

NATIONAL GRID

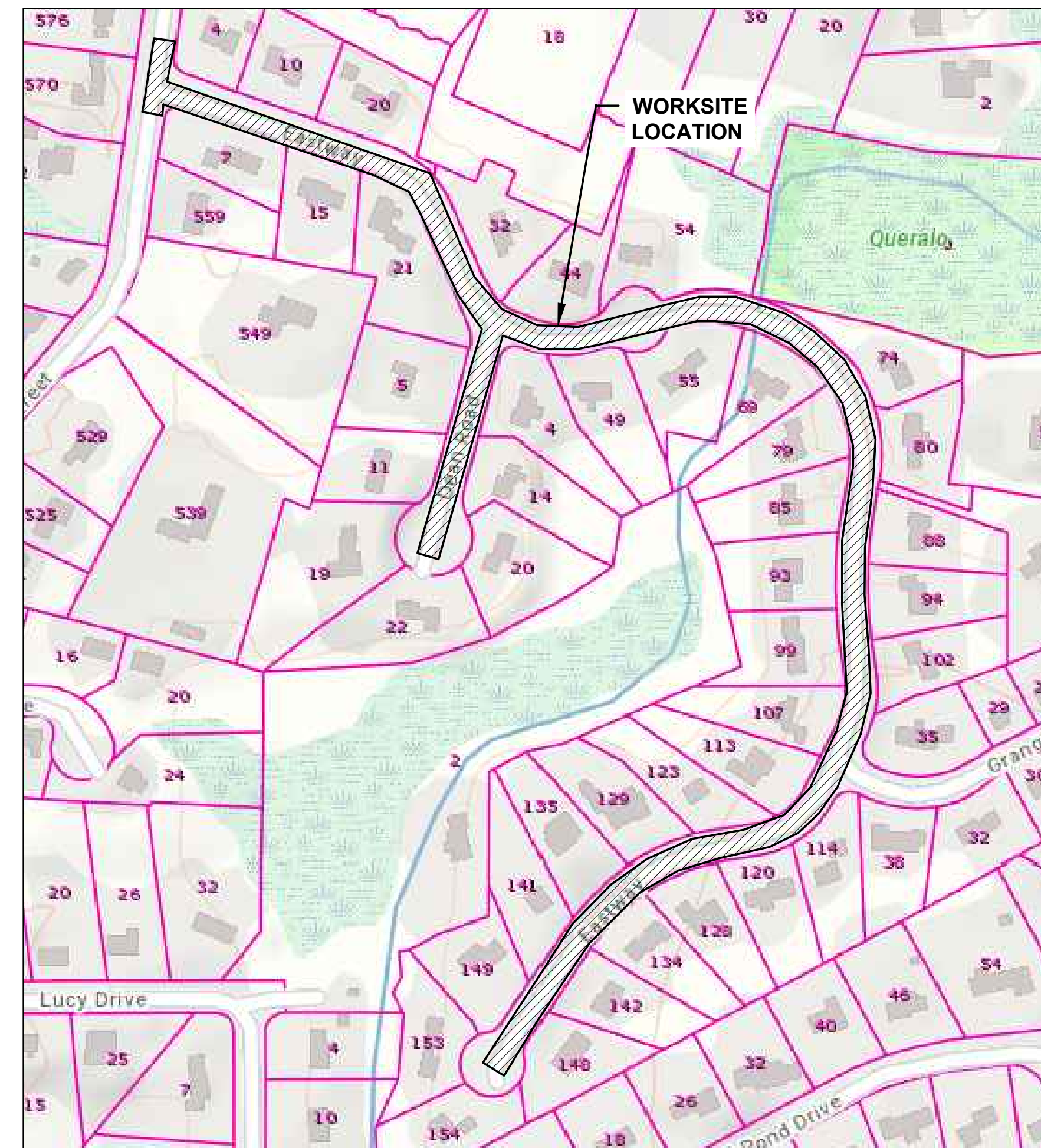
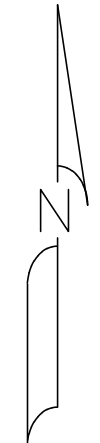
APPROX. 60' OF 6" MDPE (LP TO 60 PSIG) GAS MAIN INSTALLATION

APPROX. 2,620' OF 4" MDPE (LP TO 60 PSIG) GAS MAIN RELAY

APPROX. 370' OF 2" MDPE (LP TO 60 PSIG) GAS MAIN RELAY

1-55 EASTWAY, READING, MA

W.O. NO.: 1401271



LOCUS
SCALE: NTS

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Architecture Engineering Environmental Land Surveying Companies

Andrew J. Cavallo
09/14/21
SIGN & DATE

NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC

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

IFC

PROPOSED GAS MAIN INSTALLATION
2" / 4" / 6" MDPE (LP TO 60 PSIG)
EASTWAY
READING, MA

COVER SHEET

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	T. ATKIN	A. CAVALLO	09/13/21	DISTRIBUTION	1401271

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DRAWING NO. RDG-1401271-01	SHEET NO. G-001
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CONSTRUCTION NOTES

SCOPE OF WORK

NATIONAL GRID WORK ORDER NUMBER 1401271:

1-55 EASTWAY, READING, MA

AS PART OF FY23 GRTHREPA PROGRAM, STRATEGIC ASSET & SYSTEM PLANNING RECOMMENDS THE FOLLOWING:

INSTALL APPROX. 60 FEET OF 6 INCH, 60 PSIG PLASTIC FROM THE EXISTING 6 INCH, 60 PSIG PLASTIC AT 576 PEARL ST TO THE INTERSECTION OF PEARL ST AND EAST WAY.

INSTALL 1,110 FT OF 4 IN PL 60# MAIN IN EASTWAY, FROM PEARL ST TO THE EXISTING 6 INCH, LP COATED STEEL (1980) - (URDG0001) MAIN IN EASTWAY. PRESSURE TEST THE EXISTING 6 INCH, LP COATED STEEL (1980) - (URDG0001) MAIN CROSSING THE CULVERT IN EASTWAY TO REQUIRED SPECIFICATIONS FOR 60 PSIG AS INDICATED IN GAS WORK METHODS; ABANDON APPROX. 1,000 FT OF 6 INCH, LP BARE STEEL (1965) AND 110 FEET OF 6 INCH, LP PLASTIC (1980)

INSTALL 1,510 FEET OF 4 IN PL 60# MAIN IN EASTWAY, FROM THE PRESSURE UPGRADED 6 INCH, LP COATED STEEL (1980) - (URDG0001) MAIN TO THE END OF MAIN IN EASTWAY. ABANDON APPROX. 1,510 FEET PF 6 INCH, LP PLASTIC (1980).

INSTALL 370 FT OF 2 IN PL 60# MAIN IN DEAN RD, FROM EASTWAY TO EOM. ABANDON 370 FT OF 4 IN CS LP MAIN IN DEAN RD.

4 MAIN CONNECTIONS / CUT OFFS.

ALL ACTIVE SERVICES TO BE TRANSFERRED FROM THE MAIN TO BE RETIRED. NOTE: THIS PROJECT INVOLVES REPLACING LP GAS MAIN WITH 60 PSIG GAS MAIN.

ENSURE THAT ALL SERVICES ARE FITTED APPROPRIATELY WITH SERVICE REGULATORS PRIOR TO TRANSFERRING OVER FROM THE LP TO 60 PSIG SYSTEM.

GENERAL

- NO FIELD CHANGES SHALL BE MADE TO THIS DESIGN WITHOUT APPROVAL FROM THE ASSIGNED NATIONAL GRID ENGINEER: ENGINEER: RUSSELL STEVENS
PHONE: (781) 439-5992
EMAIL: RUSSELL.STEVENS@NATIONALGRID.COM
- 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.
- NEW MAINS SHOULD 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 SHOULD 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 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.

DESIGN CRITERIA

- DESIGN IN ACCORDANCE WITH THE FOLLOWING:
 - ENG02001 : DESIGN OF GAS SERVICES
 - ENG04001: DESIGN OF DISTRIBUTION MAINS
 - ENG04010: DESIGN REQUIREMENTS FOR INSTALLATION OF CASINGS
- PROPOSED PIPING:
 - DESIGN CLASS LOCATION - 4
 - NOMINAL SIZE – 2 INCH, 4 INCH, 6 INCH
 - MATERIAL – MDPE
 - SYSTEM MAOP – 60 PSIG.
- PIPE SIZE DETERMINED BY NATIONAL GRID STRATEGIC ASSET AND SYSTEM PLANNING.

CODES & STANDARDS

- WORK SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL CODES IN ADDITIONAL 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: COMMERCIALLY 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 DISPLACEMENT
 - 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
- SERVICE SPECIFIC CONSTRUCTION STANDARDS, 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 1,000 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 SERVICE
 - 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
 - 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 MAOP LIVE PLASTIC GAS MAIN USING MCELROY HOT TAPPING TOOL
 - 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.

PRESSURE TESTING

- PRESSURE TEST MAIN 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
- 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)
 - 10% (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 (MA)
- 24 HOUR NOTICE IS REQUIRED PRIOR TO INSTALLATION OF INSULATED FITTINGS TO ALLOW FOR ACCEPTANCE TESTING.
- NATIONAL GRID CORROSION GAS POLICIES AND WORK METHODS INCLUDE:
 - 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 CONNECTIONS
 - COR04005: INSTALLATION OF INSULATING JOINTS FOR CATHODIC PROTECTION
 - 030031-CS: FACILITY COATING GUIDE
- CORROSION DESIGN:
 - INSTALL A 2-WIRE TEST STATION TO THE EXISTING 6"-CS-LP MAIN (1965). INCLUDE 4-17 LB ANODES SPACED AT LEAST 8FT APART AND 1FT BELOW THE MAIN USING A SINGLE HEADER CABLE. INSTALL THE 9X9 TEST STATION IN AN ACCESSIBLE LOCATION. MRDG0011
 - INSTALL A 2-WIRE TEST STATION TO THE EXISTING 6"-LP-CS MAIN AT THE COATED STEEL/PLASTIC INTERFACE. INCLUDE 4-17# ANODES SPACED AT LEAST 8 FT APART AND 1 FT BELOW THE MAIN USING A SINGLE HEADER CABLE. INSTALL THE 9X9 TEST STATION IN AN ACCESSIBLE LOCATION. *URDG0001*

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 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 HAULTED 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 ENVIRONMENT 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: PROPOSED WORK IS LOCATED WITHIN 100 FEET OF WETLANDS AND/OR BODIES OF WATER / WITH 200 FEET OF A RIVER OR A STREAM (*25 FEET IN BOSTON, BROCKTON, CAMBRIDGE, CHELSEA, EVERETT, FALL RIVER, LAWRENCE, LOWELL, MALDEN, NEW BEDFORD, SOMERVILLE, SPRINGFIELD, WINTHROP, OR WORCHESTER) / WITHIN A FLOODPLAIN.
- ENVIRONMENTAL PERMIT AND/OR THE USE OF ENVIRONMENTAL BMPS MAY BE REQUIRED. SEE ENVIRONMENTAL MEMO FOR DETAILS.

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 PROCEDURES COVER THE FOLLOWING CATEGORIES:
 - A- ADMINISTRATIVE; B- INSPECTIONS; C- WALKING WORKING SURFACES; D- MEANS OF EGRESS; E- MATERIAL HANDLING AND STORAGE; F- TOXIC AND HAZARDOUS SUBSTANCES; G- HAZARDOUS MATERIALS; H- PERSONAL PROTECTIVE EQUIPMENT; I- GENERAL ENVIRONMENTAL CONTROLS; J- ACCIDENT INVESTIGATION; K- MACHINERY AND GUARDING; L- WELDING/CUTTING/BRAZING; M- EXCAVATIONS; N- CONTRACTORS; FIRE PROTECTION; O- 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

OTHER PERMITTING REQUIREMENTS


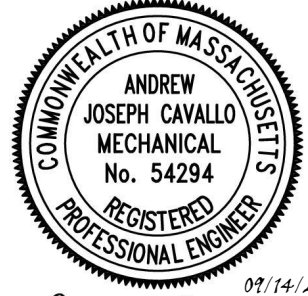


- STREET OPENING PERMIT

REFERENCE DRAWINGS

- UNDERGROUND UTILITIES ARE NOT SHOWN. NATIONAL GRID FACILITIES ARE SHOWN BASED ON AVAILABLE MAPS AND RECORDS.

DESIGN CONSULTANT

- BL COMPANIES
ANDREW J. CAVALLO, P.E.
PHONE: (781) 619-9515
EMAIL: ACAVALLO@BLCOMPANIES.COM

 Architecture Engineering Environmental Land Surveying Companies	 ANDREW JOSEPH CAVALLO MECHANICAL No. 54294 REGISTERED PROFESSIONAL ENGINEER	BOSTON GAS COMPANY d/b/a  40 SYLVAN ROAD WALTHAM, MA 02451 						PROPOSED GAS MAIN INSTALLATION 2" / 4" / 6" MDPE (LP TO 60 PSIG) EASTWAY READING, MA CONSTRUCTION NOTES						PAGE 2 OF 13	
		0 ISSUED FOR CONSTRUCTION 09/13/21 TA LA AC	NO. DESCRIPTION DATE DR.BY CK.BY APP.BY	DWG SIZE 22"X34"	DESIGNER T. ATKIN	ENGINEER A. CAVALLO	DATE: 09/13/21	ASSET I.D. DISTRIBUTION	W.O. NO.: 1401271	DRAWING NO. RDG-1401271-02	SHEET NO. G-002				

BILL OF MATERIALS						
ITEM	QTY	UOM	DESCRIPTION	SIZE (IN.)	NATIONAL GRID REFERENCE	SAP ID NUMBER
1	2,620	FT	PIPE, PLASTIC, MDPE, SDR 11.5	4	120026-MS	9340857
2	370	FT	PIPE, PLASTIC, MDPE, SDR 11	2	120026-MS	9340876
3	60	FT	PIPE, PLASTIC, MDPE, SDR 11.5	6	120026-MS	9384339
4	1	EA	REDUCER, PLASTIC, MDPE	4 x 2	CS-FIT013	9384553
5	1	EA	TEE, PLASTIC, FULL, MDPE	4	CS-FIT012	9342523
6	2	EA	COUPLING, PLASTIC ELECTROFUSION	6	CS-FIT015	9314592
7	2	EA	VALVE, BALL, MDPE, FULL PORT	6	VALV6020	9323032
8	2	EA	VALVE, BOX ASSEMBLY (FOR FULL PORT 6" VALVE)	6	VALV6020	9339893
9	3	EA	CAP, MDPE, BUTT FUSION	4	CS-FIT010	9339534
10	1	EA	CAP, MDPE, BUTT FUSION	2	CS-FIT010	9339540
11	2	EA	END CAP, MECHANICAL, FOR STEEL, RESTRAINING	6	FITS6024	9314880
12	1	EA	CAP, MDPE, BUTT FUSION	6	CS-FIT010	9339733
13	1	EA	TEE, PLASTIC, FULL, MDPE	6	CS-FIT012	9342522
14	3	EA	REDUCER, PLASTIC, MDPE	6 x 4	CS-FIT013	9342678
15	3	EA	VALVE, BALL, MDPE, FULL PORT	4	VALV6020	9341709
16	3	EA	VALVE, BOX ASSEMBLY (FOR FULL PORT 4" VALVE)	4	VALV6020	9339892
17	2	EA	ELBOW, PLASTIC, 45 DEGREE, MDPE	6	CS-FIT011	9341401
18	4	EA	ELBOW, PLASTIC, 45 DEGREE, MDPE	4	CS-FIT011	9341400
19	4	EA	COUPLING, PLASTIC ELECTROFUSION	4	CS-FIT015	9314593
20	2	EA	TRANSITION, PLASTIC TO STEEL	6	120026-MS	9339395
21	2	EA	CAP, PLASTIC, ELECTROFUSION	4	CS-FIT015	9393582
22	1	EA	VALVE, BALL, MDPE, FULL PORT	2	VALV6020	9341784
23	1	EA	VALVE, BOX ASSEMBLY	2	VALV6020	9339890
GENERAL						
G1	A/R	FT	TRACER WIRE		CNST6061	9315005
G2	A/R	ROLL	YELLOW CAUTION TAPE - GAS MAIN - 6" WIDE	6	CNST6060	9341904
PRESSURE TESTING (TEMPORARY)						
P1	A/R	EA	CAP, MDPE, BUTT FUSION	6	CS-FIT010	9339733
P2	A/R	EA	CAP, MDPE, BUTT FUSION	4	CS-FIT010	9339534
P3	A/R	EA	CAP, MDPE, BUTT FUSION	2	CS-FIT010	9339540
CATHODIC PROTECTION						
C1	2	EA	CP TEST BOX W/ COVER	N/A	030026-CS	(SEE STD)
C2	8	EA	17# ANODE	N/A	030024-CS	9311183
C3	A/R	FT	WIRE NO. 8	N/A	030026-CS	9307539
*ACTUAL LENGTH/QUANTITY OF PIPE AND FITTINGS MAY VARY DUE TO FIELD CONDITIONS. ADDITIONAL MATERIALS MAY NOT BE REFERENCED ABOVE THAT ARE INCLUDED IN THE BOM OF NATIONAL GRID CONSTRUCTIONS STANDARDS REFERENCED IN THIS DESIGN PACKAGE.						



**Architecture
Engineering
Environmental
Land Surveying**
Companies

ANDREW JOSEPH CAVALLO
MECHANICAL
No. 54294
REGISTERED
PROFESSIONAL ENGINEER
09/14/21
SIGN & DATE

NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC

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

IFC

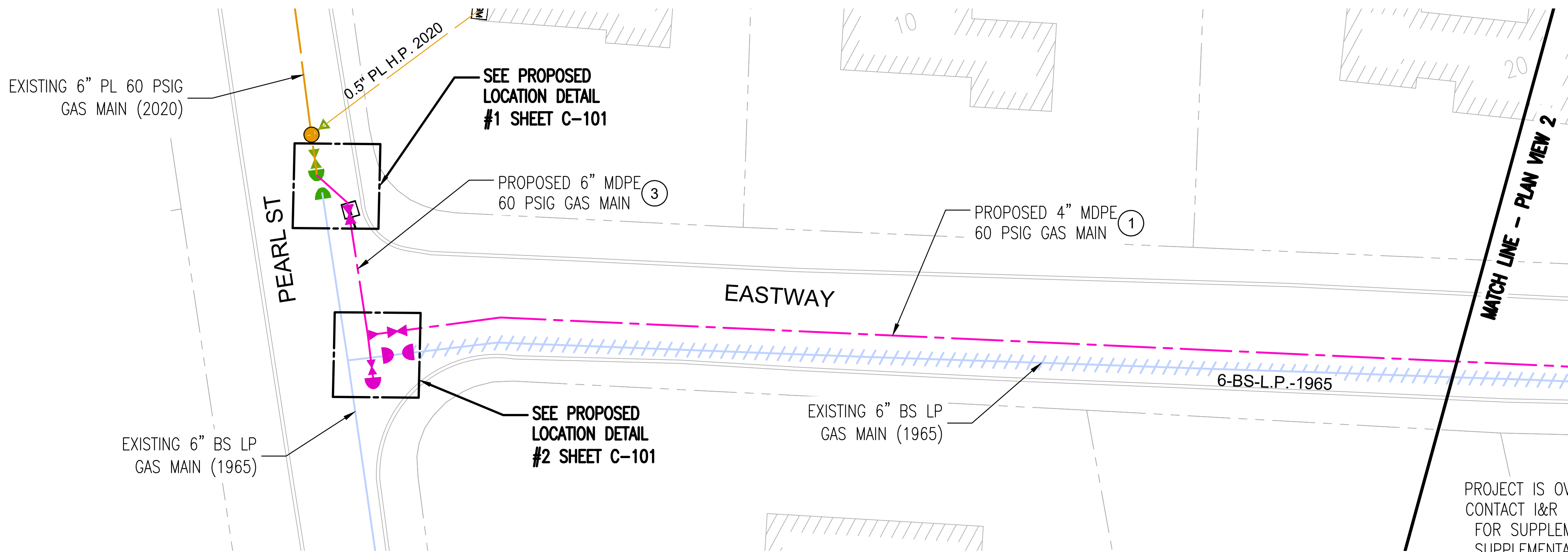
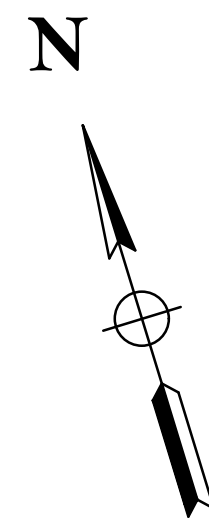
PROPOSED GAS MAIN INSTALLATION
2" / 4" / 6" MDPE (LP TO 60 PSIG)
EASTWAY
READING, MA

BILL OF MATERIALS

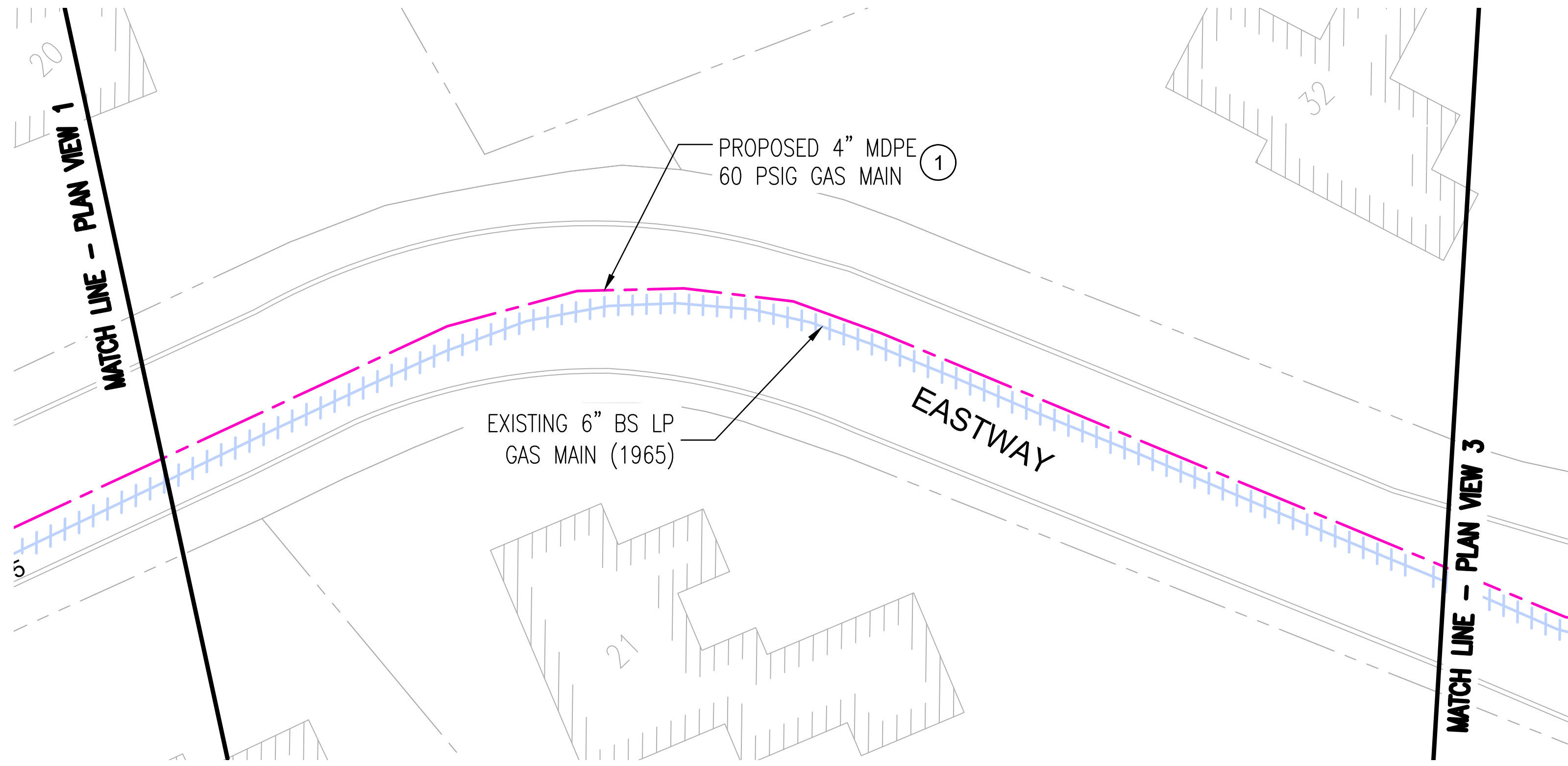
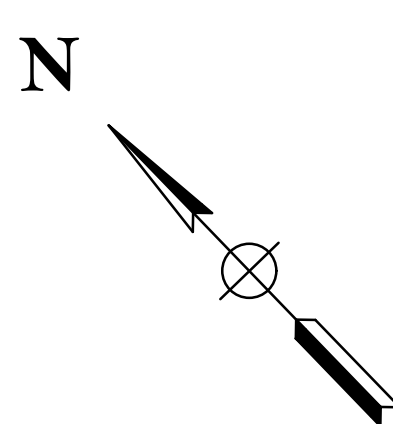
DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22" X 34"	T. ATKIN	A. CAVALLO	09/13/21	DISTRIBUTION	1401271

PAGE 3 OF 13

DRAWING NO.	SHEET NO.
RDG-1401271-03	G-003



PLAN VIEW 1
20 10 0 20
SCALE 1"=20'

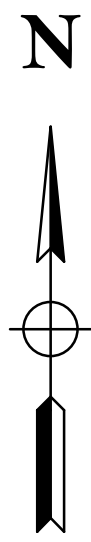


PLAN VIEW 2
20 10 0 20
SCALE 1"=20'

DRAWING LEGEND

	EXISTING BS LP GAS MAIN (TO BE ABANDONED)		PROPOSED VALVE
	EXISTING BS LP GAS MAIN		PROPOSED REDUCER
	EXISTING PL 60 PSIG GAS MAIN		PROPOSED END CAP
	PROPOSED MDPE 60 PSIG GAS MAIN		

		 40 SYLVAN ROAD WALTHAM, MA 02451	BOSTON GAS COMPANY d/b/a PROPOSED GAS MAIN INSTALLATION 2" / 4" / 6" MDPE (LP TO 60 PSIG) EASTWAY READING, MA PROPOSED INSTALLATION PLAN SHEET 1 OF 4	PAGE 5 OF 13 DRAWING NO. RDG-1401271-05 SHEET NO. C-002																					
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">DWG SIZE</td> <td style="width: 10%; text-align: center;">DESIGNER</td> <td style="width: 10%; text-align: center;">ENGINEER</td> <td style="width: 10%; text-align: center;">DATE:</td> <td style="width: 10%; text-align: center;">ASSET I.D.</td> <td style="width: 10%; text-align: center;">W.O. NO.:</td> </tr> <tr> <td style="text-align: center;">22"X34"</td> <td style="text-align: center;">T. ATKIN</td> <td style="text-align: center;">A. CAVALLO</td> <td style="text-align: center;">09/13/21</td> <td style="text-align: center;">DISTRIBUTION</td> <td style="text-align: center;">1401271</td> </tr> </table>	DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:	22"X34"	T. ATKIN	A. CAVALLO	09/13/21	DISTRIBUTION	1401271	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">NO.</td> <td style="width: 40%; text-align: center;">DESCRIPTION</td> <td style="width: 10%; text-align: center;">DATE</td> <td style="width: 10%; text-align: center;">DR. BY</td> <td style="width: 10%; text-align: center;">CK. BY</td> <td style="width: 10%; text-align: center;">APP. BY</td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">ISSUED FOR CONSTRUCTION</td> <td style="text-align: center;">09/13/21</td> <td style="text-align: center;">TA</td> <td style="text-align: center;">LA</td> <td style="text-align: center;">AC</td> </tr> </table>	NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY	0	ISSUED FOR CONSTRUCTION	09/13/21	TA
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NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY																				
0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC																				



MATCH LINE - PLAN VIEW 2

PROPOSED 4" MDPE FULL TEE (5)

PROPOSED 4" MDPE 60 PSIG GAS MAIN (1)

SEE PROPOSED LOCATION DETAIL #3 SHEET C-102

EXISTING 6" CS LP GAS MAIN (1980)

EXISTING CULVERT

MATCH LINE - PLAN VIEW 4

EASTWAY

PROPOSED 2" MDPE VALVE (23) (22)

EXISTING 4" CS LP GAS MAIN (1971)

DEAN RD

PROPOSED MDPE 4"x2" REDUCER (4)

EXISTING 6" BS LP GAS MAIN (1965)

EXISTING 6" PL LP GAS MAIN (1980)

SEE PROPOSED LOCATION DETAIL #4 SHEET C-102

EXISTING 6" PL LP GAS MAIN (1980)

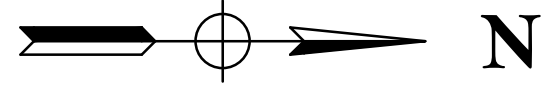
PROPOSED 2" MDPE 60 PSIG GAS MAIN (2)

MATCH LINE - PLAN VIEW 7
2" PL LP

PLAN VIEW 3
SCALE 1"=20'

PROJECT IS OVER 2500 FEET IN LENGTH. PLEASE CONTACT I&R PRIOR TO EXECUTING THE PROJECT FOR SUPPLEMENTAL ODORIZATION. INRO6002 - SUPPLEMENTAL ORDORIZATION FOR NEW PIPING

MATCH LINE - PLAN VIEW 3



MATCH LINE - PLAN VIEW 5

6-PL-L.P.-1980

EXISTING 6" PL LP GAS MAIN (1980)

EASTWAY

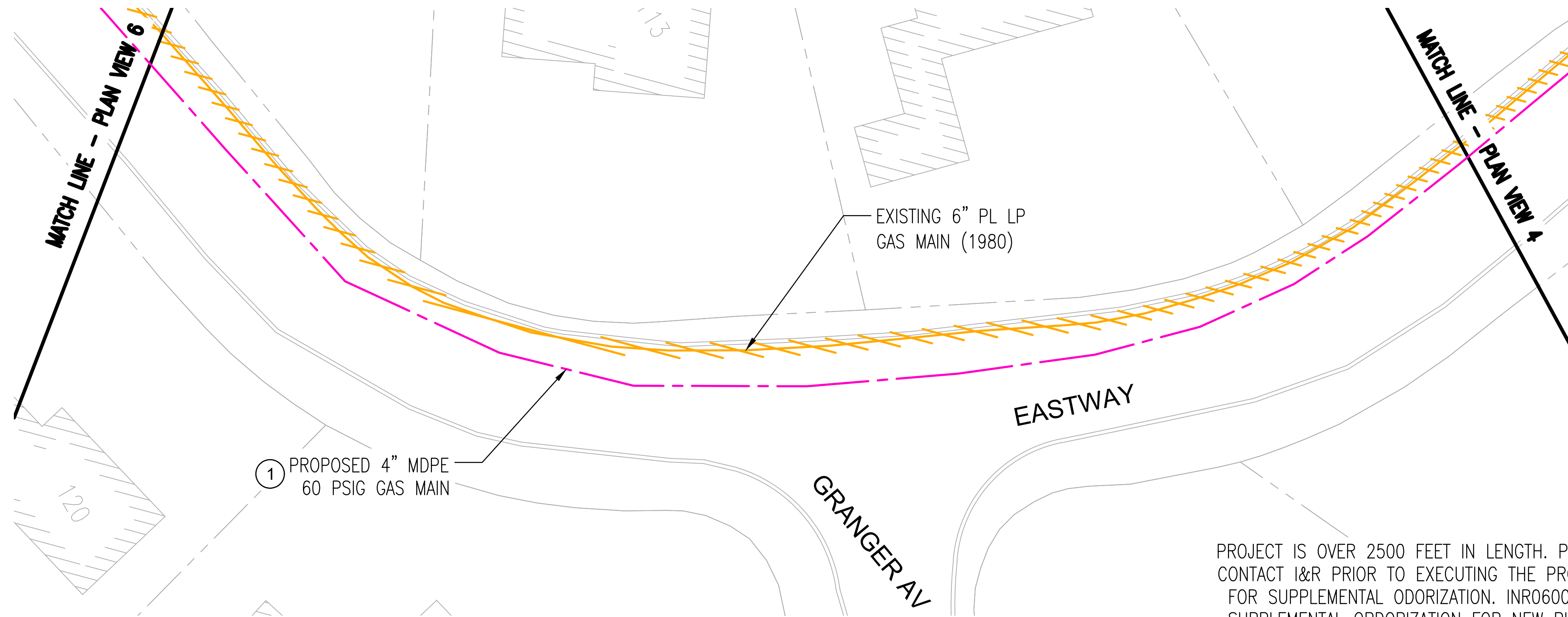
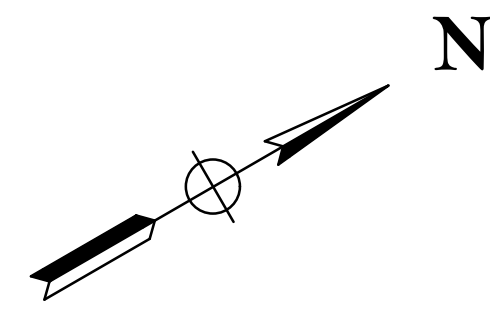
PROPOSED 4" MDPE 60 PSIG GAS MAIN (1)

- DRAWING LEGEND
- EXISTING BS LP GAS MAIN (TO BE ABANDONED)
 - EXISTING CS LP GAS MAIN (TO BE ABANDONED)
 - EXISTING PL LP GAS MAIN (TO BE ABANDONED)
 - EXISTING CULVERT
 - EXISTING BS LP GAS MAIN
 - EXISTING CS LP GAS MAIN
 - EXISTING PE LP GAS MAIN
 - PROPOSED MDPE 60 PSIG GAS MAIN
 - PROPOSED VALVE
 - PROPOSED REDUCER
 - PROPOSED END CAP

PLAN VIEW 4
SCALE 1"=20'

PROJECT IS OVER 2500 FEET IN LENGTH. PLEASE CONTACT I&R PRIOR TO EXECUTING THE PROJECT FOR SUPPLEMENTAL ODORIZATION. INRO6002 - SUPPLEMENTAL ORDORIZATION FOR NEW PIPING

		<table border="1"> <tr> <td>NO.</td> <td>ISSUED FOR CONSTRUCTION</td> <td>09/13/21</td> <td>TA</td> <td>LA</td> <td>AC</td> </tr> <tr> <td>NO.</td> <td>DESCRIPTION</td> <td>DATE</td> <td>DR.BY</td> <td>CK.BY</td> <td>APP.BY</td> </tr> </table>	NO.	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC	NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY	<p>BOSTON GAS COMPANY d/b/a nationalgrid 40 SYLVAN ROAD WALTHAM, MA 02451</p> <p>IFC</p>	<p>PROPOSED GAS MAIN INSTALLATION 2"/4"/6" MDPE (LP TO 60 PSIG) EASTWAY READING, MA</p> <p>PROPOSED INSTALLATION PLAN SHEET 2 OF 4</p>						<p>PAGE 6 OF 13</p>	
			NO.	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC															
NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY																		
<p>DWG SIZE: 22"X34"</p> <p>DESIGNER: T. ATKIN</p> <p>ENGINEER: A. CAVALLO</p> <p>DATE: 09/13/21</p> <p>ASSET I.D.: DISTRIBUTION</p> <p>W.O. NO.: 1401271</p>	<p>DRAWING NO. RDG-1401271-06</p>	<p>SHEET NO. C-003</p>																					



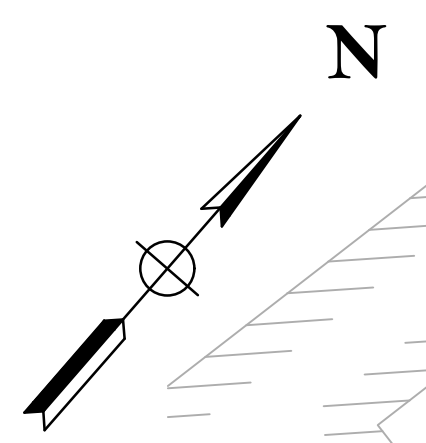
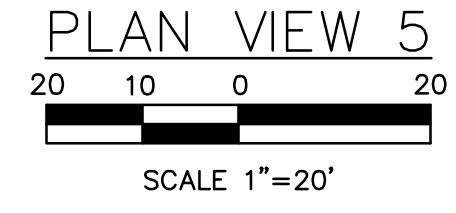
① PROPOSED 4" MDPE 60 PSIG GAS MAIN

EXISTING 6" PL LP GAS MAIN (1980)

EASTWAY

GRANGER AV

PROJECT IS OVER 2500 FEET IN LENGTH. PLEASE CONTACT I&R PRIOR TO EXECUTING THE PROJECT FOR SUPPLEMENTAL ODORIZATION. INR06002 - SUPPLEMENTAL ORDORIZATION FOR NEW PIPING

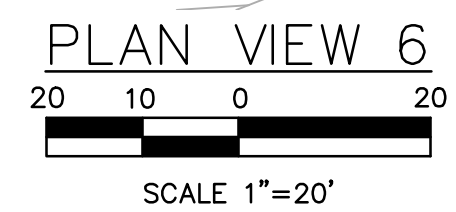


⑨ PROPOSED 4" MDPE BF END CAP

① PROPOSED 4" MDPE 60 PSIG GAS MAIN

EXISTING 6" PL LP GAS MAIN (1980)

PROJECT IS OVER 2500 FEET IN LENGTH. PLEASE CONTACT I&R PRIOR TO EXECUTING THE PROJECT FOR SUPPLEMENTAL ODORIZATION. INR06002 - SUPPLEMENTAL ORDORIZATION FOR NEW PIPING



- DRAWING LEGEND**
- EXISTING PL LP GAS MAIN (TO BE ABANDONED)
 - EXISTING PL LP GAS MAIN
 - PROPOSED MDPE 60 PSIG GAS MAIN
 - PROPOSED END CAP



NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY
0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC

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

IFC

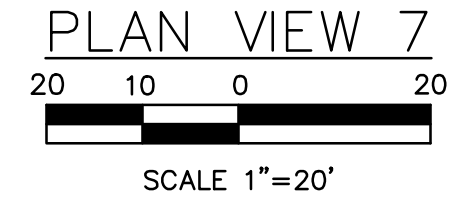
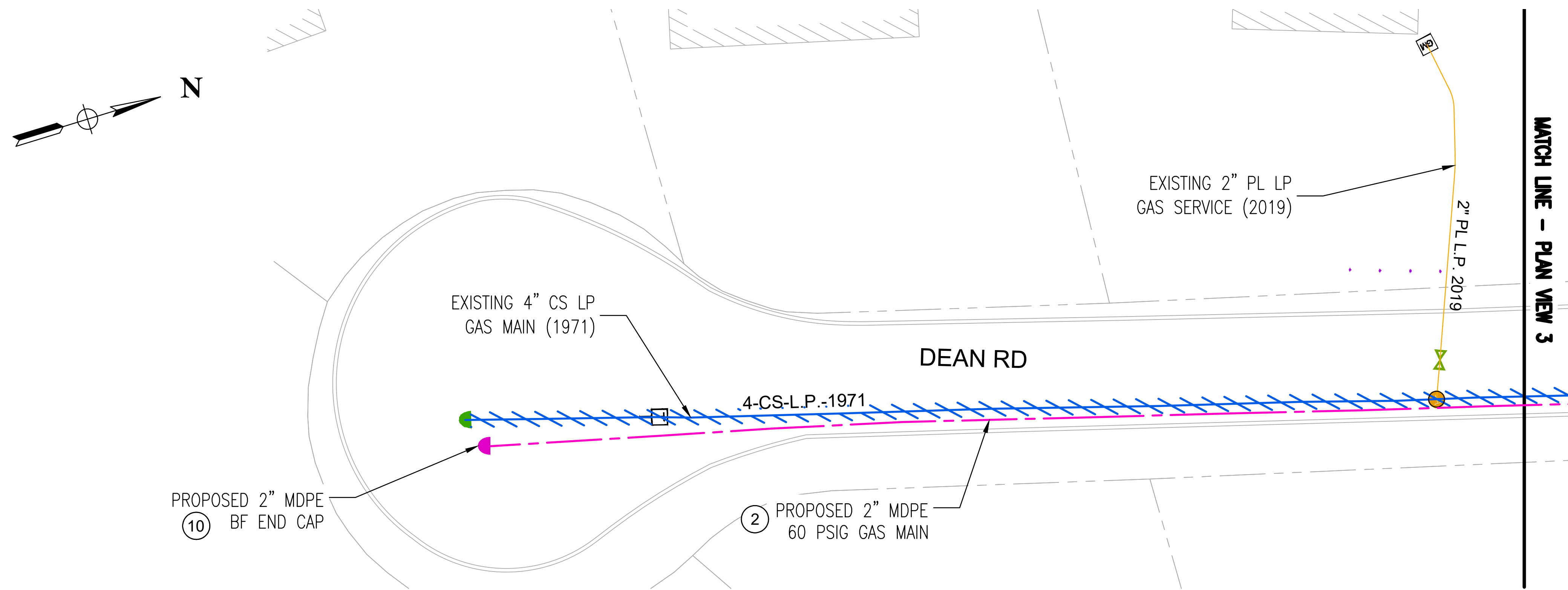
PROPOSED GAS MAIN INSTALLATION
2"/4"/6" MDPE (LP TO 60 PSIG)
EASTWAY
READING, MA

PROPOSED INSTALLATION PLAN SHEET 3 OF 4

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"x34"	T. ATKIN	A. CAVALLO	09/13/21	DISTRIBUTION	1401271

PAGE 7 OF 13

DRAWING NO.	SHEET NO.
RDG-1401271-07	C-004



PROJECT IS OVER 2500 FEET IN LENGTH. PLEASE CONTACT I&R PRIOR TO EXECUTING THE PROJECT FOR SUPPLEMENTAL ODORIZATION. INR06002 – SUPPLEMENTAL ORDORIZATION FOR NEW PIPING

DRAWING LEGEND

- EXISTING CS LP GAS MAIN (TO BE ABANDONED)
- EXISTING CS LP GAS MAIN
- EXISTING PL LP GAS SERVICE
- PROPOSED MDPE 60 PSIG GAS MAIN
- PROPOSED END CAP

NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC

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

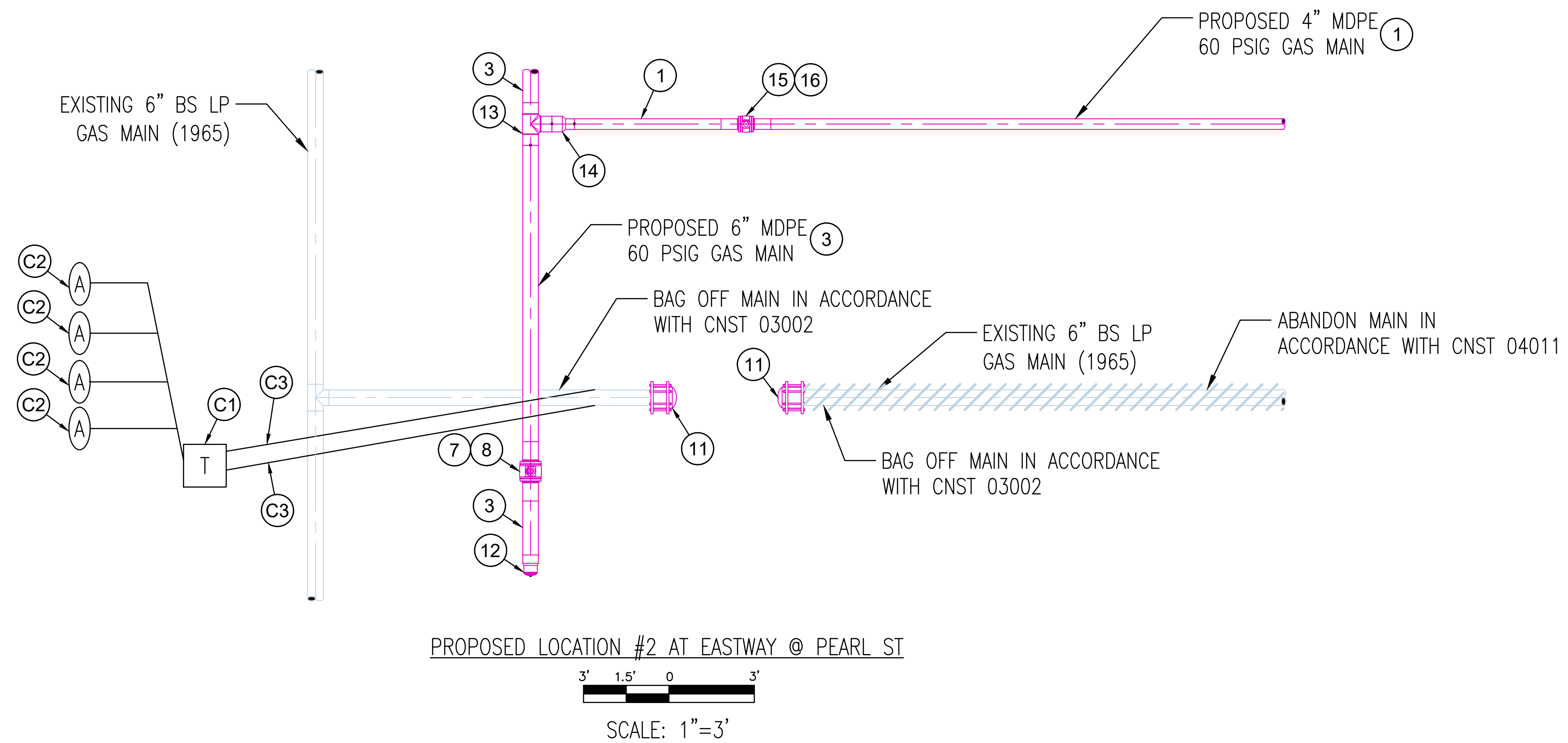
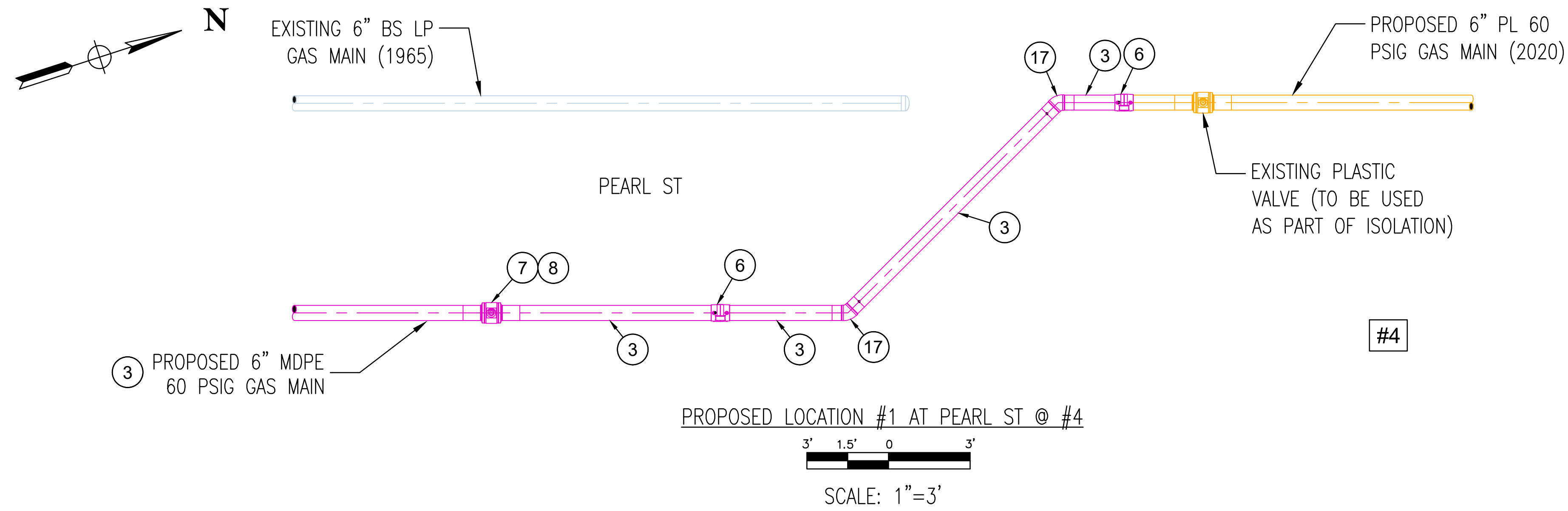
PROPOSED GAS MAIN INSTALLATION
2"/4"/6" MDPE (LP TO 60 PSIG)
EASTWAY
READING, MA

PROPOSED INSTALLATION PLAN SHEET 4 OF 4

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	T. ATKIN	A. CAVALLO	09/13/21	DISTRIBUTION	1401271

PAGE 8 OF 13

DRAWING NO.	SHEET NO.
RDG-1401271-08	C-005

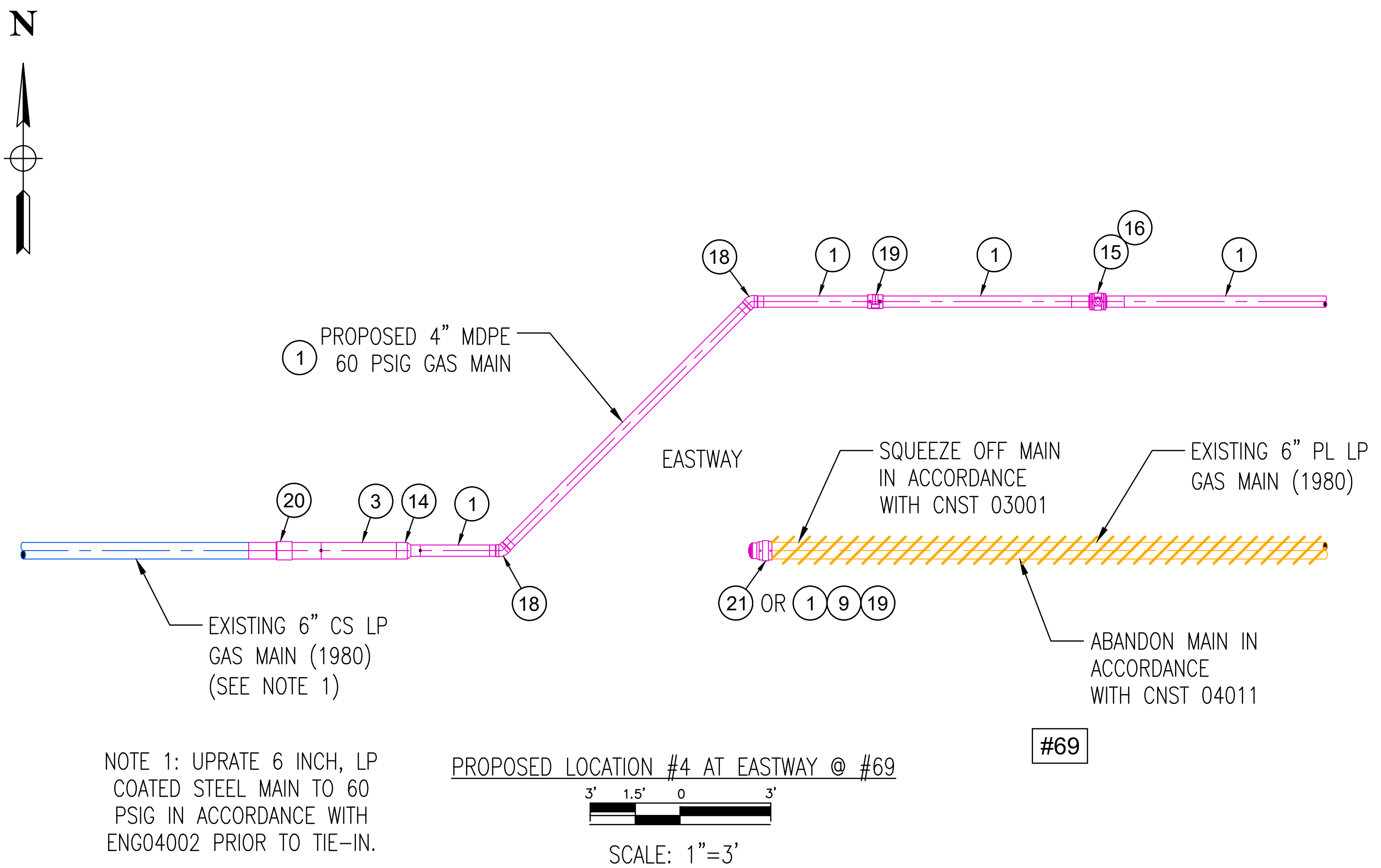
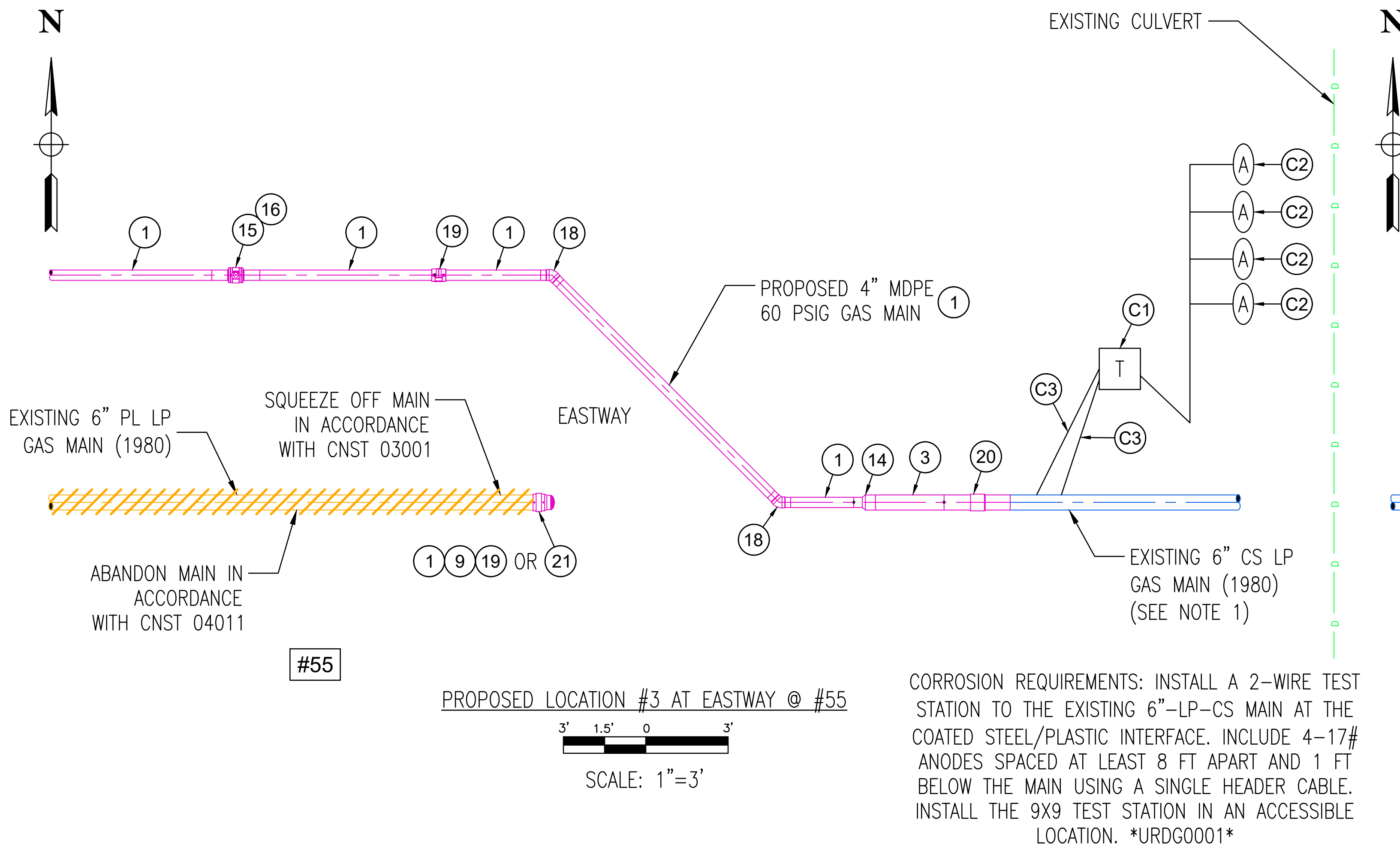


CORROSION REQUIREMENTS: INSTALL A 2-WIRE TEST STATION TO THE EXISTING 6"-CS-LP MAIN (1965). INCLUDE 4-17 LB ANODES SPACED AT LEAST 8 FT APART AND 1 FT BELOW THE MAIN USING A SINGLE HEADER CABLE. INSTALL THE 9X9 TEST STATION IN AN ACCESSIBLE LOCATION. MRDG0011

DRAWING LEGEND

	EXISTING BS LP GAS MAIN (TO BE ABANDONED)
	EXISTING BS LP GAS MAIN
	EXISTING PL 60 PSIG GAS MAIN
	PROPOSED MDPE 60 PSIG GAS MAIN

		<table border="1"> <tr> <td>NO.</td> <td>DESCRIPTION</td> <td>DATE</td> <td>DR. BY</td> <td>CK. BY</td> <td>APP. BY</td> </tr> <tr> <td>0</td> <td>ISSUED FOR CONSTRUCTION</td> <td>09/13/21</td> <td>TA</td> <td>LA</td> <td>AC</td> </tr> </table>	NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY	0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC	BOSTON GAS COMPANY d/b/a nationalgrid 40 SYLVAN ROAD WALTHAM, MA 02451	PROPOSED GAS MAIN INSTALLATION 2"/4"/6" MDPE (LP TO 60 PSIG) EASTWAY READING, MA	PAGE 9 OF 13		
			NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY											
0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC														
	PROPOSED LOCATION DETAIL SHEET 1 OF 2	<table border="1"> <tr> <td>DWG SIZE</td> <td>DESIGNER</td> <td>ENGINEER</td> <td>DATE:</td> <td>ASSET I.D.</td> <td>W.O. NO.:</td> </tr> <tr> <td>22"X34"</td> <td>T. ATKIN</td> <td>A. CAVALLO</td> <td>09/13/21</td> <td>DISTRIBUTION</td> <td>1401271</td> </tr> </table>	DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:	22"X34"	T. ATKIN	A. CAVALLO	09/13/21	DISTRIBUTION	1401271	<table border="1"> <tr> <td>DRAWING NO.</td> <td>SHEET NO.</td> </tr> <tr> <td>RDG-1401271-09</td> <td>C-101</td> </tr> </table>	DRAWING NO.	SHEET NO.	RDG-1401271-09	C-101
DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:														
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DRAWING NO.	SHEET NO.																		
RDG-1401271-09	C-101																		

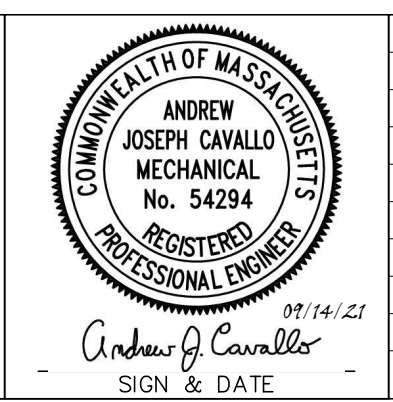


CORROSION REQUIREMENTS: INSTALL A 2-WIRE TEST STATION TO THE EXISTING 6"-LP-CS MAIN AT THE COATED STEEL/PLASTIC INTERFACE. INCLUDE 4-17# ANODES SPACED AT LEAST 8 FT APART AND 1 FT BELOW THE MAIN USING A SINGLE HEADER CABLE. INSTALL THE 9X9 TEST STATION IN AN ACCESSIBLE LOCATION. *URDG0001*

NOTE 1: UPRATE 6 INCH, LP COATED STEEL MAIN TO 60 PSIG IN ACCORDANCE WITH ENGO4002 PRIOR TO TIE-IN.

DRAWING LEGEND

- EXISTING CULVERT
- EXISTING BS LP GAS MAIN
- EXISTING PL LP GAS MAIN (TO BE ABANDONED)
- EXISTING PL LP GAS MAIN
- PROPOSED MDPE 60 PSIG GAS MAIN



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BOSTON GAS COMPANY
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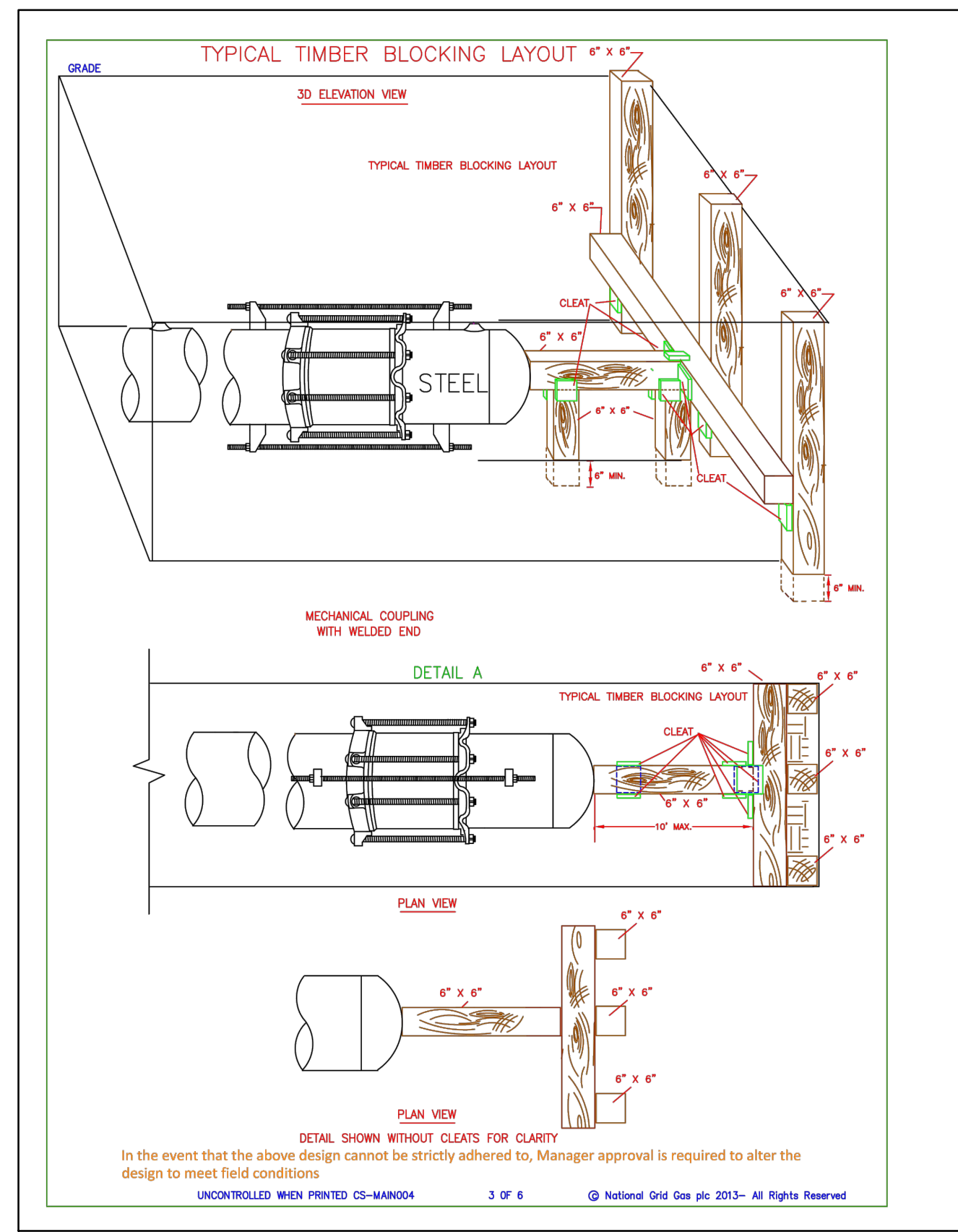
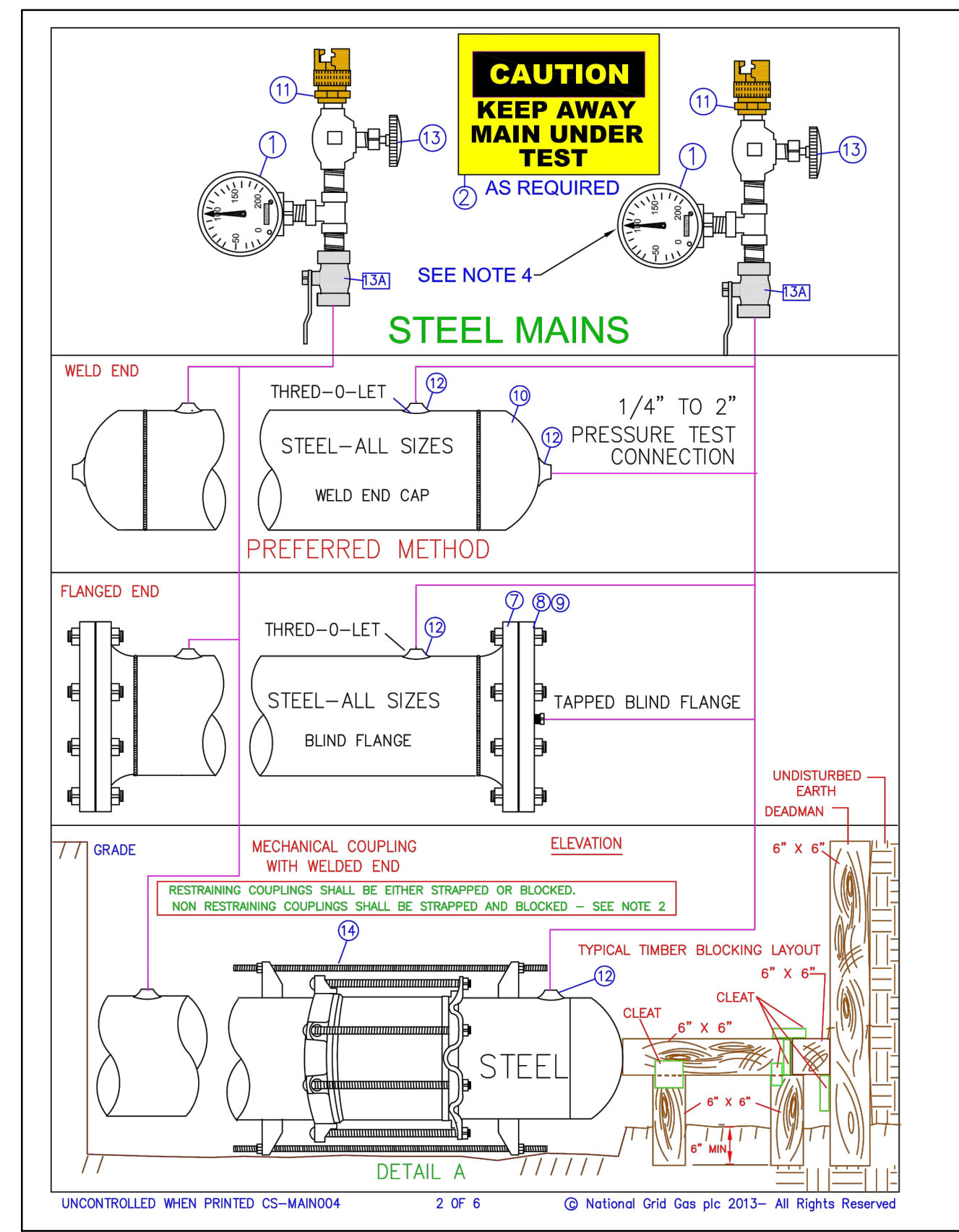
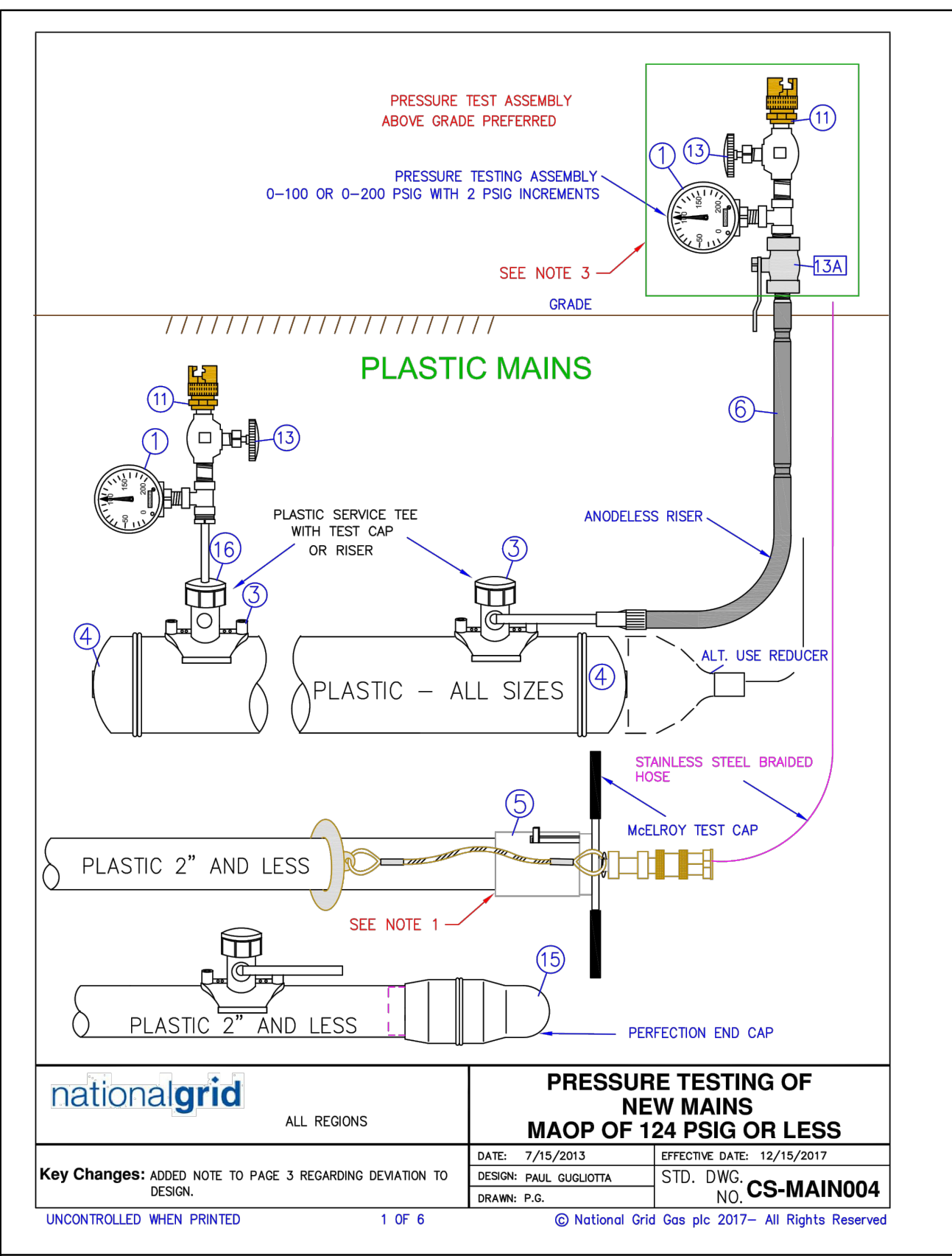
PROPOSED GAS MAIN INSTALLATION
2"/4"/6" MDPE (LP TO 60 PSIG)
EASTWAY
READING, MA

PROPOSED LOCATION DETAIL SHEET 2 OF 2

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	T. ATKIN	A. CAVALLO	09/13/21	DISTRIBUTION	1401271

PAGE 10 OF 13

DRAWING NO.	SHEET NO.
RDG-1401271-10	C-102



NOTES:
 1. INSTALL PER MCELROY MANUFACTURER'S INSTRUCTIONS.
 2. 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.
 3. 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 EMBEDEDMENT DISTANCE FROM THE WALL, THEN BLOCKING IS REQUIRED TO THE TABLE BELOW 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	5
3	6
4	12
6	24
8	41
12	61

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

3. IT IS RECOMMENDED THAT THE GAUGE ASSEMBLY BE ABOVE GRADE TO PREVENT PERSONNEL FROM ENTERING THE TRENCH WHILE THE PRESSURE TEST IS UNDERWAY.
 4. 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. (2 PSIG INCREMENTS READ IN NY STATE ONLY).
 5. REFER TO CNST04003 "PRESSURE TESTING OF MAINS OPERATING BELOW 124 PSIG" FOR TESTING AND DESIGN REQUIREMENTS.

ITEM	DESCRIPTION	SAP ITEM ID LI / MA / NYC	SAP ITEM RI AND UNY
1	PRESSURE GAUGE 0-100 OR 0-200 PSIG - 2 PSI INCREMENTS	934865	TOOL ITEM
	0-200 PSIG STAINLESS STEEL 1/2" NPT 2-1/2" DIAL	933830	TOOL ITEM
	0-100 PSIG STAINLESS STEEL 1/2" NPT 2-1/2" DIAL	NON STOCK	TOOL ITEM
2	TEE SERVICE - ELECTROFUSION YELLOW MID 1/2" CTS BUTT FUSE OUTLET	933240	NON STOCK
3	TEE SERVICE - ELECTROFUSION YELLOW MID 1/2" CTS BUTT FUSE OUTLET	934257 2X1/2	NON STOCK
	4" MAIN X 1/2" BUTT FUSE OUTLET	934258 4X1/2	NON STOCK
	6" MAIN X 1/2" BUTT FUSE OUTLET	934259 6X1/2	NON STOCK
	8" MAIN X 1/2" BUTT FUSE OUTLET	934231 8X1/2	NON STOCK
	TEE SERVICE - ELECTROFUSION YELLOW MID 1" CTS BUTT FUSE OUTLET		
	1-1/4" MAIN X 1" OUTLET LI	934232 1-1/4 X 1	NON STOCK
	2" MAIN X 1" OUTLET LI	934259 2X1	NON STOCK
	4" MAIN X 1" OUTLET LI	934251 4X1	NON STOCK
	6" MAIN X 1" OUTLET LI	934239 6X1	NON STOCK
	8" MAIN X 1" OUTLET LI	934232 8X1	NON STOCK
	TEE SERVICE - ELECTROFUSION BLACK HD 1" IPS BUTT FUSE OUTLET		
	2" MAIN X 1" IPS OUTLET	932653 2X1	932653 2X1
	3" MAIN X 1" IPS OUTLET	932658 3X1	932658 3X1 RI
	4" MAIN X 1" IPS OUTLET	932820 4X1	932820 4X1
	6" MAIN X 1" IPS OUTLET	932826 6X1	932826 6X1
	8" MAIN X 1" IPS OUTLET	932497 8X1	932497 8X1
	12" MAIN X 1" IPS OUTLET LI, NYC, MA	935181 12X1	935181 12X1
	TEE SERVICE - SADDLE FUSION HIGH DENSITY BLACK 1/2" CTS BUTT FUSE		
	2" MAIN X 1/2" OUTLET LI	934205 2X1/2	NON STOCK
	4" MAIN X 1/2" OUTLET LI	934206 4X1/2	NON STOCK
	6" MAIN X 1/2" OUTLET LI	934207 6X1/2	NON STOCK
	8" MAIN X 1/2" OUTLET LI	934208 8X1/2	NON STOCK
	TEE SERVICE - SADDLE FUSION HIGH DENSITY BLACK 1" CTS BUTT FUSE		
	2" MAIN X 1" OUTLET	934209 2X1 SDR 9	931907 2X1
	4" MAIN X 1" OUTLET	934209 4X1 SDR 9	931904 4X1
	6" MAIN X 1" OUTLET	934230 6X1 SDR 9	931963 6X1
	8" MAIN X 1" OUTLET	934231 8X1 SDR 9	931962 8X1
	12" MAIN X 1" OUTLET	934232 12X1	931962 12X1
	TEE SERVICE MECHANICAL X PERFECTION OUTLET		
	2" MAIN X 1/2" OUTLET	NON STOCK	930854 2X1/2
	4" MAIN X 1/2" OUTLET	NON STOCK	930853 4X1/2
	6" MAIN X 1/2" OUTLET	NON STOCK	930852 6X1/2
	8" MAIN X 1/2" OUTLET	NON STOCK	930847 8X1/2
	2" MAIN X 1" OUTLET	NON STOCK	932122 2X1
	3" MAIN X 1" OUTLET	932123 3X1	N/A
	4" MAIN X 1" OUTLET	932116 4X1	931549 4X1
	6" MAIN X 1" OUTLET	932149 6X1	930847 6X1
	8" MAIN X 1" OUTLET	934619 8X1	930878 8X1
	12" MAIN X 1" OUTLET	930787 12X1	930787 12X1

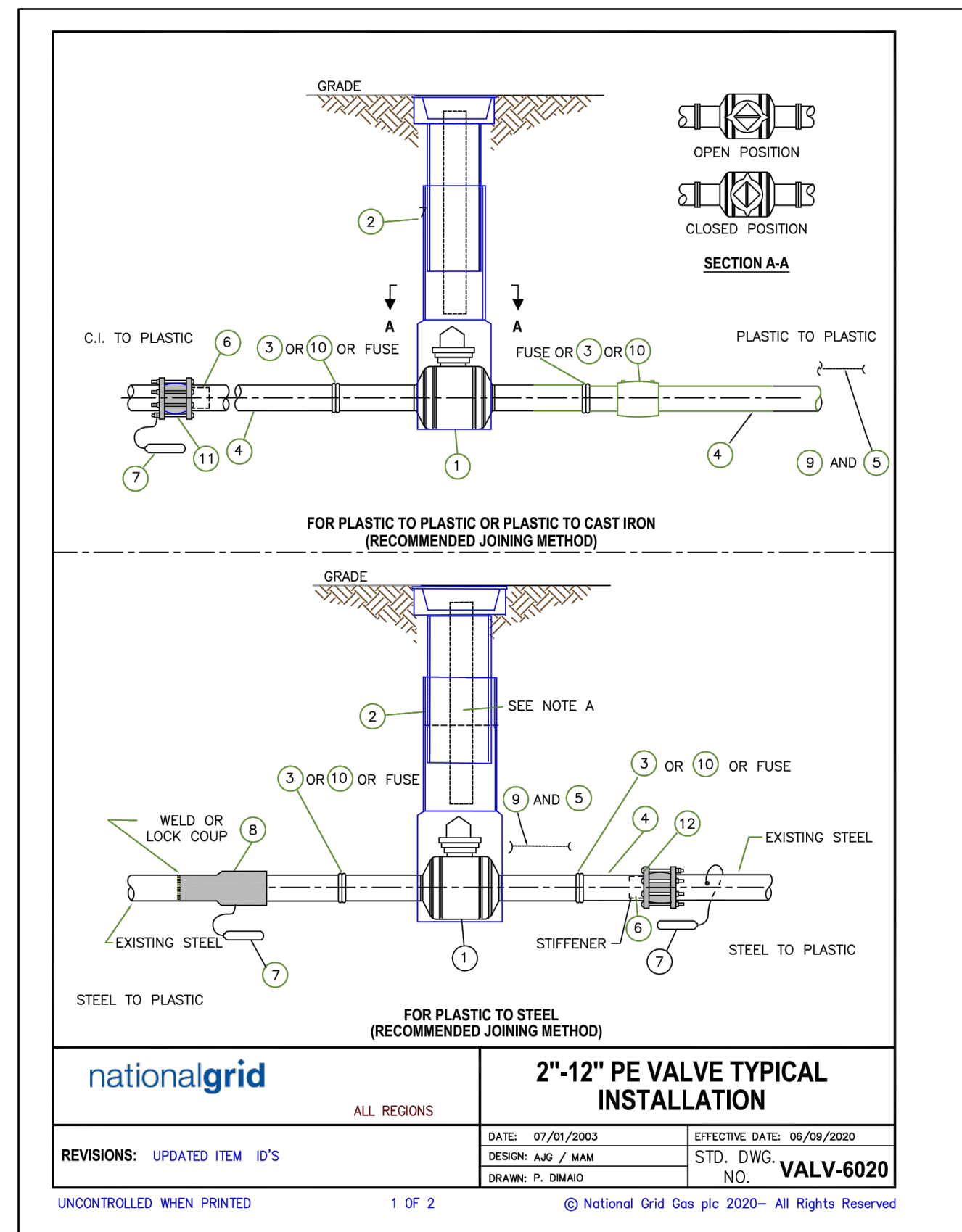
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ITEM	DESCRIPTION	ORACLE ITEM ID LI / MA / NYC	PEOPLESOF ITEM RI AND UNY
4	CAP END PLASTIC MEDIUM DENSITY YELLOW BUTT FUSE	2" 933940	NON STOCK
	3" SDR 11	933954	NON STOCK
	4" SDR 11	933934	NON STOCK
	6" SDR 11	933973	NON STOCK
	8" SDR 13.5	933959	NON STOCK
	12" SDR 11.5	933960	NON STOCK
	CAP END PLASTIC HIGH DENSITY BLACK BUTT FUSION		
	2" SDR 9	933938	NON STOCK
	4" SDR 9	933935	NON STOCK
	6" SDR 9	933936	NON STOCK
	8" SDR 9	933937	NON STOCK
	2" SDR 11 MASS RI & UNY	933284	2" 931286
	3" SDR 11 MASS RI & UNY	933285	3" 931276
	4" SDR 11 MASS RI & UNY	933286	4" 931285
	6" SDR 11 MASS RI & UNY	933284	6" 931284
	8" SDR 11 MASS RI & UNY	933282	8" 931272
	12" SDR 11 MASS, RI	933279	12" 930879
	8" SDR 13.5 UNY		8" 931263
	12" SDR 13.5 UNY		12" 931465
5	MCELROY TEST CAPS (165 PSIG MAX)	NON STOCK	NON STOCK
	1-1/4" MODEL TP-310	TP-308	NON STOCK
	2" MODEL TP-310	TP-310	NON STOCK
6	RISER		
	1" CTS MEDIUM DENSITY X 3/4" NPT OUTLET	934436	NON STOCK
	1" CTS MEDIUM DENSITY X 1-1/4" IPS OUTLET	934074	NON STOCK
	1" HIGH DENSITY X 1-1/4" OUTLET	934083	NON STOCK
	1" CST SERVASET X 1" OUTLET	932227	NON STOCK
	1" CTS HIGH DENSITY .090" WALL X 1" IPS STEEL OUTLET	931605	NON STOCK
	3/4" CTS .090" WALL PERFECTION END X 3/4" NPT STEEL	931295	NON STOCK
	1-1/4" CTS .090" WALL PERFECTION END X 1-1/4" NPT STEEL	930580	NON STOCK
	OR TEST CAPS WITH STEEL OR PLASTIC PIPE TO TEST TREE TEST CAP FOR CENTRAL PLASTIC ELECTROFUSION TAPPING TEE	938186 OR TOOL ROOM ITEM	TOOL ROOM ITEM
7	FLANGE 150# WELD END FLAT FACE		
	2"	931432	2" 931432
	3"	934138	3" 934131
	4"	934058	4" 931430
	6"	934104	6" 930859
	8"	934105	8" 930874
	12"	934079	12" 930860
	16"	932263 MA	16" 930748
	20"	932262 MA	20" 930748
8	BLIND FLANGE CLASS 150# ASTM A-105		
	2" FLAT FACE WITH 1/2" CENTER NPT TAP	934134	2" NON STOCK
	3" FLAT FACE WITH 3/4" CENTER NPT TAP	934104	3" NON STOCK
	4" FLAT FACE WITH 1/2" CENTER NPT TAP	934135	4" NON STOCK
	6" FLAT FACE WITH 3/4" CENTER NPT TAP	934082	6" NON STOCK
	2" FLAT FACE	9382074	2" 930862
	3" FLAT FACE	9307763	3" 9307763
	4" FLAT FACE	9387775	4" 9308252
	6" FLAT FACE	9385747	6" 9308518
	8" FLAT FACE	9341083	8" 9307750
	12" FLAT FACE	9340587	12" 9308749
9	GASKETS		
	2" FULL FACE 150#	933167	2" 9315688
	3" FULL FACE 150#	9341156	3" 9315687
	4" FULL FACE 150#	9341159	4" 9312569
	6" FULL FACE 150#	9332599	6" 9312568
	8" FULL FACE 150#	9341160	8" 9315689
	12" RING TYPE 150#	9341165	12" NON STOCK

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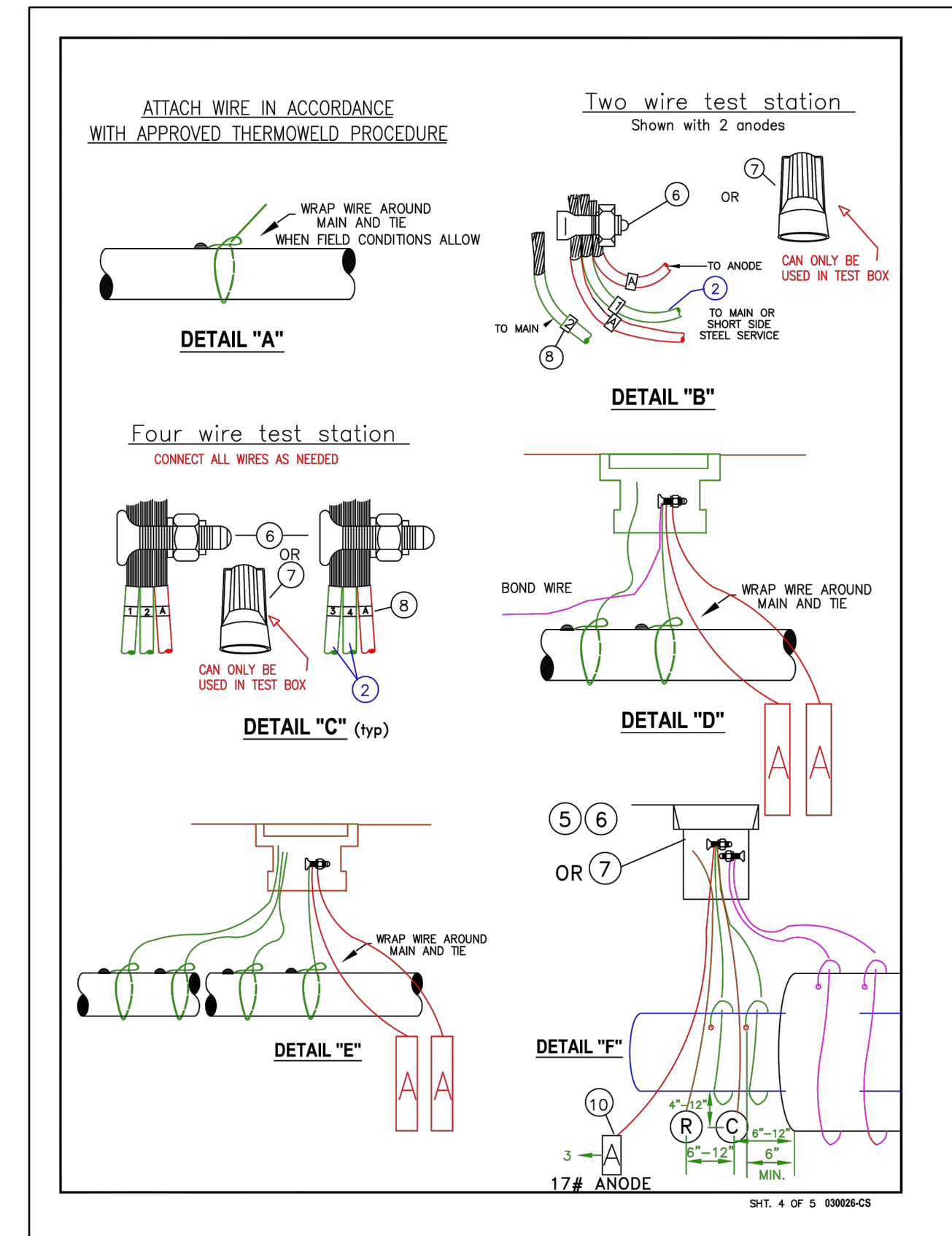
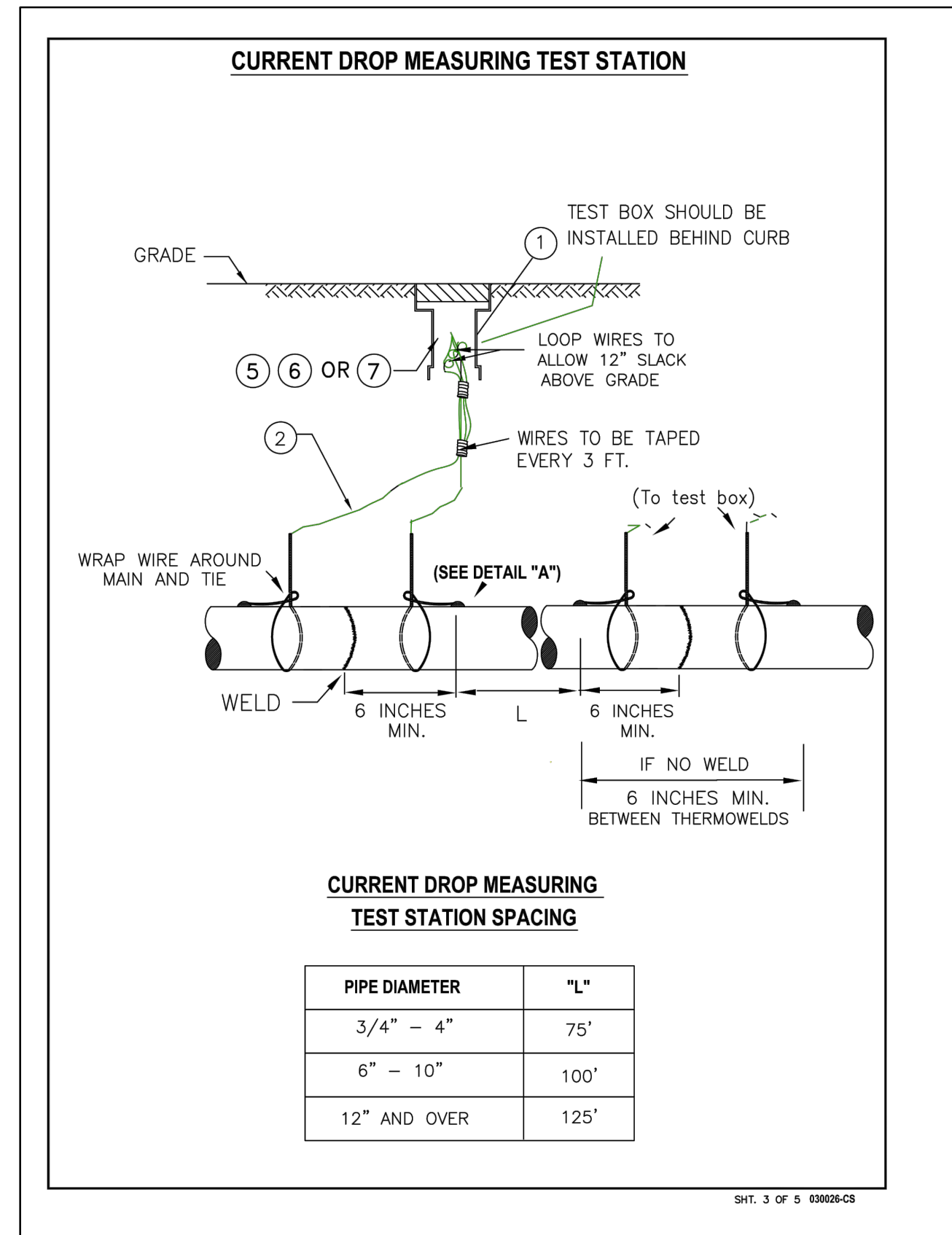
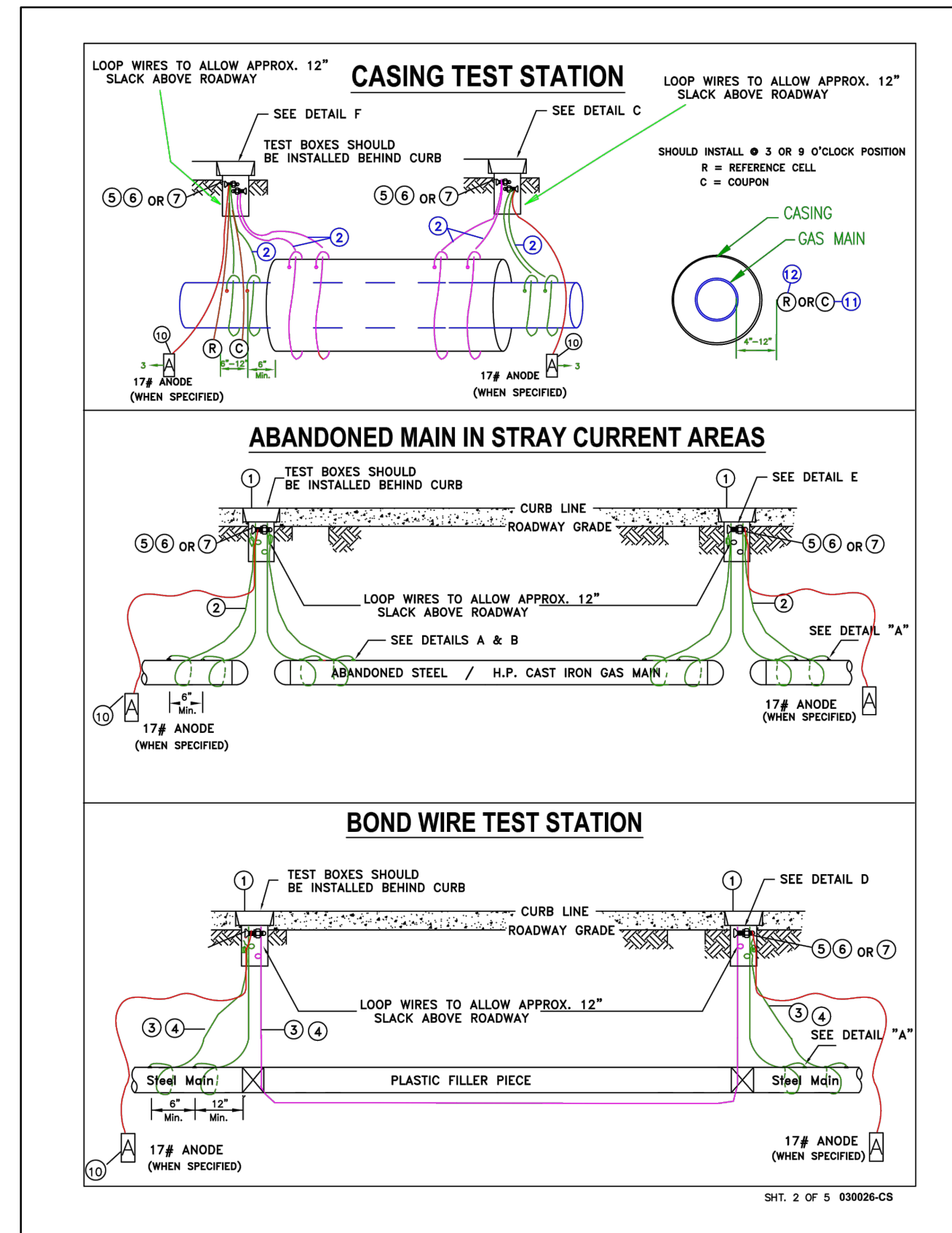
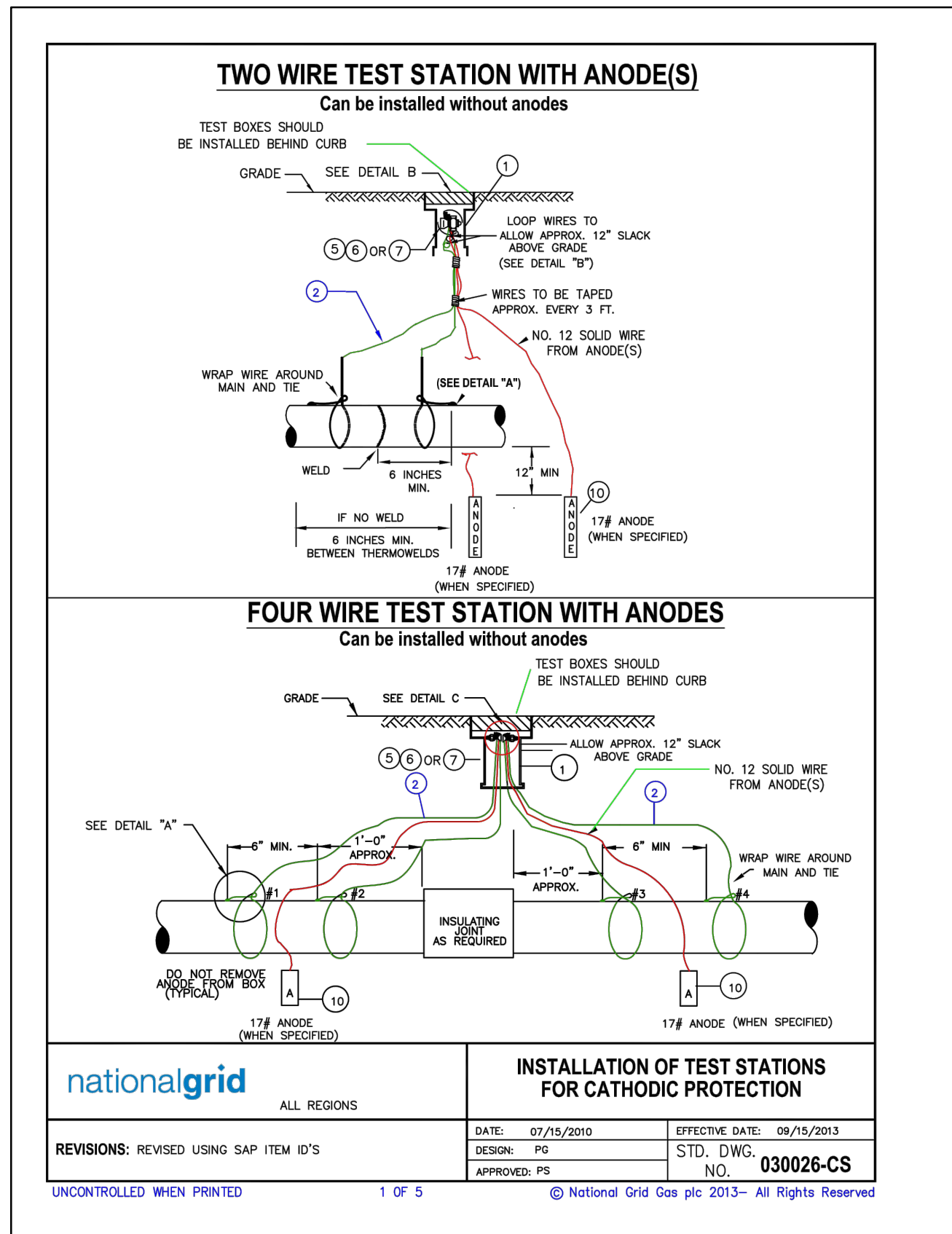
ITEM	DESCRIPTION	ORACLE ITEM ID LI / MA / NYC	PEOPLESOF ITEM RI AND UNY
10	END CAPS - STEEL WELD END STANDARD WALL - GRADE B		
	2"	933931	2" 9312095
	3"	933928	3" 9309719
	4"	933929	4" 9310069
	6"	933932	6" 9312094
	8"	933934	8" 9310069
	10"	933966	10" 9315182
	12"	933974	12" 9312092
	16"	933933	16" 9314624
	20"	933967	20" 9314823
11	THRD FITTING		
	1/2" MALE NPT X HOSE CONNECTION	933292	NON STOCK
	3/4" FEMALE X HOSE CONNECTION	933311	NON STOCK
12	THRD-O-LET		
	12" - 6" X 1/2" 3000# PER ASTM A-105 GRADE B	934162 12-6X3/4	NON STOCK
	10" - 6" X 1/2" 3000# PER ASTM A-105 GRADE B	934166 10-6X1	NON STOCK
	8" - 12" X 1" 3000# PER ASTM A-105 GRADE B	934262 8-12X1	NON STOCK
	2" X 1" 3000# PER ASTM A-105 GRADE B	NON STOCK	NON STOCK
	10" - 6" X 1" 3000# PER ASTM A-105 GRADE B	930785 10-6X1	930785 10-6X1
	36" - 14" X 1/2" 3000# PER ASTM A-105 GRADE B	NON STOCK	930787 36-14X1/2
13	VALVE		
13A	VALVE (OPTIONAL - TO SHUT OFF TEST ASSEMBLY)		
14	LUG ASSEMBLY		
	7/8" X 24" LONG (LI ONLY - SEE MAIN-6210)	934211	NON STOCK
	7/8" X 44" LONG (LI ONLY - SEE MAIN-6210)	934212	NON STOCK
	LUG GREEN 3" - 6" MAIN 7/8" DIAM. (NYC ONLY - SEE MAIN-6230 & MAIN-6230)	937904	937904
	LUG YELLOW 10" - 30" MAIN 1-1/8" DIAM. (NYC ONLY - SEE MAIN-6230 & MAIN-6230)	937905	937905
	ROD 1/2" X 12" LONG	932152	932152
	ROD 1" X 12" LONG	932150	932150
	LUG ASSEMBLY 1/2" X 30" LONG (UNY ONLY)	931741	931741
15	COUPLING - END 2" PERFECTION	938524	931548
16	TEST CAP		TOOL ROOM ITEM
	FOR SADDLE FUSION TEE - CENTRAL PLASTICS	9325109	931548
	FOR SADDLE FUSION TEE - JM EAGLE / POLY / UPONOR	9325117	931548
	FOR SADDLE FUSION TEE - PERFORMANCE PIPE TEES	9341388	931548
	FOR HVTT (HIGH VOLUME TAPPING) TEE SADDLE FUSION CENTRAL PLASTICS	9342088	931548
	FOR HVTT (HIGH VOLUME TAPPING) TEE SADDLE FUSION - JM EAGLE / POLY / UPONOR	934174	931548
	FOR HVTT (HIGH VOLUME TAPPING) TEE SADDLE FUSION PERFORMANCE PIPE TEES	932715	931548
	FOR ELECTROFUSION TEE	932494	931548
	FOR PERFECTION PMT MECHANICAL TEE (CAP FITS ALL MAIN SIZE & OUTLET SIZES OF PMTTS)	933961	931548

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NOTES:
 A. IN UNY LI REGION, INSTALL A LENGTH OF 3" DIAMETER PE OR SMALLER TUBING IN THE VALVE BOX TO IDENTIFY THE VALVE AS PLASTIC.
 B. INSTALL TRACER WIRE OR BALL MARKERS AS REQUIRED IN YOUR REGION FOR PE INSTALLATIONS.
 C. NOT USED ON THE UNY LI 99 & 124 PSI SYSTEM.
 D. REFER TO REGIONAL STANDARDS FOR MATERIAL IDS NOT GIVEN BELOW.

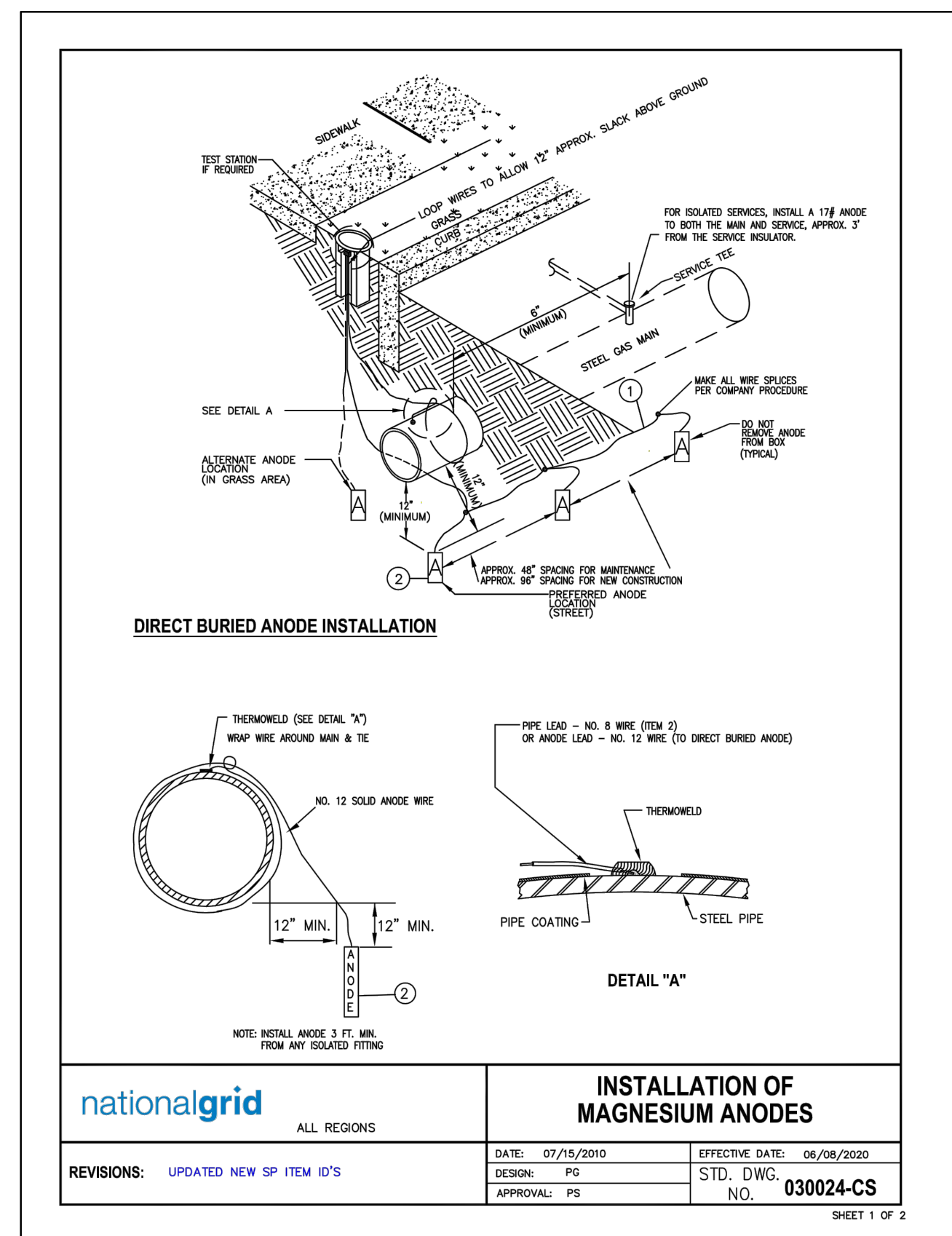
SAP ID	SAP ID	SAP ID
UNY AND RI	LI ONLY	LI, NYC AND NE
LP TO 100 PSIG HD	99 AND 124 PSIG HD	LP TO 60 PSIG MEDIUM DENSITY
9311203 12" DR 11 FULL PORT W/ GEAR OPERATOR RI ONLY	9341706 8" RED PORT DR 9	9341704 12" FULL PORT DR 13.5
9307909 12" DR 11 FULL PORT W/ GEAR OPER RI ONLY	9341705 6" RED PORT DR 9	9386294 6" FULL PORT DR 13.5
9311173 8" DR 11 FULL PORT W/ GEAR OPER UNY ONLY	9341708 4" RED PORT DR 9	9320392 6" FULL PORT DR 11.5
9315189 8" DR 13.5 FULL PORT UNY ONLY	9341709 4" FULL PORT DR 9	9341709 4" FULL PORT DR 11.5
9312116 8" DR 11 FULL PORT	9341710 2" FULL PORT DR 9	9341710 2" FULL PORT DR 11
9308561 3" DR 11 FULL PORT	9341711 2" FULL PORT DR 9	9341711 2" FULL PORT DR 11
9312060 2" DR 11 FULL PORT	9341712 2" FULL PORT DR 9	9341712 2" FULL PORT DR 11
9311146 2" DR 11 FULL PORT WITH PERMASERT ENDS	9341713 2" FULL PORT DR 9	9341713 2" FULL PORT DR 11
	9341714 2" FULL PORT DR 11	9341714 2" FULL PORT DR 11
	9341715 2" FULL PORT DR 9	9341715 2" FULL PORT DR 11.5
	9341716 2" FULL PORT DR 11.5	9341716 2" FULL PORT DR 11.5
	9341717 2" FULL PORT DR 11	9341717 2" FULL PORT DR 11
	9341718 2" FULL PORT DR 11	9341718 2" FULL PORT DR 11
	9341719 2" FULL PORT DR 11	9341719 2" FULL PORT DR 11
	9341720 2" FULL PORT DR 11	9341720 2" FULL PORT DR 11
	9341721 2" FULL PORT DR 11	9341721 2" FULL PORT DR 11
	9341722 2" FULL PORT DR 11	9341722 2" FULL PORT DR 11
	9341723 2" FULL PORT DR 11	9341723 2" FULL PORT DR 11
	9341724 2" FULL PORT DR 11	9341724 2" FULL PORT DR 11
	9341725 2" FULL PORT DR 11	9341725 2" FULL PORT DR 11
	9341726 2" FULL PORT DR 11	9341726 2" FULL PORT DR 11
	9341727 2" FULL PORT DR 11	9341727 2" FULL PORT DR 11
	9341728 2" FULL PORT DR 11	9341728 2" FULL PORT DR 11
	9341729 2" FULL PORT DR 11	9341729 2" FULL PORT DR 11
	9341730 2" FULL PORT DR 11	9341730 2" FULL PORT DR 11
	9341731 2" FULL PORT DR 11	9341731 2" FULL PORT DR 11
	9341732 2" FULL PORT DR 11	9341732 2" FULL PORT DR 11
	9341733 2" FULL PORT DR 11	9341733 2" FULL PORT DR 11
	9341734 2" FULL PORT DR 11	9341734 2" FULL PORT DR 11
	9341735 2" FULL PORT DR 11	9341735 2" FULL PORT DR 11
	9341736 2" FULL PORT DR 11	9341736 2" FULL PORT DR 11
	9341737 2" FULL PORT DR 11	9341737 2" FULL PORT DR 11
	9341738 2" FULL PORT DR 11	9341738 2" FULL PORT DR 11
	9341739 2" FULL PORT DR 11	9341739 2" FULL PORT DR 11
	9341740 2" FULL PORT DR 11	9341740 2" FULL PORT DR 11
	9341741 2" FULL PORT DR 11	9341741 2" FULL PORT DR 11
	9341742 2" FULL PORT DR 11	9341742 2" FULL PORT DR 11
	9341743 2" FULL PORT DR 11	9341743 2" FULL PORT DR 11
	9341744 2" FULL PORT DR 11	9341744 2" FULL PORT DR 11
	9341745 2" FULL PORT DR 11	9341745 2" FULL PORT DR 11
	9341746 2" FULL PORT DR 11	9341746 2" FULL PORT DR 11
	9341747 2" FULL PORT DR	



MATERIAL LIST

Description	Down State SAP Item I.D.	Upstate SAP Item I.D.	New England SAP Item I.D.	Rhode Island SAP Item I.D.	MATERIAL NOTES
1 TEST BOX WITH COVER	9338892	9312291	9338892	9311209 or (Lg - 556) IN P.TOV. 9311208	NON LOCKING COVER. DISCARD FOOT PIECE.
TEST BOX 9" SQUARE HEAVY DUTY	9339391	9339391	9339391	9339391	WEIGHS 95 LBS. STREET USE, WITHOUT COVER
COVER FOR 9" SQUARE BOX	9339797	9339797	9339797	9339797	NON-LOCKING COVER
2 WIRE, NO. 8, 7 STRAND	9307539	9307539	9307539	9307539	TEST WIRE ONLY, NOT FOR GROUND BEDS, UPSTATE AND RI WIRE HAS 19 STRANDS.
3 WIRE, NO. 6, 7 STRAND	9311795	9311795	9311795	9311795	BOND WIRE ONLY, NOT FOR GROUND BEDS
4 WIRE 1/0 - 19 STRAND 800 V - 1/C	9334171	NON STOCK	9334171	NON STOCK	USE IN STRAY CURRENT AREAS
5 TAPE, PVC - 3/4" WIDE	9334056	9316070	9334056	9316070	NOT FOR PIPE COATING
6 CONNECTOR, SPLIT BOLT, TYPE 6	9331578	9316630	9331578	NON STOCK	USE WITH NO. 6 CABLE
CONNECTOR, SPLIT BOLT, TYPE 1/01	9331612		9331612		USE WITH 1/0 CABLE
7 CONNECTOR, TWIST-ON WIRE NUT	9330683	9314631	9330683	9314631	
8 TAG, ADHESIVE NUMBER 1	9307918	9307918	9307918	9307918	LABEL WITH #1 (N) OR (E), CONSECUTIVELY TO (S) OR (W)
NUMBER 2	9307896	9307896	9307896	9307896	SEE DETAILS "B" AND "C"
NUMBER 3	9307895	9307895	9307895	9307895	USE TO LABEL ANODES
NUMBER 4	9307894	9307894	9307894	9307894	AS SPECIFIED BY CORROSION ENGINEERING
LETTER A	9307893	9307893	9307893	9307893	SATURATE WITH WATER BEFORE BACKFILL. ANODE MAY BE INSTALLED VERTICALLY OR HORIZONTALLY.
9 GROUNDING CELL	NON STOCK	NON STOCK	NON STOCK	NON STOCK	MC MILLER OR EQUAL
10 ANODE, MAGNESIUM 17LBS	9311183	9311183	9311183	9311183	
11 COUPON	9386100	By Corrosion	9386100	By Corrosion	
12 REFERENCE CELL	9385758	By Corrosion	9385758	By Corrosion	

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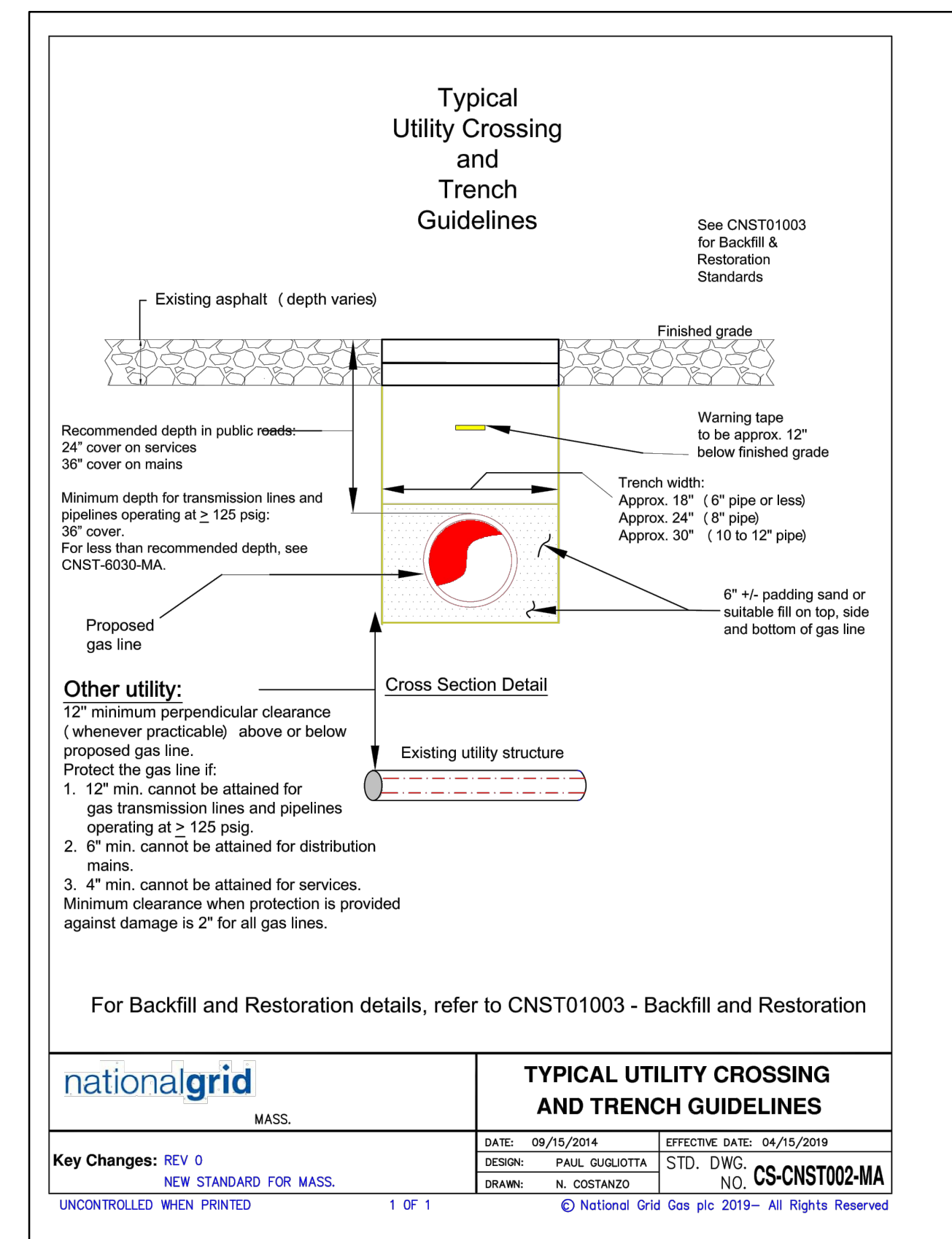


MATERIAL LIST

Description	Down State NY Item I.D.	Upstate NY Item I.D.	New England Item I.D.	Rhode Island Item I.D.	MATERIAL NOTES
1 CABLE NO. 8 - 1/C	9334425	9311214	9334425	9311214	Upstate and RI cable has 19 strands
2 ANODE, MAGNESIUM 17 LB	9311183	9311183	9311183	9311183	
3 ANODE, MAGNESIUM 3 LB	9315645	9315645	9315645	9315645	Use on Tracer wire and all isolated fittings.
4 ANODE, MAGNESIUM SPIKE 3 LB	9308624	9308624	9308624	9308624	Use on Service Risers ONLY
CLAMP, GROUNDING 1/2IN - 1IN DIA.	9386544	9386544	9386544	9386544	Grounding clamp for attaching spike anode lead wire to service riser
CLAMP, GROUNDING 1-1/4IN - 2IN DIA.	9386559	9386559	9386559	9386559	Grounding clamp for attaching spike anode lead wire to service riser

REVISIONS:	DATE:	EFFECTIVE DATE:
ISSUED FOR CONSTRUCTION	09/13/21	09/13/21
DESIGN: PS	STD. DWG.	
APPROVAL: PS	NO.	030024-CS

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NOTE: THE ENGINEER OF RECORD HAS REVIEWED THE PROVIDED NATIONAL GRID STANDARD DETAILS AND DETERMINED THEIR APPLICABILITY TO THE WORK IN THIS PACKAGE. THE ENGINEER OF RECORD DOES NOT CERTIFY THE ACCURACY OF ANY REFERENCED STANDARDS OR PROCEDURES NOT DIRECTLY RELATED TO THE WORK DESCRIBED IN THIS PLAN SET.

Architecture Engineering Environmental Land Surveying

Companies

ANDREW JOSEPH CAVALLA MECHANICAL No. 54294 REGISTERED PROFESSIONAL ENGINEER

09/14/21

Andrew J. Cavalla

SIGN & DATE

NO.	ISSUED FOR CONSTRUCTION	DATE	DR.	BY	APP.
0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC
	DESCRIPTION	DATE	DR.	BY	APP.

BOSTON GAS COMPANY d/b/a

nationalgrid

40 SYLVAN ROAD WALTHAM, MA 02451

IFC

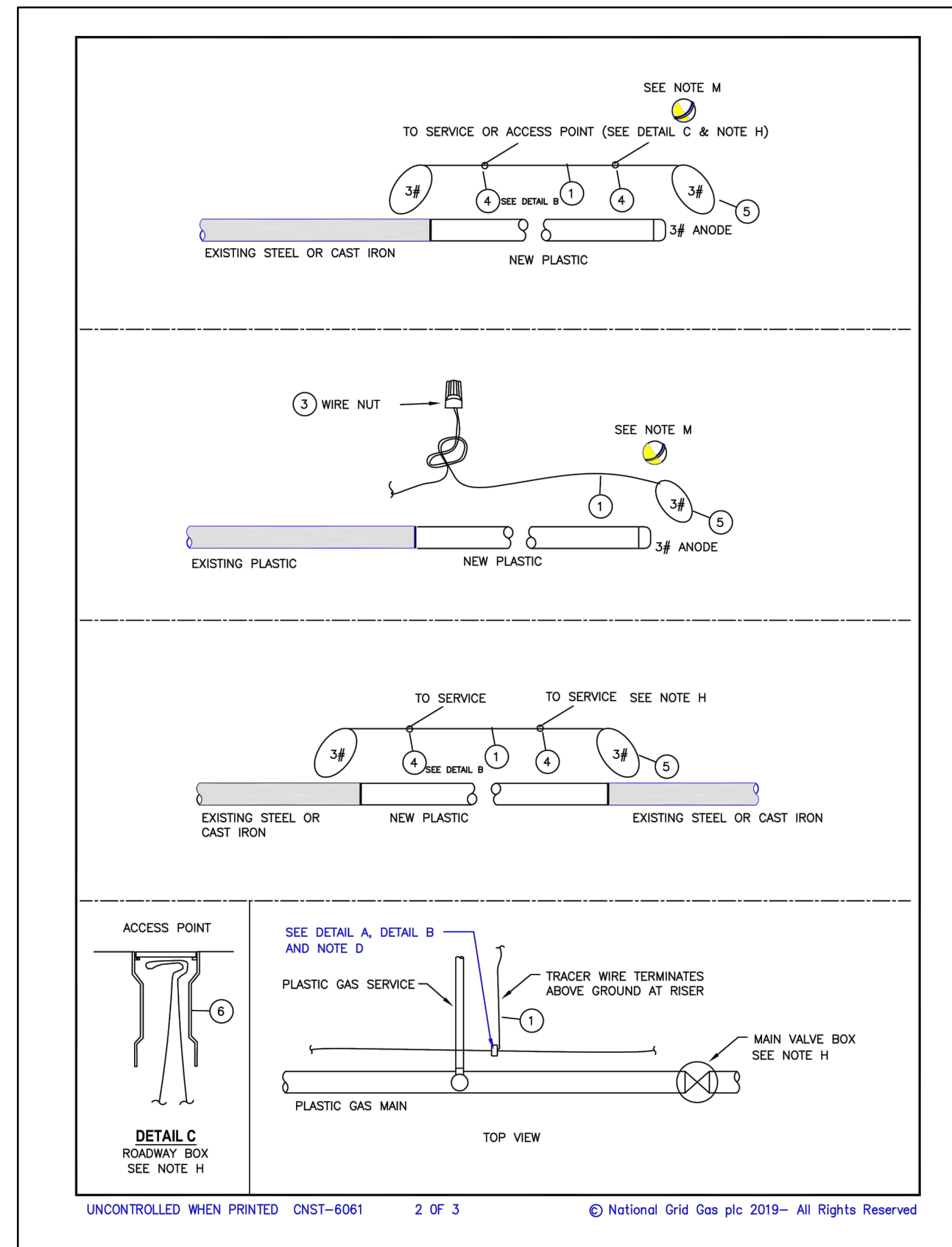
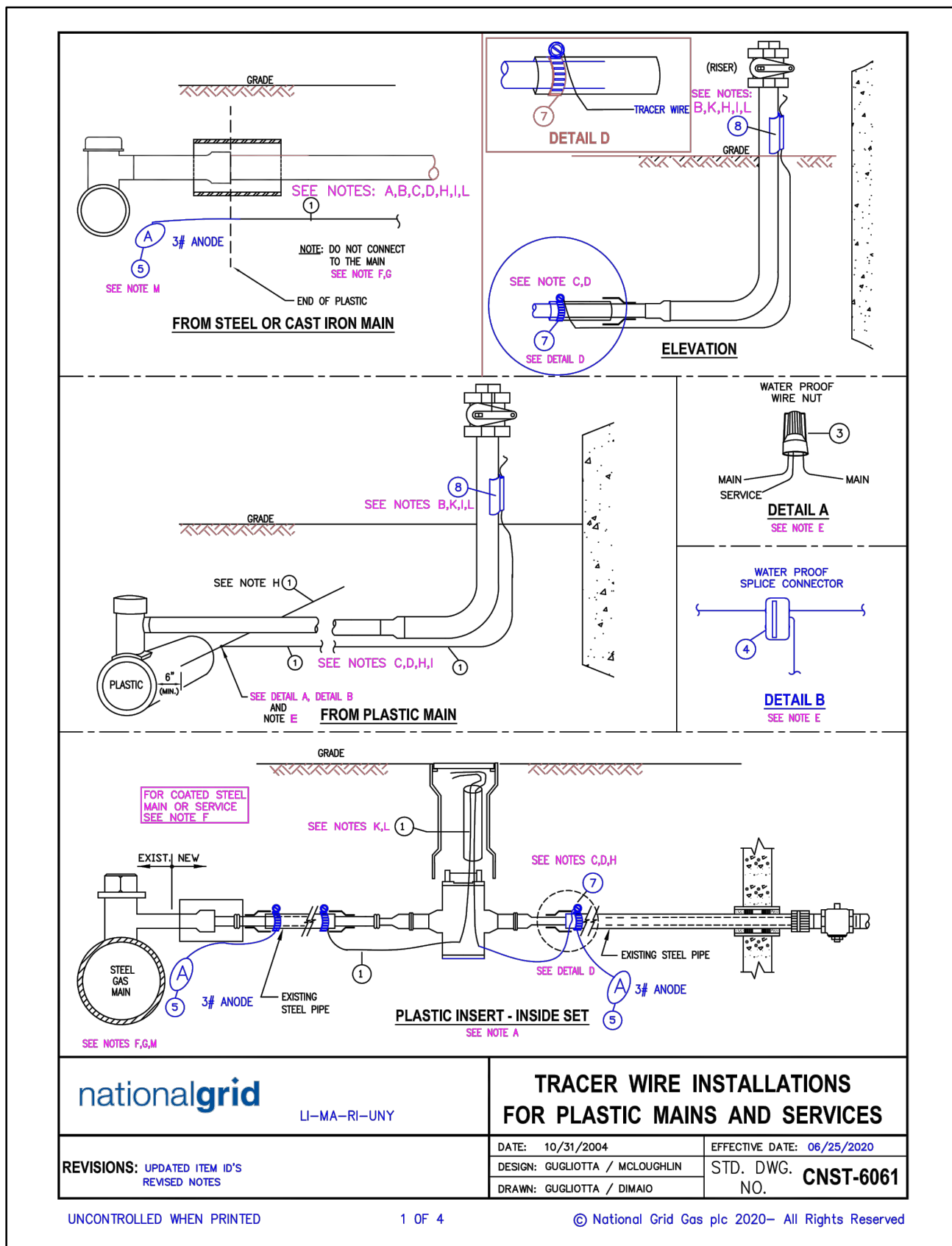
PROPOSED GAS MAIN INSTALLATION 2" / 4" / 6" MDPE (LP TO 60 PSIG) EASTWAY READING, MA

MISCELLANEOUS DETAIL 2 OF 3

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	T. ATKIN	A. CAVALLA	09/13/21	DISTRIBUTION	1401271

PAGE 12 OF 13

DRAWING NO.	SHEET NO.
RDG-1401271-12	C-202



NO.	ITEM	SAP ITEM ID
BILL OF MATERIAL		
8	TRACER WIRE SNAP, 2" (represents steel size)	LUNY/ MASS 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, 3/4" (represents steel size)	9385568 9385568
7	CLAMP, STAINLESS	9331708 9307873
6	VALVE BOX, ROADWAY	9338980 9312344 LUNY 9311208 RI
5	ANODE, 3 LB MAGNESIUM	9315645 9315645
4	WIRE SPLICE CONNECTOR, WATERPROOF	9308036 9308036
3	WIRE NUT, PLASTIC, WATERPROOF	9331644 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, LUNY- 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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Architecture Engineering Environmental Land Surveying Companies

COMMONWEALTH OF MASSACHUSETTS
 ANDREW JOSEPH CAVALLO
 MECHANICAL
 No. 54294
 REGISTERED PROFESSIONAL ENGINEER
 09/14/21
 Andrew J. Cavallo
 SIGN & DATE

NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY
0	ISSUED FOR CONSTRUCTION	09/13/21	TA	LA	AC

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

PROPOSED GAS MAIN INSTALLATION
 2" AND 4" MDPE (LP TO 60 PSIG)
 EASTWAY
 READING, MA

MISCELLANEOUS DETAIL 3 OF 3

IFC

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	T. ATKIN	A. CAVALLO	09/13/21	DISTRIBUTION	1401271