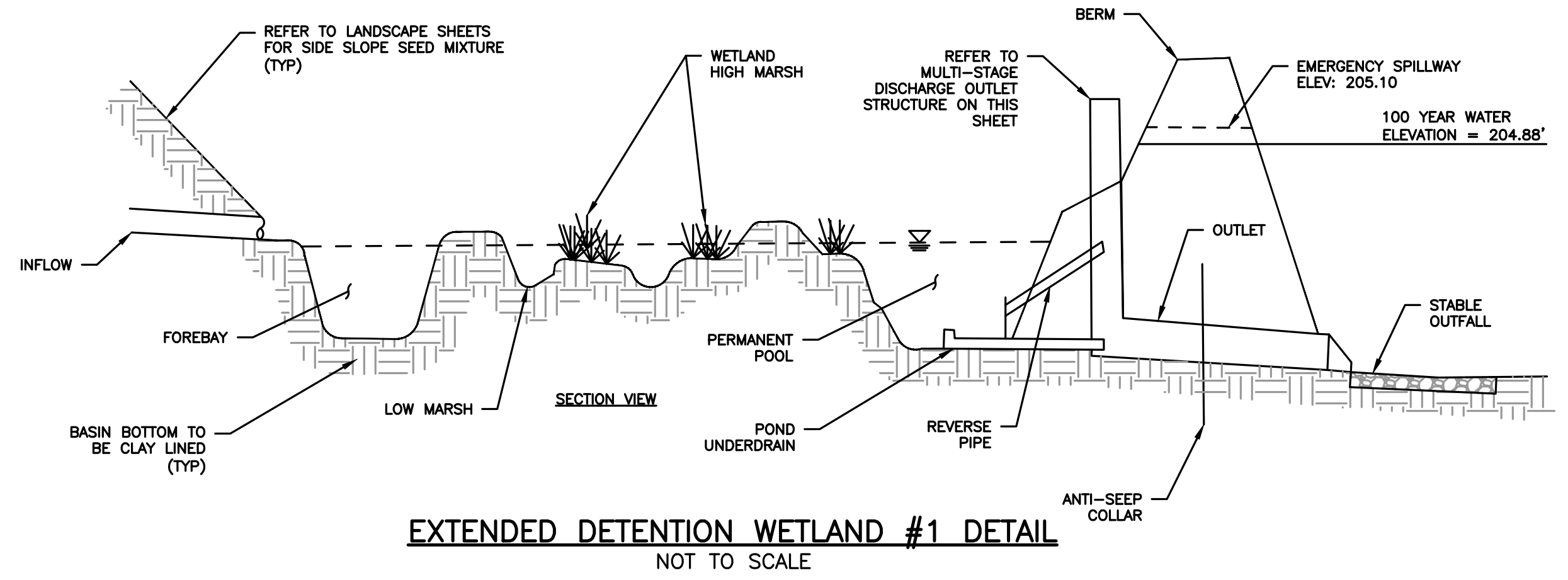
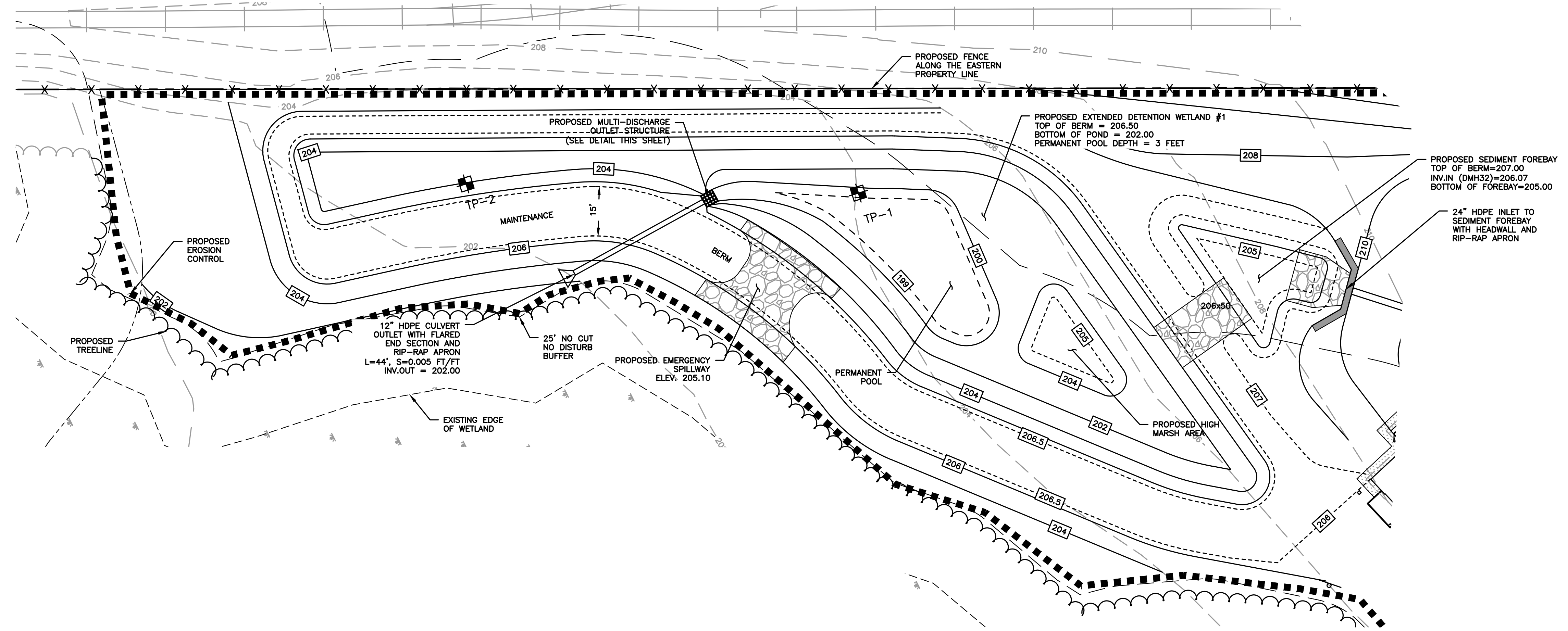
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DRAWN BY:	PB/KF
CHECKED BY:	KE
	C.81



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

PREPARED FOR:
55 BH LLC
 6 LYBERRY WAY, SUITE 203
 WESTFORD, MA 01886

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



REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
5	PB	12/16/20	EMERGENCY ACCESS
6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

DETAIL SHEET
 9 OF 20

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE

C.82



HOWARD STEIN HUDSON
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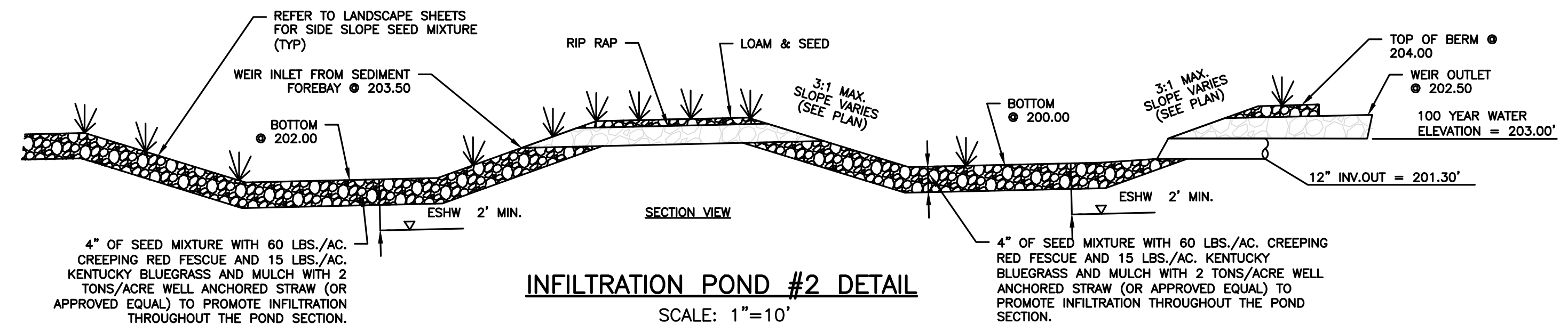
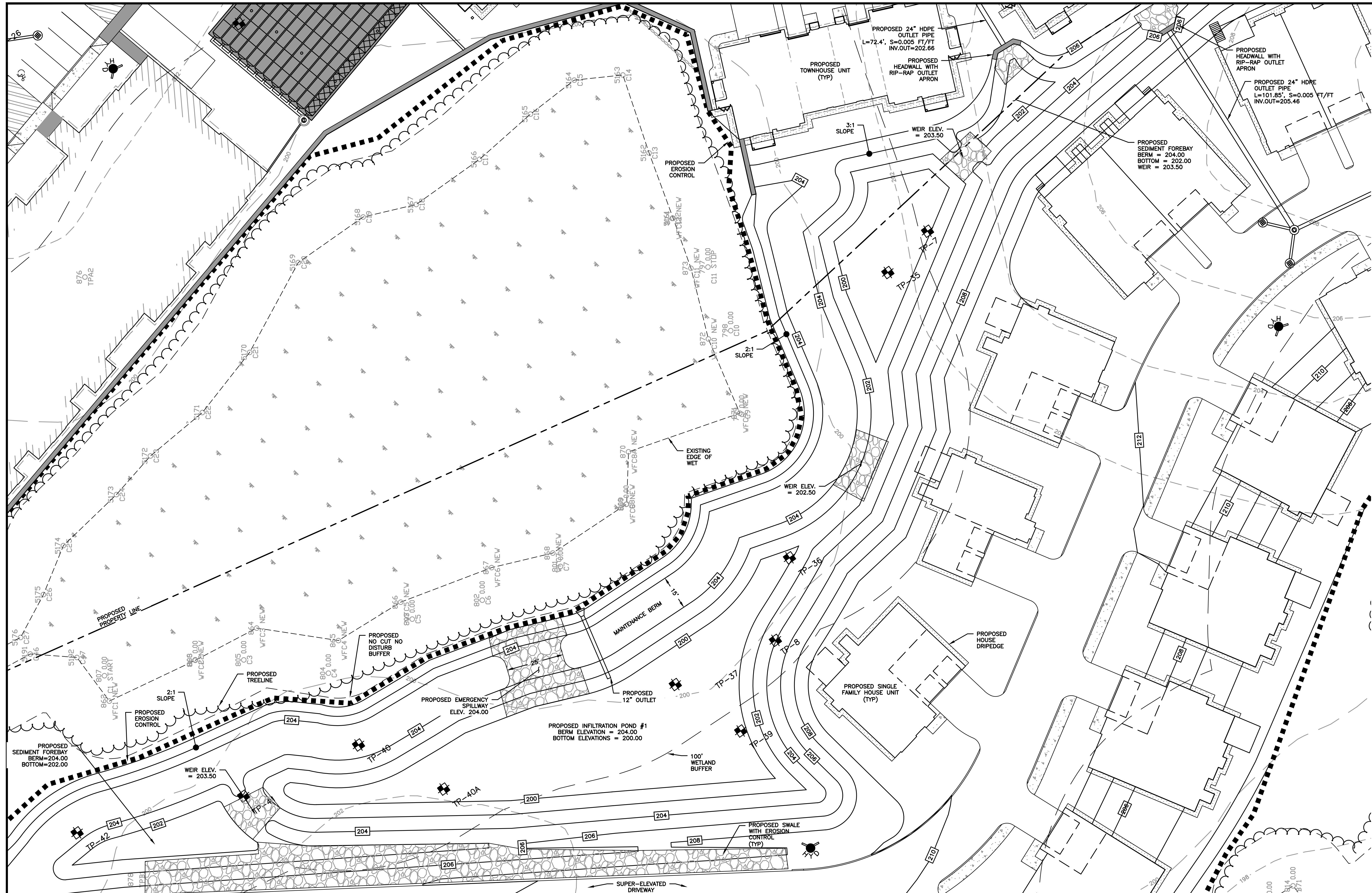
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 10 OF 20

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CHECKED BY:	KE

C.83

SHEET 83 OF 93



4" OF SEED MIXTURE WITH 60 LBS./AC. CREEPING RED FESCUE AND 15 LBS./AC. KENTUCKY BLUEGRASS AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW (OR APPROVED EQUAL) TO PROMOTE INFILTRATION THROUGHOUT THE POND SECTION.

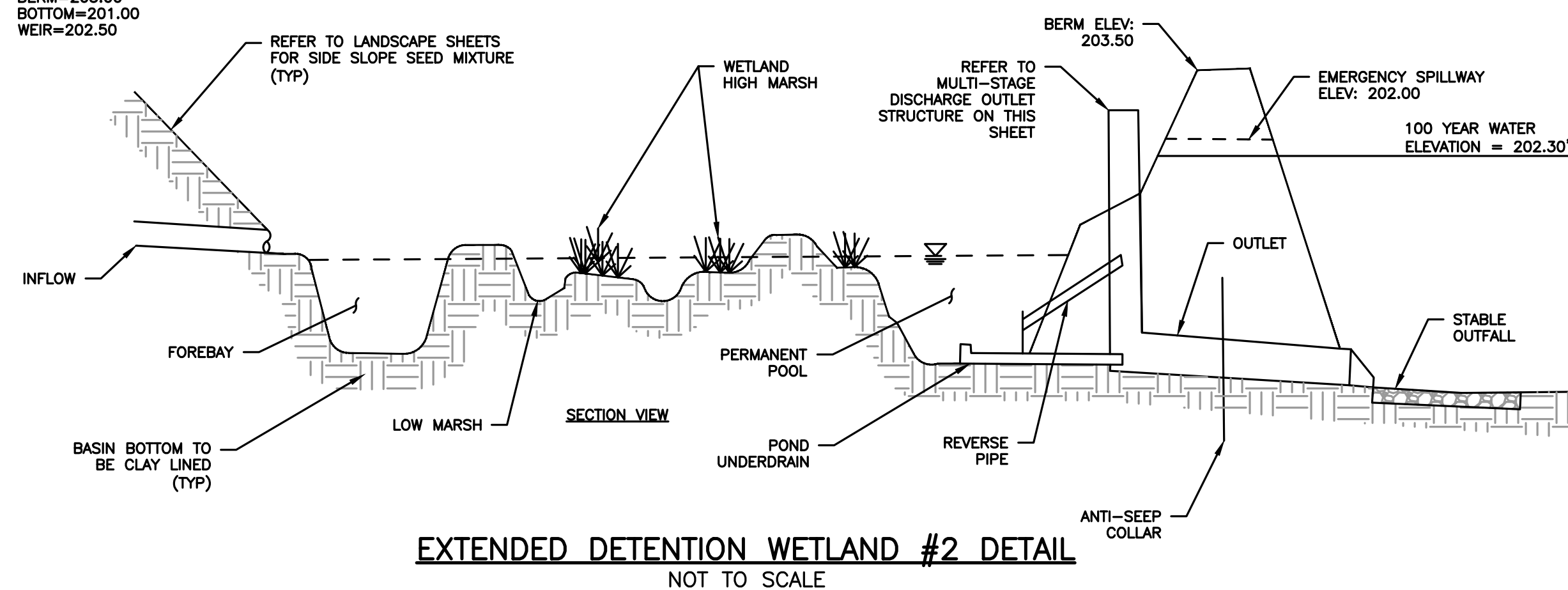
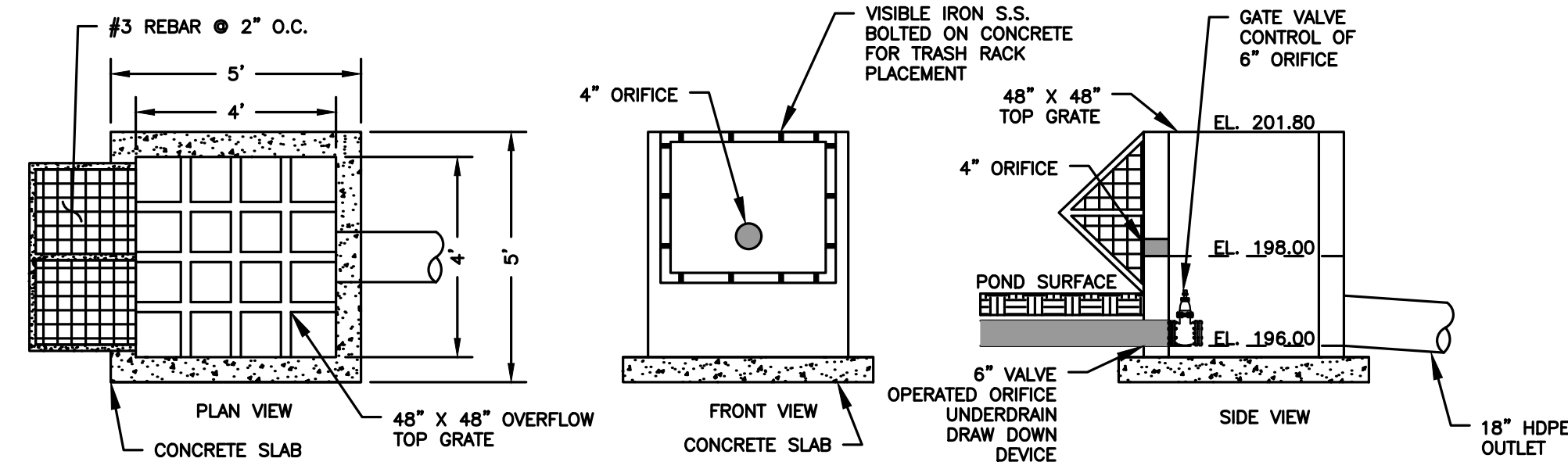
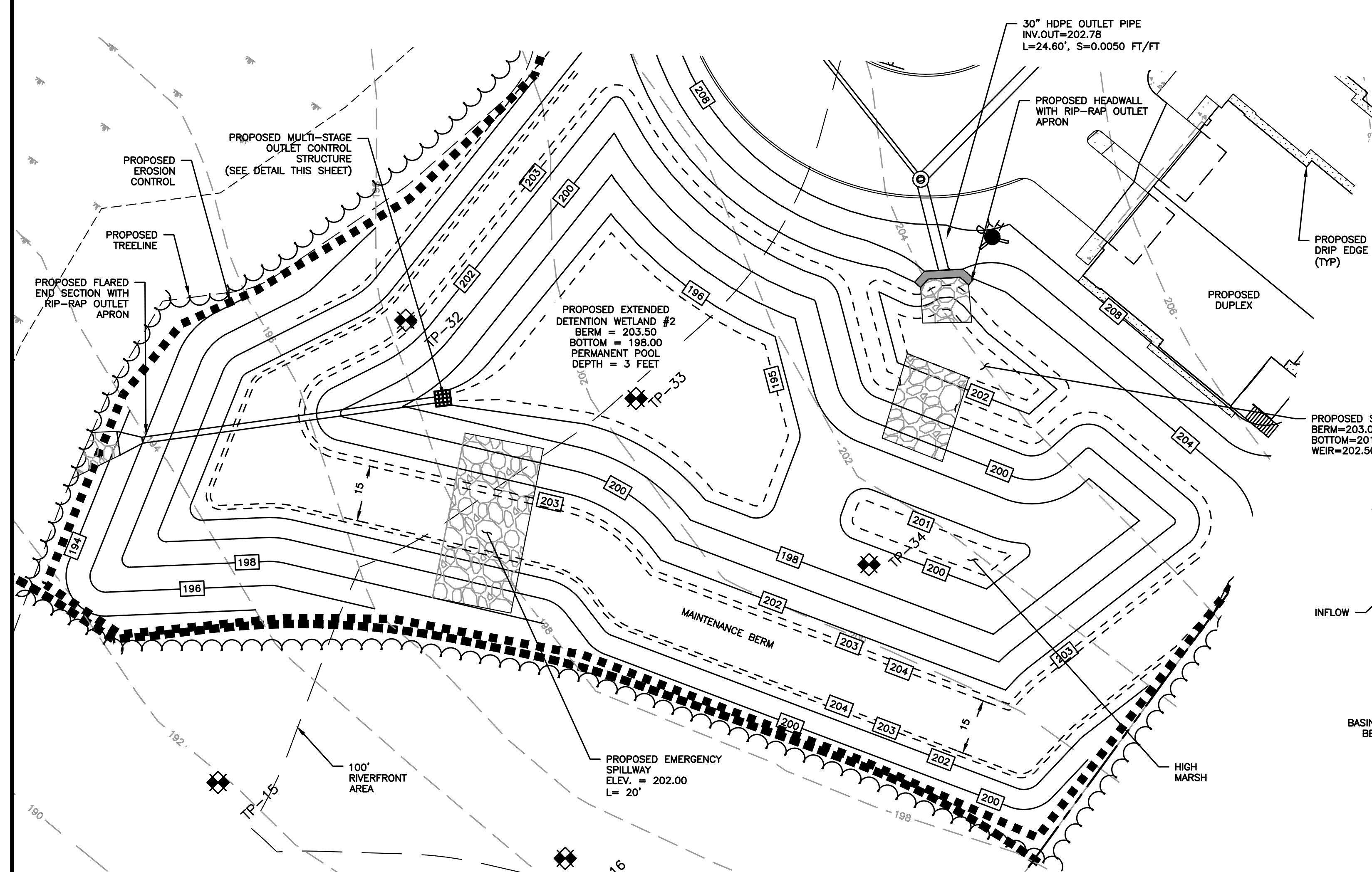
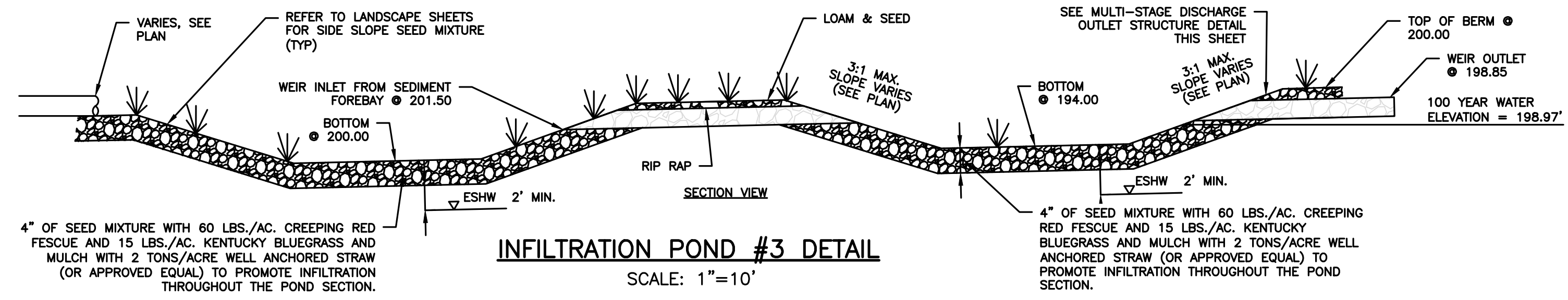
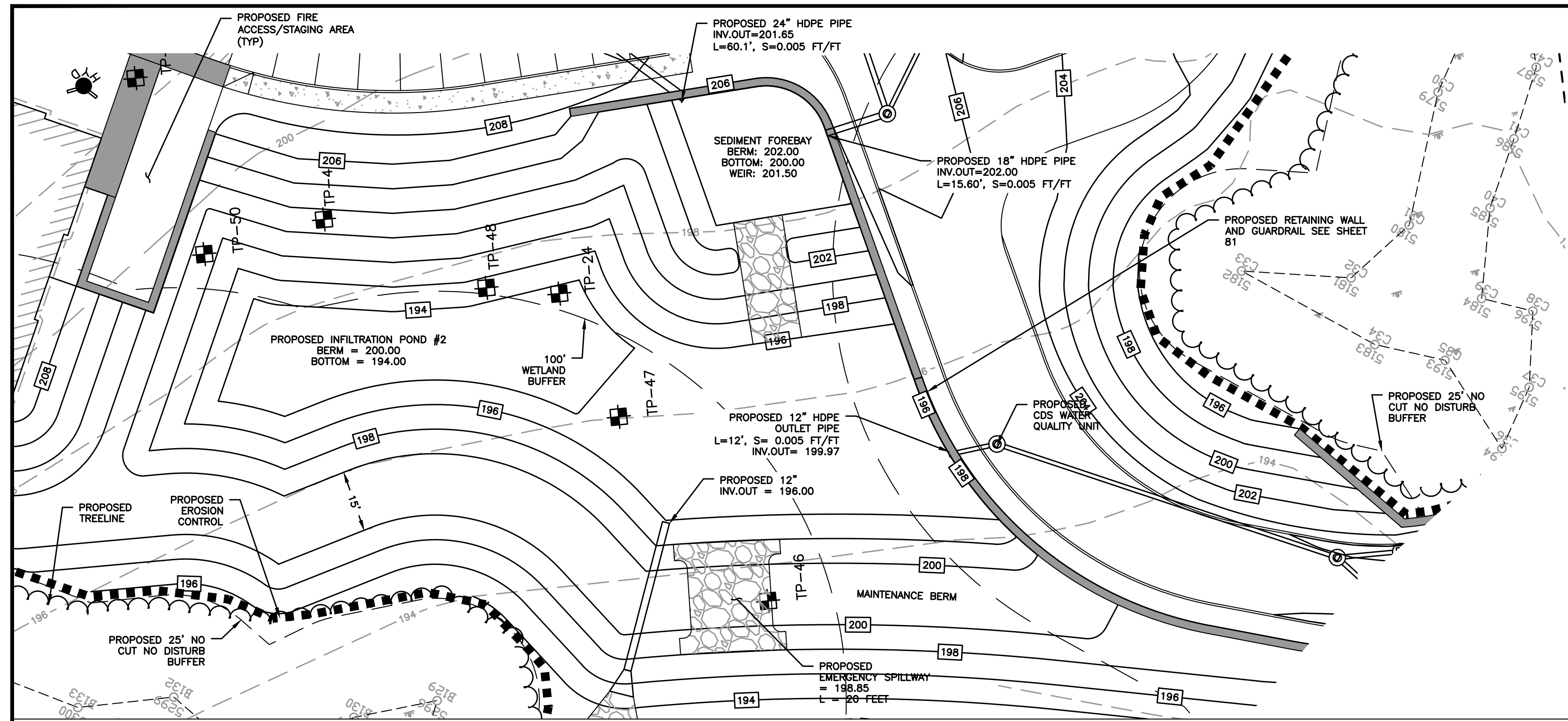
4" OF SEED MIXTURE WITH 60 LBS./AC. CREEPING RED FESCUE AND 15 LBS./AC. KENTUCKY BLUEGRASS AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW (OR APPROVED EQUAL) TO PROMOTE INFILTRATION THROUGHOUT THE POND SECTION.



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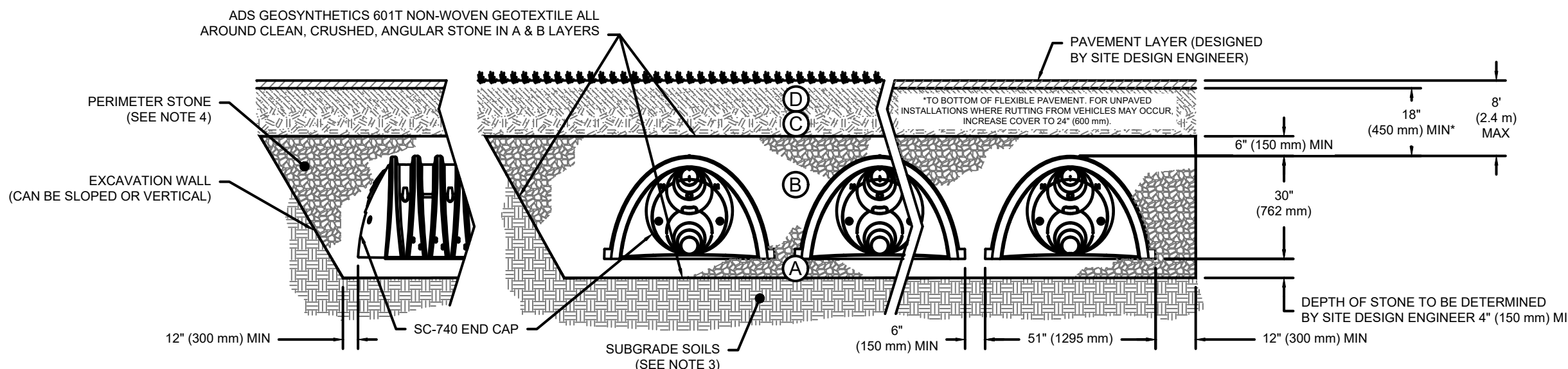
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DRAWN BY:	PB/KF
CHECKED BY:	KE
	C.84
	SHEET 84 OF 93

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, 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.

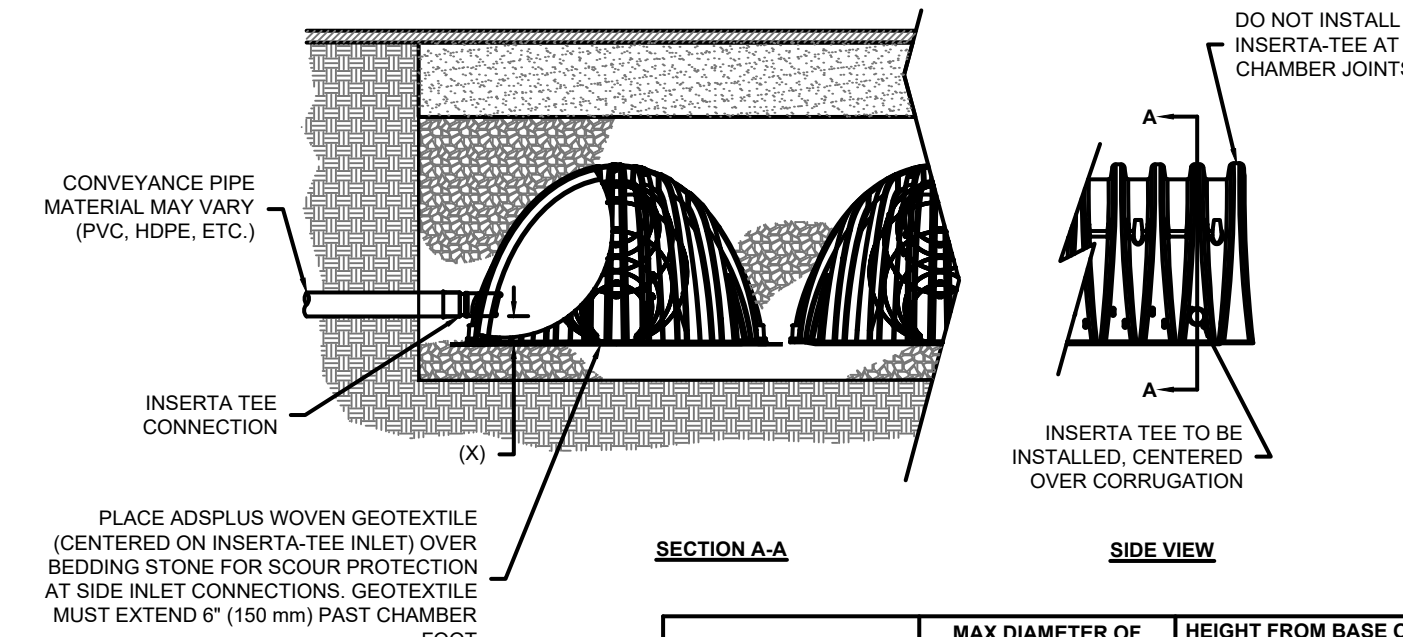


NOTES:

- 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, 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.

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, 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.



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)

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 INSTALLERS.
- 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 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 3/4-2" (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 "FLEXFORM CATCH IT" SYSTEMS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEMS FROM CONSTRUCTION SITE RUNOFF.

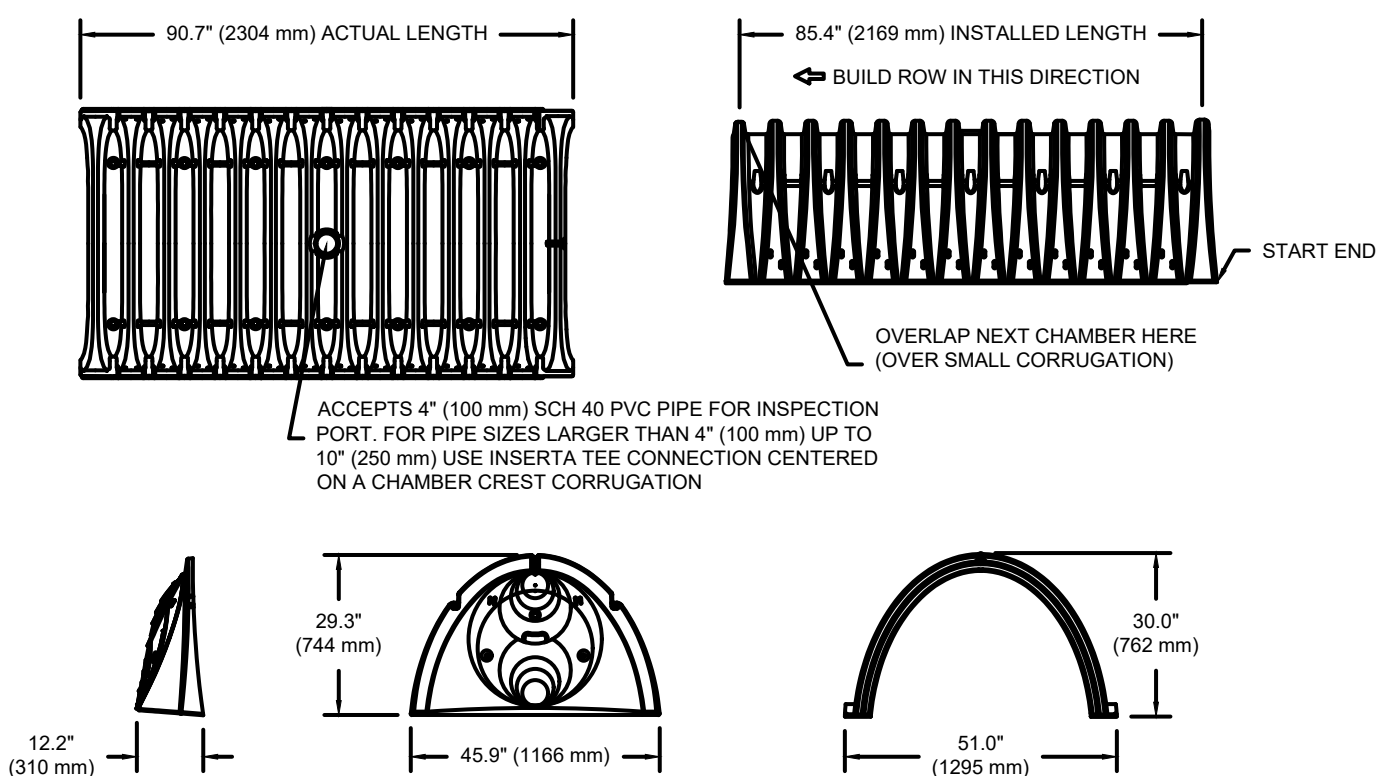
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-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	51.0" X 30.0" X 85.4" (1300 mm)	(1295 mm X 762 mm X 2169 mm)
SIZE (W X H X INSTALLED LENGTH)	45.9 CUBIC FEET (1.30 m³)	45.9 CUBIC FEET (1.30 m³)
CHAMBER STORAGE	74.9 CUBIC FEET (2.12 m³)	74.9 CUBIC FEET (2.12 m³)
MINIMUM INSTALLED STORAGE*	75.0 lbs. (33.6 kg)	75.0 lbs. (33.6 kg)

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

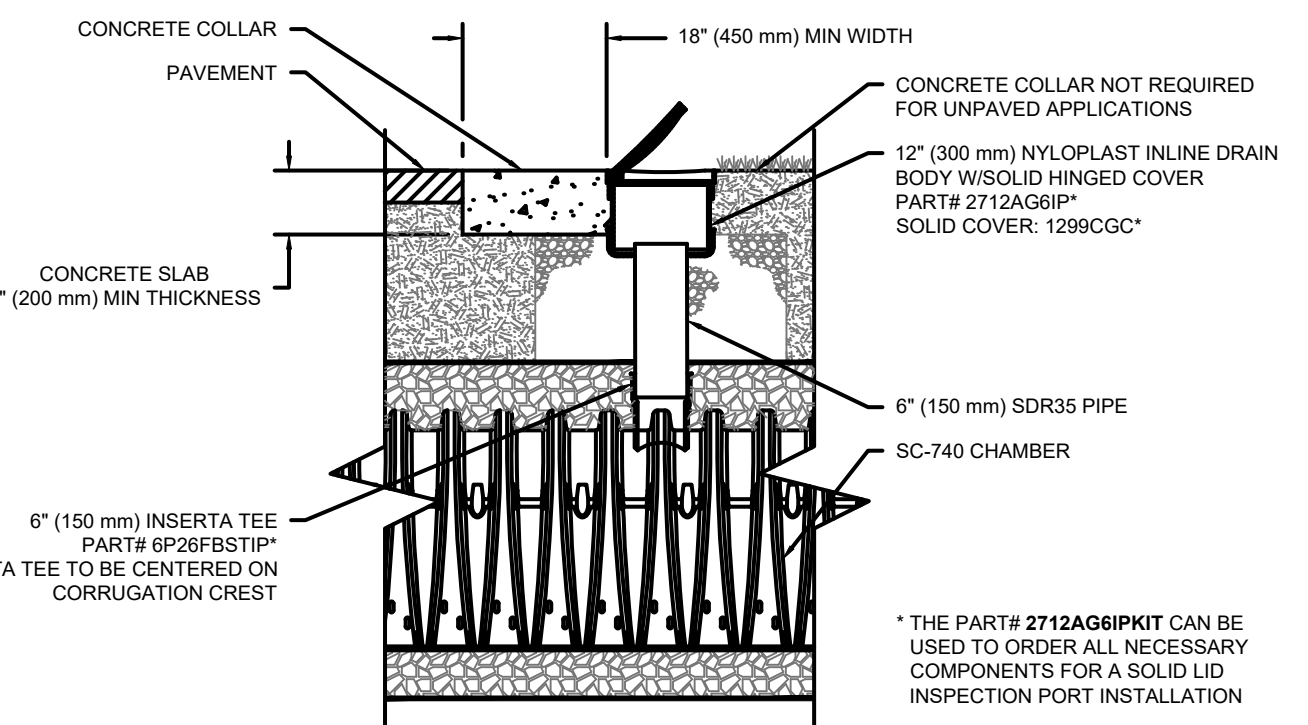
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

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

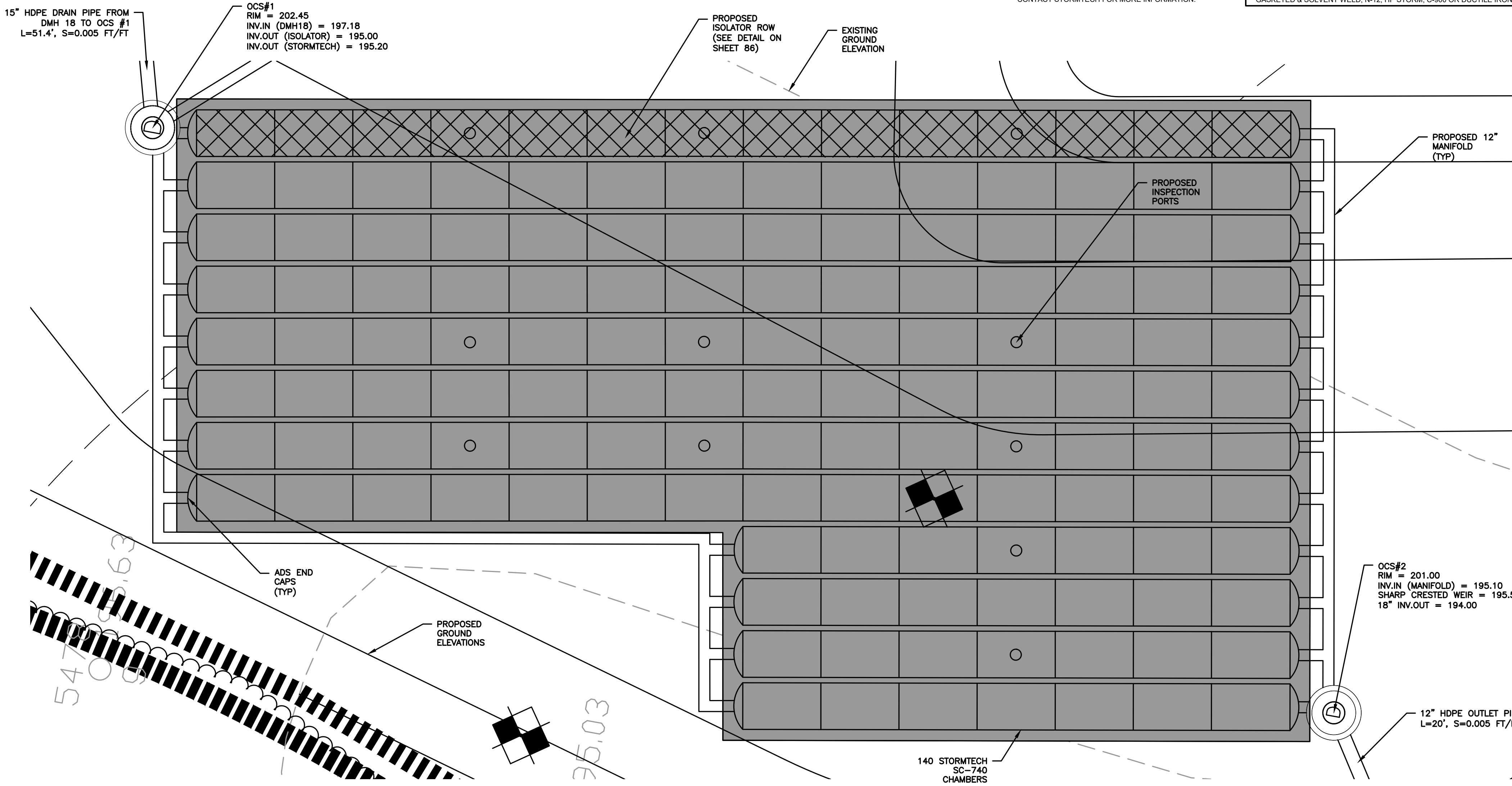
ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

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

NOTE: ALL DIMENSIONS ARE NOMINAL



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



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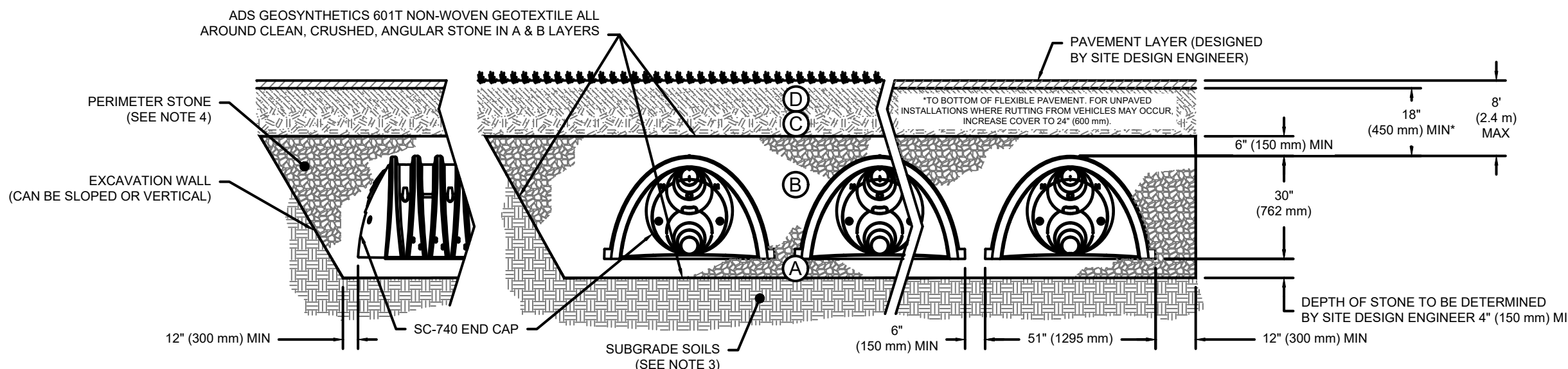
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ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

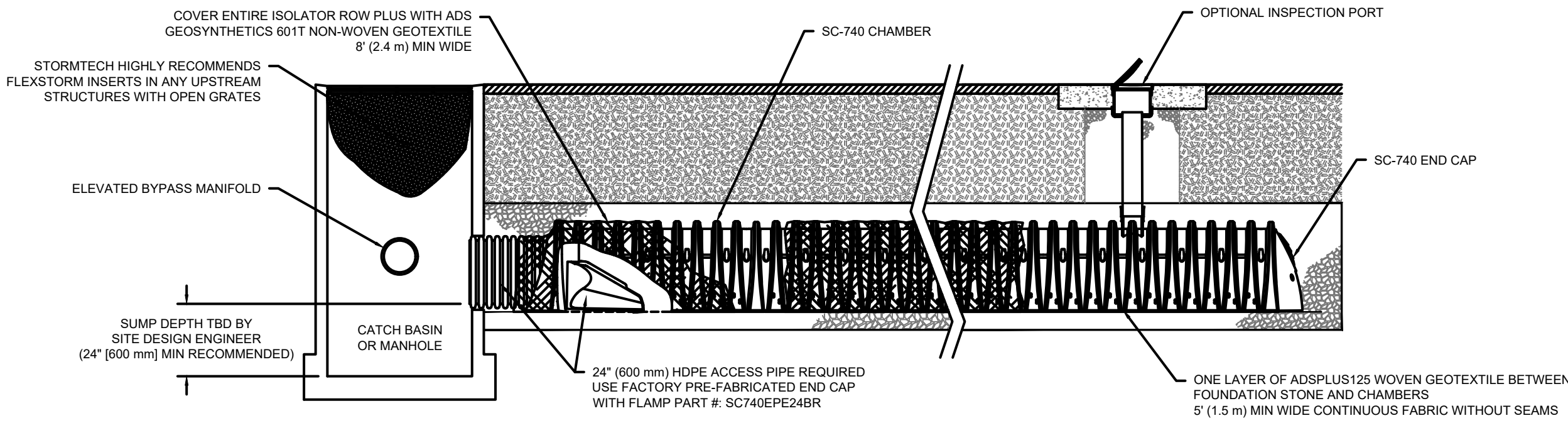
MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A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

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 - 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, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 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.



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 LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROW 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 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.

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, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 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-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 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.

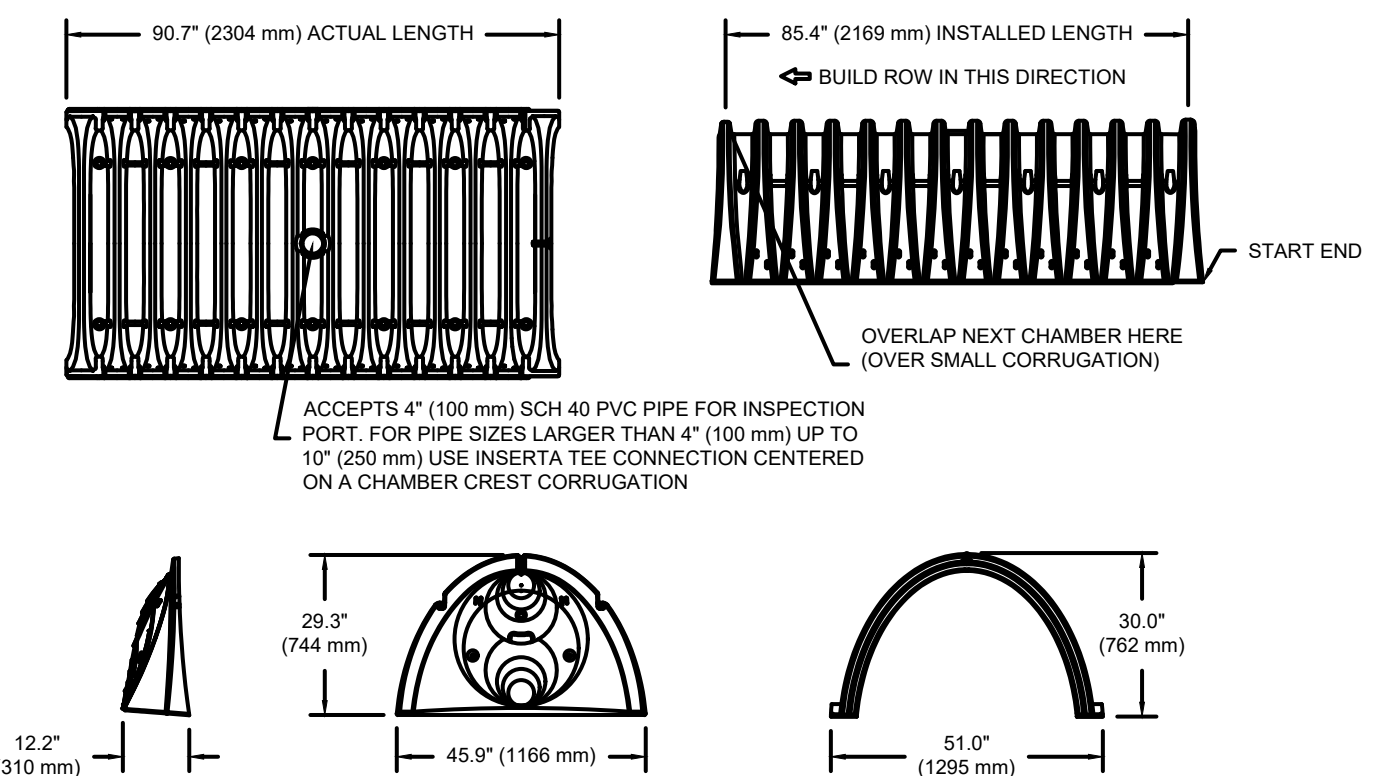
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-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)	45.9" (1166 mm)	51.0" X 30.0" X 85.4" (1130 mm)	1295 mm X 762 mm X 2169 mm
CHAMBER STORAGE*	45.9 CUBIC FEET (1.30 m ³)	74.9 CUBIC FEET (2.12 m ³)	75.0 CUBIC FEET (2.12 m ³)
MINIMUM INSTALLED STORAGE*	75.0 lbs.	75.0 lbs.	75.0 lbs.

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

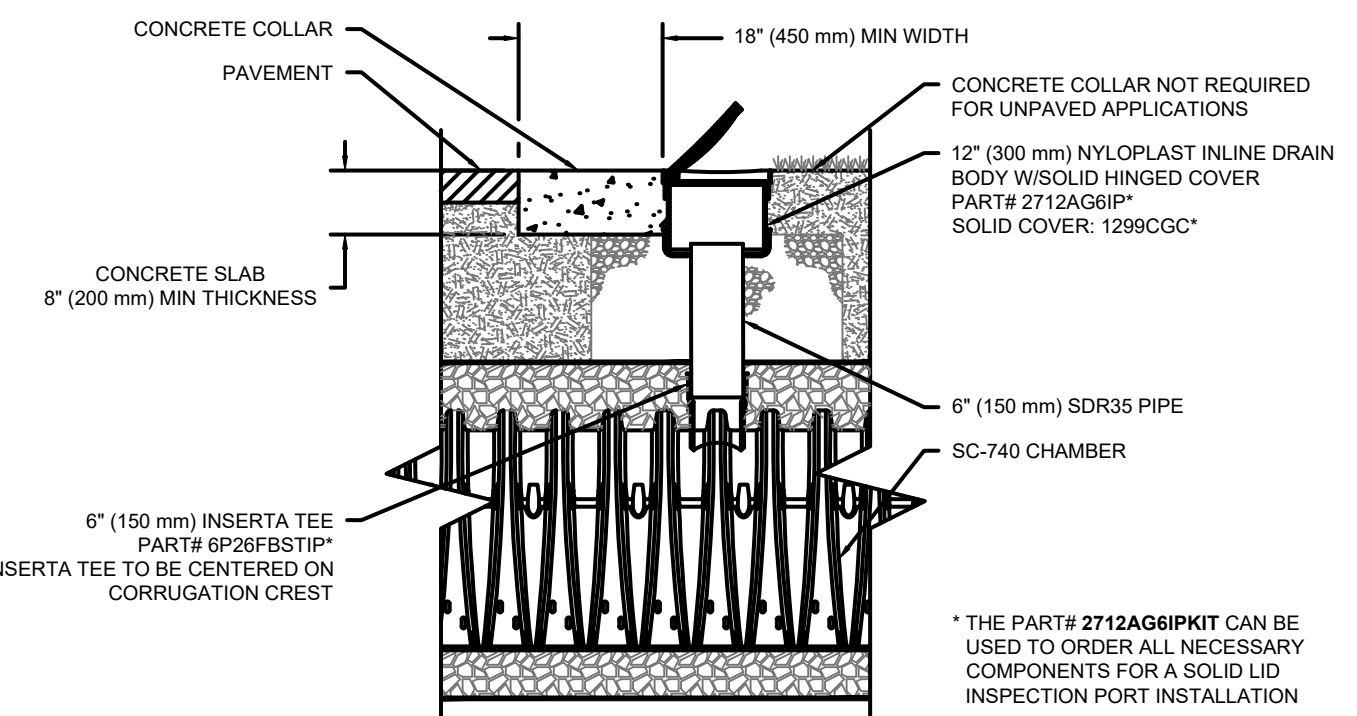
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC	---	---	---	0.5" (13 mm)
SC740EPE09T / SC740EPE09TPC	9" (229 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE09B / SC740EPE09BPC	---	---	---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC	---	---	---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC	---	---	---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC	---	---	---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC	---	---	---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

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

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

NOTE: ALL DIMENSIONS ARE NOMINAL



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

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

PREPARED FOR:

56 BH LLC
6 LYBERTY WAY, SUITE 203
WESTFORD, MA 01886

PROPOSED MULTIFAMILY
DEVELOPMENT
SUMMER STREET
WALPOLE, MA

REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
5	PB	12/16/20	EMERGENCY ACCESS
6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

SITE PLAN

DETAIL SHEET
13 OF 20

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE

C.86

NOTE:

1. THE ELEVATIONS DEPICTED ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (N.A.V.D.) OF 1988(USFT).
2. THE HORIZONTAL LOCATIONS ARE BASED ON THE MASSACHUSETTS COORDINATE SYSTEM, MAINLAND ZONE, NAD83.
3. THIS PLAN IS INTENDED TO SUPPORT AN APPLICATION TO THE WALPOLE CONSERVATION COMMISSION AND MASSDEP FOR A NOTICE OF INTENT.
4. THESE CULVERT DESIGNS HAVE BEEN PREPARED IN ACCORDANCE WITH THE MASSACHUSETTS STREAM CROSSING STANDARDS HANDBOOK BY THE DIVISION OF ECOLOGICAL RESTORATION 2ND ADDITION DATED JUNE 2012.

GENERAL CONSTRUCTION SEQUENCE

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

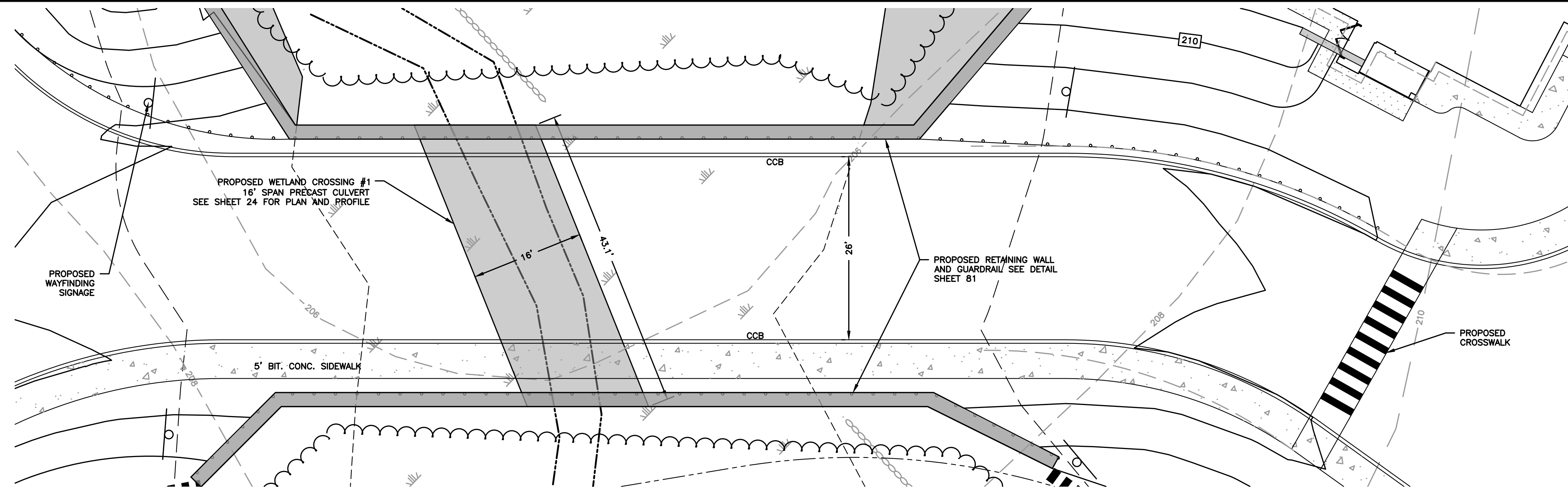
DEWATERING CONTROLS

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

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

PRECAUTIONS:

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

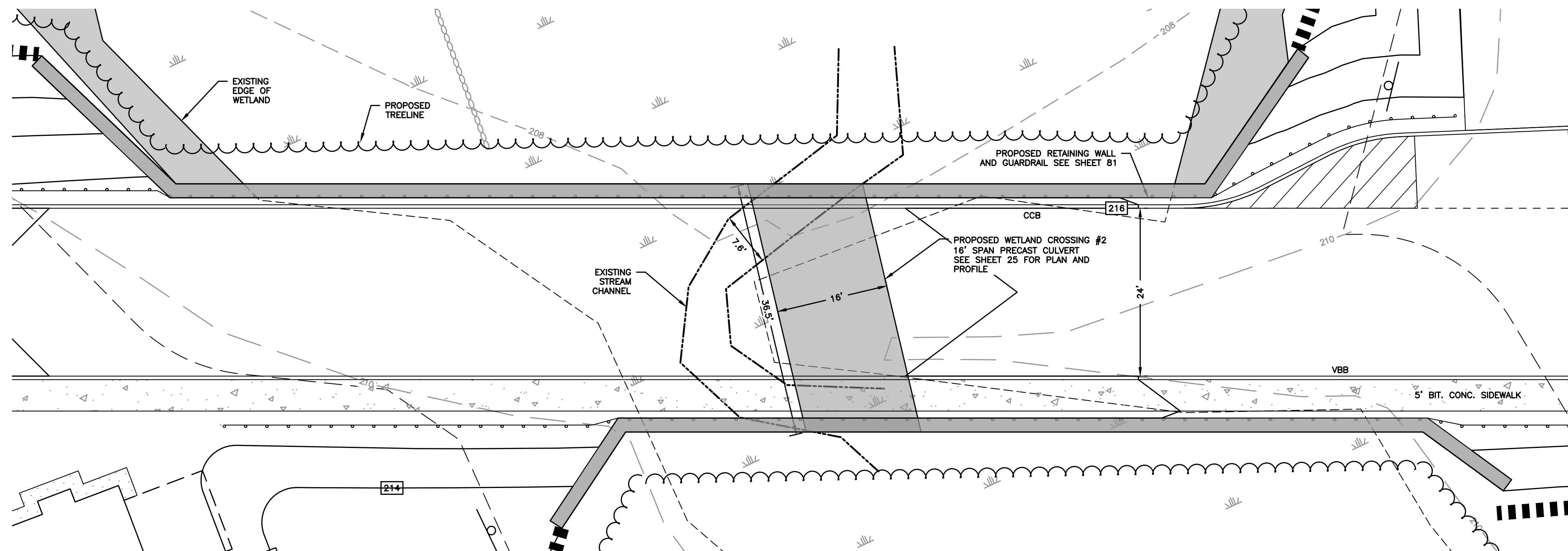


WETLAND CROSSING 1 DETAIL

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 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 2 DETAIL

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 36.5 FEET THEREFORE THE MINIMUM CROSS SECTIONAL AREA IS 29.9 FT² ~ 30 FT². THEREFORE MINIMUM INTERNAL OPEN HEIGHT SHALL BE 2.5 FT. 5 FT HEIGHT PROVIDED

PREPARED FOR:

55 BH LLC
6 LYBERTY WAY, SUITE 203
WESTFORD, MA 01886

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

REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
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6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

**SITE
PLAN**

**DETAIL SHEET
14 OF 20**

DATE: JANUARY 10, 2020

PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

DRAWN BY: PB/KF

CHECKED BY: KE

C.87



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 WESTFORD, MA 01886

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

REVISIONS:

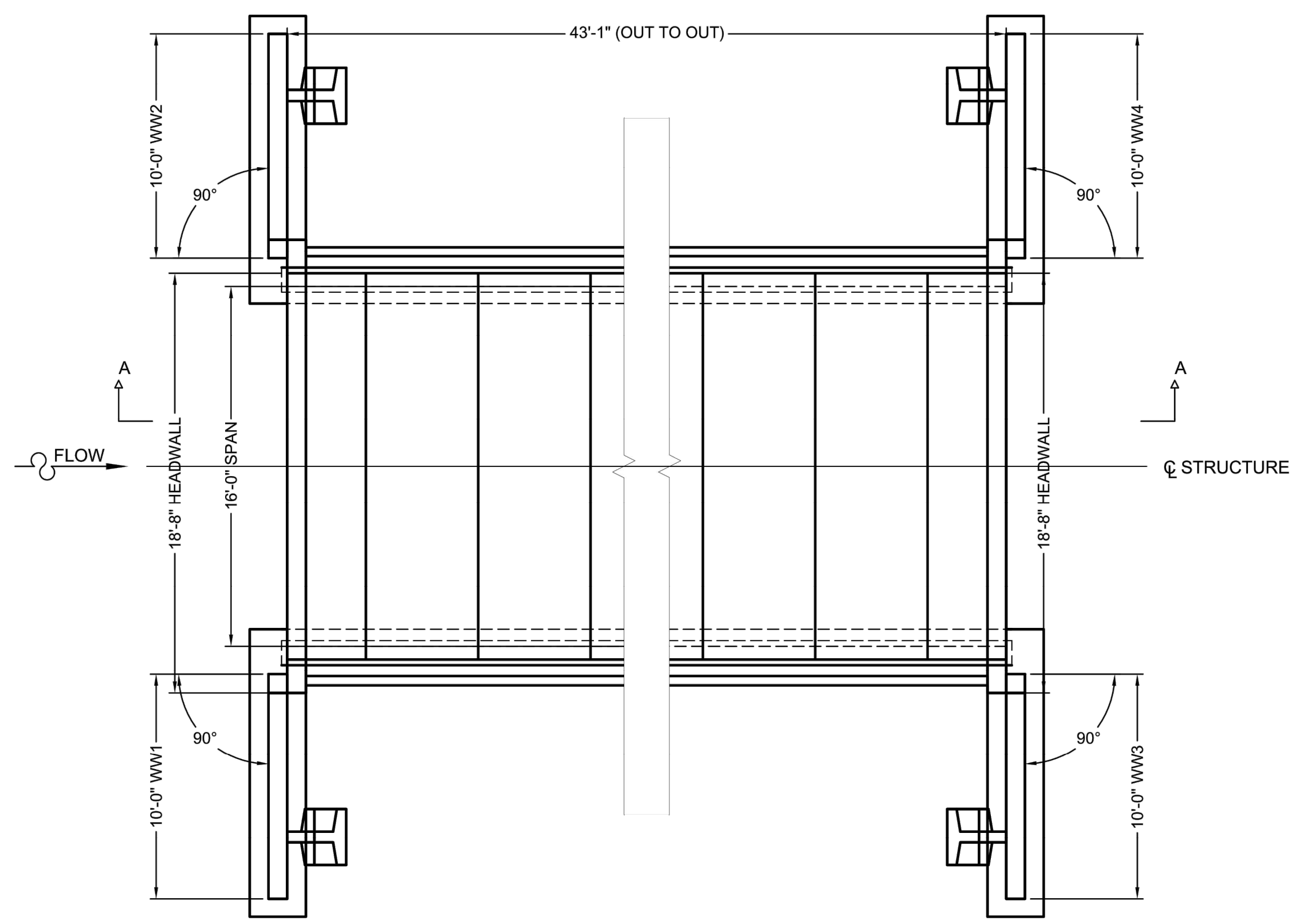
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 PLAN

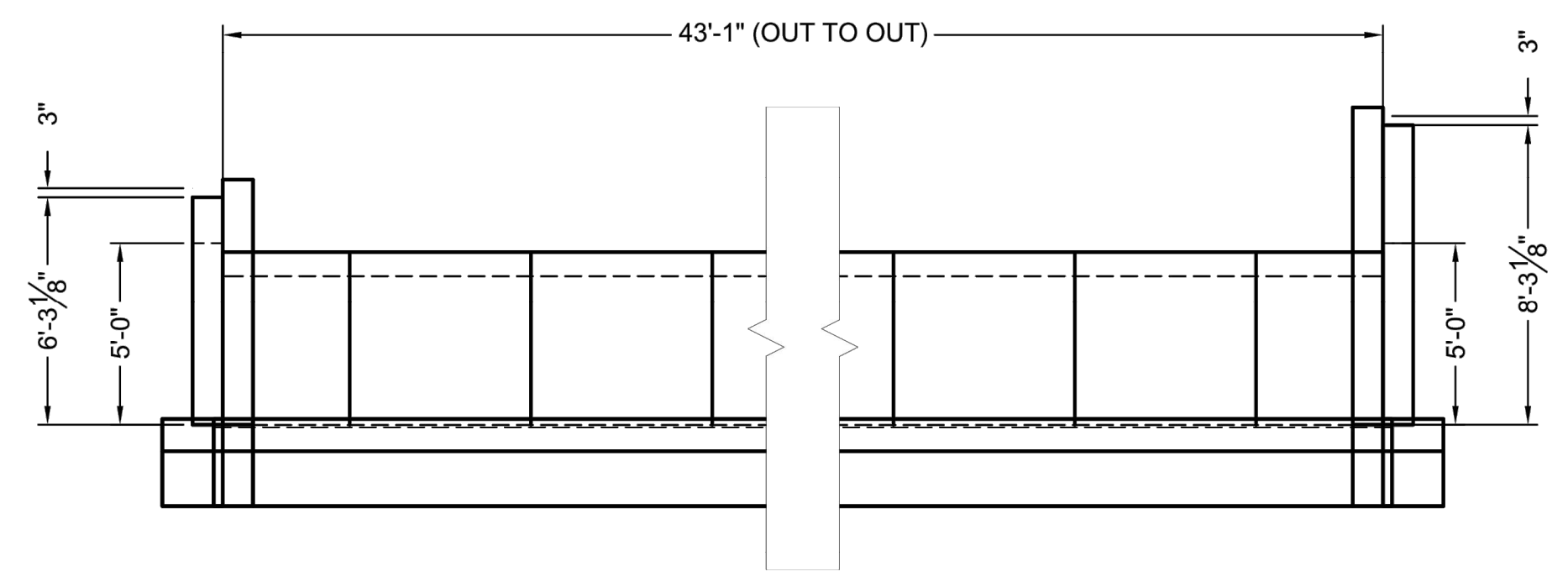
DETAIL SHEET
 15 OF 20

DATE:	JANUARY 10, 2020
PROJECT NUMBER:	19097
DESIGNED BY:	PB/KE/KF
DRAWN BY:	PB/KF
CHECKED BY:	KE

C.88

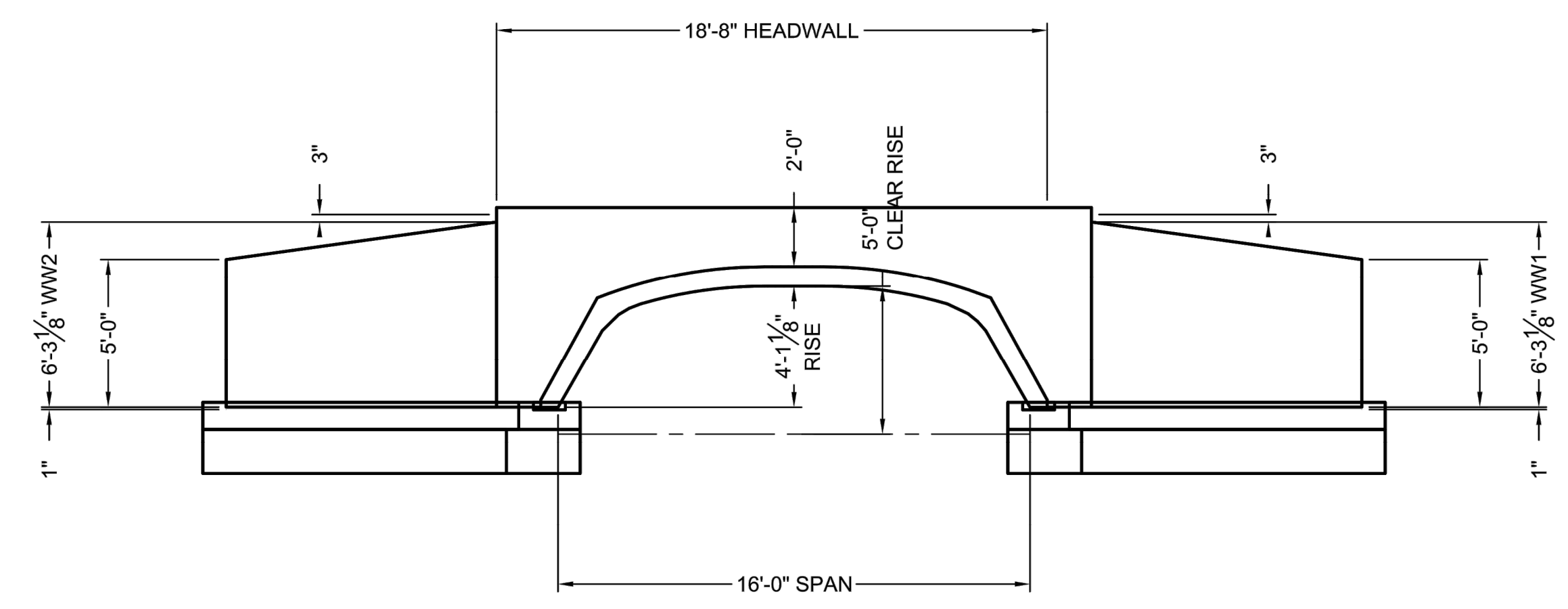


BRIDGE PLAN

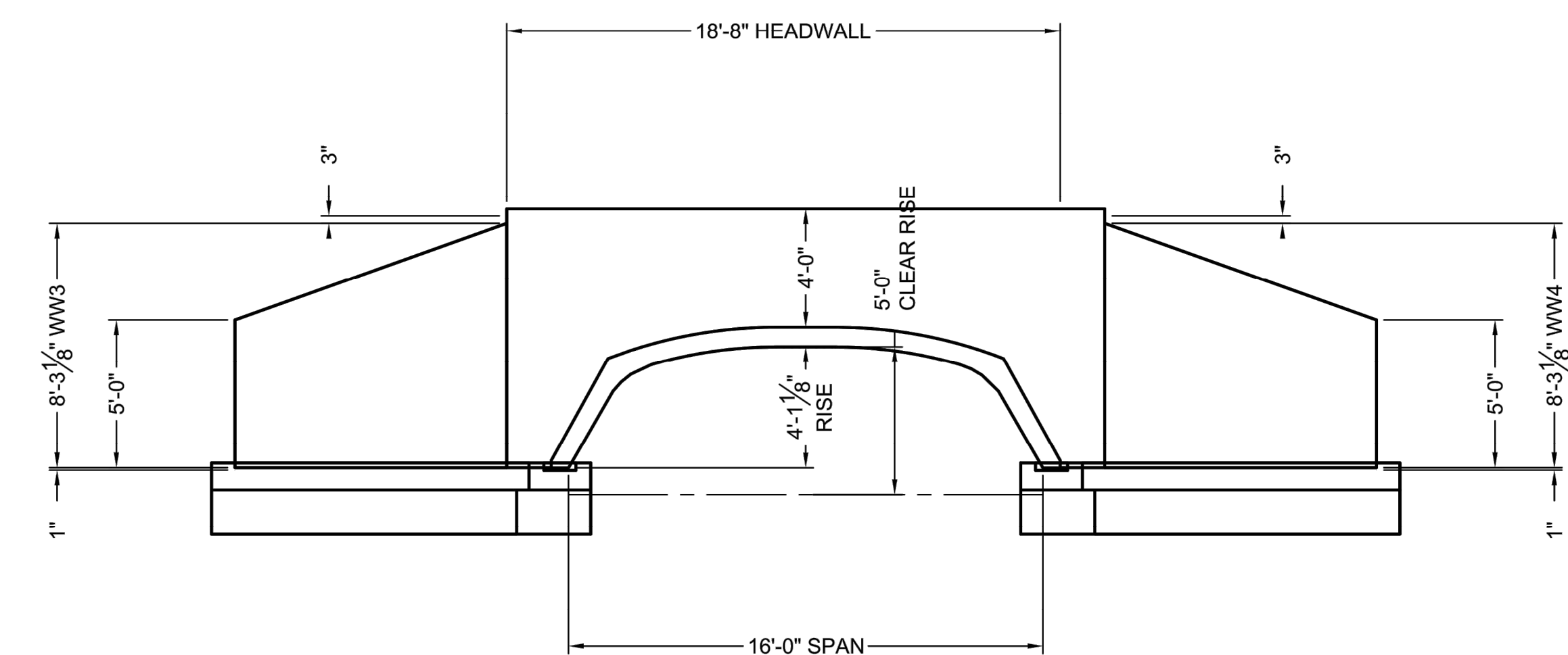


SECTION A-A

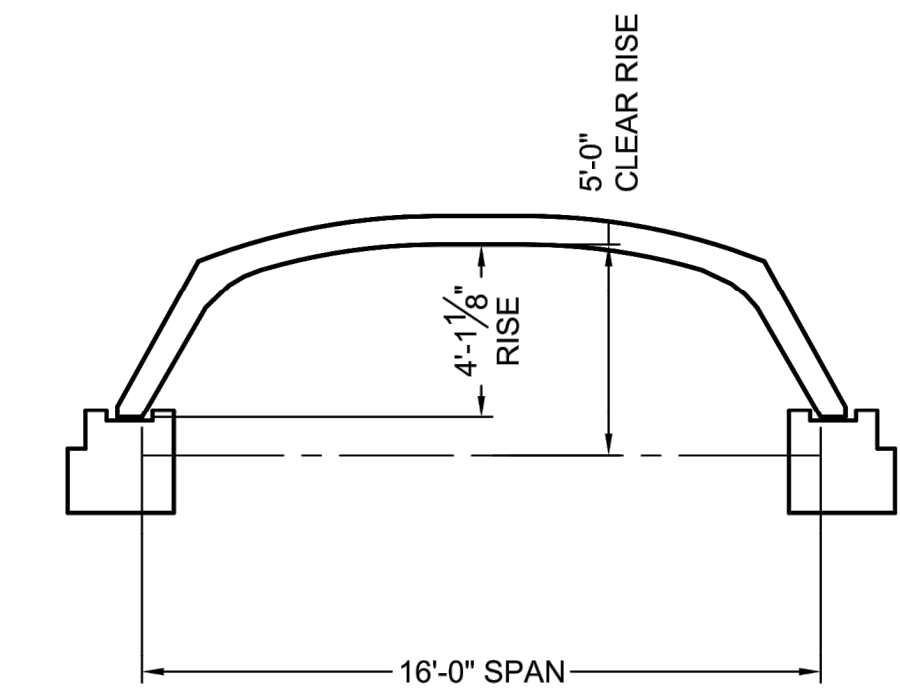
NOTES:
 1. DETAILS PROVIDED THROUGH CONTECH DESIGN YOUR OWN BRIDGE TOOL. DETAILS ARE PRELIMINARY IN NATURE AND NOT INTENDED FOR CONSTRUCTION. REFER TO CONTECH STANDARD BRIDGE SPECS FOR DESIGN/INSTALLATION NOTES.



UPSTREAM END ELEVATION



DOWNSTREAM END ELEVATION



CROSS SECTION

**WETLAND CROSSING 1 AND 2
 CONSPAN O-SERIES 16' SPAN CULVERT DETAILS**

NOT TO SCALE
 **OR APPROVED EQUAL

- NOTE:**
1. THE ELEVATIONS DEPICTED ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (N.A.V.D.) OF 1988(USFT).
 2. THE HORIZONTAL LOCATIONS ARE BASED ON THE MASSACHUSETTS COORDINATE SYSTEM, MAINLAND ZONE, NAD83.
 3. THIS PLAN IS INTENDED TO SUPPORT AN APPLICATION TO THE WALPOLE CONSERVATION COMMISSION AND MASSDEP FOR A NOTICE OF INTENT.
 4. 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.
 5. WETLAND REPLICATION AREA - 1.5:1 TOTAL REPLICATION AREA = 7,106 S.F.

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 IN WITH APPROXIMATELY PREVIOUSLY GRADED ON BOTH SIDES.
10. LOAM AND SEED AFFECTED AREAS WITH AN APPROPRIATE WETLAND SEED MIX.

CEDAR RIDGE WETLAND REPLICATION PLAN

1. THE CONSTRUCTION OF COMPENSATORY WETLAND FOR ALTERATION OF BORDERING VEGETATED WETLAND (BWV) IS PROPOSED IN 4 LOCATIONS CHOSEN AND THE METHODOLOGY EMPLOYED FOR THE REPLICATION EFFORT ARE COMPLIANT WITH THE APPLICABLE STANDARDS AT 310 CMR 10.55 (4) (B):
THE SURFACE OF THE REPLACEMENT AREA TO BE CREATED ("THE REPLACEMENT AREA") SHALL BE EQUAL TO THAT OF THE AREA THAT WILL BE LOST ("THE LOST AREA");
2. THE AGGREGATE ALTERED AREA EQUALS LESS THAN 4,889 SQUARE FEET WITH THE REDUCTION OF THE CROSSING 1 FOOTPRINT. THE PROPOSED 7,106 SQ. FT. REPLICATION EXCEEDS AN IMPACT TO REPLICATION RATION OF 1:1.51.
THE GROUND WATER AND SURFACE ELEVATION OF THE REPLACEMENT AREA SHALL BE APPROXIMATELY EQUAL TO THAT OF THE LOST AREA;
3. THE LOCATIONS (4) WERE CHOSEN BOTH FOR ADJACENCY AND CONSISTENCY WITH THE SAME SUBDRAINAGE, AS WELL AS TO APPROXIMATE THE IMPACTED ELEVATIONS AND AMBIENT GROUNDWATER CONDITIONS. THE ALTERATION AT CROSSING 1 IS AT +/- 208 ELEVATION, AS ARE THE PROPOSED REPLICATION AREAS. SIMILARLY, CROSSING 2 IS AT +/- 208 ELEVATION AND FINAL GRADES ARE ANTICIPATED TO BE BETWEEN 206 AND 208.
THE OVERALL HORIZONTAL CONFIGURATION AND LOCATION OF THE REPLACEMENT AREA WITH RESPECT TO THE BANK SHALL BE SIMILAR TO THAT OF THE LOST AREA
4. THE LOCATIONS WERE ADAPTED SO AS TO BE ADJACENT AND PARALLEL TO THE IMPACTED SYSTEMS (SEE SHEET C.87, REV. 9/14/20).
THE REPLACEMENT AREA SHALL HAVE AN UNRESTRICTED HYDRAULIC CONNECTION TO THE SAME WATER BODY OR WATERWAY ASSOCIATED WITH THE LOST AREA;
5. AGAIN, THE LOCALITIES CHOSEN FOR THE COMPENSATORY REPLICATION WERE IDENTIFIED BASED UPON THEIR ADHERENCE TO THIS CRITERIA. THEY ARE WITHIN FEET OF THE IMPACT AND ANNECTANT OR CONFLUENT WITH THE PARENT RESOURCE AREA(S).
THE REPLACEMENT AREA SHALL BE LOCATED WITHIN THE SAME GENERAL AREA OF THE WATER BODY OR REACH OF THE WATERWAY AS THE LOST AREA;
6. THE LOCATION OF THE 4 REPLICATION POLYGONS IS IMMEDIATELY ADJACENT TO THE IMPACTED AREAS AND THEREFORE MEETS THIS STANDARD.
AT LEAST 75% OF THE SURFACE OF THE REPLACEMENT AREA SHALL BE REESTABLISHED WITH INDIGENOUS WETLAND PLANT SPECIES WITHIN TWO GRADING ELEVATIONS, ASSURING RELIABLE INTERCEPTION OF LOCAL SEASONAL GROUNDWATER. SOIL IN THE REPLACEMENT AREA SHALL BE TEMPORARILY STABILIZED TO PREVENT EROSION IN ACCORDANCE WITH STANDARD U.S. SOIL CONSERVATION SERVICE METHODS;
7. THE PROPOSED REPLICATION PLANS, QUANTIFIED IN THE ACCOMPANYING TABLES WILL MEET THE 75% THRESHOLD, OR, IF NECESSARY WILL BE SUPPLANTED DURING THE TWO-SEASON MONITORING PERIOD. THE SPECIES COMPOSITION AND PREFERRED GROUND TREATMENT (USE OF NATIVE LITTER IF POSSIBLE) ARE IN KEEPING WITH SPECIES NATIVE TO THE AREA AND THE SITE.
THE REPLACEMENT AREA SHALL BE PROVIDED IN A MANNER WHICH IS CONSISTENT WITH ALL OTHER GENERAL PERFORMANCE STANDARDS FOR EACH RESOURCE AREA IN PART III OF 310 CMR 10.00. THE REPLACEMENT AREA MEETS OR EXCEEDS THE APPLICABLE STANDARDS.

SITE PREPARATION AND PLANTING

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

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

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

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

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

MONITORING

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

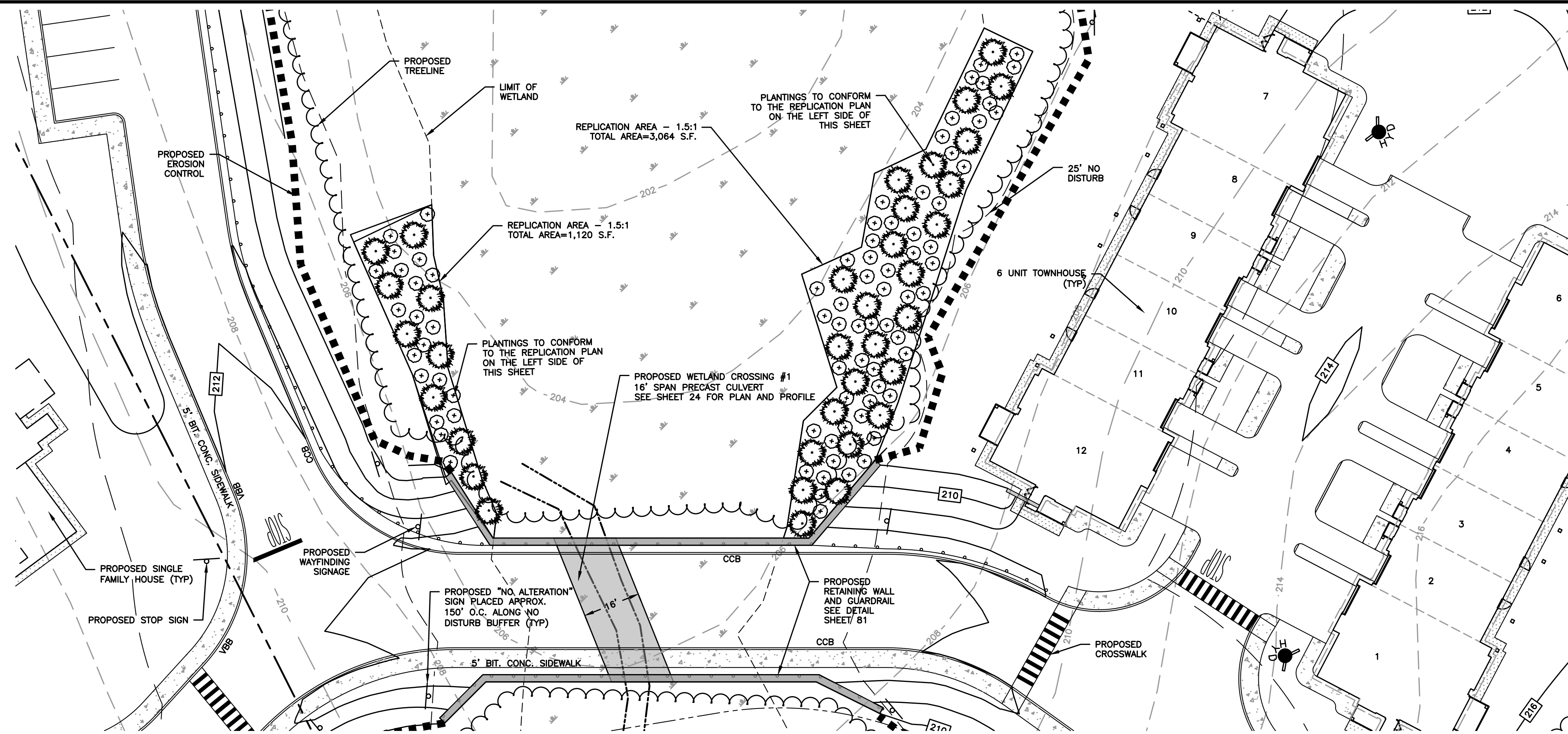
PLANTING DENSITIES PROPOSED ANTICIPATE MATURITY OF TREE AND SHRUB SPECIMENS, DELIBERATELY AVOIDING OVERSHADING OF UNDERSTORY PLANTINGS UNTIL THEY HAVE HAD MULTIPLE SEASONS OF GROWTH WITH ADEQUATE INSOLATION TO BECOME ESTABLISHED.

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

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

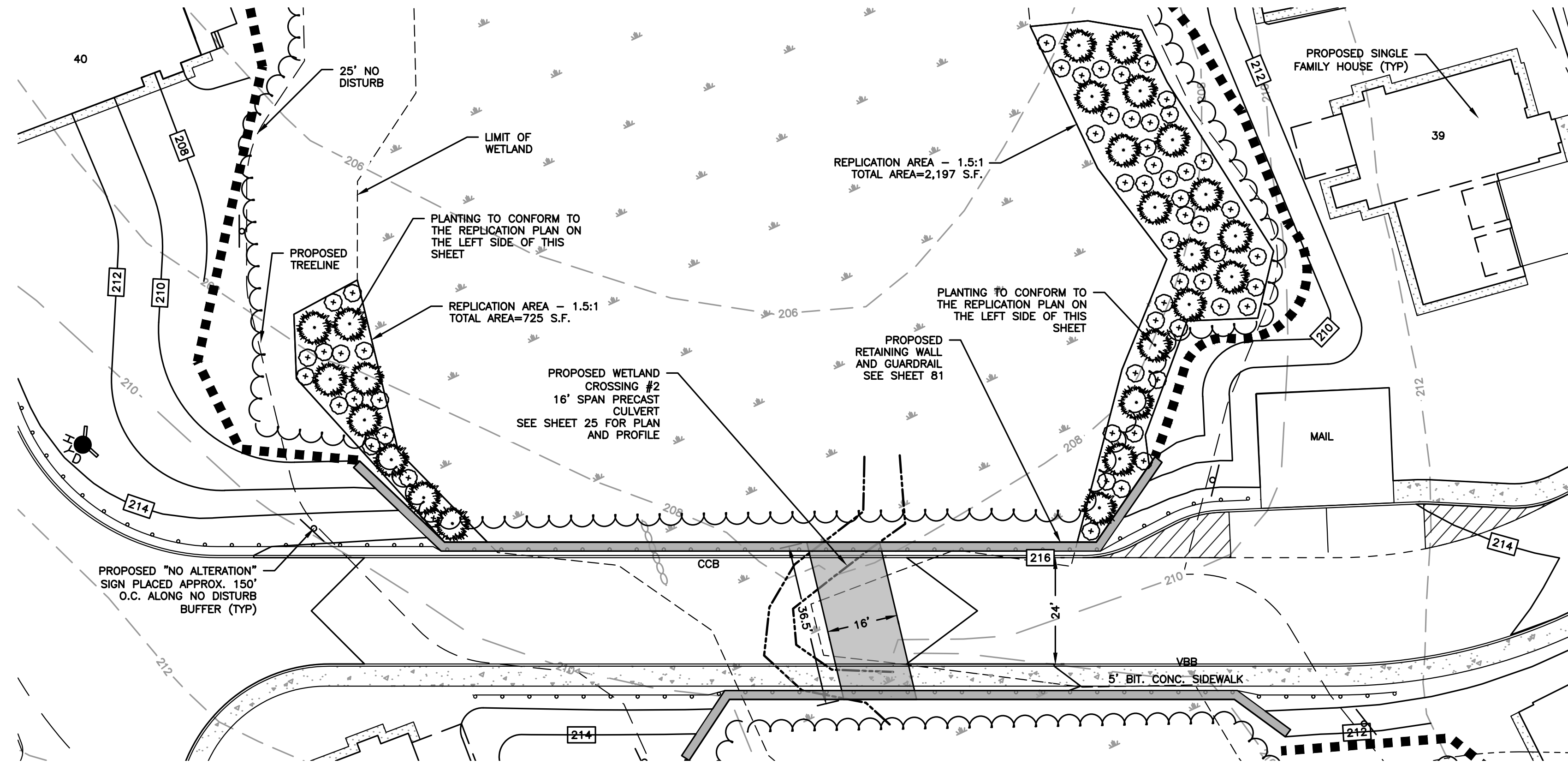
Table 2. Species List of acceptable plantings - at least 3 of tree and shrub species to be planted.

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



WETLAND REPLICATION AREA 1 DETAIL

SCALE: 1"=20'



WETLAND REPLICATION AREA 2 DETAIL

SCALE: 1"=20'

TOWN OF WALPOLE CONSERVATION COMMISSION NOTES:

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



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

REVISIONS:

NO	BY	DATE	DESCRIPTION
3	PB	9/14/20	REV. DETAILS
4	PB	10/14/20	REV. LAYOUT
5	PB	12/16/20	EMERGENCY ACCESS
6	PB	1/4/21	REV. FIRE TURNING
7	PB	1/5/21	FIRE ACCESS/ STAGING
8	PB	1/8/21	ADDED VISITOR PARKING
9	PB	1/22/21	REV. DRAINAGE DESIGN
10	PB	1/27/21	REV. SITE PLAN

**SITE
PLAN**

**DETAIL SHEET
16 OF 20**

DATE: JANUARY 10, 2020

PROJECT NUMBER: 19097

DESIGNED BY: PB/KE/KF

DRAWN BY: PB/KF

CHECKED BY: KE

C.89

