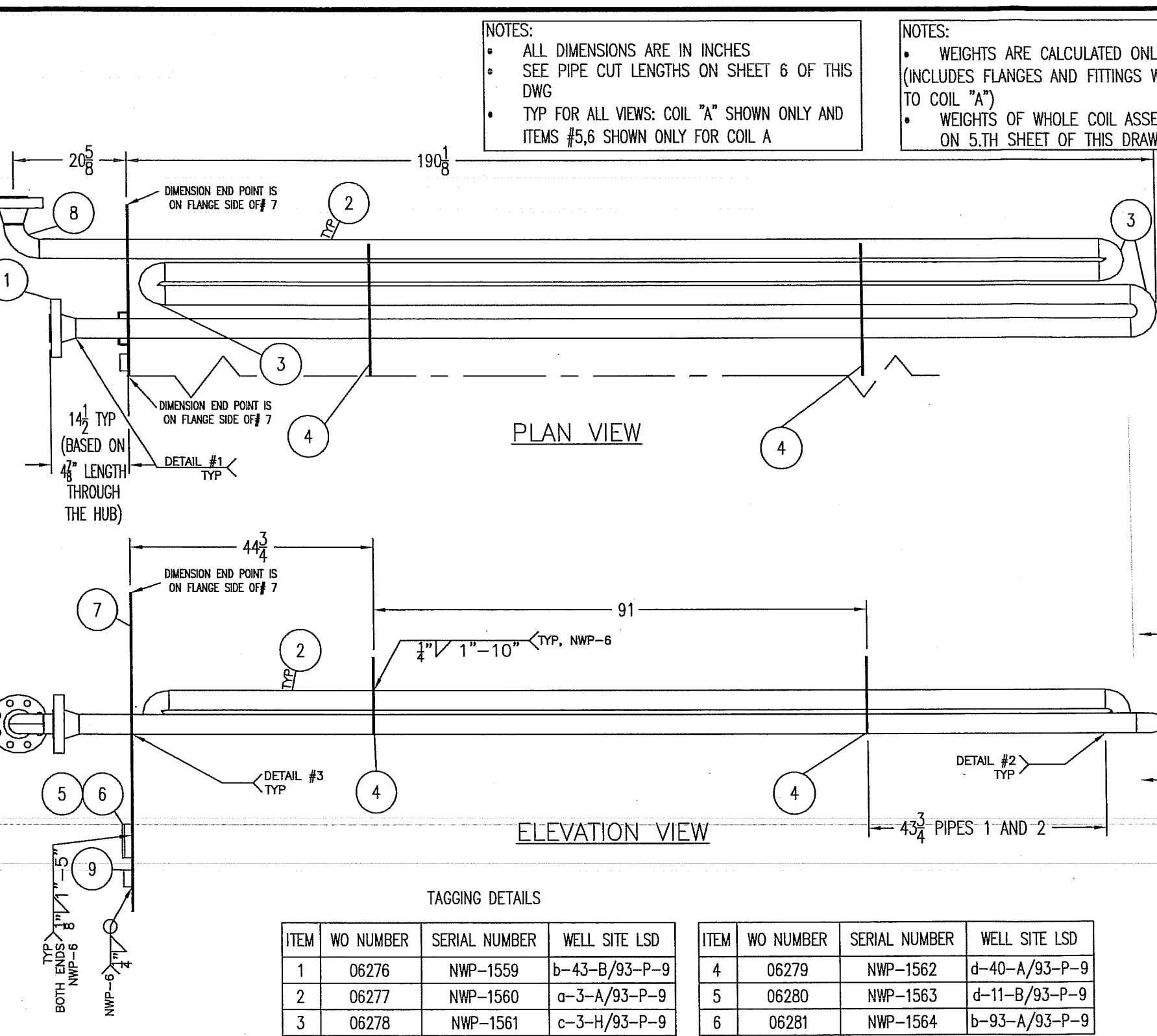




DESIGN DATA : COIL A

DESIGN & FABRICATE TO: ANSI/ASME B31.3 N.F.S. 2006 EDITION

DESIGN PRESSURE & TEMPERATURE: 3125 PSIG @ 200°F

MINIMUM DESIGN METAL TEMPERATURE: -20°F @3125PSIG

IMPACT TESTS: EXEMPT (TABLE 323.2.2-COLUMN A)

RADIOGRAPHY: 100%

POST WELD HEAT TREATMENT: 1150°F ± 50°F FOR 60 MIN. MINIMUM

HYDROSTATIC TEST PRESSURE: 4688 PSIG

CORROSION ALLOWANCE: 1/8"

PREHEAT: 50°F

HEAD THK. - MIN: N/A

CRN: P-9407.213

WEIGHT EMPTY: 1055 LBS

WEIGHT FULL OF WATER: 1209 LBS

WPS NWP-4

WPS NWP-4

WPS NWP-6

FLANGE(TYP)

WELD DETAIL #1 (SMAW ROOT)

WELD DETAIL #2 (SMAW ROOT)

WELD DETAIL #3 (GMAW)

DETAIL #5 (NUMBER OF HOLES DOES NOT HAVE TO BE AS SHOWN)

AS BUILT

GENERAL NOTES:

- QUALITY CONTROL PROGRAM NO: AQP-1253
- WELDING PROCEDURE REGISTRATION NO: 1604.2
- WPS NO: NWP-4 (Rev 4); NWP-6 (Rev 2)
- SERVICE: HYDROCARBONS
- CAPACITY: COIL A: 2.46 ft³ COIL C: 2.46 ft³
COIL B: 2.36 ft³ COIL D: 2.36 ft³
- SURFACE PREPARATION: SSPC-SP 2-63 (HAND TOOL CLEAN)
- PRIME: PER MANUFACTURER'S SPECIFICATIONS
- PAINT: PER MANUFACTURER'S SPECIFICATIONS
- ALL BOLT HOLES TO STRADDLE CENTERLINES (SEE DETAIL #5)
- COIL TO BE CLEANED WITH ALL OPENINGS PLUGGED BEFORE SHIPMENT.
- DESIGN REGISTERED TO BLUE DIAMOND DESIGN LTD. SEE DWG BDD-300 FOR COILS A,B,C AND D
- MEASUREMENTS DO NOT ALLOW FOR ROOT SPACING, EXCEPT ON FITTING TO FITTING CASES WHERE A 1/8" ROOT OPENING IS CONSIDERED.
- HEATING SURFACE AREA: COIL A: 56.79 ft² COIL C: 56.79 ft²
COIL B: 55.25 ft² COIL D: 55.25 ft²

END VIEW
VIEW A-A

WP-1559-41	PREHEAT LINE						
WP-1559-4	LINE HEATER						
WP-1559-3	SKID	1	2008.11.13.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (ADDED TAGGING DETAILS)
WP-1559-1	BILL OF MATERIALS	0	2008.10.15.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (CUSTOMER APPROVED ON OCT. 10,08)
WP-1559-1	P&ID	B	2008.10.07.	KD			ISSUED FOR APPROVAL (COIL LAYOUT MODIFIED)
NWP-1559	GENERAL ARRANGEMENT	A	2008.09.30.	KD			ISSUED FOR APPROVAL
DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP	
REFERENCE DRAWINGS		DRAWING REVISIONS					

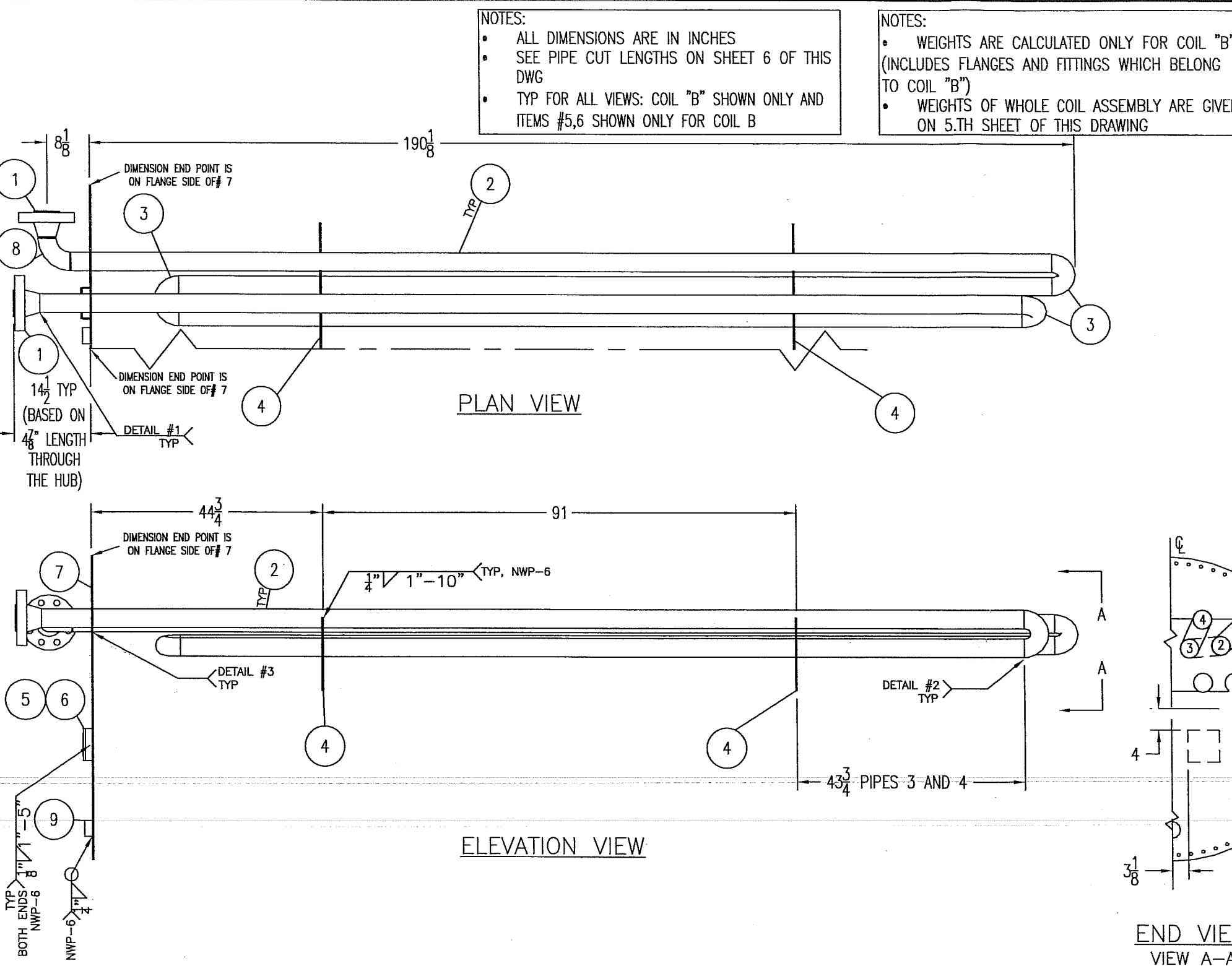
NWP INDUSTRIES INC.
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COIL A: 3"-1500# RTJ, 4 PASS
FITS ø48" x 16"; 1,500,000 BTU/HR
LINE HEATER
Tupper Field Gathering System

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SCALE 1/2" : 1"
SHEET 1/6

DWG NWP-1559-2 REV 1



DESIGN DATA : COIL B			
DESIGN & FABRICATE TO:	ANSI/ASME B31.3 N.F.S. 2006 EDITION		
DESIGN PRESSURE & TEMPERATURE:	3125 PSIG @ 200°F		
MINIMUM DESIGN METAL TEMPERATURE:	-20°F @3125PSIG		
IMPACT TESTS:	EXEMPT (TABLE 323.2.2-COLUMN A)		
RADIOGRAPHY:	100%		
POST WELD HEAT TREATMENT:	1150°F ± 50°F FOR 60 MIN. MINIMUM		
HYDROSTATIC TEST PRESSURE:	4688 PSIG		
CORROSION ALLOWANCE:	1/8"	PREHEAT:	50°F
HEAD THK. - MIN:	N/A	WEIGHT EMPTY:	1015 LBS
CRN:	P-9407.213	WEIGHT FULL OF WATER:	1162 LBS

WPS NWP-4

WELD DETAIL #1
(SMAW ROOT)

WPS NWP-4

WELD DETAIL #2
(SMAW ROOT)

WPS NWP-6

WELD DETAIL #3
(GMAW)

FLANGE(TYP)

DETAIL #5
(NUMBER OF HOLES DOES NOT HAVE TO BE AS SHOWN)

AS BUILT

TAGGING DETAILS

ITEM	WO NUMBER	SERIAL NUMBER	WELL SITE LSD
1	06276	NWP-1559	b-43-B/93-P-9
2	06277	NWP-1560	a-3-A/93-P-9
3	06278	NWP-1561	c-3-H/93-P-9
4	06279	NWP-1562	d-40-A/93-P-9
5	06280	NWP-1563	d-11-B/93-P-9
6	06281	NWP-1564	b-93-A/93-P-9

NWP-1559-41	PREHEAT LINE						
NWP-1559-4	LINE HEATER						
NWP-1559-3	SKID	1	2008.11.13.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (ADDED TAGGING DETAILS)
NWP-1559-1	BILL OF MATERIALS	0	2008.10.15.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (CUSTOMER APPROVED ON OCT. 10,08)
NWP-1559-1	P&ID	B	2008.10.07.	KD			ISSUED FOR APPROVAL (COIL LAYOUT MODIFIED)
NWP-1559	GENERAL ARRANGEMENT	A	2008.09.30.	KD			ISSUED FOR APPROVAL
DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP	
REFERENCE DRAWINGS		DRAWING REVISIONS					

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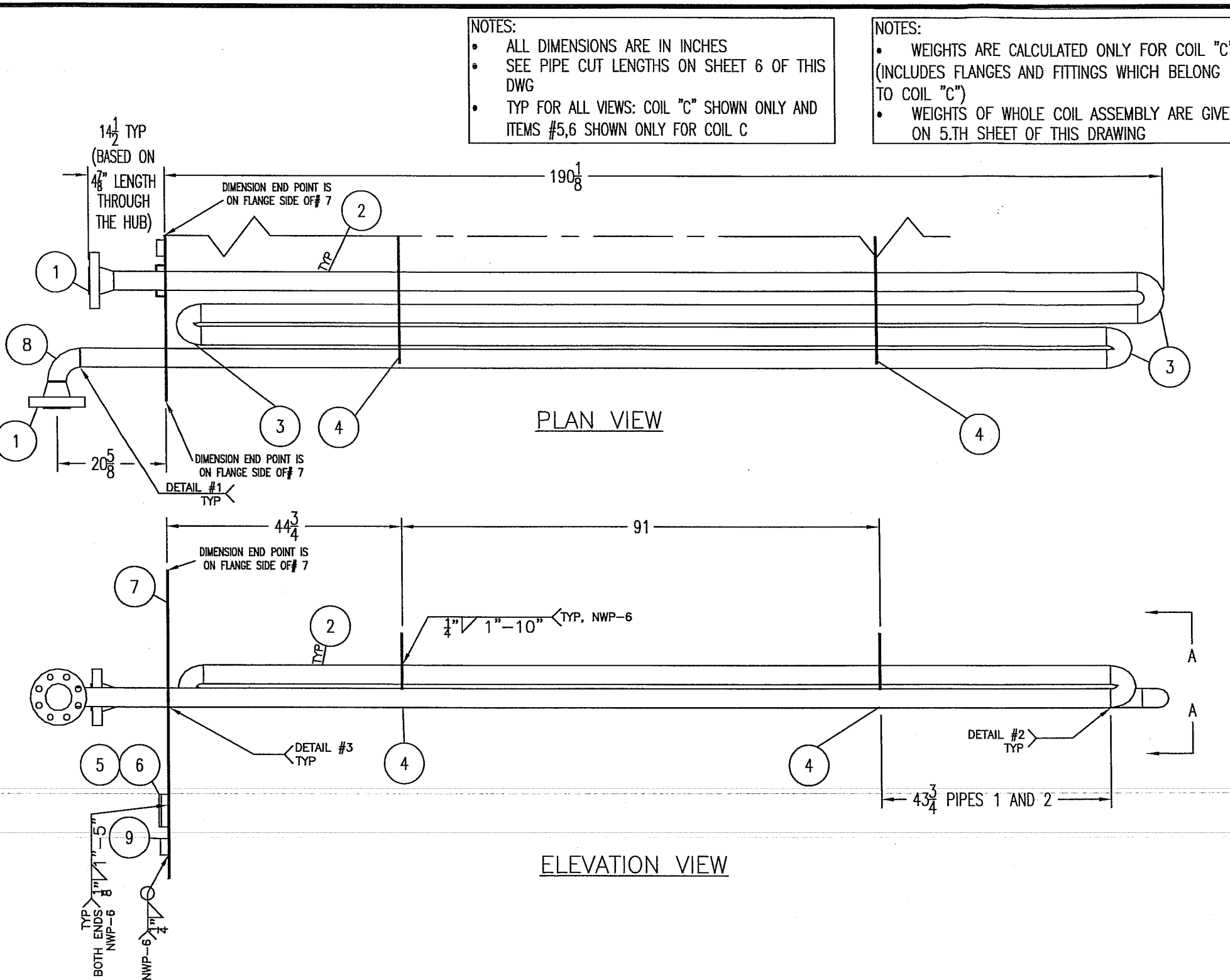
COIL B: 3"-1500# RTJ, 4 PASS
FITS Ø48" x 16'; 1,500,000 BTU/HR
LINE HEATER
Tupper Field Gathering System

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SCALE 1/2" : 1"
SHEET 2/6

DWG NWP-1559-2

REV 1



DESIGN DATA : COIL C

DESIGN & FABRICATE TO: ANSI/ASME B31.3 N.F.S. 2006 EDITION	
DESIGN PRESSURE & TEMPERATURE:	3125 PSIG @ 200°F
MINIMUM DESIGN METAL TEMPERATURE:	-20°F @3125PSIG
IMPACT TESTS:	EXEMPT (TABLE 323.2.2-COLUMN A)
RADIOGRAPHY:	100%
POST WELD HEAT TREATMENT:	1150°F ± 50°F FOR 60 MIN. MINIMUM
HYDROSTATIC TEST PRESSURE:	4688 PSIG
CORROSION ALLOWANCE:	1/8"
HEAD THK. - MIN:	N/A
CRN:	P-9407.213
PREHEAT:	50°F
WEIGHT EMPTY:	1055 LBS
WEIGHT FULL OF WATER:	1209 LBS

WPS NWP-4

WELD DETAIL #1
(SMAW ROOT)

WPS NWP-4

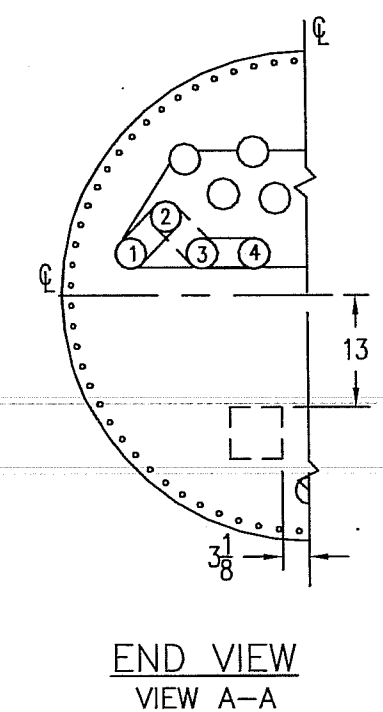
WELD DETAIL #2
(SMAW ROOT)

WPS NWP-6

WELD DETAIL #3
(GMAW)

FLANGE(TYP)

DETAIL #5
(NUMBER OF HOLES DOES NOT HAVE TO BE AS SHOWN)



AS BUILT

TAGGING DETAILS

ITEM	WO NUMBER	SERIAL NUMBER	WELL SITE LSD
1	06276	NWP-1559	b-43-B/93-P-9
2	06277	NWP-1560	a-3-A/93-P-9
3	06278	NWP-1561	c-3-H/93-P-9
4	06279	NWP-1562	d-40-A/93-P-9
5	06280	NWP-1563	d-11-B/93-P-9
6	06281	NWP-1564	b-93-A/93-P-9

P-1559-41	PREHEAT LINE						
WP-1559-4	LINE HEATER						
WP-1559-3	SKID	1	2008.11.13.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (ADDED TAGGING DETAILS)
WP-1559-1	BILL OF MATERIALS	0	2008.10.15.	KD			ISSUED FOR CONSTRUCTION (CUSTOMER APPROVED ON OCT. 10,08)
WP-1559-1	P&ID	B	2008.10.07.	KD			ISSUED FOR APPROVAL (COIL LAYOUT MODIFIED)
WP-1559	GENERAL ARRANGEMENT	A	2008.09.30.	KD			ISSUED FOR APPROVAL
DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP	
REFERENCE DRAWINGS		DRAWING REVISIONS					

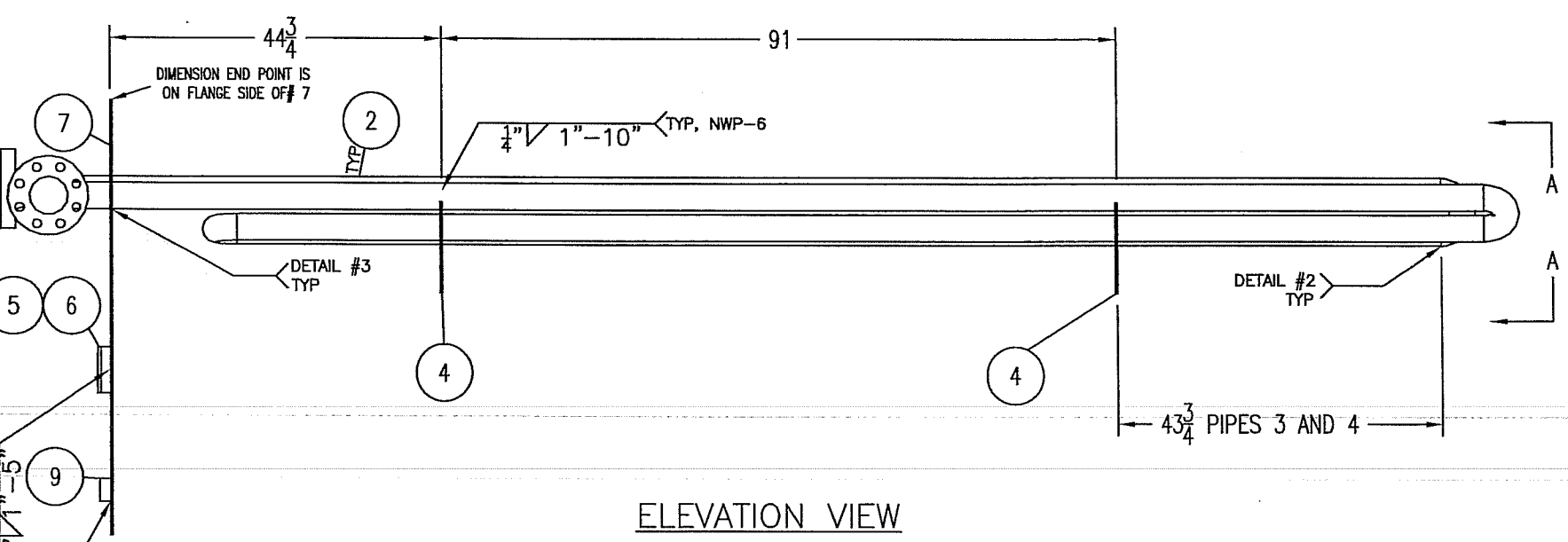
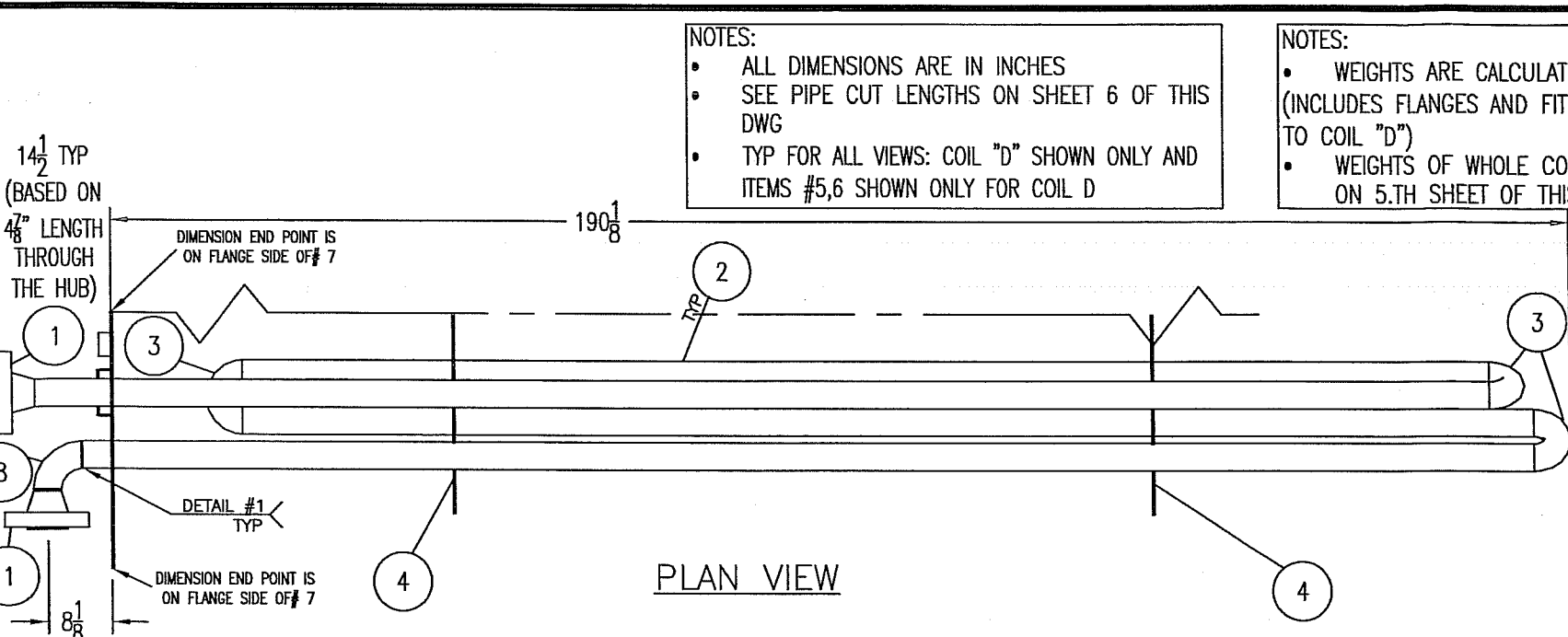
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COIL C: 3"-1500# RTJ, 4 PASS
FITS Ø48" x 16'; 1,500,000 BTU/HR
LINE HEATER
Tupper Field Gathering System

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SCALE 1/2" : 1"
SHEET 3/6

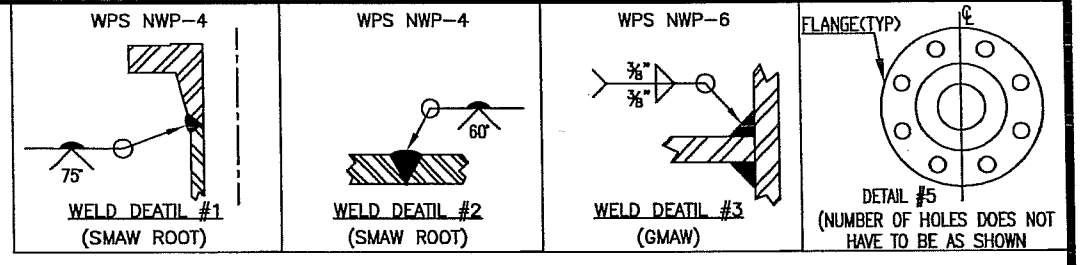
DWG NWP-1559-2 REV 1



END VIEW
VIEW A-A

DESIGN DATA : COIL D

DESIGN & FABRICATE TO:	ANSI/ASME B31.3 N.F.S. 2006 EDITION		
DESIGN PRESSURE & TEMPERATURE:	3125 PSIG @ 200°F		
MINIMUM DESIGN METAL TEMPERATURE:	-20°F @3125PSIG		
IMPACT TESTS:	EXEMPT (TABLE 323.2.2-COLUMN A)		
RADIOGRAPHY:	100%		
POST WELD HEAT TREATMENT:	1150°F ± 50°F FOR 60 MIN. MINIMUM		
HYDROSTATIC TEST PRESSURE:	4688 PSIG		
CORROSION ALLOWANCE:	1/8"	PREHEAT:	50°F
HEAD THK. - MIN:	N/A	WEIGHT EMPTY:	1015 LBS
CRN:	P-9407.213	WEIGHT FULL OF WATER:	1162 LBS



AS BUILT

TAGGING DETAILS

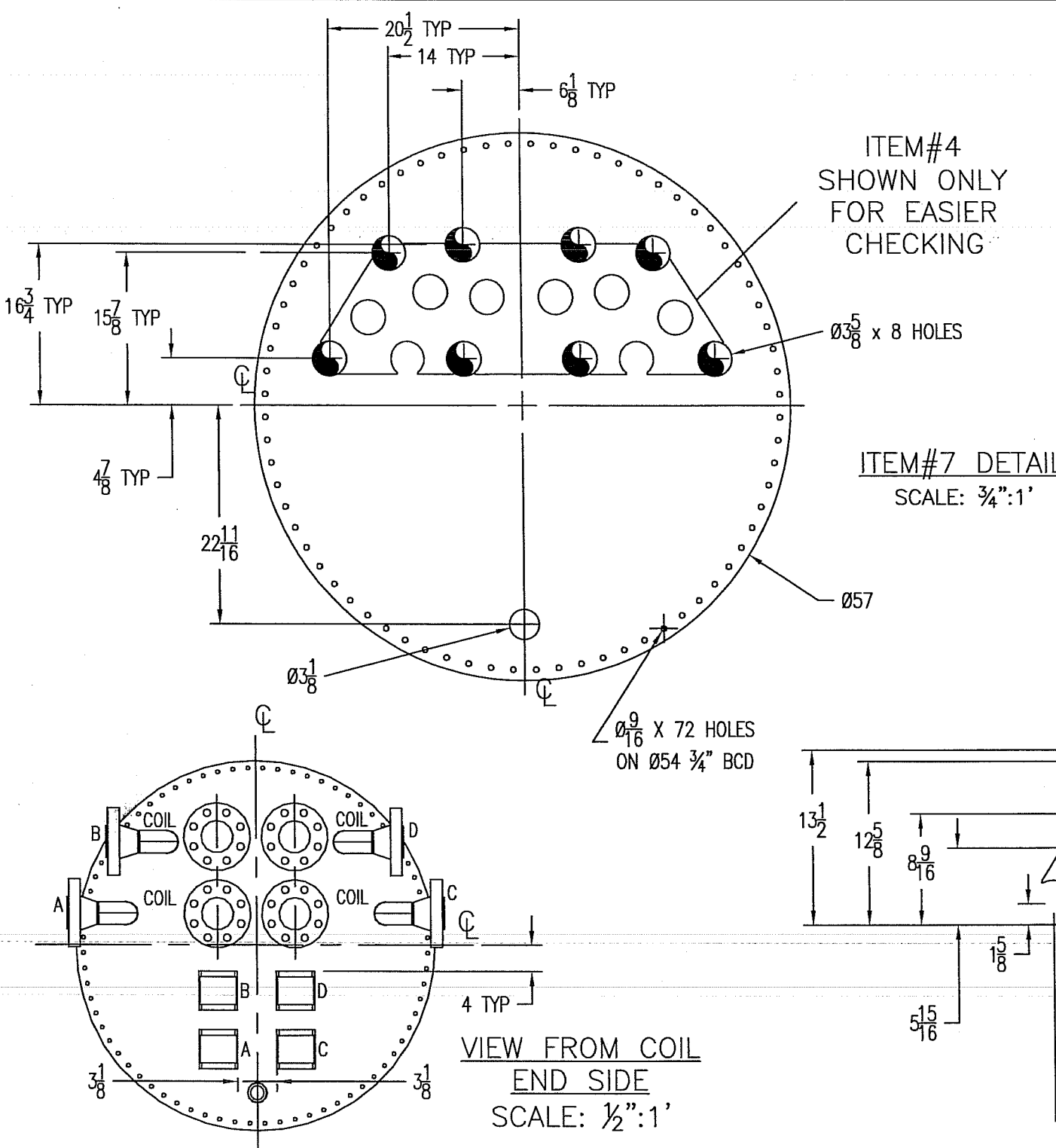
ITEM	WO NUMBER	SERIAL NUMBER	WELL SITE LSD
1	06276	NWP-1559	b-43-B/93-P-9
2	06277	NWP-1560	a-3-A/93-P-9
3	06278	NWP-1561	c-3-H/93-P-9
4	06279	NWP-1562	d-40-A/93-P-9
5	06280	NWP-1563	d-11-B/93-P-9
6	06281	NWP-1564	b-93-A/93-P-9

DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP	
P-1559-41	PREHEAT LINE						
P-1559-4	LINE HEATER						
P-1559-3	SKID	1	2008.11.13.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (ADDED TAGGING DETAILS)
WP-1559-1	BILL OF MATERIALS	0	2008.10.15.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (CUSTOMER APPROVED ON OCT. 10,08)
WP-1559-1	P&ID	B	2008.10.07.	KD			ISSUED FOR APPROVAL (COIL LAYOUT MODIFIED)
WP-1559	GENERAL ARRANGEMENT	A	2008.09.30.	KD			ISSUED FOR APPROVAL

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COIL D: 3"-1500# RTJ, 4 PASS FITS Ø48" x 16'; 1,500,000 BTU/HR LINE HEATER Tupper Field Gathering System	
SCALE 1/2" : 1"	DWG NWP-1559-2 REV 1
SHEET 4/6	



BILL OF MATERIALS						
ITEM	REQ'D	SERVICE	DESCRIPTION	MATERIAL	PART #	MTR #
1	8	FLANGE	3"-1500# RTJ FLANGE SCH160 BORE	SA-105-N	-	
2	243 FT	PIPE	3" SCH160 SMLS PIPE	SA-106-B	-	
3	12	180° RETURN	3" 180° SR BW RETURN 160	SA-234-WPB	-	
4	2	COIL TRAY	42.75" X 13.625" X 0.25"	SA-36	CNC	
5	4	BRACKET	C6" x 1 1/2" x 1/8" x 6" LG	SA-36	-	
6	4	NAME PLATE	5 1/2" x 5 1/2" x 1/16" PLATE	ALUMINUM	-	
7	1	COIL END PLATE	Ø57 OD x 1/4" PLATE (SEE DETAIL)	SA-36	CNC	
8	4	90° ELBOW	3" 90° LR BW ELBOW SCH 160	SA-234-WPB	-	
9	1	DRAIN	2" - 3000# HALF COUPLING	SA-105-N	-	

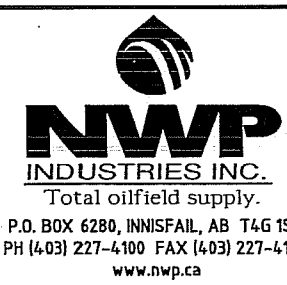
WEIGHTS:
 COIL A (EMPTY): 1055 LBS
 COIL B (EMPTY): 1015 LBS
 COIL C (EMPTY): 1055 LBS
 COIL D (EMPTY): 1015 LBS
 ITEM #4 (BOTH PLATES): 53 LBS
 ITEM #7,5,6,8 AND 9: 190 LBS
TOTAL: 4383 LBS

AS BUILT

TAGGING DETAILS

ITEM	WO NUMBER	SERIAL NUMBER	WELL SITE LSD
1	06276	NWP-1559	b-43-B/93-P-9
2	06277	NWP-1560	a-3-A/93-P-9
3	06278	NWP-1561	c-3-H/93-P-9
4	06279	NWP-1562	d-40-A/93-P-9
5	06280	NWP-1563	d-11-B/93-P-9
6	06281	NWP-1564	b-93-A/93-P-9

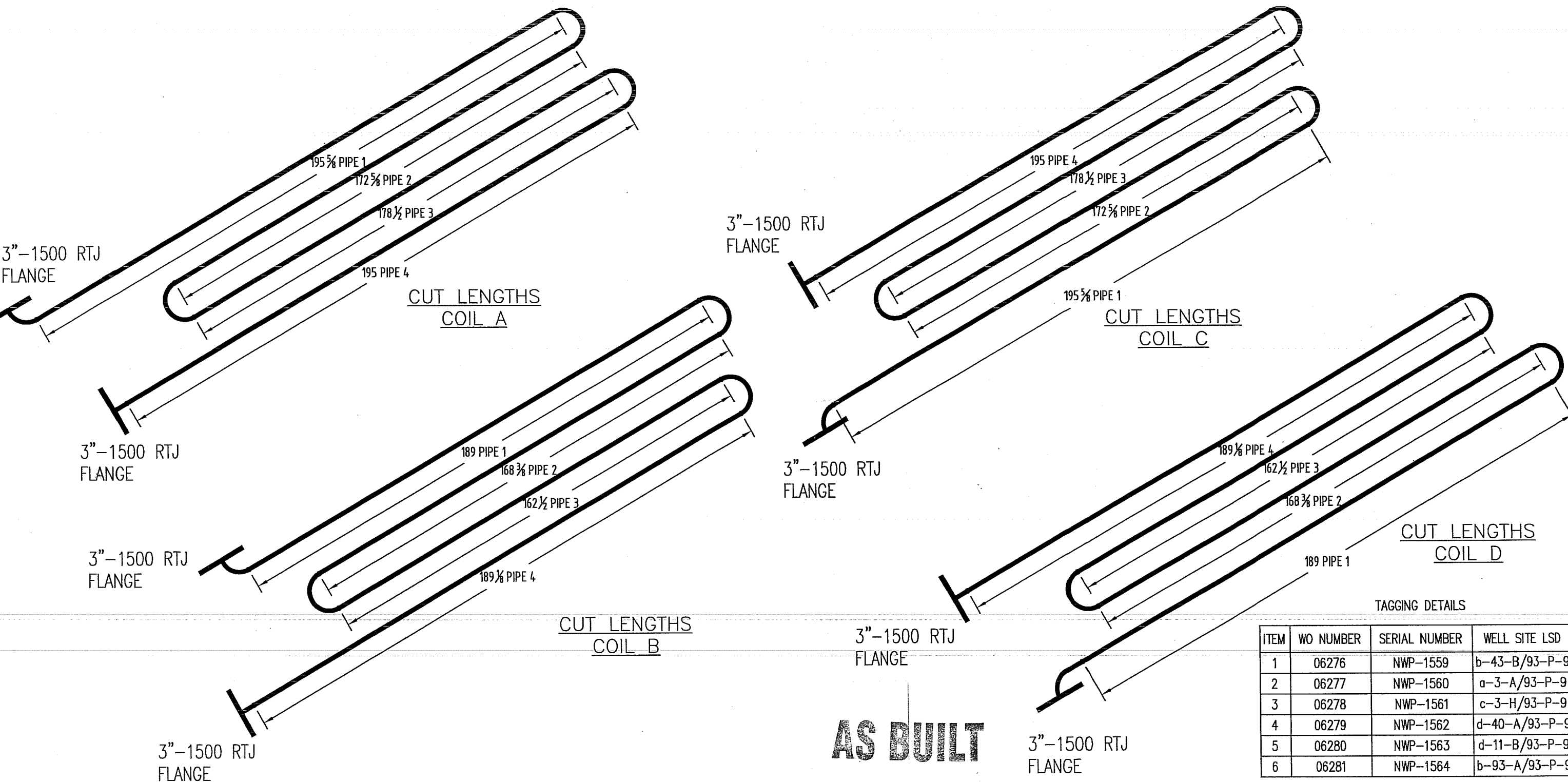
P-1559-41	PREHEAT LINE						
VP-1559-4	LINE HEATER						
VP-1559-3	SKID	1	2008.11.13.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (ADDED TAGGING DETAILS)
WP-1559-1	BILL OF MATERIALS	0	2008.10.15.	KD	ETB	DF	ISSUED FOR CONSTRUCTION (CUSTOMER APPROVED ON OCT. 10,08)
VP-1559-1	P&ID	B	2008.10.07.	KD			ISSUED FOR APPROVAL (COIL LAYOUT MODIFIED)
NWP-1559	GENERAL ARRANGEMENT	A	2008.09.30.	KD			ISSUED FOR APPROVAL
DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP	
REFERENCE DRAWINGS							DRAWING REVISIONS



COIL A,B AND C,D (SPLIT MIRRORED COILS)
 3"-1500# RTJ, 16 PASS TOTAL
 FITS Ø48" x 16'; 1,500,000 BTU/HR LINE HEATER
 Tupper Field Gathering System

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SCALE AS NOTED	DWG NWP-1559-2	REV 1
SHEET 5/6		



AS BUILT

TAGGING DETAILS

ITEM	WO NUMBER	SERIAL NUMBER	WELL SITE LSD
1	06276	NWP-1559	b-43-B/93-P-9
2	06277	NWP-1560	a-3-A/93-P-9
3	06278	NWP-1561	c-3-H/93-P-9
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VP-1559	GENERAL ARRANGEMENT	A	2008.09.30.	KD			ISSUED FOR APPROVAL
DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP	
REFERENCE DRAWINGS		DRAWING REVISIONS					

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COIL A,B AND C,D (SPLIT MIRRORED COILS)
3"-1500# RTJ, 16 PASS TOTAL
FITS 48" x 16'; 1,500,000 BTU/HR LINE HEATER
Tupper Field Gathering System

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SCALE NTS
SHEET 6/6

DWG NWP-1559-2 REV 1