



Request for Proposal

CPE Procurement

Fv.33 Tonsåsen

Skartjednet – Tonsvatnet og Bjørgokrysset – Nedre Øydgarden

SSA-T, Appendix 1, Annex 1

Requirements for Charging Points

Version log

Version	Initials	Date	Comments/amendments
1.0	DIK	18.10.2019	Part of the Tender documents

Contents

Technical infrastructure provided by NPRA..... 4

1. Charging Point 1, Fv.33 Skartjednet - Tonsvatnet..... 4

1.1 Power and communication 4

1.2 Gantry foundations 4

1.3 Manholes, 1600 x 900 mm:..... 4

1.4 Pipelines for electrical/optical wiring 4

1.5 Preconditions for gantry foundation formwork 4

1.6 Technical booths 5

1.7 Technical booth..... 6

1.8 Description of gantry solution 6

2. Charging Points Layout..... 8

2.1 CP 1 - Tonsåsen 8

TECHNICAL INFRASTRUCTURE PROVIDED BY NPRA

1. Charging Point 1, Fv.33 Skartjednet - Tonsvatnet

NPRA will provide technical infrastructure as described in Sections 1.1. to 1.5.

1.1 POWER AND COMMUNICATION

- Power and communication (fibre) connection to technical booth for CP1.

1.2 GANTRY FOUNDATIONS

- Manholes, Ø 2000 mm, H 2000 mm, formwork/preparation for gantry foundations:
 - Gantry for eastbound traffic
 - Gantry for westbound traffic

1.3 MANHOLES, 1600 X 900 MM:

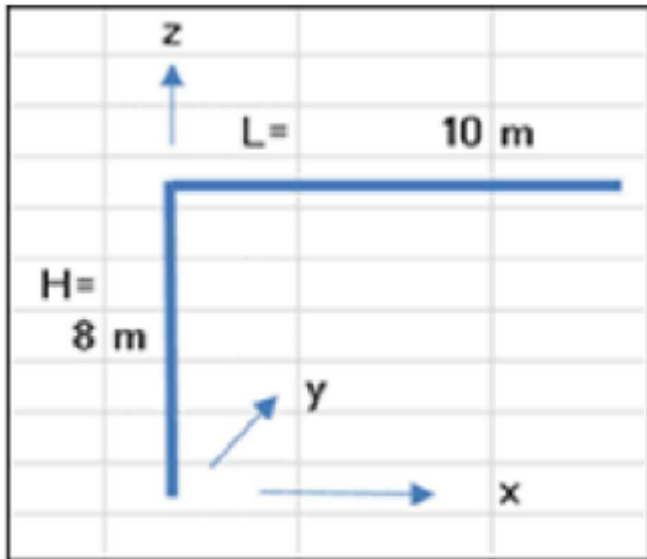
- Next to technical booth
- Next to gantry for eastbound traffic
- Next to gantry for westbound traffic

1.4 PIPELINES FOR ELECTRICAL/OPTICAL WIRING

- 4 x Ø 110 mm from technical booth to southern road bank
- 2 x Ø 110 mm from southern road bank to northern road bank
- 2 x Ø 110 mm to gantry for eastbound traffic
- 2 x Ø 110 mm to gantry for westbound traffic

1.5 PRECONDITIONS FOR GANTRY FOUNDATION FORMWORK

- Manholes, Ø 2000 mm, H 2000 mm (outside dimensions)
- Foundation and backfill: Drained, compressed crushed stone/gravel
- basic wind velocity (vb): 22 m/s
- Characteristic peak velocity pressure: 0,78 kN/m²
- Gantry height (H): maximum 8,0 m
- Gantry cantilever (L): maximum 10,0 m
- Tubular steel gantries: max. diameter 400 mm
max. wall thickness 10 mm.



The contractor shall provide technical infrastructure as described in Sections 1.6. to 1.8, Figure 1 and Figure 2 in Chapter 1.

1.6 TECHNICAL BOOTHS

Technical booth example

- Measurements (indoor): 2140 x 3135 mm
- Type: «MAXI teknikkhus 3255» from Møre trafo
- Foundation: Wall foundation, 900 mm.

1.7 TECHNICAL BOOTH

Figure 1. Technical booth - Example

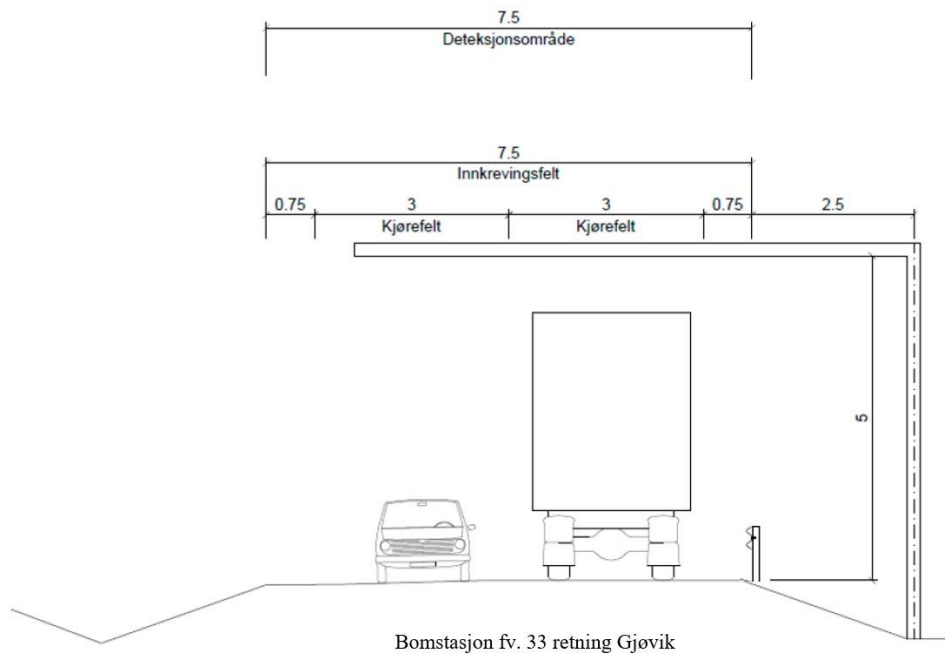
Kunde:	Ordrenr.:	Ønsket lev. dato:	Valg og opsjoner på huset:											
		<p>Innvendig høyde:</p> <ul style="list-style-type: none"> - 2400 mm <input type="checkbox"/> = Total Høyde 2970 mm (kabelbro og høyt rack krever dette) <input type="checkbox"/> - 2300 mm <input type="checkbox"/> = Total høyde 2870 mm (standard) <p>Farge / Kledning:</p> <ul style="list-style-type: none"> - Stålpåler std Mørk grå, RAL 7021 <input type="checkbox"/> - Royalimpregner brun trekledning RB10 <input type="checkbox"/> - Spesial <input type="checkbox"/>, spesifiser _____ <p>Ringmur <input type="checkbox"/></p> <p>Tillegg:</p> <ul style="list-style-type: none"> - Antistatisk gulvbelegg <input type="checkbox"/> - Nisje for Aggregatkontakt <input type="checkbox"/> - Kabelbro på dørvegg og høyre langvegg <input type="checkbox"/> - Forhøya brannklasse E180 <input type="checkbox"/> - Delevegg: <ul style="list-style-type: none"> Alt 1 Innvendig dør <input type="checkbox"/> Angi mål på skisse Alt 2 Utvendig dør <input type="checkbox"/> <p>Spesial - Ikke i konfigurator:</p> <ul style="list-style-type: none"> - Forberedt for elektronisk låsing <input type="checkbox"/> 												
<p>Ei-Installasjon: JA <input type="checkbox"/> NEI <input type="checkbox"/> Spesial se egen spesifisering <input type="checkbox"/></p> <p>Ved Ei-Installasjon, velg</p> <ul style="list-style-type: none"> <input type="checkbox"/> 240V: 63A innt.sikr, 1x32A 3-p, 1x25A, 2x16A <input type="checkbox"/> 400V: 63A innt.sikr, 1x32A 2-p, 1x25A, 2x16A <p>Inkluderer:</p> <ul style="list-style-type: none"> Varmevn 800W/m²termostat. Dobbel stikk-kontakt. Lysarmatur 2x28W. Lysbryter ved dør. 120cm. Dobbel stikk-kontakt ved dør. 120cm. Stikk-kontakt for AC <p>Ekstra utstyr kan velges (tillegg):</p> <ul style="list-style-type: none"> - Ekstra stikk-kontakt <input type="checkbox"/>. tegn inn og angi høyde - Ekstra lysarmatur for lange hus <input type="checkbox"/> - Liteslampe med skumringerele <input type="checkbox"/> - Aggregatkontakt størrelse(A): 32 A <input type="checkbox"/> 63 <input type="checkbox"/> - Ekstra ei-installasjon for rom nr 2 <input type="checkbox"/> (fysam, panelovn, bryter og stikk-kontakt) <p>Ekstra 2-polt jordfeilautomat <input type="checkbox"/></p> <p>veig 16A <input type="checkbox"/> Antall _____</p> <p>25A <input type="checkbox"/> Antall _____</p> <p>32A <input type="checkbox"/> Antall _____</p> <p>Ekstra utstyr spesial (ikke i konfigurator)</p> <ul style="list-style-type: none"> - Magnetkontakt <input type="checkbox"/> - Brannvarsler med konverter <input type="checkbox"/> 	<p>Varmepumpe:</p> <ul style="list-style-type: none"> - Type Panasonic KIT - Z35-TKEA <input type="checkbox"/> - Inkludert kommunikasjonskort <input type="checkbox"/> - Spesial <input type="checkbox"/> type _____ <p>Utstyrvalg:</p> <p>Rack:</p> <ul style="list-style-type: none"> - Høyde 1800 <input type="checkbox"/> 2200 <input type="checkbox"/> - Antall fag i bredden <ul style="list-style-type: none"> 1 stk. (1785 mm) <input type="checkbox"/> 2 stk. (1288 mm) <input type="checkbox"/> 3 stk. (2026 mm) <input type="checkbox"/> 4 stk. (2764 mm) <input type="checkbox"/> <p>UPS:</p> <ul style="list-style-type: none"> - Strømforsyning 4kW, 48V DC <input type="checkbox"/> - Ekstra likeretter 2kW <input type="checkbox"/> Antall _____ - Batterier 155 Ah <input type="checkbox"/> Antall _____ - Batterier 190 Ah <input type="checkbox"/> Antall _____ <p>Spesial - Ikke i konfigurator</p> <ul style="list-style-type: none"> - Rectiverter 230VAC / 48V DC <input type="checkbox"/> - Sikringshylle MP209-X <input type="checkbox"/> 	<table border="0"> <tr> <td>2280 <input type="checkbox"/></td> <td>2595 <input type="checkbox"/></td> </tr> <tr> <td>3255 <input type="checkbox"/></td> <td>3590 <input type="checkbox"/></td> </tr> <tr> <td>4250 <input type="checkbox"/></td> <td>4585 <input type="checkbox"/></td> </tr> <tr> <td>5245 <input type="checkbox"/></td> <td></td> </tr> <tr> <td>6240 <input type="checkbox"/></td> <td>6575 <input type="checkbox"/></td> </tr> <tr> <td>7235 <input type="checkbox"/></td> <td></td> </tr> </table>	2280 <input type="checkbox"/>	2595 <input type="checkbox"/>	3255 <input type="checkbox"/>	3590 <input type="checkbox"/>	4250 <input type="checkbox"/>	4585 <input type="checkbox"/>	5245 <input type="checkbox"/>		6240 <input type="checkbox"/>	6575 <input type="checkbox"/>	7235 <input type="checkbox"/>	
2280 <input type="checkbox"/>	2595 <input type="checkbox"/>													
3255 <input type="checkbox"/>	3590 <input type="checkbox"/>													
4250 <input type="checkbox"/>	4585 <input type="checkbox"/>													
5245 <input type="checkbox"/>														
6240 <input type="checkbox"/>	6575 <input type="checkbox"/>													
7235 <input type="checkbox"/>														
<p>Skema: _____</p> <p>Dato: 27.09.2018</p> <p>Mod. av: _____</p> <p>Kontroll: _____</p> <p>Prosjektansvarlig: _____</p> <p>Forfatter: _____</p>		<p>Teknikkhus L= med AC-nisje</p> <p>MØRE TRAFØ MØRE TRAFØ AS N-6230 SYKKYLVEN</p> <p>Tegn. nr: N-5620</p> <p>Rev. nr: _____</p> <p>Side 1 av 1</p>												

1.8 DESCRIPTION OF GANTRY SOLUTION

The gantry solutions shown in figures indicate approximate dimensions and are meant to be suggestions.

- Bidder can offer other single Tubular steel gantry solutions with smaller dimensions as long as they are according to AutoPASS requirements.
- The contractor shall deliver technical calculation for the gantries.
- The contractor shall deliver the monuting brackets between foundation and the gantry. The project will do the assembly

Figure 2. CP1 Toll station



2. CHARGING POINTS LAYOUT

2.1 CP 1 - TONSÅSEN

- This is a two-lane road, one in each direction.
- Charging area and detection area as shown in Table 1 and on Figure 2.
- Speed limit is supposed to be 80 km/h.
- Fee collection in all lanes, one lane eastbound and one lane westbound.
- Available area for service car.
- The cable distance from the equipment cabinet to the equipment in the gantries does not exceed 70 m.
- Characteristics and detailed information described in
- Table 1, Table 2 and Figure 2.

Table 1 shows the characteristics of the lanes that shall be provided with charging point equipment.

Table 1 – CP specifications and functionalities

CP ID	CP Name	Technical booth/ Technical outdoor cabinet	Number of lanes	Additional lane/area with camera detection	Charging in both directions	Half Gantry solution	Total charging area	OBU reading area in normal driving direction(s)	Dome Video Surveillance camera
1	Fv.33 Tonsåsen	Booth	2	Road shoulders	Yes	1 or 3	7,50 m	3,75+3,75	1

Table 2 shows the location and traffic density of the CP's.

Table 2

CP ID	CP Name	Municipality	North X-Coord. Euref 89 UTM32	East Y-Coord. Euref 89 UTM32	Traffic density AADT (approx.)
1	Fv.33 Tonsåsen	Etnedal	6 747 612	532 185	2200

<CONTRACTOR NAME>
Fv33 Oppland

Distribution of responsibility for procurement of equipment

Equipment	Contractor	Customer
Technical Booth with foundation	X	
Tubes and manholes		X
Foundation for gantry		X
Power		X
Communication		X
Gantry	X	
Mounting brackets between foundation and the gantry.	X	
All technical equipment according to the requirement	X	
Technical calculation for the gantries.	X	
Dome Video Surveillance camera	X	

Figure 3. Charging point

