

**INVESTITOR:**

OPĆINA VRBANJA, TRG F. TUĐMANA 1, 32254 VRBANJA,  
OIB: 10427349735

**NAZIV DOKUMENTA:**

ENERGETSKI PREGLED SUSTAVA JAVNE RASVJETE  
NA PODRUČJU OPĆINE VRBANJA

**IZVODITELJ:**

IVERSA d.o.o., M.A.RELJKOVIĆA 1, 32100 VINKOVCI,  
OIB: 35935416445

**ODGOVORNA OSOBA IZVODITELJA:**

JOSIP EREŠ, dipl.oec., direktor

**IZRADIO:**

IGOR BARAC, dipl.ing.el.

**REGISTARSKI BROJ OVLAŠTENJA:**

F-1102/2015

**OZNAKA IZVJEŠĆA:**

F-1102/2015\_001\_JR

**MJESTO I DATUM IZRADE IZVJEŠĆA:**

Vinkovci, studeni 2015.

**SADRŽAJ:**

- IZVADAK IZ SUDSKOG REGISTRA
- UGOVOR O POSLOVNO TEHNIČKOJ SURADNJI
- IZVJEŠĆE O PROVEDENOM ENERGETSKOM PREGLEDU JAVN  
OPĆINE VRBANJA – F-1102/2015\_001\_JR

REPUBLIKA HRVATSKA  
JAVNI BILJEŽNIK  
Mendeš Marijan  
Vinkovci, Duga ulica 10/I

IZVADAK IZ SUDSKOG REGISTRA

SUBJEKT UPISA

MBS:

030150479

OIB:

35935416445

TVRTKA:

1 IVERSA d.o.o. za usluge

1 IVERSA d.o.o.

SJEDIŠTE/ADRESA:

1 Vinkovci (Grad Vinkovci)  
Matije Antuna Reljkovića 1

PRAVNI OBLIK:

1 društvo s ograničenom odgovornošću

PREDMET POSLOVANJA:

- 1 \* - Izrada studija i planova
- 1 \* - Stručni poslovi prostornog uređenja
- 1 \* - Djelatnost informacijskog društva
- 1 \* - Kupnja i prodaja robe i pružanje usluga u trgovini u svrhu ostvarivanja dobiti ili drugog gospodarskog učinka, na domaćem ili inozemnom tržištu
- 1 \* - Zastupanje stranih (inozemnih) tvrtki
- 1 \* - Tehničko ispitivanje i analiza
- 1 \* - Javni cestovni prijevoz putnika i tereta u unutarnjem i međunarodnom cestovnom prometu
- 1 \* - Prijevoz za vlastite potrebe
- 1 \* - Izrada software
- 1 \* - Izrada, dizajniranje i održavanje web stranica i portala
- 1 \* - Poslovanje nekretninama
- 1 \* - Iznajmljivanje nekretnina
- 1 \* - Izrada projekata iz područja obnovljivih izvora energije
- 1 \* - Istraživanje i razvoj obnovljivih izvora energije
- 1 \* - Energetsko certificiranje građevina - zgrada, ureda, stanova, stambenih objekata, poslovnih prostora, industrijskih objekata i postrojenja
- 1 \* - Provođenje energetskih pregleda i pregleda javne rasvjete
- 1 \* - Certifikacija proizvoda i sustava
- 1 \* - Izrada projekata iz područja energetske učinkovitosti
- 1 \* - Konzultantska poduka za upravljanje i financiranje inovacija i novih tehnologija, izradu, provođenje i apliciranje projekata
- 1 \* - Savjetovanje u vezi s poslovanjem i upravljanjem
- 1 \* - Savjetovanje u području energetske učinkovitosti i obnovljivih izvora energije
- 2 \* - Izrada i provođenje investicijskih studija, elaborata i projekata za fondove Europske unije
- 2 \* - Projektiranje, građenje, uporaba i uklanjanje građevina

REPUBLIKA HRVATSKA  
JAVNI BILJEŽNIK  
Mendeš Marijan  
Vinkovci, Duga ulica 10/I

IZVADAK IZ SUDSKOG REGISTRA

SUBJEKT UPISA

PREDMET POSLOVANJA:

- 2 \* - Nadzor nad gradnjom
- 2 \* - Djelatnost nakladnika
- 2 \* - Djelatnost javnog informiranja
- 2 \* - Tehničko ispitivanje i analiza
- 2 \* - Izrada projekata i planova iz područja energetske učinkovitosti
- 2 \* - Izrada projekata iz područja održivog razvoja
- 2 \* - Izrada projekata i planova iz područja ekološke poljoprivrede

OSNIVAČI/ČLANOVI DRUŠTVA:

- 2 Josip Ereš, OIB: 58134371993  
Vinkovci, Matije Antuna Reljkovića 17
- 2 - član društva

OSOBE OVLAŠTENE ZA ZASTUPANJE:

- 2 Josip Ereš, OIB: 58134371993  
Vinkovci, Matije Antuna Reljkovića 17
- 2 - član uprave
- 2 - direktor, zastupa društvo samostalno i neograničeno
- 2 - imenovan dana 04. studeni 2015. godine

TEMELJNI KAPITAL:

- 1 20.000,00 kuna

PRAVNI ODNOSI:

Osnivački akt:

- 1 Izjava o osnivanju društva s ograničenom odgovornošću od 10. rujna 2014. godine
- 2 Izjavom o izmjeni Izjave o osnivanju društva s ograničenom odgovornošću od 04. studeni 2015. godine, mijenja se čl. 1, čl. 4 i čl. 6. temeljnog akta, koji se odnosi na promjenu predmeta poslovanja, promjenu odredbi o članu društva i promjenu odredbi izjave o osnivanju.

FINANCIJSKA IZVJEŠĆA:

	Predano	God.	Za razdoblje	Vrsta izvještaja
eu	29.06.15	2014	19.09.14 - 31.12.14	GFI-POD izvještaj

Upise u glavnu knjigu proveli su:

RBU Tt	Datum	Naziv suda
0001 Tt-14/4329-4	16.09.2014	Trgovački sud u Osijeku
0002 Tt-15/6111-2	09.11.2015	Trgovački sud u Osijeku
eu /	29.06.2015	elektronički upis



REPUBLIKA HRVATSKA  
JAVNI BILJEŽNIK  
Mendeš Marijan  
Vinkovci, Duga ulica 10/I

IZVADAK IZ SUDSKOG REGISTRA

SUBJEKT UPISA

Pristojba: \_\_\_\_\_

Nagrada: \_\_\_\_\_



JAVNI BILJEŽNIK  
Mendeš Marijan  
Vinkovci, Duga ulica 10/I

*[Handwritten signature]*

**Iversa d.o.o.**, M.A.Reljkovića 1, 32100 Vinkovci, zastupana po direktoru Ivanu Iveziću, OIB: 35935416445,  
( u nastavku Naručitelj )

i

**Igor Barac dipl. ing. el.**, ovlaštena fizička osoba za energetske preglede i energetska certificiranje zgrada  
(broj ovlaštenja F-1102/2015), Radničko naselje 15, 32251 Privlaka, OIB: 88181557571 (u nastavku Izvršitelj) sklopili su 04. kolovoza 2015.

## **UGOVOR O POSLOVNO TEHNIČKOJ SURADNJI**

### **Članak 1.**

Ovim se ugovorom o poslovno tehničkoj suradnji utvrđuju međusobna prava i obveze između Naručitelja i Izvršitelja u obavljanju poslova preuzetih ovim Ugovorom.

Predmetni poslovi odnose se na izradu energetskog pregleda sustava javne rasvjete na području Općine Vrbanja kojeg je Naručitelj ugovorio s Općinom Vrbanja, dana 03. kolovoza 2015., KLASA: 363-01/15-01/724, URBROJ: 2212/08-01/01-15-3 godine temeljem Narudžbenice broj 95/01/15.

### **Članak 2.**

Izvršitelj će za Naručitelja obavljati poslove energetskog pregleda sustava javne rasvjete sa svim pravima i obvezama prema Pravilniku o energetskim pregledima građevina i energetskom certificiranju zgrada („Narodne novine“ broj 81/12, 29/13 i 78/13), Metodologijom provođenja energetskog pregleda građevina, uvjetima Javnog poziva (EnU-1/2015) za neposredno sufinanciranje energetskih pregleda sustava javne rasvjete, objavljenog od strane Fonda za zaštitu okoliša i energetska učinkovitost te drugim pripadajućim propisima, pravilima struke, poslovnim običajima i po svojem najboljem znanju.

### **Članak 3.**

Za poslove iz članka 1. ovog Ugovora, Naručitelj će isplatiti dogovoreni iznos na žiro račun Izvršitelja br. HR8523400093100107641 kod Privredne banke Zagreb. Iznos je definiran drugim ugovorom.

Navedeni iznos Naručitelj je dužan uplatiti u roku od 15 dana od dana uplate ukupnog iznosa od strane Općine Vrbanja.

### **Članak 4.**

Izvršitelj će poslove iz članka 1. ovog Ugovora izvršiti prema predviđenoj dinamici poslova planiranoj od strane Naručitelja i Općine Vrbanja a najkasnije do 25. studenog 2015. godine. Naručitelj je dužan prikupiti sve podatke od strane nadležnih institucija vezanih uz potrošnju i lokaciju predmeta ugovora. Podatke je dužan u što kraćem roku prikupljene podatke dostaviti Izvršitelju.

### **Članak 5.**

Porez na navedeni iznos snosi Naručitelj posla.

### **Članak 6.**

Naručitelj ima pravo davati Izvršitelju upute za rad , a Izvršitelj se obvezuje to mu omogućiti.

### **Članak 7.**

Izvršitelj ima pravo i obvezu upoznati Naručitelja s nepravilnostima u radu i odabiru materijala, koje nisu u skladu s tehničkim propisima i pravilima struke.

Naručitelj je obavezan poduzeti potrebne mjere za ispravljanje tih nepravilnosti.

**Članak 8.**

Ovaj Ugovor stupa na snagu danom obostranog potpisa ovog Ugovora, što ugovorne strane potvrđuju svojim potpisom.

**Članak 9.**

U slučaju spora iz ovog Ugovora Naručitelj i Izvršitelj utvrđuju nadležnost suda u Vinkovcima.

**Članak 10.**

Ovaj Ugovor je sklopljen u četiri istovjetna primjerka, po dva za svaku ugovornu stranu.

**NARUČITELJ**  
**DIREKTOR**  
**Ivan Ivezić**

**IZVRŠITELJ**  
**Igor Barac**

**NARUČITELJ: Iversa d.o.o.**

**M.A.Reljkovića 1, 32100 Vinkovci**

**OIB: 35935416445**

**GRAĐEVINA: JAVNA RASVJETA OPĆINE VRBANJA**

**LOKACIJA: OPĆINA VRBANJA**

**BROJ IZVJEŠĆA: F-1102/2015\_001\_JR**

## **IZVJEŠĆE O PROVEDENOM ENERGETSKOM PREGLEDU**

**ENERGETSKI PREGLED JAVNE RASVJETE:**

**OVLAŠTENA OSOBA: Igor Barac dipl. ing. el.**

**BROJ OVLAŠTENJA: F-1102/2015**

**Vinkovci, studeni 2015.**



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## 1. RJEŠENJE O OVLAŠTENJU ZA OBAVLJANJE ENERGETSKIH PREGLEDA



### REPUBLIKA HRVATSKA

MINISTARSTVO GRADITELJSTVA  
I PROSTORNOGA UREĐENJA

10000 Zagreb, Ulica Republike Austrije 20  
Tel: 01/ 3782 444 Fax: 01/ 3772 822

KLASA: UP/I-360-02/15-18/188

URBROJ: 531-04-2-15-5

Zagreb, 6. srpnja 2015.

Ministarstvo graditeljstva i prostornoga uređenja, na temelju članka 19. stavka 1., a vezano za članak 44. stavak 2. Zakona o energetske učinkovitosti („Narodne novine“, broj 127/14), povodom zahtjeva Igora Barca, dipl. ing. el., iz Privlake, Radničko naselje 15, za davanje ovlaštenja za energetske certificiranje i energetske pregled zgrada u dijelu koji se odnosi na energetske preglede ostalih građevina, donosi

### RJEŠENJE

- I. Igoru Barcu, dipl. ing. el., iz Privlake, Radničko naselje 15, OIB 88181557571, rođenom u Vukovaru, 20. lipnja 1969. godine, daje se ovlaštenje za:
  - energetske pregled ostalih građevina – u dijelu koji se odnosi na elektrotehnički dio tehničkog sustava i sustave automatskog reguliranja i upravljanja i
  - provođenje energetskih pregleda javne rasvjete.
- II. Ovlaštenje iz točke I. ovoga rješenja važi 3 godine od dana izvršnosti ovoga rješenja.
- III. Podaci iz ovoga rješenja upisat će se po njegovoj izvršnosti u Registar ovlaštenih osoba za obavljanje energetskih pregleda i energetske certificiranje zgrada pod registarskim brojem: F-1102/2015.

### Obrazloženje

Igor Barac dipl. ing. el., iz Privlake, Radničko naselje 15, OIB 88181557571, rođen u Vukovaru, 20. lipnja 1969. godine (dalje u tekstu: podnositelj zahtjeva), dana 19. svibnja 2015. godine podnio je ovom Ministarstvu zahtjev za davanje ovlaštenja za:

- energetske pregled ostalih građevina - u dijelu koji se odnosi na elektrotehnički dio tehničkog sustava i sustave automatskog reguliranja i upravljanja i
- provođenje energetskih pregleda javne rasvjete.

Zahtjev je osnovan.

Uz zahtjev je podnositelj zahtjeva priložio sve isprave i dokaze u skladu sa člankom 15. Pravilnika o uvjetima i mjerilima za osobe koje provode energetske preglede građevina i

OVLAŠTENNA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO  
CERTIFICIRANJE ZGRADA Igor Barac dipl. ing. el.  
Broj ovlaštenja F-1102/2015

energetsko certificiranje zgrada („Narodne novine“, broj 81/12 i 64/13) (dalje u tekstu: Pravilnik), te budući da ispunjava uvjete propisane člankom 7. tog Pravilnika, odlučeno je kao u točki I. dispozitiva ovoga rješenja.

U točki II. dispozitiva ovoga rješenja odlučeno je u skladu s odredbom članka 13. stavka 2. Pravilnika.

U točki III. dispozitiva ovoga rješenja odlučeno je u skladu s odredbom članka 33. stavka 1. Pravilnika.

Sukladno odredbi članka 44. stavka 2. Zakona o energetskej učinkovitosti („Narodne novine“, broj 127/14) do donošenja pravilnika iz članka 19. stavka 1. toga Zakona primjenjuju se odredbe Pravilnika o energetskim pregledima građevina i energetskom certificiranju zgrada (»Narodne novine«, br. 81/12, 29/13 i 78/13) u dijelu koji se odnosi na energetske preglede građevina i Pravilnika o uvjetima i mjerilima za osobe koje provode energetske preglede građevina i energetsko certificiranje zgrada (»Narodne novine«, br. 81/12 i 64/13).

Slijedom navedenog, a u smislu odredbe članka 96. stavka 1. Zakona o općem upravnom postupku („Narodne novine“, broj 47/09) doneseno je ovo rješenje.

Upravna pristojba za izdavanje ovoga rješenja plaćena je po Tar. br. 1. i 2. Zakona o upravnim pristojbama („Narodne novine“, broj 8/96, 77/96, 95/97, 131/97, 68/98, 66/99, 145/99, 30/00, 116/00, 163/03, 17/04, 110/04, 141/04, 150/05, 153/05, 129/06, 117/07, 25/08, 60/08, 20/10, 69/10, 126/11, 112/12, 19/13, 80/13, 40/14, 69/14, 87/14, 94/14) u iznosu 70,00 kn u državnim biljezima emisije Republike Hrvatske, koji su zalijepljeni na zahtjevu i poništeni pečatom ovoga Ministarstva.

#### UPUTA O PRAVNOM LIJEKU:

Protiv ovoga rješenja žalba nije dopuštena, ali se može pokrenuti upravni spor pred Upravnim sudom u Osijeku. Upravni spor pokreće se tužbom koja se podnosi u roku od 30 dana od dana dostave ovoga rješenja, a predaje se neposredno ili preporučeno poštom Upravnom sudu u osijeku.

mr. sc. Nada Marđetko Škorić, dipl. ing. građ.



#### DOSTAVITI:

1. Igor Barac, dipl. ing. el.  
32251 Privlaka, Radničko naselje 15  
R. s povratnicom, 2 primjerka
2. Registar ovlaštenih osoba – po izvršnosti - ovdje
3. Spis – ovdje

## 2. OSNOVNI PODACI O JAVNOJ RASVJETI

### 2.1. PODACI O NARUČITELJU ENERGETSKOG PREGLEDA

Naziv i vrsta predmeta analize	Energetski pregled javne rasvjete općine Vrbanja - naselja Soljani, Strošinci, Vrbanja			
Adresa nadležne uprave	Ulica i broj	Trg dr. Franje Tuđmana 1.	Grad, poštanski broj	Vrbanja, 32254
Ime i položaj odgovorne osobe	IVICA SEP, načelnik Općine Vrbanja			
Ime i položaj kontakt osobe	VELIMIR REDL, referent - tajnik općinskog vijeća i načelnika			
Telefon, fax, mobilni telefon, email	Telefon	032863108	Fax	032863241
	Mobilni telefon	0992221798	E-mail	<a href="mailto:opcina@opcina-vrbanja.hr">opcina@opcina-vrbanja.hr</a>

### 2.2. PODACI O KONCESIONARU ODRŽAVANJA JAVNE RASVJETE

KONCESIONAR: ELEKTRO ČOP d.o.o. ŽUPANJA

KONTAKT OSOBA: Iviva Čop, vlasnik

TELEFON: 098 94 17 170

### 2.3. PODACI O POSTOJEĆOJ ELEKTROTEHNIČKOJ DOKUMENTACIJI

#### 2.3.1. POPIS POSTOJEĆE ELEKTROTEHNIČKE DOKUMENTACIJE

Općina Vrbanja posjeduje slijedeću elektrotehničku dokumentaciju javne rasvjete :

- Glavni projekt : br. TD 23/'04 Napon d.o.o. Vinkovci  
Građevina : Naselje Vrbanja – javna rasvjeta  
Projektant : Ante Bošnjak, el. teh.  
Vinkovci, ožujak 2005.
- Glavni projekt – elektrotehnički dio – javna rasvjeta , TD 71/96 Polion d.o.o.Vinkovci  
Građevina : Naselje Soljani – javna rasvjeta
  - rasvjeta nogometnog igrališta
  - rasvjeta rukometnog igralištaProjektant : Branimir Gali dipl. Ing. el.  
Vinkovci, lipanj 1997.



### **2.3.2. TEHNIČKI OPIS POSTOJEĆE ELEKTROTEHNIČKE DOKUMENTACIJE**

Elektrotehnički projekt za naselje Vrbanja predviđa izgradnju u dvije etape. U prvoj etapi se predviđa izvedba svakog drugog stupa javne rasvjete, a druga etapa je interpolacija stupova javne rasvjete u već izvedenu mrežu javne rasvjete prve etape. Projektom su predviđene svjetiljke Gamalux sa visokotlačnim natrij izvorima svjetlosti od 150W i 250W postavljene na čelične stupove visine 10m.

Elektrotehnički projekt za naselje Soljani predviđa postavljanje svjetiljki Gamalux sa visokotlačnim natrij izvorima svjetlosti od 150W i 250W na betonske stupove duljine 13m sa ukopom 2m u zemlju. Projekt također obuhvaća rasvjetu crkve reflektorima i igrališta U opisu se ne spominju etape izvođenja javne rasvjete, a svjetlotehnički proračuni obuhvaćaju razmake stupova do 42m.

### 3. UVOD

U Općini Vrbanja proveden je energetska pregled javne rasvjete sa svrhom analize postojećeg stanja javne rasvjete te analizom mjera za poboljšanje energetske učinkovitosti.

Energetski pregled je proveden temeljem važećih propisa i drugih dokumenata:

- Zakon o energetska učinkovitosti ("Narodne novine" br. 127/14)
- Pravilnik o sustavu za praćenje, mjerenje i verifikaciju ušteda energije ("Narodne novine" br. 71/15)
- Pravilnik o energetskim pregledima građevina i energetskom certificiranju zgrada ("Narodne novine" br. 81/12, 29/13 i 78/13)
- Metodologija provođenja energetskog pregleda građevina (studeni 2012.)
- Upute podnositeljima Fonda za zaštitu okoliša i energetsku učinkovitost od 23. ožujka 2015.

Javna rasvjeta u općini Vrbanja namijenjena je rasvjeti prometnica u naselju, za rasvjetu sakralnih građevina. Javna rasvjeta prometnica u naselju izvedena je svjetiljkama tipa Gamalux i KAOS1 proizvođača TEP s visokotlačnim natrijevim žaruljama snage 150 W na armiranobetonskim stupovima javne rasvjete visine 11 m, čeličnim stupovima visine 10 m ili na stupovima NN mreže. Rasvjeta sporednih ulica u naselju većinom je izvedena na betonskim stupovima niskonaponske mreže, te mjestimično na drvenim stupovima i krovnom stalku NN mreže.

Za rasvjetu prilaza osnovne škole u naselju Soljani izvedena je na betonskim stupovima svjetiljkama tipa Gamalux proizvođača TEP s visokotlačnim natrijevim žaruljama snage 150 W.

Rasvjeta crkve u naselju Soljani izvedena je pomoću reflektorskih svjetiljki tip LVR12 proizvođača TEP s metalhalogenim žaruljama snage 400 W. Reflektori su postavljeni dijelom na betonski stup JR,a dijelom na čelične stupove za rasvjetu fasade.

Rasvjeta crkve u naselju Strošinci izvedena je pomoću dvije vrste reflektorskih svjetiljki s metalhalogenim žaruljama snage 400 W i reflektorskom svjetiljkom s visokotlačnim natrijevim žaruljama snage 150 W. Reflektori su postavljeni dijelom na betonske stupove NN mreže,a dijelom na čelične stupove za rasvjetu fasade.

Rasvjeta crkve u naselju Vrbanja izvedena je pomoću dvije vrste reflektorskih svjetiljki s metalhalogenim žaruljama snage 400 W. Reflektori su postavljeni dijelom na čelične stupove JR,a dijelom na čelične stupove za rasvjetu fasade.

Rasvjeta školskog igrališta u naselju Soljani izvedena je reflektorskim svjetiljkama s metalhalogenim izvorima svjetlosti snage 400 W koji se uključuju po potrebi jer osim navedene rasvjete školskog igrališta postoji rasvjeta igrališta napajana iz razdjelnice Škole.

Naselja u općini Vrbanja pripadaju zoni rasvjetljenosti E2 koja označava područje niske ambijentalne rasvjetljenosti. Javna rasvjeta naselja Gradište može se svrstati u pet razreda rasvjete prema normi HRN EN 13201-1 Cestovna rasvjeta – 1. dio: Smjernice za odabir razreda rasvjete.

Javna rasvjeta naselja Soljani napaja se iz šest mjernih mjesta, u naselju Strošinci iz tri mjerna mjesta, u naselju Vrbanja iz osam mjernih mjesta. Sva obračunska mjerna mjesta su kategorije javna rasvjeta, tarifni model žuti. Opskrbljivač električnom energijom za sva mjerna mjesta je HEP-OPSKRBA.

Uključivanje javne rasvjete u svim naseljima vrši se pomoću svjetlosne sklopke ( luksomata ), postojeće svjetiljke nemaju autonomnu mogućnost regulacije rada.

Postojeća javna rasvjeta ne zadovoljava pokazatelje sigurnosti u prometu propisane normom HRN EN 13201-2 Cestovna rasvjeta – 2. dio: Zahtijevana svojstva radi čega se stvarna potrošnja električne energije prema instaliranoj snazi ne može uzeti kao referentna potrošnja za izračun ušteda. Za potrebe izračuna mogućih energetskih i ekonomskih ušteda modelirana je referentna potrošnja kao prepostavka postojećeg stanja. Za potrebe modeliranja referentne potrošnje izrađena je simulacija sa postojećim izvorima svjetlosti visokotlačnim natrijevim žaruljama odgovarajuće snage.

Predložene su mjere za poboljšanje energetske učinkovitosti javne rasvjete i to:

- Zamjena cestovnih svjetiljki energetski učinkovitijim svjetiljkama s LED izvorima svjetlosti, izgradnja nove energetska učinkovite javne rasvjete s LED izvorima svjetlosti u ulicama gdje je



postojeća geometrija stupova nepovoljna (postavljanje dodatnih stupova gdje je veliki razmak postojećih stupova )

- Autonomna regulacija svjetlosnog toka svjetiljki
- Izmještanje mjernih mjesta iz razvodnih ormara transformatorskih stanica

## 4. OPIS POSTOJEĆEG STANJA JAVNE RASVJETE

### 4.1. POSTOJEĆE STANJA RASVJETNIH MJESTA

#### 4.1.1. ZONE ZAŠTITE OD SVJETLOSNOG ONEČIŠĆENJA

Općina Vrbanja pripada zoni rasvjetljenosti E2 koja označava područje niske ambijentalne rasvjetljenosti. Prema Nacrtu prijedloga uredbe o standardima upravljanja rasvjetljenošću (Ministarstvo zaštite okoliša i prirode, svibanj 2013.) onečišćujući svjetlosni tok ULR ( % ) koji se emitira iznad horizontalne ravnine u odnosu na položaj svjetiljke može iznositi maksimalno 2,5% za E2 zonu rasvjetljenosti.

#### 4.1.1. RAZREDI ( KLASJE ) RASVJETE

Javna rasvjeta općine Vrbanja može se svrstati u pet razreda rasvjetle prema normi HRN EN 13201-1 Cestovna rasvjeta – 1. dio: Smjernice za odabir razreda rasvjetle. Razvrstani razredi rasvjetle prema ulicama su prikazani u slijedećoj tablici

Razred prema HRN EN 13 201-2	SOLJANI	STROŠINCI	VRBANJA
ME4a			Bana J. Jelačića, Kneza Lj. Posavskoga, Kolodvorska
ME4b	Braće Radića, Matije Gupca, Vladimira Nazora, Vrbanjska ulica	Matije Gupca, Maroša Trconića, Vladimira Nazora- nastavak na M. Gupca	
ME5	Braće Radića - Put, Josipa Kozarca, Ljudevita Gaja, Tomislavova ulica, Vrbanjska ulica - odvojak	Paštanska ulica - okomito na V. Nazora, Vladimira Nazora- nastavak na B. Radića	Josipa Bačoke - preko pruge, Josipa Kozarca, Matije Gupca, Ulica Hrastova, Ulica Rastoke
ME6	J.J. Strossmayera	Braće Radića, Bratstva jedinstva, Paštanska ulica - paralelno na V. Nazora	Braće Radića, Josipa Bačoke, Kolodvor, Matije Gupca - odvojak I, Matije Gupca - odvojak II, Put - spoj na Lj. Gaja, Zelenjak
S3	Tomislavova ulica - prolaz Škola		

#### 4.1.2. ANALIZA POSTOJEĆEG STANJA

Za rasvjetu prometnica korištena su dva tipa cestovnih svjetiljki, Kaos i Gamalux proizvođača TEP sa visokotlačnim natrij žaruljama. Svjetiljke su svojim energetskim i svjetlotehničkim karakteristikama ne zadovoljavaju važeće norme i zakone po pitanju rasvjetle prometnica i zaštite od svjetloonečišćenja.

Svjetiljke tipa Kaos su ugrađene pod kutem 0° prema horizontali i zadovoljavaju parameter zaštite od svjetloonečišćenja, u dobrom su stanju ali u ulicama u kojim se nalaze stupovi su postavljeni na razmacima većim od 70m tako da je nemoguće postići potrebne svjetlotehničke parametre.

Svjetiljke tipa Gamalux su ugrađene pod kutem od 15° prema horizontali , nisu izvedene sa zaštitom od svjetloonečišćenja tako da imaju negativni utjecaj na životinjski i biljni svijet , svjetlinu neba , kao i na zdravlje ljudi uslijed provalnog svjetla u stambene objekte, velikim dijelom sjenila su uslijed UV zračenja potamnila tako da ne propuštaju veliki dio svjetlosti, zaprljana su, a mjestimično su svjetiljke bez zaštitnih sjenila.

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Reflektori za rasvjetu crkvi su uglavnom s metalhalogenim izvorima, postavljeni pod velikim kutem prema horizontali tako da naročito doprinose svjetloonečišćenju. Postojeći svjetlosni izvori su natrijeve i metalhalogene živine žarulje i ekološki nisu prihvatljivi, te zahtijevaju ekološko zbrinjavanje.

Tipovi i količine svjetiljki su prikazane slijedećom tablicom:

Tip svjetiljki	Proizvođač	Izvedba zaštitnog stakla ( oblik i materijal )	Oznaka vrste regulacije	Tip izvora svjetlosti	Snaga žarulje (W)	Broj izvora
TEP LVC 06	TEP	zaobljeno, polimer	nema regulacije	NAVT	150	444
KAOS 1	TEP	ravno, staklo	nema regulacije	NAVT	150	50
SUPERNOVA LVR12	TEP	ravno, staklo	nema regulacije	HQI	400	12
reflektor	TEP	ravno, staklo	nema regulacije	HQI	400	10
reflektorska TEP LVT03	TEP	ravno, staklo	nema regulacije	NAVT	150	5

**Postojeća javna rasvjeta ne zadovoljava pokazatelje sigurnosti u prometu propisane normom HRN EN 13201-2 Cestovna rasvjeta – 2. dio: Zahtijevana svojstva.**

Svjetiljke javne rasvjete postavljene su uglavnom na metalne i betonske stupove, u manjoj mjeri su na drvene stupove, a dio svjetiljki postavljen je na krovne nosače NN mreže. Na sljedećim fotografijama prikazana je postojeća javna rasvjeta. U tlocrtima su označeni stupovi slovima za specifične rasvjetne situacije za koje se nalaze fotografije u prilogu.



Soljani -Vrbanjska ulica  
Svjetiljka na betonskom stupu JR



Soljani –školsko igralište  
Specifične rasvjetne situacije A,B



Soljani – svjetiljka na betonskom stupu  
NN mreže Tomislavova ulica



Soljani – svjetiljka na drvenom  
stupu Tomislavova ulica



Soljani –prilazu Školi  
Specifična rasvjetna situacija C





Soljani – specifična  
rasvjetna situacija D



Soljani – specifična  
rasvjetna situacija E



Soljani – specifična  
rasvjetna situacija F



Strošinci – svjetiljka na  
betonskom stupu NN  
mreže



Strošinci – specifična  
rasvjetna situacija E





Strošinci – specifična  
rasvjetna situacija D



Strošinci – specifična  
rasvjetna situacija A



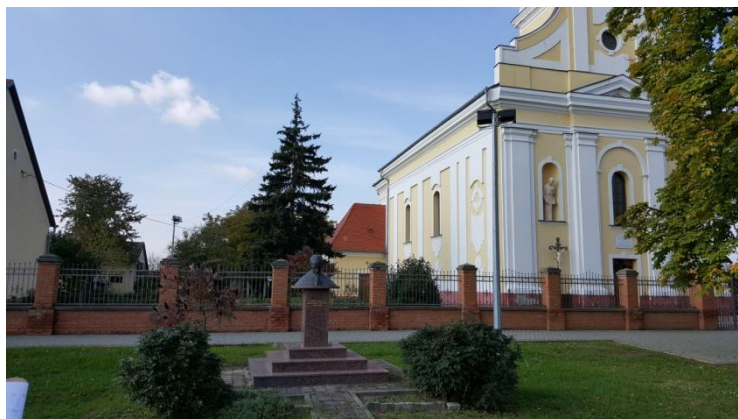
Strošinci – specifična  
rasvjetna situacija B



Strošinci – specifična  
rasvjetna situacija C



Vrbanja – specifična  
rasvjetna situacija B



Vrbanja – specifična  
rasvjetna situacija A



Vrbanja – B. J. Jelačića  
svjetiljka na metalnom  
stupu JR



Vrbanja – K. Lj. Posavskog -svjetiljka  
na betonskom stupu NN mreže



Vrbanja – Kolodvorska  
svjetiljka na betonskom  
stupu NN mreže



Vrbanja – Put – spoj na Lj.  
Gaja - svjetiljka na kući  
na nosaču NN mreže



Vrbanja – Kolodvor -  
svjetiljka na drvenom  
stupu NN mreže



Vrbanja – specifična  
rasvjetna situacija C

Postojeće stanje rasvjetnih mjesta sa podacima o prometnici, svjetiljkama, stupovima, mjenim mjestima napajanja prikazano je tablično u slijedećim tablicama.

Osim toga u prilogu se nalazi grafički prilog sa situacijom svih mjernih mjesta i svjetiljki. Također se u prilogu nalaze i svjetlotehnički proračuni koji dokazuju da postojeća rasvjeta ne zadovoljava važeće norme te se stvarno postojeće stanje ne može uzeti kao referentno za kalkulaciju ušteta.



Specifični tipovi izvora svjetlosti javne rasvjete								
Tip izvora svjetlosti	Broj izvora svjetlosti (žarulja)	Snaga žarulje (W)	Snaga žarulje s predspojnom napravom (W)	Ukupna instalirana električna snaga (W)	Udio u ukupnoj instaliranoj snazi (%)	Ukupna proračunata potrošnje električne energije (kWh)	Udio tipa u ukupnoj potrošnji električne energije (%)	Opće napomene
<b>Soljani</b>								
NAVT	136	150	187,5	25.500,00	80,95%	104.550,00	80,95%	
HQI	12	400	500	6.000,00	19,05%	24.600,00	19,05%	
	148			31.500,00	100,00%	129.150,00	100,00%	
<b>Strošinci</b>								
NAVT	91	150	187,5	17.062,50	85,05%	69.956,25	85,05%	
HQI	6	400	500	3.000,00	14,95%	12.300,00	14,95%	
	97			20.062,50	100,00%	82.256,25	100,00%	
<b>Vrbanja</b>								
NAVT	267	150	187,5	50.062,50	96,16%	205.256,25	96,16%	
HQI	4	400	500	2.000,00	3,84%	8.200,00	3,84%	
	271			52.062,50	100,00%	213.456,25	100,00%	
<b>SVEUKUPNO OPĆINA VRBANJA</b>								
NAVT	494	150	187,5	92.625,00	89,38%	379.762,50	89,38%	
HQI	22	400	500	11.000,00	10,62%	45.100,00	10,62%	
	516			103.625,00	100,00%	424.862,50	100,00%	

Svi tipovi rasvjetnih izvora koji se koriste			Podaci o postojećem sustavu javne rasvjete:										
Instalacija javne rasvjete	Oznaka transformatorske stanice	Naziv i mjesto obračuna energije (MOE)	Godi- na izgra- dnje	Tip svjetiljki i stanje /efikasnost / izbjegavanje svjetlosnog zagađenja	Tip izvora svjetlosti	Broj izvora svjetlosti (žarulja)	Snaga žarulje (W)	Snaga žarulje s predspoj- nom napra- vom (W)	Izvedba zaštitnog stakla ( oblik i materijal )	Oznaka vrste regulacije	Razred prema HRN EN 13 201-2 / Da li zado- voljava svjetlotehnič- ke parametre / Da li postoji elektrotehnič- ka dokumentacija izvedenog stanja	Zona zaštite od svjetlosnog onečišćenja	Opće napomene
<b>SOLJANI</b>													
Matije Gupca	ŽSTS 04016319 Soljani 5	8200613	1979.	cestovna, neefikasna, TEP LVC 06	NAVT	13	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Matije Gupca	PTTS 04016063 Soljani 1	8200452	1960.	cestovna, neefikasna, TEP LVC 06	NAVT	6	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Vladimira Nazora	ŽSTS 04016290 Soljani 4	8200611	1977.	cestovna, neefikasna, TEP LVC 06	NAVT	7	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Braće Radića	PTTS 04016063 Soljani 1	8200452	1960.	cestovna, neefikasna, TEP LVC 06	NAVT	1	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Braće Radića	ŽSTS 04016238 Soljani 3	8200612	1975.	cestovna, neefikasna, TEP LVC 06	NAVT	2	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Braće Radića	ŽSTS 04016290 Soljani 4	8200611	1977.	cestovna, neefikasna, TEP LVC 06	NAVT	2	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Braće Radića	PTTS 04016103 Soljani 2	8200608	1967.	cestovna, neefikasna, TEP LVC 06	NAVT	11	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Braće Radića	ŽSTS 04016357 Soljani 6	8200609	1980.	cestovna, neefikasna, TEP LVC 06	NAVT	6	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Braće Radića	ŽSTS 04016357 Soljani 6	8200609	1980.	cestovna, neefikasna, TEP LVC 07	NAVT	3	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E3	svjetiljke postavljene na betonske stupove NN mreže
Braće Radića	ŽSTS 04016290 Soljani 4	8200611	1977.	cestovna, neefikasna, TEP LVC 06	NAVT	1	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljka postavljena na čelični stup JR



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Braće Radića - crkva	PTTS 04016063 Soljani 1	8200452	1960.	reflektorska, neefikasna, SUPERNOVA LVR12	HQI	4	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na čelične stupove rasvjete fasade
Braće Radića - crkva	PTTS 04016063 Soljani 1	8200452	1960.	reflektorska, neefikasna, SUPERNOVA LVR12	HQI	2	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na betonske stupove JR
Tomislavova ulica	ŽSTS 04016357 Soljani 6	8200609	1980.	cestovna, neefikasna, TEP LVC 06	NAVT	24	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Tomislavova ulica	ŽSTS 04016238 Soljani 3	8200612	1975.	cestovna, neefikasna, TEP LVC 06	NAVT	6	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Tomislavova ulica	ŽSTS 04016238 Soljani 3	8200612	1975.	cestovna, neefikasna, TEP LVC 06	NAVT	1	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Tomislavova ulica - prolaz Škola	ŽSTS 04016238 Soljani 3	8200612	1975.	cestovna, neefikasna, TEP LVC 06	NAVT	3	150	187,5	zaobljeno, polimer	nema regulacije	S3, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Tomislavova ulica	ŽSTS 04016238 Soljani 3	8200612	1975.	cestovna, neefikasna, TEP LVC 06	NAVT	1	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljka postavljena na drveni stup NN mreže
Tomislavova ulica - igralište Škola	ŽSTS 04016238 Soljani 3	8200612	1975.	reflektorska, neefikasna	HQI	6	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na betonske stupove
J.J. Strossmayera	ŽSTS 04016357 Soljani 6	8200609	1980.	cestovna, neefikasna, TEP LVC 06	NAVT	5	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Ljudevita Gaja	PTTS 04016063 Soljani 1	8200452	1960.	cestovna, neefikasna, TEP LVC 06	NAVT	11	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Ljudevita Gaja - odvojak	PTTS 04016063 Soljani 2	8200453	1961.	cestovna, neefikasna, TEP LVC 07	NAVT	1	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E3	svjetiljke postavljene na betonske stupove NN mreže
Vrbanjska ulica	ŽSTS 04016238 Soljani 3	8200612	1975.	cestovna, neefikasna, TEP LVC 06	NAVT	17	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove JR
Vrbanjska ulica - odvojak	PTTS 04016063 Soljani 1	8200452	1960.	cestovna, neefikasna, TEP LVC 06	NAVT	1	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Josipa Kozarca - okomito na M. Gupca	PTTS 04016063 Soljani 1	8200452	1960.	cestovna, neefikasna, TEP LVC 06	NAVT	4	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže

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Josipa Kozarca - paralelno sa M. Gupca	ŽSTS 04016290 Soljani 4	8200611	1977.	cestovna, neefikasna, TEP LVC 06	NAVT	10	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
<b>STROŠINCI</b>													
Matije Gupca	ŽSTS 04016298 Strošinci 2	8239185	1978.	cestovna, neefikasna, TEP LVC 06	NAVT	11	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Matije Gupca	PTTS 04016085 Strošinci 1	8239193	1964.	cestovna, neefikasna, TEP LVC 07	NAVT	2	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora	PTTS 04016085 Strošinci 1	8239193	1964.	cestovna, neefikasna, TEP LVC 06	NAVT	11	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora	PTTS 04016085 Strošinci 1	8239193	1964.	cestovna, neefikasna, TEP LVC 06	NAVT	4	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora	ŽSTS 04016306 Strošinci 3	8239207	1978.	cestovna, neefikasna, TEP LVC 06	NAVT	12	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora – rasvjeta crkve	PTTS 04016085 Strošinci 1	8239193	1964.	reflektorska, neefikasna, SUPERNOVA LVR12	HQI	2	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora – r asvjeta crkve	ŽSTS 04016306 Strošinci 3	8239207	1978.	reflektorska, neefikasna, SUPERNOVA LVR12	HQI	1	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora – rasvjeta crkve	ŽSTS 04016306 Strošinci 3	8239207	1978.	reflektorska, neefikasna	HQI	1	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora – rasvjeta crkve	PTTS 04016085 Strošinci 1	8239193	1964.	reflektorska, neefikasna	HQI	2	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljka postavljena na čelični stup rasvje- te fasade
Vladimira Nazora – rasvjeta crkve	PTTS 04016085 Strošinci 1	8239193	1964.	reflektorska, neefikasna, TEP LVT03	NAVT	5	150	187,5	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljka postavljena na čelični stup rasvje- te fasade
Maroša Trconića	ŽSTS 04016306 Strošinci 3	8239207	1978.	cestovna, neefikasna, TEP LVC 06	NAVT	8	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Braće Radića	PTTS 04016085 Strošinci 1	8239193	1964.	cestovna, neefikasna, TEP LVC 06	NAVT	10	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Bratstva jedinstva	PTTS 04016085 Strošinci 1	8239193	1964.	cestovna, neefikasna, TEP LVC 06	NAVT	6	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže

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Bratstva jedinstva	ŽSTS 04016306 Strošinci 3	8239207	1978.	cestovna, neefikasna, TEP LVC 06	NAVT	6	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Paštanska ulica – okomito na V. Nazora	PTTS 04016085 Strošinci 1	8239193	1964.	cestovna, neefikasna, TEP LVC 06	NAVT	6	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Paštanska ulica – paralelno sa V. Nazora	PTTS 04016085 Strošinci 1	8239193	1964.	cestovna, neefikasna, TEP LVC 06	NAVT	10	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
<b>VRBANJA</b>													
Bana J. Jelačića	PTTS 04016048 Vrbanja 1	8217564	1958.	cestovna, efikasna, TEP KAOS 1	NAVT	23	150	187,5	zaobljeno, polimer	nema regulacije	ME4a, ne zadovoljava	E2	svjetiljke postavljene na čelične stupove JR
Kneza Lj. Posavskoga	PTTS 04016048 Vrbanja 1	8217564	1958.	cestovna, efikasna, TEP KAOS 1	NAVT	3	150	187,5	zaobljeno, polimer	nema regulacije	ME4a, ne zadovoljava	E2	svjetiljke postavljene na čelične stupove JR
Kneza Lj. Posavskoga - rasvjeta crkve	PTTS 04016048 Vrbanja 1	8217564	1958.	reflektorska, neefikasna, SUPERNOVA LVR12	HQI	2	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na čelični stup rasvje- te fasade
Kneza Lj. Posavskoga - rasvjeta crkve	PTTS 04016048 Vrbanja 1	8217564	1958.	reflektorska, neefikasna, SUPERNOVA LVR12	HQI	1	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na čelični stup JR
Kneza Lj. Posavskoga - rasvjeta crkve	PTTS 04016048 Vrbanja 1	8217564	1958.	reflektorska, neefikasna	HQI	1	400	500	ravno, staklo	nema regulacije	ne spada pod EN13201	E2	svjetiljke postavljene na čelični stup JR
Kneza Lj. Posavskoga	PTTS 04016074 Vrbanja 2	8217572	1962.	cestovna, efikasna, TEP KAOS 1	NAVT	24	150	187,5	zaobljeno, polimer	nema regulacije	ME4a, ne zadovoljava	E2	svjetiljke postavljene na čelične stupove JR
Kneza Lj. Posavskoga	ŽSTS 04016296 Vrbanja 4	8227322	1978.	cestovna, neefikasna, TEP LVC 06	NAVT	13	150	187,5	zaobljeno, polimer	nema regulacije	ME4a, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Ljudevita Gaja	PTTS 04016074Vrbanja 2	8217572	1962.	cestovna, neefikasna, TEP LVC 06	NAVT	12	150	187,5	zaobljeno, polimer	nema regulacije	ME4b, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Put - spoj na Lj. Gaja	PTTS 04016074 Vrbanja 2	8217572	1962.	cestovna, neefikasna, TEP LVC 06	NAVT	3	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na krovišta kuća na nosač električne mreže
Ulica Rastoke	MBTS 04016003 Vrbanja 11	nemaju podaci	1999.	cestovna, neefikasna, TEP LVC 06	NAVT	16	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže

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Josipa Kozarca	ŽSTS 04016383 Vrbanja 5	8222894	1981.	cestovna, neefikasna, TEP LVC 06	NAVT	12	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Josipa Kozarca	MBTS 04016003 Vrbanja 11	nemaju podaci	1999.	cestovna, neefikasna, TEP LVC 06	NAVT	9	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Braće Radića	MBTS 04016003 Vrbanja 11	nemaju podaci	1999.	cestovna, neefikasna, TEP LVC 06	NAVT	10	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Kolodvorska	KTS 04016414 Vrbanja 9	8226415	1985.	cestovna, neefikasna, TEP LVC 06	NAVT	32	150	187,5	zaobljeno, polimer	nema regulacije	ME4a, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Kolodvorska	ŽSTS 04016400 Vrbanja 6	8225109	1983.	cestovna, neefikasna, TEP LVC 06	NAVT	13	150	187,5	zaobljeno, polimer	nema regulacije	ME4a, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Kolodvor	KTS 04016414 Vrbanja 9	8226415	1985.	cestovna, neefikasna, TEP LVC 06	NAVT	3	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na drvene stupove NN mreže
Matije Gupca	KTS 04016006 Vrbanja 10	8202444	2010.	cestovna, neefikasna, TEP LVC 06	NAVT	13	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Matije Gupca - odvojak I	KTS 04016006 Vrbanja 10	8202444	2010.	cestovna, neefikasna, TEP LVC 06	NAVT	11	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Matije Gupca - odvojak II	KTS 04016006 Vrbanja 10	8202444	2010.	cestovna, neefikasna, TEP LVC 06	NAVT	9	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Zelenjak	KTS 04016006 Vrbanja 10	8202444	2010.	cestovna, neefikasna, TEP LVC 06	NAVT	7	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Ulica Hrastova	KTS 04016414 Vrbanja 9	8226415	1985.	cestovna, neefikasna, TEP LVC 06	NAVT	21	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Josipa Bačoke	KTS 04016414 Vrbanja 9	8226415	1985.	cestovna, neefikasna, TEP LVC 06	NAVT	22	150	187,5	zaobljeno, polimer	nema regulacije	ME6, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže
Josipa Bačoke - preko pruge	KTS 04016414 Vrbanja 9	8226415	1985.	cestovna, neefikasna, TEP LVC 06	NAVT	11	150	187,5	zaobljeno, polimer	nema regulacije	ME5, ne zadovoljava	E2	svjetiljke postavljene na betonske stupove NN mreže

**Podaci o postojećem sustavu javne rasvjete:**

Instalacija javne rasvjete	Klasifikacija površine kolnika	Raspored izvora svjetlosti	Broj traka	Tip svjetiljki	Tip izvora svjetlosti	Snaga žarulje (W)	Širina ceste (m)	Razmak stupova (m)	Udaljenost svjetiljke od ruba ceste (m)	Visina svjetiljke (m)	Podaci o kraku	Nagib svjetiljke (°)	Razred prema HRN EN 13 201-2	Ocjena stanja prema EN 13201	Ocjena opravdanosti lokacije	Opće napomene
<b>SOLJANI</b>																
Braće Radića	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,5	77,8	2,5	11	nema kraka	15°	ME4b	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove JR - prevelik razmak svjetiljki
Braće Radića - Put	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,5	44,9	4	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove JR - prevelik razmak svjetiljki
Braće Radića - crkva	nije relevantan podatak	Nije relevantan podatak	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	4	nema kraka	nije relevantan podatak	ne spada pod EN13201	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na čelične stupove rasvjete fasade
Braće Radića - crkva	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10	nema kraka	nije relevantan podatak	ne spada pod EN13201	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na betonske stupove JR
J.J. Strossmayera	R3	jednostrano	2	TEP LVC 06	NAVT	150	3,6	71,2	3,8	8	l = 0,7m	15°	ME6	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Josipa Kozarca - okomito na M. Gupca	R3	jednostrano	2	TEP LVC 06	NAVT	150	3,4	71,7	3,6	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Josipa Kozarca - paralelno na M. Gupca	R3	jednostrano	2	TEP LVC 06	NAVT	150	3,4	70,9	1,6	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Ljudevita Gaja	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,4	62	3,8	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Ljudevita Gaja - odvojak	R3	jednostrano	2	TEP LVC 06	NAVT	150	3,8	125	2,1	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Matije Gupca	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,15	83	4,1	11	nema kraka	15°	ME4b	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove JR - prevelik razmak svjetiljki
Tomislavova ulica - 1. dio	R3	jednostrano	2	TEP LVC 06	NAVT	150	3,6	106,5	4,5	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki



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Tomislavova ulica - 2. dio	R3	jednostrano	2	TEP LVC 06	NAVT	150	3,6	70	2	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Tomislavova ulica - prolaz Škola	R3	jednostrano	2	TEP LVC 06	NAVT	150	8	30	0,2	8	l = 0,7m	15°	S3	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove JR
Tomislavova ulica - igralište Škola	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	reflektorska	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10	nema kraka	nije relevantan podatak	ne spada pod EN13201	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na betonske stupove - prevelik razmak svjetiljki
Vladimira Nazora	R3	jednostrano	2	TEP LVC 06	NAVT	150	6,15	83,5	4,1	11	nema kraka	15°	ME4b	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Vrbanjska ulica	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,8	82,2	1,5	11	nema kraka	15°	ME4b	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove JR - prevelik razmak svjetiljki
Vrbanjska ulica - odvojak	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,7	89,8	6,3	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
<b>STROŠINCI</b>																
Braće Radića	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,2	76,7	0,93	8	l = 0,7m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Bratstva jedinstva	R3	jednostrano	2	TEP LVC 06	NAVT	150	3,2	83,7	1,7	8	l = 0,7m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Matije Gupca	R3	jednostrano	2	TEP LVC 06	NAVT	150	6	76,6	5,32	8	l = 0,7m	15°	ME4b	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Maroša Trconića	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,7	78,6	4,84	8	l = 0,7m	15°	ME4b	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Paštanska ulica - okomito na V. Nazora	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,2	80,44	3	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Paštanska ulica - paralelno na V. Nazora	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,2	64,85	2,36	8	l = 0,7m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Vladimira Nazora-nastavak na M. Gupca	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,2	81,5	4,1	8	l = 0,7m	15°	ME4b	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki

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Vladimira Nazora - nastavak na B. Radića	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,2	77,15	0,83	8	l = 0,7m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže - prevelik razmak svjetiljki
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	8	nije relevantan podatak	nije relevantan podatak	ne spada pod EN13201	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	8	nije relevantan podatak	nije relevantan podatak	ne spada pod EN13202	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	reflektorska	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	8	nije relevantan podatak	nije relevantan podatak	ne spada pod EN13203	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na betonske stupove NN mreže
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	Nije relevantan podatak	nije relevantan podatak	reflektorska	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	3	nije relevantan podatak	nije relevantan podatak	ne spada pod EN13204	nije relevantan podatak	nije relevantan podatak	svjetiljka postavljena na čelični stup rasvjete fasade
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	Nije relevantan podatak	nije relevantan podatak	reflektorska TEP LVT03	NAVT	150	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	3	nije relevantan podatak	nije relevantan podatak	ne spada pod EN13205	nije relevantan podatak	nije relevantan podatak	svjetiljka postavljena na čelični stup rasvjete fasade
<b>VRBANJA</b>																
Bana J. Jelačića	R3	jednostrano	2	TEP KAOS 1	NAVT	150	6	82	0,2	10,7	l=2m ; h=0,7m	0°	ME4a	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na čelične stupove JR
Braće Radića	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,5	88	3	8	l=0,7m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Josipa Bačoke	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,3	70	2,4	8	l=0,3m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Josipa Bačoke - preko pruge	R3	jednostrano	2	TEP LVC 06	NAVT	150	6	72	2,7	8	l=0,7m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Josipa Kozarca	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,1	40,2	3,1	8	l=0,7m	15°	ME5	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Josipa Kozarca	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,5	73,7	1,5	8	l=0,7m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Kneza Lj. Posavskoga	R3	jednostrano	2	TEP KAOS 1	NAVT	150	6	82,6	1,6	10,7	l=2m ; h=0,7m	0°	ME4a	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na čelične stupove JR

OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA Igor Barac dipl. ing. el.  
Broj ovlaštenja F-1102/2015

Kneza Lj. Posavskoga – rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	4	nije relevantan podatak	nije relevantan podatak	ne spada pod EN13201	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na čelični stup rasvjete fasade
Kneza Lj. Posavskoga – rasvjeta crkve	Nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10	nije relevantan podatak	nije relevantan podatak	ne spada pod EN13202	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na čelični stup JR
Kneza Lj. Posavskoga – rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	reflektorska	HQI	400	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10	nije relevantan podatak	nije relevantan podatak	ne spada pod EN13203	nije relevantan podatak	nije relevantan podatak	svjetiljke postavljene na čelični stup JR
Kneza Lj. Posavskoga	R3	jednostrano	2	TEP KAOS 1	NAVT	150	6	255,7	4,5	8	l=0,7m	15°	ME4a	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na čelične stupove JR
Kolodvorska	R3	jednostrano	2	TEP LVC 06	NAVT	150	6	78,6	2,7	9	l=2m ; h=1,5m	15°	ME4a	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Kolodvor	R3	jednostrano	2	TEP LVC 06	NAVT	150	6	72,5	1,8	8	l=0,7m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na drvene stupove NN mreže
Ljudevita Gaja	R3	jednostrano	2	TEP LVC 06	NAVT	150	6	72,6	2,6	9	l=2m ; h=1,5m	15°	ME4b	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Matije Gupca	R3	jednostrano	2	TEP LVC 06	NAVT	150	3	78,2	2,2	8	l=0,7m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Matije Gupca	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,5	45,3	3,1	8	l=0,7m	15°	ME5	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Matije Gupca - odvojak I	R3	jednostrano	2	TEP LVC 06	NAVT	150	3	66,8	3,6	8	l=0,7m	15°	ME6	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Matije Gupca - odvojak I	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,4	62,4	0,7	8	l=0,7m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Matije Gupca - odvojak II	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,4	72,1	1	8	l=0,7m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Put - spoj na Lj. Gaja	R3	jednostrano	2	TEP LVC 06	NAVT	150	3	85	6	7	l=1m	15°	ME6	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na krovništa kuća na nosač električne mreže



Ulica Hrastova	R3	jednostrano	2	TEP LVC 06	NAVT	150	5,9	73,9	2,2	8	l=0,3m	15°	ME5	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Ulica Rastoke	R3	jednostrano	2	TEP LVC 06	NAVT	150	5	87,9	4,5	8	l=0,7m	15°	ME5	ne zadovoljava	svjetiljke previše udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže
Zelenjak	R3	jednostrano	2	TEP LVC 06	NAVT	150	4,6	39,2	1,9	8	l=0,7m	15°	ME6	ne zadovoljava	svjetiljke ispravno udaljene od ruba kolnika	svjetiljke postavljene na betonske stupove NN mreže

#### 4.2. OBRAČUNSKO MJERNO MJESTO

Javna rasvjeta se uglavnom napaja iz niskonaponskih ormara ugrađenih u transformatorsku stanicu osim mjernog mjesta Vrbanja 10 koje ima izmješten ormarić javne rasvjete smješten uz transformatorske stanicu. U Vrbani mjerno mjesto Vrbanja 11 je kompletno opremljeno i s njega se napaja dio naselja, ali nisu dostupni računi niti podaci o utrošku električne energije. Popis mjernih mjesta prikazan je u slijedećoj tablici:

OBRAČUNSKO MJERNO MJESTO			
8200452	SOLJANI 1	PTTS 04016063	M. GUPCA 36A
8200608	SOLJANI 2	PTTS 04016103	B. RADIĆA 66A
8200612	SOLJANI 3	ŽSTS 04016238	VRBANJSKA
8200611	SOLJANI 4	ŽSTS 04016290	V. NAZORA
8200613	SOLJANI 5	ŽSTS 04016319	M. GUPCA
8200609	SOLJANI 6	ŽSTS 04016357	B. RADIĆA 147A
8239193	STROŠINCI 1	PTTS 04016085	V. Nazora
8239185	STROŠINCI 2	ŽSTS 04016298	M. Gupca
8239207	STROŠINCI 3	ŽSTS 04016306	V. Nazora
8217564	VRBANJA 1	PTTS 04016048	B. J. Jelačića
8217572	VRBANJA 2	PTTS 04016074	Kneza LJ. Posavskog
8227322	VRBANJA 4	ŽSTS 04016296	Kneza LJ. Posavskog
8222894	VRBANJA 5	ŽSTS 04016383	B. J. Jelačića
8225109	VRBANJA 6	ŽSTS 04016400	Kolodvorska
8226415	VRBANJA 9	KTS 04016414	Kolodvorska bb
8202444	VRBANJA 10	KTS 04016006	M. GUPCA bb
nema podatke	VRBANJA 11	MBTS 04016003	ULICA RASTOKE

Kod mjernih mjesta Vrbanja 1 i Vrbanja 4 postavljeni su SSMO ormarići kao buduća mjerna mjesta ali mjerna oprema nije u njih izmještena.

Po pitanju tehničke ispravnosti montaže i sigurnosti više mjernih mjesta ne zadovoljava ( naročito u transformatorskim stanicama PTTS ) gdje cijele montažne ploče vise na spojnim vodičima. U svakom slučaju bi se trebala mjerna mjesta dovesti u tehničku ispravnost, a u budućnosti se trebaju izmjestiti van transformatorskih stanica ili razvodnih ormara transformatorskih stanica.

Slijedeće fotografije pokazuju neka mjerna mjesta:



Mjerenje Soljani 2



Mjerenje Vrbanja 11



Mjerenje Strošinci 1



Mjerno mjesto  
Vrbanja 10



SSMO kod mjernog  
mjesta Vrbanja 1



SSMO kod mjernog  
mjesta Vrbanja 4

#### 4.3. SUSTAV REGULACIJE I UPRAVLJANJA

##### 4.3.1. POSTOJEĆI SUSTAV REGULACIJE I UPRAVLJANJA

Postojeće svjetiljke nemaju mogućnost autonomne regulacije i upravljanja. Sustav upravljanja radom javne rasvjete izveden je pomoću svjetlosnih sklopki ( luksomata ) koji ovisno o podešenom pragu intenziteta osvijetljenja i intenzitetu dnevne svjetlosti automatski uključuju i isključuju javnu rasvjetu. Na pojedinim mjernim mjestima je ugrađena svjetlosna sklopka od koje se impulsnim vodom povezuju i ostala mjerna mjesta. Slijedeća tablica pokazuje emještaj svjetlosnih sklopki.

UREĐAJ ZA REGULACIJU I UPRAVLJANJE			
SOLJANI 1	PTTS 04016063	M. GUPCA 36A	LUKSOMAT
SOLJANI 2	PTTS 04016103	B. RADIĆA 66A	IMPULSNI VOD
SOLJANI 3	ŽSTS 04016238	VRBANJSKA	IMPULSNI VOD
SOLJANI 4	ŽSTS 04016290	V. NAZORA	IMPULSNI VOD
SOLJANI 5	ŽSTS 04016319	M. GUPCA	IMPULSNI VOD
SOLJANI 6	ŽSTS 04016357	B. RADIĆA 147A	IMPULSNI VOD
STROŠINCI 1	PTTS 04016085	V. Nazora	LUKSOMAT
STROŠINCI 2	ŽSTS 04016298	M. Gupca	IMPULSNI VOD
STROŠINCI 3	ŽSTS 04016306	V. Nazora	IMPULSNI VOD
VRBANJA 1	PTTS 04016048	B. J. Jelačića	IMPULSNI VOD
VRBANJA 2	PTTS 04016074	Kneza LJ. Posavskog	LUKSOMAT
VRBANJA 4	ŽSTS 04016296	Kneza LJ. Posavskog	IMPULSNI VOD
VRBANJA 5	ŽSTS 04016383	B. J. Jelačića	IMPULSNI VOD
VRBANJA 6	ŽSTS 04016400	Kolodvorska	IMPULSNI VOD
VRBANJA 9	KTS 04016414	Kolodvorska bb	LUKSOMAT

VRBANJA 10	KTS 04016006	M. GUPCA bb	IMPULSNI VOD
VRBANJA 11	MBTS 04016003	ULICA RASTOKE	LUKSOMAT

Fotografije pokazuju neke od svjetlosnih sklopki. Svjetlosne sklopke su stavljene tako da ih u radu ne ometa ambijetalno svjetlo ili su dodatno zaštićene elementima koji ih štite od ambijetalnog svjetla i samog svjetla javne rasvjete.



Luksomat  
Strošinci 1



Luksomat  
Vrbanja 2

#### 4.3.2. PREPORUKA UPRAVLJAČKIH SKLOPOVA I SUSTAVA REGULACIJE I UPRAVLJANJA

Preporuka je da se ugrade nove svjetiljke koje imaju autonomni sustav upravljanja i regulacije. U početnoj fazi se sklop u svjetiljci preprogramira na intenzitet i vrijeme rada. Preporuka je da se postave nove svjetiljke koje imaju mogućnost nadogradnje sustava bežičnog upravljanja intenzitetom i vremenom rada svjetiljki.

Zamjenske nove svjetiljke koje se preporučuju imaju uređaje za autonomnu regulaciju svjetlosnog toka u stupnjevima tipa Dynadimmer proizvođača Philips. Korištenjem regulacije razine osvijetljenosti moguće je ostvariti vremenski ovisnu regulaciju kojom se tijekom kasnih noćnih sati kada je promet smanjenog intenziteta jednoliko smanjuje intenzitet rasvjete na cijeloj dionici prometnice. Ovim načinom regulacije kvaliteta rasvijetljenosti se zadržava (uzdužna i opća jednolikost) uz smanjenje intenziteta svjetlosti, a kao konačni rezultat ostvaruje se energetska ušteda. Sustav je neovisan o trajanju noći u ljetnim i zimskim mjesecima budući da uređaj samostalno mjeri sredinu noći i po tome određuje termine rada. Korisnik bira režim rada, mogu se postići veće uštede.

#### **4.4. DETEKCIJA KRITIČNIH TOČAKA, REVIZIJA RASVJETNIH MJESTA I SUSTAVA**

Sustav javne rasvjete općine Vrbanja nema posebnih kritičnih točaka poput kuglastih armature i sl.

Međutim radi velikih razmaka među postavljenim svjetilkama nisu zadovoljeni potrebni svjetlotehnički parametri rasvjete prometnica, radi većeg dijela svjetiljki koje nisu zasjenjene sustav stvara veliko svjetloonečišćenje.

Upravljački sustav uključivanja rasvjete nema mogućnost prilagodbe željama Korisnika za posebnim režimom uključivanja za pojedine datume u godini, nema mogućnost regulacije niti kontrole intenziteta svjetlosti.

#### **4.5. ODREĐIVANJE REFERENTNOG POSTOJEĆEG STANJA**

Postojeća javna rasvjeta ne zadovoljava pokazatelje sigurnosti u prometu propisane normom HRN EN 13201-2 Cestovna rasvjeta – 2. dio: Zahtijevana svojstva, za potrebe izračuna ušteda u potrošnji električne energije koristi će se referentno postojeće stanje.

Prilikom proračuna referentnog modela korištene su svjetiljke sa visokotlačnom natrijevom žaruljom jednake snage kao i postojeće ali je dodan potreban broj svjetiljki kako bi se zadovoljili pokazatelji sigurnosti.

Svjetlotehnički proračun referentnog postojećeg stanja dan je u prilogu a u nastavku je dan tablični prikaz podataka o referentnom modelu.



## Podaci o referenrnom modelu

Instalacija javne rasvjete	Klasifikacija površine kolnika	Raspored izvora svjetlosti	Broj traka	Širina ceste (m)	Razmak stupova (m)	Udaljenost svjetiljke od ruba ceste (m)	Visina i nagib svjetiljke (°)	Podaci o kraku	Tip svjetiljki	Tip izvora svjetlosti	Snaga žarulje (W)	Snaga žarulje s gubicima (W)	Duljina ulice ( m )	Broj svjetiljki ( kom )	Instalirana snaga (W)	Razred prema HRN EN 13 201-2 / Da li zadovoljava svjetlotehničke parametre
<b>SOLJANI</b>																
Braće Radića	R3	dvostrani offset	2	5,5	84	0,5	12m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	1788	44	8.169,64	ME4b
Braće Radića - Put	R3	jednostrano	2	5,5	44,9	4	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	209	6	1.060,27	ME5
Braće Radića - crkva	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	11	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	nije relevantan podatak	2	1.000,00	ne spada pod EN13201
Braće Radića - crkva	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	4	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	nije relevantan podatak	4	2.000,00	ne spada pod EN13201
J.J. Strossmayera	R3	jednostrano	2	3,6	46	2,5	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	280	7	1.328,80	ME6
Josipa Kozarca - okomito na M. Gupca	R3	jednostrano	2	3,4	40	3,6	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	204	6	1.143,75	ME5
Josipa Kozarca - paralelno na M. Gupca	R3	jednostrano	2	3,4	40,7	1,6	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	674	18	3.292,54	ME5
Ljudevita Gaja	R3	jednostrano	2	4,4	45	2,5	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	720	17	3.187,50	ME5
Ljudevita Gaja - odvojak	R3	jednostrano	2	3,8	45	0,8	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	117	4	675,00	ME5
Matije Gupca	R3	dvostrani offset	2	5,15	70	2,1	12m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	1396	41	7.666,07	ME4b
Tomislavova ulica - 1. dio	R3	jednostrano	2	3,6	46	3,2	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	1483	33	6.232,34	ME5
Tomislavova ulica - 2. dio	R3	jednostrano	2	3,6	45	0,7	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	593	14	2.658,33	ME5
Tomislavova ulica - prolaz Škola	R3	jednostrano	2	8	45	0,2	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	78	3	512,50	S3
Tomislavova ulica - igralište Škola	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10m	nije relevantan podatak	reflektorska	HQI	400	500	nije relevantan podatak	6	3.000,00	ne spada pod EN13201
Vladimira Nazora	R3	dvostrani offset	2	6,15	65	2,1	12m ,15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	487	16	2.997,12	ME4b
Vrbanjska ulica	R3	jednostrano	2	5,8	43	0,5	12m ,15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	1281	31	5.773,26	ME4b
Vrbanjska ulica - odvojak	R3	dvostrani offset	2	5,7	55	5	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	271	11	2.035,23	ME5
											<b>UKUPNO SOLJANI:</b>			<b>261</b>	<b>52.732,35</b>	

STROŠINCI																
Braće Radića	R3	jednostrano	2	4,2	39	0,93	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	718	19	3.639,42	ME6
Bratstva jedinstva	R3	jednostrano	2	3,2	41	1,7	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	882	23	4.221,04	ME6
Matije Gupca	R3	dvostrani offset	2	6	45	4,02	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	822	38	7.037,50	ME4b
Maroša Trconića	R3	dvostrani offset	2	5,7	35	4,84	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	516	30	5.716,07	ME4b
Paštanska ulica - okomito na V. Nazora	R3	jednostrano	2	5,2	35	3,71	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	343	11	2.025,00	ME5
Paštanska ulica - paralelno na V. Nazora	R3	jednostrano	2	5,2	36	2,36	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	603	18	3.328,13	ME6
Vladimira Nazora- nastavak na M. Gupca	R3	jednostrano	2	4,2	23	4,1	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	702	32	5.910,33	ME4b
Vladimira Nazora- nastavak na B. Radića	R3	jednostrano	2	4,2	38	0,83	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	753	21	3.902,96	ME5
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	8	nije r elevantan podatak	SUPERNOVA LVR12	HQI	400	500	nije relevantan podatak	3	1.500,00	ne spada pod EN13201
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	Nije relevantan podatak	nije relevantan podatak	8	nije relevantan podatak	reflektorska	HQI	400	500	nije relevantan podatak	1	500,00	ne spada pod EN13201
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	Nije relevantan podatak	3	nije relevantan podatak	reflektorska	HQI	400	500	nije relevantan podatak	2	1.000,00	ne spada pod EN13201
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	3	nije relevantan podatak	reflektorska TEP LVT03	NAVT	150	187,5	nije relevantan podatak	5	937,50	ne spada pod EN13201
												UKUPNO STROŠINCI:		202	39.717,94	

VRBANJA																
Bana J. Jelačića	R3	dvostrani offset	2	6	64	0,2	10,7 ; 0°	l=2m ; h=0,7m	TEP KAOS 1	NAVT	150	187,5	1681	54	10.037,11	ME4a
Braće Radića	R3	jednostrano	2	4,5	44	1,7	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	937	22	4.180,40	ME6
Josipa Bačoke	R3	dvostrani offset	2	4,3	69	2,4	8m , 15°	l=0,3m	TEP LVC 06	NAVT	150	187,5	1535	45	8.529,89	ME6
Josipa Bačoke - preko pruge	R3	dvostrani offset	2	6	75	1,4	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	747	21	3.922,50	ME5
Josipa Kozarca	R3	jednostrano	2	5,1	42	1,8	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	1131	29	5.456,13	ME5
Josipa Kozarca	R3	dvostrani offset	2	4,5	77	0,2	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5			0,00	ME5

Kneza Lj. Posavskoga	R3	dvostrani offset	2	6	57	1,6	10,7 ; 0°	l=2m ; h=0,7m	TEP KAOS 1	NAVT	150	187,5	2019	72	13.470,39	ME4a
Kneza Lj. Posavskoga - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	4	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	nije relevantan podatak	2	1.000,00	ne spada pod EN13201
Kneza Lj. Posavskoga - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	Nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	nije relevantan podatak	1	500,00	ne spada pod EN13201
Kneza Lj. Posavskoga - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	Nije relevantan podatak	Nije relevantan podatak	Nije relevantan podatak	10	Nije relevantan podatak	reflektorska	HQI	400	500	nije relevantan podatak	1	500,00	ne spada pod EN13201
Kneza Lj. Posavskoga	R3	dvostrani offset	2	6	54	3,2	9m , 15°	l=2m ; h=1,5m	TEP KAOS 1	NAVT	150	187,5	903	34	6.458,33	ME4a
Kolodvorska	R3	dvostrani offset	2	6	54	2,7	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	3103	116	21.736,11	ME4a
Kolodvor	R3	dvostrani offset	2	6	66	1,8	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	210	7	1.380,68	ME6
Ljudevita Gaja	R3	dvostrani offset	2	6	62	2,6	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	719	24	4.536,29	ME4b
Matije Gupca	R3	jednostrano	2	3	45	0,9	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	457	11	2.091,67	ME5
Matije Gupca	R3	jednostrano	2	4,5	45,3	3,1	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	360	8	1.500,00	ME5
Matije Gupca - odvojak I	R3	jednostrano	2	3	41	3,6	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	336	9	1.724,09	ME6
Matije Gupca - odvojak I	R3	jednostrano	2	4,4	38	0,7	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	326	10	1.796,05	ME6
Matije Gupca - odvojak II	R3	jednostrano	2	4,4	38	1	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	560	16	2.950,66	ME6
Put - spoj na Lj. Gaja	R3	jednostrano	2	3	38	6	7m , 15°	0,3m	TEP LVC 06	NAVT	150	187,5	200	6	1.174,34	ME6
Ulica Hrastova	R3	dvostrani offset	2	5,9	64	0,5	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	1504	48	9.000,00	ME5
Ulica Rastoke	R3	jednostrano	2	5	42	3,2	9m , 15°	l=2m ; h=1,5m	TEP LVC 06	NAVT	150	187,5	908	23	4.241,07	ME5
Zelenjak	R3	jednostrano	2	4,6	38	2,3	8m , 15°	l= 0,7m	TEP LVC 06	NAVT	150	187,5	342	10	1.875,00	ME6
											<b>UKUPNO VRBANJA:</b>			<b>570</b>	<b>108.060,72</b>	

## 5. ANALIZA I MODELIRANJE POTROŠNJE ELEKTRIČNE ENERGIJE

### 5.1. CIJENA I POTROŠNJA ELEKTRIČNE ENERGIJE PREMA RAČUNIMA

Sva obračunska mjerna mjesta su kategorije javna rasvjeta, tarifni model žuti. Opskrbljivač električnom energijom za sva mjerna mjesta je HEP-OPSKRBA. U nastavku u tablici su prikazane sastavnice cijene električne energije prema računima HEP-ODS d.o.o.

Opis	Cijena ( kn/kWh )
Električna energija viša dnevna tarifna stavka	0,78
Naknada za poticanje proizvodnje iz obnovljivih izvora	0,035
Trošarina za neposlovnu uporabu električne energije	0,0075
<b>Ukupno bez PDV-a</b>	<b>0,8225</b>

Naselje Soljani ima 6 mjernih mjesta, naselje Strošinci 3 mjerna mjesta, a naselje Vrbanja 8 mjernih mjesta. Za mjerno mjesto Vrbanja 11 (MBTS 04016003 ) u ulici Rastoke ne postoje podaci o potrošnji električne energije.

U nastavku je dan tablični prikaz mjesečne potrošnje po mjernim mjestima prema računima za električnu energiju u zadnje tri godine ( 2012. , 2013. i 2014. ) i ukupne godišnje potrošnje po naseljima.

Podaci o stvarnoj godišnjoj potrošnji električne energije ne mogu se koristiti za energetska analizu kao referentno stanje jer postojeća javna rasvjeta ne zadovoljava pokazatelje sigurnosti u prometu propisane normom HRN EN 13201-2 Cestovna rasvjeta – 2. dio: Zahtijevana svojstva. Također su podaci o potrošnji nepotpuni jer nema podataka o potrošnji dijela javne rasvjete spojene na mjerno mjesto Vrbanja 11. Za navedeno mjerno mjesto potrebno je sa opskrbljivačem energije definirati status.

**MJESEČNA POTROŠNJA ELEKTRIČNE ENERGIJE**

OBRAČUNSKO MJERNO MJESTO 8200452					SOLJANI 1		M. GUPCA 36A			PTTS 04016063			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	3144	2444	2435	1940	2029	1534	1567	2068	2090	2931	2606	2626	<b>27414</b>
2013.	2861	2114	2086	1751	1679	1453	1368	1684	1672	2113	2580	2842	<b>24203</b>
2014.	2536	2209	1906	1930	1683	1591	1684	1912	2452	3061	2857	3335	<b>27156</b>

OBRAČUNSKO MJERNO MJESTO 8200608					SOLJANI 2		B. RADIĆA 66A			PTTS 04016103			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	768	591	591	469	492	371	377	531	468	706	693	669	<b>6726</b>
2013.	804	598	590	497	476	415	455	498	524	663	788	792	<b>7100</b>
2014.	741	664	582	591	503	472	447	439	563	706	660	824	<b>7192</b>

OBRAČUNSKO MJERNO MJESTO 8200612					SOLJANI 3		VRBANJSKA			ŽSTS 04016238			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	2249	1774	1760	1357	1408	1071	1140	1598	1608	2235	2142	2038	<b>20380</b>
2013.	2527	1904	1857	1740	1740	1705	1891	2000	2074	2534	2842	3073	<b>25887</b>
2014.	2828	2502	2207	2248	1869	1835	1955	1739	2325	2697	2358	2895	<b>27458</b>

OBRAČUNSKO MJERNO MJESTO 8200611					SOLJANI 4		V. NAZORA			ŽSTS 04016290			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	1586	1217	1215	969	1012	762	776	1023	1039	1457	1425	1380	<b>13861</b>
2013.	1662	1229	1211	1053	1114	988	1035	1113	1228	1559	1679	1860	<b>15731</b>
2014.	1793	1499	1340	1358	1153	1081	1027	955	1222	1536	1426	1716	<b>16106</b>

OBRAČUNSKO MJERNO MJESTO 8200613					SOLJANI 5		M. GUPCA			ŽSTS 04016319			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	1193	915	918	731	768	579	588	774	783	1099	1047	1078	<b>10473</b>
2013.	1256	934	920	776	746	664	711	778	4030	1006	1445	1236	<b>14502</b>
2014.	1156	1021	894	908	772	727	688	672	864	1079	1008	1213	<b>11002</b>



OBRAČUNSKO MJERNO MJESTO 8200609					SOLJANI 6		B. RADIĆA 147A			ŽSTS 04016357			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	0	0	0	0	0	0	0	0	0	0	0	0	0
2013.	0	0	0	0	0	1213	1938	2011	4322	2937	3214	3529	19164
2014.	3279	2936	2531	2567	2172	2023	1929	1874	2412	296	2586	3281	27886

OBRAČUNSKO MJERNO MJESTO 8239193					STROŠINCI 1		V. Nazora			PTTS 04016085			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	2855	2275	2082	1689	1722	1270	1448	1570	1713	2481	2215	2517	23837
2013.	2675	2256	1978	1935	1432	1250	1355	1567	1730	1960	2004	2186	22328
2014.	2483	2099	1829	1839	1480	1159	1280	1328	1851	2354	2303	2549	22554

OBRAČUNSKO MJERNO MJESTO 8239185					STROŠINCI 2		M. Gupca			ŽSTS 04016298			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	1083	850	736	640	682	517	580	572	607	921	873	979	9040
2013.	1032	874	748	697	518	501	566	637	721	852	911	959	9016
2014.	1037	803	734	737	704	542	511	556	756	958	934	1021	9293

OBRAČUNSKO MJERNO MJESTO 8239207					STROŠINCI 3		V. Nazora			ŽSTS 04016306			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	5222	4178	3887	3207	3348	2524	2868	3259	3092	4764	4230	4739	45318
2013.	4988	4208	3838	4096	3021	2951	3307	3617	4030	4676	5442	5086	49260
2014.	5575	4521	3734	3675	2610	2312	2570	2958	4124	5215	5101	5559	47954

OBRAČUNSKO MJERNO MJESTO					VRBANJA 1		B. J. Jelačića			04016048			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	3243	2611	2458	2019	2157	1475	1536	2078	2131	2967	3242	3134	29051
2013.	3518	3001	2666	2609	1970	1543	1262	1762	2045	2435	2670	2806	28287
2014.	2723	2358	1921	1966	1386	1378	1630	1955	2047	2574	2324	3607	25869

OBRAČUNSKO MJERNO MJESTO					VRBANJA 2		Kneza LJ. Posavskog			04016074			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	2551	2066	2145	1618	1704	1341	1487	1684	1757	2472	2583	2519	<b>23927</b>
2013.	2789	2448	2020	1889	1820	1306	1321	1582	1816	2162	2472	2640	<b>24265</b>
2014.	2759	2375	1890	2021	1471	1316	1306	1647	1302	2859	2267	2909	<b>24122</b>

OBRAČUNSKO MJERNO MJESTO					VRBANJA 4		Kneza LJ. Posavskog			04016296			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	1118	889	860	689	631	509	547	599	637	919	963	945	<b>9306</b>
2013.	1067	845	726	700	651	544	487	616	700	819	992	964	<b>9111</b>
2014.	994	803	741	782	593	524	557	556	678	691	829	873	<b>8621</b>

OBRAČUNSKO MJERNO MJESTO					VRBANJA 5		B. J. Jelačića			04016383			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	1207	1032	990	844	897	636	618	852	871	1157	1320	1291	<b>11715</b>
2013.	1420	193	1047	1050	799	744	522	550	660	778	1054	852	<b>9669</b>
2014.	936	810	674	693	540	492	492	607	643	822	776	979	<b>8464</b>

OBRAČUNSKO MJERNO MJESTO					VRBANJA 6		Kolodvorska			04016400			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	990	768	792	584	609	507	516	597	618	872	910	884	<b>8647</b>
2013.	997	789	724	687	543	519	493	605	734	777	889	905	<b>8662</b>
2014.	1000	866	693	777	552	520	515	646	668	884	857	1014	<b>8992</b>

OBRAČUNSKO MJERNO MJESTO					VRBANJA 9		Kolodvorska bb			04016414			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studeni	prosinac	
2012.	6032	4998	4756	3633	3886	3011	3135	3596	3811	5394	5662	5575	<b>53489</b>
2013.	6273	4942	4384	4443	3369	3221	3074	2933	5347	4913	5714	6270	<b>54883</b>
2014.	5635	5398	4334	4746	3569	3230	3241	668	8191	5516	5374	6415	<b>56317</b>

OBRAČUNSKO MJERNO MJESTO					VRBANJA 10		M. GUPCA bb			04016006			UKUPNO kWh
	siječanj	veljača	ožujak	travanj	svibanj	lipanj	srpanj	kolovoz	rujan	listopad	studenj	prosinac	
2012.	2822	2855	2456	1934	2108	1406	1783	1795	1916	2692	2780	2911	27458
2013.	3066	2509	2145	2172	1613	1603	1676	1874	2253	2385	2754	2813	26863
2014.	2935	2620	2133	2408	1708	1608	1617	2009	2128	2695	2552	3118	27531

**Za mjesto Vrbanja 11 (MBTS 04016003 ) u ulici Rastoke ne postoje podaci o potrošnji električne energije.**

**GODIŠNJA POTROŠNJA ELEKTRIČNE ENERGIJE PREMA RAČUNIMA**

GODIŠNJA POTROŠNJA ENERGIJE ( kWh )	UKUPNO NASELJE SOLJANI	UKUPNO NASELJE STROŠINCI	UKUPNO NASELJE VRBANJA	SVEUKUPNO OPĆINA VRBANJA
2012.	78854	78195	163593	<b>320642</b>
2013.	106587	80604	161740	<b>348931</b>
2014.	116800	79801	159916	<b>356517</b>

## 5.2. MODELIRANJE REFERENTNE POTROŠNJE ELEKTRIČNE ENERGIJE

Referentna potrošnja električne energije određena je na temelju proračunate referentne instalirane snage javne rasvjete koja bi zadovoljavala pokazatelje sigurnosti u prometu propisane normom HRN EN 13201-2 Cestovna rasvjeta – 2. dio: Zahtijevana svojstva. Prilikom proračuna referentnog modela korištene su svjetiljke sa visokotlačnom natrijevom žaruljom jednake snage kao i postojeće ali je dodan potreban broj svjetiljki kako bi se zadovoljili pokazatelji sigurnosti. Broj svjetiljki određen je prema duljini pojedine ulice i razmaka stupova referentne rasvjete prema svjetlotehničkim proračunima.

Referentni broj sati rada sustava javne rasvjete određen je prema Pravilniku o sustavu za praćenje, mjerenje i verifikaciju ušteda energije ("Narodne novine" br. 71/15) i iznosi 4100 sati rada godišnje.

Cijena električne energije određena je prema računima za električnu energiju. Cijene su iskazane bez PDV-a. U tablici u nastavku dana je snaga i potrošnja električne energije za referentni model javne rasvjete.

SNAGA REFERENTNE RASVJETE( W )				GODIŠNJA POTROŠNJA ELEKTRIČNE ENERGIJE ZA REFERENTNO STANJE		
ASELJE SOLJANI	ASELJE STROŠINCI	ASELJE VRBANJA	SVEUKUPNA SNAGA OPĆINA VRBANJA	SVEUKUPNA ENERGIJA OPĆINA VRBANJA GODIŠNJE ( kWh )	UKUPNA CIJENA ENERGIJE (kn/kWh )	UKUPNA CIJENA GODIŠNJE (kn)
52.732,35	39.717,94	108.060,72	200.511,01	822.095,14	0,8225	676.173,25

Za potrebe izračuna energetskih i ekonomskih ušteda koristit će se modelirana referentna potrošnja kao pretpostavka postojećeg stanja.

## 6. PRIJEDLOG MJERA POBOLJŠANJA ENERGETSKE UČINKOVITOSTI

### 6.1. PRIJEDLOG MJERA OPĆENITO

Neefikasne svjetiljke potrebno je zamijeniti s novim svjetiljkama kako bi se postigla veća luminancija površine kolnika, jednolikost luminancije površine kolnika i rasvjetljenost pločnika i izbjeglo svjetloonečišćenje.

Potrebno je instalirati sustav regulacije i upravljanja radom svjetiljki

Potrebno je izmjestiti mjerna mjesta iz transformatorskih stanica u razvodne ormare javne rasvjete.

Potrebno je s opskrbljivačem električne energije definirati mjerenje utroška električne energije dijela naselja Vrbanja napajanog s mjernog mjesta Vrbanja 11. Planirane mjere prikazane su u slijedećoj tablici.

MJERE POBOLJŠANJA ENERGETSKE UČINKOVITOSTI	
MJERA 1	REKONSTRUKCIJA POSTOJEĆE JR – ZAMJENA POSTOJEĆIH NEEFIKASNIH SVJETILJKI NOVIM ENERGETSKI UČINKOVITIM
MJERA 2	UGRADNJA AUTONOMNE REGULACIJE SVJETLOSNOG TOKA SVJETILJKI
MJERA 3	IZMJEŠTANJE MJERNIH I RAZDJELNIH MJESTA

### 6.2. ZAMJENA POSTOJEĆIH NEEFIKASNIH SVJETILJKI NOVIM ENERGETSKI UČINKOVITIM

#### 6.2.1. KARAKTERISTIKE NOVOPREDLOŽENIH SVJETILJKI I PRORAČUN

Svjetiljke su uglavnom postavljene na relativno velikom međusobnom razmaku, zbog čega rasvjeta ne zadovoljava minimalne zahtjeve propisane normom. Tamo gdje svjetiljke nisu postavljene na svaki stup ( uglavnom su postavljene na svaki drugi stup ) potrebno je svjetiljke postaviti na svaki stup. U nekim ulicama je potrebno dodati stupove radi velikog razmaka između postojećih stupova i na njih također postaviti nove svjetiljke.

Zamjenom i dodavanjem svjetiljki zadovoljili bi se kriteriji propisani normom HRN EN 13201, a smanjilo bi se i svjetlosno onečišćenje. Ugradnjom novih svjetiljki s visokim stupnjem zaštite od prodora vlage i krutih čestica produljit će se radni vijek svjetlosnih izvora i predspojnih uređaja, čime će se smanjiti troškovi održavanja. Pravilnim odabirom novih svjetiljki smanjit će se fiziološko blještanje i povećati sigurnost u prometu. Razvojem svjetiljki poboljšavaju se svjetlotehničke karakteristike čime se uz žarulje manje snage nego kod postojećih svjetiljki postižu bolji svjetlotehnički parametri. Time je moguća značajna ušteda u potrošnji električne energije. Manja potrošnja energije znači manje troškove i posredno smanjenje emisije stakleničkih plinova čime se pridonosi očuvanju okoliša i održivom razvoju.

Za potrebe svjetlotehničkog proračuna predloženog modela zamjene svjetiljki energetski učinkovitijima korištene su svjetiljke proizvođača Philips s LED izvorima svjetlosti. Svjetlotehnički proračun predloženog energetski učinkovitog modela proveden je prema stvarnoj konfiguraciji prometnice s istim ulaznim podacima o profilu prometnice kao i za proračun referentnog modela. Ulazni podaci koji se razlikuju su faktor održavanja ( koji kod referentnog modela iznosi 0,8 zbog zaprljanosti svjetiljki i smanjenja svjetlosnog toka a kod modela nove rasvjete 0,90 ) i razmak stupova.



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U slijedećoj tablici prikazani su energetske učinkoviti modeli svjetiljki s osnovnim tehničkim karakteristikama.

**TEHNIČKE KARAKTERISTIKE ENERGETSKI UČINKOVITIH SVJETILJKI**

Svjetiljka	Tip regulacije	Snaga svjetiljke (W)	Snaga izvora (W)	Svjetlosni tok svjetiljke (lm)	Efikasnost (lm/W)	LOR (%)
PHILIPS BGP352 T15 1xECO19-3S/830 DC	1-10 V i DALI	23,8	20	2079	87	99
PHILIPS BGP352 T15 1xECO28-3S/740 DW	1-10 V i DALI	29,75	25	2790	94	93
PHILIPS BGP352 T15 1xECO35-3S/830 DC	1-10 V i DALI	44,03	37	3528	80	98
PHILIPS BGP352 T15 1xECO35-3S/830 DW	1-10 V i DALI	44,03	37	3312	75	92
PHILIPS BGP352 T15 1xECO46-3S/830 DW	1-10 V i DALI	57,12	48	4459	78	91
PHILIPS BGP352 T15 1xECO46-3S/830 DC	1-10 V i DALI	57,12	48	4802	84	98
PHILIPS BGP352 T15 1xECO58-3S/830 DW	1-10 V i DALI	69,02	58	5551	80	91
PHILIPS BGP352 T15 1xECO58-3S/830 DC	1-10 V i DALI	69,02	58	5917	86	97
PHILIPS BGP352 T15 1xECO70-3S/830 DC	1-10 V i DALI	84,49	71	7008	83	96
PHILIPS BGP352 T15 1xECO81-3S/830 DC	1-10 V i DALI	95,2	80	8256	87	96
PHILIPS BGP352 T15 1xECO93-3S/830 DC	1-10 V i DALI	110,67	93	9310	84	95
PHILIPS BGP353 T15 1xECO104-3S/830 DC	1-10 V i DALI	126,14	106	10355	82	95
PHILIPS BGP353 T15 1xECO116-3S/830 DC	1-10 V i DALI	134,47	113	11590	86	95
PHILIPS BGP353 T15 1xECO128-3S/830 DC	1-10 V i DALI	149,94	126	12690	85	94
PHILIPS BGP353 T15 1xECO139-3S/830 DC	1-10 V i DALI	164,22	138	13485	82	93

U slijedećoj tablici prikazani su podaci o predloženom modelu javne rasvjete. Rezultati proračuna nalaze se u prilogu.

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Instalacija javne rasvjete	Klasifikacija površine kolnika	Raspored izvora svjetlosti	Broj traka	Širina ceste (m)	Razmak stupova (m)	Udaljenost svjetiljke od ruba ceste (m)	Visina i nagib svjetiljke (°)	Podaci o kraku	Tip svjetiljki	Tip izvora svjetlosti	Snaga žarulje (W)	Snaga žarulje s gubicima (W)	Duljina ulice ( m )	Broj svjetiljki ( kom )	Instalirana snaga ( W )	Razred prema HRN EN 13 201-2 / Da li zadovoljava svjetlotehničke parametre
<b>SOLJANI</b>																
Braće Radića	R3	jednostrano	2	5,5	38,9	0,5	12m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	93	110,67	1788	45	4.980,15	ME4b
Braće Radića - Put	R3	jednostrano	2	5,5	44,9	2,71	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	71	84,49	209	6	506,94	ME5
Braće Radića - crkva	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	11	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	Nije relevantan podatak	2	1.000,00	ne spada pod EN13201
Braće Radića - crkva	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	4	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	nije relevantan podatak	4	2.000,00	ne spada pod EN13201
J.J. Strossmayera	R3	jednostrano	2	3,6	35,6	2,5	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	37	44,03	280	9	396,27	ME6
Josipa Kozarca - okomito na M. Gupca	R3	jednostrano	2	3,4	34,3	3,6	8m , 10°	l=0,7m	PHILIPS BGP352	LED	58	69,02	204	7	483,14	ME5
Josipa Kozarca - paralelno na M. Gupca	R3	jednostrano	2	3,4	40,2	1,6	8m , 10°	l=0,7m	PHILIPS BGP352	LED	48	57,12	674	19	1.085,28	ME5
Ljudevita Gaja	R3	jednostrano	2	4,4	36,4	2,5	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	58	69,02	720	22	1.518,44	ME5
Ljudevita Gaja - odvojak	R3	jednostrano	2	3,8	29	0,8	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	37	44,03	117	4	176,12	ME5
Matije Gupca	R3	jednostrano	2	5,15	41,5	2,1	12m , 0°	l=2m ; h=1,5m	PHILIPS BGP353	LED	106	126,14	1396	37	4.667,18	ME4b
Tomislavova ulica - 1. dio	R3	jednostrano	2	3,6	38,7	3,2	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	58	69,02	1483	61	4.210,22	ME5
Tomislavova ulica - 2. dio	R3	jednostrano	2	3,6	33,1	0,7	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	37	44,03	593	4	176,12	ME5
Tomislavova ulica - prolaz Škola	R3	jednostrano	2	8	30	0,2	8m , 0°	l=0,7m	PHILIPS BGP352	LED	48	57,12	78	3	171,36	S3
Tomislavova ulica - igralište Škola	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10m	nije relevantan podatak	reflektorska	HQI	400	500	nije relevantan podatak	6	3.000,00	ne spada pod EN13201
Vladimira Nazora	R3	jednostrano	2	6,15	41,75	2,1	12m , 10°	l=2m ; h=1,5m	PHILIPS BGP353	LED	113	134,47	487	13	1.748,11	ME4b
Vrbanjska ulica	R3	jednostrano	2	5,8	41,1	0,5	12m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	93	110,67	1281	33	3.652,11	ME4b
Vrbanjska ulica - odvojak	R3	jednostrano	2	5,7	36,4	5	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	80	95,2	271	10	952,00	ME5
											<b>UKUPNO SOLJANI:</b>			<b>285</b>	<b>30.723,44</b>	

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STROŠINCI																
Braće Radića	R3	jednostrano	2	4,2	35,2	0,93	8m , 10°	l=0,7m	PHILIPS BGP352	LED	25	29,75	718	22	654,50	ME6
Bratstva jedinstva	R3	jednostrano	2	3,2	43,44	1,71	8m , 0°	l=0,7m	PHILIPS BGP352	LED	37	44,03	882	23	1.012,69	ME6
Matije Gupca	R3	dvostrani offset	2	6	40,19	4,02	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP353	LED	126	149,94	822	23	3.448,62	ME4b
Maroša Trconića	R3	jednostrano	2	5,7	37,86	4,86	8m , 10°	l=0,7m	PHILIPS BGP353	LED	113	134,47	516	15	2.017,05	ME4b
Paštanska ulica - okomito na V. Nazora	R3	jednostrano	2	5,2	42,2	3,71	8m , 5°	l=0,7m	PHILIPS BGP352	LED	71	84,49	343	9	760,41	ME5
Paštanska ulica - paralelno na V. Nazora	R3	jednostrano	2	5,2	33,05	2,36	8m , 0°	l=0,7m	PHILIPS BGP352	LED	37	44,03	603	18	792,54	ME6
Vladimira Nazora- nastavak na M. Gupca	R3	jednostrano	2	4,2	32,58	4,1	8m , 10°	l=0,7m	PHILIPS BGP352	LED	80	95,2	702	21	1.999,20	ME4b
Vladimira Nazora- nastavak na B. Radića	R3	jednostrano	2	4,2	42,33	0,84	8m , 0°	l=0,7m	PHILIPS BGP352	LED	58	69,02	753	22	1.518,44	ME5
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	8	Nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	Nije relevantan podatak	3	1.500,00	ne spada pod EN13201
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	Nije relevantan podatak	nije rele- vantan podatak	nije relevantan podatak	8	nije rele- vantan podatak	reflektorska	HQI	400	500	nije relevantan podatak	1	500,00	ne spada pod EN13201
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije rele- vantan podatak	nije elevantan podatak	3	nije relevantan podatak	reflektorska	HQI	400	500	nije relevantan podatak	2	1.000,00	ne spada pod EN13201
Vladimira Nazora - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	3	nije relevantan podatak	reflektorska TEP LVT03	NAVT	150	187,5	Nije relevantan podatak	5	937,50	ne spada pod EN13201
											<b>UKUPNO STROŠINCI:</b>		<b>164</b>	<b>16.140,95</b>		

VRBANJA																
Bana J. Jelačića	R3	jednostrano	2	6	41	0,2	10,7m ; 0°	l=2m ; h=0,7m	PHILIPS BGP352	LED	80	95,2	1681	45	4.284,00	ME4a
Braće Radića	R3	jednostrano	2	4,5	46,1	1,7	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	48	57,12	937	23	1.313,76	ME6
Josipa Bačoke	R3	jednostrano	2	4,3	35	2,4	8m , 0°	l=0,3m	PHILIPS BGP352	LED	37	44,03	1535	44	1.937,32	ME6
Josipa Bačoke - preko pruge	R3	jednostrano	2	6	36,25	1,4	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	48	57,12	747	21	1.199,52	ME5
Josipa Kozarca	R3	jednostrano	2	5,1	40,2	1,8	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	58	69,02	1131	19	1.311,38	ME5
Josipa Kozarca	R3	jednostrano	2	4,5	38,7	0,2	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	48	57,12		15	856,80	ME5
Kneza Lj. Posavskoga	R3	jednostrano	2	6	41,3	1,6	10,7m ; 0°	l=2m ; h=0,7m	PHILIPS BGP352	LED	93	110,67	2019	53	5.865,51	ME4a

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Kneza Lj. Posavskoga - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	4	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	nije relevantan podatak	2	1.000,00	ne spada pod EN13201
Kneza Lj. Posavskoga - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10	nije relevantan podatak	SUPERNOVA LVR12	HQI	400	500	nije relevantan podatak	1	500,00	ne spada pod EN13201
Kneza Lj. Posavskoga - rasvjeta crkve	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	nije relevantan podatak	10	nije relevantan podatak	reflektorska	HQI	400	500	nije relevantan podatak	1	500,00	ne spada pod EN13201
Kneza Lj. Posavskoga	R3	jednostrano	2	6	40,5	3,2	9m , 5°	l=2m ; h=1,5m	PHILIPS BGP352	LED	138	164,22	903	23	3.777,06	ME4a
Kolodvorska	R3	jednostrano	2	6	39,3	2,7	9m , 5°	l=2m ; h=1,5m	PHILIPS BGP352	LED	138	164,22	3103	87	14.287,14	ME4a
Kolodvor	R3	jednostrano	2	6	36,25	1,8	8m , 0°	l=0,7m	PHILIPS BGP352	LED	37	44,03	210	8	352,24	ME6
Ljudevita Gaja	R3	jednostrano	2	6	36,9	2,6	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	93	110,67	719	21	2.324,07	ME4b
Matije Gupca	R3	jednostrano	2	3	40,1	0,9	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	48	57,12	817	11	628,32	ME5
Matije Gupca	R3	jednostrano	2	4,5	45,3	1,8	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	58	69,02		11	759,22	ME5
Matije Gupca - odvojak I	R3	jednostrano	2	3	32,9	4,3	8m , 0°	nema kraka	PHILIPS BGP352	LED	37	44,03	336	11	484,33	ME6
Matije Gupca - odvojak I	R3	jednostrano	2	4,4	31,7	1,4	8m , 0°	nema kraka	PHILIPS BGP352	LED	20	23,8	326	10	238,00	ME6
Matije Gupca - odvojak II	R3	jednostrano	2	4,4	36,6	1,7	8m , 0°	nema kraka	PHILIPS BGP352	LED	37	44,03	560	17	748,51	ME6
Put - spoj na Lj. Gaja	R3	dvostrani offset	2	3	60	2	8m , 0°	nema kraka	PHILIPS BGP352	LED	20	23,8	200	9	214,20	ME6
Ulica Hrastova	R3	jednostrano	2	5,9	36,95	0,47	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	71	84,49	1504	41	3.464,09	ME5
Ulica Rastoke	R3	jednostrano	2	5	41,9	3,2	9m , 0°	l=2m ; h=1,5m	PHILIPS BGP352	LED	71	84,49	908	31	2.619,19	ME5
Zelenjak	R3	jednostrano	2	4,6	39,2	2,6	8m , 0°	nema kraka	PHILIPS BGP352	LED	37	44,03	342	11	484,33	ME6
											<b>UKUPNO VRBANJA:</b>			<b>515</b>	<b>49.148,99</b>	

#### 6.2.2. ODREĐIVANJE POTROŠNJE NAKON PRIMJENE PRVE MJERE

U tablici u nastavku prikazani su sumarni podaci o instaliranoj snazi i godišnjoj potrošnji nakon primjene prve mjere.

SNAGA RASVJETE NAKON 1. MJERE ( W )				GODIŠNJA POTROŠNJA ELEKTRIČNE ENERGIJE NAKON PRIMJENE 1. MJERE		
SOLJANI	STROŠINCI	VRBANJA	SVEUKUPNA SNAGA OPĆINA VRBANJA (W)	SVEUKUPNA ENERGIJA OPĆINA VRBANJA GODIŠNJE ( kWh )	UKUPNA CIJENA ENERGIJE (kn/kWh )	UKUPNA CIJENA GODIŠNJE (kn)
30.723,44	16.140,95	49.148,99	96.013,38	393.654,86	0,8225	323.781,12

Referentni broj sati rada sustava javne rasvjete određen je prema Pravilniku o sustavu za praćenje, mjerenje i verifikaciju ušteda energije ("Narodne novine" br. 71/15). Cijena električne energije određena je prema računima za električnu energiju Cijene su iskazane bez PDV-a.

#### 6.2.3. ENERGETSKE I EKONOMSKE UŠTEDE, SMANJENJE EMISIJE CO<sub>2</sub>

U tablici u nastavku prikazani su sumarni podaci o uštedama u potrošnji električne energije i ekonomskim uštedama kao i smanjenju emisije CO<sub>2</sub>.

GODIŠNJA REFERENTNA POTROŠNJA ( kWh )	GODIŠNJA POTROŠNJA NAKON 1. MJERE ( kWh )	GODIŠNJA UŠTEDA ( kWh )	UŠTEDA ( % )	GODIŠNJA UŠTEDA ( kn )	SMANJENJE EMISIJE CO <sub>2</sub> ( t CO <sub>2</sub> /god )
822.095,14	393.654,86	428.440,28	52,12%	352.392,13	141,39

Prikazane energetske, ekonomske i ekološke uštede odnose se na modelirano referentno postojeće stanje. Specifični faktor emisije CO<sub>2</sub> za električnu energiju određen je prema Pravilniku o sustavu za praćenje, mjerenje i verifikaciju ušteda energije ( 0,33kgCO<sub>2</sub>/kWh ).

**Procijenjene su uštede u potrošnji električne energije od 52,12% u odnosu na referentno-postojeće stanje.**

#### 6.2.4. EKONOMSKO VREDNOVANJE PREDLOŽENE MJERE

Jednostavni period povrata *JPP* predstavlja osnovni pokazatelj ekonomske isplativosti mjera poboljšanja energetske učinkovitosti na razini energetskog pregleda građevine. U slijedećoj tablici je prikaz sadržaja prve mjere u pojedinoj ulici i procjena ekonomske vrijednosti mjere.



OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO  
CERTIFICIRANJE ZGRADA Igor Barac dipl. ing. el.  
Broj ovlaštenja F-1102/2015

**SPECIFIKACIJA 1. MJERE PO ULICAMA I EKONOMSKA VRIJEDNOST**

Instalacija javne rasvjete	Prikaz 1. mjere po ulicama	Ukupan broj novih svjetiljki	J. cijena nove svjetiljke ( kn )	Ukupan broj novih stupova	J. cijena novog stupa ( kn )	Ukupna cijena instalacije ( kn )
<b>SOLJANI</b>						
Braće Radića	dodati nove betonske stupove JR, postaviti nove svjetiljke na svaki stup	45	4.760,00	22	2.000,00	258.200,00
Braće Radića - Put	postaviti nove svjetiljke na svaki stup	6	4.500,00			27.000,00
J.J. Strossmayera	postaviti nove svjetiljke na svaki stup	9	3.475,00			31.275,00
Josipa Kozarca - okomito na M. Gupca	postaviti nove svjetiljke na svaki stup	7	4.488,00			31.416,00
Josipa Kozarca - paralelno na M. Gupca	postaviti nove svjetiljke na svaki stup	19	3.561,00			67.659,00
Ljudevita Gaja	postaviti nove svjetiljke na svaki stup	22	4.488,00			98.736,00
Ljudevita Gaja - odvojak	postaviti nove svjetiljke na svaki stup	4	3.475,00			13.900,00
Matije Gupca	dodati nove betonske stupove JR, postaviti nove svjetiljke na svaki stup	37	4.847,00	18	2.000,00	215.339,00
Tomislavova ulica - 1. dio	postaviti nove svjetiljke na svaki stup	61	4.488,00			273.768,00
Tomislavova ulica - 2. dio	postaviti nove svjetiljke na svaki stup	4	3.475,00			13.900,00
Tomislavova ulica - prolaz škola	postaviti nove svjetiljke na svaki stup	3	3.561,00			10.683,00
Vladimira Nazora	dodati nove betonske stupove JR, postaviti nove svjetiljke na svaki stup	13	4.847,00	6	2.000,00	75.011,00
Vrbanjska ulica	dodati nove betonske stupove JR, postaviti nove svjetiljke na svaki stup	33	4.760,00	16	2.000,00	189.080,00

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Vrbanjska ulica - odvojak	postaviti nove svjetiljke na svaki stup	10	4.600,00			46.000,00
<b>UKUPNO NASELJE SOLJANI:</b>						1.351.967,00
<b>STROŠINCI</b>						
Braće Radića	postaviti nove svjetiljke na svaki stup	22	3.400,00			74.800,00
Bratstva jedinstva	postaviti nove svjetiljke na svaki stup	23	3.475,00			79.925,00
Matije Gupca	postaviti nove svjetiljke na svaki stup	23	4.946,00			113.758,00
Maroša Trconića	postaviti nove svjetiljke na svaki stup	15	4.847,00			72.705,00
Paštanska ulica - okomito na V. Nazora	postaviti nove svjetiljke na svaki stup	9	4.500,00			40.500,00
Paštanska ulica - paralelno na V. Nazora	postaviti nove svjetiljke na svaki stup	18	3.475,00			62.550,00
Vladimira Nazora- nastavak na M. Gupca	postaviti nove svjetiljke na svaki stup	21	4.600,00			96.600,00
Vladimira Nazora- nastavak na B. Radića	postaviti nove svjetiljke na svaki stup	22	4.488,00			98.736,00
<b>UKUPNO NASELJE STROŠINCI:</b>						639.574,00
<b>VRBANJA</b>						
Bana J. Jelačića	dodati nove čelične JR, postaviti nove svjetiljke na svaki stup	45	4.600,00	22	3.500,00	284.000,00
Braće Radića	postaviti nove svjetiljke na svaki stup	23	3.475,00			79.925,00
Josipa Bačoke	postaviti nove svjetiljke na svaki stup	44	3.475,00			152.900,00
Josipa Bačoke - preko pruge	postaviti nove svjetiljke na svaki stup	21	3.561,00			74.781,00
Josipa Kozarca	postaviti nove svjetiljke na svaki stup	19	4.488,00			85.272,00
Josipa Kozarca	postaviti nove svjetiljke na svaki stup	15	3.561,00			53.415,00
Kneza Lj. Posavskoga	dodati nove čelične JR, postaviti nove svjetiljke na svaki stup	53	4.760,00	26	3.500,00	343.280,00

OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO  
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Kneza Lj. Posavskoga	postaviti nove svjetiljke na svaki stup	23	5.877,00			135.171,00
Kolodvorska	postaviti nove svjetiljke na svaki stup	87	5.877,00			511.299,00
Kolodvor	postaviti nove svjetiljke na svaki stup	8	3.475,00			27.800,00
Ljudevita Gaja	postaviti nove svjetiljke na svaki stup	21	4.760,00			99.960,00
Matije Gupca	postaviti nove svjetiljke na svaki stup	11	3.561,00			39.171,00
Matije Gupca	postaviti nove svjetiljke na svaki stup	11	4.488,00			49.368,00
Matije Gupca - odvojak I	postaviti nove svjetiljke na svaki stup	11	3.475,00			38.225,00
Matije Gupca - odvojak I	postaviti nove svjetiljke na svaki stup	10	3.326,00			33.260,00
Matije Gupca - odvojak II	postaviti nove svjetiljke na svaki stup	17	3.475,00			59.075,00
Put - spoj na Lj. Gaja	postaviti nove svjetiljke na svaki stup	9	3.326,00			29.934,00
Ulica Hrastova	postaviti nove svjetiljke na svaki stup	41	4.500,00			184.500,00
Ulica Rastoke	postaviti nove svjetiljke na svaki stup	31	4.500,00			139.500,00
Zelenjak	postaviti nove svjetiljke na svaki stup	11	3.475,00			38.225,00
<b>UKUPNO NASELJE VRBANJA:</b>						<b>2.459.061,00</b>
<b>UKUPNO OPĆINA VRBANJA:</b>						<b>4.634.122,00</b>

Prilikom izračuna jednostavnog perioda povrata investicije uvažen je životni vijek izvora svjetlosti bez razmatranja troškova održavanja svjetiljke. Slijedeća tablica prikazuje izračun JPP.

IZRAČUN JEDNOSTAVNOG PERIODA POVRATA NAKON 1. MJERE

<b>MJERA 1</b>	<b>UŠTEDA ( kn/god )</b>	<b>INVESTICIJA ( kn )</b>	<b>JPP ( god. )</b>
REKONSTRUKCIJA POSTOJEĆE JR	352.392,13	4.634.122,00	13,2

**Jednostavni period povrata za predloženu mjeru zamjene cestovnih svjetiljki energetski učinkovitijima i rekonstrukciju dijela javne rasvjete iznosi 13,2 godine što je dugačak povrat investicije zbog ulaganja u infrastrukturu.**

### 6.3. AUTONOMNA REGULACIJA SVJETLOSNOG TOKA SVJETILJKE

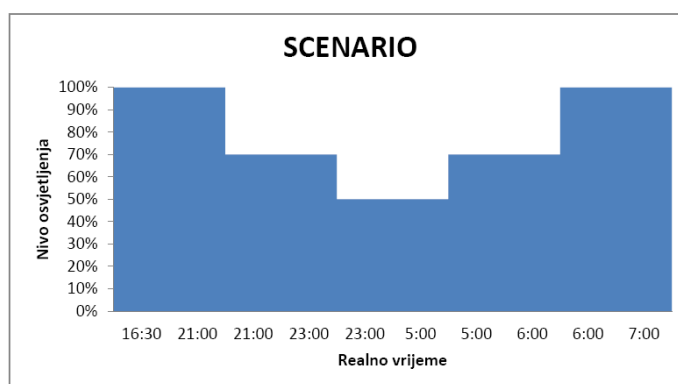
#### 6.3.1. KARAKTERISTIKE UREĐAJA ZA REGULACIJU SVJETLOSNOG TOKA

Prethodno opisane predložene svjetiljke opremljene su uređajima za autonomnu regulaciju svjetlosnog toka u stupnjevima tipa Dynadimmer proizvođača Philips.

Korištenjem regulacije razine osvijetljenosti moguće je ostvariti vremenski ovisnu regulaciju kojom se tijekom kasnih noćnih sati kada je promet smanjenog intenziteta jednoliko smanjuje intenzitet rasvjete na cijeloj dionici prometnice. Ovim načinom regulacije kvaliteta rasvijetljenosti se zadržava (uzdužna i opća jednolikost) uz smanjenje intenziteta svjetlosti, a kao konačni rezultat ostvaruje se energetska uštedu. Sustav je neovisan o trajanju noći u ljetnim i zimskim mjesecima budući da uređaj samostalno mjeri sredinu noći i po tome određuje termine rada

Preporuka je da se koristi Dynadimmer preprogramirana redukcija svjetlosti kroz 5 fleksibilnih perioda i nivoa redukcije snage i svjetlosti .. Svaki period može biti podešen na svako trajanje i nivo redukcije svjetlosti. Napajanje mjeri tijekom prva tri dana rada sustava ( i kontrolno tijekom svaka tri dana) vremena paljenja i gašenja rasvjetnog sustava (sustav se pali i gasi automatski pomoću luksomata). Na osnovu tih informacija određuje samostalno virtual midnight . Sustav nije ovisan o trajanju noći jer svaka tri dana ponovo određuje vremena paljenja i gašenja sustava . *Tablica* prikazuje odabrani scenario rada na dva primjera , a *grafikon* prikazuje jedan od njih.

DOBA DANA	TRAJANJE	DOBA DANA	TRAJANJE	%TRAJANJA	NIVO
21:00 – 23:28	2:28	16:30 – 21:00	4:30:00	31%	100%
23:28 – 00:35	1:06	21:00 – 23:00	2:00:00	14%	70%
00:35 – 03:53	3:18	23:00 – 5:00	6:00:00	41%	50%
03:53 – 4:26	0:33	5:00 – 6:00	1:00:00	7%	70%
4:26 – 5:00	0:33	6:00 – 7:00	1:00:00	7%	100%
/	8:00:00	/	14:30:00	100%	/



Proračunom proizlazi da je ušteda **26,8 %** energije prema prikazanom radu svjetiljki koje imaju mogućnost regulacije .

### 6.3.2. ODREĐIVANJE POTROŠNJE NAKON PRIMJENE DRUGE MJERE

U tablici u nastavku prikazani su sumarni podaci o instaliranoj snazi i godišnjoj potrošnji nakon primjene druge mjere.

GODIŠNJA REFERENTNA POTROŠNJA ( kWh )	GODIŠNJA POTROŠNJA NAKON 1. MJERE ( kWh )	GODIŠNJA POTROŠNJA NAKON 2. MJERE ( kWh )	UŠTEDA RAZLIKA MJERA 1 - MJERA 2 ( % )	UŠTEDA REFERENTNA POTROŠNJA - MJERA 2 ( kWh )	UŠTEDA REFERENTNA POTROŠNJA - MJERA 2 ( % )	GODIŠNJA UŠTEDA ( kn )	SMANJENJE EMISIJE CO <sub>2</sub> ( t CO <sub>2</sub> /god )
822.095,14	393.654,86	288.155,36	26,80%	533.939,78	64,95%	439.165,47	176,20

Prikazane energetske, ekonomske i ekološke uštede odnose se na modelirano referentno postojeće stanje. Specifični faktor emisije CO<sub>2</sub> za električnu energiju određen je prema Pravilniku o sustavu za praćenje, mjerenje i verifikaciju ušteda energije ( 0,33kgCO<sub>2</sub>/kWh ).

**Procijenjene su uštede u potrošnji električne energije od 64,95% u odnosu na referentno-postojeće stanje.**

### 6.3.3. EKONOMSKO VREDNOVANJE PREDLOŽENE MJERE

Kod primjene mjere upravljanja svjetlosnim tokom ne povećava se investicija jer predložene svjetiljke imaju ugrađen uređaj za regulaciju svjetlosnog toka.

#### IZRAČUN JEDNOSTAVNOG PERIODA POVRATA NAKON 2. MJERE

MJERA	UŠTEDA ( kn/god )	INVESTICIJA ( kn )	JPP ( god. )
REKONSTRUKCIJA POSTOJEĆE JR + UPRAVLJANJE SVJETLOSNIM TOKOM	439.165,47	4.634.122,00	10,6

**Sumarni jednostavni period povrata za istovremenu rekonstrukciju javne rasvjete i primjenu upravljanja svjetlosnim tokom iznosi 10,6 godina.**



#### 6.4. IZMJEŠTANJE MJERNIH I RAZDJELNIH MJESTA

Javna rasvjeta se uglavnom napaja iz niskonaponskih ormara ugrađenih u transformatorsku stanicu osim mjernog mjesta Vrbanja 10 koje ima izmješten ormarić javne rasvjete smješten uz transformatorske stanicu. Kod mjernih mjesta Vrbanja 1 i Vrbanja 4 postavljeni su SSMO ormarići kao buduća mjerna mjesta ali mjerna oprema nije u njih izmještena.

Preporuča se izmještanje mjernih i razdjelnih mjesta u samostojeće priključne ormare i ormare javne rasvjete zbog razdjeljivanja vlasništva priključka

PROCJENA INVESTICIJE IZMJEŠTANJA BROJILA		BROJ MJERNIH MJESTA ZA IZMJEŠTANJE	PROCJENA INVESTICIJE PO MJERNOM MJESTU	UKUPNA CIJENA ( kn )	OPIS
NASELJE	SOLJANI	6	9.000,00	54.000,00	
	STROŠINCI	3	9.000,00	27.000,00	
	VRBANJA	5	9.000,00	45.000,00	
		2	5.000,00	10.000,00	POSTOJI POSTAVLJEN SAMOSTOJEĆI ORMAR
SVEUKUPNO :OPĆINA VRBANJA :				136.000,00	

**Ova se mjera ne donosi energetske niti ekonomske uštede.**

#### 6.5. SUMARNI PRIKAZ SVIH MJERA

U tablici u nastavku su prikazane sve predložene mjere i njihovo ekonomsko vrednovanje.

##### SUMARNI PRIKAZ SVIH MJERA

MJERE POBOLJŠANJA ENERGETSKE UČINKOVITOSTI		VRIJEDNOST INVESTICIJE ( kn )	UŠTEDA ( kn )	JPP ( god. )
MJERA 1	ZAMJENA POSTOJEĆIH NEEFIKASNIH SVJETILJKI NOVIM ENERGETSKI UČINKOVITIM	4.634.122,00	352.392,13	13,2
MJERA 2	UGRADNJA AUTONOMNE REGULACIJE SVJETLOSNOG TOKA SVJETILJKI	4.634.122,00	439.165,47	10,6
MJERA 3	IZMJEŠTANJE MJERNIH I RAZDJELNIH MJESTA	136.000,00	-	-
<b>UKUPNO:</b>		<b>4.770.122,00</b>	<b>-</b>	<b>-</b>

Preporučuje se što prije provesti 1. mjeru energetske učinkovitosti, odnosno rekonstruirati postojeću javnu rasvjetu.

Provođenje 2. mjere, odnosno korištenje autonomne regulacije, preporuča se početi provoditi odmah nakon puštanja nove javne rasvjete u rad kako bi se smanjio period povrata investicije.

Izmještanje mjernih mjesta preporučuje se provesti ili uz provođenje mjera energetske učinkovitosti ili prilikom rekonstrukcije transformatorskih stanica.

**Nevezano za sve predložene mjere radi sigurnosti i tehničke ispravnosti obavezno u skladu sa propisima dovesti u tehnički ispravno stanje sva mjerna mjesta.**

**Također je nužno sa isporučiteljem električne energije definirati status mjernog mjesta Vrbanja 11 u naselju Vrbanja.**

## 7. ZAKLJUČAK

Postojeća javna rasvjeta općine Vrbanja ( naselja Soljani, Strošinci i naselje Vrbanja s aspekta energetske učinkovitosti i sprječavanja svjetloonečišćenja ne ispunjava u potpunosti svjetlotehničke kriterije propisane normom HRN EN 13201 što negativno utječe na sigurnost prometa.

Osim toga, svjetiljke su neefikasne, zbog čega se troši više energije nego što je potrebno. Zbog same konstrukcije svjetiljki, tj. zbog nisko smještenog svjetlosnog izvora, značajan dio svjetlosnog toka emitira se iznad horizonta. Posljedica toga je svjetlosno onečišćenje i blještanje koje ometa sudionike u prometu. Predlaže se zamjena postojećih svjetiljki novim efikasnijim svjetiljkama.

Postojeće svjetiljke nemaju sustav regulacije, ugradnjom svjetiljki sa autonomnim sustavom regulacije postići će se dodatne uštede u potrošnji električne energije kao i mogućnost ispunjavanja posebnih zahtjeva regulacije rada.

Potrebno je napraviti detaljnu projektnu dokumentaciju, kojom će se definirati potrebno povećanje broja svjetiljki i dogradnja infrastructure javne rasvjete, izmještanje mjernih mjesta van transformatorskih stanica kako bi se ispunili zahtjevi propisani normom HRN EN 13201.

Nove svjetiljke trebaju biti konstrukcijski izvedene tako da minimaliziraju svjetlosno onečišćenje i ne uzrokuju blještanje koje ometa sudionike u prometu. Nove svjetiljke trebaju biti efikasnije od postojećih, pa će biti manje snage nego postojeće i trošit će manje električne energije. Manja potrošnja energije znači manju emisiju stakleničkih plinova u atmosferu i manje troškove za energiju.

Postojeće svjetiljke nemaju odgovarajuću zaštitu od prodora krutih čestica i vlage što uzrokuje češće kvarove žarulja i predspojnih uređaja. Ugradnjom novih svjetiljki odgovarajućeg stupnja zaštite produljio bi se radni vijek ugrađene opreme i smanjili bi se troškovi održavanja javne rasvjete.

Modernizacijom javne rasvjete uz relativno mala ulaganja postiže se značajno povećanje sigurnosti u prometu, smanjuje se svjetlosno onečišćenje, smanjuje se potrošnja električne energije i poboljšava vizualna slika naselja uz povrat uložених sredstava kroz uštedu u potrošnji električne energije.

## **8. PRILOZI**

**PRILOG 1 – SITUACIJA JAVNE RASVJETE NASELJA SOLJANI**

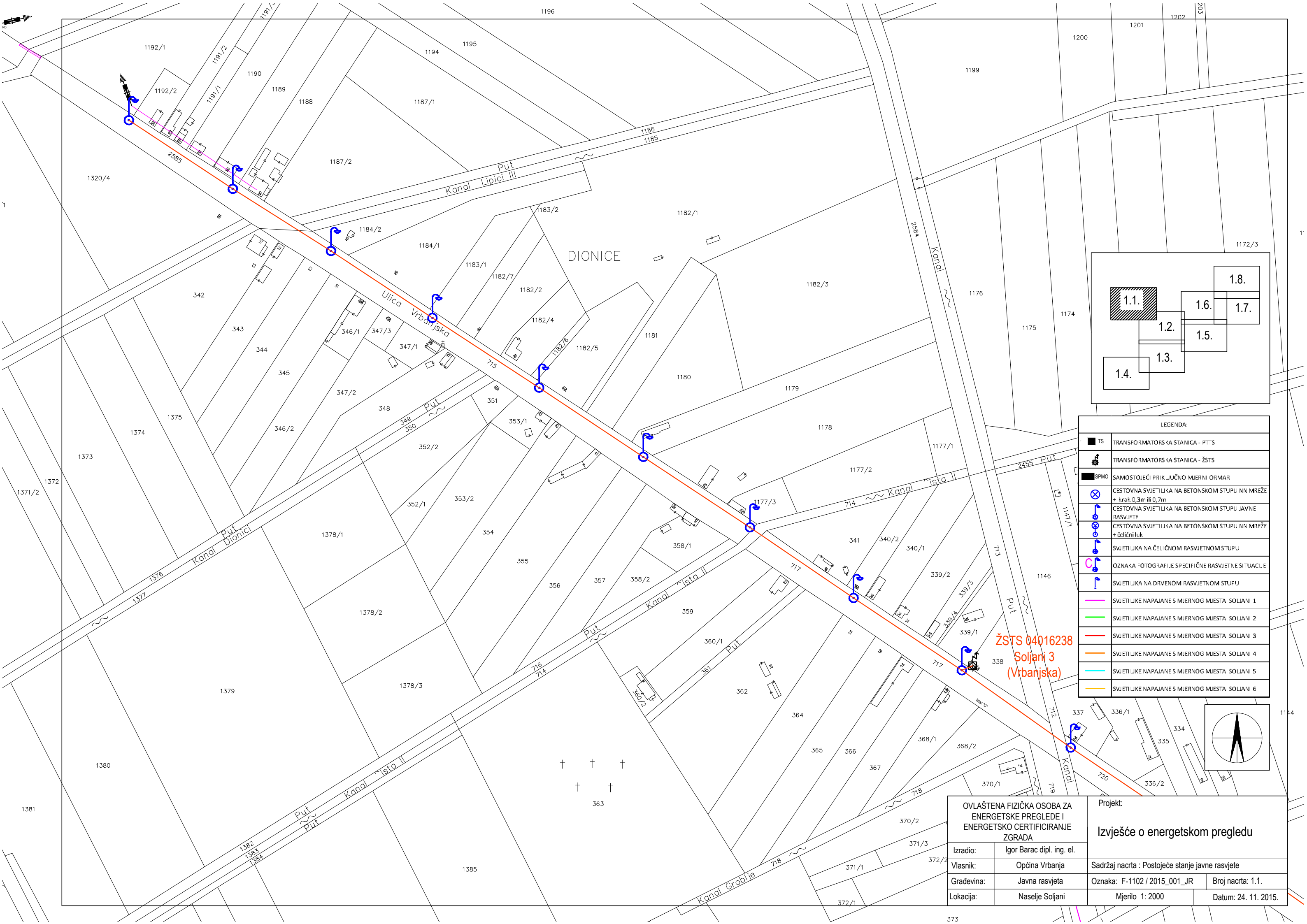
**PRILOG 2 – SITUACIJA JAVNE RASVJETE NASELJA STROŠINCI**
















**PRILOG 3 – SITUACIJA JAVNE RASVJETE NASELJA VRBANJA**

**PRILOG 4 – SVJETLOTEHNIČKI PRORAČUN JAVNE RASVJETE NASELJA SOLJANI**

**PRILOG 5 – SVJETLOTEHNIČKI PRORAČUN JAVNE RASVJETE NASELJA STROŠINCI**

**PRILOG 6 – SVJETLOTEHNIČKI PRORAČUN NASELJA VRBANJA**

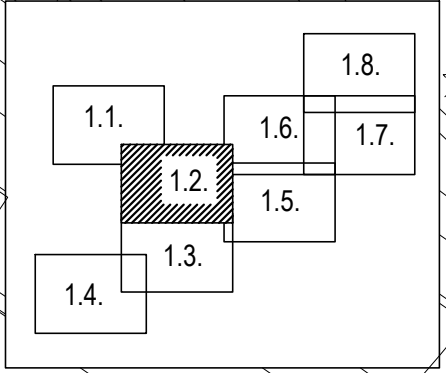
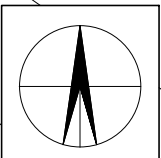


LEGENDA:	
 TS	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
 SPMO	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILUKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILUKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILUKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILUKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILUKA NA DRVENOM RASVJETNOM STUPU
	SVJETILUKE NAPAJANE S MJERNOG MJESTA SOLJANI 1
	SVJETILUKE NAPAJANE S MJERNOG MJESTA SOLJANI 2
	SVJETILUKE NAPAJANE S MJERNOG MJESTA SOLJANI 3
	SVJETILUKE NAPAJANE S MJERNOG MJESTA SOLJANI 4
	SVJETILUKE NAPAJANE S MJERNOG MJESTA SOLJANI 5
	SVJETILUKE NAPAJANE S MJERNOG MJESTA SOLJANI 6

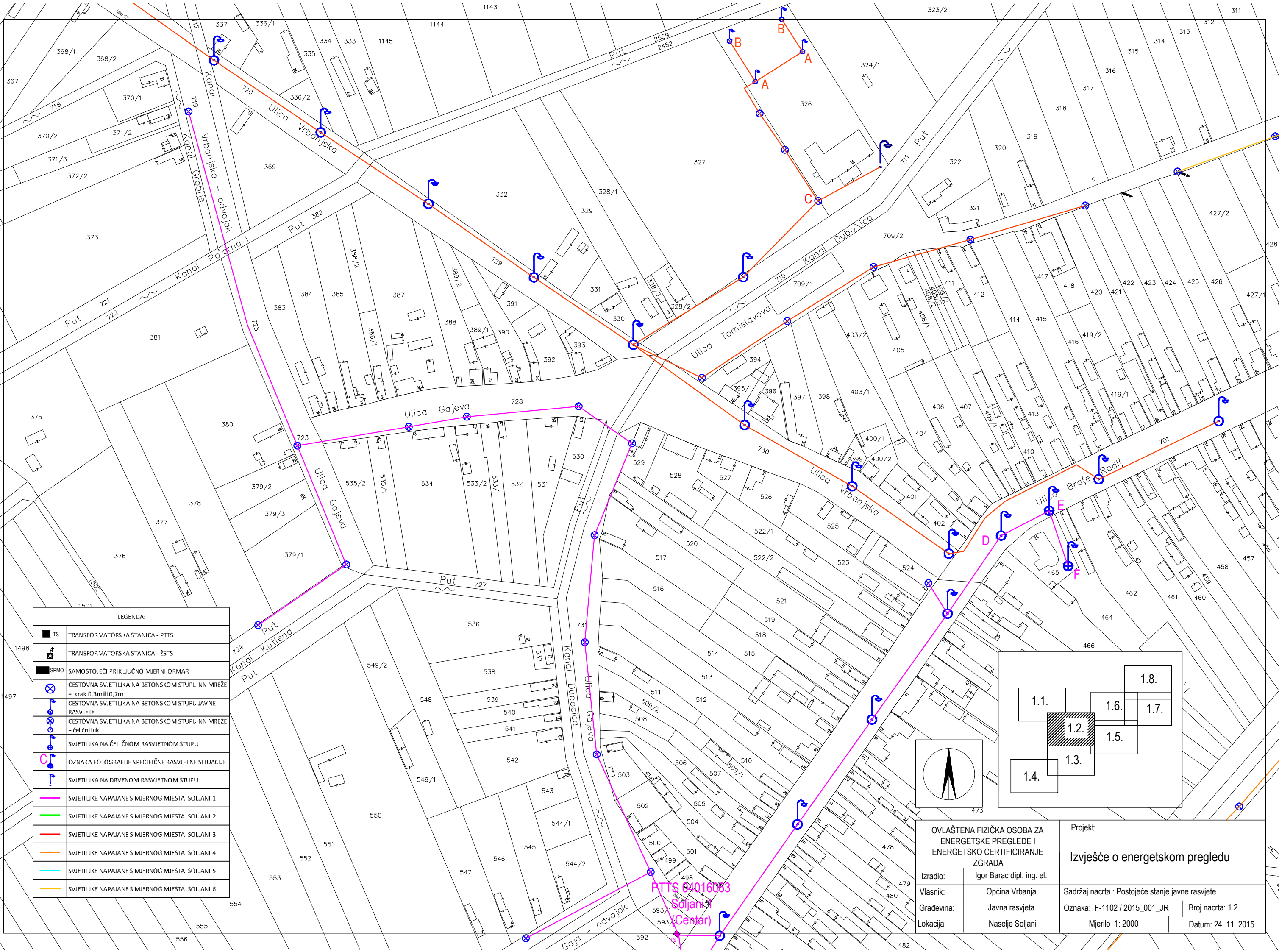
OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  <b>Izvešće o energetsom pregledu</b>	
Izradio:	Igor Barac dipl. ing. el.		
Vlasnik:	Općina Vrbanja	Sadržaj nacрта : Postojeće stanje javne rasvjete	
Građevina:	Javna rasvjeta	Oznaka: F-1102 / 2015_001_JR	Broj nacрта: 1.1.
Lokacija:	Naselje Soljani	Mjerilo 1: 2000	Datum: 24. 11. 2015.



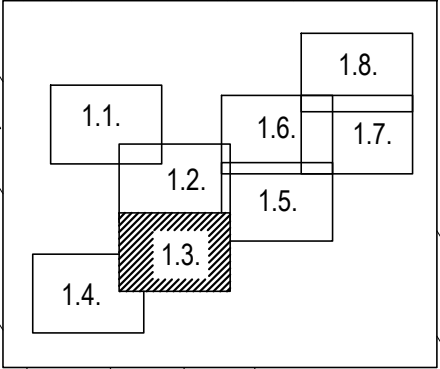
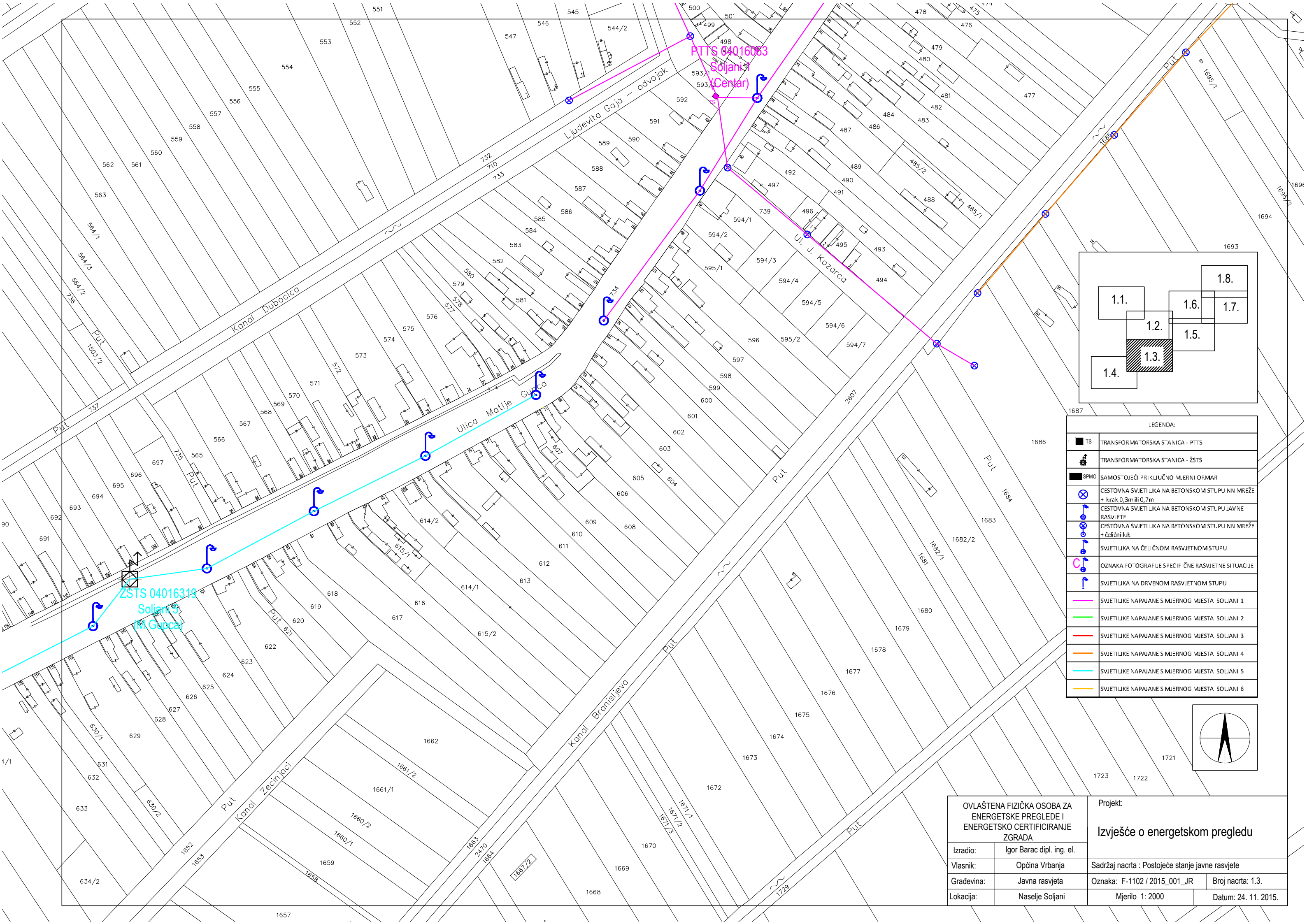
LEGENDA:	
■ TS	TRANSFORMATORSKA STANICA - PTTS
⚡	TRANSFORMATORSKA STANICA - ŽSTS
■ SPMO	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
⊗	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
⌋	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
⌋	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
⌋	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
⌋	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
⌋	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
—	SVJETILJKE NAPAJANE S MJERNOG MJESTA: SOLJANI 1
—	SVJETILJKE NAPAJANE S MJERNOG MJESTA: SOLJANI 2
—	SVJETILJKE NAPAJANE S MJERNOG MJESTA: SOLJANI 3
—	SVJETILJKE NAPAJANE S MJERNOG MJESTA: SOLJANI 4
—	SVJETILJKE NAPAJANE S MJERNOG MJESTA: SOLJANI 5
—	SVJETILJKE NAPAJANE S MJERNOG MJESTA: SOLJANI 6



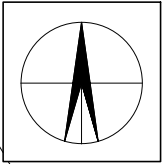
OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  <b>Izvješće o energetskom pregledu</b>	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrtā : Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102 / 2015_001_JR	Broj nacrtā: 1.2.
Gradjevina:	Javna rasvjeta	Mjerilo: 1:2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Soljani		



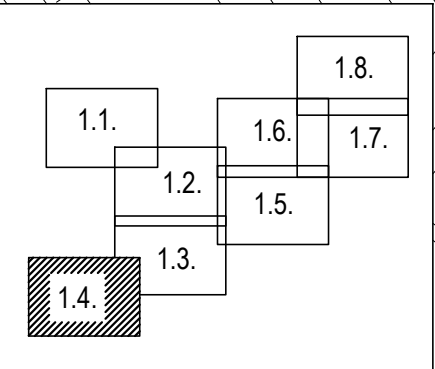



















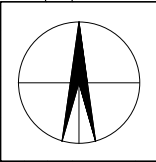
LEGENDA:	
	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ZSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILKA NA DRVENOM RASVJETNOM STUPU
	SVJETILKE NAPAJANE S MIJERNOG MJESTA: SOLJANI 1
	SVJETILKE NAPAJANE S MIJERNOG MJESTA: SOLJANI 2
	SVJETILKE NAPAJANE S MIJERNOG MJESTA: SOLJANI 3
	SVJETILKE NAPAJANE S MIJERNOG MJESTA: SOLJANI 4
	SVJETILKE NAPAJANE S MIJERNOG MJESTA: SOLJANI 5
	SVJETILKE NAPAJANE S MIJERNOG MJESTA: SOLJANI 6



OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:	
Izradio:	Igor Barac dipl. ing. el.	Izvješće o energetsom pregledu	
Vlasnik:	Općina Vrbanja	Sadržaj nacrt: Postojeće stanje javne rasvjete	
Gradovina:	Javna rasvjeta	Oznaka: F-1102 / 2015_001_JR	Broj nacrt: 1.3.
Lokacija:	Naselje Soljani	Mjerilo: 1:2000	Datum: 24. 11. 2015.

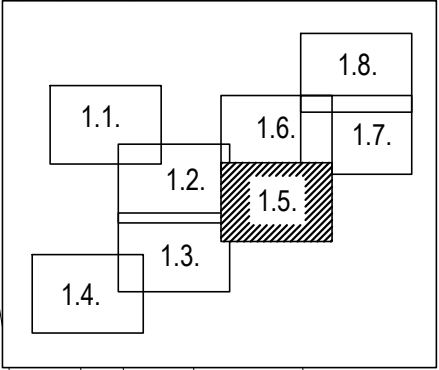
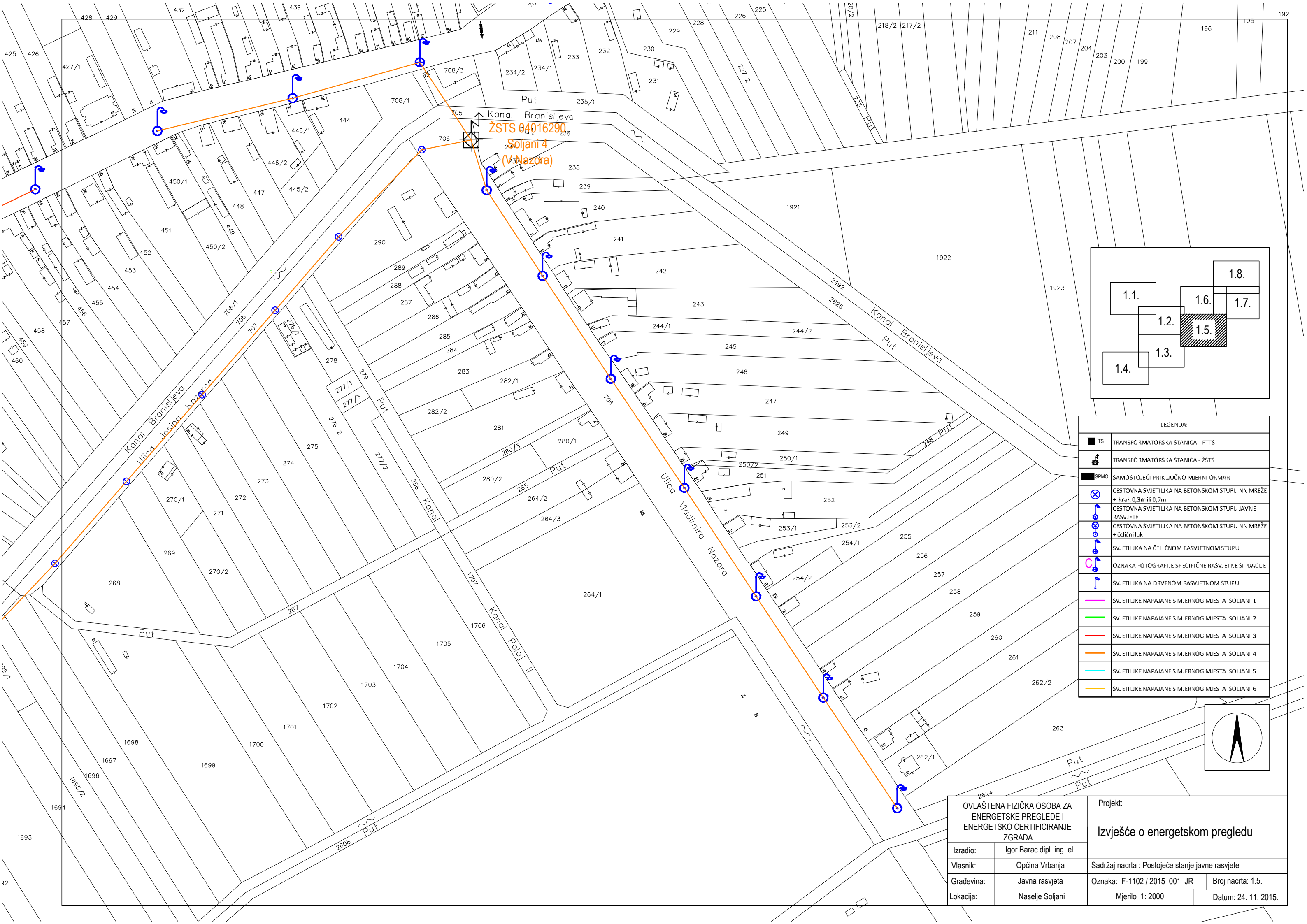


LEGENDA:	
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	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
	SVJETILJKE NAPAJANE S MJERNOG MJESTA SOLJANI 1
	SVJETILJKE NAPAJANE S MJERNOG MJESTA SOLJANI 2
	SVJETILJKE NAPAJANE S MJERNOG MJESTA SOLJANI 3
	SVJETILJKE NAPAJANE S MJERNOG MJESTA SOLJANI 4
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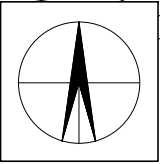


OVLASĆENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  <b>Izvešće o energetskom pregledu</b>	
Izradio:	Igor Barac dipl. ing. el.		
Vlasnik:	Općina Vrbanja	Sadržaj nacрта : Postojeće stanje javne rasvjete	
Gradjevina:	Javna rasvjeta	Oznaka: F-1102 / 2015_001_JR	Broj nacрта: 1.4.
Lokacija:	Naselje Soljani	Mjerilo: 1: 2000	Datum: 24. 11. 2015.



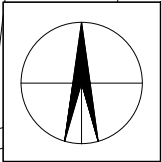
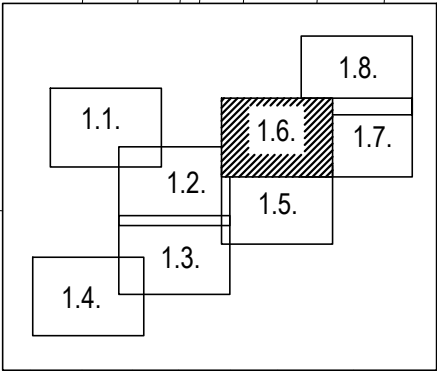


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	ŽSTS TRANSFORMATORSKA STANICA - ŽSTS
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	CESTOVNA SVJETILKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILKA NA DRVENOM RASVJETNOM STUPU
	SVJETILKE NAPAJANE S MIERNOG MJESTA SOLJANI 1
	SVJETILKE NAPAJANE S MIERNOG MJESTA SOLJANI 2
	SVJETILKE NAPAJANE S MIERNOG MJESTA SOLJANI 3
	SVJETILKE NAPAJANE S MIERNOG MJESTA SOLJANI 4
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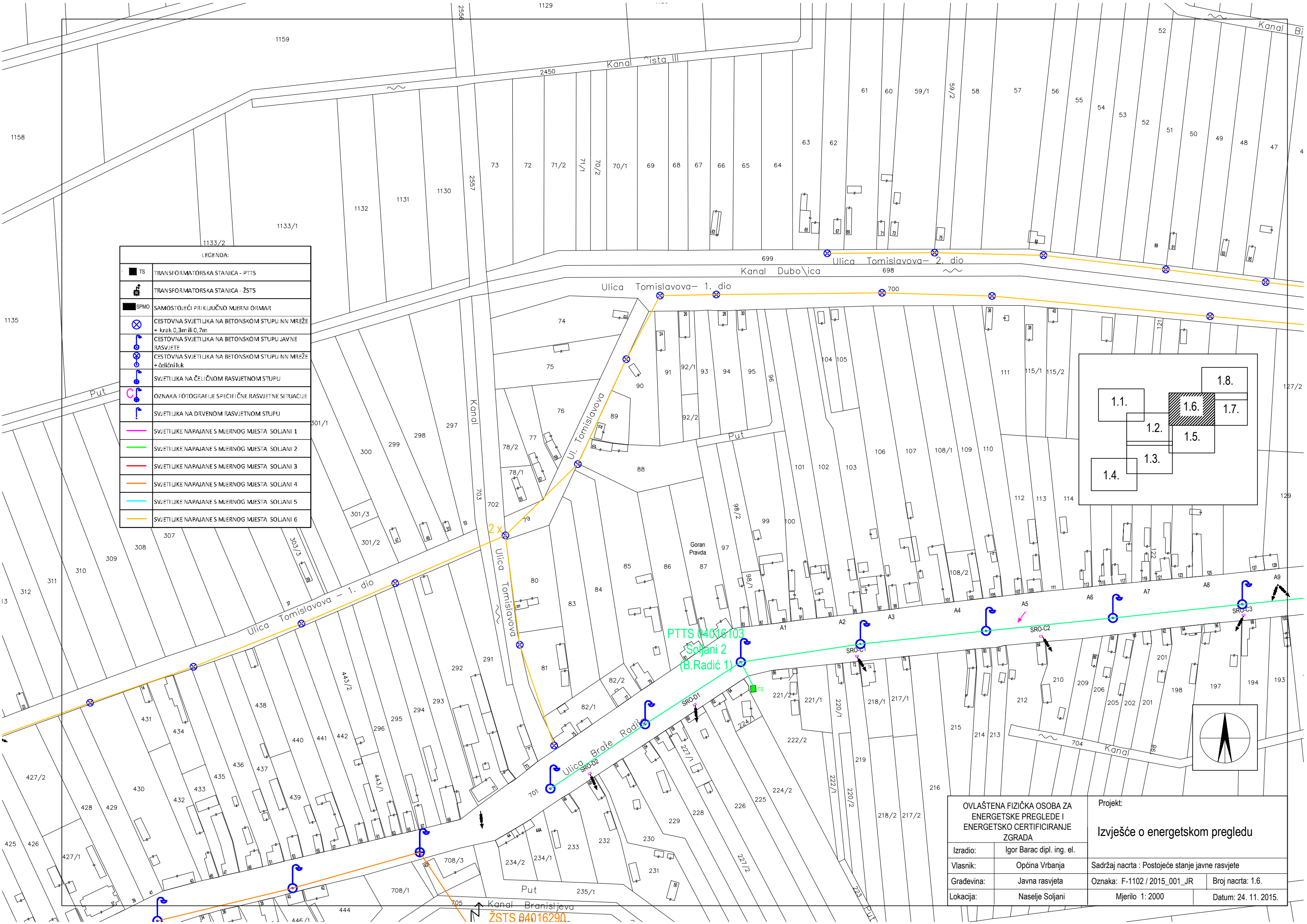


OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  Izvješće o energetsom pregledu	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrt: Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102 / 2015_001_JR	Broj nacrt: 1.5.
Gradovina:	Javna rasvjeta	Mjerilo: 1:2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Soljani		

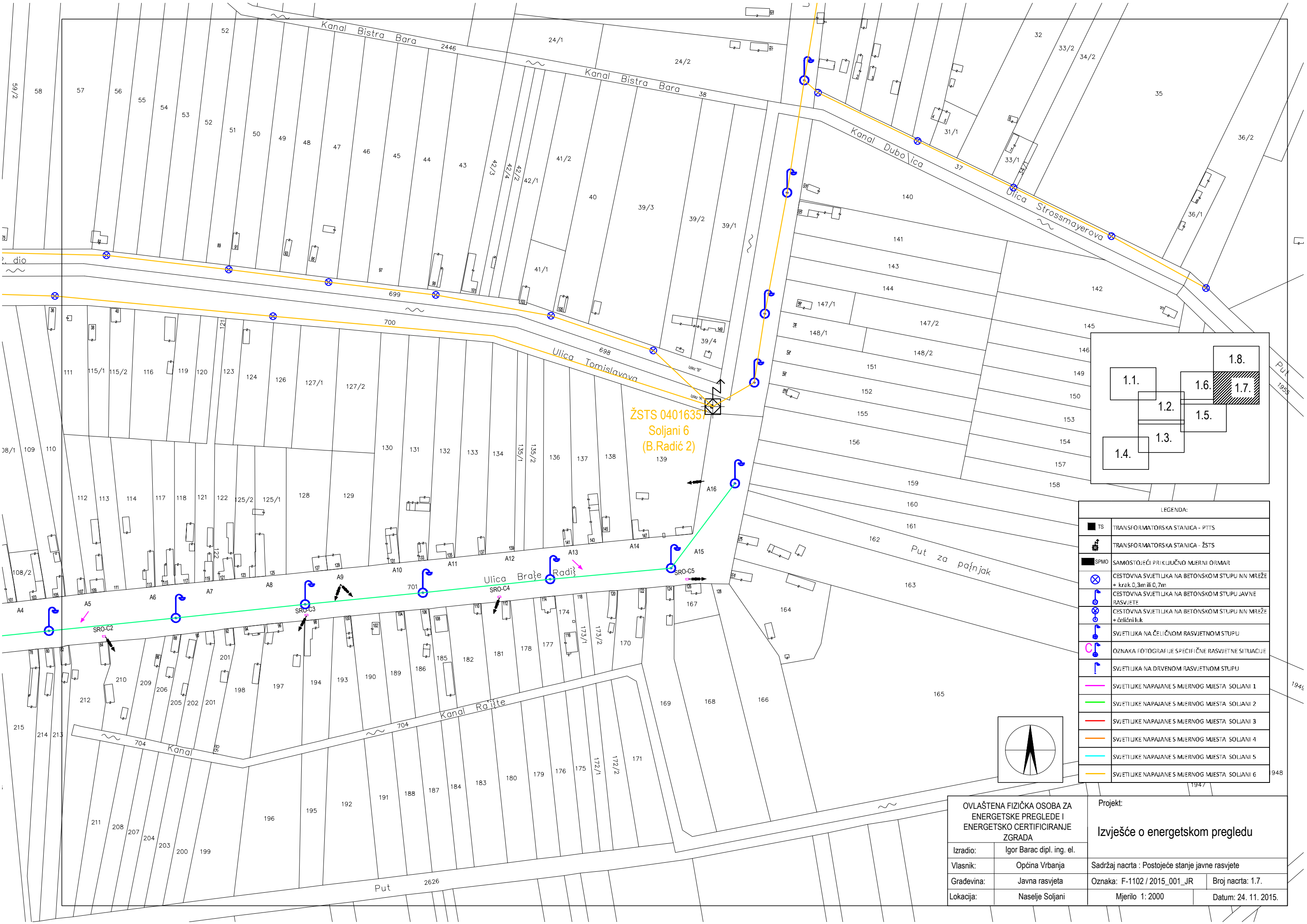
LEGENDA:	
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	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
	SVJETILJKE NAPAJANE S MJERNOG MJESTA SOLJANI 1
	SVJETILJKE NAPAJANE S MJERNOG MJESTA SOLJANI 2
	SVJETILJKE NAPAJANE S MJERNOG MJESTA SOLJANI 3
	SVJETILJKE NAPAJANE S MJERNOG MJESTA SOLJANI 4
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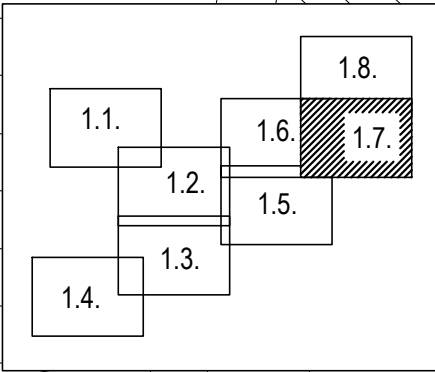
OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  <b>Izvješće o energetskom pregledu</b>	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrtā : Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102 / 2015_001_JR	Broj nacrtā: 1.6.
Gradjevina:	Javna rasvjeta	Mjerilo 1: 2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Soljani		



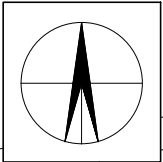




ŽSTS 04016351  
Soljani 6  
(B.Radić 2)

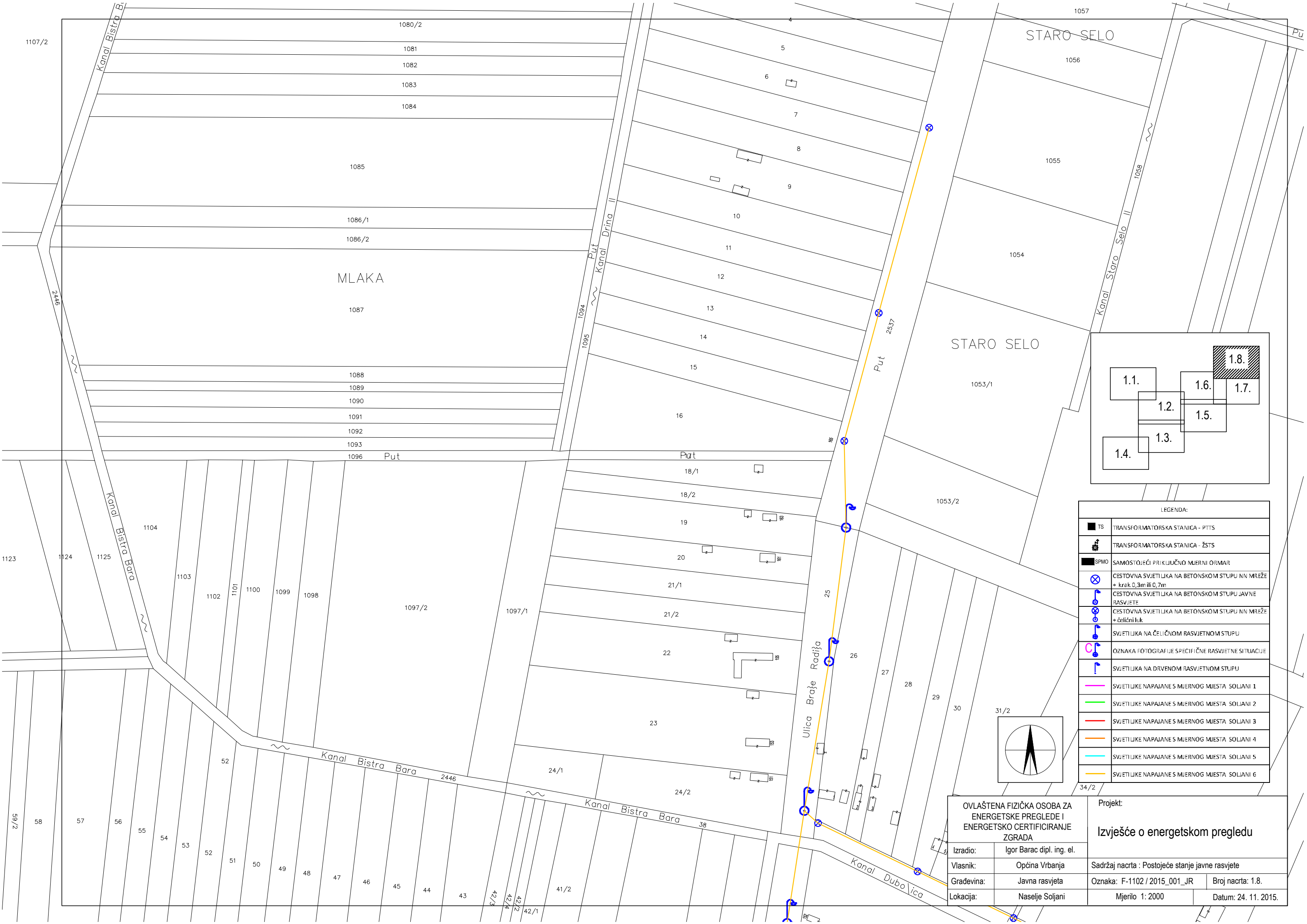


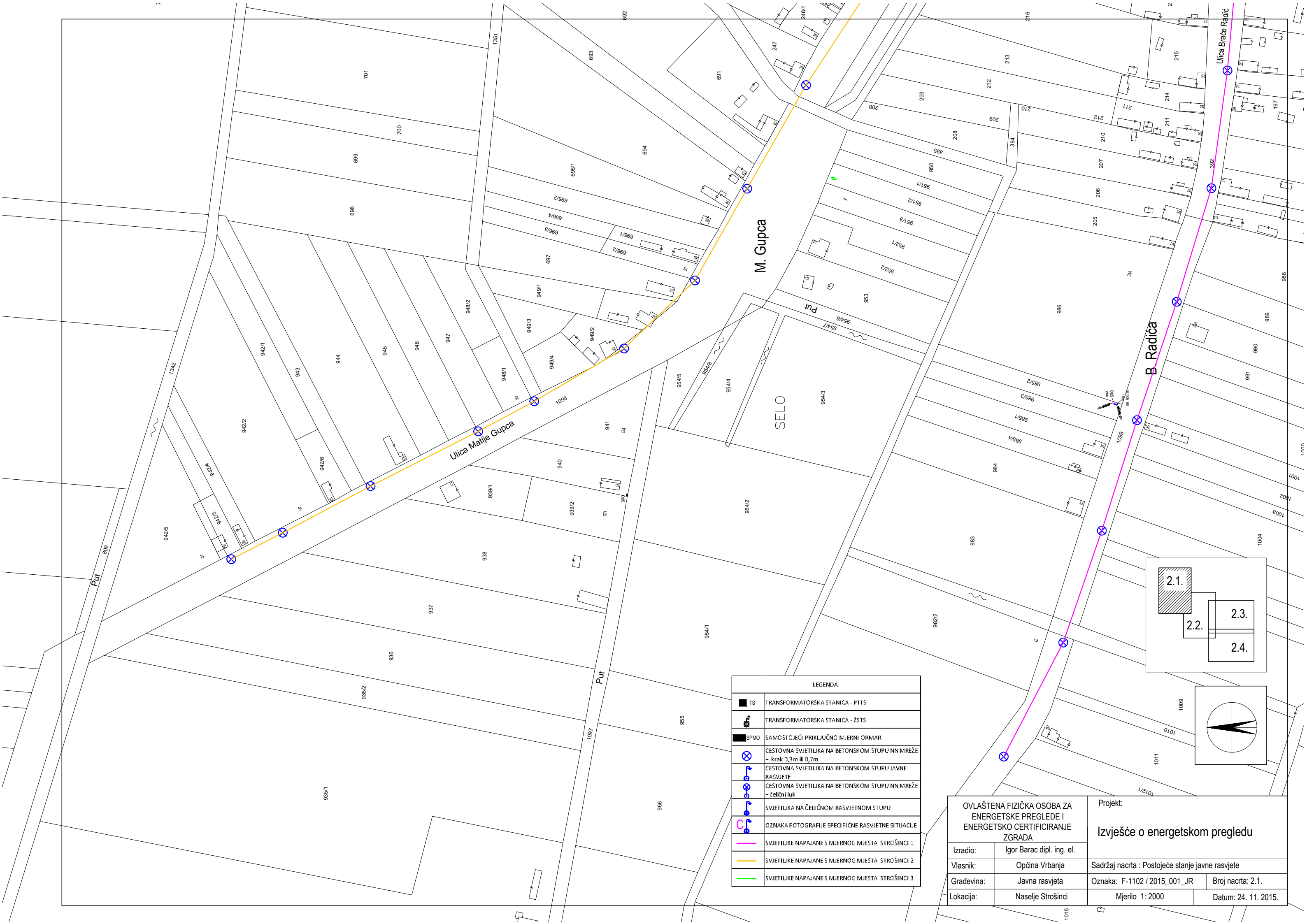
LEGENDA:	
	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILKA NA DRVENOM RASVJETNOM STUPU
	SVJETILKE NAPAJANE S MJERNOG MJESTA SOLJANI 1
	SVJETILKE NAPAJANE S MJERNOG MJESTA SOLJANI 2
	SVJETILKE NAPAJANE S MJERNOG MJESTA SOLJANI 3
	SVJETILKE NAPAJANE S MJERNOG MJESTA SOLJANI 4
	SVJETILKE NAPAJANE S MJERNOG MJESTA SOLJANI 5
	SVJETILKE NAPAJANE S MJERNOG MJESTA SOLJANI 6



OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  Izvješće o energetskom pregledu	
Izradio:	Igor Barac dipl. ing. el.		
Vlasnik:	Općina Vrbanja	Sadržaj nacrt : Postojeće stanje javne rasvjete	
Gradovina:	Javna rasvjeta	Oznaka: F-1102 / 2015_001_JR	Broj nacrt: 1.7.
Lokacija:	Naselje Soljani	Mjerilo 1: 2000	Datum: 24. 11. 2015.

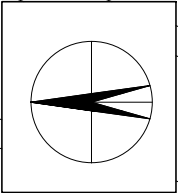
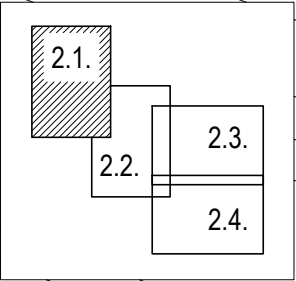


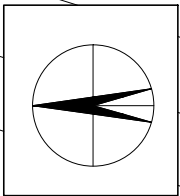
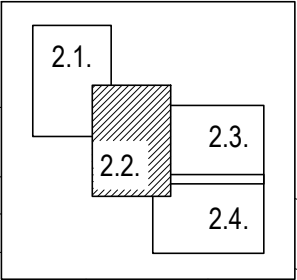
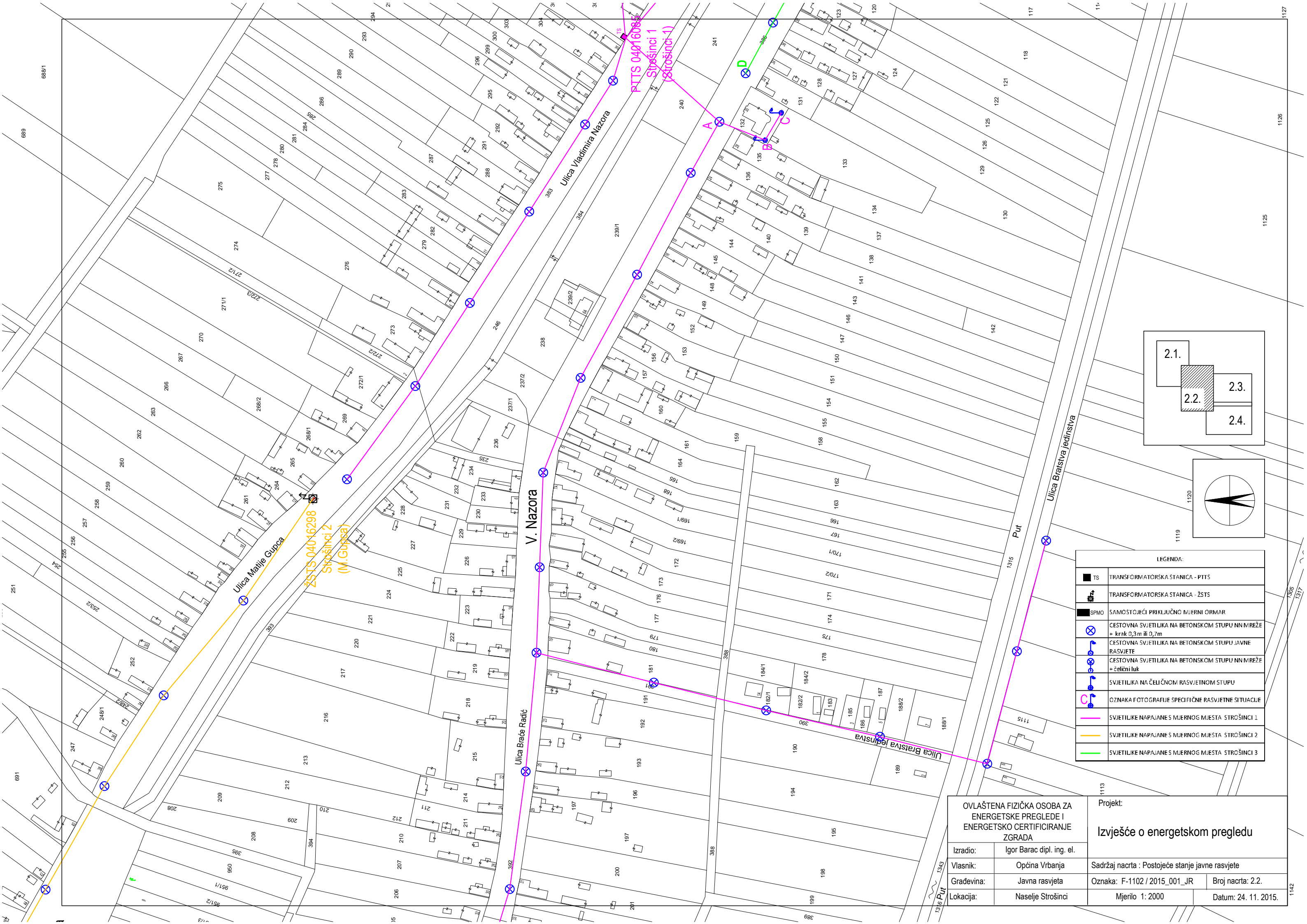




LEGENDA:	
	TS TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
	SPMO SAMOSTOJEĆI PRIKLJUČNO MUERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKE NAPAJANES MUERNOG MJESTA STROŠINCI 1
	SVJETILJKE NAPAJANES MUERNOG MJESTA STROŠINCI 2
	SVJETILJKE NAPAJANES MUERNOG MJESTA STROŠINCI 3

OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  <b>Izvješće o energetsom pregledu</b>	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrtā : Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102 / 2015_001_JR	Broj nacrtā : 2.1.
Grādevina:	Javna rasvjeta	Mjerilo 1: 2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Strošinci		

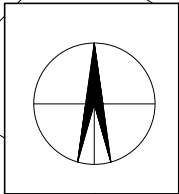
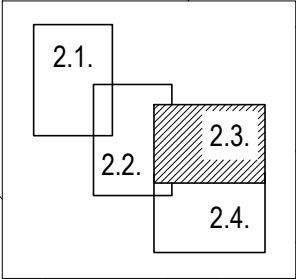
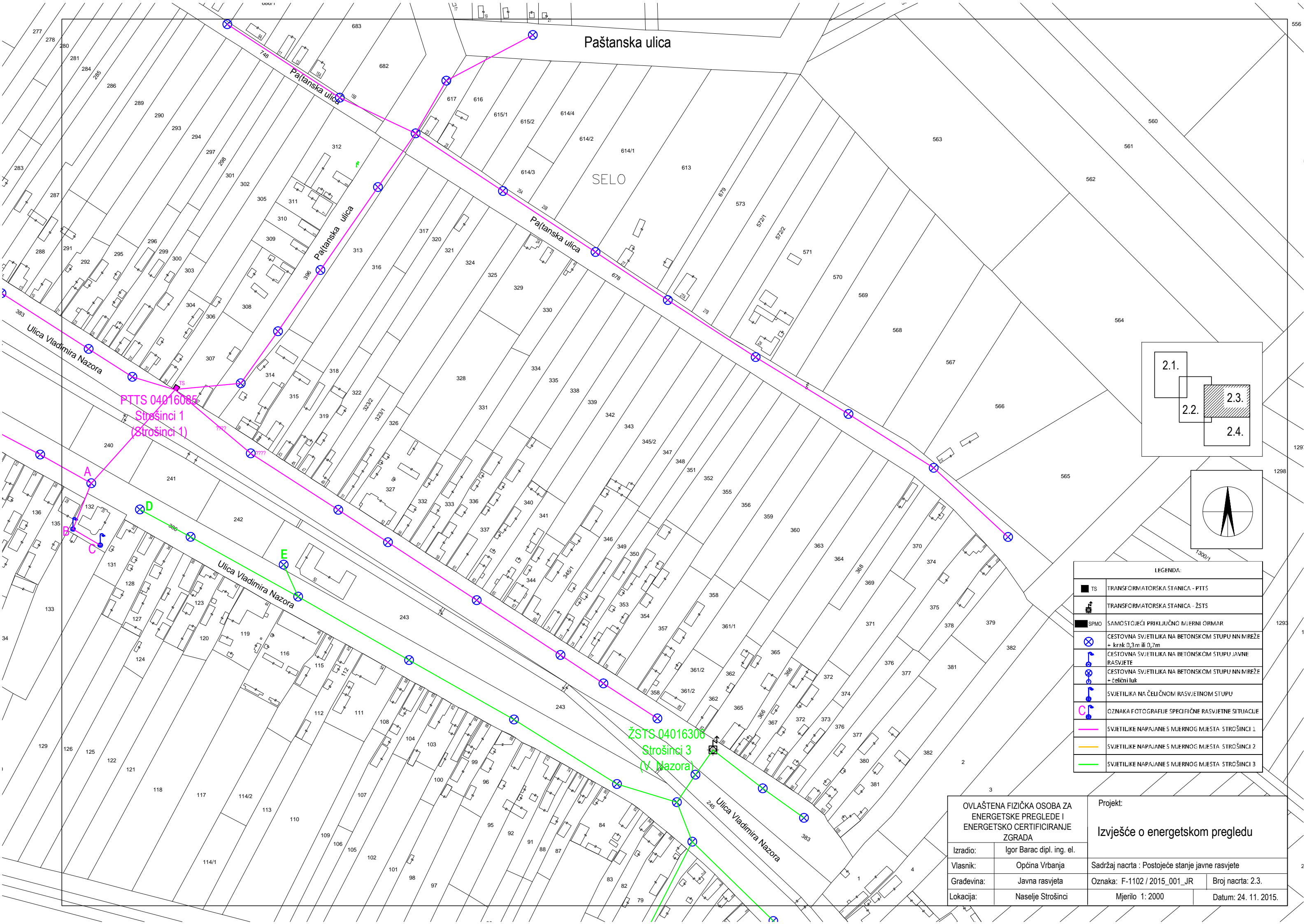




LEGENDA:	
	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILUKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILUKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILUKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILUKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILUKE NAPAJANE S MJERNOG MJESTA STROŠINCI 1
	SVJETILUKE NAPAJANE S MJERNOG MJESTA STROŠINCI 2
	SVJETILUKE NAPAJANE S MJERNOG MJESTA STROŠINCI 3

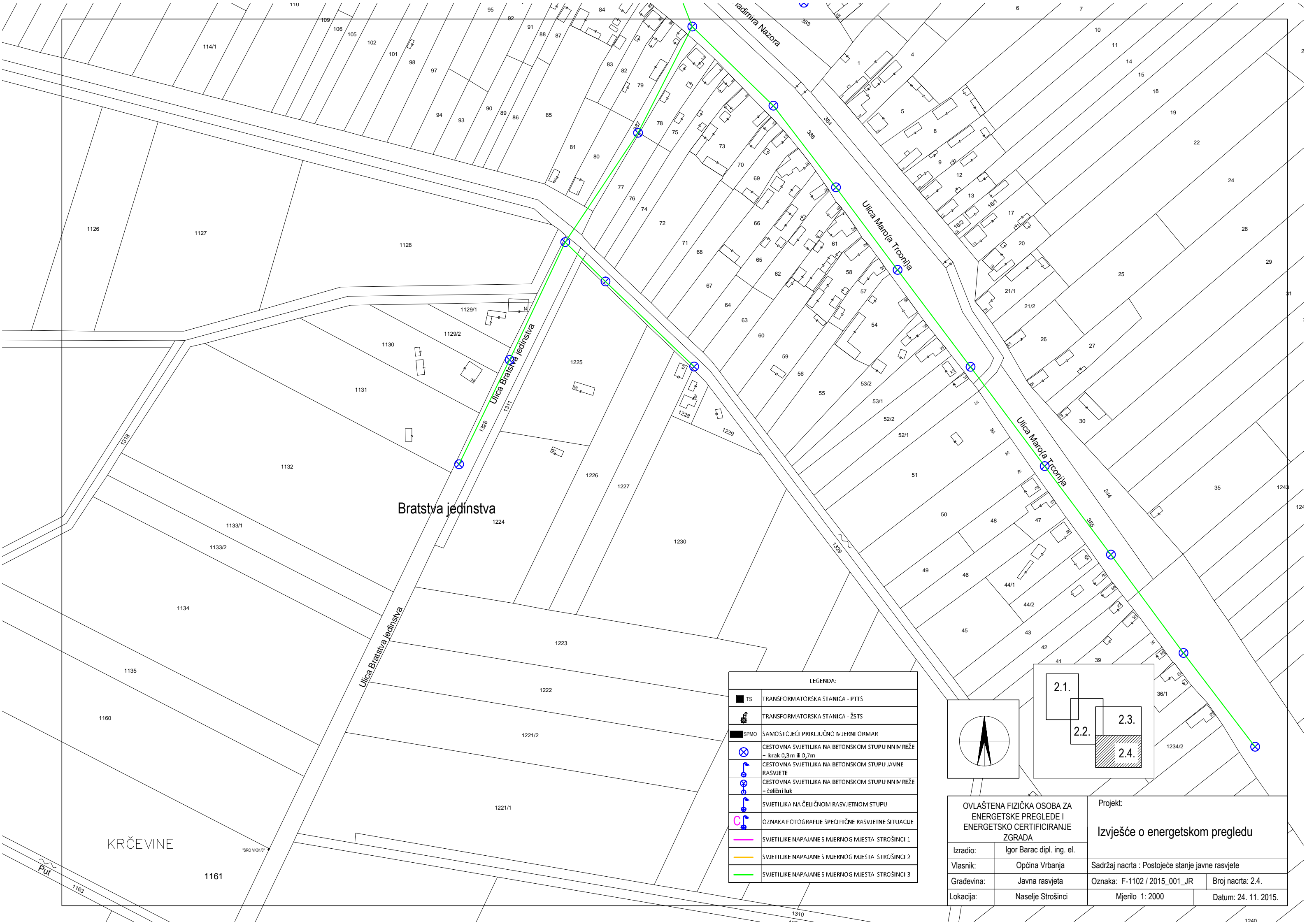
OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt: Izvješće o energetsom pregledu	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrt: Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102 / 2015_001_JR	Broj nacrt: 2.2.
Gradjevina:	Javna rasvjeta	Mjerilo 1: 2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Strošinci		





LEGENDA:	
	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN/MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN/MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKE NAPAJANES MJERNOG MJESTA STROŠINCI 1
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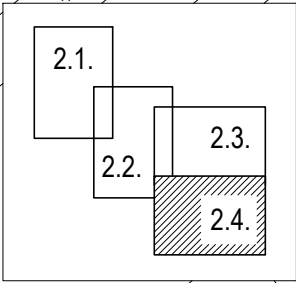
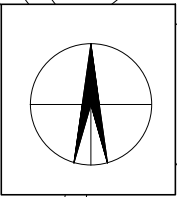
OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  Izvješće o energetsom pregledu	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrt: Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102 / 2015_001_JR	Broj nacrt: 2.3.
Gradjevina:	Javna rasvjeta	Mjerilo: 1:2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Strošinci		



Ulica Bratstva jedinstva

Bratstva jedinstva

LEGENDA:	
	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKE NAPAJANE S MJERNOG MJESTA STROŠINCI 1
	SVJETILJKE NAPAJANE S MJERNOG MJESTA STROŠINCI 2
	SVJETILJKE NAPAJANE S MJERNOG MJESTA STROŠINCI 3



OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  <b>Izvješće o energetsom pregledu</b>	
Izradio:	Igor Barac dipl. ing. el.		
Vlasnik:	Općina Vrbanja	Sadržaj nacrt : Postojeće stanje javne rasvjete	
Gradjevina:	Javna rasvjeta	Oznaka: F-1102 / 2015_001_JR	Broj nacrt: 2.4.
Lokacija:	Naselje Strošinci	Mjerilo 1: 2000	Datum: 24. 11. 2015.

KRČEVINE

"SRO VK010"

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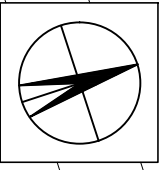
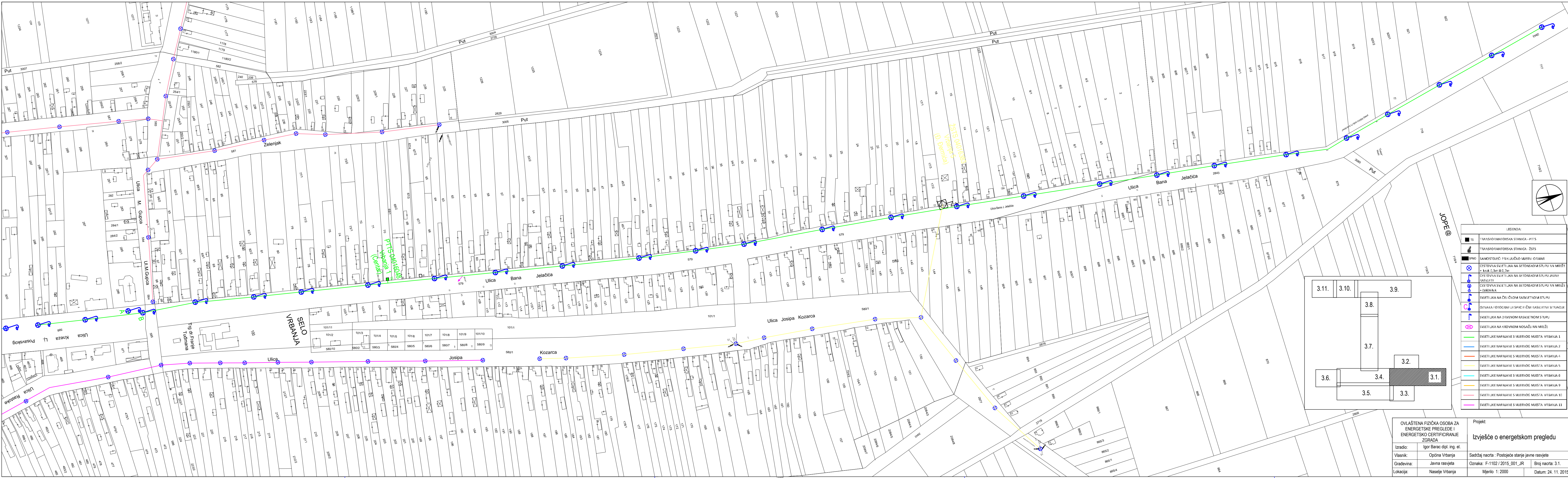
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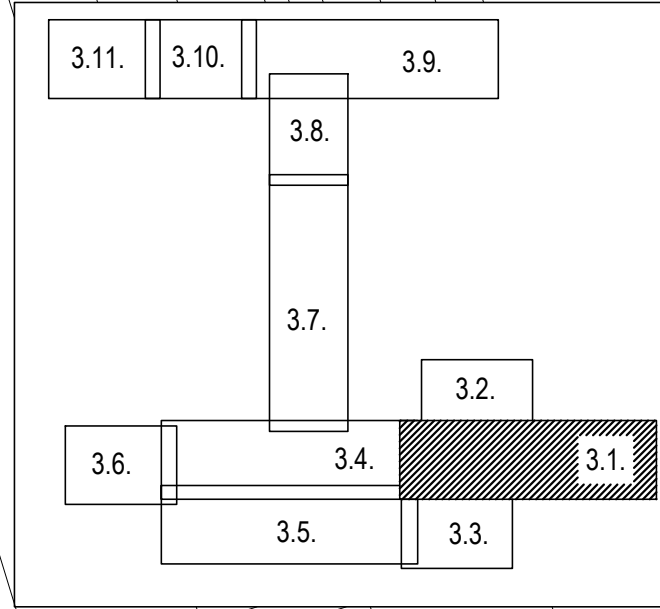
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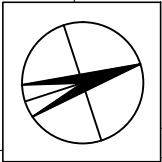
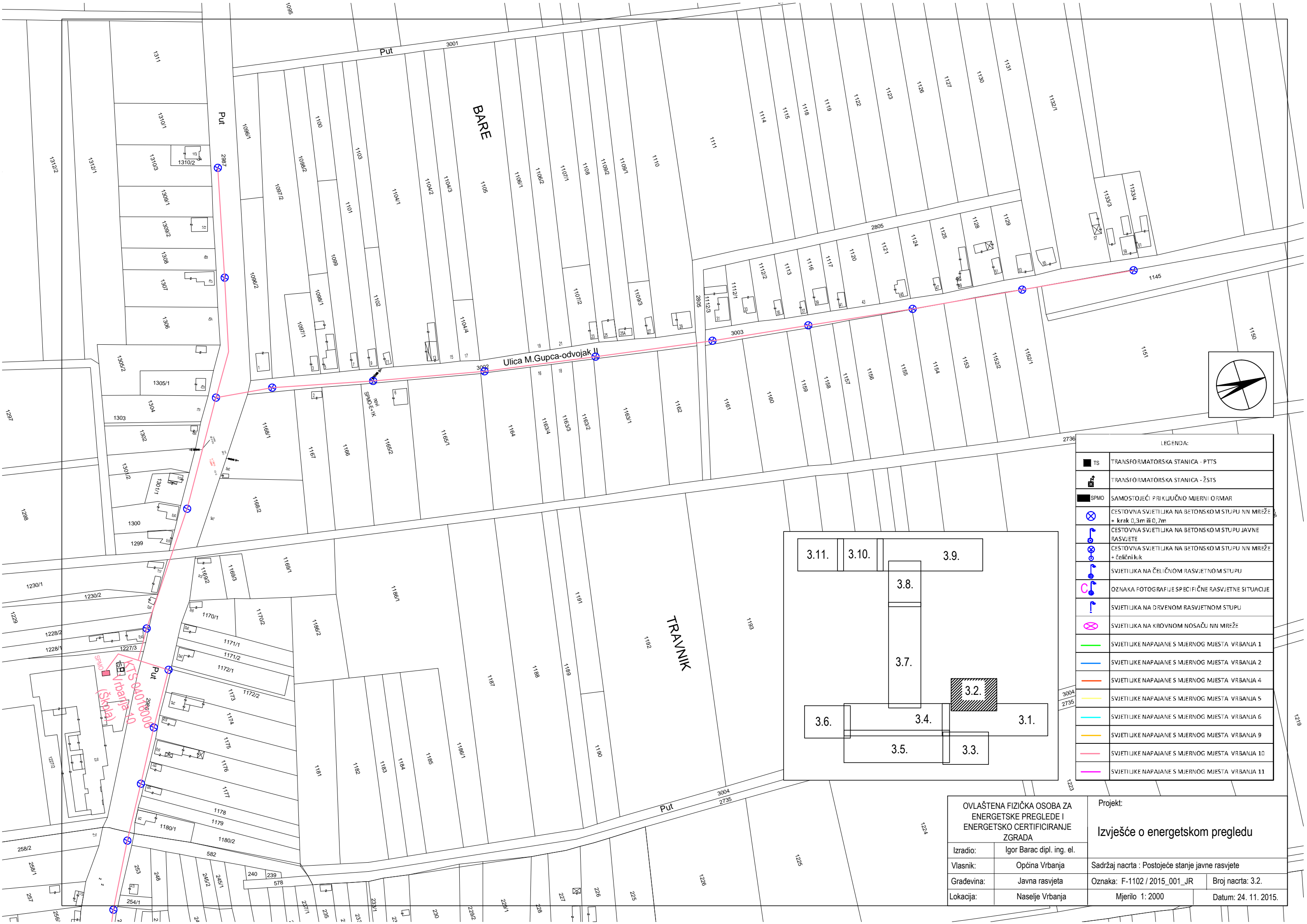


LEGENDA:	
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	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJCI PRIKLJUČNO MIERNI ODMAR
	ČESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MRŽE + krak 0,3m ili 0,2m
	ČESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	ČESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MRŽE + čelčnik
	SVJETILJKA NA ČELČNIKOV RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPOLJIŠNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
	SVJETILJKA NA KROVNOM NOSAČU NN MRŽE
	SVJETILJKE NAPAJANE S MIJERNOG MJESTA VRBANJA 1
	SVJETILJKE NAPAJANE S MIJERNOG MJESTA VRBANJA 2
	SVJETILJKE NAPAJANE S MIJERNOG MJESTA VRBANJA 4
	SVJETILJKE NAPAJANE S MIJERNOG MJESTA VRBANJA 5
	SVJETILJKE NAPAJANE S MIJERNOG MJESTA VRBANJA 6
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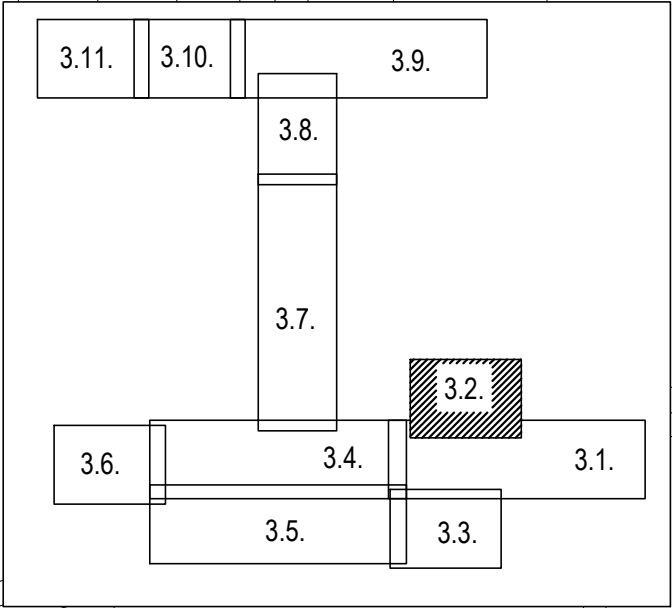


OVLASĆENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt: Izvješće o energetskom pregledu	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrt: Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102/2015_001_JR	Broj nacrt: 3.1.
Gradjevina:	Javna rasvjeta	Mjerilo: 1:2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Vrbanja		

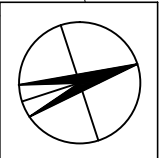
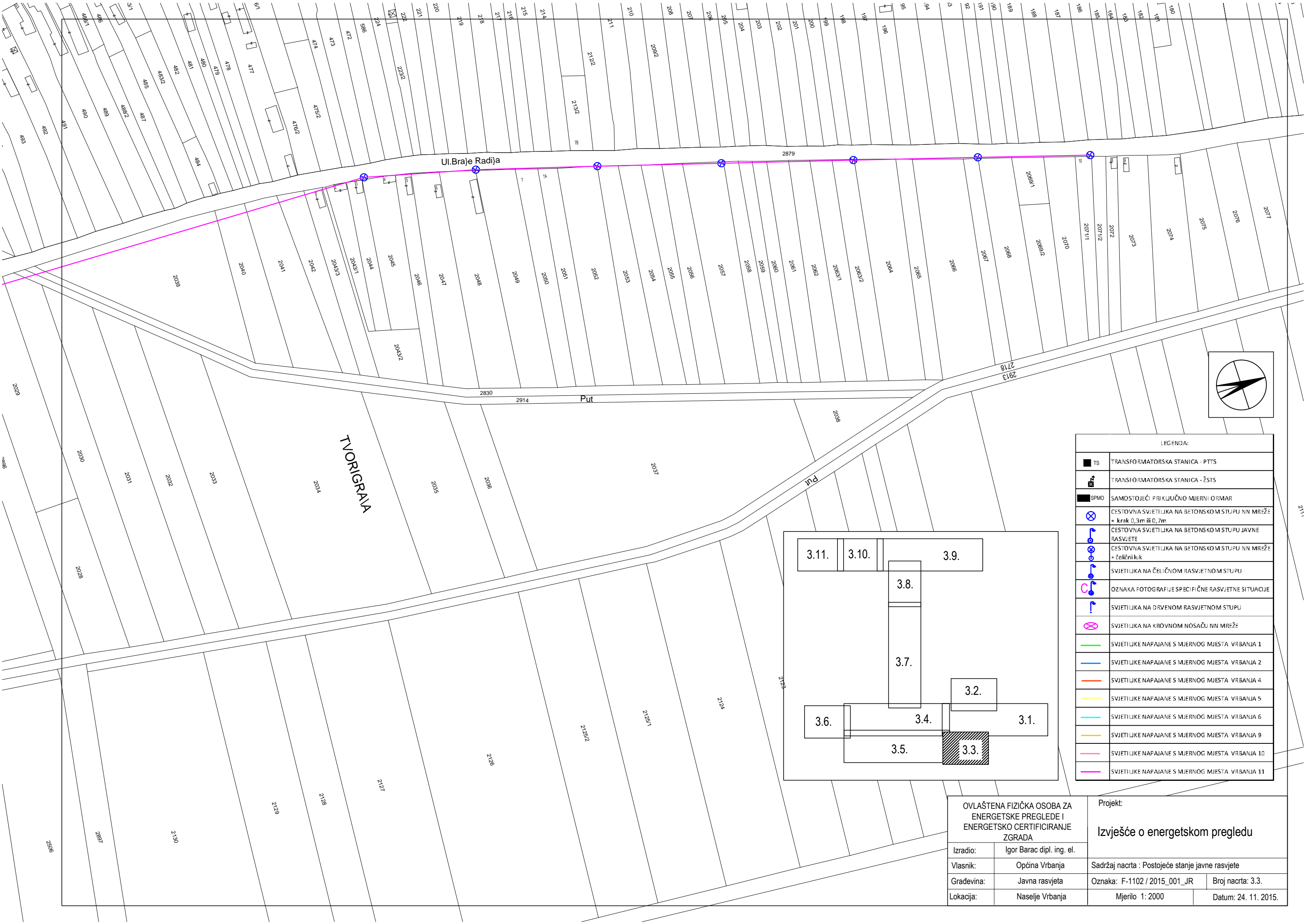




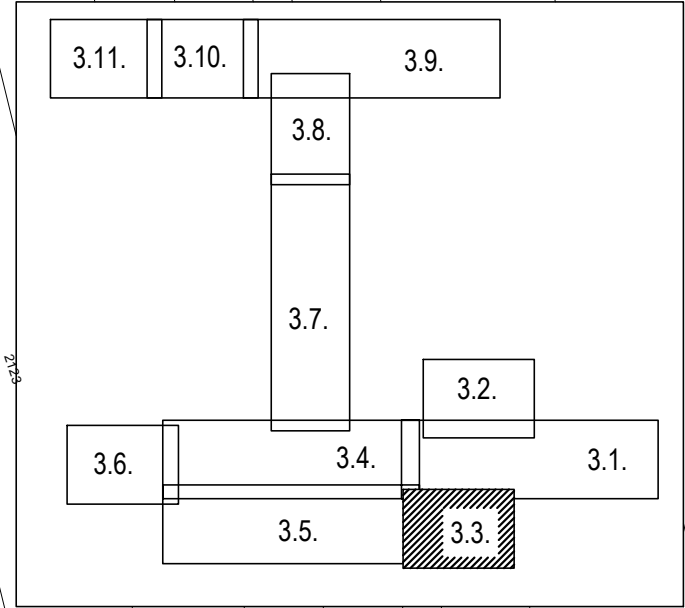
LEGENDA:	
	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
	SVJETILJKA NA KROVNOM NOSAČU NN MREŽE
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 1
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 2
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 4
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 5
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	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 10
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 11



OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:	
Izradio:	Igor Barac dipl. ing. el.	Izvješće o energetsom pregledu	
Vlasnik:	Općina Vrbanja	Sadržaj nacrt: Postojeće stanje javne rasvjete	
Gradjevina:	Javna rasvjeta	Oznaka: F-1102 / 2015_001_JR	Broj nacrt: 3.2.
Lokacija:	Naselje Vrbanja	Mjerilo 1: 2000	Datum: 24. 11. 2015.



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	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
	SVJETILJKA NA KROVNOM NOSAČU NN MREŽE
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 1
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 2
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 4
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	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 9
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 10
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 11



OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:	
		Izvješće o energetsom pregledu	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrt : Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102 / 2015_001_JR	
Gradovina:	Javna rasvjeta	Broj nacrt: 3.3.	
Lokacija:	Naselje Vrbanja	Mjerilo 1: 2000	Datum: 24. 11. 2015.

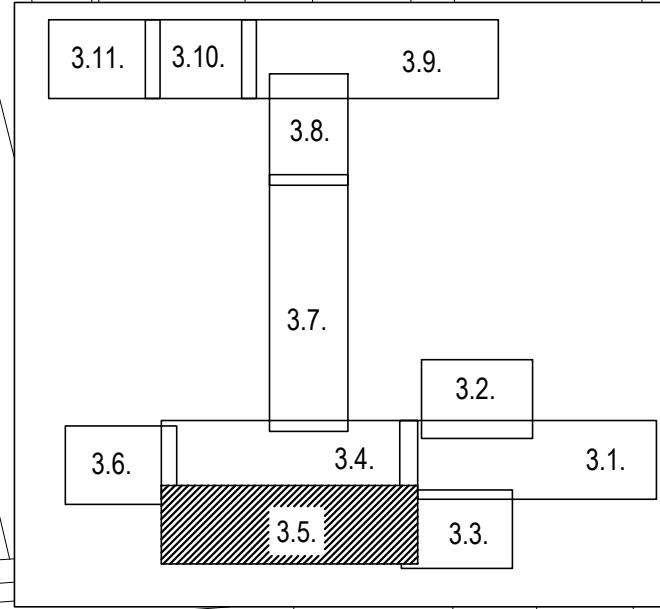
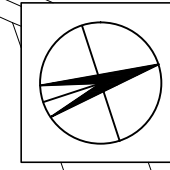




LEGENDA:	
	TRANSFORMATORSKA STANICA - PITS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEO POKLJUČNO MJERNI OŠMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + ČEKOLNIK
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DREVENOM RASVJETNOM STUPU
	SVJETILJKA NA KROVNOM NOSAČU NN MREŽE
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	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 10
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 11

OVLASHTENA FIZICKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt: Izvješće o energetskom pregledu	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrta : Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102/2015_001_JR	Broj nacrta: 3.4.
Građevina:	Javna rasvjeta	Mjerilo: 1:2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Vrbanja		

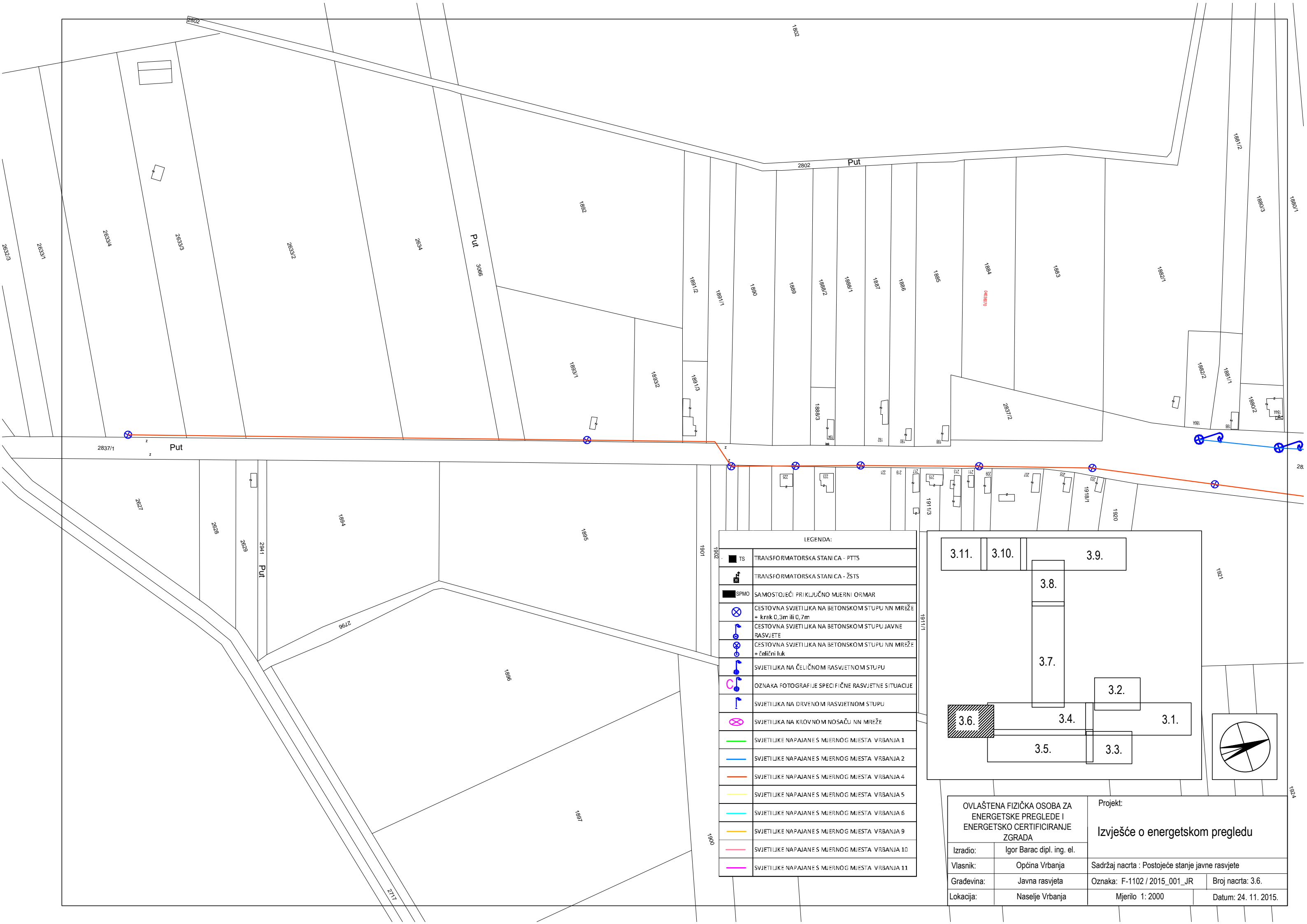




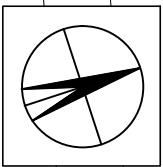
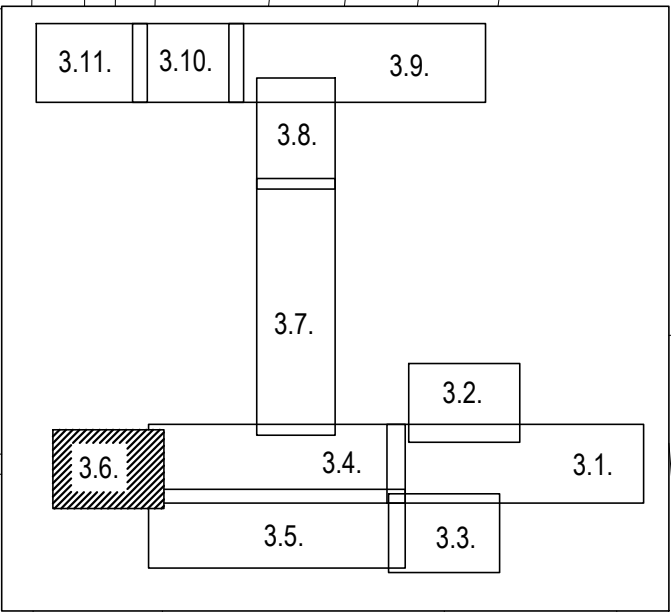
LEGENDA:	
	TRANSFORMATORSKA STANICA - PTIS
	TRANSFORMATORSKA STANICA - ŽST
	SAMOSTOJEĆI PRIKLJUČNO IZMERNI ODMAR
	ČESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MRŽE + krak 0,3m ili 0,7m
	ČESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE + čelčnik
	SVJETILJKA NA ČELČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
	SVJETILJKA NA KROVNOM NOSAČU NN MRŽE
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	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 6
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 9
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 10
	SVJETILJKE NAPAJANE S MJERNOG MJESTA VRBANJA 11

OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt: Izvješće o energetskom pregledu	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrt: Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102/2015_001_JR	Broj nacrt: 3.5.
Građevina:	Javna rasvjeta	Mjerilo: 1:2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Vrbanja		

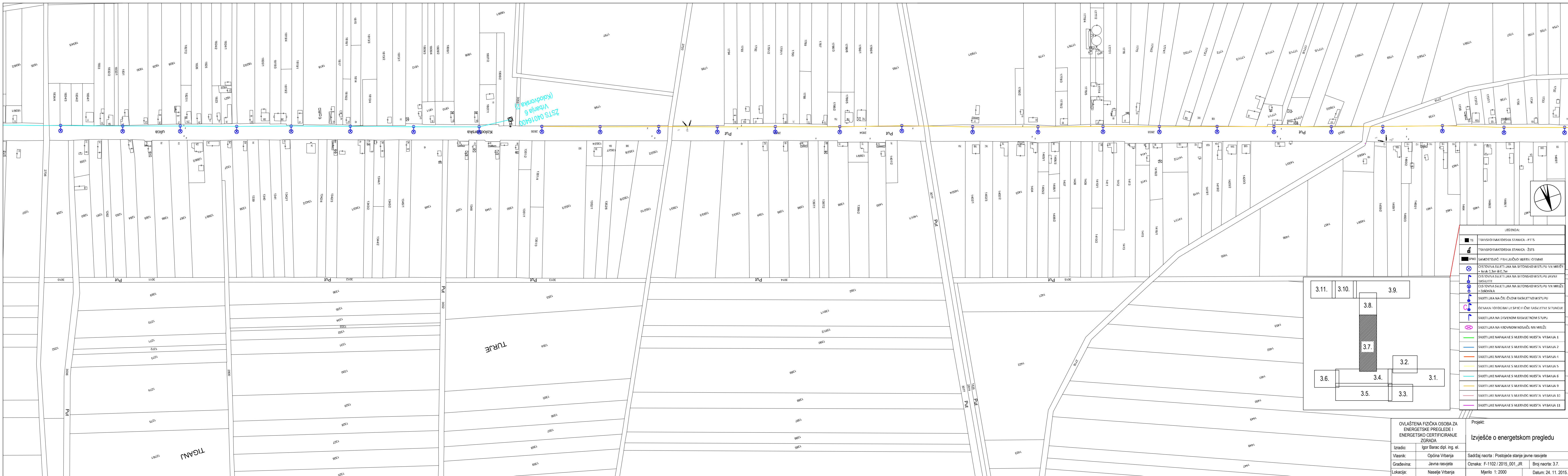


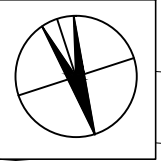


LEGENDA:	
	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
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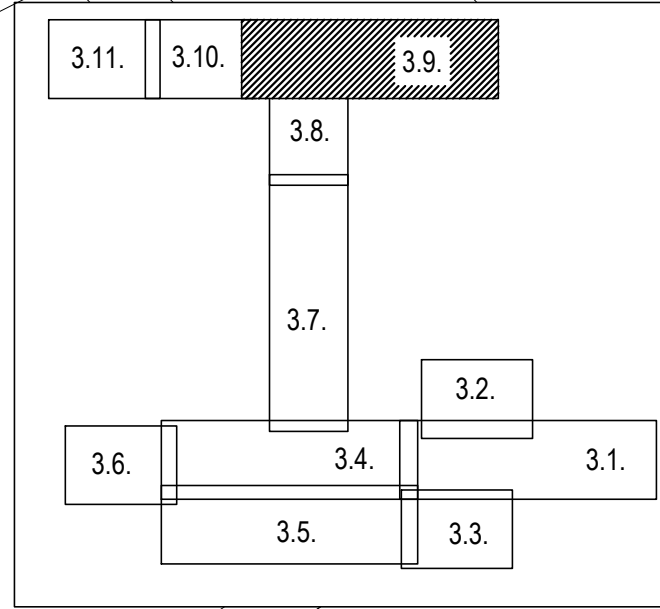
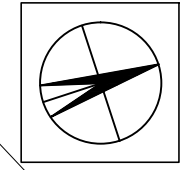
OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt: <b>Izvješće o energetsom pregledu</b>	
		Sadržaj nacrt : Postojeće stanje javne rasvjete	
Izradio:	Igor Barac dipl. ing. el.		
Vlasnik:	Općina Vrbanja		
Gradjevina:	Javna rasvjeta	Oznaka: F-1102 / 2015_001_JR	Broj nacrt: 3.6.
Lokacija:	Naselje Vrbanja	Mjerilo 1: 2000	Datum: 24. 11. 2015.





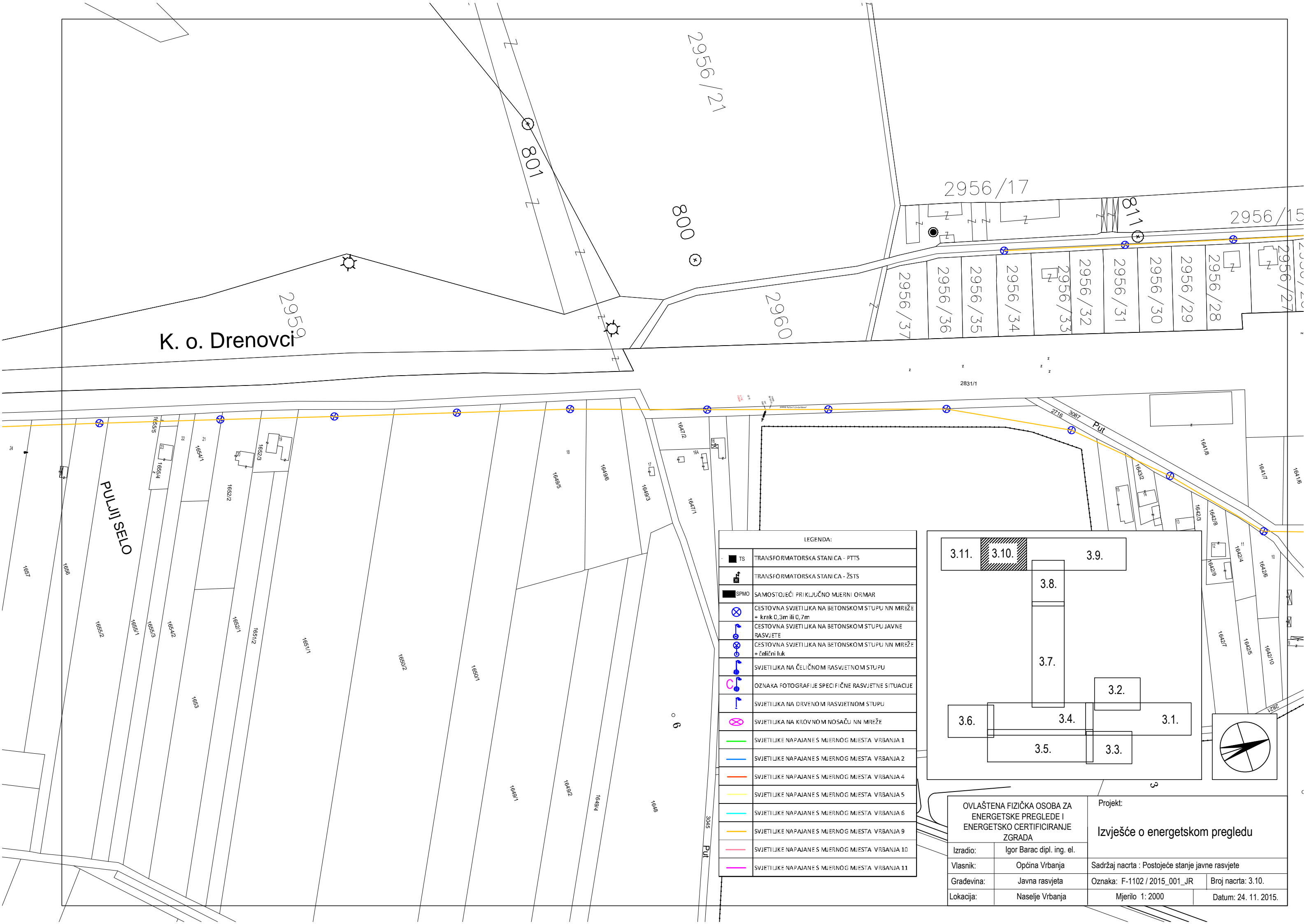
OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  <b>Izvešće o energetskom pregledu</b>	
Izradio:	Igor Barac dipl. ing. el.		
Vlasnik:	Općina Vrbanja	Sadržaj nacрта : Postojeće stanje javne rasvjete	
Građevina:	Javna rasvjeta	Oznaka: F-1102 / 2015_001_JR	Broj nacрта: 3.8.
Lokacija:	Naselje Vrbanja	Mjerilo: 1: 2000	Datum: 24. 11. 2015.



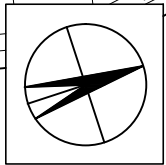
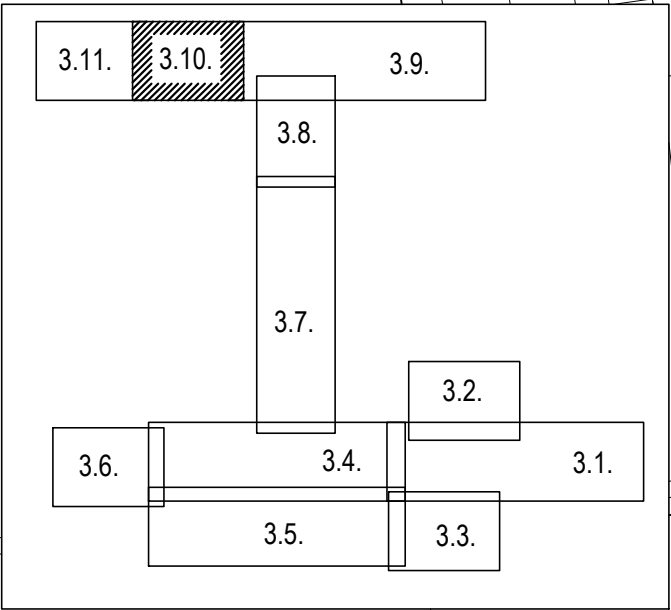


LEGENDA:	
	TRANSFORMATORSKA STANICA - PTIS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MIERNI ODMAR
	ČESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	ČESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE + čeličnik
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
	SVJETILJKA NA KROVNOM NOSAČU NN MREŽE
	SVJETILJKE NAPAJANE S MIJERNOG MJESTA VRBANJA 1
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OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt: Izvešće o energetskom pregledu	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrt : Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102/2015_001_JR	Broj nacrt: 3.9.
Gradjevina:	Javna rasvjeta	Mjerilo: 1:2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Vrbanja		

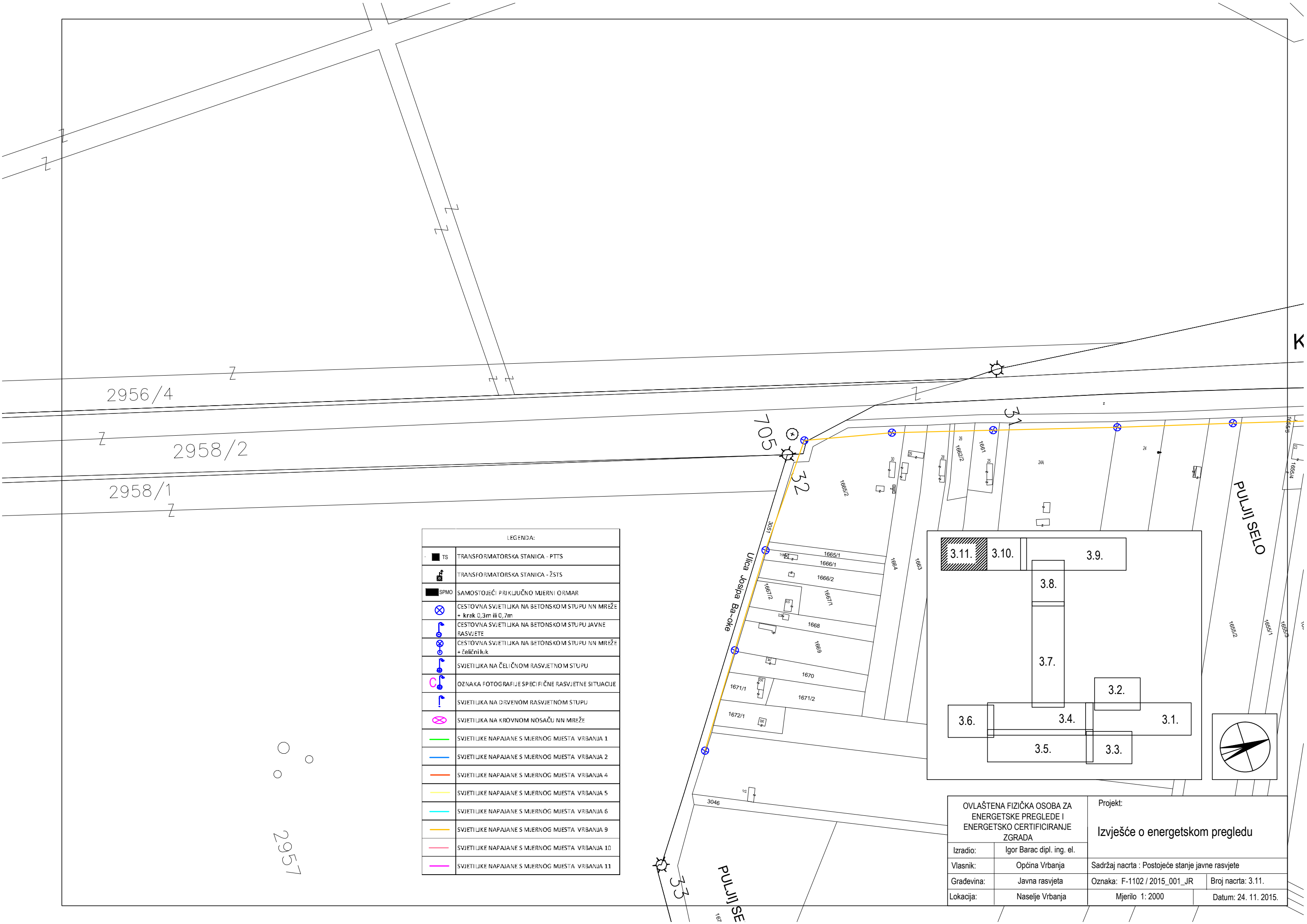


LEGENDA:	
	TRANSFORMATORSKA STANICA - PTTS
	TRANSFORMATORSKA STANICA - ŽSTS
	SAMOSTOJEĆI PRIKLJUČNO MJERNI ORMAR
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + krak 0,3m ili 0,7m
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU JAVNE RASVJETE
	CESTOVNA SVJETILJKA NA BETONSKOM STUPU NN MREŽE + čelični luk
	SVJETILJKA NA ČELIČNOM RASVJETNOM STUPU
	OZNAKA FOTOGRAFIJE SPECIFIČNE RASVJETNE SITUACIJE
	SVJETILJKA NA DRVENOM RASVJETNOM STUPU
	SVJETILJKA NA KROVNOM NOSAČU NN MREŽE
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OVLAŠTENA FIZIČKA OSOBA ZA ENERGETSKE PREGLEDE I ENERGETSKO CERTIFICIRANJE ZGRADA		Projekt:  <b>Izvješće o energetsom pregledu</b>	
Izradio:	Igor Barac dipl. ing. el.	Sadržaj nacrtu : Postojeće stanje javne rasvjete	
Vlasnik:	Općina Vrbanja	Oznaka: F-1102 / 2015_001_JR	Broj nacrtu: 3.10.
Gradjevina:	Javna rasvjeta	Mjerilo 1: 2000	Datum: 24. 11. 2015.
Lokacija:	Naselje Vrbanja		





## **Svjetlotehnički proračuni javne rasvjete**

Građevina:  
Javna rasvjeta

Mjesto gradnje:  
Naselje Soljani

Razina projekta:  
Energetski pregled

Partner for Contact:  
Order No.:  
Company:  
Customer No.:

Date: 24.11.2015  
Operator:



Operator  
Telephone  
Fax  
e-Mail

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Operator  
Telephone  
Fax  
e-Mail

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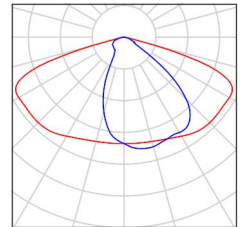




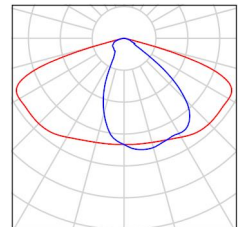
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## Svjetlotehnički proračuni javne rasvjete / Luminaire parts list

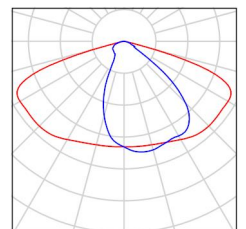
18 Pieces PHILIPS BGP352 T15 1xE035-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 3528 lm  
Luminous flux (Lamps): 3600 lm  
Luminaire Wattage: 37.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 98  
Fitting: 1 x E035-3S/830 (Correction Factor 1.000).



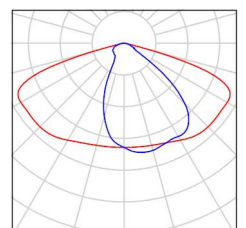
10 Pieces PHILIPS BGP352 T15 1xE046-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 4802 lm  
Luminous flux (Lamps): 4900 lm  
Luminaire Wattage: 48.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 98  
Fitting: 1 x E046-3S/830 (Correction Factor 1.000).



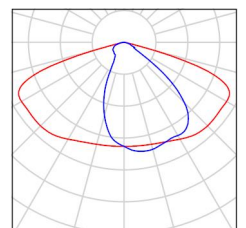
15 Pieces PHILIPS BGP352 T15 1xE058-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 5917 lm  
Luminous flux (Lamps): 6100 lm  
Luminaire Wattage: 58.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 97  
Fitting: 1 x E058-3S/830 (Correction Factor 1.000).



4 Pieces PHILIPS BGP352 T15 1xE070-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 7008 lm  
Luminous flux (Lamps): 7300 lm  
Luminaire Wattage: 71.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 96  
Fitting: 1 x E070-3S/830 (Correction Factor 1.000).



5 Pieces PHILIPS BGP352 T15 1xE081-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 8256 lm  
Luminous flux (Lamps): 8600 lm  
Luminaire Wattage: 80.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 96  
Fitting: 1 x E081-3S/830 (Correction Factor 1.000).

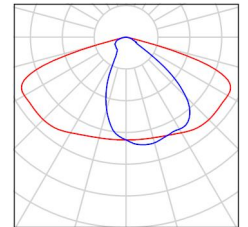




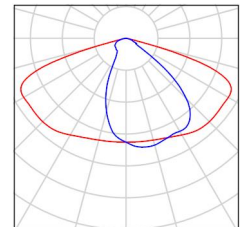
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## Svjetlotehnički proračuni javne rasvjete / Luminaire parts list

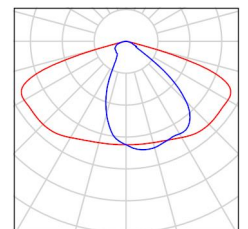
12 Pieces PHILIPS BGP352 T15 1xECO93-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 9310 lm  
Luminous flux (Lamps): 9800 lm  
Luminaire Wattage: 93.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 95  
Fitting: 1 x ECO93-3S/830 (Correction Factor 1.000).



6 Pieces PHILIPS BGP353 T15 1xECO104-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 10355 lm  
Luminous flux (Lamps): 10900 lm  
Luminaire Wattage: 106.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 95  
Fitting: 1 x ECO104-3S/830 (Correction Factor 1.000).

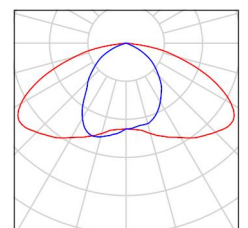


6 Pieces PHILIPS BGP353 T15 1xECO116-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 11590 lm  
Luminous flux (Lamps): 12200 lm  
Luminaire Wattage: 113.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 95  
Fitting: 1 x ECO116-3S/830 (Correction Factor 1.000).



118 Pieces tep LVC 06 150 E GAMALUX  
Article No.: LVC 06 150 E  
Luminous flux (Luminaire): 11997 lm  
Luminous flux (Lamps): 14000 lm  
Luminaire Wattage: 170.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 46 79 97 100 86  
Fitting: 1 x NAV-E (Correction Factor 1.000).

See our luminaire  
catalog for an image of  
the luminaire.





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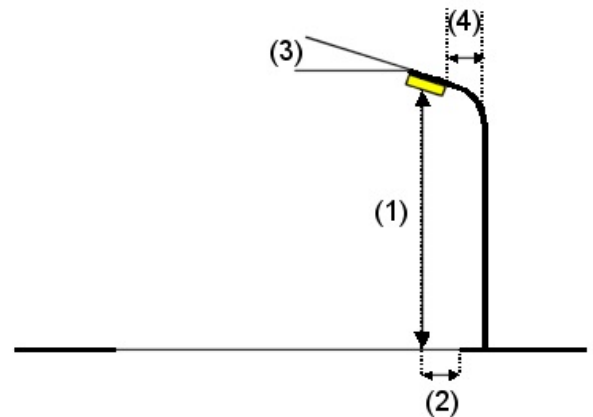
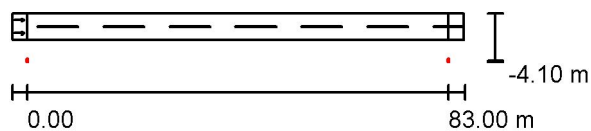
## Matije Gupca - ME4b - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.150 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	83.000 m
Mounting Height (1):	11.232 m
Height:	11.000 m
Overhang (2):	-4.038 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.000 m

#### Maximum luminous intensities

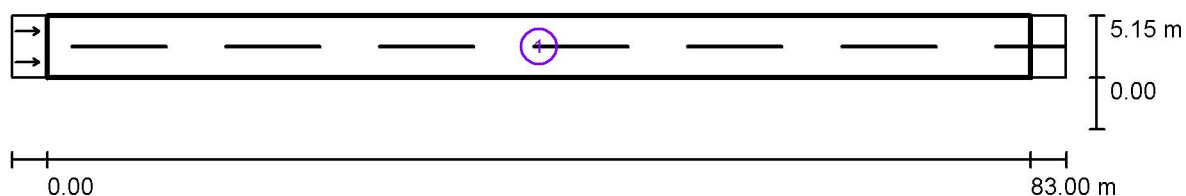
at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.

## Matije Gupca - ME4b - postojeće stanje / Photometric Results



Scale 1:637

1 Valuation Field Roadway 1  
Length: 83.000 m, Width: 5.150 m  
Grid: 28 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b (

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.18	0.19	0.16	10	1.03
Required values according to class:	≥ 0.75	≥ 0.40	≥ 0.50	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



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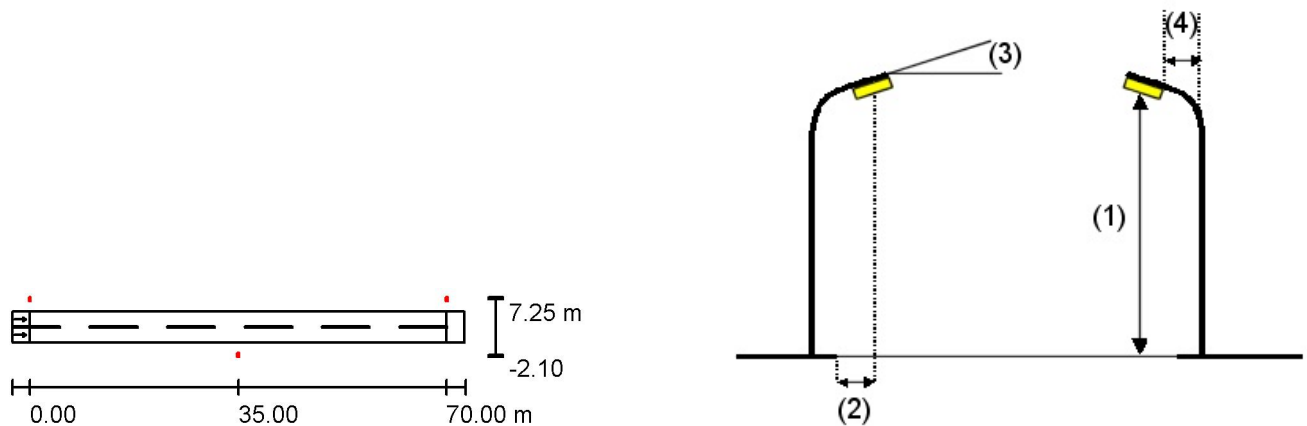
## Matije Gupca - ME4b (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.150 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	70.000 m
Mounting Height (1):	12.232 m
Height:	12.000 m
Overhang (2):	-2.038 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

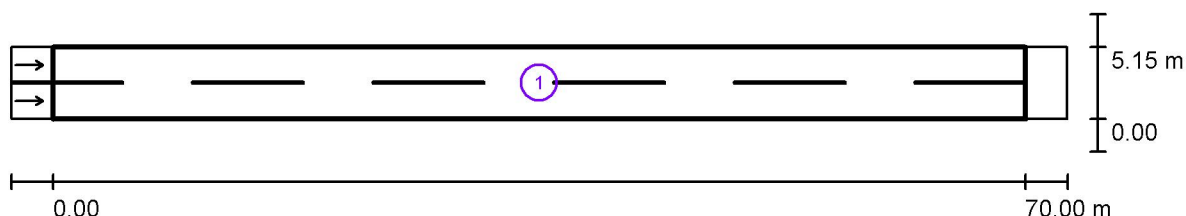
Arrangement complies with glare index class D.6.





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## Matije Gupca - ME4b (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:544

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 70.000 m, Width: 5.150 m  
Grid: 24 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.75	0.80	0.70	6	0.96
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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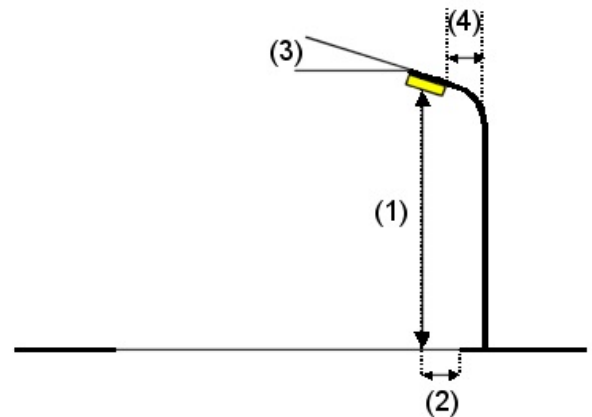
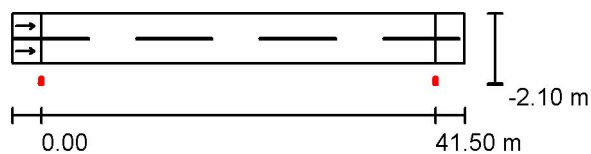
## Matije Gupca - ME4b (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.150 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP353 T15 1xEco104-3S/830 DC  
 Luminous flux (Luminaire): 10355 lm  
 Luminous flux (Lamps): 10900 lm  
 Luminaire Wattage: 106.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 41.500 m  
 Mounting Height (1): 12.024 m  
 Height: 12.000 m  
 Overhang (2): -1.646 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 474 cd/klm

at 80°: 14 cd/klm

at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

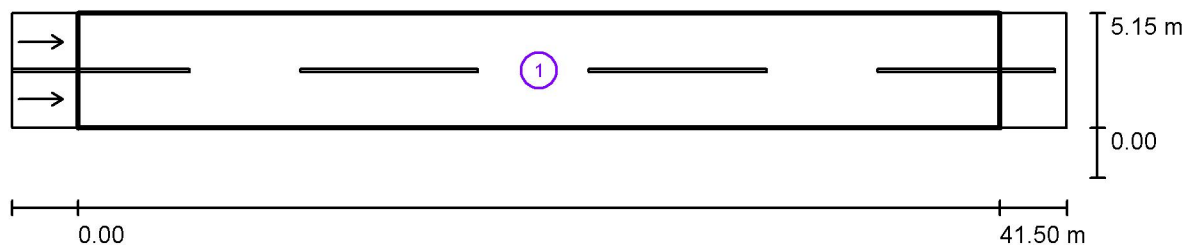
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



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## Matije Gupca - ME4b (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:340

### Calculation Field List

- Valuation Field Roadway 1  
Length: 41.500 m, Width: 5.150 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.79	0.68	0.78	6	0.91
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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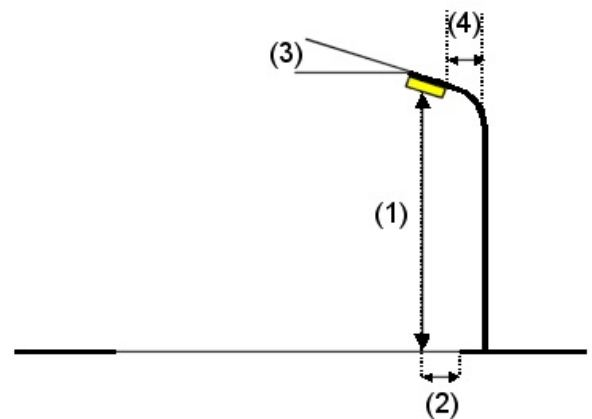
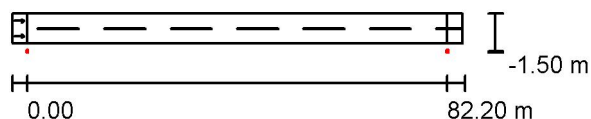
## Vrbanjska - ME4b - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.800 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 82.200 m

Mounting Height (1): 11.232 m

Height: 11.000 m

Overhang (2): -1.438 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.000 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

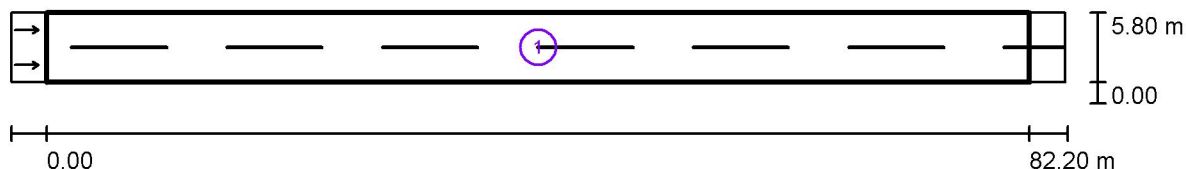
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Vrbanjska - ME4b - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:631

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 82.200 m, Width: 5.800 m  
Grid: 28 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.28	0.17	0.16	10	0.94
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓





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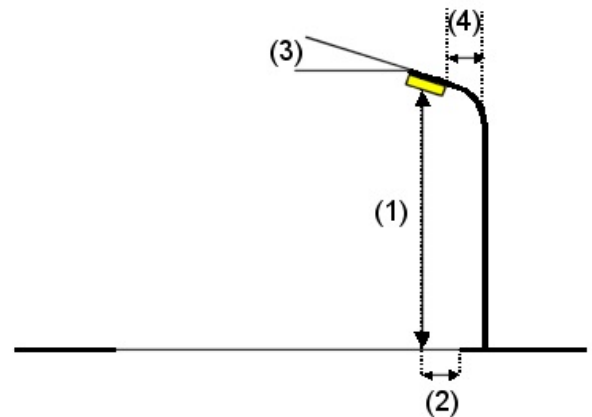
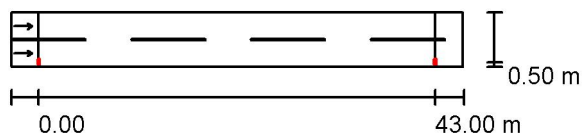
## Vrbanjska - ME4b (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.800 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	43.000 m
Mounting Height (1):	12.232 m
Height:	12.000 m
Overhang (2):	0.562 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

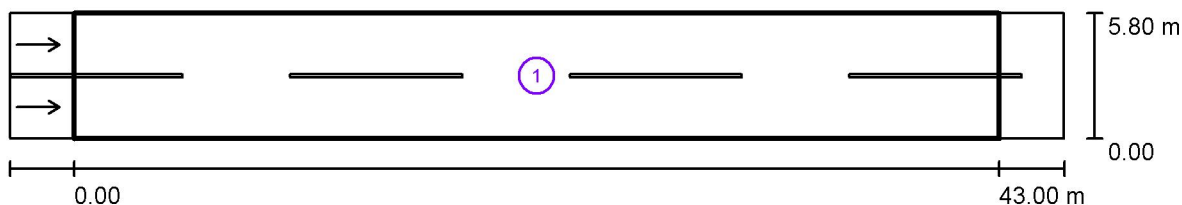
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Vrbanjska - ME4b (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:351

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 43.000 m, Width: 5.800 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.76	0.53	0.69	5	0.85
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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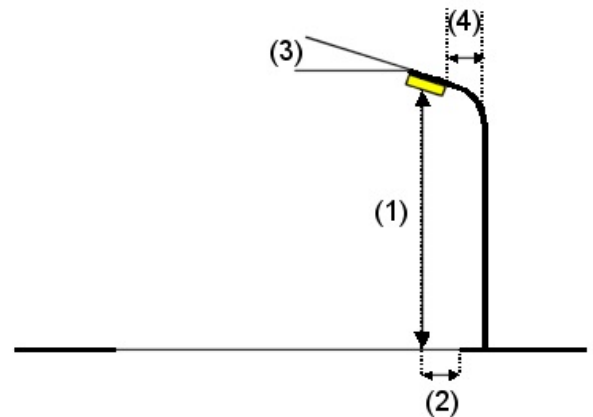
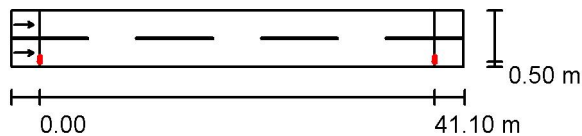
## Vrbanjska - ME4b (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.800 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xE903-3S/830 DC  
 Luminous flux (Luminaire): 9310 lm  
 Luminous flux (Lamps): 9800 lm  
 Luminaire Wattage: 93.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 41.100 m  
 Mounting Height (1): 11.990 m  
 Height: 12.000 m  
 Overhang (2): 0.928 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 471 cd/klm

at 80°: 14 cd/klm

at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

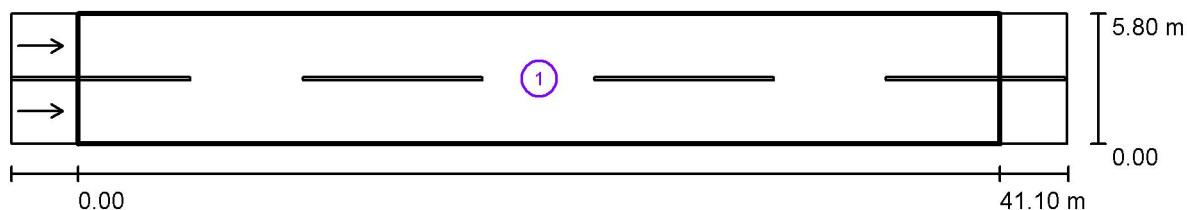
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



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## Vrbanjska - ME4b (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:337

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 41.100 m, Width: 5.800 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.79	0.71	0.84	5	0.80
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





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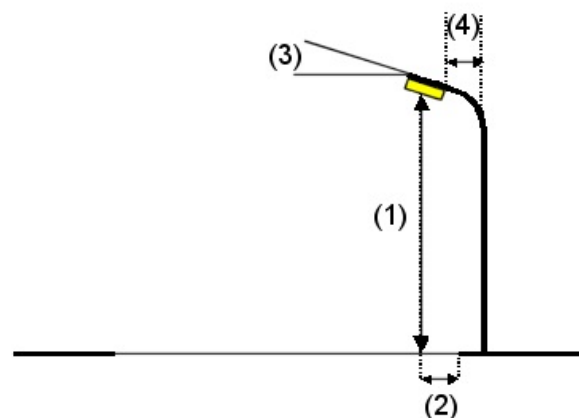
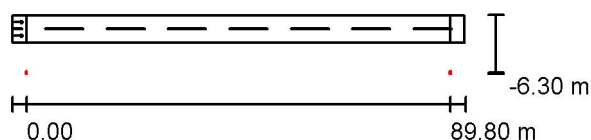
## Vrbanjska odvojak - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.700 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 89.800 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -6.238 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

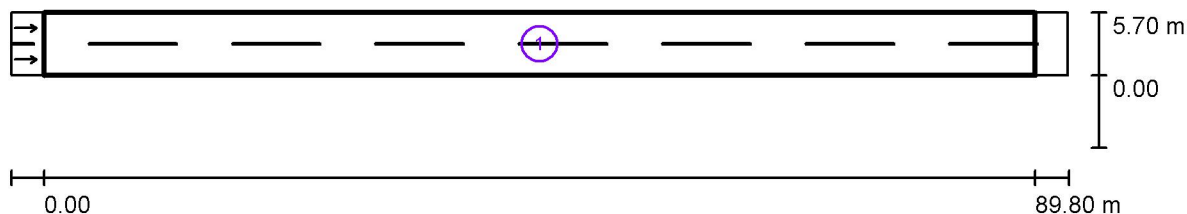
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Vrbanjska odvojak - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:685

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 89.800 m, Width: 5.700 m

Grid: 30 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.09	0.13	0.07	15	1.38
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓

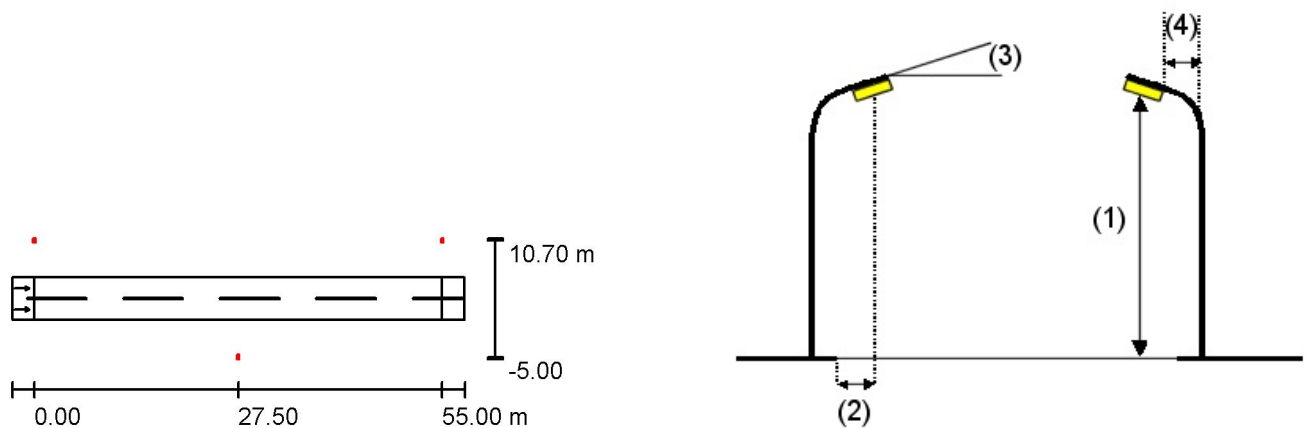
### Vrbanjska odvojak - ME5 luk (l=2m, h=1,5m) - prema normi / Planning data

## Street Profile

Roadway 1 (Width: 5.700 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

## Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	55.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-4.938 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

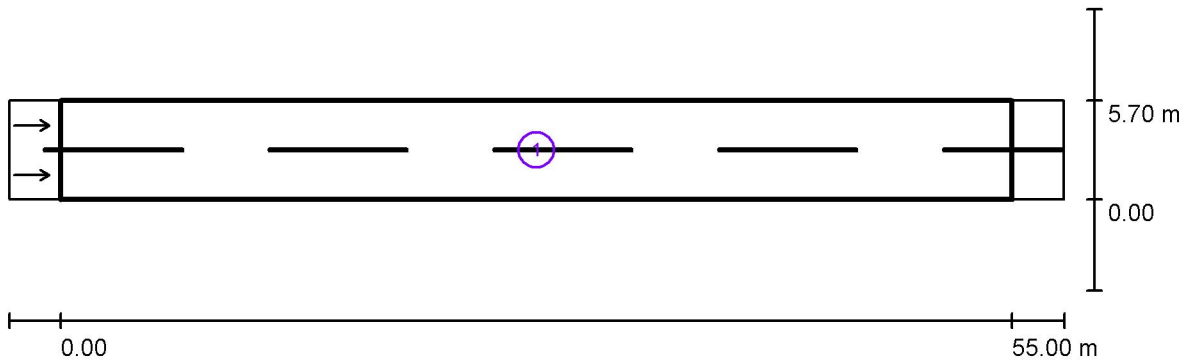
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Vrbanjska odvojak - ME5 luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:437

### Calculation Field List

- Valuation Field Roadway 1  
Length: 55.000 m, Width: 5.700 m  
Grid: 19 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.50	0.74	0.60	8	1.20
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓

Operator  
Telephone  
Fax  
e-Mail

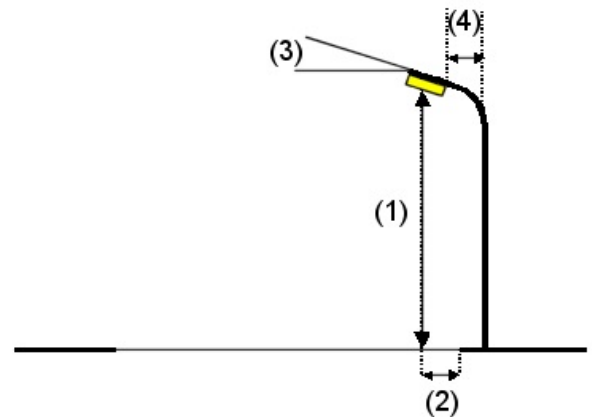
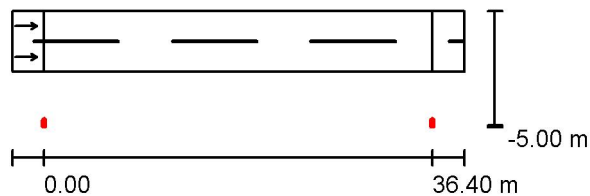
## Vrbanjska odvojak - ME5 - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.700 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco81-3S/830 DC  
 Luminous flux (Luminaire): 8256 lm  
 Luminous flux (Lamps): 8600 lm  
 Luminaire Wattage: 80.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 36.400 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -4.572 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 475 cd/klm

at 80°: 14 cd/klm

at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

Arrangement complies with luminous intensity class G4.

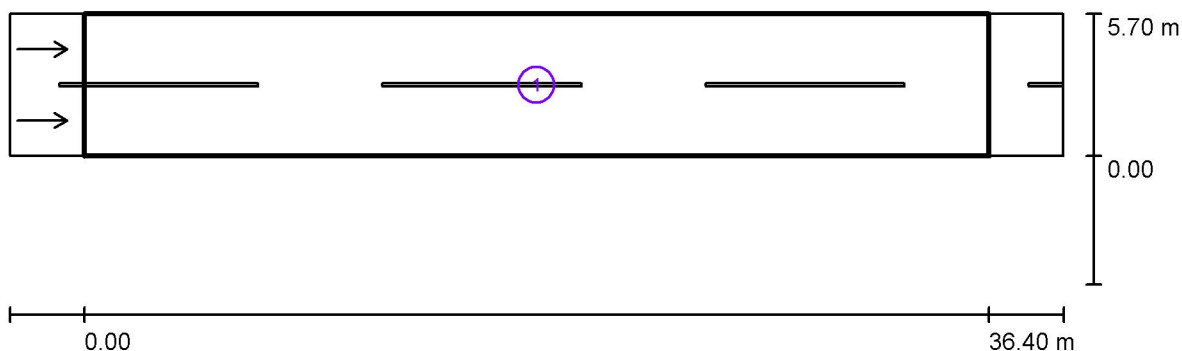
Arrangement complies with glare index class D.6.





Operator  
Telephone  
Fax  
e-Mail

## Vrbanjska odvojak - ME5 - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:304

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 36.400 m, Width: 5.700 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.51	0.40	0.64	10	0.91
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

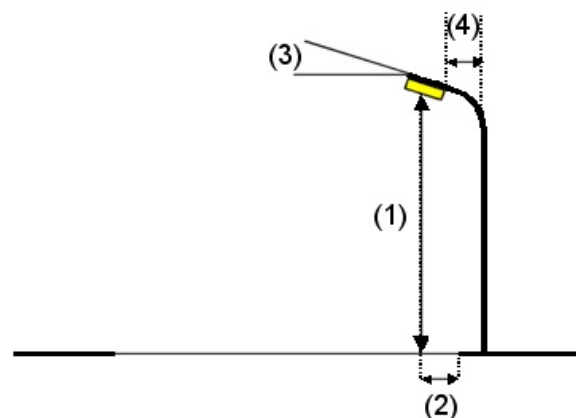
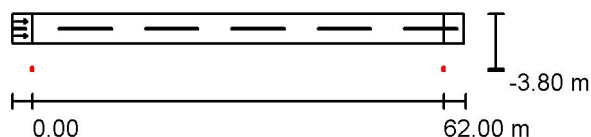
## Ljudevita Gaja - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	62.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-3.738 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

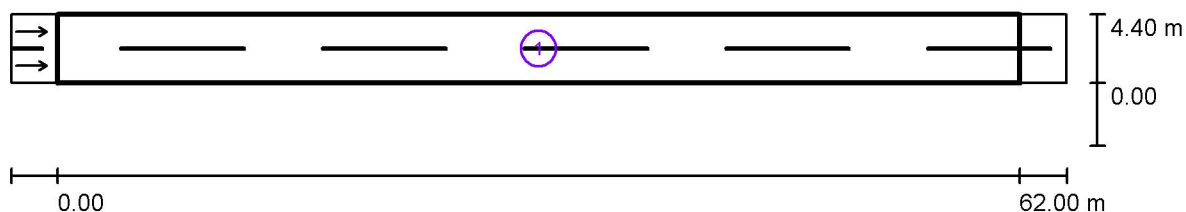
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Ljudevita Gaja - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:487

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 62.000 m, Width: 4.400 m

Grid: 21 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.25	0.20	0.15	13	1.10
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

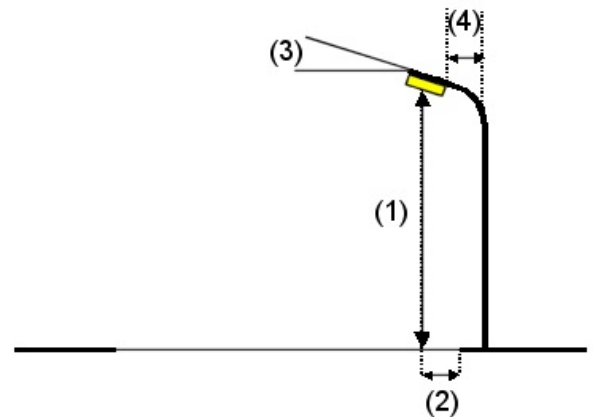
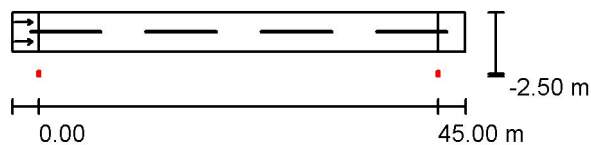
## Ljudevita Gaja (l=2m, h=1,5m)- ME5 - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	45.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-2.438 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

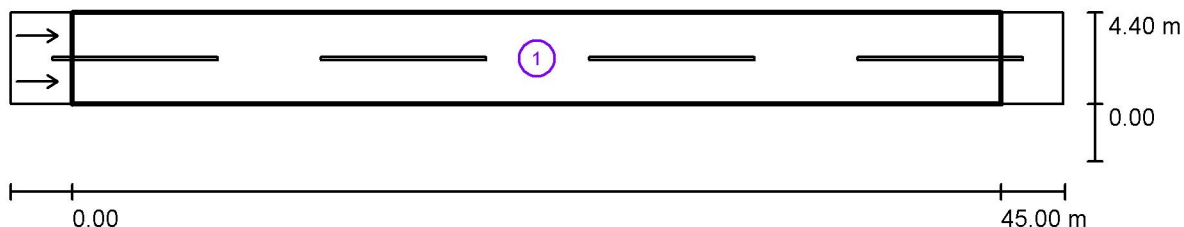
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Ljudevita Gaja (l=2m, h=1,5m)- ME5 - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:365

### Calculation Field List

- Valuation Field Roadway 1  
Length: 45.000 m, Width: 4.400 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.58	0.36	0.43	10	1.00
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
Telephone  
Fax  
e-Mail

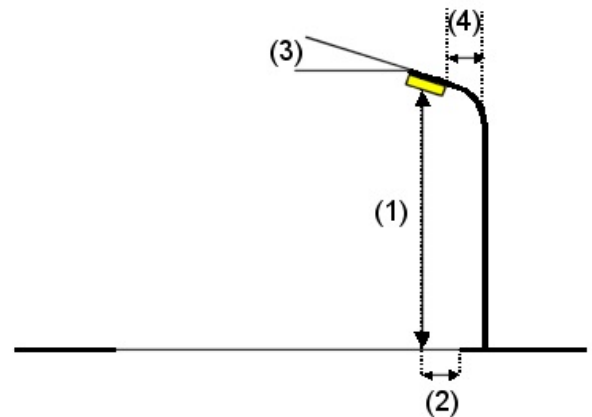
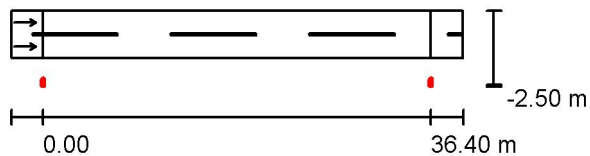
## Ljudevita Gaja (l=2m, h=1,5m) - ME5 - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco58-3S/830 DC  
 Luminous flux (Luminaire): 5917 lm  
 Luminous flux (Lamps): 6100 lm  
 Luminaire Wattage: 58.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 36.400 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -2.072 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 482 cd/klm

at 80°: 14 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

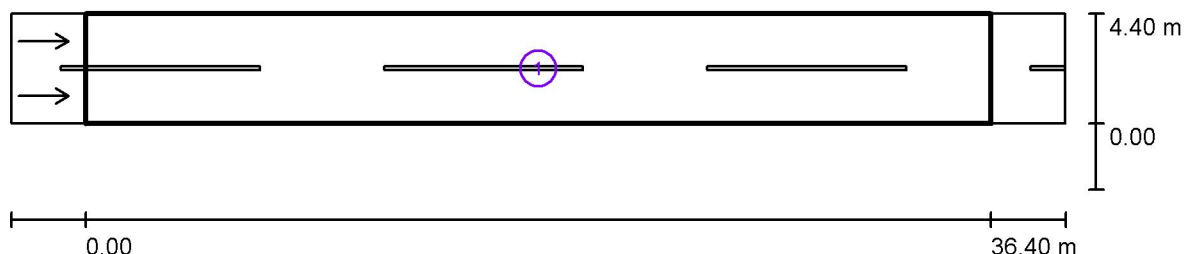
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Ljudevita Gaja (l=2m, h=1,5m) - ME5 - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:304

### Calculation Field List

- Valuation Field Roadway 1  
Length: 36.400 m, Width: 4.400 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.60	0.60	0.65	9	0.90
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

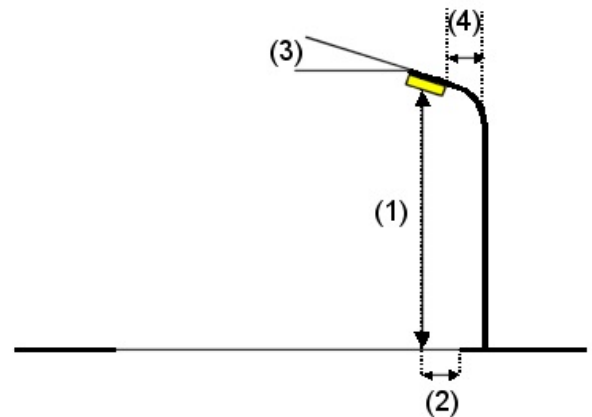
## Ljudevita Gaja odvojak - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.800 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 125.000 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -2.038 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

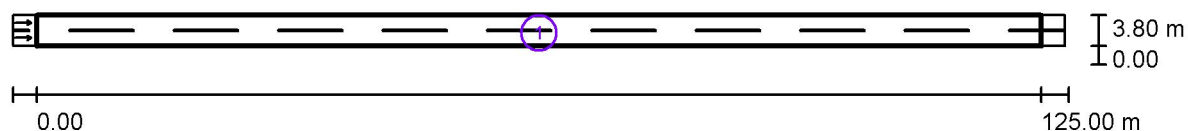
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Ljudevita Gaja odvojak - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:937

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 125.000 m, Width: 3.800 m  
Grid: 42 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.21	0.01	0.01	23	0.99
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	X	X	X	X	✓



Operator  
Telephone  
Fax  
e-Mail

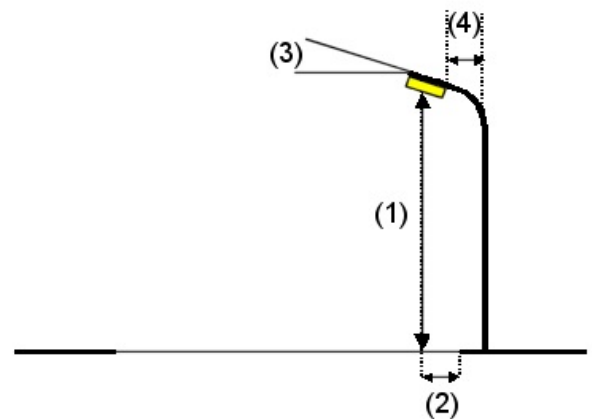
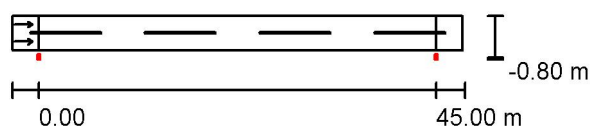
## Ljudevita Gaja odvojak (l=2m, h=1,5m)- ME5 - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.800 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	45.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-0.738 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

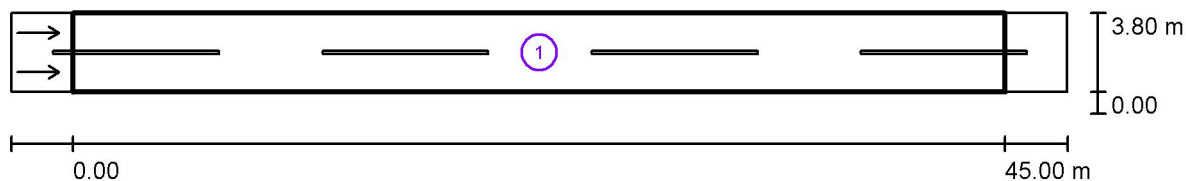
Arrangement complies with glare index class D.6.





Operator  
Telephone  
Fax  
e-Mail

## Ljudevita Gaja odvojak (l=2m, h=1,5m)- ME5 - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:365

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 45.000 m, Width: 3.800 m

Grid: 15 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.88	0.38	0.42	8	0.93
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

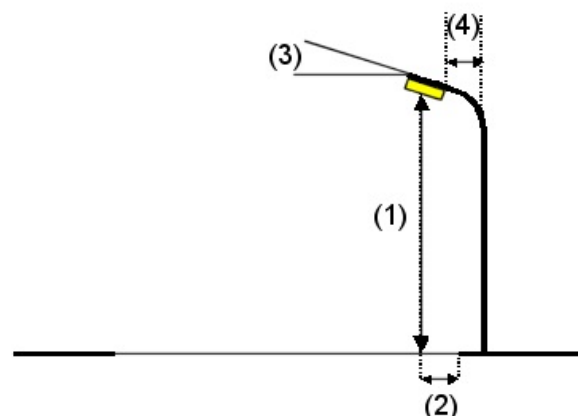
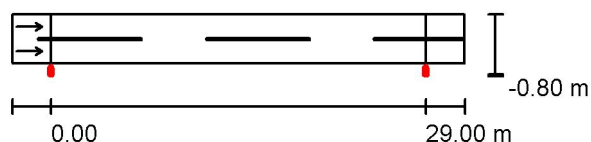
## Ljudevita Gaja odvojak (l=2m, h=1,5m) - ME5 - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.800 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DC  
 Luminous flux (Luminaire): 3528 lm  
 Luminous flux (Lamps): 3600 lm  
 Luminaire Wattage: 37.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 29.000 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -0.372 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

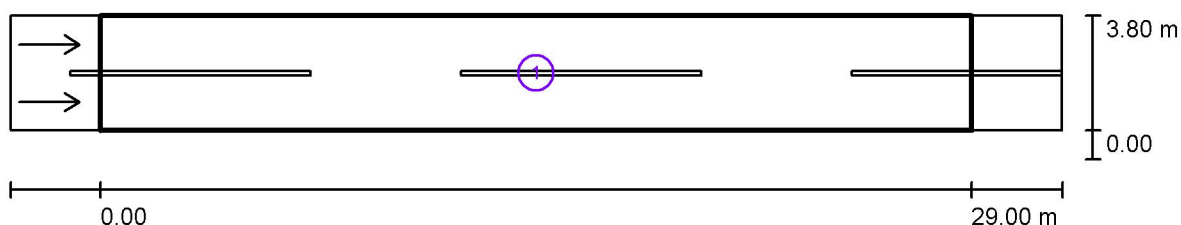
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Ljudevita Gaja odvojak (l=2m, h=1,5m) - ME5 - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:251

### Calculation Field List

- Valuation Field Roadway 1  
Length: 29.000 m, Width: 3.800 m  
Grid: 10 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.56	0.73	0.86	5	0.88
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

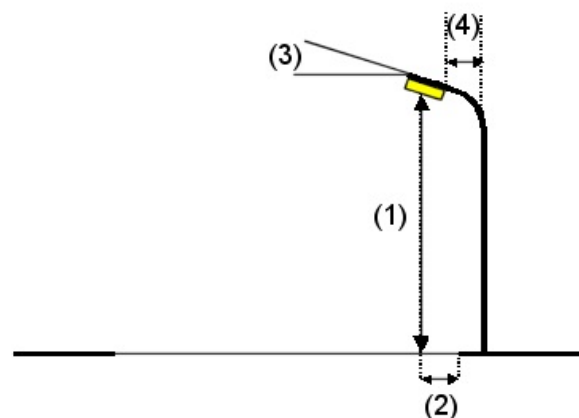
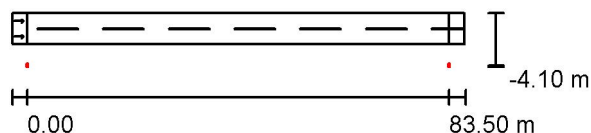
## Vladimira Nazora - ME4b - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.150 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	83.500 m
Mounting Height (1):	11.232 m
Height:	11.000 m
Overhang (2):	-4.038 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

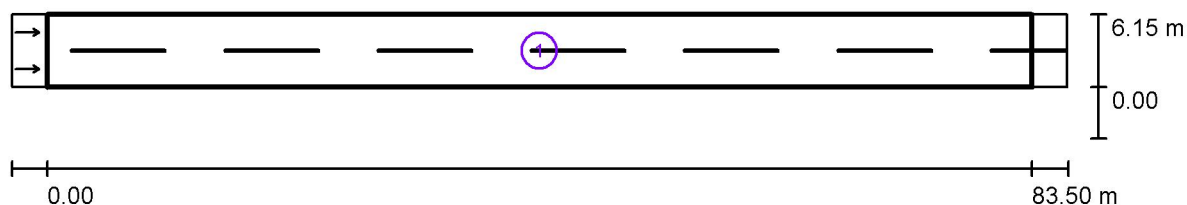
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.

Operator  
Telephone  
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## Vladimira Nazora - ME4b - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:640

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 83.500 m, Width: 6.150 m  
Grid: 28 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.17	0.18	0.16	11	1.06
Required values according to class:	≥ 0.75	≥ 0.40	≥ 0.50	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓





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e-Mail

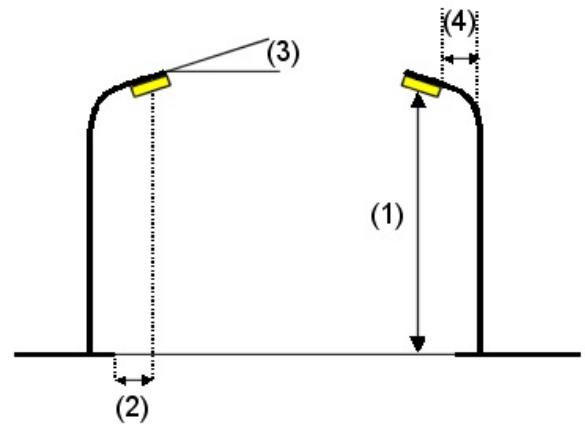
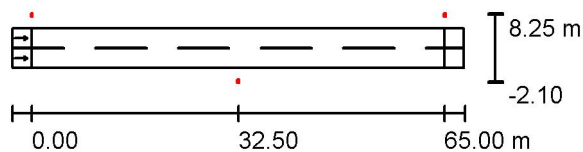
## Vladimira Nazora - ME4b - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.150 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	65.000 m
Mounting Height (1):	12.232 m
Height:	12.000 m
Overhang (2):	-2.038 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

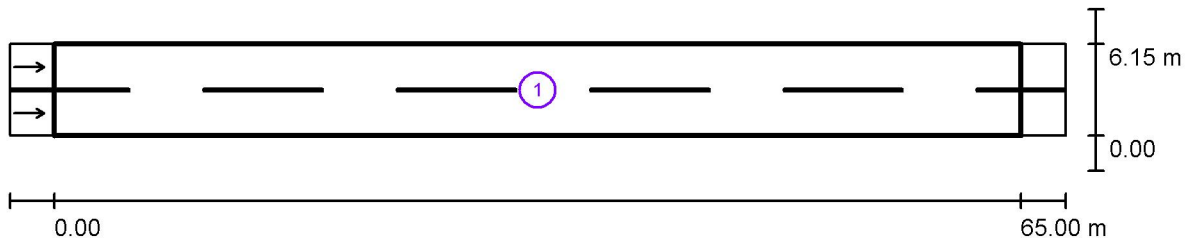
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Vladimira Nazora - ME4b - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:508

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 65.000 m, Width: 6.150 m  
Grid: 22 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.76	0.81	0.70	6	0.96
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
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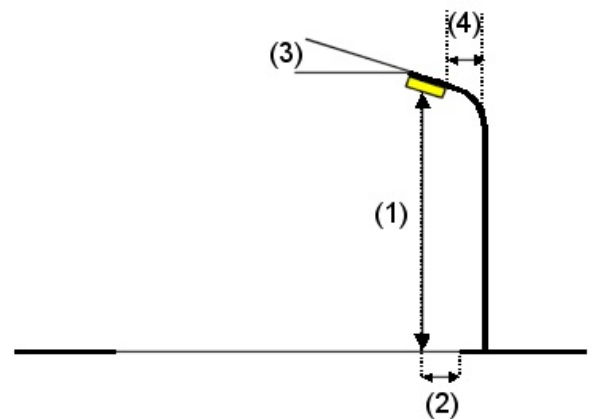
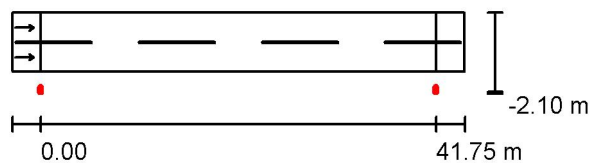
## Vladimira Nazora - ME4b - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.150 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP353 T15 1xEco116-3S/830 DC  
Luminous flux (Luminaire): 11590 lm  
Luminous flux (Lamps): 12200 lm  
Luminaire Wattage: 113.0 W  
Arrangement: Single row, bottom  
Pole Distance: 41.750 m  
Mounting Height (1): 11.944 m  
Height: 12.000 m  
Overhang (2): -1.648 m  
Boom Angle (3): 10.0 °  
Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 560 cd/klm

at 80°: 81 cd/klm

at 90°: 5.91 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

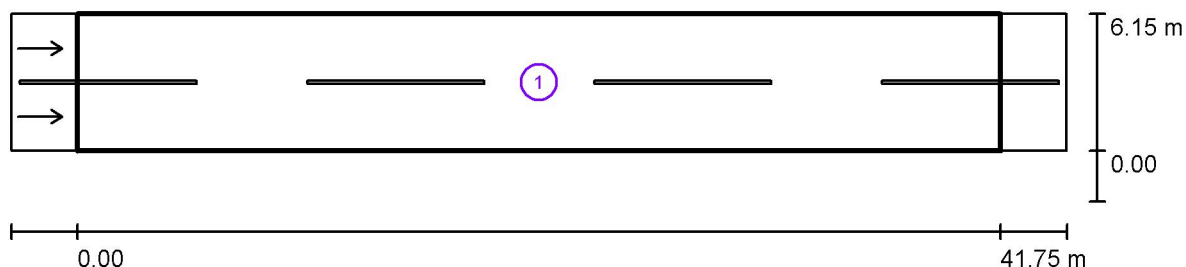
Arrangement complies with luminous intensity class G3.

Arrangement complies with glare index class D.6.



Operator  
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## Vladimira Nazora - ME4b - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:342

### Calculation Field List

- Valuation Field Roadway 1  
Length: 41.750 m, Width: 6.150 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.77	0.70	0.85	6	0.82
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
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Fax  
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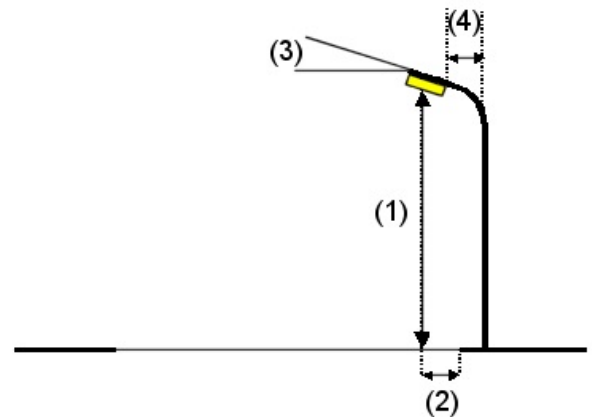
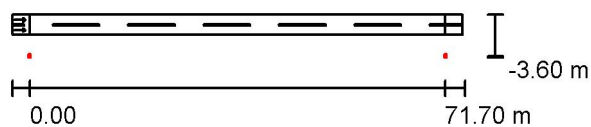
## Josipa Kozarca 1 dio - ME5 - l=0,7m - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	71.700 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-3.538 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

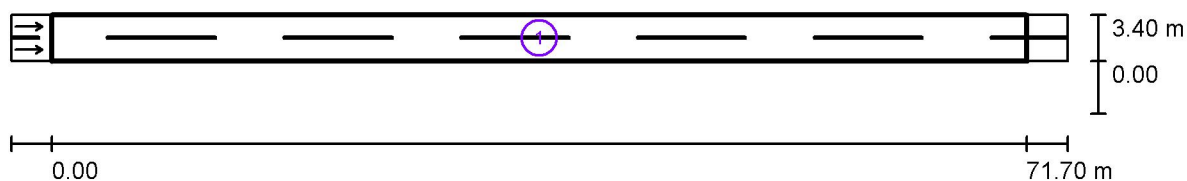
Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.





Operator  
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## Josipa Kozarca 1 dio - ME5 - l=0,7m - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:556

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 71.700 m, Width: 3.400 m

Grid: 24 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.26	0.16	0.11	14	1.04
Required values according to class:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
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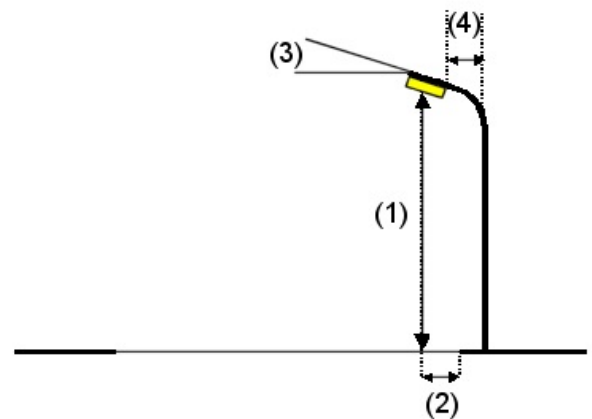
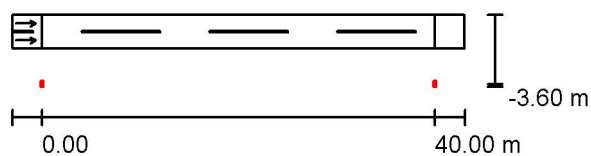
## Josipa Kozarca 1 dio - ME5 - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	40.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-3.538 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

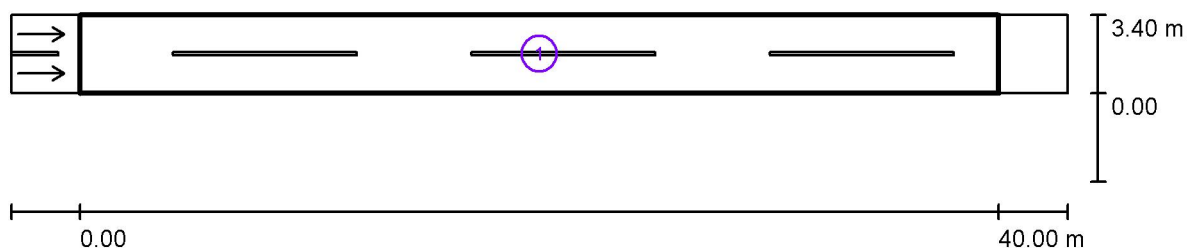
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Josipa Kozarca 1 dio - ME5 - l=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:329

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 40.000 m, Width: 3.400 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.55	0.40	0.42	10	1.04
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
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Fax  
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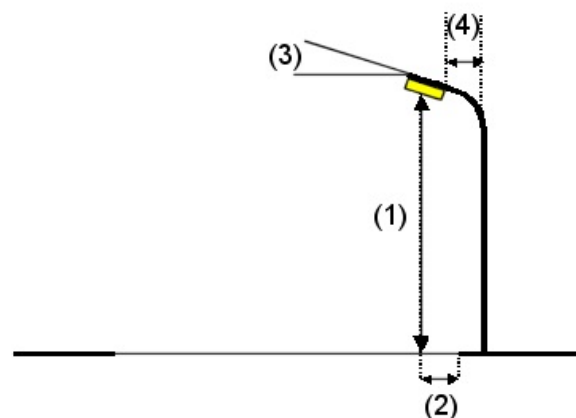
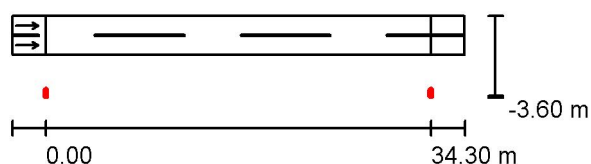
## Josipa Kozarca 1 dio - ME5 - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xECO58-3S/830 DC  
 Luminous flux (Luminaire): 5917 lm  
 Luminous flux (Lamps): 6100 lm  
 Luminaire Wattage: 58.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 34.300 m  
 Mounting Height (1): 7.916 m  
 Height: 8.000 m  
 Overhang (2): -3.181 m  
 Boom Angle (3): 10.0 °  
 Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 572 cd/klm

at 80°: 83 cd/klm

at 90°: 6.03 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

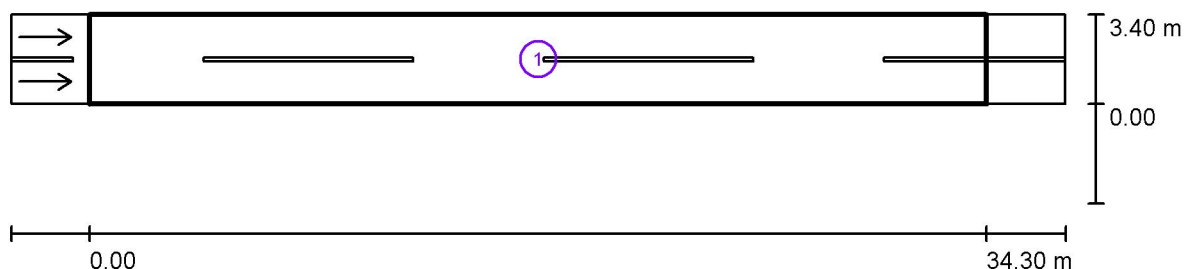
Arrangement complies with luminous intensity class G3.

Arrangement complies with glare index class D.6.



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## Josipa Kozarca 1 dio - ME5 - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:289

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 34.300 m, Width: 3.400 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.59	0.70	0.71	11	0.96
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
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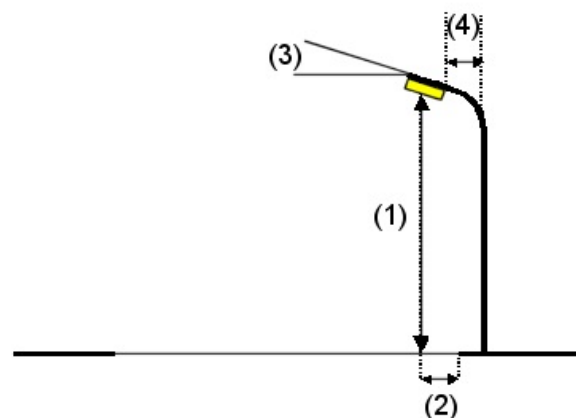
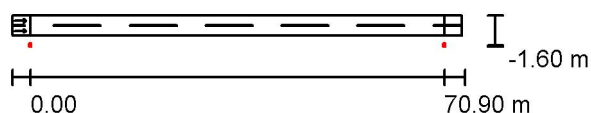
## Josipa Kozarca 2 dio - ME5 - l=0,7m - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 70.900 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -1.538 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

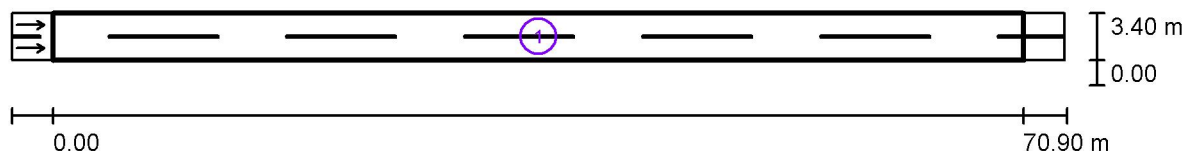
Arrangement complies with glare index class D.6.





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## Josipa Kozarca 2 dio - ME5 - l=0,7m - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:550

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 70.900 m, Width: 3.400 m

Grid: 24 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.43	0.15	0.10	14	0.97
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
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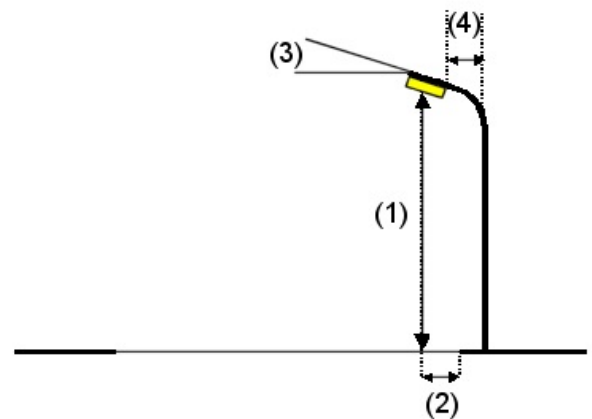
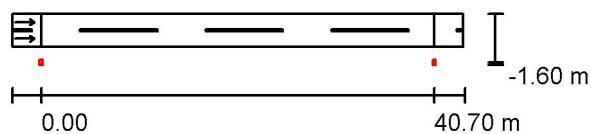
## Josipa Kozarca 2 dio - ME5 - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	40.700 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-1.538 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

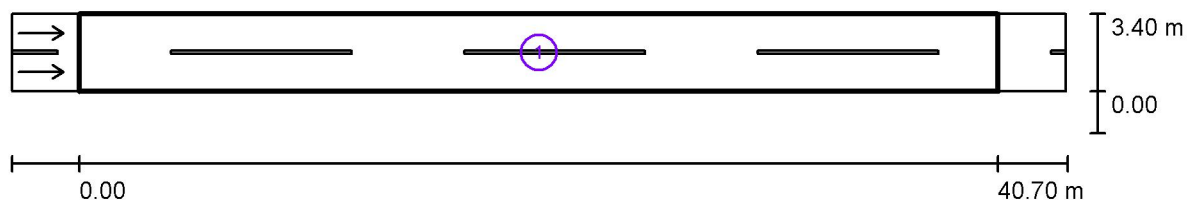
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Josipa Kozarca 2 dio - ME5 - l=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:334

### Calculation Field List

- Valuation Field Roadway 1  
Length: 40.700 m, Width: 3.400 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.90	0.35	0.41	10	0.97
Required values according to class:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
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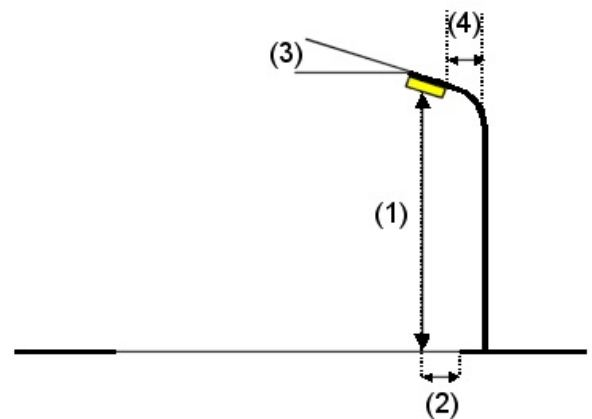
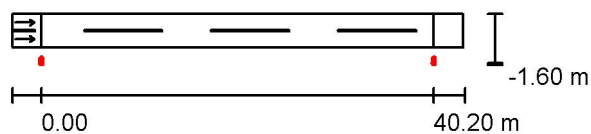
## Josipa Kozarca 2 dio - ME5 - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire:	PHILIPS BGP352 T15 1xEco46-3S/830 DC
Luminous flux (Luminaire):	4802 lm
Luminous flux (Lamps):	4900 lm
Luminaire Wattage:	48.0 W
Arrangement:	Single row, bottom
Pole Distance:	40.200 m
Mounting Height (1):	7.916 m
Height:	8.000 m
Overhang (2):	-1.181 m
Boom Angle (3):	10.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	576 cd/klm
at 80°:	84 cd/klm
at 90°:	6.07 cd/klm

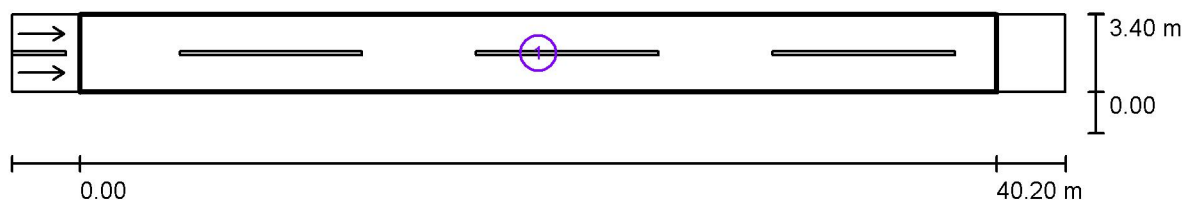
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G3.  
Arrangement complies with glare index class D.6.



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## Josipa Kozarca 2 dio - ME5 - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:331

### Calculation Field List

- Valuation Field Roadway 1  
Length: 40.200 m, Width: 3.400 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.52	0.54	0.40	10	0.86
Required values according to class:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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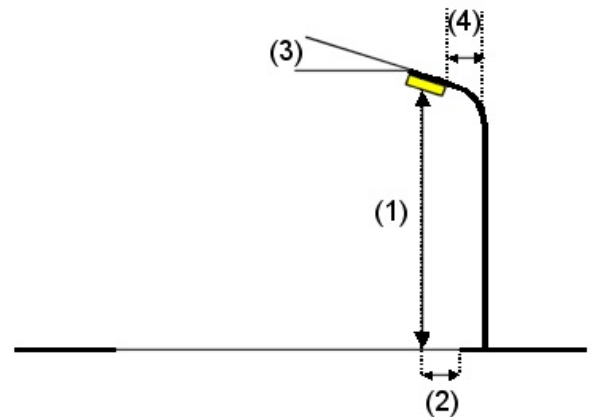
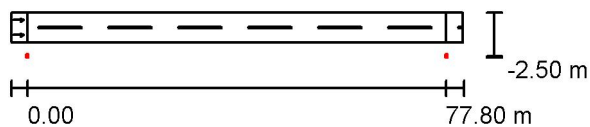
## Brače Radić - ME4b - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 77.800 m

Mounting Height (1): 11.232 m

Height: 11.000 m

Overhang (2): -2.438 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.000 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

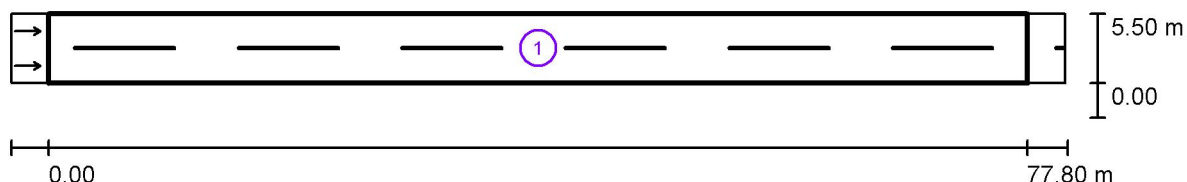
Arrangement complies with glare index class D.6.





Operator  
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Fax  
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## Braće Radić - ME4b - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:600

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 77.800 m, Width: 5.500 m

Grid: 26 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME4b

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.25	0.19	0.18	10	0.98
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
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e-Mail

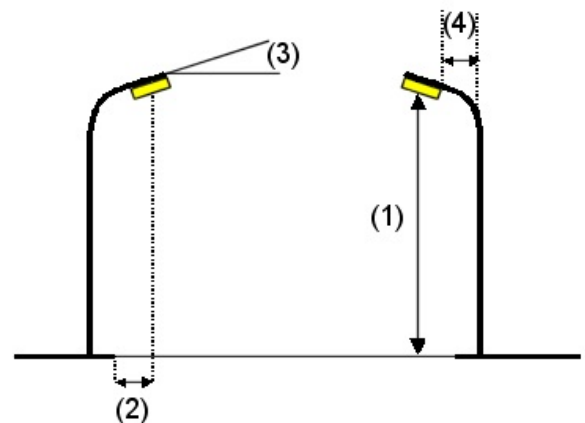
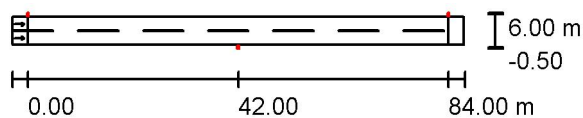
## Braće Radić (l=2m, h=1,5m) - ME4b - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	84.000 m
Mounting Height (1):	12.232 m
Height:	12.000 m
Overhang (2):	-0.438 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

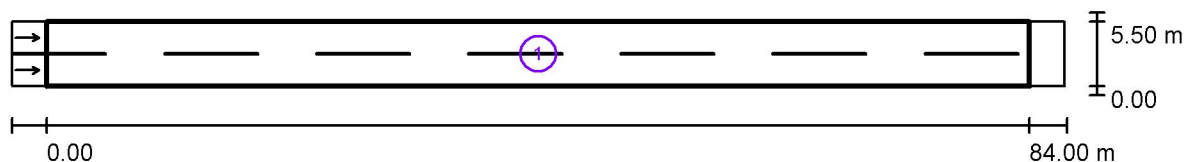
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Braće Radić (l=2m, h=1,5m) - ME4b - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:644

### Calculation Field List

- Valuation Field Roadway 1  
Length: 84.000 m, Width: 5.500 m  
Grid: 28 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.75	0.65	0.57	6	0.90
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

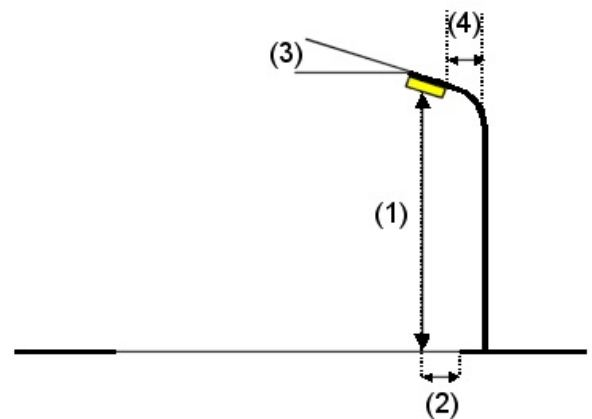
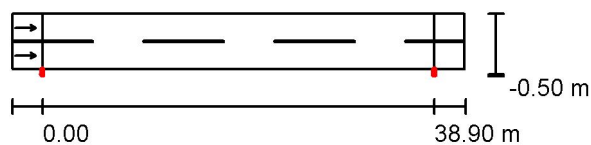
## Braće Radić (l=2m, h=1,5m) - ME4b - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xE903-3S/830 DC  
 Luminous flux (Luminaire): 9310 lm  
 Luminous flux (Lamps): 9800 lm  
 Luminaire Wattage: 93.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 38.900 m  
 Mounting Height (1): 11.990 m  
 Height: 12.000 m  
 Overhang (2): -0.072 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 471 cd/klm

at 80°: 14 cd/klm

at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

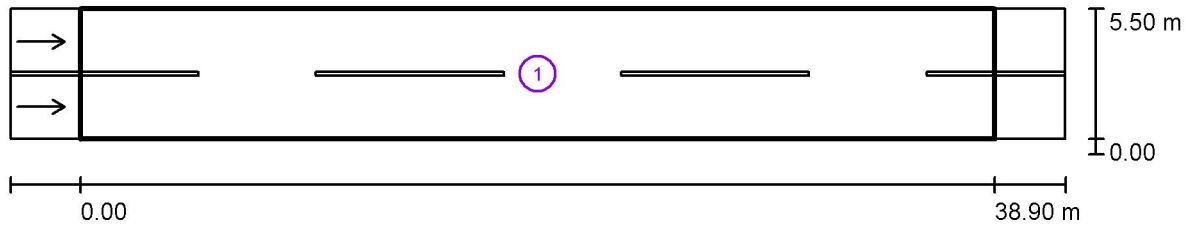
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Braće Radić (l=2m, h=1,5m) - ME4b - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:321

### Calculation Field List

- Valuation Field Roadway 1  
Length: 38.900 m, Width: 5.500 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.82	0.70	0.87	5	0.85
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

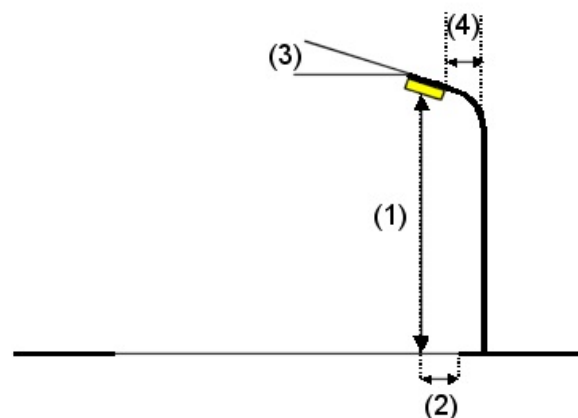
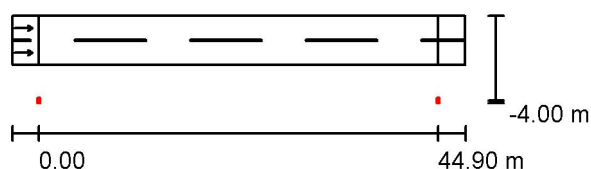
## Braće Radić Put - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	44.900 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-3.938 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

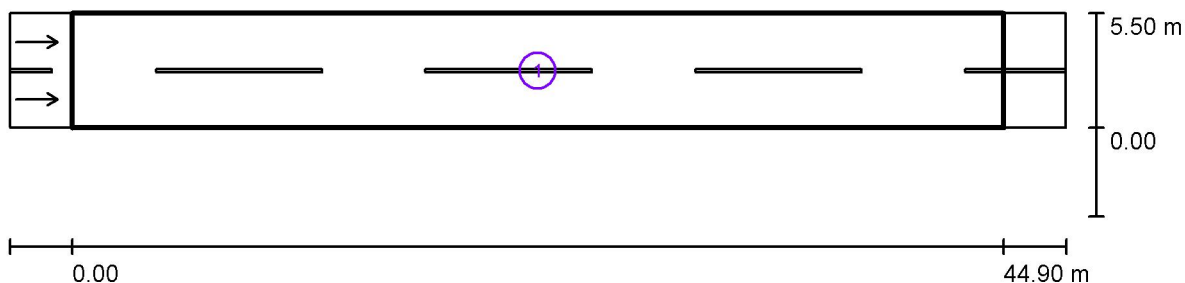
Arrangement complies with glare index class D.6.





Operator  
Telephone  
Fax  
e-Mail

## Braće Radić Put - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:364

### Calculation Field List

- Valuation Field Roadway 1  
Length: 44.900 m, Width: 5.500 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.30	0.31	0.34	11	1.20
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

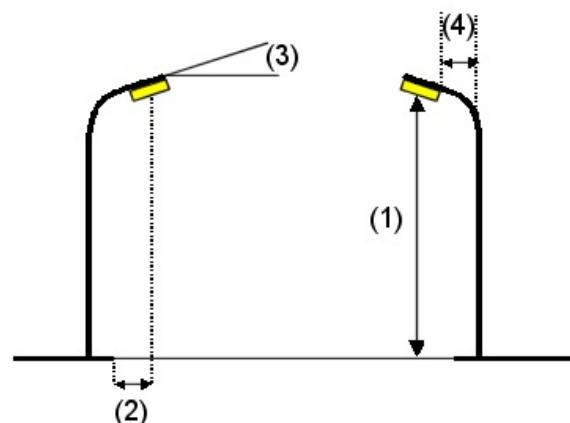
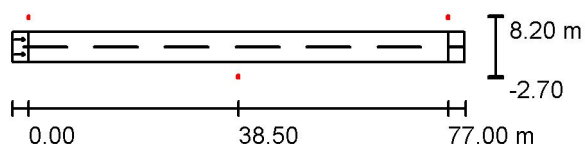
## Braće Radić Put (l=2m, h=1,5m) - ME5 - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	77.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-2.638 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

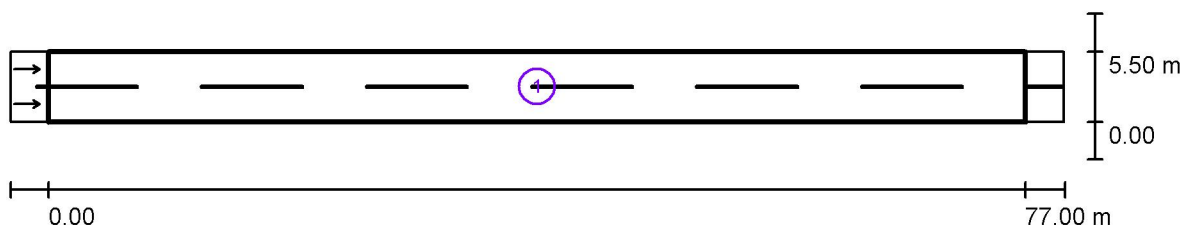
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Braće Radić Put (l=2m, h=1,5m) - ME5 - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:594

### Calculation Field List

- Valuation Field Roadway 1  
Length: 77.000 m, Width: 5.500 m  
Grid: 26 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.61	0.60	0.40	9	1.04
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

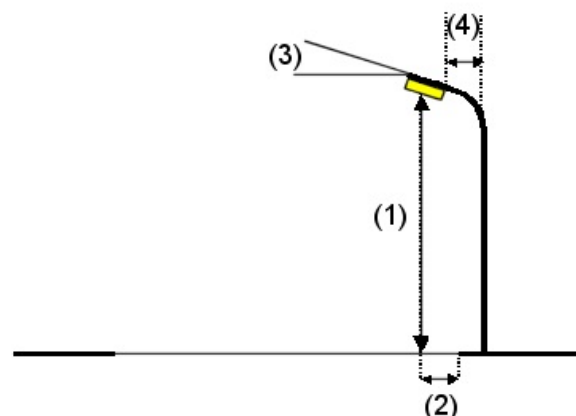
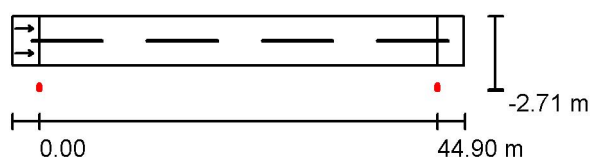
## Braće Radić Put (l=2m, h=1,5m) - ME5 - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco70-3S/830 DC  
Luminous flux (Luminaire): 7008 lm  
Luminous flux (Lamps): 7300 lm  
Luminaire Wattage: 71.0 W  
Arrangement: Single row, bottom  
Pole Distance: 44.900 m  
Mounting Height (1): 8.968 m  
Height: 8.978 m  
Overhang (2): -2.281 m  
Boom Angle (3): 0.0 °  
Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 478 cd/klm

at 80°: 14 cd/klm

at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

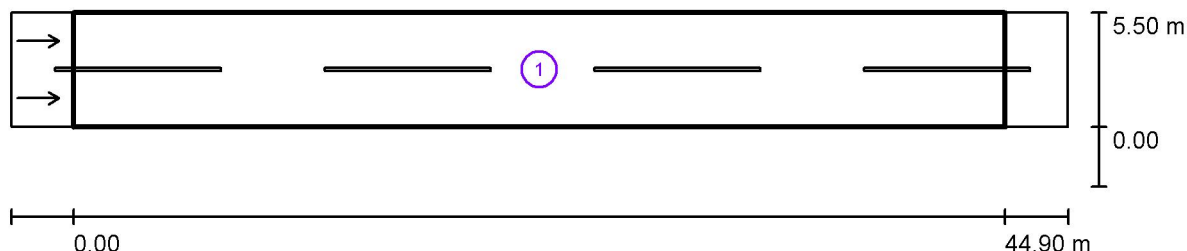
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Brače Radić Put (l=2m, h=1,5m) - ME5 - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:364

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 44.900 m, Width: 5.500 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.52	0.49	0.43	11	0.85
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

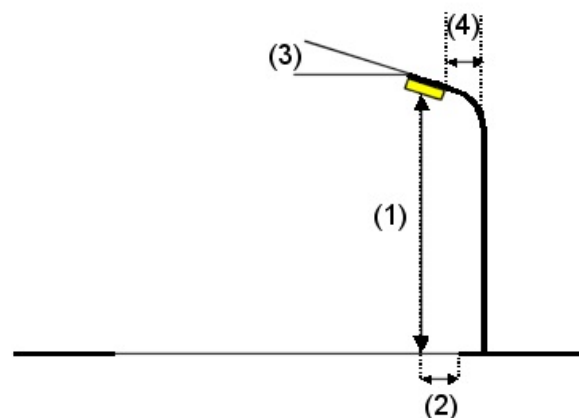
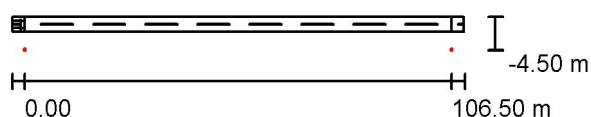
## Tomislavova - ME5 1 dio - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	106.500 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-4.438 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

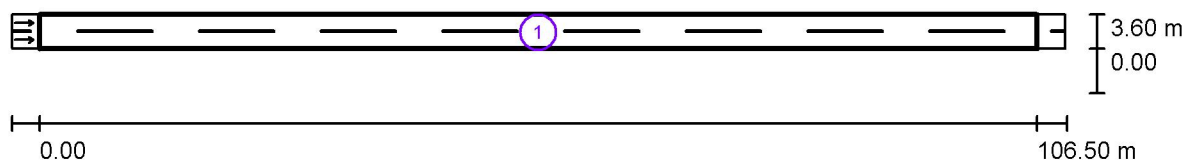
Arrangement complies with glare index class D.6.





Operator  
Telephone  
Fax  
e-Mail

## Tomislavova - ME5 1 dio - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:805

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 106.500 m, Width: 3.600 m  
Grid: 36 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.13	0.04	0.02	19	1.10
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✗	✓



Operator  
Telephone  
Fax  
e-Mail

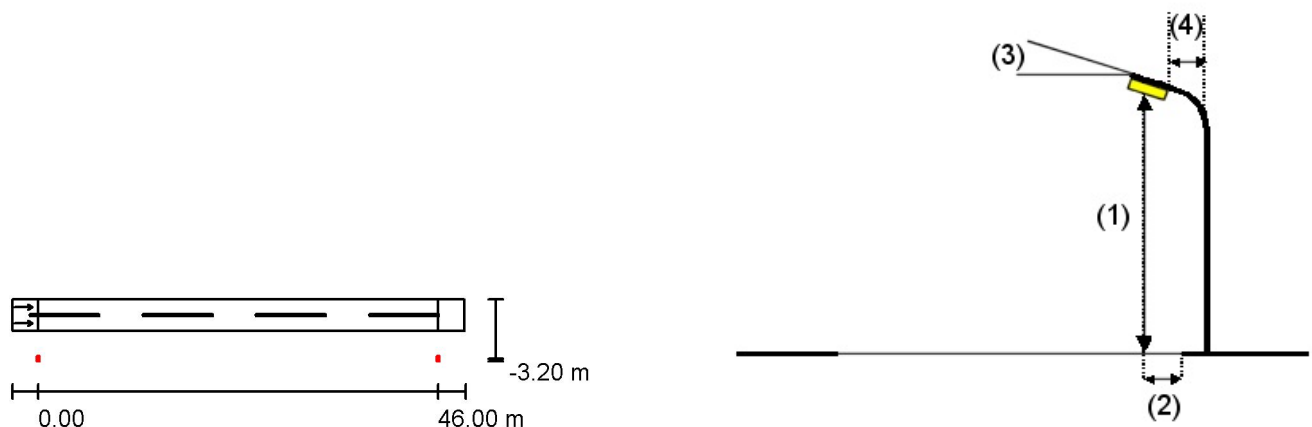
## Tomislavova - ME5 1 dio - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	46.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-3.138 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

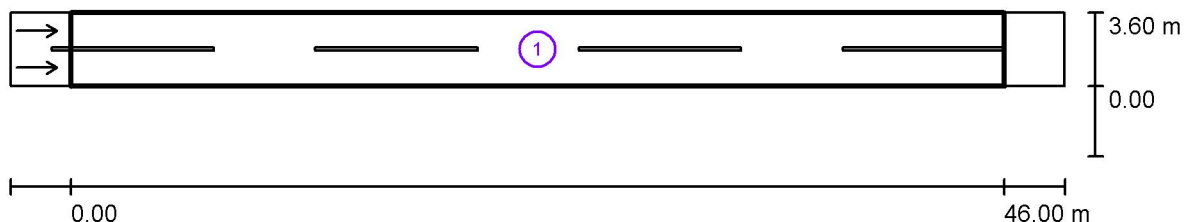
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Tomislavova - ME5 1 dio - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:372

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 46.000 m, Width: 3.600 m  
Grid: 16 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.53	0.38	0.40	9	1.01
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

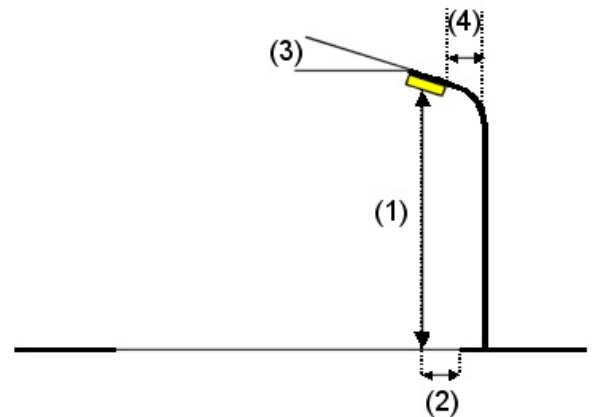
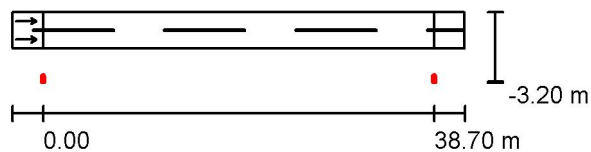
## Tomislavova - ME5 1 dio - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire:	PHILIPS BGP352 T15 1xE58-3S/830 DC
Luminous flux (Luminaire):	5917 lm
Luminous flux (Lamps):	6100 lm
Luminaire Wattage:	58.0 W
Arrangement:	Single row, bottom
Pole Distance:	38.700 m
Mounting Height (1):	8.990 m
Height:	9.000 m
Overhang (2):	-2.772 m
Boom Angle (3):	0.0 °
Boom Length (4):	2.000 m

Maximum luminous intensities

at 70°: 482 cd/klm

at 80°: 14 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

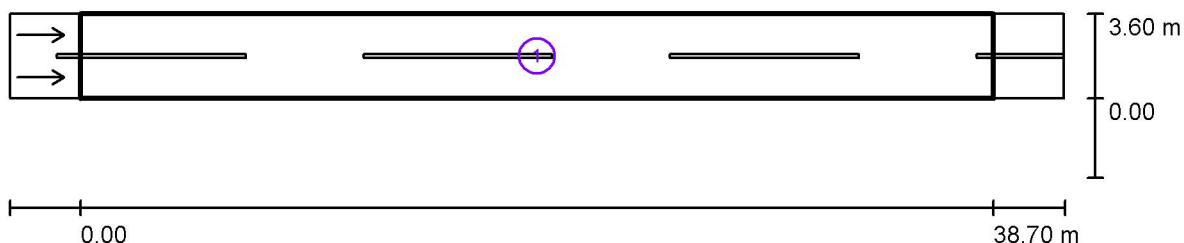
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Tomislavova - ME5 1 dio - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:320

### Calculation Field List

- Valuation Field Roadway 1  
Length: 38.700 m, Width: 3.600 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.54	0.62	0.58	9	0.94
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

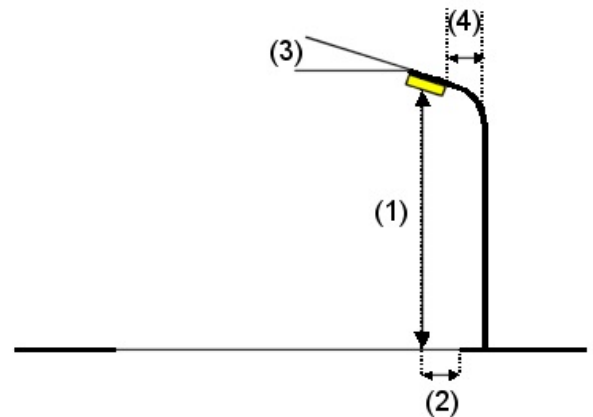
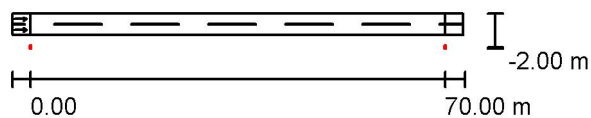
## Tomislavova - ME5 2 dio - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	70.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-1.938 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

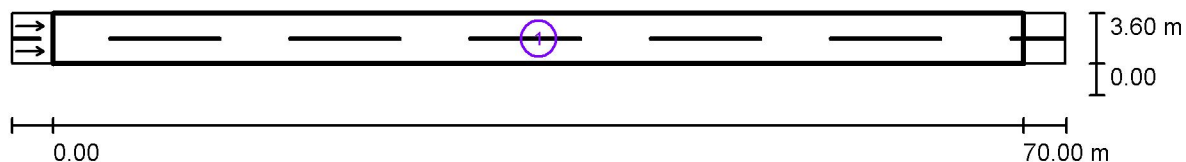
Arrangement complies with glare index class D.6.





Operator  
Telephone  
Fax  
e-Mail

## Tomislavova - ME5 2 dio - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:544

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 70.000 m, Width: 3.600 m  
Grid: 24 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.39	0.16	0.11	15	0.99
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

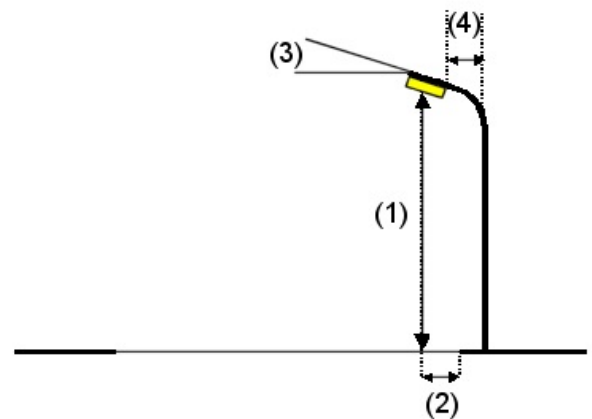
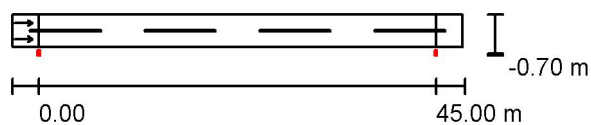
## Tomislavova - ME5 2 dio - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	45.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-0.638 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

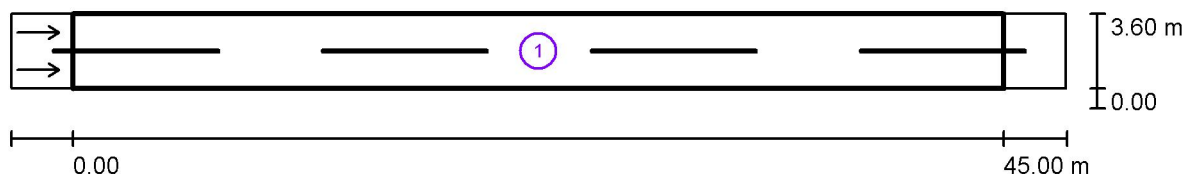
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.



Operator  
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Fax  
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## Tomislavova - ME5 2 dio - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:365

### Calculation Field List

- Valuation Field Roadway 1  
Length: 45.000 m, Width: 3.600 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.91	0.39	0.41	8	0.93
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

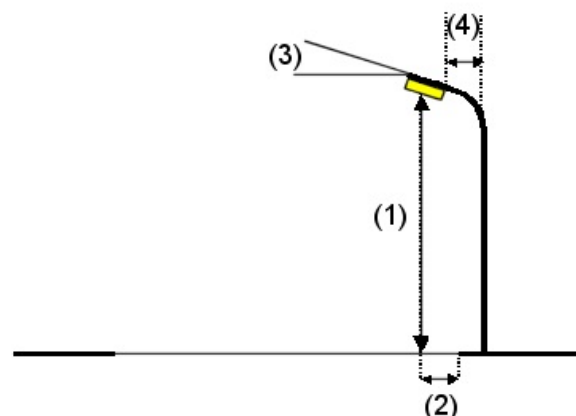
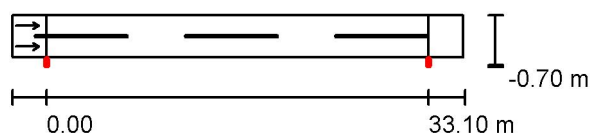
## Tomislavova - ME5 2 dio - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DC  
 Luminous flux (Luminaire): 3528 lm  
 Luminous flux (Lamps): 3600 lm  
 Luminaire Wattage: 37.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 33.100 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -0.272 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

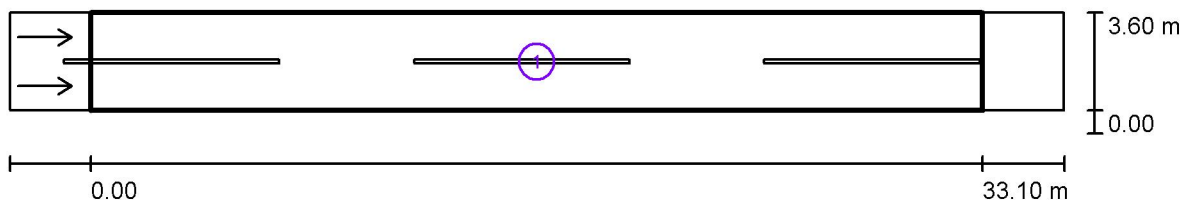
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Tomislavova - ME5 2 dio - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:280

### Calculation Field List

- Valuation Field Roadway 1  
Length: 33.100 m, Width: 3.600 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.50	0.69	0.77	6	0.89
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
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Fax  
e-Mail

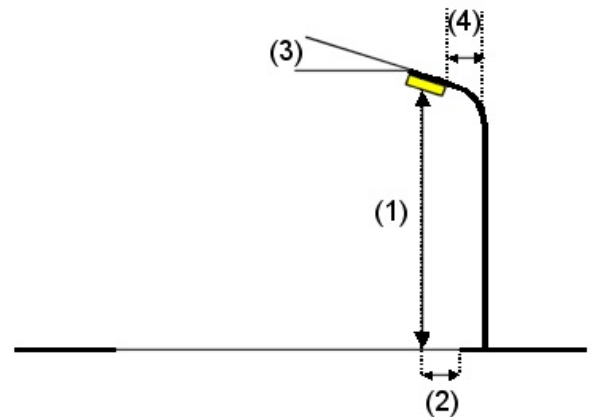
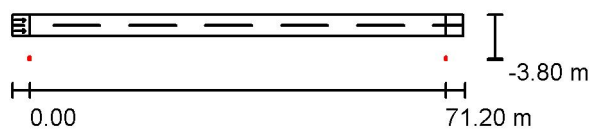
## Josipa Jurja Strossmayera - ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	71.200 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-3.738 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

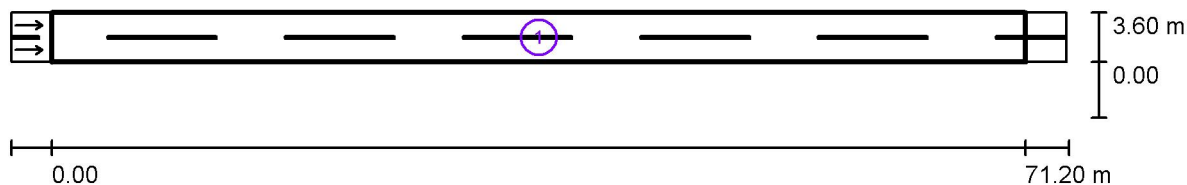
Arrangement complies with glare index class D.6.





Operator  
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## Josipa Jurja Strossmayera - ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:552

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 71.200 m, Width: 3.600 m

Grid: 24 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.24	0.16	0.11	14	1.06
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
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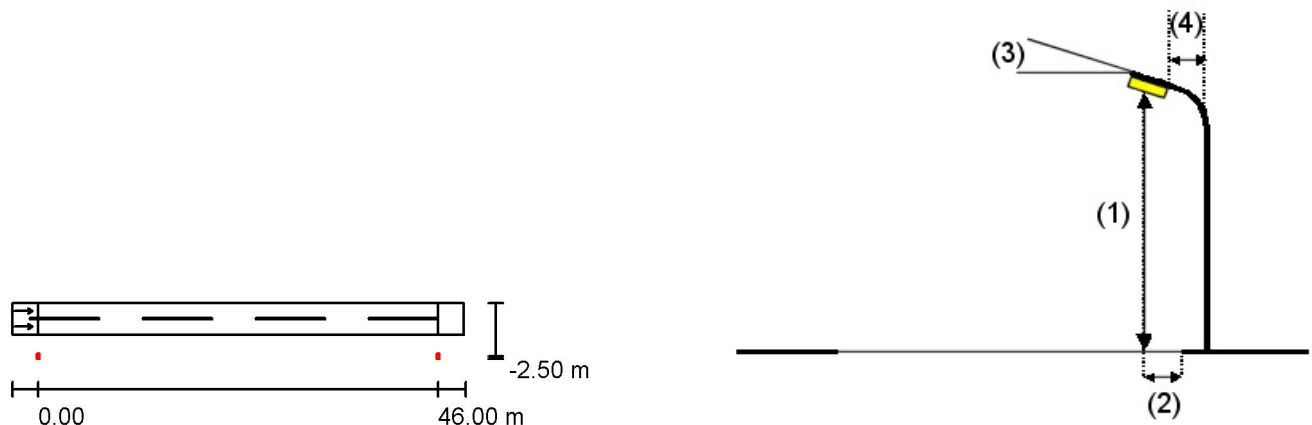
## Josipa Jurja Strossmayera - ME6 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	46.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-2.438 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

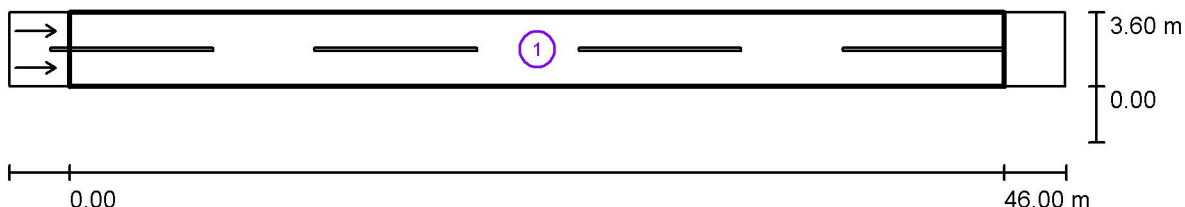
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Josipa Jurja Strossmayera - ME6 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:372

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 46.000 m, Width: 3.600 m  
Grid: 16 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.62	0.37	0.41	10	0.99
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓

Operator  
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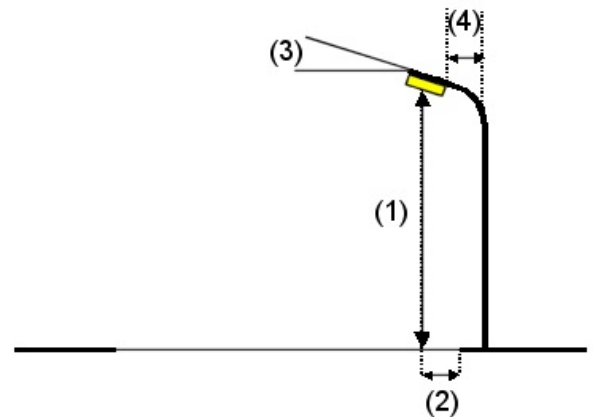
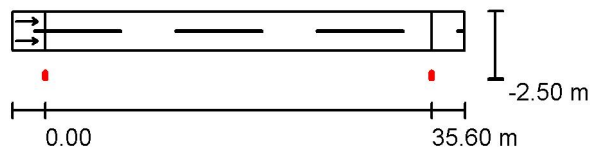
## Josipa Jurja Strossmayera - ME6 - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DC  
 Luminous flux (Luminaire): 3528 lm  
 Luminous flux (Lamps): 3600 lm  
 Luminaire Wattage: 37.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 35.600 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -2.072 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

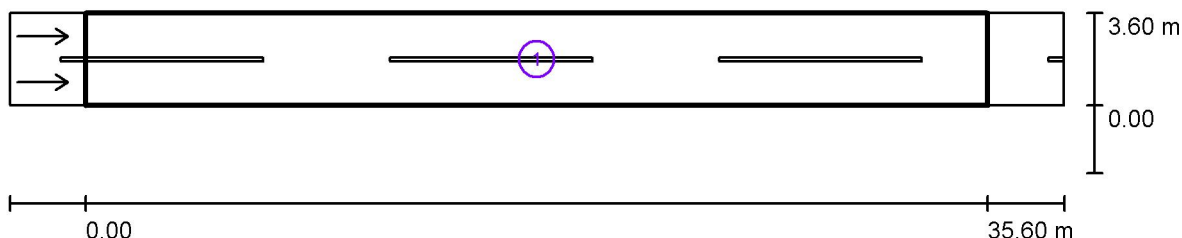
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



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## Josipa Jurja Strossmayera - ME6 - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:298

### Calculation Field List

- Valuation Field Roadway 1  
Length: 35.600 m, Width: 3.600 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.38	0.65	0.69	8	0.94
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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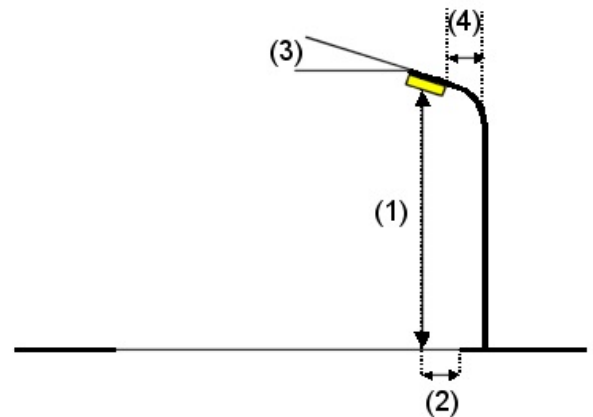
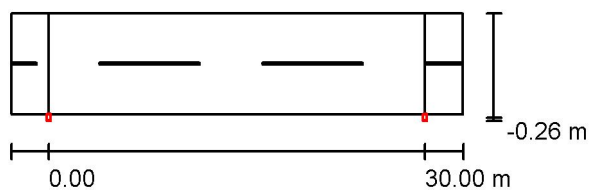
## Tomislavova -prolaz Škola - S3- postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 8.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	30.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-0.200 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

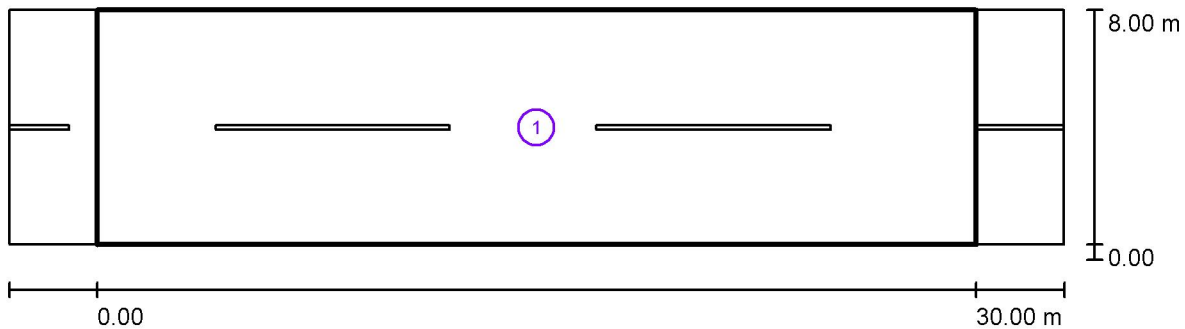
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.



Operator  
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## Tomislavova -prolaz Škola - S3- postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:258

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 30.000 m, Width: 8.000 m

Grid: 10 x 6 Points

Accompanying Street Elements: Roadway 1.

Selected Lighting Class: S3

Additional ES Lighting Class: ES6

(Not all lighting performance requirements are met.)

(Not all lighting performance requirements are met.)

	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{min}$ (semi-cyl.) [lx]
Calculated values:	14.75	4.53	1.30
Required values according to class:	$\geq 7.50$	$\geq 1.50$	$\geq 1.50$
Fulfilled/Not fulfilled:	<span style="color: red;">✗</span> <sup>1</sup>	<span style="color: green;">✓</span>	<span style="color: red;">✗</span>

<sup>1</sup> Notice: To provide for uniformity, the actual value of the maintained average illuminance may not exceed 1.5 times the minimum value indicated for the class.





Operator  
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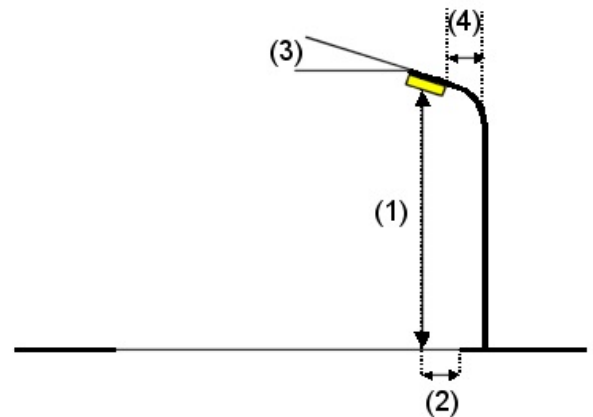
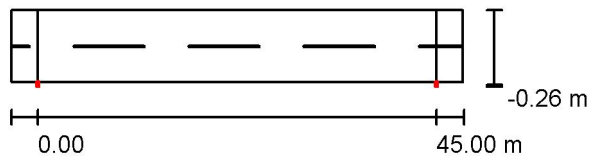
## Tomislavova -prolaz Škola - S3- prema normi / Planning data

### Street Profile

Roadway 1 (Width: 8.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	45.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-0.200 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

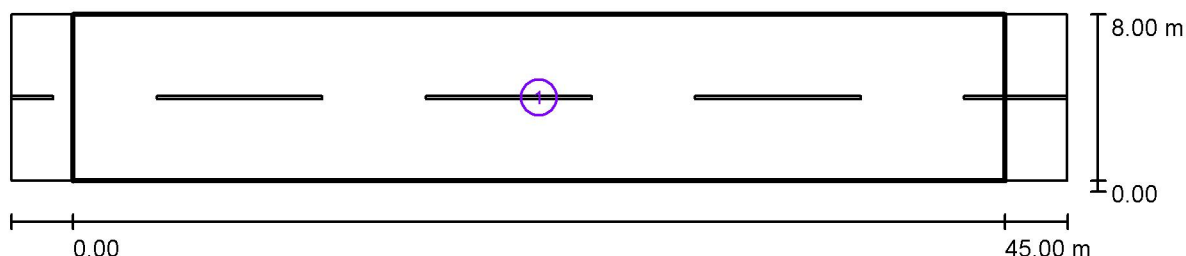
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Tomislavova -prolaz Škola - S3- prema normi / Photometric Results



Maintenance factor: 0.67

Scale 1:365

### Calculation Field List

- Valuation Field Roadway 1  
Length: 45.000 m, Width: 8.000 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
Selected Lighting Class: S3  
Additional ES Lighting Class: ES6

(All lighting performance requirements are met.)  
(Not all lighting performance requirements are met.)

	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{min}$ (semi-cyl.) [lx]
Calculated values:	9.83	1.50	0.37
Required values according to class:	$\geq 7.50$	$\geq 1.50$	$\geq 1.50$
Fulfilled/Not fulfilled:	✓	✓	✗



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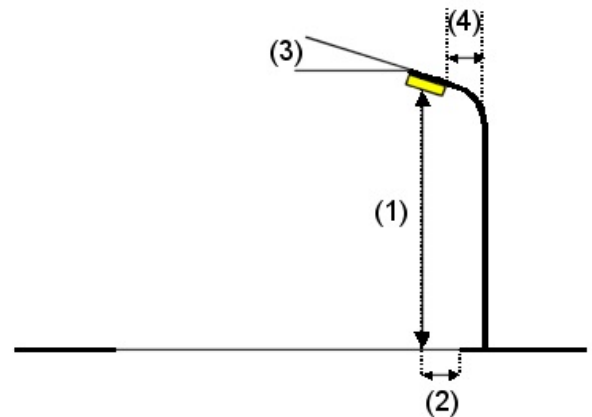
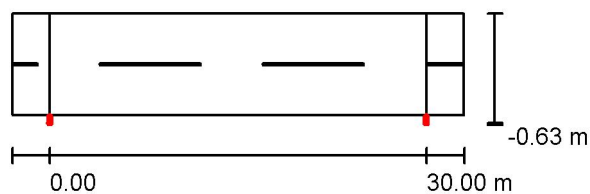
## Tomislavova -prolaz Škola - S3- novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 8.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco46-3S/830 DC  
 Luminous flux (Luminaire): 4802 lm  
 Luminous flux (Lamps): 4900 lm  
 Luminaire Wattage: 48.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 30.000 m  
 Mounting Height (1): 7.990 m  
 Height: 8.000 m  
 Overhang (2): -0.200 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 485 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

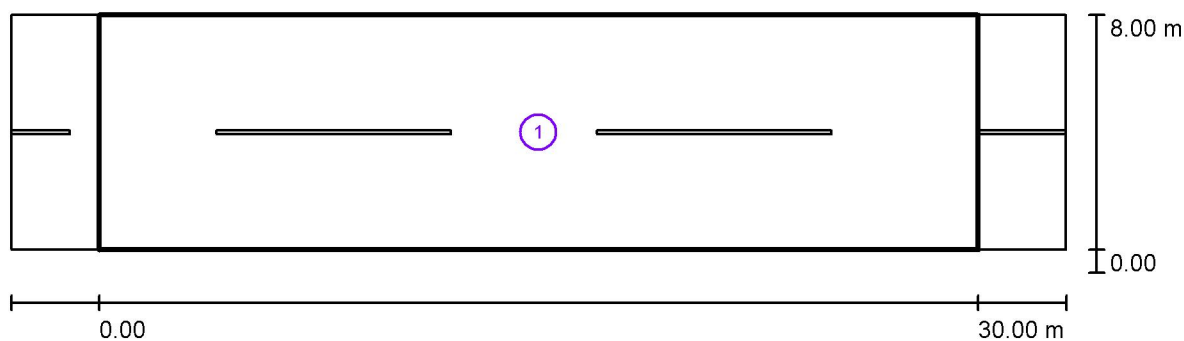
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



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## Tomislavova -prolaz Škola - S3- novo stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:258

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 30.000 m, Width: 8.000 m

Grid: 10 x 6 Points

Accompanying Street Elements: Roadway 1.

Selected Lighting Class: S3

Additional ES Lighting Class: ES6

(All lighting performance requirements are met.)

(Not all lighting performance requirements are met.)

	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{min}$ (semi-cyl.) [lx]
Calculated values:	8.18	4.44	0.28
Required values according to class:	$\geq 7.50$	$\geq 1.50$	$\geq 1.50$
Fulfilled/Not fulfilled:	✓	✓	✗

## **Svjetlotehnički proračuni javne rasvjete**

Građevina:  
Javna rasvjeta

Mjesto gradnje:  
Naselje Strošinci

Razina projekta:  
Energetski pregled

Partner for Contact:  
Order No.:  
Company:  
Customer No.:

Date: 23.11.2015  
Operator:



Operator  
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Fax  
e-Mail

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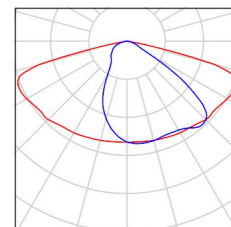




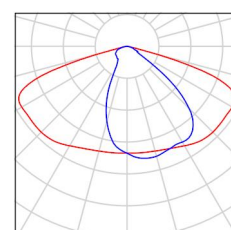
Operator  
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## Svjetlotehnički proračuni javne rasvjete / Luminaire parts list

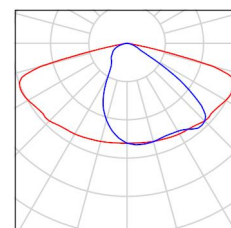
5 Pieces PHILIPS BGP352 T15 1xECO28-3S/740 DW  
Article No.:  
Luminous flux (Luminaire): 2790 lm  
Luminous flux (Lamps): 3000 lm  
Luminaire Wattage: 25.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 39 75 97 100 93  
Fitting: 1 x ECO28-3S/740 (Correction Factor 1.000).



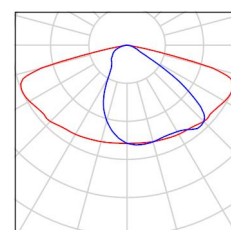
5 Pieces PHILIPS BGP352 T15 1xECO35-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 3528 lm  
Luminous flux (Lamps): 3600 lm  
Luminaire Wattage: 37.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 98  
Fitting: 1 x ECO35-3S/830 (Correction Factor 1.000).



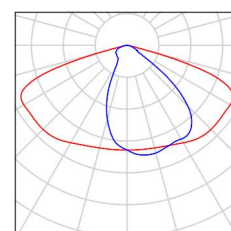
4 Pieces PHILIPS BGP352 T15 1xECO35-3S/830 DW  
Article No.:  
Luminous flux (Luminaire): 3312 lm  
Luminous flux (Lamps): 3600 lm  
Luminaire Wattage: 37.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 39 75 97 100 92  
Fitting: 1 x ECO35-3S/830 (Correction Factor 1.000).



4 Pieces PHILIPS BGP352 T15 1xECO58-3S/830 DW  
Article No.:  
Luminous flux (Luminaire): 5551 lm  
Luminous flux (Lamps): 6100 lm  
Luminaire Wattage: 58.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 39 75 97 100 90  
Fitting: 1 x ECO58-3S/830 (Correction Factor 1.000).



4 Pieces PHILIPS BGP352 T15 1xECO70-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 7008 lm  
Luminous flux (Lamps): 7300 lm  
Luminaire Wattage: 71.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 96  
Fitting: 1 x ECO70-3S/830 (Correction Factor 1.000).

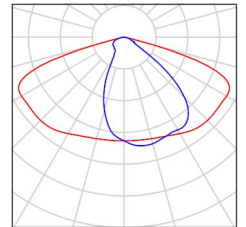




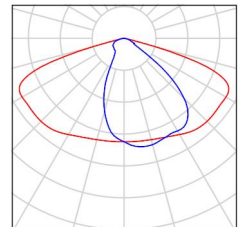
Operator  
Telephone  
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## Svjetlotehnički proračuni javne rasvjete / Luminaire parts list

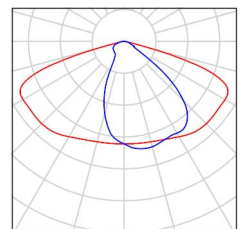
5 Pieces PHILIPS BGP352 T15 1xECO81-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 8256 lm  
Luminous flux (Lamps): 8600 lm  
Luminaire Wattage: 80.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 96  
Fitting: 1 x ECO81-3S/830 (Correction Factor 1.000).



5 Pieces PHILIPS BGP353 T15 1xECO116-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 11590 lm  
Luminous flux (Lamps): 12200 lm  
Luminaire Wattage: 113.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 95  
Fitting: 1 x ECO116-3S/830 (Correction Factor 1.000).

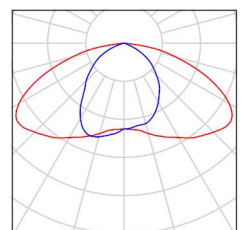


5 Pieces PHILIPS BGP353 T15 1xECO128-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 12690 lm  
Luminous flux (Lamps): 13500 lm  
Luminaire Wattage: 126.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 94  
Fitting: 1 x ECO128-3S/830 (Correction Factor 1.000).



73 Pieces tep LVC 06 150 E GAMALUX  
Article No.: LVC 06 150 E  
Luminous flux (Luminaire): 11997 lm  
Luminous flux (Lamps): 14000 lm  
Luminaire Wattage: 170.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 46 79 97 100 86  
Fitting: 1 x NAV-E (Correction Factor 1.000).

See our luminaire  
catalog for an image of  
the luminaire.





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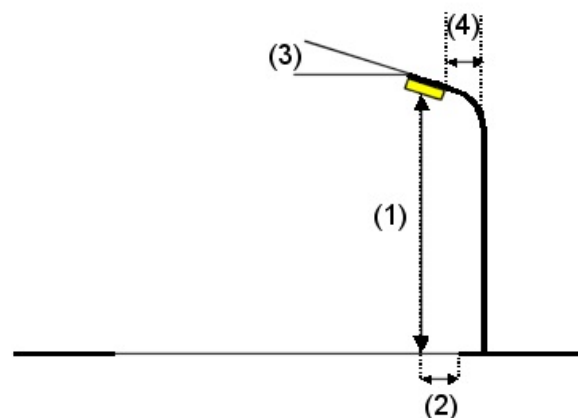
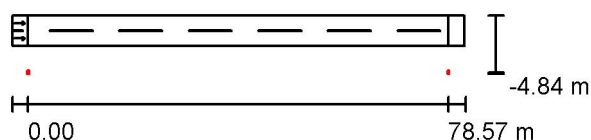
## Maroša Trconića - ME4b - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.700 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	78.570 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-4.778 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

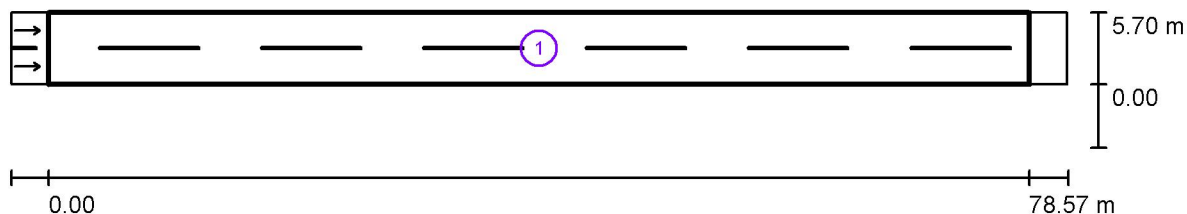
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Maroša Trconića - ME4b - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:605

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 78.570 m, Width: 5.700 m

Grid: 27 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME4b

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.14	0.15	0.08	15	1.29
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
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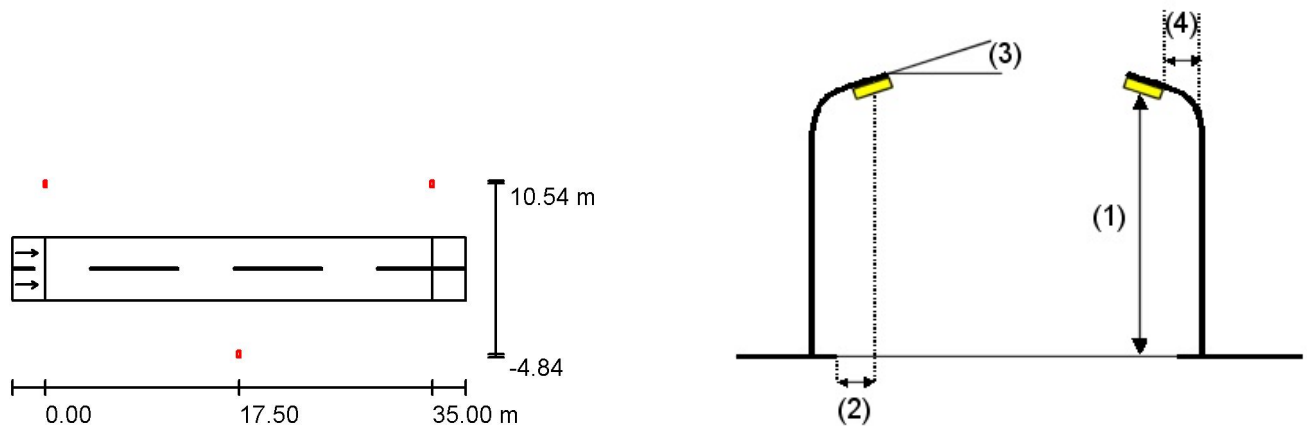
## Maroša Trconića - ME4b - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.700 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	35.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-4.778 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

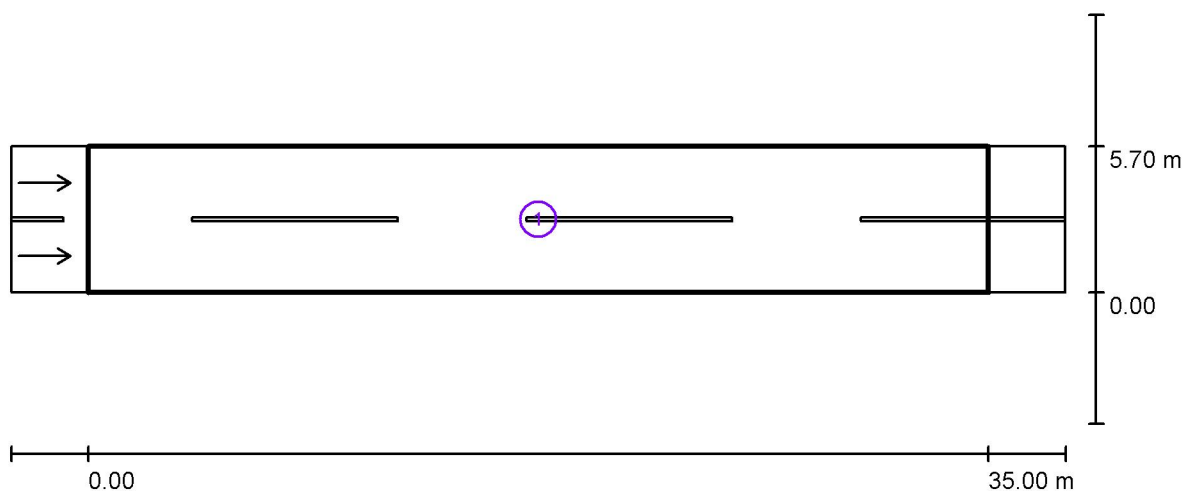
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Maroša Trconića - ME4b - l=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:294

### Calculation Field List

- Valuation Field Roadway 1  
Length: 35.000 m, Width: 5.700 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.77	0.79	0.73	8	1.29
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
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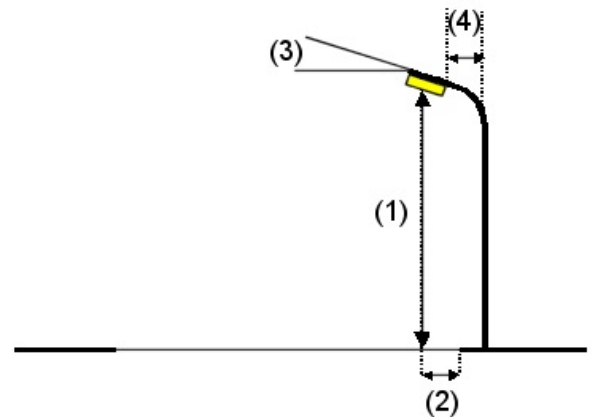
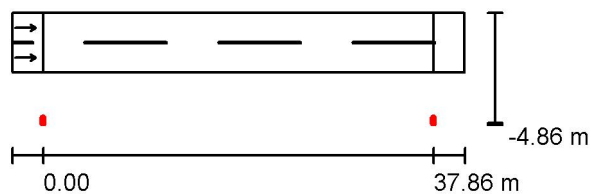
## Maroša Trconića - ME4b - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.700 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP353 T15 1xEco116-3S/830 DC  
 Luminous flux (Luminaire): 11590 lm  
 Luminous flux (Lamps): 12200 lm  
 Luminaire Wattage: 113.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 37.860 m  
 Mounting Height (1): 7.990 m  
 Height: 8.046 m  
 Overhang (2): -4.412 m  
 Boom Angle (3): 10.0 °  
 Boom Length (4): 0.700 m

#### Maximum luminous intensities

at 70°: 560 cd/klm  
 at 80°: 81 cd/klm  
 at 90°: 5.91 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

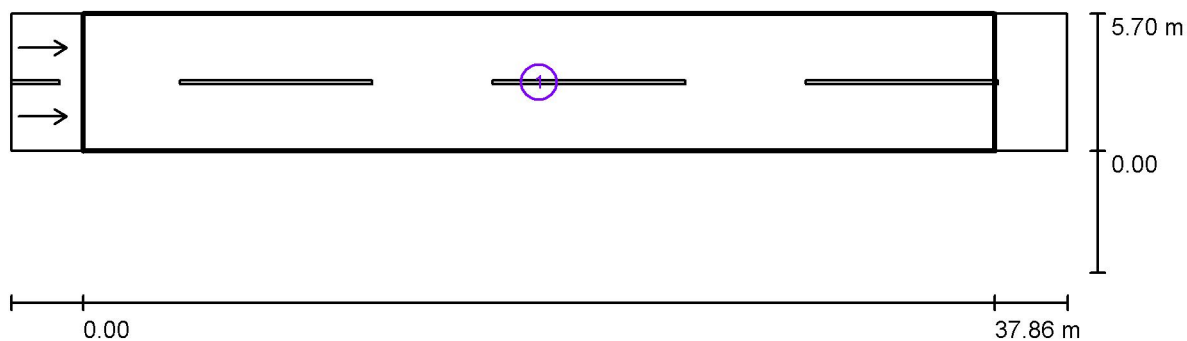
Arrangement complies with luminous intensity class G3.  
 Arrangement complies with glare index class D.6.





Operator  
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Fax  
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## Maroša Trconića - ME4b - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:314

### Calculation Field List

- Valuation Field Roadway 1  
Length: 37.860 m, Width: 5.700 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.76	0.54	0.72	15	0.97
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

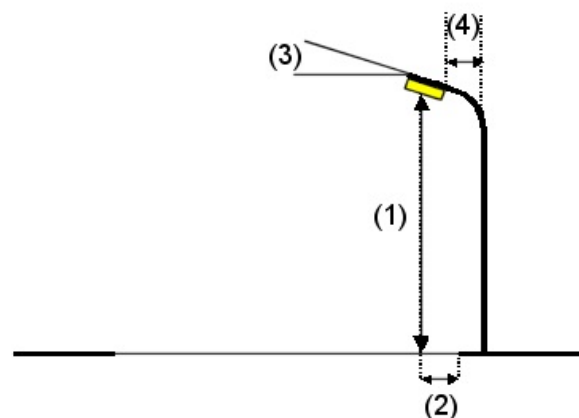
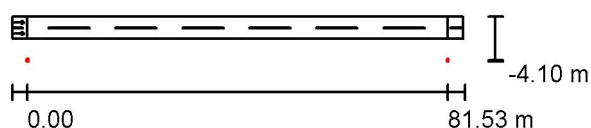
## Vladimira Nazora- nastavak na M. Gupca - ME4b - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 81.530 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -4.038 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

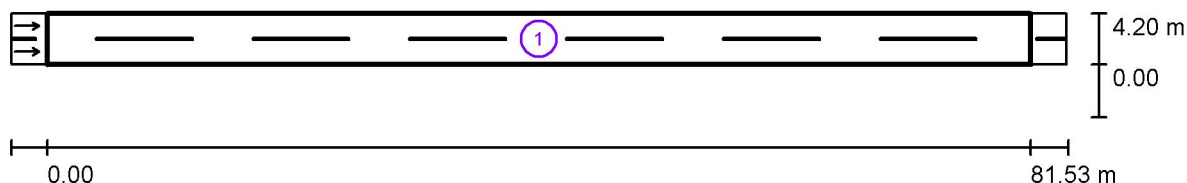
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Vladimira Nazora- nastavak na M. Gupca - ME4b - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:626

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 81.530 m, Width: 4.200 m  
Grid: 28 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.18	0.13	0.08	16	1.11
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✗	✓



Operator  
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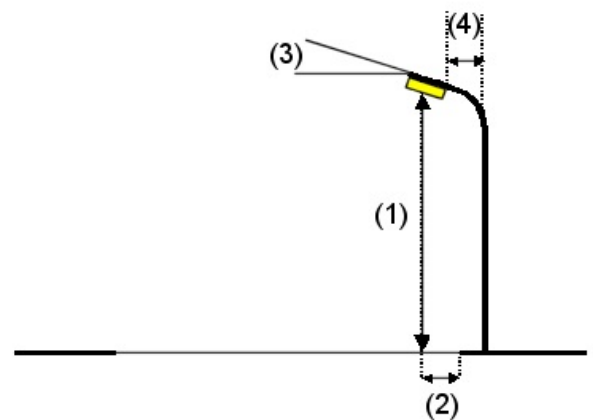
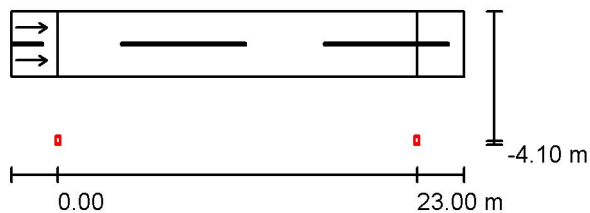
## Vladimira Nazora- nastavak na M. Gupca - ME4b - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	23.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-4.038 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

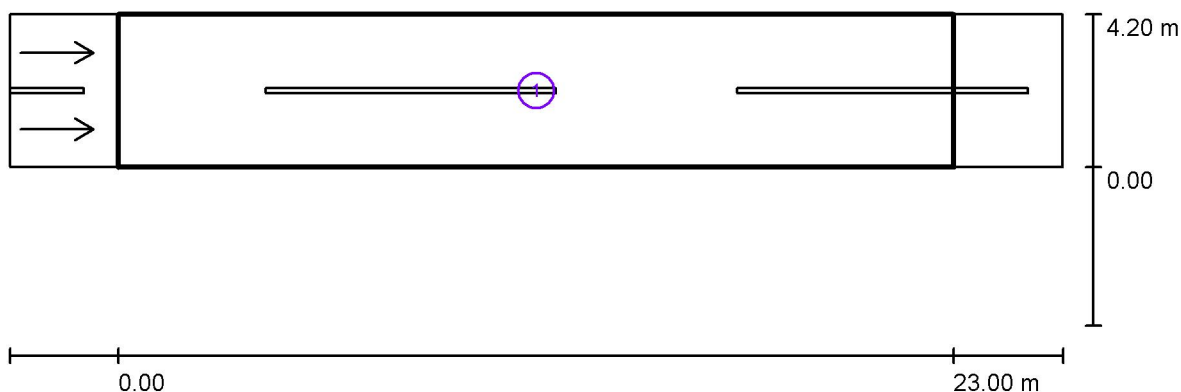
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Vladimira Nazora- nastavak na M. Gupca - ME4b - I=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:208

### Calculation Field List

- Valuation Field Roadway 1  
Length: 23.000 m, Width: 4.200 m  
Grid: 10 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.77	0.54	0.86	9	1.11
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
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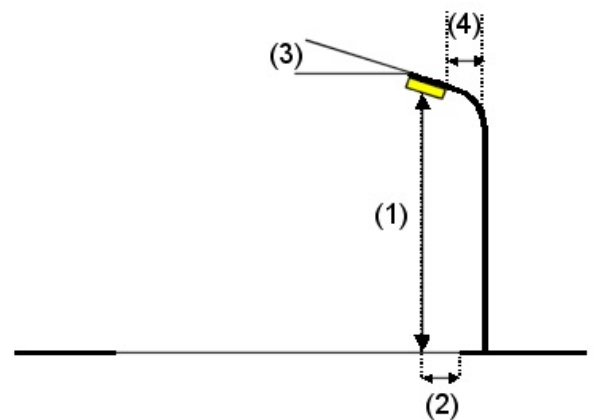
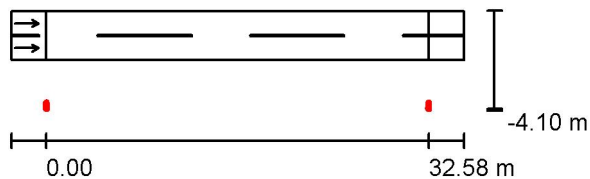
## Vladimira Nazora- nastavak na M. Gupca - ME4b - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire:	PHILIPS BGP352 T15 1xE081-3S/830 DC
Luminous flux (Luminaire):	8256 lm
Luminous flux (Lamps):	8600 lm
Luminaire Wattage:	80.0 W
Arrangement:	Single row, bottom
Pole Distance:	32.580 m
Mounting Height (1):	7.916 m
Height:	8.000 m
Overhang (2):	-3.681 m
Boom Angle (3):	10.0 °
Boom Length (4):	0.700 m

Maximum luminous intensities  
at 70°: 564 cd/klm  
at 80°: 82 cd/klm  
at 90°: 5.95 cd/klm

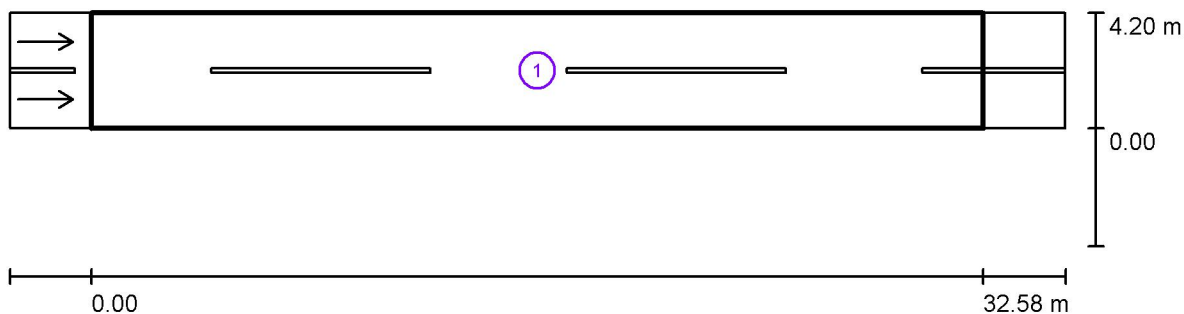
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G3.  
Arrangement complies with glare index class D.6.



Operator  
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## Vladimira Nazora- nastavak na M. Gupca - ME4b - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:276

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 32.580 m, Width: 4.200 m  
Grid: 11 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.76	0.65	0.76	12	0.97
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
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Fax  
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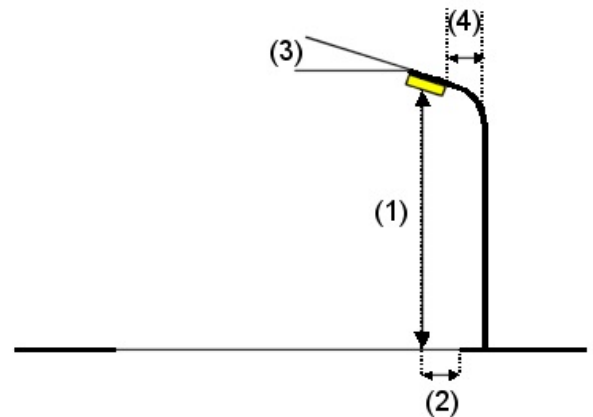
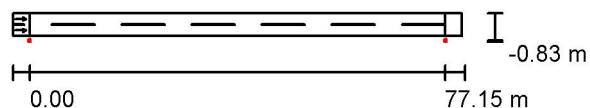
## Vladimira Nazora- nastavak na B. Radića - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	77.150 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-0.768 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

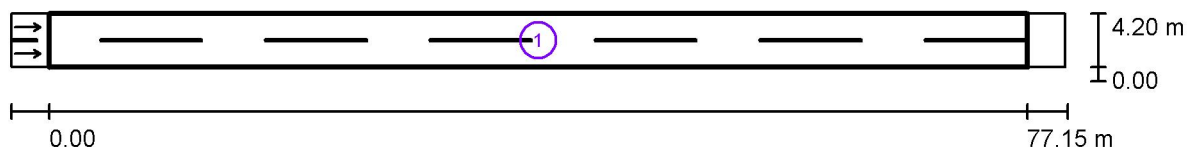
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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e-Mail

## Vladimira Nazora- nastavak na B. Radića - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:595

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 77.150 m, Width: 4.200 m

Grid: 26 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.44	0.11	0.07	15	0.92
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



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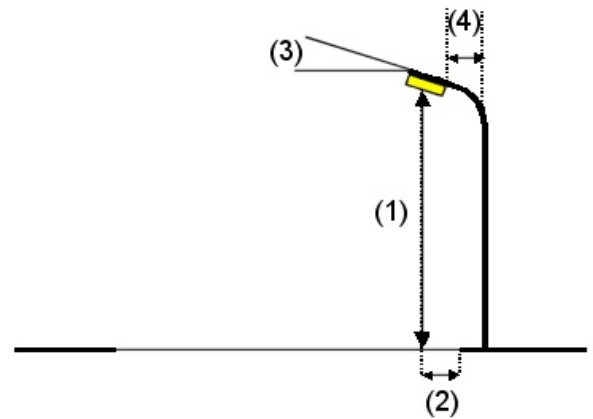
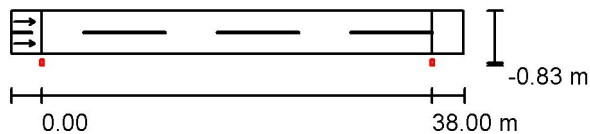
## Vladimira Nazora- nastavak na B. Radića - ME5 - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	38.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-0.768 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

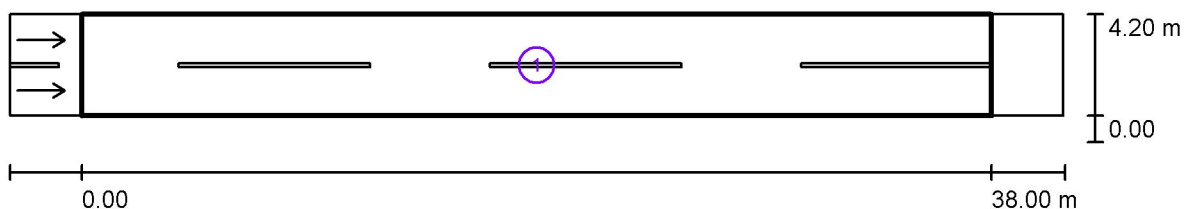
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Vladimira Nazora- nastavak na B. Radića - ME5 - l=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:315

### Calculation Field List

- Valuation Field Roadway 1  
Length: 38.000 m, Width: 4.200 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.05	0.36	0.46	9	0.92
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

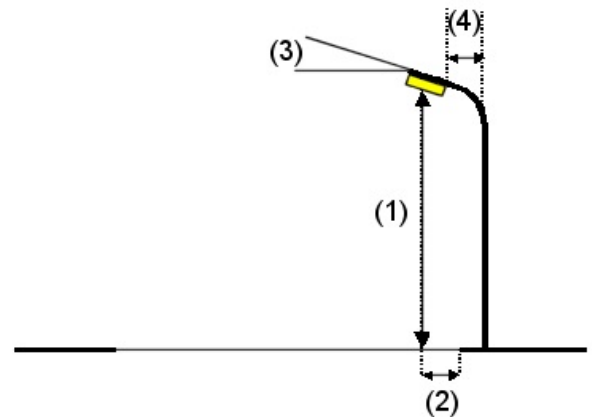
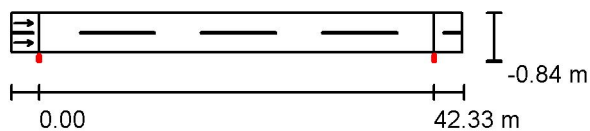
## Vladimira Nazora- nastavak na B. Radića - ME5 - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire:	PHILIPS BGP352 T15 1xEco58-3S/830 DW
Luminous flux (Luminaire):	5551 lm
Luminous flux (Lamps):	6100 lm
Luminaire Wattage:	58.0 W
Arrangement:	Single row, bottom
Pole Distance:	42.330 m
Mounting Height (1):	7.916 m
Height:	7.926 m
Overhang (2):	-0.411 m
Boom Angle (3):	0.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	632 cd/klm
at 80°:	36 cd/klm
at 90°:	0.00 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

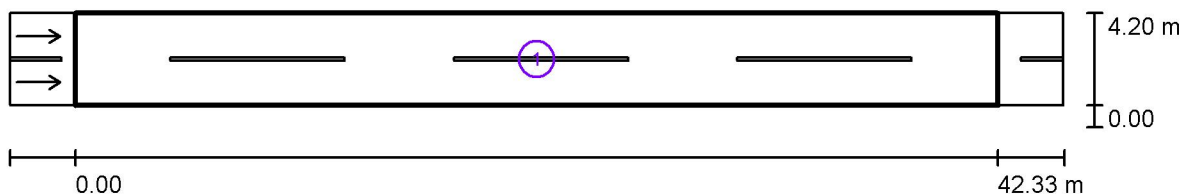
Arrangement complies with luminous intensity class G3.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Vladimira Nazora- nastavak na B. Radića - ME5 - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:346

### Calculation Field List

- Valuation Field Roadway 1  
Length: 42.330 m, Width: 4.200 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.58	0.48	0.46	12	0.90
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

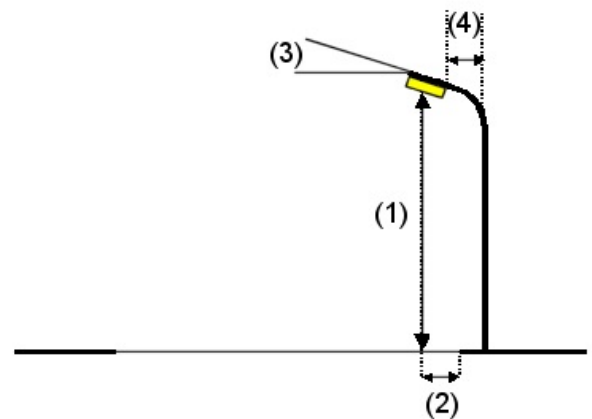
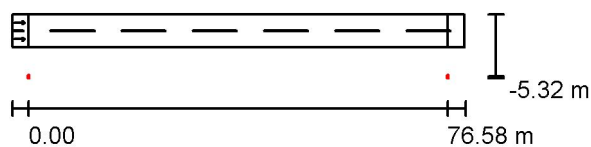
## Matije Gupca - ME4b - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	76.580 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-5.258 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

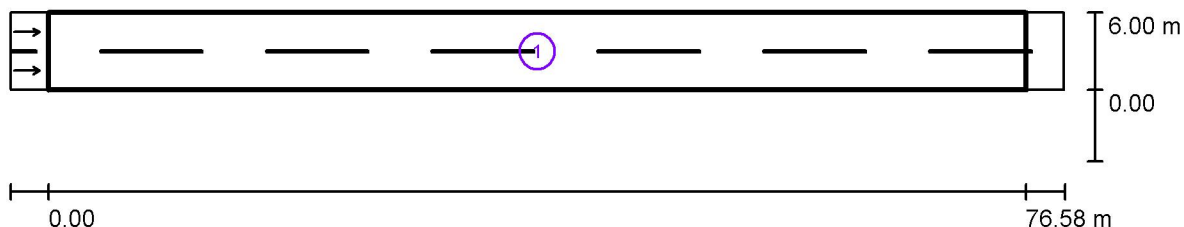
Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.





Operator  
Telephone  
Fax  
e-Mail

## Matije Gupca - ME4b - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:591

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 76.580 m, Width: 6.000 m  
Grid: 26 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.12	0.17	0.10	15	1.36
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

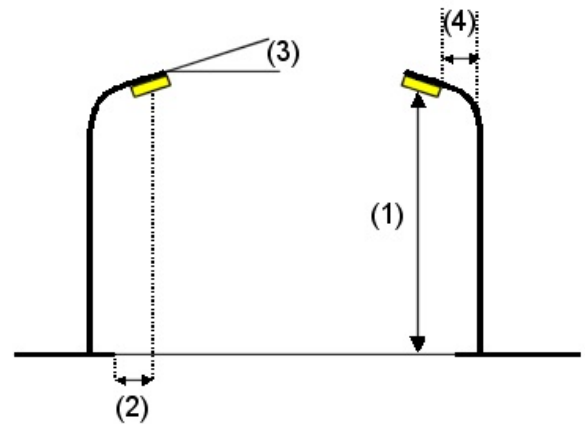
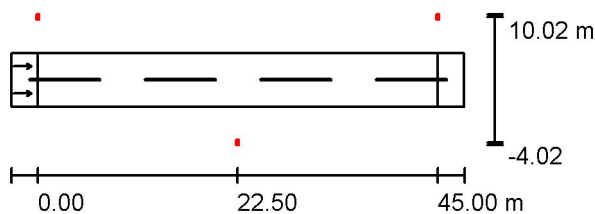
## Matije Gupca - ME4b - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX  
Luminous flux (Luminaire): 11997 lm  
Luminous flux (Lamps): 14000 lm  
Luminaire Wattage: 170.0 W  
Arrangement: Double row, with offset  
Pole Distance: 45.000 m  
Mounting Height (1): 9.232 m  
Height: 9.000 m  
Overhang (2): -3.958 m  
Boom Angle (3): 15.0 °  
Boom Length (4): 2.000 m

#### Maximum luminous intensities

at 70°: 216 cd/klm  
at 80°: 91 cd/klm  
at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

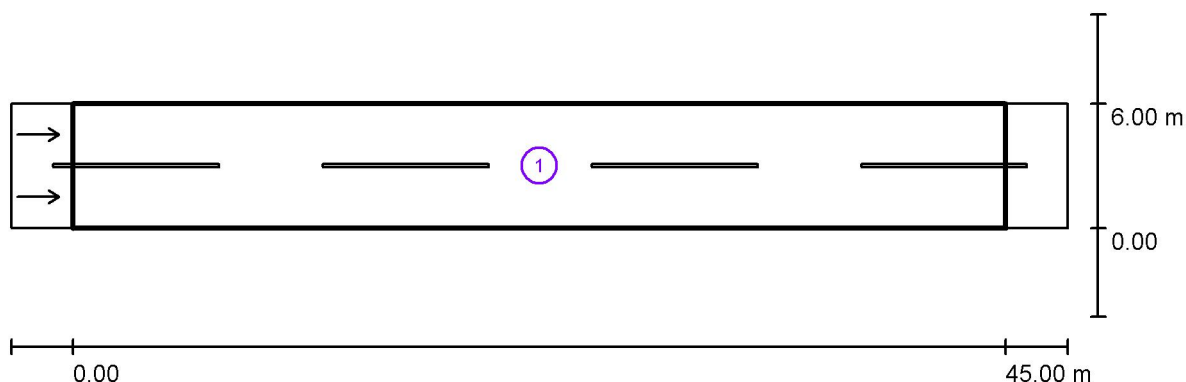
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Matije Gupca - ME4b - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:365

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 45.000 m, Width: 6.000 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.75	0.76	0.68	7	1.16
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

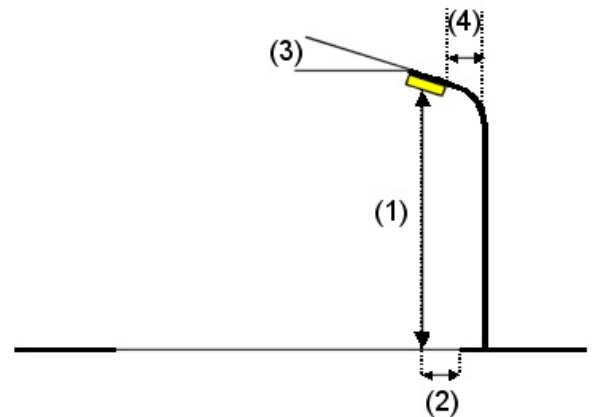
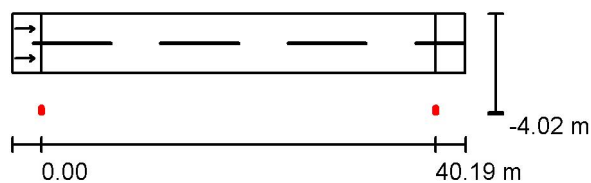
## Matije Gupca - ME4b - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP353 T15 1xEco128-3S/830 DC  
 Luminous flux (Luminaire): 12690 lm  
 Luminous flux (Lamps): 13500 lm  
 Luminaire Wattage: 126.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 40.190 m  
 Mounting Height (1): 9.000 m  
 Height: 8.976 m  
 Overhang (2): -3.565 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 468 cd/klm

at 80°: 14 cd/klm

at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

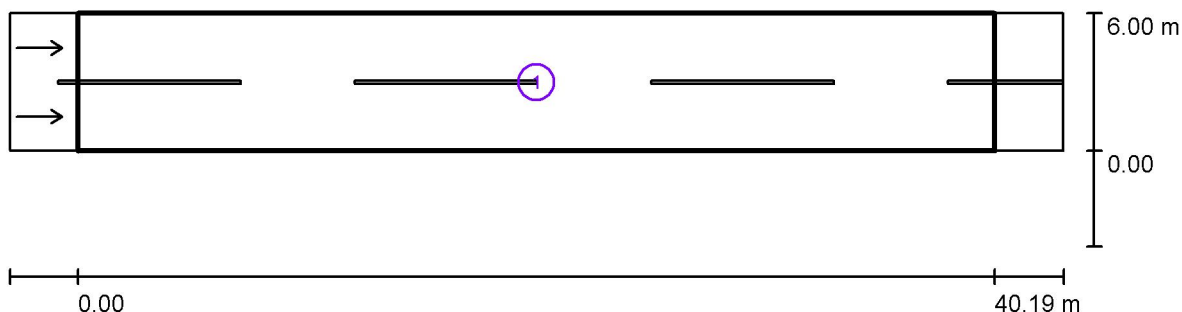
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
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e-Mail

## Matije Gupca - ME4b - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:331

### Calculation Field List

- Valuation Field Roadway 1  
Length: 40.190 m, Width: 6.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.83	0.43	0.59	13	0.86
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

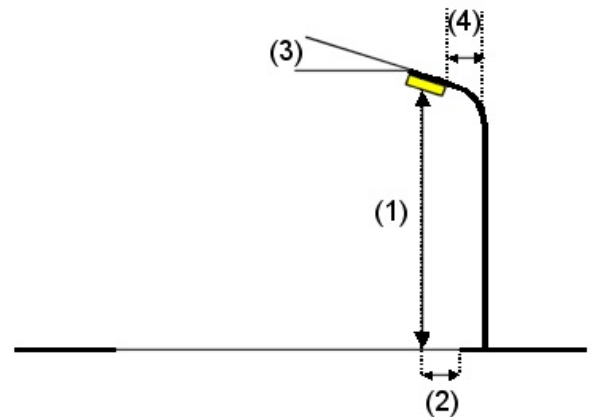
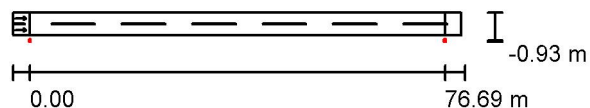
## Braće Radić - ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	76.690 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-0.868 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

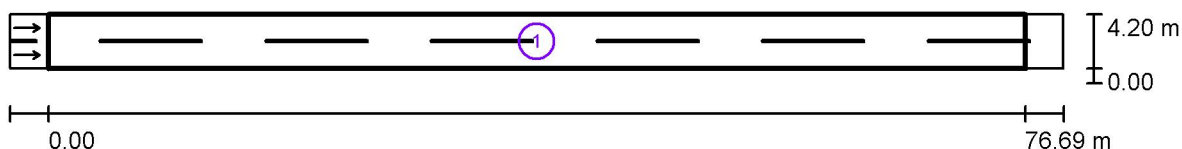
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Braće Radić - ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:592

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 76.690 m, Width: 4.200 m

Grid: 26 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.43	0.11	0.07	15	0.92
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✗	✗	✓	✓





Operator  
Telephone  
Fax  
e-Mail

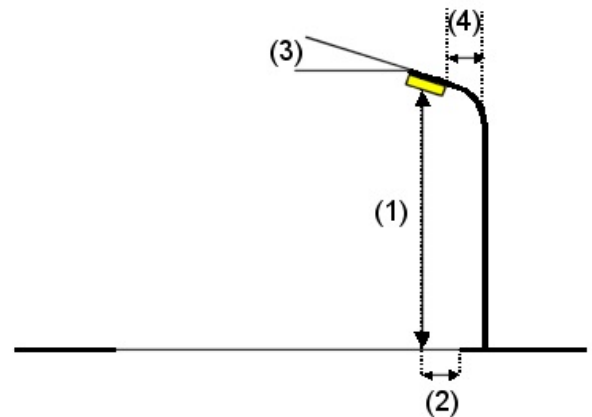
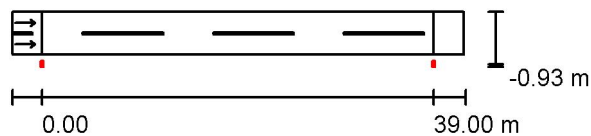
## Braće Radić - ME6 - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	39.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-0.868 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

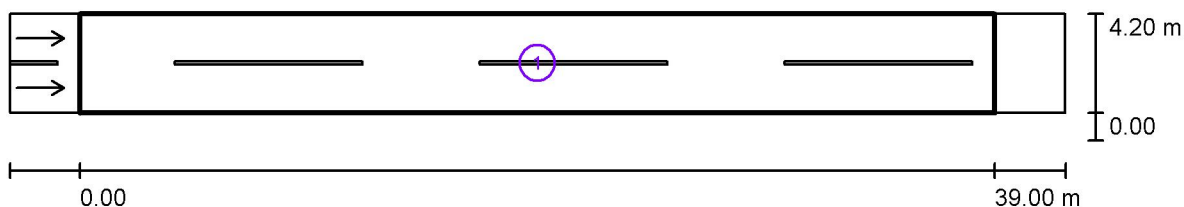
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Braće Radić - ME6 - l=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:322

### Calculation Field List

- Valuation Field Roadway 1  
Length: 39.000 m, Width: 4.200 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.00	0.35	0.43	10	0.92
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

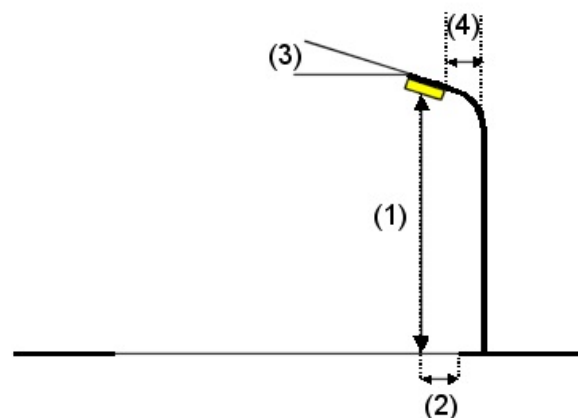
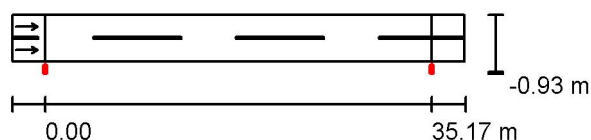
## Braće Radić - ME6 - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco28-3S/740 DW  
 Luminous flux (Luminaire): 2790 lm  
 Luminous flux (Lamps): 3000 lm  
 Luminaire Wattage: 25.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 35.170 m  
 Mounting Height (1): 7.916 m  
 Height: 8.000 m  
 Overhang (2): -0.511 m  
 Boom Angle (3): 10.0 °  
 Boom Length (4): 0.700 m

#### Maximum luminous intensities

at 70°: 652 cd/klm  
 at 80°: 154 cd/klm  
 at 90°: 6.60 cd/klm

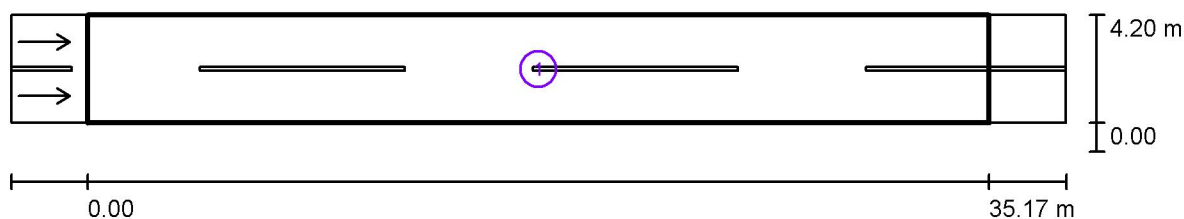
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G1.  
 Arrangement complies with glare index class D.6.



Operator  
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## Braće Radić - ME6 - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:295

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 35.170 m, Width: 4.200 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.32	0.61	0.79	8	0.82
Required values according to class:	≥ 0.30	≥ 0.35	≥ 0.40	≤ 15	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
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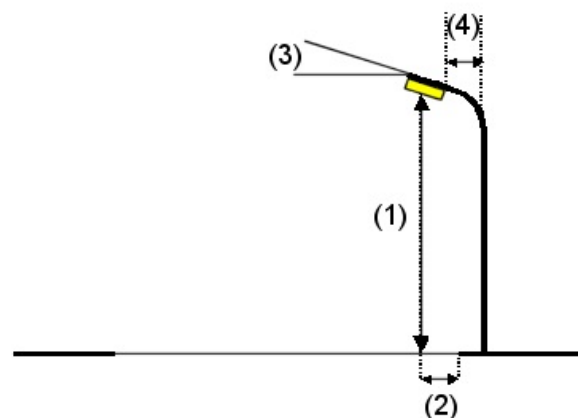
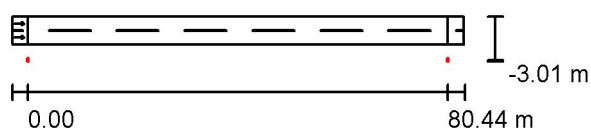
## Paštanska- okomito na V. Nazora - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	80.440 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.948 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

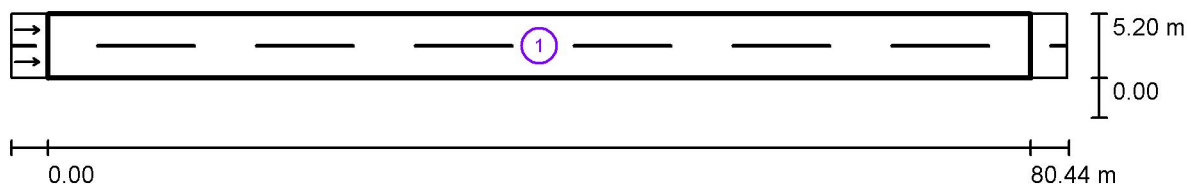
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Paštanska- okomito na V. Nazora - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:618

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 80.440 m, Width: 5.200 m

Grid: 27 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.22	0.11	0.08	16	1.10
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	<span style="color: red;">✗</span>	<span style="color: red;">✗</span>	<span style="color: red;">✗</span>	<span style="color: red;">✗</span>	<span style="color: green;">✓</span>



Operator  
Telephone  
Fax  
e-Mail

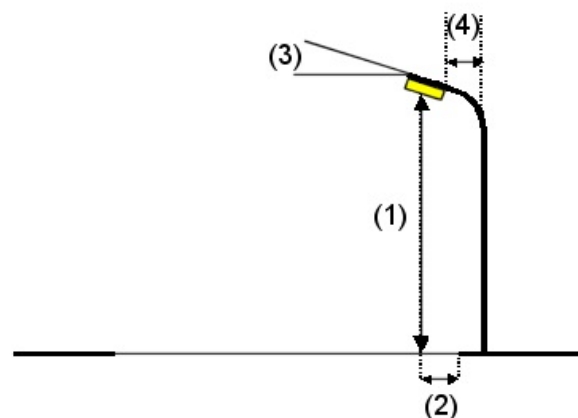
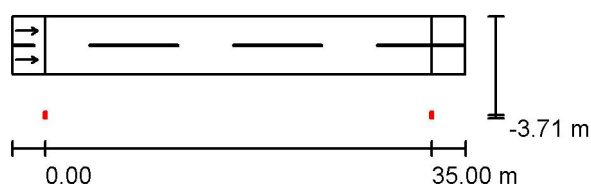
## Paštanska- okomito na V. Nazora - ME5 - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	35.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-3.648 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.

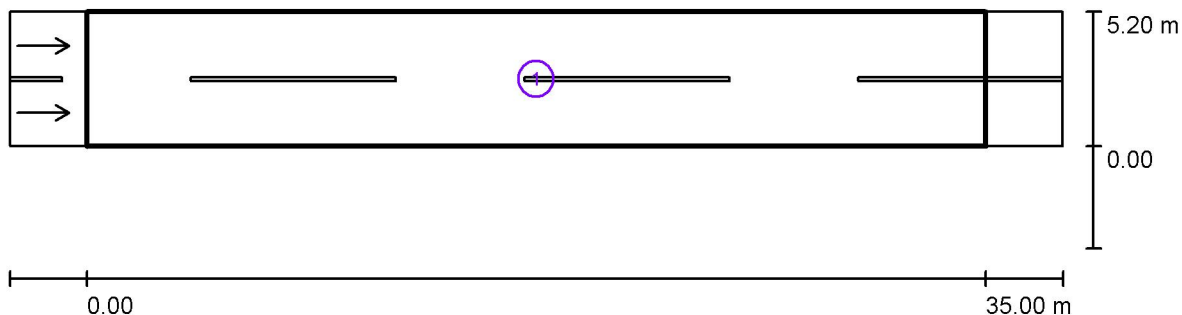
Arrangement complies with glare index class D.6.





Operator  
Telephone  
Fax  
e-Mail

## Paštanska- okomito na V. Nazora - ME5 - l=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:294

### Calculation Field List

- Valuation Field Roadway 1  
Length: 35.000 m, Width: 5.200 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.51	0.40	0.55	10	1.15
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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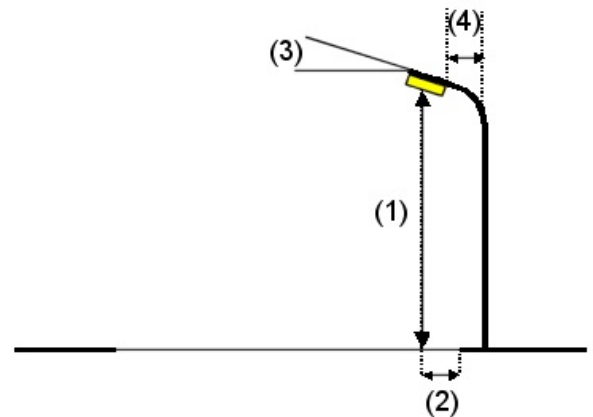
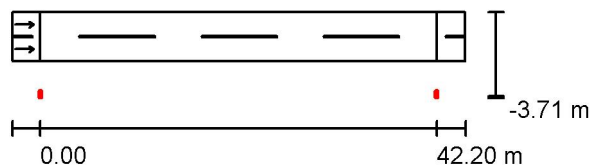
## Paštanska- okomito na V. Nazora - ME5 - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco70-3S/830 DC  
 Luminous flux (Luminaire): 7008 lm  
 Luminous flux (Lamps): 7300 lm  
 Luminaire Wattage: 71.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 42.200 m  
 Mounting Height (1): 7.953 m  
 Height: 8.000 m  
 Overhang (2): -3.285 m  
 Boom Angle (3): 5.0 °  
 Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 524 cd/klm

at 80°: 34 cd/klm

at 90°: 1.25 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

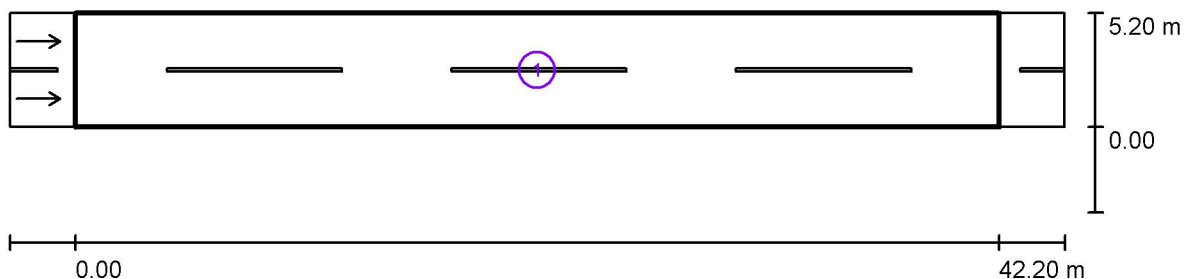
Arrangement complies with luminous intensity class G3.

Arrangement complies with glare index class D.6.



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## Paštanska- okomito na V. Nazora - ME5 - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:345

### Calculation Field List

- Valuation Field Roadway 1  
Length: 42.200 m, Width: 5.200 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.50	0.52	0.48	14	0.91
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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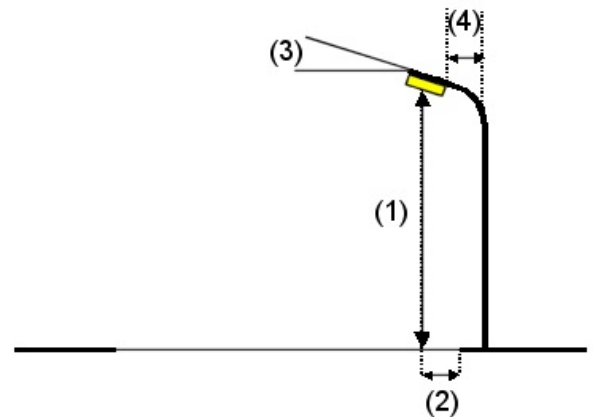
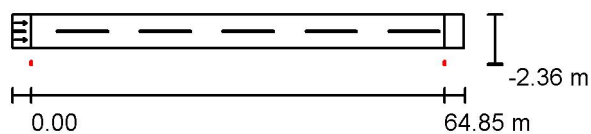
## Paštanska- paralelno na V. Nazora - ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	64.850 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.298 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

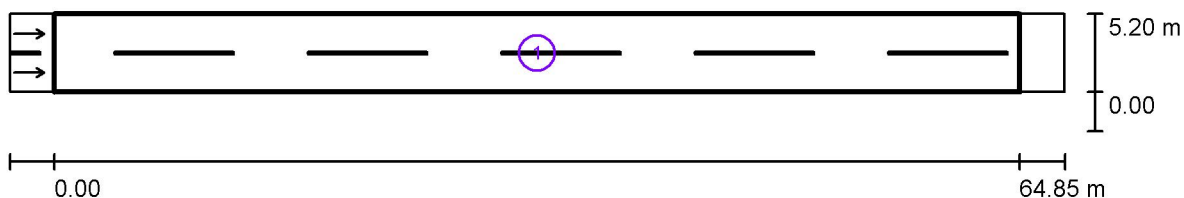
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Paštanska- paralelno na V. Nazora - ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:507

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 64.850 m, Width: 5.200 m  
Grid: 22 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.32	0.15	0.14	14	1.04
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✗	✗	✓	✓



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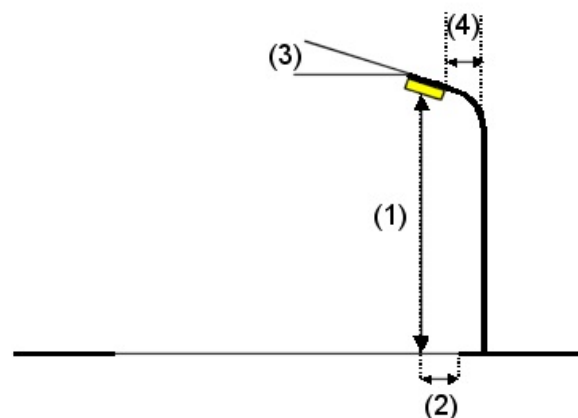
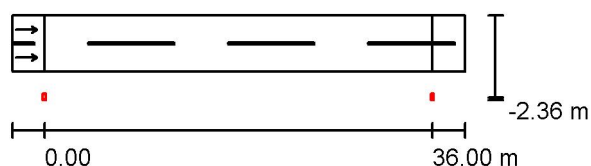
## Paštanska- paralelno na V. Nazora - ME6 - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	36.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.298 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

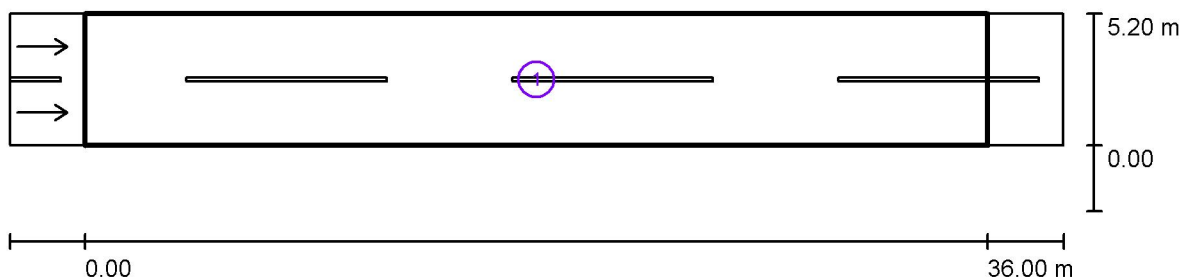
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Paštanska- paralelno na V. Nazora - ME6 - l=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:301

### Calculation Field List

- Valuation Field Roadway 1  
Length: 36.000 m, Width: 5.200 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.70	0.36	0.53	10	1.04
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





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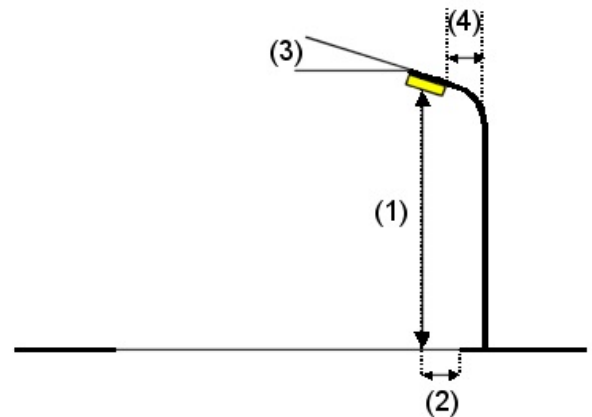
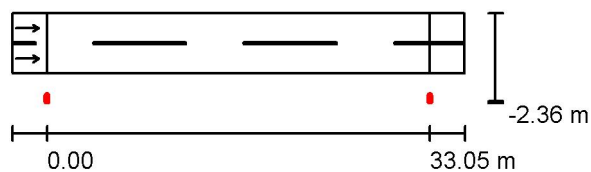
## Paštanska- paralelno na V. Nazora - ME6 - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DC  
 Luminous flux (Luminaire): 3528 lm  
 Luminous flux (Lamps): 3600 lm  
 Luminaire Wattage: 37.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 33.050 m  
 Mounting Height (1): 7.990 m  
 Height: 8.000 m  
 Overhang (2): -1.932 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

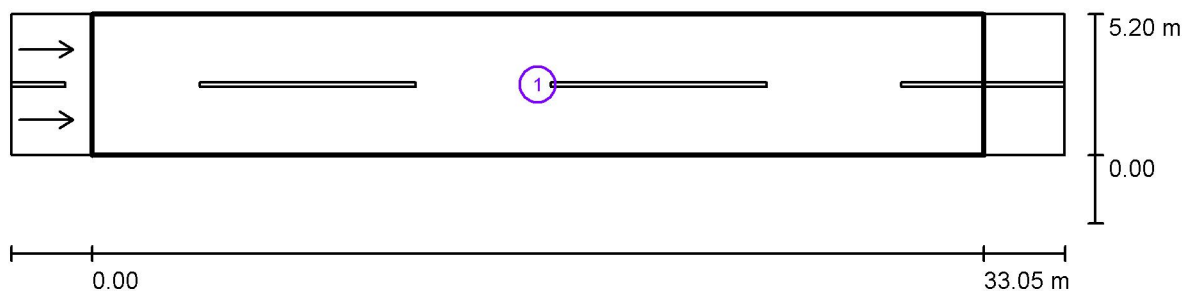
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



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## Paštanska- paralelno na V. Nazora - ME6 - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:280

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 33.050 m, Width: 5.200 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.40	0.52	0.64	9	0.83
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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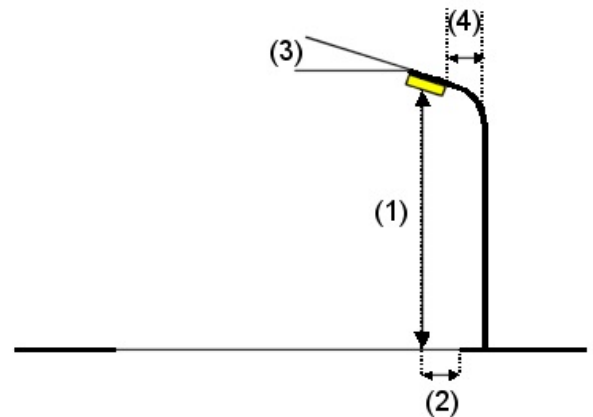
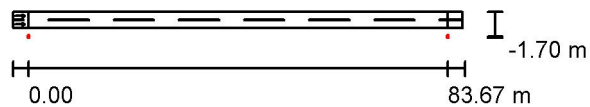
## Bratstva i jedinstva - ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 83.670 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -1.638 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

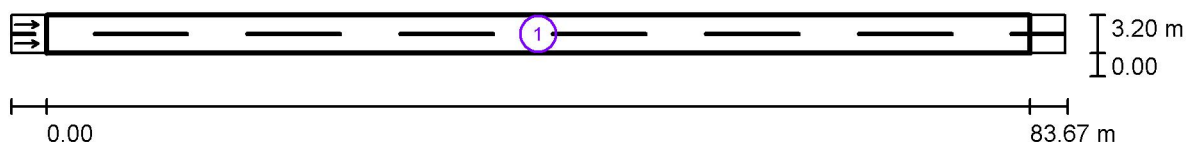
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Bratstva i jedinstva - ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:642

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 83.670 m, Width: 3.200 m  
Grid: 28 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.37	0.11	0.06	16	0.97
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✗	✗	✗	✓



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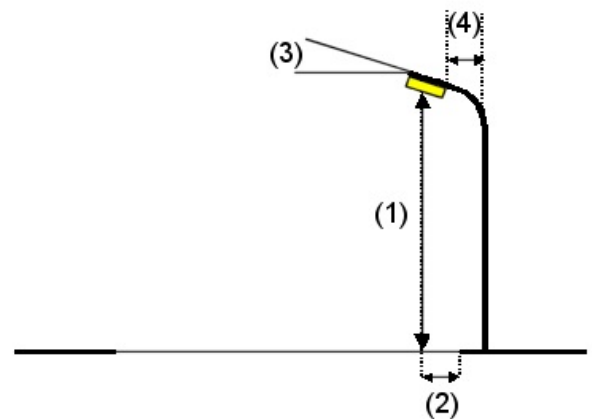
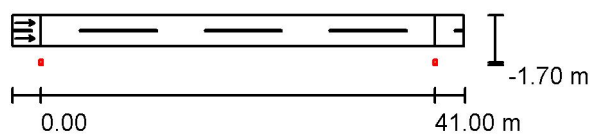
## Bratstva i jedinstva - ME6 - l=0,7m - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	41.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-1.638 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

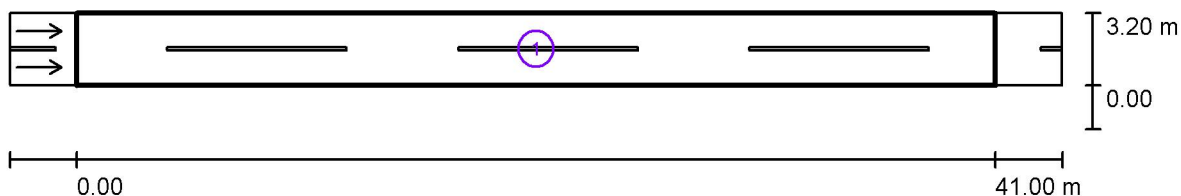
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Bratstva i jedinstva - ME6 - l=0,7m - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:337

### Calculation Field List

- Valuation Field Roadway 1  
Length: 41.000 m, Width: 3.200 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.89	0.36	0.41	10	0.97
Required values according to class:	≥ 0.30	≥ 0.35	≥ 0.40	≤ 15	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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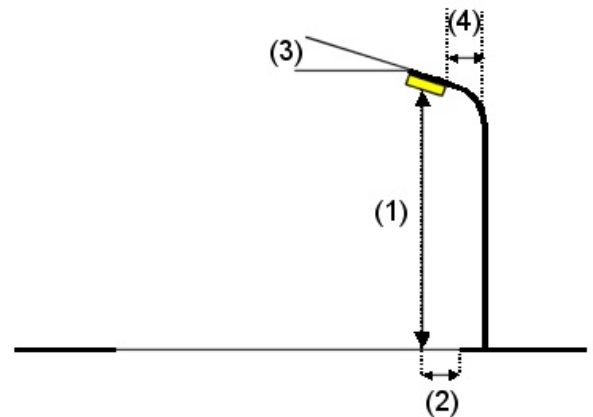
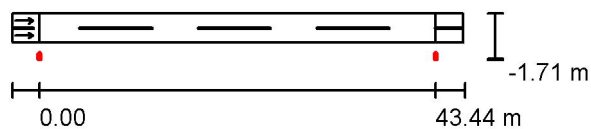
## Bratstva i jedinstva - ME6 - l=0,7m - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.200 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DW

Luminous flux (Luminaire): 3312 lm

Luminous flux (Lamps): 3600 lm

Luminaire Wattage: 37.0 W

Arrangement: Single row, bottom

Pole Distance: 43.440 m

Mounting Height (1): 7.916 m

Height: 7.926 m

Overhang (2): -1.281 m

Boom Angle (3): 0.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 640 cd/klm

at 80°: 36 cd/klm

at 90°: 0.00 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

Arrangement complies with luminous intensity class G3.

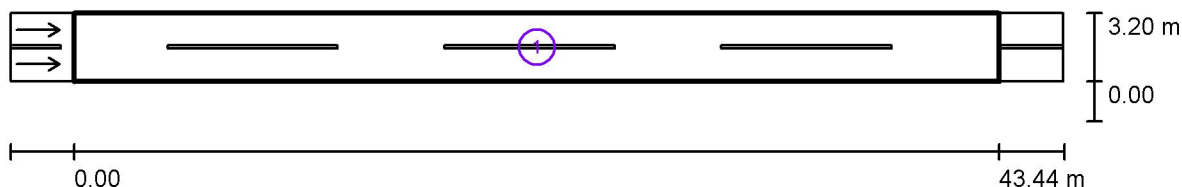
Arrangement complies with glare index class D.6.





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## Bratstva i jedinstva - ME6 - l=0,7m - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:354

### Calculation Field List

- Valuation Field Roadway 1  
Length: 43.440 m, Width: 3.200 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.32	0.49	0.43	12	0.97
Required values according to class:	≥ 0.30	≥ 0.35	≥ 0.40	≤ 15	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓

## **Svjetlotehnički proračuni javne rasvjete**

Građevina:  
Javna rasvjeta

Mjesto gradnje:  
Naselje Vrbanja

Razina projekta:  
Energetski pregled

Partner for Contact:  
Order No.:  
Company:  
Customer No.:

Date: 24.11.2015  
Operator:



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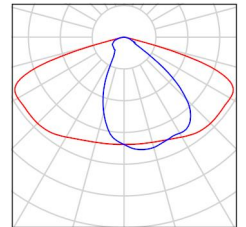
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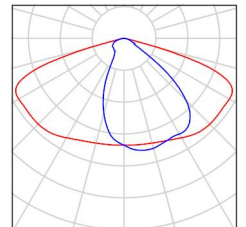
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## Svjetlotehnički proračuni javne rasvjete / Luminaire parts list

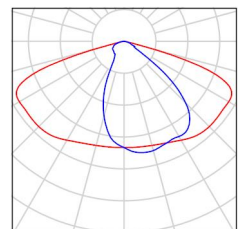
13 Pieces PHILIPS BGP352 T15 1xECO19-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 2079 lm  
Luminous flux (Lamps): 2100 lm  
Luminaire Wattage: 20.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 99  
Fitting: 1 x ECO19-3S/830 (Correction Factor 1.000).



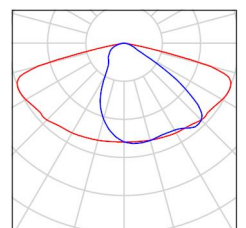
25 Pieces PHILIPS BGP352 T15 1xECO35-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 3528 lm  
Luminous flux (Lamps): 3600 lm  
Luminaire Wattage: 37.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 98  
Fitting: 1 x ECO35-3S/830 (Correction Factor 1.000).



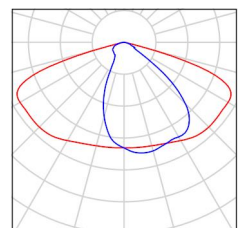
15 Pieces PHILIPS BGP352 T15 1xECO46-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 4802 lm  
Luminous flux (Lamps): 4900 lm  
Luminaire Wattage: 48.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 98  
Fitting: 1 x ECO46-3S/830 (Correction Factor 1.000).



4 Pieces PHILIPS BGP352 T15 1xECO46-3S/830 DW  
Article No.:  
Luminous flux (Luminaire): 4459 lm  
Luminous flux (Lamps): 4900 lm  
Luminaire Wattage: 48.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 39 75 97 100 91  
Fitting: 1 x ECO46-3S/830 (Correction Factor 1.000).



9 Pieces PHILIPS BGP352 T15 1xECO58-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 5917 lm  
Luminous flux (Lamps): 6100 lm  
Luminaire Wattage: 58.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 97  
Fitting: 1 x ECO58-3S/830 (Correction Factor 1.000).

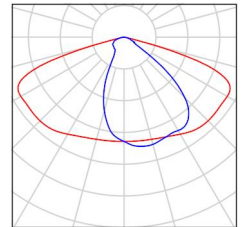




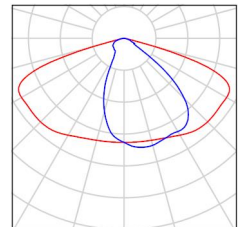
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## Svjetlotehnički proračuni javne rasvjete / Luminaire parts list

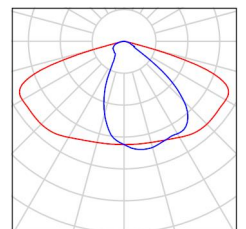
10 Pieces PHILIPS BGP352 T15 1xECO70-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 7008 lm  
Luminous flux (Lamps): 7300 lm  
Luminaire Wattage: 71.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 96  
Fitting: 1 x ECO70-3S/830 (Correction Factor 1.000).



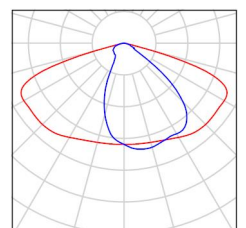
6 Pieces PHILIPS BGP352 T15 1xECO81-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 8256 lm  
Luminous flux (Lamps): 8600 lm  
Luminaire Wattage: 80.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 96  
Fitting: 1 x ECO81-3S/830 (Correction Factor 1.000).



11 Pieces PHILIPS BGP352 T15 1xECO93-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 9310 lm  
Luminous flux (Lamps): 9800 lm  
Luminaire Wattage: 93.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 95  
Fitting: 1 x ECO93-3S/830 (Correction Factor 1.000).

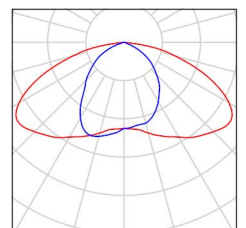


10 Pieces PHILIPS BGP353 T15 1xECO139-3S/830 DC  
Article No.:  
Luminous flux (Luminaire): 13485 lm  
Luminous flux (Lamps): 14500 lm  
Luminaire Wattage: 138.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 45 81 98 100 93  
Fitting: 1 x ECO139-3S/830 (Correction Factor 1.000).



176 Pieces tep LVC 06 150 E GAMALUX  
Article No.: LVC 06 150 E  
Luminous flux (Luminaire): 11997 lm  
Luminous flux (Lamps): 14000 lm  
Luminaire Wattage: 170.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 46 79 97 100 86  
Fitting: 1 x NAV-E (Correction Factor 1.000).

See our luminaire  
catalog for an image of  
the luminaire.







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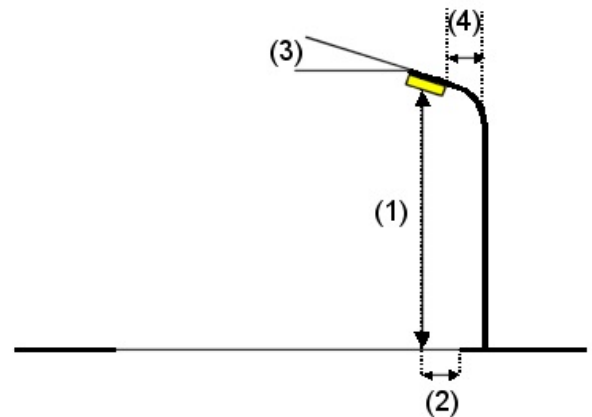
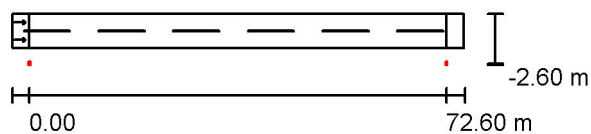
## Ljudevita Gaja - ME4b - luk (l=2m, h=1,5m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	72.600 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-2.538 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

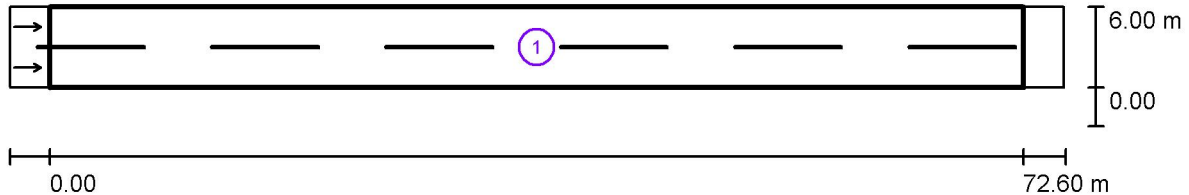
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Ljudevita Gaja - ME4b - luk (l=2m, h=1,5m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:562

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 72.600 m, Width: 6.000 m  
Grid: 25 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.26	0.15	0.14	13	1.05
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



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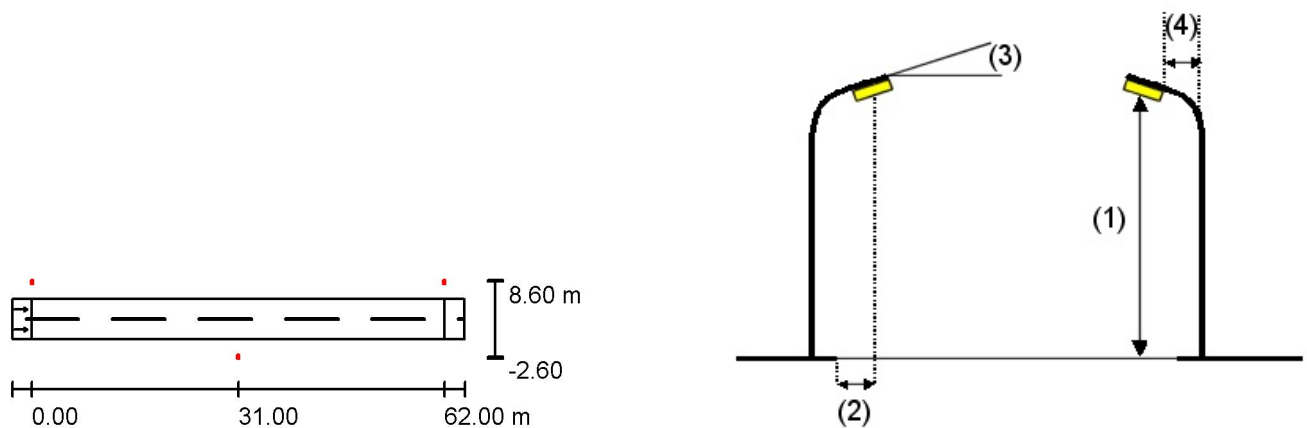
## Ljudevita Gaja - ME4b - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	62.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-2.538 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

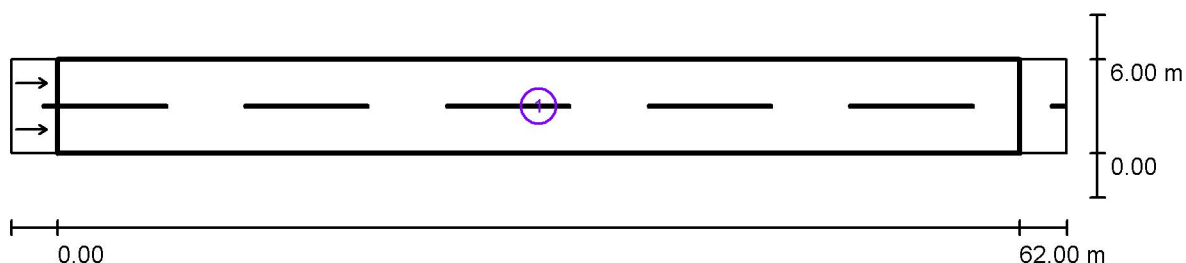
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Ljudevita Gaja - ME4b - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:487

### Calculation Field List

- Valuation Field Roadway 1  
Length: 62.000 m, Width: 6.000 m  
Grid: 21 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.75	0.67	0.53	8	1.05
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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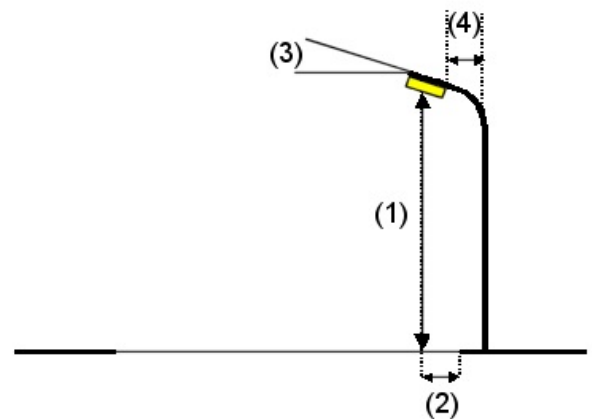
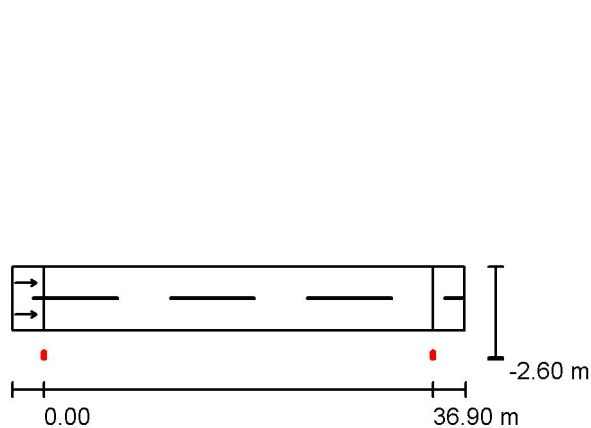
## Ljudevita Gaja - ME4b - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xE903-3S/830 DC  
 Luminous flux (Luminaire): 9310 lm  
 Luminous flux (Lamps): 9800 lm  
 Luminaire Wattage: 93.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 36.900 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -2.172 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

#### Maximum luminous intensities

at 70°: 471 cd/klm  
 at 80°: 14 cd/klm  
 at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

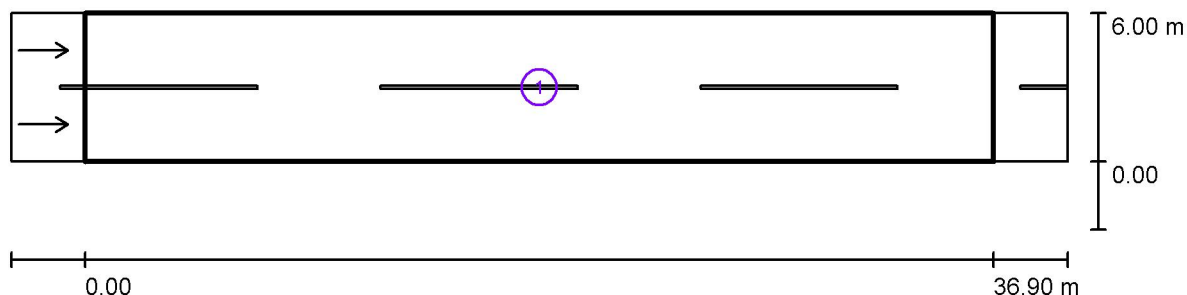
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



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## Ljudevita Gaja - ME4b - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:307

### Calculation Field List

- Valuation Field Roadway 1  
Length: 36.900 m, Width: 6.000 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.82	0.51	0.64	10	0.82
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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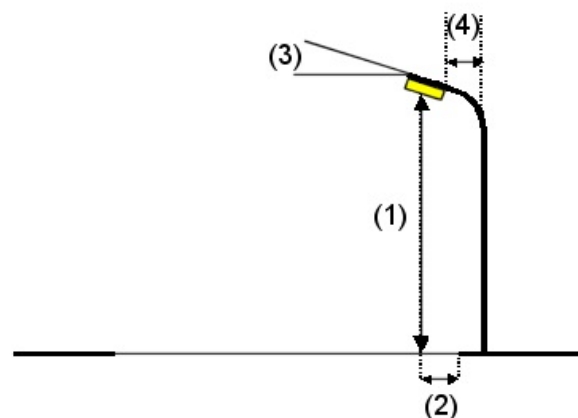
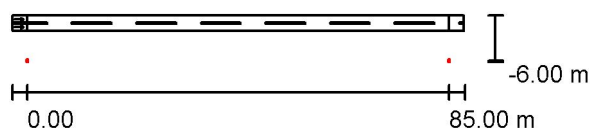
## Ljudevita Gaja - Put - na kuci - ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	85.000 m
Mounting Height (1):	7.232 m
Height:	7.000 m
Overhang (2):	-5.938 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

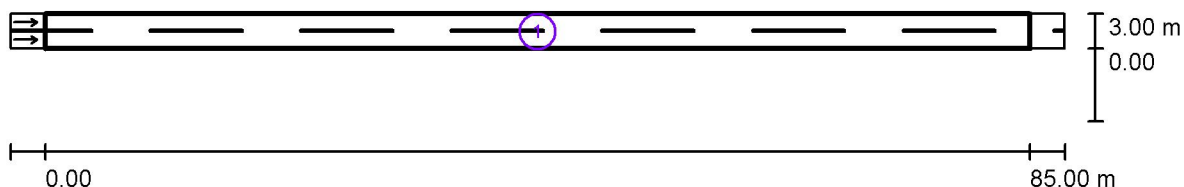
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Ljudevita Gaja - Put - na kuci - ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:651

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 85.000 m, Width: 3.000 m  
Grid: 29 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.11	0.08	0.05	16	1.14
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✗	✗	✗	✗	✓





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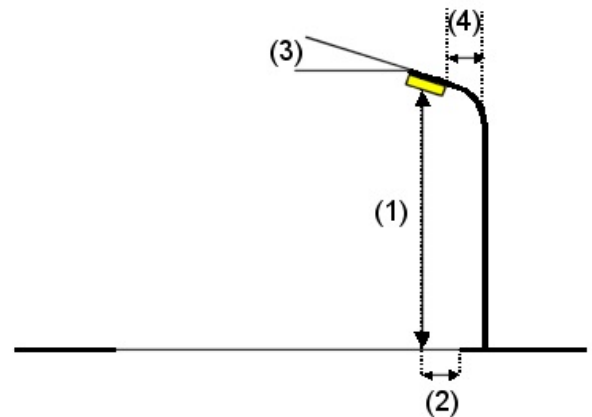
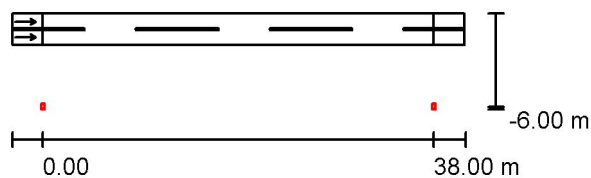
## Ljudevita Gaja - Put - na kuci - ME6 - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	38.000 m
Mounting Height (1):	7.232 m
Height:	7.000 m
Overhang (2):	-5.938 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

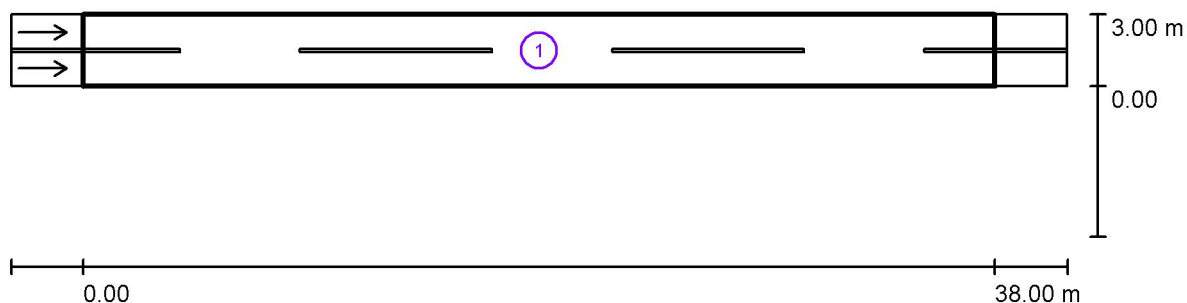
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



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## Ljudevita Gaja - Put - na kuci - ME6 - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:315

### Calculation Field List

- Valuation Field Roadway 1  
Length: 38.000 m, Width: 3.000 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.30	0.49	0.43	10	1.14
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



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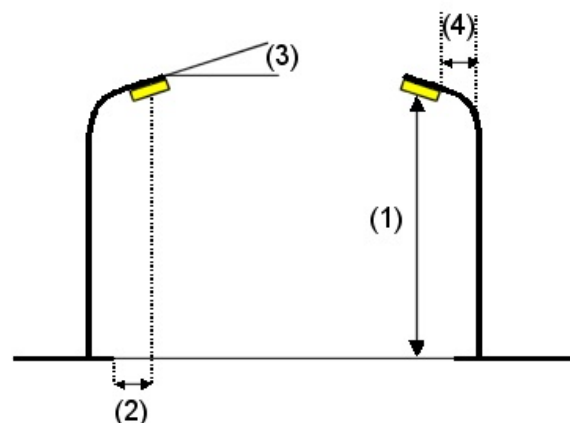
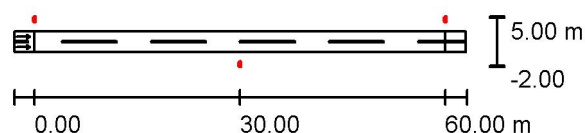
## Ljudevita Gaja - Put - stupovi - ME6 - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco19-3S/830 DC  
 Luminous flux (Luminaire): 2079 lm  
 Luminous flux (Lamps): 2100 lm  
 Luminaire Wattage: 20.0 W  
 Arrangement: Double row, with offset  
 Pole Distance: 60.000 m  
 Mounting Height (1): 7.990 m  
 Height: 8.000 m  
 Overhang (2): -1.572 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 0.000 m

#### Maximum luminous intensities

at 70°: 492 cd/klm  
 at 80°: 15 cd/klm  
 at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

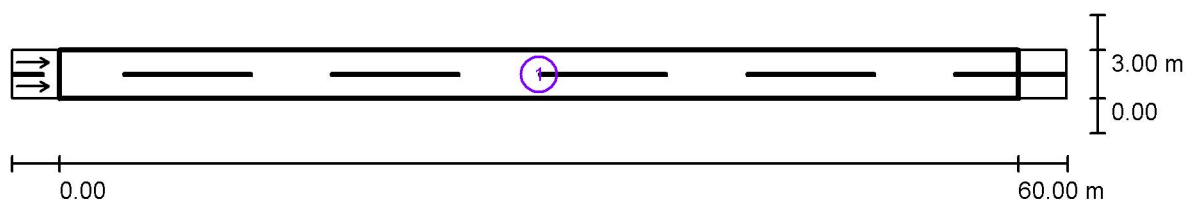
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
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Fax  
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## Ljudevita Gaja - Put - stupovi - ME6 - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:472

### Calculation Field List

- Valuation Field Roadway 1  
Length: 60.000 m, Width: 3.000 m  
Grid: 20 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.32	0.72	0.64	7	0.94
Required values according to class:	≥ 0.30	≥ 0.35	≥ 0.40	≤ 15	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

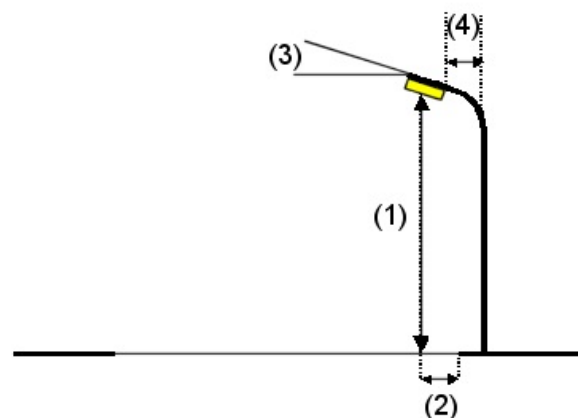
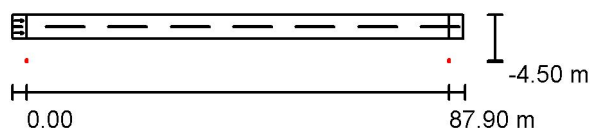
## Rastoke - ME5 - luk (l=0,7m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 87.900 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -4.438 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

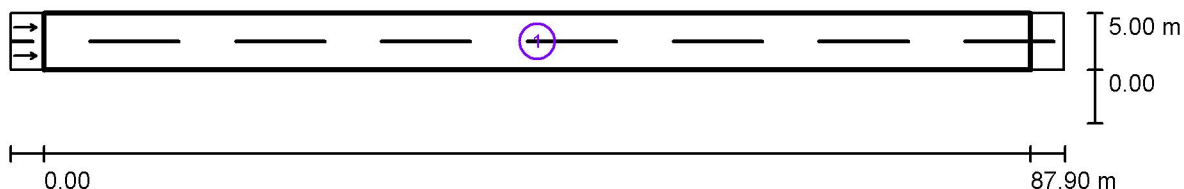
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Rastoke - ME5 - luk (l=0,7m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:672

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 87.900 m, Width: 5.000 m  
Grid: 30 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.14	0.10	0.06	16	1.20
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✗	✓



Operator  
Telephone  
Fax  
e-Mail

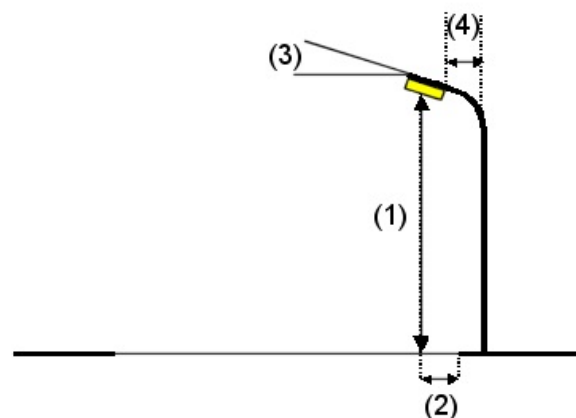
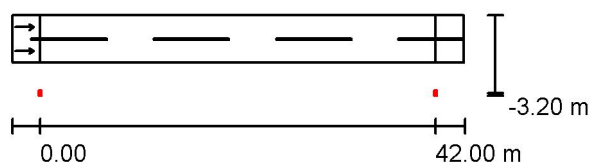
## Rastoke - ME5 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	42.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-3.138 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

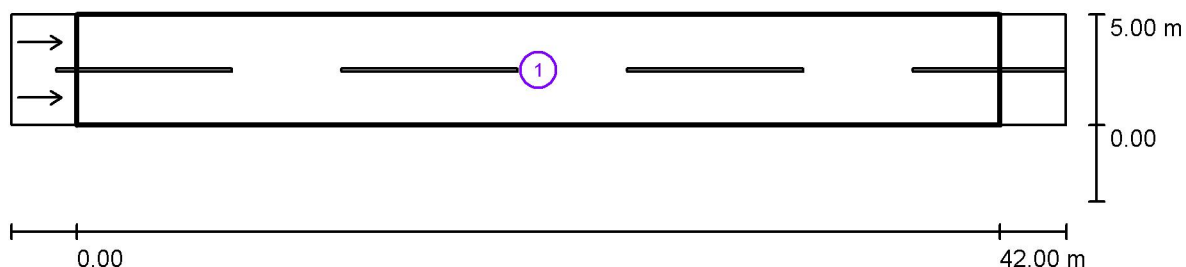
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Rastoke - ME5 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:344

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 42.000 m, Width: 5.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.51	0.37	0.50	10	1.05
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
Telephone  
Fax  
e-Mail

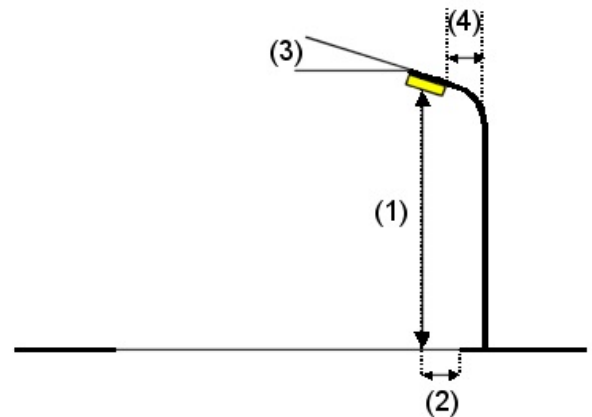
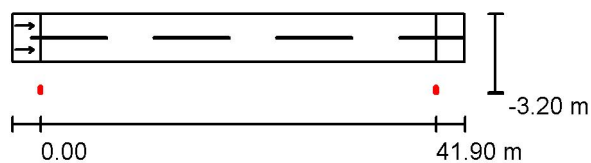
## Rastoke - ME5 - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco70-3S/830 DC  
 Luminous flux (Luminaire): 7008 lm  
 Luminous flux (Lamps): 7300 lm  
 Luminaire Wattage: 71.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 41.900 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -2.772 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 478 cd/klm

at 80°: 14 cd/klm

at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

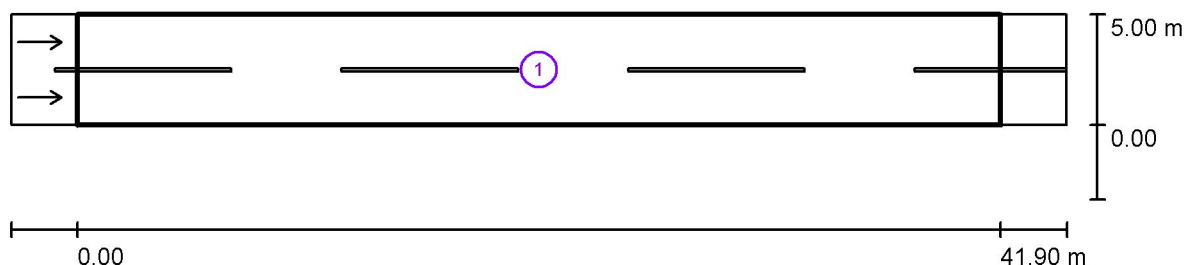
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Rastoke - ME5 - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:343

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 41.900 m, Width: 5.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.54	0.55	0.51	11	0.88
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

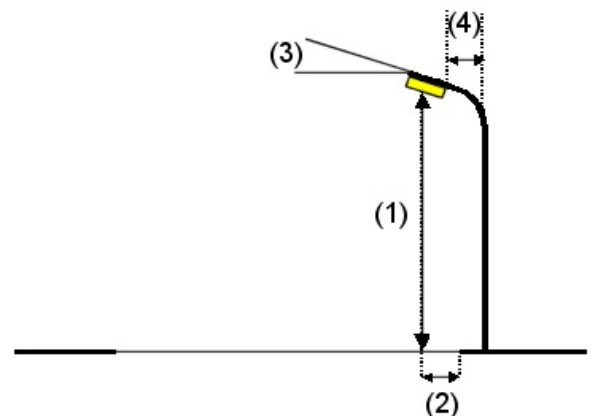
## Braće Radić - ME6 - luk (l=0,7m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	88.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.938 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

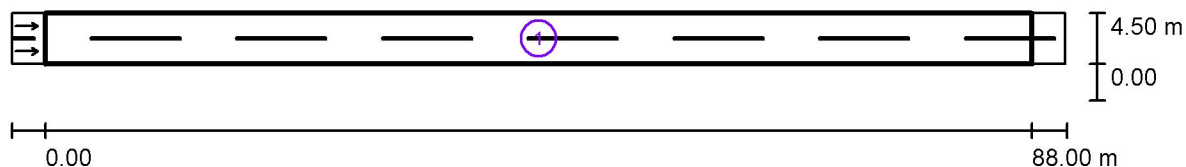
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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Fax  
e-Mail

## Braće Radić - ME6 - luk (l=0,7m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:673

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 88.000 m, Width: 4.500 m  
Grid: 30 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.22	0.09	0.06	17	1.06
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✗	✗	✗	✗	✓



Operator  
Telephone  
Fax  
e-Mail

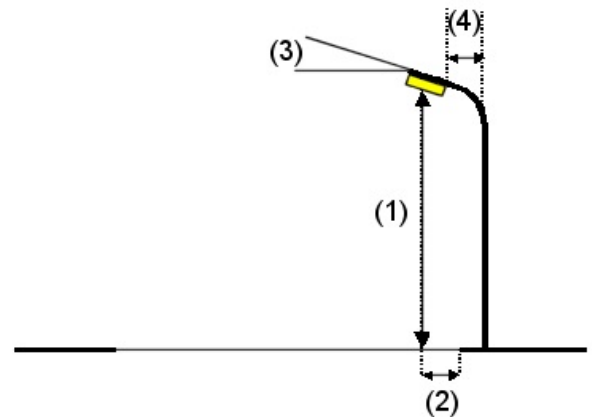
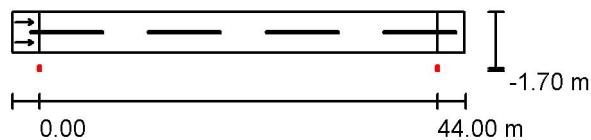
## Braće Radić - ME6 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 44.000 m

Mounting Height (1): 9.232 m

Height: 9.000 m

Overhang (2): -1.638 m

Boom Angle (3): 15.0 °

Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

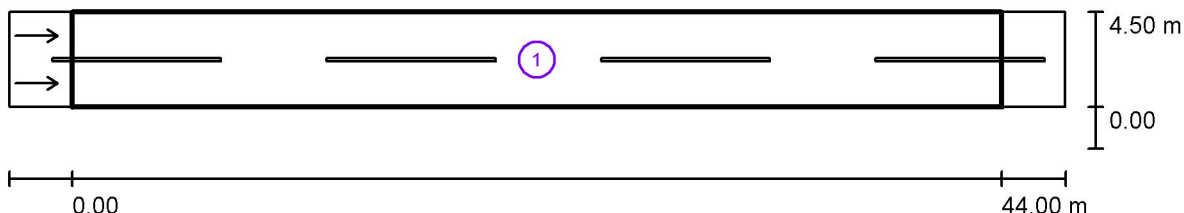
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Braće Radić - ME6 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:358

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 44.000 m, Width: 4.500 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.71	0.35	0.44	9	0.96
Required values according to class:	≥ 0.30	≥ 0.35	≥ 0.40	≤ 15	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

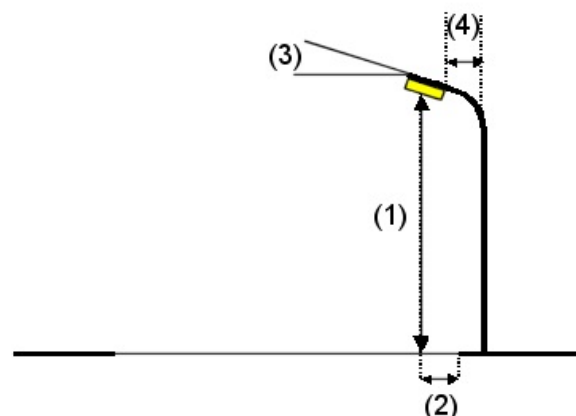
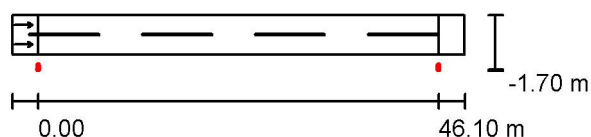
## Braće Radić - ME6 - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xECO46-3S/830 DW  
Luminous flux (Luminaire): 4459 lm  
Luminous flux (Lamps): 4900 lm  
Luminaire Wattage: 48.0 W  
Arrangement: Single row, bottom  
Pole Distance: 46.100 m  
Mounting Height (1): 8.990 m  
Height: 9.000 m  
Overhang (2): -1.272 m  
Boom Angle (3): 0.0 °  
Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 636 cd/klm

at 80°: 36 cd/klm

at 90°: 0.00 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

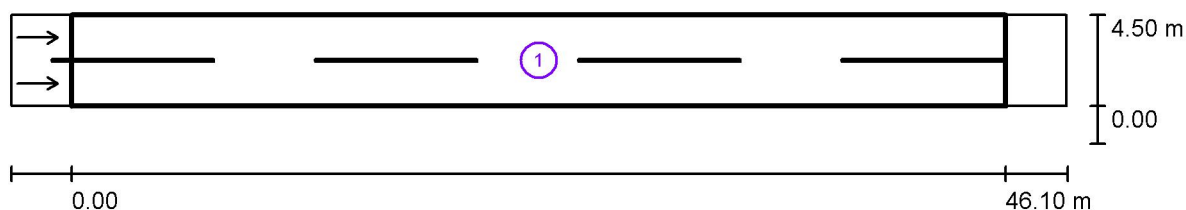
Arrangement complies with luminous intensity class G3.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
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e-Mail

## Braće Radić - ME6 - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:373

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 46.100 m, Width: 4.500 m  
Grid: 16 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.35	0.52	0.52	11	0.96
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
Telephone  
Fax  
e-Mail

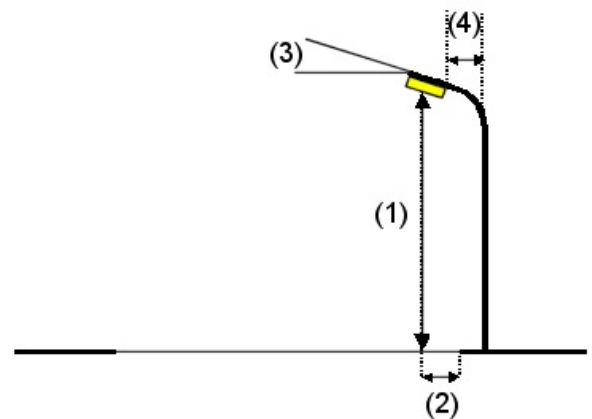
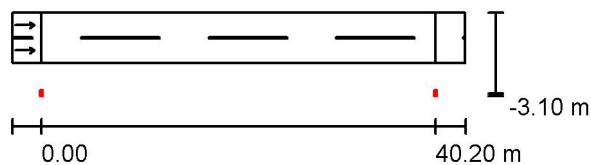
## Josipa Kozarca 1 dio - luk (l=0,7m) - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.100 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	40.200 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-3.038 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

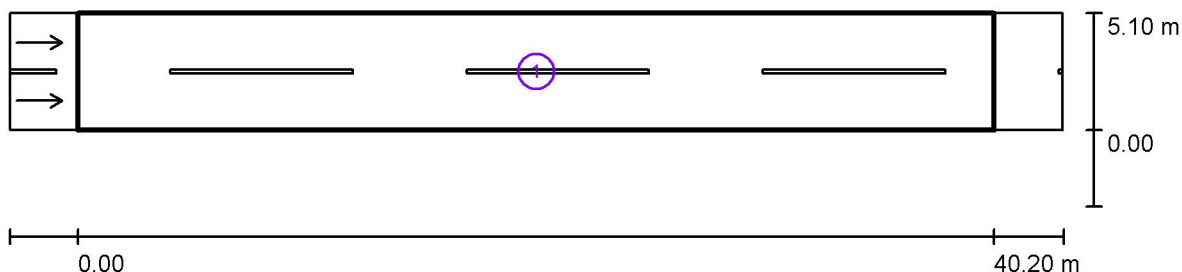
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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e-Mail

## Josipa Kozarca 1 dio - luk (l=0,7m) - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:331

### Calculation Field List

- Valuation Field Roadway 1  
Length: 40.200 m, Width: 5.100 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.44	0.33	0.44	11	1.10
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

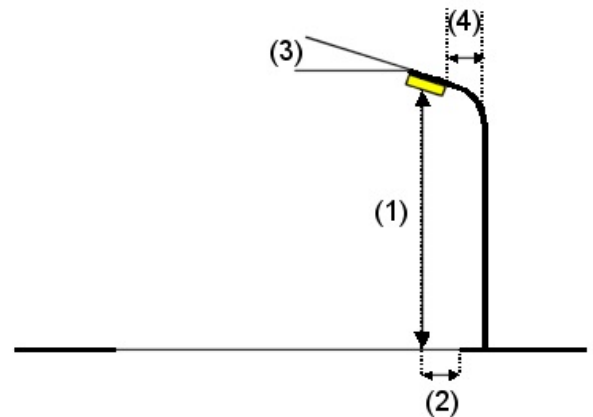
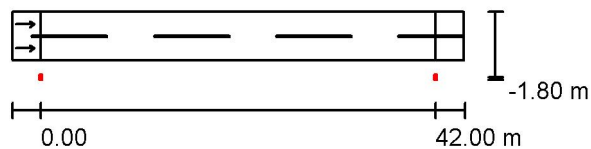
## Josipa Kozarca 1 dio - ME5 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.100 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	42.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-1.738 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

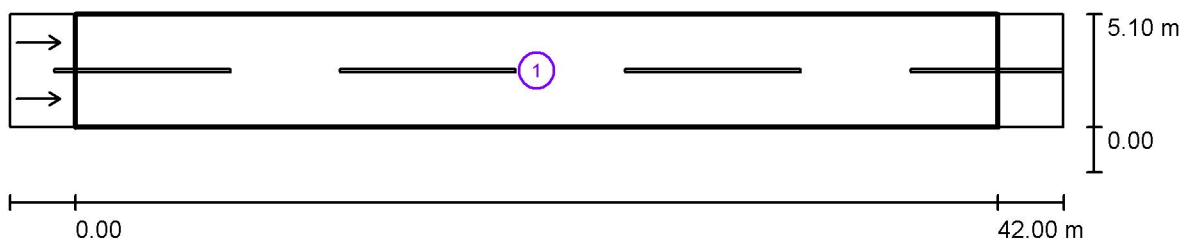
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Josipa Kozarca 1 dio - ME5 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:344

### Calculation Field List

- Valuation Field Roadway 1  
Length: 42.000 m, Width: 5.100 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.68	0.35	0.49	10	0.97
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

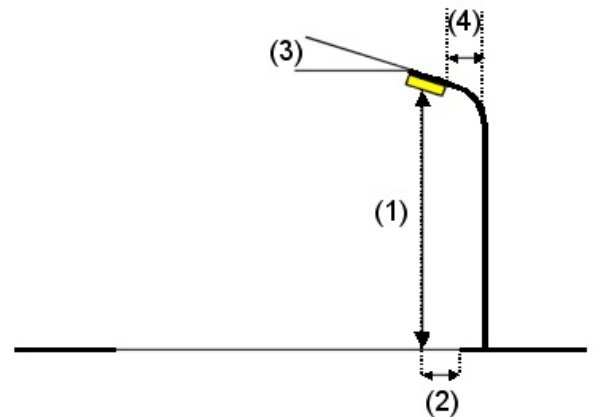
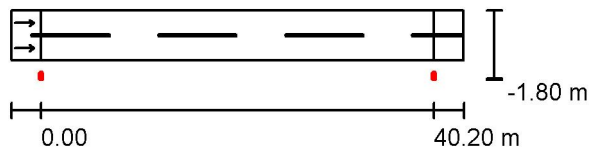
## Josipa Kozarca 1 dio - ME5 - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.100 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco58-3S/830 DC  
 Luminous flux (Luminaire): 5917 lm  
 Luminous flux (Lamps): 6100 lm  
 Luminaire Wattage: 58.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 40.200 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -1.372 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 482 cd/klm

at 80°: 14 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

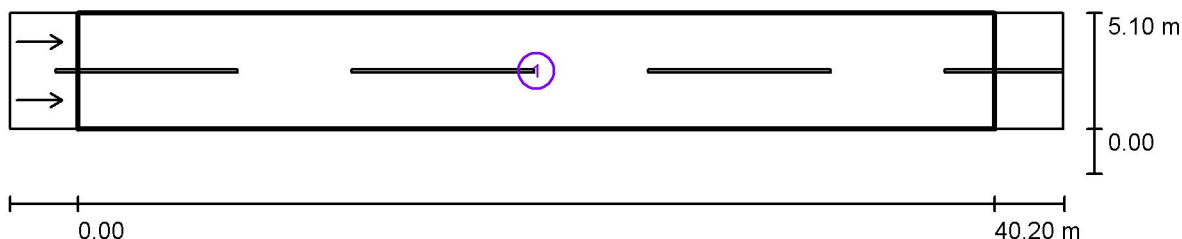
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Josipa Kozarca 1 dio - ME5 - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:331

### Calculation Field List

- Valuation Field Roadway 1  
Length: 40.200 m, Width: 5.100 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.57	0.55	0.52	9	0.85
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
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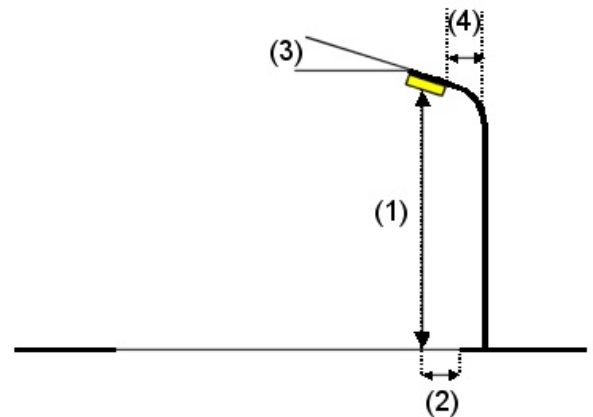
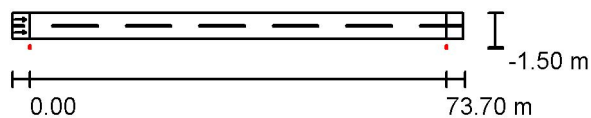
## Josipa Kozarca 2 dio - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 73.700 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -1.438 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

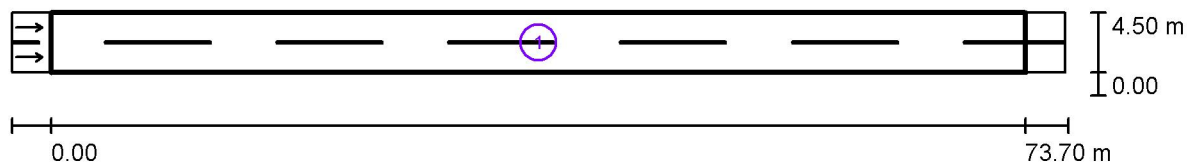
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Josipa Kozarca 2 dio - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:570

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 73.700 m, Width: 4.500 m  
Grid: 25 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.38	0.13	0.09	15	0.96
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓





Operator  
Telephone  
Fax  
e-Mail

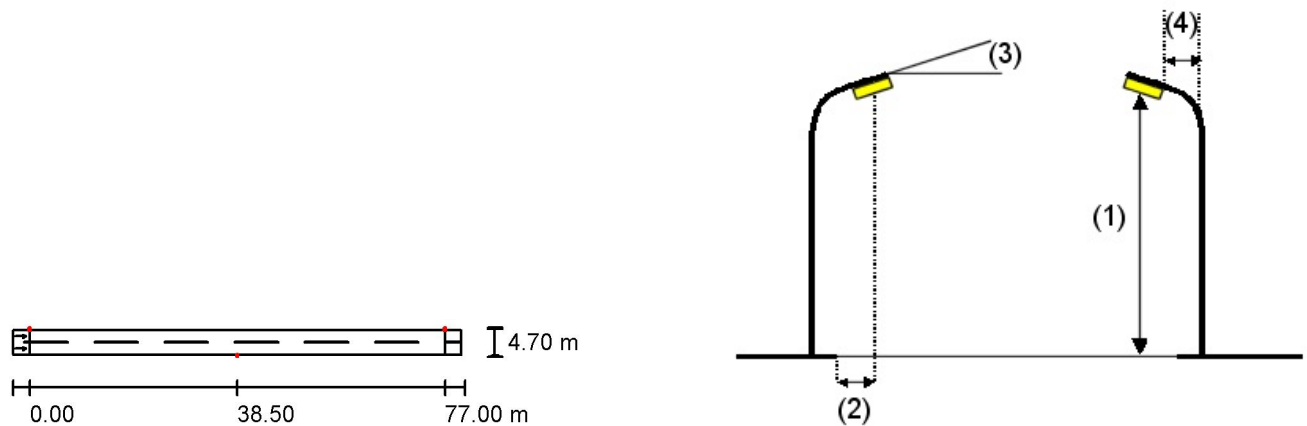
## Josipa Kozarca 2 dio - ME5 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX  
Luminous flux (Luminaire): 11997 lm  
Luminous flux (Lamps): 14000 lm  
Luminaire Wattage: 170.0 W  
Arrangement: Double row, with offset  
Pole Distance: 77.000 m  
Mounting Height (1): 9.232 m  
Height: 9.000 m  
Overhang (2): -0.138 m  
Boom Angle (3): 15.0 °  
Boom Length (4): 2.000 m

#### Maximum luminous intensities

at 70°: 216 cd/klm  
at 80°: 91 cd/klm  
at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

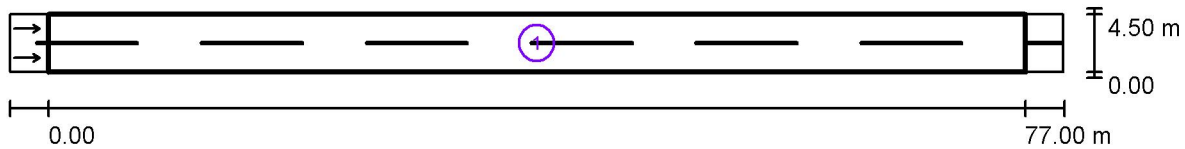
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Josipa Kozarca 2 dio - ME5 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:594

### Calculation Field List

- Valuation Field Roadway 1  
Length: 77.000 m, Width: 4.500 m  
Grid: 26 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.09	0.50	0.40	7	0.88
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

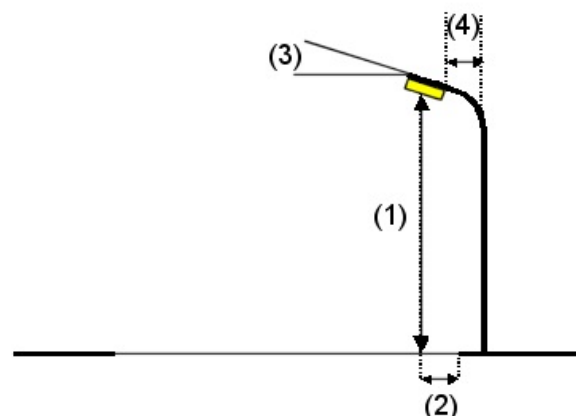
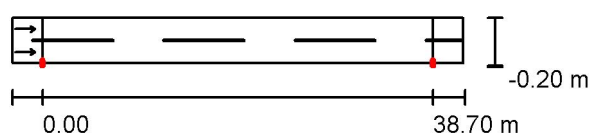
## Josipa Kozarca 2 dio - ME5 - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco46-3S/830 DC  
 Luminous flux (Luminaire): 4802 lm  
 Luminous flux (Lamps): 4900 lm  
 Luminaire Wattage: 48.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 38.700 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): 0.228 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 485 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

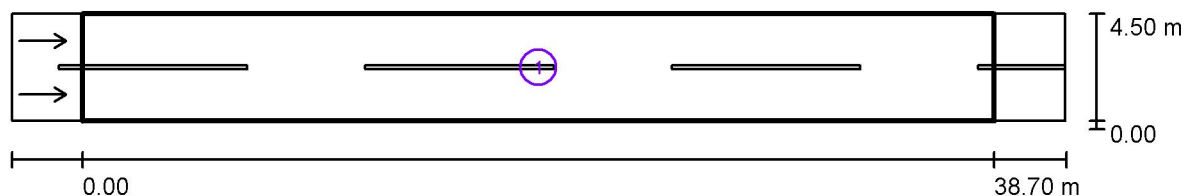
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
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## Josipa Kozarca 2 dio - ME5 - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:320

### Calculation Field List

- Valuation Field Roadway 1  
Length: 38.700 m, Width: 4.500 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.57	0.59	0.56	7	0.81
Required values according to class:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

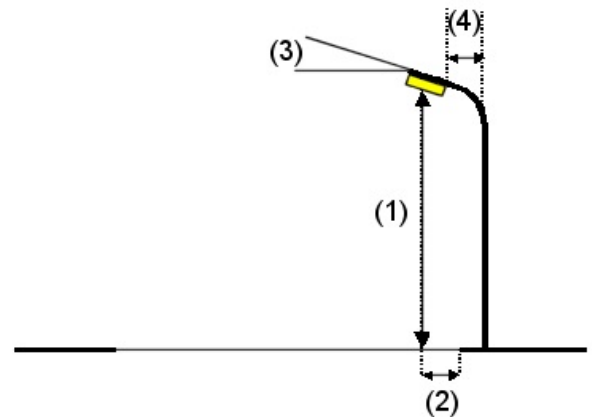
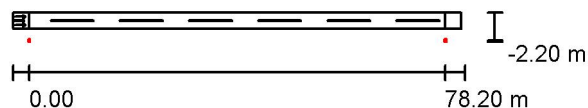
## Matije Gupca 1 dio - ME5 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	78.200 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.138 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

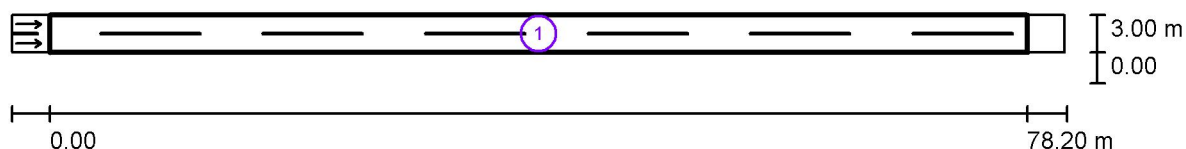
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.



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## Matije Gupca 1 dio - ME5 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:602

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 78.200 m, Width: 3.000 m

Grid: 27 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.35	0.13	0.08	16	0.99
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	<span style="color: red;">✗</span>	<span style="color: red;">✗</span>	<span style="color: red;">✗</span>	<span style="color: red;">✗</span>	<span style="color: green;">✓</span>



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Fax  
e-Mail

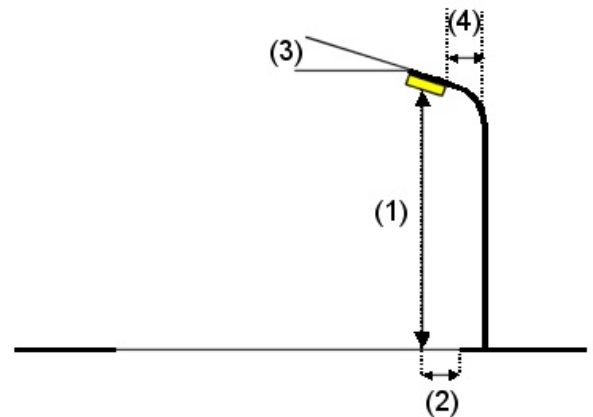
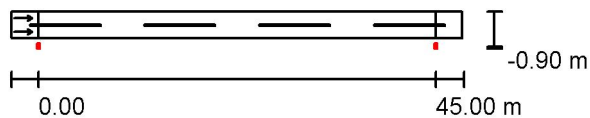
## Matije Gupca 1 dio - ME5 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	45.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-0.838 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

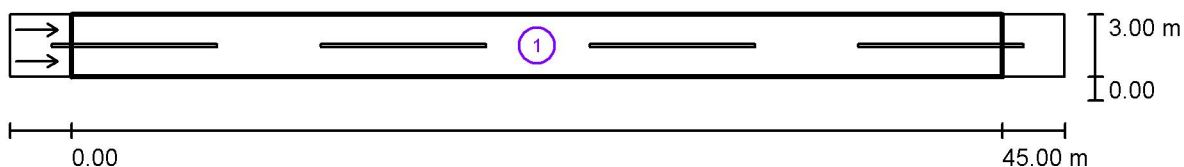
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.



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## Matije Gupca 1 dio - ME5 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:365

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 45.000 m, Width: 3.000 m  
Grid: 15 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.93	0.43	0.42	8	0.96
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
Telephone  
Fax  
e-Mail

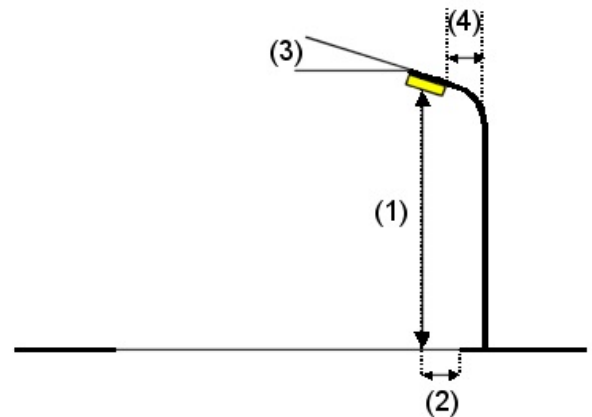
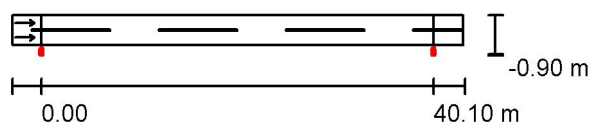
## Matije Gupca 1 dio - ME5 - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco46-3S/830 DC  
 Luminous flux (Luminaire): 4802 lm  
 Luminous flux (Lamps): 4900 lm  
 Luminaire Wattage: 48.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 40.100 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -0.472 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 485 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

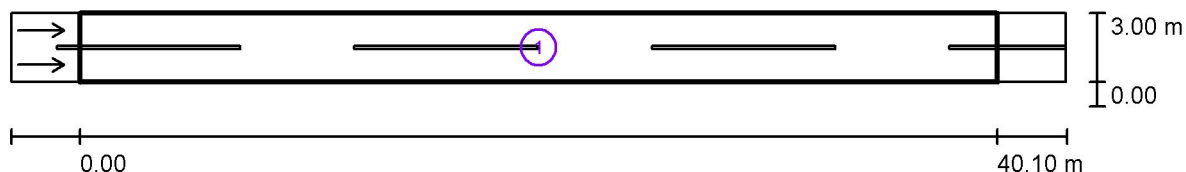
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca 1 dio - ME5 - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:330

### Calculation Field List

- Valuation Field Roadway 1  
Length: 40.100 m, Width: 3.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.57	0.58	0.51	7	0.92
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
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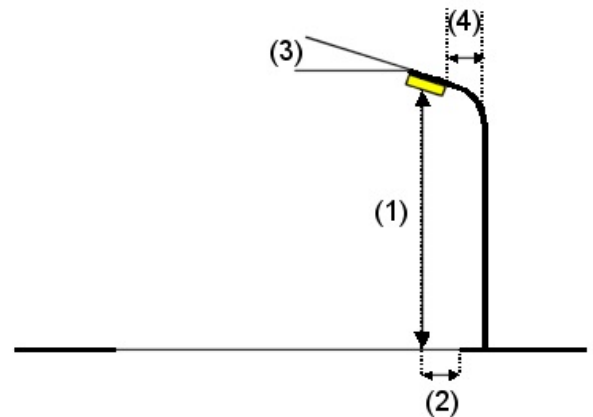
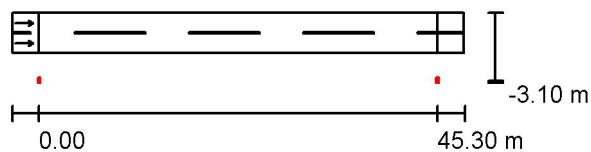
## Matije Gupca 2 dio - ME5 - l=0,7m - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	45.300 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-3.038 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

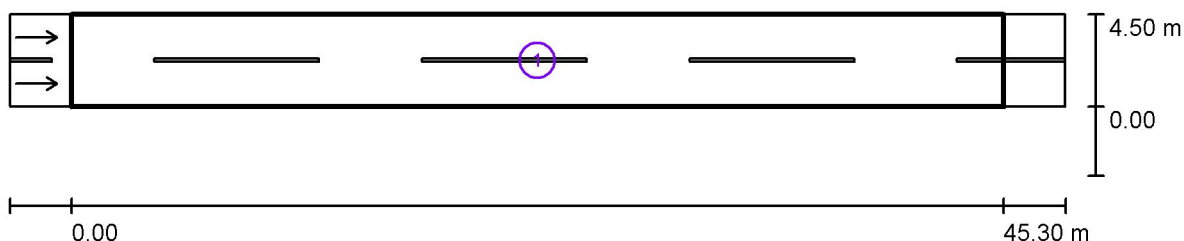
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca 2 dio - ME5 - l=0,7m - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:367

### Calculation Field List

- Valuation Field Roadway 1  
Length: 45.300 m, Width: 4.500 m  
Grid: 16 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.41	0.30	0.34	11	1.07
Required values according to class:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

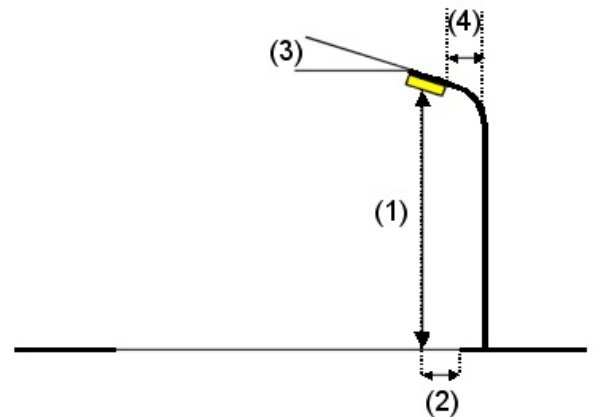
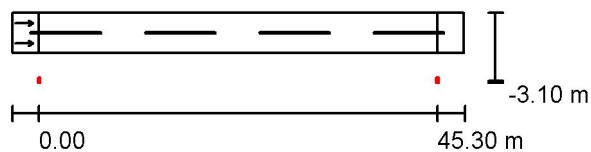
## Matije Gupca 2 dio - ME5 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	45.300 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-3.038 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

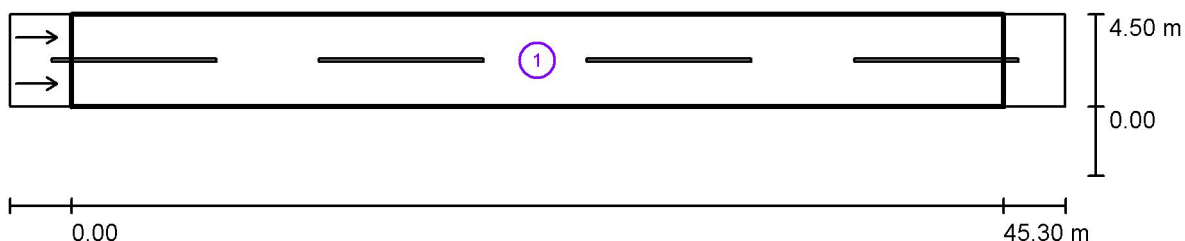
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca 2 dio - ME5 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:367

### Calculation Field List

- Valuation Field Roadway 1  
Length: 45.300 m, Width: 4.500 m  
Grid: 16 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.50	0.36	0.43	10	1.03
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

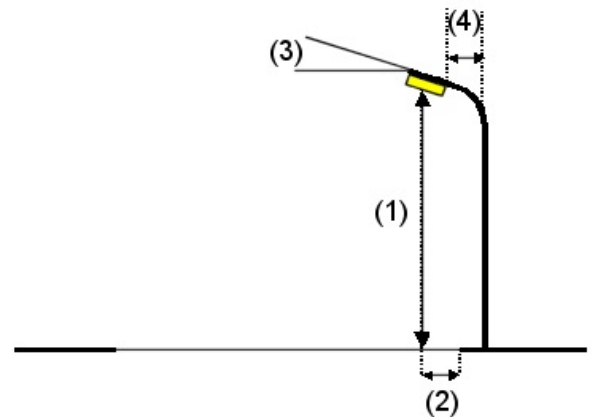
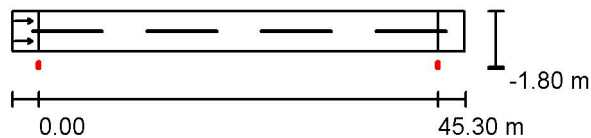
## Matije Gupca 2 dio - ME5 - luk (l=2m, h=1,5m) - kut 7° - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.500 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xECO58-3S/830 DC  
 Luminous flux (Luminaire): 5917 lm  
 Luminous flux (Lamps): 6100 lm  
 Luminaire Wattage: 58.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 45.300 m  
 Mounting Height (1): 8.938 m  
 Height: 9.000 m  
 Overhang (2): -1.377 m  
 Boom Angle (3): 7.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 547 cd/klm

at 80°: 49 cd/klm

at 90°: 2.77 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

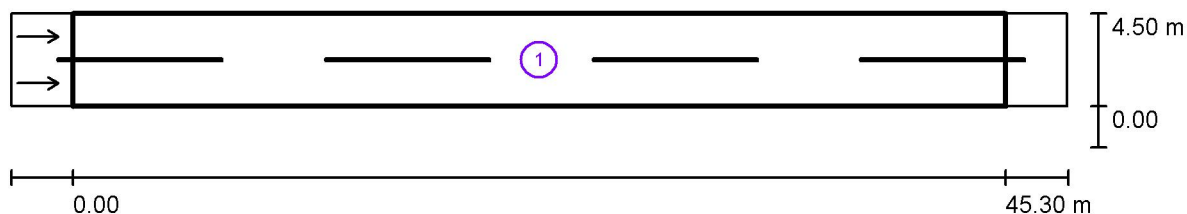
Arrangement complies with luminous intensity class G3.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca 2 dio - ME5 - luk (l=2m, h=1,5m) - kut 7° - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:367

### Calculation Field List

- Valuation Field Roadway 1  
Length: 45.300 m, Width: 4.500 m  
Grid: 16 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.50	0.54	0.41	10	0.86
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





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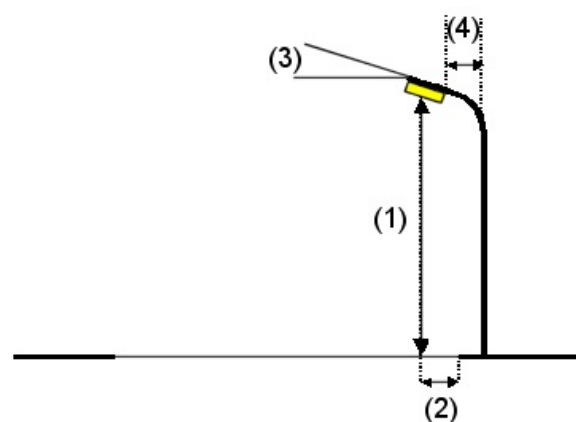
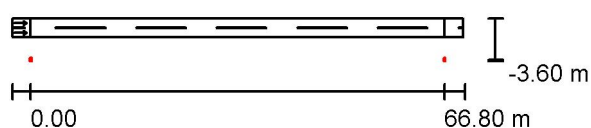
## Matije Gupca - odvojak 1 - paralelno s M. Gupca - ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 66.800 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -3.538 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

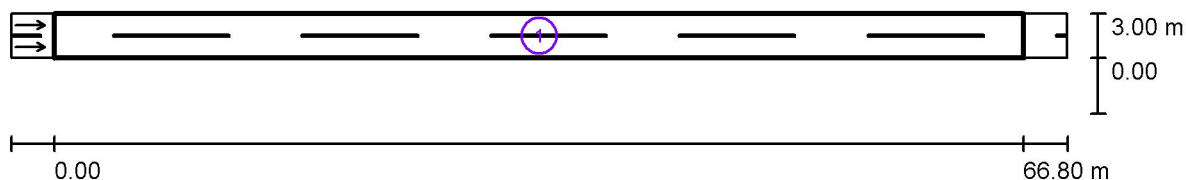
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca - odvojak 1 - paralelno s M. Gupca - ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:521

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 66.800 m, Width: 3.000 m

Grid: 23 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.29	0.18	0.13	13	1.03
Required values according to class:	≥ 0.30	≥ 0.35	≥ 0.40	≤ 15	/
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

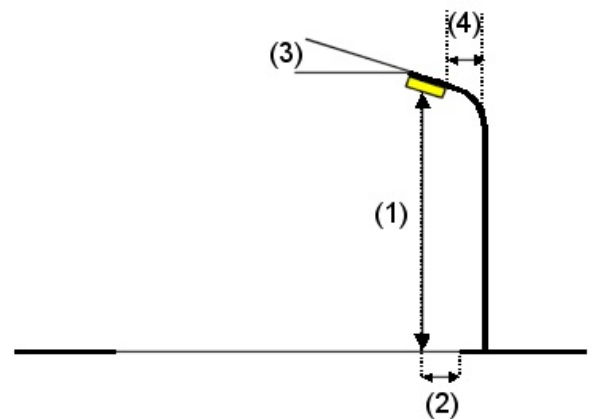
## Matije Gupca - odvojak 1 - paralelno s M. Gupca ME6 - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 41.000 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -3.538 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

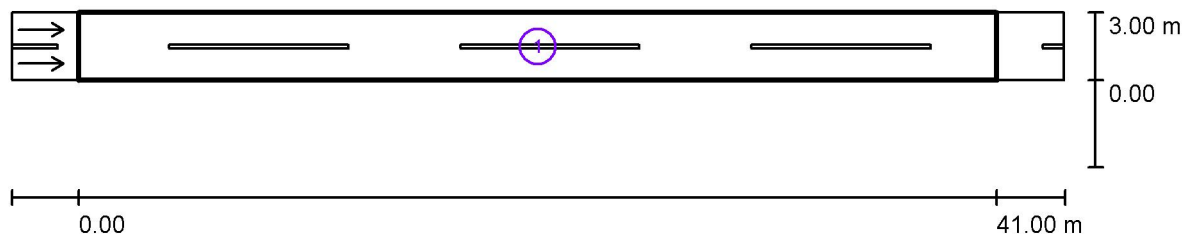
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca - odvojak 1 - paralelno s M. Gupca ME6 - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:337

### Calculation Field List

- Valuation Field Roadway 1  
Length: 41.000 m, Width: 3.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.56	0.41	0.42	10	1.03
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

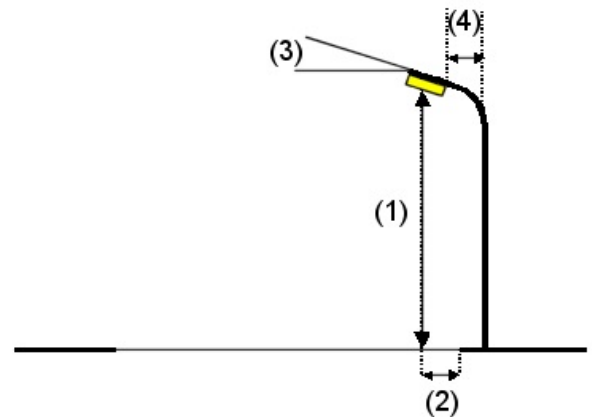
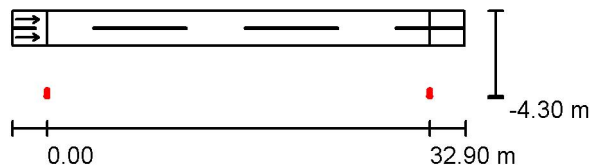
## Matije Gupca - odvojak 1 - paralelno s M. Gupca ME6 - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 3.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DC  
 Luminous flux (Luminaire): 3528 lm  
 Luminous flux (Lamps): 3600 lm  
 Luminaire Wattage: 37.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 32.900 m  
 Mounting Height (1): 7.990 m  
 Height: 8.000 m  
 Overhang (2): -3.872 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 0.000 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

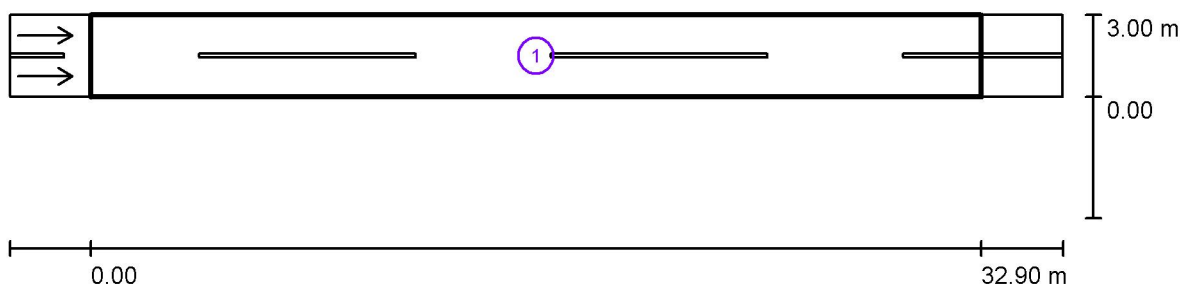
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca - odvojak 1 - paralelno s M. Gupca ME6 - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:279

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 32.900 m, Width: 3.000 m  
Grid: 11 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.34	0.65	0.68	9	0.95
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

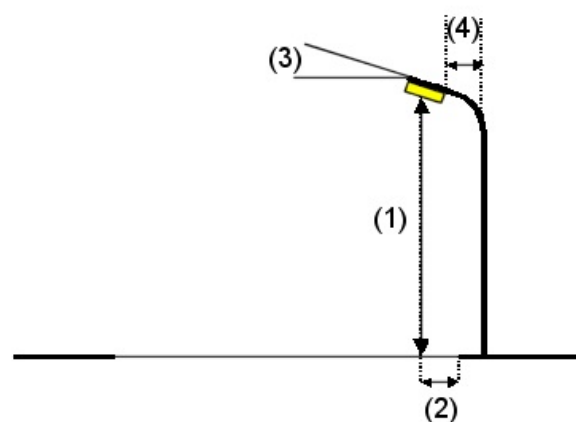
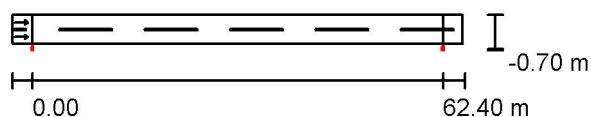
## Matije Gupca - odvojak 1 - okomito s M. Gupca ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 62.400 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -0.638 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

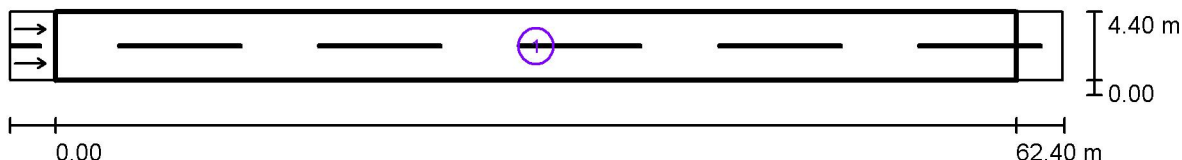
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca - odvojak 1 - okomito s M. Gupca ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:490

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 62.400 m, Width: 4.400 m  
Grid: 21 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.54	0.16	0.14	13	0.90
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✗	✗	✓	✓





Operator  
Telephone  
Fax  
e-Mail

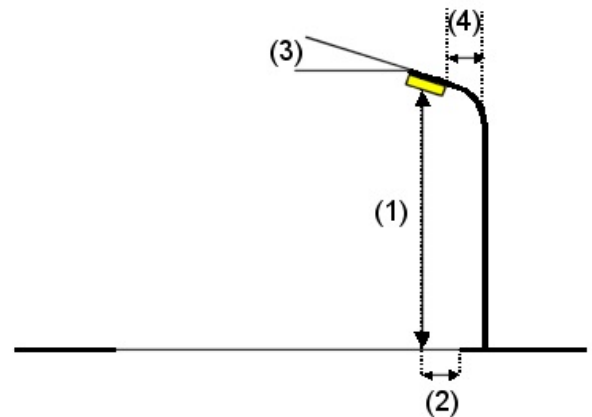
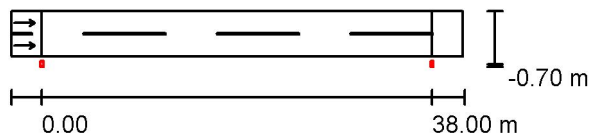
## Matije Gupca - odvojak 1 -okomito s M. Gupca ME6 - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 38.000 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -0.638 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

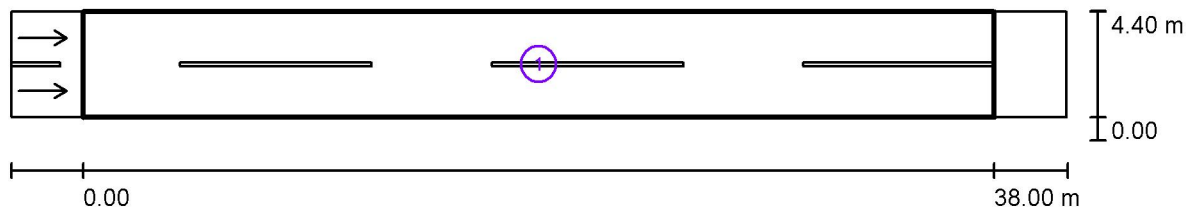
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca - odvojak 1 -okomito s M. Gupca ME6 - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:315

### Calculation Field List

- Valuation Field Roadway 1  
Length: 38.000 m, Width: 4.400 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.05	0.35	0.45	9	0.90
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

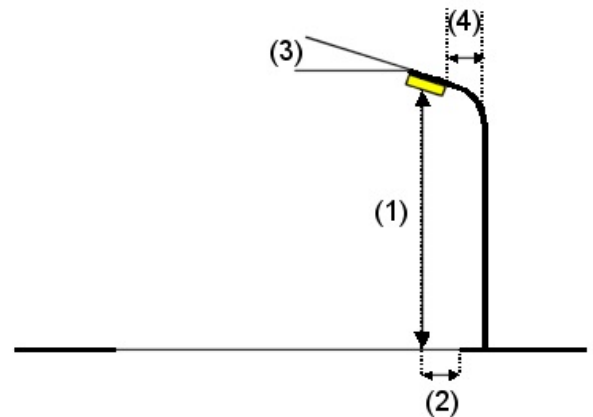
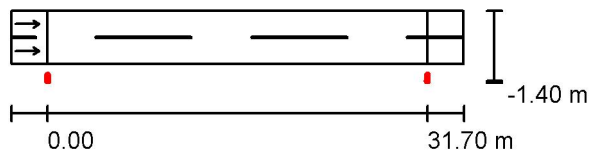
## Matije Gupca - odvojak 1 -okomito s M. Gupca ME6 - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco19-3S/830 DC  
 Luminous flux (Luminaire): 2079 lm  
 Luminous flux (Lamps): 2100 lm  
 Luminaire Wattage: 20.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 31.700 m  
 Mounting Height (1): 7.990 m  
 Height: 8.000 m  
 Overhang (2): -0.972 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 0.000 m

Maximum luminous intensities

at 70°: 492 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

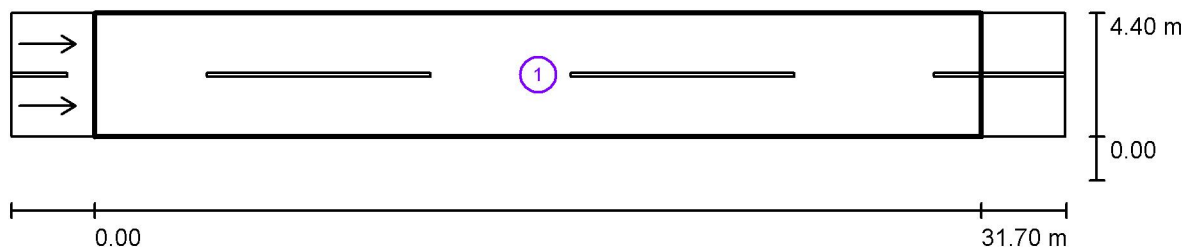
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
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## Matije Gupca - odvojak 1 -okomito s M. Gupca ME6 - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:270

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 31.700 m, Width: 4.400 m  
Grid: 11 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.30	0.61	0.71	7	0.85
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
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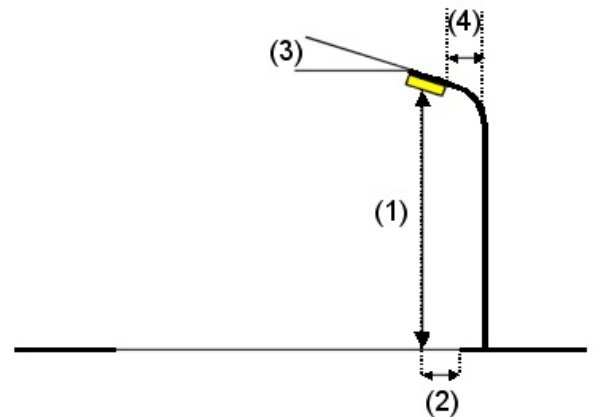
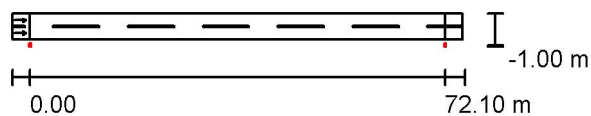
## Matije Gupca odvojak 2 - ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	72.100 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-0.938 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

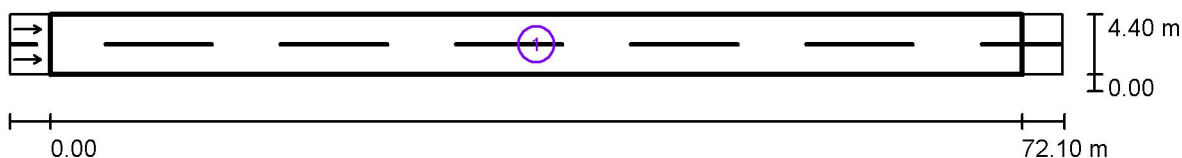
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.



Operator  
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e-Mail

## Matije Gupca odvojak 2 - ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:559

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 72.100 m, Width: 4.400 m  
Grid: 25 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.44	0.13	0.09	15	0.93
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

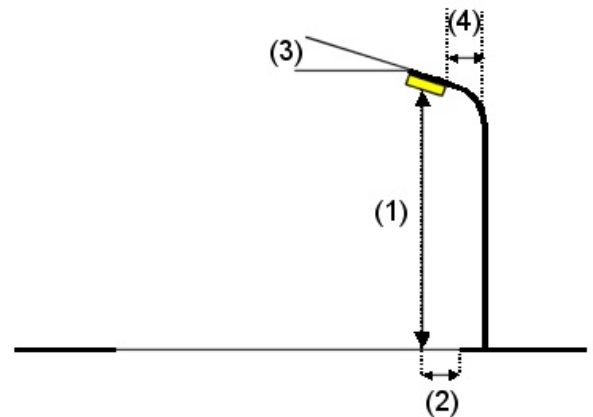
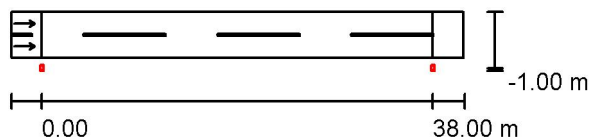
## Matije Gupca odvojak 2 - ME6 - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	38.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-0.938 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

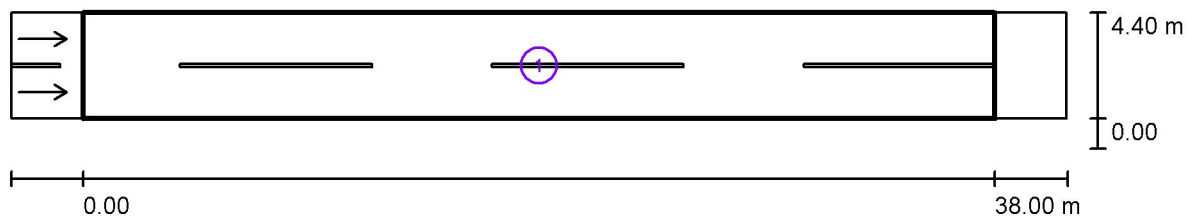
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.



Operator  
Telephone  
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## Matije Gupca odvojak 2 - ME6 - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:315

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 38.000 m, Width: 4.400 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.99	0.35	0.46	10	0.93
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
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Fax  
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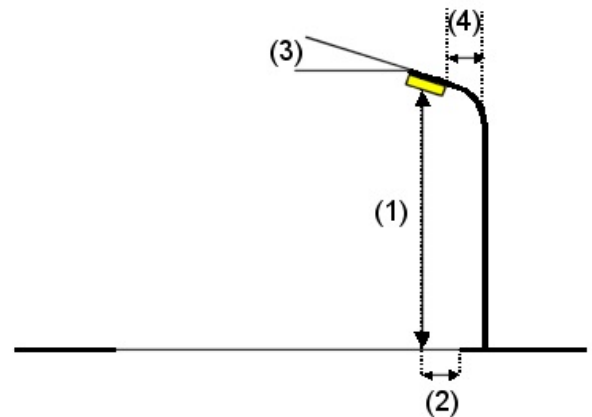
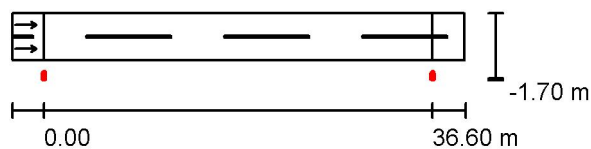
## Matije Gupca odvojak 2 - ME6 - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.400 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DC  
 Luminous flux (Luminaire): 3528 lm  
 Luminous flux (Lamps): 3600 lm  
 Luminaire Wattage: 37.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 36.600 m  
 Mounting Height (1): 7.990 m  
 Height: 8.000 m  
 Overhang (2): -1.272 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 0.000 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

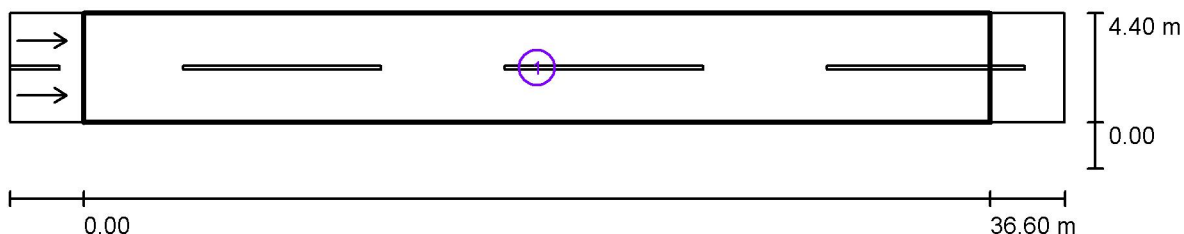
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Matije Gupca odvojak 2 - ME6 - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:305

### Calculation Field List

- Valuation Field Roadway 1  
Length: 36.600 m, Width: 4.400 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.42	0.55	0.51	9	0.86
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

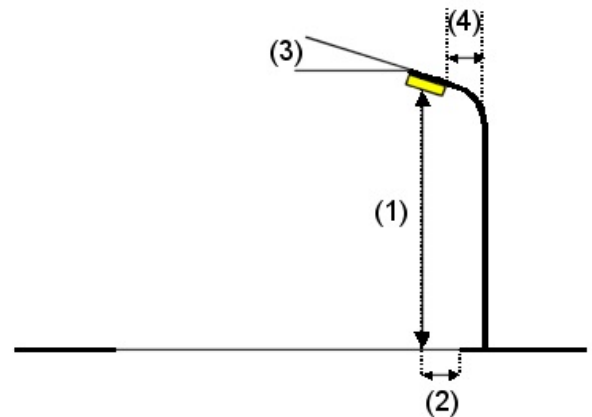
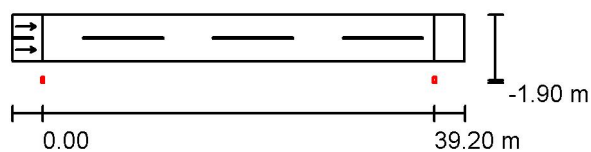
## Zelenjak - ME6 - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	39.200 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-1.838 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

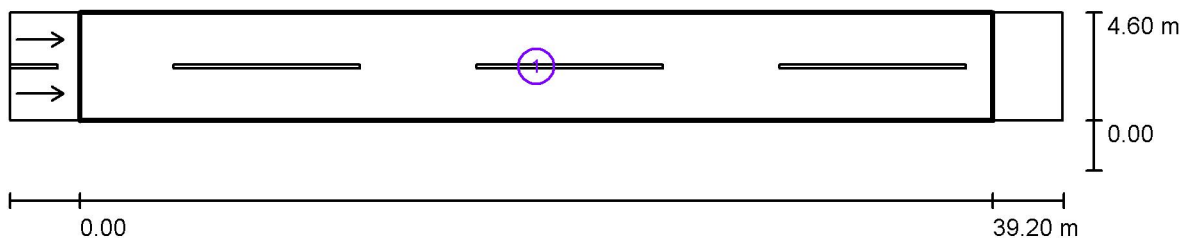
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Zelenjak - ME6 - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:324

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 39.200 m, Width: 4.600 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.64	0.34	0.45	11	0.99
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✗	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

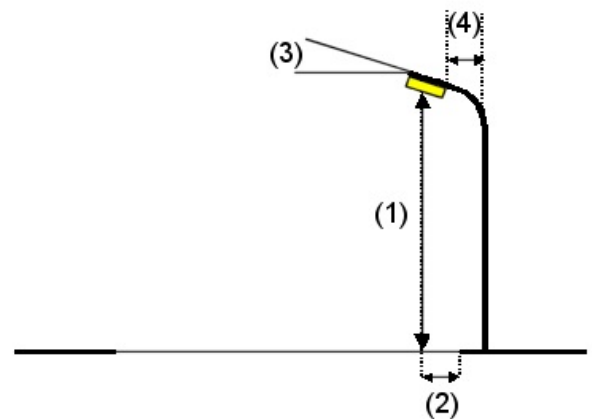
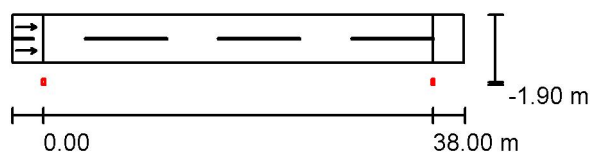
## Zelenjak - ME6 - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 38.000 m

Mounting Height (1): 8.232 m

Height: 8.000 m

Overhang (2): -1.838 m

Boom Angle (3): 15.0 °

Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 216 cd/klm

at 80°: 91 cd/klm

at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

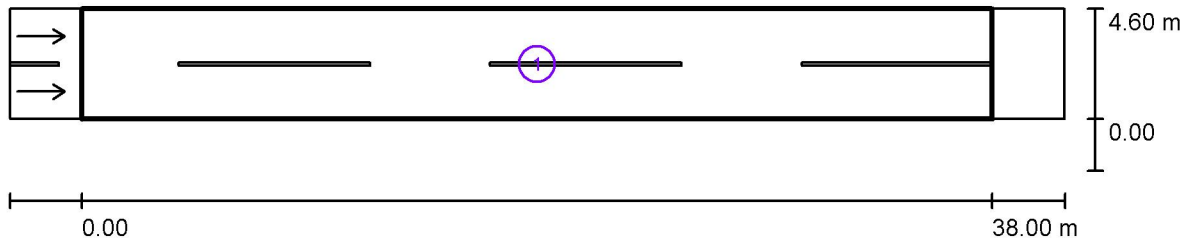
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Zelenjak - ME6 - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:315

### Calculation Field List

- Valuation Field Roadway 1  
Length: 38.000 m, Width: 4.600 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.79	0.35	0.47	11	1.00
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

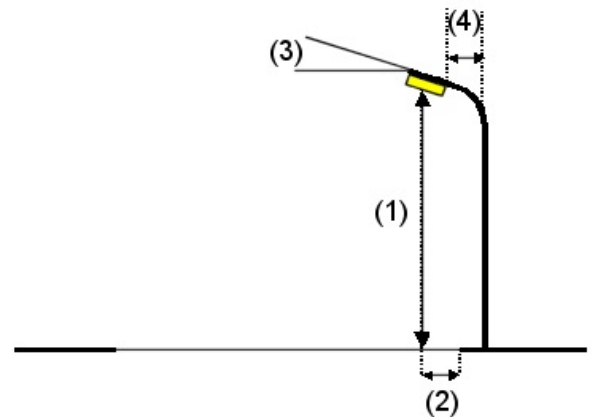
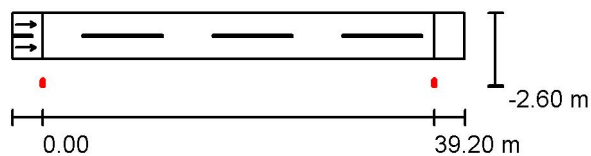
## Zelenjak - ME6 - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.600 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire:	PHILIPS BGP352 T15 1xEco35-3S/830 DC
Luminous flux (Luminaire):	3528 lm
Luminous flux (Lamps):	3600 lm
Luminaire Wattage:	37.0 W
Arrangement:	Single row, bottom
Pole Distance:	39.200 m
Mounting Height (1):	7.990 m
Height:	8.000 m
Overhang (2):	-2.172 m
Boom Angle (3):	0.0 °
Boom Length (4):	0.000 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

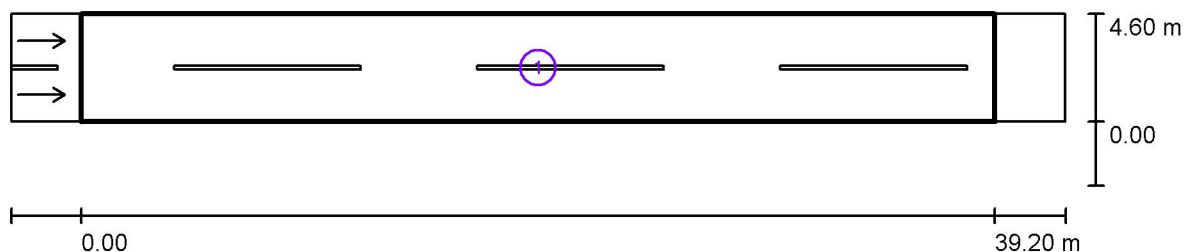
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Zelenjak - ME6 - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:324

### Calculation Field List

- Valuation Field Roadway 1  
Length: 39.200 m, Width: 4.600 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.34	0.51	0.47	11	0.87
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
Telephone  
Fax  
e-Mail

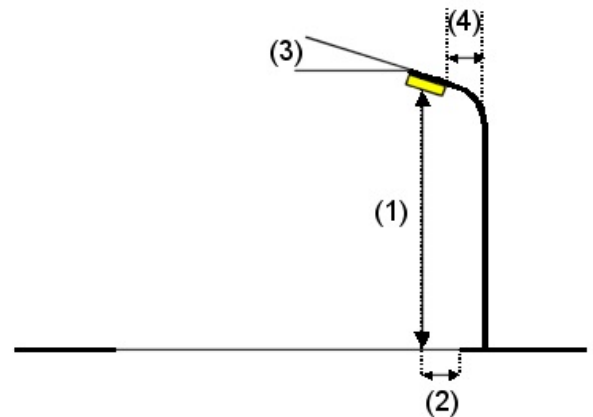
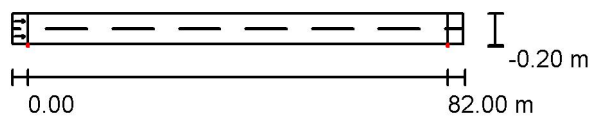
## Bana J. Jelačića - ME4a - luk (l=2m, h=0,7m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX

Luminous flux (Luminaire): 11997 lm

Luminous flux (Lamps): 14000 lm

Luminaire Wattage: 170.0 W

Arrangement: Single row, bottom

Pole Distance: 82.000 m

Mounting Height (1): 10.940 m

Height: 10.700 m

Overhang (2): -0.200 m

Boom Angle (3): 0.0 °

Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 207 cd/klm

at 80°: 81 cd/klm

at 90°: 0.00 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

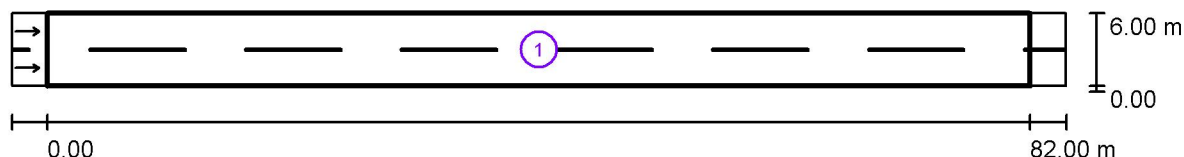
Arrangement complies with luminous intensity class G6.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Bana J. Jelačića - ME4a - luk (l=2m, h=0,7m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:630

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 82.000 m, Width: 6.000 m

Grid: 28 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME4a

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.28	0.13	0.14	10	0.91
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

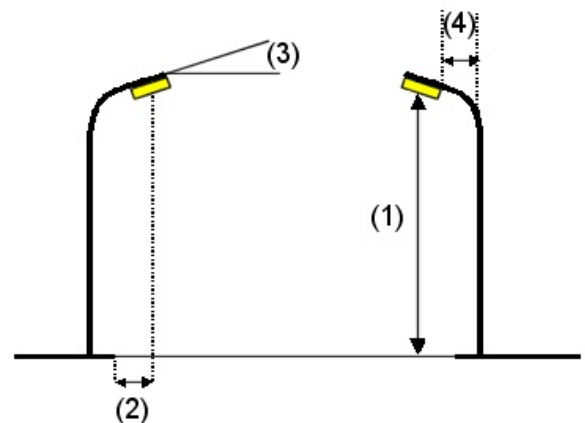
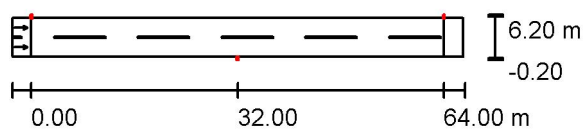
## Bana J. Jelačića - ME4a - luk (l=2m, h=0,7m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	64.000 m
Mounting Height (1):	10.940 m
Height:	10.700 m
Overhang (2):	-0.200 m
Boom Angle (3):	0.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	207 cd/klm
at 80°:	81 cd/klm
at 90°:	0.00 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

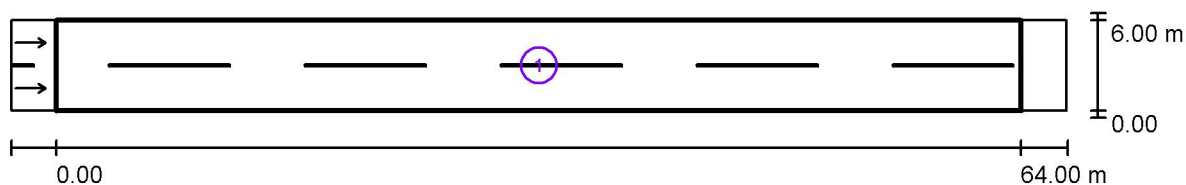
Arrangement complies with luminous intensity class G6.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Bana J. Jelačića - ME4a - luk (l=2m, h=0,7m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:501

### Calculation Field List

- Valuation Field Roadway 1  
Length: 64.000 m, Width: 6.000 m  
Grid: 22 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.88	0.66	0.61	6	0.91
Required values according to class:	≥ 0.75	≥ 0.40	≥ 0.60	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

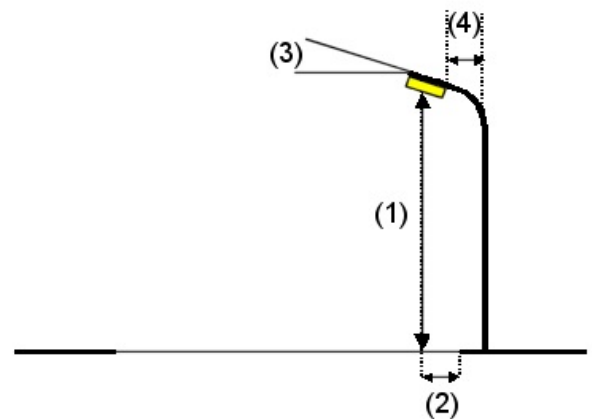
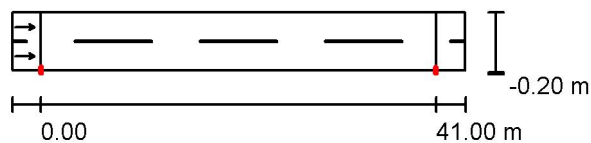
## Bana J. Jelačića - ME4a - luk (l=2m, h=0,7m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco81-3S/830 DC  
 Luminous flux (Luminaire): 8256 lm  
 Luminous flux (Lamps): 8600 lm  
 Luminaire Wattage: 80.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 41.000 m  
 Mounting Height (1): 10.690 m  
 Height: 10.700 m  
 Overhang (2): 0.228 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 475 cd/klm

at 80°: 14 cd/klm

at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

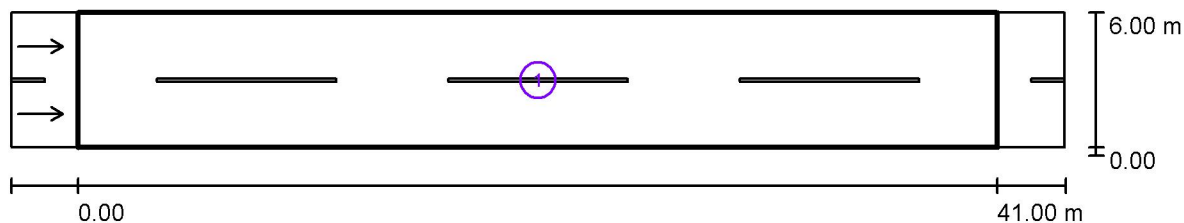
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
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Fax  
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## Bana J. Jelačića - ME4a - luk (l=2m, h=0,7m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:337

### Calculation Field List

- Valuation Field Roadway 1  
Length: 41.000 m, Width: 6.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.75	0.61	0.70	6	0.78
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

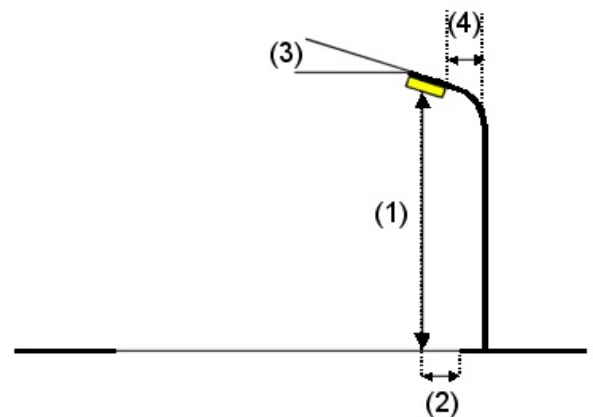
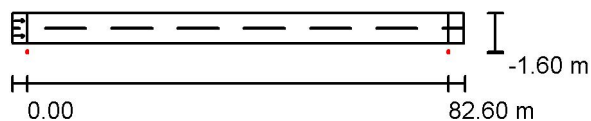
## Kneza Lj. Posavskog čelični stupovi - ME4a - luk (l=2m, h=0,7m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	82.600 m
Mounting Height (1):	10.940 m
Height:	10.700 m
Overhang (2):	-1.600 m
Boom Angle (3):	0.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	207 cd/klm
at 80°:	81 cd/klm
at 90°:	0.00 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

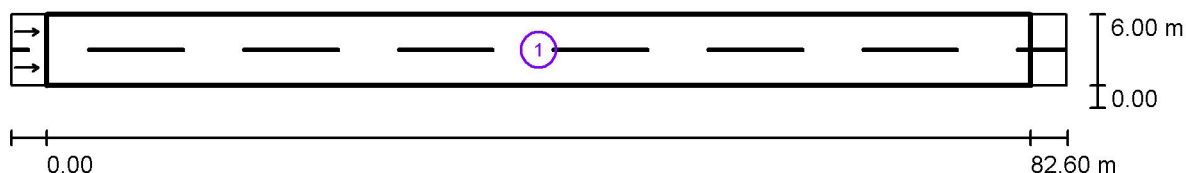
Arrangement complies with luminous intensity class G6.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
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## Kneza Lj. Posavskog čelični stupovi - ME4a - luk (l=2m, h=0,7m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:634

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 82.600 m, Width: 6.000 m

Grid: 28 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME4a

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.21	0.13	0.14	10	1.00
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓





Operator  
Telephone  
Fax  
e-Mail

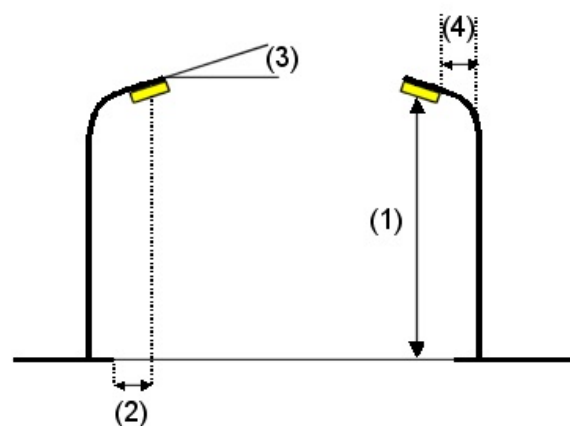
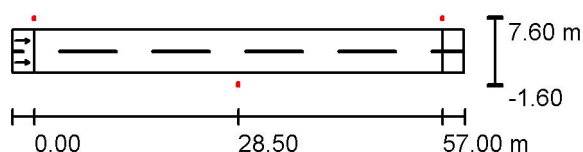
## Kneza Lj. Posavskog čelični stupovi - ME4a - luk ( $l=2\text{m}$ , $h=0,7\text{m}$ ) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3,  $q_0$ : 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	57.000 m
Mounting Height (1):	10.940 m
Height:	10.700 m
Overhang (2):	-1.600 m
Boom Angle (3):	0.0 °
Boom Length (4):	2.000 m

### Maximum luminous intensities

at 70°:	207 cd/klm
at 80°:	81 cd/klm
at 90°:	0.00 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

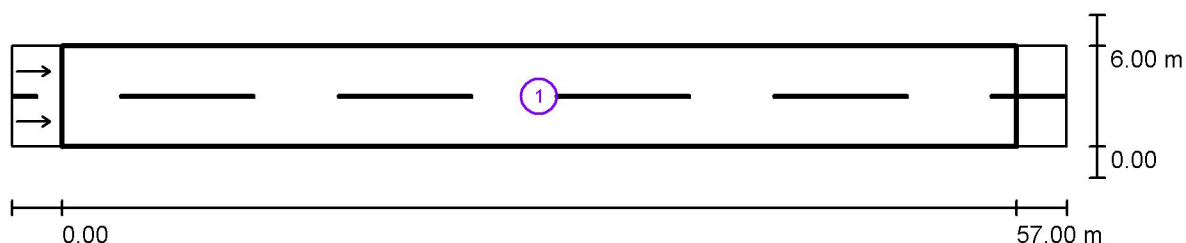
Arrangement complies with luminous intensity class G6.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Kneza Lj. Posavskog čelični stupovi - ME4a - luk (l=2m, h=0,7m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:451

### Calculation Field List

- Valuation Field Roadway 1  
Length: 57.000 m, Width: 6.000 m  
Grid: 19 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.76	0.77	0.67	5	1.00
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

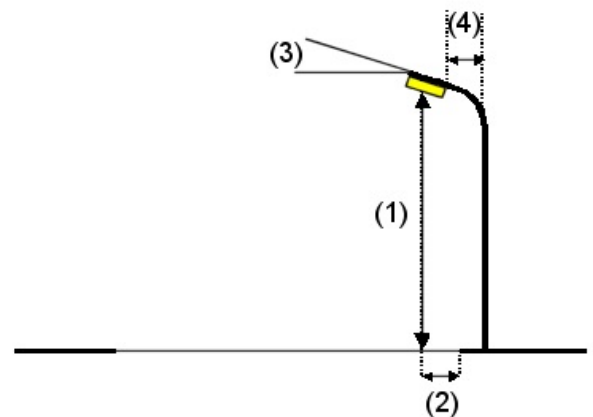
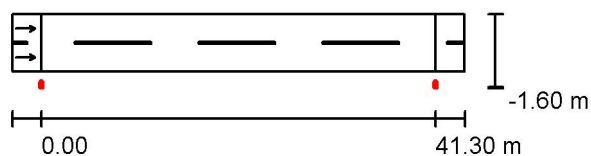
## Kneza Lj. Posavskog čelični stupovi- ME4a - luk (l=2m, h=0,7m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire:	PHILIPS BGP352 T15 1xE903-3S/830 DC
Luminous flux (Luminaire):	9310 lm
Luminous flux (Lamps):	9800 lm
Luminaire Wattage:	93.0 W
Arrangement:	Single row, bottom
Pole Distance:	41.300 m
Mounting Height (1):	10.690 m
Height:	10.700 m
Overhang (2):	-1.172 m
Boom Angle (3):	0.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	471 cd/klm
at 80°:	14 cd/klm
at 90°:	0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

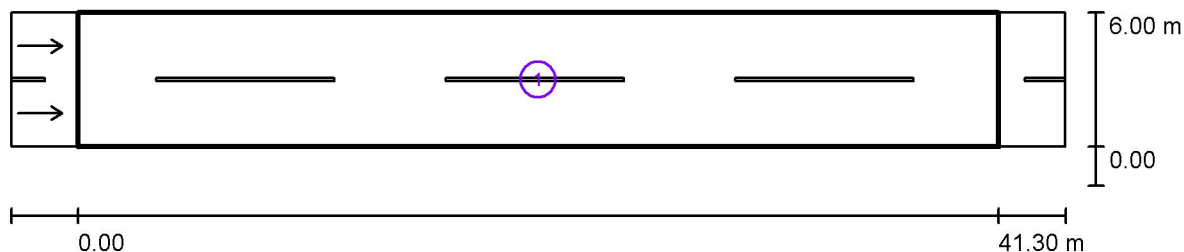
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Kneza Lj. Posavskog čelični stupovi- ME4a - luk (l=2m, h=0,7m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:339

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 41.300 m, Width: 6.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.76	0.59	0.72	7	0.84
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

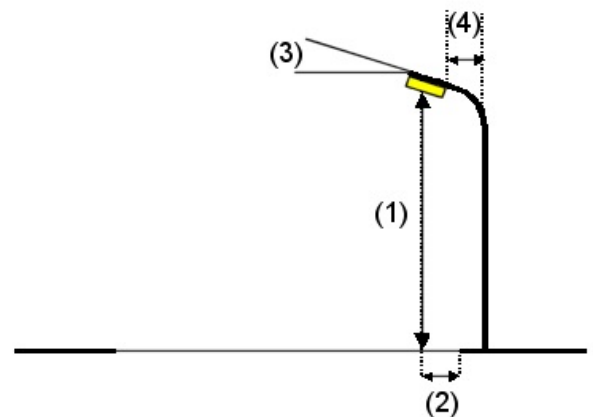
## Kneza Lj. Posavskog betonski stupovi - ME4a - luk ( $l=0,7\text{m}$ ) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3,  $q_0$ : 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	255.700 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-4.438 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

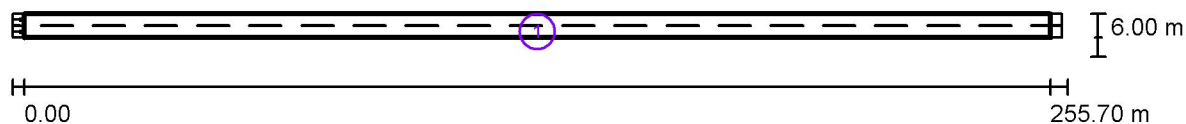
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Kneza Lj. Posavskog betonski stupovi - ME4a - luk (l=0,7m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:1871

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 255.700 m, Width: 6.000 m

Grid: 86 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME4a

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.04	0.00	0.00	/	1.29
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	<b>X</b>	<b>X</b>	<b>X</b>	/	<b>✓</b>



Operator  
Telephone  
Fax  
e-Mail

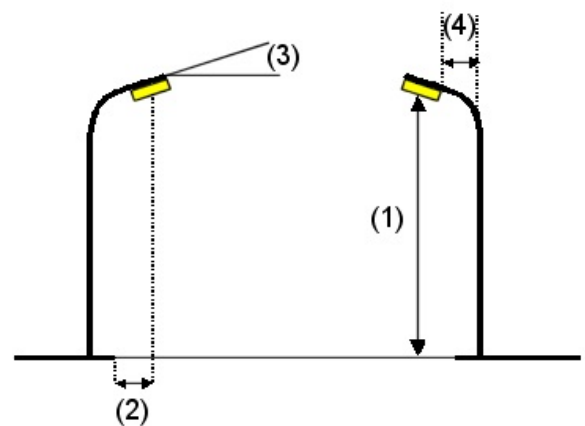
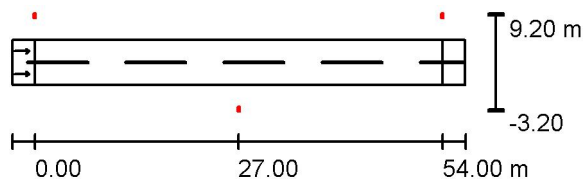
## Kneza Lj. Posavskog betonski stupovi - ME4a - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	54.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-3.138 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

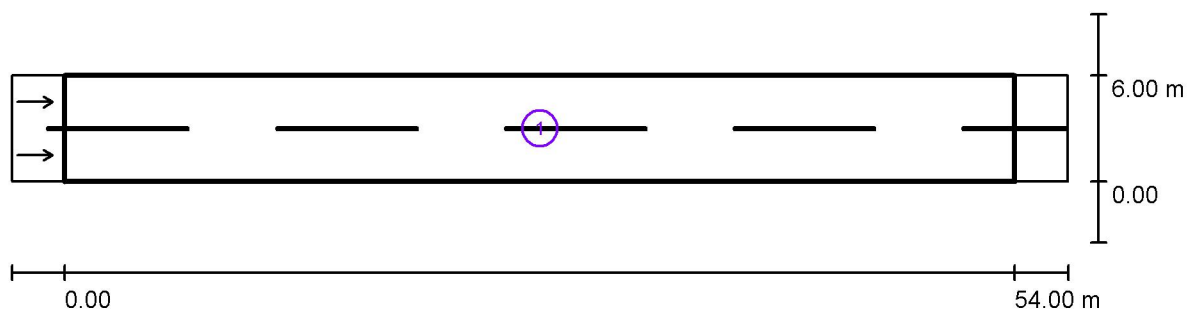
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Kneza Lj. Posavskog betonski stupovi - ME4a - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:429

### Calculation Field List

- Valuation Field Roadway 1  
Length: 54.000 m, Width: 6.000 m  
Grid: 18 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.76	0.72	0.61	8	1.09
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
Telephone  
Fax  
e-Mail

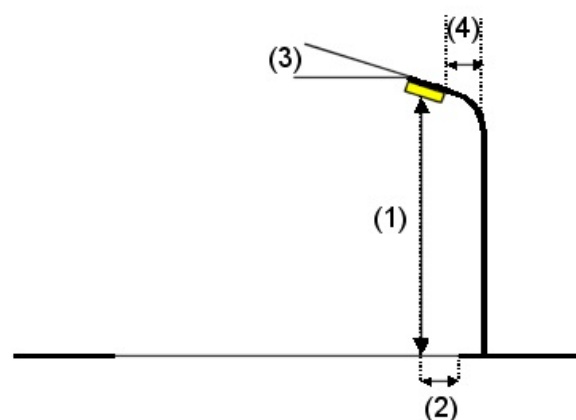
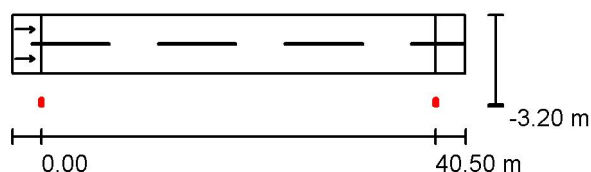
## Kneza Lj. Posavskog betonski stupovi - ME4a - luk (l=2m, h=1,5m) - kut 5° - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP353 T15 1xEco139-3S/830 DC  
 Luminous flux (Luminaire): 13485 lm  
 Luminous flux (Lamps): 14500 lm  
 Luminaire Wattage: 138.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 40.500 m  
 Mounting Height (1): 9.024 m  
 Height: 9.040 m  
 Overhang (2): -2.746 m  
 Boom Angle (3): 5.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 509 cd/klm  
 at 80°: 33 cd/klm  
 at 90°: 1.22 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

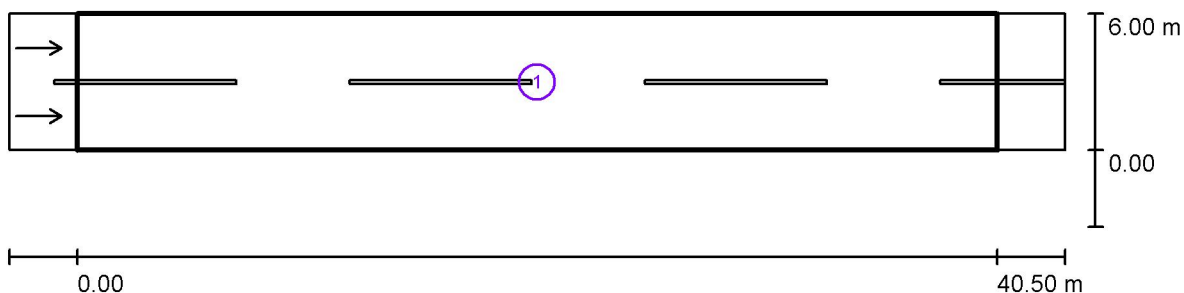
Arrangement complies with luminous intensity class G3.

Arrangement complies with glare index class D.6.



Operator  
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Fax  
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## Kneza Lj. Posavskog betonski stupovi - ME4a - luk (l=2m, h=1,5m) - kut 5° - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:333

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 40.500 m, Width: 6.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.00	0.55	0.60	12	0.87
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

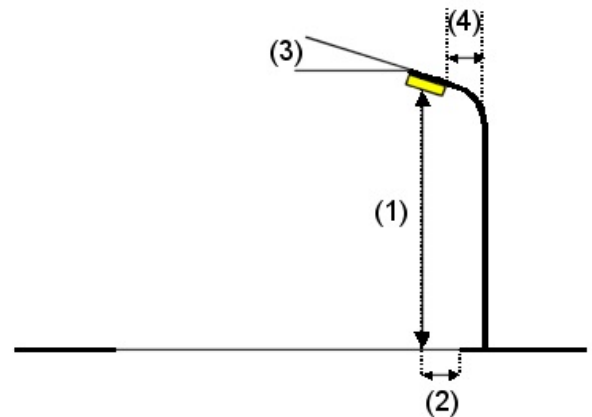
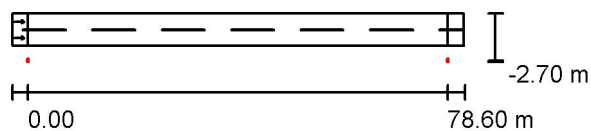
## Kolodvorska - ME4a - luk (l=2m, h=1,5m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	78.600 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-2.638 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

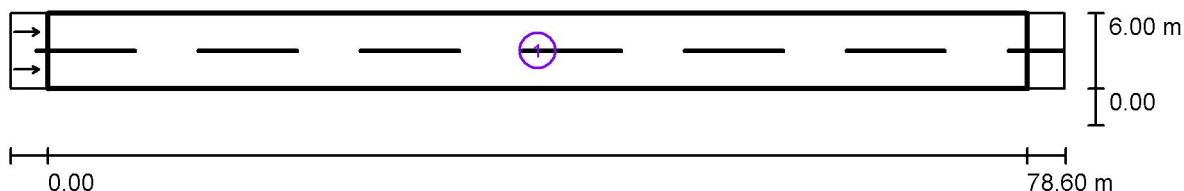
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Kolodvorska - ME4a - luk (l=2m, h=1,5m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:605

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 78.600 m, Width: 6.000 m  
Grid: 27 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.23	0.13	0.12	13	1.05
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓

Operator  
Telephone  
Fax  
e-Mail

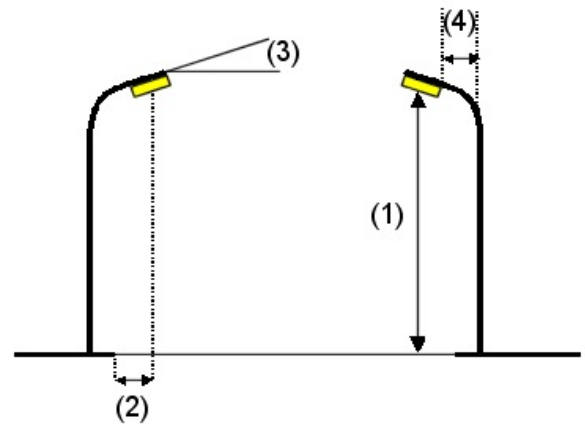
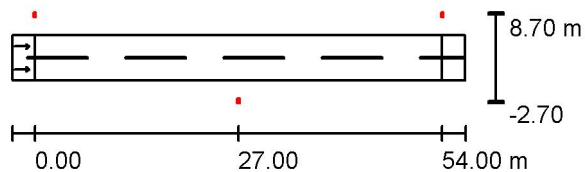
## Kolodvorska - ME4a - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire: tep LVC 06 150 E GAMALUX  
Luminous flux (Luminaire): 11997 lm  
Luminous flux (Lamps): 14000 lm  
Luminaire Wattage: 170.0 W  
Arrangement: Double row, with offset  
Pole Distance: 54.000 m  
Mounting Height (1): 9.232 m  
Height: 9.000 m  
Overhang (2): -2.638 m  
Boom Angle (3): 15.0 °  
Boom Length (4): 2.000 m

#### Maximum luminous intensities

at 70°: 216 cd/klm  
at 80°: 91 cd/klm  
at 90°: 27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

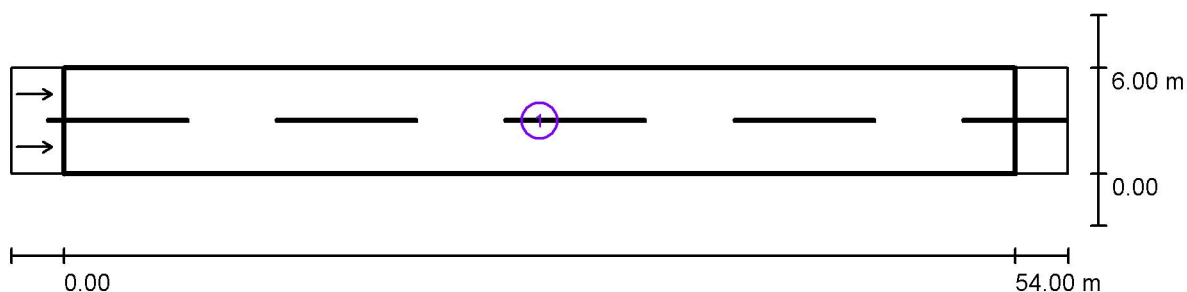
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Kolodvorska - ME4a - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:429

### Calculation Field List

- Valuation Field Roadway 1  
Length: 54.000 m, Width: 6.000 m  
Grid: 18 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.85	0.72	0.60	7	1.05
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

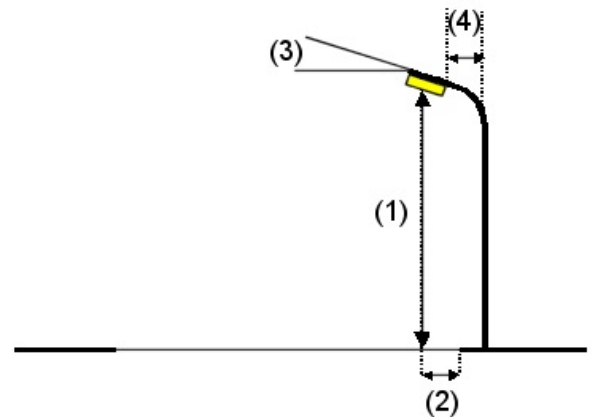
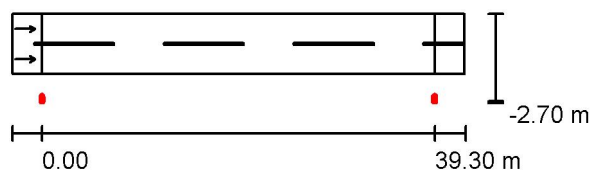
## Kolodvorska - ME4a - luk (l=2m, h=1,5m) - kut 5° - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP353 T15 1xEco139-3S/830 DC  
 Luminous flux (Luminaire): 13485 lm  
 Luminous flux (Lamps): 14500 lm  
 Luminaire Wattage: 138.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 39.300 m  
 Mounting Height (1): 8.984 m  
 Height: 9.000 m  
 Overhang (2): -2.246 m  
 Boom Angle (3): 5.0°  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 509 cd/klm

at 80°: 33 cd/klm

at 90°: 1.22 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

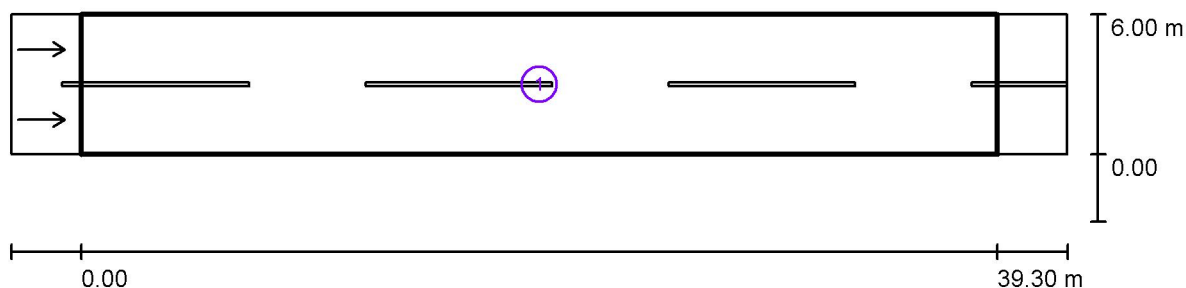
Arrangement complies with luminous intensity class G3.

Arrangement complies with glare index class D.6.



Operator  
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## Kolodvorska - ME4a - luk (l=2m, h=1,5m) - kut 5° - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:324

### Calculation Field List

- Valuation Field Roadway 1  
Length: 39.300 m, Width: 6.000 m  
Grid: 14 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4a

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.11	0.56	0.61	12	0.84
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.60$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓





Operator  
Telephone  
Fax  
e-Mail

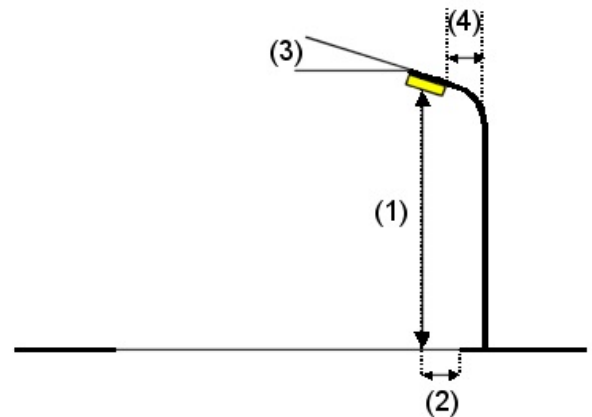
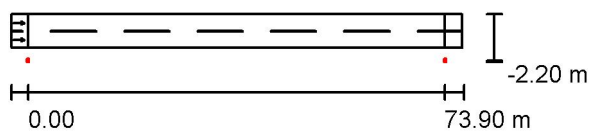
## Hrastova - ME4b - luk (l=0,3m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.900 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	73.900 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.138 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.300 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

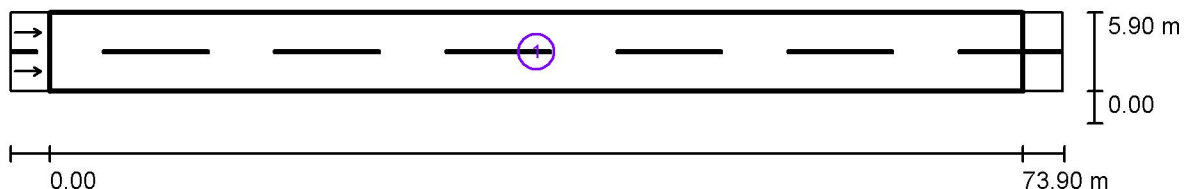
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Hrastova - ME4b - luk (l=0,3m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:572

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 73.900 m, Width: 5.900 m  
Grid: 25 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.28	0.11	0.10	15	1.06
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

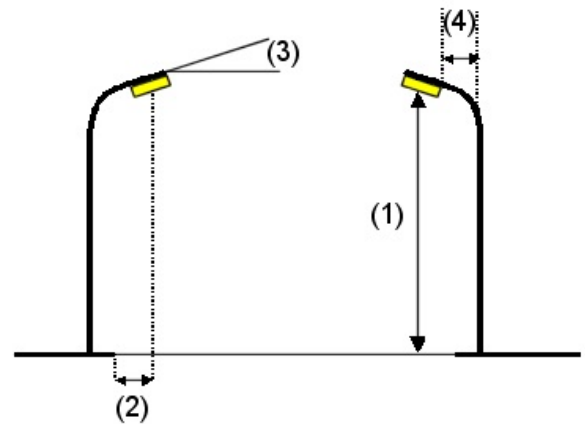
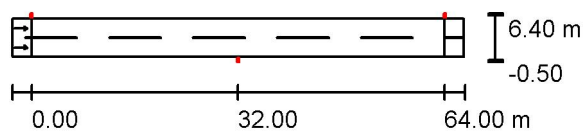
## Hrastova - ME4b - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 5.900 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	64.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-0.438 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

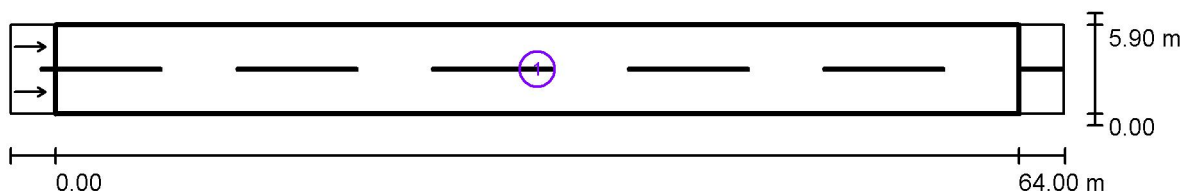
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
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## Hrastova - ME4b - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:501

### Calculation Field List

- Valuation Field Roadway 1  
Length: 64.000 m, Width: 5.900 m  
Grid: 22 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.11	0.58	0.51	8	0.86
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

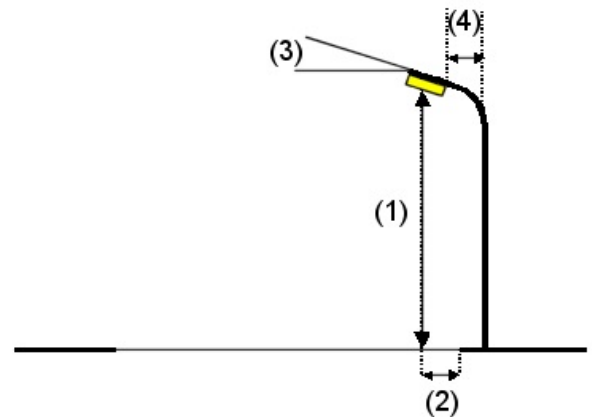
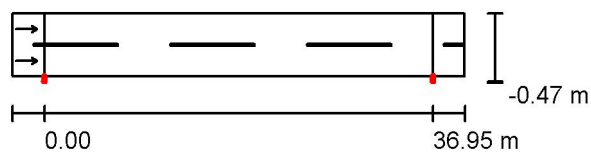
## Hrastova - ME4b - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 5.900 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco70-3S/830 DC  
 Luminous flux (Luminaire): 7008 lm  
 Luminous flux (Lamps): 7300 lm  
 Luminaire Wattage: 71.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 36.950 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -0.045 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

#### Maximum luminous intensities

at 70°: 478 cd/klm  
 at 80°: 14 cd/klm  
 at 90°: 0.14 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

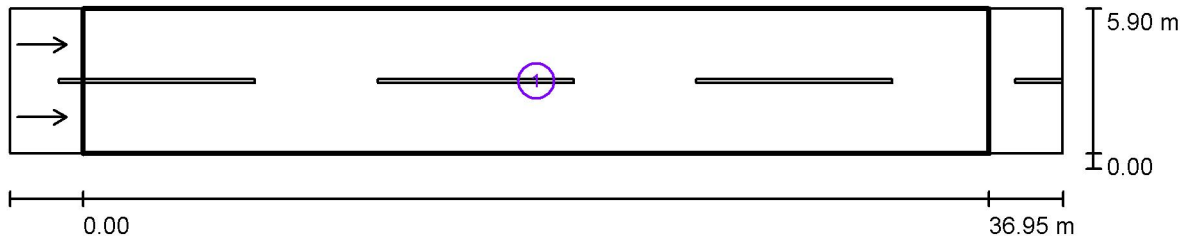
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
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Fax  
e-Mail

## Hrastova - ME4b - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:308

### Calculation Field List

- Valuation Field Roadway 1  
Length: 36.950 m, Width: 5.900 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME4b

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.80	0.57	0.64	8	0.73
Required values according to class:	$\geq 0.75$	$\geq 0.40$	$\geq 0.50$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

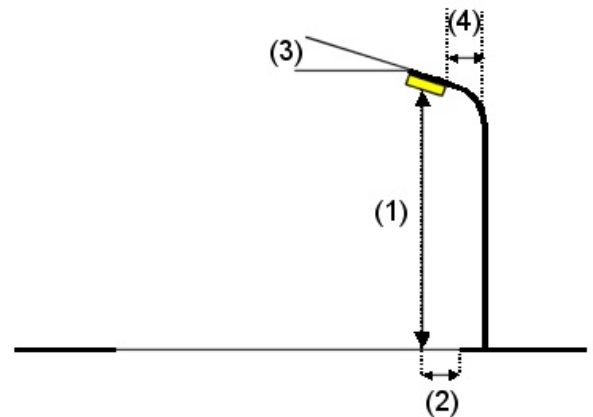
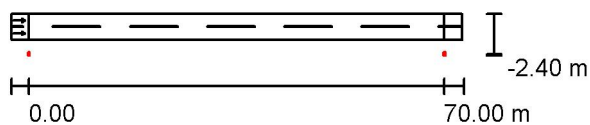
## Josipa Bačoke - ME6 - luk (l=0,3m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.300 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	70.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.338 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.300 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

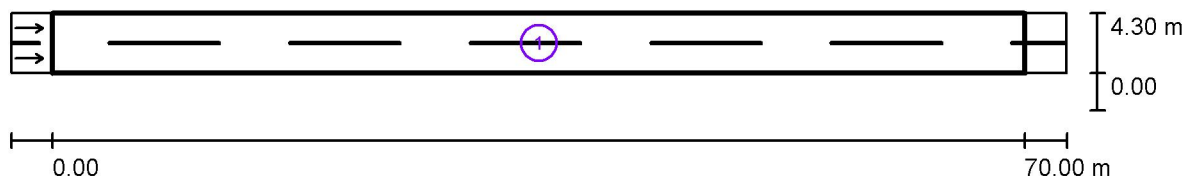
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Josipa Bačoke - ME6 - luk (l=0,3m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:544

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 70.000 m, Width: 4.300 m  
Grid: 24 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.33	0.14	0.11	14	1.02
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✗	✗	✓	✓





Operator  
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Fax  
e-Mail

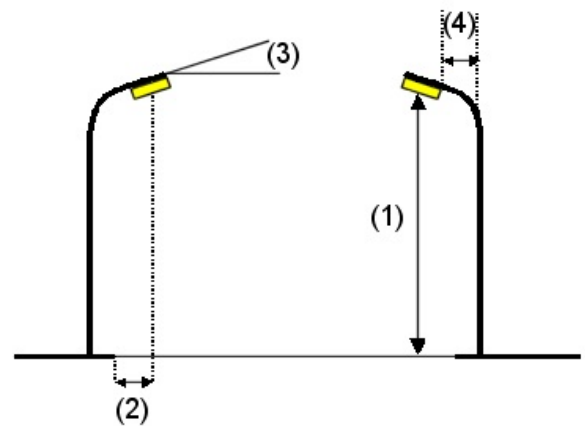
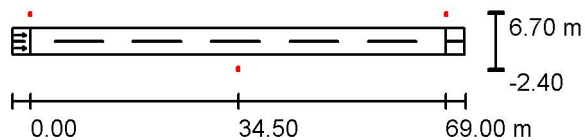
## Josipa Bačoke - ME6 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 4.300 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	69.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.338 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.300 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

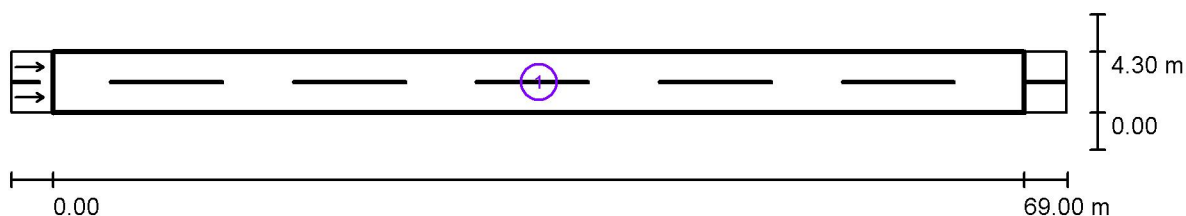
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Josipa Bačoke - ME6 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:537

### Calculation Field List

- Valuation Field Roadway 1  
Length: 69.000 m, Width: 4.300 m  
Grid: 23 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.82	0.60	0.40	9	1.02
Required values according to class:	≥ 0.30	≥ 0.35	≥ 0.40	≤ 15	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

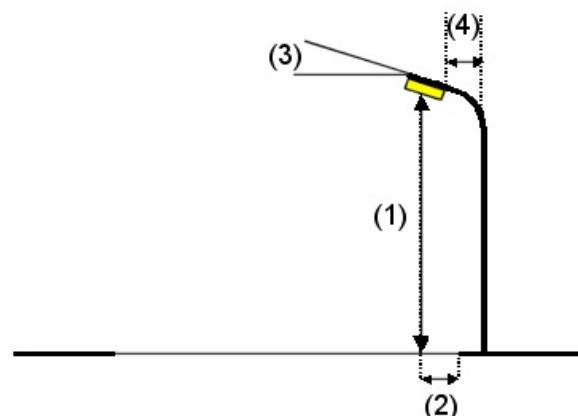
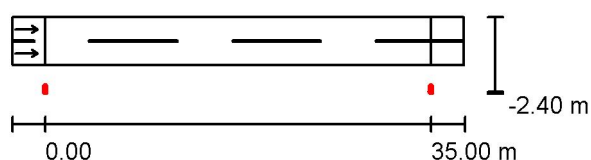
## Josipa Bačoke - ME6 - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 4.300 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DC  
 Luminous flux (Luminaire): 3528 lm  
 Luminous flux (Lamps): 3600 lm  
 Luminaire Wattage: 37.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 35.000 m  
 Mounting Height (1): 7.990 m  
 Height: 8.000 m  
 Overhang (2): -1.972 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 0.300 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

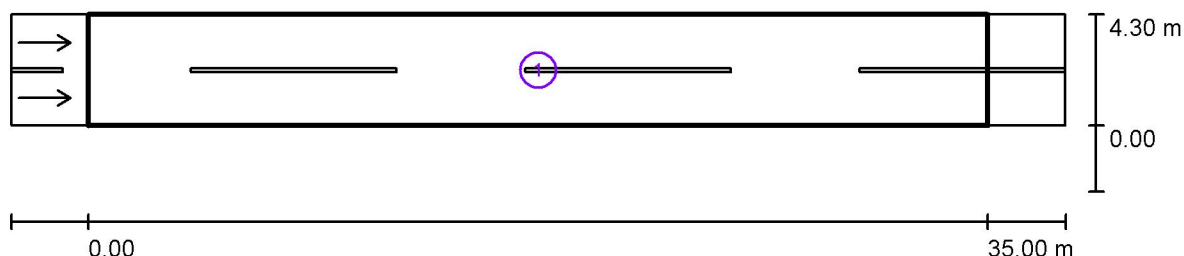
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Josipa Bačoke - ME6 - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:294

### Calculation Field List

- Valuation Field Roadway 1  
Length: 35.000 m, Width: 4.300 m  
Grid: 12 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.40	0.58	0.58	10	0.88
Required values according to class:	≥ 0.30	≥ 0.35	≥ 0.40	≤ 15	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

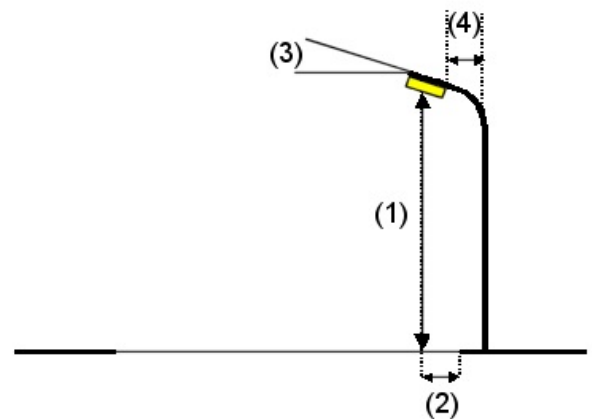
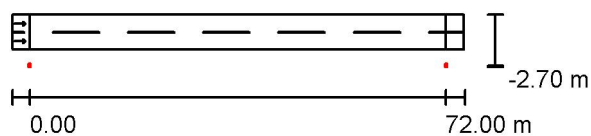
## Josipa Bačoke preko pruge - ME5 - luk ( $l=0,3\text{m}$ ) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3,  $q_0$ : 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	72.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-2.638 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

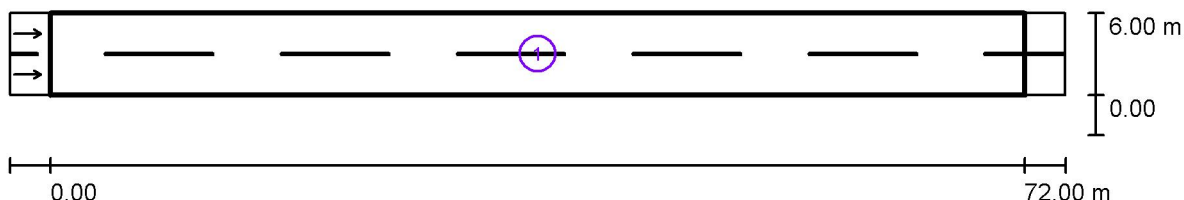
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G2.  
Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Josipa Bačoke preko pruge - ME5 - luk (l=0,3m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:558

### Calculation Field List

#### 1 Valuation Field Roadway 1

Length: 72.000 m, Width: 6.000 m

Grid: 24 x 6 Points

Accompanying Street Elements: Roadway 1.

tarmac: R3, q0: 0.070

Selected Lighting Class: ME5

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.25	0.13	0.11	15	1.11
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✗	✗	✗	✓	✓



Operator  
Telephone  
Fax  
e-Mail

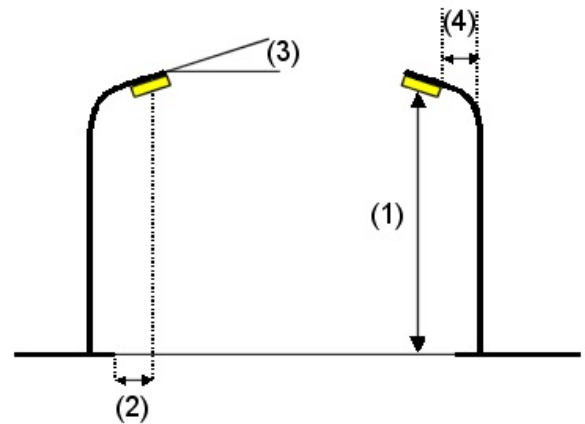
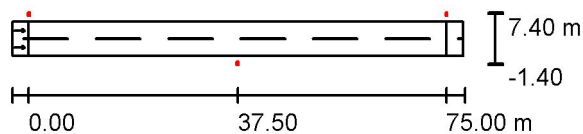
## Josipa Bačoke preko pruge - ME5 - luk (l=2m, h=1,5m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	75.000 m
Mounting Height (1):	9.232 m
Height:	9.000 m
Overhang (2):	-1.338 m
Boom Angle (3):	15.0 °
Boom Length (4):	2.000 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

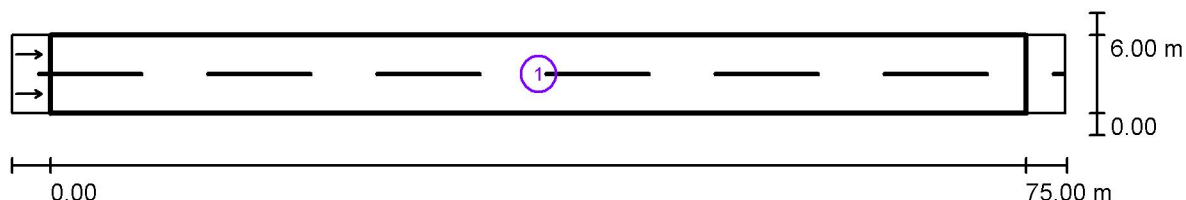
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Josipa Bačoke preko pruge - ME5 - luk (l=2m, h=1,5m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:580

### Calculation Field List

- Valuation Field Roadway 1  
Length: 75.000 m, Width: 6.000 m  
Grid: 25 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.80	0.54	0.40	9	0.94
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

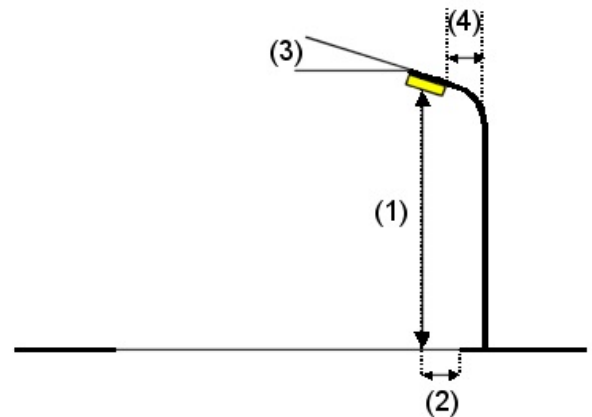
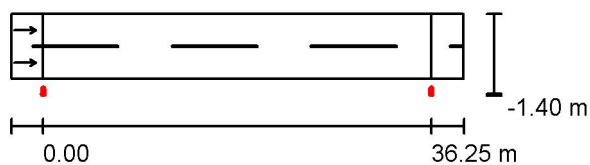
## Josipa Bačoke preko pruge - luk (l=2m, h=1,5m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco46-3S/830 DC  
 Luminous flux (Luminaire): 4802 lm  
 Luminous flux (Lamps): 4900 lm  
 Luminaire Wattage: 48.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 36.250 m  
 Mounting Height (1): 8.990 m  
 Height: 9.000 m  
 Overhang (2): -0.972 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 2.000 m

Maximum luminous intensities

at 70°: 485 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

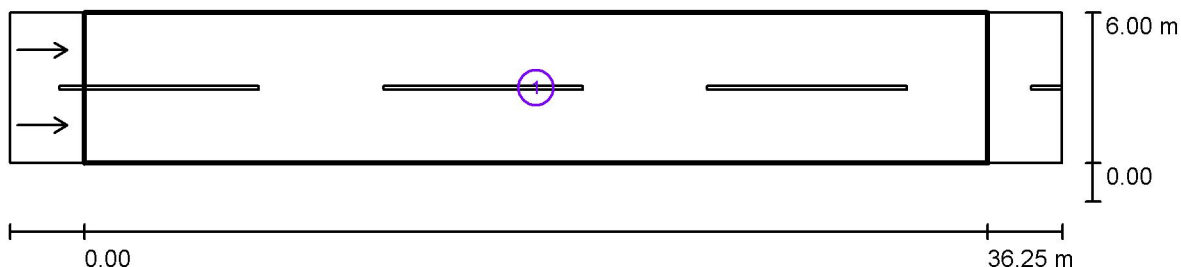
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Josipa Bačoke preko pruge - luk (l=2m, h=1,5m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:303

### Calculation Field List

- Valuation Field Roadway 1  
Length: 36.250 m, Width: 6.000 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.50	0.55	0.66	8	0.77
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

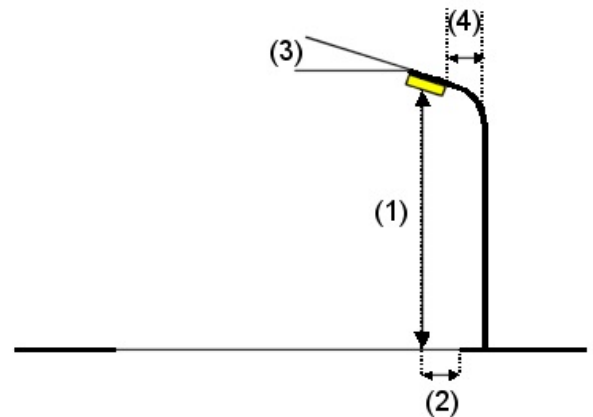
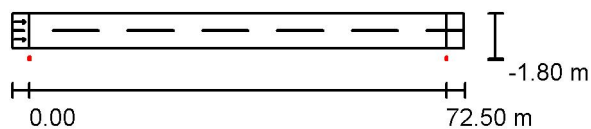
## Kolodvor - ME6 - luk (l=0,7m) - postojeće stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.67

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Single row, bottom
Pole Distance:	72.500 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-1.738 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

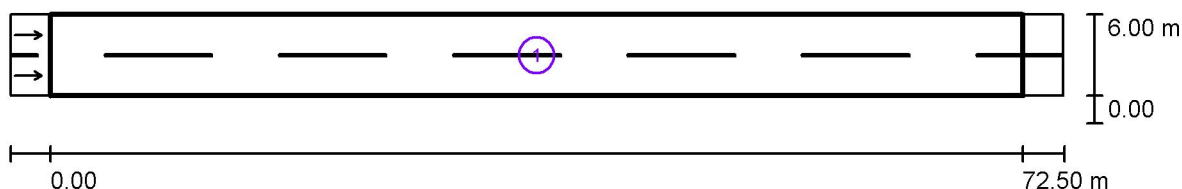
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Kolodvor - ME6 - luk (l=0,7m) - postojeće stanje / Photometric Results



Maintenance factor: 0.67

Scale 1:562

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 72.500 m, Width: 6.000 m  
Grid: 25 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(Not all lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.31	0.11	0.10	16	1.02
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✗	✗	✗	✓



Operator  
Telephone  
Fax  
e-Mail

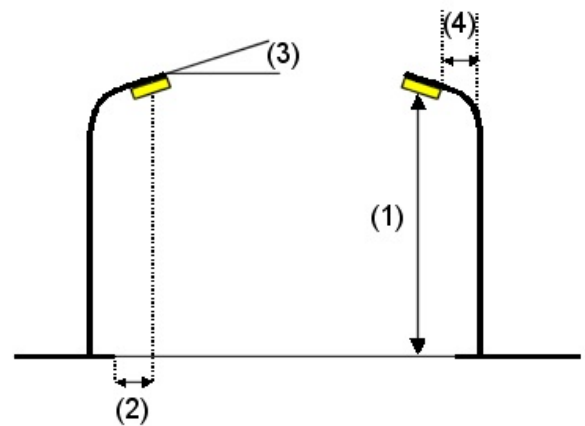
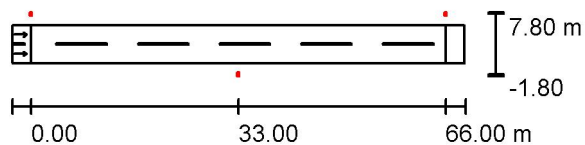
## Kolodvor - ME6 - luk (l=0,7m) - prema normi / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.80

### Luminaire Arrangements



Luminaire:	tep LVC 06 150 E GAMALUX
Luminous flux (Luminaire):	11997 lm
Luminous flux (Lamps):	14000 lm
Luminaire Wattage:	170.0 W
Arrangement:	Double row, with offset
Pole Distance:	66.000 m
Mounting Height (1):	8.232 m
Height:	8.000 m
Overhang (2):	-1.738 m
Boom Angle (3):	15.0 °
Boom Length (4):	0.700 m

#### Maximum luminous intensities

at 70°:	216 cd/klm
at 80°:	91 cd/klm
at 90°:	27 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

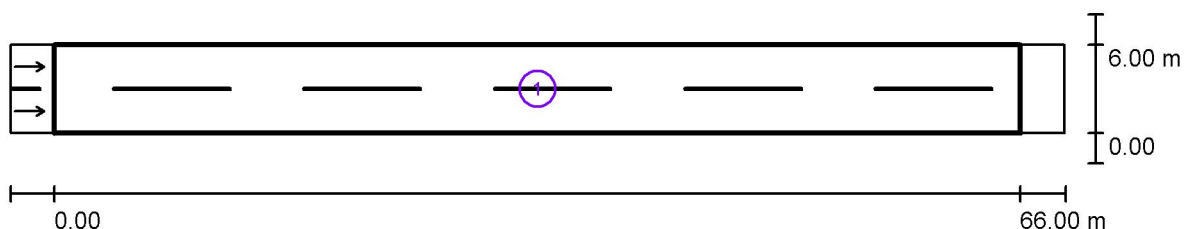
Arrangement complies with luminous intensity class G2.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Kolodvor - ME6 - luk (l=0,7m) - prema normi / Photometric Results



Maintenance factor: 0.80

Scale 1:515

### Calculation Field List

- 1 Valuation Field Roadway 1  
Length: 66.000 m, Width: 6.000 m  
Grid: 22 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.85	0.58	0.40	10	1.02
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Operator  
Telephone  
Fax  
e-Mail

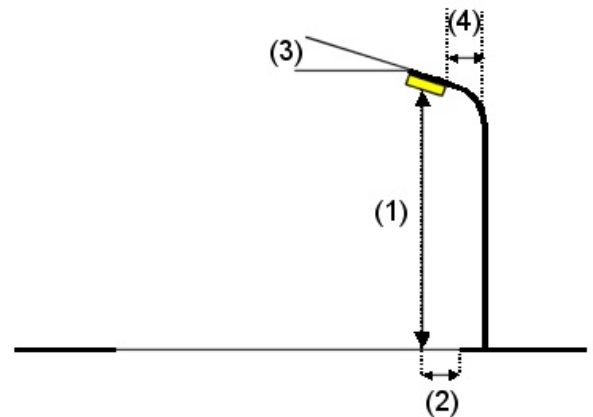
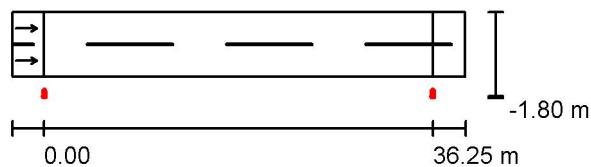
## Kolodvor - ME6 - luk (l=0,7m) - novo stanje / Planning data

### Street Profile

Roadway 1 (Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire: PHILIPS BGP352 T15 1xEco35-3S/830 DC  
 Luminous flux (Luminaire): 3528 lm  
 Luminous flux (Lamps): 3600 lm  
 Luminaire Wattage: 37.0 W  
 Arrangement: Single row, bottom  
 Pole Distance: 36.250 m  
 Mounting Height (1): 7.990 m  
 Height: 8.000 m  
 Overhang (2): -1.372 m  
 Boom Angle (3): 0.0 °  
 Boom Length (4): 0.700 m

Maximum luminous intensities

at 70°: 488 cd/klm

at 80°: 15 cd/klm

at 90°: 0.15 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 90°.

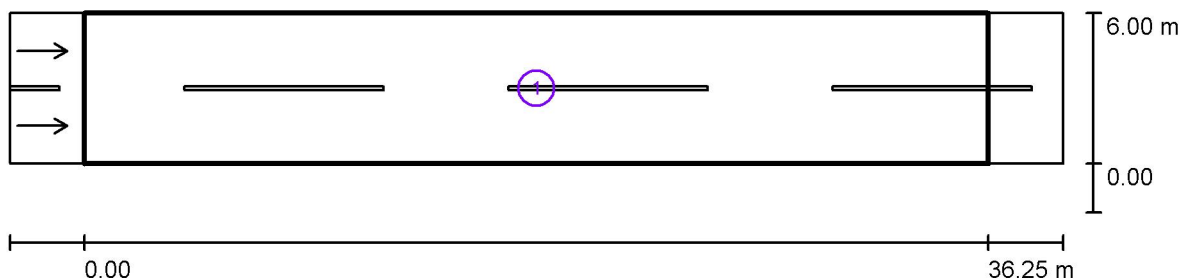
Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Operator  
Telephone  
Fax  
e-Mail

## Kolodvor - ME6 - luk (l=0,7m) - novo stanje / Photometric Results



Maintenance factor: 0.90

Scale 1:303

### Calculation Field List

- Valuation Field Roadway 1  
Length: 36.250 m, Width: 6.000 m  
Grid: 13 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME6

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	0.37	0.48	0.52	10	0.75
Required values according to class:	$\geq 0.30$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	/
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓