

VALUE ENGINEERING CHANGE PROPOSAL MISSOURI DEPARTMENT OF TRANSPORTATION

Conceptual Proposal **Final Proposal** **Date** 4/15/13

Contract ID 130125-F01 **Job No.** J6I2412

County St. Charles **Route** 70 **Original Contract Amount** \$12,409,196.96

Contractor Millstone Bangert, Inc. **By** Millstone Bangert, Inc.

Designed By _____ **Phone** 636-949-0038

VECP# 13-22 (to be completed by C.O.) **VECP** **or** **PDVECP**

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages

The current plans show constructing an MSE Wall along Ramp 1, adjacent to the Commuter Parking Lot and the proposed change is to substitute MSE Wall 13-2412-002 with a Type C (Retaining Wall) concrete barrier. The proposed barrier wall would be offset 27'-36' from the MSE Wall location, extending the 3:1 slope towards the parking lot. The proposed location of the concrete barrier wall will leave a minimum of 95 parking spaces. If additional spaces are desired, the parking layout in the southwest corner can be adjusted in the field to maximize the spaces. See attachments for additional details.

2. Estimate of reduction in construction costs. \$178,086.86

3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.

None

4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.

4/25/13

(date)

5. Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.

5/6/13

(date)

Work is scheduled for 5/10/13 and Material needs to be ordered.

(effect)

6. Dates of any previous or concurrent submission of the same proposal.

N/A

(date and/or dates)

Additional Comments:

**** Portion Below This Line To Be Filled Out by MoDOT ****

Comments: After review and comments from the St. Charles Area team, I recommend approval of this VECP. The contractor is providing an acceptable number of parking spaces for the commuter lot, as well as an acceptable barrier wall and adjacent slope. If the commuter lot needs to be restriped, the lot will first be overlaid with BP-1.

Submitted By Resident Engineer

Date

Comments:

**Approval
Recommended**

**Rejection
Recommended**

District Engineer

Date

Comments:

**Approval
Recommended**

**Rejection
Recommended**

Federal Highway Administration
Required for FHWA Full Oversight Projects

Date

Comments:

Approval

Rejection

State Construction and Materials Engineer

Date

Value Engineering Change Proposal

Job No. J6I2412

Wall 13-2412-002 (Ramp 1/1A, Sta. 7+50 to Sta. 11+50)

The proposed concrete barrier wall will be a Type C (Retaining Wall) and include the PCCP shoulder slab as shown in MoDOT standards. The existing parking lot will be saw cut along the proposed alignment and excavated for the PCCP shoulder slab. The barrier wall will include a Type B Gutter on the back side. The Concrete Traffic Barrier Type E shown to be placed along Ramp 1 will be substituted with Guardrail Type A, 7' Posts, 3' Spacing and allow for an A2 Shoulder in place of the A1 Shoulder.

Attached is the following documentation associated with the proposed change:

- Itemized breakdown
- Plan sheet showing proposed barrier wall and revised commuter lot spaces
- Barrier wall detail (MoDOT standards)
- Revised cross sections
- Excavation/Embankment Volumes

The proposed change results in a cost savings of \$178,086.86

I-70 / Mid River Mall Drive

Wall 13-2412-002 (Ramp 1/1A, Sta. 7+50 to Sta. 11+50)

DEDUCT

| <u>Line No.</u> | <u>Item No.</u> | <u>Item</u> | <u>Quantity</u> | <u>Unit</u> | <u>Unit Price</u> | <u>Cost</u> |
|-----------------|-----------------|--|-----------------|-------------|-------------------|----------------|
| 30 | 2031000 | Class A Excavation | (384.0) | CY | \$6.85 | (\$2,630.40) |
| 160 | 4039905 | Misc Optional Pavement, MRMD | (39.0) | SY | \$38.75 | (\$1,511.25) |
| 250 | 6062200A | Bridge Anchor Section | (2.0) | EA | \$1,620.00 | (\$3,240.00) |
| 260 | 6062300A | Transition Section | (2.0) | EA | \$303.00 | (\$606.00) |
| 360 | 6086004 | Concrete Sidewalk 4" | (26.7) | SY | \$42.00 | (\$1,120.00) |
| 610 | 6173200 | Concrete Traffic Barrier, Type E | (377.5) | LF | \$42.75 | (\$16,138.13) |
| 1160 | 5021333 | Concrete Pavement 9.5" (A1 Shoulder) | (180.5) | SY | \$40.00 | (\$7,220.80) |
| 2060 | 7201000 | Mechanically Stabilized Earth Wall Systems | (6,195.2) | SF | \$35.00 | (\$216,832.00) |
| | | | | | | (\$249,298.58) |

ADD

| <u>Line No.</u> | <u>Item No.</u> | <u>Item</u> | <u>Quantity</u> | <u>Unit</u> | <u>Unit Price</u> | <u>Cost</u> |
|-----------------|-----------------|--|-----------------|-------------|-------------------|-------------|
| 50 | 2036000 | Compacting Embankment | 4,050.0 | CY | \$1.00 | \$4,050.00 |
| 230 | 6061011A | Guardrail Type A, 7' Posts, 3' Spacing | 377.5 | LF | \$30.50 | \$11,513.75 |
| 400 | 6091042 | Concrete Gutter Type B | 377.0 | LF | \$30.00 | \$11,310.00 |
| 1180 | 5021340 | Type A2 Shoulder | 180.5 | SY | \$24.20 | \$4,368.10 |
| 1100 | 8051000A | Seeding | 0.5 | ACRE | \$1,230.00 | \$615.00 |
| 30 | 2031000 | Class A Excavation | 42.0 | cy | \$6.85 | \$287.70 |
| 180 | 5029905 | Misc. 5.75" Concrete Shoulder | 251.3 | SY | \$34.25 | \$8,608.17 |
| change order | | Concrete Barrier Type C (Retaining Wall) | 377.0 | LF | \$54.50 | \$20,546.50 |
| | | | | | | \$71,211.72 |

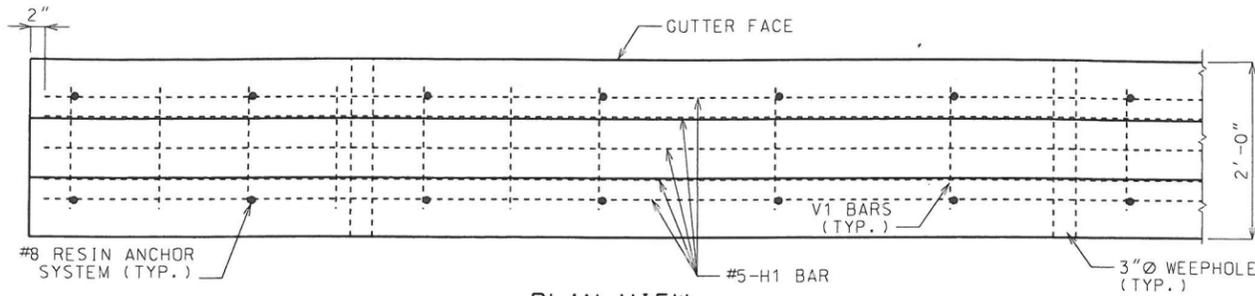
VE SAVINGS: \$178,086.86

I-70 / Mid River Mall Drive

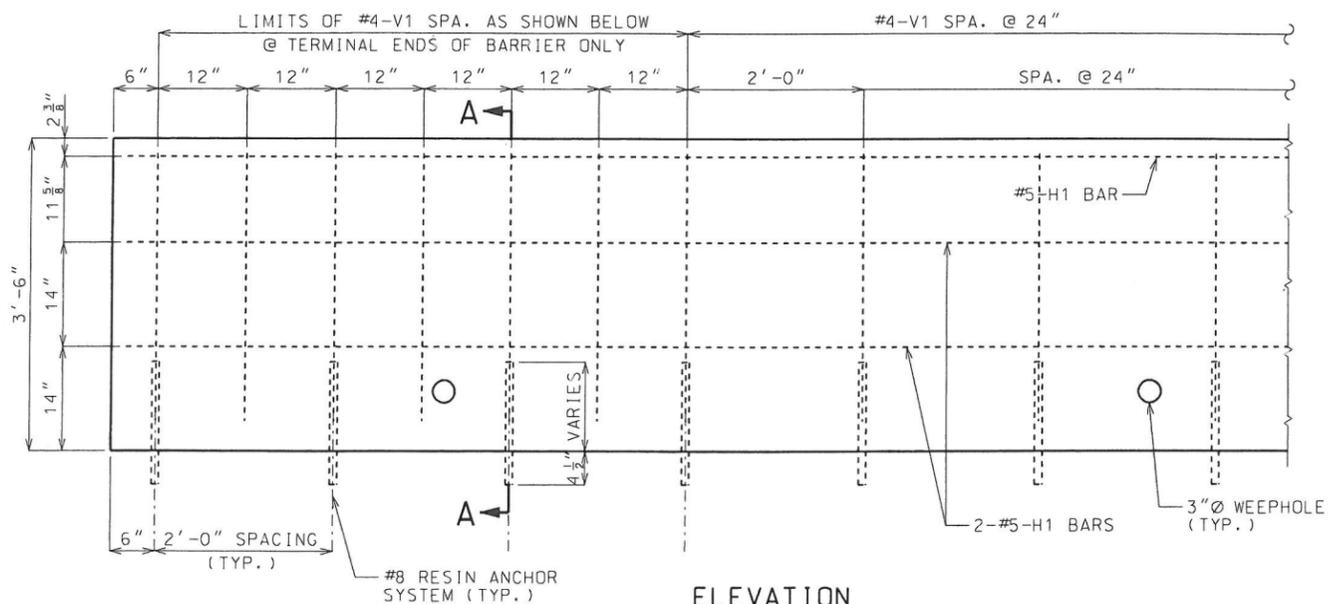
Wall 13-2412-002 (Ramp 1/1A, Sta. 7+50 to Sta. 11+50)

Embankment / Excavation

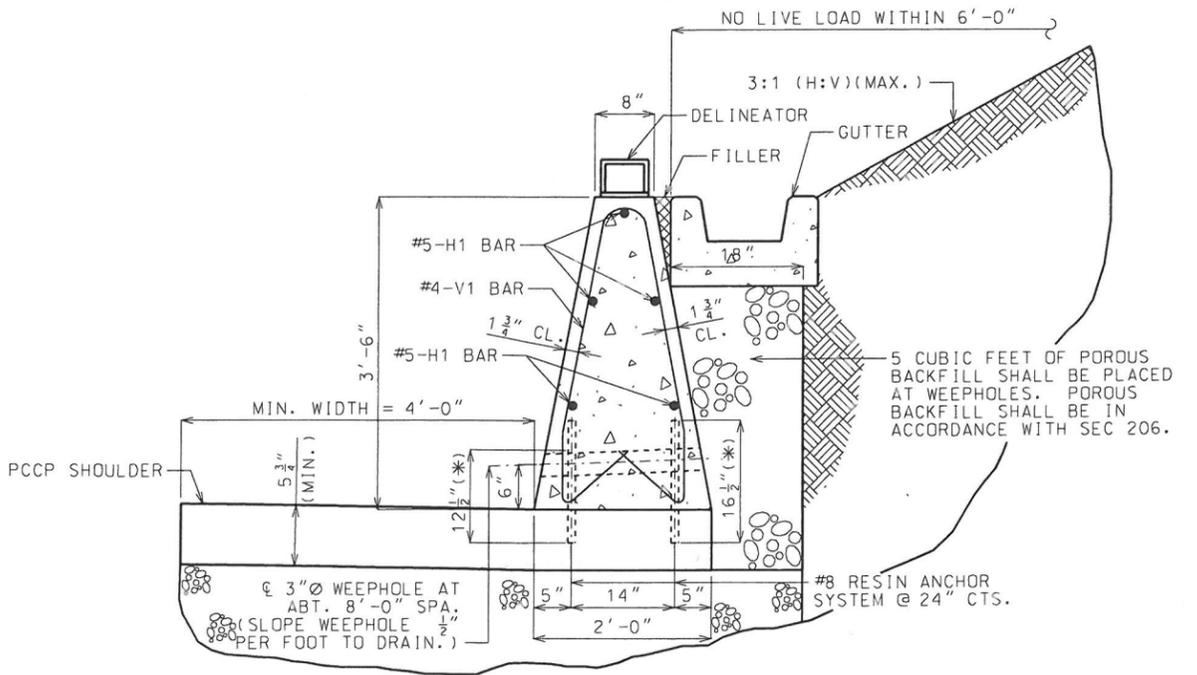
| | <u>Sta.</u> | <u>Length</u> | <u>Area (sf)</u> | <u>Embankment (cy)</u> | <u>Area (sf)</u> | <u>Excavation (cy)</u> |
|---------|-------------|---------------|------------------|------------------------|------------------|------------------------|
| | 700 | | 0 | | 0 | |
| Ramp 1 | 750 | 50 | 178 | 165 | 22 | 20 |
| | 800 | 50 | 219 | 368 | 24 | 43 |
| | 850 | 50 | 254 | 438 | 23 | 44 |
| | 900 | 50 | 296 | 509 | 25 | 44 |
| Ramp 1A | 930 | 30 | 293 | 327 | 22 | 26 |
| | 960 | 30 | 293 | 326 | 23 | 25 |
| | 1000 | 40 | 293 | 434 | 26 | 36 |
| | 1043 | 43 | 285 | 460 | 26 | 41 |
| | 1085 | 42 | 298 | 453 | 24 | 39 |
| | 1127 | 42 | 281 | 450 | 39 | 49 |
| | 1150 | 23 | 0 | 120 | 0 | 17 |
| | | | Total: | 4,050 | Total: | 384 |



PLAN VIEW
NOTE: GUTTER NOT SHOWN FOR CLARITY.

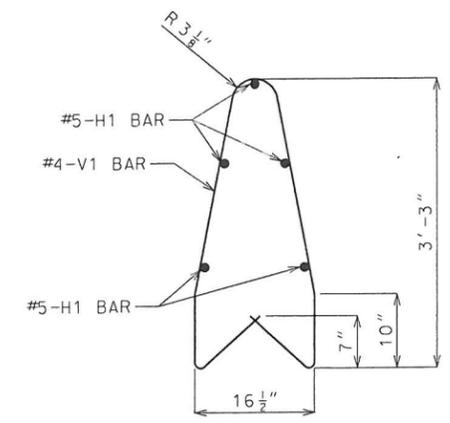


ELEVATION REINFORCING DETAILS



SECTION A-A
(FOR SLOPING AND NONSLOPING BACKSLOPE)

(*) EMBED ANCHOR 4 1/2" BELOW PCCP SHOULDER.



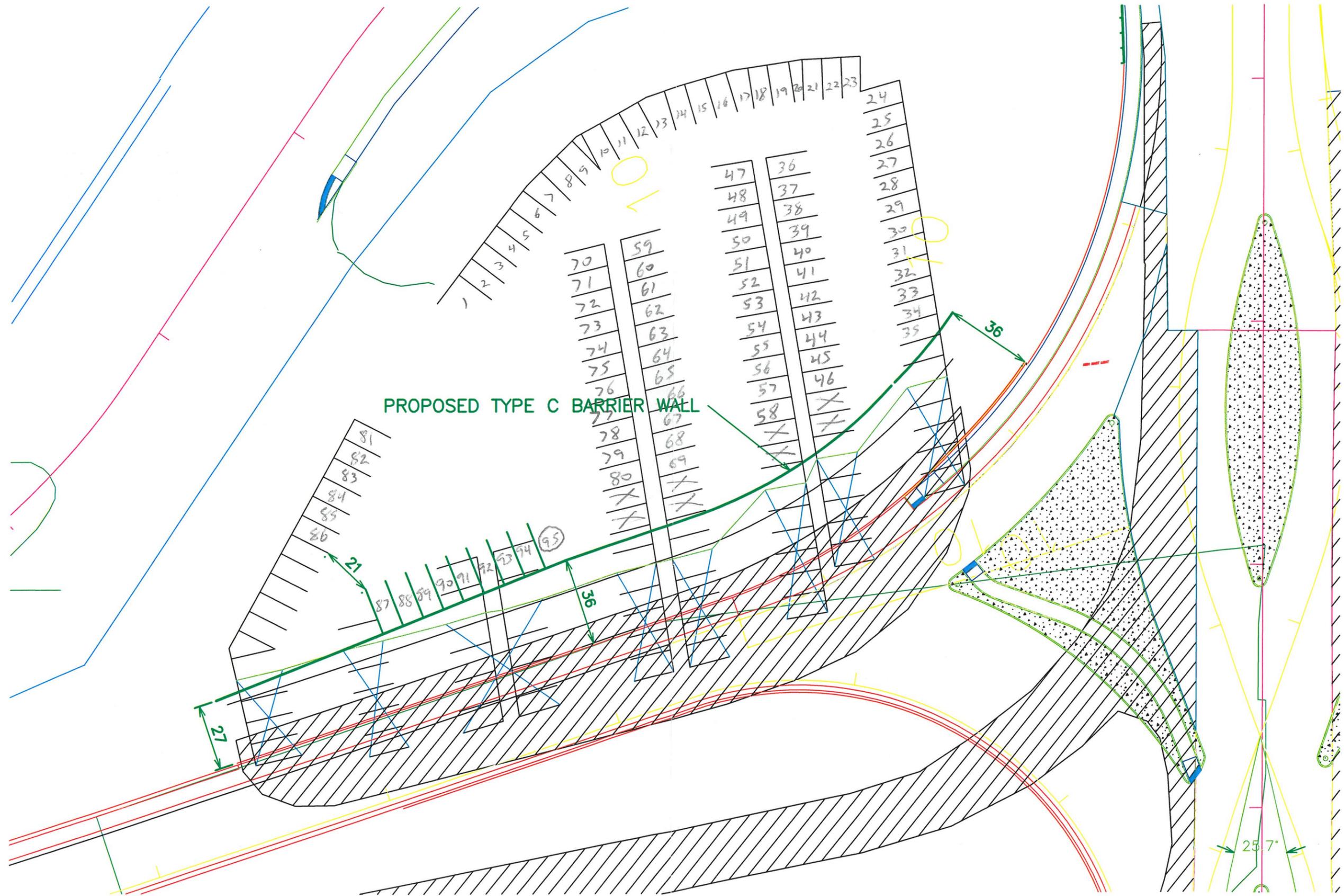
PART SECTION OF #4-V1 BAR

GENERAL NOTES:

- CONCRETE SHALL BE CLASS B F'c = 4,000 PSI.
- ALL REINFORCEMENT SHALL BE GRADE 60 EPOXY COATED.
- ANGLE OF INTERNAL FRICTION, $\phi_f \geq 27^\circ$ FOR BACKFILL MATERIAL.
- MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2", UNLESS OTHERWISE SHOWN.
- BAR SPLICES SHALL BE A MINIMUM OF 24 TIMES THE NOMINAL DIAMETER OR THE BAR.
- ANY METHOD DEvised BY THE CONTRACTOR AND APPROVED BY THE ENGINEER THAT WILL ASSURE THE LONGITUDINAL REINFORCING STEEL WILL BE POSITIONED $\pm 1/2$ INCH AS DIMENSIONED WILL BE SATISFACTORY.
- THE CONTRACTOR HAS THE OPTION TO SLIP-FORM THE BARRIER. IN WHICH CASE, ADDITIONAL REINFORCEMENT MAY BE TIED TO THE UPPER TWO-THIRDS OF THE REINFORCING CAGE TO PROVIDE BRACING.
- THIS BARRIER SHALL NOT BE USED TO SUPPORT HIGHWAY LIGHTING POLES.
- THIS BARRIER SHALL NOT BE USED FOR BRIDGE ROADWAY APPLICATIONS.
- SAWED JOINTS SHALL BE SPACED AT 15'-0". SEE MISSOURI STANDARD PLANS FOR SAWED JOINT DETAIL.
- TYPE C BARRIER MODIFIED RETAINING WALL WITH NONMOMENT SLAB SHALL BE USED ONLY AT LOCATIONS SHOWN ON PLANS.
- FOR DELINEATOR DETAILS, SEE SHEET NO. 1 OF THE MISSOURI STANDARD PLAN 617.10.
- RESIN ANCHOR SYSTEM SHALL BE DRILLED IN THE PAVEMENT.
- WHEN CURB HEIGHT EXCEEDS 42" OR SLOPE EXCEEDS 3:1 (H:V) OR LIVE LOAD IS WITHIN 6'-0", CONTACT BRIDGE DIVISION FOR SPECIAL DESIGN.

| | |
|--|---|
| MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION | |
| 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636) | |
| | PERMANENT CONCRETE TRAFFIC BARRIER TYPE C AS RETAINING WALL |
| DATE EFFECTIVE: 08/01/2012 DATE PREPARED: 7/19/2012 | 617.10H |
| SHEET NO. 6 OF 12 | |

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



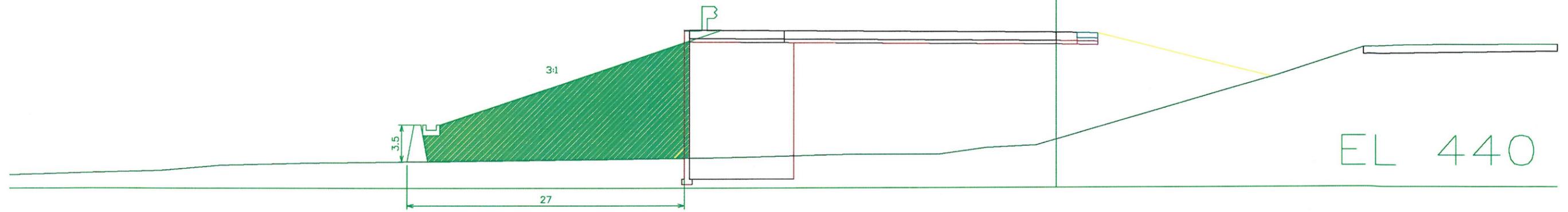
PROPOSED TYPE C BARRIER WALL

| | | | | |
|----|----|----|----|----|
| 70 | 59 | 47 | 36 | 24 |
| 71 | 60 | 48 | 37 | 25 |
| 72 | 61 | 49 | 38 | 26 |
| 73 | 62 | 50 | 39 | 27 |
| 74 | 63 | 51 | 40 | 28 |
| 75 | 64 | 52 | 41 | 29 |
| 76 | 65 | 53 | 42 | 30 |
| 77 | 66 | 54 | 43 | 31 |
| 78 | 67 | 55 | 44 | 32 |
| 79 | 68 | 56 | 45 | 33 |
| 80 | 69 | 57 | 46 | 34 |
| X | X | 58 | X | 35 |
| X | X | X | X | X |

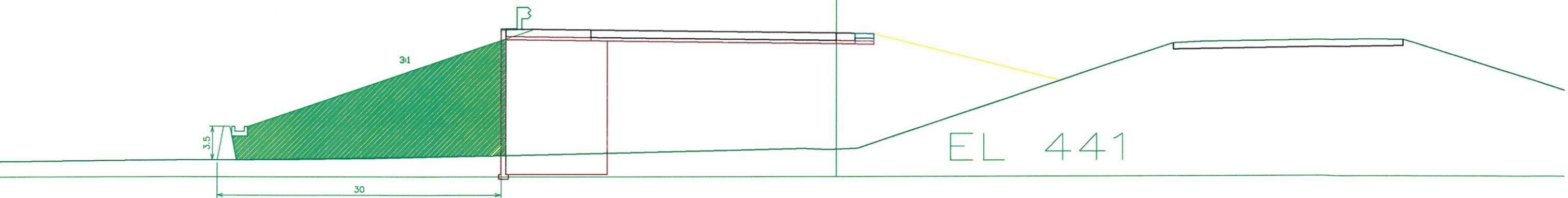
| |
|----|
| 81 |
| 82 |
| 83 |
| 84 |
| 85 |
| 86 |

| | | | | | | | | |
|----|----|----|----|----|----|----|----|----|
| 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 |
|----|----|----|----|----|----|----|----|----|

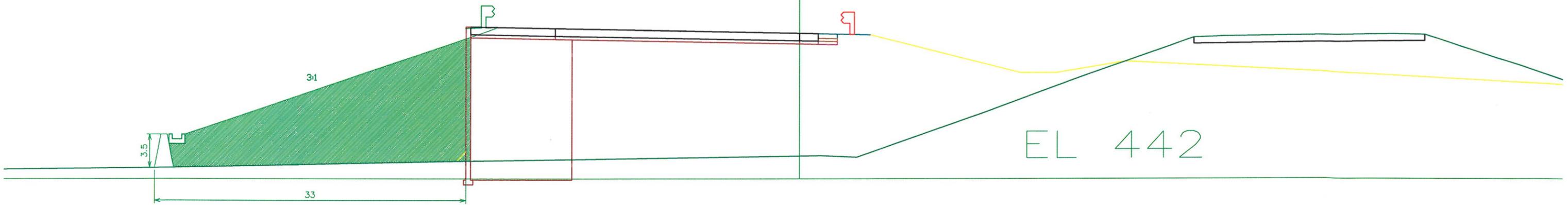
RMP 1
7+50.00 / 2



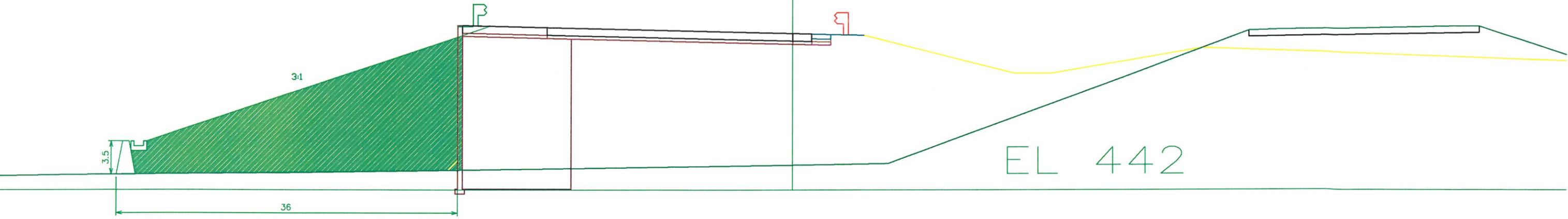
RMP 1
8+00.00 / 2



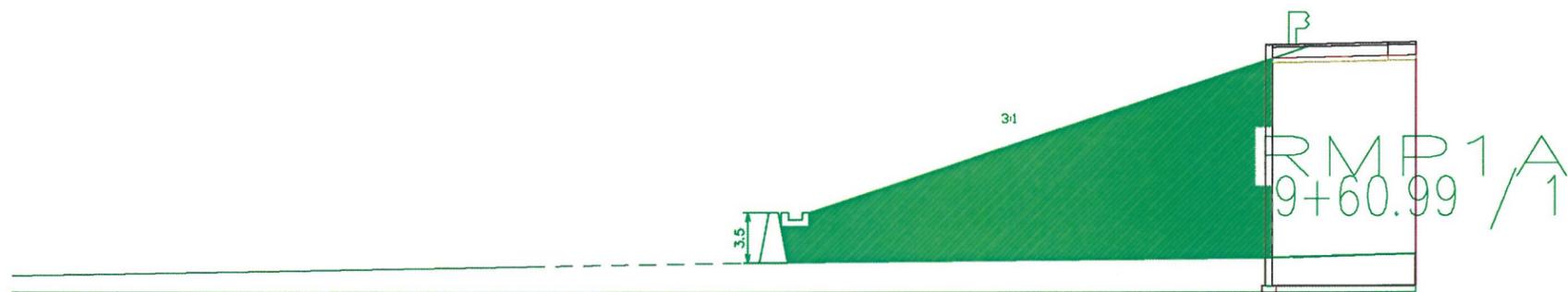
RMP 1
8+50.00 / 2



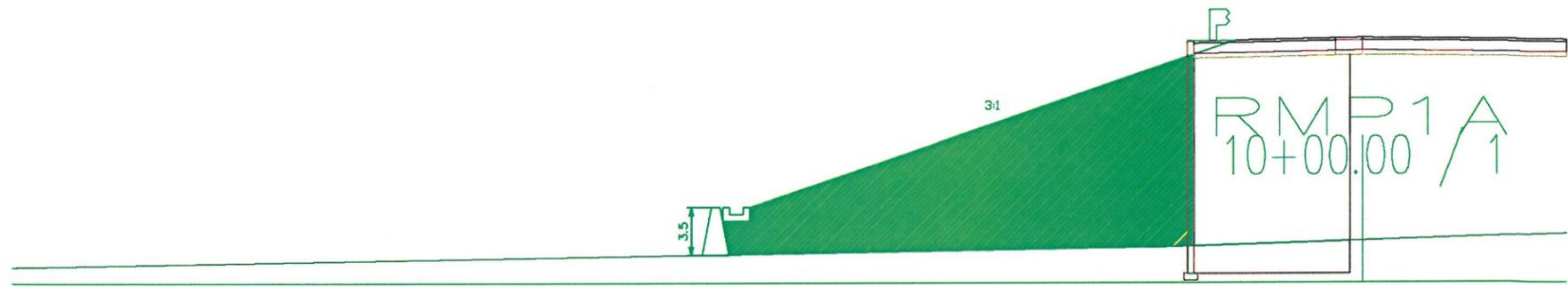
RMP 1
9+00.00 / 2



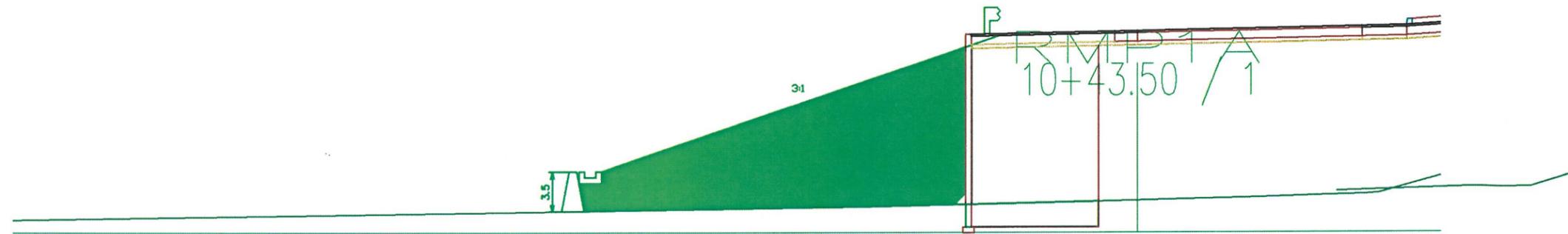
EL 442



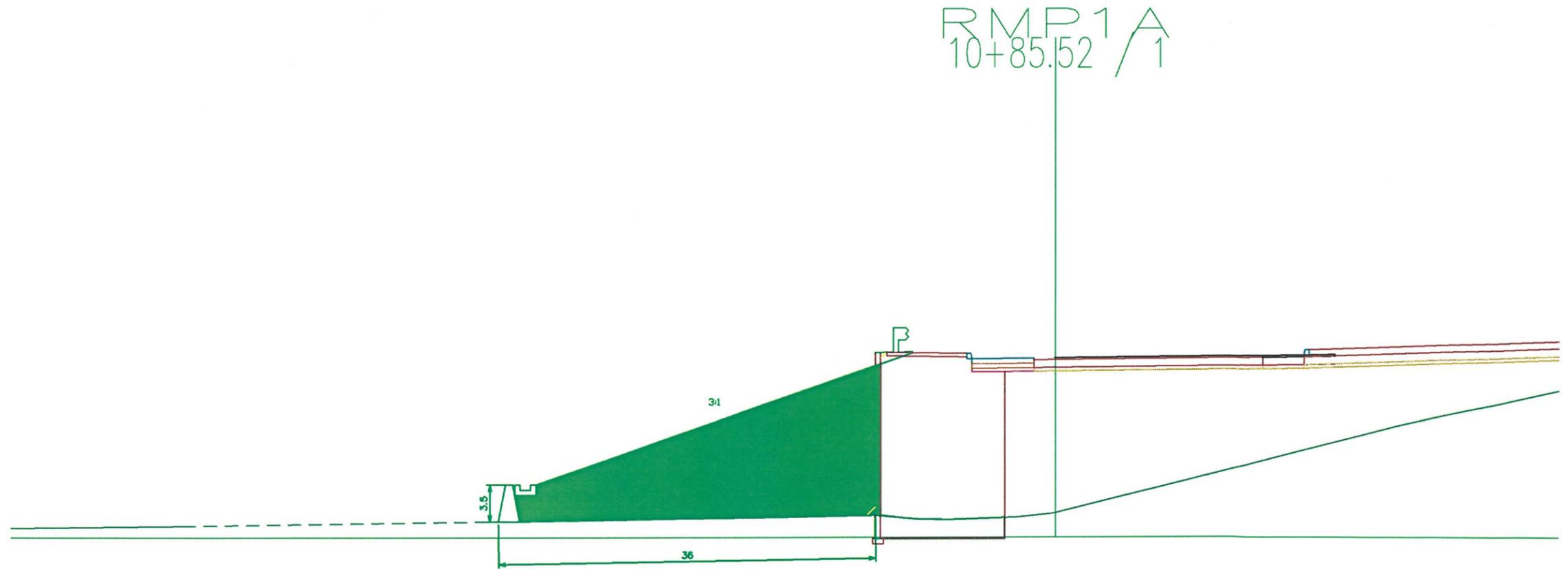
EL 442



EL 442



EL 442



EL 442

