

Horizontal Directional Drilling Hdd Good Practices Guidelines

RECOGNIZING THE WAYWAYS TO ACQUIRE THIS EBOOK **HORIZONTAL DIRECTIONAL DRILLING HDD GOOD PRACTICES GUIDELINES** IS ADDITIONALLY USEFUL. YOU HAVE REMAINED IN RIGHT SITE TO START GETTING THIS INFO. ACQUIRE THE HORIZONTAL DIRECTIONAL DRILLING HDD GOOD PRACTICES GUIDELINES JOIN THAT WE MEET THE EXPENSE OF HERE AND CHECK OUT THE LINK.

YOU COULD PURCHASE LEAD HORIZONTAL DIRECTIONAL DRILLING HDD GOOD PRACTICES GUIDELINES OR ACQUIRE IT AS SOON AS FEASIBLE. YOU COULD SPEEDILY DOWNLOAD THIS HORIZONTAL DIRECTIONAL DRILLING HDD GOOD PRACTICES GUIDELINES AFTER GETTING DEAL. SO, SUBSEQUENTLY YOU REQUIRE THE BOOKS SWIFTLY, YOU CAN STRAIGHT GET IT. ITS SUITABLY NO QUESTION EASY AND THUS FATS, ISNT IT? YOU HAVE TO FAVOR TO IN THIS EXPOSE

SOILS AND ENVIRONMENTAL QUALITY GARY M. PIERZYNSKI
2005-05-02 APERPETUAL BESTSELLER, THIS THIRD EDITION REMAINS THE OBVIOUS CHOICE FOR THOSE INSTRUCTORS WHO STRIVE TO MAKE THEIR TEACHING APPLICABLE TO CONTEMPORARY ISSUES. THE THREE AUTHORS, ALL TEACHING PROFESSORS DISTINGUISHED IN SOIL SCIENCE, HAVE UPDATED THIS STUDENT FAVORITE TO INCLUDE A GREATER NUMBER OF EVEN MORE RELEVANT TOPICS. RESPONDING TO REQUESTS, THEY HAVE ALSO PLACED AN INCREASED EMPHASIS ON MANAGEMENT ISSUES. AS WITH PREVIOUS EDITIONS, THE THIRD EDITION OFFERS STUDENTS IN SOIL OR ENVIRONMENTAL SCIENCE AN OVERVIEW OF SOIL SCIENCE, HYDROLOGY, ATMOSPHERIC CHEMISTRY, AND POLLUTANT CLASSIFICATION. THE TEXT MOVES FROM THE THEORETICAL TO THE PRACTICAL WITH AN ABUNDANCE OF CONTEMPORARY EXAMPLES, SUCH AS AN EXPLORATION OF ALLOWABLE PESTICIDE CONCENTRATIONS IN DRINKING WATER AND AN INQUIRY INTO SOIL CONTAMINATION FROM THE TRACE ELEMENTS IN ORGANIC BY-PRODUCTS. ALSO CONSIDERED ARE THE USE OF SOIL CARBON SEQUESTRATION AS A REMEDY FOR GLOBAL CLIMATE CHANGE, AND THE EFFECTS OF ACID PRECIPITATION ON FORESTATION. NEW TO THE THIRD EDITION: • NEW CHAPTERS ON NUTRIENT MANAGEMENT PLANNING, AND THE ENVIRONMENTAL TESTING OF SOIL, PLANTS, WATER, AND AIR • ADDITIONAL AND REVISED CASE STUDIES THAT CONTINUE TO RELATE ACADEMIC CONTENT TO REAL-LIFE SITUATIONS, WHILE INSPIRING STUDENTS WITH REAL -LIFE CHALLENGES TO SOLVE • EIGHT-PAGE COLOR INSET • DIRECT ENCOURAGEMENT AND LINKS TO FULLY ACCESS THE INTERNET AS A RESOURCE FOR THE MOST UP-TO-DATE FINDINGS ALWAYS RELEVANT, ALWAYS INTERESTING THE TEXT ALSO COVERS ENVIRONMENTALLY-RELATED CURRENT EVENTS, FOSTERING DISCUSSION OF THE POLITICAL, ECONOMIC, AND REGULATORY ASPECTS OF ENVIRONMENTAL ISSUES, THE HUMAN SIDE OF ENVIRONMENTAL PROBLEMS, THE USE AND MISUSE OF THE SCIENTIFIC METHOD, AND POTENTIAL BIAS IN THE PRESENTATION OF FACTS. STUDENTS IN SOIL SCIENCE, ENVIRONMENTAL SCIENCE, CHEMISTRY, BIOLOGY, GEOLOGY, AND OTHER DISCIPLINES WILL GAIN VALUABLE INSIGHT FROM THIS MULTIFACETED TEXT.

MANAGING STATISTICAL CONFIDENTIALITY & MICRODATA ACCESS CONFERENCE OF EUROPEAN STATISTICIANS 2007

THESE GUIDELINES HAVE BEEN PREPARED A TASK FORCE SET UP BY THE CONFERENCE OF EUROPEAN STATISTICIANS, WITH TWO MAIN OBJECTIVES.- THE FIRST IS TO FOSTER GREATER UNIFORMITY OF APPROACH BY COUNTRIES TO ALLOW BETTER ACCESS TO MICRODATA FOR THE RESEARCH COMMUNITY. THE SECOND IS TO PRODUCE GUIDELINES AND SUPPORTING CASE STUDIES, WHICH WILL HELP COUNTRIES IMPROVE THEIR ARRANGEMENTS FOR PROVIDING ACCESS TO MICRODATA. HANDBOOK OF MATERIALS FAILURE ANALYSIS WITH CASE STUDIES FROM THE OIL AND GAS INDUSTRY ABDEL SALAM HAMDY MAKHLOUF 2015-09-01 HANDBOOK OF MATERIALS FAILURE ANALYSIS: WITH CASE STUDIES FROM THE OIL AND GAS INDUSTRY PROVIDES AN UPDATED UNDERSTANDING ON WHY MATERIALS FAIL IN SPECIFIC SITUATIONS, A VITAL ELEMENT IN DEVELOPING AND ENGINEERING NEW ALTERNATIVES. THIS HANDBOOK COVERS ANALYSIS OF MATERIALS FAILURE IN THE OIL AND GAS INDUSTRY, WHERE A SINGLE FAILED PIPE CAN RESULT IN DEVASTATING CONSEQUENCES FOR PEOPLE, WILDLIFE, THE ENVIRONMENT, AND THE ECONOMY OF A REGION. THE BOOK COMBINES INTRODUCTORY SECTIONS ON FAILURE ANALYSIS WITH NUMEROUS REAL WORLD CASE STUDIES OF PIPELINES AND OTHER TYPES OF MATERIALS FAILURE IN THE OIL AND GAS INDUSTRY, INCLUDING JOINT FAILURE, LEAKAGE IN CRUDE OIL STORAGE TANKS, FAILURE OF GLASS FIBRE REINFORCED EPOXY PIPES, AND FAILURE OF STAINLESS STEEL COMPONENTS IN OFFSHORE PLATFORMS, AMONGST OTHERS. INTRODUCES READERS TO MODERN ANALYTICAL TECHNIQUES IN MATERIALS FAILURE ANALYSIS COMBINES FOUNDATIONAL KNOWLEDGE WITH CURRENT RESEARCH ON THE LATEST DEVELOPMENTS AND INNOVATIONS IN THE FIELD INCLUDES NUMEROUS COMPELLING CASE STUDIES OF MATERIALS FAILURE IN OIL AND GAS PIPELINES AND DRILLING PLATFORMS NORTH BAJA PIPELINE EXPANSION PROJECT 2007 RECENT PROGRESS IN DESALINATION, ENVIRONMENTAL AND MARINE OUTFALL SYSTEMS MAHAD BAAWAIN 2015-08-31 THIS BOOK COLLECTS CURRENT SCIENTIFIC INFORMATION ON ADVANCED TECHNOLOGIES AND MANAGEMENT PRACTICES ASSOCIATED WITH THE DESALINATION INDUSTRY IN THE MIDDLE EAST AND ELSEWHERE AROUND THE WORLD. THE BOOK OPENS WITH INTRODUCTORY CHAPTER WHICH BRIEFLY RECOUNTS THE HISTORY OF DESALINATION, AND DESCRIBES THE CURRENT STATE OF DEVELOPMENT IN THE FIELD. PART I: DESALINATION SYSTEMS INCLUDES TEN CHAPTERS WHICH

DESCRIBE A VARIETY OF TECHNIQUES AND DESIGNS INTENDED NOT ONLY TO MINIMIZE THE IMPACT OF DESALINATION, BUT ALSO TO SAVE ENERGY AND USE NATURAL RESOURCES TO MAXIMIZE THE OUTPUT OF INTEGRATED DESALINATION SYSTEMS. AMONG THE HIGHLIGHTS ARE A CHAPTER ON THE USE OF CERAMIC MEMBRANE TECHNOLOGY FOR SUSTAINABLE OIL WATER PRODUCTION; A CASE STUDY ON THE USE OF SOLAR HEATING SYSTEMS IN DESALINATION TECHNOLOGY IN OMAN; DISCUSSION OF FOULING AND ITS EFFECT ON DESIGN AND PERFORMANCE OF DESALINATION SYSTEMS; A REVIEW OF SHORE APPROACHES AND SEA-LINES WITH CASE STUDIES FROM AUSTRALIA AND GERMANY; AND A DISCUSSION OF THE INTEGRATION OF DESALINATION TECHNOLOGY WITH RENEWABLE ENERGY FOR CLIMATE CHANGE ABATEMENT IN THE MIDDLE EAST AND NORTH AFRICA REGION. PART II: ENVIRONMENTAL SYSTEMS INCLUDES AMONG OTHERS A CHAPTER ON REGULATING THE USE OF WATER RESOURCES AND DESALINATION TECHNOLOGY ON A REGIONAL SCALE REDUCING THE CARBON FOOTPRINT OF DESALINATION, WITH EXAMPLES FROM AUSTRALIA; A DESCRIPTION OF DESALINATION FOR IRRIGATION IN THE SOUSS MASSA REGION IN THE SOUTH OF MOROCCO; A STUDY OF THE IMPACT OF THE COASTAL INTAKE ENVIRONMENT ON OPERATING CONDITIONS OF THERMAL DESALINATION PLANTS IN THE UNITED ARAB EMIRATES; A DISCUSSION OF HYDRODYNAMIC AND THERMAL DISPERSION MODELING OF THE EFFLUENT IN A COASTAL CHANNEL, WITH A CASE STUDY FROM OMAN; AND A MATHEMATICAL MODEL STUDY OF EFFLUENT DISPOSAL FROM A DESALINATION PLANT IN THE MARINE ENVIRONMENT AT TUTICORIN IN INDIA. THE BOOK AIMS TO INSPIRE DEVELOPMENTS IN DESALINATION TECHNOLOGIES WHICH ARE SPECIFICALLY AIMED AT REDUCING ENERGY CONSUMPTION AND COST, AND MINIMIZING ENVIRONMENTAL IMPACT.

PROCEEDINGS OF THE 15TH EUROPEAN CONFERENCE ON SOIL MECHANICS AND GEOTECHNICAL ENGINEERING A.

ANAGNOSTOPOULOS 2013-03-21 THIS PUBLICATION CONTAINS THE PAPERS PRESENTED AT THE 15TH EUROPEAN CONFERENCE ON SOIL MECHANICS AND GEOTECHNICAL ENGINEERING (ECSMGE), HELD IN ATHENS, GREECE. CONSIDERABLE PROGRESS HAS BEEN MADE IN RECENT DECADES IN UNDERSTANDING THE ENGINEERING BEHAVIOR OF THOSE HARD SOILS AND WEAK ROCKS THAT CLEARLY FALL INTO EITHER THE FIELD OF SOIL OR OF ROCK MECHANICS, AND THERE HAVE BEEN IMPORTANT DEVELOPMENTS IN DESIGN AND CONSTRUCTION METHODS TO COPE WITH THEM. PROGRESS WOULD BE EVEN MORE DESIRABLE, HOWEVER, FOR THOSE MATERIALS WHICH FALL INTO THE 'GREY' AREA BETWEEN SOILS AND ROCKS. THEY PRESENT PARTICULAR CHALLENGES DUE TO THEIR DIVERSITY, THE DIFFICULTIES AND PROBLEMS ARISING IN THEIR IDENTIFICATION AND CLASSIFICATION, THEIR SAMPLING AND TESTING AND IN THE ESTABLISHMENT OF SUITABLE MODELS TO ADEQUATELY DESCRIBE THEIR BEHAVIOR. THE PUBLICATION AIMS TO PROVIDE AN UPDATED OVERVIEW OF THE EXISTING WORLDWIDE KNOWLEDGE OF THE GEOLOGICAL FEATURES, ENGINEERING PROPERTIES AND BEHAVIOR OF SUCH HARD SOILS AND WEAK ROCKS, WITH PARTICULAR REFERENCE TO THE DESIGN AND CONSTRUCTION METHODS AND PROBLEMS ASSOCIATED WITH THESE MATERIALS. PART 4 WAS PUBLISHED POST-CONFERENCE AND INCLUDES CONFERENCE

REPORTS.

DESIGN AND INSTALLATION OF MARINE PIPELINES MIKAEL BRAESTRUP 2009-02-12 THIS COMPREHENSIVE HANDBOOK ON SUBMARINE PIPELINE SYSTEMS COVERS A BROAD SPECTRUM OF TOPICS FROM PLANNING AND SITE INVESTIGATIONS, PROCUREMENT AND DESIGN, TO INSTALLATION AND COMMISSIONING. IT CONSIDERS GUIDELINES FOR THE CHOICE OF DESIGN PARAMETERS, CALCULATION METHODS AND CONSTRUCTION PROCEDURES. IT IS BASED ON LIMIT STATE DESIGN WITH PARTIAL SAFETY COEFFICIENTS.

TRENCHLESS TECHNOLOGY: PLANNING, EQUIPMENT, AND METHODS MOHAMMAD NAJAFI 2013-01-18 "THE COMPLETE GUIDE TO TRENCHLESS TECHNOLOGY PROJECT MANAGEMENT, PLANNING, COSTS, AND METHODS" WRITTEN BY AN EXPERT IN THE FIELD OF PIPELINE SYSTEM ENGINEERING, THIS BOOK DESCRIBES HOW TO PLAN, SCHEDULE, AND IMPLEMENT EFFICIENT, COST-EFFECTIVE TRENCHLESS TECHNOLOGY PIPING PROJECTS. FILLED WITH DETAILED ILLUSTRATIONS AND REAL-WORLD EXAMPLES, TRENCHLESS TECHNOLOGY: PLANNING, EQUIPMENT, AND METHODS EXPLAINS HOW TO ACCURATELY COMPARE THE COSTS OF TRENCHLESS PROJECTS, CONSIDERING GEOTECHNICAL AND ROCK MASS IMPACTS, DRILLING FLUIDS, AND LOCATING AND TRACKING EQUIPMENT. THIS DETAILED REFERENCE PROVIDES IMPORTANT INFORMATION ON HOW TO ESTIMATE THE COST OF LABOR AND EQUIPMENT, AND SCHEDULE TRENCHLESS PIPING PROJECTS. A WIDE RANGE OF TRENCHLESS TECHNOLOGY METHODS SUITABLE FOR VARIOUS GROUND AND PROJECT CONDITIONS ARE DISCUSSED IN THIS PRACTICAL RESOURCE. COVERAGE INCLUDES: COST COMPARISON OF TRENCHLESS TECHNOLOGY METHODS PLANNING FOR TRENCHLESS TECHNOLOGY PROJECTS PROJECT DELIVERY METHODS GEOTECHNICAL CONSIDERATIONS ROCK MASS PROPERTIES IMPACTS ON TRENCHLESS PROJECT FEASIBILITY TRACKING, LOCATING, AND PLANNING TOOLS FOR HORIZONTAL DIRECTIONAL DRILLING DRILLING AND LUBRICATING FLUIDS PLANNING AND CONSTRUCTION REQUIREMENTS FOR HORIZONTAL DIRECTION DRILLING HORIZONTAL AUGER BORING PIPE RAMMING MICROTUNNELING METHODS PILOT TUBE (OR PILOT TUBE MICROTUNNELING) METHOD PIPE/BOX JACKING AND UTILITY TUNNELING CURED-IN-PLACE PIPE SLIPLINING LATERAL RENEWAL LOCALIZED REPAIR PLANNING AND CONSTRUCTION REQUIREMENTS FOR PIPE BURSTING PANEL LININGS SPRAY-IN-PLACE PIPE "--

PIPELINE DESIGN FOR INSTALLATION BY HORIZONTAL DIRECTIONAL DRILLING AMERICAN SOCIETY OF CIVIL ENGINEERS. HDD DESIGN GUIDELINE TASK COMMITTEE 2005 THIS VOLUME ADDRESSES THE DESIGN OF MAJOR PIPELINE OR DUCT SEGMENTS TO BE INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING (HDD). THIS MANUAL OF PRACTICE, WHICH COVERS TOPICS SPECIFICALLY RELATED TO HDD INSTALLATION, WAS PREPARED BY A COMMITTEE OF SENIOR ENGINEERS WHO ARE LEADERS IN THE DEVELOPMENT OF HDD TECHNIQUES AND PRACTICES. HDD IS A TRENCHLESS EXCAVATION METHOD THAT IS ACCOMPLISHED IN THREE PHASES AND USES A SPECIALIZED HORIZONTAL DRILLING RIG WITH ANCILLARY TOOLS AND EQUIPMENT. THIS MANUAL IS MEANT TO BE A GUIDE FOR DESIGN ENGINEERS WITH PREVIOUS EXPERIENCE AND KNOWLEDGE OF THE HDD INSTALLATION PROCESS AND PIPELINE DESIGN METHODS. TOPICS COVERED

INCLUDE: PREDESIGN SURVEYS; DRILLED PATH DESIGN; PIPE DESIGN; CONSTRUCTION IMPACT; AND AS-BUILT DOCUMENTATION.

SITE SPECIFIC ANALYSIS UNITED STATES. DEPARTMENT OF THE INTERIOR 1978

MANUAL FOR CONTROLLING AND REDUCING THE FREQUENCY OF PAVEMENT UTILITY CUTS W. JAMES WILDE 2002

PATTERNS: INTEGRATING WebSPHERE ILOG JRULES WITH IBM SOFTWARE CHRIS RAYNS 2011-02-24 THIS IBM® REDBOOKS® PUBLICATION DESCRIBES HOW THE IBM WebSPHERE® ILOG JRULES PRODUCT CAN BE USED IN ASSOCIATION WITH OTHER IBM MIDDLEWARE PRODUCTS TO DELIVER BETTER SOLUTIONS. THIS BOOK CAN HELP ARCHITECTS POSITION A BUSINESS RULE MANAGEMENT SYSTEM (BRMS) IN THEIR EXISTING INFRASTRUCTURES TO DELIVER THE VALUE PROPOSITIONS THAT THE BUSINESS NEEDS. THIS BOOK CAN ALSO HELP DEVELOPERS DESIGN AND INTEGRATE JRULES WITH THOSE MIDDLEWARE PRODUCTS (FOCUSSED ON WebSPHERE PROCESS SERVER, WebSPHERE MESSAGE BROKER AND IBM CICS®) AND HELP TO ILLUSTRATE COMMON INTEGRATION PATTERNS AND PRACTICES FOR THESE PRODUCTS.

TRENCHLESS TECHNOLOGY MOHAMMAD NAJAFI 2005-01-17 TRENCHLESS TECHNOLOGY ALLOWS FOR THE INSTALLATION OR RENEWAL OF UNDERGROUND UTILITY SYSTEMS WITH MINIMUM DISRUPTION OF THE SURFACE. AS WATER AND WASTEWATER SYSTEMS AGE OR MUST BE REDESIGNED IN ORDER TO COMPLY WITH ENVIRONMENTAL REGULATIONS, THE DEMAND FOR THIS TECHNOLOGY HAS DRAMATICALLY INCREASED. THIS IS A DETAILED REFERENCE COVERING CONSTRUCTION DETAILS, DESIGN GUIDELINES, ENVIRONMENTAL CONCERNS, AND THE LATEST ADVANCES IN EQUIPMENT, METHODS, AND MATERIALS. * DESIGN AND ANALYSIS PROCEDURES * DESIGN EQUATIONS * RISK ASSESSMENT * SOIL COMPATIBILITY AND MORE

POWER7 AND POWER7+ OPTIMIZATION AND TUNING GUIDE BRIAN HALL 2013-03-04 THIS IBM® REDBOOKS® PUBLICATION PROVIDES ADVICE AND TECHNICAL INFORMATION ABOUT OPTIMIZING AND TUNING APPLICATION CODE TO RUN ON SYSTEMS THAT ARE BASED ON THE IBM POWER7® AND POWER7+™ PROCESSORS. THIS ADVICE IS DRAWN FROM APPLICATION OPTIMIZATION EFFORTS ACROSS MANY DIFFERENT TYPES OF CODE THAT RUNS UNDER THE IBM AIX® AND LINUX OPERATING SYSTEMS, FOCUSING ON THE MORE PERVASIVE PERFORMANCE OPPORTUNITIES THAT ARE IDENTIFIED, AND HOW TO CAPITALIZE ON THEM. THE TECHNICAL INFORMATION WAS DEVELOPED BY A SET OF DOMAIN EXPERTS AT IBM. THE FOCUS OF THIS BOOK IS TO GATHER THE RIGHT TECHNICAL INFORMATION, AND LAY OUT SIMPLE GUIDANCE FOR OPTIMIZING CODE PERFORMANCE ON THE IBM POWER7 AND POWER7+ SYSTEMS THAT RUN THE AIX OR LINUX OPERATING SYSTEMS. THIS BOOK CONTAINS A LARGE AMOUNT OF STRAIGHTFORWARD PERFORMANCE OPTIMIZATION THAT CAN BE PERFORMED WITH MINIMAL EFFORT AND WITHOUT PREVIOUS EXPERIENCE OR IN-DEPTH KNOWLEDGE. THIS OPTIMIZATION WORK CAN: IMPROVE THE PERFORMANCE OF THE APPLICATION THAT IS BEING OPTIMIZED FOR THE POWER7 SYSTEM CARRY OVER IMPROVEMENTS TO SYSTEMS THAT ARE BASED ON RELATED PROCESSOR CHIPS

IMPROVE PERFORMANCE ON OTHER PLATFORMS THE AUDIENCE OF THIS BOOK IS THOSE PERSONNEL WHO ARE RESPONSIBLE FOR PERFORMING MIGRATION AND IMPLEMENTATION ACTIVITIES ON IBM POWER7-BASED SERVERS, WHICH INCLUDES SYSTEM ADMINISTRATORS, SYSTEM ARCHITECTS, NETWORK ADMINISTRATORS, INFORMATION ARCHITECTS, AND DATABASE ADMINISTRATORS (DBAs).

TRENCHLESS INSTALLATION OF CONDUITS BENEATH ROADWAYS TOM ISELEY 1997 THIS SYNTHESIS WILL BE OF INTEREST TO GEOLOGISTS; GEOTECHNICAL, CONSTRUCTION, AND MAINTENANCE ENGINEERS; OTHER STATE DEPARTMENT OF TRANSPORTATION (DOT) PERSONNEL INVOLVED WITH THE PLANNING, DESIGN, AND PERMIT ISSUANCE FOR CONDUITS BENEATH ROADWAYS; LOCAL TRANSPORTATION AGENCIES; UTILITY CONTRACTORS AND CONSULTANTS; AND TRENCHLESS CONSTRUCTION EQUIPMENT MANUFACTURERS. IT DESCRIBES THE CURRENT STATE OF THE PRACTICE FOR THE USE OF TRENCHLESS TECHNOLOGY FOR INSTALLING CONDUITS BENEATH ROADWAYS. TRENCHLESS CONSTRUCTION IS A PROCESS OF INSTALLING, REHABILITATING, OR REPLACING UNDERGROUND UTILITY SYSTEMS WITHOUT OPEN-CUT EXCAVATION. THE SYNTHESIS IS FOCUSED ON TRENCHLESS TECHNOLOGY FOR NEW INSTALLATIONS. THIS REPORT OF THE TRANSPORTATION RESEARCH BOARD DESCRIBES THE TRENCHLESS INSTALLATION TECHNOLOGIES (METHODS, MATERIALS, AND EQUIPMENT) CURRENTLY EMPLOYED BY STATE DOTs AND OTHER AGENCIES TO INSTALL CONDUITS BENEATH ROADWAYS. THE SYNTHESIS PRESENTS DATA OBTAINED FROM A REVIEW OF THE LITERATURE AND A SURVEY OF TRANSPORTATION AGENCIES. FOR EACH TECHNOLOGY IDENTIFIED, INFORMATION IS PROVIDED TO DESCRIBE THE RANGE OF APPLICATIONS, BASIS FOR TECHNIQUE SELECTION, SITE SPECIFIC DESIGN FACTORS TO BE CONSIDERED, RELATIVE COSTS, COMMON ENVIRONMENTAL ISSUES, AND EXAMPLE SPECIFICATIONS. IN ADDITION, INFORMATION ON EMERGING TECHNOLOGIES AND RESEARCH NEEDS IS PRESENTED.

ASCE MANUALS AND REPORTS ON ENGINEERING PRACTICE 2007

TRENCHLESS TECHNOLOGY FOR INSTALLATION OF CABLES AND PIPELINES DIETRICH STEIN 2005

MANAGING SNOW & ICE JOHN A. ALLIN 2011-07-21 *MANAGING SNOW & ICE*, 2ND EDITION IS THE DEFINITIVE GUIDE TO RUNNING A SUCCESSFUL SNOW AND ICE REMOVAL BUSINESS. IT COVERS NEGOTIATING CONTRACTS WITH CUSTOMERS, MARKETING, MANAGING EMPLOYEES AND SUBCONTRACTORS, AS WELL AS THE MORE TECHNICAL ASPECTS SUCH AS PLOWING PATTERNS AND PROPER USE OF DEICING AGENTS.

HDD PRACTICE HANDBOOK HANS-JOACHIM BAYER 2005 THIS HANDBOOK IS WRITTEN FOR PLANNING ENGINEERS, CONSTRUCTION ENGINEERS AND TECHNICIANS, FOR PIPELINE AND NETWORK ENGINEERS AND TECHNICIANS, FOR ENGINEERING COMPANIES, FOR CONSTRUCTION AND PIPELINE COMPANIES, FOR NETWORK AND PIPELINE OWNERS, FOR INSTALLATION COMPANIES OF MAINS, CABLES, FIBERS, DUCTS, SEWERS AND COMPLETE NETWORKS, FOR DRILLERS OF ALL BRANCHES, FOR DRILLING FLUID SPECIALISTS, FOR ENVIRONMENTAL AND WATER MANAGEMENT APPLICATIONS, FOR FOUNDATIONS SPECIALISTS, FOR ALL PEOPLE ENGAGED IN THE UNDERGROUND

INFRASTRUCTURE, FOR ALL WHICH LIKE TO COMBINE ECONOMICAL AND ECOLOGICAL ADVANTAGES BY GOING TRENCHLESS AND BY USING NEWEST TECHNOLOGICAL POSSIBILITIES FOR UNDERGROUND CONSTRUCTION.

INTRODUCTION TO DIRECTIONAL AND HORIZONTAL DRILLING J. A. SHORT 1993 IN THIS BOOK, SHORT INTRODUCES THE READER TO DIRECTIONAL AND HORIZONTAL DRILLING. THEY ARE TIMELY DRILLING TECHNIQUES GAINING INCREASING USAGE. THIS TEXT IS THE FOURTH AND LATEST BOOK SHORT HAS WRITTEN ABOUT THE OIL AND GAS INDUSTRY. HE SHARES WITH HIS READERS THE KNOWLEDGE THAT HE HAS ACQUIRED THROUGH YEARS OF EXPERIENCE.

TRENCHLESS TECHNOLOGY MOHAMMAD NAJAFI 2005-01-17 TRENCHLESS TECHNOLOGY ALLOWS FOR THE INSTALLATION OR RENEWAL OF UNDERGROUND UTILITY SYSTEMS WITH MINIMUM DISRUPTION OF THE SURFACE. AS WATER AND WASTEWATER SYSTEMS AGE OR MUST BE REDESIGNED IN ORDER TO COMPLY WITH ENVIRONMENTAL REGULATIONS, THE DEMAND FOR THIS TECHNOLOGY HAS DRAMATICALLY INCREASED. THIS IS A DETAILED REFERENCE COVERING CONSTRUCTION DETAILS, DESIGN GUIDELINES, ENVIRONMENTAL CONCERNS, AND THE LATEST ADVANCES IN EQUIPMENT, METHODS, AND MATERIALS. * DESIGN AND ANALYSIS PROCEDURES * DESIGN EQUATIONS * RISK ASSESSMENT * SOIL COMPATIBILITY AND MORE

PIPELINE INFRASTRUCTURE RENEWAL AND ASSET MANAGEMENT MOHAMMAD NAJAFI 2016-03-17 VALUE, ESTIMATE, AND MANAGE YOUR PIPELINE INFRASTRUCTURE ASSETS IMPLEMENT PIPELINE INFRASTRUCTURE MANAGEMENT POLICIES THAT ARE SUSTAINABLE, COST EFFECTIVE, AND ENVIRONMENTALLY FRIENDLY USING THE HANDS-ON INSTRUCTION AND BEST PRACTICES CONTAINED IN THIS PRACTICAL GUIDE. WRITTEN BY AN EXPERT PIPELINE ENGINEER, PIPELINE INFRASTRUCTURE RENEWAL AND ASSET MANAGEMENT OFFERS IN-DEPTH TECHNICAL AND ADMINISTRATIVE COVERAGE AND PROVIDES REAL-WORLD CASE STUDIES AND ILLUSTRATIONS. YOU WILL GET COMPLETE INFORMATION ON PIPELINE LIFE EXPECTANCY, BUDGETING, RENEWAL, REGULATIONS AND STANDARDS, AND INSPECTIONS. THROUGHOUT, DETAILS ARE PROVIDED FOR THE FULL RANGE OF PIPELINE RENEWAL METHODS FOR WATER, SEWER, AND PRESSURE PIPELINES. PIPELINE INFRASTRUCTURE RENEWAL AND ASSET MANAGEMENT COVERS: · PIPELINE ASSET MANAGEMENT · DESIGN CONSIDERATIONS FOR TRENCHLESS RENEWAL METHODS (TRM) · CONDITION ASSESSMENT · PIPE AND PIPE INSTALLATION CONSIDERATIONS · CURED-IN-PLACE PIPE (CIPP) · SLIPLINING (SL) · MODIFIED SLIPLINING (MSL) · PIPE BURSTING (PB) · SPRAY-IN-PLACE PIPE (SIPP) · CLOSE-FIT PIPE (CFP) · SEWER MANHOLE RENEWAL (SMR) · LATERAL RENEWAL (LR) · LOCALIZED REPAIRS (LOR)

CANADIAN JOURNAL OF CIVIL ENGINEERING 2003

REAUTHORIZATION OF THE NATURAL GAS PIPELINE SAFETY ACT AND THE HAZARDOUS LIQUID PIPELINE SAFETY ACT UNITED STATES. CONGRESS. HOUSE. COMMITTEE ON ENERGY AND COMMERCE. SUBCOMMITTEE ON ENERGY AND AIR QUALITY 2002

PLASTIC PIPING HANDBOOK DAVID WILLOUGHBY 2001-08-22 ALL-THE-ANSWERS GUIDE TO PLASTIC PIPING WRITTEN BY EXPERT DAVID WILLOUGHBY, A 20-YEAR

VETERAN IN THE FIELD, PLASTIC PIPING HANDBOOK IS A ONE-OF-A-KIND, COMPREHENSIVE GUIDE TO THE DURABLE, ECONOMICAL PIPING SOLUTION USED TODAY IN 90 PERCENT OF LOW-PRESSURE LIQUID AND NATURAL GAS INSTALLATIONS. YOU GET THE FACTS YOU NEED ON A FULL RANGE OF VITAL TOPICS, FROM PIPE SELECTION TO PIPELINE PURGING AND DRYING, TO LEAK DETECTION. THIS INCOMPARABLE RESOURCE FEATURES CODES AND SPECS FOR GAS AND WATER TRANSMISSION, INSPECTION AND TESTING PROCEDURES, AND PROVIDES YOU WITH PLENTY OF CHARTS, DATA SHEETS, AND TABLES. YOU'LL FIND AT YOUR FINGERTIPS HUNDREDS OF PAGES OF CLEAR, PRACTICAL GUIDANCE TO HELP YOU: * DESIGN SYSTEMS FOR MUNICIPAL, INDUSTRIAL, COMMERCIAL, RESIDENTIAL, AND FIELD USE * FOLLOW STEP-BY-STEP PROCEDURES FOR ABOVEGROUND AND BURIED PIPE DESIGN * CHOOSE AND APPLY PIPES, CONTROL VALVES, AND REGULATORS * ADHERE TO CODES AND STANDARDS * INSTALL, INSPECT AND TEST PIPELINES * MORE!

DUCTILE-IRON PIPE AND FITTINGS, 3RD ED. (M41) AWWA STAFF 2011-01-12

DUCTILE-IRON PIPE AND FITTINGS AMERICAN WATER WORKS ASSOCIATION 2009 AN IDEAL REFERENCE FOR DESIGN ENGINEERS AND OPERATORS IN WATER TREATMENT, THIS MANUAL OF WATER SUPPLY PRACTICES DESCRIBES DUCTILE-IRON PIPE MANUFACTURING, DESIGN, HYDRAULICS, PIPE WALL THICKNESS, CORROSION CONTROL, INSTALLATION, SUPPORTS, FITTINGS AND APPURTENANCES, JOINING, AND INSTALLATION.

TRENCHLESS TECHNOLOGY PIPING: INSTALLATION AND INSPECTION MOHAMMAD NAJAFI 2010-03-08 DESIGN, INSTALL, INSPECT, AND MANAGE TRENCHLESS TECHNOLOGY PIPING PROJECTS TRENCHLESS TECHNOLOGY PIPING OFFERS COMPREHENSIVE COVERAGE OF PIPE INSTALLATION, RENEWAL, AND REPLACEMENT USING TRENCHLESS TECHNOLOGY METHODS. THIS STEP-BY-STEP RESOURCE EXPLAINS HOW TO IMPLEMENT EFFICIENT DESIGN, CONSTRUCTION, AND INSPECTION PROCESSES AND SHOWS HOW TO SAVE TIME AND MONEY WITH A STATE-OF-THE-ART PROJECT MANAGEMENT SYSTEM. PACKED WITH DETAILED ILLUSTRATIONS, THE BOOK SURVEYS THE WIDE VARIETY OF TRENCHLESS TECHNOLOGIES AVAILABLE AND DISCUSSES THE RECOMMENDED APPLICATIONS FOR EACH. THIS CUTTING-EDGE ENGINEERING TOOL ALSO CONTAINS VITAL INFORMATION ON CONTRACTING, PROJECT DELIVERY, SAFETY, QUALITY CONTROL, AND QUALITY ASSURANCE. COVERAGE INCLUDES: TRENCHLESS TECHNOLOGY METHODS FOR NEW PIPE INSTALLATIONS AND OLD PIPE LININGS AND REPLACEMENTS PIPELINE PLANNING AND DESIGN PIPE BEHAVIOR UNDER SOIL AND TRAFFIC LOADS DETAILS ON DIFFERENT TYPES OF PIPES, SUCH AS CONCRETE, PLASTIC, PVC, HDPE, GRP, AND METALLIC DESIGN AND PROJECT MANAGEMENT CONSIDERATIONS FOR HORIZONTAL DIRECTIONAL DRILLING (HDD) TRENCHLESS REPLACEMENT SYSTEMS, INCLUDING PIPE BURSTING AND PIPE REMOVAL METHODS CONSTRUCTION AND INSPECTION REQUIREMENTS FOR CURED-IN-PLACE PIPE (CIPP) DESIGN AND CONSTRUCTION CONSIDERATIONS FOR PIPE JACKING AND MICROTUNNELING METHODS QUALITY ASSURANCE, QUALITY CONTROL, INSPECTION, AND SAFETY HORIZONTAL DIRECTIONAL DRILLING HDD CONSORTIUM 2008

BUILDING IBM ENTERPRISE CONTENT MANAGEMENT

SOLUTIONS FROM END TO END WEI-DONG ZHU

2014-10-22 IBM® ENTERPRISE CONTENT MANAGEMENT (ECM) SOLUTIONS PROVIDE EFFICIENT AND EFFECTIVE WAYS TO CAPTURE CONTENT, MANAGE THE CONTENT AND BUSINESS PROCESSES, DISCOVER INSIGHTS FROM THE CONTENT, AND DERIVE ACTIONS TO IMPROVE BUSINESS PROCESSES, PRODUCTS, AND SERVICES. THIS IBM REDBOOKS® PUBLICATION INTRODUCES AND HIGHLIGHTS SOME OF THE IBM ECM PRODUCTS THAT CAN BE IMPLEMENTED AND INTEGRATED TOGETHER TO CREATE END-TO-END ECM SOLUTIONS: IBM CASE MANAGER IBM DATACAP IBM CONTENT MANAGER ONDEMAND IBM ENTERPRISE RECORDS IBM WATSON™ CONTENT ANALYTICS IBM CONTENT CLASSIFICATION FOR EACH PRODUCT INVOLVED IN THE ECM SOLUTION, THIS IBM REDBOOKS PUBLICATION BRIEFLY DESCRIBES WHAT IT IS, ITS FUNCTIONS AND CAPABILITIES, AND PROVIDES STEP-BY-STEP PROCEDURES FOR INSTALLING, CONFIGURING, AND IMPLEMENTING IT. IN ADDITION, WE PROVIDE PROCEDURES FOR INTEGRATING THESE PRODUCTS TOGETHER TO CREATE AN END-TO-END ECM SOLUTION TO ACHIEVE THE OVERALL SOLUTION OBJECTIVES. NOT ALL OF THE PRODUCTS ARE REQUIRED TO BE INTEGRATED INTO AN ECM SOLUTION. DEPENDING ON YOUR BUSINESS REQUIREMENTS, YOU CAN CHOOSE A SUBSET OF THESE PRODUCTS TO BE BUILT INTO YOUR ECM SOLUTIONS. THIS BOOK SERVES AS A HANDS-ON LEARNING GUIDE FOR INFORMATION TECHNOLOGY (IT) SPECIALISTS WHO PLAN TO BUILD ECM SOLUTIONS FROM END-TO-END, FOR A PROOF OF CONCEPT (PoC) ENVIRONMENT, OR FOR A PROOF OF TECHNOLOGY ENVIRONMENT. FOR IMPLEMENTING A PRODUCTION-STRENGTH ECM SOLUTION, ALSO REFER TO IBM KNOWLEDGE CENTER, IBM REDBOOKS PUBLICATIONS, AND IBM SOFTWARE SERVICES.

STANDARD CONSTRUCTION GUIDELINES FOR MICROTUNNELING

2001-01-01 THIS STANDARD GUIDELINE COVERS THE PLANNING, DESIGN, PIPE MATERIALS, AND CONSTRUCTION OF MICROTUNNELING. MICROTUNNELING IS DEFINED AS A TRENCHLESS CONSTRUCTION METHOD FOR INSTALLING PIPELINES. THE NORTH AMERICAN DEFINITION OF MICROTUNNELING DESCRIBES A METHOD AND DOES NOT IMPOSE SIZE LIMITATIONS ON THAT METHOD. THE TUNNEL MAY BE CONSIDERED A MICROTUNNEL IF ALL OF THE FOLLOWING FEATURES APPLY TO CONSTRUCTION: THE MICROTUNNELING BORING MACHINE IS REMOTE CONTROLLED, A LASER GUIDANCE SYSTEM IS EMPLOYED, A JACKING SYSTEM IS USED FOR THRUST, AND CONTINUOUS PRESSURE IS PROVIDED TO THE FACE OF THE EXCAVATION TO BALANCE GROUNDWATER AND EARTH PRESSURES. THIS STANDARD GUIDELINE IS A VITAL REFERENCE FOR OWNERS, ENGINEERS, CONTRACTORS, AND CONSTRUCTION MANAGERS.

AN INTRODUCTION TO TRENCHLESS TECHNOLOGY STEVEN R.

KRAMER 2012-12-06 IN THE PAST DECADE, THE FIELD OF TRENCHLESS TECHNOLOGY HAS EXPANDED RAPIDLY IN PRODUCTS, EQUIPMENT, AND UTILIZATION. THIS EXPANSION WOULD NOT HAVE OCCURRED WITHOUT A STRONG INCREASE IN ECONOMIC INCENTIVES TO THE USER. BECAUSE THE OPERATING ENVIRONMENT HAS CHANGED, TRENCHLESS TECHNOLOGY IS OFTEN THE PREFERRED ALTERNATIVE TO TRADITIONAL METHODS OF DIGGING HOLES AND INSTALLING

CONDUITS. THE INFRASTRUCTURE IN WHICH WE LIVE HAS BECOME MORE CONGESTED AND HAS TO BE SHARED BY SEVERAL USERS. IN ADDITION, THE COST OF RESTORING A ROAD OR LANDSCAPED AREA AFTER CONSTRUCTION MAY BE HIGHER THAN THE COST OF INSTALLING THE CONDUIT. THESE FACTORS ADD TO THE NEED FOR TRENCHLESS TECHNOLOGY—THE ABILITY TO DIG HOLES WITHOUT DISTURBING THE SURFACE. IN SOME WAYS, TRENCHLESS TECHNOLOGY IS A FUTURISTIC CONCEPT. RUTH KRAUSS IN A CHILDREN'S BOOK OF DEFINITIONS WROTE, "A HOLE... IS TO DIG." BUT THIS STATEMENT IS NOT NECESSARILY TRUE. TODAY, A HOLE COULD BE TO BORE. TRENCHLESS TECHNOLOGY IS NOT NEW. BUT IT CERTAINLY HAS BECOME THE BUZZWORD OF THE CONSTRUCTION INDUSTRY AND IT APPEARS THAT IT WILL HAVE A GROWING IMPACT IN THE WAY CONTRACTORS, UTILITIES, AND OTHERS INSTALL NEW FACILITIES. METHODS TO BORE HORIZONTAL HOLES WERE PRACTICED AS EARLY AS THE 1800S, BUT THIS TECHNOLOGY HAS GREATLY CHANGED. TODAY'S TOOLS INCLUDE SOPHISTICATED DRILLING METHODS, STATE-OF-THE-ART POWER SYSTEMS, AND ELECTRONIC GUIDANCE TECHNIQUES. THESE TOOLS CAN BORE FASTER, SAFER, AND MORE ACCURATELY, AND IN MANY INSTANCES MORE ECONOMICALLY, THAN OPEN-CUT METHODS. TECHNOLOGY HAS PLAYED AN IMPORTANT ROLE IN THESE ADVANCES, BUT ECONOMICS HAS BECOME THE DRIVING FORCE IN MAKING THESE SYSTEMS POPULAR.

HORIZONTAL DIRECTIONAL DRILLING (HDD) DAVID

WILLOUGHBY 2005-06-24 THIS IS A COMPLETE SOURCEBOOK OF INFORMATION ON HORIZONTAL DIRECTIONAL DRILLING, THE INSTALLATION OF PIPELINES AND UTILITIES BENEATH OBSTACLES SUCH AS WATER AND ROADWAYS. HDD IS A FAST-GROWING TECHNOLOGY IN THE TRENCHLESS INDUSTRY. PROVIDES TECHNICAL INFORMATION ON THE DESIGN, PERMITTING, CONSTRUCTION, BID DOCUMENTS, SPECIFICATIONS, AND CONSTRUCTION OF HDD APPLICATIONS. NUMEROUS HDD CALCULATIONS WITH EXAMPLES. **HANDBOOK OF POLYETHYLENE PIPE** 2012-02 PUBLISHED BY THE PLASTICS PIPE INSTITUTE (PPI), THE HANDBOOK DESCRIBES HOW POLYETHYLENE PIPING SYSTEMS CONTINUE TO PROVIDE UTILITIES WITH A COST-EFFECTIVE SOLUTION TO REHABILITATE THE UNDERGROUND INFRASTRUCTURE. THE BOOK WILL ASSIST IN DESIGNING AND INSTALLING PE PIPING SYSTEMS THAT CAN PROTECT UTILITIES AND OTHER END USERS FROM CORROSION, EARTHQUAKE DAMAGE AND WATER LOSS DUE TO LEAKY AND CORRODED PIPES AND JOINTS.

TECHNOLOGY INNOVATION IN UNDERGROUND CONSTRUCTION

GERNOT BEER 2009-10-16 THIS RICHLY-ILLUSTRATED REFERENCE GUIDE PRESENTS INNOVATIVE TECHNIQUES FOCUSED ON REDUCING TIME, COST AND RISK IN THE CONSTRUCTION AND MAINTENANCE OF UNDERGROUND FACILITIES: A PRIMARY FOCUS OF THE TECHNOLOGICAL DEVELOPMENT IN UNDERGROUND ENGINEERING IS TO EASE THE PRACTICAL EXECUTION AND TO REDUCE TIME, COST AND RISK IN THE CONSTRUCTION AND MAINTENANCE OF UNDERGROUND FACILITIES SUCH AS TUNNELS AND CAVERNS. THIS CAN BE REALIZED BY NEW DESIGN TOOLS FOR DESIGNERS, BY INSTANT DATA ACCESS FOR ENGINEERS, BY VIRTUAL PROTOTYPING AND TRAINING FOR MANUFACTURERS, AND BY ROBOTIC DEVICES FOR MAINTENANCE AND REPAIR FOR OPERATORS AND MANY MORE ADVANCES. THIS VOLUME

PRESENTS THE LATEST TECHNOLOGICAL INNOVATIONS IN UNDERGROUND DESIGN, CONSTRUCTION, AND OPERATION, AND COMPREHENSIVELY DISCUSSES DEVELOPMENTS IN GROUND IMPROVEMENT, SIMULATION, PROCESS INTEGRATION, SAFETY, MONITORING, ENVIRONMENTAL IMPACT, EQUIPMENT, BORING AND CUTTING, PERSONNEL TRAINING, MATERIALS, ROBOTICS AND MORE. THESE NEW FEATURES ARE THE RESULT OF A BIG RESEARCH PROJECT ON UNDERGROUND ENGINEERING, WHICH HAS INVOLVED MANY PLAYERS IN THE DISCIPLINE. WRITTEN IN AN ACCESSIBLE STYLE AND WITH A FOCUS ON APPLIED ENGINEERING, THIS BOOK IS AIMED AT A READERSHIP OF ENGINEERS, CONSULTANTS, CONTRACTORS, OPERATORS, RESEARCHERS, MANUFACTURERS, SUPPLIERS AND CLIENTS IN THE UNDERGROUND ENGINEERING BUSINESS. IT MAY MOREOVER BE USED AS EDUCATIONAL MATERIAL FOR ADVANCED COURSES IN TUNNELLING AND UNDERGROUND CONSTRUCTION.

NEW PIPELINE TECHNOLOGIES, SECURITY, AND SAFETY

MOHAMMAD NAJAFI 2003 THIS COLLECTION CONTAINS 200 PAPERS PRESENTED AT THE ASCE INTERNATIONAL CONFERENCE ON PIPELINE ENGINEERING AND CONSTRUCTION, HELD IN BALTIMORE, MARYLAND, JULY 13-16, 2003.

PIPELINES 2013 2013

LANDSLIDE SCIENCE AND PRACTICE CLAUDIO MARGOTTINI
2013-08-18 THIS BOOK CONTAINS PEER-REVIEWED PAPERS

FROM THE SECOND WORLD LANDSLIDE FORUM, ORGANISED BY THE INTERNATIONAL CONSORTIUM ON LANDSLIDES (ICL), THAT TOOK PLACE IN SEPTEMBER 2011. THE ENTIRE MATERIAL FROM THE CONFERENCE HAS BEEN SPLIT INTO SEVEN VOLUMES, THIS ONE IS THE SIXTH: 1. LANDSLIDE INVENTORY AND SUSCEPTIBILITY AND HAZARD ZONING, 2. EARLY WARNING, INSTRUMENTATION AND MONITORING, 3. SPATIAL ANALYSIS AND MODELLING, 4. GLOBAL ENVIRONMENTAL CHANGE, 5. COMPLEX ENVIRONMENT, 6. RISK ASSESSMENT, MANAGEMENT AND MITIGATION, 7. SOCIAL AND ECONOMIC IMPACT AND POLICIES.

REST AREA UPGRADE, ROUTE I-495/LONG ISLAND EXPRESSWAY BETWEEN EASTBOUND EXITS 51 AND 52, TOWN OF HUNTINGTON, SUFFOLK COUNTY 2007

DAVID

WILLOUGHBY 2005-06-03 THIS IS A COMPLETE SOURCEBOOK OF INFORMATION ON HORIZONTAL DIRECTIONAL DRILLING, THE INSTALLATION OF PIPELINES AND UTILITIES BENEATH OBSTACLES SUCH AS WATER AND ROADWAYS. HDD IS A FAST-GROWING TECHNOLOGY IN THE TRENCHLESS INDUSTRY. PROVIDES TECHNICAL INFORMATION ON THE DESIGN, PERMITTING, CONSTRUCTION, BID DOCUMENTS, SPECIFICATIONS, AND CONSTRUCTION OF HDD APPLICATIONS NUMEROUS HDD CALCULATIONS WITH EXAMPLES

HORIZONTAL DIRECTIONAL DRILLING (HDD)