SITE DEVELOPMENT PLANS

FOR:

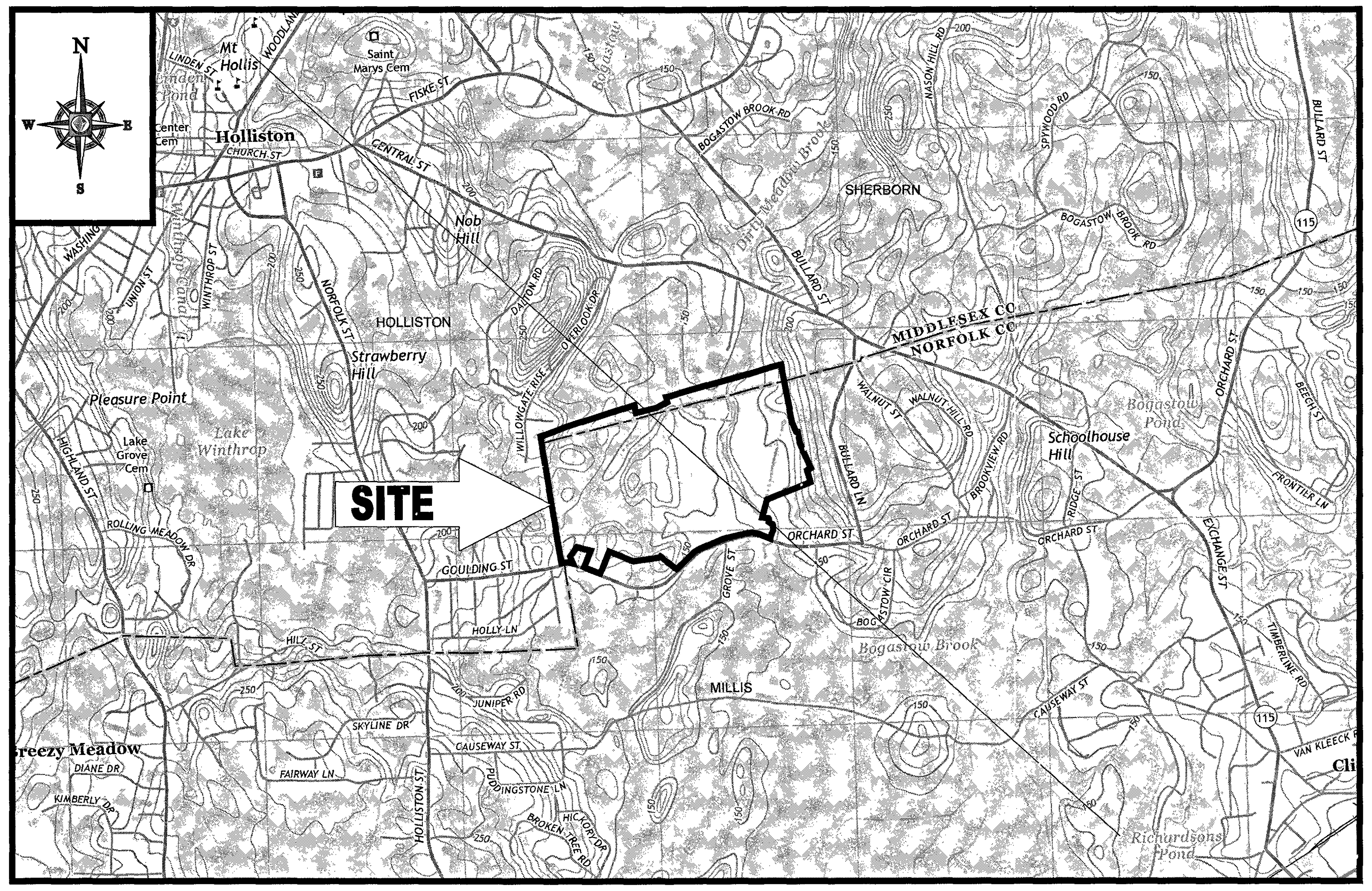
GLEN ELLEN SENIOR RESIDENTIAL COMMUNITY DEVELOPMENT

Toll Brothers

LOCATION OF SITE:

ORCHARD STREET, TOWN OF MILLIS
NORFOLK COUNTY, MASSACHUSETTS

TOWN OF MILLIS - MAP 01, LOTS 1 - 4, 6
TOWN OF MILLIS - MAP 05, LOT 35
TOWN OF HOLLISTON - MAP 09, BLOCK 6, LOTS 95 & 104



LOCATION MAP

SCALE: 1"=2000'
PLAN REFERENCE: HOLLISTON AND MEDFIELD USGS QUADRANGLES

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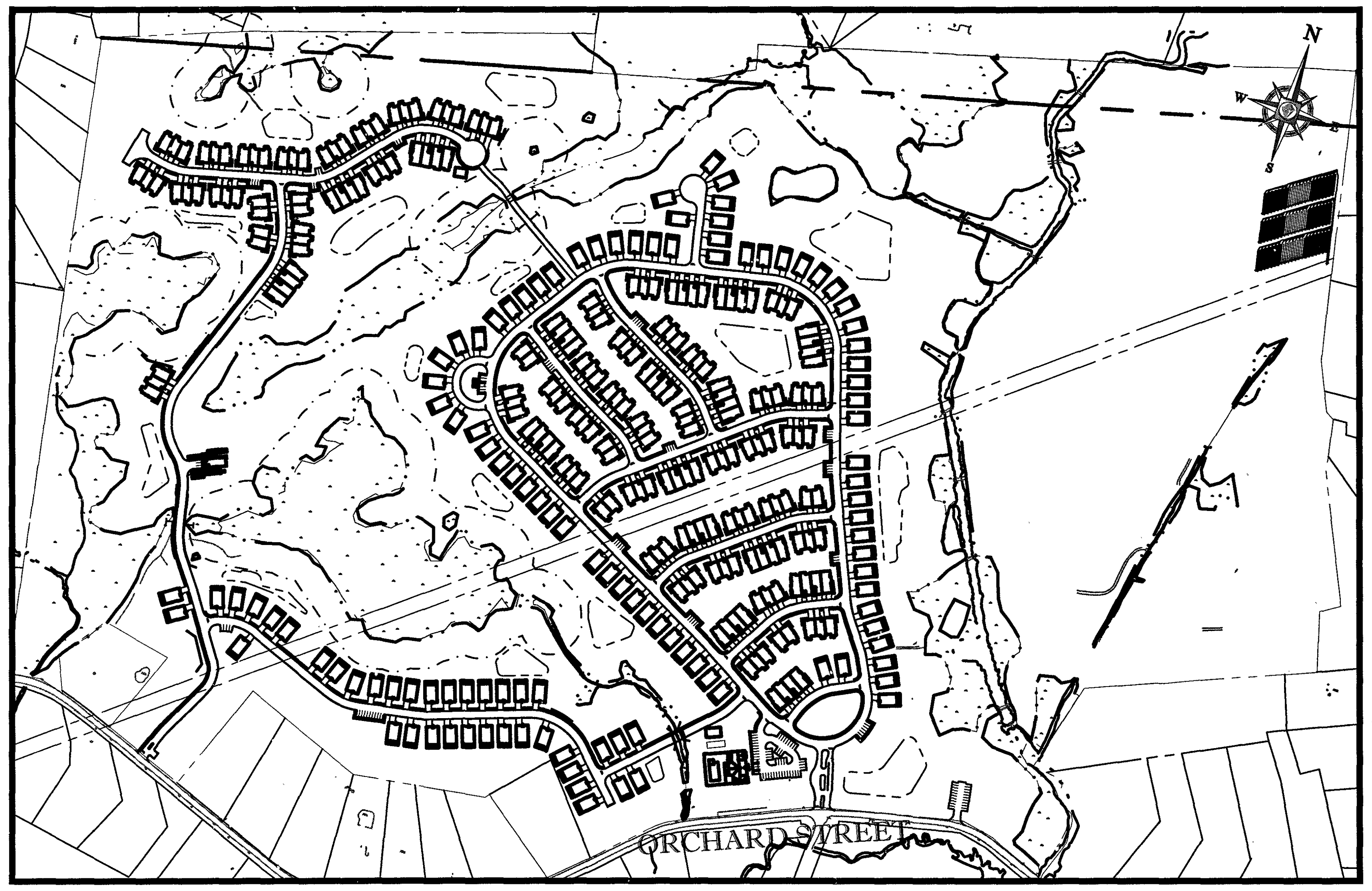

AREA PLAN

SCALE: 1"=400'

PREPARED BY

BOHLER ENGINEERING

BOHLER ENGINEERING™

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING PROGRAM MANAGEMENT LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN PERMITTING SERVICES TRANSPORTATION SERVICES

- UPSTATE NEW YORK
- NEW ENGLAND
- BOSTON, MA
- NEW YORK METRO
- NEW YORK, NY
- NEW JERSEY
- PHILADELPHIA, PA
- LEHIGH VALLEY, PA
- SOUTHEASTERN, PA
- REHOBOTH BEACH, DE
- BALTIMORE, MD
- SOUTHERN MARYLAND
- NORTHERN VIRGINIA
- CENTRAL VIRGINIA
- RALEIGH, NC
- CHARLOTTE, NC
- TAMPA, FL
- SOUTH FLORIDA

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REVISIONS

REV	DATE	COMMENT	BY
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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT: SITE DEVELOPMENT PLANS
—FOR—
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER ENGINEERING
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RHODE ISLAND LICENSE No. [illegible]
CONNECTICUT LICENSE No. [illegible]
NEW HAMPSHIRE LICENSE No. 10280
MAINE LICENSE No. 9490
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

WILLIAM D GOEBEL
CIVIL
42644

SHEET TITLE:
COVER SHEET

SHEET NUMBER:
1
OF 74

REV 0 - 11/18/2016

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GENERAL NOTES

CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE NOTES AND SPECIFICATIONS CONTAINED HEREIN. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL SUBCONTRACTORS FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS.

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

   - "PLAN OF LAND TO ACCOMPANY ANRAD APPLICATION - PREPARED BY ESE CONSULTANTS, INC. , 04/27/16.

   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.

2. ALL ACCESSIBLE (A/K/A ADA) PARKING SPACES MUST BE CONSTRUCTED TO MEET, AT A MINIMUM, THE MORE STRINGENT OF THE REQUIREMENTS OF THE "AMERICANS WITH DISABILITIES ACT (ADA) CODE (42 U.S.C. § 12101 et seq. AND 42 U.S.C. § 4151 et seq.) OR THE REQUIREMENTS OF THE JURISDICTION WHERE THE PROJECT IS TO BE CONSTRUCTED, AND ANY AND ALL AMENDMENTS TO BOTH WHICH ARE IN EFFECT WHEN THESE PLANS ARE COMPLETED.
3. 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.
4. 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.
5. 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.
6. 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 WORK.
7. 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.
8. 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 ADDITIONAL WORK.
9. CONTRACTOR MUST REFER TO THE ARCHITECTURAL/BUILDING PLANS "OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
10. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFUL REVIEW OF THE ENTIRE SITE PLAN AND THE LATEST ARCHITECTURAL PLANS (INCLUDING, BUT NOT LIMITED TO, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLAN, WHERE APPLICABLE). CONTRACTOR MUST IMMEDIATELY NOTIFY OWNER, ARCHITECT AND SITE ENGINEER, IN WRITING, OF ANY CONFLICTS, DISCREPANCIES OR AMBIGUITIES WHICH EXIST.
11. 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.
12. 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 STRUCTURES AND PROPERTIES.
13. THE CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER 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.
14. 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 AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
15. 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.
16. 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.
17. 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.
18. 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 FULLEST 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 CONTRACTORS, ALL CLAIMS BY THIRD PARTIES AND ALL CLAIMS RELATED TO THE PROJECT. CONTRACTOR MUST NOTIFY ENGINEER, IN WRITING, AT LEAST THIRTY (30) DAYS PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF ITS INSURANCE HEREUNDER.
19. BOHLER 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. 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.
20. 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, OVERSEEING, 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.
21. 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.
22. 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.
23. ALL SIGNING AND PAVEMENT STRIPING MUST CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR LOCALLY APPROVED SUPPLEMENT.
24. 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.
25. 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 INCURS AS A RESULT OF SAID FAILURE.
26. ALL DIMENSIONS MUST BE TO FACE OF CURB, EDGE OF PAVEMENT, OR EDGE OF BUILDING, UNLESS NOTED OTHERWISE.
27. 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.
28. 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.
29. 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.
30. 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

1. 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 TO COMMENCEMENT OF CONSTRUCTION.
2. 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.
3. 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.
4. 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.
5. 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 CODES.
6. THE CONTRACTOR MUST INSTALL ALL STORM SEWER AND SANITARY SEWER COMPONENTS WHICH FUNCTION BY GRAVITY PRIOR TO THE INSTALLATION OF ALL OTHER UTILITIES.
7. 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.
8. 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.
9. 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 THE UTILITY/SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
10. 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.
11. 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.
12. 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 TO EXCAVATION AND TRENCHING PROCEDURES.
13. 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.
14. 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.
15. 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.
16. 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.
17. THE CONTRACTOR IS FULLY RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION. CONTRACTOR MUST CONFIRM AND ENSURE 0.75% MINIMUM SLOPE AGAINST ALL ISLANDS, GUTTERS, AND CURBS; 1.0% ON ALL CONCRETE SURFACES; AND 1.5% MINIMUM ON ASPHALT (EXCEPT 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.
18. 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.
19. REFER TO THIS SHEET FOR ADDITIONAL NOTES.
20. 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.
21. 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.
22. WHERE RETAINING WALLS (WHETHER OR NOT THEY MEET THE JURISDICTIONAL DEFINITION) ARE IDENTIFIED ON PLANS, ELEVATIONS IDENTIFIED ARE FOR THE EXPOSED PORTION OF THE WALL. WALL FOOTINGS/FOUNDATION ELEVATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR BASED ON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS.
23. 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.
24. 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 WRITING, OTHERWISE.
25. STORM AND SANITARY SEWER PIPE LENGTHS INDICATED ARE NOMINAL AND MEASURED CENTER OF INLET AND/OR MANHOLES STRUCTURE TO CENTER OF STRUCTURE.
26. STORMWATER ROOF DRAIN LOCATIONS ARE BASED ON PRELIMINARY ARCHITECTURAL PLANS. CONTRACTOR IS RESPONSIBLE TO AND FOR VERIFYING LOCATIONS OF SAME BASED ON FINAL ARCHITECTURAL PLANS.
27. 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.

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

28. 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 THE TIME OF APPLICATION.
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.
30. WHERE BASEMENTS ARE TO BE PROVIDED FOR PROPOSED DWELLING UNITS, THE DEVELOPER SHALL, BY BORING OR BY TEST PIT, DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED DWELLINGS. WHERE GROUNDWATER IS ENCOUNTERED IN THE BASEMENT AREA, BASEMENTS WILL NOT BE INSTALLED UNLESS SPECIAL CONSTRUCTION METHODS ARE UTILIZED, TO BE REVIEWED AND APPROVED BY THE MUNICIPAL CONSTRUCTION CODE OFFICIAL. IF AND WHERE SUMP PUMPS ARE INSTALLED, ALL DISCHARGES MUST BE CONNECTED TO THE STORM SEWER. A CLEANOUT MUST BE PROVIDED PRIOR TO THE CONNECTION TO THE STORM DRAIN IN ORDER THAT BLOCKAGES CAN BE ADDRESSED.
31. 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.
32. LOCATION OF PROPOSED UTILITY POLE RELOCATION IS AT THE SOLE DISCRETION OF UTILITY COMPANY.
33. 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

1. THIS PLAN REFERENCES DOCUMENTS AND INFORMATION BY:

   PLAN OF LAND TO ACCOMPANY ANRAD APPLICATION
   ORCHARD STREET
   MILLIS, MA 02054
   PREPARED BY:
   ESE CONSULTANTS, INC.
   WESTBOROUGH, MA 01581
   04/27/2016
   JOB#:3878

2. 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.
3. BOHLER ENGINEERING HAS NO CONTRACTUAL, LEGAL, OR OTHER RESPONSIBILITY FOR JOB SITE SAFETY OR JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME.
4. 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.
5. 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 CODES.
6. 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 OTHER PUBLIC AGENCIES 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.
   G. ARRANGING FOR AND COORDINATING WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) FOR THE TEMPORARY OR PERMANENT TERMINATION OF SERVICE REQUIRED BY THE 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.
   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.
   I. IN THE EVENT THE CONTRACTOR DISCOVERS ANY HAZARDOUS MATERIAL, THE REMOVAL OF WHICH IS NOT ADDRESSED IN THE PROJECT PLANS AND SPECIFICATIONS, THE CONTRACTOR MUST IMMEDIATELY CEASE ALL WORK AND IMMEDIATELY NOTIFY THE OWNER AND ENGINEER OF THE DISCOVERY OF SUCH MATERIALS.
7. 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 MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY.
8. 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 ON ALL LOCAL STRUCTURES.
12. 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.
13. 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 AGENCIES WITH JURISDICTION.
15. 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 AT ANY TIME.
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.
18. 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, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE USED TO ACCOMPLISH THAT WORK. ALL MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE 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.
19. 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, STATE, AND FEDERAL LAWS AND APPLICABLE CODES. THE CONTRACTOR MUST MAINTAIN RECORDS TO DEMONSTRATE PROPER DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.
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.

ADA INSTRUCTIONS TO CONTRACTOR:

CONTRACTORS MUST EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ADA (ACCESSIBLE) ACCESSIBLE COMPONENTS AND ACCESS ROUTES FOR THE SITE. THESE COMPONENTS, AS CONSTRUCTED, MUST COMPLY WITH ALL APPLICABLE STATE AND LOCAL ACCESSIBILITY LAWS AND REGULATIONS AND THE CURRENT ADA AND/OR STATE ARCHITECTURAL ACCESS BOARD STANDARDS AND REGULATIONS' BARRIER FREE ACCESS AND ANY MODIFICATIONS, REVISIONS OR UPDATES TO SAME. FINISHED SURFACES ALONG THE ACCESSIBLE ROUTE OF TRAVEL FROM PARKING SPACE, PUBLIC TRANSPORTATION, PEDESTRIAN ACCESS, INTER-BUILDING ACCESS, TO POINTS OF ACCESSIBLE BUILDING ENTRANCE/EXIT, MUST COMPLY WITH THESE ADA AND/OR ARCHITECTURAL ACCESS BOARD CODE REQUIREMENTS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

- PARKING SPACES AND PARKING AISLES - SLOPE SHALL NOT EXCEED 1:50 (1/4 PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
- CURB RAMPS - SLOPE MUST NOT EXCEED 1:12 (8.3%) FOR A MAXIMUM OF SIX (6) FEET.
- LANDINGS - MUST BE PROVIDED AT EACH END OF RAMPS, MUST PROVIDE POSITIVE DRAINAGE, AND MUST NOT EXCEED 1:50 (1/4 PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
- PATH OF TRAVEL ALONG ACCESSIBLE ROUTE - MUST PROVIDE A 36-INCH OR GREATER UNOBSTRUCTED WIDTH OF TRAVEL (CAR OVERHANGS AND/OR HANDRAILS CANNOT REDUCE THIS MINIMUM WIDTH). THE SLOPE MUST BE NO GREATER THAN 1:20 (5.0%) IN THE DIRECTION OF TRAVEL, AND MUST NOT EXCEED 1:50 (1/4 PER FOOT OR NOMINALLY 2.0%) IN CROSS SLOPE. WHERE PATH OF TRAVEL WILL BE GREATER THAN 1:20 (5.0%), ADA RAMP MUST BE ADHERED TO. A MAXIMUM SLOPE OF 1:12 (8.3%), FOR A MAXIMUM RISE OF 2.5 FEET, MUST BE PROVIDED. THE RAMP MUST HAVE ADA HAND RAILS AND "LEVEL LANDINGS ON EACH END THAT ARE CROSS SLOPED NO MORE THAN 1:50 IN ANY DIRECTION (1/4 PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE.
- DOORWAYS - MUST HAVE A "LEVEL LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED AWAY FROM THE DOOR NO MORE THAN 1:50 (1/4 PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE. THIS LANDING AREA MUST BE NO LESS THAN 60 INCHES (5 FEET) LONG, EXCEPT WHERE OTHERWISE PERMITTED BY ADA STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS. (SEE ICC/ANSI A117.1-2003 AND OTHER REFERENCED INCORPORATED BY CODE.)
- WHEN THE PROPOSED CONSTRUCTION INVOLVES RECONSTRUCTION, MODIFICATION, REVISION OR EXTENSION OF OR TO ADA COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, CONTRACTOR MUST VERIFY EXISTING ELEVATIONS SHOWN ON THE PLAN. NOTE THAT TABLE 405.2 OF THE DEPARTMENT OF JUSTICE'S ADA STANDARDS FOR ACCESSIBLE DESIGN ALLOWS FOR STEEPER RAMP SLOPES, IN RARE CIRCUMSTANCES. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES AND/OR FIELD CONDITIONS THAT DIFFER IN ANY WAY OR ANY RESPECT FROM WHAT IS SHOWN ON THE PLANS, IN WRITING, BEFORE COMMENCEMENT OF WORK. CONSTRUCTED IMPROVEMENTS MUST FALL WITHIN THE MAXIMUM AND MINIMUM LIMITATIONS IMPOSED BY THE BARRIER FREE REGULATIONS AND THE ADA REQUIREMENTS.
- THE CONTRACTOR MUST VERIFY THE SLOPES OF CONTRACTOR'S FORMS PRIOR TO POURING CONCRETE. IF ANY NON-CONFORMANCE IS OBSERVED OR EXISTS, CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO POURING CONCRETE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS TO REMOVE, REPAIR AND REPLACE NON-CONFORMING CONCRETE.

IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION WITH THE LOCAL BUILDING CODE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

TYPICAL ABBREVIATIONS

KEY	DESCRIPTION	KEY	DESCRIPTION
BC	BOTTOM CURB	PROP.	PROPOSED
TC	TOP CURB	TBR/R	TO BE REMOVED AND REPLACED
BOC	BACK OF CURB	TBR	TO BE REMOVED
BW	BOTTOM OF WALL GRADE	TPF	TREE PROTECTION FENCE
TW	TOP OF WALL	BLDG.	BUILDING
EXIST.	EXISTING	SF	SQUARE FEET
BM.	BENCHMARK	SMH	SEWER MANHOLE
EOP	EDGE OF PAVEMENT	DMH	DRAIN MANHOLE
℄	CENTERLINE	STM.	STORM
FF	FINISHED FLOOR	SAN.	SANITARY
V.I.F.	VERIFY IN FIELD	CONC.	CONCRETE
GC	GENERAL CONTRACTOR	ARCH.	ARCHITECTURAL
HP	HIGH POINT	DEP.	DEPRESSED
LP	LOW POINT	R	RADIUS
TYP.	TYPICAL	MIN.	MINIMUM
INT.	INTERSECTION	MAX.	MAXIMUM
PC.	POINT OF CURVATURE	No. / #	NUMBER
PT.	POINT OF TANGENCY	W.	WIDE
PI.	POINT OF INTERSECTION	DEC.	DECORATIVE
PVI.	POINT OF VERTICAL INTERSECTION	ELEV.	ELEVATION
STA.	STATION	UNG.	UNDERGROUND
GRT	GRATE	R.O.W.	RIGHT OF WAY
INV.	INVERT	LF	LINEAR FOOT
DIP	DUCTILE IRON PIPE	LOD	LIMIT OF DISTURBANCE
PVC	POLYVINYL CHLORIDE PIPE	LOW	LIMIT OF WORK
HDPE	HIGH DENSITY POLYETHYLENE PIPE	L.S.A.	LANDSCAPED AREA
RCP	REINFORCED CONCRETE PIPE	±	PLUS OR MINUS
S	SLOPE	°	DEGREE
ME	MEET EXISTING	Ø / DIA.	DIAMETER

TYPICAL LEGEND

EXISTING		PROPOSED
━━ ▪▪ ━━	PROPERTY LINE	
- - - - - -	SETBACK	
—— - - ——	EASEMENT	
══════	CURB	══════
Ⓓ	STORM MANHOLE	Ⓓ
Ⓢ	SEWER MANHOLE	Ⓢ
▦	CATCH BASIN	▦
△ WF#5	WETLAND FLAG	
—— · · ——	WETLAND LINE	
× 54.83	SPOT ELEVATION	53.52
× TC 54.58 G 53.78	TOP & BOTTOM OF CURB	TC=54.32 BC=53.82
— — 53 — —	CONTOUR	—— 50 ——
	FLOW ARROW	5%
⇦	PAINTED ARROW	⬅
	RIDGE LINE	— · — · —
—G——G—	GAS LINE	—G——G—
—T——T—	TELEPHONE LINE	—T——T—
—E——E—	ELECTRIC LINE	—E——E—
—W——W—	WATER LINE	—W——W—
—OH——OH—	OVERHEAD WIRE	—OH——OH—
= = = = =	STORM PIPE	━ ━ ━ ━
= = = = =	SANITARY LINE	—S——S—
△ 10	PARKING COUNT	④
⊥	SIGN	⊥
◇	LIGHT POLE	
	GUIDE RAIL	—I——I—
∅	UTILITY POLE	∅

REFER TO SITE PLAN FOR ZONING ANALYSIS TABLE AND LAND USE/ ZONING INFORMATION & NOTES

REFER TO SOIL EROSION CONTROL NOTES & DETAILS SHEET FOR TYPICAL EROSION NOTES AND DETAILS

REFER TO LANDSCAPE NOTES & DETAILS SHEET FOR TYPICAL LANDSCAPE NOTES AND DETAILS

REFER TO LIGHTING PLAN FOR TYPICAL LIGHTING NOTES AND TABLES

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PROJECT No.:	W161041
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CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
—FOR—
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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CONNECTICUT LICENSE No. [illegible]854
NEW HAMPSHIRE LICENSE No. 10280
NEW [illegible] LICENSE No. [illegible]490
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

WILLIAM D. GOEBEL CIVIL No. 42644

SHEET TITLE:
GENERAL NOTES SHEET

SHEET NUMBER:
2
OF 74

REV 0 - 11/18/2016

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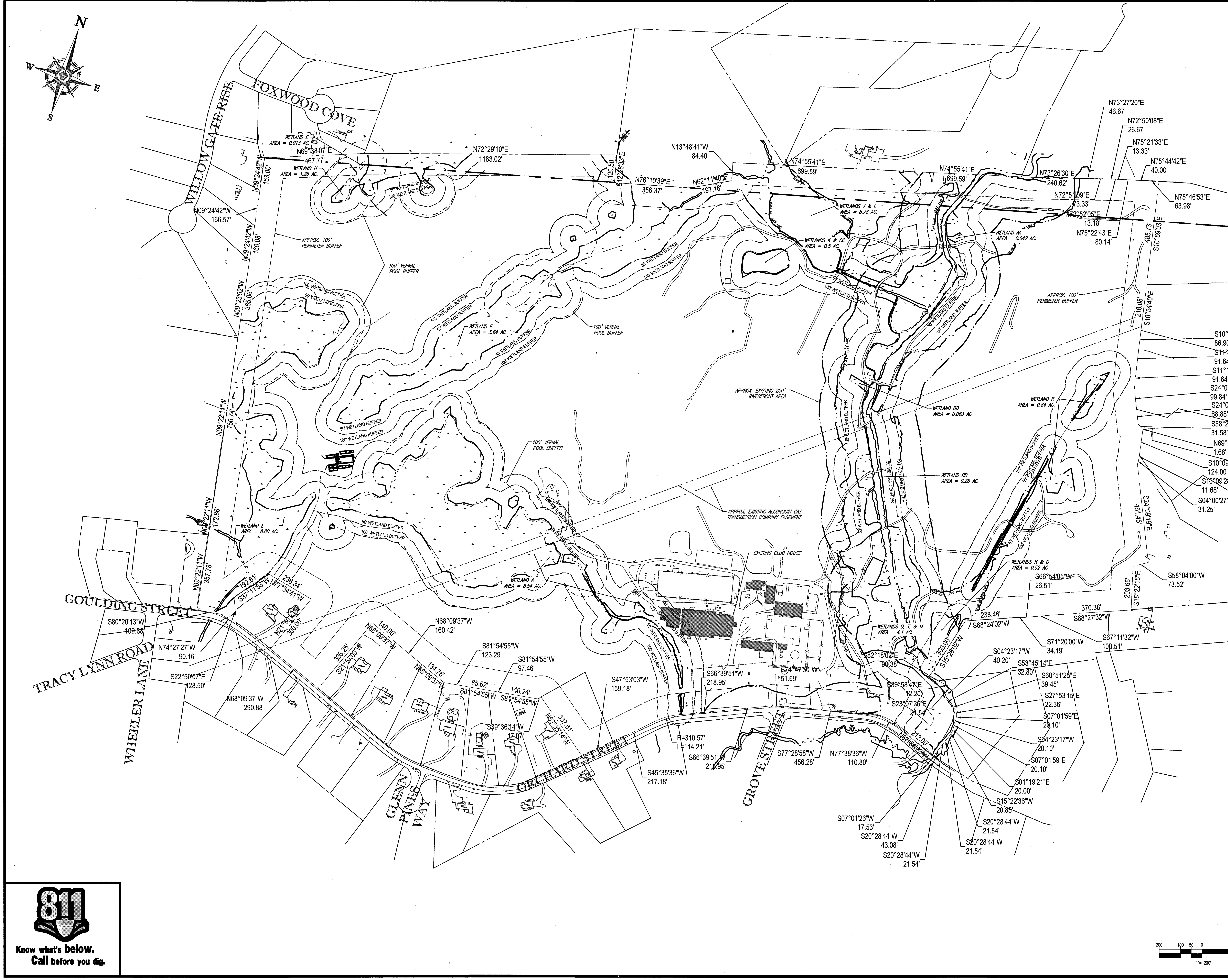

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Toll Brothers

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WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:

OVERALL EXISTING CONDITIONS

SHEET NUMBER:
3
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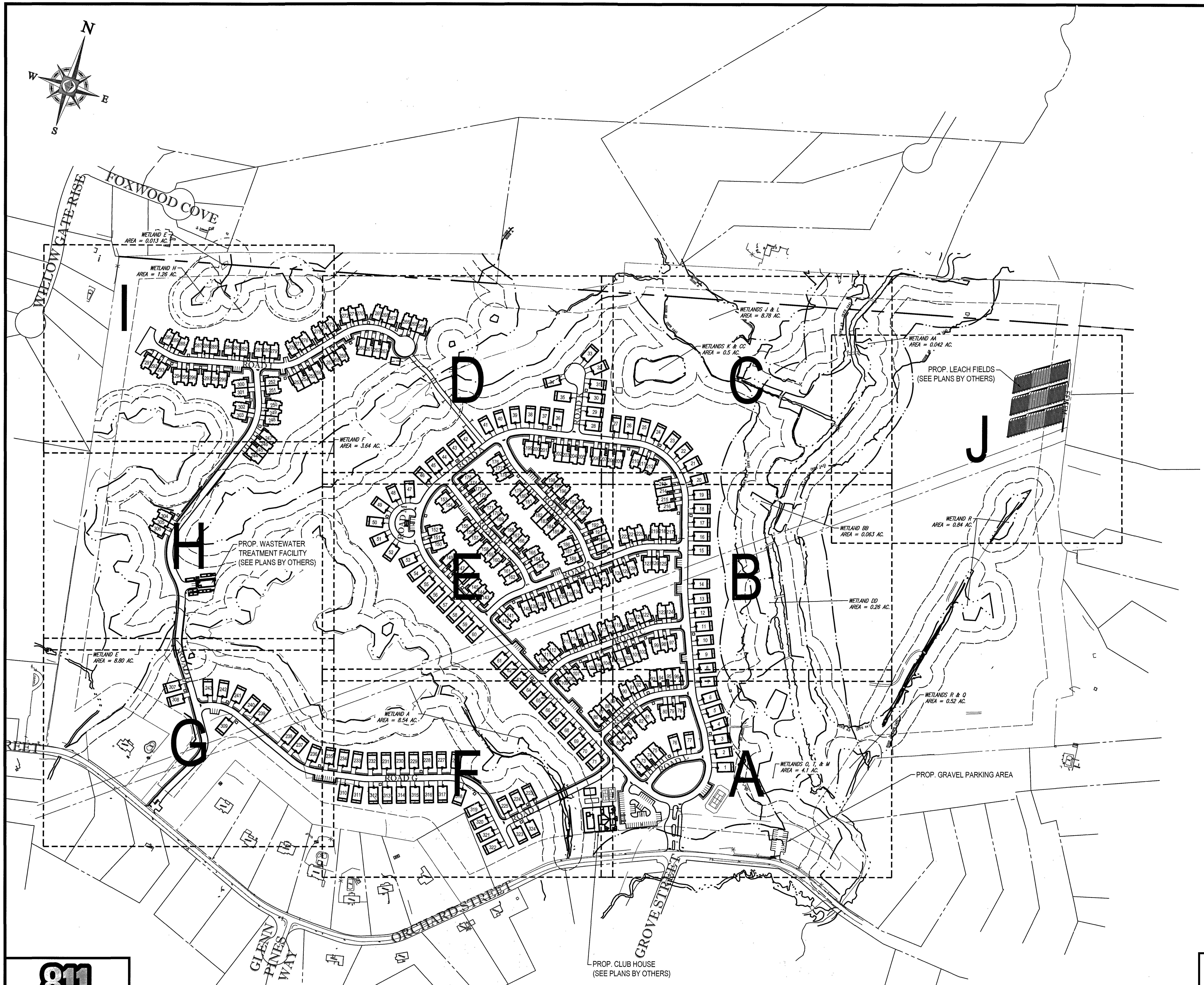
N
E
S
W
WILLOW GATE RISE
FOXWOOD COVE
WETLAND E AREA = 0.013 AC.
WETLAND H AREA = 1.26 AC.
I
ROAD I
D
C
WETLANDS J & L AREA = 8.78 AC.
WETLANDS K & CC AREA = 0.5 AC.
WETLAND AA AREA = 0.042 AC.
PROP. LEACH FIELDS (SEE PLANS BY OTHERS)
J
WETLAND F AREA = 3.64 AC.
PROP. WASTEWATER TREATMENT FACILITY (SEE PLANS BY OTHERS)
H
E
B
WETLAND BB AREA = 0.063 AC.
WETLAND R AREA = 0.84 AC.
WETLAND DD AREA = 0.26 AC.
WETLAND E AREA = 8.80 AC.
WETLANDS R & Q AREA = 0.52 AC.
WETLAND A AREA = 8.54 AC.
G
F
ROAD G
WETLANDS O, T, & M AREA = 4.1 AC.
A
PROP. GRAVEL PARKING AREA
STREET
ORCHARD STREET
GLENN PINES WAY
GROVE STREET
PROP. CLUB HOUSE (SEE PLANS BY OTHERS)

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REFER TO GENERAL NOTES SHEET FOR NOTES

200 100 50 0 200
1"= 200'

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SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

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FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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TOWN OF MILLIS
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SHEET TITLE:

OVERALL SITE PLAN & SHEET INDEX

SHEET NUMBER:
4
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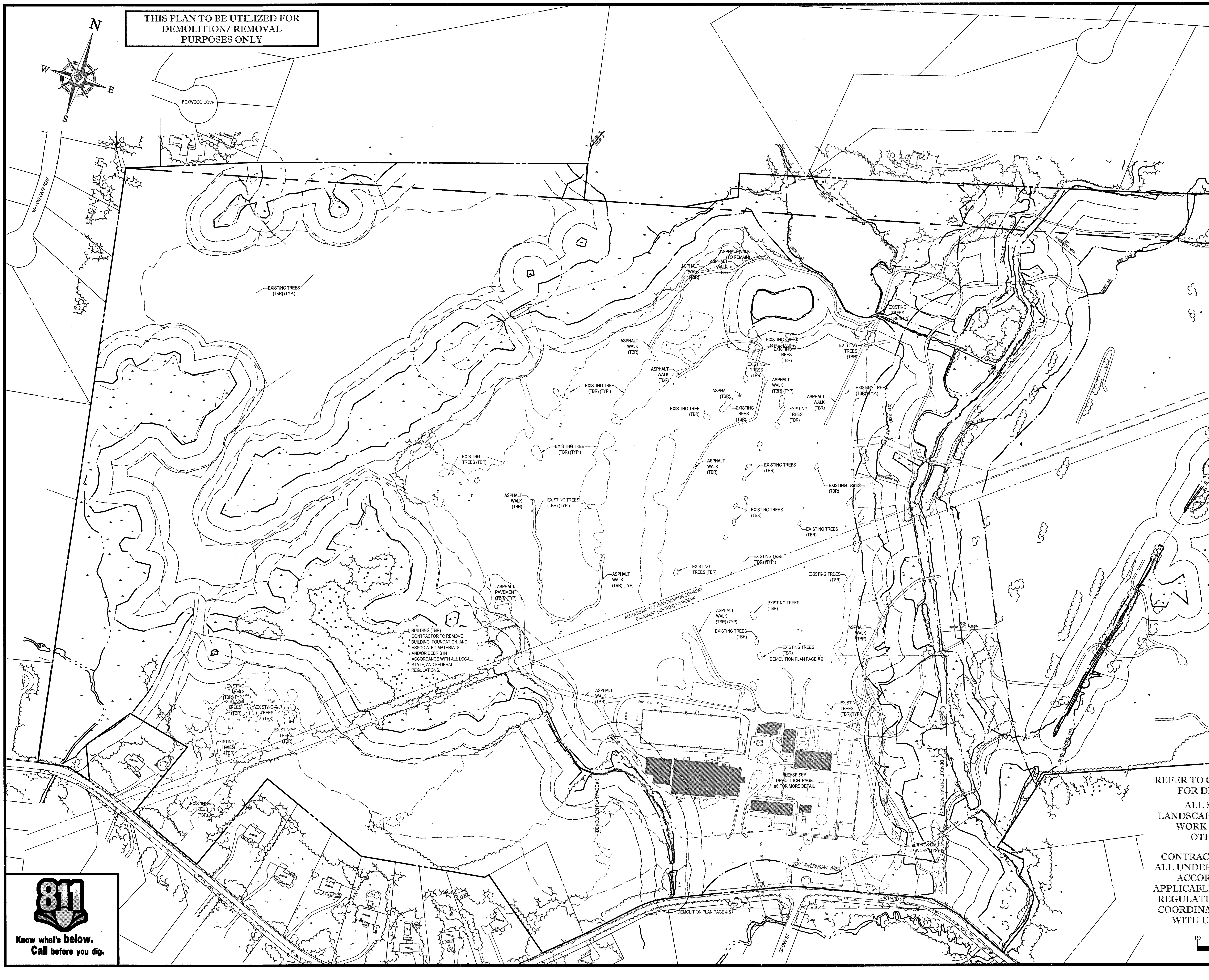
N
W
E
S
FOXWOOD COVE
WILLOW GATE RISE
EXISTING TREES (TBR) (TYP.)
ASPHALT WALK (TO REMAIN)
ASPHALT WALK (TBR)
EXISTING TREES (TO REMAIN)
EXISTING TREES (TBR)
ASPHALT (TBR)
EXISTING TREE (TBR)
ASPHALT WALK (TBR) (TYP)
EXISTING TREE (TBR) (TYP.)
EXISTING TREES (TBR) (TYP.)
ASPHALT PAVEMENT (TBR) (TYP)
BUILDING (TBR) CONTRACTOR TO REMOVE BUILDING, FOUNDATION, AND ASSOCIATED MATERIALS AND/OR DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
ALGONQUIN GAS TRANSMISSION COMAPNY EASEMENT (APPROX) TO REMAIN
DEMOLITION PLAN PAGE # 6
EXISTING TREES (TBR)(TYP)
PLEASE SEE DEMOLITION PAGE #6 FOR MORE DETAIL
ZONE AE (BFE 143)
ZONE AE (BFE 144)
200' RIVERFRONT AREA
APPROX LIMIT OF WORK (TYP)
ORCHARD ST
GROVE ST
150 75 37.5 0 150
1"= 150'

REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

ALL STRUCTURES AND LANDSCAPING OUTSIDE LIMIT OF WORK TO REMAIN UNLESS OTHERWISE NOTED.

CONTRACTOR TO CUT AND CAP ALL UNDERGROUND UTILITIES IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND FEDERAL REGULATIONS. CONTRACTOR TO COORDINATE ALL DISCONNECTS WITH UTILITY PROVIDERS.

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CAD I.D.:	XREF-SURVEY_SS3

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SITE
DEVELOPMENT
PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET TITLE:
DEMOLITION
PLAN A

SHEET NUMBER:
5
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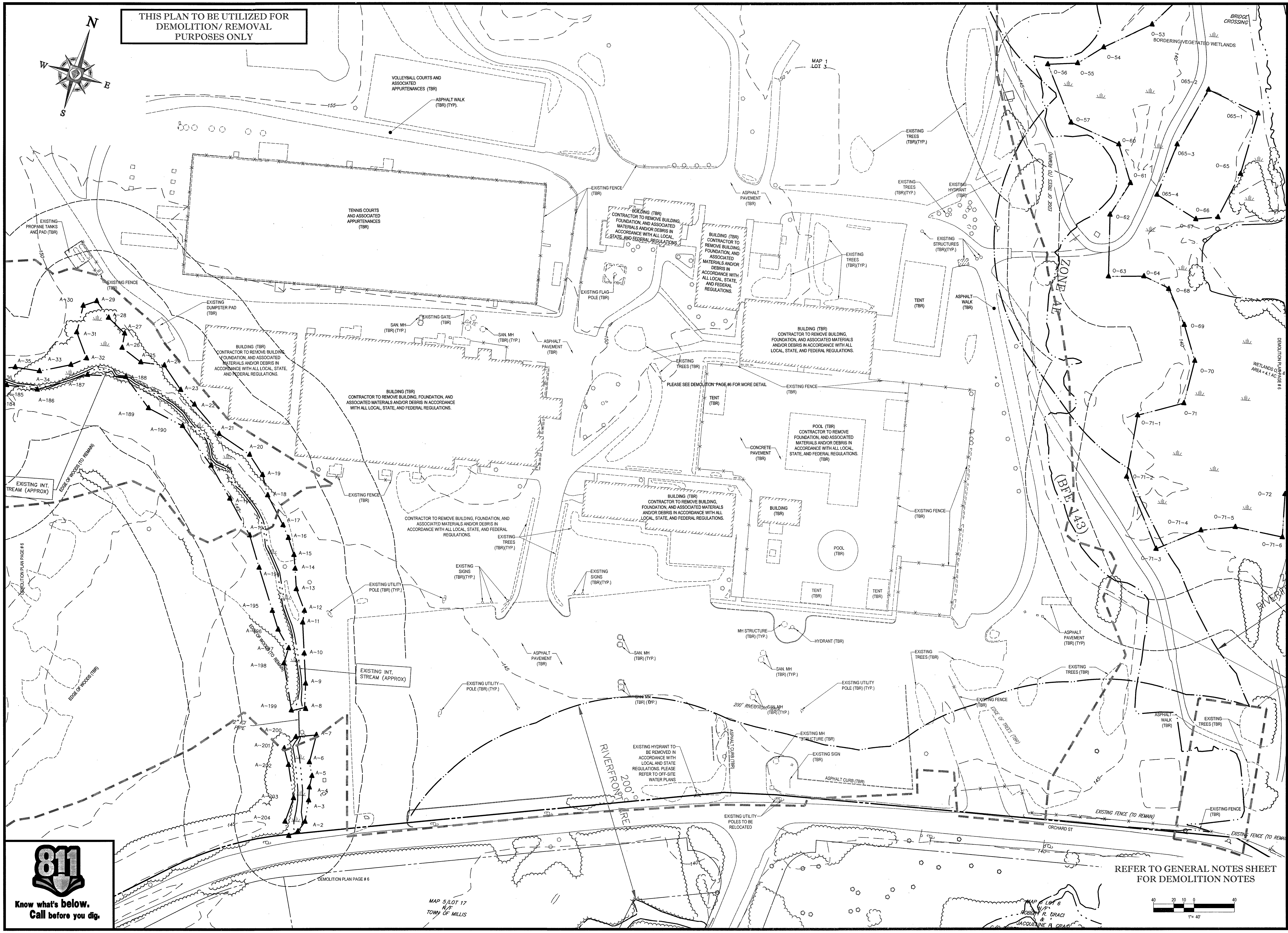
N
E
S
W
VOLLEYBALL COURTS AND ASSOCIATED APPURTENANCES (TBR)
ASPHALT WALK (TBR) (TYP.)
TENNIS COURTS AND ASSOCIATED APPURTENANCES (TBR)
EXISTING PROPANE TANKS AND PAD (TBR)
EXISTING FENCE (TBR)
EXISTING DUMPSTER PAD (TBR)
BUILDING (TBR) CONTRACTOR TO REMOVE BUILDING, FOUNDATION, AND ASSOCIATED MATERIALS AND/OR DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
BUILDING (TBR) CONTRACTOR TO REMOVE BUILDING, FOUNDATION, AND ASSOCIATED MATERIALS AND/OR DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
EXISTING FLAG POLE (TBR)
SAN. MH (TBR) (TYP.)
EXISTING GATE (TBR)
ASPHALT PAVEMENT (TBR)
EXISTING TREES (TBR)
PLEASE SEE DEMOLITION PAGE #6 FOR MORE DETAIL
EXISTING FENCE (TBR)
TENT (TBR)
POOL (TBR) CONTRACTOR TO REMOVE FOUNDATION, AND ASSOCIATED MATERIALS AND/OR DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
CONCRETE PAVEMENT (TBR)
BUILDING (TBR)
POOL (TBR)
TENT (TBR)
EXISTING TREES (TBR)(TYP.)
EXISTING HYDRANT (TBR)
EXISTING STRUCTURES (TBR)(TYP.)
ASPHALT WALK (TBR)
MAP 1 LOT 3
EXISTING TREES (TBR)(TYP.)
ZONE AE
(BFE 143)
EDGE OF TREES (TO REMAIN)
BRIDGE CROSSING
BORDERING/VEGETATED WETLANDS
WETLANDS AREA = 4.1 AC±
DEMOLITION PLAN PAGE # 6
O-53
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A-204
EXISTING INT. STREAM (APPROX)
EDGE OF WOODS (TO REMAIN)
EDGE OF WOODS (TBR)
EXISTING INT. STREAM (APPROX)
DEMOLITION PLAN PAGE # 6
CI PIPE
EXISTING FENCE (TBR)
BUILDING (TBR) CONTRACTOR TO REMOVE BUILDING, FOUNDATION, AND ASSOCIATED MATERIALS AND/OR DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
CONTRACTOR TO REMOVE BUILDING, FOUNDATION, AND ASSOCIATED MATERIALS AND/OR DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
EXISTING TREES (TBR)(TYP.)
BUILDING (TBR) CONTRACTOR TO REMOVE BUILDING, FOUNDATION, AND ASSOCIATED MATERIALS AND/OR DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
BUILDING (TBR)
EXISTING SIGNS (TBR)(TYP.)
EXISTING SIGNS (TBR)(TYP.)
EXISTING UTILITY POLE (TBR) (TYP.)
MH STRUCTURE (TBR) (TYP.)
HYDRANT (TBR)
ASPHALT PAVEMENT (TBR)
SAN. MH (TBR) (TYP.)
SAN. MH (TBR) (TYP.)
EXISTING UTILITY POLE (TBR) (TYP.)
EXISTING UTILITY POLE (TBR) (TYP.)
SAN. MH (TBR) (TYP.)
200' RIVERFRONT
SAN. MH (TBR) (TYP.)
EXISTING HYDRANT TO BE REMOVED IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS. PLEASE REFER TO OFF-SITE WATER PLANS
RIVERFRONT AREA
200'
ASPHALT CURB (TBR)
EXISTING MH STRUCTURE (TBR)
EXISTING SIGN (TBR)
ASPHALT CURB (TBR)
EXISTING UTILITY POLES TO BE RELOCATED
EXISTING TREES (TBR)
ASPHALT PAVEMENT (TBR) (TYP)
EXISTING TREES (TBR)
EXISTING FENCE (TBR)
EDGE OF TREES (TBR)
ASPHALT WALK (TBR)
EXISTING TREES (TBR)
EXISTING FENCE (TO REMAIN)
EXISTING FENCE (TBR)
ORCHARD ST
RIVERFRONT
155
150
145
140
MAP 5/LOT 17 N/F TOWN OF MILLIS
MAP 5 LOT 6 N/F ROBERT R. GRACI & JACQUELINE P. GRACI
40 20 10 0 40
1"= 40'

REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

811
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- CENTRAL VIRGINIA
- RALEIGH, NC
- CHARLOTTE, NC
- TAMPA, FL
- SOUTH FLORIDA

REVISIONS

REV	DATE	COMMENT	BY
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PERMIT SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	XREF-SURVEY_SS3

PROJECT:

SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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MAINE LICENSE No. 9490
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

WILLIAM D GOEBEL
CIVIL
42644

SHEET TITLE:

DEMOLITION PLAN A

SHEET NUMBER:
6
OF 74

REV 0 - 11/18/2016

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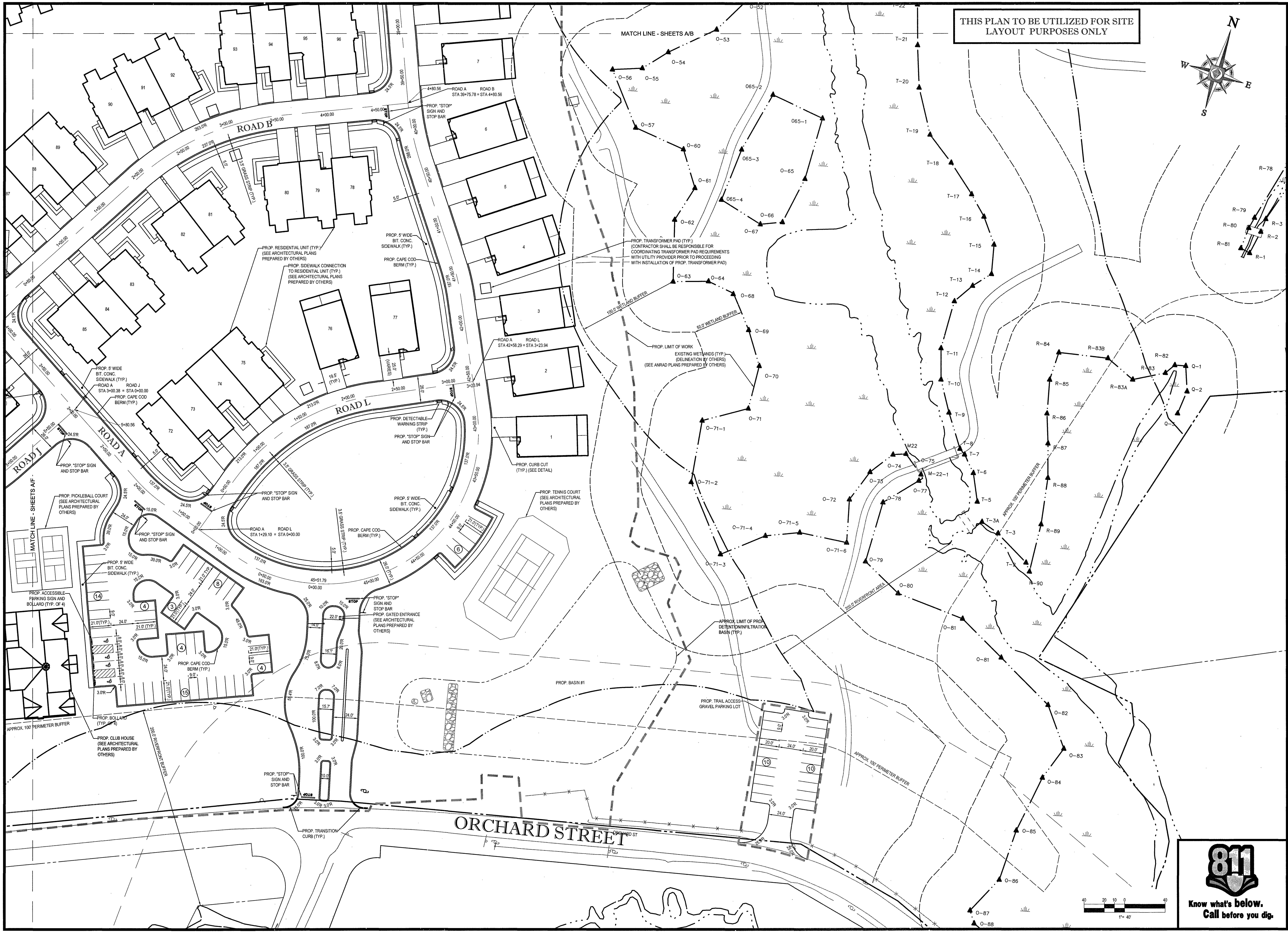
MATCH LINE - SHEETS A/B
MATCH LINE - SHEETS A/F
ROAD A
ROAD B
ROAD J
ROAD L
ORCHARD STREET
ORCHARD ST
N
S
E
W
PROP. RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. SIDEWALK CONNECTION TO RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
PROP. CAPE COD BERM (TYP.)
3.5' GRASS STRIP (TYP.)
ROAD A STA 39+75.78 = ROAD B STA 4+80.56
PROP. "STOP" SIGN AND STOP BAR
ROAD A STA 42+58.29 = ROAD L STA 3+23.94
ROAD A STA 3+00.38 = ROAD J STA 0+00.00
ROAD A STA 1+29.10 = ROAD L STA 0+00.00
PROP. DETECTABLE WARNING STRIP (TYP.)
PROP. CURB CUT (TYP.) (SEE DETAIL)
PROP. TENNIS COURT (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. PICKLEBALL COURT (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. ACCESSIBLE PARKING SIGN AND BOLLARD (TYP. OF 4)
PROP. BOLLARD (TYP. OF 4)
PROP. CLUB HOUSE (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. GATED ENTRANCE (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. TRANSITION CURB (TYP.)
APPROX. 100' PERIMETER BUFFER
200.0' RIVERFRONT BUFFER
200.0' RIVERFRONT AREA
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
PROP. LIMIT OF WORK
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
PROP. BASIN #1
PROP. TRAIL ACCESS GRAVEL PARKING LOT
1
2
3
4
5
6
7
72
73
74
75
76
77
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O-71-1
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065-1
065-2
065-3
065-4
M22
M-22-1
T-3
T-3A
T-5
T-6
T-7
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R-1
R-2
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R-78
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R-83A
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R-86
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R-90
Q-1
Q-2
Q-3
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1"= 40'

Know what's below. Call before you dig.

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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS

—FOR—

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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WILLIAM D
GOEBEL
CIVIL
42644

SHEET TITLE:

SITE PLAN
A

SHEET NUMBER:
7
OF 74

REV 0 - 11/18/2016

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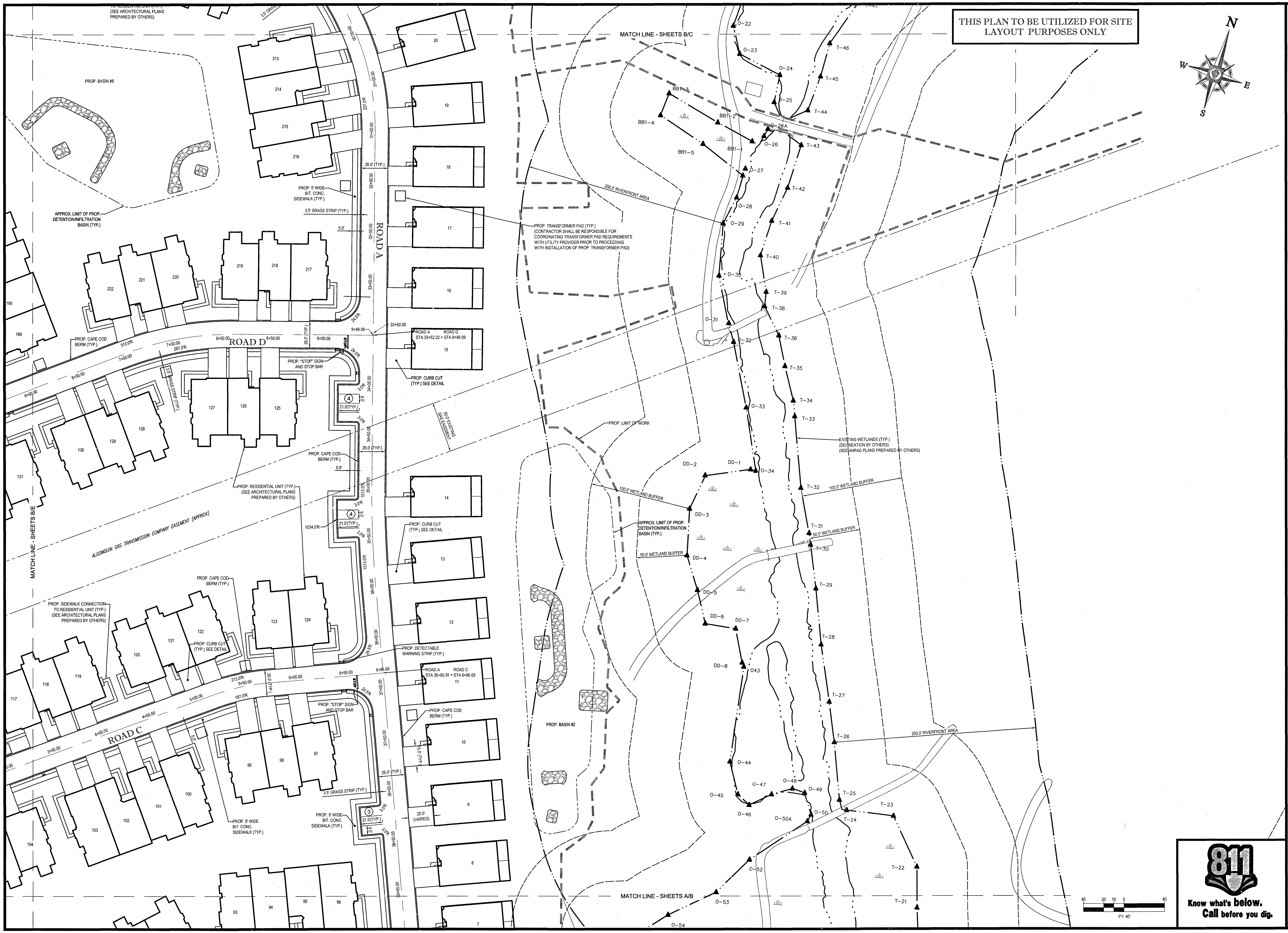
MATCH LINE - SHEETS B/C
MATCH LINE - SHEETS A/B
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PROP. BASIN #8
PROP. BASIN #2
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
3.5' GRASS STRIP (TYP.)
26.0' (TYP.)
ROAD A
ROAD D
ROAD C
PROP. CAPE COD BERM (TYP.)
PROP. "STOP" SIGN AND STOP BAR
PROP. CURB CUT (TYP.) SEE DETAIL
ROAD A STA 33+52.22 = ROAD D STA 9+49.09
ROAD A STA 36+85.91 = ROAD C STA 6+86.65
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
PROP. RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. SIDEWALK CONNECTION TO RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. DETECTABLE WARNING STRIP (TYP.)
ALGONQUIN GAS TRANSMISSION COMPANY EASEMENT (APPROX)
5Ø' EXISTING GAS EASEMENT
PROP. LIMIT OF WORK
200.0' RIVERFRONT AREA
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
21.0' (TYP.)
25.0' (VARIES)
1034.0'R
1013.0'R
313.0'R
287.0'R
213.0'R
187.0'R
24.5'R
3.0'R
237.0'R
5.0'
BB1-1
BB1-2
BB1-3
BB1-4
BB1-5
DD-1
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1"= 40'

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REVISIONS

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PERMIT
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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

WILLIAM D.
GOEBEL
CIVIL
42644

SHEET TITLE:
SITE PLAN
B

SHEET NUMBER:
8
OF 74

REV 0 - 11/18/2016

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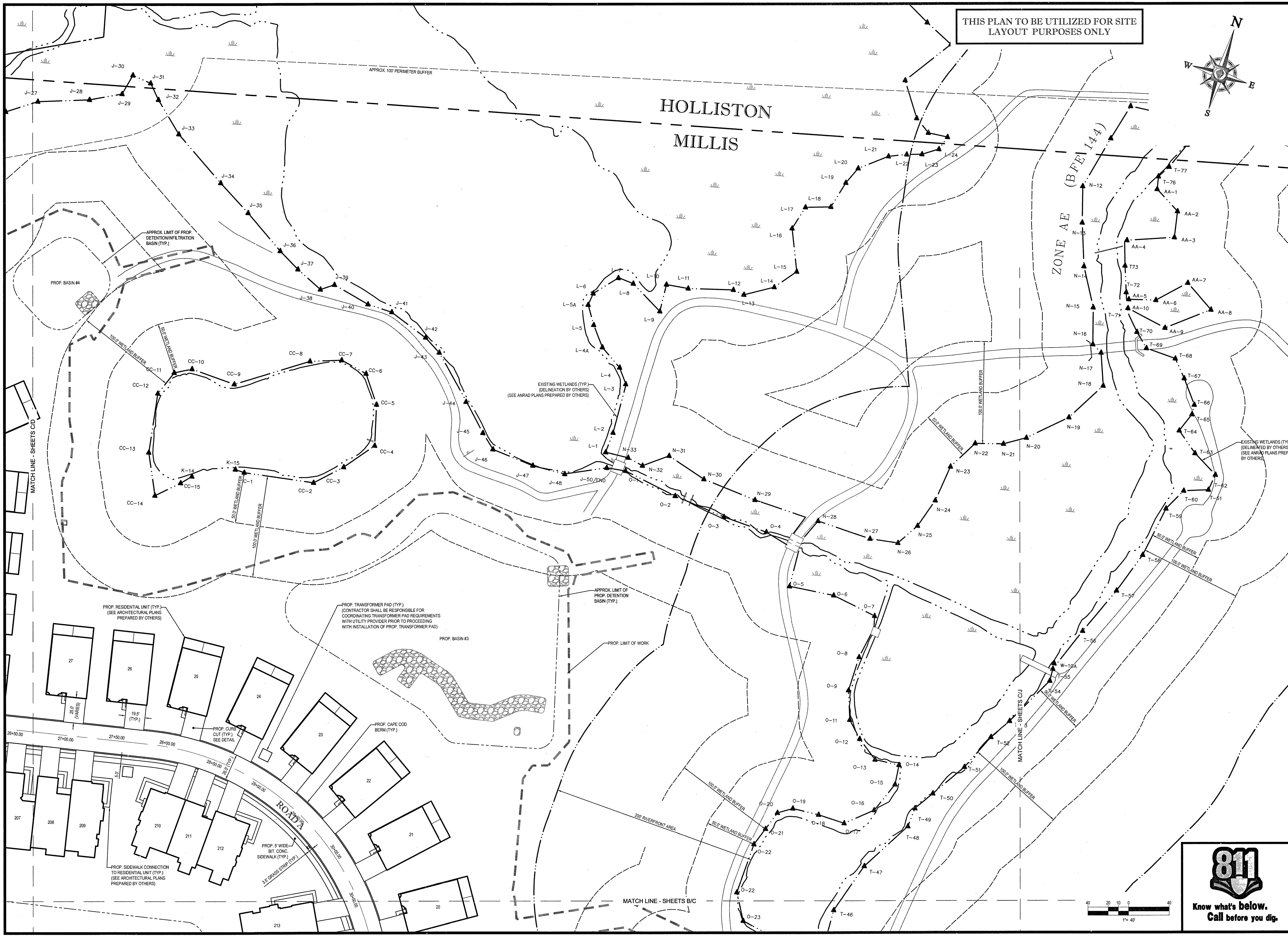
THIS PLAN TO BE UTILIZED FOR SITE LAYOUT PURPOSES ONLY
N
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S
HOLLISTON
MILLIS
APPROX. 100' PERIMETER BUFFER
ZONE AE (BFE 144)
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
PROP. BASIN #4
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
MATCH LINE - SHEETS C/D
MATCH LINE - SHEETS C/J
MATCH LINE - SHEETS B/C
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
200' RIVERFRONT AREA
APPROX. LIMIT OF PROP. DETENTION BASIN (TYP.)
PROP. LIMIT OF WORK
PROP. BASIN #3
PROP. RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
PROP. CURB CUT (TYP.) SEE DETAIL
PROP. CAPE COD BERM (TYP.)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
3.5' GRASS STRIP (TYP.)
PROP. SIDEWALK CONNECTION TO RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
ROAD A
25.0' (VARIES)
19.5' (TYP.)
26.0' (TYP.)
5.0'
26+50.00
27+00.00
27+50.00
28+00.00
28+50.00
29+00.00
29+50.00
30+00.00
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J-27 J-28 J-29 J-30 J-31 J-32 J-33 J-34 J-35 J-36 J-37 J-38 J-39 J-40 J-41 J-42 J-43 J-44 J-45 J-46 J-47 J-48 J-50/END
CC-1 CC-2 CC-3 CC-4 CC-5 CC-6 CC-7 CC-8 CC-9 CC-10 CC-11 CC-12 CC-13 CC-14 CC-15 K-14 K-15
L-1 L-2 L-3 L-4 L-4A L-5 L-5A L-6 L-7 L-8 L-9 L-10 L-11 L-12 L-13 L-14 L-15 L-16 L-17 L-18 L-19 L-20 L-21 L-22 L-23 L-24
N-12 N-13 N-14 N-15 N-16 N-17 N-18 N-19 N-20 N-21 N-22 N-23 N-24 N-25 N-26 N-27 N-28 N-29 N-30 N-31 N-32 N-33
O-1 O-2 O-3 O-4 O-5 O-6 O-7 O-8 O-9 O-11 O-12 O-13 O-14 O-15 O-16 O-17 O-18 O-19 O-20 O-21 O-22 O-23
AA-1 AA-2 AA-3 AA-4 AA-5 AA-6 AA-7 AA-8 AA-9 AA-10
T-46 T-47 T-48 T-49 T-50 T-51 T-52 T-54 T-55 T-56 T-57 T-58 T-59 T-60 T-61 T-62 T-63 T-64 T-65 T-66 T-67 T-68 T-69 T-70 T-72 T73 T-76 T-77 T-79
W-10A
40 20 10 0 40
1"= 40'

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SET

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FOR

Toll Brothers

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MAP# 05, LOT# 35
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WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:
SITE PLAN
C

SHEET NUMBER:
9
OF 74

REV 0 - 11/18/2016

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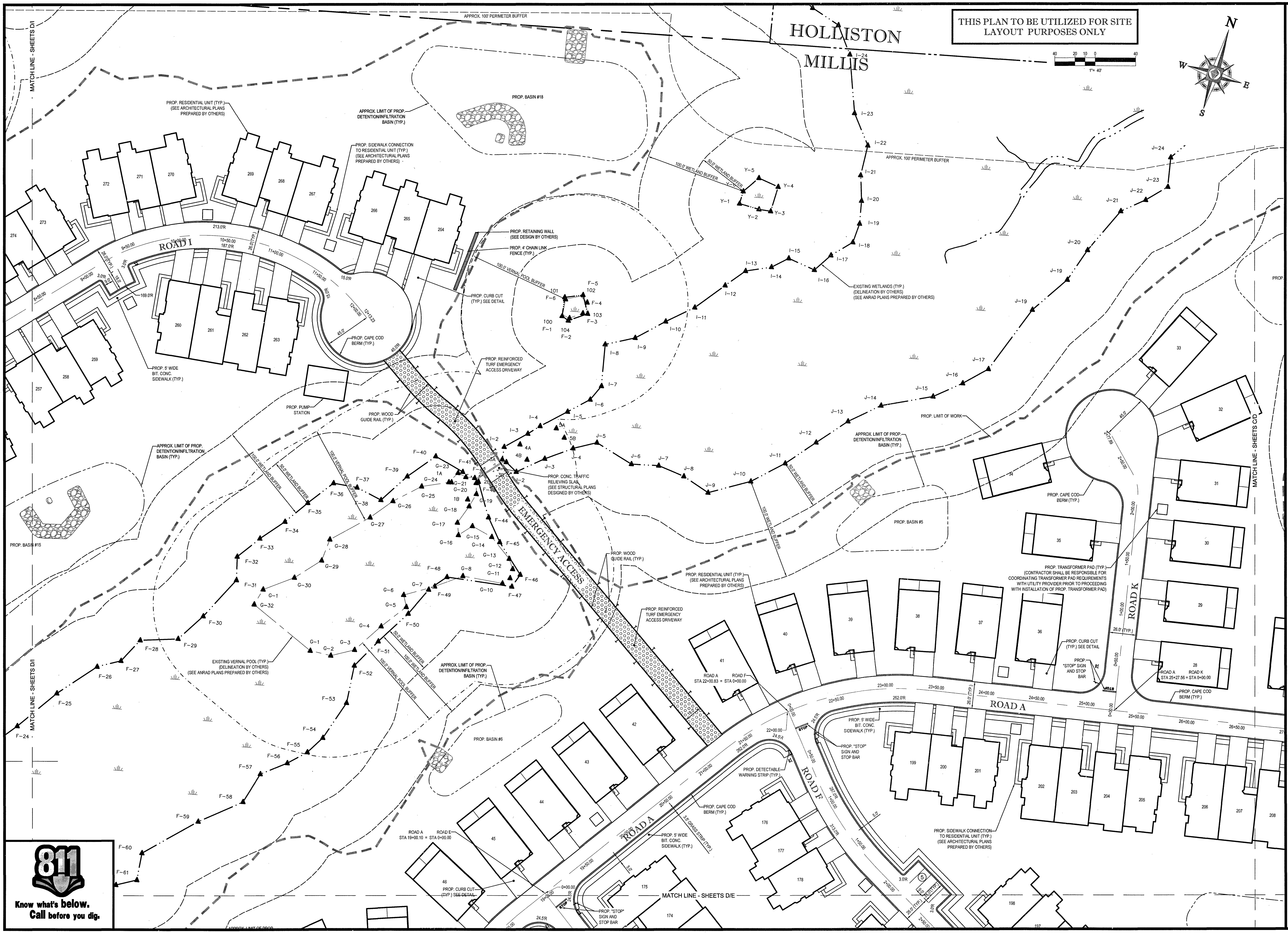
HOLLISTON
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MATCH LINE - SHEETS D/I
MATCH LINE - SHEETS C/D
MATCH LINE - SHEETS D/E
APPROX. 100' PERIMETER BUFFER
PROP. BASIN #18
PROP. BASIN #15
PROP. BASIN #6
PROP. BASIN #5
PROP. RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
PROP. SIDEWALK CONNECTION TO RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. RETAINING WALL (SEE DESIGN BY OTHERS)
PROP. 4' CHAIN LINK FENCE (TYP.)
100.0' VERNAL POOL BUFFER
PROP. CURB CUT (TYP.) SEE DETAIL
PROP. CAPE COD BERM (TYP.)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
PROP. REINFORCED TURF EMERGENCY ACCESS DRIVEWAY
PROP. PUMP STATION
PROP. WOOD GUIDE RAIL (TYP.)
PROP. CONC. TRAFFIC RELIEVING SLAB (SEE STRUCTURAL PLANS DESIGNED BY OTHERS)
EMERGENCY ACCESS
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
PROP. LIMIT OF WORK
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
PROP. "STOP" SIGN AND STOP BAR
PROP. DETECTABLE WARNING STRIP (TYP.)
3.5' GRASS STRIP (TYP.)
ROAD I
ROAD A
ROAD K
ROAD F
ROAD E
ROAD A STA 22+00.83 = ROAD F STA 0+00.00
ROAD A STA 25+27.56 = ROAD K STA 0+00.00
ROAD A STA 19+00.10 = ROAD E STA 0+00.00
PROP
APPROX. LIMIT OF PROP.
257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
174 175 176 177 178 198 199 200 201 202 203 204 205 206 207 208
I-2 I-3 I-4 I-5 I-6 I-7 I-8 I-9 I-10 I-11 I-12 I-13 I-14 I-15 I-16 I-17 I-18 I-19 I-20 I-21 I-22 I-23 I-24
J-2 J-3 J-4 J-5 J-6 J-7 J-8 J-9 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-19 J-20 J-21 J-22 J-23 J-24
F-1 F-2 F-3 F-4 F-5 F-6 100 101 102 103 104
Y-1 Y-2 Y-3 Y-4 Y-5
F-24 F-25 F-26 F-27 F-28 F-29 F-30 F-31 F-32 F-33 F-34 F-35 F-36 F-37 F-38 F-39 F-40 F-41 F-44 F-45 F-46 F-47 F-48 F-49 F-50 F-51 F-52 F-53 F-54 F-55 F-56 F-57 F-58 F-59 F-60 F-61
G-1 G-2 G-3 G-4 G-5 G-6 G-7 G-8 G-10 G-11 G-12 G-13 G-14 G-15 G-16 G-17 G-18 G-19 G-20 G-21 G-23 G-24 G-25 G-26 G-27 G-28 G-29 G-30 G-32
1A 1B 2B 4A 4B 5A 5B
811
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PERMIT SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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CONNECTICUT LICENSE No. [illegible]854
NEW HAMPSHIRE LICENSE No. 10280
MAINE LICENSE No. 9490
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

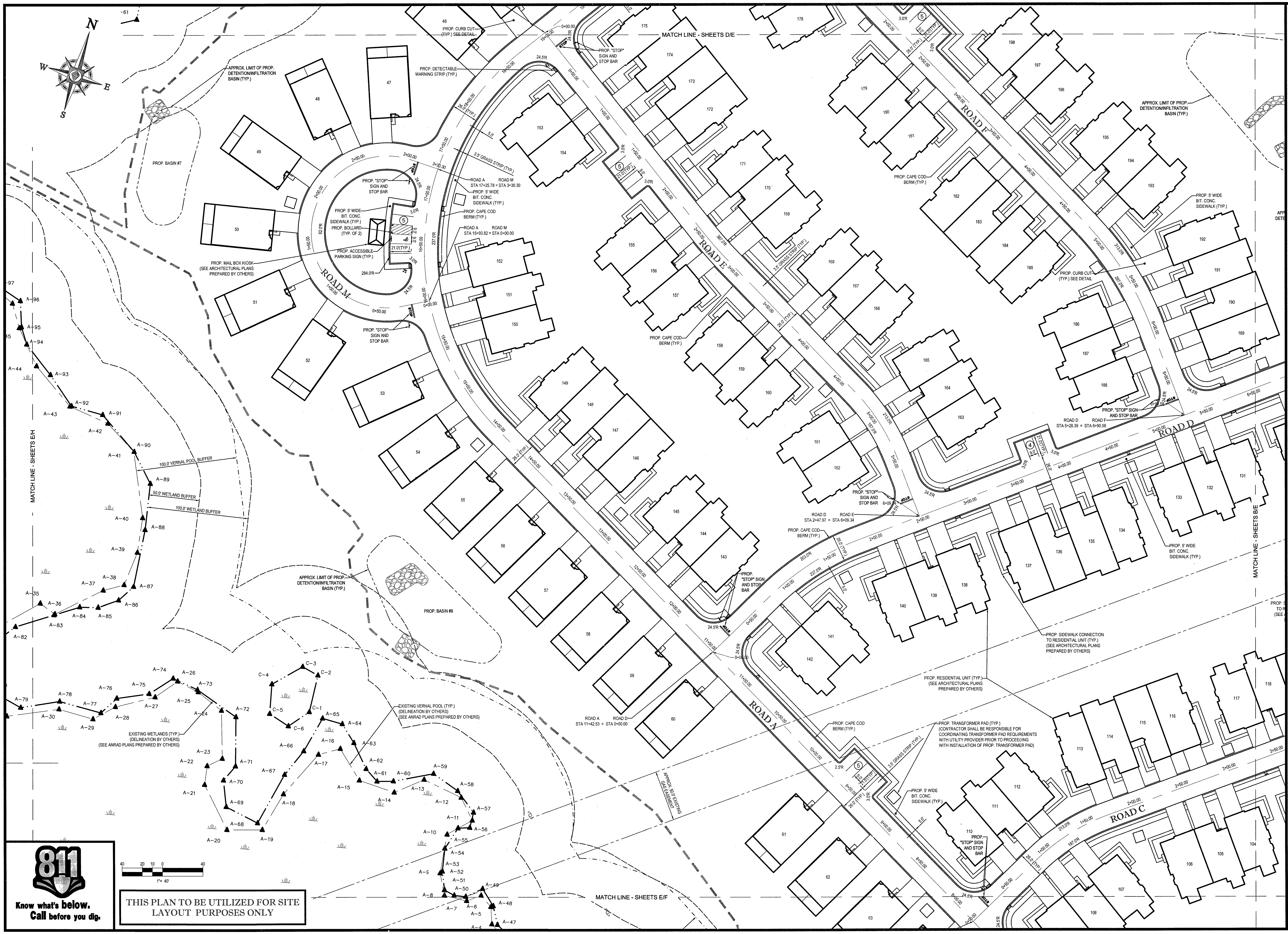
WILLIAM D. GOEBEL CIVIL 42644

SHEET TITLE:

SITE PLAN D

SHEET NUMBER:
10
OF 74

REV 0 - 11/18/2016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ROAD D
ROAD A
ROAD C
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
PROP. BASIN #7
PROP. BASIN #9
PROP. CURB CUT (TYP.) SEE DETAIL
PROP. "STOP" SIGN AND STOP BAR
PROP. DETECTABLE WARNING STRIP (TYP.)
3.5' GRASS STRIP (TYP.)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
PROP. BOLLARD (TYP. OF 2)
PROP. ACCESSIBLE PARKING SIGN (TYP.)
PROP. CAPE COD BERM (TYP.)
PROP. MAIL BOX KIOSK (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
ROAD A ROAD M STA 17+25.78 = STA 3+30.30
ROAD A ROAD M STA 15+93.82 = STA 0+00.00
ROAD D ROAD F STA 5+28.39 = STA 6+90.58
ROAD D ROAD E STA 2+47.97 = STA 6+09.34
ROAD A ROAD D STA 11+42.53 = STA 0+00.00
100.0' VERNAL POOL BUFFER
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
APPROX. 50.0' EXISTING GAS EASEMENT
PROP. SIDEWALK CONNECTION TO RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
40 20 10 0 40
1"= 40'

811
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PERMIT
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DRAWN BY:	JT
CHECKED BY:	AFT
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SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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FLORIDA LICENSE No. 66202

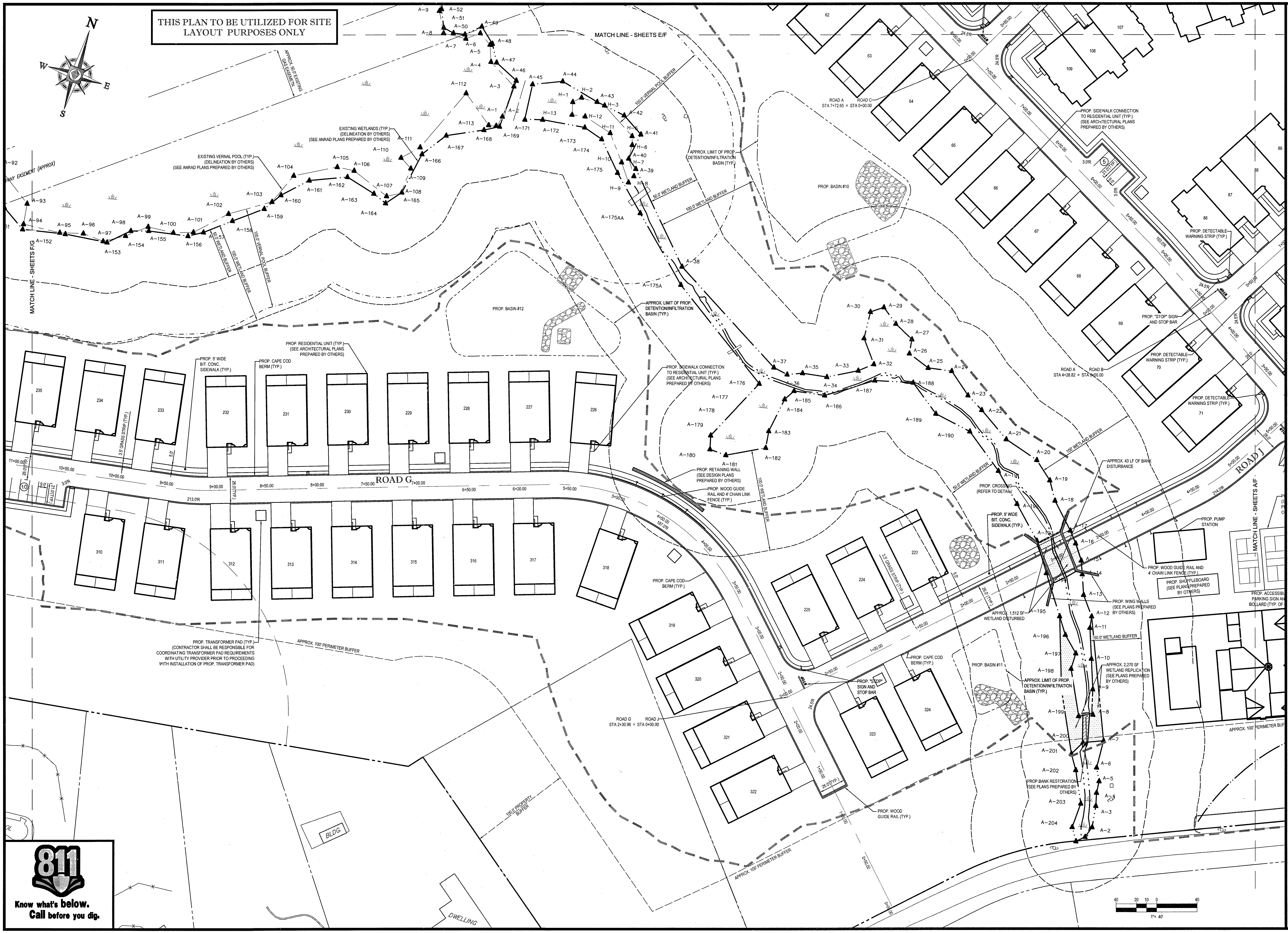
WILLIAM D GOEBEL
CIVIL
42644

SHEET TITLE:

SITE PLAN
E

SHEET NUMBER:
11
OF 74

REV 0 - 11/18/2016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EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
100.0' VERNAL POOL BUFFER
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
100' WETLAND BUFFER
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
PROP. BASIN #10
PROP. BASIN #11
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STA 4+28.82 = STA 0+00.00
ROAD G
ROAD J
STA 2+30.96 = STA 0+00.00
ROAD G
ROAD J
PROP. SIDEWALK CONNECTION TO RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. DETECTABLE WARNING STRIP (TYP.)
PROP. "STOP" SIGN AND STOP BAR
PROP. RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
PROP. CAPE COD BERM (TYP.)
3.5' GRASS STRIP (TYP.)
PROP. RETAINING WALL (SEE DESIGN PLANS PREPARED BY OTHERS)
PROP. WOOD GUIDE RAIL AND 4' CHAIN LINK FENCE (TYP.)
PROP. WOOD GUIDE RAIL (TYP.)
PROP. CROSSING (REFER TO DETAIL)
APPROX. 43 LF OF BANK DISTURBANCE
APPROX. 1,512 SF WETLAND DISTURBED
PROP. WING WALLS (SEE PLANS PREPARED BY OTHERS)
APPROX. 2,270 SF WETLAND REPLICATION (SEE PLANS PREPARED BY OTHERS)
PROP.BANK RESTORATION (SEE PLANS PREPARED BY OTHERS)
PROP. PUMP STATION
PROP. SHUFFLEBOARD (SEE PLANS PREPARED BY OTHERS)
PROP. ACCESSIBL PARKING SIGN AN BOLLARD (TYP. OF
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
APPROX. 100' PERIMETER BUFFER
100.0' PROPERTY BUFFER
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21.0'(TYP.)
9.0'
24.5'R
163.0'R
187.0'R
213.0'R
214.0'R
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26.0'(TYP.)
5.0'
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1"= 40'

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PROJECT No.:	W161041
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CAD I.D.:	W161041_SS3

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SITE DEVELOPMENT PLANS

FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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WILLIAM D. GOEBEL
CIVIL
42644
REGISTERED PROFESSIONAL ENGINEER

SHEET TITLE:

SITE PLAN F

SHEET NUMBER:
12
OF 74

REV 0 - 11/18/2016

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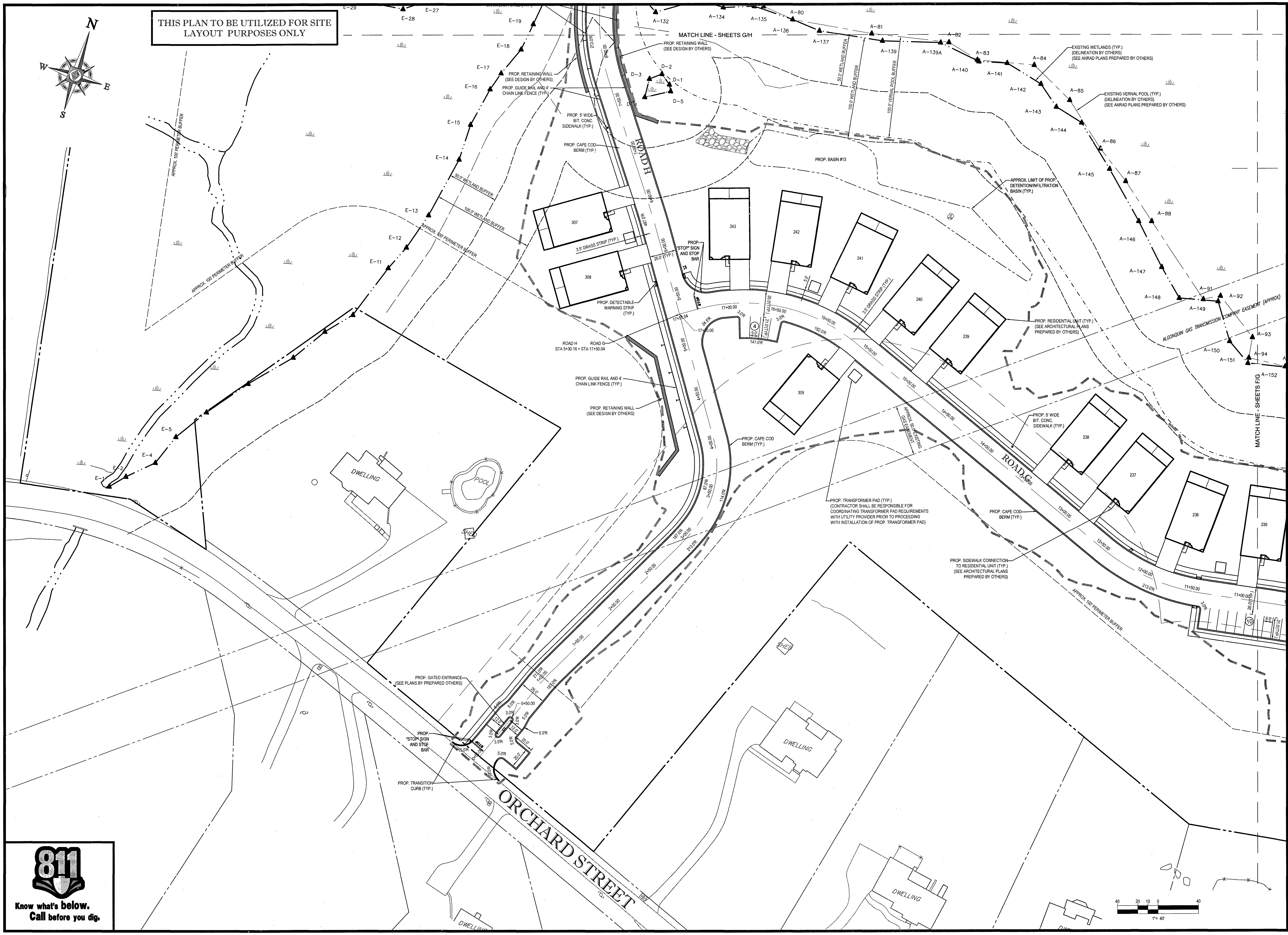
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MATCH LINE - SHEETS G/H
MATCH LINE - SHEETS F/G
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ROAD G
ORCHARD STREET
ROAD H STA 5+30.16 = STA 17+50.04
PROP. RETAINING WALL (SEE DESIGN BY OTHERS)
PROP. GUIDE RAIL AND 4' CHAIN LINK FENCE (TYP.)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
PROP. CAPE COD BERM (TYP.)
PROP. BASIN #13
PROP. "STOP" SIGN AND STOP BAR
PROP. DETECTABLE WARNING STRIP (TYP.)
PROP. RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
ALGONQUIN GAS TRANSMISSION COMPANY EASEMENT (APPROX)
APPROX. 50' EXISTING GAS EASEMENT
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
PROP. SIDEWALK CONNECTION TO RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. GATED ENTRANCE (SEE PLANS BY PREPARED OTHERS)
PROP. "STOP" SIGN AND STOP BAR
PROP. TRANSITION CURB (TYP.)
3.5' GRASS STRIP (TYP.)
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
100.0' VERNAL POOL BUFFER
APPROX. 100' PERIMETER BUFFER
DWELLING
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SHED
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1"= 40'

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FOR
Toll Brothers

LOCATION OF SITE
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MAP# 05, LOT# 35
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WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:
SITE PLAN G

SHEET NUMBER:
13
OF 74

REV 0 - 11/18/2016

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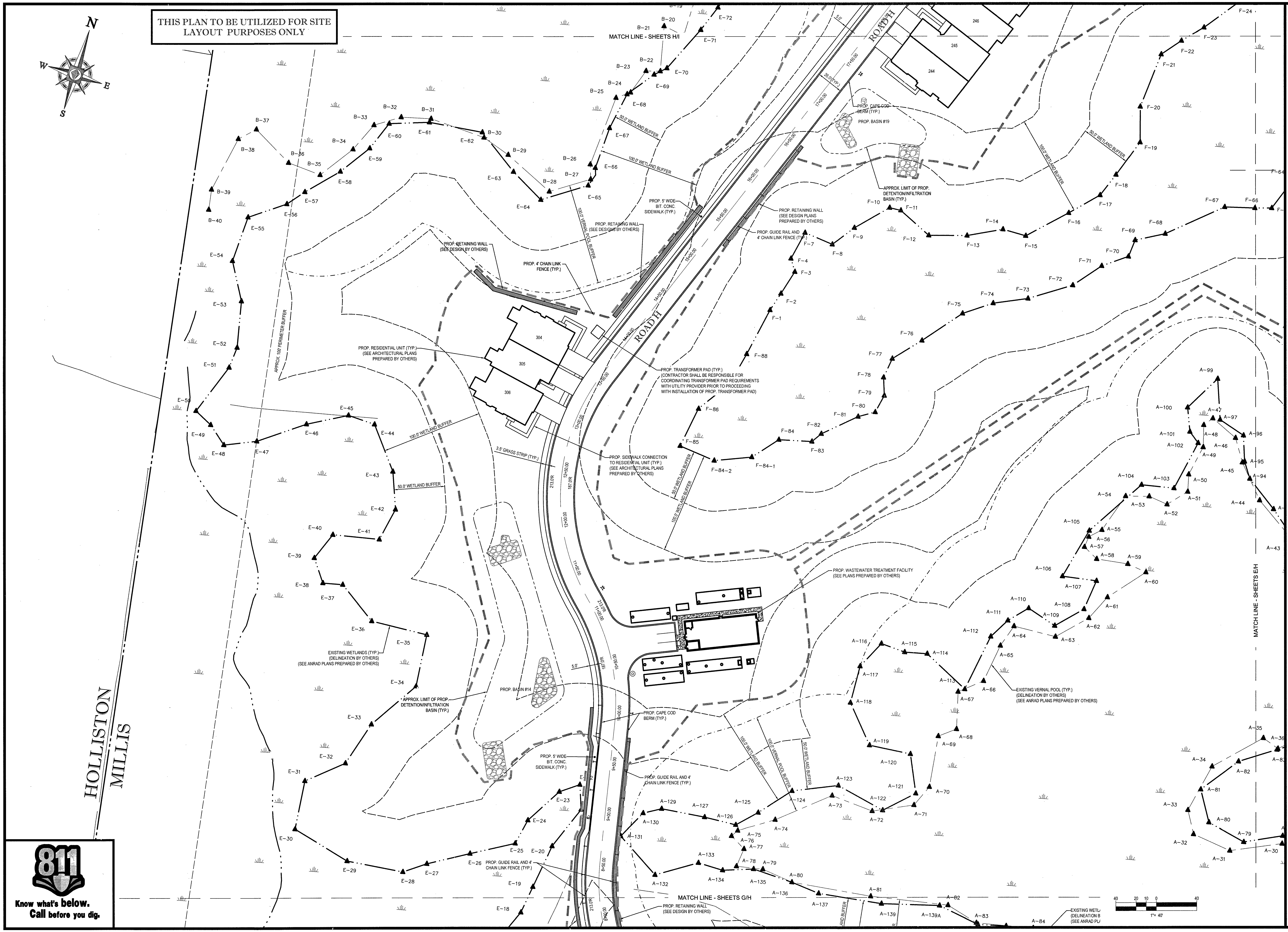
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PROP. RETAINING WALL (SEE DESIGN BY OTHERS)
PROP. 4' CHAIN LINK FENCE (TYP.)
PROP. RETAINING WALL (SEE DESIGNS BY OTHERS)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
PROP. RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
PROP. SIDEWALK CONNECTION TO RESIDENTIAL UNIT (TYP.) (SEE ARCHITECTURAL PLANS PREPARED BY OTHERS)
3.5' GRASS STRIP (TYP.)
PROP. RETAINING WALL (SEE DESIGN PLANS PREPARED BY OTHERS)
PROP. GUIDE RAIL AND 4' CHAIN LINK FENCE (TYP.)
PROP. CAPE COD BERM (TYP.)
PROP. BASIN #19
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
PROP. WASTEWATER TREATMENT FACILITY (SEE PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
PROP. BASIN #14
APPROX. LIMIT OF PROP. DETENTION/INFILTRATION BASIN (TYP.)
PROP. CAPE COD BERM (TYP.)
PROP. 5' WIDE BIT. CONC. SIDEWALK (TYP.)
PROP. GUIDE RAIL AND 4' CHAIN LINK FENCE (TYP.)
PROP. GUIDE RAIL AND 4' CHAIN LINK FENCE (TYP.)
PROP. RETAINING WALL (SEE DESIGN BY OTHERS)
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50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
100.0' VERNAL POOL BUFFER
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1"= 40'
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SET

PROJECT No.: W161041
DRAWN BY: JT
CHECKED BY: AFT
DATE: 11/18/2016
SCALE: AS NOTED
CAD I.D.: W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER ENGINEERING
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FLORIDA LICENSE No. 66202

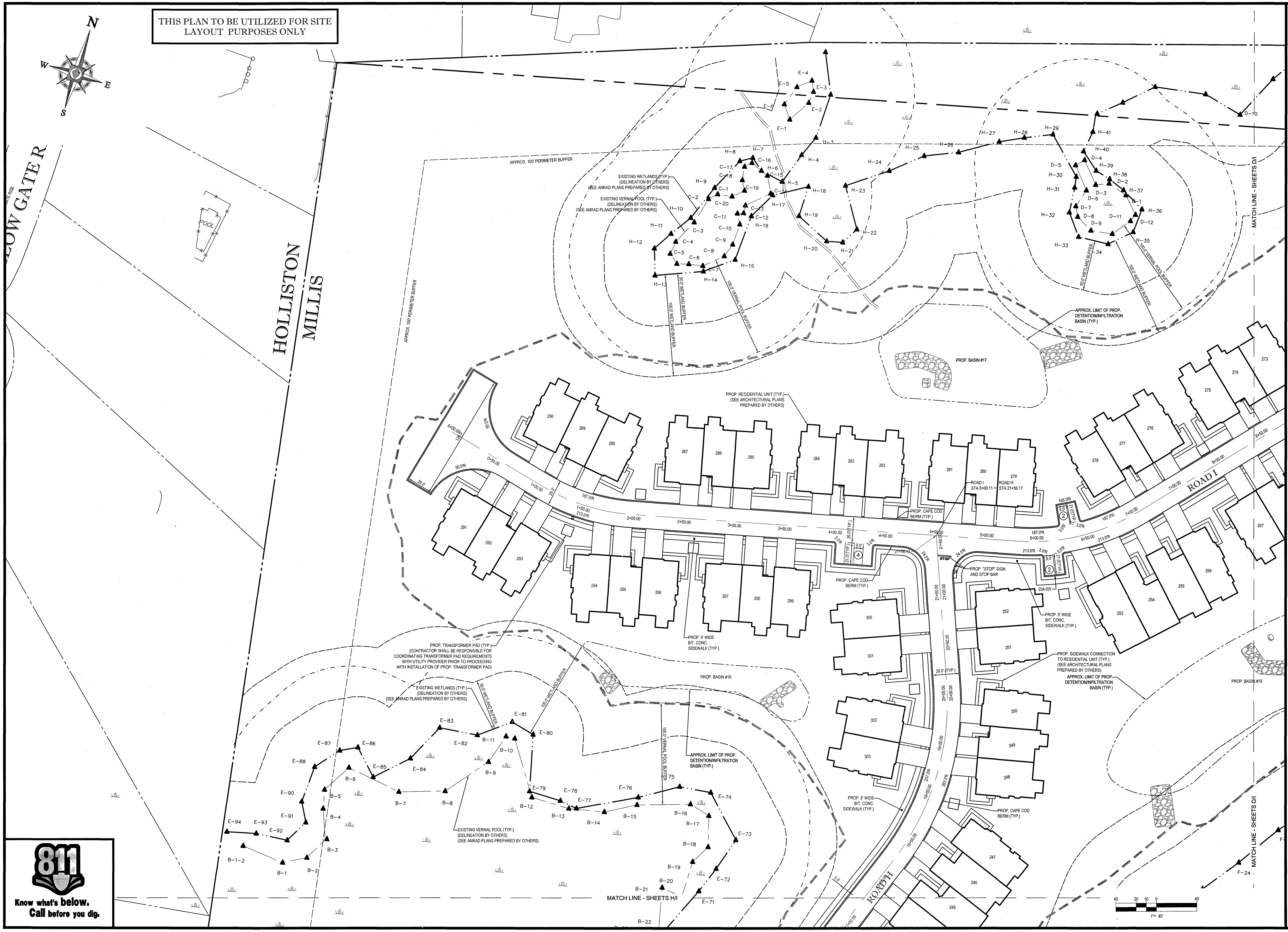
WILLIAM D. GOEBEL CIVIL 42644

SHEET TITLE:
SITE PLAN H

SHEET NUMBER:
14
OF 74

REV 0 - 11/18/2016

THIS PLAN TO BE UTILIZED FOR SITE
LAYOUT PURPOSES ONLY



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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
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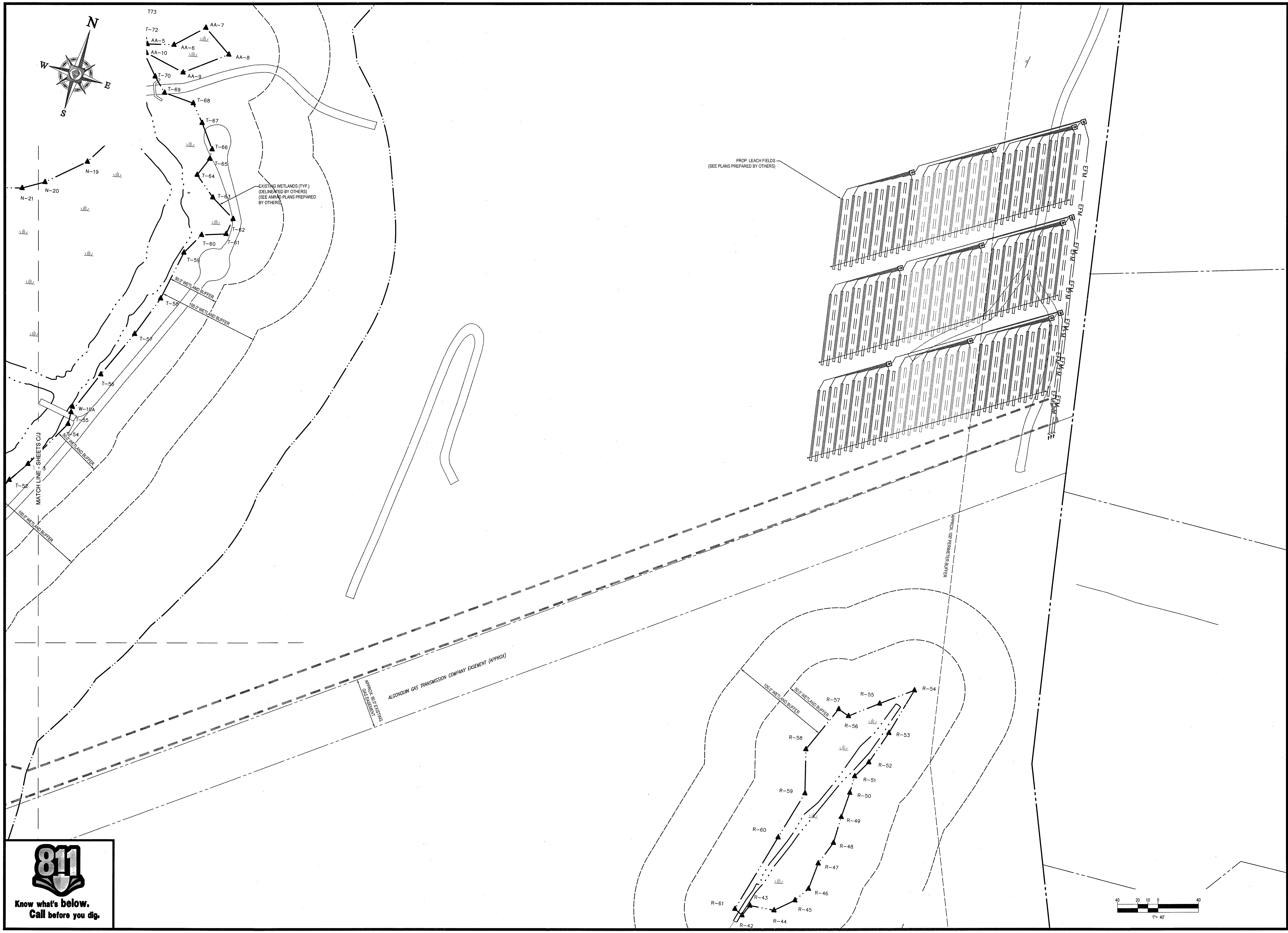
WILLIAM D GOEBEL
CIVIL
42644

SHEET TITLE:

SITE PLAN
I

SHEET NUMBER:
15
OF 74

REV 0 - 11/18/2016



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Know what's below.
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CAD I.D.:	W161041_SS3

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FOR

Toll Brothers

LOCATION OF SITE
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MAP# 05, LOT# 35
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WILLIAM D. GOEBEL
CIVIL
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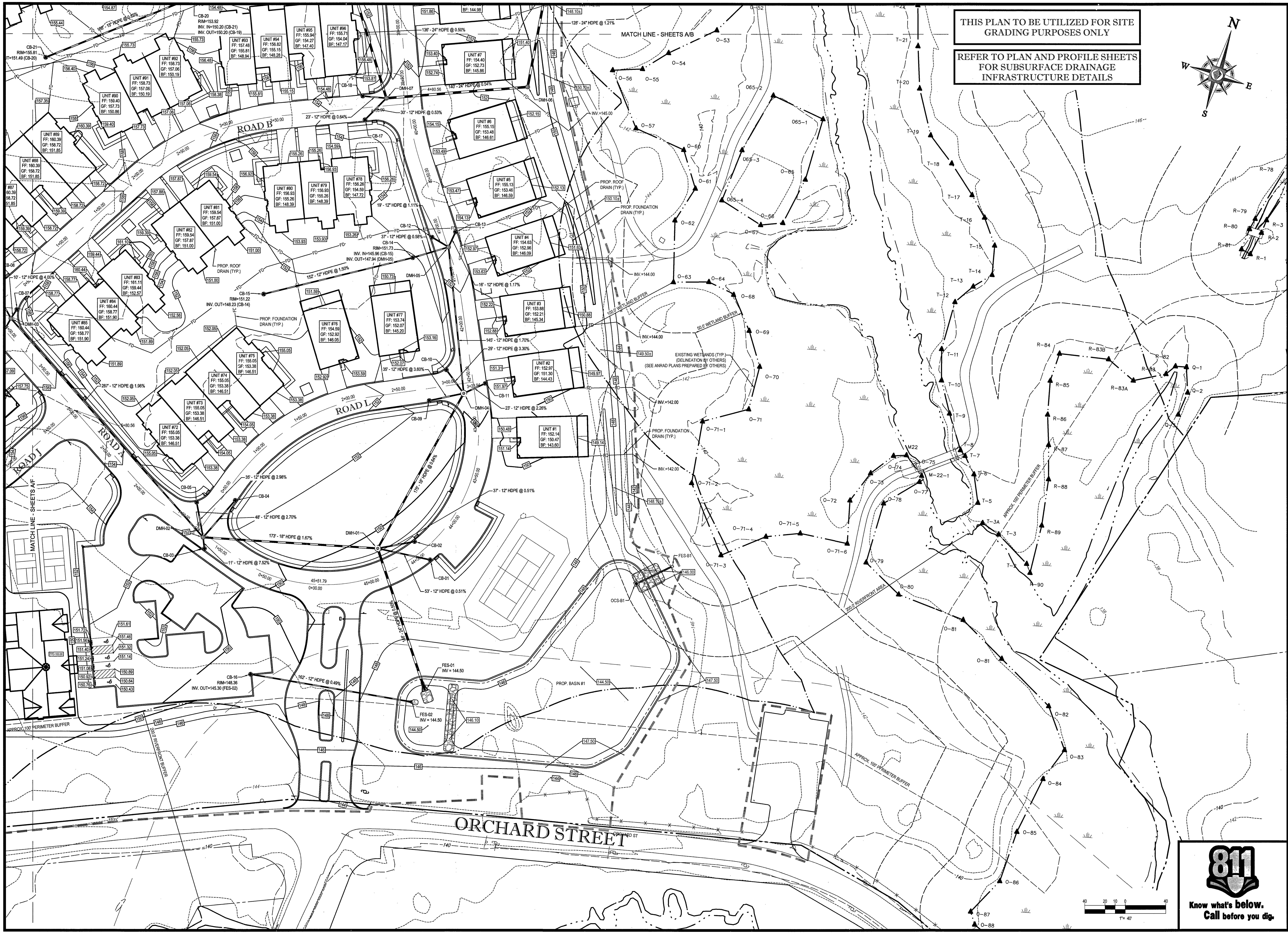
SHEET TITLE:

SITE PLAN J

SHEET NUMBER:
16
OF 74

REV 0 - 11/18/2016


MATCH LINE - SHEETS A/B
MATCH LINE - SHEETS A/F
ROAD B
ROAD L
ROAD A
ROAD J
ORCHARD STREET
UNIT #1 FF: 152.14 GF: 150.47 BF: 143.60
UNIT #2 FF: 152.97 GF: 151.30 BF: 144.43
UNIT #3 FF: 153.88 GF: 152.21 BF: 145.34
UNIT #4 FF: 154.63 GF: 152.96 BF: 146.09
UNIT #5 FF: 155.13 GF: 153.46 BF: 146.59
UNIT #6 FF: 155.15 GF: 153.48 BF: 146.61
UNIT #7 FF: 154.40 GF: 152.73 BF: 145.86
UNIT #72 FF: 155.05 GF: 153.38 BF: 146.51
UNIT #73 FF: 155.05 GF: 153.38 BF: 146.51
UNIT #74 FF: 155.05 GF: 153.38 BF: 146.51
UNIT #75 FF: 155.05 GF: 153.38 BF: 146.51
UNIT #76 FF: 154.59 GF: 152.92 BF: 146.05
UNIT #77 FF: 153.74 GF: 152.07 BF: 145.20
UNIT #78 FF: 156.26 GF: 154.59 BF: 147.72
UNIT #79 FF: 156.93 GF: 155.26 BF: 148.39
UNIT #80 FF: 156.93 GF: 155.26 BF: 148.39
UNIT #81 FF: 159.54 GF: 157.87 BF: 151.00
UNIT #82 FF: 159.54 GF: 157.87 BF: 151.00
UNIT #83 FF: 161.11 GF: 159.44 BF: 152.57
UNIT #84 FF: 160.44 GF: 158.77 BF: 151.90
UNIT #85 FF: 160.44 GF: 158.77 BF: 151.90
UNIT #88 FF: 160.39 GF: 158.72 BF: 151.85
UNIT #89 FF: 160.39 GF: 158.72 BF: 151.85
UNIT #90 FF: 159.40 GF: 157.73 BF: 150.86
UNIT #91 FF: 158.73 GF: 157.06 BF: 150.19
UNIT #92 FF: 158.73 GF: 157.06 BF: 150.19
UNIT #93 FF: 157.48 GF: 155.81 BF: 148.94
UNIT #94 FF: 156.82 GF: 155.15 BF: 148.28
UNIT #95 FF: 155.94 GF: 154.27 BF: 147.40
UNIT #96 FF: 155.71 GF: 154.04 BF: 147.17
CB-20 RIM=153.92 INV. IN=150.20 (CB-21) INV. OUT=150.20 (CB-19)
CB-21 RIM=155.81 INV. OUT=151.49 (CB-20)
CB-14 RIM=151.73 INV. IN=145.96 (CB-15) INV. OUT=147.94 (DMH-05)
CB-15 RIM=151.22 INV. OUT=148.23 (CB-14)
CB-16 RIM=148.36 INV. OUT=145.30 (FES-02)
FES-01 INV = 144.50
FES-02 INV = 144.50
FES-B1
OCS-B1
PROP. BASIN #1
PROP. ROOF DRAIN (TYP.)
PROP. FOUNDATION DRAIN (TYP.)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
200.0' RIVERFRONT AREA
APPROX. 100' PERIMETER BUFFER
128' - 24" HDPE @ 1.21%
136' - 24" HDPE @ 0.50%
140' - 24" HDPE @ 0.54%
173' - 18" HDPE @ 1.67%
175' - 18" HDPE @ 0.64%
152' - 12" HDPE @ 1.50%
162' - 12" HDPE @ 0.49%
N
E
S
W
1" = 40'
40 20 10 0 40

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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
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DATE:	11/18/2016
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CAD I.D.:	W161041_SS3

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:
GRADING &
DRAINAGE
PLAN A

SHEET NUMBER:
17
OF 74

REV 0 - 11/18/2016

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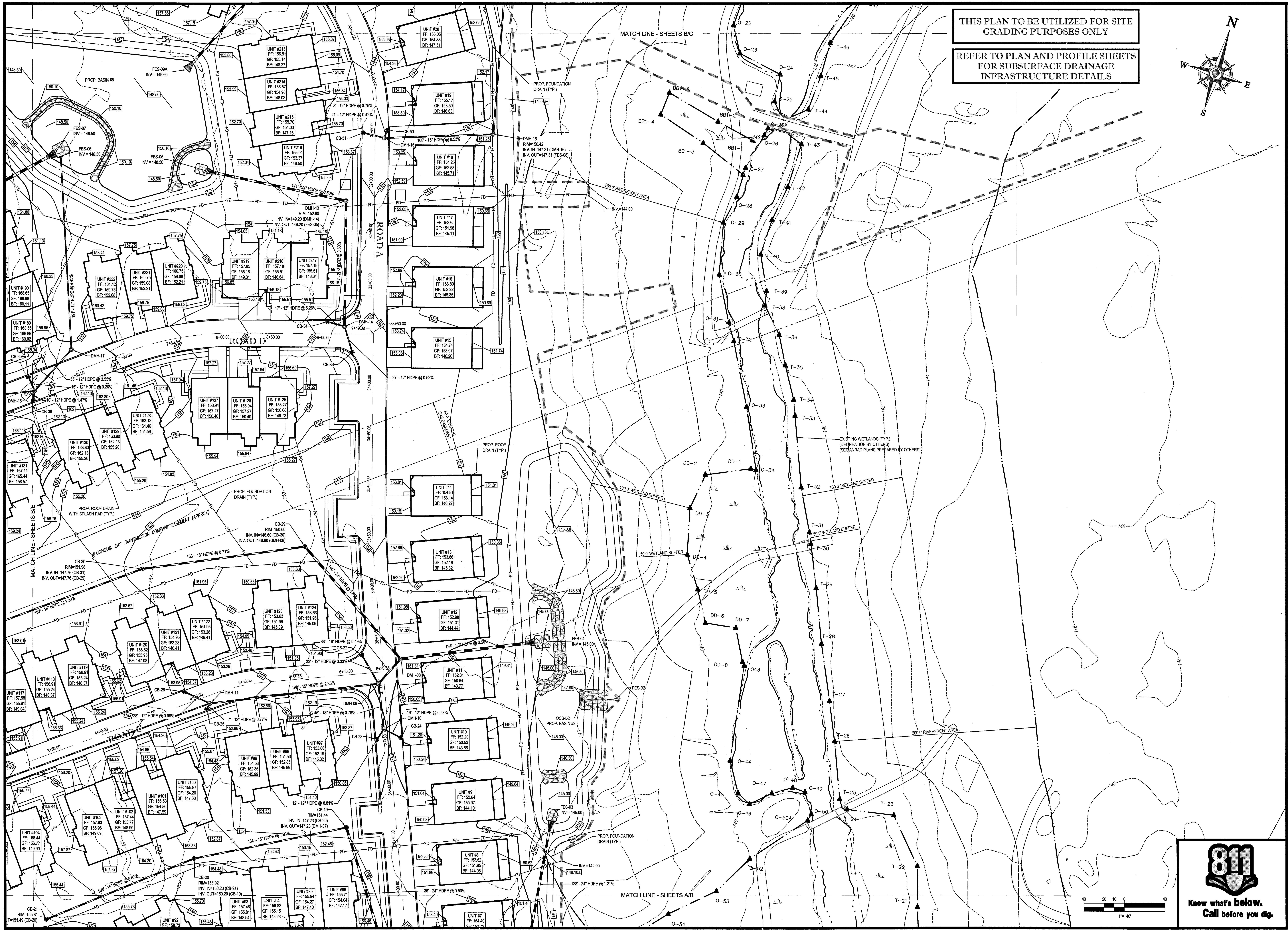

MATCH LINE - SHEETS B/C
MATCH LINE - SHEETS A/B
MATCH LINE - SHEETS B/E
ROAD A
ROAD C
ROAD D
N
E
S
W
PROP. BASIN #8
FES-09A INV = 149.60
FES-07 INV = 148.50
FES-06 INV = 148.50
FES-05 INV = 148.50
141' - 24" HDPE @ 0.50%
DMH-13 RIM=152.80 INV. IN=149.20 (DMH-14) INV. OUT=149.20 (FES-05)
DMH-14
DMH-15 RIM=150.42 INV. IN=147.31 (DMH-16) INV. OUT=147.31 (FES-08)
DMH-16
DMH-17
DMH-18
CB-50
CB-51
CB-33
CB-34
CB-35
CB-36
108' - 15" HDPE @ 0.53%
8' - 12" HDPE @ 0.75%
21' - 12" HDPE @ 0.42%
17' - 12" HDPE @ 5.26%
27' - 12" HDPE @ 0.52%
55' - 12" HDPE @ 3.55%
15' - 12" HDPE @ 0.20%
10' - 12" HDPE @ 1.47%
191' - 12" HDPE @ 4.43%
PROP. FOUNDATION DRAIN (TYP.)
PROP. ROOF DRAIN (TYP.)
PROP. ROOF DRAIN WITH SPLASH PAD (TYP.)
50.0' EXISTING GAS EASEMENT
ALGONQUIN GAS TRANSMISSION COMPANY EASEMENT (APPROX)
200.0' RIVERFRONT AREA
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
INV.=144.00
INV.=142.00
CB-29 RIM=150.60 INV. IN=146.60 (CB-30) INV. OUT=146.60 (DMH-08)
CB-30 RIM=151.98 INV. IN=147.76 (CB-31) INV. OUT=147.76 (CB-29)
163' - 18" HDPE @ 0.71%
146' - 24" HDPE @ 0.48%
187' - 15" HDPE @ 1.33%
33' - 18" HDPE @ 0.49%
33' - 12" HDPE @ 3.33%
134' - 30" HDPE @ 0.50%
168' - 15" HDPE @ 2.35%
45' - 18" HDPE @ 0.78%
19' - 12" HDPE @ 0.53%
28' - 12" HDPE @ 0.98%
7' - 12" HDPE @ 0.77%
12' - 12" HDPE @ 0.81%
154' - 15" HDPE @ 1.83%
136' - 24" HDPE @ 0.50%
128' - 24" HDPE @ 1.21%
FES-04 INV = 145.00
FES-03 INV = 145.00
FES-B2
OCS-B2 PROP. BASIN #2
DMH-08
DMH-09
DMH-10
DMH-11
CB-19 RIM=151.44 INV. IN=147.23 (CB-20) INV. OUT=147.23 (DMH-07)
CB-20 RIM=153.92 INV. IN=150.20 (CB-21) INV. OUT=150.20 (CB-19)
CB-21 RIM=155.81 INV. OUT=151.49 (CB-20)
CB-22
CB-23
CB-24
CB-25
CB-26
UNIT #20 FF: 156.05 GF: 154.38 BF: 147.51
UNIT #19 FF: 155.17 GF: 153.50 BF: 146.63
UNIT #18 FF: 154.25 GF: 152.58 BF: 145.71
UNIT #17 FF: 153.65 GF: 151.98 BF: 145.11
UNIT #16 FF: 153.89 GF: 152.22 BF: 145.35
UNIT #15 FF: 154.74 GF: 153.07 BF: 146.20
UNIT #14 FF: 154.81 GF: 153.14 BF: 146.27
UNIT #13 FF: 153.86 GF: 152.19 BF: 145.32
UNIT #12 FF: 152.98 GF: 151.31 BF: 144.44
UNIT #11 FF: 152.31 GF: 150.64 BF: 143.77
UNIT #10 FF: 152.20 GF: 150.53 BF: 143.66
UNIT #9 FF: 152.64 GF: 150.97 BF: 144.10
UNIT #8 FF: 153.52 GF: 151.85 BF: 144.98
UNIT #7 FF: 154.40
UNIT #213 FF: 156.81 GF: 155.14 BF: 148.27
UNIT #214 FF: 156.57 GF: 154.90 BF: 148.03
UNIT #215 FF: 155.70 GF: 154.03 BF: 147.16
UNIT #216 FF: 155.04 GF: 153.37 BF: 146.50
UNIT #217 FF: 157.18 GF: 155.51 BF: 148.64
UNIT #218 FF: 157.18 GF: 155.51 BF: 148.64
UNIT #219 FF: 157.85 GF: 156.18 BF: 149.31
UNIT #220 FF: 160.75 GF: 159.08 BF: 152.21
UNIT #221 FF: 160.75 GF: 159.08 BF: 152.21
UNIT #222 FF: 161.42 GF: 159.75 BF: 152.88
UNIT #190 FF: 168.65 GF: 166.98 BF: 160.11
UNIT #189 FF: 168.56 GF: 166.89 BF: 160.02
UNIT #127 FF: 158.94 GF: 157.27 BF: 150.40
UNIT #126 FF: 158.94 GF: 157.27 BF: 150.40
UNIT #125 FF: 158.27 GF: 156.60 BF: 149.73
UNIT #128 FF: 163.13 GF: 161.46 BF: 154.59
UNIT #129 FF: 163.80 GF: 162.13 BF: 155.26
UNIT #130 FF: 163.80 GF: 162.13 BF: 155.26
UNIT #131 FF: 167.11 GF: 165.44 BF: 158.57
UNIT #123 FF: 153.63 GF: 151.96 BF: 145.09
UNIT #124 FF: 153.63 GF: 151.96 BF: 145.09
UNIT #122 FF: 154.95 GF: 153.28 BF: 146.41
UNIT #121 FF: 154.95 GF: 153.28 BF: 146.41
UNIT #120 FF: 155.62 GF: 153.95 BF: 147.08
UNIT #119 FF: 156.91 GF: 155.24 BF: 148.37
UNIT #118 FF: 156.91 GF: 155.24 BF: 148.37
UNIT #117 FF: 157.58 GF: 155.91 BF: 149.04
UNIT #99 FF: 154.53 GF: 152.86 BF: 145.99
UNIT #98 FF: 154.53 GF: 152.86 BF: 145.99
UNIT #97 FF: 153.86 GF: 152.19 BF: 145.32
UNIT #100 FF: 155.87 GF: 154.20 BF: 147.33
UNIT #101 FF: 156.53 GF: 154.86 BF: 147.96
UNIT #102 FF: 157.44 GF: 155.77 BF: 148.90
UNIT #103 FF: 157.63 GF: 155.96 BF: 149.09
UNIT #104 FF: 158.44 GF: 156.77 BF: 149.90
UNIT #96 FF: 155.71 GF: 154.04 BF: 147.17
UNIT #95 FF: 155.94 GF: 154.27 BF: 147.40
UNIT #94 FF: 156.82 GF: 155.15 BF: 148.28
UNIT #93 FF: 157.48 GF: 155.81 BF: 148.94
UNIT #92 FF: 158.73
BB1-1
BB1-2
BB1-3
BB1-4
BB1-5
DD-1
DD-2
DD-3
DD-4
DD-5
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DD-8
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1" = 40'

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PERMIT
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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS

FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:

GRADING & DRAINAGE PLAN B

SHEET NUMBER:
18
OF 74

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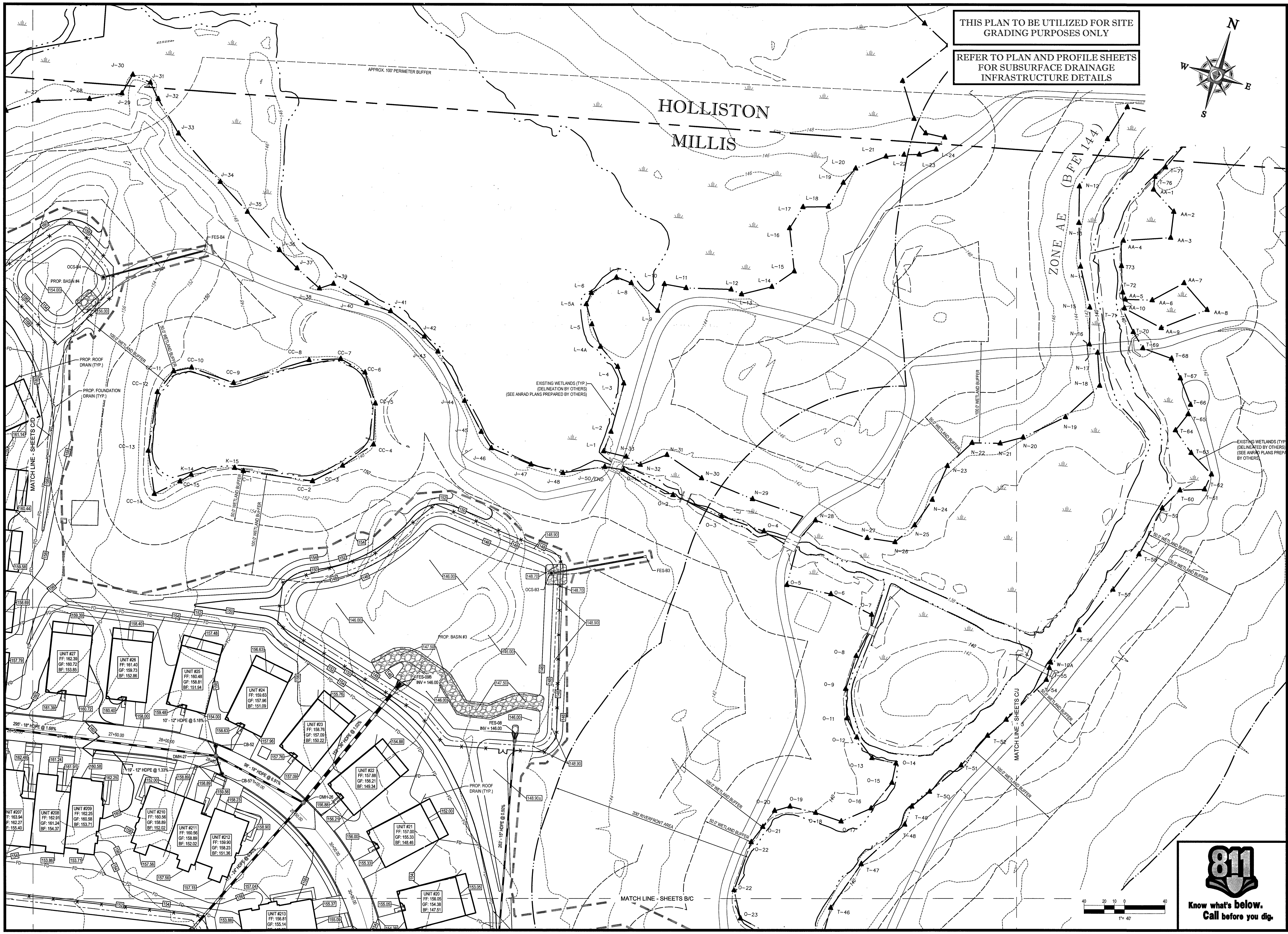

N
E
S
W
HOLLISTON
MILLIS
APPROX. 100' PERIMETER BUFFER
ZONE AE (BFE 144)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
200' RIVERFRONT AREA
PROP. BASIN #4
OCS-B4
FES-B4
PROP. BASIN #3
OCS-B3
FES-B3
FES-09B INV = 146.00
FES-08 INV = 146.00
PROP. ROOF DRAIN (TYP.)
PROP. FOUNDATION DRAIN (TYP.)
MATCH LINE - SHEETS C/D
MATCH LINE - SHEETS C/J
MATCH LINE - SHEETS B/C
295' - 18" HDPE @ 1.68%
10' - 12" HDPE @ 5.18%
19' - 12" HDPE @ 1.33%
98' - 18" HDPE @ 8.91%
203' - 15" HDPE @ 0.50%
CB-52
CB-53
DMH-27
DMH-26
27+50.00
28+00.00
UNIT #27 FF: 162.39 GF: 160.72 BF: 153.85
UNIT #26 FF: 161.40 GF: 159.73 BF: 152.86
UNIT #25 FF: 160.48 GF: 158.81 BF: 151.94
UNIT #24 FF: 159.63 GF: 157.96 BF: 151.09
UNIT #23 FF: 158.76 GF: 157.09 BF: 150.22
UNIT #22 FF: 157.88 GF: 156.21 BF: 149.34
UNIT #21 FF: 157.00 GF: 155.33 BF: 148.46
UNIT #20 FF: 156.05 GF: 154.38 BF: 147.51
UNIT #207 FF: 163.94 GF: 162.27 BF: 155.40
UNIT #208 FF: 162.91 GF: 161.24 BF: 154.37
UNIT #209 FF: 162.25 GF: 160.58 BF: 153.71
UNIT #210 FF: 160.56 GF: 158.89 BF: 152.02
UNIT #211 FF: 160.56 GF: 158.89 BF: 152.02
UNIT #212 FF: 159.90 GF: 158.23 BF: 151.36
UNIT #213 FF: 156.81 GF: 155.14
FD

1" = 40'

811

Know what's below.
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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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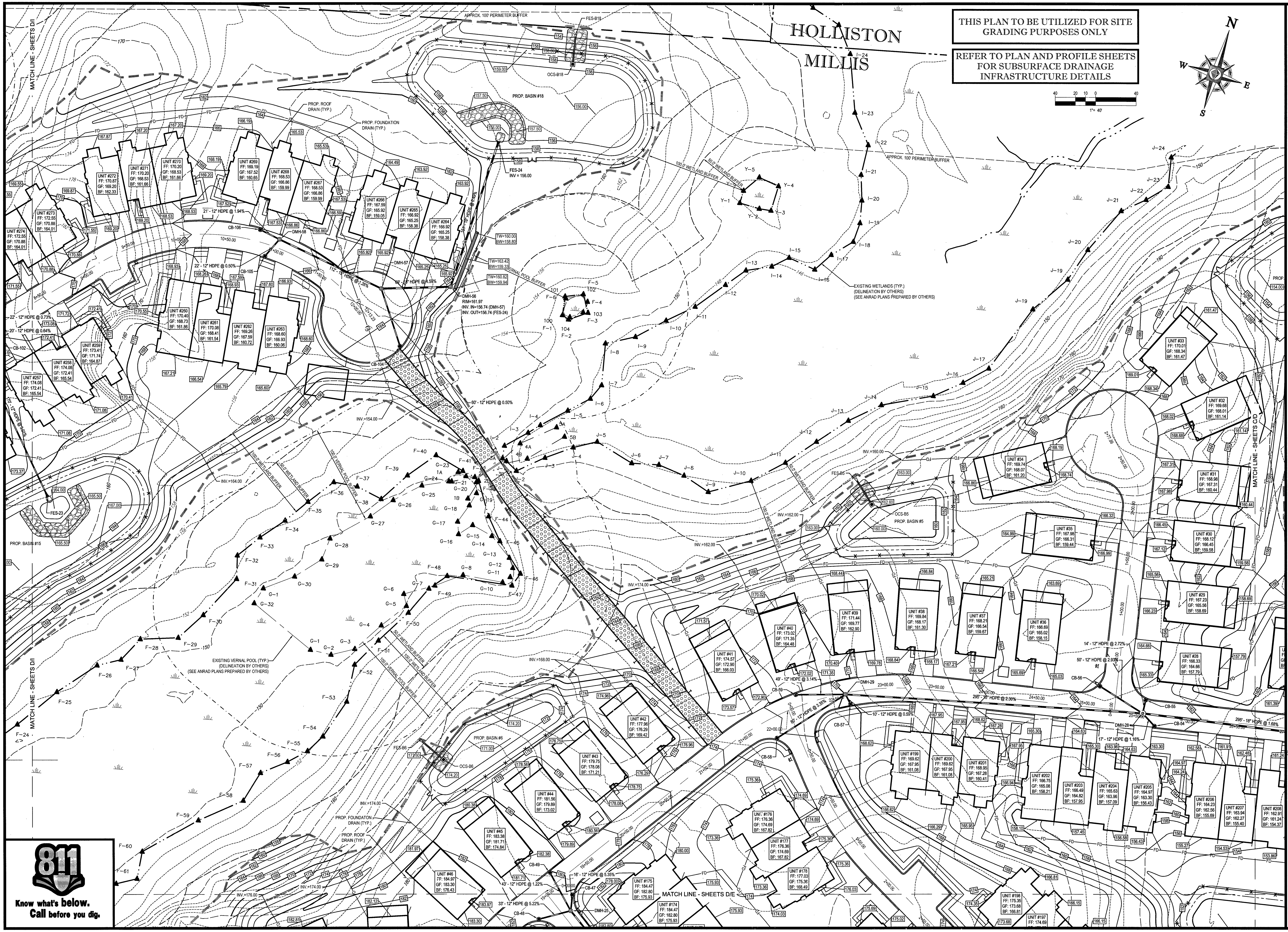
WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:
GRADING &
DRAINAGE
PLAN C

SHEET NUMBER:
19
OF 74

REV 0 - 11/18/2016



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PERMIT
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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
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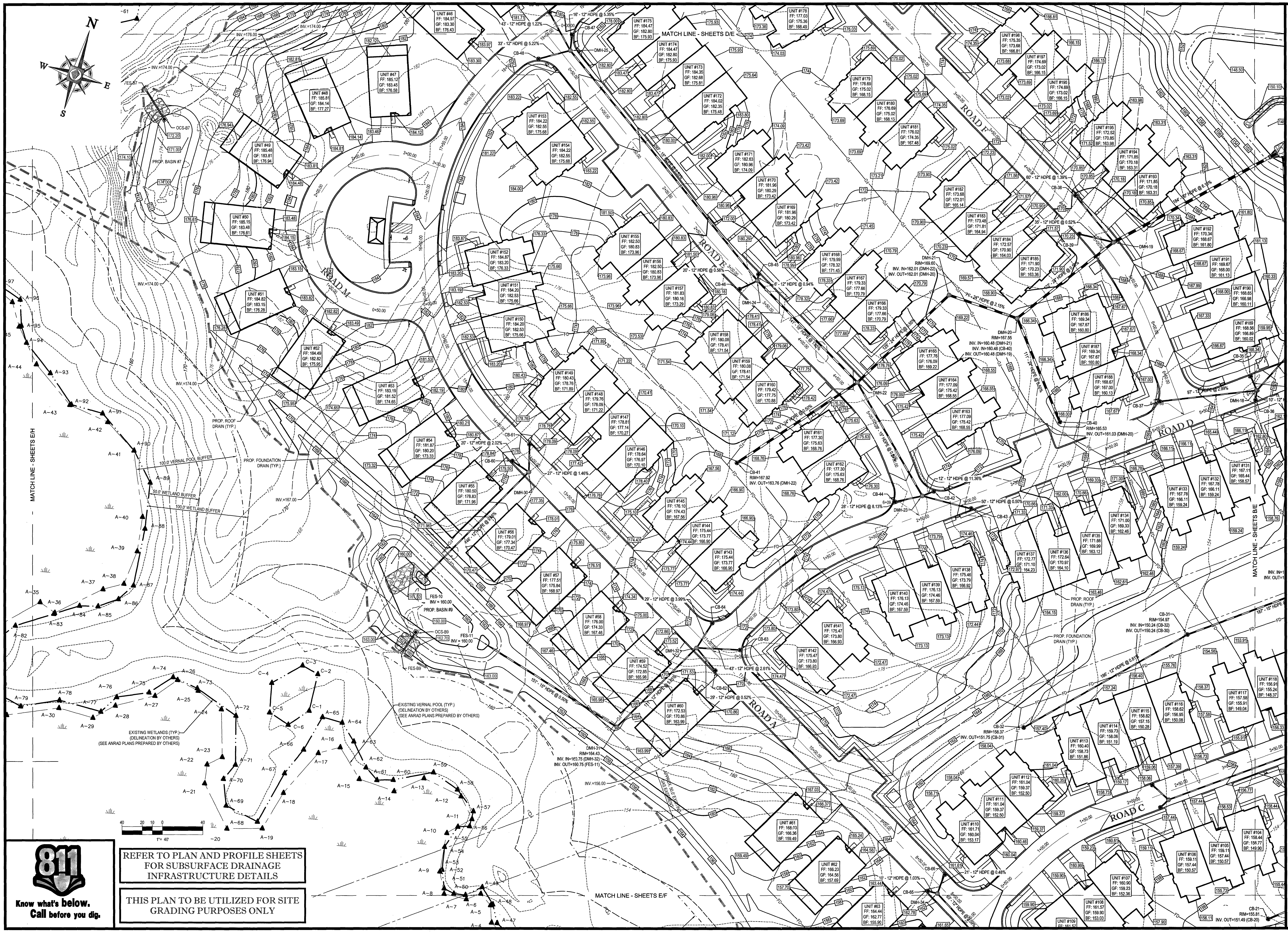
WILLIAM D GOEBEL
CIVIL
42644

SHEET TITLE:
GRADING & DRAINAGE PLAN D

SHEET NUMBER:
20
OF 74

REV 0 - 11/18/2016



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INFRASTRUCTURE DETAILS

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DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS

FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
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SHEET TITLE:

GRADING & DRAINAGE PLAN E

SHEET NUMBER:
21
OF 74

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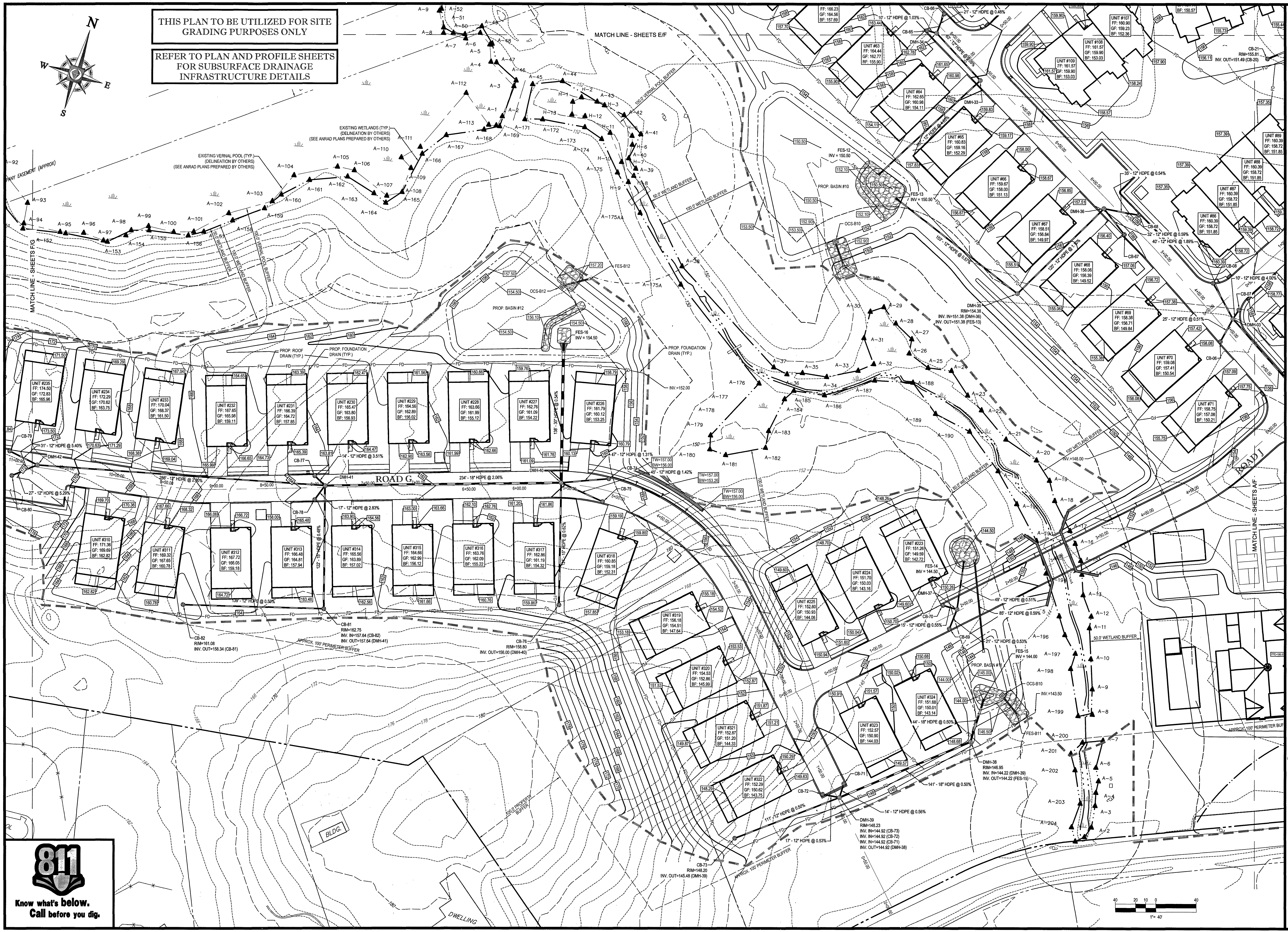

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DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS

FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET TITLE:

GRADING & DRAINAGE PLAN F

SHEET NUMBER:
22
OF 74

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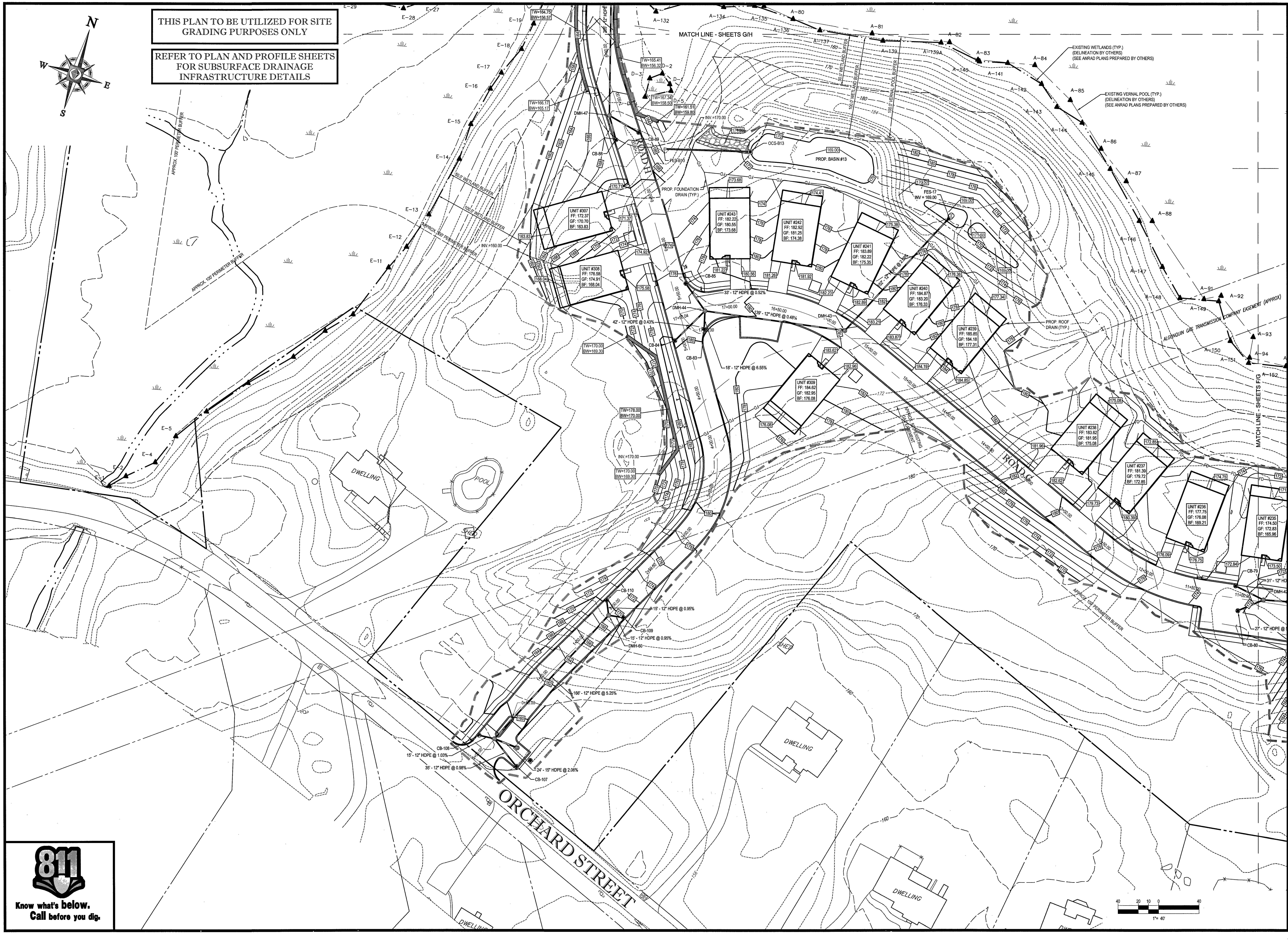
N
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MATCH LINE - SHEETS G/H
MATCH LINE - SHEETS F/G
ROAD H
ROAD C
ORCHARD STREET
PROP. BASIN #13
OCS-B13
FES-B13
FES-17
INV = 169.00
INV.=170.00
INV.=160.00
PROP. FOUNDATION DRAIN (TYP.)
PROP. ROOF DRAIN (TYP.)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
ALGONQUIN GAS TRANSMISSION COMPANY EASEMENT (APPROX)
APPROX. 50' EXISTING GAS EASEMENT
APPROX. 100' PERIMETER BUFFER
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
50.0' VERNAL POOL BUFFER
100.0' VERNAL POOL BUFFER
UNIT #307 FF: 172.37 GF: 170.70 BF: 163.83
UNIT #308 FF: 176.58 GF: 174.91 BF: 168.04
UNIT #243 FF: 182.22 GF: 180.55 BF: 173.68
UNIT #242 FF: 182.92 GF: 181.25 BF: 174.38
UNIT #241 FF: 183.89 GF: 182.22 BF: 175.35
UNIT #240 FF: 184.87 GF: 183.20 BF: 176.33
UNIT #239 FF: 185.85 GF: 184.18 BF: 177.31
UNIT #309 FF: 184.62 GF: 182.95 BF: 176.08
UNIT #238 FF: 183.62 GF: 181.95 BF: 175.08
UNIT #237 FF: 181.39 GF: 179.72 BF: 172.85
UNIT #236 FF: 177.75 GF: 176.08 BF: 169.21
UNIT #235 FF: 174.50 GF: 172.83 BF: 165.96
TW=164.75 BW=156.57
TW=165.41 BW=156.32
TW=167.34 BW=158.50
TW=161.51 BW=159.80
TW=166.17 BW=165.17
TW=170.00 BW=169.30
TW=178.00 BW=170.00
DMH-47
DMH-44
DMH-43
DMH-42
DMH-60
CB-88
CB-89
CB-85
CB-84
CB-83
CB-79
CB-80
CB-110
CB-109
CB-108
CB-107
33' - 12" HDPE @ 0.52%
139' - 12" HDPE @ 0.48%
42' - 12" HDPE @ 0.43%
18' - 12" HDPE @ 6.55%
152' - 12" HDPE @ 2.59%
31' - 12" HDPE
27' - 12" HDPE
15' - 12" HDPE @ 0.95%
15' - 12" HDPE @ 0.95%
166' - 12" HDPE @ 5.25%
15' - 12" HDPE @ 1.03%
35' - 12" HDPE @ 0.98%
24' - 15" HDPE @ 2.06%
DWELLING
POOL
SHED
1"= 40'
40
20
10
0
40

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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
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SHEET TITLE:
GRADING & DRAINAGE PLAN G

SHEET NUMBER:
23
OF 74

REV 0 - 11/18/2016

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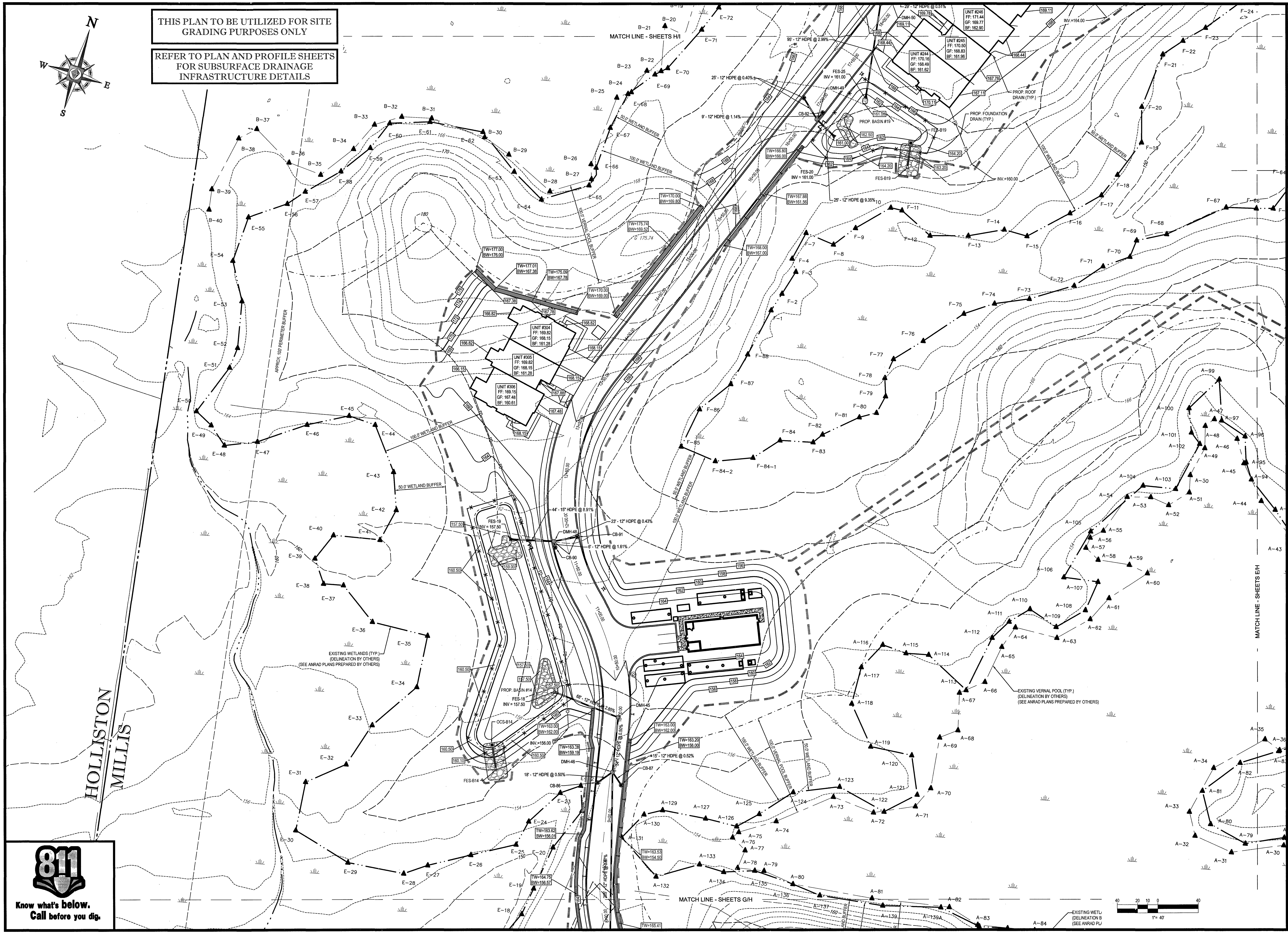

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CAD I.D.:	W161041_SS3

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SITE
DEVELOPMENT
PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
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MASSACHUSETTS

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SHEET TITLE:
GRADING &
DRAINAGE
PLAN H

SHEET NUMBER:
24
OF 74

REV 0 - 11/18/2016

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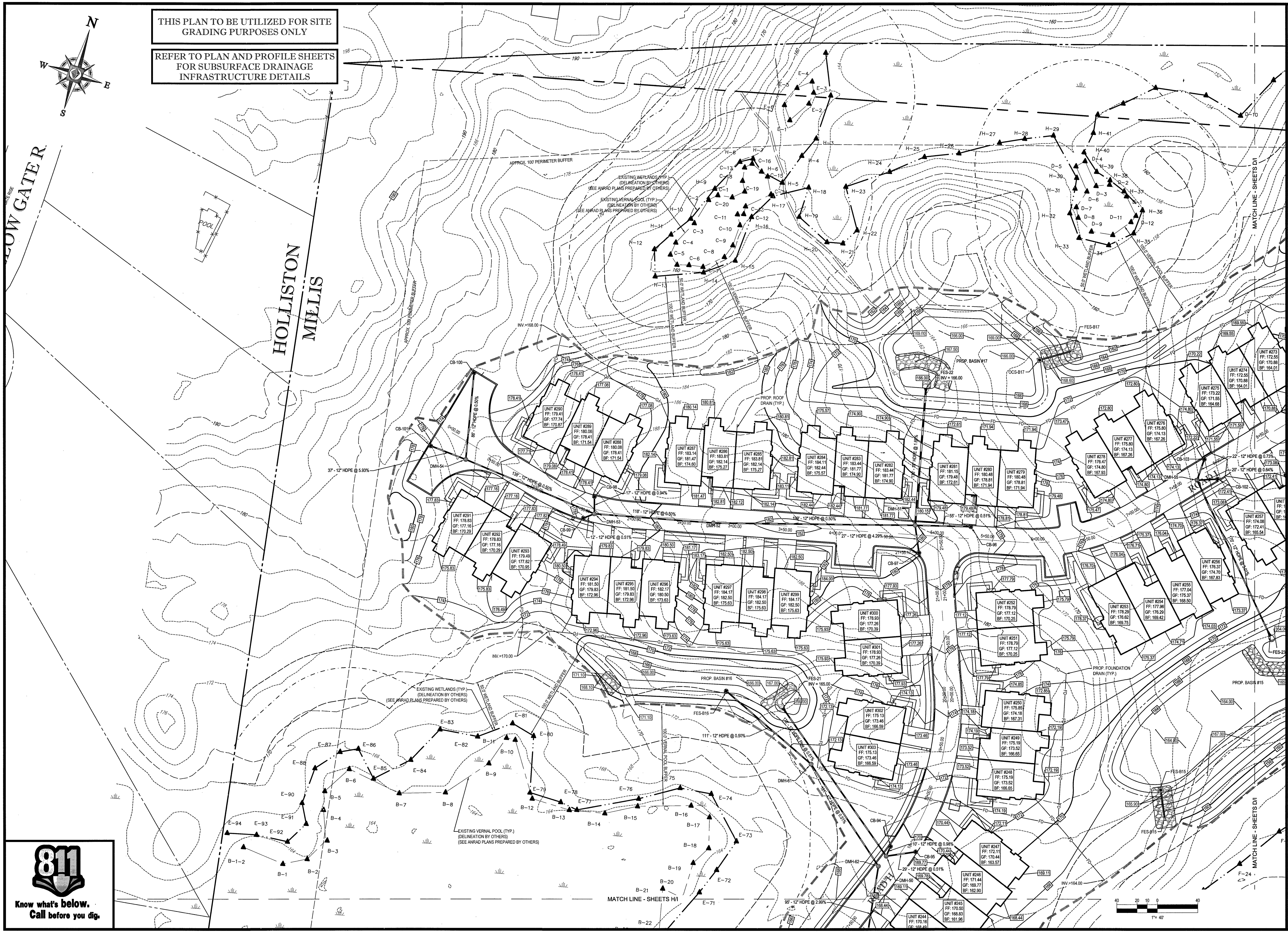
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E
S
W
HOLLISTON
MILLIS
LOW GATE R
POOL
APPROX. 100' PERIMETER BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
100.0' VERNAL POOL BUFFER
PROP. BASIN #17
PROP. BASIN #16
PROP. BASIN #15
PROP. ROOF DRAIN (TYP.)
PROP. FOUNDATION DRAIN (TYP.)
FES-22
FES-21
FES-B16
FES-B17
FES-B15
FES-23
OCS-B17
CB-100
CB-101
CB-98
CB-99
CB-97
CB-96
CB-95
CB-94
CB-102
CB-103
DMH-54
DMH-53
DMH-52
DMH-51
DMH-55
DMH-61
DMH-62
DMH-50
INV.=168.00
INV.=170.00
INV.=164.00
INV.= 166.00
INV.= 165.00
37' - 12" HDPE @ 5.93%
86' - 12" HDPE @ 0.50%
138' - 12" HDPE @ 0.50%
118' - 12" HDPE @ 0.50%
17' - 12" HDPE @ 0.94%
12' - 12" HDPE @ 0.51%
27' - 12" HDPE @ 4.29%
55' - 12" HDPE @ 0.51%
111' - 12" HDPE @ 0.50%
10' - 12" HDPE @ 0.98%
29' - 12" HDPE @ 0.51%
95' - 12" HDPE @ 2.99%
22' - 12" HDPE @ 0.73%
20' - 12" HDPE @ 0.64%
UNIT #290 FF: 179.41 GF: 177.74 BF: 170.87
UNIT #289 FF: 180.08 GF: 178.41 BF: 171.54
UNIT #288 FF: 180.08 GF: 178.41 BF: 171.54
UNIT #287 FF: 183.14 GF: 181.47 BF: 174.60
UNIT #286 FF: 183.81 GF: 182.14 BF: 175.27
UNIT #285 FF: 183.81 GF: 182.14 BF: 175.27
UNIT #284 FF: 184.11 GF: 182.44 BF: 175.57
UNIT #283 FF: 183.44 GF: 181.77 BF: 174.90
UNIT #282 FF: 183.44 GF: 181.77 BF: 174.90
UNIT #281 FF: 181.15 GF: 179.48 BF: 172.61
UNIT #280 FF: 180.48 GF: 178.81 BF: 171.94
UNIT #279 FF: 180.48 GF: 178.81 BF: 171.94
UNIT #278 FF: 176.47 GF: 174.80 BF: 167.93
UNIT #277 FF: 175.80 GF: 174.13 BF: 167.26
UNIT #276 FF: 175.80 GF: 174.13 BF: 167.26
UNIT #275 FF: 173.22 GF: 171.55 BF: 164.68
UNIT #274 FF: 172.55 GF: 170.88 BF: 164.01
UNIT #273 FF: 172.55 GF: 170.88 BF: 164.01
UNIT #291 FF: 178.83 GF: 177.16 BF: 170.29
UNIT #292 FF: 178.83 GF: 177.16 BF: 170.29
UNIT #293 FF: 179.49 GF: 177.82 BF: 170.95
UNIT #294 FF: 181.50 GF: 179.83 BF: 172.96
UNIT #295 FF: 181.50 GF: 179.83 BF: 172.96
UNIT #296 FF: 182.17 GF: 180.50 BF: 173.63
UNIT #297 FF: 184.17 GF: 182.50 BF: 175.63
UNIT #298 FF: 184.17 GF: 182.50 BF: 175.63
UNIT #299 FF: 184.17 GF: 182.50 BF: 175.63
UNIT #300 FF: 178.93 GF: 177.26 BF: 170.39
UNIT #301 FF: 178.93 GF: 177.26 BF: 170.39
UNIT #302 FF: 175.13 GF: 173.46 BF: 166.59
UNIT #303 FF: 175.13 GF: 173.46 BF: 166.59
UNIT #252 FF: 178.79 GF: 177.12 BF: 170.25
UNIT #251 FF: 178.79 GF: 177.12 BF: 170.25
UNIT #250 FF: 175.85 GF: 174.18 BF: 167.31
UNIT #249 FF: 175.19 GF: 173.52 BF: 166.65
UNIT #248 FF: 175.19 GF: 173.52 BF: 166.65
UNIT #247 FF: 172.11 GF: 170.44 BF: 163.57
UNIT #246 FF: 171.44 GF: 169.77 BF: 162.90
UNIT #245 FF: 170.50 GF: 168.83 BF: 161.96
UNIT #244 FF: 170.16 GF: 168.49
UNIT #253 FF: 178.29 GF: 176.62 BF: 169.75
UNIT #254 FF: 177.96 GF: 176.29 BF: 169.42
UNIT #255 FF: 177.04 GF: 175.37 BF: 168.50
UNIT #256 FF: 176.37 GF: 174.70 BF: 167.83
UNIT #257 FF: 174.08 GF: 172.41 BF: 165.54
MATCH LINE - SHEETS D/I
MATCH LINE - SHEETS H/I
40 20 10 0 40
1" = 40'

811
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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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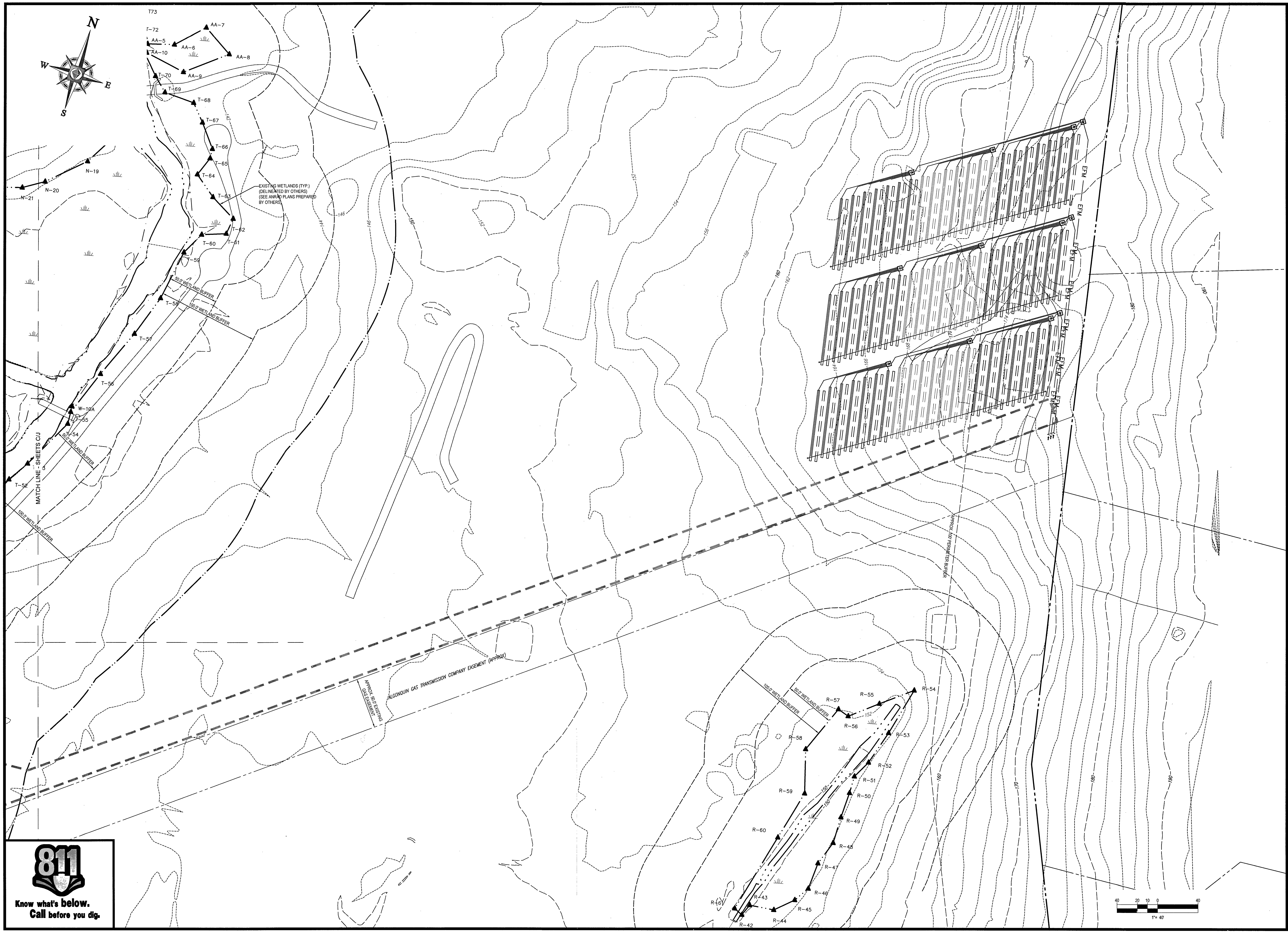
WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:

GRADING & DRAINAGE PLAN I

SHEET NUMBER:
25
OF 74

REV 0 - 11/18/2016



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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS

FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
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WILLIAM D GOEBEL
CIVIL
42644

SHEET TITLE:

GRADING & DRAINAGE PLAN J

SHEET NUMBER:
26
OF 74

REV 0 - 11/18/2016

P:\16\W161041\Drawings\Plan Sets\REV3\W161041_ss3.dwg, 26-Grad Drainage-J, 10/6/2014, 4:26:00 PM, jtao, XeroX510-1.pc3, User634, 1:1

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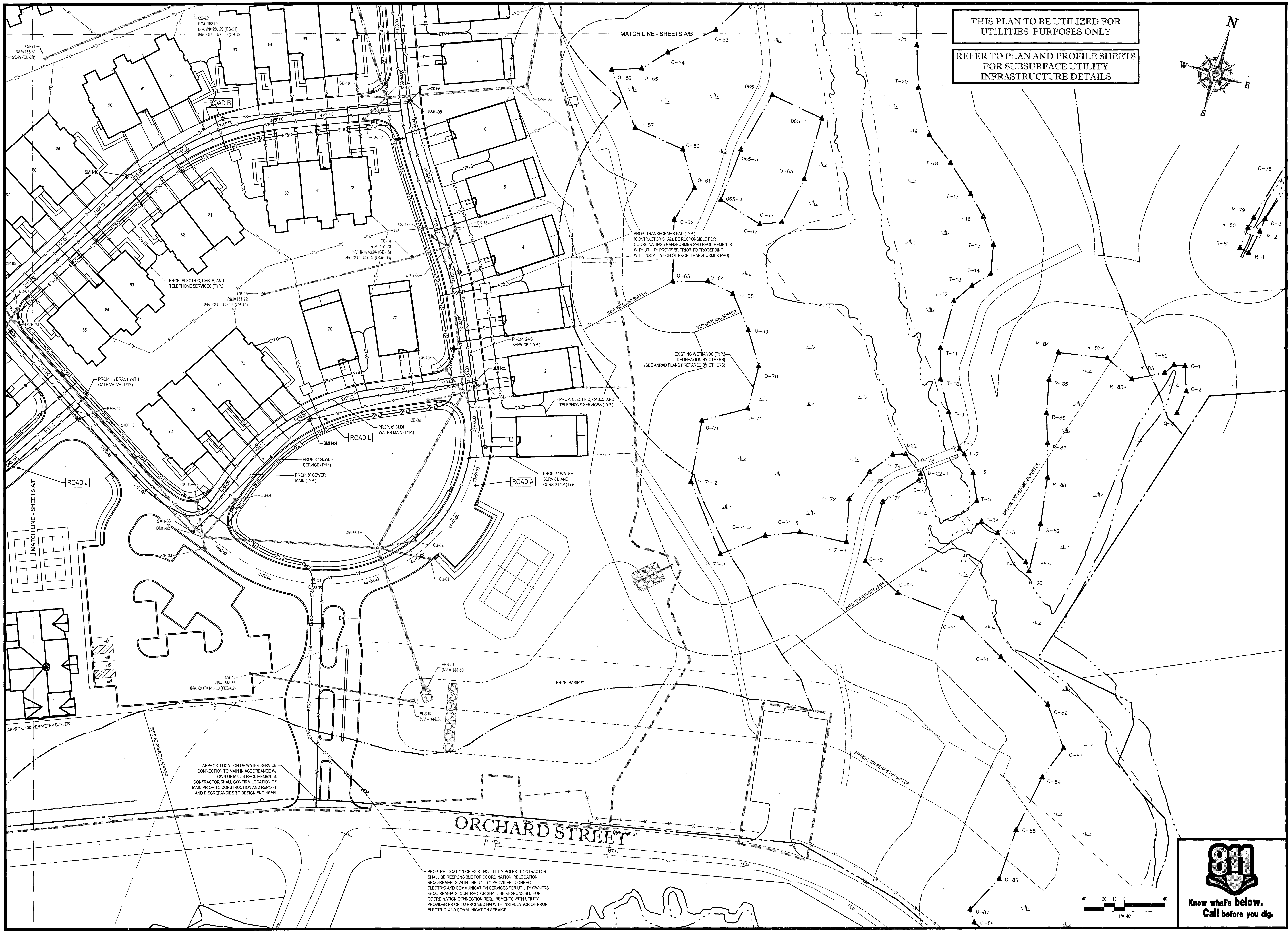
MATCH LINE - SHEETS A/B
MATCH LINE - SHEETS A/F
CB-21
RIM=155.81
T=151.49 (CB-20)
CB-20
RIM=153.92
INV. IN=150.20 (CB-21)
INV. OUT=150.20 (CB-19)
ROAD B
ROAD L
ROAD A
ROAD J
ORCHARD STREET
SMH-10
SMH-08
SMH-05
SMH-04
SMH-03
SMH-02
DMH-07
DMH-06
DMH-05
DMH-03
DMH-02
DMH-01
CB-18
CB-17
CB-13
CB-12
CB-11
CB-10
CB-09
CB-08
CB-07
CB-05
CB-04
CB-03
CB-02
CB-01
CB-14
RIM=151.73
INV. IN=145.96 (CB-15)
INV. OUT=147.94 (DMH-05)
CB-15
RIM=151.22
INV. OUT=148.23 (CB-14)
CB-16
RIM=148.36
INV. OUT=145.30 (FES-02)
FES-01
INV = 144.50
FES-02
INV = 144.50
PROP. BASIN #1
PROP. ELECTRIC, CABLE, AND TELEPHONE SERVICES (TYP.)
PROP. HYDRANT WITH GATE VALVE (TYP.)
PROP. GAS SERVICE (TYP.)
PROP. 8" CLDI WATER MAIN (TYP.)
PROP. 4" SEWER SERVICE (TYP.)
PROP. 8" SEWER MAIN (TYP.)
PROP. 1" WATER SERVICE AND CURB STOP (TYP.)
PROP. TRANSFORMER PAD (TYP.) (CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
200.0' RIVERFRONT AREA
200.0' RIVERFRONT BUFFER
APPROX. 100' PERIMETER BUFFER
APPROX. LOCATION OF WATER SERVICE CONNECTION TO MAIN IN ACCORDANCE W/ TOWN OF MILLIS REQUIREMENTS. CONTRACTOR SHALL CONFIRM LOCATION OF MAIN PRIOR TO CONSTRUCTION AND REPORT AND DISCREPANCIES TO DESIGN ENGINEER.
PROP. RELOCATION OF EXISTING UTILITY POLES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION RELOCATION REQUIREMENTS WITH THE UTILITY PROVIDER. CONNECT ELECTRIC AND COMMUNICATION SERVICES PER UTILITY OWNERS REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION CONNECTION REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. ELECTRIC AND COMMUNICATION SERVICE.
ET&C
FD
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W
1" = 40'
40 20 10 0 40

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PERMIT SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
—FOR—
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
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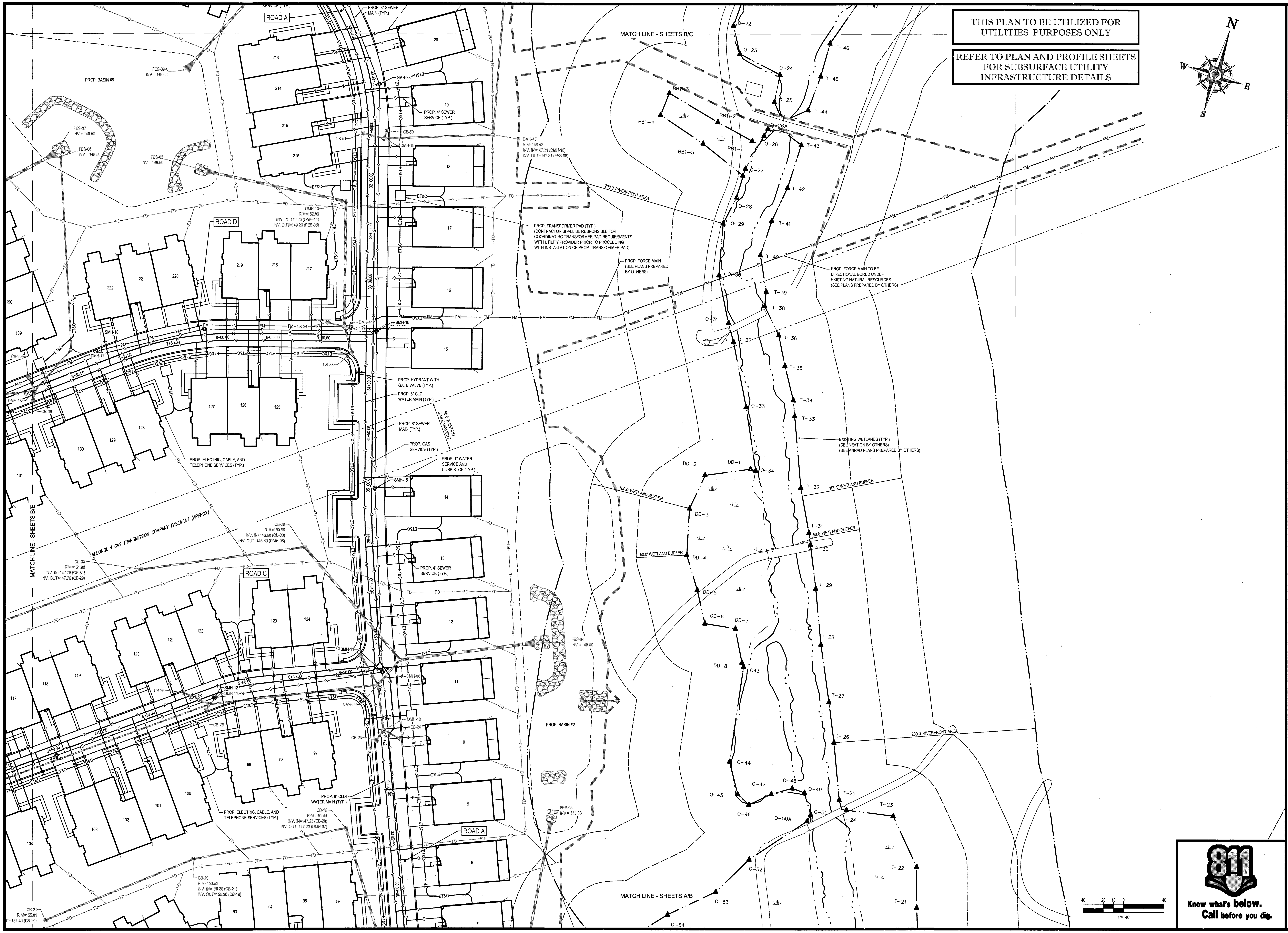
WILLIAM D. GOEBEL CIVIL 42644

SHEET TITLE:
UTILITY PLAN A

SHEET NUMBER:
27
OF 74

REV 0 - 11/18/2016



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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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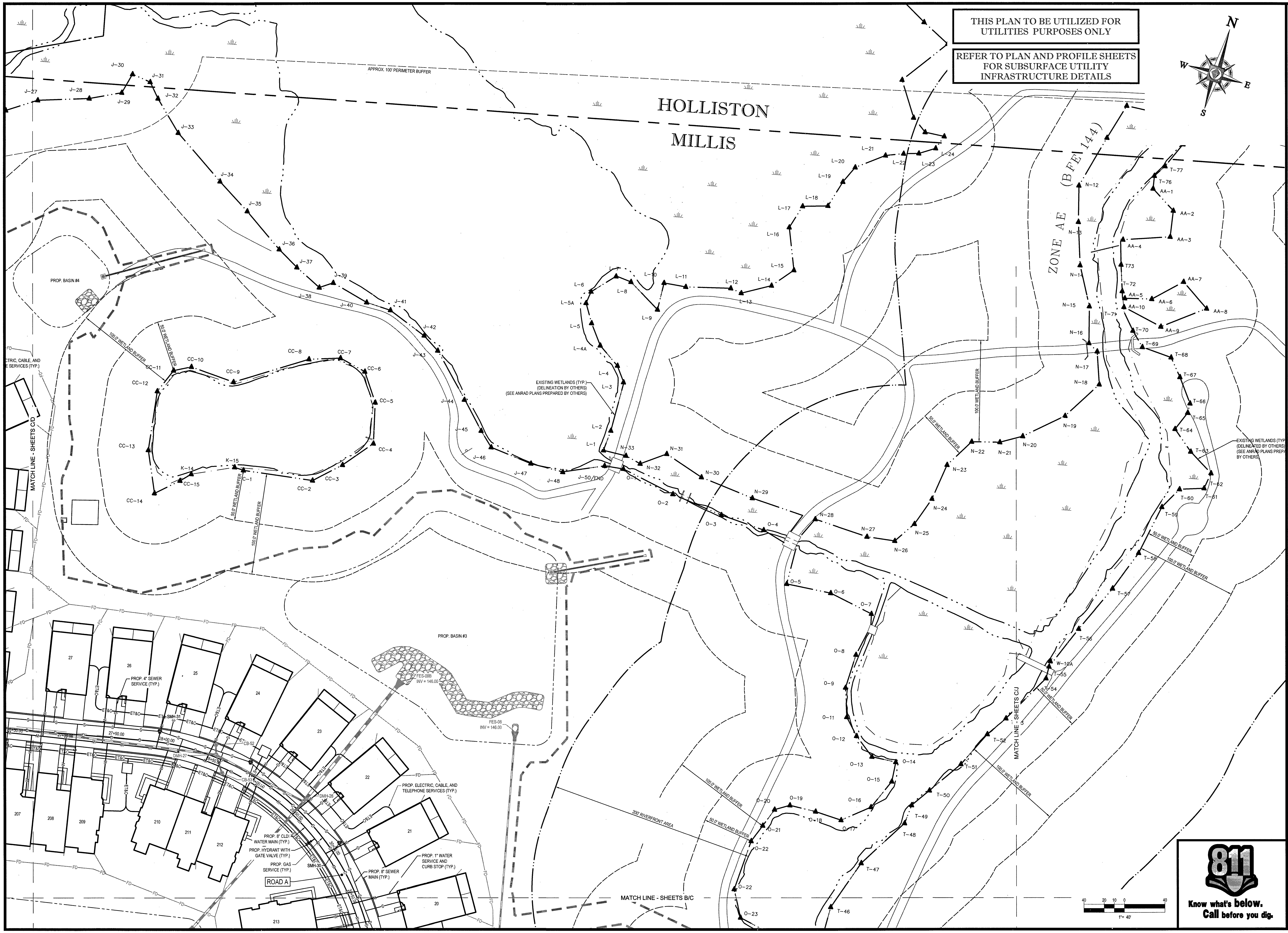
CIVIL
42644

SHEET TITLE:
UTILITY PLAN B

SHEET NUMBER:
28
OF 74

REV 0 - 11/18/2016


HOLLISTON
MILLIS
APPROX. 100' PERIMETER BUFFER
ZONE AE (B.F.E. 144)
PROP. BASIN #4
PROP. BASIN #3
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
200' RIVERFRONT AREA
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
MATCH LINE - SHEETS C/D
MATCH LINE - SHEETS C/J
MATCH LINE - SHEETS B/C
FES-08B INV = 146.00
FES-08 INV = 146.00
PROP. 4" SEWER SERVICE (TYP.)
PROP. ELECTRIC, CABLE, AND TELEPHONE SERVICES (TYP.)
PROP. 8" CLDI WATER MAIN (TYP.)
PROP. HYDRANT WITH GATE VALVE (TYP.)
PROP. GAS SERVICE (TYP.)
PROP. 1" WATER SERVICE AND CURB STOP (TYP.)
PROP. 8" SEWER MAIN (TYP.)
ROAD A
SMH-31
SMH-30
DMH-27
DMH-26
CB-52
N
E
S
W
1"= 40'

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PROJECT No.:	W161041
DRAWN BY:	JT
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DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET TITLE:
UTILITY PLAN C

SHEET NUMBER:
29
OF 74

REV 0 - 11/18/2016

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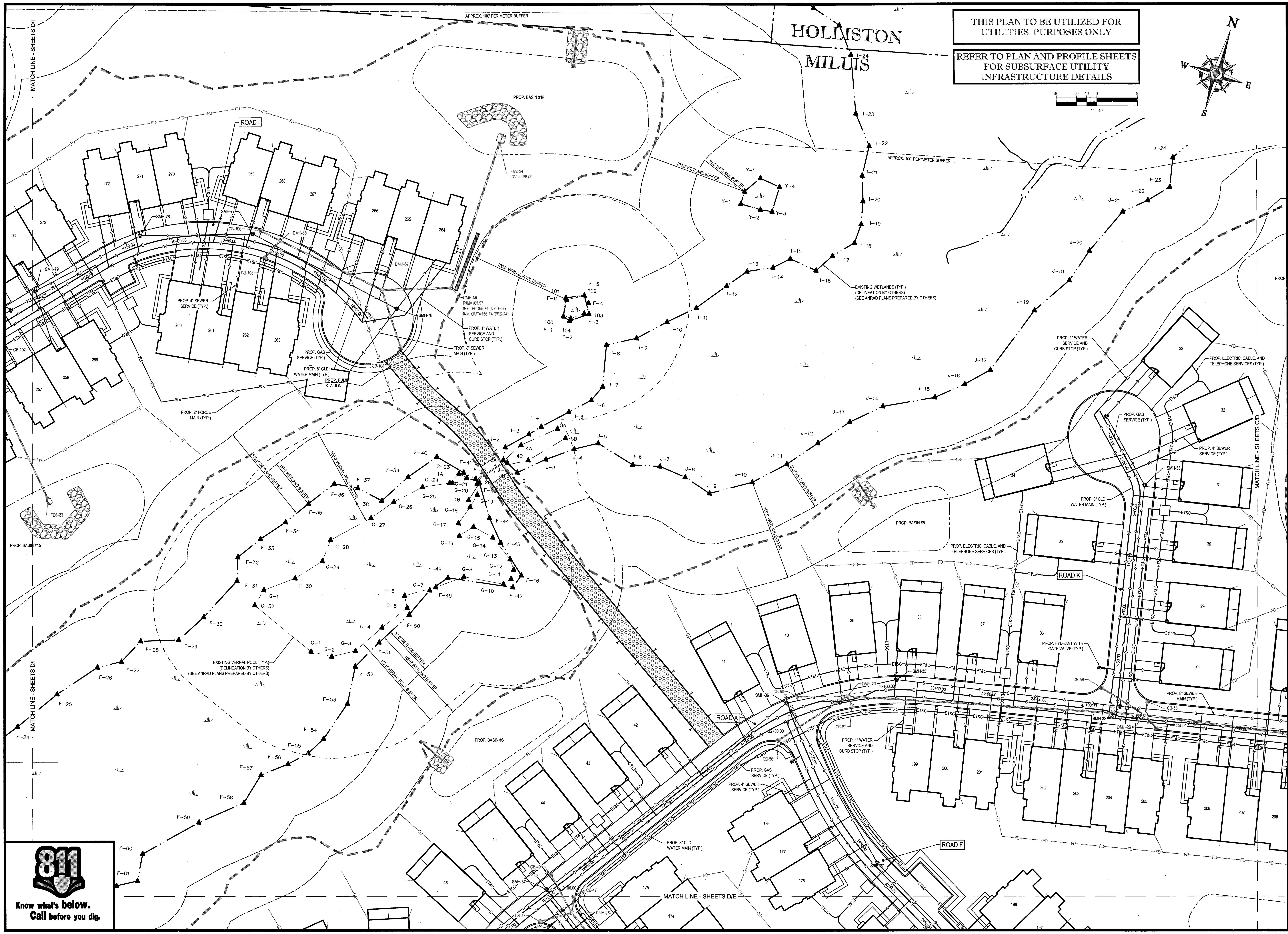

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CAD I.D.:	W161041_SS3

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FOR
Toll Brothers

LOCATION OF SITE
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MAP# 05, LOT# 35
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MASSACHUSETTS

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CIVIL
42644

SHEET TITLE:
UTILITY PLAN D

SHEET NUMBER:
30
OF 74

REV 0 - 11/18/2016

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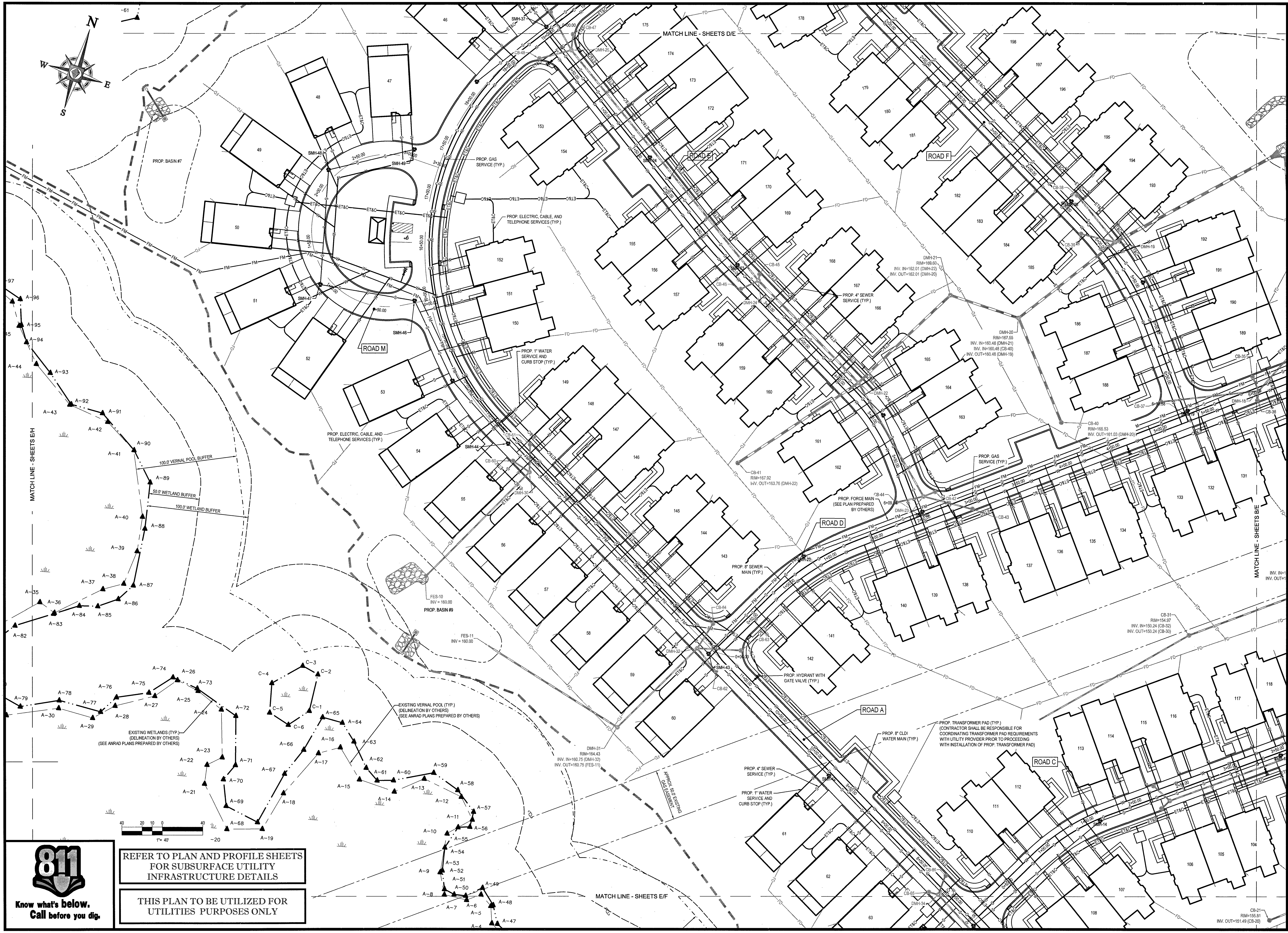
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MATCH LINE - SHEETS B/E
ROAD M
ROAD E
ROAD F
ROAD D
ROAD A
ROAD C
PROP. BASIN #7
PROP. BASIN #9
PROP. GAS SERVICE (TYP.)
PROP. ELECTRIC, CABLE, AND TELEPHONE SERVICES (TYP.)
PROP. 1" WATER SERVICE AND CURB STOP (TYP.)
PROP. 4" SEWER SERVICE (TYP.)
PROP. 8" SEWER MAIN (TYP.)
PROP. 8" CLDI WATER MAIN (TYP.)
PROP. HYDRANT WITH GATE VALVE (TYP.)
PROP. FORCE MAIN (SEE PLAN PREPARED BY OTHERS)
PROP. TRANSFORMER PAD (TYP.) CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRANSFORMER PAD REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. TRANSFORMER PAD)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
100.0' VERNAL POOL BUFFER
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
APPROX. 50.0' EXISTING GAS EASEMENT
FES-10 INV = 160.00
FES-11 INV = 160.00
DMH-21 RIM=169.60 INV. IN=162.01 (DMH-22) INV. OUT=162.01 (DMH-20)
DMH-20 RIM=167.55 INV. IN=160.48 (DMH-21) INV. IN=160.48 (CB-40) INV. OUT=160.48 (DMH-19)
CB-40 RIM=165.53 INV. OUT=161.03 (DMH-20)
CB-41 RIM=167.92 INV. OUT=163.76 (DMH-22)
DMH-31 RIM=164.43 INV. IN=160.75 (DMH-32) INV. OUT=160.75 (FES-11)
CB-31 RIM=154.97 INV. IN=150.24 (CB-32) INV. OUT=150.24 (CB-30)
CB-21 RIM=155.81 INV. OUT=151.49 (CB-20)
SMH-37
SMH-48
SMH-49
SMH-47
SMH-46
SMH-44
SMH-43
SMH-42
SMH-14
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40 20 10 0 40
1"= 40'

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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
—FOR—
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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MAINE LICENSE No. [illegible]
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

WILLIAM D. GOEBEL CIVIL 42644

SHEET TITLE:
UTILITY PLAN E

SHEET NUMBER:
31
OF 74

REV 0 - 11/18/2016

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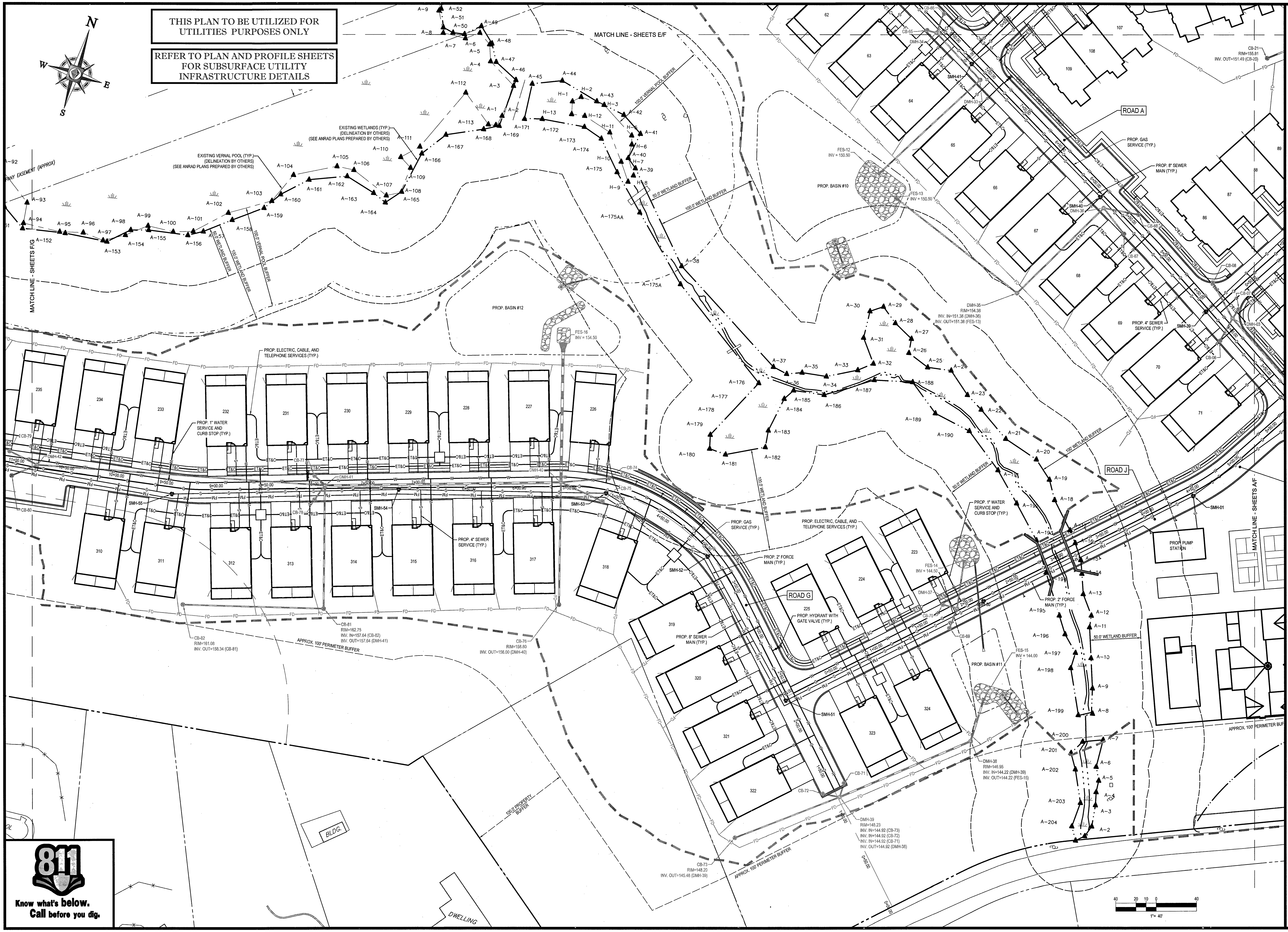

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CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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WILLIAM D.
GOEBEL
CIVIL
42644

SHEET TITLE:
UTILITY PLAN F

SHEET NUMBER:
32
OF 74

REV 0 - 11/18/2016

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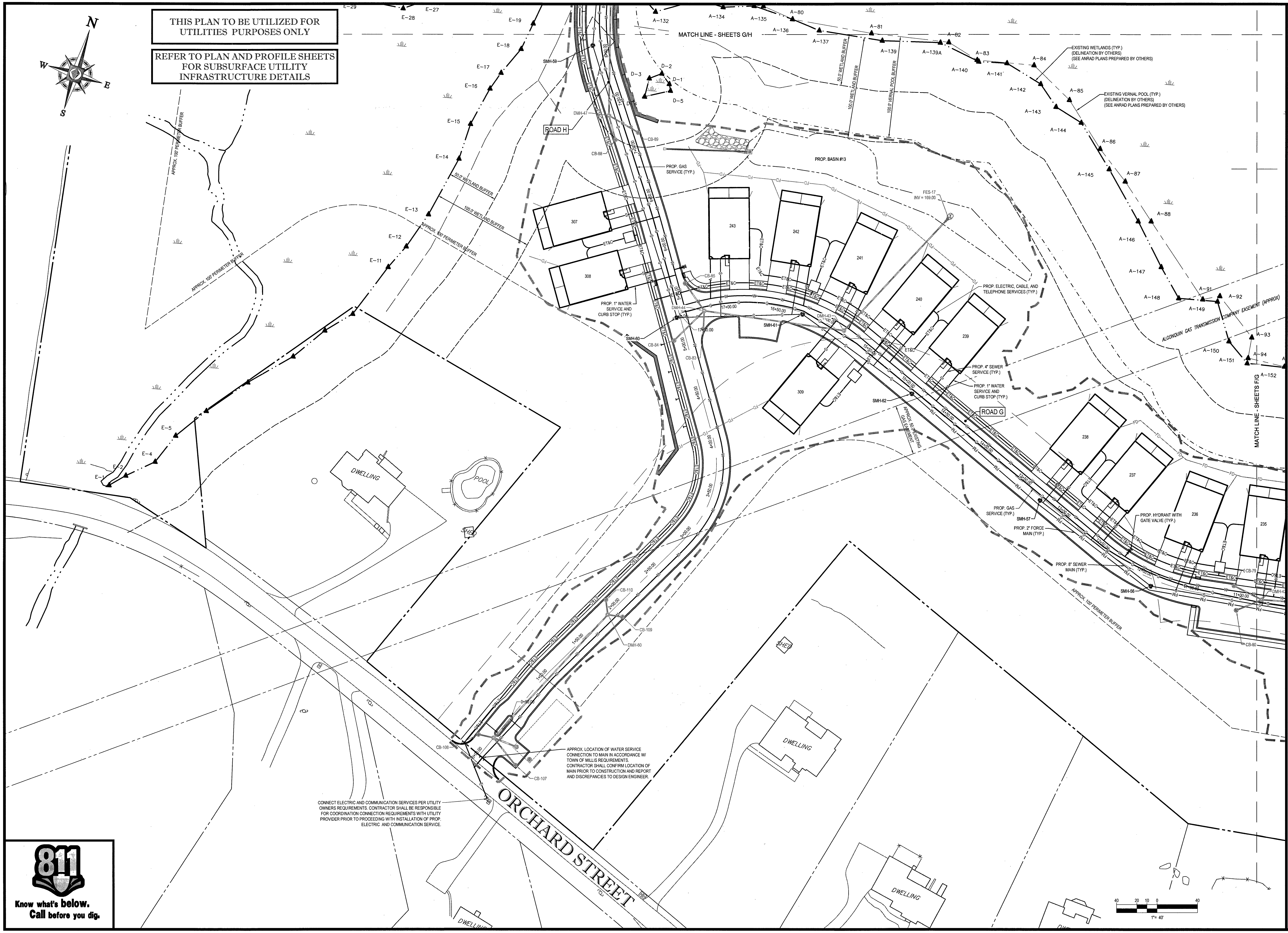

APPROX. LOCATION OF WATER SERVICE CONNECTION TO MAIN IN ACCORDANCE W/ TOWN OF MILLIS REQUIREMENTS. CONTRACTOR SHALL CONFIRM LOCATION OF MAIN PRIOR TO CONSTRUCTION AND REPORT AND DISCREPANCIES TO DESIGN ENGINEER.

CONNECT ELECTRIC AND COMMUNICATION SERVICES PER UTILITY OWNERS REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION CONNECTION REQUIREMENTS WITH UTILITY PROVIDER PRIOR TO PROCEEDING WITH INSTALLATION OF PROP. ELECTRIC AND COMMUNICATION SERVICE.

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Know what's **below.**
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- SOUTH FLORIDA

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CAD I.D.:	W161041_SS3

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SITE DEVELOPMENT PLANS
—FOR—
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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TOWN OF MILLIS
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MASSACHUSETTS

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WILLIAM D. GOEBEL
CIVIL
42644
REGISTERED PROFESSIONAL ENGINEER

SHEET TITLE:
UTILITY PLAN G

SHEET NUMBER:
33
OF 74

REV 0 - 11/18/2016

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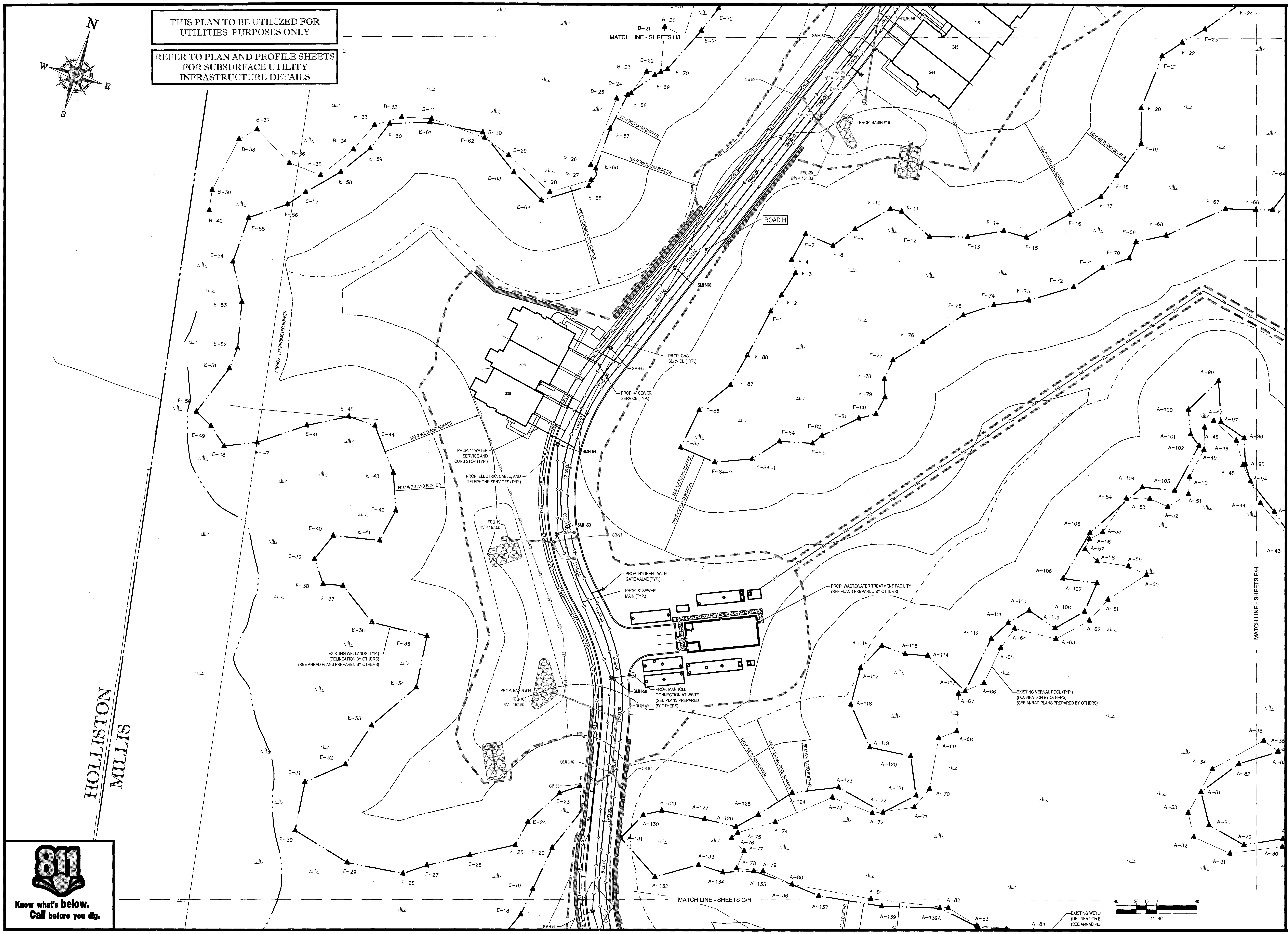

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MATCH LINE - SHEETS H/I
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HOLLISTON
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APPROX. 100' PERIMETER BUFFER
100.0' VERNAL POOL BUFFER
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
PROP. BASIN #19
PROP. BASIN #14
FES-25
INV = 161.00
FES-20
INV = 161.00
FES-19
INV = 157.50
FES-18
INV = 157.50
SMH-67
SMH-66
SMH-65
SMH-64
SMH-63
SMH-58
SMH-59
DMH-50
DMH-49
DMH-48
DMH-46
DMH-45
CB-93
CB-92
CB-81
CB-80
CB-87
CB-86
244
245
246
304
305
306
PROP. GAS SERVICE (TYP.)
PROP. 4" SEWER SERVICE (TYP.)
PROP. 1" WATER SERVICE AND CURB STOP (TYP.)
PROP. ELECTRIC, CABLE, AND TELEPHONE SERVICES (TYP.)
PROP. HYDRANT WITH GATE VALVE (TYP.)
PROP. 8" SEWER MAIN (TYP.)
PROP. WASTEWATER TREATMENT FACILITY (SEE PLANS PREPARED BY OTHERS)
PROP. MANHOLE CONNECTION AT WWTF (SEE PLANS PREPARED BY OTHERS)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
FM
B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-33 B-34 B-35 B-36 B-37 B-38 B-39 B-40
E-18 E-19 E-20 E-23 E-24 E-25 E-26 E-27 E-28 E-29 E-30 E-31 E-32 E-33 E-34 E-35 E-36 E-37 E-38 E-39 E-40 E-41 E-42 E-43 E-44 E-45 E-46 E-47 E-48 E-49 E-50 E-51 E-52 E-53 E-54 E-55 E-56 E-57 E-58 E-59 E-60 E-61 E-62 E-63 E-64 E-65 E-66 E-67 E-68 E-69 E-70 E-71 E-72
F-1 F-2 F-3 F-4 F-7 F-8 F-9 F-10 F-11 F-12 F-13 F-14 F-15 F-16 F-17 F-18 F-19 F-20 F-21 F-22 F-23 F-24 F-64 F-66 F-67 F-68 F-69 F-70 F-71 F-72 F-73 F-74 F-75 F-76 F-77 F-78 F-79 F-80 F-81 F-82 F-83 F-84 F-84-1 F-84-2 F-85 F-86 F-87 F-88
A-30 A-31 A-32 A-33 A-34 A-35 A-36 A-43 A-44 A-45 A-46 A-47 A-48 A-49 A-50 A-51 A-52 A-53 A-54 A-55 A-56 A-57 A-58 A-59 A-60 A-61 A-62 A-63 A-64 A-65 A-66 A-67 A-68 A-69 A-70 A-71 A-72 A-73 A-74 A-75 A-76 A-77 A-78 A-79 A-80 A-81 A-82 A-83 A-84 A-94 A-95 A-96 A-97 A-99
A-100 A-101 A-102 A-103 A-104 A-105 A-106 A-107 A-108 A-109 A-110 A-111 A-112 A-113 A-114 A-115 A-116 A-117 A-118 A-119 A-120 A-121 A-122 A-123 A-124 A-125 A-126 A-127 A-129 A-130 A-131 A-132 A-133 A-134 A-135 A-136 A-137 A-139 A-139A
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1" = 40'

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SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:
UTILITY PLAN H

SHEET NUMBER:
34
OF 74

REV 0 - 11/18/2016

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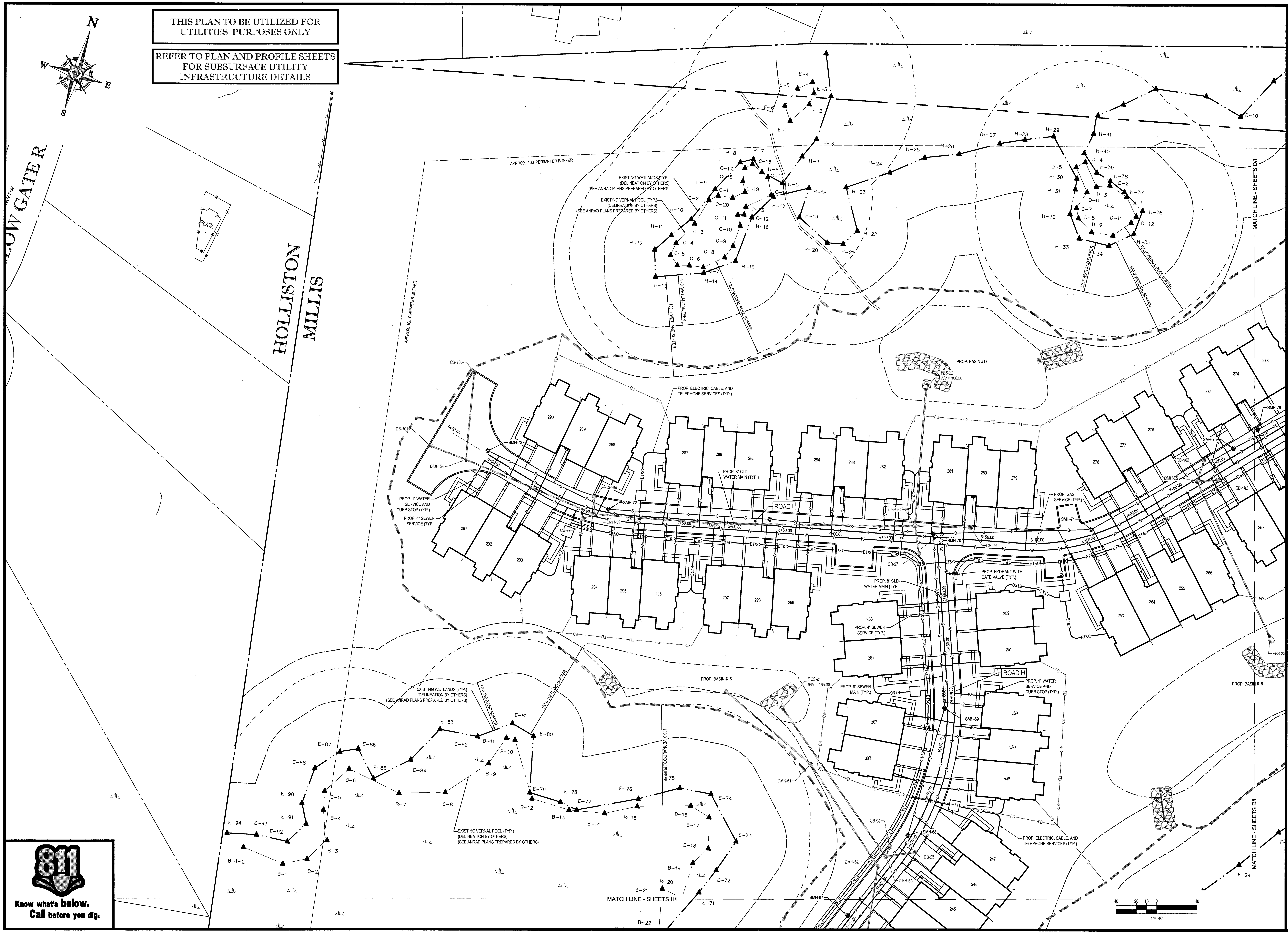
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HOLLISTON
MILLIS
LOW GATE R
POOL
APPROX. 100' PERIMETER BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
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50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
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PROP. ELECTRIC, CABLE, AND TELEPHONE SERVICES (TYP.)
PROP. 8" CLDI WATER MAIN (TYP.)
PROP. 1" WATER SERVICE AND CURB STOP (TYP.)
PROP. 4" SEWER SERVICE (TYP.)
PROP. 8" SEWER MAIN (TYP.)
PROP. GAS SERVICE (TYP.)
PROP. HYDRANT WITH GATE VALVE (TYP.)
ROAD I
ROAD H
PROP. BASIN #17
PROP. BASIN #16
PROP. BASIN #15
FES-22 INV = 166.00
FES-21 INV = 165.00
FES-23
MATCH LINE - SHEETS D/I
MATCH LINE - SHEETS H/I
1" = 40'
40 20 10 0 40

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FOR

Toll Brothers

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MAP# 05, LOT# 35
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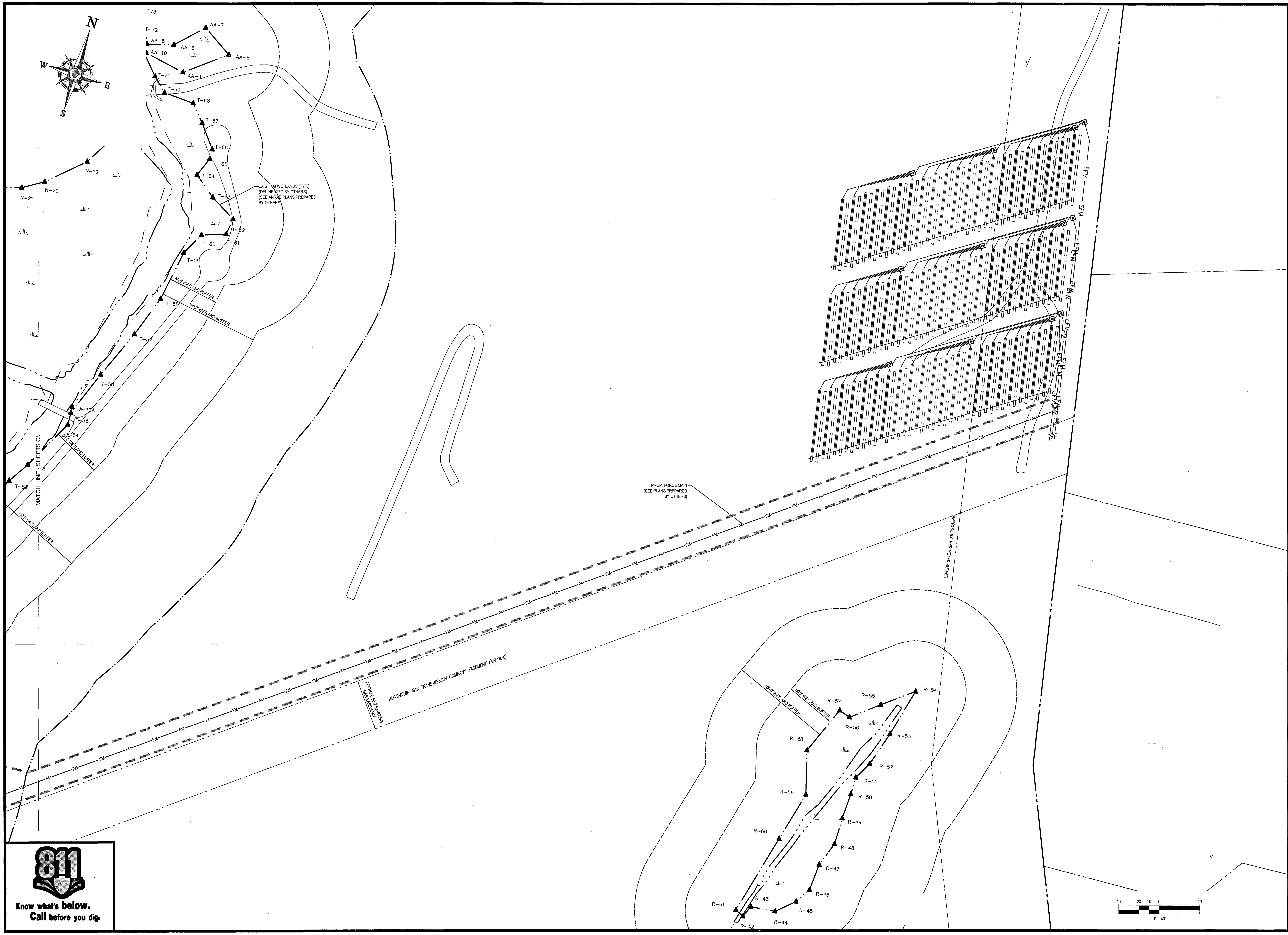
WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:

UTILITY PLAN I

SHEET NUMBER:
35
OF 74

REV 0 - 11/18/2016



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SHEET TITLE:
UTILITY PLAN J

SHEET NUMBER:
36
OF 74

REV 0 - 11/18/2016

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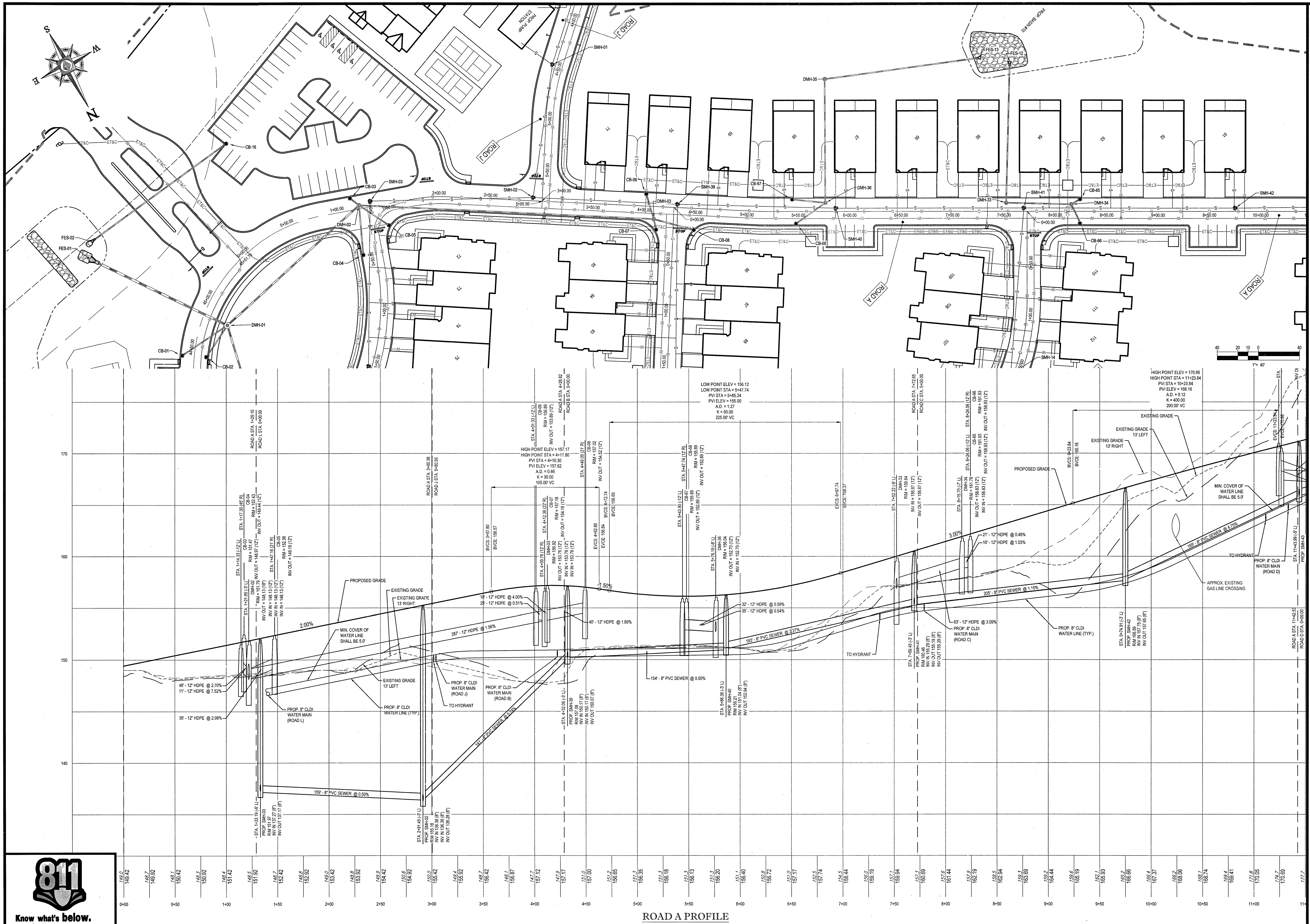

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SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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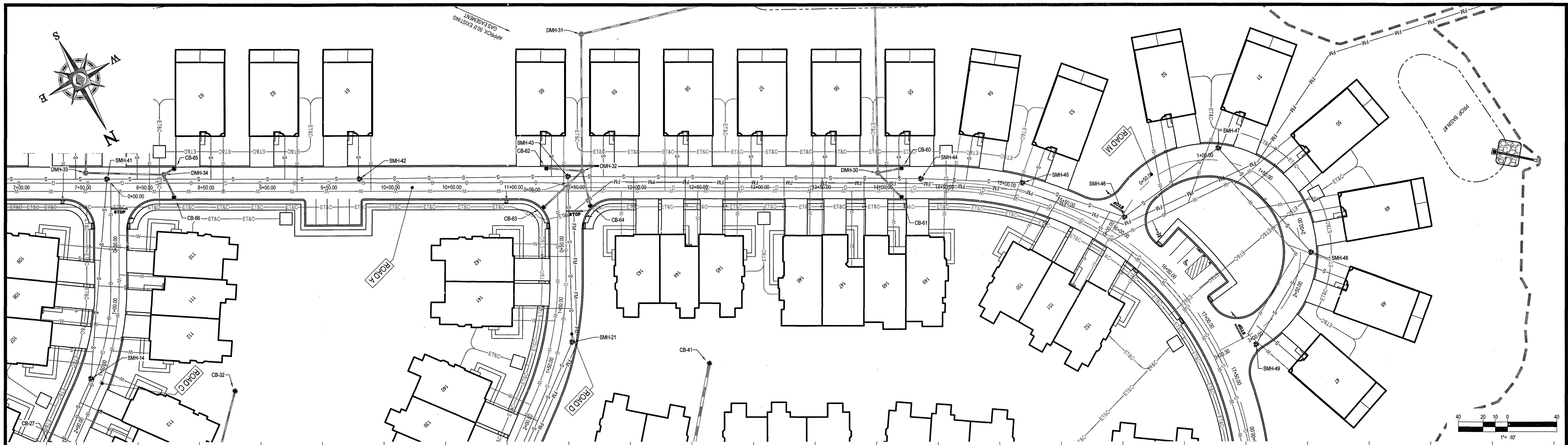
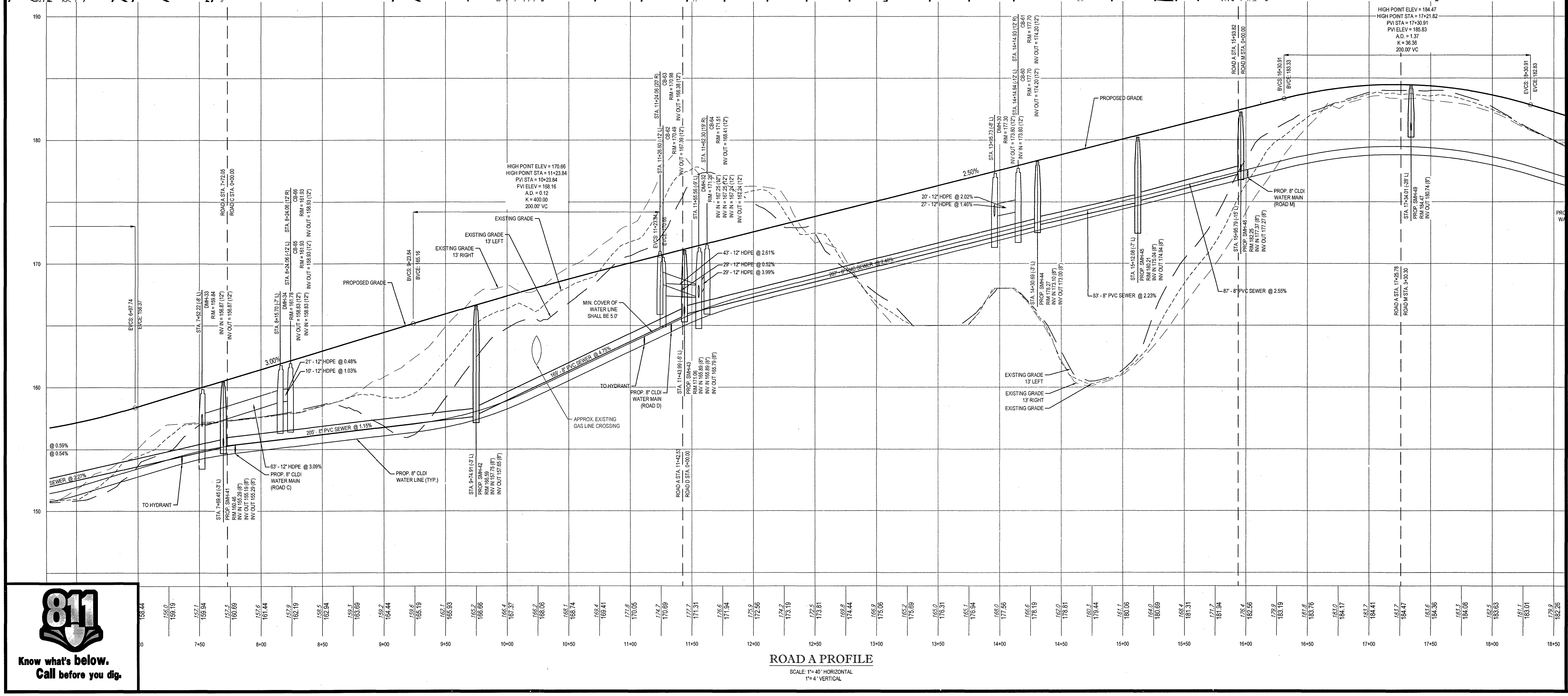
SHEET TITLE:
ROAD A PLAN AND PROFILE A

SHEET NUMBER:
37
OF 74

REV 0 - 11/18/2016





ROAD A PROFILE

SCALE: 1"= 40' HORIZONTAL
1"= 4' VERTICAL

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SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
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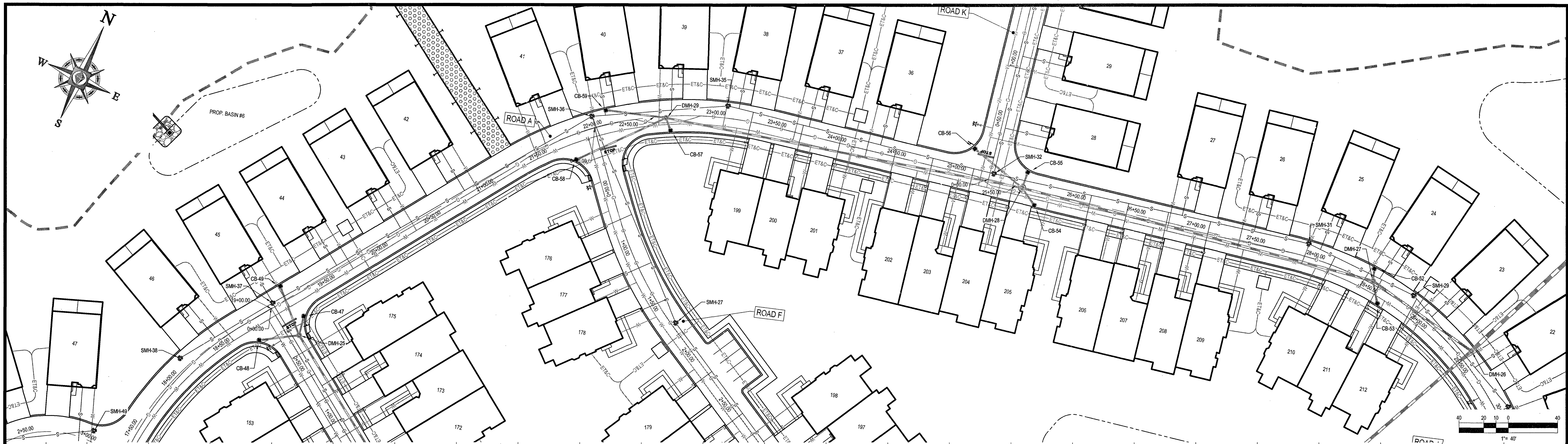
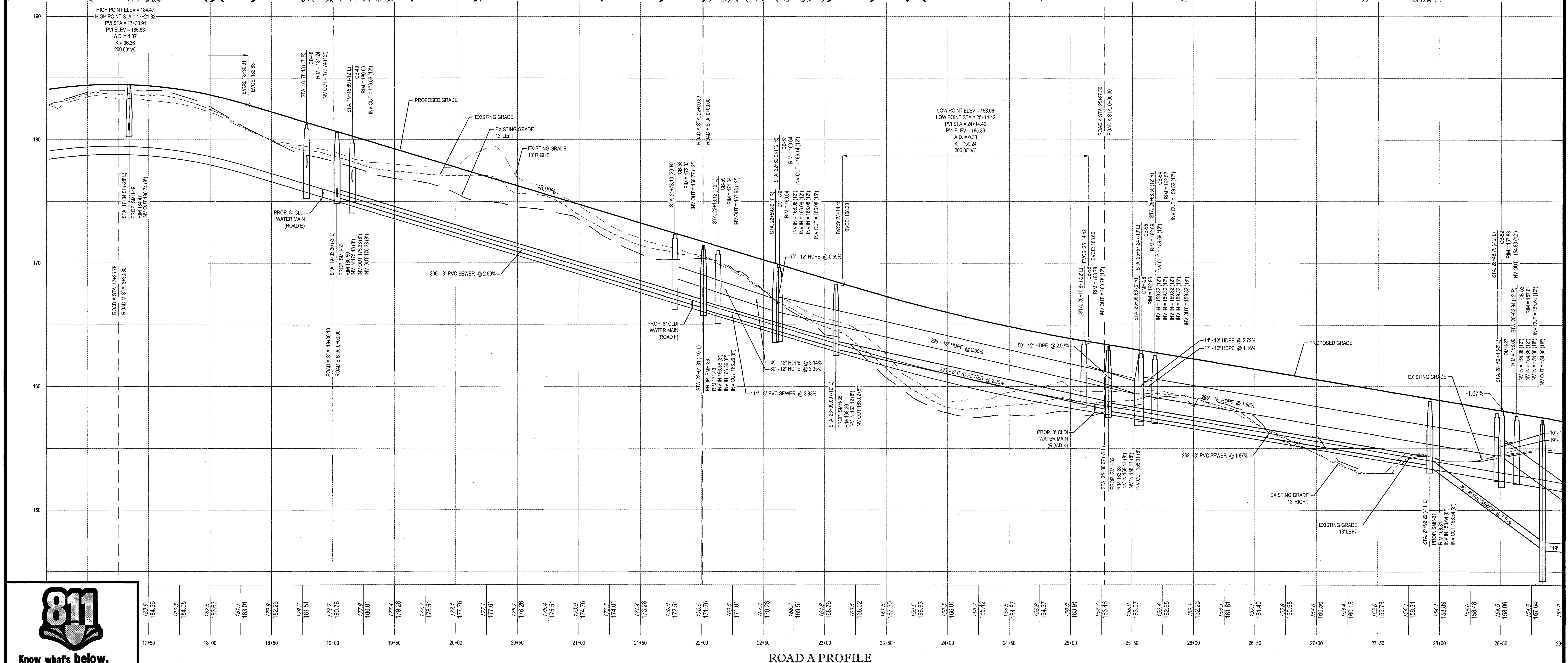
SHEET TITLE:
ROAD A PLAN AND PROFILE B

SHEET NUMBER:
38
OF 74

REV 0 - 11/18/2016





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1"= 4' VERTICAL

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PROJECT No.: W161041
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CHECKED BY: AFT
DATE: 11/18/2016
SCALE: AS NOTED
CAD I.D.: W161041_SS3_PROFILES

PROJECT:
SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET TITLE:
ROAD A PLAN AND PROFILE C

SHEET NUMBER:
39
OF 74

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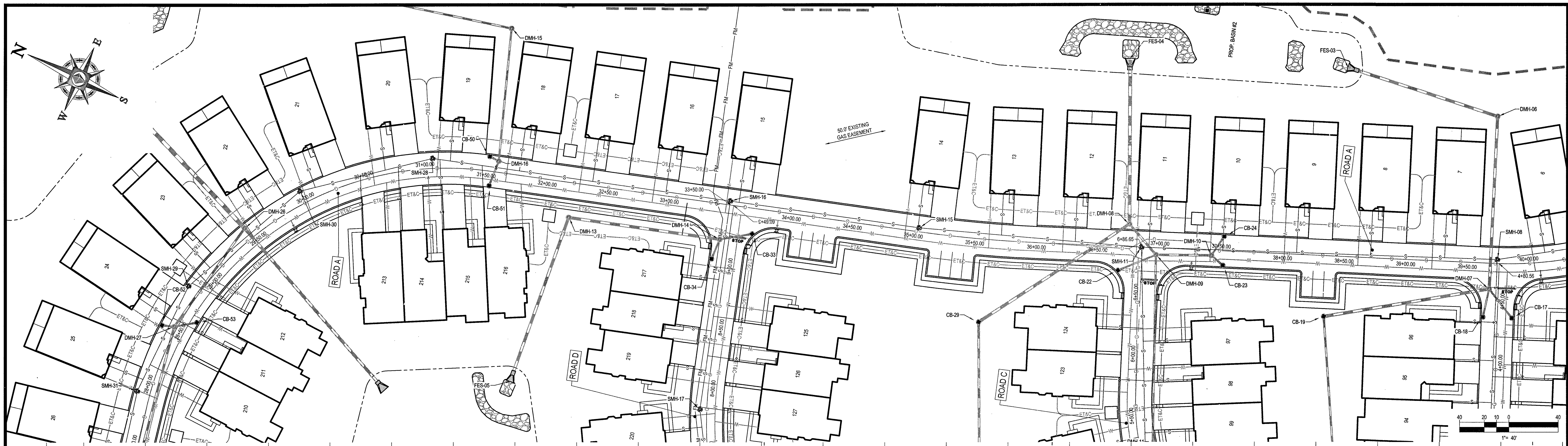

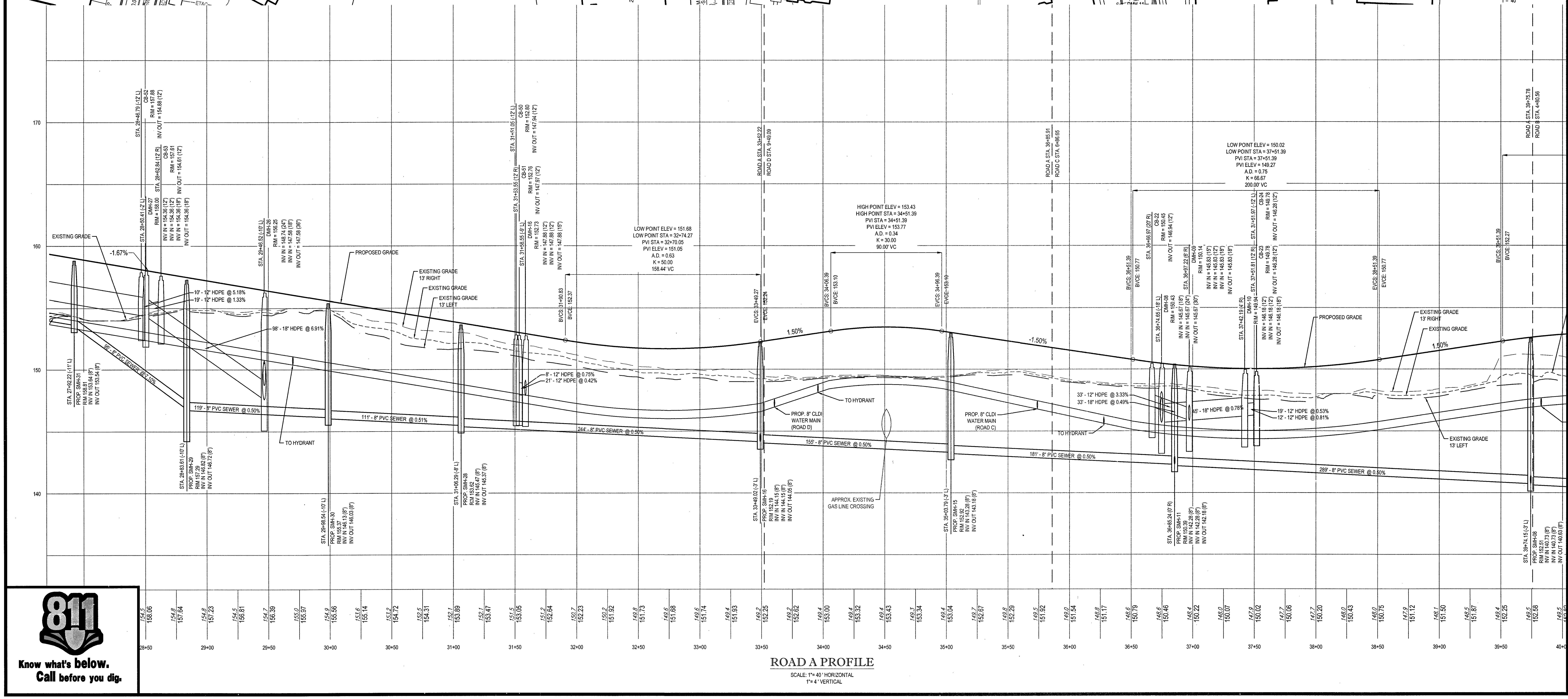

ROAD A PROFILE

SCALE: 1"= 40' HORIZONTAL
1"= 4' VERTICAL

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PROJECT No.:	W161041
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SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:
SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET NUMBER:

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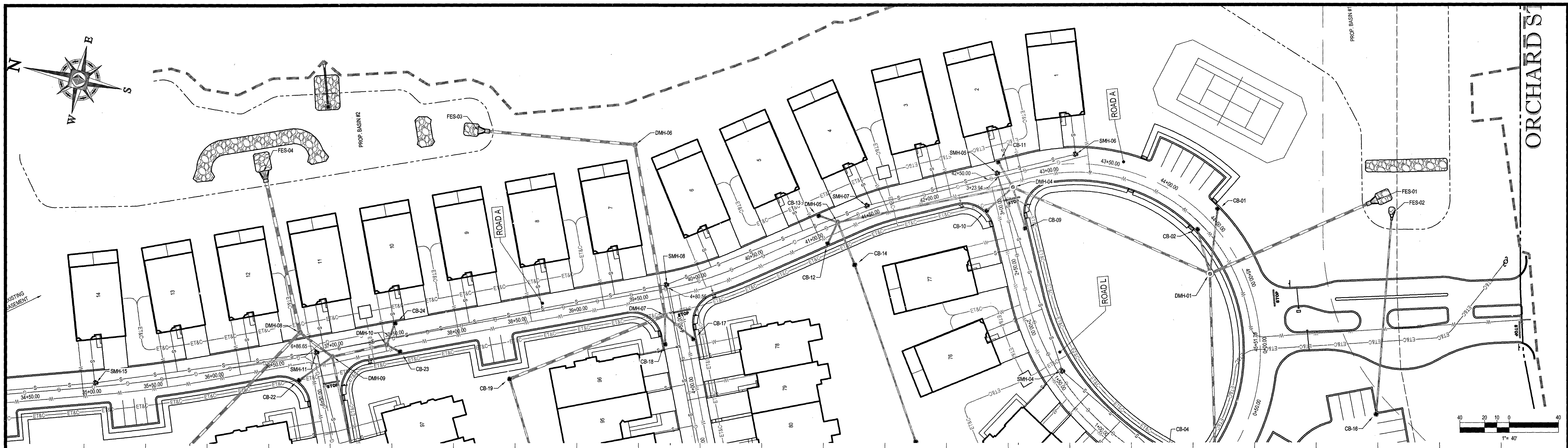

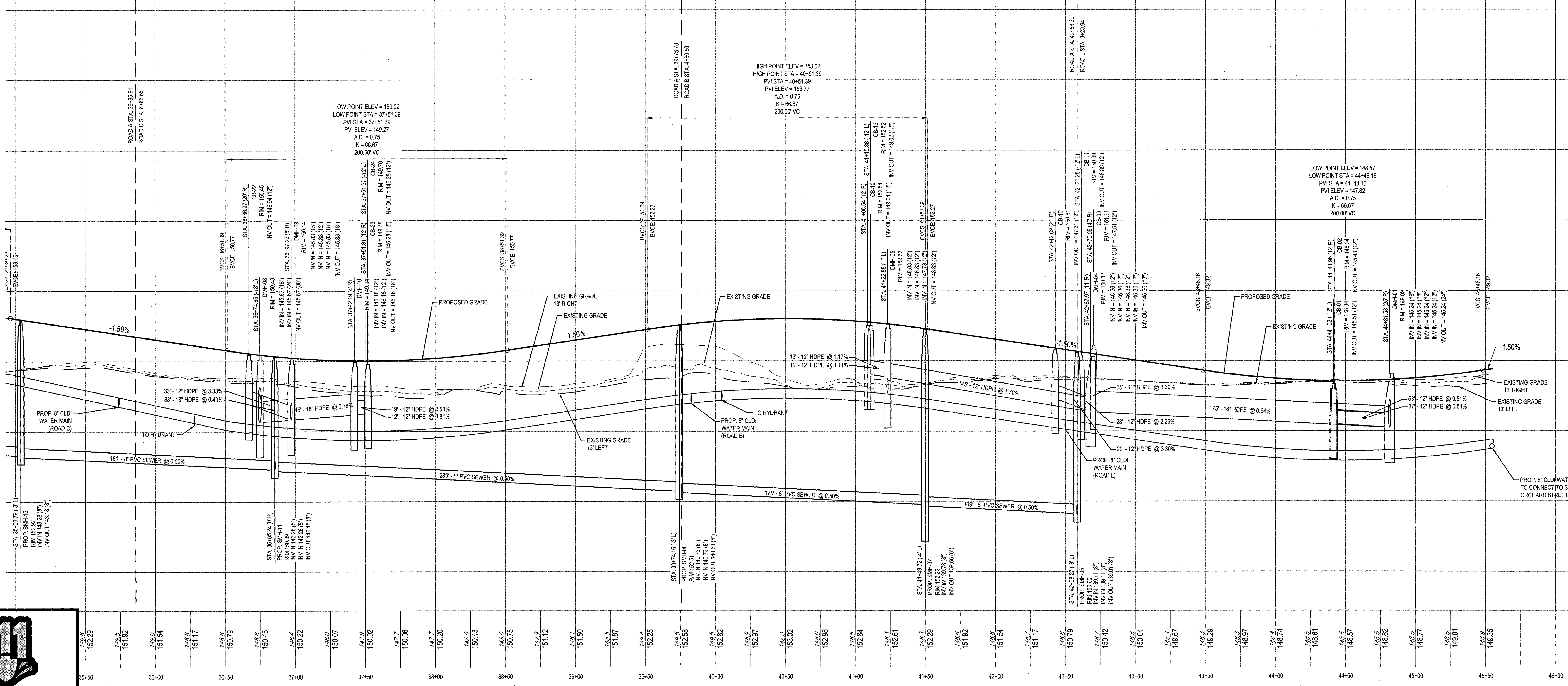

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DATE: 11/18/2016
SCALE: AS NOTED
CAD I.D.: W161041_SS3_PROFILES

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET TITLE:
ROAD A
PLAN AND
PROFILE E

SHEET NUMBER:
41
OF 74

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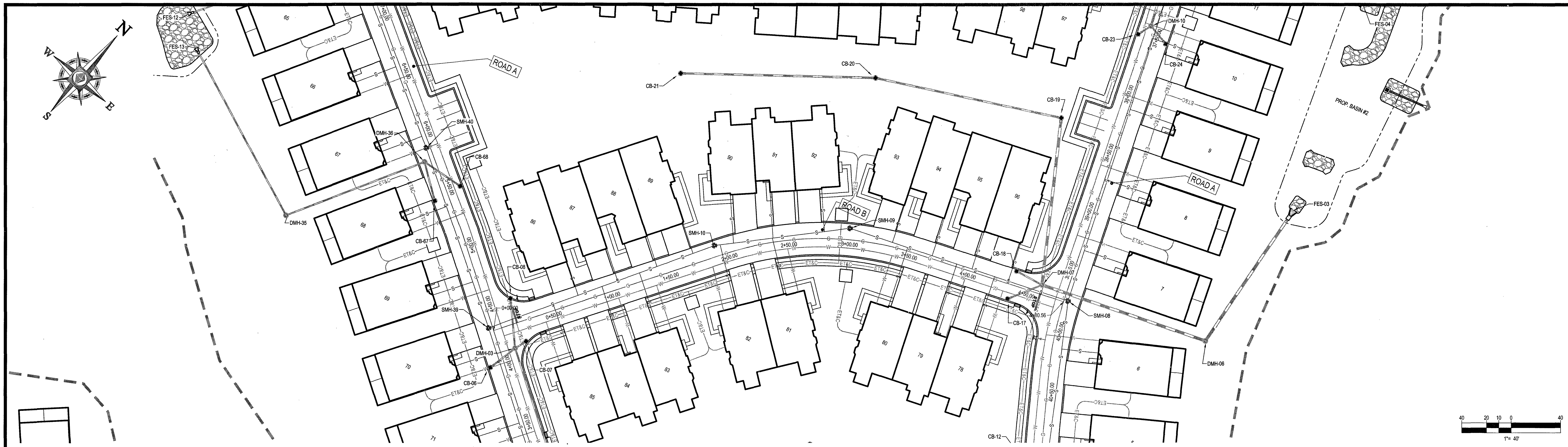

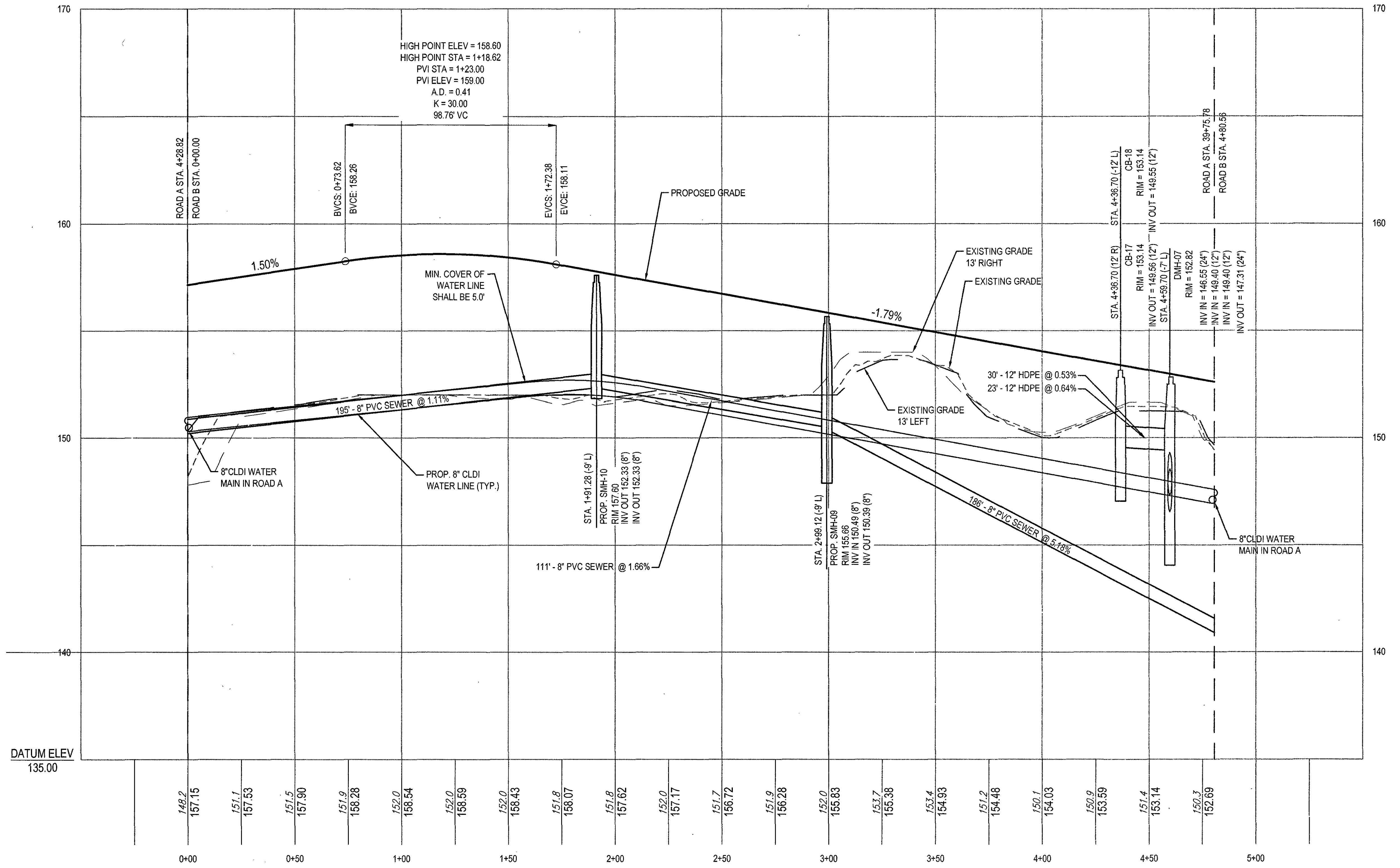

ROAD B PROFILE

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1"= 4 ' VERTICAL

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Toll Brothers

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SHEET TITLE:
ROAD B PLAN AND PROFILE

SHEET NUMBER:
42
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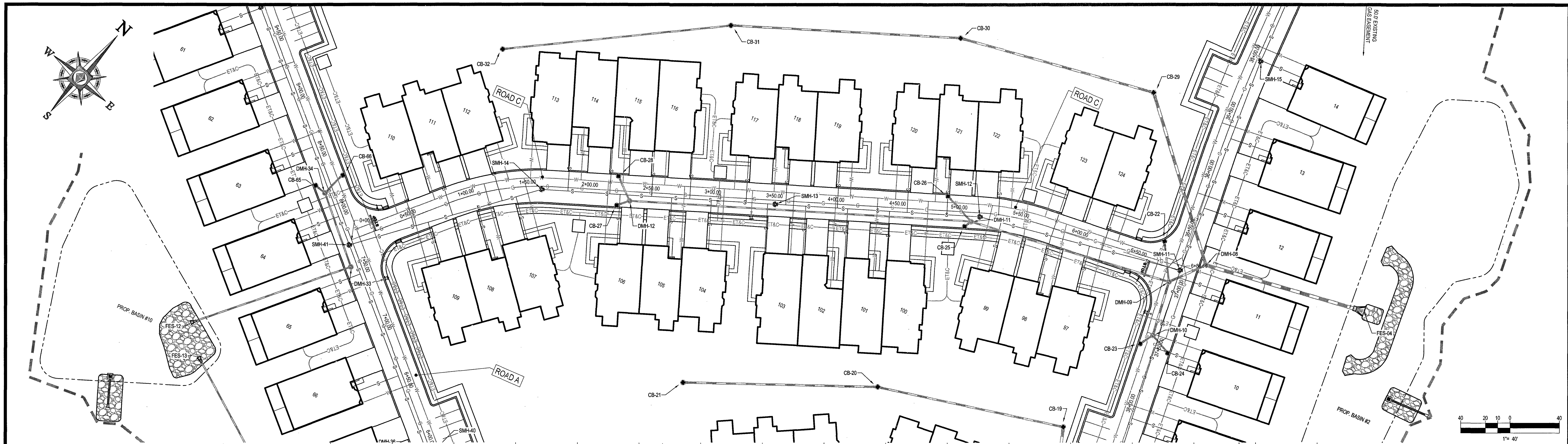

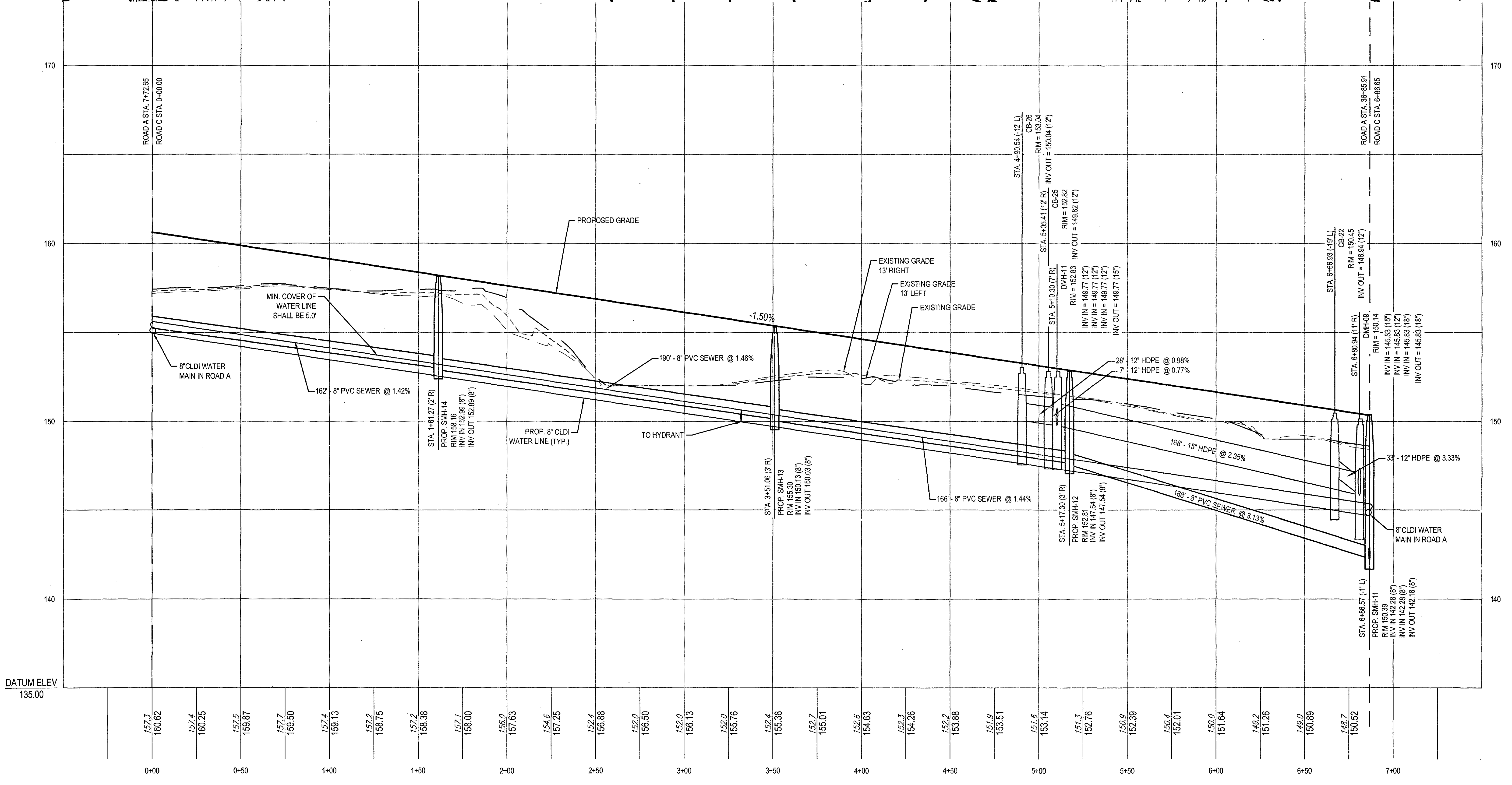

ROAD C PROFILE

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SCALE:	AS NOTED
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DEVELOPMENT
PLANS
FOR
Toll Brothers

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MAP# 05, LOT# 35
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42644

SHEET TITLE:
ROAD C
PLAN AND
PROFILE

SHEET NUMBER:
43
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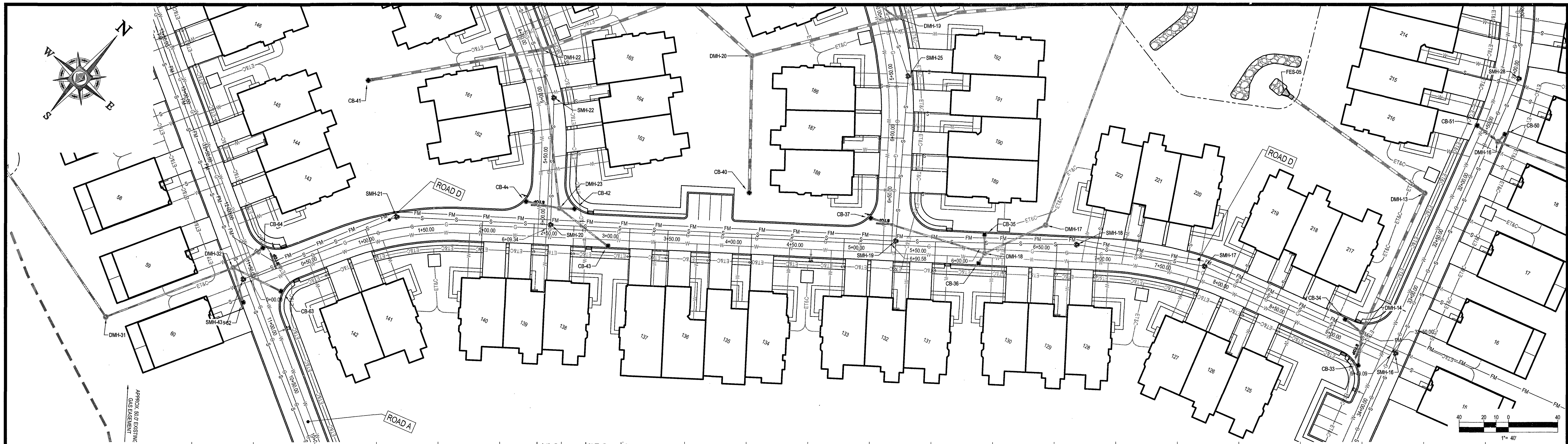

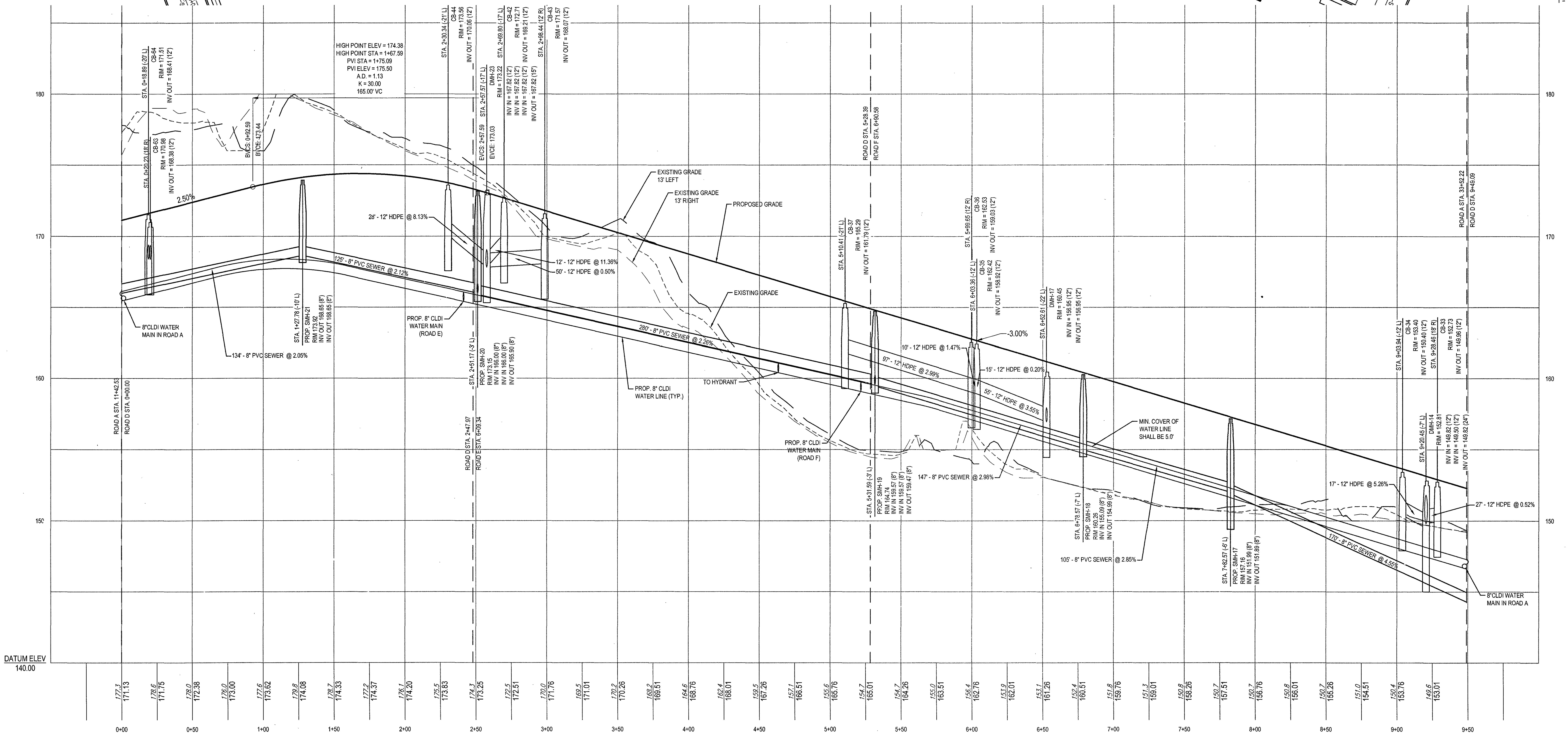
HIGH POINT ELEV = 174.38
HIGH POINT STA = 1+67.59
PVI STA = 1+75.09
PVI ELEV = 175.50
A.D. = 1.13
K = 30.00
165.00' VC
STA. 0+18.89 (-20' L) CB-64 RIM = 171.51 INV OUT = 168.41 (12")
STA. 0+20.23 (18' R) CB-63 RIM = 170.98 INV OUT = 168.38 (12")
BVCS: 0+92.59
BVCE: 173.44
STA. 2+30.34 (-21' L) CB-44 RIM = 173.56 INV OUT = 170.06 (12")
STA. 2+57.57 (-17' L) DMH-23 RIM = 173.22
EVCS: 2+57.59
EVCE: 173.03
STA. 2+69.80 (-17' L) CB-42 RIM = 172.71 INV OUT = 169.21 (12")
INV IN = 167.82 (12") INV IN = 167.82 (12") INV IN = 167.82 (12") INV OUT = 167.82 (15")
STA. 2+98.44 (12' R) CB-43 RIM = 171.57 INV OUT = 168.07 (12")
2.50%
28' - 12" HDPE @ 8.13%
12' - 12" HDPE @ 11.36%
50' - 12" HDPE @ 0.50%
125' - 8" PVC SEWER @ 2.12%
134' - 8" PVC SEWER @ 2.05%
8"CLDI WATER MAIN IN ROAD A
STA. 1+27.78 (-10' L) PROP. SMH-21 RIM 173.92 INV OUT 168.65 (8") INV OUT 168.65 (8")
PROP. 8" CLDI WATER MAIN (ROAD E)
STA. 2+51.17 (-3' L) PROP. SMH-20 RIM 173.15 INV IN 166.00 (8") INV IN 166.00 (8") INV OUT 165.90 (8")
ROAD A STA. 11+42.53
ROAD D STA. 0+00.00
ROAD D STA. 2+47.97
ROAD E STA. 6+09.34
EXISTING GRADE 13' LEFT
EXISTING GRADE 13' RIGHT
PROPOSED GRADE
EXISTING GRADE
280' - 8" PVC SEWER @ 2.26%
PROP. 8" CLDI WATER LINE (TYP.)
TO HYDRANT
ROAD D STA. 5+28.39
ROAD F STA. 6+90.58
STA. 5+10.41 (-21' L) CB-37 RIM = 165.29 INV OUT = 161.79 (12")
PROP. 8" CLDI WATER MAIN (ROAD F)
STA. 5+31.59 (-3' L) PROP. SMH-19 RIM 164.74 INV IN 159.57 (8") INV IN 159.57 (8") INV OUT 159.47 (8")
STA. 5+99.65 (12' R) CB-36 RIM = 162.53 INV OUT = 159.03 (12")
STA. 6+03.36 (-12' L) CB-35 RIM = 162.42 INV OUT = 158.92 (12")
-3.00%
10' - 12" HDPE @ 1.47%
97' - 12" HDPE @ 2.99%
15' - 12" HDPE @ 0.20%
55' - 12" HDPE @ 3.55%
147' - 8" PVC SEWER @ 2.98%
STA. 6+52.61 (-22' L) DMH-17 RIM = 160.45 INV IN = 156.95 (12") INV OUT = 156.95 (12")
STA. 6+78.57 (-7' L) PROP. SMH-18 RIM 160.26 INV IN 155.09 (8") INV OUT 154.99 (8")
105' - 8" PVC SEWER @ 2.85%
MIN. COVER OF WATER LINE SHALL BE 5.0'
STA. 7+82.57 (-6' L) PROP. SMH-17 RIM 157.16 INV IN 151.99 (8") INV OUT 151.89 (8")
170' - 8" PVC SEWER @ 4.55%
STA. 9+03.94 (-12' L) CB-34 RIM = 153.40 INV OUT = 150.40 (12")
STA. 9+28.46 (18' R) CB-33 RIM = 152.73 INV OUT = 149.96 (12")
STA. 9+20.45 (-7' L) DMH-14 RIM = 152.81 INV IN = 149.82 (12") INV IN = 149.50 (12") INV OUT = 149.82 (24")
17' - 12" HDPE @ 5.26%
27' - 12" HCPE @ 0.52%
ROAD A STA. 33+52.22
ROAD D STA. 9+49.09
8"CLDI WATER MAIN IN ROAD A
180
170
160
150
DATUM ELEV 140.00
0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50 9+00 9+50

ROAD D PROFILE

SCALE: 1"= 40' HORIZONTAL
1"= 4' VERTICAL

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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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SHEET TITLE:

ROAD D PLAN AND PROFILE

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44
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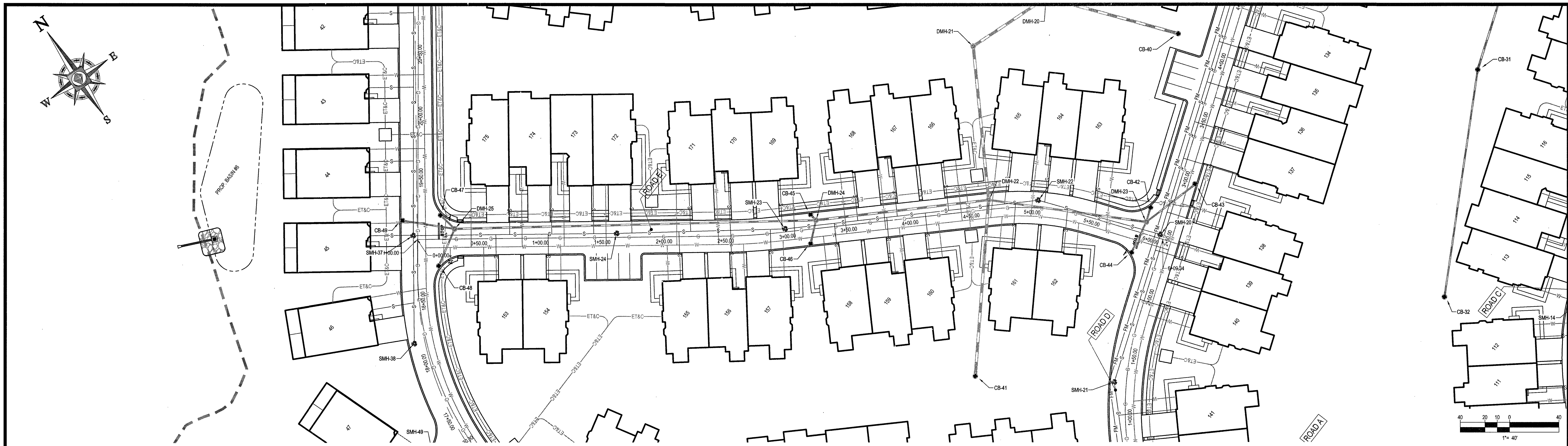

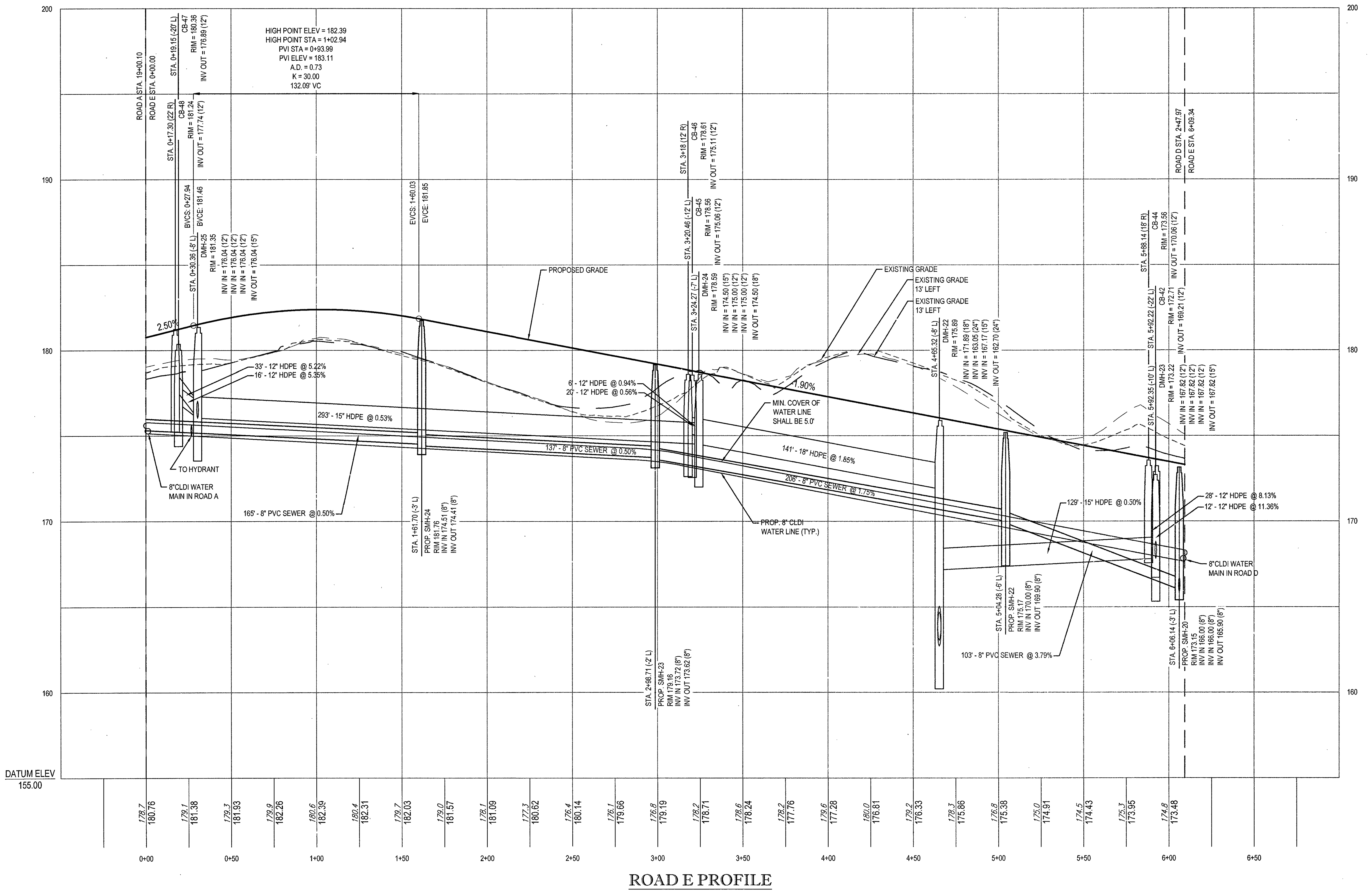

ROAD E PROFILE

SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

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PROJECT No.:	W161041
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DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
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SHEET TITLE:
ROAD E PLAN AND PROFILE

SHEET NUMBER:
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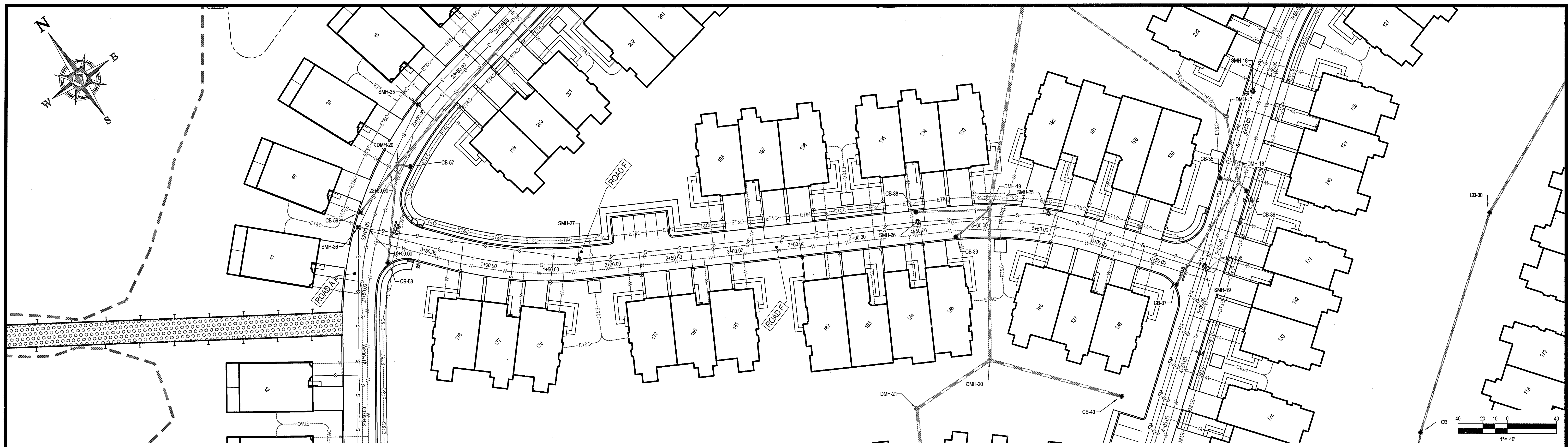

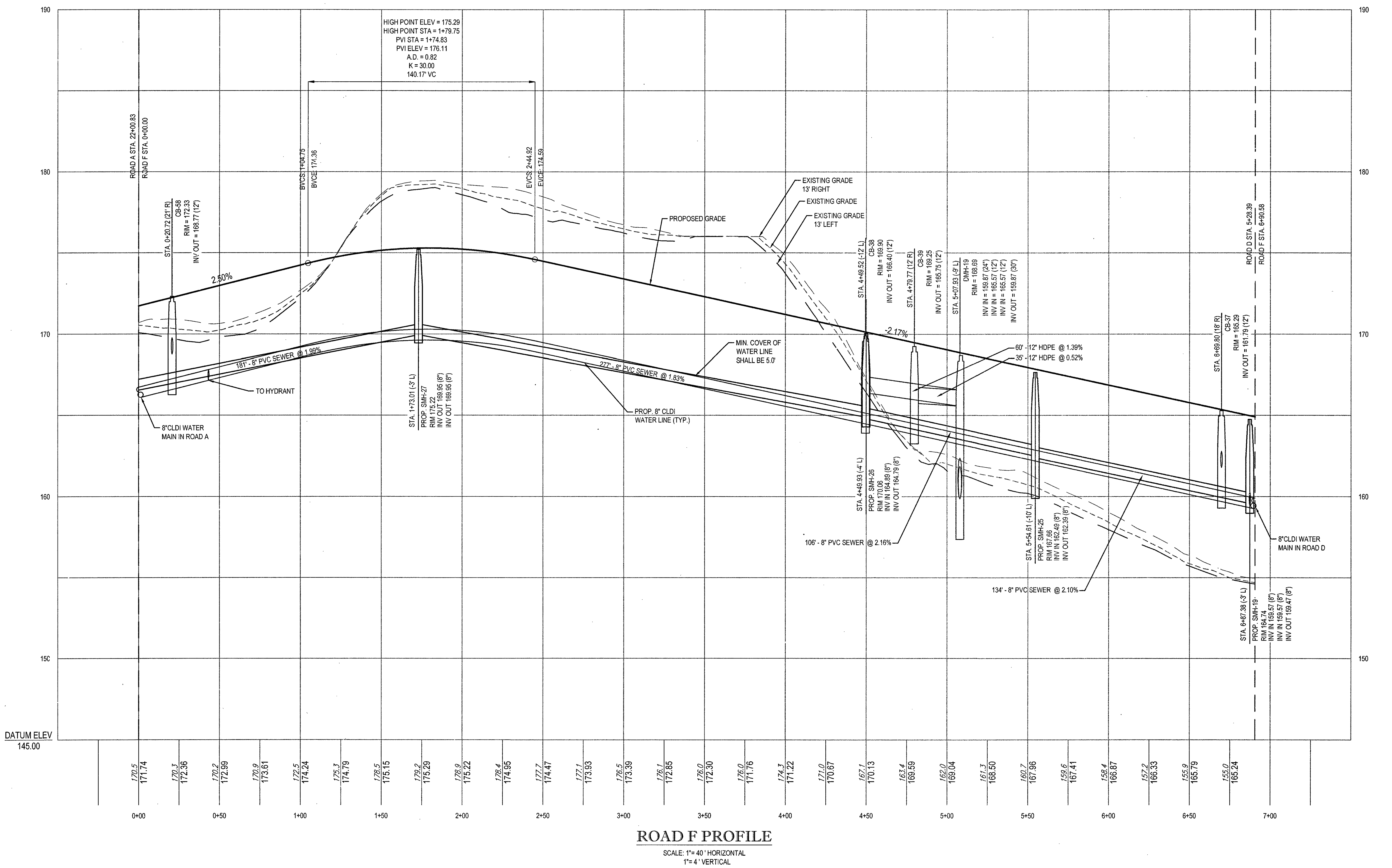

ROAD F PROFILE

SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

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FOR
Toll Brothers

LOCATION OF SITE
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SHEET TITLE:
ROAD F PLAN AND PROFILE

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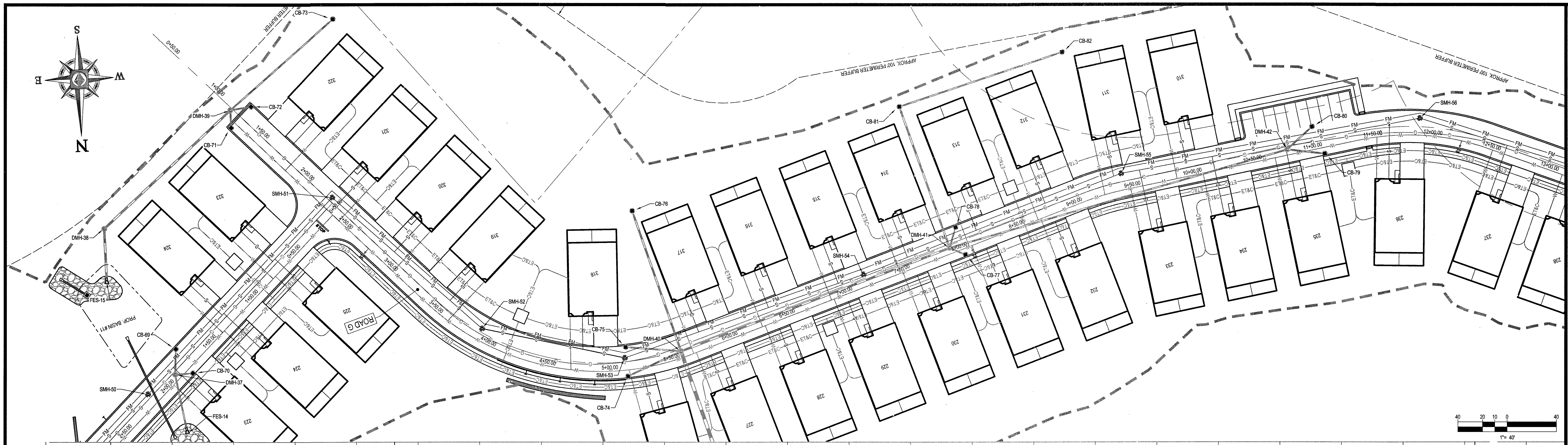

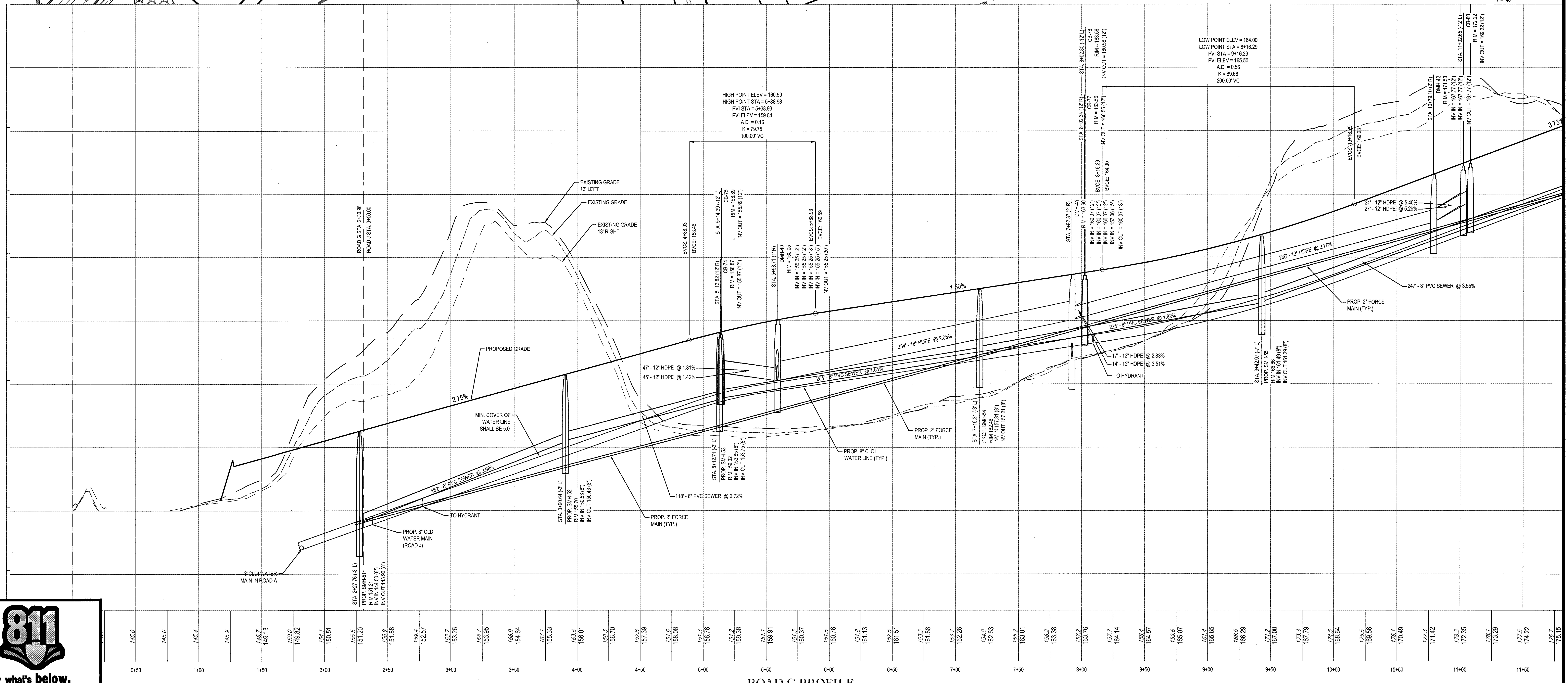

ROAD G PROFILE

SCALE: 1"= 40' HORIZONTAL
1"= 4' VERTICAL

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PROJECT No.:	W161041
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DATE:	11/18/2016
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CAD I.D.:	W161041_SS3_PROFILES

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET TITLE:
ROAD G PLAN AND PROFILE A

SHEET NUMBER:
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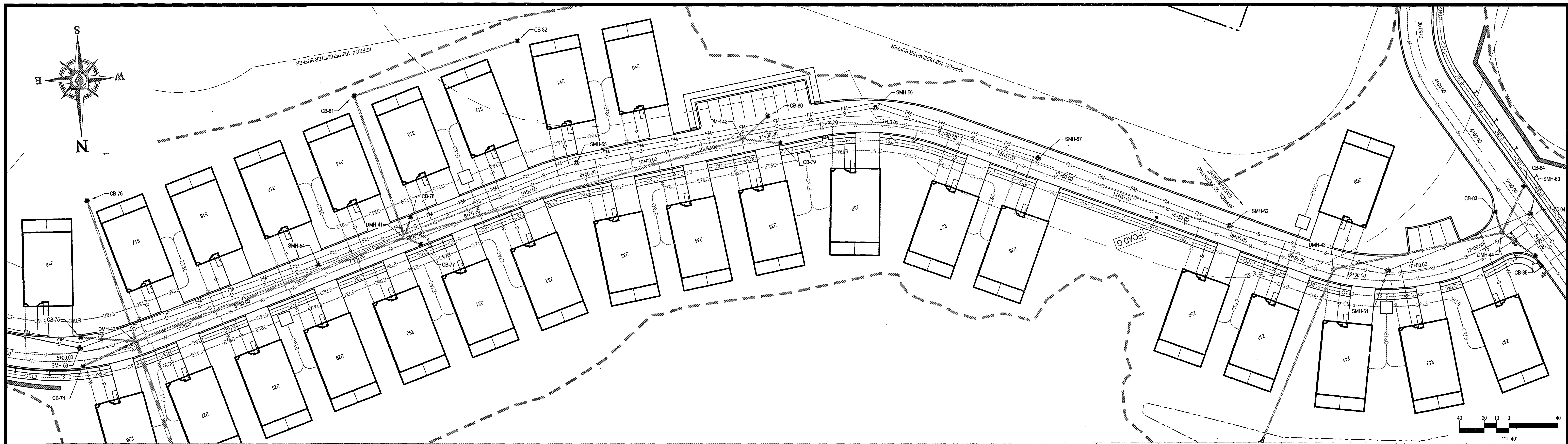

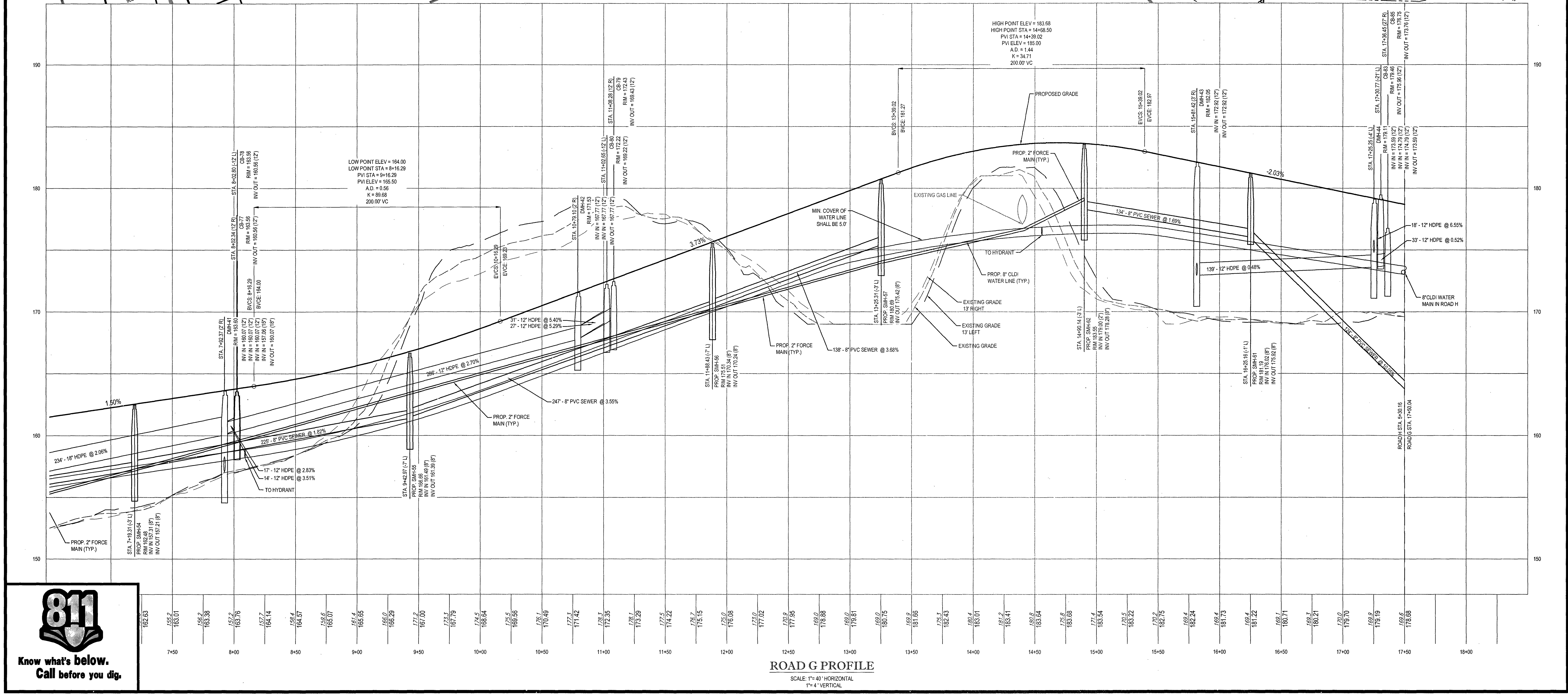

ROAD G PROFILE

SCALE: 1"= 40' HORIZONTAL
1"= 4' VERTICAL

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PROJECT No.:	W161041
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DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:
SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
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NORFOLK COUNTY,
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SHEET TITLE:
ROAD G PLAN AND PROFILE B

SHEET NUMBER:
48
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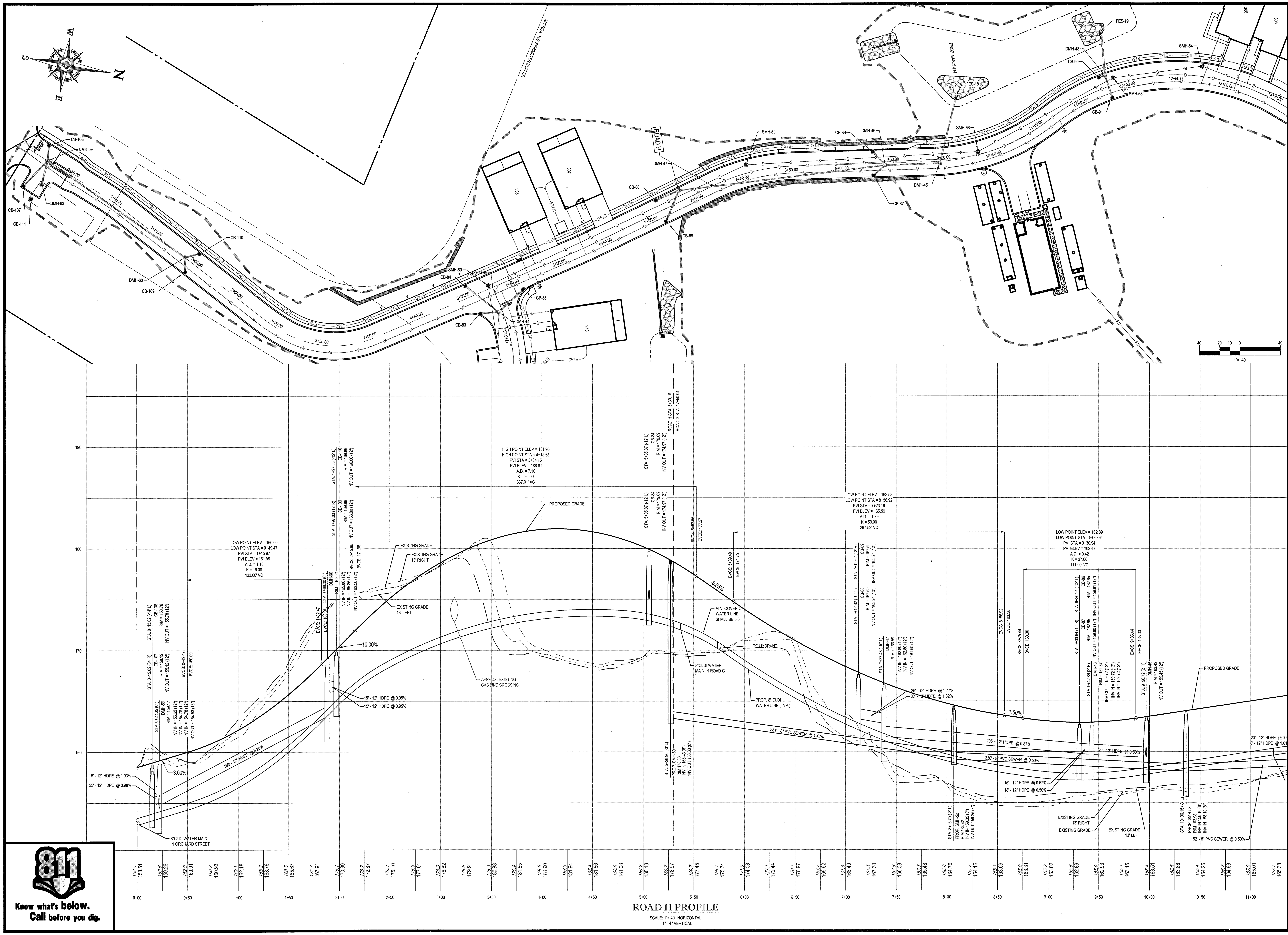

ROAD H PROFILE

SCALE: 1"= 40' HORIZONTAL
1"= 4' VERTICAL

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SHEET TITLE:
ROAD H PLAN AND PROFILE A

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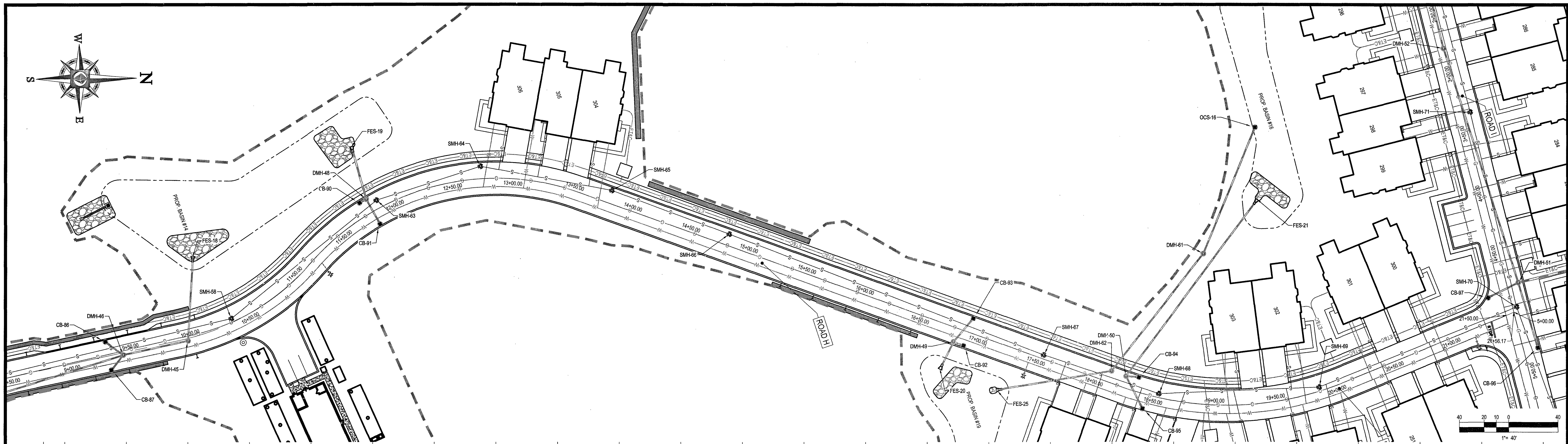

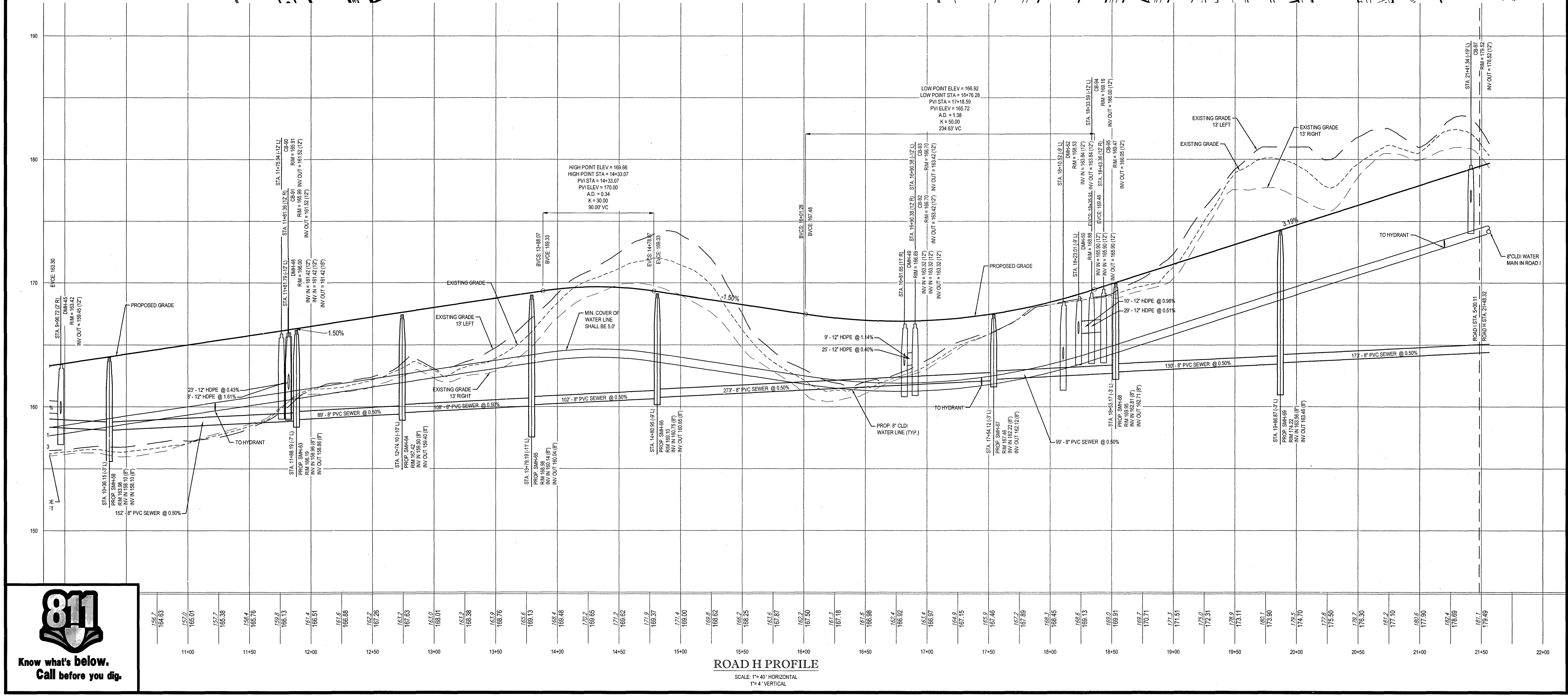
190
180
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160
150
EVCE: 163.30
STA. 9+96.72 (2' R) DMH-45 RIM = 163.42 INV OUT = 159.45 (12")
PROPOSED GRADE
STA. 11+75.94 (-12' L) CB-90 RIM = 165.91 INV OUT = 161.52 (12")
STA. 11+81.36 (12' R) CB-91 RIM = 165.99 INV OUT = 161.52 (12")
STA. 11+81.79 (-12' L) DMH-48 RIM = 166.00 INV IN = 161.42 (12") INV IN = 161.42 (12") INV OUT = 161.42 (15")
1.50%
23' - 12" HDPE @ 0.43%
6' - 12" HDPE @ 1.61%
89' - 8" PVC SEWER @ 0.50%
TO HYDRANT
STA. 10+36.15 (-3' L) PROP. SMH-58 RIM 163.98 INV IN 158.10 (8") INV IN 158.10 (8")
152' - 8" PVC SEWER @ 0.50%
STA. 11+88.19 (-7' L) PROP. SMH-63 RIM 166.19 INV IN 158.96 (8") INV OUT 158.86 (8")
STA. 12+74.10 (-10' L) PROP. SMH-64 RIM 167.42 INV IN 159.50 (8") INV OUT 159.40 (8")
HIGH POINT ELEV = 169.66
HIGH POINT STA = 14+33.07
PVI STA = 14+33.07
PVI ELEV = 170.00
A.D. = 0.34
K = 30.00
90.00' VC
BVCS: 13+88.07 BVCE: 169.33
EVCS: 14+78.07 EVCE: 169.33
EXISTING GRADE
EXISTING GRADE 13' LEFT
EXISTING GRADE 13' RIGHT
MIN. COVER OF WATER LINE SHALL BE 5.0'
-1.50%
108' - 8" PVC SEWER @ 0.50%
102' - 8" PVC SEWER @ 0.50%
273' - 8" PVC SEWER @ 0.50%
STA. 13+79.19 (-11' L) PROP. SMH-65 RIM 168.98 INV IN 160.14 (8") INV OUT 160.04 (8")
STA. 14+80.95 (-9' L) PROP. SMH-66 RIM 169.10 INV IN 160.75 (8") INV OUT 160.65 (8")
BVCS: 16+01.28 BVCE: 167.48
LOW POINT ELEV = 166.92
LOW POINT STA = 16+76.28
PVI STA = 17+18.59
PVI ELEV = 165.72
A.D. = 1.38
K = 50.00
234.63' VC
STA. 16+81.65 (11' R) DMH-49 RIM = 166.69 INV IN = 163.32 (12") INV IN = 163.32 (12") INV OUT = 163.32 (12")
STA. 16+90.38 (12' R) CB-92 RIM = 166.70 INV OUT = 163.42 (12")
STA. 16+90.38 (-12' L) CB-93 RIM = 166.70 INV OUT = 163.42 (12")
9' - 12" HDPE @ 1.14%
25' - 12" HDPE @ 0.40%
PROP. 8" CLDI WATER LINE (TYP.)
TO HYDRANT
STA. 17+54.12 (-3' L) PROP. SMH-67 RIM 167.46 INV IN 162.22 (8") INV OUT 162.12 (8")
99' - 8" PVC SEWER @ 0.50%
STA. 18+10.52 (-9' L) DMH-62 RIM = 168.53 INV IN = 163.84 (12") INV OUT = 163.84 (12")
STA. 18+23.01 (-9' L) DMH-50 RIM = 168.88 INV IN = 165.90 (12") INV IN = 165.90 (12") INV OUT = 165.90 (12")
EVCS: 18+35.91 EVCE: 169.46
STA. 18+33.59 (-12' L) CB-94 RIM = 169.16 INV OUT = 166.00 (12")
STA. 18+43.36 (12' R) CB-95 RIM = 169.47 INV OUT = 166.05 (12")
10' - 12" HDPE @ 0.98%
29' - 12" HDPE @ 0.51%
STA. 18+53.17 (-3' L) PROP. SMH-68 RIM 169.95 INV IN 162.81 (8") INV OUT 162.71 (8")
130' - 8" PVC SEWER @ 0.50%
3.19%
STA. 19+86.87 (-3' L) PROP. SMH-69 RIM 174.22 INV IN 163.56 (8") INV OUT 163.46 (8")
173' - 8" PVC SEWER @ 0.50%
TO HYDRANT
STA. 21+41.34 (-19' L) CB-97 RIM = 179.52 INV OUT = 176.52 (12")
8"CLDI WATER MAIN IN ROAD I
ROAD I STA. 5+00.11
ROAD H STA. 21+48.32
156.7 164.63
157.0 165.01
157.7 165.38
158.4 165.76
159.8 166.13
161.4 166.51
161.6 166.88
162.2 167.26
163.2 167.63
163.0 168.01
163.2 168.38
163.9 168.76
165.6 169.13
168.4 169.48
170.2 169.65
171.2 169.62
171.9 169.37
171.4 169.00
169.8 168.62
166.2 168.25
163.6 167.87
162.2 167.50
161.3 167.18
161.6 166.98
162.4 166.92
163.4 166.97
164.9 167.15
165.9 167.46
167.2 167.89
168.3 168.45
168.6 169.13
169.0 169.91
169.7 170.71
171.3 171.51
175.0 172.31
178.9 173.11
180.1 173.90
179.5 174.70
177.8 175.50
179.7 176.30
181.2 177.10
180.6 177.90
182.4 178.69
181.1 179.49
11+00
11+50
12+00
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20+50
21+00
21+50
22+00

ROAD H PROFILE

SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:

SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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SHEET TITLE:

ROAD H PLAN AND PROFILE B

SHEET NUMBER:
50
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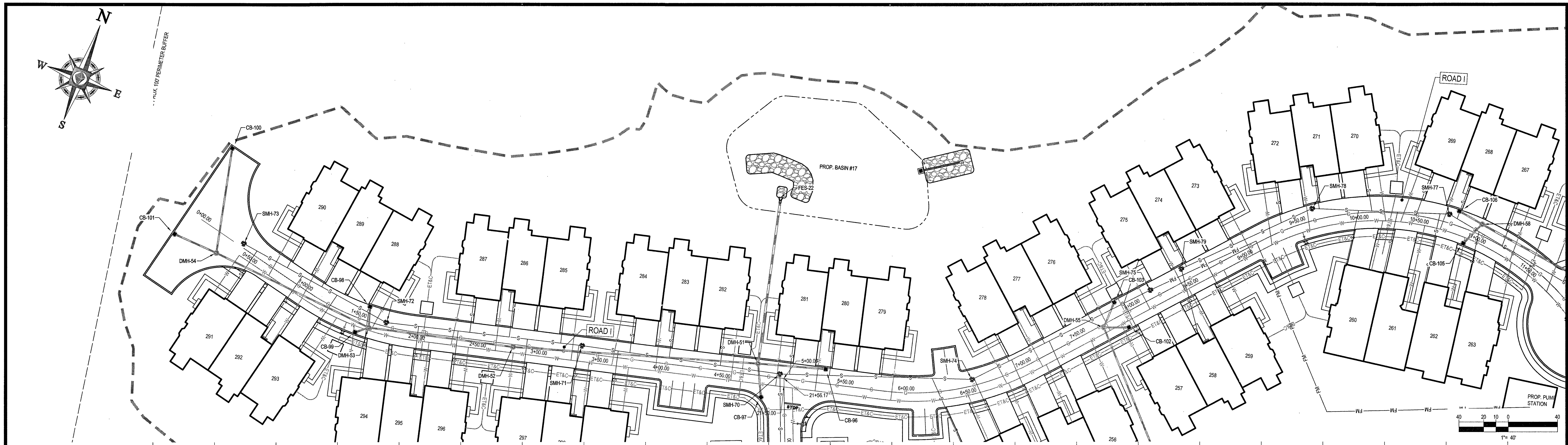

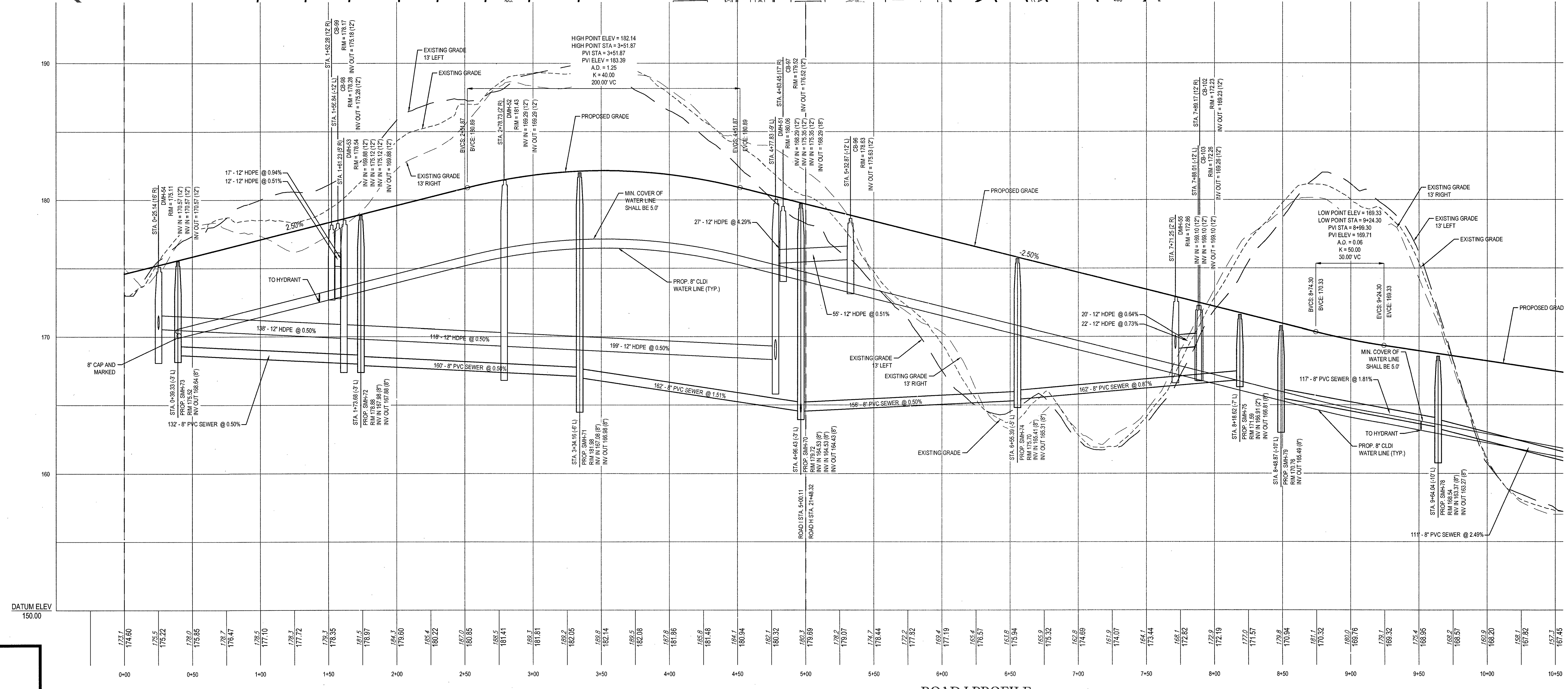

ROAD I PROFILE

SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

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DATE: 11/18/2016
SCALE: AS NOTED
CAD I.D.: W161041_SS3_PROFILES

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FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET TITLE:
ROAD I PLAN AND PROFILE A

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51
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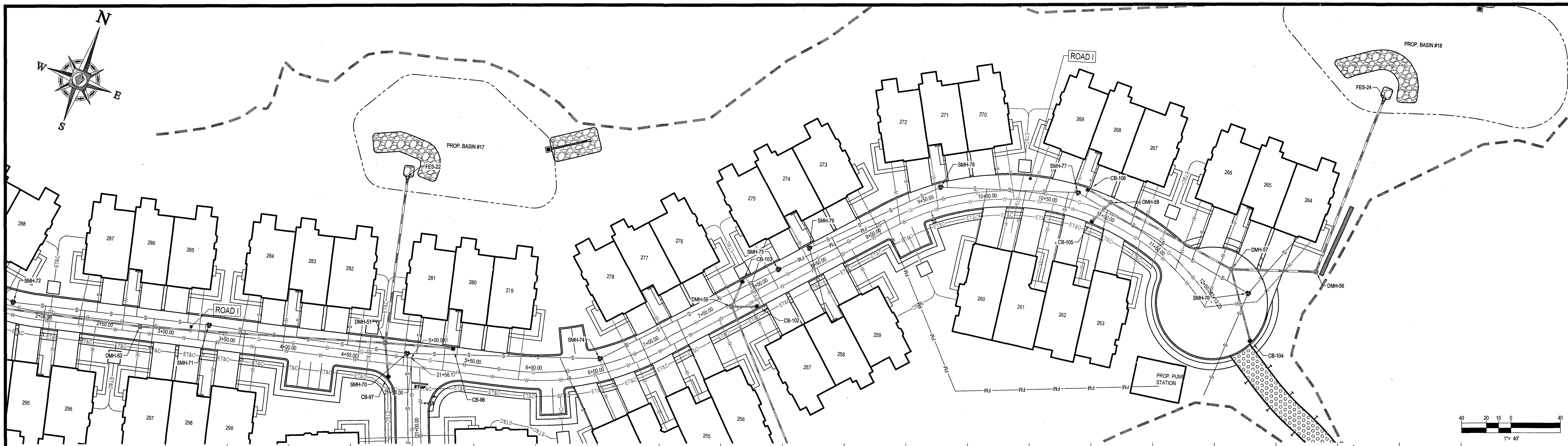

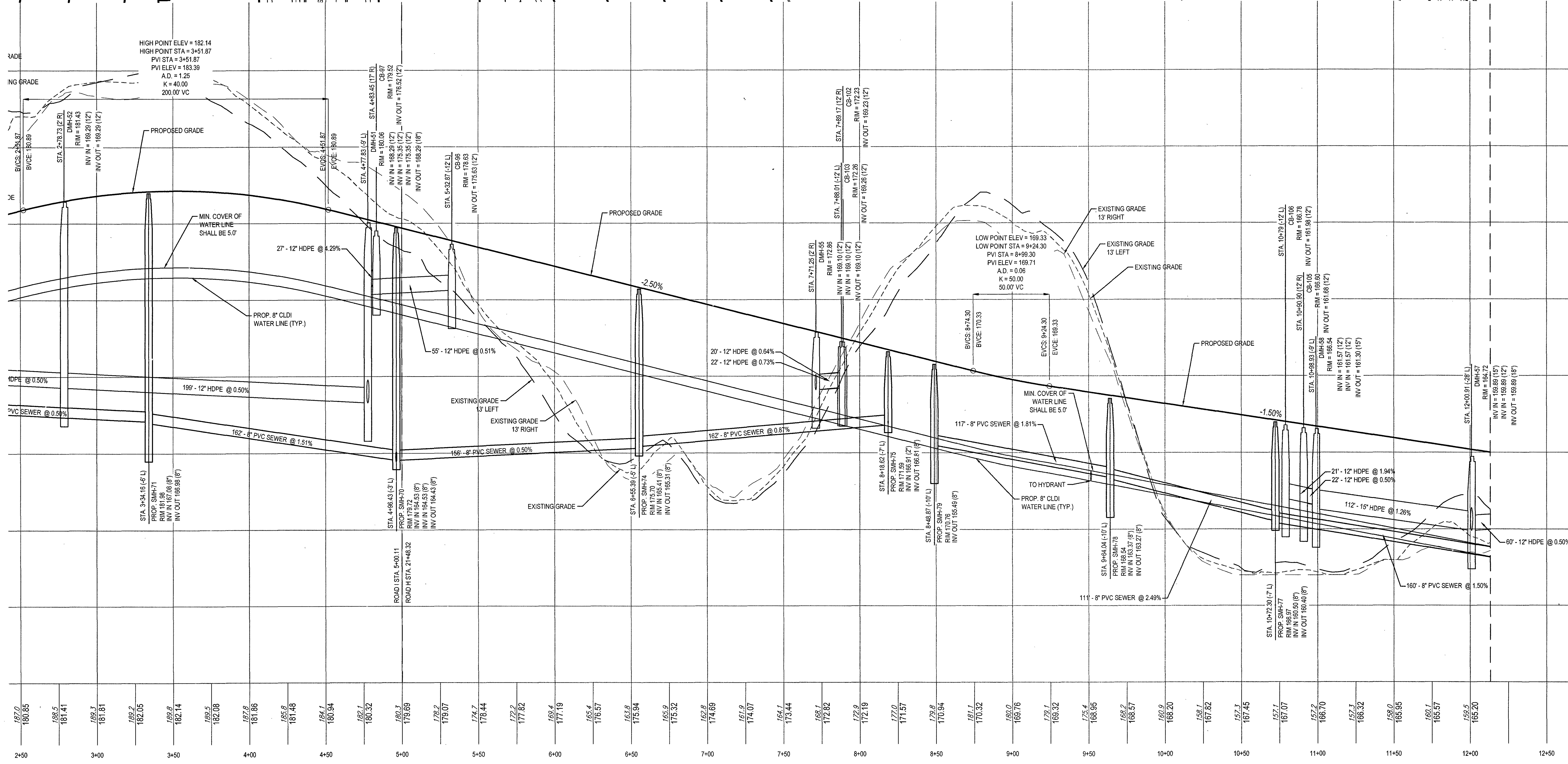
HIGH POINT ELEV = 182.14
HIGH POINT STA = 3+51.87
PVI STA = 3+51.87
PVI ELEV = 183.39
A.D. = 1.25
K = 40.00
200.00' VC
PROPOSED GRADE
MIN. COVER OF WATER LINE SHALL BE 5.0'
PROP. 8" CLDI WATER LINE (TYP.)
199' - 12" HDPE @ 0.50%
162' - 8" PVC SEWER @ 1.51%
156' - 8" PVC SEWER @ 0.50%
27' - 12" HDPE @ 4.29%
55' - 12" HDPE @ 0.51%
-2.50%
20' - 12" HDPE @ 0.64%
22' - 12" HDPE @ 0.73%
162' - 8" PVC SEWER @ 0.87%
117' - 8" PVC SEWER @ 1.81%
EXISTING GRADE 13' LEFT
EXISTING GRADE 13' RIGHT
EXISTING GRADE
LOW POINT ELEV = 169.33
LOW POINT STA = 9+24.30
PVI STA = 8+99.30
PVI ELEV = 169.71
A.D. = 0.06
K = 50.00
50.00' VC
TO HYDRANT
111' - 8" PVC SEWER @ 2.49%
-1.50%
21' - 12" HDPE @ 1.94%
22' - 12" HDPE @ 0.50%
112' - 15" HDPE @ 1.26%
160' - 8" PVC SEWER @ 1.50%
60' - 12" HDPE @ 0.50%
STA. 3+34.16 (-6' L) PROP. SMH-71 RIM 181.98 INV IN 167.08 (8") INV OUT 166.98 (8")
STA. 4+96.43 (-3' L) PROP. SMH-70 RIM 179.72 INV IN 164.53 (8") INV IN 164.53 (8") INV OUT 164.43 (8")
ROAD I STA. 5+00.11 ROAD H STA. 21+48.32
STA. 6+55.39 (-5' L) PROP. SMH-74 RIM 175.70 INV IN 165.41 (8") INV OUT 165.31 (8")
STA. 8+18.62 (-7' L) PROP. SMH-75 RIM 171.59 INV IN 166.91 (2") INV OUT 166.81 (8")
STA. 8+48.87 (-10' L) PROP. SMH-79 RIM 170.76 INV OUT 165.49 (8")
STA. 9+64.04 (-10' L) PROP. SMH-78 RIM 168.54 INV IN 163.37 (8") INV OUT 163.27 (8")
STA. 10+72.30 (-7' L) PROP. SMH-77 RIM 166.97 INV IN 160.50 (8") INV OUT 160.40 (8")
190
180
170
160
2+50
3+00
3+50
4+00
4+50
5+00
5+50
6+00
6+50
7+00
7+50
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11+50
12+00
12+50

ROAD I PROFILE

SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:
SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
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SHEET TITLE:
ROAD I PLAN AND PROFILE B

SHEET NUMBER:
52
OF 74

REV 0 - 11/18/2016

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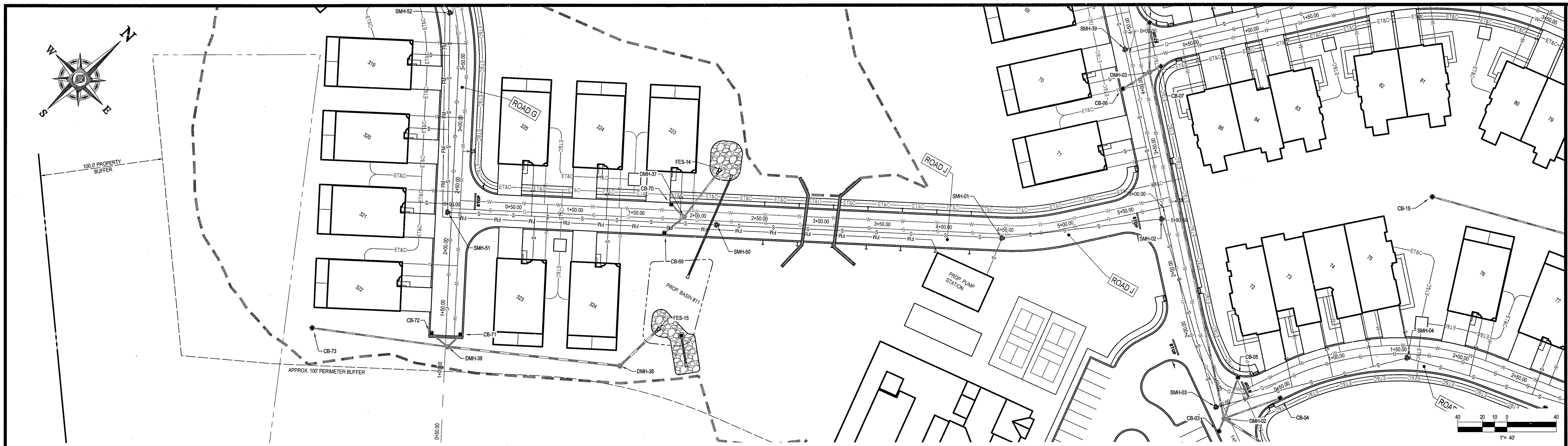

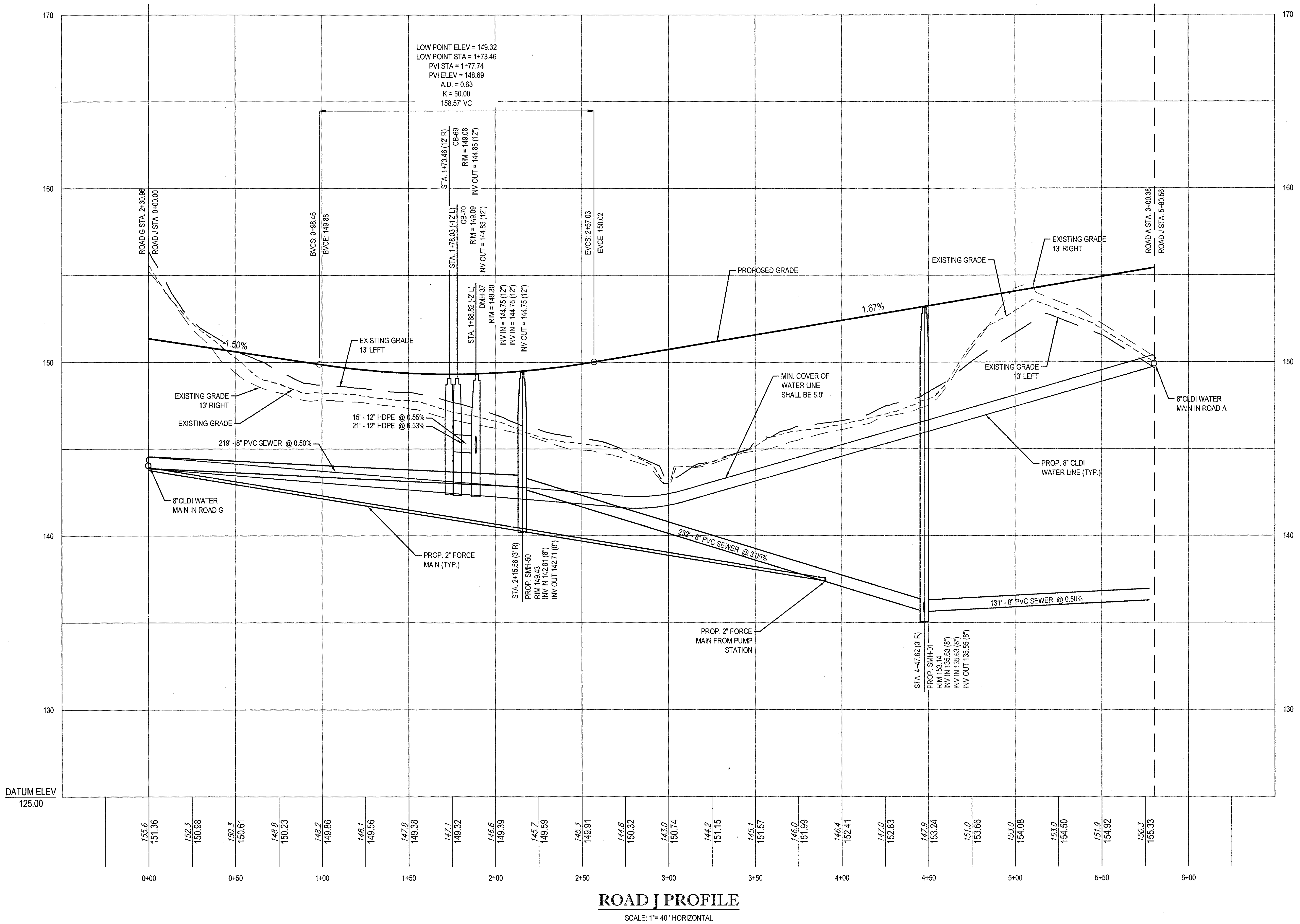

ROAD J PROFILE

SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

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PROJECT:
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FOR
Toll Brothers

LOCATION OF SITE
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MAP# 05, LOT# 35
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SHEET TITLE:
ROAD J PLAN AND PROFILE

SHEET NUMBER:
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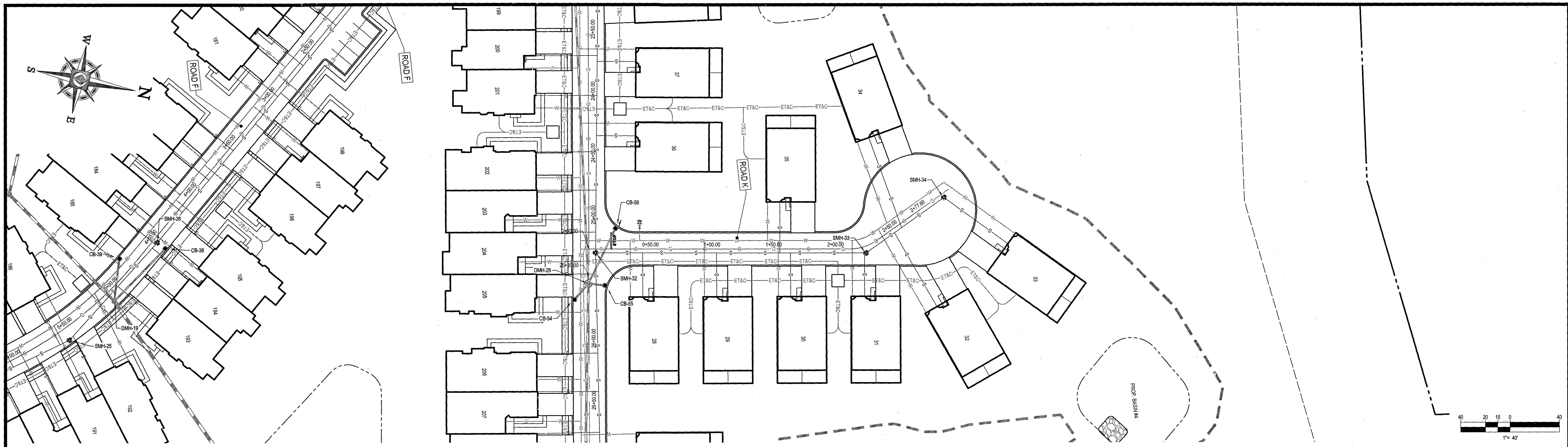

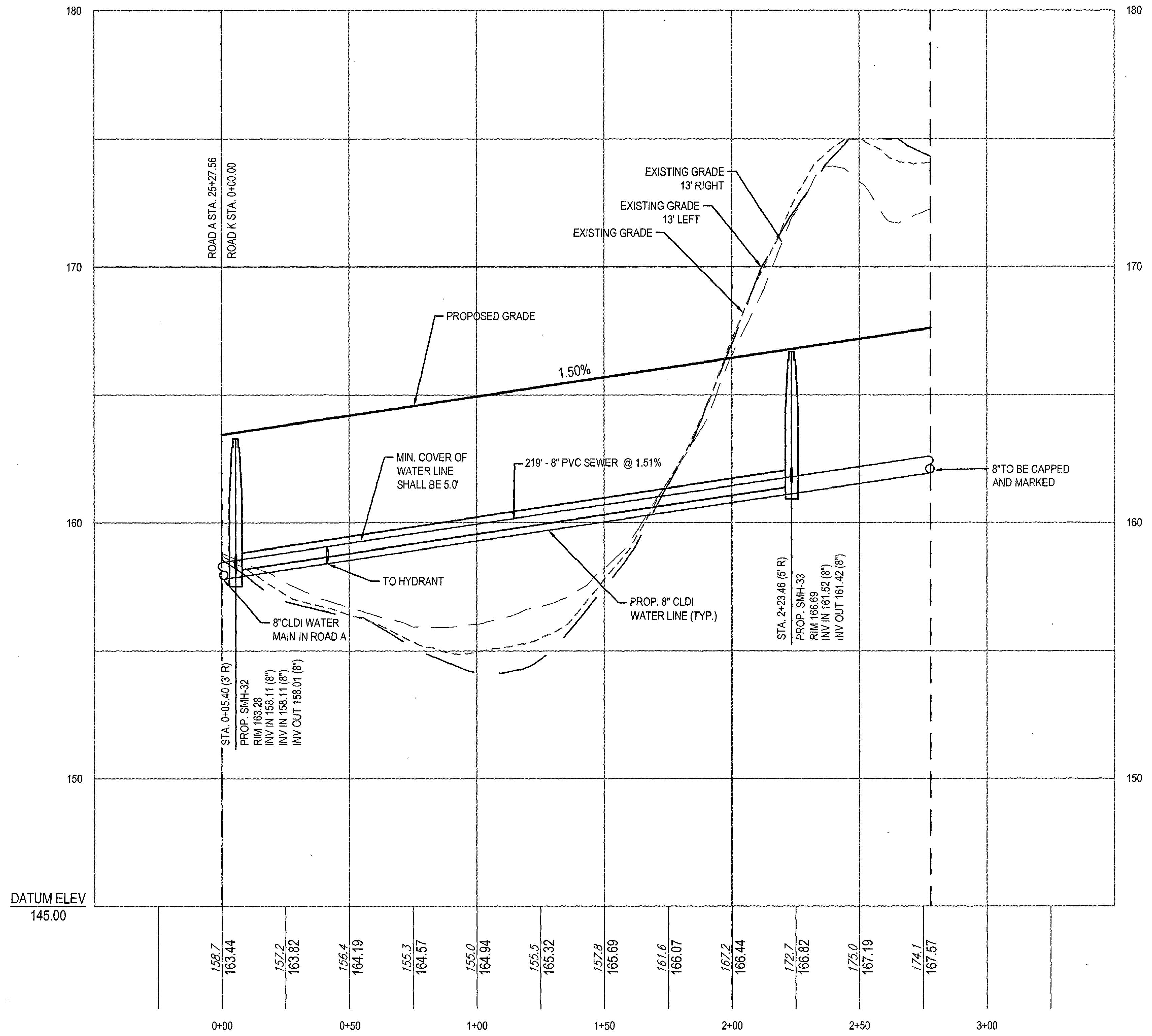

ROAD K PROFILE

SCALE: 1"= 40 ' HORIZONTAL
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ROAD K PLAN AND PROFILE

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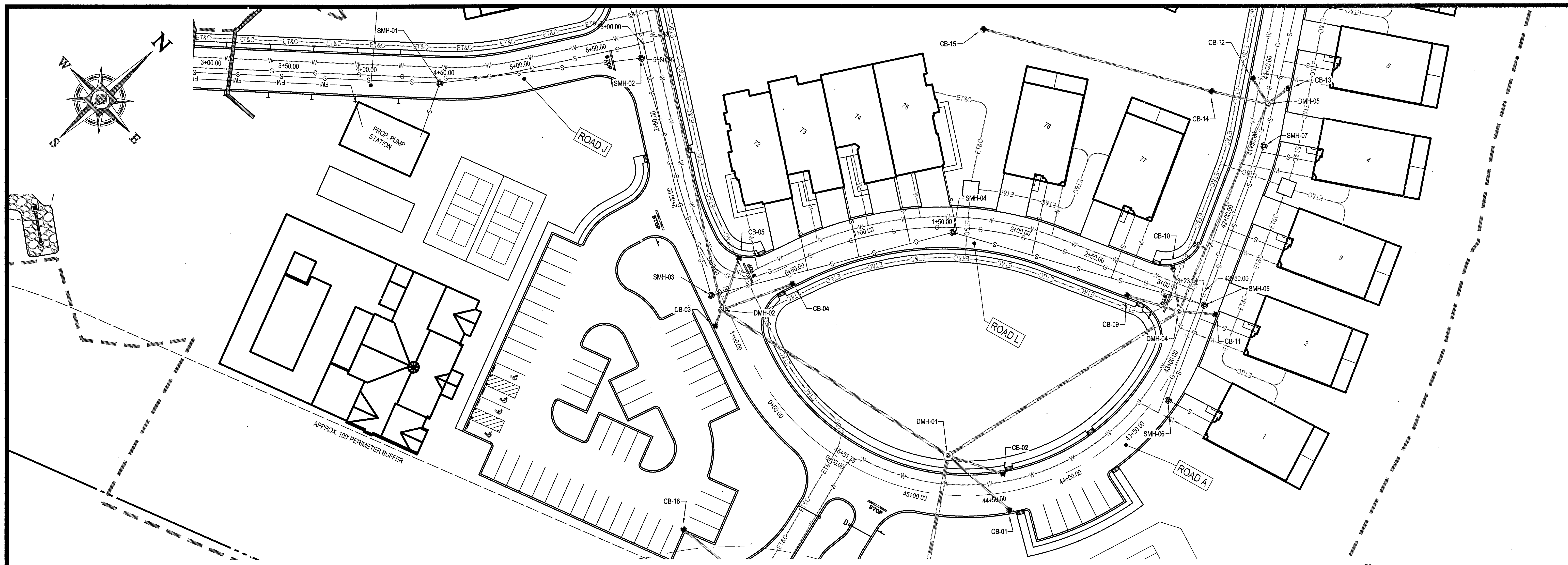

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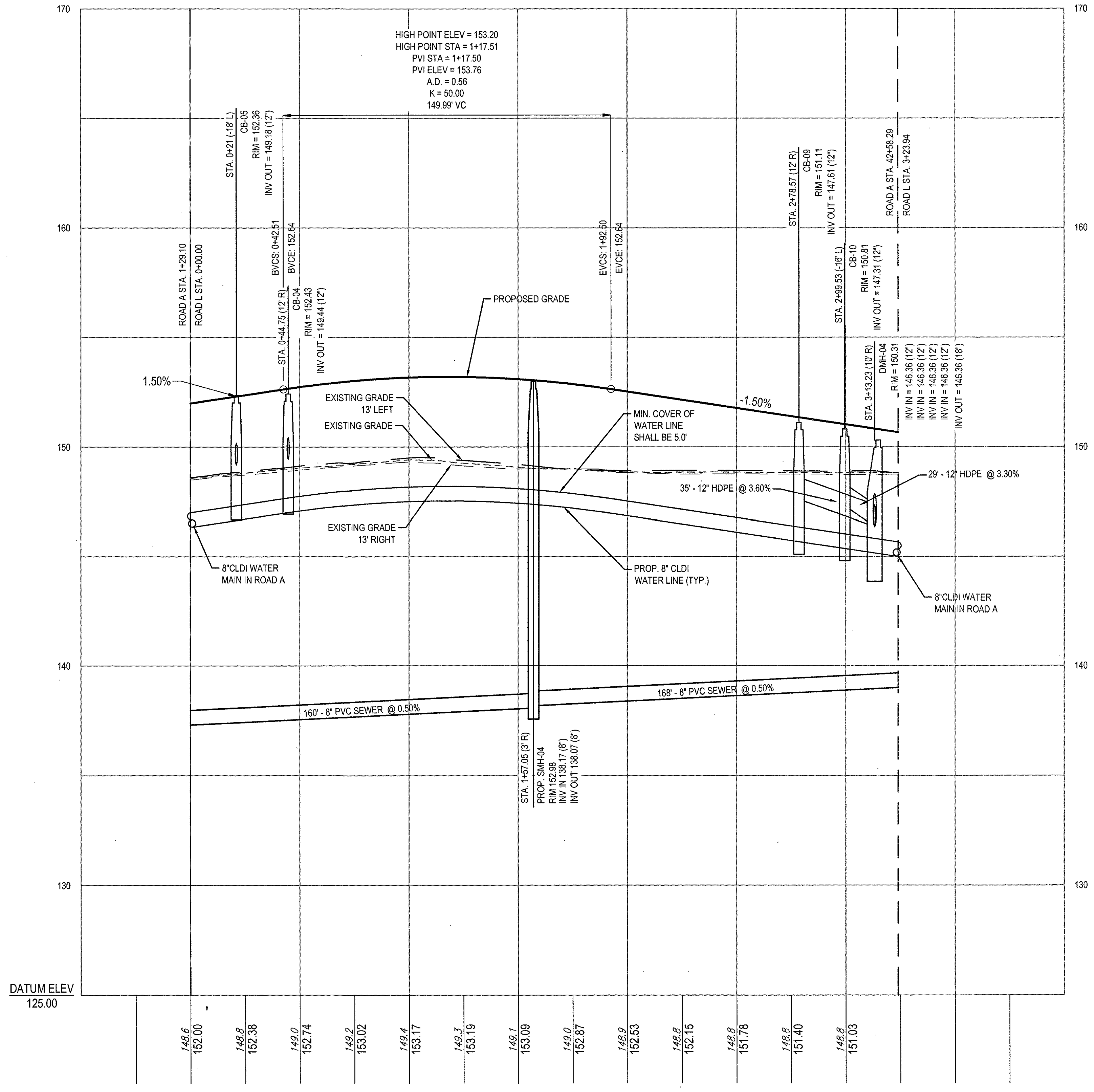

ROAD L PROFILE

SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

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SHEET TITLE:
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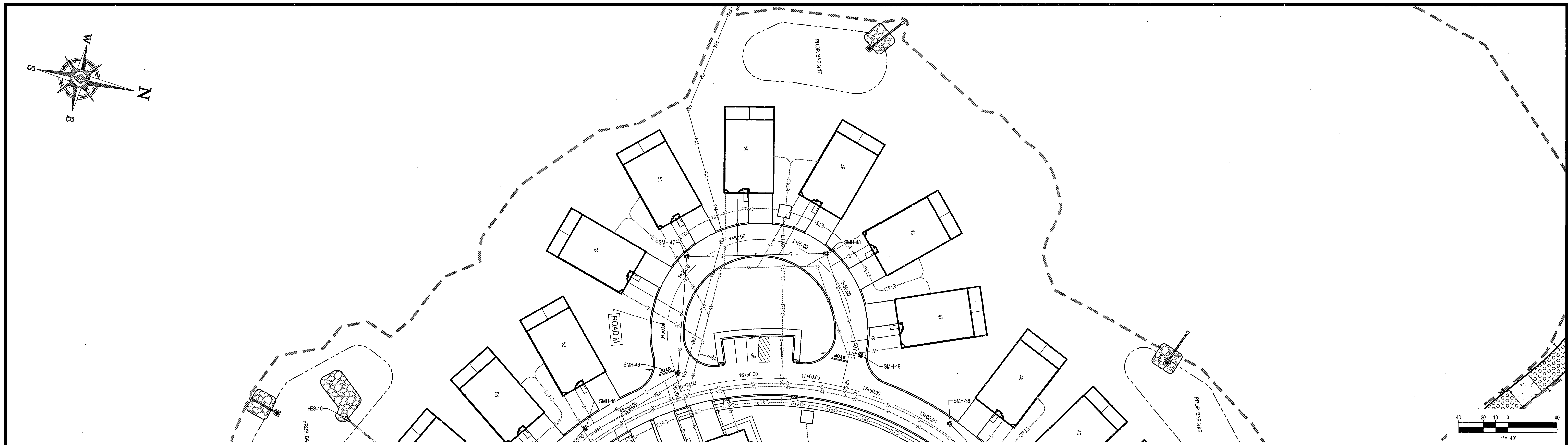

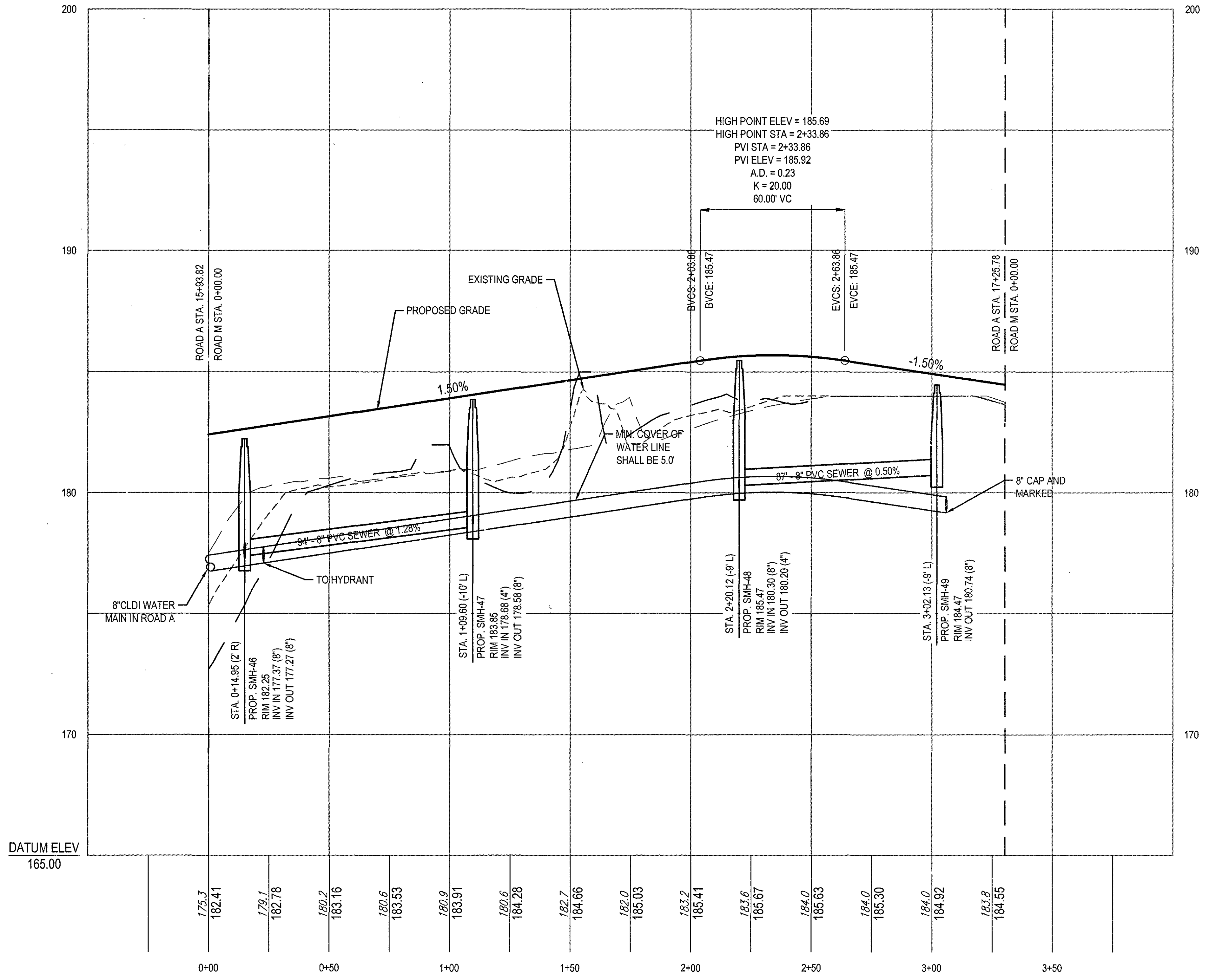

ROAD M PROFILE

SCALE: 1"= 40 ' HORIZONTAL
1"= 4 ' VERTICAL

811

Know what's below.
Call before you dig.

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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_PROFILES

PROJECT:

SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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CONNECTICUT LICENSE No. [illegible]1854
NEW HAMPSHIRE LICENSE No. 10280
MAINE LICENSE No. 9490
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

WILLIAM D GOEBEL CIVIL 42644

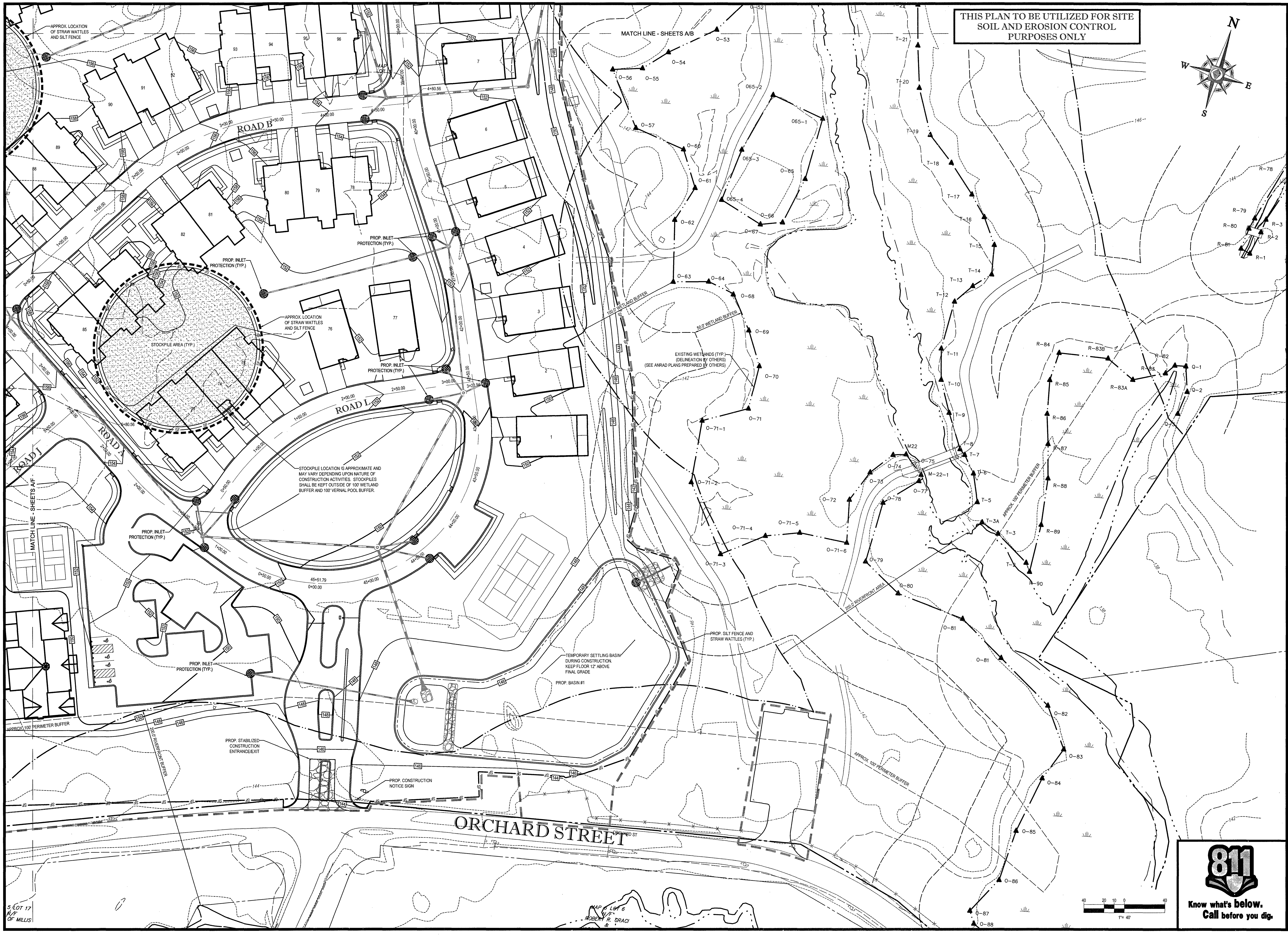
SHEET TITLE:

ROAD M PLAN AND PROFILE

SHEET NUMBER:
56
OF 74

REV 0 - 11/18/2016

THIS PLAN TO BE UTILIZED FOR SITE SOIL AND EROSION CONTROL PURPOSES ONLY


MATCH LINE - SHEETS A/B
MATCH LINE - SHEETS A/F
N
E
S
W
ROAD B
ROAD L
ROAD A
ROAD J
ORCHARD STREET
APPROX. LOCATION OF STRAW WATTLES AND SILT FENCE
STOCKPILE AREA (TYP.)
PROP. INLET PROTECTION (TYP.)
STOCKPILE LOCATION IS APPROXIMATE AND MAY VARY DEPENDING UPON NATURE OF CONSTRUCTION ACTIVITIES. STOCKPILES SHALL BE KEPT OUTSIDE OF 100' WETLAND BUFFER AND 100' VERNAL POOL BUFFER.
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
TEMPORARY SETTLING BASIN DURING CONSTRUCTION. KEEP FLOOR 12" ABOVE FINAL GRADE
PROP. BASIN #1
PROP. SILT FENCE AND STRAW WATTLES (TYP.)
PROP. STABILIZED CONSTRUCTION ENTRANCE/EXIT
PROP. CONSTRUCTION NOTICE SIGN
APPROX. 100' PERIMETER BUFFER
200.0' RIVERFRONT AREA
100.0' RIVERFRONT BUFFER
SF
5 LOT 17 N/F OF MILLIS
MAP 5 LOT 6 N/F ROBERT R. GRACI &
1" = 40'

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PERMIT SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN A

SHEET NUMBER:
57
OF 74

REV 0 - 11/18/2016

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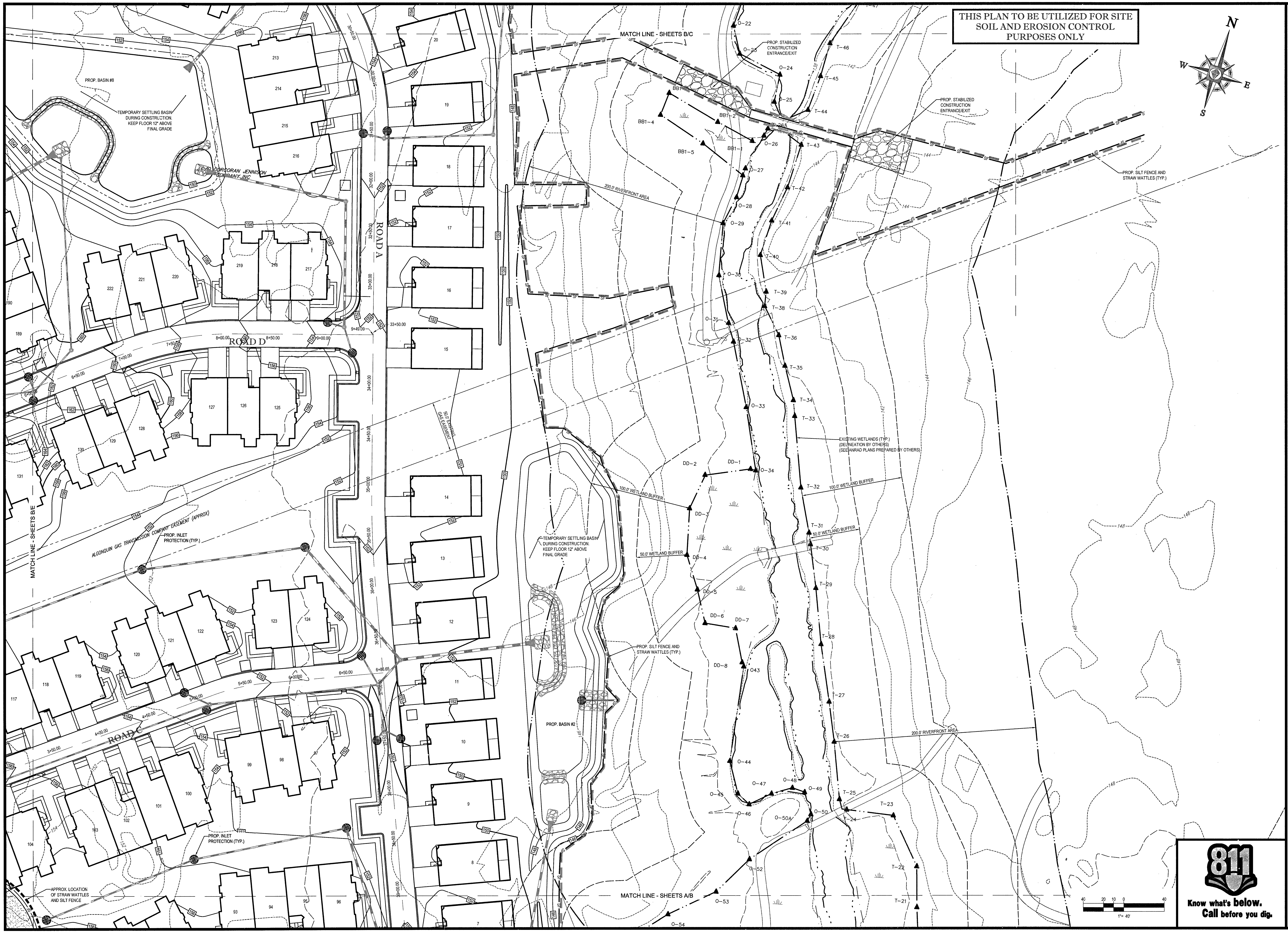

811

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- ◆ BALTIMORE, MD
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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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FLORIDA LICENSE No. 66202

WILLIAM D. GOEBEL
CIVIL
42644

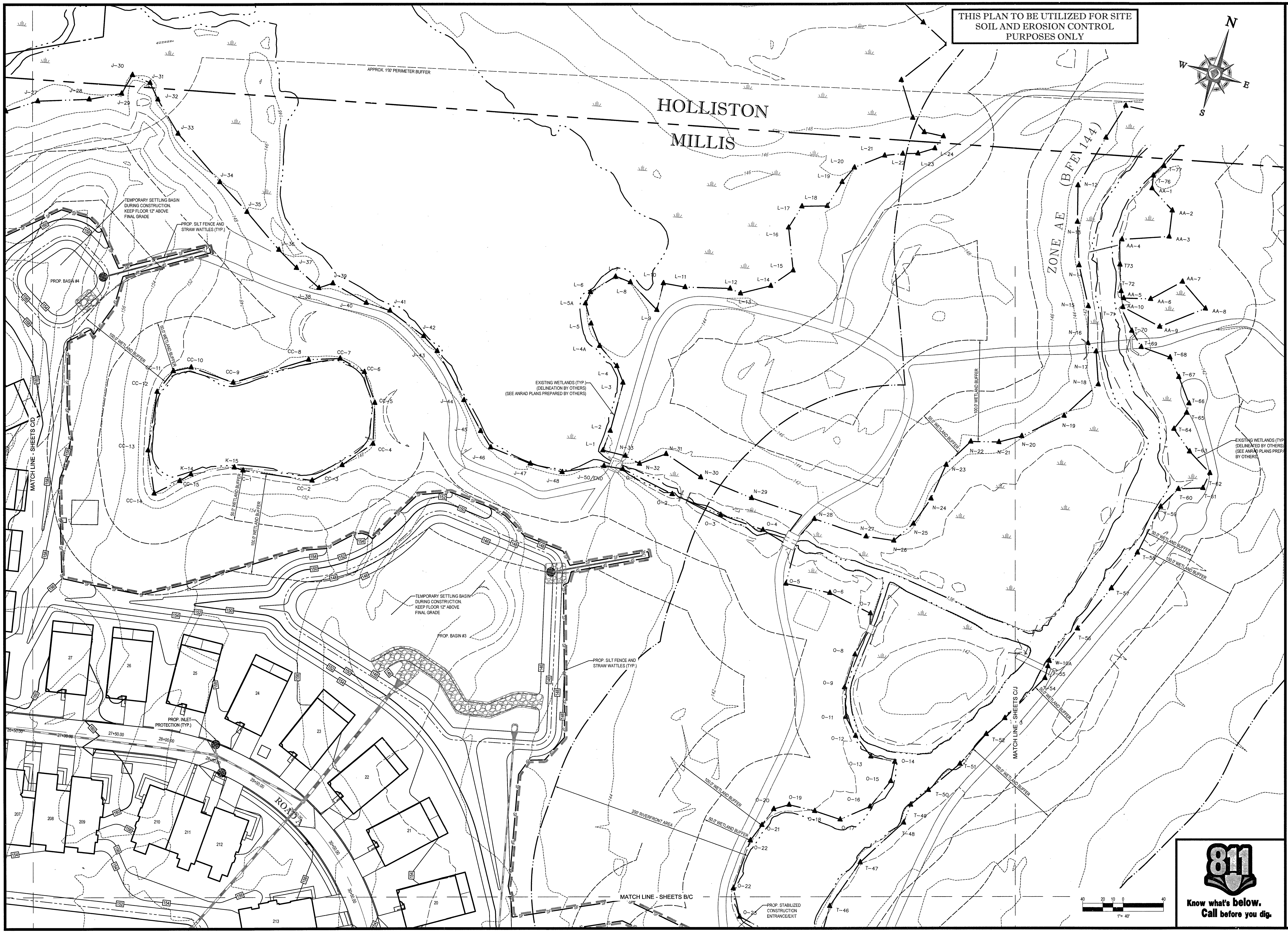
SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN B

SHEET NUMBER:
58
OF 74

REV 0 - 11/18/2016

THIS PLAN TO BE UTILIZED FOR SITE SOIL AND EROSION CONTROL PURPOSES ONLY


HOLLISTON
MILLIS
ZONE AE (BFE 144)
APPROX. 100' PERIMETER BUFFER
TEMPORARY SETTLING BASIN DURING CONSTRUCTION. KEEP FLOOR 12" ABOVE FINAL GRADE
PROP. SILT FENCE AND STRAW WATTLES (TYP.)
PROP. BASIN #4
PROP. BASIN #3
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
200' RIVERFRONT AREA
PROP. INLET PROTECTION (TYP.)
PROP. STABILIZED CONSTRUCTION ENTRANCE/EXIT
ROAD A
MATCH LINE - SHEETS C/D
MATCH LINE - SHEETS C/J
MATCH LINE - SHEETS B/C
N
E
S
W
1"= 40'
811
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- NORTHERN VIRGINIA
- CENTRAL VIRGINIA
- RALEIGH, NC
- CHARLOTTE, NC
- TAMPA, FL
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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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WILLIAM D GOEBEL CIVIL 42844

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SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN C

SHEET NUMBER:
59
OF 74

REV 0 - 11/18/2016

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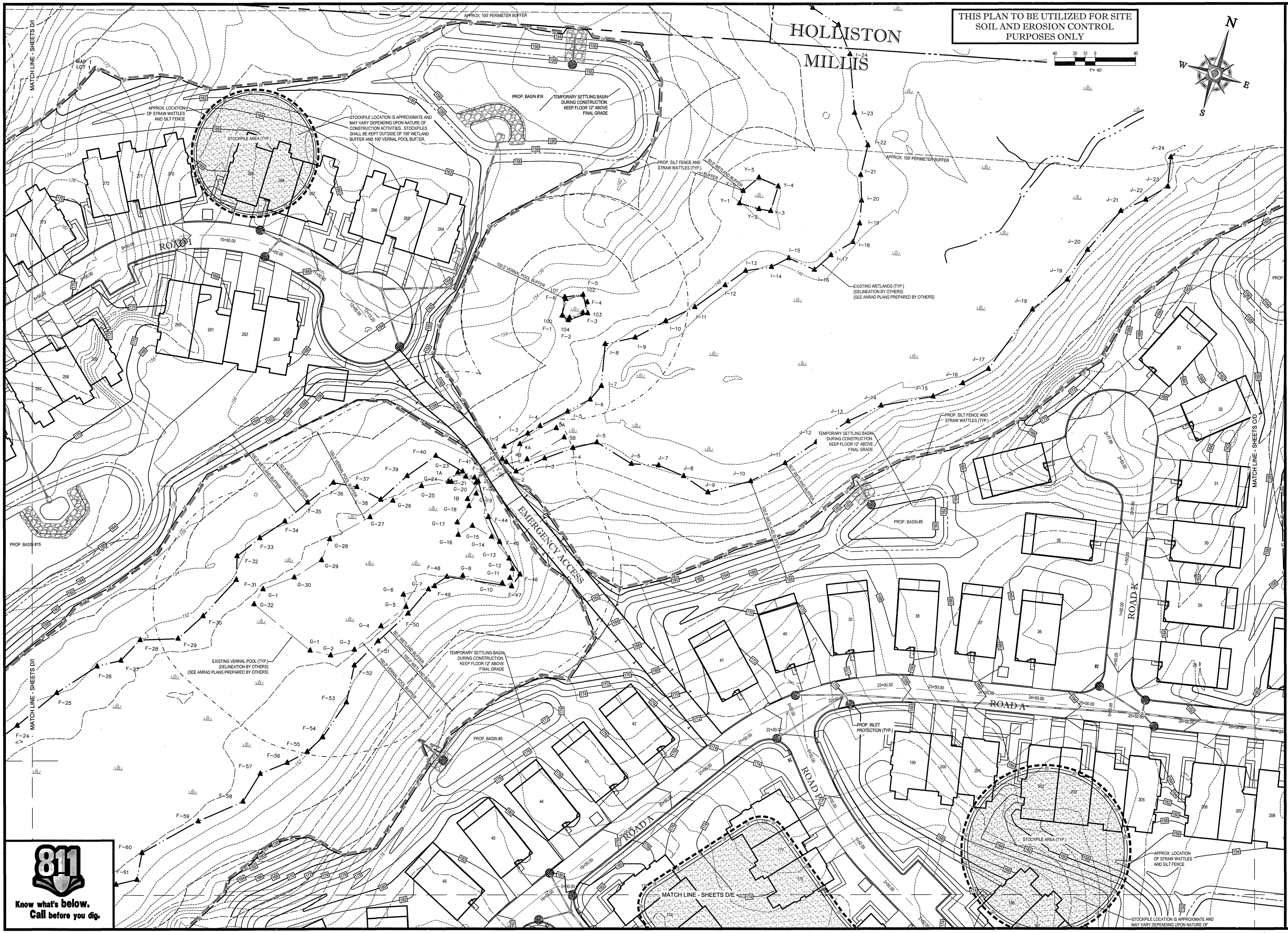
HOLLISTON
MILLIS
40 20 10 0 40
1" = 40'
N
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W
APPROX. 100' PERIMETER BUFFER
MATCH LINE - SHEETS D/I
MAP 1 LOT 1
APPROX. LOCATION OF STRAW WATTLES AND SILT FENCE
STOCKPILE AREA (TYP.)
STOCKPILE LOCATION IS APPROXIMATE AND MAY VARY DEPENDING UPON NATURE OF CONSTRUCTION ACTIVITIES. STOCKPILES SHALL BE KEPT OUTSIDE OF 100' WETLAND BUFFER AND 100' VERNAL POOL BUFFER.
PROP. BASIN #18
TEMPORARY SETTLING BASIN DURING CONSTRUCTION. KEEP FLOOR 12" ABOVE FINAL GRADE
PROP. SILT FENCE AND STRAW WATTLES (TYP.)
50.0' WETLAND BUFFER
100.0' VERNAL POOL BUFFER
100.0' WETLAND BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
ROAD I
ROAD A
ROAD K
ROAD F
EMERGENCY ACCESS
PROP. BASIN #15
PROP. BASIN #5
PROP. BASIN #6
PROP. INLET PROTECTION (TYP.)
MATCH LINE - SHEETS C/D
MATCH LINE - SHEETS D/E

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- ◆ SOUTHEASTERN, PA
- ◆ REHOBOTH BEACH, DE
- ◆ BALTIMORE, MD
- ◆ SOUTHERN MARYLAND
- ◆ NORTHERN VIRGINIA
- ◆ CENTRAL VIRGINIA
- ◆ RALEIGH, NC
- ◆ CHARLOTTE, NC
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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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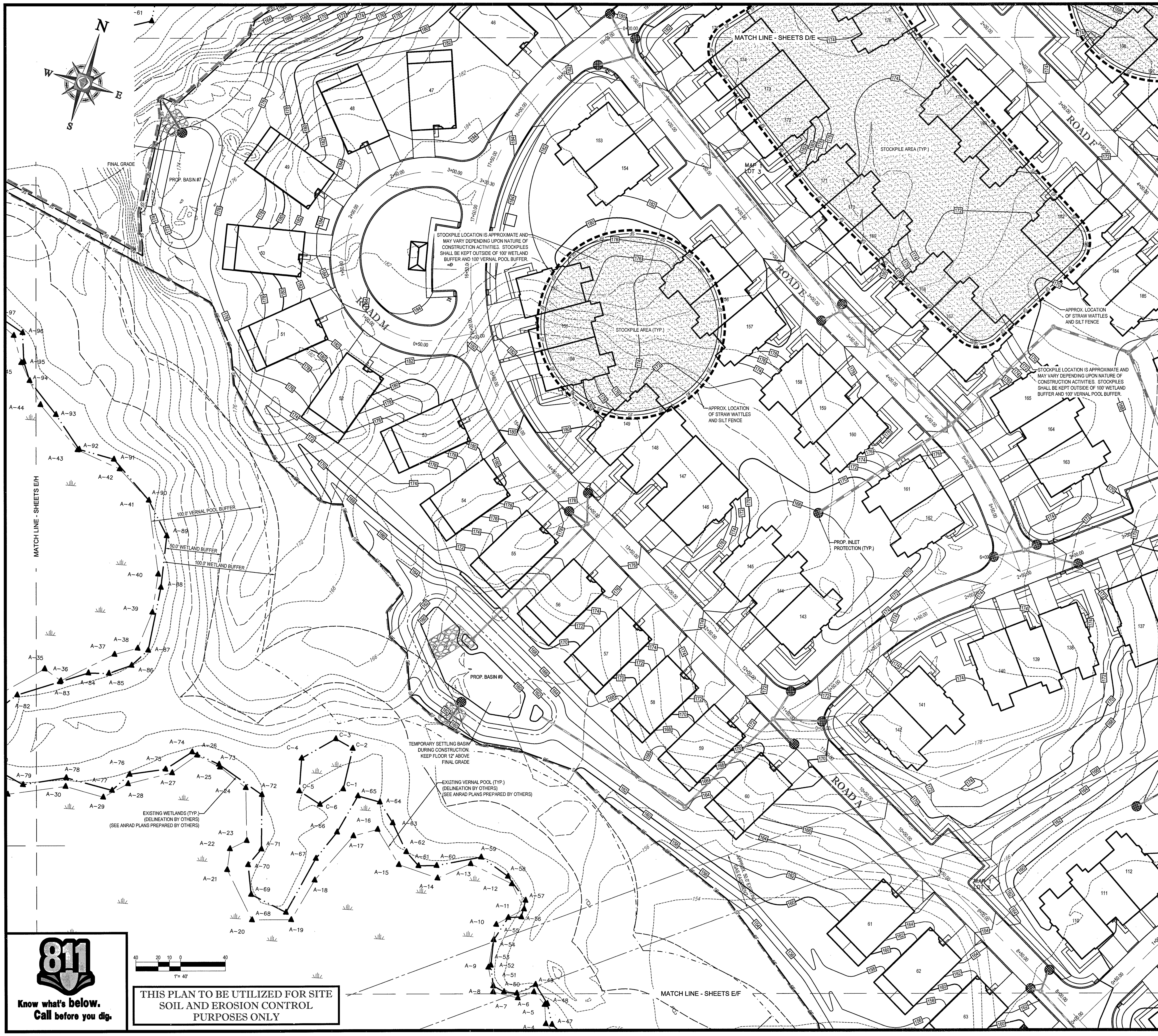
FLORIDA LICENSE No. 66202

WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN D

SHEET NUMBER:
60
OF 74

REV 0 - 11/18/2016


MATCH LINE - SHEETS D/E
MATCH LINE - SHEETS E/H
MATCH LINE - SHEETS B/E
MATCH LINE - SHEETS E/F
ROAD A
ROAD C
ROAD D
ROAD E
ROAD F
ROAD M
STOCKPILE LOCATION IS APPROXIMATE AND MAY VARY DEPENDING UPON NATURE OF CONSTRUCTION ACTIVITIES. STOCKPILES SHALL BE KEPT OUTSIDE OF 100' WETLAND BUFFER AND 100' VERNAL POOL BUFFER.
STOCKPILE AREA (TYP.)
APPROX. LOCATION OF STRAW WATTLES AND SILT FENCE
PROP. INLET PROTECTION (TYP.)
PROP. BASIN #7
PROP. BASIN #9
FINAL GRADE
TEMPORARY SETTLING BASIN DURING CONSTRUCTION. KEEP FLOOR 12" ABOVE FINAL GRADE
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
100.0' VERNAL POOL BUFFER
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
MAP LOT 3
MAP LOT 1
N
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S
W
1" = 40'
811
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- REHOBOTH BEACH, DE
- BALTIMORE, MD
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SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:

SITE DEVELOPMENT PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN E

SHEET NUMBER:
61
OF 74

REV 0 - 11/18/2016

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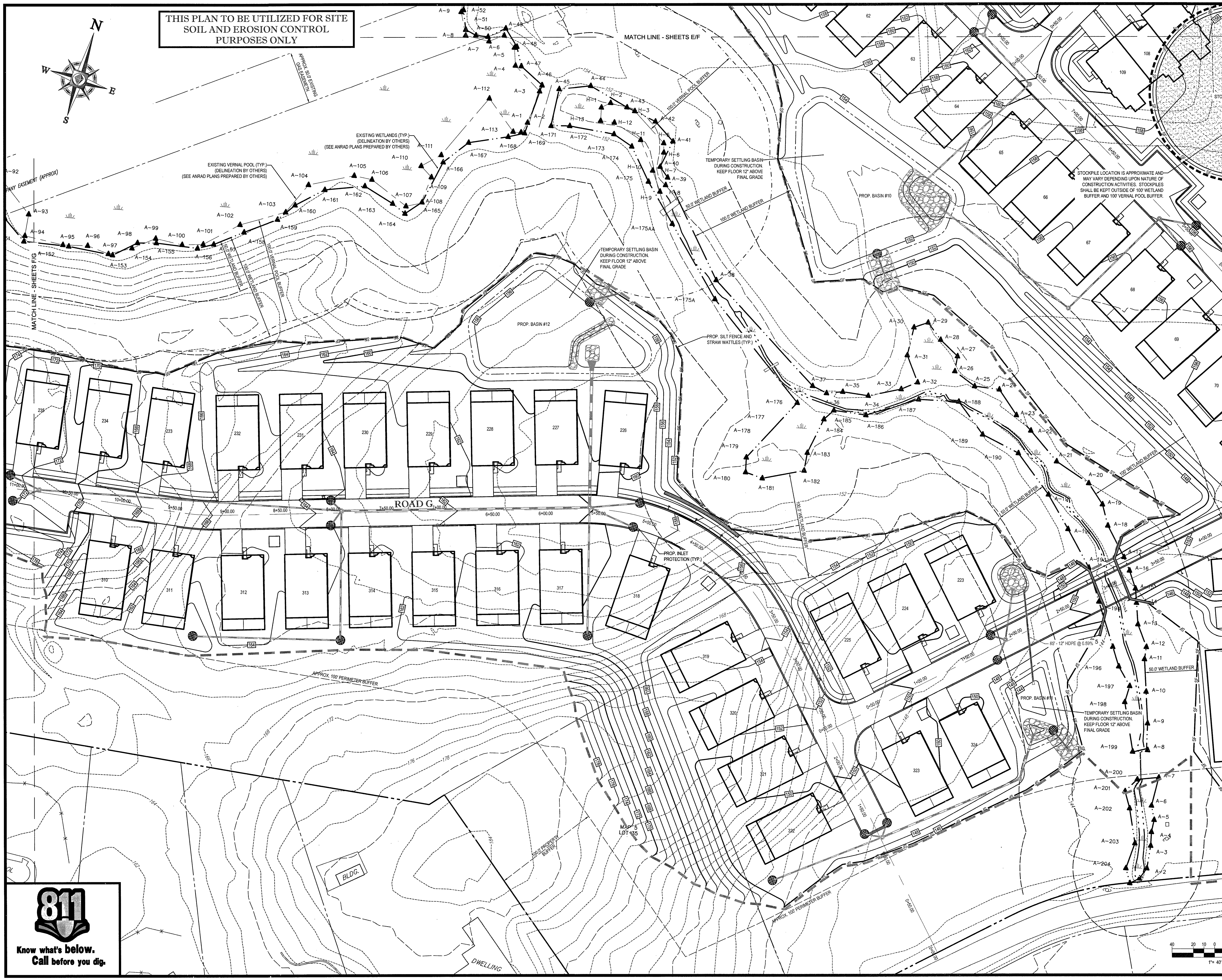
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MATCH LINE - SHEETS E/F
MATCH LINE - SHEETS F/G
MATCH LINE - SHEETS A/F
EXISTING WETLANDS (TYP.)
(DELINEATION BY OTHERS)
(SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.)
(DELINEATION BY OTHERS)
(SEE ANRAD PLANS PREPARED BY OTHERS)
TEMPORARY SETTLING BASIN DURING CONSTRUCTION. KEEP FLOOR 12" ABOVE FINAL GRADE
PROP. BASIN #10
PROP. BASIN #11
PROP. BASIN #12
PROP. SILT FENCE AND STRAW WATTLES (TYP.)
PROP. INLET PROTECTION (TYP.)
100.0' VERNAL POOL BUFFER
100.0' WETLAND BUFFER
50.0' WETLAND BUFFER
100' WETLAND BUFFER
STOCKPILE AREA (TYP.)
STOCKPILE LOCATION IS APPROXIMATE AND MAY VARY DEPENDING UPON NATURE OF CONSTRUCTION ACTIVITIES. STOCKPILES SHALL BE KEPT OUTSIDE OF 100' WETLAND BUFFER AND 100' VERNAL POOL BUFFER.
ROAD G
ROAD J
83' - 12" HDPE @ 0.59%
APPROX. 100' PERIMETER BUFFER
100.0' PROPERTY BUFFER
MAP 5 LOT 35
BLDG.
DWELLING
811
Know what's below.
Call before you dig.
40 20 10 0 40
1"= 40'

TM

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PROJECT:

SITE DEVELOPMENT PLANS

FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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COMMONWEALTH OF MASSACHUSETTS
WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN F

SHEET NUMBER:
62
OF 74

REV 0 - 11/18/2016

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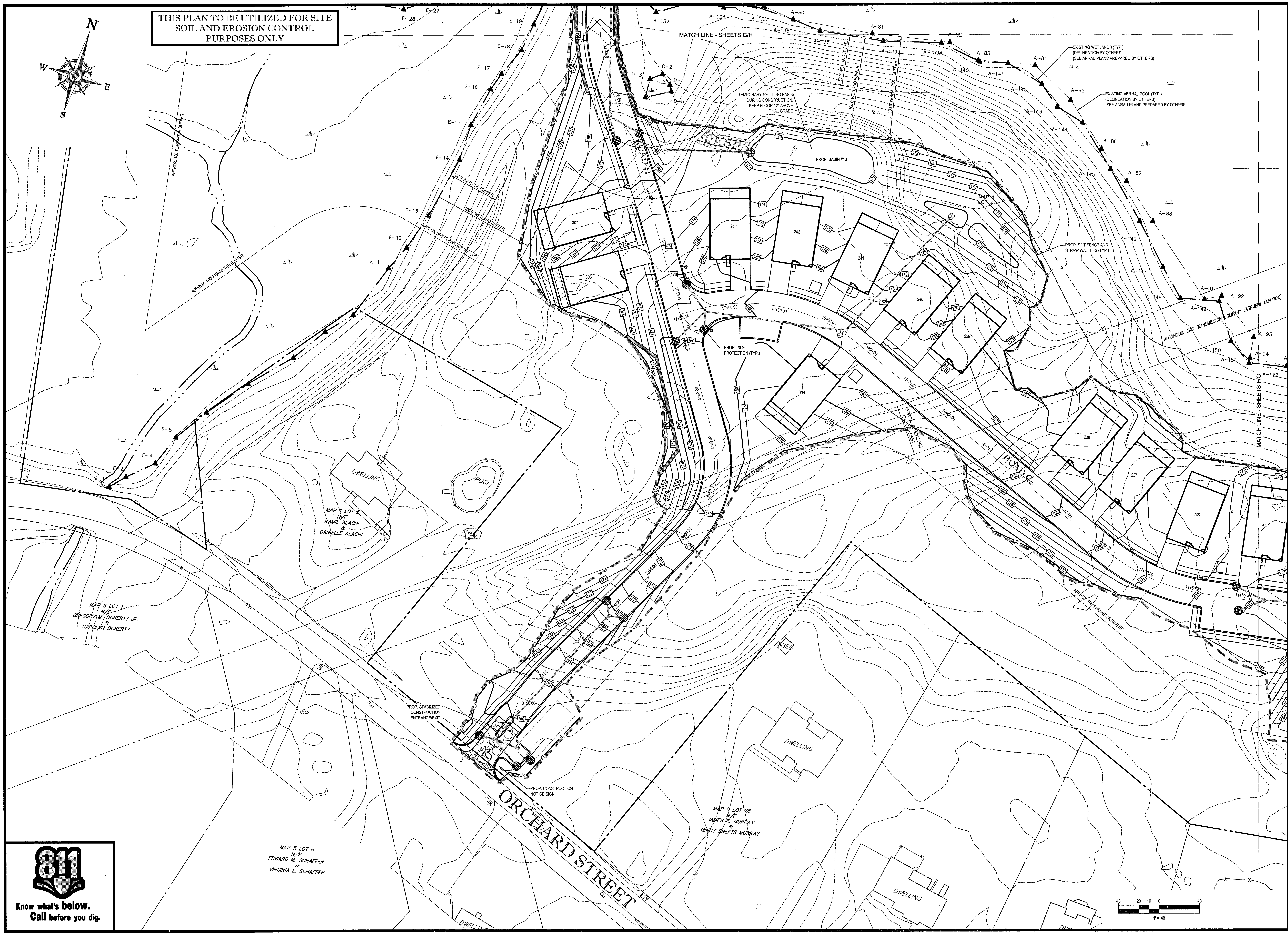
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TEMPORARY SETTLING BASIN DURING CONSTRUCTION. KEEP FLOOR 12" ABOVE FINAL GRADE
PROP. BASIN #13
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
100.0' VERNAL POOL BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
PROP. SILT FENCE AND STRAW WATTLES (TYP.)
ALGONQUIN GAS TRANSMISSION COMPANY EASEMENT (APPROX)
APPROX. 50' EXISTING GAS EASEMENT
PROP. INLET PROTECTION (TYP.)
MAP 1 LOT 4
ROAD C
ROAD H
APPROX. 100' PERIMETER BUFFER
307
308
243
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241
240
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309
238
237
236
DWELLING
POOL
SHED
MAP 1 LOT 5 N/F KAMIL ALACHI & DANIELLE ALACHI
MAP 5 LOT 1 N/F GREGORY M. DOHERTY JR. & CAROLYN DOHERTY
MAP 5 LOT 28 N/F JAMES R. MURRAY & MINDY SHEFTS MURRAY
MAP 5 LOT 8 N/F EDWARD M. SCHAFFER & VIRGINIA L. SCHAFFER
PROP. STABILIZED CONSTRUCTION ENTRANCE/EXIT
PROP. CONSTRUCTION NOTICE SIGN
ORCHARD STREET
40 20 10 0 40
1"= 40'

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PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN G

SHEET NUMBER:
63
OF 74

REV 0 - 11/18/2016

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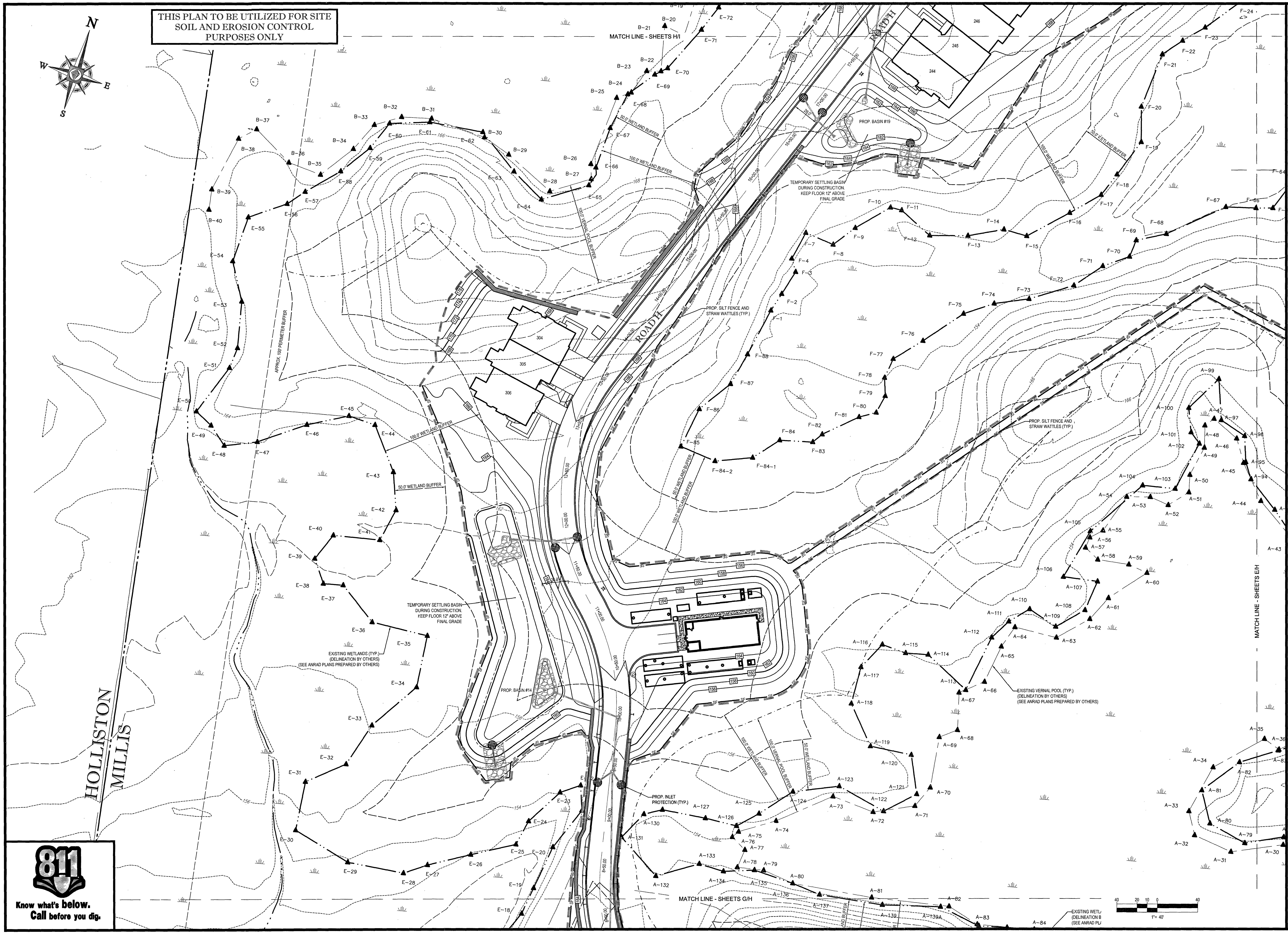
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APPROX. 100' PERIMETER BUFFER
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
100.0' VERNAL POOL BUFFER
PROP. BASIN #19
PROP. BASIN #14
TEMPORARY SETTLING BASIN DURING CONSTRUCTION. KEEP FLOOR 12" ABOVE FINAL GRADE
PROP. SILT FENCE AND STRAW WATTLES (TYP.)
PROP. INLET PROTECTION (TYP.)
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
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SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
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WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN H

SHEET NUMBER:
64
OF 74

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SOIL AND EROSION CONTROL
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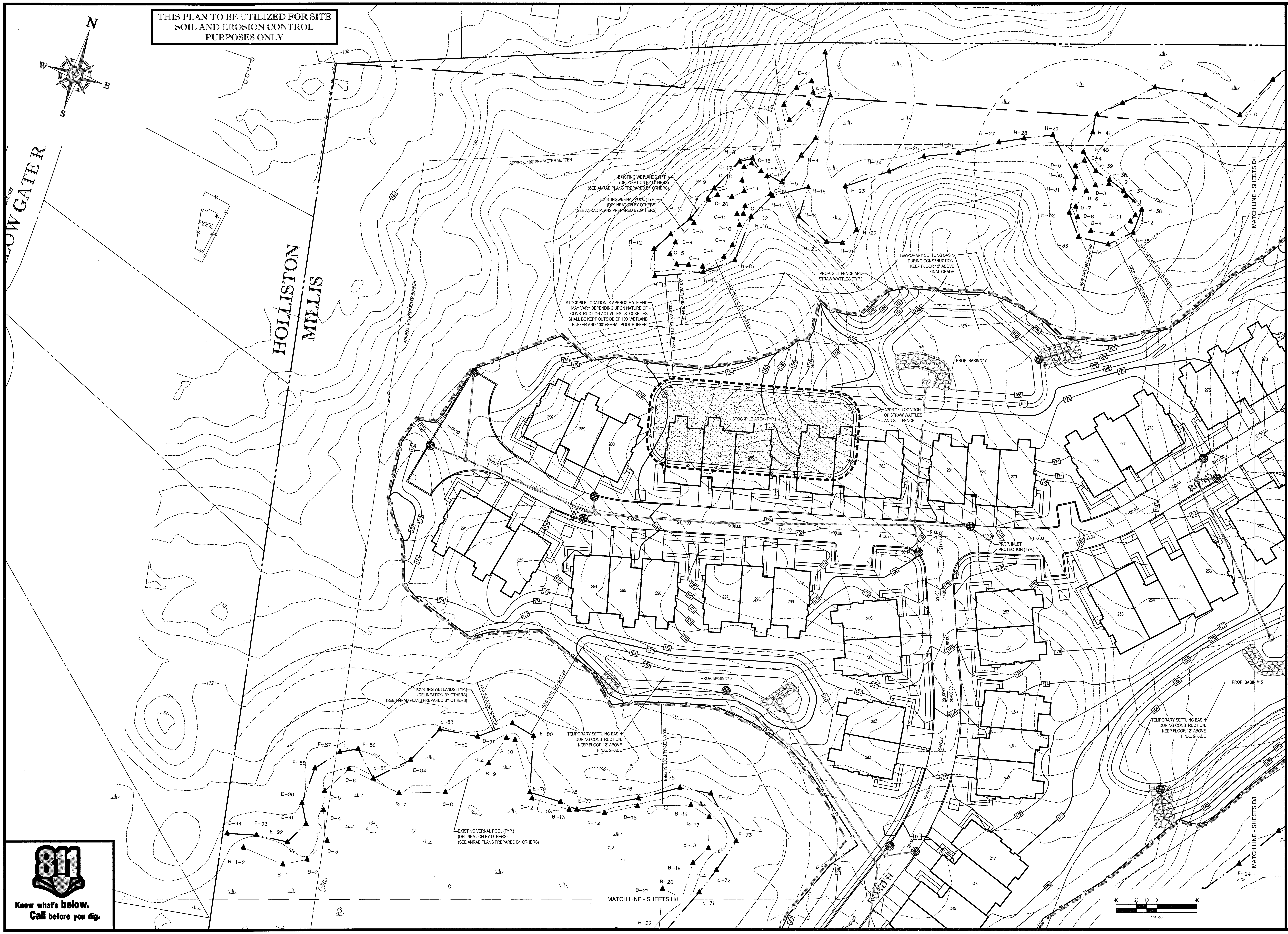
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APPROX. 100' PERIMETER BUFFER
EXISTING WETLANDS (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
EXISTING VERNAL POOL (TYP.) (DELINEATION BY OTHERS) (SEE ANRAD PLANS PREPARED BY OTHERS)
STOCKPILE LOCATION IS APPROXIMATE AND MAY VARY DEPENDING UPON NATURE OF CONSTRUCTION ACTIVITIES. STOCKPILES SHALL BE KEPT OUTSIDE OF 100' WETLAND BUFFER AND 100' VERNAL POOL BUFFER.
50.0' WETLAND BUFFER
100.0' WETLAND BUFFER
100.0' VERNAL POOL BUFFER
PROP. SILT FENCE AND STRAW WATTLES (TYP.)
TEMPORARY SETTLING BASIN DURING CONSTRUCTION. KEEP FLOOR 12" ABOVE FINAL GRADE
PROP. BASIN #17
STOCKPILE AREA (TYP.)
APPROX. LOCATION OF STRAW WATTLES AND SILT FENCE
PROP. INLET PROTECTION (TYP.)
PROP. BASIN #16
PROP. BASIN #15
ROAD
MATCH LINE - SHEETS D/I
MATCH LINE - SHEETS H/I
1" = 40'

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FOR
Toll Brothers

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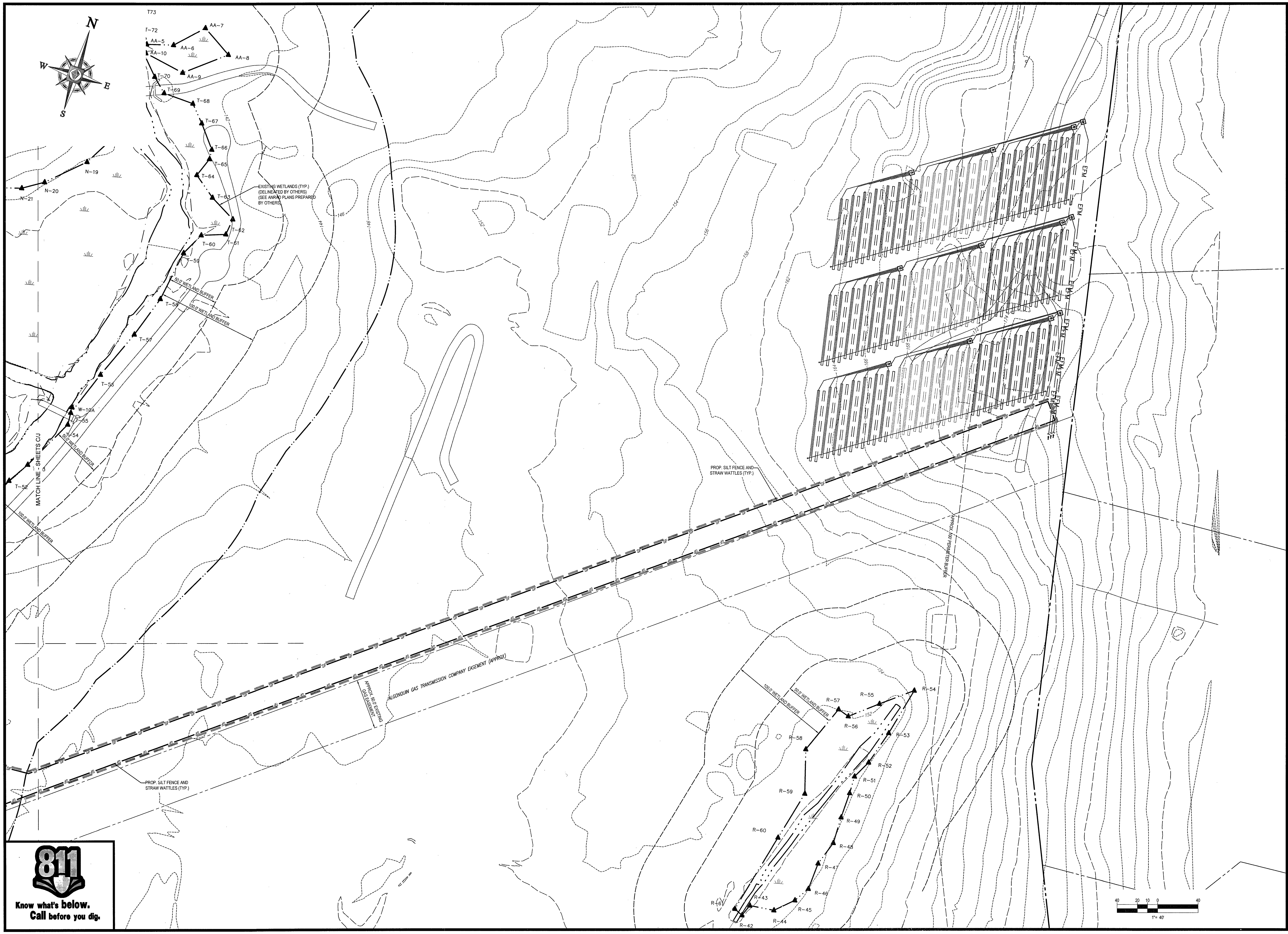
WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN I

SHEET NUMBER:
65
OF 74

REV 0 - 11/18/2016



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CAD I.D.:	W161041_SS3

PROJECT:
SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
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SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN J

SHEET NUMBER:
66
OF 74

REV 0 - 11/18/2016

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE AS SET FORTH IN THE MOST CURRENT STATE SEDIMENT AND EROSION CONTROL MANUAL.
2. THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE LEFT IN AN UNTREATED OR UNVEGETATED CONDITION FOR A MINIMUM TIME. AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL. IF THE DISTURBANCE IS WITHIN 100 FEET OF A STREAM OR POND, THE AREA SHALL BE STABILIZED WITHIN 7 DAYS OR PRIOR TO ANY STORM EVENT (THIS WOULD INCLUDE WETLANDS).
3. SEDIMENT BARRIERS (SILT FENCE, STRAW BARRIERS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15% AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
4. INSTALL SILTATION BARRIER AT TOE OF SLOPE TO FILTER SILT FROM RUNOFF. SEE SILTATION BARRIER DETAILS FOR PROPER INSTALLATION. SILTATION BARRIER WILL REMAIN IN PLACE PER NOTE #5.
5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSURE. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE STABILIZED BY TURF.
6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2:1).
7. IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCH (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
8. TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST TO PROTECT FROM SPRING RUNOFF PROBLEMS.
9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADED ONTO OPEN AREAS.
10. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND PREPARED FOR FINAL SEEDING AS FOLLOWS:
    - 10.1. SIX INCHES OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
    - 10.2. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 LB PER ACRE OR 18.4 LB PER 1,000 SF USING 10-20-20 OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB PER1,000 SF).
    - 10.3. FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUE-GRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYEGRASS: SEEDING RATE IS 1.03 LBS PER 1,000 SF LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED.
    - 10.4. STRAW MULCH AT THE RATE OF 70-90 LBS PER 1,000 SF. A HYDRO-APPLICATION OF WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR RMB PLUS WILL BE USED ON STRAW MULCH FOR WIND CONTROL.
11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS STABILIZED.
12. WETLANDS WILL BE PROTECTED W/STRAWBALES AND/OR SILT FENCE INSTALLED AT THE EDGE OF THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE.
13. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL HAVE AN EXPOSURE WINDOW OF NOT MORE THAN 7 DAYS.
14. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IF NOT BEING ACTIVELY WORKED,

MULCH

LOCATION	MULCH	RATE (1000 SF)
PROTECT AREA	STRAW	100 POUNDS
WINDY AREA	SHREDDED OR CHOPPED CORNSTALKS STRAW (ANCHORED)*	185-275 POUNDS 100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES GREATER THAN 3:1	JUTE MESH OR EXCELSIOR MAT	AS REQUIRED
GREATER THAN 3:1	(REFER TO GEOTECHNICAL REPORT FOR FINAL DESIGN REQUIREMENT)	

* A HYDRO-APPLICATION OF WOOD, OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR RMB PLUS SHALL BE USED ON STRAW MULCH FOR WIND CONTROL.

MULCH ANCHORING
ANCHOR MULCH WITH PEG AND TWINE (1 SQ. YD/BLOCK); MULCH NETTING (AS PER MANUFACTURER); WOOD CELLULOSE FIBER (750 LBS/ACRE); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); USE OF A SERRATED STRAIGHT DISK. WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

EROSION CONTROL NOTES DURING WINTER CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHOULD BE LIMITED TO THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT.
4. CONTINUATION OF EARTHWORK OPERATION ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR STRAW AT A RATE OF 100 LB. PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE.
6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 200 - 300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF STRAW OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
7. MULCHING REQUIREMENTS:
    - 7.1. BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.
    - 7.2. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPE EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.
    - 7.3. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15% AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
8. AFTER NOVEMBER 1ST THE CONTRACTOR SHALL APPLY DORMANT SEEDING OR MULCH AND ANCHORING ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.
9. DURING THE WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.
10. STOCKPILING OF MATERIALS (DIRT, WOOD, CONSTRUCTION MATERIALS, ETC.) MUST REMAIN COVERED AT ALL TIMES TO MINIMIZE ANY DUST PROBLEMS THAT MAY OCCUR WITH ADJACENT PROPERTIES AND TO PROVIDE MAXIMUM PROTECTION AGAINST EROSION RUNOFF.
11. EXISTING CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.

811
Know what's below.
Call before you dig.

THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

-INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE/EXIT (AS SHOWN)

-INSTALLATION OF EROSION CONTROL BARRIER (STRAW BALES AND SILT FENCE) (AS SHOWN)

-INSTALLATION OF INLET PROTECTION IN STREET (AS SHOWN)

-DEMOLITION OF EXISTING SITE STRUCTURES (SEE DEMOLITION PLAN)

-DEMOLITION OF EXISTING SITE PAVEMENT AND AMENITIES (SEE DEMOLITION PLAN)

-CLEARING AND GRUBBING

-INSTALLATION OF TEMPORARY SWALES AND SEDIMENT BASINS

-EARTHWORK AND EXCAVATION/FILLING AS NECESSARY

-CONSTRUCTION OF UTILITIES

-STABILIZE PERMANENT LAWN AREAS AND SLOPES WITH TEMPORARY SEEDING

-INSTALLATION OF INLET PROTECTION ON ON-SITE UTILITIES (AS SHOWN)

-CONSTRUCTION OF BUILDINGS

-CONSTRUCTION OF ALL CURBING AND LANDSCAPE ISLANDS AS INDICATED ON THE PLANS

-SPREAD TOPSOIL ON SLOPED AREAS AND SEED AND MULCH

-FINAL GRADING OF ALL SLOPED AREAS

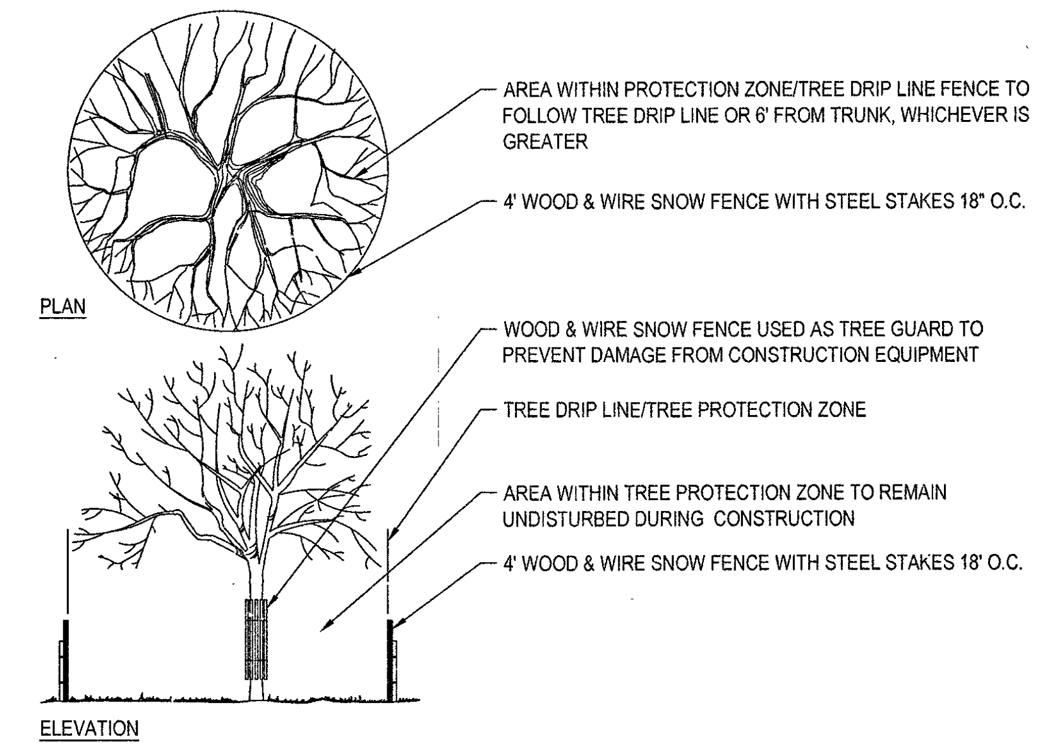
-PLACE 6" TOPSOIL ON SLOPES AFTER FINAL GRADING COMPLETED. FERTILIZE, SEED, AND MULCH SEED MIXTURE TO BE INSTALLED REQUIRED.

-REMOVAL OF THE TEMPORARY SEDIMENT BASINS

-PAVE PARKING LOT

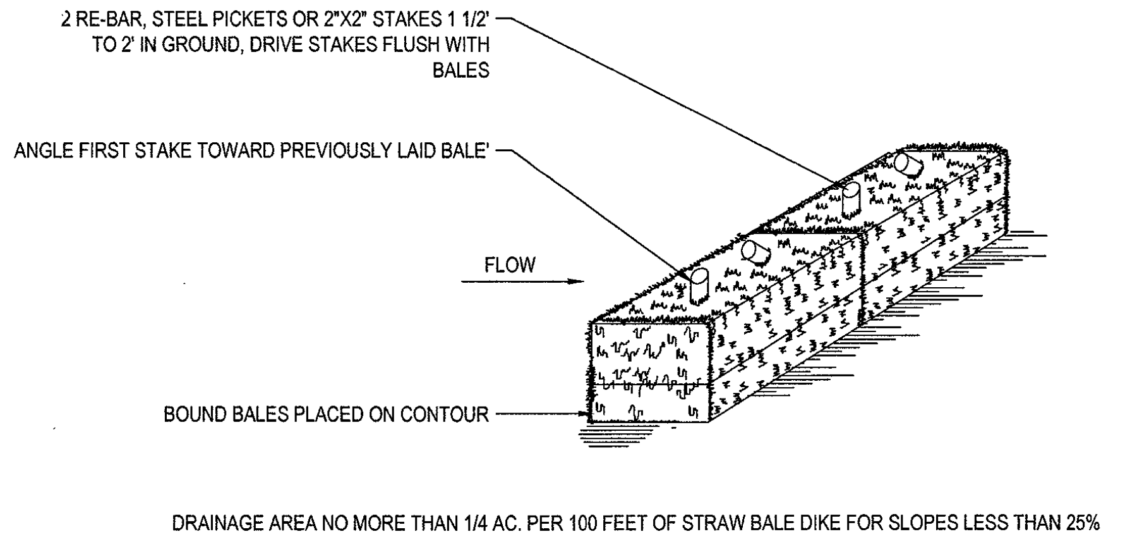
-LANDSCAPING PER LANDSCAPING PLAN

-REMOVE EROSION CONTROLS AS DISTURBED AREAS BECOME STABILIZED TO 70% STABLIZATION OR GREATER.


AREA WITHIN PROTECTION ZONE/TREE DRIP LINE FENCE TO FOLLOW TREE DRIP LINE OR 6' FROM TRUNK, WHICHEVER IS GREATER
4' WOOD & WIRE SNOW FENCE WITH STEEL STAKES 18" O.C.
PLAN
WOOD & WIRE SNOW FENCE USED AS TREE GUARD TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT
TREE DRIP LINE/TREE PROTECTION ZONE
AREA WITHIN TREE PROTECTION ZONE TO REMAIN UNDISTURBED DURING CONSTRUCTION
4' WOOD & WIRE SNOW FENCE WITH STEEL STAKES 18' O.C.
ELEVATION

TREE PROTECTION DURING CONSTRUCTION

N.T.S.

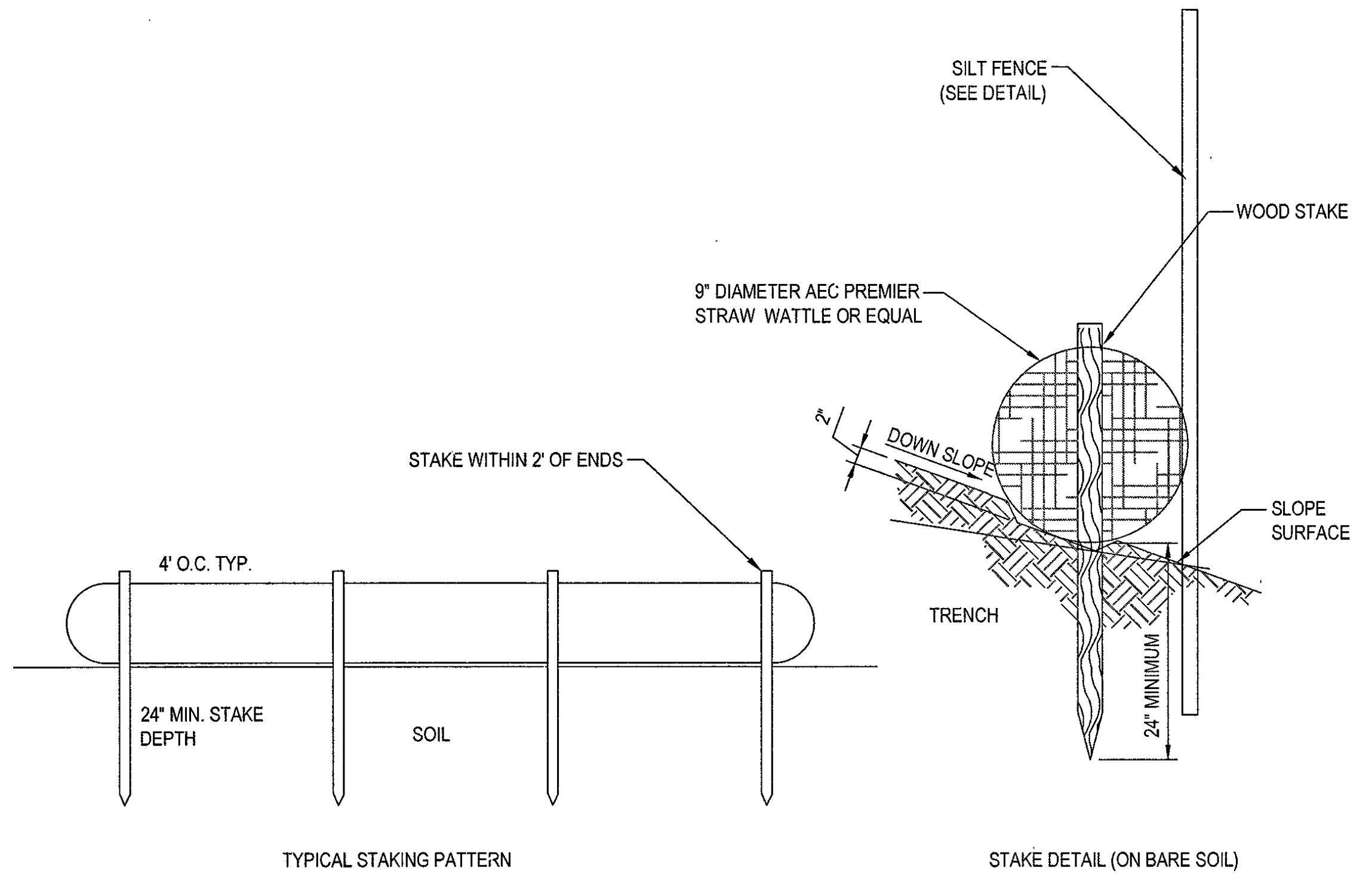

2 RE-BAR, STEEL PICKETS OR 2"X2" STAKES 1 1/2' TO 2' IN GROUND, DRIVE STAKES FLUSH WITH BALES
ANGLE FIRST STAKE TOWARD PREVIOUSLY LAID BALE'
FLOW
BOUND BALES PLACED ON CONTOUR

DRAINAGE AREA NO MORE THAN 1/4 AC. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%

NOTES:
1. BALES SHALL BE PLACED AT THE TOP OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

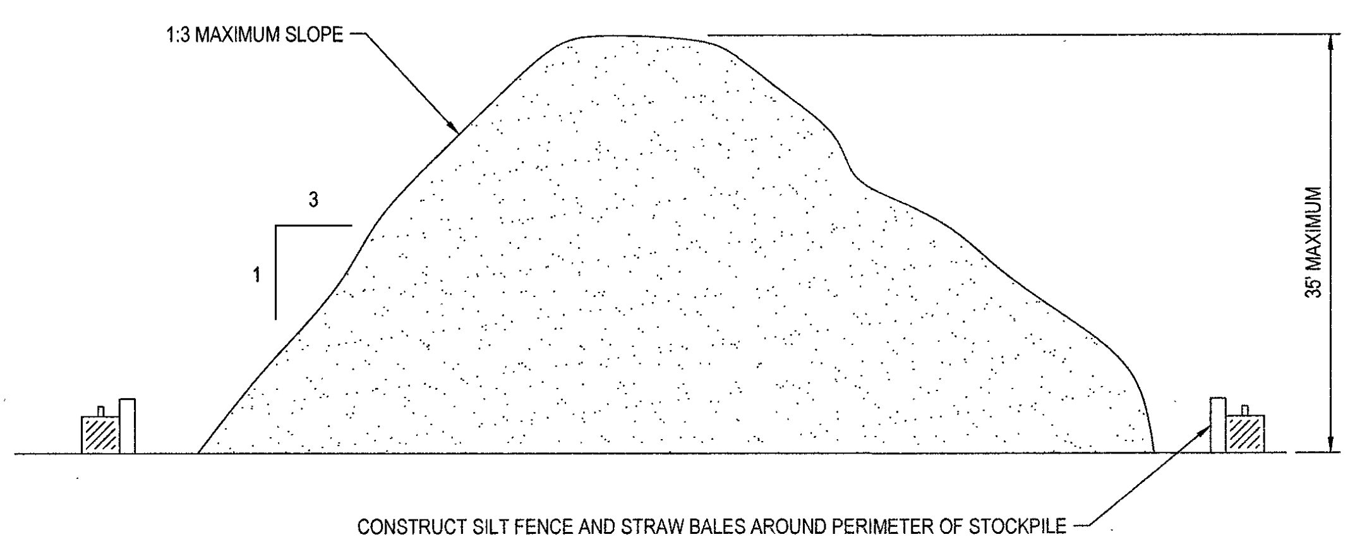
STRAW BALE DETAIL

N.T.S.



STRAW WATTLES

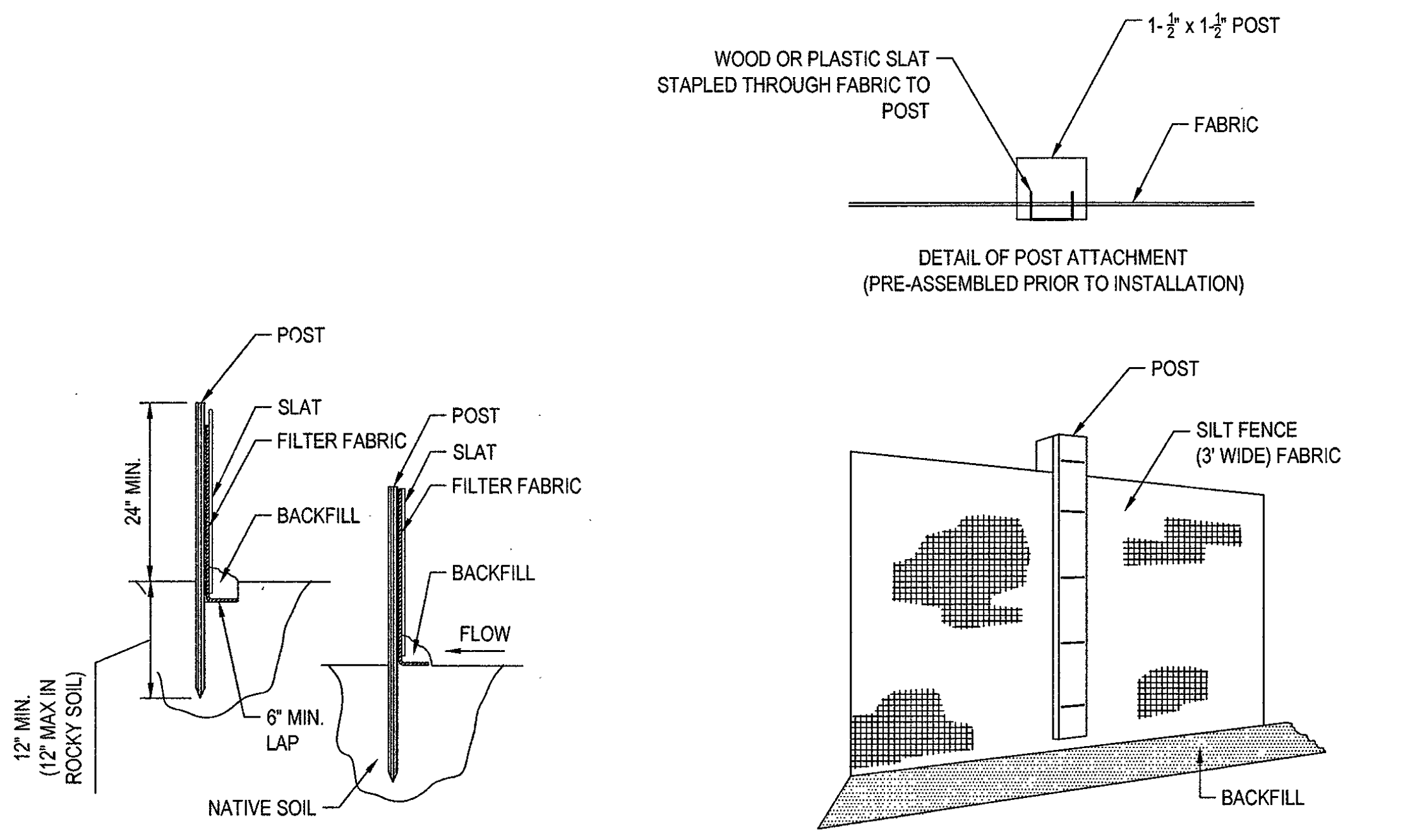
N.T.S.


1:3 MAXIMUM SLOPE
3
1
35' MAXIMUM
CONSTRUCT SILT FENCE AND STRAW BALES AROUND PERIMETER OF STOCKPILE

TEMPORARY STOCKPILE DETAIL

N.T.S.

INSTALLATION:
1. EXCAVATE A 6"x 6" TRENCH ALONG THE LINE OF EROSION CONTROL OF THE SITE.
2. UNROLL SILTATION FENCE AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH (NET SIDE AWAY FROM FLOW DIRECTION).
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS LAYING ACROSS THE TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF THE FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCOMPLISHED BY LAYING FABRIC FLAP ON UNDISTURBED GROUND AND PILING & TAMP- ING FILL AT THE BASE.

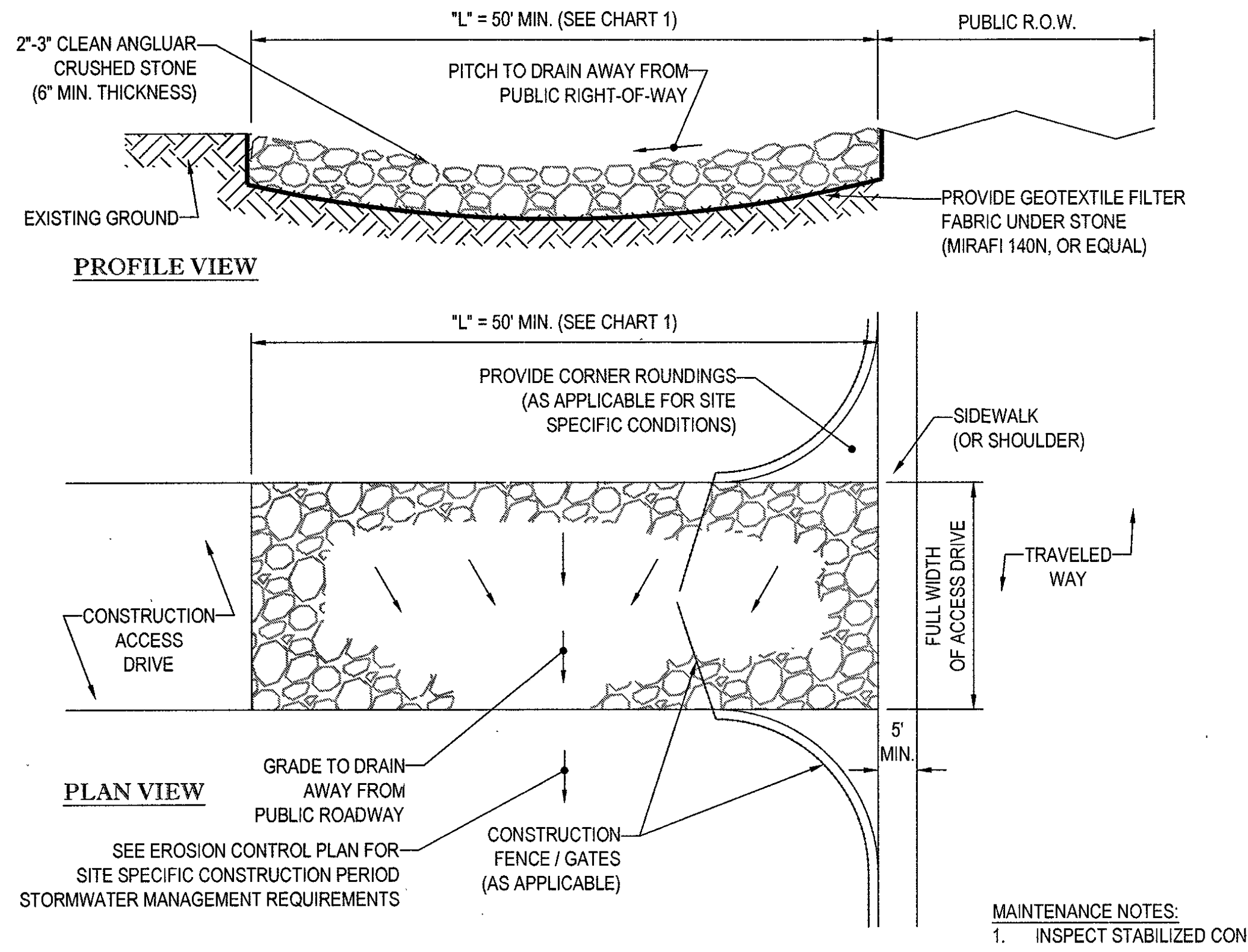

WOOD OR PLASTIC SLAT STAPLED THROUGH FABRIC TO POST
1-½" x 1-½" POST
FABRIC
DETAIL OF POST ATTACHMENT (PRE-ASSEMBLED PRIOR TO INSTALLATION)
POST
SLAT
FILTER FABRIC
BACKFILL
24" MIN.
12" MIN. (12" MAX IN ROCKY SOIL)
6" MIN. LAP
NATIVE SOIL
FLOW
POST
SILT FENCE (3' WIDE) FABRIC
BACKFILL

TOE-IN METHODS

PERSPECTIVE OF FENCE

TYP. SILTATION FENCE DETAIL

N.T.S.


2"-3" CLEAN ANGLUAR CRUSHED STONE (6" MIN. THICKNESS)
"L" = 50' MIN. (SEE CHART 1)
PUBLIC R.O.W.
PITCH TO DRAIN AWAY FROM PUBLIC RIGHT-OF-WAY
EXISTING GROUND
PROVIDE GEOTEXTILE FILTER FABRIC UNDER STONE (MIRAFI 140N, OR EQUAL)
PROFILE VIEW
"L" = 50' MIN. (SEE CHART 1)
PROVIDE CORNER ROUNDINGS (AS APPLICABLE FOR SITE SPECIFIC CONDITIONS)
SIDEWALK (OR SHOULDER)
CONSTRUCTION ACCESS DRIVE
FULL WIDTH OF ACCESS DRIVE
TRAVELED WAY
5' MIN.
PLAN VIEW
GRADE TO DRAIN AWAY FROM PUBLIC ROADWAY
SEE EROSION CONTROL PLAN FOR SITE SPECIFIC CONSTRUCTION PERIOD STORMWATER MANAGEMENT REQUIREMENTS
CONSTRUCTION FENCE / GATES (AS APPLICABLE)

MAINTENANCE NOTES:
1. INSPECT STABILIZED CONSTRUCTION ENTRANCE / ANTI-TRACKING PAD AND SEDIMENT DISPOSAL AREA WEEKLY OF AFTER EVERY MAJOR RAIN STORM EVENT.
2. WASH WATER (IF USED) SHALL BE DIRECTED TOWARD A SEDIMENT TRAP, SUFFICIENTLY SIZED FOR SPECIFIC SITE CONDITIONS.
3. EXCESSIVELY MUD-CLOGGED STONE SHALL BE REMOVED AND REPLACED, AS NEEDED.

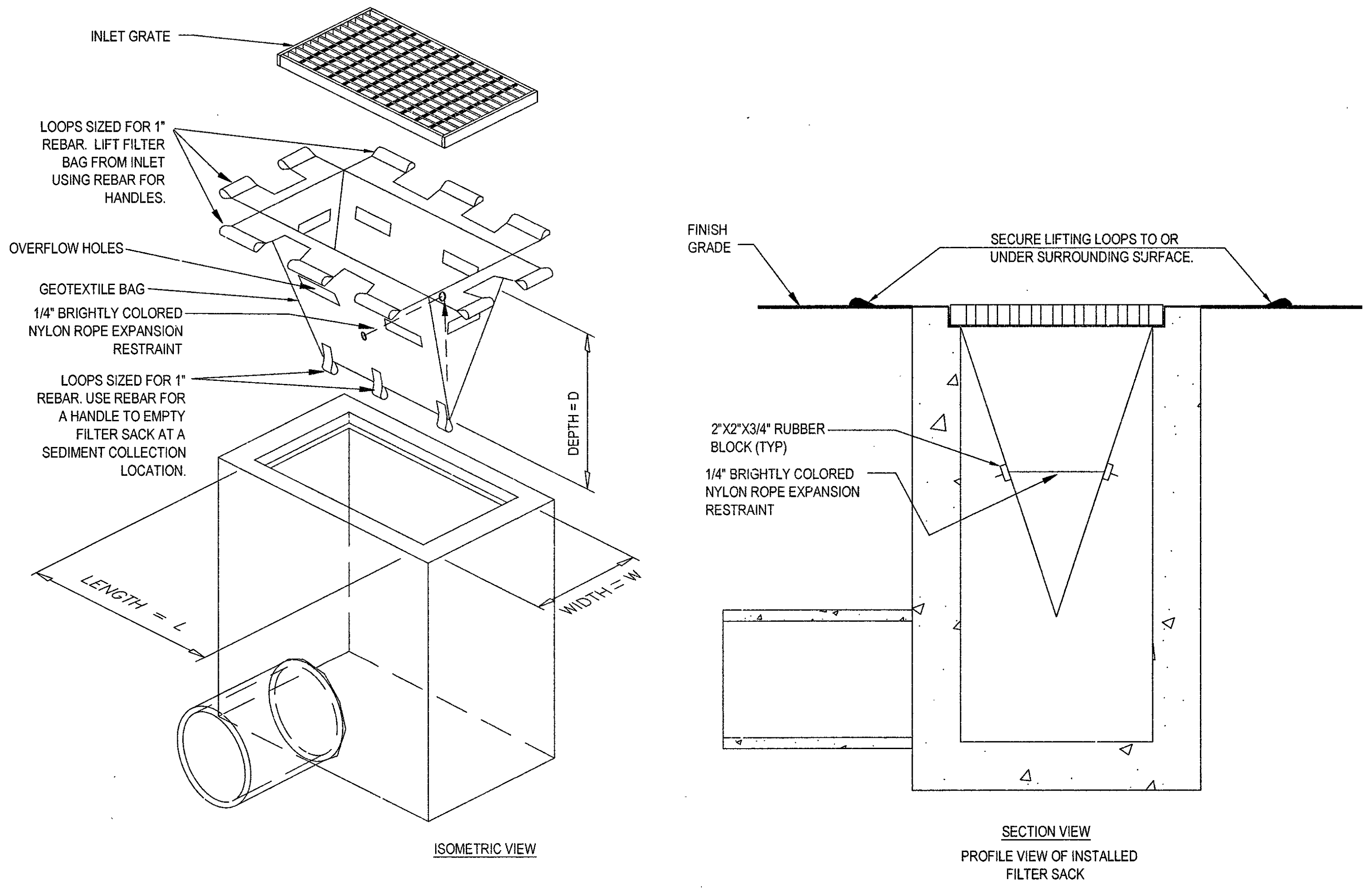
CHART 1

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2% TO 5%	100 FT	200FT
>5%	ENTIRE ENTRANCE STABILIZED WITH FABC BASE COURSE (1)	

(1) AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

STABILIZED CONSTRUCTION EXIT

N.T.S.


INLET GRATE
LOOPS SIZED FOR 1" REBAR. LIFT FILTER BAG FROM INLET USING REBAR FOR HANDLES.
OVERFLOW HOLES
GEOTEXTILE BAG
1/4" BRIGHTLY COLORED NYLON ROPE EXPANSION RESTRAINT
LOOPS SIZED FOR 1" REBAR. USE REBAR FOR A HANDLE TO EMPTY FILTER SACK AT A SEDIMENT COLLECTION LOCATION.
DEPTH = D
LENGTH = L
WIDTH = W
ISOMETRIC VIEW
FINISH GRADE
SECURE LIFTING LOOPS TO OR UNDER SURROUNDING SURFACE.
2"X2"X3/4" RUBBER BLOCK (TYP)
1/4" BRIGHTLY COLORED NYLON ROPE EXPANSION RESTRAINT
SECTION VIEW
PROFILE VIEW OF INSTALLED FILTER SACK

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

1. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. PLACE AN OIL ADSORBENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES
7. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

DO NOT USE IN PAVED AREAS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

TO BE USED IN EXISTING RIGHT OF WAY

FILTER SACKS (GRATED INLETS)

N.T.S.

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PERMIT
SET

PROJECT No.: W161041
DRAWN BY: JT
CHECKED BY: AFT
DATE: 11/18/2016
SCALE: AS NOTED
CAD I.D.: W161041_SS3

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER ENGINEERING
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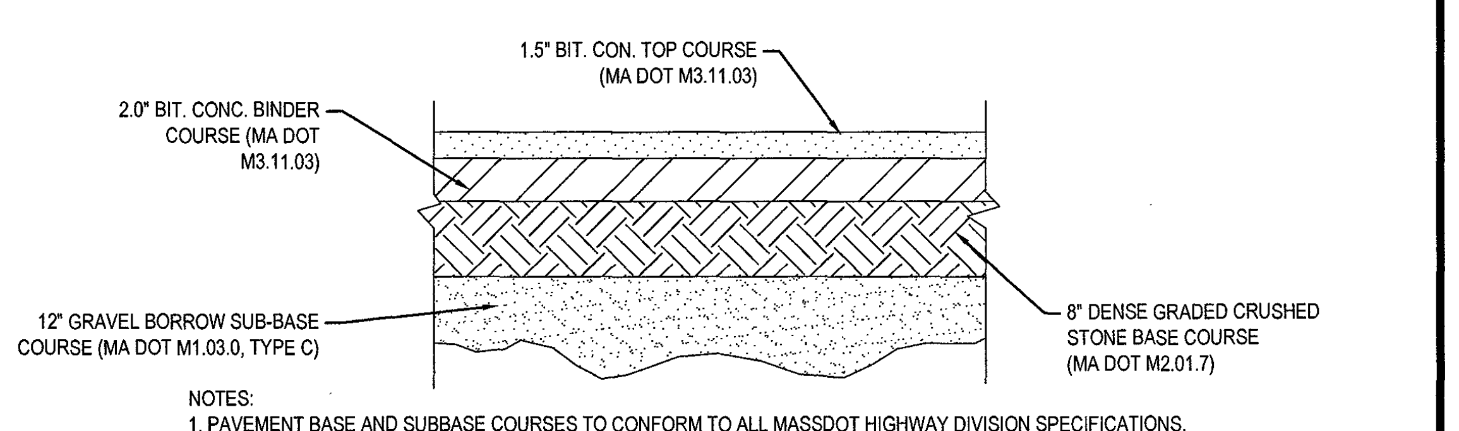
SHEET TITLE:
SOIL EROSION
CONTROL
NOTES &
DETAILS SHEET

SHEET NUMBER:
67
OF 74

REV 0 - 11/18/2016

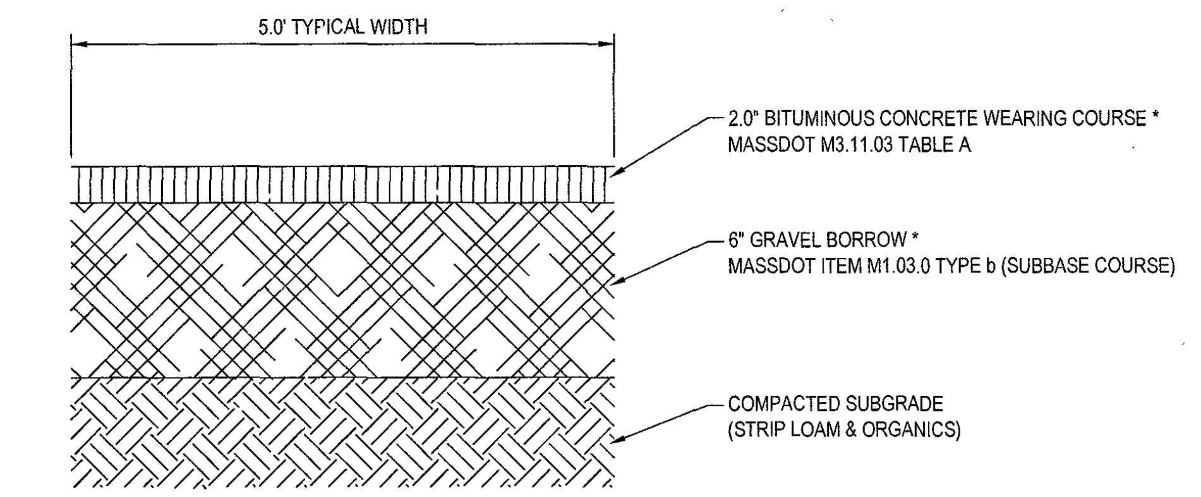
P:\16\W161041\Drawings\Plan Sets\REV0\W161041_ss3.dwg, 67-Ero Notes, 10/6/2014, 4:26:00 PM, jtao, XeroX510-1.pc3, User634, 1:1


1.5" BIT. CON. TOP COURSE
(MA DOT M3.11.03)
2.0" BIT. CONC. BINDER COURSE (MA DOT M3.11.03)
12" GRAVEL BORROW SUB-BASE COURSE (MA DOT M1.03.0, TYPE C)
8" DENSE GRADED CRUSHED STONE BASE COURSE (MA DOT M2.01.7)

NOTES:
1. PAVEMENT BASE AND SUBBASE COURSES TO CONFORM TO ALL MASSDOT HIGHWAY DIVISION SPECIFICATIONS.
2. IF SUBGRADES ARE WET, AN ADDITIONAL 6"+ LAYER OF $\frac{3}{8}$" CRUSHED STONE MAY BE REQUIRED TO PROVIDE STABILITY FOR EQUIPMENT.
3. GC TO REFER TO GEOTECHNICAL REPORT PREPARED BY UTC OF MASSACHUSETTS, INC. DATED 05/26/16 FOR PAVEMENT SPECIFICATIONS.

TYPICAL PAVEMENT SECTION

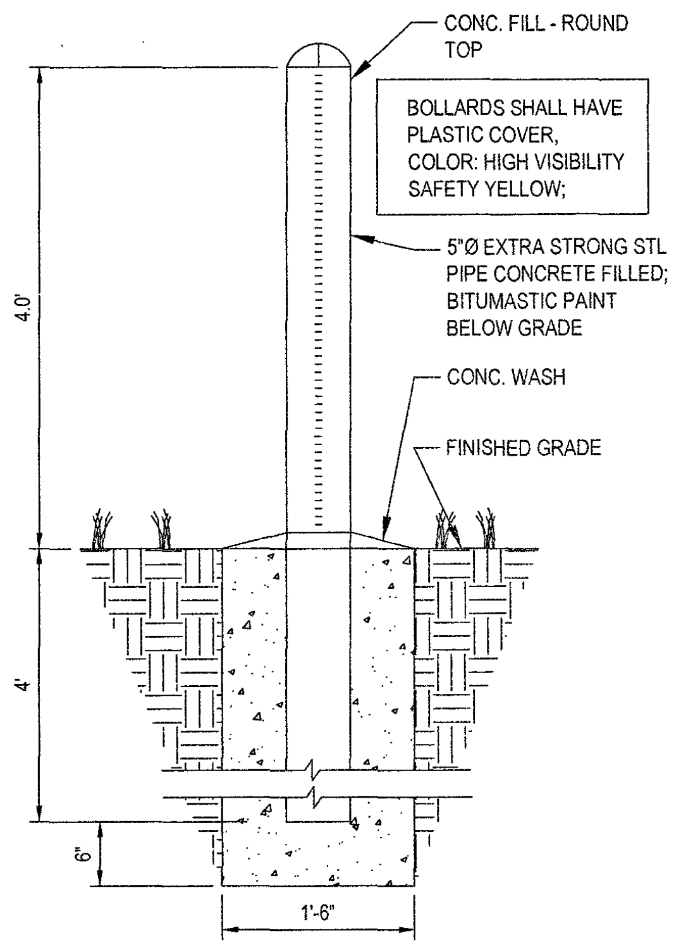
N.T.S.



* NOTE:
UTILIZE 4" POROUS BITUMINOUS ASPHALT OVER 8" COMPACTED CHOLAR COURSE (AASHTO NO. 57) FOR ANY NECESSARY SIDEWALK REPLACEMENT ALONG LEGACY FARMS ROAD.

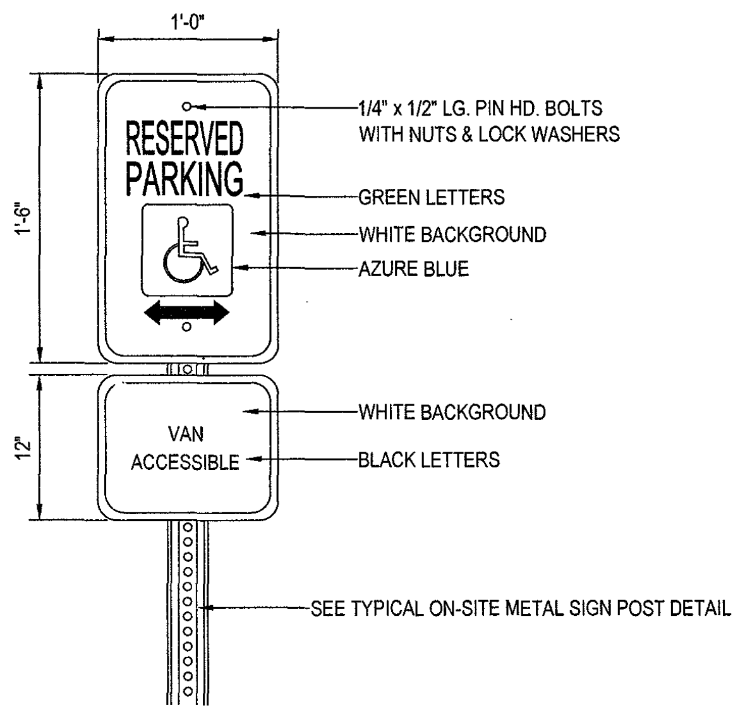
BITUMINOUS CONCRETE SIDEWALK SECTION

N.T.S.


CONC. FILL - ROUND TOP
BOLLARDS SHALL HAVE PLASTIC COVER, COLOR: HIGH VISIBILITY SAFETY YELLOW;
5"Ø EXTRA STRONG STL PIPE CONCRETE FILLED; BITUMASTIC PAINT BELOW GRADE
CONC. WASH
FINISHED GRADE
4.0'
4'
6"
1'-6"

BOLLARD DETAIL

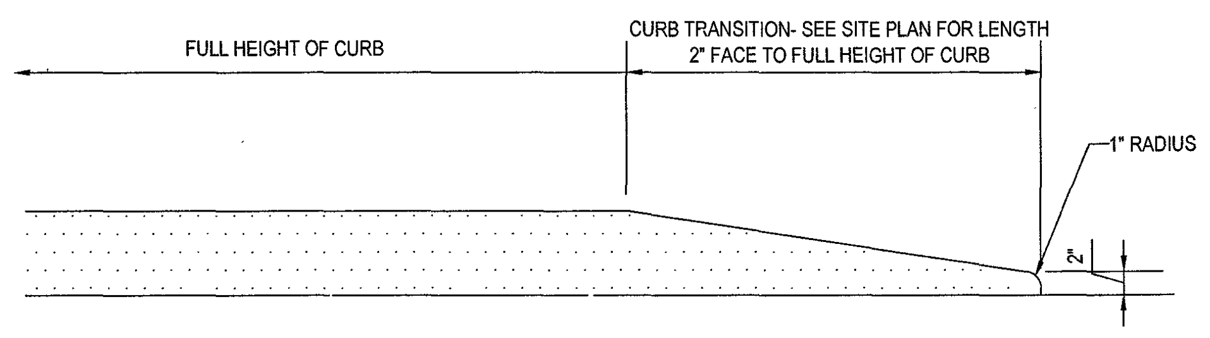
N.T.S.



NOTE:
BOTTOM OF SIGNS SHALL BE AT A MIN. 5' HEIGHT ABOVE GROUND.
TOP OF SIGNS SHALL BE AT A MAX. 8' HEIGHT ABOVE GROUND.

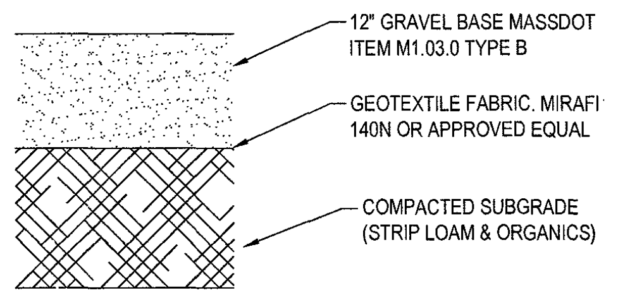
ACCESSIBLE PARKING SIGN DETAIL

N.T.S.


FULL HEIGHT OF CURB
CURB TRANSITION- SEE SITE PLAN FOR LENGTH
2" FACE TO FULL HEIGHT OF CURB
1" RADIUS
2"

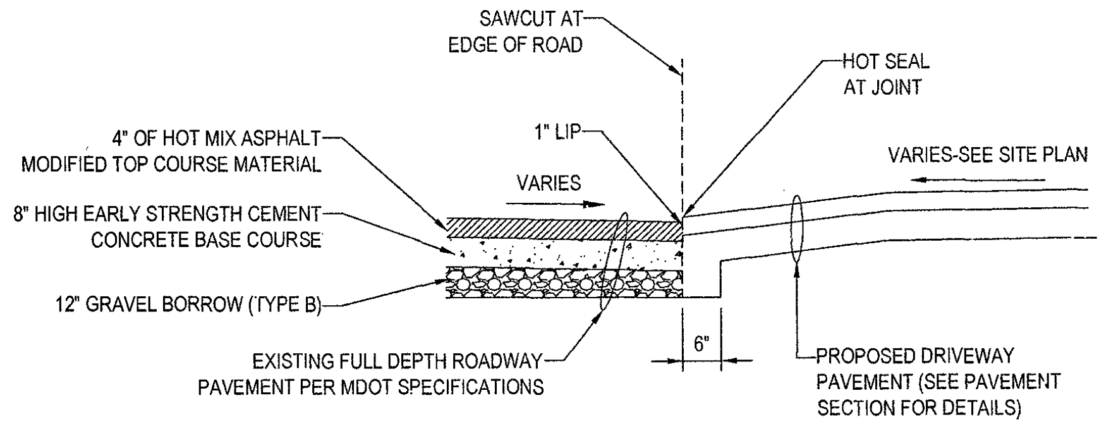
TRANSITION CURB DETAIL

N.T.S.


12" GRAVEL BASE MASSDOT ITEM M1.03.0 TYPE B
GEOTEXTILE FABRIC, MIRAFI 140N OR APPROVED EQUAL
COMPACTED SUBGRADE (STRIP LOAM & ORGANICS)

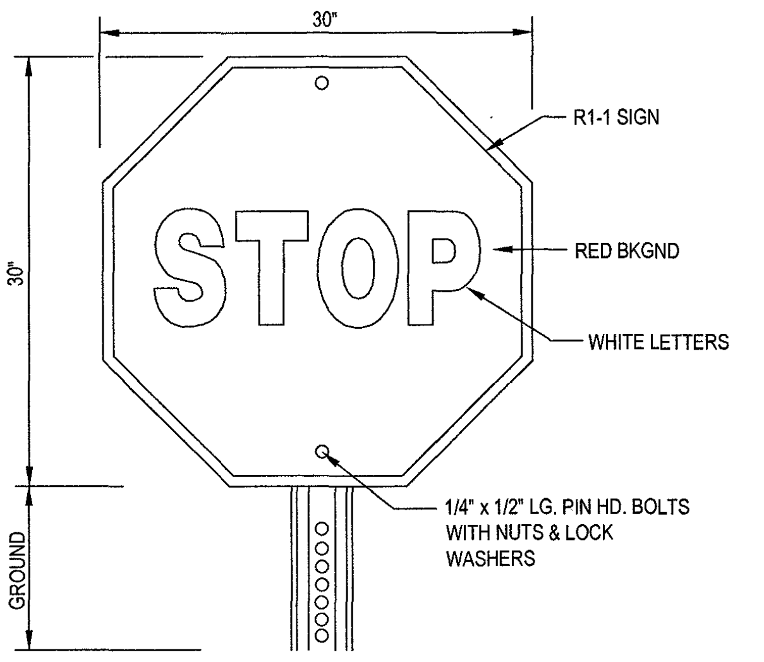
PUMP STATION ACCESS DRIVE DETAIL

N.T.S.


SAWCUT AT EDGE OF ROAD
HOT SEAL AT JOINT
4" OF HOT MIX ASPHALT MODIFIED TOP COURSE MATERIAL
1" LIP
VARIES
VARIES-SEE SITE PLAN
8" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE
12" GRAVEL BORROW (TYPE B)
6"
EXISTING FULL DEPTH ROADWAY PAVEMENT PER MDOT SPECIFICATIONS
PROPOSED DRIVEWAY PAVEMENT (SEE PAVEMENT SECTION FOR DETAILS)

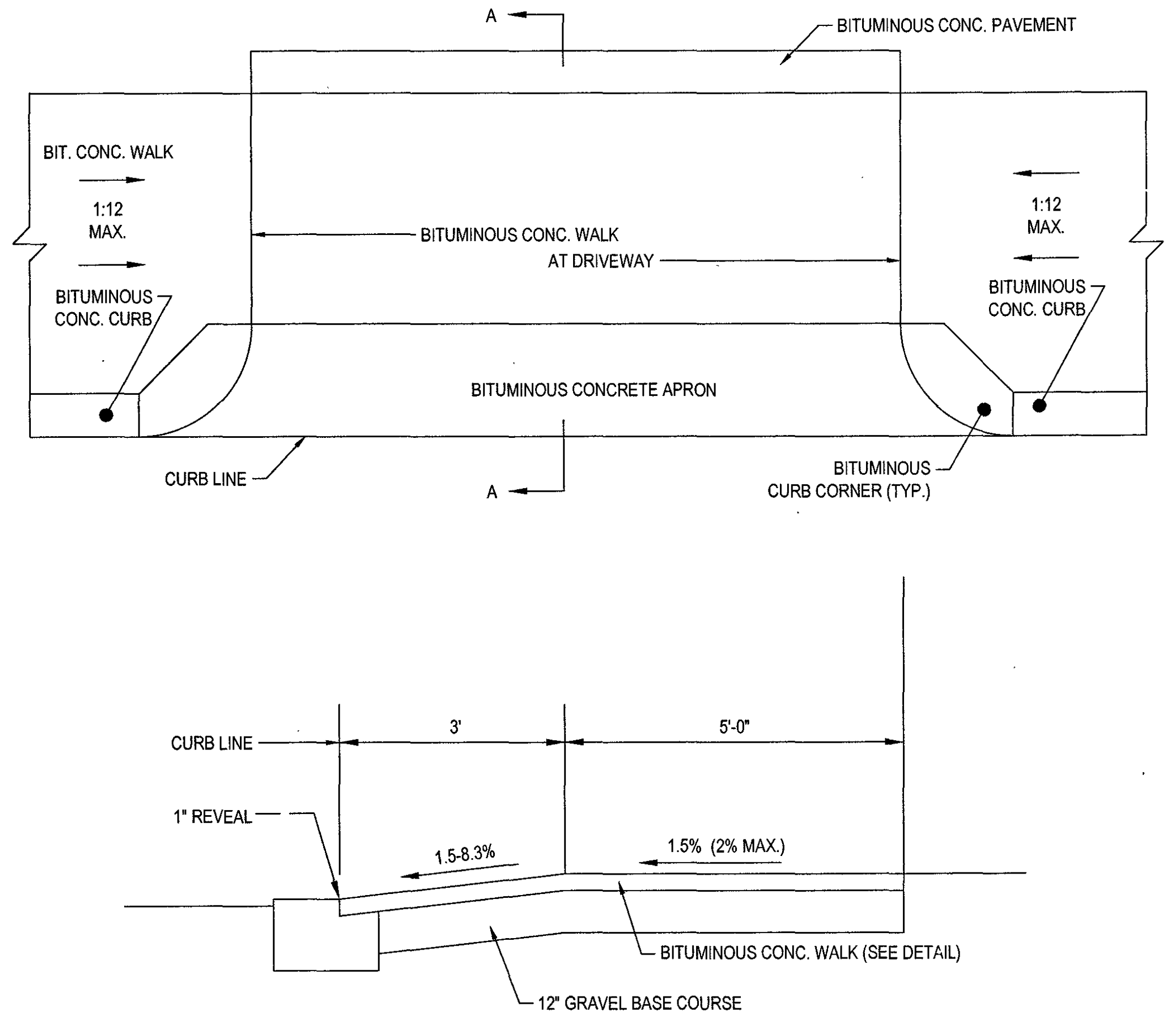
DRIVEWAY CONSTRUCTION DETAIL

N.T.S.



'STOP' SIGN DETAIL

N.T.S.



CURB CUT DETAIL

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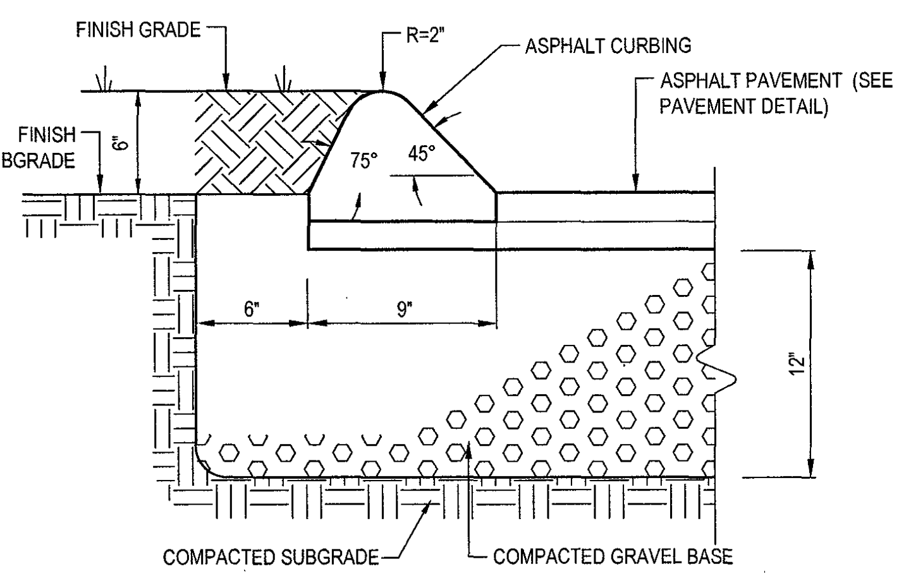
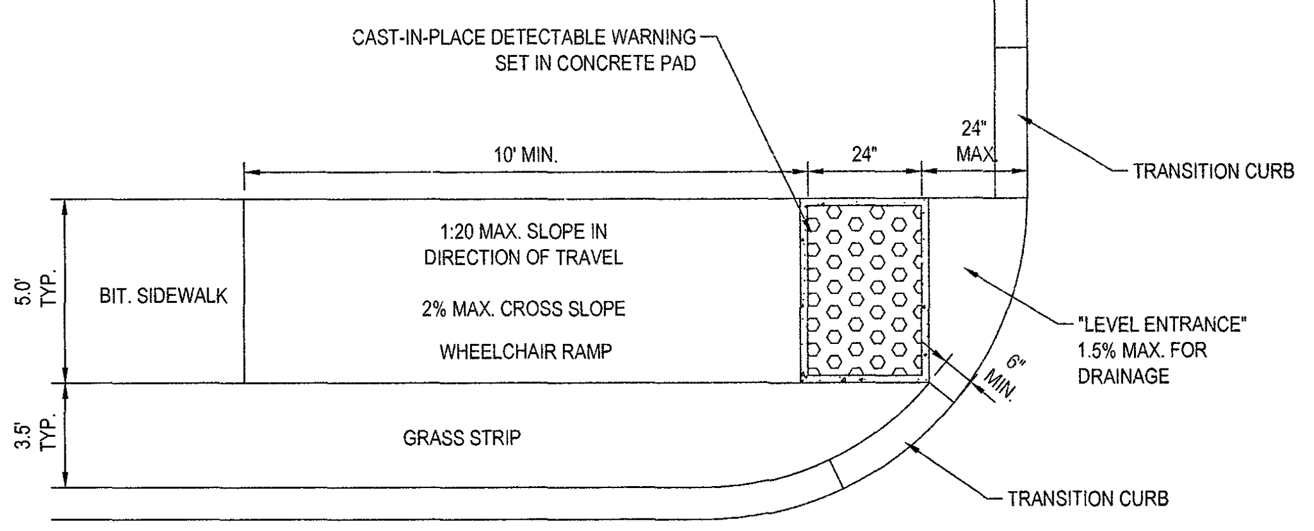


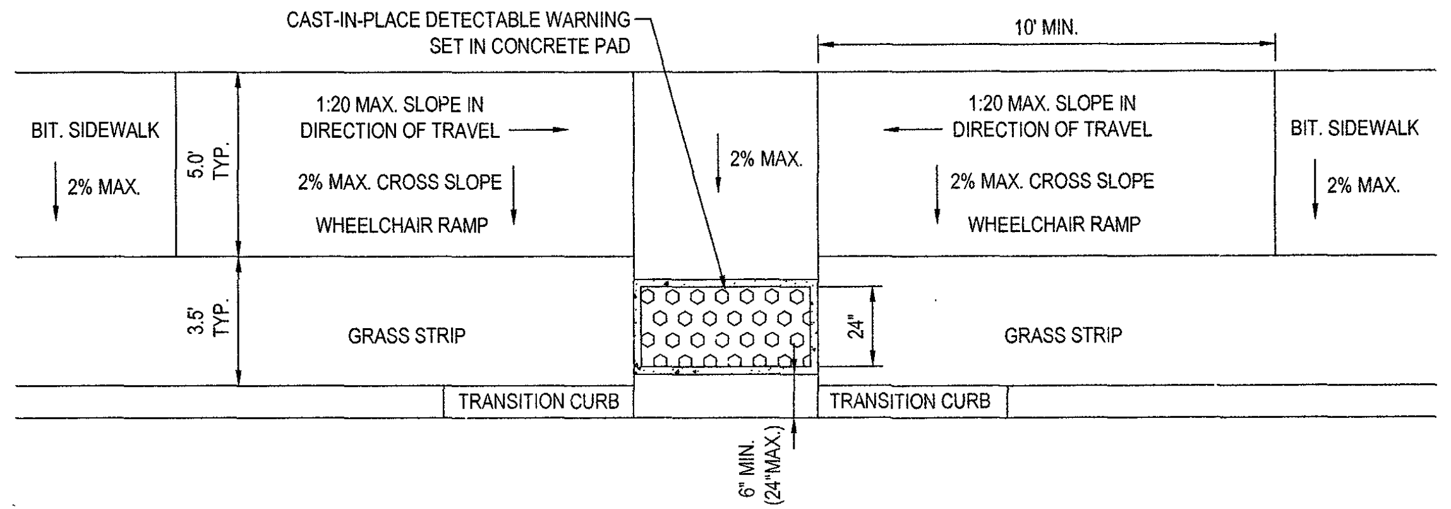
CAPE COD CURB BERM DETAIL

N.T.S.

AT ROADWAY OPENING:

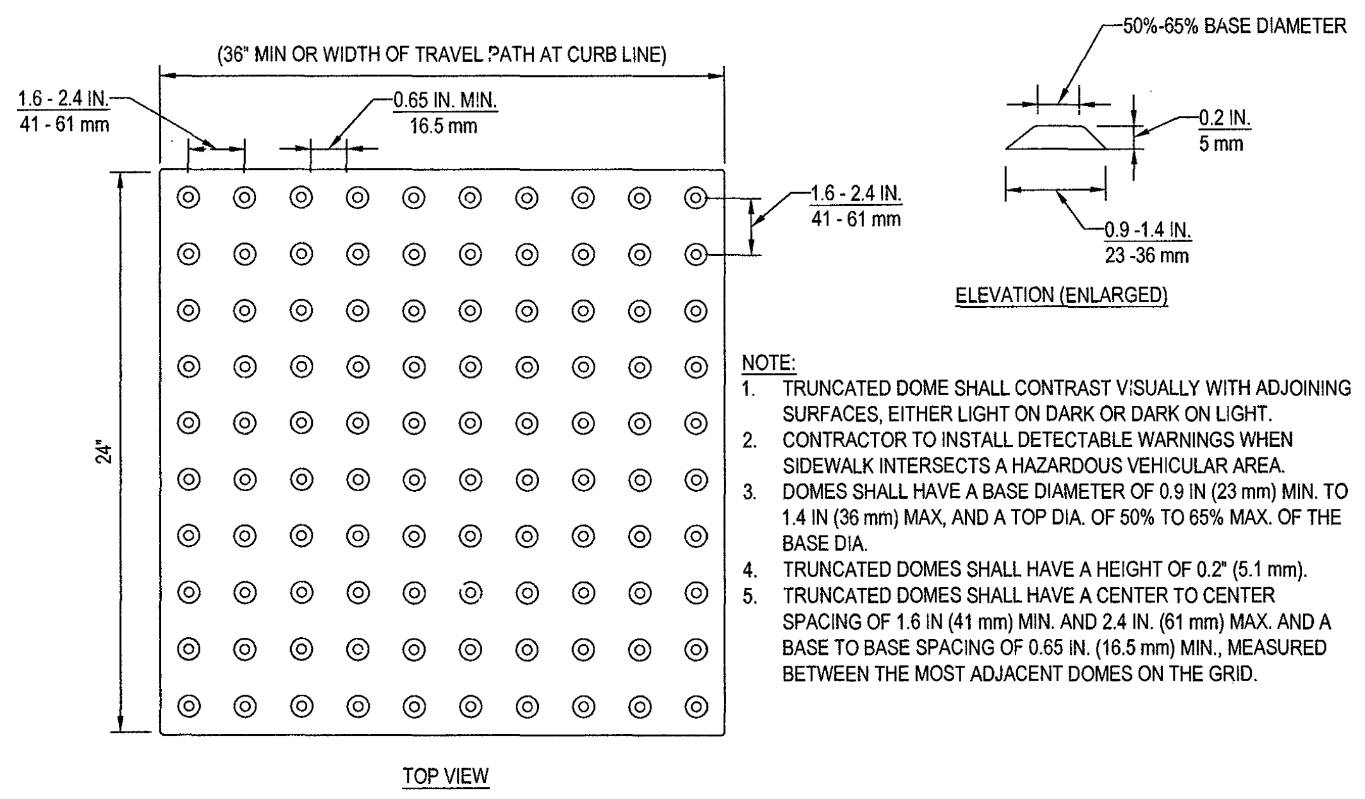


AT MID-BLOCK:



TYPICAL SIDEWALK RAMP DETAIL

N.T.S.



NOTE:
1. TRUNCATED DOME SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT ON DARK OR DARK ON LIGHT.
2. CONTRACTOR TO INSTALL DETECTABLE WARNINGS WHEN SIDEWALK INTERSECTS A HAZARDOUS VEHICULAR AREA.
3. DOMES SHALL HAVE A BASE DIAMETER OF 0.9 IN (23 mm) MIN. TO 1.4 IN (36 mm) MAX, AND A TOP DIA. OF 50% TO 65% MAX. OF THE BASE DIA.
4. TRUNCATED DOMES SHALL HAVE A HEIGHT OF 0.2" (5.1 mm).
5. TRUNCATED DOMES SHALL HAVE A CENTER TO CENTER SPACING OF 1.6 IN (41 mm) MIN. AND 2.4 IN. (61 mm) MAX. AND A BASE TO BASE SPACING OF 0.65 IN. (16.5 mm) MIN., MEASURED BETWEEN THE MOST ADJACENT DOMES ON THE GRID.

NOTE TO DESIGNER:
IF A WALK CROSSES OR ADJOINS A VEHICULAR WAY WHERE THE WALKING SURFACE AND PAVEMENT ARE NOT SEPARATED BY CURBS, RAILING OR OTHER ELEMENTS, THE BOUNDARY BETWEEN THE AREA SHALL BE DEFINED BY A CONTINUOUS DETECTABLE WARNING WHICH IS MIN. 36" WIDE (ADA ACCESSIBLE GUIDELINES PRINTED 11-4-06) AND MIN. 24" DEPTH.

DETECTABLE WARNING PANEL DETAIL

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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_DETAILS

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

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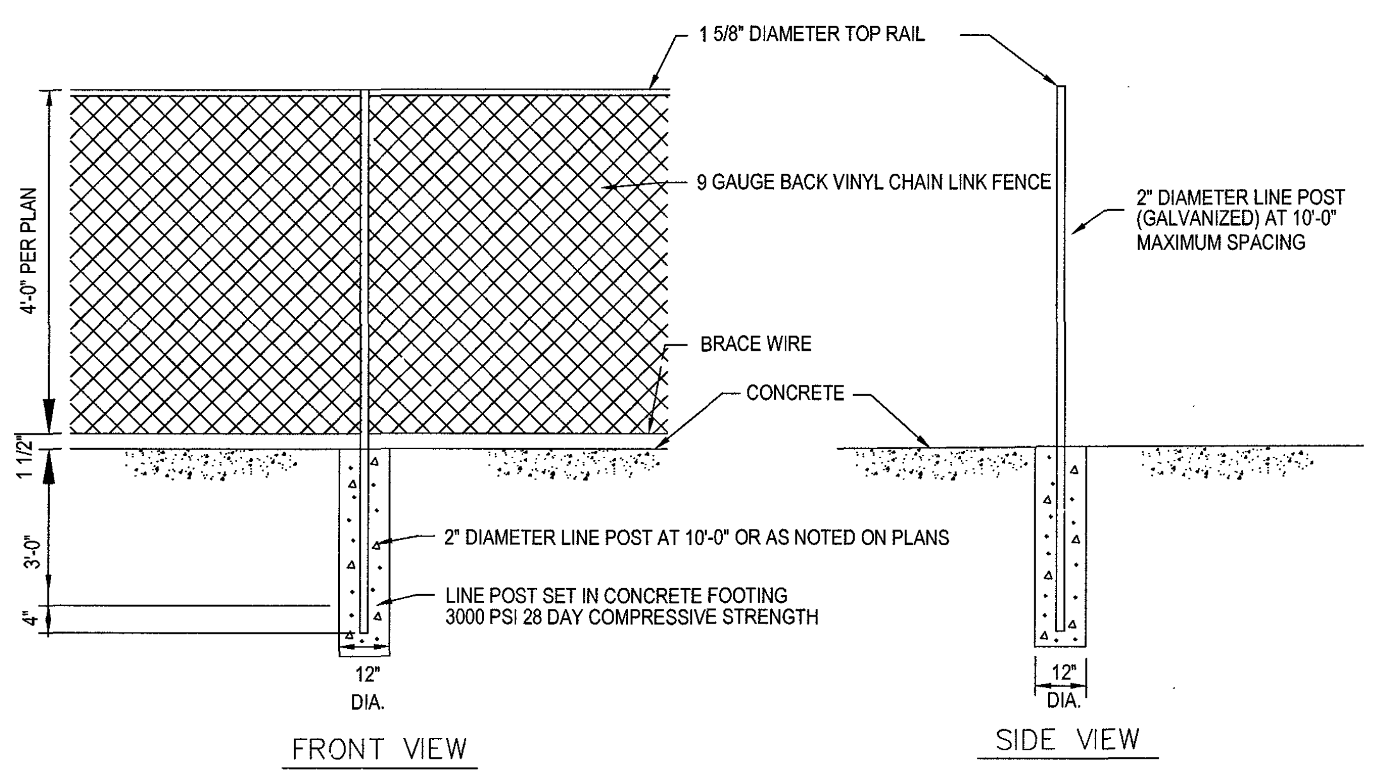
WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:
DETAILS

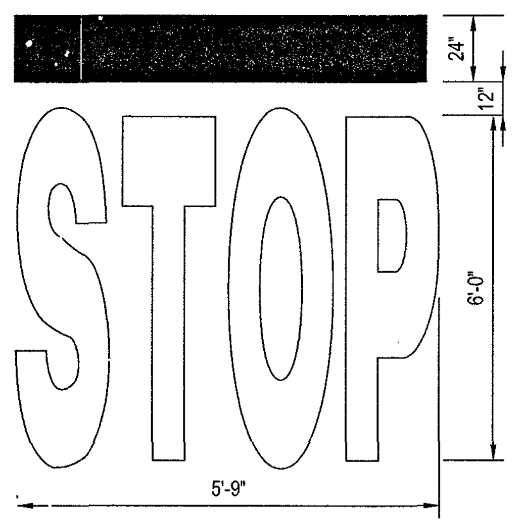
SHEET NUMBER:
68
OF 74

REV 0 - 11/18/2016


1 5/8" DIAMETER TOP RAIL
9 GAUGE BACK VINYL CHAIN LINK FENCE
2" DIAMETER LINE POST (GALVANIZED) AT 10'-0" MAXIMUM SPACING
BRACE WIRE
CONCRETE
4'-0" PER PLAN
1 1/2"
3'-0"
4"
2" DIAMETER LINE POST AT 10'-0" OR AS NOTED ON PLANS
LINE POST SET IN CONCRETE FOOTING 3000 PSI 28 DAY COMPRESSIVE STRENGTH
12" DIA.
12" DIA.
FRONT VIEW
SIDE VIEW

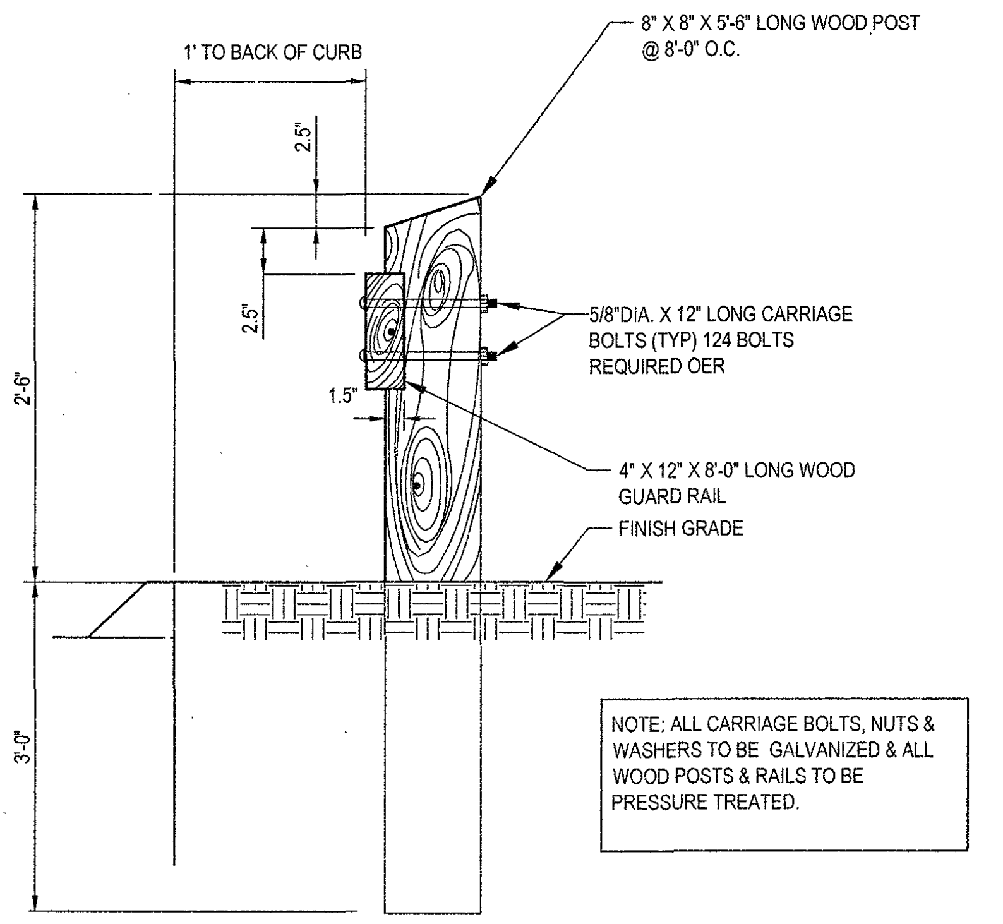
CHAIN LINK FENCE DETAIL

N.T.S.



'STOP' BAR DETAIL

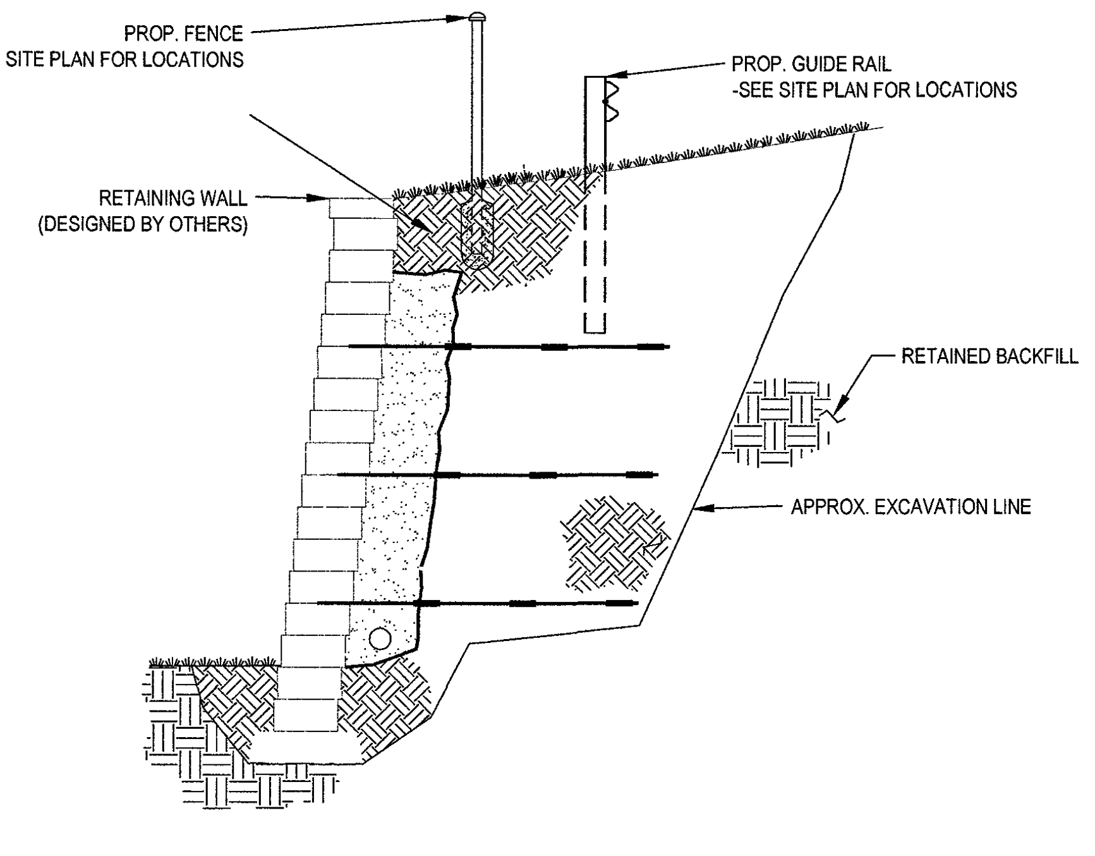
N.T.S.


8" X 8" X 5'-6" LONG WOOD POST @ 8'-0" O.C.
1' TO BACK OF CURB
2.5"
2.5"
1.5"
2'-6"
3'-0"
5/8"DIA. X 12" LONG CARRIAGE BOLTS (TYP) 124 BOLTS REQUIRED OER
4" X 12" X 8'-0" LONG WOOD GUARD RAIL
FINISH GRADE

NOTE: ALL CARRIAGE BOLTS, NUTS & WASHERS TO BE GALVANIZED & ALL WOOD POSTS & RAILS TO BE PRESSURE TREATED.

WOOD GUIDE RAIL DETAIL

N.T.S.

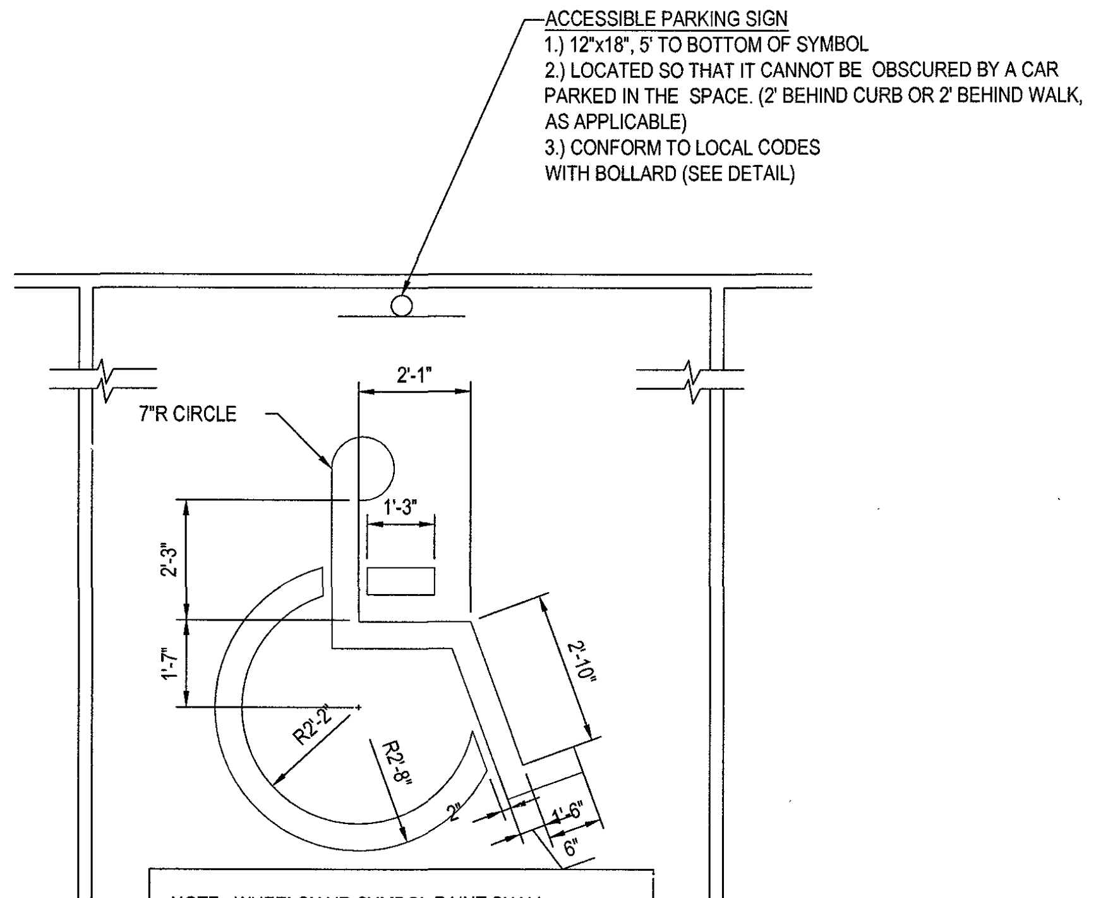

PROP. FENCE -SEE SITE PLAN FOR LOCATIONS
PROP. GUIDE RAIL -SEE SITE PLAN FOR LOCATIONS
RETAINING WALL (DESIGNED BY OTHERS)
RETAINED BACKFILL
APPROX. EXCAVATION LINE

NOTES:

- [1] THIS DETAIL PROVIDED FOR REFERENCE ONLY. DESIGN OF PROPOSED RETAINING WALLS TO BE PREPARED BY A LICENSED STRUCTURAL ENGINEER.
- [2] RETAINING WALL & ASSOCIATED REINFORCEMENT SHALL BE DESIGNED TO ACCOMMODATE PROPOSED FENCE, GUIDE RAIL, SUBSURFACE STRUCTURES, UTILITIES AND ALL OTHER WORK SHOWN ON THESE SITE DEVELOPMENT PLANS.
- [3] RETAINING WALL DESIGNER MUST ACCOUNT FOR MULTIPLE STORM STRUCTURES BEHIND WALL INCLUDING PARALLEL STORM PIPE THAT MAY INTERFERE WITH GEOSYNTHETIC REINFORCEMENT.
- [4] SEE GRADING & DRAINAGE PLAN FOR PROPOSED ELEVATIONS AND SLOPES ASSOCIATED WITH SAME.

TYPICAL RETAINING WALL DETAIL

N.T.S.

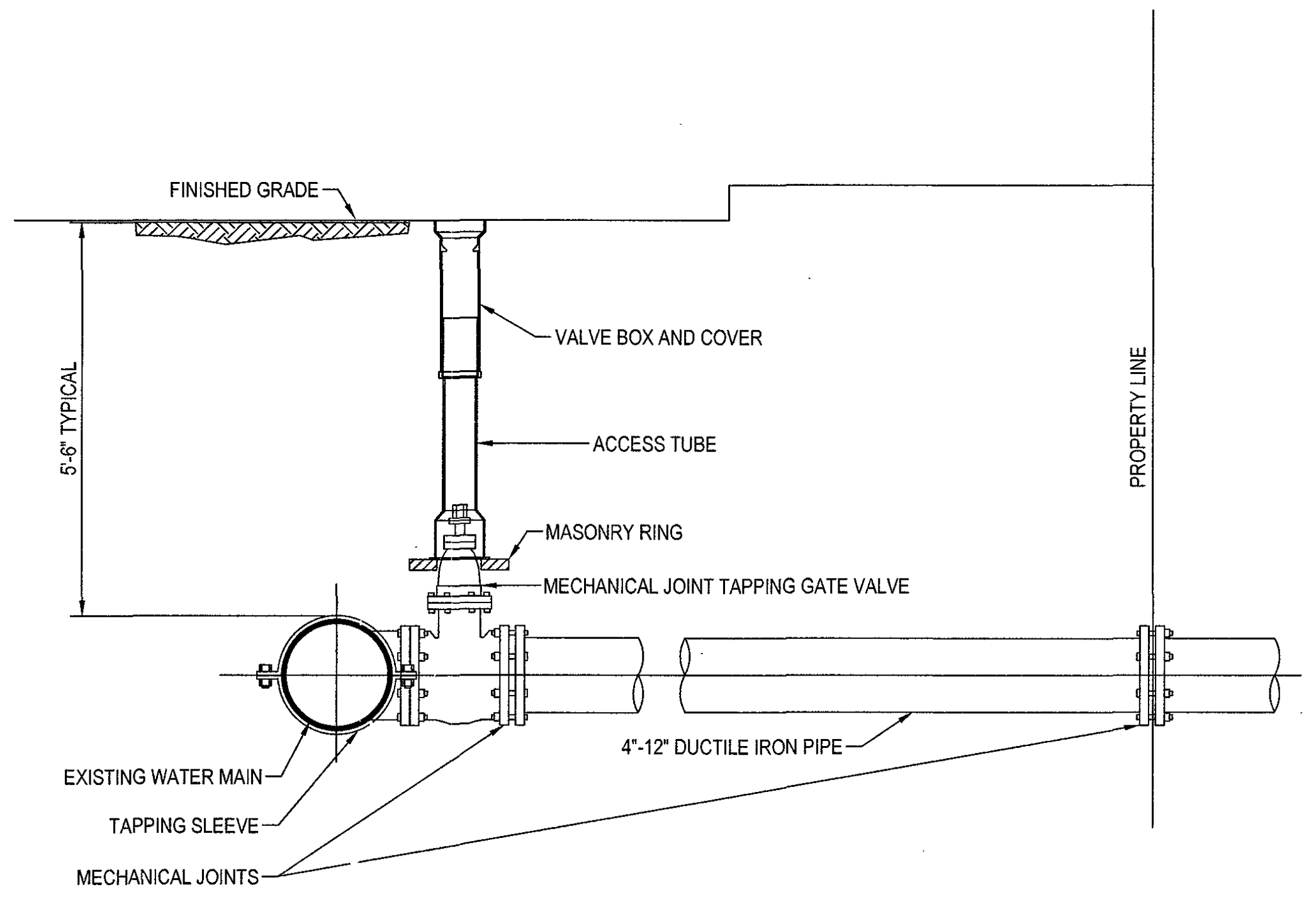


ACCESSIBLE PARKING SIGN
1.) 12"x18", 5' TO BOTTOM OF SYMBOL
2.) LOCATED SO THAT IT CANNOT BE OBSCURED BY A CAR PARKED IN THE SPACE. (2' BEHIND CURB OR 2' BEHIND WALK, AS APPLICABLE)
3.) CONFORM TO LOCAL CODES WITH BOLLARD (SEE DETAIL)

NOTE: WHEELCHAIR SYMBOL PAINT SHALL CONFORM TO THE STRIPING PAINT SPECIFIED AND SYMBOL SHALL BE CENTERED IN THE STALL.

ACCESSIBLE PARKING STALL PAINTING DETAIL

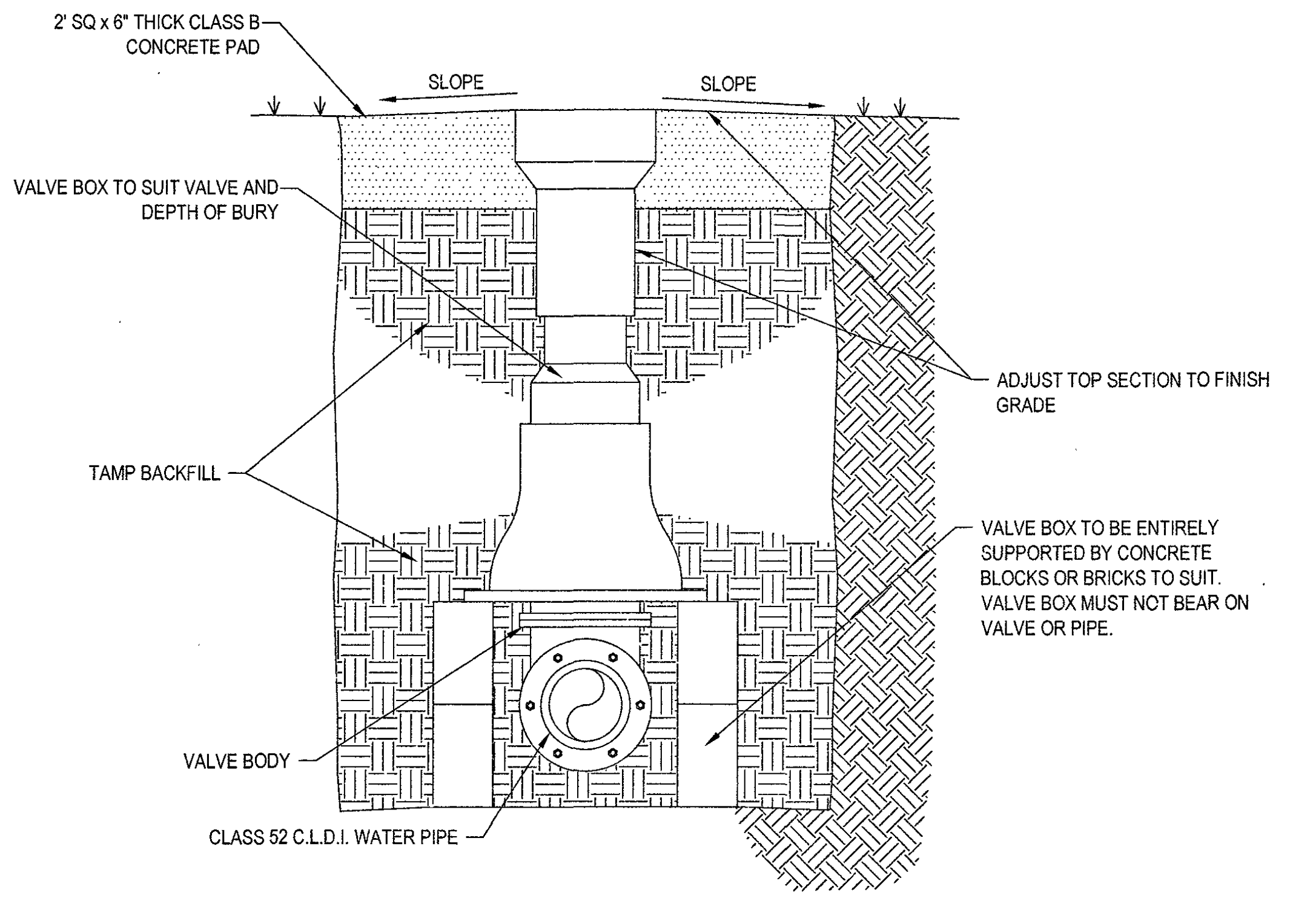
N.T.S.



NOTE:
1. DETAIL SHOWN FOR GRAPHICAL PURPOSES ONLY. PROVIDE WATER CONNECTION IN ACCORDANCE WITH UTILITY OWNER'S REQUIREMENTS.

TYPICAL WATER PIPE CONNECTION WITH TAPPING SLEEVE AND GATE VALVE DETAIL

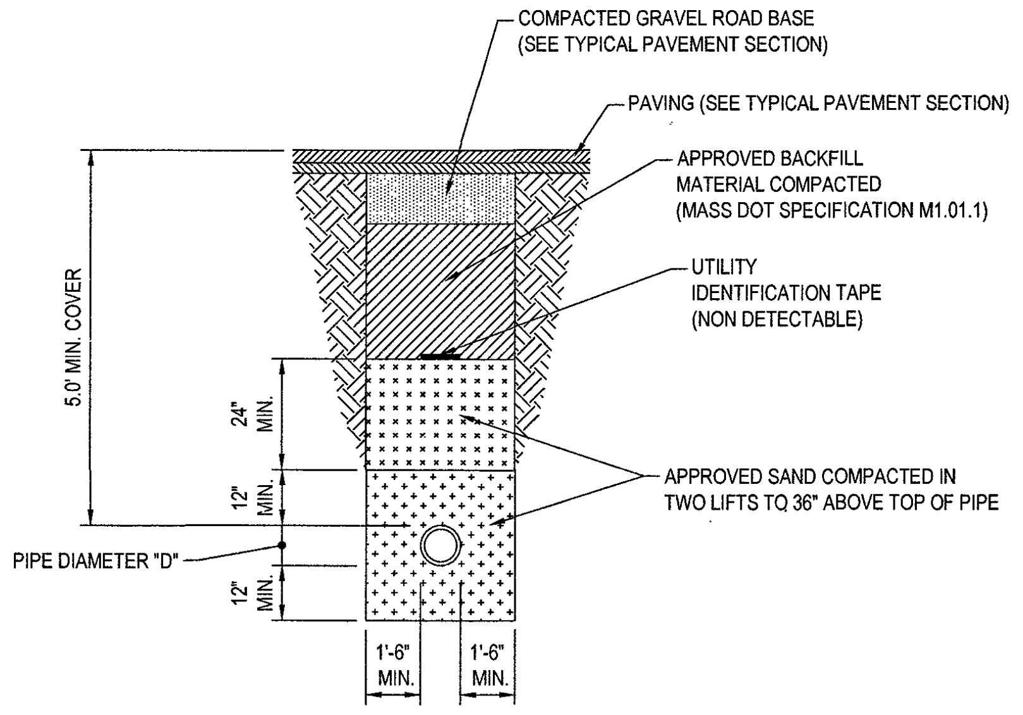
N.T.S.


2' SQ x 6" THICK CLASS B CONCRETE PAD
SLOPE
SLOPE
VALVE BOX TO SUIT VALVE AND DEPTH OF BURY
ADJUST TOP SECTION TO FINISH GRADE
TAMP BACKFILL
VALVE BOX TO BE ENTIRELY SUPPORTED BY CONCRETE BLOCKS OR BRICKS TO SUIT. VALVE BOX MUST NOT BEAR ON VALVE OR PIPE.
VALVE BODY
CLASS 52 C.L.D.I. WATER PIPE

GATE VALVE DETAIL

N.T.S.

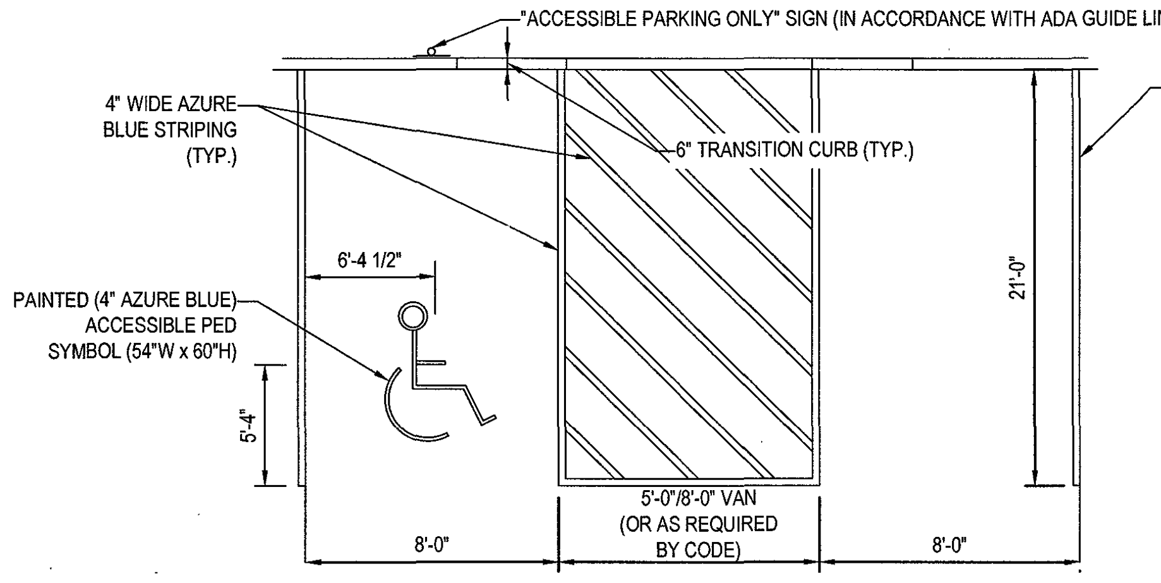
NOTE: THE CONTRACTOR IS DIRECTED AND RESPONSIBLE TO SLOPE AND/OR SHIELD THE TRENCH EXCAVATION IN ACCORDANCE WITH ALL APPLICABLE OSHA REGULATIONS.


COMPACTED GRAVEL ROAD BASE (SEE TYPICAL PAVEMENT SECTION)
PAVING (SEE TYPICAL PAVEMENT SECTION)
APPROVED BACKFILL MATERIAL COMPACTED (MASS DOT SPECIFICATION M1.01.1)
UTILITY IDENTIFICATION TAPE (NON DETECTABLE)
5.0' MIN. COVER
24" MIN.
12" MIN.
12" MIN.
APPROVED SAND COMPACTED IN TWO LIFTS TO 36" ABOVE TOP OF PIPE
PIPE DIAMETER "D"
1'-6" MIN.
1'-6" MIN.

NOTE:
1. DETAIL SHOWN FOR GRAPHICAL PURPOSES ONLY. PROVIDE WATER LINE TRENCH IN ACCORDANCE WITH UTILITY OWNER'S REQUIREMENTS.

TYPICAL WATER TRENCH DETAIL

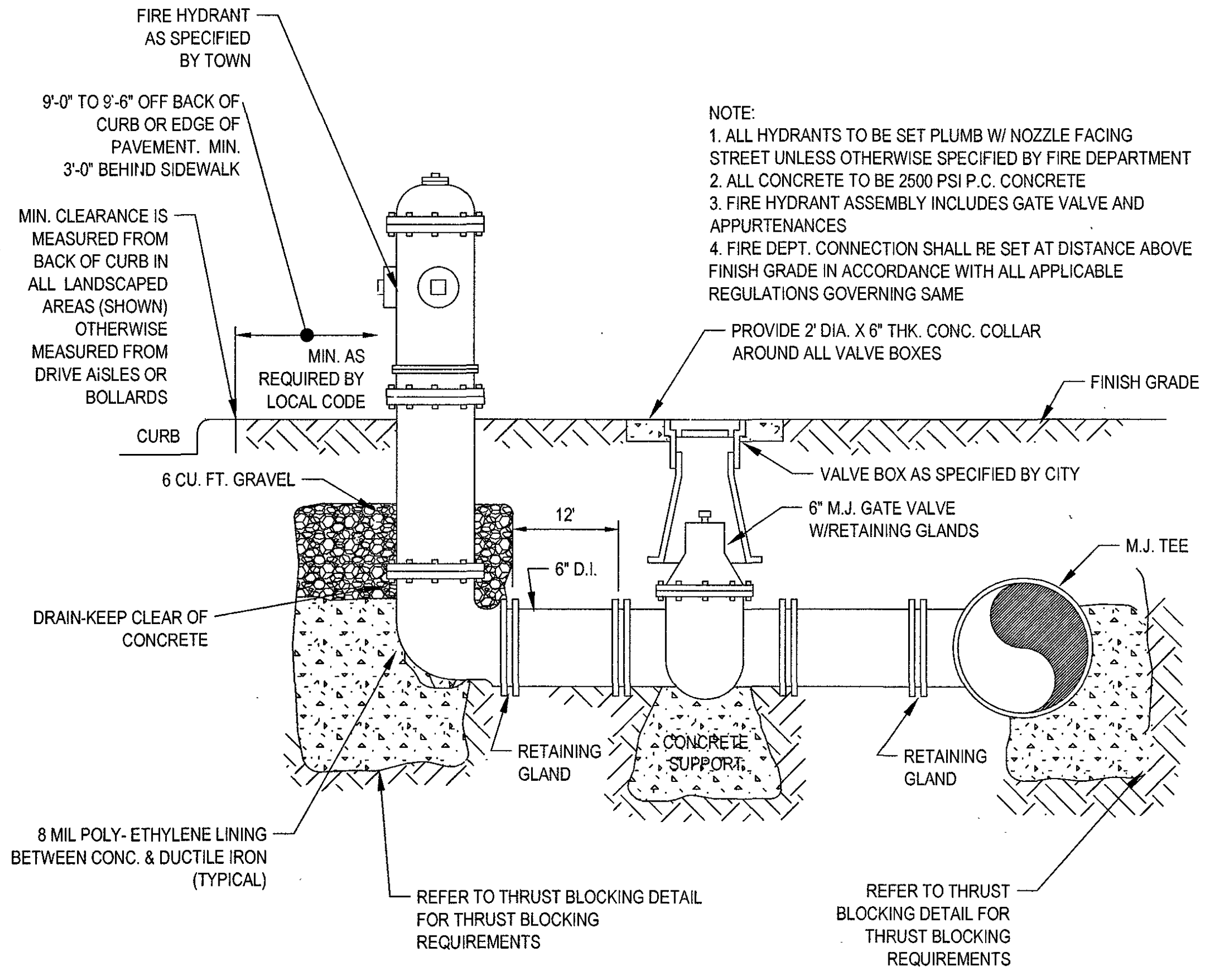
N.T.S.


"ACCESSIBLE PARKING ONLY" SIGN (IN ACCORDANCE WITH ADA GUIDE LINES)
4" WIDE AZURE BLUE STRIPING (TYP.)
6" TRANSITION CURB (TYP.)
4" WIDE WHITE STRIPING (TYP.)
6'-4 1/2"
PAINTED (4" AZURE BLUE) ACCESSIBLE PED SYMBOL (54"W x 60"H)
5'-4"
21'-0"
8'-0"
5'-0"/8'-0" VAN (OR AS REQUIRED BY CODE)
8'-0"

NOTE: ALL PAVEMENT STRIPING AND MARKINGS SHALL CONSIST OF CHLORINATED RUBBER PAINT APPLIED TO A DRY SURFACE WHEN THE TEMPERATURE IS GREATER THAN 40°F. PAINT SHALL BE APPLIED AT A MINIMUM OF 0.015" (15 MIL) FILM THICKNESS

ACCESSIBLE STALL MARKINGS & PARKING LOT STRIPING DETAIL

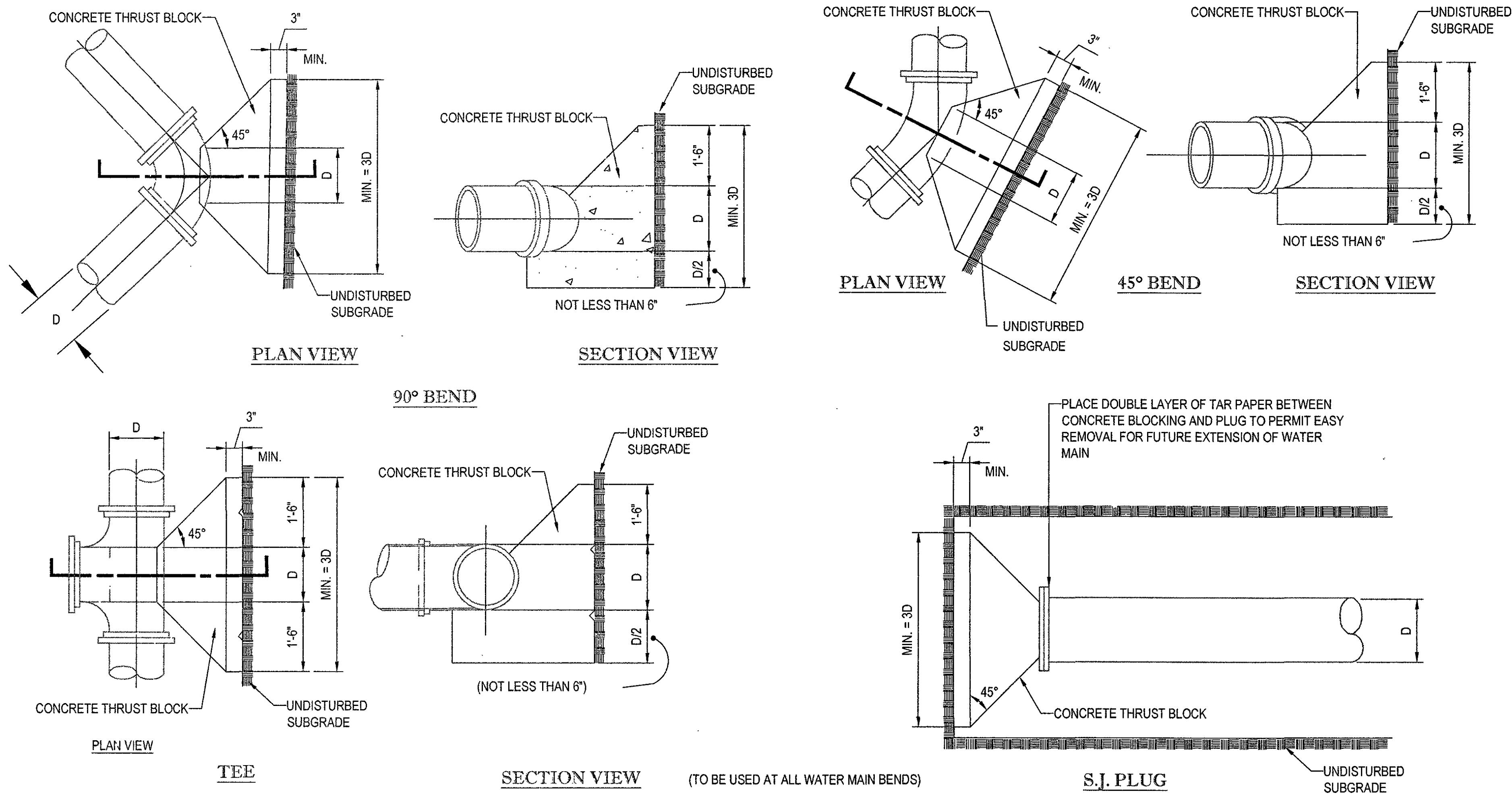
N.T.S.


FIRE HYDRANT AS SPECIFIED BY TOWN
9'-0" TO 9'-6" OFF BACK OF CURB OR EDGE OF PAVEMENT. MIN. 3'-0" BEHIND SIDEWALK
MIN. CLEARANCE IS MEASURED FROM BACK OF CURB IN ALL LANDSCAPED AREAS (SHOWN) OTHERWISE MEASURED FROM DRIVE AISLES OR BOLLARDS
MIN. AS REQUIRED BY LOCAL CODE
CURB
6 CU. FT. GRAVEL
12'
6" D.I.
PROVIDE 2' DIA. X 6" THK. CONC. COLLAR AROUND ALL VALVE BOXES
FINISH GRADE
VALVE BOX AS SPECIFIED BY CITY
6" M.J. GATE VALVE W/RETAINING GLANDS
M.J. TEE
DRAIN-KEEP CLEAR OF CONCRETE
RETAINING GLAND
CONCRETE SUPPORT
RETAINING GLAND
8 MIL POLY- ETHYLENE LINING BETWEEN CONC. & DUCTILE IRON (TYPICAL)
REFER TO THRUST BLOCKING DETAIL FOR THRUST BLOCKING REQUIREMENTS
REFER TO THRUST BLOCKING DETAIL FOR THRUST BLOCKING REQUIREMENTS

NOTE:
1. ALL HYDRANTS TO BE SET PLUMB W/ NOZZLE FACING STREET UNLESS OTHERWISE SPECIFIED BY FIRE DEPARTMENT
2. ALL CONCRETE TO BE 2500 PSI P.C. CONCRETE
3. FIRE HYDRANT ASSEMBLY INCLUDES GATE VALVE AND APPURTENANCES
4. FIRE DEPT. CONNECTION SHALL BE SET AT DISTANCE ABOVE FINISH GRADE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS GOVERNING SAME

FIRE HYDRANT ASSEMBLY DETAIL

N.T.S.



(TO BE USED AT ALL WATER MAIN BENDS)

THRUST BLOCK DETAIL

N.T.S.

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- NORTHERN VIRGINIA
- CENTRAL VIRGINIA
- RALEIGH, NC
- CHARLOTTE, NC
- TAMPA, FL
- SOUTH FLORIDA

REVISIONS

REV	DATE	COMMENT	BY
1			
2			
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13			
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15			

PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_DETAILS

PROJECT: SITE DEVELOPMENT PLANS
—FOR—

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9300
Fax: (508) 480-9080
www.BohlerEngineering.com

W.D. GOEBEL
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 42644
RHODE ISLAND LICENSE No. [illegible]
CONNECTICUT LICENSE No. [illegible]
NEW HAMPSHIRE LICENSE No. 10280
MAINE LICENSE No. [illegible]
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202

WILLIAM D
GOEBEL
CIVIL
42644

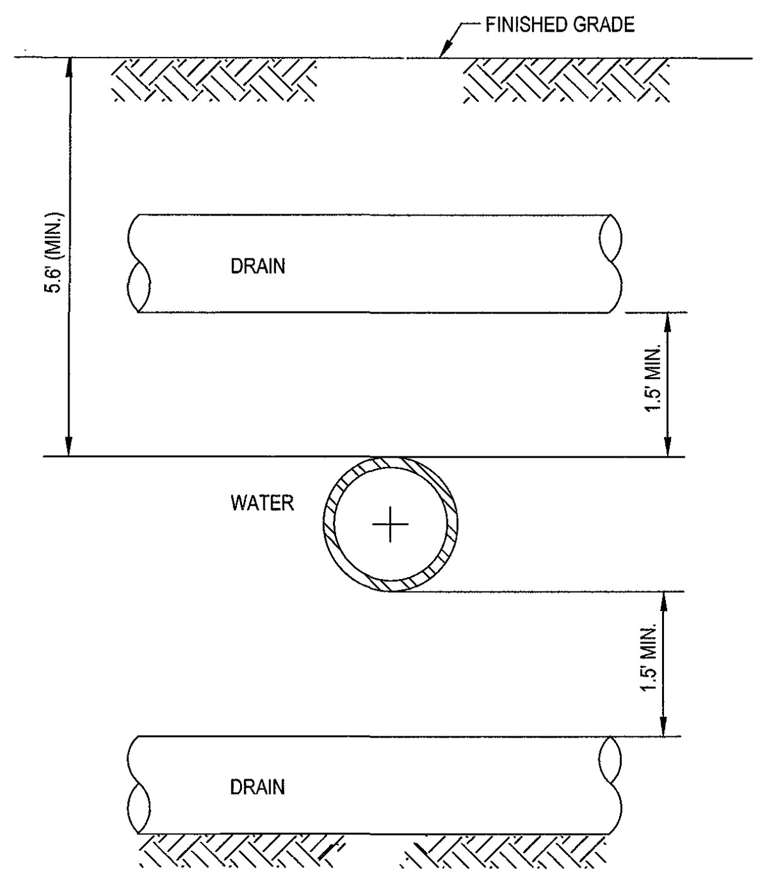
SHEET TITLE:

DETAILS

SHEET NUMBER:
69
OF 74

REV 0 - 11/18/2016

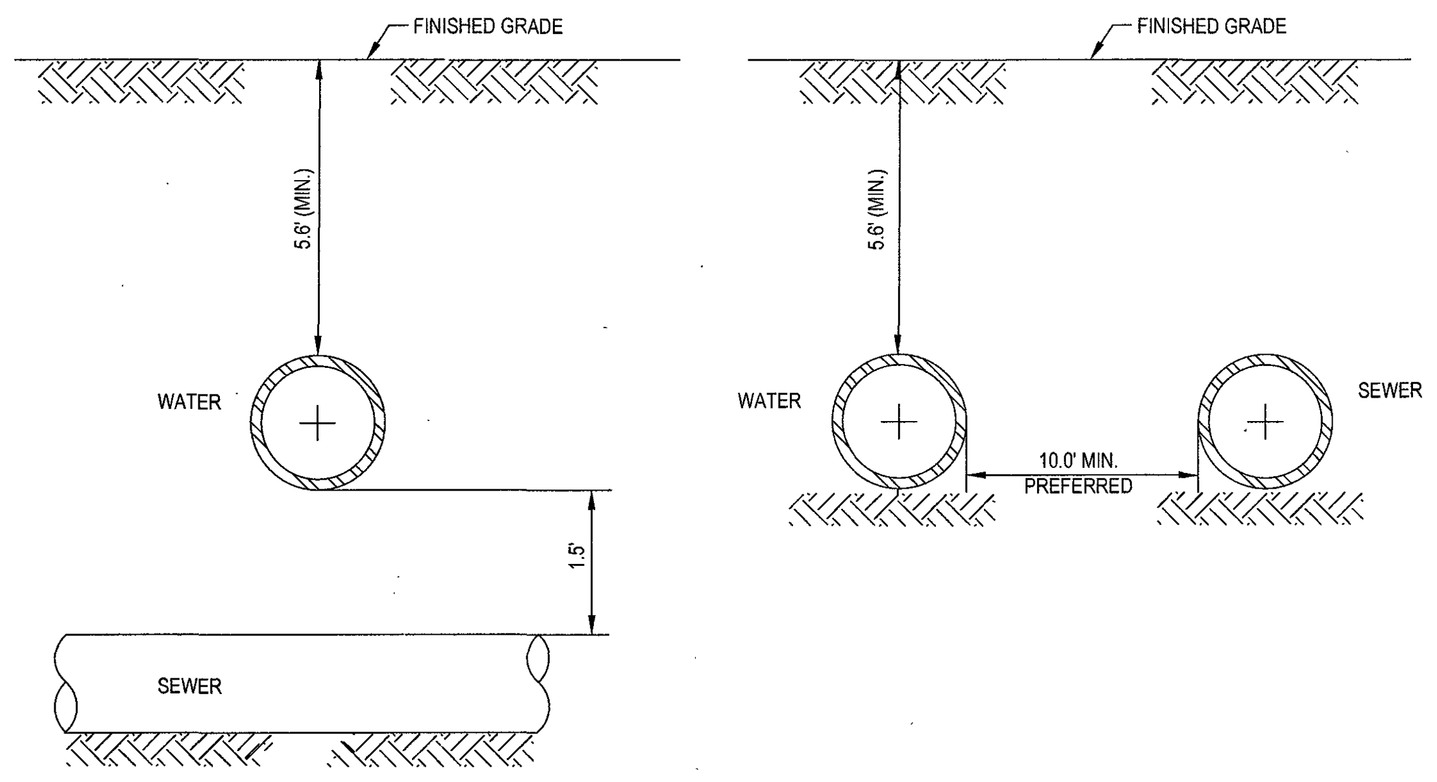
P:\16\W161041\Drawings\Plan_Sets\REV3\W161041_ss3_Details.dwg, 69-DETAILS, 10/6/2014, 4:26:00 PM, mashley, XeroX510-1.pc3, User634, 1:1



NOTE: REFER TO CONCRETE ENCASEMENT DETAIL (THIS SHEET) WHERE VERTICAL SEPARATION CAN NOT BE ACHIEVED.

WATER/DRAIN CROSSING DETAIL

N.T.S.

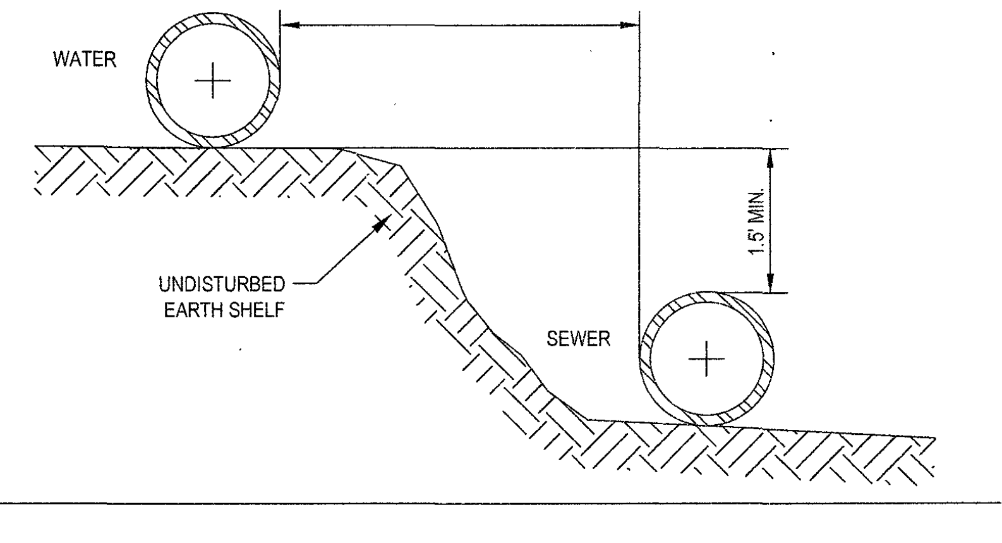


NOTE:

10' HORIZONTAL SEPARATION AND 1.5' VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN WATER AND SEWER AS DEPICTED IN THIS DETAIL OR SEWER SHALL BE ENCASED IN CONCRETE (SEE "CONCRETE ENCASEMENT DETAIL AT UTILITY CROSSING" DETAIL THIS SHEET) IN SECTIONS WHERE SEPARATIONS SHALL NOT BE ACHIEVED.

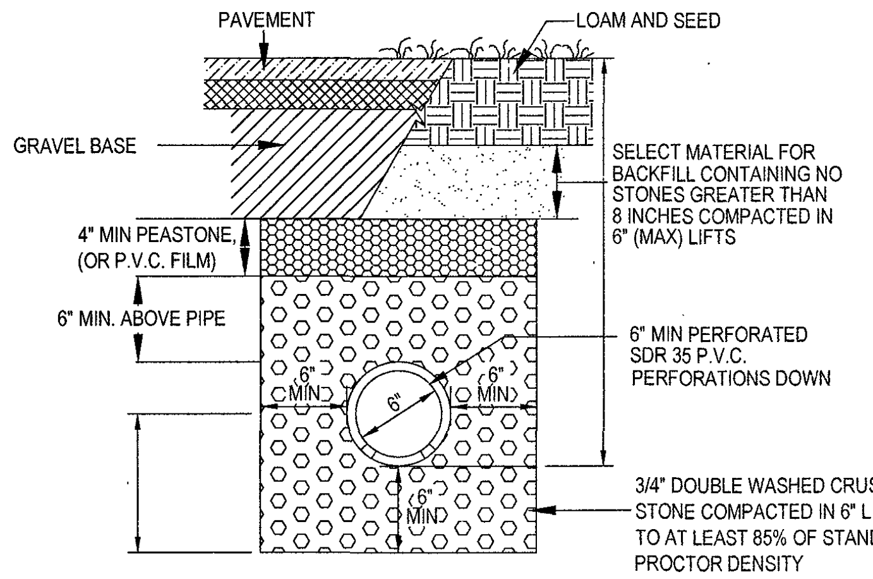
WATER/SEWER CROSSING DETAIL

N.T.S.



WATER/SEWER SEPARATION DETAIL

N.T.S.

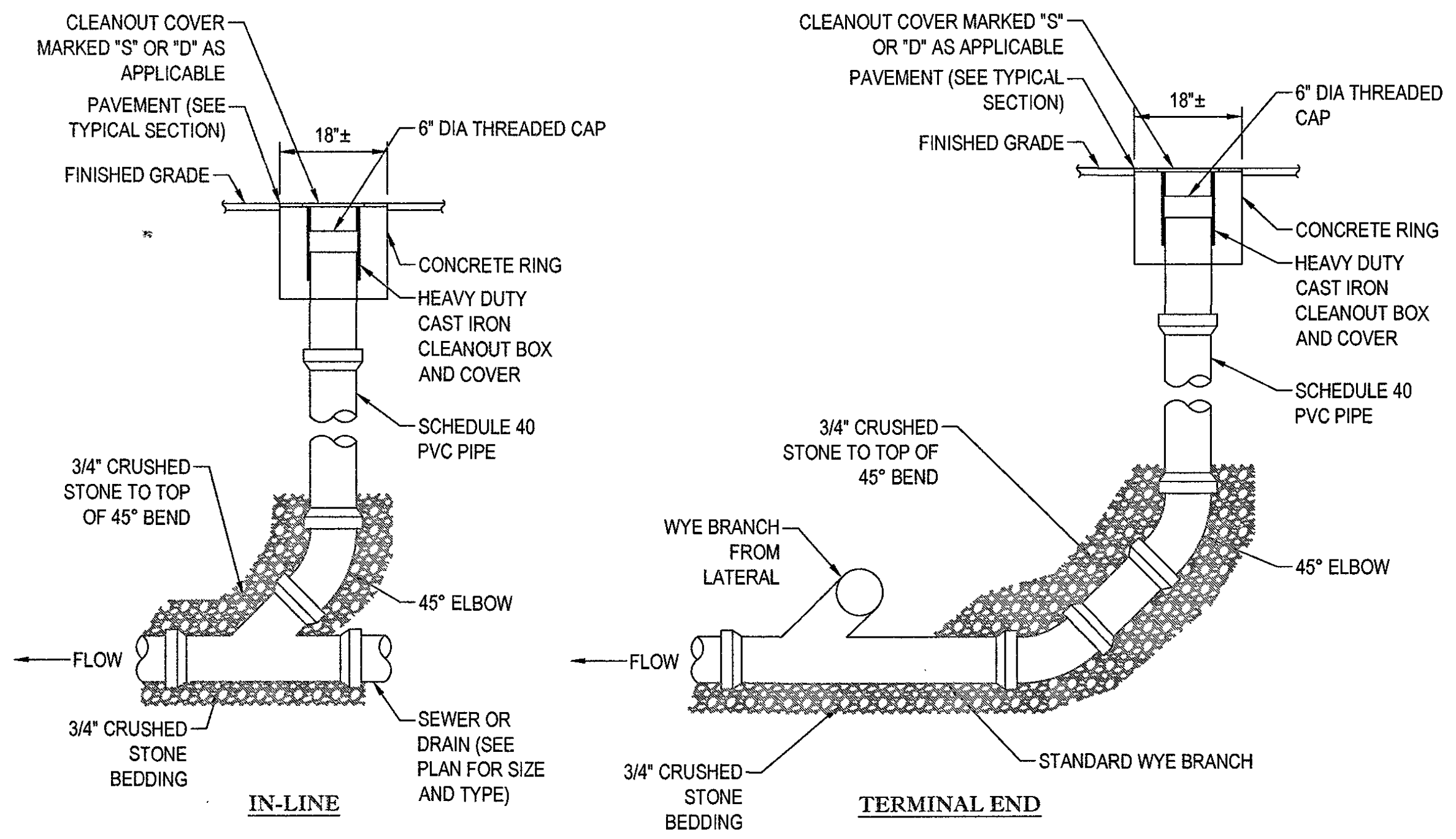

PAVEMENT
LOAM AND SEED
GRAVEL BASE
SELECT MATERIAL FOR BACKFILL CONTAINING NO STONES GREATER THAN 8 INCHES COMPACTED IN 6" (MAX) LIFTS
4" MIN PEASTONE, (OR P.V.C. FILM)
6" MIN. ABOVE PIPE
6" MIN PERFORATED SDR 35 P.V.C. PERFORATIONS DOWN
6" MIN
6"
6" MIN
6" MIN
3/4" DOUBLE WASHED CRUSHED STONE COMPACTED IN 6" LIFTS TO AT LEAST 85% OF STANDARD PROCTOR DENSITY

NOTES

1. PROVIDE CLEANOUTS TO FINISHED GRADE AT ALL UPGRADIENT ENDS AND AT INTERVALS OF NO MORE THAN 200 FEET
2. MINIMUM SLOPE SHALL BE 0.003, TO DRAIN TO DAYLIGHT.
3. SUBDRAIN TO BE INSTALLED IN ALL LOCATIONS WHERE THE PROPOSED ROADWAY BASE IS WITHIN A MINIMUM OF 2 FEET OF CUT. IN GENERAL, THE SUBDRAIN SHALL FOLLOW THE CONTOUR OF THE ROADWAY AND CONNECT TO THE NEAREST DOWN GRADIENT DRAINAGE STRUCTURE UNLESS OTHERWISE INDICATED ON THE GRADING AND DRAINAGE PLANS.

TYPICAL SUBDRAIN DETAIL

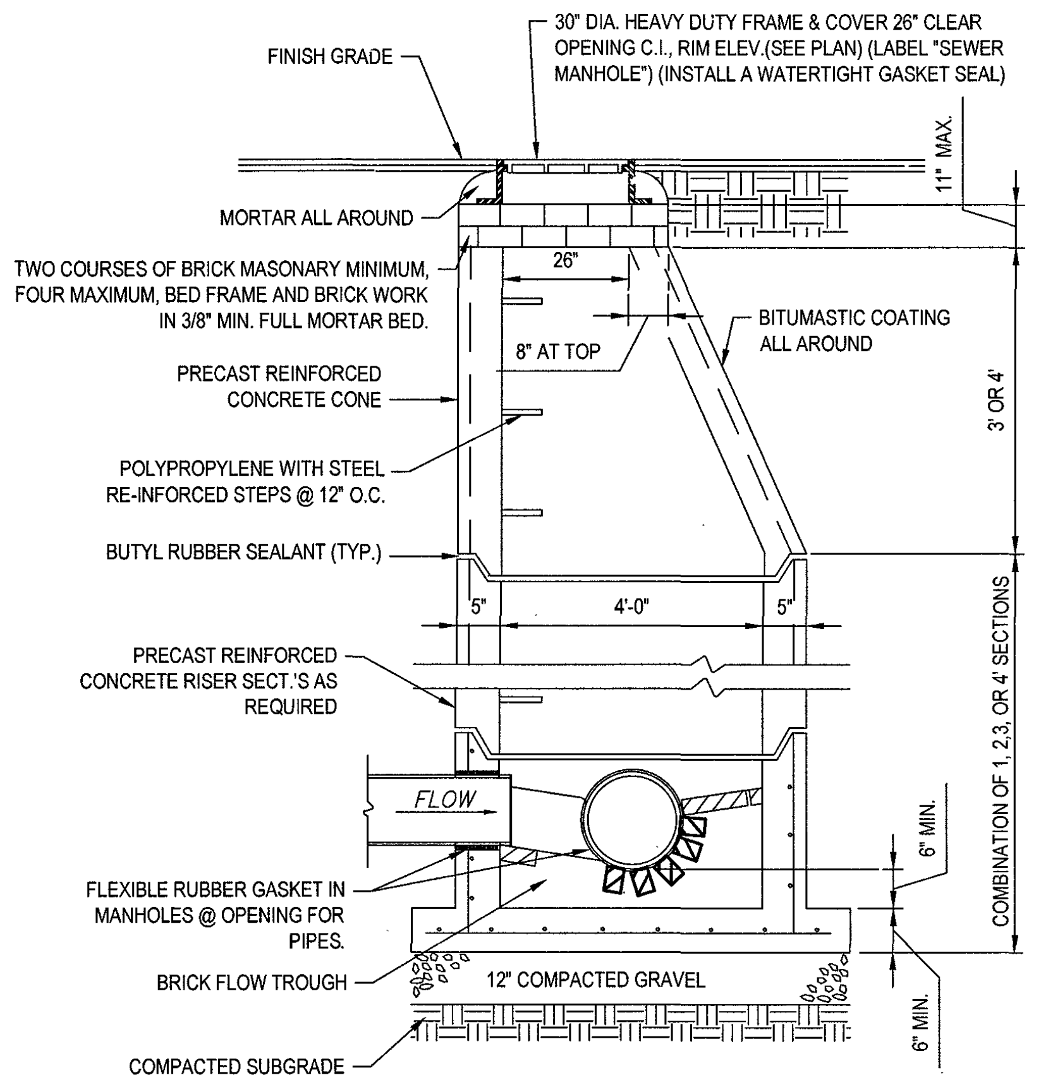
N.T.S.


CLEANOUT COVER MARKED "S" OR "D" AS APPLICABLE
PAVEMENT (SEE TYPICAL SECTION)
18"±
6" DIA THREADED CAP
FINISHED GRADE
CONCRETE RING
HEAVY DUTY CAST IRON CLEANOUT BOX AND COVER
SCHEDULE 40 PVC PIPE
3/4" CRUSHED STONE TO TOP OF 45° BEND
45° ELBOW
FLOW
3/4" CRUSHED STONE BEDDING
SEWER OR DRAIN (SEE PLAN FOR SIZE AND TYPE)
IN-LINE
CLEANOUT COVER MARKED "S" OR "D" AS APPLICABLE
PAVEMENT (SEE TYPICAL SECTION)
18"±
6" DIA THREADED CAP
FINISHED GRADE
CONCRETE RING
HEAVY DUTY CAST IRON CLEANOUT BOX AND COVER
SCHEDULE 40 PVC PIPE
3/4" CRUSHED STONE TO TOP OF 45° BEND
WYE BRANCH FROM LATERAL
45° ELBOW
FLOW
3/4" CRUSHED STONE BEDDING
STANDARD WYE BRANCH
TERMINAL END

NOTES:
1. CLEANOUTS TO BE INSTALLED WHERE INDICATED ON THE PLANS.
2. CLEANOUT PIPE TO BE SAME SIZE AND MATERIAL AS SEWER/DRAIN LINE UP TO 8".
3. BACKFILL TO TOP OF 45° WITH 3/4" CRUSHED STONE.

SEWER / DRAIN CLEANOUT DETAIL

N.T.S.

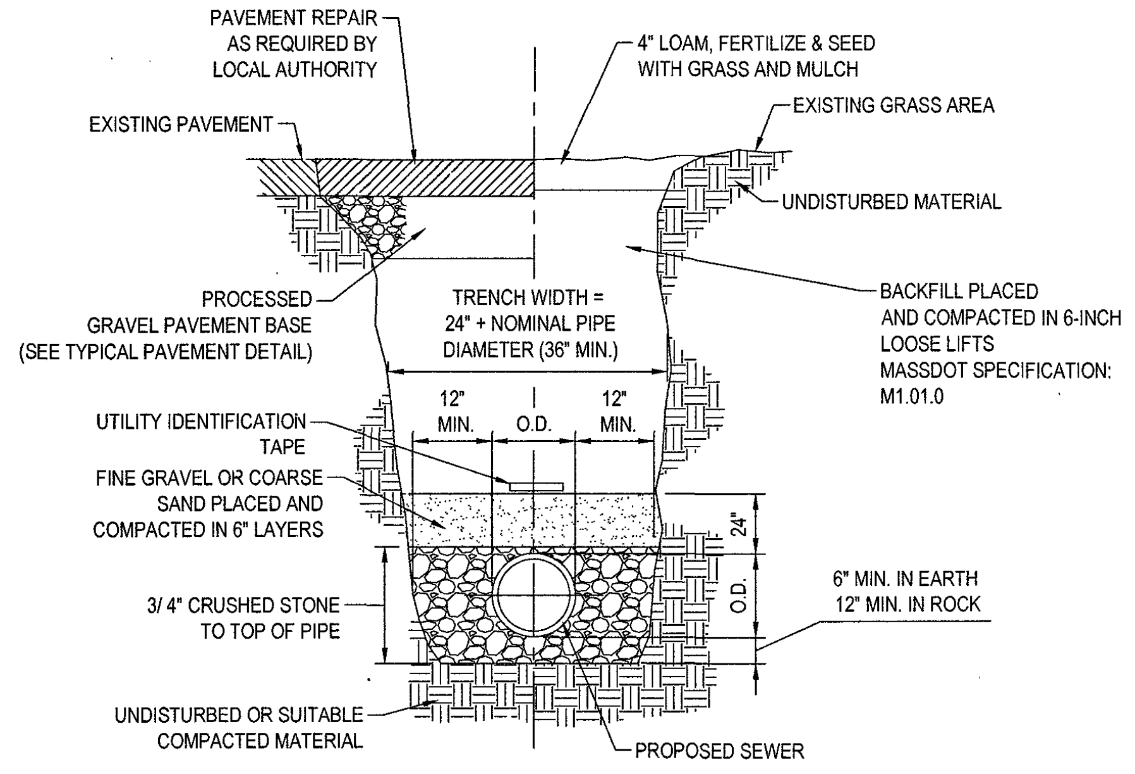

FINISH GRADE
30" DIA. HEAVY DUTY FRAME & COVER 26" CLEAR OPENING C.I., RIM ELEV.(SEE PLAN) (LABEL "SEWER MANHOLE") (INSTALL A WATERTIGHT GASKET SEAL)
11" MAX.
MORTAR ALL AROUND
TWO COURSES OF BRICK MASONARY MINIMUM, FOUR MAXIMUM, BED FRAME AND BRICK WORK IN 3/8" MIN. FULL MORTAR BED.
26"
8" AT TOP
BITUMASTIC COATING ALL AROUND
PRECAST REINFORCED CONCRETE CONE
3' OR 4'
POLYPROPYLENE WITH STEEL RE-INFORCED STEPS @ 12" O.C.
BUTYL RUBBER SEALANT (TYP.)
5"
4'-0"
5"
PRECAST REINFORCED CONCRETE RISER SECT.'S AS REQUIRED
COMBINATION OF 1, 2,3, OR 4' SECTIONS
FLOW
6" MIN.
FLEXIBLE RUBBER GASKET IN MANHOLES @ OPENING FOR PIPES.
BRICK FLOW TROUGH
12" COMPACTED GRAVEL
6" MIN.
COMPACTED SUBGRADE

NOTE: ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.

TYPICAL PRECAST CONCRETE SANITARY MANHOLE DETAIL

N.T.S.

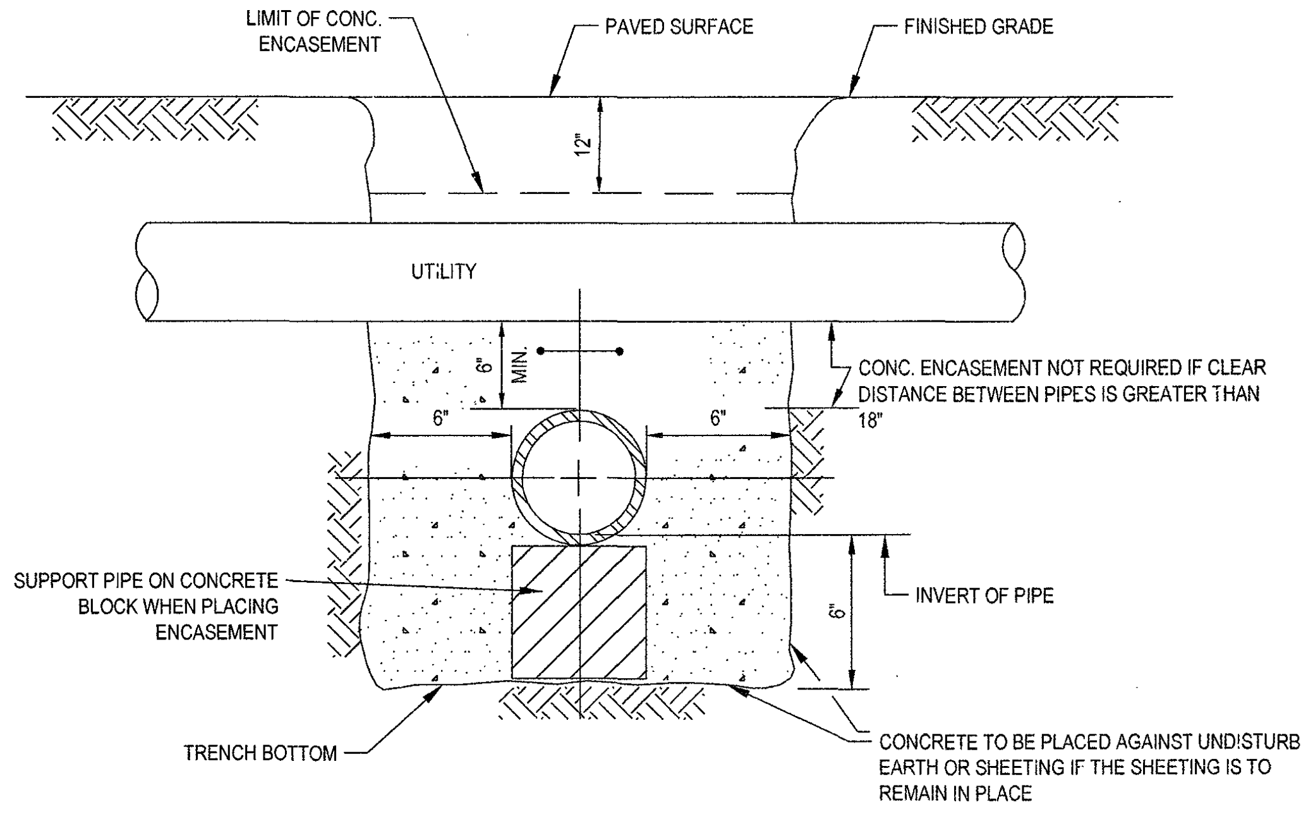
NOTE: THE CONTRACTOR IS DIRECTED AND RESPONSIBLE TO SLOPE AND/OR SHIELD THE TRENCH EXCAVATION IN ACCORDANCE WITH ALL APPLICABLE OSHA REGULATIONS.


PAVEMENT REPAIR AS REQUIRED BY LOCAL AUTHORITY
4" LOAM, FERTILIZE & SEED WITH GRASS AND MULCH
EXISTING GRASS AREA
EXISTING PAVEMENT
UNDISTURBED MATERIAL
PROCESSED GRAVEL PAVEMENT BASE (SEE TYPICAL PAVEMENT DETAIL)
TRENCH WIDTH = 24" + NOMINAL PIPE DIAMETER (36" MIN.)
BACKFILL PLACED AND COMPACTED IN 6-INCH LOOSE LIFTS MASSDOT SPECIFICATION: M1.01.0
12" MIN.
O.D.
12" MIN.
UTILITY IDENTIFICATION TAPE
FINE GRAVEL OR COARSE SAND PLACED AND COMPACTED IN 6" LAYERS
24"
O.D.
3/ 4" CRUSHED STONE TO TOP OF PIPE
6" MIN. IN EARTH
12" MIN. IN ROCK
UNDISTURBED OR SUITABLE COMPACTED MATERIAL
PROPOSED SEWER

NOTE:
1. DETAIL SHOWN FOR GRAPHICAL PURPOSES ONLY. PROVIDE SEWER LINE TRENCH IN ACCORDANCE WITH UTILITY OWNER'S REQUIREMENTS.

SEWER AND FORCE MAIN TRENCH DETAIL

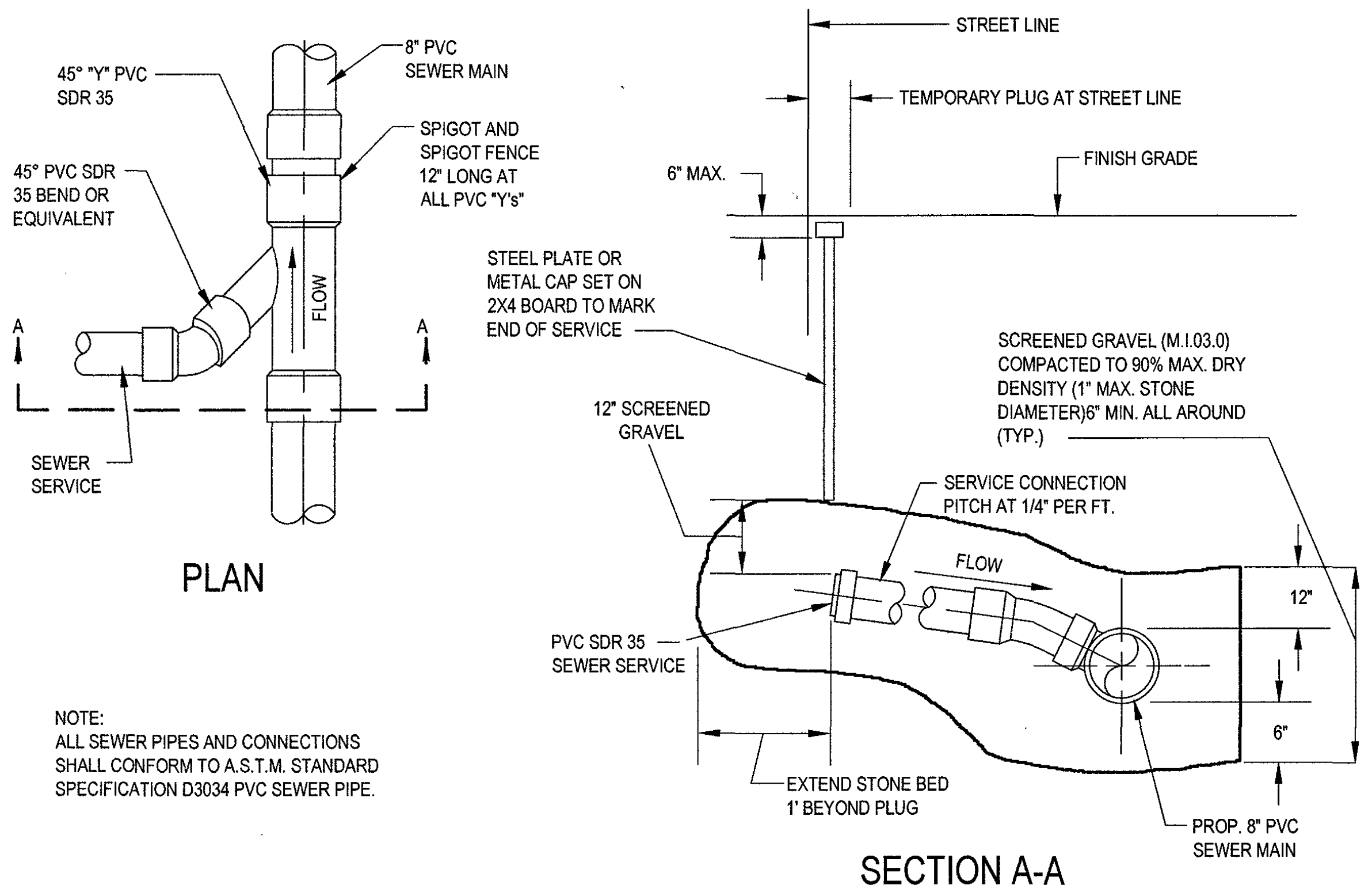
N.T.S.


LIMIT OF CONC. ENCASEMENT
PAVED SURFACE
FINISHED GRADE
12"
UTILITY
6" MIN.
CONC. ENCASEMENT NOT REQUIRED IF CLEAR DISTANCE BETWEEN PIPES IS GREATER THAN 18"
6"
6"
SUPPORT PIPE ON CONCRETE BLOCK WHEN PLACING ENCASEMENT
INVERT OF PIPE
6"
TRENCH BOTTOM
CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH OR SHEETING IF THE SHEETING IS TO REMAIN IN PLACE

NOTES:
- PIPE MUST BE BRACED VERTICALLY & HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONCRETE
- ALL CONCRETE ENCASEMENT SHALL BE KEPT 12" BELOW THE BOTTOM OF ASPHALT PAVEMENT
- CONCRETE ENCASEMENT SHALL EXTEND 1.5' IN EITHER DIRECTION OF CROSSING EXCEPT FOR WATER/SEWER CROSSINGS, WHICH SHALL EXTEND 10' IN EITHER DIRECTION OF CROSSING.

CONCRETE ENCASEMENT DETAIL AT UTILITY CROSSING

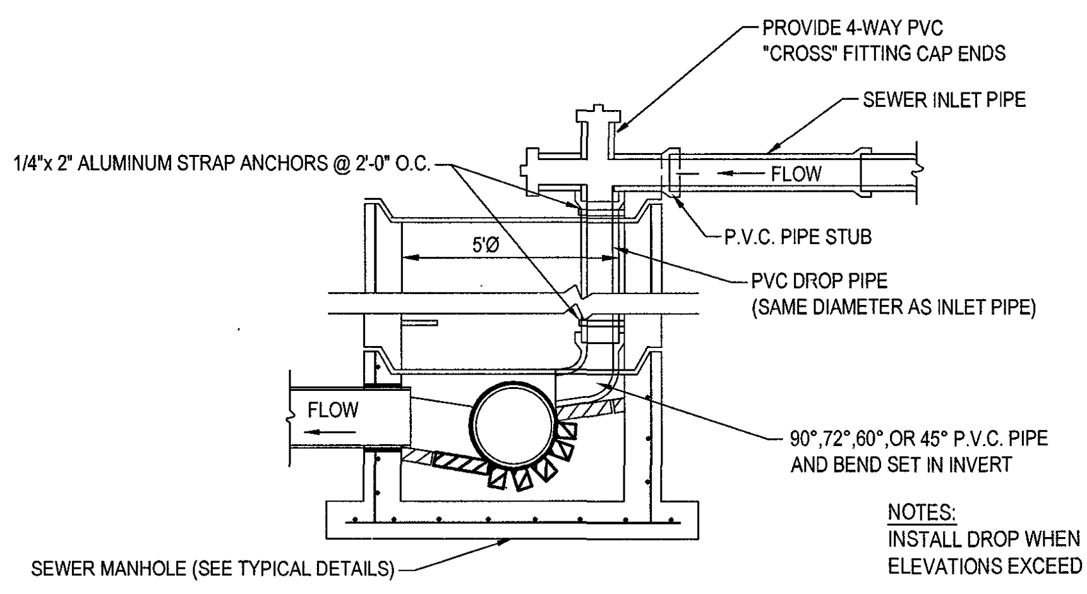
N.T.S.


45° "Y" PVC SDR 35
8" PVC SEWER MAIN
SPIGOT AND SPIGOT FENCE 12" LONG AT ALL PVC "Y's"
45° PVC SDR 35 BEND OR EQUIVALENT
FLOW
A
A
SEWER SERVICE
PLAN
STREET LINE
TEMPORARY PLUG AT STREET LINE
FINISH GRADE
6" MAX.
STEEL PLATE OR METAL CAP SET ON 2X4 BOARD TO MARK END OF SERVICE
SCREENED GRAVEL (M.I.03.0) COMPACTED TO 90% MAX. DRY DENSITY (1" MAX. STONE DIAMETER)6" MIN. ALL AROUND (TYP.)
12" SCREENED GRAVEL
SERVICE CONNECTION PITCH AT 1/4" PER FT.
FLOW
12"
PVC SDR 35 SEWER SERVICE
6"
EXTEND STONE BED 1' BEYOND PLUG
PROP. 8" PVC SEWER MAIN
SECTION A-A

NOTE:
ALL SEWER PIPES AND CONNECTIONS SHALL CONFORM TO A.S.T.M. STANDARD SPECIFICATION D3034 PVC SEWER PIPE.

GRAVITY SEWER SERVICE CONNECTION DETAIL

N.T.S.

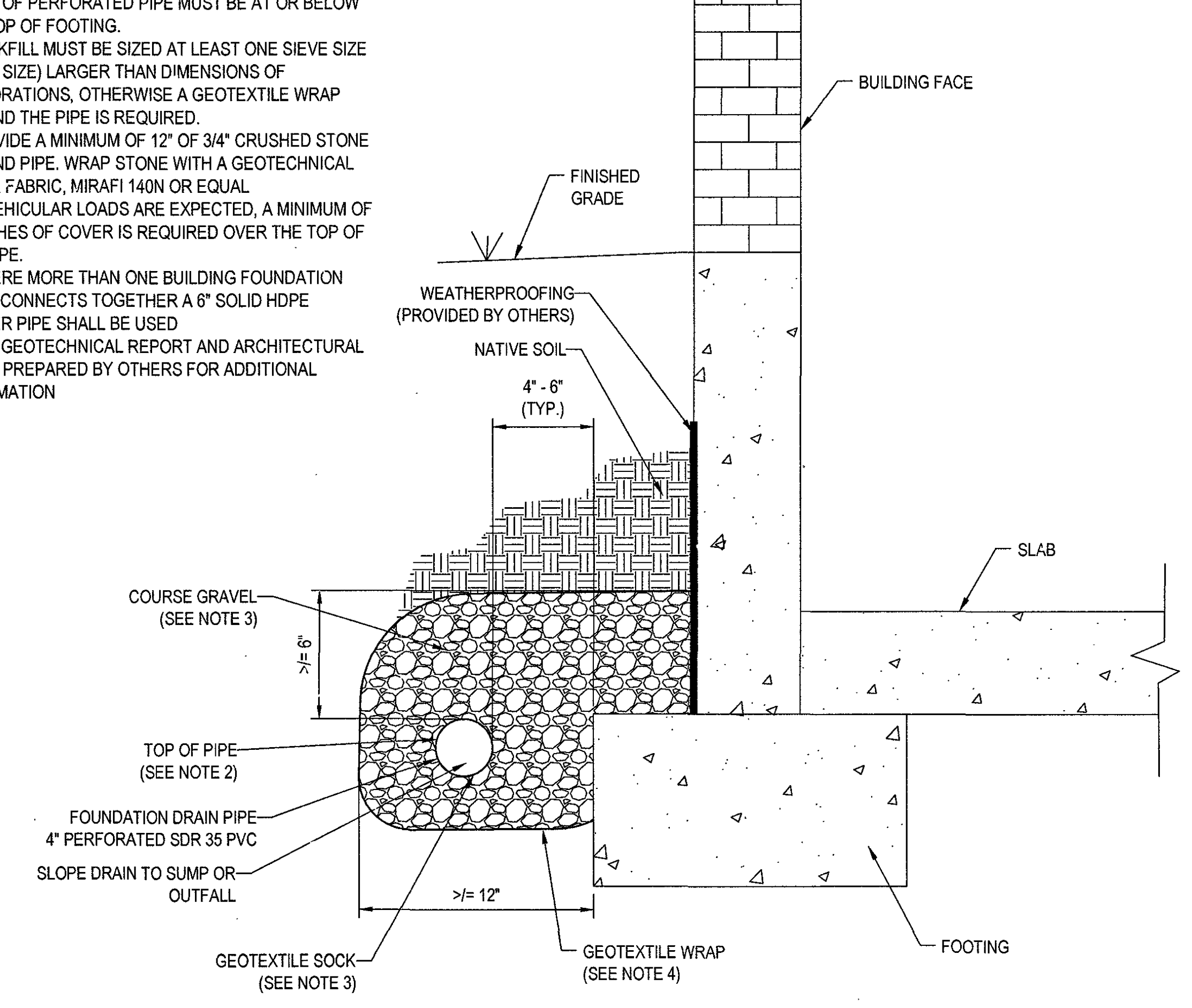

PROVIDE 4-WAY PVC "CROSS" FITTING CAP ENDS
SEWER INLET PIPE
1/4"x 2" ALUMINUM STRAP ANCHORS @ 2'-0" O.C.
FLOW
5'Ø
P.V.C. PIPE STUB
PVC DROP PIPE (SAME DIAMETER AS INLET PIPE)
FLOW
90°,72°,60°,OR 45° P.V.C. PIPE AND BEND SET IN INVERT
SEWER MANHOLE (SEE TYPICAL DETAILS)

NOTES:
INSTALL DROP WHEN INLET TO OUTLET ELEVATIONS EXCEED TWO FEET

SEWER DROP MANHOLE DETAIL

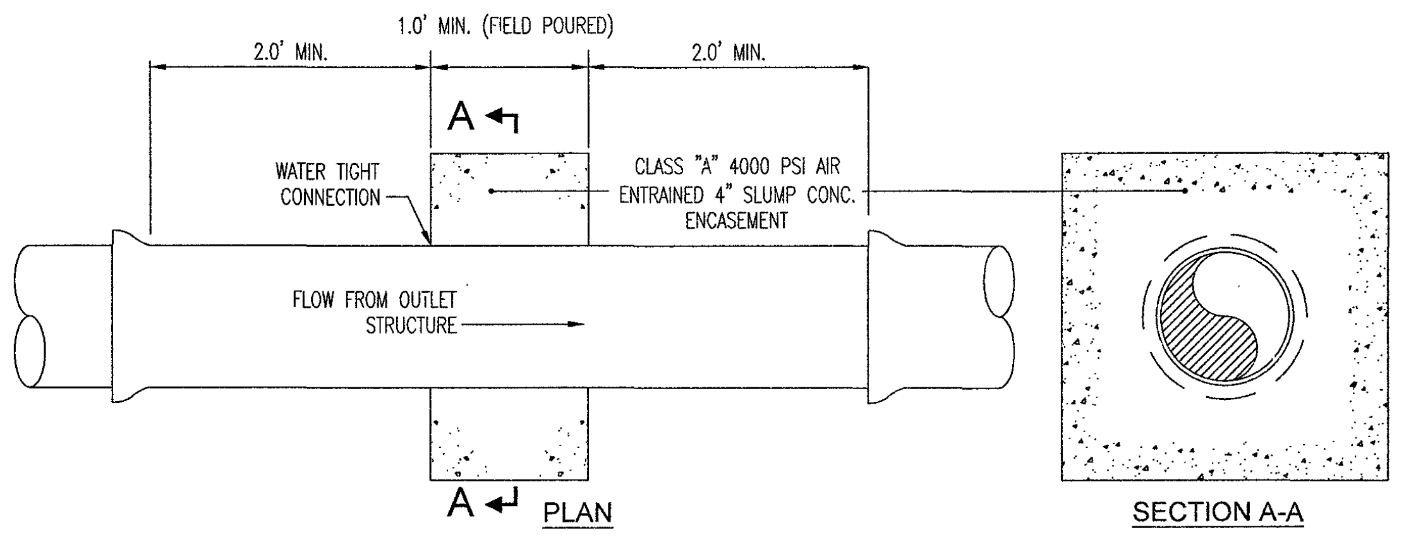
N.T.S.

NOTES:
1. BACKFLOW PREVENTERS SHALL BE INSTALLED ON FOUNDATION DRAINS.
2. TOP OF PERFORATED PIPE MUST BE AT OR BELOW THE TOP OF FOOTING.
3. BACKFILL MUST BE SIZED AT LEAST ONE SIEVE SIZE (ROCK SIZE) LARGER THAN DIMENSIONS OF PERFORATIONS, OTHERWISE A GEOTEXTILE WRAP AROUND THE PIPE IS REQUIRED.
4. PROVIDE A MINIMUM OF 12" OF 3/4" CRUSHED STONE AROUND PIPE. WRAP STONE WITH A GEOTECHNICAL FILTER FABRIC, MIRAFI 140N OR EQUAL
5. IF VEHICULAR LOADS ARE EXPECTED, A MINIMUM OF 12-INCHES OF COVER IS REQUIRED OVER THE TOP OF THE PIPE.
6. WHERE MORE THAN ONE BUILDING FOUNDATION DRAIN CONNECTS TOGETHER A 6" SOLID HDPE HEADER PIPE SHALL BE USED
7. SEE GEOTECHNICAL REPORT AND ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ADDITIONAL INFORMATION


BUILDING FACE
FINISHED GRADE
WEATHERPROOFING (PROVIDED BY OTHERS)
NATIVE SOIL
4" - 6" (TYP.)
SLAB
COURSE GRAVEL (SEE NOTE 3)
>/= 6"
TOP OF PIPE (SEE NOTE 2)
FOUNDATION DRAIN PIPE 4" PERFORATED SDR 35 PVC
SLOPE DRAIN TO SUMP OR OUTFALL
>/= 12"
GEOTEXTILE SOCK (SEE NOTE 3)
GEOTEXTILE WRAP (SEE NOTE 4)
FOOTING

FOUNDATION DRAIN DETAIL

N.T.S.

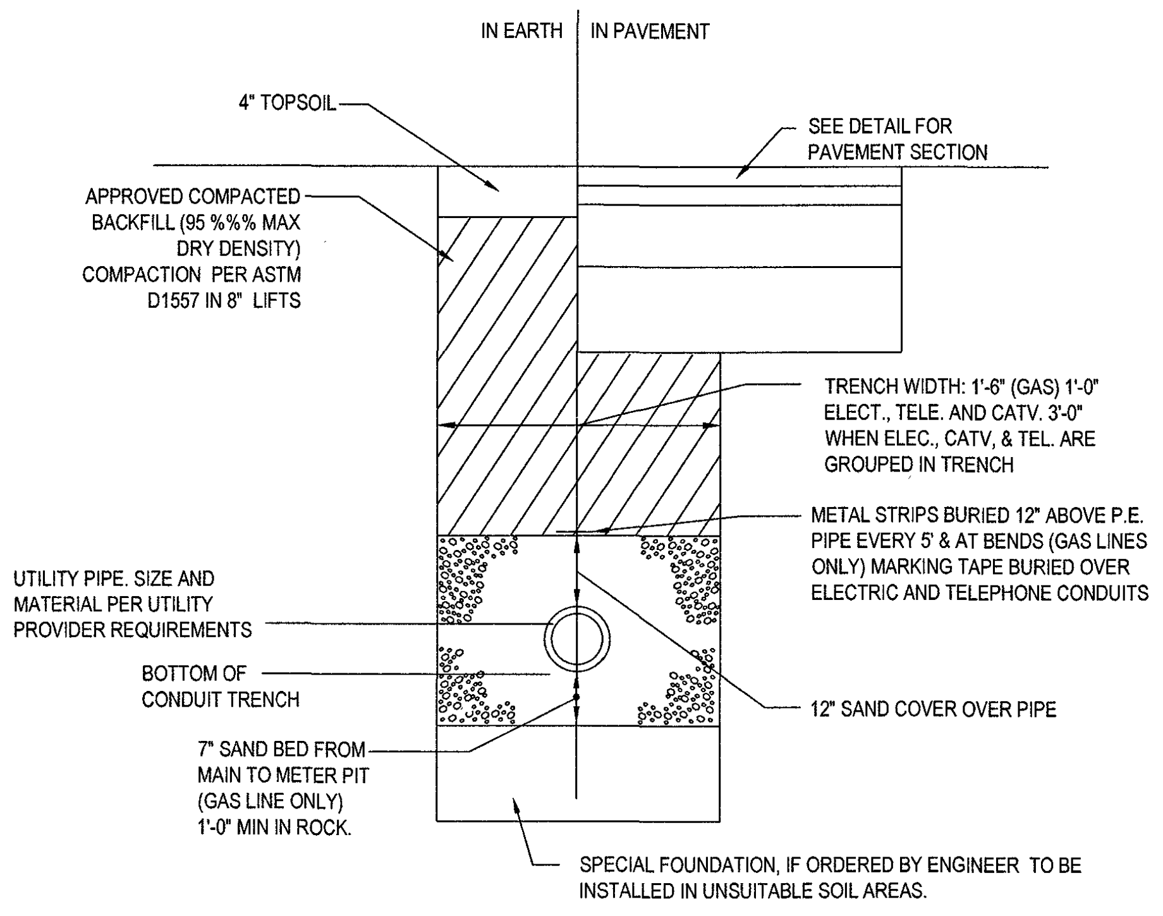

1.0' MIN. (FIELD POURED)
2.0' MIN.
2.0' MIN.
A
WATER TIGHT CONNECTION
CLASS "A" 4000 PSI AIR ENTRAINED 4" SLUMP CONC. ENCASEMENT
FLOW FROM OUTLET STRUCTURE
A
PLAN
SECTION A-A

NOTE:
FIELD POURED COLLARS SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12) INCHES. COLLARS MAY NOT BE INSTALLED WITHIN TWO (2) FEET OF PIPE JOINTS. PRECAST COLLARS NOT ALLOWED ON CORRUGATED PIPE.

ANTI-SEEP COLLAR DETAIL

N.T.S.

NOTE: THE CONTRACTOR IS DIRECTED AND RESPONSIBLE TO SLOPE AND/OR SHIELD THE TRENCH EXCAVATION IN ACCORDANCE WITH ALL APPLICABLE OSHA REGULATIONS.


IN EARTH
IN PAVEMENT
4" TOPSOIL
SEE DETAIL FOR PAVEMENT SECTION
APPROVED COMPACTED BACKFILL (95 %%% MAX DRY DENSITY) COMPACTION PER ASTM D1557 IN 8" LIFTS
TRENCH WIDTH: 1'-6" (GAS) 1'-0" ELECT., TELE. AND CATV. 3'-0" WHEN ELEC., CATV, & TEL. ARE GROUPED IN TRENCH
METAL STRIPS BURIED 12" ABOVE P.E. PIPE EVERY 5' & AT BENDS (GAS LINES ONLY) MARKING TAPE BURIED OVER ELECTRIC AND TELEPHONE CONDUITS
UTILITY PIPE. SIZE AND MATERIAL PER UTILITY PROVIDER REQUIREMENTS
BOTTOM OF CONDUIT TRENCH
12" SAND COVER OVER PIPE
7" SAND BED FROM MAIN TO METER PIT (GAS LINE ONLY) 1'-0" MIN IN ROCK.
SPECIAL FOUNDATION, IF ORDERED BY ENGINEER TO BE INSTALLED IN UNSUITABLE SOIL AREAS.

ELECTRICAL, TELEPHONE AND GAS TRENCH DETAIL

N.T.S.

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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_DETAILS

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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CIVIL
42644

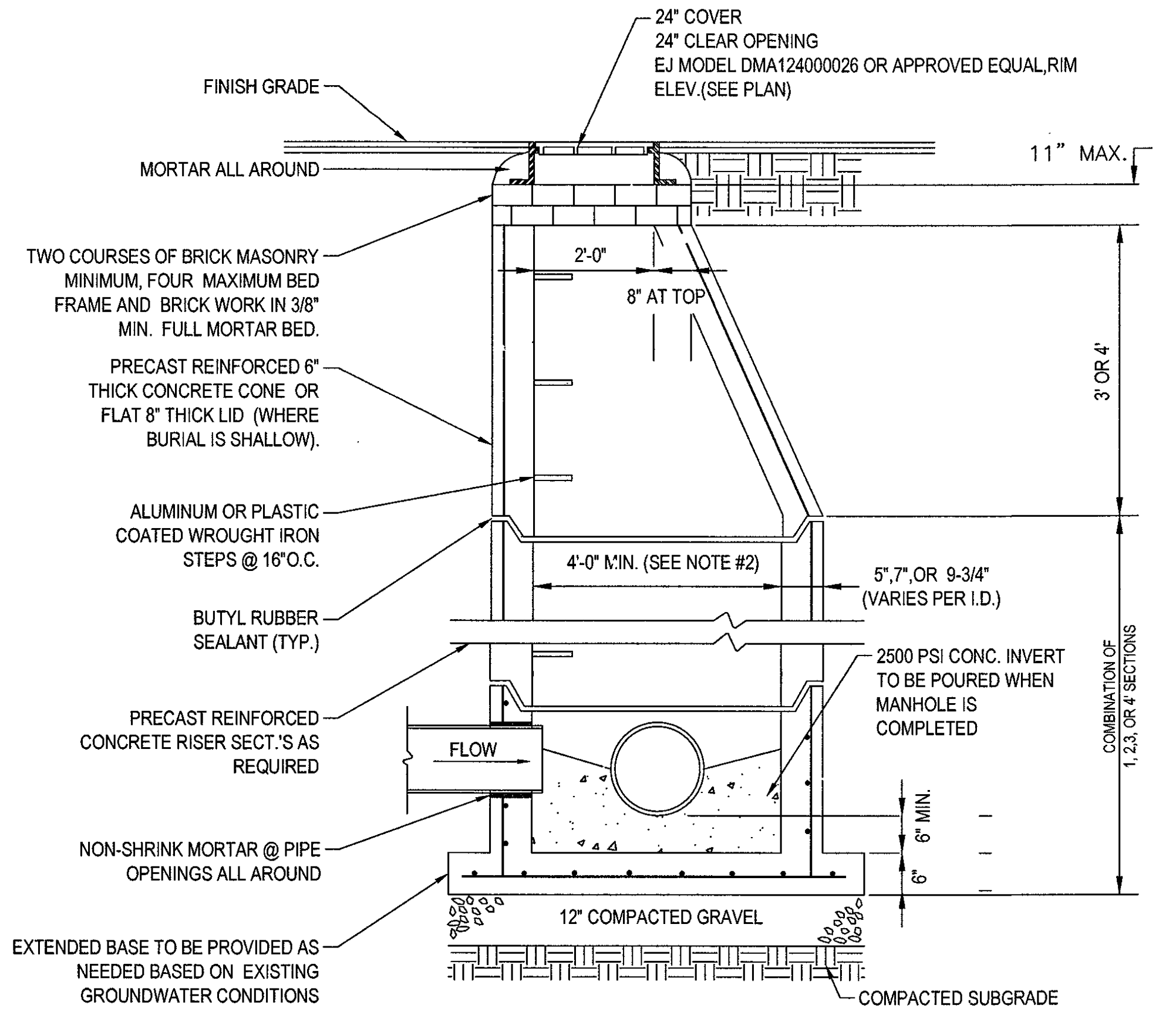
SHEET TITLE:
DETAILS

SHEET NUMBER:
70
OF 74

REV 0 - 11/18/2016

TYPICAL SANITARY MANHOLE DETAIL

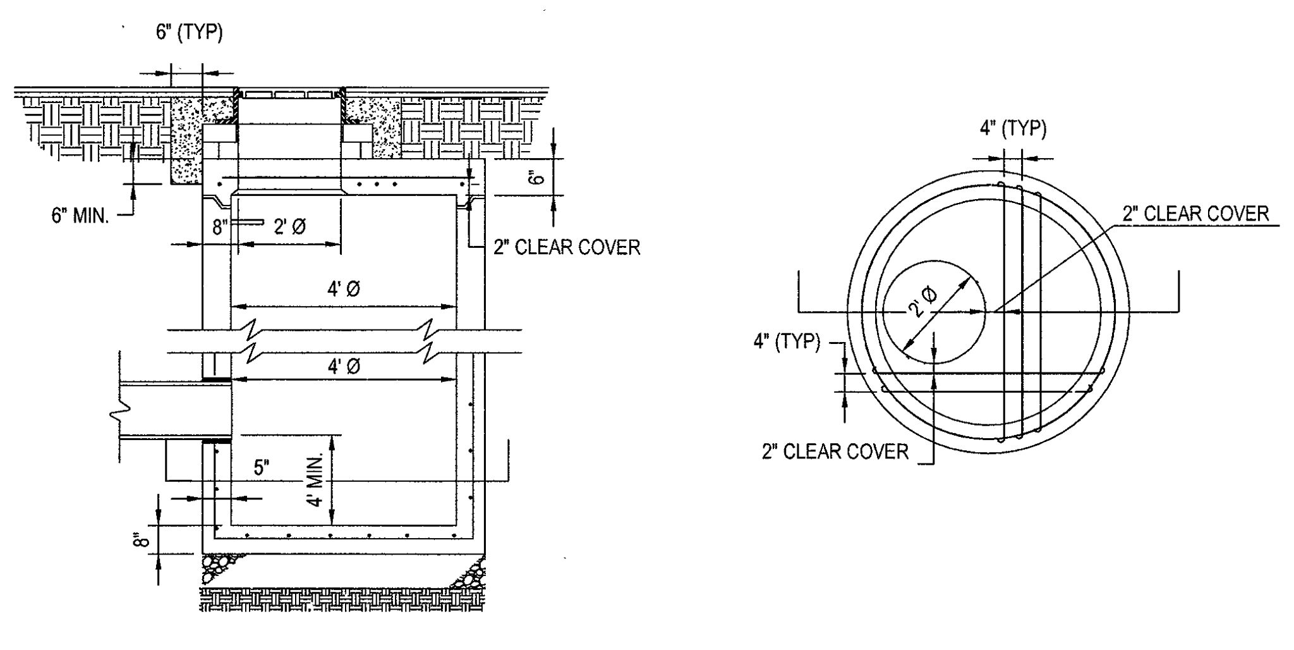
N.T.S.


24" COVER
24" CLEAR OPENING
EJ MODEL DMA124000026 OR APPROVED EQUAL,RIM ELEV.(SEE PLAN)
FINISH GRADE
MORTAR ALL AROUND
11" MAX.
TWO COURSES OF BRICK MASONRY MINIMUM, FOUR MAXIMUM BED FRAME AND BRICK WORK IN 3/8" MIN. FULL MORTAR BED.
2'-0"
8" AT TOP
3' OR 4'
PRECAST REINFORCED 6" THICK CONCRETE CONE OR FLAT 8" THICK LID (WHERE BURIAL IS SHALLOW).
ALUMINUM OR PLASTIC COATED WROUGHT IRON STEPS @ 16"O.C.
4'-0" MIN. (SEE NOTE #2)
5",7",OR 9-3/4" (VARIES PER I.D.)
BUTYL RUBBER SEALANT (TYP.)
2500 PSI CONC. INVERT TO BE POURED WHEN MANHOLE IS COMPLETED
COMBINATION OF 1, 2,3, OR 4' SECTIONS
PRECAST REINFORCED CONCRETE RISER SECT.'S AS REQUIRED
FLOW
6" MIN.
6"
NON-SHRINK MORTAR @ PIPE OPENINGS ALL AROUND
12" COMPACTED GRAVEL
EXTENDED BASE TO BE PROVIDED AS NEEDED BASED ON EXISTING GROUNDWATER CONDITIONS
COMPACTED SUBGRADE

NOTES:
1. ALL STRUCTURES SHALL BE H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.
2. CONTRACTOR SHALL SIZE MANHOLE AS NECESSARY TO ACCOMMODATE THE PROPOSED PIPE SIZES AND PENETRATIONS USING GEOMETRY SHOWN ON THE GRADING AND DRAINAGE PLANS AS WELL AS INFORMATION PROVIDED IN THE ROADWAY PROFILES.

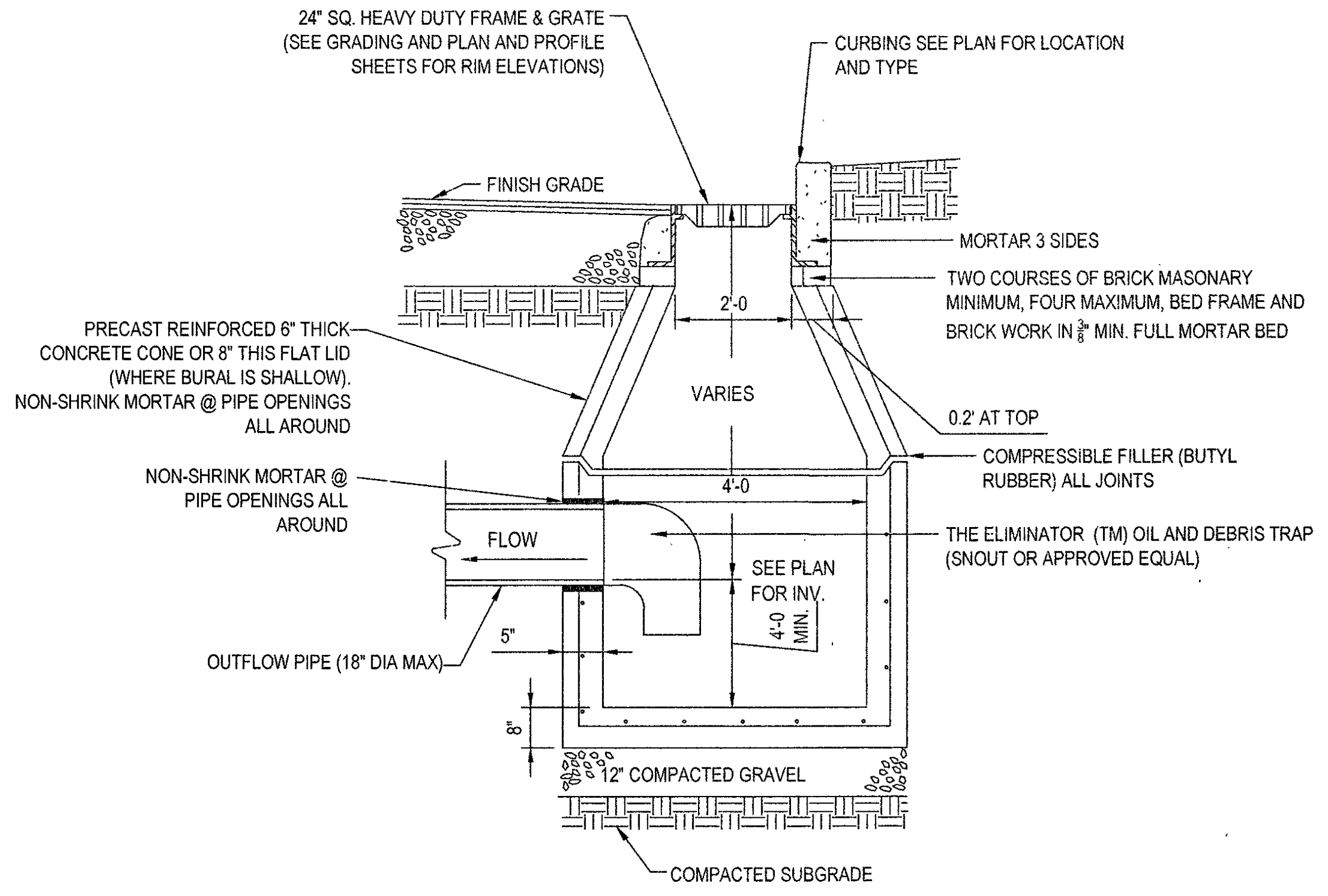
PRECAST FLAT SLAB TOP FOR CATCH BASIN DETAIL

N.T.S.



STANDARD PRECAST CONCRETE DEEP SUMP CATCH BASIN DETAIL

N.T.S.

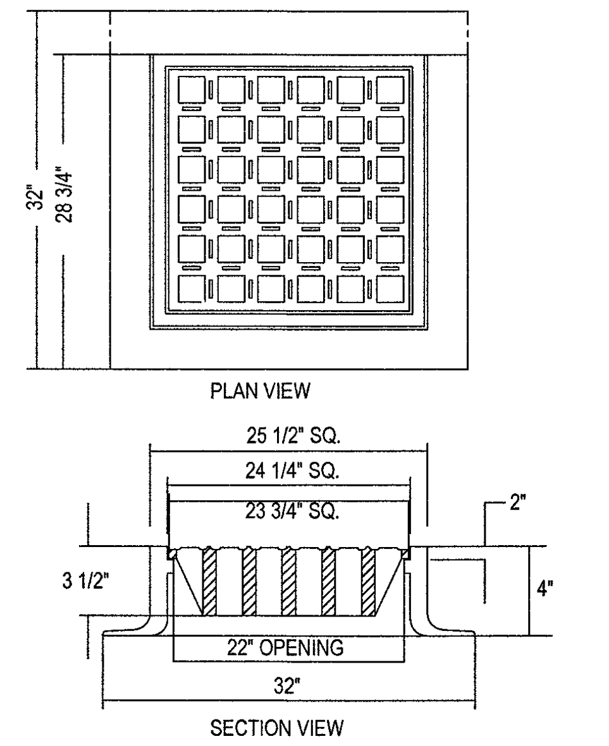

24" SQ. HEAVY DUTY FRAME & GRATE (SEE GRADING AND PLAN AND PROFILE SHEETS FOR RIM ELEVATIONS)
CURBING SEE PLAN FOR LOCATION AND TYPE
FINISH GRADE
MORTAR 3 SIDES
TWO COURSES OF BRICK MASONARY MINIMUM, FOUR MAXIMUM, BED FRAME AND BRICK WORK IN 3/8" MIN. FULL MORTAR BED
2'-0
PRECAST REINFORCED 6" THICK CONCRETE CONE OR 8" THIS FLAT LID (WHERE BURAL IS SHALLOW). NON-SHRINK MORTAR @ PIPE OPENINGS ALL AROUND
VARIES
0.2' AT TOP
COMPRESSIBLE FILLER (BUTYL RUBBER) ALL JOINTS
NON-SHRINK MORTAR @ PIPE OPENINGS ALL AROUND
4'-0
FLOW
THE ELIMINATOR (TM) OIL AND DEBRIS TRAP (SNOUT OR APPROVED EQUAL)
SEE PLAN FOR INV.
4'-0 MIN.
5"
OUTFLOW PIPE (18" DIA MAX)
8"
12" COMPACTED GRAVEL
COMPACTED SUBGRADE

NOTES:
1. ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.
2. USE PRECAST FLAT SLAB TOP FOR SHALLOW INVERT APPLICATIONS. SEE DETAIL.

TYPICAL CATCH BASIN SINGLE GRATE DETAIL

N.T.S.

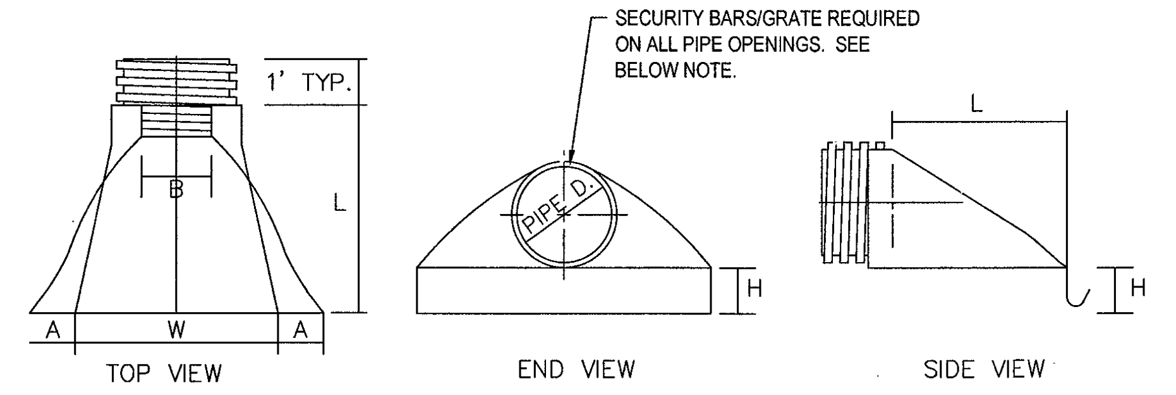
FRAME: EJ MODEL LF244-2 (4 FLANGE) REF. MHD 201.6.0
GRATE: EJ MODEL L24SG17 OR APPROVED EQUALS.
USE MASSDOT CASCADE GRATE (L24SG18) WHERE GRADES ARE IN EXCESS OF 5%



NOTES:
1. FULLY MACHINED AND INTERCHANGABLE FRAMES AND COVERS. HIGH QUALITY MATERIALS AND WORKMANSHIP. COAL TAR EPOXY PAINTED. NO ROCK COVERS. H-20 LOADING RATE WEIGHT OF GRATE: 215 LBS. WEIGHT OF FRAME: 4 FLANGES - 295 LBS REFERENCE MASSDOT STANDARD DETAIL 201.6.0.

ADS END SECTION DIMENSIONS DETAIL

N.T.S.


SECURITY BARS/GRATE REQUIRED ON ALL PIPE OPENINGS. SEE BELOW NOTE.
1' TYP.
B
L
A
W
A
TOP VIEW
PIPE D.
H
END VIEW
L
H
SIDE VIEW

PIPE DIAMETER	DIMENSION (inches)					
	PART NO.	A(1±)	B MAX	H(1±)	L(1/2±)	W(2±)
12" and 15"	1210 NP	6.5	10	6.5	25	29
18"	1810 NP	7.5	15	6.5	32	35
24"	2410 NP	7.5	18	6.5	36	45
30"	3015 NP	7.5	22	8.6	58	63
36"	3615 NP	10.5	NA	7.0	58	63

NOTES:

1. ALL PIPE ENDS SHALL HAVE SECURITY BARS / GRATES INSTALLED. PIPE OPENINGS OF 12 INCHES IN DIAMETER SHALL HAVE A SINGLE BAR GRATE THROUGH THE CENTER OF THE PIPE. THE GRATES SHALL BE CONSTRUCTED OF STEEL BARS, NOT LESS THAN ½" DIAMETER, WELDED TOGETHER TO PROVIDE A GRATE NOT SMALLER THAN THE PIPE OPENING. THE VERTICAL BARS SHALL BE PLACED WITH 4 INCH CLEAR OPENINGS BETWEEN THEM, AND THE HORIZONTAL BARS SHALL BE PLACED 6 INCHES ON CENTER. THE GRATES SHALL BE INSTALLED IN SUCH A MANNER AS TO ALLOW REMOVAL FOR MAINTENANCE PURPOSES. A SUITABLE SKETCH OF THE GRATE AND METHOD OF INSTALLATION SHALL BE SUBMITTED FOR APPROVAL WITH THE PLANS FOR THE DRAINS AND APPURTENANCES.

HDPE STORM DRAINAGE TRENCH DETAIL

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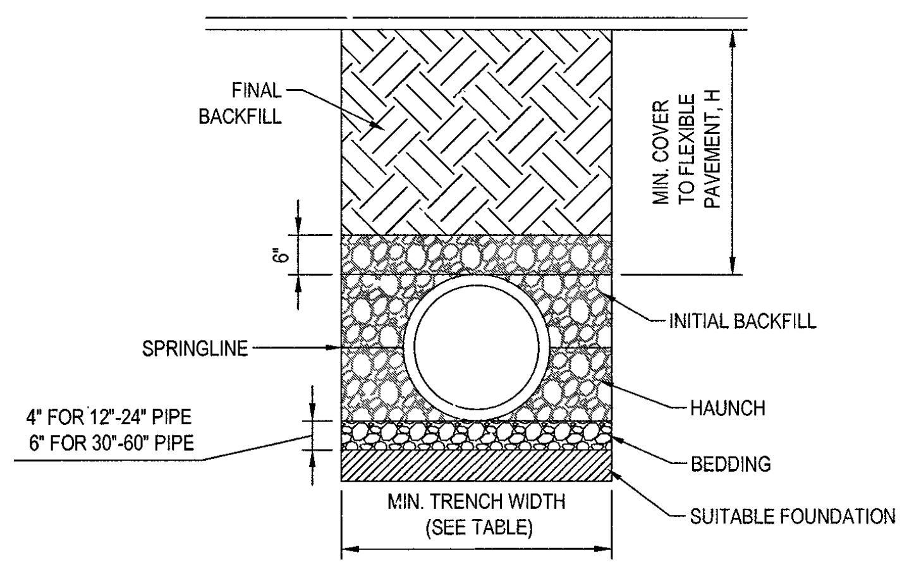


RECOMMENDED MIN. TRENCH WIDTH	
PIPE DIA.	MIN. TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
48"	80"
60"	96"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 , "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

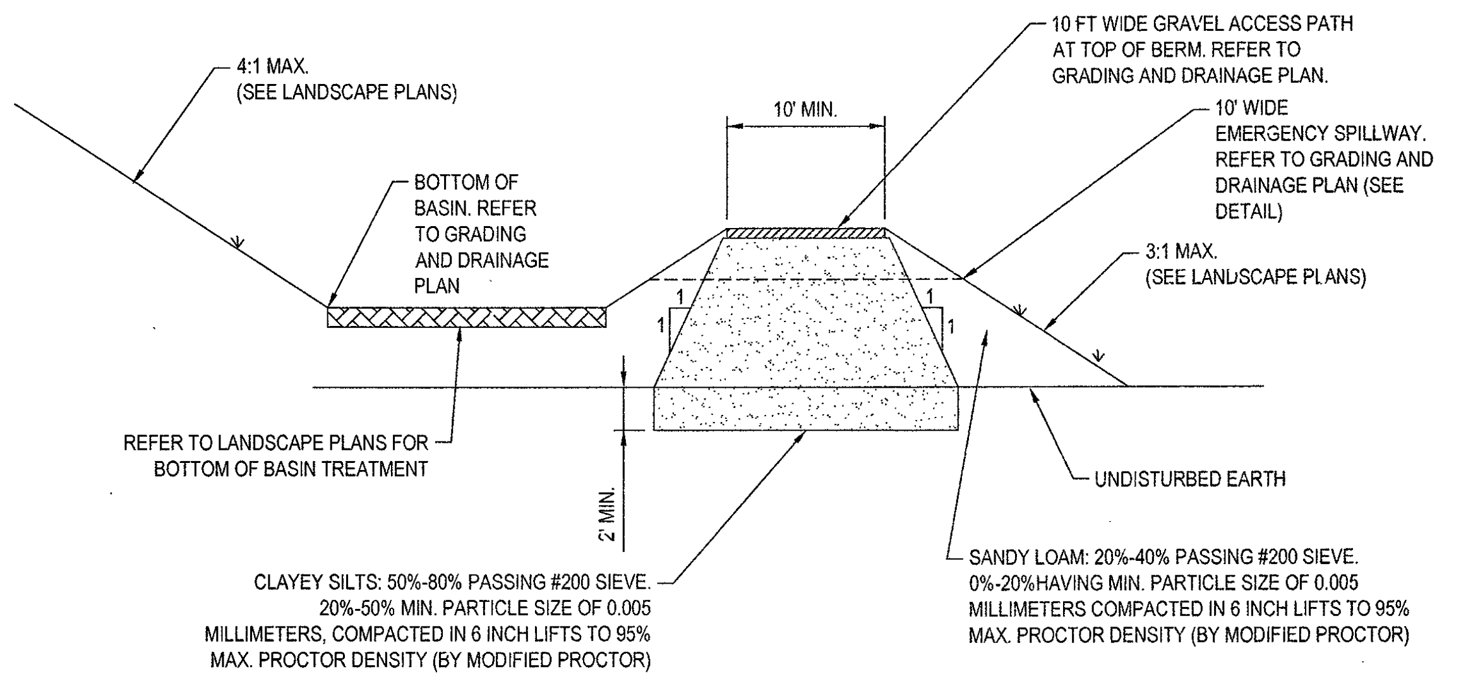
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

BASIN IMPERVIOUS CORE DETAIL

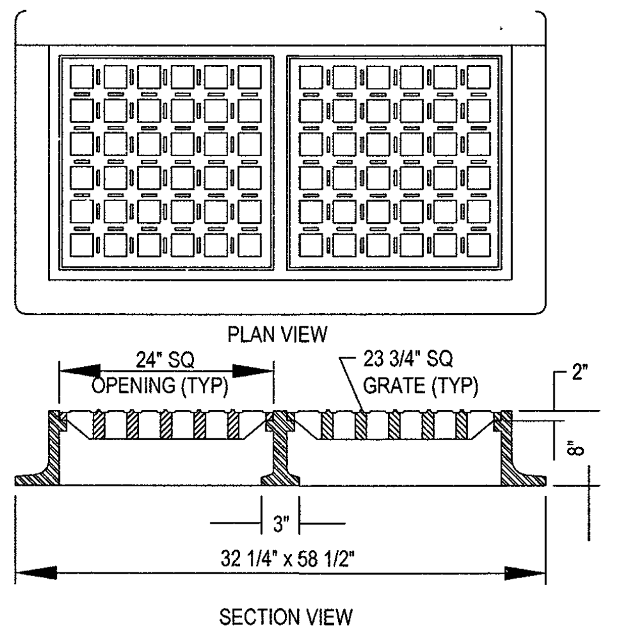
N.T.S.


4:1 MAX. (SEE LANDSCAPE PLANS)
10 FT WIDE GRAVEL ACCESS PATH AT TOP OF BERM. REFER TO GRADING AND DRAINAGE PLAN.
10' MIN.
10' WIDE EMERGENCY SPILLWAY. REFER TO GRADING AND DRAINAGE PLAN (SEE DETAIL)
BOTTOM OF BASIN. REFER TO GRADING AND DRAINAGE PLAN
3:1 MAX. (SEE LANDSCAPE PLANS)
1
1
1
1
REFER TO LANDSCAPE PLANS FOR BOTTOM OF BASIN TREATMENT
UNDISTURBED EARTH
2' MIN.
SANDY LOAM: 20%-40% PASSING #200 SIEVE. 0%-20%HAVING MIN. PARTICLE SIZE OF 0.005 MILLIMETERS COMPACTED IN 6 INCH LIFTS TO 95% MAX. PROCTOR DENSITY (BY MODIFIED PROCTOR)
CLAYEY SILTS: 50%-80% PASSING #200 SIEVE. 20%-50% MIN. PARTICLE SIZE OF 0.005 MILLIMETERS, COMPACTED IN 6 INCH LIFTS TO 95% MAX. PROCTOR DENSITY (BY MODIFIED PROCTOR)

NOTE: FOUNDATION FOR BERM CONSTRUCTION SHALL BE CLEARED OF ALL TOP SOIL, ROCKS, STUMPS, OR OTHER DELETERIOUS MATERIAL TO A FIRM SURFACE.

TYPICAL CATCH BASIN DOUBLE GRATE DETAIL

N.T.S.

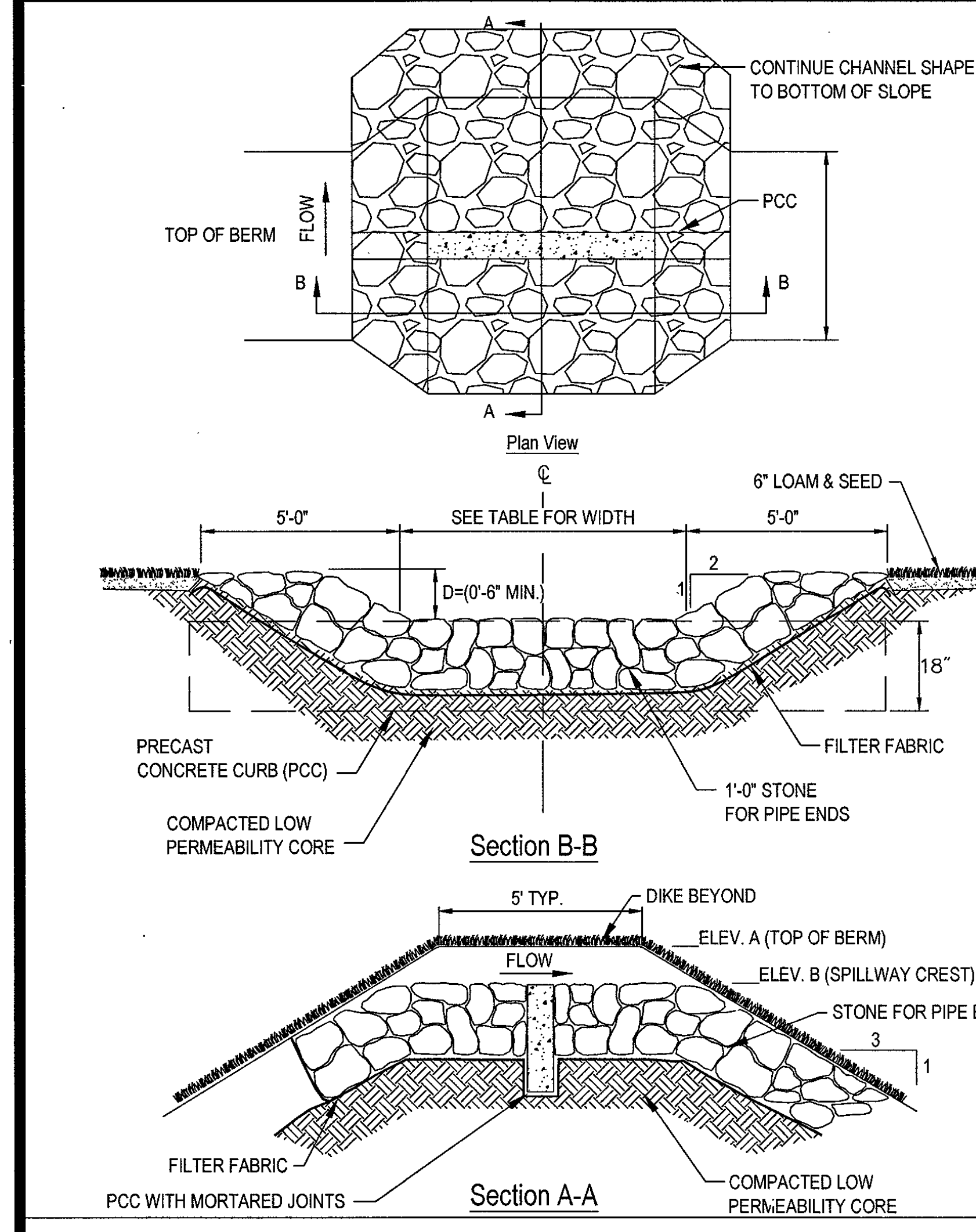


FRAME: EJ MODEL LV2448-2 GRATE: EJ MODEL L24SG17 (USE 2 GRATES) OR APPROVED EQUALS. USE MASSDOT CASCADE GRATE WHERE GRADES ARE IN EXCESS OF 5%

NOTES:
FULLY MACHINED AND INTERCHANGABLE FRAMES AND COVERS. HIGH QUALITY MATERIALS AND WORKMANSHIP. COAL TAR EPOXY PAINTED. NO ROCK COVERS. H-20 LOADING RATE 3 FLANGE FRAMES TO BE USED WITH CURB INLET

OVERFLOW SPILLWAY

N.T.S.

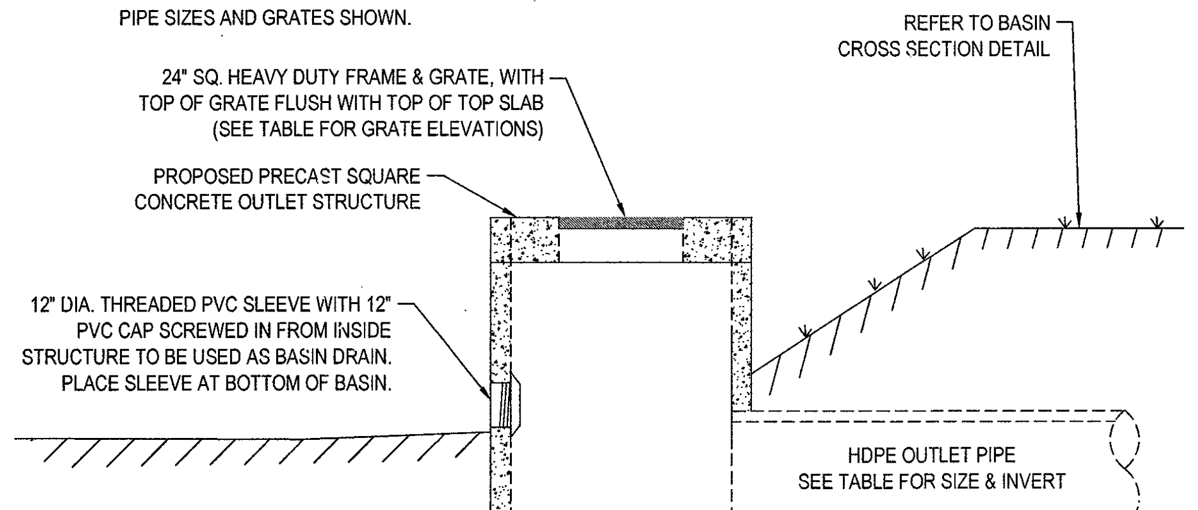


OUTLET CONTROL STRUCTURE

N.T.S.

BASIN #	GRATE ELEV. (FT)	OUTLET PIPE SIZE (IN.)	OUTLET PIPE LENGTH (FT)	OUTLET PIPE SLOPE (%)	OUTLET PIPE INV. ELEV. AT STRUCTURE (FT)	OUTLET PIPE INV. ELEV. AT OUTFALL (FT)
B-1	146.70	15"	30'	2.0%	142.60	142.00
B-2	147.10	24"	30"	1.0%	142.20	141.90
B-3	148.05	15"	90'	1.0%	145.40	144.50
B-4	155.50	15"	100'	1.0%	153.25	152.25
B-5	162.55	15"	25'	2.0%	159.50	159.00
B-6	173.60	15"	25'	2.0%	170.50	170.00
B-7	172.15	15"	30'	2.0%	169.90	169.30
B-9	162.50	15"	20'	1.0%	159.20	159.00
B-10	152.85	15"	20'	2.0%	148.40	148.00
B-11	146.25	18"	20'	1.0%	144.00	143.80
B-12	157.00	15"	25'	1.0%	154.10	153.85
B-13	171.25	15"	80'	2.0%	166.00	164.40
B-14	160.00	15"	20'	1.0%	156.00	155.80
B-15	165.90	15"	25'	2.0%	163.00	162.50
B-16	167.50	15"	30'	1.0%	168.30	168.00
B-17	168.60	15"	30'	5.0%	163.50	162.00
B-18	157.80	15"	25'	2.0%	154.50	154.00
B-19	163.20	15"	20'	1.0%	160.95	160.75

CONTRACTOR SHALL SIZE OUTLET STRUCTURE AS NECESSARY TO ACCOMMODATE THE PROPOSED PIPE SIZES AND GRATES SHOWN.


REFER TO BASIN CROSS SECTION DETAIL
24" SQ. HEAVY DUTY FRAME & GRATE, WITH TOP OF GRATE FLUSH WITH TOP OF TOP SLAB (SEE TABLE FOR GRATE ELEVATIONS)
PROPOSED PRECAST SQUARE CONCRETE OUTLET STRUCTURE
12" DIA. THREADED PVC SLEEVE WITH 12" PVC CAP SCREWED IN FROM INSIDE STRUCTURE TO BE USED AS BASIN DRAIN. PLACE SLEEVE AT BOTTOM OF BASIN.
HDPE OUTLET PIPE SEE TABLE FOR SIZE & INVERT

FLARED END SECTION WITH RIP RAP APRON / SCOUR HOLE DETAIL

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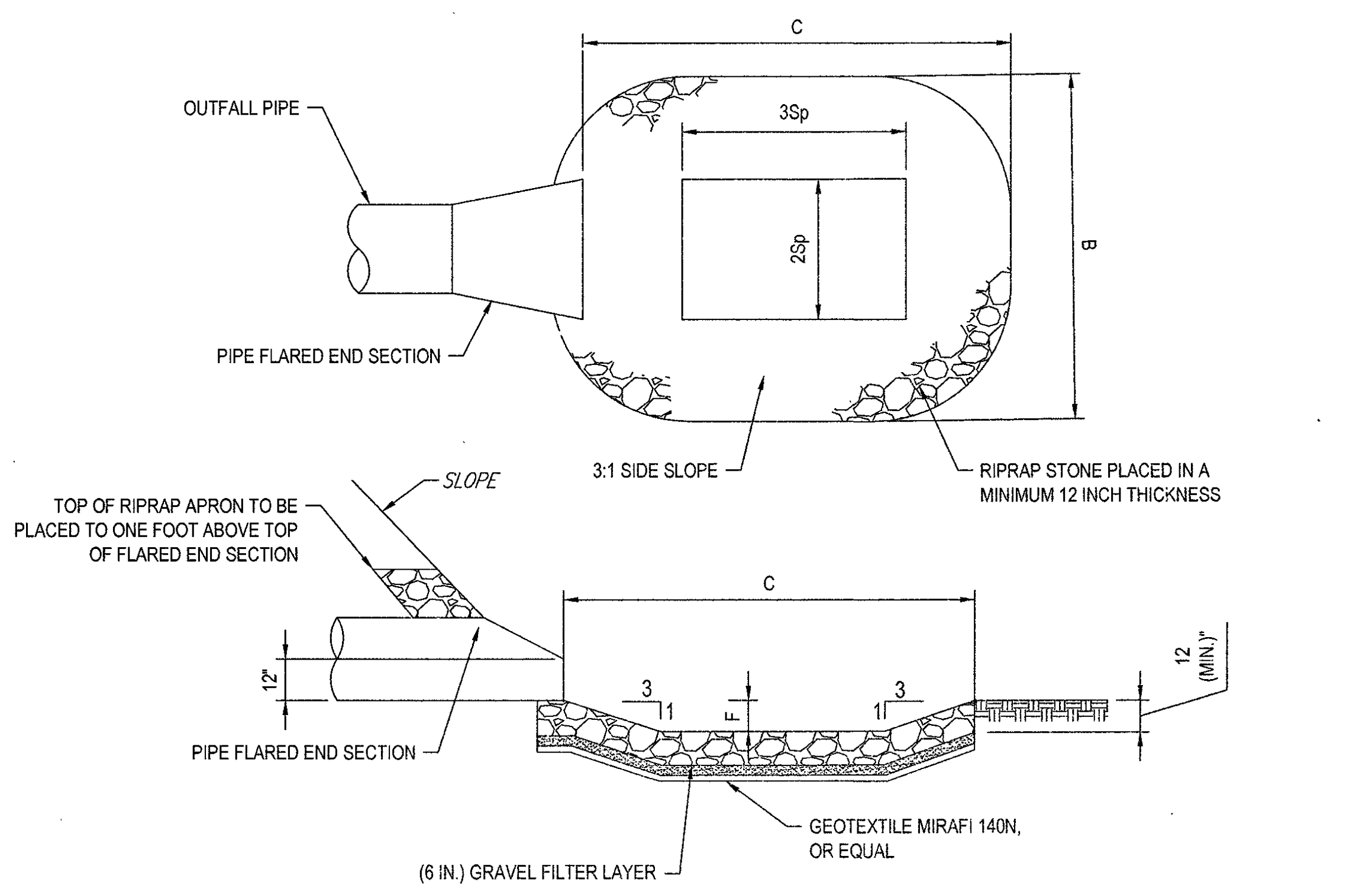
C
OUTFALL PIPE
3Sp
2Sp
B
PIPE FLARED END SECTION
3:1 SIDE SLOPE
RIPRAP STONE PLACED IN A MINIMUM 12 INCH THICKNESS
SLOPE
TOP OF RIPRAP APRON TO BE PLACED TO ONE FOOT ABOVE TOP OF FLARED END SECTION
C
12"
3
1
F
3
1
12 (MIN.)"
PIPE FLARED END SECTION
GEOTEXTILE MIRAFI 140N, OR EQUAL
(6 IN.) GRAVEL FILTER LAYER

SCOUR HOLE CHART

LOCATION	D /Sp (in.)	F (ft.)	C (ft.)	B (ft.)	d (in.)
FES-1	24	1.0	12.0	10.0	18
FES-2	12	0.50	3.0	5.0	12
FES-3	24	1.0	12.0	10.0	18
FES-4	30	1.25	15.0	13.0	18
FES-5	24	1.0	12.0	10.0	18
FES-6	12	0.50	6.0	5.0	12
FES-7	30	1.25	15.0	13.0	18
FES-8	15	0.625	8	6	12
FES-9	36	1.5	18	15	18
FES-10	12	0.50	6.0	5.0	12
FES-11	15	0.625	8	6	12
FES-12	12	SEE PLAN			12
FES-13	12	SEE PLAN			12
FES-14	12	SEE PLAN			12
FES-15	18	SEE PLAN			12
FES-16	30	1.25	15.0	13.0	18
FES-17	12	0.50	6.0	5.0	12
FES-18	12	SEE PLAN			12
FES-19	15	0.625	8	6	12
FES-20	12	SEE PLAN			12
FES-21	12	0.50	6.0	5.0	12
FES-22	18	0.75	9.0	8.0	16
FES-23	12	0.50	6.0	5.0	12
FES-24	18	0.75	9.0	8.0	16
FES-25	12	0.50	6.0	5.0	12
FES-26	12	0.50	6.0	5.0	12
FES-27	12	SEE PLAN			12

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◆ NORTHERN VIRGINIA ◆ CENTRAL VIRGINIA ◆ RALEIGH, NC ◆ CHARLOTTE, NC ◆ TAMPA, FL ◆ SOUTH FLORIDA

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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_DETAILS

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
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RHODE ISLAND LICENSE No. [illegible]
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NEW HAMPSHIRE LICENSE No. 10280
MAINE LICENSE No. [illegible]
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202
WILLIAM D. GOEBEL CIVIL 42844

SHEET TITLE:
DETAILS

SHEET NUMBER:
71
OF 74

REV 0 - 11/18/2016

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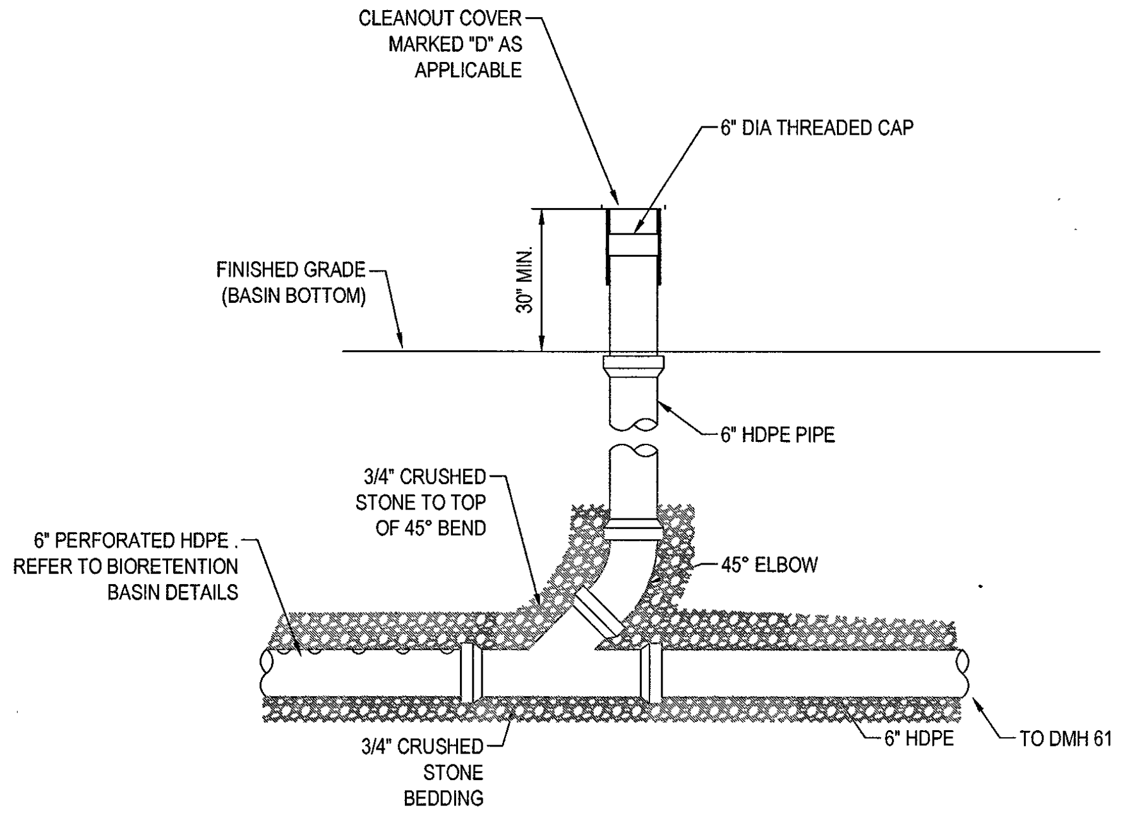
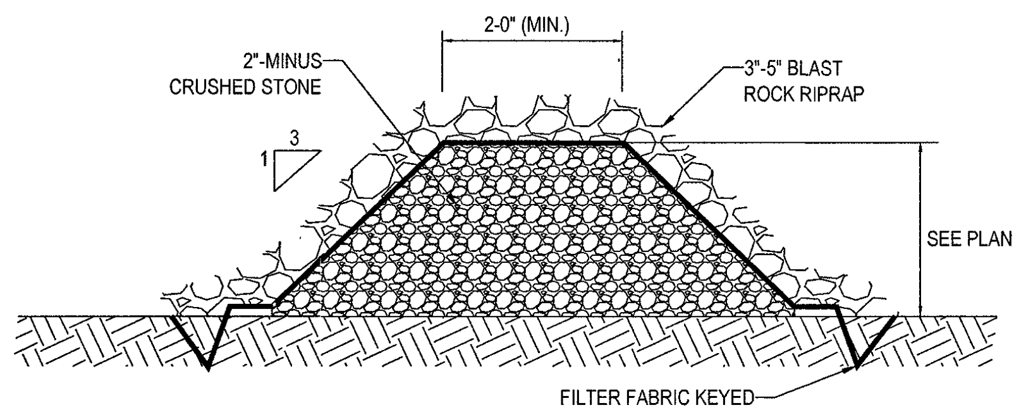

CLEANOUT COVER MARKED "D" AS APPLICABLE
6" DIA THREADED CAP
FINISHED GRADE (BASIN BOTTOM)
30" MIN.
6" HDPE PIPE
3/4" CRUSHED STONE TO TOP OF 45° BEND
6" PERFORATED HDPE. REFER TO BIORETENTION BASIN DETAILS
45° ELBOW
3/4" CRUSHED STONE BEDDING
6" HDPE
TO DMH 61

NOTES:
1. CLEANOUTS TO BE INSTALLED WHERE INDICATED ON THE PLANS.
2. CLEANOUT PIPE TO BE SAME SIZE AND MATERIAL AS SEWER/DRAIN LINE UP TO 8".
3. BACKFILL TO TOP OF 45° WITH 3/4" CRUSHED STONE.

BASIN CLEANOUT DETAIL

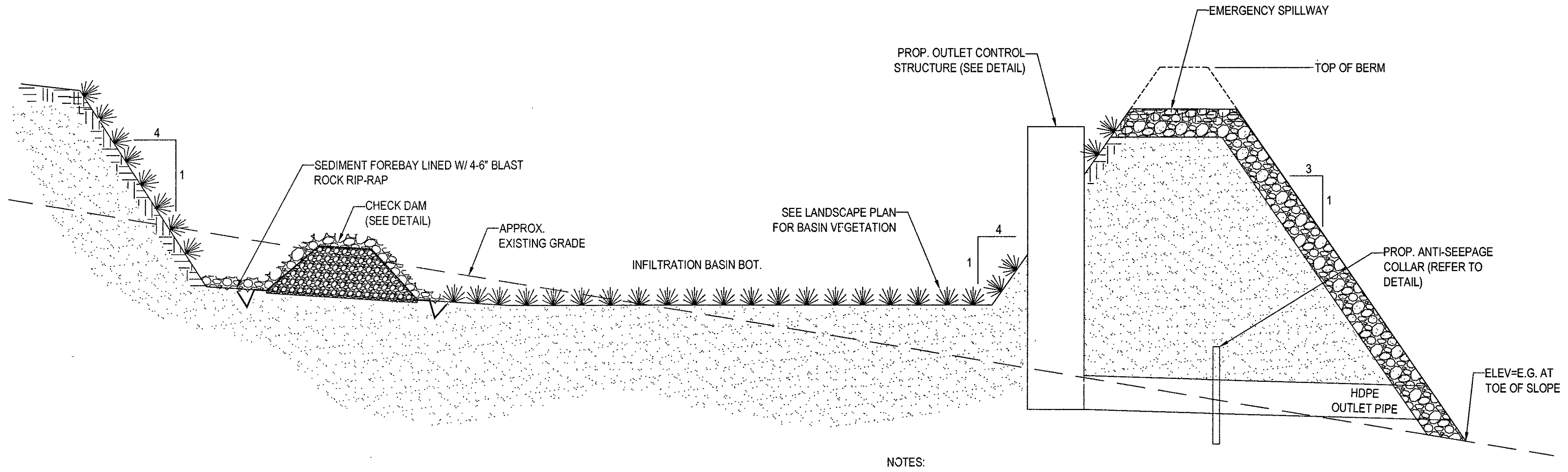
N.T.S.



NOTES:
1. STONE SHALL BE PLACED MECHANICALLY OR BY HAND. STONE SHALL NOT BE DUMPED DIRECTLY INTO FOREBAY. SEE GRADING AND DRAINAGE PLAN.

STONE CHECK DAM DETAIL

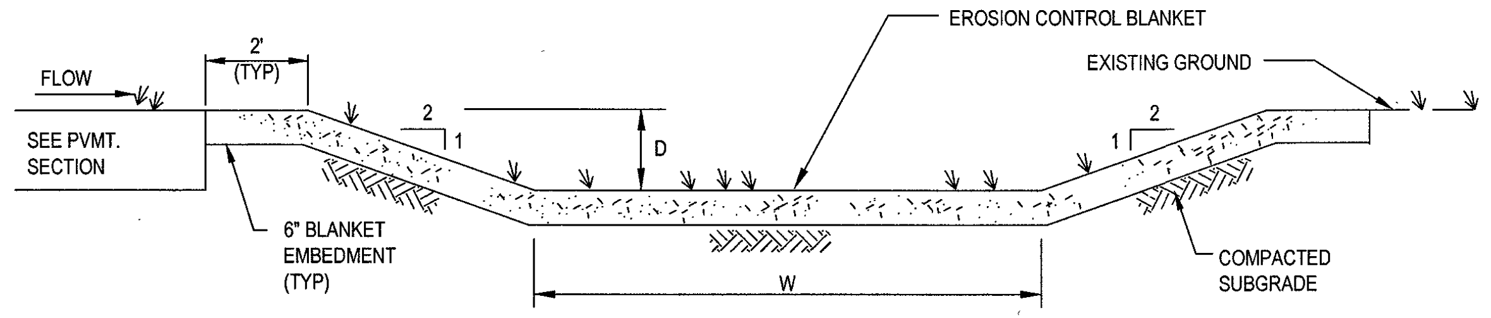
N.T.S.


4
1
SEDIMENT FOREBAY LINED W/ 4-6" BLAST ROCK RIP-RAP
CHECK DAM (SEE DETAIL)
APPROX. EXISTING GRADE
INFILTRATION BASIN BOT.
SEE LANDSCAPE PLAN FOR BASIN VEGETATION
4
1
PROP. OUTLET CONTROL STRUCTURE (SEE DETAIL)
EMERGENCY SPILLWAY
TOP OF BERM
3
1
PROP. ANTI-SEEPAGE COLLAR (REFER TO DETAIL)
HDPE OUTLET PIPE
ELEV=E.G. AT TOE OF SLOPE

NOTES:
1. CONTRACTOR TO ESTABLISH VEGETATION IN BASIN PRIOR TO PAVING.
2. PARENT MATERIAL & FILL MATERIAL SOILS SHALL NOT BE COMPACTED TO REDUCE INFILTRATION CAPACITY. IF SOILS WITHIN THE FOOTPRINT OF THE INFILTRATION BASIN ARE COMPACTED, COMPACTED SOILS SHALL BE REMOVED AND REPLACED.

TYPICAL DETENTION/INFILTRATION BASIN SECTION

N.T.S.



GRASS SWALE

NOTE:

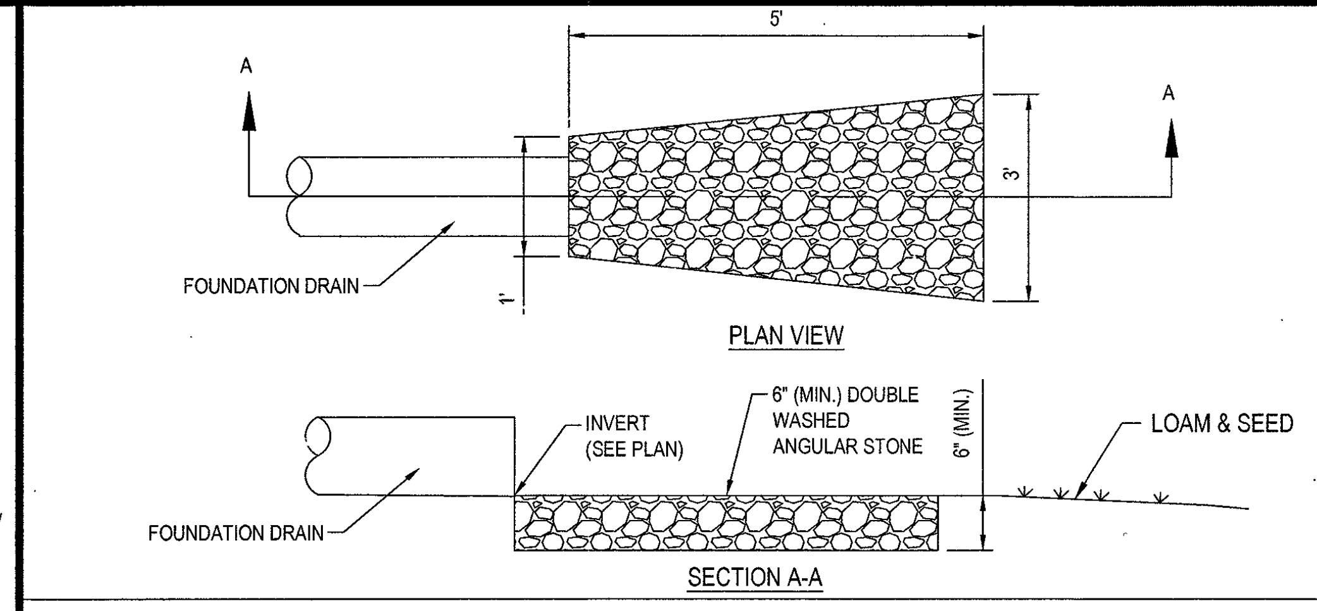
1. GEOTECHNICAL FABRIC TO BE INSTALLED FOR SLOPE STABILIZATION WHERE SLOPES EXCEED 4%.
2. SEED MIX FOR GRASSED SWALES SHALL CONSIST OF THE FOLLOWING:
   70% RED FESCUE
   15% PERENNIAL RYE GRASS
   15% BIRDS FOOT TREFOIL

SWALE DESIGNATION	W	D
TYPICAL *	2'	2'

* UNLESS OTHERWISE NOTED ON GRADING PLANS

GRASSED SWALE DETAIL

N.T.S.

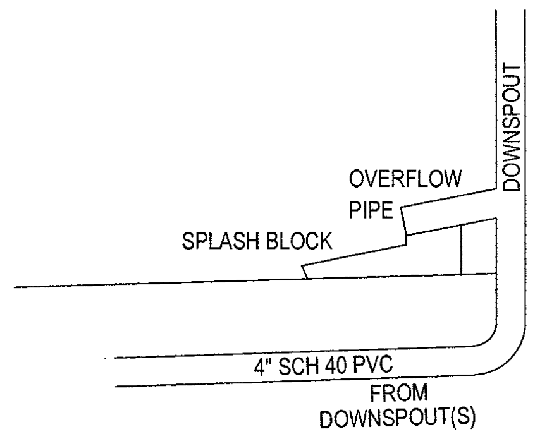


PLAN VIEW

SECTION A-A

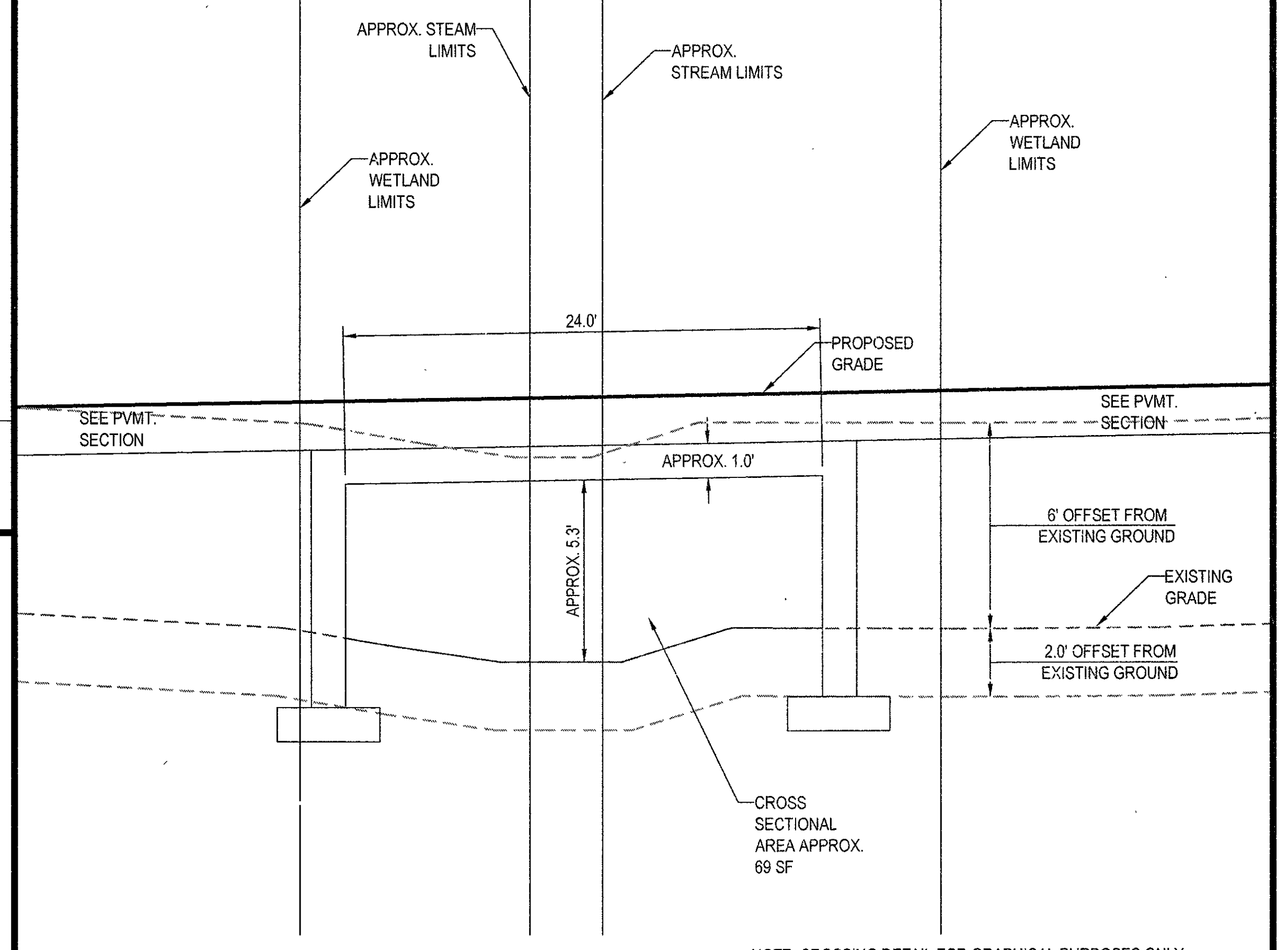
FOUNDATION DRAIN OUTLET PROTECTION DETAIL

N.T.S.



DOWNSPOUT DETAIL

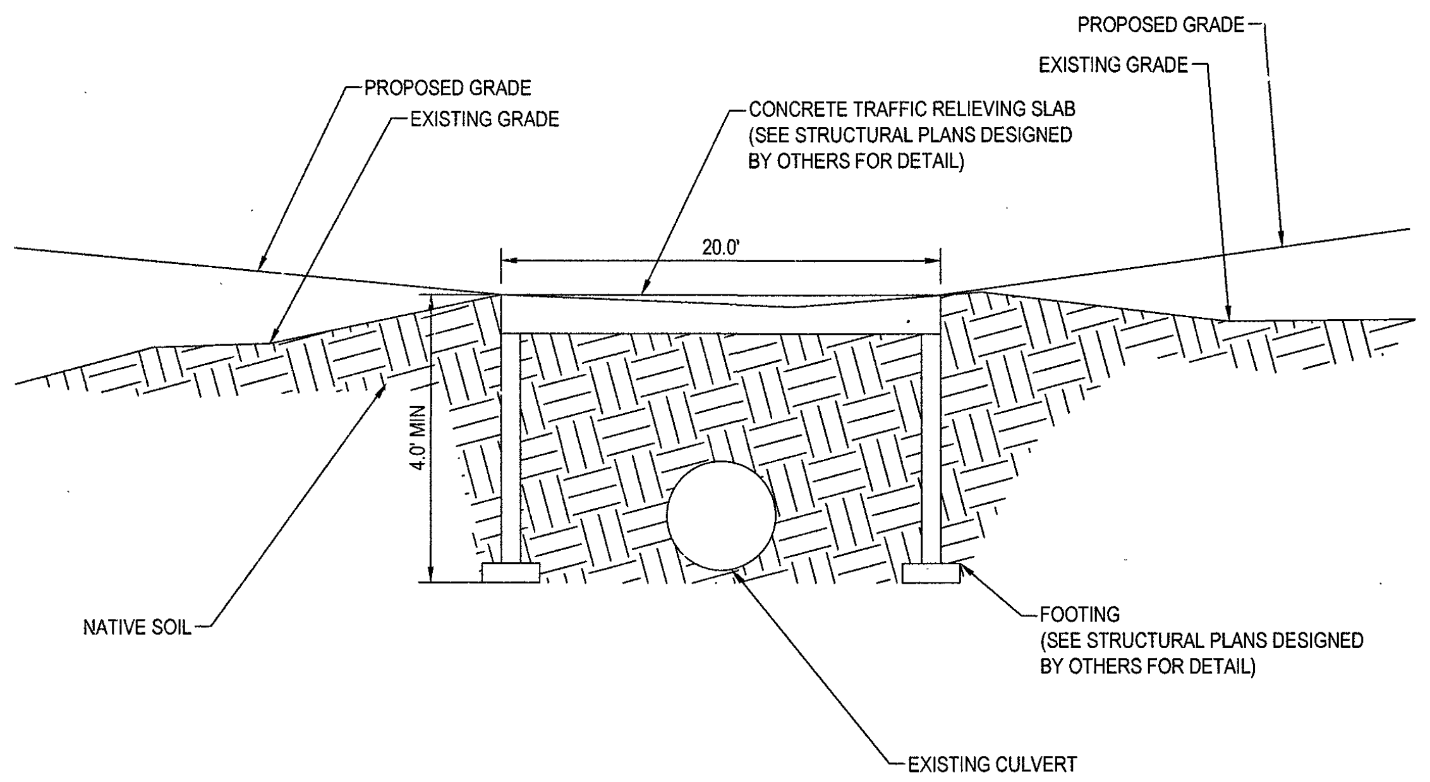
N.T.S.



NOTE: CROSSING DETAIL FOR GRAPHICAL PURPOSES ONLY. PLEASE SEE PLANS BY STRUCTURAL ENGINEER FOR MORE INFORMATION.

ROAD J STREAM CROSSING DETAIL

N.T.S.


PROPOSED GRADE
EXISTING GRADE
CONCRETE TRAFFIC RELIEVING SLAB (SEE STRUCTURAL PLANS DESIGNED BY OTHERS FOR DETAIL)
PROPOSED GRADE
EXISTING GRADE
20.0'
4.0' MIN
NATIVE SOIL
FOOTING (SEE STRUCTURAL PLANS DESIGNED BY OTHERS FOR DETAIL)
EXISTING CULVERT

NOTE: CROSSING DETAIL FOR GRAPHICAL PURPOSES ONLY. PLEASE SEE PLANS BY STRUCTURAL ENGINEER FOR MORE INFORMATION.

EMERGENCY ACCESS CONCRETE TRAFFIC RELIEVING SLAB

N.T.S.

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ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

- ◆ UPSTATE NEW YORK
- ◆ NEW ENGLAND
- ◆ BOSTON, MA
- ◆ NEW YORK METRO
- ◆ NEW YORK, NY
- ◆ NEW JERSEY
- ◆ PHILADELPHIA, PA
- ◆ LEHIGH VALLEY, PA
- ◆ SOUTHEASTERN, PA
- ◆ REHOBOTH BEACH, DE
- ◆ BALTIMORE, MD
- ◆ SOUTHERN MARYLAND
- ◆ NORTHERN VIRGINIA
- ◆ CENTRAL VIRGINIA
- ◆ RALEIGH, NC
- ◆ CHARLOTTE, NC
- ◆ TAMPA, FL
- ◆ SOUTH FLORIDA

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REVISIONS

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PERMIT
SET

PROJECT No.: W161041
DRAWN BY: JT
CHECKED BY: AFT
DATE: 11/18/2016
SCALE: AS NOTED
CAD I.D.: W161041_SS3_DETAILS

PROJECT: SITE DEVELOPMENT PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT STREET
TOWN OF MILLIS
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
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FLORIDA LICENSE No. 66202

WILLIAM D GOEBEL CIVIL 42644

SHEET TITLE:
DETAILS

SHEET NUMBER:
72
OF 74

REV 0 - 11/18/2016

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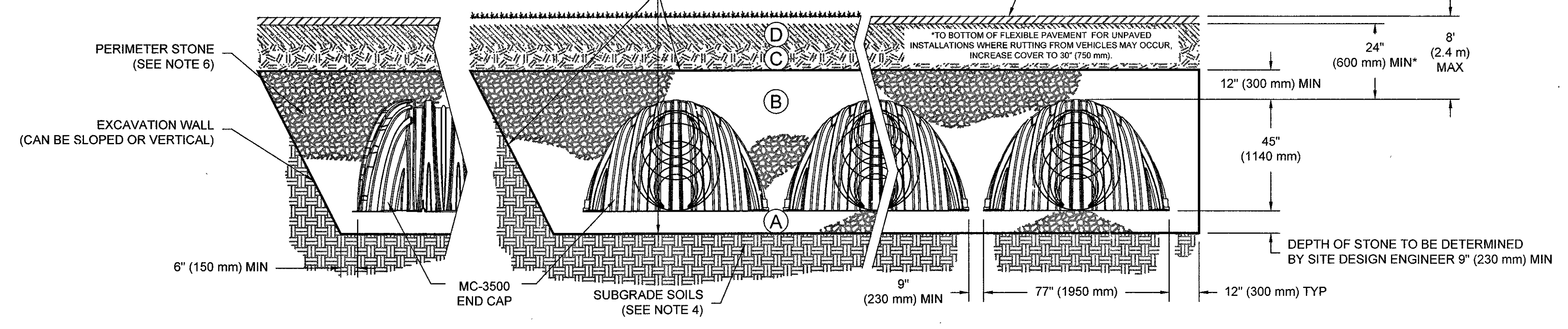
ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3. 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2] [3]

PLEASE NOTE:

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

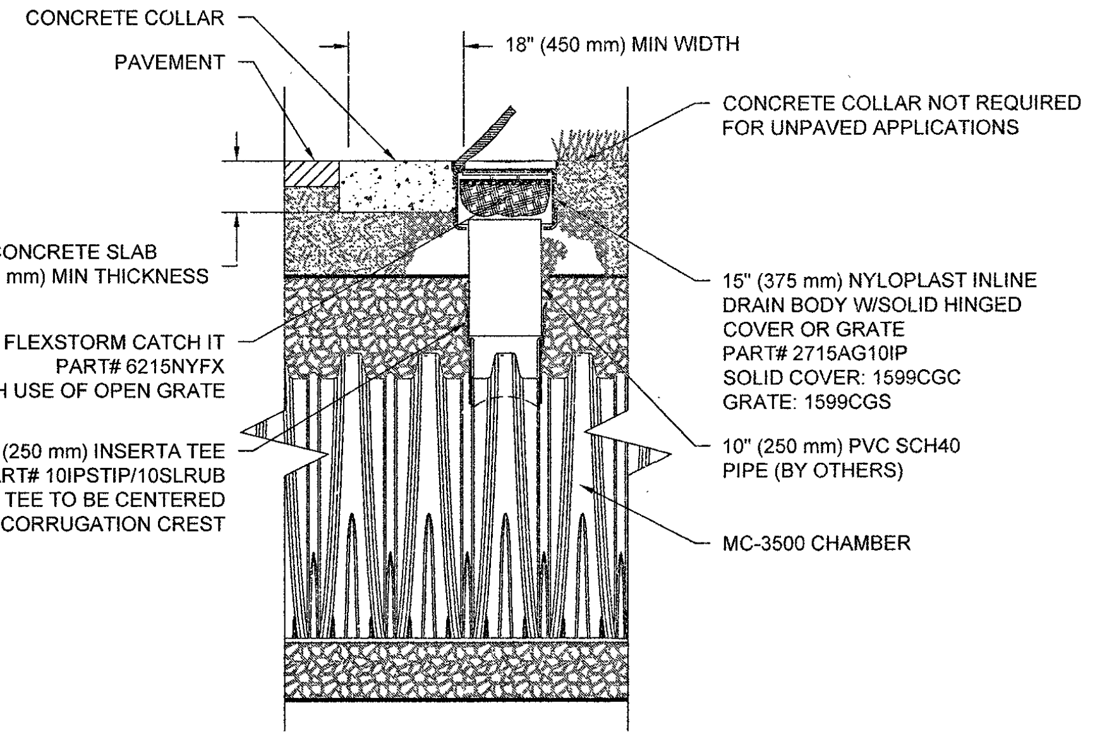

ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE ALL AROUND CLEAN, CRUSHED, ANGULAR STONE IN A & B LAYERS
PAVEMENT LAYER (DESIGNED BY SITE DESIGN ENGINEER)
PERIMETER STONE (SEE NOTE 6)
EXCAVATION WALL (CAN BE SLOPED OR VERTICAL)
D
C
B
A
*TO BOTTOM OF FLEXIBLE PAVEMENT FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 30" (750 mm).
24" (600 mm) MIN*
8' (2.4 m) MAX
12" (300 mm) MIN
45" (1140 mm)
DEPTH OF STONE TO BE DETERMINED BY SITE DESIGN ENGINEER 9" (230 mm) MIN
6" (150 mm) MIN
MC-3500 END CAP
SUBGRADE SOILS (SEE NOTE 4)
9" (230 mm) MIN
77" (1950 mm)
12" (300 mm) TYP

NOTES:

1. MC-3500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
   PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

MC-3500 CROSS-SECTION

N.T.S.

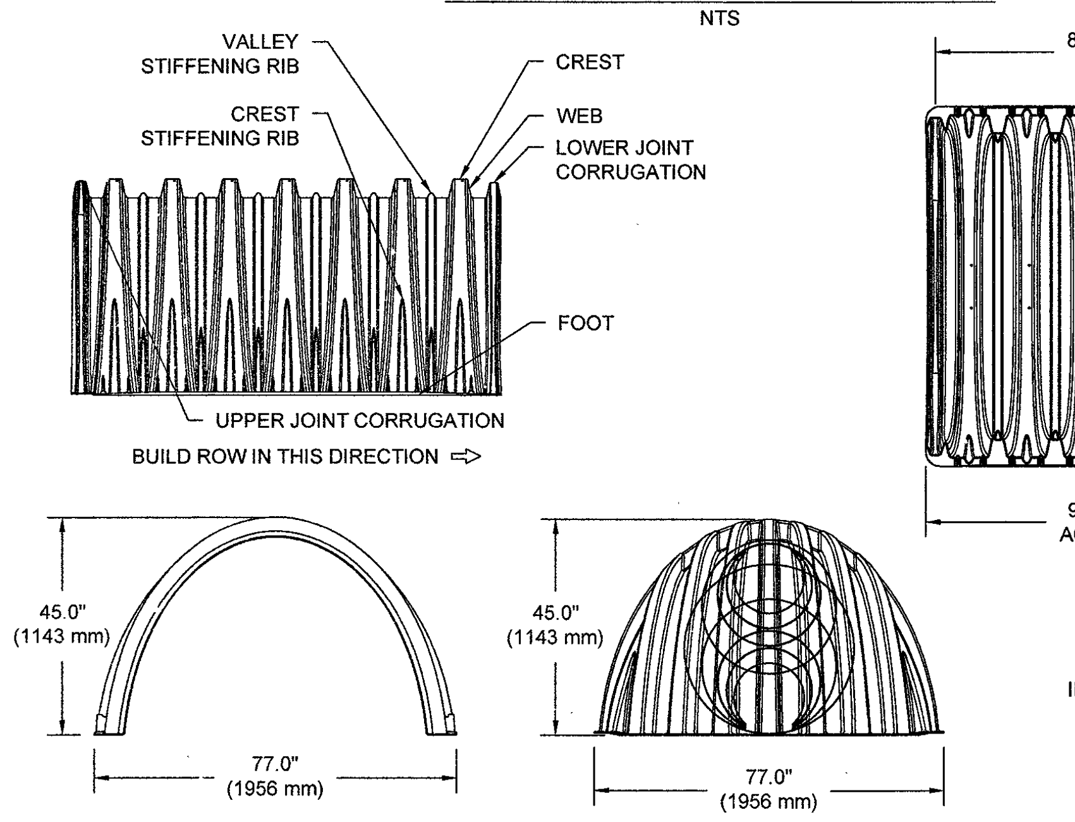

CONCRETE COLLAR
PAVEMENT
18" (450 mm) MIN WIDTH
CONCRETE COLLAR NOT REQUIRED FOR UNPAVED APPLICATIONS
CONCRETE SLAB 8" (200 mm) MIN THICKNESS
15" (375 mm) NYLOPLAST INLINE DRAIN BODY W/SOLID HINGED COVER OR GRATE PART# 2715AG10IP SOLID COVER: 1599CGC GRATE: 1599CGS
FLEXSTORM CATCH IT PART# 6215NYFX WITH USE OF OPEN GRATE
10" (250 mm) INSERTA TEE PART# 10IPSTIP/10SLRUB INSERTA TEE TO BE CENTERED ON CORRUGATION CREST
10" (250 mm) PVC SCH40 PIPE (BY OTHERS)
MC-3500 CHAMBER

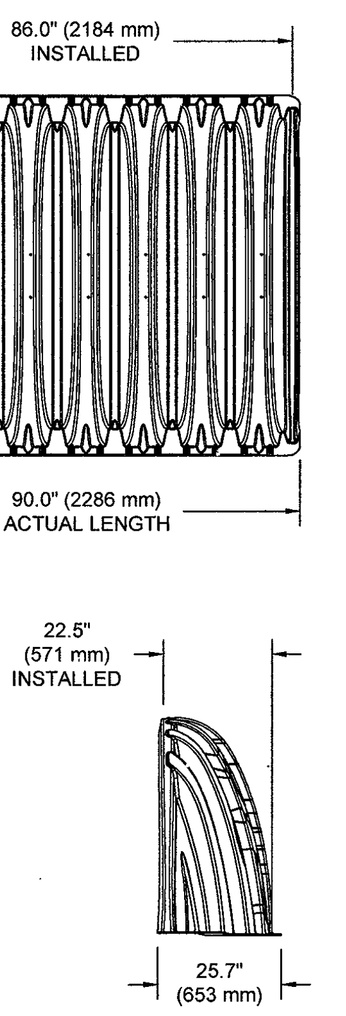
MC-3500 10" INSPECTION PORT

N.T.S.

MC-3500 TECHNICAL SPECIFICATION

NTS





NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	178.9 CUBIC FEET	(5.06 m³)
WEIGHT	135.0 lbs.	(61.2 kg)

NOMINAL END CAP SPECIFICATIONS

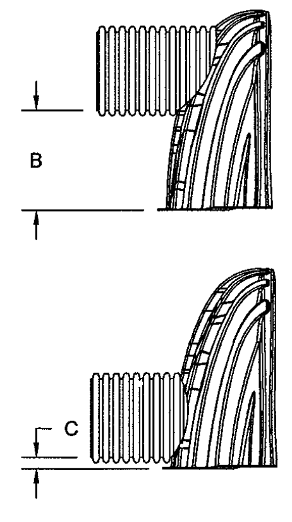
SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 22.5"	(1956 mm X 1143 mm X 571 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	46.0 CUBIC FEET	(1.30 m³)
WEIGHT	50.0 lbs.	(22.7 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

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

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP30BC	30" (750 mm)	---	

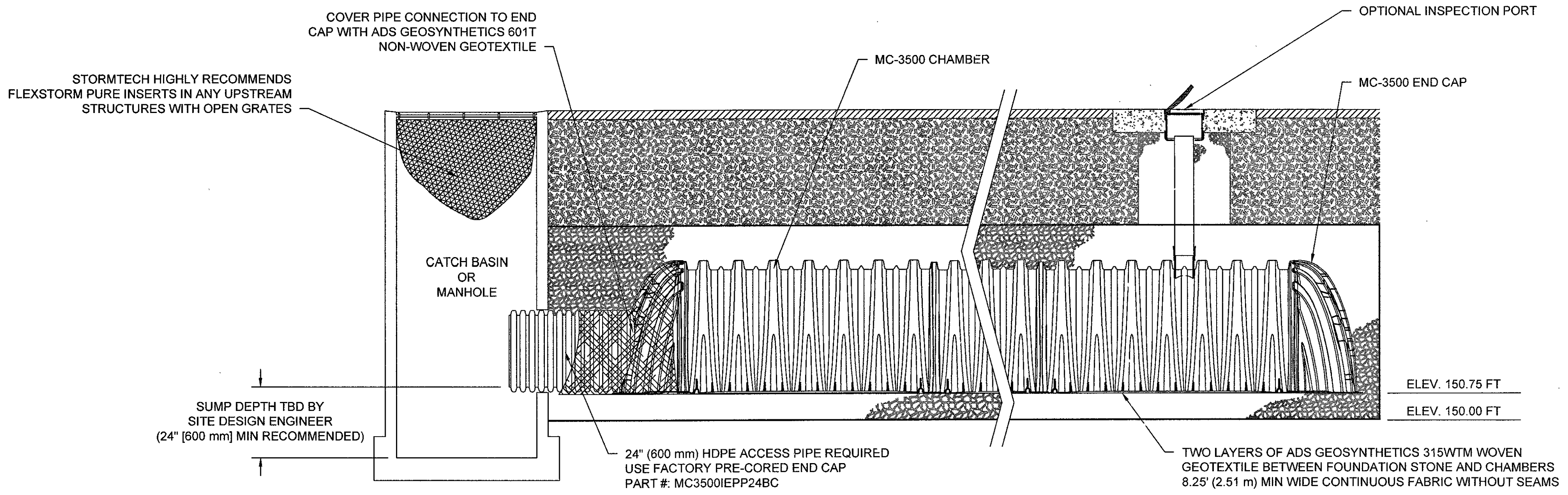
NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS.
CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm)
THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHTEST POSSIBLE FOR THE PIPE SIZE.

MC-3500 SECTION

N.T.S.


COVER PIPE CONNECTION TO END CAP WITH ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE
STORMTECH HIGHLY RECOMMENDS FLEXSTORM PURE INSERTS IN ANY UPSTREAM STRUCTURES WITH OPEN GRATES
MC-3500 CHAMBER
OPTIONAL INSPECTION PORT
MC-3500 END CAP
CATCH BASIN OR MANHOLE
ELEV. 150.75 FT
ELEV. 150.00 FT
SUMP DEPTH TBD BY SITE DESIGN ENGINEER (24" [600 mm] MIN RECOMMENDED)
24" (600 mm) HDPE ACCESS PIPE REQUIRED USE FACTORY PRE-CORED END CAP PART #: MC3500IEPP24BC
TWO LAYERS OF ADS GEOSYNTHETICS 315WTM WOVEN GEOTEXTILE BETWEEN FOUNDATION STONE AND CHAMBERS 8.25' (2.51 m) MIN WIDE CONTINUOUS FABRIC WITHOUT SEAMS

MC-3500 ISOLATOR ROW DETAIL

NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

MC-3500 PROFILE

N.T.S.

PROPOSED LAYOUT: SYSTEM 1

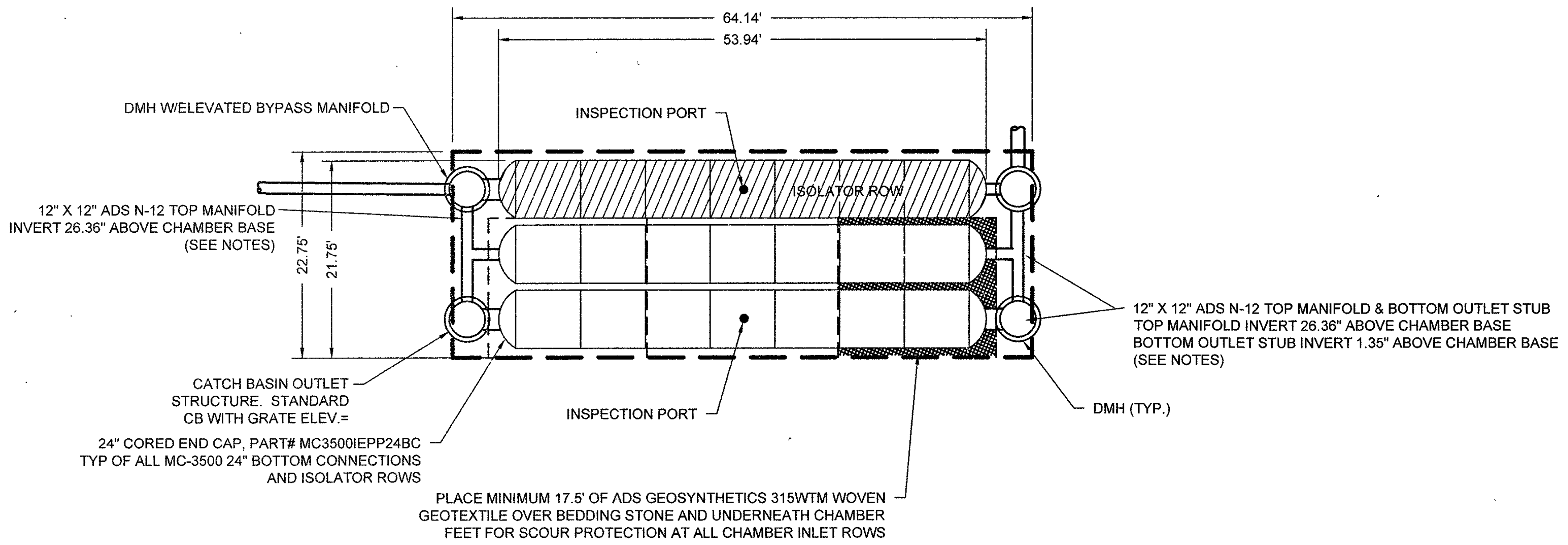
(21) STORMTECH MC-3500 CHAMBERS
(2) STORMTECH MC-3500 END CAPS
INSTALLED WITH 12" COVER STONE, 9 BASE STONE, 40% STONE VOID
INSTALLED SYSTEM VOLUME: 4,236 CF
AREA OF SYSTEM: 1,459 FT²
PERIMETER OF SYSTEM: 173.78 FT

PROPOSED ELEVATIONS: SYSTEM 1

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	162.50
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	157.00
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	156.50
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	156.50
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	156.50
TOP OF STONE:	155.50
TOP OF CHAMBER:	154.50
12" TOP MANIFOLD INVERT:	152.95
24" ISOLATOR ROW INVERT:	150.92
12" BOTTOM MANIFOLD INVERT:	150.86
BOTTOM OF CHAMBER:	150.75
BOTTOM OF STONE:	150.00

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THE SITE DESIGN ENGINEER MUST REVIEW THE PROXIMITY OF THE CHAMBERS TO THE RETAINING WALL AND CONSIDER EFFECTS OF POSSIBLE SATURATED SOILS ON THE RETAINING WALL'S INTEGRITY.
- THE SITE DESIGN ENGINEER MUST REVIEW THE PROXIMITY OF THE CHAMBERS TO THE SLOPE AND CONSIDER EFFECTS OF POSSIBLE SATURATED SOILS ON THE SLOPE'S INTEGRITY.
- THE SITE DESIGN ENGINEER MUST REVIEW THE PROXIMITY OF THE CHAMBERS TO THE BUILDING/STRUCTURE. NO FOUNDATION LOADS SHALL BE TRANSMITTED TO THE CHAMBERS. THE SITE DESIGN ENGINEER MUST CONSIDER EFFECTS OF POSSIBLE SATURATED SOILS ON BEARING CAPACITY OF SOILS AND SEEPAGE INTO BASEMENTS.


64.14'
53.94'
DMH W/ELEVATED BYPASS MANIFOLD
INSPECTION PORT
ISOLATOR ROW
12" X 12" ADS N-12 TOP MANIFOLD INVERT 26.36" ABOVE CHAMBER BASE (SEE NOTES)
22.75'
21.75'
12" X 12" ADS N-12 TOP MANIFOLD & BOTTOM OUTLET STUB TOP MANIFOLD INVERT 26.36" ABOVE CHAMBER BASE BOTTOM OUTLET STUB INVERT 1.35" ABOVE CHAMBER BASE (SEE NOTES)
CATCH BASIN OUTLET STRUCTURE. STANDARD CB WITH GRATE ELEV.=
24" CORED END CAP, PART# MC3500IEPP24BC TYP OF ALL MC-3500 24" BOTTOM CONNECTIONS AND ISOLATOR ROWS
INSPECTION PORT
DMH (TYP.)
PLACE MINIMUM 17.5' OF ADS GEOSYNTHETICS 315WTM WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

MC-3500 UNDERGROUND BASIN LAYOUT

N.T.S.

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- ◆ LEHIGH VALLEY, PA
- ◆ SOUTHEASTERN, PA
- ◆ REHOBOTH BEACH, DE
- ◆ BALTIMORE, MD
- ◆ SOUTHERN MARYLAND
- ◆ NORTHERN VIRGINIA
- ◆ CENTRAL VIRGINIA
- ◆ RALEIGH, NC
- ◆ CHARLOTTE, NC
- ◆ TAMPA, FL
- ◆ SOUTH FLORIDA

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE PROPRIETARY AND SHALL NOT BE COPIED OR USED FOR ANY PURPOSE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM BOHLER ENGINEERING. ONLY APPROVED, SIGNED AND SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	BY
1			
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12			
13			
14			
15			

PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_DETAILS

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR
Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT 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

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MAINE LICENSE No. 9490
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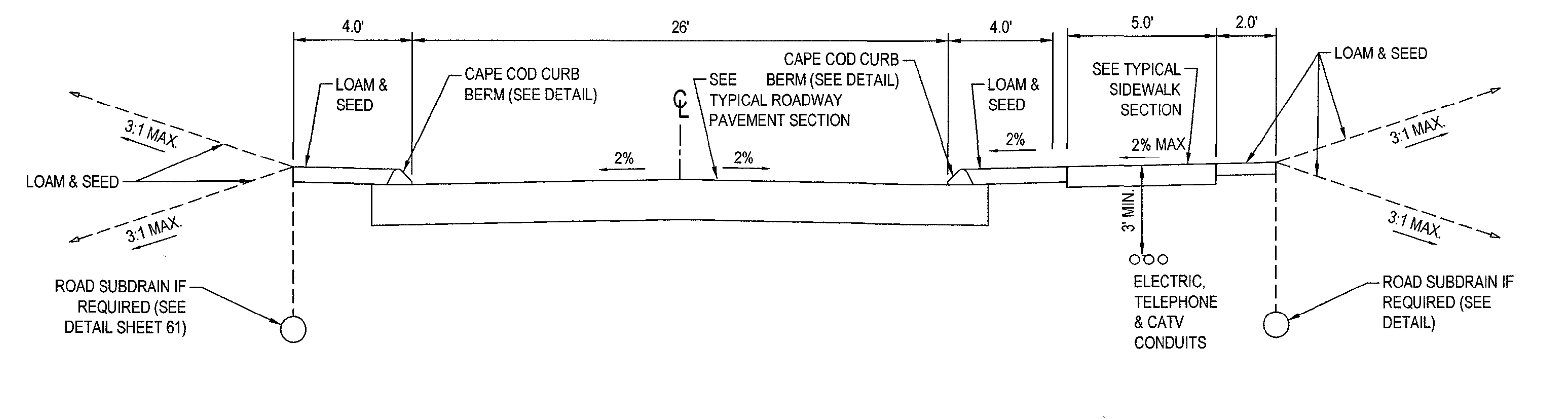
FLORIDA LICENSE No. 66202

WILLIAM D. GOEBEL CIVIL 42644

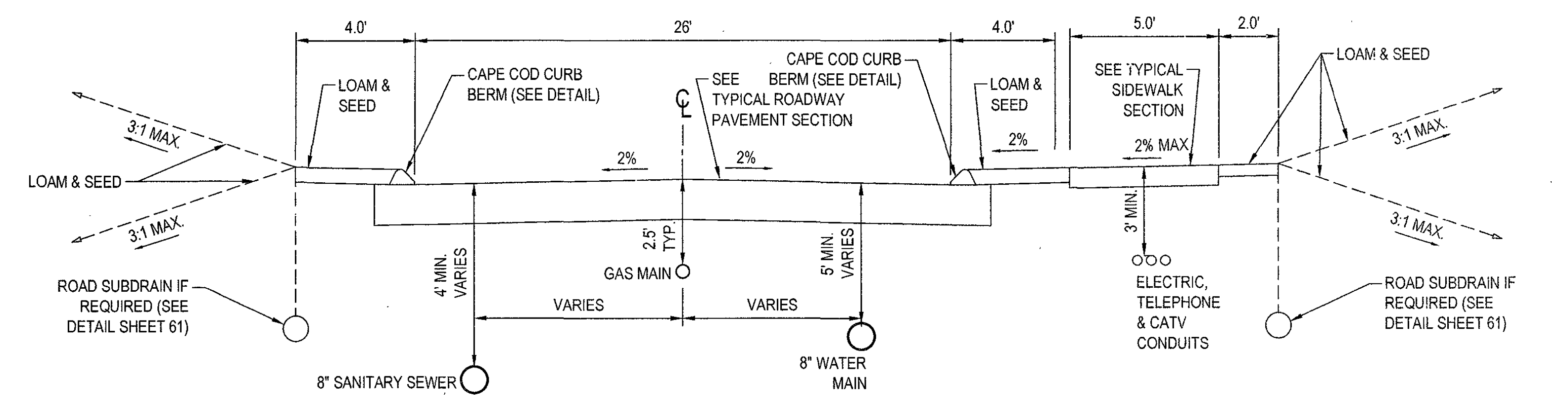
SHEET TITLE:
DETAILS

SHEET NUMBER:
73
OF 74

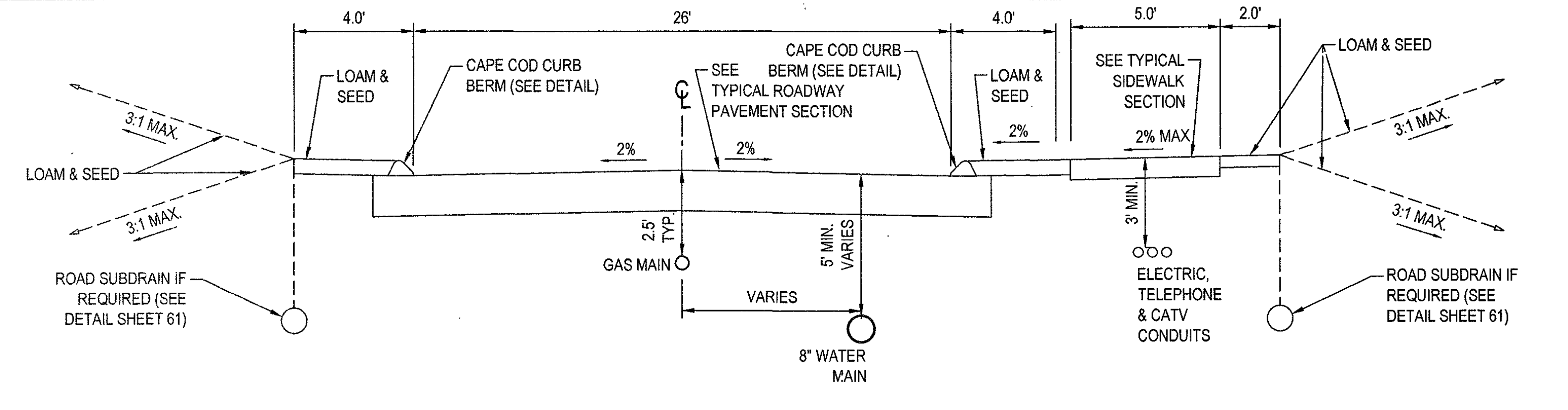
REV 0 - 11/18/2016


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

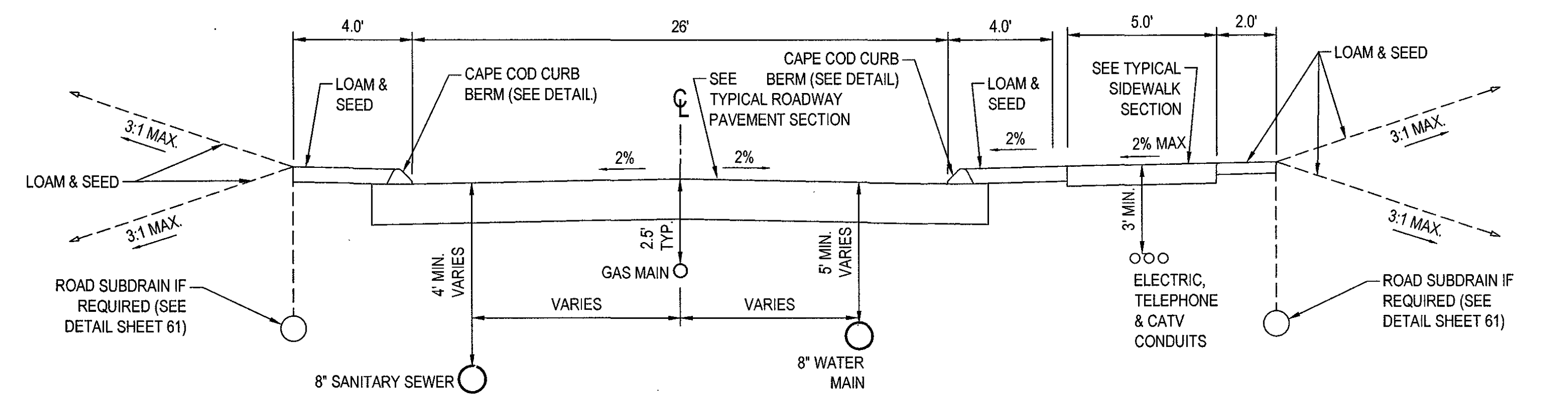
ROAD A STA. 0+00 TO STA. 1+32 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
2.5' TYP
GAS MAIN
4' MIN. VARIES
5' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

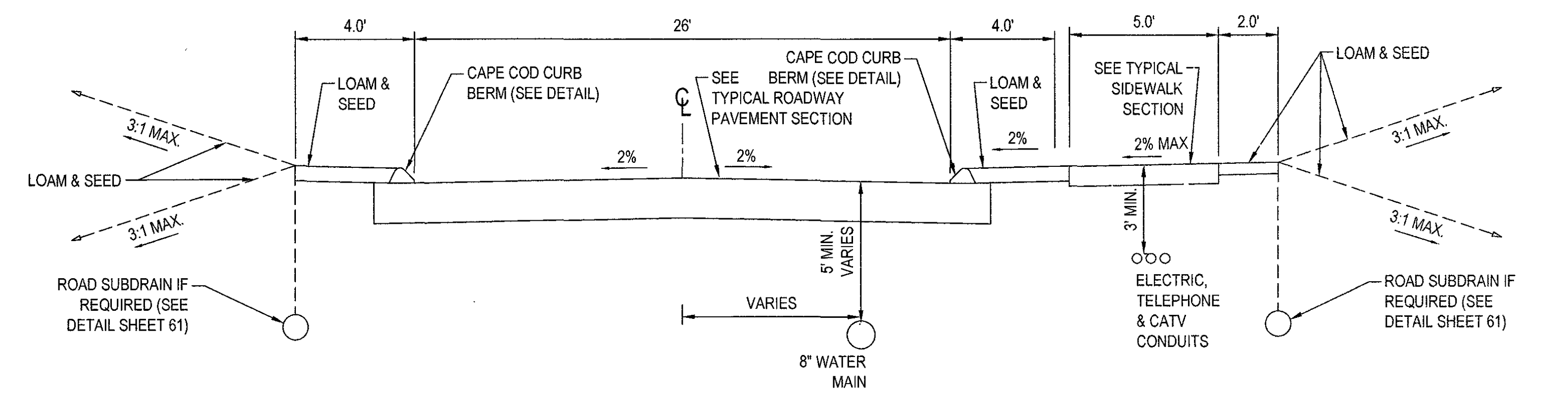
ROAD A STA. 1+32 TO STA. 15+97 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
2.5' TYP
GAS MAIN
5' MIN. VARIES
VARIES
8" WATER MAIN
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

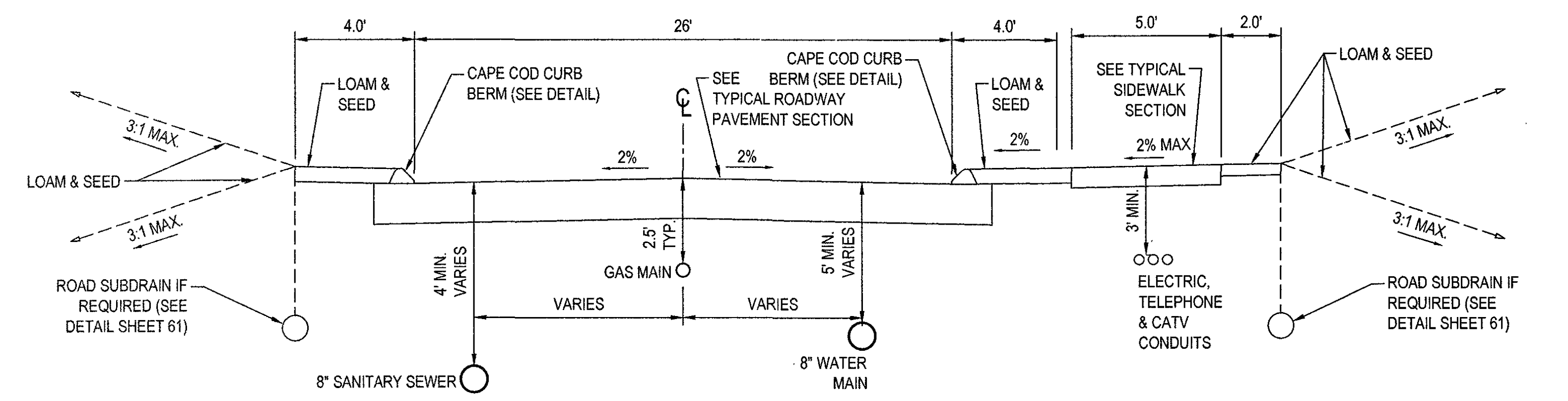
ROAD A STA. 15+97 TO STA. 18+16 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
2.5' TYP
GAS MAIN
4' MIN. VARIES
5' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

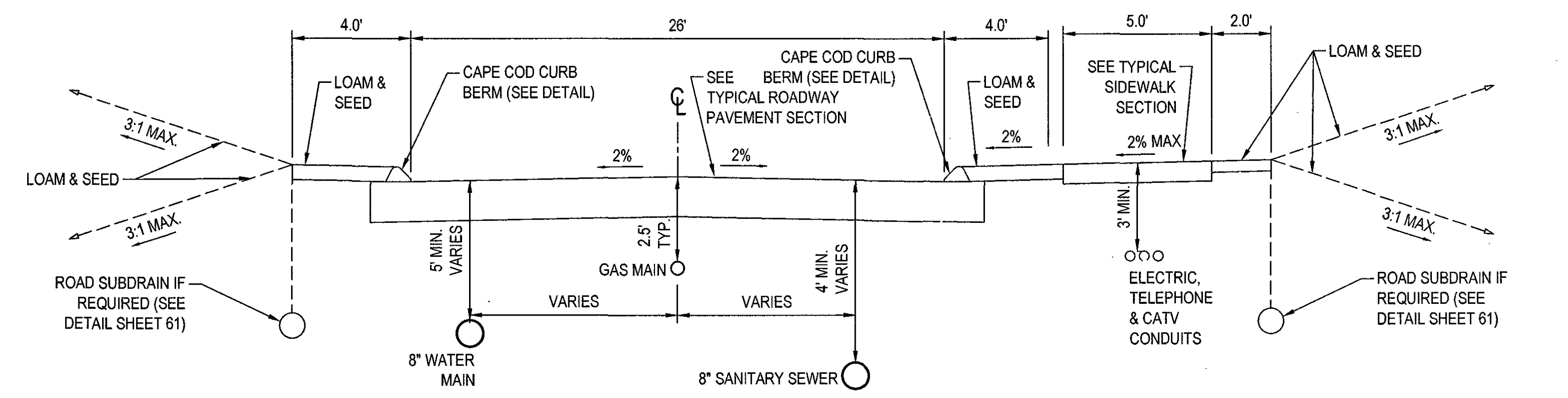
ROAD A STA. 18+16 TO STA. 43+21 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
5' MIN. VARIES
VARIES
8" WATER MAIN
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

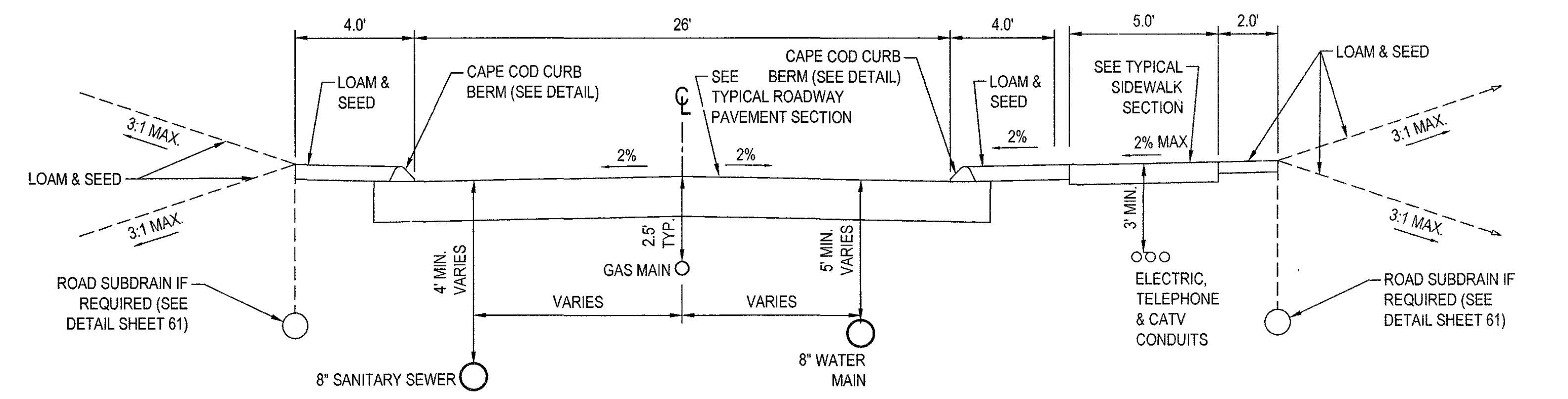
ROAD A STA. 43+21 TO STA. 45+52 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
2.5' TYP
GAS MAIN
4' MIN. VARIES
5' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

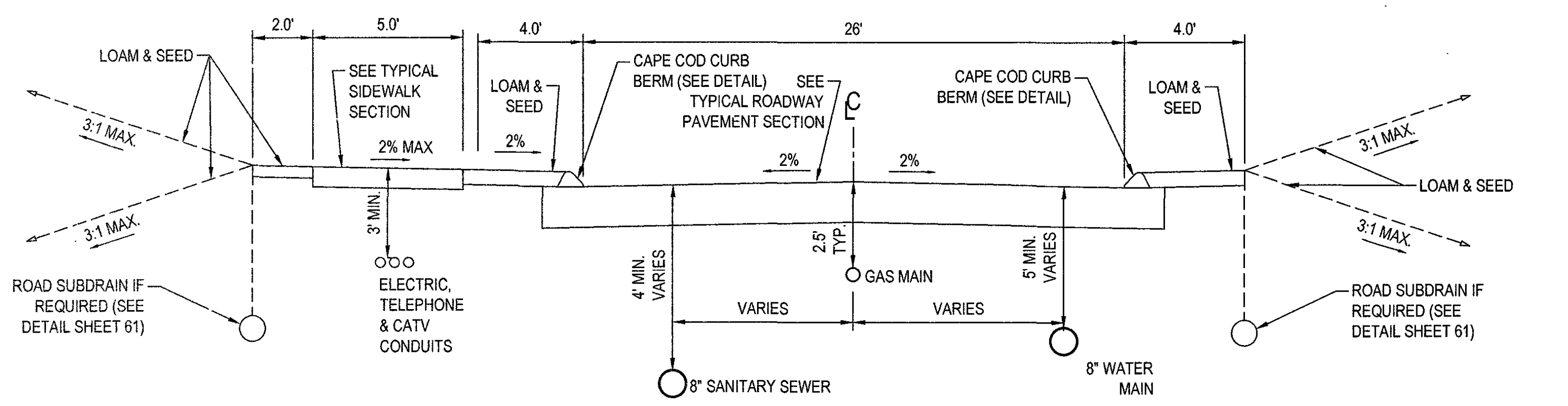
ROAD B STA. 0+00 TO STA. 4+86 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
2.5' TYP
GAS MAIN
5' MIN. VARIES
4' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

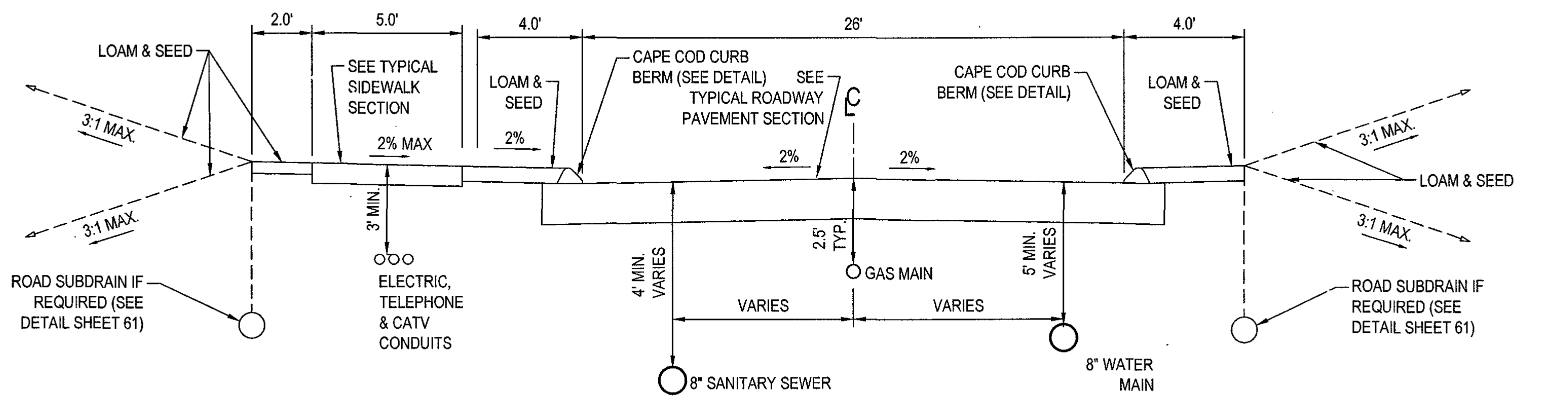
ROAD C STA. 0+00 TO STA. 6+87 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
2.5' TYP
GAS MAIN
4' MIN. VARIES
5' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

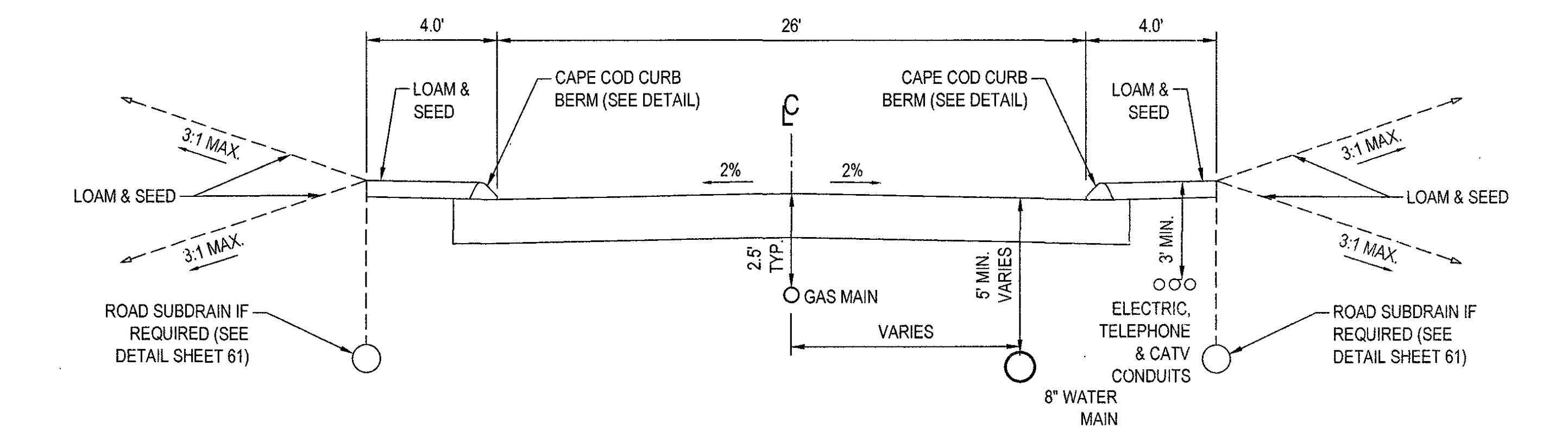
ROAD D STA. 0+00 TO STA. 9+49 REFER TO ROADWAY CROSS SECTION NOTES


2.0'
5.0'
4.0'
26'
4.0'
LOAM & SEED
SEE TYPICAL SIDEWALK SECTION
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
2% MAX
2%
3:1 MAX
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
4' MIN. VARIES
2.5' TYP
GAS MAIN
5' MIN. VARIES
VARIES
8" SANITARY SEWER
8" WATER MAIN
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

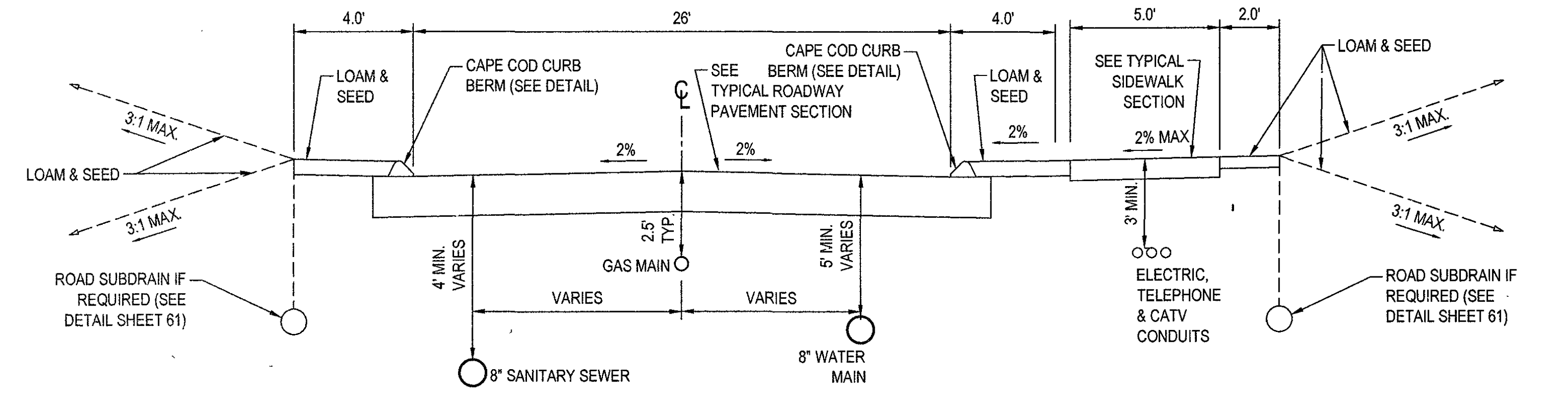
ROAD E STA. 0+00 TO STA. 6+09 REFER TO ROADWAY CROSS SECTION NOTES


2.0'
5.0'
4.0'
26'
4.0'
LOAM & SEED
SEE TYPICAL SIDEWALK SECTION
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
2% MAX
2%
3:1 MAX
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
4' MIN. VARIES
2.5' TYP
GAS MAIN
5' MIN. VARIES
VARIES
8" SANITARY SEWER
8" WATER MAIN
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

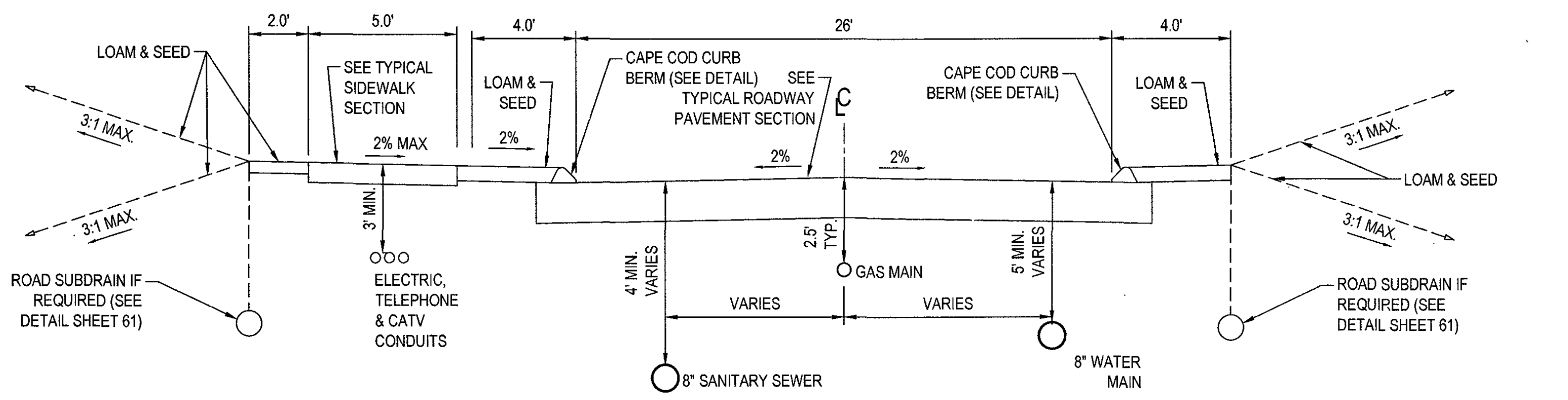
ROAD F STA. 0+00 TO STA. 6+91 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
2%
3:1 MAX
2.5' TYP
GAS MAIN
5' MIN. VARIES
VARIES
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
8" WATER MAIN
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

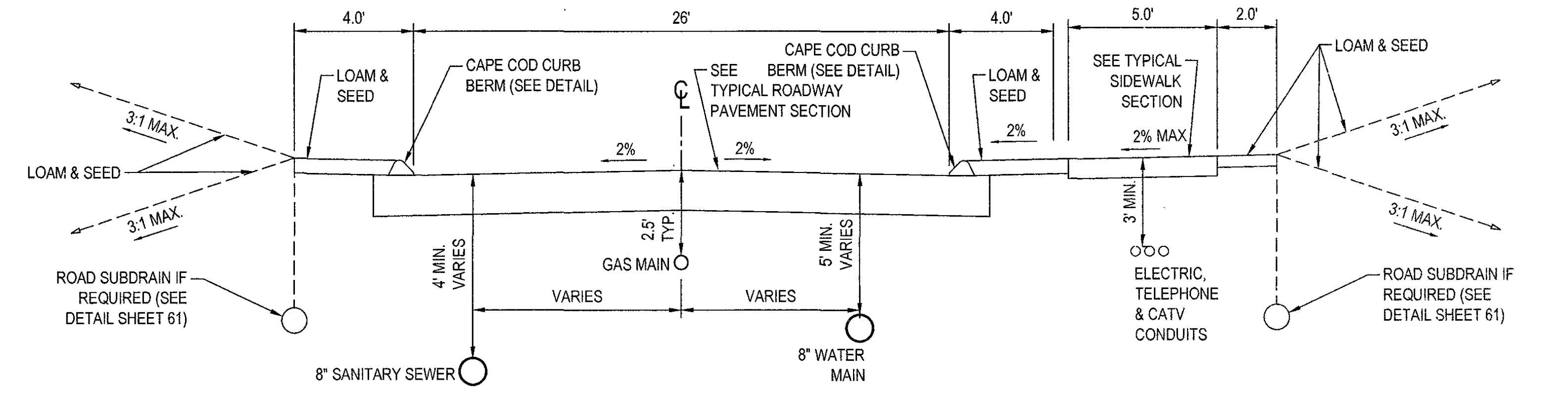
ROAD G STA. 1+28 TO STA. 2+28 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
2.5' TYP
GAS MAIN
4' MIN. VARIES
5' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

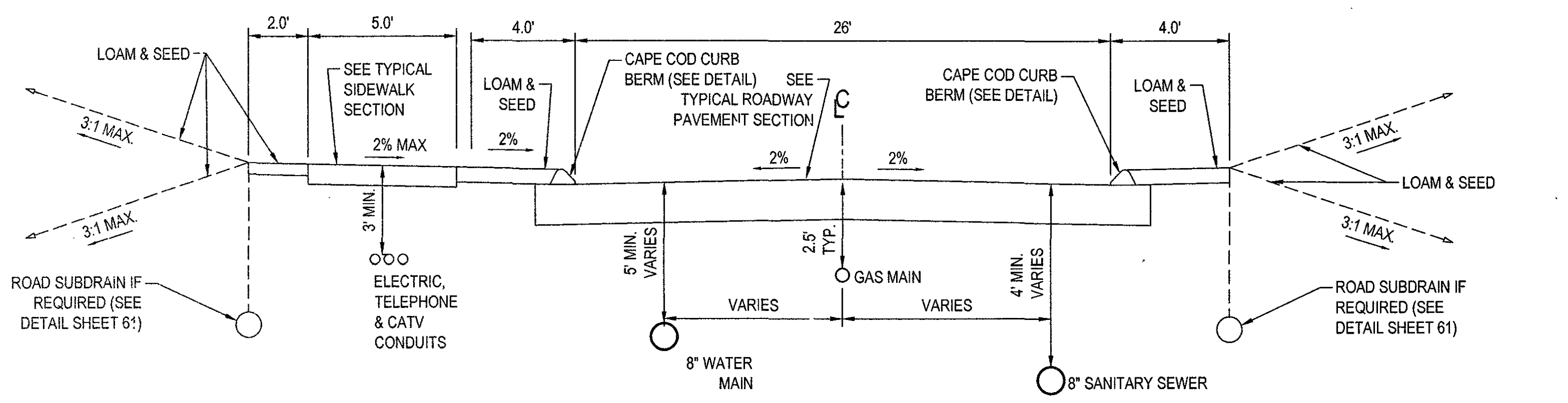
ROAD G STA. 2+28 TO STA. 17+50 REFER TO ROADWAY CROSS SECTION NOTES


2.0'
5.0'
4.0'
26'
4.0'
LOAM & SEED
SEE TYPICAL SIDEWALK SECTION
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
2% MAX
2%
3:1 MAX
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
4' MIN. VARIES
2.5' TYP
GAS MAIN
5' MIN. VARIES
VARIES
8" SANITARY SEWER
8" WATER MAIN
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

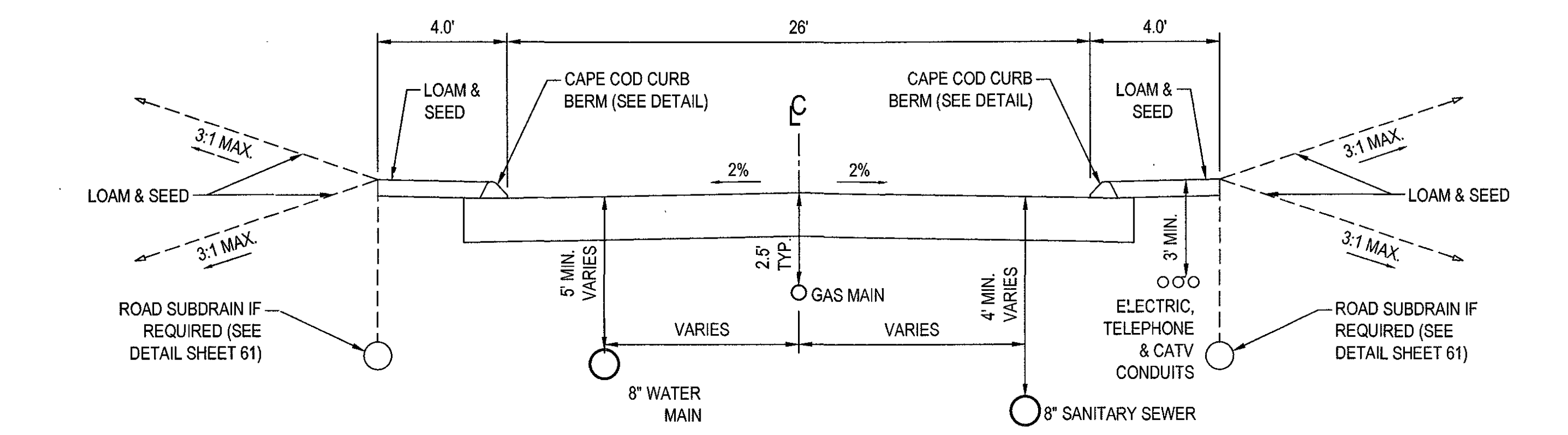
ROAD H STA. 5+30 TO STA. 21+56 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
2.5' TYP
GAS MAIN
4' MIN. VARIES
5' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

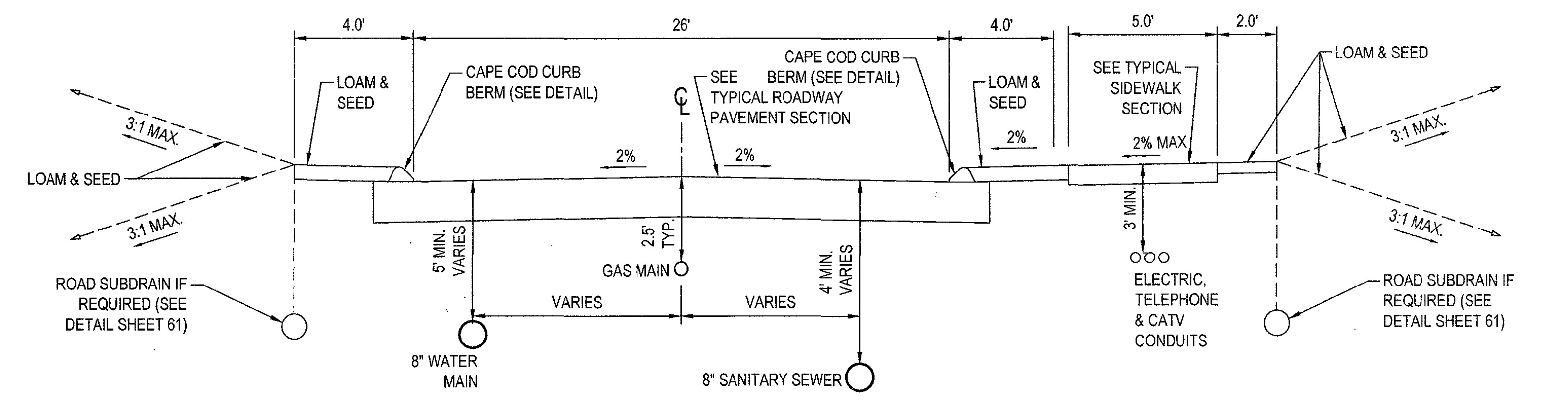
ROAD I STA. 0+00 TO STA. 12+13 REFER TO ROADWAY CROSS SECTION NOTES


2.0'
5.0'
4.0'
26'
4.0'
LOAM & SEED
SEE TYPICAL SIDEWALK SECTION
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
2% MAX
2%
3:1 MAX
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
5' MIN. VARIES
2.5' TYP
GAS MAIN
4' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

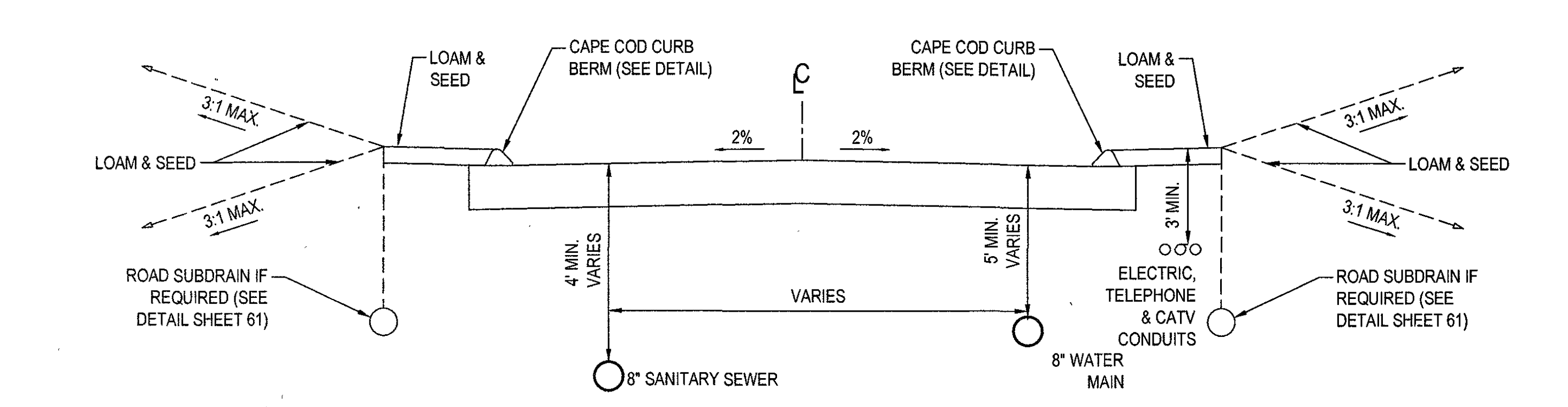
ROAD J STA. 0+00 TO STA. 5+81 REFER TO ROADWAY CROSS SECTION NOTES



ROAD K STA. 0+00 TO STA. 2+78 REFER TO ROADWAY CROSS SECTION NOTES


4.0'
26'
4.0'
5.0'
2.0'
LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
SEE TYPICAL ROADWAY PAVEMENT SECTION
SEE TYPICAL SIDEWALK SECTION
2% MAX
2%
3:1 MAX
5' MIN. VARIES
2.5' TYP
GAS MAIN
4' MIN. VARIES
VARIES
8" WATER MAIN
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

ROAD L STA. 0+00 TO STA. 3+24 REFER TO ROADWAY CROSS SECTION NOTES


LOAM & SEED
CAPE COD CURB BERM (SEE DETAIL)
2%
3:1 MAX
4' MIN. VARIES
5' MIN. VARIES
VARIES
8" SANITARY SEWER
3' MIN.
ELECTRIC, TELEPHONE & CATV CONDUITS
8" WATER MAIN
ROAD SUBDRAIN IF REQUIRED (SEE DETAIL SHEET 61)

ROAD M STA. 0+00 TO STA. 3+30 REFER TO ROADWAY CROSS SECTION NOTES

ROADWAY CROSS SECTION NOTES:

1. REFER TO SITE PLAN SHEETS FOR EXACT LOCATION OF MODIFIED CAPE COD BERM.
2. REFER TO SITE PLAN SHEETS FOR ADDITIONAL INFORMATION REGARDING SIDEWALK LOCATIONS.
3. DIMENSIONS TO AND LOCATIONS OF UTILITIES REPRESENT GENERAL GUIDELINES. REFER TO UTILITY PLAN SHEETS FOR ACTUAL UTILITY LOCATIONS.
4. SUBDRAIN TYPICAL FOR SECTIONS IN CUT. CONNECT SUBDRAIN TO CLOSEST DOWNSTREAM DRAINAGE STRUCTURE OR DAYLIGHT AS FEASIBLE.
5. REFER TO GRADING AND DRAINAGE PLANS FOR LOCATIONS OF PROPOSED DRAINAGE STRUCTURES AND PIPING.
6. REFER TO LANDSCAPE PLANS FOR ADDITIONAL INFORMATION.

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SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING PROGRAM MANAGEMENT LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN PERMITTING SERVICES TRANSPORTATION SERVICES

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- BOSTON, MA
- NEW YORK METRO
- NEW YORK, NY
- NEW JERSEY
- PHILADELPHIA, PA
- LEHIGH VALLEY, PA
- SOUTHEASTERN, PA
- REHOBOTH BEACH, DE
- BALTIMORE, MD
- SOUTHERN MARYLAND
- NORTHERN VIRGINIA
- CENTRAL VIRGINIA
- RALEIGH, NC
- CHARLOTTE, NC
- TAMPA, FL
- SOUTH FLORIDA

REVISIONS

REV	DATE	COMMENT	BY
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PERMIT
SET

PROJECT No.:	W161041
DRAWN BY:	JT
CHECKED BY:	AFT
DATE:	11/18/2016
SCALE:	AS NOTED
CAD I.D.:	W161041_SS3_DETAILS

PROJECT:

SITE
DEVELOPMENT
PLANS
—FOR—

Toll Brothers

LOCATION OF SITE
MAP# 01, LOTS# 1-4, 6
MAP# 05, LOT# 35
WALNUT 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. GOEBEL
PROFESSIONAL ENGINEER
NEW YORK LICENSE No. 071284-1
FLORIDA LICENSE No. 66202
WILLIAM D. GOEBEL
CIVIL
42644

SHEET TITLE:

TYPICAL
CROSS
SECTIONS

SHEET NUMBER:

74
OF 74

REV 0 - 11/18/2016