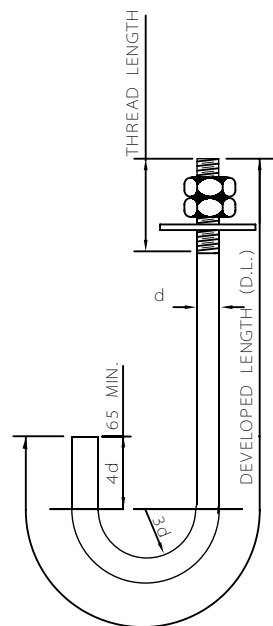
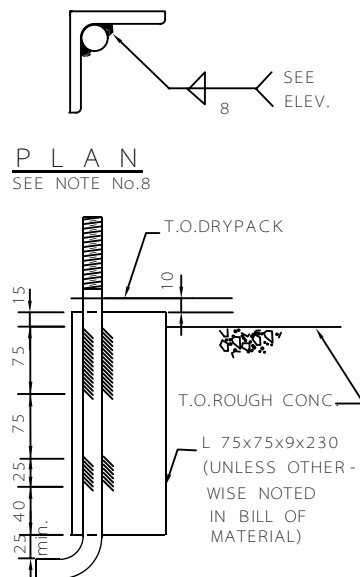


T Y P E L



T Y P E J



E L E V A T I O N

NOTES:

- 1 - ALL DIMENSIONS SHOWN ARE IN MILLI-METERS.
- 2 - CONCRETE WITH MINIMUM COMPRESSIVE STRENGTH OF $F'C=211\text{Kg/cm}^2$ ON CLINDRICAL SPECIMEN AT 28 DAYS.
- 3 - BOLT LENGTH SHALL CONFORM TO THE SCHEDULE ON THIS DRAWING UNLESS OTHERWISE NOTED IN THE BILL OF MATERIAL. DEVELOPED LENGTH (ABBREVIATED D.L. IN BILL OF MATERIAL) IS MEASURED ON CENTER LINE OF BOLT.
- 4 - NUTS AND BOLTS SHALL CONFORM TO ASTM A36 AND A307 LATEST REVISION.
- 5 - NUTS SHALL BE AMERICAN STANDARD, HEXAGONAL HEAVY WITH UNC - 2B THREAD AND SHALL BE PROVIDED BY OTHERS UNLESS OTHERWISE NOTED ON PURCHASE ORDER.
- 6 - BOLT THREAD SHALL BE UNC - 2A.
- 7 - HEAT BOLT MATERIAL TO A TEMPERATURE NOT EXCEEDING 1070°C AT LEAST 75mm. BEYOND BEND ZONE IF HOT BEND IS REQUIRED. ALLOW BOLT TO COOL IN AIR.
- 8 - ONLY FOR NORMAL TENSION AND HIGH SHEAR SHOULD BE USED.
- 9 - FILL ALL SLEEVES WITH GROUT AFTER EQUIPMENT INSTALLATION.
- 10 - METAL SLEEVES SHALL CONFORM TO A 106B OR A36.
- 11 - WASHERS SHALL CONFORM TO A36.
- 12 - ANCHOR PLATES SHALL CONFORM TO A36.

STANDARD ANCHOR BOLT SCHEDULE

BOLT DIA. "d"		TYPE L		TYPE J		SHEAR (Kg.)		TENSION (Kg.)	
INCH	MM.	LENGTH	THREAD LENGTH	DEVELOPED LENGTH	THREAD LENGTH	TYPE L	TYPE J	TYPE L	TYPE J
1/2	14	230	50	-	-	320	-	280	-
5/8	16	280	60	-	-	480	-	470	-
3/4	20	330	70	570	70	580	580	690	2265
7/8	23	380	75	650	75	800	800	970	3139
1	26	430	85	740	85	1050	1050	1280	4122
1 1/4	32	530	100	910	100	1660	1660	2050	6568

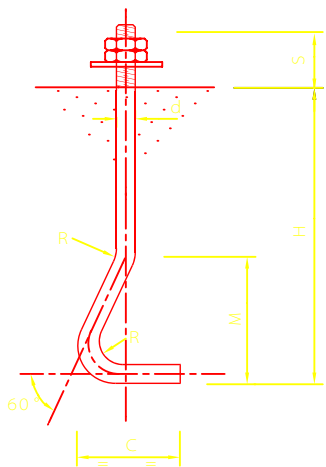
C		
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REV	DESCRIPTION	DATE

IRANIAN PETROLEUM STANDARDS 
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ANCHOR BOLTS
TYPE L , J

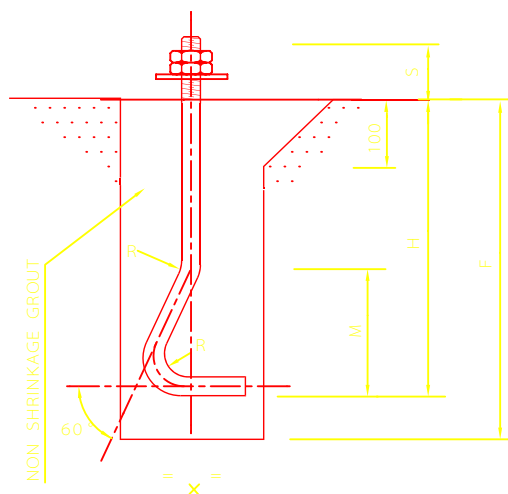
DATE	DRAWING No.	SHEET	REV.
	IPS - D - CE - 201	1/4	

NOT TO SCALE



TYPE "U"

d	H	C	M	R	BOLT WEIGHT(kg)			
					S=75	S=110	S=150	S=200
10	320	40	80	10	0.281	0.302	0.327	0.358
12	360	50	100	12	0.431	0.479	0.497	0.542
14	390	60	120	14	0.598	0.677	0.725	0.786
16	400	65	130	16	0.852	0.908	0.971	1.050
18	400	75	150	18	1.099	1.167	1.249	1.348
20	420	80	160	20	1.418	1.504	1.603	1.726
22	460	90	180	22	1.865	1.970	2.089	2.238
24	460	100	200	24	2.255	2.380	2.521	2.699
27	500	115	230	27	3.101	3.259	3.438	3.663
30	510	125	250	30	3.940	4.134	4.356	4.633
33	560	130	260	33	5.136	5.371	5.640	5.976
36	580	145	270	36	6.312	6.592	6.912	7.311



TYPE "B"

d	H	C	M	R	BOLT WEIGHT(kg)				E	F
					S=75	S=110	S=150	S=200		
10	320	40	80	10	0.281	0.302	0.327	0.358	100	350
12	360	50	100	12	0.431	0.479	0.497	0.542	100	390
14	390	60	120	14	0.598	0.677	0.725	0.786	100	420
16	400	65	130	16	0.852	0.908	0.971	1.050	120	430
18	400	75	150	18	1.099	1.167	1.249	1.348	150	430
20	420	80	160	20	1.418	1.504	1.603	1.726	150	450
22	460	90	180	22	1.865	1.970	2.089	2.238	150	490
24	460	100	200	24	2.255	2.380	2.521	2.699	150	490
27	500	115	230	27	3.101	3.259	3.438	3.663	180	530
30	510	125	250	30	3.940	4.134	4.356	4.633	180	540
33	560	130	260	33	5.136	5.371	5.640	5.976	180	590
36	580	145	270	36	6.312	6.592	6.912	7.311	200	610

NOTES:

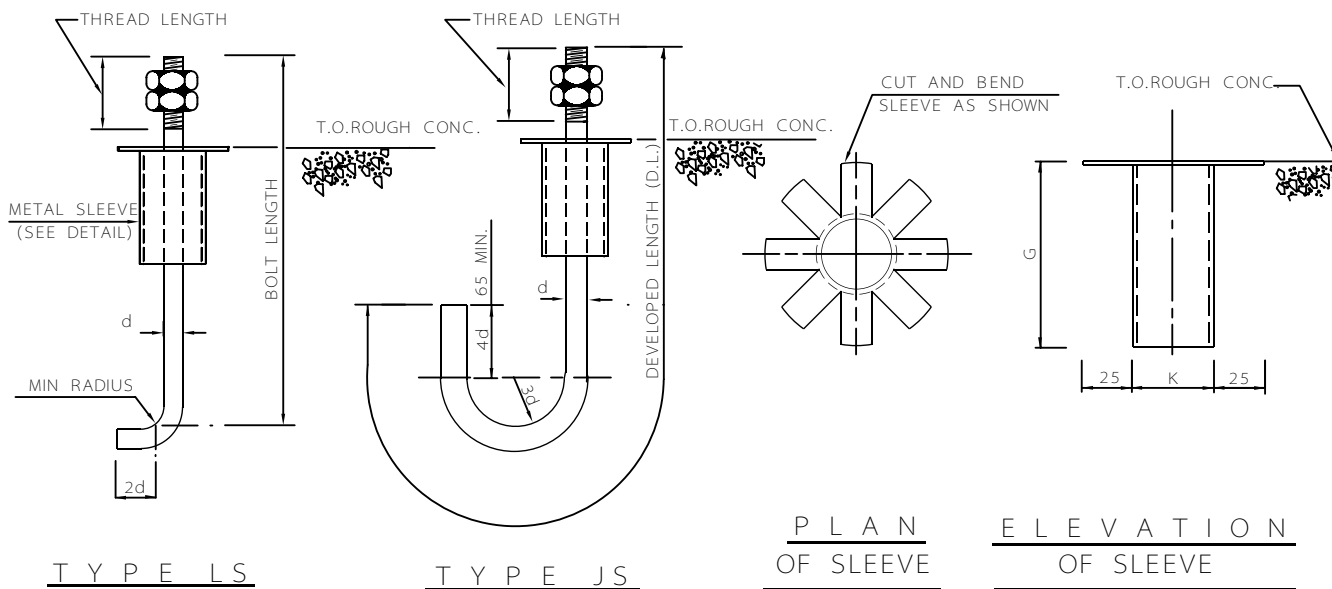
- 1- FOR GENERAL NOTES SEE SHEET 1.
- 2- THIS TYPE OF BOLT SHALL BE USED FOR LIGHT EQUIPMENT AND OR VENDOR'S RECCOMENDATION.
- 3- SPECIFICATION FOR THIS TYPE OF BOLT SHALL BE USED FOR LIGHT EQUIPMENT AND VENDOR'S RECCOMENDATION.

C		
B		
A		
REV	DESCRIPTION	DATE

IRANIAN PETROLEUM STANDARDS 
 NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION

ANCHOR BOLTS
 TYPE B , U

DATE	DRAWING No.	SHEET	REV.
	IPS - D - CE - 201	3	4



NOTES:

1- FOR GENERAL NOTES SEE SHEET 1.

STADARD ANCHOR BOLT & SLEEVE SCHEDULE

BOLT DIA. "d"		TYPE LS		TYPE JS		SHEAR (Kg)		TENSION (Kg)		SHEET METAL & PLASTIC	
INCH	MM.	LENGTH	THREAD LENGTH	DEVELOPED LENGTH	THREAD LENGTH	TYPE LS	TYPE JS	TYPE LS	TYPE JS	K	G
1/2	14	380	50	-	-	320	-	280	-	50	150
5/8	16	480	60	-	-	480	-	470	-	50	200
3/4	20	530	70	960	70	580	580	690	2265	50	200
7/8	23	580	75	1040	75	800	800	970	3139	50	200
1	26	710	85	1200	85	1050	1050	1280	4122	75	280
1 1/4	32	810	100	1360	100	1660	1660	2050	6568	75	280
1 1/2	39	-	-	1660	115	-	2330	-	9558	100	400
1 3/4	45	-	-	1850	135	-	3170	-	12910	100	400
2	52	-	-	2140	150	-	4150	-	16987	100	450
2 1/4	58	-	-	2420	165	-	5240	-	22061	100	450
2 1/2	64	-	-	2650	180	-	6490	-	27180	150	450
2 3/4	70	-	-	2990	200	-	7840	-	33522	150	450
3	77	-	-	3390	205	-	9340	-	40543	150	450

C		
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REV	DESCRIPTION	DATE

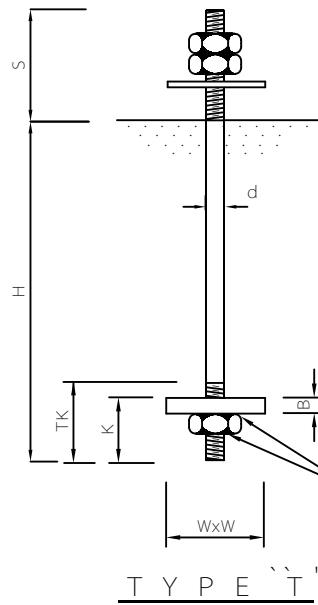
IRANIAN PETROLEUM STANDARDS

NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION

ANCHOR BOLTS
TYPE LS , JS

DATE	DRAWING No.	SHEET	REV.
	IPS - D - CE - 201	2/4	

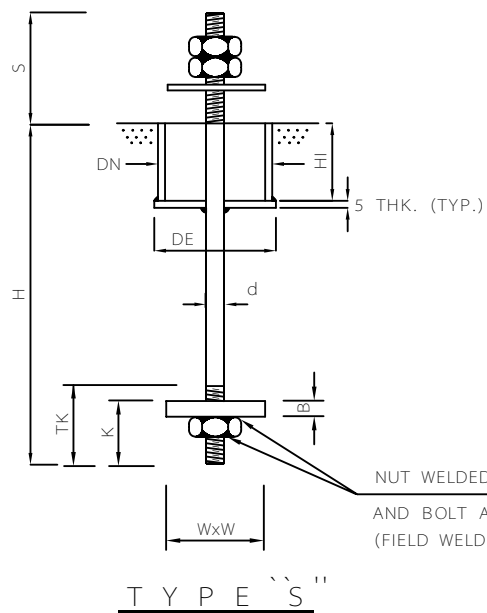
NOT TO SCALE



NUT WELDED TO ANCHOR PLATE
AND BOLT AT THREE POINTS
(FIELD WELDING)

T Y P E **T**

d	H	TK	K	PLATE		BOLT WEIGHT PER 1 SET (Kg.)			
				B	W	S=75	S=110	S=150	S=200
16	400	60	50	16	70	0.982	1.037	1.100	1.179
18	400	70	60	16	70	1.350	1.420	1,500	1.600
20	420	70	60	16	70	1.634	1.720	1.819	1.943
22	460	80	70	16	70	2.140	2.240	2.360	2.510
24	460	80	70	16	70	2.620	2.745	2.886	3.065
27	500	90	80	20	110	3.545	3.702	3.882	4.106
30	510	100	90	20	110	4.646	4.840	5.062	5.340
33	560	110	100	20	110	6.123	6.360	6.627	6.963
36	580	120	110	20	110	7.524	7.805	8.123	8.523




NUT WELDED TO ANCHOR PLATE
AND BOLT AT THREE POINTS
(FIELD WELDING)

T Y P E **S**

d	H	TK	K	PLATE		SLEEVE			BOLT WEIGHT PER 1 SET (Kg.)				
				B	W	DN	H1	DE	S=75	S=110	S=150	S=200	
39	630	150	130	25	150	100	130	70	11.074	11.402	11.777	12.246	0.430
42	650	180	170	25	150	100	130	70	13.486	13.867	14.302	14.846	0.430
45	690	180	170	25	150	100	130	70	16.759	17.196	17.695	18.319	0.480
48	690	180	170	25	150	100	130	70	18.662	19.159	19.727	20.437	0.480
52	770	180	170	30	200	100	130	70	23.958	24.541	25.208	26.042	0.480
56	820	200	190	30	200	100	250	130	29.401	30.078	30.851	31.818	0.480
60	880	200	190	30	200	150	250	180	34.337	35.114	36.000	37.112	0.720
64	900	220	200	40	200	150	250	180	43.875	44.759	45.769	47.032	0.720
72	1000	250	220	40	200	150	250	180	57.410	58.533	59.806	61.404	0.720

NOTES:

1- FOR GENERAL NOTES SEE SHEET 1.

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REV	DESCRIPTION	DATE	
IRANIAN PETROLEUM STANDARDS 			
<small>NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION</small>			
ANCHOR BOLTS TYPE S , T			
DATE	DRAWING No.	SHEET	REV.
	IPS - D - CE - 201	4	4

NOT TO SCALE