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| NO REVISIONS | REVISED | VOID |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

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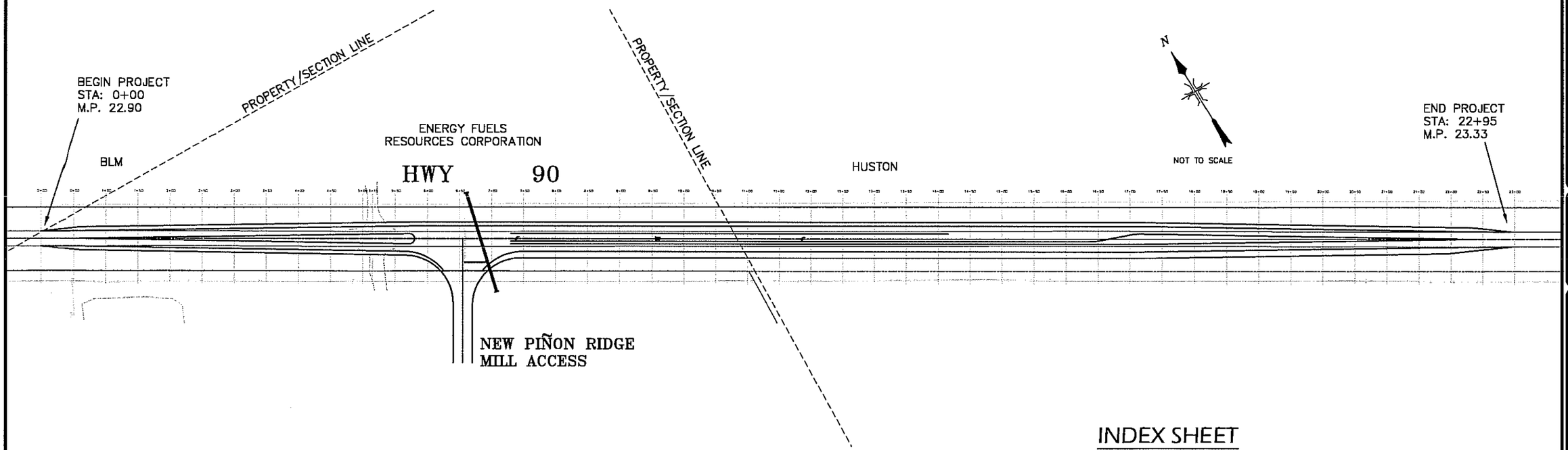
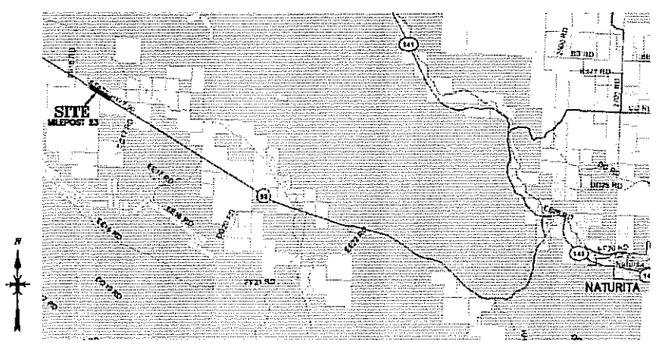
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

# MONTROSE COUNTY, COLORADO

# STATE HIGHWAY ACCESS PERMIT NO. 508015
# HIGHWAY 90 & MILL ACCESS INTERSECTION IMPROVEMENTS
# AT MP 23.028




VICINITY MAP
NOT TO SCALE

SECTIONS 8 & 9, T.46N., R.17W., N.M.P.M.

JAMES R. ROBERTS
REGISTERED
6144
11/3/09
PROFESSIONAL ENGINEER
STATE OF COLORADO

## INDEX SHEET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|---|---|
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| 2 | STANDARD PLAN LIST |
| 3 | NOTES |
| 4 | DETAIL & TYP. CROSS SECTION |
| 5-7 | PLAN & PROFILE HWY 90 |
| 8-9 | SIGNAGE & PAVEMENT MARKINGS |
| 10-19 | CROSS SECTIONS |
| 20 | EXISTING BLM ACCESS CROSS SECTION |
| 21 | DRAINAGE CROSS SECTION |
| 22 | RIGHT OF WAY MAP |
| APPENDIX | REVISED M&S STANDARDS |
| | M-208-1 TEMPORARY EROSION CONTROL |
| | S-614-8 TUBULAR STEEL SIGN SUPPORT DETAILS |
| | S-627-1 PAVEMENT MARKINGS |


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ENERGY FUELS RESOURCES CORPORATION
TITLE SHEET
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

DMC JOB NO. D9064

SHEET NO. 1 OF 22

| AS CONSTRUCTED | | |
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| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

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THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

| PLAN NUMBER | NEW OR REVISED | S STANDARD TITLE | PAGE NUMBER |
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COLORADO
DEPARTMENT OF TRANSPORTATION

STANDARD PLANS LIST

M&S STANDARDS

July 04, 2006

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ENERGY FUELS RESOURCES CORPORATION
STANDARD PLAN LIST
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

JOB NO. 09064

SHEET NO. 2 OF 22 SHEETS

| AS CONSTRUCTED | | |
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| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

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FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

TURN LANE CONSTRUCTION

1. This drawing shows the underground utilities of which the Engineer has knowledge. Other utilities may exist. Contractor is responsible for locating and protecting all utilities.

2. Contractor shall comply with the requirements of the COOT Access Permit prior to undertaking work in the Highway 90 right of way. Notify CDOT to schedule a pre-construction conference prior to commencing work.

3. Contractor shall provide a traffic control plan for the approval by CDOT.

4. Contractor shall construct the widened road section and overlay matching the grade and elevation of the existing pavement on Highway 90.

5. Contractor shall excavate to subgrade adjacent Highway 90, and shall cut back into the existing gravel base on the edge of the existing roadway sufficiently far to provide a competent full depth gravel section at the joint between the new work and the existing gravel base.

6. Contractor shall scarify, moisture condition to +/- 2% of optimum moisture, and compact the subgrade to 90% modified proctor, ASTM D-1557, unless otherwise directed by the engineer. Owner will provide testing.

7. Contractor shall proof roll the subgrade with a loaded truck prior to placement of the gravel. Contact the engineer to observe the proof roll. Any areas of the subgrade which fail to adequately support the proof roll load shall be reworked as necessary to stabilize the subgrade.

8. Contractor shall place subbase and base course gravel in maximum 6 inch lifts, compacting each lift to 95% modified proctor, ASTM D-1557, at +/- 2% of optimum moisture. Owner will provide testing.

9. Contractor shall saw cut the edge of the existing pavement immediately prior to paving to create a clean, neat, vertical joint between the existing and the new pavements. All pavement joints shall be vertical and straight. Broken edges will not be allowed. If the edge is damaged by or during contractor's operations, further cut back will be required.

10. Paving contractor shall tack coat the saw cut edge of the existing pavement prior to paving.

11. Asphalt mixture shall be SX75 PG 64-22. Binder oil shall be PG 64-22 binder.

12. Place asphalt pavement in 3 lifts, compacted to 92% to 96% of maximum theoretical density. Owner will provide testing.

13. Asphalt placement shall conform to CDOT Standards and Specifications for Roads and Bridges, latest edition.

TRAFFIC CONTROL PLAN

1. "Prior to beginning of work in the CDOT ROW, the Permittee shall create a site specific and detailed construction traffic control plan which covers all phases and day/night signage conditions of work, including final signing and striping."

LANDSCAPING

1. A minimum of four (4) inches of topsoil shall be placed on all slopes that are to be seeded and mulch. Soil preparation, seeding, and mulching shall be required within the right-of-way limits on all disturbed areas not surfaced. The following types and rates shall be used:

| COMMON NAME | BOTANICAL NAME | LBS. PLS/ACRE |
|---|---|---|
| Western Wheatgrass (V. Arriba) | Pascapyrum Smithii | 16 |
| Slender Wheatgrass (V. San Luis) | Elymus Trachycaulus | 6 |
| Indian Ricegrass (V. Paloma) | Oryzopsis Hymenoides | 6 |
| Hard Fescue (V. Durar) | Festuca Ovina Duriuscula | 6 |
| Alsike Clover | Trifolium Hybridium | 4 |
| Sand Dropseed | Sporobolus Cryptandrus | 0.50 |
| TOTAL | | 38.50 |

Seed shall be mechanically drilled to a depth of 0.25 or 0.5 inches into the soil on slopes flatter than 3:1. Seeding shall be broadcast on slopes 3:1 or steeper and raked into soil.

COOT GENERAL NOTES:

1. "All materials, equipment, installation and construction within the State Highway ROW shall be in accordance with the latest edition of the following standard references as applicable:
   A. CDOT Materials Manual
   B. CDOT Construction Manual
   C. CDOT Standard Specifications for Road and Bridge Construction, latest edition
   D. CDOT Standard Special Provisions, as applicable to project
   E. CDOT Standard Plans (M&S Standards)
      FHWA Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highway and the Colorado Supplement thereto
   F. AASHTO Roadside Design Guide
   Please note that some of the reference materials listed above may be purchased from:
      Colorado Department of Transportation
      Bid Plans Room
      4201 East Arkansas Avenue
      Denver, CO 80222-3400
      (303)757-9313"
   G. CDOT Drainage Manual

2. "Access construction within highway ROW and all highway improvements shall comply with the Access Permit and Notice to Proceed (NTP). A copy of that Permit and NTP shall be a available on the construction site at all times."

3. "During access construction no construction personnel vehicles will be permitted to park in the state highway right-of-way, with the exception of necessary vehicles specifically being used for construction work."

4. "It is the responsibility of the Permittee to determine which environmental clearances and/or regulations apply to the project, and to obtain any clearances that are required directly from the appropriate agency prior to commencing work. Please refer to or request a copy of the "CDOT Environmental Clearance Information Summary" (ECIS) for details. The ECIS may be obtained from CDOT Permitting Offices or may be accessed via the CDOT Planning/Construction-Environmental Guidance webpage at:

<http://www.dot.state.co.us/AccessPermits/PDF/EnvironClearInfoSummaryAugust2003LiveLinks.pdf>

FAILURE TO COMPLY WITH REGULATORY REQUIREMENTS MAY RESULT IN SUSPENSION OR REVOCATION OF YOUR CDOT PERMIT, OR ENFORCEMENT ACTIONS BY OTHER AGENCIES.

ALL discharges are subject to the provisions of the Colorado Water Quality Act and the Colorado Discharge Permit Regulations. Prohibited discharges include substances such as: wash water, paint, automotive fluids, solvents, oils or soaps.

Unless otherwise identified by CDOT or the Colorado Department of Public Health and Environmental (CDPHE) Water Quality Control Division (WQCD) as significant sources of pollutants to the waters of the State, the following discharges to storm water systems are allowed without a Colorado Discharge Permit System Permit: landscape irrigation, diverted stream flows, uncontaminated ground water infiltration to separate storm sewers, discharges from potable water sources, foundation drains, air condition condensation, irrigation water, springs, footing drains, water line flushing, flows from riparian habitats and wetlands, and flow from fire fighting activities.

ANY OTHER DISCHARGES, including storm water discharges from industrial facility or construction sites, may required Colorado Discharge Permit System permits from CDPHE before work begins. For additional information and forms, go the CDPHE website at:

http://www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html."

5. "CDOT must approve the asphalt mix design prior to construction.

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ENERGY FUELS RESOURCES CORPORATION

NOTES
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

DMC JOB NO 09064

SHEET NO 3 OF 22

| AS CONSTRUCTED | | |
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| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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CONSTRUCTION SUBACCOUNT NO. 0

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STATE OF COLORADO

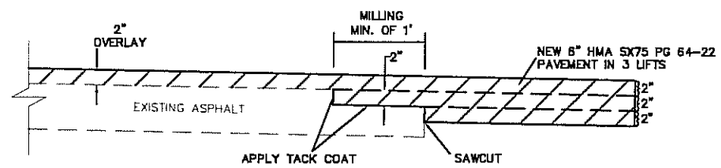


**EXHIBIT D**
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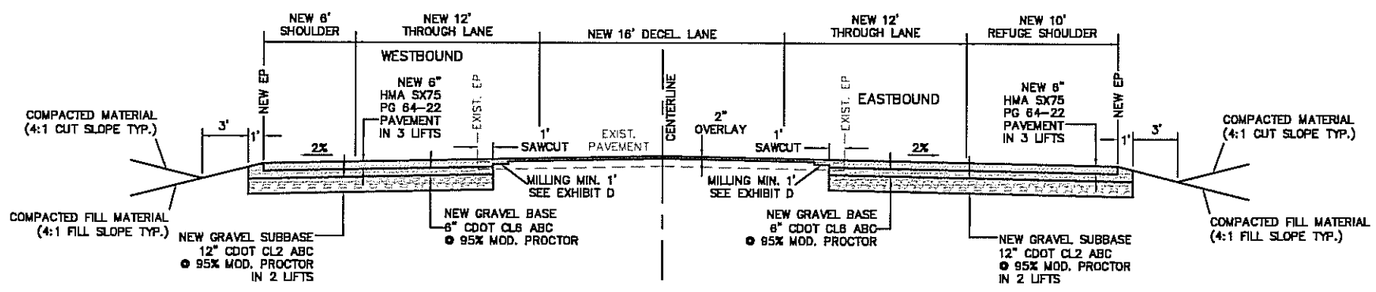
STRUCTURAL SECTION DESIGNED BY CDOT REGION 5 MATERIALS LAB "ENERGY FUELS RESOURCES PINON RIDGE URANIUM PROCESSING MILL ACCESS" DATED 05/27/08.

HOT MIX ASPHALT GRADING SX75 PG 64-22

AGGREGATE BASE COURSE:
CLASS 6: R VALUE ≥ 78
CLASS 2: R VALUE ≥ 70




**TYP. CROSS SECTION**
SCALE: 1"=10'

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DETAIL AND TYP. CROSS-SECTION
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 4
OF 22 SHEETS

| AS CONSTRUCTED | | |
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FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

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Scale in feet
1" = 60'
30' 0 30' 60'

LEGEND:
= EXISTING CONTOURS
= PROPOSED CONTOURS
= CENTER LINE
= EXISTING RIGHT-OF-WAY LINE
= EXISTING OVERHEAD POWER LINE
= EXISTING ROW FENCE
= EXISTING UNDERGROUND PHONE LINE

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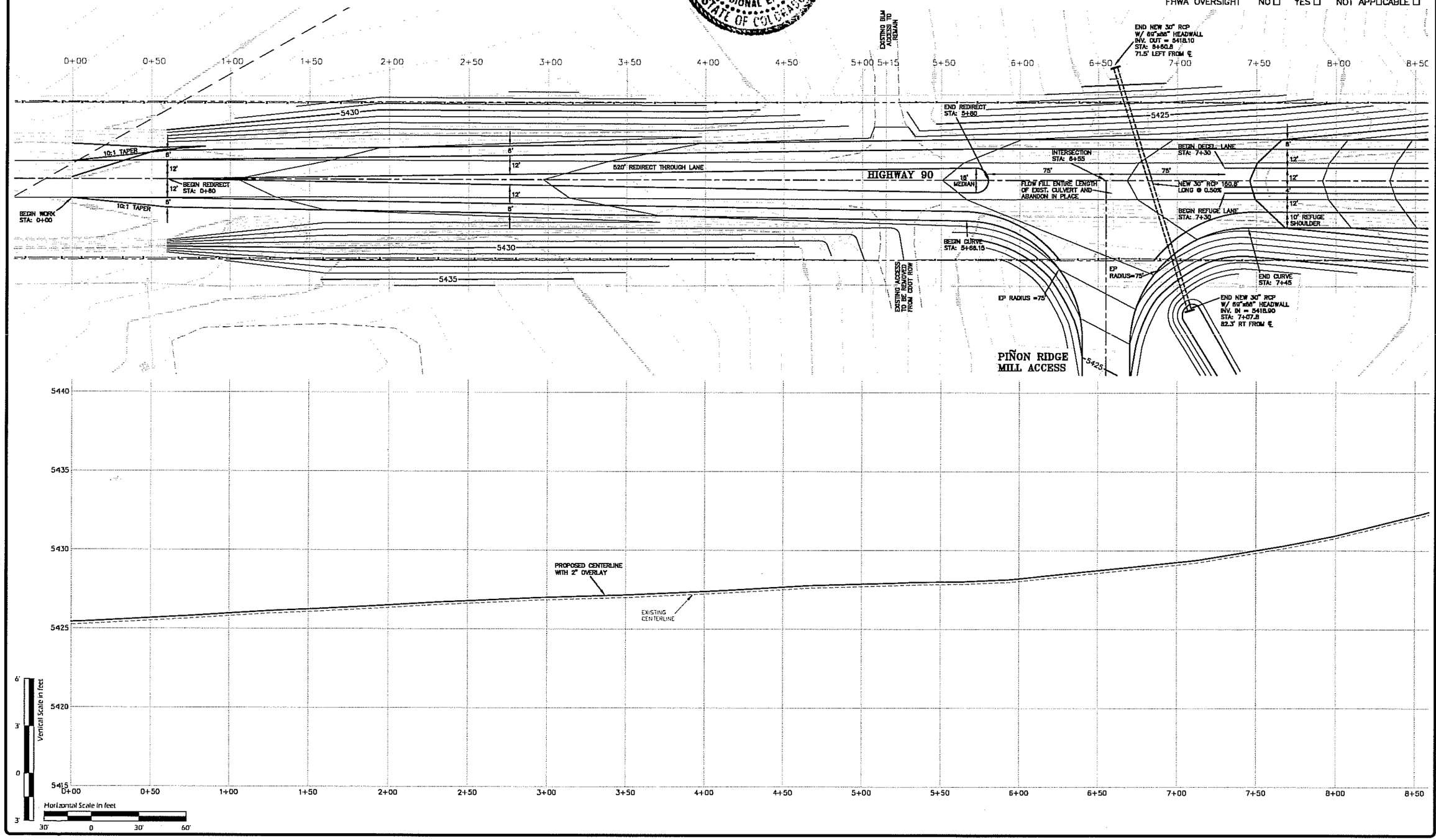


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ENERGY FUELS RESOURCES CORPORATION

PLAN & PROFILE HWY 90
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

PROJECT NO 09064

SHEET NO 5 OF 22 SHEETS

| AS CONSTRUCTED | | |
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| NO REVISIONS | REVISED | VOID |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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CONSTRUCTION SUBACCOUNT NO. D

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FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

LEGEND:

- = EXISTING CONTOURS
- = PROPOSED CONTOURS
- = CENTER LINE
- = EXISTING RIGHT-OF-WAY LINE
- = EXISTING OVERHEAD POWER LINE
- = EXISTING ROW FENCE
- = EXISTING UNDERGROUND PHONE LINE

N

1" = 60'

Scale in feet

30' 0 30' 60'

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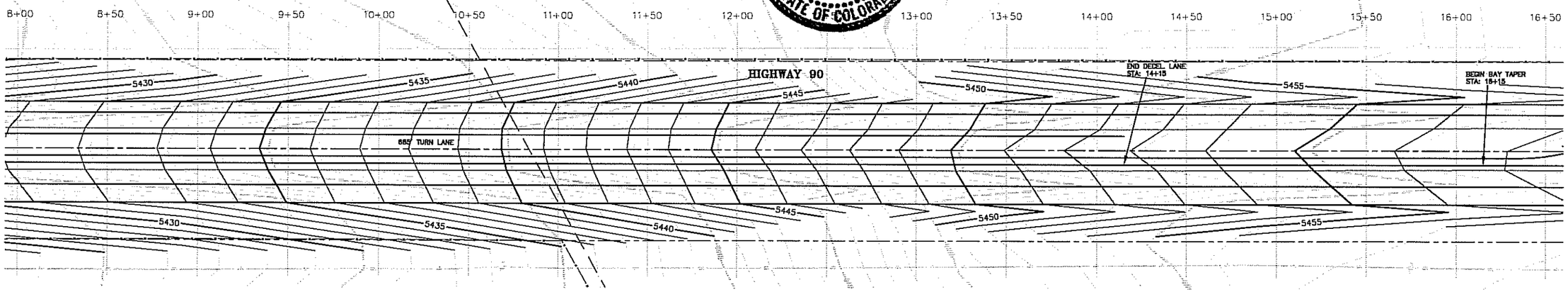


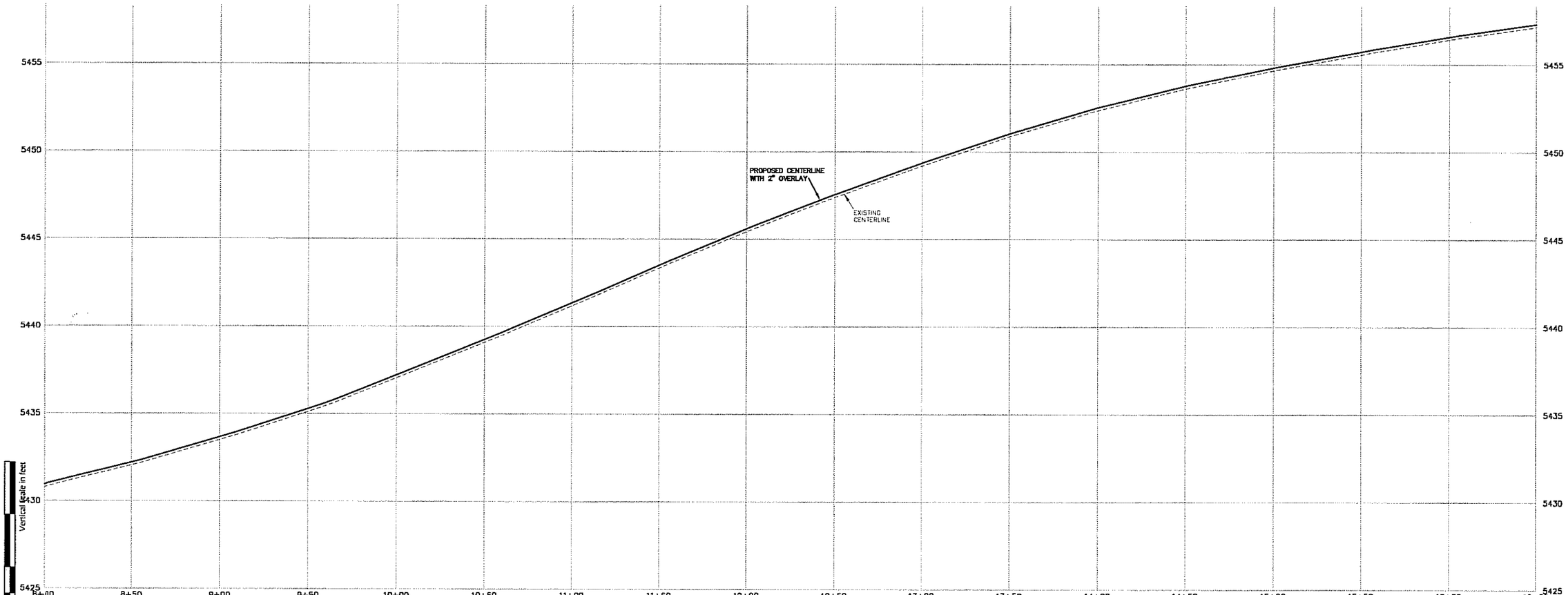


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1967 Colorado Blvd. • Durango, CO 81301 • (970) 247-1068 • (970) 259-2758 FAX
www.delmontconsultants.com • mail@delmontconsultants.com

| DESIGNED BY | DRAWN BY | CHECKED BY | DATE REVISED |
|---|---|---|---|
| JRR/NEB | NEB | JRR | 11/02/09 |

| SCALE | FILE NAME |
|---|---|
| 1"=60' | 09064C_CDOT-ACCESS |

ENERGY FUELS RESOURCES CORPORATION

PLAN & PROFILE HWY 90

SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS

PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 6 OF 22 SHEETS

N

1" = 60'

Scale in feet

30' 0 30' 60'

LEGEND:

= EXISTING CONTOURS
= PROPOSED CONTOURS
= CENTER LINE
= EXISTING RIGHT-OF-WAY LINE
= EXISTING OVERHEAD POWER LINE
= EXISTING ROW FENCE
= EXISTING UNDERGROUND PHONE LINE

JAMES R. ROBERTS
REGISTERED
16144
11/3/09
PROFESSIONAL ENGINEER
STATE OF COLORADO

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | CDLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

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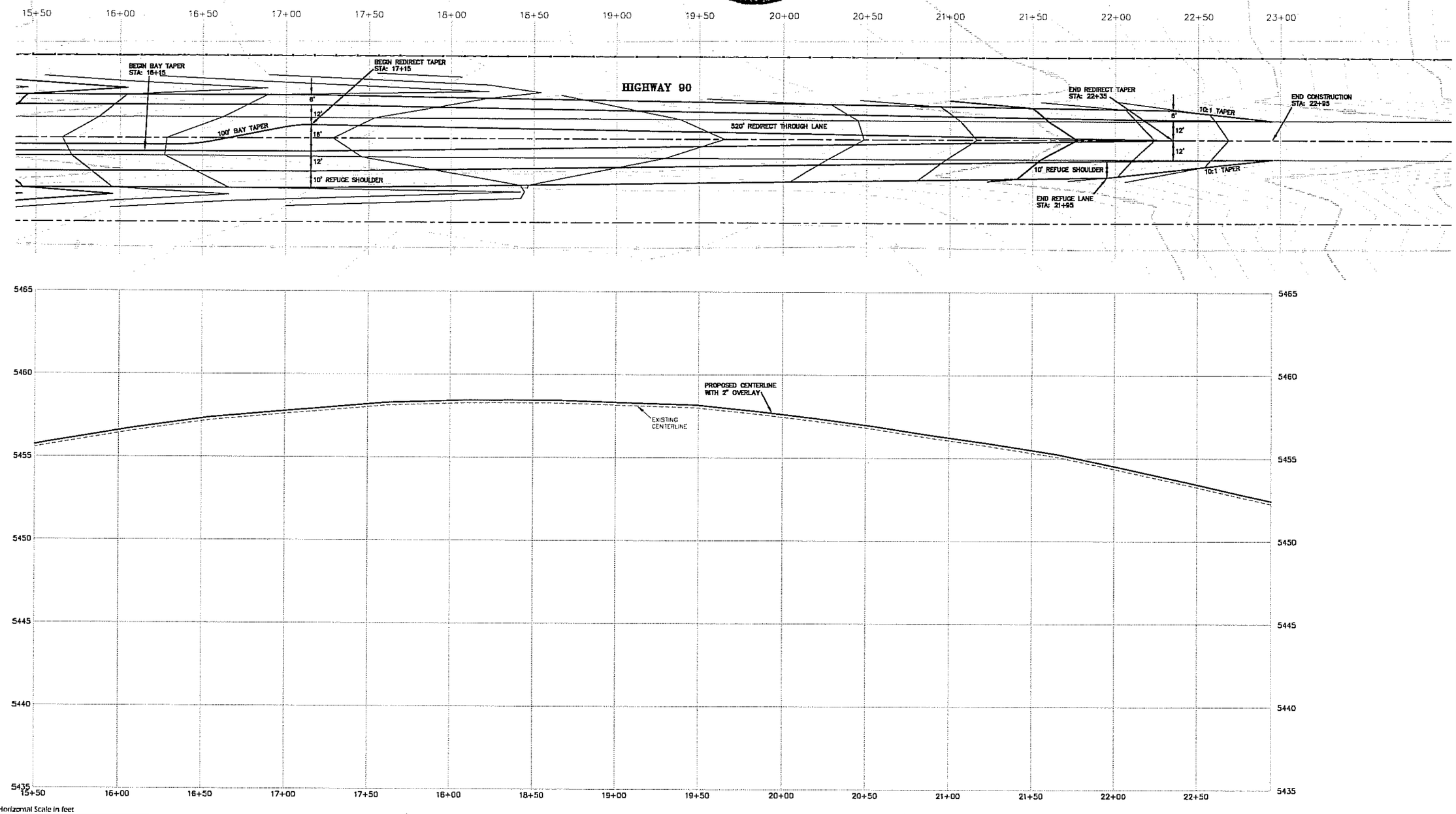
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐




| NO | DATE | REVISIONS | BY |
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1314 Main Ave. • P.O. Box 1209 • Durango, CO 81302 • (970) 247-4220 • F (970) 247-4227
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DRAWING FILE NAME: NEB 090640_CDOT-ACCESS
SCALE: 1"=60'
CHECKED BY: JRR
DATE ISSUED: 11/02/09

ENERGY FUELS RESOURCES CORPORATION

PLAN & PROFILE HWY 90
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 7 OF 22 SHEETS

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. D

| REVISIONS | | |
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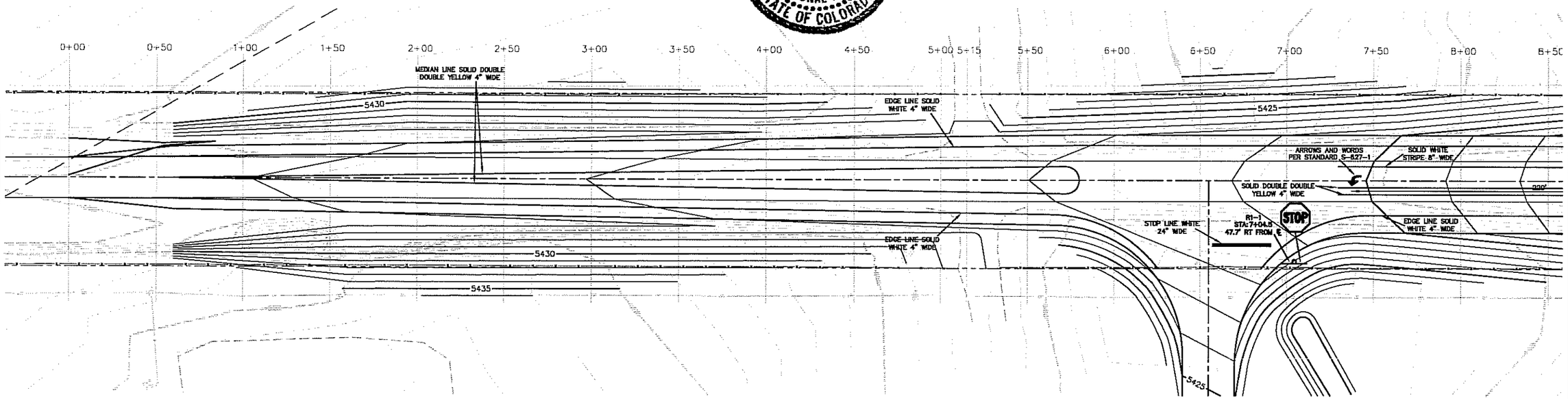
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

JAMES R. ROBERTS REGISTERED 16144 PROFESSIONAL ENGINEER STATE OF COLORADO 11/3/09

N

Scale in feet 1" = 60'

30' 0 30' 60'



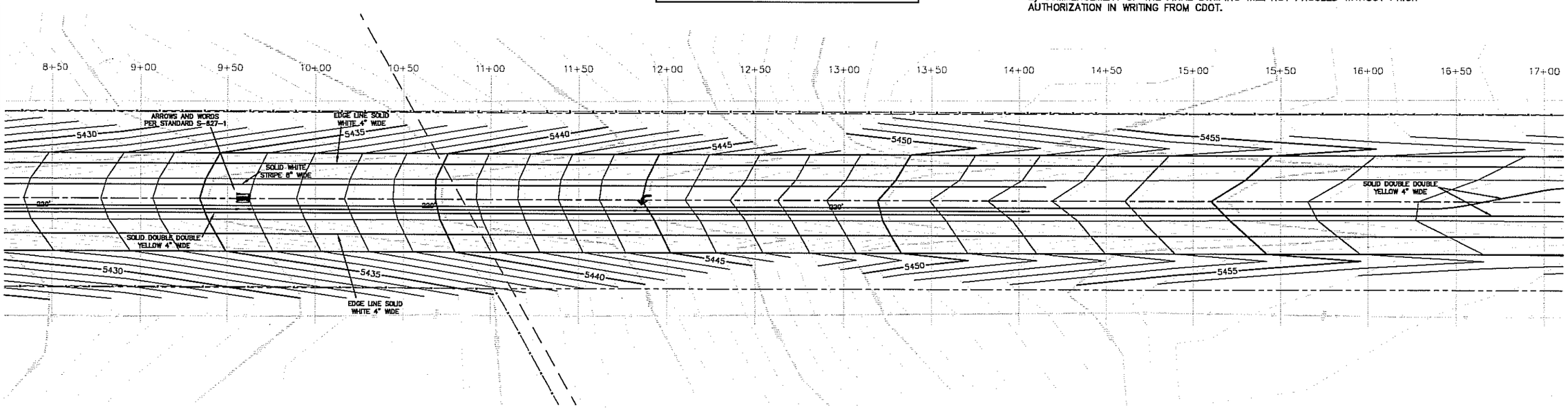

## SIGN LEGEND

| | SIGN CODE | SIZE |
|---|---|---|
| STOP | R1-1 | 30"x30" NEW |

NOTES

1) ALL FINAL STRIPING, INCLUDING LONG-LINE STRIPES, STOP BARS, CROSSWALKS, WORDS AND SYMBOLS SHALL BE TYPE I PAVEMENT MARKING MATERIAL AND SHALL BE EITHER ROLLED IN HOT DURING THE PAVING OPERATION, OR GROUND AND INLAID FLUSH AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE. CDOT WILL PROVIDE MATERIALS FOR THE LONG LINES.

2) COMMENCEMENT OF THE FINAL STRIPING WILL NOT PROCEED WITHOUT PRIOR AUTHORIZATION IN WRITING FROM CDOT.




| NO | DATE | REVISIONS | BY |
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320 Gunnison Avenue • Grand Junction, CO 81501 • (970) 245-8749 • Fax (970) 245-8083
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| | | | |
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| DESIGNED BY JRR/NEB | SCALE 1"=60' | DRAWN BY JRR | DATE 11/02/09 |
| CHECKED BY NEB | FILE NAME 090640_CDOT-ACCESS | | |

ENERGY FUELS RESOURCES CORPORATION

SIGNAGE & PAVEMENT MARKINGS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO 09064

SHEET NO 8 OF 22 SHEETS

| AS CONSTRUCTED | | |
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| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. D

| REVISIONS | | |
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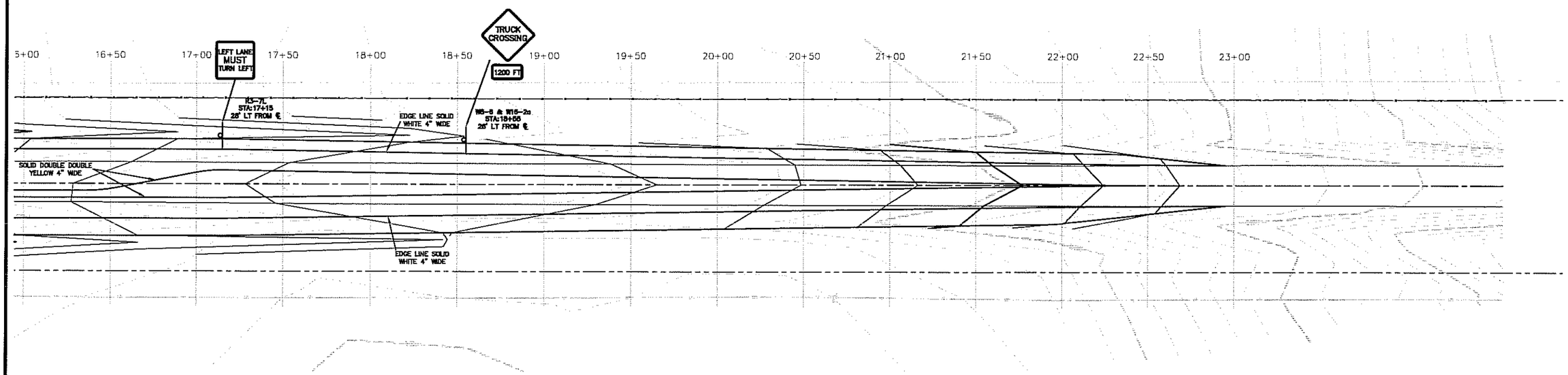
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO




## SIGN LEGEND

| | SIGN CODE | SIZE |
|---|---|---|
| LEFT LANE MUST TURN LEFT | R3-7L | 30"x30" NEW |
| TRUCK CROSSING | W5-5 | 30"x30" NEW |
| 1200 FT | W15-2a | 24"x12" NEW |

NOTES

1) ALL FINAL STRIPING, INCLUDING LONG-LINE STRIPES, STOP BARS, CROSSWALKS, WORDS AND SYMBOLS SHALL BE TYPE I PAVEMENT MARKING MATERIAL AND SHALL BE EITHER ROLLED IN HOT DURING THE PAVING OPERATION, OR GROUND AND INLAID FLUSH AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE. CDOT WILL PROVIDE MATERIALS FOR THE LONG LINES.

2) COMMENCEMENT OF THE FINAL STRIPING WILL NOT PROCEED WITHOUT PRIOR AUTHORIZATION IN WRITING FROM CDOT.

| NO | DATE | REVISIONS | BY |
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DEL-MONT CONSULTANTS, INC.
1100 Delaware Street, Suite 1 • Denver, CO 80204
Tel (303) 534-1160 • Fax (303) 534-1161


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ENERGY FUELS RESOURCES CORPORATION

SIGNAGE & PAVEMENT MARKINGS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

PROJECT NO 09064

SHEET NO 9 OF 22 SHEETS

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS | REVISED | VOID |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

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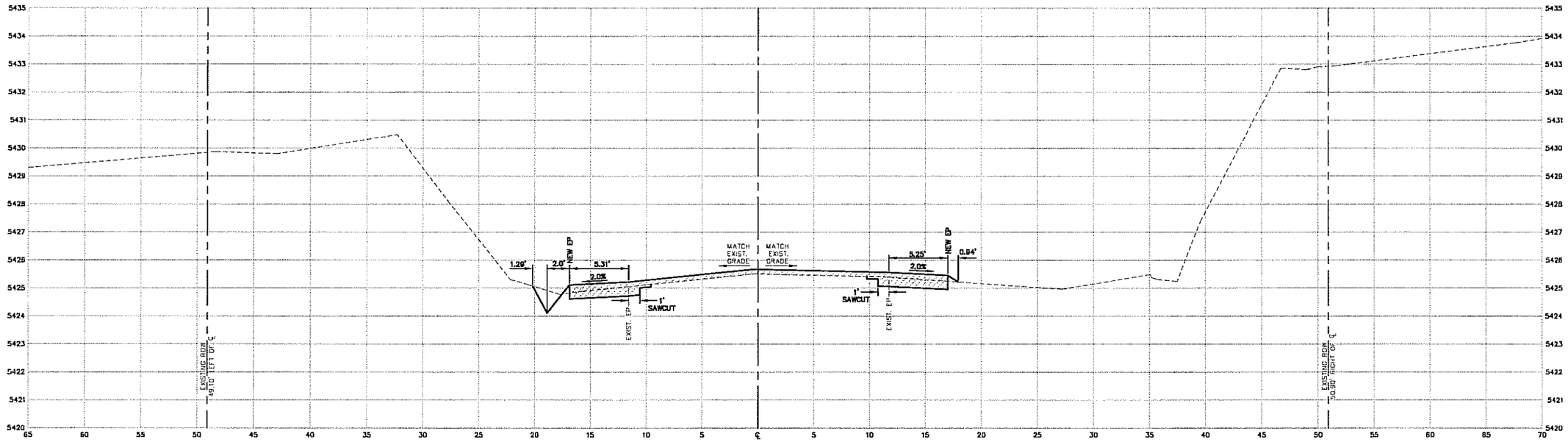
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

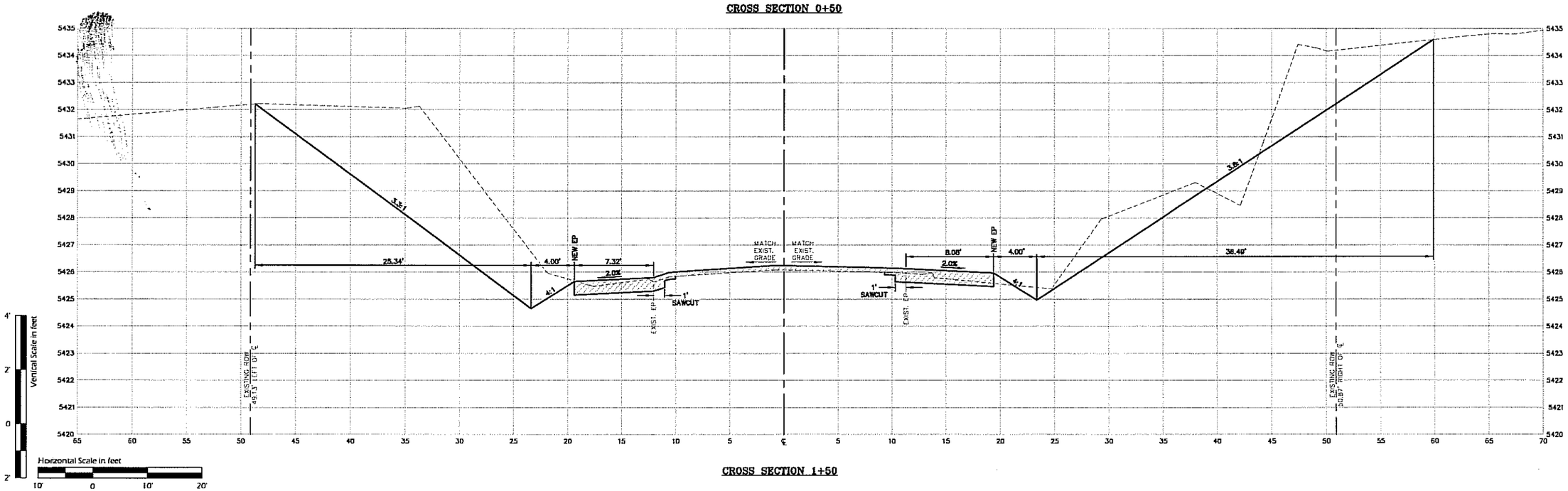
JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

LEGEND:

- = EXISTING GRADE
- = PROPOSED CONSTRUCTION
- = PROPOSED ASPHALT




CROSS SECTION 0+50




CROSS SECTION 1+50

| NO | DATE | REVISIONS | BY |
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1555 Colorado Avenue • Hotchkiss, CO 81419 • (970) 249-5841 • (970) 249-6246 fax
www.dmc-consultants.com • www.dmc-fhwa-qualified.com

| DRAWN BY | SCALE | DESIGNED BY | DATE REVISED |
|---|---|---|---|
| JRR/NEB | 1"=10' | JRR | 11/02/09 |

DWG. NAME NO. NEB 090640_CDOT-ACCESS

ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DWG. JOB NO. 09064

SHEET NO. 10 OF 22

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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CONSTRUCTION SUBACCOUNT NO. 0

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FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

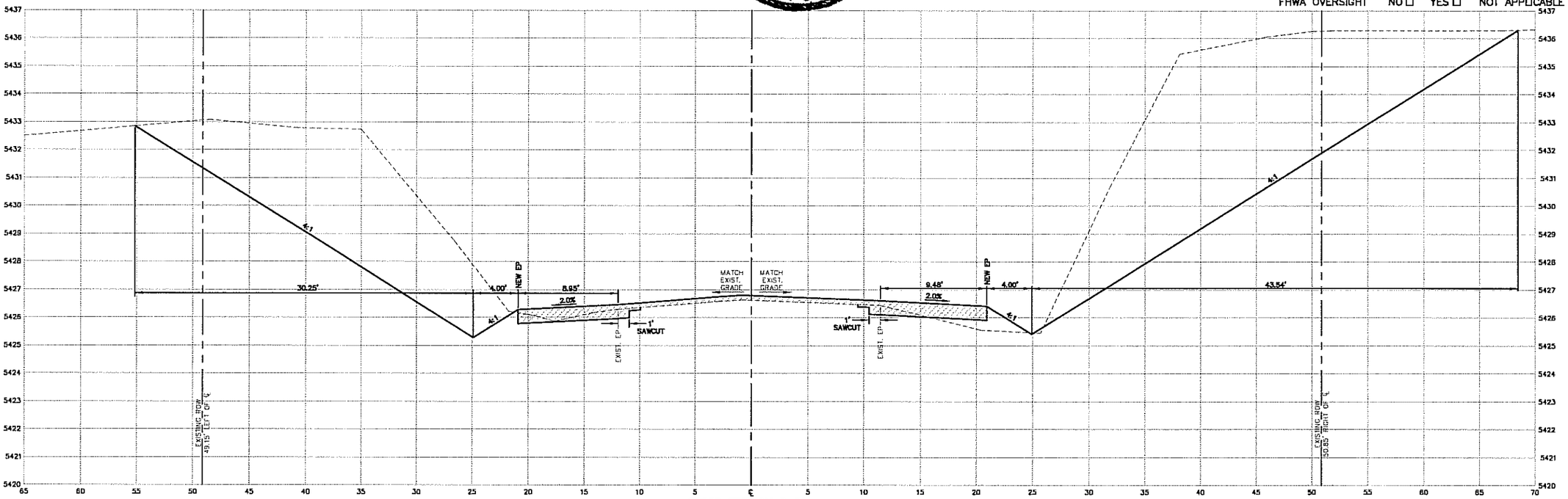
JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

LEGEND:

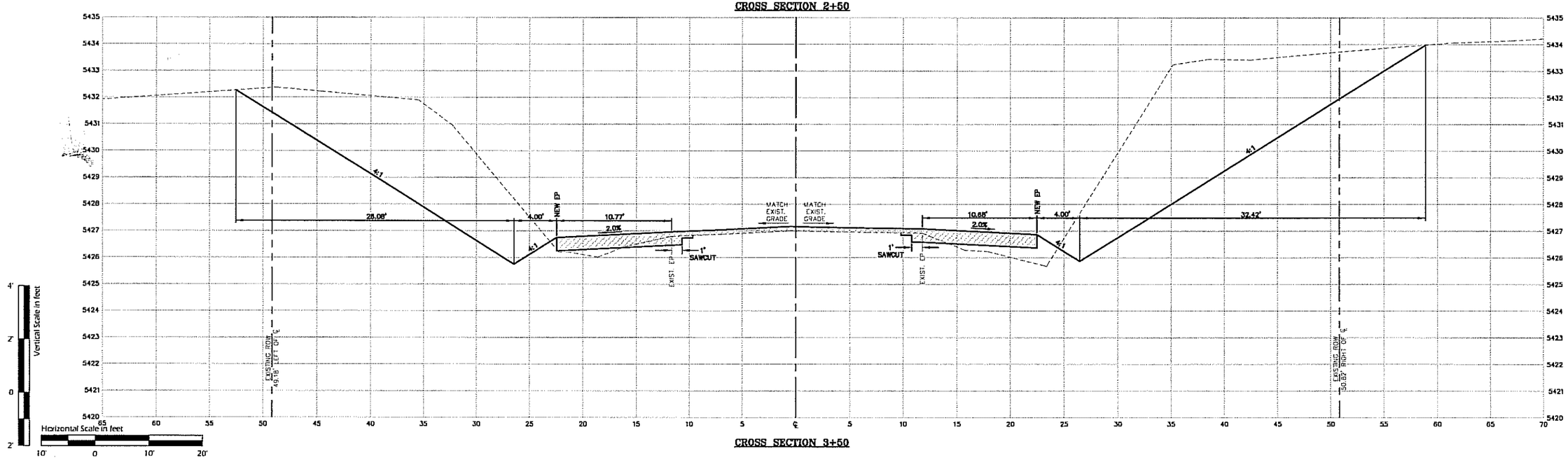
= EXISTING GRADE

= PROPOSED CONSTRUCTION

= PROPOSED ASPHALT




CROSS SECTION 2+50




CROSS SECTION 3+50

| NO. | DATE | REVISIONS | BY |
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| DESIGNED BY | DRAWN BY | SCALE | FIELD BOOK | DATE |
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ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS

SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS

PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

D9064

SHEET NO. 11 OF 22 SHEETS

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS | REVISED | VOID |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
|---|---|---|---|
| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

| REVISIONS | | |
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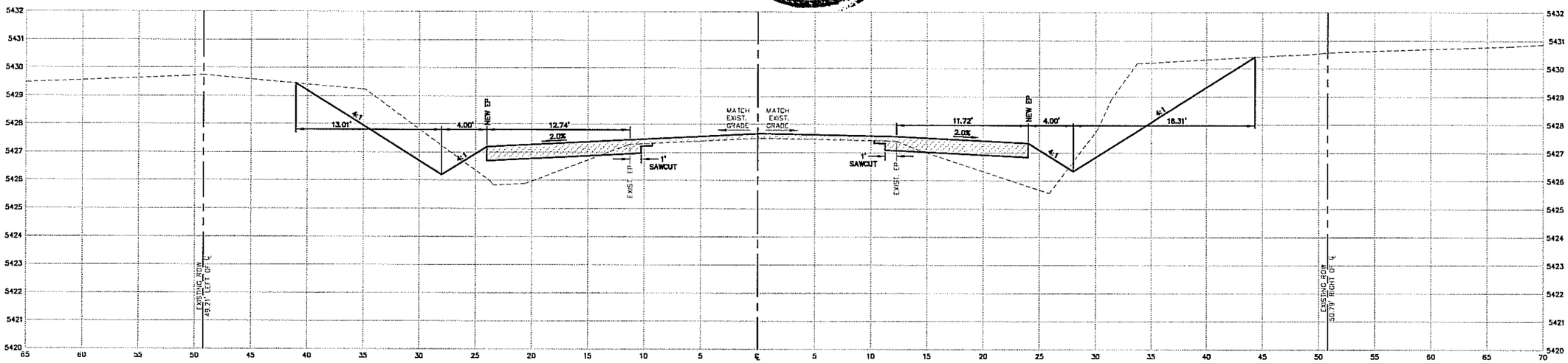
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

JAMES R. ROBERTS
REGISTERED
16144
11/3/09
PROFESSIONAL ENGINEER
STATE OF COLORADO

LEGEND:

- = EXISTING GRADE
- = PROPOSED CONSTRUCTION
- = PROPOSED ASPHALT

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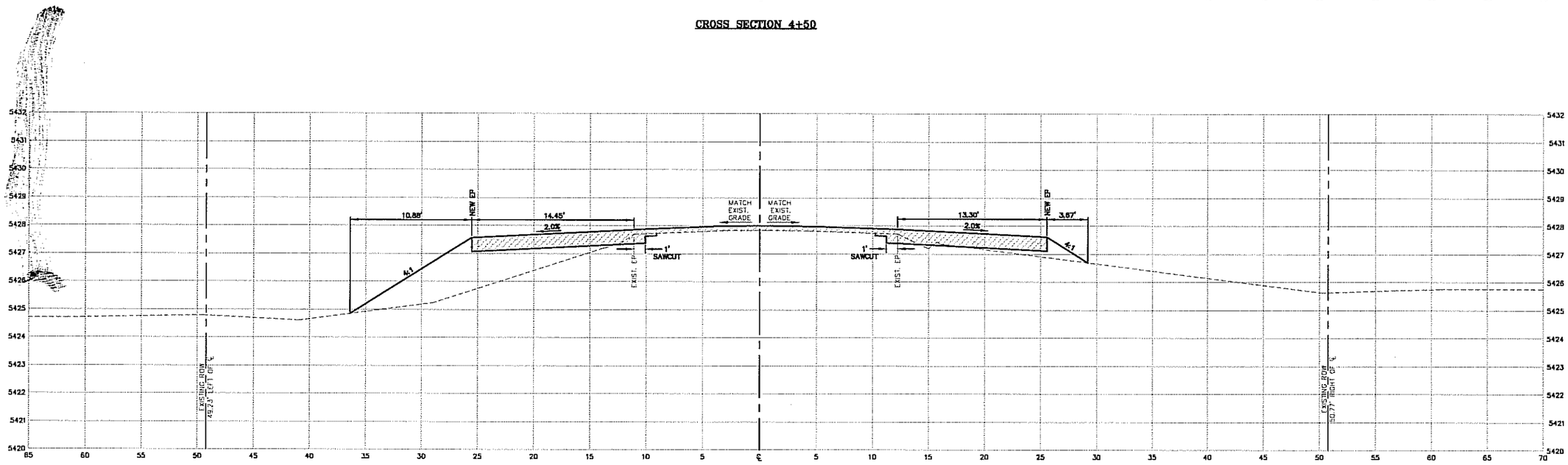
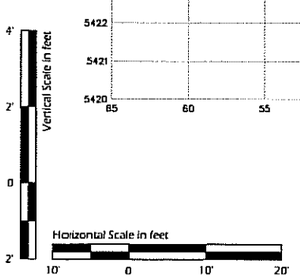



CROSS SECTION 5+50




| NO | DATE | REVISIONS | BY |
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ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 12
OF 22 SHEETS

| AS CONSTRUCTED | | | |
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| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

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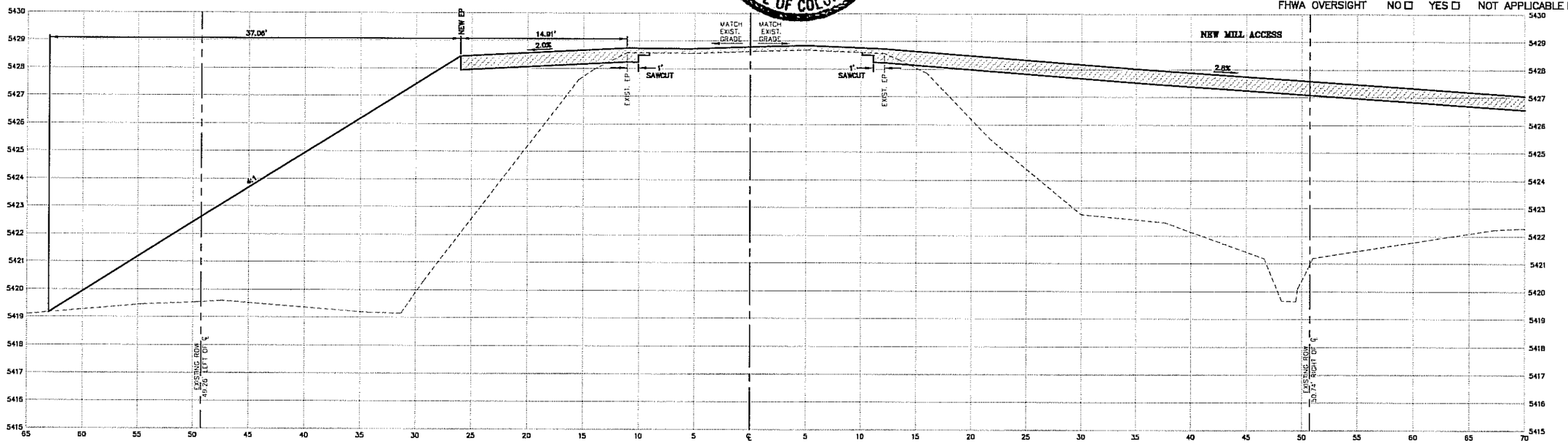
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

JAMES R. ROBERTS
REGISTERED
16144
11/3/09
PROFESSIONAL ENGINEER
STATE OF COLORADO

LEGEND:
- - - - - - = EXISTING GRADE
——— = PROPOSED CONSTRUCTION
▨ = PROPOSED ASPHALT




CROSS SECTION 6+55
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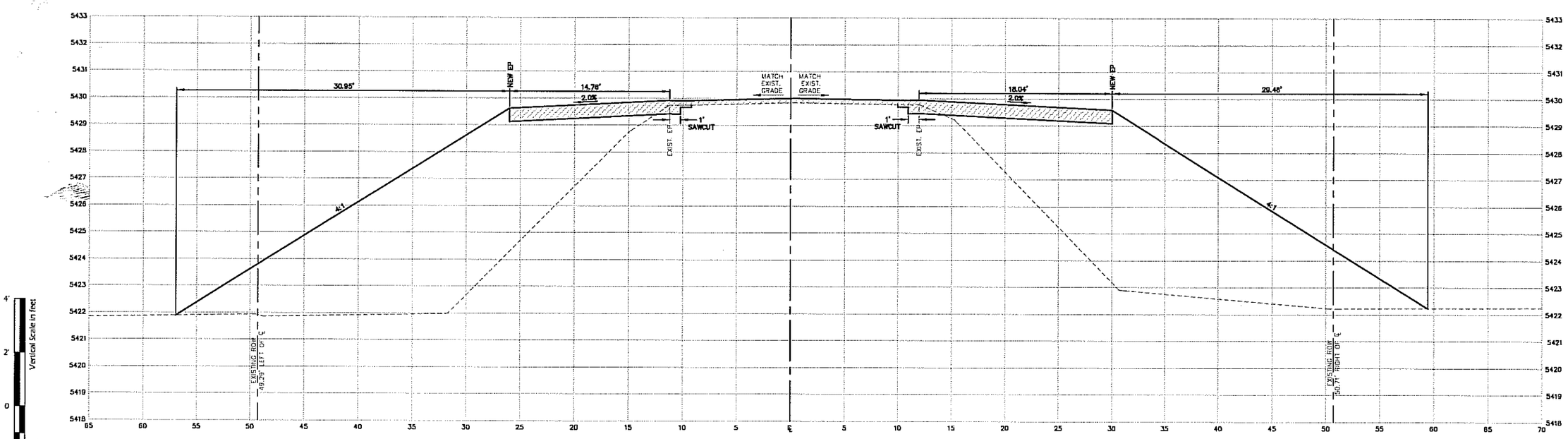


CROSS SECTION 7+50

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DATE ISSUED 11/02/09

ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

DWG JOB NO 09064

SHEET NO 13
OF 22 SHEETS

| AS CONSTRUCTED | | |
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| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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CONSTRUCTION SUBACCOUNT NO. 0

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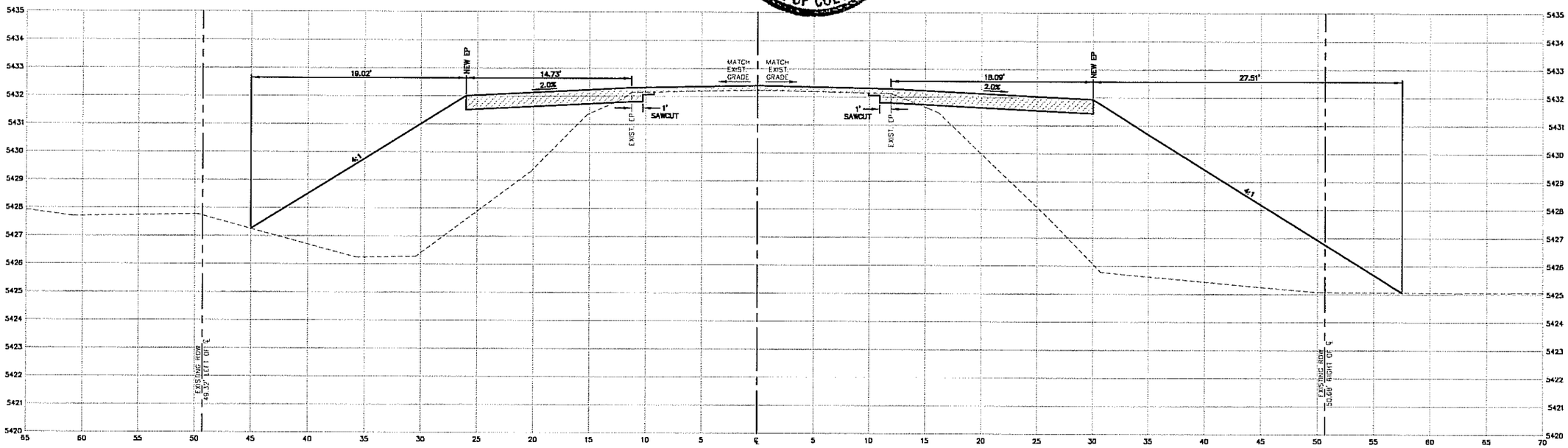
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

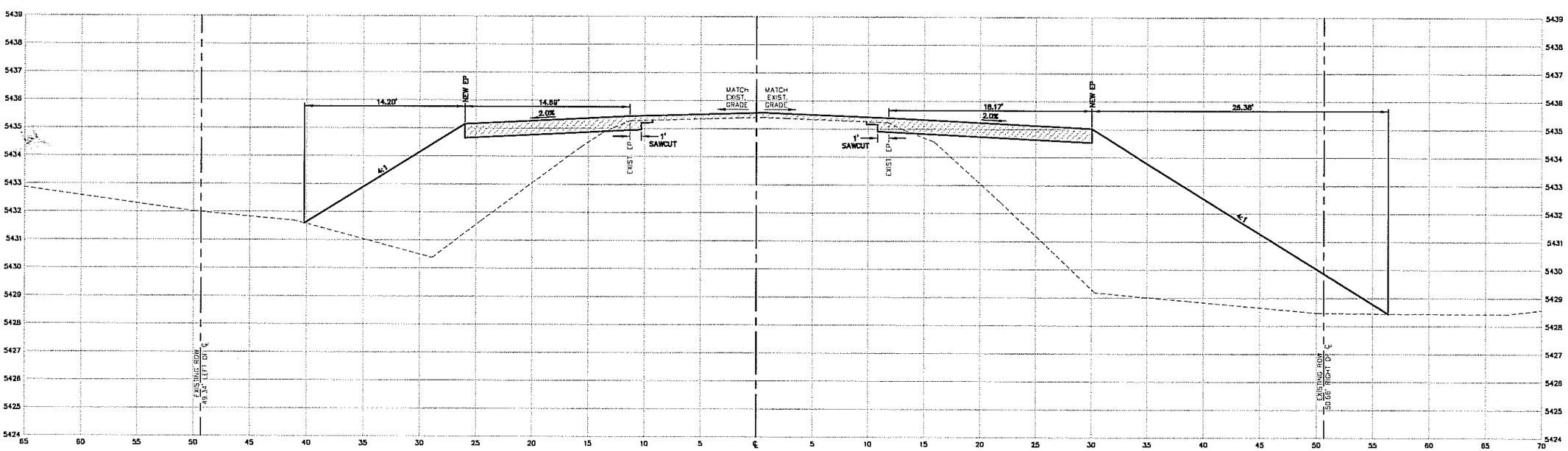
JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

LEGEND:

- = EXISTING GRADE
- = PROPOSED CONSTRUCTION
- = PROPOSED ASPHALT




CROSS SECTION 8+50




CROSS SECTION 9+50

Vertical Scale in feet: 4' 2' 0 2'

Horizontal Scale in feet: 10' 0 10' 20'

| NO | DATE | REVISIONS | BY |
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ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO 09064

SHEET NO 14 OF 22 SHEETS

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS | REVISED | VOID |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
|---|---|---|---|
| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

| REVISIONS | | |
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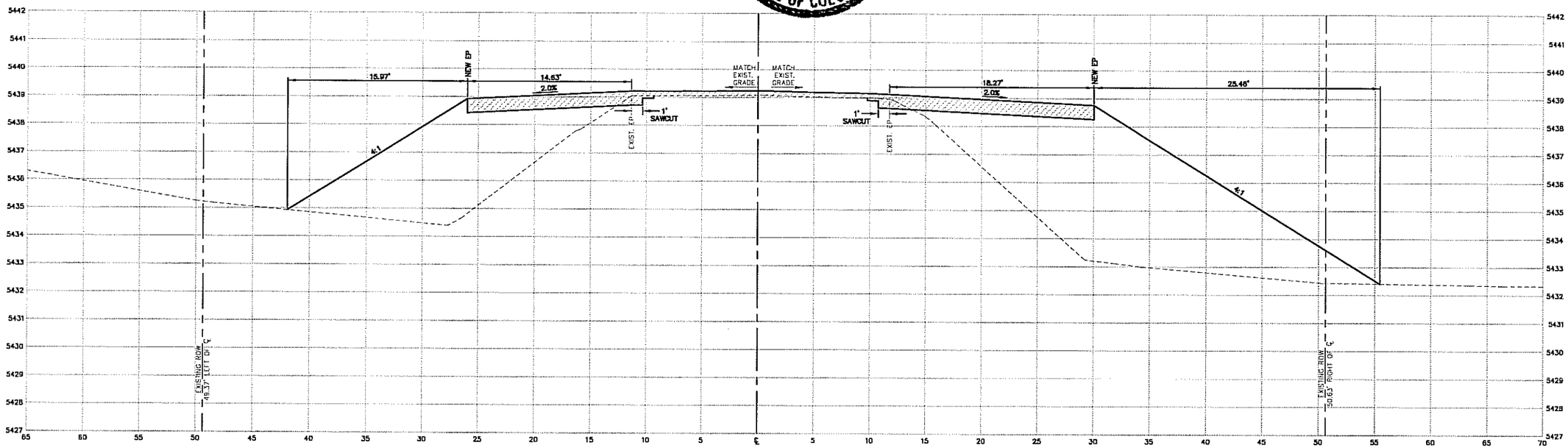
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

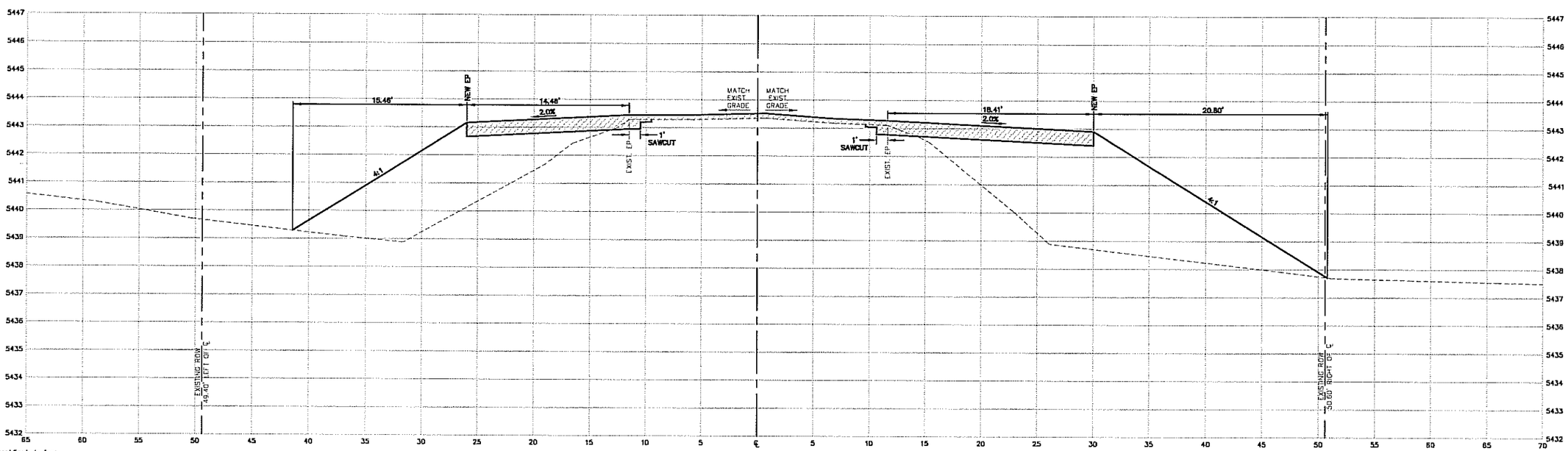
JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

LEGEND:

- = EXISTING GRADE
- = PROPOSED CONSTRUCTION
- = PROPOSED ASPHALT




CROSS SECTION 10+50




CROSS SECTION 11+50

| NO | DATE | REVISIONS | BY |
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DEL-MONT CONSULTANTS, INC.
1441 Gardenia Avenue, Suite 1-A, Lakewood, Colorado 80215
Phone: (303) 232-9400 Fax: (303) 232-8671
www.delmontconsultants.com

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| DRAWN BY NEB | FILENAME 090640_CDOT-ACCESS | | |

ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 15 OF 22 SHEETS

| AS CONSTRUCTED | | |
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| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

| REVISIONS | | |
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FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

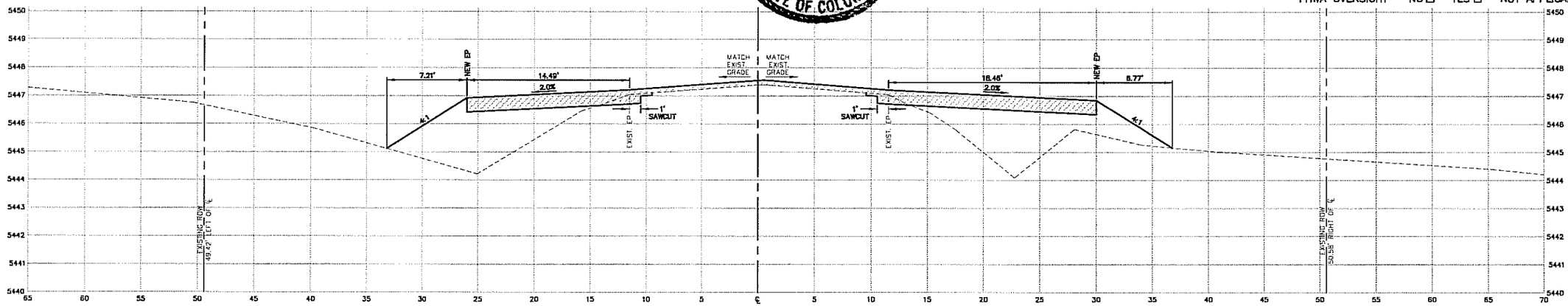
JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

LEGEND:

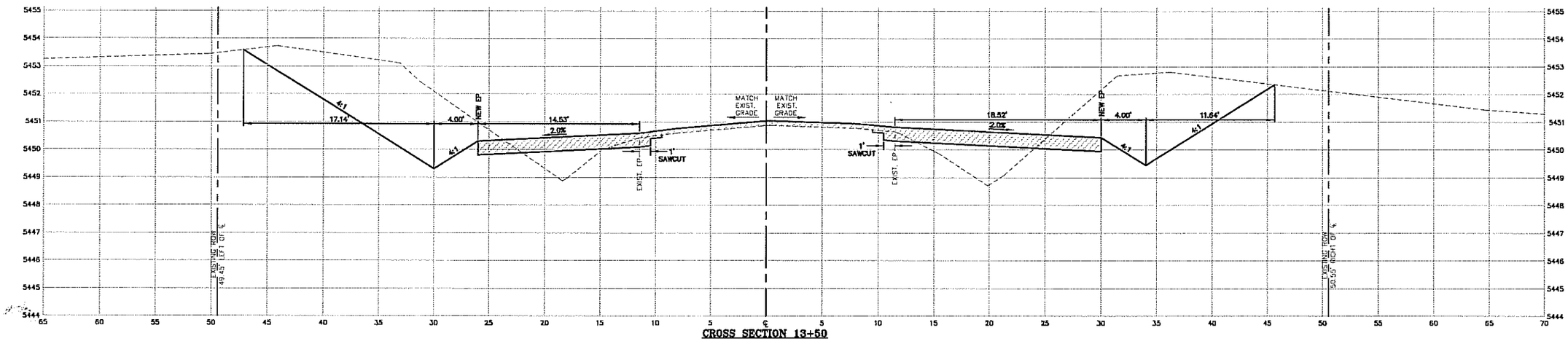
= EXISTING GRADE

= PROPOSED CONSTRUCTION

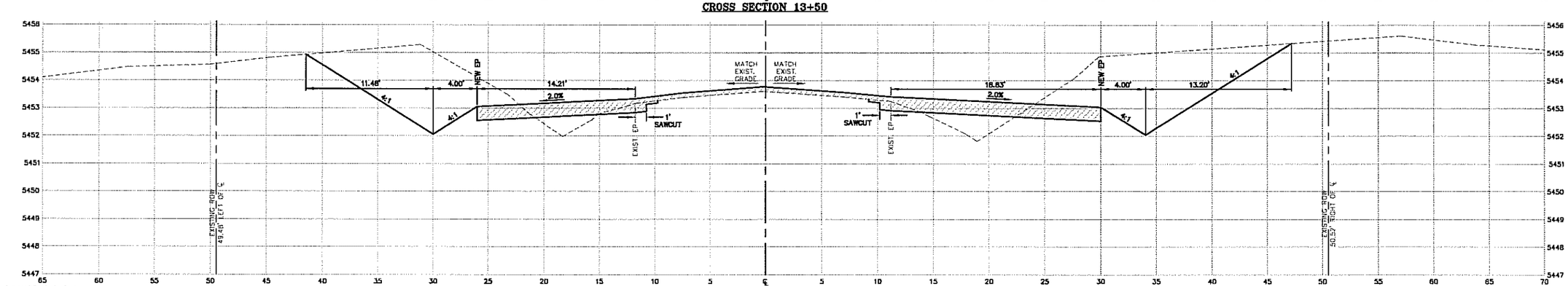
= PROPOSED ASPHALT




CROSS SECTION 12+50




CROSS SECTION 13+50




CROSS SECTION 14+50

Vertical Scale in feet: 4' 2' 0 2'

Horizontal Scale in feet: 10' 0 10' 20'

| NO | DATE | REVISIONS | BY |
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3801 CAMPBELL PARK • GRAND JUNCTION, COLORADO 81506
970 Colorado Ave. • Norwood, CO 81423 • (970) 327-4201 • (970) 249-6261 Fax
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| DRAWN BY | SCALE | FILE NAME | DATE ISSUED | CHECKED BY |
|---|---|---|---|---|
| JRR/NEB | 1"=10' | NEB 09064C_CDOT-ACCESS | 11/02/09 | JRR |

ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO 09064

SHEET NO 16 OF 22

| AS CONSTRUCTED | | |
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| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
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CONSTRUCTION SUBACCOUNT NO. 0

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FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

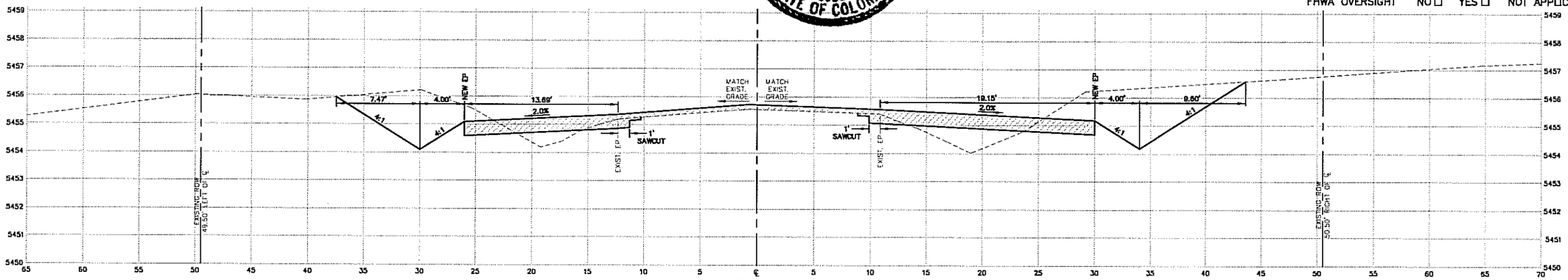
JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

LEGEND:

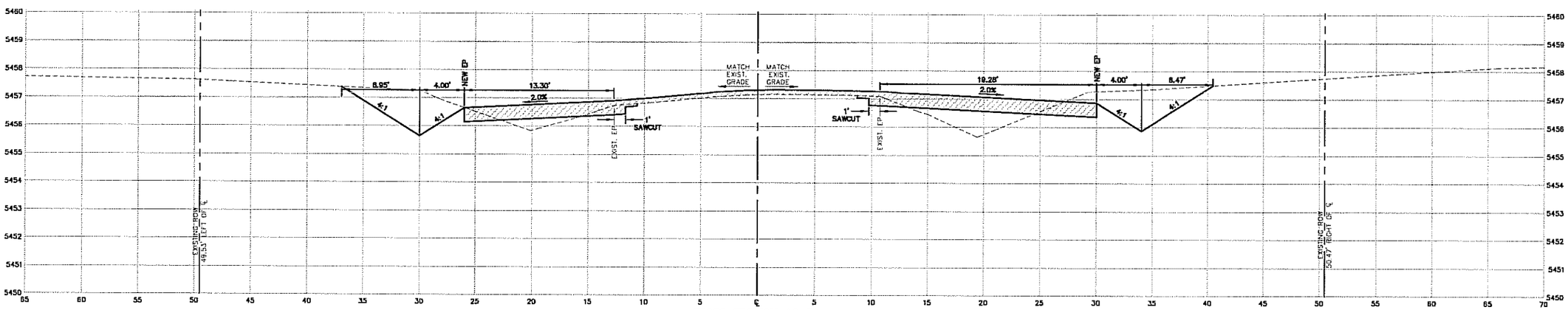
= EXISTING GRADE

= PROPOSED CONSTRUCTION

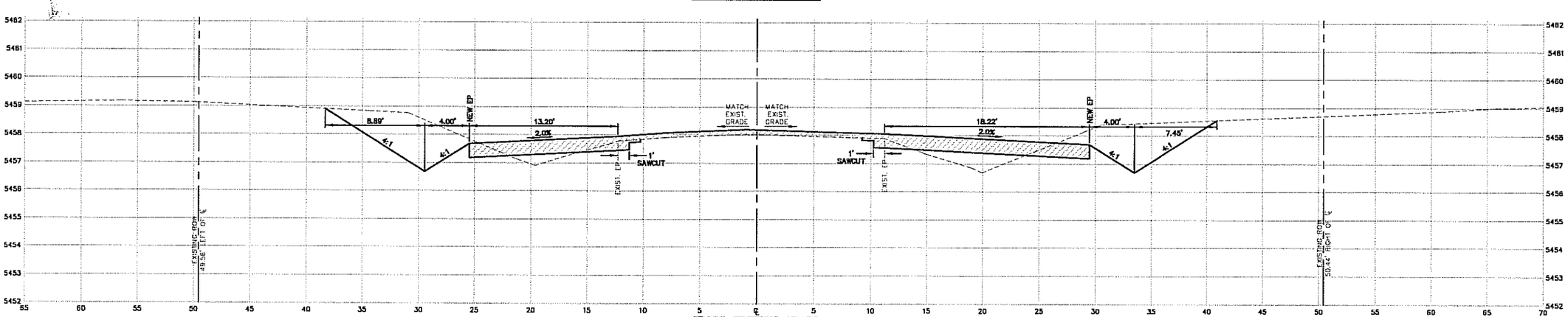
= PROPOSED ASPHALT




CROSS SECTION 15+50




CROSS SECTION 16+50




CROSS SECTION 17+50

Vertical Scale in feet: 4' 2' 0 2'

Horizontal Scale in feet: 10' 0 10' 20'

| NO | DATE | REVISIONS | BY |
|---|---|---|---|
| | | | |

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www.del-mont.com • web@del-mont.com

| DESIGNED BY | DRAWN BY | SCALE | FILE NAME | CHECKED BY | DATE MADE |
|---|---|---|---|---|---|
| JRR/NEB | NEB | 1"=10' | 090640_CDOT-ACCESS | JRR | 11/02/09 |

ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 17 OF 22 SHEETS

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
|---|---|---|---|
| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

| REVISIONS | | |
|---|---|---|
| | | |
| | | |
| | | |

FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

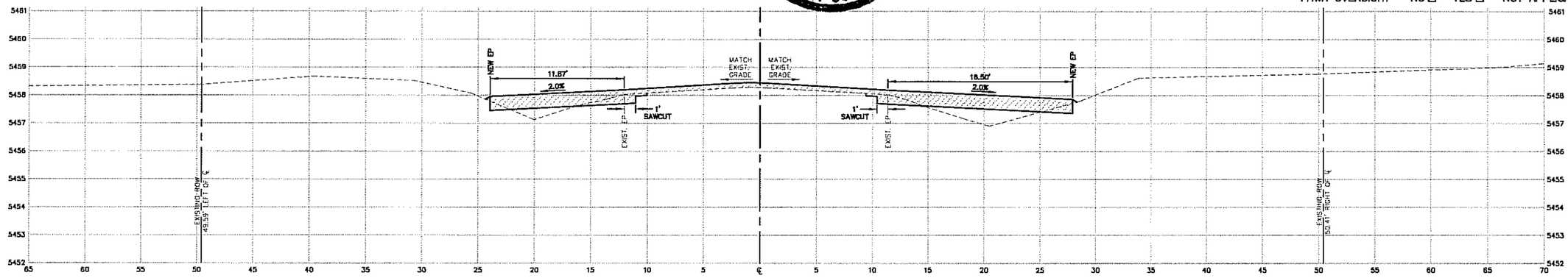
JAMES R. ROBERTS REGISTERED 16144 PROFESSIONAL ENGINEER STATE OF COLORADO 11/3/09

LEGEND:

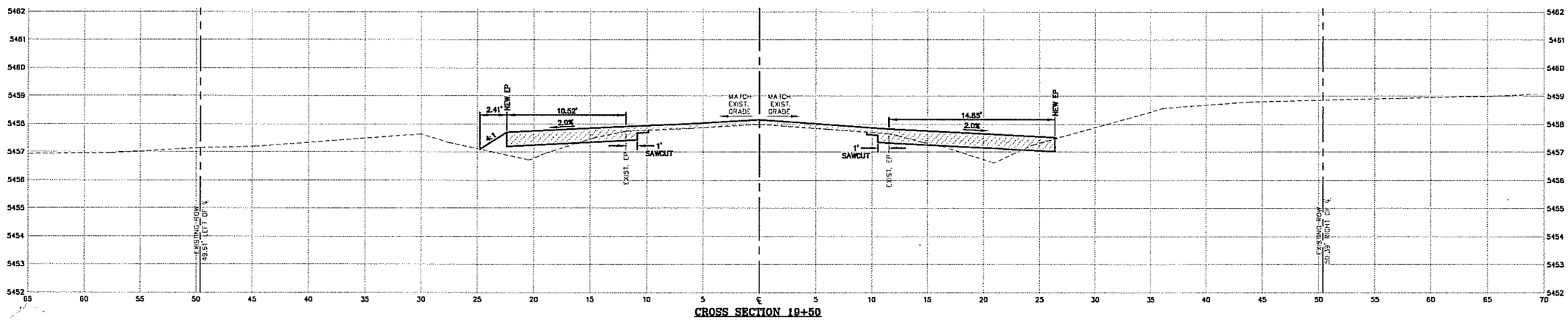
= EXISTING GRADE

= PROPOSED CONSTRUCTION

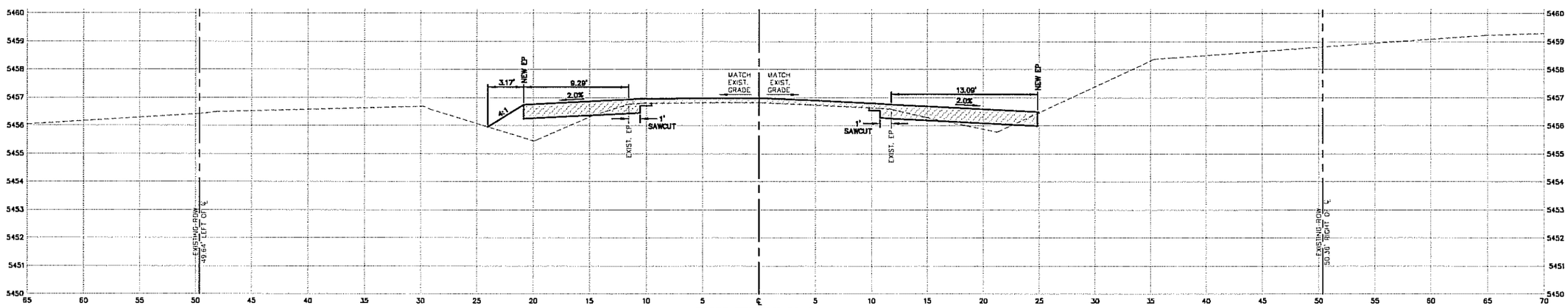
= PROPOSED ASPHALT




CROSS SECTION 18+50




CROSS SECTION 19+50




CROSS SECTION 20+50

Vertical Scale in feet: 4' 2' 0 2'

Horizontal Scale in feet: 10' 0 10' 20'

| NO | DATE | REVISIONS | BY |
|---|---|---|---|
| | | | |

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| | | | |
|---|---|---|---|
| DESIGNED BY JRR/NEB | SCALE 1"=10' | CHECKED BY JRR | DATE 11/02/09 |
| DRAWN BY NEB | FILE NAME 09064C_CDOT-ACCESS | | |

ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS

SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS

PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO 09064

SHEET NO 18 OF 22 SHEETS

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
|---|---|---|---|
| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

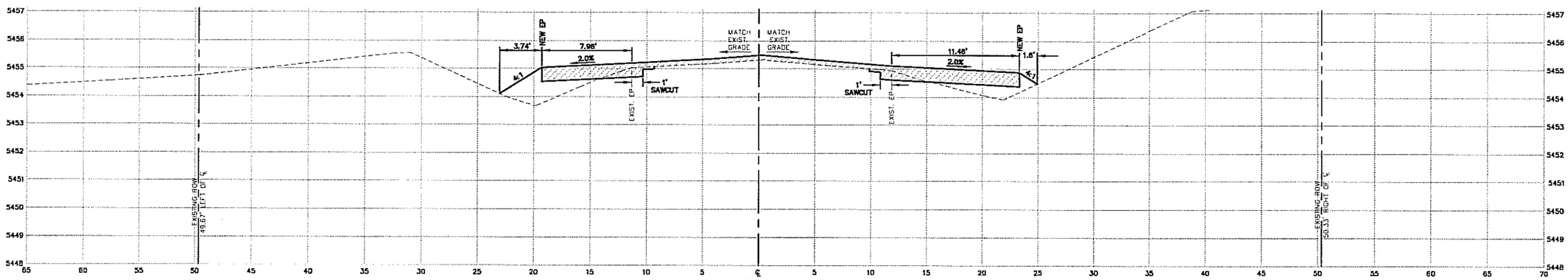
| REVISIONS | | |
|---|---|---|
| | | |
| | | |
| | | |

FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

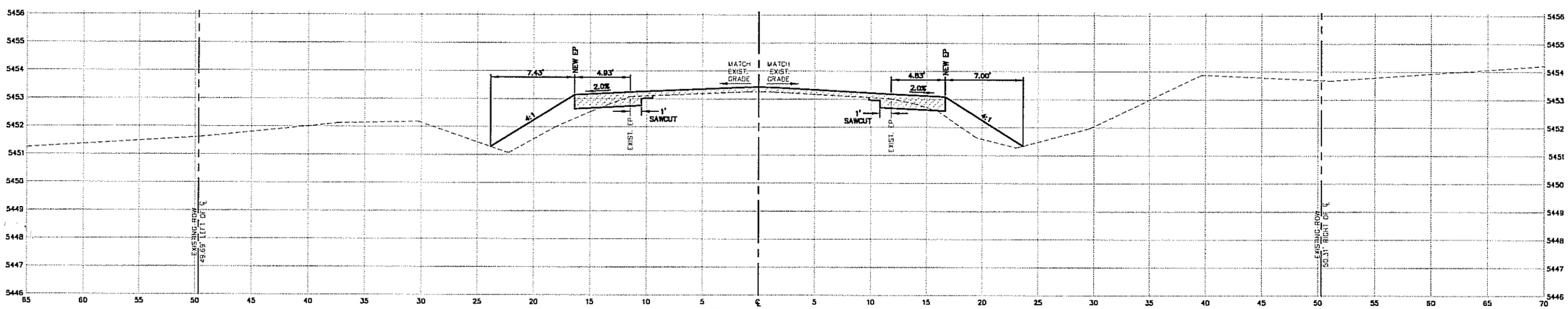
JAMES R. ROBERTS
REGISTERED
16144
11/3/09
PROFESSIONAL ENGINEER
STATE OF COLORADO

LEGEND:

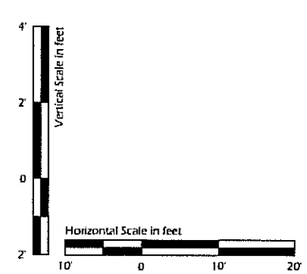
- = EXISTING GRADE
- = PROPOSED CONSTRUCTION
- = PROPOSED ASPHALT




CROSS SECTION 21+50




CROSS SECTION 22+50




| NO | DATE | REVISIONS | BY |
|---|---|---|---|

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| DESIGNED BY | DRAWN BY | SCALE | FILE NAME | CHECKED BY | DATE |
|---|---|---|---|---|---|
| JRR/NEB | NEB | 1"=10' | 09084C_CDOT-ACCESS | JRR | 11/02/09 |

ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 19 OF 22 SHEETS

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
|---|---|---|---|
| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

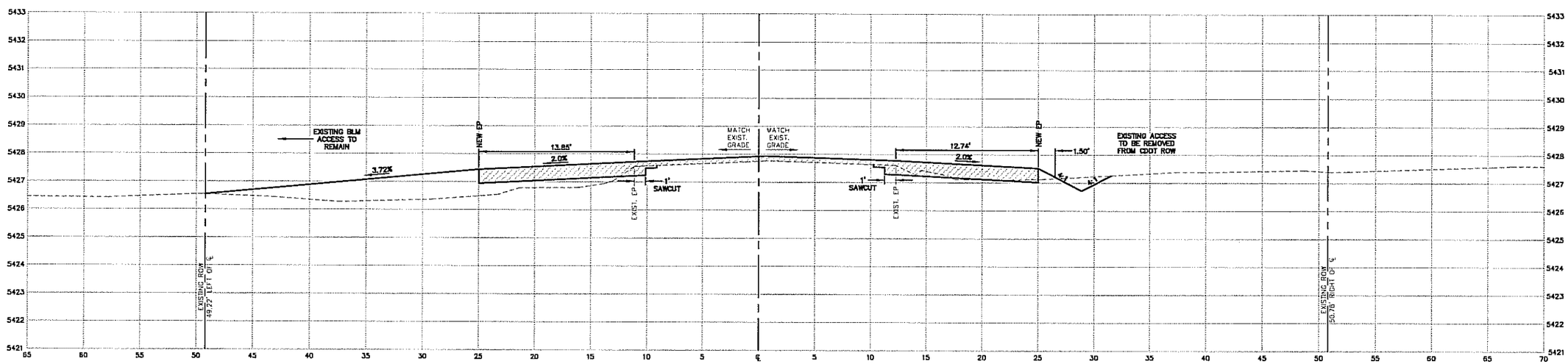
| REVISIONS | | |
|---|---|---|
| | | |
| | | |
| | | |

FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

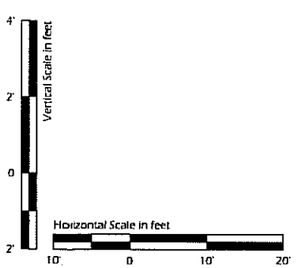
JAMES R. ROBERTS
REGISTERED
16144
11/3/09
PROFESSIONAL ENGINEER
STATE OF COLORADO

LEGEND:

- = EXISTING GRADE
- = PROPOSED CONSTRUCTION
- = PROPOSED ASPHALT




**EXISTING BLM ACCESS**
**CROSS SECTION 5+15**




| NO | DATE | REVISIONS | BY |
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www.dei-mont.com • mail@dei-mont.com

| DRAWN BY | SCALE | DATE | FILE NAME |
|---|---|---|---|
| JRR/NEB | 1"=10' | 11/02/09 | NEB/RDD_099640_CDOT-ACCESS |

ENERGY FUELS RESOURCES CORPORATION

CROSS SECTIONS
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL
MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 20 OF 22 SHEETS

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS ☐ | REVISED ☐ | VOID ☐ |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
|---|---|---|---|
| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

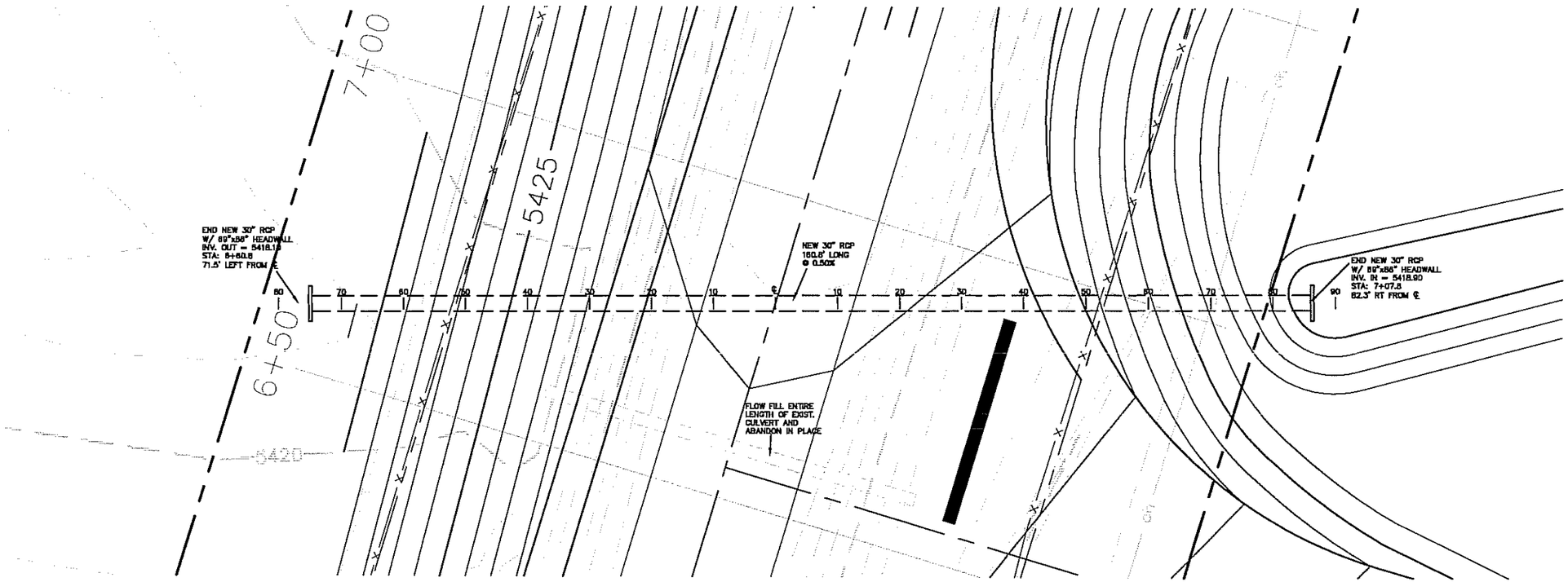
| REVISIONS | | |
|---|---|---|
| | | |
| | | |
| | | |

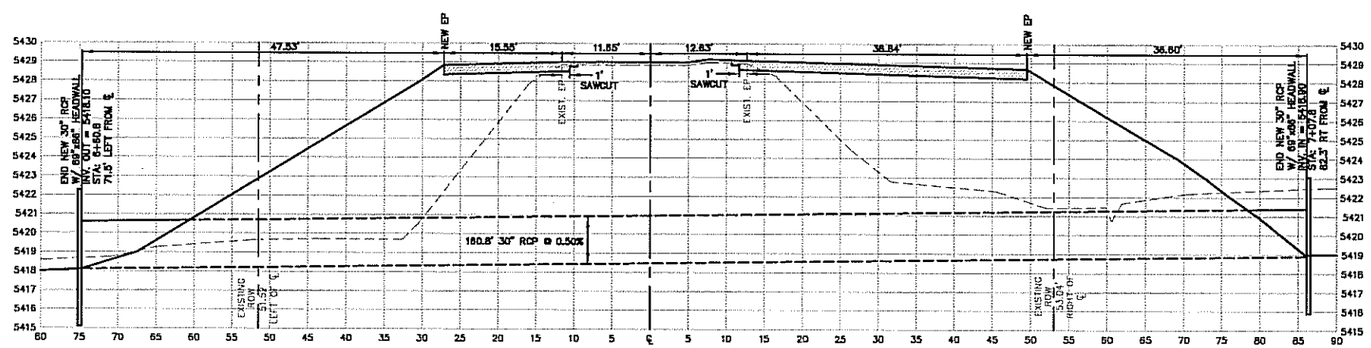
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐

JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

LEGEND:

- = EXISTING GRADE
- = PROPOSED CONSTRUCTION
- = PROPOSED ASPHALT




CROSS SECTION NEW CULVERT
CENTERLINE STA: 6+82.6

Vertical Scale in feet: 8' 4' 0 4'

Horizontal Scale in feet: 10' 0 10' 20'

| NO | DATE | REVISIONS | BY |
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| | | | |

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| DRAWN BY | DESIGNED BY | SCALE | FILE NAME | DATE REVISED | CHECKED BY |
|---|---|---|---|---|---|
| NEB | JRR/NEB | 1"=20' | 090640_CDOT-ACCESS | 11/02/09 | JRR |

ENERGY FUELS RESOURCES CORPORATION

DRAINAGE CROSS SECTION
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

MONTROSE COUNTY COLORADO

DMC JOB NO. 09064

SHEET NO. 21 OF 22 SHEETS

N

1" = 60'

Scale in feet

30' 0 30' 60'

LEGEND:

= EXISTING CONTOURS
= PROPOSED CONTOURS
= CENTER LINE
= EXISTING RIGHT-OF-WAY LINE
= PROPOSED RIGHT-OF-WAY LINE
= EXISTING OVERHEAD POWER LINE
= EXISTING ROW FENCE
= EXISTING UNDERGROUND PHONE LINE

JAMES R. ROBERTS REGISTERED 16144 11/3/09 PROFESSIONAL ENGINEER STATE OF COLORADO

| AS CONSTRUCTED | | |
|---|---|---|
| NO REVISIONS | REVISED | VOID |

| FED. ROAD REGION | DIVISION | PROJ. NO. | SHEET NO. |
|---|---|---|---|
| VIII | COLO. | | |

CONSTRUCTION SUBACCOUNT NO. 0

| REVISIONS | | |
|---|---|---|
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| | | |
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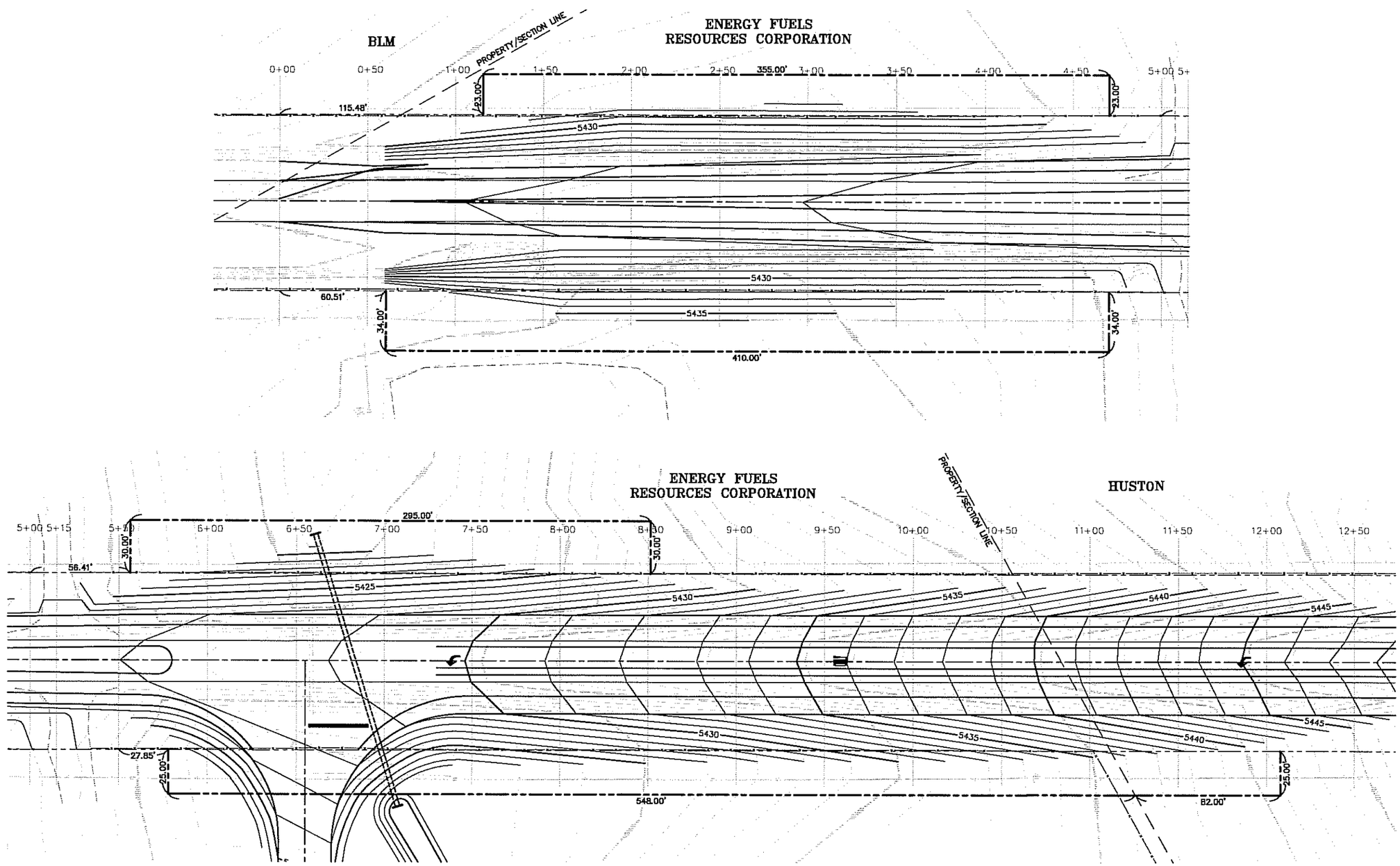
FHWA OVERSIGHT NO ☐ YES ☐ NOT APPLICABLE ☐




| NO | DATE | REVISIONS | BY |
|---|---|---|---|

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| | | | |
|---|---|---|---|
| DESIGNED BY JRR/NEB | SCALE 1"=60' | CHECKED BY JRR | DATE 11/02/09 |
| DRAWN BY NEB | FILE NAME 090940_CDOT-ACCESS | DATE REVISED | |

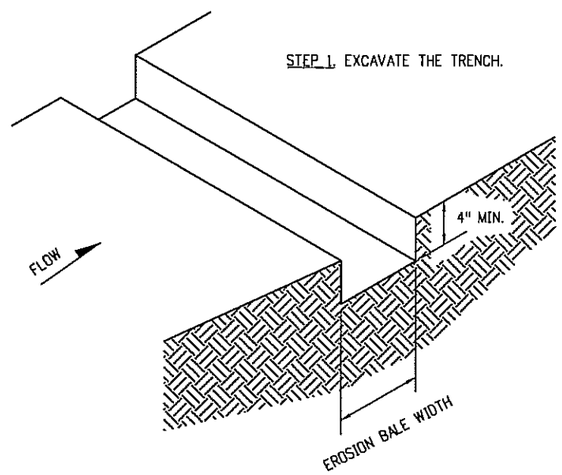
ENERGY FUELS RESOURCES CORPORATION

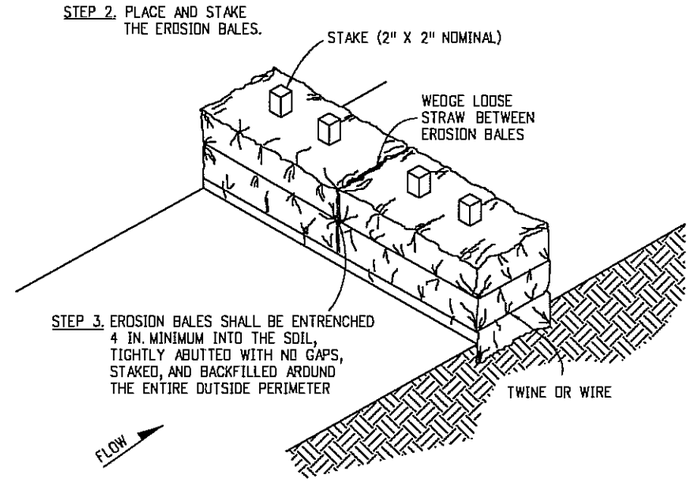
RIGHT OF WAY MAP
SH 90 & ACCESS ROAD INTERSECTION IMPROVEMENTS
PIÑON RIDGE MILL

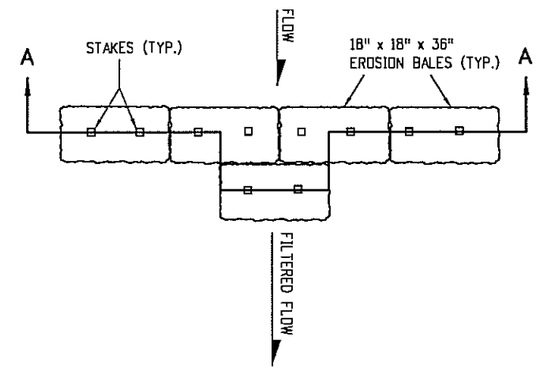
MONTROSE COUNTY COLORADO

DMC JOB NO 09064

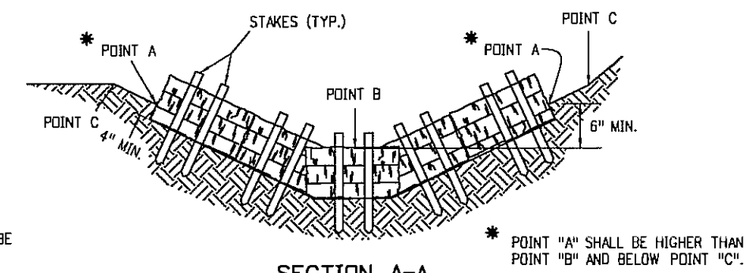
SHEET NO 22 OF 22 SHEETS



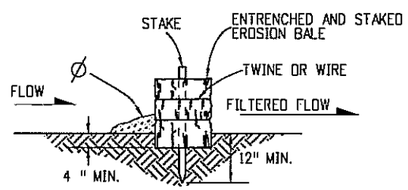



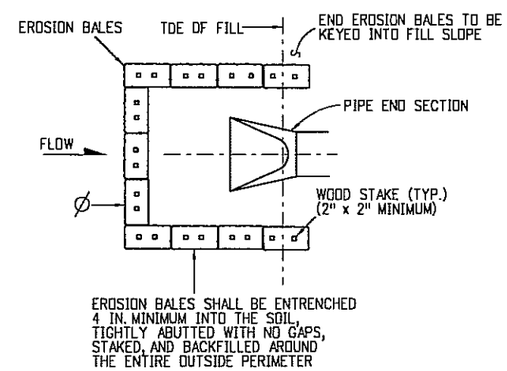

PLAN




SECTION A-A



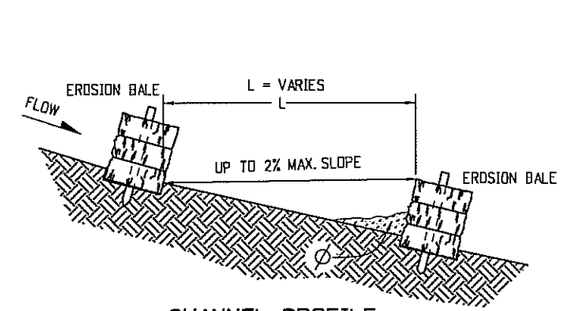

TYPICAL EROSION BALE TRENCHING AND STAKING




PLAN VIEW

CULVERT EROSION BALE INLET PROTECTION

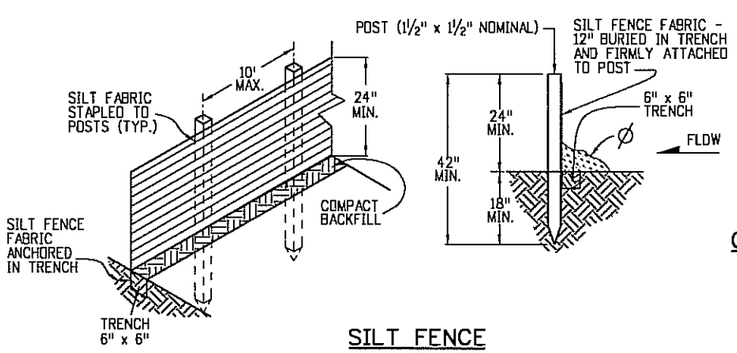
Ø REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF EXPOSED SILT FENCE OR BALE HEIGHT. INSPECTION SHALL BE PERFORMED CONTINUOUSLY FOR PROPER FUNCTION.




CHANNEL PROFILE

SPACING BETWEEN EROSION BALES

NOTE: EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL, TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.




SILT FENCE

| Computer File Information | | | Sheet Revisions | |
|---|---|---|---|---|
| Creation Date: 07/04/06 Initials: DD | | | Date: | Comments |
| Last Modification Date: 07/09/09 Initials: LTA | (R-X) | (R-X) | 07/09/09 | Revised sheets 4 and 5. |
| Full Path: www.dot.state.co.us/DesignSupport/ | (R-X) | (R-X) | | |
| Drawing File Name: 208010107.dgn | (R-X) | (R-X) | | |
| CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English | (R-X) | (R-X) | | |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Denver, Colorado 80222
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Fax: (303) 757-9820
Project Development Branch DD/LTA

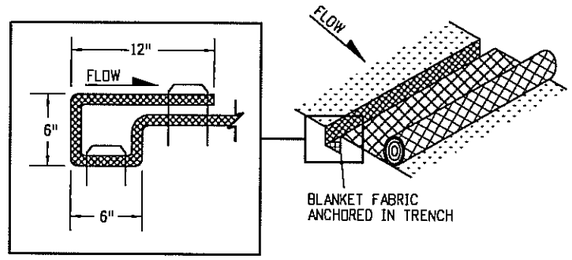

# TEMPORARY EROSION CONTROL

Issued By: Project Development Branch on July 04, 2006

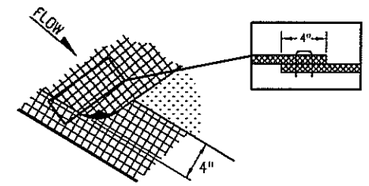
STANDARD PLAN NO.

M-208-1

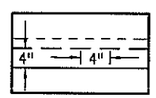
STEP 1. PLACE UPSLOPE END OF BLANKET IN A TRENCH 6 IN. DEEP BY 6 IN. WIDE.



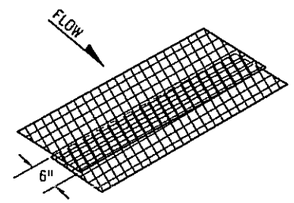

STEP 2. USE A 4 IN. OVERLAP WHENEVER TWO WIDTHS OF BLANKET ARE INSTALLED SIDE BY SIDE. STAPLE PATTERN: MINIMUM 3 PER SQUARE YARD.



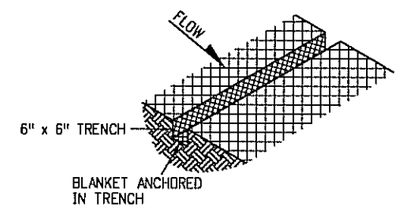

STEP 3. USE A 6 IN. OVERLAP WHEREVER ONE ROLL OF BLANKET ENDS AND ANOTHER BEGINS.

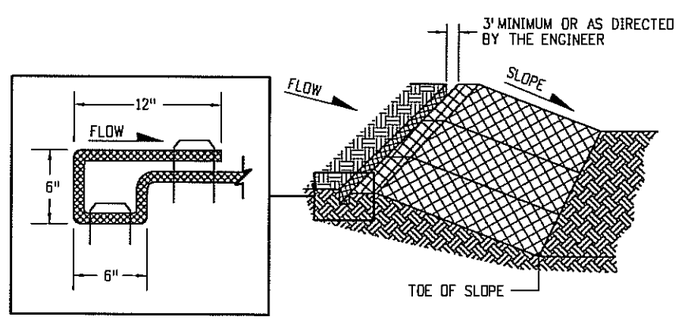



STAPLE PATTERN

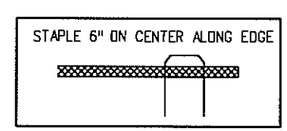


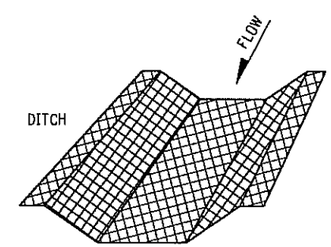

STEP 4. CHECK SLOTS SHOULD BE MADE EVERY 35 FT. AND AT TERMINAL ENDS. INSERT A FOLD OF THE BLANKET INTO A TRENCH 6 IN. WIDE BY 6 IN. DEEP AND COMPACT IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATION LAY THE BLANKET SMOOTHLY ON THE SURFACE OF THE SOIL, DO NOT STRETCH THE BLANKET, AND DO NOT ALLOW WRINKLES. INSTALL STAPLES 12 IN. ON CENTER IN TRENCH.




PLACE BLANKET PARALLEL WITH THE DIRECTION OF FLOW AND ANCHOR SECURELY. BRING BLANKET TO THE TOE OF SLOPE OR AS DIRECTED BY THE ENGINEER BEFORE TERMINATING THE INSTALLATION.




PLACE BLANKET WITH THE DIRECTION OF FLOW. DO NOT JOIN STRIPS IN THE CENTER OF THE DITCH. PLACE CHECK SLOTS AS REQUIRED.

## SOIL RETENTION BLANKETS

IN ACCORDANCE WITH SECTION 216.

| Computer File Information | | |
|---|---|---|
| Creation Date: 07/04/06 | Initials: DD | |
| Last Modification Date: 07/09/09 | Initials: LTA | (R-X) |
| Full Path: www.dot.state.co.us/DesignSupport/ | | (R-X) |
| Drawing File Name: 208010207.dgn | | (R-X) |
| CAD Ver.: MicroStation V8 Scale: Not to Scale | Units: English | (R-X) |

| Sheet Revisions | |
|---|---|
| Date: | Comments |
| | |
| | |
| | |
| | |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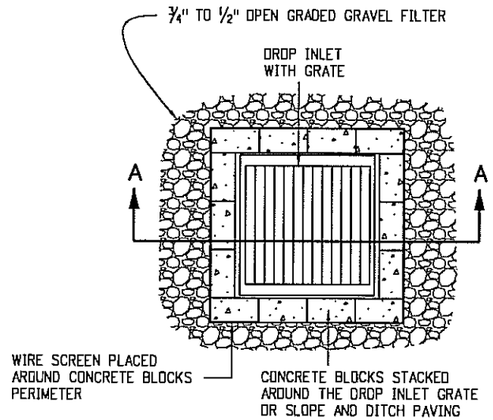
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820
Project Development Branch DD/LTA


# TEMPORARY EROSION CONTROL

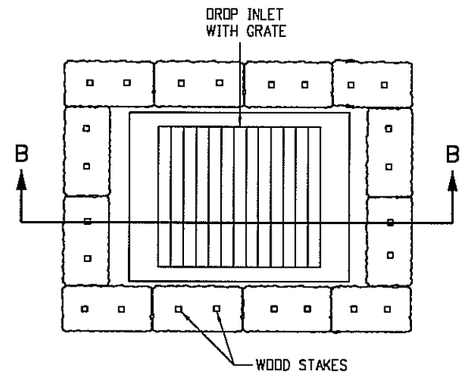
Issued By: Project Development Branch on July 04, 2006

STANDARD PLAN NO.

M-208-1



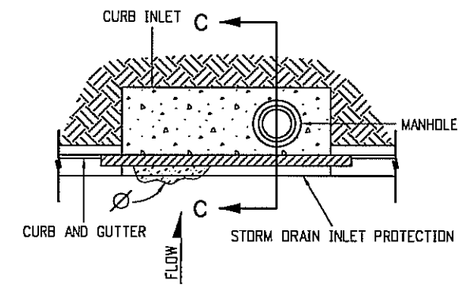

PLAN VIEW



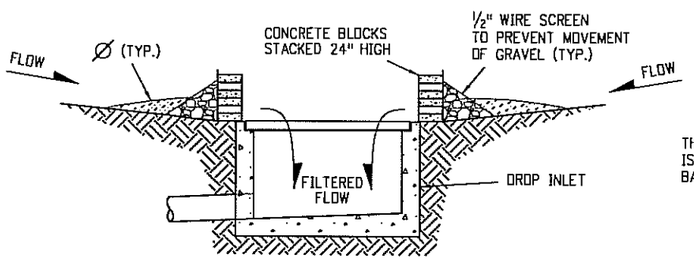

PLAN VIEW

NOTE

Ø REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF EXPOSED INLET PROTECTION HEIGHT. INSPECTION SHALL BE PERFORMED CONTINUOUSLY FOR PROPER FUNCTION.

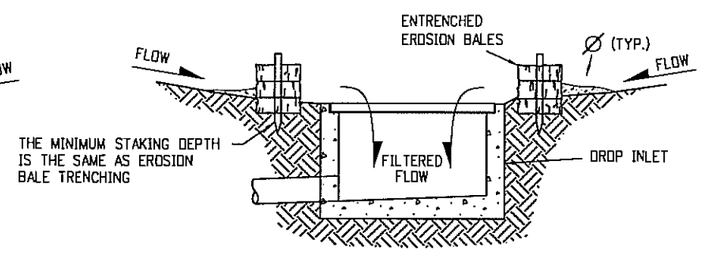



PLAN VIEW




SECTION A-A

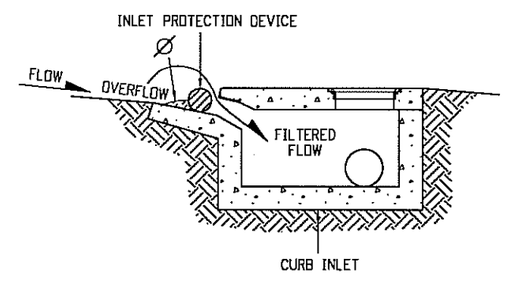
STORM DRAIN INLET PROTECTION (TYPE C OR D)




SECTION B-B

INLET EROSION BALE FILTER (TYPE C OR D)

NOTE: EROSION BALES ARE TO BE ENTRENCHED 4 IN. INTO THE SOIL, TIGHTLY ABUTTING WITH NO GAPS, STAKED AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER OF GRATE OR SLOPE AND DITCH PAVING.




SECTION C-C

STORM DRAIN INLET PROTECTION (TYPE R)

NOTES:

1. INLET PROTECTION SHALL EXTEND 12 IN. PAST EACH END OF THE INLET AND BE 4 IN. TO 6 IN. IN DIAMETER.
2. INLET PROTECTION MAY CONSIST OF CONTINUOUS FILTER TUBING FILLED WITH GRAVEL OR PREMANUFACTURED DEVICE.

| Computer File Information | | Sheet Revisions | |
|---|---|---|---|
| Creation Date: 07/04/06 Initials: DD | | Date: | Comments |
| Last Modification Date: 07/09/09 Initials: LTA | (R-X) | | |
| Full Path: www.dot.state.co.us/DesignSupport/ | (R-X) | | |
| Drawing File Name: 208010307.dgn | (R-X) | | |
| CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English | (R-X) | | |

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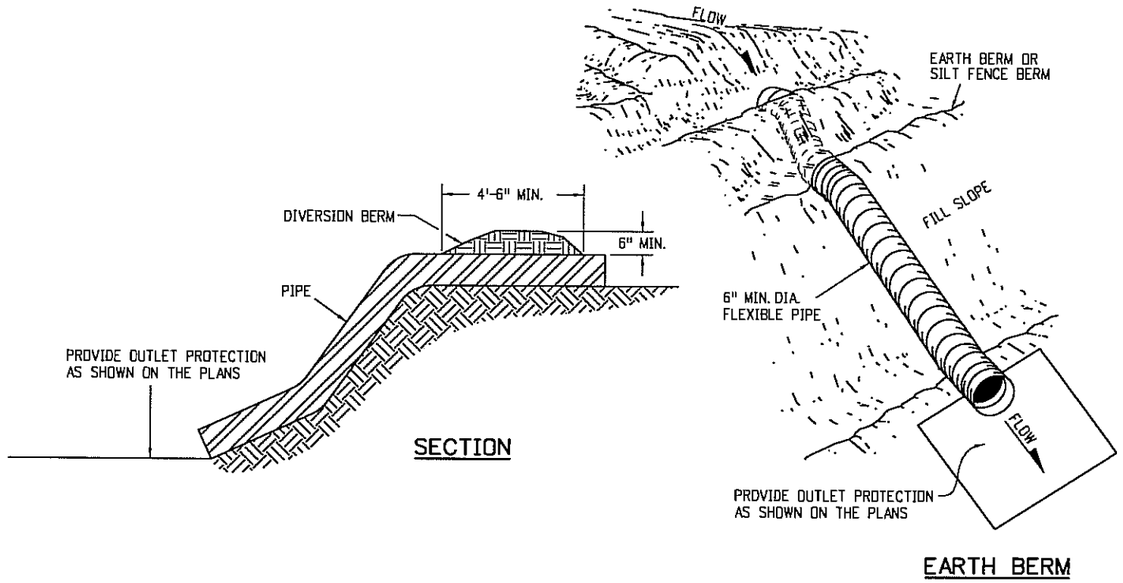
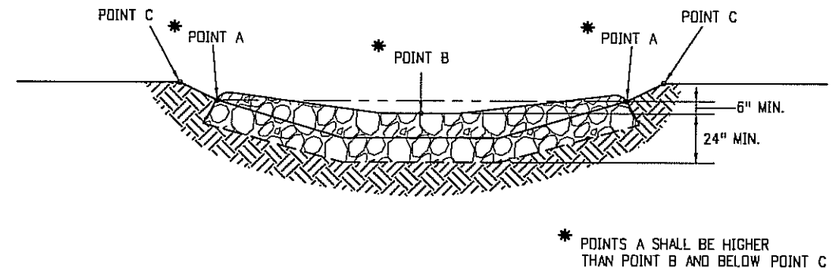
STANDARD PLAN NO.

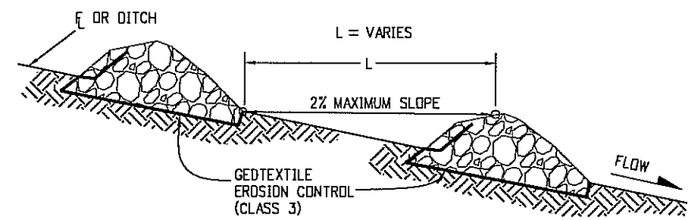
M-208-1



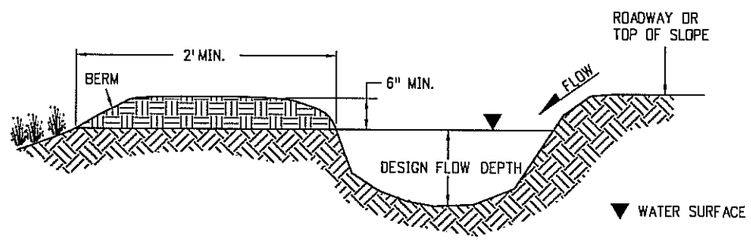

TEMPORARY SLOPE DRAIN



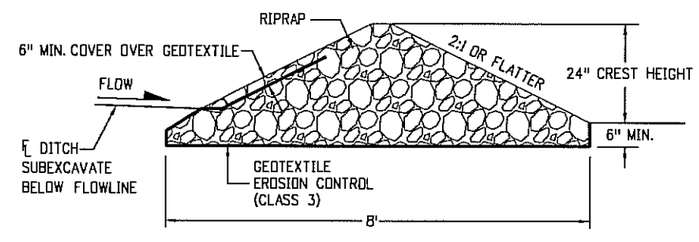

TYPICAL SECTION VIEW




SECTION VIEW ALONG DITCH FLOWLINE




DIVERSION DAM




SECTION DETAIL

CHECK DAM FOR EROSION CONTROL

NOTES:

1. RIPRAP SIZE D50 = 6 IN. OR AS SHOWN ON THE PLANS.
2. THE ENDS OF RIPRAP CHECK DAM SHALL BE A MINIMUM OF 6 IN. HIGHER THAN CENTER OF CHECK DAM.
3. SEDIMENT SHALL BE REMOVED WHEN THE DEPTH UPSTREAM FROM CHECK DAM IS ½ THE CREST HEIGHT.
4. CHECK DAMS MAY BE TEMPORARY OR PERMANENT AS SHOWN ON THE PLANS.

| Computer File Information | |
|---|---|
| Creation Date: 07/04/06 | Initials: DD |
| Last Modification Date: 07/09/09 | Initials: LTA |
| Full Path: www.dot.state.co.us/DesignSupport/ | |
| Drawing File Name: 208010407.dgn | |
| CAD Ver.: MicroStation V8 Scale: Not to Scale | Units: English |

| | Sheet Revisions | |
|---|---|---|
| | Date: | Comments |
| R-X | 07/09/09 | Changed Class B to Class 3 for Geotextile Erosion Control. |
| R-X | | |
| R-X | | |

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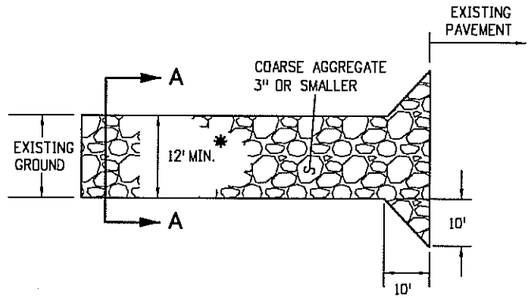
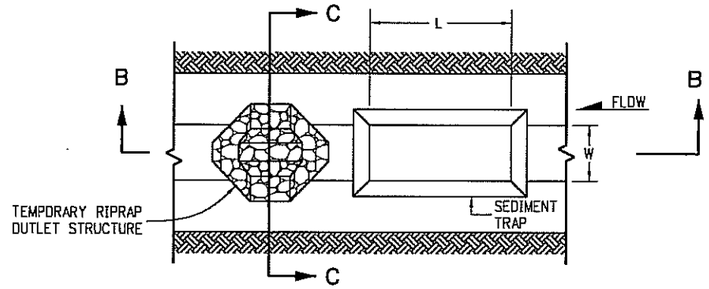
M-208-1



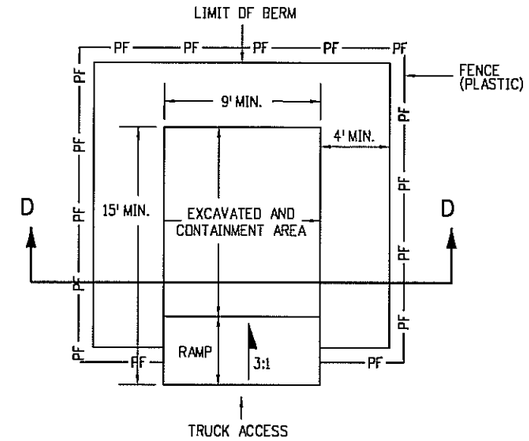

PLAN VIEW

* SHALL EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION.



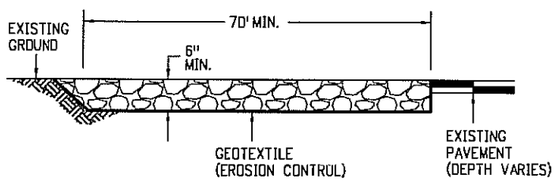

NOTE: SEE PLAN SHEETS FOR THE FOLLOWING:
RIPRAP SIZE
DEPTH (D1 AND D2)
LENGTH (L)
WIDTH (W)
DITCH TYPE, SIZE AND LOCATION

PLAN VIEW

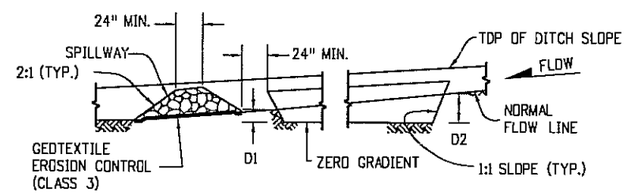



PLAN VIEW

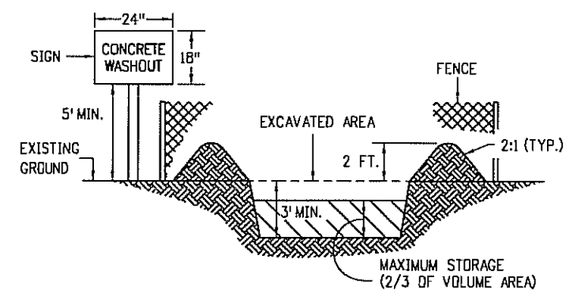
Ø REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF STRUCTURE HEIGHT. INSPECTION SHALL BE PERFORMED CONTINUOUSLY FOR PROPER FUNCTION.




ELEVATION SECTION




CROSS SECTION B-B

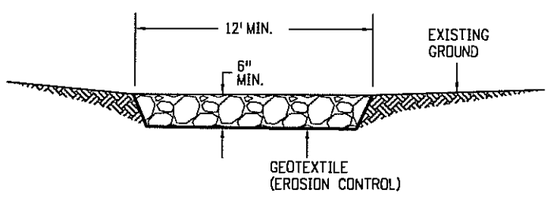



SECTION D-D

CONCRETE WASHOUT STRUCTURE

NOTES:

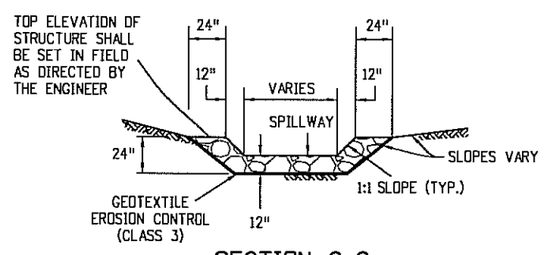
1. SIGN MATERIAL, EXCAVATION, AND RESTORATION ARE INCLUDED IN THE COST OF THE CONCRETE WASHOUT STRUCTURE.
2. EROSION BALES MAY BE USED AS AN ALTERNATIVE FOR THE BERM.
3. A FENCE (PLASTIC) CONFORMING TO SUBSECTION 607.02 SHALL BE INSTALLED AROUND THE CONCRETE WASHOUT AREA, EXCEPT AT THE OPENING.
4. THE CONCRETE WASHOUT SIGN SHALL HAVE LETTERS AT LEAST 3 IN. HIGH AND CONFORM TO SUBSECTION 630.02.




SECTION A-A

STABILIZED CONSTRUCTION ENTRANCE

NOTE: THE CONTRACTOR SHALL PROTECT ANY CURB AND GUTTER THAT CROSSES THE ENTRANCE. PROTECTION OF THE CURB AND GUTTER WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.




SECTION C-C

SEDIMENT TRAP/DEWATERING STRUCTURE

NOTE: THE RIPRAP AND GEOTEXTILE ARE INCLUDED IN THE COST OF THE BID ITEM.

| Computer File Information | | Sheet Revisions | |
|---|---|---|---|
| Creation Date: 07/04/06 Initials: DD | | Date: | Comments |
| Last Modification Date: 07/09/09 Initials: LTA | (R-X) | 07/09/09 | Added Note 3 and 4 to the Section D-D detail. |
| Full Path: www.dot.state.co.us/DesignSupport/ | | | |
| Drawing File Name: 208010507.dgn | (R-X) | | |
| CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English | (R-X) | | |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# TEMPORARY EROSION CONTROL

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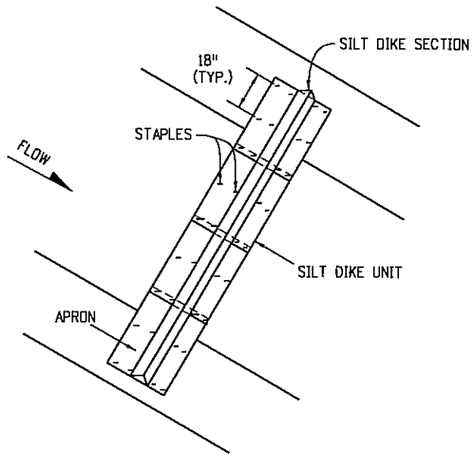
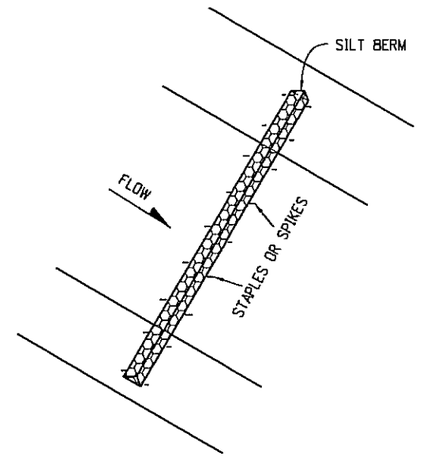
STANDARD PLAN NO.

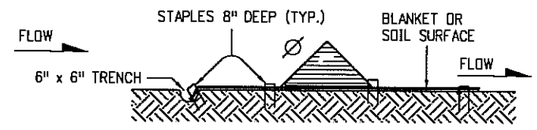
M-208-1




PLAN VIEW



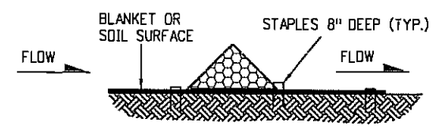

PLAN VIEW



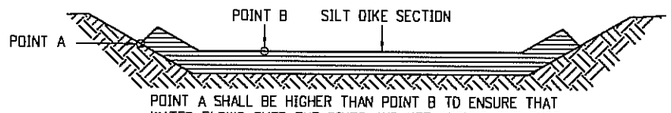

NOTE: APRON ANCHORED INTO TRENCH WITH STAPLES AND COMPACTED BACKFILL.

TYPICAL SECTION

Ø REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF STRUCTURE HEIGHT. INSPECTION SHALL BE PERFORMED CONTINUOUSLY FOR PROPER FUNCTION.




TYPICAL SECTION VIEW

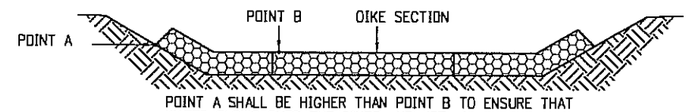



POINT A SHALL BE HIGHER THAN POINT B TO ENSURE THAT WATER FLOWS OVER THE DIKES AND NOT AROUND THE ENDS.

FRONT VIEW

SILT DIKE-INSTALLATION FOR DRAINAGE DITCH

NOTE: SECTIONS OF THE SILT DIKE SHALL BE TIGHTLY ABUTTED WITH NO GAPS.




POINT A SHALL BE HIGHER THAN POINT B TO ENSURE THAT WATER FLOWS OVER THE DIKES AND NOT AROUND THE ENDS.

FRONT VIEW

SILT BERM-VELOCITY CHECKS FOR DRAINAGE DITCH

NOTE: SECTIONS OF THE SILT BERM SHALL BE TIGHTLY ABUTTED WITH NO GAPS.

| Computer File Information | | Sheet Revisions | |
|---|---|---|---|
| Creation Date: 07/04/06 Initials: DD | | Date: | Comments |
| Last Modification Date: 07/09/09 Initials: LTA | (R-X) | | |
| Full Path: www.dot.state.co.us/DesignSupport/ | (R-X) | | |
| Drawing File Name: 208010607.dgn | (R-X) | | |
| CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English | (R-X) | | |

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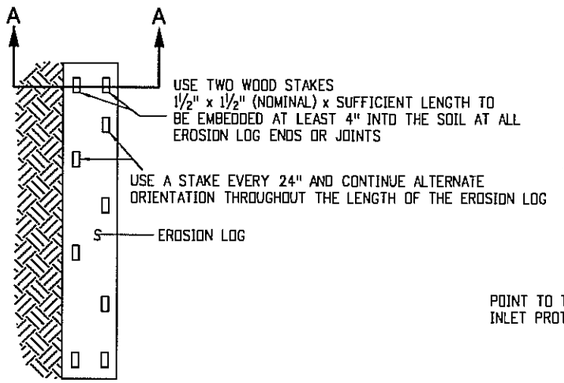
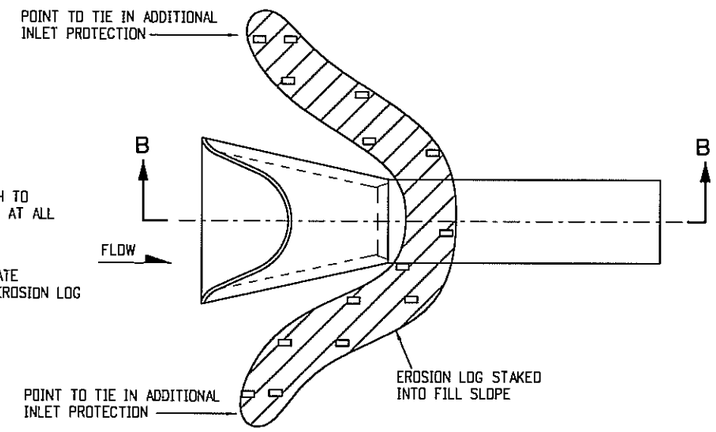
STANDARD PLAN NO.

M-208-1



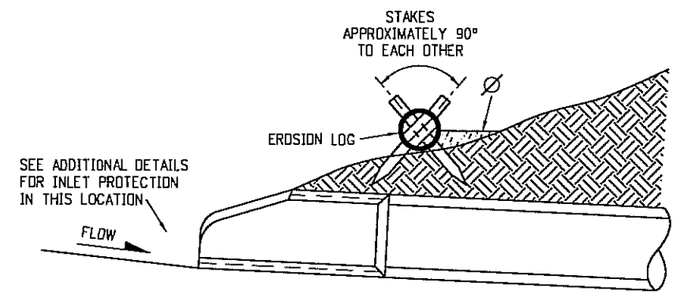

TYPICAL STAKE INSTALLATION




PLAN VIEW

NOTE

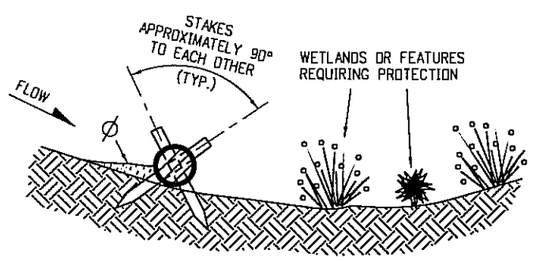
Ø REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF PROTECTION FEATURE HEIGHT. INSPECTION SHALL BE PERFORMED CONTINUOUSLY FOR PROPER FUNCTION.




SECTION B-B

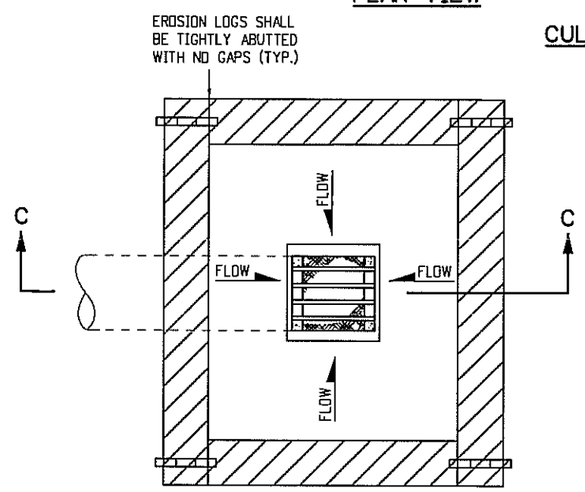
CULVERT EROSION LOG INLET PROTECTION

(FOR SLOPES 3:1 OR STEEPER)

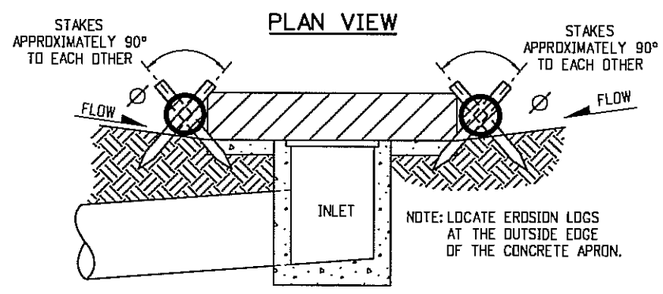



SECTION A-A

EROSION LOG APPLICATION

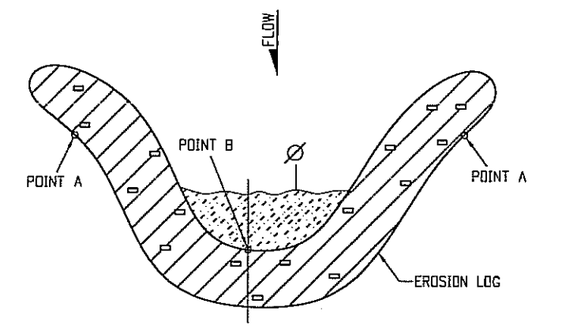



PLAN VIEW

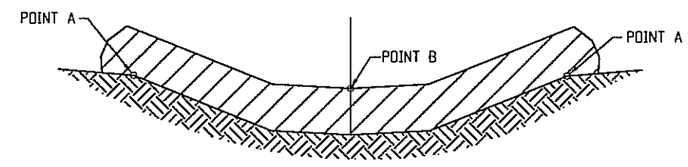



SECTION C-C

DROP INLET EROSION LOG FILTER




PLAN VIEW




POINTS A SHALL BE HIGHER THAN POINT B.

ELEVATION

EROSION LOG DETAIL DITCH INSTALLATION

NOTE: EROSION LOGS SHALL BE TIGHTLY ABUTTED WITH NO GAPS.

| Computer File Information | | |
|---|---|---|
| Creation Date: 07/04/06 | Initials: DD | |
| Last Modification Date: 07/09/09 | Initials: LTA | (R-X) |
| Full Path: www.dot.state.co.us/DesignSupport/ | | (R-X) |
| Drawing File Name: 208010707.dgn | | (R-X) |
| CAD Ver.: MicroStation V8 Scale: Not to Scale | Units: English | (R-X) |

| Sheet Revisions | |
|---|---|
| Date: | Comments |
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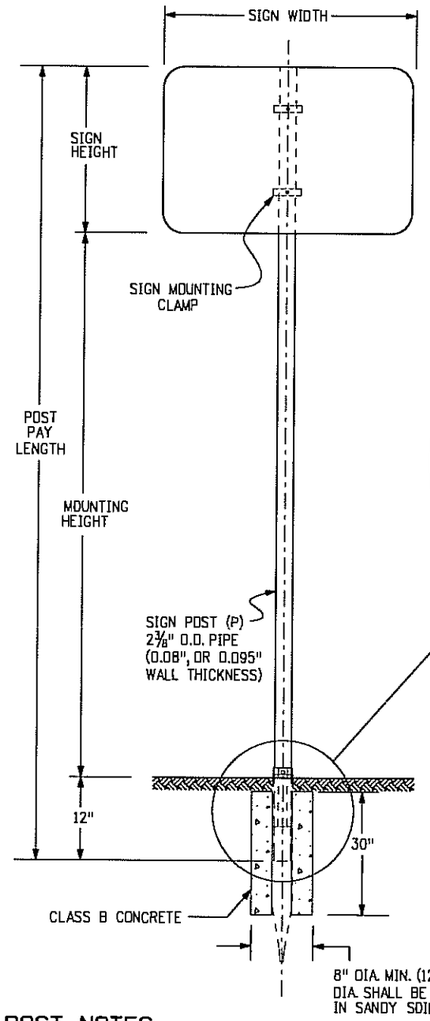
# TEMPORARY EROSION CONTROL

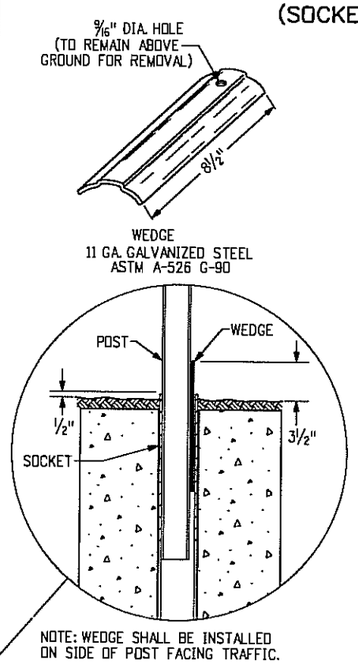
Issued By: Project Development Branch on July 04, 2006

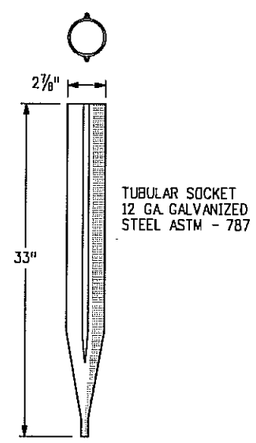
STANDARD PLAN NO.

M-208-1

# TUBULAR STEEL POSTS
## (SOCKET SYSTEM) (SINGLE OR DOUBLE POST)




## SIGNPOST SELECTION GUIDE (90 MPH WIND LOAD DESIGN)

**7' MOUNTING HEIGHT**

| SIGN HEIGHT (FT) \ SIGN WIDTH (FT) | 1 | 2 | 2.5 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | P | P | P | P | P | P1 | SIZES NOT USED | | | |
| 2 | P | P | P | P | P | P1 | TWO P1'S | | | |
| 2.5 | P | P | P | P | P1 | P1 | | | | |
| 3 | P | P | P | P1 | P1 | P1 | | | | |
| 4 | P | P1 | P1 | P1 | P1 | P1 | | | | |
| 5 | SIZES NOT USED | | P1 | P1 | P1 | P1 | | | | |
| 6 | | | P1 | P1 | P1 | ▼P2 | | | | TWO P2'S |
| 7 | | | P1 | P1 | ▼P2 | TWO P1'S | | | TWO P2'S | SIZE NOT USED |

**8' MOUNTING HEIGHT**

| SIGN HEIGHT (FT) \ SIGN WIDTH (FT) | 1 | 2 | 2.5 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | P | P | P | P | P | P1 | SIZES NOT USED | | | |
| 2 | P | P | P | P | P1 | P1 | TWO P1'S | | | |
| 2.5 | P | P | P | P1 | P1 | P1 | | | | |
| 3 | P | P | P1 | P1 | P1 | P1 | | | | |
| 4 | P | P1 | P1 | P1 | P1 | P1 | | | | |
| 5 | SIZES NOT USED | | P1 | P1 | P1 | ▼P2 | | | | |
| 6 | | | P1 | P1 | P1 | ▼P2 | | | | TWO P2'S |
| 7 | | | P1 | P1 | TWO P1'S | TWO P1'S | | | TWO P2'S | SIZES NOT USED |

**9' MOUNTING HEIGHT**

| SIGN HEIGHT (FT) \ SIGN WIDTH (FT) | 1 | 2 | 2.5 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | P | P | P | P | P | P1 | SIZES NOT USED | | | |
| 2 | P | P | P | P | P1 | P1 | TWO P1'S | | | |
| 2.5 | P | P | P | P1 | P1 | P1 | | | | |
| 3 | P | P | P1 | P1 | P1 | P1 | | | | |
| 4 | P | P1 | P1 | P1 | P1 | P1 | | | | |
| 5 | SIZES NOT USED | | P1 | P1 | P1 | ▼P2 | | | | TWO P2'S |
| 6 | | | P1 | P1 | ▼P2 | TWO P1'S | | | TWO P2'S | |
| 7 | | | P1 | P2 | TWO P1'S | TWO P1'S | | TWO P2'S | SIZES NOT USED | |

▼SEE CHART NOTE 4.

## CHART NOTES

1. TYPICAL POST MOUNTING HEIGHTS FROM GROUND TO BOTTOM OF SIGN PANEL ARE 7, 8 OR 9 FEET. OTHER HEIGHTS MAY BE REQUIRED WHEN SIGNS ARE MOUNTED ON STEEPER FILL OR CUT SLOPES.
2. FOR SIGNS MOUNTED ON TWO POSTS, THE MINIMUM DISTANCE BETWEEN POSTS SHALL BE 2 FEET AND THE MAXIMUM DISTANCE SHALL BE 8 FEET. DISTANCE FROM POST TO EDGE OF SIGN PANEL(S) SHALL BE 0 TO 4 INCHES. WHEN BACKING ZEES ARE USED, POSTS SHALL BE INSTALLED WITH A MINIMUM OF 2 INCHES TO THE EDGE OF THE BACKING ZEE.
3. ALL SIGN PANELS GREATER THAN 60 INCHES IN WIDTH MUST BE MOUNTED ON TWO POSTS TO PREVENT TURNING.
4. THE POST SIZES SHOWN ARE THE MINIMUM SIZES REQUIRED. TWO P1 POSTS MAY BE SUBSTITUTED WHERE ONE P2 POST IS INDICATED. P2 POSTS MAY SUBSTITUTED FOR P1 POSTS WHEN DIRECTED BY THE ENGINEER.

## GENERAL NOTES

1. SIGNS BETWEEN 37 IN. AND 60 IN. WIDTH WITH ONE POST INSTALLATION REQUIRE A T OR U SIGN SUPPORT BRACKET IN ADDITION TO THE BACKING ZEE REQUIREMENTS. WHEN DIRECTED BY THE ENGINEER, SIGN PANELS LESS THAN 48 IN. IN WIDTH MAY ATTACHED DIRECTLY TO T OR U BRACKETS WITHOUT ZEES.
2. U-BRACKETS MAY BE USED FOR MULTIPLE SIGN INSTALLATIONS.
3. FOR BACKING ZEE REQUIREMENTS AND DETAILS, SEE STANDARD PLANS S-614-3 AND S-614-4.

## POST NOTES

THE POST MAY BE PRE-PUNCHED WITH ⅜" DIA. HOLES AND THE SIGN MOUNTED DIRECTLY TO THE POST, OR AN APPROVED MOUNTING CLAMP MAY BE USED TO MOUNT THE SIGN TO THE POST. IF THE POST IS PRE-PUNCHED, THE HOLES SHALL BE SPACED THE FOLLOWING DISTANCES FROM THE TOP:
1", 3", 10", 16", 21", 23", 24", 27", 33", 37", 39", AND 45"

## POST SPECIFICATIONS

| POST SIZE | OUTSIDE DIAMETER | WALL THICKNESS | MATERIAL | * COATING | MAX ALLOW MOMENT | PAID FOR AS: |
|---|---|---|---|---|---|---|
| P | 2.375" | .080" | ASTM-513 | ASTM A-653 G-210 WITH 3.0 MIL POLYMER COATING PER ASTM A123 CLEAR COATING | 1.47 KIP FT | STEEL SIGN SUPPORT (2 INCH ROUND) |
| P1 | 2.875" | .160" | ASTM-513 | | 4.02 KIP FT | STEEL SIGN SUPPORT (2½ INCH ROUND NP-40) |
| P2 | 2.875" | .276" | ASTM-500 | GC HOT DIPPED PER ASTM-123 | 5.13 KIP FT | STEEL SIGN SUPPORT (2½ INCH ROUND SCH 80) |

* COLOR POWDER COATING MAY BE ADDED ACCORDING TO MANUFACTURER SPECIFICATIONS FOR SPECIAL LOCATIONS WHEN SHOWN ON THE PLANS.

| Computer File Information | |
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| Last Modification Date: 06/18/09 | Initials: KEN |
| Full Path: www.dot.state.co.us/DesignSupport/ | |
| Drawing File Name: Sheet_S-614-08_1of5.dgn | |
| CAD Ver.: MicroStation V8 Scale: Not to Scale | Units: English |

| | Sheet Revisions | |
|---|---|---|
| | Date: | Comments |
| (R-1) | 06/18/09 | REVISE P1 PIPE COATING SPECIFICATION TO MATCH P PIPE'S COATING SPECIFICATION. |
| (R-X) | | |
| (R-X) | | |
| (R-X) | | |


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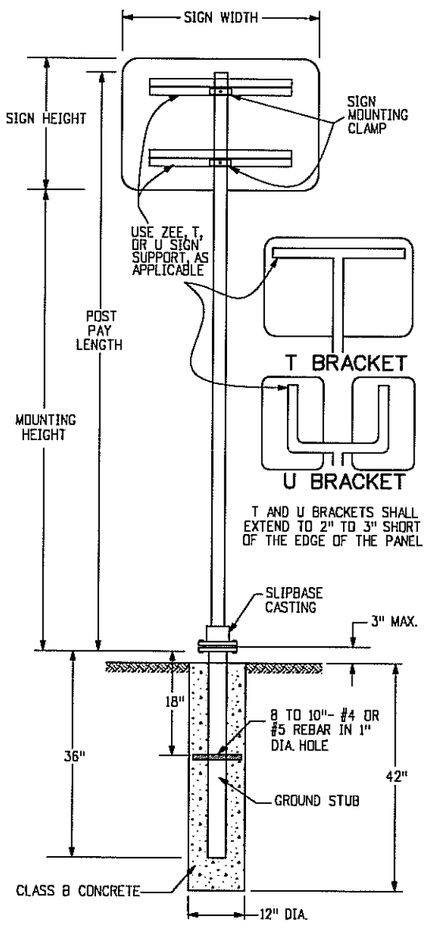
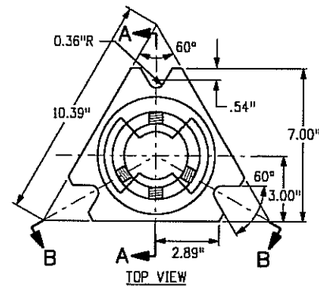
# TUBULAR STEEL SIGN SUPPORT DETAILS

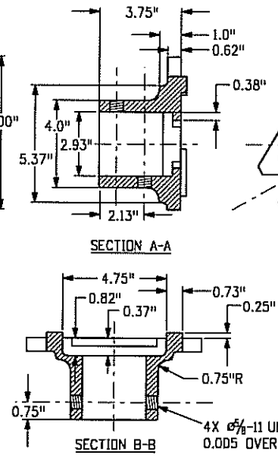
Issued By: Safety & Traffic Engineering Branch June 18, 2009

STANDARD PLAN NO.
S-614-8
Sheet No. 1 of 5

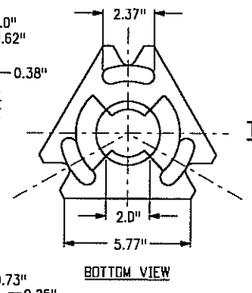
## TUBULAR STEEL POSTS
## (WITH SLIPBASE)
## (SINGLE OR DOUBLE POST)



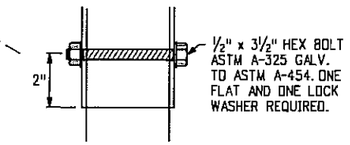

### SLIPBASE CASTING




### DIMENSIONS FOR MOUNTING CLAMP (ALL DIMENSION ARE IN INCHES)

| STANDARD PIPE SIZE | A | B | C | D | E | F | G | K | L | $R_1$ | $R_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3 3/4 | 2 3/4 | 1 1/2 | 1 1/8 | 1/2 | 3/16 | 1 | 2 11/16 | 1 7/32 | 1 1/4 | 1 3/16 |
| 2 1/2 | 4 1/4 | 3 1/4 | 2 | 1 1/4 | 1/2 | 1/4 | 1 | 3 3/16 | 1 15/32 | 1 1/2 | 1 7/16 |

### T AND U BRACKET ATTACHMENT

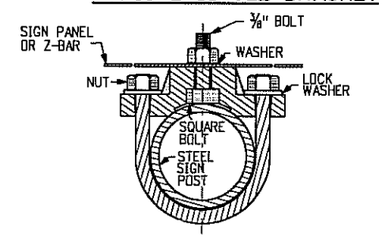



DETAIL "A"

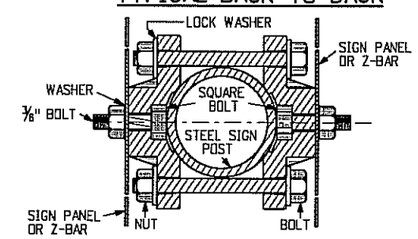
### PIPE CLAMP CASTING

PIPE CLAMP CASTING SHALL BE ASTM B26 OR B108 ALUMINUM ALLOY A444.0-T4 OR 356.0-F. ALL SIGN MOUNTING CLAMP PARTS NOT MADE FROM ALUMINUM SHALL BE GALVANIZED STEEL IN CONFORMANCE WITH ASTM A153 OR STAINLESS STEEL.

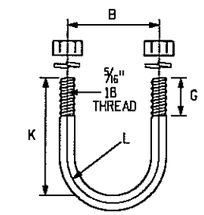
### TYPICAL SINGLE BRACKET




### TYPICAL BACK TO BACK

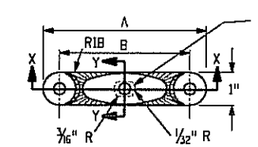



### DETAILS FOR SIGN PANEL ATTACHMENT

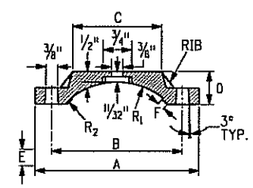



U-BOLT

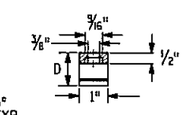
U-BOLT TO BE MADE IN ACCORDANCE WITH STANDARD MANUFACTURING PROCEDURE. 1/4" OR 5/16" DIAMETER STOCK IS PERMISSIBLE. AMERICAN STANDARD REGULAR SEMI-FINISHED HEX NUTS AND SPRING LOCKWASHERS.




SLOT TO HOLD HEAD OF 3/8" HEX HEAD BOLT. THE BOLT SHALL BE 1 1/4" LONG, WITH FULL THREADS, A MEDIUM WASHER, AND GALVANIZED STEEL OR ALUMINUM SELF-LOCKING HEX HEAD NUT. THE BOLT HEAD MUST NOT TURN IN THE SLOT.

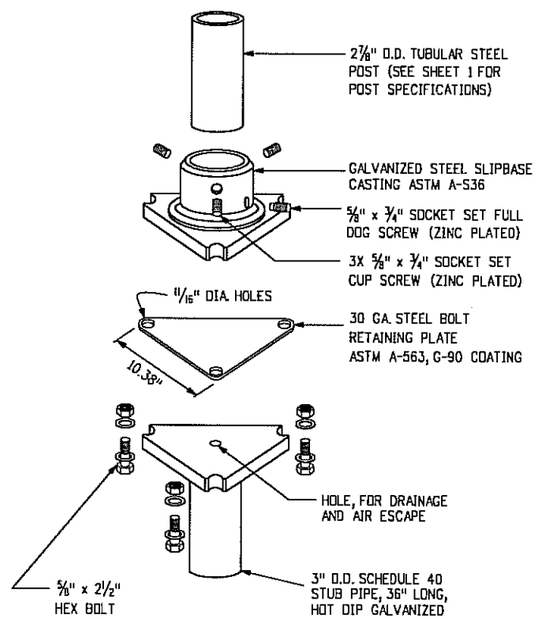



SECTION X-X

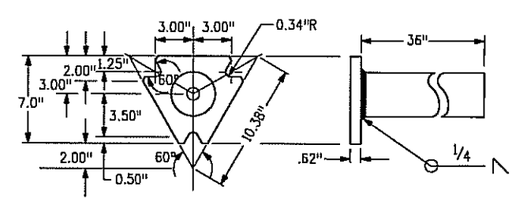



SECTION Y-Y

### MOUNTING CLAMP FOR SOCKET OR SLIPBASE




### TYPICAL ASSEMBLY




### SLIPBASE STUB POST

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| Last Modification Date: | Initials: |
| Full Path: www.dot.state.co.us/DesignSupport/ | |
| Drawing File Name: Sheet_S-614-08_2of5.dgn | |
| CAD Ver.: MicroStation V8 Scale: Not to Scale | Units: English |

| Sheet Revisions | |
|---|---|
| Date: | Comments |
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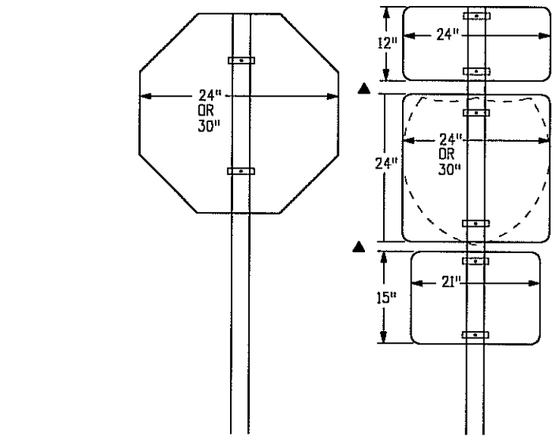
# TUBULAR STEEL SIGN SUPPORT DETAILS

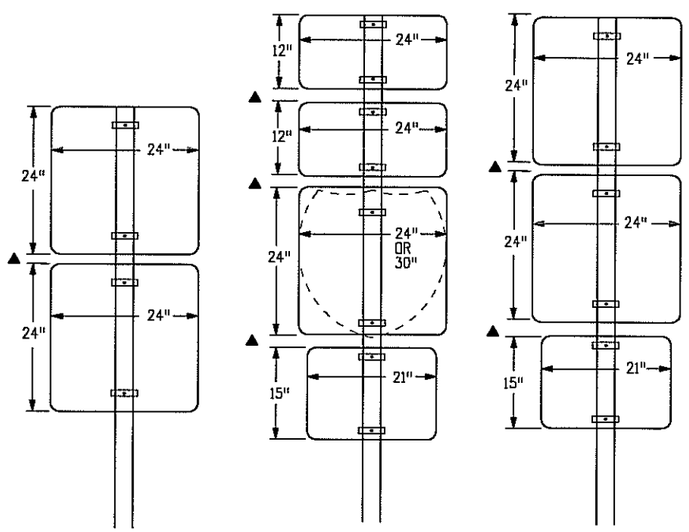
Issued By: Safety & Traffic Engineering Branch July 4, 2006

STANDARD PLAN NO.

S-614-8

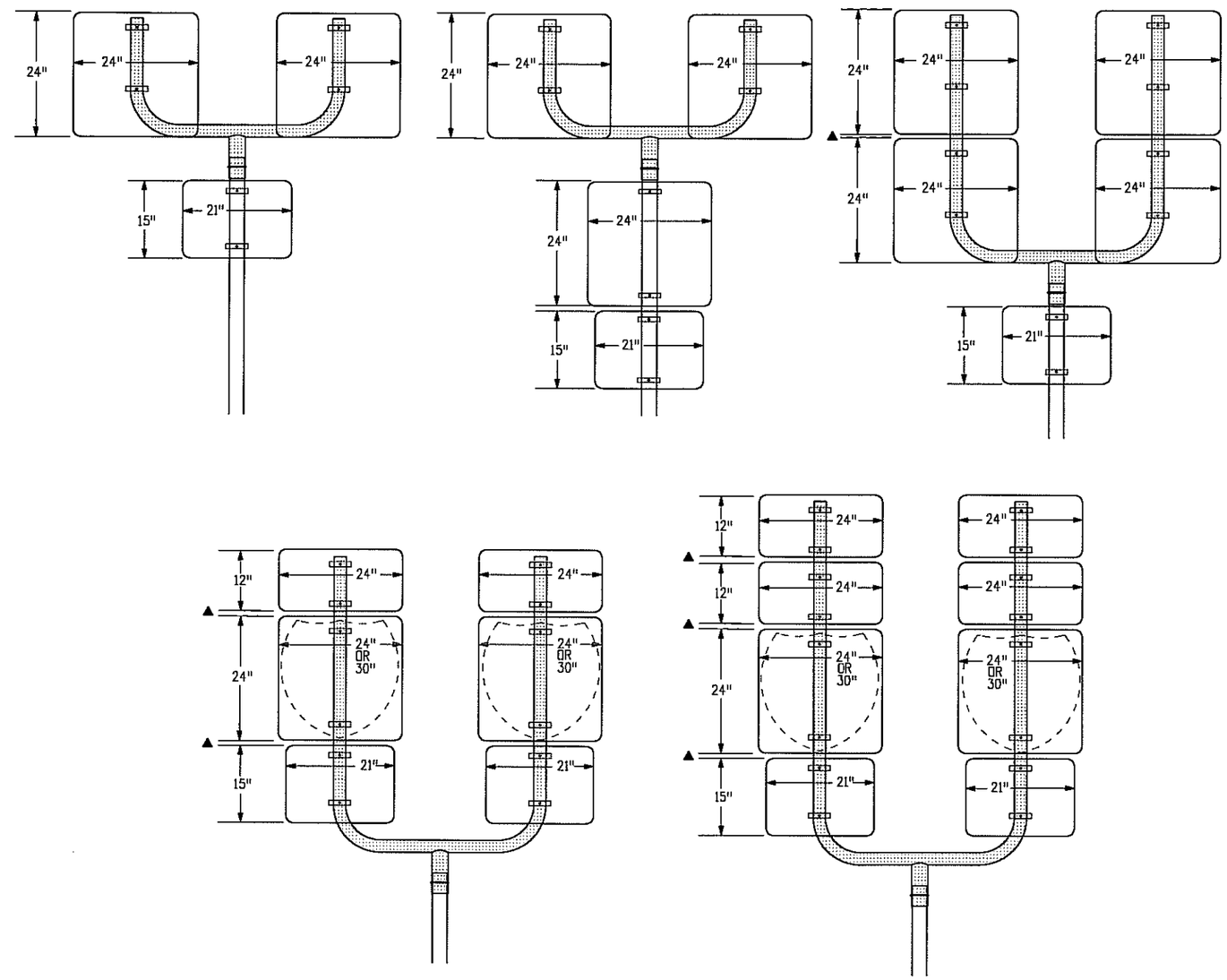
Sheet No. 2 of 5




CLASS I SIGN COMBINATIONS (DIRECT ATTACHMENT)

▲ SEE NOTE 6 ON SHEET 4




CLASS I SIGN COMBINATIONS USING U-BRACKETS

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| CAD Ver.: MicroStation V8 Scale: Not to Scale Units:English | R-X | | |


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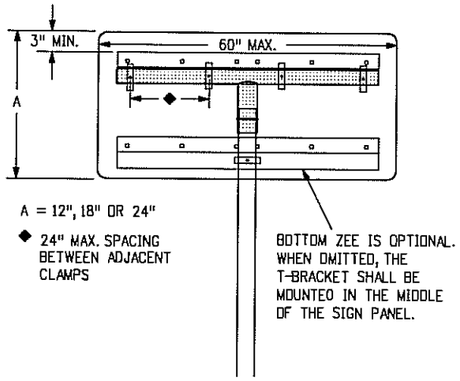
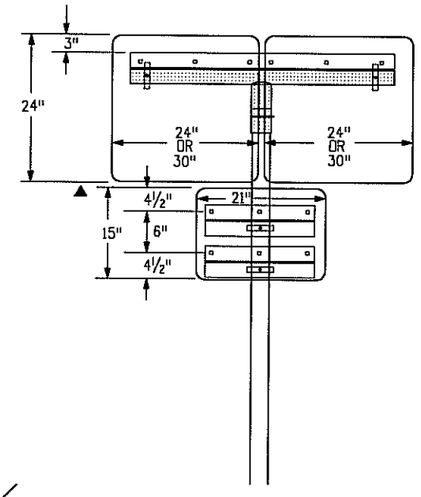
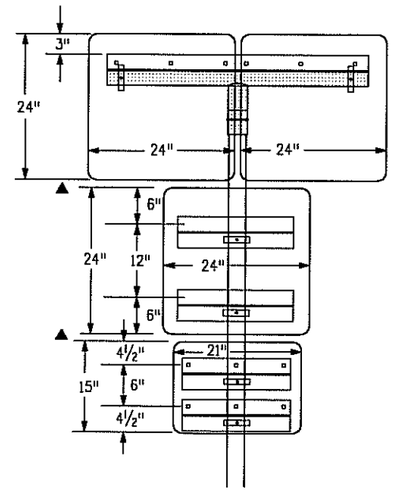


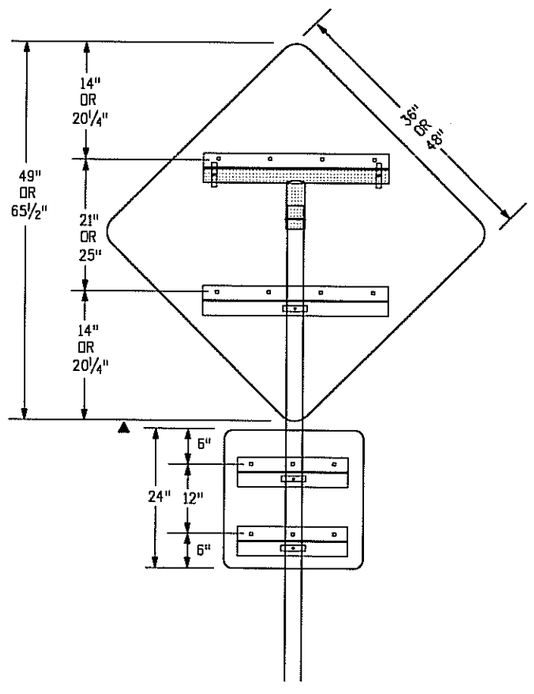



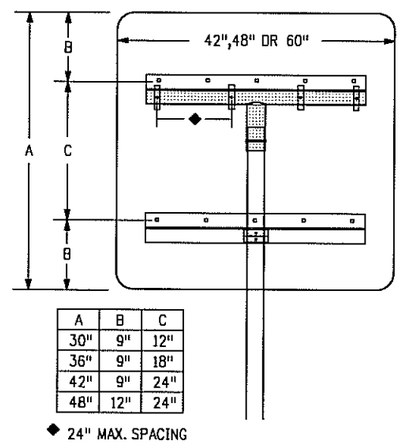




| PANEL WIDTHS | ZEE LENGTH |
|---|---|
| 21" | 15" |
| 24" | 18" |
| 30" | 24" |
| 36" | 30" |
| 42" | 36" |
| 45" | 39" |
| 48" | 42" |
| 54" | 48" |
| 60" | 54" |
| 36" DIAMOND | 22" |
| 48" DIAMOND | 36" |
| 24" & 24" | 43" |
| 24" & 30" | 49" |
| 30" & 30" | 55" |
| 36" & 36" | 67" |
| 45" & 36" | 76" |
| 24" & 24" & 24" | 68" |
| 24" & 24" & 30" | 74" |
| 24" & 30" & 24" | 74" |
| 30" & 24" & 30" | 80" |
| 24" & 30" & 30" | 80" |
| 30" & 30" & 30" | 86" |

## GENERAL NOTES

1. Z-BAR LENGTH SHALL BE 3 IN. (± ½ IN.) SHORT OF THE EDGE OF THE SIGN OR ROW OF SIGNS ON BOTH SIDES. THE ACCOMPANYING TABLE GIVES THE Z-BAR LENGTH FOR MOST TYPICAL PANEL COMBINATIONS.
2. FIRST AND LAST HOLES SHALL BE 2 IN. FROM EDGE OF Z-BAR. THE HOLES IN BETWEEN SHALL BE 6 IN. TO 8 IN. APART.
3. T AND U BRACKETS SHALL TERMINATE 2 IN. TO 3 IN. FROM EDGE OF SIGN PANEL. WHEN A ZEE IS CONNECTED TO A T-BRACKET, THEY SHALL BE THE SAME LENGTH EXCEPT WHEN THE ZEE MUST EXTEND BEYOND THE MAXIMUM LENGTH OF A T-BRACKET.
4. TWO MOUNTING CLAMPS ARE REQUIRED ON ZEES WHERE THERE IS ONLY ONE ZEE FOR THE PANEL AND THE ZEE IS ATTACHED TO ONLY ONE POST.
5. ZEES SHALL BE ATTACHED TO T-BRACKETS AND U-BRACKETS WITH U-BOLTS OR MOUNTING CLAMPS.
6. ▲ VERTICAL SPACING BETWEEN SIGN PANELS SHALL BE 11IN. TO 1½ IN. TYPICAL.
7. IN SPECIAL CASES U-BRACKETS MAY BE USED TO MOUNT SIGNS THAT FACE DIFFERENT DIRECTIONS. THE ENGINEER SHALL DETERMINE THE ORIENTATION OF THE SIGN PANELS AND VERIFY THAT THE MAXIMUM ALLOWABLE WIND LOADS FOR THE POST ARE NOT EXCEEDED.

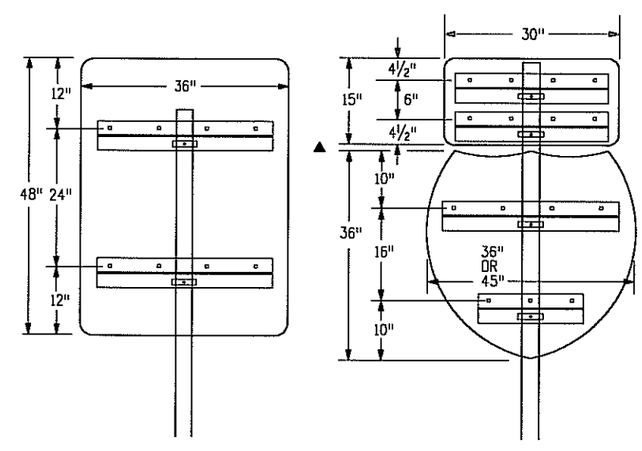



| A | B | C |
|---|---|---|
| 30" | 9" | 12" |
| 36" | 9" | 18" |
| 42" | 9" | 24" |
| 48" | 12" | 24" |

◆ 24" MAX. SPACING BETWEEN ADJACENT CLAMPS

CLASS II SIGN COMBINATIONS USING T-BRACKETS WITH Z-BAR




SINGLE POST CLASS II SIGNS USING Z-BAR

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| Last Modification Date: | Initials: |
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| Sheet Revisions | |
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| Date: | Comments |
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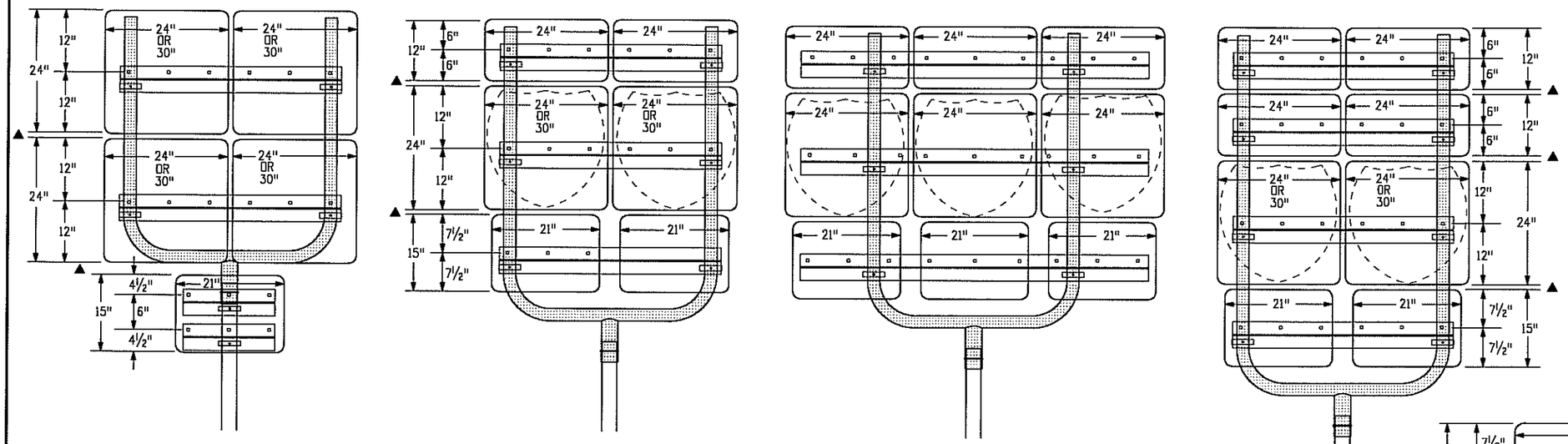
# TUBULAR STEEL SIGN SUPPORT DETAILS

Issued By: Safety & Traffic Engineering Branch July 4, 2006

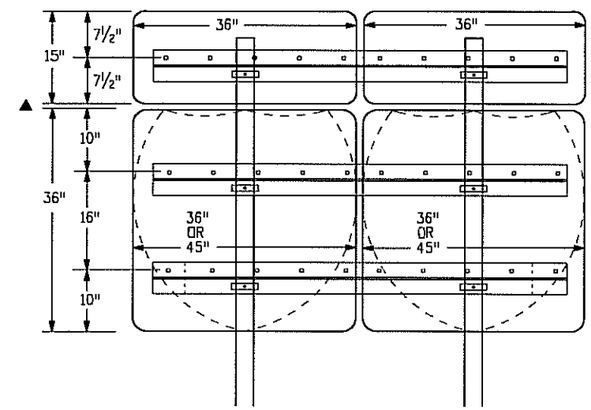
STANDARD PLAN NO.

S-614-8

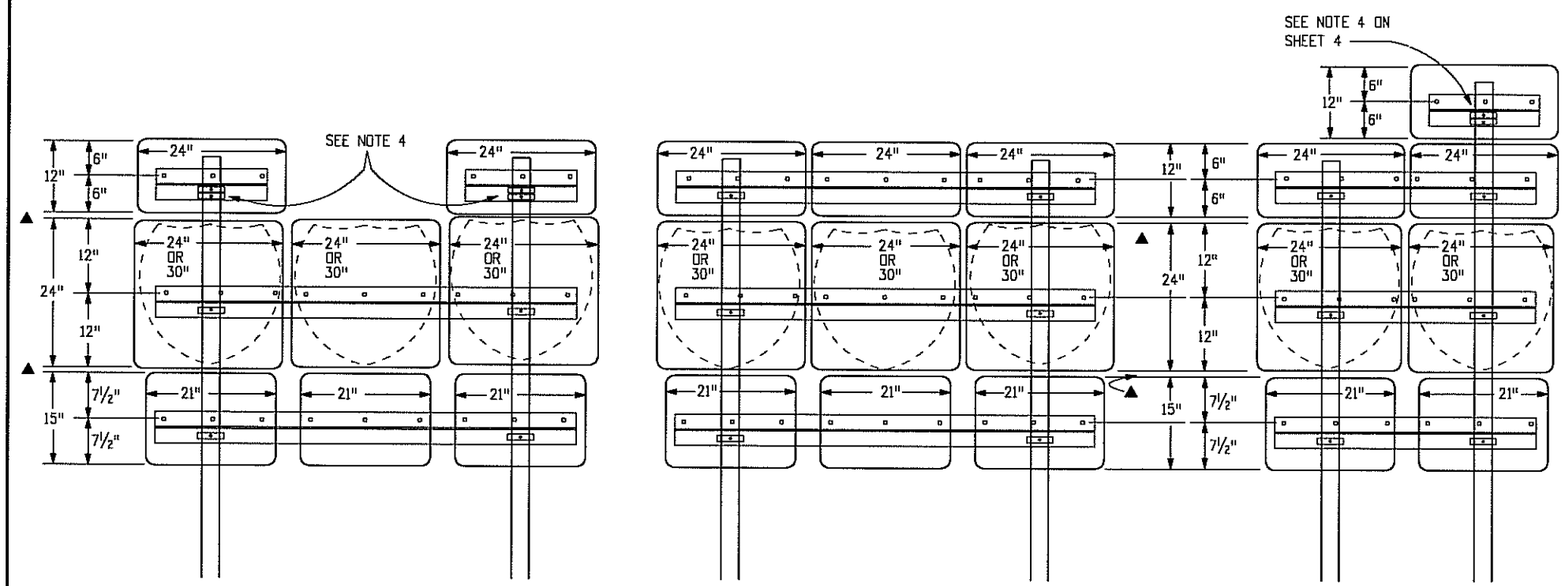
Sheet No. 4 of 5




CLASS II SIGN COMBINATIONS USING U-BRACKETS

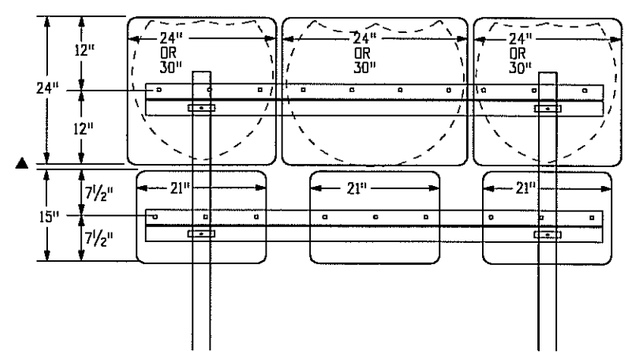



NOTE: THIS CONFIGURATION IS PREFERABLE TO USING TWO SEPARATE SIGNS.




▲ SEE NOTE 6 ON SHEET 4

CLASS II SIGN COMBINATIONS USING TWO POSTS

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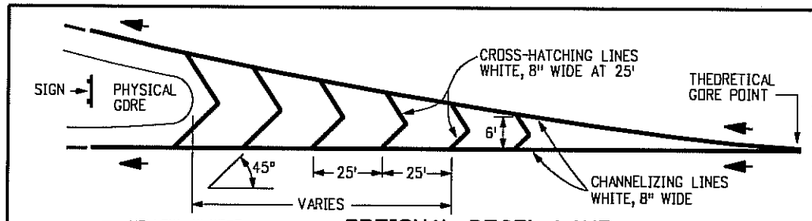
# TUBULAR STEEL SIGN SUPPORT DETAILS

Issued By: Safety & Traffic Engineering Branch July 4, 2006

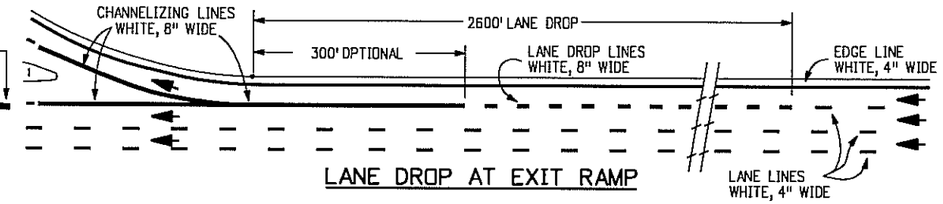
STANDARD PLAN NO.

S-614-8

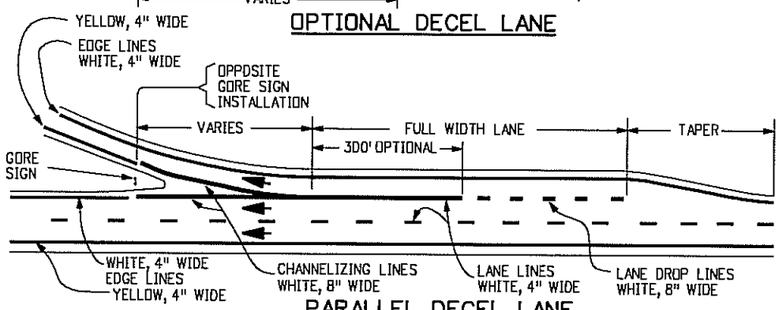
Sheet No. 5 of 5



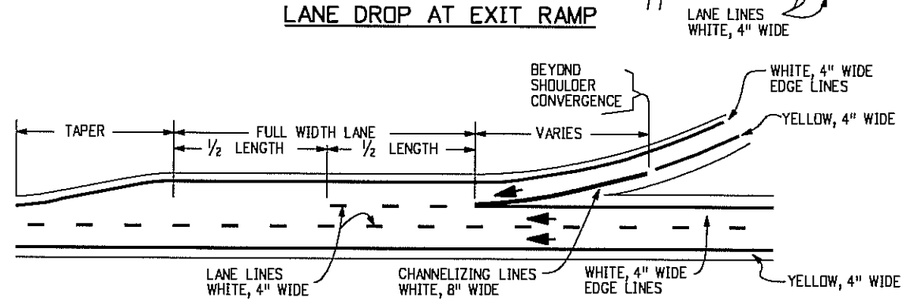

OPTIONAL DECEL LANE



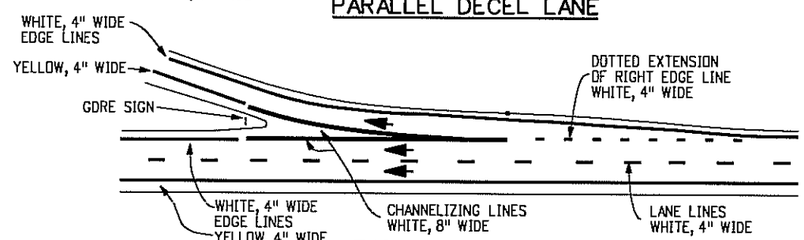

LANE DROP AT EXIT RAMP



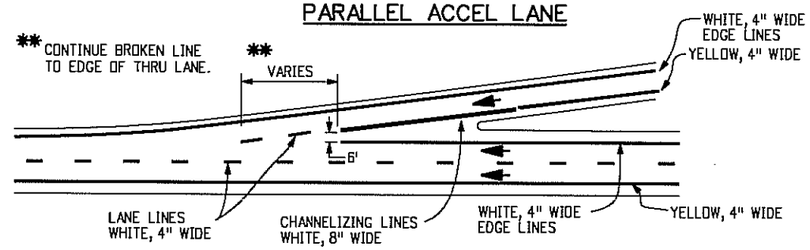

PARALLEL DECEL LANE



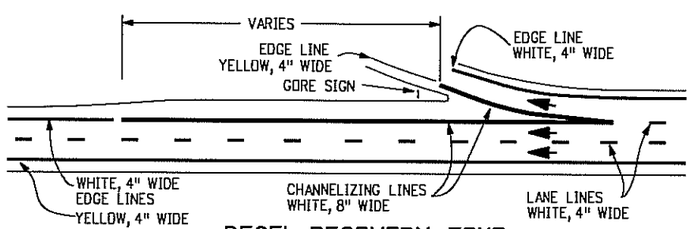

PARALLEL ACCEL LANE



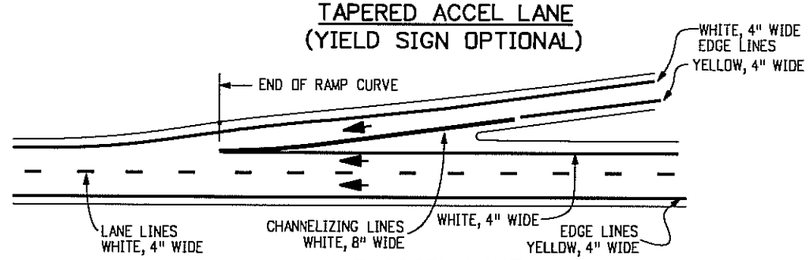

TAPERED DECEL LANE



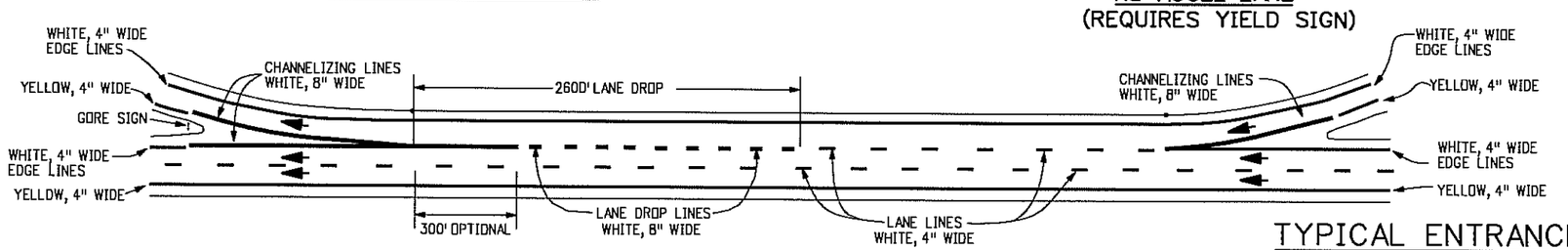

TAPERED ACCEL LANE
(YIELD SIGN OPTIONAL)




DECEL RECOVERY ZONE




NO ACCEL LANE
(REQUIRES YIELD SIGN)




COMBINATION ACCEL-DECEL LANE

# TYPICAL ENTRANCE AND EXIT RAMP MARKINGS

## GENERAL NOTES

1. CENTER LINES

   BROKEN YELLOW, 4 IN. WIDE - 10 FT. SEGMENTS WITH 30 FT. GAPS.

   SOLID YELLOW, 4 IN. WIDE.
   THESE LINES SEPARATE ADJACENT-OPPOSITE DIRECTION TRAFFIC LANES. DOUBLE LINES SHALL BE SPACED 4 IN. APART.

2. LANE LINES

   BROKEN WHITE, 4 IN. WIDE - 10 FT. SEGMENTS WITH 30' GAPS.

   SOLID WHITE, 4 IN. WIDE.
   THESE LINES SEPARATE ADJACENT-SAME DIRECTION TRAFFIC LANES. A SOLID LINE MAY BE USED TO DISCOURAGE LANE CHANGING, WHILE TWO PARALLEL SOLID WHITE LINES ARE REQUIRED TO PROHIBIT LANE CHANGING.

3. EDGE LINES

   SOLID WHITE OR YELLOW EDGE LINES SHALL BE 4 IN. WIDE. YELLOW EDGE LINES SHALL BE USED ONLY FOR LEFT EDGE, IN THE DIRECTION OF TRAVEL OF DIVIDED STREETS AND HIGHWAYS (SEPARATED BY OTHER THAN A PAINTED MEDIAN) AND ONE-WAY ROADWAYS (INCLUDING RAMPS).

   EDGE LINES ARE NOT CONTINUED THROUGH INTERSECTIONS AND ARE NOT BROKEN FOR DRIVEWAYS. CARE MUST BE TAKEN TO AVOID EDGE LINE APPEARING AS LANE LINE ALONG ROADWAYS WITH WIDE SHOULDERS AND/OR CLOSELY SPACED DRIVEWAYS.

4. DOTTED LINES

   BROKEN WHITE, WIDTH MATCHING THE LINE BEING EXTENDED-2 FT. SEGMENTS WITH 4 FT. GAPS. THESE LINES ARE USED TO DELINEATE THE EXTENSION OF A LINE THROUGH AN INTERSECTION OR INTERCHANGE AREA.

5. CHANNELIZING LINES

   SOLID WHITE, 8 IN. WIDE. THESE LINES ARE USED WITH ACCELERATION-DECELERATION LANES, PAVEMENT WIDTH TRANSITIONS, AND LEFT-RIGHT TURN SLOTS OR ISLANDS.

6. CROSS-HATCHING LINES

   SOLID WHITE OR YELLOW, 8 IN. WIDE-45 DEGREE DIAGONAL, SPACED AT 25 FT. INTERVALS. THESE LINES ARE OPTIONAL AND MAY BE PLACED AT LOCATIONS INDICATED ON THE PLANS OR DETERMINED BY THE ENGINEER. YELLOW SHALL BE USED FOR PAINTED MEDIANS OR PAVEMENT WIDTH TRANSITIONS ONLY.

   OPTIONAL DIAGONAL SHOULDER MARKINGS SHALL BE SOLID WHITE, 8 IN. WIDE, SPACED AT INTERVALS OF 20 FT. MINIMUM TO 100 FT. MAXIMUM.

7. PARKING LINES

   SOLID WHITE, 3 IN. WIDE-DIAGONAL OR PARALLEL AS SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.

8. STOP LINES

   SOLID WHITE, 24 IN. WIDE-EXTEND PARALLEL TO INTERSECTED ROADWAY ACROSS ALL APPROACH LANES OR AS INDICATED AT LOCATIONS ON THE PLANS. LOCATE AT THE DESIRED STOPPING POINT, NOT MORE THAN 30 FT, NOR LESS THAN 4 FT. FROM THE NEAREST EDGE OF THE INTERSECTED TRAFFIC LANE.

9. LANE DROP MARKINGS

   BROKEN WHITE, 8 IN. WIDE - 3 FT. SEGMENTS WITH 12 FT. GAPS. THESE LINES SHOULD BEGIN 260D FT. IN ADVANCE OF THE THEORETICAL GORE POINT TO DISTINGUISH THE LANE DROP FROM A CONTINUOUS LANE. THE CHANNELIZING LINE MAY BE EXTENDED APPROXIMATELY 300 FT. UPSTREAM.

(CONTINUED ON SHEET NO. 2)

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| Creation Date: 07/04/06 | Initials: KCM |
| Last Modification Date: 09/24/08 | Initials: KEN |
| Full Path: www.dot.state.co.us/DesignSupport/ | |
| Drawing File Name: Sheet_S-627-01_1of5.dgn | |
| CAD Ver.: MicroStation V8 Scale: Not to Scale | Units: English |

R-1
R-X
R-X
R-X

| Sheet Revisions | |
|---|---|
| Date: | Comments |
| 09/24/08 | REVISE TO 4 IN. NOTE 1, LINE 5 |
| | |
| | |
| | |

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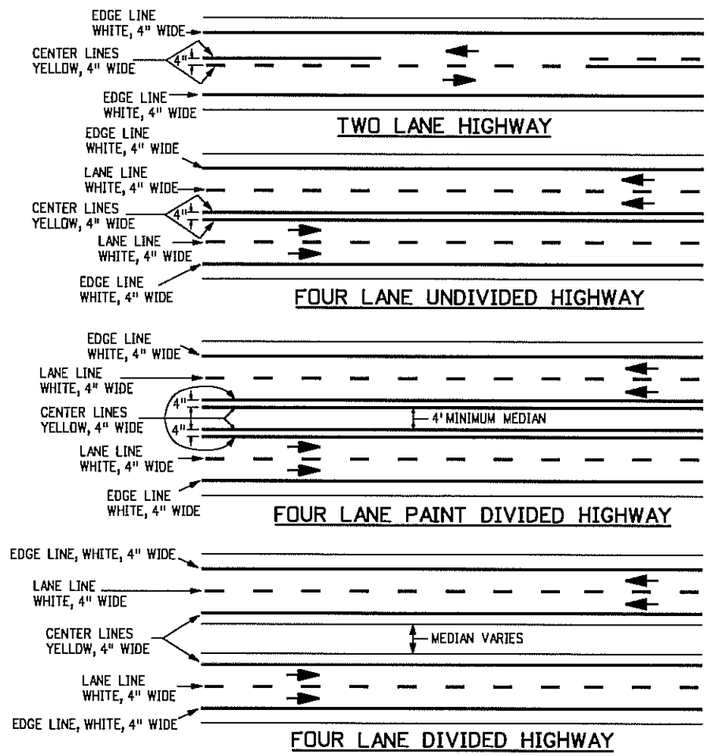
# PAVEMENT MARKINGS

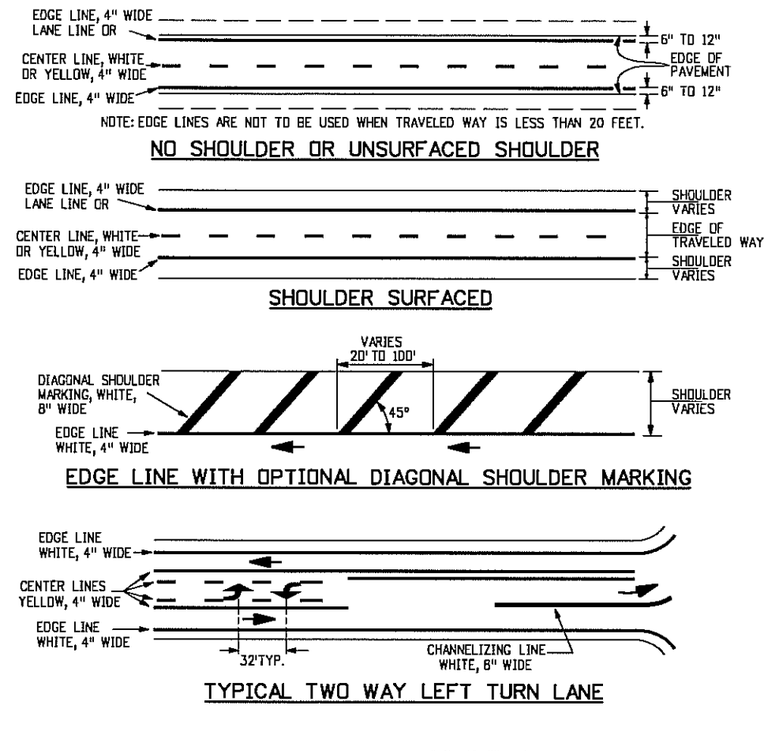
Issued By: Safety & Traffic Engineering Branch September 24, 2008

STANDARD PLAN NO.

S-627-1

Sheet No. 1 of 5




## GENERAL NOTES

(CONTINUED FROM SHEET NO. 1)

10. CROSSWALK LINES

SOLID WHITE, 12 IN. WIDE FOR TRANSVERSE LINE TYPE - EXTEND ACROSS ENTIRE WIDTH OF PAVEMENT. IF NO ADVANCE STOP LINE IS PROVIDED, INCREASE THE WIDTH OF THE CROSSWALK LINES TO 24 IN. THE DISTANCE BETWEEN THE LINES IS USUALLY DETERMINED BY THE WIDTH OF THE SIDEWALKS SO CONNECTED, HOWEVER, IN NO CASE SHALL THIS BE LESS THAN 6 FT.

COMPLICATED AND/OR CHANNELIZED INTERSECTIONS AND MID-BLOCK CROSSWALKS SHALL BE SOLID WHITE, 12 IN. TO 24 IN. WIDE AND 8 FT. TO 10 FT. LONG FOR LONGITUDINAL LINE TYPE AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

11. WORD, ARROW AND SYMBOL MARKINGS

ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH "THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" ADOPTED BY THE FEDERAL HIGHWAY ADMINISTRATION.

12. TRANSITION TAPER LENGTH

L = MINIMUM LENGTH OF TAPER.

S = DESIGN SPEED FOR NEW CONSTRUCTION OR NUMERICAL VALUE OF THE POSTED SPEED LIMIT OF THE 85TH PERCENTILE SPEED OF EXISTING TRAFFIC.

W = WIDTH TRANSITIONED

FORMULA: FOR SPEED 45 MPH OR MORE, $L = S \times W$

FOR SPEED 40 MPH OR LESS, $L = \frac{WS^2}{60}$

▲ NOTE:

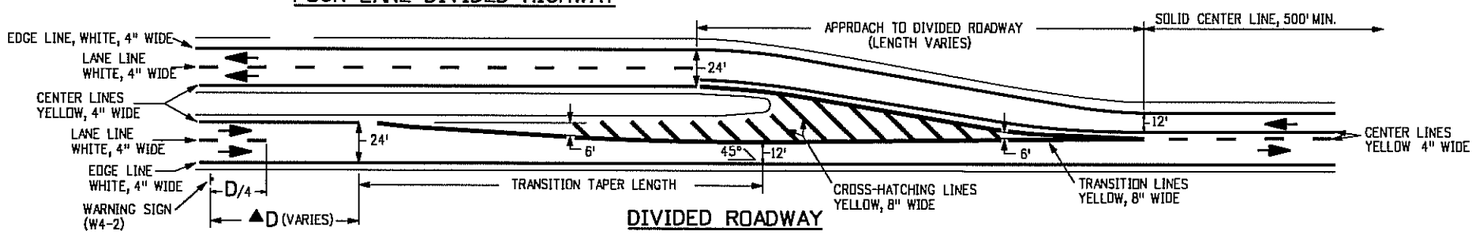
D = THE DISTANCE FROM THE PAVEMENT WIDTH TRANSITION SIGN (W4-2) TO THE BEGINNING OF THE TRANSITION TAPER.

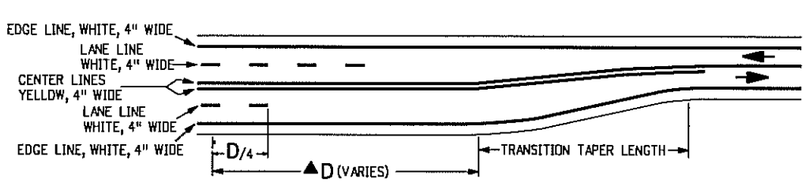
13. TRANSITION LINES

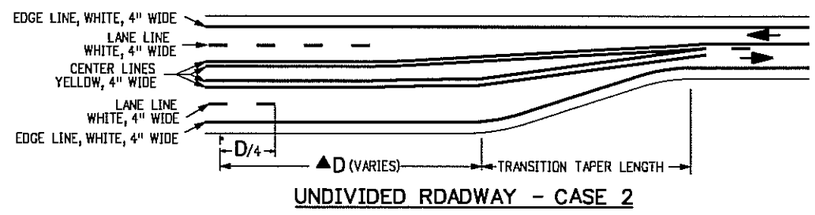
SOLID YELLOW, 8 IN. WIDE. THESE LINES ARE USED WHERE ADDITIONAL EMPHASIS OR VISIBILITY IS DESIRABLE AT PAVEMENT WIDTH TRANSITIONS. PLACE AT LOCATIONS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

14. SPEED MEASURING MARKING

SOLID WHITE, 24 IN. - EXTEND 4 FT. FROM OUTSIDE OF EDGE LINES ON SHOULDERS.




## TYPICAL PAVEMENT WIDTH TRANSITION MARKINGS

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| Last Modification Date: 09/24/08 | Initials: KEN |
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| CAD Ver.: MicroStation V8 Scale: Not to Scale | Units: English |

| | Sheet Revisions | |
|---|---|---|
| | Date: | Comments |
| R-1 | 09/24/08 | CHANGED SPACING BETWEEN DOUBLE YELLOW STRIPES FROM 3 IN. TO 4 IN. |
| R-X | | |
| R-X | | |
| R-X | | |


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# PAVEMENT MARKINGS

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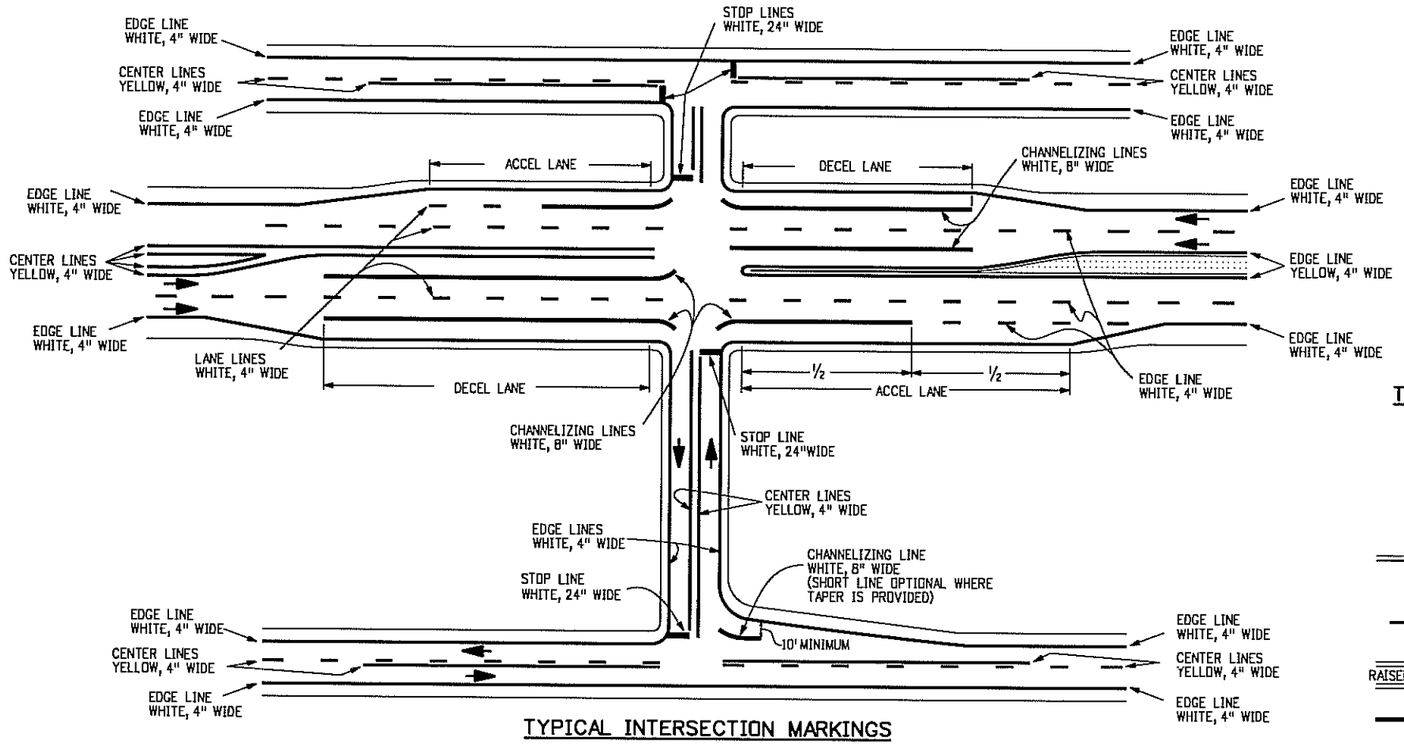
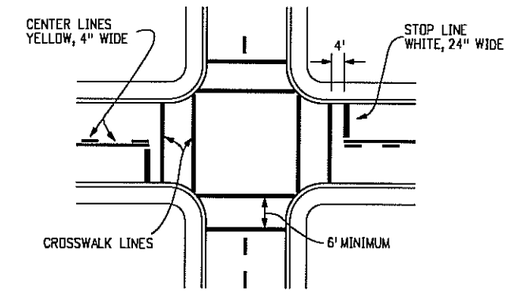
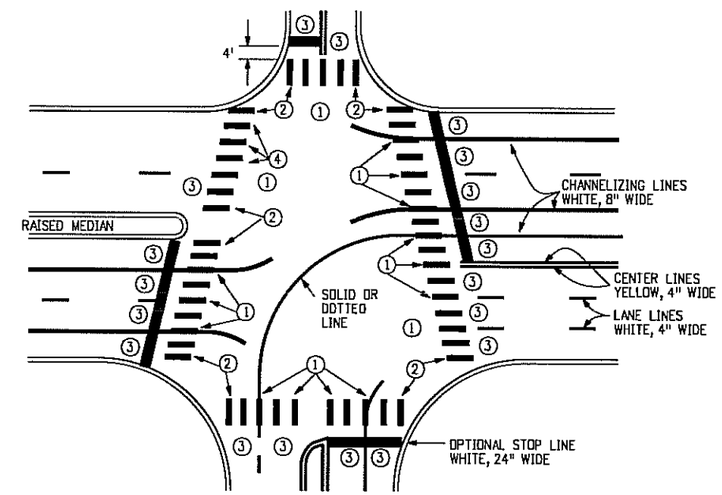
Sheet No. 2 of 5



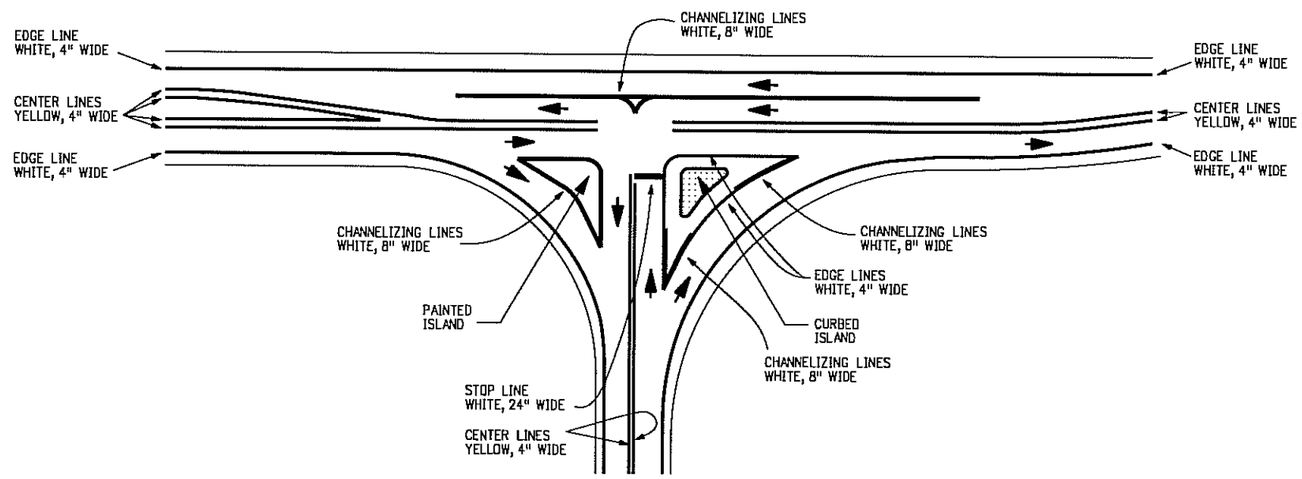

TYPICAL INTERSECTION MARKINGS




TYPICAL TRANSVERSE LINE CROSSWALK MARKINGS

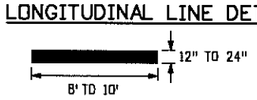



TYPICAL CONTINENTAL CROSSWALK MARKINGS




TYPICAL ISLAND MARKINGS

## LONGITUDINAL LINE DETAIL




## CROSSWALK NOTES

CENTER CROSSWALKS ON CURB RAMPS. IF SUCH RAMPS ARE NOT PROVIDED CENTER ON SIGNAL POLES WHEREVER PRACTICAL.

1. CENTER ON LANE, CENTER OR CHANNELIZING LINE.
2. CENTER OR EXTENDED FLOW LINE.
3. CENTER BETWEEN ADJACENT LINES.
4. LINES AND SPACES TO APPROXIMATE ADJACENT PATTERN.

# INTERSECTIONS, ISLANDS AND CROSSWALKS

| Computer File Information | | Sheet Revisions | |
|---|---|---|---|
| Creation Date: 07/04/06 Initials: JSW | | Date: | Comments |
| Last Modification Date: Initials: | R-X | | |
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| CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English | R-X | | |

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# PAVEMENT MARKINGS

Issued By: Safety & Traffic Engineering Branch July 4, 2006

STANDARD PLAN NO.

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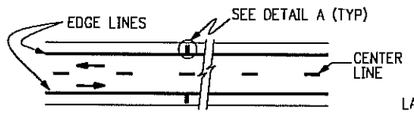
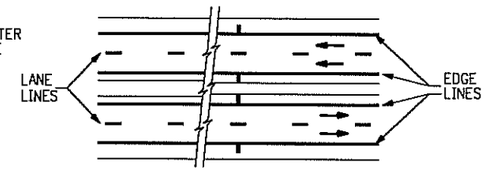
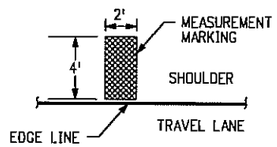
Sheet No. 3 of 5




TWO - WAY ROADWAY

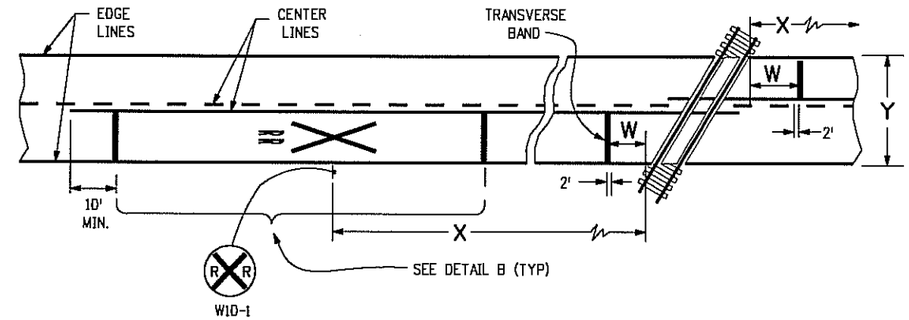



MULTI - LANE DIVIDED HIGHWAY

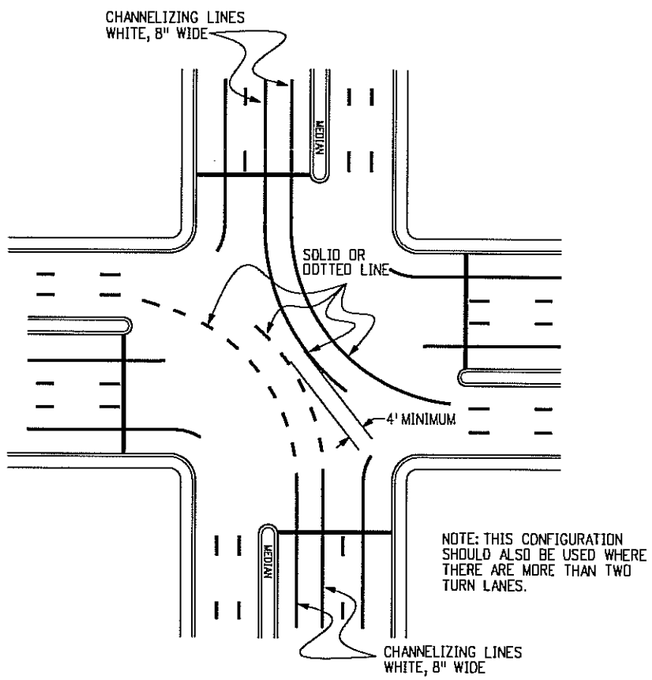



DETAIL A

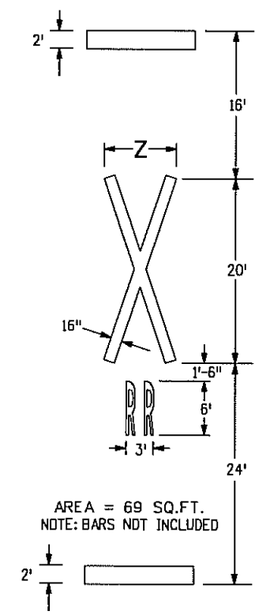
## TYPICAL SPEED MEASUREMENT MARKING




## TYPICAL PAVEMENT MARKING AT RAILROAD CROSSING




## TYPICAL DOUBLE LEFT TURN MARKINGS




AREA = 69 SQ.FT.
NOTE: BARS NOT INCLUDED

DETAIL B

### RAILROAD CROSSING NOTES:

W = APPROXIMATELY 15 FT. (STOP LINE SHOULD BE 8' IN ADVANCE OF ACTIVE TRAFFIC CONTROL SYSTEMS; I.E., AUTOMATIC GATES AND/OR FLASHING SIGNALS).

X = THE DISTANCE FROM THE RAILROAD CROSSING MARKING TO THE NEAREST TRACK WILL VARY ACCORDING TO THE APPROACH SPEED AND THE SIGHT DISTANCE OF THE VEHICULAR TRAFFIC APPROACHING, BUT NOT LESS THAN 50 FT. (REFERENCE NOTE 1).

Y = ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL **RR** SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

Z = NORMALLY 8 FT. (WIDTH MAY VARY ACCORDING TO LANE WIDTH).

1. THE WARNING SIGN SHALL BE PLACED ACCORDING TO THE WARNING SIGN PLACEMENT TABLE IN THE MUTCD. IF CONDITIONS DO NOT ALLOW PLACEMENT ACCORDING TO THE TABLE, IT SHALL BE AS APPROVED BY THE ENGINEER.
2. REFER TO "THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", ADOPTED BY THE FEDERAL HIGHWAY ADMINISTRATION, FOR **RR** SYMBOL DETAILS.

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| Last Modification Date: | Initials: | | |
| Full Path: www.dot.state.co.us/DesignSupport/ | | | |
| Drawing File Name: Sheet_S-627-01_4of5.dgn | | | |
| CAD Ver.: MicroStation V8 | Scale: Not to Scale | Units: English | |

| Sheet Revisions | |
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# PAVEMENT MARKINGS

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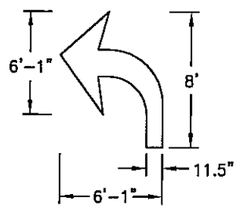
Sheet No. 4 of 5

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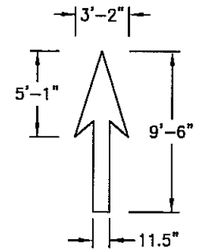


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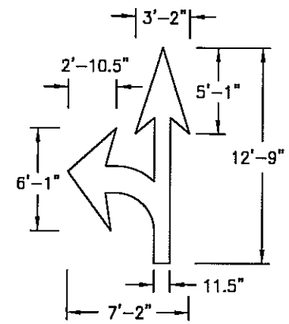


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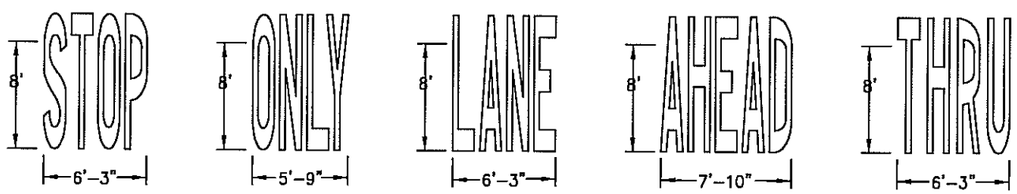
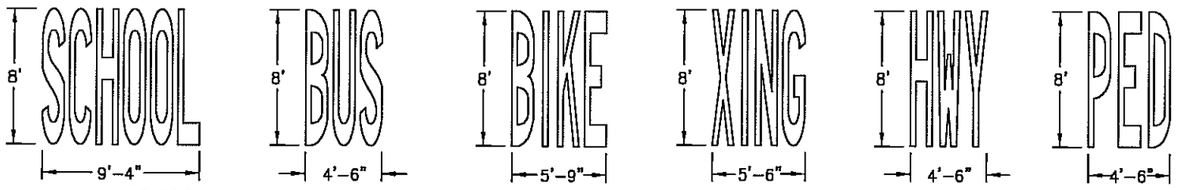
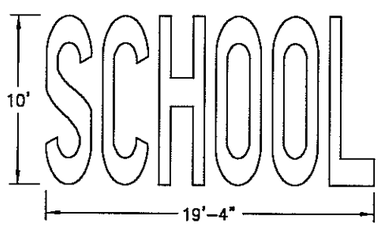
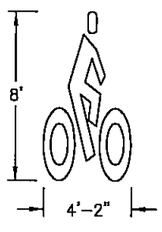



1-LANE SCHOOL




STROKE = 8"
2-LANE SCHOOL

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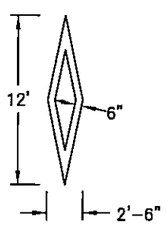


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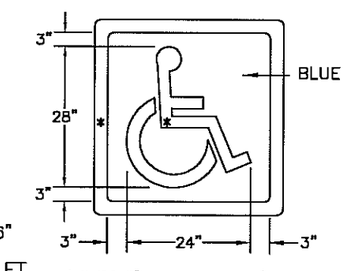
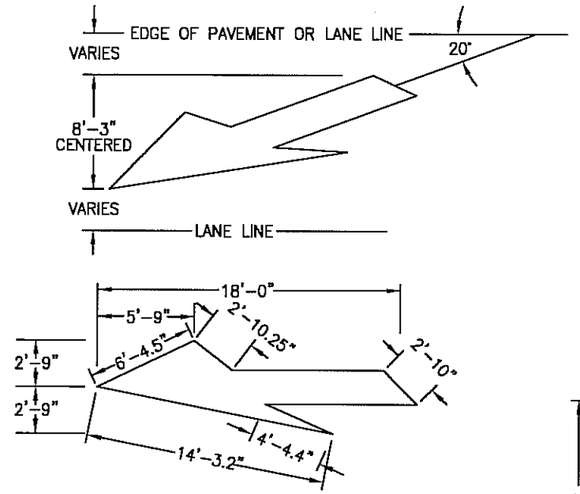



*WHITE 3" STROKE WIDTH (BORDER MAY BE 4" STROKE WIDTH)




AREA = 42 SQ.FT.

## DESIGNATED PAYMENT AREAS

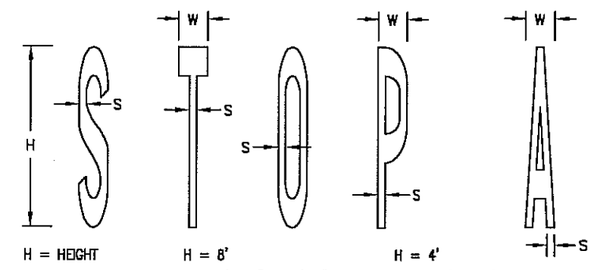
FOR THE FOLLOWING H, W, AND S DIMENSIONS PAY:

### H = 4' WORDS

| | |
|---|---|
| BIKE – 5.5 SQ.FT. | LANE – 6.0 SQ.FT. |
| ONLY – 6.0 SQ.FT. | XING – 5.0 SQ.FT. |

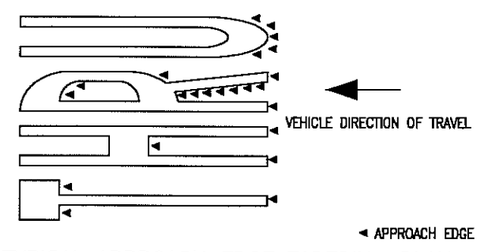
### H = 8' WORDS

| | |
|---|---|
| STOP – 23.0 SQ.FT. | XING – 20.0 SQ.FT. |
| ONLY – 22.5 SQ.FT. | LANE – 22.5 SQ.FT. |
| AHEAD – 29.0 SQ.FT. | BIKE – 21.0 SQ.FT. |
| BUS – 18.5 SQ.FT. | HWY – 16.5 SQ.FT. |
| THRU – 22.0 SQ.FT. | SCHOOL(1L) – 33.0 SQ.FT. |
| PED – 17.5 SQ.FT. | SCHOOL(2L) – 85.0 SQ.FT. |

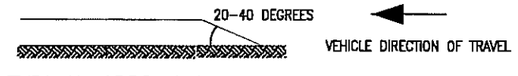



| | | |
|---|---|---|
| H = HEIGHT | H = 8' | H = 4' |
| W = WIDTH | W = 1'-3.4" TO 1'-4" | W = 7.7" TO 8" |
| S = STROKE | S = 3.8" TO 4" | S = 1.9" TO 2" |

TYPICAL LETTER MEASUREMENTS




TYPICAL APPROACH EDGE TAPERING PLAN VIEW




TYPICAL APPROACH EDGE TAPERING PROFILE VIEW

## WORD AND SYMBOL NOTES

IF HEIGHT IS INCREASED OR DECREASED THEN ALL MEASUREMENTS CHANGE PROPORTIONATELY. EXAMPLE: "H" MEASUREMENT FOR STOP IS REDUCED TO 4' FROM 8' THEN SQUARE FEET = 5.75 (1/4 OF 23.0 SQ. FT.).

PAVEMENT WORD AND SYMBOL MARKINGS, TRANSVERSE AND LONGITUDINAL (CONTINENTAL) CROSSWALK LINES, AND STOP LINES WILL BE PAID FOR IN SQUARE FEET USING THEIR SPECIFIC BID ITEMS.

## TAPERING NOTES

ALL PAVEMENT MARKING APPROACH EDGES FROM THE VEHICLE DIRECTION OF TRAVEL SHALL BE TAPERED USING A PUTTY KNIFE OR SIMILAR TOOL

# PAVEMENT MARKING WORDS AND SYMBOLS

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| 07/24/09 | ADDED TAPERING VIEWS AND NOTES |


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KCM/SCL

PAVEMENT MARKINGS

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