OFF-SITE WATER & SEWER LINE PLANS

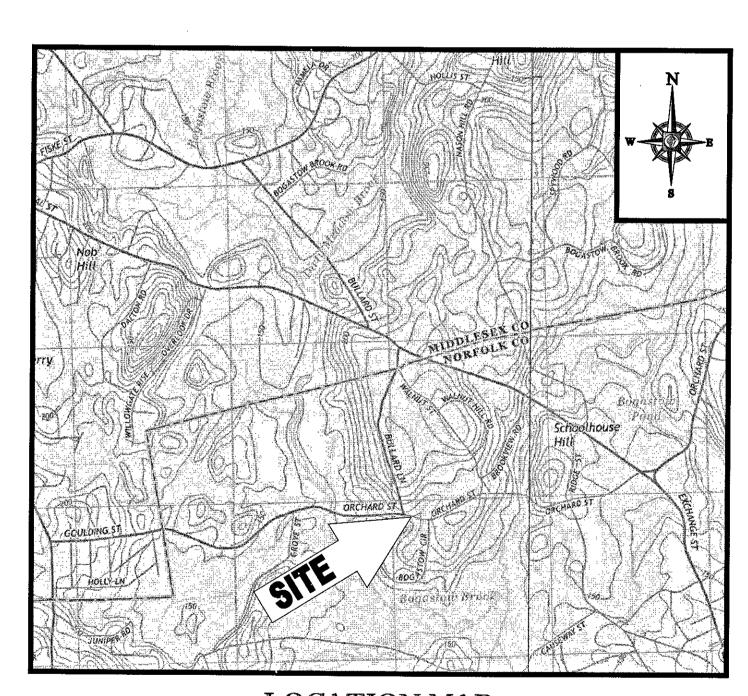
FOR:

TOLL BROTHERS, INC., NEW ENGLAND DIVISION 134 FLANDERS ROAD, SUITE 275 WESTBOROUGH, MA 01581

ORCHARD STREET, MIDDLESEX STREET, & EXCHANGE STREET

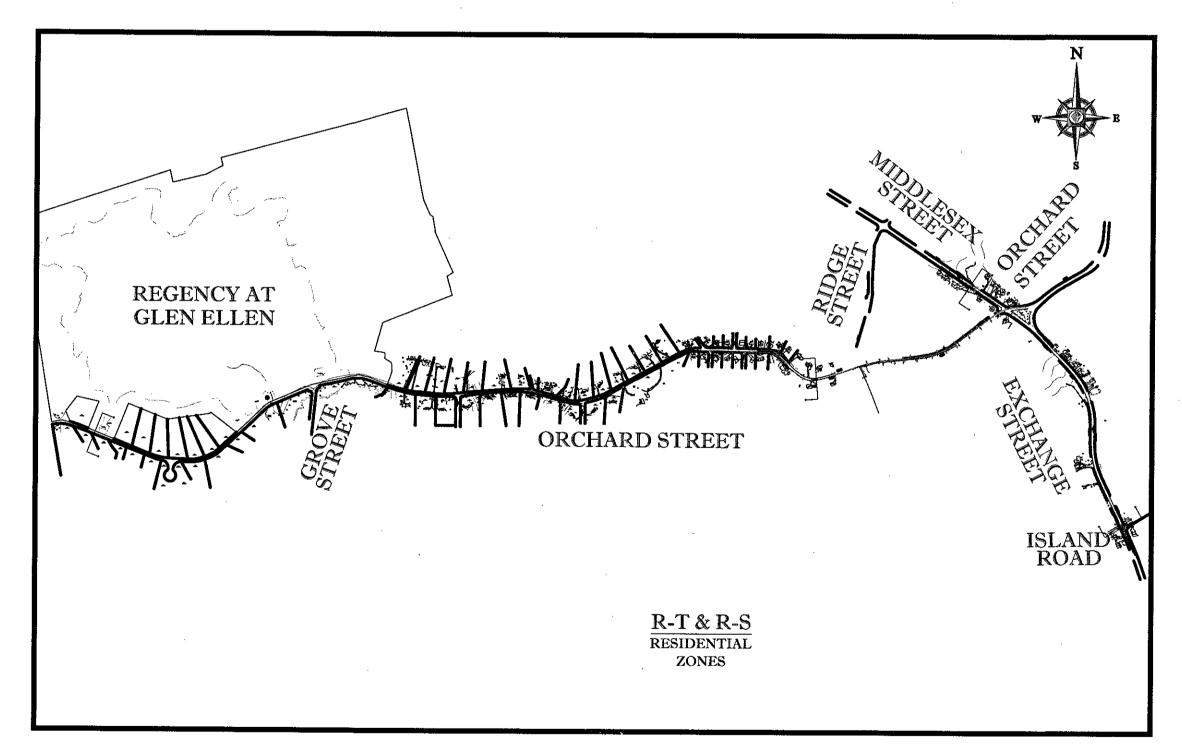
LOCATION OF SITE:

ORCHARD STREET, TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS



LOCATION MAP

SCALE: 1"=2000'
PLAN REFERENCE: MEDFIELD, MASSACHUSETTS USGS QUADRANGLE



AREA PLAN
SCALE: 1"=750'

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PROJECT:	
OFF. S	ITE SEWER
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TOLL BROS.,
INC.

COCATION OF SITE
ORCHARD STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLE I
352 TURNPIKE ROAD SOUTHBOROUGH, MA 01772

PROPESSIONAL ENGINEER

MASSAGAUSPTESCHENSE NO. 268

COMMESSIONAL ENGINEER

MASSAGAUSPTESCHENSE NO. 268

COMMESSIONAL ENGINEER

MASSAGAUSPTESCHENSE NO. 268

COMMESSIONAL ENGINEER

MEW HAMPS CHMELES SE NO. 10280

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SHEET NUMBER:

THE FOLLOWING DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THIS SITE PLAN:

SURVEY INFORMATION PREPARED BY ESE CONSULTANTS, INC.

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST VERIFY THAT HE/SHE HAS THE LATEST EDITION OF THE DOCUMENTS REFERENCED ABOVE. THIS IS CONTRACTOR'S RESPONSIBILITY.

- PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE COMMENTS TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES AND CONFIRMED THAT ALL NECESSARY OR REQUIRED PERMITS HAVE BEEN OBTAINED. CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
- THE OWNER/CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- ALL WORK MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND CONDITIONS OF APPROVAL, AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT.
- THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SET FORTH HEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND, IN CASE OF CONFLICT, DISCREPANCY OR AMBIGUITY, THE MORE STRINGENT REQUIREMENTS AND/OR RECOMMENDATIONS CONTAINED IN THE PLANS AND THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SHALL TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR MUST NOTIFY THE ENGINEER, IN WRITING, OF ANY SUCH CONFLICT, DISCREPANCY OR AMBIGUITY BETWEEN THE GEOTECHNICAL REPORTS AND PLANS AND SPECIFICATIONS PRIOR TO PROCEEDING WITH ANY FURTHER
- THESE PLANS ARE BASED ON INFORMATION PROVIDED TO BOHLER ENGINEERING BY THE OWNER AND OTHERS PRIOR TO THE TIME OF PLAN PREPARATION. CONTRACTOR MUST FIELD VERIFY EXISTING CONDITIONS AND NOTIFY BOHLER ENGINEERING, IN WRITING, IMMEDIATELY IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.
- ALL DIMENSIONS SHOWN ON THE PLANS MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR MUST NOTIFY ENGINEER, IN WRITING, IF ANY CONFLICTS, DISCREPANCIES, OR AMBIGUITIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION, NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR WORK WHICH HAS TO BE REDONE OR REPAIRED DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO CONTRACTOR GIVING ENGINEER WRITTEN NOTIFICATION OF SAME AND ENGINEER, THEREAFTER, PROVIDING CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH
- DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE AND ALL UNSUITABLE EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL GOVERNMENTAL AUTHORITIES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PRECAUTIONS TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS 9
- . THE CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER 10. FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND TO PROVIDE A SAFE WORK AREA FOR THIRD PARTIES, PEDESTRIANS AND ANYONE INVOLVED WITH THE PROJECT.
- THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION. INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. AND SHALL BEAR ALL COSTS ASSOCIATED WITH SAME TO INCLUDE, BUT NOT BE LIMITED TO REDESIGN RE-SURVEY RE-PERMITTING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY MUST RESTORE SUCH CONSTRUCTION OR PROPERTY TO A CONDITION EQUIVALENT TO OR BETTER THAN THE CONDITIONS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION, AND IN CONFORMANCE WITH APPLICABLE CODES, LAWS RULES, REGULATIONS, STATUTORY REQUIREMENTS AND STATUTES, CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND TO NOTIFY THE OWNER, THE CONSTRUCTION MANAGER, AND THE TOWN OF MILLIS DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A SET OF PRE-CONSTRUCTION PHOTOS AND/OR VIDEO TAKEN ALONG THE LIMITS OF WORK TO THE MILLIS DPW FOR APPROVAL AND RECORD. ALL NOTIFICATION TO THE OWNER SHALL INCLUDE THE MILLIS DPW.
- 2. ALL CONCRETE MUST BE AIR ENTRAINED AND HAVE THE MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND/OR GEOTECHNICAL REPORT.
- THE ENGINEER IS NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONSTRUCTION MEANS, METHODS TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK DEPICTED BOTH ON THESE PLANS. AND FOR ANY CONFLICTS/SCOPE REVISIONS WHICH RESULT FROM SAME. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE METHODS/MEANS FOR COMPLETION OF THE WORK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY. THE ENGINEER OF RECORD HAS NOT BEEN RETAINED TO PERFORM OR BE RESPONSIBLE FOR JOB SITE SAFETY, SAME BEING WHOLLY OUTSIDE OF ENGINEER'S SERVICES AS RELATED TO THE PROJECT. THE ENGINEER OF RECORD IS NOT RESPONSIBLE TO IDENTIFY OR REPORT ANY JOB SITE SAFETY ISSUES, AT ANY TIME
- 5. ALL CONTRACTORS MUST CARRY THE SPECIFIED STATUTORY WORKER'S COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE (CGL). ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME BOHLER ENGINEERING, AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES. SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AS ADDITIONAL NAMED INSURED AND TO PROVIDE CONTRACTUAL LIABILITY COVERAGE SUFFICIENT TO INSURE THIS HOLD HARMLESS AND INDEMNITY OBLIGATIONS ASSUMED BY THE CONTRACTORS. ALL CONTRACTORS MUST FURNISH BOHLER ENGINEERING WITH CERTIFICATIONS OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE PRIOR TO COMMENCING WORK AND UPON RENEWAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION AND FOR ONE YEAR AFTER THE COMPLETION OF CONSTRUCTION. IN ADDITION, ALL CONTRACTORS WILL, TO THE FULLES' EXTENT PERMITTED UNDER THE LAW, INDEMNIFY, DEFEND AND HOLD HARMLESS BOHLER ENGINEERING AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS FROM AND AGAINST ANY DAMAGES, INJURIES, CLAIMS, ACTIONS, PENALTIES, EXPENSES, PUNITIVE DAMAGES, TORT DAMAGES, STATUTORY CLAIMS, STATUTORY CAUSES OF ACTION, LOSSES, CAUSES OF ACTION, LIABILITIES OR COSTS, INCLUDING, BUT NOT LIMITED TO, REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH OR TO THE PROJECT, INCLUDING ALL CLAIMS BY EMPLOYEES OF THE TRACTORS. ALL CLAIMS BY THIRD PARTIES AND ALL CLAIMS RELATED TO THE PROJECT. COI PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF ITS INSURANCE HEREUNDER.
- S ROHLER ENGINEERING WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER DATA. WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. THE CONTRACTORS SUBMITTALS AS REQUIRED SHALL BE REVIEWED BY BOHLER ENGINEERING AND SUBMITTED TO THE MILLIS DPW FOR REVIEW AND APPROVALL. CONSTRUCTION MEANS AND/OR METHODS AND/OR TECHNIQUES OR PROCEDURES, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND BOHLER HAS NO RESPONSIBILITY OR LIABILITY FOR SAME HEREUNDER. BOHLER ENGINEERING'S SHOP DRAWING REVIEW WILL BE CONDUCTED WITH REASONABLE PROMPTNESS WHILE ALLOWING SUFFICIENT TIME TO PERMIT ADEQUATE REVIEW. REVIEW OF A SPECIFIC ITEM MUST NOT INDICATE THAT BOHLER ENGINEERING HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. BOHLER ENGINEERING WILL NOT BE RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS NOT PROMPTLY AND IMMEDIATELY BROUGHT TO ITS ATTENTION, IN WRITING, BY THE CONTRACTOR, BOHLER ENGINEERING WILL NOT BE REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
- . NEITHER THE PROFESSIONAL ACTIVITIES OF BOHLER ENGINEERING, NOR THE PRESENCE OF BOHLER ENGINEERING AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AT A CONSTRUCTION/PROJECT SITE, SHALL RELIEVE THE GENERAL CONTRACTOR OF ITS OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING OVERSEFING SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND COMPLIANCE WITH ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES WITH JURISDICTION OVER THE PROJECT AND/OR PROPERTY. BOHLER ENGINEERING AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PROGRAMS OR PROCEDURES. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY. BOHLER ENGINEERING SHALL BE INDEMNIFIED BY THE GENERAL CONTRACTOR AND MUST BE NAMED AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE AS DESCRIBED ABOVE IN NOTE 19 FOR JOB SITE SAFETY.
- B. IF THE CONTRACTOR DEVIATES FROM THE PLANS AND SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER FOR SUCH DEVIATIONS, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK DONE WHICH DEVIATES FROM THE PLANS, ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS THE ENGINEER, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, IN ACCORDANCE WITH PARAGRAPH 19 HEREIN, FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS, JUDGMENTS, PENALTIES AND THE LIKE RELATED TO SAME
- CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF TRAFFIC PLAN FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER IN THE R.O.W. OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE. THE CONTRACTOR SHALL NOTIFY THE MILLIS POLICE AND FIRE DEPARTMENTS 24 HOURS IN ADVANCE OF STREET CLOSURES. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING AND PROVIDING UNIFORMED SPECIAL POLICE OFFICERS TO DIRECT TRAFFIC AS REQUIRED BY THE POLICE DEPARTMENT.
- ALL SIGNING AND PAVEMENT STRIPING MUST CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR LOCALLY APPROVED SUPPLEMENT.
- ENGINEER IS NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS. IF CONTRACTOR AND/OR OWNER FAIL TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH APPROVED PLANS. THEY AGREE TO JOINTLY AND SEVERALLY INDEMNIFY AND HOLD ENGINEER HARMLESS FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS.
- OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS. IN STRICT ACCORDANCE WITH THE APPROVED PLAN(S) AND DESIGN AND, FURTHER ENGINEER IS NOT RESPONSIBLE FOR ANY FAILURE TO SO MAINTAIN OR PRESERVE SITE AND/OR DESIGN FEATURES. IF OWNER FAILS TO MAINTAIN AND/OR PRESERVE ALL PHYSICAL SITE FEATURES AND/OR DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS, OWNER AGREES TO INDEMNIFY AND HOLD ENGINEER HARMLESS FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER
- ALL DIMENSIONS MUST BE TO FACE OF CURB, EDGE OF PAVEMENT, OR EDGE OF BUILDING, UNLESS NOTED OTHERWISE.
- ALL CONSTRUCTION AND MATERIALS MUST COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, LAWS, ORDINANCES, RULES AND CODES, AND ALL APPLICABLE OSHA REQUIREMENTS.
- CONTRACTOR AND OWNER MUST INSTALL ALL ELEMENTS AND COMPONENTS IN STRICT COMPLIANCE WITH AND ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDED INSTALLATION CRITERIA AND SPECIFICATIONS. IF CONTRACTOR AND/OR OWNER FAIL TO DO SO, THEY AGREE TO JOINTLY AND SEVERALLY INDEMNIFY AND HOLD ENGINEER HARMLESS FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS AS A RESULT OF SAID FAILURE.
- CONTRACTOR IS RESPONSIBLE TO MAINTAIN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH EPA REQUIREMENTS FOR SITES WHERE ONE (1) ACRE OR MORE (UNLESS THE LOCAL JURISDICTION REQUIRES FEWER) IS DISTURBED BY CONSTRUCTION ACTIVITIES. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL ACTIVITIES INCLUDING THOSE OF SUBCONTRACTORS ARE IN COMPLIANCE WITH THE SWPPP, INCLUDING BUT NOT LIMITED TO LOGGING ACTIVITIES (MINIMUM ONCE PER WEEK AND AFTER RAINFALL EVENTS) AND CORRECTIVE MEASURES, AS APPROPRIATE.
- AS CONTAINED IN THESE DRAWINGS AND ASSOCIATED APPLICATION DOCUMENTS PREPARED BY THE SIGNATORY PROFESSIONAL ENGINEER, THE USE OF THE WORDS CERTIFY OR CERTIFICATION CONSTITUTES AN EXPRESSION OF "PROFESSIONAL OPINION" REGARDING THE INFORMATION WHICH IS THE SUBJECT OF THE UNDERSIGNED PROFESSIONAL'S KNOWLEDGE OR BELIEF AND IN ACCORDANCE WITH COMMON ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE. AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED.

GENERAL GRADING & UTILITY PLAN NOTES

- LOCATIONS OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE INDEPENDENTLY CONFIRMED WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. SANITARY SEWER AND ALL OTHER UTILITY SERVICE CONNECTION POINTS MUST BE INDEPENDENTLY CONFIRMED BY THE CONTRACTOR IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES MUST IMMEDIATELY BE REPORTED, IN WRITING, TO THE ENGINEER. CONSTRUCTION MUST COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT PRIOR
- CONTRACTOR MUST VERTICALLY AND HORIZONTALLY LOCATE ALL UTILITIES AND SERVICES INCLUDING, BUT NOT LIMITED TO, GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE OR WORK SPACE, WHICHEVER IS GREATER. THE CONTRACTOR MUST USE, REFER TO, AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION, AT NO COST TO THE OWNER. CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE INITIATION AND COMMENCEMENT OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT AND/OR DISCREPANCY BETWEEN THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR THE RELATIVE OR APPLICABLE CODES, REGULATIONS, LAWS, RULES, STATUTES AND/OR ORDINANCES, IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD, IN WRITING, OF SAID CONFLICT AND/OR DISCREPANCY PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR'S FAILURE TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE CONTRACTOR'S FULL AND COMPLETE ACCEPTANCE OF ALL RESPONSIBILITY TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, LAWS, STATUTES, ORDINANCES AND CODES AND, FURTHER, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH SAME
- THE CONTRACTOR MUST LOCATE AND CLEARLY AND UNAMBIGUOUSLY DEFINE VERTICALLY AND HORIZONTALLY ALL ACTIVE AND INACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE AND INACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING SITE ACTIVITY.
- THE CONTRACTOR MUST FAMILIARIZE ITSELF WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AS IDENTIFIED OR REQUIRED FOR THE PROJECT. THE CONTRACTOR MUST PROVIDE THE OWNER WITH WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH THE JURISDICTION AND UTILITY COMPANY REQUIREMENTS AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND
- THE CONTRACTOR MUST INSTALL ALL STORM SEWER AND SANITARY SEWER COMPONENTS WHICH FUNCTION BY GRAVITY PRIOR TO THE INSTALLATION OF ALL OTHER UTILITIES.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SITE PLAN DOCUMENTS AND ARCHITECTURAL DESIGN FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, GREASE TRAP REQUIREMENTS/DETAILS, DOOR ACCESS, AND EXTERIOR GRADING. THE ARCHITECT WILL DETERMINE THE UTILITY SERVICE SIZES. THE CONTRACTOR MUST COORDINATE INSTALLATION OF UTILITIES/SERVICES WITH THE INDIVIDUAL COMPANIES, TO AVOID CONFLICTS AND TO ENSURE THAT PROPER DEPTHS ARE ACHIEVED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT INSTALLATION OF ALL IMPROVEMENTS COMPLIES WITH ALL UTILITY REQUIREMENTS WITH JURISDICTION AND/OR CONTROL OF THE SITE, AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES AND, FURTHER, IS RESPONSIBLE FOR COORDINATING THE UTILITY TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO THE EXISTING UTILITY/SERVICE. WHERE A CONFLICT(S) EXISTS BETWEEN THESE SITE PLANS AND THE ARCHITECTURAL PLANS, OR WHERE ARCHITECTURAL PLAN UTILITY CONNECTION POINTS DIFFER, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER, IN WRITING, AND PRIOR TO CONSTRUCTION. RESOLVE SAME.
- WATER SERVICE MATERIALS, BURIAL DEPTH, AND COVER REQUIREMENTS MUST BE SPECIFIED BY THE LOCAL UTILITY COMPANY. CONTRACTOR'S PRICE FOR WATER SERVICE MUST INCLUDE ALL FEES, COSTS AND APPURTENANCES REQUIRED BY THE UTILITY TO PROVIDE FULL AND COMPLETE WORKING SERVICE. CONTRACTOR MUST CONTACT THE APPLICABLE MUNICIPALITY TO CONFIRM THE PROPER WATER METER AND VAULT, PRIOR TO COMMENCING CONSTRUCTION.
- ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC. ARE TO BE INSTALLED UNDERGROUND. ALL NEW UTILITIES/SERVICES MUST BE INSTALLED IN ACCORDANCE WITH HE UTILITY/SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
- SITE GRADING MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT REFERENCED IN THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND REPLACING UNSUITABLE MATERIALS WITH SUITABLE MATERIALS AS SPECIFIED IN THE GEOTECHNICAL REPORT. ALL EXCAVATED OR FILLED AREAS MUST BE COMPACTED AS OUTLINED IN THE GEOTECHNICAL REPORT. MOISTURE CONTENT AT TIME OF PLACEMENT MUST BE SUBMITTED IN A COMPACTION REPORT PREPARED BY A QUALIFIED GEOTECHNICAL ENGINEER. REGISTERED WITH THE STATE WHERE THE WORK IS PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS. SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES, SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT MUST BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE BY OWNER/DEVELOPER, OR OWNER/DEVELOPER'S REPRESENTATIVE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS DIRECTED BY THE GEOTECHNICAL REPORT. EARTHWORK ACTIVITIES INCLUDING, BUT NOT LIMITED TO, EXCAVATION, BACKFILL, AND COMPACTING MUST COMPLY WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES. EARTHWORK ACTIVITIES MUST COMPLY WITH THE STANDARD STATE DOT SPECIFICATIONS FOR ROADWAY CONSTRUCTION (LATEST EDITION) AND ANY AMENDMENTS OR REVISIONS THERETO.
- ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION MUST BE AS PER THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT AND MUST BE COORDINATED WITH THE APPLICABLE UTILITY COMPANY SPECIFICATIONS. WHEN THE PROJECT DOES NOT HAVE GEOTECHNICAL RECOMMENDATIONS, FILL AND COMPACTION MUST, AT A MINIMUM, COMPLY WITH THE STATE DOT REQUIREMENTS AND SPECIFICATIONS AND CONSULTANT SHALL HAVE NO LIABILITY OR RESPONSIBILITY FOR OR AS RELATED TO FILL, COMPACTION AND BACKFILL. FURTHER, CONTRACTOR IS FULLY RESPONSIBLE FOR EARTHWORK BALANCE.
- THE CONTRACTOR MUST COMPLY, TO THE FULLEST EXTENT, WITH THE LATEST OSHA STANDARDS AND REGULATIONS, AND/OR ANY OTHER AGENCY WITH JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE "MEANS AND METHODS" REQUIRED TO MEET THE INTENT AND PERFORMANCE CRITERIA OF OSHA, AS WELL AS ANY OTHER ENTITY THAT HAS JURISDICTION FOR EXCAVATION AND/OR TRENCHING PROCEDURES AND CONSULTANT SHALL HAVE NO RESPONSIBILITY FOR OR AS RELATED FOR OR AS RELATED
- PAVEMENT MUST BE SAW CUT IN STRAIGHT LINES, AND EXCEPT FOR EDGE OF BUTT JOINTS, MUST EXTEND TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS MUST BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS WILL NOT BE PERMITTED.
- THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS MUST BE ADJUSTED, AS NECESSARY, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS, REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES.
- DURING THE INSTALLATION OF SANITARY SEWER, STORM SEWER, AND ALL UTILITIES. THE CONTRACTOR MUST MAINTAIN A CONTEMPORANEOUS AND THOROUGH RECORD OF CONSTRUCTION TO IDENTIFY THE AS-INSTALLED LOCATIONS OF ALL UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR MUST CAREFULLY NOTE ANY INSTALLATIONS THAT DEVIATE FROM THE INFORMATION CONTAINED IN THE UTILITY PLAN. THIS RECORD MUST BE KEPT ON A CLEAN COPY OF THE DRAINAGE OR UTILITY PLAN, WHICH CONTRACTOR MUST PROMPTLY PROVIDE TO THE OWNER AT THE COMPLETION OF WORK. THE CONTRACTOR SHALL PROVIDE A COPY OF THE AS-BUILT PLAN TO THE TOWN OF MILLIS DPW AT THE COMPLETION OF CONSTRUCTION. DETAILS SILL BE PROVIDED ON THE CONSTRUCTION DOCUMENTS AND WILL BE PROVIDED TO THE DPW.
- WHEN THE SITE IMPROVEMENT PLANS INVOLVE MULTIPLE BUILDINGS, SOME OF WHICH MAY BE BUILT AT A LATER DATE, THE CONTRACTOR MUST EXTEND ALL LINES, INCLUDING BUT NOT LIMITED TO STORM SEWER, SANITARY SEWER, UTILITIES, AND IRRIGATION LINE, TO A POINT AT LEAST FIVE (5) FEET BEYOND THE PAVED AREAS FOR WHICH THE CONTRACTOR IS RESPONSIBLE. CONTRACTOR MUST CAP ENDS AS APPROPRIATE, MARK LOCATIONS WITH A 2X4, AND MUST NOTE THE LOCATION OF ALL OF THE ABOVE ON A CLEAN COPY OF THE DRAINAGE OR UTILITY PLAN, WHICH CONTRACTOR MUST PROMPTLY PROVIDE TO THE OWNER UPON COMPLETION OF THE WORK.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION. WHERE ADA REQUIREMENTS OR EXISTING TOPOGRAPHY LIMIT GRADES). TO PREVENT PONDING. CONTRACTOR MUST IMMEDIATELY IDENTIFY, IN WRITING TO THE ENGINEER. ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST. IF CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER NOTIFICATION, MUST BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS THE DESIGN ENGINEER FOR ANY DAMAGES, COSTS, INJURIES ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM SAME.
- PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 6" ABOVE EXISTING LOCAL ASPHALT GRADE UNLESS OTHERWISE NOTED. FIELD ADJUST TO CREATE A MINIMUM OF .075% GUTTER GRADE ALONG CURB FACE. IT IS CONTRACTOR'S OBLIGATION TO ENSURE THAT DESIGN ENGINEER APPROVES FINAL CURBING CUT SHEETS PRIOR TO INSTALLATION OF SAME.
- IN THE EVENT OF DISCREPANCIES AND/OR CONFLICTS BETWEEN PLANS OR RELATIVE TO OTHER PLANS, THE SITE PLAN WILL TAKE PRECEDENCE AND CONTROL. CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER, IN WRITING, OF ANY DISCREPANCIES AND/OR CONFLICTS.
- CONTRACTOR IS REQUIRED TO SECURE ALL NECESSARY AND/OR REQUIRED PERMITS AND APPROVALS FOR ALL OFF SITE MATERIAL SOURCES AND DISPOSAL FACILITIES. CONTRACTOR MUST SUPPLY A COPY OF APPROVALS TO ENGINEER AND OWNER PRIOR TO INITIATING ANY WORK.
- STORM DRAINAGE PIPE: UNLESS INDICATED OTHERWISE, ALL STORM SEWER PIPE MUST BE REINFORCED CONCRETE PIPE (RCP) CLASS III WITH SILT TIGHT JOINTS. WHEN HIGH-DENSITY POLYETHYLENE PIPE (HDPE) IS CALLED FOR ON THE PLANS, IT MUST CONFORM TO AASHTO M294 AND TYPE S (SMOOTH INTERIOR WITH ANGULAR CORRUGATIONS) WITH GASKET FOR SILT TIGHT JOINT. PVC PIPE FOR ROOF DRAIN CONNECTION MUST BE SDR 26 OR SCHEDULE 40 UNLESS INDICATED OTHERWISE.
- SANITARY SEWER PIPE MUST BE POLYVINYL CHLORIDE (PVC) SDR 35 EXCEPT WHERE INDICATED OTHERWISE. SANITARY LATERAL MUST BE PVC SCHEDULE 40 OR PVC SDR 26 UNLESS INDICATED, IN
- STORM AND SANITARY SEWER PIPE LENGTHS INDICATED ARE NOMINAL AND MEASURED CENTER OF INLET AND/OR MANHOLES STRUCTURE TO CENTER OF STRUCTURE.
- 24. STORMWATER ROOF DRAIN LOCATIONS ARE BASED ON PRELIMINARY ARCHITECTURAL PLANS. CONTRACTOR IS RESPONSIBLE TO AND FOR VERIFYING LOCATIONS OF SAME BASED ON FINAL
- SEWERS CROSSING STREAMS AND/OR LOCATION WITHIN 10 FEET OF THE STREAM EMBANKMENT, OR WHERE SITE CONDITIONS SO INDICATE, MUST BE CONSTRUCTED OF STEEL, REINFORCED CONCRETE, DUCTILE IRON OR OTHER SUITABLE MATERIAL
- SEWERS CONVEYING SANITARY FLOW COMBINED SANITARY AND STORMWATER FLOW OR INDUSTRIAL FLOW MUST BE SEPARATED FROM WATER MAINS BY A DISTANCE OF AT LEAST 10 FEET HORIZONTALLY, IF SUCH LATERAL SEPARATION IS NOT POSSIBLE, THE PIPES MUST BE IN SEPARATE TRENCHES WITH THE SEWER AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN, OR SUCH OTHER SEPARATION AS APPROVED BY THE GOVERNMENT AGENCY WITH JURISDICTION OVER SAME
- MECHANICAL OR SLIP-ON JOINTS FOR A DISTANCE OF AT LEAST 10 FEET ON EITHER SIDE OF THE CROSSING. IN ADDITION, ONE FULL LENGTH OF SEWER PIPE SHOULD BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER MUST BE PROVIDED WATER MAIN PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL WATER PURVEYOR. IN THE ABSENCE OF SUCH REQUIREMENTS, WATER

MAIN PIPING MUST BE CEMENT-LINED DUCTILE IRON (DIP) MINIMUM CLASS 52 THICKNESS. ALL PIPE AND APPURTENANCES MUST COMPLY WITH THE APPLICABLE AWWA STANDARDS IN EFFECT AT

. WHERE APPROPRIATE SEPARATION FROM A WATER MAIN IS NOT POSSIBLE, THE SEWER MUST BE ENCASED IN CONCRETE OR SLEEVED, OR CONSTRUCTED OF DUCTILE IRON PIPE USING

- 29. CONTRACTOR MUST ENSURE THAT ALL UTILITY TRENCHES LOCATED IN EXISTING PAVED ROADWAYS INCLUDING SEWER, WATER AND STORM SYSTEMS, MUST BE REPAIRED IN ACCORDANCE WITH REFERENCED MUNICIPAL, COUNTY AND/OR DOT DETAILS AS APPLICABLE. CONTRACTOR MUST COORDINATE INSPECTION AND APPROVAL OF COMPLETED WORK WITH THE AGENCY WITH JURISDICTION OVER SAME.
- FOR SINGLE AND TWO-FAMILY RESIDENTIAL PROJECTS, WHERE THE PROPOSED DWELLING AND ADJACENT SPOT ELEVATION(S) ARE SCHEMATIC FOR GENERIC BUILDING FOOTPRINT, GRADES MUST BE ADJUSTED BASED ON FINAL ARCHITECTURAL PLANS TO PROVIDE A MINIMUM OF SIX (6) INCHES BELOW TOP OF BLOCK AND /OR SIX (6) INCHES BELOW SIDING, WHICHEVER IS LOWEST, AND MUST PROVIDE POSITIVE DRAINAGE (2% MIN.) AWAY FROM DWELLING. ALL CONSTRUCTION, INCLUDING GRADING, MUST COMPLY WITH THE LATEST LOCAL AND STATE BUILDING CODE AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES.
- 31. LOCATION OF PROPOSED UTILITY POLE RELOCATION IS AT THE SOLE DISCRETION OF UTILITY COMPANY.

THE TIME OF APPLICATION.

CONSULTANT IS NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, SHALL HAVE NO LIABILITY FOR ANY HAZARDOUS MATERIALS, HAZARDOUS SUBSTANCES, OR POLLUTANTS ON, ABOUT OR UNDER THE PROPERTY.

GENERAL DEMOLITION NOTES

- THIS PLAN REFERENCES DOCUMENTS AND INFORMATION BY
- SURVEY INFORMATION PREPARED BY ESE CONSULTANTS, INC
- CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 et seq.), AS AMENDED
- AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
- BOHLER ENGINEERING HAS NO CONTRACTUAL, LEGAL, OR OTHER RESPONSIBILITY FOR JOB SITE SAFETY OR JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME.
- THE DEMOLITION PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION, ONLY, REGARDING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR MUST ALSO REVIEW THE OTHER SITE PLAN DRAWINGS AND INCLUDE IN DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
- CONTRACTOR MUST RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS OR SPECIFICATIONS, CONCERNS REGARDING THE APPLICABLE SAFETY STANDARDS, OR THE SAFETY OF THE CONTRACTOR OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT, WITH BOHLER ENGINEERING, IN WRITING, AND RESPONDED TO BY BOHLER, IN WRITING, PRIOR TO THE INITIATION OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY. ALL DEMOLITION ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, RULES, REQUIREMENTS, STATUTES, ORDINANCES AND
- PRIOR TO STARTING ANY DEMOLITION, CONTRACTOR IS RESPONSIBLE FOR/TO:
- A. OBTAINING ALL REQUIRED PERMITS AND MAINTAINING THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND TOWN OF MILLIS CONSERVATION COMMISSION WITH JURISDICTION THROUGHOUT THE DURATION OF THE PROJECT, SITE WORK, AND DEMOLITION WORK.
- B. NOTIFYING, AT A MINIMUM, THE MUNICIPAL ENGINEER, DESIGN ENGINEER, AND LOCAL SOIL CONSERVATION DISTRICT, 72 HOURS PRIOR TO THE START OF WORK.
- C. INSTALLING THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE.

- D. IN ACCORDANCE WITH STATE LAW, THE CONTRACTOR MUST CALL THE STATE ONE-CALL DAMAGE PROTECTION SYSTEM FOR UTILITY MARKOUT, IN ADVANCE OF ANY EXCAVATION.
- E. LOCATING AND PROTECTING ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE. CABLE. FIBER OPTIC CABLE, ETC. WITHIN AND ADJACENT TO THE LIMITS OF PROJECT ACTIVITIES. THE CONTRACTOR MUST USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.
- F. PROTECTING AND MAINTAINING IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES. A TEMPORARY WATER BYPASS PIPING SYSTEM WITH SERVICE HOSES PLAN SHOULD BE SUBMITTED BY THE CONTRACTOR FOR REVIEW AND APPROVAL TO ASSURE MINIMUM INTERRUPTION OF EXISTING
- PROJECT PLANS AND SPECIFICATIONS. THE CONTRACTOR MUST PROVIDE THE UTILITY ENGINEER AND OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTIONAL AND UTILITY COMPANY REQUIREMENTS. A COPY OF THE NOTIFICATION SHOULD BE SUBMITTED TO
- H. COORDINATION WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE AFFECTED PARTIES WORK REQUIRED TO BE DONE "OFF-PEAK" IS TO BE DONE AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR MUST IMMEDIATELY CEASE ALL WORK AND IMMEDIATELY NOTIFY THE OWNER AND ENGINEER OF THE DISCOVERY OF SUCH MATERIALS. THE FIRM OR ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR MUST PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE
- THE CONTRACTOR MUST PROVIDE ALL "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES. AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN. CONTRACTOR MUST USE NEW MATERIAL FOR ALL REPAIRS. CONTRACTOR'S REPAIR MUST INCLUDE THE RESTORATION OF ANY ITEMS REPAIRED TO THE PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR SHALL PERFORM ALL REPAIRS AT THE CONTRACTOR'S SOLE EXPENSE.
- 9. THE CONTRACTOR MUST NOT PERFORM ANY EARTH MOVEMENT ACTIVITIES, DEMOLITION OR REMOVAL OF FOUNDATION WALLS, FOOTINGS, OR OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE UNLESS SAME IS IN STRICT ACCORDANCE AND CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS, AND/OR UNDER THE WRITTEN DIRECTION OF THE OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
- 10. CONTRACTOR MUST BACKFILL ALL EXCAVATION RESULTING FROM, OR INCIDENTAL TO, DEMOLITION ACTIVITIES. BACKFILL MUST BE ACCOMPLISHED WITH APPROVED BACKFILL MATERIALS, AND MUST BE SUFFICIENTLY COMPACTED TO SUPPORT NEW IMPROVEMENTS AND PERFORMED IN COMPLIANCE WITH THE RECOMMENDATIONS AND GUIDANCE IN THE GEOTECHNICAL REPORT. BACKFILLING MUST OCCUR IMMEDIATELY AFTER DEMOLITION ACTIVITIES, AND MUST BE DONE SO AS TO PREVENT WATER ENTERING THE EXCAVATION. FINISHED SURFACES MUST BE GRADED TO PROMOTE POSITIVE DRAINAGE.
- 11. EXPLOSIVES MUST NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND ALL APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS MUST BE IN PLACE PRIOR TO CONTRACTOR STARTING AN EXPLOSIVE PROGRAM AND/OR ANY DEMOLITION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS
- CONTRACTOR MUST PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE CURRENT FHWA "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY.
- CONTRACTOR MUST CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY PRIOR TO THE COMMENCEMENT OF ANY ROAD OPENING OR DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.
- 14. DEMOLITION ACTIVITIES AND EQUIPMENT MUST NOT USE AREAS OUTSIDE THE DEFINED PROJECT LIMIT LINE, WITHOUT WRITTEN PERMISSION OF THE OWNER AND ALL GOVERNMENTAL
- THE CONTRACTOR MUST USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, CONTRACTOR MUST CLEAN ALL ADJACENT STRUCTURES AND IMPROVEMENTS TO REMOVE ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
- 16. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS
- 17. CONTRACTOR IS RESPONSIBLE FOR SITE JOB SAFETY, WHICH MUST INCLUDE, BUT NOT BE LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING AND OTHER APPROPRIATE SAFETY ITEMS NECESSARY TO PROTECT THE PUBLIC FROM AREAS OF CONSTRUCTION AND CONSTRUCTION ACTIVITY. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION AS TO THE MEANS
- USED MUST BE IN STRICT ACCORDANCE WITH ALL STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR MUST COMPLY WITH ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION WASTES AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH ALL MUNICIPAL, COUNTY

METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE USED TO ACCOMPLISH THAT WORK. ALL MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE

20 CONTRACTOR MUST MAINTAIN A RECORD SET OF PLANS UPON WHICH IS INDICATED THE LOCATION OF EXISTING UTILITIES THAT ARE CAPPED, ABANDONED IN PLACE, OR RELOCATED DUE TO DEMOLITION ACTIVITIES. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER, AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK.

STATE, AND FEDERAL LAWS AND APPLICABLE CODES. THE CONTRACTOR MUST MAINTAIN RECORDS TO DEMONSTRATE PROPER DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO

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TELEPHONE LINE

ELECTRIC LINE

WATER LINE

OVERHEAD WIRE

STORM PIPE

SANITARY LINE

PARKING COUNT

SIGN

LIGHT POLE

GUIDE RAIL

UTILITY POLE

LOCATE EXISTING

INFRASTRUCTURE AND WATER

SERVICES, AND REPLACE AND

CONNECT TO NEW WATER MAIN. IF

EXISTING INFRASTRUCTURE AND

SERVICES DO NOT EXIST, PROVIDE

NEW INFRASTRUCTURE AND

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PROJECT: OFF- SITE SEWER LINE PLANS

SCALE:

CAD I.D.

06/14/2017

AS NOTED

W161041 SS2 - SEWER

TOLL BROS INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY MASSACHUSETTS

352 TURNPIKE ROAD SOUTHBOROUGH, MA 01772 Phone: (508) 480-9900 (508) 480-9080

www.BohlerEngineering.com

ÉSSIONAL ENCINEER NEW YORK LICENSE No. 07.1284-1

GENERAL

ALL WORK TO BE COORDINATED WITH THE

NOTES SHEET

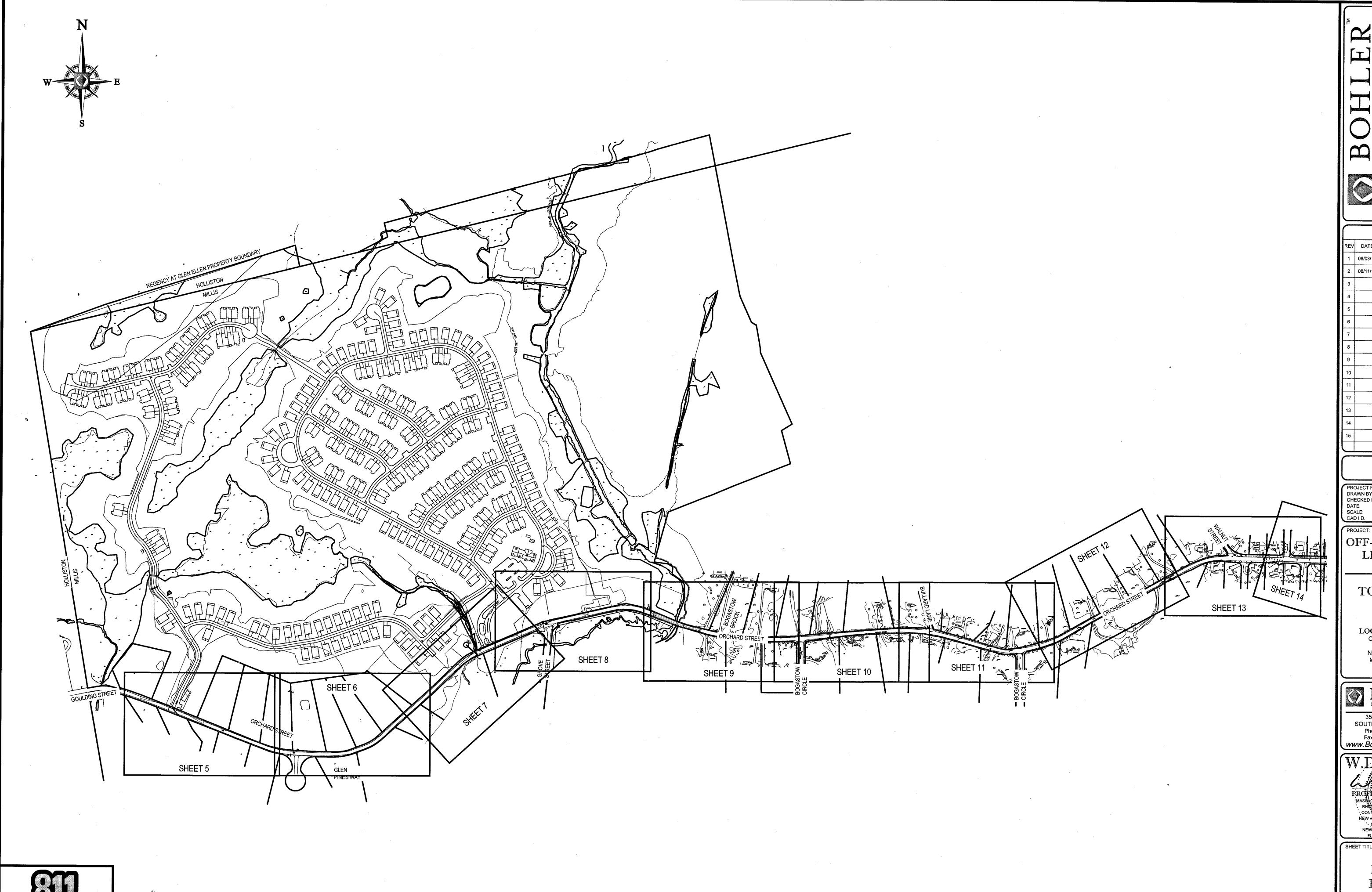
SHEET NUMBER:

REV 2 - 8/11/2017

THE OWNER AS REFERRED TO HEREIN I THE TOWN OF MILLIS

ALL PROPOSED SERVICES SHALL BE LOCATED WITH MINIMUM IMPACT TO EXISTING STONE WALLS AND TREES

CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THE SIZE, MATERIAL, AND LOCATION OF EXISTING SERVICES



Know what's below.

Call before you dig.

Sch Sch					
REVISIONS					
REV	DATE	COMMENT	BY		
1	08/03/17	REVISIONS PER COMMISSION FEEDBACK	ММА		
2	08/11/17	REVISIONS PER REVIEW COMMENTS			
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OFF- SITE SEWER LINE PLANS

TOLL BROS., INC.

LOCATION OF SITE
ORCHARD STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS



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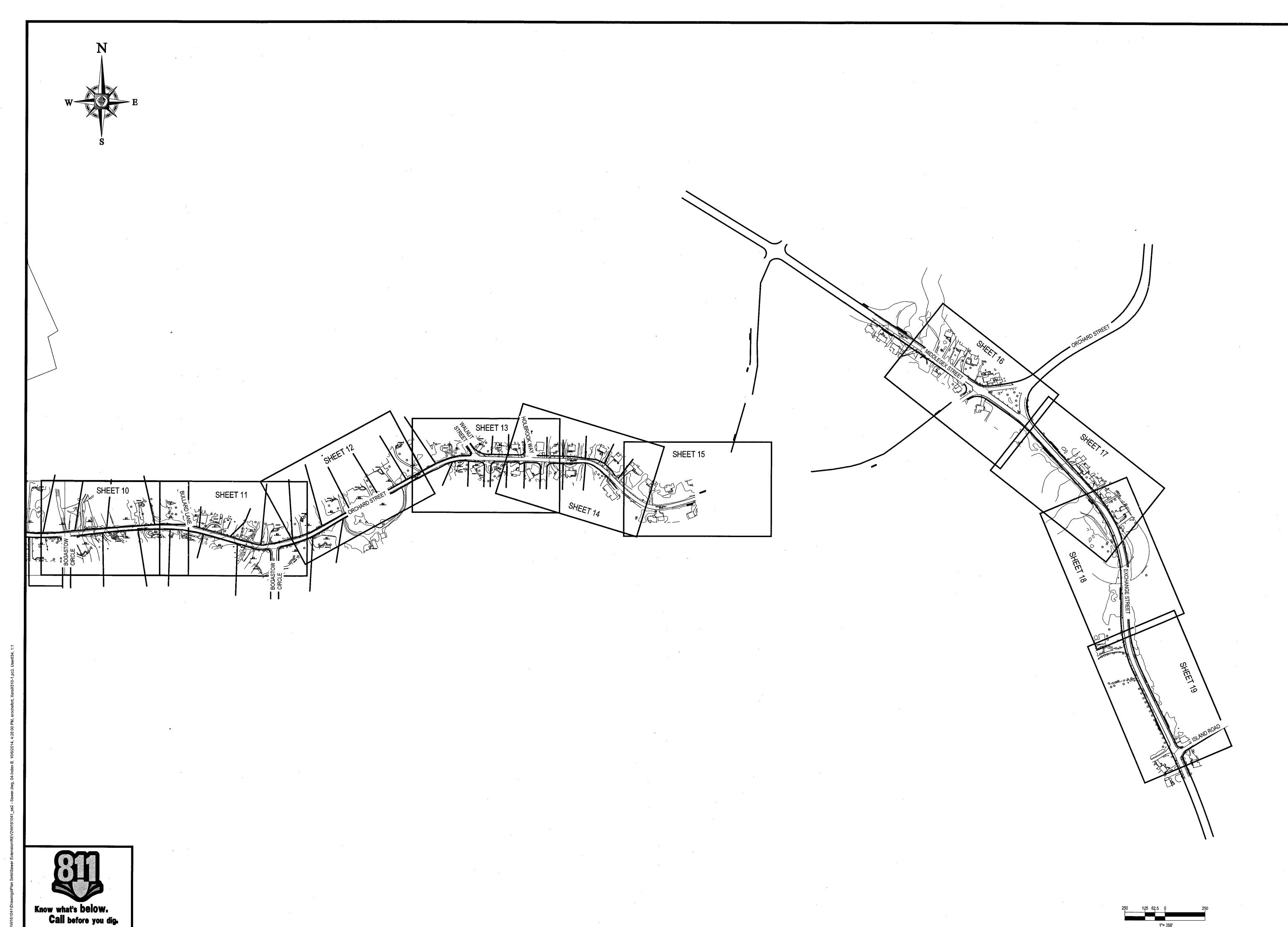
MAINE LICENSE No. 9490 NEW YORK LICENSE No. 07.1284-1 FLORIDA LICENSE No. 66202

INDEX PLAN A

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OF 27



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PROJECT No.:	W161041

OFF- SITE SEWER LINE PLANS

TOLL BROS., INC.

LOCATION OF SITE
ORCHARD STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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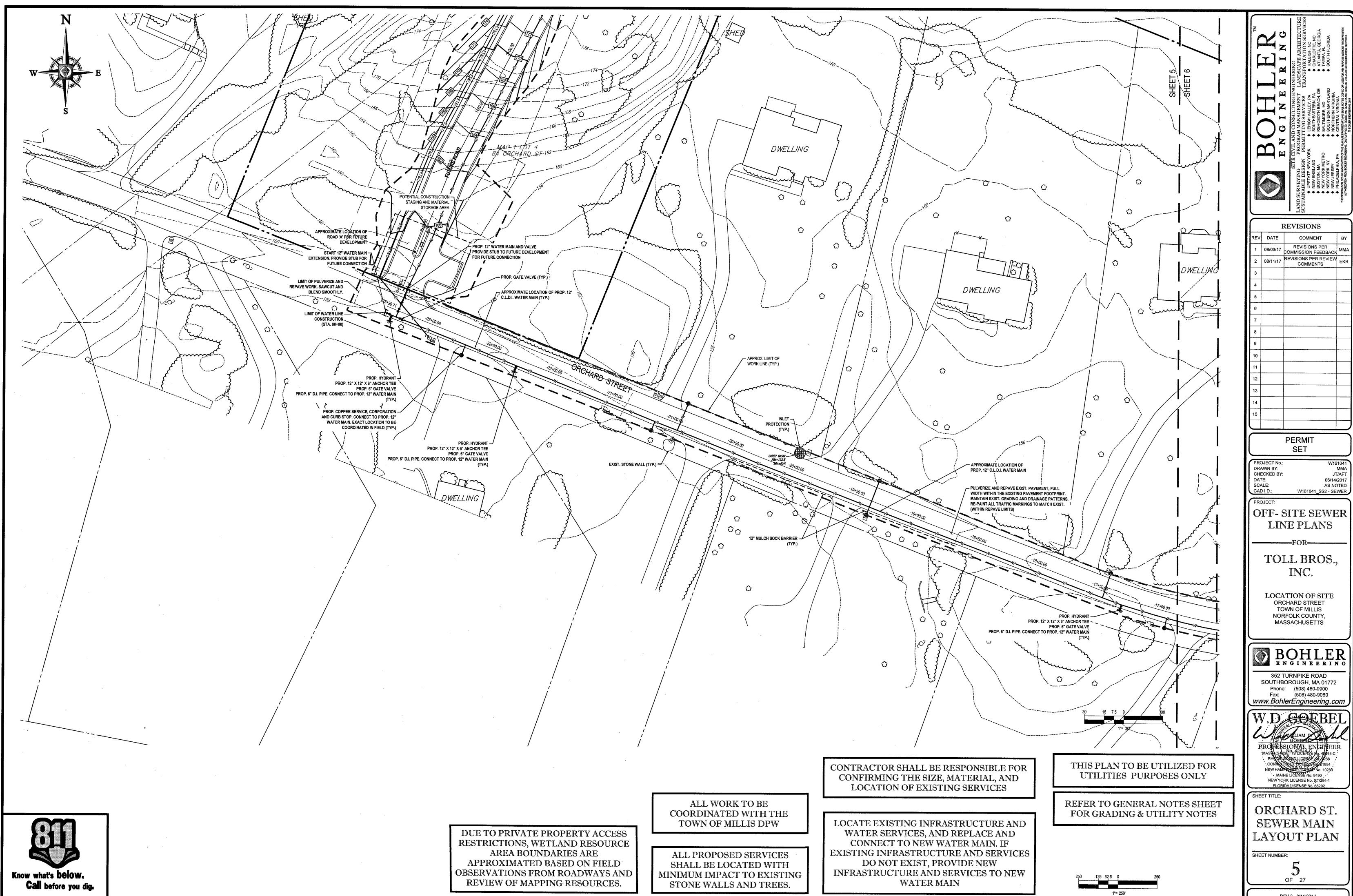
PROPESSIONAL ENGINEER
MASSICHUSETTS LICENSE NO. 42644-C:
RHOUZUSETTS LICENSE NO. 42644-C:
RHOUZUSETTS LICENSE NO. 668
CONNECTION LICENSE NO. 10280
MAINE LICENSE NO. 9490
NEW YORK LICENSE NO. 071284-1
FLORIDA LICENSE NO. 66202

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INDEX PLAN B

SHEET NUMBER:

OF 27



REVISIONS COMMENT REVISIONS PER COMMISSION FEEDBACK ' REVISIONS PER REVIEW COMMENTS

JT/AFT 06/14/2017 AS NOTED W161041_SS2 - SEWER

LINE PLANS

TOLL BROS., INC.

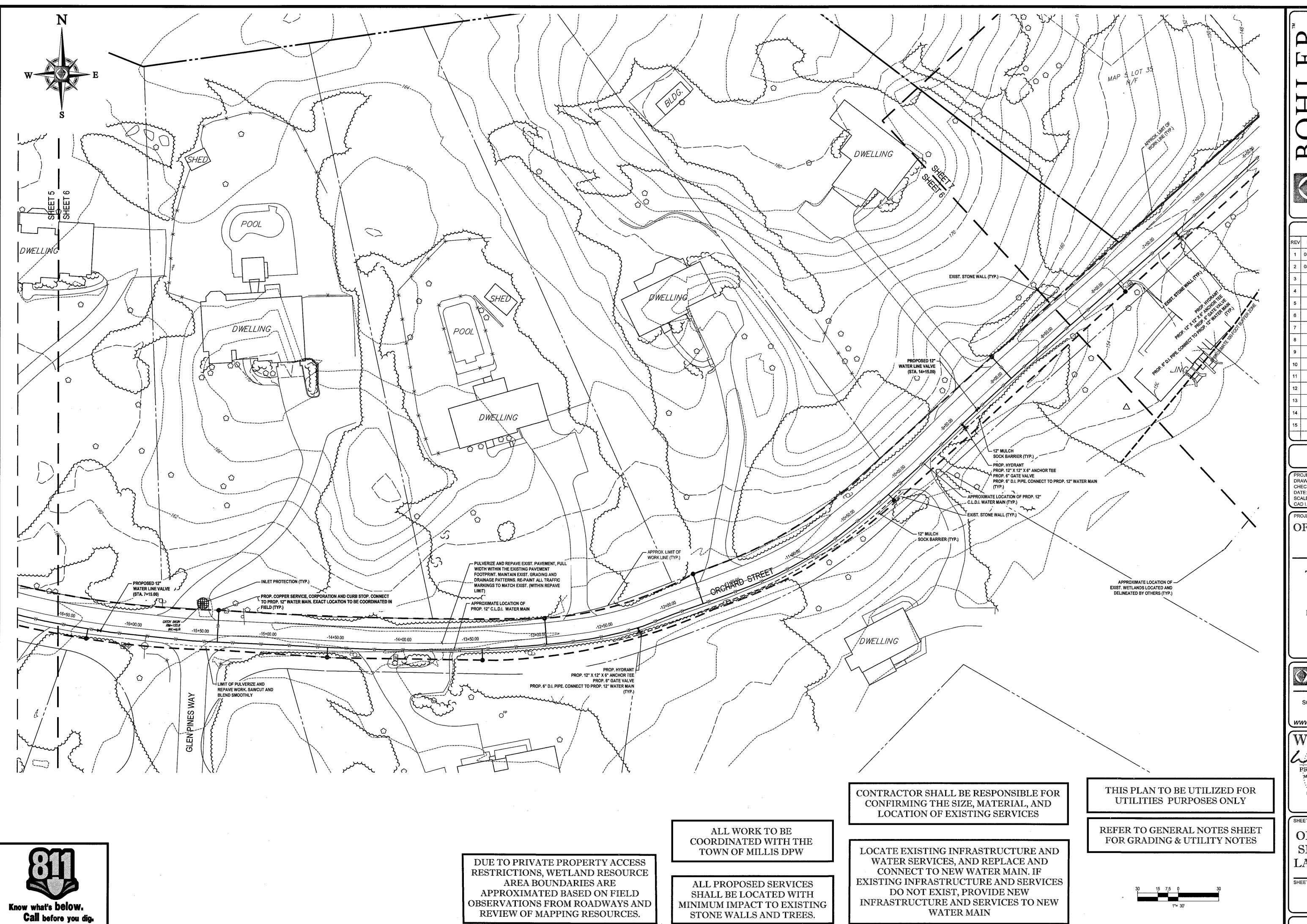
LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS

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NEW YORK LICENSE No. 071284-1 ORCHARD ST.

SEWER MAIN LAYOUT PLAN



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DRAWN BY: MMA
CHECKED BY: JT/AFT
DATE: 06/14/2017
SCALE: AS NOTED
CAD I.D.: W161041_SS2 - SEWER

OFF- SITE SEWER
LINE PLANS

LINE PLANS

TOLL BROS., INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS



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W.D. COEBEL

PROTESSIONAL ENGINEE

MASTACHUSETTS LICENSE NO. 42644-C

RITORIS AND LICENSE NO. 22854

NEW HAMPSHEE LICENSE NO. 10280

MAINE LICENSE NO. 9490

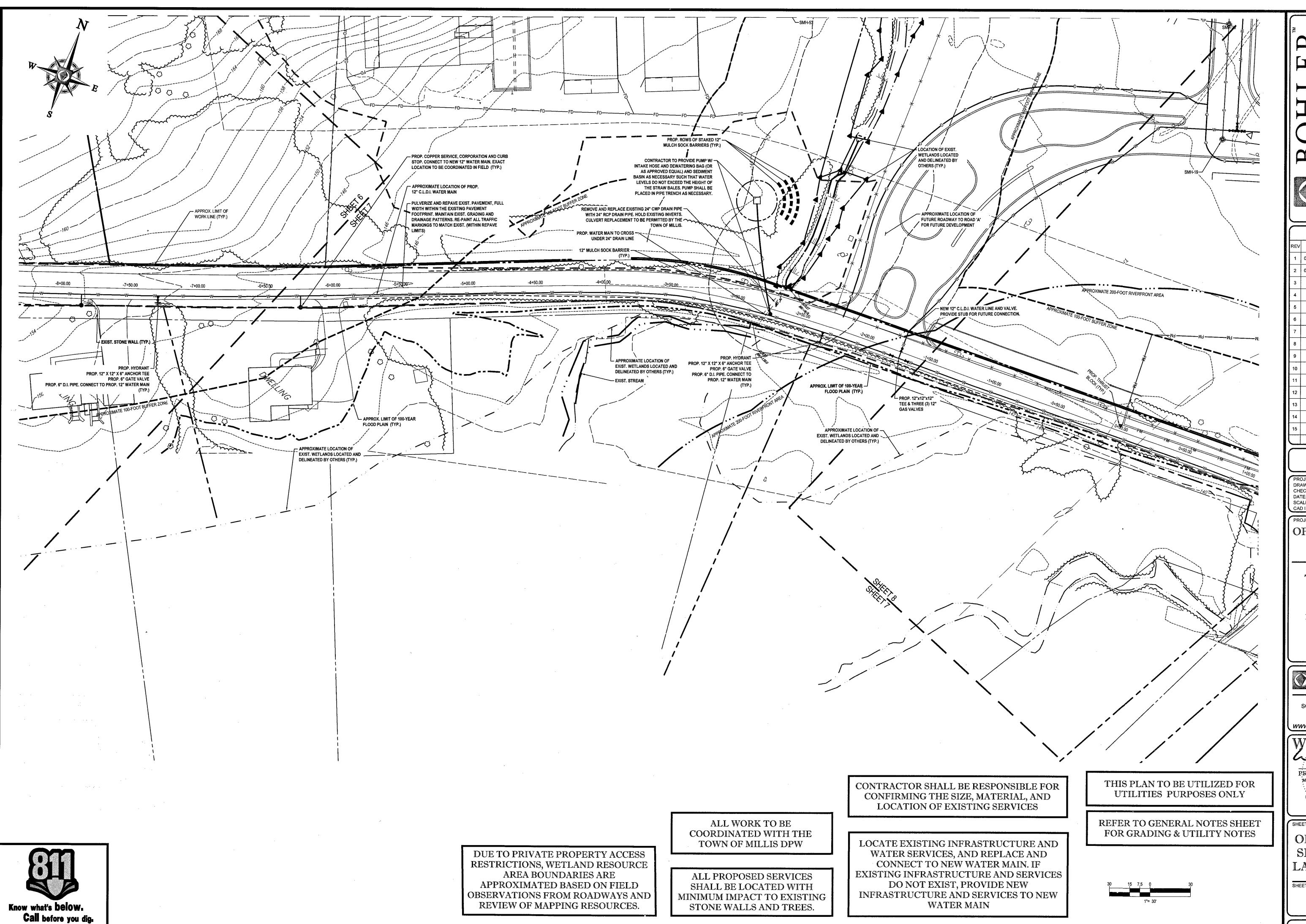
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SHEET TITLE:

ORCHARD ST. SEWER MAIN LAYOUT PLAN

SHEET NUMBER:

OF 27



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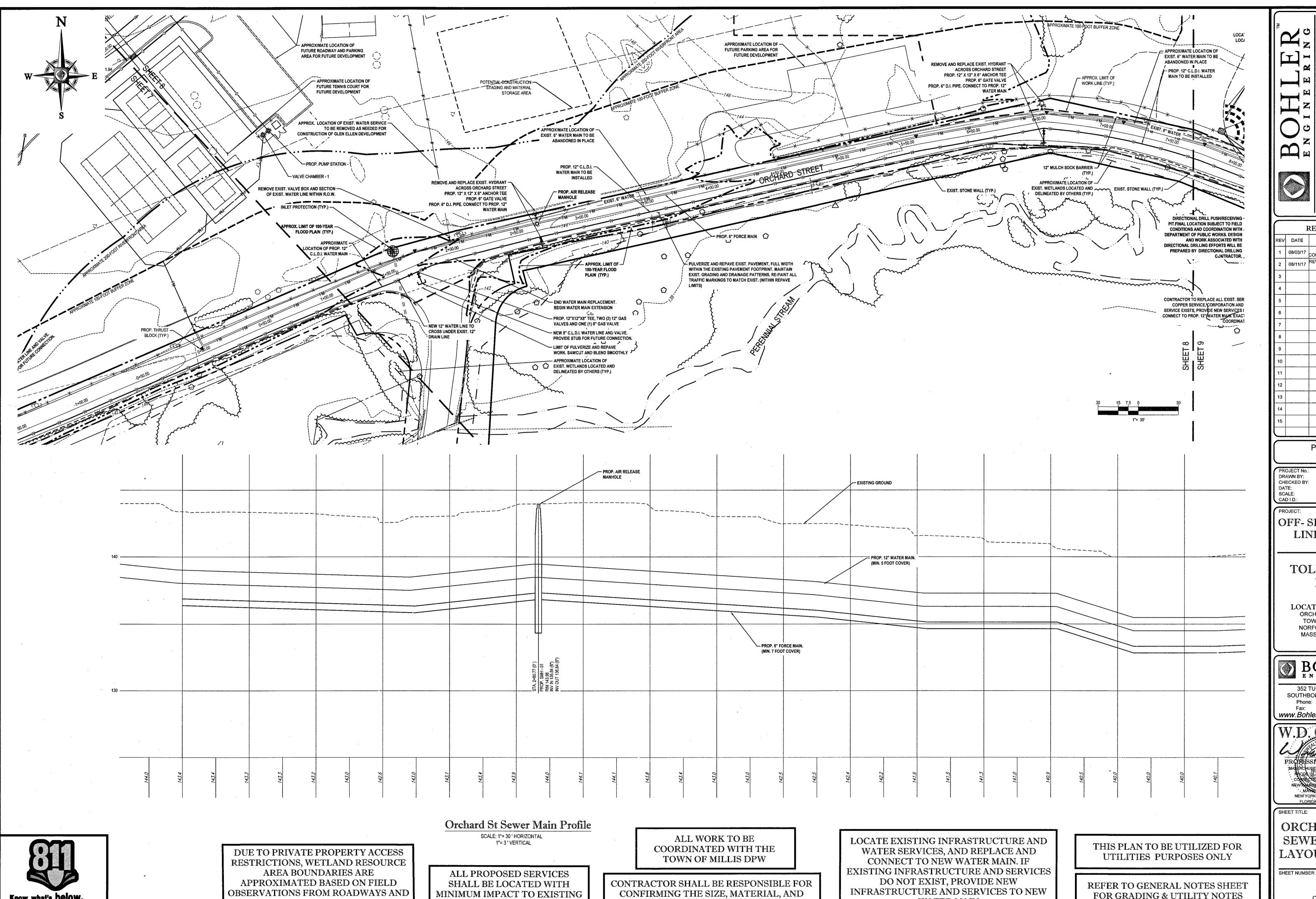
LOCATION OF SITE
ORCHARD STREET
TOWN OF MILLIS
NORFOLK COUNTY,
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ORCHARD ST. SEWER MAIN LAYOUT PLAN

OF 27



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REVIEW OF MAPPING RESOURCES.

STONE WALLS AND TREES.

LOCATION OF EXISTING SERVICES

WATER MAIN

FOR GRADING & UTILITY NOTES

REVISIONS COMMENT REVISIONS PER COMMISSION FEEDBACK REVISIONS PER REVIEW COMMENTS PERMIT

DRAWN BY: 06/14/2017 AS NOTED DATE: SCALE: W161041_SS2 - SEWER

OFF- SITE SEWER LINE PLANS

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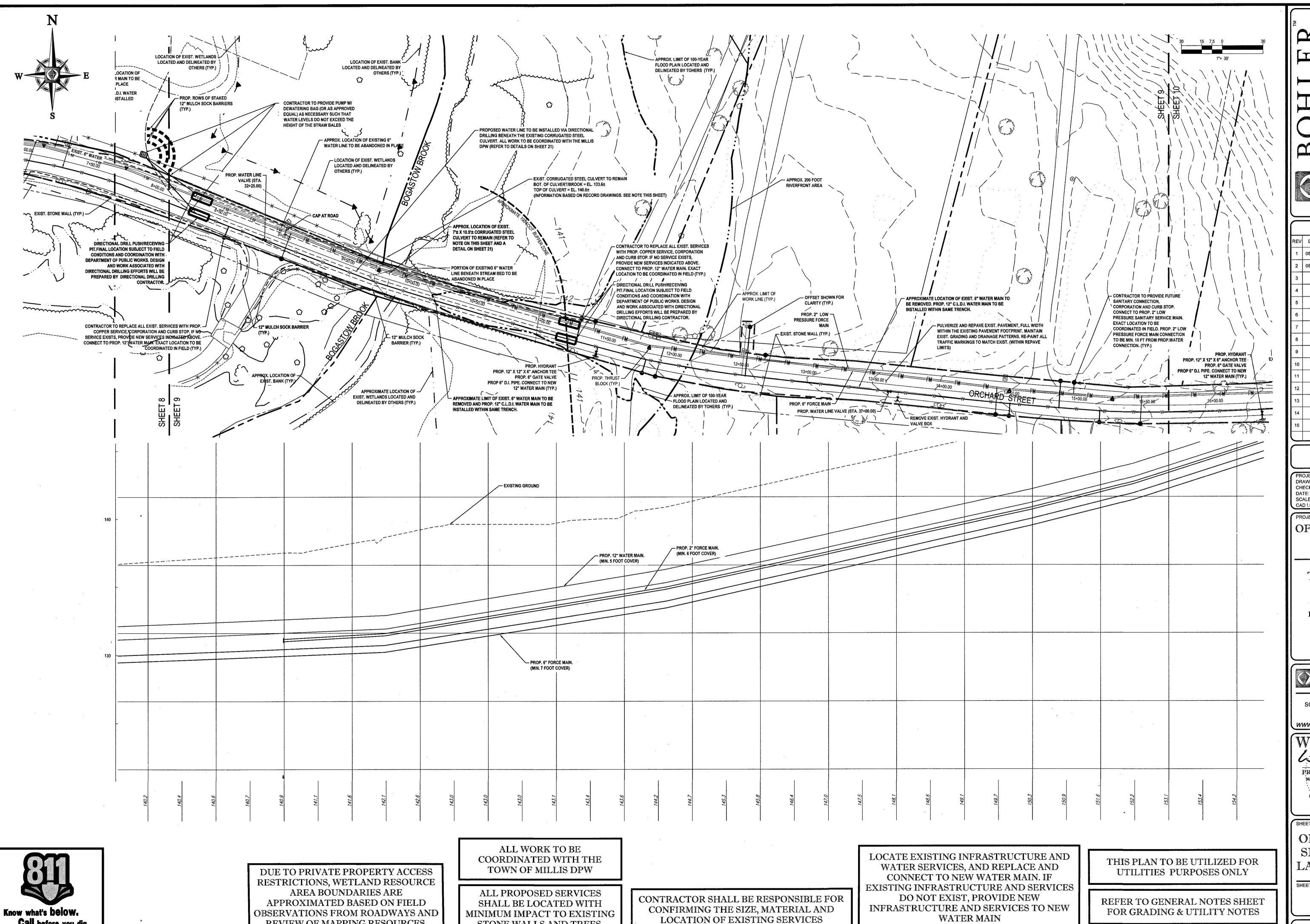
LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS



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ORCHARD ST. SEWER MAIN LAYOUT PLAN

OF 27



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REVIEW OF MAPPING RESOURCES.

STONE WALLS AND TREES.

REVISIONS COMMENT REVISIONS PER DMMISSION FEEDBACI REVISIONS PER REVIEW 08/11/17 COMMENTS

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OFF- SITE SEWER LINE PLANS

> TOLL BROS., INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS

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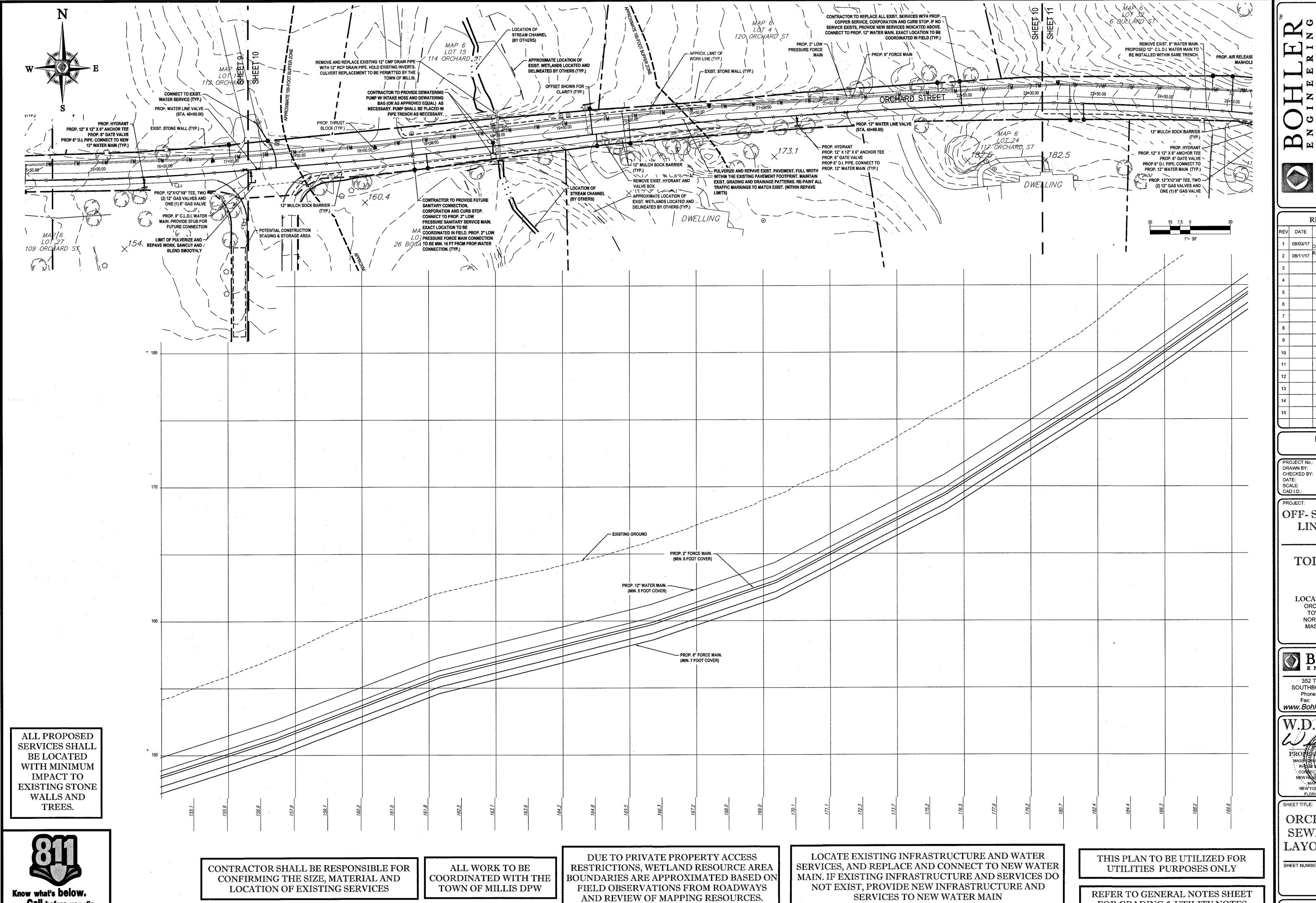
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ORCHARD ST. SEWER MAIN LAYOUT PLAN

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OFF- SITE SEWER LINE PLANS

> TOLL BROS., INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS



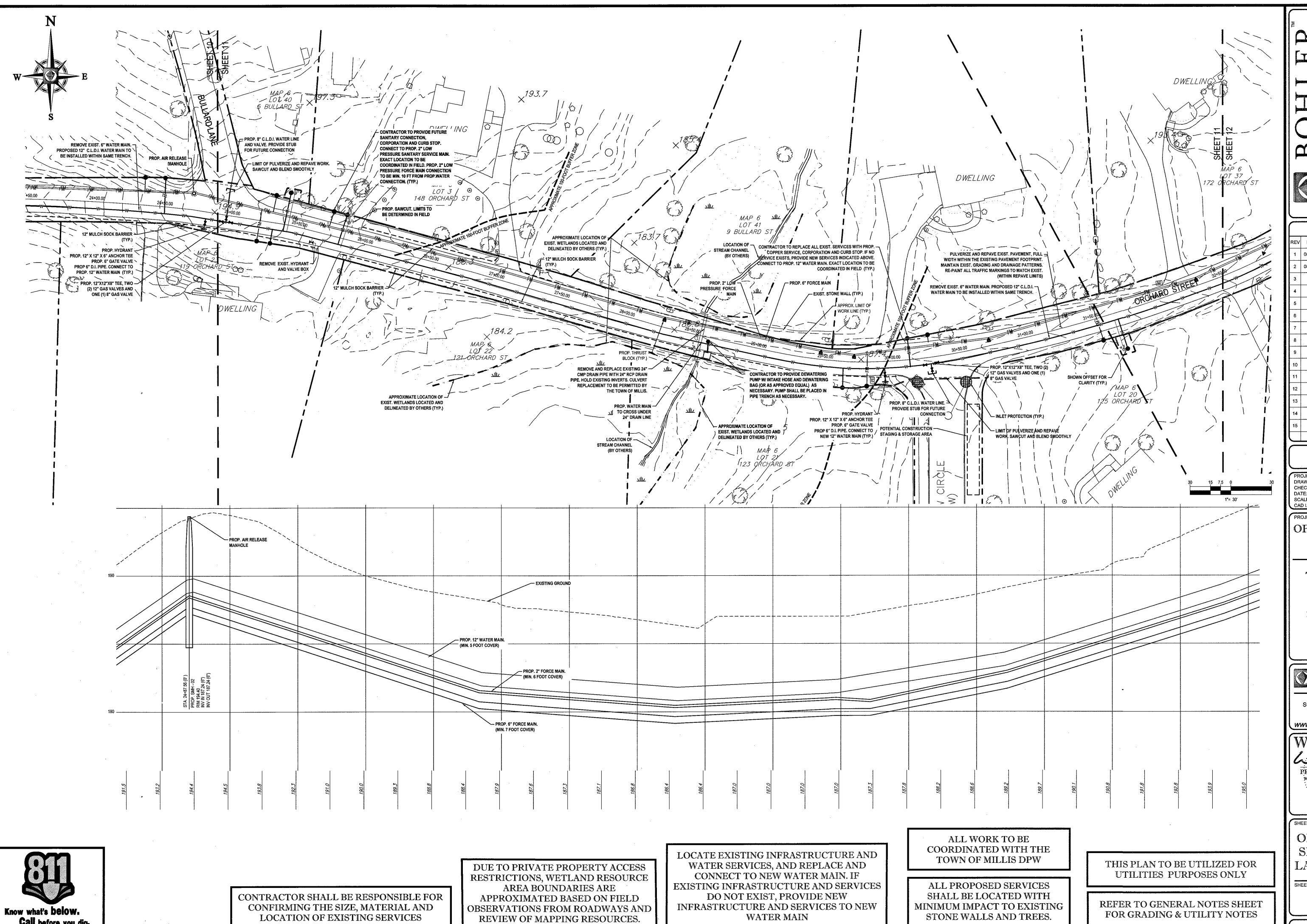
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ORCHARD ST. SEWER MAIN LAYOUT PLAN

SHEET NUMBER:

FOR GRADING & UTILITY NOTES

OF 27



REVISIONS REVISIONS PER OMMISSION FEEDBACK EVISIONS PER REVIEW . COMMENTS

CHECKED BY DATE: SCALE: CAD I.D.: JT/AFT 06/14/2017 AS NOTED

OFF- SITE SEWER LINE PLANS

TOLL BROS. INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS

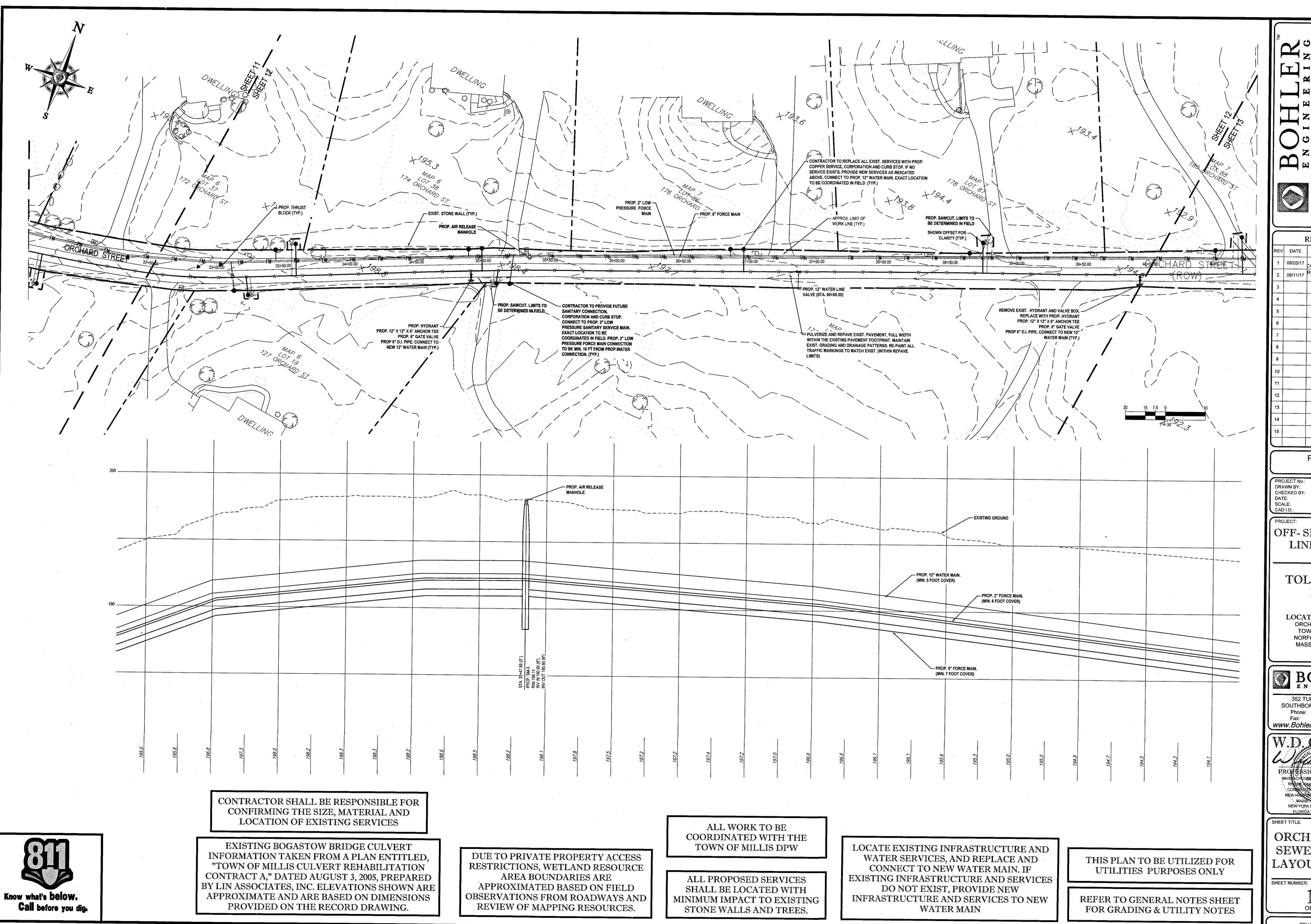


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ORCHARD ST. SEWER MAIN LAYOUT PLAN

SHEET NUMBER:

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SITE CIVIL AND CONSULTING ENGINEERING

SOUTHERSTEIN

* RALEIGH NC

* SOUTHERSTEIN

* SOUTHERN WIRGINIA

* HILADELPHIA, PA

* CENTRAL VIRGINIA

* HILADELPHIA, PA

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REVISIONS

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DRAWN BY: MMA
CHECKED BY: JT/AFT
DATE: 06/14/2017
SCALE: AS NOTED
CAD I.D.: W161041_SS2 - SEWER

PROJECT:

OFF- SITE SEWER

SET

LINE PLANS

FOR—

TOLL BROS., INC.

COCATION OF SITE
ORCHARD STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER ENGINEERING

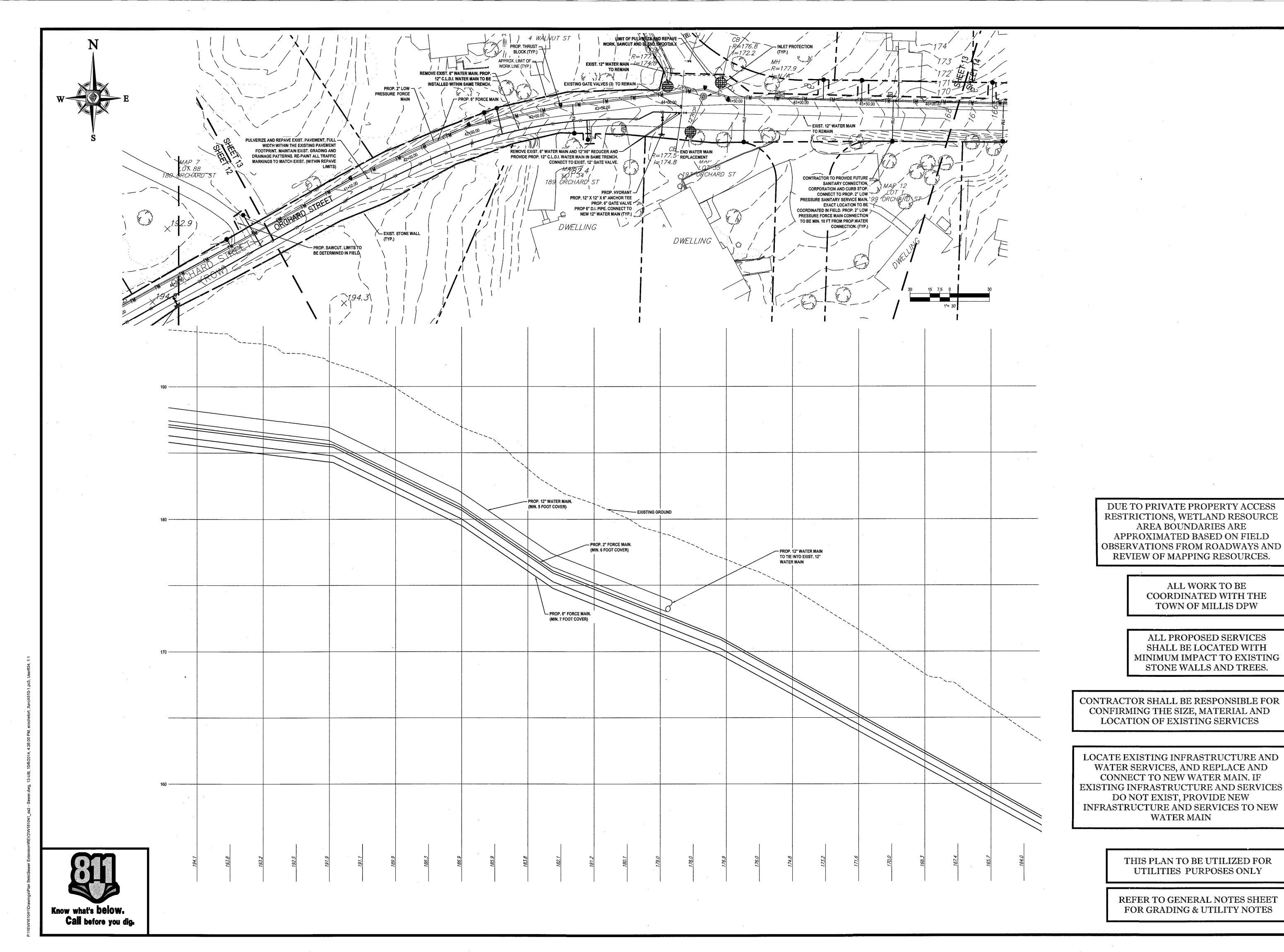
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PROPESSIONAL ENTERE MASSACHUSERISTINGE

MEW HAND PARENTS NO. 94 MAINE DISTRICT NO. 94 NEW YORK LICENSE NO. 66 FLORIDA LICENSE NO. 66

ORCHARD ST.
SEWER MAIN
LAYOUT PLAN

12 OF 27



REVISIONS REVISIONS PER 08/11/17

DRAWN BY: 06/14/2017 AS NOTED

OFF- SITE SEWER LINE PLANS

TOLL BROS., INC.

ALL WORK TO BE

LOCATION OF SITE
ORCHARD STREET
TOWN OF MILLIS
NORFOLK COUNTY,
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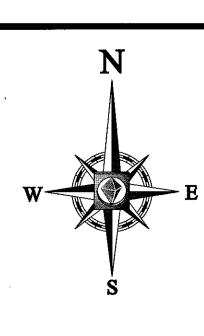
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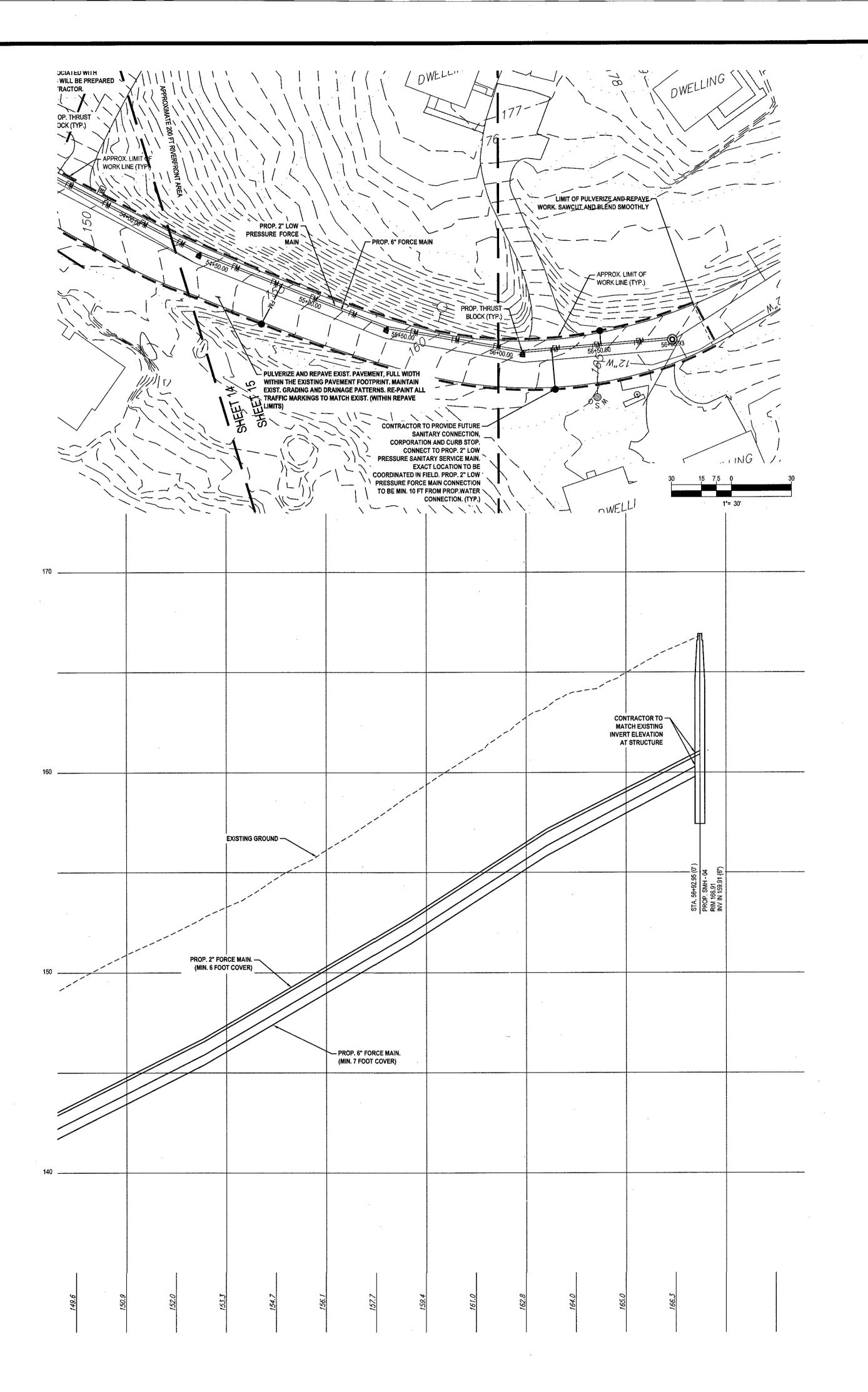
ORCHARD ST. SEWER MAIN LAYOUT PLAN

SHEET NUMBER:

OF 27







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PROJECT No.: W16104
DRAWN BY: MM

RESTRICTIONS, WETLAND RESOURCE
AREA BOUNDARIES ARE
APPROXIMATED BASED ON FIELD
OBSERVATIONS FROM ROADWAYS AND
REVIEW OF MAPPING RESOURCES.

DUE TO PRIVATE PROPERTY ACCESS

ALL WORK TO BE COORDINATED WITH THE TOWN OF MILLIS DPW

ALL PROPOSED SERVICES
· SHALL BE LOCATED WITH
MINIMUM IMPACT TO EXISTING
STONE WALLS AND TREES.

CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THE SIZE, MATERIAL AND LOCATION OF EXISTING SERVICES

LOCATE EXISTING INFRASTRUCTURE AND
WATER SERVICES, AND REPLACE AND
CONNECT TO NEW WATER MAIN. IF
EXISTING INFRASTRUCTURE AND SERVICES
DO NOT EXIST, PROVIDE NEW
INFRASTRUCTURE AND SERVICES TO NEW
WATER MAIN

THIS PLAN TO BE UTILIZED FOR UTILITIES PURPOSES ONLY

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

ENGLAND

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SITE CIVIL AND CONSULTING ENGINEERING

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 PROJECT No.:
 W161041

 DRAWN BY:
 MMA

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 DATE:
 06/14/2017

 SCALE:
 AS NOTED

 CAD I.D.:
 W161041_SS2 - SEWER

OFF- SITE SEWER
LINE PLANS

TOLL BROS., INC.

LOCATION OF SITE
ORCHARD STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS



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W.D. GOEBEI
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ROJESSIONAL ENGINEER

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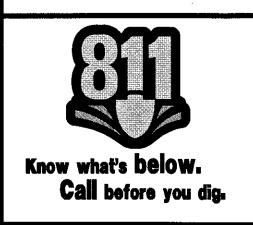
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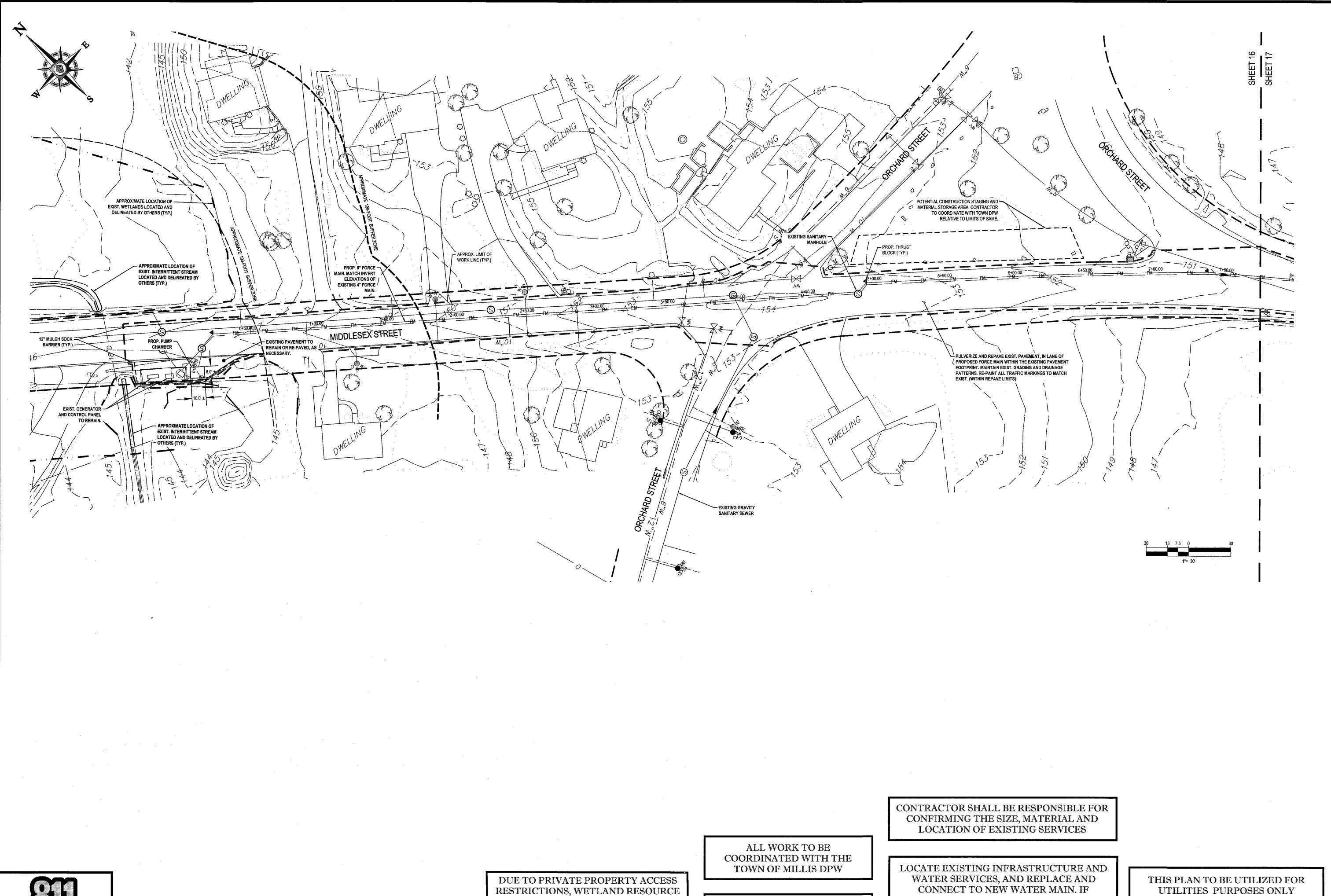
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ORCHARD ST.
SEWER MAIN
LAYOUT PLAN

SHEET NUMBER:

15 OF 27





AREA BOUNDARIES ARE

APPROXIMATED BASED ON FIELD

OBSERVATIONS FROM ROADWAYS AND

REVIEW OF MAPPING RESOURCES.

Know what's below.

Call before you dig.

REVISIONS **REVISIONS PER** COMMISSION FEEDBACH REVISIONS PER REVIEW COMMENTS

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OFF- SITE SEWER LINE PLANS

> TOLL BROS., INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS



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MIDDLESEX ST. SEWER MAIN LAYOUT PLAN

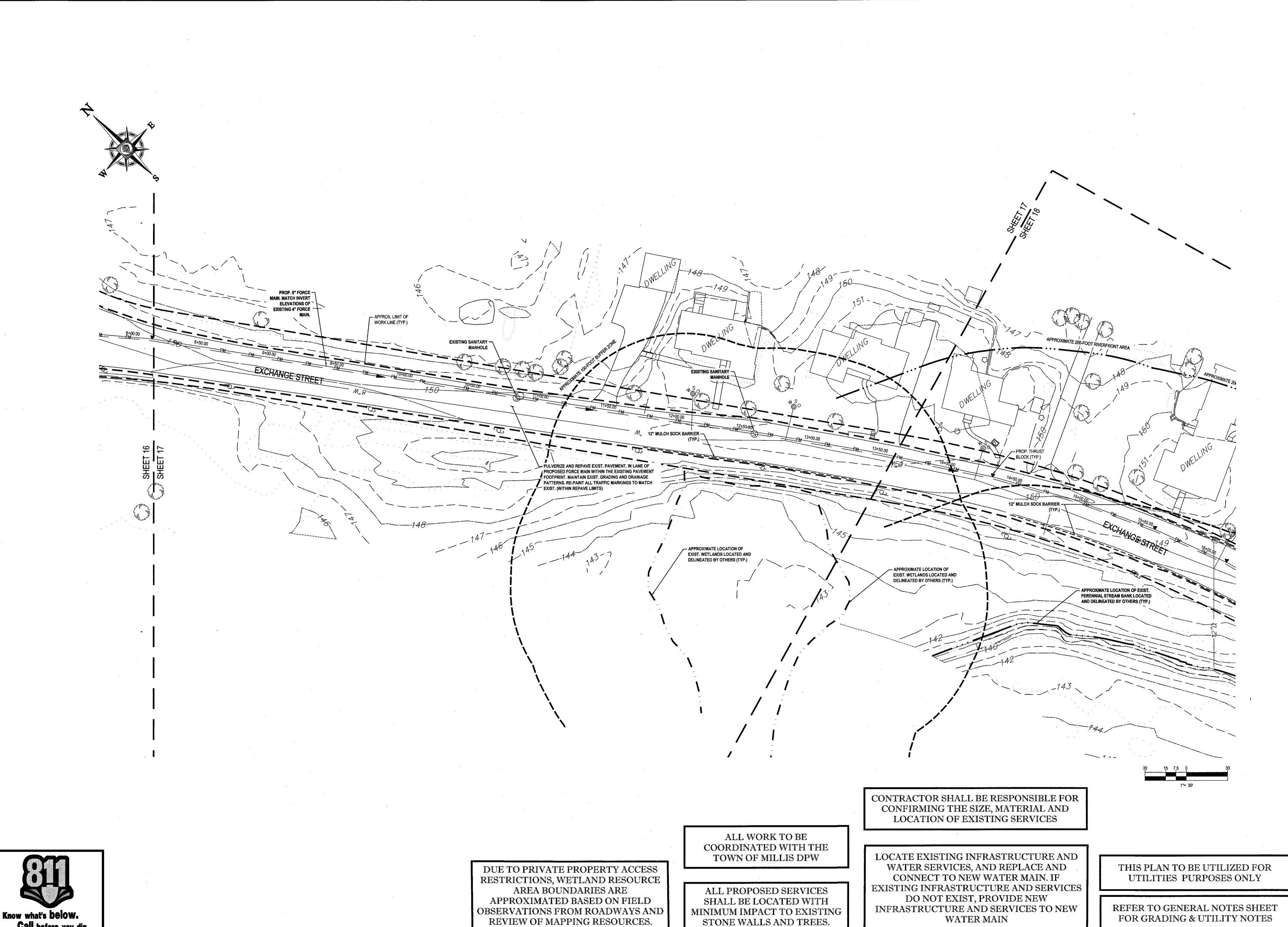
OF 27

REV 2 - 8/11/2017

ALL PROPOSED SERVICES SHALL BE LOCATED WITH MINIMUM IMPACT TO EXISTING STONE WALLS AND TREES.

CONNECT TO NEW WATER MAIN. IF **EXISTING INFRASTRUCTURE AND SERVICES** DO NOT EXIST, PROVIDE NEW INFRASTRUCTURE AND SERVICES TO NEW WATER MAIN

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES



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PROGRAM MANAGEMENT
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SOUTHEASTERN, PA

SOUTHEASTERN, PA

SEHOBOTH BEACH, DE

REHOBOTH BEACH, DE

STANFA, FL

TAMPA, FL



> PERMIT SET

DRAWN BY: MMA
CHECKED BY: JT/AFT
DATE: 06/14/2017
SCALE: AS NOTED
CAD I.D.: W161041_SS2 - SEWER

PROJECT:

OFF- SITE SEWER

LINE PLANS

TOLL BROS. INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS



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WILLIAM D. COEBEI

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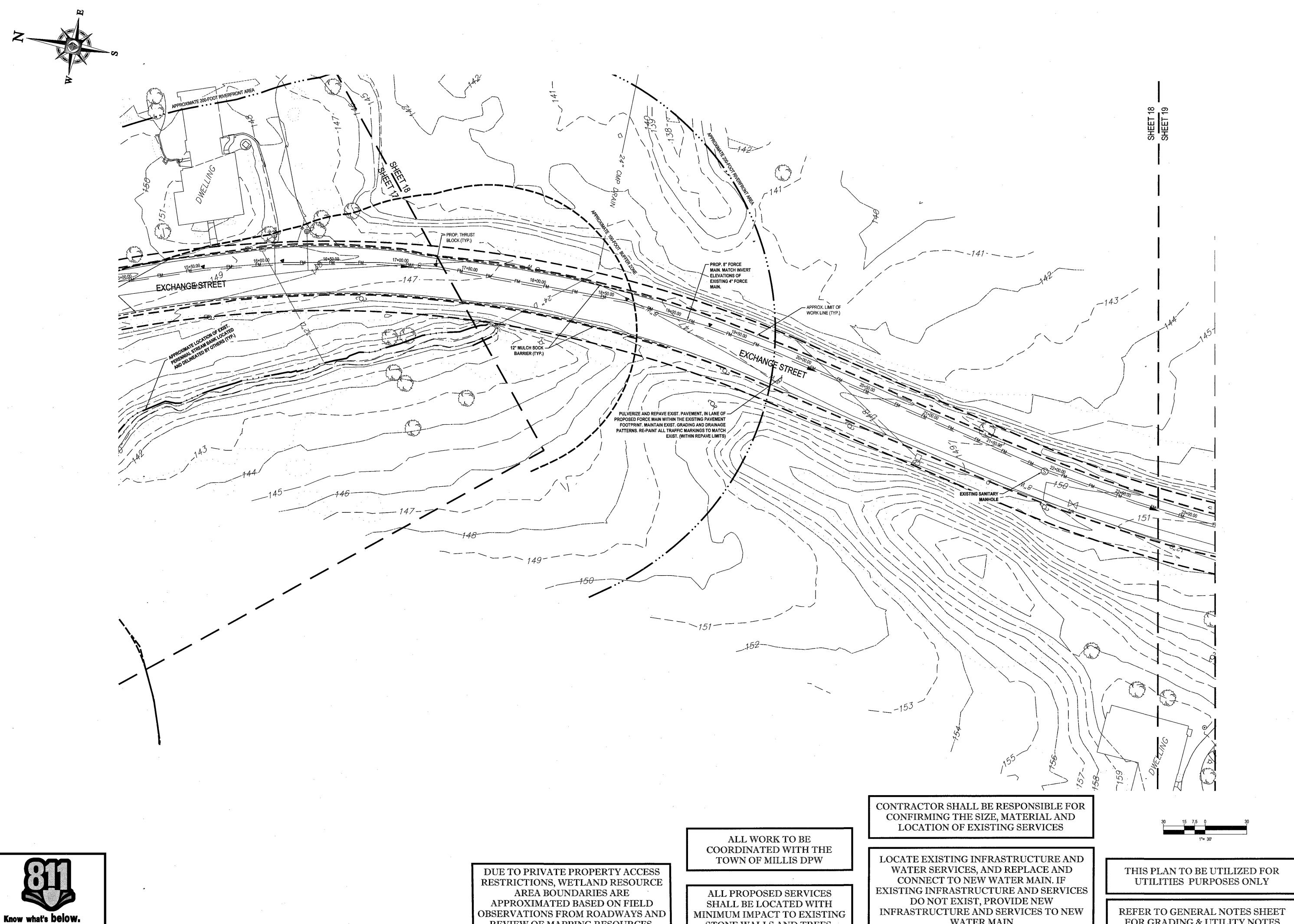
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MIDDLESEX ST.
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OF 27



REVIEW OF MAPPING RESOURCES.

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PROJECT No.: DRAWN BY: JT/AFT 06/14/2017 AS NOTED W161041_SS2 - SEWER CHECKED BY DATE: SCALE: CAD I.D.:

OFF- SITE SEWER LINE PLANS

TOLL BROS., INC.

LOCATION OF SITE
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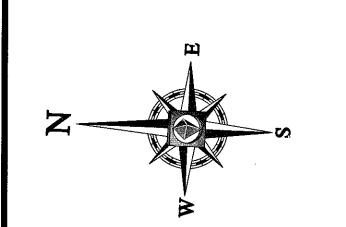
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REV 2 - 8/11/2017

MINIMUM IMPACT TO EXISTING STONE WALLS AND TREES.

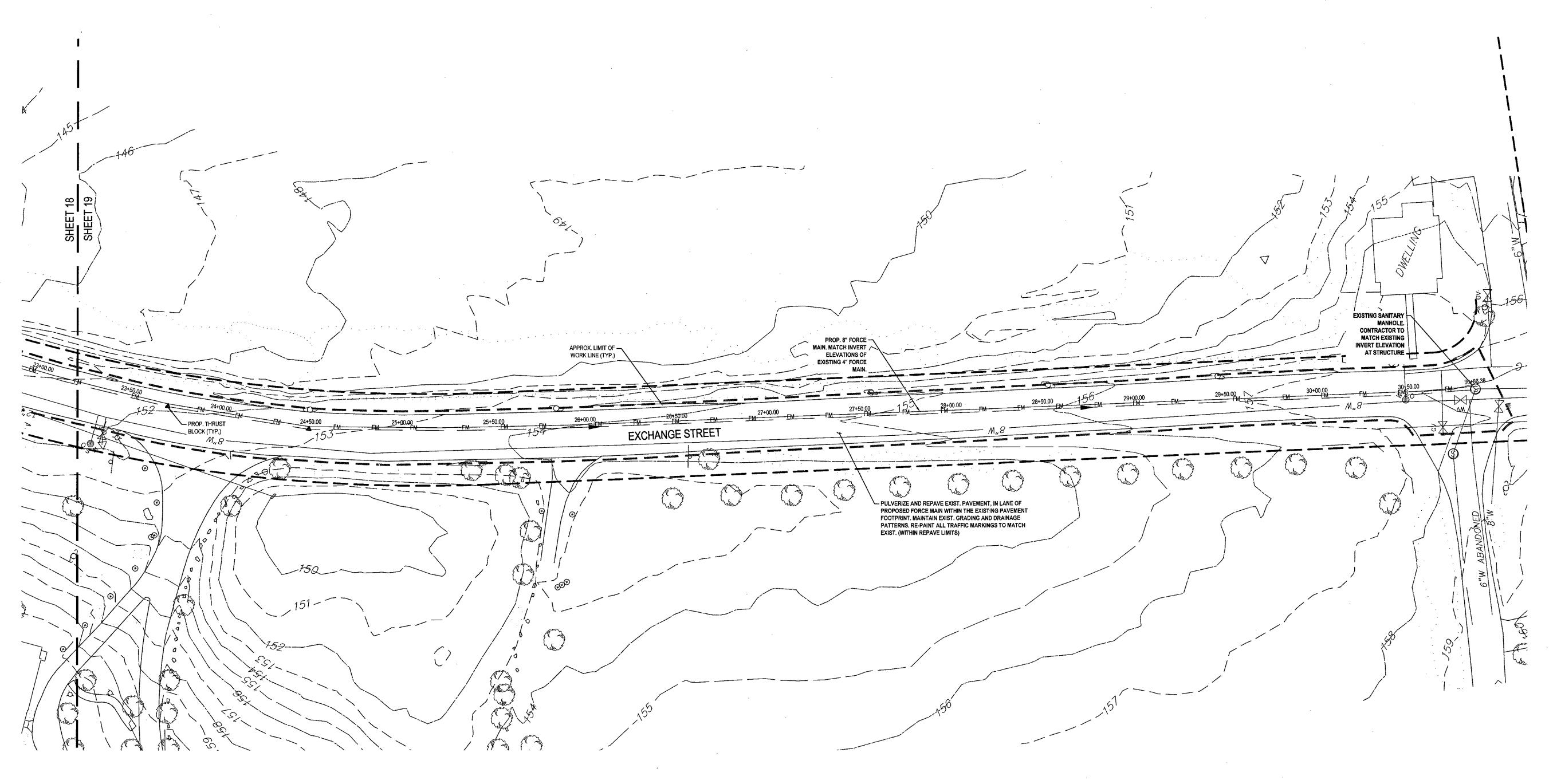
INFRASTRUCTURE AND SERVICES TO NEW WATER MAIN

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES



Know what's below.

Call before you dig.



DUE TO PRIVATE PROPERTY ACCESS

RESTRICTIONS, WETLAND RESOURCE

AREA BOUNDARIES ARE

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THIS PLAN TO BE UTILIZED FOR UTILITIES PURPOSES ONLY

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES ENGINERING
PROGRAM MANAGEMENT
PERMITTING SERVICES
ORK + LEHIGH VALLEY, PA
+ SOUTHEASTERN, PA
+ SOUTHERN MARCH

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PROJECT No.: W161041
DRAWN BY: MMA
CHECKED BY: JT/AFT
DATE: 06/14/2017
SCALE: AS NOTED
CAD I.D.: W161041_SS2 - SEWER

OFF- SITE SEWER LINE PLANS

TOLL BROS., INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS



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PROPESSIONAL ENGINEER
MASACHUSETT STREET No. 4644-C:
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RHOPE SCAND LICENSE NO. 10280

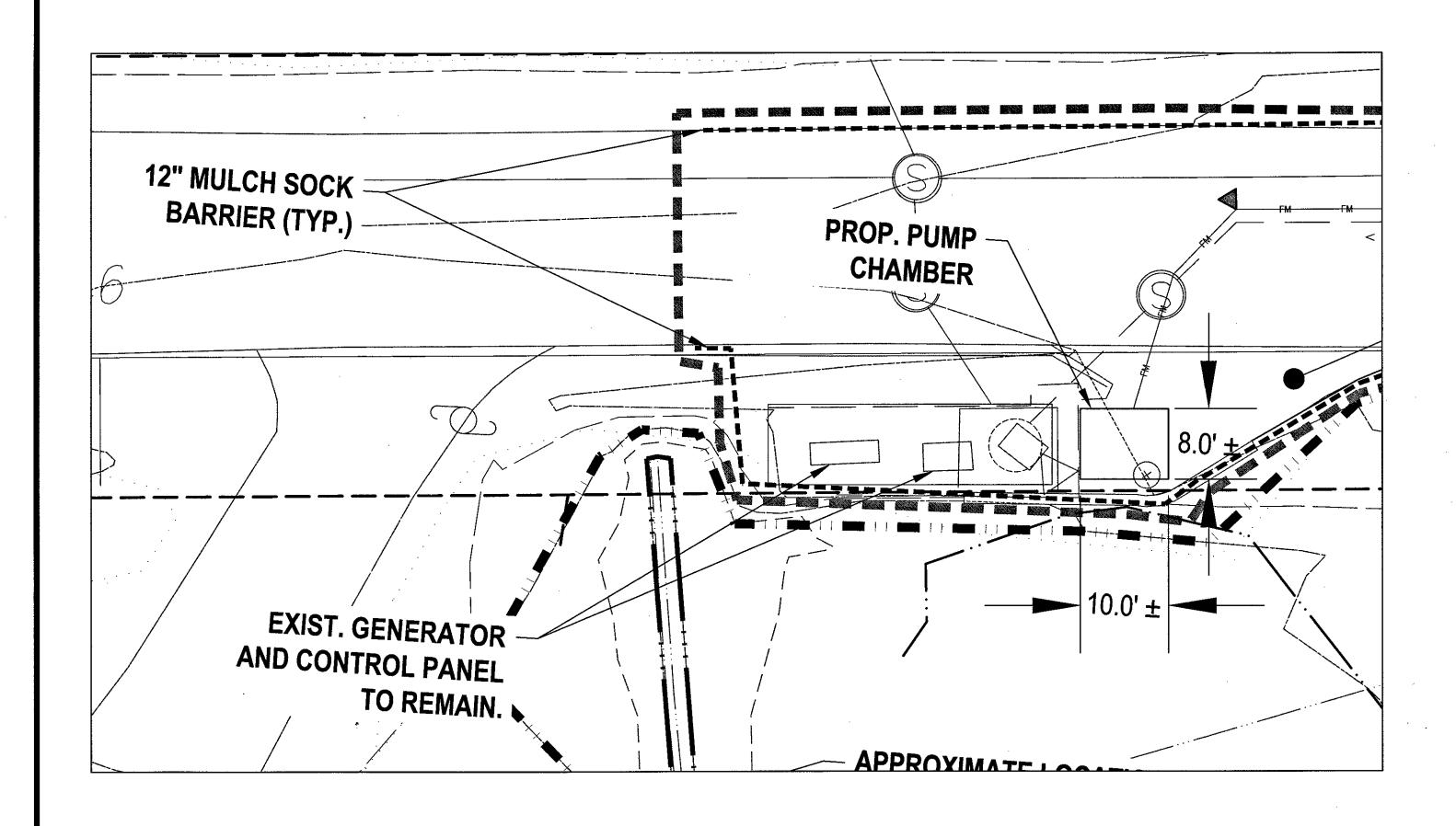
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NEW HAMPS LICENSE No. 10
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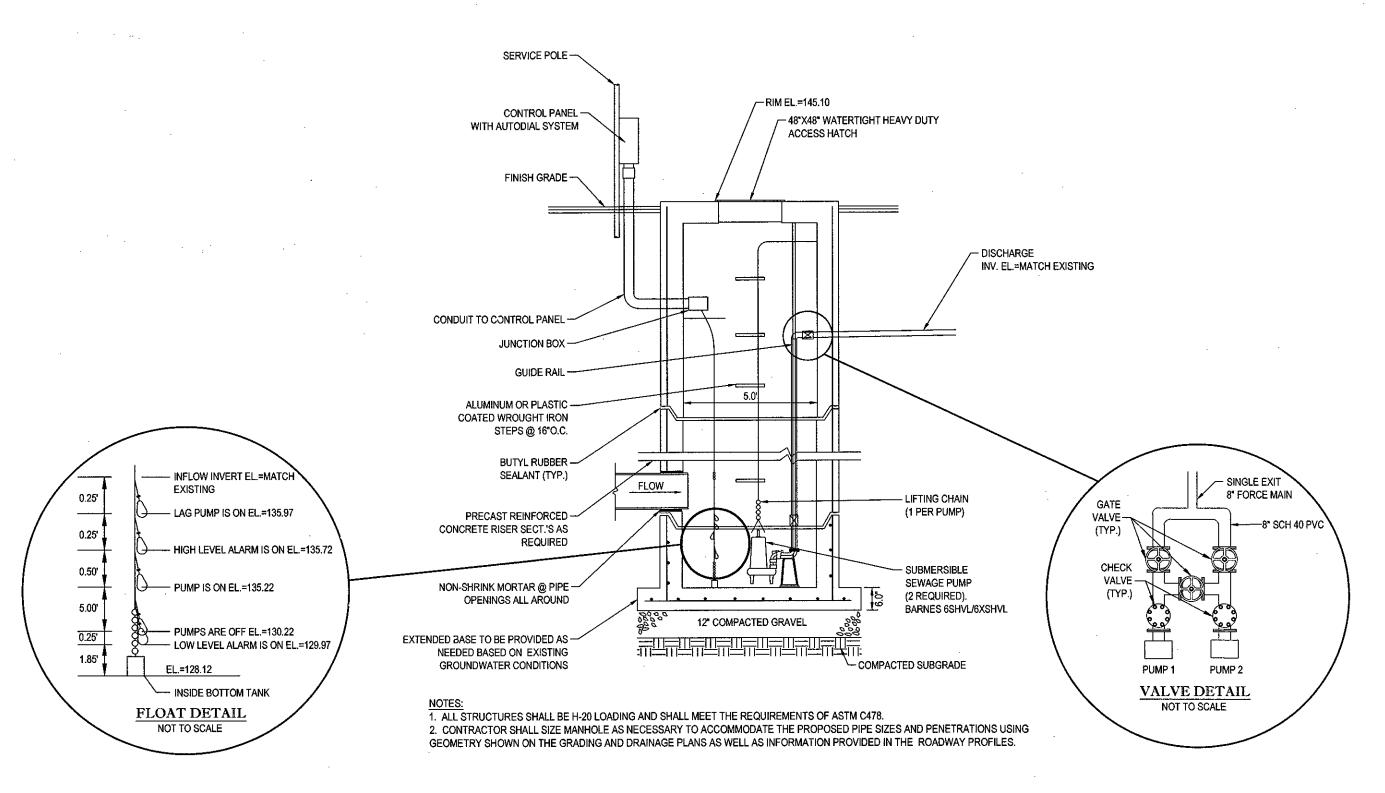
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SEWER MAIN
LAYOUT PLAN

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OF 27





PUMP STATION 1 DETAIL

PUMP CHAMBER SYSTEM NOTES:

- ALL ENTRIES FOR PUMP CHAMBER SHALL BE KOR'N SEAL OR EQUIVALENT.
- DESIGN OPERATING VOLUME TO CLEAR THE VOLUME OF THE FORCE MAIN ON EACH PUMP CYCLE.
- 3. PUMP STATION ACCESS HATCH CENTERED OVER PUMPS TO BE A WATERTIGHT STAINLESS STEEL H-20, 48° SQUARE AS NOTED. INLET HATCH SHALL BE CENTERED OVER INLET PIPES AND WATERTIGHT STAINLESS STEEL H-20, 36" SQUARE AS NOTED. BOTH HATCHES SHALL BE SUPPORTED ON A PRE-CAST CONCRETE RISER DESIGNED TO ACCOMMODATE STAINLESS STEEL H-20 HATCHES. OPENINGS IN TOP OF PUMP CHAMBER SHALL MATCH THE HATCH DIMENSIONS.
- 4. A VENT SHALL BE LOCATED THROUGH THE TOP OF THE PUMP CHAMBER OR ALTERNATIVELY THROUGH THE PRECAST HATCH RISER. VENT PIPING SHALL BE SHOWN TO A LOCATION WHERE A CHARCOAL FILTER MAY BE LOCATED. IF NECESSARY, THE CHARCOAL FILTER WILL BE
- 5. AN AUDIBLE HORN, RED FLASHING LIGHT AND EMERGENCY CONTACT SIGN MOUNTED NEXT TO THE LIGHT SHALL BE FURNISHED TO PROVIDE NOTIFICATION OF PUMP STATION FAILURE AND PROVIDE AN EMERGENCY CONTACT NUMBER IF HORN/LIGHT ARE SOUNDING/VISIBLE. SUCH EQUIPMENT SHALL BE IDENTICAL TO THOSE USED ON OTHER TOWN OF MILLIS DPW PUMP STATIONS EXCEPT DIFFERENT CONTACT NUMBERS.
- 6. AN "AUTO DIALER" SHALL BE PROVIDED WITH THE STATION CONTROLS WHICH WILL NOTIFY A MANNED 24/7 LOCATION FOR EMERGENCY RESPONSE. DIALER SHALL PROVIDE PRIMARY AND BACKUP RESPONSE CALLS AND DIAL OUT TO FIRE DISPATCH IF ALL RESPONSES FAIL. 7. PUMPS SHALL ALTERNATE AND A RUN TIME METER SHALL BE INSTALLED IN THE CONTROL PANEL FOR EACH PUMP. EACH PUMP AND ALARM
- 8. SEWER PUMP SYSTEM VENDOR MAINTENANCE CONTRACT TO BE PROVIDED PRIOR TO TESTING AND ACTIVATING PUMP SYSTEM. WATER TIGHT TESTING, MANDREL TESTING AND VACUUM TESTING OF ALL SYSTEM COMPONENTS INCLUDING PUMP CHAMBER SHALL BE ACCORDING TO THE TOWN OF MILLIS DPW REGULATIONS. CONTRACTOR SHALL TEST FORCE MAIN PIPE IN THE PRESENCE OF AN ENGINEER USING A HYDROSTATIC TEST OF AT LEAST 1.5 TIMES THE SHUTOFF HEAD OF THE CONNECTED PUMPS OR 150 PSI, WHICHEVER IS GREATER. LOSS OF WATER PRESSURE DURING TEST SHALL NOT EXCEED 5 PSI IN A 2-HOUR PERIOD. ANY DEFECTIVE WORK SHOWN BY THIS TEST
- SHALL BE REPLACED ENTIRELY AT THE CONTRACTOR'S EXPENSE. 9. ALL INTERIOR PIPING AND HARDWARE SHALL BE STAINLESS STEEL.
- 10. SHOP DRAWINGS OF THE PUMP CHAMBER AND ALL PUMP EQUIPMENT TO BE APPROVED BY DPW AFTER REVIEW BY THE DESIGN ENGINEER.
- 11. CONTRACTOR SHALL PROVIDE TRAINING AND START UP SERVICES BY MANUFACTURER'S REP FOR PUMP STATION. START UP SERVICES SHALL INCLUDE INSTRUCTION AND DEMONSTRATION INCLUDING OPERATION WITH BACKUP POWER USING PORTABLE GENERATOR. SEWER PUMP SYSTEM O&M MANUAL TO BE PROVIDED AND REVIEWED BY DPW AND SHALL INCLUDE EMERGENCY CONTACTS AND MAINTENANCE
- 12. PUMP INSTALLATION, POWER FEED, ALARMS AND PUMP CONTROL PANEL TO BE INSTALLED BY A QUALIFIED LICENSED ELECTRICIAN.
- 13. CONTROL PANEL SHALL HAVE AN OUTLET WIRED TO ALLOW CONNECTION OF AN EMERGENCY GENERATOR WITH SUITABLE CAPABILITY TO ISOLATE THE CONTROL PANEL WHILE POWERED BY BACK UP GENERATOR.
- 14. A SEPARATE AS-BUILT SHALL BE PROVIDED TO DPW FOR THE SEWER PUMP STATION.
- 15. BOTH PUMPS MUST BE EQUIPPED WITH AN ALARM LOCATED IN THE BUILDING SERVED WHICH IS POWERED BY A CIRCUIT SEPARATE FROM THE CIRCUIT TO THE PUMPS. PUMPS SHALL BE CAPABLE OF PASSING A MINIMUM SOLID SIZE OF 1 1/4 INCH
- DIAMETER AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. 16. THE SUBMERSIBLE PUMPS SHALL BE INSTALLED WITH A HYDRAULICALLY SEALED SLIDE COUPLING ARRANGEMENT SO THAT THE PUMPS CAN BE REMOVED FROM THE PUMP CHAMBER FOR SERVICE AND INSPECTION AND THEN RETURNED TO SERVICE WITHOUT ENTERING THE PUMP CHAMBER TO UNBOLT OR UNLOCK THE CONNECTION BETWEEN THE PUMP AND PIPING.
- 17. DUPLEX PUMP CONTROLS SHALL BE PROVIDED IN THE PUMP CONTROL PANEL LOCATION WITHIN THE BUILDING AND
- 18. EACH SUBMERSIBLE PUMP SHALL BE EQUIPPED WITH 25 FEET OF POWER CABLE WITH EPOXY SEALED HOUSING WITH SECONDARY PRESSURE GROMMET FOR SEALING AND STRAIN RELIEF. ALL INCOMING LEAD WIRES SHALL BE SPLICED IN THE
- 19. THE CONTRACTOR SHALL FURNISH AND INSTALL FIVE (5) MERCURY LIQUID LEVEL SENSORS WITH SUFFICIENT LENGTH OF CABLE FOR EACH PUMP STATION. SUSPENDED TYPE OF LEVEL SENSORS SHALL BE MERCURY TYPE PILOT DUTY DEVICES MOUNTED IN A CORROSION RESISTANT POLYPROPYLENE HOUSING, AND MOUNTED TO TANK INTERIOR BY A DETACHABLE BRACKET TO BE EASILY ACCESSIBLE FROM THE EXISTING MANWAYS.
- 20. THE PUMP MOTORS SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AND SHALL BE FITTED WITH HOUR METERS THAT ARE RECORDED WITHIN THE PUMP PANEL.

PUMP CHAMBER SYSTEM:

TOTAL DYNAMIC HEAD= 46.75 FT @ 775 GPM PUMP REQUIREMENTS:

USE TWO (2) BARNES SUBMERSIBLE SEWAGE PUMP MODEL 6SHVL/6XSHVL 19.1 HP, 3 PHASE, 60 HZ, WITH 6" IMPELLER OR APPROVED EQUAL.

BOTH PUMPS MUST BE EQUIPPED WITH AN ALARM LOCATED IN THE CONTROL PANEL WHICH IS POWERED BY A CIRCUIT SEPARATE FROM THE CIRCUIT TO THE PUMPS. PUMPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

DESIGN CALCULATIONS

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TDH (ft) Flow (GPM) 775 gpm 3.9 min Pump Duration 2992 Gallons Volume per cycle 4.95 ft/sec

> REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

CONTRACTOR SHALL PERFORM THE REQUISITE TESTING TO THE SATISFACTION OF THE TOWN OF MILLIS AND STATE, AS APPROPRIATE, UPON COMPLETION OF THE SANITARY SEWER SYSTEM.

PROPOSED LOCATION OF UNDERGROUND ELECTRIC CONDUIT AND ALARM PANEL FOR PUMP CHAMBER TO BE COORDINATED WITH OWNER OR OWNERS REPRESENTATIVE AND ENGINEER. COORDINATE ELECTRICAL REQUIREMENTS/ADEQUACY OF CIRCUITS AND CONNECTION LOCATIONS FOR ALARMS WITH ARCHITECT AND ENGINEER.

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REVISIONS

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OFF- SITE SEWER

LINE PLANS

TOLL BROS.,

INC.

LOCATION OF SITE

ORCHARD STREET TOWN OF MILLIS

NORFOLK COUNTY

MASSACHUSETTS

BOHLER

352 TURNPIKE ROAD

SOUTHBOROUGH, MA 01772

Phone: (508) 480-9900

06/14/2017

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COMMENT

REVISIONS PER OMMISSION FEEDBACK REVISIONS PER REVIEW

COMMENTS

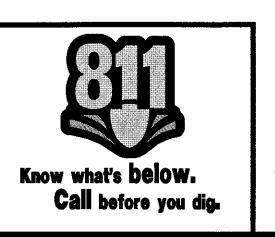
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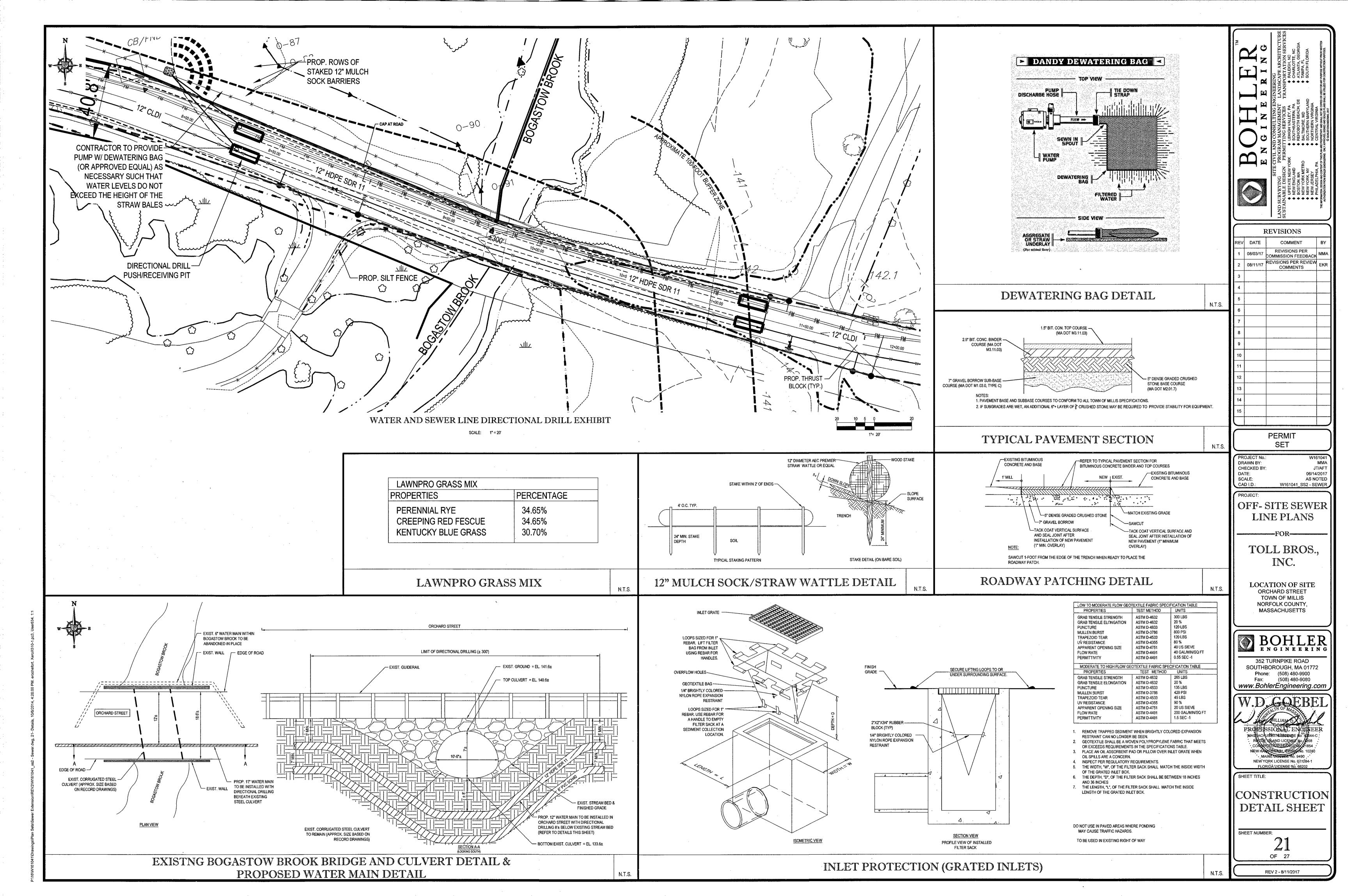
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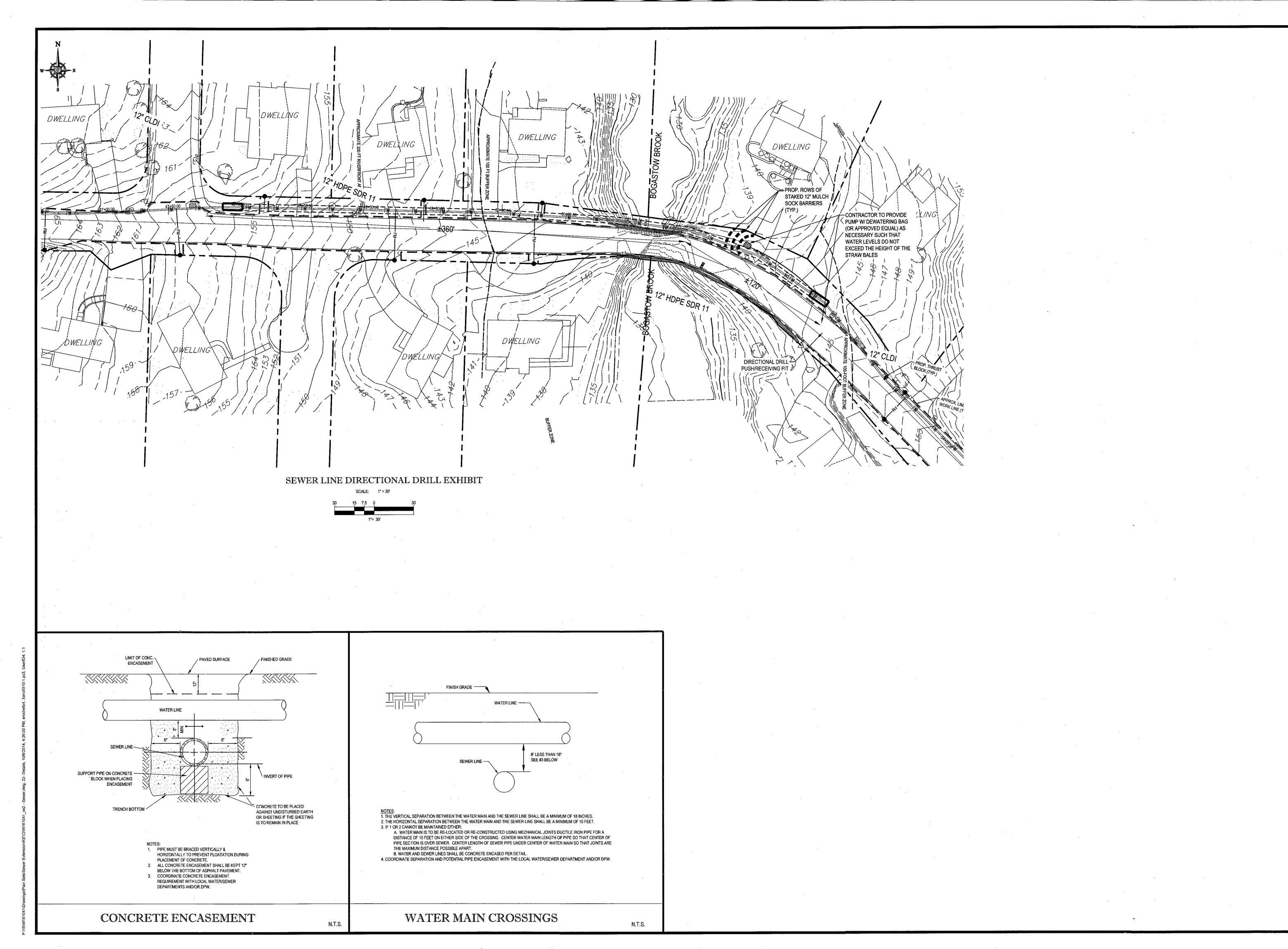
PLAN AND DETAILS

SHEET NUMBER:

OF 27







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OUTTAINABLE DESIGN

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PROJECT No.:
DRAWN BY:
CHECKED BY:
DATE:

DATE: 06/14/2017
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PROJECT:

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W.D. GOEBEI

PROBUSIONAL ENGINEE

MASSACHUSETSERSENO. 42644-C

RACE NAME LICENSE NO. 42644-C

RACE NAME LICENSE NO. 10280

MAINE LICENSE NO. 9490

NEW YORK LICENSE NO. 07.7284-1

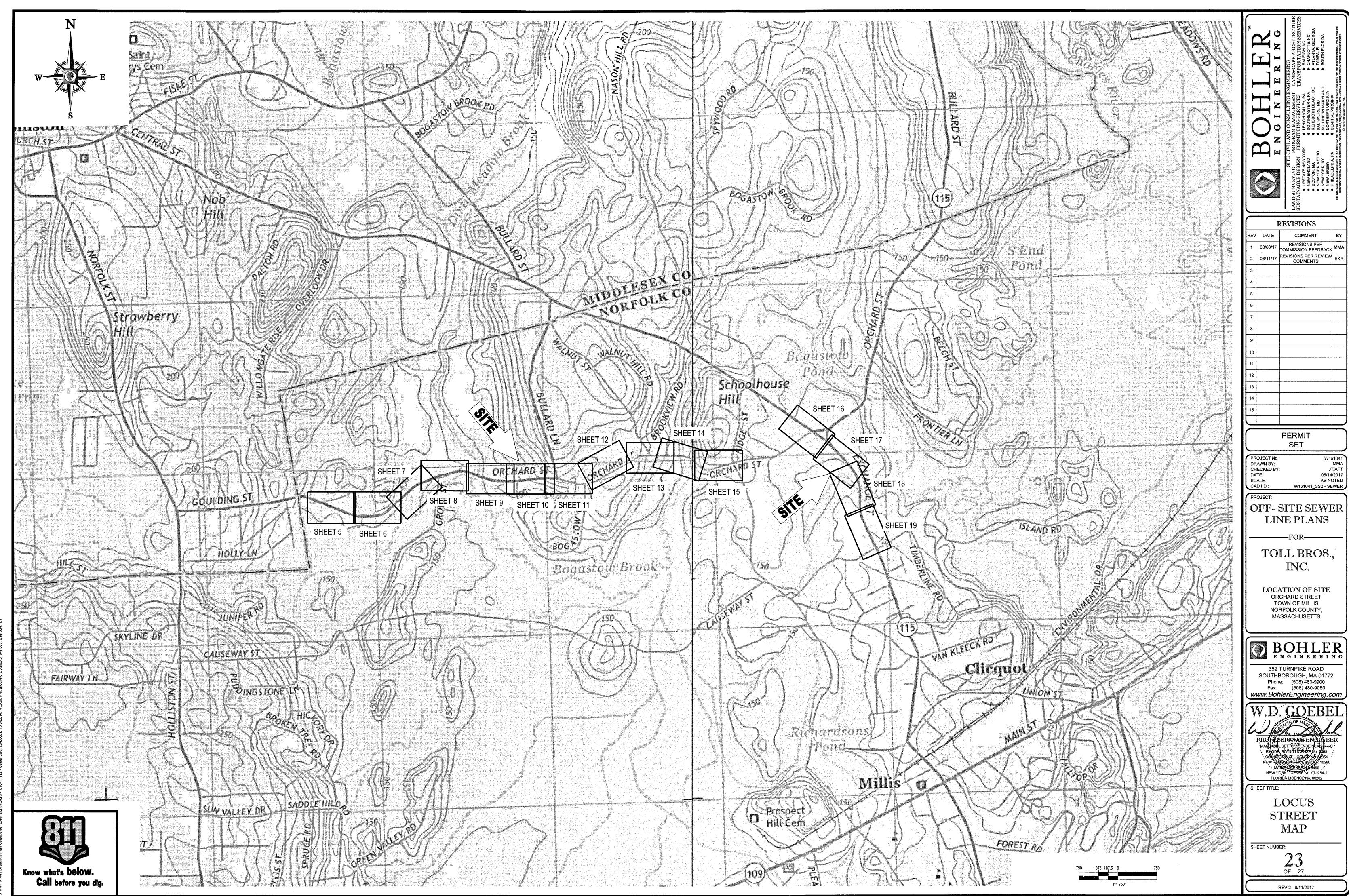
FLORIDA LICENSE NO. 66202

SHEET TITLE:

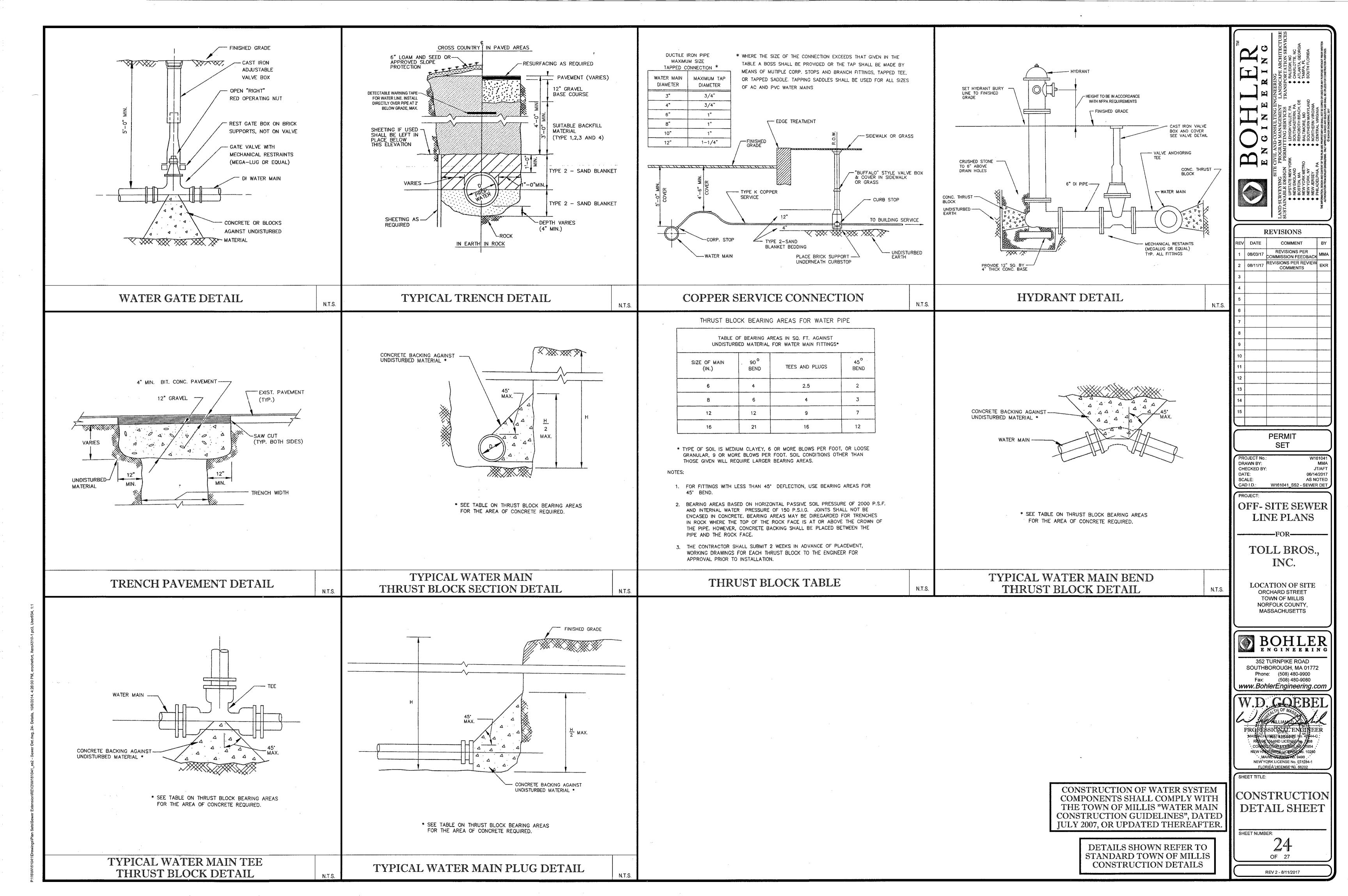
CONSTRUCTION DETAIL SHEET

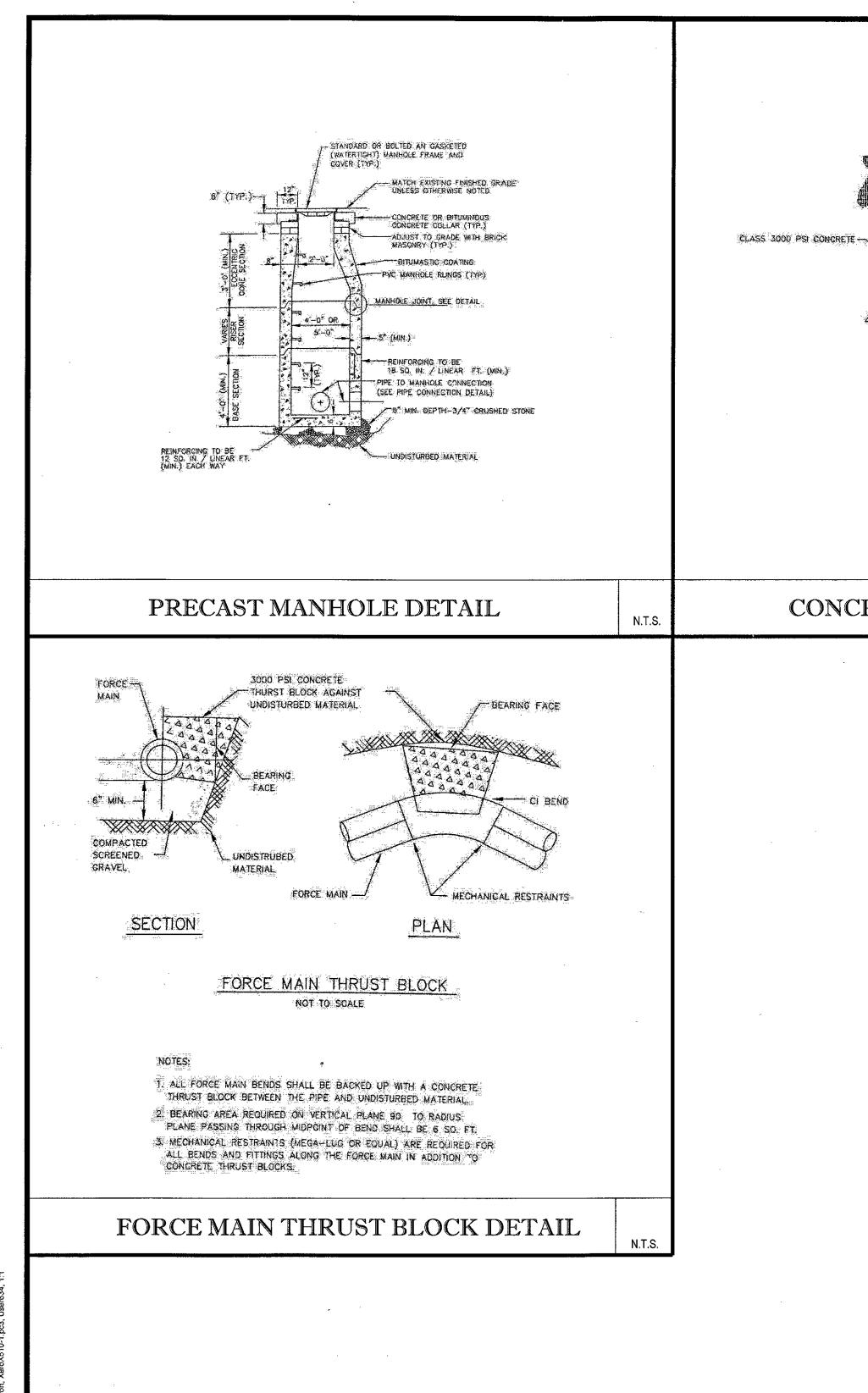
SHEET NUMBER:

22 OF 27





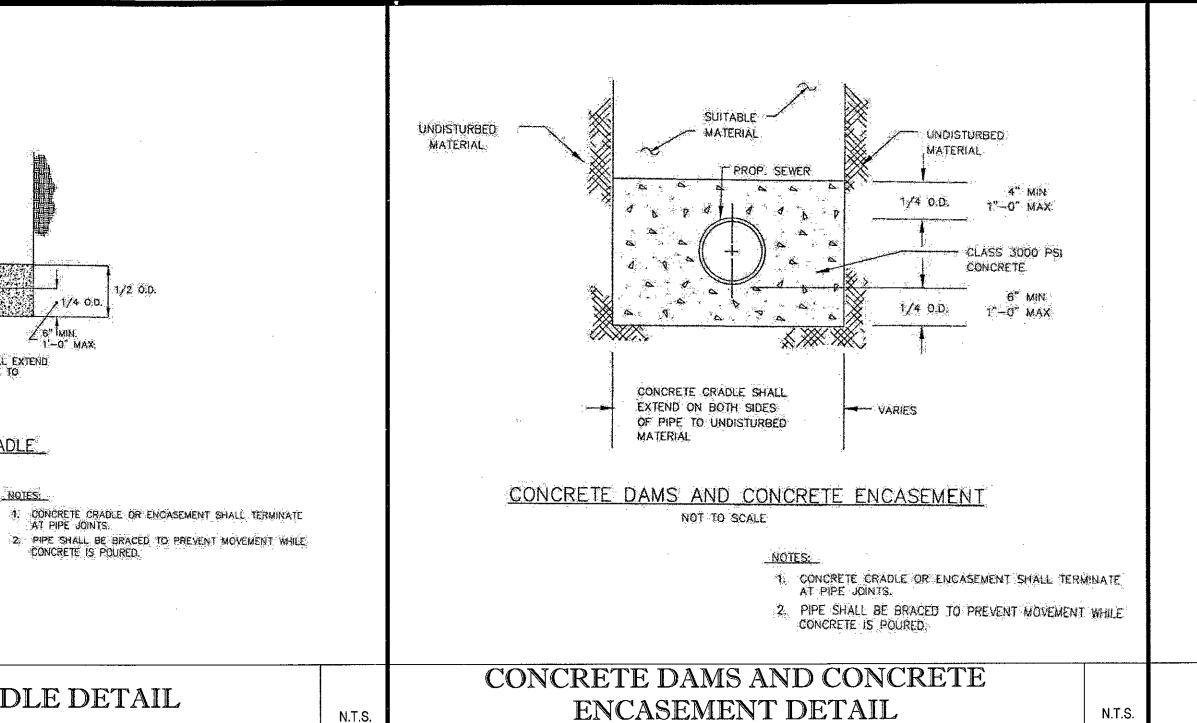


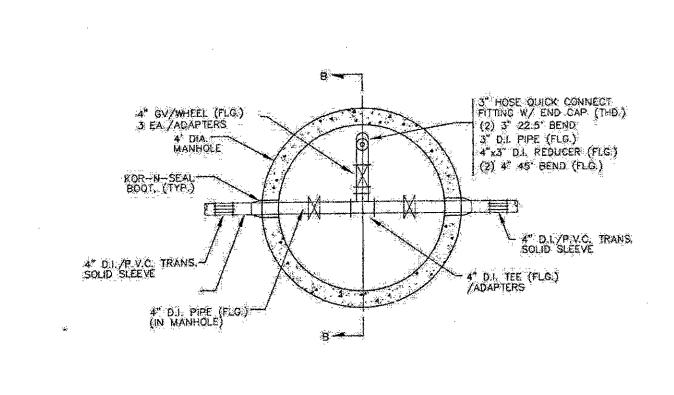


SUITABLE MATERIAL

- CONCRETE CRADLE SHALL EXTEND ON BOTH SIDES OF PIPE TO UNDISTURBED MATERIAL

CONCRETE CRADLE DETAIL





SITE CIVIL AND CONVENCES OF SOUTH

LAND SURVEYING

LAND SURVEYING

SITE CIVIL AND CONVENCES OF SOUTH

NOSTATE NEW YORK

+ UPSTATE NEW YORK
+ EHIGH
+ NEW ENGLAND
+ NEW ENGLAND
+ NEW ENGLAND
+ NEW FENDEN
+ NEW YORK METRO
+ NEW YORK NY
+ NEW YORK NY
+ NEW SOUTH
+ NEW YORK NY
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FORCE MAIN CLEAN OUT DETAIL

N.T.S.

PERMIT SET

PROJECT No.: W161041
DRAWN BY: MMA
CHECKED BY: JT/AFT
DATE: 06/14/2017
SCALE: AS NOTED
CAD I.D.: W161041_SS2 - SEWER DET

ROJECT:

OFF- SITE SEWER LINE PLANS

TOLL BROS., INC.

LOCATION OF SITE
ORCHARD STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER ENGINEERING

352 TURNPIKE ROAD SOUTHBOROUGH, MA 01772 Phone: (508) 480-9900 Fax: (508) 480-9080 www.BohlerEngineering.com

W.D. GOEBEI

PROFESSIONAL ENGINE
MASSACHUSETT SAZGENSE NO. 41644
RINGDE SLAND LICENSE NO. 41644
CONNESTICUENSE NO. 41644
NEW HAMESTERS NO. 1028
MAINT THE THE NO. 07.1284-1

SHEET TITLE:

CONSTRUCTION DETAIL SHEET

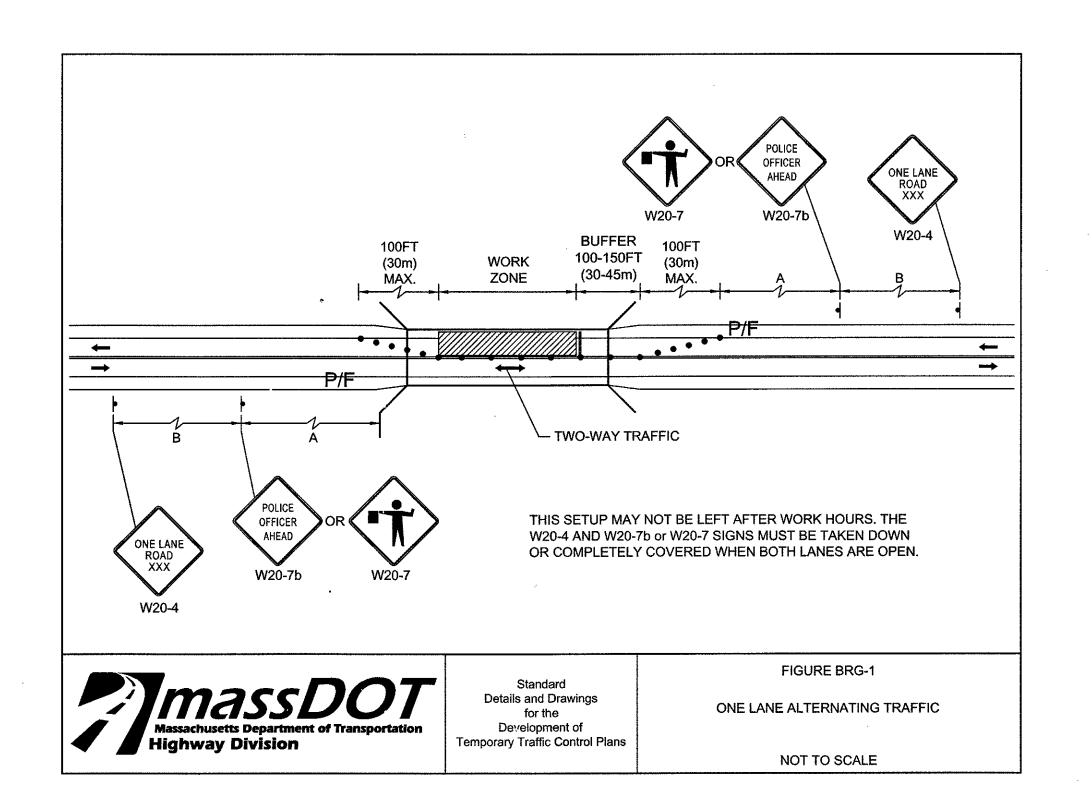
SHEET NUMBER:

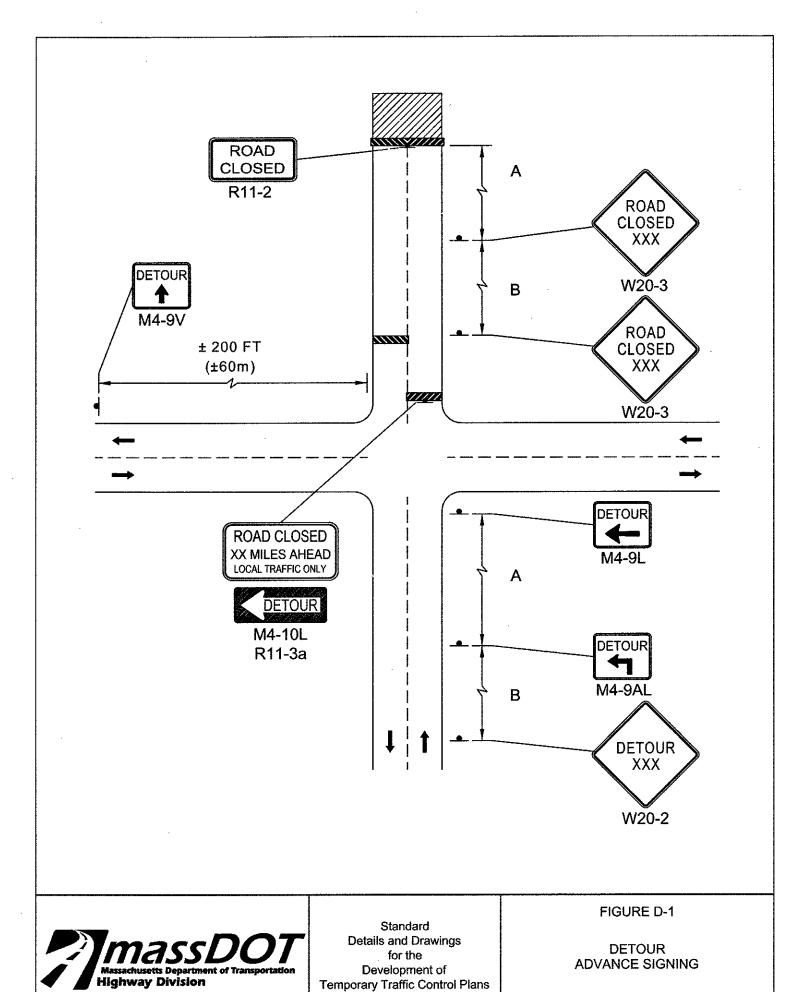
25 OF 27

REV 2 - 8/11/2017

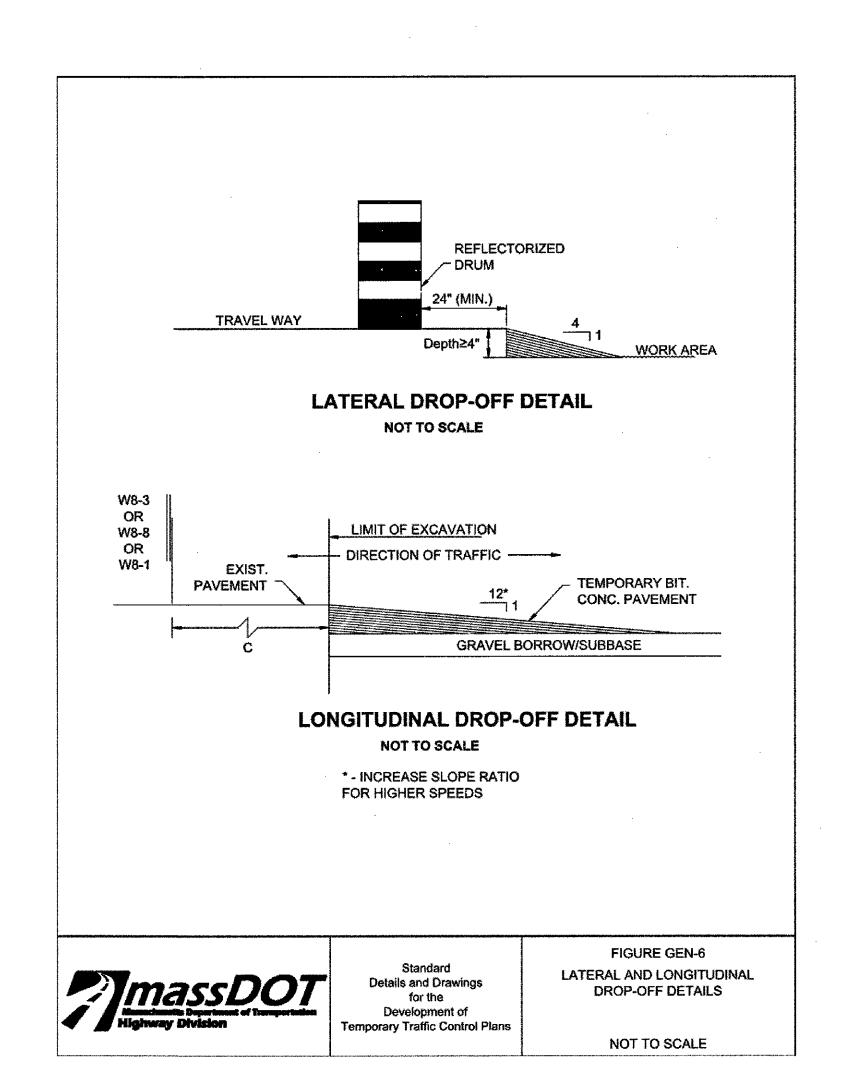
CONSTRUCTION OF WATER SYSTEM COMPONENTS SHALL COMPLY WITH THE TOWN OF MILLIS "WATER MAIN CONSTRUCTION GUIDELINES", DATED JULY 2007, OR UPDATED THEREAFTER.

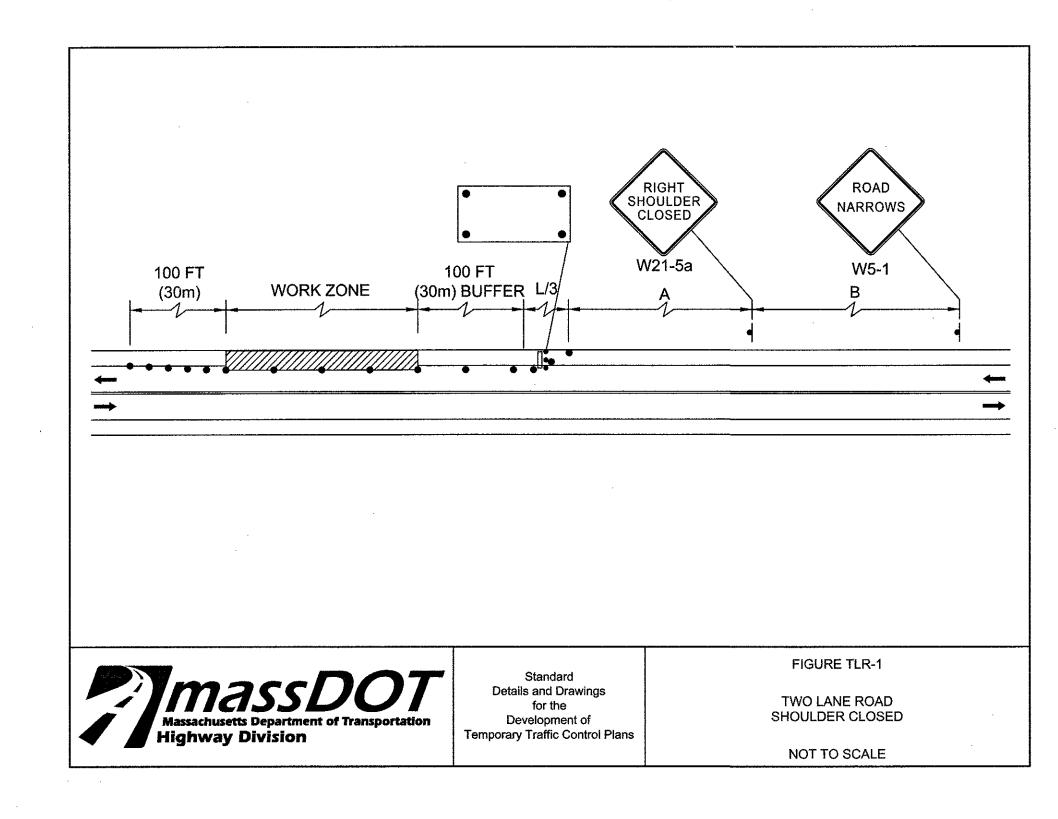
DETAILS SHOWN REFER TO STANDARD TOWN OF MILLIS CONSTRUCTION DETAILS

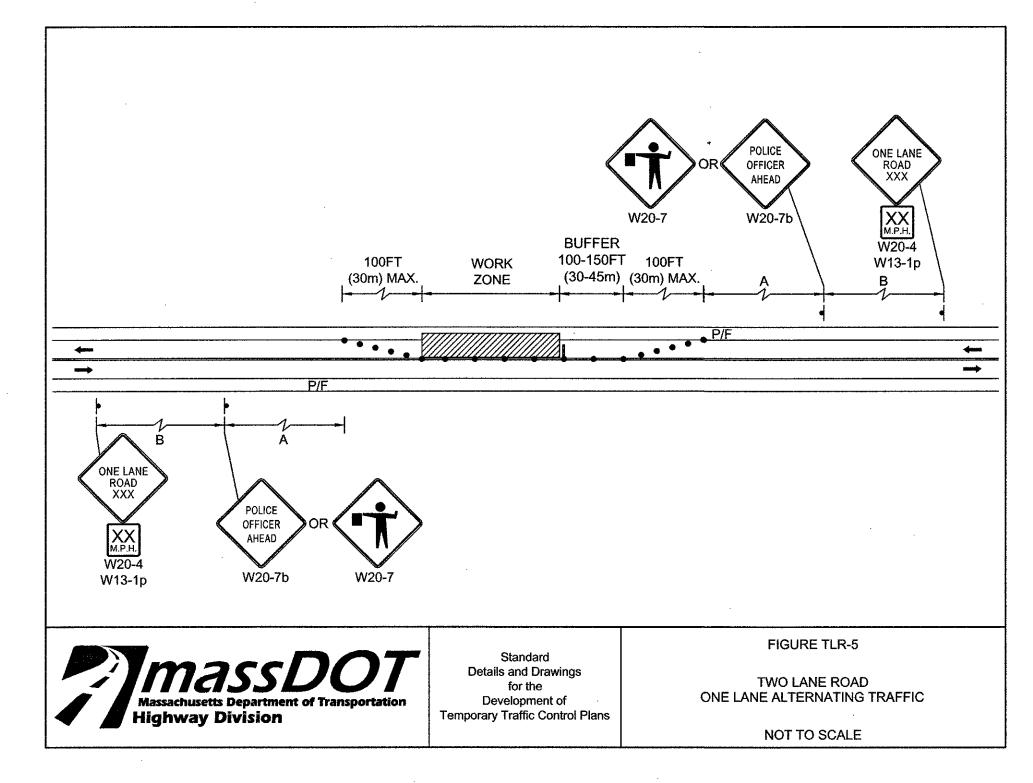




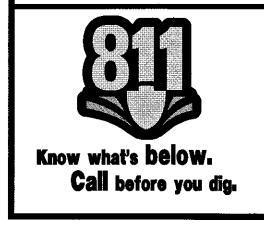
NOT TO SCALE







TRAFFIC CONTROL MEASURES
TO BE COORDINATED WITH
THE TOWN OF MILLIS DPW
AND EMERGENCY SERVICES



E N G I N E E R I N G

TE CIVIL AND CONSULTING ENGINEERING

PROGRAM MANAGEMENT
N PERMITTING SERVICES
NYORK
OF TEHIGH VALLEY, PA
OF THEASTERN, PA
OF THEASTERN,

REVISIONS				
REV	DATE	COMMENT	BY	
1	08/03/17	REVISIONS PER COMMISSION FEEDBACK	MMA	
2	08/11/17	REVISIONS PER REVIEW COMMENTS	EKR	
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PERMIT				

DRAWN BY: MMA
CHECKED BY: JT/AFT
DATE: 06/14/2017
SCALE: AS NOTED
CAD I.D.: W161041_SS2 - SEWER DET

PROJECT:

OFF- SITE SEWER

SET

LINE PLANS

FOR

TOLL BROS., INC.

LOCATION OF SITE ORCHARD STREET TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS



352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

W.D. GEBEI
WILLIAM D. WILLIAM D.

WILLIAM D.

OEBEL
PROPERSIONAL PROPERSIONAL

TYPICAL
TRAFFIC
CONTROL
DETAILS

SHEET NUMBER:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS. 2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD. 3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK. 4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC. 5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY 6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS. 7. THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS. 8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER. 9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER. 10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN 11. MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3m) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER. 12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS. REFLECTORIZED PLASTIC DRUM WORK ZONE OR 36" CONE WORK VEHICLE TRUCK MOUNTED ATTENUATOR DIRECTION OF TRAFFIC P/F POLICE/FLAGGER DETAIL. MPACT ATTENUATOR TRAFFIC OR PEDESTRIAN SIGNAL TYPE III BARRICADE MEDIAN BARRIER CHANGEABLE MESSAGE SIGN MEDIAN BARRIER WITH WARNING LIGHTS ARROW BOARD THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL). IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED: MEASURED AVERAGE WORK ZONE CAPACITIES NUMBER OF LANES NUMBER AVERAGE CAPACITY OPEN STUDIES (EXISTING) (TO TRAFFIC) VPH VPHPL Source: Dudek, C., <u>Notes on Work Zone Capacity and Level of Service</u>. Texas Transportation Institute, Texas A&M University, College Station, Texas (1984) BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED. FIGURE GEN-1 Massachusetts Department of Transportation

Traffic Management

GENERAL GUIDELINES

	DIST	ANCE BETWE	EN SIGNS **		
ROAD TYPE	Α	В		С	
LOCAL OR LOW VOLUME ROADWAYS*	350 (100)	350 (10	0) 3	550 (100)	
MOST OTHER ROADWAYS*	500 (150)	500 (15	0) 5	600 (150)	
FREEWAYS AND EXPRESSWAYS*	1,000 (300)	1,500 (45	50) 2,	640 (800)	
* ROAD TYPE TO BE DETERMINED BY MASS ** DISTANCES ARE SHOWN IN FEET (METERS SHOWN IN THE DETAIL/ TYPICAL SETUP FOR POINT OF RESTRICTION TO THE FIRST SECOND SIGNS. THE C DIMENSION IS THE SIGN IS THE FIRST ONE TYPICALLY ENCOUNTIES. THE "THIRD" SIGN ABOVE IS TYPICALLY RECONDED THE THESE ADVANCE WARNING SIGNS ARE LOW W20—1 SERIES (ROAD WORK XX FT) SIGN ADDITIONAL SIGNS (i.e. "RIGHT LANE CLOSIN SOME FIGURES AS EXAMPLES OF REIN THE FIRST AND SECOND WARNING SIGNS ZONE SIGNS AND MAY BE MOVED DEPEND LOCATED. R2—10g SIGNS SHALL BE PLACED BETWE	EDOT OFFICE OF TRANS). THE COLUMN HE FIGURES. THE A DIME IN SIGN. THE B DIME IN THE BUSTANCE BETWEE UNTERED BY A DRIVE IN THE IN	ADINGS A, B, IENSION IS THE NSION IS THE NSION IS THE NSION IS THE APPROACHI "ADVANCE WAI EPROJECT LIM EMAIN FOR TH EFT LANE CLC ACEMENT BUT ED TO AS THE ESPECIFIC RO	PLANNING. AND C ARE ' IE DISTANCE BE DISTANCE BE ID AND THIRD NG A TEMPOR RNING" SIGN HE DURATION SED 1 MILE" ARE USED II	THE DIMENSION FROM THE TRAF ETWEEN THE FIF SIGNS. (THE RARY TRAFFIC C ON THE TTCP: APPROACHES (I OF THE PROJE HAVE BEEN S N RARE OCCASI L (DAY—TO—DAY FOR THAT DAY	NSITION RST AND "THIRD" CONTROL SETUPS. i.e. THE COT. SHOWN IONS. Y) WORK
R2-10g. R2-10e, AND W20-1 SERIES S					
Based on: Table 6C-1 MUTCD LATEST EDITION	1				
SPEED* DISTAI (km/h) (m) 30 33 40 56	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	PEED* D (mph) 20 25 30 35 40 45 50 65 70 75 SPEED PRIOR HE LENGTH OF	ISTANCE (ft) 115 155 200 250 305 360 425 495 570 645 730 820 TO WORK ST	AL	
Source: Table 6C-2 MUTCD LATEST EDITION		, , ,			
	MILITARI PARTICIPATO DE LA CONTRACTOR DE L				OFNIC
_				FIGURE	GEN-2
Massachusetts Department of Transportation Highway Division	Notes for Traffic Manage	ment	NOTES	ON WORK Z	ONE DISTANCE

SUGGESTED WORK ZONE WARNING SIGN SPACING

CONVENTIONAL ROADWAY- A STREET OR HIGHWAY OTHER THAN A LOW-VOLUME ROAD, EXPRESSWAY, OR FREEWAY. EXPRESSWAY- A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS. ${\it \underline{FREEWAY}}-$ A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS. LOW-VOLUME ROAD- A FACILITY LYING OUTSIDE OF BUILT-UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 AADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM. Source: MUTCD LATEST EDITION TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)*		
MERGING TAPER	AT LEAST L		
SHIFTING TAPER	AT LEAST 0.5L		
SHOULDER TAPER	AT LEAST 0.33L		
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN.(15 m) 100 FT(30 m) MAX.		
DOWNSTREAM TAPER	50 FT MIN.(15 m) 100 FT MAX.(30 m) PER LAN		

Source: Table 6C-3 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH (L) FEET	SPEED LIMIT (S)	TAPER LENGTH Meters
40 MPH OR LESS	L= WS ² 60	60 KM/H OR LESS	L== WS ² 155
45 MPH OR MORE	L= WS	70 KM/H OR MORE	L= WS 1.6

WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICAPATED OPERATING SPEED IN MPH (KM/H)

Source: Table 6C-4 MUTCD LATEST EDITION

Parass DOT Messachusetts Department of Transportation Highway Division

Traffic Management

NOTES ON WORK ZONE DISTANCES DRAWN BY: CHECKED BY DATE: SCALE: CAD I.D.:

FIGURE GEN-3

OFF- SITE SEWER LINE PLANS

PERMIT

Y: JT/AFT 06/14/2017 AS NOTED W161041_SS2 - SEWER DET

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REVISIONS

2 08/11/17 REVISIONS PER REVIEW EKR

COMMISSION FEEDBACK "

1 08/03/17

TOLL BROS., INC.

ORCHARD STREET
TOWN OF MILLIS NORFOLK COUNTY, MASSACHUSETTS

BO	HL.	ER
ENGI	NEER	IN

352 TURNPIKE ROAD SOUTHBOROUGH, MA 01772 Phone: (508) 480-9900

Fax: (508) 480-9080 www.BohlerEngineering.com

TYPICAL TRAFFIC CONTROL NOTES

SHEET NUMBER:

Know what's below. Call before you dig. TRAFFIC CONTROL MEASURES TO BE COORDINATED WITH THE TOWN OF MILLIS DPW AND EMERGENCY SERVICES