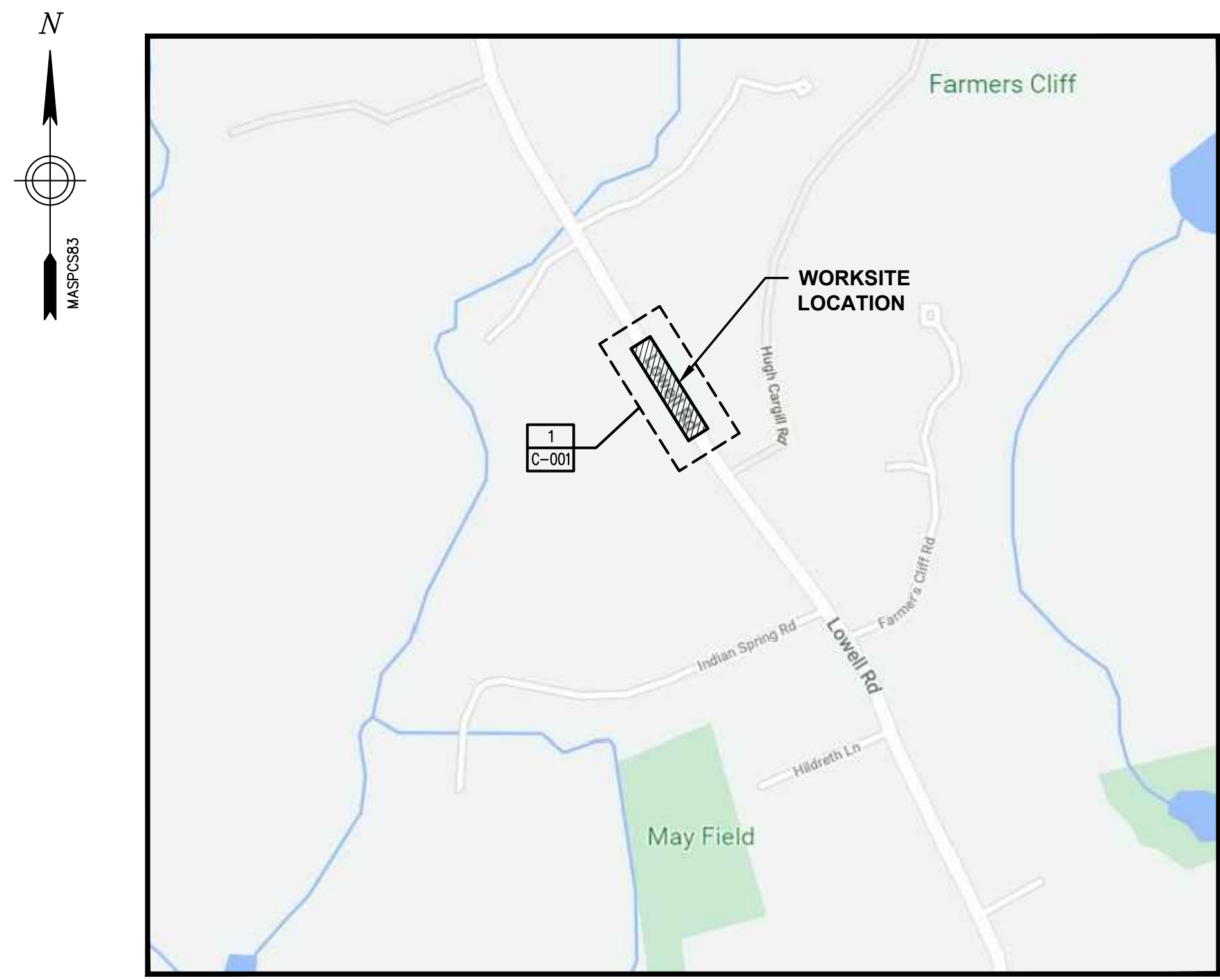


PROPOSED GAS MAIN REPLACEMENT APPROXIMATELY 250' OF 8" PLASTIC - 60 PSIG 925 LOWELL ROAD, CONCORD, MA W.O. NO. 1441924



LOCUS
SCALE: NTS

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3	DPL-CON-067813-1071	C-001	PROPOSED INSTALLATION PLAN
4	DPL-CON-067813-1071	C-201	PROPOSED TIE-IN DETAILS
5	DPL-CON-067813-1071	C-301	NATIONAL GRID STANDARD CONSTRUCTION DETAILS
6	DPL-CON-067813-1071	C-302	NATIONAL GRID STANDARD CONSTRUCTION DETAILS
7	DPL-CON-067813-1071	C-303	NATIONAL GRID STANDARD CONSTRUCTION DETAILS



<p style="font-size: small;">Drawing Copyright © 2022</p> <p style="font-size: x-small;">141 Longwater Drive, Suite 104 Norwell, MA 02061-1620 781-982-7700 www.chacompanies.com</p>	<p style="font-size: x-small;">UNAUTHORIZED COPY OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">NO.</th> <th style="width: 45%;">DESCRIPTION</th> <th style="width: 10%;">DATE</th> <th style="width: 5%;">DR. BY</th> <th style="width: 5%;">CK. BY</th> <th style="width: 5%;">APP. BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>INCORPORATED NGRID COMMENTS (DATED 03/31/2022)</td> <td>04/01/2022</td> <td>MJM</td> <td>TM</td> <td>GWP</td> </tr> <tr> <td>0</td> <td>ISSUED FOR CONSTRUCTION</td> <td>02/07/2022</td> <td>MJM</td> <td>TM</td> <td>GWP</td> </tr> </tbody> </table>	NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY	1	INCORPORATED NGRID COMMENTS (DATED 03/31/2022)	04/01/2022	MJM	TM	GWP	0	ISSUED FOR CONSTRUCTION	02/07/2022	MJM	TM	GWP	<p style="font-size: x-small;">BOSTON GAS COMPANY d/b/a</p> <p style="font-size: x-small;">40 SYLVAN ROAD WALTHAM, MA 02451</p>	<p style="text-align: center;">PROPOSED GAS MAIN REPLACEMENT 925 LOWELL ROAD CONCORD, MA</p> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">COVER SHEET</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">DWG SIZE</td> <td style="width: 10%;">DESIGNER</td> <td style="width: 10%;">ENGINEER</td> <td style="width: 10%;">DATE:</td> <td style="width: 10%;">ASSET I.D.</td> <td style="width: 10%;">W.O. NO.:</td> </tr> <tr> <td>22"X34"</td> <td>M.MERSEREAU</td> <td>T.MARRI</td> <td>02/07/2022</td> <td>DISTRIBUTION</td> <td>1441924</td> </tr> </table>	DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:	22"X34"	M.MERSEREAU	T.MARRI	02/07/2022	DISTRIBUTION	1441924	<p style="text-align: center; font-size: small;">PAGE 1 OF 7</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">DRAWING NO.</th> <th style="width: 50%;">SHEET NO.</th> </tr> <tr> <td style="text-align: center; font-size: 1.2em;">DPL-CON-067813-1071</td> <td style="text-align: center; font-size: 1.2em;">G-001</td> </tr> </table>	DRAWING NO.	SHEET NO.	DPL-CON-067813-1071	G-001
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CONSTRUCTION NOTES

SCOPE OF WORK

NATIONAL GRID WORK ORDER NUMBER 1441924:

(925 LOWELL ROAD, CONCORD, MA)
GAS OPERATIONS ENGINEERING APPROVES THE PROPOSED ADDED LOAD OF 3,500 CFH, FOR A TOTAL LOAD OF 15,291 CFH CONTINGENT UPON THE FOLLOWING:

- GROWTH REINFORCEMENT – RELAY APPROXIMATELY 250' OF 4" PL 60# MAIN IN LOWELL ROAD WITH APPROXIMATELY 250' OF 8" PL 60# MAIN FROM THE EXISTING 8" PL 60# TO #925.

BILLING: 2 MAIN CONNECTIONS

GENERAL

- NO FIELD CHANGES SHALL BE MADE TO THIS DESIGN WITHOUT APPROVAL FROM THE ASSIGNED NATIONAL GRID ENGINEER
ENGINEER: BRENDAN GALLAGHER
PHONE: (774) 813-7488
EMAIL: BRENDAN.GALLAGHER1@NATIONALGRID.COM
- NEW MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE TYPICAL TRENCH DETAIL INCLUDED IN THESE DRAWINGS, UNLESS NOTED OTHERWISE.
 - 36 INCHES OF COVER FROM FINAL GRADE WHERE PRACTICAL
 - STATE HIGHWAY MINIMUM COVER: 36 INCHES
 - DISTRIBUTION MAIN MINIMUM COVER: 24 INCHES
 - SAND PADDING IN ALL DIRECTIONS, 6 INCHES MINIMUM
 - CAUTION TAPE SHALL BE INCLUDED ONE FOOT BELOW GRADE
- SERVICES SHALL BE INSTALLED WITH 24 INCHES OF COVER
 - MINIMUM IN PUBLIC ROW: 18 INCHES
 - MINIMUM IN PRIVATE PROPERTY: 12 INCHES
 - SAND PADDING IN ALL DIRECTIONS, 6 INCHES MINIMUM
 - CAUTION TAPE SHALL BE INCLUDED ONE FOOT BELOW GRADE
- REFER TO CNST-6030 FOR SHALLOW MAINS. PRIOR TO INSTALLING GAS MAINS WITH LESS THAN 24 INCHES OF COVER, COMPLETE REQUEST FOR WAIVER FORM AND CONTACT GAS PIPELINE SAFETY & COMPLIANCE FOR APPROVAL:
 - JENNIFER GILLIS – (617) 594-5157 (MA EXCLUDING CAPE AND WEBSTER)
 - LIEN GAUTHIER – (617) 438-9069 (MA EXCLUDING CAPE AND WEBSTER)
 - IF A PROPOSED TOP TEE CONNECTION RESULTS IN A SHALLOW MAIN THAT CANNOT MEET THE WAIVER CRITERIA, A FULL TEE CONNECTION IS AN ACCEPTABLE ALTERNATIVE. A SPHERICAL TEE IS ONLY ACCEPTABLE WITH APPROVAL FROM NATIONAL GRID STRATEGIC ASSET AND SYSTEM PLANNING.
- ALL MAINS SHOULD BE INSTALLED WITH CLEARANCE OF 12 INCHES FROM OTHER FACILITIES.
 - DISTRIBUTION MINIMUM CLEARANCE: 6 INCHES
 - APPROPRIATE PROTECTIVE MEASURES SHALL BE USED TO PROTECT THE GAS FACILITY IF MINIMUMS CANNOT BE ATTAINED. APPROVAL IS REQUIRED BY GAS SYSTEMS ENGINEERING.
- THE PIPE ALIGNMENT IS SHOWN FOR REFERENCE ONLY AS APPROXIMATELY 3 FEET FROM THE EXISTING MAIN (BASED ON AVAILABLE RECORD INFORMATION). THE ACTUAL ROUTE AND ALL VERTICAL AND HORIZONTAL OFFSETS ARE TO BE FIELD ROUTED WITHIN THE PUBLIC RIGHT-OF-WAY BASED ON THE ACTUAL LOCATION OF EXISTING UTILITIES. ADDITIONAL FITTINGS NOT SHOWN WILL BE REQUIRED.
 - ELBOWS SHOWN ARE ASSUMED TO BE 45 DEGREES IN MOST APPLICATIONS. 90 DEGREE ELBOWS MAY BE NEEDED BASED ON FIELD CONDITIONS.
- VALVES DEPICTED IN THE DESIGN ARE THE MINIMUM REQUIRED FOR SECTIONALIZING, ISOLATION, CRITICAL VALVES, AND/OR TO ACCOMMODATE TIE-INS. ADDITIONAL FULL PORT VALVES MAY BE ADDED TO ACCOMMODATE CONSTRUCTION.
 - VALVES FOR BRANCHES AT INTERSECTIONS SHOULD BE FIELD LOCATED JUST OUTSIDE OF THE INTERSECTION WHERE EASILY ACCESSIBLE, PRIOR TO THE FIRST SERVICE.
- ELECTROFUSION COUPLINGS MAY BE INTERCHANGED WITH BUTT FUSION WHERE APPLICABLE.
- TIE-IN LOCATIONS MAY VARY UP TO 100 FEET OF THE PROPOSED LOCATION TO ACCOMMODATE CONSTRUCTION, EXCEPT FOR WHEN THE FOLLOWING CONDITIONS APPLY:
 - REGULATOR STATION IS WITHIN THE SCOPE OF THE JOB OR WITHIN 200 FEET OF THE TIE-IN LOCATION
 - CHANGE TO THE NUMBER OF CONNECTIONS (ADDITIONAL ADDED FROM AN INTERSECTION OR OTHERWISE)
 - MATERIAL/SIZE CHANGE AT NEW LOCATION
- NOT ALL BYPASSES, GAUGES, PURGES AND OTHER MISCELLANEOUS FITTINGS ARE SHOWN. CONSTRUCTION SHALL INSTALL THESE FITTINGS AS NEEDED IN ACCORDANCE WITH THE APPROVED SOP.
- WHEN CONNECTING NEW "DEAD" MAIN TO NEW "DEAD" MAIN: AS LONG AS THE CONNECTION BRANCH SIZE SHOWN IN THE DRAWINGS CAN BE ACHIEVED, THE FOLLOWING CONNECTION TYPES ARE ACCEPTED AND INTERCHANGEABLE.
 - INLINE TEE
 - PLASTIC HIGH VOLUME TAPPING TEE (2" BRANCH SIZE OR LESS)
 - PLASTIC BRANCH SADDLE (WITH MAIN CUTTER SIZE SHOWN IN NATIONAL GRID POLICIES)
 - STEEL THREE-WAY TEE (WITH MAIN CUTTER SIZE SHOWN IN NATIONAL GRID POLICIES)
- THE LIVE MAIN CONNECTION DETAIL SHOWN IN THE DRAWINGS SHALL BE FOLLOWED. ANY CHANGES TO THE TIE IN CONNECTION TYPE SHALL BE APPROVED BY THE NATIONAL GRID ENGINEER PRIOR TO CONSTRUCTION.
- ALL CUSTOMER SERVICES WITHIN THE SCOPE OF MAIN TO BE ABANDONED SHALL BE TRANSFERRED OR RELAYED BY THE CONTRACTOR TO THE NEW MAIN PRIOR TO ABANDONMENT. WHEN RELAYING A LOWER PRESSURE MAIN WITH A HIGHER PRESSURE MAIN, ALL SERVICES SHALL BE RELAYED OR INSERTED.
- DRESSER STYLE COMPRESSION FITTINGS ON PLASTIC MAY BE USED AS AN ALTERNATIVE TO ELECTROFUSION FITTINGS ON PLASTIC TO PLASTIC PIPE CONNECTIONS PROVIDED THAT THE COUPLINGS ARE:
 - MADE FOR PLASTIC TO PLASTIC APPLICATIONS.
 - PULL-OFF RESISTANT.
 - INSTALLED WITH AN APPROPRIATELY SIZED ANODE ATTACHED. THE SAME STYLE COUPLING MAY BE USED AS A PERMANENT LINE CAP PROVIDED THAT THE CORRECT FACTORY END PLATE IS UTILIZED AS AN ALTERNATIVE TO A FUSED END PLASTIC END CAP.
 - DRESSER STYLE CAPS AND PERMASERT CAPS ARE INTERCHANGEABLE WITH FUSION CAPS, PROVIDED CATHODIC PROTECTION REQUIREMENTS ARE USED FOR METALLIC BOLT STYLE FITTINGS REMAINING IN SERVICE.
- FOR HOST STEEL MAIN CONNECTIONS: IN LIEU OF THE USE OF TDW 3-WAY TEE FITTINGS. ESPECIALLY WHERE INSUFFICIENT COVERAGE PROHIBITS THEIR USE, A MUELLER WELD ON BOTTOM-OUT FITTING OR A TDW SPHERICAL 3-WAY TEE CAN BE USED FOR STOP OFF/TAKE OFF APPLICATIONS. A TDW SHORTSTOPP FITTING CAN ALSO BE USED AS AN ALTERNATIVE, BUT REQUIRES ANALYSIS FOR BYPASS ETC. NATIONAL GRID SYSTEM PLANNING SHALL REVIEW AND APPROVE THE USE OF AN ALTERNATIVE FITTING. A PULL OUT RESISTANT COUPLING MUST BE USED FOR THE CONNECTION OF THE NEW MAIN TO THE HOST MAIN.
- FOR HOST CAST IRON MAIN CONNECTIONS: IN LIEU OF THE USE OF TDW 3-WAY TEE FITTINGS, WELDED ON A DRESSER STYLE 50A REPAIR SLEEVE, ESPECIALLY WHERE INSUFFICIENT COVERAGE PROHIBITS THEIR USE, AN INLINE TEE CAN BE SUBSTITUTED IN CONJUNCTION WITH EITHER A TDW SHORTSTOPP FITTING WELDED ON TOP OF A DRESSER STYLE 50A REPAIR SLEEVE, TDW SHORTSLEEVES, OR A MUELLER MECHANICAL STOP OFF FITTING CAN BE USED BUT REQUIRES ANALYSIS FOR BYPASS ETC. NATIONAL GRID GAS SYSTEM PLANNING SHALL REVIEW AND APPROVE THE USE OF AN ALTERNATIVE FITTING. A PULL OUT RESISTANT COUPLING MUST BE USED FOR THE CONNECTION OF THE NEW MAIN TO THE HOST MAIN.
- ON NEW PLASTIC TO EXISTING STEEL CONNECTIONS, IN-LINE TIE-INS USING A STOP-OFF FITTING AND A PULL-OUT RESISTANT DRESSER STYLE COUPLING IS INTERCHANGEABLE WITH USING A TDW 3-WAY TEE, AN ELBOW AND A PLASTIC TO STEEL TRANSITION FITTING ON A HIGH PRESSURE DISTRIBUTION MAIN OR SERVICE.
- STEEL MUELLER ANSI 150 CLASS FITTINGS ARE INTERCHANGEABLE WITH TDW FITTINGS OF 150 POUND CLASS PROVIDED THAT THEY ARE THE SAME SIZE AND CAN PROVIDE THE SAME FUNCTION IN A SAFE MANNER IN ACCORDANCE TO THE MANUFACTURER'S SPECIFICATIONS.
- PLASTIC INLINE TEES AND BRANCH SADDLES ARE INTERCHANGEABLE PROVIDED THE SADDLE IS THE EQUIVALENT SIZE OF THE TEE INCLUDING REDUCERS AND TAPPED OUT TO THE MAXIMUM SIZE ALLOWED BY THE MANUFACTURER.
- FOR A 2" PLASTIC TIE-IN TO AN EXISTING 2" PLASTIC PIPE, EITHER A 2" HVT OR A STRAIGHT BUTT CONNECTION ARE ACCEPTABLE ALTERNATIVES PROVIDED THERE ARE NO ONE WAY FEED ISSUES.
- BUTT FUSE PLASTIC CAPS, WITH OR WITHOUT ELECTROFUSION COUPLINGS, MAY BE USED IN LIEU OF ELECTROFUSION CAPS AS NEEDED.

CODES & STANDARDS

- WORK SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL CODES IN ADDITION TO NATIONAL GRID GAS POLICIES AND WORK METHODS. WHERE ANY CONFLICTS OF CODES, STANDARDS, AND REGULATIONS MAY EXIST, THE MORE STRINGENT CODE, STANDARD, OR REGULATION SHALL APPLY.
- ALL REFERENCES SHALL BE IN ACCORDANCE WITH THE MOST CURRENT REVISION AVAILABLE AT THE TIME OF CONSTRUCTION
- FEDERAL & STATE
 - TITLE 49: PART 192 TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS
 - 220 CMR: DEPARTMENT OF PUBLIC UTILITIES
100.00 – 113.00: MASSACHUSETTS GAS DISTRIBUTION CODE
 - AMERICAN SOCIETY OF MECHANICAL ENGINEERS
B31.8: GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS
- CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL GRID GAS POLICIES AND WORK METHODS, INCLUDING BUT NOT LIMITED TO:
 - CNST01003: BACKFILL AND RESTORATION
 - CNST01005: PREPARATION OF GAS FACILITY HISTORICAL RECORDS
 - CNST01006: COMMERCIALY AVAILABLE SHORING SYSTEMS
 - CNST02014: ENCAPSULATING CAST IRON JOINTS
 - CNST03001: SQUEEZE-OFF OPERATIONS
 - CNST03002: STOP-OFF OPERATIONS ON LOW PRESSURE MAINS
 - CNST03005: PURGING REQUIREMENTS FOR GAS PIPELINES
 - CNST03006: PURGING OPERATIONS – DIRECT REPLACEMENT
 - CNST03007: PURGING OPERATIONS – COMPLETE INERT FILL
 - CNST03008: PURGING OPERATIONS – SLUG METHOD
 - CNST03014: STOP OFF OPERATIONS FOR KLEISS EQUIPMENT
 - CNST04005: INSTALLING STEEL DISTRIBUTION MAINS
 - CNST04007: FIELD COLD BENDING OF LINE PIPE
 - CNST04008: INSTALLING PLASTIC MAINS
 - CNST04011: ABANDONMENT OF MAINS
 - CNST04012: GROUTING ABANDONED PIPELINES
 - CNST04030: RAISING MAIN AND SERVICE GATE BOXES
 - CNST05001: JOINING OF PLASTIC PIPE
 - CNST05011: INSTALLATION OF DRESSER 700 COUPLINGS
 - CNST5010: GENERAL CONSTRUCTION REQUIREMENTS AND PIPE HANDLING
 - DAM01011: EXCAVATION AND EXCAVATION NOTIFICATION REQUIREMENTS FOR UNDERGROUND FACILITIES FOR MASSACHUSETTS AND RHODE ISLAND
 - DAM01015: LOCATE AND MARK-OUT REQUIREMENTS FOR UNDERGROUND GAS FACILITIES
 - DAM01016: LOCATE AND MARK OUT OF UNDERGROUND FACILITIES
 - GCON02001: SYSTEM OPERATING PROCEDURE (SOP)
 - GEN01100: OPERATOR QUALIFICATION PLAN
 - GEN03002: PROCESSING GAS MAIN AND NEW SERVICE WORK PACKAGES
 - GEN03004: CHANGE CONTROL PROCEDURE FOR STANDARD CONSTRUCTION PROJECTS
 - INR06002: SUPPLEMENTAL ODORIZATION FOR NEW PIPING
 - Z. MAINS030: INSTALLATION OF POLYETHYLENE PIPE
 - MECH5010: JOINTS OTHER THAN WELDED
 - 030018-CS SPECIFICATION AND HANDLING OF TRAFFIC PLATES
 - DAM01008: CAST IRON ENCRoACHMENT POLICY FOR MASSACHUSETTS AND RHODE ISLAND
 - CS-CNST002-MA: TYPICAL UTILITY CROSSING AND TRENCH GUIDELINES
 - AE-CS-MAIN004: PRESSURE TESTING OF NEW MAINS MAOP OF 124 PSIG OR LESS
 - AF. CNST6030: PROTECTIVE STEEL PLATING FOR GAS MAINS AND SERVICES
 - AG. CNST6061: TRACER WIRE INSTALLATIONS FOR PLASTIC MAINS AND SERVICES
 - AH. CNST6045: SUPPORT REQUIREMENTS FOR EXPOSED AND UNDERMINED STEEL OR PLASTIC FACILITIES
 - AM. MAIN6010: STANDARD FLOW TEST PROCEDURE FOR MAIN BAG-OFF LOW PRESSURE MAINS
 - AJ. MAIN6100: VENT INSTALLATION FOR GAS MAIN CASINGS
 - AK. MECH6010: CONNECTION OF DISSIMILAR POLYETHYLENE PLASTIC PIPE WITH ELECTROFUSION OF MECHANICAL COUPLING
 - AL. MECH6020: CONNECTION OF DISSIMILAR POLYETHYLENE PLASTIC PIPE WITH ELECTROFUSION OR MECHANICAL SADDLE TEE
 - AM. PURG6040: TYPICAL NITROGEN PURGE ARRANGEMENT
 - AN. VALV6020: 2 IN. – 12 IN. POLYETHYLENE VALVE INSTALLATIONS ON GAS MAIN
 - AO. FITS6370: VALVE BOXES UP TO 8 IN. VALVES AND ALL RISER RINGS
 - SERVICE SPECIFIC GAS POLICIES AND WORK METHODS
 - CMS03002: CUSTOMER METER AND SERVICE REGULATOR DESIGN AND INSTALLATION POLICY
 - CMS04002: PURGING PROCEDURES FOR CUSTOMER METER SERVICES
 - CNST03011: NO-INTERRUPT SERVICE TRANSFER
 - CNST06002: INSTALLING DISTRIBUTION SERVICES
 - CNST06003: INSTALLATION & MAINTENANCE POLICY FOR CURB VALVES ON SERVICE LINES WITH INSTALLED METER CAPACITIES OVER 1000 SCFH THAT DON'T HAVE EXCESS FLOW VALVES
 - CNST06009: METER/SERVICE RELOCATION GUIDELINE
 - CNST06020: COMPLETION AND PROCESSING OF GAS SERVICE RECORD CARDS
 - CNST06030: NOTIFICATION OF CUSTOMERS INVOLVED IN THE INTERRUPTION OF GAS SERVICES
 - CS-SERV001: TYPICAL 1/2" SERVICE OUTSIDE SETS
 - CS-SERV002: TYPICAL 1" SERVICE OUTSIDE SETS
 - CS-SERV003: TYPICAL 1-1/4" SERVICE OUTSIDE SETS
 - CS-SERV004: TYPICAL 2" SERVICE
 - CS-SERV005: EXCESS FLOW VALVE REQUIREMENTS ON HP SERVICES
 - N. CS-SERV009: TYPICAL 1/2" SERVICE INSIDE SETS
 - CS-SERV010: TYPICAL 1" SERVICE INSIDE SETS
 - HTAP-6010: NO-INTERRUPT 1 INCH CTS AND 1-1/4 INCH CTS SERVICE TRANSFER (NIST) LP TO 60 PSIG MAINS
 - SERV-5075: RELOCATION OF METER SET ASSEMBLIES INSIDE TO OUTSIDE
 - SERV-6185: HOT TAPPING MD BRANCH SADDLES OFF 4IN – 12IN 60 PSIG
 - VALV6110: 1/2 INCH – 3 INCH POLYETHYLENE GAS SERVICE VALVE INSTALLATION
- SEE TIE IN DETAILS FOR APPLICABLE MAIN CONNECTION REFERENCES
- SEE BILL OF MATERIAL FOR MATERIAL SPECIFICATION, STANDARD AND/OR APPLICABLE NATIONAL GRID "FITS" REFERENCE
 - FOR THIS PROJECT, GRADE B, X42, X52 AND EQUIVALENT ARE ACCEPTABLE STEEL MATERIAL STRENGTHS IF APPLICABLE. ALTERNATES TO THE BOM ARE ALLOWED WITHIN THIS RANGE BASED ON MATERIAL AVAILABILITY.

DESIGN CRITERIA

- DESIGN IN ACCORDANCE WITH THE FOLLOWING:
 - ENGO2001: DESIGN OF GAS SERVICES
 - ENGO4001: DESIGN OF DISTRIBUTION MAINS
 - ENGO4010: DESIGN REQUIREMENTS FOR INSTALLATION OF CASINGS
- PROPOSED PIPING:
 - DESIGN CLASS LOCATION – 4
 - NOMINAL SIZE – 8 INCH & 4 INCH
 - MATERIAL – MDPE
 - SYSTEM MAOP – 60 PSIG
- PIPE SIZING DETERMINED BY NATIONAL GRID STRATEGIC ASSET AND SYSTEM PLANNING
- BYPASS REQUIREMENTS FOR ALL MAIN CONNECTIONS TO BE DETERMINED BY NATIONAL GRID OPERATIONS ENGINEERING AND IMPLEMENTED IN ACCORDANCE WITH THE SOP PROCESS.
- FOR WORK ORDERS PERTAINING TO ENCRoACHMENTS, NATIONAL GRID SHALL DETERMINE IN THE FIELD THE EXACT LOCATION OF THE ENCRoACHMENT TO ENSURE THE REPLACEMENT COMPLIES WITH DAM01008 AND REMOVES ANY POTENTIAL HAZARD CREATED BY THE ENCRoACHMENT.

SEQUENCE OF CONSTRUCTION

- CONTRACTOR SHALL CALL DIGSAFE (DIAL 811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO CONSTRUCTION. SATURDAYS, SUNDAYS, AND HOLIDAYS ARE EXCLUDED.
- CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND STRUCTURES DEPICTED OR NOT DEPICTED ON THIS DESIGN PRIOR TO CONSTRUCTION.
- INSTALL MAIN AS INDICATED IN SCOPE OF WORK.
- PRESSURE TEST (SEE PRESSURE TESTING SECTION).
- TAP EXISTING 4-INCH PL 60# MAIN WITH 4X4 BRANCH SADDLE.
- PURGE NEW MAIN INTO SERVICE.
- TRANSFER/RELAY SERVICES TO NEW MAIN.
- COMPLETE CONNECTIONS IN DETAIL 2.
- CUT AND CAP IN DETAIL 1.
- PURGE OLD MAIN OUT OF SERVICE AND ABANDON.
- PERFORM RESTORATION.

PRESSURE TESTING

- PRESSURE TESTING TO BE IN ACCORDANCE WITH:
 - CNST04003: PRESSURE TESTING MAINS OPERATING BELOW 125 PSIG.
 - TEST PRESSURE (MINIMUM): 90 PSIG
 - TEST DURATION BASED ON LENGTH AND DIAMETER IN ACCORDANCE WITH TABLE 1
 - TEST MEDIUM: AIR AND/OR NITROGEN
 - CS-MAIN004: PRESSURE TESTING OF NEW MAINS MAOP OF 124 PSIG OR LESS
- PRESSURE TEST SERVICES IN ACCORDANCE WITH:
 - CNST06008: PRESSURE TESTING SERVICE LINES

WELDING

- NATIONAL GRID WELDING GAS POLICIES AND WORK METHODS INCLUDE:
 - CNST05002: WELDING POLICY
 - CNST05003: PIPE WELDING SAFETY
 - CNST05005: WELDING PROCEDURE SPECIFICATIONS
 - MS-030: WELDING FILLER MATERIALS
- PRIOR TO THE START OF ANY WORK THE CONTRACTOR SHALL SUBMIT WELDER CERTIFICATION DOCUMENTS FOR EACH OF THE WELDERS EMPLOYED ON THIS PROJECT.
- WELDING PROCEDURE SPECIFICATIONS REQUIRED
 - BUTT WELDS (GROOVE): WPS-SMAW-E6010/7010 (LATEST REVISION)
 - FILLET WELDS (BRANCH): WPS-SMAW-E6010/7010 (LATEST REVISION)
- 10X (AT LEAST 1) OF WELDS IN EACH CATEGORY BELOW SHALL BE SUBJECT TO NON-DESTRUCTIVE EXAMINATION (NDE).
 - BUTT WELDS 2-INCH AND GREATER: 10% RADIOGRAPH
 - BUTT WELDS < 2-INCHES: 10% MAGNETIC PARTICLE
 - FILLET WELDS: 10% MAGNETIC PARTICLE
- NDE AND WELD MAP SHALL BE PROVIDED BY SKYTESTING
- SKYTESTING SCHEDULING CONTACT:
WILLIAM (BILL) CLARK
CELL: (704) 858-7794
EMAIL: WCLARK@SKYTESTING.COM

CATHODIC PROTECTION

- IF EXISTING TEST STATIONS, WIRES, AND/OR MAGNESIUM ANODES ARE DISTURBED OR DAMAGED, NOTIFY THE NATIONAL GRID CORROSION DEPARTMENT:
BUTCH VINCENT: (617) 438-5192
- 24 HOUR NOTICE IS REQUIRED PRIOR TO INSTALLATION OF INSULATED FITTINGS TO ALLOW FOR ACCEPTANCE TESTING
- CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL GRID CORROSION GAS POLICIES AND WORK METHODS INCLUDING:
 - COR01100: CORROSION DESIGN CRITERIA
 - COR02001: APPLICATION OF COATING SYSTEMS
 - COR02020: INSPECTING EXPOSED STEEL PIPE FOR CORROSION
 - COR02021: INSPECTING EXPOSED CAST OR DUCTILE PIPING FOR GRAPHITIZATION
 - COR03001: TESTING OF PIPE COATING (JEEP TESTING)
 - COR04001: INSTALLATION OF MAGNESIUM ANODES
 - COR04003: INSTALLATION OF TEST STATIONS FOR CATHODIC PROTECTION
 - COR04004: INSTALLATION OF WIRE CONNECTION
 - COR04005: INSTALLATION OF INSULATING JOINTS FOR CATHODIC PROTECTION
 - 030031-CS: FACILITY COATING GUIDE
 - 030024-CS: INSTALLATION OF MAGNESIUM ANODES
 - 030026-CS: INSTALLATION OF TEST STATIONS FOR CATHODIC PROTECTION
 - 030016-CS: ELECTRICAL ISOLATION REQUIREMENTS OF A METALLIC COUPLING INSTALLED TO THE TIE IN A PLASTIC PIPE TO A METALLIC PIPE
 - 030028-CS: INSTALLATION OF INSULATING JOINTS FOR CATHODIC PROTECTION
 - 030036-CS: INSTALLING WIRE CONNECTIONS
- CORROSION DESIGN: SEE CONTENTS OF THIS DESIGN FOR CATHODIC PROTECTION DETAILS.

ENVIRONMENTAL

- WORK SHALL CONFORM TO THE NATIONAL GRID ENVIRONMENTAL POLICY.
- ENVIRONMENTAL ENGINEERING CONTACT
ANDREW L. SHELBY
PHONE: (781) 907-1867
EMAIL: ANDREW.SHELBY@NATIONALGRID.COM
- CONTRACTOR SHALL REVIEW THE PROJECT WORK ORDER PACKAGE FOR THE ENVIRONMENTAL GUIDANCE FORMS, FOR EXAMPLE EG-301, FOR THE RESPECTIVE STATE.
- WHEN SOILS OR LIQUIDS ARE ENCOUNTERED THAT ARE BELIEVED TO BE CONTAMINATED WITH OIL AND/OR HAZARDOUS MATERIAL, EXCAVATION WORK SHALL BE HALTED AND FIELD PERSONNEL SHALL NOTIFY THEIR IMMEDIATE SUPERVISOR.
- NO EXCAVATED SOIL SHALL LEAVE THE WORK SITE UNTIL ENVIRONMENTAL HAS MADE A DETERMINATION FOR ITS PROPER DISPOSAL.
- NATIONAL GRID ENVIRONMENTAL POLICIES AND PROCEDURES INCLUDE:
 - SHE02001: HANDLING CONTAMINATED MATERIALS AND PIPING
 - SHE02002: REMOVING MERCURY REGULATORS AND DEVICES
 - SHE02003: ENCOUNTERING CONTAMINATION WHILE EXCAVATING
 - EG303-NE: BEST MANAGEMENT PRACTICES
 - EG140: USED GAS PIPE MANAGEMENT
- ENVIRONMENTAL REQUIREMENTS: N/A

SAFETY

- WORK SHALL CONFORM TO THE NATIONAL GRID EMPLOYEE SAFETY HANDBOOK AND OSHA REQUIREMENTS
 - REQUIRED PPE SHALL BE WORN AND UTILIZED IN ACCORDANCE WITH THE CURRENT NATIONAL GRID SAFETY POLICY.
 - A NATIONAL GRID APPROVED CONTRACTOR HEALTH AND SAFETY PLAN (HASP) IS REQUIRED PRIOR TO CONSTRUCTION.
 - CONSTRUCTION SIGNING, DRUMS, BARRICADES, AND OTHER DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) PART VI AND SHALL BE MAINTAINED BY THE CONTRACTOR.
 - NATIONAL GRID SAFETY POLICIES AND PROCEDURES INCLUDE:
 - ADMINISTRATIVE
 - WALKING WORKING SURFACES
 - MATERIAL HANDLING AND STORAGE
 - HAZARDOUS MATERIALS
 - GENERAL ENVIRONMENTAL CONTROLS
 - MACHINERY AND GUARDING
 - EXCAVATIONS
 - FIRE PROTECTION
 - INSPECTIONS
 - MEANS OF EGRESS
 - TOXIC AND HAZARDOUS SUBSTANCES
 - PERSONAL PROTECTIVE EQUIPMENT
 - ACCIDENT INVESTIGATION
 - WELDING/CUTTING/BRAZING
 - CONTRACTORS
 - FLEET AND ROADWAY SAFETY
- GAS WORK METHODS SAFETY PROCEDURES INCLUDE:
 - SHE01001: GENERAL SAFETY REQUIREMENTS
 - SHE01002: SUPPLIED-AIR RESPIRATORS
 - SHE01003: USING AND MAINTAINING PORTABLE GAS MONITORS
 - SHE01004: USING AND MAINTAINING FLAME IONIZATION UNITS
 - SHE01005: DISSIPATING STATIC ELECTRICAL CHARGES ON PLASTIC PIPE
 - SHE01006: ENTERING GAS UTILITY VAULTS
 - SHE01008: USING AND MAINTAINING THE GAS-EXPLORER
 - SHE01009: DISSIPATING STATIC ELECTRICAL CHARGES ON PLASTIC PIPE
 - SHE01010: THE APPLICATION OF FORMAL PROCESS SAFETY ASSESSMENTS TO HIGHER-RISK GAS ACTIVITIES PERFORMED IN THE FIELD
 - SHE02001: HANDLING CONTAMINATED MATERIALS AND PIPING

OTHER PERMITTING REQUIREMENTS

TOWN OF CONCORD STREET OPENING PERMIT.
TOWN OF CONCORD GRANT OF LOCATION PERMIT.

REFERENCE DRAWINGS

LOCATION OF IDENTIFIED UNDERGROUND UTILITIES ARE APPROXIMATED BASED ON AVAILABLE RECORD AND FIELD INFORMATION IN ACCORDANCE WITH CI/ASCE 38-02. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT IDENTIFIED ON THESE PLANS. ALL EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR FOR SERVICE, SIZE, INVERT ELEVATIONS, LOCATIONS, ETC.


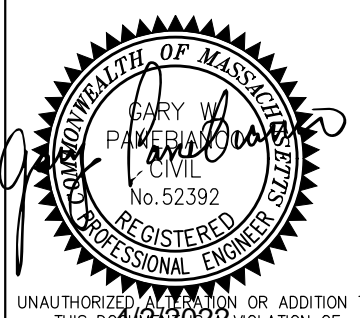
THE TOPOGRAPHIC AND ELEVATION DATA SHOWN HEREON WAS OBTAINED FROM (MASS GIS, MAIN RECORDS, AND SERVICE CARDS) AND IS NOT CERTIFIED AS CORRECT AND/OR ACCURATE BY THIS ENGINEER. USERS RELY ON SAID DATA AT THEIR OWN RISK.

CONSULTANT CONTACT INFORMATION

CHA CONSULTING, INC.
JEFFREY O'DONNELL, P.E.
BUSINESS PRACTICE LEADER – GAS ENGINEERING
(781) 982-5456
JODONNELL@CHACOMPANIES.COM

BILL OF MATERIALS

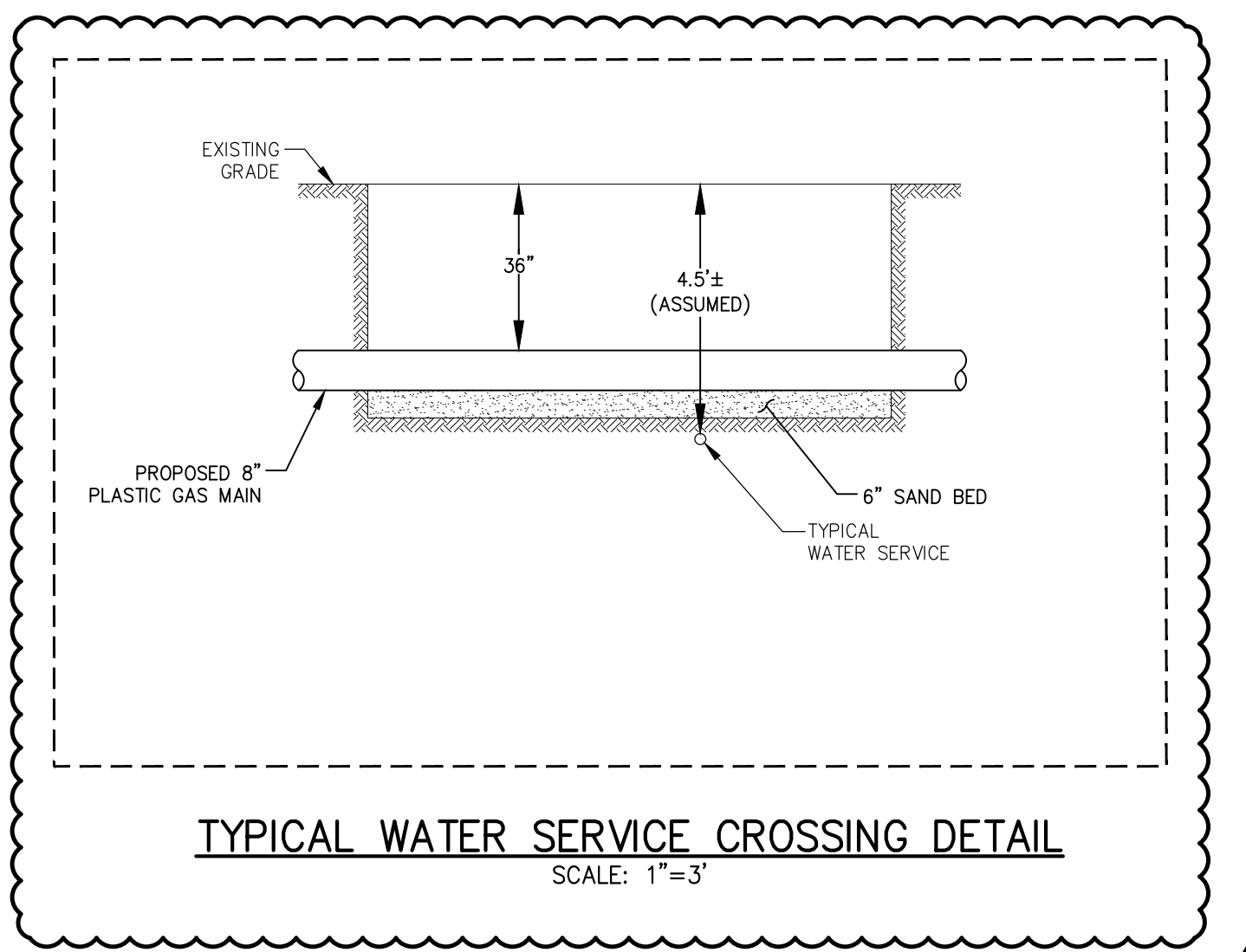
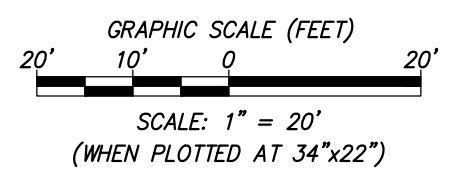
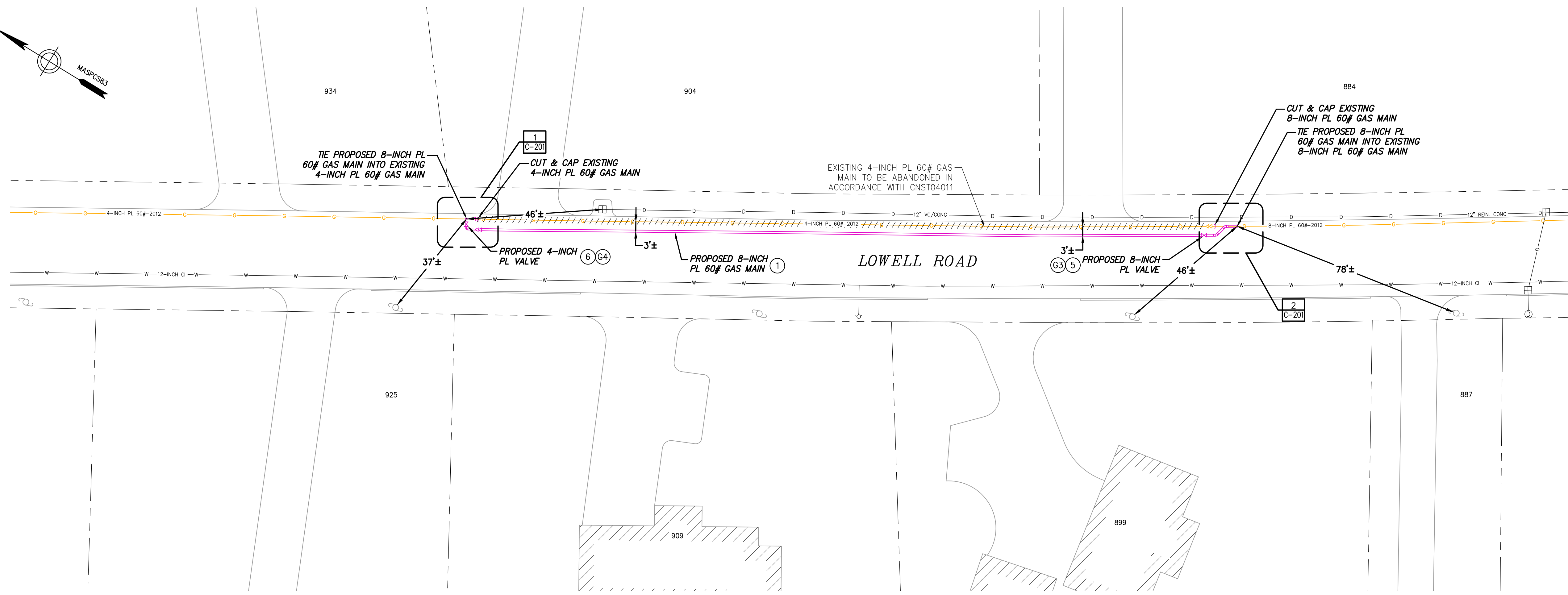
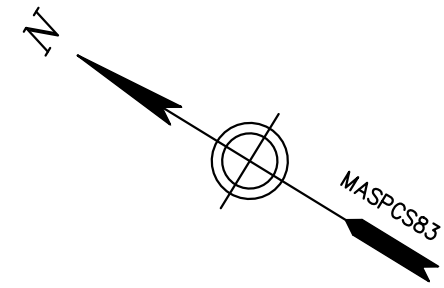
BILL OF MATERIALS						
ITEM	QTY	UOM	DESCRIPTION	SIZE (IN.)	NATIONAL GRID REFERENCE	SAP ID NUMBER
1	255	FT	PIPE, PLASTIC, MDPE	8	120026-MS	9340862
2	5	FT	PIPE, PLASTIC, MDPE-STRAIGHT 40'	4	120026-MS	9340857
3	A/R	EA	ELBOW, PLASTIC, MDPE, 45 DEGREE	8	CS-FIT011	9341402
4	A/R	EA	ELBOW, PLASTIC, MDPE, 90 DEGREE	4	CS-FIT011	9341397
5	1	EA	VALVE, PLASTIC, FULL BORE/PORT, MDPE	8	VALV6020	9386594
6	1	EA	VALVE, PLASTIC, FULL BORE/PORT, MDPE	4	VALV6020	9341709
7	A/R	EA	COUPLING, PLASTIC ELECTROFUSION	8	CS-FIT015	9314591
8	A/R	EA	COUPLING, PLASTIC ELECTROFUSION	4	CS-FIT015	9314593
9	1	EA	REDUCER, PLASTIC, MDPE	8 X 6	CS-FIT013	9342616
10	1	EA	REDUCER, PLASTIC, MDPE	6 X 4	CS-FIT013	9342678
11	A/R	EA	CAP, PLASTIC, MDPE, BUTT FUSE	8	CS-FIT010	9339559
12	A/R	EA	CAP, PLASTIC, HDPE, ELECTRO FUSE	8	CS-FIT015	9393633
13	A/R	EA	CAP, PLASTIC, MDPE, BUTT FUSE	4	CS-FIT010	9339554
14	A/R	EA	CAP, PLASTIC, HDPE, ELECTRO FUSE	4	CS-FIT015	9393582
15	1	EA	SADDLE, BRANCH, 4 IN X 4 IN, ELECTROFUSION, MDPE	4 X 4	CS-FIT015	9342255
GENERAL						
G1	A/R	FT	TRACER WIRE	-	CNST6061	9315005
G2	A/R	ROLL	YELLOW CAUTION TAPE - GAS MAIN - 6" WIDE	-	CNST6060	9341904
G3	1	EA	VALVE BOX ASSEMBLY	8	FITS6370	(SEE STD)
G4	1	EA	VALVE BOX ASSEMBLY	4	FITS6370	(SEE STD)
CATHODIC PROTECTION						
C1	A/R	EA	CP TEST BOX W/ COVER	N/A	030026-CS	(SEE STD)
C2	A/R	EA	17# ANODE	N/A	030024-CS	9311183
NOTE: ALL MATERIAL QUANTITIES ARE ESTIMATED BASED ON PROPOSED DESIGN. ADDITIONAL QUANTITIES AND/OR OTHER MATERIALS MAY BE REQUIRED TO CONSTRUCT VERTICAL OFFSETS OR DUE TO OTHER UNKNOWN AS-FOUND CONDITIONS/DESIGN CONFLICTS AND/OR FOR TESTING.						

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141 Longwater Drive, Suite 104 Norwell, MA 02061-1620 781-982-7700 www.chacompanies.com					
1	INCORPORATED NGRID COMMENTS (DATED 03/31/2022)	04/01/2022	MJM	TM	GWP
0	ISSUED FOR CONSTRUCTION	02/07/2022	MJM	TM	GWP
NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY

PROPOSED GAS MAIN REPLACEMENT 925 LOWELL ROAD CONCORD, MA					
PAGE 2 OF 7					
DRAWING NO. SHEET NO.					
DPL-CON-067813-1071 G-002					
DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"x34"	M.MERSERAU	T.MARRI	02/07/2022	DISTRIBUTION	1441924

CONSTRUCTION NOTES AND BOM

FINAL

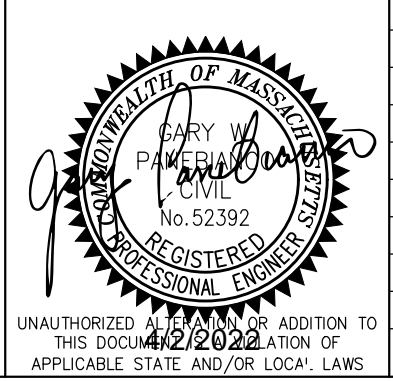


LEGEND

- EXISTING PL GAS REDUCER
- PROPOSED GAS CAP
- PROPOSED GAS TRANSITION FITTING
- PROPOSED GAS REDUCER
- PROPOSED GAS VALVE
- BUILDING LINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- EDGE OF PAVEMENT
- CURB LINE
- EXISTING PL GAS MAIN
- EXISTING GAS MAIN TO BE ABANDONED
- PROPOSED GAS LINE

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NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
1	INCORPORATED NGRID COMMENTS (DATED 03/31/2022)	04/01/2022	MJM	TM	GWP
0	ISSUED FOR CONSTRUCTION	02/07/2022	MJM	TM	GWP

BOSTON GAS COMPANY
d/b/a
nationalgrid
40 SYLVAN ROAD
WALTHAM, MA 02451

FINAL

PROPOSED GAS MAIN REPLACEMENT
925 LOWELL ROAD
CONCORD, MA

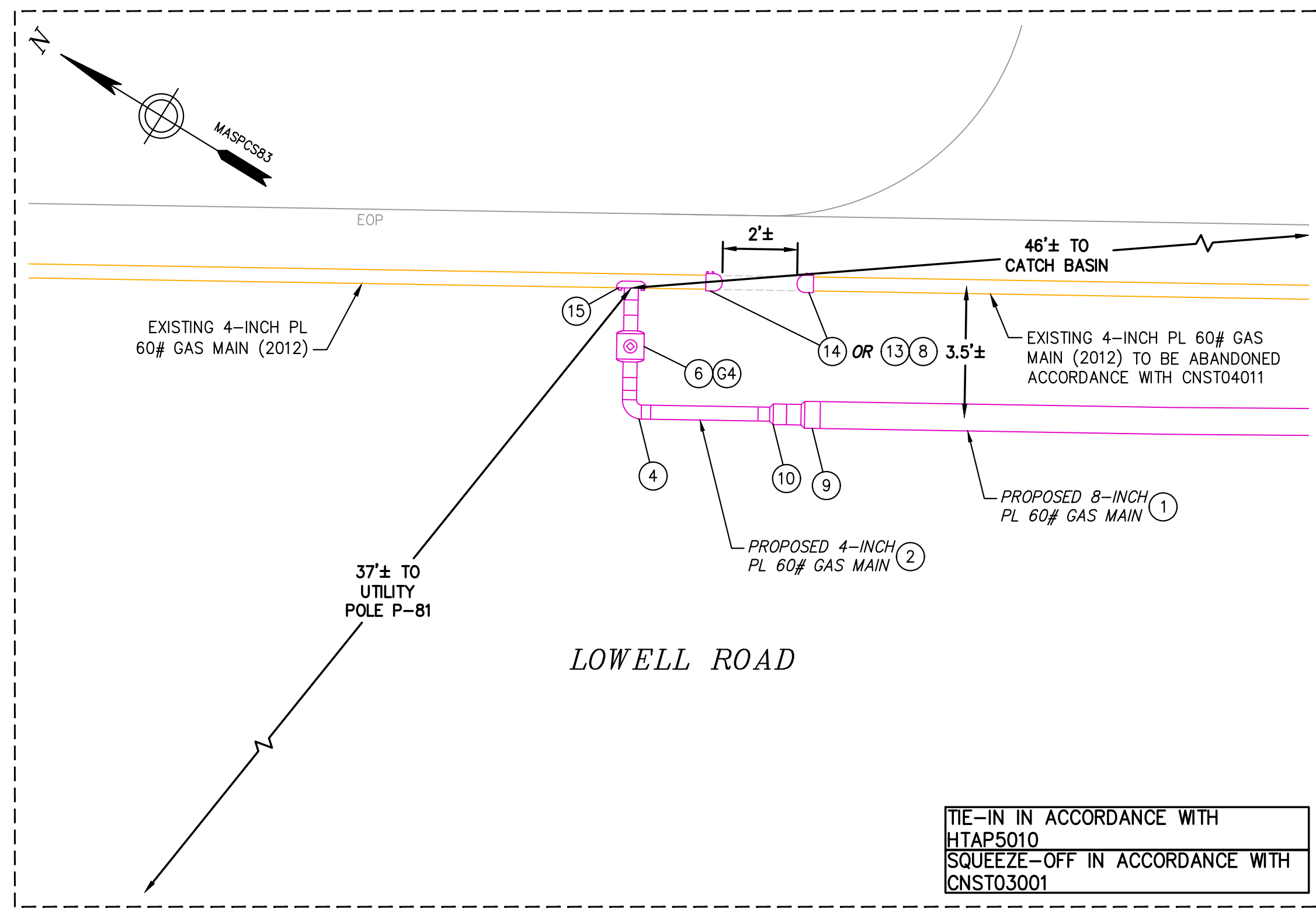
PROPOSED INSTALLATION PLAN

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	M.MERSEREAU	T.MARRI	02/07/2022	DISTRIBUTION	1441924

PAGE 3 OF 7

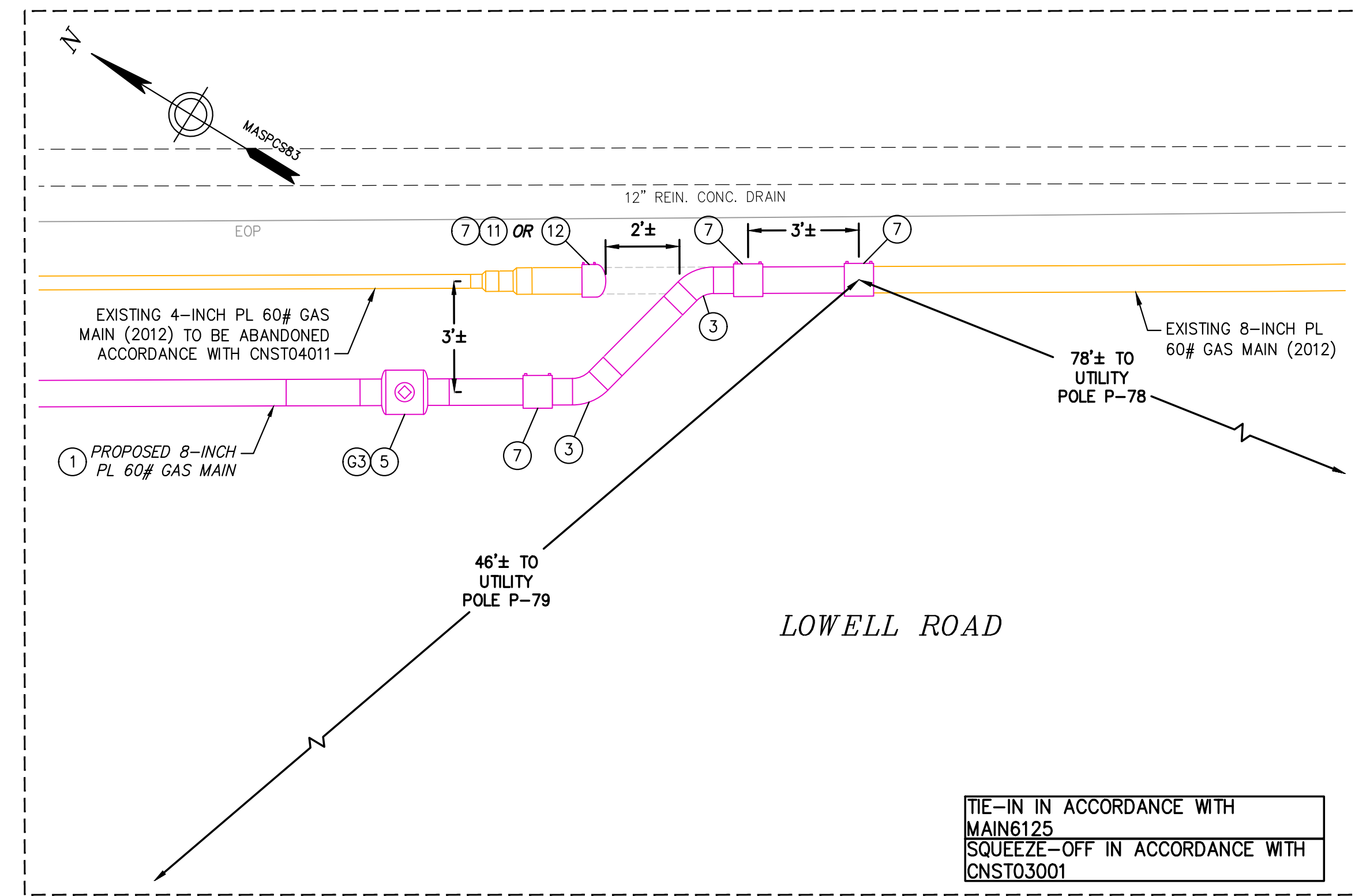
DRAWING NO.	SHEET NO.
DPL-CON-067813-1071	C-001

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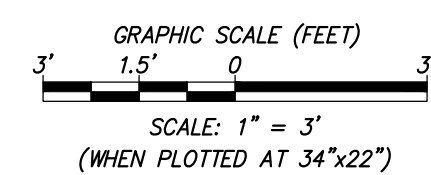
1 PROPOSED TIE-IN AT #925 LOWELL ROAD
SCALE: 1"=3'

TIE-IN IN ACCORDANCE WITH HTAP5010
SQUEEZE-OFF IN ACCORDANCE WITH CNST03001



2 PROPOSED TIE-IN AT #909 LOWELL ROAD
SCALE: 1"=3'

TIE-IN IN ACCORDANCE WITH MAIN6125
SQUEEZE-OFF IN ACCORDANCE WITH CNST03001



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NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
1	INCORPORATED NGRID COMMENTS (DATED 03/31/2022)	04/01/2022	MJM	TM	GWP
0	ISSUED FOR CONSTRUCTION	02/07/2022	MJM	TM	GWP

BOSTON GAS COMPANY
d/b/a
nationalgrid
40 SYLVAN ROAD
WALTHAM, MA 02451

FINAL

PROPOSED GAS MAIN REPLACEMENT
925 LOWELL ROAD
CONCORD, MA

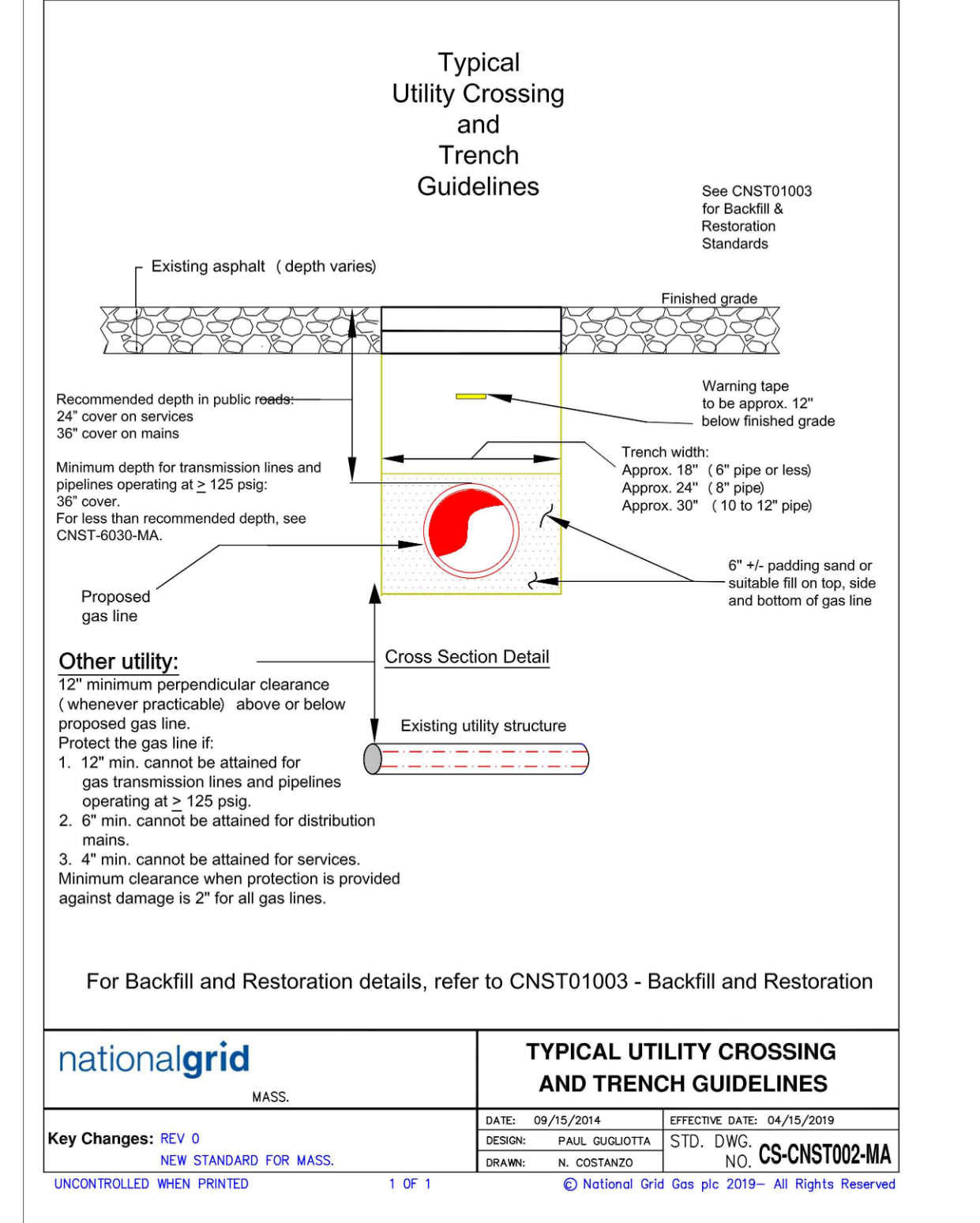
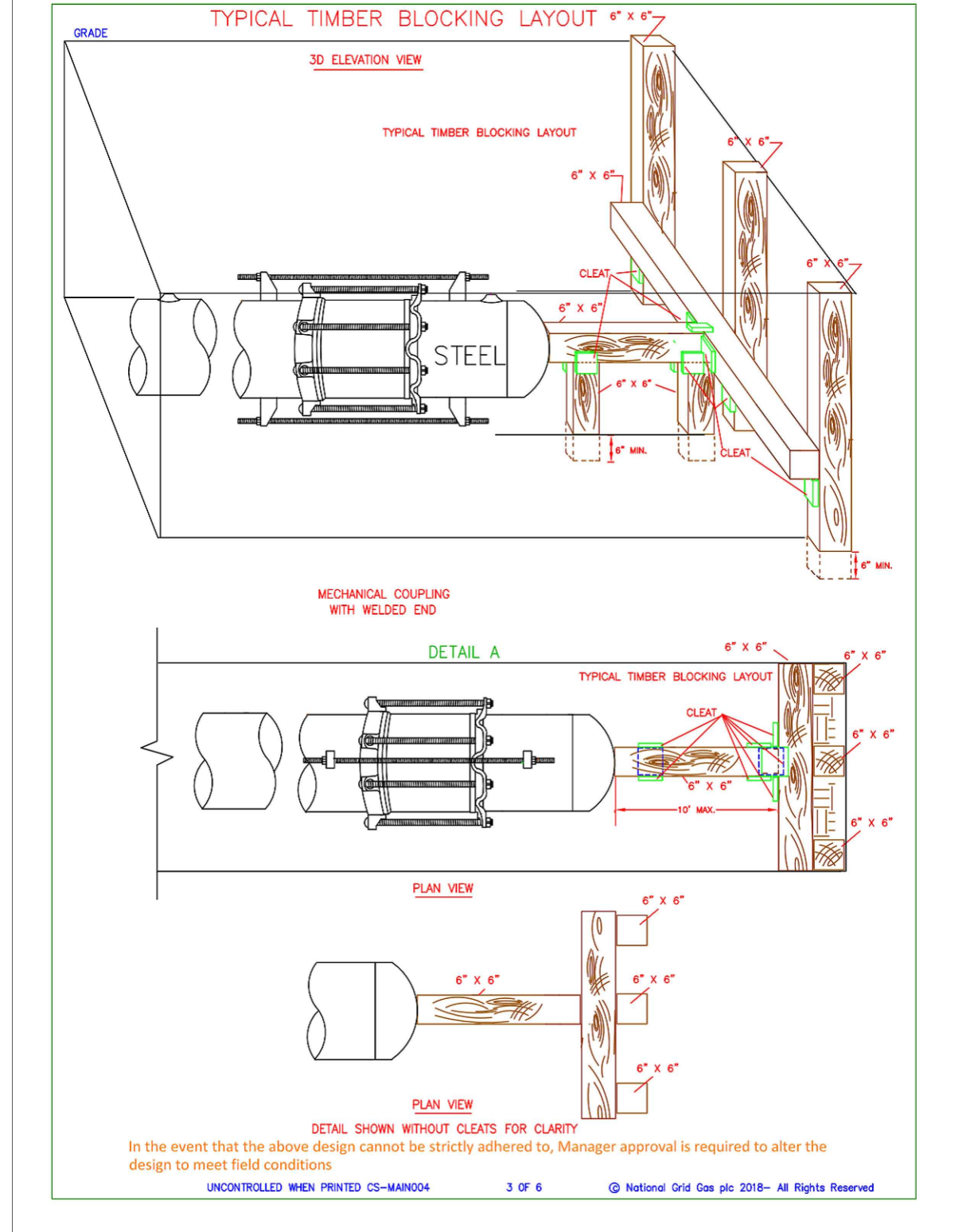
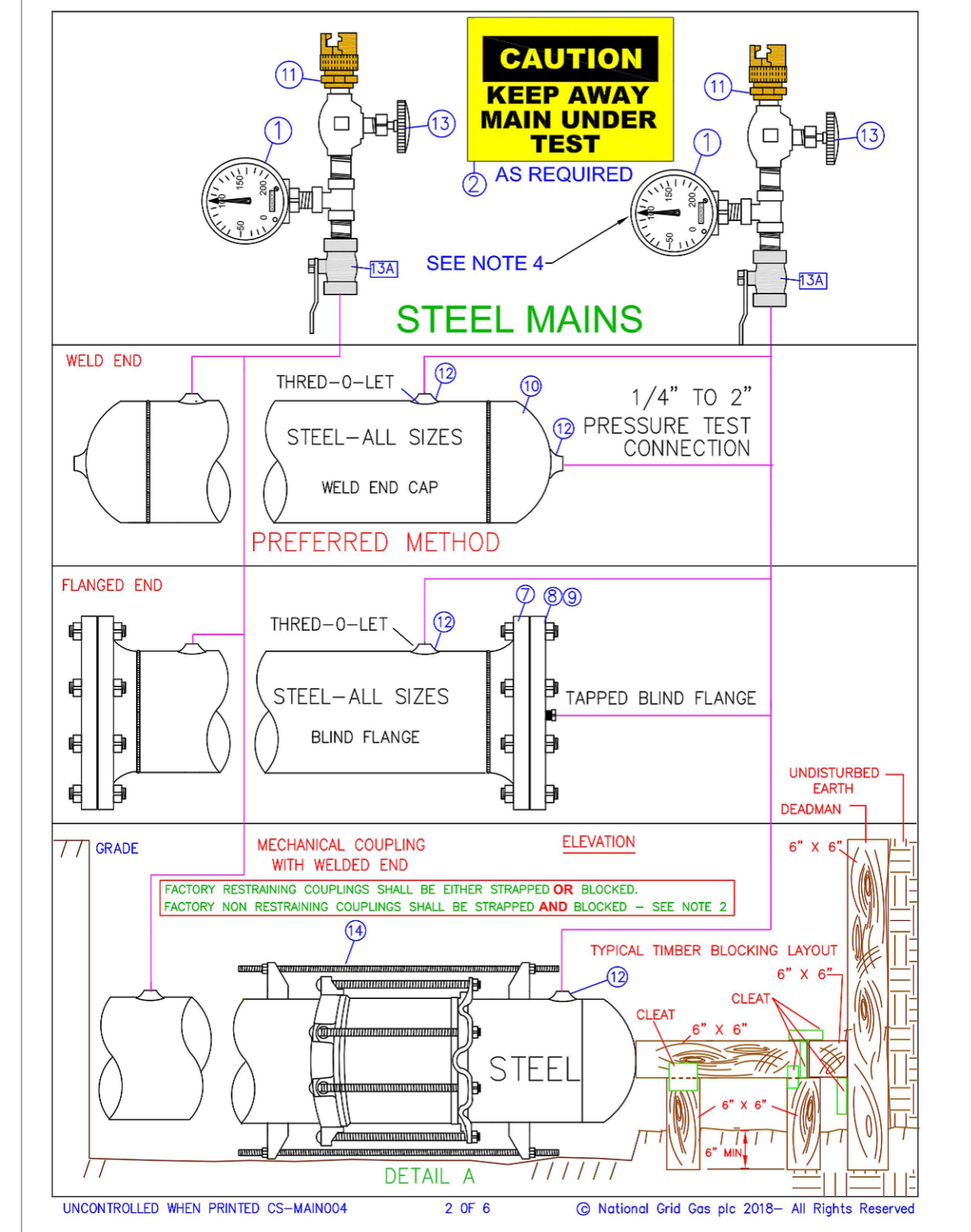
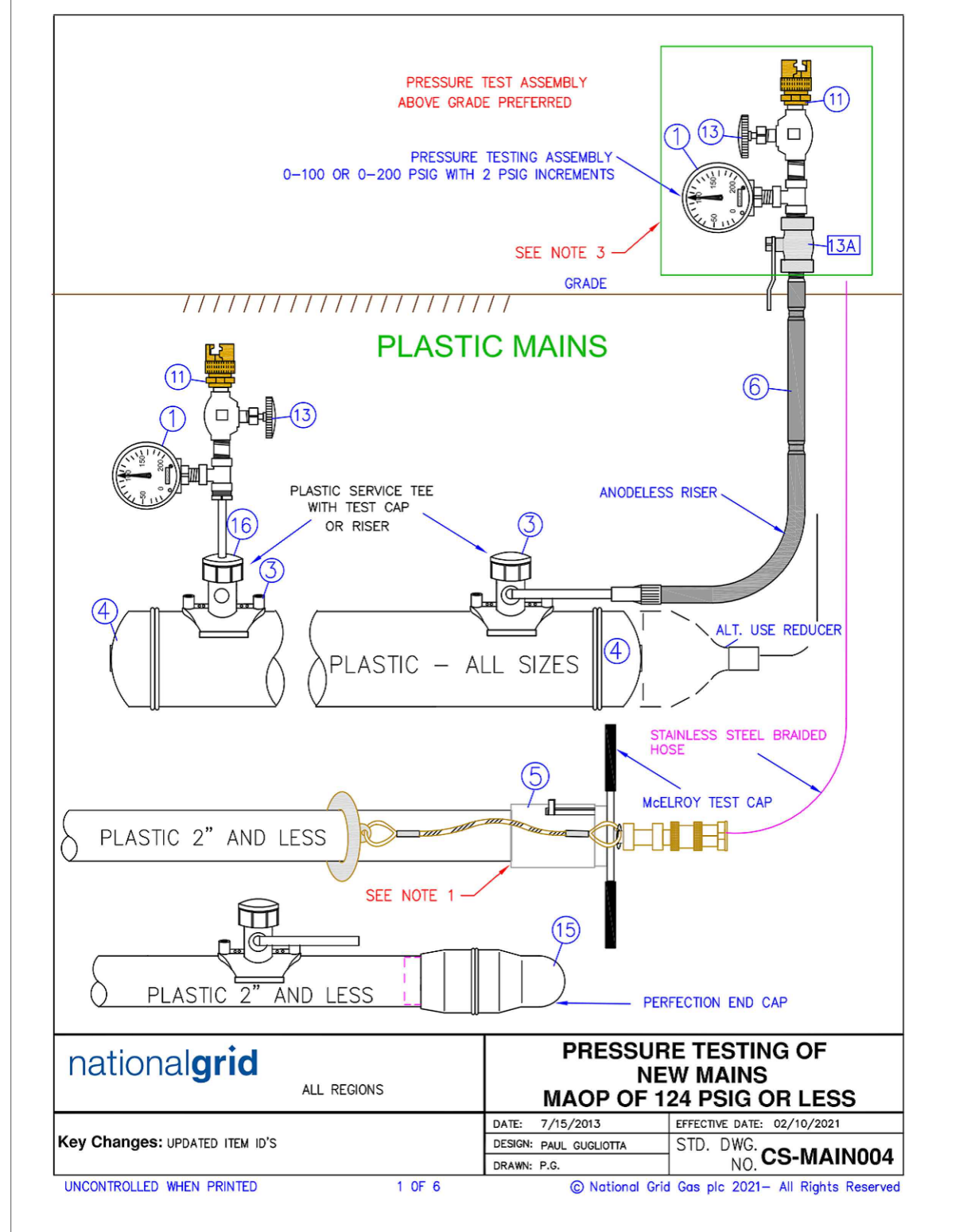
PROPOSED TIE-IN DETAILS

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"x34"	M.MERSEUREAU	T.MARRI	02/07/2022	DISTRIBUTION	1441924

PAGE 4 OF 7

DRAWING NO.	SHEET NO.
DPL-CON-067813-1071	C-201

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NOTES:

- INSTALL PER MCELROY MANUFACTURER'S INSTRUCTIONS.
- WHEN USING MECHANICAL COUPLINGS AS SHOWN IN DETAIL A, NON-RESTRAINING COUPLING SHALL BE STRAPPED AND THE ENDS SHALL BE BLOCKED PER APPROVED STANDARD DRAWINGS. RESTRAINING COUPLINGS NEED TO BE EITHER STRAPPED OR BLOCKED. WHEN USING RESTRAINING COUPLINGS, STRAPPING NUTS SHOULD BE HAND TIGHT.
- ON EXISTING STEEL SYSTEMS REFER TO THE TABLE BELOW FOR THE MINIMUM SAFE DISTANCE FROM THE EXCAVATION WALL. IF A BURIED, UNSTRAPPED COUPLING EXISTS AT A DISTANCE LESS THAN THE MINIMUM SAFE EMBEDMENT DISTANCE FROM THE WALL, THEN BLOCKING IS REQUIRED FOR THE PRESSURE TEST. IF AN ALL WELDED SYSTEM CAN NOT BE CONFIRMED, THE WELDED OR FLANGED ENDS SHALL BE BLOCKED.

PIPE SIZE (INCHES)	MINIMUM SAFE DISTANCE FROM THE EXCAVATION WALL (FEET)
2	3
3	4
4	5
6	7
8	9
10	11
12	13

REFER TO CONSTRUCTION STANDARD FITS 6025 AND FITS 6015 FOR LIST OF COUPLINGS.

- IT IS RECOMMENDED THAT THE GAUGE ASSEMBLY BE ABOVE GRADE TO PREVENT PERSONNEL FROM ENTERING THE TRENCH WHILE THE PRESSURE TEST IS UNDERWAY.
- ONE PRESSURE TEST GAUGE AT EACH PIPE END IS RECOMMENDED TO VERIFY THE PRESSURE. ALL GAUGES SHALL BE 0-100 OR 0-200 PSIG RANGE (0-200 PSIG INCREMENTS RECOMMENDED BY STATE ONLY).
- REFER TO CNST04063 'PRESSURE TESTING OF MAINS OPERATING BELOW 125 PSIG' FOR TESTING AND DESIGN REQUIREMENTS.

ITEM	DESCRIPTION	SAP ITEM ID LI/MA/NYC	SAP ITEMS RI AND UNY
1	PRESSURE GAUGE 0-100 OR 0-200 PSIG - 2 PSI INCREMENTS 0-200 PSIG STAINLESS STEEL 1/2" NPT 2-1/2" DIAL 0-200 PSIG STAINLESS STEEL 1/2" NPT 2-1/2" DIAL 0-200 PSIG STAINLESS STEEL 1/2" NPT	935486 935890 933240	TOOL ITEM TOOL ITEM NON STOCK
2	SIGN - WARNING PRESSURE TEST (AS REQUIRED IN FIELD)	933240	NON STOCK
3	TEE SERVICE - ELECTROFUSION YELLOW MD 1/2" CTS BUTT FUSE OUTLET 2" MAIN X 1/2" BUTT FUSE OUTLET LUMANNYYNC 4" MAIN X 1/2" BUTT FUSE OUTLET LUMANNYYNC 6" MAIN X 1/2" BUTT FUSE OUTLET LUMANNYYNC 8" MAIN X 1/2" BUTT FUSE OUTLET LUMANNYYNC	9342517 2X12 9342518 4X12 9342516 6X12 9342371 8X12	NON STOCK NON STOCK NON STOCK NON STOCK
	TEE SERVICE - ELECTROFUSION YELLOW MD 1" CTS BUTT FUSE OUTLET 1/4" MAIN X 1" OUTLET LI 2" MAIN X 1" OUTLET LI 4" MAIN X 1" OUTLET LI 6" MAIN X 1" OUTLET LI 8" MAIN X 1" OUTLET LI	9342332 1-1/4 X 1 9342519 2X1 9342521 4X1 9342328 6X1 9342372 8X1	NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK
	TEE SERVICE - ELECTROFUSION BLACK HD 1" IPS BUTT FUSE OUTLET 2" MAIN X 1" IPS OUTLET MASS 4" MAIN X 1" IPS OUTLET MASS 6" MAIN X 1" IPS OUTLET MASS 8" MAIN X 1" IPS OUTLET MASS 12" MAIN X 1" IPS OUTLET LI, NYC, MA	9322653 2X1 9322628 3X1 9322620 4X1 9322626 6X1 9322607 8X1 9318311 12X1	NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK
	TEE SERVICE - SADDLE FUSION HIGH DENSITY BLACK 1/2" CTS BUTT FUSE 2" MAIN X 1/2" OUTLET LI 4" MAIN X 1/2" OUTLET LI 6" MAIN X 1/2" OUTLET LI 8" MAIN X 1/2" OUTLET LI	9342405 2X12 9342406 4X12 9342407 6X12 9342408 8X12	NON STOCK NON STOCK NON STOCK NON STOCK
	TEE SERVICE - SADDLE FUSION HIGH DENSITY BLACK 1" CTS BUTT FUSE 2" MAIN X 1" OUTLET LI 4" MAIN X 1" OUTLET LI 6" MAIN X 1" OUTLET LI 8" MAIN X 1" OUTLET LI 12" MAIN X 1" OUTLET	9342409 2X1 SDR 9 9342409 4X1 SDR 9 9342430 6X1 SDR 9 9342431 8X1 SDR 9 9314629 12X1	9315907 2X1 9315904 4X1 9315963 6X1 9315962 8X1 NON STOCK
	TEE SERVICE MECHANICAL X PERFECTION OUTLET 4" MAIN X 1/2" OUTLET 6" MAIN X 1/2" OUTLET 8" MAIN X 1/2" OUTLET 2" MAIN X 1" OUTLET 4" MAIN X 1" OUTLET 6" MAIN X 1" OUTLET 8" MAIN X 1" OUTLET	NON STOCK 9306584 2X12 9306583 4X12 9306472 6X12 9306471 8X12 9315492 2X1 9307123 3X1 9315490 4X1 9308473 6X1 9308178 8X1	NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK

ITEM	DESCRIPTION	ORACLE ITEM ID LI/MA/NYC	PEOPLESOFT ITEM RI AND UNY
4	CAP END PLASTIC MEDIUM DENSITY YELLOW BUTT FUSE 2" SDR 11 4" SDR 11 6" SDR 11 8" SDR 11.5 12" SDR 11.5	9339540 9339541 9339544 9339733 9339569 12 9339560	NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK
	CAP END PLASTIC HIGH DENSITY BLACK BUTT FUSION 2" SDR 9 4" SDR 9 6" SDR 9 8" SDR 9	9339538 9339535 9339536 9339537	NON STOCK NON STOCK NON STOCK NON STOCK
	2" SDR 11 MASS RI & UNY 4" SDR 11 MASS RI & UNY 6" SDR 11 MASS RI & UNY 8" SDR 11 MASS RI 12" SDR 11 RI UNY	9312886 9310276 9312885 9312884 9310272 12 9308729	2 9312886 3 9310276 4 9312885 6 9312884 8 9310272 12 9308729
	8" SDR 13.5 RI 12" SDR 13.5 RI	9312883 12 9314605	8 9312883 NON STOCK
5	MCELROY TEST CAPS (165 PSIG MAX) 1-1/4" MODEL TP 2" MODEL TP-310	NON STOCK TP-308 TP-310	NON STOCK NON STOCK NON STOCK
	RISER 1" CTS MEDIUM DENSITY X 1/4" NPT OUTLET 1" HIGH DENSITY X 1-1/4" OUTLET 1" CTS SERVAISE X 1" OUTLET 1" CTS HIGH DENSITY .000" WALL X 1" IPS STEEL OUTLET 1/2" CTS .000" WALL PERFECTION END X 1/2" NPT STEEL 1-1/4" CTS .000" WALL PERFECTION END X 1-1/4" NPT STEEL	9344396 9340874 9340863 9322927 9316495 9310295 9306180	NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK
	OR TEST CAPS WITH STEEL OR PLASTIC PIPE TO TEST TEE TEST CAP FOR CENTRAL PLASTIC ELECTROFUSION TAPPING TEE	9301110 OR TOOL NON STOCK	TOOL, ROOM ITEM NON STOCK
7	FLANGE 150# WELD END FLAT FACE 2" 3" 4" 6" 8" 10" 12" 16" 20"	9314322 9314431 9314430 9308659 9308748 9308660 9322363 MA 9322362 MA	2 9314322 3 9314431 4 9314430 6 9308659 8 9308748 10 9308660 12 9322363 MA 16 9322362 MA 20 9322362 MA
8	BLIND FLANGE CLASS 150# ASTM A-105 2" FLAT FACE WITH N° CENTER NPT TAP 3" FLAT FACE WITH N° CENTER NPT TAP 4" FLAT FACE WITH N° CENTER NPT TAP 6" FLAT FACE WITH N° CENTER NPT TAP 2" FLAT FACE 3" FLAT FACE 4" FLAT FACE 6" FLAT FACE 8" FLAT FACE 12" FLAT FACE	9341434 9341014 9341435 9340842 9308674 9307751 9306252 9306247 9307750 9308749	2 9341434 3 9341014 4 9341435 6 9340842 9308674 9307751 6 9306252 6 9306247 6 9307750 12 9308749
9	GASKETS 2" FACE 150# 3" FULL FACE 150# 4" FULL FACE 150# 6" FULL FACE 150# 8" FULL FACE 150# 12" BRIG TYPE 150#	9335167 9341158 9341159 9335599 9341168 9341165	2 9335167 3 9341158 4 9341159 6 9335599 8 9341168 12 9341165

ITEM	DESCRIPTION	ORACLE ITEM ID LI/MA/NYC	PEOPLESOFT ITEM RI AND UNY
10	END CAPS - STEEL WELD END STANDARD WALL - GRADE B 2" 3" 4" 6" 8" 10" 12" 16" 20"	9312095 9308719 9312096 9312094 9312093 9315182 9312092 9314824 9315997	2 9312095 3 9308719 4 9312096 6 9312094 8 9312093 10 9315182 12 9312092 16 9314824 20 9315997
11	THOR FITTING 1/2" MALE NPT X HOSE CONNECTION 1/2" FEMALE X HOSE CONNECTION	0550489 0550431	NON STOCK NON STOCK
12	THRED-O-LET 12" - 6" X 1/2" 3000# PER ASTM A-105 GRADE B 10" - 6" X 1" 3000# PER ASTM A-105 GRADE B 8" - 12" X 1" 3000# PER ASTM A-105 GRADE B 2" X 1" 3000# PER ASTM A-105 GRADE B 10" - 6" X 1" 3000# PER ASTM A-105 GRADE B 38" 1/4" X 1/2" 3000# PER ASTM A-105 GRADE B	9341652 12-6X3/4 9341656 10-6X1 9342352 36-12X1 NON STOCK NON STOCK NON STOCK NON STOCK	NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK
13	VALVE		
13A	VALVE (OPTIONAL - TO SHUT OFF TEST ASSEMBLY)		
14	LUG ASSEMBLY 7/8" X 24" LONG (LI ONLY) - SEE MAIN-4210 7/8" X 44" LONG (LI ONLY) - SEE MAIN-4210 LUG GREEN 3" - 2" MAIN 7/8" DIAM. (NYC ONLY) - SEE MAIN-4230 & MAIN-4230 LUG YELLOW 10" - 30" MAIN 1-1/8" DIAM. (NYC ONLY) - SEE MAIN-4230 & MAIN-4230 ROD 1/2" X 12" LONG (NYC ONLY) LUG ASSEMBLY 1/2" X 30" LONG	9342211 9342212 9357904 9357905 9308152 9308150 NON STOCK	NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK
15	TEST CAP FOR SADDLE FUSION TEE - CENTRAL PLASTICS FOR SADDLE FUSION TEE - IM EAGLE / POLY UPOHOR FOR HVT HIGH VOLUME TAPPING TEE SADDLE FUSION CENTRAL PLASTICS FOR HVT HIGH VOLUME TAPPING TEE SADDLE FUSION - IM EAGLE / POLY UPOHOR FOR HVT HIGH VOLUME TAPPING TEE SADDLE FUSION PERFORMANCE PIPE TEES FOR HVT ELECTROFUSION TEE FOR ELECTROFUSION TEE FOR PERFECTION HVT MECHANICAL TEE (CAP FITS ALL MAIN SIZE & OUTLET SIZES OF FITTS)	9325109 9325017 9341368 9340268 9341474 9322715 9308364 9381846 9339691	TOOL, ROOM ITEM NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK NON STOCK

NATIONAL GRID CONSTRUCTION DETAILS *THIS DRAWING DEPICTS TYPICAL NATIONAL GRID STANDARDS AND IS PROVIDED FOR THIS PROJECT ONLY

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CONCORD, MA

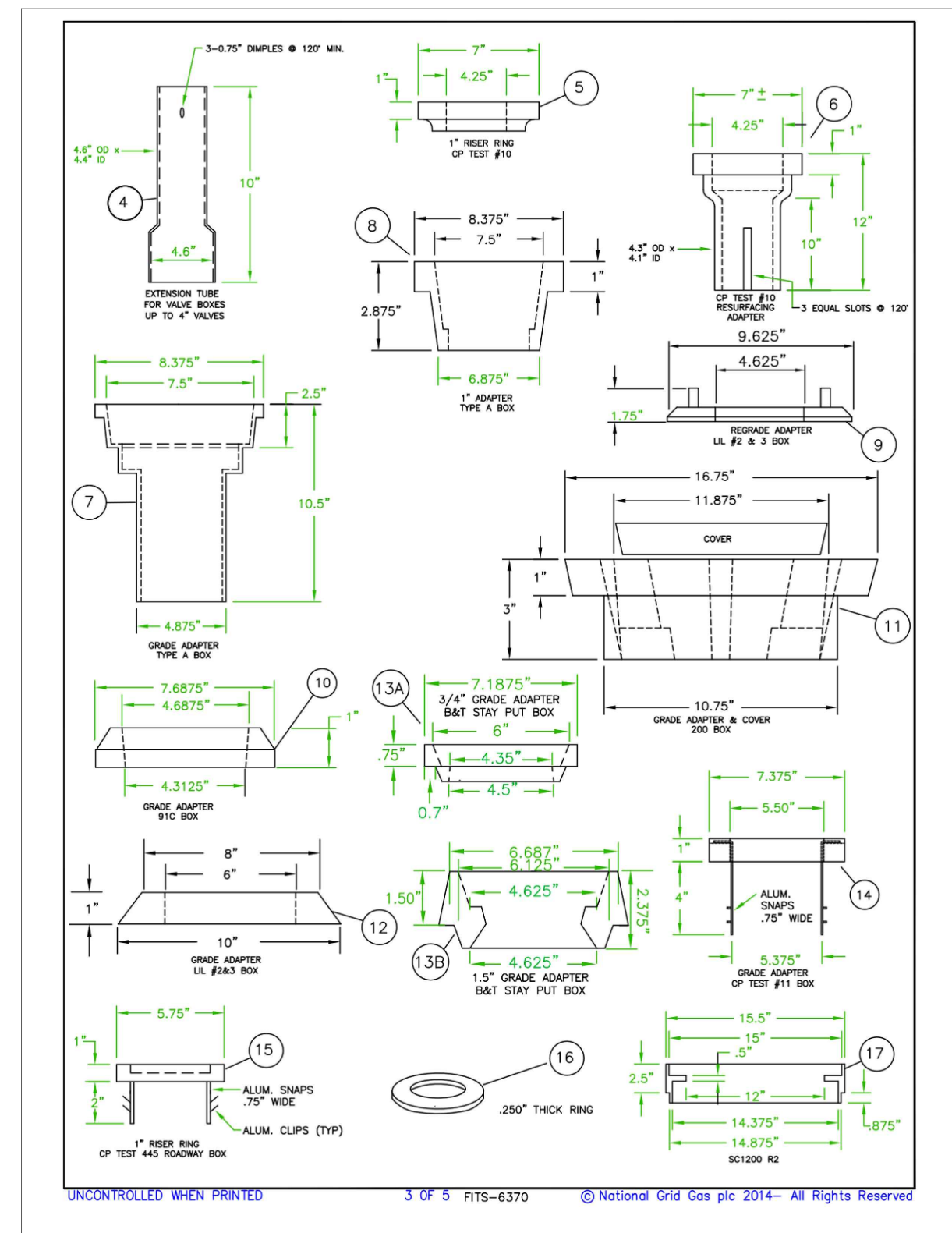
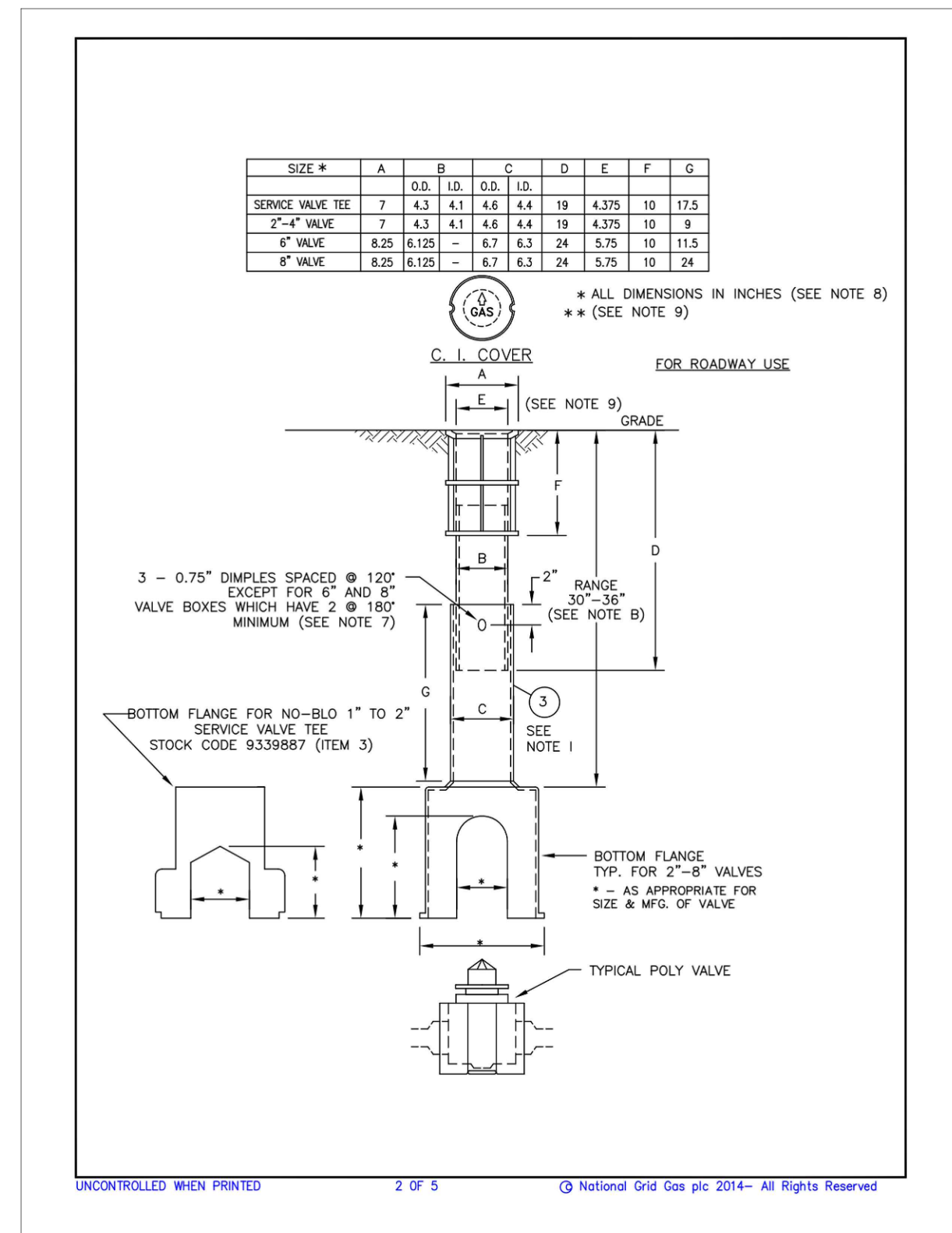
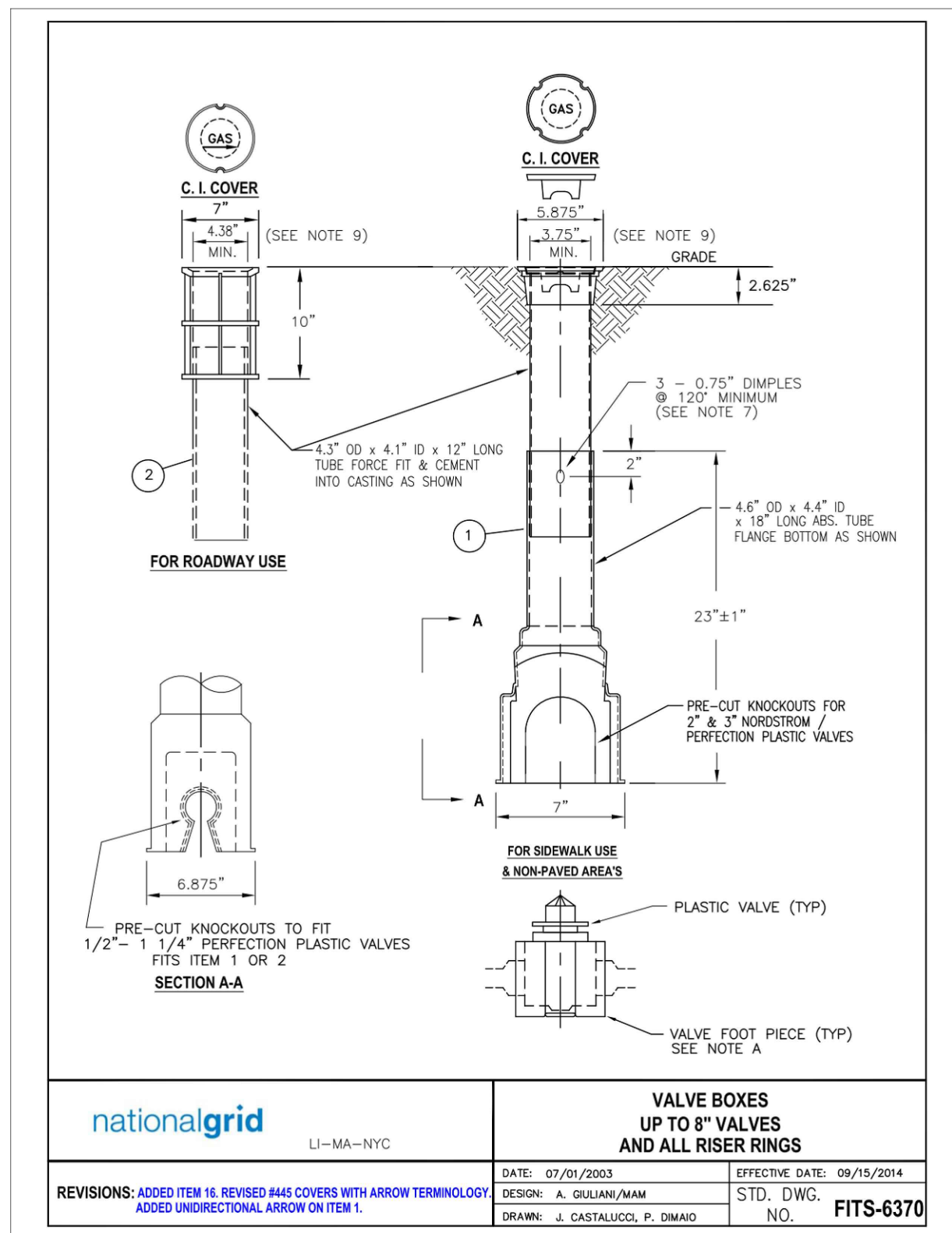
NATIONAL GRID STANDARD CONSTRUCTION DETAILS

DWG SIZE: 22"X34"	DESIGNER: M.MERSEREAU	ENGINEER: T.MARRI	DATE: 02/07/2022	ASSET I.D.: DISTRIBUTION	W.O. NO.: 1441924
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PAGE 5 OF 7

DRAWING NO. DPL-CON-067813-1071	SHEET NO. C-301
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1 OF 1



INSTALLATION NOTES:

- VALVE FOOT PIECE TO BE INSTALLED AROUND THE VALVE THEN INSERTED INTO THE BOTTOM FLANGE OF THE VALVE BOX.
- THE RANGE OF THE VALVE BOX FROM TOP OF GRADE TO TOP OF VALVE IS 24" TO 38". FOR DEEPER VALVES USE EXTENSION TUBE STOCK CODE 0038923.
- THESE BOXES CAN ALSO BE USED WITH THE APPROPRIATE SIZE STEEL VALVE. IF USED WITH A STEEL VALVE THE VALVE FOOT PIECE IS NOT TO BE USED. HOWEVER, PRIOR TO BACKFILLING INSTALL THE LOWER PORTION OF THE VALVE KEY ON THE VALVE OPERATING NUT. THEN PLACE THE LOWER SECTION OF THE BOX ON THE VALVE. WHEN THE BOTTOM SECTION IS BACKFILLED TO WITHIN 6" FROM ITS TOP REMOVE THE VALVE KEY & INSTALL THE TOP SECTION OF THE BOX.
- ITEM 2 SHALL ONLY BE USED IN SIDEWALK AND NON-PAVED, NON TRAFFIC AREA EXCEPT DRIVEWAYS.
- USE ITEM 1 ON MAIN LINE VALVES INSTALLED IN PAVED AND NON PAVED AREAS.
- AFTER INSTALLATION OF MAIN LINE VALVE & BOX NOTIFY GSO OF COMPLETION.

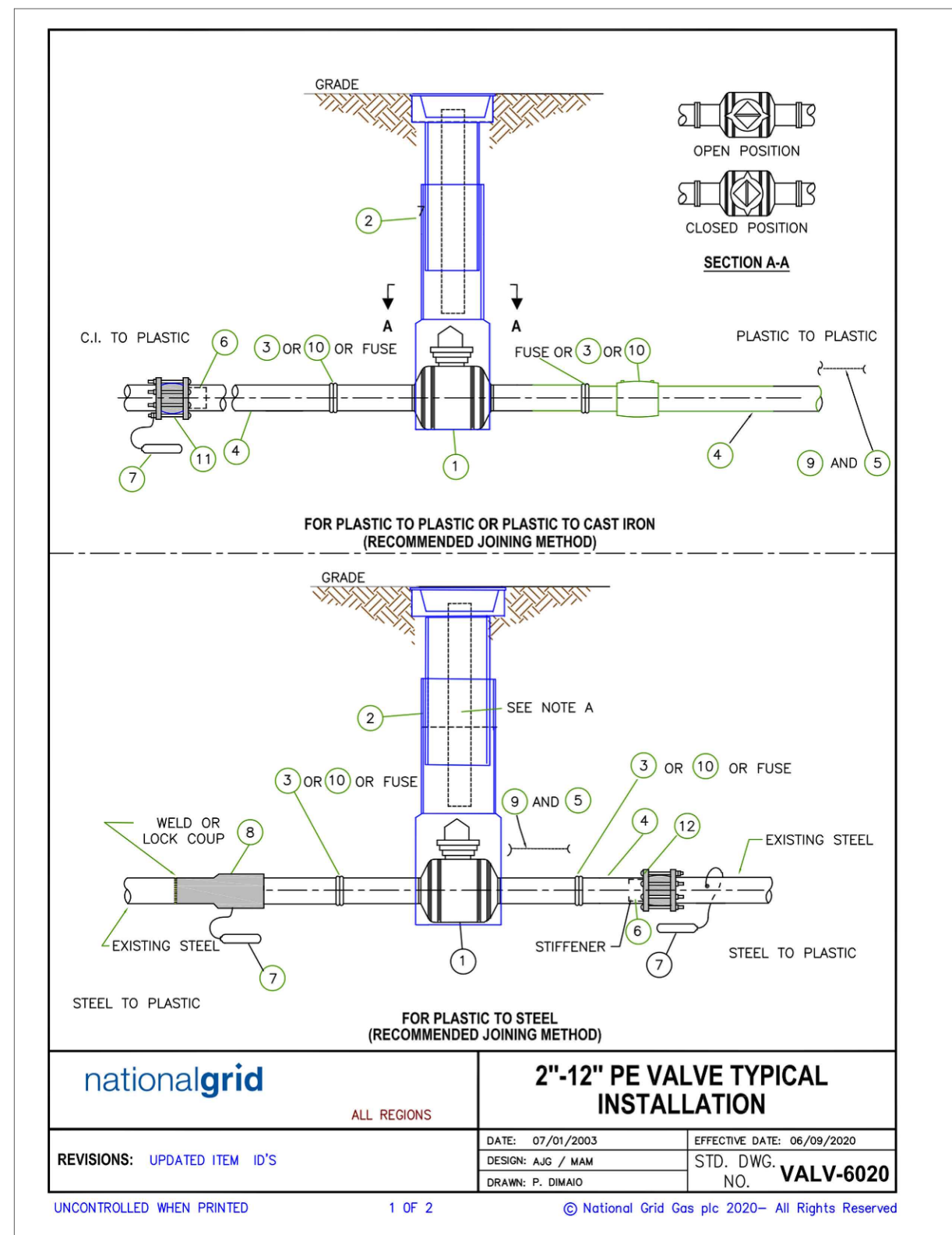
MANUFACTURING NOTES:

- ALL TOPS & BOTTOMS SHALL BE INTERCHANGEABLE.
- THE TOP OF THE BOX ASSEMBLY SHALL BE FABRICATED SO AS TO FIT INSIDE THE BOTTOM SECTION.
- MATERIAL SHALL CONFORM TO ASTM SPECIFICATIONS FOR GREY CAST IRON CASTINGS, DESIGNATED A48, CLASS 25.
- COVER SHALL BE DESIGNED TO ALLOW THE ARROW TO BE POSITIONED AT 60 INTERVALS.
- ALL SURFACES SHALL BE COVERED WITH ONE COAT OF FLINTKOTE HYDALT PROTECTIVE COATING, C-13-E OR APPROVED EQUAL.
- THE PLASTIC USED FOR THE TUBES SHALL BE PROTECTED FROM UV RAYS & AHD HAVE THE PROPER INHIBITORS TO PROTECT FROM BRITTLINESS AT ZERO DEGREES.
- DIMPLES SHALL BE FORMED SO AS TO EXERT ENOUGH PRESSURE ON INNER TUBE TO SUPPORT ENTIRE ASSEMBLY IN EXTENDED POSITION.
- DIMENSIONAL TOLERANCES: MANUFACTURE SHALL ADHERE TO THE FOLLOWING DIMENSIONAL TOLERANCES ALL PLASTIC TUBING SHALL BE +/- 0.010" TO THOSE SHOWN ON THE DRAWING. ALL CASTINGS SHALL BE MANUFACTURED TO WITHIN +/- 0.0025" TO THE DIMENSIONS SHOWN ON THE DRAWING.
- DIMENSIONS SHALL BE CONSISTENT THROUGHOUT THE CASTING.
- TOP SECTION OF VALVE BOX SHALL HAVE THE PLASTIC TUBE FORCED FIT AND CEMENTED INTO THE CASTING. THIS JOINT SHALL BE CAPABLE OF WITHSTANDING A PULL OUT FORCE OF 20 POUNDS.
- MANUFACTURER SHALL SUBMIT SAMPLES TO THE ENGINEER FOR APPROVAL PRIOR TO BID ACCEPTANCE.
- STREET BOXES SHALL BE DESIGNED TO HANDLE TO AN H-20 ROADWAY LOADING.
- TOP FLANGE OF ROADWAY BOX SHALL BE FLAT AND WIDE ENOUGH TO ACCOMMODATE A 3/8" METAL NUMBER STAMP EMBEDDED INTO THE CASTING BY CHD IN THE FIELD.
- THE VALVE FOOT PIECE SHALL BE DESIGNED TO FIT THE FOLLOWING MANUFACTURERS VALVES:
 - 2" - 1/2" PERFECTION
 - 2" - HORDSTROM OR PERFECTION UNIVERSAL FOOT PC FOR BOTH MFG.
 - 4" - HORDSTROM

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No.	ITEM	N.G. CODE NO.
18	PENTAGON KEY FOR ITEMS 8B AND 11B (NOT SHOWN)	9354644
19	2" REGRADE ADAPTER FOR 12" LOCKING BOX SC1200 R2	9384175
10	VALVE BOX ADAPTER RING, 1/4" THICK X 7.58" I.D. X 10-1/2" O.D. FLAT RING TO RAISE OLD LEGACY OBSOLETE LILCO ROUNDED CASTINGS	9353359
15	ONE INCH GRADE ADAPTER & COVER FOR CP TEST #45 ROADWAY BOX - H/ ONLY	9339313
	REPLACEMENT COVER FOR LIL #2 BOX - LI ONLY	9339629
	COVER MARKED "GAS" FOR #45 BOX (WITH UNIDIRECTIONAL ARROW)	9338228
	COVER MARKED "GAS" FOR #4 STAY PUT BOX - NYC ONLY	9339759
	COVER MARKED "GAS" FOR #10 BOX	9338656
	COVER MARKED "GAS" FOR #10 BOX RESURFACE REPAIR SLEEVE RING	9339762
14	1" REGRADE ADAPTER WITH COVER FOR CP TEST #11B BOX - SEE NOTE B	9382611
13A	1/2" REGRADE ADAPTER FOR BBT STAY PUT SERVICE BOX WITH SLOTS - NYC ONLY	9338900
13B	1/2" REGRADE ADAPTER FOR BBT STAY PUT SERVICE BOX WITH SLOTS - NYC ONLY	9339725
12	1" REGRADE ADAPTER FRAME FOR THE LIL # 2 & 3 VALVE BOX	9338659
	COVER FOR ABOVE (NOT SHOWN) - LI ONLY	9339860
11B	COVER, REPLACEMENT, LOCKING, MARKED "GAS" FOR EXISTING LOCK TYPE 200 BOX, WITH PENTHEAD BOLT - LI ONLY (NOT SHOWN)	9384338
11A	COVER, REPLACEMENT, HIGH-LOCK, MARKED "GAS" FOR EXISTING HIGH-LOCK TYPE 200 BOX - LI ONLY (NOT SHOWN)	9339788
11	1" REGRADE ADAPTER FRAME & COVER FOR 200 VALVE BOX - LI ONLY	9339826
	2-1/2" REGRADE ADAPTER FOR 200 VALVE BOX, FITS EXISTING COVER (NOT SHOWN) - LI ONLY	9339769
10	1" REGRADE ADAPTER & COVER FOR 91C BOX - LI ONLY	9339761
9	1 1/2" REGRADE ADAPTER FOR LIL 263 BOX - LI ONLY	9339758
8B	COVER, REPLACEMENT, LOCKING, MARKED "GAS" FOR 7-1/2" EXISTING TYPE "A" LOCK VALVE BOXES, WITH PENTHEAD BOLT - LI ONLY (NOT SHOWN)	9339760
8A	COVER, REPLACEMENT, MARKED "GAS" FOR 7-1/2" EXISTING TYPE "A" NON-LOCK VALVE BOXES AND ALL TYPE "A" ADAPTER RINGS - LI ONLY (NOT SHOWN)	9384430
8	1" REGRADE ADAPTER FOR TYPE "A" VALVE BOX, FITS EXISTING COVER - LI ONLY	9339827
7	2 1/2" REGRADE ADAPTER FOR TYPE "A" VALVE BOX, 2-1/2" MIN TO 8 IN MAX RISE, FITS EXISTING COVER - LI ONLY	9339763
6	1" REGRADE ADAPTER RING EXTENSION WITH 10" PLASTIC SKIRT TO REPAIR TOPS OF CP TEST #10 BOX	9381407
5	1" REGRADE ADAPTER FOR CP TEST #10 BOX	9339823
4	EXTENSION TUBE - FOR CP TEST #11 BOX	9382619
	EXTENSION TUBE - FOR CP TEST #10 BOX	9339824
	EXTENSION TUBE, FOR CP TEST #56 BOX, 18" LONG - (NOT SHOWN) - HE ONLY	9383189
	EXTENSION TUBE, FOR CP TEST #334 BOX, 24" LONG - (NOT SHOWN) - HE ONLY	9383188
	ROADWAY BOX ASSEMBLY AND COVER FOR 6" POLY VALVE CP TEST #11B OR APPVD EQUAL	9338883
	ROADWAY BOX ASSEMBLY AND COVER FOR 4" POLY VALVE CP TEST #11B OR APPVD EQUAL	9338882
	ROADWAY BOX ASSEMBLY AND COVER FOR 2" POLY VALVE CP TEST #10 OR APPVD EQUAL	9338881
	ROADWAY BOX ASSEMBLY AND COVER FOR 2" POLY VALVE CP TEST #10 OR APPVD EQUAL	9338880
	ROADWAY BOX ASSEMBLY AND COVER FOR 1" MUELLER SERVICE VALVE TEE CP TEST #10 OR APPVD EQUAL	9338877
2	ROADWAY SERVICE BOX AND COVER FOR 1/2" TO 1" PLASTIC VALVE HE ONLY CP TEST #10 OR APPVD EQUAL	9382767
1	SIDEWALK VALVE BOX ASSEMBLY AND UNIDIRECTIONAL ARROW COVER FOR 1/2" TO 1 1/2" PLASTIC VALVES CP TEST #445 OR APPVD EQUAL	9338888
	SIDEWALK VALVE BOX ASSEMBLY AND UNIDIRECTIONAL ARROW COVER FOR 2" TO 3" PLASTIC VALVES CP TEST #445 OR APPROVED EQUAL	9338889

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REVISIONS: UPDATED ITEM ID'S

DATE: 07/01/2003 EFFECTIVE DATE: 06/08/2020

DESIGN: AJS / MAM

DRAWN: P. DIMAD

NO. **VALV-6020**

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UNY AND RI LP TO 100 PSIG HD	LI ONLY 99 AND 124 PSIG HD	LI, NYC AND NE LP TO 60 PSIG MEDIUM DENSITY
9311203 12" DR 11 FULL PORT W/ GEAR OPERATOR RI ONLY	9341706 8" RED PORT DR 9	9341704 12" FULL PORT DR 13.5
9307909 12" DR 13.5 FULL PORT W/ GEAR OPER UNY ONLY	9341705 8" RED PORT DR 9	9386594 8" FULL PORT DR 13.5
9311173 8" DR 11 FULL PORT RI ONLY	9341704 8" RED PORT DR 9	9323032 8" FULL PORT DR 11.5
9312116 8" DR 11 FULL PORT	9341699 2" FULL PORT DR 9	9341709 4" FULL PORT DR 11.5
9306561 3" DR 11 FULL PORT		9323298 3" FULL PORT DR 11
9312060 2" DR 11 FULL PORT		9341748 2" FULL PORT DR 11
9311146 2" DR 11 FULL PORT WITH PERMASERT ENDS		9341408 8" RED PORT DR 13.5
		9341757 8" RED PORT DR 11.5
		9341693 4" RED PORT DR 11.5
		9341756 3" RED PORT DR 11

100 PSIG HIGH DENSITY (NE ONLY)

SAP ID	SAP ID	SAP ID
SELECT ROADWAY VALVE BOX BELOW TO MATCH SIZED VALVE GIVEN	SELECT ROADWAY VALVE BOX BELOW TO MATCH SIZED VALVE GIVEN	SELECT ROADWAY VALVE BOX BELOW TO MATCH SIZED VALVE GIVEN
9312060 2" FULL PORT DR 11	9323032 8" RED PORT DR 11	9323032 8" RED PORT DR 11
9312116 8" FULL PORT DR 11	9323032 8" RED PORT DR 11	9323032 8" RED PORT DR 11

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NATIONAL GRID CONSTRUCTION DETAILS *THIS DRAWING DEPICTS TYPICAL NATIONAL GRID STANDARDS AND IS PROVIDED FOR THIS PROJECT ONLY

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7/15/2021

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WALTHAM, MA 02451

FINAL

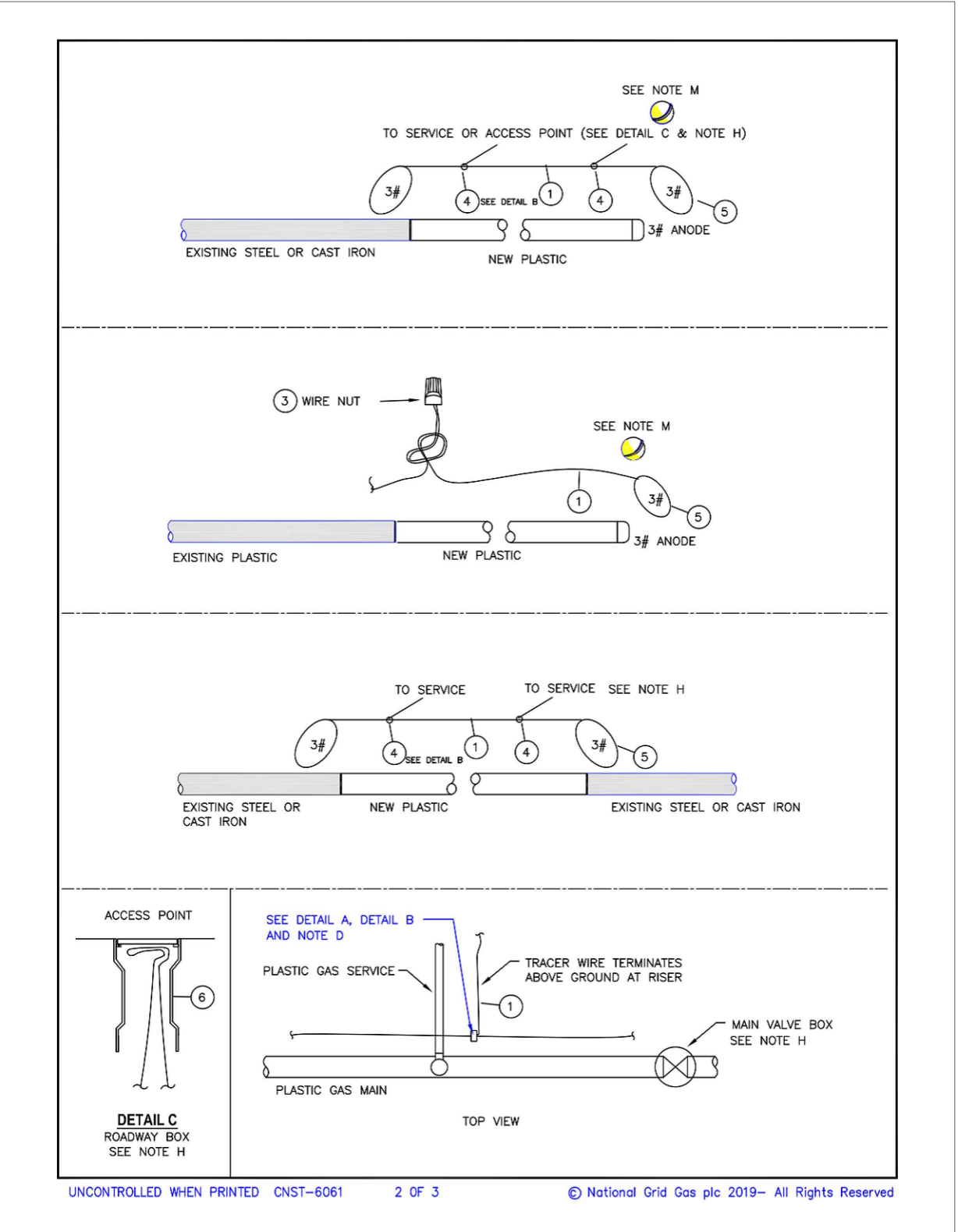
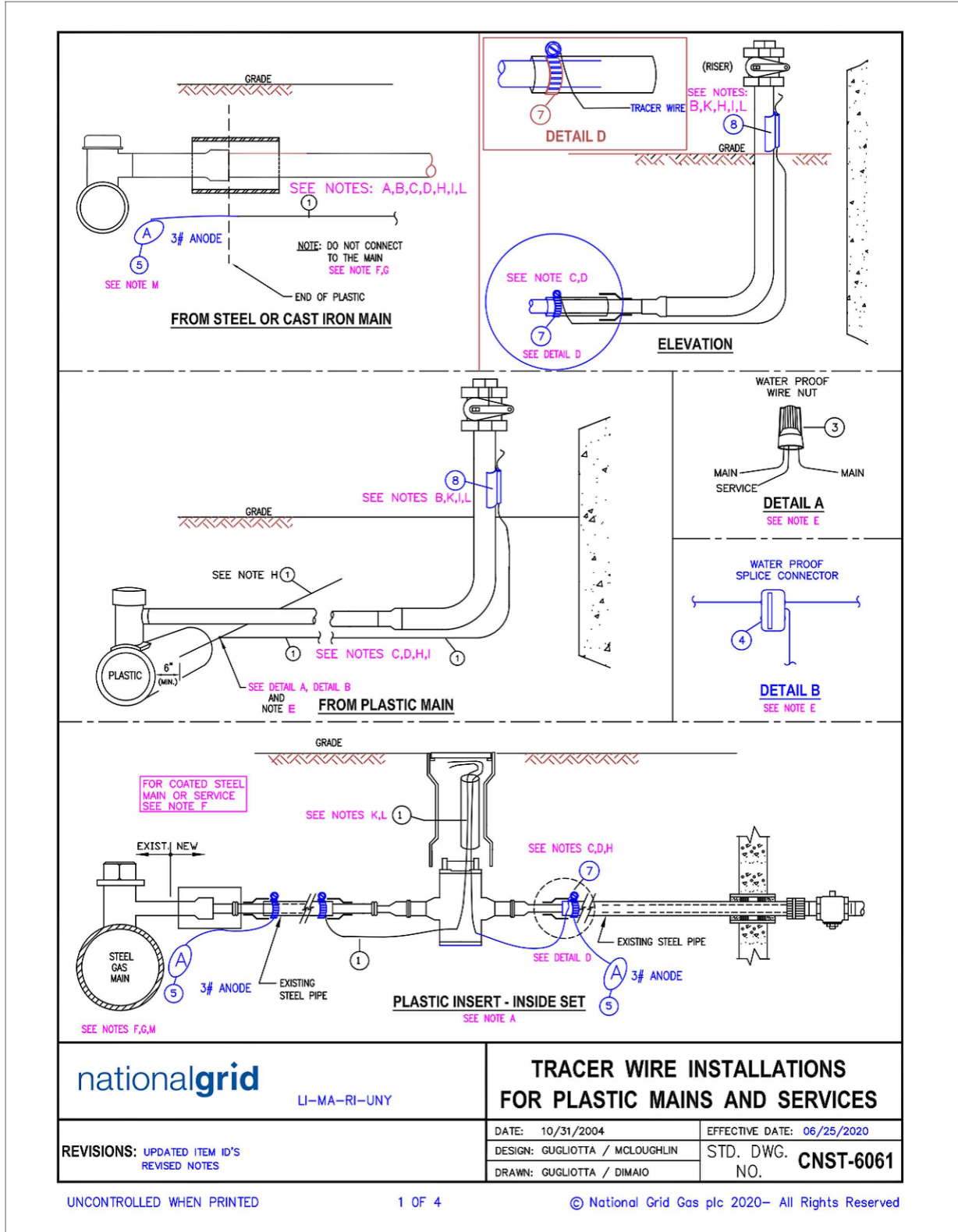
PROPOSED GAS MAIN REPLACEMENT
925 LOWELL ROAD
CONCORD, MA

NATIONAL GRID STANDARD CONSTRUCTION DETAILS

PAGE 6 OF 7

DWG SIZE	DESIGNER	ENGINEER	DATE	ASSET I.D.	W.O. NO.:
22"x34"	M.MERSEREAU	T.MARRI	02/07/2022	DISTRIBUTION	1441924

DRAWING NO.	SHEET NO.
DPL-CON-067813-1071	C-302



NO.	ITEM	UNY/R	SAP ITEM ID
BILL OF MATERIAL			
8	TRACER WIRE SNAP, 2" (represents steel size)	9386134	9386134
8	TRACER WIRE SNAP, 1 1/2" (represents steel size)	9386156	9386156
8	TRACER WIRE SNAP, 1" (represents steel size)	9386150	9386150
8	TRACER WIRE SNAP, 1/2" (represents steel size)	9385568	9385568
7	CLAMP, STAINLESS	9331708	9331708
6	VALVE BOX, ROADWAY	9338990	9312344 UNY 9311208 RI
5	ANODE, 3 LB MAGNESIUM	9315645	9315645
4	WIRE SPLICE CONNECTOR, WATERPROOF	9306036	9306036
3	WIRE NUT, PLASTIC, WATERPROOF	9319444	9314631
2	WIRE, DIRECTIONAL DRILL, STAINLESS, STRANDED, 10 AWG	9314187	9314187
1	TRACER WIRE, DIRECT BURY, COPPER, 12 AWG	9315005	9315005

A. Inside sets: Terminate tracer wire in the curb valve box. Allow enough wire to extend 18" to 24" above grade.

B. Outside Sets: Tracer wire should be extended approximately 18" above grade at riser. Connect tracer wire to the riser using a "tracer snap", Item #8. If the appropriate tracer snap is not available, wrap or tie the tracer wire to the riser. Do not permanently attach tracer wire to the riser. Tracer wire should not exceed 6" above the point where it is secured to the riser.

C. Partially tubed services: When the abandoned portion of an existing steel service pipe is used as a sleeve for the new plastic, all cut out sections of the steel pipe to be inserted with plastic, shall be connected using a section of tracer wire to maintain continuity. If the existing service is coated steel, see [Installation of Test Stations for Cathodic Protection \[030026-CS\]](#) and [Installation of Test Stations for Cathodic Protection \[COR04003\]](#) or contact corrosion department for more guidance.

D. Thermite welding of tracer wire to abandoned steel service is only acceptable prior to insertion of the plastic tubing. See [Installation of Test Stations for Cathodic Protection \[030026-CS\]](#).

E. Plastic Mains: The service tracer wire shall be connected to the plastic main tracer wire using item #3 detail A or item #4 (detail B - preferred) in accordance with [Installing Wire Connections \[COR04004\]](#).

F. Coated Steel Mains: Do not connect the tracer wire to the steel main. See [Installation of Test Stations for Cathodic Protection \[030026-CS\]](#) and [Installation of Test Stations for Cathodic Protection \[COR04003\]](#) or contact corrosion department for more guidance.

G. Cast Iron or Bare Steel Mains: Do not connect the tracer wire to the main. It is required in LI and MA, and suggested in all other areas to terminate the tracing wire with a 3# anode.

Tracer Wire Installation Notes

H. Install tracer wire in close proximity to the plastic pipe. Approximately 4" to 6" away from the pipe. LI & MA- Above or alongside, UNY- alongside, RI-Under or alongside. Exception: For trenchless pipe installations, the minimum clearance is waived.

I. Maintain separation of approximately 4" from service riser. Do not permanently connect the tracer wire to the riser.

J. For horizontal directional drill installations, use stainless wire, item #2.

K. Tracer wire installed in boxes should allow enough wire to extend 18" to 24" above grade.

L. Verification: upon completion, the installer shall verify the location of the main or service using the tracer wire and locating device and perform a mark out using the conductive method.

M. LI and MA: Required to terminate the tracing wire with a 3# anode. This is to ground the tracer wire and increase signal strength when locating. This practice is recommended in all areas where signal strength is an issue.

Regional Notes

NYC ONLY: refer to [Installation of Marker Tapes and EMS Pipeline Locators for Mains and Services \[CNST6060-NYC\]](#) for installation of electronic marker ball in place of tracer wire.

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d/b/a
nationalgrid
40 SYLVAN ROAD
WALTHAM, MA 02451

FINAL

PROPOSED GAS MAIN REPLACEMENT
925 LOWELL ROAD
CONCORD, MA

**NATIONAL GRID STANDARD
CONSTRUCTION DETAILS**

DWG SIZE	DESIGNER	ENGINEER	DATE	ASSET I.D.	W.O. NO.:
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PAGE 7 OF 7

DRAWING NO.	SHEET NO.
DPL-CON-067813-1071	C-303

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