Site Development Plans for

Woodland Golf Club 4th Hole Improvements

1897 Washington Street, Auburndale, MA 02466

APPLICANT:

WOODLAND GOLF CLUB

1897 WASHINGTON STREET AUBURNDALE, MA 02466



CIVIL ENGINEER:

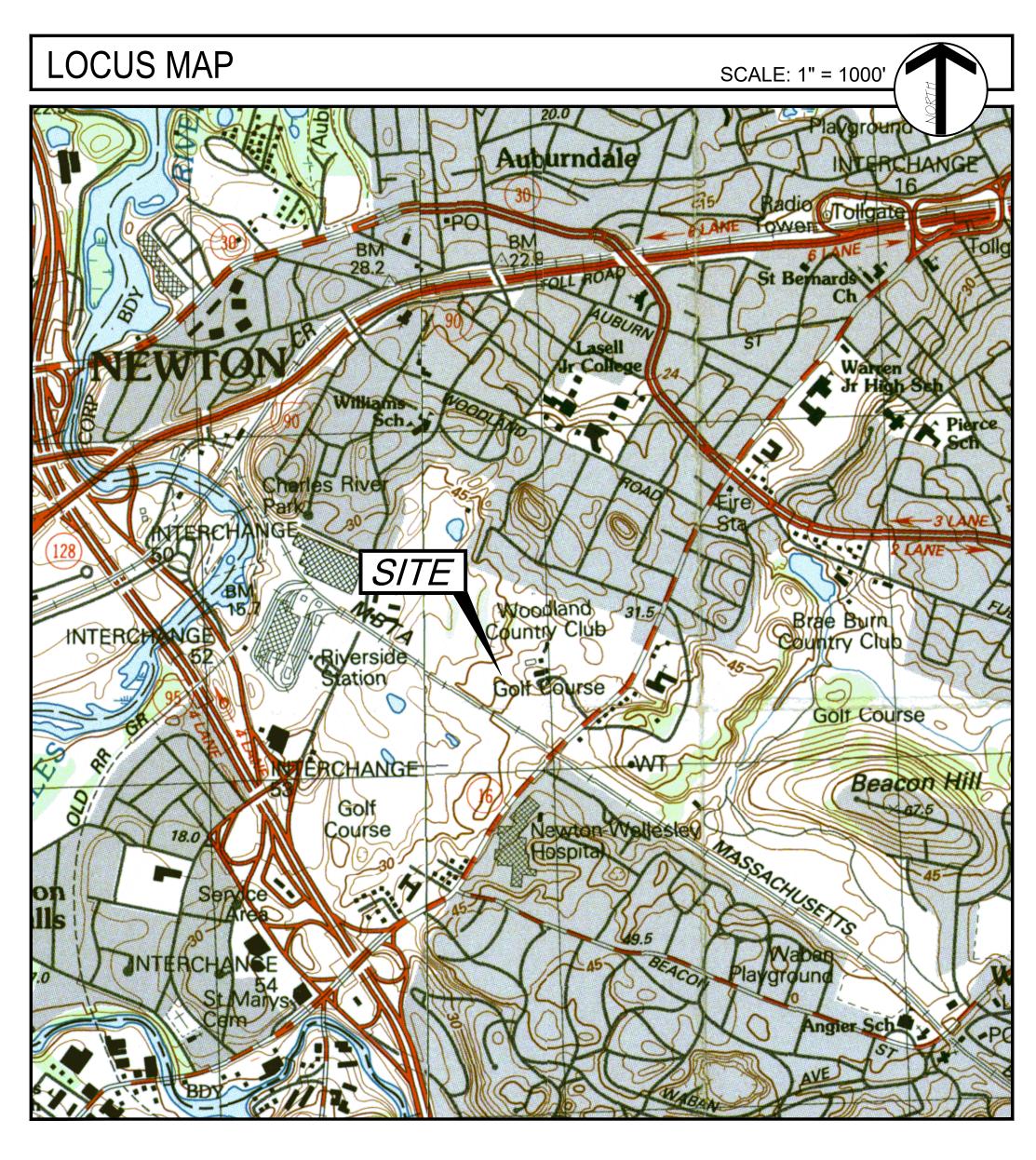
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OWNER / APPLICANT:

WOODLAND GOLF

1897 WASHINGTON ST.
AUBURNDALE, MA 02466



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNICESS THEY ARE
ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL
ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND
SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE
STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING
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SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE
NOTATION "ALTERED BY "POLLOWED BY THEIR SIGNATURE, THE
DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION

PROPOSED SITE
DEVELOPMENT PLANS
FOR
WOODLAND GOLF CLUB
4TH HOLE IMPROVEMENTS

No.	Submittal / Revision	Ару	Ву	Date
◬	NOTICE OF INTENT	ΤK	SA	4/3/24

TITLE SHEET

Designed By: Drawn By: Checked By:
TK SA TK

Issue Date: Project No.: Scale:
4/03/2024 072672

C-001

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- 1. THE EXISTING CONDITIONS INFORMATION SHOWN HEREON IS THE RESULT OF AN ON-THE-GROUND SURVEY PERFORMED BY CHA CONSULTING, INC. IN JUNE OF 2023.
- 2. ALL DEED REFERENCES ARE TO MIDDLESEX SOUTH COUNTY REGISTRY OF DEEDS UNLESS OTHERWISE NOTED.
- 3. TOPOGRAPHY, CONTOURS AND BENCHMARKS ARE BASED ON NEWTON CITY BASE VERTICAL DATUM (NCB). TEMPORARY BENCHMARKS, REFERENCED TO THE DATUM ARE INDICATED ON THE SURVEY. IN THE EVENT THAT BENCHMARKS (TBM'S), ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY ARE DESTROYED, NOT RECOVERABLE OR A DISCREPANCY IS FOUND, THE USER SHOULD NOTIFY THIS FIRM IN WRITING PRIOR TO COMMENCING OR CONTINUING ANY WORK.
- 4. LOCATION OF SUBSURFACE UTILITIES SHOWN HEREON ARE APPROXIMATE AND ADDITIONAL UTILITIES MAY EXIST THAT ARE NOT SHOWN ON THIS PLAN. LOCATIONS ARE COMPILED FROM UTILITY PLANS OF RECORD AND DIG-SAFE FIELD MARKINGS. RIM AND INVERT INFORMATION HAS BEEN COMPILED AND FIELD VERIFIED WHERE POSSIBLE. THIS INFORMATION IS NOT TO BE USED FOR CONSTRUCTION. PRIOR TO ANY CONSTRUCTION, CONTACT DIG-SAFE (1-800-344-7233) TO FIELD VERIFY LOCATION OF ALL UTILITIES.

GENERAL

- 1. PROTECTIONS
- A. PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS, TREES OR VEGETATION.
- B. PROTECT IMPROVEMENTS ON ADJOINING PROPERTIES AND ON OWNER'S PROPERTY
- C. RESTORE DAMAGED IMPROVEMENTS TO ORIGINAL CONDITION AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
- D. CONDUCT OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH OPERATIONS, STREETS, WALKS, AND OTHER ADJACENT FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION. STREETS AND ROADWAYS SHALL BE THOROUGHLY CLEANED AND/OR SWEPT ON A DAILY BASIS OR MORE FREQUENTLY AS REQUIRED BY THE GOVERNING AUTHORITY.
- 2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS DOT SPECIFICATIONS FOR HIGHWAYS AND BRIDGES AND/OR THE APPROPRIATE LOCAL AUTHORITIES.
- ALL SLOPES, UNLESS OTHERWISE SPECIFIED, SHALL BE LOAMED AND SEEDED FOR STABILIZATION AS SOON AS POSSIBLE TO PREVENT EROSION TOWARD RESOURCE AREAS AND BUFFERS, ABUTTING PROPERTIES, OR PUBLIC WAYS. EROSION CONTROL BLANKETS ARE REQUIRED FOR ALL 2H:1V SLOPES. SLOPES MAY NOT EXCEED 2H:1V.
- ANY DEVIATIONS, I.E. "FIELD CHANGES" FROM THE DESIGN PLAN(S) MUST BE APPROVED BY THE DESIGN ENGINEER IN WRITING. CONTRACTOR SHOULD BE AWARE THAT LOCAL AND STATE AUTHORITIES HAVE JURISDICTION AND APPROVALS MUST BE OBTAINED FROM THE APPROPRIATE AUTHORITY PRIOR TO THE IMPLEMENTATION OF THE "FIELD CHANGE." CHA INC. ASSUMES NO LIABILITY OR RESPONSIBILITY FOR WORK ASSOCIATED WITH FIELD CHANGES COMPLETED WITHOUT REGARD TO THE "FIELD CHANGE" PROCEDURE.
- 5. RELOCATION OF ANY UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROPRIATE UTILITY COMPANY AND/OR REGULATORY AGENCY.
- 6. *** DIG SAFE NOTE *** IN ACCORDANCE WITH MGL. CH. 82, SEC. 40 INCLUDING AMENDMENTS, ALL CONTRACTORS SHALL NOTIFY UTILITY COMPANIES AND GOVERNMENT AGENCIES, IN WRITING. OF THE INTENT TO EXCAVATE, BLAST, DEMOLISH, BORE, OR PERFORM OTHER EARTH MOVING OPERATIONS NO LESS THAN 72 HOURS AND NO MORE THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF SUCH WORK (EXCLUSIVE OF SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS) OR CALL "DIG SAFE" AT 1-888-DIG-SAFE
- 7. ADDITIONAL BENCHMARKS TO BE SET BY CONTRACTOR PRIOR TO CONSTRUCTION TO ENSURE QUALITY WORKMANSHIP.
- 8. ANY STILLING AND/OR DETENTION BASINS SHOULD RECEIVE PERIODIC MAINTENANCE DURING CONSTRUCTION TO REMOVE DEPOSITED SILTS AND DEBRIS TO ENSURE PROPERTY DRAINAGE AND SETTLING OF PARTICULATE MATTER.
- 9. ALL MANHOLE COVERS FOR CROSS-COUNTRY LOCATIONS OR IN PUBLIC GATHERING LOCATIONS SHALL BE FITTED WITH BOLT LOCKS OR EQUIVALENT.
- 10. UNLESS OTHERWISE LABELED, ALL REINFORCED CONCRETE PIPE, RCP. SHALL BE CLASS III: ALL DUCTILE IRON PIPE SHALL BE CEMENT LINED CLASS 52: ALL PVC GRAVITY SEWER SHALL BE SDR 35; ALL PRESSURE SEWER SHALL BE SDR 21; ALL HDPE PIPE TO BE N-12 WATER TIGHT JOINT OR APPROVED EQUAL.

SITE WORK

1. CAUTION - NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON DESIGN PLANS AND LIMITED AS-BUILT INFORMATION. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS (EXCLUSIVE OF SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS) PRIOR TO ANY EXCAVATION, DEMOLITION, BORING, OR OTHER EARTH MOVING OPERATIONS TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS AT NO ADDITIONAL EXPENSE TO OWNER.

- A. REFER TO SECTION 310000 EARTHWORK OF THE PROJECT SPECIFICATIONS
- FINISH GRADING
- A. GRADE ALL AREAS WHERE FINISH GRADE ELEVATIONS ARE INDICATED ON DRAWINGS, OTHER THAN PAVED AREAS AND BUILDINGS, INCLUDING EXCAVATED AREAS, FILLED AND TRANSITION AREAS, AND LANDSCAPED AREAS. GRADED AREAS SHALL BE UNIFORM AND SMOOTH, FREE FROM DEBRIS, OR IRREGULAR SURFACE CHANGES. FINISHED SUBGRADE SURFACE SHALL NOT BE MORE THAN 0.10 FEET ABOVE OR BELOW ESTABLISHED SUBGRADE ELEVATIONS, AND ALL GROUND SURFACES SHALL VARY UNIFORMLY BETWEEN INDICATED ELEVATIONS. FINISH DITCHES SHALL BE GRADED TO ALLOW FOR PROPER DRAINAGE WITHOUT PONDING AND IN A MANNER THAT WILL MINIMIZE EROSION POTENTIAL
- B. GRADE SURFACE TO MATCH ADJACENT GRADES AND TO PROVIDE FLOW TO SURFACE DRAINAGE STRUCTURES, OR GRADE AS DESIGNATED ON THE PLANS AFTER FILL PLACEMENT
- THE CONTRACTOR IS RESPONSIBLE FOR GENERAL CLEANUP OF THE PROJECT ON A DAILY BASIS AND AT THE COMPLETION OF THE PROJECT. OPEN TRENCHES, DITCHES, EXCAVATIONS, ETC. SHALL NOT BE PERMITTED TO BE LEFT OPEN OVERNIGHT. CONTRACTOR WILL BACKFILL OR UTILIZE SUITABLE STEEL PLATES FOR THE SECURING OF THE PROJECT SITE PRIOR TO CEASING WORK EACH DAY
- APPROPRIATE TRAFFIC CONTROL, I.E. SIGNAGE, BARRICADES, AND OTHER MEANS, WILL BE SUPPLIED BY THE CONTRACTOR IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL
- UNDER NO CIRCUMSTANCES MAY ANY UTILITY, STRUCTURE, AND/OR REPAIR BE BACKFILLED UNLESS INSPECTED AND APPROVED BY THE TOWN OFFICIALS AND/OR REPRESENTATIVE. RECEIPT OF APPROVAL TO BACKFILL WILL NOT RELEASE THE CONTRACTOR FROM ANY RESPONSIBILITY OR LIABILITY FOR PERFORMANCE TESTS REQUIRED AS PART OF THIS
- 7. PROPER SHORING AND TRENCH BOXES SHALL BE UTILIZED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATORY AGENCIES TO PROVIDE A SAFE WORKING ENVIRONMENT.
- SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS WITH EXPERIENCE IN SHORING DESIGN.
- 8. ALL UTILITIES DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- A. ALL WATER PIPING, VALVES, HYDRANTS, AND FITTINGS ETC. TO CONFORM TO LOCAL GUIDELINES OR AS DIRECTED BY THE WATER DEPARTMENT, CONSTRUCTION OF WATER LINE TO CONFORM TO ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.
- B. ALL WATER PIPE SHALL BE THICKNESS CLASS 52 DUCTILE IRON. ALL PIPES AND FITTINGS SHALL HAVE A CEMENT LINING TWICE THE THICKNESS SPECIFIED IN AWWA C104 AND SHALL HAVE A BITUMINOUS SEAL COAT APPLIES INSIDE AND OUTSIDE CONFORMING TO AWWA C104. "TYTON" OR MECHANICAL JOINTS ARE PERMITTED UNLESS OTHERWISE DIRECTED.
- REFER TO PLUMBING PLANS FOR WATER SERVICE, FIRE PROTECTION, AND SANITARY SEWER CONNECTIONS UNLESS OTHERWISE NOTED.
- 10. CONTRACTOR SHALL OBTAIN APPROVAL FOR ALL TRANSFORMER LOCATIONS FROM THE FIRE DEPARTMENT AND BUILDING INSPECTOR PRIOR TO CONSTRUCTION.

SEWER

ALL TESTING SHALL BE PER CITY OF NEWTON STANDARDS AND SHALL BE WITNESSED BY A DPW INSPECTOR

- 1. SEWER MANHOLES SHALL BE VACUUM TESTED.
- 2. SEWER PIPES SHALL BE PRESSURE TESTED.
- 3. THESE NOTES ARE INTENDED TO SUPPLEMENT THE LOCAL REQUIREMENTS FOR MATERIALS AND WORKMANSHIP.
- WATER AND SEWER MAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST LOCAL AND STATE CODES INCLUDING THE RECOMMENDATIONS OF THE AMERICAN WATER WORKS ASSOCIATION AND THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION TECHNICAL REPORT 16. CONSTRUCTION SHALL PROCEED IN A WORKMANLIKE MANNER WITH STATE-OF-THE-ART CONSTRUCTION TECHNIQUES.
- THE CONTRACTOR SHALL INSULATE WATER AND SEWER MAINS AS INDICATED ON THE PLANS OR WHEN DESIGN OR CONSTRUCTION ENCUMBRANCES DICTATE ALIGNMENT TO OCCUR ABOVE THE FROST LINE. PROCUREMENT AND INSTALLATION OF PIPE INSULATION SHALL CONFORM TO THE REQUIREMENTS LISTED IN THE LATEST MASS, DOT STANDARD SPECIFICATIONS FOR SECTION 301,60P AND MATERIAL SPECIFICATION M9.11.1. THE PIPE INSULATION SHALL BE PRE-MOLDED TYPE CELLULAR GLASS INSULATION WITH ALUMINUM JACKET CONFORMING TO THE LATEST REQUIREMENTS OF ASTM-522 OR APPROVED EQUAL
- THE CONTRACTOR SHALL FOLLOW ALTERNATE CONSTRUCTION PROCEDURES WHEN DESIGN OR CONSTRUCTION ENCUMBRANCES PREVENT HORIZONTAL SEPARATION OF 10 FEET OR THE ALTERNATE OF 18 INCHES OF VERTICAL SEPARATION BETWEEN WATER AND SEWER MAINS. IN AREAS WHERE THE ABOVE OFFSETS CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE CONSTRUCTED WITH MEGA-LUG MECHANICAL TYPE FITTINGS OR APPROVED EQUAL FOR A DISTANCE OF 10-FEET ON EITHER SIDE OF THE CROSSING OR LATERAL ENCROACHMENT AND SHALL STRADDLE A FULL LENGTH OF CLASS 52 CEMENTED LINED DUCTILE IRON WATER PIPE.
- 7. THE DEFLECTION IN ALL GRAVITY SEWER PIPE SHALL BE TESTED USING A GO, NO-GO MANDREL TEST TO ENSURE THAT PROPER INSTALLATION HAS OCCURED. TEST SHALL CONFORM WITH PIPE MANUFACTURER'S RECOMMENDATIONS AND SHALL NOT INDICATE MORE THAN 7.5% DEFLECTION, U.O.N.
- 8. BELOW IS A GENERAL PROCEDURE FOR TESTING. COORDINATE WITH DPW INSPECTOR PRIOR TO TESTING.

EXFILTRATION TEST FOR NEW SEWER MAIN:

- 1. PREPARATION OF TEST, AFTER THE MANHOLE HAD BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES AND THOSE EXTERIOR JOINTS WITHIN SIX FEET OF THE GROUND SURFACE SHALL BE FILLED AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR. THE TEST SHALL BE MADE PRIOR TO PLACING THE SHELF AND INVERT AND BEFORE FILLING AND POINTING THE HORIZONTAL JOINTS BELOW THE 6- FOOT DEPTH LINE. IF THE GROUNDWATER TABLE HAS BEEN ALLOWED TO RISE ABOVE THE BOTTOM OF THE MANHOLE, IT SHALL BE LOWERED FOR THE DURATION OF THE TEST. ALL PIPES AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLE PLUGGED AND PLUGS BRACED TO PREVENT BLOW OUT
- 2. TEST PROCEDURE. THE MANHOLE SHALL THEN BE FILLED WITH WATER TO THE TOP OF THE CONE SECTION. IF THE EXCAVATION HAS NOT BEEN BACKFILLED AND OBSERVATION INDICATED NO VISIBLE LEAKAGE, THAT IS, NO WATER VISIBLY MOVING DOWN THE SURFACE OF THE MANHOLE, THE MANHOLE MAY BE CONSIDERED TO BE SATISFACTORILY WATERTIGHT. IF THE TEST AS DESCRIBED ABOVE IS UNSATISFACTORY AS DETERMINED BY THE ENGINEER OR IF THE MANHOLE EXCAVATION HAS BEEN BACKFILLED THE TEST SHALL BE CONTINUED. A PERIOD OF TIME MAY BE PERMITTED, IF THE CONTRACTOR WISHES, TO ALLOW FOR
- 3. AT THE END OF THIS PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE, IF NECESSARY, AND THE MEASURING TIME OF AT LEAST EIGHT HOURS BEGUN. AT THE END OF THE TEST PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE, MEASURING THE VOLUME OF WATER ADDED. THIS AMOUNT SHALL BE EXTRAPOLATED TO A 24-HOUR RATE AND THE LEAKAGE DETERMINED ON THE BASIS OF DEPTH. THE LEAKAGE FOR EACH MANHOLE SHALL NOT EXCEED ONE GALLON PER VERTICAL FOOT FOR A 24-HOUR PERIOD. IF THE TEST FAILS THIS REQUIREMENTS, BY THE LEAKAGE DOES NOT EXCEED THREE GALLONS PER VERTICAL FOOT PER DAY, REPAIRS BY APPROVED METHODS MAY BE MADE AS DIRECTED BY THE ENGINEER TO BRING THE LEAKAGE WITHIN THE ALLOWABLE RATE ON ONE GALLON PER VERTICAL FOOT PER DAY. LEAKAGE DUE TO A DEFECTIVE SECTION OR JOINT OF EXCEEDING THE THREE-GALLON PER VERTICAL FOOT PER DAY RATE. SHALL BE CAUSE FOR THE REJECTION OF THE MANHOLE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UNCOVER. DISASSEMBLE, RECONSTRUCT OR REPLACE THE MANHOLE AS DIRECTED BY THE ENGINEER. THE MANHOLE SHALL THEN BE RE-TESTED AND, IF SATISFACTORY INTERIOR JOINTS SHALL BE FILLED AND POINTED.

4. BACKFILLING. THE TEST MAY BE CONDUCTED EITHER BEFORE OR AFTER BACKFILLING AROUND THE MANHOLE. HOWEVER, IF THE CONTRACTOR ELECTS TO BACKFILL PRIOR TO TESTING, IT SHALL BE AT HIS OWN RISK AND IT SHALL BE INCUMBENT UPON THE CONTRACTOR TO DETERMINE THE REASON FOR ANY FAILURE OF THE TEST. NO ADJUSTMENT IN THE LEAKAGE ALLOWANCE WILL BE MADE FOR UNKNOWN CAUSES SUCH AS LEAKING PLUGS, ABSORPTION, ETC., I.E., IT WILL BE ASSUMED THAT ALL LOSS OF WATER DURING THE TEST IS A RESULT OF LEAKS THROUGH THE JOINTS OF THROUGH THE CONCRETE. FURTHERMORE, THE CONTRACTOR SHALL TAKE ANY STEPS NECESSARY TO ASSURE THE ENGINEER THAT THE WATER TABLE IS BELOW THE BOTTOM OF THE MANHOLE THROUGHOUT THE TEST.

VACUUM TEST FOR NEW SEWER MAIN:

- 1. THE VACUUM TESTING SYSTEM SHALL BE SUPPLIED BY NPC SYSTEMS, INC. OR EQUIVALENT AS APPROVED BY THE ENGINEER. THE TESTING SHALL BE DONE IMMEDIATELY AFTER ASSEMBLY OF THE MANHOLE AND BEFORE BACKFILLING. A 60 LB-FT. TORQUE WRENCH SHALL BE USED TO TIGHTEN EXTERNAL CLAMPS THAT SECURE THE TEST COVER TO THE TOP OF THE MANHOLE. ALL LIFT HOLES SHALL BE PLUGGED WITH A NON-SHRINKING MORTAR. THE CONTRACTOR SHALL PLUG THE PIPE OPENINGS, TAKING CARE TO SECURELY BRACE THE PLUGS AND THE PIPE TO PREVENT THE PLUGS FROM BEING DRAWN INTO THE MANHOLE.
- 2. A VACUUM OF 10 INCHES OF MERCURY, HG (4.9 PSI), SHALL BE DRAWN AND THE VACUUM PUMP SHUT OFF. THE MANHOLE PASSES THE TEST IF THE VACUUM REMAINS GREATER THAN OR EQUAL TO 9 INCHES HG (4.4 PSI) FOR A PERIOD GREATER THAN ONE MINUTE FOR MANHOLES UP TO 10 FEET DEEP; ONE MINUTE FIFTEEN SECONDS FOR MANHOLES 10-15 FEET DEEP: AND ONE MINUTE THIRTY SECONDS FOR MANHOLES 15-25 FEET DEEP.
- 3. IF THE MANHOLE FAILS THE INITIAL TEST, THE CONTRACTOR SHALL LOCATE THE LEAKS AND MAKE PROPER REPAIRS. LEAKS MAY BE FILLED WITH A WET SLURRY OF ACCEPTED QUICK SETTING MATERIAL. IF THE MANHOLE FAILS THE VACUUM TEST AGAIN, ADDITIONAL REPAIRS MUST BE MADE, AND THE MANHOLE MUST BE TESTED BY EXFILTRATION AS OUTLINED IN PARAGRAPH 3.03 (A). FIELD QUALITY CONTROL
- 1. THE PIPELINES SHALL BE MADE AS NEARLY WATERTIGHT AS PRACTICABLE, AND LEAKAGE TESTS AND MEASUREMENTS SHALL BE MADE AFTER THE PIPELINE HAS BEEN BACKFILLED
- 2. WHERE THE GROUNDWATER LEVEL IS MORE THAN 1 FT ABOVE THE TOP OF THE PIPE AT ITS UPPER END, THE CONTRACTOR SHALL CONDUCT EITHER INFILTRATION TESTS OR LOW
- 3. WHERE THE GROUNDWATER LEVEL IS LESS THAN 1 FT. ABOVE THE TOP OF THE PIPE AT ITS UPPER END, THE CONTRACTOR SHALL CONDUCT EITHER EXFILTRATION TESTS OR LOW PRESSURE AIR TESTS.
- 4. AT THE TIME OF THE TEST, THE CONTRACTOR SHALL DETERMINE THE GROUNDWATER ELEVATION FROM OBSERVATION WELLS, EXCAVATIONS OR OTHER MEANS, ALL SUBJECT TO
- 5. FOR MAKING THE LOW PRESSURE AIR TESTS, THE CONTRACTOR SHALL USE EQUIPMENT SPECIFICALLY DESIGNED AND MANUFACTURED FOR THE PURPOSE OF TESTING SEWER PIPELINES USING LOW PRESSURE AIR. THE EQUIPMENT SHALL BE PROVIDED WITH AN AIR REGULATORY VALVE OR AIR SAFETY SO SET THAT THE INTERNAL AIR PRESSURE IN THE
- 6. THE LEAKAGE TEST USING LOW PRESSURE AIR SHALL BE MADE ON EACH MANHOLE-TO-MANHOLE SECTION OF PIPELINE AFTER PLACEMENT OF THE BACKFILL.
- 7. PNEUMATIC PLUGS SHALL HAVE A SEALING LENGTH EQUAL TO OR GREATER THAN THE DIAMETER OF THE PIPE TO BE TESTED. PNEUMATIC PLUGS SHALL RESIST INTERNAL TEST PRESSURES WITHOUT REQUIRING EXTERNAL BRACING OR BLOCKING.
- 8. ALL AIR USED SHALL PASS THROUGH A SINGLE CONTROL PANEL.
- 9. LOW PRESSURE AIR SHALL BE INTRODUCED INTO THE SEALED LINE UNTIL THE INTERNAL AIR PRESSURE REACHES 4 PSIG. GREATER THAN THE MAXIMUM PRESSURE EXERTED BY THE GROUNDWATER THAT MAY BE ABOVE THE INVERT OF THE PIPE AT THE TIME OF THE TEST. HOWEVER, THE INTERNAL AIR PRESSURE IN THE SEALED LINE SHALL NOT BE ALLOWED TO EXCEED 8 PSIG. WHEN THE MAXIMUM PRESSURE EXERTED BY THE GROUNDWATER IS GREATER THAN 4 PSIG. THE CONTRACTOR SHALL CONDUCT ONLY AN INFILTRATION TEST.
- 10. AT LEAST TWO MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE IN THE SECTION UNDER TEST. AFTER THE STABILIZATION PERIOD, THE LOW PRESSURE AIR SUPPLY HOSE SHALL BE QUICKLY DISCONNECTED FROM THE CONTROL PANEL. THE TIME REQUIRED IN MINUTES FOR THE PRESSURE IN THE SECTION UNDER TEST TO DECREASE FROM 3.5 TO 2.5 PSIG (GREATER THAN THE MAXIMUM PRESSURE EXERTED BY GROUNDWATER THAT MAY BE ABOVE THE INVERT OF THE PIPE) SHALL NOT BE LESS THAN THAT SHOWN IN THE FOLLOWING TABLE:

PIPE DIAMETER IN INCHES VS. MINUTES

- 6" 5.0 MIN. 40 SEC 8" 7.0 MIN. 34 SEC
- 10" 9.0 MIN. 26 SEC. 12" 11.0 MIN. 20 SEC
- 15" 14.0 MIN. 10 SEC 18" 17.0 MIN 0 SEC
- 21" 19.0 MIN. 50 SEC. 24" 22.0 MIN. 40 SEC
- 27" 25.0 MIN. 30 SEC.
- 11.FOR MAKING THE INFILTRATION AND EXFILTRATION TESTS, THE CONTRACTOR SHALL FURNISH SUITABLE TEST PLUGS, WATER PUMPS, AND APPURTENANCES, AND ALL LABOR REQUIRED TO PROPERLY CONDUCT THE TESTS ON SECTIONS OF ACCEPTABLE LENGTH.
- 12. FOR MAKING THE INFILTRATION TESTS, UNDERDRAINS, IF USED, SHALL BE PLUGGED AND OTHER GROUNDWATER DRAINAGE SHALL BE STOPPED TO PERMIT THE GROUNDWATER TO RETURN TO ITS NORMAL LEVEL INSOFAR AS PRACTICABLE
- 13. UPON COMPLETION OF A SECTION OF THE SEWER. THE CONTRACTOR SHALL DEWATER IT AND CONDUCT AN EXFILTRATION TEST TO MEASURE THE INFILTRATION FOR AT LEAST 24 HOURS. THE AMOUNT OF INFILTRATION, INCLUDING MANHOLES, TEES, AND CONNECTIONS, SHALL NOT EXCEED 200 GAL, PER INCH DIAMETER PER MILE OF SEWER PER 24 HOURS.
- 14. FOR MAKING THE EXFILTRATION TESTS, THE SEWERS SHALL BE SUBJECTED TO AN INTERNAL PRESSURE BY PLUGGING THE PIPE AT THE LOWER END AND THEN FILLING THE PIPELINES AND MANHOLES WITH CLEAN WATER TO A HEIGHT OF 2 FT. ABOVE THE TOP OF THE SEWER AT ITS UPPER END. WHERE CONDITIONS BETWEEN MANHOLES, MAY RESULT IN TEST PRESSURES WHICH WOULD CAUSE LEAKAGE AT THE STOPPERS IN BRANCHES, PROVISIONS SHALL BE MADE BY SUITABLE TIES, BRACES, AND WEDGES TO SECURE THE STOPPERS AGAINST LEAKAGE RESULTING FROM THE TEST PRESSURE
- 15. THE RATE OF LEAKAGE FROM THE SEWERS SHALL BE DETERMINED BY MEASURING THE AMOUNT OF WATER REQUIRED TO MAINTAIN THE LEVEL 2 FT. ABOVE THE TOP OF THE PIPE.
- 16. LEAKAGE FROM THE SEWERS UNDER TEST SHALL NOT EXCEED THE REQUIREMENTS FOR LEAKAGE INTO SEWERS AS HEREIN BEFORE SPECIFIED.
- 17. THE SEWERS SHALL BE TESTED BEFORE ANY CONNECTIONS ARE MADE TO BUILDINGS.
- 18. THE CONTRACTOR SHALL CONSTRUCT WEIRS OR OTHER MEANS OF MEASUREMENTS AS MAY BE REQUIRED
- 19. SUITABLE BULKHEADS SHALL BE INSTALLED, AS REQUIRED, TO PERMIT THE TEST OF THE SEWER.
- 20.SHOULD THE SECTIONS UNDER TEST FAIL TO MEET THE REQUIREMENTS, THE CONTRACTOR SHALL DO ALL WORK OF LOCATING AND REPAIRING LEAKS AND RETESTING AS THE ENGINEER MAY REQUIRE WITHOUT ADDITIONAL COMPENSATION
- 21.IF, IN THE JUDGMENT OF THE ENGINEER, IT IS IMPRACTICABLE TO FOLLOW THE FOREGOING PROCEDURES FOR ANY REASON, ACCEPTABLE MODIFICATIONS IN THE PROCEDURES SHALL BE MADE AS REQUIRED, BUT IN ANY EVENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ULTIMATE TIGHTNESS OF THE LINE WITHIN THE ABOVE TEST REQUIREMENTS.

RETAINING WALL NOTES

- 1. THE RETAINING WALLS ARE SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY. IT DOES NOT REPRESENT OR INTEND TO DETAIL THE REQUIREMENTS FOR DESIGN AND/OR CONSTRUCTION OF THE WALL. OTHER FACTORS WHICH CANNOT BE REASONABLY FORESEEN AT THIS TIME MAY REQUIRE ALTERATION TO THE WALL CONCEPT INCLUDING BUT NOT LIMITED TO GEOGRID REINFORCEMENT, ALTERNATE CROSS SECTIONS, MEANS & METHODS OF CONSTRUCTION, AND TEMPORARY SHORING AND STABILIZATION OF SOILS.
- 2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN DETAILED DESIGN AND CONSTRUCTION DRAWINGS FROM THE MANUFACTURER, INCLUDING APPLICABLE CALCULATIONS PRIOR TO THE START OF WALL CONSTRUCTION. ALL CALCULATIONS AND DRAWINGS SHALL BE PREPARED BY A QUALIFIED ENGINEER EXPERIENCED IN
- SEGMENTAL RETAINING WALL DESIGN TO INCLUDE INTERFACE AND FOUNDATION REQUIREMENTS FOR WALL 3. THE DESIGN SHALL BE BASED UPON THE GEOTECHNICAL INVESTIGATION REPORT TO ENSURE PROPER DATA IS AVAILABLE TO DESIGN THE WALL
- 4. WALLS OVER 30" IN HEIGHT REQUIRE A SAFETY FENCE/BARRIER ALONG THE ENTIRE LENGTH OF THE WALL.
- 5. THE CONTRACTOR SHALL SUBMIT CERTIFICATIONS AND WARRANTY INFORMATION TO THE OWNER TO SUBSTANTIATE THAT THE PROPOSED WALL CONSTRUCTION MATERIALS MEET THE DESIGN STANDARD SPECIFICATIONS OF THE SPECIFIED WALL SYSTEM
- 6. THE SITE DESIGN ENGINEER ASSUMES NO LIABILITY FOR INTERPRETATION OF SUBSURFACE CONDITIONS. SUITABILITY OF SOIL DESIGN PARAMETERS AND INTERPRETATIONS OF SUBSURFACE GROUNDWATER CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE WALL DESIGN ENGINEER IS CONTACTED IF CONDITIONS VARY
- 7. RETAINING WALL SHALL BE DESIGNED FOR SATURATED BACKFILL CONDITIONS.
- 8. CONTRACTOR TO PROVIDE SHOP DRAWING PRIOR TO CONSTRUCTION.

LEGEND - EXISTING

	\mathcal{U}			
		BUILDING LINE	⊠ EB	ELECTRIC BOX
		PARCEL BOUNDARY LINE		WETLAND FLAG
		EASEMENT LINE	O PO!	
		ADJOINING PARCEL LINE	⊙ B0L	BOLLARD
		STREET/HIGHWAY LINE	þ	SINGLE POST SIGN
		EDGE OF ASPHALT	0	DOUBLE POST SIGN
		EDGE OF CONCRETE EDGE OF GRAVEL/CRUSHED STONE		MONITORING WELL
W		WATER LINE	O POST	POST
D		DRAIN LINE	Æ	HANDICAP ICON
s		SEWER LINE	Ch	TITAL TOOK
G		GAS LINE OVERHEAD UTILITY LINE	TREE	PINE TREE
OHW	<u> </u>	W/POWER POLE TREE LINE	TREE	DECIDUOUS TREE
E	☑ TEL PED	TELEPHONE PEDESTAL	♦ SHRUB	SHRUB
\triangleright	∠ gv	GAS VALVE	O 55454	FLOOR DRAIN
	GAS MTR	GAS METER	O DRAIN	SQUARE CATCH BASIN
	MHSA	SEWER MANHOLE	· CB	SQUARE CATCH DASIN
	◯ VENT	VENT	· MHST	STORM MANHOLE
5	Q	UTILITY POLE	< INV.	INVERT
3	*	LIGHT POLE	⊙ WSO	WATER SHUT OFF
	-	GUY WIRE	⊥ wv	WATER VALVE
	. MHE	ELECTRIC MANHOLE	-Q- HYD	HYDRANT

LEGEND - PROPOSED

585	MAJOR CONTOUR
586	MINOR CONTOUR
w	DOMESTIC WATER
	FIRE PROTECTION
— — — UE— — —	UNDERGROUND ELECTRIC SERVICE
———Е———	UNDERGROUND SITE ELECTRIC
———s———	SANITARY SEWER
———FM———	FORCEMAIN
	STORM SEWER
— — GAS— — —	NATURAL GAS
xx	CHAINLINK FENCE
	CATCH BASIN
	DOUBLE CATCH BASIN
©	DRAIN MANHOLE
▶‡ 	HYDRANT ASSEMBLY
•	LINE VALVE
Ø	POST INDICATOR VALVE
©	SANITARY MANHOLE
	SEWER PUMP
	RETAINING WALL
•-□	LIGHT FIXTURE

CONCRETE AND REINFORCING STEEL NOTES

PRESUMED ALLOWABLE SOIL BEARING CAPACITY IS 4000 PSF. VERIFY IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

ALL STRUCTURAL DRAWINGS ARE TO BE USED WITH THE ENTIRE SET OF DRAWINGS.

ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED. METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIALS IS THE CONTRACTOR'S RESPONSIBILITY

THE CONTRACTOR IS RESPONSIBLE FOR DISSEMINATION OF ALL REVISIONS AND REQUIREMENTS TO THE SUBCONTRACTORS. REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF ALL DRAWINGS AND SPECIFICATIONS. HOWEVER THE ENGINEER DOES NOT GUARANTEE AGAINST HUMAN ERROR AND

FOR THAT REASON IT IS IMPERATIVE THAT THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND DETAILS AND MUST VERIFY ALL CONDITIONS AND DIMENSIONS AT THE SITE. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING.

2. CODE CONFORMANCE TO COMPLY WITH THE LATEST RECOMMENDATIONS OF THESE STANDARDS. - ACI 301- "STRUCTURAL CONCRETE FOR BUILDINGS"

ACI 315- "DETAILING CONCRETE WORK" ACI 318- "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"

- ACI 322- "BUILDING CODE REQUIREMENTS FOR STRUCTURAL PLAIN CONCRETE"

- ACI 347- "FORM WORK" 3. MATERIALS

- APPROVED, READY MIXED CONCRETE HAVING AN MINIMUM COMPRESSIVE STRENGTH (fc) OF 3,500 PSI AT 28 DAYS WITH 3/4"AGGREGATE MAX., SLUMP 3-5 INCHES UNLESS OTHERWISE - PROVIDE AIR-ENTRAINMENT ADMIXTURE TO AID THE FREEZE/THAW RESISTANCE OF ALL EXPOSED CONCRETE

REINFORCING STEEL - ASTM A615 GRADE 60 DEFORMED BARS, ASTM A185 WELDED WIRE FABRIC

- SMOOTH PLYWOOD FORMS FOR EXPOSED SLABS OR VERTICAL SURFACES. BOARD FORMS FOR FOOTINGS OR UNEXPOSED CONCRETE SURFACES. NO EARTH

- NONMETALLIC, NON-SHRINK GROUT UNDER BASE PLATES OR BEARING PLATES

4. EXECUTION

CONCRETE

CONCRETE: - PLACE CONCRETE ACCORDING TO THE APPROVED METHODS OF ACL 301.89. STRENGTH (fc) OF 3500 PSI AT 28 DAYS, SI LIMP 3-5 INCHES LINI ESS OTHERWISE NOTED WITH MAXIMUM 3/4 INCH AGGREGATE AND MAXIMUM 6% AIR ENTERTAINMENT FOR EXTERIOR CONCRETE EXPOSED TO MOISTURE.

- PLACE REINFORCING USING STANDARD BAR SUPPORTS TO PROVIDE PROPER CLEARANCE AND PREVENT DISPLACEMENT DURING CONCRETE OPERATIONS. LAP CONTINUOUS BARS 40 DIAMETERS. PROVIDE THE FOLLOWING MINIMUM CONCRETE COVERAGE:

 3" CONCRETE PLACED AGAINST EARTH - 2" FORMED CONCRETE EXPOSED TO EARTH, WEATHER, OR WATER

- 2" SLABS ON GRADE (MINIMUM FROM TOP) - 2" FRAMED SLABS (NOT EXPOSED TO WEATHER) 2" FRAMED SLABS (EXPOSED TO WEATHER)

- PLACE DEFORMED BARS IN ACCORDANCE WITH THE LATEST EDITION OF CRSL "RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS." ALL WELDED. WIRE MESH SHALL CONFORM TO ASTM A185, LAP TWO SQUARES AT ALL JOINTS AND AND TIE AT 3'-0" ON CENTER, PROVIDE (2) #5 BARS EACH SIDE OF ALL OPENINGS IN WALLS AND SLABS, BARS TO EXTEND 24" BEYOND EDGE OF OPENINGS. (FOR SIZE AND LOCATION OF OPENINGS REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS). NO HORIZONTAL CONSTRUCTION JOINTS ARE ALLOWED UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS OR ALLOWED IN WRITING BY THE ENGINEER. ALL GROUT FOR BASE PLATES SHALL BE NON-SHRINK AND NON-METALLIC WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI

REINFORCING BAR EMBEDMENT LENGTH STANDARD HOOK

FORM WORK

- PROPERLY BRACE AND SHORE FORM WORK TO MAINTAIN ALIGNMENT AND TOLERANCES IN ACCORDANCE TO ACI 347. - DETAILS NOT SHOWN IN DRAWINGS SHALL BE IN ACCORDANCE WITH ACI DETAILING MANUAL (ACI 315).

- CONTRACTOR SHALL MAKE PROVISIONS TO HAVE FOUR CYLINDERS CAST FOR EACH (50) CUBIC FEET OF CONCRETE POURED OR FOR ANY ONE DAY OPERATION.

ACCORDANCE TO ASTM C39. 6. EXCAVATION & COMPACTED FIL - COMPACTED FILL SHALL BE PLACED IN LEVEL, UNIFORM LIFTS NOT EXCEEDING 8 INCHES IN UNCOMPACTED THICKNESS AND BE COMPACTED TO AT LEAST

TESTING LABORATORY SHALL BE RESPONSIBLE FOR MAKING AND CURING SPECIMENS IN CONFORMANCE TO ASTM C31 AND TESTING SPECIMENS IN

COMPLETED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER AND STRUCTURAL ENGINEER. 7 EXPANSION CONTRACTION AND CONSTRUCTION JOINTS

- FILL TO CONFORM TO THE PROJECT SPECIFICATIONS FOR STRUCTURAL FILL OR AS DIRECTED BY THE ENGINEER. BACKFILL AND EXCAVATION TO BE

- CONTRACTOR SHALL PROVIDE CONTRACTION JOINTS IN WALLS AND SLABS NOT TO EXCEED 20' (OR EQUALLY SPACED) AND EXPANSION JOINTS NOT TO EXCEED 90' (IF APPLICABLE) ALL CONSTRUCTION JOINTS SHALL HAVE ROUGHENED, KEYED, AND/OR BONDING AGENT APPLIED TO THE CONCRETE LAYING SURFACES AS DIRECTED BY THE ENGINEER OR TO THE MOST STRINGENT AC1 318 STANDARDS

- ALL EXPOSED CONCRETE SHALL BE FINISHED TO PROJECT ARCHITECTURAL STANDARDS OR AS DIRECTED BY THE ENGINEER. ALL EXPOSED CORNERS SHALL BE CHAMFERED. - ALL VOIDS, POCKETS, AND DEFORMATIONS IN THE EXPOSED FACE OF WALL SHALL BE CORRECTED TO A SMOOTH, UNIFORM FINISH OR AS DIRECTED BY THE ENGINEER.

WATER TESTING

ALL TESTING SHALL CONFORM TO CITY OF NEWTON STANDARD SPECIFICATIONS. A CITY INSPECTOR SHALL BE PRESENT FOR ALL WATER TESTING AND SAMPLING PROCEDURES.

1. REQUIRED TESTS FOR WATERLINES AND FORCE MAINS:

95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557.

A. PERFORM THE FOLLOWING AFTER THE PIPE HAS BEEN INSTALLED AND PRIOR TO FINAL ACCEPTANCE:

A.1. PRESSURE TEST. / A.2. LEAKAGE TEST. PRESUMPTIVE HYDROSTATIC TESTS MAY BE PERFORMED WHEN THE SYSTEM IS PARTIALLY BACKFILLED TO "CHECK" THE WORK, BUT FINAL ACCEPTANCE SHALL

BE BASED ON HYDROSTATIC TESTS PERFORMED ON THE FINISHED SYSTEM AFTER IT IS COMPLETELY BACKFILLED.

A. TEST PIPING TO 1.5 TIMES THE PIPE WORKING PRESSURE, OR 150 PSI, WHICHEVER IS GREATER. MEASURE TEST PRESSURES AT THE LOWEST POINT IN THE PIPE SECTION AND CORRECT TO THE ELEVATION OF THE GAUGE.

B. RELIEVE TRAPPED AIR AT THE SECTION HIGH POINTS THROUGH HYDRANTS, OR TAPS INSTALLED FOR THIS PURPOSE, PROVIDED TEMPORARY INSTALLATIONS ARE REMOVED AND PLUGGED AFTER ACCEPTANCE

MAINTAIN THE TEST PRESSURE FOR A PERIOD OF TWO (2) HOURS. AT THE END OF THE TEST PERIOD, IF THE TEST PRESSURE REMAINS CONSTANT, THE PIPE SECTION SHALL HAVE PASSED THE TEST. IF THE PRESSURE HAS DROPPED. IT SHALL BE BROUGHT BACK TO THE TEST PRESSURE BY PUMPING A KNOWN VOLUME OF WATER (BY PUMPING FROM A GRADUATED CONTAINER OR BY METERING) BACK INTO THE PIPE. THE VOLUME OF WATER THUS USED, REPRESENTING LEAKAGE FROM THE PIPE, SHALL BE RECORDED. IF THE LEAKAGE IS LESS THAN THE ALLOWABLE LEAKAGE SPECIFIED BELOW, THE PIPE SHALL HAVE PASSED THE TEST. IF THE LEAKAGE EXCEEDS THE ALLOWABLE LEAKAGE SPECIFIED, THE CONTRACTOR SHALL LOCATE THE LEAK, PERMANENTLY REPAIR THE SECTION OF PIPE WHERE THE LEAK IS OCCURRING TO THE SATISFACTION OF THE ENGINEER, AND RETEST THE PIPE AS SPECIFIED ABOVE.

A. CONDUCT THE LEAKAGE TEST CONCURRENTLY WITH THE PRESSURE TEST.

B. THE MAXIMUM ALLOWED LEAKAGE IS DETERMINED BY THE FOLLOWING FORMULA:

NECESSARY UNTIL THE LEAKAGE REQUIREMENT IS MET. REPAIR OR REPLACE ALL DEFECTIVE WORK.

SYSTEM (THE TOWN). HAS APPROVED THE DISCHARGE OF WATER TO ITS SANITARY SEWER.

 $L = N \times D \times P \frac{1}{2}$ WHERE L = ALLOWABLE LEAKAGE, IN GPH; WHERE N = NO. OF JOINTS IN TEST SECTION WHERE D = NOMINAL PIPE DIAMETER, IN INCHES; WHERE P = AVERAGE TEST PRESSURE, IN PSIG

2. FLUSH THE PIPE WITH WATER AT A MINIMUM VELOCITY OF 2.5 FEET PER SECOND (FPS) TO CLEAR ALL FOREIGN MATERIAL FROM THE PIPE.

5. ACCEPTANCE SHALL BE DETERMINED ON THE BASIS OF ALLOWABLE LEAKAGE. IF ANY PIPE SECTION DISCLOSES LEAKAGE GREATER THAN THAT SPECIFIED, LOCATE, REPAIR AND RETEST UNTIL THE LEAKAGE IS WITHIN THE LIMITS SPECIFIED. 6. MAKE ALL VISIBLE LEAKS TIGHT REGARDLESS OF THE AMOUNT OF LEAKAGE, AND IF THE LINES DO NOT MEET THE ABOVE LEAKAGE TEST, REPAIR AND RETEST AS

DISINFECTION OF POTABLE WATER MAINS

AUTHORITY HAVING JURISDICTION.

1. DISINFECT ALL POTABLE WATER MAINS IN ACCORDANCE WITH THE LATEST VERSION OF AWWA C651, EXCEPT THAT THE PLACEMENT OF CHLORINE POWDER OR TABLETS INSIDE THE PIPE DURING INSTALLATION SHALL NOT BE ALLOWED. DISINFECT WATER MAINS AFTER THE PIPING HAS PASSED THE PRESSURE AND LEAKAGE TESTING.

3. APPLY A CHLORINE SOLUTION WITH A CONCENTRATION BETWEEN 50 PARTS PER MILLION (PPM) AND 100 PPM. THE CHLORINE SOLUTION SHALL REMAIN IN THE PIPING FOR A MINIMUM OF 24 HOURS. THE CONCENTRATION AT THE END OF THIS PERIOD SHALL BE AT LEAST 25 PPM IN ALL SECTIONS OF THE MAIN. REPEAT THE ENTIRE PROCEDURE IF THE RESIDUAL IS LESS THAN 25 PPM.

A. WHILE THE CHLORINATED WATER IS BEING ADDED, ALL APPURTENANCES (VALVES, HYDRANTS, ETC.) SHALL BE OPERATED SO AS TO COMPLETELY DISINFECT THE NEW WORK.

B. POSITION VALVES SO THAT THE CHLORINE SOLUTION IN THE SECTION BEING DISINFECTED WILL NOT FLOW INTO WATER MAINS IN ACTIVE SERVICE. C. CHLORINE RESIDUAL SAMPLES SHALL BE TAKEN AS DIRECTED BY THE ENGINEER. 4. AFTER THE TWENTY FOUR (24) HOUR RETENTION PERIOD, FLUSH THE MAIN UNTIL RESIDUAL TESTING INDICATES THAT THE CHLORINE CONCENTRATION IS

 A. DISPOSE OF HEAVILY CHLORINATED WATER INTO SANITARY SEWER OR TANK TRUCK. B. THE OWNER AND THE OWNER OF THE SANITARY SEWER SYSTEM SHALL BE NOTIFIED A MINIMUM OF TWENTY-FOUR (24) HOURS PRIOR TO THE DISCHARGE OF ANY WATER TO THE SANITARY SEWER. CONTRACTOR SHALL SUBMIT TO THE ENGINEER WRITTEN CONFIRMATION THAT THE OWNER OF SANITARY SEWER

C. UNDER NO CIRCUMSTANCES WILL THE EMPTYING OF WATER ONTO ROADWAYS, OR INTO DITCHES, CULVERTS, STREAMS OR WETLANDS BE ALLOWED. AFTER DISINFECTION AND FINAL FLUSHING, AND PRIOR TO PLACING THE LINES IN SERVICE, THE CONTRACTOR SHALL COLLECT BACTERIOLOGICAL SAMPLES (BOTH COLIFORM AND HETEROTROPHIC PLATE COUNT) AND SUBMIT SAMPLES TO AN APPROVED TESTING LABORATORY. TWO CONSECUTIVE SETS OF SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART IN ACCORDANCE WITH AWWA C651. THE COLLECTION POINTS SHALL BE AS DIRECTED BY THE ENGINEER AND LOCAL

A. THE TESTING LABORATORY PERFORMING THE BACTERIOLOGICAL ANALYSIS SHALL BE ACCEPTABLE TO THE ENGINEER.

B. SUBMIT THREE (3) COPIES OF THE LABORATORY ANALYSIS TO THE ENGINEER.

APPROXIMATELY THAT OF THE NEIGHBORING SERVICE AREA.

B. CONTRACTOR SHALL PAY FOR ALL TESTING REQUIRED.

A. SHOULD SAFE RESULTS NOT OCCUR AFTER LABORATORY TESTS, THE CONTRACTOR SHALL, AT HIS EXPENSE, REPEAT THE DISINFECTION PROCEDURE UNTIL SAFE RESULTS ARE OBTAINED. THIS INCLUDES A POSITIVE RESULT FOR COLIFORM OR A MEASURED HETEROTROPHIC PLATE COUNT OF GREATER THAN 500 COLONY-FORMING UNITS PER ML.

6. ALL PRECAUTION SHALL BE TAKEN TO MAINTAIN DRY AND SANITARY CONDITIONS AND PREVENT CONTAMINATION OF ANY PIPING. IF, IN THE OPINION OF THE ENGINEER, CONTAMINATION HAS OCCURRED, THE CONTRACTOR SHALL REPEAT THE DISINFECTION PROCEDURE AND TESTING AT HIS COST AND EXPENSE.



OWNER / APPLICANT

1897 WASHINGTON ST AUBURNDALE, MA 0246



NGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND OR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING TH ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LANI SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE TH NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, T DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION

PROPOSED SITE **DEVELOPMENT PLANS** WOODLAND GOLF CLUI

4TH HOLE IMPROVEMENTS

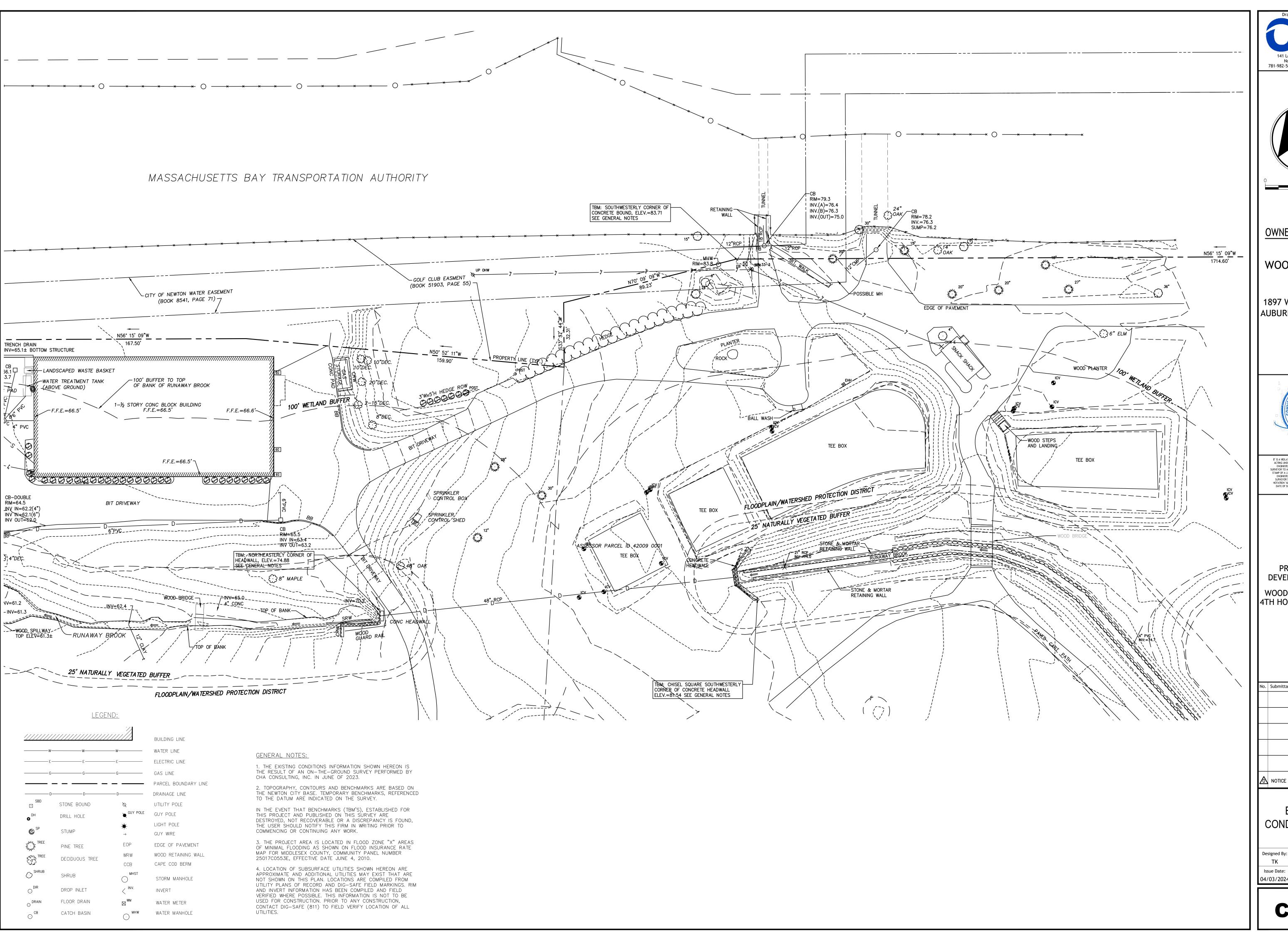
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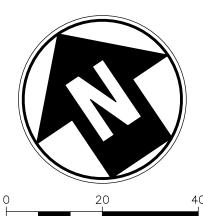
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OWNER / APPLICANT

WOODLAND GOLF CLUB

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FOR
WOODLAND GOLF CLUB
4TH HOLE IMPROVEMENTS

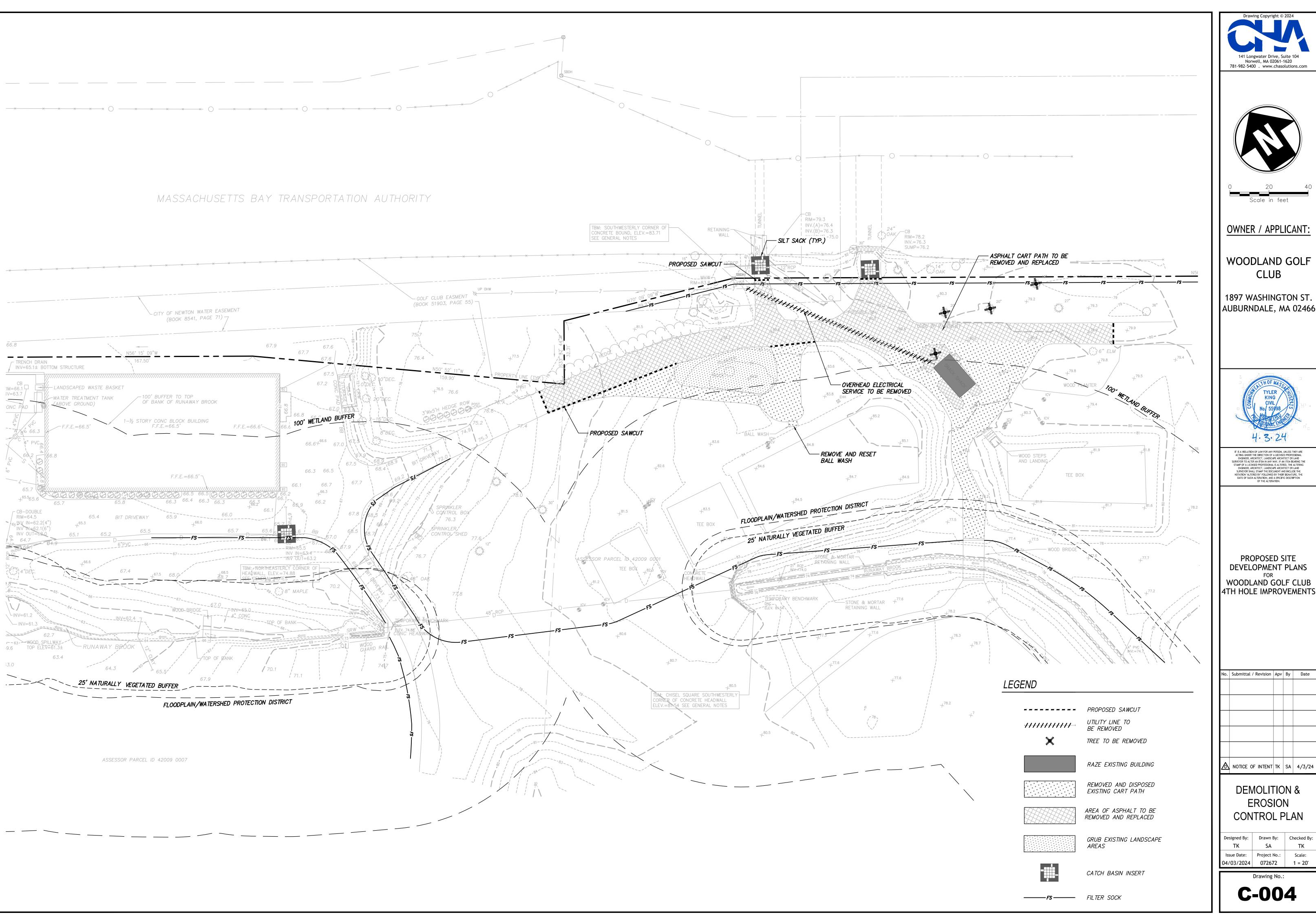
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EXISTING CONDITIONS PLAN

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TK	SA	TK
ue Date:	Project No.:	Scale:
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Drawing No.:

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OWNER / APPLICANT

WOODLAND GOLF CLUB

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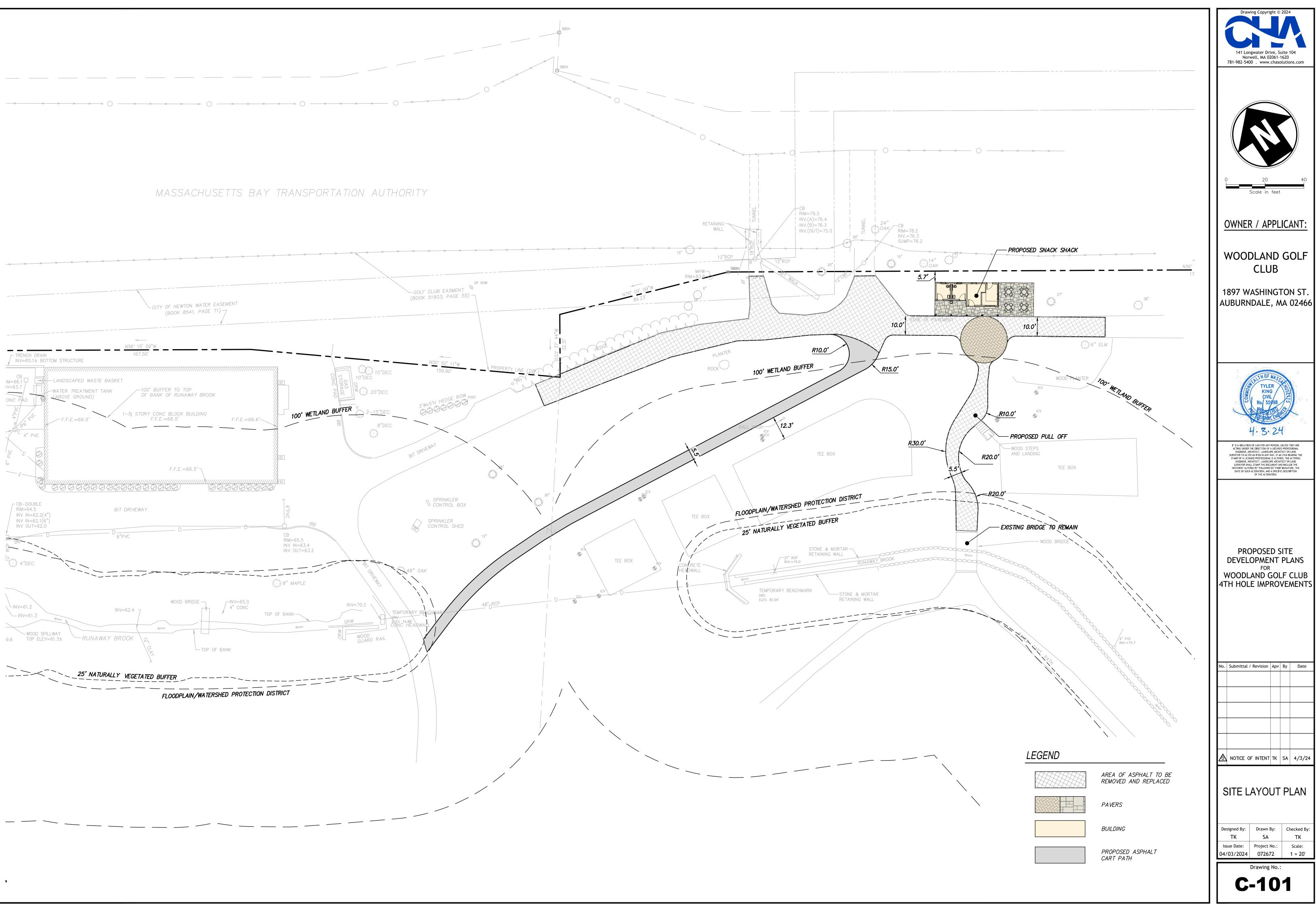
PROPOSED SITE DEVELOPMENT PLANS WOODLAND GOLF CLUB

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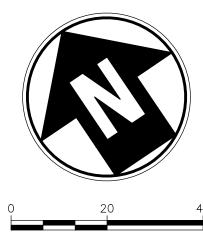
DEMOLITION & EROSION CONTROL PLAN

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WOODLAND GOLF CLUB

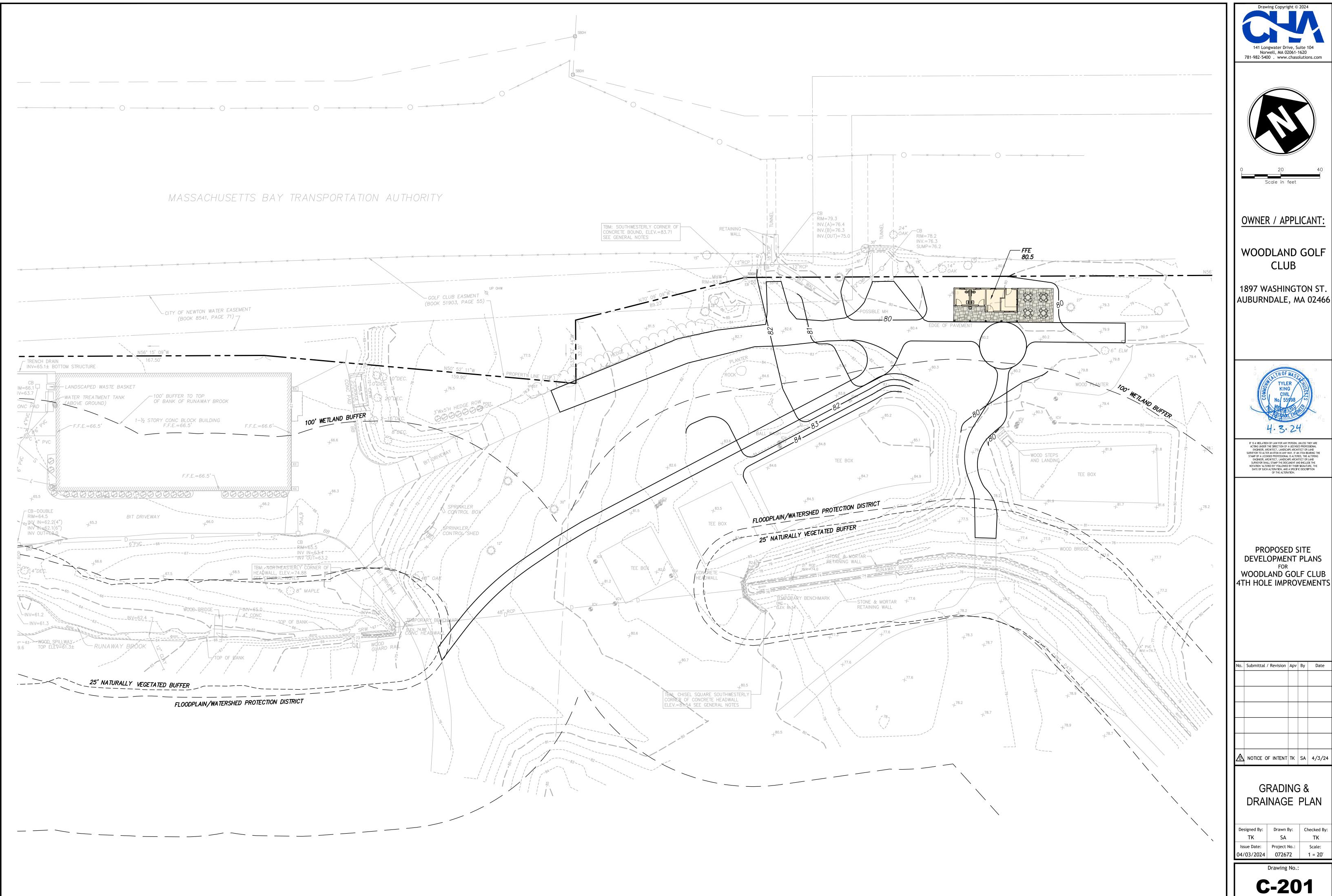
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PROPOSED SITE DEVELOPMENT PLANS WOODLAND GOLF CLUB 4TH HOLE IMPROVEMENTS

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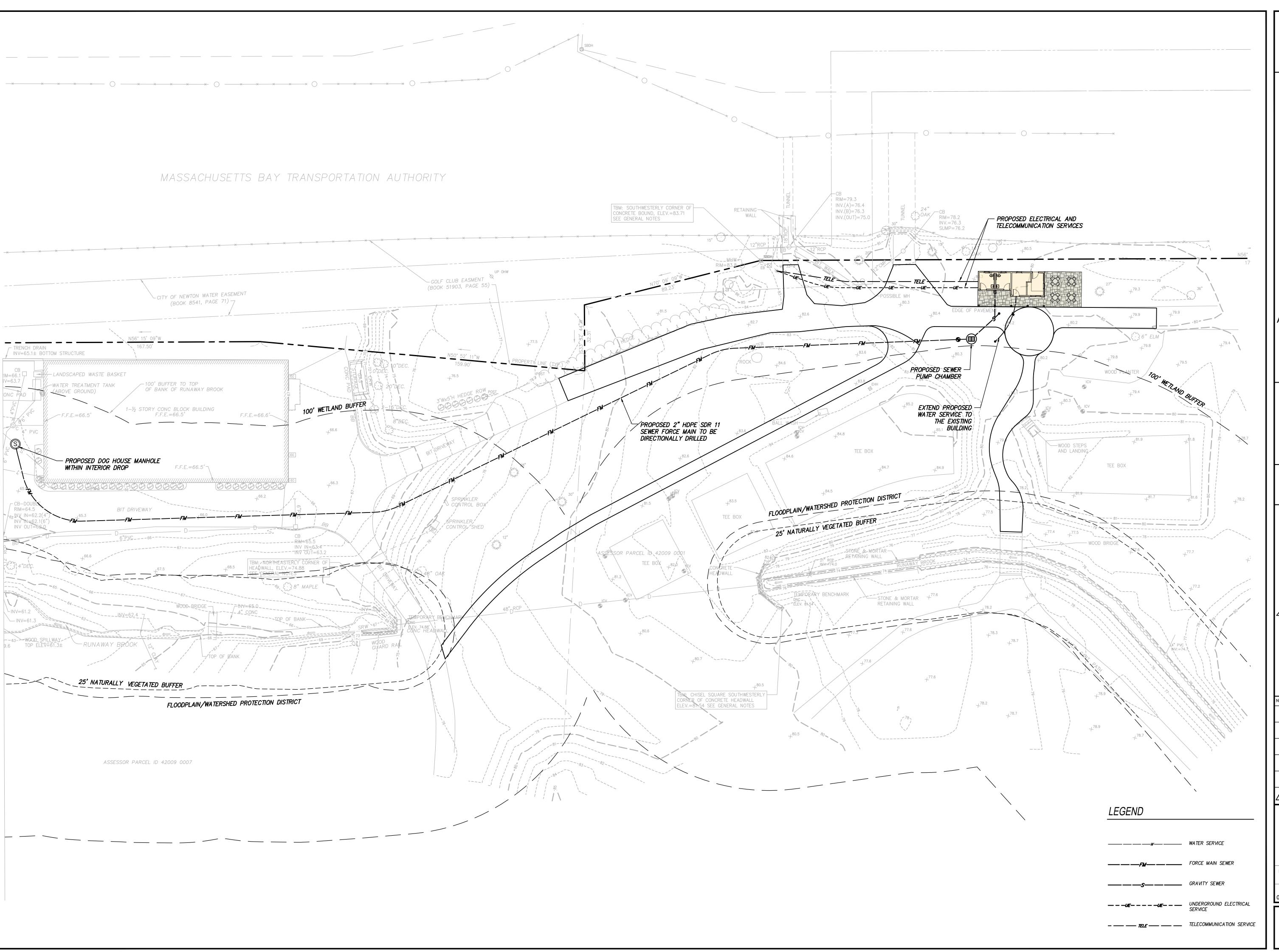
DEVELOPMENT PLANS WOODLAND GOLF CLUB

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DRAINAGE PLAN

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PROPOSED SITE
DEVELOPMENT PLANS
FOR
WOODLAND GOLF CLUB
4TH HOLE IMPROVEMENTS

No.	Submittal / Revision	Apv	Ву	Date
◬	NOTICE OF INTENT	TK	SA	4/3/24

UTILITY PLAN

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Issue Date:	Project No.:	Scale:			
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C-301

- 1. PREFABRICATED COMPOST SOCK SHALL BE FILTREXX SOXX OR APPROVED EQUAL.
- 2. MATERIAL FOR SOCKS SHALL CONSIST OF SANITIZED MATURE COMPOST, FREE OF VIABLE WEED SEEDS AND FOREIGN DEBRIS SUCH AS GLASS AND PLASTIC. COMPOST SHALL BE IN SHREDDED OR GRANULAR FORM AND FREE FROM HARD LUMPS. IN ADDITION, NO KILN-DRIED WOOD OR CONSTRUCTION DEBRIS SHALL BE ALLOWED. CONTRACTOR SHALL REFER TO MASSDOT SPECIFICATIONS M1.06.0 FOR MATERIAL SPECIFICATIONS.

ATTACHMENT DETAIL

- 3. SOCK SHALL CONSIST OF JUTE MESH OR OTHER APPROVED BIODEGRADABLE MATERIAL.
- PRACTICE: COMPOST FILTER SOCK: A COMPOST FILTER SOCK IS A TYPE OF CONTAINED COMPOST FILTER BERM CONSISTING OF A MESH TUBE FILLED WITH COMPOST MATERIAL THAT IS PLACED PERPENDICULAR TO SHEET FLOW RUNOFF TO RETAIN SEDIMENT FROM DISTURBED AREAS. THE COMPOST FILTER SOCK ACTS AS A FILTER TO RETAIN SEDIMENT AND OTHER POLLUTANTS (E.G., SUSPENDED

SOLIDS, NUTRIENTS) WHILE ALLOWING THE WATER TO FLOW THROUGH IT. COMPOST QUALITY MUST MEET AASHTO 2010

SPECIFICATIONS.

- **INSTALLATIONS REQUIREMENTS:** ONCE THE FILTER SOCK IS FILLED AND PUT IN PLACE, IT SHOULD BE ANCHORED TO THE SLOPE BY STAKES ALONG THE DOWNHILL SIDE OF THE SOCK AT 10' SPACING ON CENTER (O.C.)O THE ENDS OF THE FILTER SOCK SHOULD BE DIRECTED UPSLOPE, TO PREVENT STORMWATER FROM RUNNING AROUND THE END OF THE TUBE.
- MAINTENANCE REQUIREMENTS: SOCK MUST BE INSPECTED FOR SEDIMENT ACCUMULATION. IF THERE IS EXCESSIVE PONDING BEHIND THE FILTER SOCK OR ACCUMULATED SEDIMENT REACHES THE TOP OF THE SOCK, AN ADDITIONAL SOCK SHOULD BE ADDED ON TOP OR INFRONT OF THE EXISTING SOCK IN THESE AREAS. AN ADEQUATE RESERVE OF SOCKS MUST BE KEPT ON SITE AT ALL TIMES FOR EMERGENCY AND/OR ROUTINE REPLACEMENT. SOCKS SHALL BE REMOVED ONLY AFTER EXPOSED SOILS IN THE CONTRIBUTING DRAINAGE AREA ACHIEVE FINAL STABILIZATION. SEDIMENT ACCUMULATION MUST BE REMOVED ONCE IT HAS REACHED 1/2 OF THE EXPOSED HEIGHT OF THE SOCK.

— 1.5" LAYER SUPERPAVE

TABLE M3.11.1-1

SURFACE COURSE (SSC-9.5)

PER MASSDOT SPECIFICATION

12-INCH COMPOST FILTER SOCK

1.5" LAYER SUPERPAVE INTERMEDIATE

COURSE (SIC-12.5) PER MASSDOT SPECIFICATION TABLE M3.11.1-1

TO CONSTRUCTION.

8" DENSE-GRADED CRUSHED STONE FOR SUBBASE MASS

HIGHWAY M2.01.7

COMPACTED SUBGRADE

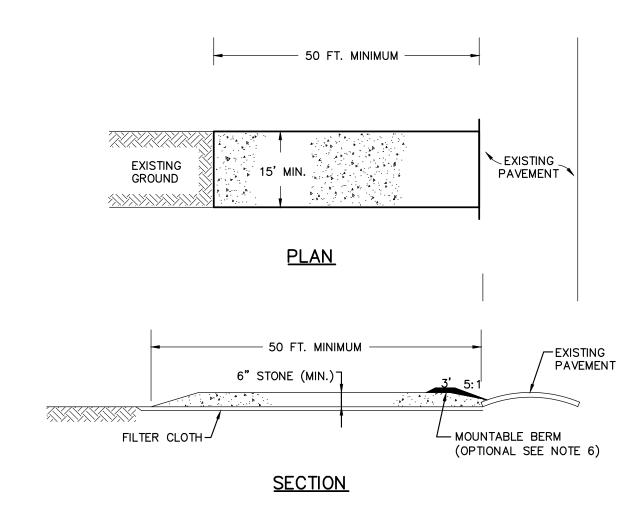
OR GRANULAR FILL

1. COMPACTED LIFTS NOT TO EXCEED 8 INCHES BETWEEN COURSES.

2. CONTRACTOR TO PROOF ROLL SUBGRADE PRIOR TO GRAVEL PLACEMENT.

4 BITUMINOUS PAVEMENT SECTION DETAIL

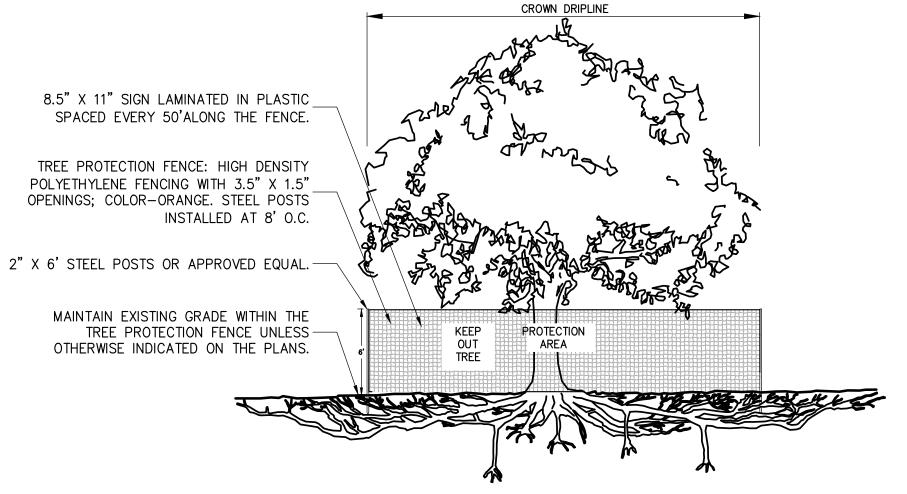
3. CONTRACTOR TO CONFIRM PAVEMENT SECTION WITH GEOTECH REPORT PRIOR



CONSTRUCTION SPECIFICATIONS:

- 1. STONE SIZE: USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- 2. LENGTH: RECOMMEND 100 FEET IN SILTS AND CLAYS.
- 3. THICKNESS: NOT LESS THAN SIX (6) INCHES.
- 4. WIDTH: FIFTEEN (15) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS
- 5. FILTER CLOTH: SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- 6. SURFACE WATER: ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM SHALL BE INSTALLED.
- 7. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY AND ON AN ON GOING BASIS.
- 8. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED.

STABILIZED CONSTRUCTION ENTRANCE



- 1. CONTRACTOR TO MAINTAIN INTEGRITY OF CONSTRUCTION FENCE FOR
- EXISTING TREE PROTECTION

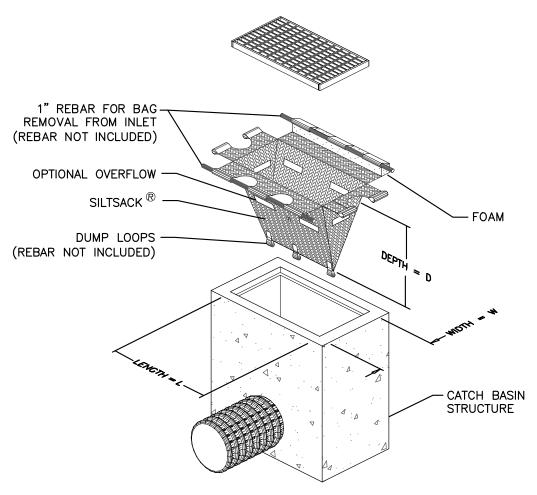
NOT TO SCALE

DURATION OF PROJECT.

NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST. 3. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING

INCLUDING DURING FENCE INSTALLATION AND REMOVAL 4. SEE SITE PREPARATION PLAN FOR ANY MODIFICATIONS WITH THE TREE

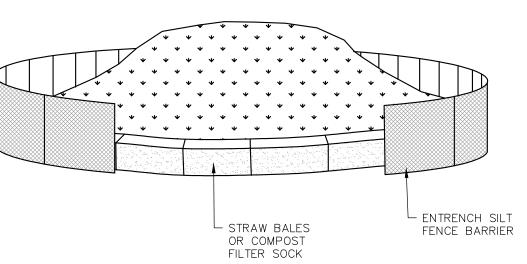
PROTECTION AREA.



<u>ISOMETRIC VIEW</u>

- 1. REMOVE ACCUMULATED SEDIMENT WHEN CAPACITY IS REDUCED BY HALF OR PER MANUFACTURER'S RECOMMENDATIONS.
- 2. CATCH BASIN INSERT TO BE SILTSACK®BY ACF ENVIRONMENTAL, PHONE: 1-800-448-3636, acfenvironmental.com OR EQUIVALENT.
- 3. INSTALL ON ALL EXISTING CATCH BASINS WITHIN MAIN STREET AND ON SITE. INSTALL ON ALL PROPOSED CATCH BASINS AFTER STRUCTURE INSTALLATION.

3 FILTER SACK CATCH BASIN INSERT DETAIL



INSTALLATION NOTES:

- 1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
- 2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
- 3. UPON COMPLETION OF STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH STRAW BALES, THEN STABILIZED WITH VEGETATION, OR COVERED.
- 4. SEE SPECIFICATIONS FOR INSTALLATION OF STRAW BALES.



OWNER / APPLICANT

WOODLAND GOLF CLUB

1897 WASHINGTON ST AUBURNDALE, MA 02466



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERI ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION

PROPOSED SITE DEVELOPMENT PLANS WOODLAND GOLF CLUB 4TH HOLE IMPROVEMENTS

No. | Submittal / Revision | Apv | By | Date

DETAILS SHEET - 1

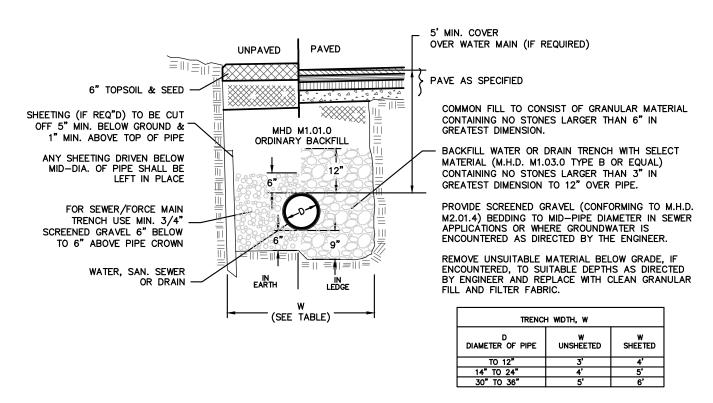
NOTICE OF INTENT TK SA 4/3/24

Drawn By: Checked By Designed By:

TK

04/03/2024 072672 Drawing No.:

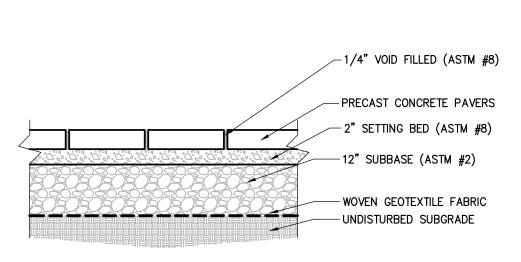
Issue Date: Project No.:



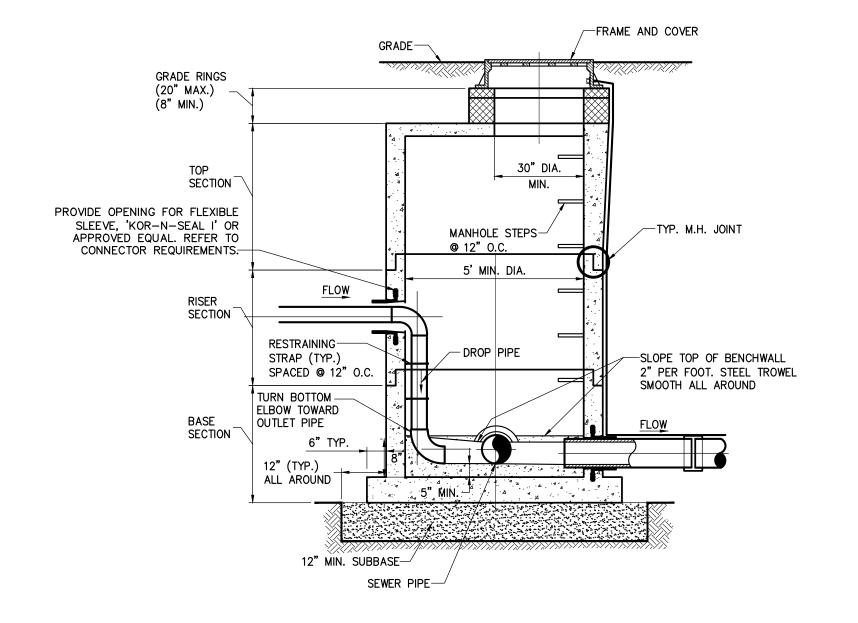
NOTES:

- 1. ALL TRENCH CONSTRUCTION TO CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
- 2. COMPACT FILL AND TAMP PIPE TO 95% MAX. DRY DENSITY IN 8" LIFTS UNLESS OTHERWISE SPECIFIED.
- 3. INSTALL DUCTILE IRON WATER PIPE IN ACCORDANCE WITH ANSI A21.51 (AWWA C151) LAYING CONDITION TYPE 2. BACKFILL TO CONFORM TO MHD M1.03.0 GRAVEL BURROW TYPE c TO 12" ABOVE PIPE CROWN OR AS DIRECTED BY MANUFACTURER OR ENGINEER.
- 4. MATERIALS FOR SEWER BEDDING, HAUNCHING, AND BACKFILL TO CONFORM TO CLASSES I, II, OR III AS DESCRIBED IN ASTM D 2321 AND TR-16 GUIDES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS.
- 5. BC TO 12" ABOVE PIPE CROWN OR AS DIRECTED BY MANUFACTURER OR ENGINEER.
- 6. PROVIDE MINIMUM 5 FT. COVER OVER WATER MAIN AS MEASURED FROM BOTTOM OF CURB LINE. INSULATE WATER MAIN IN ACCORDANCE WITH M.H.D. SECTION 301 WATER SYSTEMS IN AREAS PRONE TO FROST ACTION AND/OR LESS THAN 5' MIN. COVER.

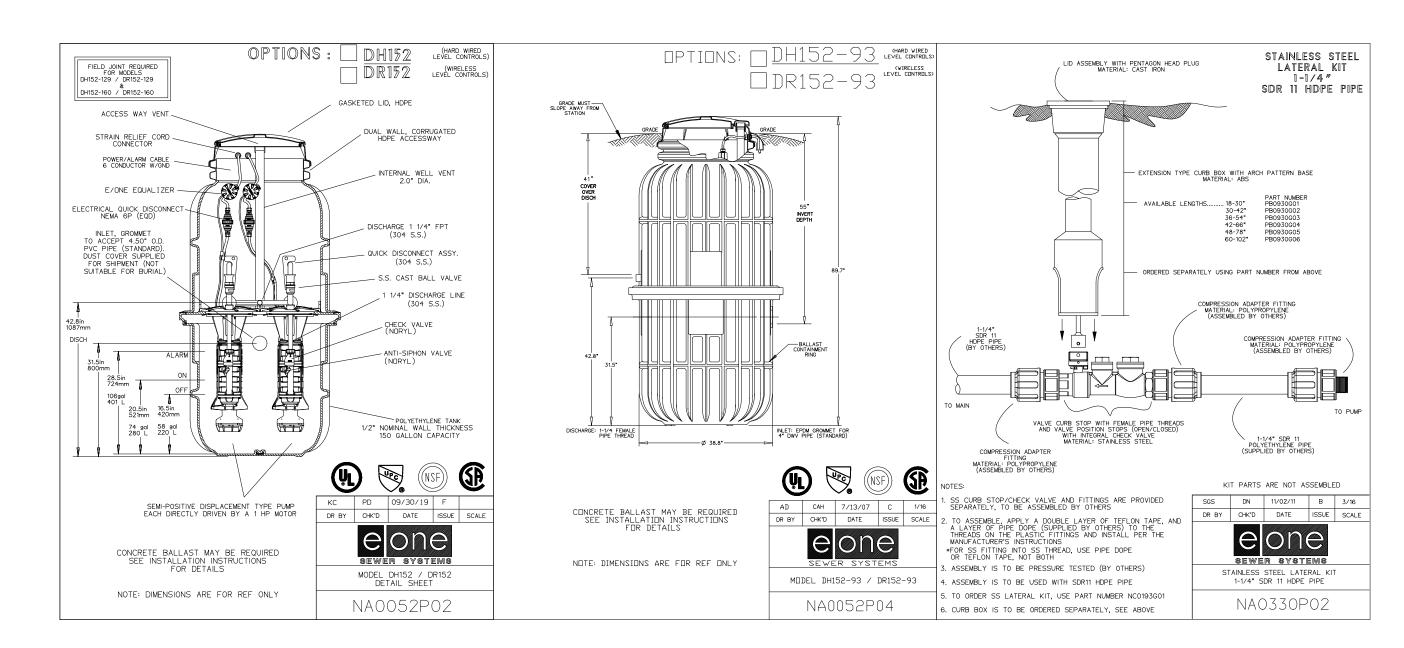








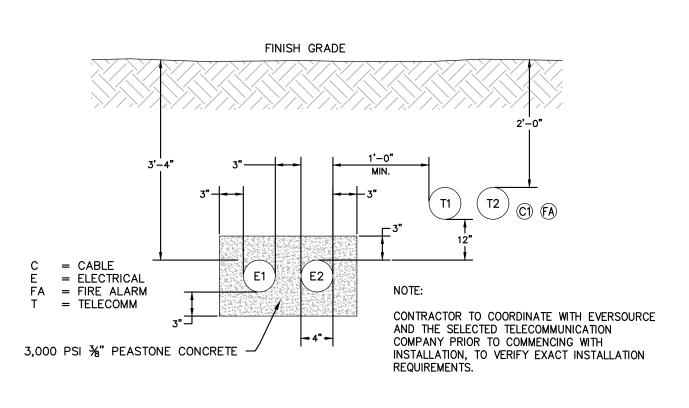
3 DOGHOUSE MANHOLE WITH INTERIOR DROP
SCALE: NO SCALE



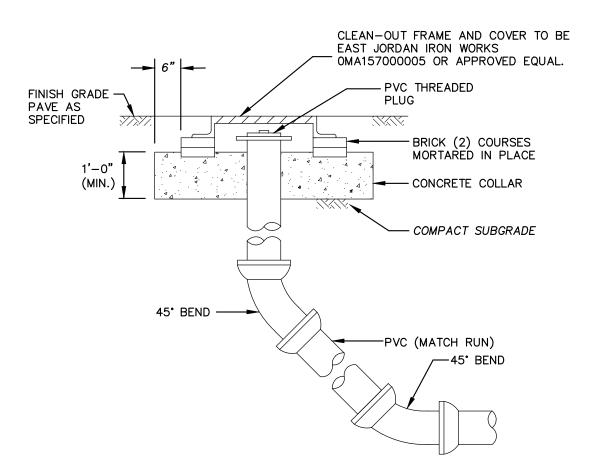
NOTES:

- CONTRACTOR SHALL PROVIDE SIGNED & SEALED BUOYANCY CALCULATIONS TO CHA. CALCULATIONS SHALL ASSUME SEASONAL
 HIGH GROUNDWATER ELEVATION FOR GROUNDWATER DEPTH WITH A 1.15 FACTOR OF SAFETY APPLIED TO THE UPLIFT.
- 2. CONTRACTOR SHALL PROVIDE BALLAST, AS NECESSARY, PENDING THE BUOYANCY CALCULATIONS.





5 TYPICAL UTILITY DUCTBANK CROSS SECTION
SCALE: NO SCALE



6 TYPICAL SEWER SERVICE CLEANOUT SCALE: NO SCALE

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OWNER / APPLICANT

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PROPOSED SITE
DEVELOPMENT PLANS
FOR
WOODLAND GOLF CLUB
4TH HOLE IMPROVEMENTS

No. Submittal / Revision Apv By Date

| Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date | Date

DETAILS SHEET - 2

Designed By: Drawn By: Checked By:
TK SA TK

Issue Date: Project No.: Scale:
04/03/2024 072672

Drawing No.:

C-602