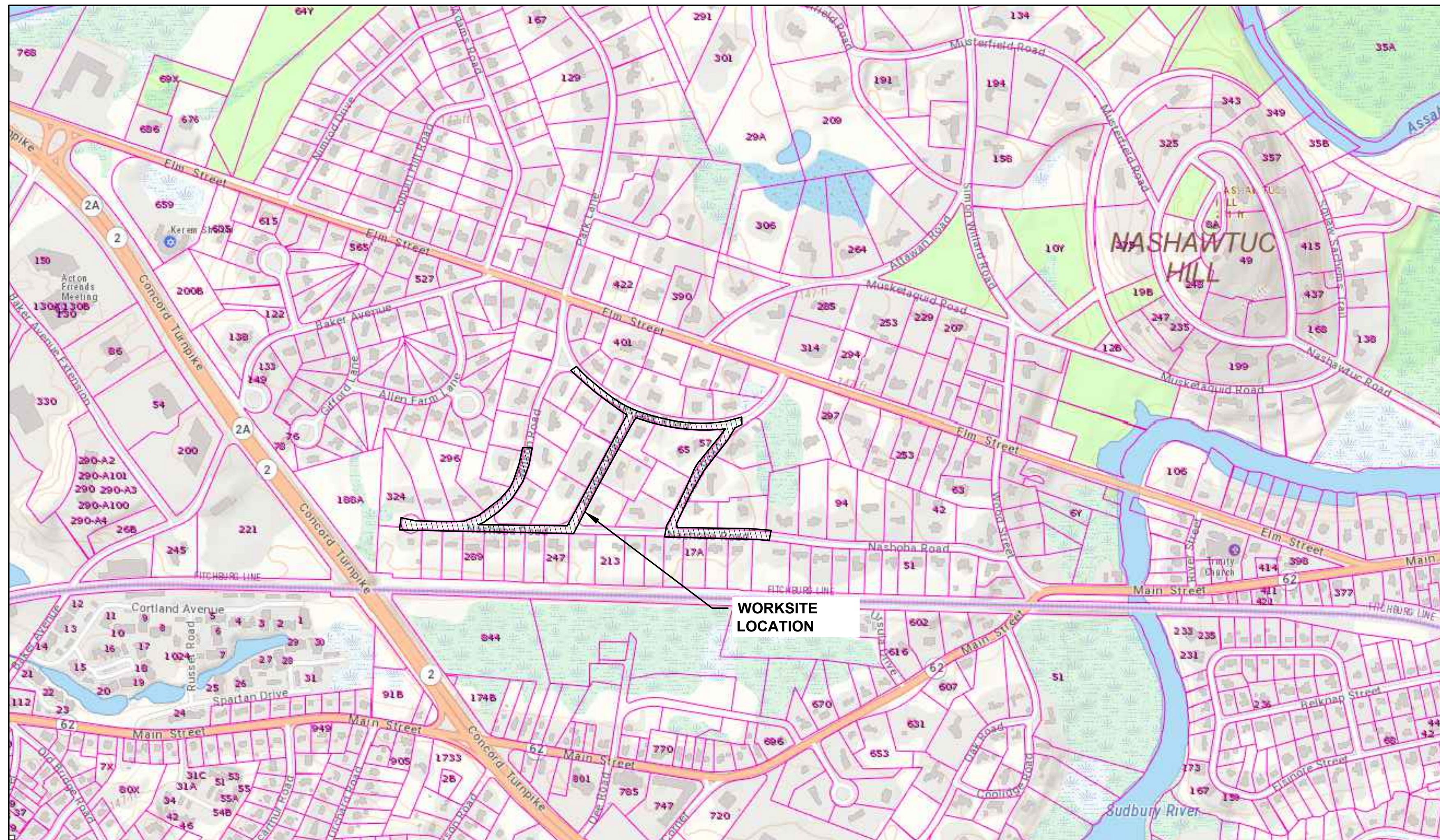


NATIONAL GRID

APPROX. 4205' OF 2" MDPE (60 PSIG) GAS MAIN RELAY

42-138 CRESCENT ROAD, CONCORD, MA

W.O. NO.: 1434024



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LOCUS
SCALE: NTS



NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC

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

IFC

PROPOSED GAS MAIN INSTALLATION					
2" MDPE (60 PSIG) CRESCENT RD CONCORD, MA					
COVER SHEET					
DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024

PAGE 1 OF 14	
DRAWING NO.	SHEET NO.
CON-1434024-01	G-001

CONSTRUCTION NOTES

SCOPE OF WORK
 NATIONAL GRID WORK ORDER NUMBER 1434024:
 42-138 CRESCENT ROAD, CONCORD, MA
 AS PART OF THE BSMNRPL PROGRAM, LPP INTEGRITY MANAGEMENT RECOMMENDS:
 THE RELAY OF APRX 805 FEET OF 2 INCH, 60 PSIG COATED STEEL (1930-ICON0027), APRX 150 FEET OF 2 INCH, 60 PSIG PLASTIC (2013) WITH APRX 955 FEET OF 2 INCH, 60 PSIG PLASTIC IN CRESCENT RD FROM THE EXST 2 INCH, 60 PSIG COATED STEEL AT #42 CRESCENT RD TO THE 2 INCH, 60 PSIG PLASTIC AT THE END OF MAIN AT #138 CRESCENT RD
 THE RELAY OF APRX 735 FEET OF 2 INCH, 60 PSIG COATED STEEL (1930-ICON0027) WITH APRX 735 FEET OF 2 INCH, 60 PSIG PLASTIC IN HOSMER RD FROM NASHOBA RD TO THE EXST 2 INCH, 60 PSIG COATED STEEL IN CRESCENT RD
 THE RELAY OF APRX 710 FEET OF 2 INCH, 60 PSIG COATED STEEL (1930-ICON-0027) WITH APRX 710 FEET OF 2 INCH, 60 PSIG PLASTIC IN GARLAND RD FROM CRESCENT RD TO THE EXST 2 INCH, 60 PSIG COATED STEEL IN NASHOBA RD
 THE RELAY OF APRX 465 FEET OF 2 INCH, 60 PSIG COATED STEEL (1957-ICON0027) WITH APRX 465 FEET OF 2 INCH, 60 PSIG PLASTIC IN WILSON RD FROM NASHOBA RD TO END OF MAIN AT #59 WILSON RD
 THE RELAY OF APRX 860 FEET OF 2 INCH, 60 PSIG COATED STEEL (1957-ICON0027) WITH APRX 860 FEET OF 2 INCH, 60 PSIG PLASTIC IN NASHOBA RD FROM HOSMER RD TO END OF MAIN AT #321 NASHOBA RD
 THE RELAY OF APRX 480 FEET OF 2 INCH, 60 PSIG COATED STEEL (1930 -ICON0027) WITH APRX 480 FEET OF 2 INCH, 60 PSIG PLASTIC IN NASHOBA RD FROM GARLAND RD TO THE EXST 2 INCH, 60 PSIG COATED STEEL AT #144 NASHOBA RD
 1 MAIN CONNECTION / CUT OFF.
 ALL ACTIVE SERVICES TO BE TRANSFERRED FROM THE MAIN TO BE RETIRED.

GENERAL

1 NO FIELD CHANGES SHALL BE MADE TO THIS DESIGN WITHOUT APPROVAL FROM THE ASSIGNED NATIONAL GRID ENGINEER:
 ENGINEER: NICOLE ARABIE
 PHONE: (774) 406-9644
 EMAIL: NICOLE.ARABIE@NATIONALGRID.COM

2 NEW MAINS SHOULD BE INSTALLED IN ACCORDANCE WITH THE TYPICAL TRENCH DETAIL INCLUDED IN THESE DRAWINGS, UNLESS NOTED OTHERWISE.
 A 36 INCHES OF COVER FROM FINAL GRADE WHERE PRACTICAL.
 B STATE HIGHWAY MINIMUM COVER: 36 INCHES
 C DISTRIBUTION MAIN MINIMUM COVER: 24 INCHES
 D SAND PADDING IN ALL DIRECTIONS, 6 INCHES MINIMUM.
 E CAUTION TAPE SHALL BE INCLUDED ONE FOOT BELOW GRADE.

3 SERVICES SHOULD BE INSTALLED WITH 24 INCHES OF COVER.
 A MINIMUM IN PUBLIC ROW: 18 INCHES
 B MINIMUM IN PRIVATE PROPERTY: 12 INCHES
 C SAND PADDING IN ALL DIRECTIONS, 6 INCHES MINIMUM.
 D CAUTION TAPE SHALL BE INCLUDED ONE FOOT BELOW GRADE.

4 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:
 A JENNIFER GILLIS - (617) 594-5157
 B 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.

5 ALL MAINS SHOULD BE INSTALLED WITH CLEARANCE OF 12 INCHES FROM OTHER FACILITIES.
 A DISTRIBUTION MINIMUM CLEARANCE: 6 INCHES
 B APPROPRIATE PROTECTIVE MEASURES SHALL BE USED TO PROTECT THE GAS FACILITY IF MINIMUMS CANNOT BE ATTAINED. APPROVAL IS REQUIRED BY GAS SYSTEMS ENGINEERING.

6 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.
 A ELBOWS SHOWN ARE ASSUMED TO BE 45 DEGREES IN MOST APPLICATIONS. 90 DEGREE ELBOWS MAY BE NEEDED BASED ON FIELD CONDITIONS.

7 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.
 A VALVES FOR BRANCHES AT INTERSECTIONS SHOULD BE FIELD LOCATED JUST OUTSIDE OF THE INTERSECTION WHERE EASILY ACCESSIBLE, PRIOR TO THE FIRST SERVICE.

8 ELECTROFUSION COUPLINGS MAY BE INTERCHANGED WITH BUTT FUSION WHERE APPLICABLE.

9 TIE-IN LOCATIONS MAY VARY UP TO 100 FEET OF THE PROPOSED LOCATION TO ACCOMMODATE CONSTRUCTION, EXCEPT FOR WHEN THE FOLLOWING CONDITIONS APPLY:
 A REGULATOR STATION WITHIN THE SCOPE OF THE JOB OR WITHIN 200 FEET OF THE TIE-IN LOCATION.
 B CHANGE TO THE NUMBER OF CONNECTIONS (ADDITIONAL ADDED FROM AN INTERSECTION OR OTHERWISE).
 C MATERIAL/SIZE CHANGE AT NEW LOCATION.

10 NOT ALL BYPASSES, GAUGES, PURGES AND OTHER MISCELLANEOUS FITTINGS ARE SHOWN. CONSTRUCTION SHALL INSTALL THESE FITTINGS AS NEEDED IN ACCORDANCE WITH THE APPROVED SOP.

11 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:
 A INLINE TEE
 B PLASTIC HIGH VOLUME TAPPING TEE (2" BRANCH SIZE OR LESS)
 C PLASTIC BRANCH SADDLE (WITH MAIN CUTTER SIZE SHOWN IN NATIONAL GRID POLICIES)
 D STEEL THREE-WAY TEE (WITH MAIN CUTTER SIZE SHOWN IN NATIONAL GRID POLICIES)

12 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.

13 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.

SEQUENCE OF CONSTRUCTION

1 CONTRACTOR SHALL CALL DIGSAFE (DIAL 811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO CONSTRUCTION. SATURDAYS, SUNDAYS, AND HOLIDAYS ARE EXCLUDED.

2 CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND STRUCTURES DEPICTED OR NOT DEPICTED ON THIS DESIGN PRIOR TO CONSTRUCTION.

3 INSTALL MAIN AS INDICATED IN SCOPE OF WORK

4 PRESSURE TEST (SEE PRESSURE TESTING SECTION)

5 MAKE CONNECTION AT LOCATION 1

6 PURGE NEW MAIN INTO SERVICE

7 TRANSFER/RELAY SERVICES TO NEW MAIN

8 MAKE DISCONNECTION AT LOCATION 1

9 PURGE OLD MAIN OUT OF SERVICE AND ABANDON

10 PERFORM RESTORATION

DESIGN CRITERIA

1 DESIGN IN ACCORDANCE WITH THE FOLLOWING:
 A ENG04001: DESIGN OF DISTRIBUTION MAINS

2 PROPOSED PIPING:
 A DESIGN CLASS LOCATION - 4
 B NOMINAL SIZE - 2 INCH
 C MATERIAL - MDPE
 D SYSTEM MAOP - 60 PSIG

3 PIPE SIZE DETERMINED BY NATIONAL GRID STRATEGIC ASSET AND SYSTEM PLANNING.

CODES & STANDARDS

1 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.

2 ALL REFERENCES SHALL BE IN ACCORDANCE WITH THE MOST CURRENT REVISION AVAILABLE AT THE TIME OF CONSTRUCTION.

3 FEDERAL & STATE
 A TITLE 49: PART 192 TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS
 B 220 CMR: DEPARTMENT OF PUBLIC UTILITIES
 100.00 - 113.00: MASSACHUSETTS GAS DISTRIBUTION CODE
 C AMERICAN SOCIETY OF MECHANICAL ENGINEERS
 B31.8: GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS

4 CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL GRID GAS POLICIES AND WORK METHODS, INCLUDING BUT NOT LIMITED TO:
 A CNST01003: BACKFILL AND RESTORATION
 B CNST01005: PREPARATION OF GAS FACILITY HISTORICAL RECORDS

C CNST01006: COMMERCIALLY AVAILABLE SHORING SYSTEMS
 D CNST02014: ENCAPSULATING CAST IRON JOINTS
 E CNST03001: SQUEEZE-OFF OPERATIONS
 F CNST03002: STOP-OFF OPERATIONS ON LOW PRESSURE MAINS
 G CNST03005: PURGING REQUIREMENTS FOR GAS PIPELINES
 a. CNST03006: PURGING OPERATIONS - DIRECT DISPLACEMENT
 b. CNST03007: PURGING OPERATIONS - COMPLETE INERT FILL
 c. CNST03008: PURGING OPERATIONS - SLUG METHOD
 H CNST03014: STOP OFF OPERATIONS FOR KLEISS EQUIPMENT
 I CNST04005: INSTALLING STEEL DISTRIBUTION MAINS
 J CNST04007: FIELD COLD BENDING OF LINE PIPE
 K CNST04008: INSTALLING PLASTIC MAINS
 L CNST04011: ABANDONMENT OF MAINS
 M CNST04012: GROUTING ABANDONED PIPELINES
 N CNST04030: RAISING MAIN AND SERVICE GATE BOXES
 O CNST05001: JOINING OF PLASTIC PIPE
 P CNST05011: INSTALLATION OF DRESSER 700 COUPLINGS
 Q CNST5010: GENERAL CONSTRUCTION REQUIREMENTS AND PIPE HANDLING
 R DAM01011: EXCAVATION AND EXCAVATION NOTIFICATION REQUIREMENTS FOR UNDERGROUND FACILITIES FOR MASSACHUSETTS AND RHODE ISLAND
 S DAM01015: LOCATE AND MARK-OUT REQUIREMENTS FOR UNDERGROUND GAS FACILITIES
 T DAM01016: LOCATE AND MARK-OUT OF UNDERGROUND FACILITIES
 U GCON02001: SYSTEM OPERATING PROCEDURE (SOP)
 V GEN01100: OPERATOR QUALIFICATION PLAN
 W GEN03002: PROCESSING GAS MAIN AND NEW SERVICE WORK PACKAGES
 X GEN03004: CHANGE CONTROL PROCEDURE FOR STANDARD CONSTRUCTION PROJECTS
 Y INR06002: SUPPLEMENTAL ODORIZATION FOR NEW PIPING
 Z MAINS030: INSTALLATION OF POLYETHYLENE PIPE
 AA MECH5010: JOINTS OTHER THAN WELDED
 BB 030018-CS: SPECIFICATION AND HANDLING OF TRAFFIC PLATES

5 SERVICE SPECIFIC CONSTRUCTION STANDARDS, GAS POLICIES AND WORK METHODS:
 A CMS03002: CUSTOMER METER AND SERVICE REGULATOR DESIGN AND INSTALLATION POLICY
 B CMS04002: PURGING PROCEDURES FOR CUSTOMER METER SERVICES
 C CNST03011: NO-INTERRUPT SERVICE TRANSFER
 D CNST06002: INSTALLING DISTRIBUTION SERVICES
 E 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
 F CNST06009: METER/SERVICE RELOCATION GUIDELINE
 G CNST06020: COMPLETION AND PROCESSING OF GAS SERVICE RECORD CARDS
 H CNST06030: NOTIFICATION OF CUSTOMERS INVOLVED IN THE INTERRUPTION OF GAS SERVICE
 I CS-SERV001: TYPICAL 1/2" SERVICE OUTSIDE SETS
 J CS-SERV002: TYPICAL 1" SERVICE OUTSIDE SETS
 K CS-SERV003: TYPICAL 1-1/4" SERVICE OUTSIDE SETS
 L CS-SERV004: TYPICAL 2" SERVICE
 M CS-SERV005: EXCESS FLOW VALVE REQUIREMENTS ON HP SERVICES
 N CS-SERV009: TYPICAL 1/2" SERVICE INSIDE SETS
 O CS-SERV010: TYPICAL 1" SERVICE INSIDE SETS
 P HTAP-6010: NO-INTERRUPT 1 INCH CTS AND 1-1/4 INCH CTS SERVICE TRANSFER (NIST) LP TO 60 PSIG MAINS
 Q SERV-5075: RELOCATION OF METER SET ASSEMBLIES INSIDE TO OUTSIDE
 R SERV-6185: HOT TAPPING MD BRANCH SADDLES OFF 4IN - 12IN 60 PSIG MAOP LIVE PLASTIC GAS MAIN USING MCELROY HOT TAPPING TOOL
 S VALV6110: 1/2 INCH - 3 INCH POLYETHYLENE GAS SERVICE VALVE INSTALLATION

6 SEE TIE IN DETAILS FOR APPLICABLE MAIN CONNECTION REFERENCES.

7 SEE BILL OF MATERIAL FOR MATERIAL SPECIFICATION, STANDARD AND/OR APPLICABLE NATIONAL GRID "FITS" REFERENCE.
 A 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

1 PRESSURE TEST MAIN IN ACCORDANCE WITH:
 A CNST04003: PRESSURE TESTING MAINS OPERATING BELOW 125 PSIG

B TEST PRESSURE (MINIMUM): 90 PSIG
 C TEST DURATION BASED ON LENGTH AND DIAMETER IN ACCORDANCE WITH TABLE 1.
 D TEST MEDIUM: AIR AND/OR NITROGEN

2 PRESSURE TEST SERVICES IN ACCORDANCE WITH:
 A CNST06008: PRESSURE TESTING SERVICE LINES

CATHODIC PROTECTION

1 IF EXISTING TEST STATIONS, WIRES, AND/OR MAGNESIUM ANODES ARE DISTURBED OR DAMAGED, NOTIFY THE NATIONAL GRID CORROSION DEPARTMENT:
 BUTCH VINCENT 617-438-5192

2 24 HOUR NOTICE IS REQUIRED PRIOR TO INSTALLATION OF INSULATED FITTINGS TO ALLOW FOR ACCEPTANCE TESTING.

3 NATIONAL GRID CORROSION GAS POLICIES AND WORK METHODS INCLUDE:
 A COR01100: CORROSION DESIGN CRITERIA
 B COR02001: APPLICATION OF COATING SYSTEMS
 C COR02020: INSPECTING EXPOSED STEEL PIPE FOR CORROSION
 D COR02021: INSPECTING EXPOSED CAST OR DUCTILE PIPING FOR GRAPHITIZATION
 E COR03001: TESTING OF PIPE COATING (JEEP TESTING)
 F COR04001: INSTALLATION OF MAGNESIUM ANODES
 G COR04003: INSTALLATION OF TEST STATIONS FOR CATHODIC PROTECTION
 H COR04004: INSTALLATION OF WIRE CONNECTIONS
 I COR04005: INSTALLATION OF INSULATING JOINTS FOR CATHODIC PROTECTION
 J 030031-CS: FACILITY COATING GUIDE

4 CORROSION DESIGN: INSTALL A 2-WIRE TEST STATION TO THE EXISTING 2 INCH, 60 PSIG COATED STEEL (1930) MAIN AT THE COATED STEEL/PLASTIC INTERFACE. NO ANODES REQUIRED. INSTALL THE 9X9 TEST STATION IN AN ACCESSIBLE LOCATION. ICON0027

ENVIRONMENTAL

1 WORK SHALL CONFORM TO THE NATIONAL GRID ENVIRONMENTAL POLICY.

2 ENVIRONMENTAL ENGINEERING CONTACT:
 JAIME WALKER
 PHONE: (978) 551-1156
 EMAIL: JAIME.WALKER@NATIONALGRID.COM

3 CONTRACTOR SHALL REVIEW THE PROJECT WORK ORDER PACKAGE FOR ENVIRONMENTAL GUIDANCE FORMS, FOR EXAMPLE EG-301, FOR THE RESPECTIVE STATE.

4 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.

5 NO EXCAVATED SOIL SHALL LEAVE THE WORK SITE UNTIL ENVIRONMENTAL HAS MADE A DETERMINATION FOR ITS PROPER DISPOSAL.

6 NATIONAL GRID ENVIRONMENT POLICIES AND PROCEDURES INCLUDE:
 A SHE02001: HANDLING CONTAMINATED MATERIALS AND PIPING
 B SHE02002: REMOVING MERCURY REGULATORS AND DEVICES
 C SHE02003: ENCOUNTERING CONTAMINATION WHILE EXCAVATING
 D EG303-NE: BEST MANAGEMENT PRACTICES
 E EG140: USED GAS PIPE MANAGEMENT

7 ENVIRONMENTAL REQUIREMENTS: PROPOSED WORK IS LOCATED WITHIN 100 FEET OF WETLANDS AND/OR BODIES OF WATER / WITHIN 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 WORCESTER) WITHIN A FLOODPLAIN. ENVIRONMENTAL PERMIT AND/OR THE USE OF ENVIRONMENTAL BMPs MAY BE REQUIRED. SEE ENVIRONMENTAL MEMO FOR DETAILS.

SAFETY

1 WORK SHALL CONFORM TO THE NATIONAL GRID EMPLOYEE SAFETY HANDBOOK AND OSHA REQUIREMENTS.

2 REQUIRED PPE SHALL BE WORN AND UTILIZED IN ACCORDANCE WITH THE CURRENT NATIONAL GRID SAFETY POLICY.

3 A NATIONAL GRID APPROVED CONTRACTOR HEALTH AND SAFETY PLAN (HASP) IS REQUIRED PRIOR TO CONSTRUCTION.

4 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.

5 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; Q- FLEET AND ROADWAY SAFETY

6 GAS WORK METHODS SAFETY PROCEDURES INCLUDE:
 A SHE01001: GENERAL SAFETY REQUIREMENTS
 B SHE01002: SUPPLIED-AIR RESPIRATORS
 C SHE01003: USING AND MAINTAINING PORTABLE GAS MONITORS
 D SHE01004: USING AND MAINTAINING FLAME IONIZATION UNITS
 E SHE01005: DISSIPATING STATIC ELECTRICAL CHARGES ON PLASTIC PIPE
 F SHE01006: ENTERING GAS UTILITY VAULTS
 G SHE01008: USING AND MAINTAINING THE GAS-EXPLORER
 H SHE01009: DISSIPATING STATIC ELECTRICAL CHARGES ON PLASTIC PIPE
 I SHE01010: THE APPLICATION OF FORMAL PROCESS SAFETY ASSESSMENTS TO HIGHER-RISK GAS ACTIVITIES PERFORMED IN THE FIELD

OTHER PERMITTING REQUIREMENTS

1 STREET OPENING PERMIT
 2 CONCORD GRANT OF LOCATION

UTILITY OWNER INFORMATION



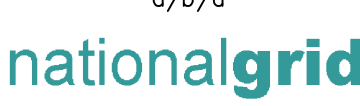

1 TOWN OF CONCORD

REFERENCE DRAWINGS

1 LOCATION OF IDENTIFIED UNDERGROUND UTILITIES ARE AN APPROXIMATE 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.

DESIGN CONSULTANT

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

		BOSTON GAS COMPANY d/b/a  40 SYLVAN ROAD WALTHAM, MA 02451						PROPOSED GAS MAIN INSTALLATION 2" MDPE (60 PSIG) CRESCENT RD CONCORD, MA						PAGE 2 OF 14	
								CONSTRUCTION NOTES						DRAWING NO. CON-1434024-02 SHEET NO. G-002	
0 ISSUED FOR CONSTRUCTION NO. DESCRIPTION DATE DR.BY CK.BY APP.BY		04/21/2022	SH	TA	AC	DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:				
						22"x34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024				

BILL OF MATERIALS						
ITEM	QTY	UOM	DESCRIPTION	SIZE (IN.)	NATIONAL GRID REFERENCE	SAP ID NUMBER
1	4,205	FT	PIPE, PLASTIC, MDPE, SDR 11 (COILS)	2	120026-MS	9340876
2	2	EA	ELBOW, PLASTIC, 90 DEGREE, MDPE	2	CS-FIT011	9341385
3	4	EA	TEE, PLASTIC, FULL, MDPE	2	CS-FIT012	9342031
4	8	EA	VALVE, BALL, MDPE, FULL PORT	2	VALV6020	9341784
5	8	EA	VALVE, BOX ASSEMBLY	2	VALV6020	9339890
6	1	EA	CAP, PLASTIC, ELECTROFUSION	2	CS-FIT015	9393634
7	5	EA	CAP, MDPE, BUTT FUSION	2	CS-FIT010	9339540
8	1	EA	TEE, TDW, THREE-WAY, CONTOURED	2	FITS6055	9310679
9	1	EA	TRANSITION, PLASTIC TO STEEL	2	120026-MS	9339392
10	1	EA	END CAP, MECHANICAL, FOR STEEL, RESTRAINING	2	FITS6024	9323367
11	1	EA	CAP, WELDED, STEEL	2	MAIN6045	9312095
12	1	EA	COUPLING, PLASTIC ELECTROFUSION	2	CS-FIT015	9314594
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	2	CS-FIT010	9339540
CATHODIC PROTECTION						
C1	1	EA	CP TEST BOX W/ COVER	N/A	030026-CS	(SEE STD)
C2	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.						



BL Companies
 Architecture
 Engineering
 Environmental
 Land Surveying

04/21/22
 Andrew J. Cavallo
 SIGN & DATE

NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC

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

IFC

PROPOSED GAS MAIN INSTALLATION
 2" MDPE (60 PSIG)
 CRESCENT RD
 CONCORD, MA

BILL OF MATERIALS

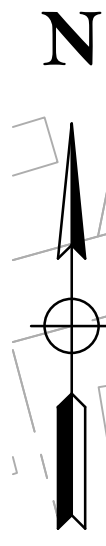
DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024

PAGE 3 OF 14

DRAWING NO.	SHEET NO.
CON-1434024-03	G-003

DRAWING LEGEND

- EXISTING CS 60 PSIG GAS MAIN
- EXISTING PE 60 PSIG GAS MAIN
- - - - - EXISTING CS 60 PSIG GAS MAIN (TO BE ABANDONED)
- - - - - EXISTING PE 60 PSIG GAS MAIN (TO BE ABANDONED)
- PROPOSED MDPE 60 PSIG GAS MAIN
- D EXISTING DRAIN
- W EXISTING WATER
- E EXISTING ELECTRIC SERVICE
- ✂ PROPOSED VALVE
- PROPOSED END CAP
- ⊙ DRAIN MANHOLE
- ⊙ UTILITY POLE

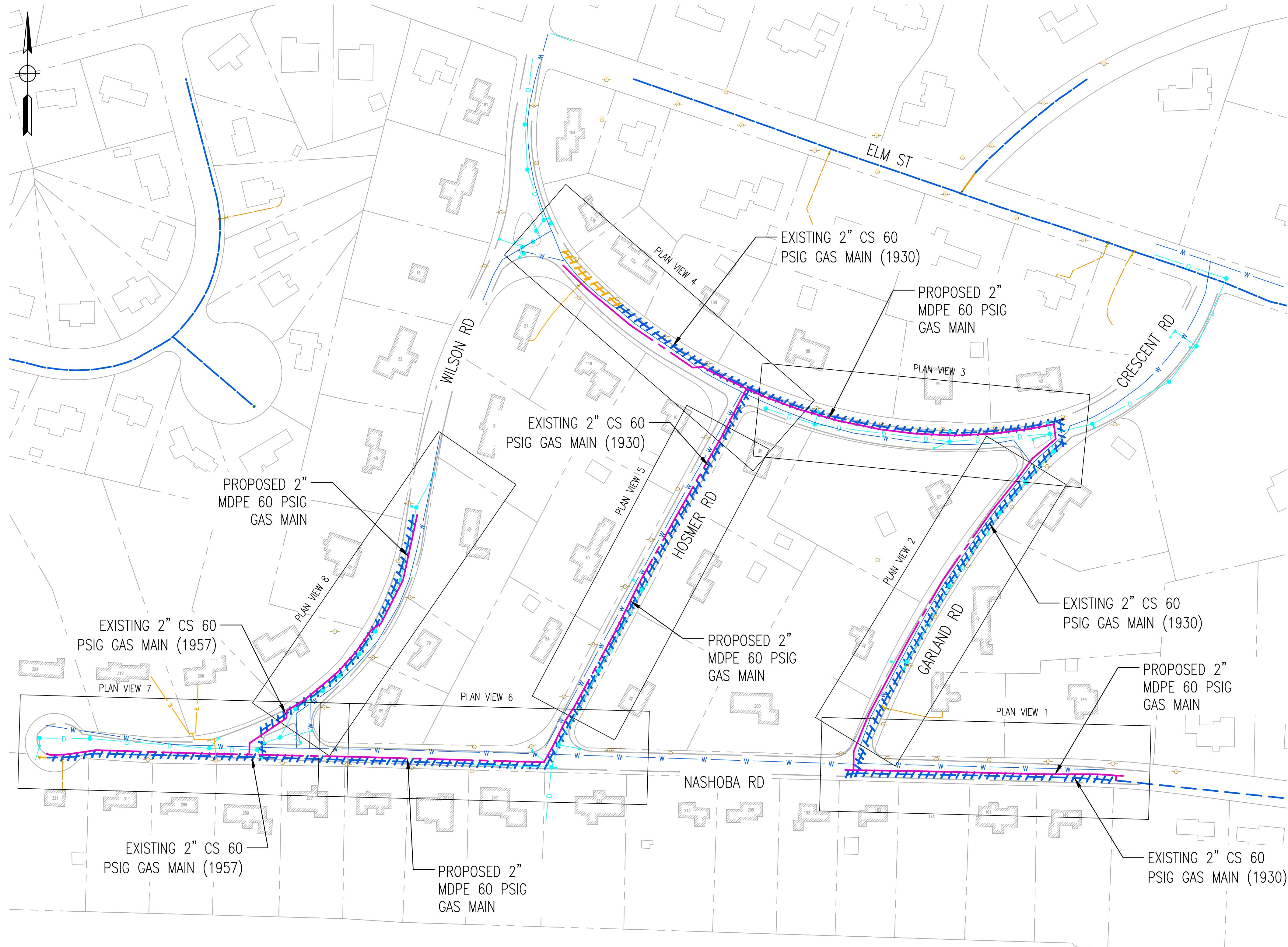


THE USE OF A DRAWDOWN COMPRESSOR DURING MAIN ABANDONMENT IS RECOMMENDED DUE TO THE LENGTH AND PRESSURE OF THE EXISTING MAIN. CONTACT DAVE LESSARD OR JIM MCNEILL ONE MONTH PRIOR TO THE START OF CONSTRUCTION TO COORDINATE USE OF A DRAWDOWN COMPRESSOR DURING MAIN ABANDONMENT.

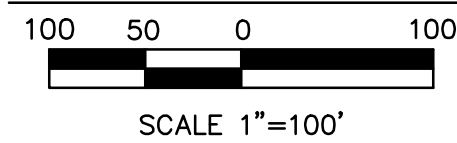
PROJECT IS OVER 2500 FEET IN LENGTH. PLEASE CONTACT I&R PRIOR TO EXECUTING THE PROJECT FOR SUPPLEMENTAL ODORIZATION. INRO6002

NOTE:

1. MAINTAIN A MINIMUM 12" VERTICAL AND HORIZONTAL SEPARATION FROM TOWN OF CONCORD AND CMLP, EDGE-TO-EDGE (DRAINAGE PIPES, CATCH BASINS AND INLETS, MANHOLES, FOUNDATIONS, ELECTRICAL CONDUIT, ETC.) WITHIN THE RIGHT OF WAY ON ALL CONCORD TOWN ROADWAYS.
2. MAINTAIN A MINIMUM 12" VERTICAL AND 36" HORIZONTAL SEPARATION FROM TOWN OF CONCORD WATER MAINS.
3. MAINTAIN A MINIMUM 24" SEPARATION BETWEEN PROPOSED GAS MAIN AND EXISTING UTILITY POLES.



PLAN OVERVIEW



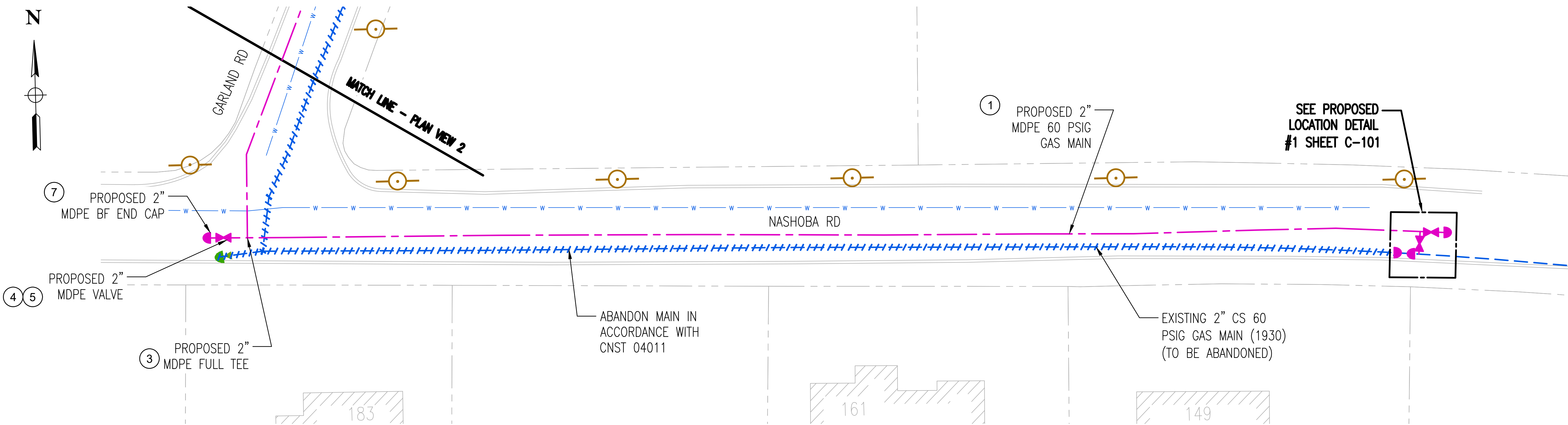
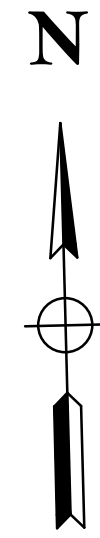
NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC

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

IFC

PROPOSED GAS MAIN INSTALLATION					
2" MDPE (60 PSIG)					
CRESCENT RD					
CONCORD, MA					
PROPOSED INSTALLATION PLAN OVERVIEW					
DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"x34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024

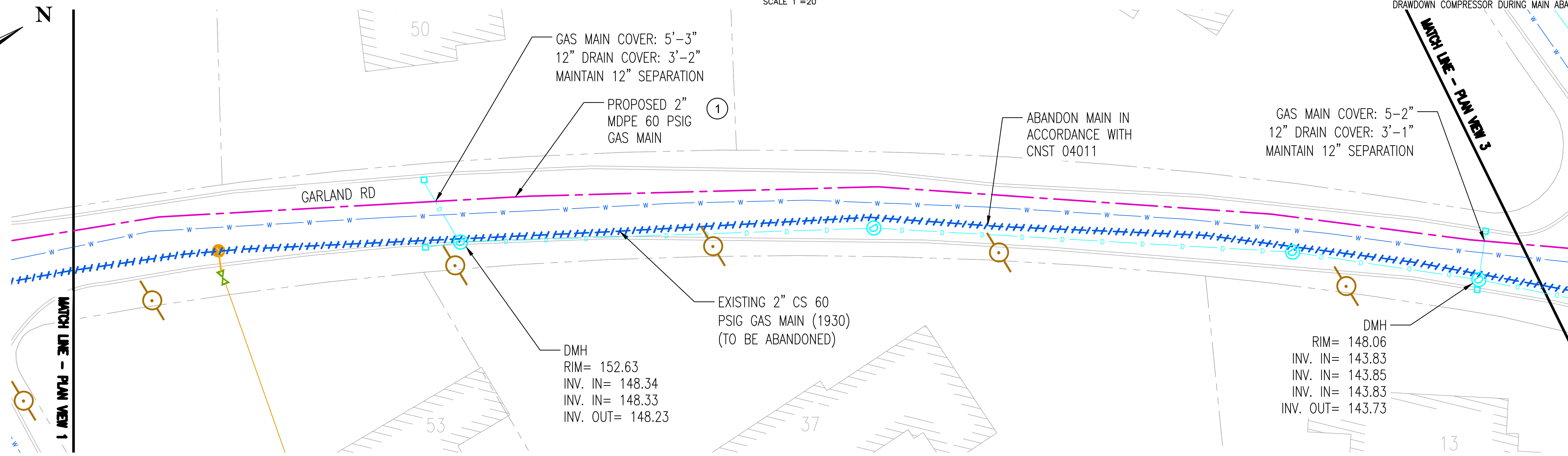
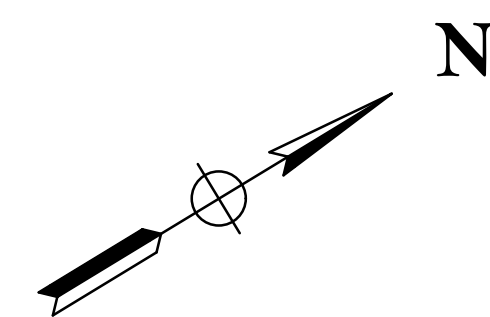
PAGE 4 OF 14	
DRAWING NO.	SHEET NO.
CON-1434024-04	C-001



PLAN VIEW 1
SCALE 1"=20'

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

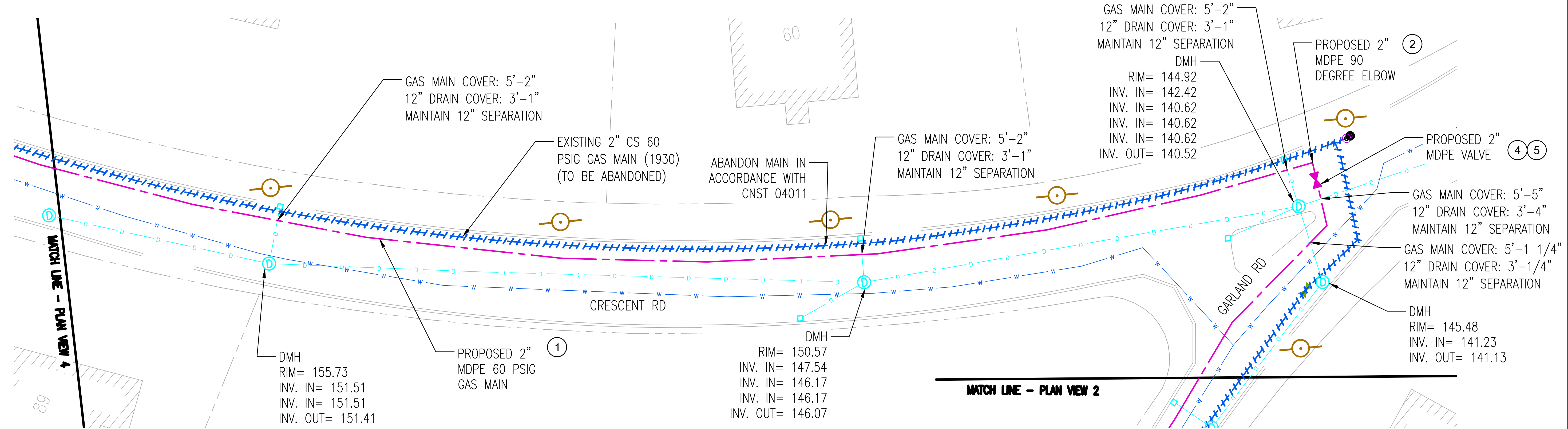
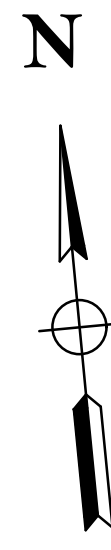
THE USE OF A DRAWDOWN COMPRESSOR DURING MAIN ABANDONMENT IS RECOMMENDED DUE TO THE LENGTH AND PRESSURE OF THE EXISTING MAIN. CONTACT DAVE LESSARD OR JIM MCNEILL ONE MONTH PRIOR TO THE START OF CONSTRUCTION TO COORDINATE USE OF A DRAWDOWN COMPRESSOR DURING MAIN ABANDONMENT.



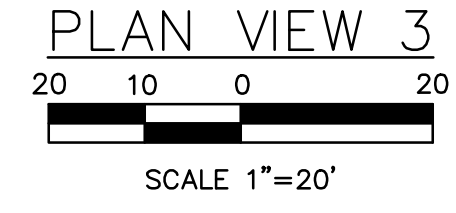
PLAN VIEW 2
SCALE 1"=20'

- NOTE:
1. MAINTAIN A MINIMUM 12" VERTICAL AND HORIZONTAL SEPARATION FROM TOWN OF CONCORD AND CMLP, EDGE-TO-EDGE (DRAINAGE PIPES, CATCH BASINS AND INLETS, MANHOLES, FOUNDATIONS, ELECTRICAL CONDUIT, ETC.) WITHIN THE RIGHT OF WAY ON ALL CONCORD TOWN ROADWAYS.
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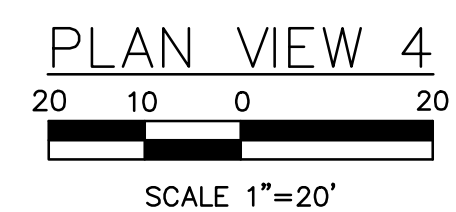
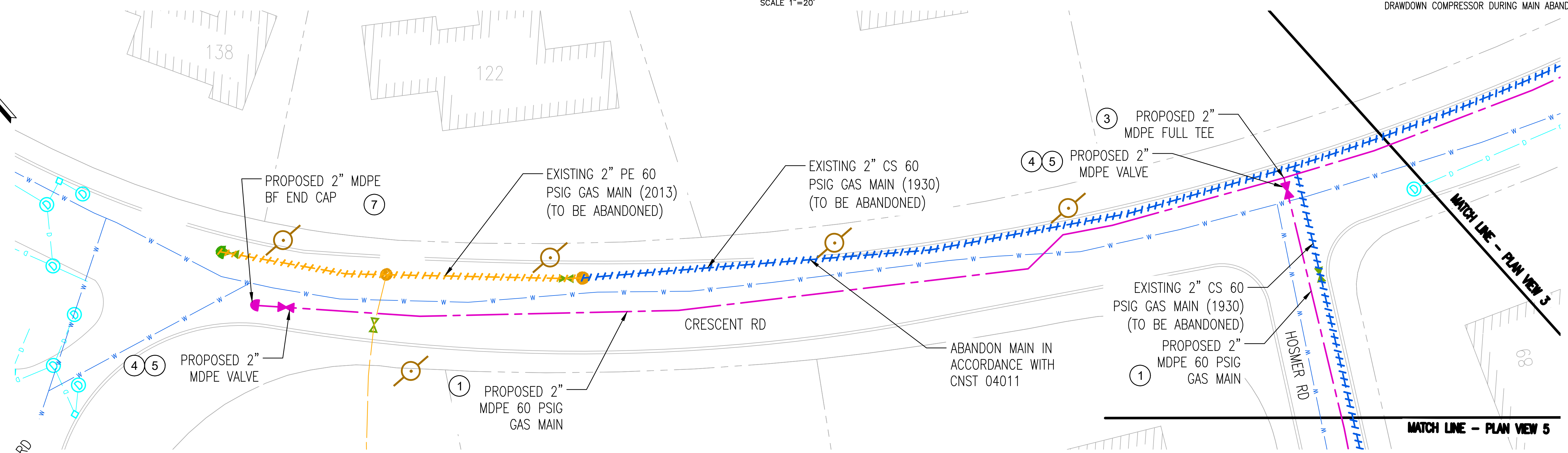
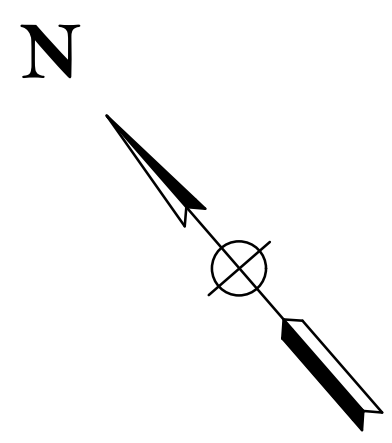
		<table border="1"> <tr> <td>NO.</td> <td>ISSUED FOR CONSTRUCTION</td> <td>04/21/2022</td> <td>SH</td> <td>TA</td> <td>AC</td> </tr> <tr> <td>NO.</td> <td>DESCRIPTION</td> <td>DATE</td> <td>DR.BY</td> <td>CK.BY</td> <td>APP.BY</td> </tr> </table>	NO.	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC	NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY	<p>BOSTON GAS COMPANY d/b/a 40 SYLVAN ROAD WALTHAM, MA 02451</p>	<p>PROPOSED GAS MAIN INSTALLATION 2" MDPE (60 PSIG) CRESCENT RD CONCORD, MA</p> <p>PROPOSED INSTALLATION PLAN SHEET 1 OF 4</p>	<p>PAGE 5 OF 14</p> <table border="1"> <tr> <td>DRAWING NO.</td> <td>SHEET NO.</td> </tr> <tr> <td>CON-1434024-05</td> <td>C-002</td> </tr> </table>	DRAWING NO.	SHEET NO.	CON-1434024-05	C-002
			NO.	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC													
NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY																
DRAWING NO.	SHEET NO.																				
CON-1434024-05	C-002																				
<p>DMH RIM= 152.63 INV. IN= 148.34 INV. IN= 148.33 INV. OUT= 148.23</p>	<p>DMH RIM= 148.06 INV. IN= 143.83 INV. IN= 143.85 INV. IN= 143.83 INV. OUT= 143.73</p>	<p>IFC</p>	<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>S. HAMILTON</td> <td>A. CAVALLO</td> <td>04/21/2022</td> <td>DISTRIBUTION</td> <td>1434024</td> </tr> </table>	DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:	22"X34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024						
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22"X34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024																



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

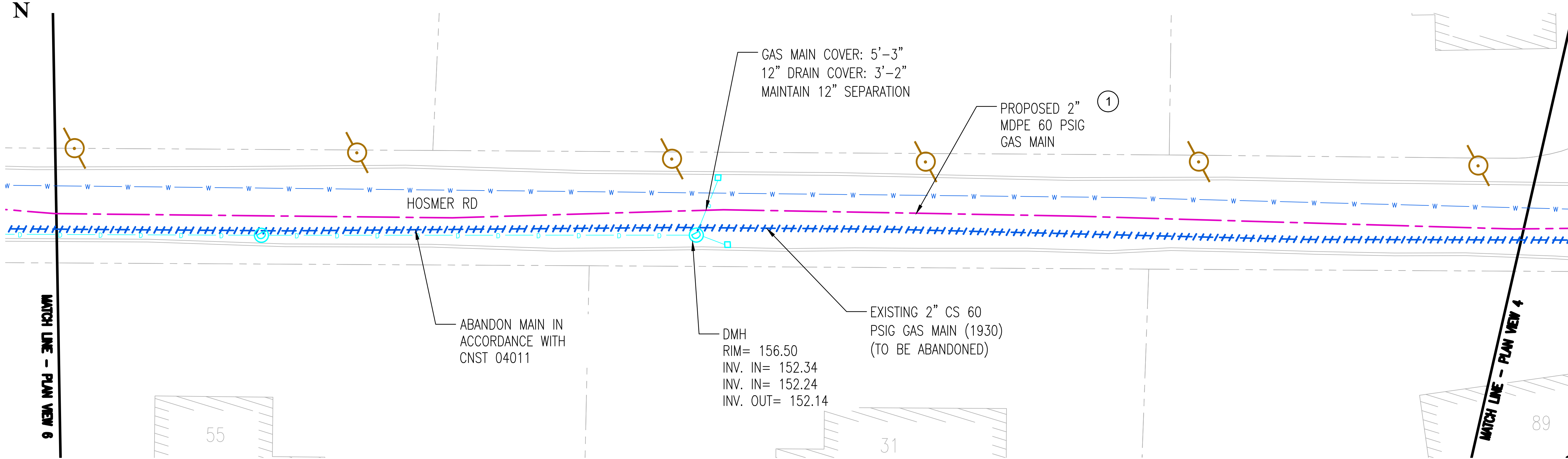
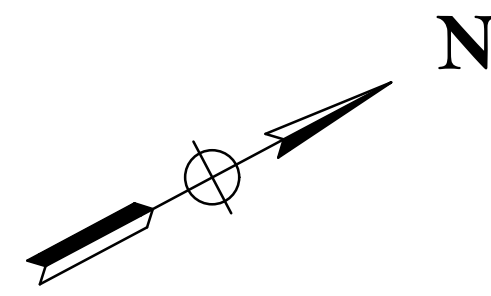


THE USE OF A DRAWDOWN COMPRESSOR DURING MAIN ABANDONMENT IS RECOMMENDED DUE TO THE LENGTH AND PRESSURE OF THE EXISTING MAIN. CONTACT DAVE LESSARD OR JIM MCNEILL ONE MONTH PRIOR TO THE START OF CONSTRUCTION TO COORDINATE USE OF A DRAWDOWN COMPRESSOR DURING MAIN ABANDONMENT.



- NOTE:
1. MAINTAIN A MINIMUM 12" VERTICAL AND HORIZONTAL SEPARATION FROM TOWN OF CONCORD AND CMLP, EDGE-TO-EDGE (DRAINAGE PIPES, CATCH BASINS AND INLETS, MANHOLES, FOUNDATIONS, ELECTRICAL CONDUIT, ETC.) WITHIN THE RIGHT OF WAY ON ALL CONCORD TOWN ROADWAYS.
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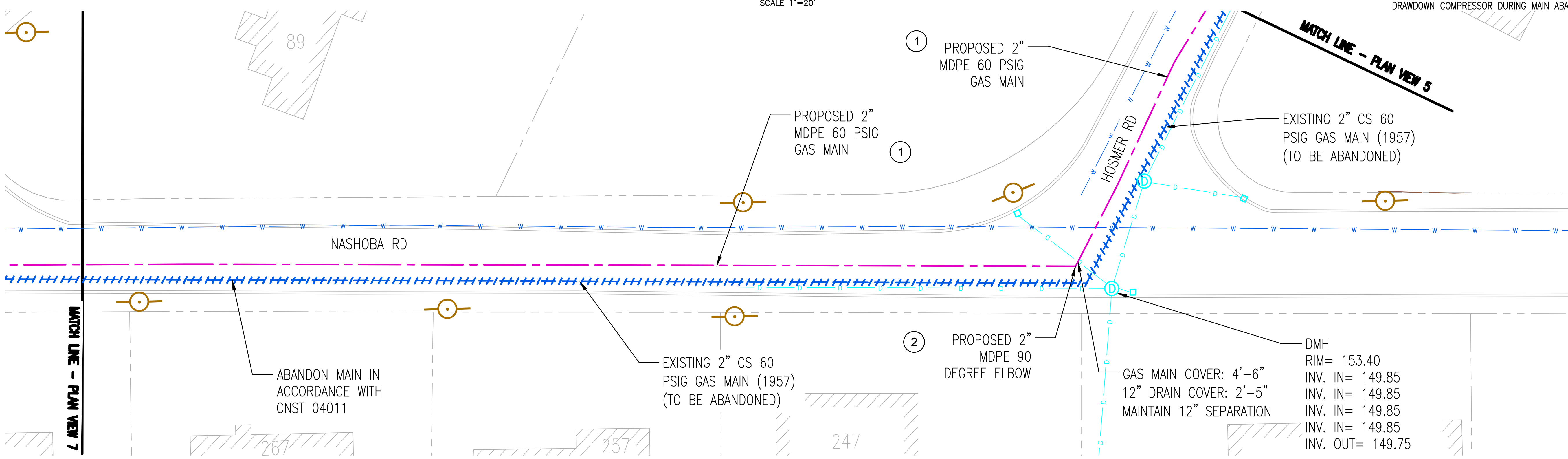
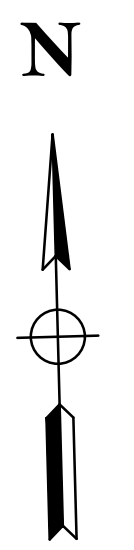
			BOSTON GAS COMPANY d/b/a		PROPOSED GAS MAIN INSTALLATION 2" MDPE (60 PSIG) CRESCENT RD CONCORD, MA		PAGE 6 OF 13		
			40 SYLVAN ROAD WALTHAM, MA 02451		PROPOSED INSTALLATION PLAN SHEET 2 OF 4		DRAWING NO.	SHEET NO.	
IFC		DWG SIZE	DESIGNER	ENGINEER	DATE	ASSET I.D.	W.O. NO.:	CON-1434024-06	C-003
0 ISSUED FOR CONSTRUCTION 04/21/2022 SH TA AC		22"x34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024		



PLAN VIEW 5
SCALE 1"=20'

THE USE OF A DRAWDOWN COMPRESSOR DURING MAIN ABANDONMENT IS RECOMMENDED DUE TO THE LENGTH AND PRESSURE OF THE EXISTING MAIN. CONTACT DAVE LESSARD OR JIM MCNEILL ONE MONTH PRIOR TO THE START OF CONSTRUCTION TO COORDINATE USE OF A DRAWDOWN COMPRESSOR DURING MAIN ABANDONMENT.

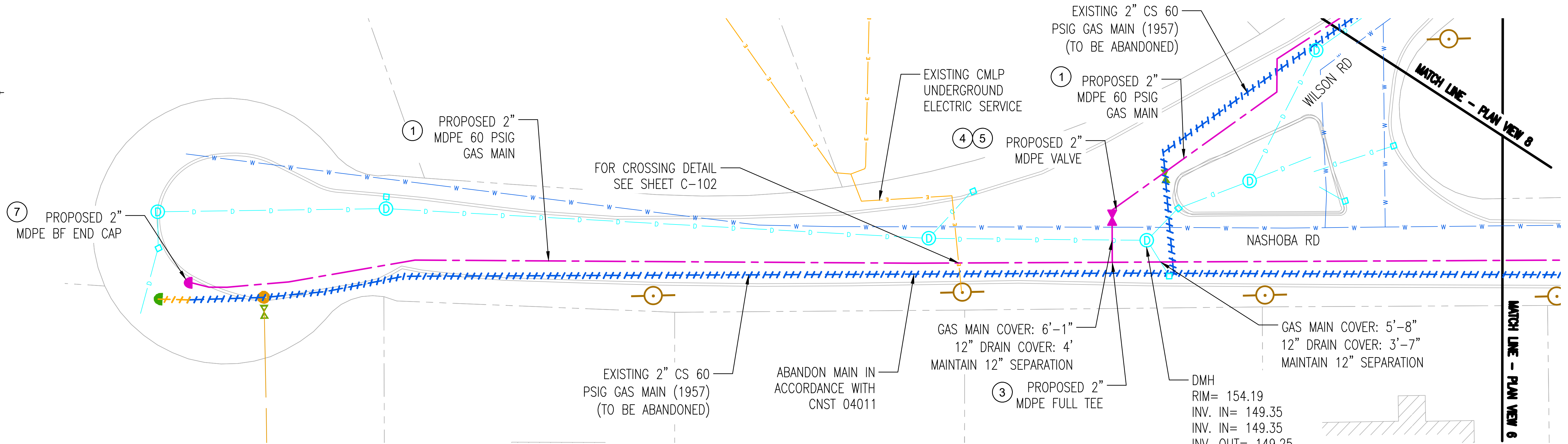
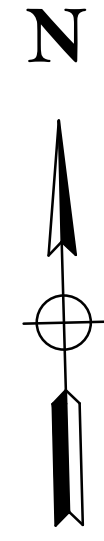
PROJECT IS OVER 2500 FEET IN LENGTH. PLEASE CONTACT I&R PRIOR TO EXECUTING THE PROJECT FOR SUPPLEMENTAL ODORIZATION. INR06002



PLAN VIEW 6
SCALE 1"=20'

- NOTE:
1. MAINTAIN A MINIMUM 12" VERTICAL AND HORIZONTAL SEPARATION FROM TOWN OF CONCORD AND CMLP, EDGE-TO-EDGE (DRAINAGE PIPES, CATCH BASINS AND INLETS, MANHOLES, FOUNDATIONS, ELECTRICAL CONDUIT, ETC.) WITHIN THE RIGHT OF WAY ON ALL CONCORD TOWN ROADWAYS.
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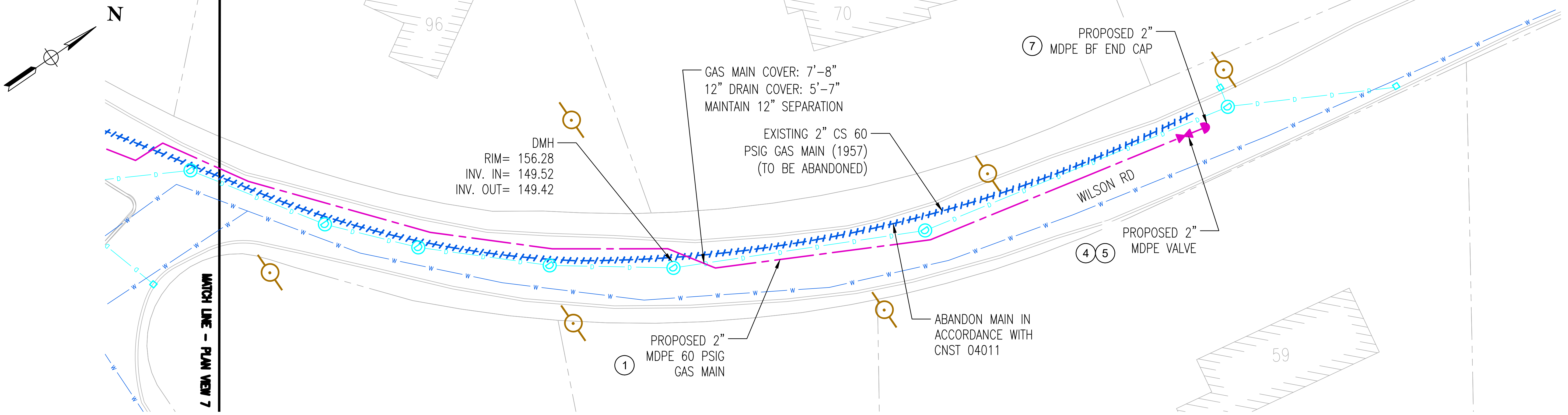
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			NO.	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC													
NO.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY																
DRAWING NO.	SHEET NO.																				
CON-1434024-07	C-004																				
<p>04/21/22 Andrew J. Cavallo SIGN & DATE</p>	<p>IFC</p>	<p>PROPOSED INSTALLATION PLAN SHEET 3 OF 4</p> <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>S. HAMILTON</td> <td>A. CAVALLO</td> <td>04/21/2022</td> <td>DISTRIBUTION</td> <td>1434024</td> </tr> </table>	DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:	22"x34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024							
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22"x34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024																



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PLAN VIEW 7
SCALE 1"=20'

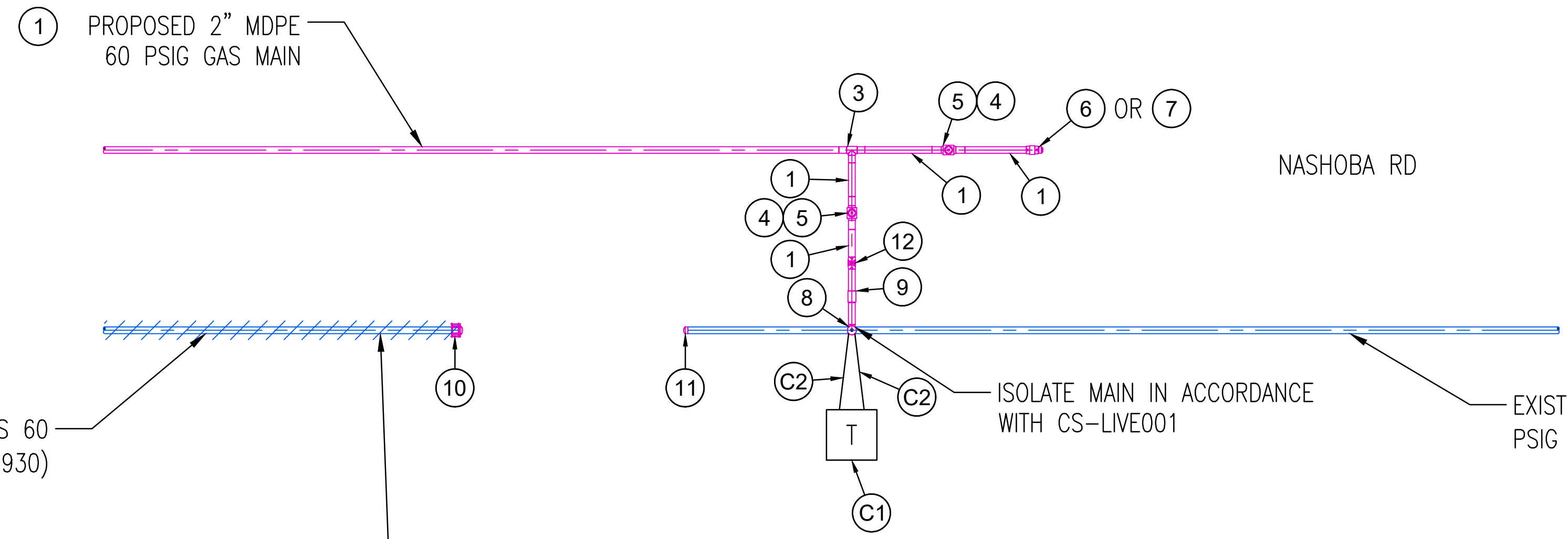
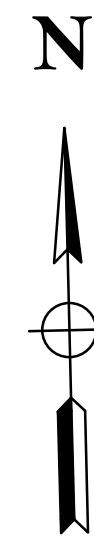
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PLAN VIEW 8
SCALE 1"=20'

- NOTE:
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			NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY													
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC																
DRAWING NO.	SHEET NO.																				
CON-1434024-08	C-005																				
	<p>IFC</p>	<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>S. HAMILTON</td> <td>A. CAVALLO</td> <td>04/21/2022</td> <td>DISTRIBUTION</td> <td>1434024</td> </tr> </table>	DWG SIZE	DESIGNER	ENGINEER	DATE	ASSET I.D.	W.O. NO.:	22"x34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024							
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22"x34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024																



CORROSION REQUIREMENTS: INSTALL A 2-WIRE TEST STATION TO THE EXISTING 2 INCH, 60 PSIG COATED STEEL (1930) MAIN AT THE COATED STEEL/PLASTIC INTERFACE. NO ANODES REQUIRED. INSTALL THE 9X9 TEST STATION IN AN ACCESSIBLE LOCATION. ICON0027

EXISTING 2" CS 60 PSIG GAS MAIN (1930)

#149

ABANDON MAIN IN ACCORDANCE WITH CNST 04011

PROPOSED LOCATION #1 AT NASHOBA RD @ #149



SCALE: 1"=3'

NASHOBA RD

EXISTING 2" CS 60 PSIG GAS MAIN (1930)

NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC

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

PROPOSED GAS MAIN INSTALLATION
2" MDPE (60 PSIG)
CRESCENT RD
CONCORD, MA

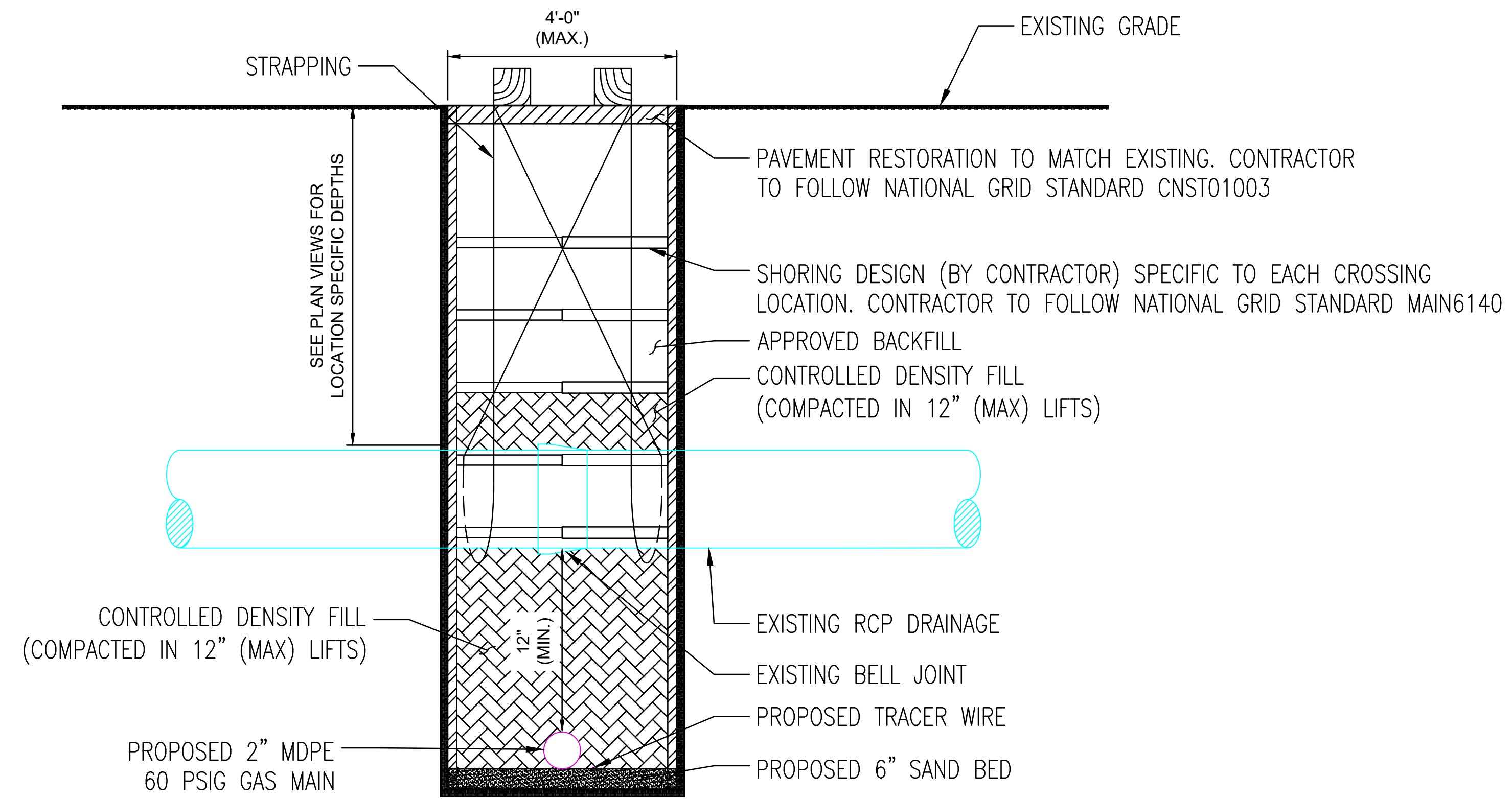
PROPOSED LOCATION DETAIL SHEET

DWG SIZE	DESIGNER	ENGINEER	DATE	ASSET I.D.	W.O. NO.:
22"X34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024

PAGE 9 OF 14

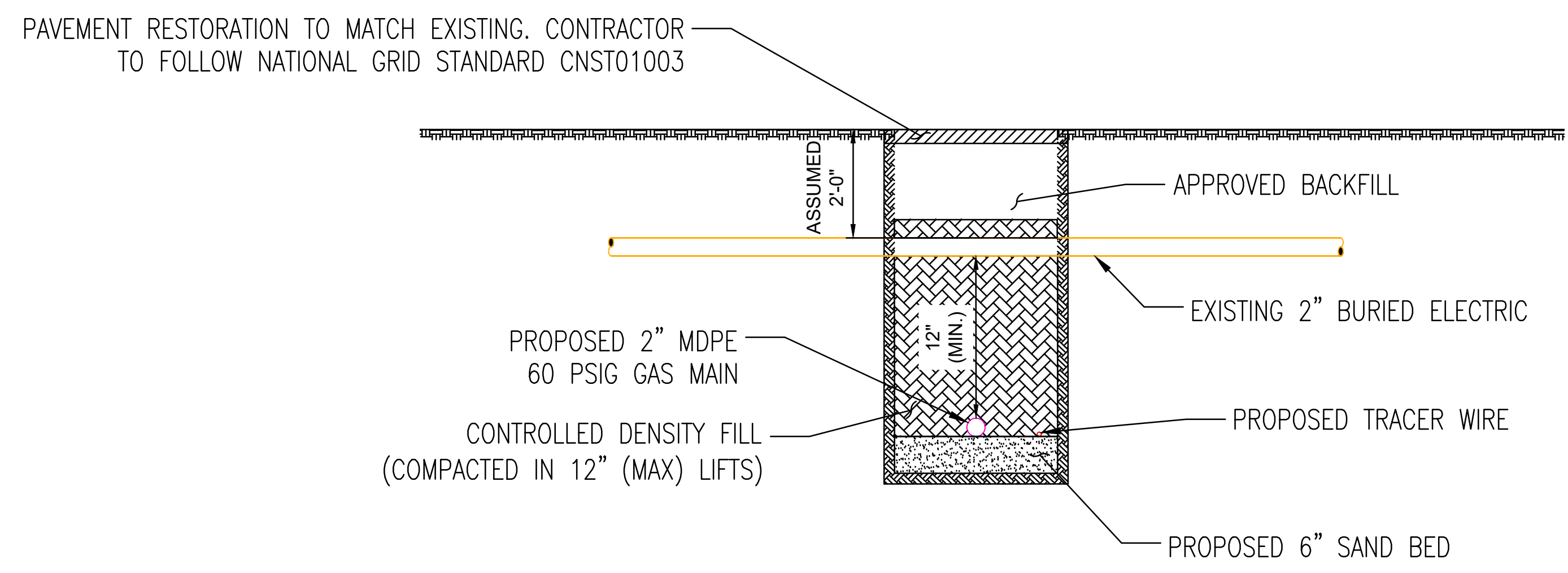
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CON-1434024-09	C-101

IFC





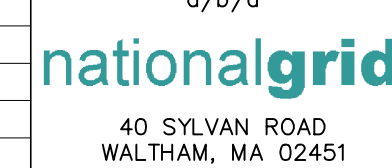
UTILITY CROSSING SECTION DETAIL
DRAINAGE CROSSING
 NOT TO SCALE

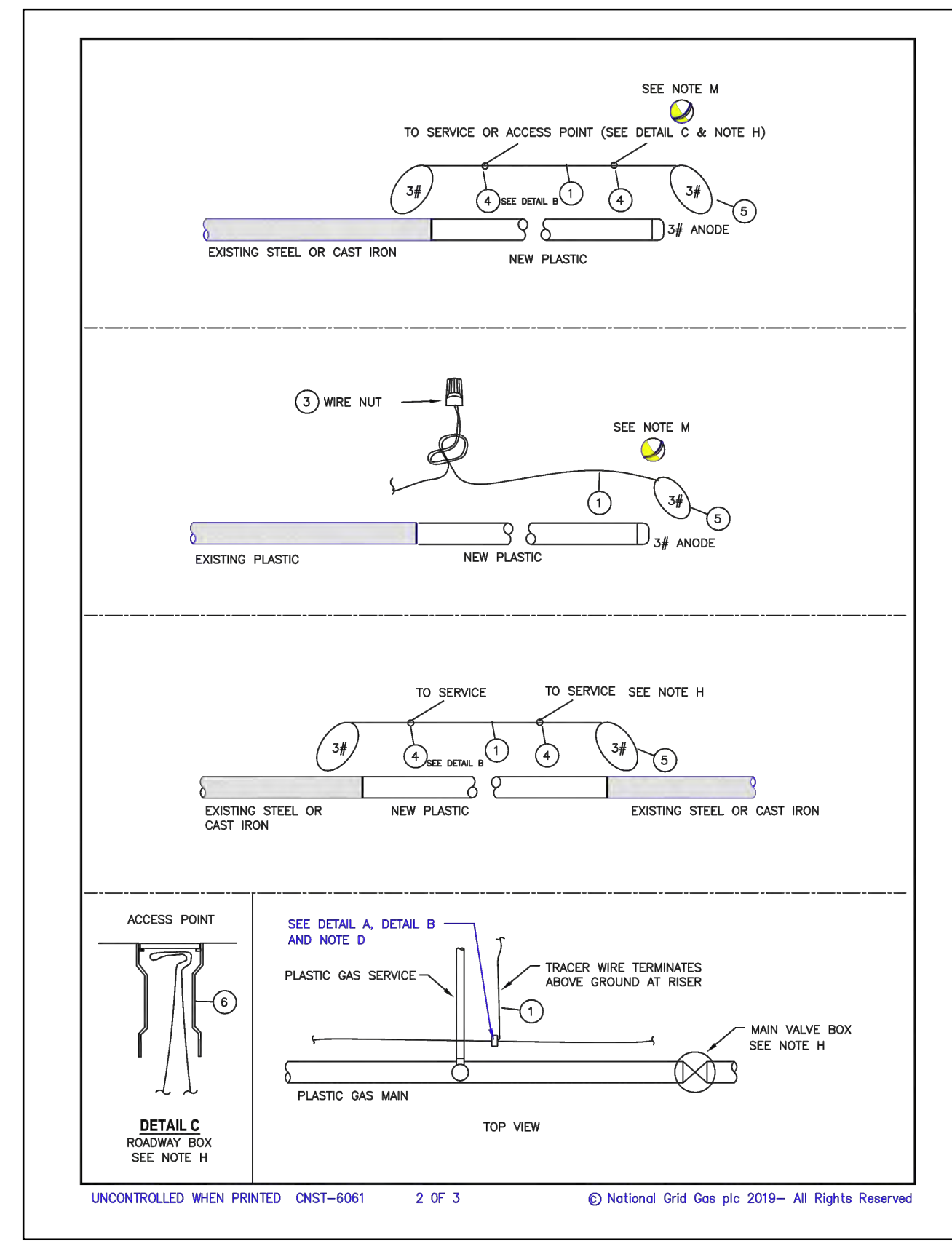
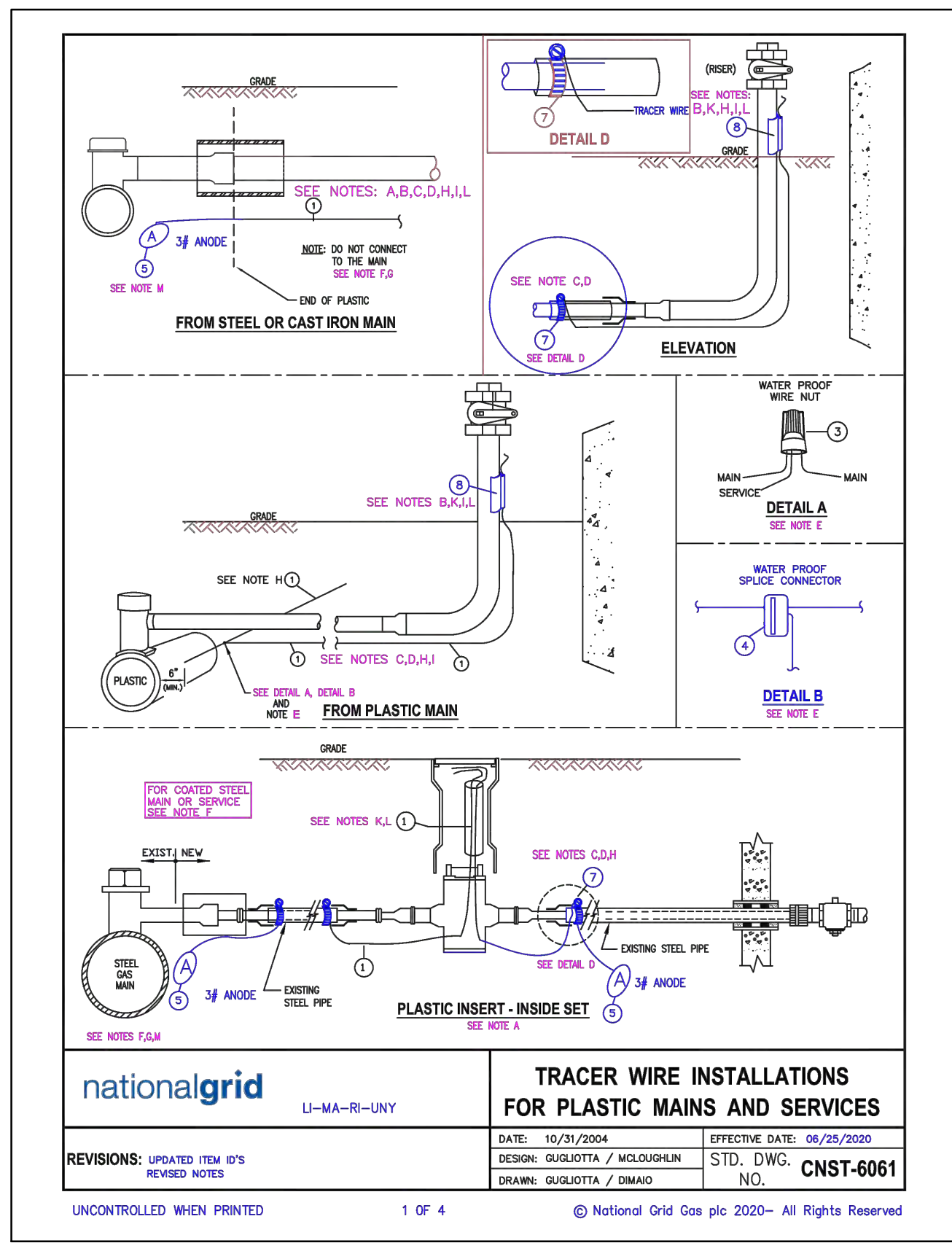
- NOTE:
1. IF BELL JOINT IS UNCOVERED AT THE PROPOSED CROSSING LOCATION, SUPPORT IS NEEDED ON EITHER SIDE OF BELL JOINT.
 2. RESTORATION TO MEET NATRIONAL GRID STANDARD CNST01003 AND TOWN OF CONCORD REQUIREMENTS.



UTILITY CROSSING SECTION DETAIL
ELECTRIC CROSSING
 NOT TO SCALE

NOTE: RESTORATION TO MEET NATIONAL GRID STANDARD CNST01003 AND TOWN OF CONCORD REQUIREMENTS

			BOSTON GAS COMPANY d/b/a				PROPOSED GAS MAIN INSTALLATION 2" MDPE (60 PSIG) CRESCENT RD CONCORD, MA				PAGE 10 OF 14	
			40 SYLVAN ROAD WALTHAM, MA 02451		PROPOSED LOCATION CROSSING DETAIL SHEET				DRAWING NO. CON-1434024-10	SHEET NO. C-102		
04/21/22 Andrew J. Cavallo SIGN & DATE		IFC	DWG SIZE 22"x34"	DESIGNER S. HAMILTON	ENGINEER A. CAVALLO	DATE 04/21/2022	ASSET I.D. DISTRIBUTION	W.O. NO.: 1434024	NO. DESCRIPTION DATE DR.BY CK.BY APP.BY			



NO.	ITEM	UNY/RI	LI/MA/RI	UNY/RI
8	TRACER WIRE SNAP, 2" (represents steel size)	9386134	9386134	9386134
8	TRACER WIRE SNAP, 1 1/2" (represents steel size)	9386156	9386156	9386156
8	TRACER WIRE SNAP, 1" (represents steel size)	9386150	9386150	9386150
8	TRACER WIRE SNAP, 3/4" (represents steel size)	9385568	9385568	9385568
7	CLAMP, STAINLESS	9331708	9331708	9331708
6	VALVE BOX, ROADWAY	9339890	9312344 UNY 9311208 RI	
5	ANODE, 3 LB MAGNESIUM	9315645	9315645	9315645
4	WIRE SPLICE CONNECTOR, WATERPROOF	9306036	9306036	9306036
3	WIRE NUT, PLASTIC, WATERPROOF	9331644	9331644	9314631
2	WIRE, DIRECTIONAL DRILL, STAINLESS, STRANDED 10 AWG	9314137	9314137	9314137
1	TRACER WIRE, DIRECT BURY, COPPER, 12 AWG	9315005	9315005	9315005

UNCONTROLLED WHEN PRINTED 2 OF 2 © National Grid Gas plc 2020 - All Rights Reserved Effective Date 06/25/2020

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

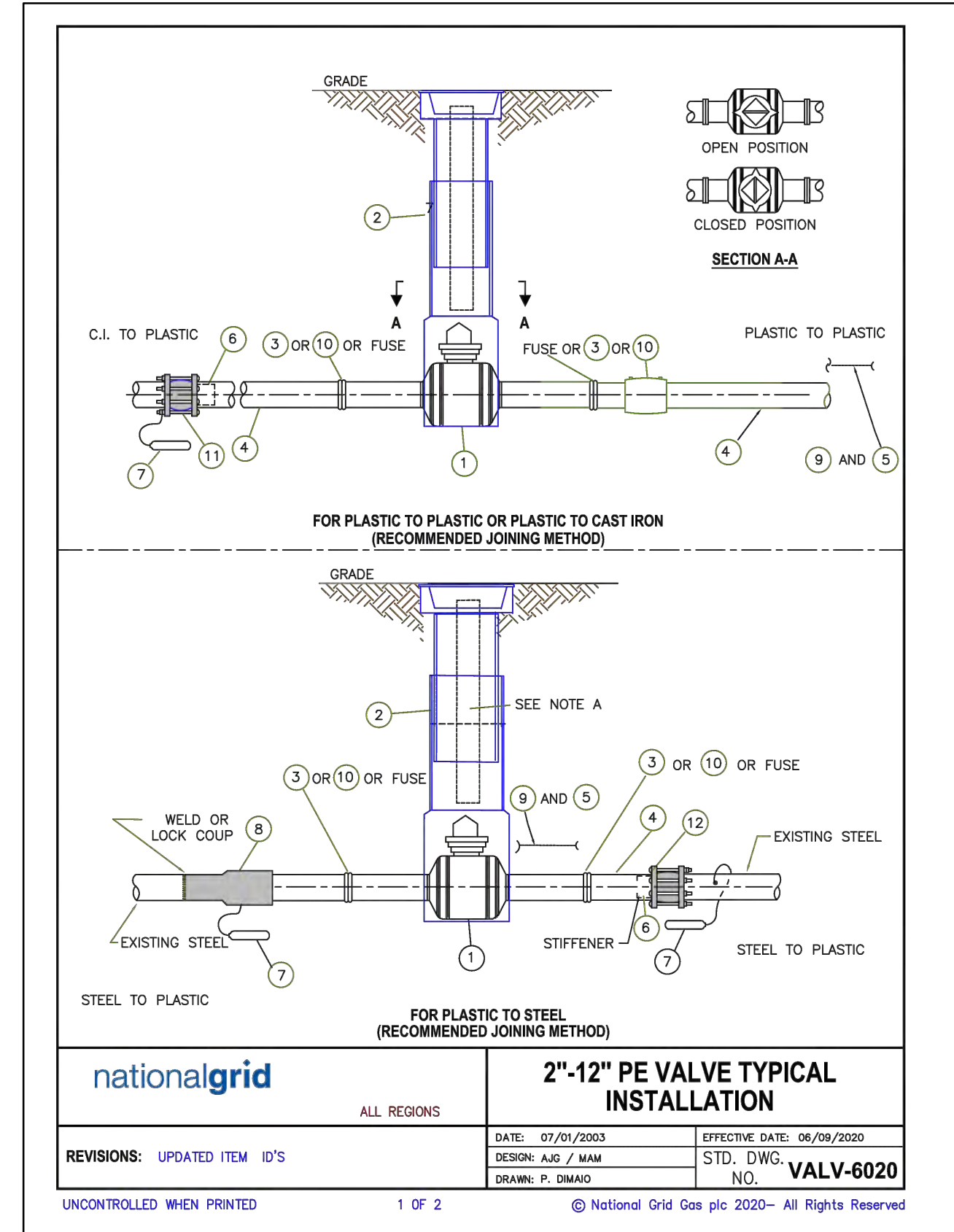
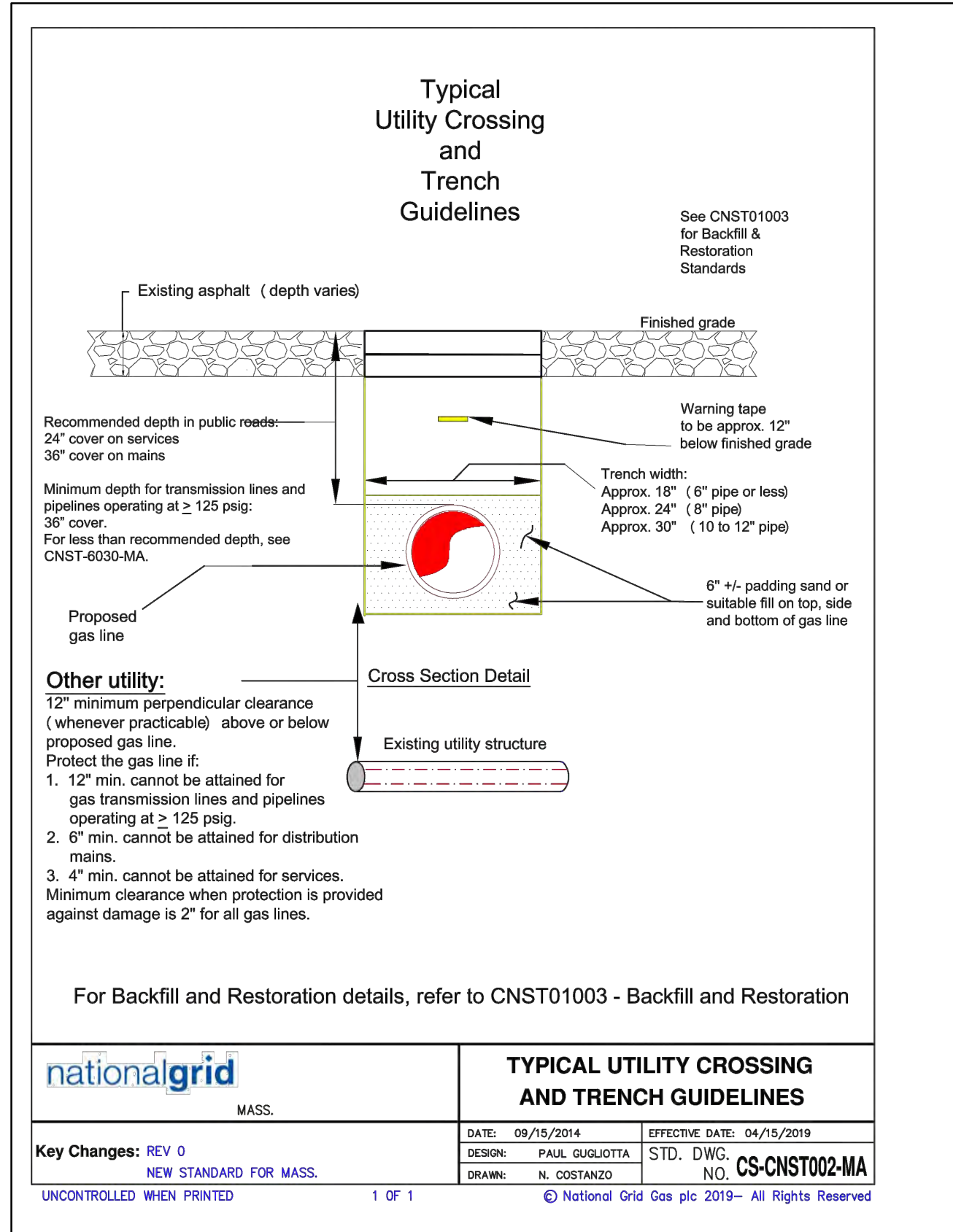
L. Verification: upon completion, the installer shall verify the location of the main or service using the tracer wire and locating device and perform a mark out using the conductive method.

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 \[CNST6060-UNY\]](#) for installation of electronic marker ball in place of tracer wire.

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NOTES:
 A. IN ANY LI REGION, INSTALL A LENGTH OF 2" 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 DRY LI 99 & 124 PSI IBE SYSTEM.
 D. REFER TO REGIONAL STANDARDS FOR MATERIAL IDS NOT GIVEN BELOW.

	SAP ID	SAP ID	SAP ID
1	UNY AND RI LP TO 160 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 6" RED PORT DR 9	9341704 12" FULL PORT DR 13.5
	9307909 12" DR 13.5 FULL PORT W/ GEAR OPER UNY ONLY	9341700 4" RED PORT DR 9	9323032 6" FULL PORT DR 11.5
	9311173 8" DR 11 FULL PORT	9341699 2" FULL PORT DR 9	9341708 4" FULL PORT DR 11.5
	9315189 8" DR 13.5 FULL PORT UNY ONLY		9323039 3" FULL PORT DR 11
	9312116 8" DR 11 FULL PORT		9341784 2" FULL PORT DR 11
	9312058 4" DR 11 FULL PORT	RI ONLY	9341408 8" RED PORT DR 13.5
	9308561 3" DR 11 FULL PORT		9341757 6" RED PORT DR 11.5
	9312060 2" DR 11 FULL PORT		9341693 4" RED PORT DR 11.5
	9311146 2" DR 11 FULL PORT WITH PERMASERT ENDS		9341756 3" RED PORT DR 11
2	ROADWAY VALVE BOX WITH COVER		100 PSIG HIGH DENSITY (NE ONLY)
	SEE DWG FITS 6360 (FOR 12" VALVE)	9341706 8" RED PORT	9323610 4" RED PORT DR 11
	9311208 (FOR 2" THRU 8" VALVE)	9341700 6" RED PORT	9323611 6" RED PORT DR 11
		9341700 4" RED PORT	9323612 8" RED PORT DR 11
		9341699 2" FULL PORT	
			9312060 2" FULL PORT DR 11
			9312058 4" FULL PORT DR 11
			9312116 6" FULL PORT DR 11
			9323626 FOR 12" FULL PORT
			9323626 FOR 8" FULL PORT
		9339893 FOR 6" FULL PORT	
		9339892 FOR 4" FULL PORT	
		9339890 FOR 3" FULL PORT	
		9339890 FOR 2" FULL PORT	
		9339893 FOR 8" RED PORT	
		9339892 FOR 6" RED PORT	
		9339891 FOR 4" RED PORT	
		9339891 FOR 3" RED PORT	

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Architecture Engineering Environmental Land Surveying

Andrew Joseph Cavallo
 MECHANICAL
 No. 54294
 PROFESSIONAL ENGINEER

04/21/22
 Andrew J. Cavallo
 SIGN & DATE

NO.	ISSUED FOR CONSTRUCTION	DATE	DR.BY	CK.BY	APP.BY
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC

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

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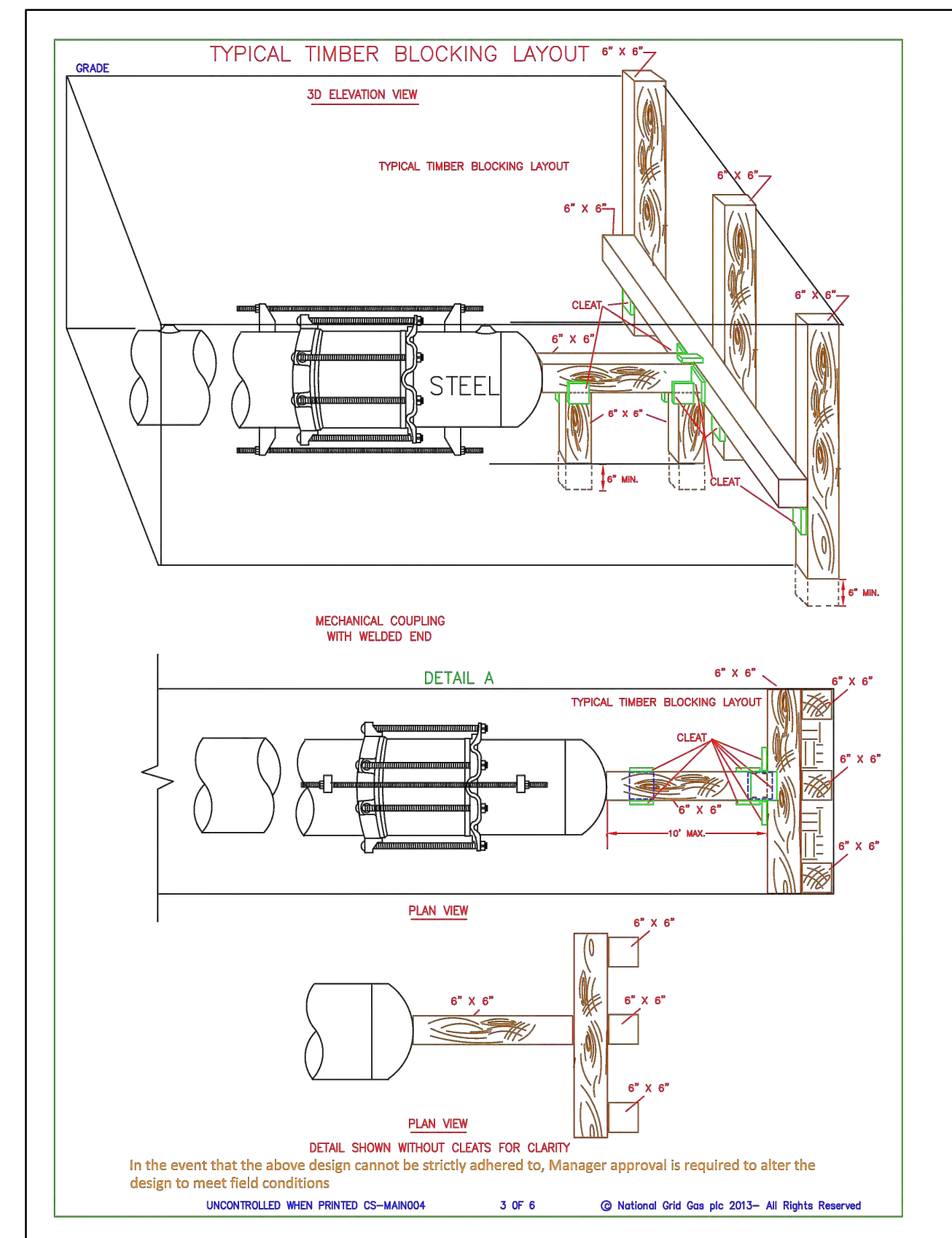
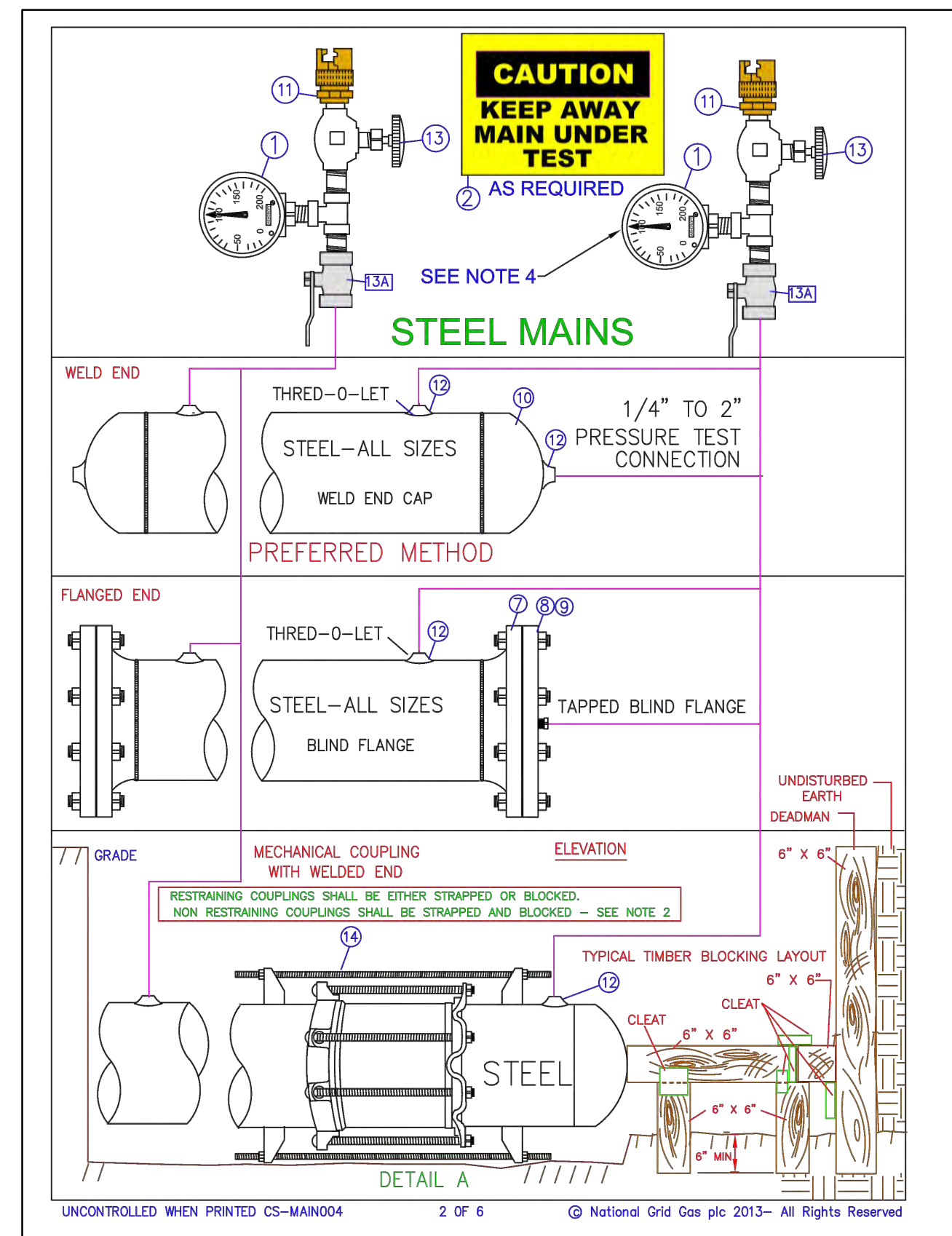
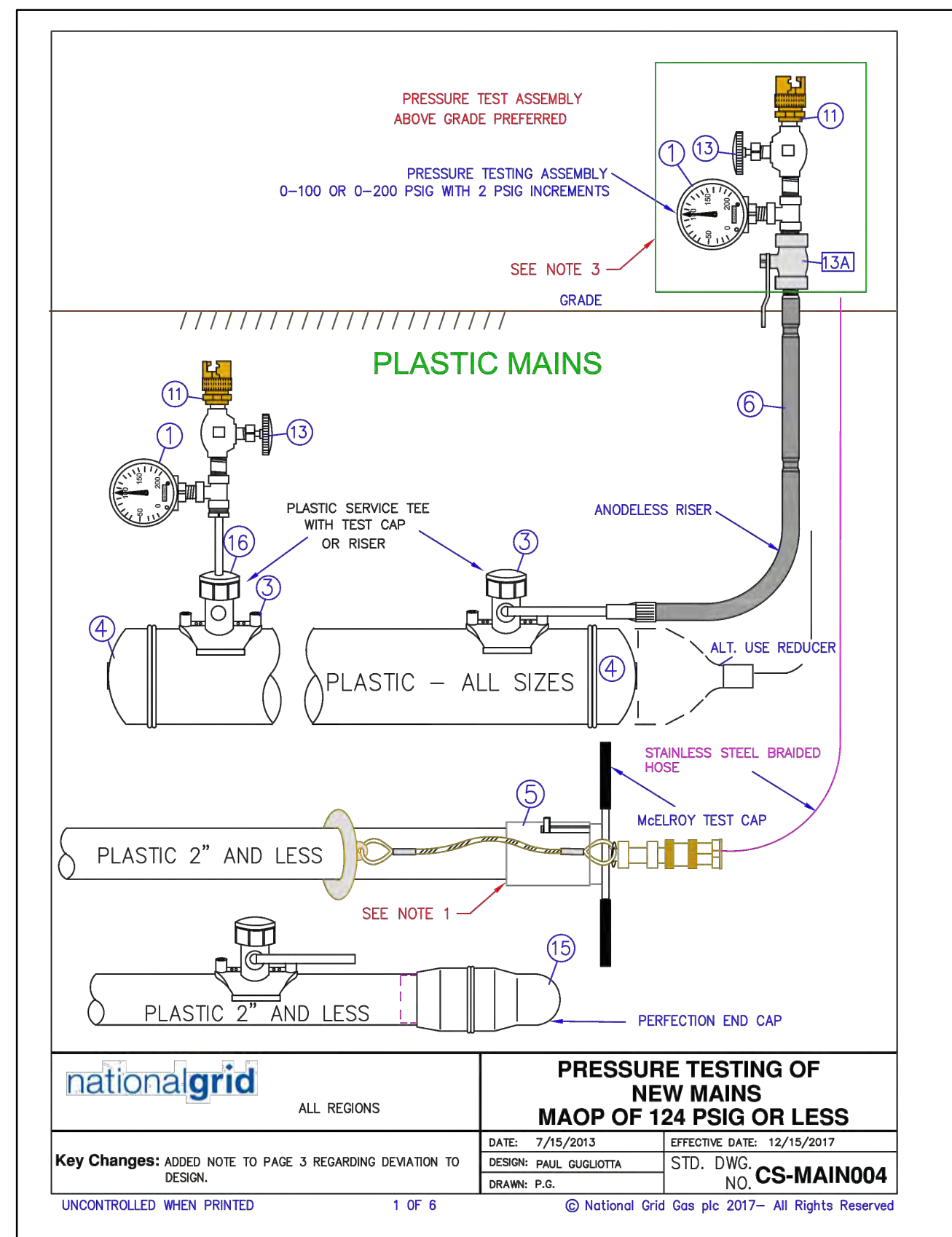
PROPOSED GAS MAIN INSTALLATION
 2" MDPE (60 PSIG)
 CRESCENT RD
 CONCORD, MA

MISCELLANEOUS DETAIL 1 OF 4

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	S. HAMILTON	A. CAVALLO	04/21/2022	DISTRIBUTION	1434024

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DRAWING NO.	SHEET NO.
CON-1434024-11	C-201



NOTES:

- INSTALL PER MEULROY 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 EMBODIMENT 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	5
3	6
4	12
6	24
8	41
12	70

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 (2 PSIG INCREMENTS READ IN NY STATE ONLY).
- REFER TO CUSTOMER'S '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 PSIG INCREMENTS	9354865	TOOL ITEM
2	0-200 PSIG STAINLESS STEEL 1/2" NPT 3-1/2" DIAL	9355300	TOOL ITEM
3	0-100 PSIG STAINLESS STEEL 1/2" NPT	NON STOCK	NON STOCK
3	TEE SERVICE - ELECTROFUSION YELLOW MD 1/2" CTS BUTT FUSE OUTLET	9332240	NON STOCK
4	2" MAIN X 1/2" BUTT FUSE OUTLET	9342517 2X1/2	NON STOCK
4	2" MAIN X 1/2" BUTT FUSE OUTLET	9342518 4X1/2	NON STOCK
4	2" MAIN X 1/2" BUTT FUSE OUTLET	9342516 6X1/2	NON STOCK
4	2" MAIN X 1/2" BUTT FUSE OUTLET	9342371 8X1/2	NON STOCK
4	TEE SERVICE - ELECTROFUSION YELLOW MD 1" CTS BUTT FUSE OUTLET	9342332 1-1/4 X 1	NON STOCK
4	2" MAIN X 1" OUTLET LI	9342519 2X1	NON STOCK
4	2" MAIN X 1" OUTLET LI	9342521 4X1	NON STOCK
4	2" MAIN X 1" OUTLET LI	9342328 6X1	NON STOCK
4	2" MAIN X 1" OUTLET LI	9342371 8X1	NON STOCK
4	TEE SERVICE - ELECTROFUSION BLACK HD 1" IPS BUTT FUSE OUTLET	9322853 2X1	9322853 2X1
4	2" MAIN X 1" IPS OUTLET	9322828 3X1	9322828 3X1 RI
4	2" MAIN X 1" IPS OUTLET	9322820 4X1	9322820 4X1
4	2" MAIN X 1" IPS OUTLET	9322826 6X1	9322826 6X1
4	2" MAIN X 1" IPS OUTLET	9323487 8X1	9323487 8X1
4	2" MAIN X 1" IPS OUTLET LI, NYC, MA	931831 12X1	931831 12X1
4	TEE SERVICE - SADDLE FUSION HIGH DENSITY BLACK 1/2" CTS BUTT FUSE	9342405 2X1/2	NON STOCK
4	2" MAIN X 1/2" OUTLET LI	9342406 4X1/2	NON STOCK
4	2" MAIN X 1/2" OUTLET LI	9342407 6X1/2	NON STOCK
4	2" MAIN X 1/2" OUTLET LI	9342408 8X1/2	NON STOCK
4	TEE SERVICE - SADDLE FUSION HIGH DENSITY BLACK 1" CTS BUTT FUSE	9342409 2X1 SDR 9	9315907 2X1
4	2" MAIN X 1" OUTLET	9342429 4X1 SDR 9	9315964 4X1
4	2" MAIN X 1" OUTLET	9342430 6X1 SDR 9	9315963 6X1
4	2" MAIN X 1" OUTLET	9342431 8X1 SDR 9	9315962 8X1
4	2" MAIN X 1" OUTLET	NON STOCK	9314829 12X1
4	TEE SERVICE MECHANICAL X PERFECTION OUTLET	NON STOCK	9308594 2X1/2
4	2" MAIN X 1/2" OUTLET	NON STOCK	9308583 4X1/2
4	2" MAIN X 1/2" OUTLET	NON STOCK	9308472 6X1/2
4	2" MAIN X 1/2" OUTLET	NON STOCK	9308471 8X1/2
4	2" MAIN X 1" OUTLET	938122 2X1	9315492 2X1
4	2" MAIN X 1" OUTLET	938123 3X1	9315493 3X1
4	2" MAIN X 1" OUTLET	938118 4X1	9315490 4X1
4	2" MAIN X 1" OUTLET	938149 6X1	9308473 6X1
4	2" MAIN X 1" OUTLET	9345162 8X1	9308478 8X1
4	2" MAIN X 1" OUTLET	9387367 12X1	9387367 12X1

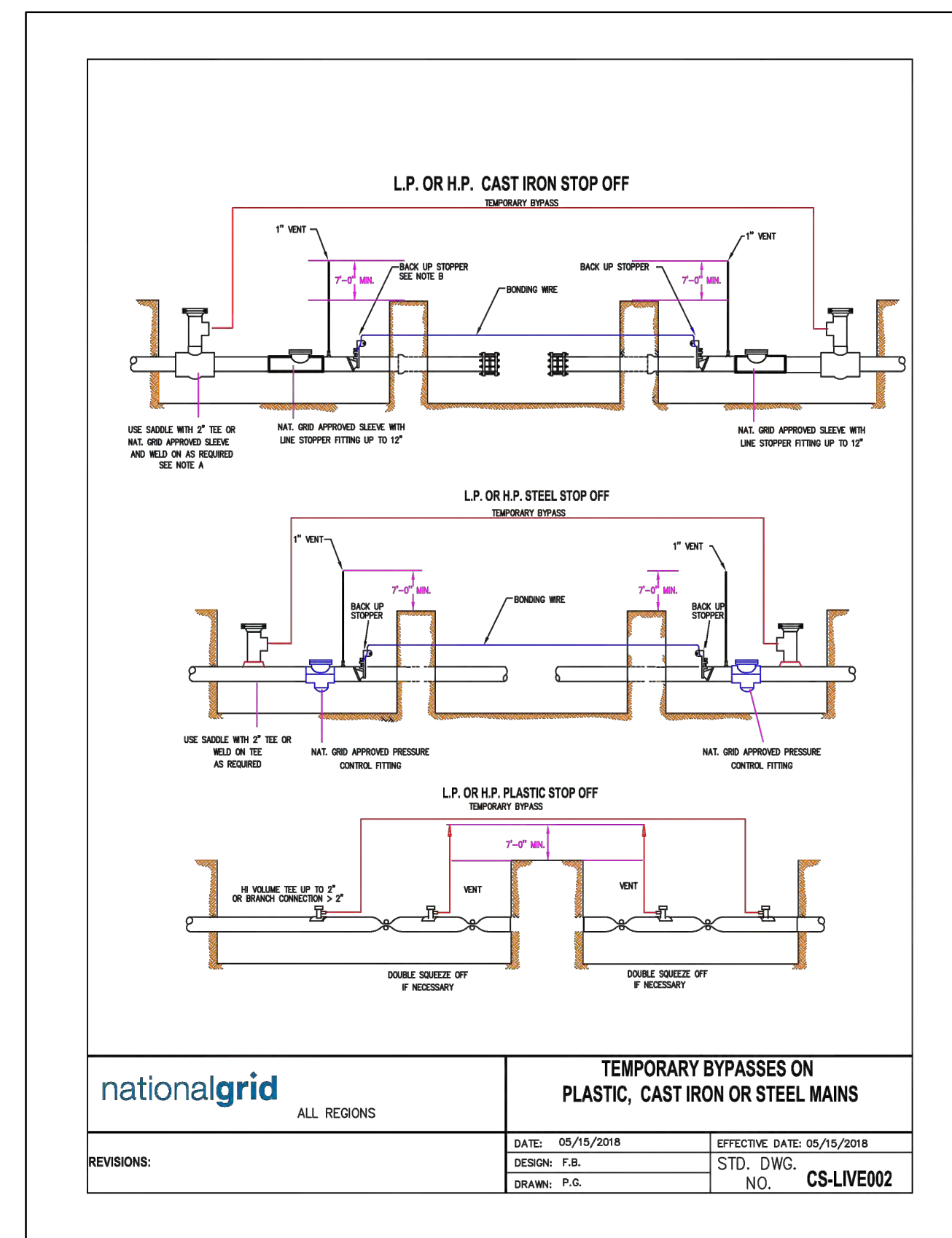
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ITEM	DESCRIPTION	ORACLE ITEM ID LI/MA/ NYC	PEOPLESOF ITEM RI AND UNY
4	CAP END PLASTIC MEDIUM DENSITY YELLOW BUTT FUSE	2" 9339540	NON STOCK
4	2" SDR 11	9339541	NON STOCK
4	4" SDR 11	9339534	NON STOCK
4	6" SDR 11	9339733	NON STOCK
4	8" SDR 11.5	9339559	NON STOCK
4	12" SDR 11.5	9339560	NON STOCK
4	CAP END PLASTIC HIGH DENSITY BLACK BUTT FUSION	2" 9339538	NON STOCK
4	4" SDR 9	9339535	NON STOCK
4	6" SDR 9	9339536	NON STOCK
4	8" SDR 9	9339537	NON STOCK
4	2" SDR 11 MASS RI & UNY	9312888	NON STOCK
4	4" SDR 11 MASS RI & UNY	9312825	NON STOCK
4	4" SDR 11 MASS RI & UNY	9312876	NON STOCK
4	4" SDR 11 MASS RI & UNY	9312885	NON STOCK
4	6" SDR 11 MASS RI & UNY	9312841	NON STOCK
4	8" SDR 11 MASS RI & UNY	9312842	NON STOCK
4	12" SDR 11 MASS, RI	9308729	NON STOCK
4	8" SDR 13.5 UNY	9312883	NON STOCK
4	12" SDR 13.5 UNY	12 9314605	NON STOCK
5	MEULROY TEST CAPS (165 PSIG MAX)	NON STOCK	NON STOCK
5	1-1/4" MODEL TP	TP-306	TP-306
5	2" MODEL TP-310	TP-310	TP-310
6	RISERS	9344386	NON STOCK
6	1" CTS MEDIUM DENSITY X 1/2" NPT OUTLET	9340874	NON STOCK
6	1" HIGH DENSITY X 1-1/4" OUTLET	9340874	NON STOCK
6	1" CST SERVASET X 1" OUTLET	9322627	NON STOCK
6	1" CTS HIGH DENSITY .090" WALL X 1" IPS STEEL OUTLET	9318405	NON STOCK
6	1" CTS .090" WALL PERFECTION END X 1-1/4" NPT STEEL	9310295	NON STOCK
6	1-1/4" CTS .090" WALL PERFECTION END X 1-1/4" NPT STEEL	9306180	NON STOCK
7	OR TEST CAPS WITH STEEL OR PLASTIC PIPE TO TEST TREE TEST CAP FOR CENTRAL PLASTIC ELECTROFUSION TAPPING TEE	9381846 OR TOOL ROOM ITEM	TOOL ROOM ITEM
7	FLANGE 150# WELD END FLAT FACE	2" 9341058	2" 9314322
7	3"	9341438	3" 9314431
7	4"	9340988	4" 9314430
7	6"	9341084	6" 9308959
7	8"	9341015	8" 9308748
7	12"	9340979	12" 9308660
7	16"	9322383	16" NON STOCK
7	20"	9322382	20" NON STOCK
8	BLIND FLANGE CLASS 150# ASTM A-105	9341434	2" NON STOCK
8	2" FLAT FACE WITH 1/2" CENTER NPT TAP	9341014	3" NON STOCK
8	3" FLAT FACE WITH 1/2" CENTER NPT TAP	9341435	4" NON STOCK
8	4" FLAT FACE WITH 1/2" CENTER NPT TAP	9340862	6" NON STOCK
8	6" FLAT FACE WITH 1/2" CENTER NPT TAP	9360974	2" NON STOCK
8	2" FLAT FACE	9360974	2" NON STOCK
8	3" FLAT FACE	9387763	3" 9307751
8	4" FLAT FACE	9387776	4" 9307652
8	6" FLAT FACE	9385747	6" 9306518
8	8" FLAT FACE	9341083	8" 9307760
8	12" FLAT FACE	9340587	12" 9308749
9	GASKETS	9333167	2" 9315688
9	3" FULL FACE 150#	9341158	3" 9312067
9	4" FULL FACE 150#	9341159	4" 9312069
9	6" FULL FACE 150#	9332599	6" 9312568
9	8" FULL FACE 150#	9341166	8" 9315689
9	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" 9339631	2" 9312095
10	3"	9339629	3" 9308719
10	4"	9339528	4" 9312096
10	6"	9339632	6" 9312098
10	8"	9339524	8" 9312093
10	10"	9339666	10" 9315162
10	12"	9339734	12" 9312092
10	16"	9339633	16" 9314824
10	20"	9339667	20" 9314823
11	THOR FITTING	9332392	NON STOCK
11	1/2" MALE NPT X HOSE CONNECTION	9333111	NON STOCK
11	3/4" FEMALE X HOSE CONNECTION	9333111	NON STOCK
12	THRED-O-LET	12" - 8" X 1/2" 3000# PER ASTM A-105 GRADE B	9341652 12-8X3/4
12	10" - 8" X 1" 3000# PER ASTM A-105 GRADE B	9341658 10-8X1	NON STOCK
12	38" - 12" X 1" 3000# PER ASTM A-105 GRADE B	9342052 38-12X1	NON STOCK
12	2" X 1" 3000# PER ASTM A-105 GRADE B	9307676 2X1	NON STOCK
12	10" - 8" X 1" 3000# PER ASTM A-105 GRADE B	9307665 10-8X1	NON STOCK
12	38" - 14" X 3/4" 3000# PER ASTM A-105 GRADE B	9307677 38-14X3/4	NON STOCK
13	VALVE	NON STOCK	NON STOCK
13A	VALVE (OPTIONAL - TO SHUT OFF TEST ASSEMBLY)	NON STOCK	NON STOCK
14	LUG ASSEMBLY	7/8" X 24" LONG (LI ONLY - SEE MAIN-4210)	9342211
14	7/8" X 44" LONG (LI ONLY - SEE MAIN-4210)	9342212	NON STOCK
14	LUG GREEN 3" - 8" MAIN 7/8" DIAM. (NYC ONLY - SEE MAIN-4230 & MAIN-4230)	9357904	NON STOCK
14	LUG YELLOW 10" - 30" MAIN 1-1/8" DIAM. (NYC ONLY - SEE MAIN-4230 & MAIN-4230)	9357905	NON STOCK
14	ROD 3/4" X 12" LONG	9328121	NON STOCK
14	ROD 1" X 12" LONG	9328150	NON STOCK
14	LUG ASSEMBLY 3/4" X 30" LONG (UNY ONLY)	9315741	NON STOCK
15	COUPLING - END 2" PERFECTION	9355248	NON STOCK
16	TEST CAP	9325109	TOOL ROOM ITEM
16	FOR SADDLE FUSION TEE - CENTRAL PLASTICS	9325117	NON STOCK
16	FOR SADDLE FUSION TEE - JIM EAGLE / POLY UPONOR	9341368	NON STOCK
16	FOR HVT HIGH VOLUME TAPPING TEE - PERFORMANCE PIPE TEES	9342498	NON STOCK
16	FOR HVT HIGH VOLUME TAPPING TEE - SADDLE FUSION - CENTRAL PLASTICS	9341774	NON STOCK
16	FOR HVT HIGH VOLUME TAPPING TEE - SADDLE FUSION - JIM EAGLE / POLY UPONOR	9323715	NON STOCK
16	FOR HVT HIGH VOLUME TAPPING TEE - SADDLE FUSION PERFORMANCE PIPE TEES	9352484	NON STOCK
16	FOR HVT ELECTROFUSION TEE	9381846	NON STOCK
16	FOR ELECTROFUSION TEE	9339661	NON STOCK
16	FOR PERFECTION HMT MECHANICAL TEE (CAP FITS ALL MAIN SIZE & OUTLET SIZES OF PMTTS)	NON STOCK	NON STOCK

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NOTES:

- FOR BYPASSES ON THE LP SYSTEM ONLY SCREW TEES AND BAGHOLES MAY BE TAPPED DIRECTLY INTO THE MAIN.
- BACK UP STOPPERS WILL BE REQUIRED IF INSUFFICIENT STOP OFF CAN BE ACHIEVED OR IF WELDED BETWEEN THE STOPPERS WILL BE REQUIRED.
- STOP OFF CAN BE PERFORMED USING MUELLER, T.D. WILLIAMSON, KUEISS, BAGS, OR OTHER APPROVED STOP OFF SYSTEMS.

SHT. 2 OF 2 CS-LIVE002

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Architecture Engineering Environmental Land Surveying Companies

ANDREW JOSEPH CAVALLA MECHANICAL No. 54294 PROFESSIONAL ENGINEER

04/21/2022

Andrew J. Cavalla SIGN & DATE

NO.	ISSUED FOR CONSTRUCTION	DATE	DR.BY	CK.BY	APP.BY
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC

BOSTON GAS COMPANY d/b/a nationalgrid

40 SYLVAN ROAD WALTHAM, MA 02451

IFC

PROPOSED GAS MAIN INSTALLATION

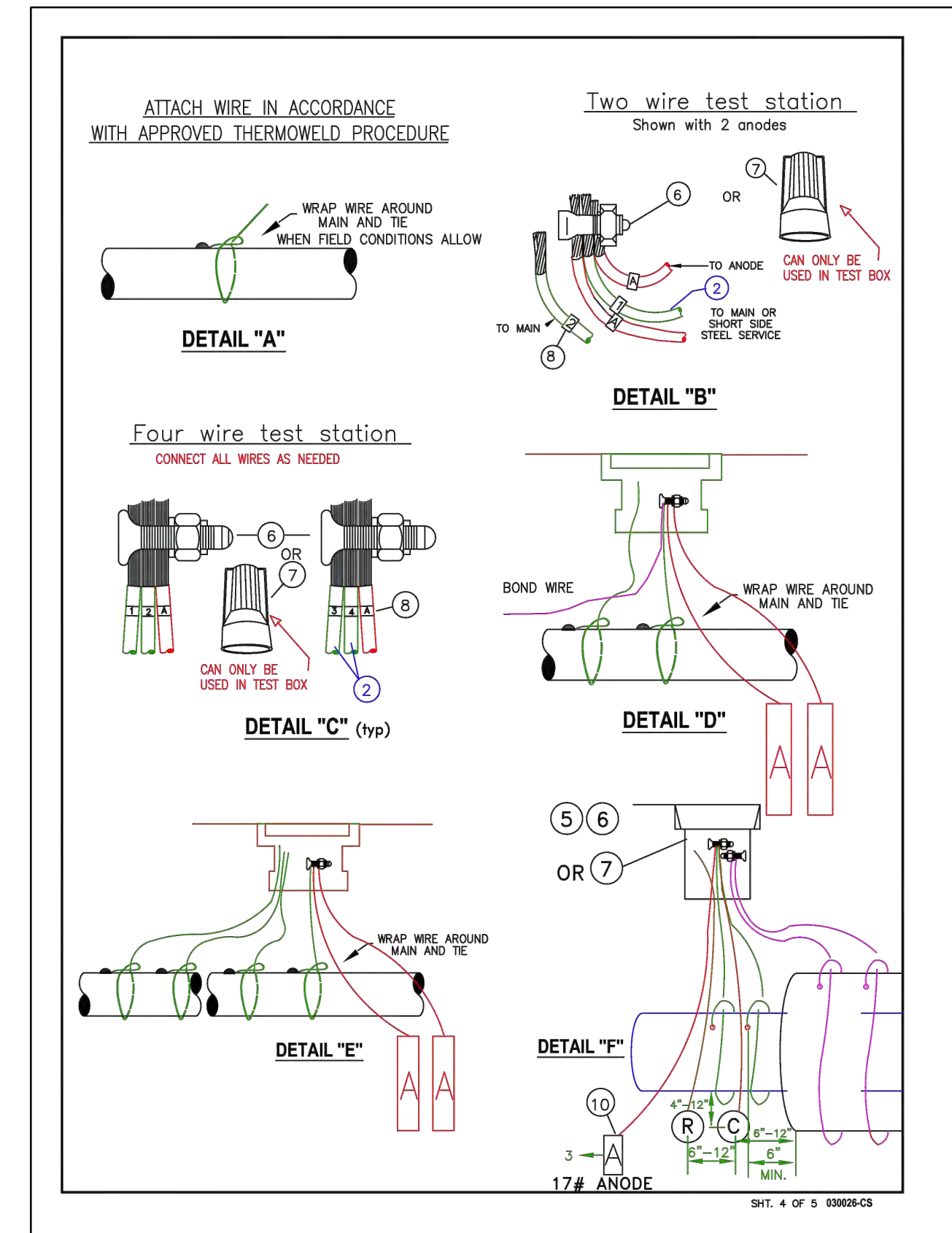
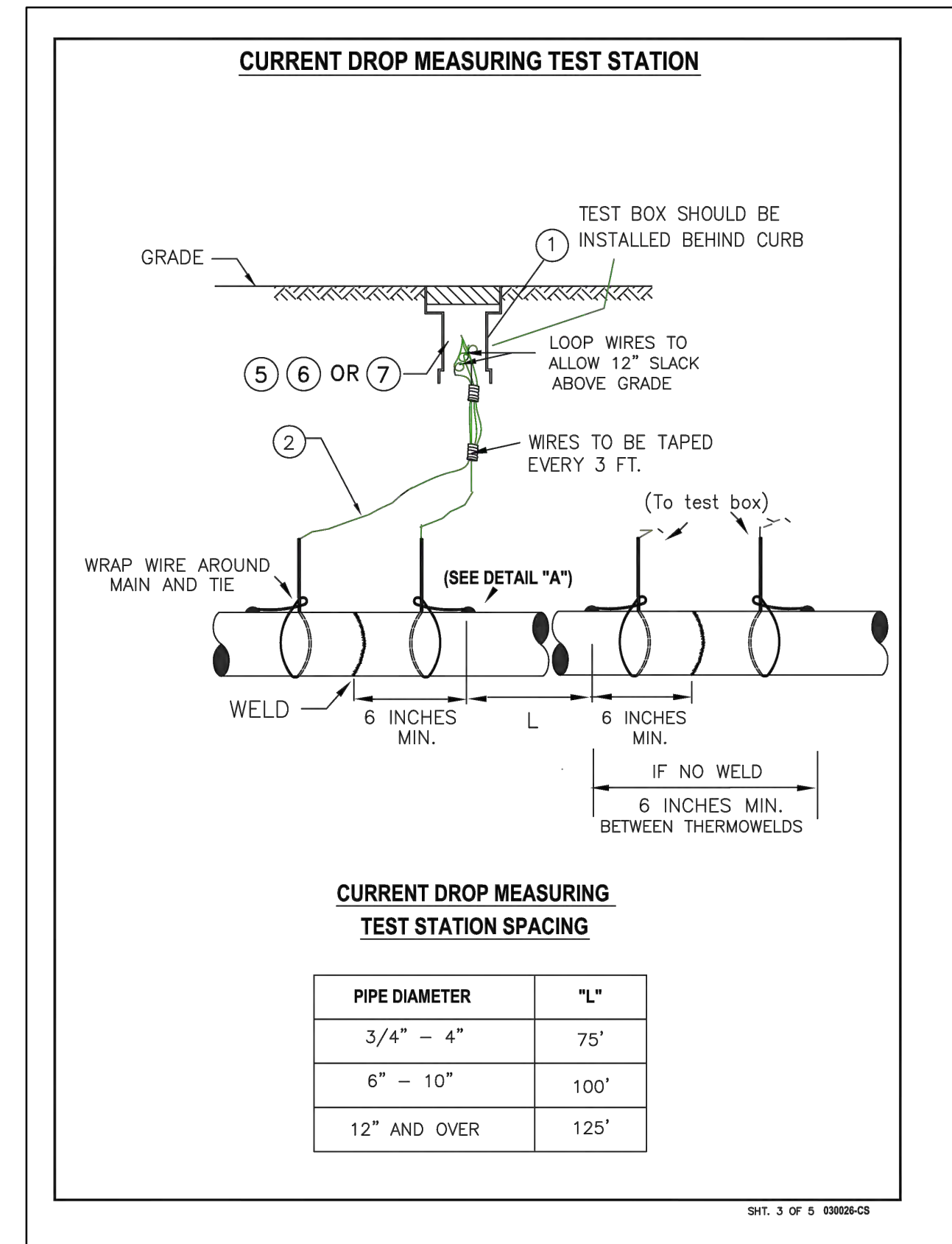
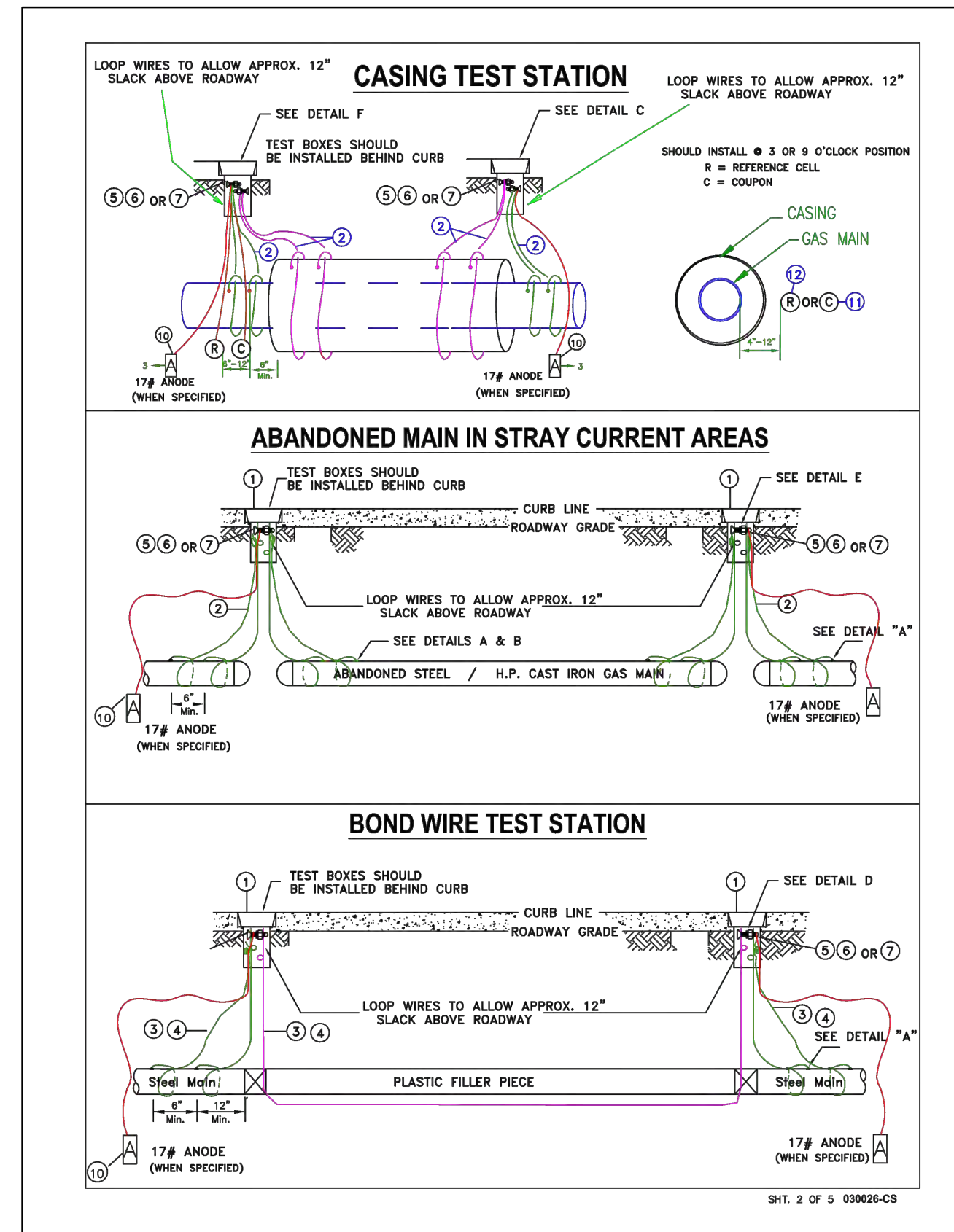
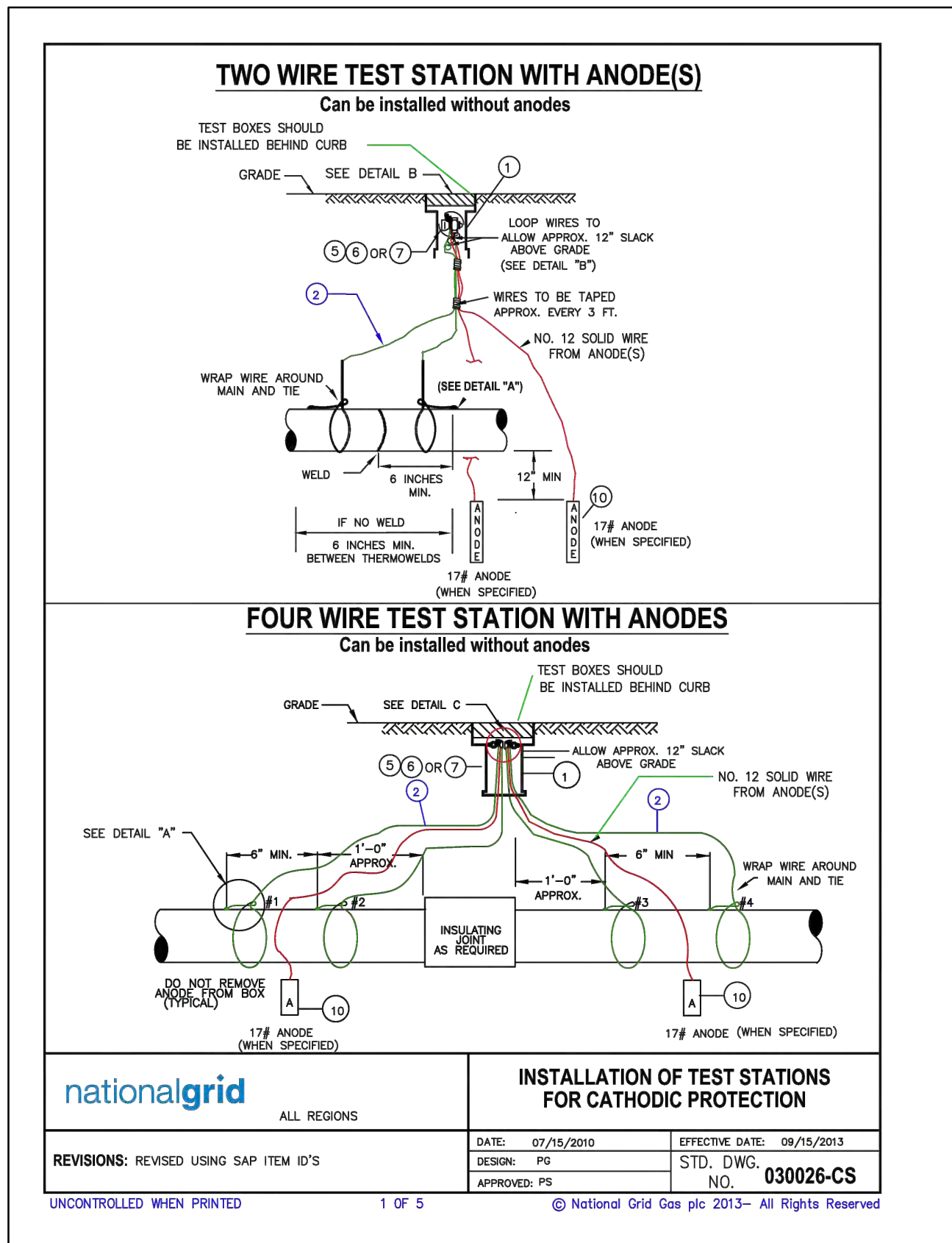
2" MDPE (60 PSIG) CRESCENT RD CONCORD, MA

MISCELLANEOUS DETAIL 2 OF 4

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	S. HAMILTON	A. CAVALLA	04/21/2022	DISTRIBUTION	1434024

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DRAWING NO.	SHEET NO.
CON-1434024-12	C-202



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	9339892	9312291	9339892	9311209 or 9311208	NON LOCKING COVER. DISCARD FOOT PIECE.
TEST BOX 9" SQUARE HEAVY DUTY	9339391		9339391		WEIGHS 95 LBS, STREET USE, WITHOUT COVER
COVER FOR 9" SQUARE BOX	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 600 V-1/C	9334171	NON STOCK	9334171	NON STOCK	USE IN STRAY CURRENT AREAS
5 TAPE, PVC - 3/2" 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 NUMBER 2 NUMBER 3 NUMBER 4 LETTER A	9307918 9307896 9307895 9307894 9307893	9307918 9307896 9307895 9307894 9307893	9307918 9307896 9307895 9307894 9307893	9307918 9307896 9307895 9307894 9307893	LABEL WITH #1 (N) OR (E), CONSECUTIVELY TO (S) OR (W) SEE DETAILS "B" AND "C" USE TO LABEL ANODES
9 GROUNDING CELL	NON STOCK	9315642	NON STOCK	NON STOCK	AS SPECIFIED BY CORROSION ENGINEERING
10 ANODE, MAGNESIUM 17LBS	9311183	9311183	9311183	9311183	SATURATE WITH WATER BEFORE BACKFILL. ANODE MAY BE INSTALLED VERTICALLY OR HORIZONTALLY. MC MILLER OR EQUAL
11 COUPON	9386100	By Corrosion	9386100	By Corrosion	
12 REFERENCE CELL	9385758	By Corrosion	9385758	By Corrosion	BORIN MFRG INC OR EQUAL

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Architecture Engineering Environmental Land Surveying Companies

ANDREW JOSEPH CAVALLLO MECHANICAL No. 54294 REGISTERED PROFESSIONAL ENGINEER 04/21/22

Andrew J. Cavalllo SIGN & DATE

NO.	DESCRIPTION	DATE	DR. BY	CK. BY	APP. BY
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC

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

IFC

BOSTON GAS COMPANY d/b/a nationalgrid

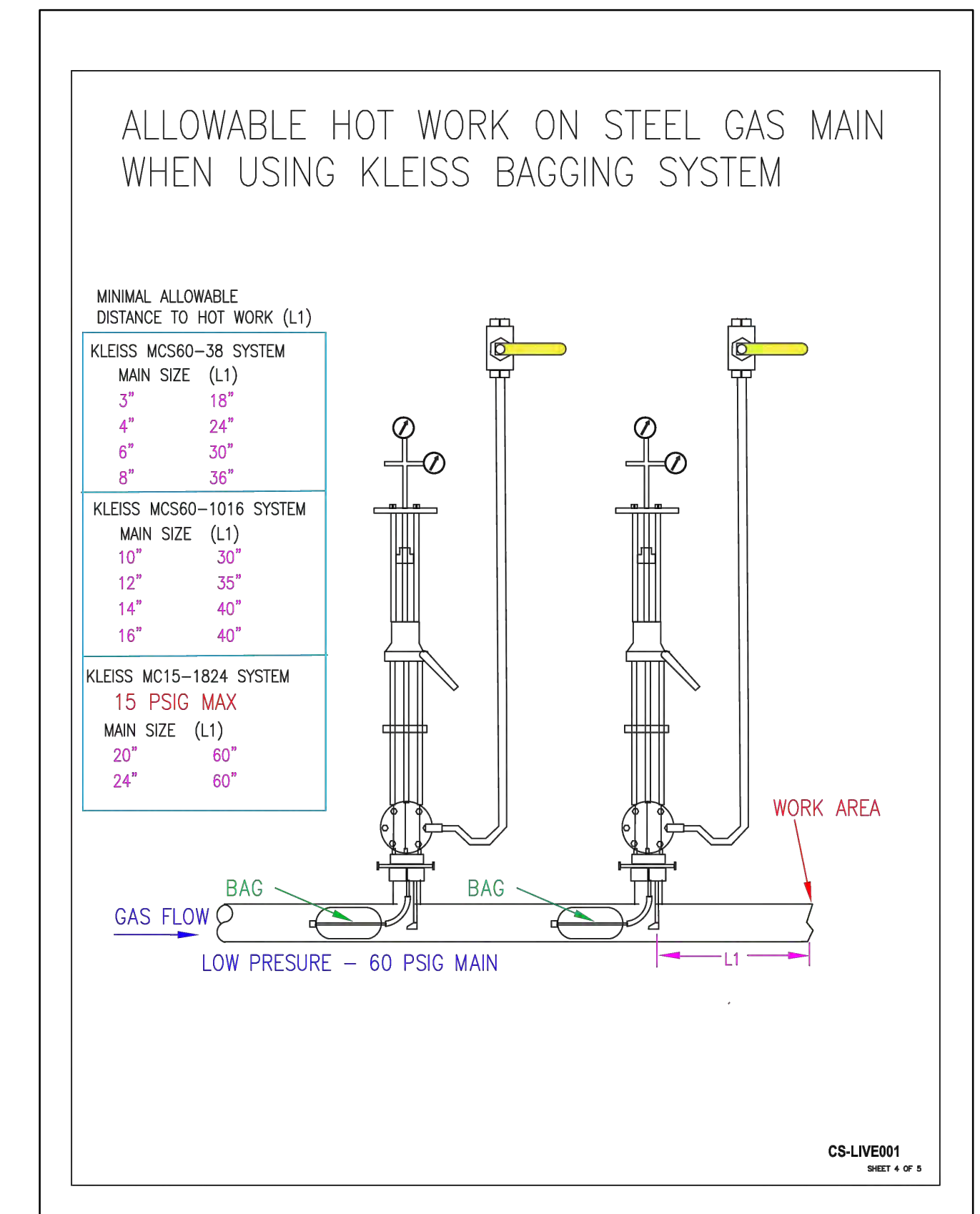
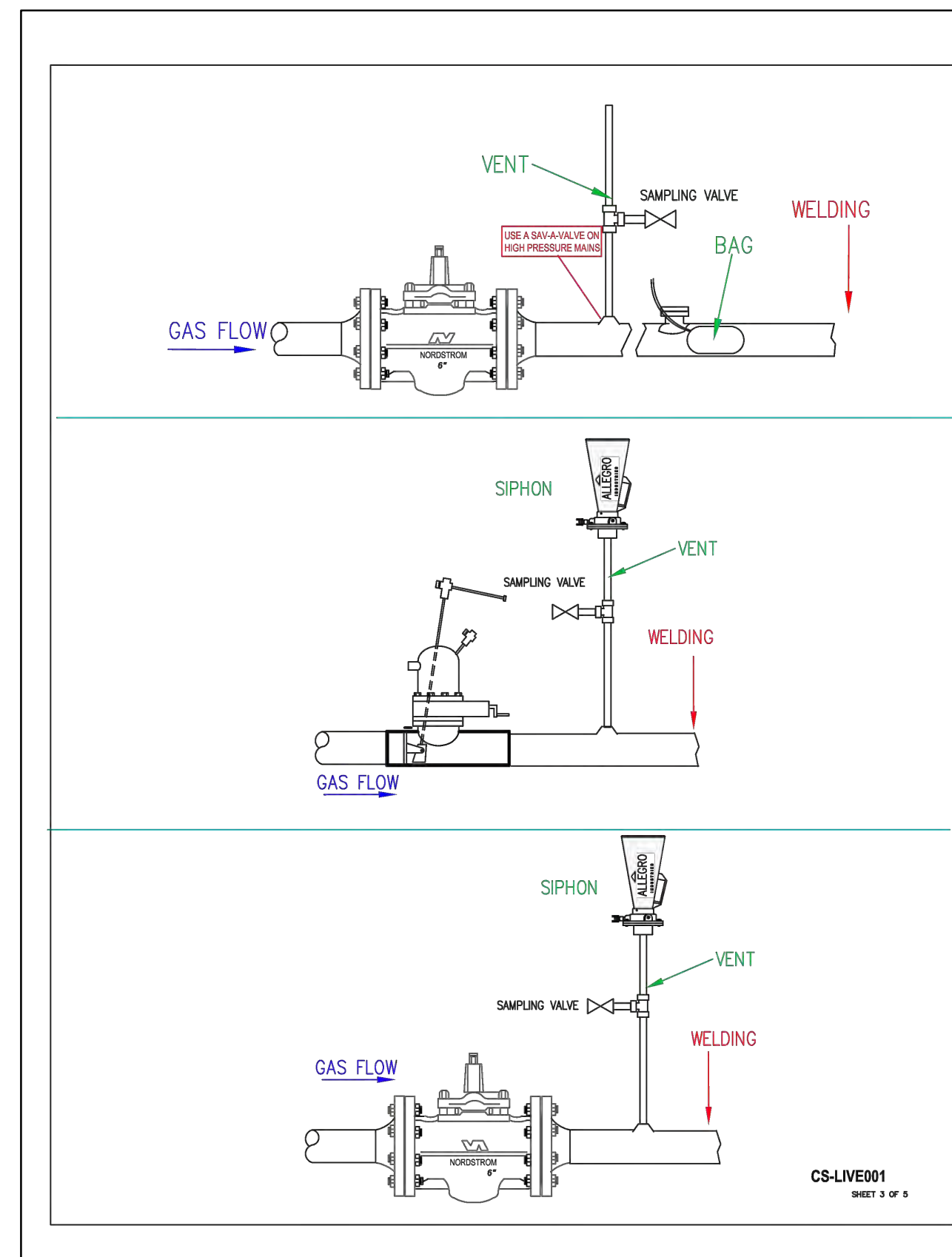
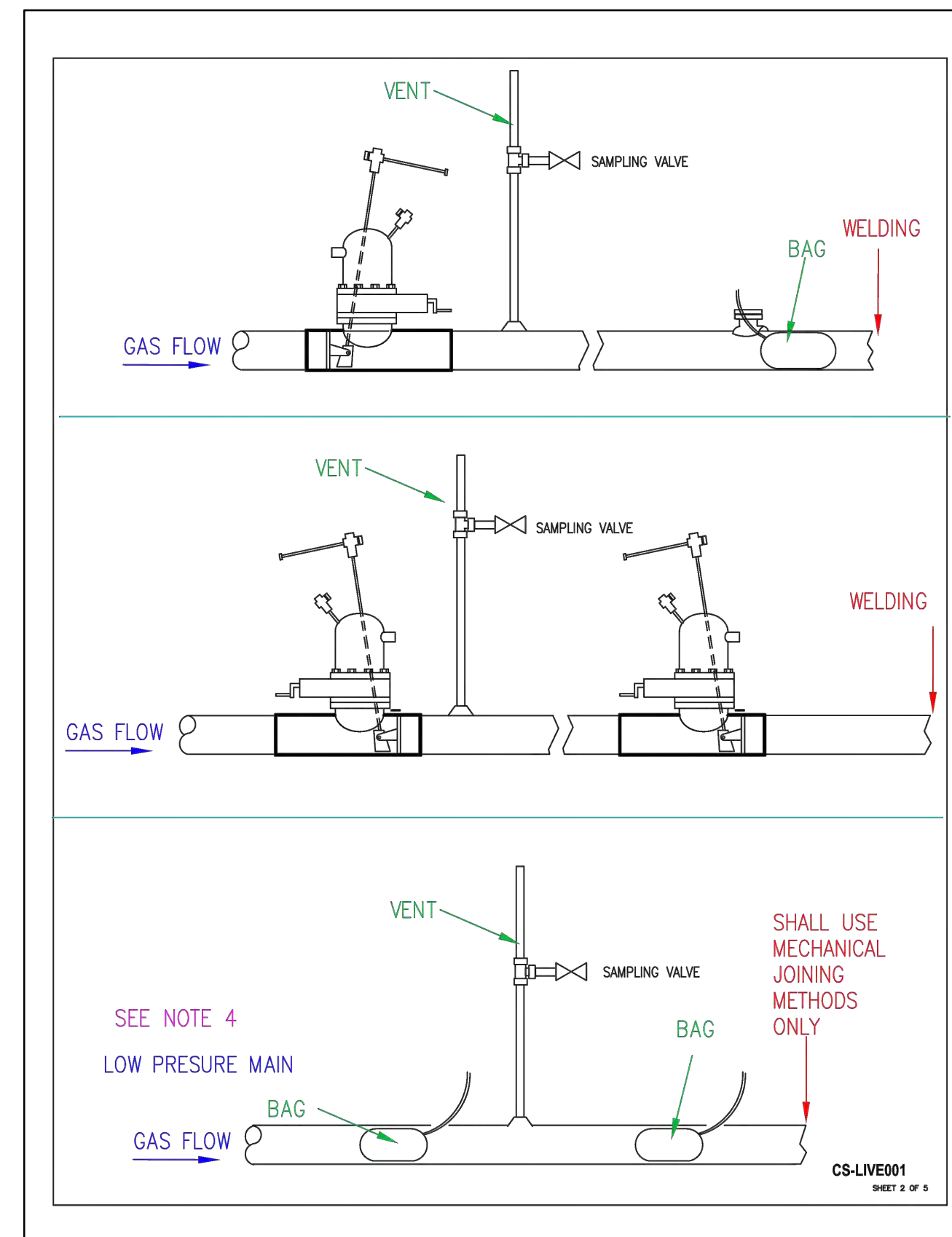
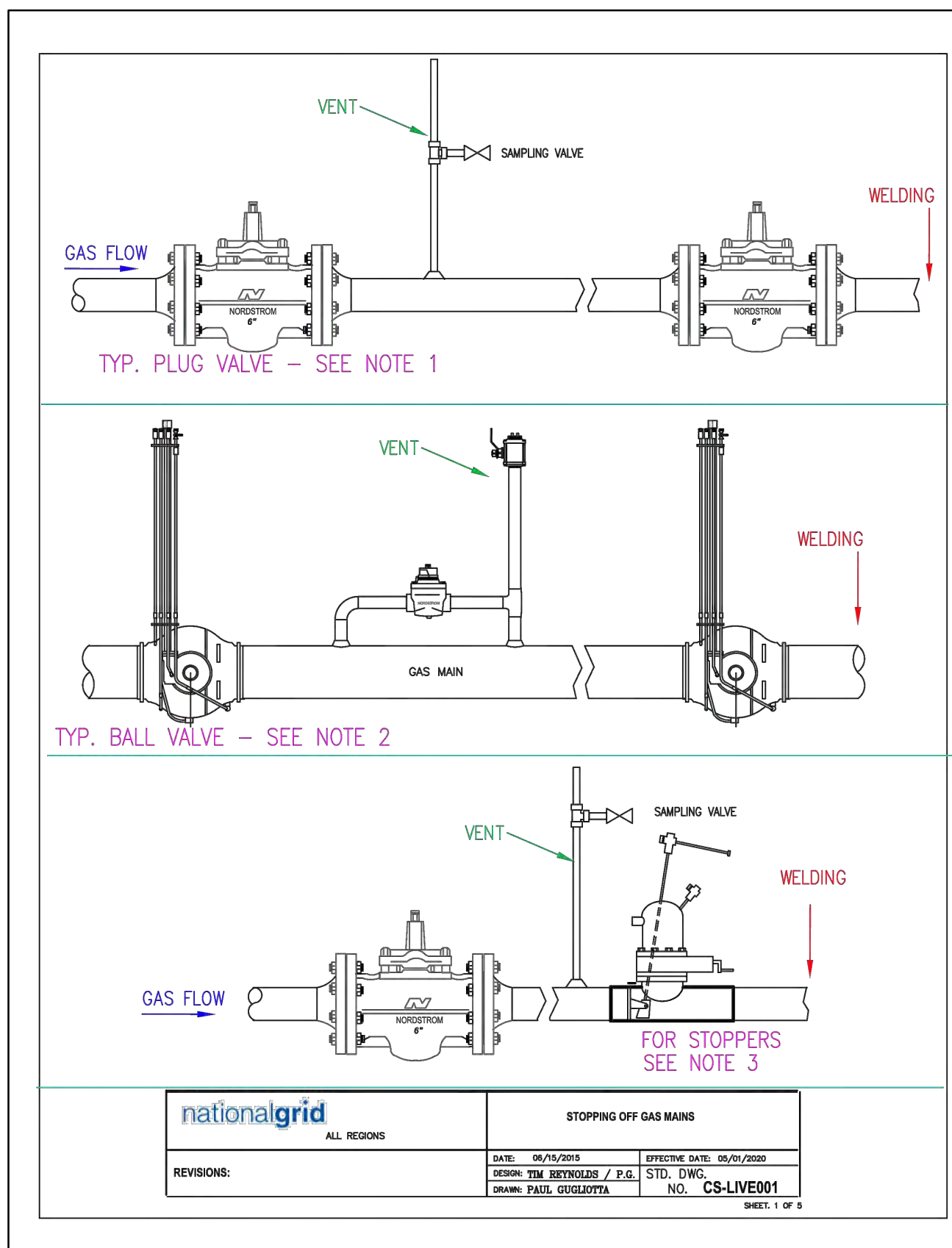
PROPOSED GAS MAIN INSTALLATION 2" MDPE (60 PSIG) CRESCENT RD CONCORD, MA

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DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"x34"	S. HAMILTON	A. CAVALLLO	04/21/2022	DISTRIBUTION	1434024

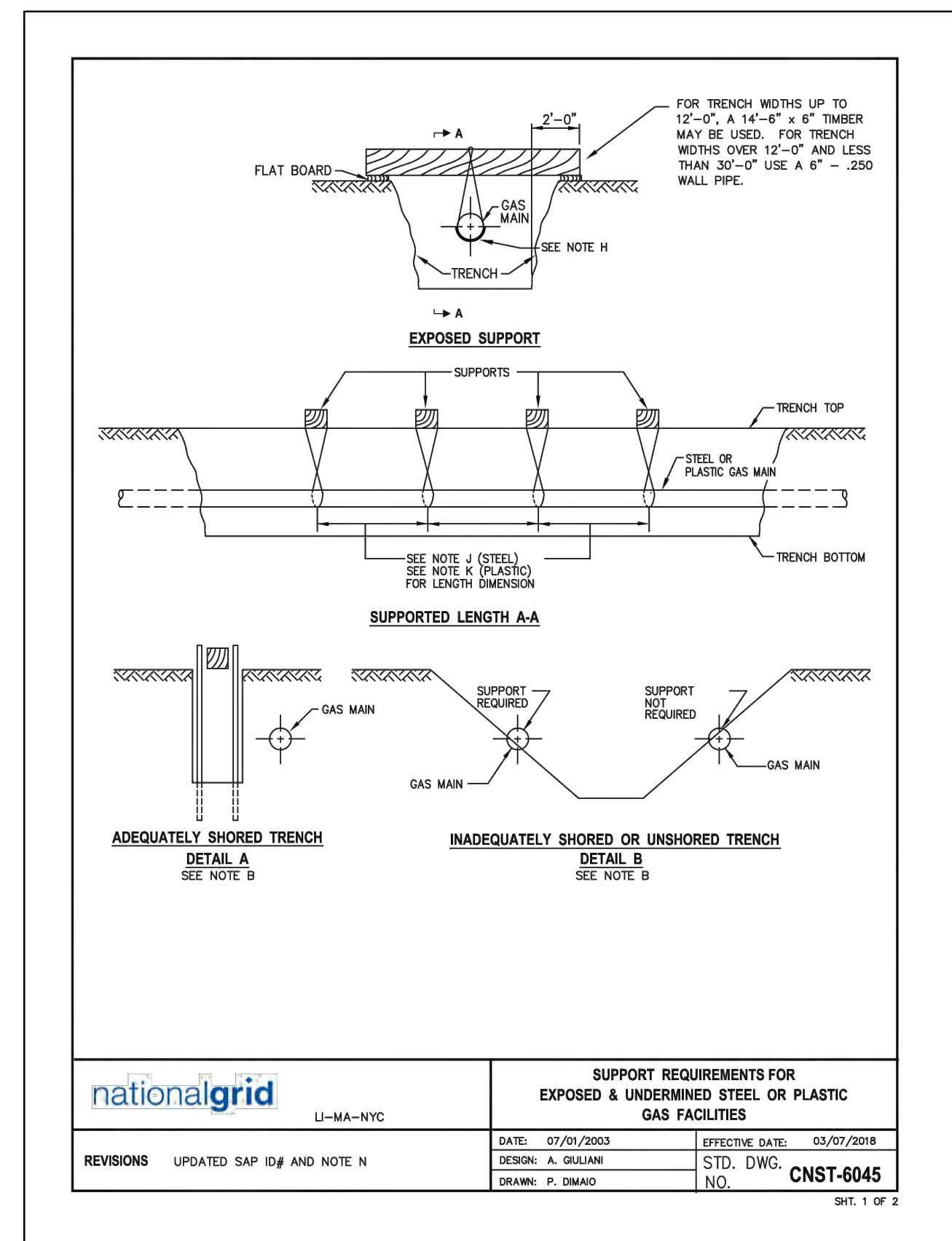
DRAWING NO.	SHEET NO.
CON-1434024-13	C-203



NOTES:

- PLUG VALVES SHOULD BE GREASED PRIOR TO SHUTTING OFF TO INSURE TIGHT SHUTOFF.
- USE THE BALL VALVE'S BLOCK AND BLEED AND / OR PURGE ASSEMBLY IF AVAILABLE TO VENT GAS BETWEEN THE TWO CLOSED VALVES.
- REFER TO MANUFACTURER'S LITERATURE FOR PRESSURE LIMITS OF STOPPERS AND DRILLING EQUIPMENT.
- WELDING SHALL NOT BE PERFORMED AGAINST A BAG WHERE THE BAG IS USED AS THE PRIMARY MEANS OF STOPPING THE GAS FLOW. SEE STOP-OFF OPERATIONS ON LOW PRESSURE MAINS [CNST-03002].

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NOTES:

- THIS CONSTRUCTION STANDARD SHALL BE USED TO SUPPORT PLASTIC OR STEEL GAS FACILITIES WHICH ARE UNDERMINED AND EXPOSED BY CONSTRUCTION ACTIVITY.
- IF AN EXCAVATION IS MADE AT ANY DISTANCE PARALLEL TO THE GAS FACILITY WITH ADEQUATE OSHA STRUCTURAL SHORING, AS SHOWN IN DETAIL 'A', OR IF A STABLE SOIL CONDITION WITH SUFFICIENT COVER ABOVE THE PIPE'S CENTERLINE EXISTS, AS SHOWN IN DETAIL 'B', THEN SUPPORTS ARE NOT REQUIRED. UNSTABLE SOIL IS DEFINED AS A SOIL WHICH CAN CAUSE "SOIL RUN OUT" FROM BENEATH THE PIPE (E.G. WASHOUT, SOFT SLAY, etc.) OR CAN SIFT DUE TO CONSTRUCTION ACTIVITY, VIBRATIONS, etc.; AND CAUSE A SOIL SCENARIO TO OCCUR AS SHOWN IN DETAIL 'B' TO REQUIRE PIPE SUPPORT.
- IF AN EXCAVATION CROSSES OR RUNS PARALLEL TO A GAS FACILITY, SUPPORTS MAY NOT BE REQUIRED IF THE EXPOSED SECTION OF PLASTIC PIPES IS 3' OR LESS AND STEEL PIPES 7' OR LESS.
- ALL EXCAVATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONE CALL DIG SAFE PROGRAM USING THE APPROPRIATE MARK OUT, TEST HOLES AND EXCAVATION TO AVOID DAMAGE TO PIPE OR PIPE COATINGS:
 - NEW YORK STATE CODE RULE 703
 - MA CHAPTER 82 - SECTION 40, GENERAL LAWS, REGULATING NOTICE REQUIREMENTS FOR EXCAVATION IN PUBLIC WAYS
- USE OF THIS CONSTRUCTION STANDARD DOES NOT RELIEVE THE CONSTRUCTION AGENCY OR AUTHORITY OR THEIR RESPECTIVE CONTRACTORS OF RESPONSIBILITY FOR DAMAGES. ALL DAMAGES WILL BE REPAIRED IN ACCORDANCE WITH EXISTING STANDARDS AND THE APPROPRIATE PARTY SHALL BE BILLED FOR ALL EXPENSES.
- GAS FACILITIES SHOULD NOT BE UNDERMINED WITHOUT ADEQUATE SUPPORT (DETAIL A). ALL SUPPORT LINES SHALL BE TENSIONED SO THAT NO DEFLECTION WILL OCCUR WHEN THE FACILITY IS UNDERMINED. THIS TENSION SHALL BE CHECKED AT THE START AND END OF EACH DAY AND ADJUSTED AS NECESSARY.
- WHERE A COUPLING, GAS SERVICE, CLAMP, VALVE, DRIP LINE OR OTHER APPURTENANCE EXISTS ON THE EXPOSED SECTION OF MAIN, AN ADDITIONAL SUPPORT SHALL BE INSTALLED AT THE LOCATION.
- WHEN SUPPORTING AN EXPOSED FACILITY, THE PIPE COATING SHALL BE PROTECTED WITH ROCK SHIELD (ITEM ID 8340228), OR OTHER LIKE MATERIAL CUT TO A MINIMUM WIDTH OF 1/2 THE SUPPORTED PIPE DIAMETER. SUPPORT LINES SHALL BE A MINIMUM OF 3/4" POLYPROPYLENE OR BETTER. PSP SHIELDS MAY ALSO BE USED FOR THIS PURPOSE PROVIDED THEY EXTEND A MINIMUM OF 1/2 WAY UP THE PIPE TO PROTECT FROM SIDE LOADING.
- SUPPORTS FOR GAS TRANSMISSION FACILITIES SHALL BE REVIEWED WITH GAS ENGINEERING PRIOR TO INSTALLATION.
- THE MAXIMUM SPACING BETWEEN SUPPORTS FOR STEEL FACILITIES SHALL BE AS FOLLOWS:
 - 7' SPACING FOR 3" AND 1 1/2" STEEL
 - 10' SPACING FOR 2" STEEL
 - 15' SPACING FOR 1" AND 3/4" STEEL
 - 20' SPACING FOR 6" AND LARGER STEEL
- THE MAXIMUM SPACING BETWEEN SUPPORTS FOR PLASTIC FACILITIES SHALL BE AS FOLLOWS:
 - 3' SPACING FOR 6" AND SMALLER PLASTIC
 - 6' SPACING FOR 4" AND LARGER PLASTIC
- VIBRATING MACHINES ARE ALLOWED OVER STEEL OR PLASTIC FACILITIES WITH 24" OR GREATER COVER. HAND HELD MECHANICAL TAMPER IS ACCEPTABLE OVER ANY FACILITY WITH 12" OR GREATER COVER.
- WHEN CONSTRUCTION ACTIVITY IS COMPLETED, CLEAN FILL SHALL BE COMPACTED AROUND AND UNDER THE GAS FACILITY BEFORE REMOVING SUPPORTS.
- SEE REGIONAL DAM1007-NY-CI-LI-UNY OR DAM-MA-RI PROCEDURES FOR REPLACEMENT REQUIREMENTS OF CAST IRON PIPE.

BILL OF MATERIAL

No.	ITEM	CODE No.
SHT. 2 OF 2 CNST-6045		

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 PROFESSIONAL ENGINEER

04/21/22
Andrew J. Cavalla
SIGN & DATE

No.	DESCRIPTION	DATE	DR.BY	CK.BY	APP.BY
0	ISSUED FOR CONSTRUCTION	04/21/2022	SH	TA	AC

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

IFC

PROPOSED GAS MAIN INSTALLATION
2" MDPE (60 PSIG)
CRESCENT RD
CONCORD, MA

MISCELLANEOUS DETAIL 4 OF 4

DWG SIZE	DESIGNER	ENGINEER	DATE:	ASSET I.D.	W.O. NO.:
22"X34"	S. HAMILTON	A. CAVALLA	04/21/2022	DISTRIBUTION	1434024

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DRAWING NO.	SHEET NO.
CON-1434024-14	C-204