

**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:**  
CCF QUANNAPOWITT PROPERTY COMPANY, LLC  
185 DARTMOUTH STREET, SUITE 402  
BOSTON, MA 02116

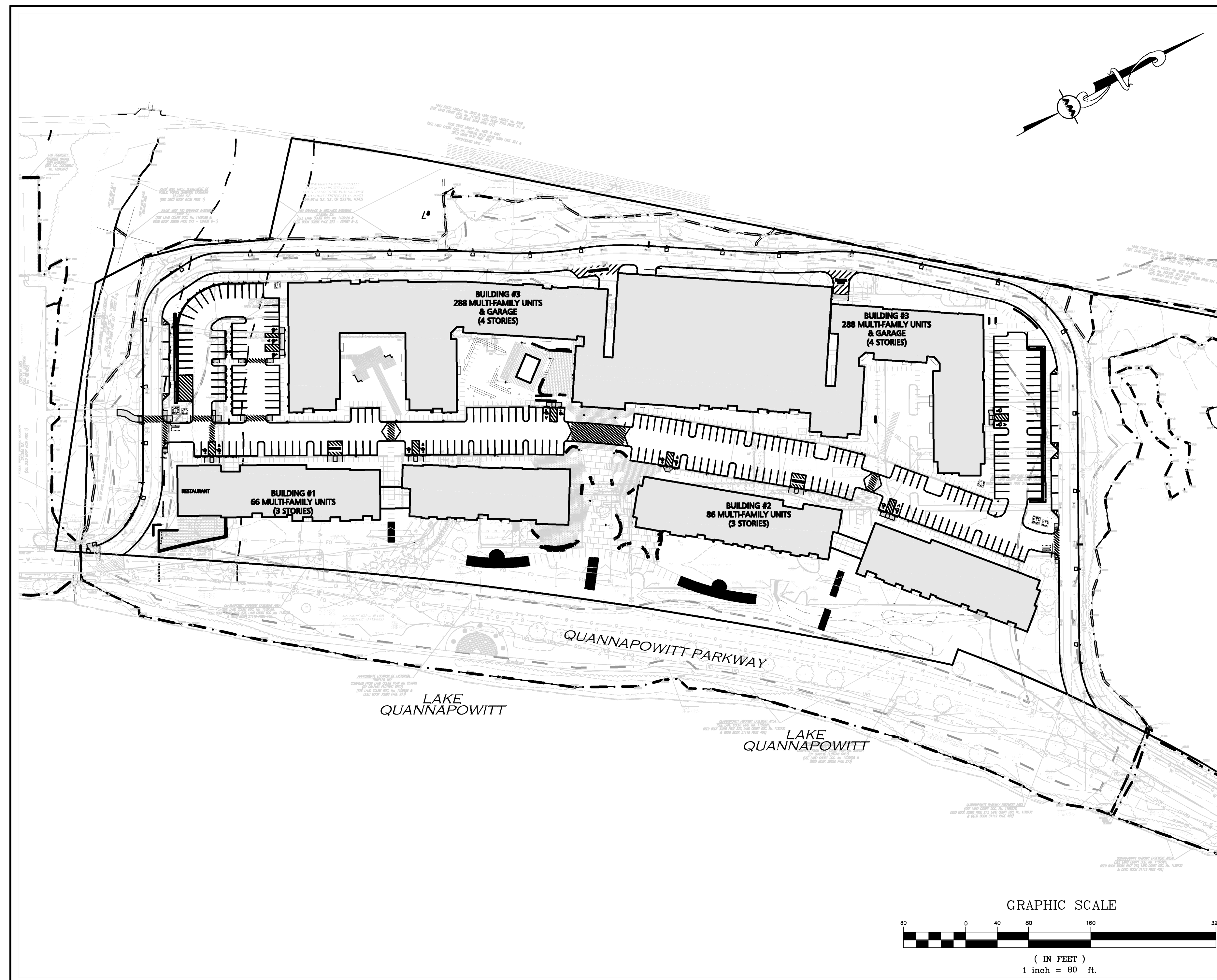
**SITE ENGINEERS:**  
ALLEN & MAJOR ASSOCIATES, INC.  
100 COMMERCE WAY  
WOBBURN, MA 01888-0118

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

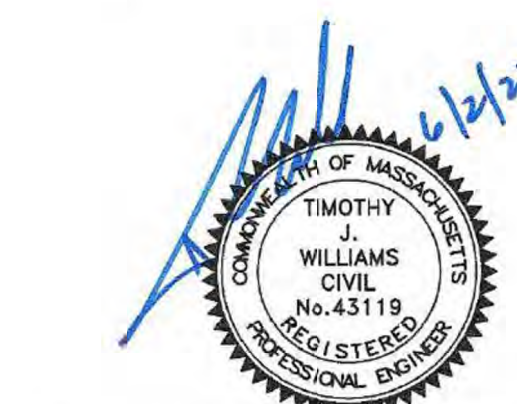
**LANDSCAPE ARCHITECTS:**  
COPLEY WOLFF DESIGN GROUP  
10 POST OFFICE SQUARE, SUITE 1315  
BOSTON, MA 02109

**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



PREPARED BY:  
**ALLEN & MAJOR ASSOCIATES, INC.**  
civil engineering • land surveying  
environmental consulting • landscape architecture  
www.allenmajor.com  
100 COMMERCE WAY  
WOBBURN, MA 01888-0118  
TEL: (781) 935-6889  
FAX: (781) 935-2896  
WOBBURN, MA • LAKEVILLE, MA • MANCHESTER, NH  
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PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

ISSUED TO ZONING BOARD OF APPEALS: MARCH 16, 2021  
RE-ISSUED TO ZONING BOARD OF APPEALS: MARCH 31, 2021  
ISSUED TO CONSERVATION COMMISSION: AUGUST 3, 2021  
RE-ISSUED TO ZONING BOARD OF APPEALS: SEPTEMBER 1, 2021  
RE-ISSUED TO ZONING BOARD OF APPEALS: NOVEMBER 11, 2021  
RE-ISSUED TO CONSERVATION COMMISSION: JANUARY 5, 2022  
RE-ISSUED TO CONSERVATION COMMISSION: FEBRUARY 7, 2022

RE-ISSUED TO CONSERVATION COMMISSION & ZONING BOARD OF APPEALS: APRIL 8, 2022  
RE-ISSUED TO CONSERVATION COMMISSION & ZONING BOARD OF APPEALS: JUNE 2, 2022



1.	5/22/19	NEW WETLAND FLAGS
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DRAWN BY: VC/BKL

DESIGNED BY:

CHECKED BY: SMB

**Merrill**  
Engineers and Land Surveyors  
427 Columbia Road, Hanover, MA 02339  
Telephone: 781-826-9200 Fax: 781-826-6665

**EXISTING CONDITIONS PLAN**  
**200 QUANNAPOWITT PARKWAY**  
**WAKEFIELD, MASSACHUSETTS**

APPLICANT  
WATERSTONE PROPERTIES GROUP, INC.  
322 RESERVOIR STREET  
NEEDHAM, MA 02494

SEPTEMBER 10, 2018

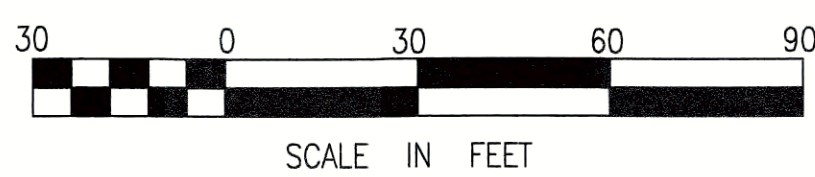
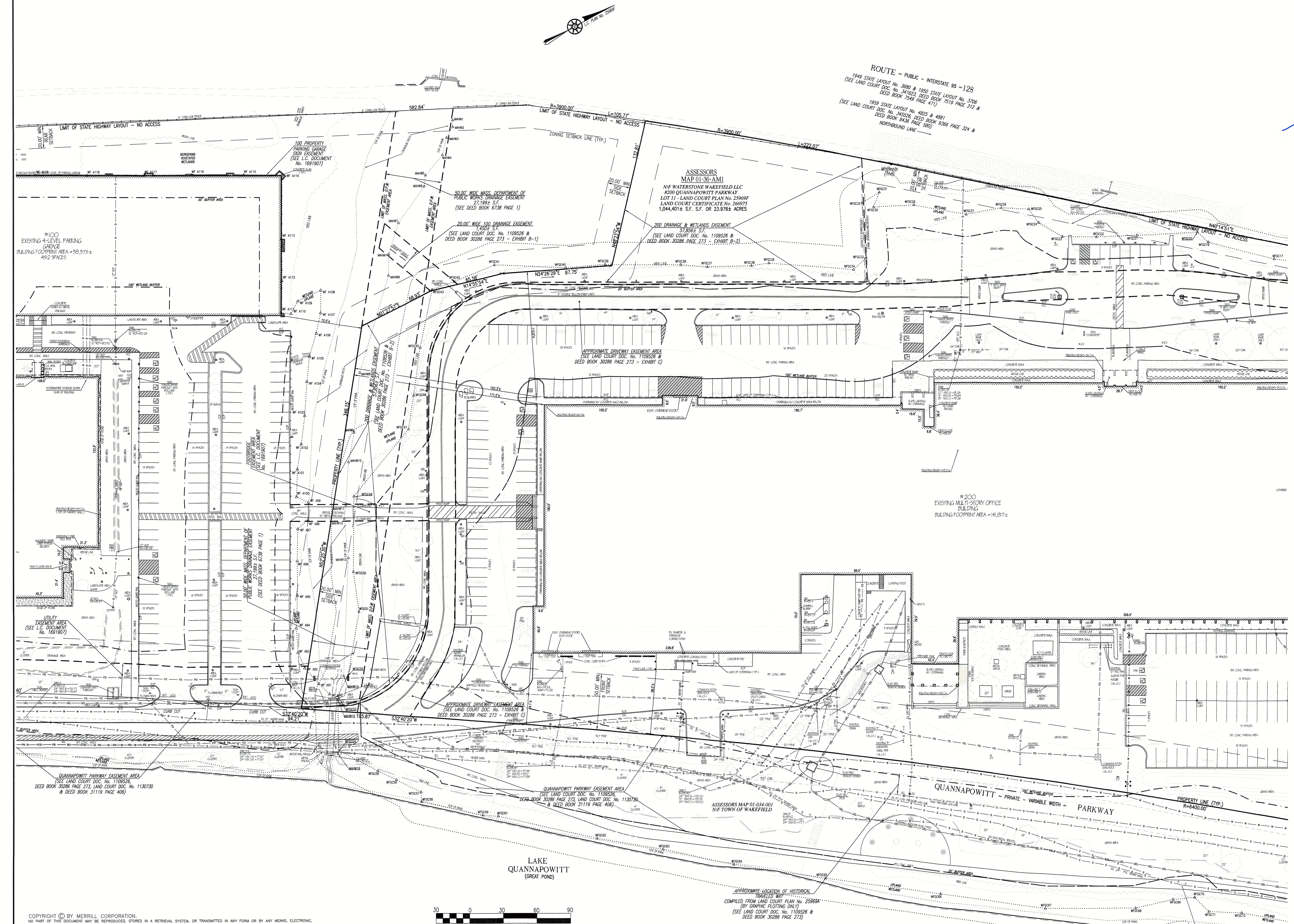
SCALE: AS-NOTED

JOB No. 10-055

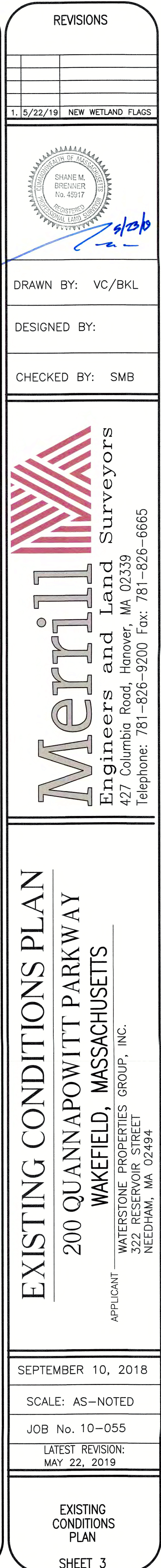
LATEST REVISION:  
MAY 22, 2019

EXISTING  
CONDITIONS  
PLAN

SHEET 2













GENERAL NOTES:

1. THE EXISTING CONDITIONS PLAN WAS PREPARED BY MERRILL ENGINEERS & LAND SURVEYORS.
2. MAXIMUM CROSS SLOPE ON ALL WALKS IN 6:1 (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 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 THE 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 GROUND BREAK.
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 VERIFIED BY THE GAS COMPANY 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.

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 LINES. 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 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 FACILITIES, 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 SEED 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 AND EXCESS OF 5%, 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, SEEDING 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 SWEEPED OR WASHED TO AVOID TRACKING MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. 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 EARTHWORK 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 CONTRACTOR'S FIELD OFFICE ON-SITE. 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 ON-SITE, 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.

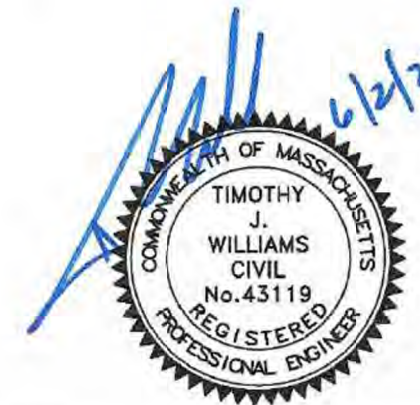
ABBREVIATIONS:

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	MISC	MISCELLANEOUS
BM	BENCH MARK	MTD	MOUNTED
BOS	BOTTOM OF SLOPE	MW	MONITORING WELL
BOW	BOTTOM OF WALL		
BRK	BRICK	N	NORTH
BV&B	BUTTERFLY VALVE & BOX	NIC	NOT IN CONTRACT
BWV	BORDERING VEGETATED WETLAND	NH	NUMBER
		NTS	NOT TO SCALE
CB	CATCH BASIN	OC	ON CENTER
CB	CATCH FEET	OD	OUTSIDE DIAMETER
CFS	CUBIC FEET PER SECOND	OH	OVERHEAD WIRE
CI	CAST IRON (PIPE)	OWH	OVERHEAD
CL	CENTERLINE	OW	OBSERVATION WELL
CLDI	CEMENT LINED DUCTILE IRON (PIPE)		
CM	CONSTRUCTION MANAGER	PC	POINT OF CURVATURE
CMP	CORRUGATED METAL PIPE	PCC	POINT OF COMPOUND CURVATURE
CO	CLEAN OUT	PIC	POINT OF INTERSECTION
CONC	CONCRETE	PKG	PARKING
CONST	CONSTRUCTION	PL	PROPERTY LINE
CONT	CONTRACTOR	PLMB	PLUMBING
CRD	COORDINATE	POT	POINT ON CURVATURE
CRI	CORRUGATED POLYETHYLENE PIPE	PRC	POINT ON TANGENT
CUL	CULVERT	PRO	POINT OF REVERSE CURVATURE
CY	CUBIC YARD	PROP, P	PROPOSED
		PT	POINT (OR POINT OF TANGENT)
		PVC	POLYVINYL CHLORIDE (PIPE)
DB	DISTRIBUTION BOX	R&R	REMOVE & RESET/REPLACE
DBL	DOUBLE	R&S	REMOVE & REPLACE
DEM	DEMOLISH	RCP	REINFORCED CONCRETE PIPE
DET	DETENTION	RD	ROAD (OR ROOF DRAIN)
DIA	DIAMETER	REDUC	REDUCER
DIM	DIMENSION	RELOC	RELOCATE
DMH	DRAIN MANHOLE	REM	REMOVE
DW	DOMESTIC WATER (OR DRY WELL)	RET	RETAIN, RETAINING OR RETENTION
DWG	DRAWING	ROW	RIGHT OF WAY
DYCL	DOUBLE YELLOW CENTERLINE	RR	RAILROAD
		RWL	RAIN WATER LEADER
		RWY	ROADWAY
EHH	ELECTRIC HANDHOLE	SD	SUBDRAIN
EL	ELEVATION	SF	SQUARE FEET
ELEC	ELECTRIC	SGC	SLOPED GRANITE CURB
EMH	ELECTRIC MANHOLE	SMH	SEWER MANHOLE
EOP	EDGE OF PAVEMENT	STANDPIPE	STANDPIPE
EOR	EDGE OF ROAD	SPEC	SPECIFICATION
EOW	EDGE OF WETLANDS	STA	STATION
ETC	ELECTRIC, TELEPHONE, CABLE	STC	STORM COLLECTOR
EXIST	EXISTING	STD	STANDARD
EXT	EXTERIOR	STRTL	STRUCTURAL
		SOLID	SOLID WHITE EDGE LINE
		SW	SIDEWALK
		SWLL	SOLID WHITE LANE LINE
		SYCL	SOLID YELLOW CENTERLINE
TA	TEST BORING	TB	TEST BORING
TC	TOP OF CURB	TD	TRENCH DRAIN
TEL	TELEPHONE	TEL	TELEPHONE
TID	TRENCH DRAIN	TEL	TELEPHONE
TOS	TOP OF SLOPE	TOS	TOP OF SLOPE
TOW	TOP OF WALL	TOW	TOP OF WALL
TS&V	TAPPING SLEEVE & VALVE	TS&V	TAPPING SLEEVE & VALVE
TYP	TYPICAL	TYP	TYPICAL
UD	UNDERDRAIN	UD	UNDERDRAIN
UL	UNDERWRITERS LABORATORY	UL	UNDERWRITERS LABORATORY
UP	UTILITY POLE	UP	UTILITY POLE
VCP	VITRIFIED CLAY PIPE	VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL	VERT	VERTICAL
VGC	VERTICAL GRANITE CURB	VGC	VERTICAL GRANITE CURB
WG	WATER GATE	WG	WATER GATE
WM	WATER MAIN	WM	WATER MAIN
WMH	WATER MANHOLE	WMH	WATER MANHOLE
WSO	WATER SHUTOFF	WSO	WATER SHUTOFF
WGLD	WAKEFIELD MUNICIPAL GAS & LIGHT DEPARTMENT	WGLD	WAKEFIELD MUNICIPAL GAS & LIGHT DEPARTMENT

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1	3/31/2021	Re-issued to ZBA

APPLICANT:  
**CCF QUANNAPOWITT PROPERTY COMPANY, LLC**  
185 DARTMOUTH STREET  
BOSTON, MA 02116

PROJECT:  
**200-400 QUANNAPOWITT PARKWAY**  
WAKEFIELD, MA 01880

PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	N/A	DWG. NAME:	C-1623-11.dwg

DESIGNED BY: NCD CHECKED BY: TWW

PREPARED BY:



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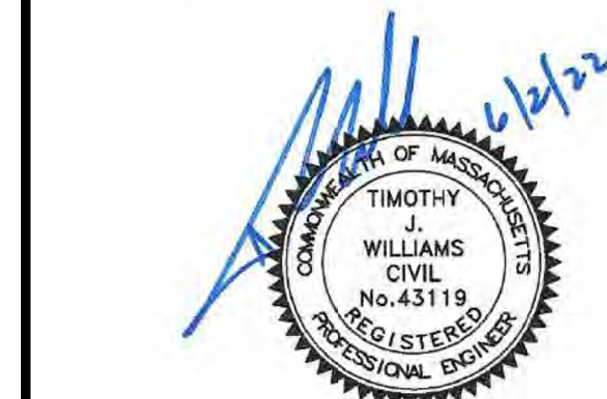
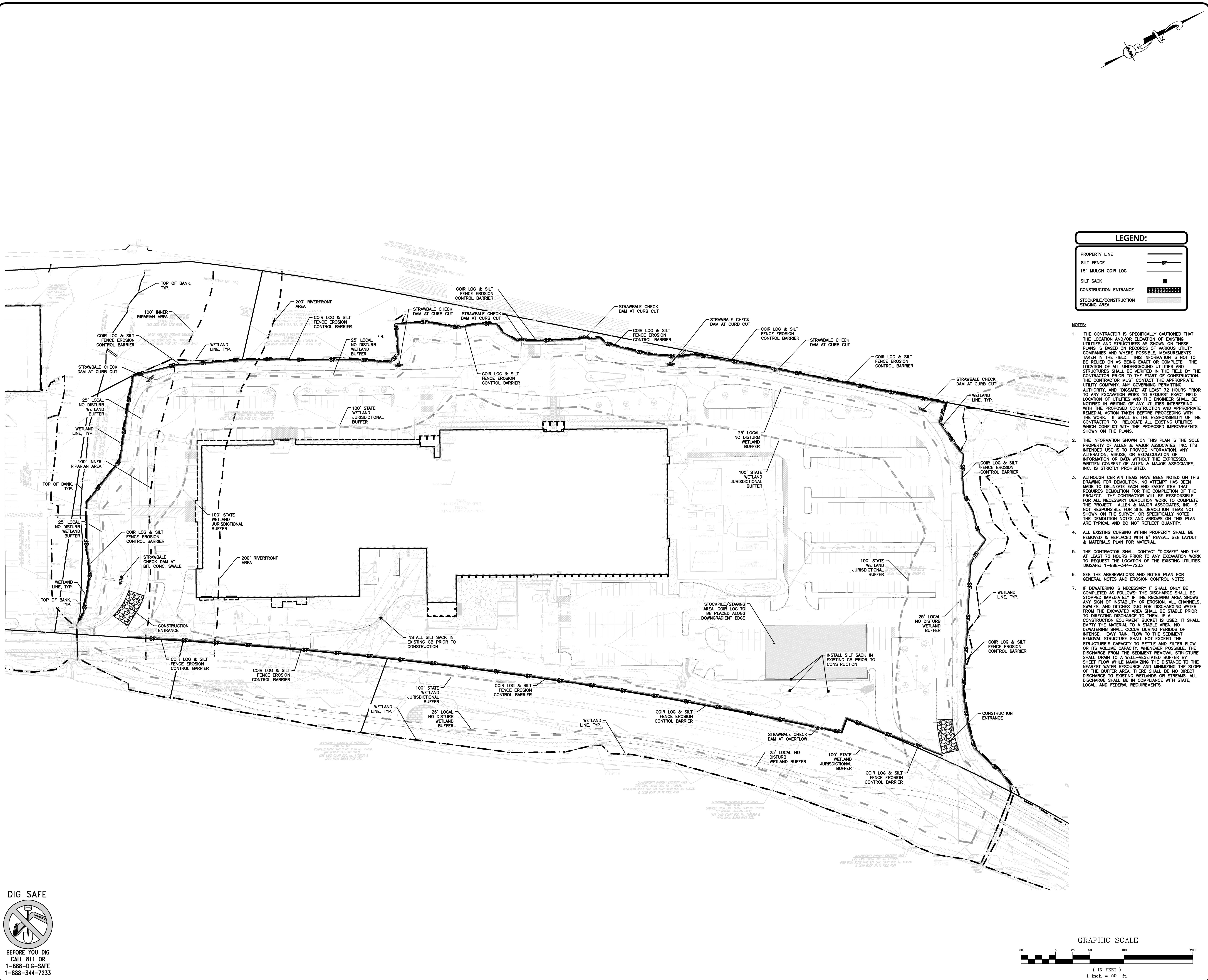
DRAWING TITLE: <b>ABBREVIATIONS &amp; NOTES</b>	SHEET No. <b>C-101A</b>
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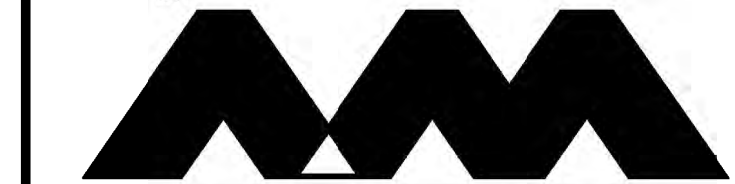
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PARKWAY  
WAKEFIELD, MA 01880

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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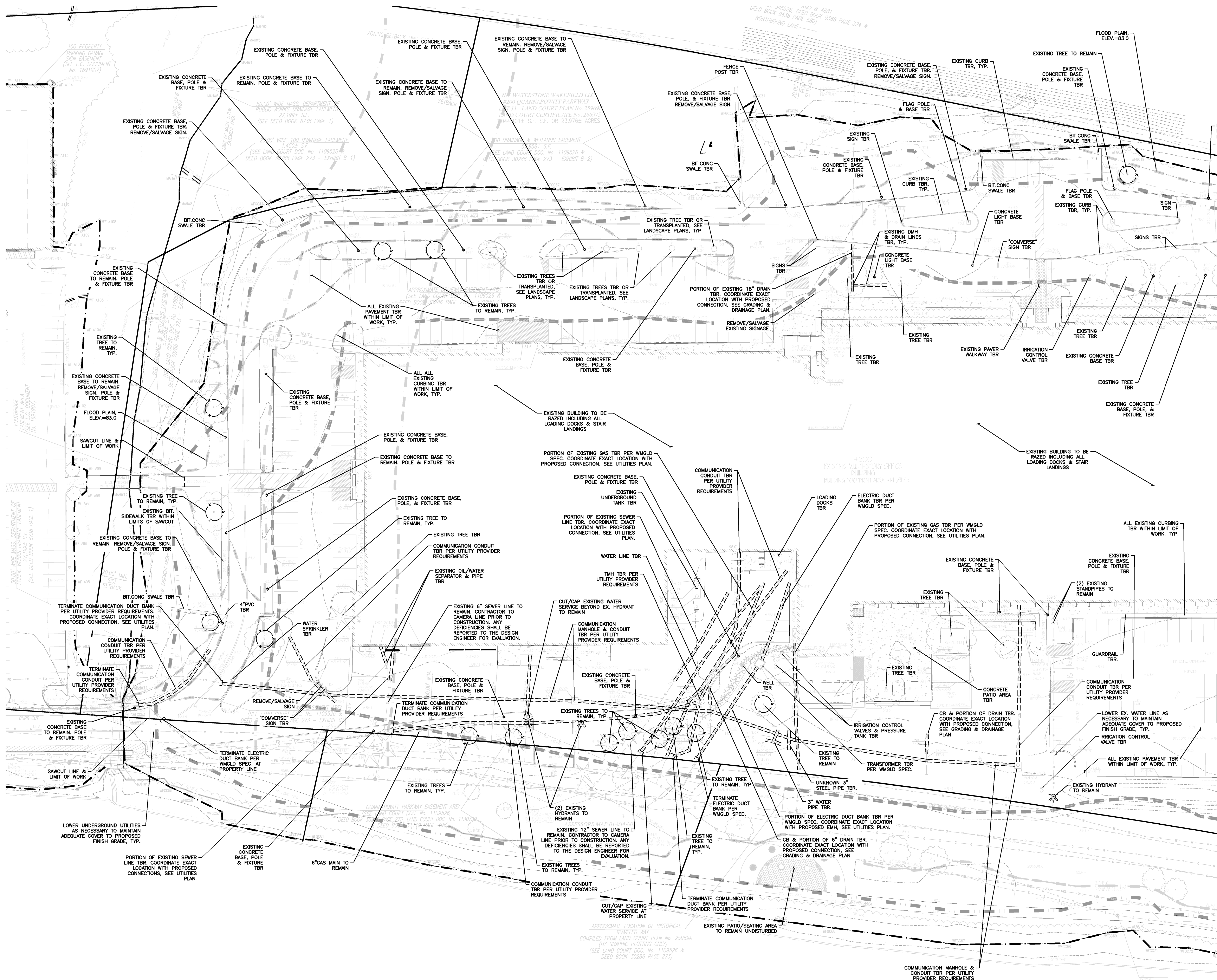
EROSION CONTROL  
PLAN

SHEET No.

C-102

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**LEGEND:**

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

- NOTES:**
- 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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  - ALL EXISTING CURBING WITHIN PROPERTY SHALL BE REMOVED & REPLACED WITH 6" REVEAL. SEE LAYOUT & MATERIALS PLAN FOR MATERIAL.
  - THE CONTRACTOR SHALL CONTACT "DIGSAFE" AND THE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST THE LOCATION OF THE EXISTING UTILITIES. DISSAFE: 1-888-344-7233
  - SEE THE ABBREVIATIONS AND NOTES PLAN FOR GENERAL NOTES AND EROSION CONTROL NOTES.

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APPLICANT:  
**CCF QUANNAPOWITT PROPERTY COMPANY, LLC**  
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

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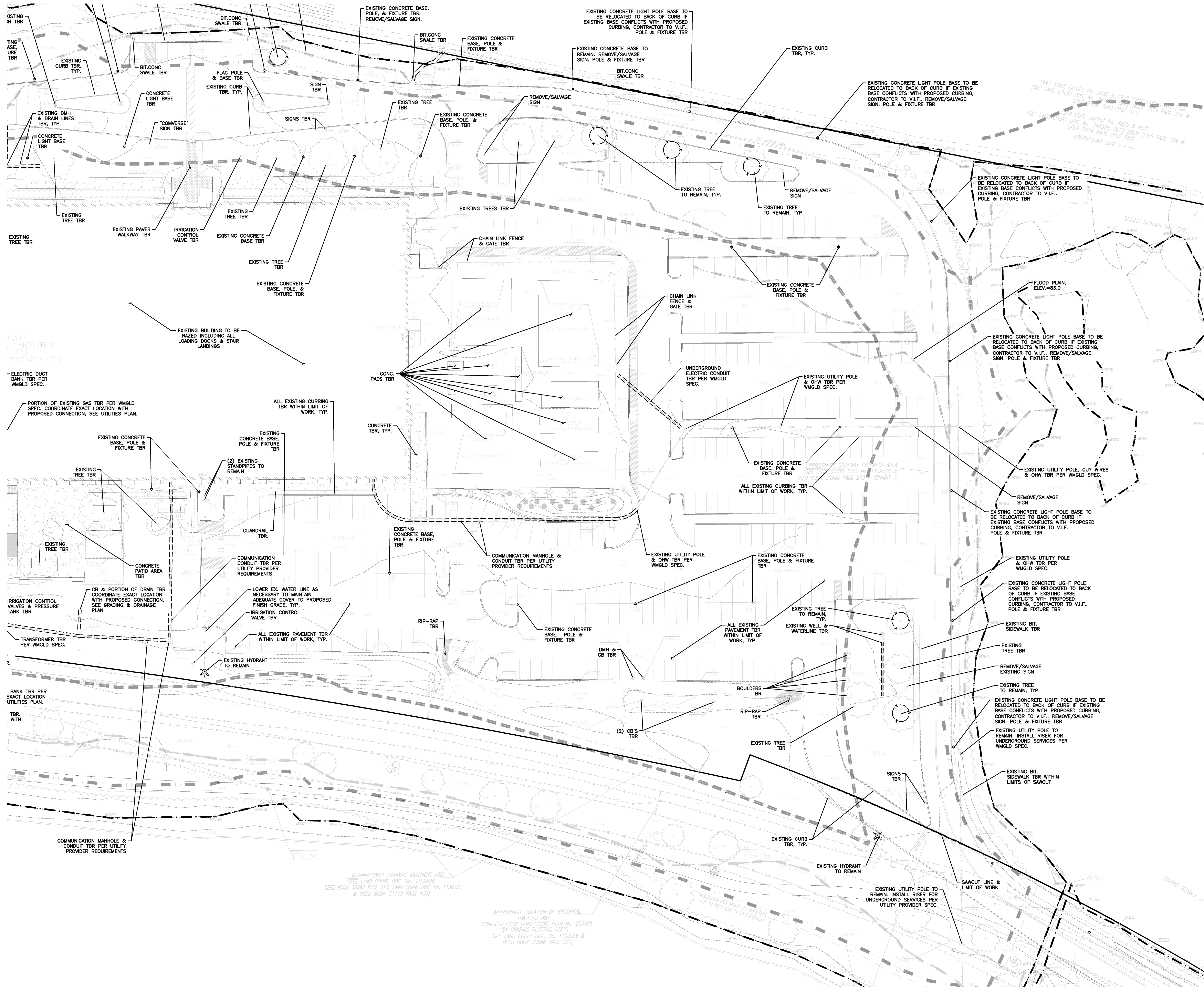
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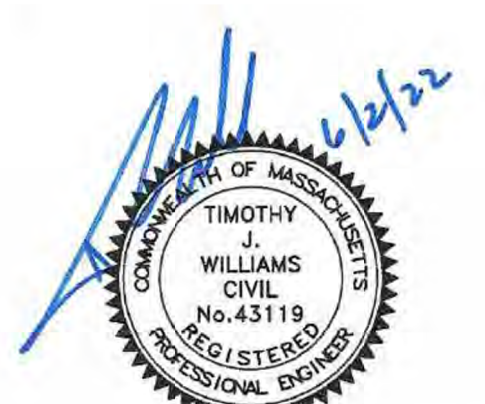




**LEGEND:**

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

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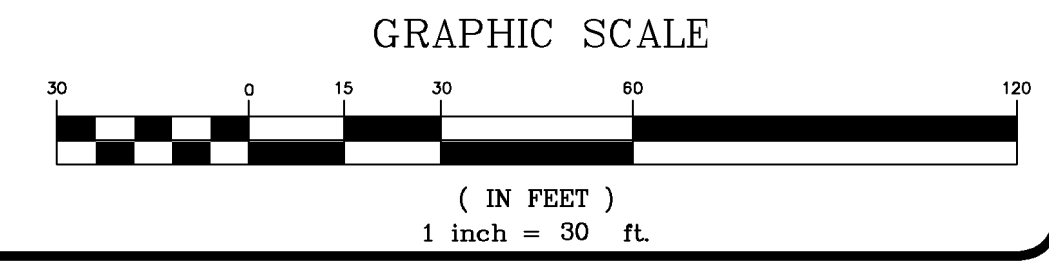
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PROJECT NO.	1623-11	DATE:	MARCH 16, 2021
SCALE:	1"=30'	DWG. NAME:	C-1623-11.dwg
DESIGNED BY:	NCD	CHECKED BY:	TJW

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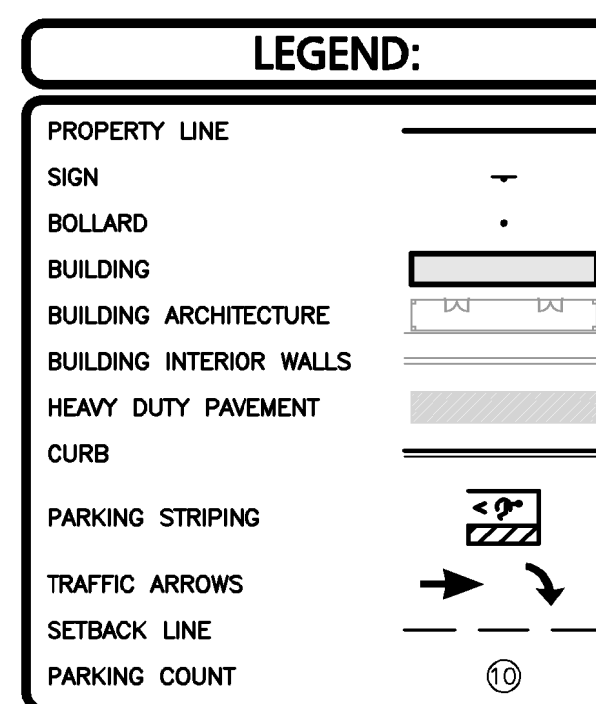
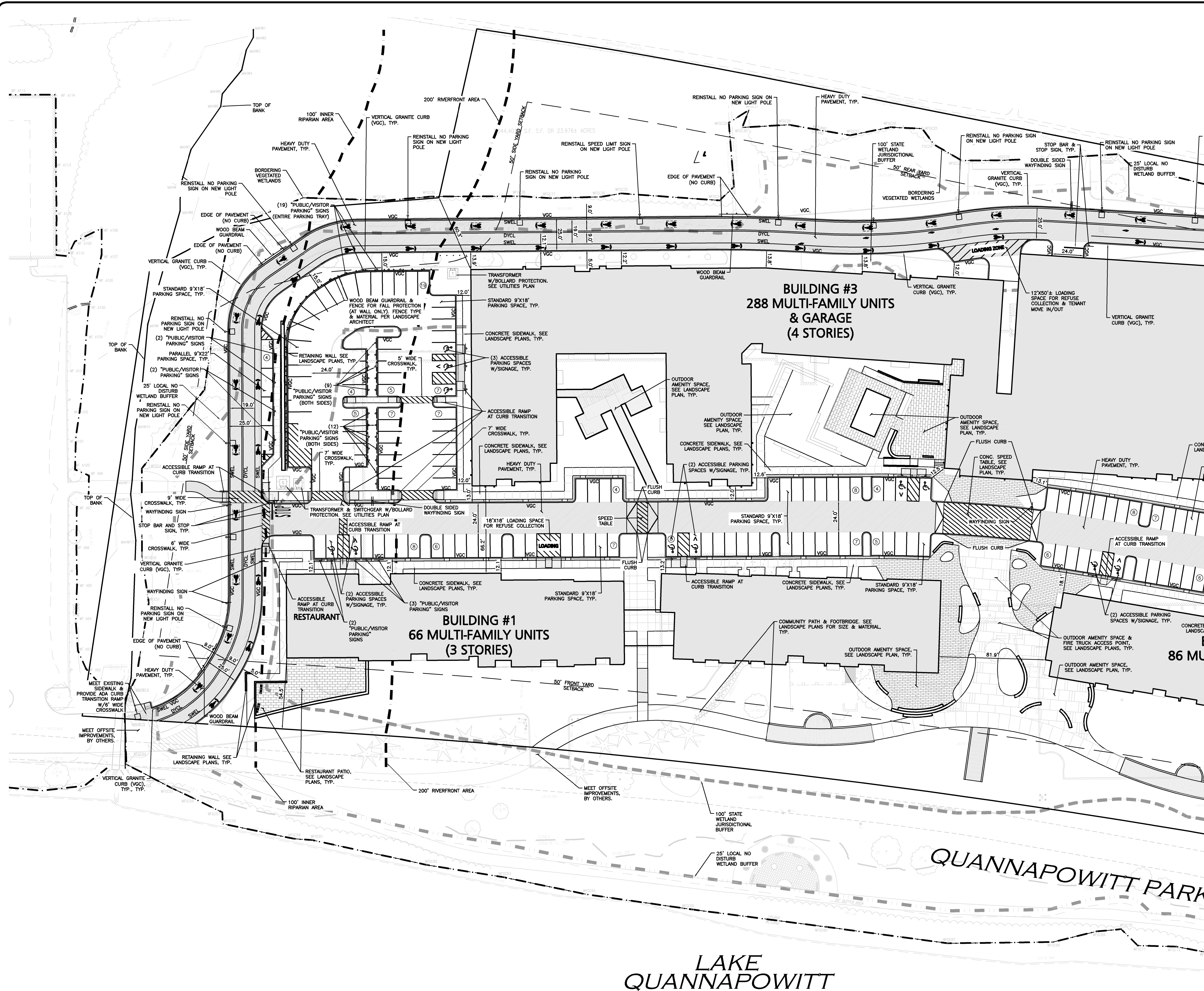


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**NOTES:**

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS 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.
2. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS 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.
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.



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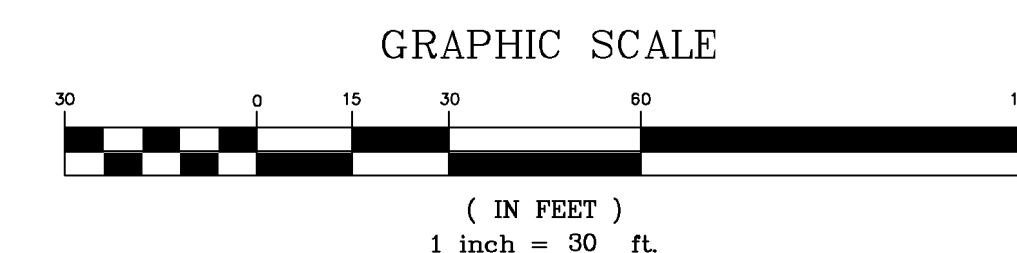
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**DRAWING TITLE:**

LAYOUT PLAN

**SHEET No.**

C-104A

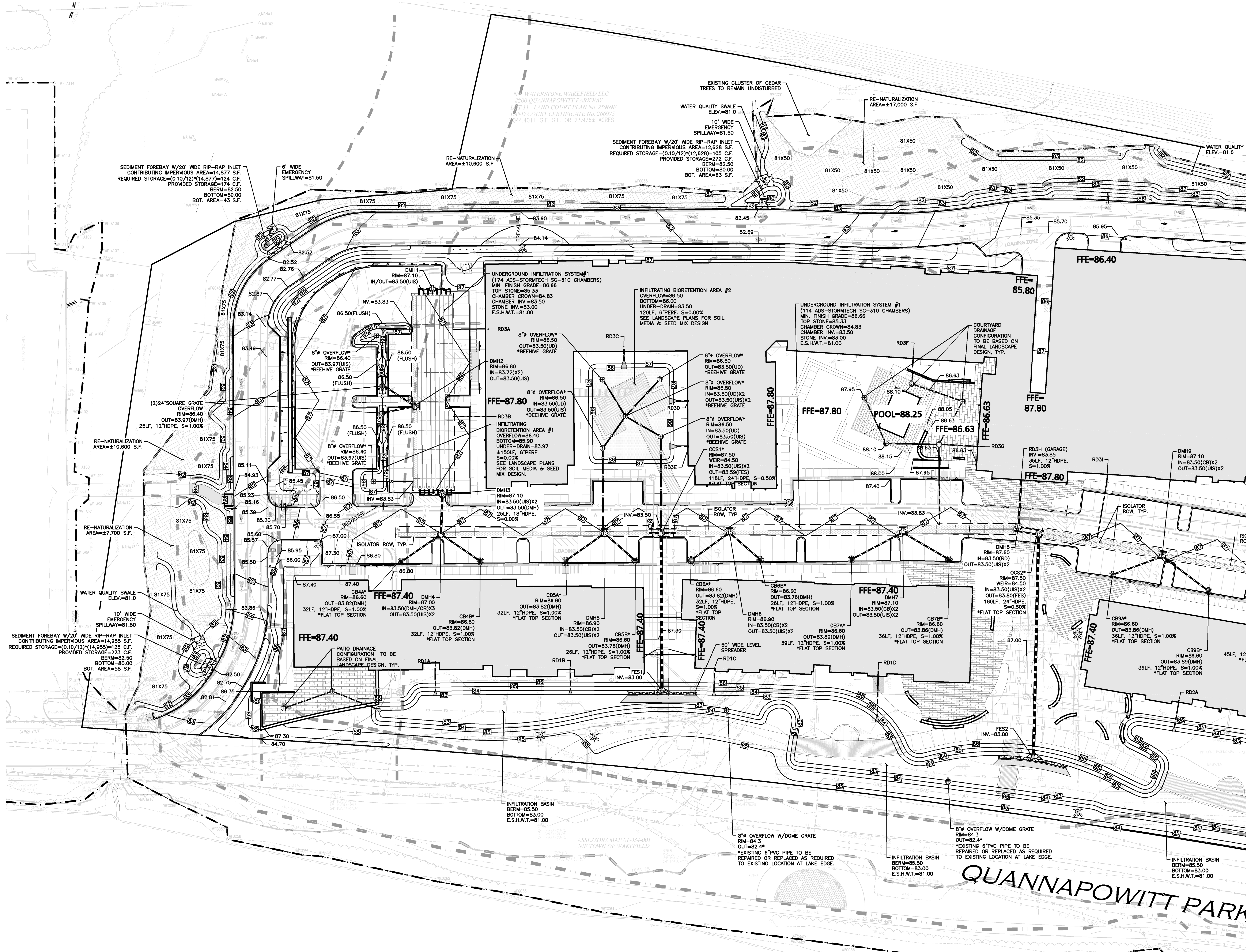


LAKE  
QUANNAPOWITT





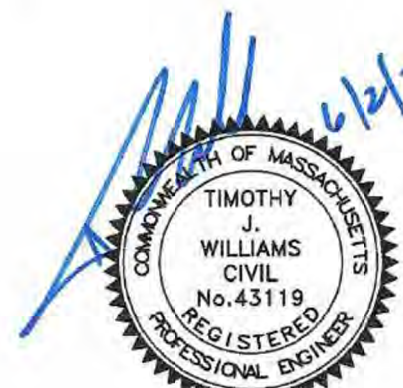




**LEGEND:**

- RAIN 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:**
- 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.
  - ALL ELEVATIONS REFER TO NAVD '88.
  - THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS 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.
  - 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



PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
8	06/02/2022	Re-issued to Con.Com. & ZBA
7	04/08/2022	Re-issued to Con.Com. & ZBA
6	2/07/2022	Re-issued to Conservation Commission
5	1/05/2022	Re-issued to Conservation Commission
4	11/11/2021	Re-issued to ZBA
3	9/01/2021	Re-issued to ZBA
2	8/03/2021	Issued to Conservation Commission
1	3/31/2021	Re-issued to ZBA

APPLICANT:

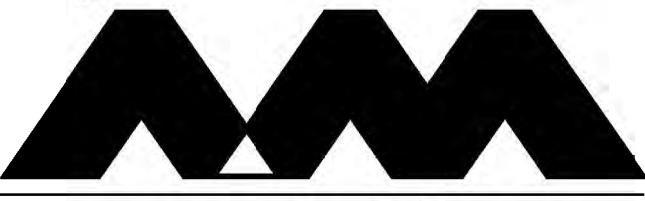
CCF QUANNAPOWITT PROPERTY  
COMPANY, LLC  
185 DARTMOUTH STREET  
BOSTON, MA 02116

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) 935-2886

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DRAWING TITLE:

GRADING &  
DRAINAGE PLAN

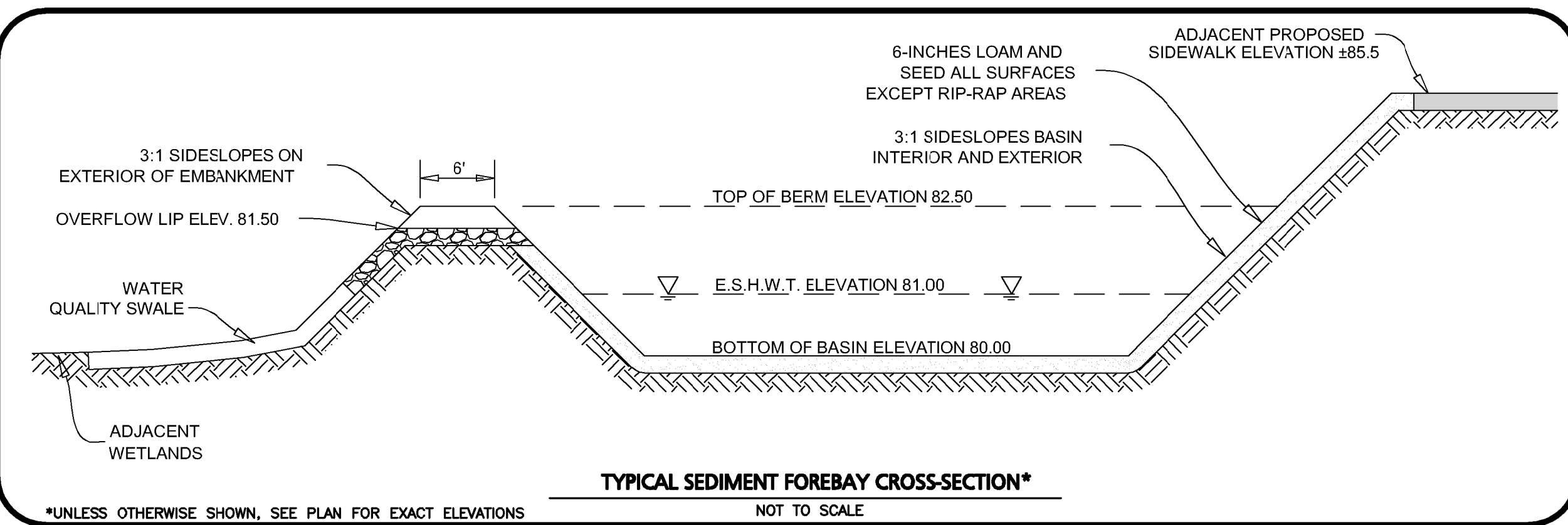
SHEET NO.

C-105A

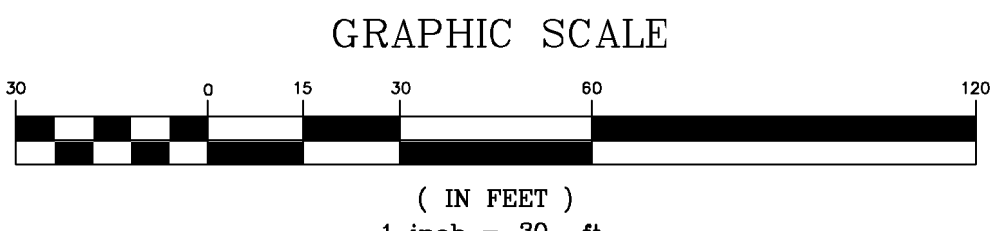
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**DIG SAFE**

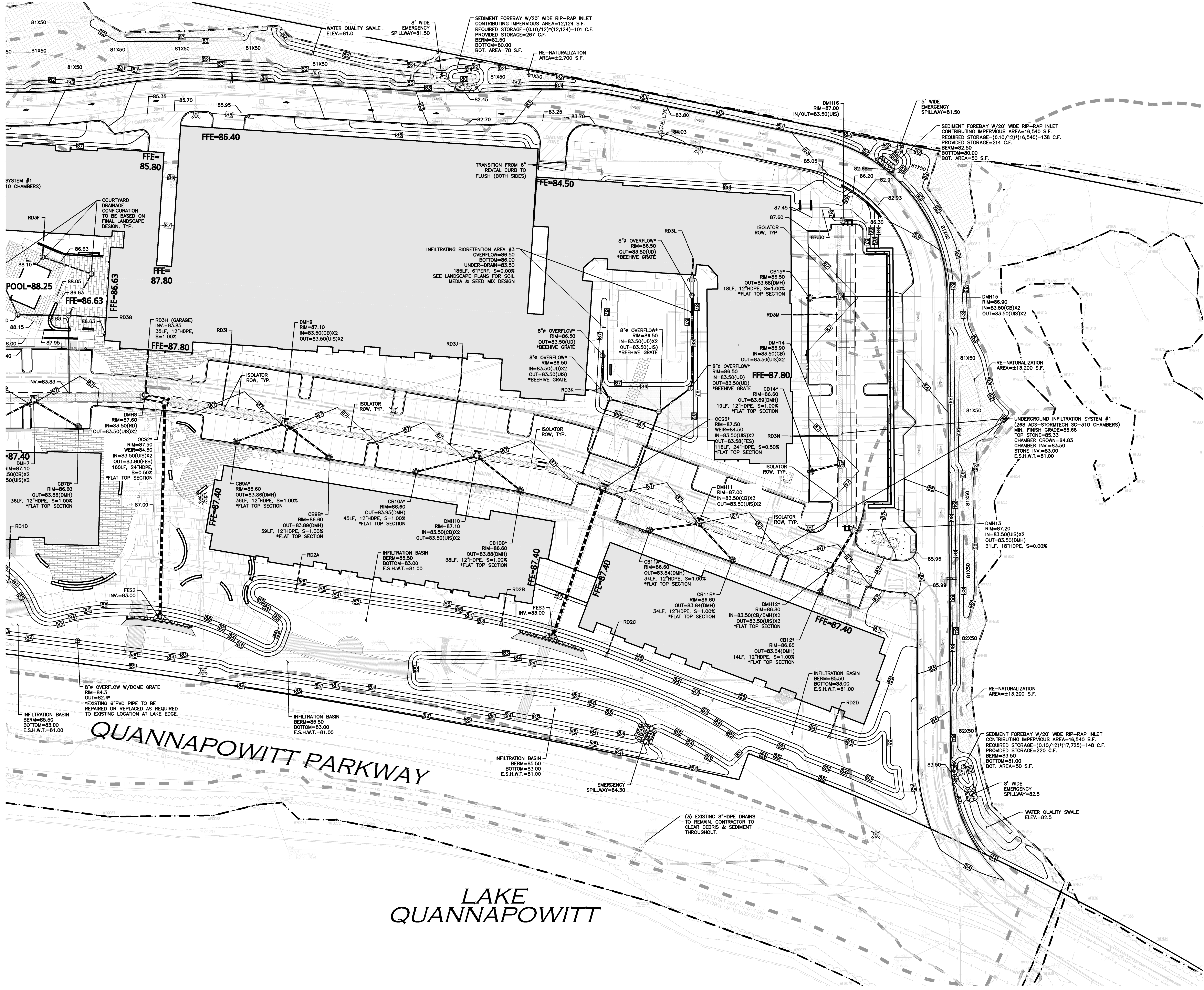
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CALL 811 OR  
1-888-DIG-SAFE  
1-888-344-7233



LAKE  
QUANNAPOWITT







**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

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PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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3	9/01/2021	Re-issued to ZBA
2	8/03/2021	Issued to Conservation Commission
1	3/31/2021	Re-issued to ZBA

APPLICANT:  
**CCF QUANNAPOWITT PROPERTY  
COMPANY, LLC**  
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

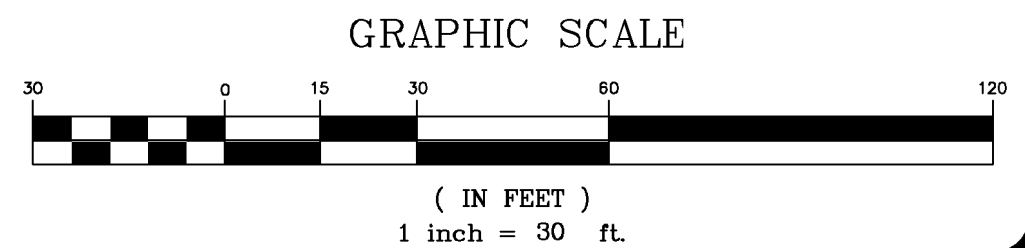
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DRAWING TITLE: <b>GRADING &amp; DRAINAGE PLAN</b>	SHEET No. <b>C-105B</b>
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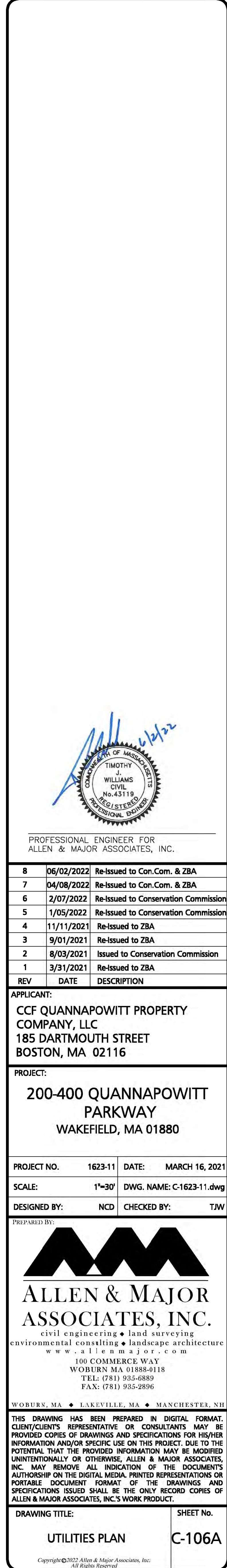


**DIG SAFE**

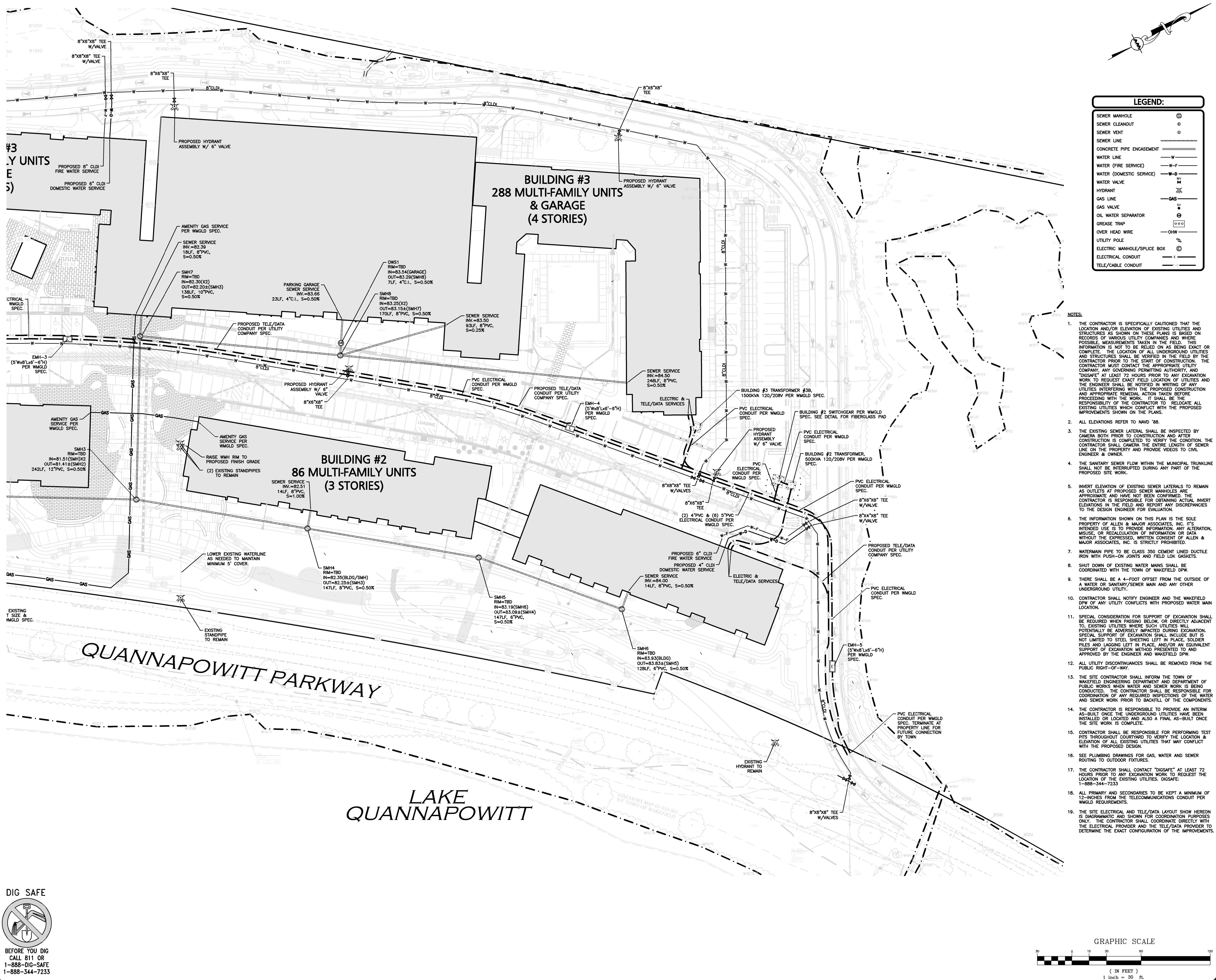
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1-888-DIG-SAFE  
1-888-344-7233

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









**PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.**

**APPLICANT:**  
CCF QUANNAPOWITT PROPERTY COMPANY, LLC  
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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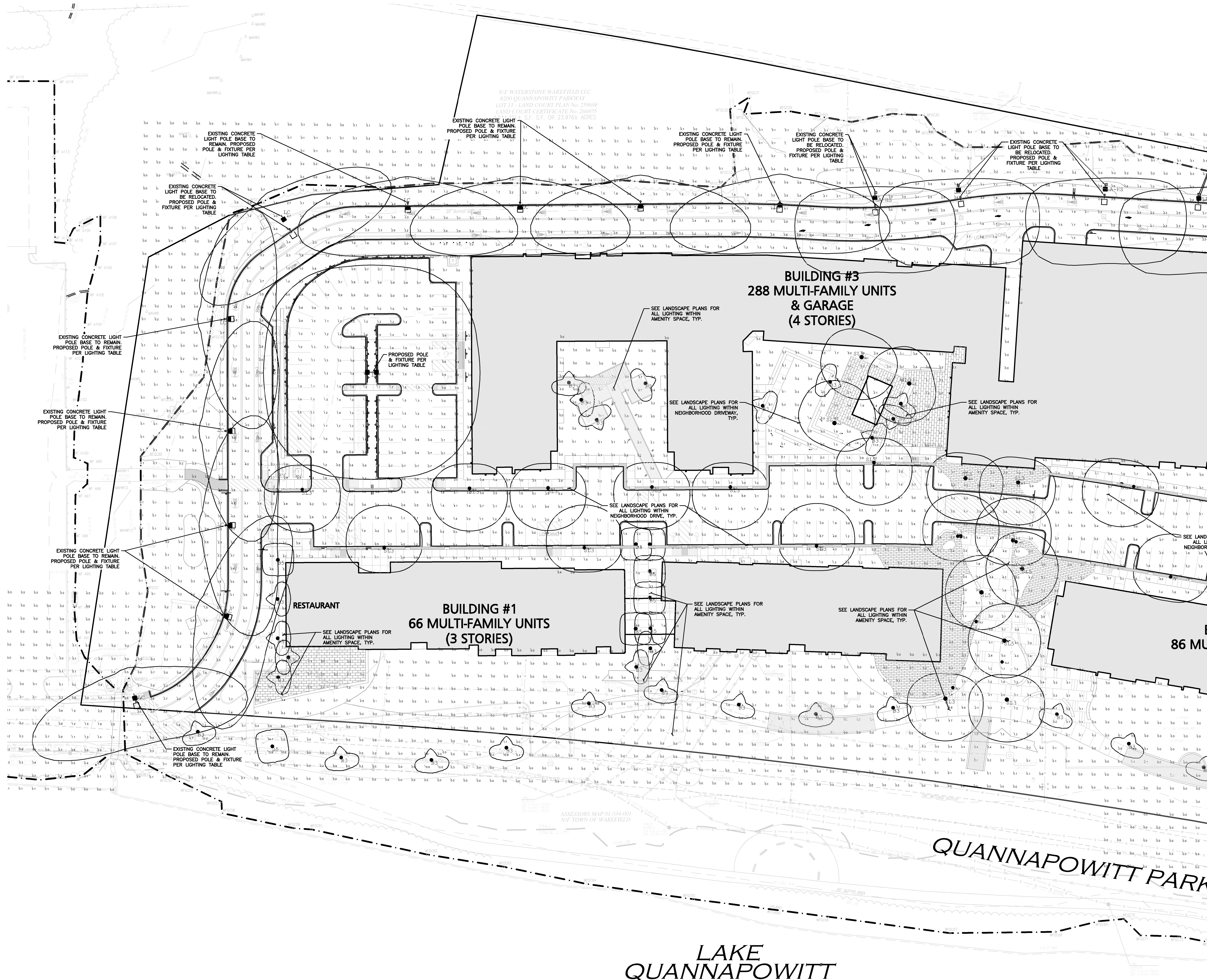
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**DRAWING TITLE:** UTILITIES PLAN **SHEET NO.:** C-106B

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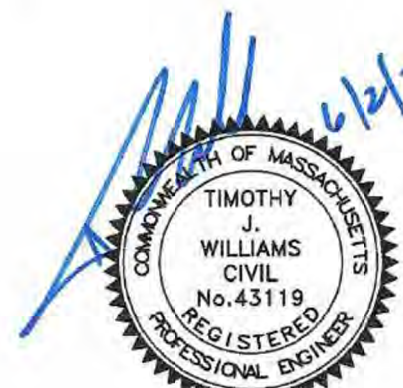
**LEGEND:**

PROPOSED LIGHTING □ □ □ □ □

EXISTING STREET LIGHTING ✱

PHOTOMETRICS 2.0 0.8

- 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 ITS 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.
  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



PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

8	06/02/2022	Re-issued to Con.Com. & ZBA
7	04/08/2022	Re-issued to Con.Com. & ZBA
6	2/07/2022	Re-issued to Conservation Commission
5	1/05/2022	Re-issued to Conservation Commission
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3	9/01/2021	Re-issued to ZBA
2	8/03/2021	Issued to Conservation Commission
1	3/31/2021	Re-issued to ZBA
REV	DATE	DESCRIPTION

APPLICANT:

CCF QUANNAPOWITT PROPERTY  
COMPANY, LLC  
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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ASSOCIATES, INC.**

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DRAWING TITLE:

SITE LIGHTING PLAN

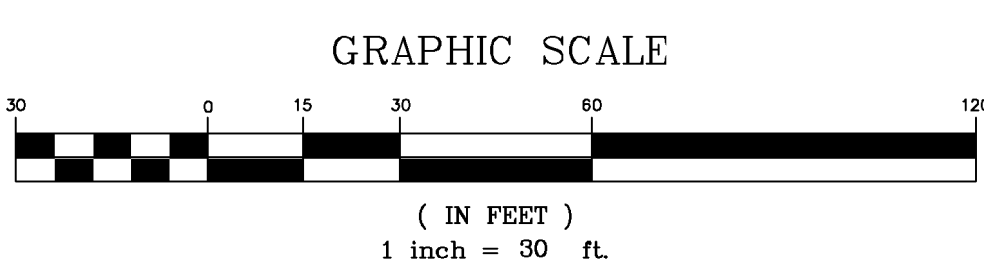
SHEET NO.

C-107A

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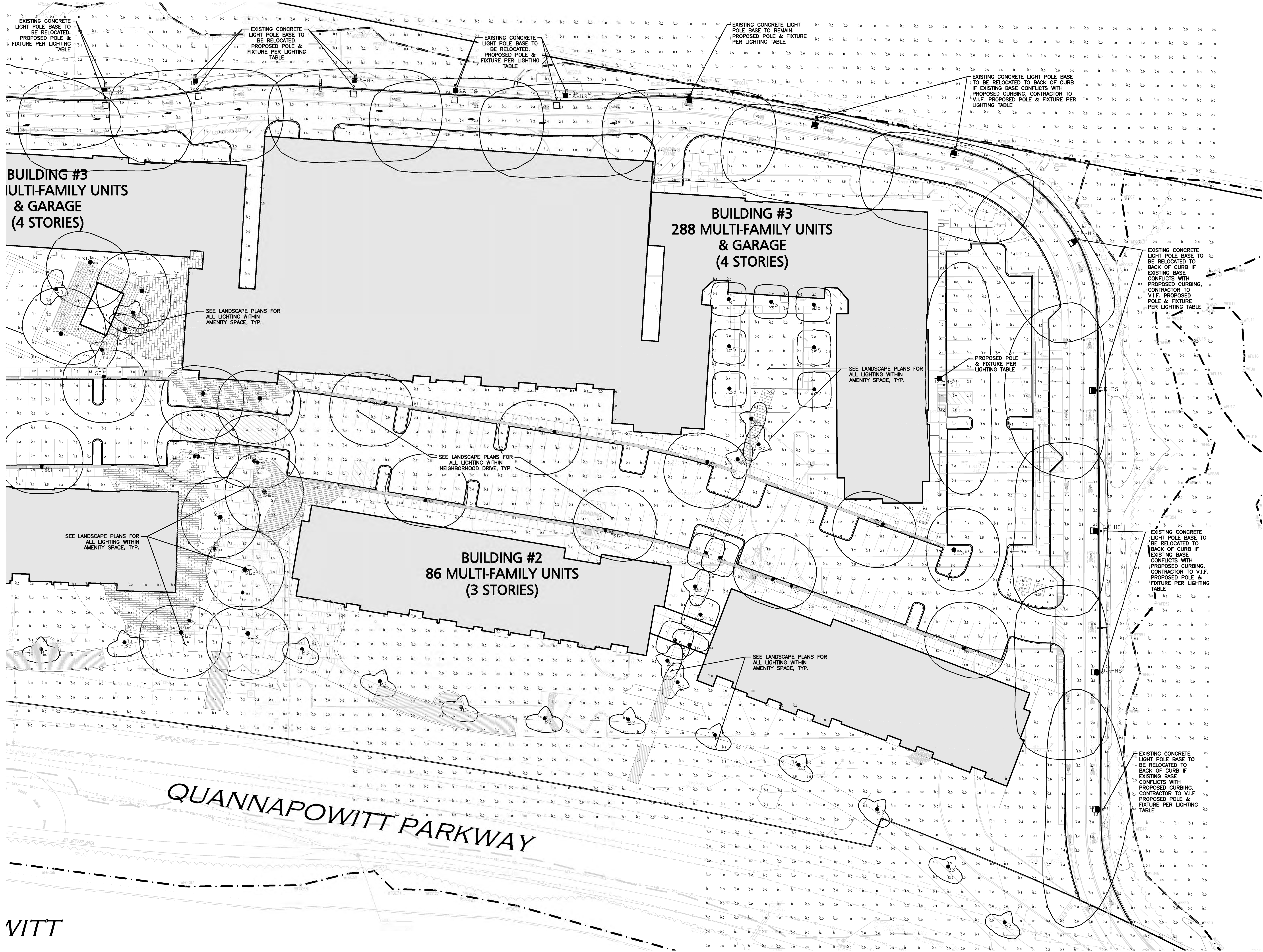
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1-888-DIG-SAFE  
1-888-344-7233



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





**LEGEND:**

PROPOSED LIGHTING

EXISTING STREET LIGHTING

PHOTOMETRICS

- NOTES:**
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  - THE CONTRACTOR SHALL CONTACT "DISSAFE" 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.
  - DISSAFE: 1-800-344-7233  
WAKEFIELD DEPT. OF PUBLIC WORKS: 1-781-246-6301
  - 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.
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PROFESSIONAL ENGINEER FOR  
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APPLICANT:

CCF QUANNAPOWITT PROPERTY  
COMPANY, LLC  
185 DARTMOUTH STREET  
BOSTON, MA 02116

PROJECT:

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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

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DRAWING TITLE:

SITE LIGHTING PLAN

SHEET NO.

C-107B

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

**GARDCO**  
by @ignify

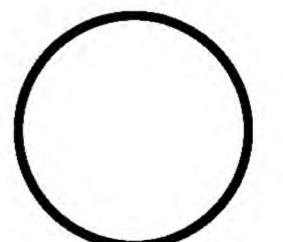
**Site & Area**  
EcoForm  
ECP-S small area light

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.

**GARDCO**  
by @ignify

**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.

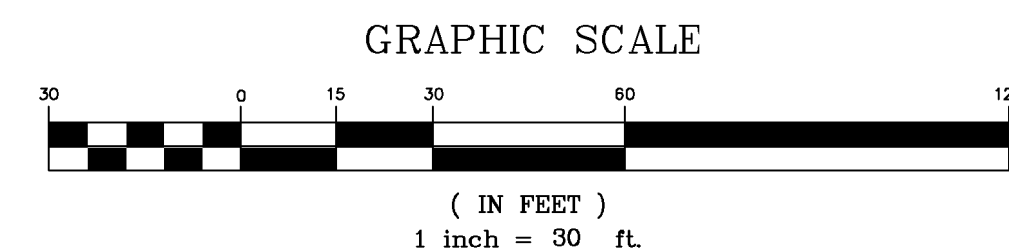


Luminaire Schedule							
Qty	Label	Arrangement	Lumens	Input Watts	LLF	BUS Rating	Description
42	83	SINGLE	2300	23.1	0.765	06-00-01	GARDCO PBL-42-14L-450-WW-G2-3-INV
19	85	SINGLE	2195	23.1	0.765	02-00-01	GARDCO PBL-42-14L-450-WW-G2-5-INV
11	1A-HS	SINGLE	13338	135.1	0.850	01-00-03	GARDCO BCF-5-48L-900-WW-G2-AR-3-INV-HIS-FINISH / MOUNTED @ 30FT
13	1C	SINGLE	17115	135.1	0.850	03-00-03	GARDCO BCF-5-48L-900-WW-G2-AR-2-INV-FINISH / MOUNTED @ 30FT
1	1C-HS	Single	13110	135.1	0.850	02-00-02	GARDCO BCF-5-48L-900-WW-G2-AR-2-INV-HIS-FINISH / MOUNTED @ 30FT
1	1D	BACK-BACK	17413	135.1	0.850	05-00-03	GARDCO BCF-5-48L-900-WW-G2-AR-5W-INV-FINISH / DOUBLE MOUNTED @ 30FT
1	1A-HS	Single	13736	135.1	0.850	01-00-03	GARDCO BCF-5-48L-900-WW-G2-AR-4-INV-HIS-FINISH / MOUNTED @ 30FT
27	81-S	SINGLE	7796	75.81978	0.850	02-00-03	GARDCO PPT-140L-1675-WW-G2-3-INV / MOUNTED @ 10FT
3	81-S	SINGLE	7258	75.81978	0.850	03-00-02	GARDCO PPT-140L-1675-WW-G2-3-INV / MOUNTED @ 10FT

Calculation Summary						
Label	Grid Height	Avg	Max	Min	Avg/Rtn	Max/Rtn
Site Ground	0	0.95	26.3	0.0	N.A.	N.A.
PARKING LOT		1.45	9.0	0.1	14.50	90.00
ROAD		2.51	5.2	0.2	12.95	26.00

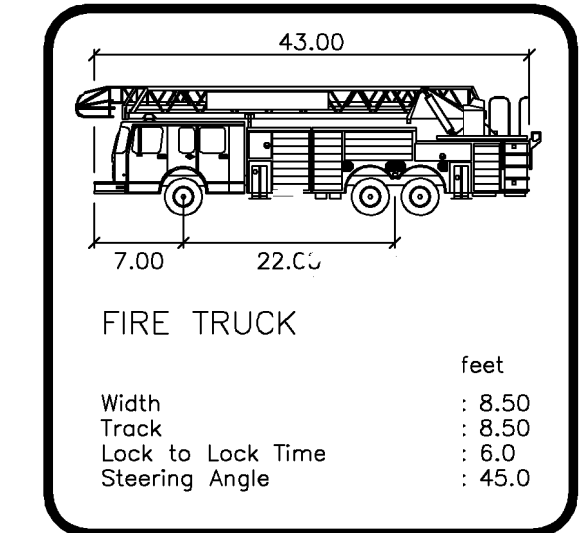
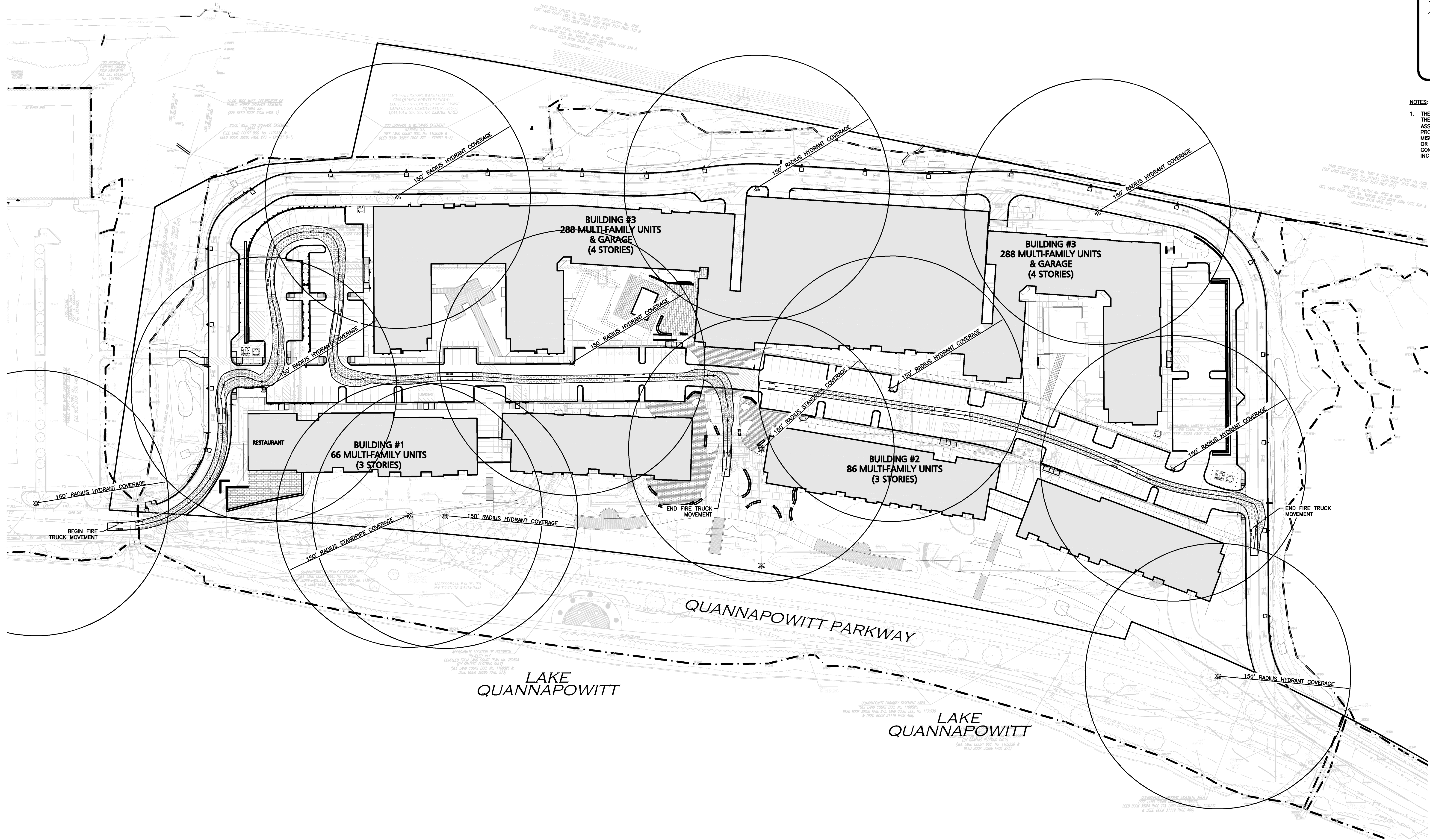


TELEPHONE 860.632.8766  
WWW.APEXLIGHTINGSOLUTIONS.COM



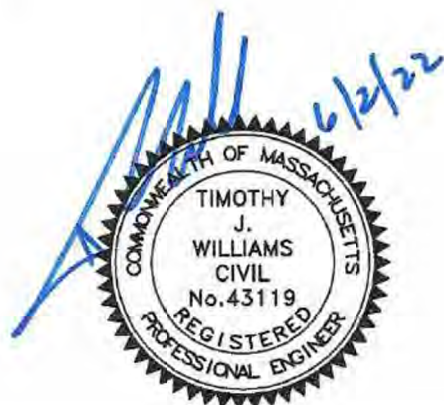


N:\PROJECTS\1623-11\DWG\DRAWINGS\CURRENT\C-1623-11 - TRUCK TURNING PLAN.DWG



**NOTES:**

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PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

8	06/02/2022	Re-Issued to Con.Com. & ZBA
7	04/08/2022	Re-Issued to Con.Com. & ZBA
6	2/07/2022	Re-Issued to Conservation Commission
5	1/05/2022	Re-Issued to Conservation Commission
4	11/11/2021	Re-Issued to ZBA
3	9/01/2021	Re-Issued to ZBA
2	8/03/2021	Issued to Conservation Commission
1	3/31/2021	Re-Issued to ZBA
REV	DATE	DESCRIPTION

APPLICANT:

CCF QUANNAPOWITT PROPERTY  
COMPANY, LLC  
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  
WOBBURN MA 01888-0118  
TEL: (781) 935-6889  
FAX: (781) 935-2886

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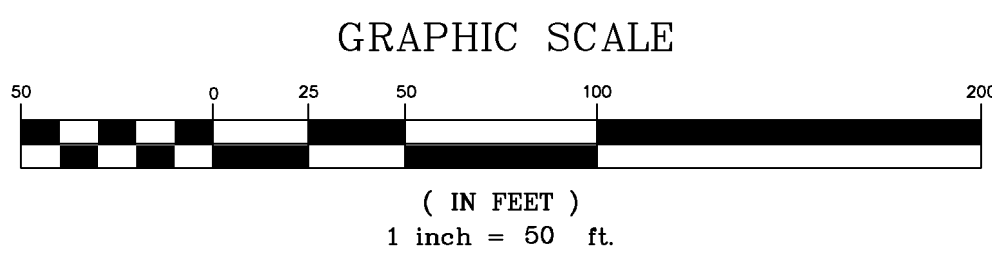
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DRAWING TITLE:  
**FIRE TRUCK TURNING &  
HYDRANT LOCATION PLAN**

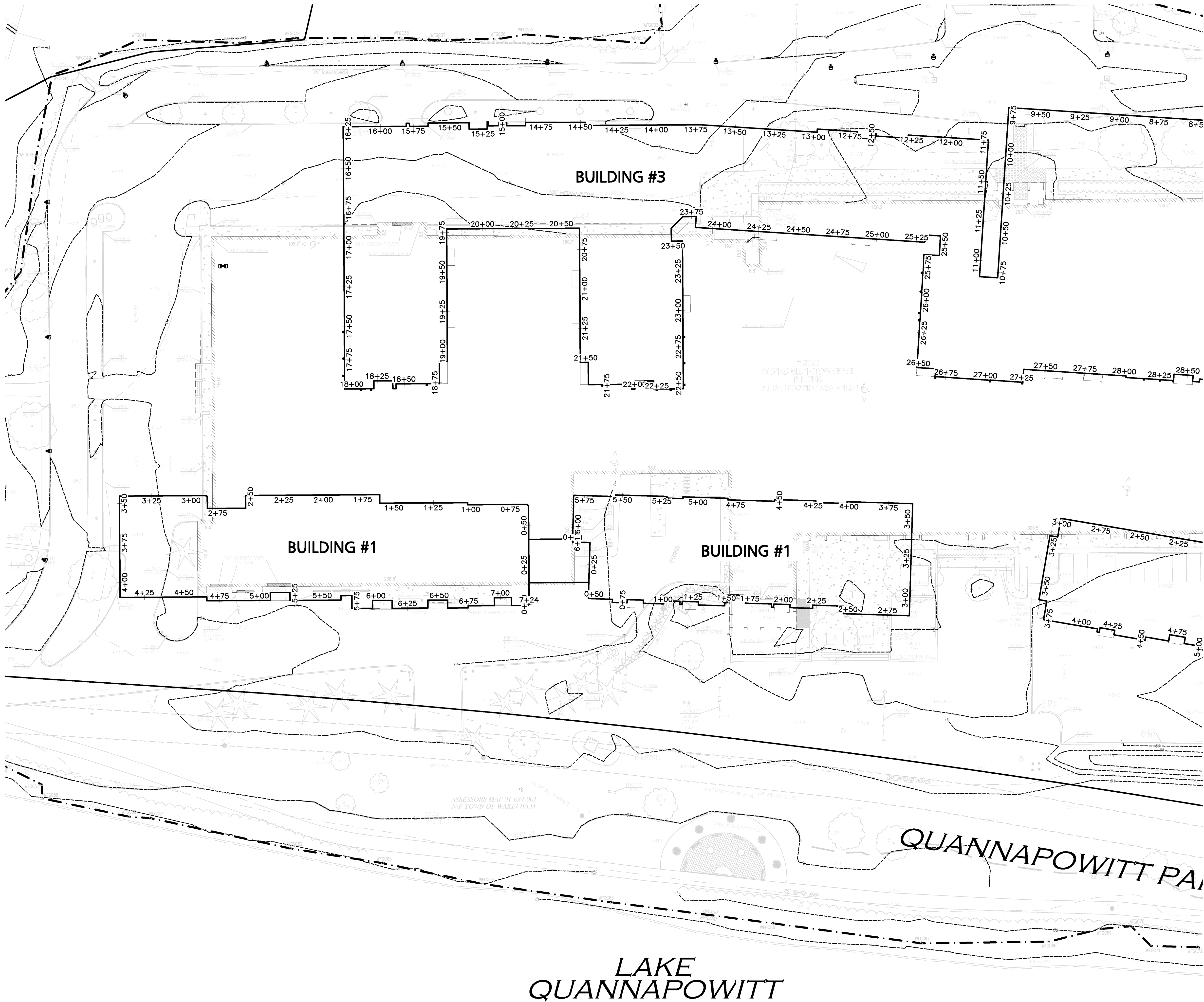
SHEET No.

**C-108**

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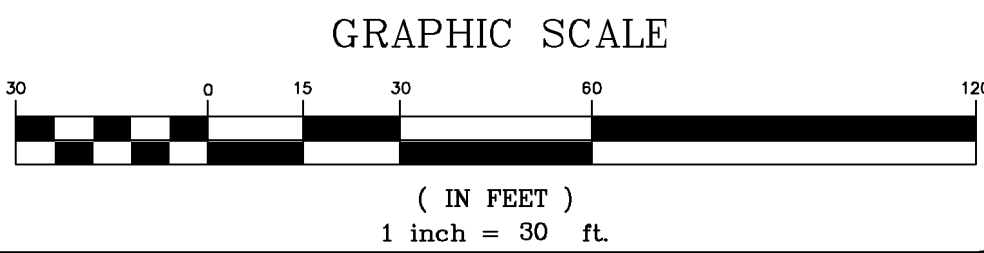






NOTES:

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 "DISCOVER" 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. ITS 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.



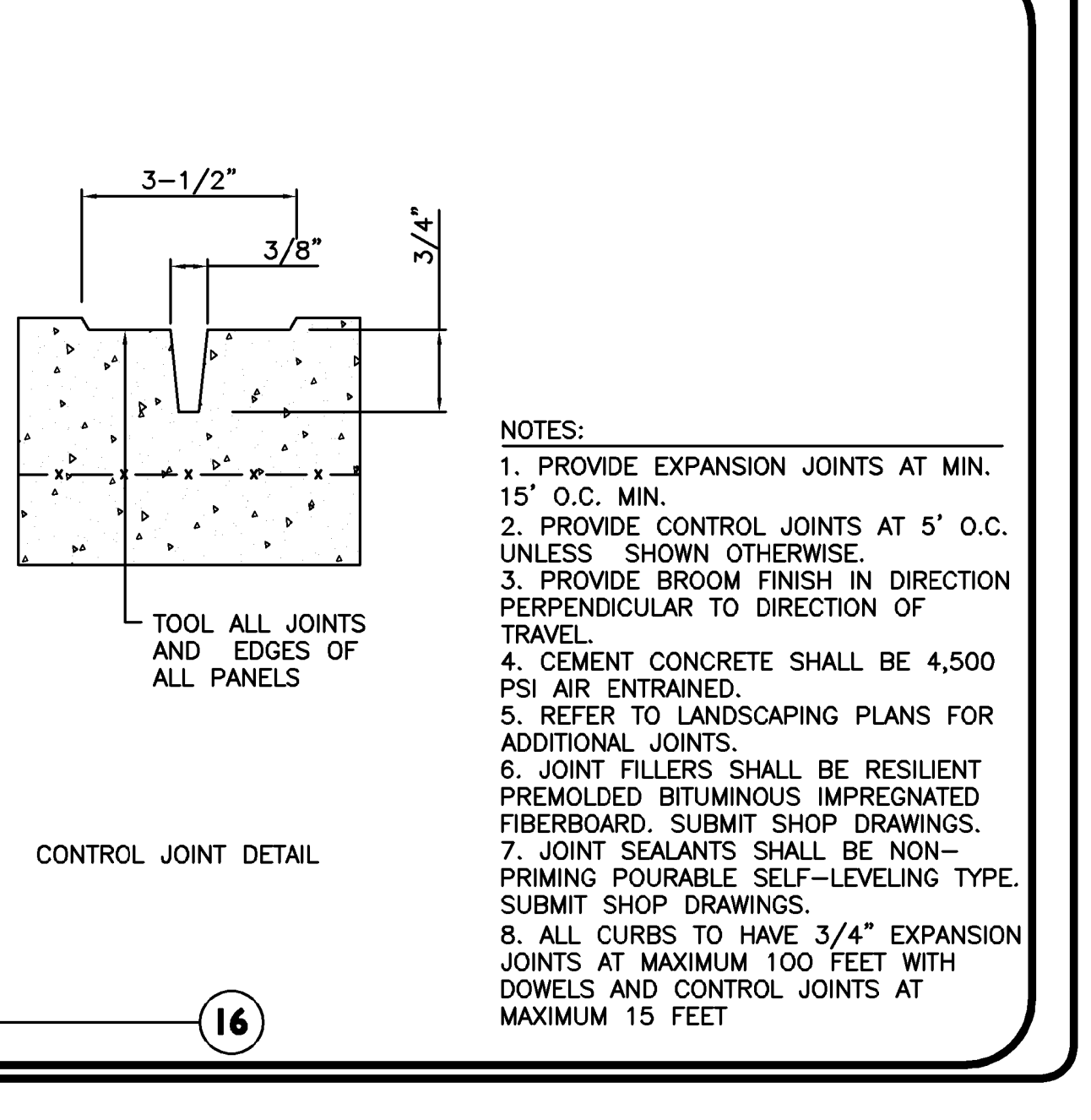
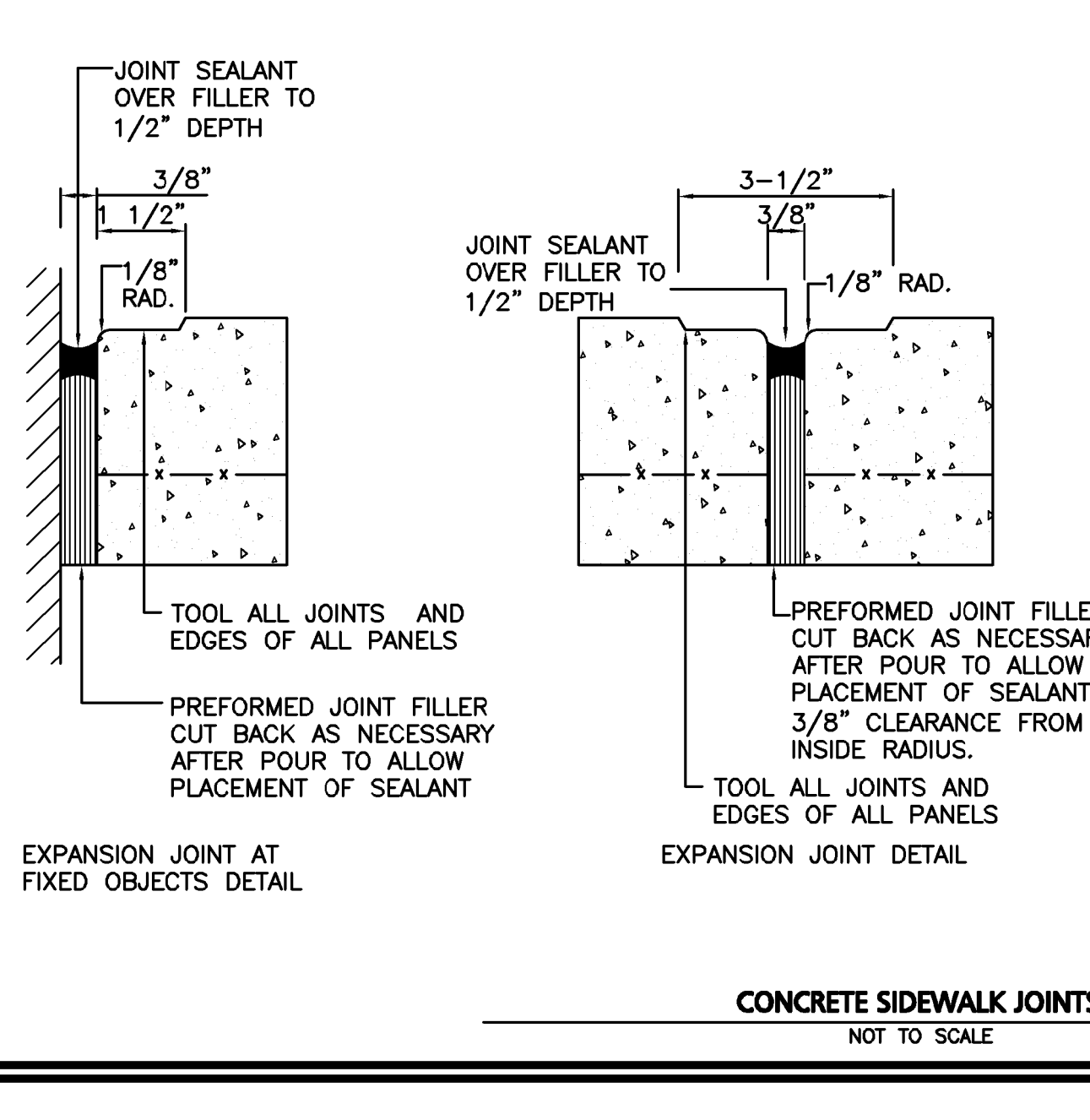
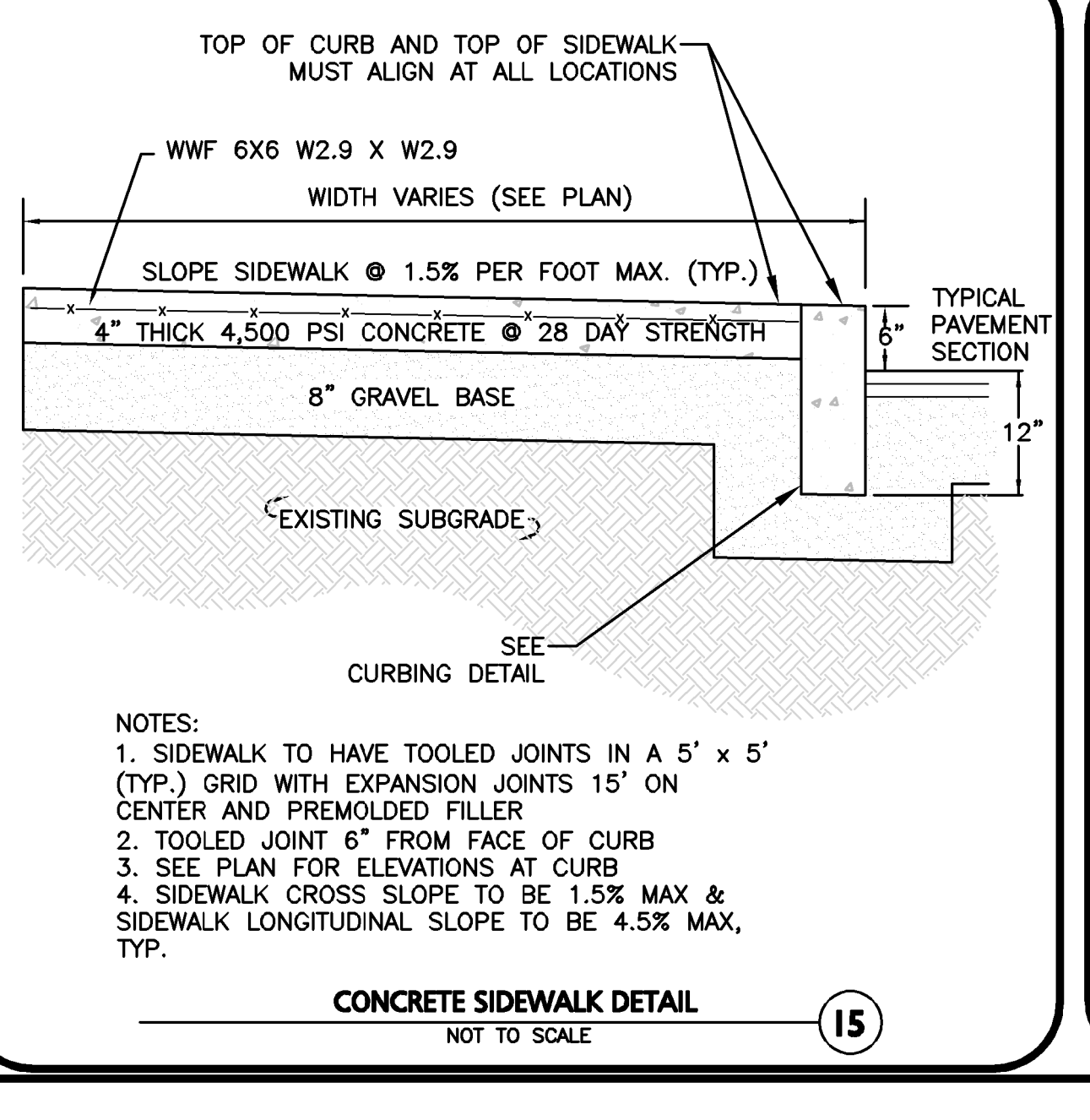
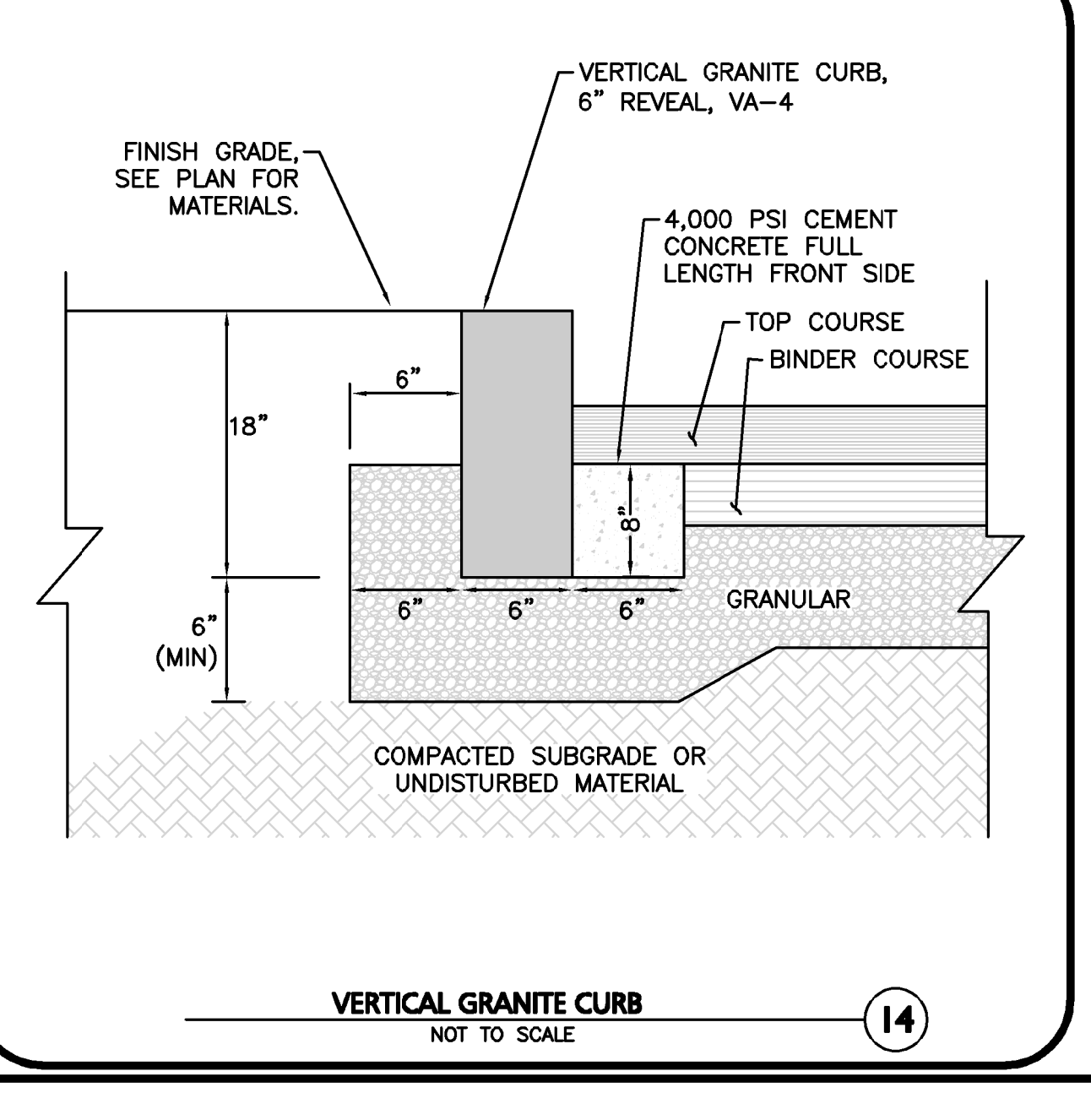
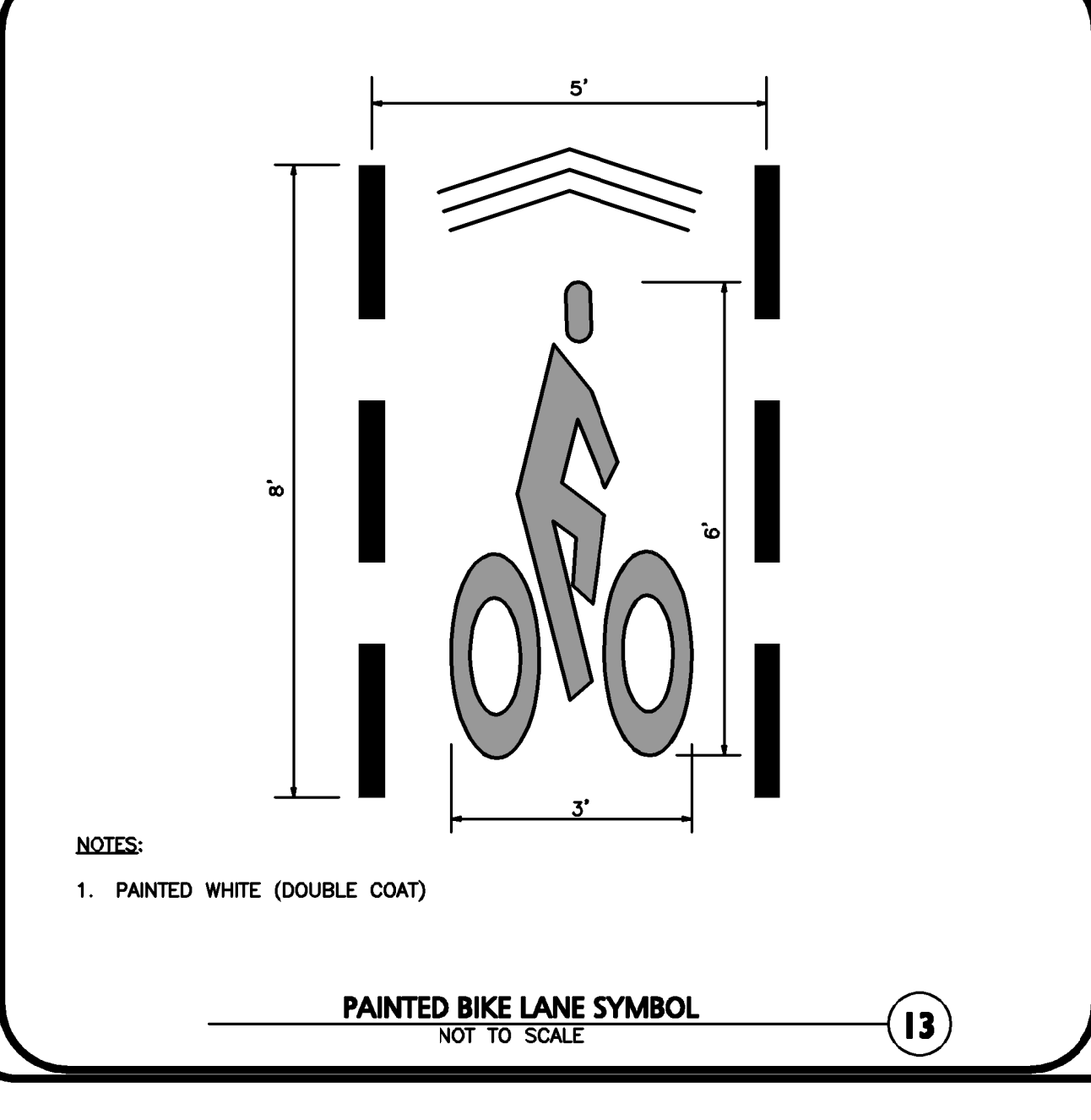
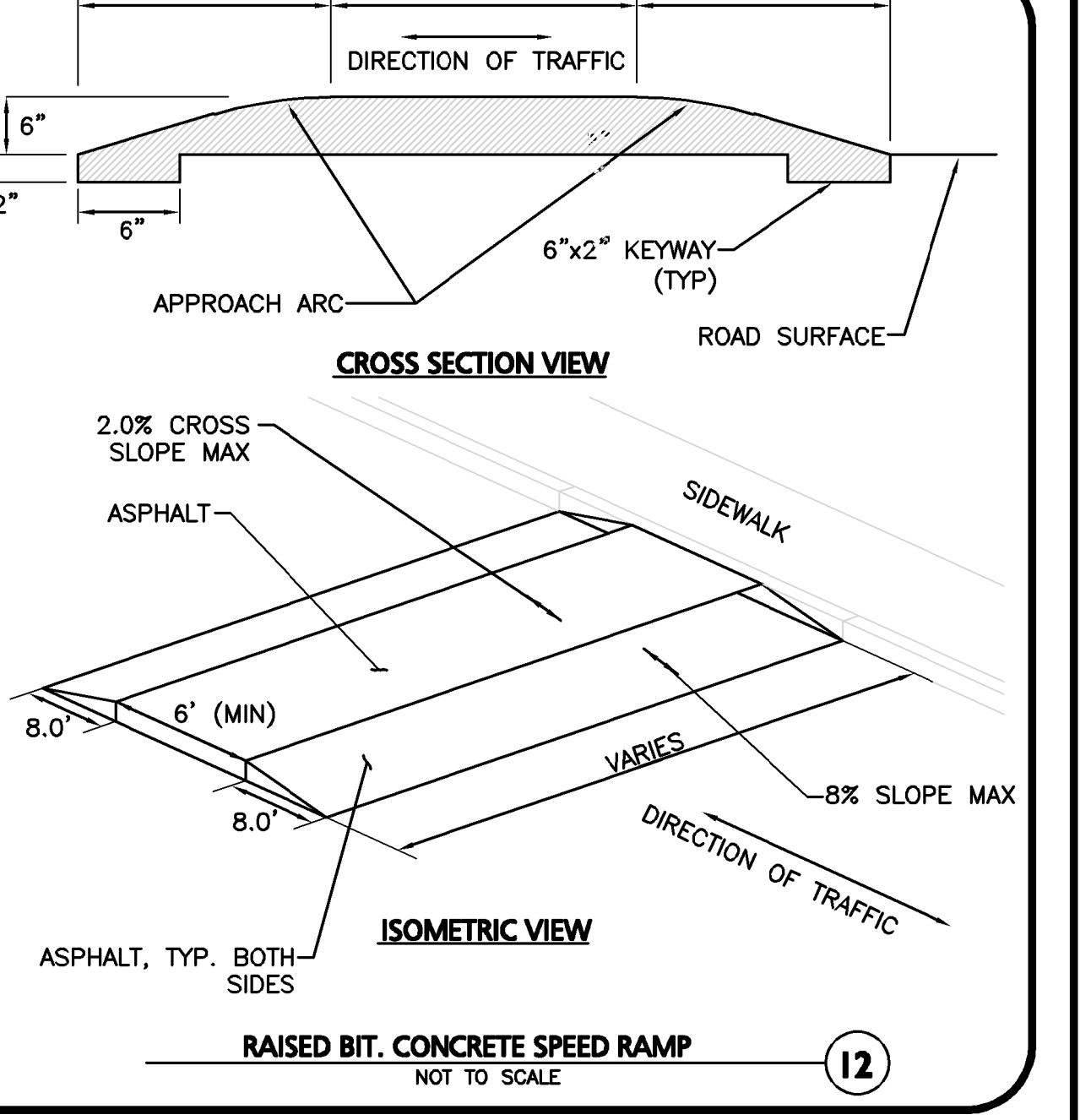
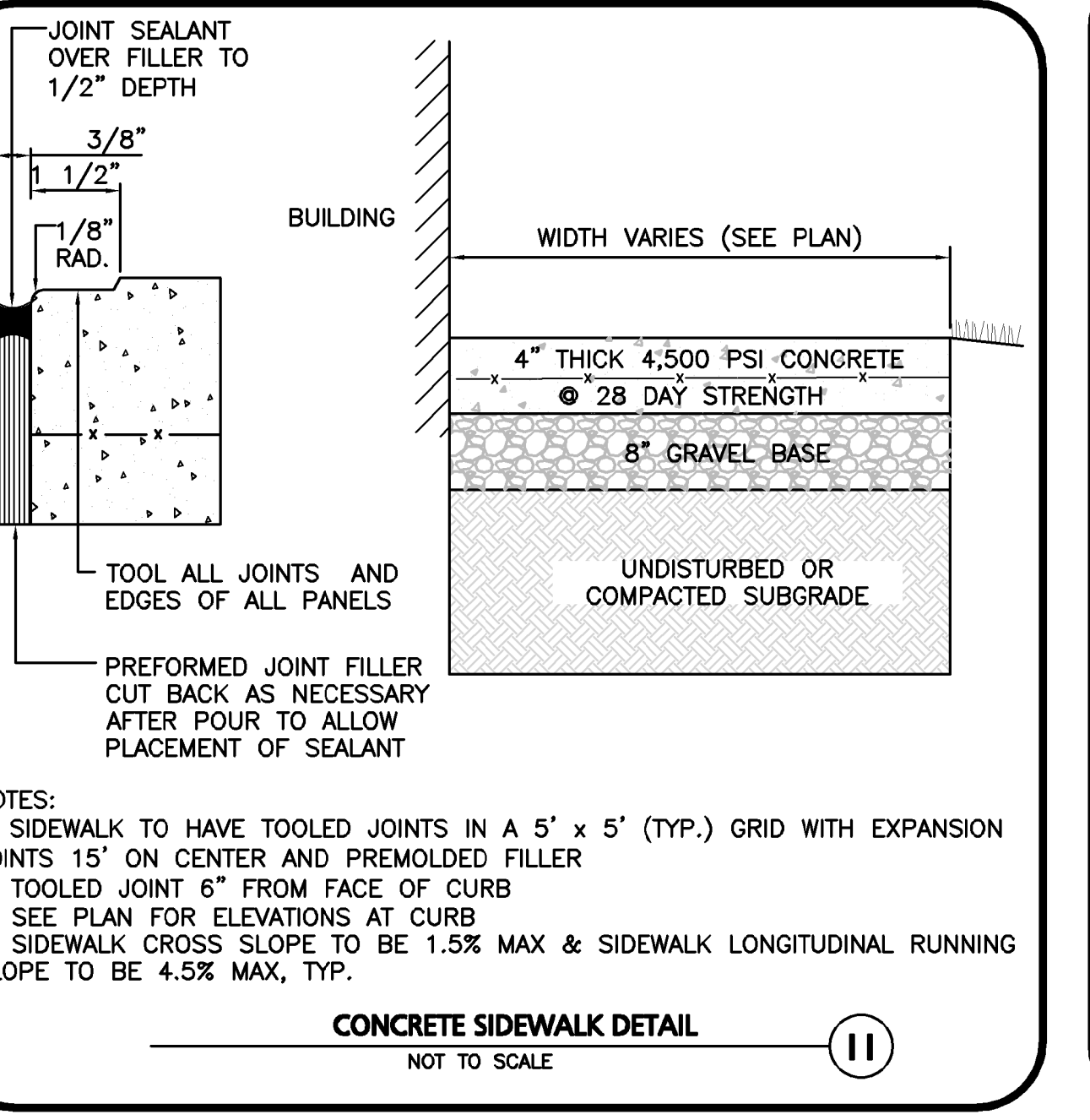
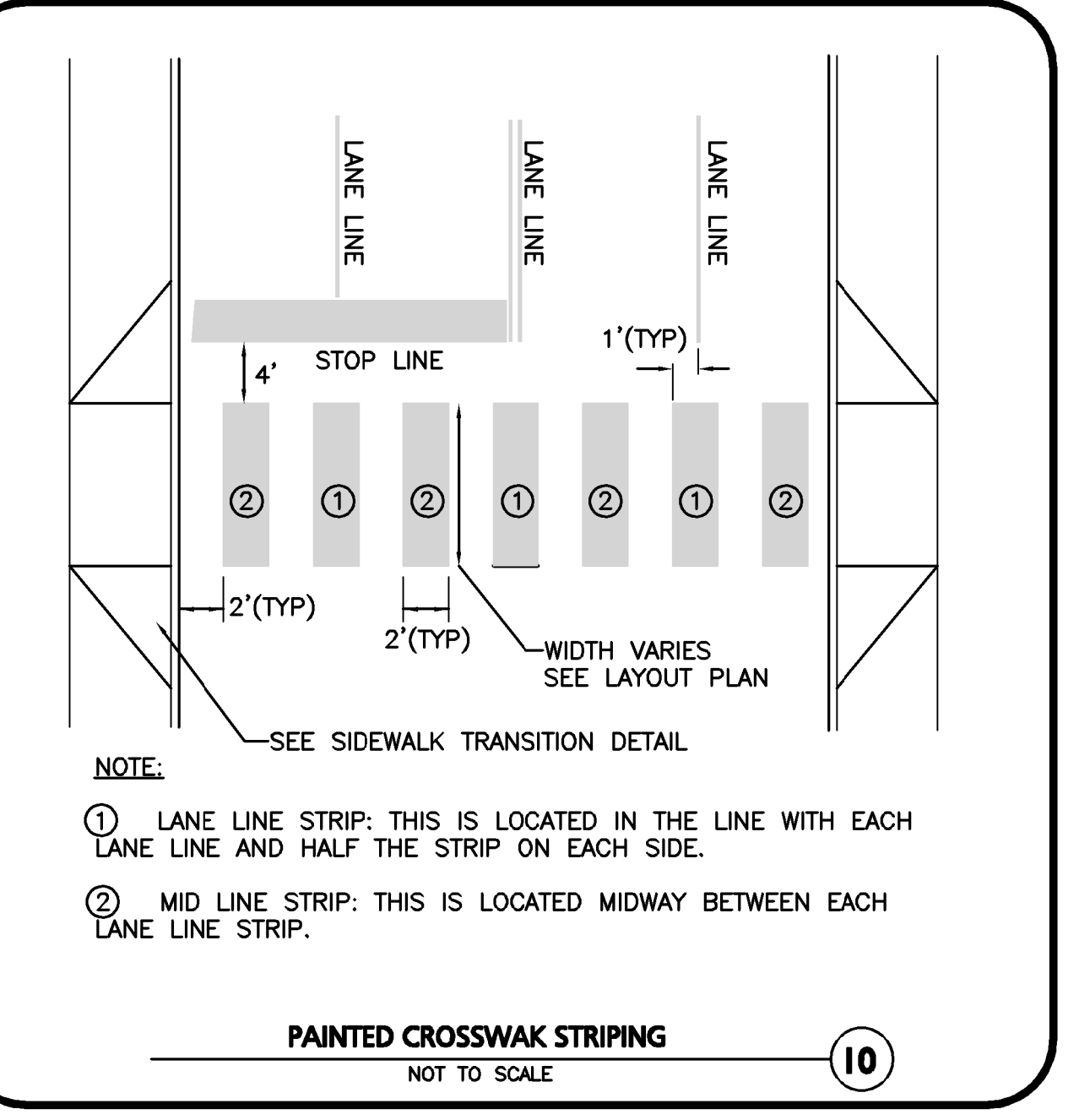
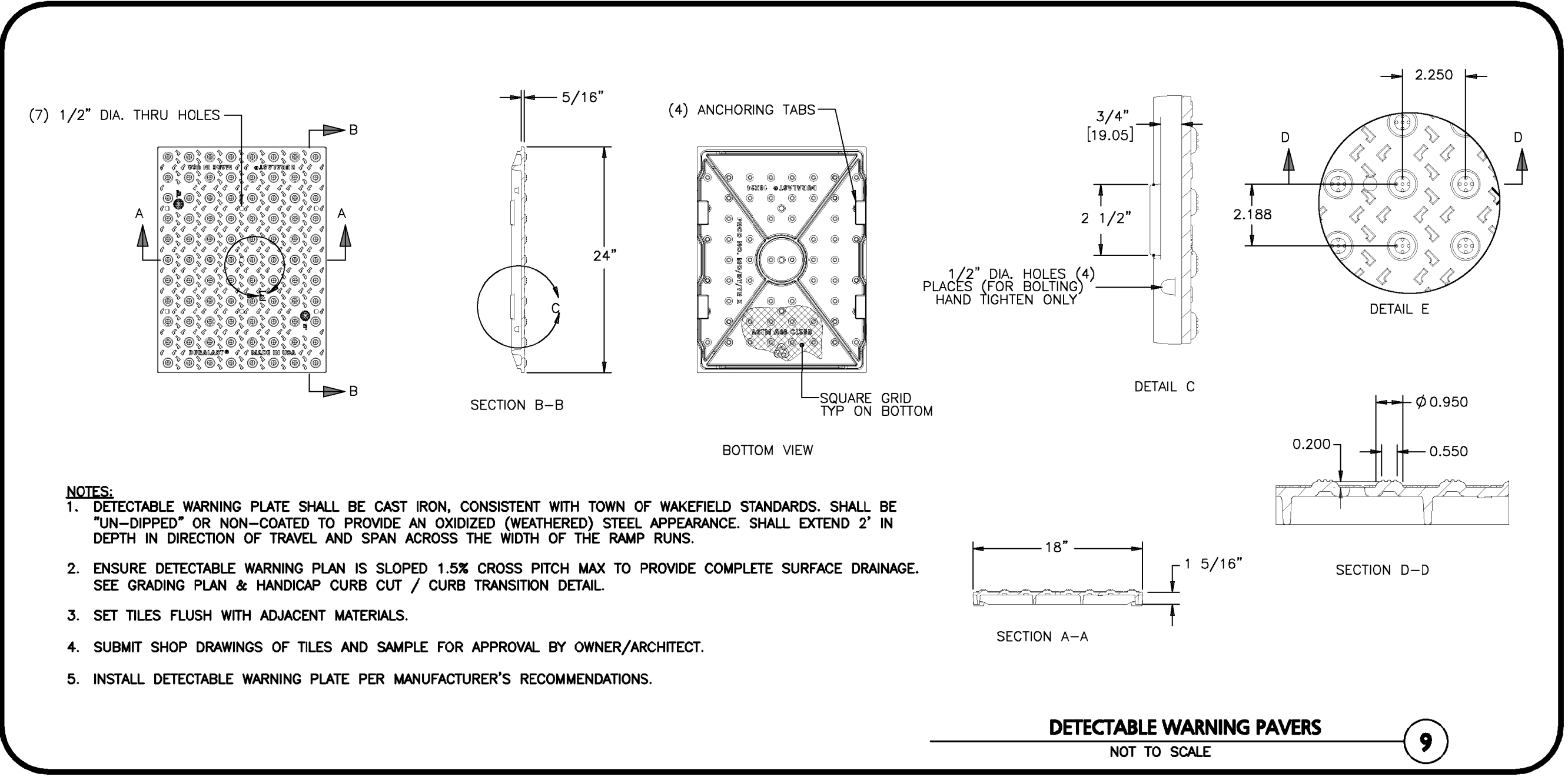
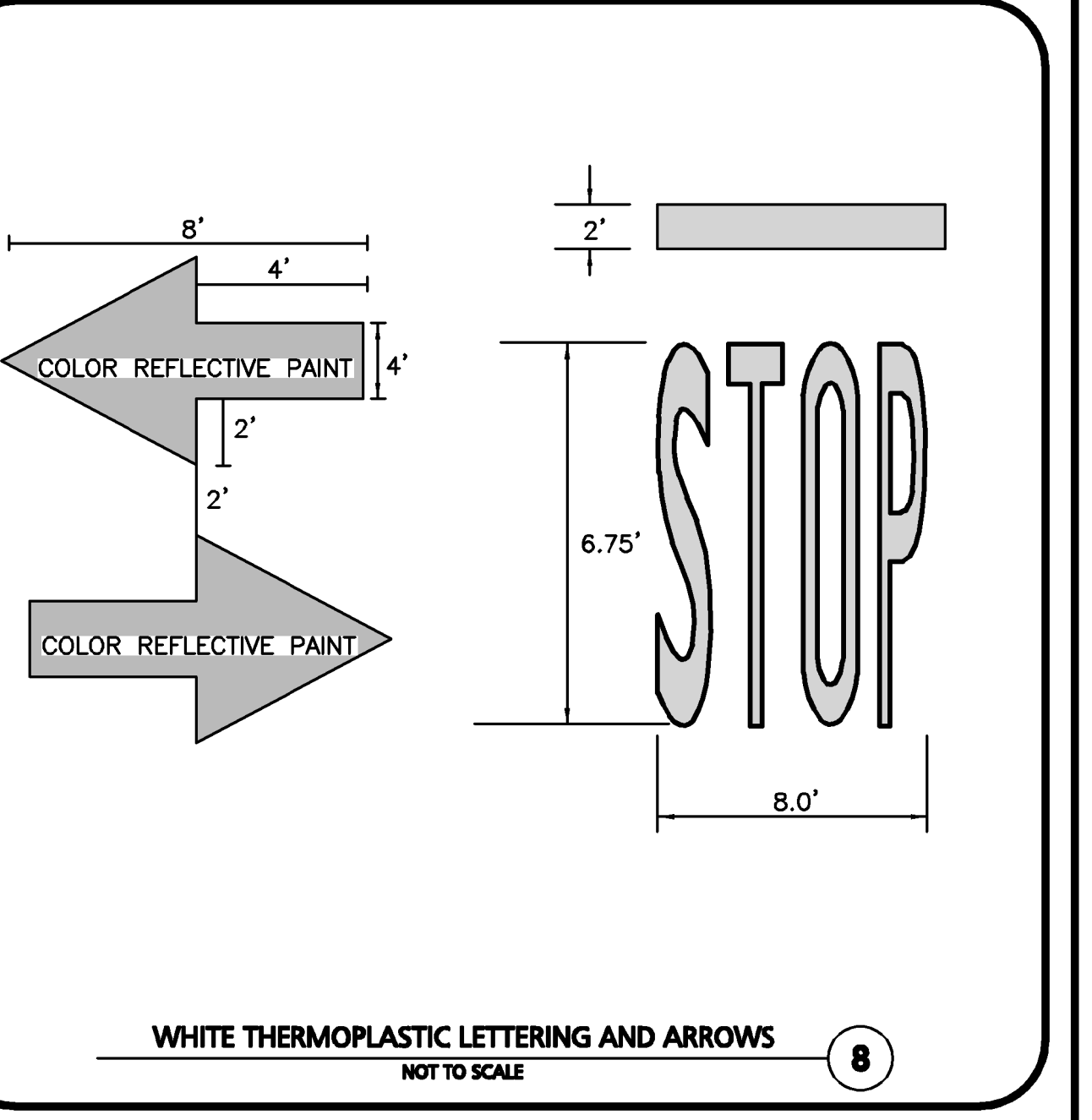
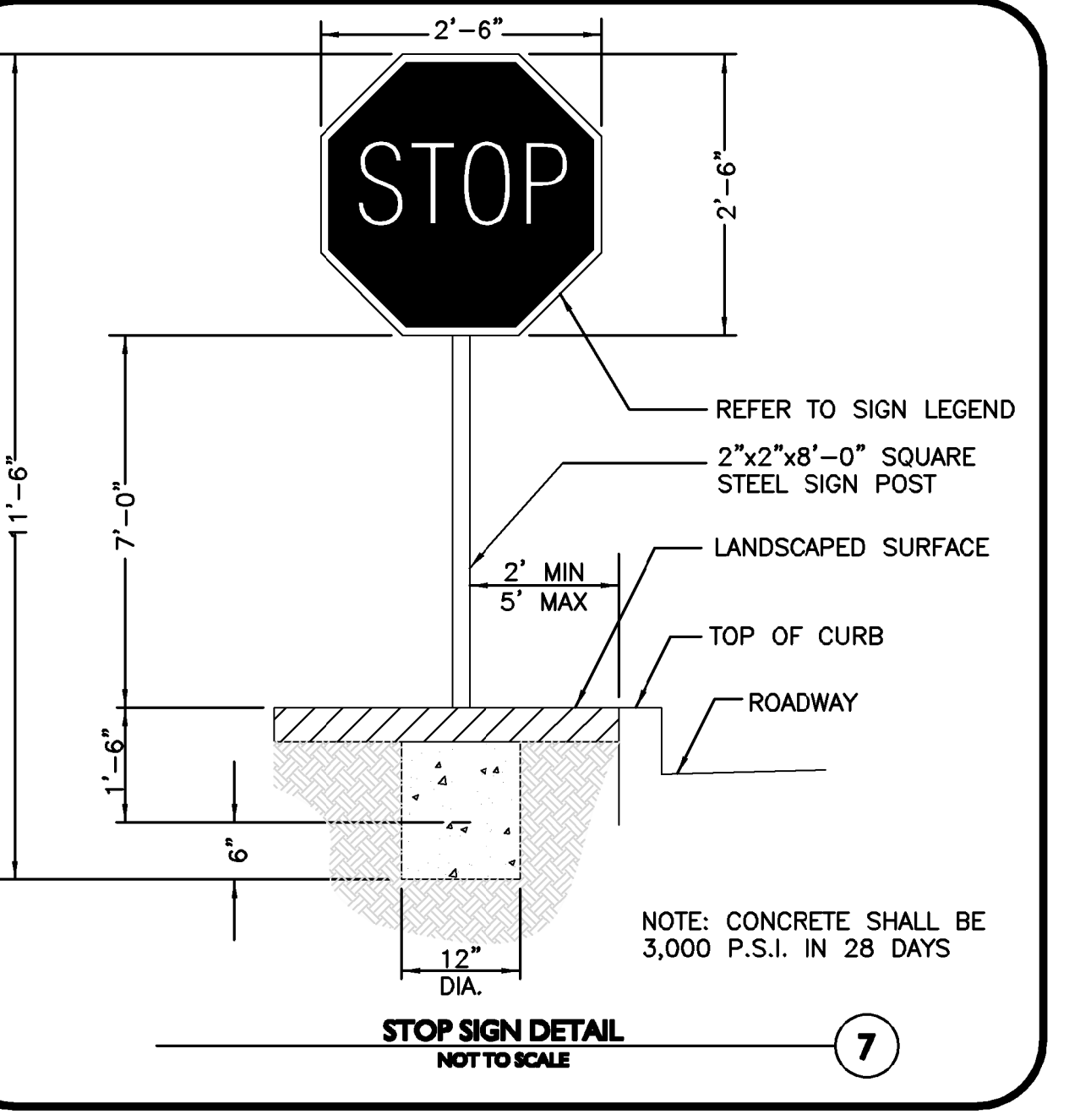
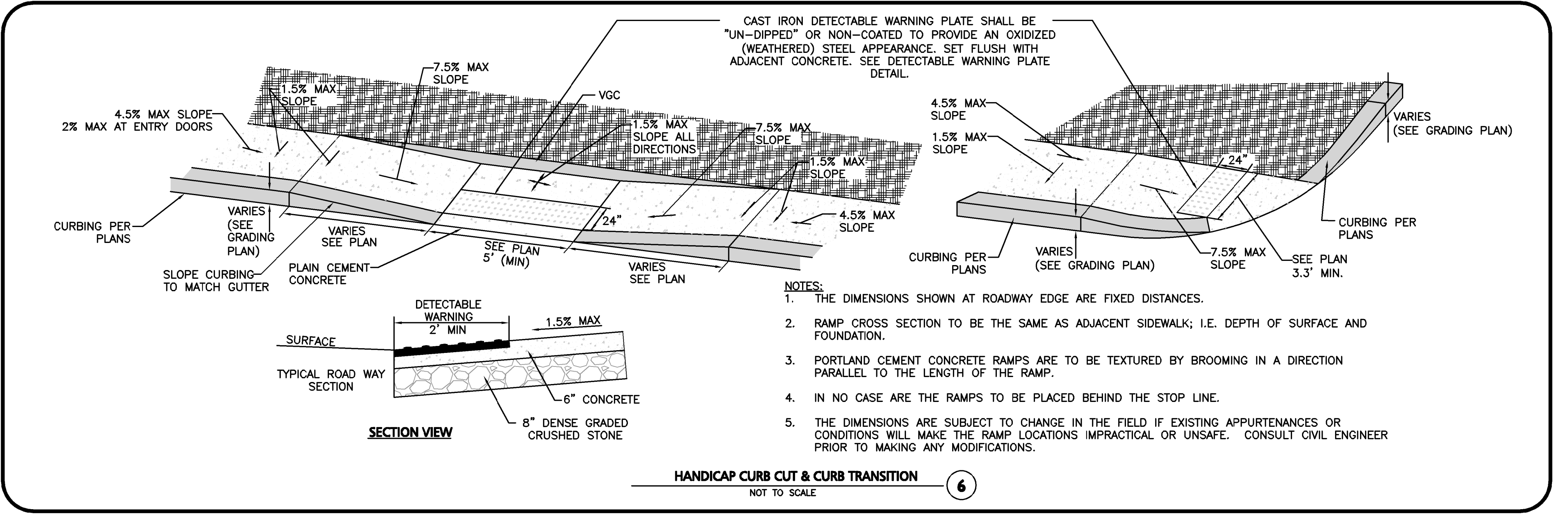
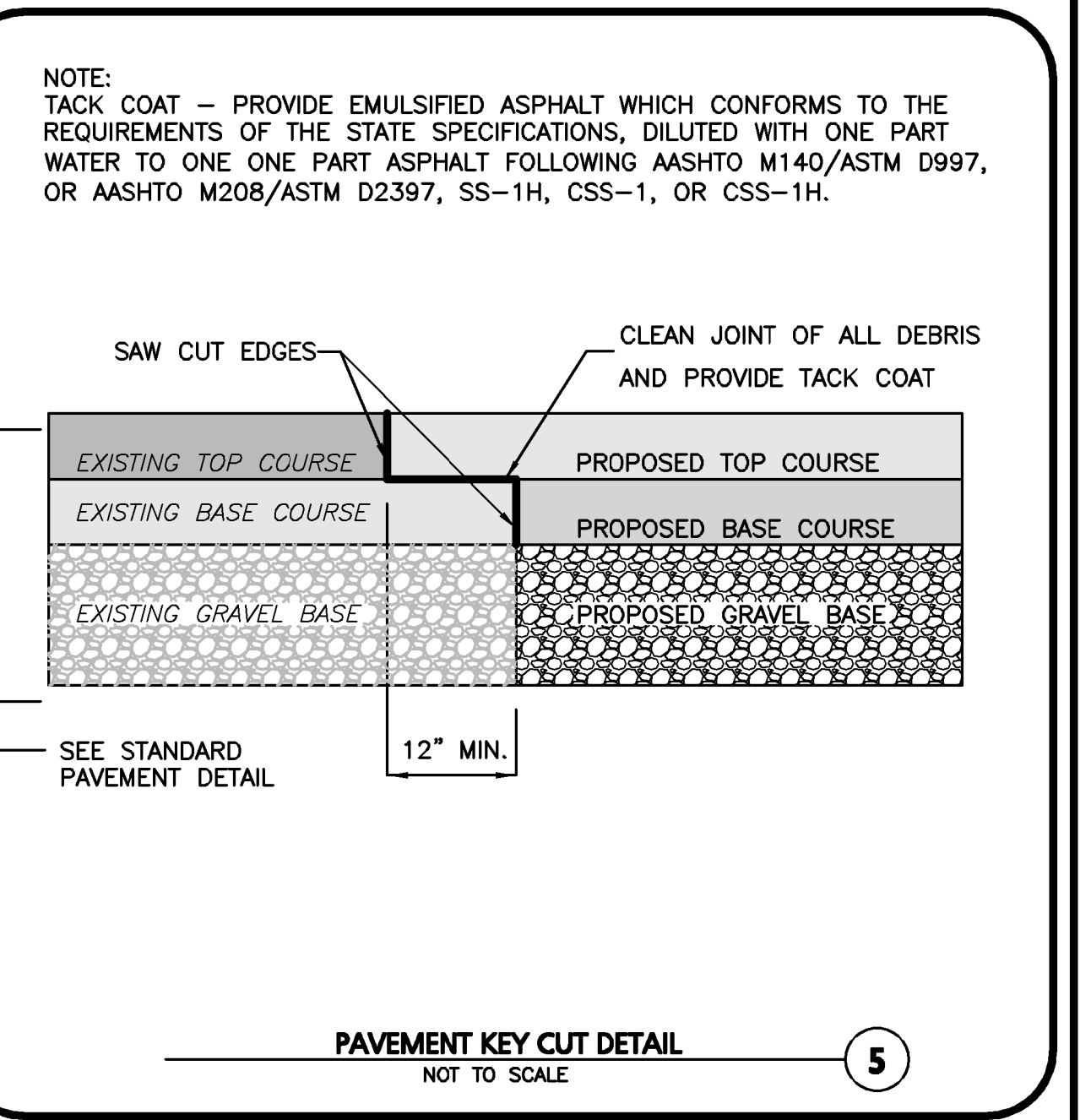
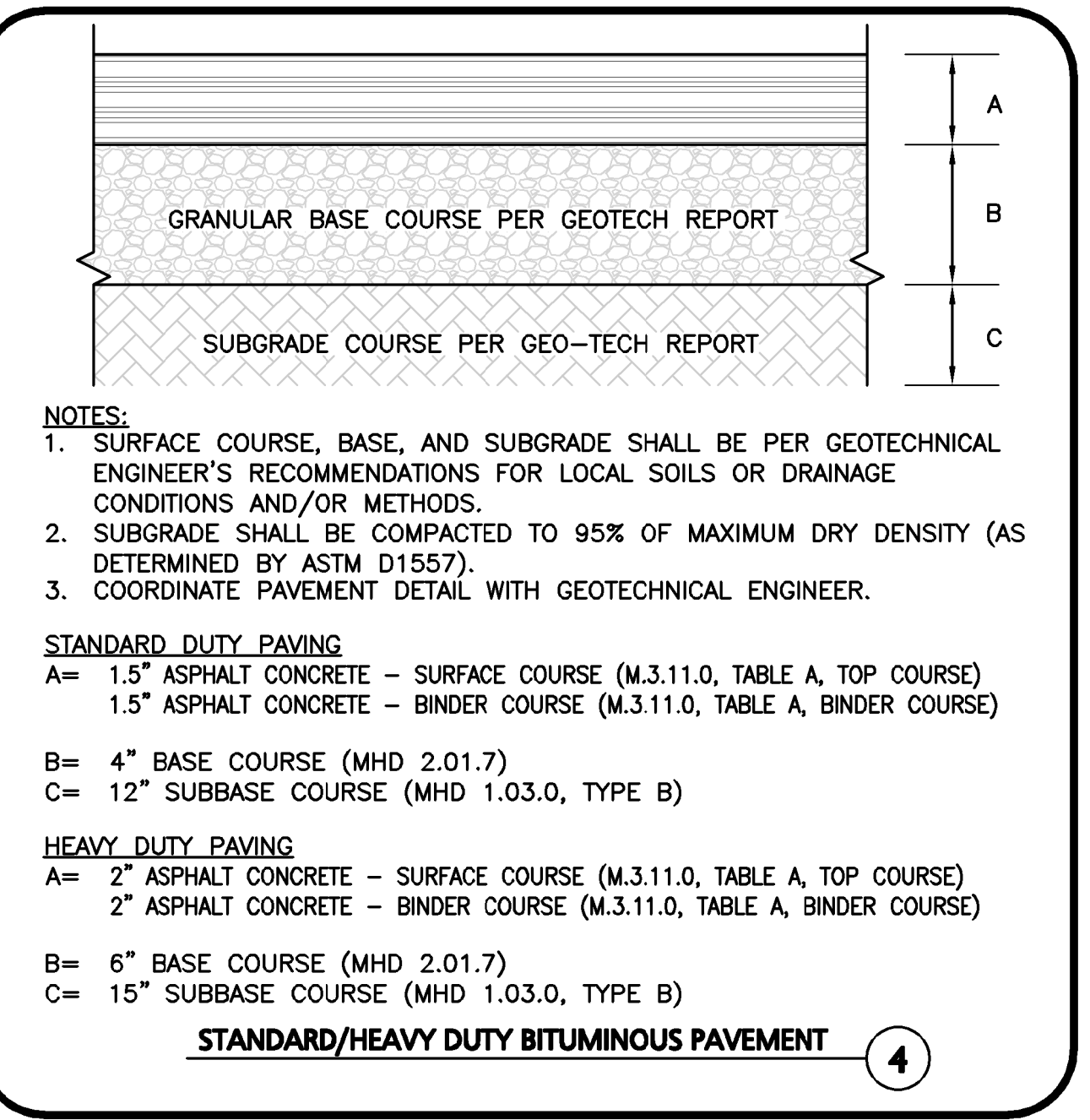
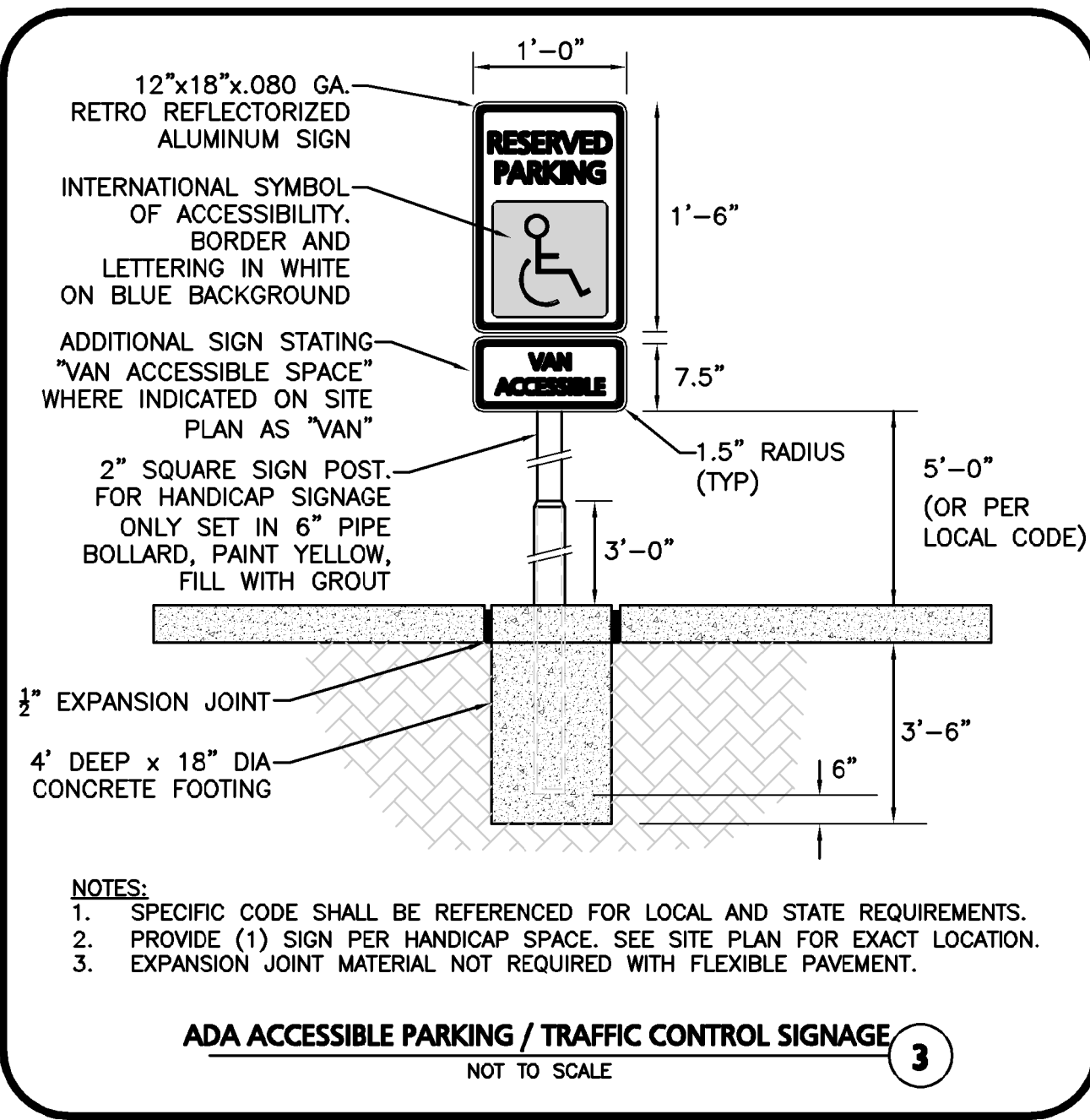
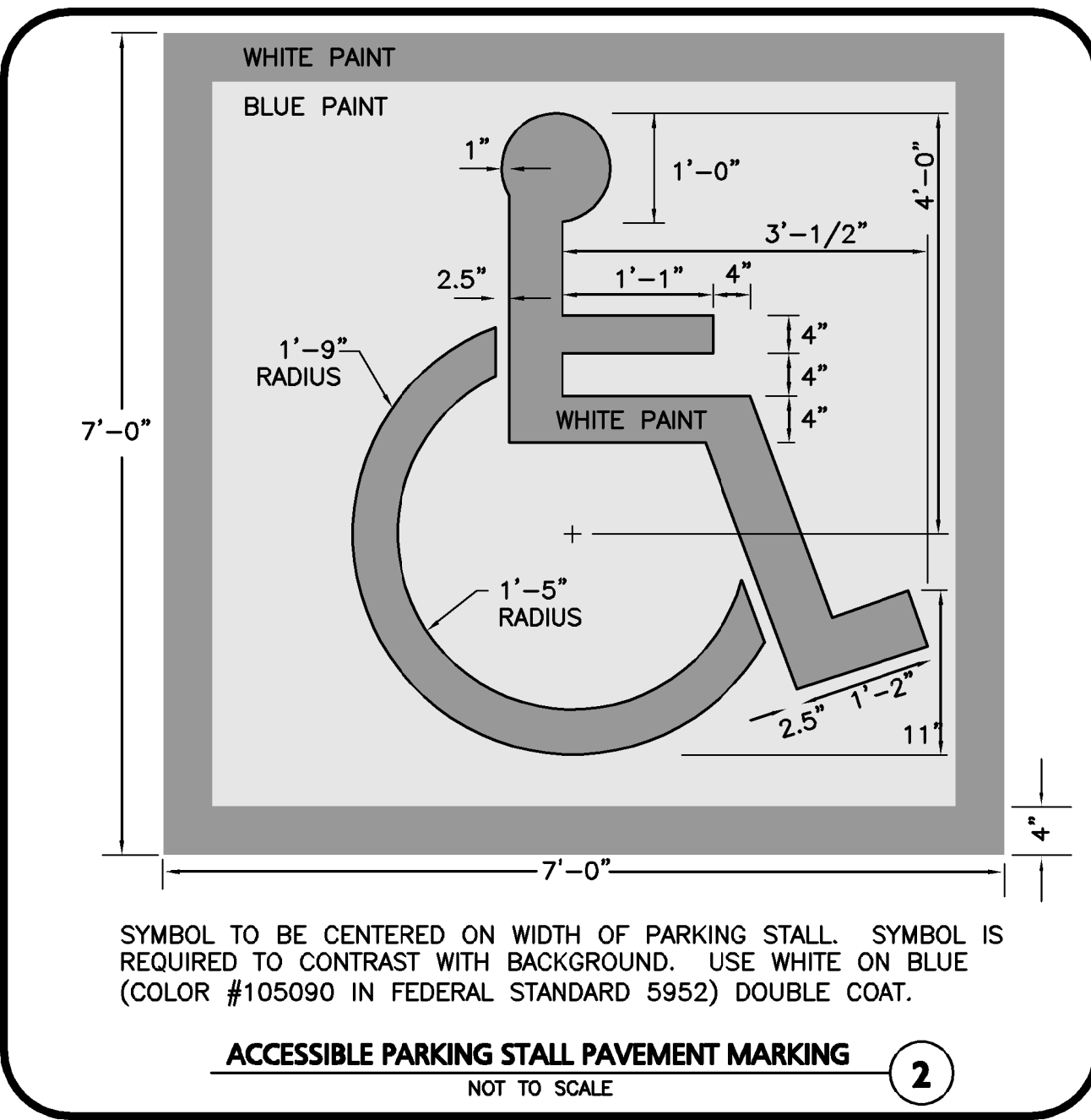
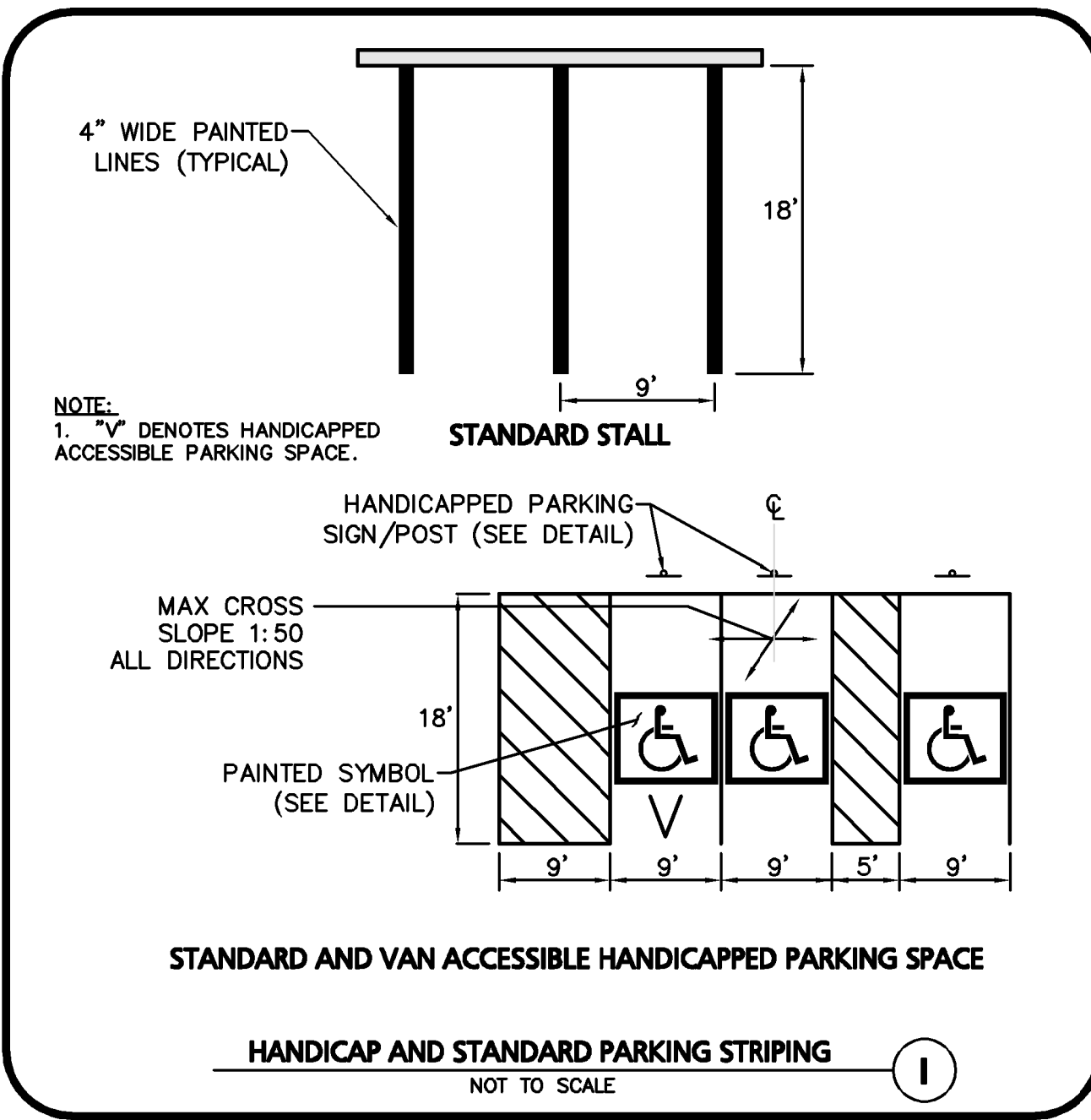
Grade Plane Summary Spreadsheet						Computation Sheet		
Title	200 Quannapowitt Parkway, Wakefield, MA					By	BS	
Project	June 1, 2022					Chk'd	LW	
Date						App'd	TJW	
Building #1		Station From	Elevation 1	Station To	Elevation 2	Length	Average Grade	Weighted Average Finish Grade
Existing Grade								
0+00.00	84.00	0+11.00	84.00	11.00	84.00			924.00
0+11.00	84.00	0+12.00	86.70	1.00	85.85			85.85
0+12.00	86.70	2+78.00	86.70	266.00	86.70			23662.20
2+78.00	86.70	2+79.00	84.80	1.00	84.40			84.40
2+79.00	84.80	3+20.00	84.00	41.00	84.40			3460.40
3+20.00	84.00	3+48.00	83.50	28.00	83.75			2393.75
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4+68.00	83.30	4+69.00	83.30	0.10	83.30			2920.75
4+69.00	83.30	4+70.00	83.30	0.10	83.30			2920.75
4+70.00	83.30	4+71.00	83.30	0.10	83.30			2920.75
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4+73.00	83.30	4+74.00	83.30	0.10	83.30			2920.75
4+74.00	83.30	4+75.00	83.30	0.10	83.30			2920.75
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4+80.00	83.30	4+81.00	83.30	0.10	83.30			2920.75
4+81.00	83.30	4+82.00	83.30	0.10</				





Computation Sheet								
Project Data	Grade Plane Summary Spreadsheet					By	BS	
	200 Quannapowitt Parkway, Wakefield, MA					Checked	TJW	
	June 1, 2022					Approved	TJW	
Building #2		Station From	Elevation 1	Station To	Elevation 2	Length	Average Grade	Weighted Average Finish Grade
Existing Grade								
	0+00.00	84.20	0+25.00	84.50	25.00	84.35		2445.15
	0+25.00	84.50	0+50.00	85.00	25.00	84.75		2453.10
	0+50.00	85.00	0+75.00	85.50	25.00	85.00		2459.50
	0+75.00	85.50	0+88.00	86.00	13.00	85.75		86.75
	0+88.00	86.00	1+00.00	86.50	12.00	86.25		86.53.10
	1+00.00	86.50	1+14.00	85.00	14.00	84.80		84.80
	0+50.00	85.00	0+88.00	86.00	28.00	85.75		2453.10
	0+88.00	86.00	2+42.00	87.00	54.00	86.10		177.25
	2+42.00	87.00	3+00.00	87.20	58.00	87.10		600.80
	3+10.00	86.70	3+25.00	85.00	15.00	86.15		85.15
	3+25.00	85.00	3+48.00	84.00	23.00	85.05		2474.50
	3+48.00	84.00	3+75.00	85.00	27.00	84.50		85.25
	3+75.00	85.25	3+88.00	84.00	13.00	85.00		32.00.00
	3+88.00	84.00	4+25.00	84.00	37.00	84.00		84.00
	4+15.00	84.00	4+68.00	83.70	53.00	83.85		6689.50
	4+68.00	83.70	5+00.00	83.50	32.00	83.60		84.00
	4+88.00	84.30	6+17.00	84.30	29.00	84.30		1770.30
	6+17.00	84.30	6+25.00	84.30	8.00	84.30		84.30
	6+25.00	84.30	6+40.00	84.30	15.00	84.30		2678.40
	6+40.00	84.30	6+44.00	84.10	4.00	84.30		83.90
	6+44.00	84.10	6+45.00	84.20	1.00	84.15		84.15
	6+45.00	84.20	6+67.00	83.50	22.00	84.05		2405.05
	6+67.00	83.50	7+00.00	84.00	33.00	83.70		2438.15
	7+04.00	84.00	7+33.00	84.20	29.00	84.10		2433.50
	0+00.00	84.50	0+04.00	84.40	4.00	84.40		337.60
	0+04.00	84.40	0+05.00	84.10	1.00	84.25		84.25
	0+05.00	84.10	0+05.50	84.00	0.50	84.05		2521.50
	0+25.00	84.00	1+25.00	83.00	100.00	83.00		7551.00
	1+25.00	83.00	2+05.00	83.00	80.00	83.00		5589.00
	2+05.00	83.00	2+45.00	84.10	40.00	84.10		3400.00
	2+45.00	84.10	3+00.00	84.00	55.00	84.05		4118.05
	3+00.00	84.00	3+47.00	83.50	47.00	83.75		83.75
	3+47.00	83.50	3+60.00	84.00	13.00	83.60		2185.25
	3+60.00	84.00	3+77.00	84.10	17.00	83.75		83.75
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	3+78.00	84.10	3+85.00	84.00	7.00	84.05		84.05
	3+85.00	84.00	4+45.00	84.00	60.00	84.00		5021.00
	4+45.00	84.00	4+84.00	84.10	39.00	84.05		7816.05
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	5+05.00	84.40	5+05.50	84.30	0.50	84.35		84.35
Total 1,399.00 84.36								





PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

8 06/02/2022 Re-issued to Con. Com. & ZBA

7 04/08/2022 Re-issued to Con. Com. & ZBA

6 2/07/2022 Re-issued to Conservation Commission

5 1/05/2022 Re-issued to Conservation Commission

4 11/11/2021 Re-issued to ZBA

3 9/01/2021 Re-issued to ZBA

2 8/03/2021 Issued to Conservation Commission

1 3/31/2021 Re-issued to ZBA

REV DATE DESCRIPTION

APPLICANT: CCF QUANNAPOWITT PROPERTY COMPANY, LLC 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

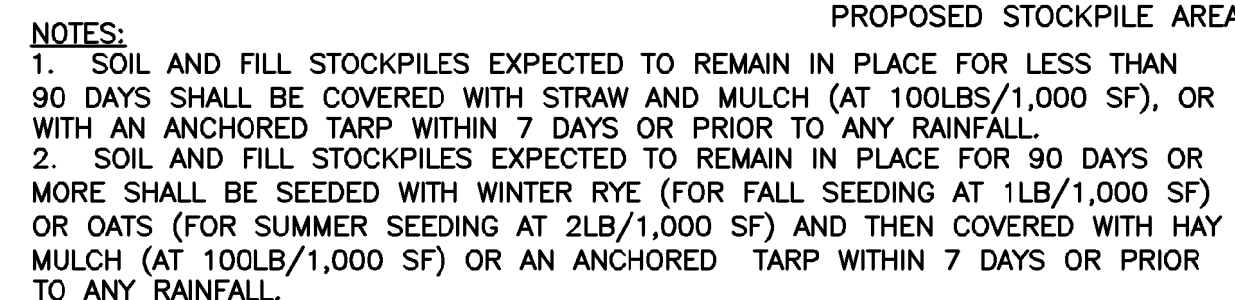
PREPARED BY: ALLEN & MAJOR ASSOCIATES, INC.

WOBURN, MA • LAKEVILLE, MA • MANCHESTER, NH

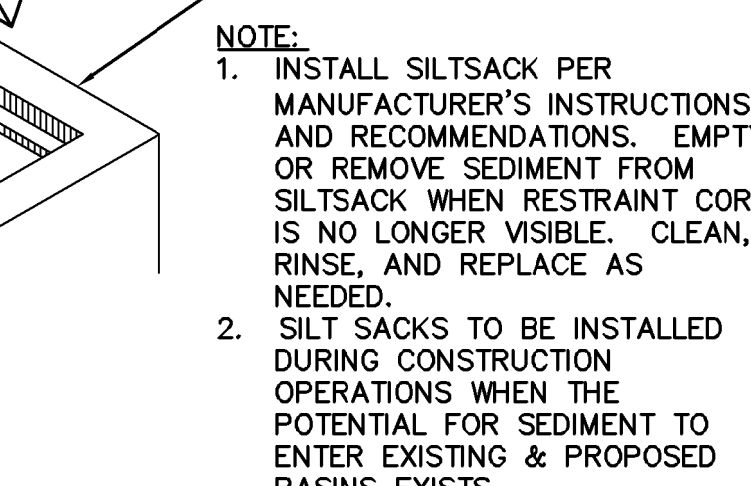
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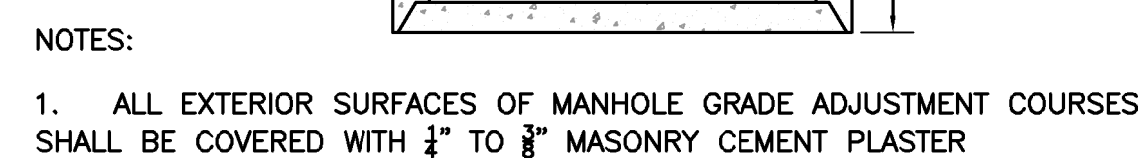
**STOCKPILE PROTECTION** 2



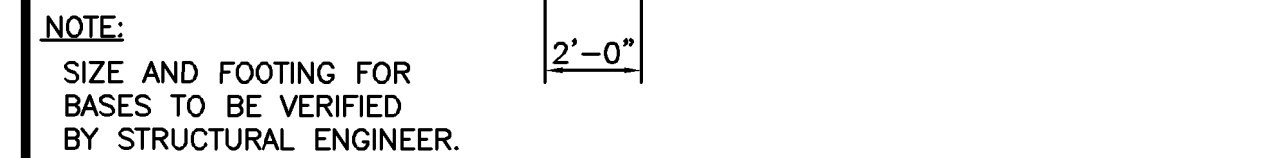
**SILTSACK INLET DETAIL**



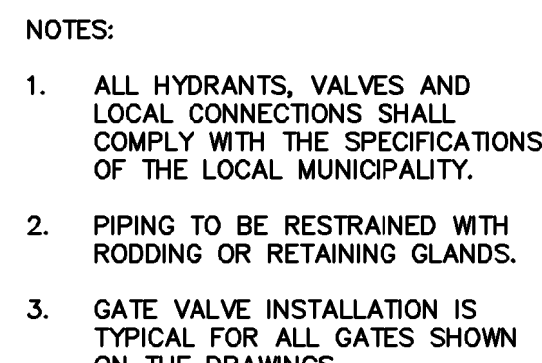
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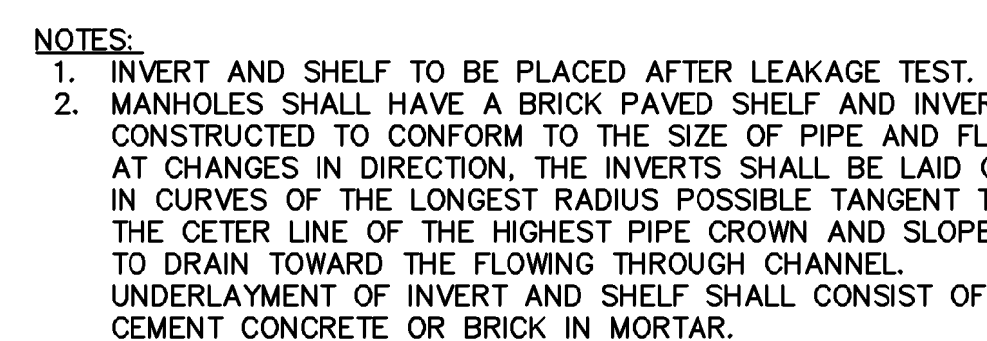
**PRECAST CONCRETE SEWER MANHOLE**  
NOT TO SCALE



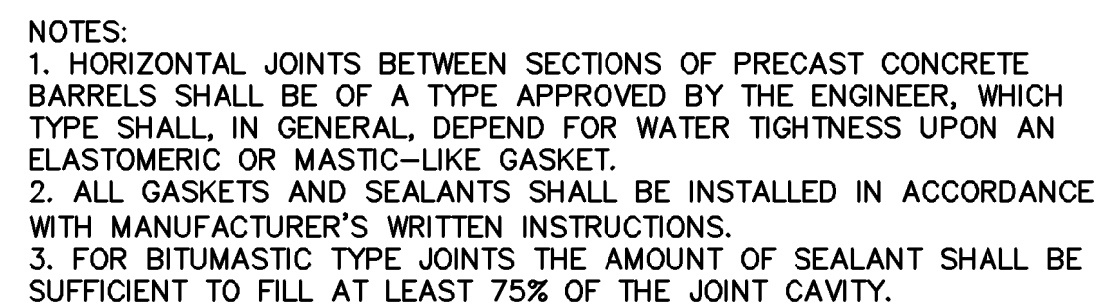
**MOUNTED LIGHT POLE (NEW BASE) DETAIL**  
NOT TO SCALE



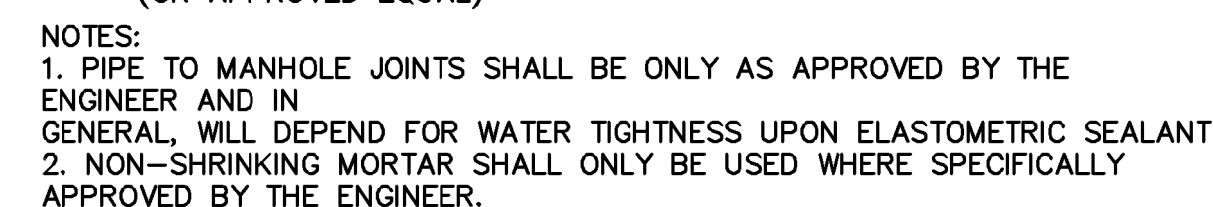
**FIRE HYDRANT CONNECTION**  
**NOT TO SCALE**



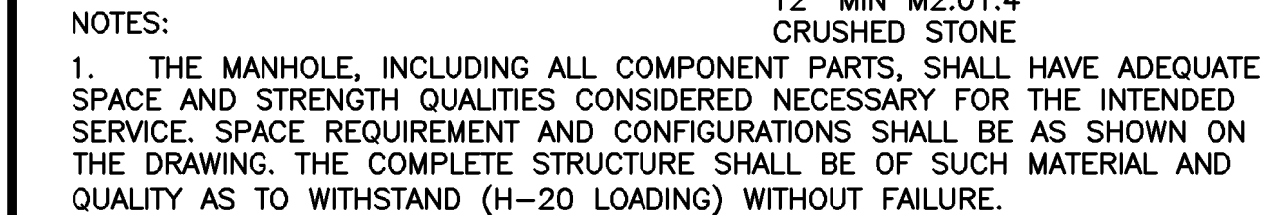
**TYPICAL BRICK INVERT SECTION FOR SEWER MANHOLES**



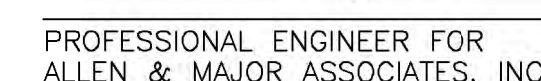
### SEWER MANHOLE JOINTING METHODS



**PIPE CONNECTIONS TO SEWER MANHOLE**  
NOT TO SCALE



**PRECAST DRAIN MANHOLE**  
**NOT TO SCALE**



APPLICANT:  
CCF QUANNAPOWITT PROPERTY  
COMPANY, LLC  
185 DARTMOUTH STREET  
BOSTON, MA 02116

**PROJECT:**

200-400 QUANNAPOW  
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

PREPARATION OF



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.

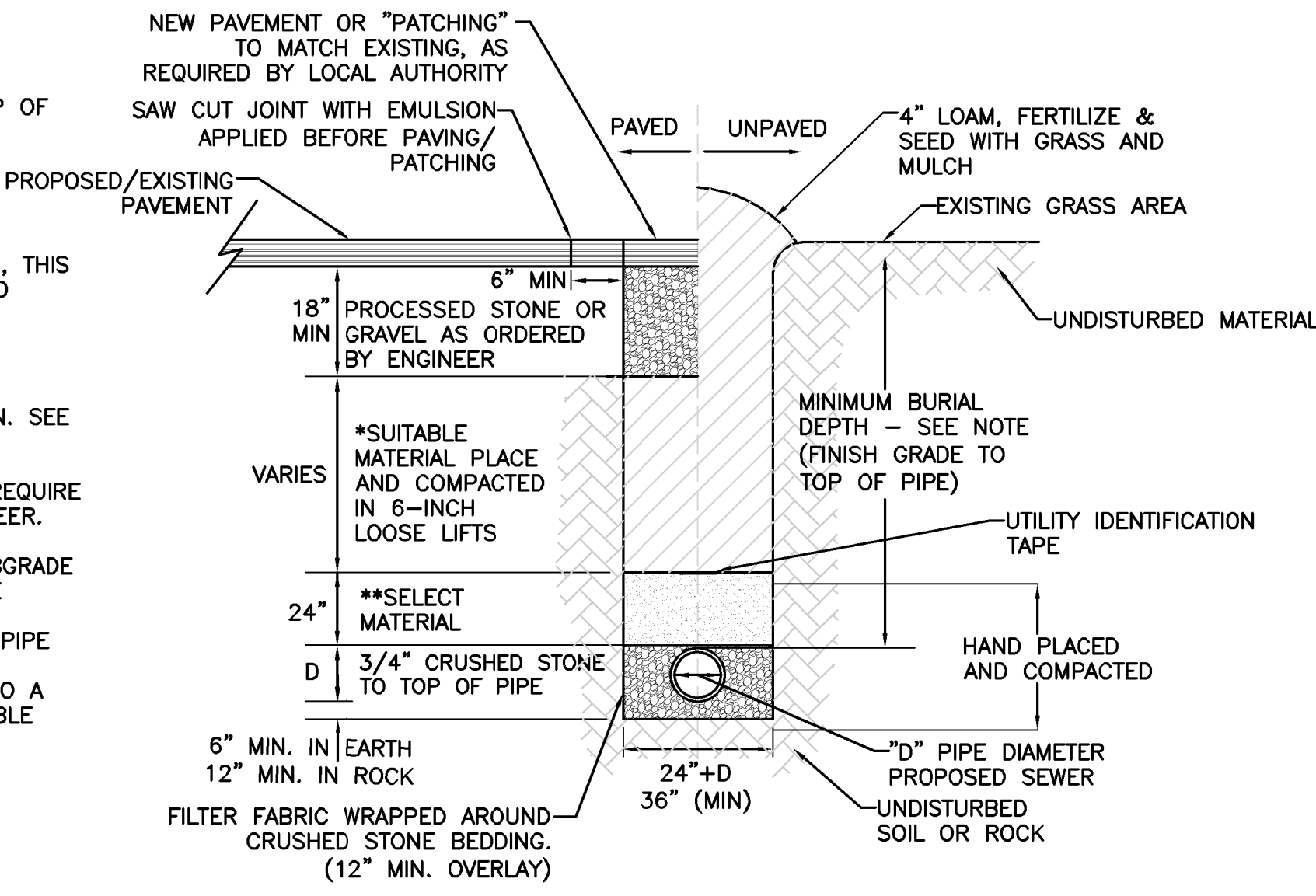
## DETAILS

C-502



NOTES:

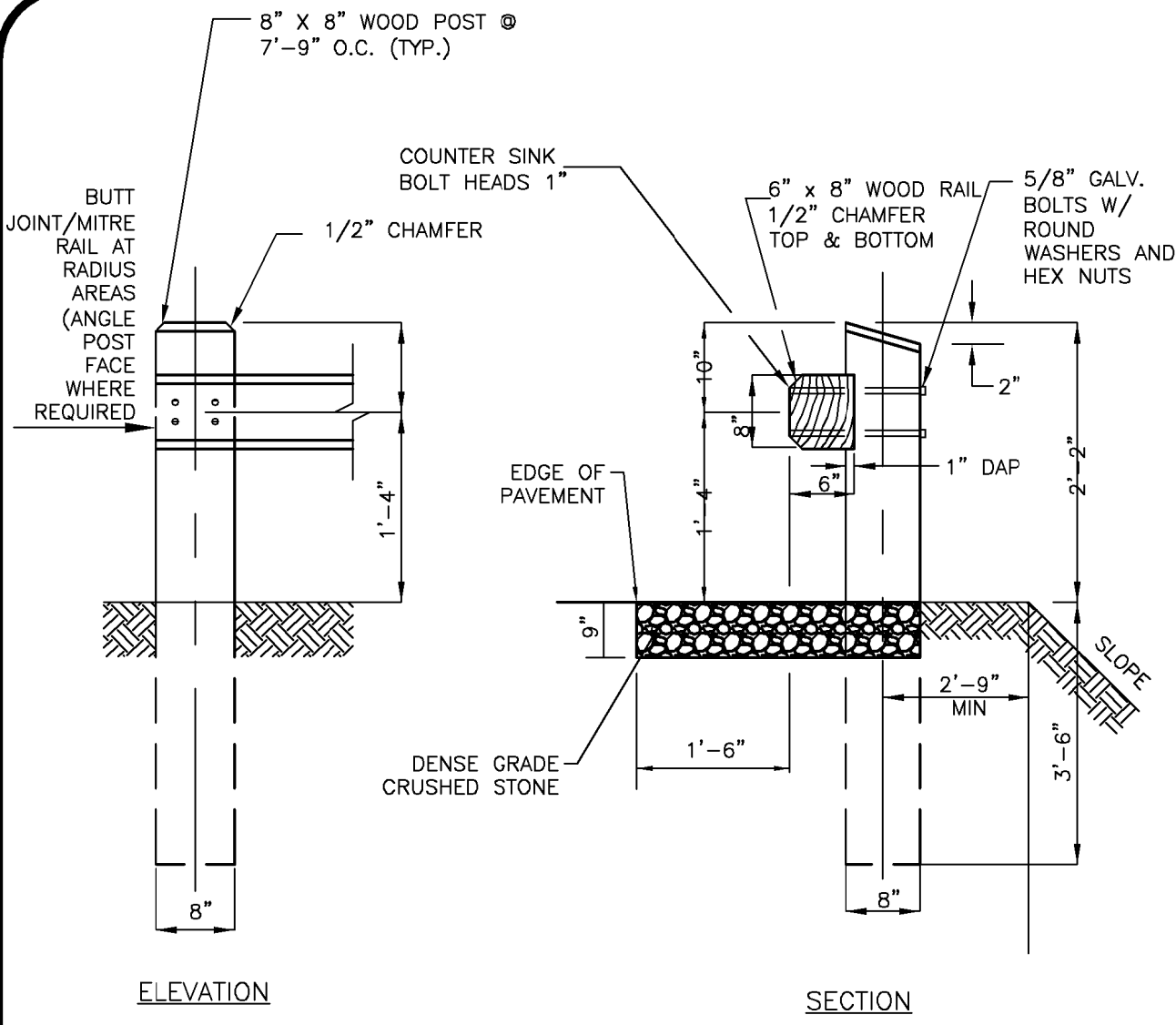
1. MINIMUM BURIAL DEPTH (FINISH GRADE TO TOP OF PIPE)  
GRAVITY PIPE - SEE PLAN OR PROFILE  
PRESSURE PIPE UNDER PAVING - 4'  
PRESSURE PIPE BENEATH UNPAVED - 3'
2. WHERE BACKFILL IS DESIGNATED AS COMPACTED, THIS MEANS 90 TO 95% STANDARD PROCTOR, AASHTO T-99. ALL FILL PLACED BELOW PIPES AND STRUCTURES 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).



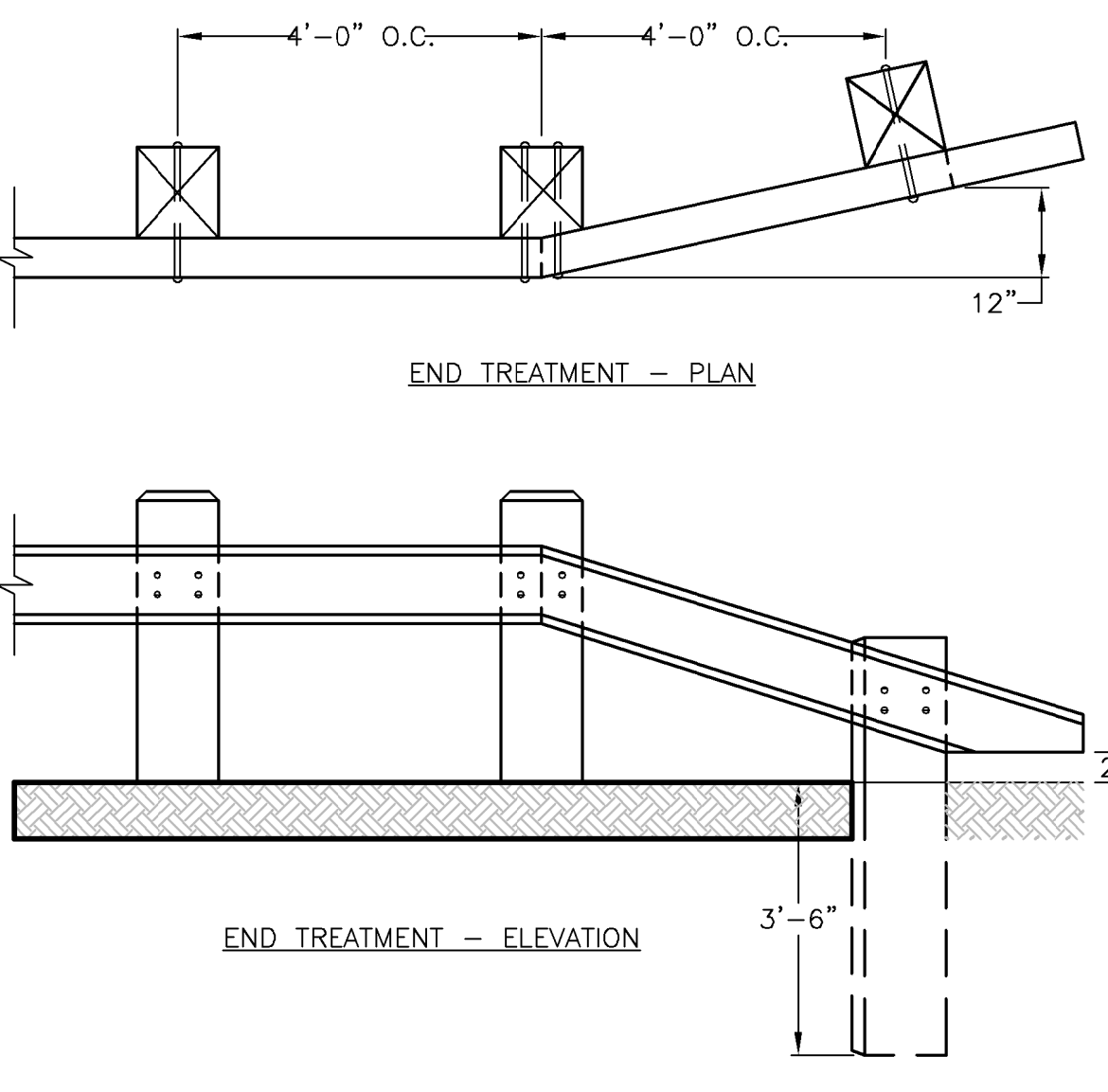
SEWER TRENCH DETAIL  
NOT TO SCALE

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

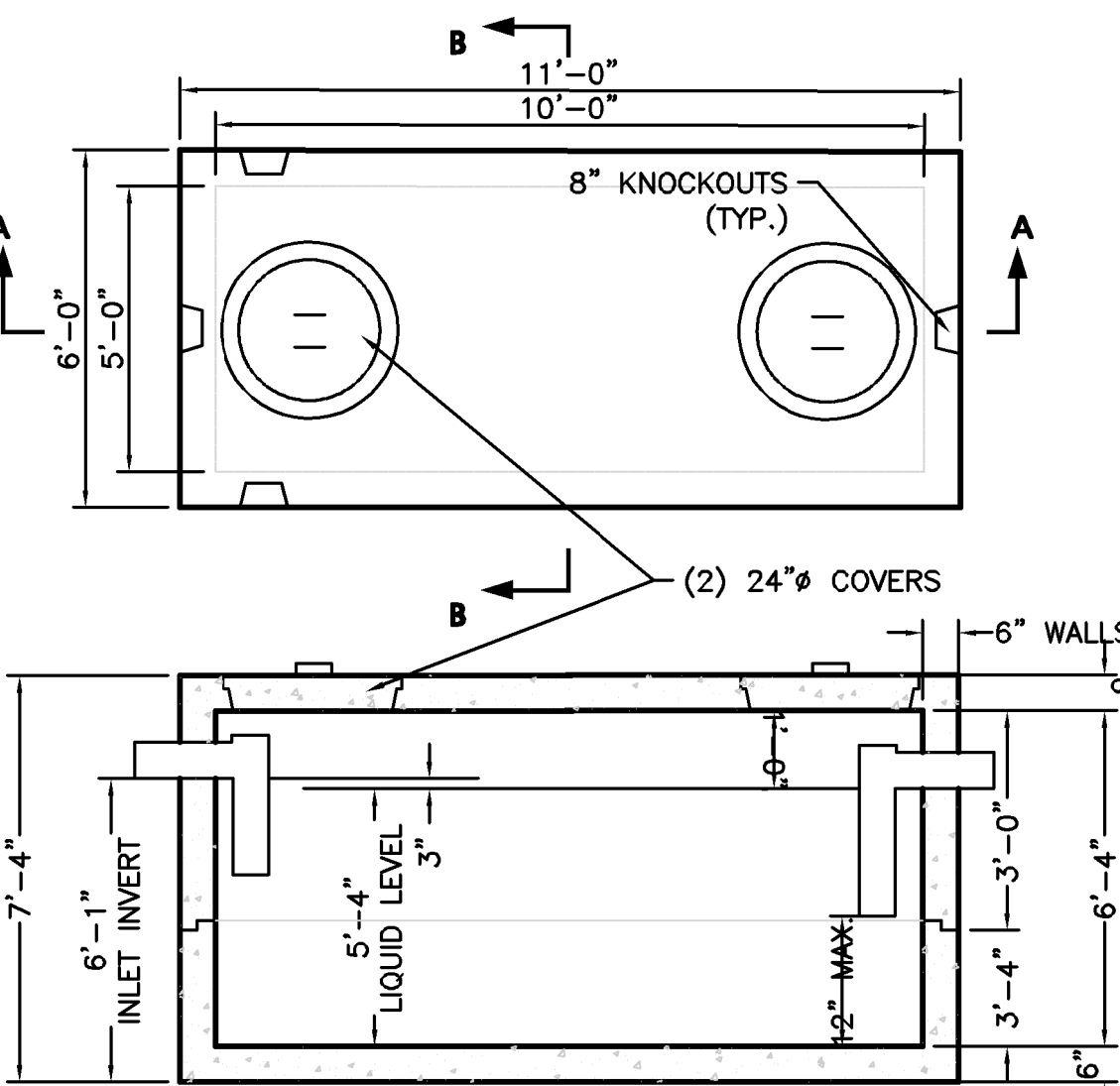
- \* SUITABLE MATERIAL SHALL CONTAIN NO STONE GREATER THAN 4" IN DIAMETER, NO FROZEN LUMPS, AND SMALL AMOUNTS OF CLAY OR ORGANIC MATERIAL. ALL MATERIAL TO BE PLACED IN MAX 12" LIFTS AND COMPACTED BEFORE PLACING NEXT LIFT.
- \*\*TYPE I MATERIAL SHALL BE EITHER GRAVEL OR EXCAVATED MATERIAL CONTAINING NO 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 3/4" OPENING, AND NOT MORE THAN 5% PASSING A 1/2" 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 1/2" SQUARE OPENING.



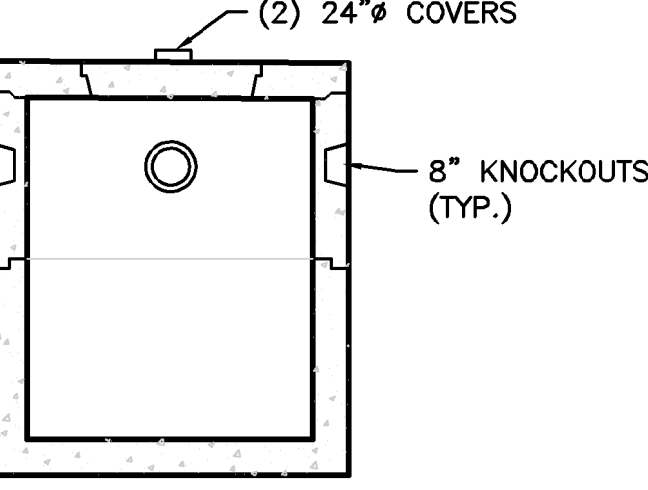
- NOTES:
1. ALL TIMBERS SHALL BE SOUTHERN YELLOW PINE (#2 AND BETTER)-SAS-TREATED AFTER FABRICATION)



WOOD GUARDRAIL  
NOT TO SCALE



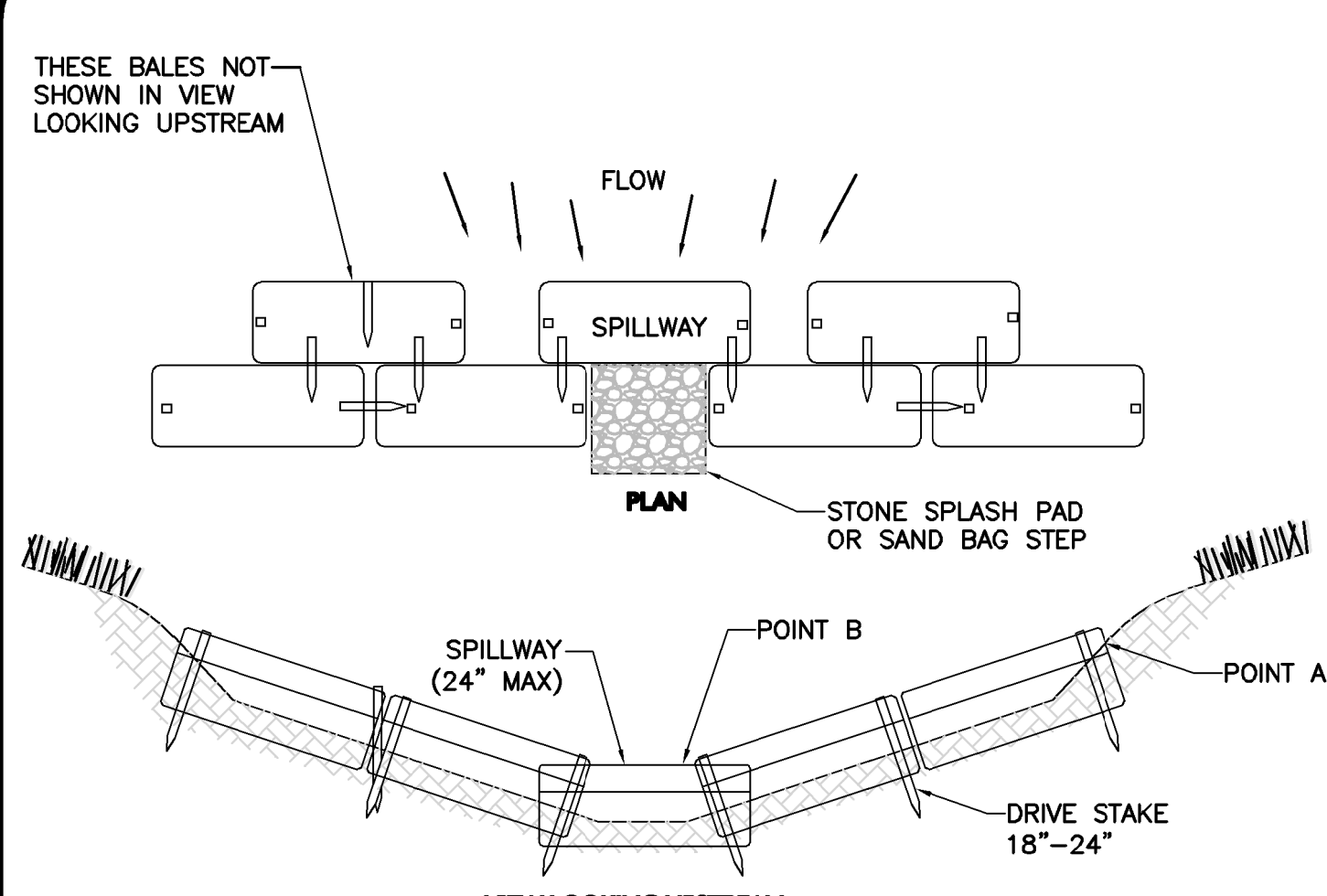
SECTION A-A



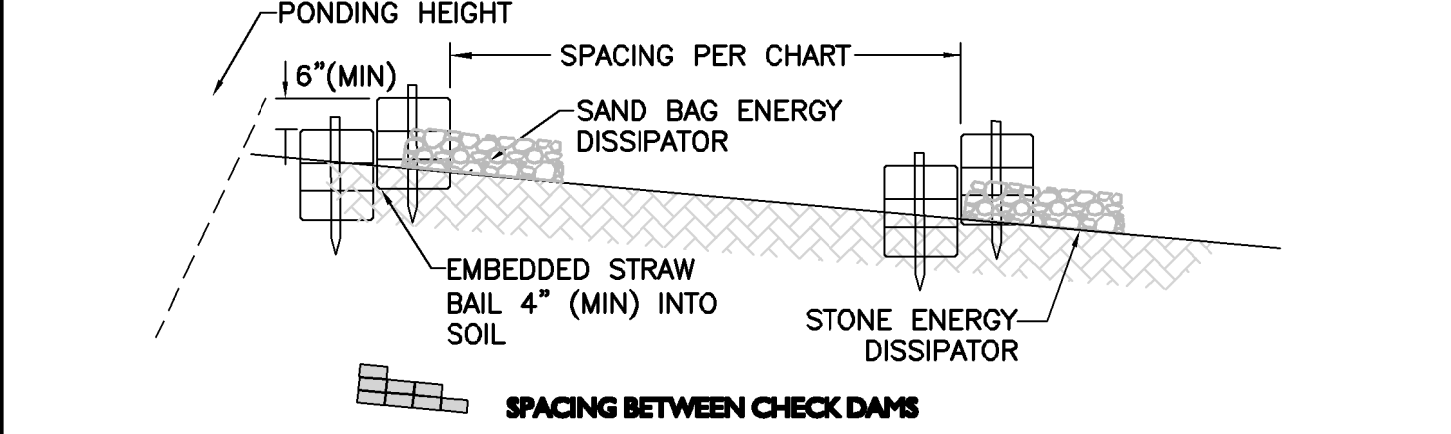
SECTION B-B

- 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 EQUIVLENT.
  7. APPROX. WEIGHTS: TOP SLAB = 2.3 TONS; BOTTOM 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  
NOT TO SCALE



VIEW LOOKING UPSTREAM



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

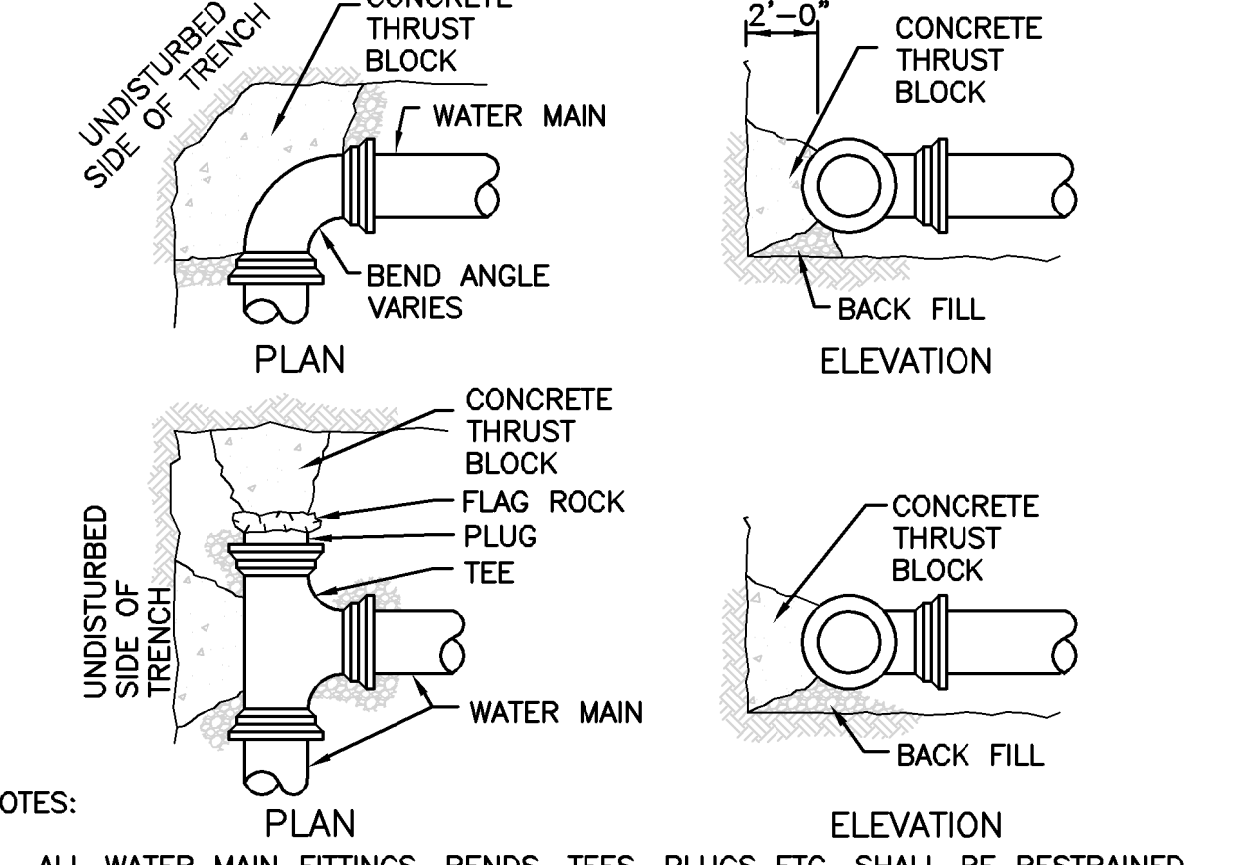
- NOTE:
1. HAYBALE CHECK DAM TO BE USED WHERE DRAINAGE AREA IS LESS THAN 1/2 ACRE. (TO BE FIELD COORDINATED)
  2. EMBED BALES 4" INTO THE SOIL AND KEY BALES INTO THE CHANNEL BANKS.
  3. POINT "A" MUST BE HIGHER THAN POINT "B" (SPILLWAY HEIGHT).
  4. PLACE BALES PERPENDICULAR TO THE FLOW WITH ENDS TIGHTLY 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  
NOT TO SCALE

NOT USED  
NOT TO SCALE

5

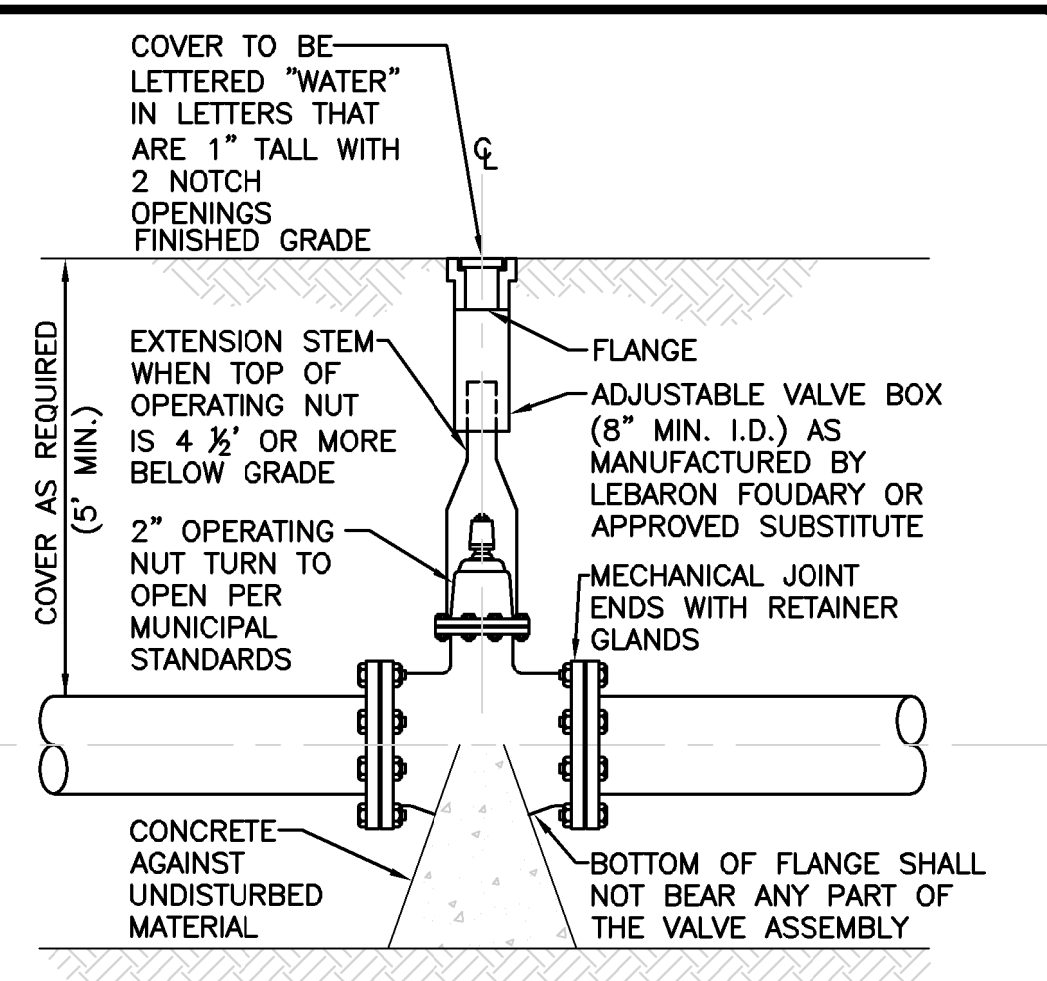
PIPE DIAMETER	MINIMUM THRUST BLOCK BEARING AREAS			
	90° BEND (SQ. FT.)	45° BEND (SQ. FT.)	22.5° BEND (SQ. FT.)	TEES, PLUGS, CAPS & HYDRANTS (SQ.FT.)
6"	5	3	3	4
8"	9	6	3	9
10"	13	7	4	12
12"	20	10	5	16



- 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 2  
SAND 4  
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  
SCALE: N.T.S.

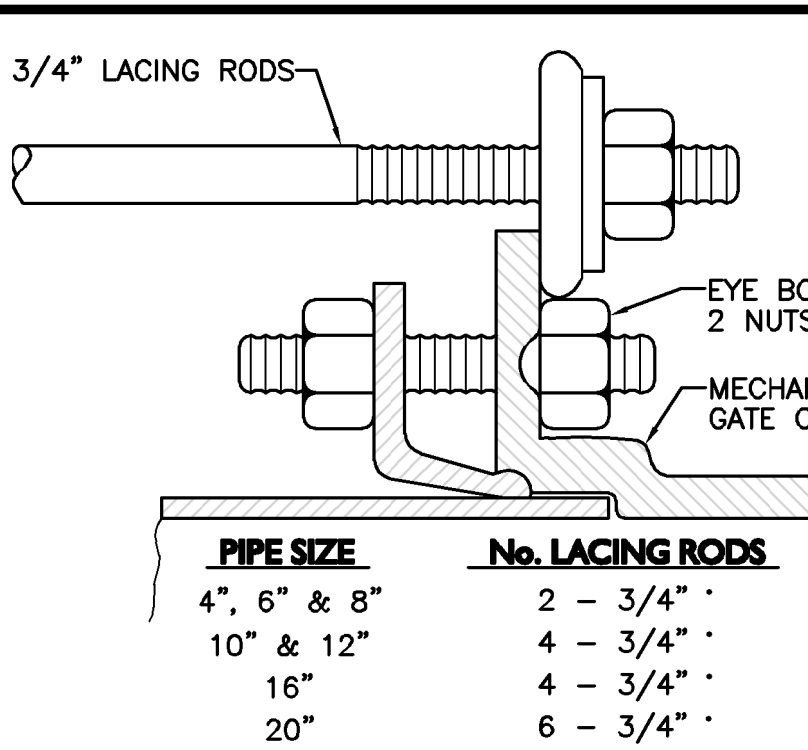
6



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

GATE VALVE DETAIL  
NOT TO SCALE

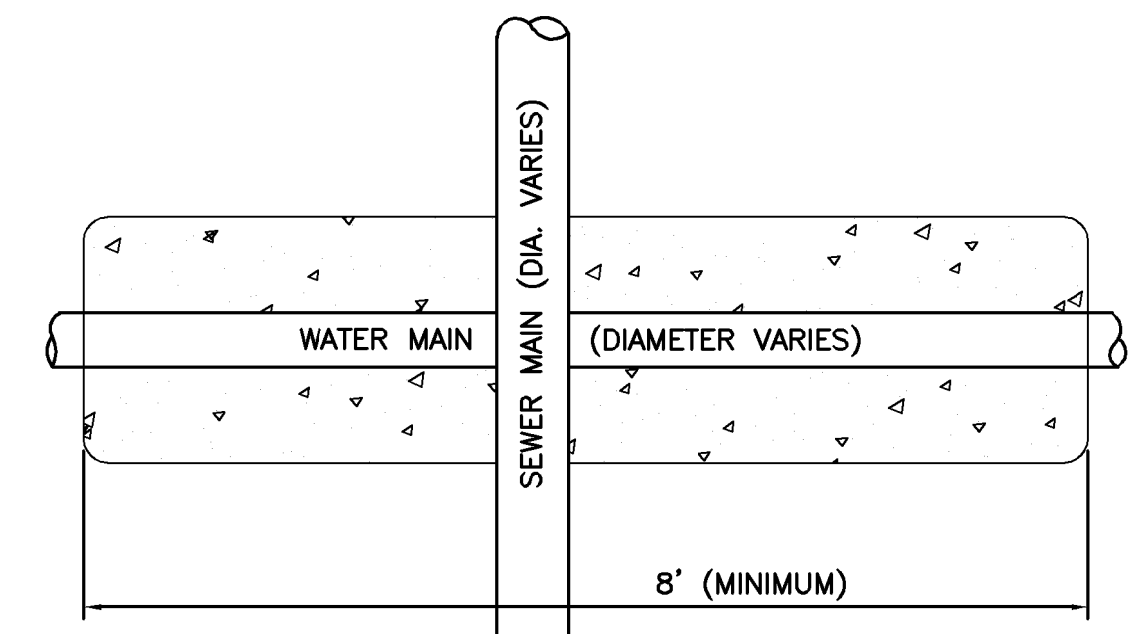
8



- \* 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  
NOT TO SCALE

9



- 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  
NOT TO SCALE

10



PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
8	06/02/2022	Re-issued to Con.Com. & ZBA
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PREPARED BY:

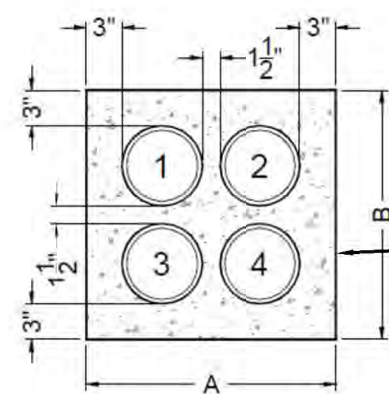


WOBURN, MA • LAKEVILLE, MA • MANCHESTER, NH

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DRAWING TITLE:	SHEET No.
DETAILS	C-503

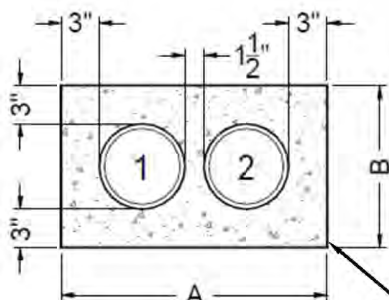




4-5' CONDUIT LAYOUT

DIMENSIONS:  
A = 18.5-INCHES  
B = 18.5-INCHES

USE SPACERS TO MAINTAIN  
CORRECT SPACING &  
ALIGNMENT OF THE DUCTS



2-4' CONDUIT LAYOUT

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

USE SPACERS TO MAINTAIN  
CORRECT SPACING &  
ALIGNMENT OF THE DUCTS

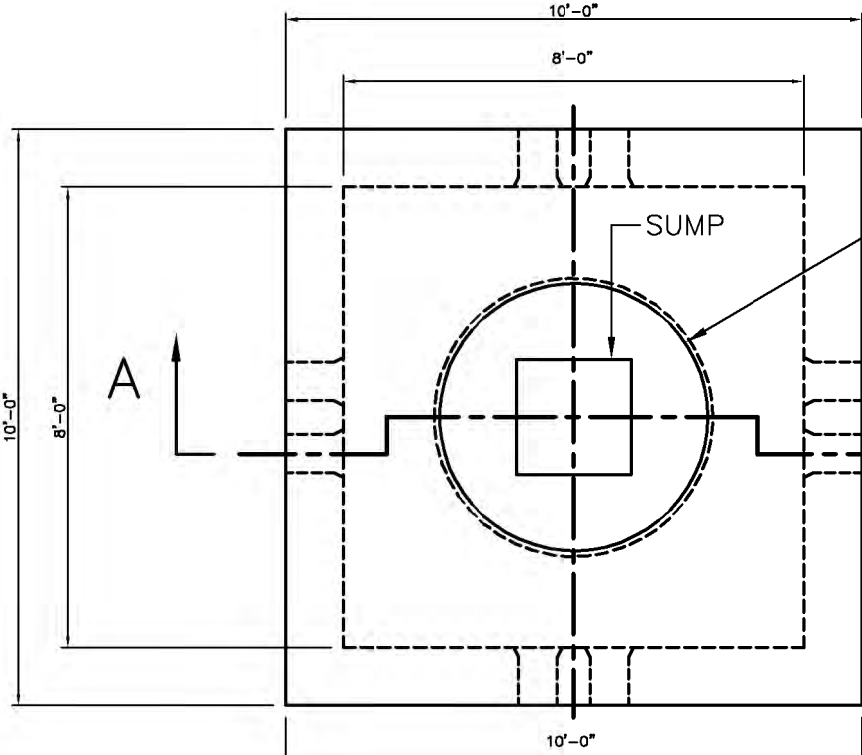
- NOTES:
1. MAINTAIN A CLEAR DISTANCE OF 12" (MIN.) FROM ALL STRUCTURES THAT CROSS ABOVE OR BELOW THE DUCTBANK.
  2. PVC SOLVENT CEMENT SHALL BE USED TO CREATE WATER-TIGHT JOINTS FOR ALL CONDUIT INSTALLED.
  3. RED CAUTION TAPE REQUIRED. CENTERED ABOVE ALL DUCT LINES.
  4. OTHER UTILITIES SHALL MAINTAIN 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.

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.

STANDARD UNREINFORCED CONCRETE DUCTBANK FOR  
4" & 5" CONDUIT (WMGLD)

NOT TO SCALE

1



PLAN

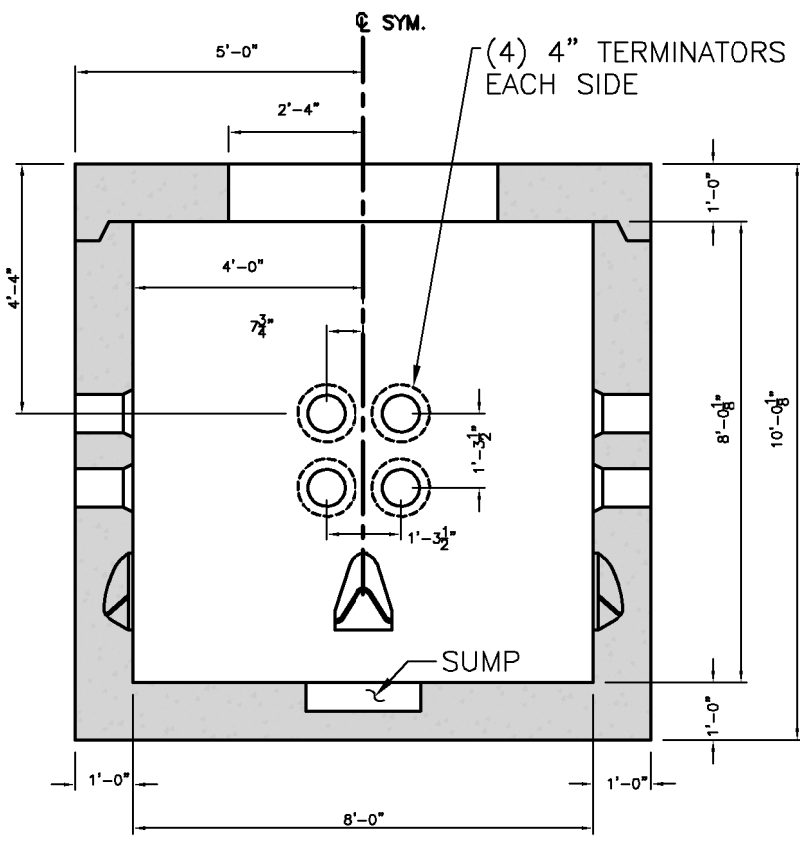
NOTES:

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

NOT TO SCALE

2



SECTION A-A

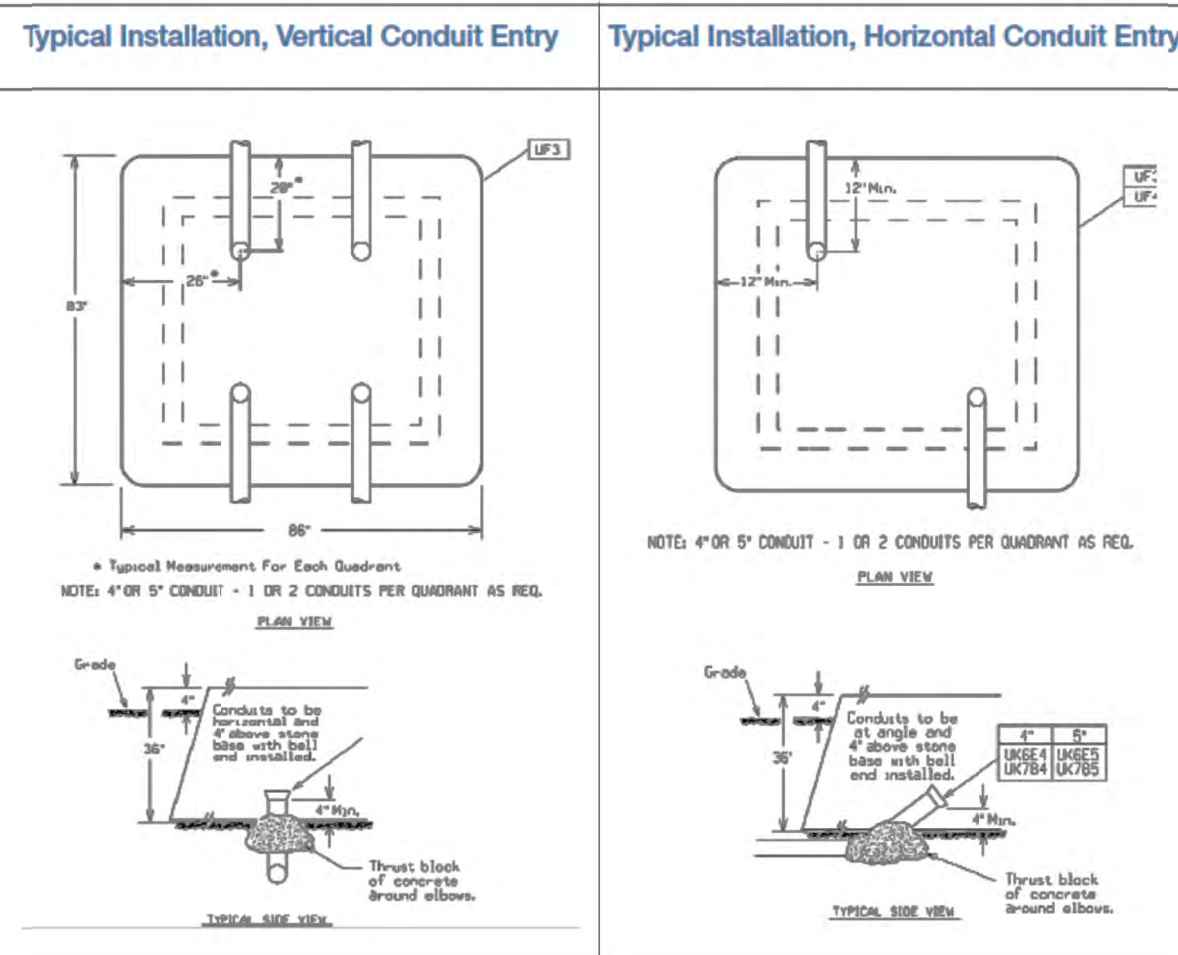
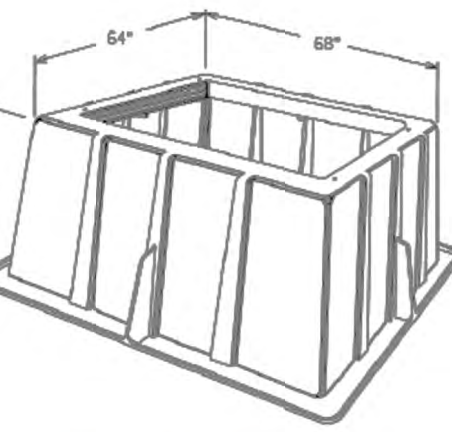
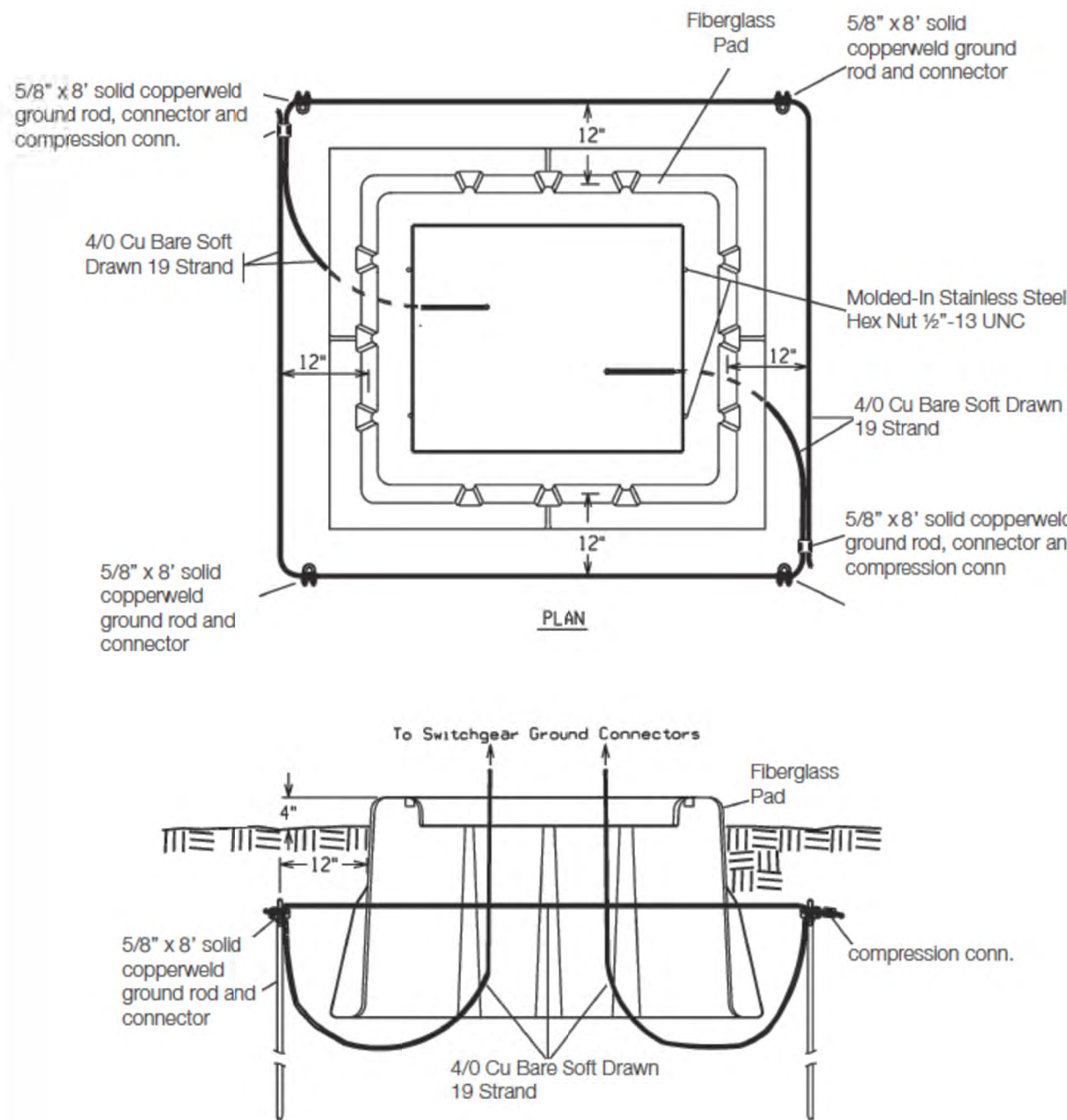
CLOSED BOTTOM

FIBERGLASS SWITCHGEAR GROUND GRID

NOT TO SCALE

3

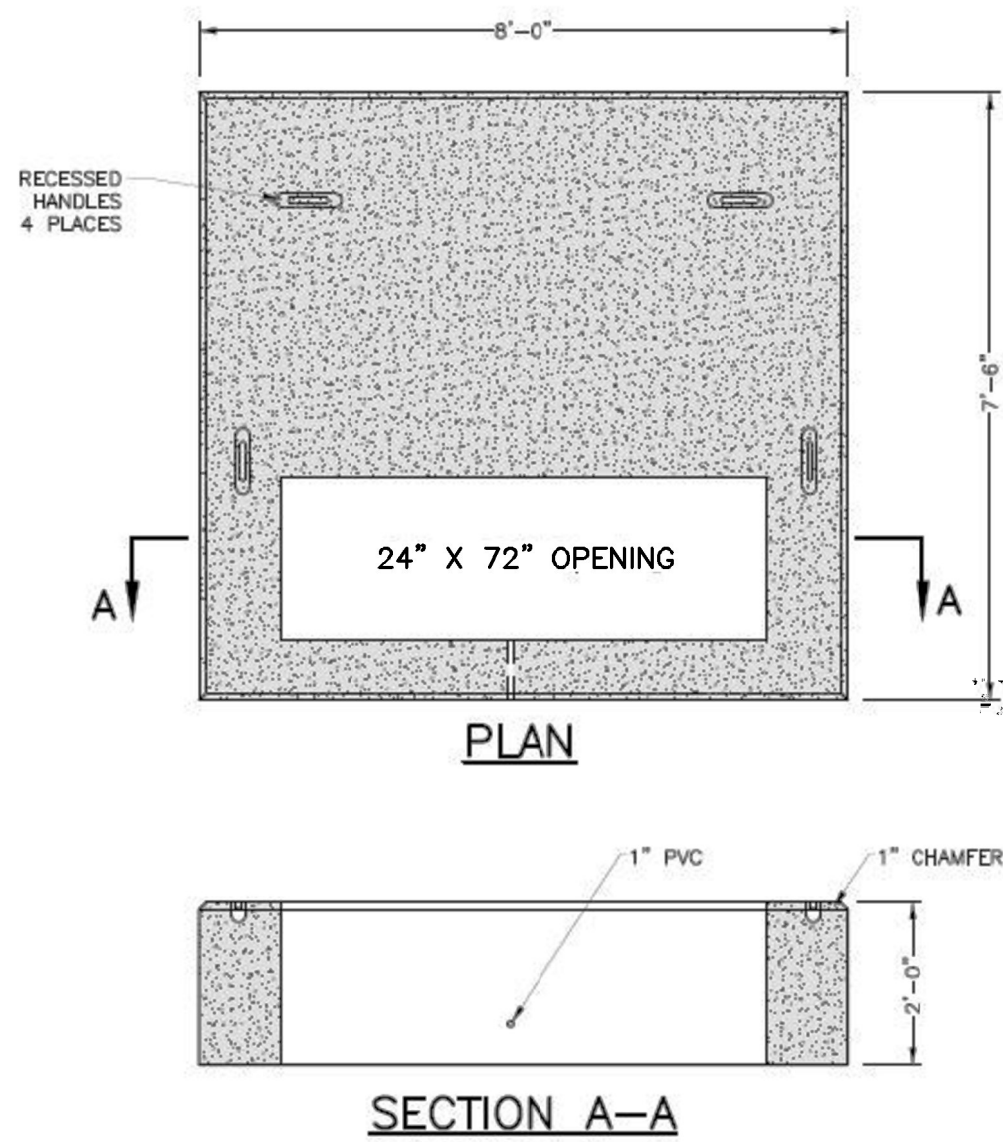
26.1 Fiberglass Switchgear Ground Grid  
The Customer shall install the ground grid for a fiberglass switchgear installation as shown in the picture.



FIBERGLASS SWITCHGEAR BASE

NOT TO SCALE

4



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

3 PHASE TRANSFORMER PAD - 750-2000 KVA

NOT TO SCALE

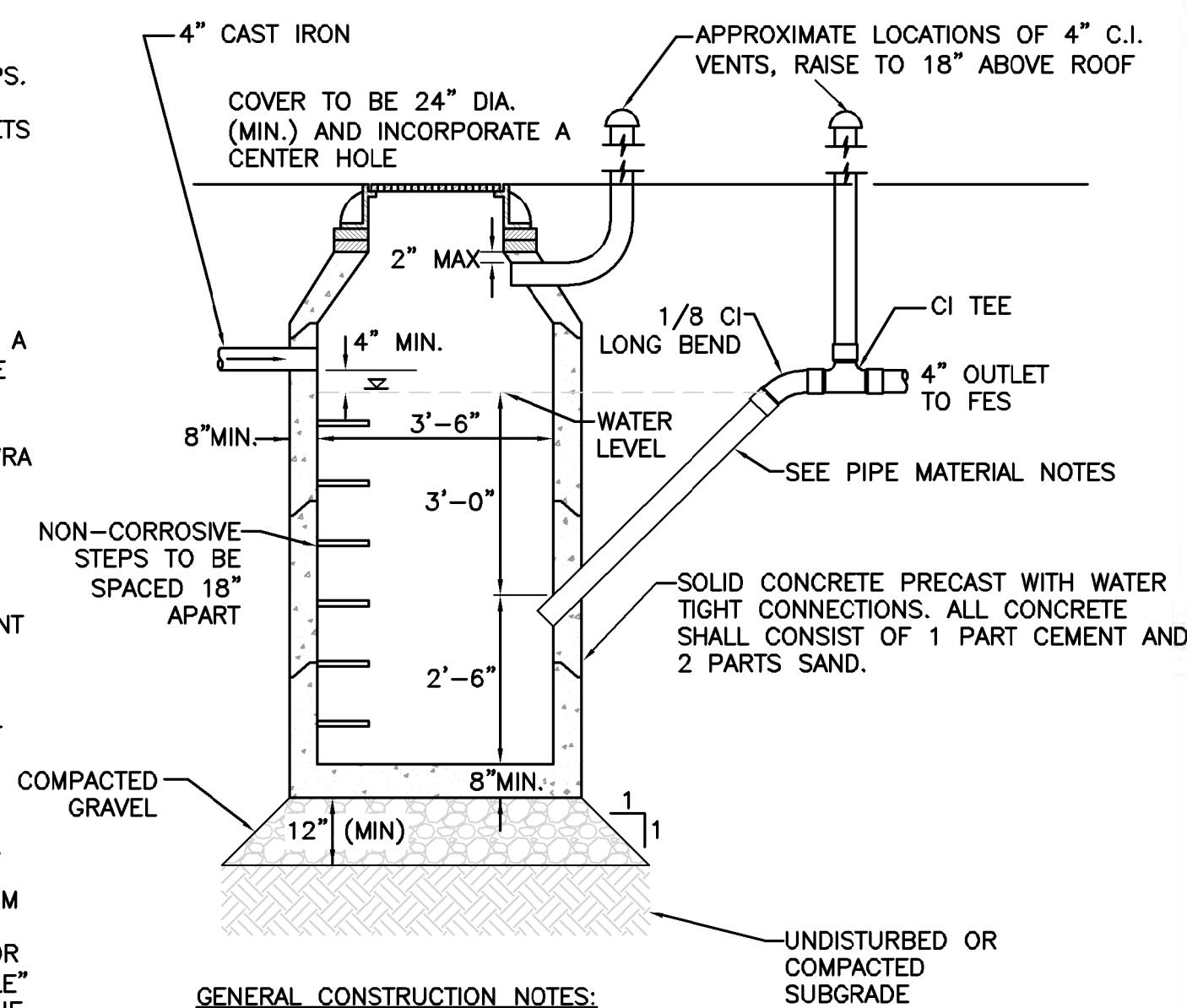
5

PIPE MATERIAL NOTES:

1. NO-HUB CAST IRON WITH PRODUCT-APPROVED STAINLESS STEEL CLAMPS.
2. SERVICE WEIGHT CAST IRON WITH PRODUCT-APPROVED RESILIENT GASKETS OR LEAD AND OAKUM JOINTS.
3. EXTRA HEAVY CAST IRON WITH PRODUCT-APPROVED RESILIENT GASKETS OR LEAD AND OAKUM JOINTS.

MWRA INSPECTION NOTES:

1. AT LEAST 10 DAYS PRIOR TO INSTALLATION CONTRACTOR SHALL SUBMIT A "NOTIFICATION OF PROPOSED GAS/OIL SEPARATOR INSTALLATION" TO THE MWRA PER THE MASSACHUSETTS UNIFORM PLUMBING CODE AND THE MWRA'S SEWER USE REGULATIONS. FOR ADDITIONAL INFORMATION OR TO REQUEST AN INSPECTION PLEASE CONTACT THOMAS J. COFFEY, JR. (MWRA SOURCE COORDINATOR) @ (617)-305-5624.
2. PLUMBING SHALL BE INSTALLED, BUT STRUCTURE SHALL NOT BE BACKFILLED PRIOR TO MWRA INSPECTION.
3. MORTAR THE JOINTS (NO RUBBER BOOTS ALLOWED - HYDRAULIC CEMENT ONLY).
4. THE STRUCTURES SEAM MUST BE COMPLETELY VISIBLE AROUND THE ENTIRE STRUCTURE FOR INSPECTION. ADDITIONALLY THE AREA ONE FOOT BELOW THE OUTLET PIPE MUST ALSO BE VISIBLE. FOR INSPECTION.
5. OUTLET LINE SHALL BE PLUGGED (ON THE OUTSIDE) WHERE IT CAN BE REMOVED ONCE IT IS CONFIRMED THAT THE STRUCTURE HAS NO LEAKS.
6. THE CONTRACTOR SHALL FILL THE STRUCTURE WITH WATER AND CONFIRM THAT THERE ARE NO LEAKS PRIOR TO SCHEDULING THE MWRA INSPECTION. THE CONTRACTOR SHOULD NOTE THAT THE MWRA INSPECTOR WILL BE SPECIFICALLY LOOKING AT THE OUTLET PIPE "45 DEGREE ANGLE" AND UNDERSTANDS THAT IT IS PARTICULARLY DIFFICULT TO SEAL. SO THE CONTRACTOR SHOULD BE CAREFUL WHEN MORTARING THE JOINT. NOTE THE INSPECTOR WILL WANT TO INSPECT THE CONNECTION WITH THE TANK 1' BELOW THAT JOINT.
7. ONCE ON SITE, THE INSPECTOR WILL FIRST INSPECT THE STRUCTURE COMPLETELY FULL TO INSURE IT HAS NO LEAKS. THE INSPECTOR WILL THEN REQUIRE THAT THE OUTLET PIPE PLUG BE REMOVED TO OBSERVE THE WATER LEVEL. THE WATER LEVEL MUST BE OBSERVED AT LEAST 4" BELOW THE INLET PIPE.
8. THE CONTRACTOR MUST HAVE A 2" PUMP ON-SITE DURING THE INSPECTION TO ALLOW THE INSPECTOR TO VERIFY THE INTERIOR MEASUREMENT OF THE TANK FOR CODE COMPLIANCE.
9. THE OUTLET PIPE MUST NOT STICK INTO THE STRUCTURE CHAMBER ANY MORE THAN ILLUSTRATED.



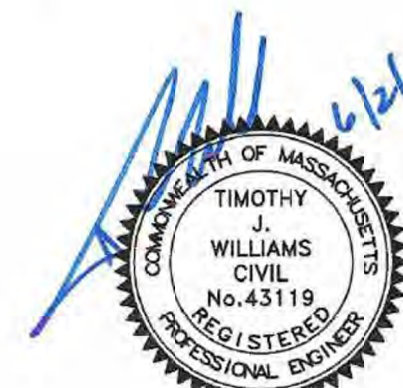
GENERAL CONSTRUCTION NOTES:

1. SEPARATOR TO BE LOCATED OUTSIDE WHERE POSSIBLE, WHEN LOCATED OUTSIDE, MANHOLE SHALL HAVE A CENTER HOLE.
2. SEPARATOR SHALL BE LOCATED AND CONSTRUCTED TO PREVENT SURFACE OR SUB-SURFACE WATER FROM ENTERING.
3. OUTLET TO BE BELOW FROST LINE.
4. SEPARATOR MUST BE FILLED WITH CLEAN WATER AND LEAK TESTED BEFORE BEING INTRODUCED INTO SERVICE.
5. OIL AND GAS TO BE REMOVED BEFORE CLEANING AND SHALL NOT BE DISCHARGED TO THE SEWER THROUGH ANY FIXTURES.
6. INLET SHALL BE SET A MINIMUM OF THREE FEET BELOW GRADE

GAS/OIL SEPARATOR

NOT TO SCALE

6



PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

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7	04/08/2022	Re-issued to Con.Com. & ZBA
6	2/07/2022	Re-issued to Conservation Commission
5	1/05/2022	Re-issued to Conservation Commission
4	11/11/2021	Re-issued to ZBA
3	9/01/2021	Re-issued to ZBA
2	8/03/2021	Issued to Conservation Commission
1	3/31/2021	Re-issued to ZBA
REV	DATE	DESCRIPTION

APPLICANT:

CCF QUANNAPOWITT PROPERTY  
COMPANY, LLC  
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:

**ALLEN & MAJOR ASSOCIATES, INC.**  
civil engineering • land surveying  
environmental consulting • landscape architecture  
www.allenmajor.com  
100 COMMERCE WAY  
WOBURN MA 01880-0118  
TEL: (781) 935-8880  
FAX: (781) 935-2896

WOBURN, MA • LAKEVILLE, MA • MANCHESTER, NH

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DRAWING TITLE:	SHEET No.
DETAILS	C-504



## STORMWATER CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740, SC-310, OR APPROVED EQUAL.
- CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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".
- 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 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.
  - 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.
  - STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- 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

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

## NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-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".
- 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.

## GENERAL NOTES

NOT TO SCALE

1

**StormTech**  
Detention • Retention • Water Quality

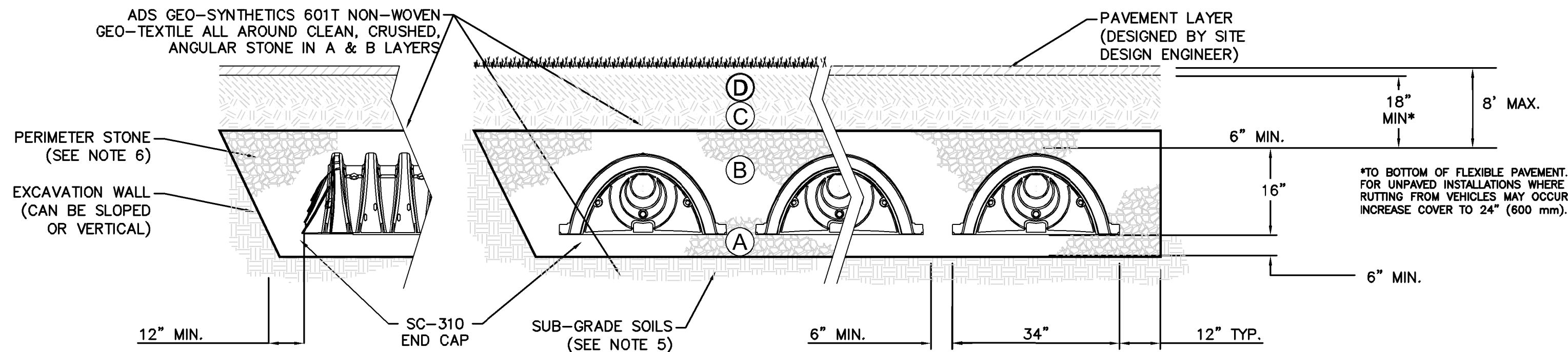
70 INWOOD ROAD, SUITE 3 | ROCKY HILL | CT | 06067

860-529-8188 | 888-892-2694 | WWW.STORMTECH.COM

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 <sup>1</sup> A-1, A-2-4, A-3 OR AASHTO M43 <sup>1</sup> 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 <sup>1</sup> 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 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>1</sup>

## PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPREHENSIVE 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.



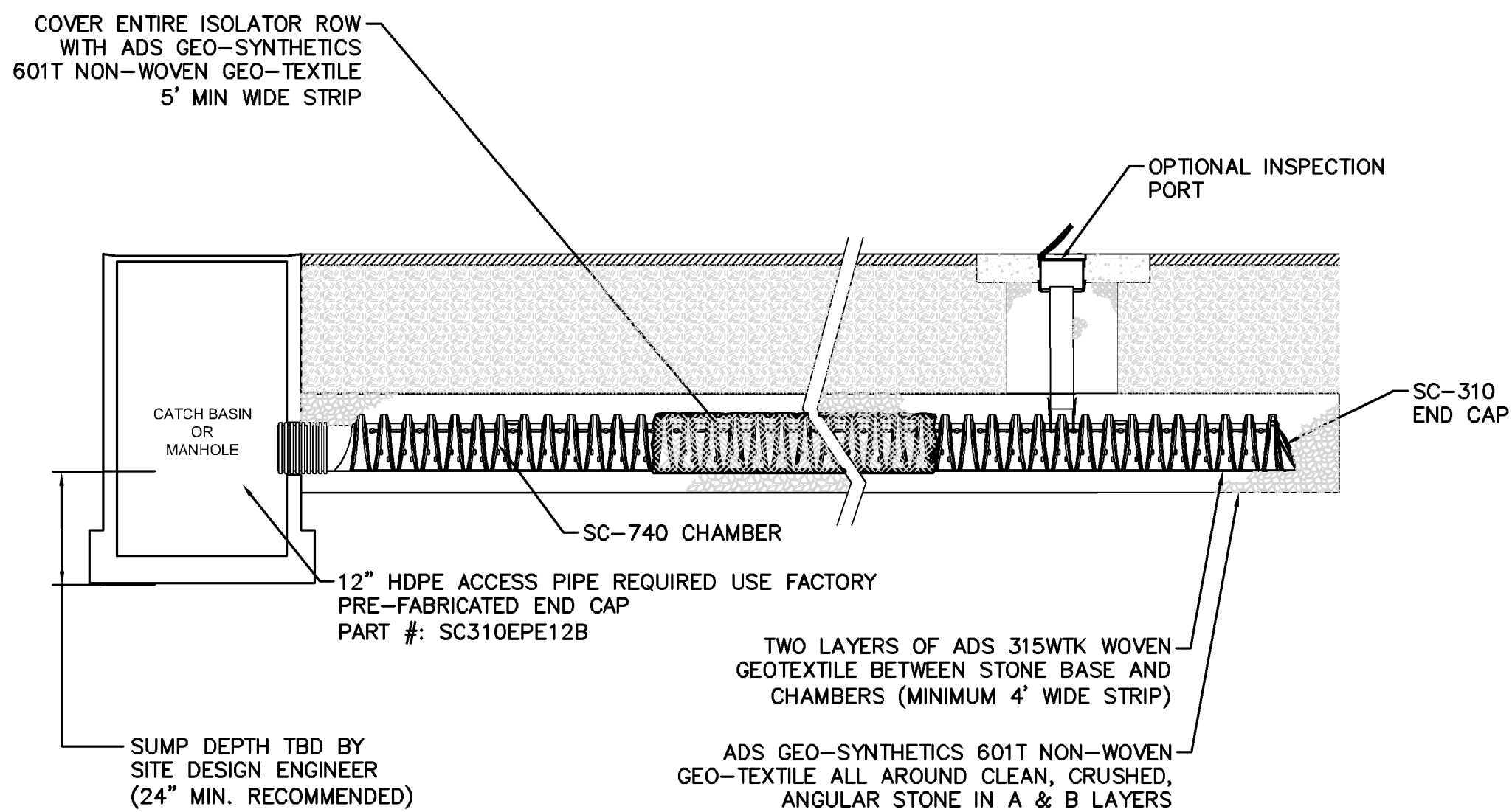
## NOTES:

- 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".
- SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
- EXISTING FILL MATERIAL TO BE REMOVED (WHERE ENCOUNTERED) WITHIN LIMITS OF THE PROPOSED INFILTRATIONS SYSTEM DOWN TO THE NATIVE SOIL AND BACKFILLED WITH TITL V SAND.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 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

NOT TO SCALE

2

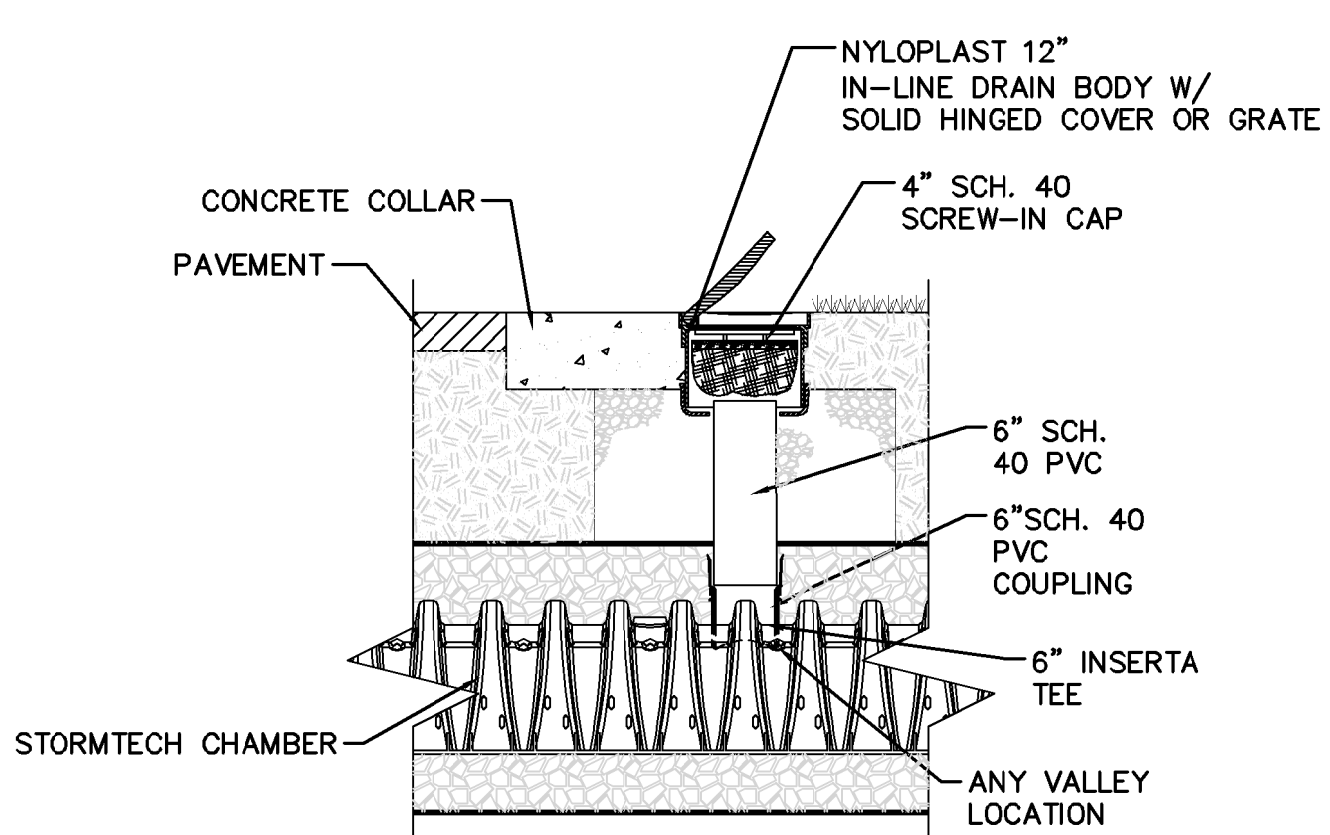


## STORMTECH ISOLATOR ROW\*

## ISOLATOR ROW & INSPECTION PORT

NOT TO SCALE

3

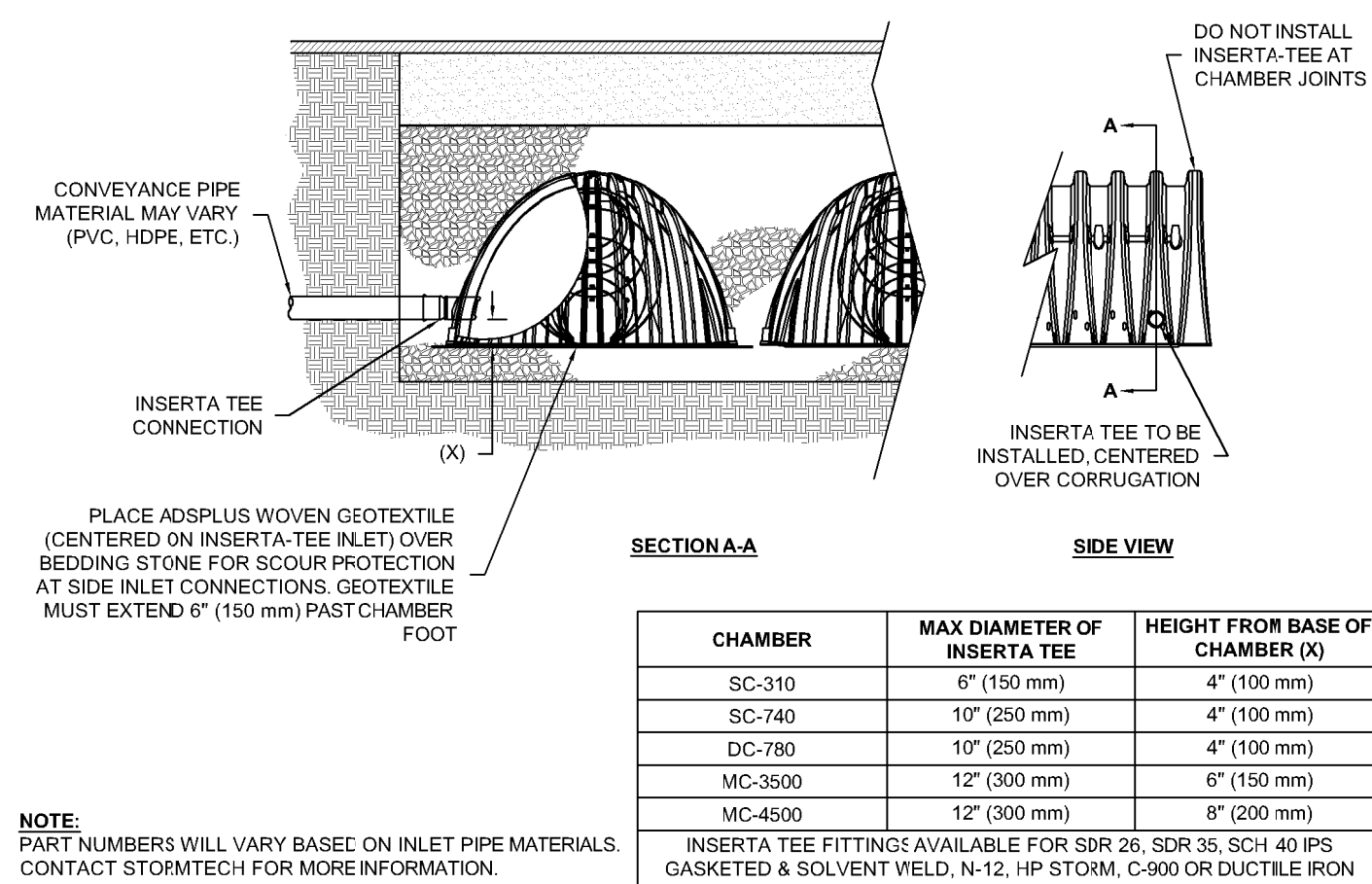


## NOTES:

- INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.
- ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED.

## CONNECTION DETAIL

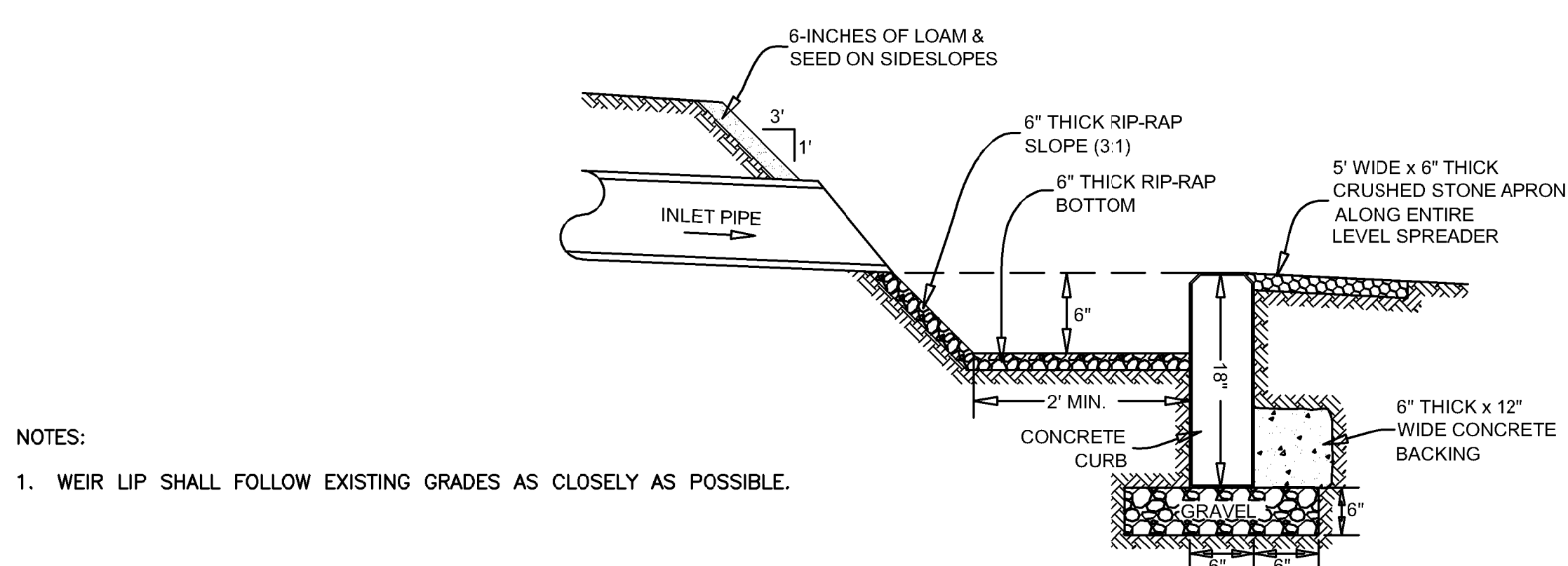
NTS



## INSERTA TEE DETAIL

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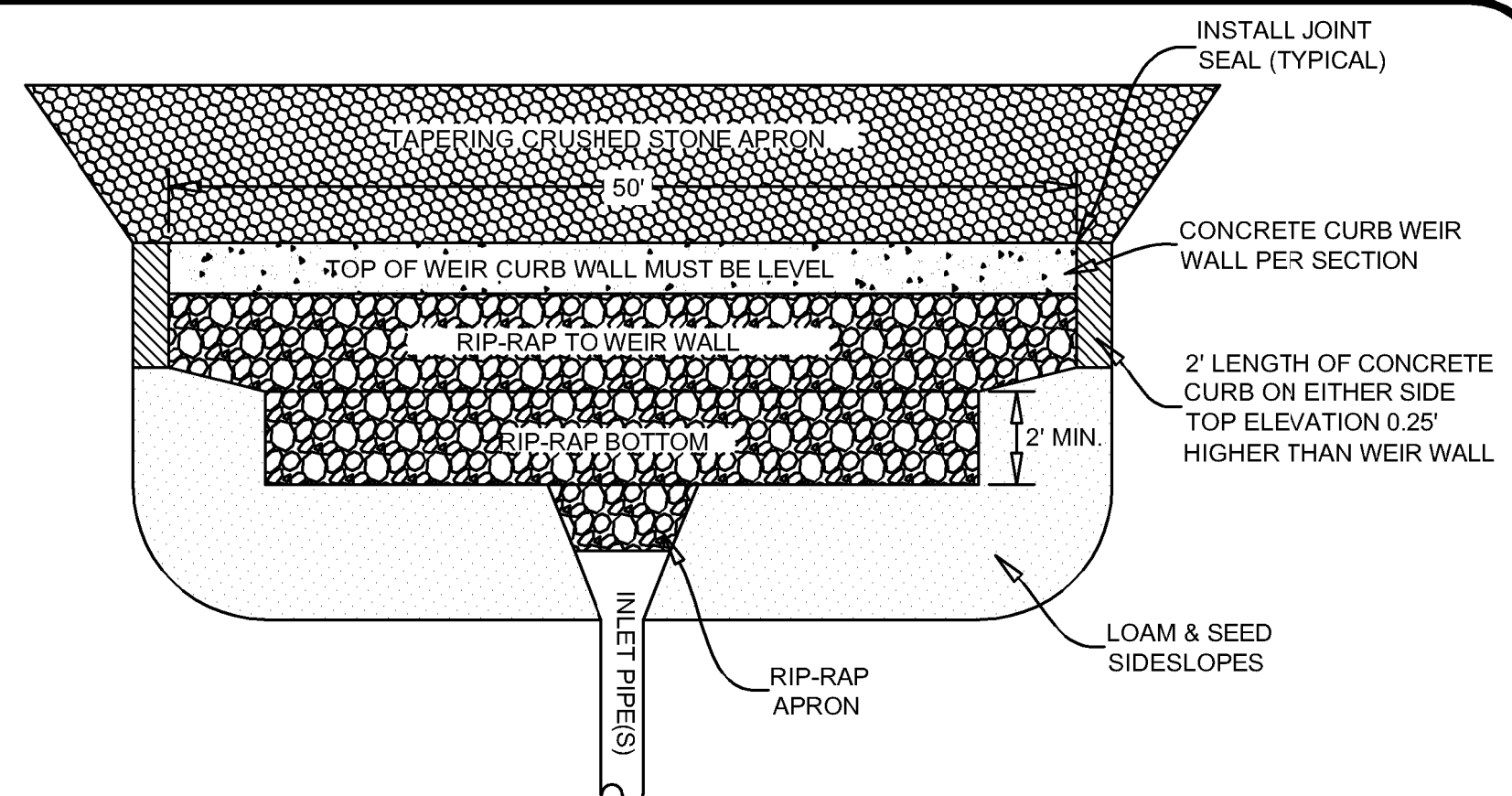
4



## NOTES:

- WEIR LIP SHALL FOLLOW EXISTING GRADES AS CLOSELY AS POSSIBLE.

## TYPICAL SECTIONAL VIEW

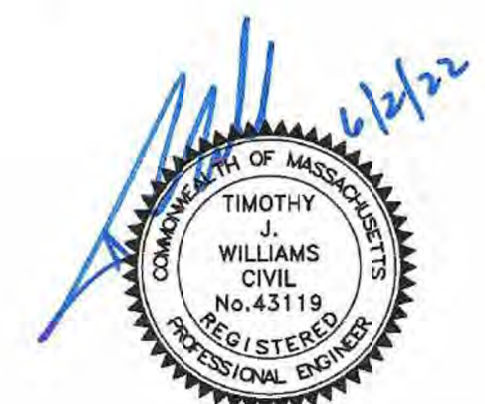


## PLAN VIEW

## LEVEL SPREADER

NOT TO SCALE

5



PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

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1	3/31/2021	Re-issued to ZBA
REV	DATE	DESCRIPTION

## APPLICANT:

CCF QUANNAPOWITT PROPERTY  
COMPANY, LLC  
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:

**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

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## DRAWING TITLE:

DETAILS

## SHEET No.

C-505

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