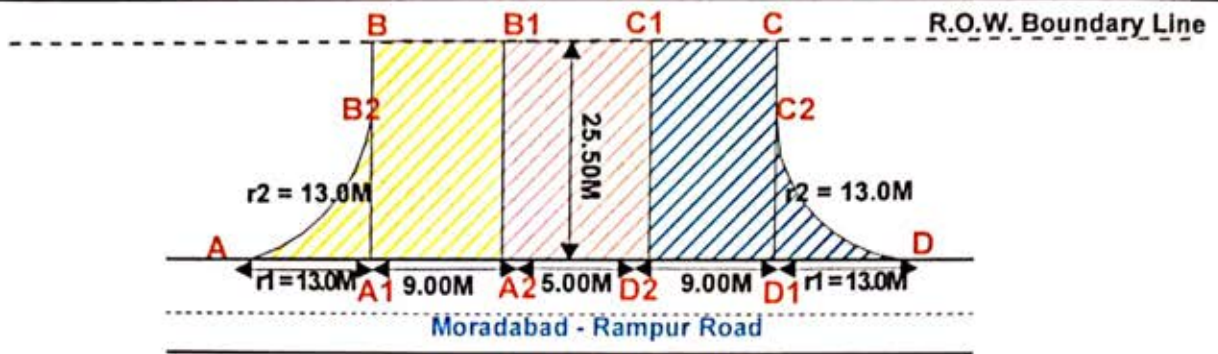


Area Calculation Sheet as per Approved Layout Plan

PROPOSED PROTECTED FOREST LAND TO BE DIVERTED FOR ENTRY/EXIT APPROACH TO HINDUSTAN PETROLEUM CORPORATION LIMITED RETAIL OUTLET ON DELHI - BAREILLY - LUCKNOW ROAD (NH-24) (CITY ROAD) IN KM. NO. 163.0 (CH. NO. 162.863, LHS) AT GATA NO.- 112MI, 113MI & 114/1 MI, VILLAGE:- MUSTAFABAD MUSTAKAM, TEHSIL:- MORADABAD, DISTRICT:- MORADABAD (U.P.)



Area of Entry approach to retail outlet

= Area of Curve Polygon(A B2 A1) + Area of rectangle (B B1 A2 A1)

Area of Curve Polygon(A B2 A1)

$$= \{ (r_1 \times r_2) - (\pi \times r_1 \times r_2) / 4 \}$$

$$= \{ (13.0m \times 13.0m) - (3.14 \times 13.0 \times 13.0 / 4) \}$$

$$= (169.0 - 132.665) \text{ SqM}$$

$$= 36.34 \text{ SqM}$$

Area of rectangle (B B1 A2 A1)

$$= \{ \text{Length(m)} \times \text{width(m)} \}$$

$$= (9.00m \times 25.50m)$$

$$= 229.5 \text{ SqM}$$

So, Area of Entry approach to retail outlet = (36.34 + 229.5) SqM = 265.84 SqM

Area of Separator = Area of rectangle (B1 C1 D2 A2)

Area of rectangle (B1 C1 D2 A2)

$$= \{ \text{Length(m)} \times \text{width(m)} \}$$

$$= (5.00m \times 25.50m) \text{ SqM}$$

$$= 127.50 \text{ SqM}$$

Area of Exit approach from retail outlet

= Area of Curve Polygon(C2 D D1) + Area of rectangle (C C1 D2 D1)

Area of Curve Polygon(C2 D D1)

$$= \{ (r_1 \times r_2) - (\pi \times r_1 \times r_2) / 4 \}$$

$$= \{ (13.0m \times 13.0m) - (3.14 \times 13.0 \times 13.0 / 4) \}$$

$$= (169.0 - 132.665) \text{ SqM}$$

$$= 36.34 \text{ SqM}$$

Area of rectangle (C C1 D2 D1)

$$= \{ \text{Length(m)} \times \text{width(m)} \}$$

$$= (9.00m \times 25.50m)$$

$$= 229.5 \text{ SqM}$$

So, Area of Exit approach from retail outlet = (36.34 + 229.5) SqM = 265.84 SqM

Total Proposed Protected Forest Area for Diversion

$$= 265.84 \text{ SqM (Entry)} + 127.50 \text{ SqM (Forest Area B/W Entry \& Exit)} + 265.84 \text{ SqM (Exit)}$$

$$= 659.18 \text{ Sqm}$$

$$= 0.065918 \text{ Ha.}$$

Non-Forest Land/Private Land Area as per Layout Plan

= Retailoutlet Private Land area

= area of quadrilateral BCHI = [Area of triangle BCI + Area of triangle CIH]

Area of triangle = $\sqrt{S(S-a)(S-b)(S-c)}$

; where $S = (a+b+c)/2$ and a, b and c are sides of a triangle

$$\text{Area of triangle BCI} = \sqrt{38.613(15.613)(16.263)(6.737)} = 257.006 \text{ SqM}$$

$$\text{Area of triangle CIH} = \sqrt{38.9305(16.4105)(15.4405)(7.0795)} = 264.264 \text{ SqM}$$

$$\text{So, area of non-forest land is} = (257.006 + 264.264) \text{ SqM} = 521.27 \text{ SqM}$$

$$= 0.0521 \text{ Ha.}$$

(Authorized Signatory)

Hindustan Petroleum Corporation Ltd.
Meerut Retail Regional Office