
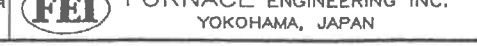
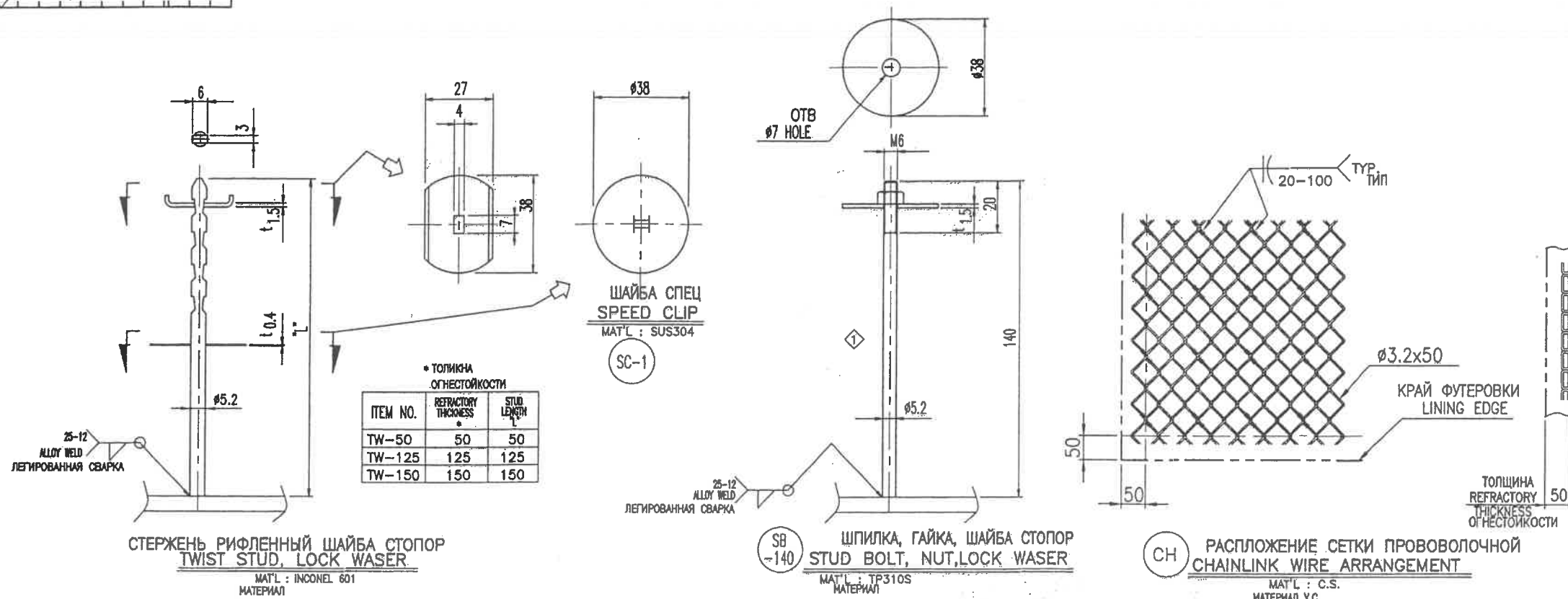


YAROSLAVL REFINERY MODERNIZATION YAROSLAVL RUSSIAN FEDERATION
DAO SLAVNEFT- YAROSLAVNEFTORGSTINTEZ
 Toyo Engineering Corp. TEC WORK NO.: BA-0572
REQ. NO. BXB001
ITEM NO. VB-0-2/1.2

409-VB1-513	PLATFORM DETAIL NO.3				
409-VB1-512	PLATFORM DETAIL NO.2				
409-VB1-511	PLATFORM DETAIL NO.1				
DWG. NO.	TITLE				
REFERENCE DRAWING					
1	29/7/02	REVISED AS MARKED	S.T.	<i>Kishida</i>	<i>M. Ueda</i>
NO.	DATE	DESCRIPTION	DSGN	CHKD	APPD
REVISIONS					
FOR TOYO ENGINEERING CORPORATION					
OAO " SLAVNEFT-YAROSLAVNEFTORG SINTZ "					
TITLE VB-0-2/1 & 2 VISBREAKER HEATER					
PLATFORM DETAIL NO.5					
ПУЧИ ВИСБРЕКИНГА VB-0-2/1 И 2					
ПЛОЩАДКИ ДЕТАЛИ NO.5					
DRAWN CH.S.YUN APR.28/01 JOB NO. 1409					
DESIGNED		REQ NO.			
CHECKED K.Ishida		17/6/01		SCALE 1/15	
APPROVED M.Ueda		17/6/01			
DWG.NO.	41019HVBI1-151151				
 FURNEACE ENGINEERING INC. YOKOHAMA, JAPAN					





NOTES :

1. SPACING OF ANCHOR SHALL BE SPECIFIED INDIVIDUALLY AS PER REFRACTORY DRAWINGS.
2. MANUAL AND STUD WELDING ARE USED. WELDING RODS IN MANUAL WELDING SHALL BE USED AS FOLLOWS.

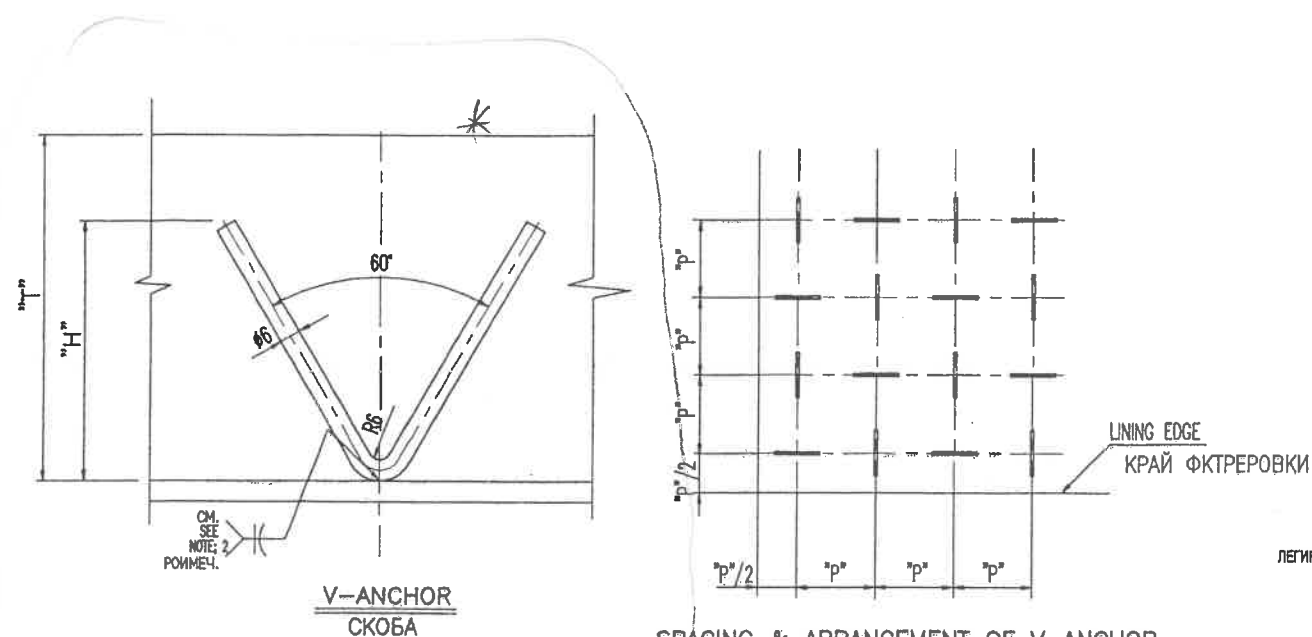
МАТЕРИАЛ СКОБЫ	ЗЛЕКТРОД ДЛЯ СВАРКИ
ANCHOR MATERIAL	WELDING ROD

STAINLESS STEEL
& INCONEL

CARBON STEEL CARBON STEEL
УГЛЕРОДИСТАЯ СТАЛЬ УГЛЕРОДИСТАЯ СТАЛЬ

ПРИМЕЧАНИЕ

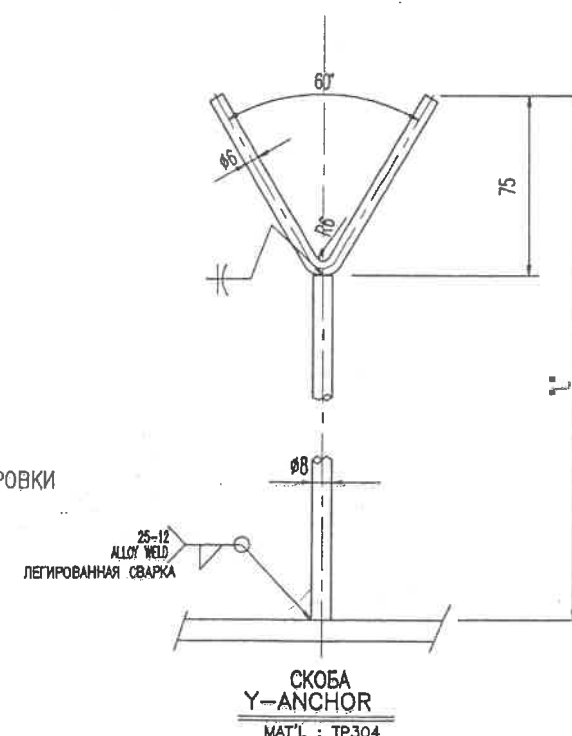
1. РАССТОЯНИЕ МЕЖУ СКОБ ПРЕДУСМОТРЕТЬ ИНДИВИДУАЛЬНО СОГЛАСНО ЧЕРТЕЖАМ ФУТЕРОВКИ ЖАРОПРОЧНОЙ
2. СВАРКА РУЧНАЯ СЭЛЕКТРОДАМИ УКАЗАННЫМИ НИЖЕ



SPACING & ARRANGEMENT OF V-ANCHOR
РАССТОЯНИЯ РАСПОЛОЖЕНИЕ СКОБ

ITEM NO.	REFRACTORY THICKNESS "Т"	ANCHOR LENGTH "H"	SPACING OF ANCHOR **		MAT'L. MATER.
			"P"		
			VERTICAL WALL, СТЕНА ВЕР- ТИКАЛЬНАЯ	OVERHEAD (ARCH & ROOF) СВОД И ПЛАФОН	
V-50C	75	50	125	100	C.S.
V-95	125	95	175	150	TP304
V-110	150	110	200	175	TP304

* ТОЛЩИНА ОГНЕСТОЙКОСТИ
** РАССТОЯНИЕ МЕЖДУ СЕОБ



СКОБА
Y-ANCHOR
MAT'L : TP30

ITEM NO.	REFRACTORY THICKNESS *	Y-ANCHOR "L"
Y-195	225	195
Y-210	250	210

* ТОЛЩИНА ОГНЕСТОЙКОСТИ

DWG. NO.		TITLE			
REFERENCE DRAWING					
2	23/10/02	REVISED AS MARKED	S.T	<i>[Signature]</i>	<i>[Signature]</i>
1	29/7/02	REVISED AS MARKED	S.T	K.I	MU
NO.	DATE	DESCRIPTION	DSGN	CHKD	APPR

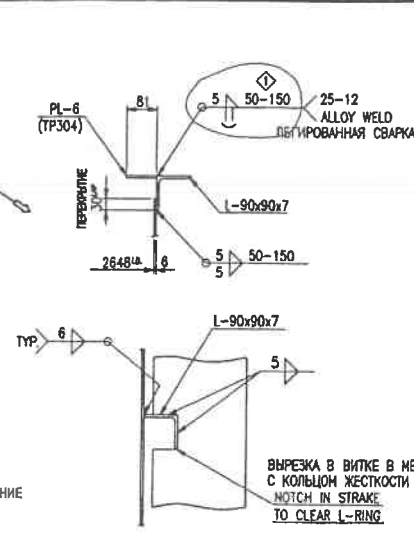
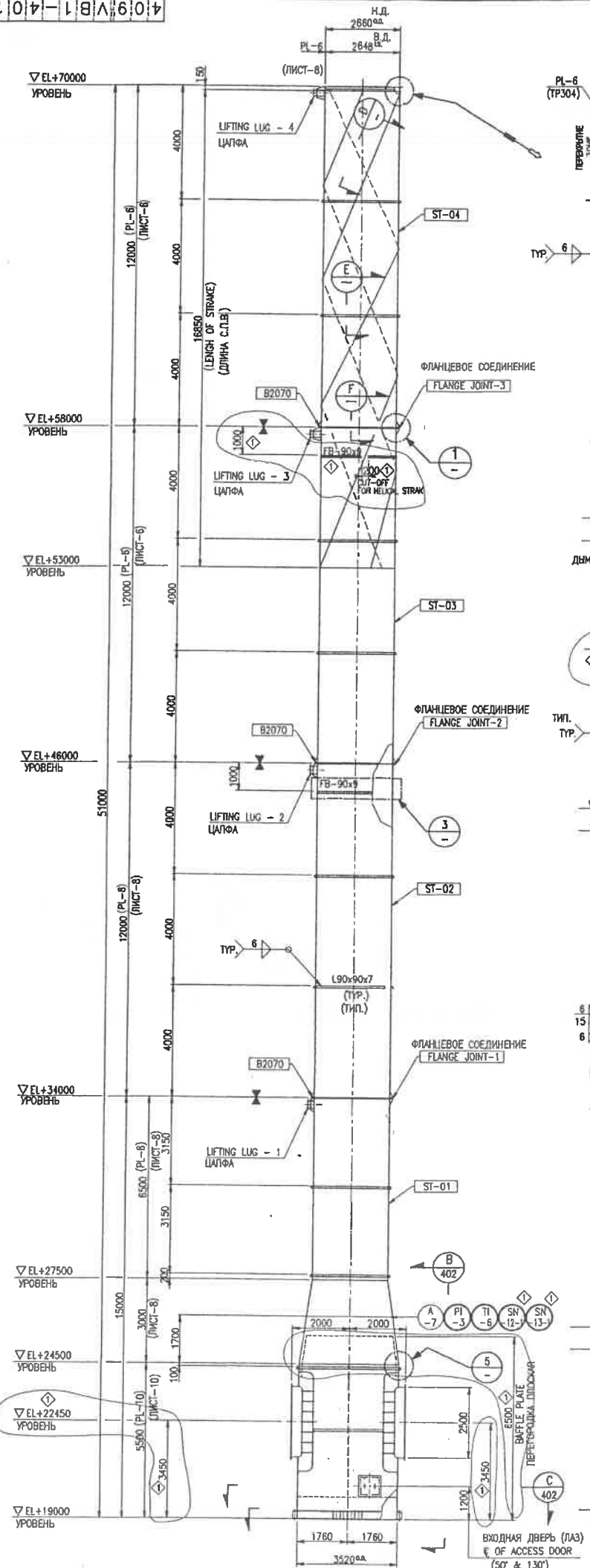
DATE	BY	REVISIONS

FOR TOYO ENGINEERING CORPORATION
OAO "SLAVNEFT-YAROSLAVNEFTTEORGSIITEZ"

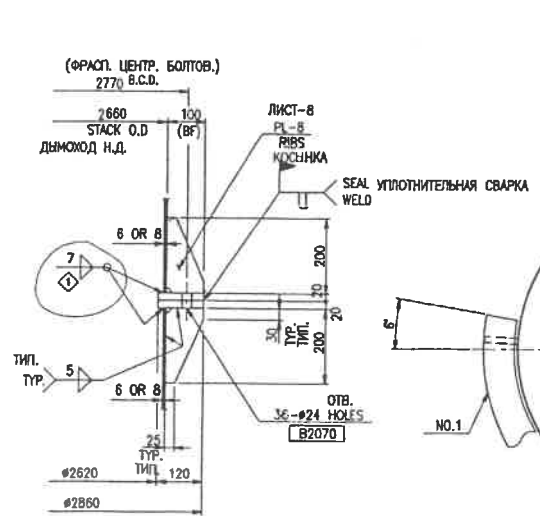
TITLE	VB-0-2/1 & 2 VISBREAKER HEATER LINING ANCHOR DETAILS ПУЧИ ВИСБРЕКИНГА VB-0-2/1 И 2 КРЕПЛЕНИЕ ФУТЕРОВКИ-ДЕТАЛИ
-------	--

DRAWN	S.F	1/6/02	JOB NO.	1409
DESIGNED	_____	_____	REQ NO.	
CHECKED	K.Ishida	17/6/02	SCALE	1/8
APPROVED	M.Utada	17/6/02		

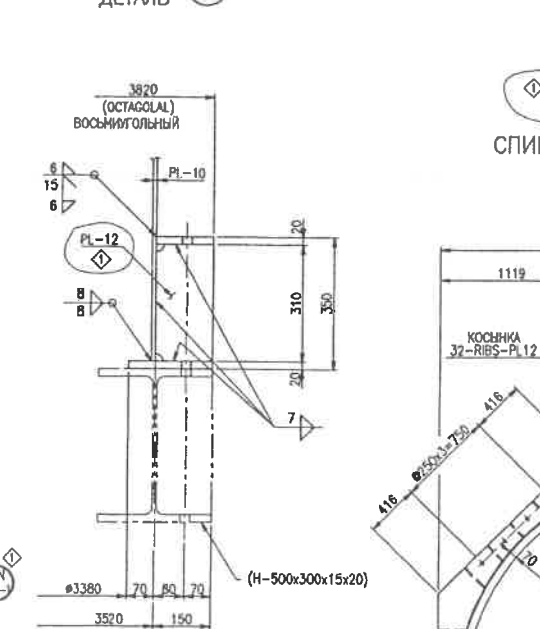
DWG.NO.	4	0	9	H	V	B	1	-	6	9	1	2
---------	---	---	---	---	---	---	---	---	---	---	---	---



SECTION E



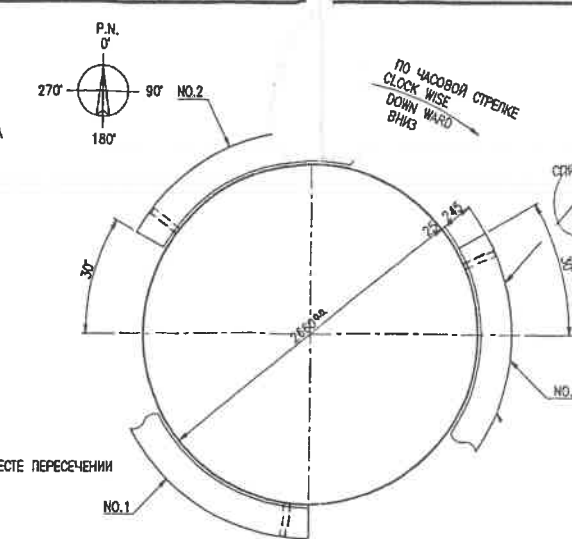
DETAIL 1



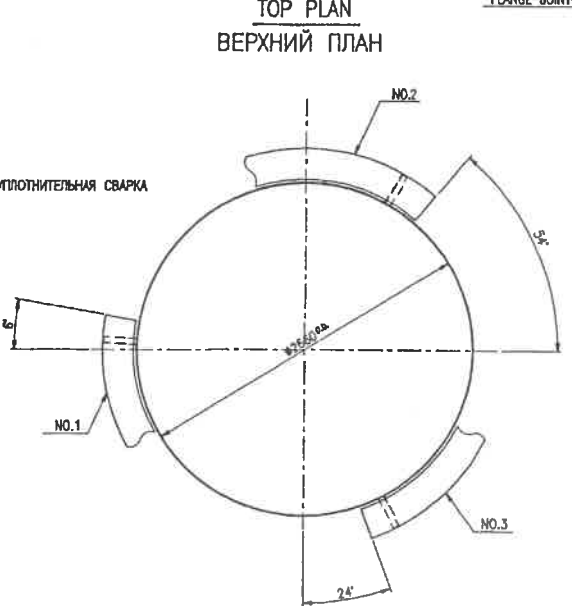
SECTION A1



SECTION A



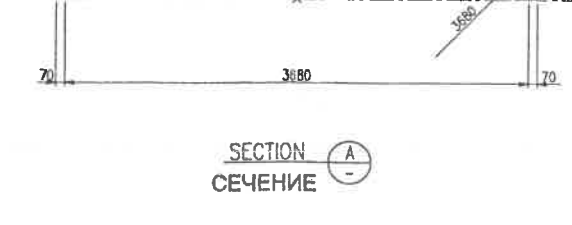
TOP PLAN



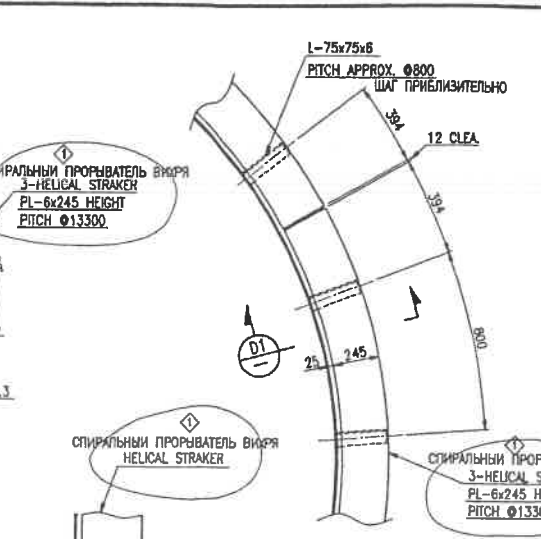
BOTTOM PLAN



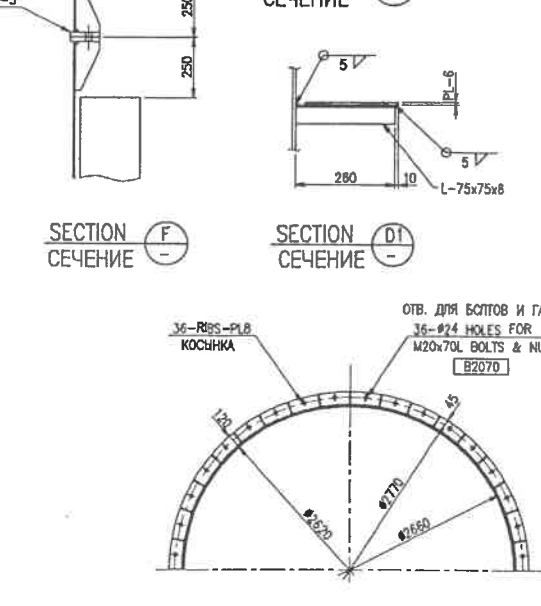
SECTION A



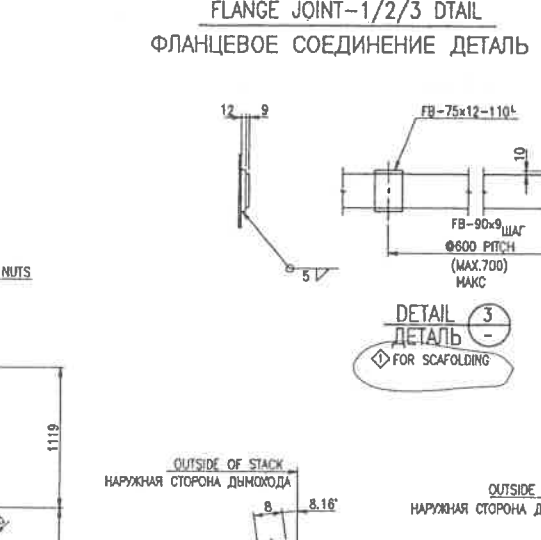
SECTION A



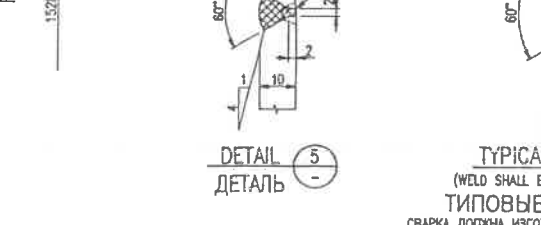
SECTION D



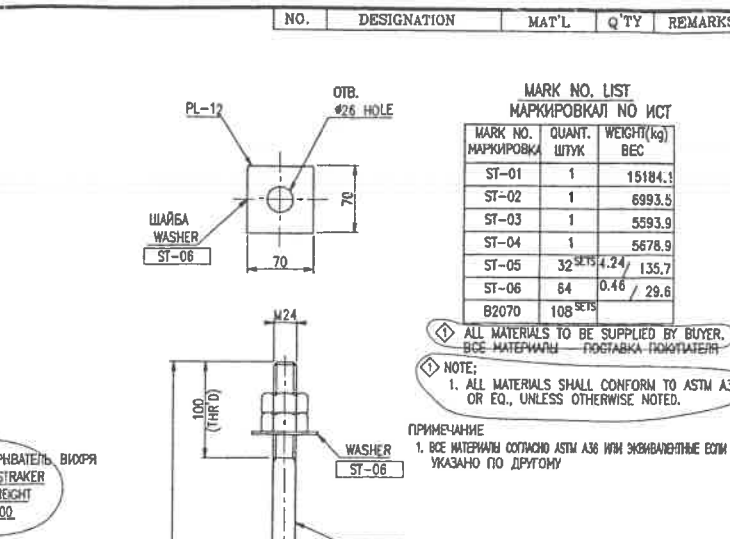
SECTION D1



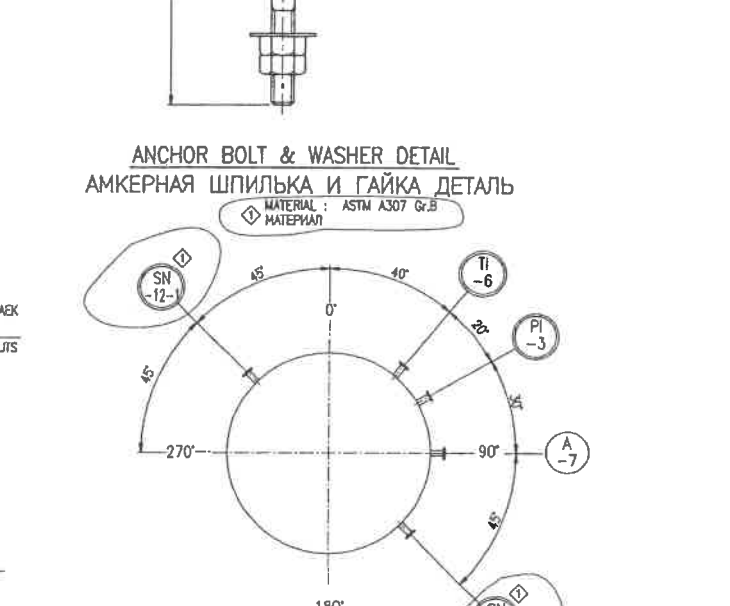
SECTION D1



SECTION D1



SECTION D1



SECTION D1



SECTION D1



SECTION D1

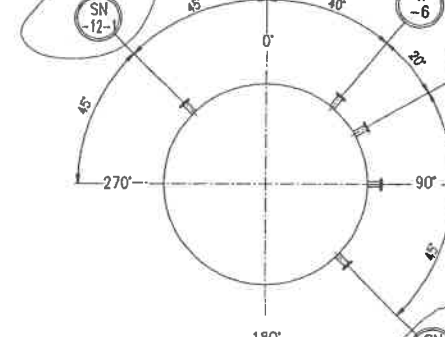
MARK NO.	QUANT.	WEIGHT (kg)
ST-01	1	15184.1
ST-02	1	6993.5
ST-03	1	5593.9
ST-04	1	5678.9
ST-05	32 SETS	4.24 / 135.7
ST-06	64	0.46 / 29.6
B2070	108 SETS	

ALL MATERIALS TO BE SUPPLIED BY BUYER.
 NOTE: 1. ALL MATERIALS SHALL CONFORM TO ASTM A36 OR EQ., UNLESS OTHERWISE NOTED.

ПРИМЕЧАНИЕ
 1. ВСЕ МАТЕРИАЛЫ СОГЛАСНО ASTM A36 ИЛИ ЭКВИВАЛЕНТЫ ЕДИН НЕ УКАЗАНО ПО ДРУГОМУ

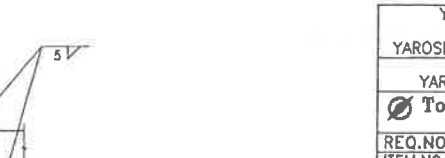
ANCHOR BOLT & WASHER DETAIL

MATERIAL: ASTM A307 Gr.B
 MATERIAL



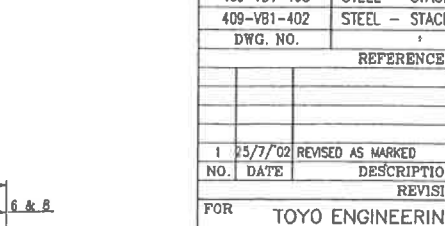
INST. NOZZLE ORIENTATION

РАСПОЛОЖЕНИЕ ШТУЦЕРОВ ИНСТРУМЕНТОВКИ



FLANGE JOINT-1/2/3 DETAIL

ФЛАНЦЕВОЕ СОЕДИНЕНИЕ ДЕТАЛЬ



TYPICAL WELDING DETAIL

(WELD SHALL BE BACK-GAUGED FROM OUTSIDE)
 ТИПОВЫЕ ДЕТАЛИ СВАРКИ



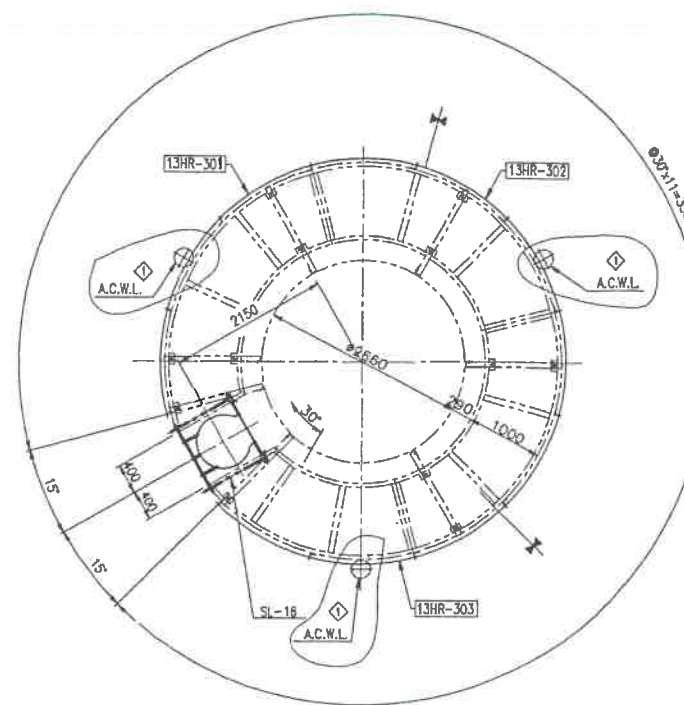
DETAIL 5

СВАРКА ДОЛЖНА ИЗГОТОВЛИВАТИСЯ С МЕХАН. ВИБИВКОЮ НАРУЖИ

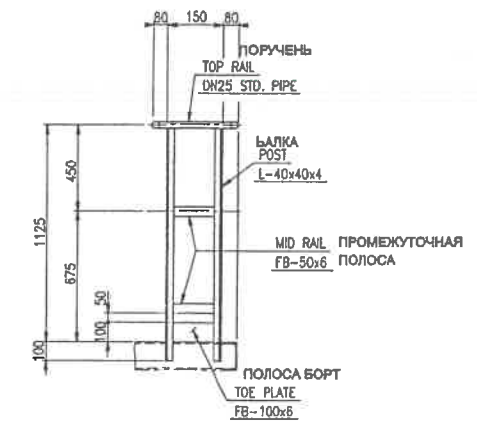
YAROSLAVL REFINERY MODERNIZATION			
YAROSLAVL RUSSIAN FEDERATION			
OAO SLAVNEFT-YAROSLAVNEFTTEORGINTSEZ			
Toyo Engineering Corp.			
TEC WORK NO.: BA-0572			
REQ. NO. BXB001			
ITEM NO. VB-0-2/1,2			
409-VB1-711	INSTRUMENT NOZZLE DETAILS		
409-VB1-412	STEEL - FLUG GAS DUCT NO.2		
409-VB1-411	STEEL - FLUG GAS DUCT NO.1		
409-VB1-403	STEEL - STACK NO.3		
409-VB1-402	STEEL - STACK NO.2		
DWG. NO.		TITLE	
REFERENCE DRAWING			
1	25/7/02	REVISED AS MARKED	S.T.
NO.	DATE	DESCRIPTION	DSGN/CHKD/APPD
FOR TOYO ENGINEERING CORPORATION			
OAO "SLAVNEFT-YAROSLAVNEFTTEORGINTSEZ"			
TITLE VB-0-2/1 & 2 VISBREAKER HEATER			
STEEL - STACK NO.1			
Печи висбрекинга VB-0-2/1 и 2			
СТАЛЬНАЯ СТРУКТУРА-ДЫМОХОД NO.1			
DRAWN	Y.S.KIM	Apr.10/02	JOB NO. 1409
DESIGNED			REQ. NO.
CHECKED	K.Ishida	16/5/02	SCALE 1/30, 1/10
APPROVED	M.Utada	16/5/02	
DWG. NO.	409VB1-401		
FEI FURNACE ENGINEERING INC. YOKOHAMA, JAPAN			

NOTE:
1. ALL MATERIALS SHALL CONFORM TO ASTM A36 OR EQ.,
UNLESS OTHERWISE NOTED.

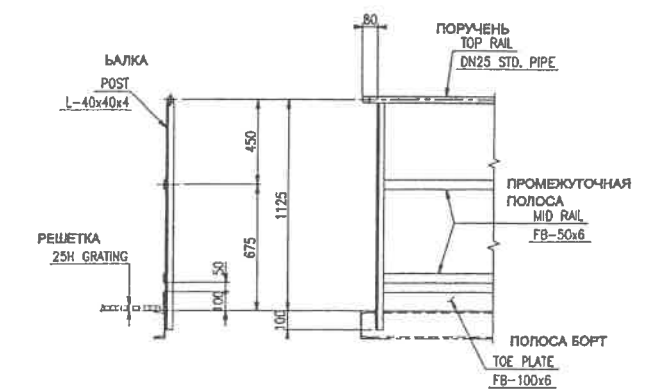
ПРИМЕЧАНИЕ
ВСЕ МАТЕРИАЛЫ СОГЛАСНО АСТМ А36 ИЛИ
ЭКВИВАЛЕНТНЫЕ ЕСЛИ НЕ УКАЗАНО ПО ДРУГОМУ.



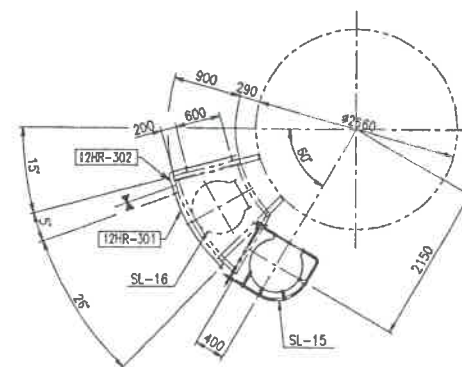
EL+65500 PLAN
УРОВЕНЬ ПЛАН



8HR-304 9HR-304 HANDRAIL DETAIL
10HR-303 11HR-303 БАЛЮСТРАДА - ДЕТАЛЬ



END PART TYP. DETAIL
КОНЕЦ УЗЛА ТИП. ДЕТАЛИ



EL+57500 PLAN
УРОВЕНЬ ПЛАН

MARK NO. LIST
МАРКИРОВКА NO ЛИСТ

MARK NO. МАРКНОВКА	REQ'D NO. ШТУК	WEIGHT(kg) ВЕС
BHR-301	1	84.7
302	1	80.3
303	1	28.0
BHR-304	1	9.8
9HR-301	1	43.6
302	1	58.3
303	1	62.3
9HR-304	2	4.9 / 9.8
10HR-301	1	22.9
10HR-302	1	18.4
10HR-303	1	9.8
11HR-301	1	25.1
11HR-302	1	28.3
11HR-303	1	9.8
12HR-301	1	24.6
12HR-302	1	18.1
13HR-301	1	85.2
13HR-302	1	77.6
13HR-303	1	60.5

ALL MATERIALS TO BE SUPPLIED
BY BUYER.
ВСЕ МАТЕРИАЛЫ - ПОСТАВКА ПОКУПАТЕЛЯ

409-VB1-532	PLATFORM - LADDER NO.2
409-VB1-531	PLATFORM - LADDER NO.1
409-VB1-591	PLATFORM - TYPICAL DETAILS
409-VB1-514	PLATFORM DETAILS NO.4
DWG. NO.	TITLE
REFERENCE DRAWING	
1	29/7/02 REVISED AS MARKED
NO.	DATE DESCRIPTION
	DSGN CHKD APPD
REVISIONS	
FOR	TOYO ENGINEERING CORPORATION OAO "SLAVNEFT-YAROSLAVNEFTORGOSINTEZ"
TITLE	VB-O-2/1 & 2 VISBREAKER HEATER HANDRAIL ARRANGEMENT NO.4 ПУЧИ ВИСБРЕКИНГА VB-O-2/1 И 2 БАЛЮСТРАДА ОБЩИЙ ВИД NO.4
DRAWN	CH.S.YUN
DESIGNED	May 20/02
CHECKED	K.Ishida
APPROVED	M.Utada
JOB NO.	1409
REQ NO.	
SCALE	1/50
DWG NO. 15-1111-11	

FEI FURNACE ENGINEERING INC.
YOKOHAMA, JAPAN

NOTE:
1. ALL MATERIALS SHALL CONFORM TO ASTM A36 OR EQ.,
UNLESS OTHERWISE NOTED.
ПРИМЕЧАНИЕ

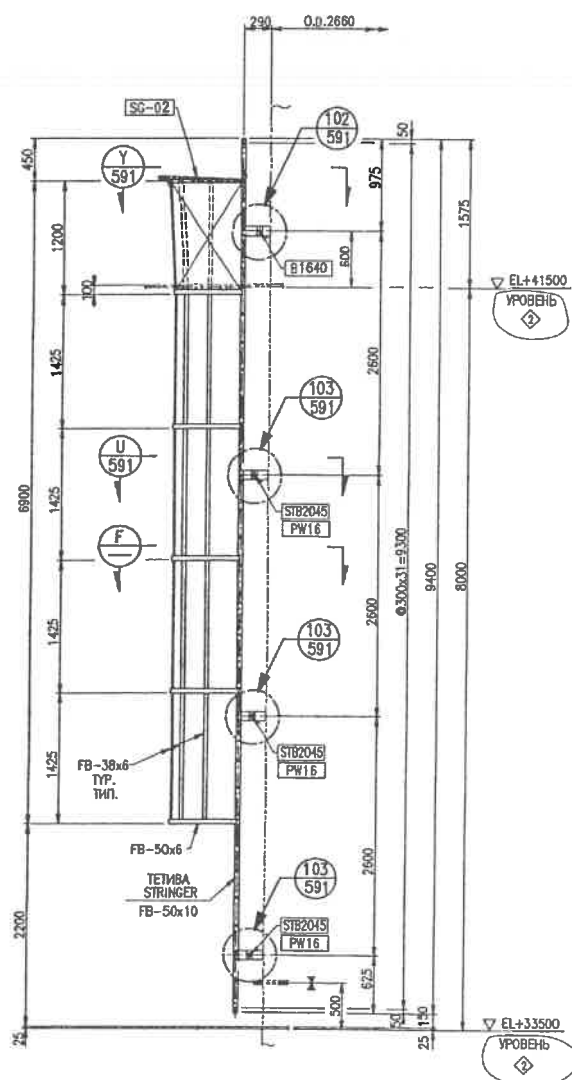
ВСЕ МАТЕРИАЛЫ СОГЛАСНО АСТМ А36 ИЛИ
ЭКВИВАЛЕНТНЫЕ ЕСЛИ НЕ УКАЗАНО ПО ДРУГОМУ

MARK NO. LIST
МАРКИРОВКА NO. ЛИСТ

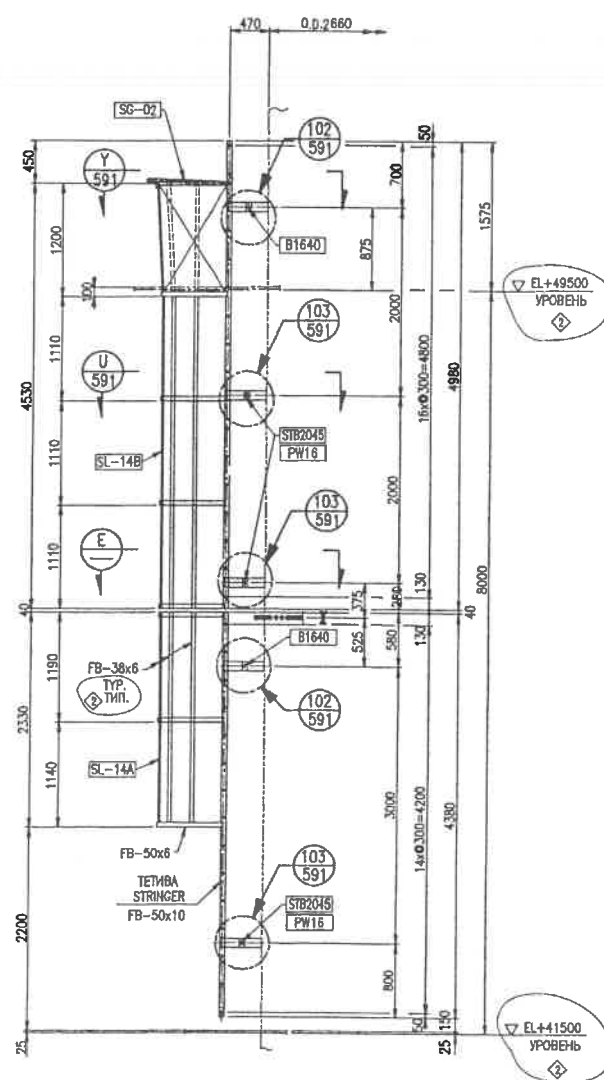
MARK NO.	REQ'D NO.	WEIGHT(kg)
МАРКИРОВКА	ШТУК	ВЕС
SL-13	1	203.6
14A	1	100.9
14B	1	128.7
15	1	208.6
SL-16	1	208.6
SG-01	2	3.2 / 6.4
SG-02	3	3.2 / 9.6
B1640	10	215
STB2045	24	200
PW16	24	—

ALL MATERIALS TO BE SUPPLIED
BY BUYER.

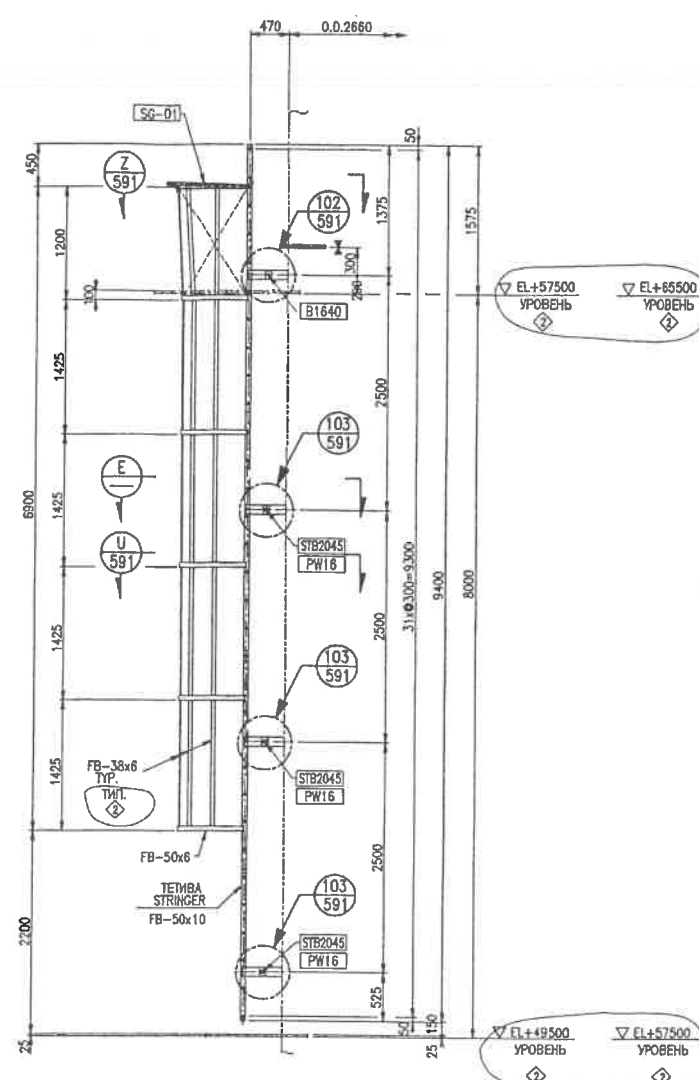
ВСЕ МАТЕРИАЛЫ—ПОСТАВКА
ПОКУПАТЕЛЯ



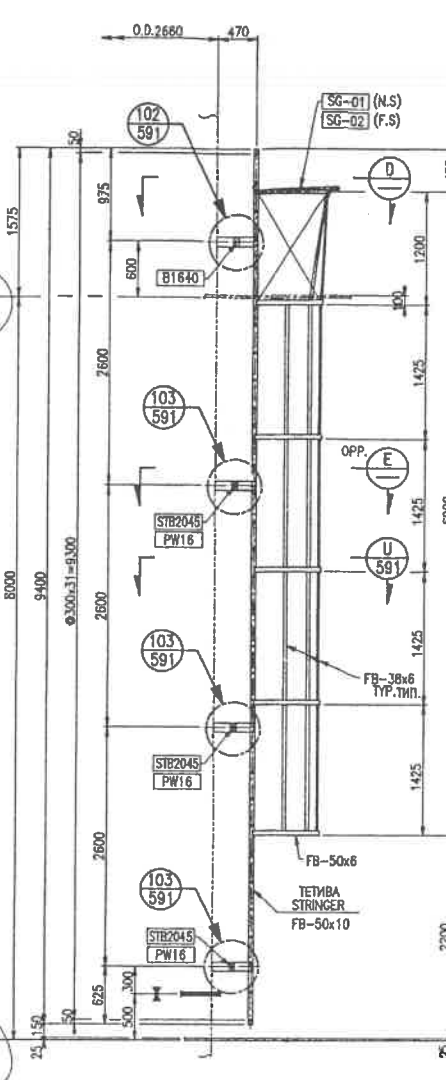
SL-13 LADDER
ЛЕСТНИЦА



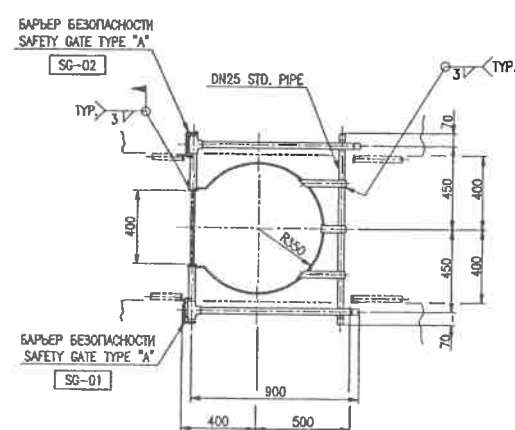
SL-14A SL-14B LADDER
ЛЕСТНИЦА



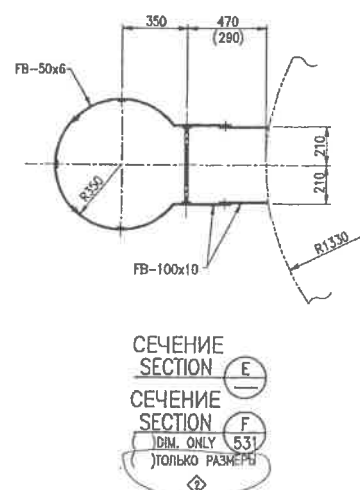
SL-15 LADDER
ЛЕСТНИЦА



SL-16 LADDER
ЛЕСТНИЦА



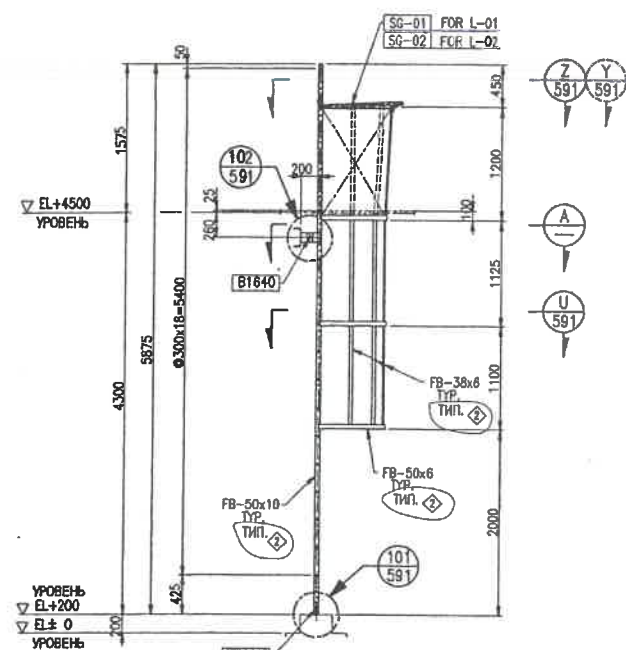
SECTION D-D
СЕЧЕНИЕ D-D



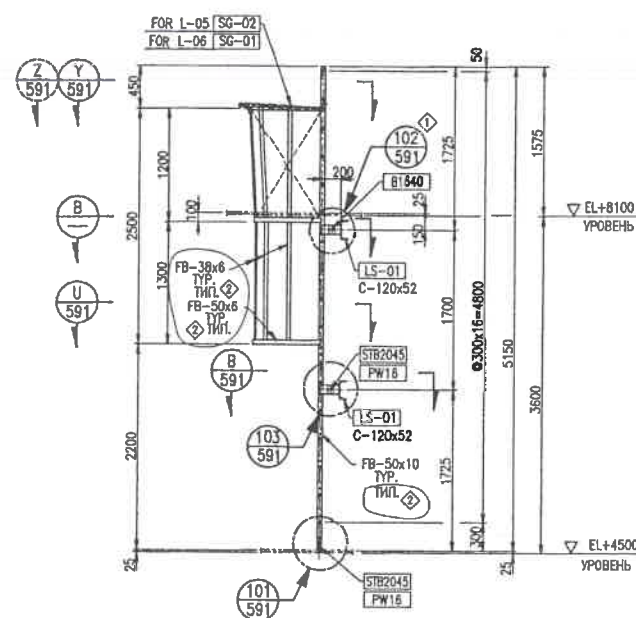
SECTION E-E
СЕЧЕНИЕ E-E
IDM. ONLY (ТОЛЬКО РАЗМЕРЫ)

YAROSLAVL REFINERY
MODERNIZATION
YAROSLAVL RUSSIAN FEDERATION
OAO SLAVNEFT-YAROSLAVNEFTORGSTINTZ
Toyo Engineering Corp.
TEC WORK NO.: BA-0572
REQ. NO. BXBA001
ITEM NO. VB-0-2/1,2

409-VB1-502	PLATFORM ASSEMBLY NO.2
409-VB1-501	PLATFORM ASSEMBLY NO.1
409-VB1-591	PLATFORM-TYPICAL DETAILS
409-VB1-531	PLATFORM - LADDER NO.1
DWG. NO.	TITLE
	REFERENCE DRAWING
2	19/9/02 REVISED AS MARKED S.T.
1	29/7/02 REVISED AS MARKED S.T. K.J. M.U.
NO.	DATE DESCRIPTION DSGN CHKD APPD
	REVISIONS
FOR	TOYO ENGINEERING CORPORATION
	OAO "SLAVNEFT-YAROSLAVNEFTORGSTINTZ"
TITLE	VB-0-2/1 & 2 VISBREAKER HEATER
	PLATFORM - LADDER NO.2
	ПУЩИ ВИСБРЕКИНГА VB-0-2/1 И 2
	ПЛОЩАДКИ-ЛЕСТНИЦА NO.2
DRAWN	Y.S.KIM 10/10/02 JOB NO. 1409
DESIGNED	REQ. NO.
CHECKED	K.Ishida 17/6/02 SCALE 1/40, 1/10
APPROVED	M.Utoda 17/6/02
DWG. NO.	409VB1-532
	FURNACE ENGINEERING INC.
	YOKOHAMA, JAPAN

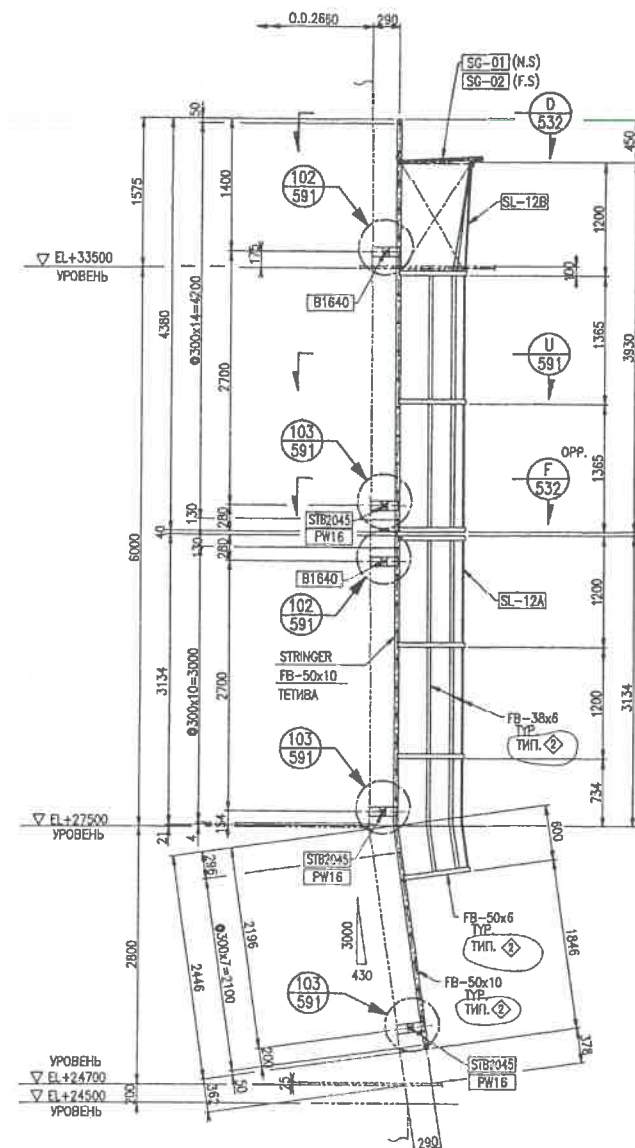


ЛЕСТНИЦА (ТАК КАК ПОКАЗАНО)
LADDER (AS SOWN)
ЛЕСТНИЦА (ОПР. ХАНД)
LADDER (OPP. HAND)
ЛЕСТНИЦА (В ЗЕРКАЛЬНОМ ИЗОБРАЖЕНИИ)

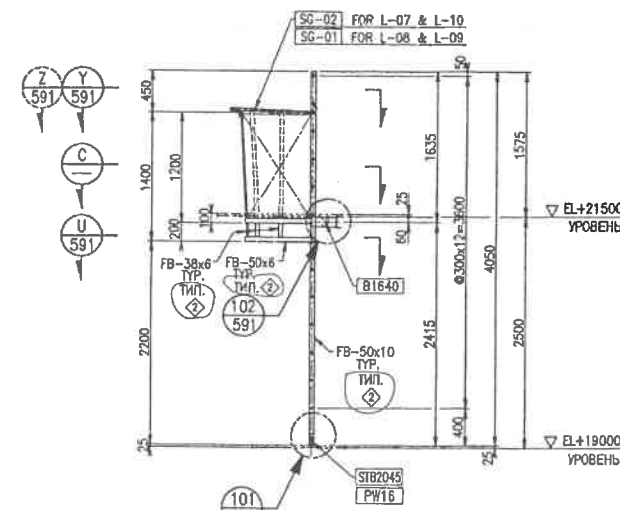


L-05 ЛЕСТНИЦА (ТАК КАК ПОКАЗАНО)
LADDER (AS SHOWN)

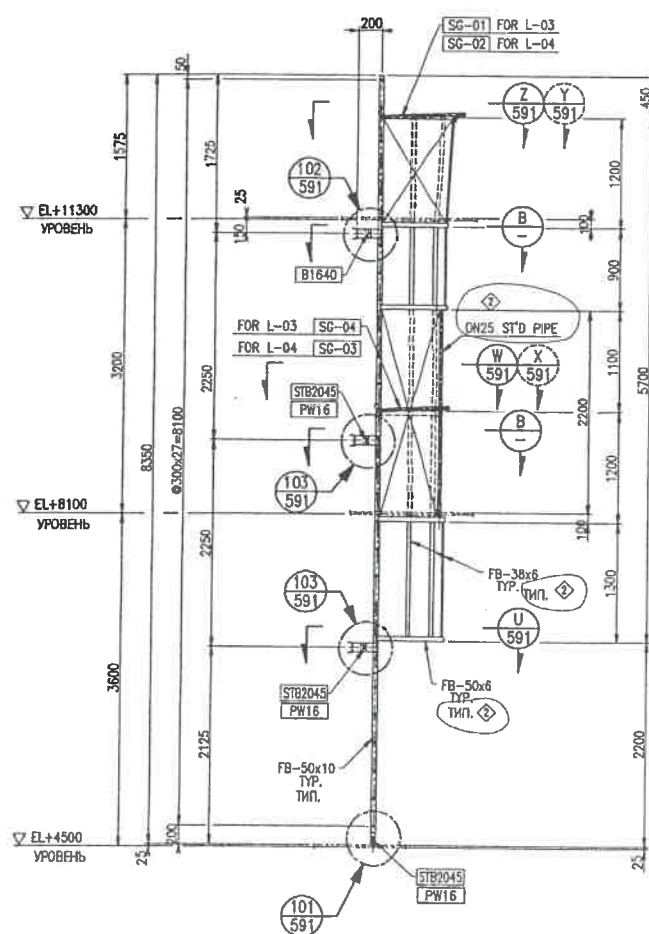
L-06 LADDER (OPP. HAND)
ЛЕСТНИЦА (В ЗЕРКАЛЬНОМ ИЗОБРАЖЕНИИ)



SL-12A SL-12B LADDER
ЛЕСТНИЦА



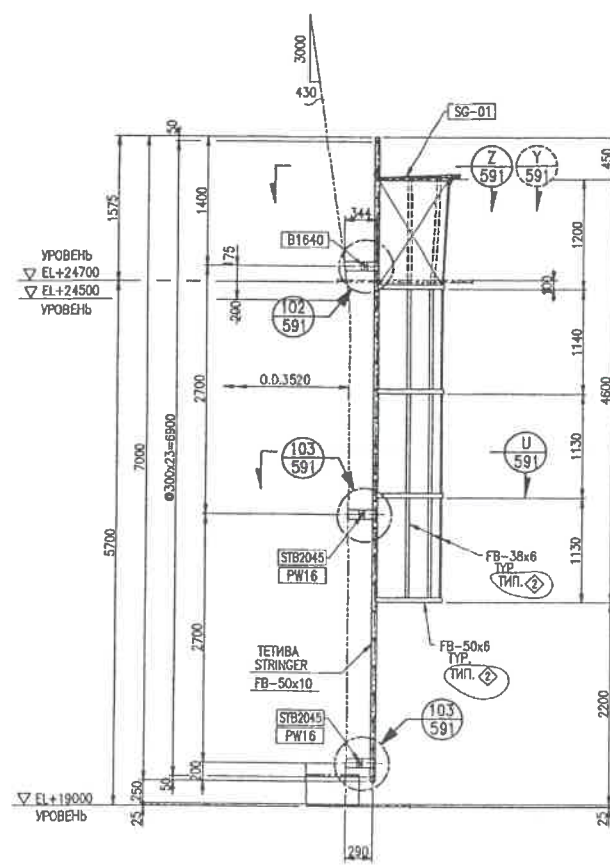
ЛЕСТНИЦА (ТАК КАК ПОКАЗАНО)
L-07 L-10 LADDER (AS SOWN)
 ЛЕСТНИЦА (В ЗЕРКАЛЬНОМ ИЗОБРАЖЕНИИ)
L-08 L-09 LADDER (OPP. HAND)



L-03 ЛЕСТНИЦА (ТАК КАК ПОКАЗАНО)
LADDER (AS SHOWN)

L-04 LADDER (OPP. HAND)

ЛЕСТНИЦА (В ЗЕРКАЛЬНОМ ИЗОБРАЖЕНИИ)



SL-11 LADDER
ЛЕСТНИЦА

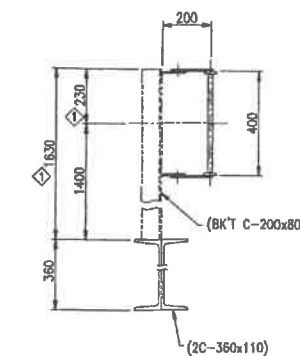
NOTE:
1. ALL MATERIALS SHALL CONFORM TO ASTM A36 OR EQ.,
⬇ UNLESS OTHERWISE NOTED.

ПРИМЕЧАНИЕ
ВСЕ МАТЕРИАЛЫ СОГЛАСНО ASTM A36 ИЛИ
ЭКВИВАЛЕНТНЫЕ ЕСЛИ НЕ УКАЗАНО ИНАКЕ

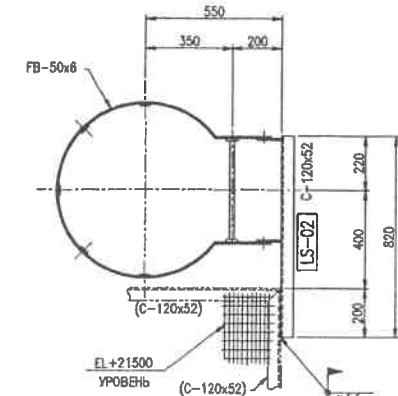
MARK NO.	REQ'D NO.	WEIGHT(oz)
SL-11	1 SET	14.5
SL-12A	1 SET	13.0
SL-12B	1 SET	10.0
SG-01	2	3.2
SG-02	1	
B1840	6 SET	
STB2045	10 SET	
PW16	10	

NO.	DESIGNATION	MAT'L	Q'TY	REMARKS	
<div> <div>MARK NO. LIST</div> <div>МАРКИРОВКА НО. ЛИСТ</div> <div>VB-0-2/1</div> <div>VB-0-2/2</div> </div>					
MARK NO. МАРКИРОВКА	REQ'D NO. ШТУК	WEIGHT(kg) ВЕС	MARK NO. МАРКИРОВКА	REQ'D NO. ШТУК	WEIGHT(kg) ВЕС
L-01	1 SET NASOP	◇ 118.5	L-02	1 SET NASOP	◇ 118.5
O3	1 SET NASOP	180.2	O4	1 SET NASOP	180.2
O5	1 SET NASOP	102.4	O6	1 SET NASOP	102.4
O7	1 SET NASOP	69.2	O8	1 SET NASOP	69.2
L-O9	1 SET NASOP	69.2	L-10	1 SET NASOP	69.2
SG-01	4	3.2 / 12.8	SG-01	1	3.2
SG-02	1	3.2	SG-02	4	3.2 / 12.8
SG-04	1	2.9	SG-03	1	12.9
LS-01	5	6.38 / 31.9	LS-01	5	6.38 / 31.9
LS-02	2	8.55 / 17.1	LS-02	2	8.55 / 17.1
B1640	10 SET NASOP	_____	B1640	10 SET NASOP	_____
STB2045	16 SET NASOP	_____	STB2045	16 SET NASOP	_____
PL16	16	_____	PL16	16	_____

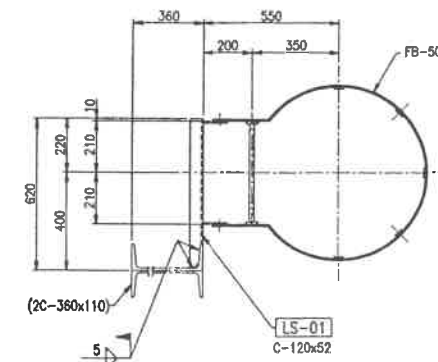
ALL MATERIALS TO BE SUPPLIED BY BUYER.
ВСЕ МАТЕРИАЛЫ—ПОСТАВКА ПОКУПАТЕЛЯ



SECTION
СЧЕНИЕ




SECTION C
СЧЕТНИК



SECTION 
СЕЧЕНИЕ 

YAROSLAVL REFINERY MODERNIZATION YAROSLAVL RUSSIAN FEDERATION
ОАО СЛАВНЕФТ- YAROSLAVNEFTEORGSSINTEZ
 Toyo Engineering Corp. TEC WORK NO.: BA-0572
REQ.NO. BXBAA001
ITEM NO. VB-0-2/1,2

409-VB1-502	PLATFORM ASSEMBLY NO.2				
409-VB1-501	PLATFORM ASSEMBLY NO.1				
409-VB1-591	PLATFORM-TYPICAL DETAILS				
409-VB1-532	PLATFORM - LADDER NO.2				
DWG. NO.	TITLE				
REFERENCE DRAWING					
2	19/9/02	REVISED AS MARKED	S.T.	K.S.	M.Obata
1	29/7/02	REVISED AS MARKED	S.T.	K.I.	M.I.
NO.	DATE	DESCRIPTION	DSGN	CHKD	APPD
REVISIONS					
FOR TOYO TOYOCHEMICAL CORPORATION QAO "SLAVNEFT-YAROSLAVNEFTORGSMINTZ"					
TITLE VB-0-2/1 & 2 VISBREAKER HEATER PLATFORM - LADDER NO.1 ЛУЧИ ВИСБРЕКИНГА VB-0-2/1 и 2 ПЛОЩАДКИ-ЛЕСТНИЦА NO.1					
DRAWN	Y.S.KIM	Apr.10/02	JOB NO.	1409	
DESIGNED			REQ NO.		
CHECKED	K.Shida	12/6/02	SCALE	1/40 , 1/10	
APPROVED	M.Utada	12/6/02			
DWG.NO.	409VB1-531				
 FURNACE ENGINEERING INC. YOKOHAMA, JAPAN					