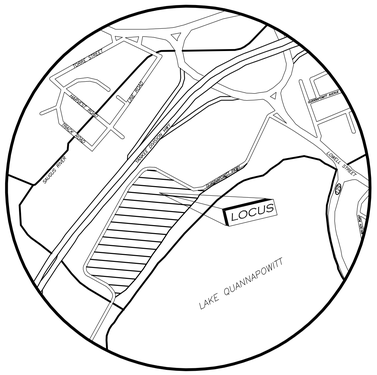
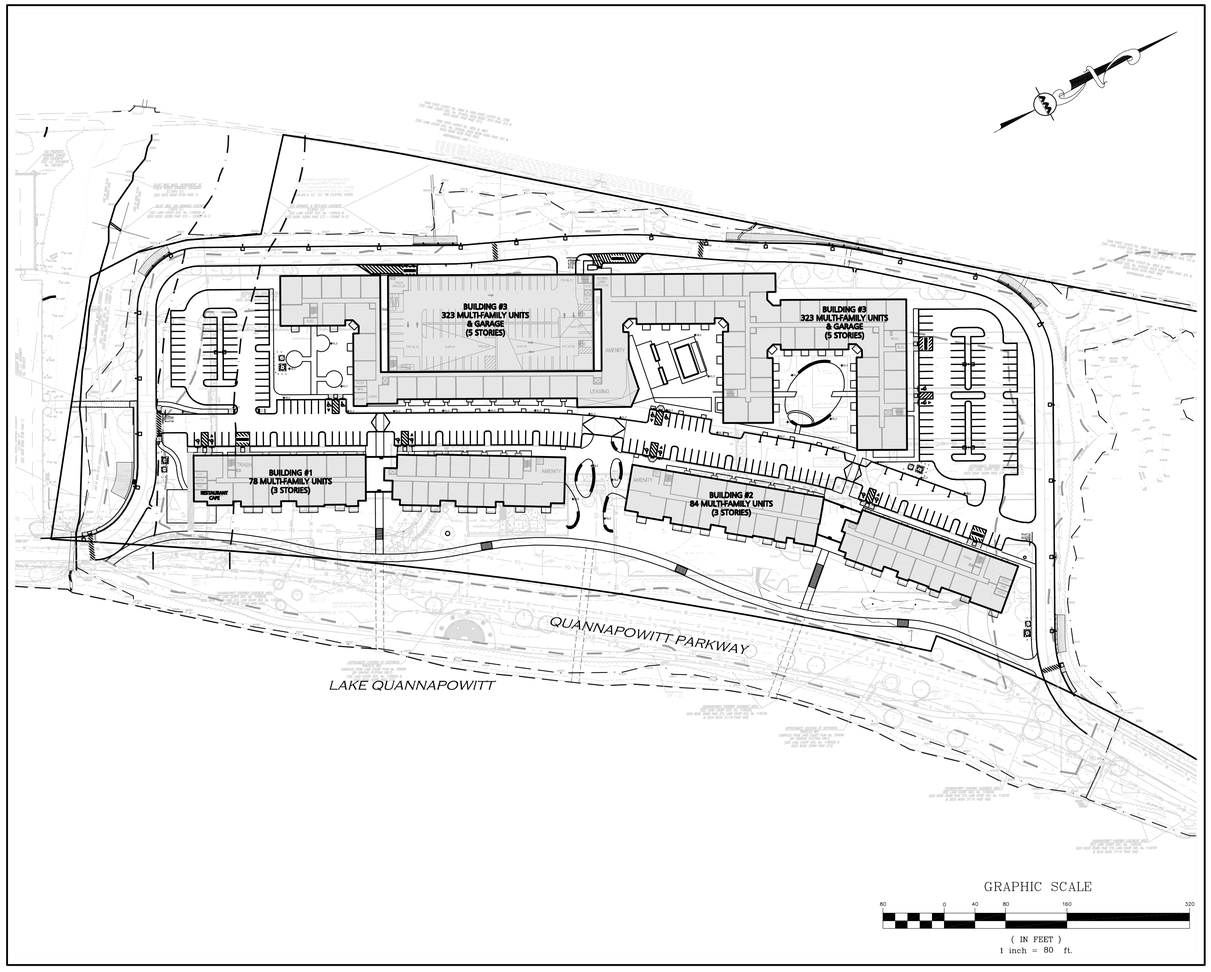


LOCUS MAP
NOT TO SCALE

SITE DEVELOPMENT PLANS FOR
200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880



OWNER:
WATERSTONE PROPERTIES GROUP
117 KENDRICK STREET
NEEDHAM, MA 02494

APPLICANT:
CABOT, CABOT & FORBES
185 DARTMOUTH STREET, SUITE 402
BOSTON, MA 02116

SITE ENGINEERS:
ALLEN & MAJOR ASSOCIATES, INC.
100 COMMERCE WAY
WOBURN, MA 01888-0118

LAND SURVEYORS:
MERRILL
427 COLUMBIA ROAD
HANOVER, MA 02339
781.826.9200

LANDSCAPE ARCHITECTS:
COPLEY WOLFF DESIGN GROUP
10 POST OFFICE SQUARE, SUITE 1315
BOSTON, MA 02109

ARCHITECT:
CUBE 3 STUDIO
160 STATE STREET, FLOOR 6
BOSTON, MA 02109

TRAFFIC ENGINEERS:
VANASSE & ASSOCIATES, INC.
35 NEW ENGLAND BUSINESS CENTER DRIVE, SUITE 140
ANDOVER, MA 01810

LIST OF DRAWINGS

CIVIL

DRAWING TITLE	SHEET NO.	ISSUED	REVISED THRU
EXISTING CONDITIONS PLAN	SHEET 1	05-23-2019	-
EXISTING CONDITIONS PLAN	SHEET 2	05-23-2019	-
EXISTING CONDITIONS PLAN	SHEET 3	05-23-2019	-
EXISTING CONDITIONS PLAN	SHEET 4	05-23-2019	-
ABBREVIATIONS & NOTES	C-101A	03-16-2021	-
CONTEXT PLAN	C-101B	03-16-2021	-
EROSION CONTROL PLAN	C-102	03-16-2021	-
SITE PREPARATION PLAN	C-103A/B	03-16-2021	-
LAYOUT & MATERIALS PLAN	C-104A/B	03-16-2021	-
GRADING & DRAINAGE PLAN	C-105A/B	03-16-2021	-
UTILITY PLAN	C-106A/B	03-16-2021	-
SITE LIGHTING PLAN	C-107A/B	03-16-2021	-
FIRE TRUCK TURNING & HYDRANT LOCATION PLAN	C-108	03-16-2021	-
AVERAGE GRADE PLAN	C-109A/B	03-16-2021	-
DETAILS	C-501	03-16-2021	-
DETAILS	C-502	03-16-2021	-
DETAILS	C-503	03-16-2021	-
DETAILS	C-504	03-16-2021	-
DETAILS	C-505	03-16-2021	-

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting ◆ landscape architecture
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COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No. 43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

ISSUED TO ZONING BOARD OF APPEALS: MARCH 16, 2021

GENERAL NOTES:

1. THE EXISTING CONDITIONS PLAN WAS PREPARED BY MERRILL ENGINEERS & LAND SURVEYORS.
2. MAXIMUM CROSS SLOPE ON ALL WALKS IN 66:1 (1.5%) AND MAXIMUM LONGITUDINAL SLOPE IS 22.5:1 (4.5%) EXCEPT WHERE OTHERWISE INDICATED ON THE DRAWINGS.
3. THIS PROJECT WILL BE SERVED BY PUBLIC WATER AND SEWER, NATURAL GAS, TELEPHONE, CABLE AND ELECTRIC. ALL UTILITY LINES WILL BE INSTALLED UNDERGROUND UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS AT NO ADDITIONAL COST.
5. ALL MAIN BUILDING ENTRANCES AND WALKS SHALL BE HANDICAP ACCESSIBLE PER FEDERAL ADA & MA AAB REGULATIONS.
6. ALL SITE WORK DONE FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE SITE PLANS AND SITE WORK SPECIFICATIONS FOR CONSTRUCTION.
7. ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTIES DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
8. ALL PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED AND RESTORED BY A SURVEYOR REGISTERED IN THE STATE OF MASSACHUSETTS AT THE CONTRACTORS EXPENSE.
9. ALL DISTURBED AREAS SHALL BE MAINTAINED IN ACCORDANCE WITH THE EROSION CONTROL PLAN, MA DEP, AND THE REQUIREMENTS OF THE WAKEFIELD CONSERVATION COMMISSION.
10. ALL APPLICABLE PERMITS AND AN APPROVED SET OF PLANS SHALL BE AVAILABLE AT THE CONSTRUCTION SITE.
11. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A PRECONSTRUCTION MEETING THE WITH THE APPROPRIATE TOWN DEPARTMENTS, THE APPROPRIATE UTILITY COMPANIES, THE OWNER AND OWNER'S REPRESENTATIVE. THE MEETING SHALL TAKE PLACE PRIOR TO THE START OF CONSTRUCTION AND THE CONTRACTOR MUST PROVIDE 48 HOURS NOTICE TO ALL ATTENDEES PRIOR TO THE START OF THE MEETING.
12. APPROPRIATE WARNING SIGNS, MARKERS, BARRICADES AND/OR FLAG MEN SHALL BE PROVIDED TO REGULATE TRAFFIC. CONSTRUCTION TRAFFIC CONTROLS SHALL BE IMPLEMENTED AND OPERATED ACCORDING TO THE MASS DEPARTMENT OF TRANSPORTATION, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE LOCAL AUTHORITY.
13. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ADDITIONAL BENCHMARK INFORMATION IF REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING BENCHMARKS. IF IT IS NECESSARY TO RELOCATE A BENCHMARK, IT SHALL BE RELOCATED BY A MASSACHUSETTS PROFESSIONAL LAND SURVEYOR AND DONE SO AT THE CONTRACTOR'S EXPENSE.
14. ALL PERMITS AND APPROVALS NECESSARY FROM AGENCIES GOVERNING THE WORK SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK.
15. ALL BUILDING DIMENSIONS ARE MEASURED TO THE OUTSIDE FACE OF THE BUILDING.
16. ALL RADII ARE 3 FEET UNLESS OTHERWISE NOTED.
17. ALL PARKING LOT AND AISLE DIMENSIONS ARE TAKEN FROM THE FACE OF CURB AND INDICATE EDGE OF PAVEMENT.
18. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK OR EARTHWORK OPERATIONS, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY PER ON SITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR REGULATORY AGENCIES HAVING JURISDICTION AT NO ADDITIONAL COST TO THE OWNER.
19. CONSTRUCTION DURING WET WEATHER OR WINTER CONDITIONS IS TO BE ANTICIPATED AND PROVISIONS TO ADEQUATELY ADDRESS THESE CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST.
20. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY PERMITS AND/OR CONNECTION FEES REQUIRED TO CARRY OUT THE WORK INCLUDING BUT NOT LIMITED TO DEMOLITION.
21. DISPOSAL OF ALL DEMOLISHED MATERIALS INCLUDING EXISTING MISC. CONSTRUCTION DEBRIS FILL IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL MUNICIPAL REQUIREMENTS AT NO ADDITIONAL COST.
22. ALL DISTURBED AREAS NOT NOTED TO RECEIVE OTHER TREATMENT ARE TO RECEIVE SIX INCHES (6") MINIMUM OF TOPSOIL & SEED, AND BE MAINTAINED UNTIL ESTABLISHED & ACCEPTED. SEE LANDSCAPE PLAN.
23. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY.
24. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH THE TOWN OF WAKEFIELD'S GOVERNING AUTHORITY'S SPECIFICATIONS AND SHALL BE APPROVED BY SUCH.
25. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO DETERMINE EXACT POINT OF SERVICE CONNECTION AT EXISTING UTILITY.
26. ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR AT GROUNDBREAK.
27. PROPOSED GAS SERVICE LOCATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CONFIRM WITH THE GAS COMPANY THAT THE GAS LINE INSTALLATION SHALL BE BY THE LOCAL GAS COMPANY. THE CONTRACTOR SHALL GIVE THE GAS COMPANY ADVANCE NOTICE OF WHEN THE GAS LINE CAN BE INSTALLED.
28. PROPOSED ELECTRIC AND COMMUNICATIONS (TELEPHONE AND CABLE) SYSTEMS LOCATIONS ARE APPROXIMATE ONLY AND SHALL BE COORDINATED AND SCHEDULED WITH THE APPROPRIATE UTILITY COMPANY SERVICING THE PROJECT SITE.
29. CONTRACTOR IS RESPONSIBLE FOR DIGGING TEST HOLES AND VERIFYING ANY EXISTING UTILITY OR STRUCTURE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT BASED ON EXACT LOCATION OF EXISTING UTILITIES, THERE ARE NO CONFLICTS BETWEEN THEM AND THE PROPOSED UTILITIES.

DIG SAFE

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CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233

UTILITY NOTES:

1. THE LATEST STANDARDS OF THE TOWN OF WAKEFIELD SHALL BE FOLLOWED WHEN INSTALLING ANY SANITARY SEWER AND STORM DRAIN WORK. BOTH SEWER AND STORM DRAIN WORK WILL BE INSPECTED BY TOWN OF WAKEFIELD PERSONNEL AND ALL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE LATEST STANDARDS OF THE TOWN OF WAKEFIELD SHALL BE FOLLOWED WHEN INSTALLING ANY WATER LINE WORK. WATER LINE WORK WILL BE INSPECTED BY TOWN OF WAKEFIELD PERSONNEL AND ALL COSTS SHALL INCLUDE PRESSURE TESTING, DISINFECTING, AND FLUSHING OF MAINS. INSPECTION COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND REMOVAL OF ALL NECESSARY DISINFECTING AND FLUSHING TAPS AS DIRECTED BY THE TOWN.
3. THE CONTRACTOR SHALL REFER TO ARCHITECTS & PLUMBING PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL ROOF DRAIN LATERALS AND UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRIC, TELEPHONE, AND NATURAL GAS SERVICE. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND COORDINATE WITH THE PROPER AGENCY THE LOCATION AND SCHEDULING OF CONNECTIONS WITH THEIR FACILITIES.
4. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION.
5. ABANDONED EXISTING UTILITIES AND UTILITIES TO BE ABANDONED SHALL EITHER BE ABANDONED IN PLACE AS NOTED OR SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED. ALL UTILITIES SCHEDULED FOR ABANDONMENT OR REMOVAL AND DISPOSAL MUST BE COORDINATED BY THE CONTRACTOR WITH THE RESPECTIVE UTILITY OWNER. WHEN ABANDONED UTILITIES ARE TO BE LEFT IN PLACE, PLUG OR CAP THE ENDS OF THE CONDUITS AND PIPES. REMOVE ABANDONED UTILITY MANHOLES, JUNCTION BOXES AND SIMILAR STRUCTURES TO A MINIMUM DEPTH OF 4 FEET BELOW FINISHED GRADE AND PUNCTURE OR BREAK THE BOTTOM SLABS OF MANHOLES AND SIMILAR STRUCTURE TO ALLOW DRAINAGE. BACKFILL AND COMPACT EXCAVATIONS RESULTING FROM REMOVAL OF UTILITY FACILITATES, AS REQUIRED TO RESTORE THE ORIGINAL GRADE.
6. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENTS OF NATURAL GAS, ELECTRIC, TELEPHONE AND ANY OTHER UTILITY BY THE UTILITY OWNER.
7. THE CONTRACTOR SHALL USE THE FOLLOWING PIPE MATERIALS:
   SEWER – PVC (POLYVINYL CHLORIDE), SDR 35
   DRAIN – HDPE (HIGH DENSITY CORRUGATED POLYETHYLENE PIPE WITH SMOOTH INNER WALL), ASTM D2321 (UNLESS OTHERWISE SPECIFIED ON PLAN)
   – RCP CLASS IV (REINFORCED CONCRETE PIPE, WHERE SPECIFIED)
   WATER – C.L.D.I.
8. BEFORE WORK BEGINS ON THE SEWER OR STORM DRAIN, THE CONTRACTOR WILL COORDINATE WITH THE TOWN OF WAKEFIELD THE APPROPRIATE PERMIT FEE AND INSPECTION FEE.
9. ALL UTILITY CONNECTIONS THROUGH THE BUILDING WALL SHALL BE BY MEANS OF FLEXIBLE JOINTS.
10. A MINIMUM OF 10 FEET CLEAR HORIZONTALLY SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWER MAINS AND/OR STORM DRAINS. WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET TO A WATER MAIN, THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE DIFFERENCE IN ELEVATION BETWEEN THE WATER MAIN AND THE SEWER MAIN SHALL BE AT LEAST 18 INCHES.
11. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
12. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITY'S INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
13. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
14. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 5'–0" COVER ON ALL WATERLINES AND A MAXIMUM OF 8'–0" COVER.
15. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATERLINES, SANITARY LINES, STORM LINES AND GAS LINES (EXISTING AND PROPOSED), THE SANITARY LINE SHALL BE DUCTILE IRON PIPE WITH MECHANICAL JOINTS AT LEAST 10 FEET ON BOTH SIDES OF CROSSING, THE WATERLINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE THRUST BLOCKING AS REQUIRED TO PROVIDE A MINIMUM OF 18" CLEARANCE BETWEEN THE PIPES. WHERE THE WATERLINE IS LESS THE 18" VERTICAL CLEARANCE AND MEETING 10' HORIZONTAL CLEARANCE CANNOT BE MET, THE WATER MUST BE ENCASED IN CONCRETE TO MEET THE REQUIREMENTS OF ANSI A21.10 OR ANSI 21.11 (AWWA C–151) (CLASS 50).
16. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 3000 P.S.I.
17. DRAWINGS DO NOT NECESSARILY SHOW ALL EXISTING UTILITIES.
18. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE SPECIFICATIONS OF THE LOCAL AUTHORITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER, SEWER, GAS AND ELECTRICAL AND TELECOMMUNICATIONS LINES.
19. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
20. ALL WATER MAIN APPURTENANCES, MATERIALS, METHODS OF INSTALLATION AND TESTING REQUIREMENTS SHALL MEET OR EXCEED THE TOWN OF WAKEFIELD REQUIREMENTS.
21. SEWER PIPE BEDDING MATERIAL SHALL BE AS SPECIFIED ON THE DRAWINGS. IF LOCAL OR STATE AUTHORITIES REQUIRE DIFFERENT BEDDING OR BACKFILL MATERIAL, THEN THE MORE STRINGENT SHALL APPLY.

EROSION & SEDIMENTATION CONTROL NOTES:

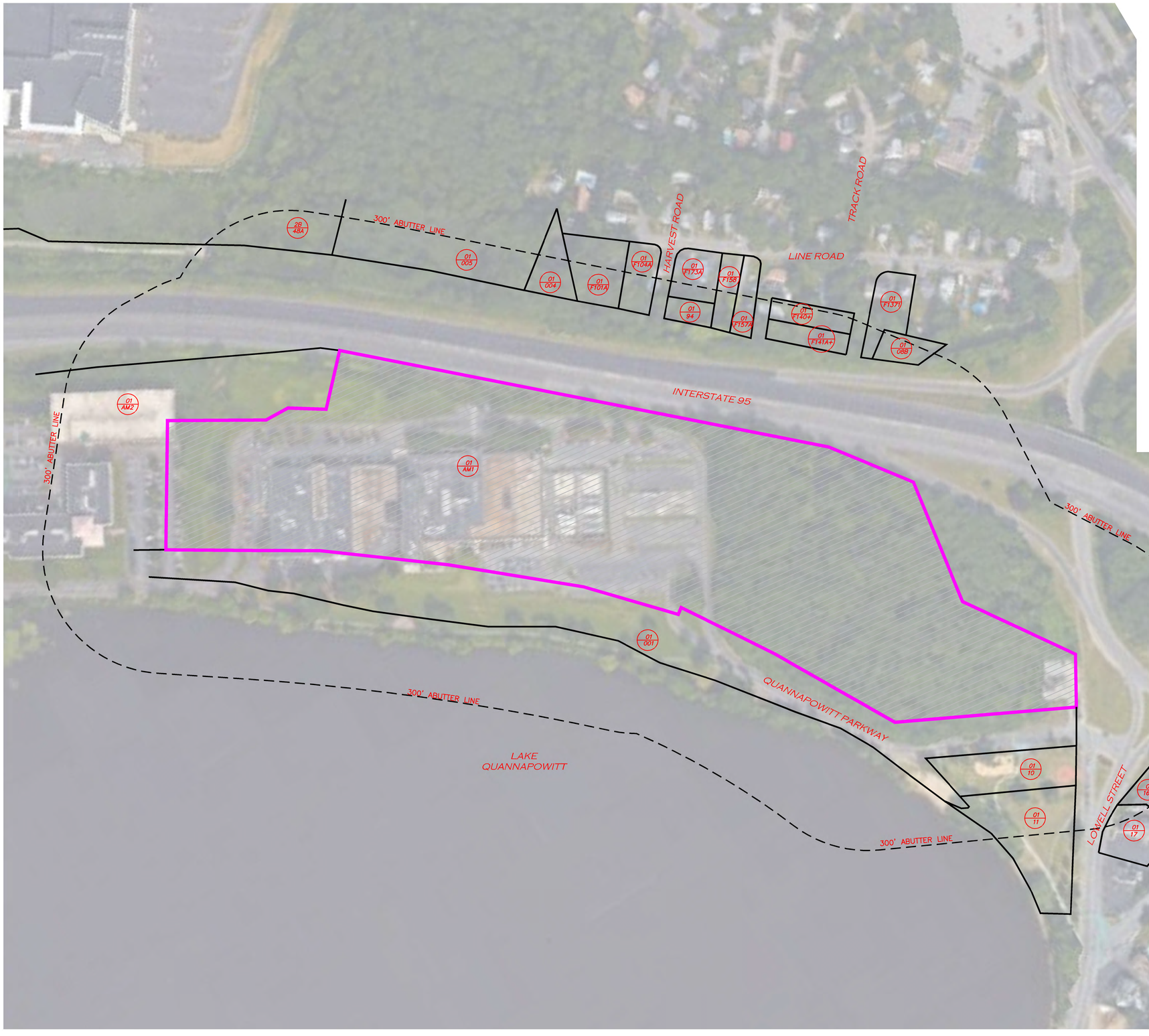
1. EROSION CONTROL SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS TO SILT CONTROLS SHOWN ON THE APPROVED PLANS AS A RESULT OF ACTUAL FIELD CONDITIONS OR CONSTRUCTION PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH B.M.P. (BEST MANAGEMENT PRACTICES) PER THE E.P.A. 2008 "CONSTRUCTION GENERAL PERMIT" MANUAL, AND MASSACHUSETTS 2003 EROSION & SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, . ANY SUCH MODIFICATIONS FROM THE ABOVE MANUALS SHALL BE INSTALLED AS APPROVED BY THE ENGINEER.
2. AREAS OF EXPOSED SOIL UNDERGOING CONSTRUCTION THAT WILL NOT BE COVERED AND OR FINISHED GRADED SHALL BE STABILIZED AS SOON AS PRACTICABLE BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY (UNLESS TOWN HAS STRICTER REQUIREMENTS WHICH SHALL BE FOLLOWED) IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY EROSION CONTROL MEASURES SHALL INCLUDE EROSION CONTROL MESH, NETTING OR MULCH AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND SHOWN ON THE DESIGN PLANS. IF MULCH IS USED, STRAW MULCH SHALL BE APPLIED AT THE RATE OF 4 BALES PER 1,000 SQUARE FEET. APPLICATION AREA SHALL BE SUFFICIENTLY COVERED WITH MULCH TO AVOID ANY VISIBLE SOIL EXPOSURE. MULCH SHALL BE KEPT MOIST TO AVOID LOSS DUE TO WIND. MULCH AND NETTING SHALL BE APPLIED IN THE BASE OF ALL GRASSED WATERWAYS AND IN VEGETATIVE SLOPES WHICH EXCEED 15% AND DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS.
3. IF DISTURBED AREAS DO NOT RECEIVE FINAL SEEDING BY OCTOBER 1ST OF THE CONSTRUCTION YEAR, THEN ALL DISTURBED AREAS SHALL BE SEEDED WITH A WINTER COVER CROP AT THE RATE OF 3 LBS PER 1,000 SQUARE FEET. WINTER SEEDING SHALL BE COVERED WITH EROSION CONTROL MESH (MULCH AND NETTING). HEAVY GRADE MATS SHALL BE USED IN THE BASE OF ALL GRASSED WATERWAYS ON VEGETATED SLOPES IN EXCESS OF 15%, AND ANY DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS. MULCH AND NETTING SHALL ALSO BE PROVIDED FOR ADDITIONAL WINTER PROTECTION.
4. ALL TOPSOIL SHALL BE COLLECTED, STOCKPILED, SEEDED WITH RYE AT 3LBS PER 1,000 SQUARE FOOT AND MULCHED, AND REUSED AS REQUIRED. SILTATION FENCING SHALL BE PLACED DOWN GRADIENT FROM STOCKPILED LOAM. LOAM SHALL BE STOCKPILED AT LOCATIONS DESIGNATED BY THE OWNER AND ENGINEER.
5. ALL FILTER BARRIERS, SILT SACKS, AND EROSION CONTROL BERMS SHALL BE INSTALLED ACCORDING TO THE EROSION CONTROL PLAN. THESE SHALL BE MAINTAINED DURING DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER. ALL THE FILTER BARRIERS AND EROSION CONTROL BERMS SHALL BE INSPECTED AFTER ANY RAINFALL OR RUNOFF EVENT, MAINTAINED AND CLEANED UNTIL ALL AREAS HAVE AT LEAST 85–90% VIGOROUS PERENNIAL COVER OF GRASSES.
6. ADJACENT ROADS SHALL BE PERIODICALLY SWEPT OR WASHED TO AVOID TRACKING MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. A WATERING TRUCK WILL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS.
7. THE CONTRACTOR SHALL USE EXTREME CAUTION TO AVOID ALLOWING SEDIMENTS TO ENTER THE STORM DRAIN SYSTEM DURING CONSTRUCTION. CATCH BASIN INLETS SHALL BE PROTECTED DURING CONSTRUCTION BY THE USE OF STRAW BALE BARRIERS AROUND EACH INLET. SILT SACKS SHALL BE INSTALLED IN ALL EXISTING BASINS. INLET PROTECTION MAY BE REMOVED ONLY AFTER FINISHED AREAS ARE PAVED AND THE VEGETATED SLOPES ARE ESTABLISHED WITH AT LEAST 85–90% OF VIGOROUS PERENNIAL GROWTH.
8. AS APPLICABLE, EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISHED SEEDED AREAS AS SPECIFIED ON THE DESIGN PLANS.
9. AT A MINIMUM, ALL STRAW BALE AND FILTER FABRIC SHALL REMAIN IN PLACE UNTIL SEEDINGS HAVE BECOME 85–90% ESTABLISHED. THE TOWN OF WAKEFIELD CONSERVATION COMMISSION MUST APPROVE THE REMOVAL OR RELOCATION OF ANY OF THE STRAW BALES AND FILTER FABRIC.
10. AT THE OWNER'S DISCRETION ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED TO MAINTAIN STABILITY OF EARTHWORKS AND FINISHED GRADED AREAS. THE CONTRACTOR, AT HIS EXPENSE, WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ADDITIONAL MEASURES AS SPECIFIED BY THE OWNER. THIS INCLUDES BUT IS NOT LIMITED TO REQUESTS BY MA DEP. THE ENGINEER AND THE MUNICIPALITY, AS AUTHORIZED BY THE OWNER. FAILURE TO COMPLY WITH THE OWNER'S DIRECTIONS WILL RESULT IN DISCONTINUATION OF CONSTRUCTION ACTIVITIES.
11. INSPECTIONS AND MONITORING MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE BY CONTRACTOR. WEEKLY INSPECTIONS SHALL BE HELD THROUGH THE DURATION OF CONSTRUCTION ACTIVITY. WEEKLY INSPECTION REPORTS SHALL BE MAINTAINED BY THE CONTRACTOR AND LOCATED IN THE CONTRACTORS FIELD OFFICE ONSITE. IN ADDITION TO THE NORMAL WEEKLY INSPECTIONS, THE CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL EROSION CONTROL MEASURES AFTER EACH RAINFALL OR RUNOFF EVENT, KEEP APPROPRIATE REQUIRED RECORDS AND INSPECTION REPORTS, AND PERFORM THE NECESSARY REPAIRS. THE INSPECTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE SITE'S DOWN STREAM DISCHARGE POINTS.
12. IF ANY EVIDENCE OF SEDIMENTATION IS OBSERVED AT THE STORMWATER MANAGEMENT AREA INLETS, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE A PLAN TO THE ENGINEER TO REMOVE ANY ACCUMULATED SEDIMENT IN THESE AREAS. THE CONTRACTOR SHALL ALSO IMMEDIATELY PROVIDE ADDITIONAL ON SITE EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT FURTHER DEGRADATION OF THE AREA.
13. FOLLOWING THE TEMPORARY OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA SEMI–MONTHLY TO ENSURE THE AREAS HAVE A MINIMUM OF 85–90% VEGETATED VIGOROUS GROWTH. RE–SEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW UP INSPECTIONS IN THE EVENT OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.
14. CONTRACTOR & ALL SITE SUBCONTRACTORS SHALL BE FAMILIAR WITH & FOLLOW ALL APPROVED PERMITS AND CONDITIONS. CONTRACTOR SHALL MAINTAIN A COPY OF ALL APPROVED PERMITS ONSITE, INCLUDING THE ORDER OF CONDITIONS FROM THE WAKEFIELD CONSERVATION COMMISSION. ALL CONDITIONS & RECOMMENDATIONS WITHIN THE APPROVED PERMITS SHALL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.
15. ALL EROSION MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER OR THE TOWN OF WAKEFIELD.
16. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.
17. TOP OF STOCKPILES SHALL BE COVERED IN SUCH MANNER THAT STORMWATER DOES NOT INFILTRATE THE MATERIALS AND THEREBY RENDER THE SAME UNSUITABLE FOR FILL USE.
18. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION SHALL BE STABILIZED WITH MULCH OR SEEDED FOR TEMPORARY VEGETATIVE COVER. NO AREA, SUBJECT TO EROSION SHALL BE LEFT DISTURBED AND UNSTABILIZED FOR PERIODS LONGER THAN IS ABSOLUTELY NECESSARY TO CARRY OUT THAT PORTION OF THE CONSTRUCTION WORK OR SIX MONTHS AFTER SOIL HAS BEEN DISTURBED WHICHEVER IS LESS.
19. ALL EROSION CONTROL MEASURES SHALL BE ROUTINELY INSPECTED, CLEANED AND REPAIRED OR REPLACED AS NECESSARY THROUGHOUT ALL PHASES OF CONSTRUCTION. IN ADDITION, INSPECTION SHALL TAKE PLACE WEEKLY AND BEFORE AND AFTER EACH RAINFALL EVENT.
20. ALL PROPOSED SLOPES EQUAL TO OR STEEPER THAN 3:1 SHALL BE STABILIZED WITH JUTE MESH AND PROTECTED FROM EROSION UNTIL WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.
21. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL HAYBALES AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE ENGINEER OR THE TOWN ENGINEER TO MITIGATE ANY EMERGENCY CONDITION.

GRADING & DRAINAGE NOTES:

1. EXISTING PAVEMENT SHALL BE SAW–CUT AND PAVEMENT JOINT SHALL BE INSTALLED WHERE NECESSARY TO ENSURE A SMOOTH CONTINUOUS GRADE.
2. THE ARCHITECTURAL PLANS SHALL BE REFERRED TO IN ORDER TO DETERMINE THE EXACT LOCATIONS OF VESTIBULE, SLOPED PAVING, EXIT PORCHES, HANDICAPPED RAMPS, TRUCK DOCKS, DUMPSTER PADS, ROOF DRAIN LATERALS AND PRECISE BUILDING DIMENSIONS.
3. ALL GRADING OPERATIONS SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANIES.
4. IN LANDSCAPED AREAS THE TOP ELEVATION OF MANHOLES SHALL BE FLUSH WITH FINISH GRADE OF THE LOAM. IN PAVED AREAS THE TOP ELEVATIONS OF MANHOLES SHALL MATCH FINISH GRADE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED AS SOON AS POSSIBLE UPON COMPLETION OF CONSTRUCTION WORK IN THE AREA. REFER TO EROSION CONTROL PLAN.
6. TEMPORARY STRAW BALE PROTECTION AND/OR SILT SACK SHALL BE INSTALLED AND MAINTAINED AT EXISTING DRAINAGE STRUCTURES DURING CONSTRUCTION, TO PRECLUDE SEDIMENT LADEN RUNOFF FROM ENTERING THE DRAINAGE SYSTEM.
7. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE.
8. ALL CATCH BASINS, MANHOLES, INFILTRATION SYSTEM, AND WATER QUALITY STRUCTURES TO BE CLEANED OUT PRIOR TO FINAL APPROVAL TO REMOVE ALL CONSTRUCTION SILT AND DEBRIS.
9. IF ANY EXISTING UTILITY STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER AT NO ADDITIONAL COST.
10. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
11. ALL STORM DRAIN MANHOLES SHALL HAVE TRAFFIC BEARING RING & COVERS & SHALL BE LABELED "DRAIN".
12. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
13. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
14. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE SIX INCHES (6") OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES EQUAL TO OR STEEPER THAN 3H:1V. CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH LANDSCAPE & CIVIL SPECIFICATIONS & DRAWINGS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
15. ALL DRAINAGE SHALL CONFORM TO LOCAL REQUIREMENTS.

ABBREVIATIONS:

ABAN	ABANDON	L	LENGTH
ADJ	ADJUST	LB	LEACHING BASIN
		LP	LIGHT POLE
B	BORING		
BC	BOTTOM OF CURB	MAT	MATERIAL
BIT	BITUMINOUS	MAX	MAXIMUM
BCB	BITUMINOUS CONCRETE BERM	MH	MANHOLE
BLDG	BUILDING	MIN	MINIMUM
BM	BENCH MARK	MISC	MISCELLANEOUS
BOS	BOTTOM OF SLOPE	MTD	MOUNTED
BOW	BOTTOM OF WALL	MW	MONITORING WELL
BRK	BRICK		
BV&B	BUTTERFLY VALVE & BOX	N	NORTH
BVW	BORDERING VEGETATED WETLAND	NIC	NOT IN CONTRACT
		NO	NUMBER
CATV	CABLE TELEVISION	NTS	NOT TO SCALE
CB	CATCH BASIN		
CF	CUBIC FEET	OC	ON CENTER
CFS	CUBIC FEET PER SECOND	OD	OUTSIDE DIAMETER
CI	CAST IRON (PIPE)	OHW	OVERHEAD WIRE
CL	CENTERLINE	OVHD	OVERHEAD
CLDI	CEMENT LINED DUCTILE IRON (PIPE)	OW	OBSERVATION WELL
CM	CONSTRUCTION MANAGER	PC	POINT OF CURVATURE
CMP	CORRUGATED METAL PIPE	PCC	POINT COMPOUND CURVATURE
CO	CLEAN OUT	PI	POINT OF INTERSECTION
CONC	CONCRETE	PKG	PARKING
CONST	CONSTRUCTION	PL	PROPERTY LINE
CONT	CONTRACTOR	PLMB	PLUMBING
CRD	COORDINATE	POC	POINT ON CURVATURE
CPP	CORRUGATED POLYETHYLENE PIPE	POT	POINT ON TANGENT
CUL	CULVERT	PRC	POINT OF REVERSE CURVATURE
CY	CUBIC YARD	PROP, P	PROPOSED
		PT	POINT (OR POINT OF TANGENT)
DB	DISTRIBUTION BOX	PVC	POLYVINYL CHLORIDE (PIPE)
DBL	DOUBLE		
DEM	DEMOLISH	R&R	REMOVE & RESET/REPLACE
DET	DETENTION	R&S	REMOVE & STACK
DI	DUCTILE IRON (PIPE)	RCP	REINFORCED CONCRETE PIPE
DIA	DIAMETER	RD	ROAD (OR ROOF DRAIN)
DIM	DIMENSION	RED	REDUCER
DMH	DRAIN MANHOLE	RELOC	RELOCATE
DW	DOMESTIC WATER (OR DRY WELL)	REM	REMOVE
DWG	DRAWING	RET	RETAIN, RETAINING OR RETENTION
DYCL	DOUBLE YELLOW CENTERLINE	ROW	RIGHT OF WAY
		RR	RAILROAD
EHH	ELECTRIC HANDHOLE	RWL	RAIN WATER LEADER
EL	ELEVATION	RWY	ROADWAY
ELEC	ELECTRIC	SD	SUBDRAIN
EMH	ELECTRIC MANHOLE	SF	SQUARE FEET
EOP	EDGE OF PAVEMENT	SGC	SLOPED GRANITE CURB
EOR	EDGE OF ROAD	SMH	SEWER MANHOLE
EOW	EDGE OF WETLANDS	SP	STANDPIPE
ETC	ELECTRIC, TELEPHONE, CABLE	SPEC	SPECIFICATION
EXIST	EXISTING	STA	STATION
EXT	EXTERIOR	STC	STORMCEPTOR
		STD	STANDARD
FA	FIRE ALARM	STRTL	STRUCTURAL
FCC	FLUSH CONCRETE CURB	SWEL	SOL



LEGEND:

MAP/PARCEL — 12 / 24384

84 TRACK ROAD AREA = 5,516± SF MAP 01, LOT 94	94	146 LOWELL STREET AREA = 19,128± SF MAP 01, LOT 17	17
38 LINE ROAD AREA = 14,869± SF MAP 01, LOT F173A	F173A	147 LOWELL STREET AREA = 40,899± SF MAP 01, LOT 11	11
36 LINE ROAD AREA = 10,666± SF MAP 01, LOT F158	F158	LOWELL STREET AREA = 36,739± SF MAP 01, LOT 10	10
2 HARVEST ROAD AREA = 10,774± SF MAP 01, LOT F157A	F157A	LINE ROAD AREA = 17,160± SF MAP 01, LOT F104A	F104A
1 HARVEST ROAD AREA = 11,188± SF MAP 01, LOT F140+	F140+	46 LINE ROAD AREA = ± SF MAP 01, LOT F101A	F101A
LINE ROAD AREA = 12,624± SF MAP 01, LOT F141A+	F141A+	LINE ROAD AREA = 13,700± SF MAP 01, LOT 004	004
18 LINE ROAD AREA = ± SF MAP 01, LOT F137I	F137I	LINE ROAD AREA = 87,120± SF MAP 01, LOT 005	005
LINE ROAD REAR AREA = 5,194± SF MAP 01, LOT 08B	08B	619 NORTH AVE AREA = 238,273± SF MAP 2B, LOT 48A	48A
13 MAIN STREET AREA = 22,198± SF MAP 01, LOT 15C	15C	100 QUANNAPOWITT PKWY AREA = 370,391± SF MAP 01, LOT AM2	AM2
17 MAIN STREET AREA = 6,300± SF MAP 01, LOT 16	16	200-400 QUANNAPOWITT PKWY AREA = 1,044,394± SF MAP 01, LOT AM1	AM1
19 MAIN STREET AREA = 10520± SF MAP 01, LOT 16A	16A	QUANNAPOWITT PKWY AREA = 378,100± SF MAP 01, LOT 001	001

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D – BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No.43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=100'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
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enviromental consulting ◆ landscape architecture
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:	SHEET No.
CONTEXT PLAN	C-101B

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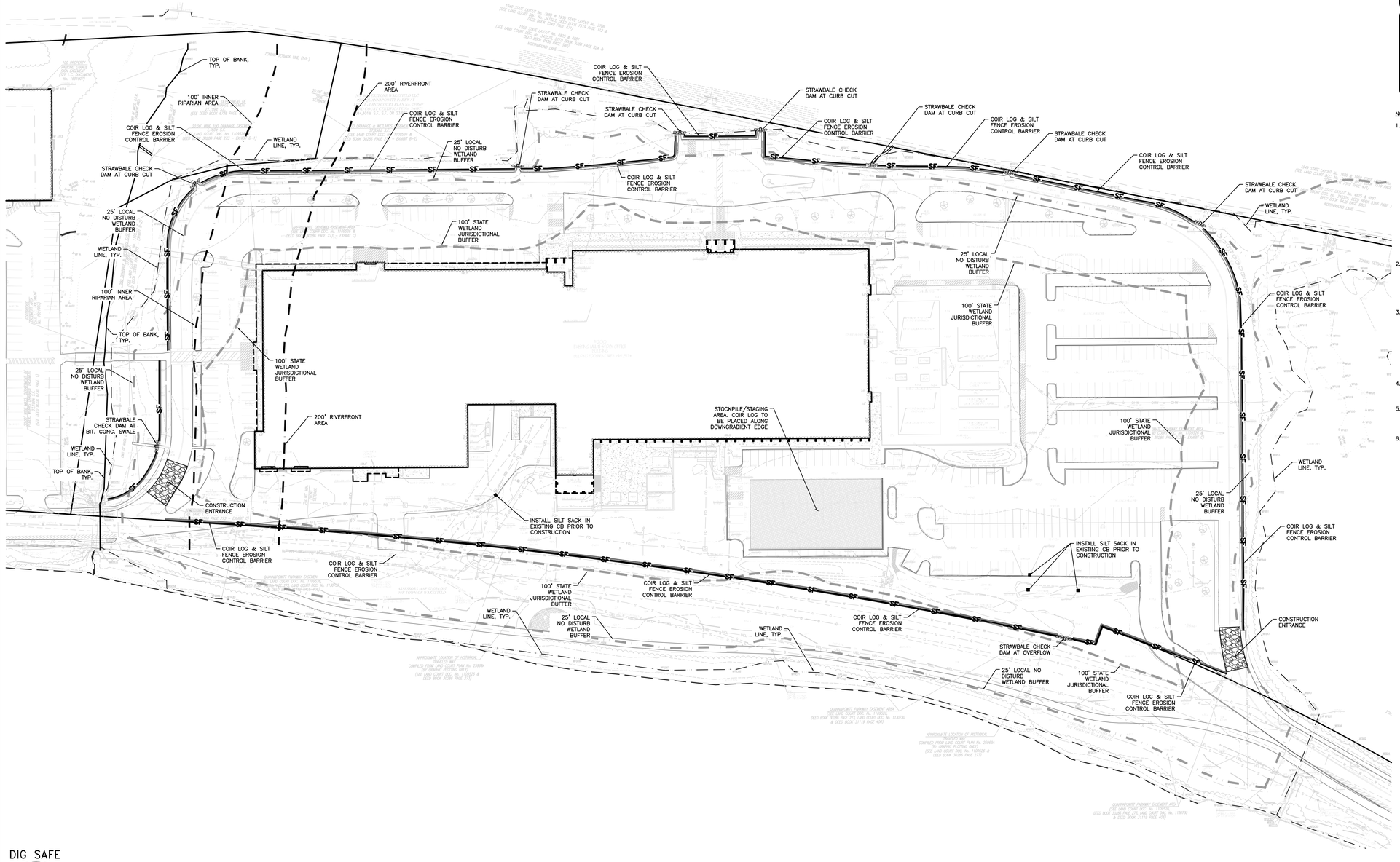

LEGEND:

- PROPERTY LINE
- SILT FENCE — SF
- 18" MULCH COIR LOG
- SILT SACK
- CONSTRUCTION ENTRANCE
- STOCKPILE/CONSTRUCTION STAGING AREA

NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
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4. ALL EXISTING CURBING WITHIN PROPERTY SHALL BE REMOVED & REPLACED WITH 6" REVEAL. SEE LAYOUT & MATERIALS PLAN FOR MATERIAL.
5. THE CONTRACTOR SHALL CONTACT "DIGSAFE" AND THE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST THE LOCATION OF THE EXISTING UTILITIES. DIGSAFE: 1-888-344-7233
6. SEE THE ABBREVIATIONS AND NOTES PLAN FOR GENERAL NOTES AND EROSION CONTROL NOTES.

DIG SAFE

BEFORE YOU DIG CALL 811 OR 1-888-DIG-SAFE 1-888-344-7233

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft.

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D - BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No.43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=50'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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environmental consulting ◆ landscape architecture
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DRAWING TITLE: EROSION CONTROL PLAN

SHEET No. C-102

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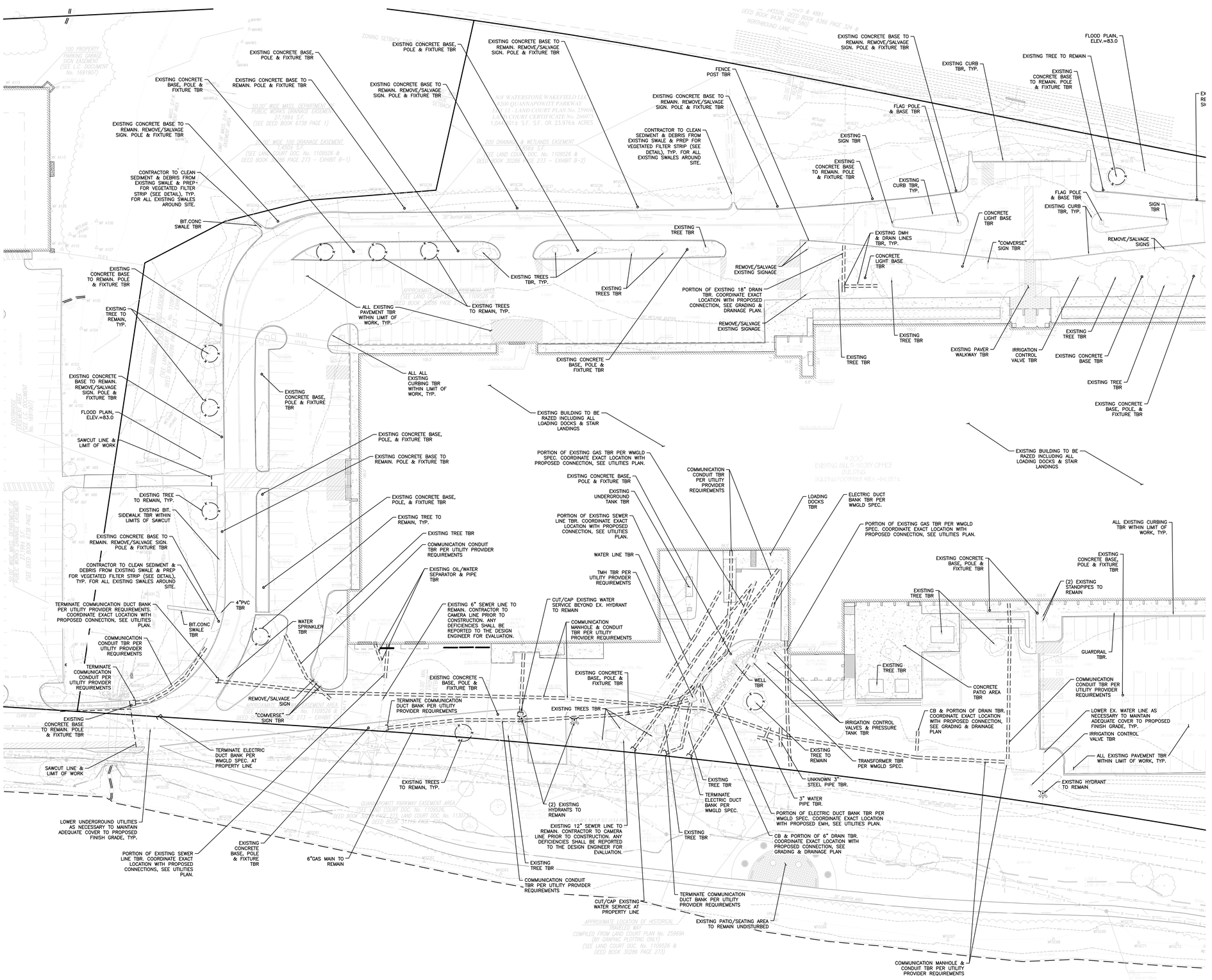
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
EXISTING CONCRETE BASE TO REMAIN. REMOVE/SALVAGE SIGN. POLE & FIXTURE TBR
EXISTING CONCRETE BASE TO REMAIN. POLE & FIXTURE TBR
CONTRACTOR TO CLEAN SEDIMENT & DEBRIS FROM EXISTING SWALE & PREP FOR VEGETATED FILTER STRIP (SEE DETAIL), TYP. FOR ALL EXISTING SWALES AROUND SITE.
BIT.CONC SWALE TBR
EXISTING CONCRETE BASE TO REMAIN. POLE & FIXTURE TBR
EXISTING TREE TO REMAIN, TYP.
FLOOD PLAIN, ELEV.=83.0
SAWCUT LINE & LIMIT OF WORK
EXISTING TREE TO REMAIN, TYP.
EXISTING BIT. SIDEWALK TBR WITHIN LIMITS OF SAWCUT
EXISTING CONCRETE BASE TO REMAIN. REMOVE/SALVAGE SIGN. POLE & FIXTURE TBR
CONTRACTOR TO CLEAN SEDIMENT & DEBRIS FROM EXISTING SWALE & PREP FOR VEGETATED FILTER STRIP (SEE DETAIL), TYP. FOR ALL EXISTING SWALES AROUND SITE.
TERMINATE COMMUNICATION DUCT BANK PER UTILITY PROVIDER REQUIREMENTS. COORDINATE EXACT LOCATION WITH PROPOSED CONNECTION, SEE UTILITIES PLAN.
COMMUNICATION CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
TERMINATE COMMUNICATION CONDUIT PER UTILITY PROVIDER REQUIREMENTS
EXISTING CONCRETE BASE TO REMAIN. POLE & FIXTURE TBR
SAWCUT LINE & LIMIT OF WORK
LOWER UNDERGROUND UTILITIES AS NECESSARY TO MAINTAIN ADEQUATE COVER TO PROPOSED FINISH GRADE, TYP.
PORTION OF EXISTING SEWER LINE TBR. COORDINATE EXACT LOCATION WITH PROPOSED CONNECTIONS, SEE UTILITIES PLAN.
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
6"GAS MAIN TO REMAIN
TERMINATE ELECTRIC DUCT BANK PER WMGLD SPEC. AT PROPERTY LINE
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
ALL EXISTING PAVEMENT TBR WITHIN LIMIT OF WORK, TYP.
EXISTING TREES TO REMAIN, TYP.
EXISTING TREES TBR, TYP.
EXISTING TREES TBR
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
ALL ALL EXISTING CURBING TBR WITHIN LIMIT OF WORK, TYP.
EXISTING BUILDING TO BE RAZED INCLUDING ALL LOADING DOCKS & STAIR LANDINGS
EXISTING CONCRETE BASE, POLE, & FIXTURE TBR
EXISTING CONCRETE BASE TO REMAIN. POLE & FIXTURE TBR
EXISTING CONCRETE BASE, POLE, & FIXTURE TBR
EXISTING TREE TO REMAIN, TYP.
EXISTING TREE TBR
COMMUNICATION CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
EXISTING OIL/WATER SEPARATOR & PIPE TBR
EXISTING 6" SEWER LINE TO REMAIN. CONTRACTOR TO CAMERA LINE PRIOR TO CONSTRUCTION. ANY DEFICIENCIES SHALL BE REPORTED TO THE DESIGN ENGINEER FOR EVALUATION.
4"PVC TBR
BIT.CONC SWALE TBR
WATER SPRINKLER TBR
REMOVE/SALVAGE SIGN
"CONVERSE" SIGN TBR
TERMINATE COMMUNICATION DUCT BANK PER UTILITY PROVIDER REQUIREMENTS
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
EXISTING TREES TO REMAIN, TYP.
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
EXISTING TREES TBR
(2) EXISTING HYDRANTS TO REMAIN
EXISTING 12" SEWER LINE TO REMAIN. CONTRACTOR TO CAMERA LINE PRIOR TO CONSTRUCTION. ANY DEFICIENCIES SHALL BE REPORTED TO THE DESIGN ENGINEER FOR EVALUATION.
EXISTING TREE TBR
COMMUNICATION CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
CUT/CAP EXISTING WATER SERVICE AT PROPERTY LINE
EXISTING PATIO/SEATING AREA TO REMAIN UNDISTURBED
TERMINATE COMMUNICATION DUCT BANK PER UTILITY PROVIDER REQUIREMENTS
EXISTING TREE TBR
TERMINATE ELECTRIC DUCT BANK PER WMGLD SPEC.
PORTION OF ELECTRIC DUCT BANK TBR PER WMGLD SPEC. COORDINATE EXACT LOCATION WITH PROPOSED EMH, SEE UTILITIES PLAN.
CB & PORTION OF 6" DRAIN TBR. COORDINATE EXACT LOCATION WITH PROPOSED CONNECTION, SEE GRADING & DRAINAGE PLAN
COMMUNICATION MANHOLE & CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
PORTION OF EXISTING GAS TBR PER WMGLD SPEC. COORDINATE EXACT LOCATION WITH PROPOSED CONNECTION, SEE UTILITIES PLAN.
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
EXISTING UNDERGROUND TANK TBR
PORTION OF EXISTING SEWER LINE TBR. COORDINATE EXACT LOCATION WITH PROPOSED CONNECTION, SEE UTILITIES PLAN.
WATER LINE TBR
TMH TBR PER UTILITY PROVIDER REQUIREMENTS
CUT/CAP EXISTING WATER SERVICE BEYOND EX. HYDRANT TO REMAIN
COMMUNICATION MANHOLE & CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
EXISTING TREES TBR
WELL TBR
IRRIGATION CONTROL VALVES & PRESSURE TANK TBR
EXISTING TREE TO REMAIN
TRANSFORMER TBR PER WMGLD SPEC.
UNKNOWN 3" STEEL PIPE TBR.
3" WATER PIPE TBR.
COMMUNICATION CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
COMMUNICATION MANHOLE & CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
LOADING DOCKS TBR
ELECTRIC DUCT BANK TBR PER WMGLD SPEC.
COMMUNICATION CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
EXISTING BUILDING TO BE RAZED INCLUDING ALL LOADING DOCKS & STAIR LANDINGS
PORTION OF EXISTING GAS TBR PER WMGLD SPEC. COORDINATE EXACT LOCATION WITH PROPOSED CONNECTION, SEE UTILITIES PLAN.
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
EXISTING TREE TBR
EXISTING TREE TBR
CONCRETE PATIO AREA TBR
CB & PORTION OF DRAIN TBR. COORDINATE EXACT LOCATION WITH PROPOSED CONNECTION, SEE GRADING & DRAINAGE PLAN
ALL EXISTING CURBING TBR WITHIN LIMIT OF WORK, TYP.
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
(2) EXISTING STANDPIPES TO REMAIN
GUARDRAIL TBR.
COMMUNICATION CONDUIT TBR PER UTILITY PROVIDER REQUIREMENTS
LOWER EX. WATER LINE AS NECESSARY TO MAINTAIN ADEQUATE COVER TO PROPOSED FINISH GRADE, TYP.
IRRIGATION CONTROL VALVE TBR
ALL EXISTING PAVEMENT TBR WITHIN LIMIT OF WORK, TYP.
EXISTING HYDRANT TO REMAIN
FENCE POST TBR
EXISTING CONCRETE BASE TO REMAIN. REMOVE/SALVAGE SIGN. POLE & FIXTURE TBR
CONTRACTOR TO CLEAN SEDIMENT & DEBRIS FROM EXISTING SWALE & PREP FOR VEGETATED FILTER STRIP (SEE DETAIL), TYP. FOR ALL EXISTING SWALES AROUND SITE.
REMOVE/SALVAGE EXISTING SIGNAGE
PORTION OF EXISTING 18" DRAIN TBR. COORDINATE EXACT LOCATION WITH PROPOSED CONNECTION, SEE GRADING & DRAINAGE PLAN.
REMOVE/SALVAGE EXISTING SIGNAGE
EXISTING CONCRETE BASE TO REMAIN. REMOVE/SALVAGE SIGN. POLE & FIXTURE TBR
EXISTING CURB TBR, TYP.
FLAG POLE & BASE TBR
EXISTING SIGN TBR
EXISTING CONCRETE BASE TO REMAIN. POLE & FIXTURE TBR
EXISTING CURB TBR, TYP.
EXISTING DMH & DRAIN LINES TBR, TYP.
CONCRETE LIGHT BASE TBR
EXISTING TREE TBR
EXISTING TREE TBR
EXISTING PAVER WALKWAY TBR
"CONVERSE" SIGN TBR
CONCRETE LIGHT BASE TBR
EXISTING CONCRETE BASE TO REMAIN. POLE & FIXTURE TBR
EXISTING TREE TO REMAIN
EXISTING CONCRETE BASE TO REMAIN. POLE & FIXTURE TBR
FLAG POLE & BASE TBR
EXISTING CURB TBR, TYP.
SIGN TBR
REMOVE/SALVAGE SIGNS
IRRIGATION CONTROL VALVE TBR
EXISTING CONCRETE BASE TBR
EXISTING TREE TBR
EXISTING CONCRETE BASE, POLE, & FIXTURE TBR
EXISTING CONCRETE BASE TO REMAIN. POLE & FIXTURE TBR
EXISTING TREE TO REMAIN, TYP.
EXISTING BUILDING TO BE RAZED INCLUDING ALL LOADING DOCKS & STAIR LANDINGS
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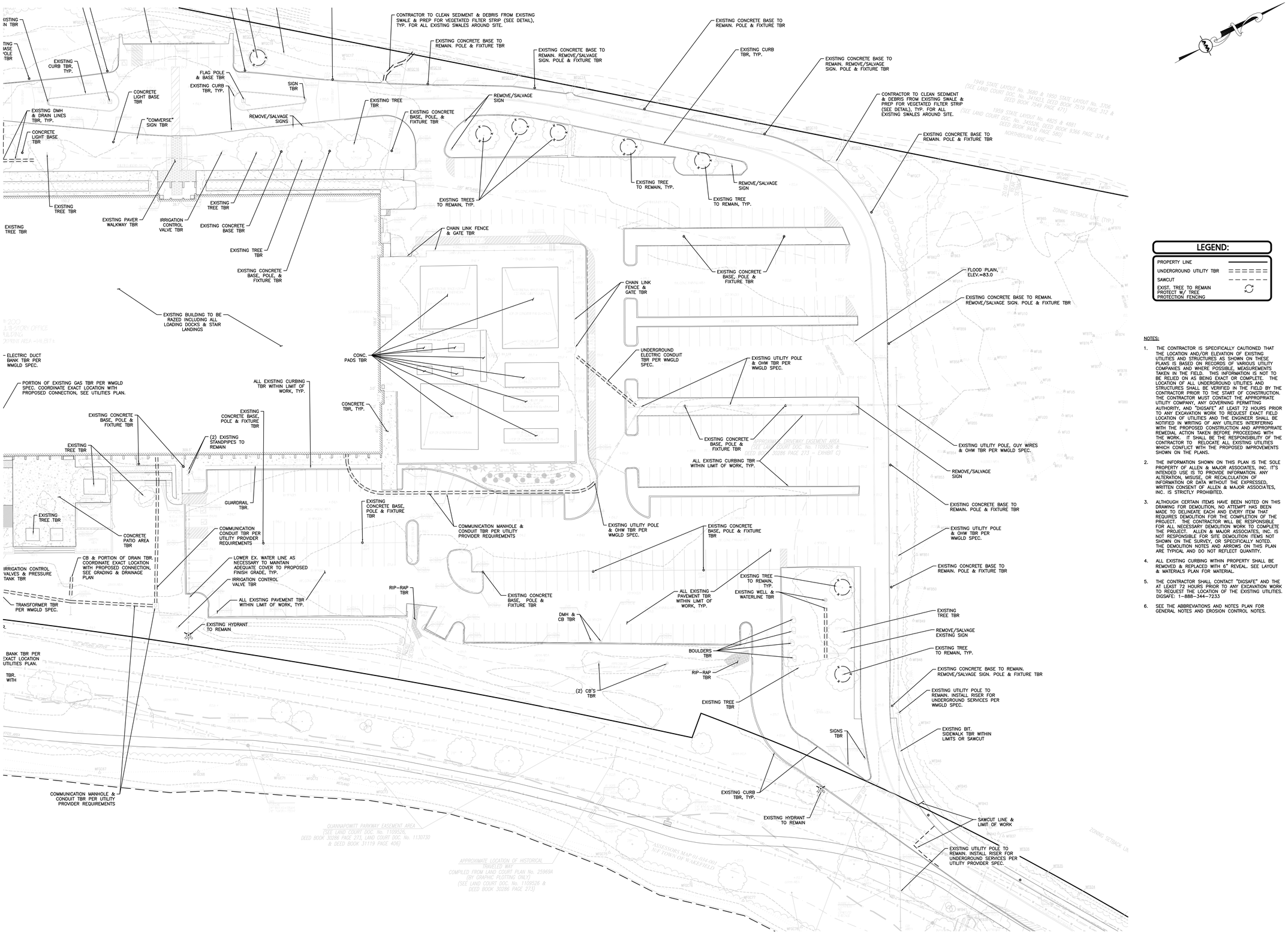
EXISTING TREE TBR
EXISTING CONCRETE BASE, POLE & FIXTURE TBR
EXISTING TREE TBR
EXISTING TREE TBR
EXISTING TRE



LEGEND:

PROPERTY LINE	———
UNDERGROUND UTILITY TBR	= = = = = =
SAWCUT	— — — — —
EXIST. TREE TO REMAIN PROTECT W/ TREE PROTECTION FENCING	

NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
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4. ALL EXISTING CURBING WITHIN PROPERTY SHALL BE REMOVED & REPLACED WITH 6" REVEAL. SEE LAYOUT & MATERIALS PLAN FOR MATERIAL.
5. THE CONTRACTOR SHALL CONTACT "DIGSAFE" AND THE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST THE LOCATION OF THE EXISTING UTILITIES. DIGSAFE: 1-888-344-7233
6. SEE THE ABBREVIATIONS AND NOTES PLAN FOR GENERAL NOTES AND EROSION CONTROL NOTES.

DIG SAFE

BEFORE YOU DIG CALL 811 OR 1-888-DIG-SAFE 1-888-344-7233

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

K:\PROJECTS\1623-11\CIVIL\DRAWINGS\CURRENT\C-1623-11 - SITE PREPERATION PLAN.DWG

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D - BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J WILLIAMS
CIVIL
No. 43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=30'	DWG. NAME: C-1623-11.dwg	
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:

SITE PREPARATION PLAN

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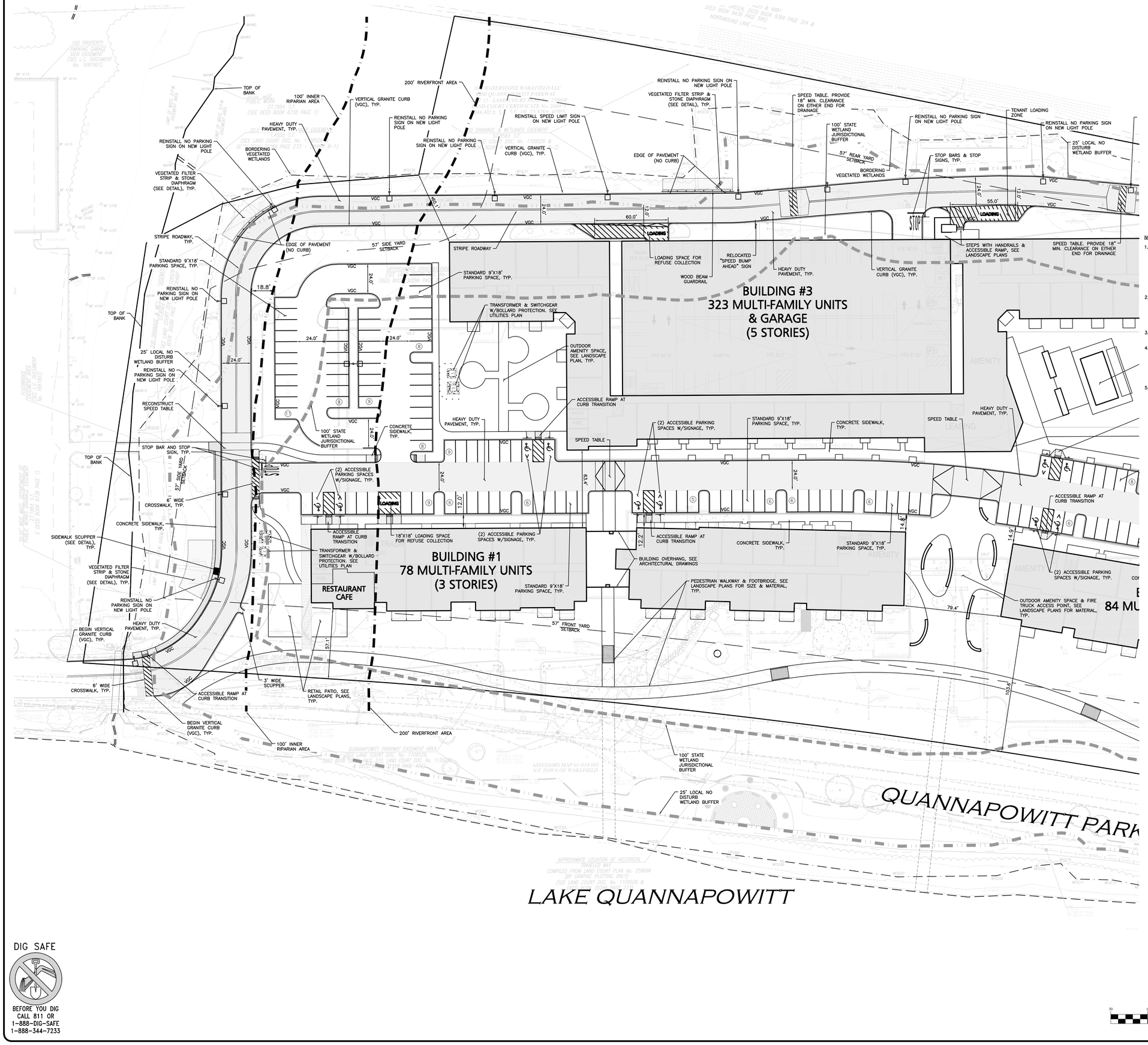
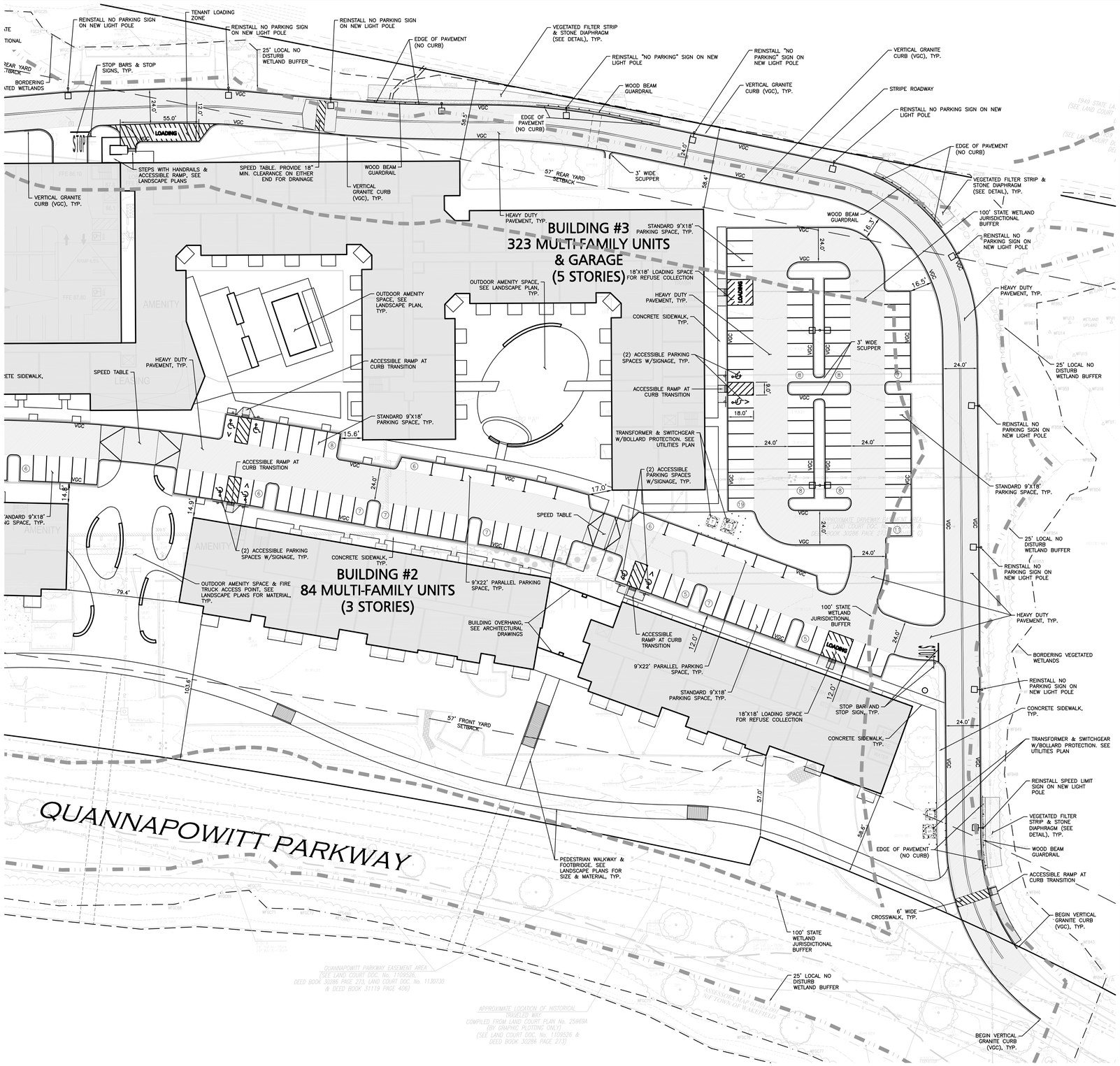
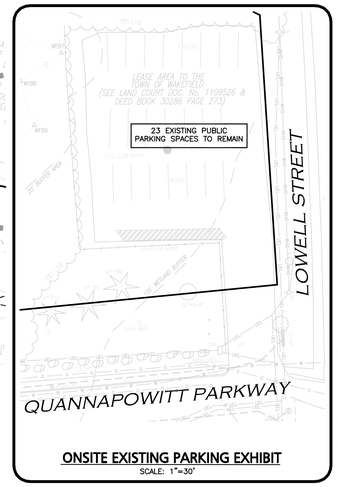
SHEET No.

C-103B


BUILDING #3
323 MULTI-FAMILY UNITS
& GARAGE
(5 STORIES)
BUILDING #1
78 MULTI-FAMILY UNITS
(3 STORIES)
RESTAURANT
CAFE
LAKE QUANNAPOWITT
QUANNAPOWITT PARK
AMENITY
LOADING
STOP
TOP OF BANK
100' INNER RIPARIAN AREA
200' RIVERFRONT AREA
VERTICAL GRANITE CURB (VGC), TYP.
REINSTALL NO PARKING SIGN ON NEW LIGHT POLE
REINSTALL SPEED LIMIT SIGN ON NEW LIGHT POLE
HEAVY DUTY PAVEMENT, TYP.
BORDERING VEGETATED WETLANDS
VEGETATED FILTER STRIP & STONE DIAPHRAGM (SEE DETAIL), TYP.
EDGE OF PAVEMENT (NO CURB)
STRIPE ROADWAY, TYP.
STANDARD 9'X18' PARKING SPACE, TYP.
57' SIDE YARD SETBACK
57' REAR YARD SETBACK
57' FRONT YARD SETBACK
25' LOCAL NO DISTURB WETLAND BUFFER
100' STATE WETLAND JURISDICTIONAL BUFFER
VEGETATED FILTER STRIP & STONE DIAPHRAGM (SEE DETAIL), TYP.
SPEED TABLE, PROVIDE 18" MIN. CLEARANCE ON EITHER END FOR DRAINAGE
VEGETATED FILTER STRIP & STONE DIAPHRAGM (SEE DETAIL), TYP.
TENANT LOADING ZONE
STOP BARS & STOP SIGNS, TYP.
LOADING SPACE FOR REFUSE COLLECTION
WOOD BEAM GUARDRAIL
RELOCATED "SPEED BUMP AHEAD" SIGN
STEPS WITH HANDRAILS & ACCESSIBLE RAMP, SEE LANDSCAPE PLANS
SPEED TABLE, PROVIDE 18" MIN. CLEARANCE ON EITHER END FOR DRAINAGE
TRANSFORMER & SWITCHGEAR W/BOLLARD PROTECTION. SEE UTILITIES PLAN
OUTDOOR AMENITY SPACE, SEE LANDSCAPE PLAN, TYP.
ACCESSIBLE RAMP AT CURB TRANSITION
HEAVY DUTY PAVEMENT, TYP.
(2) ACCESSIBLE PARKING SPACES W/SIGNAGE, TYP.
CONCRETE SIDEWALK, TYP.
SPEED TABLE
RECONSTRUCT SPEED TABLE
STOP BAR AND STOP SIGN, TYP.
6' WIDE CROSSWALK, TYP.
SIDEWALK SCUPPER (SEE DETAIL), TYP.
REINSTALL NO PARKING SIGN ON NEW LIGHT POLE
BEGIN VERTICAL GRANITE CURB (VGC), TYP.
3' WIDE SCUPPER
RETAIL PATIO, SEE LANDSCAPE PLANS, TYP.
18'X18' LOADING SPACE FOR REFUSE COLLECTION
BUILDING OVERHANG, SEE ARCHITECTURAL DRAWINGS
PEDESTRIAN WALKWAY & FOOTBRIDGE, SEE LANDSCAPE PLANS FOR SIZE & MATERIAL, TYP.
OUTDOOR AMENITY SPACE & FIRE TRUCK ACCESS POINT, SEE LANDSCAPE PLANS FOR MATERIAL, TYP.
100' INNER RIPARIAN AREA
200' RIVERFRONT AREA
100' STATE WETLAND JURISDICTIONAL BUFFER
25' LOCAL NO DISTURB WETLAND BUFFER
APPROXIMATE LOCATION OF HISTORICAL TRAVELED WAY COMPILED FROM LAND COURT PLAN No. 25969A (BY GRAPHIC PLOTTING ONLY) (SEE LAND COURT DOC. No. 1109526 & LAND COURT CASE 221)
ASSESSORS MAP 01-034-00 N/F TOWN OF WAKEFIELD
QUANNAPOWITT PARKWAY EASEMENT AREA (SEE LAND COURT DOC. No. 1109526, RED BOOK 9366 PAGE 324 & LAND COURT CASE 221)
N/F WATERSTONE WAKEFIELD LLC
N/F QUANNAPOWITT PARKWAY LLC
AND COURT CERTIFICATE No. 346564
(SEE LAND COURT DOC. No. 1109526 & RED BOOK 9366 PAGE 324)
(SEE LAND COURT DOC. No. 1109526 & LAND COURT CASE 273 - LOT B-1)
(SEE DEED BOOK 6736 PAGE 1)
100' PROPERTY, PARKING GARAGE SIGN EASEMENT, & LIC. DOCUMENT No. 1691907)
DRAINAGE AREA (SEE LAND COURT DOC. No. 1109526 & RED BOOK 9366 PAGE 324)
PUBLIC WATER MAIN EASEMENT (SEE DEED BOOK 6736 PAGE 1)
DRAINAGE EASEMENT (SEE LAND COURT DOC. No. 1109526 & RED BOOK 9366 PAGE 324)
WATER MAIN EASEMENT (SEE LAND COURT DOC. No. 1109526 & RED BOOK 9366 PAGE 324)
DRAINAGE & WETLANDS EASEMENT (SEE LAND COURT DOC. No. 1109526 & RED BOOK 9366 PAGE 324)
SEWER EASEMENT (SEE LAND COURT DOC. No. 1109526 & RED BOOK 9366 PAGE 324)
DRAINAGE





ONSITE EXISTING PARKING EXHIBIT

SCALE: 1"=30'

LEGEND:

PROPERTY LINE
SIGN
BOLLARD
BUILDING
BUILDING ARCHITECTURE
BUILDING INTERIOR WALLS
HEAVY DUTY PAVEMENT
CURB
PARKING STRIPING
TRAFFIC ARROWS
SETBACK LINE
PARKING COUNT

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR IT'S REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
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3. SEE ARCHITECTURAL (ARCH.) PLANS FOR DETAILED BUILDING INFORMATION.
4. THE CONTRACTOR SHALL CONTACT "DIGSAFE" AND THE TOWN OF WAKEFIELD DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST THE LOCATION OF THE EXISTING UTILITIES.

   DIGSAFE: 1-800-344-7233
   WAKEFIELD DEPT. OF PUBLIC WORKS: 1-781-246-6301
5. RESTAURANT/CAFE SHOWN SUBJECT TO SPECIAL PERMIT; ABSENT THE ISSUANCE OF SUCH SPECIAL PERMIT, AREA TO BE USED AS ANCILLARY MEETING/AMENITY SPACE FOR RESIDENTS.

OFF-STREET PARKING SUMMARY

LAND USAGE – MULTI-FAMILY DWELLINGS OR ATTACHED DWELLINGS:
2 BEDROOMS OR FEWER – 1.5 PARKING SPACES REQUIRED PER UNIT
3 BEDROOMS OR MORE – 2.0 PARKING SPACES REQUIRED PER UNIT

LAND USAGE – EATING PLACES SERVING FOOD OR BEVERAGES:
1.0 PARKING SPACES REQUIRED PER 3 EMPLOYEES ON MAX. WORKING SHIFT, PLUS 1.0 PER 4 SEATS, PLUS 1.0 PER 100 S.F. OF FUNCTION ROOMS NOT DESIGNED FOR EATING

PROPOSED RESIDENTIAL USE:

454 PROPOSED STUDIO, 1 BEDROOM OR 2 BEDROOM UNITS
(454 UNITS)*(1.5 REQUIRED PARKING SPACES PER UNIT) = 681 SPACES

31 PROPOSED 3 BEDROOM UNITS
(31 UNITS)*(2.0 REQUIRED PARKING SPACES PER UNIT) = 62 SPACES

PROPOSED RESTAURANT USE:
(15 EMPLOYEES) / 3 PER SPACE + (88 SEATS) / 4 SEATS PER SPACE = 27 SPACES

TOTAL REQUIRED = 770 SPACES

ADA REQUIRED STANDARD HANDICAPPED & VAN ACCESSIBLE SPACES

TOTAL=(760 TOTAL STALLS PROPOSED) = 16 TOTAL SPACES

1 OUT OF EVERY 6 PROPOSED ADA ACCESSIBLE STALLS MUST BE VAN ACCESSIBLE = 3 SPACES

TOTAL PROVIDED = 28 (8 VAN)

SURFACE PARKING			STRUCTURED PARKING				
STANDARD 9'X18' SPACES	PARALLEL 9'X22' SPACES	ACCESSIBLE SPACES	STANDARD 9'X18' SPACES	ACCESSIBLE SPACES	TOTAL PROPOSED	TOTAL REQUIRED	EXISTING TO REMAIN
205	12	14 (7 VAN)	527	12 (1 VAN)	770	770	23

1. NO REQUIRED PARKING AREAS SHALL BE PLACED IN THE REQUIRED FRONT YARD AREA OF A MULIFAMILY DWELLING COMPLEX, EXCEPT SHORT-TERM OR VISITOR PARKING, WHICH SHALL NOT COVER MORE THAN 40% OF SUCH AREA.
2. THE SURFACED AREAS OF OFF-STREET PARKING AREAS SHALL BE SET BACK A MINIMUM OF 7.5' FROM ALL BUILDINGS.
3. NO OPEN PARKING OR DRIVEWAY SHALL BE CLOSER THAN 12 FEET TO A WALL CONTAINING WINDOWS TO HABITABLE ROOMS OF A DWELLING UNIT WHICH IS ON THE GROUND FLOOR OR BASEMENT FLOOR.
4. OPEN PARKING AREAS SHALL BE SEPARATED FROM THE STREET LINE BY A LANDSCAPED STRIP NOT LESS THAN 15' IN WIDTH, EXCEPT AT ENTRANCES AND EXITS.
5. AT LEAST 5% OF THE INTERIOR OF ANY PARKING LOT WITH 40 OR MORE PARKING SPACES SHALL BE LANDSCAPED, BUT PLANTING OR SCREENING ALONG THE PERIMETER SHALL NOT BE COUNTED AS PART OF THIS 5%. THERE SHALL BE A MINIMUM OF ONE SHADE TREE FOR EACH 2,000 S.F. OF PARKING AREA. SHADE TREE SIZE, SPECIES, AND LOCATION SHALL BE APPROVED BY THE TOWN ARBORIST.

DIMENSIONAL REGULATIONS: MULTIFAMILY DWELLINGS, MIXED USE DEVELOPMENT

UNDERLYING ZONING DISTRICT: LIMITED BUSINESS (LB)
USE: MID-RISE APARTMENT W/ RETAIL USE

ITEM	EXISTING	PROPOSED	REQUIRED/ALLOWED (SEC.190-32)	REQUIRED/ALLOWED (TABLE 2)
MINIMUM LOT AREA (S.F.)	23.97 AC. (1,044,397 S.F.)	23.97 AC. (1,044,397 S.F.)	4,000	40,000
FLOOR AREA RATIO (FAR)	0.21 (±224,067 S.F.)	0.50 (±525,975 S.F.)	N/A	1.25
DENSITY	N/A	1,044,397 S.F. =2,153 485 UNITS	1,200 S.F PER UNIT	N/A
FRONTAGE AND WIDTH (FT)	>180	>180	180	150
FRONT YARD SETBACK (FT)	>50	57.0	56.6 (1)	50
SIDE YARD SETBACK (FT)	>20	60.1	56.6 (1)	20
REAR YARD SETBACK (FT)	>20	58.4	56.6 (1)	20
DISTANCE BETWEEN BUILDINGS (FT)	>20	63.4	56.6 (2)	N/A
BUILDING HEIGHT (STORIES)	N/A	5	5	N/A
BUILDING HEIGHT (FT)	±57.5	56.6 (3)	50	50
BUILDING COVERAGE (%)	14% (141,817 S.F.)	16% (166,805 S.F.)	35% (MAX.)	40% (MAX.)
OPEN AREA (%)	60% (630,458 S.F.)	73% (767,583 S.F.)	30% (MIN.)	30% (MIN.)

1. 30' OR HEIGHT OF BUILDING, WHICHEVER IS GREATER
2. 50' OR HEIGHT OF TALLER BUILDING, WHICHEVER IS GREATER
3. RELIEF REQUESTED PER SECTION 190-32.1.A; THE SPECIAL PERMIT GRANTING AUTHORITY, AS PROVIDED IN 190-32, MAY ALLOW REDUCTIONS AND/OR ALTERATIONS IN THE DIMENSIONAL CONTROLS FOR MULTIFAMILY DWELLINGS AS REQUIRED UNDER 190-32D AND TABLE 2 (TABLE OF DIMENSIONAL REGULATIONS) OF THE ZONING BYLAW BY SPECIAL PERMIT, ACCORDING TO PROCEDURE CONTAINED IN ARTICLE VIII, AND IF IT DEEMS THE REDUCTIONS WILL ENHANCE THE MULTIFAMILY PROJECT AS A WHOLE OR ALLOW IT TO BENEFIT THE NEIGHBORHOOD IN WHICH IT IS SITUATED OR THE TOWN OF WAKEFIELD AS A WHOLE.

OPEN AREA: A YARD AREA WHICH IS UNBUILT UPON BUT WHICH MAY INCLUDE SIDEWALKS, SWIMMING POOLS, TERRACED AREAS, PATIOS, TENNIS COURTS, PLAY COURTS, PLAYGROUND FACILITIES OR SIMILAR FACILITIES AND IS NOT DEVOTED TO STREETS, DRIVEWAYS OR OFF-STREET PARKING OR LOADING AREAS.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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190-32D – BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No.43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

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185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

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DRAWING TITLE:	SHEET No.
LAYOUT PLAN	C-104B

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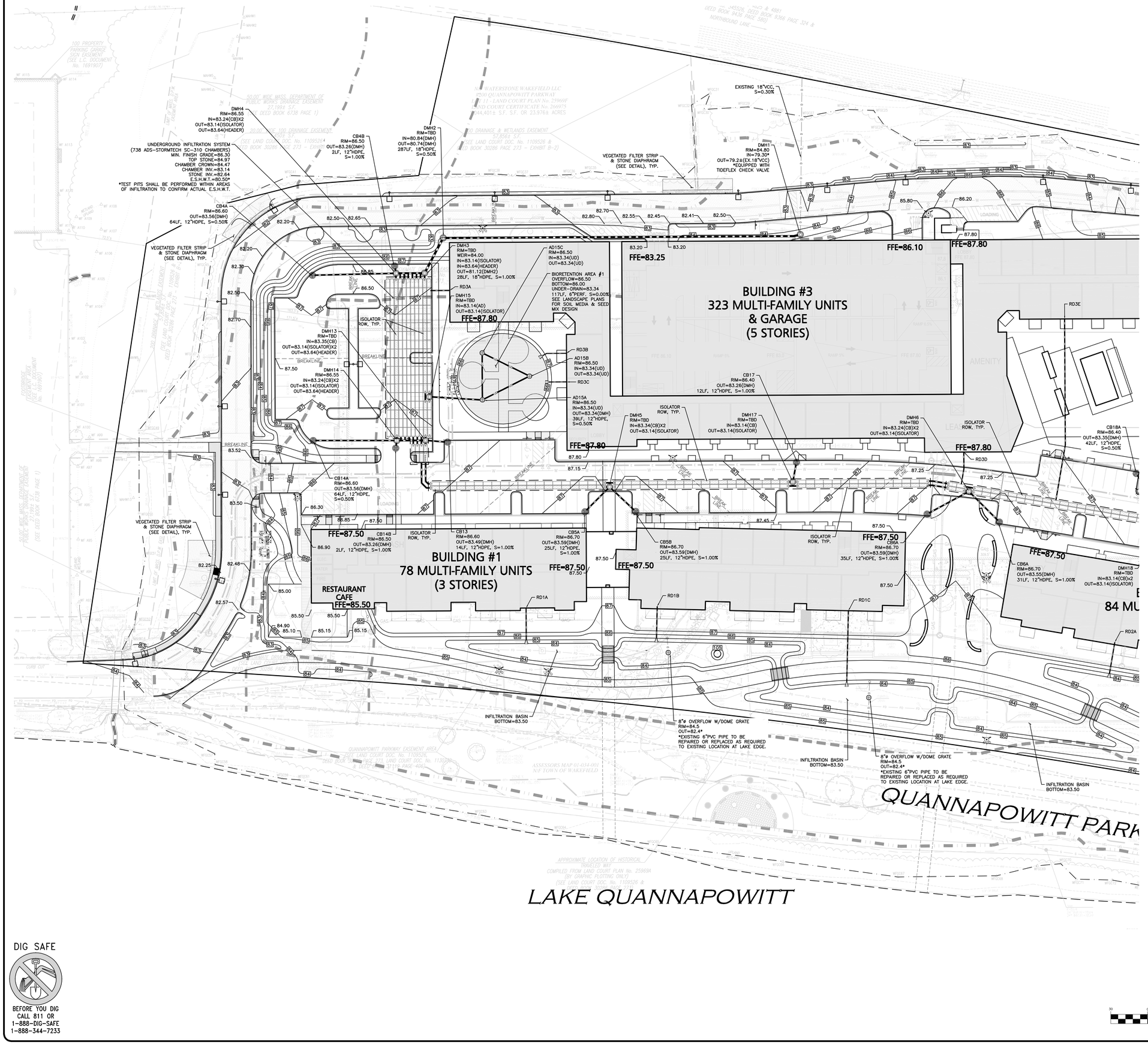

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190-32D – BUILDING HEIGHT REQUIREMENT

LEGEND:

- DRAIN MANHOLE
- CATCH BASIN
- CATCH BASIN – DOUBLE GRATE
- FLARED END SECTION
- DRAIN LINE
- RIPRAP OUTFALL
- 1' CONTOUR
- TOP OF BERM
- BIO/INFILTRATION BASIN
- INFILTRATION SYSTEM

NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
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DRAWING TITLE:

GRADING & DRAINAGE PLAN

SHEET No.

C-105A

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environmental consulting ◆ landscape architecture
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TEL: (781) 935-6889
FAX: (781) 935-2896
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DRAWING TITLE:

GRADING & DRAINAGE PLAN

SHEET No.

C-105B

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GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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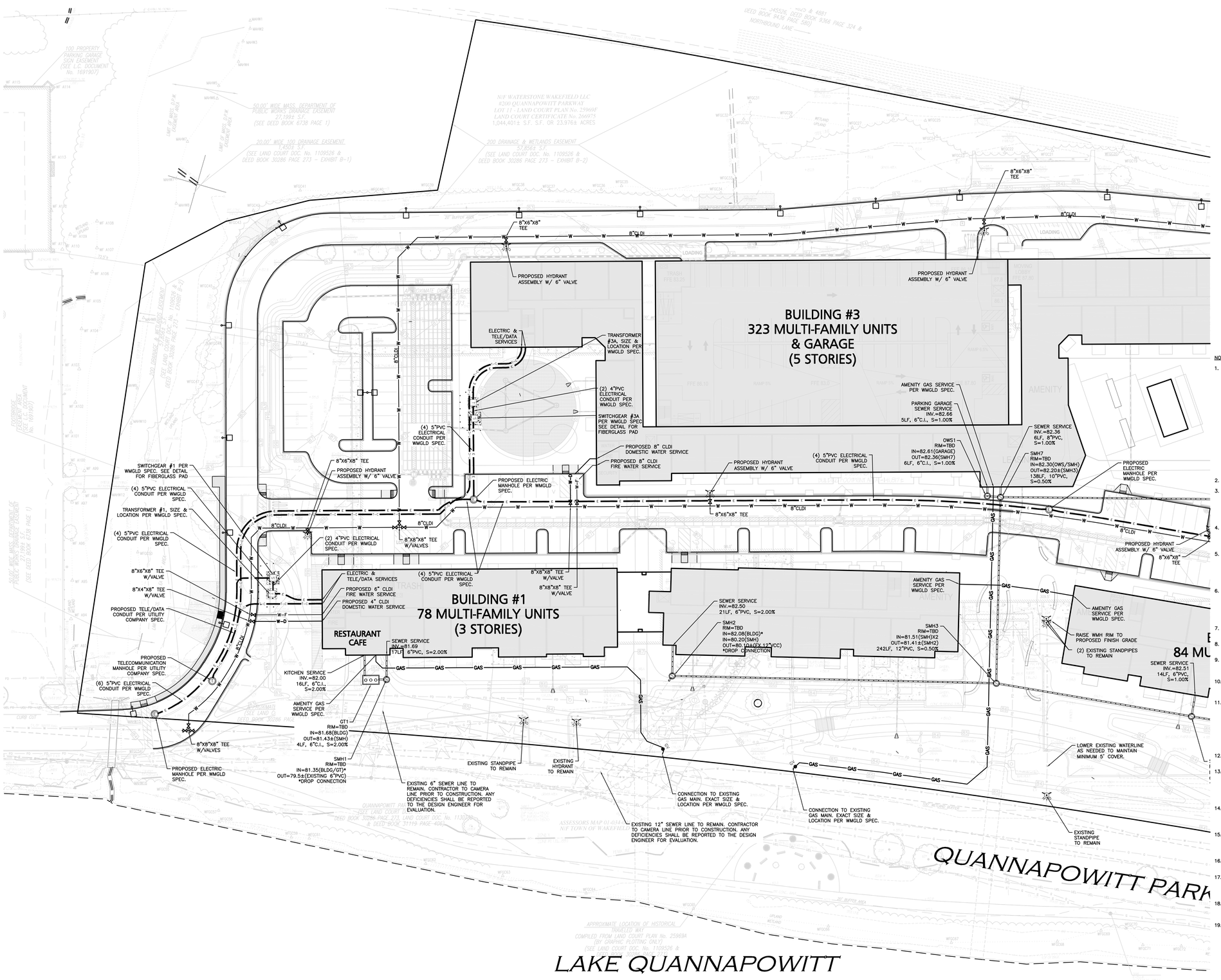
1-888-DIG-SAFE
1-888-344-7233

N:\PROJECTS\1623-11\CIVIL\DRAWINGS\CURRENT\C-1623-11 - GRADING & DRAINAGE.DWG



LEGEND:

SEWER MANHOLE	S
SEWER CLEANOUT	C
SEWER VENT	V
SEWER LINE	
CONCRETE PIPE ENCASEMENT	
WATER LINE	W
WATER (FIRE SERVICE)	W-F
WATER (DOMESTIC SERVICE)	W-D
WATER VALVE	WV
HYDRANT	
GAS LINE	GAS
GAS VALVE	GV
OIL WATER SEPARATOR	OWS
GREASE TRAP	GT
OVER HEAD WIRE	OHW
UTILITY POLE	
ELECTRIC MANHOLE/SPLICE BOX	E
ELECTRICAL CONDUIT	E
TELE/CABLE CONDUIT	T/C

NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. ALL ELEVATIONS REFER TO NAVD '88.
3. THE EXISTING SEWER LATERAL SHALL BE INSPECTED BY CAMERA BOTH PRIOR TO CONSTRUCTION AND AFTER CONSTRUCTION IS COMPLETED TO VERIFY THE CONDITION. THE CONTRACTOR SHALL CAMERA THE ENTIRE LENGTH OF SEWER LINE ON THE PROPERTY AND PROVIDE VIDEOS TO CIVIL ENGINEER & OWNER.
4. THE SANITARY SEWER FLOW WITHIN THE MUNICIPAL TRUNKLINE SHALL NOT BE INTERRUPTED DURING ANY PART OF THE PROPOSED SITE WORK.
5. INVERT ELEVATION OF EXISTING SEWER LATERALS TO REMAIN AS OUTLETS AT PROPOSED SEWER MANHOLES ARE APPROXIMATE AND HAVE NOT BEEN CONFIRMED. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ACTUAL INVERT ELEVATIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE DESIGN ENGINEER FOR EVALUATION.
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8. SHUT DOWN OF EXISTING WATER MAINS SHALL BE COORDINATED WITH THE TOWN OF WAKEFIELD DPW.
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12. ALL UTILITY DISCONTINUANCES SHALL BE REMOVED FROM THE PUBLIC RIGHT-OF-WAY.
13. THE SITE CONTRACTOR SHALL INFORM THE TOWN OF WAKEFIELD ENGINEERING DEPARTMENT AND DEPARTMENT OF PUBLIC WORKS WHEN WATER AND SEWER WORK IS BEING CONDUCTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ANY REQUIRED INSPECTIONS OF THE WATER AND SEWER WORK PRIOR TO BACKFILL OF THE COMPONENTS.
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GRAPHIC SCALE

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(IN FEET)
1 inch = 30 ft.

DIG SAFE

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N:\PROJECTS\1623-11\CIVIL\DRAWINGS\CURRENT\C-1623-11 - UTILITIES.DWG

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D - BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS TIMOTHY J. WILLIAMS CIVIL No.43119 REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=30'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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DRAWING TITLE:	SHEET No.
UTILITIES PLAN	C-106A

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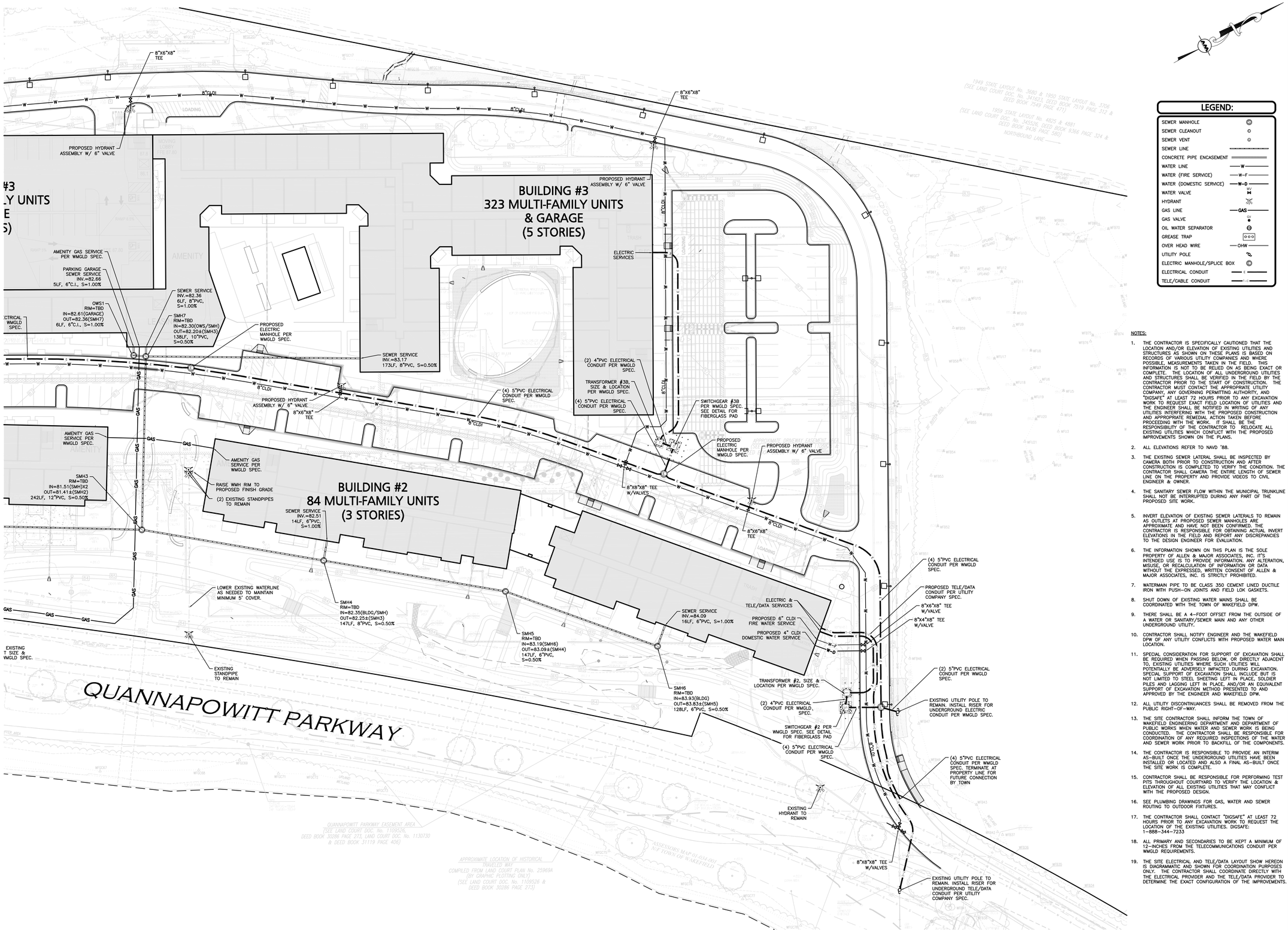

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SEWER MANHOLE	S
SEWER CLEANOUT	C
SEWER VENT	V
SEWER LINE	
CONCRETE PIPE ENCASEMENT	
WATER LINE	W
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HYDRANT	
GAS LINE	GAS
GAS VALVE	GV
OIL WATER SEPARATOR	
GREASE TRAP	
OVER HEAD WIRE	OHW
UTILITY POLE	
ELECTRIC MANHOLE/SPLICE BOX	E
ELECTRICAL CONDUIT	E
TELE/CABLE CONDUIT	T/C

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(IN FEET)
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DIG SAFE

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COMMONWEALTH OF MASSACHUSETTS TIMOTHY J. WILLIAMS CIVIL No.43119 REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=30'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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DRAWING TITLE:	SHEET No.
UTILITIES PLAN	C-106B

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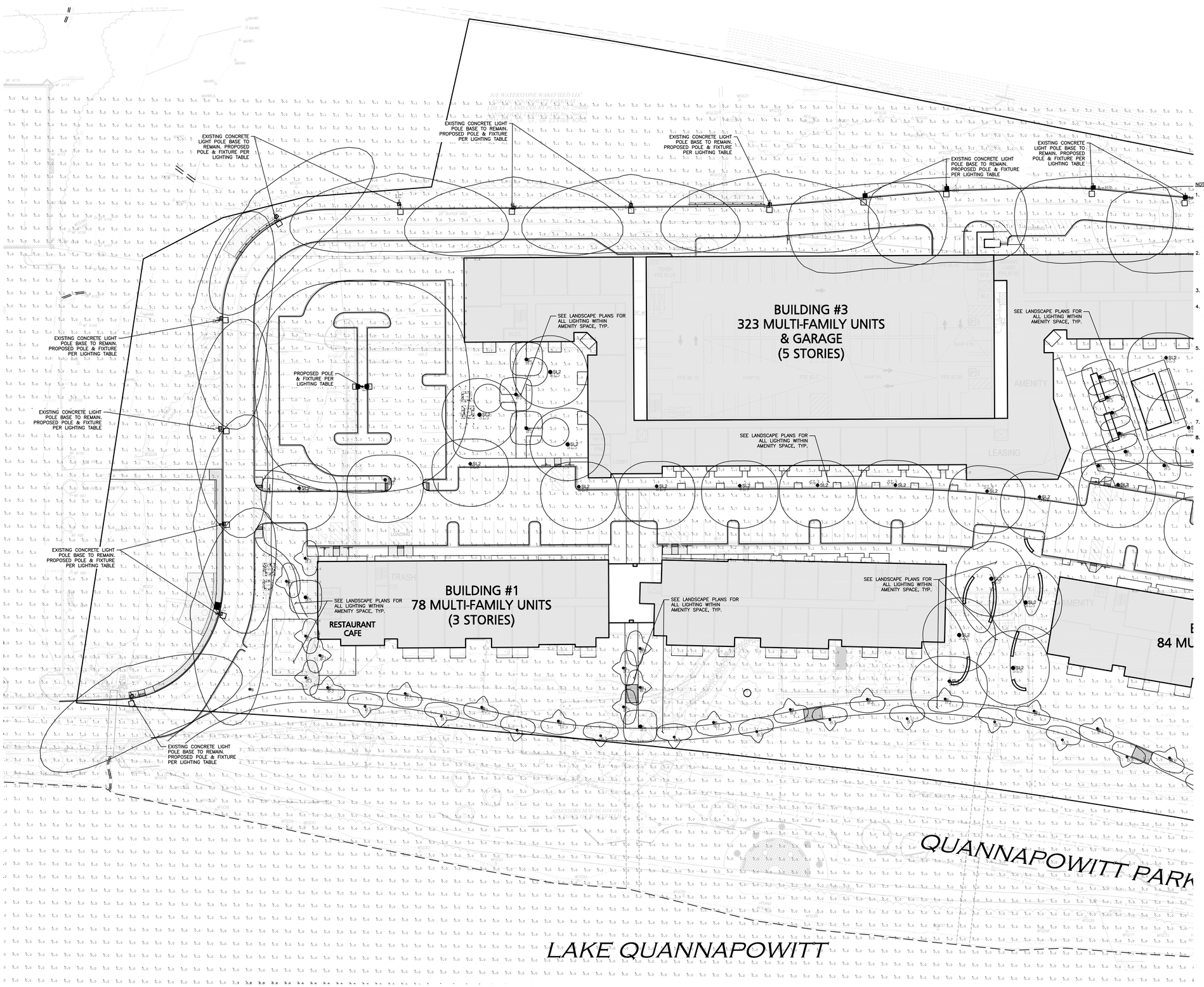

LEGEND:

PROPOSED LIGHTING	
EXISTING STREET LIGHTING	
PHOTOMETRICS	2.0 0.8

NOTES:

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   DIGSAFE: 1-800-344-7233
   WAKEFIELD DEPT. OF PUBLIC WORKS: 1-781-246-6301
5. THIS LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS UTILIZING CURRENT INDUSTRY STANDARD LAMP RATINGS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER VARIABLE FIELD CONDITIONS.
6. WIRING SIZES AND QUANTITIES SHALL BE DETERMINED BY THE SITE ELECTRICAL CONTRACTOR AND COORDINATED WITH THE BUILDING ELECTRICAL CONTRACTOR.
7. ALL MOUNTING HEIGHTS WITHIN PARKWAY ARE TO BE 30' UNLESS OTHERWISE NOTED
8. **LIGHTING LUMINAIRE SCHEDULE, LOCATIONS, NOTES, AND PHOTOMETRICS PROVIDED BY APEX LIGHTING SOLUTIONS, 20-30 BEAVER ROAD, WETHERSFIELD, CT 06109**

DIG SAFE

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190-32D - BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J WILLIAMS
CIVIL
No.43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
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DRAWING TITLE:	SHEET No.
SITE LIGHTING PLAN	C-107A

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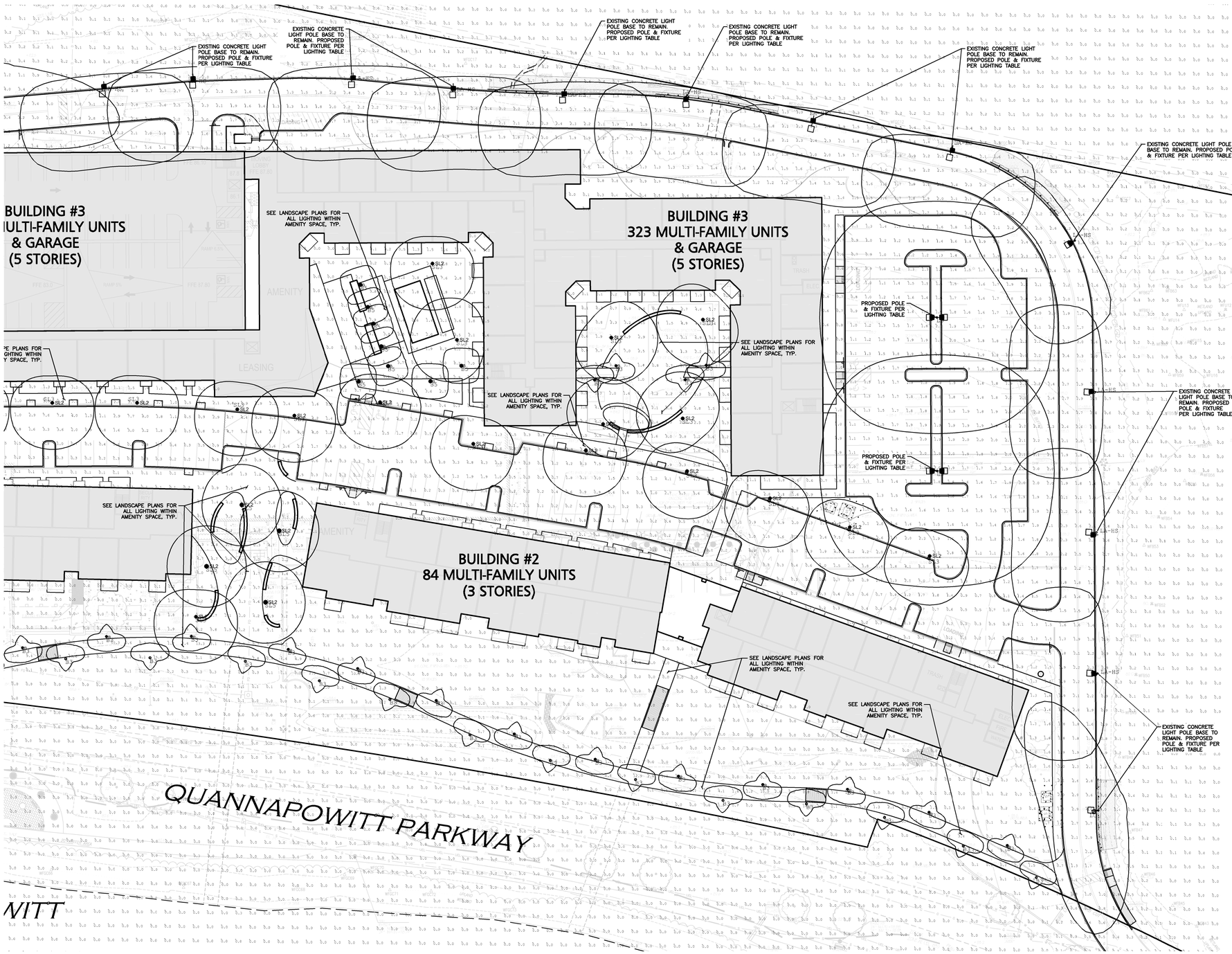

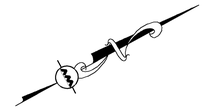

LEGEND:

- PROPOSED LIGHTING
- EXISTING STREET LIGHTING
- PHOTOMETRICS

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GARDCO by Signify — **Site & Area** — EcoForm — ECF-S small area light

Gardco EcoForm Gen-2 combines economy with performance in an LED area luminaire. Capable of delivering up to 27,800 lumens or more in a compact, low profile LED luminaire, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems available for further energy savings. Includes Service Tag, our innovative way to provide assistance throughout the life of the product.

Luminaire Schedule							
Qty	Label	Arrangement	Lumens	Input Watts	LLF	BUG Rating	Description
50	B3	SINGLE	2008	23.1	0.765	B0-U0-G1	GARDCO FBL-42-14L-450-NW-G2-3-UNV
13	B5	SINGLE	2195	23.1	0.765	B2-U0-G1	GARDCO FBL-42-14L-450-NW-G2-5-UNV
24	SL3	SINGLE	7756	75.81978	0.850	B2-U0-G3	GARDCO FPT-140L-1615-NW-G2-3-UNV / MOUNTED @ 10FT
7	SL5	SINGLE	7258	75.81978	0.850	B3-U0-G2	GARDCO FPT-140L-1615-NW-G2-5-UNV / MOUNTED @ 10FT
11	LC	SINGLE	17115	135.1	0.850	B3-U0-G3	GARDCO ECF-S-48L-900-NW-G2-AR-2-UNV-FINISH / MOUNTED @ 30FT
12	LA-HS	SINGLE	13338	135.1	0.850	B1-U0-G3	GARDCO ECF-S-48L-900-NW-G2-AR-3-UNV-HS-FINISH / MOUNTED @ 30FT
3	LD	BACK-BACK	17413	135.1	0.850	B5-U0-G3	GARDCO ECF-S-48L-900-NW-G2-AR-5W-UNV-FINISH / DOUBLE MOUNTED @ 30FT

Calculation Summary						
Label	Grid Height	Avg	Max	Min	Avg/Min	Max/Min
Site_Ground	0	0.70	23.4	0.0	N.A.	N.A.
PARKING LOT		1.47	8.3	0.1	14.70	83.00
ROAD		2.52	5.3	0.5	5.04	10.60

APEX LIGHTING SOLUTIONS
THE POINT WHERE ALL ASCENDING LINES CONVERGE
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WWW.APEXLIGHTINGSOLUTIONS.COM

GARDCO by Signify — **Pole/Bracket** — Site and Area Poles — Straight Round Aluminum Tenon Base

The Gardco RA straight aluminum pole consists of a one-piece round extruded aluminum lighting standard mounted to a structural quality carbon galvanized steel base tenon. This construction offers the corrosion resistance and flexibility of aluminum with the strength and integrity of steel. The poles are finished with either Architectural Class 1 anodizing or electrostatically applied TGIC polyester powdercoat.

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1-888-344-7233

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D - BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No.43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=30'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY
WOBURN MA 01888-0118
TEL: (781) 935-0889
FAX: (781) 935-2896
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: SITE LIGHTING PLAN

SHEET No. C-107B

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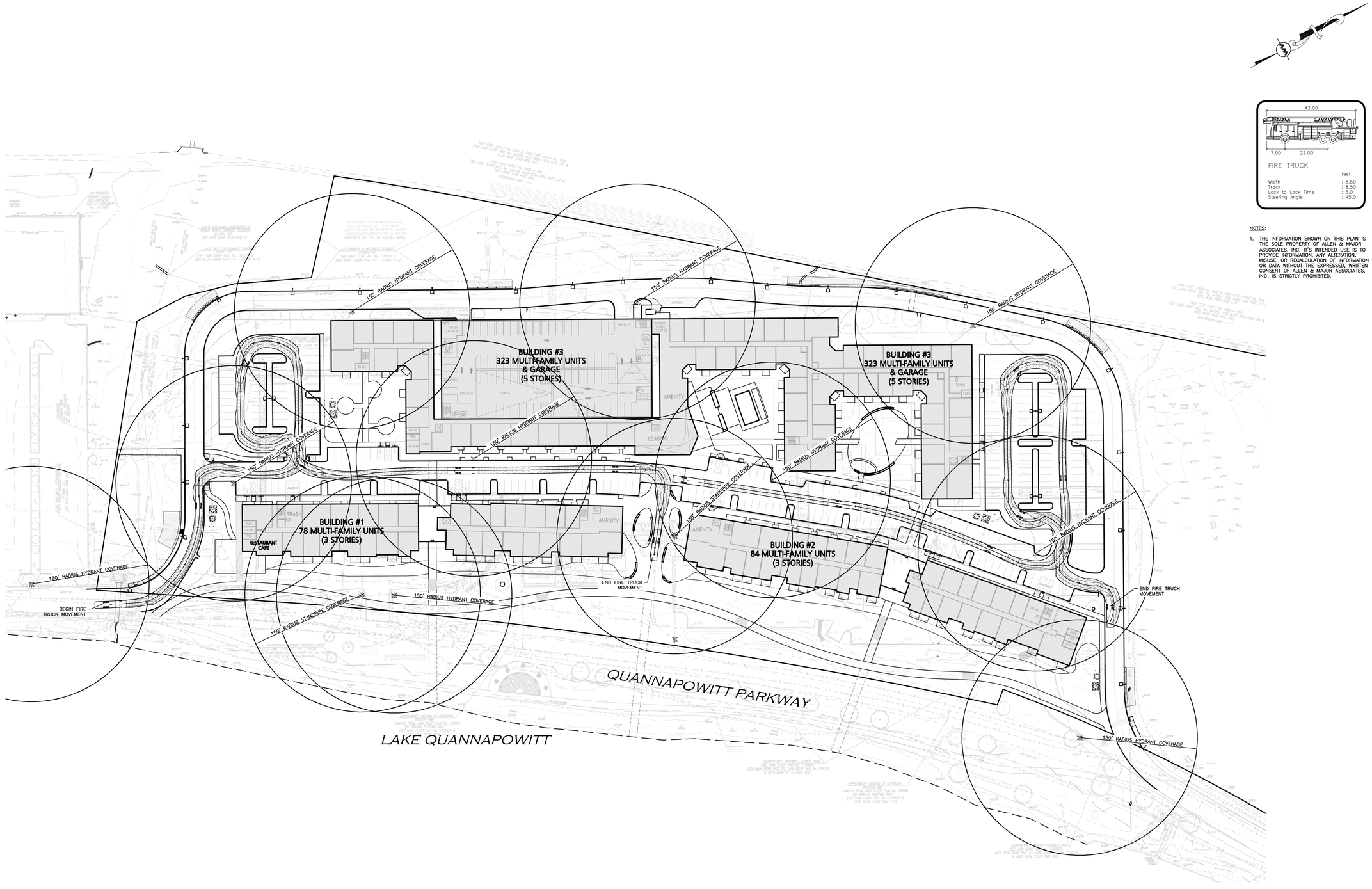

FIRE TRUCK

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

NOTES:

1. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. IT'S INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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N:\PROJECTS\1623-11\CIVIL\DRAWINGS\CURRENT\C-1623-11 - TRUCK TURNING PLAN.DWG

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D – BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No. 43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=50'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY
WOBURN MA 01888-0118
TEL: (781) 935-6889
FAX: (781) 935-2896
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:

FIRE TRUCK TURNING & HYDRANT LOCATION PLAN

SHEET No.

C-108

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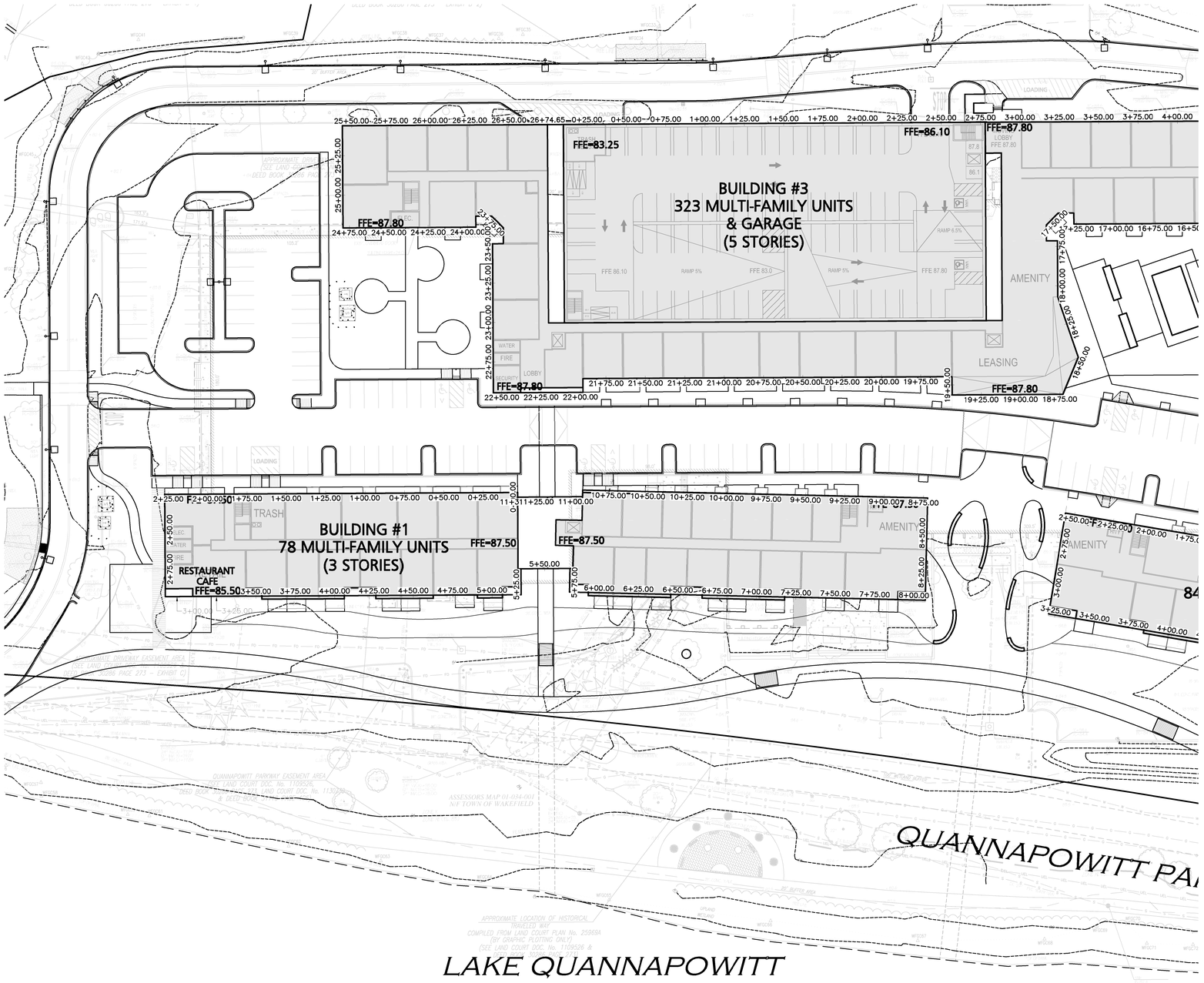

NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. ALL ELEVATIONS REFER TO NAVD '88.
3. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. IT'S INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
4. ALL EXISTING GRADES AT LOCATIONS WITHIN THE FOOTPRINT OF THE EXISTING BUILDING ASSUME AN ELEVATION 86.70 TO MATCH THE EXISTING FINISH FLOOR.

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N:\PROJECTS\1623-11\CIVIL\DRAWINGS\CURRENT\C-1623-11 - AVERAGE GRADE.DWG

Computation Sheet

Title: ***Grade Plane Summary Spreadsheet*** — By: ND
Project: 200 Quinnapowitt Parkway, Wakefield, MA — Chk'd: TJW
Date — Apprv'd: TJW

Building #1

Station From	Elevation 1	Station To	Elevation 2	Length	Average Grade	Weighted Average Finish Grade
Existing Grade						
0+00.00	86.70	0+25.00	86.70	25.00	86.70	2167.50
0+25.00	86.70	0+50.00	86.70	25.00	86.70	2167.50
0+50.00	86.70	0+75.00	86.70	25.00	86.70	2167.50
0+75.00	86.70	1+00.00	86.70	25.00	86.70	2167.50
1+00.00	86.70	1+25.00	86.70	25.00	86.70	2167.50
1+25.00	86.70	1+50.00	86.70	25.00	86.70	2167.50
1+50.00	86.70	1+75.00	86.70	25.00	86.70	2167.50
1+75.00	86.70	2+00.00	84.75	25.00	85.73	2143.13
2+00.00	84.75	2+25.00	84.10	25.00	84.43	2110.63
2+25.00	84.10	2+50.00	84.10	25.00	84.10	2102.50
2+50.00	84.10	2+75.00	83.80	25.00	83.95	2098.75
2+75.00	83.80	3+00.00	84.30	25.00	84.05	2101.25
3+00.00	84.30	3+25.00	84.20	25.00	84.25	2106.25
3+25.00	84.20	3+50.00	84.20	25.00	84.20	2105.00
3+50.00	84.20	3+75.00	84.10	25.00	84.15	2103.75
3+75.00	84.10	4+00.00	84.20	25.00	84.15	2103.75
4+00.00	84.20	4+25.00	84.30	25.00	84.25	2106.25
4+25.00	84.30	4+50.00	84.40	25.00	84.35	2108.75
4+50.00	84.40	4+75.00	84.40	25.00	84.40	2110.00
4+75.00	84.40	5+00.00	84.40	25.00	84.40	2110.00
5+00.00	84.40	5+25.00	86.70	25.00	85.55	2138.75
5+25.00	86.70	5+50.00	86.70	25.00	86.70	2167.50
5+50.00	86.70	5+75.00	86.70	25.00	86.70	2167.50
5+75.00	86.70	6+00.00	83.90	25.00	85.30	2132.50
6+00.00	83.90	6+25.00	84.60	25.00	84.25	2106.25
6+25.00	84.60	6+50.00	85.90	25.00	85.25	2131.25
6+50.00	85.90	6+75.00	85.90	25.00	85.90	2147.50
6+75.00	85.90	7+00.00	86.70	25.00	86.30	2157.50
7+00.00	86.70	7+25.00	86.60	25.00	86.65	2166.25
7+25.00	86.60	7+50.00	86.10	25.00	86.35	2158.75
7+50.00	86.10	7+75.00	86.10	25.00	86.10	2152.50
7+75.00	86.10	8+00.00	86.70	25.00	86.40	2160.00
8+00.00	86.70	8+25.00	86.00	25.00	86.35	2158.75
8+25.00	86.00	8+50.00	86.70	25.00	86.35	2158.75
8+50.00	86.70	8+75.00	86.70	25.00	86.70	2167.50
8+75.00	86.70	9+00.00	86.70	25.00	86.70	2167.50
9+00.00	86.70	9+25.00	86.70	25.00	86.70	2167.50
9+25.00	86.70	9+50.00	86.70	25.00	86.70	2167.50
9+50.00	86.70	9+75.00	86.70	25.00	86.70	2167.50
9+75.00	86.70	10+00.00	86.70	25.00	86.70	2167.50
10+00.00	86.70	10+25.00	86.70	25.00	86.70	2167.50
10+25.00	86.70	10+50.00	86.70	25.00	86.70	2167.50
10+50.00	86.70	10+75.00	84.00	25.00	85.35	2133.75
10+75.00	84.00	11+00.00	83.80	25.00	83.90	2097.50
11+00.00	83.80	11+25.00	86.70	25.00	85.25	2131.25
11+25.00	86.70	11+37.04	86.70	12.04	86.70	1043.87
			Total	1,137.04		85.69

Computation Sheet

Title: ***Grade Plane Summary Spreadsheet*** — By: ND
Project: 200 Quinnapowitt Parkway, Wakefield, MA — Chk'd: TJW
Date — Apprv'd: TJW

Building #3

Station From	Elevation 1	Station To	Elevation 2	Length	Average Grade	Weighted Average Finish Grade
Existing Grade						
0+00.00	83.10	0+25.00	82.90	25.00	83.00	2075.00
0+25.00	82.90	0+50.00	82.80	25.00	82.85	2071.25
0+50.00	82.80	0+75.00	82.60	25.00	82.70	2067.50
0+75.00	82.60	1+00.00	82.70	25.00	82.65	2066.25
1+00.00	82.70	1+25.00	83.40	25.00	83.05	2076.25
1+25.00	83.40	1+50.00	84.00	25.00	83.70	2092.50
1+50.00	84.00	1+75.00	84.80	25.00	84.30	2107.50
1+75.00	84.60	2+00.00	84.70	25.00	84.65	2116.25
2+00.00	84.70	2+25.00	84.60	25.00	84.65	2116.25
2+25.00	84.60	2+50.00	84.70	25.00	84.65	2116.25
2+50.00	84.70	2+75.00	85.20	25.00	84.95	2123.75
2+75.00	85.20	3+00.00	84.80	25.00	85.00	2125.00
3+00.00	84.80	3+25.00	85.00	25.00	84.90	2122.50
3+25.00	85.00	3+50.00	84.80	25.00	84.90	2122.50
3+50.00	84.80	3+75.00	84.90	25.00	84.85	2121.25
3+75.00	84.90	4+00.00	84.50	25.00	84.70	2117.50
4+00.00	84.50	4+25.00	84.10	25.00	84.30	2107.50
4+25.00	84.10	4+50.00	83.90	25.00	84.00	2100.00
4+50.00	83.90	4+75.00	83.80	25.00	83.85	2096.25
4+75.00	83.80	5+00.00	83.10	25.00	83.45	2086.25
5+00.00	83.10	5+25.00	83.10	25.00	83.10	2077.50
5+25.00	83.10	5+50.00	83.20	25.00	83.15	2078.75
5+50.00	83.20	5+75.00	83.30	25.00	83.25	2081.25
5+75.00	83.30	6+00.00	83.40	25.00	83.35	2083.75
6+00.00	83.40	6+25.00	83.30	25.00	83.35	2083.75
6+25.00	83.30	6+50.00	83.20	25.00	83.25	2081.25
6+50.00	83.20	6+75.00	83.00	25.00	83.10	2077.50
6+75.00	83.00	7+00.00	82.90	25.00	82.95	2073.75
7+00.00	82.90	7+25.00	82.90	25.00	82.90	2072.50
7+25.00	82.90	7+50.00	82.80	25.00	82.85	2071.25
7+50.00	82.80	7+75.00	82.90	25.00	82.85	2071.25
7+75.00	82.90	8+00.00	83.50	25.00	83.20	2080.00
8+00.00	83.50	8+25.00	83.10	25.00	83.30	2082.50
8+25.00	83.10	8+50.00	83.20	25.00	83.15	2078.75
8+50.00	83.20	8+75.00	83.70	25.00	83.45	2086.25
8+75.00	83.70	9+00.00	83.50	25.00	83.60	2090.00
9+00.00	83.50	9+25.00	83.50	25.00	83.50	2087.50
9+25.00	83.50	9+50.00	84.00	25.00	83.75	2093.75
9+50.00	84.00	9+75.00	83.80	25.00	83.90	2097.50
9+75.00	83.80	10+00.00	83.80	25.00	83.80	2095.00
10+00.00	83.80	10+25.00	83.90	25.00	83.85	2096.25
10+25.00	83.90	10+50.00	83.90	25.00	83.90	2097.50
10+50.00	83.90	10+75.00	83.60	25.00	83.85	2096.25
10+75.00	83.80	11+00.00	83.80	25.00	83.80	2095.00
11+00.00	83.80	11+25.00	83.60	25.00	83.70	2092.50
11+25.00	83.60	11+50.00	83.50	25.00	83.55	2088.75
11+50.00	83.50	11+75.00	83.80	25.00	83.65	2091.25
11+75.00	83.80	12+00.00	83.90	25.00	83.85	2096.25
12+00.00	83.90	12+25.00	83.90	25.00	83.90	2097.50
12+25.00	83.90	12+50.00	84.00	25.00	83.95	2098.75
12+50.00	84.00	12+75.00	84.00	25.00	84.00	2100.00
12+75.00	84.00	13+00.00	84.00	25.00	84.00	2100.00
13+00.00	84.00	13+25.00	84.50	25.00	84.25	2106.25
13+25.00	84.50	13+50.00	84.50	25.00	84.50	2112.50
13+50.00	84.50	13+75.00	84.10	25.00	84.30	2107.50
13+75.00	84.10	14+00.00	84.10	25.00	84.10	2102.50
14+00.00	84.10	14+25.00	84.00	25.00	84.05	2101.25
14+25.00	84.00	14+50.00	86.70	25.00	85.35	2133.75
14+50.00	86.70	14+75.00	86.70	25.00	86.70	2167.50
14+75.00	86.70	15+00.00	86.70	25.00	86.70	2167.50
15+00.00	86.70	15+25.00	86.70	25.00	86.70	2167.50
15+25.00	86.70	15+50.00	86.70	25.00	86.70	2167.50
15+50.00	86.70	15+75.00	86.70	25.00	86.70	2167.50
15+75.00	86.70	16+00.00	86.70	25.00	86.70	2167.50
16+00.00	86.70	16+25.00	86.70	25.00	86.70	2167.50
16+25.00	86.70	16+50.00	86.70	25.00	86.70	2167.50
16+50.00	86.70	16+75.00	86.70	25.00	86.70	2167.50
16+75.00	86.70	17+00.00	86.70	25.00	86.70	2167.50
17+00.00	86.70	17+25.00	86.70	25.00	86.70	2167.50
17+25.00	86.70	17+50.00	86.70	25.00	86.70	2167.50
17+50.00	86.70	17+75.00	86.70	25.00	86.70	2167.50
17+75.00	86.70	18+00.00	86.70	25.00	86.70	2167.50
18+00.00	86.70	18+25.00	86.70	25.00	86.70	2167.50
18+25.00	86.70	18+50.00	86.70	25.00	86.70	2167.50
18+50.00	86.70	18+75.00	86.70	25.00	86.70	2167.50
18+75.00	86.70	19+00.00	86.70	25.00	86.70	2167.50
19+00.00	86.70	19+25.00	86.70	25.00	86.70	2167.50
19+25.00	86.70	19+50.00	86.70	25.00	86.70	2167.50
19+50.00	86.70	19+75.00	86.70	25.00	86.70	2167.50
19+75.00	86.70	20+00.00	86.70	25.00	86.70	2167.50
20+00.00	86.70	20+25.00	86.70	25.00	86.70	2167.50
20+25.00	86.70	20+50.00	86.70	25.00	86.70	2167.50
20+50.00	86.70	20+75.00	86.70	25.00	86.70	2167.50
20+75.00	86.70	21+00.00	86.70	25.00	86.70	2167.50
21+00.00	86.70	21+25.00	86.70	25.00	86.70	2167.50
21+25.00	86.70	21+50.00	86.70	25.00	86.70	2167.50
21+50.00	86.70	21+75.00	86.70	25.00	86.70	2167.50
21+75.00	86.70	22+00.00	86.70	25.00	86.70	2167.50
22+00.00	86.70	22+25.00	86.70	25.00	86.70	2167.50
22+25.00	86.70	22+50.00	86.70	25.00	86.70	2167.50
22+50.00	86.70	22+75.00	86.70	25.00	86.70	2167.50
22+75.00	86.70	23+00.00	86.70	25.00	86.70	2167.50
23+00.00	86.70	23+25.00	86.70	25.00	86.70	2167.50
23+25.00	86.70	23+50.00	86.70	25.00	86.70	2167.50
23+50.00	86.70	23+75.00	84.80	25.00	85.75	2143.75
23+75.00	84.80	24+00.00	85.50	25.00	85.15	2128.75
24+00.00	85.50	24+25.00	86.10	25.00	85.80	2145.00
24+25.00	86.10	24+50.00	86.70	25.00	86.40	2160.00
24+50.00	86.70	24+75.00	86.30	25.00	86.50	2162.50
24+75.00	86.30	25+00.00	84.70	25.00	85.50	2137.50
25+00.00	84.70	25+25.00	83.90	25.00	84.30	2107.50
25+25.00	83.90	25+50.00	83.60	25.00	83.75	2093.75
25+50.00	83.60	25+75.00	83.70	25.00	83.65	2091.25
25+75.00	83.70	26+00.00	83.60	25.00	83.65	2091.25
26+00.00	83.60	26+25.00	83.40	25.00	83.50	2087.50
26+25.00	83.40	26+50.00	83.30	25.00	83.35	2083.75
26+50.00	83.30	26+74.65	83.10	24.65	83.20	2050.88
			Total	2,674.65		84.87

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D - BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No. 43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=30'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY
WOBURN MA 01888-0118
TEL: (781) 935-0889
FAX: (781) 935-2896
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:

AVERAGE GRADE PLAN

SHEET No.
C-109A

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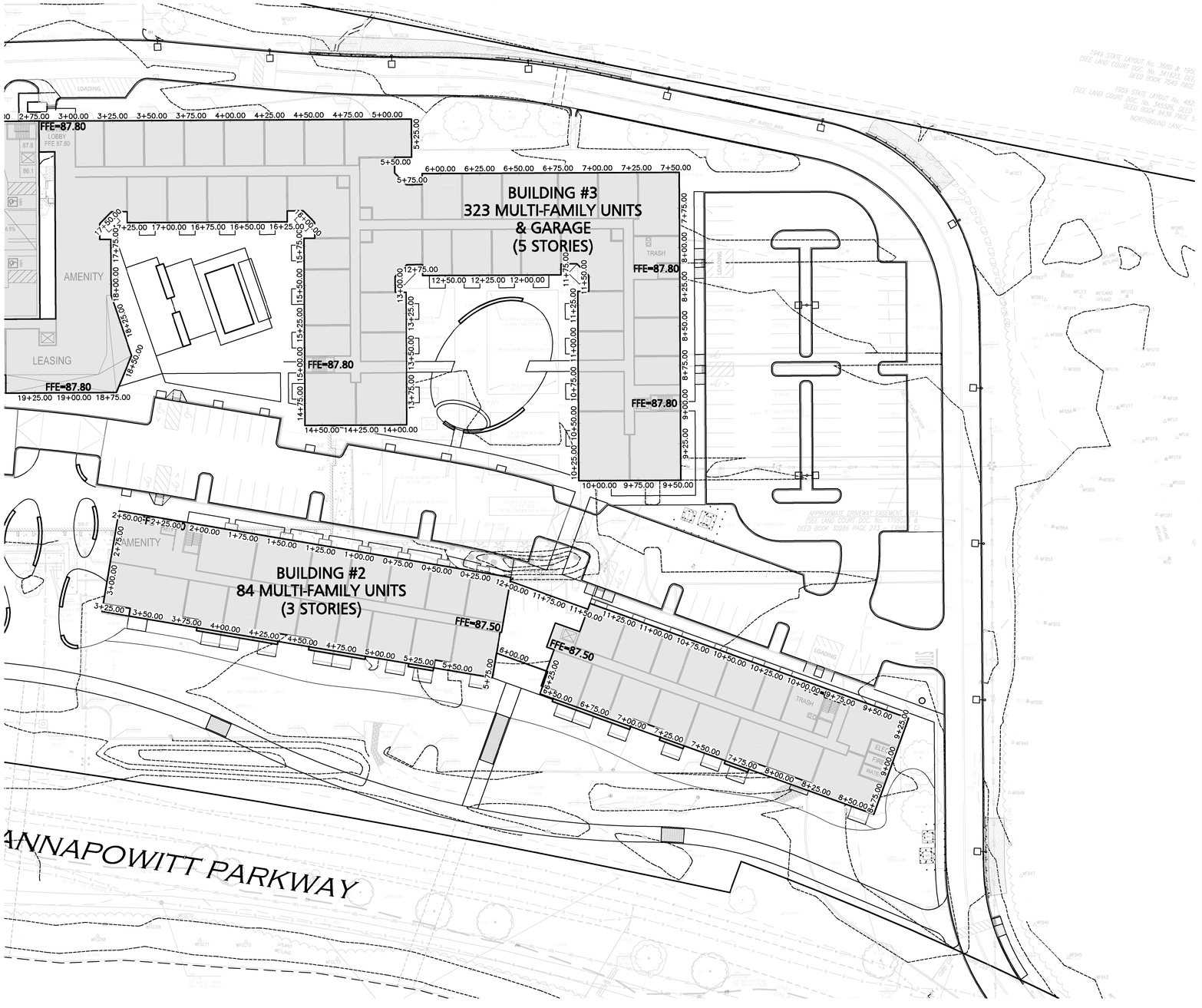

NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. ALL ELEVATIONS REFER TO NAVD '88.
3. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. IT'S INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
4. ALL EXISTING GRADES AT LOCATIONS WITHIN THE FOOTPRINT OF THE EXISTING BUILDING ASSUME AN ELEVATION 86.70 TO MATCH THE EXISTING FINISH FLOOR.

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1-888-DIG-SAFE
1-888-344-7233

N:\PROJECTS\1623-11\CIVIL\DRAWINGS\CURRENT\C-1623-11 - AVERAGE GRADE.DWG

Computation Sheet

Title ***Grade Plane Summary Spreadsheet*** By ND
Project 200 Quinnapowitt Parkway, Wakefield, MA Chk'd TJW
Date Apprv'd TJW

Building #2

Existing Grade

Height of Building - The vertical distance of the highest point of the roof above the average finished grade of the ground immediately adjoining the building, as computed before the building is actually erected.

Station From	Elevation 1	Station To	Elevation 2	Length	Average Grade	Weighted Average Finish Grade
0+00.00	84.80	0+25.00	85.50	25.00	85.20	2130.00
0+25.00	85.60	0+50.00	84.50	25.00	85.05	2126.25
0+50.00	84.50	0+75.00	84.40	25.00	84.45	2111.25
0+75.00	84.40	1+00.00	84.70	25.00	84.55	2113.75
1+00.00	84.70	1+25.00	85.00	25.00	84.85	2121.25
1+25.00	85.00	1+50.00	85.10	25.00	85.05	2126.25
1+50.00	85.10	1+75.00	85.20	25.00	85.15	2128.75
1+75.00	85.20	2+00.00	86.70	25.00	85.95	2148.75
2+00.00	86.70	2+25.00	86.70	25.00	86.70	2167.50
2+25.00	86.70	2+50.00	86.70	25.00	86.70	2167.50
2+50.00	86.70	2+75.00	85.60	25.00	86.15	2153.75
2+75.00	85.60	3+00.00	85.20	25.00	85.40	2135.00
3+00.00	85.20	3+25.00	84.90	25.00	85.05	2126.25
3+25.00	84.90	3+50.00	84.60	25.00	84.75	2118.75
3+50.00	84.60	3+75.00	84.50	25.00	84.55	2113.75
3+75.00	84.50	4+00.00	84.20	25.00	84.35	2108.75
4+00.00	84.20	4+25.00	84.10	25.00	84.15	2103.75
4+25.00	84.10	4+50.00	83.90	25.00	84.00	2100.00
4+50.00	83.90	4+75.00	83.80	25.00	83.85	2096.25
4+75.00	83.80	5+00.00	84.30	25.00	84.05	2101.25
5+00.00	84.30	5+25.00	84.20	25.00	84.25	2106.25
5+25.00	84.20	5+50.00	83.90	25.00	84.05	2101.25
5+50.00	83.90	5+75.00	83.90	25.00	83.90	2097.50
5+75.00	83.90	6+00.00	84.10	25.00	84.00	2100.00
6+00.00	84.10	6+25.00	83.90	25.00	84.00	2100.00
6+25.00	83.90	6+50.00	83.90	25.00	83.90	2097.50
6+50.00	83.90	6+75.00	83.80	25.00	83.85	2096.25
6+75.00	83.80	7+00.00	83.80	25.00	83.80	2095.00
7+00.00	83.80	7+25.00	83.80	25.00	83.80	2095.00
7+25.00	83.80	7+50.00	83.90	25.00	83.80	2095.00
7+50.00	83.80	7+75.00	83.90	25.00	83.85	2096.25
7+75.00	83.90	8+00.00	83.90	25.00	83.90	2097.50
8+00.00	83.90	8+25.00	83.50	25.00	83.70	2092.50
8+25.00	83.50	8+50.00	83.90	25.00	83.70	2092.50
8+50.00	83.90	8+75.00	83.90	25.00	83.90	2097.50
8+75.00	83.90	9+00.00	84.00	25.00	83.95	2098.75
9+00.00	84.00	9+25.00	84.10	25.00	84.05	2101.25
9+25.00	84.10	9+50.00	84.10	25.00	84.10	2102.50
9+50.00	84.10	9+75.00	83.70	25.00	83.90	2097.50
9+75.00	83.70	10+00.00	83.80	25.00	83.75	2093.75
10+00.00	83.80	10+25.00	83.80	25.00	83.80	2095.00
10+25.00	83.80	10+50.00	83.90	25.00	83.85	2096.25
10+50.00	83.90	10+75.00	84.10	25.00	84.00	2100.00
10+75.00	84.10	11+00.00	84.20	25.00	84.15	2103.75
11+00.00	84.20	11+25.00	84.20	25.00	84.20	2105.00
11+25.00	84.20	11+50.00	84.40	25.00	84.30	2107.50
11+50.00	84.40	11+75.00	83.50	25.00	83.95	2098.75
11+75.00	83.50	12+00.00	84.50	25.00	84.05	2101.25
12+00.00	83.50	12+02.38	84.50	2.38	84.15	200.28
			Total	1,202.38		84.38

Computation Sheet

Title ***Grade Plane Summary Spreadsheet*** By ND
Project 200 Quinnapowitt Parkway, Wakefield, MA Chk'd TJW
Date Apprv'd TJW

Building #3

Existing Grade

Height of Building - The vertical distance of the highest point of the roof above the average finished grade of the ground immediately adjoining the building, as computed before the building is actually erected.

Station From	Elevation 1	Station To	Elevation 2	Length	Average Grade	Weighted Average Finish Grade
0+00.00	83.10	0+25.00	82.90	25.00	83.00	2075.00
0+25.00	82.90	0+50.00	82.80	25.00	82.85	2071.25
0+50.00	82.80	0+75.00	82.60	25.00	82.70	2067.50
0+75.00	82.60	1+00.00	82.70	25.00	82.65	2066.25
1+00.00	82.70	1+25.00	83.40	25.00	83.05	2076.25
1+25.00	83.40	1+50.00	84.00	25.00	83.70	2092.50
1+50.00	84.00	1+75.00	84.60	25.00	84.30	2107.50
1+75.00	84.60	2+00.00	84.70	25.00	84.65	2116.25
2+00.00	84.70	2+25.00	84.60	25.00	84.65	2116.25
2+25.00	84.60	2+50.00	84.70	25.00	84.65	2116.25
2+50.00	84.70	2+75.00	85.20	25.00	84.95	2123.75
2+75.00	85.20	3+00.00	84.80	25.00	85.00	2125.00
3+00.00	84.80	3+25.00	85.00	25.00	84.90	2122.50
3+25.00	85.00	3+50.00	84.80	25.00	84.90	2122.50
3+50.00	84.80	3+75.00	84.90	25.00	84.85	2121.25
3+75.00	84.90	4+00.00	84.50	25.00	84.70	2117.50
4+00.00	84.50	4+25.00	84.10	25.00	84.30	2107.50
4+25.00	84.10	4+50.00	83.90	25.00	84.00	2100.00
4+50.00	83.90	4+75.00	83.80	25.00	83.85	2096.25
4+75.00	83.80	5+00.00	83.10	25.00	83.45	2086.25
5+00.00	83.10	5+25.00	83.10	25.00	83.10	2077.50
5+25.00	83.10	5+50.00	83.20	25.00	83.15	2078.75
5+50.00	83.20	5+75.00	83.30	25.00	83.25	2081.25
5+75.00	83.30	6+00.00	83.40	25.00	83.35	2083.75
6+00.00	83.40	6+25.00	83.30	25.00	83.35	2083.75
6+25.00	83.30	6+50.00	83.20	25.00	83.25	2081.25
6+50.00	83.20	6+75.00	83.00	25.00	83.10	2077.50
6+75.00	83.00	7+00.00	82.90	25.00	82.95	2073.75
7+00.00	82.90	7+25.00	82.90	25.00	82.90	2072.50
7+25.00	82.90	7+50.00	82.80	25.00	82.85	2071.25
7+50.00	82.80	7+75.00	82.90	25.00	82.85	2071.25
7+75.00	82.90	8+00.00	83.50	25.00	83.20	2080.00
8+00.00	83.50	8+25.00	83.10	25.00	83.30	2082.50
8+25.00	83.10	8+50.00	83.20	25.00	83.15	2078.75
8+50.00	83.20	8+75.00	83.70	25.00	83.45	2086.25
8+75.00	83.70	9+00.00	83.50	25.00	83.60	2090.00
9+00.00	83.50	9+25.00	83.50	25.00	83.50	2087.50
9+25.00	83.50	9+50.00	84.00	25.00	83.75	2093.75
9+50.00	84.00	9+75.00	83.80	25.00	83.90	2097.50
9+75.00	83.80	10+00.00	83.80	25.00	83.80	2095.00
10+00.00	83.80	10+25.00	83.90	25.00	83.85	2096.25
10+25.00	83.90	10+50.00	83.90	25.00	83.90	2097.50
10+50.00	83.90	10+75.00	83.80	25.00	83.85	2096.25
10+75.00	83.80	11+00.00	83.80	25.00	83.80	2095.00
11+00.00	83.80	11+25.00	83.60	25.00	83.70	2092.50
11+25.00	83.60	11+50.00	83.50	25.00	83.55	2088.75
11+50.00	83.50	11+75.00	83.80	25.00	83.65	2091.25
11+75.00	83.80	12+00.00	83.90	25.00	83.85	2096.25
12+00.00	83.90	12+25.00	83.90	25.00	83.90	2097.50
12+25.00	83.90	12+50.00	84.00	25.00	83.95	2098.75
12+50.00	84.00	12+75.00	84.00	25.00	84.00	2100.00
12+75.00	84.00	13+00.00	84.00	25.00	84.00	2100.00
13+00.00	84.00	13+25.00	84.50	25.00	84.25	2106.25
13+25.00	84.50	13+50.00	84.50	25.00	84.50	2112.50
13+50.00	84.50	13+75.00	84.10	25.00	84.30	2107.50
13+75.00	84.10	14+00.00	84.10	25.00	84.10	2102.50
14+00.00	84.10	14+25.00	84.00	25.00	84.05	2101.25
14+25.00	84.00	14+50.00	86.70	25.00	85.35	2133.75
14+50.00	86.70	14+75.00	86.70	25.00	86.70	2167.50
14+75.00	86.70	15+00.00	86.70	25.00	86.70	2167.50
15+00.00	86.70	15+25.00	86.70	25.00	86.70	2167.50
15+25.00	86.70	15+50.00	86.70	25.00	86.70	2167.50
15+50.00	86.70	15+75.00	86.70	25.00	86.70	2167.50
15+75.00	86.70	16+00.00	86.70	25.00	86.70	2167.50
16+00.00	86.70	16+25.00	86.70	25.00	86.70	2167.50
16+25.00	86.70	16+50.00	86.70	25.00	86.70	2167.50
16+50.00	86.70	16+75.00	86.70	25.00	86.70	2167.50
16+75.00	86.70	17+00.00	86.70	25.00	86.70	2167.50
17+00.00	86.70	17+25.00	86.70	25.00	86.70	2167.50
17+25.00	86.70	17+50.00	86.70	25.00	86.70	2167.50
17+50.00	86.70	17+75.00	86.70	25.00	86.70	2167.50
17+75.00	86.70	18+00.00	86.70	25.00	86.70	2167.50
18+00.00	86.70	18+25.00	86.70	25.00	86.70	2167.50
18+25.00	86.70	18+50.00	86.70	25.00	86.70	2167.50
18+50.00	86.70	18+75.00	86.70	25.00	86.70	2167.50
18+75.00	86.70	19+00.00	86.70	25.00	86.70	2167.50
19+00.00	86.70	19+25.00	86.70	25.00	86.70	2167.50
19+25.00	86.70	19+50.00	86.70	25.00	86.70	2167.50
19+50.00	86.70	19+75.00	86.70	25.00	86.70	2167.50
19+75.00	86.70	20+00.00	86.70	25.00	86.70	2167.50
20+00.00	86.70	20+25.00	86.70	25.00	86.70	2167.50
20+25.00	86.70	20+50.00	86.70	25.00	86.70	2167.50
20+50.00	86.70	20+75.00	86.70	25.00	86.70	2167.50
20+75.00	86.70	21+00.00	86.70	25.00	86.70	2167.50
21+00.00	86.70	21+25.00	86.70	25.00	86.70	2167.50
21+25.00	86.70	21+50.00	86.70	25.00	86.70	2167.50
21+50.00	86.70	21+75.00	86.70	25.00	86.70	2167.50
21+75.00	86.70	22+00.00	86.70	25.00	86.70	2167.50
22+00.00	86.70	22+25.00	86.70	25.00	86.70	2167.50
22+25.00	86.70	22+50.00	86.70	25.00	86.70	2167.50
22+50.00	86.70	22+75.00	86.70	25.00	86.70	2167.50
22+75.00	86.70	23+00.00	86.70	25.00	86.70	2167.50
23+00.00	86.70	23+25.00	86.70	25.00	86.70	2167.50
23+25.00	86.70	23+50.00	86.70	25.00	86.70	2167.50
23+50.00	85.70	23+75.00	84.80	25.00	85.75	2143.75
23+75.00	84.80	24+00.00	85.50	25.00	85.15	2128.75
24+00.00	85.50	24+25.00	86.10	25.00	85.80	2145.00
24+25.00	86.10	24+50.00	86.70	25.00	86.40	2160.00
24+50.00	86.70	24+75.00	86.30	25.00	86.50	2162.50
24+75.00	86.30	25+00.00	84.70	25.00	85.50	2137.50
25+00.00	84.70	25+25.00	83.90	25.00	84.30	2107.50
25+25.00	83.90	25+50.00	83.60	25.00	83.75	2093.75
25+50.00	83.60	25+75.00	83.70	25.00	83.65	2091.25
25+75.00	83.70	26+00.00	83.60	25.00	83.65	2091.25
26+00.00	83.60	26+25.00	83.40	25.00	83.50	2087.50
26+25.00	83.40	26+50.00	83.30	25.00	83.35	2083.75
26+50.00	83.30	26+74.65	83.10	24.65	83.20	2050.88
			Total	2,674.65		84.87

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D – BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No. 43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=30'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY
WOBURN MA 01888-0118
TEL: (781) 935-6889
FAX: (781) 935-2896
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:	SHEET No.
AVERAGE GRADE PLAN	C-109B

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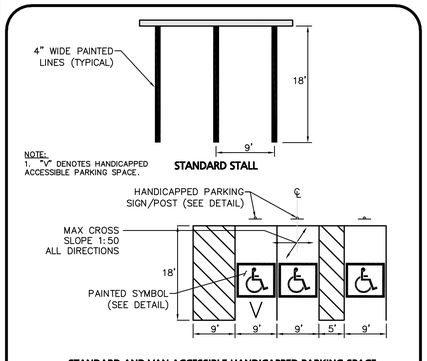
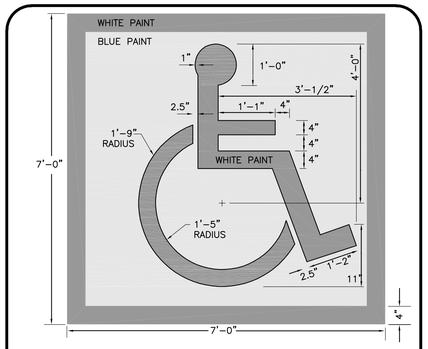
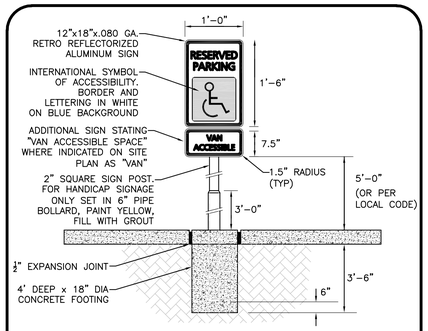


HANDICAP AND STANDARD PARKING STRIPING
NOT TO SCALE — 1



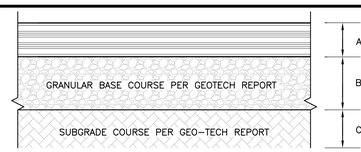
SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND. USE WHITE ON BLUE (COLOR #105090 IN FEDERAL STANDARD 5952) DOUBLE COAT.

ACCESSIBLE PARKING STALL PAVEMENT MARKING
NOT TO SCALE — 2



NOTES:
1. SPECIFIC CODE SHALL BE REFERENCED FOR LOCAL AND STATE REQUIREMENTS.
2. PROVIDE (1) SIGN PER HANDICAP SPACE. SEE SITE PLAN FOR EXACT LOCATION.
3. EXPANSION JOINT MATERIAL NOT REQUIRED WITH FLEXIBLE PAVEMENT.

ADA ACCESSIBLE PARKING / TRAFFIC CONTROL SIGNAGE
NOT TO SCALE — 3



NOTES:
1. SURFACE COURSE, BASE, AND SUBGRADE SHALL BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS FOR LOCAL SOILS OR DRAINAGE CONDITIONS AND/OR METHODS.
2. SUBGRADE SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY (AS DETERMINED BY ASTM D1557).
3. COORDINATE PAVEMENT DETAIL WITH GEOTECHNICAL ENGINEER.

STANDARD DUTY PAVING
A= 1.5" ASPHALT CONCRETE – SURFACE COURSE (M.3.11.0, TABLE A, TOP COURSE)
1.5" ASPHALT CONCRETE – BINDER COURSE (M.3.11.0, TABLE A, BINDER COURSE)

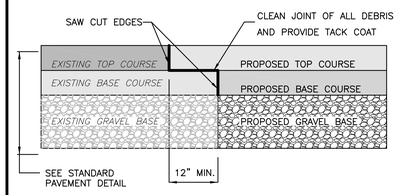
B= 4" BASE COURSE (MHD 2.01.7)
C= 12" SUBBASE COURSE (MHD 1.03.0, TYPE B)

HEAVY DUTY PAVING
A= 2" ASPHALT CONCRETE – SURFACE COURSE (M.3.11.0, TABLE A, TOP COURSE)
2" ASPHALT CONCRETE – BINDER COURSE (M.3.11.0, TABLE A, BINDER COURSE)

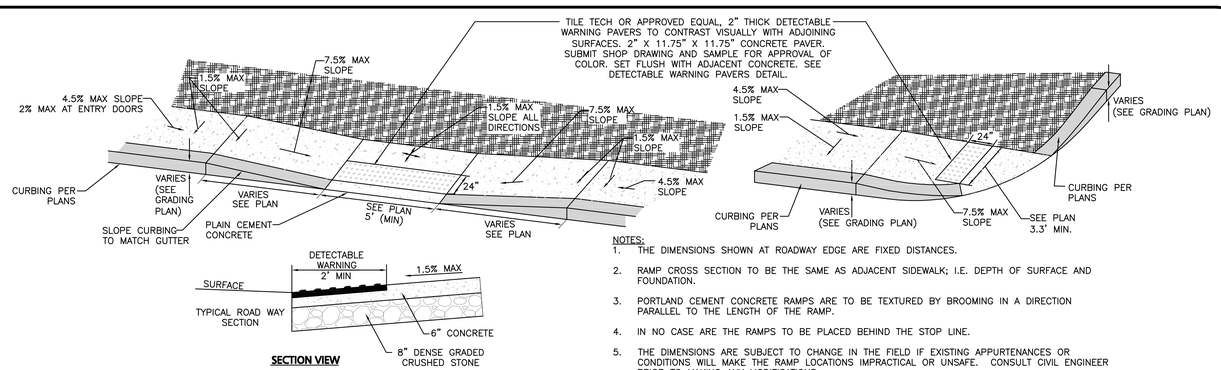
B= 6" BASE COURSE (MHD 2.01.7)
C= 15" SUBBASE COURSE (MHD 1.03.0, TYPE B)

STANDARD/HEAVY DUTY BITUMINOUS PAVEMENT
4

NOTE:
TACK COAT – PROVIDE EMULSIFIED ASPHALT WHICH CONFORMS TO THE REQUIREMENTS OF THE STATE SPECIFICATIONS, DILUTED WITH ONE PART WATER TO ONE ONE PART ASPHALT FOLLOWING AASHTO M140/ASTM D997, OR AASHTO M208/ASTM D2397, SS-1H, CSS-1, OR CSS-1H.

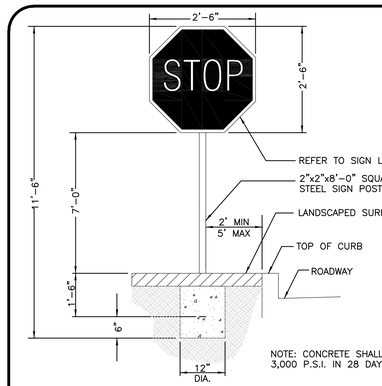


PAVEMENT KEY CUT DETAIL
NOT TO SCALE — 5

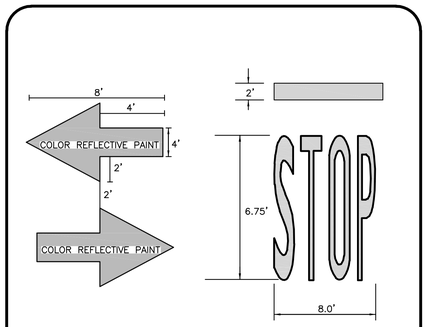


NOTES:
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
5. THE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE. CONSULT CIVIL ENGINEER PRIOR TO MAKING ANY MODIFICATIONS.

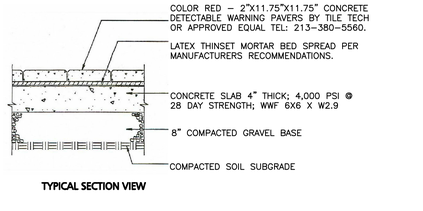
HANDICAP CURB CUT & CURB TRANSITION
NOT TO SCALE — 6



STOP SIGN DETAIL
NOT TO SCALE — 7

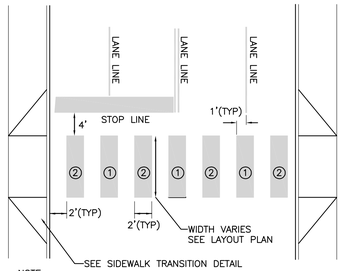


WHITE THERMOPLASTIC LETTERING AND ARROWS
NOT TO SCALE — 8



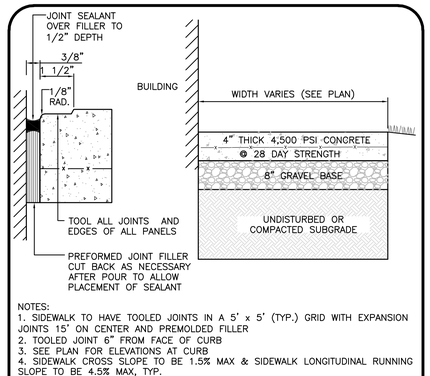
NOTES:
COLOR OF THE PAVERS SHALL BE RED.
CONCRETE SLAB SHALL BE SLOPED 1.5% CROSS PITCH MAX TO PROVIDE COMPLETE SURFACE DRAINAGE. SEE GRADING PLAN & HANDICAP CURB CUT / CURB TRANSISTION DETAIL.
SLAB TO HAVE STEEL TROWEL AND FINE BROOM FINISH. DO NOT USE CURING COMPOUNDS. CONTRACTOR TO ADD EXPANSION JOINTS AND PREMOLDED FILLER AT EDGE OF TILES AND ADJACENT MATERIAL.
SET TILES FLUSH WITH ADJACENT MATERIALS.
SUBMIT SHOP DRAWINGS OF TILES AND SAMPLE FOR APPROVAL OF COLOR TO OWNER / ARCH.
INSTALL DETECTABLE WARNING PAVERS PER MANUFACTURER'SRECOMMENDATIONS.

DETECTABLE WARNING PAVERS
NOT TO SCALE — 9



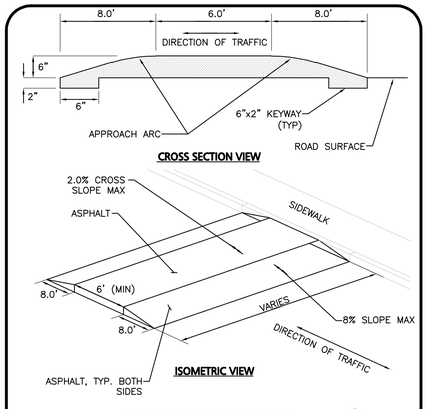
NOTE:
① LANE LINE STRIP: THIS IS LOCATED IN THE LINE WITH EACH LANE LINE AND HALF THE STRIP ON EACH SIDE.
② MID LINE STRIP: THIS IS LOCATED MIDWAY BETWEEN EACH LANE LINE STRIP.

PAINTED CROSSWAK STRIPING
NOT TO SCALE — 10



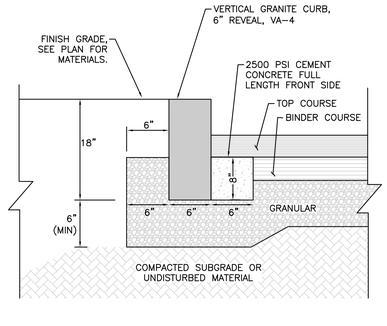
NOTES:
1. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' x 5' (TYP.) GRID WITH EXPANSION JOINTS 15' ON CENTER AND PREMOLDED FILLER
2. TOOLED JOINT 6" FROM FACE OF CURB
3. SEE PLAN FOR ELEVATIONS AT CURB
4. SIDEWALK CROSS SLOPE TO BE 1.5% MAX & SIDEWALK LONGITUDINAL RUNNING SLOPE TO BE 4.5% MAX, TYP.

CONCRETE SIDEWALK DETAIL
NOT TO SCALE — 11

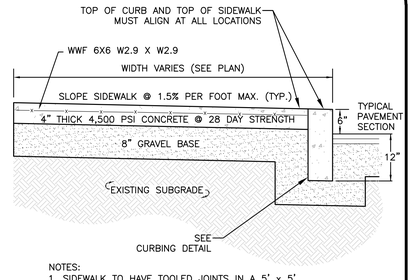


RAISED BIT. CONCRETE SPEED RAMP
NOT TO SCALE — 12

NOT USED
NOT TO SCALE — 13

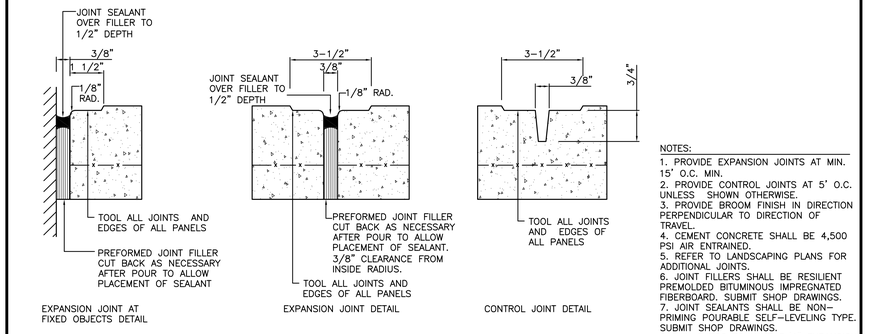


VERTICAL GRANITE CURB
NOT TO SCALE — 14



NOTES:
1. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' x 5' (TYP.) GRID WITH EXPANSION JOINTS 15' ON CENTER AND PREMOLDED FILLER
2. TOOLED JOINT 6" FROM FACE OF CURB
3. SEE PLAN FOR ELEVATIONS AT CURB
4. SIDEWALK CROSS SLOPE TO BE 1.5% MAX & SIDEWALK LONGITUDINAL SLOPE TO BE 4.5% MAX, TYP.

CONCRETE SIDEWALK DETAIL
NOT TO SCALE — 15



NOTES:
1. PROVIDE EXPANSION JOINTS AT MIN. 15' O.C. MIN.
2. PROVIDE CONTROL JOINTS AT 5' O.C. UNLESS SHOWN OTHERWISE.
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO DIRECTION OF TRAVEL.
4. CEMENT CONCRETE SHALL BE 4,500 PSI AIR ENTRAINED.
5. REFER TO LANDSCAPING PLANS FOR ADDITIONAL JOINTS.
6. JOINT FILLERS SHALL BE RESILIENT PREMOLDED BITUMINOUS IMPREGNATED FIBERBOARD. SUBMIT SHOP DRAWINGS.
7. JOINT SEALANTS SHALL BE NON-PRIMING POURABLE SELF-LEVELING TYPE. SUBMIT SHOP DRAWINGS.
8. ALL CURBS TO HAVE 3/4" EXPANSION JOINTS AT MAXIMUM 100 FEET WITH DOWELS AND CONTROL JOINTS AT MAXIMUM 15 FEET

CONCRETE SIDEWALK JOINTS
NOT TO SCALE — 16

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D – BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No.43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	N.T.S.	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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environmental consulting ◆ landscape architecture
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WOBURN MA 01888-0118
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DRAWING TITLE:	SHEET No.
DETAILS	C-501

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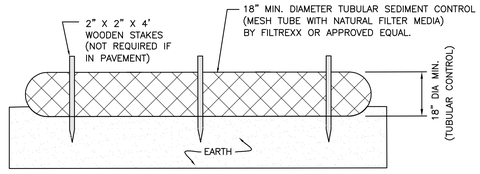
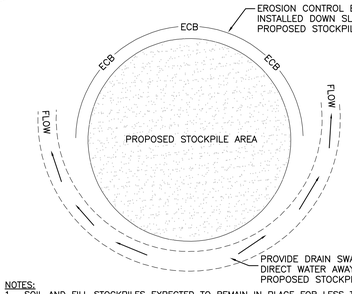


SECTION

NOTES:

1. ALL MATERIALS TO MEET MANUFACTURERS SPECIFICATIONS.
2. DIG TRENCH AND PLACE TUBULAR SEDIMENT CONTROLS. INSTALL WOODEN STAKES THROUGH COIR LOG MESH AND INTO EARTH EVERY 5' O.C. TIE ADJACENT LOGS TOGETHER WITH BIODEGRADABLE TWINE AND OVERLAP LOGS A MINIMUM OF 12".
3. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR SEDIMENT CONTROLS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR.
4. WHERE THE TUBULAR SEDIMENT CONTROLS REQUIRE REPAIR OR SEDIMENT, IT WILL BE ROUTINELY COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST.
5. AT A MINIMUM, THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE WHEN THEY REACH 1/3 THE EXPOSED HEIGHT OF THE , OR IF MORE FREQUENTLY AS DIRECTED BY THE ENGINEER.

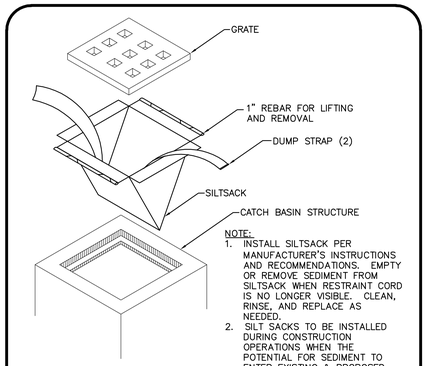
COIR LOG DETAIL — NOT TO SCALE — 1



NOTES:

1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH STRAW AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 1LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH HAY MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

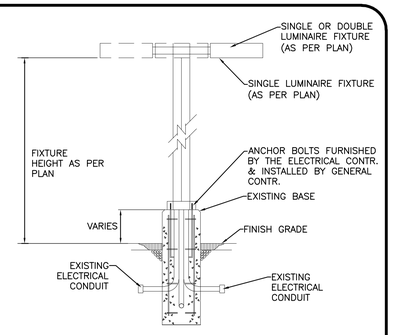
STOCKPILE PROTECTION — NOT TO SCALE — 2



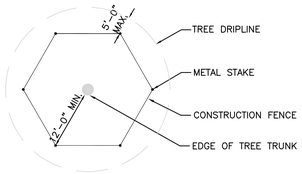
NOTE:

1. INSTALL SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
2. SILT SACKS TO BE INSTALLED DURING CONSTRUCTION OPERATIONS WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

SILTSACK INLET DETAIL — NOT TO SCALE — 3

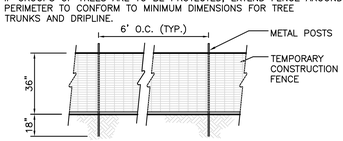


MOUNTED LIGHT POLE (EXISTING BASE) DETAIL — NOT TO SCALE — 4

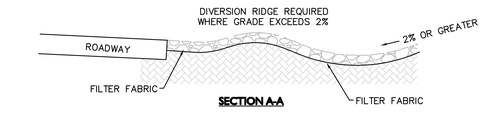


NOTE:

1. CONSTRUCTION FENCE TO BE "VISUAL BARRIER FENCE" AS MANUFACTURED BY EXXON CHEMICAL COMPANY ATLANTA, GA; "KONTROL SAFETY FENCE" AS MANUFACTURED BY MIRAFI, CHARLOTTE, N.C. OR APPROVED EQUAL.
2. IF GROUPS OF TREES ARE TO BE PROTECTED, EXTEND FENCE AROUND PERIMETER TO CONFORM TO MINIMUM DIMENSIONS FOR TREE TRUNKS AND DRIPLINE.



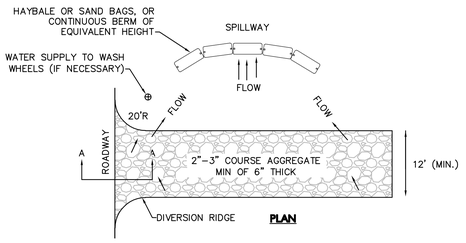
TEMP. CONST. FENCE / TREE PROTECTION — NOT TO SCALE — 5



SECTION A-A

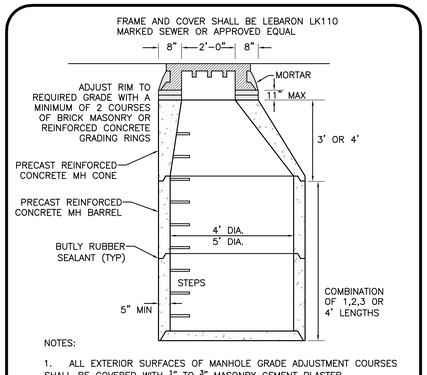
NOTES:

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 ENTERING THE PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. USE SANDBAGS, HAYBALES, OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.



PLAN

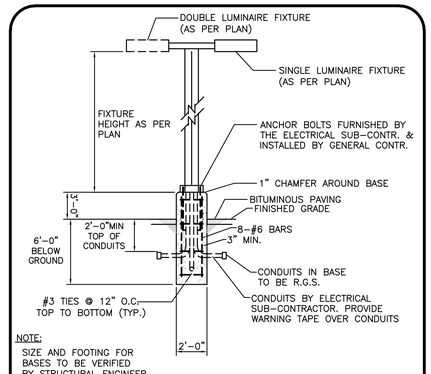
TEMPORARY CONSTRUCTION ENTRANCE/EXIT — NOT TO SCALE — 6



NOTES:

1. ALL EXTERIOR SURFACES OF MANHOLE GRADE ADJUSTMENT COURSES SHALL BE COVERED WITH $\frac{1}{2}$" TO $\frac{3}{8}$" MASONRY CEMENT PLASTER

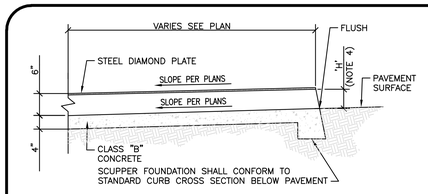
PRECAST CONCRETE SEWER MANHOLE — NOT TO SCALE — 7



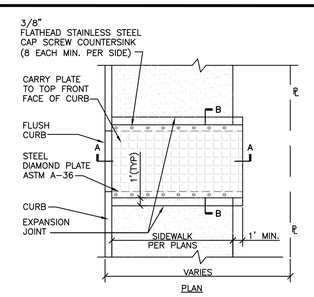
NOTE:

SIZE AND FOOTING FOR BASES TO BE VERIFIED BY STRUCTURAL ENGINEER.

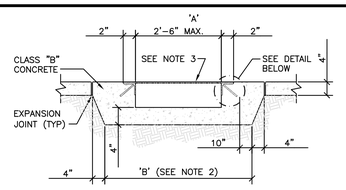
MOUNTED LIGHT POLE (NEW BASE) DETAIL — NOT TO SCALE — 8



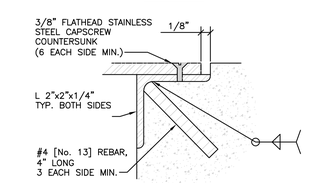
SECTION A-A



PLAN



SECTION B-B



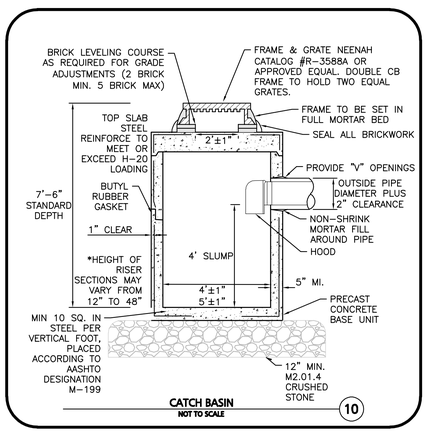
DETAIL

NOTES:

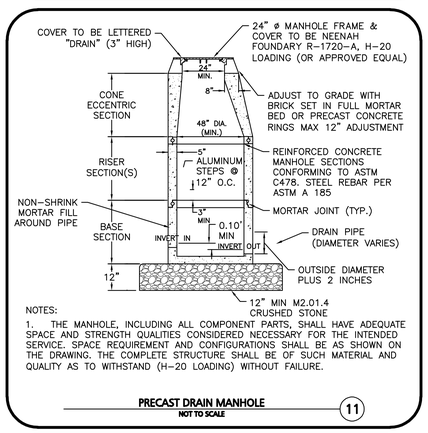
1. (——›) INDICATES DIRECTION OF FLOW.
2. DIMENSION 'B' EQUALS 'A'+1'.
3. 1/2" THICK STEEL DIAMOND PLATE ASTM A-36. STEEL DIAMOND PLATE SHALL BE GIVEN TWO COATS OF HIGH PERFORMANCE NON-SLIP EPOXY PAINT. EXPOSED METAL SHALL BE PAINTED WITH TWO COATS OF SSPC PAINT NO. 5 OR APPROVED EQUAL.
4. 'H' EQUALS CURB FACE HEIGHT. DIMENSION NOTED ON PLANS.
5. FOR CURB AND GUTTER, USE 2' TRANSITIONS TO VERTICAL CURB.
6. FOR MULTIPLE SCUPPERS PROVIDE 4" BETWEEN ADJACENT PANELS OF STEEL DIAMOND PLATE.
7. STEEL DIAMOND PLATE SHALL BE DELIVERED AS ONE PIECE, CONFORMING TO THE REQUIRED SCUPPER DIMENSIONS. PLATES SHALL NOT BE SPLICED.

SIDEWALK SCUPPER* — NOT TO SCALE — 9

***OR APPROVED EQUAL**



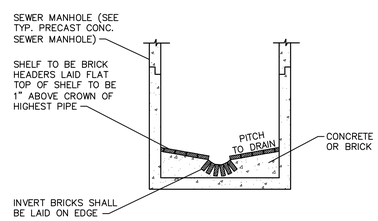
CATCH BASIN — NOT TO SCALE — 10



NOTES:

1. THE MANHOLE, INCLUDING ALL COMPONENT PARTS, SHALL HAVE ADEQUATE SPACE AND STRENGTH QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENT AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND (H-20 LOADING) WITHOUT FAILURE.

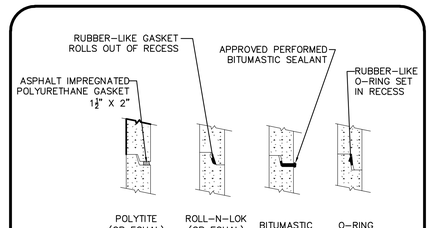
PRECAST DRAIN MANHOLE — NOT TO SCALE — 11



NOTES:

1. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
2. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CETER LINE OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF CEMENT CONCRETE OR BRICK IN MORTAR.

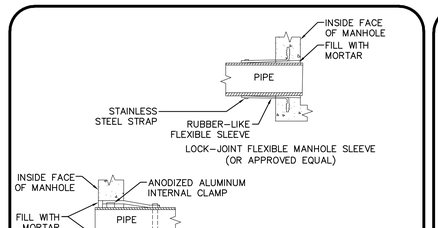
TYPICAL BRICK INVERT SECTION FOR SEWER MANHOLES — NOT TO SCALE — 12



NOTES:

1. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATER TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET.
2. ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY.

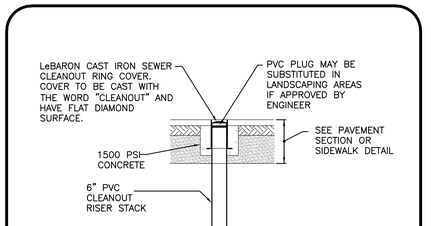
SEWER MANHOLE JOINTING METHODS — NOT TO SCALE — 13



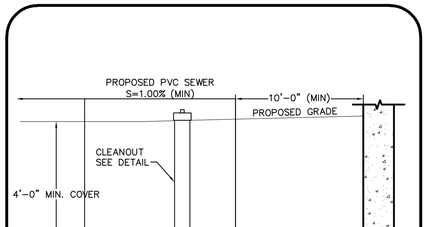
NOTES:

1. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND FOR WATER TIGHTNESS UPON ELASTOMETRIC SEALANT
2. NON-SHRINKING MORTAR SHALL ONLY BE USED WHERE SPECIFICALLY APPROVED BY THE ENGINEER.

PIPE CONNECTIONS TO SEWER MANHOLE — NOT TO SCALE — 14



SEWER CLEAN OUT DETAIL — NOT TO SCALE — 15



BUILDING SEWER SERVICE — NOT TO SCALE — 16

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D – BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No. 43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	N.T.S.	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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environmental consulting ◆ landscape architecture
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:	SHEET No.
DETAILS	C-502

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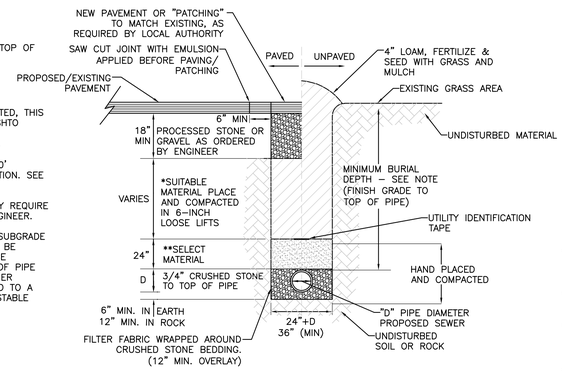
NOTES:

1. MINIMUM BURIAL DEPTH (FINISH GRADE TO TOP OF PIPE)
   GRAVITY PIPE – SEE PLAN OR PROFILE
   PRESSURE PIPE UNDER PAVING – 4'
   PRESSURE PIPE BENEATH UNPAVED – 3'
2. WHERE BACKFILL IS DESIGNATED AS COMPACTED, THIS MEANS 90 TO 95% STANDARD PROCTOR. AASHTO T-99. ALL FILL PLACED BELOW PIPES AND STRUCTURES MUST MEET THIS REQUIREMENT.
3. INSTALL CLAY DAMS AROUND THE PIPE AT 50' INTERVALS TO PREVENT LANDFILL GAS MIGRATION. SEE TETRATECH DETAIL 20 ON SHEET CA-9.
4. TRENCHES WITHIN PUBLIC RIGHT OF WAY MAY REQUIRE FLOWABLE FILL. VERIFY WITH MUNICIPAL ENGINEER.
5. WHERE WASTE FILLS ARE ENCOUNTERED AT SUBGRADE LEVEL FOR NEW UTILITIES, THE FILL SHOULD BE OVER-EXCAVATED, THE SUBGRADE SHOULD BE RE-COMPACTED, AND BACKFILL CONSISTING OF PIPE BEDDING MATERIAL, CRUSHED STONE OR OTHER SUITABLE GRANULAR FILL SHOULD BE PLACED TO A SUFFICIENT DEPTH TO CREATE A FIRM AND STABLE SUBGRADE (TYPICALLY 12 TO 18 INCHES OVER-EXCAVATION).



SEWER TRENCH DETAIL (1)
NOT TO SCALE

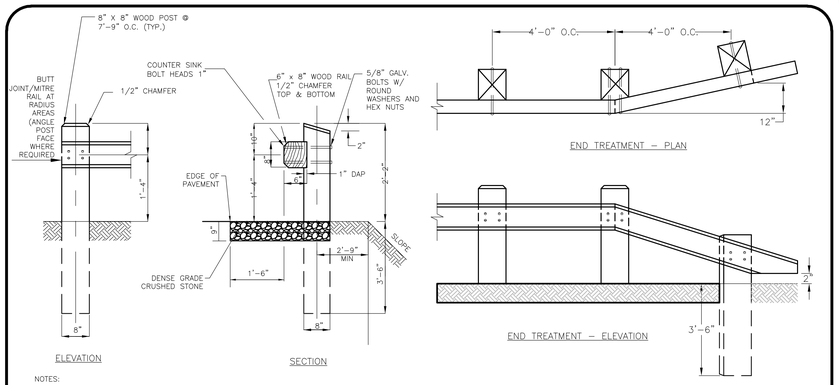
CONDITION & PIPE	**SELECT MATERIAL	LINING MATERIAL
DUCTILE IRON "ORDINARY SOIL"	TYPE I, II, OR III	SAND OR TYPE III
RCP "ORDINARY SOIL"	TYPE II OR III	SAND OR TYPE III
ALL PIPE OVER BEDROCK OR LEDGE	TYPE II OR III	SAND OR TYPE III
DUCTILE IRON IN CLAY OR MUCK	TYPE II OR III	SAND
RCP IN CLAY	TYPE II OR III	SAND
ALL PLASTICS	TYPE III	SAND OR TYPE III

* SUITABLE MATERIAL SHALL CONTAIN NO STONE GREATER THAN 4" IN DIAMETER, NO FROZEN LUMPS, AND SMALL AMOUNTS OF CLAY OR ORGANIC MATERIAL. ALL MATERIAL TO BE PLACED IN MAX 12" LIFTS AND COMPACTED BEFORE PLACING NEXT LIFT.

**TYPE I MATERIAL SHALL BE EITHER GRAVEL OR EXCAVATED MATERIAL CONTAINING NO STONES GREATER THAN 1.5" DIAMETER, NO FROZEN LUMPS, CLAY OR ORGANIC MATERIAL.

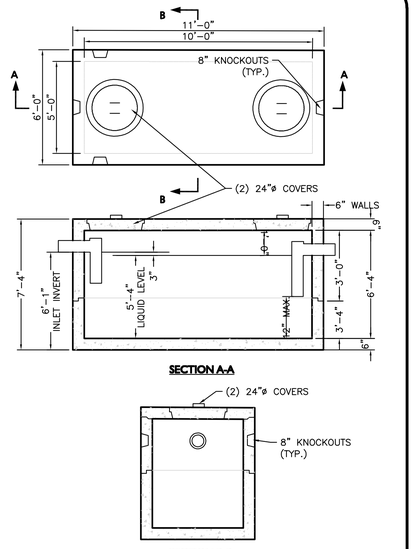
**TYPE II MATERIAL SHALL BE CLEAN, HARD, CRUSHED OR NATURAL STONE WITH A GRADATION BY WEIGHT OF 100% PASSING A 1.5" SQUARE OPENING, NOT MORE THAN 25% PASSING A ¾" OPENING, AND NOT MORE THAN 5% PASSING A ¼" SQUARE OPENING.

**TYPE III MATERIAL SHALL BE CLEAN, HARD, CRUSHED STONE FREE FROM COATINGS AND THOROUGHLY WASHED WITH A GRADATION BY WEIGHT OF 100% PASSING A 3/4" SQUARE OPENING, AND 0 TO 5% PASSING A ¼" SQUARE OPENING.



NOTES:
1. ALL TIMBERS SHALL BE SOUTHERN YELLOW PINE (#2 AND BETTER-SAS-TREATED AFTER FABRICATION)

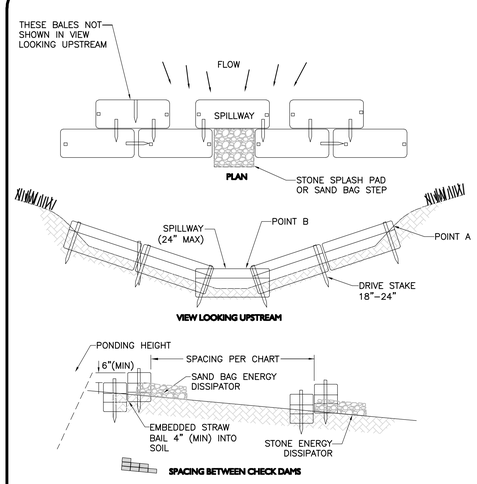
WOOD GUARDRAIL (2)
NOT TO SCALE



MANUFACTURER'S NOTES:
1. CONCRETE: 5,000 PSI MINIMUM STRENGTH @ 28 DAYS.
2. STEEL REINFORCING-ASTM A-615, GRADE 60.
3. COVER TO STEEL-1" MINIMUM.
4. TANKS ARE DESIGNED TO MEET ASTM C858 AND ACI 318 WITH ASSHTO HS-20 LOADING.
5. EARTH COVER: 0 TO 5 FEET MAX.
6. CONSTRUCTION JOINT SEALED WITH 1" DIA. BUTYL RUBBER OR EQUIVILENT.
7. APPROX. WEIGHTS: TOP SLAB = 2.3 TONS; BOTTON SECTION = 8.5 TONS.

ADDITIONAL NOTES:
1. ALL PIPE GOING TO, WITHIN, AND TO 10 FEET BEYOND THE CONCRETE STRUCTURE, INCLUDING THE 4" VENT PIPE, SHALL BE THE RESPONSIBILITY OF THE PLUMBING PROFESSIONAL.
2. ALL PIPE, INCLUDING THE 4" VENT PIPE TO THE ROOF, SHALL BE CAST IRON.
3. THE PLUMBING PROFESSIONAL SHOULD COORDINATE INSTALLATION OF THE TANK, ACCESS MANHOLES, AND DETAILS OF EXCAVATION, BACKFILLING, AND WATERPROOFING WITH THE CIVIL ENGINEER.
4. ADJUST TO GRADE WITH MINIMUM 12" OF CONCRETE BRICK AND MORTAR (RED BRICK SHALL NOT BE USED).
5. BUTYL RUBBER JOINT SEALANT SHALL BE USED AT ALL JOINTS.

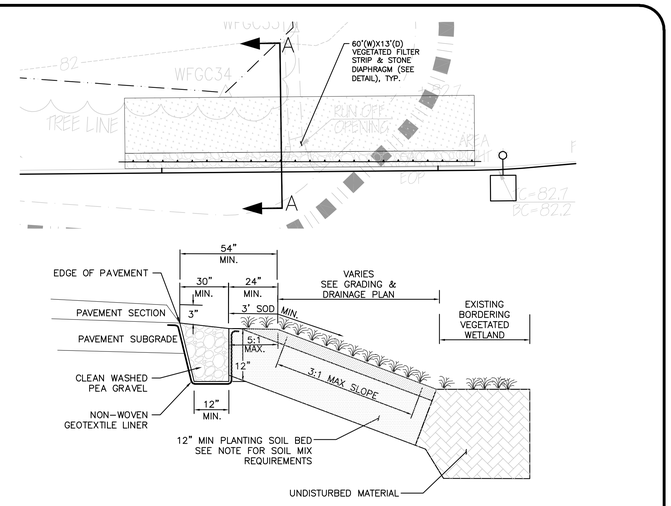
2,000 GALLON PRECAST CONCRETE GREASE TRAP (3)
NOT TO SCALE



GRADE %	SPACING (FT)
0-2	250
3-5	200-135
6-10	100-80
11-15	80-60
16-20	60-45

NOTE:
1. HAYBALE CHECK DAM TO BE USED WHERE DRAINAGE AREA IS LESS THAN ¼ ACRE. (TO BE FIELD COORDINATED)
2. EMBED BALES 4" INTO THE SOIL AND KEY BALES INTO THE CHANNEL BANKS.
3. POINT "A" MUST BE HIGHER THAN POINT "B" (SPILLWAY HEIGHT).
4. PLACE BALES PERPENDICULAR TO THE FLOW WITH ENDS TIGHTLY ABUTTING.
5. SPILLWAY HEIGHT SHALL NOT EXCEED 24".
6. INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.
7. DO NOT PLACE IN FLOWING STREAMS.

STRAWBALE CHECK DAM (4)
NOT TO SCALE

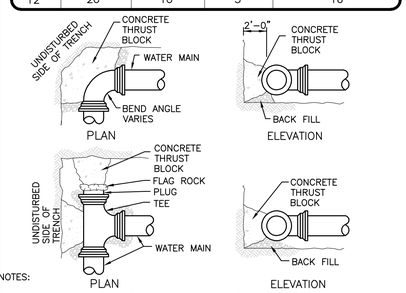


SOIL MIX REQUIREMENTS:

1. THE SOIL MIX SHALL BE FROM OFFSITE SOURCES AND SHOULD BE A MIXTURE OF SAND COMPOST AND SOIL. DO NOT REUSE EXISTING TOPSOILS. SOIL SHALL CONTAIN:
   – 20-30% SAND (CONSTRUCTION SAND)
   – 30-40% TOPSOIL
   – 20-30% COMPOST (AGED LEAF MULCH AND ORGANIC MATTER AS AVAILABLE FROM NEWLAND FARMS, 145 NEWLAND STREET NORTON, MA 508-285-3169).
   – 5% CLAY (MAX.)
2. THE SOIL MIX MUST BE UNIFORM, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN 1/2 INCHES.
3. SOIL pH SHOULD GENERALLY BE BETWEEN 5.5-7.0, A RANGE THAT IS OPTIMAL FOR MICROBIAL ACTIVITY AND ADSORPTION OF NITROGEN, PHOSPHORUS, AND OTHER POLLUTANTS.
4. USE SOIL WITH 7% TO 10% ORGANIC CONTENT OF TOTAL DRY WEIGHT.
5. THE TOPSOIL COMPONENT SHALL BE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE, PER USDA TEXTURE TRIANGLE. SOILS SHALL BE COMPOSED OF A NATURAL, FERTILE, FRIABLE SOILS. THE SOILS SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND SUPPORT OF VEGETATIVE GROWTH AND MATCH THE PARTICLE DISTRIBUTION AND ORGANIC CONTENT REQUIREMENTS BELOW. TOPSOIL SHALL BE FREE OF ANY OBJECTS GREATER THAN ½" INCH IN DIAMETER INCLUDING STONES, EARTH CLODS, OR STICKS. IT SHALL CONTAIN NO STUMPS, CLAY LUMPS, ROOTS, OTHER OBJECTIONABLE, EXTRANEOUS MATTER OR DEBRIS NOR SHALL CONTAIN TOXIC SUBSTANCES.
6. THE COMPOST SHALL BE A HUMUS RICH TYPE DERIVED FROM THE DECOMPOSITION OF LEAVES AND YARD WASTES. THE COMPOST SHALL NOT CONTAIN BIOSOLIDS/MIXED MUNICIPAL COMPOST/ANIMAL MANURE COMPONENT.

STONE DIAPHRAGM & VEGETATED FILTER STRIP AT EXISTING SWALES (5)
NOT TO SCALE

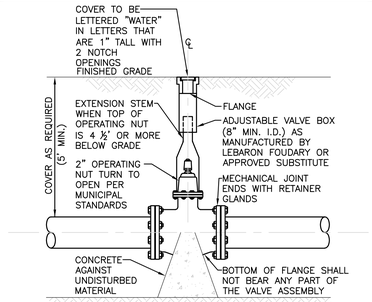
MINIMUM THRUST BLOCK BEARING AREAS				
PIPE DIAMETER	90° BEND (SQ. FT.)	45° BEND (SQ. FT.)	22.5° BEND (SQ. FT.)	TEES, PLUGS, CAPS & HYDRANTS (SQ.FT.)
6"	5	3	3	4
8"	9	6	3	9
10"	13	7	4	12
12"	20	10	5	16



NOTES:
1. ALL WATER MAIN FITTINGS, BENDS, TEES, PLUGS ETC. SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
2. ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
3. SIZE OF CONCRETE THRUST BLOCKS SHALL BE AS NOTED ABOVE.
4. MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 3,000 P.S.I.
5. KEEP CONCRETE CLEAR OF MECHANICAL JOINTS.
6. THE BELOW PREDICATED ON A WATER PRESSURE OF 225 PSI AND A SOIL RESISTANCE OF 2000 PSF (TILL). FOR OTHER SOILS THE VALUES IN THE ABOVE TABLE SHALL BE MULTIPLIED BY:
   SOFT CLAY 4
   SAND 2
   SAND & GRAVEL 1.33
   SHALE 0.4
7. ALL CAST-IN-PLACE THRUST BLOCKS SHALL BE FORMED UP WITH PLYWOOD SO THAT CONCRETE IS NOT CAST AROUND FITTINGS OR MECHANICAL JOINTS.

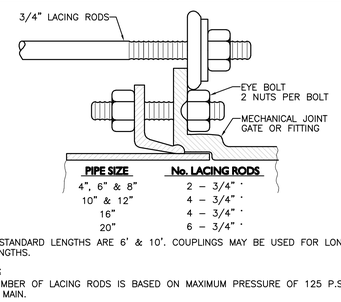
THRUST BLOCKS (6)
SCALE: N.T.S.

NOT USED (7)
NOT TO SCALE



NOTE:
1.) CONTRACTOR MAY USE ANCHOR TEES AT HIS OPTION.
2.) HYDRANTS AND VALVES TO OPERATE PER MUNICIPAL STANDARDS

GATE VALVE DETAIL (8)
NOT TO SCALE

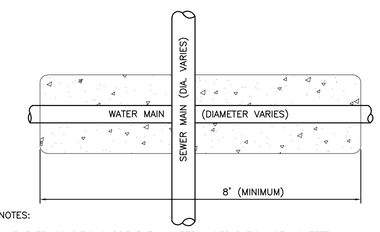


PIPE SIZE	No. LACING RODS
4", 6" & 8"	2 – 3/4" '
10" & 12"	4 – 3/4" '
16"	4 – 3/4" '
20"	6 – 3/4" '

* STANDARD LENGTHS ARE 6' & 10'. COUPLINGS MAY BE USED FOR LONGER LENGTHS.

NOTES:
1. NUMBER OF LACING RODS IS BASED ON MAXIMUM PRESSURE OF 125 P.S.I. IN MAIN.
2. EYE-BOLTS AND LACING RODS ARE TO BE FABRICATED FROM A-36 STEEL.
3. STEEL LACING RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 36,000 P.S.I.
4. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 7,000 LBS. EACH.

MECHANICAL JOINT LACING DETAIL (9)
NOT TO SCALE



NOTES:
WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET BETWEEN A SEWER MAIN AND A WATER MAIN:
1. THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE DIFFERENCE IN ELEVATION BETWEEN THE WATER MAIN AND THE SEWER MAIN SHALL BE AT LEAST 18 INCHES.
2. THE PIPE CROSSING SHALL OCCUR AS CLOSE TO 90° AS PRACTICABLE.
3. THE PIPE JOINTS SHALL BE STAGGERED TO PROVIDE THE MAXIMUM SEPARATION FROM THE POINT OF CROSSING.
4. THE CROSSING SHALL BE ENCASED IN CONCRETE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR A DISTANCE OF 8 LINEAR FEET CENTERED ON THE CROSSING.

SEWER / WATER CROSSING DETAIL (10)
NOT TO SCALE

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D – BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No.43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

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DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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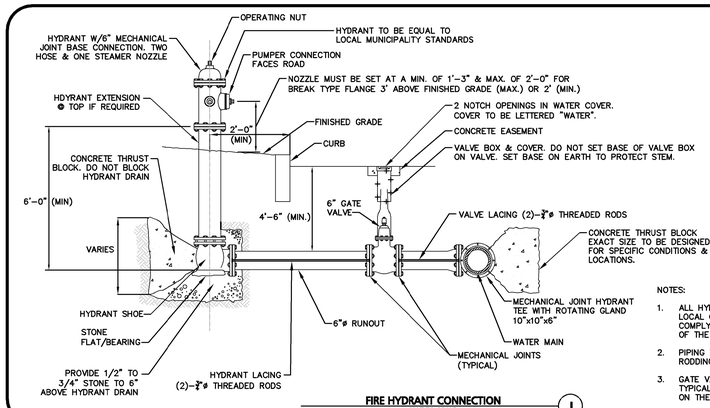
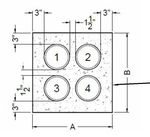


NOTES:

1. ALL HYDRANTS, VALVES AND LOCAL CONNECTIONS SHALL COMPLY WITH THE SPECIFICATIONS OF THE LOCAL MUNICIPALITY.
2. PIPING TO BE RESTRAINED WITH RODDING OR RETAINING GLANDS.
3. GATE VALVE INSTALLATION IS TYPICAL FOR ALL GATES SHOWN ON THE DRAWINGS.

FIRE HYDRANT CONNECTION (1)
NOT TO SCALE



4 - 5" CONDUIT LAYOUT

DIMENSIONS:
A = 18.5–INCHES
B = 18.5–INCHES

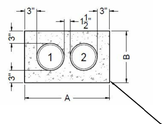
USE SPACERS TO MAINTAIN CORRECT SPACING & ALIGNMENT OF THE DUCTS

CONCRETE SPECIFICATION:

- CONCRETE SHALL BE NORMAL WEIGHT WITH PEASTONE MIX, 2500 PSI @ 28 DAY COMPRESSIVE STRENGTH.
- UNLESS OTHERWISE SPECIFIED, CONSTRUCTION SHALL CONFORM TO ACI–318 (LATEST EDITION) WHERE REINFORCEMENT IS SPECIFIED.

NOTES:

1. MAINTAIN A CLEAR DISTANCE OF 12" (MIN.) FROM ALL STRUCTURES THAT CROSS ABOVE OR BELOW THE DUCTBANK.
2. PVC SOLVENT CEMENT SHALL BE USED TO CREATE WATER–TIGHT JOINTS FOR ALL CONDUIT INSTALLED.
3. RED CAUTION TAPE REQUIRED. CENTERED ABOVE ALL DUCT LINES.
4. OTHER UTILITIES SHALL MAINTAIN A 12" MIN. CLEAR DISTANCE FROM WMGLD ELECTRIC WHEN SHARING SAME TRENCH & SHALL NOT BE IN THE SAME CONCRETE ENCASEMENT.
5. ALL ELECTRIC WORK SHALL CONFORM WITH WMGLD REQUIREMENTS AND STANDARDS.

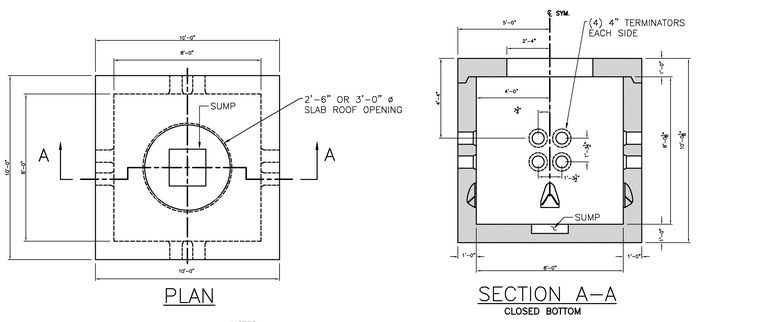


2 - 4" CONDUIT LAYOUT

DIMENSIONS:
A = 16.5–INCHES
B = 10.5–INCHES

USE SPACERS TO MAINTAIN CORRECT SPACING & ALIGNMENT OF THE DUCTS

STANDARD UNREINFORCED CONCRETE DUCTBANK FOR 4" & 5" CONDUIT (WMGLD) (2)
NOT TO SCALE



PLAN

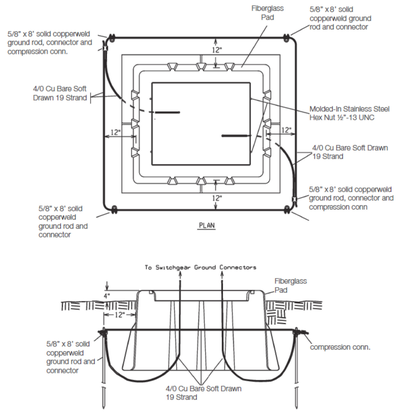
SECTION A–A
CLOSED BOTTOM

NOTES:

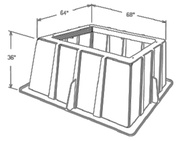
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN LOADING: AASHTO HS20–44, 0 TO 5 FEET COVER.
3. STEEL REINFORCEMENT CONFORMS TO ASTM A615, GRADE 60.
4. MINIMUM STEEL COVER 1".
5. VAULT TO HAVE STANDARD 30" VERIZON MANHOLE RING & COVER

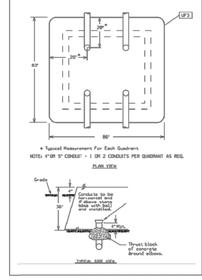
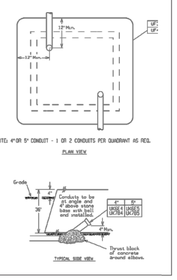
TELE/DATA MANHOLE (3)
NOT TO SCALE

26.1 Fiberglass Switchgear Ground Grid
The Customer shall install the ground grid for a fiberglass switchgear installation as shown in the picture.

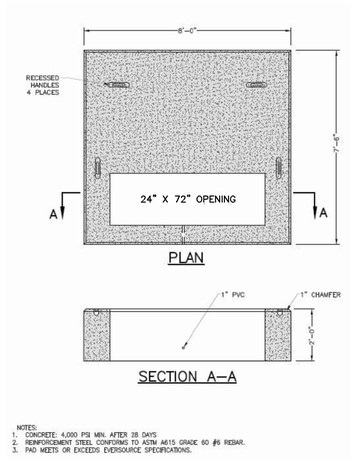


FIBERGLASS SWITCHGEAR GROUND GRID (4)
NOT TO SCALE



Typical Installation, Vertical Conduit Entry	Typical Installation, Horizontal Conduit Entry
	

FIBERGLASS SWITCHGEAR BASE (5)
NOT TO SCALE



NOTES:
1. CONCRETE: 4,000 PSI MIN. AFTER 28 DAYS
2. REINFORCEMENT STEEL CONFORMS TO ASTM A615 GRADE 60 #6 REBAR.
3. PAD MEETS OR EXCEEDS EVERSOURCE SPECIFICATIONS.

3 PHASE TRANSFORMER PAD - 750-2000 KVA (6)
NOT TO SCALE

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190–32D – BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No.43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	N.T.S.	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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DRAWING TITLE:	SHEET No.
DETAILS	C-504

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STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740, SC-310, OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. 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.
5. CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:

a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES 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 AASHTO FOR THERMOPLASTIC PIPE.

b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.

c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.

8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.

STORMTECH RECOMMENDS 3 BACKFILL METHODS:
- STONESHOOTER LOCATED OFF THE CHAMBER BED.
- BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUB-GRADE.
- BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.

4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

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

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

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

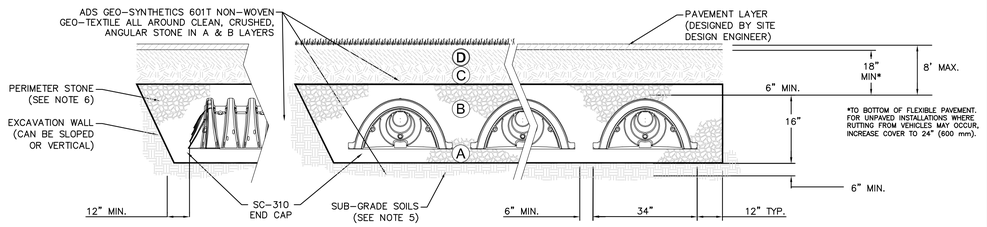
StormTech®
Detention • Retention • Water Quality

70 INWOOD ROAD, SUITE 3 | ROCKY HILL | CT | 06067
860-529-8188 | 888-892-2694 | WWW.STORMTECH.COM

GENERAL NOTES (1)
NOT TO SCALE

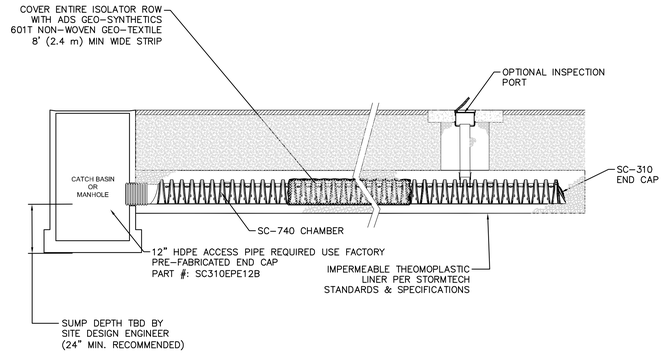
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUB-BASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUB-GRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUB-BASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUB-GRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2, 3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



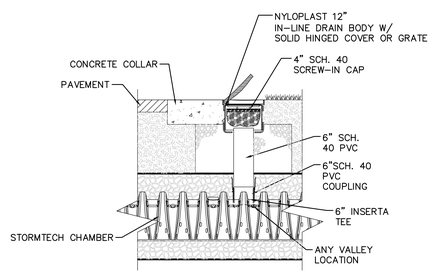
NOTES:
1. SC-310 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
5. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUB-GRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
7. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUB-BASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS (2)
NOT TO SCALE



STORMTECH ISOLATOR ROW*

ISOLATOR ROW & INSPECTION PORT (3)
NOT TO SCALE



NOTES:
1. INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED.

CONNECTION DETAIL
NTS

INSPECTION PORT DETAIL

RELIEF FROM THE FOLLOWING ZONING REQUIREMENTS OF THE TOWN OF WAKEFIELD ZONING ORDINANCE ARE REQUESTED:

190-32D - BUILDING HEIGHT REQUIREMENT

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY J. WILLIAMS
CIVIL
No. 43119
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT:

CABOT, CABOT & FORBES
185 DARTMOUTH STREET
BOSTON, MA 02116

PROJECT:

200-400 QUANNAPOWITT PARKWAY
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	N.T.S.	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

PREPARED BY:

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environmental consulting ◆ landscape architecture
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DRAWING TITLE: DETAILS

SHEET No. C-505

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