

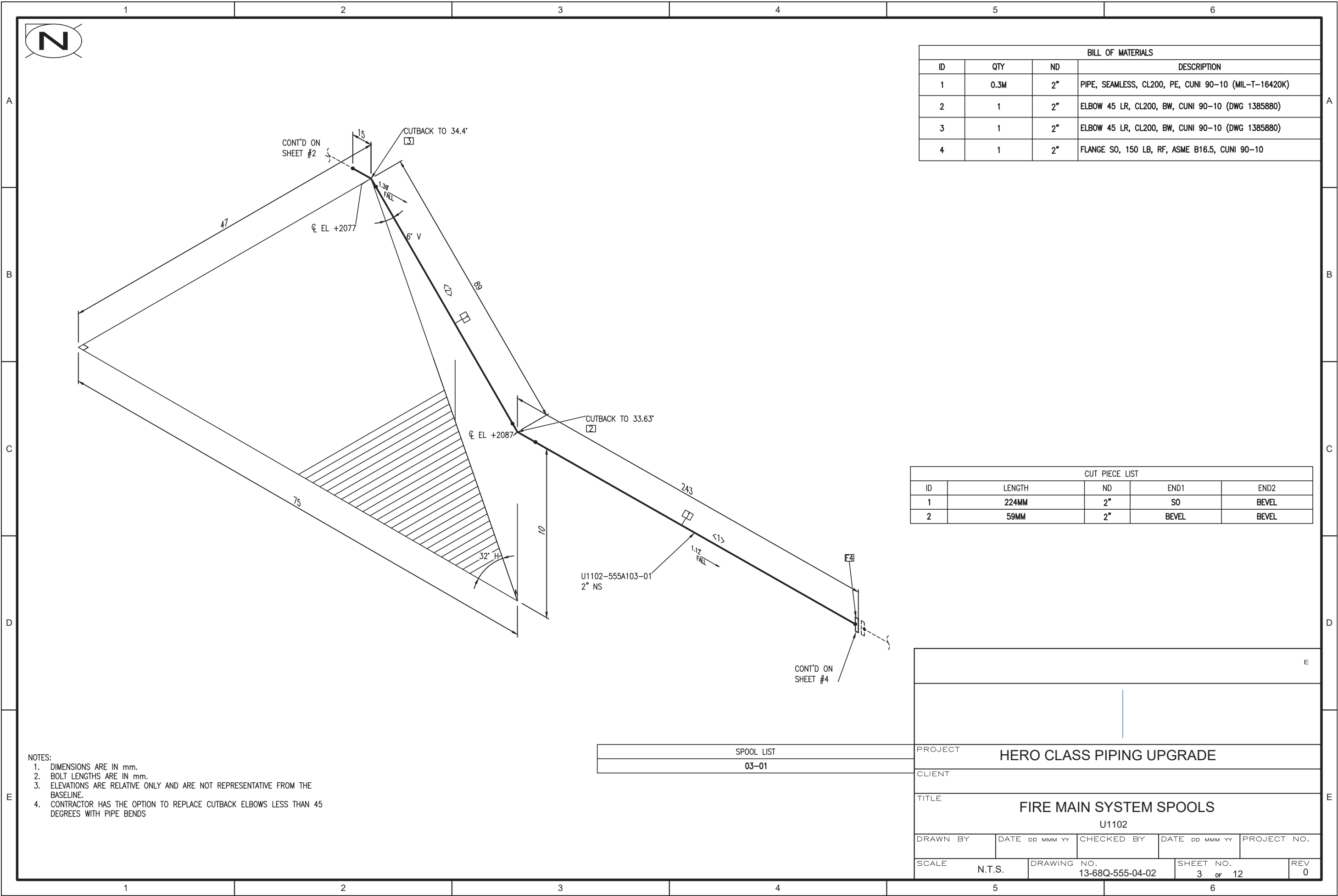
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	0.9M	2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1	2"	ELBOW 45 LR, CL200, BW, CUNI 90-10 (DWG 1385880)
3	1	2"	FLANGE S0, 150 LB, RF, ASME B16.5, CUNI 90-10
4	4	5/8"x83	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
5	1	2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	58MM	2"	BEVEL	S0
2	790MM	2"	BEVEL	BEVEL

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
 - ELEVATIONS ARE RELATIVE ONLY AND ARE NOT REPRESENTATIVE FROM THE BASELINE.
 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS

SPPOOL LIST
03-01

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO.
				2 OF 12
				REV
				0



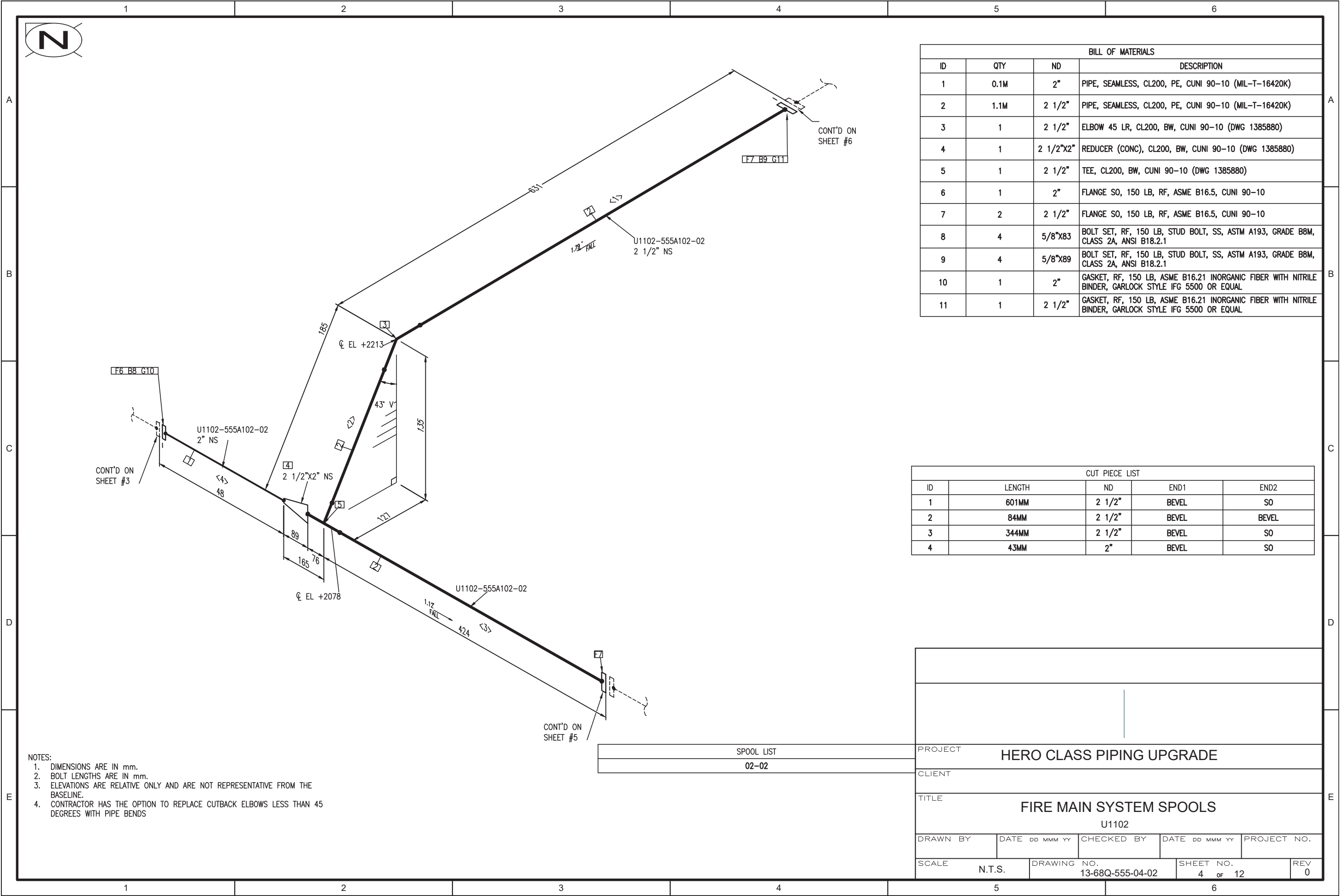
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	0.3M	2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1	2"	ELBOW 45 LR, CL200, BW, CUNI 90-10 (DWG 1385880)
3	1	2"	ELBOW 45 LR, CL200, BW, CUNI 90-10 (DWG 1385880)
4	1	2"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	224MM	2"	SO	BEVEL
2	59MM	2"	BEVEL	BEVEL

SPOOL LIST
03-01

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO. 3 OF 12
				REV 0

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
 - ELEVATIONS ARE RELATIVE ONLY AND ARE NOT REPRESENTATIVE FROM THE BASELINE.
 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS

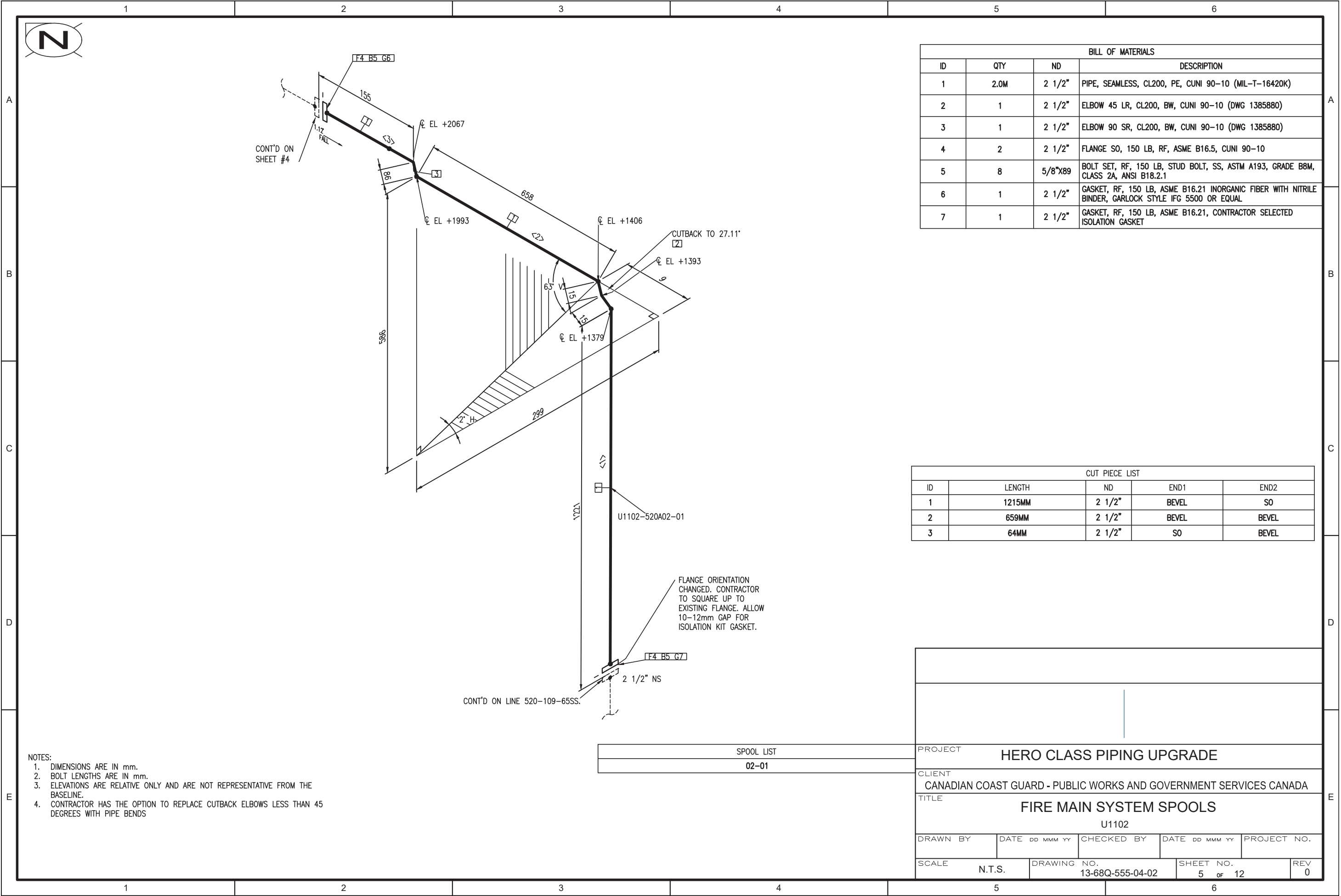


BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	0.1M	2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1.1M	2 1/2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
3	1	2 1/2"	ELBOW 45 LR, CL200, BW, CUNI 90-10 (DWG 1385880)
4	1	2 1/2"x2"	REDUCER (CONC), CL200, BW, CUNI 90-10 (DWG 1385880)
5	1	2 1/2"	TEE, CL200, BW, CUNI 90-10 (DWG 1385880)
6	1	2"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10
7	2	2 1/2"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10
8	4	5/8"x83	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
9	4	5/8"x89	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
10	1	2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL
11	1	2 1/2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	601MM	2 1/2"	BEVEL	S0
2	84MM	2 1/2"	BEVEL	BEVEL
3	344MM	2 1/2"	BEVEL	S0
4	43MM	2"	BEVEL	S0

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO. 4 OF 12
				REV 0

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
 - ELEVATIONS ARE RELATIVE ONLY AND ARE NOT REPRESENTATIVE FROM THE BASELINE.
 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS



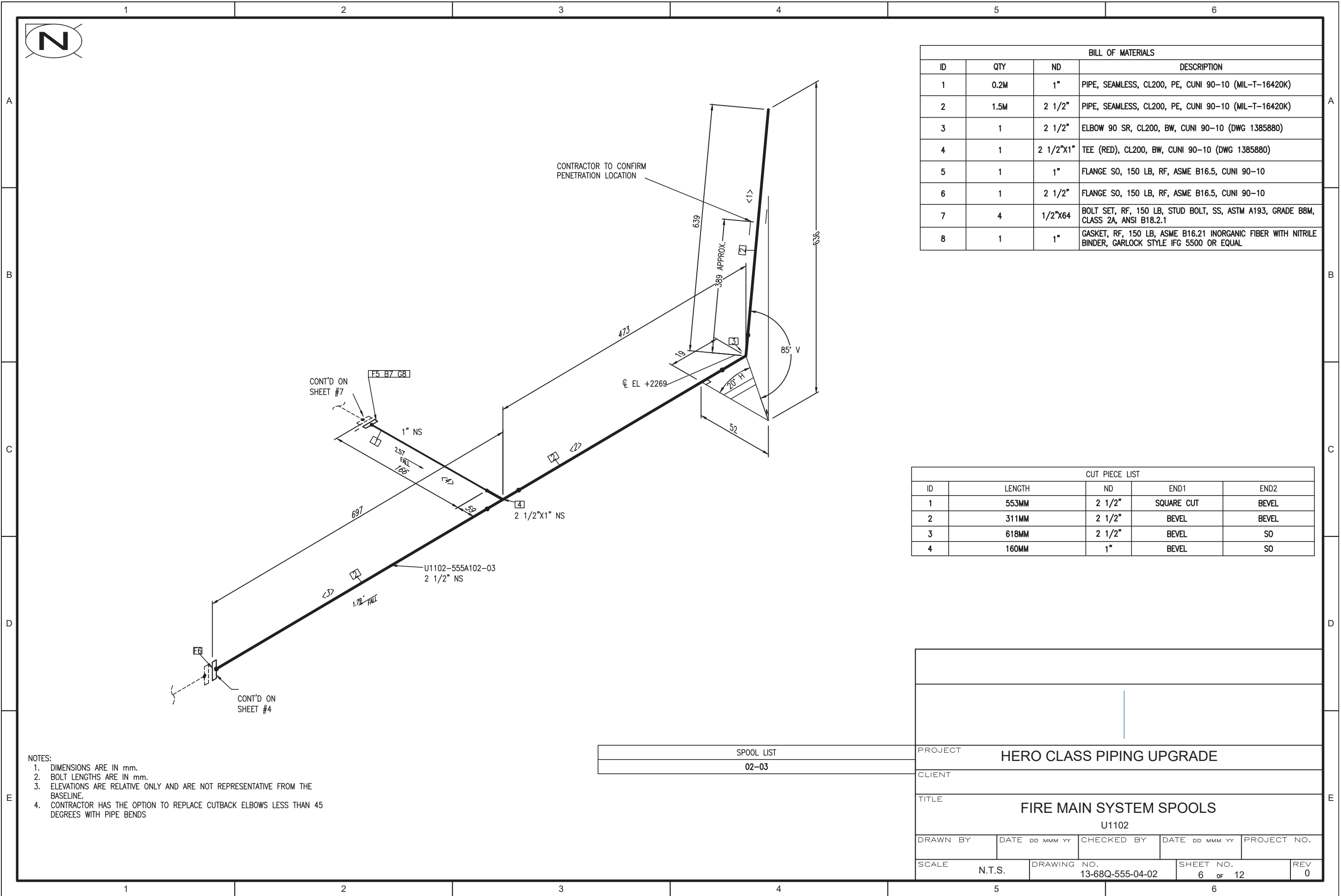
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	2.0M	2 1/2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1	2 1/2"	ELBOW 45 LR, CL200, BW, CUNI 90-10 (DWG 1385880)
3	1	2 1/2"	ELBOW 90 SR, CL200, BW, CUNI 90-10 (DWG 1385880)
4	2	2 1/2"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10
5	8	5/8"x89	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
6	1	2 1/2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL
7	1	2 1/2"	GASKET, RF, 150 LB, ASME B16.21, CONTRACTOR SELECTED ISOLATION GASKET

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	1215MM	2 1/2"	BEVEL	SO
2	659MM	2 1/2"	BEVEL	BEVEL
3	64MM	2 1/2"	SO	BEVEL

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
CANADIAN COAST GUARD - PUBLIC WORKS AND GOVERNMENT SERVICES CANADA				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO. 5 OF 12
				REV 0

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
 - ELEVATIONS ARE RELATIVE ONLY AND ARE NOT REPRESENTATIVE FROM THE BASELINE.
 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS

SPOOL LIST
02-01



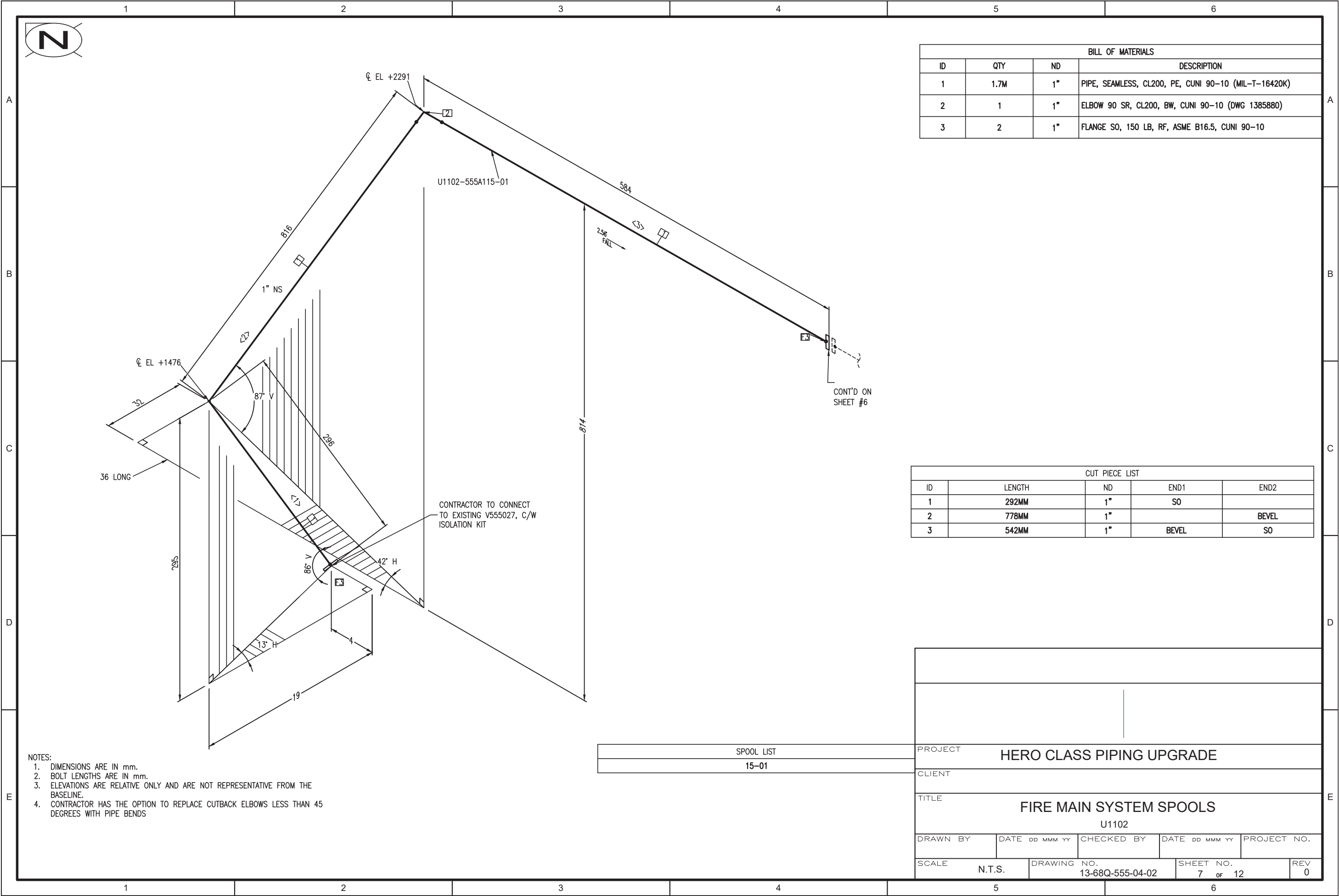
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	0.2M	1"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1.5M	2 1/2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
3	1	2 1/2"	ELBOW 90 SR, CL200, BW, CUNI 90-10 (DWG 1385880)
4	1	2 1/2"x1"	TEE (RED), CL200, BW, CUNI 90-10 (DWG 1385880)
5	1	1"	FLANGE S0, 150 LB, RF, ASME B16.5, CUNI 90-10
6	1	2 1/2"	FLANGE S0, 150 LB, RF, ASME B16.5, CUNI 90-10
7	4	1/2"x64	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
8	1	1"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	553MM	2 1/2"	SQUARE CUT	BEVEL
2	311MM	2 1/2"	BEVEL	BEVEL
3	618MM	2 1/2"	BEVEL	S0
4	160MM	1"	BEVEL	S0

SPOOL LIST
02-03

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO. 6 OF 12
				REV 0

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
 - ELEVATIONS ARE RELATIVE ONLY AND ARE NOT REPRESENTATIVE FROM THE BASELINE.
 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS



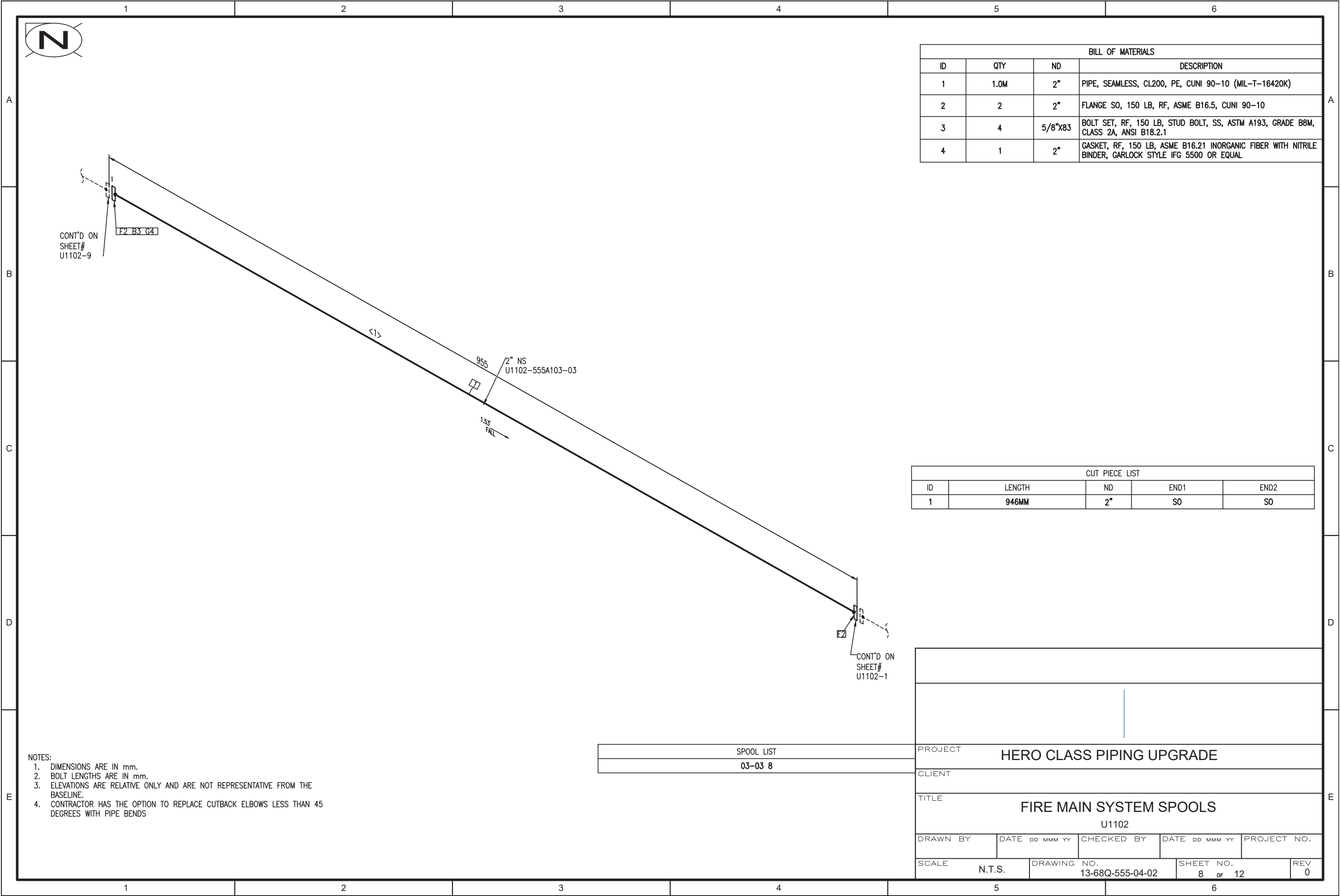
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	1.7M	1"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1	1"	ELBOW 90 SR, CL200, BW, CUNI 90-10 (DWG 1385880)
3	2	1"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	292MM	1"	SO	
2	778MM	1"		BEVEL
3	542MM	1"	BEVEL	SO

- NOTES:
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 - BOLT LENGTHS ARE IN mm.
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 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS

SPPOOL LIST
15-01

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	SHEET NO.	REV
		13-68Q-555-04-02	7 OF 12	0



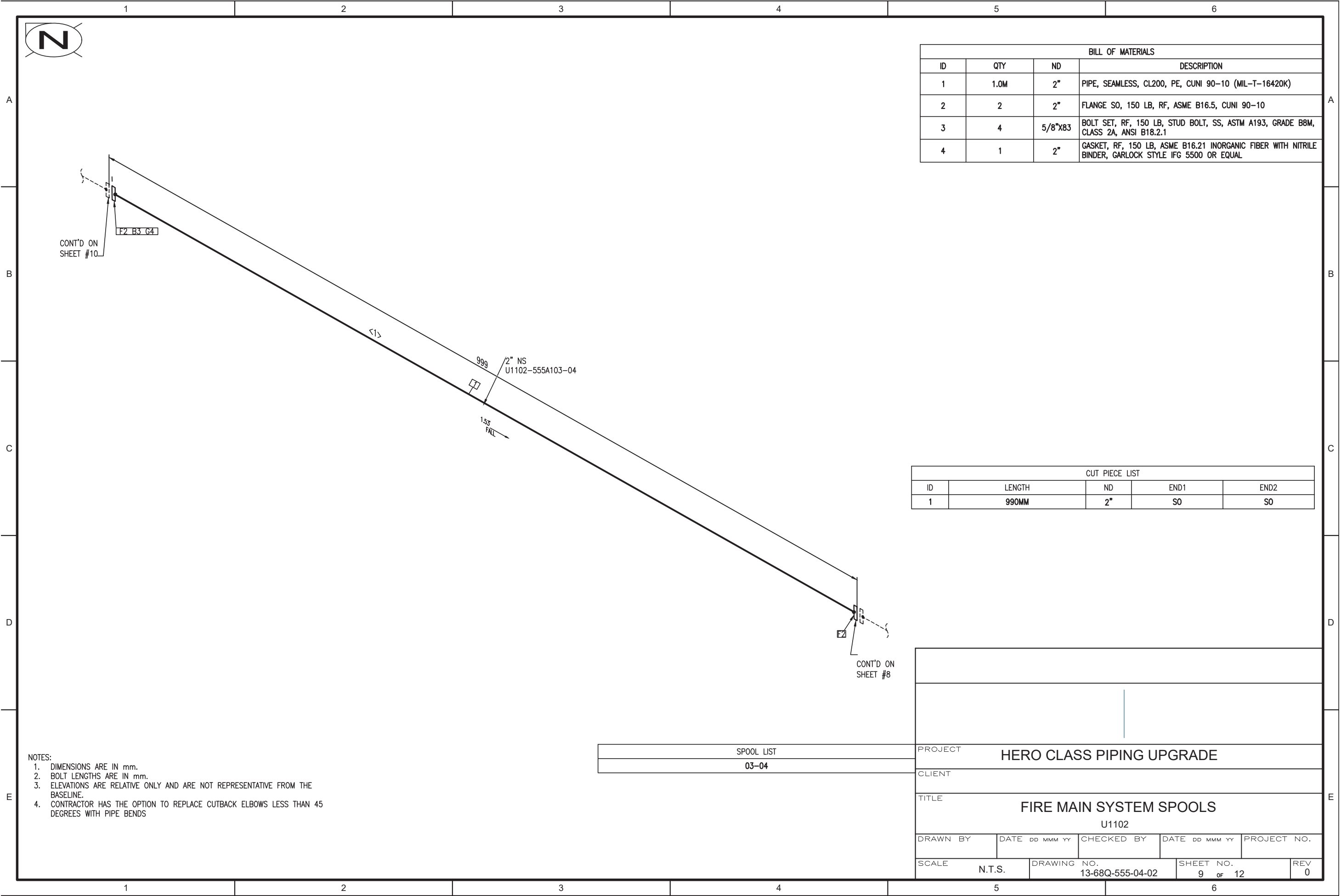
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	1.0M	2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	2	2"	FLANGE S0, 150 LB, RF, ASME B16.5, CUNI 90-10
3	4	5/8"x83	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
4	1	2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	946MM	2"	S0	S0

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
 - ELEVATIONS ARE RELATIVE ONLY AND ARE NOT REPRESENTATIVE FROM THE BASELINE.
 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS

SPPOOL LIST
03-03 8

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO. 8 OF 12
				REV 0



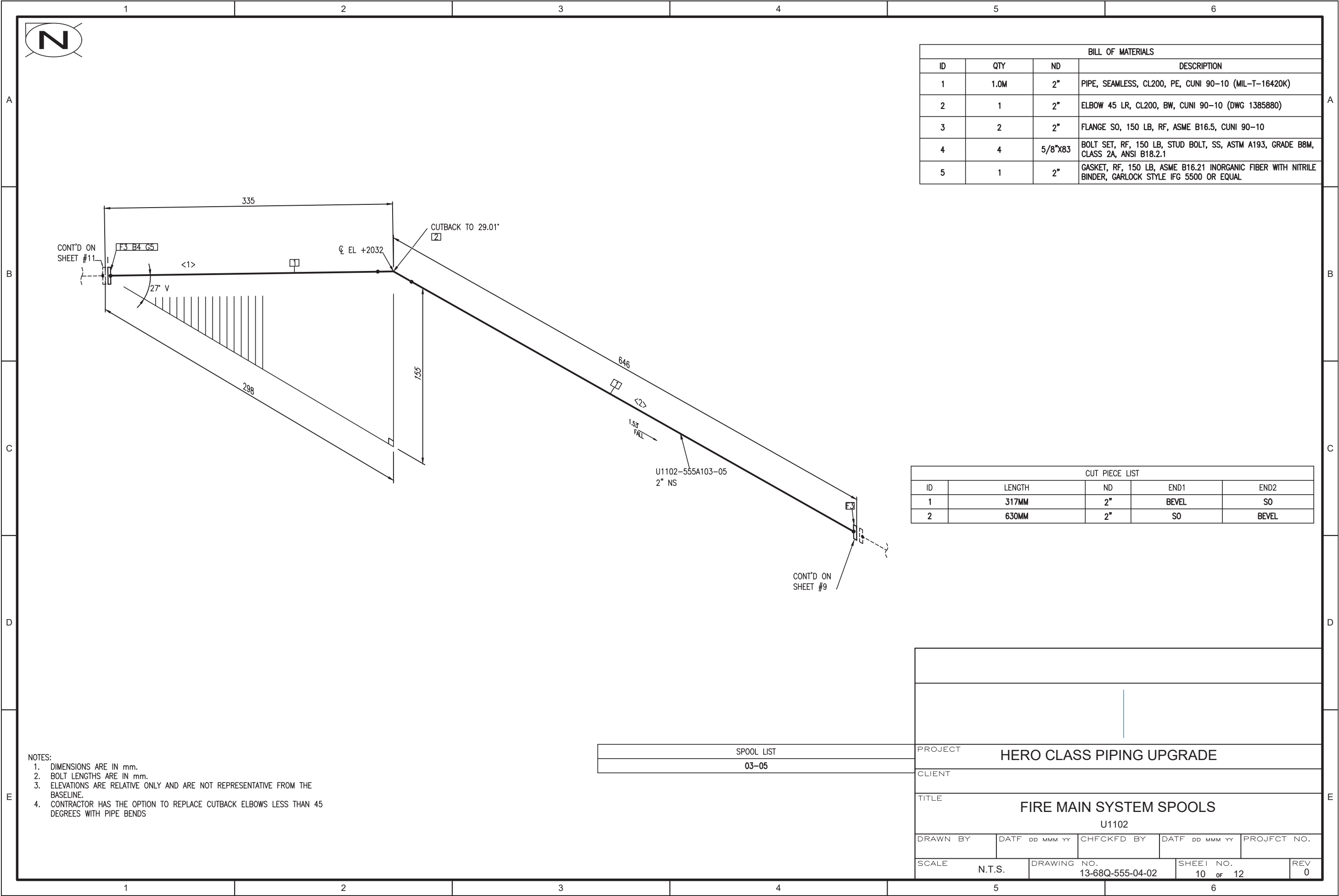
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	1.0M	2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	2	2"	FLANGE S0, 150 LB, RF, ASME B16.5, CUNI 90-10
3	4	5/8"x83	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
4	1	2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	990MM	2"	S0	S0

SPPOOL LIST
03-04

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO.
				9 of 12
				REV
				0

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
 - ELEVATIONS ARE RELATIVE ONLY AND ARE NOT REPRESENTATIVE FROM THE BASELINE.
 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS



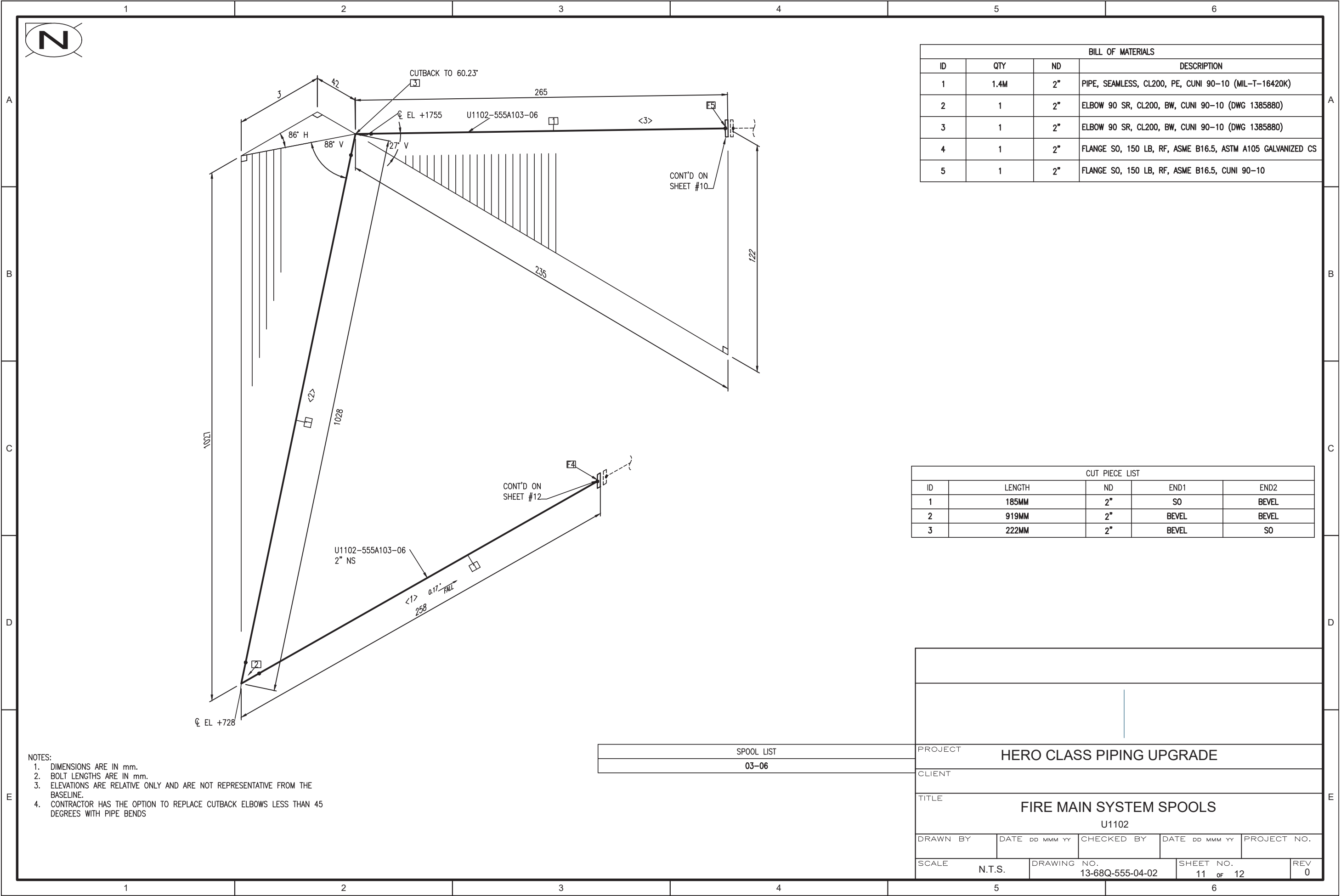
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	1.0M	2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1	2"	ELBOW 45 LR, CL200, BW, CUNI 90-10 (DWG 1385880)
3	2	2"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10
4	4	5/8"x83	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
5	1	2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	317MM	2"	BEVEL	SO
2	630MM	2"	SO	BEVEL

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
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 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS

SPOOL LIST
03-05

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	SHEET NO.	REV
		13-68Q-555-04-02	10 OF 12	0



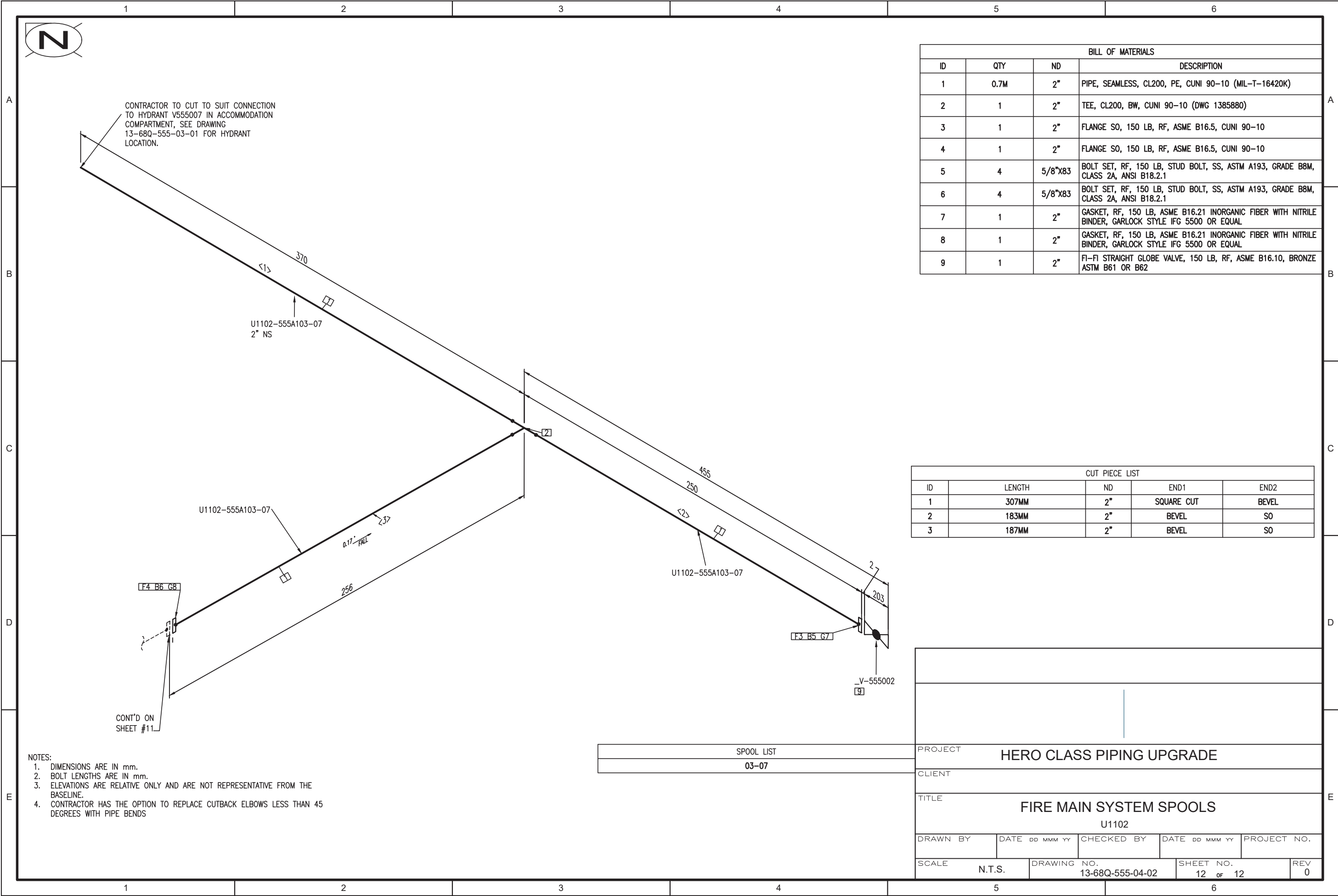
BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	1.4M	2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1	2"	ELBOW 90 SR, CL200, BW, CUNI 90-10 (DWG 1385880)
3	1	2"	ELBOW 90 SR, CL200, BW, CUNI 90-10 (DWG 1385880)
4	1	2"	FLANGE SO, 150 LB, RF, ASME B16.5, ASTM A105 GALVANIZED CS
5	1	2"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	185MM	2"	SO	BEVEL
2	919MM	2"	BEVEL	BEVEL
3	222MM	2"	BEVEL	SO

- NOTES:
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 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS

SPPOOL LIST
03-06

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO.
		11 OF 12		REV
				0



BILL OF MATERIALS			
ID	QTY	ND	DESCRIPTION
1	0.7M	2"	PIPE, SEAMLESS, CL200, PE, CUNI 90-10 (MIL-T-16420K)
2	1	2"	TEE, CL200, BW, CUNI 90-10 (DWG 1385880)
3	1	2"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10
4	1	2"	FLANGE SO, 150 LB, RF, ASME B16.5, CUNI 90-10
5	4	5/8"x83	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
6	4	5/8"x83	BOLT SET, RF, 150 LB, STUD BOLT, SS, ASTM A193, GRADE B8M, CLASS 2A, ANSI B18.2.1
7	1	2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL
8	1	2"	GASKET, RF, 150 LB, ASME B16.21 INORGANIC FIBER WITH NITRILE BINDER, GARLOCK STYLE IFG 5500 OR EQUAL
9	1	2"	FI-FI STRAIGHT GLOBE VALVE, 150 LB, RF, ASME B16.10, BRONZE ASTM B61 OR B62

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
1	307MM	2"	SQUARE CUT	BEVEL
2	183MM	2"	BEVEL	SO
3	187MM	2"	BEVEL	SO

SPPOOL LIST
03-07

PROJECT				
HERO CLASS PIPING UPGRADE				
CLIENT				
TITLE				
FIRE MAIN SYSTEM SPOOLS				
U1102				
DRAWN BY	DATE DD MMM YY	CHECKED BY	DATE DD MMM YY	PROJECT NO.
SCALE	N.T.S.	DRAWING NO.	13-68Q-555-04-02	SHEET NO. 12 OF 12
				REV 0

- NOTES:
- DIMENSIONS ARE IN mm.
 - BOLT LENGTHS ARE IN mm.
 - ELEVATIONS ARE RELATIVE ONLY AND ARE NOT REPRESENTATIVE FROM THE BASELINE.
 - CONTRACTOR HAS THE OPTION TO REPLACE CUTBACK ELBOWS LESS THAN 45 DEGREES WITH PIPE BENDS