
VALIDE projektiranje in svetovanje d.o.o.,
Kladezna ul. 20, Ljubljana

projektiranje, inženiring in tehnično svetovanje
vrednotenje podjetij, nepremičnin, strojev in opreme

tel./fax: 01-283-20-30/01-283-20-31, GSM: 041-617-136

NAČRT IN ŠTEVILČNA OZNAKA NAČRTA:

Načrt gradbenih konstrukcij, št. ozn. Načrta **3**

INVESTITOR:

MESTNA OBČINA LJUBLJANA, Mestni trg 1, 1000 Ljubljana

OBJEKT:

VODNA SKULPTURA

VRSTA PROJEKTNE DOKUMENTACIJE:

projekt za izvedbo, št.projekta: 09/2017

ZA GRADNJO:

nova gradnja

PROJEKTANT:

VALIDE d.o.o.,

Kladezna ulica 20, 1000 Ljubljana, tel.01/283 20 30 . fax.01/283 20 31

Odgovorni predstavnik podjetja:

Žig podjetja:

Gabrijela Kovačič Sodnik

Podpis: _____

ODGOVORNI PROJEKTANT:

Alan Sodnik, univ.dipl.inž.grad. (IZS G-0941)

Osebni žig projektanta:

Podpis: _____

ŠTEVILKA NAČRTA:

P-45/18

KRAJ IN DATUM IZDELAVE NAČRTA:

Ljubljana, april 2018

ODGOVORNI VODJA PROJEKTA:

Primož Boršič, m.i.a. (ZAPS 1740 A)

Osebni žig projektanta:

Podpis: _____

Izvod številka: 1 2 3 4 5 6 7 8 9 10

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3.3 TEHNIČNO POROČILO

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3.3.1 Tehnično poročilo

TEHNIČNO POROČILO

1.0 SPLOŠNO

Tehnično poročilo se nanaša na izdelavo načrta gradbenih konstrukcij PZI za gradnjo vodne skulpture zasnovane po natečajnem razpisu, upoštevana je tudi projektna naloga investitorja MOL.

Vodna skulptura bo locirana na izteku Tomšičeve ulice na Slovensko cesto, natančneje na pločniku med objektom trgovske hiše Nama in poslovno stavbo Konzorcij (zemljišče s parc. št. 3304 in 3276/1, obe k.o. 1725 Ajdovščina). Za potrebe vodne skulpture je investitor že v času prenove Slovenske ceste izvedel podzemno strojnico s potrebnimi priključki, na lokaciji se nahajajo obstoječi elektro jašek, v neposredni bližini potekajo tudi drugi podzemni vodi komunalne infrastrukture. Vodna skulptura s svojimi deli je umeščena med obstoječo infrastrukturo, za potrebe izvedbe je predvidenih nekaj novih elementov in nekaj posegov v obstoječe podzemne objekte.

V nadaljevnju podajamo opis posameznih konstrukcijskih elementov projektirane vodne skulpture, prikazani pa so tudi v risbah v nadaljevanju dokumentacije.

2.0 OPIS ELEMENTOV KONSTRUKCIJE IN POSEGOV V OBSTOJEČE DELE

2.1 Jeklena cev

Osrednji del vodne skulpture predstavlja jeklena cev, ki je zvita v dveh zankah. Skupna dolžina cevi znaša 32,0 m, zanki pa segata cca 4,70 m nad koto terena. Začetni del cevi poteka »po terenu« v dolžini cca 3,60 m, v tem delu je cev na 4 točkah sidrana na ab pasovni temelj. Nato se cev »dvigne« do predvidene višine in spusti ponovno do terena, kjer je na dolžini cca 1,60 m spet »leži na terenu« in je na tem delu sidrana v ab zgornjo ploščo jaška v 2 točkah. Maksimalna tlorisna dimenzija skulpture znaša 6,0 x 9,5 m. V statični presoji načrta g.k. je upoštevana prvotno predvidena cev in nerjavnega jekla Ø457x8 mm. Načrti so bili nato spremenjeni in izbrana je cev dimenzije Ø500x8 mm oziroma Ø508x8 mm. V nadaljevanju podajamo povzetek rezultata ocene vpliva prereza povečanja jeklene cevi na rezultate statičnega izračuna in posleično na ostale elemente konstrukcije (podporni elementi, ab temelj, plošča jaška).

Celotna cev je za izbrano in projektirano geometrijo predvidoma sestavljena iz več segmentov, ki so krivljeni v zahtevanih radijih in nato medsebojno zvarjeni v končno obliko. Med dvema ležiščema na ab jašku je predvidena v steni cevi (na delu, ki je najbližje terenu) pravokotna odprtina skozi katero so iz jaška v cev speljane vodovodne cevi.

Sidranje cevi je predvideno preko ležiščne pločevine (jeklena plošča širine 100 in debeline 25 mm) in sidrne plošče sidrana v ab pasovni temelj oziroma zgornjo ab

ploščo jaška. Ležiščna pločevina je privarjena na steno cevi, dolžino pločevine pa je potrebno točno določiti ob sami montaži. V ab temelj so ob betonaži vgrajeni sidrni vijaki M20 na katere se namesti sidrne plošče, te so dimenzije 265x200x25 mm. Predvidena je uporaba dvojnih matic (na obeh straneh sidrne plošče) s pomočjo katerih se sidrno ploščo natančno »znivelira« na željeno višino (glede na točno koto finalnega tlaka,...) in prostor med temeljem in sidrno ploščo zapolni s podlivno malto (npr. Altex ali podobno), v projektu pa je upoštevana kota zgornjega roba ab temelja -0,30 oziroma plošče -0,20. Glede na končno višino sidrne plošče in višinsko koto končnega tlaka ter zelen videz cevi proti končnemu tlaku, se za vsako mesto sidranja določi dolžino ležiščne pločevine, ki je na montaži nato privarjena na sidrno ploščo.

2.2 Pasovni temelj

Pasovni temelj je dolžine 7,56 m in prereza 60/60 cm, kota zgornjega roba temelja je predvidena -0,30. Na medsebojnih osnih razdaljah 2,40 m je predvidena vgradnja sidrnih vijakov M20 in sidrnih ploščic kot že opisano v predhodni točki. Pasovni temelj je armiran z vzdolžno armaturo Ø20 in Ø14 ter stremeni Ø10/15 cm.

2.3 Jašek/plošča preko elektro vodov

Na južni strani skulpture se nahaja obstoječi elektro jašek, ki je predviden za razširitev, prav tako vodov, ki potekajo skozi njega pa je predvidena izvedba »premostitve« na katero se cev skulpture 2x sidra, skozi ploščo pa potekajo tudi vodovodne cevi v samo skulpturo.

Premostitev preko elektro vodov je predvidena kot ab »škatla« s spodnjo in zgornjo polno ab ploščo debeline 20 cm in dvema stranskima polnima ab stenama prav tako debeline 20 cm. Steni ob obstoječem jašku in nasprotna stena sta izvedeni naknadno (lahko s pustim betonom ali je odprtina zaprta z betonskimi zidaki, ali podobno) glede na dejansko potrebno odprtino za prehod vodov. Plošči in steni so armirani z mrežno armauro in ravnimi palicami rebraste armature. V zgornji plošči je v SV vogalu predvidena odprtina za pokrov (dostop v jašek) dimenzije 60/60 cm, v sredini manjša odprtina dimenzije 5/25 cm za prehod vodovodnih cevi v skulpturo in pa 2x sidrne plošče za sidranje cevi skulpture.

2.4 Razširitev obstoječega elektro jaška

Pod južnim delom skulpture se nahaja obstoječi elektro jašek, ki bi zaradi postavitve jeklene cevi postal nedostopen, zaradi tega je predvidena razširitev jaška na J stran in izvedba odprtije s pokrovom za dostop vanj. Tako je predvidena razširitev za 1,25 m pri isti širini, »skupna« stena se odstrani, vsi deli razširitve so iz armiranega betona, stene so debeline 15 cm, spodnja in zgornja plošča pa 20 cm. Razširjeni del jaška je armiran z mrežno armaturo in dodatnimi palicami rebraste armature. V zgornji plošči je predvidena odprtina velikosti 60/60 cm za vgradnjo pokrova, ki bo omogočal servisni

dostop v jašek. Odprtina v obstoječem delu jaška se ohrani, onemogočen pa bo dostop vanj.

2.5 Novi TK jašek

Novi TK jašek se nahaja na V strani skulpture in je potreben zaradi prestavitve TK vodov, ki se nahajajo na mestu osrednjega vtočnega jaška (šahta). TK jašek je tlorisne dimenzije 170x180 cm s stenami debeline 15 cm ter spodnjo in zgornjo ploščo debeline pravtako 15 cm. Globina jaška je prilagojena obstoječi komunalni infrastrukturi in znaša 180 cm, oziroma je vrh spodnje plošče na koti -1,74.

Na dveh nasprotnih stenah jaška sta predvideni odprtini za prehod TK vodov, dejanska velikost odprtin v času izdelave dokumentacije ni poznana in se jo določi in izvede glede na dejanske potrebe ob sami gradnji. V zgornji plošči je predvidena odprtine velikosti 60x60 cm s pokrovom za servisni dostop v jašek.

2.6 Vtočni jašek (šaht)

Na sredini obeh »zank« skulpture se v tleh nahaja vtočni jašek v katerega se zliva voda iz RF cevi skulpture. Geometrija celotnega jaška je prilagojena zahtevam vtočne odprtine v zgornjem delu in razpoložljivemu prostoru v podzemnem delu, kjer je prisotnost velikega števila različnih komunalnih vodov. Tako je predviden jašek v obliki lijaka s premerom 280 cm v najvišjem delu (na stiku s tlakom), nato je na višini 45 cm stena jaška navpična in se nato pod kotom 55° zoža na velikost zunanjega premera 140 cm, ta potem poteka nespremenjeno do končne globine. Zaradi dokaj zahtevne geometrije jaška in s tem povezano vgradnjo armature, prisotnost agresivnega medija (voda z dodatki za mehčanje, kloriranje) in zahtevami predpisom po ustrezni debelini zaščitve plasti betona, menimo, da je za zagotovitev ustrezne kakovosti izvedbe potrebno celoten element predhodno izdelati in ga v enem kosu transportirati na gradbišče in vgraditi. Debelina spodnje plošče in debelina sten vtočnega jaška tako znaša 20 cm. S tako geometrijo je masa celotnega jaška ocenjena na 8.250 kg, kar še omogoča transport in vgradnjo v enem kosu. Skladno s posredovano geometrijo jaška so v stenah predvidene odprtine in preboji za instalacije (odtok vode, varnostni preliv, elektro kabel za LED svetilko) in utor po celotnem obodu za namestitev LED svetilke.

Pod jaškom se po končanem izkopu in utrditvi terena izvede »ploščo« iz podložnega betona debeline cca 50 cm in premera cca 250 cm, s skrbno nivelirano zgornjo površino (na želeno in projektirano višinsko koto), ki služi kot ravna in stabilna podlaga jaška (predlagamo, da se v zgornji in spodnji del podložnega betona vgradi armaturna mreža dimenzije cca 200x200 cm, npr Q-308). Po postavitvi jaška se spodnji del med podložnim betonom in steno jaška »obbetonira« s pustim betonom do višine cca 50 cm, kar bo dodatno utrdilo jašek v zahtevanem položaju.

V steno jaška se pred betonažo vgradijo cevi za dostop vanj (lestev), na zgornjem najširšem delu pa se pred betonažo vgradi »križ« iz jeklene pločevine, ki predstavlja

nosilni del pohodne rešetke na vrhu jaška. Na zgornjem robu jaška je prevedena vgraditev jeklenega kotnika dimenzije 150x90x10 mm, ki z daljšo stranico leži na steni, krajša stranica pa je poravnana z notranjim robom stene jaška. Jeklen profil je predhodno krivljen v zahtevan radij, izdelan je lahko iz več segmentov. Posamezni deli so lahko vgrajeni ob betonaži (v ta namen je potrebno predhodno na daljšo stranico privariti sidra $\varnothing 16$ na razdaljah cca 25 cm) ali pa skozi predhodno izdelane luknje kotnik sidrati v že izveden jašek, pri tem pa se uporabi sidrna tehnika npr. HILTI HiT HY-200 s sidrnimi vijaki M16 iz nerjavnega jekla. Na notranji del kotnika (krajša stranica) se privari manjši kotnik dimenzije 25x25x4 mm na višino, ki bo ustrezala dejanski dimenziji-debelini pokrova, saj kotnik služi kot ležišče pokrova po celotnem obodu jaška.

Na elementih »križa« iz ploščatega jekla, ki so vgrajeni v steno jaška je predvidena pritrditev sidrnih pločevin debeline 5 mm, ki služijo in pomagajo pri natančni postavitvi »križa« na želeno pozicijo, križ se nato s točkovnimi zvari fiksira na armaturo stene jaška in tako zagotovi položaj tudi med betonažo jaška. Elementi »križa« so dimenzije 250x10 mm, stranska podporna rebra pa dimenzije 100/10 mm, predvidena pa je nerjavno jeklo oziroma vročecinkana »navadna« jeklena pločevina.

Okrogla pohodna rešetka je iz nerjavečega jekla, \varnothing 240 cm, raster cca 33 x 33 mm, ki omogoča odtekanje vode. Vzorec rešetke posnema vzorec okoliškega tlaka. Rešetko tvorijo 4 pokrovi od tega je eden namenjen servisnemu vstopu kar pomeni, da se pokrov v času vstopa odstrani. Dimenzije odstranljivega pokrova znašajo 1,34 x 1,34 cm. Debelina jeklenih profilov pokrova znaša 3 mm, višina trakov pa 30 mm. Pokrovi rešetke se namestijo na jekleno nosilno konstrukcijo, ki je vbetonirana v stene AB vtočnega jaška.

2.7 Obstoječa strojnica

V obstoječi strojnici ni predvidenih posegov v nosilno konstrukcijo.

3.0 STATIČNA PRESOJA

V okviru izdelave projektne dokumentacije je bila izdelana statična presoja vseh pomembnih delov nosilne konstrukcije – jeklena cev skulpture, pasovni ab temelj, ab jašek preko elektro vodov, vtočni jašek. Uporabljen je bil računalniški program RFEM, izdelan prostorski model konstrukcije jeklene cevi s temelji in 3D model vtočnega jaška, upoštevani veljavni predpisi (SIST EN oz. Eurocode) za določitev obtežbe in dimenzioniranje posameznih elementov konstrukcije.

Na podlagi analize rezultatov obremenitev, deformacij jeklene cevi in reakcij na ab elemente zaradi upoštevanja dimenzije jeklene cevi $\varnothing 508 \times 8$ mm lahko ugotovimo:

- (a) lastna teža jeklene cevi se poveča za 11,4%

- (b) obremenitve v cevi se povečajo od 2,2 do 18,4 %
- (c) deformacije cevi se zmanjšajo za 22%
- (d) reakcije in vpliv na ab elemente (pasovni temelj, plošča jaška) se povečajo za max. 2,5%

Na podlagi zgornjih ugotovitev lahko zaključimo, da sprememba dimenzije cevi na Ø508x8 mm ne pomeni bistvene spremembe in vse dimenzije elementov konstrukcije, kot so prikazane v načrtih ostanejo nespremenjene.

4.0 PROJEKTIRANA KAKOVOST MATERIALA

V projektni dokumentaciji je predvidena naslednja kakovost materiala:

beton: vtočni prefabriciran jašek:	C30/37, XC2, XD2, XF2, PV-III
pasovni temelj, ostali jaški:	C25/30, XC2
podložni beton:	C16/20 (pod vtočnim jaškom d=50 cm, ostalo d=10-20 cm)
armatura:	B 500-B
jeklo:	nerjavno jeklo 1.4404 (AISI316) ali 1.4401 (AISI316L), kakovosti S235

Opažno armaturni načrti posameznih elementov so prikazani v grafičnih prilogah v nadaljevanju. Vse instalcijske preboje pred izvedbo preveriti v načrtih elektro in strojnih instalacij, preboji se lahko izvedejo ob sami izvedbi ab elementov ali naknadno s kronskim vrtanjem po predhodni uskladitvi s projektantom GK.

Alan Sodnik, univ. dipl. inž. gradb.
(IZS G-0941)

v Ljubljani, april 2018

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3.3.2 Statična presoja

STRUCTURAL ANALYSIS

PROJECT

Vodna skulptura, Ljubljana

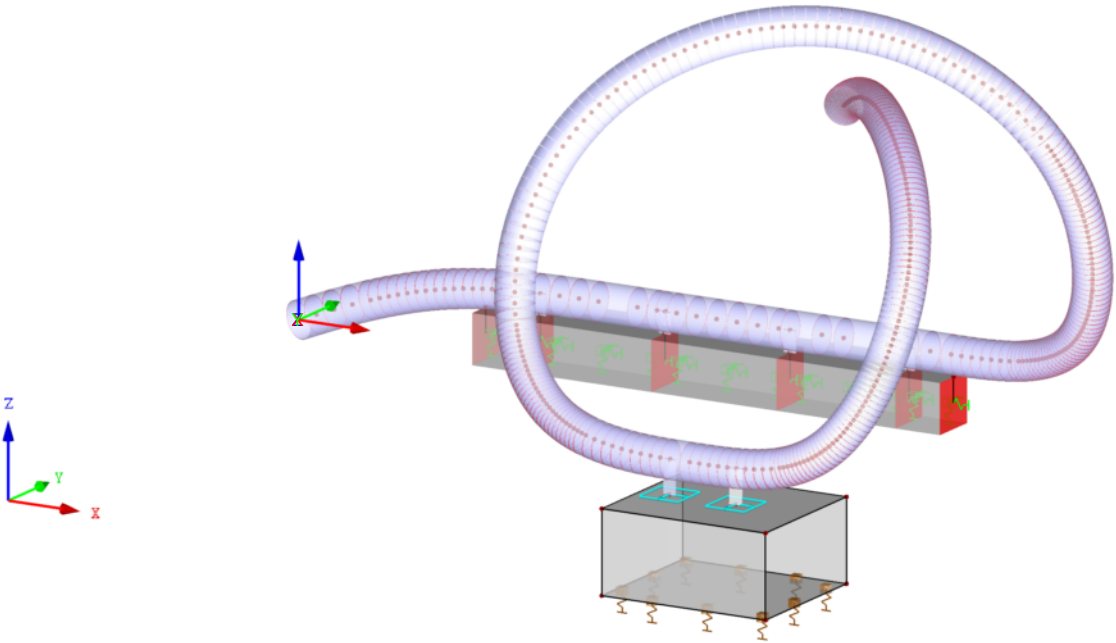
CLIENT

Mestna občina Ljubljana

CREATED BY

Rok Murko

Isometric



Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

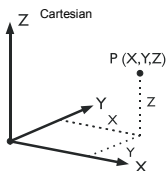
■ MODEL - GENERAL DATA

	General	Model name	: 3D_model_skulpture
		Project name	: Vodna skulptura
		Type of model	: 3D
		Positive direction of global axis Z	: Upward
		Classification of load cases and combinations	: According to Standard: EN 1990 National Annex: SIST - Slovenia
		<input checked="" type="checkbox"/> Automatically create combinations	: <input checked="" type="checkbox"/> Load Combinations
	Options	<input type="checkbox"/> RF-FORM-FINDING - Find initial equilibrium shapes of membrane and cable structures	
		<input type="checkbox"/> RF-CUTTING-PATTERN	
		<input type="checkbox"/> Piping analysis	
		<input type="checkbox"/> Use CQC Rule	
		<input type="checkbox"/> Enable CAD/BIM model	
		Standard Gravity g	: 10.00 m/s ²

■ FE MESH SETTINGS

	General	Target length of finite elements	l_{FE}	: 0.5 m
		Maximum distance between a node and a line to integrate it into the line	ϵ	: 0.0 m
		Maximum number of mesh nodes (in thousands)		: 500
	Members	Number of divisions of members with cable, elastic foundation, taper, or plastic characteristic		: 10
		<input checked="" type="checkbox"/> Activate member divisions for large deformation or post-critical analysis		
		<input checked="" type="checkbox"/> Use division for members with node lying on them		
	Surfaces	Maximum ratio of FE rectangle diagonals	Δ_D	: 1.800
		Maximum out-of-plane inclination of two finite elements	α	: 0.50 °
		Shape direction of finite elements		: Triangles and quadrangles <input checked="" type="checkbox"/> Same squares where possible

■ 1.1 NODES



Node No.	Node Type	Reference Node	Coordinate System	Node Coordinates			Comment
				X [m]	Y [m]	Z [m]	
1	Standard	-	Cartesian	0.000	0.000	0.000	
2	Standard	-	Cartesian	0.228	0.000	0.093	
3	Standard	-	Cartesian	0.457	0.000	0.183	
4	Standard	-	Cartesian	0.688	0.000	0.270	
5	Standard	-	Cartesian	0.921	0.000	0.351	
6	Standard	-	Cartesian	1.038	0.000	0.389	
7	Standard	-	Cartesian	1.155	0.000	0.426	
8	Standard	-	Cartesian	1.273	0.000	0.461	
9	Standard	-	Cartesian	1.392	0.000	0.494	
10	Standard	-	Cartesian	1.510	0.000	0.525	
11	Standard	-	Cartesian	1.630	0.000	0.554	
12	Standard	-	Cartesian	1.750	0.000	0.580	
13	Standard	-	Cartesian	1.870	0.000	0.604	
14	Standard	-	Cartesian	1.991	0.000	0.625	
15	Standard	-	Cartesian	2.112	0.000	0.644	
16	Standard	-	Cartesian	2.234	0.000	0.660	
17	Standard	-	Cartesian	2.356	0.001	0.674	
18	Standard	-	Cartesian	2.479	0.001	0.686	
19	Standard	-	Cartesian	2.602	0.001	0.696	
20	Standard	-	Cartesian	2.849	0.001	0.711	
21	Standard	-	Cartesian	3.097	0.001	0.720	
22	Standard	-	Cartesian	3.346	0.001	0.725	
23	Standard	-	Cartesian	3.595	0.001	0.727	
24	Standard	-	Cartesian	3.844	0.001	0.727	
25	Standard	-	Cartesian	4.344	0.000	0.727	
26	Standard	-	Cartesian	4.594	0.000	0.727	
27	Standard	-	Cartesian	4.847	0.000	0.727	
28	Standard	-	Cartesian	5.101	0.000	0.727	
29	Standard	-	Cartesian	5.359	0.000	0.727	
30	Standard	-	Cartesian	5.620	0.000	0.727	
31	Standard	-	Cartesian	5.885	0.001	0.727	
32	Standard	-	Cartesian	6.155	0.002	0.727	
34	Standard	-	Cartesian	6.707	0.003	0.727	
35	Standard	-	Cartesian	6.986	0.004	0.727	
36	Standard	-	Cartesian	7.546	0.002	0.727	
37	Standard	-	Cartesian	7.825	0.000	0.727	
38	Standard	-	Cartesian	8.101	-0.004	0.727	
39	Standard	-	Cartesian	8.373	-0.010	0.727	
40	Standard	-	Cartesian	8.507	-0.014	0.728	
41	Standard	-	Cartesian	8.639	-0.018	0.730	
42	Standard	-	Cartesian	8.770	-0.024	0.734	
43	Standard	-	Cartesian	8.898	-0.030	0.741	
44	Standard	-	Cartesian	9.023	-0.038	0.750	
45	Standard	-	Cartesian	9.145	-0.047	0.763	
46	Standard	-	Cartesian	9.264	-0.057	0.780	
47	Standard	-	Cartesian	9.322	-0.062	0.790	
48	Standard	-	Cartesian	9.379	-0.068	0.802	
49	Standard	-	Cartesian	9.435	-0.075	0.815	
50	Standard	-	Cartesian	9.490	-0.082	0.829	

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.1 NODES

Node No.	Node Type	Reference Node	Coordinate System	Node Coordinates			Comment
				X [m]	Y [m]	Z [m]	
51	Standard	-	Cartesian	9.544	-0.089	0.845	
52	Standard	-	Cartesian	9.597	-0.097	0.863	
53	Standard	-	Cartesian	9.648	-0.105	0.882	
54	Standard	-	Cartesian	9.699	-0.114	0.902	
55	Standard	-	Cartesian	9.748	-0.124	0.925	
56	Standard	-	Cartesian	9.796	-0.133	0.949	
57	Standard	-	Cartesian	9.843	-0.144	0.976	
58	Standard	-	Cartesian	9.888	-0.155	1.004	
59	Standard	-	Cartesian	9.932	-0.166	1.034	
60	Standard	-	Cartesian	9.974	-0.179	1.067	
61	Standard	-	Cartesian	10.015	-0.191	1.102	
62	Standard	-	Cartesian	10.054	-0.205	1.139	
63	Standard	-	Cartesian	10.092	-0.219	1.178	
64	Standard	-	Cartesian	10.128	-0.233	1.220	
65	Standard	-	Cartesian	10.163	-0.249	1.264	
66	Standard	-	Cartesian	10.196	-0.264	1.310	
67	Standard	-	Cartesian	10.227	-0.281	1.357	
68	Standard	-	Cartesian	10.257	-0.298	1.407	
69	Standard	-	Cartesian	10.285	-0.315	1.459	
70	Standard	-	Cartesian	10.311	-0.333	1.512	
71	Standard	-	Cartesian	10.336	-0.352	1.567	
72	Standard	-	Cartesian	10.360	-0.370	1.624	
73	Standard	-	Cartesian	10.381	-0.390	1.681	
74	Standard	-	Cartesian	10.401	-0.409	1.740	
75	Standard	-	Cartesian	10.420	-0.429	1.801	
76	Standard	-	Cartesian	10.437	-0.450	1.862	
77	Standard	-	Cartesian	10.452	-0.470	1.924	
78	Standard	-	Cartesian	10.465	-0.492	1.987	
79	Standard	-	Cartesian	10.477	-0.513	2.051	
80	Standard	-	Cartesian	10.487	-0.534	2.116	
81	Standard	-	Cartesian	10.496	-0.556	2.181	
82	Standard	-	Cartesian	10.503	-0.578	2.246	
83	Standard	-	Cartesian	10.508	-0.600	2.312	
84	Standard	-	Cartesian	10.511	-0.623	2.378	
85	Standard	-	Cartesian	10.513	-0.645	2.445	
86	Standard	-	Cartesian	10.513	-0.668	2.511	
87	Standard	-	Cartesian	10.511	-0.691	2.577	
88	Standard	-	Cartesian	10.508	-0.714	2.644	
89	Standard	-	Cartesian	10.503	-0.737	2.710	
90	Standard	-	Cartesian	10.496	-0.759	2.775	
91	Standard	-	Cartesian	10.488	-0.782	2.840	
92	Standard	-	Cartesian	10.478	-0.805	2.905	
93	Standard	-	Cartesian	10.466	-0.828	2.969	
94	Standard	-	Cartesian	10.452	-0.851	3.032	
95	Standard	-	Cartesian	10.437	-0.874	3.094	
96	Standard	-	Cartesian	10.420	-0.896	3.156	
97	Standard	-	Cartesian	10.401	-0.919	3.216	
98	Standard	-	Cartesian	10.381	-0.941	3.276	
99	Standard	-	Cartesian	10.359	-0.964	3.334	
100	Standard	-	Cartesian	10.335	-0.986	3.392	
101	Standard	-	Cartesian	10.310	-1.009	3.449	
102	Standard	-	Cartesian	10.284	-1.031	3.504	
103	Standard	-	Cartesian	10.256	-1.054	3.559	
104	Standard	-	Cartesian	10.227	-1.076	3.613	
105	Standard	-	Cartesian	10.164	-1.121	3.718	
106	Standard	-	Cartesian	10.097	-1.166	3.819	
107	Standard	-	Cartesian	10.025	-1.212	3.916	
108	Standard	-	Cartesian	9.949	-1.258	4.009	
109	Standard	-	Cartesian	9.870	-1.304	4.099	
110	Standard	-	Cartesian	9.787	-1.352	4.184	
111	Standard	-	Cartesian	9.700	-1.400	4.265	
112	Standard	-	Cartesian	9.611	-1.449	4.343	
113	Standard	-	Cartesian	9.520	-1.499	4.416	
114	Standard	-	Cartesian	9.427	-1.550	4.485	
115	Standard	-	Cartesian	9.332	-1.603	4.550	
116	Standard	-	Cartesian	9.236	-1.656	4.611	
117	Standard	-	Cartesian	9.139	-1.712	4.668	
118	Standard	-	Cartesian	9.040	-1.768	4.720	
119	Standard	-	Cartesian	8.941	-1.826	4.768	
120	Standard	-	Cartesian	8.841	-1.885	4.812	
121	Standard	-	Cartesian	8.741	-1.945	4.852	
122	Standard	-	Cartesian	8.639	-2.006	4.887	
123	Standard	-	Cartesian	8.537	-2.068	4.918	
124	Standard	-	Cartesian	8.435	-2.131	4.945	
125	Standard	-	Cartesian	8.332	-2.195	4.967	
126	Standard	-	Cartesian	8.229	-2.259	4.984	
127	Standard	-	Cartesian	8.125	-2.324	4.997	
128	Standard	-	Cartesian	8.021	-2.390	5.006	
129	Standard	-	Cartesian	7.918	-2.456	5.010	
130	Standard	-	Cartesian	7.814	-2.523	5.009	
131	Standard	-	Cartesian	7.709	-2.590	5.004	
132	Standard	-	Cartesian	7.606	-2.657	4.994	
133	Standard	-	Cartesian	7.502	-2.725	4.979	
134	Standard	-	Cartesian	7.398	-2.793	4.960	
135	Standard	-	Cartesian	7.296	-2.861	4.936	
136	Standard	-	Cartesian	7.194	-2.929	4.908	
137	Standard	-	Cartesian	7.093	-2.997	4.876	
138	Standard	-	Cartesian	6.993	-3.064	4.839	
139	Standard	-	Cartesian	6.895	-3.132	4.797	
140	Standard	-	Cartesian	6.799	-3.199	4.752	
141	Standard	-	Cartesian	6.704	-3.267	4.702	
142	Standard	-	Cartesian	6.612	-3.333	4.648	
143	Standard	-	Cartesian	6.522	-3.399	4.590	
144	Standard	-	Cartesian	6.434	-3.465	4.529	

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.1 NODES

Node No.	Node Type	Reference Node	Coordinate System	Node Coordinates			Comment
				X [m]	Y [m]	Z [m]	
145	Standard	-	Cartesian	6.349	-3.530	4.463	
146	Standard	-	Cartesian	6.267	-3.594	4.393	
147	Standard	-	Cartesian	6.189	-3.658	4.320	
148	Standard	-	Cartesian	6.114	-3.721	4.243	
149	Standard	-	Cartesian	6.042	-3.783	4.162	
150	Standard	-	Cartesian	5.974	-3.844	4.078	
151	Standard	-	Cartesian	5.910	-3.904	3.991	
152	Standard	-	Cartesian	5.850	-3.964	3.900	
153	Standard	-	Cartesian	5.795	-4.022	3.807	
154	Standard	-	Cartesian	5.744	-4.080	3.710	
155	Standard	-	Cartesian	5.697	-4.138	3.612	
156	Standard	-	Cartesian	5.655	-4.194	3.511	
157	Standard	-	Cartesian	5.617	-4.251	3.408	
158	Standard	-	Cartesian	5.585	-4.306	3.302	
159	Standard	-	Cartesian	5.557	-4.361	3.195	
160	Standard	-	Cartesian	5.535	-4.416	3.087	
161	Standard	-	Cartesian	5.519	-4.470	2.977	
162	Standard	-	Cartesian	5.507	-4.523	2.866	
163	Standard	-	Cartesian	5.502	-4.577	2.753	
164	Standard	-	Cartesian	5.502	-4.630	2.640	
165	Standard	-	Cartesian	5.508	-4.682	2.527	
166	Standard	-	Cartesian	5.521	-4.734	2.413	
167	Standard	-	Cartesian	5.539	-4.786	2.299	
168	Standard	-	Cartesian	5.563	-4.837	2.186	
169	Standard	-	Cartesian	5.592	-4.886	2.075	
170	Standard	-	Cartesian	5.628	-4.935	1.965	
171	Standard	-	Cartesian	5.669	-4.982	1.857	
172	Standard	-	Cartesian	5.692	-5.005	1.804	
173	Standard	-	Cartesian	5.716	-5.028	1.752	
174	Standard	-	Cartesian	5.741	-5.050	1.701	
175	Standard	-	Cartesian	5.768	-5.072	1.650	
176	Standard	-	Cartesian	5.797	-5.094	1.601	
177	Standard	-	Cartesian	5.826	-5.114	1.552	
178	Standard	-	Cartesian	5.857	-5.135	1.505	
179	Standard	-	Cartesian	5.890	-5.155	1.459	
180	Standard	-	Cartesian	5.924	-5.174	1.414	
181	Standard	-	Cartesian	5.959	-5.193	1.370	
182	Standard	-	Cartesian	5.995	-5.211	1.327	
183	Standard	-	Cartesian	6.033	-5.229	1.286	
184	Standard	-	Cartesian	6.072	-5.246	1.246	
185	Standard	-	Cartesian	6.113	-5.262	1.207	
186	Standard	-	Cartesian	6.155	-5.277	1.171	
187	Standard	-	Cartesian	6.198	-5.292	1.135	
188	Standard	-	Cartesian	6.242	-5.307	1.102	
189	Standard	-	Cartesian	6.288	-5.320	1.070	
190	Standard	-	Cartesian	6.335	-5.333	1.040	
191	Standard	-	Cartesian	6.384	-5.345	1.011	
192	Standard	-	Cartesian	6.433	-5.356	0.985	
193	Standard	-	Cartesian	6.484	-5.366	0.960	
194	Standard	-	Cartesian	6.536	-5.376	0.937	
195	Standard	-	Cartesian	6.589	-5.385	0.915	
196	Standard	-	Cartesian	6.643	-5.394	0.895	
197	Standard	-	Cartesian	6.698	-5.401	0.877	
198	Standard	-	Cartesian	6.754	-5.409	0.860	
199	Standard	-	Cartesian	6.810	-5.415	0.844	
200	Standard	-	Cartesian	6.926	-5.427	0.816	
201	Standard	-	Cartesian	7.045	-5.436	0.793	
202	Standard	-	Cartesian	7.166	-5.444	0.775	
203	Standard	-	Cartesian	7.289	-5.450	0.760	
204	Standard	-	Cartesian	7.413	-5.455	0.749	
205	Standard	-	Cartesian	7.539	-5.459	0.740	
206	Standard	-	Cartesian	7.665	-5.461	0.734	
207	Standard	-	Cartesian	7.792	-5.463	0.731	
208	Standard	-	Cartesian	7.918	-5.463	0.728	
209	Standard	-	Cartesian	8.168	-5.464	0.727	
210	Standard	-	Cartesian	8.292	-5.464	0.727	
211	Standard	-	Cartesian	8.413	-5.464	0.727	
212	Standard	-	Cartesian	8.533	-5.464	0.729	
213	Standard	-	Cartesian	8.651	-5.463	0.731	
214	Standard	-	Cartesian	8.766	-5.461	0.735	
215	Standard	-	Cartesian	8.879	-5.459	0.742	
216	Standard	-	Cartesian	8.990	-5.455	0.752	
217	Standard	-	Cartesian	9.098	-5.450	0.766	
218	Standard	-	Cartesian	9.203	-5.444	0.784	
219	Standard	-	Cartesian	9.305	-5.436	0.806	
220	Standard	-	Cartesian	9.355	-5.431	0.820	
221	Standard	-	Cartesian	9.404	-5.425	0.834	
222	Standard	-	Cartesian	9.452	-5.420	0.851	
223	Standard	-	Cartesian	9.499	-5.413	0.868	
224	Standard	-	Cartesian	9.545	-5.406	0.888	
225	Standard	-	Cartesian	9.591	-5.398	0.909	
226	Standard	-	Cartesian	9.636	-5.390	0.932	
227	Standard	-	Cartesian	9.679	-5.381	0.956	
228	Standard	-	Cartesian	9.722	-5.372	0.983	
229	Standard	-	Cartesian	9.764	-5.361	1.011	
230	Standard	-	Cartesian	9.805	-5.350	1.042	
231	Standard	-	Cartesian	9.844	-5.338	1.075	
232	Standard	-	Cartesian	9.883	-5.325	1.109	
233	Standard	-	Cartesian	9.921	-5.312	1.147	
234	Standard	-	Cartesian	9.957	-5.297	1.186	
235	Standard	-	Cartesian	9.993	-5.282	1.228	
236	Standard	-	Cartesian	10.027	-5.266	1.271	
237	Standard	-	Cartesian	10.061	-5.249	1.317	
238	Standard	-	Cartesian	10.093	-5.232	1.364	

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.1 NODES

Node No.	Node Type	Reference Node	Coordinate System	Node Coordinates			Comment
				X [m]	Y [m]	Z [m]	
239	Standard	-	Cartesian	10.123	-5.213	1.413	
240	Standard	-	Cartesian	10.153	-5.194	1.464	
241	Standard	-	Cartesian	10.181	-5.174	1.517	
242	Standard	-	Cartesian	10.209	-5.154	1.571	
243	Standard	-	Cartesian	10.234	-5.132	1.626	
244	Standard	-	Cartesian	10.259	-5.110	1.683	
245	Standard	-	Cartesian	10.282	-5.087	1.740	
246	Standard	-	Cartesian	10.304	-5.064	1.799	
247	Standard	-	Cartesian	10.324	-5.040	1.859	
248	Standard	-	Cartesian	10.343	-5.015	1.920	
249	Standard	-	Cartesian	10.360	-4.990	1.981	
250	Standard	-	Cartesian	10.376	-4.964	2.044	
251	Standard	-	Cartesian	10.391	-4.937	2.106	
252	Standard	-	Cartesian	10.404	-4.910	2.170	
253	Standard	-	Cartesian	10.415	-4.882	2.233	
254	Standard	-	Cartesian	10.425	-4.854	2.297	
255	Standard	-	Cartesian	10.433	-4.825	2.361	
256	Standard	-	Cartesian	10.440	-4.796	2.425	
257	Standard	-	Cartesian	10.445	-4.766	2.490	
258	Standard	-	Cartesian	10.448	-4.735	2.554	
259	Standard	-	Cartesian	10.450	-4.704	2.618	
260	Standard	-	Cartesian	10.449	-4.673	2.681	
261	Standard	-	Cartesian	10.447	-4.641	2.744	
262	Standard	-	Cartesian	10.444	-4.608	2.807	
263	Standard	-	Cartesian	10.438	-4.576	2.869	
264	Standard	-	Cartesian	10.431	-4.542	2.930	
265	Standard	-	Cartesian	10.422	-4.509	2.991	
266	Standard	-	Cartesian	10.410	-4.474	3.051	
267	Standard	-	Cartesian	10.398	-4.440	3.109	
268	Standard	-	Cartesian	10.383	-4.405	3.167	
269	Standard	-	Cartesian	10.366	-4.370	3.224	
270	Standard	-	Cartesian	10.348	-4.334	3.280	
271	Standard	-	Cartesian	10.329	-4.298	3.334	
272	Standard	-	Cartesian	10.307	-4.262	3.388	
273	Standard	-	Cartesian	10.285	-4.225	3.441	
274	Standard	-	Cartesian	10.260	-4.189	3.492	
275	Standard	-	Cartesian	10.235	-4.151	3.543	
276	Standard	-	Cartesian	10.208	-4.114	3.592	
277	Standard	-	Cartesian	10.180	-4.076	3.640	
278	Standard	-	Cartesian	10.150	-4.038	3.687	
279	Standard	-	Cartesian	10.119	-4.000	3.732	
280	Standard	-	Cartesian	10.088	-3.961	3.776	
281	Standard	-	Cartesian	10.055	-3.923	3.819	
282	Standard	-	Cartesian	10.021	-3.884	3.861	
283	Standard	-	Cartesian	9.986	-3.845	3.901	
284	Standard	-	Cartesian	9.950	-3.806	3.940	
285	Standard	-	Cartesian	9.914	-3.766	3.977	
286	Standard	-	Cartesian	9.876	-3.727	4.013	
287	Standard	-	Cartesian	9.838	-3.687	4.047	
288	Standard	-	Cartesian	9.799	-3.647	4.080	
289	Standard	-	Cartesian	9.760	-3.607	4.112	
290	Standard	-	Cartesian	9.719	-3.567	4.141	
291	Standard	-	Cartesian	9.679	-3.527	4.170	
292	Standard	-	Cartesian	9.638	-3.487	4.196	
293	Standard	-	Cartesian	9.596	-3.446	4.221	
294	Standard	-	Cartesian	9.554	-3.406	4.245	
295	Standard	-	Cartesian	9.512	-3.366	4.266	
296	Standard	-	Cartesian	9.469	-3.325	4.286	
297	Standard	-	Cartesian	9.427	-3.285	4.304	
298	Standard	-	Cartesian	9.384	-3.245	4.321	
299	Standard	-	Cartesian	9.341	-3.204	4.335	
300	Standard	-	Cartesian	9.298	-3.164	4.348	
301	Standard	-	Cartesian	9.255	-3.123	4.359	
302	Standard	-	Cartesian	9.211	-3.083	4.368	
303	Standard	-	Cartesian	9.168	-3.042	4.375	
304	Standard	-	Cartesian	9.124	-3.002	4.380	
305	Standard	-	Cartesian	9.080	-2.961	4.383	
306	Standard	-	Cartesian	9.036	-2.921	4.385	
307	Standard	-	Cartesian	8.992	-2.880	4.384	
308	Standard	-	Cartesian	8.948	-2.839	4.381	
309	Standard	-	Cartesian	8.904	-2.799	4.377	
310	Standard	-	Cartesian	8.860	-2.758	4.370	
311	Standard	-	Cartesian	8.815	-2.717	4.361	
312	Standard	-	Cartesian	8.771	-2.676	4.350	
313	Standard	-	Cartesian	8.726	-2.635	4.337	
314	Standard	-	Cartesian	8.681	-2.594	4.322	
315	Standard	-	Cartesian	8.636	-2.552	4.305	
316	Standard	-	Cartesian	8.591	-2.511	4.286	
317	Standard	-	Cartesian	8.546	-2.470	4.264	
318	Standard	-	Cartesian	8.501	-2.428	4.240	
319	Standard	-	Cartesian	8.455	-2.386	4.214	
320	Standard	-	Cartesian	8.410	-2.344	4.186	
321	Standard	-	Cartesian	8.364	-2.302	4.155	
322	Standard	-	Cartesian	8.319	-2.260	4.122	
323	Standard	-	Cartesian	8.273	-2.218	4.087	
324	Standard	-	Cartesian	4.701	0.000	0.727	
325	Standard	-	Cartesian	3.097	0.001	0.470	
326	Standard	-	Cartesian	2.397	0.001	0.470	
327	Standard	-	Cartesian	8.397	0.001	0.470	
330	Standard	-	Cartesian	4.695	0.001	0.470	
331	Standard	-	Cartesian	6.301	0.001	0.470	
332	Standard	-	Cartesian	7.911	-5.463	0.320	
333	Standard	-	Cartesian	7.825	0.001	0.470	
334	Standard	-	Cartesian	8.760	-5.463	0.320	

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.1 NODES

Node No.	Node Type	Reference Node	Coordinate System	Node Coordinates			Comment
				X [m]	Y [m]	Z [m]	
335	Standard	-	Cartesian	7.561	-6.363	0.320	
336	Standard	-	Cartesian	9.660	-6.363	0.320	
337	Standard	-	Cartesian	7.561	-4.563	0.320	
338	Standard	-	Cartesian	9.660	-4.563	0.320	
339	Standard	-	Cartesian	7.561	-6.363	-0.680	
340	Standard	-	Cartesian	9.660	-6.363	-0.680	
341	Standard	-	Cartesian	7.561	-4.563	-0.680	
342	Standard	-	Cartesian	9.660	-4.563	-0.680	
343	Standard	-	Cartesian	6.301	0.002	0.727	

1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [m]		Comment
1	Polyline	1,2	0.246	XZ	
2	Polyline	2,3	0.247	XZ	
3	Polyline	3,4	0.247	XZ	
4	Polyline	4,5	0.246	XZ	
5	Polyline	5,6	0.123	XZ	
6	Polyline	6,7	0.123	XZ	
7	Polyline	7,8	0.123	XZ	
8	Polyline	8,9	0.123	XZ	
9	Polyline	9,10	0.123	XZ	
10	Polyline	10,11	0.123	XZ	
11	Polyline	11,12	0.123	XZ	
12	Polyline	12,13	0.123	XZ	
13	Polyline	13,14	0.123	XZ	
14	Polyline	14,15	0.123	XZ	
15	Polyline	15,16	0.123	XZ	
16	Polyline	16,17	0.123	XZ	
17	Polyline	17,18	0.123	XZ	
18	Polyline	18,19	0.123	XZ	
19	Polyline	19,20	0.247	XZ	
20	Polyline	20,21	0.248	XZ	
21	Polyline	21,22	0.249	XZ	
22	Polyline	22,23	0.249	XZ	
23	Polyline	23,24	0.249	XZ	
24	Polyline	24,25	0.499	XY	
25	Polyline	25,26	0.251	XY	
26	Polyline	26,324	0.107	XY	
27	Polyline	27,28	0.255	X	
28	Polyline	28,29	0.258	X	
29	Polyline	29,30	0.261	XY	
30	Polyline	30,31	0.265	XY	
31	Polyline	31,32	0.270	XY	
32	Polyline	32,343	0.146	XY	
33	Polyline	343,34	0.405	XY	
34	Polyline	34,35	0.279	XY	
35	Polyline	35,36	0.560	XY	
36	Polyline	36,37	0.279	XY	
37	Polyline	37,38	0.276	XY	
38	Polyline	38,39	0.272		
39	Polyline	39,40	0.134		
40	Polyline	40,41	0.132		
41	Polyline	41,42	0.130		
42	Polyline	42,43	0.128		
43	Polyline	43,44	0.126		
44	Polyline	44,45	0.123		
45	Polyline	45,46	0.120		
46	Polyline	46,47	0.059		
47	Polyline	47,48	0.059		
48	Polyline	48,49	0.058		
49	Polyline	49,50	0.057		
50	Polyline	50,51	0.057		
51	Polyline	51,52	0.056		
52	Polyline	52,53	0.056		
53	Polyline	53,54	0.055		
54	Polyline	54,55	0.055		
55	Polyline	55,56	0.055		
56	Polyline	56,57	0.054		
57	Polyline	57,58	0.054		
58	Polyline	58,59	0.055		
59	Polyline	59,60	0.055		
60	Polyline	60,61	0.055		
61	Polyline	61,62	0.056		
62	Polyline	62,63	0.056		
63	Polyline	63,64	0.057		
64	Polyline	64,65	0.058		
65	Polyline	65,66	0.059		
66	Polyline	66,67	0.060		
67	Polyline	67,68	0.060		
68	Polyline	68,69	0.061		
69	Polyline	69,70	0.062		
70	Polyline	70,71	0.063		
71	Polyline	71,72	0.064		
72	Polyline	72,73	0.065		
73	Polyline	73,74	0.065		
74	Polyline	74,75	0.066		
75	Polyline	75,76	0.067		
76	Polyline	76,77	0.067		
77	Polyline	77,78	0.068		
78	Polyline	78,79	0.068		

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1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [m]		Comment
79	Polyline	79,80	0.069		
80	Polyline	80,81	0.069		
81	Polyline	81,82	0.070		
82	Polyline	82,83	0.070		
83	Polyline	83,84	0.070		
84	Polyline	84,85	0.070		
85	Polyline	85,86	0.070		
86	Polyline	86,87	0.070		
87	Polyline	87,88	0.070		
88	Polyline	88,89	0.070		
89	Polyline	89,90	0.070		
90	Polyline	90,91	0.070		
91	Polyline	91,92	0.069		
92	Polyline	92,93	0.069		
93	Polyline	93,94	0.069		
94	Polyline	94,95	0.068		
95	Polyline	95,96	0.068		
96	Polyline	96,97	0.067		
97	Polyline	97,98	0.067		
98	Polyline	98,99	0.066		
99	Polyline	99,100	0.066		
100	Polyline	100,101	0.066		
101	Polyline	101,102	0.066		
102	Polyline	102,103	0.065		
103	Polyline	103,104	0.065		
104	Polyline	104,105	0.130		
105	Polyline	105,106	0.129		
106	Polyline	106,107	0.129		
107	Polyline	107,108	0.129		
108	Polyline	108,109	0.128		
109	Polyline	109,110	0.128		
110	Polyline	110,111	0.128		
111	Polyline	111,112	0.128		
112	Polyline	112,113	0.127		
113	Polyline	113,114	0.127		
114	Polyline	114,115	0.126		
115	Polyline	115,116	0.126		
116	Polyline	116,117	0.125		
117	Polyline	117,118	0.125		
118	Polyline	118,119	0.124		
119	Polyline	119,120	0.124		
120	Polyline	120,121	0.124		
121	Polyline	121,122	0.123		
122	Polyline	122,123	0.123		
123	Polyline	123,124	0.123		
124	Polyline	124,125	0.123		
125	Polyline	125,126	0.123		
126	Polyline	126,127	0.123		
127	Polyline	127,128	0.123		
128	Polyline	128,129	0.123		
129	Polyline	129,130	0.124		
130	Polyline	130,131	0.124		
131	Polyline	131,132	0.124		
132	Polyline	132,133	0.125		
133	Polyline	133,134	0.125		
134	Polyline	134,135	0.125		
135	Polyline	135,136	0.126		
136	Polyline	136,137	0.126		
137	Polyline	137,138	0.126		
138	Polyline	138,139	0.126		
139	Polyline	139,140	0.126		
140	Polyline	140,141	0.126		
141	Polyline	141,142	0.126		
142	Polyline	142,143	0.126		
143	Polyline	143,144	0.126		
144	Polyline	144,145	0.125		
145	Polyline	145,146	0.125		
146	Polyline	146,147	0.125		
147	Polyline	147,148	0.125		
148	Polyline	148,149	0.124		
149	Polyline	149,150	0.124		
150	Polyline	150,151	0.124		
151	Polyline	151,152	0.124		
152	Polyline	152,153	0.124		
153	Polyline	153,154	0.123		
154	Polyline	154,155	0.123		
155	Polyline	155,156	0.123		
156	Polyline	156,157	0.123		
157	Polyline	157,158	0.123		
158	Polyline	158,159	0.123		
159	Polyline	159,160	0.123		
160	Polyline	160,161	0.124		
161	Polyline	161,162	0.124		
162	Polyline	162,163	0.124		
163	Polyline	163,164	0.125		
164	Polyline	164,165	0.125		
165	Polyline	165,166	0.126		
166	Polyline	166,167	0.126		
167	Polyline	167,168	0.126		
168	Polyline	168,169	0.126		
169	Polyline	169,170	0.125		
170	Polyline	170,171	0.125		
171	Polyline	171,172	0.062		
172	Polyline	172,173	0.062		

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1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [m]		Comment
173	Polyline	173,174	0.061		
174	Polyline	174,175	0.061		
175	Polyline	175,176	0.061		
176	Polyline	176,177	0.061		
177	Polyline	177,178	0.060		
178	Polyline	178,179	0.060		
179	Polyline	179,180	0.060		
180	Polyline	180,181	0.059		
181	Polyline	181,182	0.059		
182	Polyline	182,183	0.059		
183	Polyline	183,184	0.058		
184	Polyline	184,185	0.058		
185	Polyline	185,186	0.058		
186	Polyline	186,187	0.058		
187	Polyline	187,188	0.058		
188	Polyline	188,189	0.057		
189	Polyline	189,190	0.057		
190	Polyline	190,191	0.057		
191	Polyline	191,192	0.057		
192	Polyline	192,193	0.057		
193	Polyline	193,194	0.058		
194	Polyline	194,195	0.058		
195	Polyline	195,196	0.058		
196	Polyline	196,197	0.059		
197	Polyline	197,198	0.059		
198	Polyline	198,199	0.059		
199	Polyline	199,200	0.120		
200	Polyline	200,201	0.121		
201	Polyline	201,202	0.123		
202	Polyline	202,203	0.124		
203	Polyline	203,204	0.125		
204	Polyline	204,205	0.126		
205	Polyline	205,206	0.126		
206	Polyline	206,207	0.127		
207	Polyline	207,208	0.126		
208	Polyline	208,209	0.251		
209	Polyline	209,210	0.123	X	
210	Polyline	210,211	0.122		
211	Polyline	211,212	0.120		
212	Polyline	212,213	0.118		
213	Polyline	213,214	0.116		
214	Polyline	214,215	0.113		
215	Polyline	215,216	0.111		
216	Polyline	216,217	0.109		
217	Polyline	217,218	0.107		
218	Polyline	218,219	0.105		
219	Polyline	219,220	0.052		
220	Polyline	220,221	0.051		
221	Polyline	221,222	0.051		
222	Polyline	222,223	0.051		
223	Polyline	223,224	0.051		
224	Polyline	224,225	0.051		
225	Polyline	225,226	0.051		
226	Polyline	226,227	0.051		
227	Polyline	227,228	0.051		
228	Polyline	228,229	0.052		
229	Polyline	229,230	0.052		
230	Polyline	230,231	0.053		
231	Polyline	231,232	0.054		
232	Polyline	232,233	0.055		
233	Polyline	233,234	0.056		
234	Polyline	234,235	0.057		
235	Polyline	235,236	0.058		
236	Polyline	236,237	0.059		
237	Polyline	237,238	0.060		
238	Polyline	238,239	0.061		
239	Polyline	239,240	0.062		
240	Polyline	240,241	0.063		
241	Polyline	241,242	0.064		
242	Polyline	242,243	0.065		
243	Polyline	243,244	0.065		
244	Polyline	244,245	0.066		
245	Polyline	245,246	0.067		
246	Polyline	246,247	0.068		
247	Polyline	247,248	0.068		
248	Polyline	248,249	0.069		
249	Polyline	249,250	0.069		
250	Polyline	250,251	0.070		
251	Polyline	251,252	0.070		
252	Polyline	252,253	0.070		
253	Polyline	253,254	0.071		
254	Polyline	254,255	0.071		
255	Polyline	255,256	0.071		
256	Polyline	256,257	0.071		
257	Polyline	257,258	0.071		
258	Polyline	258,259	0.071		
259	Polyline	259,260	0.071		
260	Polyline	260,261	0.071		
261	Polyline	261,262	0.071		
262	Polyline	262,263	0.070		
263	Polyline	263,264	0.070		
264	Polyline	264,265	0.070		
265	Polyline	265,266	0.070		
266	Polyline	266,267	0.069		

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1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [m]		Comment
267	Polyline	267,268	0.069		
268	Polyline	268,269	0.069		
269	Polyline	269,270	0.069		
270	Polyline	270,271	0.068		
271	Polyline	271,272	0.068		
272	Polyline	272,273	0.068		
273	Polyline	273,274	0.068		
274	Polyline	274,275	0.068		
275	Polyline	275,276	0.067		
276	Polyline	276,277	0.067		
277	Polyline	277,278	0.067		
278	Polyline	278,279	0.067		
279	Polyline	279,280	0.067		
280	Polyline	280,281	0.066		
281	Polyline	281,282	0.066		
282	Polyline	282,283	0.066		
283	Polyline	283,284	0.066		
284	Polyline	284,285	0.066		
285	Polyline	285,286	0.065		
286	Polyline	286,287	0.065		
287	Polyline	287,288	0.065		
288	Polyline	288,289	0.064		
289	Polyline	289,290	0.064		
290	Polyline	290,291	0.064		
291	Polyline	291,292	0.063		
292	Polyline	292,293	0.063		
293	Polyline	293,294	0.063		
294	Polyline	294,295	0.062		
295	Polyline	295,296	0.062		
296	Polyline	296,297	0.062		
297	Polyline	297,298	0.061		
298	Polyline	298,299	0.061		
299	Polyline	299,300	0.060		
300	Polyline	300,301	0.060		
301	Polyline	301,302	0.060		
302	Polyline	302,303	0.060		
303	Polyline	303,304	0.060		
304	Polyline	304,305	0.060		
305	Polyline	305,306	0.060		
306	Polyline	306,307	0.060		
307	Polyline	307,308	0.060		
308	Polyline	308,309	0.060		
309	Polyline	309,310	0.061		
310	Polyline	310,311	0.061		
311	Polyline	311,312	0.062		
312	Polyline	312,313	0.062		
313	Polyline	313,314	0.063		
314	Polyline	314,315	0.063		
315	Polyline	315,316	0.064		
316	Polyline	316,317	0.065		
317	Polyline	317,318	0.066		
318	Polyline	318,319	0.067		
319	Polyline	319,320	0.068		
320	Polyline	320,321	0.069		
321	Polyline	321,322	0.070		
322	Polyline	322,323	0.072		
323	Polyline	326,325	0.700	X	
324	Polyline	21,325	0.250	Z	
325	Polyline	325,330	1.597	X	
326	Polyline	324,330	0.257		
327	Polyline	208,332	0.409		
328	Polyline	331,343	0.257		
329	Polyline	333,327	0.572	X	
330	Polyline	330,331	1.606	X	
332	Polyline	333,37	0.257	YZ	
333	Polyline	331,333	1.524	X	
334	Polyline	324,27	0.145	XY	
335	Polyline	214,334	0.415		
336	Polyline	335,336	2.098	X	
337	Polyline	336,338	1.800	Y	
338	Polyline	338,337	2.098	X	
339	Polyline	337,335	1.800	Y	
340	Polyline	335,339	1.000	Z	
341	Polyline	336,340	1.000	Z	
342	Polyline	337,341	1.000	Z	
343	Polyline	338,342	1.000	Z	
344	Polyline	339,340	2.098	X	
348	Polyline	341,342	2.098	X	
353	Polyline	341,339	1.800	Y	
355	Polyline	340,342	1.800	Y	

1.3 MATERIALS

Matl. No.	Modulus E [kN/cm ²]	Modulus G [kN/cm ²]	Poisson's Ratio v [-]	Spec. Weight γ [kN/m ³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	S 235 1.4404 (Cold Rolled Strip, for Calculation of Imposed Internal Forces)				Z-30.3-6:2014-04 1.60E-05	1.00	Isotropic Linear Elastic
	Baustahl S 235						
2	Concrete C25/30 3100.00	EN 1992-1-1:2004/A1:2014 1291.67	0.200	25.00	1.00E-05	1.00	Isotropic Linear Elastic

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1.4 SURFACES

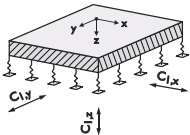
Surface No.	Surface Type		Boundary Lines No.	Matl. No.	Thickness		Area A [m²]	Weight W [kg]
	Geometry	Stiffness			Type	d [mm]		
1	Plane	Standard	344,341,336,340	2	Constant	200.0	2.098	1049.21
2	Plane	Standard	348,343,338,342	2	Constant	200.0	2.098	1049.21
3	Plane	Standard	339,336-338	2	Constant	200.0	3.777	1888.58
4	Plane	Standard	353,344,355,348	2	Constant	200.0	3.777	1888.58

1.4.2 SURFACES - INTEGRATED OBJECTS

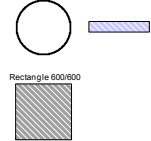
Surface No.	Integrated Objects No.			Openings	Comment
	Nodes	Lines			
3	332,334				

1.9 SURFACE SUPPORTS

Found. No.	On Surfaces No.	Spring Constants RF-SOILIN	Translation Support or Spring [kN/m³]			Shear Spring [kN/m]	
			u _x	u _y	u _z	v _{xz}	v _{yz}
1	4	-	3500.000	3500.000	20000.000	15000.000	15000.000



RO 457.0x8.0 (HoL FL 150x25)

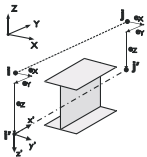


1.13 CROSS-SECTIONS

Section No.	Matl. No.	J [cm ⁴]	I _y [cm ⁴]	I _z [cm ⁴]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm]	
		A [cm ²]	A _y [cm ²]	A _z [cm ²]			Width b	Height h
1	RO 457.0x8.0 (warmgefertigt)							
	1	56900.00	28450.00	28450.00	0.00	0.00	457.0	457.0
		113.00	55.95	55.95				
Layer 04								
2	FL 150x25 DIN 1017-1							
	1	69.92	19.53	703.13	0.00	0.00	150.0	25.0
		37.50	31.25	31.25				
3	Rectangle 600/600							
	2	1823040.00	1080000.00	1080000.00	0.00	0.00	600.0	600.0
		3600.00	3000.00	3000.00				

1.15/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm]			Member End - Eccentricity			Member hinge location	
		e _{1,x}	e _{1,y}	e _{1,z}	e _{2,x}	e _{2,y}	e _{2,z}	Member Start	Member End
1	Global	0.0	0.0	0.0	0.0	0.0	0.0	at member	at member

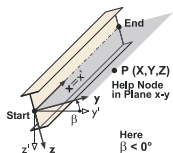


1.15/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment		Transverse offset from cross-section of another obj.				Axial offset from adjacent	
	y-Axis	z-Axis	Object Type	Object No.	y-Axis	z-Axis	Member Sta	Member End
1	Middle	Top (-z)	None	0	Middle	Middle	<input type="checkbox"/>	<input type="checkbox"/>

1.17 MEMBERS

Mbr. No.	Line No.	Member	Rotation		Cross-Section		Hinge No.		Ecc. No.	Div. No.	Length L [m]	
			Type	β [°]	Start	End	Start	End				
1	1	Beam	Angle	0.00	1	1	-	-	-	-	0.246	XZ
2	2	Beam	Angle	0.00	1	1	-	-	-	-	0.247	XZ
3	3	Beam	Angle	0.00	1	1	-	-	-	-	0.247	XZ
4	4	Beam	Angle	0.00	1	1	-	-	-	-	0.246	XZ
5	5	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
6	6	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
7	7	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
8	8	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
9	9	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
10	10	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
11	11	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
12	12	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
13	13	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
14	14	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
15	15	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
16	16	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
17	17	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
18	18	Beam	Angle	0.00	1	1	-	-	-	-	0.123	XZ
19	19	Beam	Angle	0.00	1	1	-	-	-	-	0.247	XZ
20	20	Beam	Angle	0.00	1	1	-	-	-	-	0.248	XZ
21	21	Beam	Angle	0.00	1	1	-	-	-	-	0.249	XZ
22	22	Beam	Angle	0.00	1	1	-	-	-	-	0.249	XZ
23	23	Beam	Angle	0.00	1	1	-	-	-	-	0.249	XZ
24	24	Beam	Angle	0.00	1	1	-	-	-	-	0.499	XY
25	25	Beam	Angle	0.00	1	1	-	-	-	-	0.251	XY
26	26	Beam	Angle	0.00	1	1	-	-	-	-	0.107	XY



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1.17 MEMBERS

Mbr. No.	Line No.	Member	Rotation		Cross-Section		Hinge No.		Ecc. No.	Div. No.	Length L [m]	
			Type	β [°]	Start	End	Start	End				
27	27	Beam	Angle	0.00	1	1	-	-	-	-	0.255	X
28	28	Beam	Angle	0.00	1	1	-	-	-	-	0.258	X
29	29	Beam	Angle	0.00	1	1	-	-	-	-	0.261	XY
30	30	Beam	Angle	0.00	1	1	-	-	-	-	0.265	XY
31	31	Beam	Angle	0.00	1	1	-	-	-	-	0.270	XY
32	32	Beam	Angle	0.00	1	1	-	-	-	-	0.146	XY
33	33	Beam	Angle	0.00	1	1	-	-	-	-	0.405	XY
34	34	Beam	Angle	0.00	1	1	-	-	-	-	0.279	XY
35	35	Beam	Angle	0.00	1	1	-	-	-	-	0.560	XY
36	36	Beam	Angle	0.00	1	1	-	-	-	-	0.279	XY
37	37	Beam	Angle	0.00	1	1	-	-	-	-	0.276	XY
38	38	Beam	Angle	0.00	1	1	-	-	-	-	0.272	
39	39	Beam	Angle	0.00	1	1	-	-	-	-	0.134	
40	40	Beam	Angle	0.00	1	1	-	-	-	-	0.132	
41	41	Beam	Angle	0.00	1	1	-	-	-	-	0.130	
42	42	Beam	Angle	0.00	1	1	-	-	-	-	0.128	
43	43	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
44	44	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
45	45	Beam	Angle	0.00	1	1	-	-	-	-	0.120	
46	46	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
47	47	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
48	48	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
49	49	Beam	Angle	0.00	1	1	-	-	-	-	0.057	
50	50	Beam	Angle	0.00	1	1	-	-	-	-	0.057	
51	51	Beam	Angle	0.00	1	1	-	-	-	-	0.056	
52	52	Beam	Angle	0.00	1	1	-	-	-	-	0.056	
53	53	Beam	Angle	0.00	1	1	-	-	-	-	0.055	
54	54	Beam	Angle	0.00	1	1	-	-	-	-	0.055	
55	55	Beam	Angle	0.00	1	1	-	-	-	-	0.055	
56	56	Beam	Angle	0.00	1	1	-	-	-	-	0.054	
57	57	Beam	Angle	0.00	1	1	-	-	-	-	0.054	
58	58	Beam	Angle	0.00	1	1	-	-	-	-	0.055	
59	59	Beam	Angle	0.00	1	1	-	-	-	-	0.055	
60	60	Beam	Angle	0.00	1	1	-	-	-	-	0.055	
61	61	Beam	Angle	0.00	1	1	-	-	-	-	0.056	
62	62	Beam	Angle	0.00	1	1	-	-	-	-	0.056	
63	63	Beam	Angle	0.00	1	1	-	-	-	-	0.057	
64	64	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
65	65	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
66	66	Beam	Angle	0.00	1	1	-	-	-	-	0.060	
67	67	Beam	Angle	0.00	1	1	-	-	-	-	0.060	
68	68	Beam	Angle	0.00	1	1	-	-	-	-	0.061	
69	69	Beam	Angle	0.00	1	1	-	-	-	-	0.062	
70	70	Beam	Angle	0.00	1	1	-	-	-	-	0.063	
71	71	Beam	Angle	0.00	1	1	-	-	-	-	0.064	
72	72	Beam	Angle	0.00	1	1	-	-	-	-	0.065	
73	73	Beam	Angle	0.00	1	1	-	-	-	-	0.065	
74	74	Beam	Angle	0.00	1	1	-	-	-	-	0.066	
75	75	Beam	Angle	0.00	1	1	-	-	-	-	0.067	
76	76	Beam	Angle	0.00	1	1	-	-	-	-	0.067	
77	77	Beam	Angle	0.00	1	1	-	-	-	-	0.068	
78	78	Beam	Angle	0.00	1	1	-	-	-	-	0.068	
79	79	Beam	Angle	0.00	1	1	-	-	-	-	0.069	
80	80	Beam	Angle	0.00	1	1	-	-	-	-	0.069	
81	81	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
82	82	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
83	83	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
84	84	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
85	85	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
86	86	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
87	87	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
88	88	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
89	89	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
90	90	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
91	91	Beam	Angle	0.00	1	1	-	-	-	-	0.069	
92	92	Beam	Angle	0.00	1	1	-	-	-	-	0.069	
93	93	Beam	Angle	0.00	1	1	-	-	-	-	0.069	
94	94	Beam	Angle	0.00	1	1	-	-	-	-	0.068	
95	95	Beam	Angle	0.00	1	1	-	-	-	-	0.068	
96	96	Beam	Angle	0.00	1	1	-	-	-	-	0.067	
97	97	Beam	Angle	0.00	1	1	-	-	-	-	0.067	
98	98	Beam	Angle	0.00	1	1	-	-	-	-	0.066	
99	99	Beam	Angle	0.00	1	1	-	-	-	-	0.066	
100	100	Beam	Angle	0.00	1	1	-	-	-	-	0.066	
101	101	Beam	Angle	0.00	1	1	-	-	-	-	0.066	
102	102	Beam	Angle	0.00	1	1	-	-	-	-	0.065	
103	103	Beam	Angle	0.00	1	1	-	-	-	-	0.065	
104	104	Beam	Angle	0.00	1	1	-	-	-	-	0.130	
105	105	Beam	Angle	0.00	1	1	-	-	-	-	0.129	
106	106	Beam	Angle	0.00	1	1	-	-	-	-	0.129	
107	107	Beam	Angle	0.00	1	1	-	-	-	-	0.129	
108	108	Beam	Angle	0.00	1	1	-	-	-	-	0.128	
109	109	Beam	Angle	0.00	1	1	-	-	-	-	0.128	
110	110	Beam	Angle	0.00	1	1	-	-	-	-	0.128	
111	111	Beam	Angle	0.00	1	1	-	-	-	-	0.128	
112	112	Beam	Angle	0.00	1	1	-	-	-	-	0.127	
113	113	Beam	Angle	0.00	1	1	-	-	-	-	0.127	
114	114	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
115	115	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
116	116	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
117	117	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
118	118	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
119	119	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
120	120	Beam	Angle	0.00	1	1	-	-	-	-	0.124	

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.17 MEMBERS

Mbr. No.	Line No.	Member	Rotation		Cross-Section		Hinge No.		Ecc. No.	Div. No.	Length L [m]	
			Type	β [°]	Start	End	Start	End				
121	121	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
122	122	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
123	123	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
124	124	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
125	125	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
126	126	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
127	127	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
128	128	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
129	129	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
130	130	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
131	131	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
132	132	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
133	133	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
134	134	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
135	135	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
136	136	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
137	137	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
138	138	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
139	139	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
140	140	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
141	141	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
142	142	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
143	143	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
144	144	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
145	145	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
146	146	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
147	147	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
148	148	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
149	149	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
150	150	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
151	151	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
152	152	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
153	153	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
154	154	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
155	155	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
156	156	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
157	157	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
158	158	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
159	159	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
160	160	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
161	161	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
162	162	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
163	163	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
164	164	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
165	165	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
166	166	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
167	167	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
168	168	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
169	169	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
170	170	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
171	171	Beam	Angle	0.00	1	1	-	-	-	-	0.062	
172	172	Beam	Angle	0.00	1	1	-	-	-	-	0.062	
173	173	Beam	Angle	0.00	1	1	-	-	-	-	0.061	
174	174	Beam	Angle	0.00	1	1	-	-	-	-	0.061	
175	175	Beam	Angle	0.00	1	1	-	-	-	-	0.061	
176	176	Beam	Angle	0.00	1	1	-	-	-	-	0.061	
177	177	Beam	Angle	0.00	1	1	-	-	-	-	0.060	
178	178	Beam	Angle	0.00	1	1	-	-	-	-	0.060	
179	179	Beam	Angle	0.00	1	1	-	-	-	-	0.060	
180	180	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
181	181	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
182	182	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
183	183	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
184	184	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
185	185	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
186	186	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
187	187	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
188	188	Beam	Angle	0.00	1	1	-	-	-	-	0.057	
189	189	Beam	Angle	0.00	1	1	-	-	-	-	0.057	
190	190	Beam	Angle	0.00	1	1	-	-	-	-	0.057	
191	191	Beam	Angle	0.00	1	1	-	-	-	-	0.057	
192	192	Beam	Angle	0.00	1	1	-	-	-	-	0.057	
193	193	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
194	194	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
195	195	Beam	Angle	0.00	1	1	-	-	-	-	0.058	
196	196	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
197	197	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
198	198	Beam	Angle	0.00	1	1	-	-	-	-	0.059	
199	199	Beam	Angle	0.00	1	1	-	-	-	-	0.120	
200	200	Beam	Angle	0.00	1	1	-	-	-	-	0.121	
201	201	Beam	Angle	0.00	1	1	-	-	-	-	0.123	
202	202	Beam	Angle	0.00	1	1	-	-	-	-	0.124	
203	203	Beam	Angle	0.00	1	1	-	-	-	-	0.125	
204	204	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
205	205	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
206	206	Beam	Angle	0.00	1	1	-	-	-	-	0.127	
207	207	Beam	Angle	0.00	1	1	-	-	-	-	0.126	
208	208	Beam	Angle	0.00	1	1	-	-	-	-	0.251	
209	209	Beam	Angle	0.00	1	1	-	-	-	-	0.123	X
210	210	Beam	Angle	0.00	1	1	-	-	-	-	0.122	
211	211	Beam	Angle	0.00	1	1	-	-	-	-	0.120	
212	212	Beam	Angle	0.00	1	1	-	-	-	-	0.118	
213	213	Beam	Angle	0.00	1	1	-	-	-	-	0.116	
214	214	Beam	Angle	0.00	1	1	-	-	-	-	0.113	

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.17 MEMBERS

Mbr. No.	Line No.	Member	Rotation		Cross-Section		Hinge No.		Ecc. No.	Div. No.	Length L [m]
			Type	β [°]	Start	End	Start	End			
215	215	Beam	Angle	0.00	1	1	-	-	-	-	0.111
216	216	Beam	Angle	0.00	1	1	-	-	-	-	0.109
217	217	Beam	Angle	0.00	1	1	-	-	-	-	0.107
218	218	Beam	Angle	0.00	1	1	-	-	-	-	0.105
219	219	Beam	Angle	0.00	1	1	-	-	-	-	0.052
220	220	Beam	Angle	0.00	1	1	-	-	-	-	0.051
221	221	Beam	Angle	0.00	1	1	-	-	-	-	0.051
222	222	Beam	Angle	0.00	1	1	-	-	-	-	0.051
223	223	Beam	Angle	0.00	1	1	-	-	-	-	0.051
224	224	Beam	Angle	0.00	1	1	-	-	-	-	0.051
225	225	Beam	Angle	0.00	1	1	-	-	-	-	0.051
226	226	Beam	Angle	0.00	1	1	-	-	-	-	0.051
227	227	Beam	Angle	0.00	1	1	-	-	-	-	0.051
228	228	Beam	Angle	0.00	1	1	-	-	-	-	0.052
229	229	Beam	Angle	0.00	1	1	-	-	-	-	0.052
230	230	Beam	Angle	0.00	1	1	-	-	-	-	0.053
231	231	Beam	Angle	0.00	1	1	-	-	-	-	0.054
232	232	Beam	Angle	0.00	1	1	-	-	-	-	0.055
233	233	Beam	Angle	0.00	1	1	-	-	-	-	0.056
234	234	Beam	Angle	0.00	1	1	-	-	-	-	0.057
235	235	Beam	Angle	0.00	1	1	-	-	-	-	0.058
236	236	Beam	Angle	0.00	1	1	-	-	-	-	0.059
237	237	Beam	Angle	0.00	1	1	-	-	-	-	0.060
238	238	Beam	Angle	0.00	1	1	-	-	-	-	0.061
239	239	Beam	Angle	0.00	1	1	-	-	-	-	0.062
240	240	Beam	Angle	0.00	1	1	-	-	-	-	0.063
241	241	Beam	Angle	0.00	1	1	-	-	-	-	0.064
242	242	Beam	Angle	0.00	1	1	-	-	-	-	0.065
243	243	Beam	Angle	0.00	1	1	-	-	-	-	0.065
244	244	Beam	Angle	0.00	1	1	-	-	-	-	0.066
245	245	Beam	Angle	0.00	1	1	-	-	-	-	0.067
246	246	Beam	Angle	0.00	1	1	-	-	-	-	0.068
247	247	Beam	Angle	0.00	1	1	-	-	-	-	0.068
248	248	Beam	Angle	0.00	1	1	-	-	-	-	0.069
249	249	Beam	Angle	0.00	1	1	-	-	-	-	0.069
250	250	Beam	Angle	0.00	1	1	-	-	-	-	0.070
251	251	Beam	Angle	0.00	1	1	-	-	-	-	0.070
252	252	Beam	Angle	0.00	1	1	-	-	-	-	0.070
253	253	Beam	Angle	0.00	1	1	-	-	-	-	0.071
254	254	Beam	Angle	0.00	1	1	-	-	-	-	0.071
255	255	Beam	Angle	0.00	1	1	-	-	-	-	0.071
256	256	Beam	Angle	0.00	1	1	-	-	-	-	0.071
257	257	Beam	Angle	0.00	1	1	-	-	-	-	0.071
258	258	Beam	Angle	0.00	1	1	-	-	-	-	0.071
259	259	Beam	Angle	0.00	1	1	-	-	-	-	0.071
260	260	Beam	Angle	0.00	1	1	-	-	-	-	0.071
261	261	Beam	Angle	0.00	1	1	-	-	-	-	0.071
262	262	Beam	Angle	0.00	1	1	-	-	-	-	0.070
263	263	Beam	Angle	0.00	1	1	-	-	-	-	0.070
264	264	Beam	Angle	0.00	1	1	-	-	-	-	0.070
265	265	Beam	Angle	0.00	1	1	-	-	-	-	0.070
266	266	Beam	Angle	0.00	1	1	-	-	-	-	0.069
267	267	Beam	Angle	0.00	1	1	-	-	-	-	0.069
268	268	Beam	Angle	0.00	1	1	-	-	-	-	0.069
269	269	Beam	Angle	0.00	1	1	-	-	-	-	0.069
270	270	Beam	Angle	0.00	1	1	-	-	-	-	0.068
271	271	Beam	Angle	0.00	1	1	-	-	-	-	0.068
272	272	Beam	Angle	0.00	1	1	-	-	-	-	0.068
273	273	Beam	Angle	0.00	1	1	-	-	-	-	0.068
274	274	Beam	Angle	0.00	1	1	-	-	-	-	0.068
275	275	Beam	Angle	0.00	1	1	-	-	-	-	0.067
276	276	Beam	Angle	0.00	1	1	-	-	-	-	0.067
277	277	Beam	Angle	0.00	1	1	-	-	-	-	0.067
278	278	Beam	Angle	0.00	1	1	-	-	-	-	0.067
279	279	Beam	Angle	0.00	1	1	-	-	-	-	0.067
280	280	Beam	Angle	0.00	1	1	-	-	-	-	0.066
281	281	Beam	Angle	0.00	1	1	-	-	-	-	0.066
282	282	Beam	Angle	0.00	1	1	-	-	-	-	0.066
283	283	Beam	Angle	0.00	1	1	-	-	-	-	0.066
284	284	Beam	Angle	0.00	1	1	-	-	-	-	0.066
285	285	Beam	Angle	0.00	1	1	-	-	-	-	0.065
286	286	Beam	Angle	0.00	1	1	-	-	-	-	0.065
287	287	Beam	Angle	0.00	1	1	-	-	-	-	0.065
288	288	Beam	Angle	0.00	1	1	-	-	-	-	0.064
289	289	Beam	Angle	0.00	1	1	-	-	-	-	0.064
290	290	Beam	Angle	0.00	1	1	-	-	-	-	0.064
291	291	Beam	Angle	0.00	1	1	-	-	-	-	0.063
292	292	Beam	Angle	0.00	1	1	-	-	-	-	0.063
293	293	Beam	Angle	0.00	1	1	-	-	-	-	0.063
294	294	Beam	Angle	0.00	1	1	-	-	-	-	0.062
295	295	Beam	Angle	0.00	1	1	-	-	-	-	0.062
296	296	Beam	Angle	0.00	1	1	-	-	-	-	0.062
297	297	Beam	Angle	0.00	1	1	-	-	-	-	0.061
298	298	Beam	Angle	0.00	1	1	-	-	-	-	0.061
299	299	Beam	Angle	0.00	1	1	-	-	-	-	0.060
300	300	Beam	Angle	0.00	1	1	-	-	-	-	0.060
301	301	Beam	Angle	0.00	1	1	-	-	-	-	0.060
302	302	Beam	Angle	0.00	1	1	-	-	-	-	0.060
303	303	Beam	Angle	0.00	1	1	-	-	-	-	0.060
304	304	Beam	Angle	0.00	1	1	-	-	-	-	0.060
305	305	Beam	Angle	0.00	1	1	-	-	-	-	0.060
306	306	Beam	Angle	0.00	1	1	-	-	-	-	0.060
307	307	Beam	Angle	0.00	1	1	-	-	-	-	0.060
308	308	Beam	Angle	0.00	1	1	-	-	-	-	0.060

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1.17 MEMBERS

Mbr. No.	Line No.	Member	Rotation		Cross-Section		Hinge No.		Ecc. No.	Div. No.	Length L [m]	
			Type	β [°]	Start	End	Start	End				
309	309	Beam	Angle	0.00	1	1	-	-	-	-	0.061	
310	310	Beam	Angle	0.00	1	1	-	-	-	-	0.061	
311	311	Beam	Angle	0.00	1	1	-	-	-	-	0.062	
312	312	Beam	Angle	0.00	1	1	-	-	-	-	0.062	
313	313	Beam	Angle	0.00	1	1	-	-	-	-	0.063	
314	314	Beam	Angle	0.00	1	1	-	-	-	-	0.063	
315	315	Beam	Angle	0.00	1	1	-	-	-	-	0.064	
316	316	Beam	Angle	0.00	1	1	-	-	-	-	0.065	
317	317	Beam	Angle	0.00	1	1	-	-	-	-	0.066	
318	318	Beam	Angle	0.00	1	1	-	-	-	-	0.067	
319	319	Beam	Angle	0.00	1	1	-	-	-	-	0.068	
320	320	Beam	Angle	0.00	1	1	-	-	-	-	0.069	
321	321	Beam	Angle	0.00	1	1	-	-	-	-	0.070	
322	322	Beam	Angle	0.00	1	1	-	-	-	-	0.072	
323	323	Beam	Angle	0.00	3	3	-	-	1	-	1.597	X
325	323	Beam	Angle	0.00	3	3	-	-	1	-	0.700	X
329	329	Beam	Angle	0.00	3	3	-	-	1	-	0.572	X
330	330	Beam	Angle	0.00	3	3	-	-	1	-	1.606	X
333	333	Beam	Angle	0.00	3	3	-	-	1	-	1.524	X
334	334	Beam	Angle	0.00	1	1	-	-	-	-	0.145	XY
335	324	Beam	Angle	90.00	2	2	-	-	-	-	0.250	Z
336	326	Beam	Angle	90.00	2	2	-	-	-	-	0.257	
339	327	Beam	Angle	90.00	2	2	-	-	-	-	0.409	
340	335	Beam	Angle	90.00	2	2	-	-	-	-	0.415	
341	332	Beam	Angle	0.00	2	2	-	-	-	-	0.257	YZ
342	328	Beam	Angle	15.00	2	2	-	-	-	-	0.257	



1.19 MEMBER ELASTIC FOUNDATIONS

Found. No.	Member No.	$C_{1,x}$ [kN/m²]	$C_{1,y}$ [kN/m²]	$C_{1,z}$ [kN/m²]	$C_{2,x}$ [kN]	$C_{2,y}$ [kN]	$C_{2,z}$ [kN]	C_ϕ [kNm/rad/m]
1	323,325,329,330,333	3500.000	3500.000	20000.000	2000.000	2000.000	15000.000	0.000

1.23 FE MESH REFINEMENTS

Refinem. No.	FE Mesh Refinement applied to	Nodes No.	Number Divisions	Sphere Radius [m]	Target FE Length [m]		Comment
1	Nodes - Circular	332,334		1.000	Inner	Outer	
2	Lines gradually	336,338, 344,348	2		0.050	0.500	

2.1 LOAD CASES

Load Case	Load Case Description	EN 1990 SIST Action Category	Self-Weight - Factor in Direction			
			Active	X	Y	Z
LC1	Lastna, stalna teža	Permanent	<input checked="" type="checkbox"/>	0.000	0.000	-1.000
LC2	Obtežba 1	Imposed - Category C: congregation areas	<input type="checkbox"/>			
LC3	Obtežba 2	Imposed - Category C: congregation areas	<input type="checkbox"/>			
LC4	Obtežba 3	Imposed - Category C: congregation areas	<input type="checkbox"/>			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters	
LC1	Lastna, stalna teža	Method of analysis	: <input checked="" type="radio"/> Geometrically linear analysis
		Method for solving system of nonlinear algebraic equations	: <input checked="" type="radio"/> Newton-Raphson
		Activate stiffness factors of:	: <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
LC2	Obtežba 1	Method of analysis	: <input checked="" type="radio"/> Geometrically linear analysis
		Method for solving system of nonlinear algebraic equations	: <input checked="" type="radio"/> Newton-Raphson
		Activate stiffness factors of:	: <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
LC3	Obtežba 2	Method of analysis	: <input checked="" type="radio"/> Geometrically linear analysis
		Method for solving system of nonlinear algebraic equations	: <input checked="" type="radio"/> Newton-Raphson
		Activate stiffness factors of:	: <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
LC4	Obtežba 3	Method of analysis	: <input checked="" type="radio"/> Geometrically linear analysis
		Method for solving system of nonlinear algebraic equations	: <input checked="" type="radio"/> Newton-Raphson
		Activate stiffness factors of:	: <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)

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2.5 LOAD COMBINATIONS

Load Combin.	Load Combination		No.	Factor	Load Case	
	DS	Description				
CO1	STR	1.35*LC1	1	1.35	LC1	Lastna, stalna teža
CO2	STR	1.35*LC1 + 1.5*LC2	1	1.35	LC1	Lastna, stalna teža
			2	1.50	LC2	Obtežba 1
CO3	STR	1.35*LC1 + 1.5*LC2 + 1.5*LC3	1	1.35	LC1	Lastna, stalna teža
			2	1.50	LC2	Obtežba 1
			3	1.50	LC3	Obtežba 2
CO4	STR	1.35*LC1 + 1.5*LC2 + 1.5*LC3 + 1.5*LC4	1	1.35	LC1	Lastna, stalna teža
			2	1.50	LC2	Obtežba 1
			3	1.50	LC3	Obtežba 2
			4	1.50	LC4	Obtežba 3
CO5	STR	1.35*LC1 + 1.5*LC2 + 1.5*LC4	1	1.35	LC1	Lastna, stalna teža
			2	1.50	LC2	Obtežba 1
			3	1.50	LC4	Obtežba 3
CO6	STR	1.35*LC1 + 1.5*LC3	1	1.35	LC1	Lastna, stalna teža
			2	1.50	LC3	Obtežba 2
CO7	STR	1.35*LC1 + 1.5*LC3 + 1.5*LC4	1	1.35	LC1	Lastna, stalna teža
			2	1.50	LC3	Obtežba 2
			3	1.50	LC4	Obtežba 3
CO8	STR	1.35*LC1 + 1.5*LC4	1	1.35	LC1	Lastna, stalna teža
			2	1.50	LC4	Obtežba 3
CO9	S Ch	LC1	1	1.00	LC1	Lastna, stalna teža
CO10	S Ch	LC1 + LC2	1	1.00	LC1	Lastna, stalna teža
			2	1.00	LC2	Obtežba 1
CO11	S Ch	LC1 + LC2 + LC3	1	1.00	LC1	Lastna, stalna teža
			2	1.00	LC2	Obtežba 1
			3	1.00	LC3	Obtežba 2
CO12	S Ch	LC1 + LC2 + LC3 + LC4	1	1.00	LC1	Lastna, stalna teža
			2	1.00	LC2	Obtežba 1
			3	1.00	LC3	Obtežba 2
			4	1.00	LC4	Obtežba 3
CO13	S Ch	LC1 + LC2 + LC4	1	1.00	LC1	Lastna, stalna teža
			2	1.00	LC2	Obtežba 1
			3	1.00	LC4	Obtežba 3
CO14	S Ch	LC1 + LC3	1	1.00	LC1	Lastna, stalna teža
			2	1.00	LC3	Obtežba 2
CO15	S Ch	LC1 + LC3 + LC4	1	1.00	LC1	Lastna, stalna teža
			2	1.00	LC3	Obtežba 2
			3	1.00	LC4	Obtežba 3
CO16	S Ch	LC1 + LC4	1	1.00	LC1	Lastna, stalna teža
			2	1.00	LC4	Obtežba 3
CO17	S Fr	LC1	1	1.00	LC1	Lastna, stalna teža
CO18	S Fr	LC1 + 0.7*LC2	1	1.00	LC1	Lastna, stalna teža
			2	0.70	LC2	Obtežba 1
CO19	S Fr	LC1 + 0.7*LC2 + 0.7*LC3	1	1.00	LC1	Lastna, stalna teža
			2	0.70	LC2	Obtežba 1
			3	0.70	LC3	Obtežba 2
CO20	S Fr	LC1 + 0.7*LC2 + 0.7*LC3 + 0.7*LC4	1	1.00	LC1	Lastna, stalna teža
			2	0.70	LC2	Obtežba 1
			3	0.70	LC3	Obtežba 2
			4	0.70	LC4	Obtežba 3
CO21	S Fr	LC1 + 0.7*LC2 + 0.7*LC4	1	1.00	LC1	Lastna, stalna teža
			2	0.70	LC2	Obtežba 1
			3	0.70	LC4	Obtežba 3
CO22	S Fr	LC1 + 0.7*LC3	1	1.00	LC1	Lastna, stalna teža
			2	0.70	LC3	Obtežba 2
CO23	S Fr	LC1 + 0.7*LC3 + 0.7*LC4	1	1.00	LC1	Lastna, stalna teža
			2	0.70	LC3	Obtežba 2
			3	0.70	LC4	Obtežba 3
CO24	S Fr	LC1 + 0.7*LC4	1	1.00	LC1	Lastna, stalna teža
			2	0.70	LC4	Obtežba 3
CO25	S Qp	LC1	1	1.00	LC1	Lastna, stalna teža
CO26	S Qp	LC1 + 0.6*LC2	1	1.00	LC1	Lastna, stalna teža
			2	0.60	LC2	Obtežba 1
CO27	S Qp	LC1 + 0.6*LC2 + 0.6*LC3	1	1.00	LC1	Lastna, stalna teža
			2	0.60	LC2	Obtežba 1
			3	0.60	LC3	Obtežba 2
CO28	S Qp	LC1 + 0.6*LC2 + 0.6*LC3 + 0.6*LC4	1	1.00	LC1	Lastna, stalna teža
			2	0.60	LC2	Obtežba 1
			3	0.60	LC3	Obtežba 2
			4	0.60	LC4	Obtežba 3
CO29	S Qp	LC1 + 0.6*LC2 + 0.6*LC4	1	1.00	LC1	Lastna, stalna teža
			2	0.60	LC2	Obtežba 1
			3	0.60	LC4	Obtežba 3
CO30	S Qp	LC1 + 0.6*LC3	1	1.00	LC1	Lastna, stalna teža
			2	0.60	LC3	Obtežba 2
CO31	S Qp	LC1 + 0.6*LC3 + 0.6*LC4	1	1.00	LC1	Lastna, stalna teža
			2	0.60	LC3	Obtežba 2
			3	0.60	LC4	Obtežba 3
CO32	S Qp	LC1 + 0.6*LC4	1	1.00	LC1	Lastna, stalna teža
			2	0.60	LC4	Obtežba 3

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
CO1	1.35*LC1	Method of analysis	: <input checked="" type="radio"/> Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	: <input checked="" type="radio"/> Picard
		Options	: <input checked="" type="checkbox"/> Consider favorable effects due to tension
			: <input checked="" type="checkbox"/> Refer internal forces to deformed system for:
			<input checked="" type="checkbox"/> Normal forces N
			<input checked="" type="checkbox"/> Shear forces V _y and V _z

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2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Moments M_y, M_z and M_T <input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO2	1.35*LC1 + 1.5*LC2	Method of analysis Method for solving system of nonlinear algebraic equations Options	<input checked="" type="checkbox"/> Second order analysis (P-Delta) <input checked="" type="checkbox"/> Picard <input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y, M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO3	1.35*LC1 + 1.5*LC2 + 1.5*LC3	Method of analysis Method for solving system of nonlinear algebraic equations Options	<input checked="" type="checkbox"/> Second order analysis (P-Delta) <input checked="" type="checkbox"/> Picard <input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y, M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO4	1.35*LC1 + 1.5*LC2 + 1.5*LC3 + 1.5*LC4	Method of analysis Method for solving system of nonlinear algebraic equations Options	<input checked="" type="checkbox"/> Second order analysis (P-Delta) <input checked="" type="checkbox"/> Picard <input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y, M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO5	1.35*LC1 + 1.5*LC2 + 1.5*LC4	Method of analysis Method for solving system of nonlinear algebraic equations Options	<input checked="" type="checkbox"/> Second order analysis (P-Delta) <input checked="" type="checkbox"/> Picard <input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y, M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO6	1.35*LC1 + 1.5*LC3	Method of analysis Method for solving system of nonlinear algebraic equations Options	<input checked="" type="checkbox"/> Second order analysis (P-Delta) <input checked="" type="checkbox"/> Picard <input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y, M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO7	1.35*LC1 + 1.5*LC3 + 1.5*LC4	Method of analysis Method for solving system of nonlinear algebraic equations Options	<input checked="" type="checkbox"/> Second order analysis (P-Delta) <input checked="" type="checkbox"/> Picard <input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y, M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO8	1.35*LC1 + 1.5*LC4	Method of analysis Method for solving system of nonlinear algebraic equations Options	<input checked="" type="checkbox"/> Second order analysis (P-Delta) <input checked="" type="checkbox"/> Picard <input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y, M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) <input checked="" type="checkbox"/> Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO9	LC1	Method of analysis Method for solving system of nonlinear algebraic equations Options	<input checked="" type="checkbox"/> Second order analysis (P-Delta) <input checked="" type="checkbox"/> Picard <input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y, M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M)

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■ 2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters
		: <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO10	LC1 + LC2	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : <input checked="" type="radio"/> Picard Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V _y and V _z <input checked="" type="checkbox"/> Moments M _y , M _z and M _T Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γM) : <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO11	LC1 + LC2 + LC3	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : <input checked="" type="radio"/> Picard Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V _y and V _z <input checked="" type="checkbox"/> Moments M _y , M _z and M _T Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γM) : <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO12	LC1 + LC2 + LC3 + LC4	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : <input checked="" type="radio"/> Picard Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V _y and V _z <input checked="" type="checkbox"/> Moments M _y , M _z and M _T Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γM) : <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO13	LC1 + LC2 + LC4	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : <input checked="" type="radio"/> Picard Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V _y and V _z <input checked="" type="checkbox"/> Moments M _y , M _z and M _T Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γM) : <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO14	LC1 + LC3	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : <input checked="" type="radio"/> Picard Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V _y and V _z <input checked="" type="checkbox"/> Moments M _y , M _z and M _T Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γM) : <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO15	LC1 + LC3 + LC4	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : <input checked="" type="radio"/> Picard Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V _y and V _z <input checked="" type="checkbox"/> Moments M _y , M _z and M _T Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γM) : <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO16	LC1 + LC4	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : <input checked="" type="radio"/> Picard Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V _y and V _z <input checked="" type="checkbox"/> Moments M _y , M _z and M _T Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γM) : <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO17	LC1	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : <input checked="" type="radio"/> Picard Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V _y and V _z <input checked="" type="checkbox"/> Moments M _y , M _z and M _T Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γM) : <input checked="" type="checkbox"/> Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : <input checked="" type="checkbox"/> Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO18	LC1 + 0.7*LC2	Method of analysis : <input checked="" type="radio"/> Second order analysis (P-Delta)

Project: Vodna skulptura

Model: 3D model skulpture

Date: 2.5.2018

■ 2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters
		Method for solving system of nonlinear algebraic equations : • Picard Options : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V _y and V _z ☒ Moments M _y , M _z and M _T Activate stiffness factors of: : ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I _{yy} , I _{zz} , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO19	LC1 + 0.7*LC2 + 0.7*LC3	Method of analysis : • Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : • Picard Options : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V _y and V _z ☒ Moments M _y , M _z and M _T Activate stiffness factors of: : ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I _{yy} , I _{zz} , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO20	LC1 + 0.7*LC2 + 0.7*LC3 + 0.7*LC4	Method of analysis : • Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : • Picard Options : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V _y and V _z ☒ Moments M _y , M _z and M _T Activate stiffness factors of: : ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I _{yy} , I _{zz} , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO21	LC1 + 0.7*LC2 + 0.7*LC4	Method of analysis : • Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : • Picard Options : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V _y and V _z ☒ Moments M _y , M _z and M _T Activate stiffness factors of: : ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I _{yy} , I _{zz} , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO22	LC1 + 0.7*LC3	Method of analysis : • Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : • Picard Options : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V _y and V _z ☒ Moments M _y , M _z and M _T Activate stiffness factors of: : ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I _{yy} , I _{zz} , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO23	LC1 + 0.7*LC3 + 0.7*LC4	Method of analysis : • Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : • Picard Options : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V _y and V _z ☒ Moments M _y , M _z and M _T Activate stiffness factors of: : ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I _{yy} , I _{zz} , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO24	LC1 + 0.7*LC4	Method of analysis : • Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : • Picard Options : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V _y and V _z ☒ Moments M _y , M _z and M _T Activate stiffness factors of: : ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I _{yy} , I _{zz} , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO25	LC1	Method of analysis : • Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : • Picard Options : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V _y and V _z ☒ Moments M _y , M _z and M _T Activate stiffness factors of: : ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I _{yy} , I _{zz} , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)
CO26	LC1 + 0.6*LC2	Method of analysis : • Second order analysis (P-Delta) Method for solving system of nonlinear algebraic equations : • Picard

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
		Options	<input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y , M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J , I_y , I_z , A , A_y , A_z) <input checked="" type="checkbox"/> Members (factor for GJ , EI_y , EI_z , EA , GA_y , GA_z)
CO27	LC1 + 0.6*LC2 + 0.6*LC3	Method of analysis	<input checked="" type="radio"/> Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	<input checked="" type="radio"/> Picard
		Options	<input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y , M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J , I_y , I_z , A , A_y , A_z) <input checked="" type="checkbox"/> Members (factor for GJ , EI_y , EI_z , EA , GA_y , GA_z)
CO28	LC1 + 0.6*LC2 + 0.6*LC3 + 0.6*LC4	Method of analysis	<input checked="" type="radio"/> Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	<input checked="" type="radio"/> Picard
		Options	<input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y , M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J , I_y , I_z , A , A_y , A_z) <input checked="" type="checkbox"/> Members (factor for GJ , EI_y , EI_z , EA , GA_y , GA_z)
CO29	LC1 + 0.6*LC2 + 0.6*LC4	Method of analysis	<input checked="" type="radio"/> Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	<input checked="" type="radio"/> Picard
		Options	<input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y , M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J , I_y , I_z , A , A_y , A_z) <input checked="" type="checkbox"/> Members (factor for GJ , EI_y , EI_z , EA , GA_y , GA_z)
CO30	LC1 + 0.6*LC3	Method of analysis	<input checked="" type="radio"/> Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	<input checked="" type="radio"/> Picard
		Options	<input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y , M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J , I_y , I_z , A , A_y , A_z) <input checked="" type="checkbox"/> Members (factor for GJ , EI_y , EI_z , EA , GA_y , GA_z)
CO31	LC1 + 0.6*LC3 + 0.6*LC4	Method of analysis	<input checked="" type="radio"/> Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	<input checked="" type="radio"/> Picard
		Options	<input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y , M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J , I_y , I_z , A , A_y , A_z) <input checked="" type="checkbox"/> Members (factor for GJ , EI_y , EI_z , EA , GA_y , GA_z)
CO32	LC1 + 0.6*LC4	Method of analysis	<input checked="" type="radio"/> Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	<input checked="" type="radio"/> Picard
		Options	<input checked="" type="checkbox"/> Consider favorable effects due to tension <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <input checked="" type="checkbox"/> Normal forces N <input checked="" type="checkbox"/> Shear forces V_y and V_z <input checked="" type="checkbox"/> Moments M_y , M_z and M_T
		Activate stiffness factors of:	<input checked="" type="checkbox"/> Materials (partial factor γ_M) <input checked="" type="checkbox"/> Cross-sections (factor for J , I_y , I_z , A , A_y , A_z) <input checked="" type="checkbox"/> Members (factor for GJ , EI_y , EI_z , EA , GA_y , GA_z)

2.7 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	ULS (STR/GEO) - Permanent / transient - Eq. 6.10	CO1/p or to CO8
RC2	SLS - Characteristic	CO9/p or to CO16
RC3	SLS - Frequent	CO17/p or to CO24
RC4	SLS - Quasi-permanent	CO25/p or to CO32

Project: Vodna skulptura

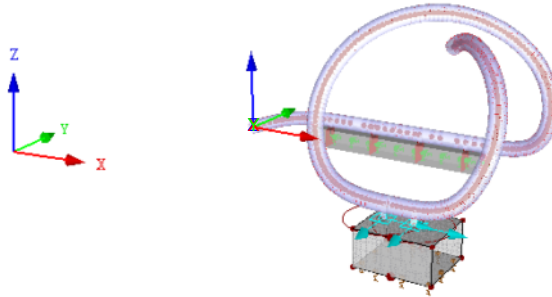
Model: 3D_model_skulpture

Date: 2.5.2018

■ LC1: LASTNA, STALNA TEŽA

LC 1: Lastna, stalna teža

Perspective

■ 3.1 NODAL LOADS - BY COMPONENTS
- COORDINATE SYSTEM

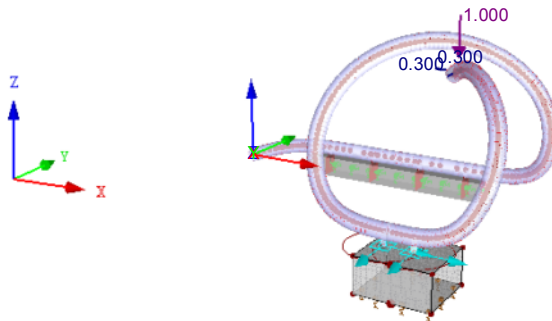
LC2: Obtezba 1

No.	On Nodes No.	Coordinate System	Force [kN]			Moment [kNm]		
			P_x / P_u	P_y / P_v	P_z / P_w	M_x / M_u	M_y / M_v	M_z / M_w
1	318	0 Global XYZ	0.300	0.300	-1.000	0.000	0.000	0.000

■ LC2: OBTEZBA 1

LC 2: Obtezba 1
Loads [kN]

Perspective

■ 3.1 NODAL LOADS - BY COMPONENTS
- COORDINATE SYSTEM

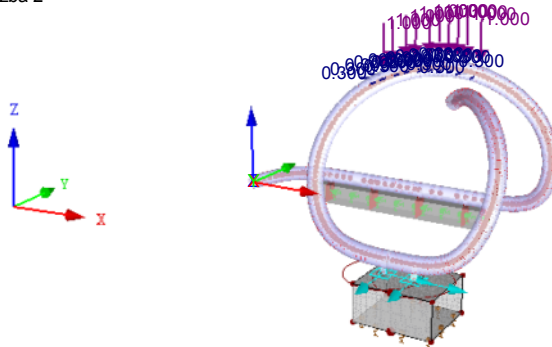
LC3: Obtezba 2

No.	On Nodes No.	Coordinate System	Force [kN]			Moment [kNm]		
			P_x / P_u	P_y / P_v	P_z / P_w	M_x / M_u	M_y / M_v	M_z / M_w
1	120,123,125,127, 129,131,134,136, 139,141	0 Global XYZ	0.300	0.300	-1.000	0.000	0.000	0.000

■ LC3: OBTEZBA 2

LC 3: Obtezba 2
Loads [kN]

Perspective

LC2
Obtezba 1LC3
Obtezba 2

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

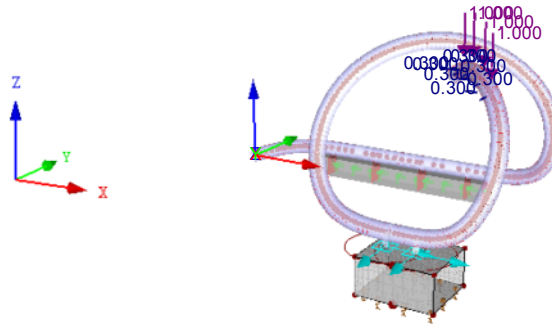
LC4: Obtezba 3

No.	On Nodes No.	Coordinate System	Force [kN]			Moment [kNm]		
			P_X / P_U	P_Y / P_V	P_Z / P_W	M_X / M_U	M_Y / M_V	M_Z / M_W
1	287,295,306,315	0 Global XYZ	0.300	0.300	-1.000	0.000	0.000	0.000

LC4: OBTEZBA 3

LC 4: Obtezba 3
Loads [kN]

Perspective



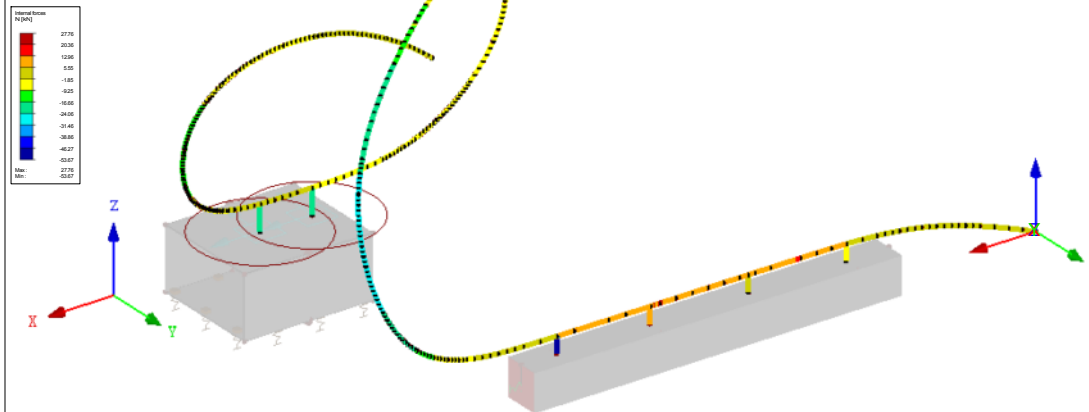
INTERNAL FORCES N

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Internal Forces N

Result Combinations: Max and Min Values

Isometric



Members Max N: 27.76, Min N: -53.67 [kN]

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

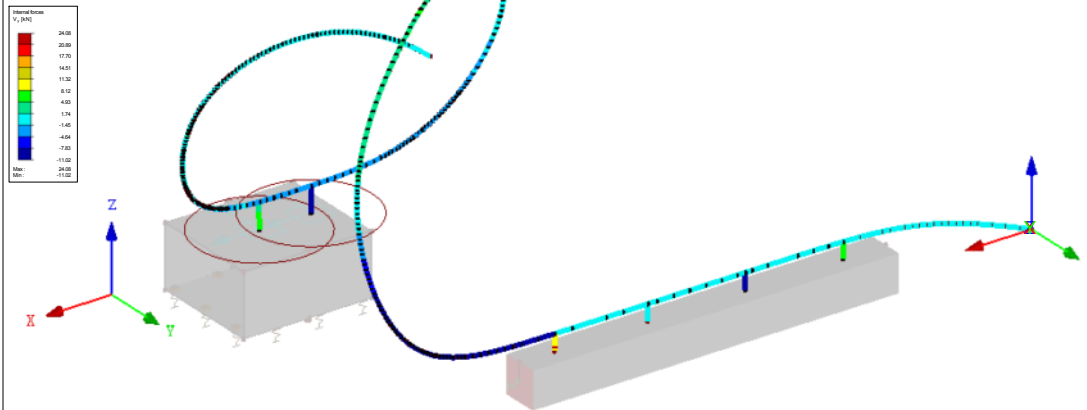
INTERNAL FORCES V_y

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Internal Forces V-y

Result Combinations: Max and Min Values

Isometric



Project: Vodna skulptura

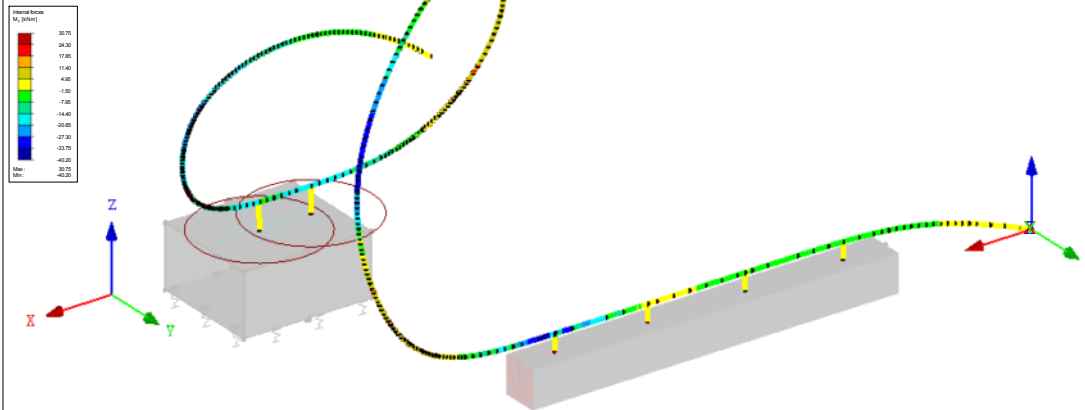
Model: 3D_model_skulpture

Date: 2.5.2018

INTERNAL FORCES M_y

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10
 Members Internal Forces M_y
 Result Combinations: Max and Min Values

Isometric

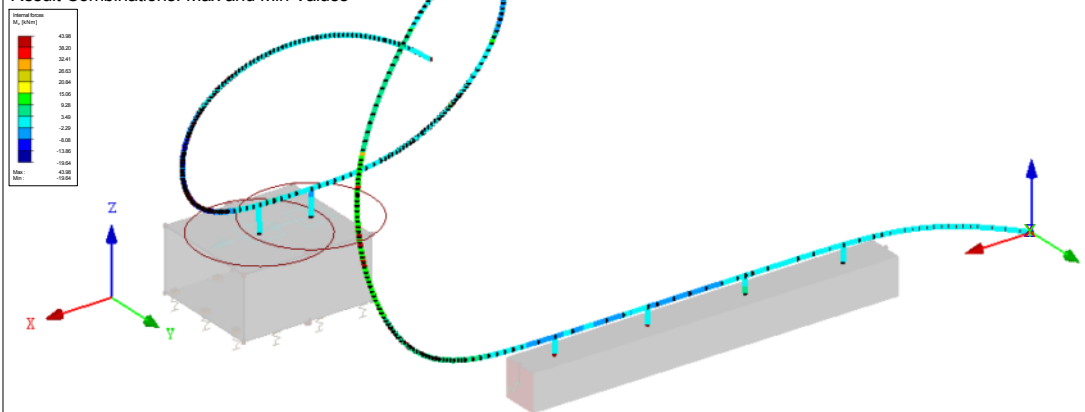


Members Max M_y : 30.75, Min M_y : -40.20 [kNm]

INTERNAL FORCES M_z

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10
 Members Internal Forces M_z
 Result Combinations: Max and Min Values

Isometric

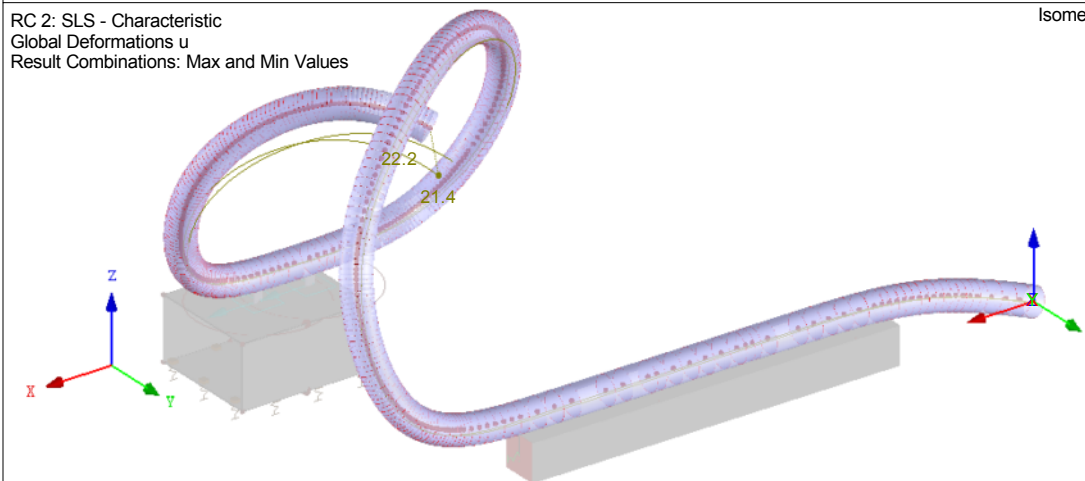


Members Max M_z : 43.98, Min M_z : -19.64 [kNm]

GLOBAL DEFORMATIONS u

RC 2: SLS - Characteristic
 Global Deformations u
 Result Combinations: Max and Min Values

Isometric



Max u : 22.2, Min u : 0.5 [mm]
 Factor of deformations: 31.00

Project: Vodna skulptura

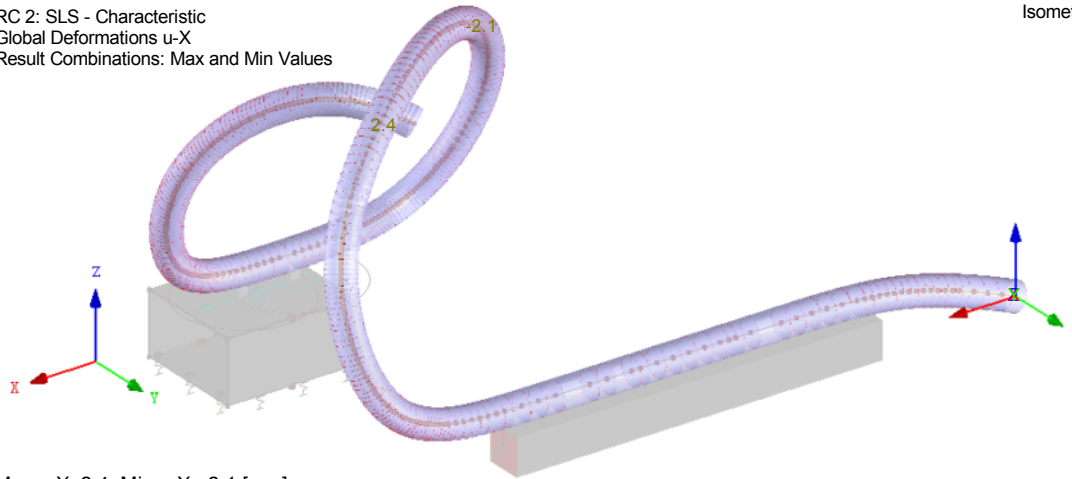
Model: 3D_model_skulpture

Date: 2.5.2018

GLOBAL DEFORMATIONS u_x

RC 2: SLS - Characteristic
Global Deformations u-X
Result Combinations: Max and Min Values

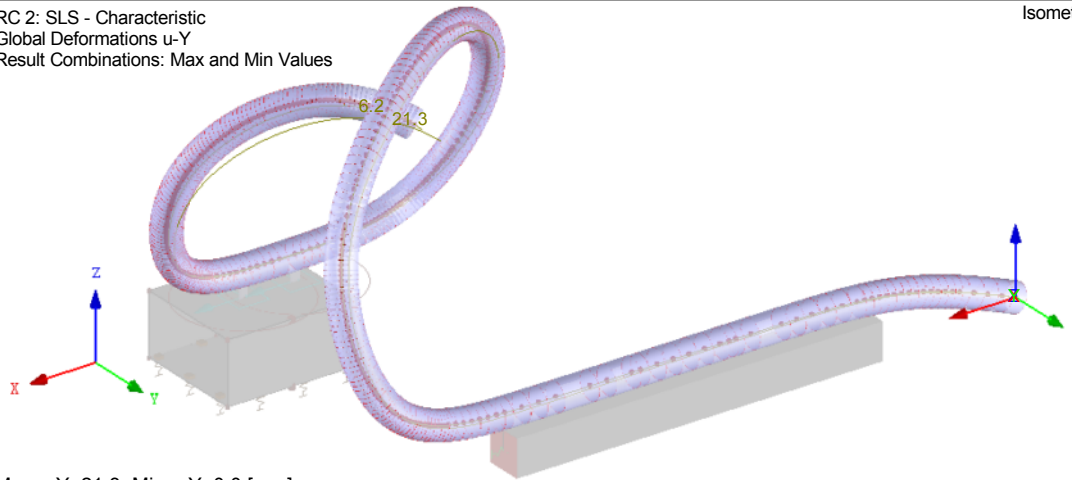
Isometric



GLOBAL DEFORMATIONS u_y

RC 2: SLS - Characteristic
Global Deformations u-Y
Result Combinations: Max and Min Values

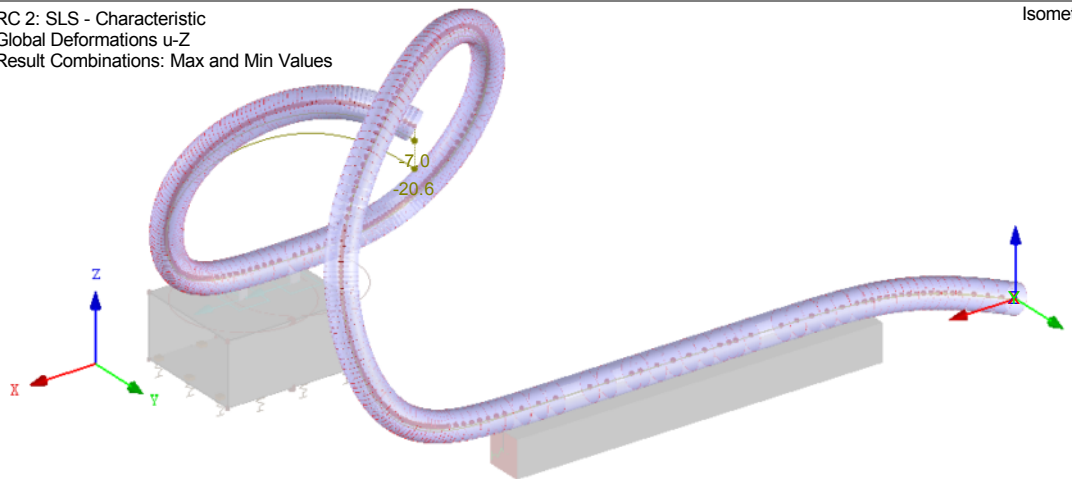
Isometric



GLOBAL DEFORMATIONS u_z

RC 2: SLS - Characteristic
Global Deformations u-Z
Result Combinations: Max and Min Values

Isometric



Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

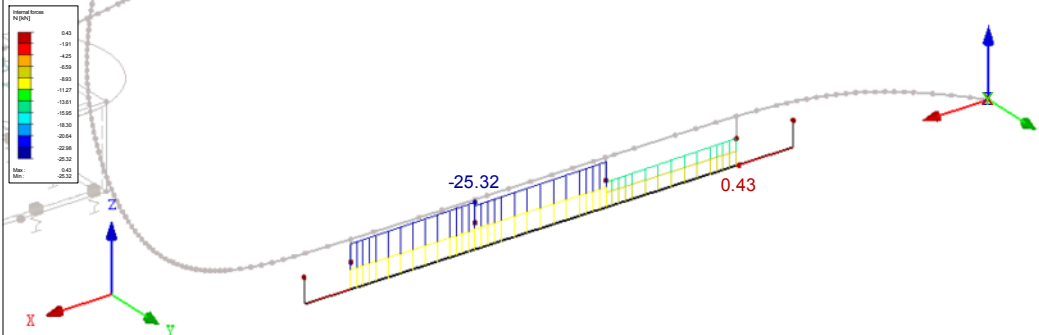
INTERNAL FORCES N

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Internal Forces N

Result Combinations: Max and Min Values

Isometric



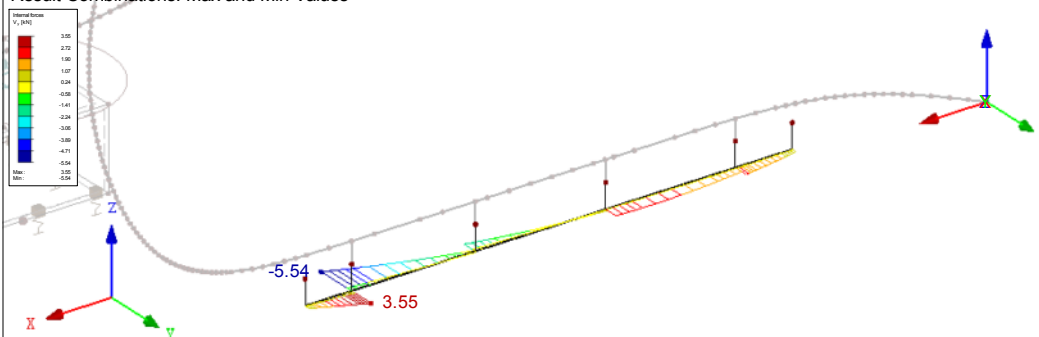
INTERNAL FORCES V_y

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Internal Forces V-y

Result Combinations: Max and Min Values

Isometric



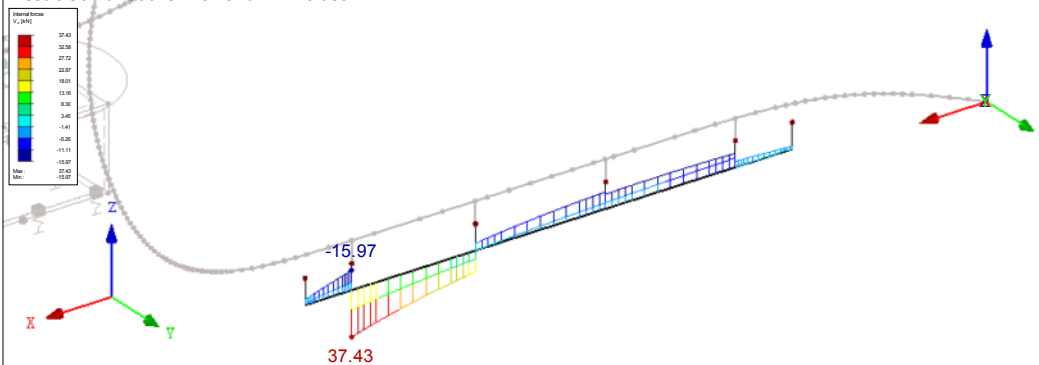
INTERNAL FORCES V_z

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Internal Forces V-z

Result Combinations: Max and Min Values

Isometric



Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

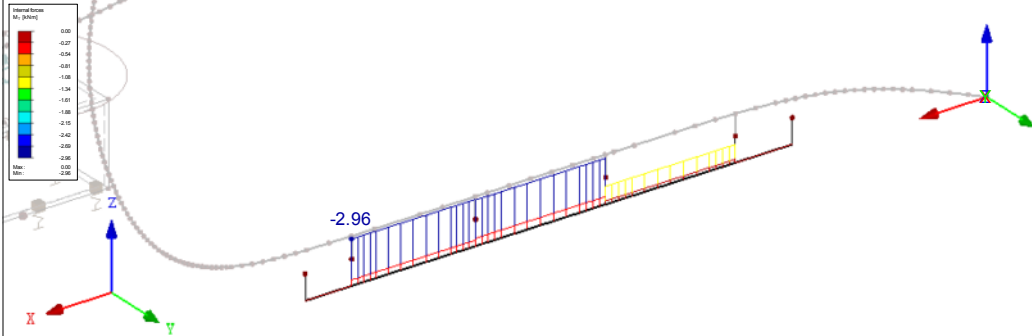
INTERNAL FORCES M_T

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Internal Forces M-T

Result Combinations: Max and Min Values

Isometric

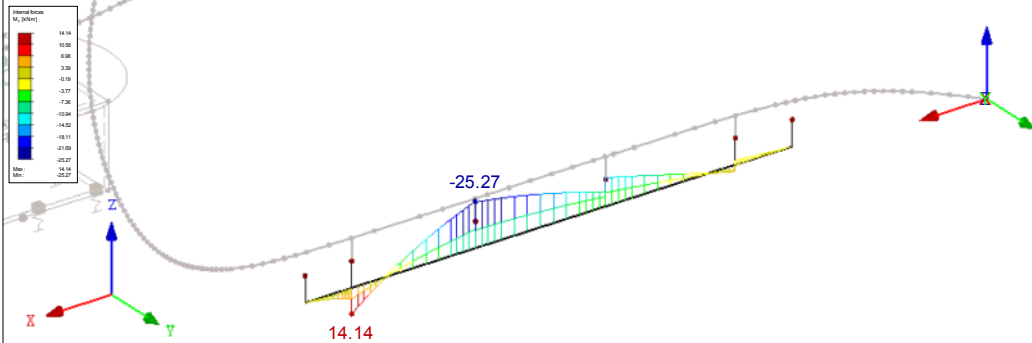
**INTERNAL FORCES M_y**

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Internal Forces M-y

Result Combinations: Max and Min Values

Isometric

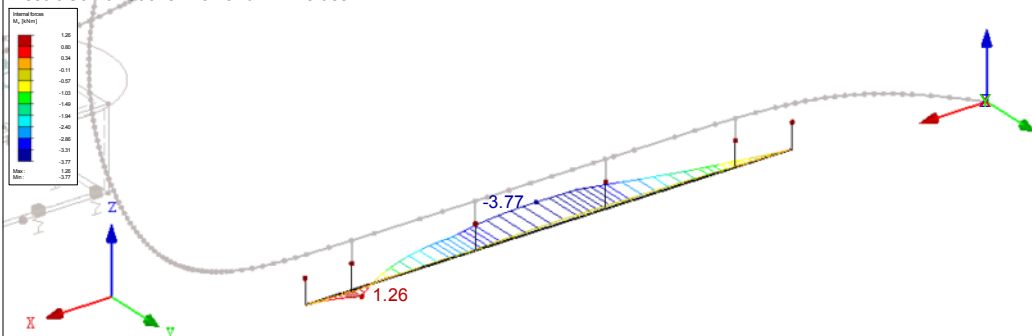
**INTERNAL FORCES M_z**

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Internal Forces M-z

Result Combinations: Max and Min Values

Isometric



Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

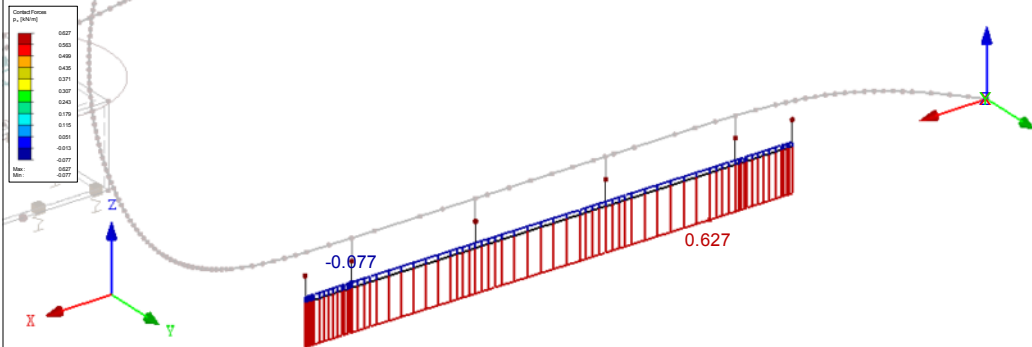
CONTACT FORCES p_x

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Contact Forces p-x

Result Combinations: Max and Min Values

Isometric



Members Max p-x: 0.627, Min p-x: -0.077 [kN/m]

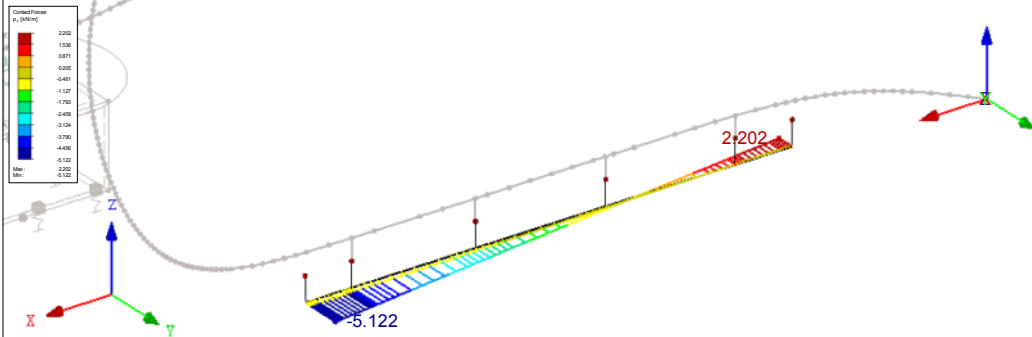
CONTACT FORCES p_y

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Contact Forces p-y

Result Combinations: Max and Min Values

Isometric



Members Max p-y: 2.202, Min p-y: -5.122 [kN/m]

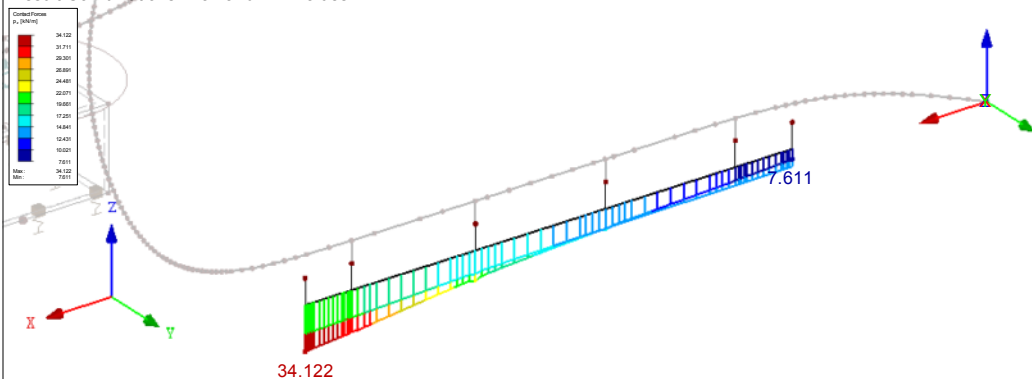
CONTACT FORCES p_z

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Contact Forces p-z

Result Combinations: Max and Min Values

Isometric



Members Max p-z: 34.122, Min p-z: 7.611 [kN/m]

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

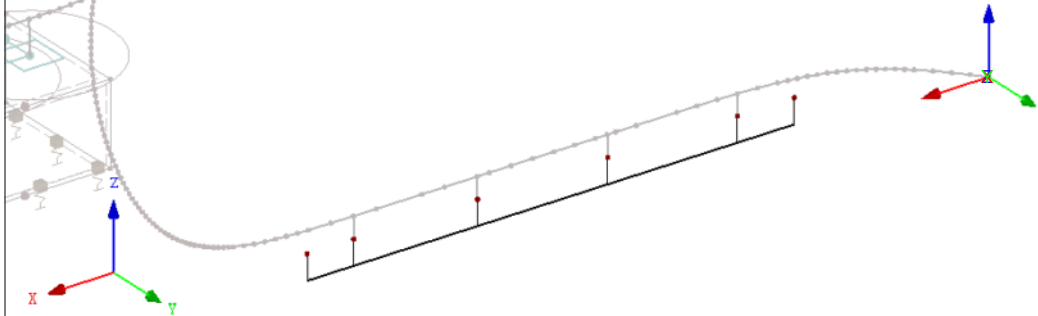
CONTACT FORCES m_x

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Contact Forces m-x

Result Combinations: Max and Min Values

Isometric



Members Max m-x: 0.000, Min m-x: 0.000 [kNm/m]

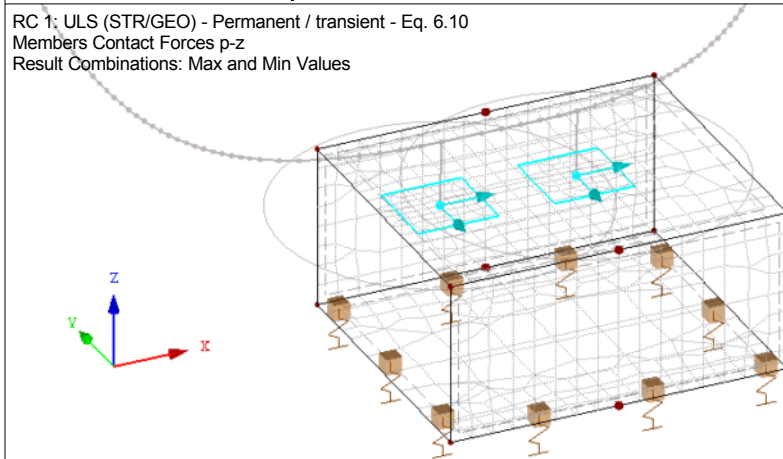
CONTACT FORCES p_z

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Members Contact Forces p-z

Result Combinations: Max and Min Values

Isometric



Members Max p-z: -, Min p-z: -

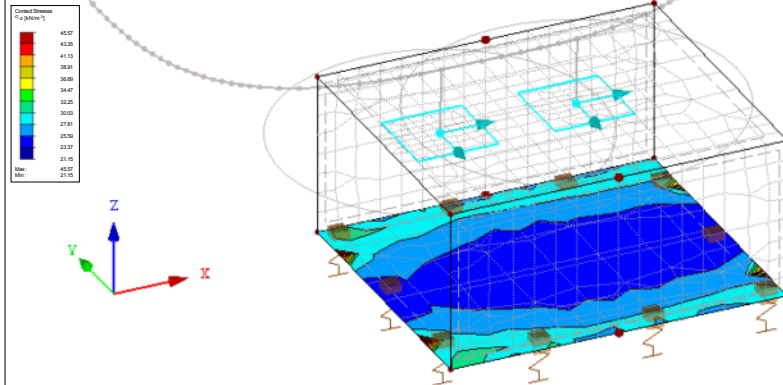
CONTACT STRESSES σ_z

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Surfaces Contact Stresses Sigma-z

Result Combinations: Max and Min Values

Isometric

Surfaces Max Sigma-z: 45.57, Min Sigma-z: 21.15 [kN/m²]

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

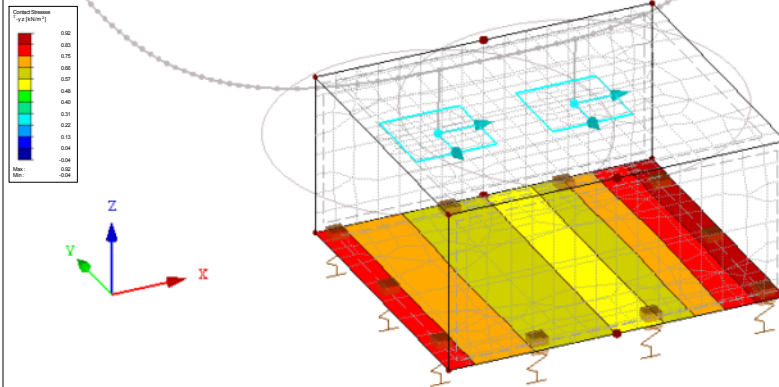
CONTACT STRESSES τ_{yz}

RC 1; ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Surfaces Contact Stresses Tau-yz

Result Combinations: Max and Min Values

Isometric



Surfaces Max Tau-yz: 0.92, Min Tau-yz: -0.04 [kN/m²]

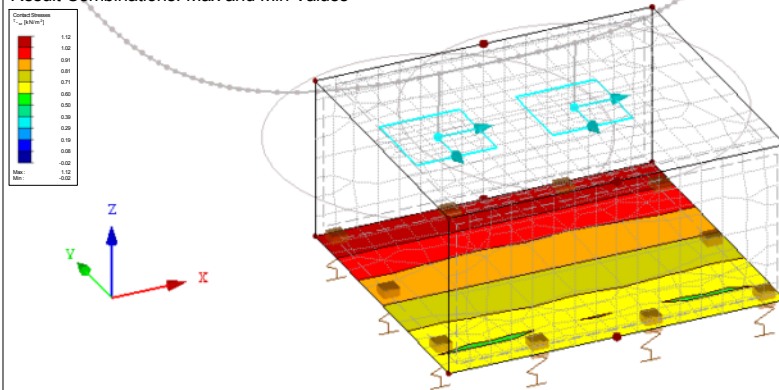
CONTACT STRESSES τ_{xz}

RC 1; ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Surfaces Contact Stresses Tau-xz

Result Combinations: Max and Min Values

Isometric



Surfaces Max Tau-xz: 1.12, Min Tau-xz: -0.02 [kN/m²]

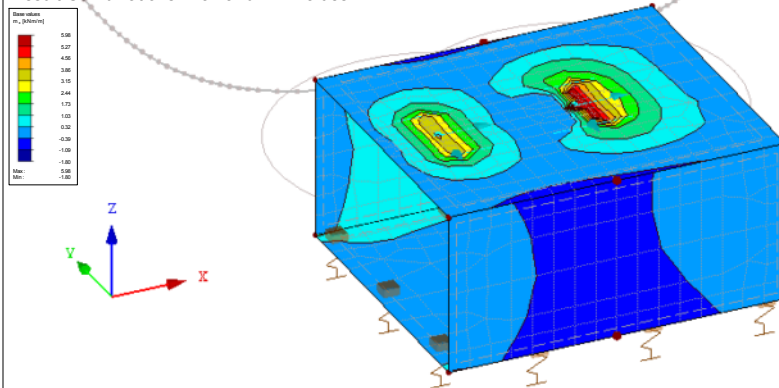
BASE VALUES m_x

RC 1; ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Surfaces Basic Internal Forces m-x

Result Combinations: Max and Min Values

Isometric



Surfaces Max m-x: 5.98, Min m-x: -1.80 [kNm/m]

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

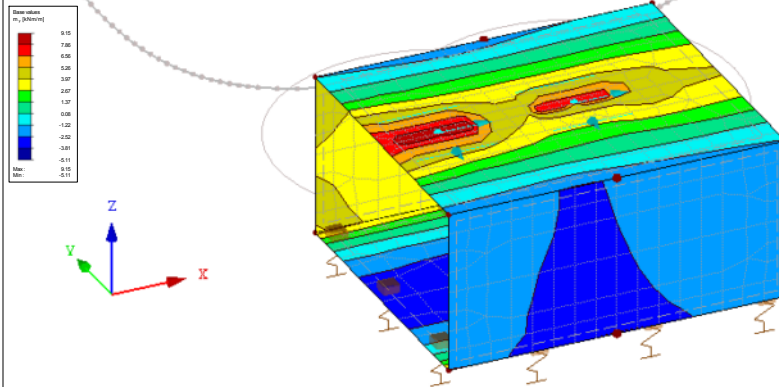
BASE VALUES m_y

RC 1; ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Surfaces Basic Internal Forces m_y

Result Combinations: Max and Min Values

Isometric

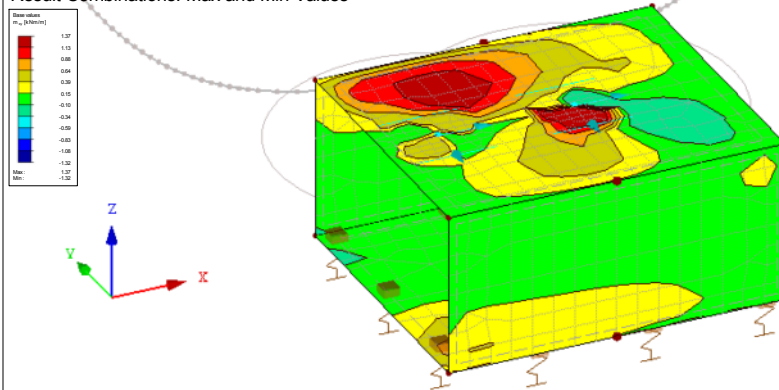
Surfaces Max m_y : 9.15, Min m_y : -5.11 [kNm/m]**BASE VALUES m_{xy}**

RC 1; ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Surfaces Basic Internal Forces m_{xy}

Result Combinations: Max and Min Values

Isometric

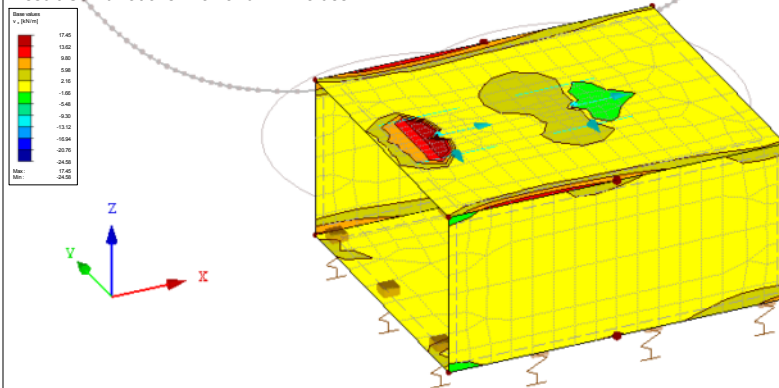
Surfaces Max m_{xy} : 1.37, Min m_{xy} : -1.32 [kNm/m]**BASE VALUES v_x**

RC 1; ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Surfaces Basic Internal Forces v_x

Result Combinations: Max and Min Values

Isometric

Surfaces Max v_x : 17.45, Min v_x : -24.58 [kN/m]

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

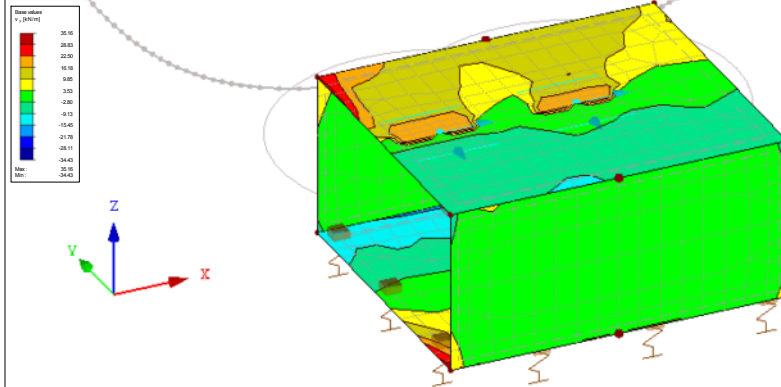
■ BASE VALUES v_y

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Surfaces Basic Internal Forces v-y

Result Combinations: Max and Min Values

Isometric



Surfaces Max v-y: 35.16, Min v-y: -34.43 [kN/m]

RF-STEEL Members

CA1

General stress analysis
of steel members

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.1.1 GENERAL DATA

Members to design:	All
Load cases to design:	LC1 Lastna, stalna teža
	LC2 Obtežba 1
	LC3 Obtežba 2
	LC4 Obtežba 3
Load combinations to design:	CO1 1.35*LC1
	CO2 1.35*LC1 + 1.5*LC2
	CO3 1.35*LC1 + 1.5*LC2 + 1.5*LC3
	CO4 1.35*LC1 + 1.5*LC2 + 1.5*LC3 + 1.5*LC4
	CO5 1.35*LC1 + 1.5*LC2 + 1.5*LC4
	CO6 1.35*LC1 + 1.5*LC3
	CO7 1.35*LC1 + 1.5*LC3 + 1.5*LC4
	CO8 1.35*LC1 + 1.5*LC4
	CO9 LC1
	CO10 LC1 + LC2
	CO11 LC1 + LC2 + LC3
	CO12 LC1 + LC2 + LC3 + LC4
	CO13 LC1 + LC2 + LC4
	CO14 LC1 + LC3
	CO15 LC1 + LC3 + LC4
	CO16 LC1 + LC4
	CO17 LC1
	CO18 LC1 + 0.7*LC2
	CO19 LC1 + 0.7*LC2 + 0.7*LC3
	CO20 LC1 + 0.7*LC2 + 0.7*LC3 + 0.7*LC4
	CO21 LC1 + 0.7*LC2 + 0.7*LC4
	CO22 LC1 + 0.7*LC3
	CO23 LC1 + 0.7*LC3 + 0.7*LC4
	CO24 LC1 + 0.7*LC4
	CO25 LC1
	CO26 LC1 + 0.6*LC2
	CO27 LC1 + 0.6*LC2 + 0.6*LC3
	CO28 LC1 + 0.6*LC2 + 0.6*LC3 + 0.6*LC4
	CO29 LC1 + 0.6*LC2 + 0.6*LC4
	CO30 LC1 + 0.6*LC3
	CO31 LC1 + 0.6*LC3 + 0.6*LC4
	CO32 LC1 + 0.6*LC4
Result combinations to design:	RC1 ULS (STR/GEO) - Permanent / transient - Eq. 6.10
	RC2 SLS - Characteristic
	RC3 SLS - Frequent
	RC4 SLS - Quasi-permanent

1.2 MATERIALS

Matl. No.	Material Description	Safety Factor γ_M [-]	Yield Strength f_{yk} [kN/cm ²]	Limit Stresses [kN/cm ²]	Limit σ_x	Limit τ	Limit σ_{eqv}
1	S 235 1.4404 (Cold Rolled Strip, for Calculation of Imposed Internal Forces)	1.00	24.00	<input type="checkbox"/>	24.00	13.86	24.00

1.3.1 CROSS-SECTIONS

Sect. No.	Matl. No.	Cross-section Description	I_x [cm ⁴] A [cm ²]	I_y [cm ⁴] $\alpha_{pl,y}$	I_z [cm ⁴] $\alpha_{pl,z}$	Comment
1	1	RO 457.0x8.0 (Hot Formed)	56900.00 113.00	28450.00 1.30	28450.00 1.30	Layer 04
The cross-section in RFEM is different from that in RF-STEEL Members.						
2	1	FL 150x25 DIN 1017-1	69.92 37.50	19.53 1.50	703.13 1.50	
3	2	Rectangle 600/600	1.823E+06 3600.00	1.080E+06 1.50	1.080E+06 1.50	
The section cannot be designed because the characteristic stresses are invalid!						

RO 457.0x8.0 (Hot Formed)



Rectangle 600/600



2.1 STRESSES BY CROSS-SECTION

Sect. No.	Member No.	Location x [m]	S-Point No.	Load Case	Stress Type	Stress [kN/cm ²]	Stress Ratio
1	RO 457.0x8.0 (Hot Formed) - Layer 04						
	90	0.070	35	CO4	Sigma Total	-3.82	0.16
	214	0.000	18	CO4	Tau Total	-1.83	0.13
	90	0.070	35	CO4	Sigma-eqv	3.83	0.16
2	FL 150x25 DIN 1017-1						
	341	0.257	3	CO4	Sigma Total	-19.28	0.80
	339	0.000	1	CO3	Tau Total	-0.23	0.02
	341	0.257	3	CO4	Sigma-eqv	19.29	0.80

Project: Vodna skulptura

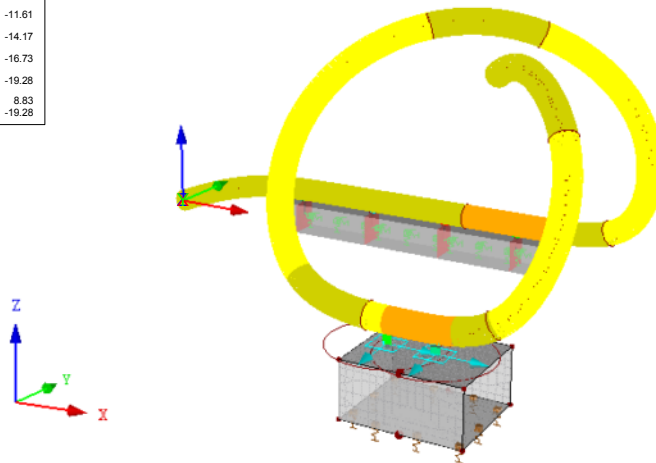
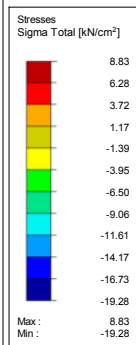
Model: 3D_model_skulpture

Date: 2.5.2018

MODEL

RF-STEEL Members CA1

Perspective

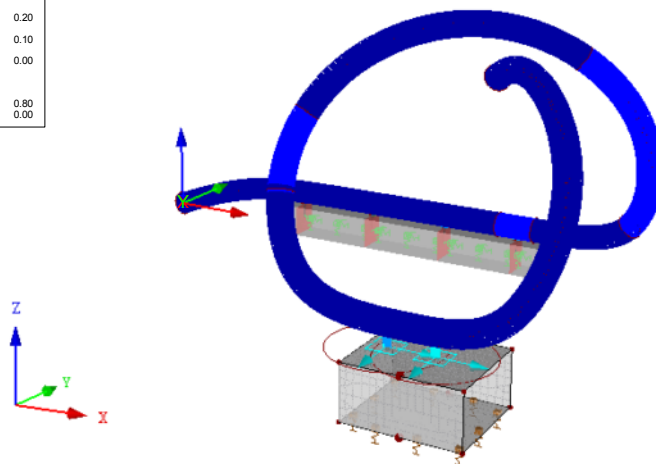
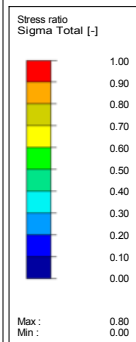


Members Max Sigma Total: 8.83, Min Sigma Total: -19.28 [kN/cm²]

MODEL

RF-STEEL Members CA1

Perspective



Members Max Sigma Total: 0.80, Min Sigma Total: 0.00

Project: Vodna skulptura

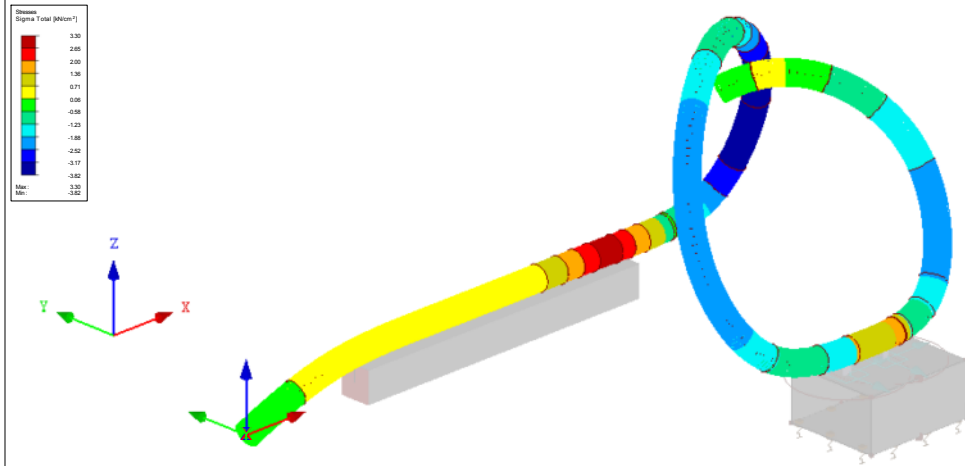
Model: 3D_model_skulpture

Date: 2.5.2018

■ MODEL

RF-STEEL Members CA1

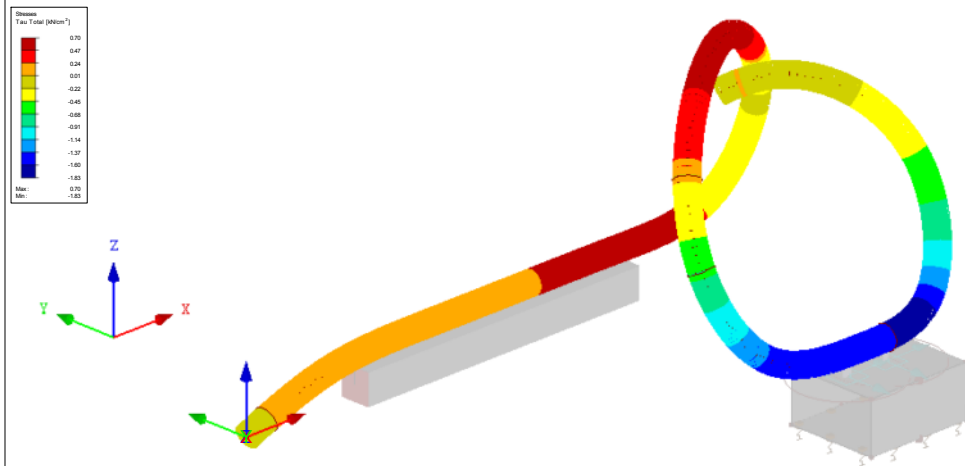
Isometric



■ MODEL

RF-STEEL Members CA1

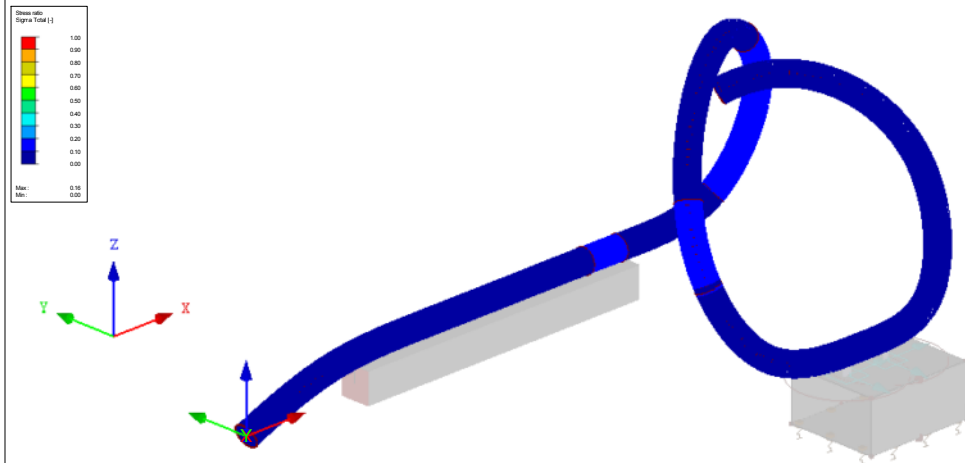
Isometric



■ MODEL

RF-STEEL Members CA1

Isometric



Project: Vodna skulptura

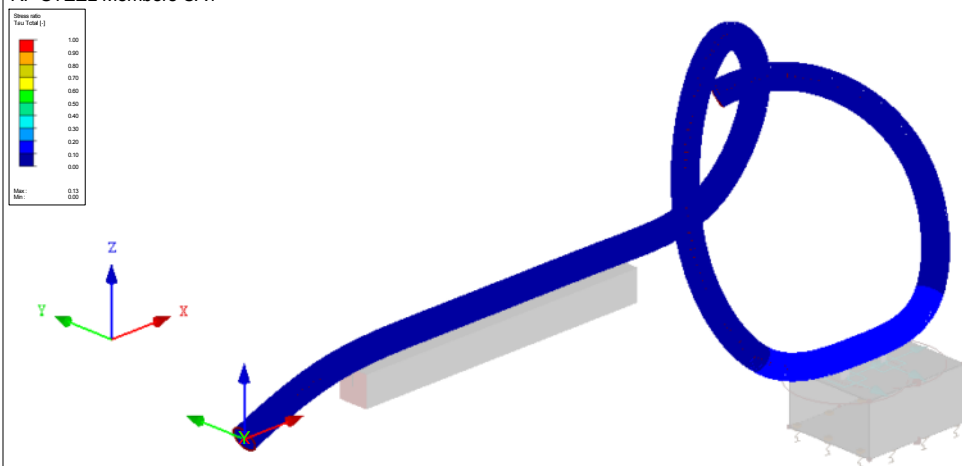
Model: 3D_model_skulpture

Date: 2.5.2018

■ MODEL

RF-STEEL Members CA1

Isometric

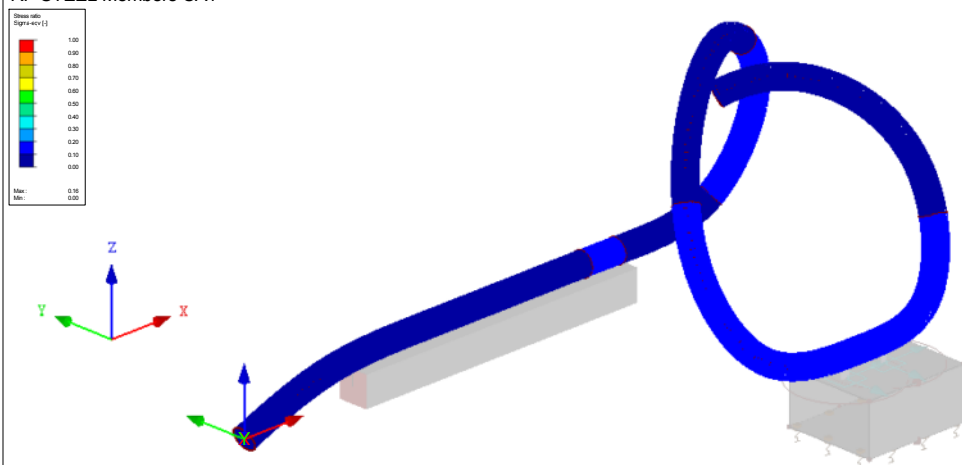


Members Max Tau Total: 0.13, Min Tau Total: 0.00

■ MODEL

RF-STEEL Members CA1

Isometric

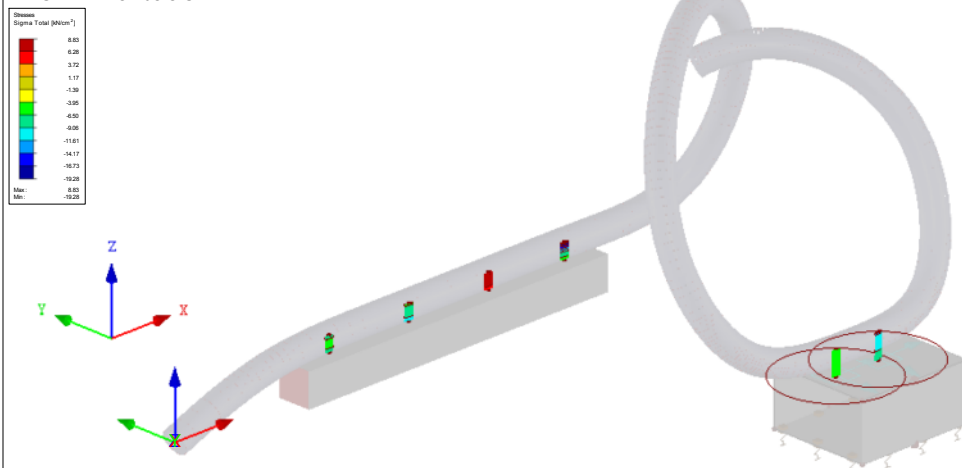


Members Max Sigma-eqv: 0.16, Min Sigma-eqv: 0.00

■ MODEL

RF-STEEL Members CA1

Isometric



Members Max Sigma Total: 8.83, Min Sigma Total: -19.28 [kN/cm²]

Project: Vodna skulptura

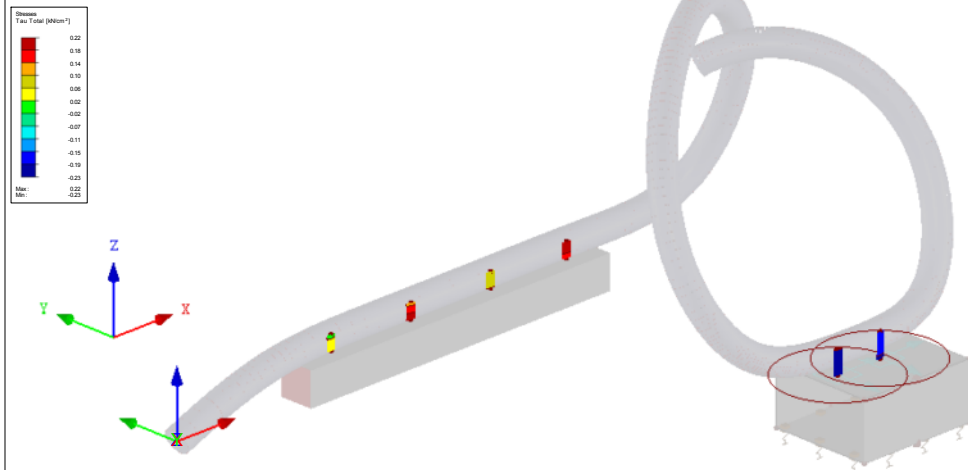
Model: 3D_model_skulpture

Date: 2.5.2018

■ MODEL

RF-STEEL Members CA1

Isometric

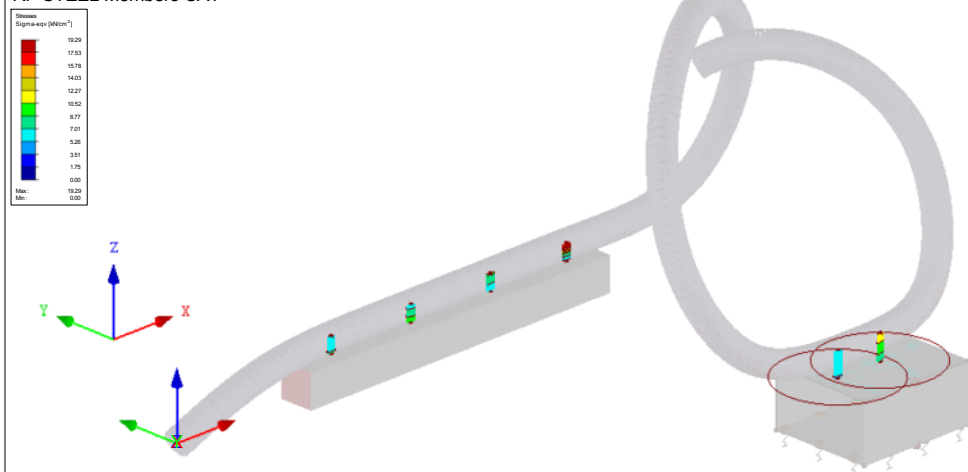


Members Max Tau Total: 0.22, Min Tau Total: -0.23 [kN/cm²]

■ MODEL

RF-STEEL Members CA1

Isometric

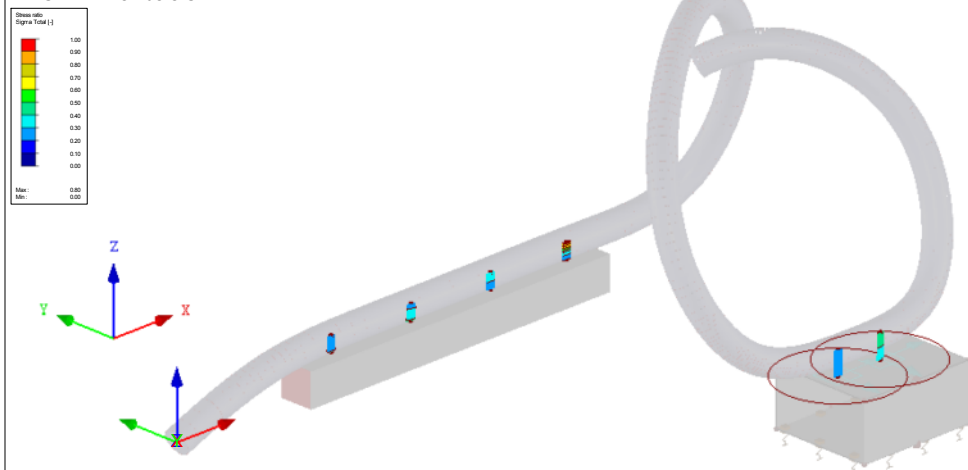


Members Max Sigma-eqv: 19.29, Min Sigma-eqv: 0.00 [kN/cm²]

■ MODEL

RF-STEEL Members CA1

Isometric



Members Max Sigma Total: 0.80, Min Sigma Total: 0.00

Project: Vodna skulptura

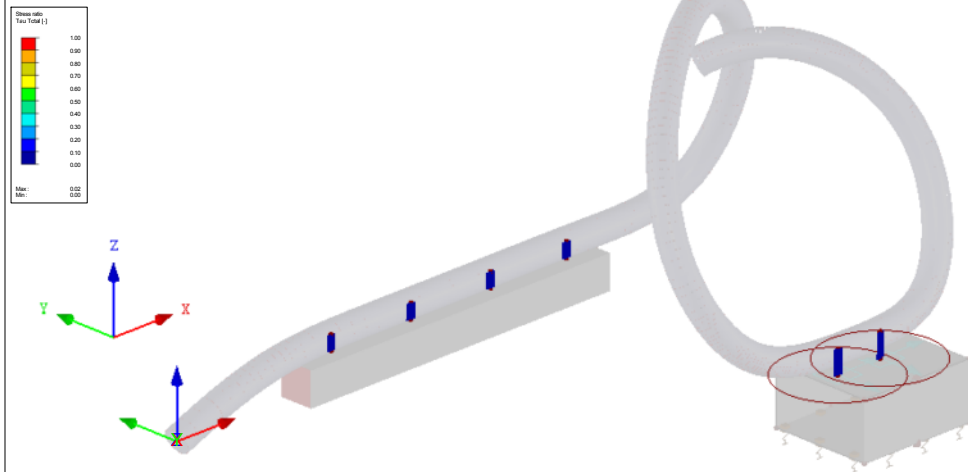
Model: 3D_model_skulpture

Date: 2.5.2018

■ MODEL

RF-STEEL Members CA1

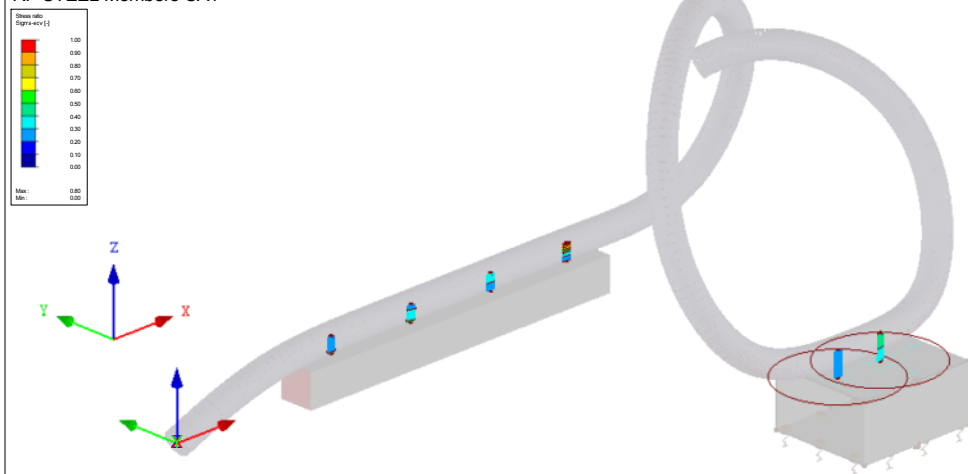
Isometric



■ MODEL

RF-STEEL Members CA1

Isometric



RF-CONCRETE Surfaces
CA1
Reinforced concrete design

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.1 GENERAL DATA

Design according to Standard:		SIST EN 1992-1-1:2005/A101:2006	
ULTIMATE LIMIT STATE			
Result combination for design:	RC1	ULS (STR/GEO) - Permanent / transient - Eq. 6.10 Persistent and Transient	
SERVICEABILITY LIMIT STATE			
Result combination for design:	RC2	SLS - Characteristic Characteristic with direct load, k_1 0.575	
	RC3	SLS - Frequent Frequent, k_1 0.575	
	RC4	SLS - Quasi-permanent Quasi-permanent, k_1 0.575	
Definition of Provided Additional Reinforcement		Automatic arrangement according to the specifications in Table 1.4	
Type of SLS method:		Analytical Method By assuming an identical deformation ratio of the longitudinal reinforcement	
Design of			
Concrete Stress Analysis	<input type="checkbox"/>		
Steel Stress Analysis	<input checked="" type="checkbox"/>		
Crack widths	<input checked="" type="checkbox"/>		
Layout of longitudinal reinforcement			
Required longitudinal reinforcement automatically increased for serviceability limit state design:	<input checked="" type="checkbox"/>		
DETAILS			
Analysis Method for Reinforcement Envelope	Mixed		
Apply the averaged internal forces in the defined average region for the ULS calculation and for the analytic method of SLS calculation.	<input checked="" type="checkbox"/>		
Apply the internal forces without the rib components	<input type="checkbox"/>		
Design Situation Settings for Serviceability Limit State Checks			
Load combination:			
Characteristic with direct load	Checks: $k_1 \cdot f_{ck}$, $k_3 \cdot f_{yk}$		
Characteristic with imposed deformation	Checks: $k_1 \cdot f_{ck}$, $k_4 \cdot f_{yk}$		
Frequent	Checks: w_k		
Quasi-permanent	Checks: $k_2 \cdot f_{ck}$, w_k , u_l		

1.2 MATERIALS

Material No.	Material Description		Comment
	Concrete Strength Class	Steel Description	
2	Concrete C25/30	B 500 S (A)	

1.2.1 MATERIAL PARAMETERS

Material No.	Description	Name	Size	Unit
2	Concrete Strength Class: Concrete C25/30			
	Characteristic Cylinder Compressive Strength	f_{ck}	25.00	N/mm ²
	5 % Fractile of Axial Tensile Strength	$f_{ctk,0.05}$	1.80	N/mm ²
	Characteristic for Nonlinear Calculations			
	Mean Secant Modulus of Elasticity	E_{gm}	31000.00	N/mm ²
	Mean Cylinder Compressive Strength	f_{cm}	33.00	N/mm ²
	Mean Axial Tensile Strength	f_{ctm}	2.60	N/mm ²
	Ultimate Strain for Pure Compression	ϵ_{c1}	-2.100	‰
	Ultimate Strain at Failure	ϵ_{cu}	-3.500	‰
	Shear Modulus	G	12916.70	N/mm ²
	Poisson's Ratio	ν	0.200	-
	Characteristic Strains for Parabolic-Rectangular Diagram			
	Ultimate Strain for Pure Compression	ϵ_{c2}	-2.000	‰
	Ultimate Strain at Failure	ϵ_{cu2}	-3.500	‰
	Parabola Exponent	n	2.000	-
	Specific Weight	γ	25.00	kN/m ³
	Reinforcing Steel: B 500 S (A)			
	Modulus of Elasticity	E_s	200000.00	N/mm ²
	Yield Stress Mean Value	f_{ym}	550.00	N/mm ²
	Characteristic Yield Stress	f_{yk}	500.00	N/mm ²
	Tensile Strength Mean Value	f_{tm}	551.25	N/mm ²
	Characteristic Tensile Strength	f_{tk}	525.00	N/mm ²
	Limiting Strain	ϵ_{uk}	25.000	‰

1.3 SURFACES

Surface No.	Matl. No.	$f_{ct,eff,wk}$ [N/mm ²]	$f_{ct,eff,As,min}$ [N/mm ²]	$w_{k,+z}$ (top) [mm]	$w_{k,-z}$ (bottom) [mm]	Effects due to Restraint		Notes
						Apply	k_c [-]	
1	Thickness Type: Constant, Thickness: 20.00 cm	2	2.60	2.60	0.300 0.300	<input checked="" type="checkbox"/>	0.4	6)
2	Thickness Type: Constant, Thickness: 20.00 cm	2	2.60	2.60	0.300 0.300	<input checked="" type="checkbox"/>	0.4	6)
3	Thickness Type: Constant, Thickness: 20.00 cm	2	2.60	2.60	0.300	<input checked="" type="checkbox"/>	0.4	6)

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.3 SURFACES

Surface No.	Matl. No.	$f_{ct,eff,wk}$ [N/mm ²]	$f_{ct,eff,As,min}$ [N/mm ²]	$w_{k,+z}$ (top) [mm]	Effects due to Restraint		Notes
				$w_{k,-z}$ (bottom) [mm]	Apply	k_c [-]	
4	Thickness Type: Constant, 2	2.60	2.60	Thickness: 20.00 cm	<input checked="" type="checkbox"/>	0.4	6)
				0.300 0.300			

Notes:

6) Calculation of minimum reinforcement for effects due to restraint

1.4 REINFORCEMENT GROUP NO. 1

Applied to surfaces:	All
REINFORCEMENT RATIO	
Minimum secondary reinforcement	20.0 %
Basic minimum reinforcement	0.0 %
Minimum compression reinforcement	0.0 %
Minimum tension reinforcement	0.0 %
Maximum reinforcement percentage	4.0 %
Minimum shear reinforcement percentage	0.0 %
REINFORCEMENT AREA FOR DESIGN OF SLS	
Use provided basic reinforcement and required additional reinforcement acc. to Tables 2.1, 2.2, 2.3	
Concrete cover acc. to Standard	<input type="checkbox"/>
BASIC REINFORCEMENT LAYOUT - TOP (-z)	
Number of directions	2
Cover to rebar centroid	d-1: 3.00, d-2: 3.70 cm
Bar diameter	ds-1: 7.00, ds-2: 7.00 mm
Directions of reinforcement	Phi-1: 0.000°, Phi-2: 90.000°
Reinforcement area	As-1,-z (top): 3.85, As-2,-z (top): 3.85 cm ² /m
BASIC REINFORCEMENT LAYOUT - BOTTOM (+z)	
Number of directions	2
Cover to rebar centroid	d-1: 3.00, d-2: 3.70 cm
Bar diameter	ds-1: 7.00, ds-2: 7.00 mm
Directions of reinforcement	Phi-1: 0.000°, Phi-2: 90.000°
Reinforcement area	As-1,+z (bottom): 3.85, As-2,+z (bottom): 3.85 cm ² /m
ADDITIONAL REINFORCEMENT LAYOUT - TOP (-z)	
Number of directions	2
Cover to rebar centroid	d-1: 3.00, d-2: 4.00 cm
Bar diameter	ds-1: 10.00, ds-2: 10.00 mm
Directions of reinforcement	Phi-1: 0.000°, Phi-2: 90.000°
Reinforcement area	Use required additional reinforcement acc. to Tables 2.1, 2.2, 2.3
ADDITIONAL REINFORCEMENT LAYOUT - BOTTOM (+z)	
Number of directions	2
Cover to rebar centroid	d-1: 3.00, d-2: 4.00 cm
Bar diameter	ds-1: 10.00, ds-2: 10.00 mm
Directions of reinforcement	Phi-1: 0.000°, Phi-2: 90.000°
Reinforcement area	Use required additional reinforcement acc. to Tables 2.1, 2.2, 2.3
LONGITUDINAL REINFORCEMENT FOR SHEAR FORCE DESIGN	
Apply the greater value resulting from either the required or provided reinforcement (basic and add. reinforcement) per reinforcement direction	
OPTIONS FOR SIST EN 1992-1-1:2005/A101:2006	
Minimum longitudinal reinforcement for plates acc. to 9.3.1	<input checked="" type="checkbox"/>
Direction of minimum reinforcement	
Reinforcement direction with the main tensile force from top (-z) and bottom (+z) surfaces together:	<input checked="" type="checkbox"/>
Minimum longitudinal reinforcement for walls acc. to 9.6	<input type="checkbox"/>
Minimum shear reinforcement	<input checked="" type="checkbox"/>
Neutral axis depth limitation	<input checked="" type="checkbox"/>
Variable strut inclination - min	21.801 °
Variable concrete strut inclination - max	45.000 °
Partial safety factor γ_s	PT 1.15, AC 1.00, SLS 1.00
Partial safety factor γ_c	PT 1.50, AC 1.20, SLS 1.00
Consideration of long-term effects Alpha-cc	PT 1.00, AC 1.00, SLS 1.00
Consideration of long-term effects Alpha-ct	SLS 1.00

2.2 REQUIRED REINFORCEMENT BY SURFACE

Surface No.	Point No.	Point Coordinates [m]			Symbol	Required Reinforcement			Basic Reinf.	Additional Reinforcement		Unit	Notes
		X	Y	Z		ULS	SLS	ULS/SLS		Required	Provided		
1	M33	8.610	-6.363	0.320	$a_{s,1,-z}$ (top)	0.45	3.64	3.64	3.85	0.00	-	cm ² /m	
	M33	8.610	-6.363	0.320	$a_{s,2,-z}$ (top)	2.25	4.07	4.07	3.85	0.22	-	cm ² /m	
	M33	8.610	-6.363	0.320	$a_{s,1,+z}$ (bottom)	0.00	3.64	3.64	3.85	0.00	-	cm ² /m	
	M33	8.610	-6.363	0.320	$a_{s,2,+z}$ (bottom)	0.00	4.07	4.07	3.85	0.22	-	cm ² /m	
	M33	8.610	-6.363	0.320	a_{sw}	0.00	-	0.00	-	-	-	cm ² /m ²	
2	M337	7.561	-4.563	0.320	$a_{s,1,-z}$ (top)	0.07	3.64	3.64	3.85	0.00	-	cm ² /m	
	M337	7.561	-4.563	0.320	$a_{s,2,-z}$ (top)	0.01	4.07	4.07	3.85	0.22	-	cm ² /m	
	M337	7.561	-4.563	0.320	$a_{s,1,+z}$ (bottom)	0.45	3.64	3.64	3.85	0.00	-	cm ² /m	
	M337	7.561	-4.563	0.320	$a_{s,2,+z}$ (bottom)	2.25	4.07	4.07	3.85	0.22	-	cm ² /m	
	M337	7.561	-4.563	0.320	a_{sw}	0.00	-	0.00	-	-	-	cm ² /m ²	
3	M33	8.610	-6.363	0.320	$a_{s,1,-z}$ (top)	0.45	3.64	3.64	3.85	0.00	-	cm ² /m	
	M33	8.610	-6.363	0.320	$a_{s,2,-z}$ (top)	2.25	4.07	4.07	3.85	0.22	-	cm ² /m	

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

2.2 REQUIRED REINFORCEMENT BY SURFACE

Surface No.	Point No.	Point Coordinates [m]			Symbol	Required Reinforcement			Basic Reinf.	Additional Reinforcement		Unit	Notes
		X	Y	Z		ULS	SLS	ULS/SLS		Required	Provided		
4	M33	8.610	-6.363	0.320	$a_{s,1,+z}$ (bottom)	0.00	3.64	3.64	3.85	0.00	-	cm ² /m	
	M33	8.610	-6.363	0.320	$a_{s,2,+z}$ (bottom)	0.00	4.07	4.07	3.85	0.22	-	cm ² /m	
	M33	8.610	-6.363	0.320	a_{sw}	0.00	-	0.00	-	-	-	cm ² /m ²	
	M339	7.561	-6.363	-0.680	$a_{s,1,-z}$ (top)	0.00	3.64	3.64	3.85	0.00	-	cm ² /m	
	M339	7.561	-6.363	-0.680	$a_{s,2,-z}$ (top)	0.00	4.07	4.07	3.85	0.22	-	cm ² /m	
	M339	7.561	-6.363	-0.680	$a_{s,1,+z}$ (bottom)	0.45	3.64	3.64	3.85	0.00	-	cm ² /m	
	M339	7.561	-6.363	-0.680	$a_{s,2,+z}$ (bottom)	2.25	4.07	4.07	3.85	0.22	-	cm ² /m	
	M339	7.561	-6.363	-0.680	a_{sw}	0.00	-	0.00	-	-	-	cm ² /m ²	

3.2 SERVICEABILITY CHECK BY SURFACE

Surface No.	Point No.	Point Coordinates [m]			Load Case	Design				Unit	Ratio	Notes
		X	Y	Z		Type	Exist. Value	Limit Value				
1	M33	8.610	-6.363	0.320	Envelope e ChD	σ_s	0.00	400.00		N/mm ²	0.0	226) 236)
	M33	8.610	-6.363	0.320	Envelope Fr	$a_{s,min}$	4.07	4.13		cm ² /m	1.1	233)
	M33	8.610	-6.363	0.320	Envelope e ChD	lim d_s	0.72	-		cm	0.0	226) 235) 236)
	M33	8.610	-6.363	0.320	Envelope e ChD	lim s_l	0.100	-		m	0.0	226) 235) 236)
2	M33	8.610	-6.363	0.320	Envelope e ChD	w_k	0.000	0.300		mm	0.0	226) 236)
	M337	7.561	-4.563	0.320	Envelope e ChD	σ_s	0.00	400.00		N/mm ²	0.0	226) 236)
	M337	7.561	-4.563	0.320	Envelope Fr	$a_{s,min}$	4.07	4.13		cm ² /m	1.1	233)
	M337	7.561	-4.563	0.320	Envelope e ChD	lim d_s	0.72	-		cm	0.0	226) 235) 236)
3	M337	7.561	-4.563	0.320	Envelope e ChD	lim s_l	0.100	-		m	0.0	226) 235) 236)
	M337	7.561	-4.563	0.320	Envelope e ChD	w_k	0.000	0.300		mm	0.0	226) 236)
	M33	8.610	-6.363	0.320	Envelope e ChD	σ_s	0.00	400.00		N/mm ²	0.0	226) 236)
	M33	8.610	-6.363	0.320	Envelope Fr	$a_{s,min}$	4.07	4.13		cm ² /m	1.1	233)
4	M33	8.610	-6.363	0.320	Envelope e ChD	lim d_s	0.72	-		cm	0.0	226) 235) 236)
	M33	8.610	-6.363	0.320	Envelope e ChD	lim s_l	0.100	-		m	0.0	226) 235) 236)
	M33	8.610	-6.363	0.320	Envelope e ChD	w_k	0.000	0.300		mm	0.0	226) 236)
	M339	7.561	-6.363	-0.680	Envelope e ChD	σ_s	0.00	400.00		N/mm ²	0.0	226) 236)
	M339	7.561	-6.363	-0.680	Envelope Fr	$a_{s,min}$	4.07	4.13		cm ² /m	1.1	233)
	M339	7.561	-6.363	-0.680	Envelope e ChD	lim d_s	0.72	-		cm	0.0	226) 235) 236)
	M339	7.561	-6.363	-0.680	Envelope e ChD	lim s_l	0.100	-		m	0.0	226) 235) 236)
	M339	7.561	-6.363	-0.680	Envelope e ChD	w_k	0.000	0.300		mm	0.0	226) 236)

SERVICEABILITY CHECK NOTES

No.	Description
226)	Concrete cracks on neither side.
233)	The design is not satisfactory! Because of the required reinforcement for ULS or user-defined reinforcement the defined reinforcement area is different from the required reinforcement for SLS and that negatively affects SLS design.
235)	The check restricts increase of reinforcement for economic reasons.
236)	The check of the reinforcing layer need not to be fulfilled for economic reasons.

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

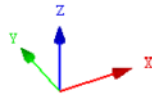
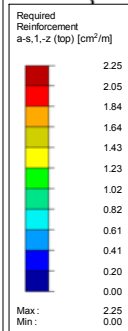
REQUIRED REINFORCEMENT $a_{s,1,-z}$ (top)

RF-CONCRETE Surfaces CA1

Reinforced concrete design

Surfaces Required Reinforcement $a_{s,1,-z}$ (top)

Isometric

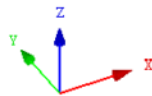
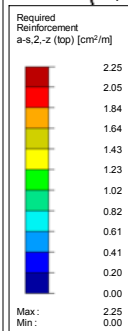
Surfaces Max $a_{s,1,-z}$ (top): 2.25, Min $a_{s,1,-z}$ (top): 0.00 [cm²/m]**REQUIRED REINFORCEMENT $a_{s,2,-z}$ (top)**

RF-CONCRETE Surfaces CA1

Reinforced concrete design

Surfaces Required Reinforcement $a_{s,2,-z}$ (top)

Isometric

Surfaces Max $a_{s,2,-z}$ (top): 2.25, Min $a_{s,2,-z}$ (top): 0.00 [cm²/m]

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

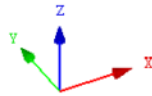
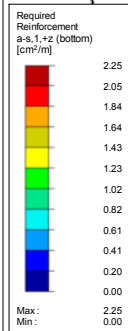
REQUIRED REINFORCEMENT $a_{s,1,+z}$ (bottom)

RF-CONCRETE Surfaces CA1

Reinforced concrete design

Surfaces Required Reinforcement $a_{s,1,+z}$ (bottom)

Isometric



Surfaces Max $a_{s,1,+z}$ (bottom): 2.25, Min $a_{s,1,+z}$ (bottom): 0.00 [cm²/m]

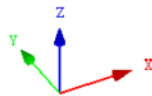
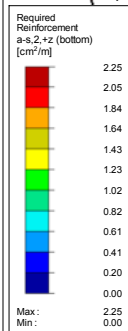
REQUIRED REINFORCEMENT $a_{s,2,+z}$ (bottom)

RF-CONCRETE Surfaces CA1

Reinforced concrete design

Surfaces Required Reinforcement $a_{s,2,+z}$ (bottom)

Isometric



Surfaces Max $a_{s,2,+z}$ (bottom): 2.25, Min $a_{s,2,+z}$ (bottom): 0.00 [cm²/m]

Project: Vodna skulptura

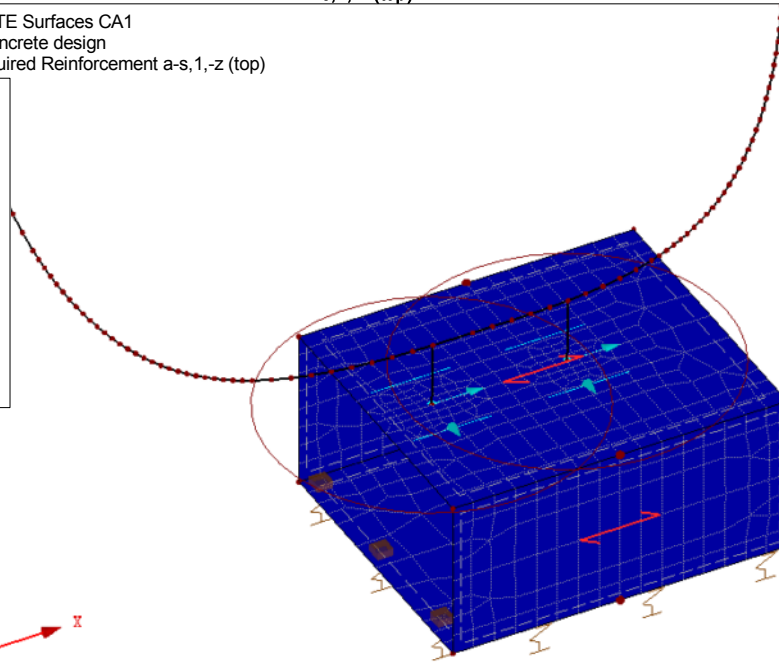
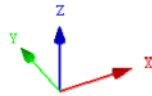
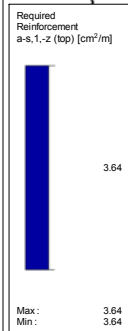
Model: 3D_model_skulpture

Date: 2.5.2018

REQUIRED REINFORCEMENT $a_{s,1,-z}$ (top)

RF-CONCRETE Surfaces CA1
Reinforced concrete design
Surfaces Required Reinforcement a-s,1,-z (top)

Isometric

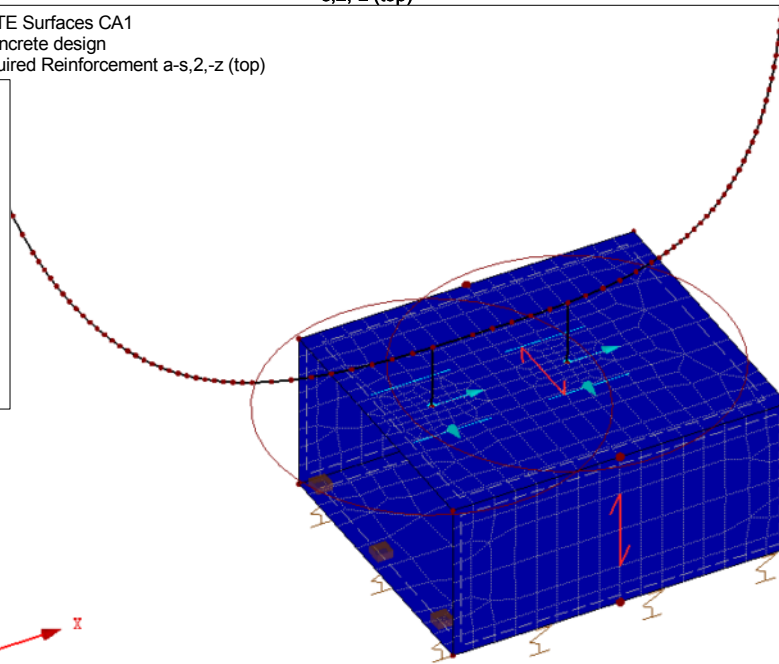
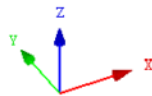
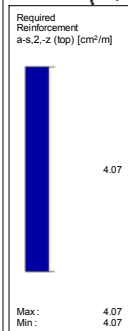


Surfaces Max a-s,1,-z (top): 3.64, Min a-s,1,-z (top): 3.64 [cm²/m]

REQUIRED REINFORCEMENT $a_{s,2,-z}$ (top)

RF-CONCRETE Surfaces CA1
Reinforced concrete design
Surfaces Required Reinforcement a-s,2,-z (top)

Isometric



Surfaces Max a-s,2,-z (top): 4.07, Min a-s,2,-z (top): 4.07 [cm²/m]

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

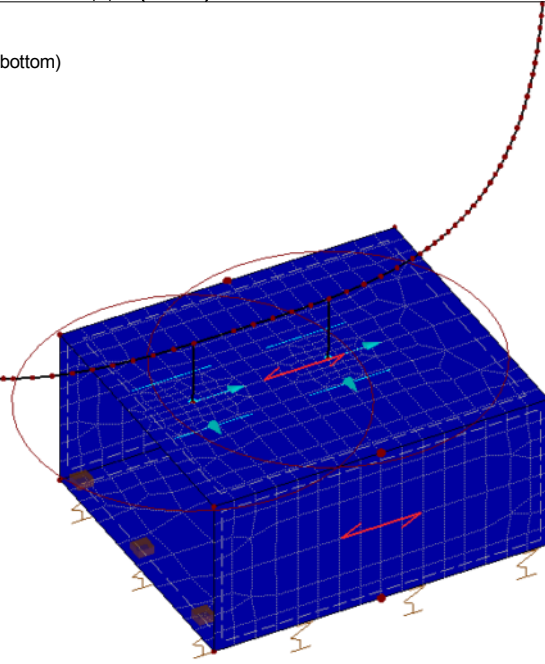
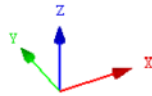
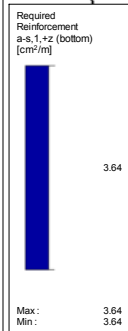
REQUIRED REINFORCEMENT $a_{s,1,+z}$ (bottom)

RF-CONCRETE Surfaces CA1

Reinforced concrete design

Surfaces Required Reinforcement a-s,1,+z (bottom)

Isometric

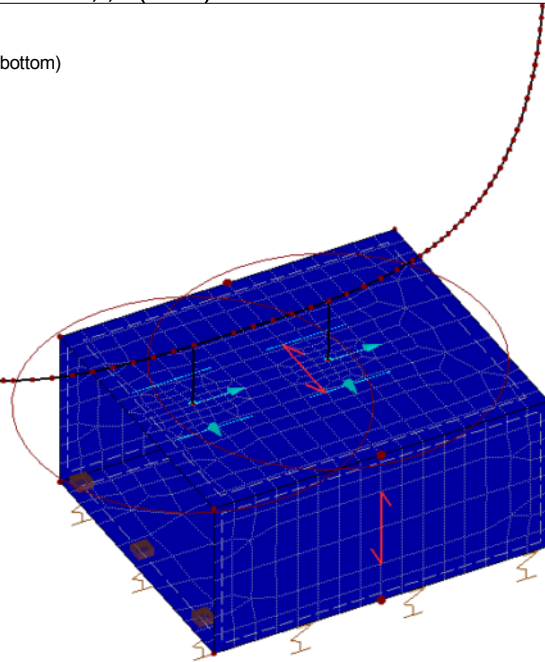
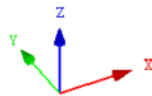
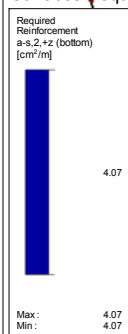
Surfaces Max a-s,1,+z (bottom): 3.64, Min a-s,1,+z (bottom): 3.64 [cm²/m]**REQUIRED REINFORCEMENT $a_{s,2,+z}$ (bottom)**

RF-CONCRETE Surfaces CA1

Reinforced concrete design

Surfaces Required Reinforcement a-s,2,+z (bottom)

Isometric

Surfaces Max a-s,2,+z (bottom): 4.07, Min a-s,2,+z (bottom): 4.07 [cm²/m]

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

1.1 GENERAL DATA

Design according to Standard:		SIST EN 1992-1-1:2005/A101:2006	
ULTIMATE LIMIT STATES			
Result combinations to design:	RC1	ULS (STR/GEO) - Permanent / transient - Eq. 6.10 Persistent and Transient	
SERVICEABILITY LIMIT STATES			
Result combinations to design:	RC2	SLS - Characteristic Characteristic with direct load, k-t: 0.600	
	RC3	SLS - Frequent Frequent, k-t: 0.575	
	RC4	SLS - Quasi-permanent Quasi-permanent, k-t: 0.575	
Design Situation Settings for Serviceability Limit State Checks			
Load combination:			
Characteristic with direct load	Checks: $k_1 \cdot f_{ck}$, $k_3 \cdot f_{yk}$		
Characteristic with imposed deformation	Checks: $k_1 \cdot f_{ck}$, $k_4 \cdot f_{yk}$		
Frequent	Checks: w_k		
Quasi-permanent	Checks: $k_2 \cdot f_{ck}$, w_k , u_l		
Deformation Relative to:			
Undeformed system			

1.1 SETTINGS - NONLINEAR CALCULATION (STATE II)

Activate nonlinear calculation for ULTIMATE LIMIT state:	<input type="checkbox"/>
Activate nonlinear calculation for SERVICEABILITY LIMIT state:	<input type="checkbox"/>
Activate nonlinear calculation for fire resistance	<input type="checkbox"/>

1.2 MATERIALS

Matl. No.	Material Description		Comment
2	Concrete C25/30	B 500 S (A)	

1.2.1 MATERIAL PARAMETERS

Matl. No.	Description	Name	Size	Unit
2	Concrete Strength Class: Concrete C25/30			
	Characteristic Cylinder Compressive Strength	f_{ck}	25.000	N/mm ²
	Mean Cylinder Compressive Strength	f_{cm}	33.000	N/mm ²
	Mean Axial Tensile Strength	f_{ctm}	2.600	N/mm ²
	5 % Fractile of Axial Tensile Strength	$f_{ctk,0.05}$	1.800	N/mm ²
	95 % Fractile of Axial Tensile Strength	$f_{ctk,0.95}$	3.300	N/mm ²
	Mean Secant Modulus of Elasticity	E_{cm}	31000.000	N/mm ²
	Characteristic Strains for Nonlinear Calculations			
	Ultimate Strain for Pure Compression	ϵ_{c1}	-2.100	‰
	Ultimate Strain at Failure	ϵ_{cu1}	-3.500	‰
	Characteristic Strains for Parabolic-Rectangular Diagram			
	Ultimate Strain for Pure Compression	ϵ_{c2}	-2.000	‰
	Ultimate Strain at Failure	ϵ_{cu2}	-3.500	‰
	Parabola Exponent	n	2	
	Specific Weight	γ	25.00	kN/m ³
	Reinforcing Steel: B 500 S (A)			
	Modulus of Elasticity	E_s	200000	N/mm ²
	Characteristic Yield Stress	f_{yk}	500	N/mm ²
	Characteristic Tensile Strength	f_{tk}	525	N/mm ²
	Limiting Strain	ϵ_{uk}	25.000	‰

Rectangle 600/600



1.3 CROSS-SECTIONS

Section No.	Matl. No.	Cross-Section Description	Notes	Comment
3	2	Rectangle 600/600		

1.6 REINFORCEMENT GROUP NO. 1

Applied to members:	323,325,329,330,333
LONGITUDINAL REINFORCEMENT	
Possible diameters:	14.0, 20.0 mm
Max. number of layers:	1
Min. spacing for first layer:	20.0 mm
Type of anchorage:	Straight
Steel surface:	Ribbed
Reduction of reinforcement:	None
SHEAR REINFORCEMENT	
Possible diameters:	10.0 mm
No. of stirrup legs:	2
Inclination:	90°

Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

2.3 REQUIRED REINFORCEMENT BY MEMBER

Reinforcement	Member No.	Location x [m]	Loading	Reinforcement Area	Unit	Error Message or Note
$A_{s,z}$ (top)	333	0.000	RC1	5.40	cm ²	25)
$A_{s,z}$ (bottom)	333	1.371	RC1	10.80	cm ²	25)
$A_{s,T}$	333	1.524	RC1	0.76	cm ²	
$a_{sw,V, stirrup}$	333	0.000	RC1	4.80	cm ² /m	58) 69)
$a_{sw,T, stirrup}$	333	1.524	RC1	0.07	cm ² /m	

4.3 SERVICEABILITY CHECK BY MEMBER

Member No.	Location x [m]	Loading	Type	Existing Value	Design Limit Value	Unit	Capacity	Note
Member No. 323 - Rectangle 600/600								
323	1.597	RC2	σ_s	25.0	400.0	N/mm ²	0.07	
323	0.000	RC3	$A_{s,min}$	6.16	4.52	cm ²	0.74	
323	0.000	RC3	lim d_s	14.0	-	mm	0.00	215)
323	0.000	RC3	lim s_l	0.175	-	m	0.01	
323	0.000	RC3	w_k	0.000	0.300	mm	0.00	207) 215)
Member No. 325 - Rectangle 600/600								
325	0.700	RC2	σ_s	6.2	400.0	N/mm ²	0.02	
325	0.000	RC3	$A_{s,min}$	6.16	4.52	cm ²	0.74	
325	0.000	RC3	lim d_s	14.0	-	mm	0.00	215)
325	0.000	RC3	lim s_l	0.175	-	m	0.01	
325	0.000	RC3	w_k	0.000	0.300	mm	0.00	207) 215)
Member No. 329 - Rectangle 600/600								
329	0.000	RC2	σ_s	11.8	400.0	N/mm ²	0.03	
329	0.000	RC3	$A_{s,min}$	6.16	4.52	cm ²	0.74	
329	0.000	RC3	lim d_s	14.0	-	mm	0.00	215)
329	0.000	RC3	lim s_l	0.175	-	m	0.01	
329	0.000	RC3	w_k	0.000	0.300	mm	0.00	207) 215)
Member No. 330 - Rectangle 600/600								
330	1.606	RC2	σ_s	36.9	400.0	N/mm ²	0.10	
330	0.000	RC3	$A_{s,min}$	6.16	4.52	cm ²	0.74	
330	0.000	RC3	lim d_s	14.0	-	mm	0.00	215)
330	0.000	RC3	lim s_l	0.175	-	m	0.01	
330	0.000	RC3	w_k	0.000	0.300	mm	0.00	207) 215)
Member No. 333 - Rectangle 600/600								
333	0.000	RC2	σ_s	37.2	400.0	N/mm ²	0.10	
333	0.000	RC3	$A_{s,min}$	6.16	4.52	cm ²	0.74	
333	0.000	RC3	lim d_s	14.0	-	mm	0.00	215)
333	0.000	RC3	lim s_l	0.175	-	m	0.01	
333	0.000	RC3	w_k	0.000	0.300	mm	0.00	207) 215)

NOTES

No.	Description
25)	Min. reinforcement for compression members acc. to 9.5.2 (2)
26)	Minimum reinforcement for beams - Top acc. to 9.2.1.1 (1)
28)	The top longitudinal reinforcement was increased for SLS
29)	Bottom longitudinal reinforcement was increased for SLS
58)	Using the approximate value of lever z
69)	Min. shear reinforcement acc. to 9.2.2 (5)
207)	Crack width directly restricted (complied)
215)	Concrete does not crack

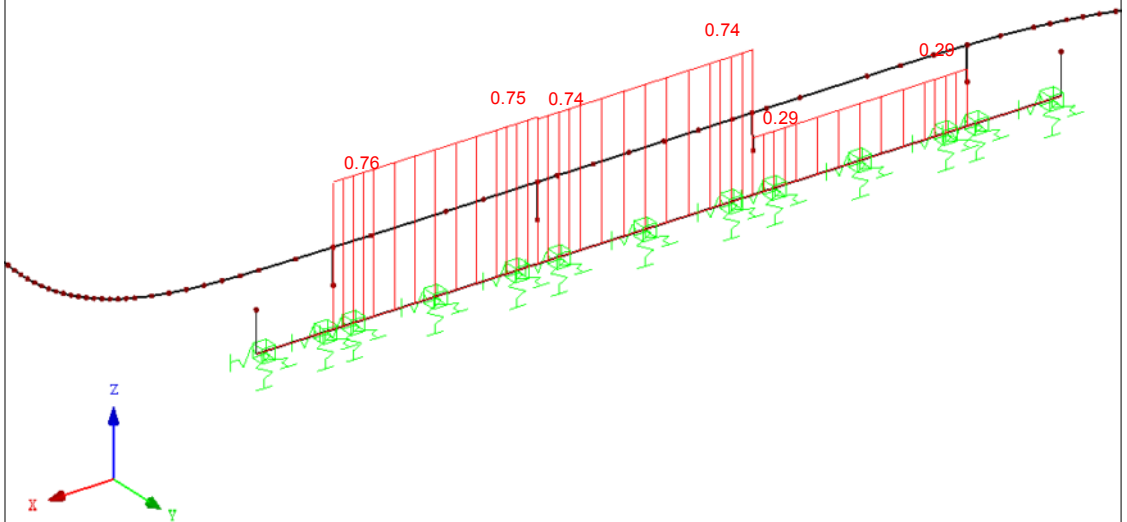
Project: Vodna skulptura

Model: 3D_model_skulpture

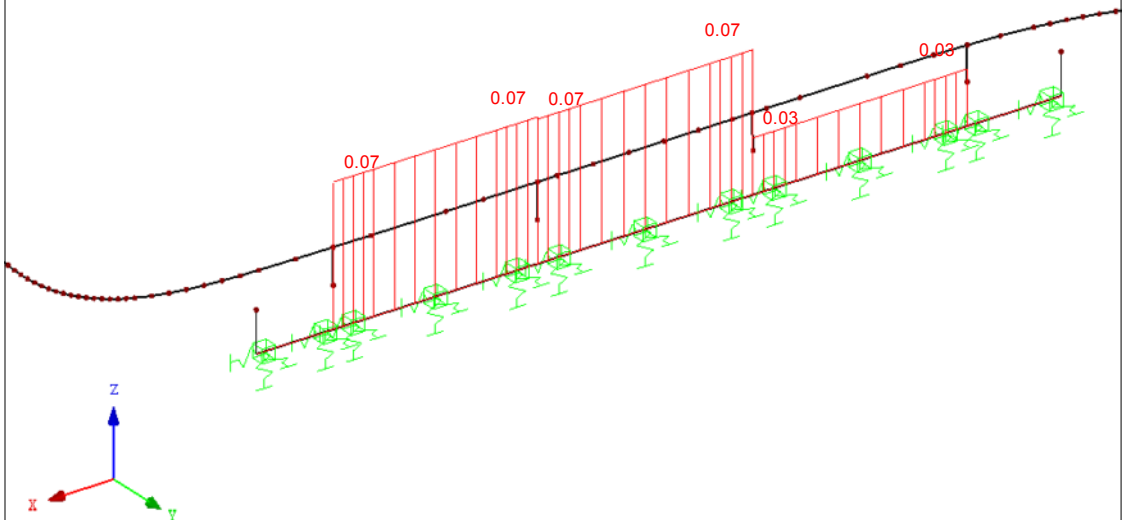
Date: 2.5.2018

■ REQUIRED REINFORCEMENT $A_{s,T}$ RF-CONCRETE Members CA1
Design of concrete members

Isometric

Max A-s,T: 0.76 cm²■ REQUIRED REINFORCEMENT $a_{sw,T, stirrup}$ RF-CONCRETE Members CA1
Design of concrete members

Isometric

Max a-sw,T, stirrup: 0.07 cm²/m

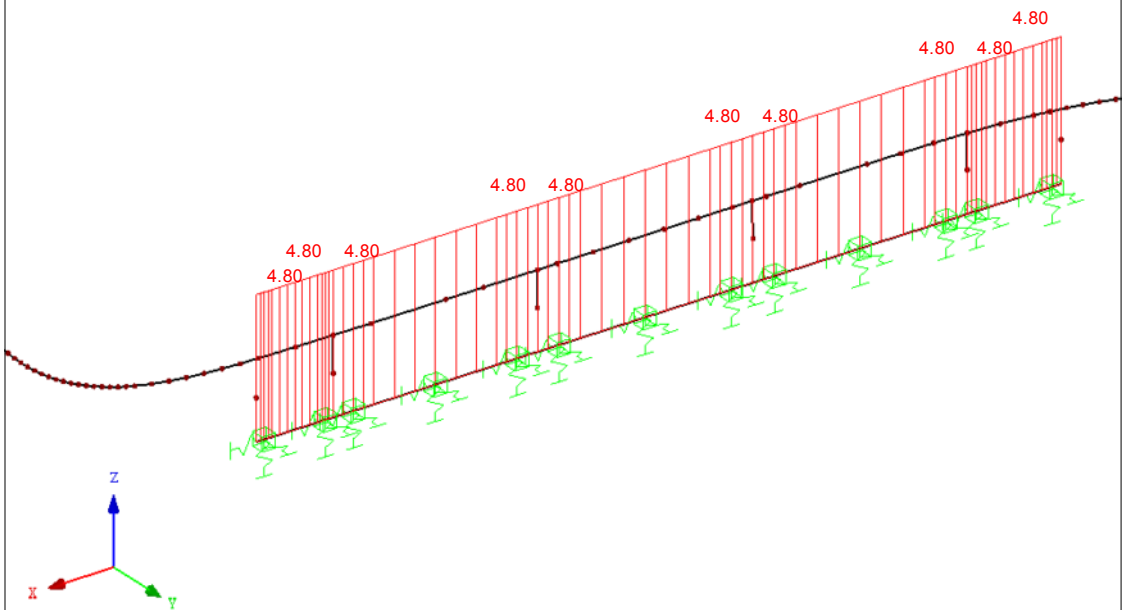
Project: Vodna skulptura

Model: 3D_model_skulpture

Date: 2.5.2018

■ REQUIRED REINFORCEMENT $a_{sw,V,stirrup}$ RF-CONCRETE Members CA1
Design of concrete members

Isometric

Max $a_{sw,V,stirrup}$: 4.80 cm²/m

Project: Vodna skulptura

Model: Saht

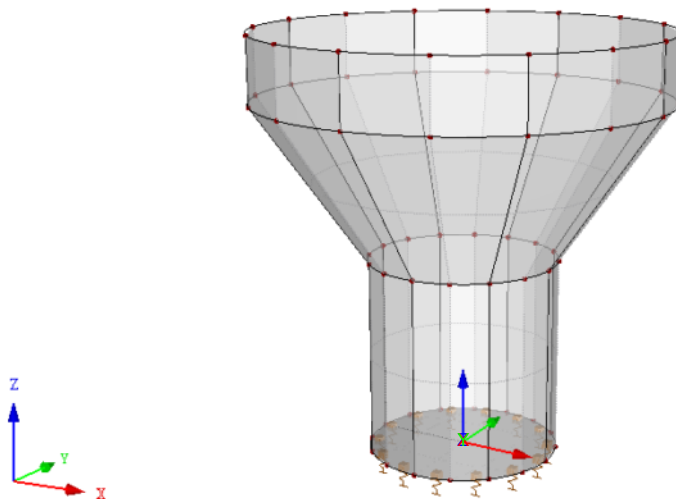
Date: 2.5.2018

■ MODEL - GENERAL DATA

	General	Model name	: Saht
		Project name	: Vodna skulptura
		Type of model	: 3D
		Positive direction of global axis Z	: Upward
		Classification of load cases and combinations	: According to Standard: EN 1990 National Annex: SIST - Slovenia
		<input checked="" type="checkbox"/> Automatically create combinations	: <input checked="" type="checkbox"/> Load Combinations
	Options	<input type="checkbox"/> RF-FORM-FINDING - Find initial equilibrium shapes of membrane and cable structures	
		<input type="checkbox"/> RF-CUTTING-PATTERN	
		<input type="checkbox"/> Piping analysis	
		<input type="checkbox"/> Use CQC Rule	
		<input type="checkbox"/> Enable CAD/BIM model	
		Standard Gravity	
		g	: 10.00 m/s ²

■ MODEL

Perspective



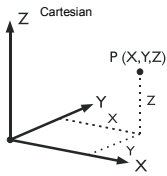
■ FE MESH SETTINGS

	General	Target length of finite elements	l_{FE}	: 0.5 m
		Maximum distance between a node and a line to integrate it into the line	ϵ	: 0.0 m
		Maximum number of mesh nodes (in thousands)		: 500
	Members	Number of divisions of members with cable, elastic foundation, taper, or plastic characteristic		: 10
		<input checked="" type="checkbox"/> Activate member divisions for large deformation or post-critical analysis		
		<input checked="" type="checkbox"/> Use division for members with node lying on them		
	Surfaces	Maximum ratio of FE rectangle diagonals	Δ_D	: 1.800
		Maximum out-of-plane inclination of two finite elements	α	: 0.50 °
		Shape direction of finite elements		: Triangles and quadrangles
				<input checked="" type="checkbox"/> Same squares where possible

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018



1.1 NODES

Node No.	Node Type	Reference Node	Coordinate System	Node Coordinates			Comment
				X [m]	Y [m]	Z [m]	
1	Standard	-	Cartesian	-0.601	0.000	0.000	
2	Standard	-	Cartesian	0.000	0.000	0.000	
3	Standard	-	Cartesian	0.000	0.601	0.000	
4	Standard	-	Cartesian	0.601	0.000	0.000	
5	Standard	-	Cartesian	-0.601	0.000	1.243	
6	Standard	-	Cartesian	-0.425	-0.425	0.000	
7	Standard	-	Cartesian	-0.425	-0.425	1.243	
8	Standard	-	Cartesian	-1.301	0.000	2.243	
9	Standard	-	Cartesian	-0.555	-0.230	0.000	
10	Standard	-	Cartesian	-0.555	-0.230	1.243	
11	Standard	-	Cartesian	-1.301	0.000	2.665	
12	Standard	-	Cartesian	-0.920	-0.920	2.243	
13	Standard	-	Cartesian	-1.202	-0.498	2.243	
14	Standard	-	Cartesian	-1.202	-0.498	2.665	
15	Standard	-	Cartesian	-0.920	-0.920	2.665	
17	Standard	-	Cartesian	0.000	-0.601	0.000	
18	Standard	-	Cartesian	0.000	-0.601	1.243	
19	Standard	-	Cartesian	-0.230	-0.555	0.000	
20	Standard	-	Cartesian	-0.230	-0.555	1.243	
21	Standard	-	Cartesian	0.000	-1.301	2.243	
22	Standard	-	Cartesian	-0.498	-1.202	2.243	
23	Standard	-	Cartesian	-0.498	-1.202	2.665	
24	Standard	-	Cartesian	0.000	-1.301	2.665	
26	Standard	-	Cartesian	0.425	-0.425	0.000	
27	Standard	-	Cartesian	0.425	-0.425	1.243	
28	Standard	-	Cartesian	0.230	-0.555	0.000	
29	Standard	-	Cartesian	0.230	-0.555	1.243	
30	Standard	-	Cartesian	0.920	-0.920	2.243	
31	Standard	-	Cartesian	0.498	-1.202	2.243	
32	Standard	-	Cartesian	0.498	-1.202	2.665	
33	Standard	-	Cartesian	0.920	-0.920	2.665	
36	Standard	-	Cartesian	0.601	0.000	1.243	
37	Standard	-	Cartesian	0.555	-0.230	0.000	
38	Standard	-	Cartesian	0.555	-0.230	1.243	
39	Standard	-	Cartesian	1.301	0.000	2.243	
40	Standard	-	Cartesian	1.202	-0.498	2.243	
41	Standard	-	Cartesian	1.202	-0.498	2.665	
42	Standard	-	Cartesian	1.301	0.000	2.665	
44	Standard	-	Cartesian	0.425	0.425	0.000	
45	Standard	-	Cartesian	0.425	0.425	1.243	
46	Standard	-	Cartesian	0.555	0.230	0.000	
47	Standard	-	Cartesian	0.555	0.230	1.243	
48	Standard	-	Cartesian	0.920	0.920	2.243	
49	Standard	-	Cartesian	1.202	0.498	2.243	
50	Standard	-	Cartesian	1.202	0.498	2.665	
51	Standard	-	Cartesian	0.920	0.920	2.665	
54	Standard	-	Cartesian	0.000	0.601	1.243	
55	Standard	-	Cartesian	0.230	0.555	0.000	
56	Standard	-	Cartesian	0.230	0.555	1.243	
57	Standard	-	Cartesian	0.000	1.301	2.243	
58	Standard	-	Cartesian	0.498	1.202	2.243	
59	Standard	-	Cartesian	0.498	1.202	2.665	
60	Standard	-	Cartesian	0.000	1.301	2.665	
61	Standard	-	Cartesian	-0.425	0.425	0.000	
62	Standard	-	Cartesian	-0.425	0.425	1.243	
63	Standard	-	Cartesian	-0.230	0.555	0.000	
64	Standard	-	Cartesian	-0.230	0.555	1.243	
65	Standard	-	Cartesian	-0.920	0.920	2.243	
66	Standard	-	Cartesian	-0.498	1.202	2.243	
67	Standard	-	Cartesian	-0.498	1.202	2.665	
68	Standard	-	Cartesian	-0.920	0.920	2.665	
69	Standard	-	Cartesian	-0.555	0.230	0.000	
73	Standard	-	Cartesian	-0.555	0.230	1.243	
75	Standard	-	Cartesian	-1.202	0.498	2.243	
76	Standard	-	Cartesian	-1.202	0.498	2.665	

1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [m]		Comment
1	Polyline	1,2	0.601	X	
2	Arc	1,69,61	0.472	XY	
3	Polyline	5,1	1.243	Z	
4	Polyline	7,6	1.243	Z	
5	Polyline	8,5	1.221	XZ	
6	Arc	1,9,6	0.472	XY	
7	Polyline	11,8	0.422	Z	
8	Polyline	12,7	1.221		
9	Arc	5,10,7	0.472	XY	
10	Polyline	15,12	0.422	Z	
11	Arc	8,13,12	1.022	XY	
12	Arc	11,14,15	1.022	XY	
14	Polyline	18,17	1.243	Z	
15	Arc	6,19,17	0.472	XY	
16	Polyline	21,18	1.221	YZ	
17	Arc	7,20,18	0.472	XY	
18	Polyline	24,21	0.422	Z	
19	Arc	12,22,21	1.022	XY	
20	Arc	15,23,24	1.022	XY	
22	Polyline	27,26	1.243	Z	
23	Arc	17,28,26	0.472	XY	
24	Polyline	30,27	1.221		

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1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [m]		Comment
25	Arc	18,29,27	0.472	XY	
26	Polyline	33,30	0.422	Z	
27	Arc	21,31,30	1.022	XY	
28	Arc	24,32,33	1.022	XY	
30	Polyline	36,4	1.243	Z	
31	Arc	26,37,4	0.472	XY	
32	Polyline	39,36	1.221	XZ	
33	Arc	27,38,36	0.472	XY	
34	Polyline	42,39	0.422	Z	
35	Arc	30,40,39	1.022	XY	
36	Arc	33,41,42	1.022	XY	
38	Polyline	45,44	1.243	Z	
39	Arc	4,46,44	0.472	XY	
40	Polyline	48,45	1.221		
41	Arc	36,47,45	0.472	XY	
42	Polyline	51,48	0.422	Z	
43	Arc	39,49,48	1.022	XY	
44	Arc	42,50,51	1.022	XY	
46	Polyline	54,3	1.243	Z	
47	Arc	44,55,3	0.472	XY	
48	Polyline	57,54	1.221	YZ	
49	Arc	45,56,54	0.472	XY	
50	Polyline	60,57	0.422	Z	
51	Arc	48,58,57	1.022	XY	
52	Arc	51,59,60	1.022	XY	
53	Polyline	62,61	1.243	Z	
54	Arc	3,63,61	0.472	XY	
55	Polyline	65,62	1.221		
56	Arc	54,64,62	0.472	XY	
57	Polyline	68,65	0.422	Z	
58	Arc	57,66,65	1.022	XY	
59	Arc	60,67,68	1.022	XY	
60	Arc	61,3,44	0.943	XY	
64	Arc	62,73,5	0.472	XY	
66	Arc	65,75,8	1.022	XY	
67	Arc	68,76,11	1.022	XY	

1.3 MATERIALS

Matl. No.	Modulus E [kN/cm ²]	Modulus G [kN/cm ²]	Poisson's Ratio ν [-]	Spec. Weight γ [kN/m ³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	Concrete C30/37 3300.00	EN 1992-1-1:2004/A1:2014 1375.00	0.200	25.00	1.00E-05	1.00	Isotropic Linear Elastic
	Beton C30/37						

1.4 SURFACES

Surface No.	Surface Type Geometry	Stiffness	Boundary Lines No.	Matl. No.	Thickness Type	d [mm]	Area A [m ²]	Weight W [kg]
1	Quadrangle	Standard	6,4,9,3	1	Constant	200.0	0.583	291.32
2	Quadrangle	Standard	9,8,11,5	1	Constant	200.0	0.900	450.17
3	Quadrangle	Standard	11,10,12,7	1	Constant	200.0	0.429	214.31
4	Plane	Standard	2,60,39,31,23,15,6	1	Constant	200.0	1.104	552.09
5	Quadrangle	Standard	15,14,17,4	1	Constant	200.0	0.583	291.32
6	Quadrangle	Standard	17,16,19,8	1	Constant	200.0	0.900	450.17
7	Quadrangle	Standard	19,18,20,10	1	Constant	200.0	0.429	214.31
8	Quadrangle	Standard	23,22,25,14	1	Constant	200.0	0.583	291.32
9	Quadrangle	Standard	25,24,27,16	1	Constant	200.0	0.900	450.17
10	Quadrangle	Standard	27,26,28,18	1	Constant	200.0	0.429	214.31
11	Quadrangle	Standard	31,30,33,22	1	Constant	200.0	0.583	291.32
12	Quadrangle	Standard	33,32,35,24	1	Constant	200.0	0.900	450.17
13	Quadrangle	Standard	35,34,36,26	1	Constant	200.0	0.429	214.31
14	Quadrangle	Standard	39,38,41,30	1	Constant	200.0	0.583	291.32
15	Quadrangle	Standard	41,40,43,32	1	Constant	200.0	0.900	450.17
16	Quadrangle	Standard	43,42,44,34	1	Constant	200.0	0.429	214.31
17	Quadrangle	Standard	47,46,49,38	1	Constant	200.0	0.583	291.32
18	Quadrangle	Standard	49,48,51,40	1	Constant	200.0	0.900	450.17
19	Quadrangle	Standard	51,50,52,42	1	Constant	200.0	0.429	214.31
20	Quadrangle	Standard	54,53,56,46	1	Constant	200.0	0.583	291.32
21	Quadrangle	Standard	56,55,58,48	1	Constant	200.0	0.900	450.17
22	Quadrangle	Standard	58,57,59,50	1	Constant	200.0	0.429	214.31
23	Quadrangle	Standard	2,3,64,53	1	Constant	200.0	0.583	291.32
24	Quadrangle	Standard	64,5,66,55	1	Constant	200.0	0.900	450.17
25	Quadrangle	Standard	66,7,67,57	1	Constant	200.0	0.429	214.31

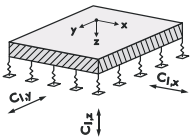
1.4.2 SURFACES - INTEGRATED OBJECTS

Surface No.	Nodes	Integrated Objects No. Lines	Openings	Comment
4		1,47,54		

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1.9 SURFACE SUPPORTS

Found. No.	On Surfaces No.	Spring Constants RF-SOILIN	Translation Support or Spring [kN/m³]			Shear Spring [kN/m]	
			u_x	u_y	u_z	v_{xz}	v_{yz}
1	4	-	3500.000	3500.000	20000.000	15000.000	15000.000

2.1 LOAD CASES

Load Case	Load Case Description	EN 1990 SIST Action Category	Self-Weight - Factor in Direction			
			Active	X	Y	Z
LC1	Lastna teža	Permanent	<input checked="" type="checkbox"/>	0.000	0.000	-1.000
LC2	Zemeljski pritisk	Permanent	<input type="checkbox"/>			
LC3	Prometna obtežba	Imposed - Category G: traffic area - vehicle weight ≤ 160 kN	<input type="checkbox"/>			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters	
LC1	Lastna teža	Method of analysis	: Geometrically linear analysis
		Method for solving system of nonlinear algebraic equations	: Newton-Raphson
		Activate stiffness factors of:	: Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
LC2	Zemeljski pritisk	Method of analysis	: Geometrically linear analysis
		Method for solving system of nonlinear algebraic equations	: Newton-Raphson
		Activate stiffness factors of:	: Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
LC3	Prometna obtežba	Method of analysis	: Geometrically linear analysis
		Method for solving system of nonlinear algebraic equations	: Newton-Raphson
		Activate stiffness factors of:	: Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case
CO1	STR	1.35*LC1 + 1.35*LC2	1	1.35	LC1 Lastna teža
			2	1.35	LC2 Zemeljski pritisk
CO2	STR	1.35*LC1 + 1.35*LC2 + 1.5*LC3	1	1.35	LC1 Lastna teža
			2	1.35	LC2 Zemeljski pritisk
			3	1.50	LC3 Prometna obtežba
CO3	S Ch	LC1 + LC2	1	1.00	LC1 Lastna teža
			2	1.00	LC2 Zemeljski pritisk
CO4	S Ch	LC1 + LC2 + LC3	1	1.00	LC1 Lastna teža
			2	1.00	LC2 Zemeljski pritisk
			3	1.00	LC3 Prometna obtežba
CO5	S Fr	LC1 + LC2	1	1.00	LC1 Lastna teža
			2	1.00	LC2 Zemeljski pritisk
CO6	S Fr	LC1 + LC2 + 0.5*LC3	1	1.00	LC1 Lastna teža
			2	1.00	LC2 Zemeljski pritisk
			3	0.50	LC3 Prometna obtežba
CO7	S Qp	LC1 + LC2	1	1.00	LC1 Lastna teža
			2	1.00	LC2 Zemeljski pritisk
CO8	S Qp	LC1 + LC2 + 0.3*LC3	1	1.00	LC1 Lastna teža
			2	1.00	LC2 Zemeljski pritisk
			3	0.30	LC3 Prometna obtežba

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
CO1	1.35*LC1 + 1.35*LC2	Method of analysis	: Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	: Picard
		Options	: Consider favorable effects due to tension
			: Refer internal forces to deformed system for:
			: Normal forces N
			: Shear forces V_y and V_z
			: Moments M_y, M_z and M_T
		Activate stiffness factors of:	: Materials (partial factor γ_M)
			: Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: Members (factor for $GJ, EI_y, EI_z, EA, GA_y, GA_z$)
CO2	1.35*LC1 + 1.35*LC2 + 1.5*LC3	Method of analysis	: Second order analysis (P-Delta)
		Method for solving system of nonlinear algebraic equations	: Picard
		Options	: Consider favorable effects due to tension
			: Refer internal forces to deformed system for:
			: Normal forces N
			: Shear forces V_y and V_z
			: Moments M_y, M_z and M_T
		Activate stiffness factors of:	: Materials (partial factor γ_M)
			: Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)

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2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters
CO3	LC1 + LC2	<div>Method of analysis : <input checked="" type="checkbox"/> Members (factor for GJ, EI_y, EI_z, EA, GA_w, GA₂)</div> <div>Method for solving system of nonlinear algebraic equations : <input checked="" type="checkbox"/> Second order analysis (P-Delta)</div> <div>Options : <input checked="" type="checkbox"/> Picard</div> <div>Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension</div> <div>Options : <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <div><input checked="" type="checkbox"/> Normal forces N</div> <div><input checked="" type="checkbox"/> Shear forces V_y and V_z</div> <div><input checked="" type="checkbox"/> Moments M_y, M_z and M_T</div> </div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γ_M)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Members (factor for GJ, EI_y, EI_z, EA, GA_w, GA₂)</div>
CO4	LC1 + LC2 + LC3	<div>Method of analysis : <input checked="" type="checkbox"/> Second order analysis (P-Delta)</div> <div>Method for solving system of nonlinear algebraic equations : <input checked="" type="checkbox"/> Picard</div> <div>Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension</div> <div>Options : <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <div><input checked="" type="checkbox"/> Normal forces N</div> <div><input checked="" type="checkbox"/> Shear forces V_y and V_z</div> <div><input checked="" type="checkbox"/> Moments M_y, M_z and M_T</div> </div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γ_M)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Members (factor for GJ, EI_y, EI_z, EA, GA_w, GA₂)</div>
CO5	LC1 + LC2	<div>Method of analysis : <input checked="" type="checkbox"/> Second order analysis (P-Delta)</div> <div>Method for solving system of nonlinear algebraic equations : <input checked="" type="checkbox"/> Picard</div> <div>Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension</div> <div>Options : <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <div><input checked="" type="checkbox"/> Normal forces N</div> <div><input checked="" type="checkbox"/> Shear forces V_y and V_z</div> <div><input checked="" type="checkbox"/> Moments M_y, M_z and M_T</div> </div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γ_M)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Members (factor for GJ, EI_y, EI_z, EA, GA_w, GA₂)</div>
CO6	LC1 + LC2 + 0.5*LC3	<div>Method of analysis : <input checked="" type="checkbox"/> Second order analysis (P-Delta)</div> <div>Method for solving system of nonlinear algebraic equations : <input checked="" type="checkbox"/> Picard</div> <div>Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension</div> <div>Options : <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <div><input checked="" type="checkbox"/> Normal forces N</div> <div><input checked="" type="checkbox"/> Shear forces V_y and V_z</div> <div><input checked="" type="checkbox"/> Moments M_y, M_z and M_T</div> </div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γ_M)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Members (factor for GJ, EI_y, EI_z, EA, GA_w, GA₂)</div>
CO7	LC1 + LC2	<div>Method of analysis : <input checked="" type="checkbox"/> Second order analysis (P-Delta)</div> <div>Method for solving system of nonlinear algebraic equations : <input checked="" type="checkbox"/> Picard</div> <div>Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension</div> <div>Options : <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <div><input checked="" type="checkbox"/> Normal forces N</div> <div><input checked="" type="checkbox"/> Shear forces V_y and V_z</div> <div><input checked="" type="checkbox"/> Moments M_y, M_z and M_T</div> </div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γ_M)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Members (factor for GJ, EI_y, EI_z, EA, GA_w, GA₂)</div>
CO8	LC1 + LC2 + 0.3*LC3	<div>Method of analysis : <input checked="" type="checkbox"/> Second order analysis (P-Delta)</div> <div>Method for solving system of nonlinear algebraic equations : <input checked="" type="checkbox"/> Picard</div> <div>Options : <input checked="" type="checkbox"/> Consider favorable effects due to tension</div> <div>Options : <input checked="" type="checkbox"/> Refer internal forces to deformed system for: <div><input checked="" type="checkbox"/> Normal forces N</div> <div><input checked="" type="checkbox"/> Shear forces V_y and V_z</div> <div><input checked="" type="checkbox"/> Moments M_y, M_z and M_T</div> </div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Materials (partial factor γ_M)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)</div> <div>Activate stiffness factors of: : <input checked="" type="checkbox"/> Members (factor for GJ, EI_y, EI_z, EA, GA_w, GA₂)</div>

■ 2.7 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	ULS (STR/GEO) - Permanent / transient - Eq. 6.10	CO1/p or CO2/p
RC2	SLS - Characteristic	CO3/p or CO4/p
RC3	SLS - Frequent	CO5/p or CO6/p
RC4	SLS - Quasi-permanent	CO7/p or CO8/p

Project: Vodna skulptura

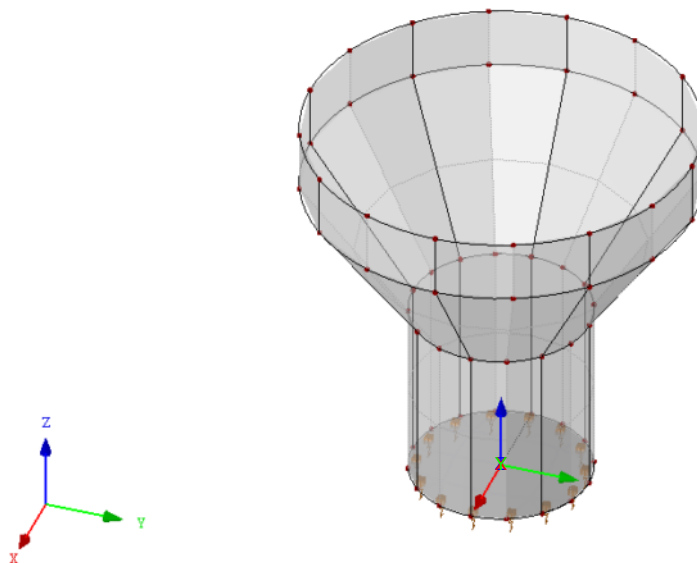
Model: Saht

Date: 2.5.2018

■ LC1: LASTNA TEŽA

LC 1: Lastna teža

Isometric



LC2

Zemeljski pritisk

■ 3.4 SURFACE LOADS

LC2: Zemeljski pritisk

No.	On Surfaces No.	Load Type	Load Distribution	Load Direction	Symbol	Load Parameters		On Node No.
						Value	Unit	
1	1-3,5-25	Force	Linear in Z	z	p ₁	0.00	kN/m ²	15
					p ₂	-20.00	kN/m ²	6

Project: Vodna skulptura

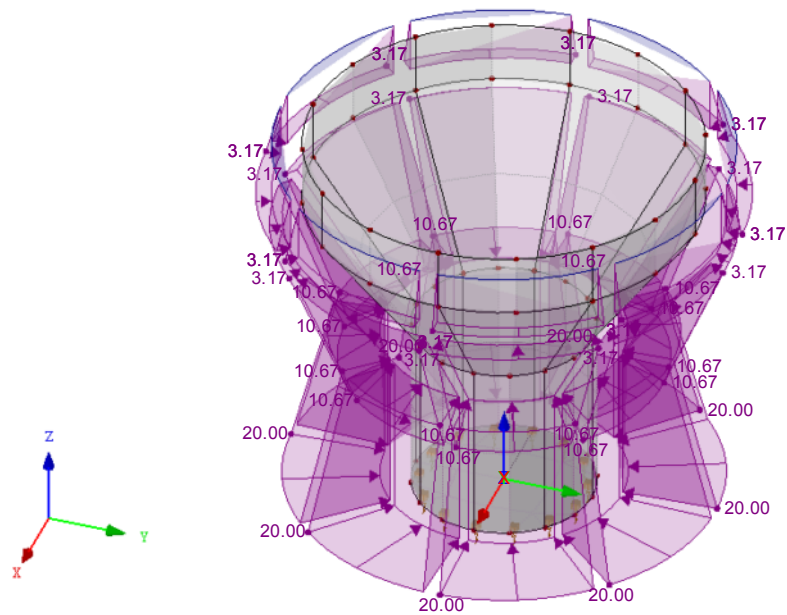
Model: Saht

Date: 2.5.2018

■ LC2: ZEMELJSKI PRITISK

LC 2: Zemeljski pritisk
Loads [kN/m²]

Isometric



LC3

Prometna obtežba

■ 3.4 SURFACE LOADS

LC3: Prometna obtežba

No.	On Surfaces No.	Load Type	Load Distribution	Load Direction	Symbol	Load Parameters		On Node No.
						Value	Unit	
1	19	Force	Linear in Z	YL	p ₁	0.00	kN/m ²	51
					p ₂	-13.00	kN/m ²	48
2	18	Force	Linear in Z	YL	p ₁	-13.00	kN/m ²	48
					p ₂	-11.00	kN/m ²	45
3	17	Force	Linear in Z	YL	p ₁	-11.00	kN/m ²	45
					p ₂	-5.00	kN/m ²	44

Project: Vodna skulptura

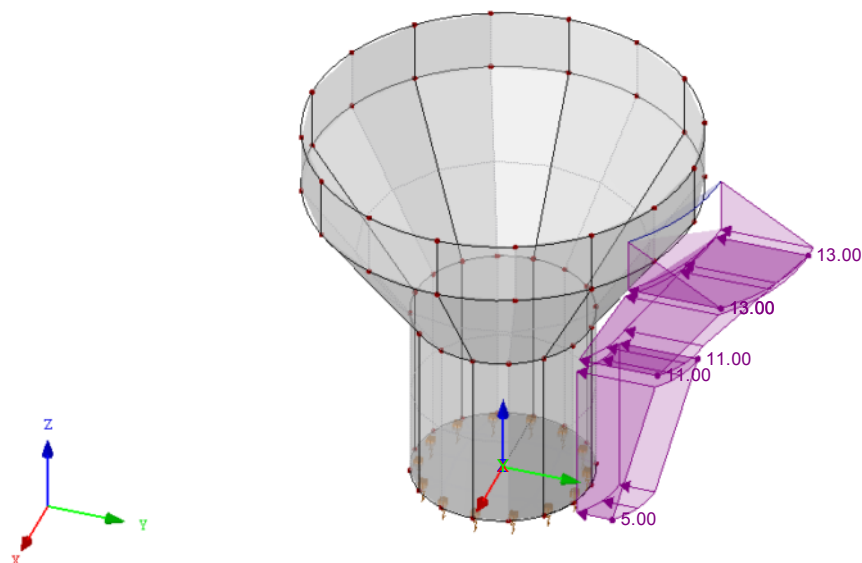
Model: Saht

Date: 2.5.2018

■ LC3: PROMETNA OBTEZBA

LC 3: Prometna obtežba
Loads [kN/m²]

Isometric

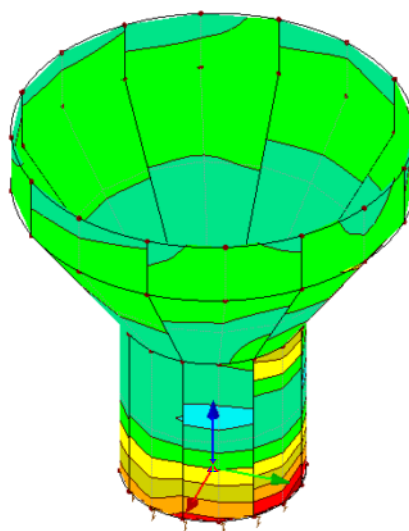
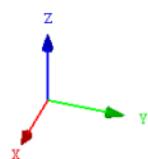
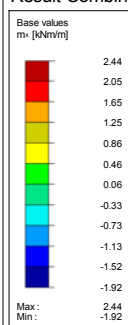
■ BASE VALUES m_x

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Basic Internal Forces m-x

Result Combinations: Max and Min Values

Isometric



Max m-x: 2.44, Min m-x: -1.92 [kNm/m]

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

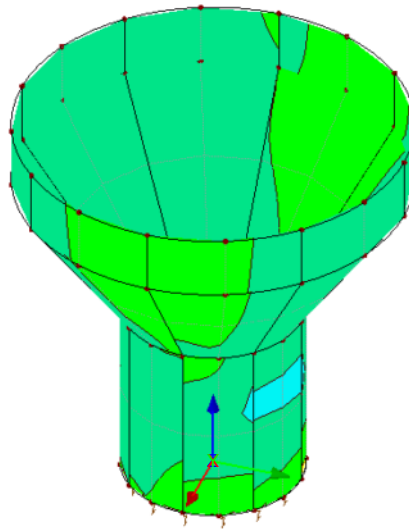
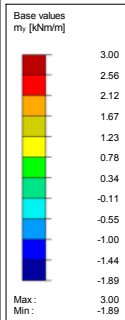
■ BASE VALUES m_y

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Basic Internal Forces m-y

Result Combinations: Max and Min Values

Isometric



Max m-y: 3.00, Min m-y: -1.89 [kNm/m]

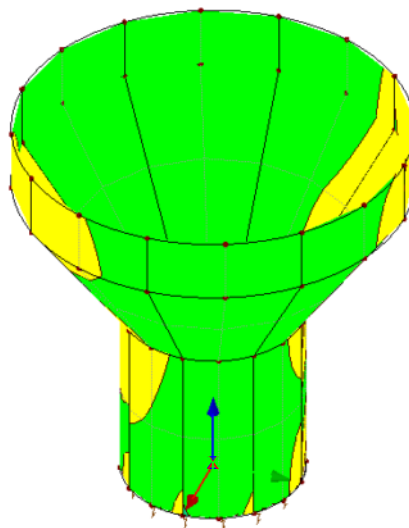
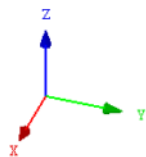
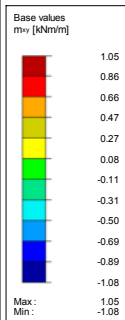
■ BASE VALUES m_{xy}

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Basic Internal Forces m-xy

Result Combinations: Max and Min Values

Isometric



Max m-xy: 1.05, Min m-xy: -1.08 [kNm/m]

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

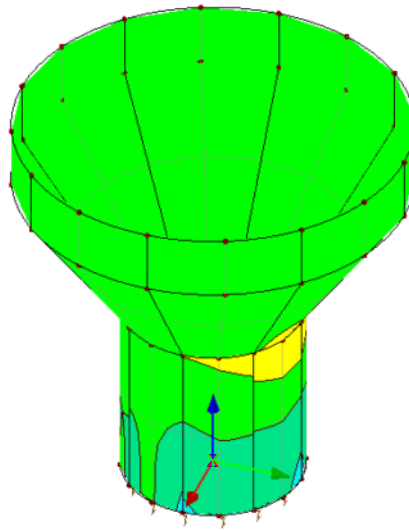
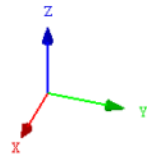
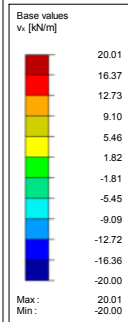
■ BASE VALUES v_x

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Isometric

Basic Internal Forces v-x

Result Combinations: Max and Min Values



Max v-x: 20.01, Min v-x: -20.00 [kN/m]

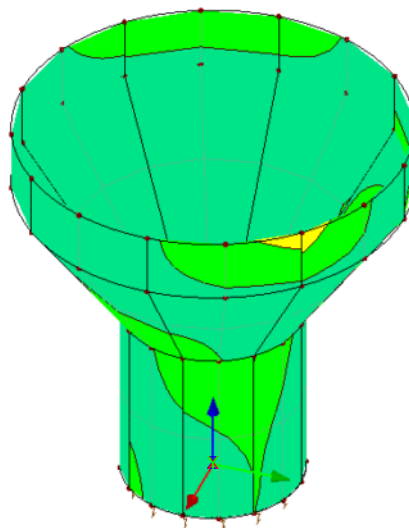
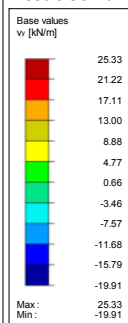
■ BASE VALUES v_y

RC 1: ULS (STR/GEO) - Permanent / transient - Eq. 6.10

Isometric

Basic Internal Forces v-y

Result Combinations: Max and Min Values



Max v-y: 25.33, Min v-y: -19.91 [kN/m]

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

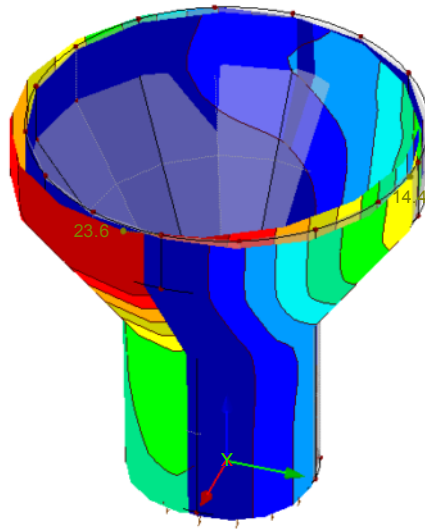
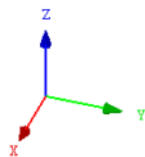
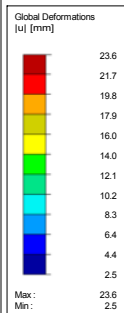
■ GLOBAL DEFORMATIONS u

RC 2: SLS - Characteristic

Global Deformations u

Result Combinations: Max and Min Values

Isometric



Max u : 23.6, Min u : 2.5 [mm]
Factor of deformations: 11.00

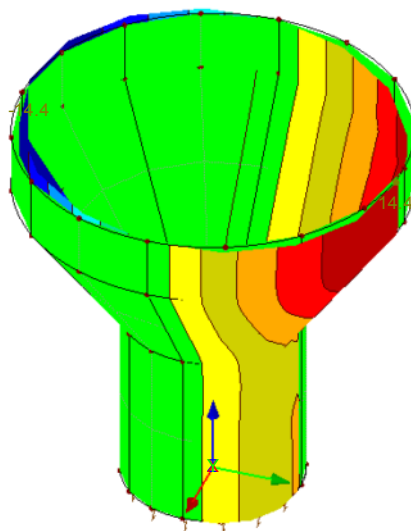
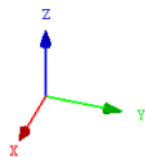
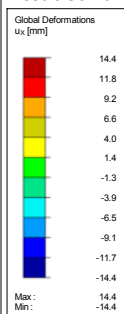
■ GLOBAL DEFORMATIONS u_x

RC 2: SLS - Characteristic

Global Deformations u_x

Result Combinations: Max and Min Values

Isometric



Max u_x : 14.4, Min u_x : -14.4 [mm]
Factor of deformations: 11.00

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

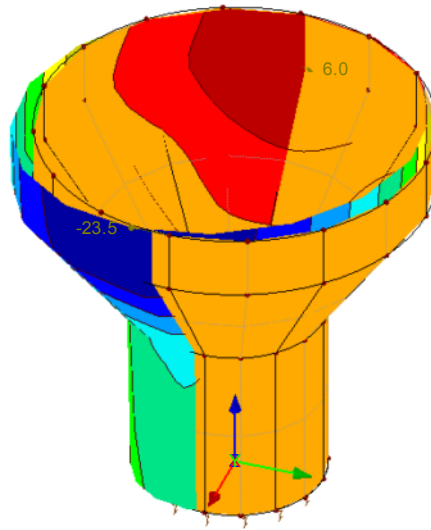
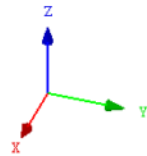
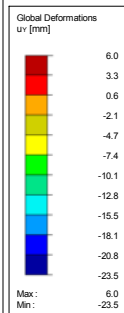
■ GLOBAL DEFORMATIONS u_y

RC 2: SLS - Characteristic

Global Deformations u-Y

Result Combinations: Max and Min Values

Isometric



Max u-Y: 6.0, Min u-Y: -23.5 [mm]
Factor of deformations: 11.00

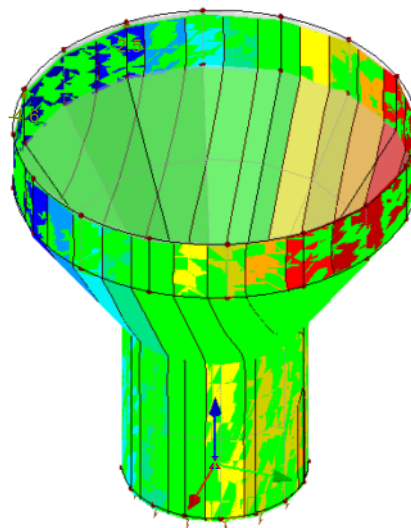
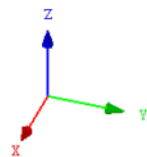
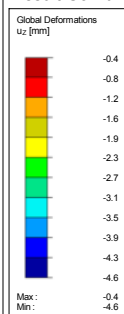
■ GLOBAL DEFORMATIONS u_z

RC 2: SLS - Characteristic

Global Deformations u-Z

Result Combinations: Max and Min Values

Isometric



Max u-Z: -0.4, Min u-Z: -4.6 [mm]
Factor of deformations: 11.00

RF-CONCRETE Surfaces
CA1
Reinforced concrete design

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

1.1 GENERAL DATA

Design according to Standard:		SIST EN 1992-1-1:2005/A101:2006	
ULTIMATE LIMIT STATE			
Load combinations for design:	CO1	1.35*LC1 + 1.35*LC2 Persistent and Transient	
	CO2	1.35*LC1 + 1.35*LC2 + 1.5*LC3 Persistent and Transient	
	CO3	LC1 + LC2 Persistent and Transient	
	CO4	LC1 + LC2 + LC3 Persistent and Transient	
Result combination for design:	RC1	ULS (STR/GEO) - Permanent / transient - Eq. 6.10 Persistent and Transient	
Definition of Provided Additional Reinforcement		Automatic arrangement according to the specifications in Table 1.4	
DETAILS			
Analysis Method for Reinforcement Envelope	Mixed		
Apply the internal forces without the rib components	<input type="checkbox"/>		
Design Situation Settings for Serviceability Limit State Checks			
Load combination:			
Characteristic with direct load	Checks: $k_1 \cdot f_{ck}$, $k_3 \cdot f_{yk}$		
Characteristic with imposed deformation	Checks: $k_1 \cdot f_{ck}$, $k_4 \cdot f_{yk}$		
Frequent	Checks: w_k		
Quasi-permanent	Checks: $k_2 \cdot f_{ck}$, w_k , u_l		

1.2 MATERIALS

Material No.	Material Description		Comment
	Concrete Strength Class	Steel Description	
1	Concrete C30/37	B 500 S (A)	

1.2.1 MATERIAL PARAMETERS

Material No.	Description	Name	Size	Unit
1	Concrete Strength Class: Concrete C30/37			
	Characteristic Cylinder Compressive Strength	f_{ck}	30.00	N/mm ²
	5 % Fractile of Axial Tensile Strength	$f_{ctk,0.05}$	2.00	N/mm ²
	Characteristic for Nonlinear Calculations			
	Mean Secant Modulus of Elasticity	E_{cm}	33000.00	N/mm ²
	Mean Cylinder Compressive Strength	f_{cm}	38.00	N/mm ²
	Mean Axial Tensile Strength	f_{ctm}	2.90	N/mm ²
	Ultimate Strain for Pure Compression	ϵ_{c1}	-2.200	‰
	Ultimate Strain at Failure	ϵ_{c1u}	-3.500	‰
	Shear Modulus	G	13750.00	N/mm ²
	Poisson's Ratio	ν	0.200	-
	Characteristic Strains for Parabolic-Rectangular Diagram			
	Ultimate Strain for Pure Compression	ϵ_{c2}	-2.000	‰
	Ultimate Strain at Failure	ϵ_{cu2}	-3.500	‰
	Parabola Exponent	n	2.000	-
	Specific Weight	γ	25.00	kN/m ³
	Reinforcing Steel: B 500 S (A)			
	Modulus of Elasticity	E_s	200000.00	N/mm ²
	Yield Stress Mean Value	f_{ym}	550.00	N/mm ²
	Characteristic Yield Stress	f_{yk}	500.00	N/mm ²
	Tensile Strength Mean Value	f_{tm}	551.25	N/mm ²
	Characteristic Tensile Strength	f_{tk}	525.00	N/mm ²
	Limiting Strain	ϵ_{uk}	25.000	‰

1.3 SURFACES

Surface No.	Matl. No.	Thickness Type	Thickness [cm]	Notes	Comment
1	1	Constant	20.00		
2	1	Constant	20.00		
3	1	Constant	20.00		
4	1	Constant	20.00		
5	1	Constant	20.00		
6	1	Constant	20.00		
7	1	Constant	20.00		
8	1	Constant	20.00		
9	1	Constant	20.00		
10	1	Constant	20.00		
11	1	Constant	20.00		
12	1	Constant	20.00		
13	1	Constant	20.00		
14	1	Constant	20.00		
15	1	Constant	20.00		
16	1	Constant	20.00		
17	1	Constant	20.00		
18	1	Constant	20.00		
19	1	Constant	20.00		
20	1	Constant	20.00		
21	1	Constant	20.00		
22	1	Constant	20.00		
23	1	Constant	20.00		

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

1.3 SURFACES

Surface No.	Matl. No.	Thickness Type	Thickness [cm]	Notes	Comment
24	1	Constant	20.00		
25	1	Constant	20.00		

1.4 REINFORCEMENT GROUP NO. 1

Applied to surfaces:	All
REINFORCEMENT RATIO	
Minimum secondary reinforcement	20.0 %
Basic minimum reinforcement	0.0 %
Minimum compression reinforcement	0.0 %
Minimum tension reinforcement	0.0 %
Maximum reinforcement percentage	4.0 %
Minimum shear reinforcement percentage	0.0 %
Concrete cover acc. to Standard	<input type="checkbox"/>
BASIC REINFORCEMENT LAYOUT - TOP (-z)	
Number of directions	2
Cover to rebar centroid	d-1: 3.00, d-2: 4.00 cm
Directions of reinforcement	Phi-1: 0.000°, Phi-2: 90.000°
Reinforcement area	As-1,-z (top): 0.00, As-2,-z (top): 0.00 cm²/m
BASIC REINFORCEMENT LAYOUT - BOTTOM (+z)	
Number of directions	2
Cover to rebar centroid	d-1: 3.00, d-2: 4.00 cm
Directions of reinforcement	Phi-1: 0.000°, Phi-2: 90.000°
Reinforcement area	As-1,+z (bottom): 0.00, As-2,+z (bottom): 0.00 cm²/m
LONGITUDINAL REINFORCEMENT FOR SHEAR FORCE DESIGN	
Apply the greater value resulting from either the required or provided reinforcement (basic and add. reinforcement) per reinforcement direction	
OPTIONS FOR SIST EN 1992-1-1:2005/A101:2006	
Minimum longitudinal reinforcement for plates acc. to 9.3.1	<input checked="" type="checkbox"/>
Direction of minimum reinforcement	
Reinforcement direction with the main tensile force from top (-z) and bottom (+z) surfaces together:	<input checked="" type="checkbox"/>
Minimum longitudinal reinforcement for walls acc. to 9.6	<input type="checkbox"/>
Minimum shear reinforcement	<input checked="" type="checkbox"/>
Neutral axis depth limitation	<input checked="" type="checkbox"/>
Variable strut inclination - min	21.801 °
Variable concrete strut inclination - max	45.000 °
Partial safety factor γ_s	PT 1.15, AC 1.00, SLS 1.00
Partial safety factor γ_c	PT 1.50, AC 1.20, SLS 1.00
Consideration of long-term effects Alpha-cc	PT 1.00, AC 1.00, SLS 1.00
Consideration of long-term effects Alpha-ct	SLS 1.00

2.2 REQUIRED REINFORCEMENT BY SURFACE

Surface No.	Point No.	Point Coordinates [m]			Symbol	Required Reinf. ULS	Basic Reinf.	Additional Reinforcement		Unit	Notes
		X	Y	Z				Required	Provided		
1	M16	-0.601	0.000	0.622	$a_{s,1,-z}$ (top)	0.50	0.00	0.50	-	cm²/m	
	M16	-0.601	0.000	0.622	$a_{s,2,-z}$ (top)	2.49	0.00	2.49	-	cm²/m	
	M1	-0.601	0.000	0.000	$a_{s,1,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M1	-0.601	0.000	0.000	$a_{s,2,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M1	-0.601	0.000	0.000	a_{sw}	0.00	-	-	-	cm²/m²	
2	M12	-0.920	-0.920	2.243	$a_{s,1,-z}$ (top)	0.50	0.00	0.50	-	cm²/m	
	M12	-0.920	-0.920	2.243	$a_{s,2,-z}$ (top)	2.49	0.00	2.49	-	cm²/m	
	M8	-1.301	0.000	2.243	$a_{s,1,+z}$ (bottom)	0.50	0.00	0.50	-	cm²/m	
	M8	-1.301	0.000	2.243	$a_{s,2,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M5	-0.601	0.000	1.243	a_{sw}	0.00	-	-	-	cm²/m²	
3	M15	-0.920	-0.920	2.665	$a_{s,1,-z}$ (top)	0.50	0.00	0.50	-	cm²/m	
	M15	-0.920	-0.920	2.665	$a_{s,2,-z}$ (top)	2.49	0.00	2.49	-	cm²/m	
	M11	-1.301	0.000	2.665	$a_{s,1,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M8	-1.301	0.000	2.243	$a_{s,2,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M8	-1.301	0.000	2.243	a_{sw}	0.00	-	-	-	cm²/m²	
4	M34	0.000	-0.318	0.000	$a_{s,1,-z}$ (top)	2.49	0.00	2.49	-	cm²/m	
	M25	-0.295	-0.295	0.000	$a_{s,2,-z}$ (top)	2.49	0.00	2.49	-	cm²/m	
	M1	-0.601	0.000	0.000	$a_{s,1,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M3	0.000	0.601	0.000	$a_{s,2,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M1	-0.601	0.000	0.000	a_{sw}	0.00	-	-	-	cm²/m²	
5	M106	-0.425	-0.425	0.622	$a_{s,1,-z}$ (top)	0.50	0.00	0.50	-	cm²/m	
	M106	-0.425	-0.425	0.622	$a_{s,2,-z}$ (top)	2.49	0.00	2.49	-	cm²/m	
	M17	0.000	-0.601	0.000	$a_{s,1,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M6	-0.425	-0.425	0.000	$a_{s,2,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M6	-0.425	-0.425	0.000	a_{sw}	0.00	-	-	-	cm²/m²	
6	M12	-0.920	-0.920	2.243	$a_{s,1,-z}$ (top)	0.50	0.00	0.50	-	cm²/m	
	M12	-0.920	-0.920	2.243	$a_{s,2,-z}$ (top)	2.49	0.00	2.49	-	cm²/m	
	M12	-0.920	-0.920	2.243	$a_{s,1,+z}$ (bottom)	0.50	0.00	0.50	-	cm²/m	
	M12	-0.920	-0.920	2.243	$a_{s,2,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M7	-0.425	-0.425	1.243	a_{sw}	0.00	-	-	-	cm²/m²	
7	M15	-0.920	-0.920	2.665	$a_{s,1,-z}$ (top)	0.50	0.00	0.50	-	cm²/m	
	M15	-0.920	-0.920	2.665	$a_{s,2,-z}$ (top)	2.49	0.00	2.49	-	cm²/m	
	M12	-0.920	-0.920	2.243	$a_{s,1,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M12	-0.920	-0.920	2.243	$a_{s,2,+z}$ (bottom)	2.49	0.00	2.49	-	cm²/m	
	M12	-0.920	-0.920	2.243	a_{sw}	0.00	-	-	-	cm²/m²	

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

■ 2.2 REQUIRED REINFORCEMENT BY SURFACE

Surface No.	Point No.	Point Coordinates [m]			Symbol	Required Reinf.		Additional Reinforcement		Unit	Notes
		X	Y	Z		ULS	Basic Reinf.	Required	Provided		
8	M83	0.000	-0.601	0.622	a _{s,1,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M83	0.000	-0.601	0.622	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M17	0.000	-0.601	0.000	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M26	0.425	-0.425	0.000	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
9	M17	0.000	-0.601	0.000	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M21	0.000	-1.301	2.243	a _{s,1,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M21	0.000	-1.301	2.243	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M21	0.000	-1.301	2.243	a _{s,1,+z} (bottom)	0.50	0.00	0.50	-	cm ² /m	
10	M21	0.000	-1.301	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M18	0.000	-0.601	1.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M24	0.000	-1.301	2.665	a _{s,1,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M24	0.000	-1.301	2.665	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
11	M21	0.000	-1.301	2.243	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M21	0.000	-1.301	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M21	0.000	-1.301	2.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M97	0.601	0.000	0.622	a _{s,1,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
12	M97	0.601	0.000	0.622	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M4	0.601	0.000	0.000	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M4	0.601	0.000	0.000	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M4	0.601	0.000	0.000	a _{sw}	0.00	-	-	-	cm ² /m ²	
13	M36	0.601	0.000	1.243	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M36	0.601	0.000	1.243	a _{s,2,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M30	0.920	-0.920	2.243	a _{s,1,+z} (bottom)	0.50	0.00	0.50	-	cm ² /m	
	M30	0.920	-0.920	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
14	M27	0.425	-0.425	1.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M33	0.920	-0.920	2.665	a _{s,1,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M33	0.920	-0.920	2.665	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M30	0.920	-0.920	2.243	a _{s,1,+z} (bottom)	0.50	0.00	0.50	-	cm ² /m	
15	M30	0.920	-0.920	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M30	0.920	-0.920	2.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M45	0.425	0.425	1.243	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M97	0.601	0.000	0.622	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
16	M4	0.601	0.000	0.000	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M44	0.425	0.425	0.000	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M4	0.601	0.000	0.000	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M36	0.601	0.000	1.243	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
17	M36	0.601	0.000	1.243	a _{s,2,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M45	0.425	0.425	1.243	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M39	1.301	0.000	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M36	0.601	0.000	1.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
18	M51	0.920	0.920	2.665	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M51	0.920	0.920	2.665	a _{s,2,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M48	0.920	0.920	2.243	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M39	1.301	0.000	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
19	M39	1.301	0.000	2.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M71	0.425	0.425	0.622	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M71	0.425	0.425	0.622	a _{s,2,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M3	0.000	0.601	0.000	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
20	M44	0.425	0.425	0.000	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M3	0.000	0.601	0.000	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M45	0.425	0.425	1.243	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M58	0.498	1.202	2.243	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
21	M54	0.000	0.601	1.243	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M48	0.920	0.920	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M45	0.425	0.425	1.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M59	0.498	1.202	2.665	a _{s,1,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
22	M59	0.498	1.202	2.665	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M48	0.920	0.920	2.243	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M48	0.920	0.920	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M48	0.920	0.920	2.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
23	M81	0.000	0.601	0.622	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M81	0.000	0.601	0.622	a _{s,2,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M3	0.000	0.601	0.000	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M61	-0.425	0.425	0.000	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
24	M3	0.000	0.601	0.000	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M64	-0.230	0.555	1.243	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M64	-0.230	0.555	1.243	a _{s,2,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M54	0.000	0.601	1.243	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
25	M57	0.000	1.301	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M54	0.000	0.601	1.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M60	0.000	1.301	2.665	a _{s,1,-z} (top)	0.50	0.00	0.50	-	cm ² /m	
	M60	0.000	1.301	2.665	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
26	M57	0.000	1.301	2.243	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M57	0.000	1.301	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M57	0.000	1.301	2.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M91	-0.425	0.425	0.622	a _{s,1,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
27	M16	-0.601	0.000	0.622	a _{s,2,-z} (top)	2.49	0.00	2.49	-	cm ² /m	
	M1	-0.601	0.000	0.000	a _{s,1,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M61	-0.425	0.425	0.000	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M1	-0.601	0.000	0.000	a _{sw}	0.00	-	-	-	cm ² /m ²	
28	M96	-0.672	0.672	1.743	a _{s,1,-z} (top)	0.03	0.00	0.03	-	cm ² /m	
	M8	-1.301	0.000	2.243	a _{s,2,-z} (top)	0.01	0.00	0.01	-	cm ² /m	
	M8	-1.301	0.000	2.243	a _{s,1,+z} (bottom)	0.50	0.00	0.50	-	cm ² /m	
	M8	-1.301	0.000	2.243	a _{s,2,+z} (bottom)	2.49	0.00	2.49	-	cm ² /m	
29	M5	-0.601	0.000	1.243	a _{sw}	0.00	-	-	-	cm ² /m ²	
	M65	-0.920	0.920	2.243	a _{s,1,-z} (top)	0.03	0.00	0.03	-	cm ² /m	

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

■ 2.2 REQUIRED REINFORCEMENT BY SURFACE

Surface No.	Point No.	Point Coordinates [m]			Symbol	Required Reinf.	Basic Reinf.	Additional Reinforcement		Unit	Notes
		X	Y	Z		ULS		Required	Provided		
	M8	-1.301	0.000	2.243	$a_{s,2,-z}$ (top)	0.02	0.00	0.02	-	cm ² /m	
	M8	-1.301	0.000	2.243	$a_{s,1,+z}$ (bottom)	0.50	0.00	0.50	-	cm ² /m	
	M8	-1.301	0.000	2.243	$a_{s,2,+z}$ (bottom)	2.49	0.00	2.49	-	cm ² /m	
	M8	-1.301	0.000	2.243	a_{sw}	0.00	-	-	-	cm ² /m ²	

Project: Vodna skulptura

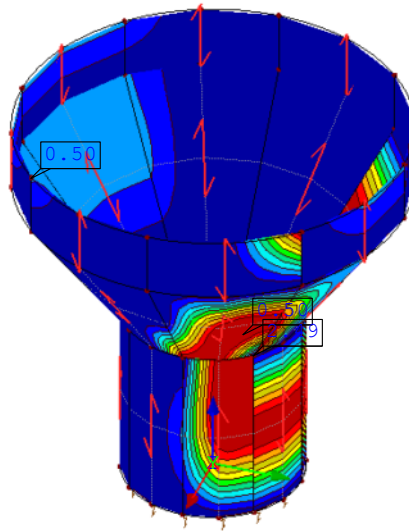
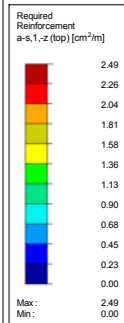
Model: Saht

Date: 2.5.2018

■ REQUIRED REINFORCEMENT $a_{s,1,-z}$ (top)

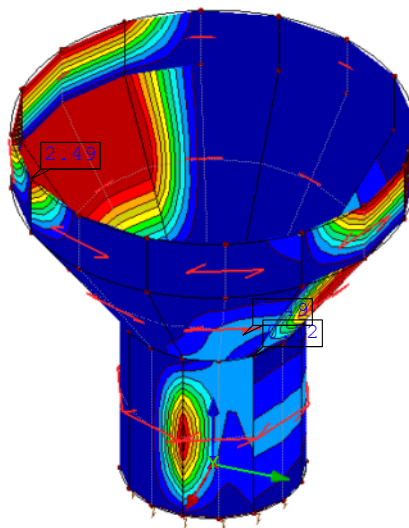
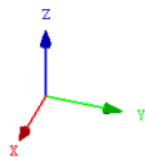
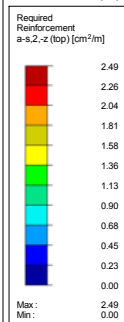
RF-CONCRETE Surfaces CA1
Reinforced concrete design
Required Reinforcement $a_{s,1,-z}$ (top)
Values: $a_{s,1,-z}$ (top) [cm^2/m]

Isometric

Max $a_{s,1,-z}$ (top): 2.49, Min $a_{s,1,-z}$ (top): 0.00 [cm^2/m]■ REQUIRED REINFORCEMENT $a_{s,2,-z}$ (top)

RF-CONCRETE Surfaces CA1
Reinforced concrete design
Required Reinforcement $a_{s,2,-z}$ (top)
Values: $a_{s,2,-z}$ (top) [cm^2/m]

Isometric

Max $a_{s,2,-z}$ (top): 2.49, Min $a_{s,2,-z}$ (top): 0.00 [cm^2/m]

Project: Vodna skulptura

Model: Saht

Date: 2.5.2018

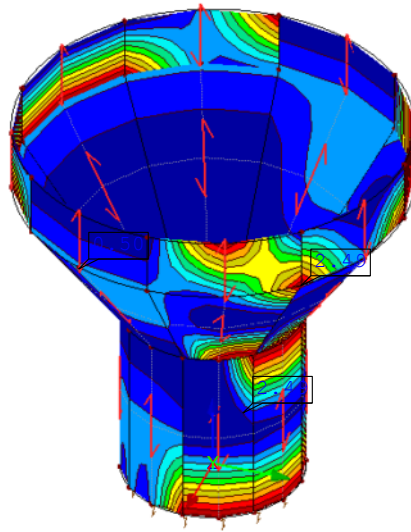
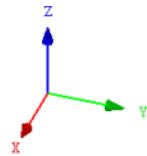
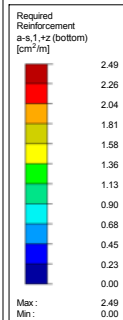
■ REQUIRED REINFORCEMENT $a_{s,1,+z}$ (bottom)

RF-CONCRETE Surfaces CA1

Reinforced concrete design

Required Reinforcement $a-s,1,+z$ (bottom)Values: $a-s,1,+z$ (bottom) [cm^2/m]

Isometric

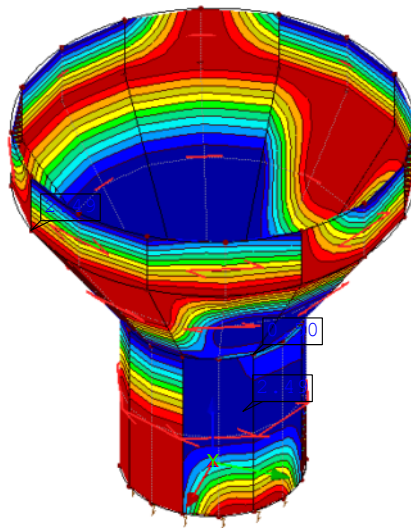
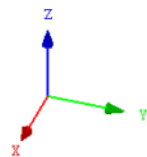
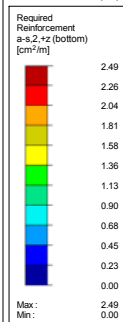
Max $a-s,1,+z$ (bottom): 2.49, Min $a-s,1,+z$ (bottom): 0.00 [cm^2/m]■ REQUIRED REINFORCEMENT $a_{s,2,+z}$ (bottom)

RF-CONCRETE Surfaces CA1

Reinforced concrete design

Required Reinforcement $a-s,2,+z$ (bottom)Values: $a-s,2,+z$ (bottom) [cm^2/m]

Isometric

Max $a-s,2,+z$ (bottom): 2.49, Min $a-s,2,+z$ (bottom): 0.00 [cm^2/m]

**VALIDE projektiranje in svetovanje d.o.o.,
Kladezna ul. 20, Ljubljana**

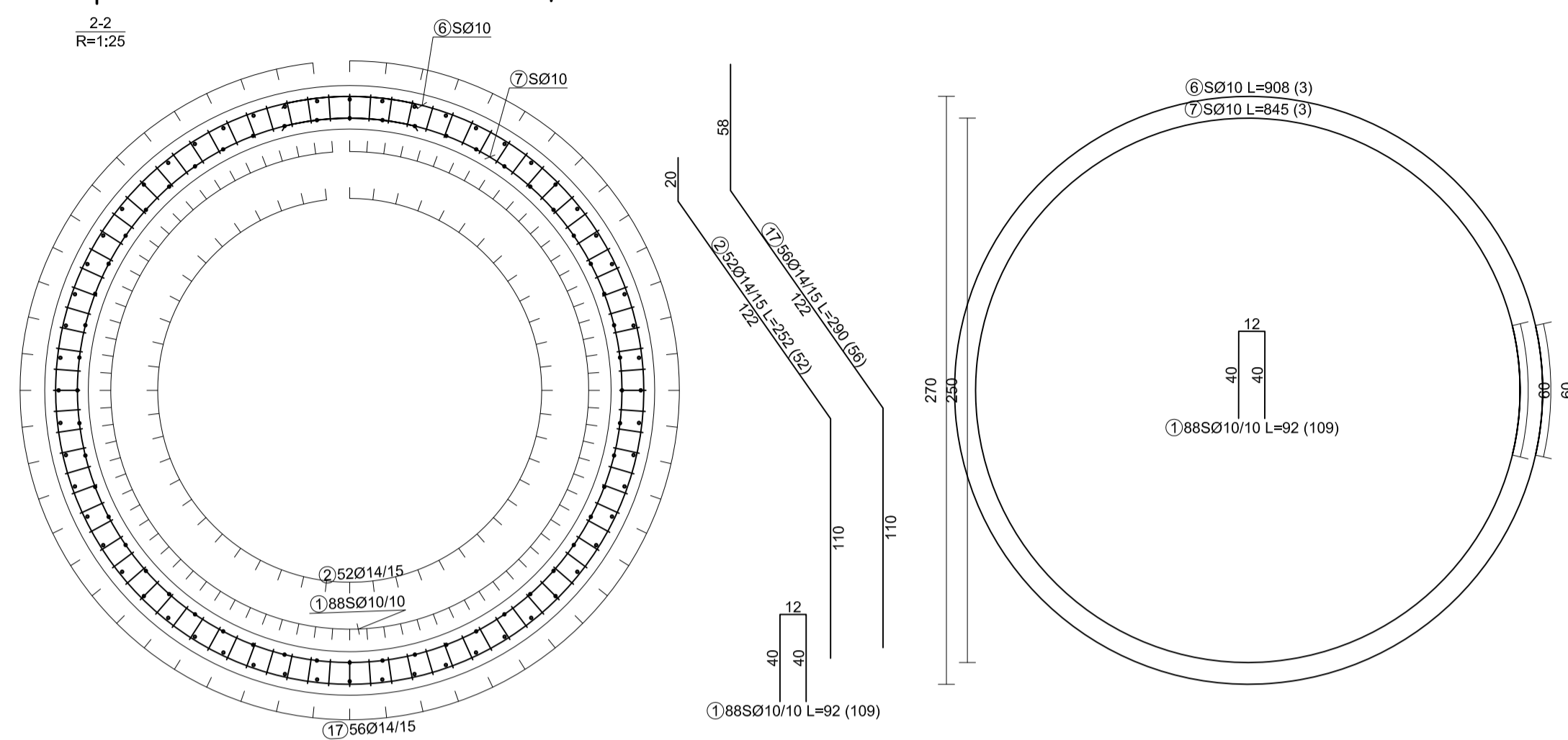
projektiranje, inženiring in tehnično svetovanje
vrednotenje podjetij, nepremičnin, strojev in opreme

tel./fax: 01-283-20-30/01-283-20-31, GSM: 041-617-136

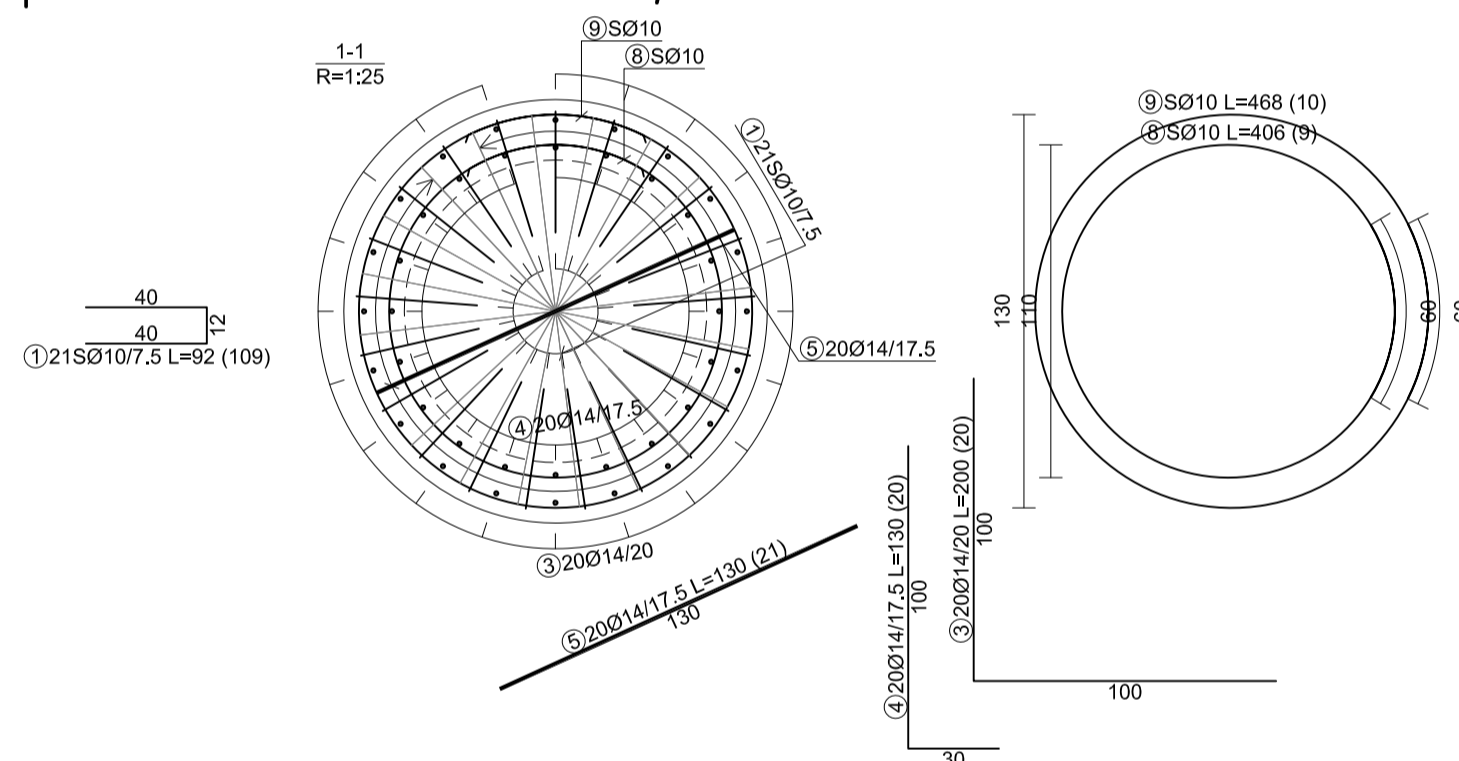
3.4 RISBE

Palice - izvleček					
Ø [mm]	lgn [m]		Teža enote [kg/m']	Teža [kg]	
B 500-B					
8	11.97		0.40	4.73	
10	789.85		0.62	487.34	
14	1326.99		1.21	1605.66	
20	52.60		2.47	129.92	
Skupaj (B 500-B)				2227.65	
Skupaj				2227.65	
Mreže - izvleček					
Oznaka mreže	B [cm]	L [cm]	n	Teža enote [kg/m2]	Skupna teža [kg]
Q-283	215	600	10	4.44	572.76
Skupaj					572.76

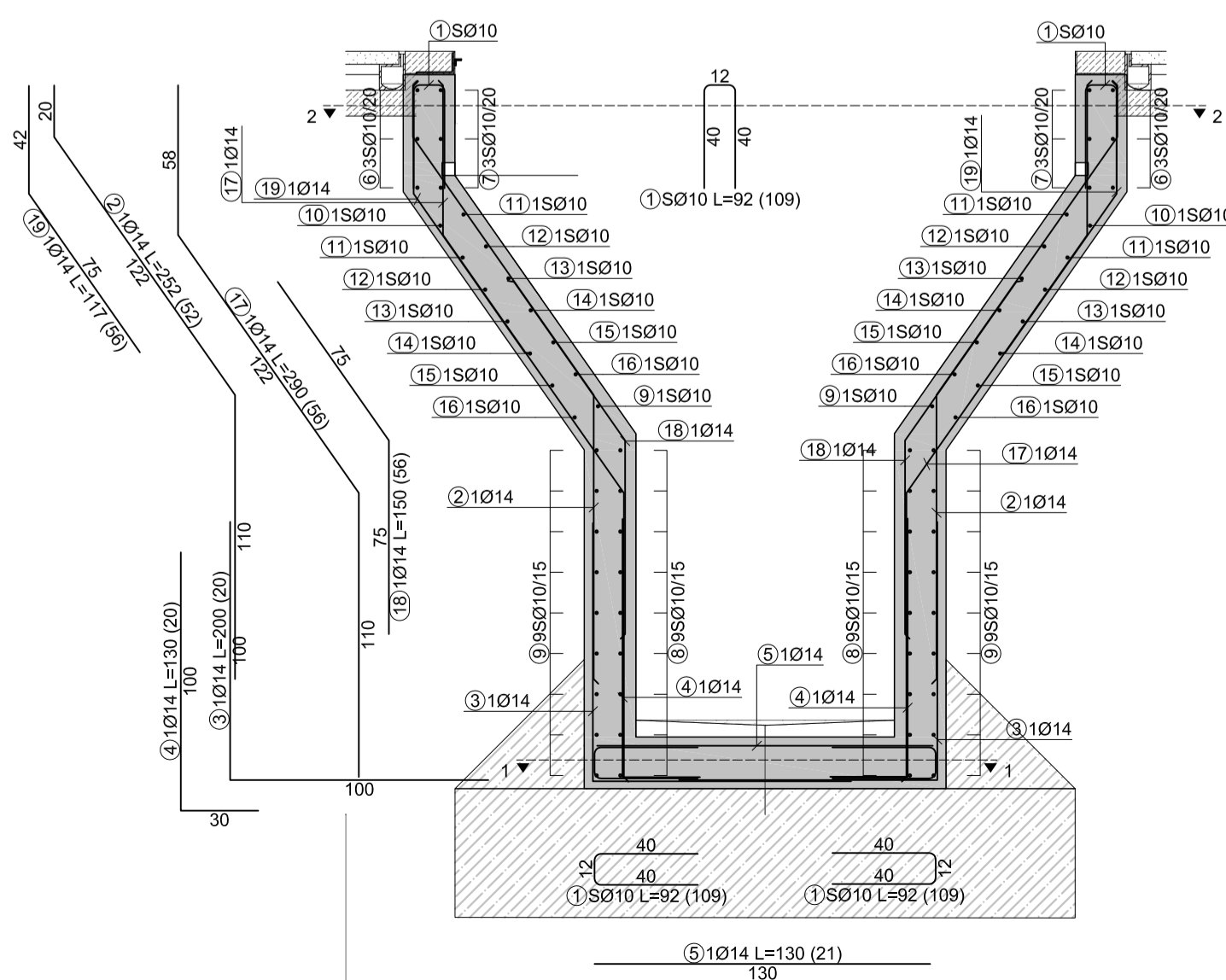
-palična in mrežna armatura, M1:25



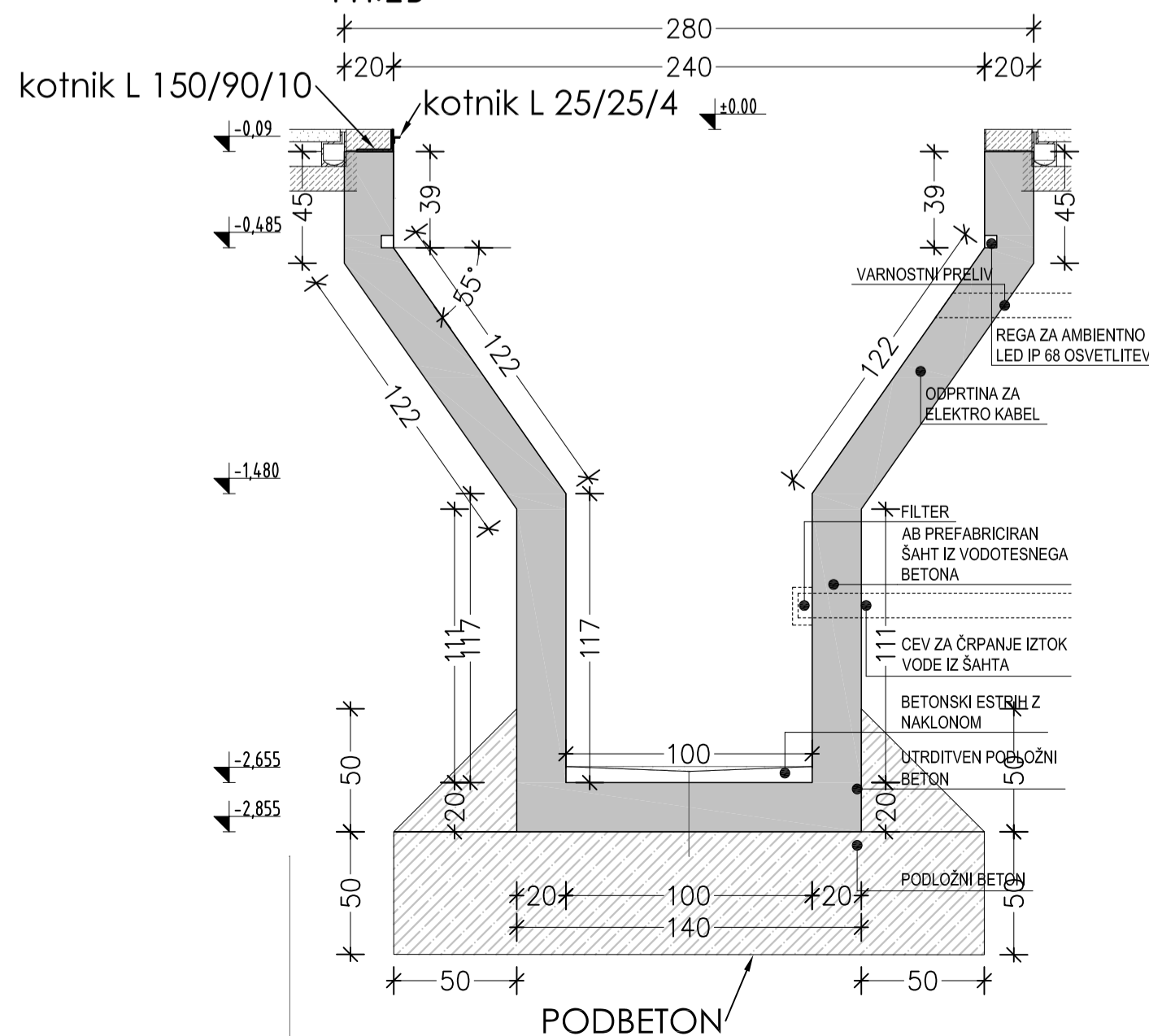
-palična in mrežna armatura, M1:25



-palična armatura, M1:25



-M1:25

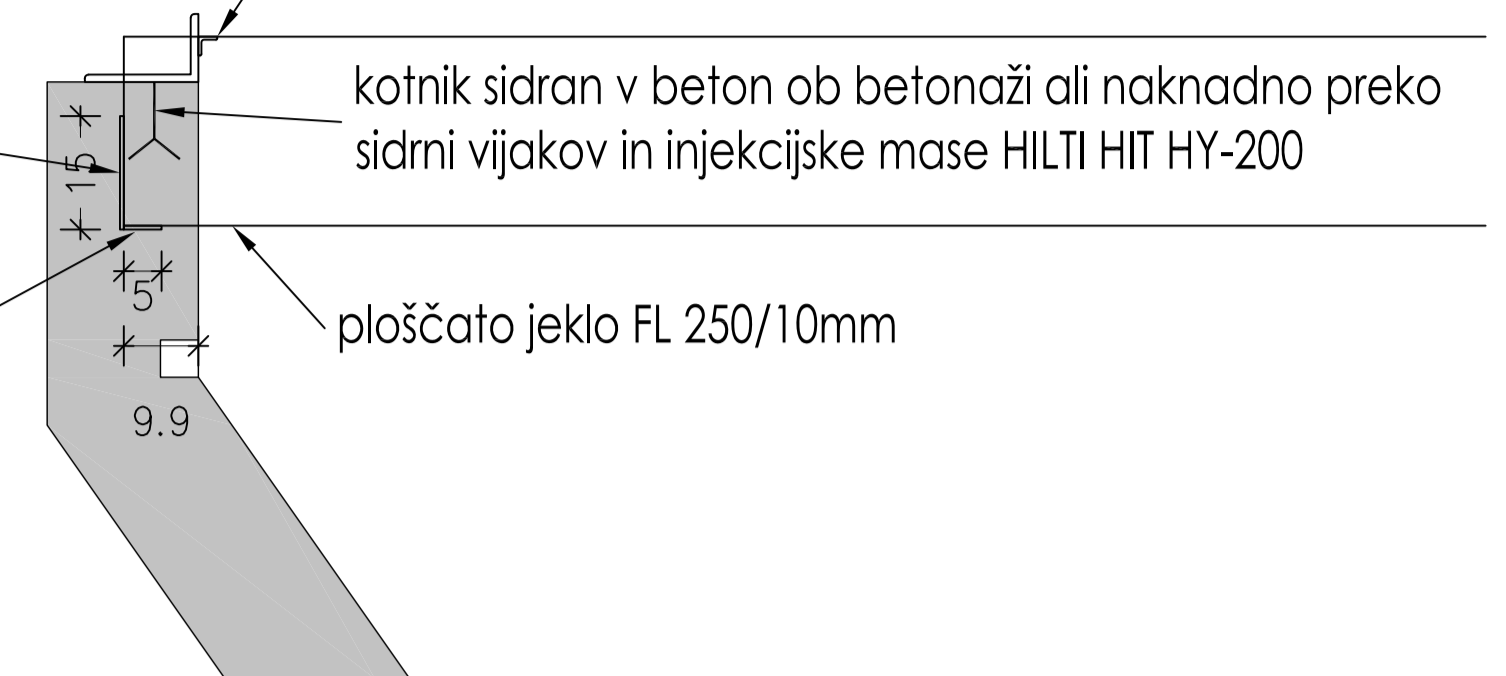


-M1:10

kotnik L25/25/4 privarjen na kotnik
/ 150/90/10, kotni zvar $a=3\text{mm}$

— kotnik sidran v beton ob betonaži ali naknadno preko
sidrni vijakov in injekcijske mase HILTI HIT HY-200

ploščato jeklo FL 250/10mm



Palice - specifikacija					
ozn	oblika in mere [cm]	Ø	lg [m]	n [kos]	lgn [m]
Vodna skulptura, prefabricirani AB šah (1 kos)					
1		10	0.92	109	100.
2		14	2.52	52	131.
3		14	2.00	20	40.
4		14	1.30	20	26.
5		14	1.30	21	27.
6		10	9.08	3	27.
7		10	8.45	3	25.
8		10	4.06	9	36.
9		10	4.88	10	46.
10		10	8.72	1	8.
11		10	8.17	2	16.
12		10	7.61	2	15.
13		10	7.10	2	14.
14		10	6.54	2	13.
15		10	5.97	2	11.
16		10	5.47	2	10.
17		14	2.90	56	162.
18		14	1.50	56	84.


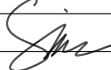
PRED VGRADNJO BETONOV VGRAJENO ARMATURO OBVEZNO
PREVERI ODGOVORNI NADZORNIK ZA GRADBENA DELA.
POLOŽENO ARMATURO POTRDITI Z VPISOM V GRADBENI
DNEVNIK.

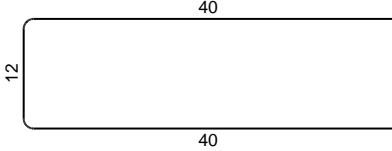
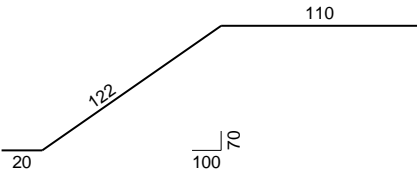
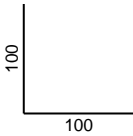
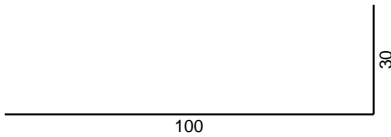
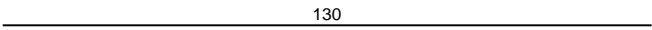
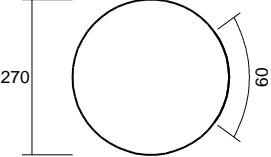
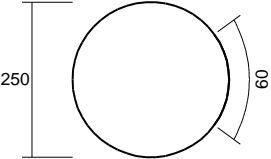
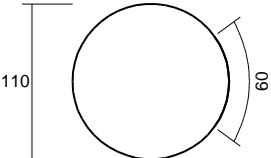
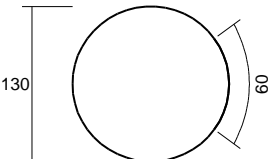
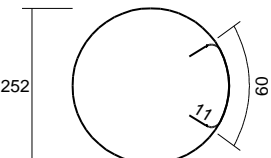
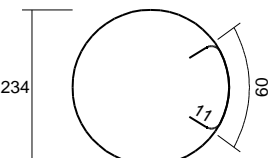
PRED IZVEDBO MORA IZVAJALEC DEL PREGLEDATI ARMATURNE
NAČRTE IN PO POTREBNI OBLIKOVANJE ARMATURE PRILAGODITI
NAČINU IZVEDBE

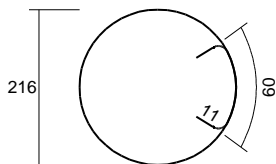
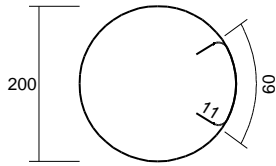
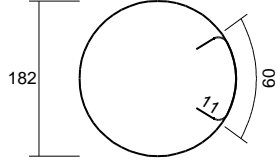
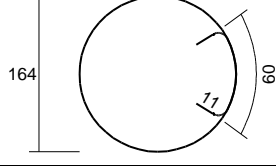
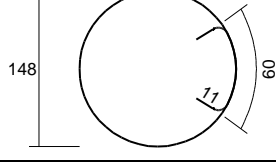
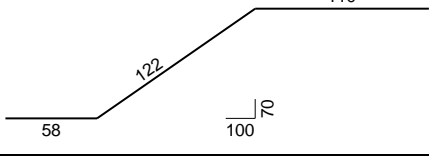
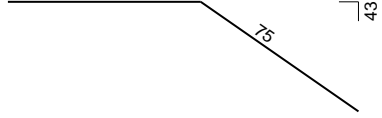
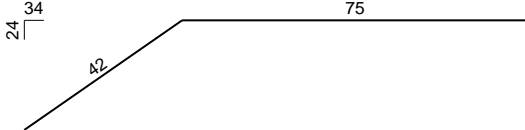
MERE, VIŠINSKE KOTE IN PREBOJE GLEJ TUDI V NAČRTIH
ARHITEKTURE IN STROJNIH TER ELEKTRO INŠTALACIJ.

LASTNOSTI MATERIALOV: BETON V SKLADU S SIST-EN 206-12003	Razred trdnosti [N/mm2]	Stopnja izpostavljenosti	Zaščitni sloj [mm]	vrsta cementa	omejevalni razpok [mm]
PREFABRICIRAN ŠAHT PAŠOVNI TEMELJ JAŠKI PODBETON	C30/37 C25/30 C15/20 C16/20	XD2,XF2,XC2,PV-III XC2 XC2 /	40 35 35 /	N N N /	0.30 0.30 0.30 /
ARMATURA V SKLADU S SIST EN 10080		Stopnja duktilnosti [%]		PROJECT BETONA IZDELJA DOBAVITELJ SVEŽE BETONSKE MEŠANICE!	
ARMATURNÉ PALICE B 500-B	f _{yk} =500	VISOKA >5%			
MREŽNA ARMATURA B 500-B	f _{yk} =500	VISOKA >5%			

JEKLO 1.4404, S235, nerjavno jeklo

08				
	Spr.	Opis spremembe	Datum	Podpis
	Izvajalec		Kladenska ul. 20, Ljubljana	
04	IZS 0537		tel./fax: 01-283-20-30 / 01-283-20-31 Mobilitel: 041-617-136	
	Naročnik	Mestna občina Ljubljana, Mestni trg 1, SI-1000 Ljubljana		
	Objekt/lokacija	VODNA SKULPTURA		
04	Vrsta načrta	Načrt gradbenih konstrukcij		
	Vrsta dokumentacije	PZI - Projekt za izvedbo		
	Vsečina/naslov risbe	<p align="center">ARMATURNO OPAŽNI NAČRT PREFABRICIRANI VTOČNI JAŠEK</p>		
		Ime	Id. št.	Podpis
	OVP	Primož Borsič, m.i.a.	ZAPS A-1740	
	OP	Alan Sodnik, u.d.i.g.	IZS G-0941	
00	Sodelavec	Rok Murko, d.i.g. (UN)		
	Sodelavec			
	št. projekta	št. načrta	Datum	Merilo
	09/2017	P-45/18	april 2018	1:10/25
				št. lista
				A-1

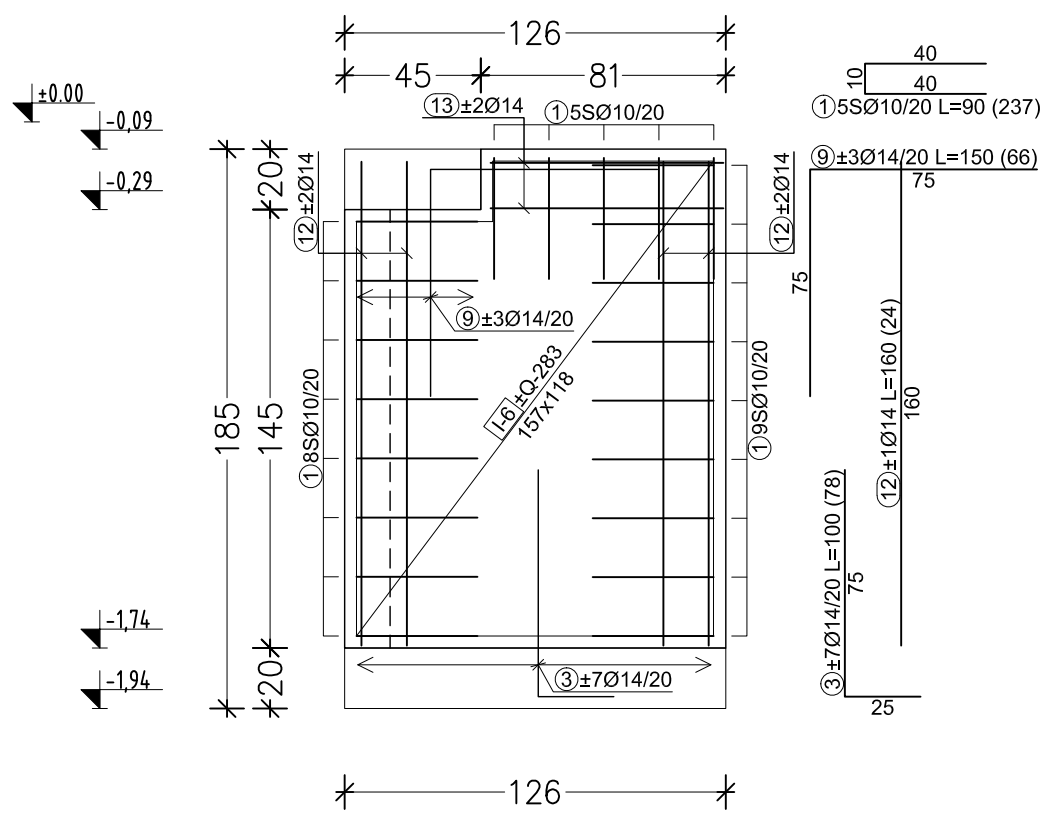
Palice - specifikacija					
ozn	oblika in mere [cm]	Ø	lg [m]	n [kos]	lg _n [m]
Vodna skulptura, prefabricirani AB šaht (1 kos)					
1		10	0.92	109	100.28
2		14	2.52	52	131.04
3		14	2.00	20	40.00
4		14	1.30	20	26.00
5		14	1.30	21	27.30
6		10	9.08	3	27.24
7		10	8.45	3	25.35
8		10	4.06	9	36.54
9		10	4.68	10	46.80
10		10	8.72	1	8.72
11		10	8.17	2	16.34

Palice - specifikacija					
ozn	oblika in mere [cm]	Ø	lg [m]	n [kos]	lgn [m]
12		10	7.61	2	15.22
13		10	7.10	2	14.20
14		10	6.54	2	13.08
15		10	5.97	2	11.94
16		10	5.47	2	10.94
17		14	2.90	56	162.40
18		14	1.50	56	84.00
19		14	1.17	56	65.52

Palice - izvleček			
Ø [mm]	lgn [m]	Teža enote [kg/m]	Teža [kg]
B 500-B			
10	326.65	0.62	201.54
14	536.26	1.21	648.87
Skupaj			850.42

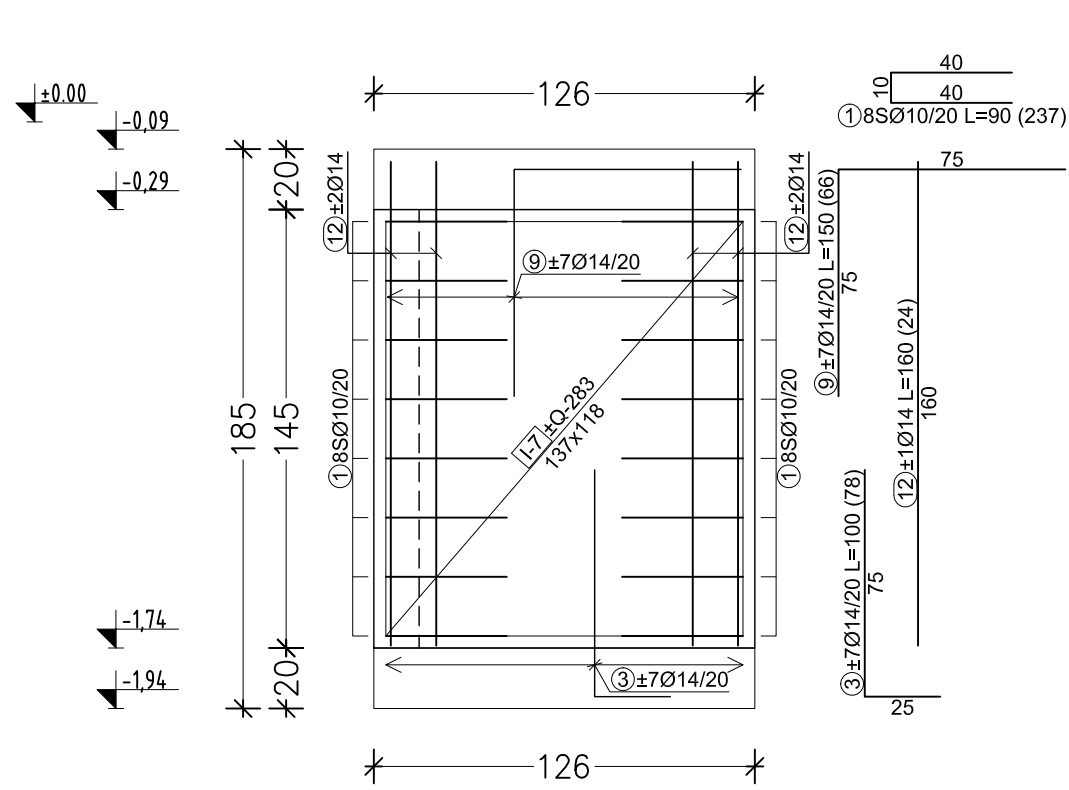
STENA V OSI A

-palična in mrežna armatura, M1:25



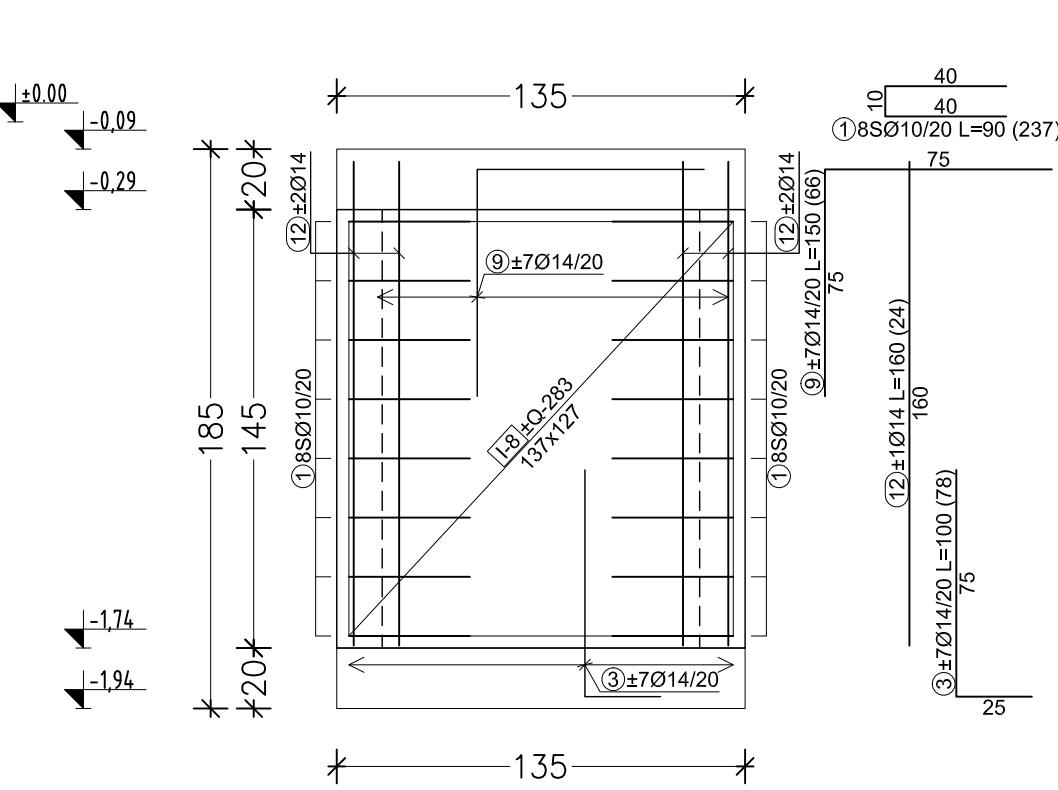
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-palična in mrežna armatura, M1:25



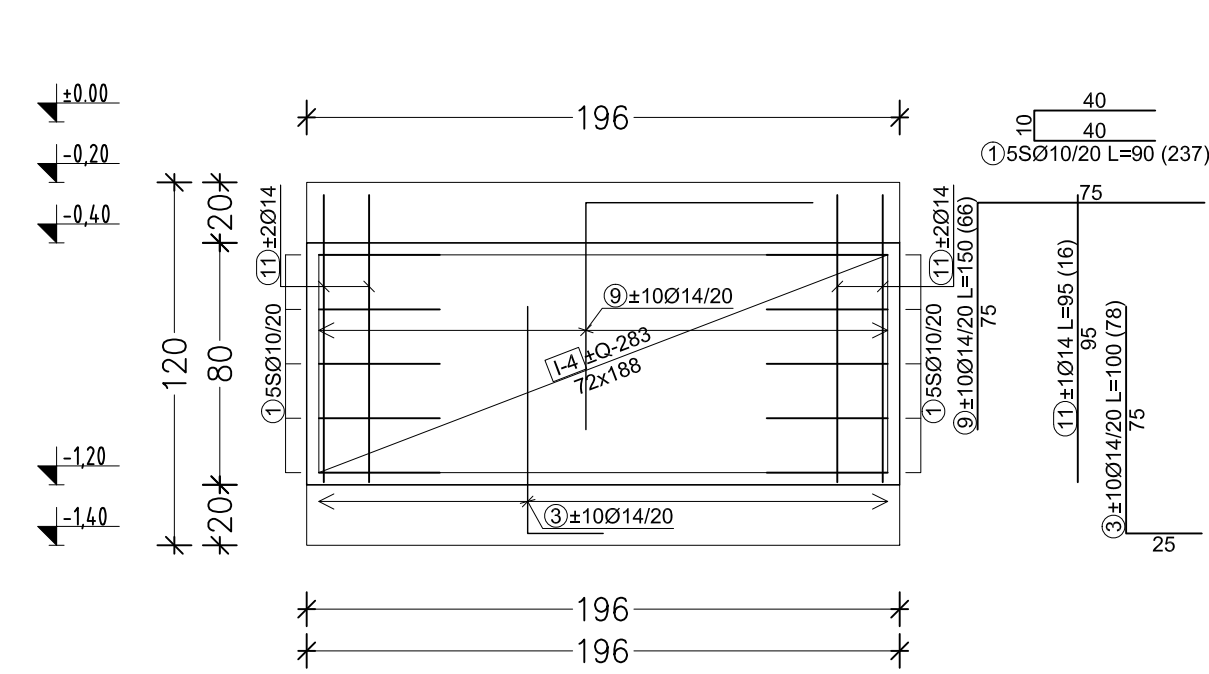
STENA V OSI 1

-palična in mrežna armatura, M1:25



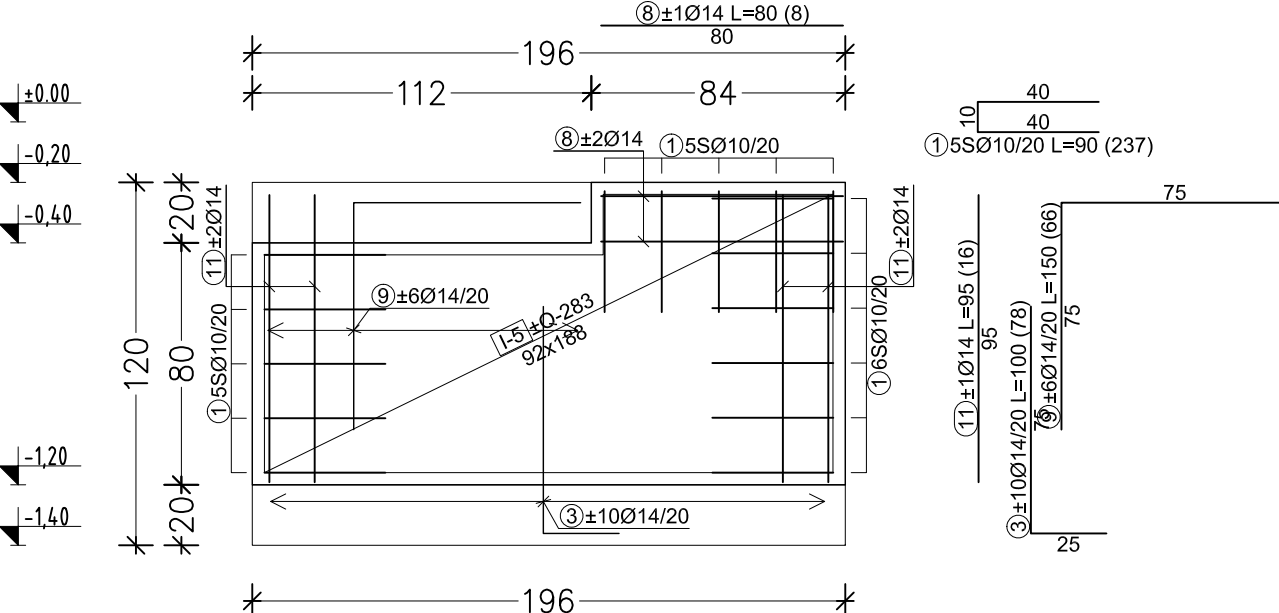
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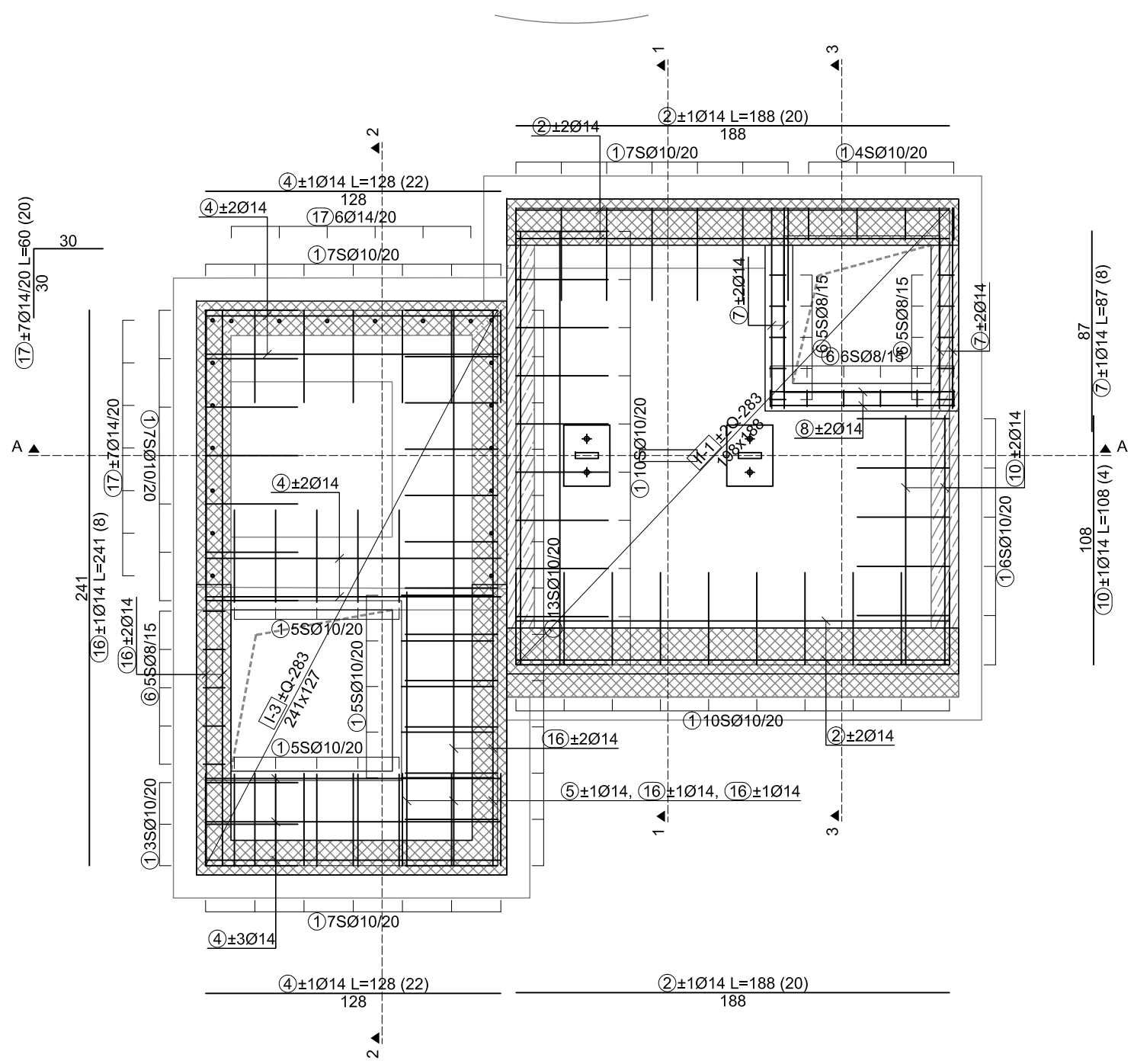
STENA V OSI 3

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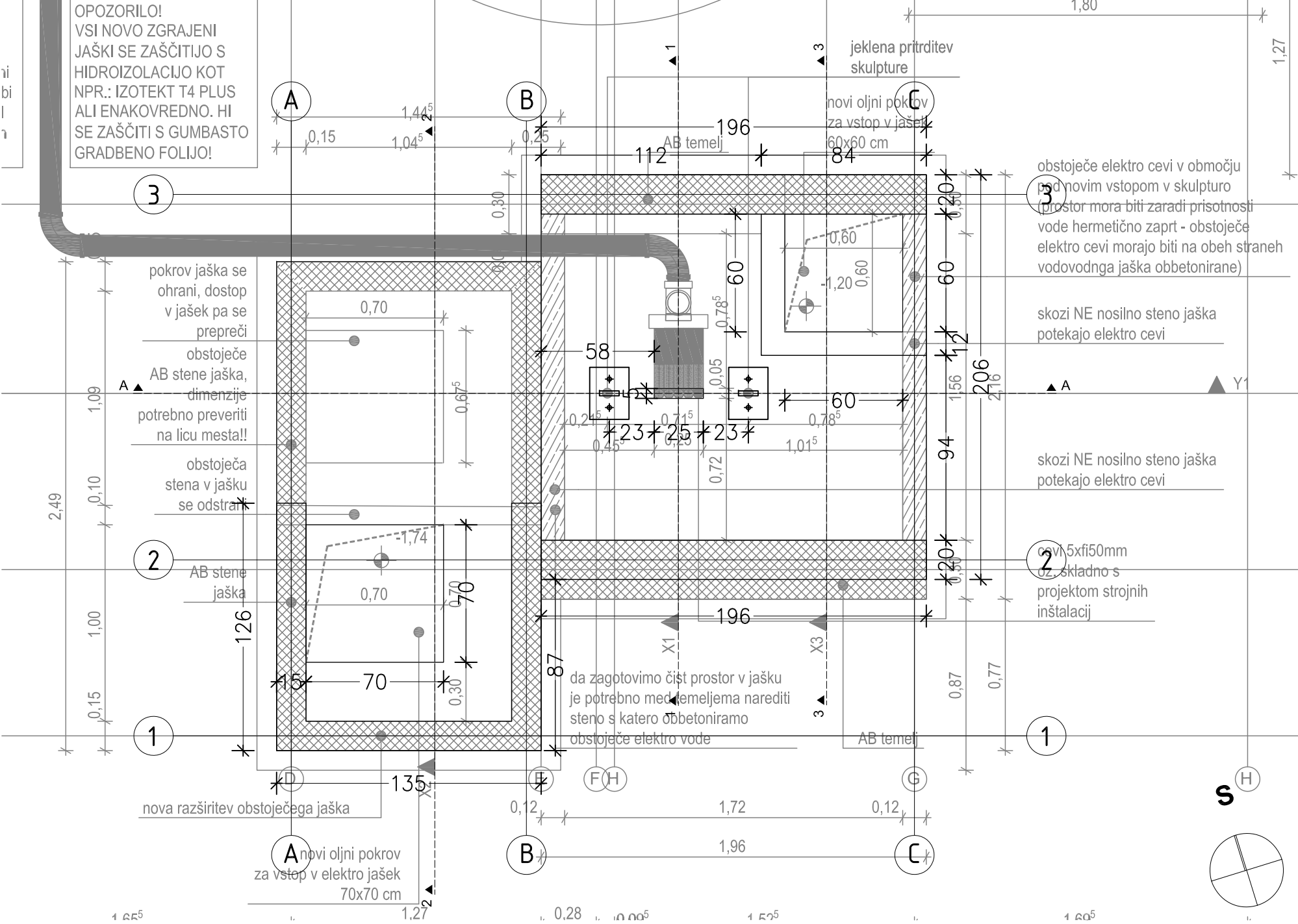
TLORIS ZGORNJE PLOŠČE JAŠKA

-palična in mrežna armatura, M1:25



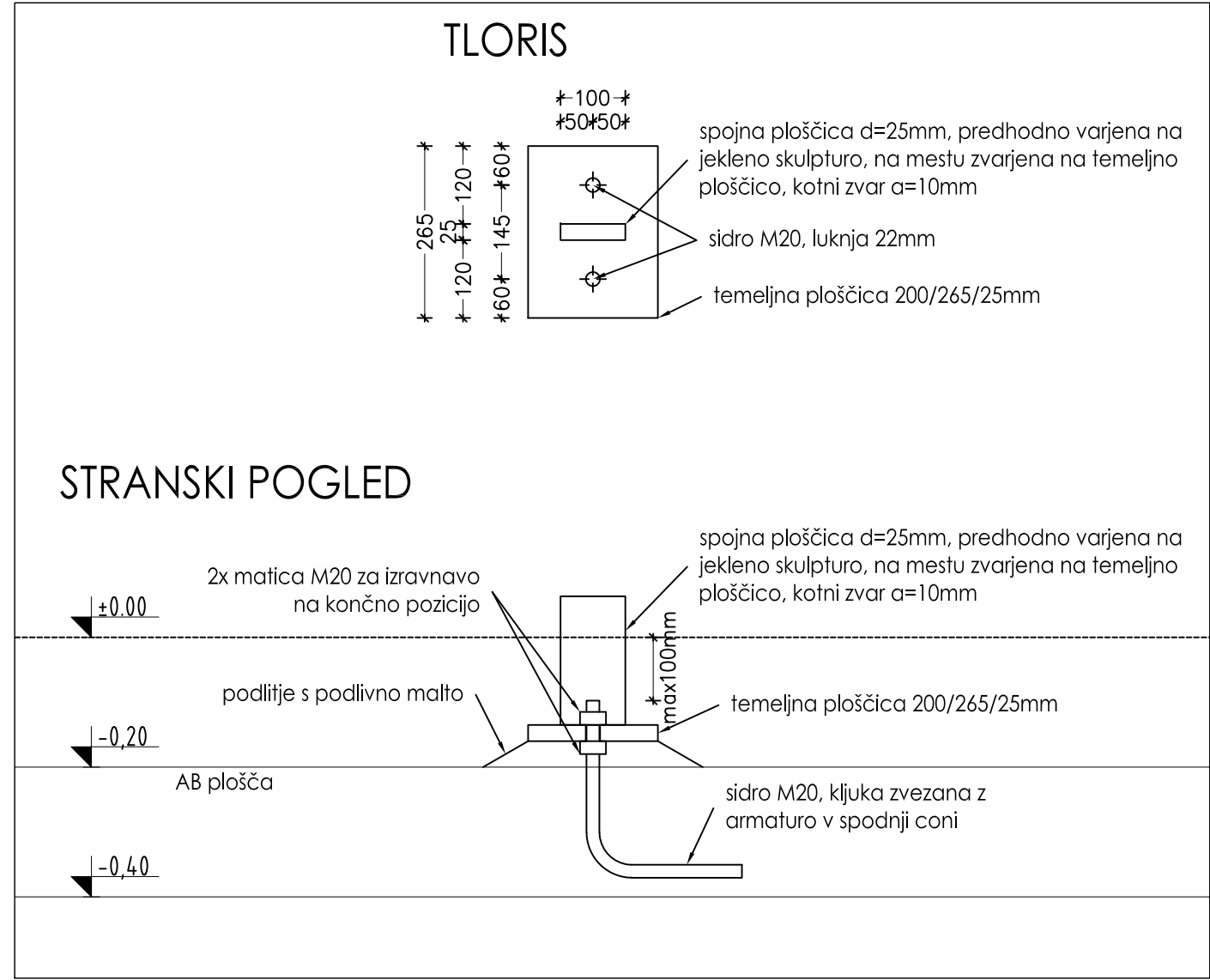
OPAŽ ZGORNJE PLOŠČE JAŠKA

-M1:25



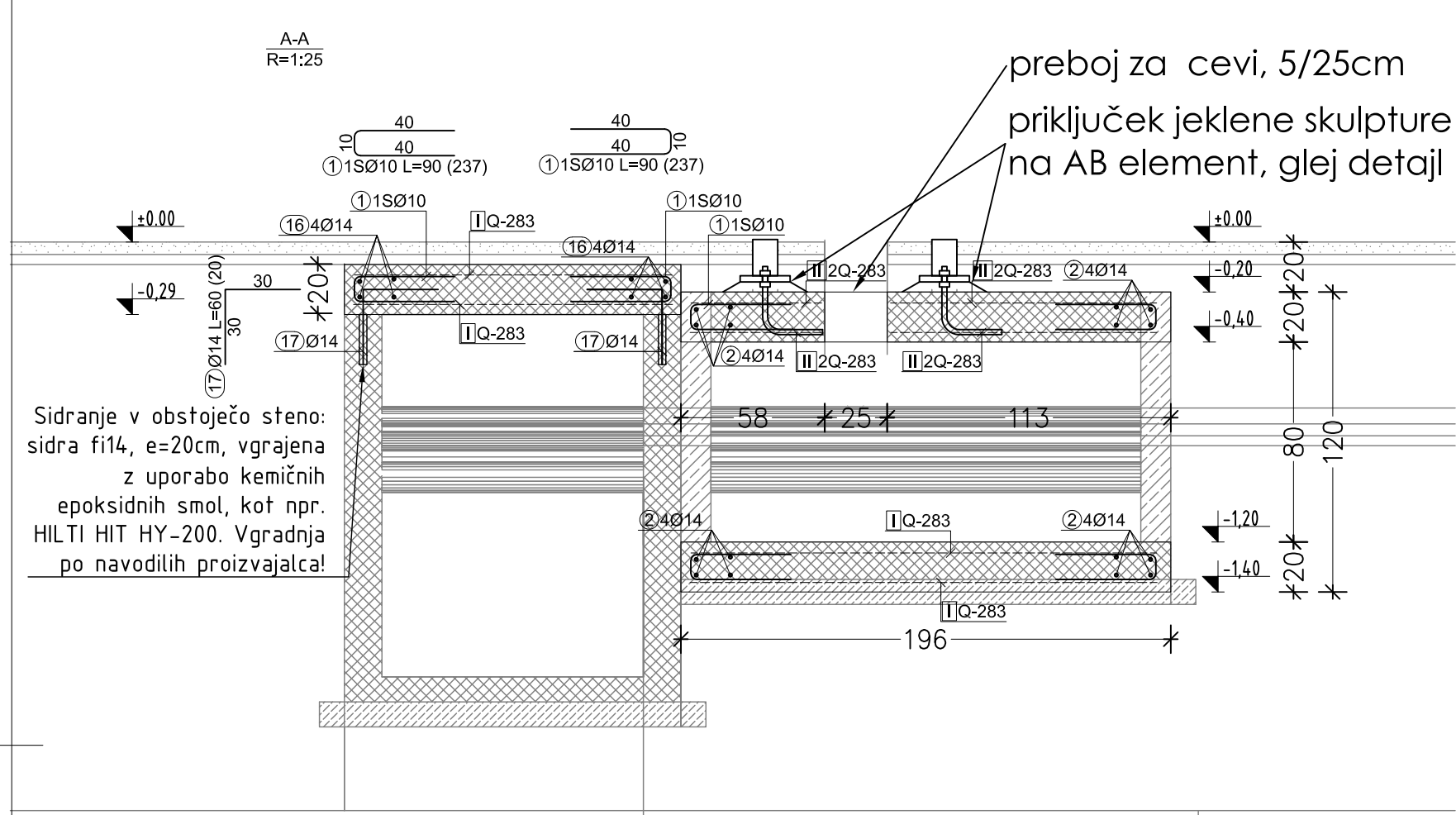
DETAJL PRIKLJUČKA SKULPTURE NA JAŠEK

-M1:10



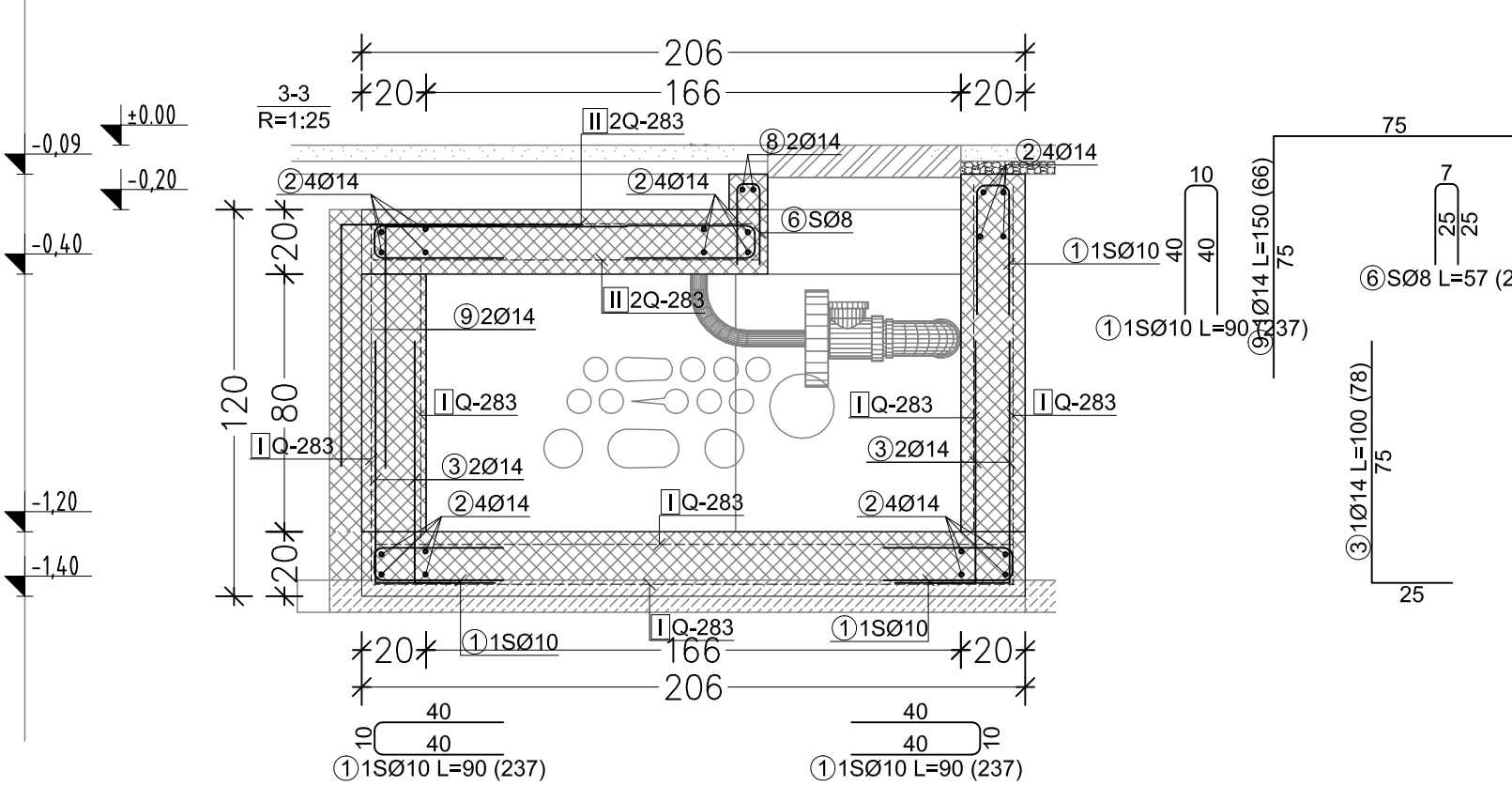
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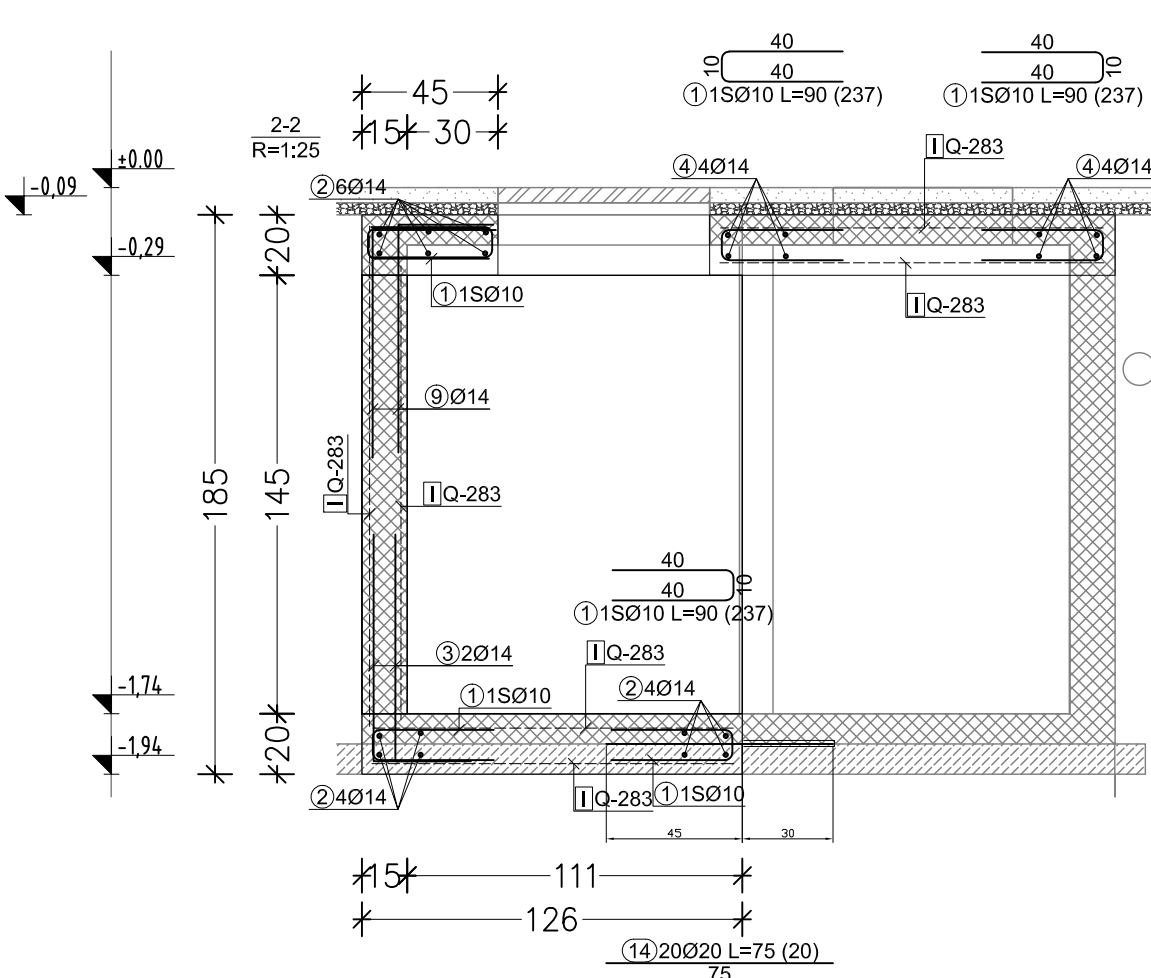
PREREZ 3-3

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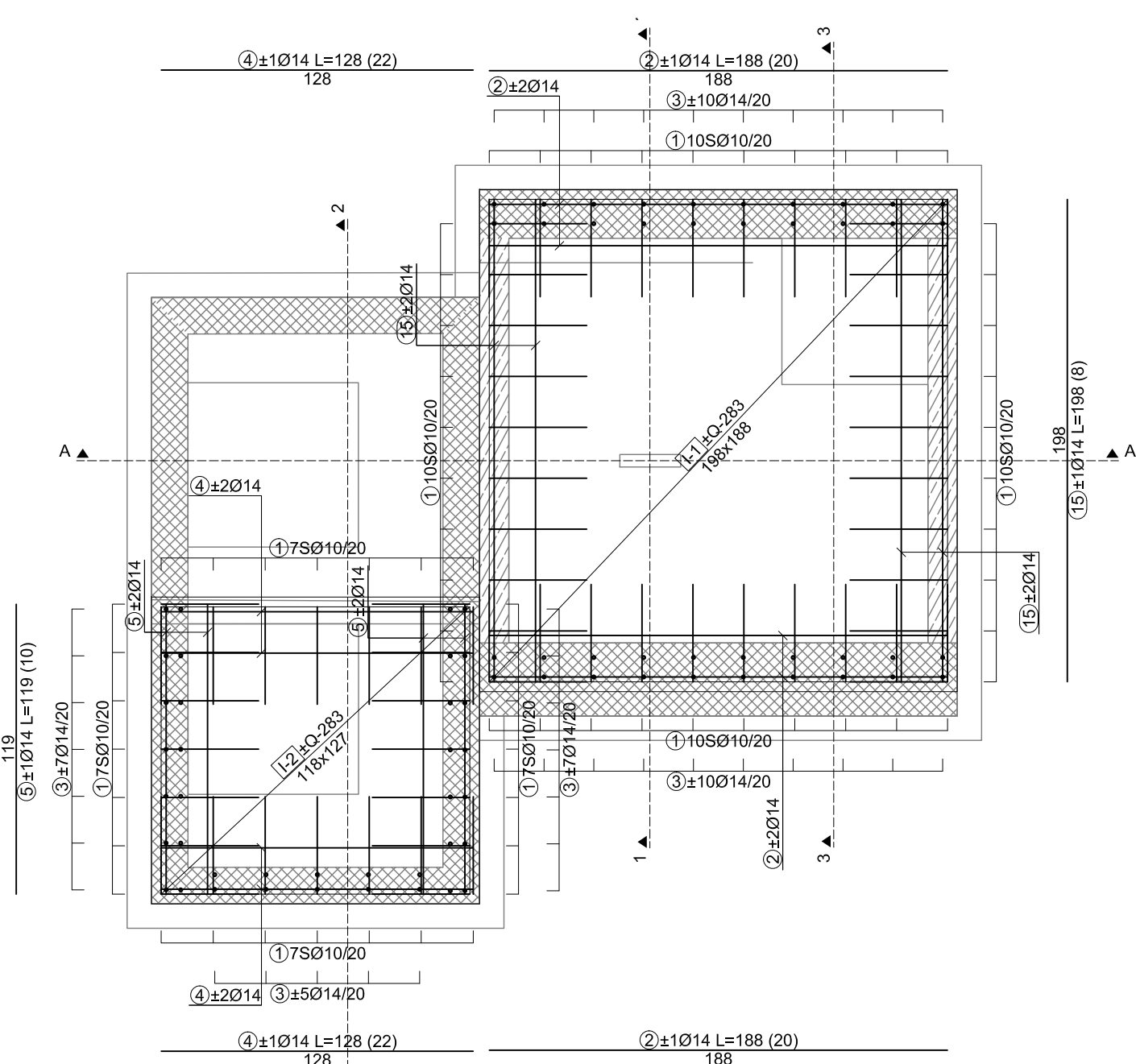
PREREZ 2-2

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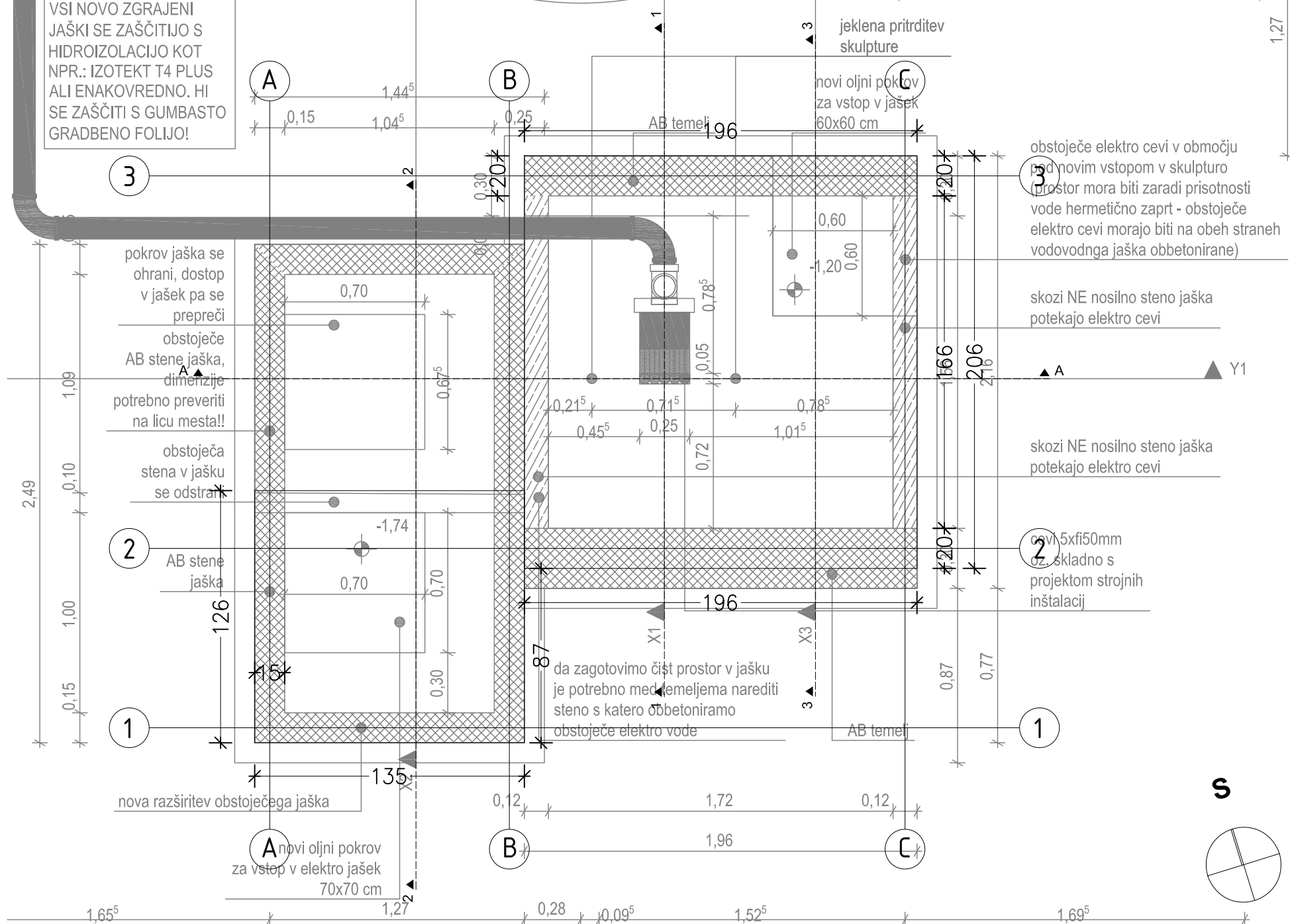
TLORIS SPODNJE PLOŠČE JAŠKA

-palična in mrežna armatura, M1:25



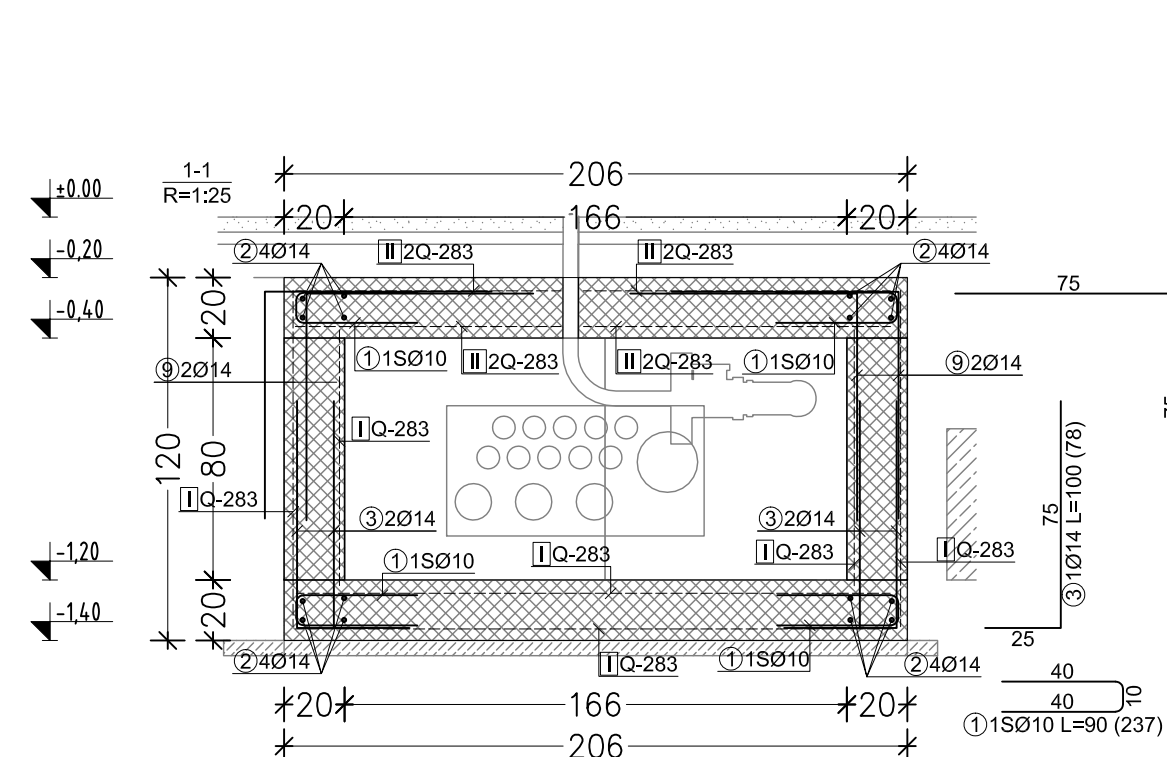
OPAŽ SPODNJE PLOŠČE JAŠKA

-M1:25



PREREZ 1-1

-palična in mrežna armatura, M1:25



Palič - specifikacija		Ø	l _p [m]	n [nos]	l _{pn} [m]
com	oblika in mera [cm]				
Vodna skulptura, jasek (1 kos)					
1		10	0,00	237	213,30
2		14	1,06	20	37,60
3		14	1,00	76	78,00
4		14	1,26	20	28,16
5		14	1,16	10	11,60
6		8	0,57	21	11,97
7		14	0,87	6	6,96
8		14	0,80	6	6,40
9		14	1,50	66	99,00
10		14	1,06	4	4,20
11		14	0,96	16	15,20
12		14	1,60	24	38,40
13		14	0,77	4	3,08
14		20	0,75	20	15,00
15		14	1,06	6	16,84
16		14	2,41	6	19,28
17		14	0,60	20	12,00

Palič - izračun		Teža enote [kg/m²]		Teža [kg]	
Ø [mm]	l _{pn} [m]				
8	11,97	0,40		4,73	
10	213,30	0,62		131,61	
14	376,14	1,21		455,13	
16	15,00	2,47		37,05	
Skupaj (Ø 800-B)				628,51	
Skupaj				628,51	

Mreža - specifikacija						
Pozicija	Oznaka mreže	B [cm]	L [cm]	n	Teža enote [g/cm2]	Skupna teža [kg]
Vodna skulptura, jasek (1 kos)						
1-1	Q-283	186	196	2	4,44	33,08
1-2	Q-283	127	116	2	4,44	13,27
1-3	Q-283	127	241	2	4,44	27,10
1-4	Q-283	186	72	2	4,44	12,03
1-5	Q-283	186	62	2	4,44	15,36
1-6	Q-283	116	157	2	4,44	16,45
1-7	Q-283	116	137	2	4,44	16,37
1-8	Q-283	127	137	2	4,44	15,46
1-1	Q-283	186	196	4	4,44	66,16
[Skupaj]						213,27
Mreža - izračun						
Oznaka mreže	B [cm]	L [cm]	n	Teža enote [g/cm2]	Skupna teža [kg]	
Q-283	215	600	6	4,44	343,66	
[Skupaj]						343,66

Mreža - načrt razcepa		Vodna skulptura, jasek	
		Q-283 (800 cm x 215 cm)	
		1x	1x
		1-1 186 x 186 40 x 40 8-1 186 x 186	1-1 186 x 186 40 x 40 8-1 186 x 186
		1-2 241 x 127 40 x 40 4-2 241 x 127	1-2 241 x 127 40 x 40 4-2 241 x 127
		1-3 127 x 116 40 x 40 2-1 127 x 116	1-3 127 x 116 40 x 40 2-1 127 x 116
		1-4 186 x 72 40 x 40 2-1 186 x 72	1-4 186 x 72 40 x 40 2-1 186 x 72
		1-5 186 x 62 40 x 40 2-1 186 x 62	1-5 186 x 62 40 x 40 2-1 186 x 62
		1-6 116 x 157 40 x 40 2-1 116 x 157	1-6 116 x 157 40 x 40 2-1 116 x 157
		1-7 116 x 137 40 x 40 2-1 116 x 137	1-7 116 x 137 40 x 40 2-1 116 x 137
		1-8 127 x 137 40 x 40 2-1 127 x 137	1-8 127 x 137 40 x 40 2-1 127 x 137
		1-1 186 x 186 40 x 40 8-1 186 x 186	1-1 186 x 186 40 x 40 8-1 186 x 186

Distančniki med sloji armature:
Za držanje distance se uporabijo distančne kače. Ocenjena poraba: 50kg

PRED VGRADNJO BETONOV VGRAJENO ARMATURO OBVEZNO
PREVERI ODGOVORNI NADZORNIK ZA GRADBENA DELA.
POLOŽENO ARMATURO POTRDI TI V VIŠPOM V GRADBENI
DNEVNIK.

PRED IZVEDBO MORA IZVAJALEC DEL PREGLEDATI ARMATURNE
NAČRTE IN PO POTREBNI OBLIKOVANJE ARMATURE PRILAGODITI
NAČINU IZVEDBE

MERE, VIŠINSKE KOTE IN PREBOJE GLEJ TUDI V NAČRTIH
ARHITEKTURE IN STROJNIH TER ELEKTRO INŠTALACIJ.

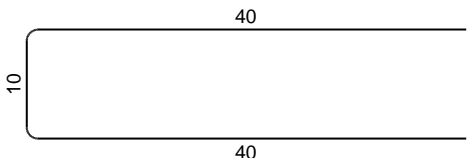

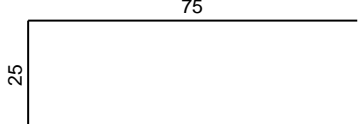
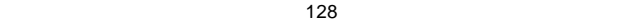
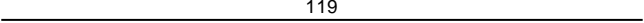
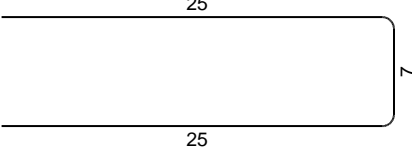
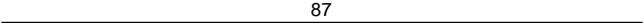
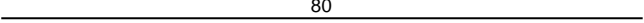
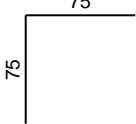
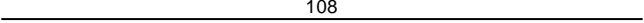
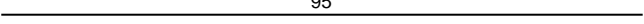
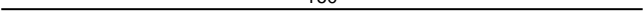
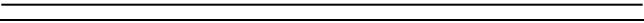
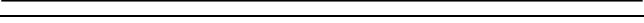
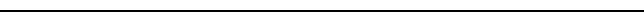
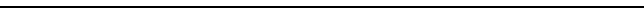
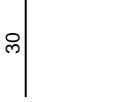
LASTNOSTI MATERIALOV:	Razred trdnosti [N/mm²]	Stopnja izpostavljenosti	Začetni sloj [mm]	vrsta cementa	omejitvev razpok [mm]
BETON V SKLADU S SIST-EN 206-12003					
PREFABRICIRAN ŠAHT	C30/37	X02,Xf2,XC2,PV-III	40	N	0,30
PASOVNI TEHELJ	C25/30	XC2	35	N	0,30
JAŠKI	C25/30	XC2	35	N	0,30
PODBETON	C16/20	/	/	/	/

ARMATURA V SKLADU S SIST EN 10080	f _{yk} =500	Stopnja duktilnosti [%]	PROJEKT BETONA IZDELA
ARMATURNE PALICE B 500-B	f _{yk} =500	VISOKA >5%	DOBAVITELJ SVEŽE
MREŽNA ARMATURA B 500-B		VISOKA >5%	BETONSKE MEŠANICE!

JEKLO 14404, S235, nerjavno jeklo

PODZEMNI JAŠKI

A	Sprememba zgornje plošče jaška med osjo A in B	2.7.2018	
Spr.	Opis spremembe	Datum	Podpis
Izvajalec	Primož Boršič, m.i.a.	Kladenska ul. 20, Ljubljana	
IZS 0537	VAL-DE	tel./fax: 01-283-20-101-283-20-31	
		Mobilite: 041-617-136	
Naročnik	Mestna občina Ljubljana, Mestni trg 1, SI-1000 Ljubljana		
Objekt/lokacija	VODNA SKULPTURA		
Vrsta načrta	Načrt gradbenih konstrukcij		
Vrsta dokumentacije	PZI - Projekt za izvedbo		
Vsebina/naslov risbe			
ARMATURNO OPAŽNI NAČRT PODZEMNI JAŠKI			
OVP	Ime	Id. št.	Podpis
OP	Primož Boršič, m.i.a.	ZAPS A-1740	
Sodelavec	Alan Sodnik, u.d.i.g.	IZS G-0341	
Sodelavec	Rok Murko, d.i.g. (UN)		
št. projekta		št. načrta	Datum
09/2017		P-45/18	april 2018
		Merilo	št. lista
		1:10/25	A-2

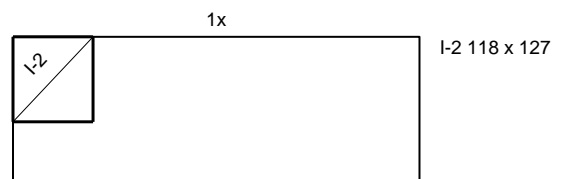
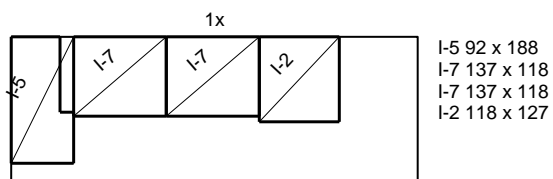
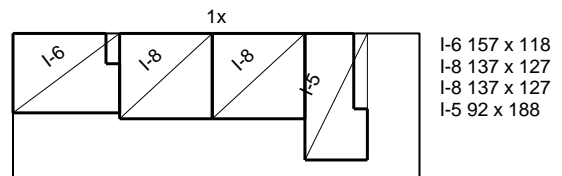
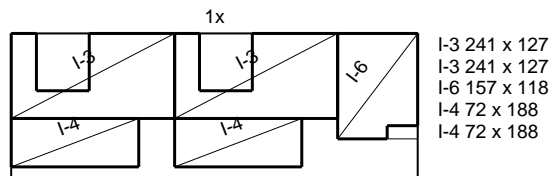
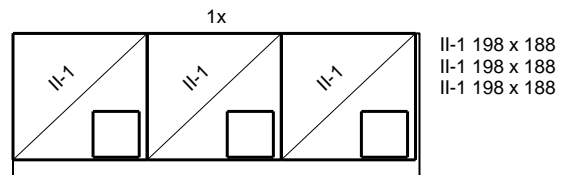
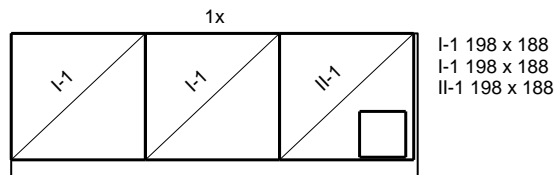
Palice - specifikacija					
ozn	oblika in mere [cm]	Ø	lg [m]	n [kos]	lg _n [m]
Vodna skulptura, jašek (1 kos)					
1		10	0.90	237	213.30
2		14	1.88	20	37.60
3		14	1.00	78	78.00
4		14	1.28	22	28.16
5		14	1.19	10	11.90
6		8	0.57	21	11.97
7		14	0.87	8	6.96
8		14	0.80	8	6.40
9		14	1.50	66	99.00
10		14	1.08	4	4.32
11		14	0.95	16	15.20
12		14	1.60	24	38.40
13		14	0.77	4	3.08
14		20	0.75	20	15.00
15		14	1.98	8	15.84
16		14	2.41	8	19.28
17		14	0.60	20	12.00

Palice - izvleček			
Ø [mm]	lgn [m]	Teža enote [kg/m]	Teža [kg]
B 500-B			
8	11.97	0.40	4.73
10	213.30	0.62	131.61
14	376.14	1.21	455.13
20	15.00	2.47	37.05
Skupaj (B 500-B)			628.51
Skupaj			628.51

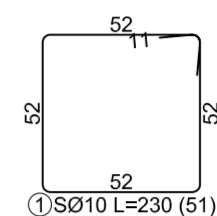
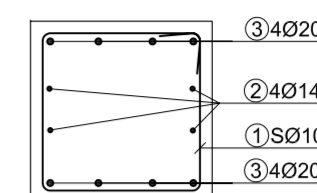
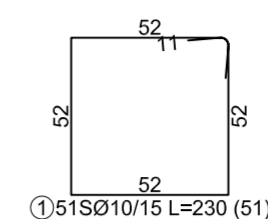
Mreže - specifikacija						
Pozicija	Oznaka mreže	B [cm]	L [cm]	n	Teža enote [kg/m2]	Skupna teža [kg]
Vodna skulptura, jašek (1 kos)						
I-1	Q-283	188	198	2	4.44	33.08
I-2	Q-283	127	118	2	4.44	13.27
I-3	Q-283	127	241	2	4.44	27.10
I-4	Q-283	188	72	2	4.44	12.03
I-5	Q-283	188	92	2	4.44	15.36
I-6	Q-283	118	157	2	4.44	16.45
I-7	Q-283	118	137	2	4.44	14.37
I-8	Q-283	127	137	2	4.44	15.46
II-1	Q-283	188	198	4	4.44	66.16
Skupaj						213.27

Mreže - izvleček					
Oznaka mreže	B [cm]	L [cm]	n	Teža enote [kg/m ²]	Skupna teža [kg]
Q-283	215	600	6	4.44	343.66
Skupaj					343.66

Mreže - načrt razreza
Vodna skulptura, jašek
Q-283 (600 cm x 215 cm)

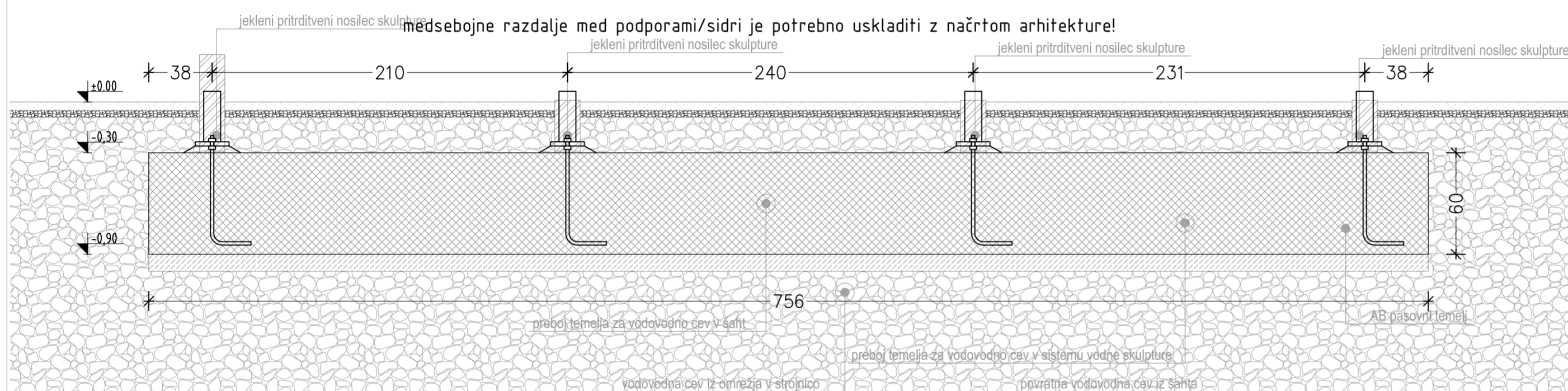


-palična armatura, M1:25

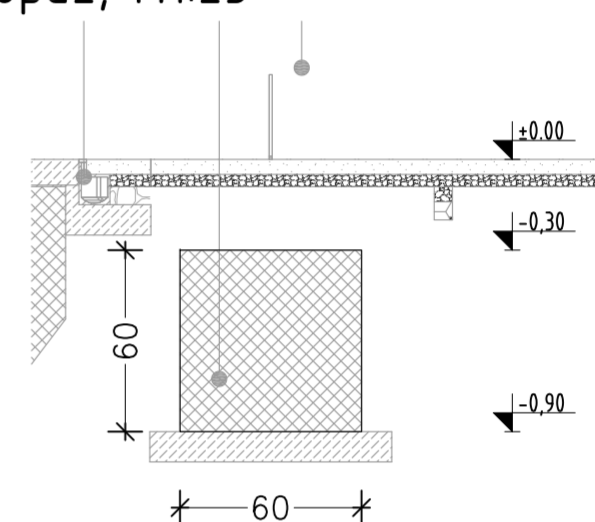


-palična armatura, M1:25

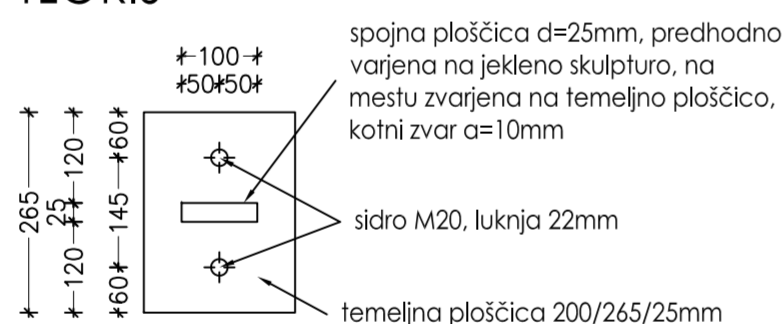
-opaž, M1:25



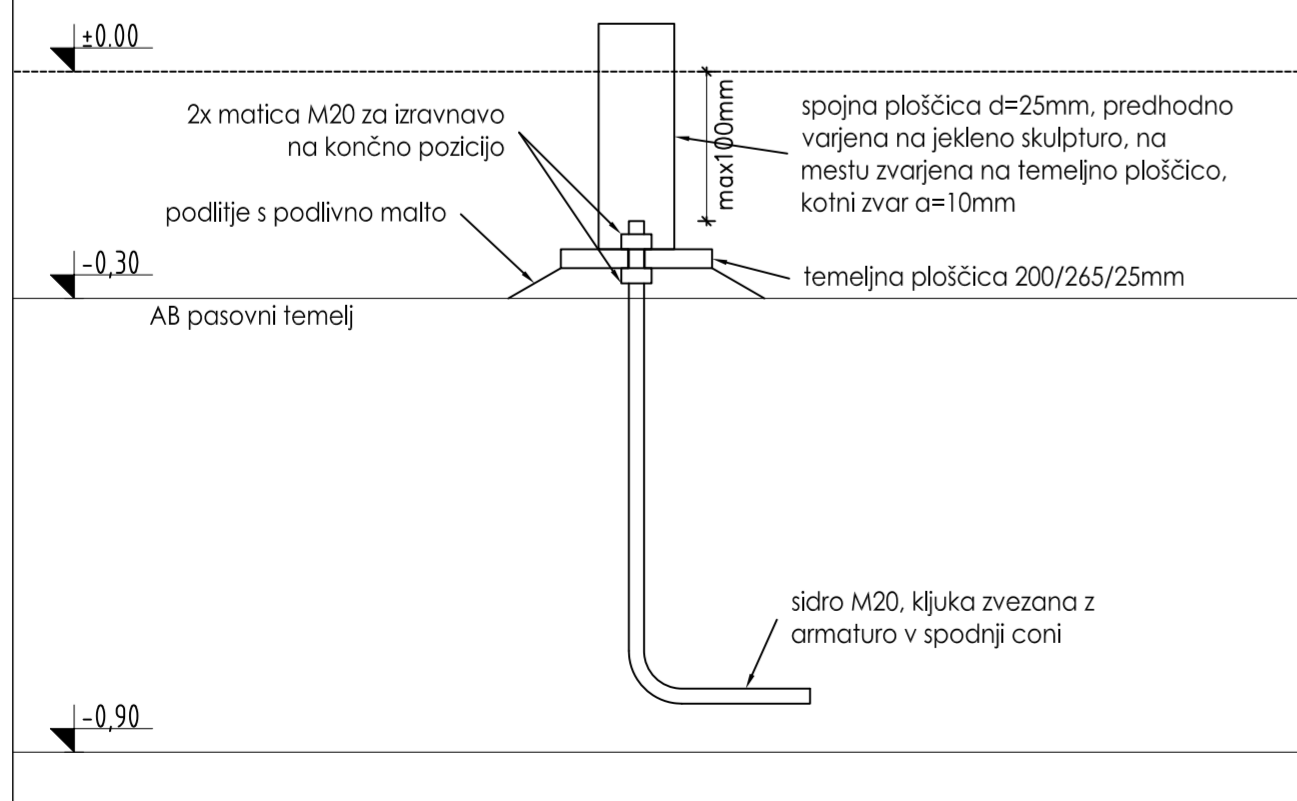
-opaž, M1:25

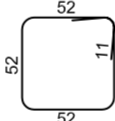


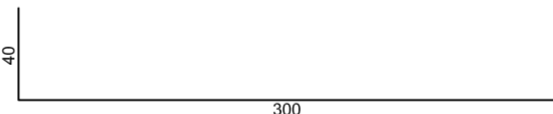





TLORIS



STRANSKI POGLED



Palice - specifikacija					
ozn	oblika in mere [cm]	Ø	lg [m]	n [kos]	lgn [m]
Vodna skulptura, PASOVNI TEMELJ (1 kos)					
1		10	2.30	51	117.30
2		14	6.00	4	24.00
3		20	6.00	4	24.00
4		20	3.40	4	13.60
5		14	2.30	4	9.20
6		14	3.10	4	12.40
7		14	6.00	4	24.00
Palico - izvleček					
Ø [mm]	lgn [m]	Teža enote [kg/m]		Teža [kg]	
B 500-B					
10	117.30	0.62		72.37	
14	69.60	1.21		84.22	
20	37.60	2.47		92.87	
Skupaj					249.46

PRED VGRADNJO BETONOV VGRAJENO ARMATURO OBVEZNO
PREVERI ODGOVORNI NADZORNIK ZA GRADBENA DELA.
POLOŽENO ARMATURO POTRDITI Z VPISOM V GRADBENI
DNEVNIK.

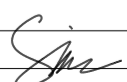
PRED IZVEDBO MORA IZVAJALEC DEL PREGLEDATI ARMATURNE
NAČRTE IN PO POTREBNI OBLIKOVANJE ARMATURE PRILAGODITI
NAČINU IZVEDBE

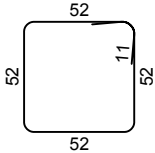

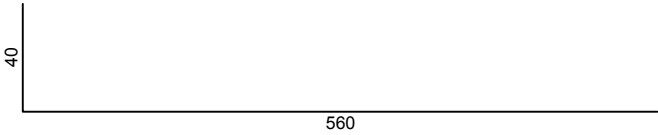
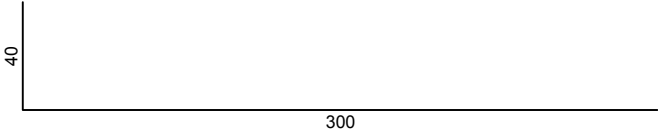
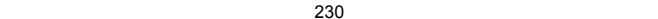

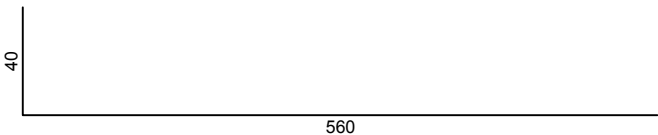
MERE, VIŠINSKE KOTE IN PREBOJE GLEJ TUDI V NAČRTIH
ARHITEKTURE IN STROJNIH TER ELEKTRO INŠTALACIJ.

LASTNOSTI MATERIALOV: BETON V SKLADU S SIST-EN 206-1:2003	Razred trdnosti [N/mm ²]	Stopnja izpostavljenosti	Zaščitni sloj [mm]	vrsta cementa	omejitev razpok [mm]
PREFABRICIRAN ŠAHT	C30/37	XD2,XF2,XC2,PV-III	40	N	0.30
PAŠOVNI TEMELJ	C25/30	XC2	35	N	0.30
JAŠKI	C25/30	XC2	35	N	0.30
PODBETON	C16/20	/	/	/	/
ARMATURA V SKLADU S SIST EN 10080		Stopnja duktilnosti [%]			
ARMATURNE PALICE B 500-B	f _{yk} =500	VISOKA >5%			PROJEKT BETONA IZDELAVA DOBAVITELJ! SVEŽE BETONSKE MEŠANICE!
MREŽNA ARMATURA B 500-B	f _{yk} =500	VISOKA >5%			

JEKLO 1.4404, S235, nerjavno jeklo

PASOVNI TEMELJ

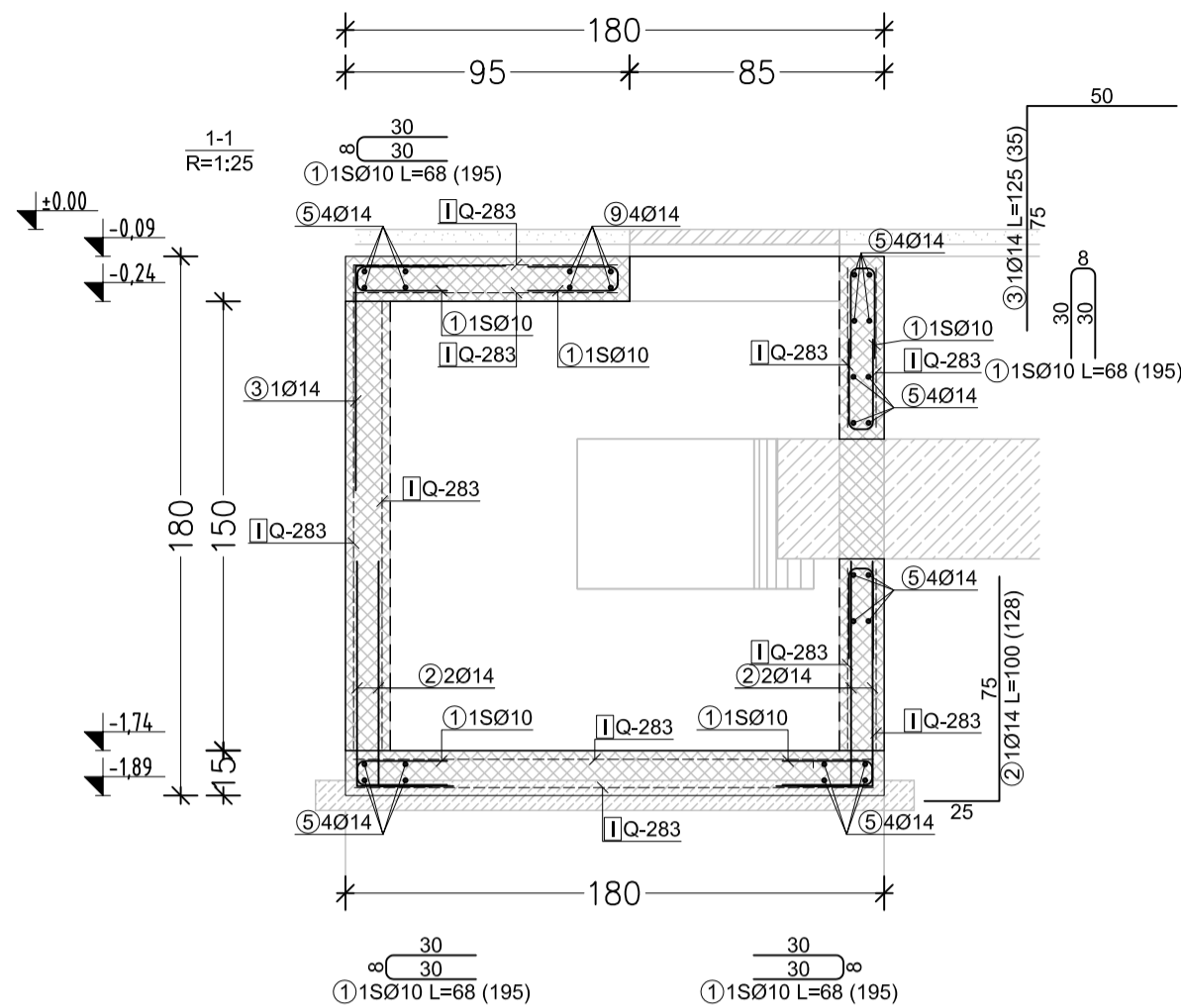
Spr.	Opis spremembe	Datum	Podpis	
Izvajalec	Kladezna ul. 20, Ljubljana			
IZS 0537	tel./fax: 01-283-20-30 / 01-283-20-31			
	Mobitel: 041-617-136			
Naročnik	Mestna občina Ljubljana, Mestni trg 1, SI-1000 Ljubljana			
Objekt/lokacija	VODNA SKULPTURA			
Vrsta načrta	Načrt gradbenih konstrukcij			
Vrsta dokumentacije	PZI - Projekt za izvedbo			
Vsebina/naslov risbe	ARMATURNO OPAŽNI NAČRT PASOVNI TEMELJ			
	Ime	Id. št.	Podpis	
OVP	Primož Boršič, m.i.a.	ZAPS A-1740		
OP	Alan Sodnik, u.d.i.g.	IZS G-0941		
Sodelavec	Rok Murko, d.i.g. (UN)			
Sodelavec				
št. projekta	št. načrta	Datum	Merilo	št. lista
09/2017	P-45/18	april 2018	1:10/25	A-3

Palice - specifikacija					
ozn	oblika in mere [cm]	Ø	lg [m]	n [kos]	lgn [m]
Vodna skulptura, PASOVNI TEMELJ (1 kos)					
1		10	2.30	51	117.30
2		14	6.00	4	24.00
3		20	6.00	4	24.00
4		20	3.40	4	13.60
5		14	2.30	4	9.20
6		14	3.10	4	12.40
7		14	6.00	4	24.00

Palice - izvleček			
Ø [mm]	lgn [m]	Teža enote [kg/m']	Teža [kg]
B 500-B			
10	117.30	0.62	72.37
14	69.60	1.21	84.22
20	37.60	2.47	92.87
Skupaj			249.46

PREREZ 1-1

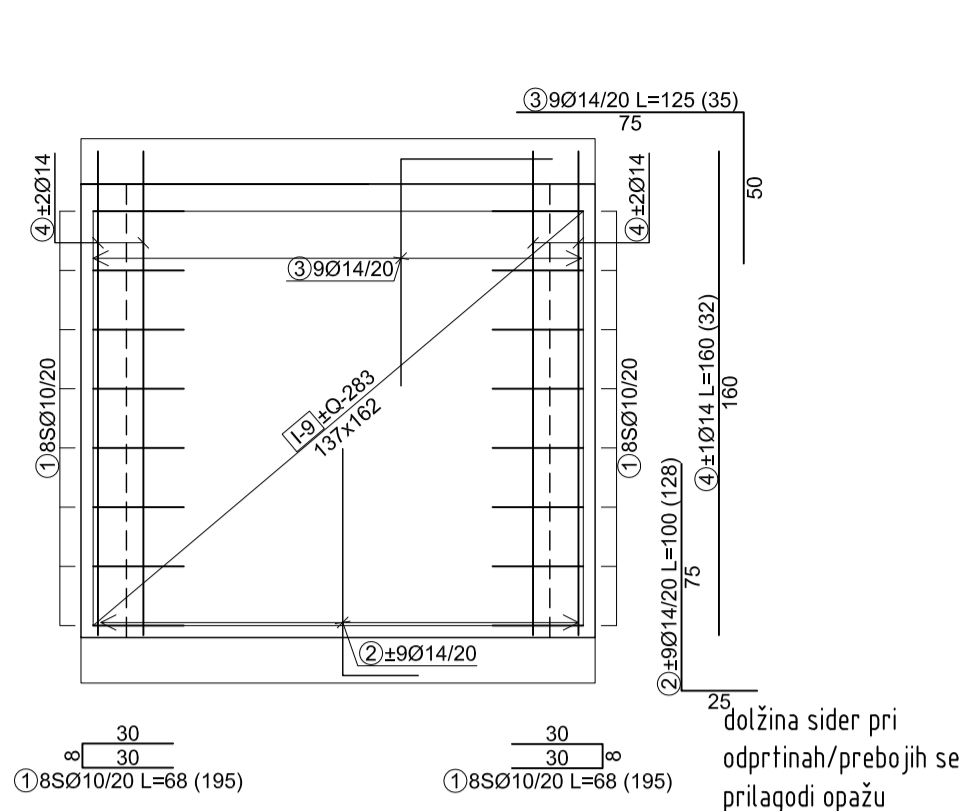
-palična in mrežna armatura, M1:25



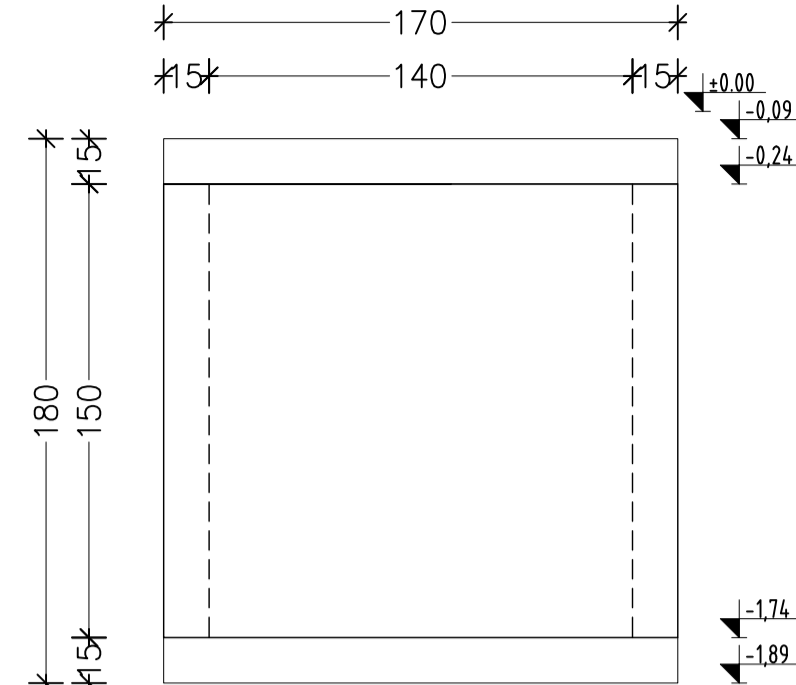
Palice - specifikacija					
ozn	oblika in mere [cm]	Ø	lg [m]	n [kos]	lgm [m]
Vodna skulptura, jašek TK vodov (1 kos)					
1		10	0.68	195	132.80
2		14	1.00	128	128.00
3		14	1.25	35	43.75
4		14	1.60	32	51.20
5		14	1.62	16	25.92
6		14	1.72	16	27.52
7		14	1.10	28	30.80
8		14	1.30	16	20.80
9		14	1.20	12	14.40
10		14	0.65	4	2.60
Palice - izveček					
Ø [mm]	lgm [m]	Teža enote [kg/m]		Teža [kg]	
10		132.80	0.62	81.81	
14		344.98	1.21	417.44	
Skupaj				499.25	

STENA V OSI D

-palična in mrežna armatura, M1:25

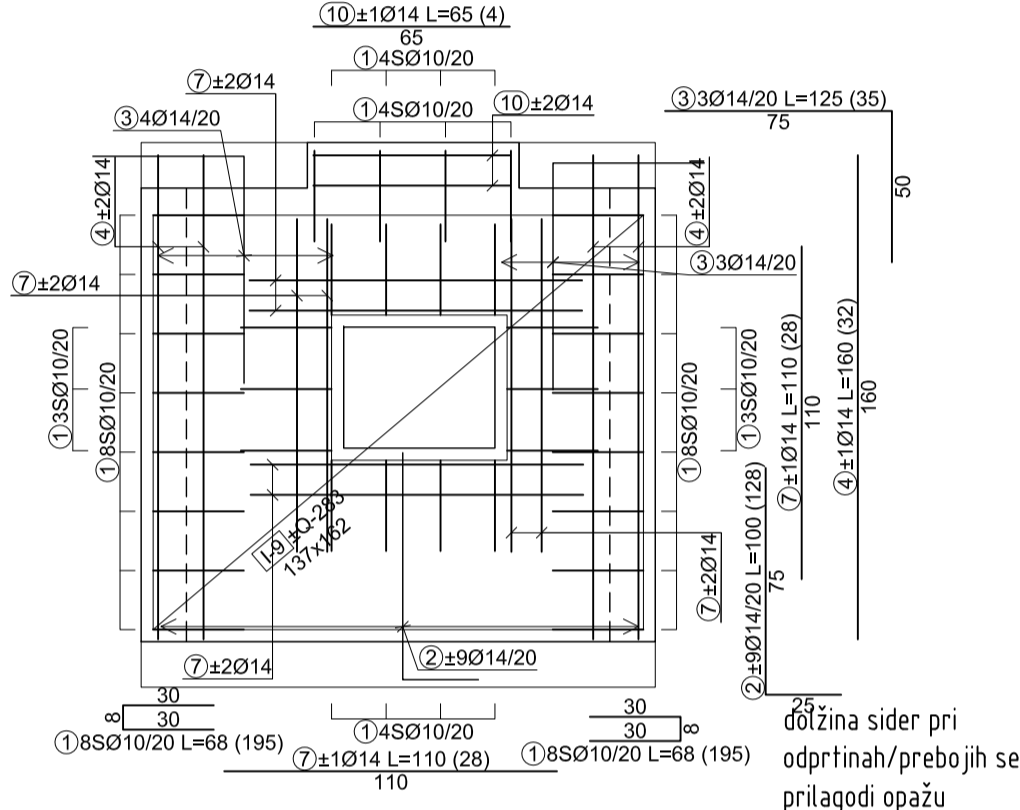


-opaž, M1:25

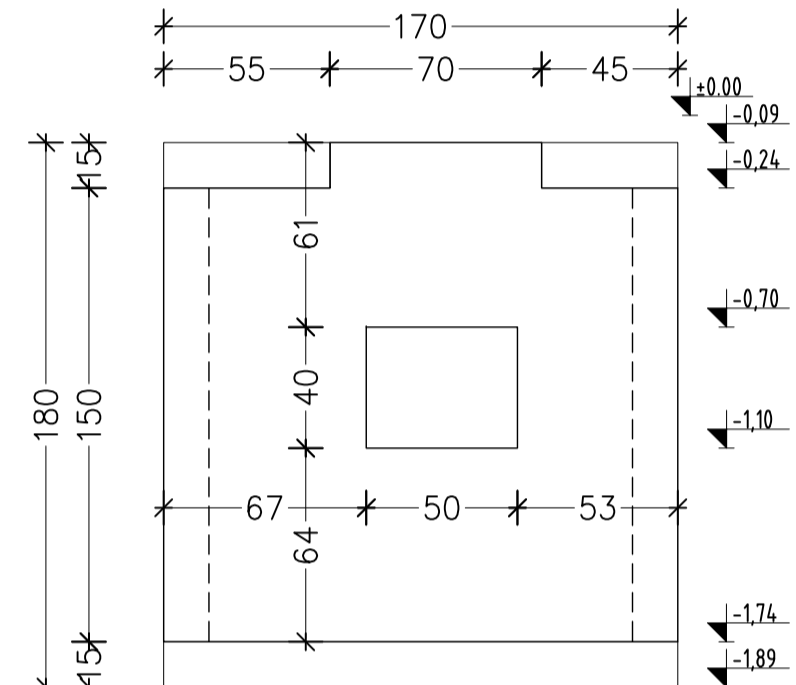


STENA V OSI E

-palična in mrežna armatura, M1:25

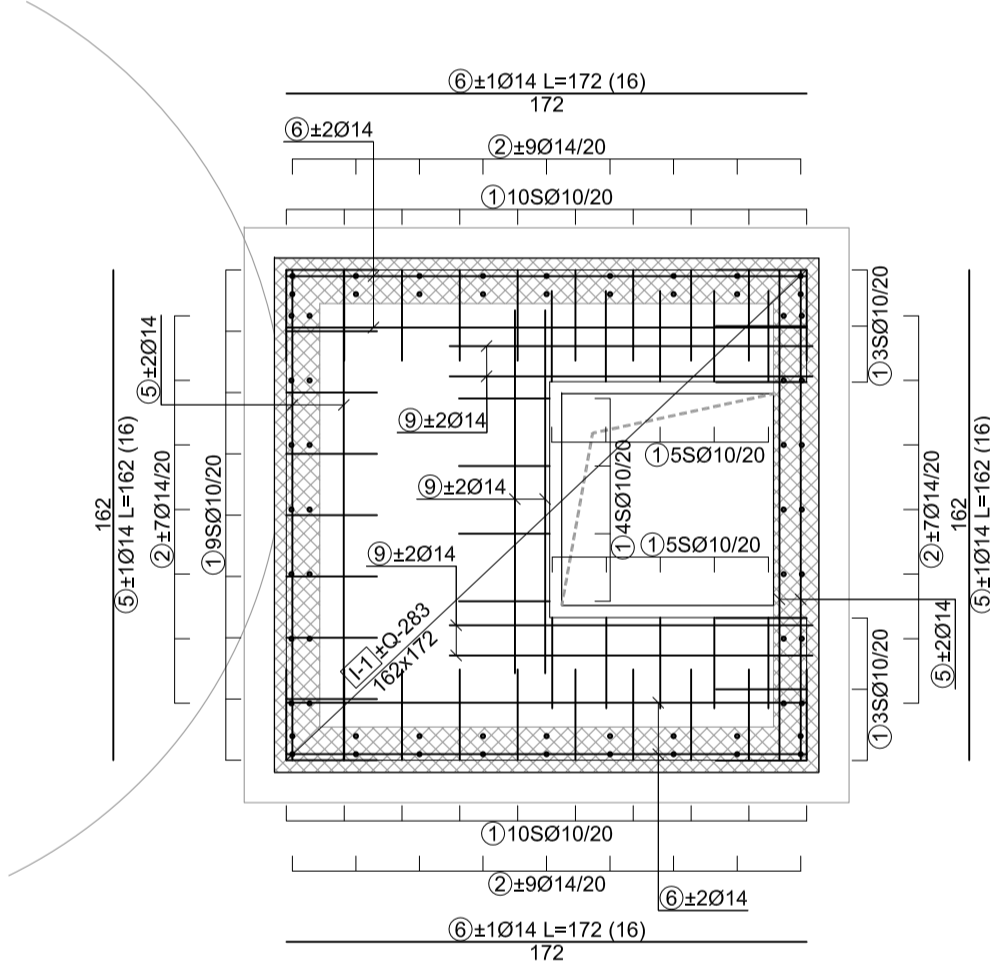


-opaž, M1:25



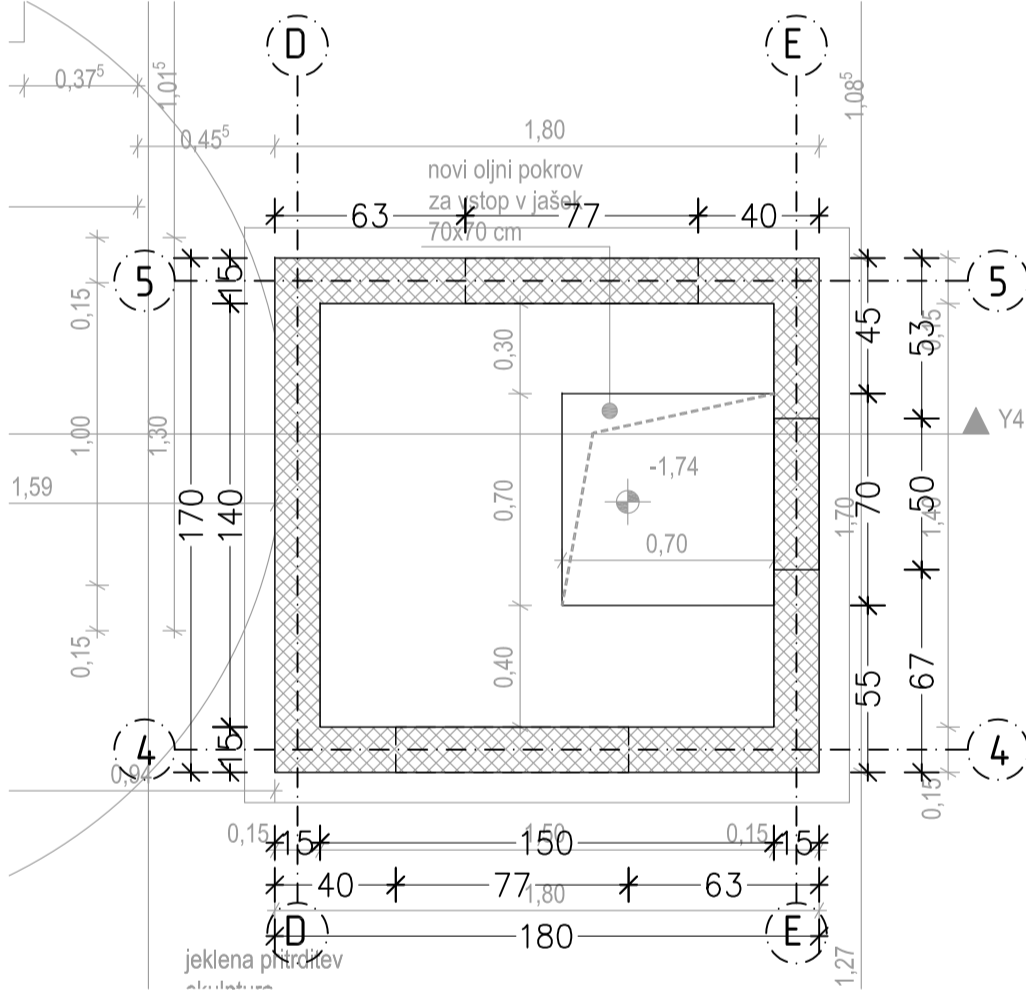
TLORIS ZGORNJE PLOŠČE JAŠKA

-palična in mrežna armatura, M1:25



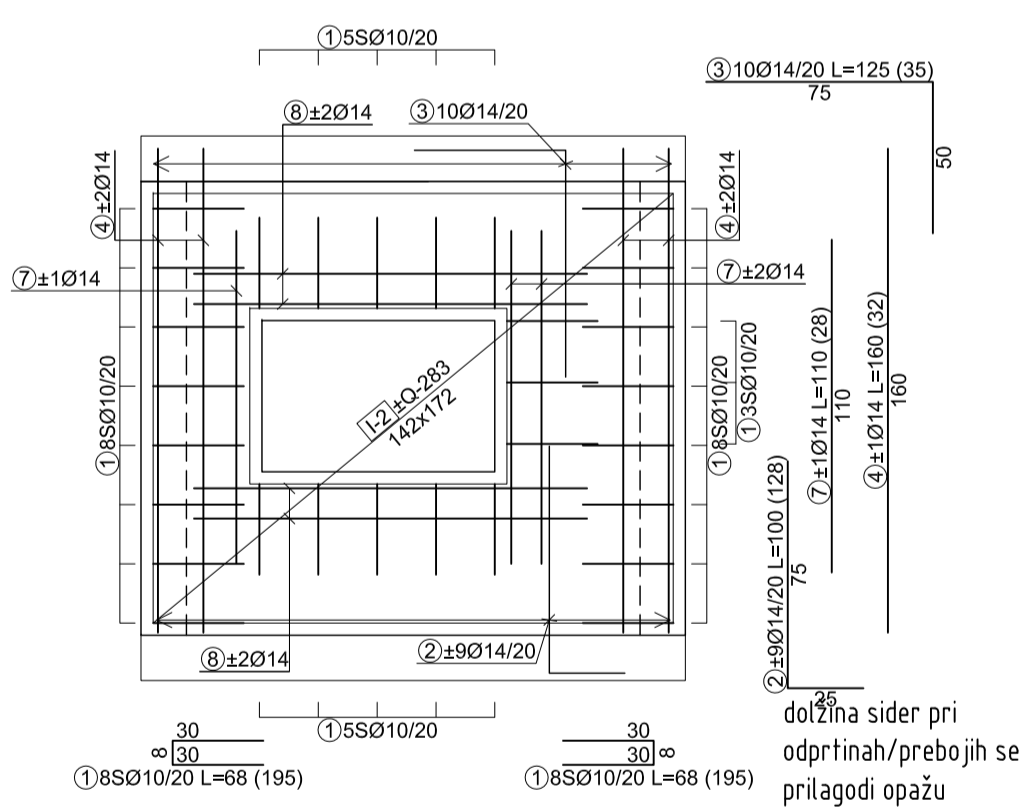
OPAŽ ZGORNJE PLOŠČE JAŠKA

-M1:25

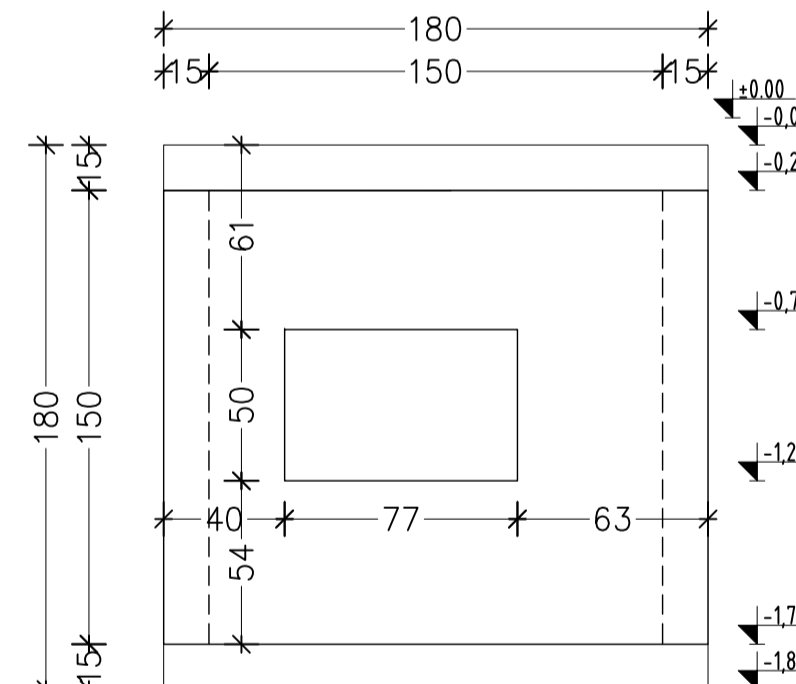


STENA V OSI 4

-palična in mrežna armatura, M1:25

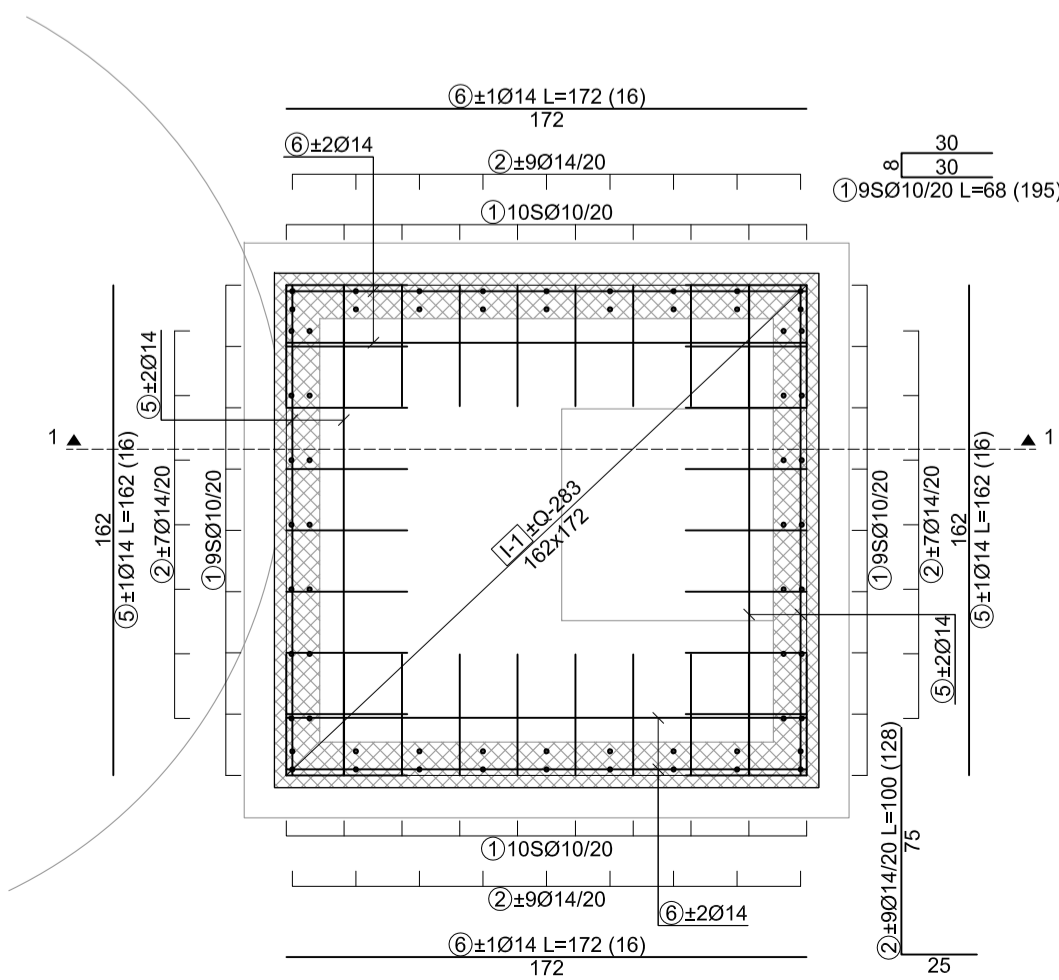


-opaž, M1:25



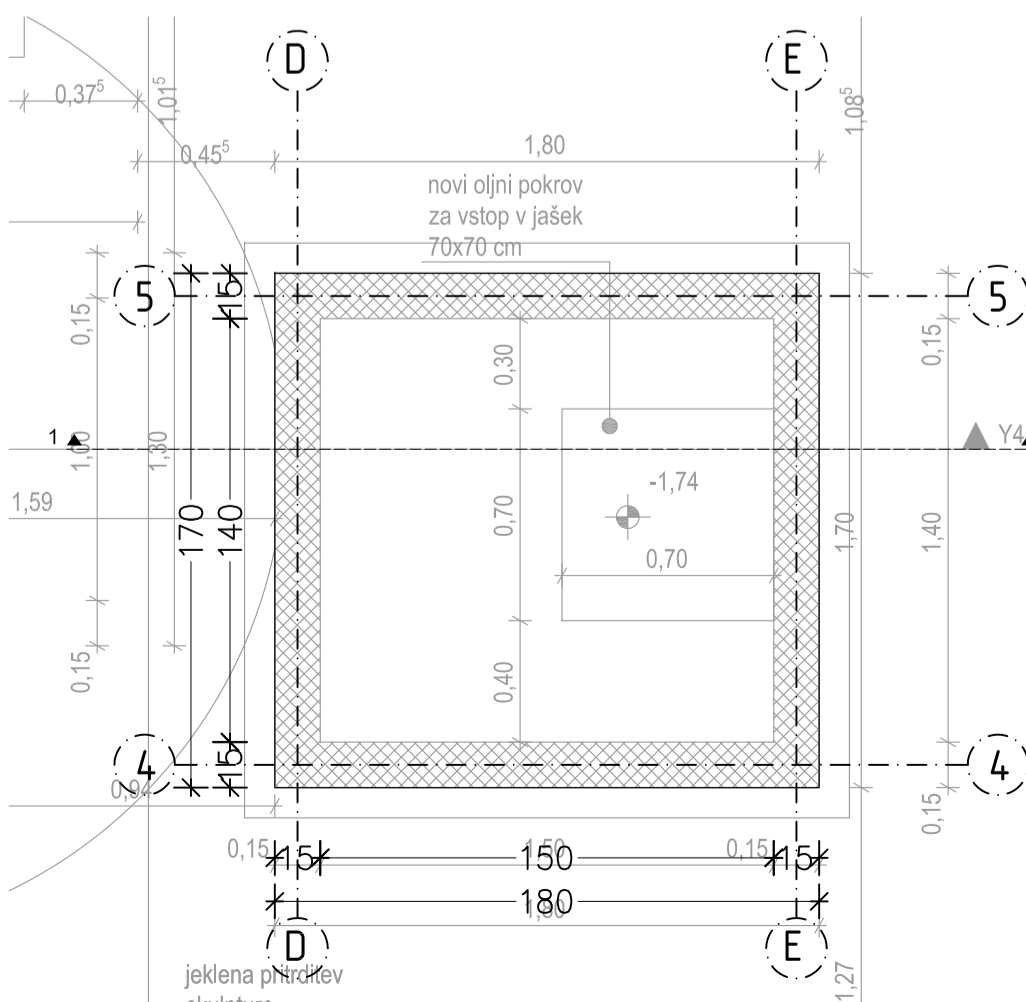
TLORIS SPODNJE PLOŠČE JAŠKA

-palična in mrežna armatura, M1:25



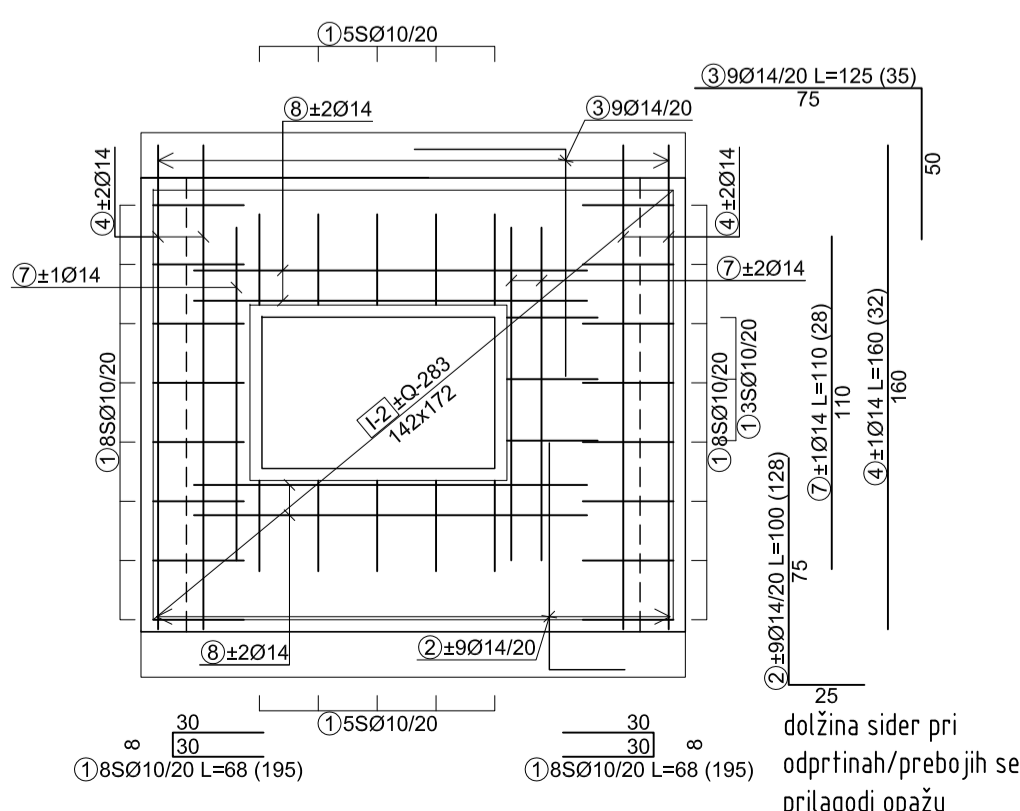
OPAŽ SPODNJE PLOŠČE JAŠKA

-M1:25

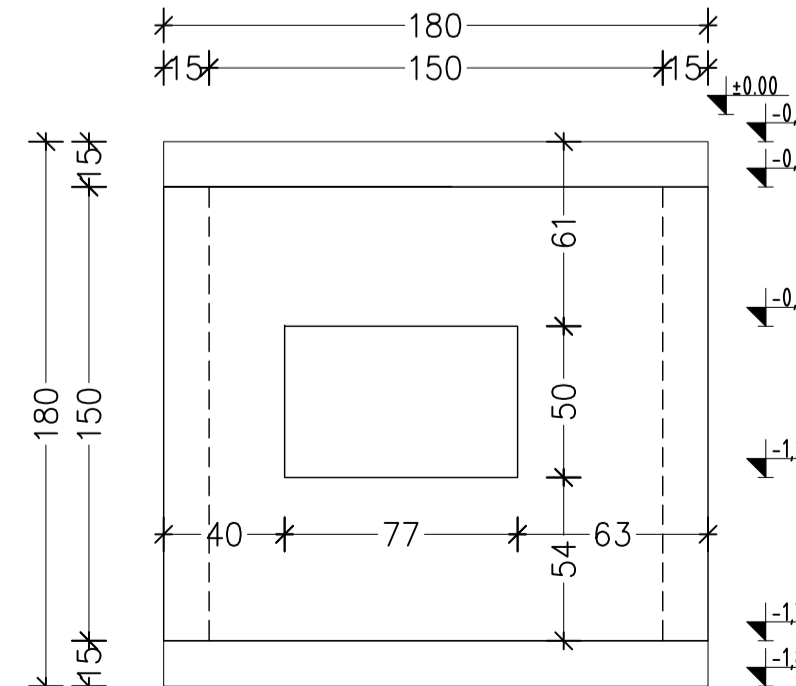


STENA V OSI 5

-palična in mrežna armatura, M1:25



-opaž, M1:25



Mreže - specifikacija						
Pozicija	Oznaka mreže	B [cm]	L [cm]	n	Teža enote [kg/m2]	Skupna teža [kg]
Vodna skulptura, jašek TK vodov (1 kos)						
I-1	Q-283	172	162	4	4.44	49.53
I-2	Q-283	172	142	4	4.44	43.37
I-9	Q-283	162	137	4	4.44	39.44
Skupaj						132.34
Mreže - izveček						
Oznaka mreže	B [cm]	L [cm]	n	Teža enote [kg/m2]	Skupna teža [kg]	
Q-283	215	600	4	4.44	229.10	
Skupaj						229.10

Mreže - načrt razreza						
Vodna skulptura, jašek TK vodov						
Q-283 (215 cm x 600 cm)						

Distančniki med sloji armature:
Za držanje distance se uporabijo distančne kače. Ocenjena poraba: 35kg

PRED VGRADNJO BETONOV VGRAJENO ARMATURO OBVEZNO PREVERI ODGOVORNI NADZORNIK ZA GRADBENA DELA.
POLOŽENO ARMATURO POTRDITI Z VPISOM V GRADBENI DNEVNIK.

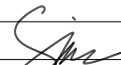
PRED IZVEDBO MORA IZVAJALEC DEL PREGLEDATI ARMATURNE NAČRTE IN PO POTREBNI OBLIKOVANJE ARMATURE PRILAGODITI NAČINU IZVEDBE

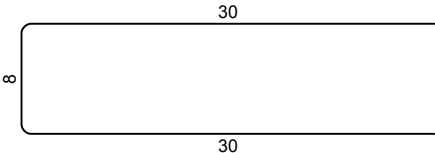
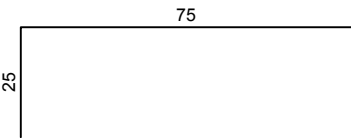
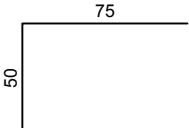
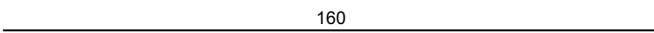

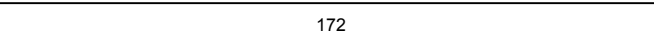
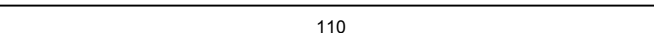
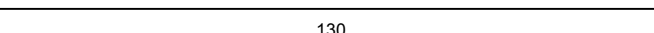
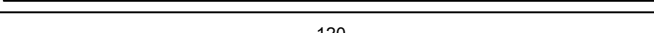
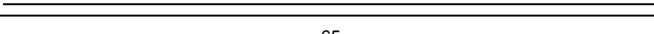
MERE, VIŠINSKE KOTE IN PREBOJE GLEJ TUDI V NAČRTIH ARHITEKTURE IN STROJNIH TER ELEKTRO INŠTALACIJ.

LASTNOSTI MATERIALOV:	Razred trdnosti [N/mm2]	Stopnja izpostavljenosti	Zaščitni sloj [mm]	vrsta cementa	omejitve razpok [mm]
PREFABRICIRAN ŠAHT	C30/37	XD2, XF2, XC2, PV-III	40	N	0.30
PASOVNI TEMELJ	C25/30	XC2	35	N	0.30
JASKI	C25/30	XC2	35	N	0.30
PODBETON	C16/20	/	/	/	/
ARMATURA V SKLADU S SIST EN 10080	f _{yk} =500	Stopnja duktilnosti [%]	PROJEKT BETONA IZDELA DOBAVITELJ SVEŽE BETONSKE MEŠANCE!		
ARMATURNI PALICE B 500-B	f _{yk} =500	VISOKA >5%			
MREŽNA ARMATURA B 500-B	f _{yk} =500	VISOKA >5%			

JEKLO 1.4404, S235, nerjavno jeklo

JAŠEK TK VODOV

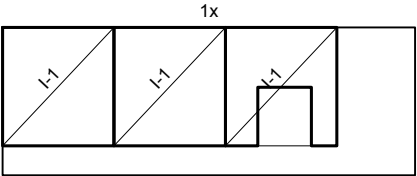
Spr.		Opis spremembe	Datum	Podpis
izvajalec		Kladezna ul. 20, Ljubljana tel./fax: 01-283-20-30 / 01-283-20-31 Mobilni: 041-617-136		
ZS 0537		VAL:DE		
Naročnik		Mestna občina Ljubljana, Mestni trg 1, SI-1000 Ljubljana		
Objekt/lokacija		VODNA SKULPTURA		
Vrsta načrta		Načrt gradbenih konstrukcij		
Vrsta dokumentacije		PZI - Projekt za izvedbo		
Vsebinski naslov risbe		ARMATURNO OPAŽNI NAČRT JAŠEK TK VODOV		
OVP		Ime	Id. št.	Podpis
OP		Primož Boršič, m.i.a.	ZAPS A-1740	
Sodelavec		Alan Sodnik, u.d.i.g.	IZS G-0941	
Sodelavec		Rok Murko, d.i.g. (UN)		
št. projekta		št. načrta	Datum	Merilo
09/2017		P-45/18	april 2018	1:25
				št. lista
				A-4

Palice - specifikacija					
ozn	oblika in mere [cm]	Ø	lg [m]	n [kos]	lg _n [m]
Vodna skulptura, jašek TK vodov (1 kos)					
1		10	0.68	195	132.60
2		14	1.00	128	128.00
3		14	1.25	35	43.75
4		14	1.60	32	51.20
5		14	1.62	16	25.92
6		14	1.72	16	27.52
7		14	1.10	28	30.80
8		14	1.30	16	20.80
9		14	1.20	12	14.40
10		14	0.65	4	2.60

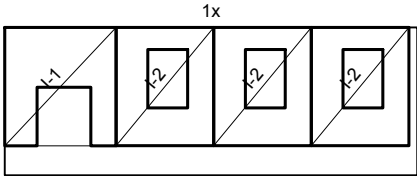
Palice - izvleček			
Ø [mm]	lgn [m]	Teža enote [kg/m']	Teža [kg]
B 500-B			
10	132.60	0.62	81.81
14	344.99	1.21	417.44
Skupaj			499.25

Mreže - specifikacija						
Pozicija	Oznaka mreže	B [cm]	L [cm]	n	Teža enote [kg/m2]	Skupna teža [kg]
Vodna skulptura, jašek TK vodov (1 kos)						
I-1	Q-283	172	162	4	4.44	49.53
I-2	Q-283	172	142	4	4.44	43.37
I-9	Q-283	162	137	4	4.44	39.44
Skupaj						132.34

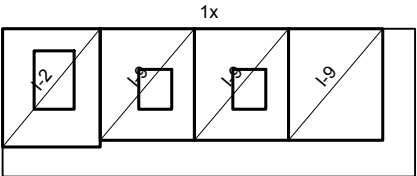
Mreže - izvleček					
Oznaka mreže	B [cm]	L [cm]	n	Teža enote [kg/m2]	Skupna teža [kg]
Q-283	215	600	4	4.44	229.10
Skupaj					229.10



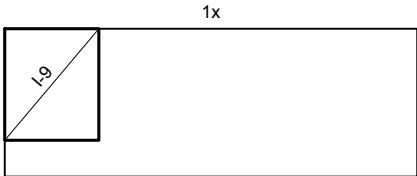
I-1 172 x 162
I-1 172 x 162
I-1 172 x 162



I-1 172 x 162
I-2 172 x 142
I-2 172 x 142
I-2 172 x 142



I-2 172 x 142
I-9 162 x 137
I-9 162 x 137
I-9 162 x 137



I-9 162 x 137