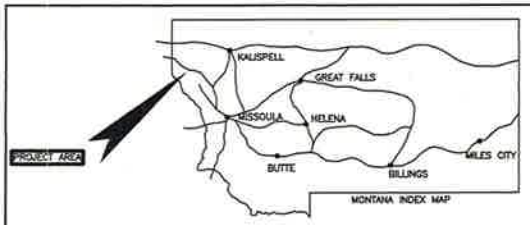
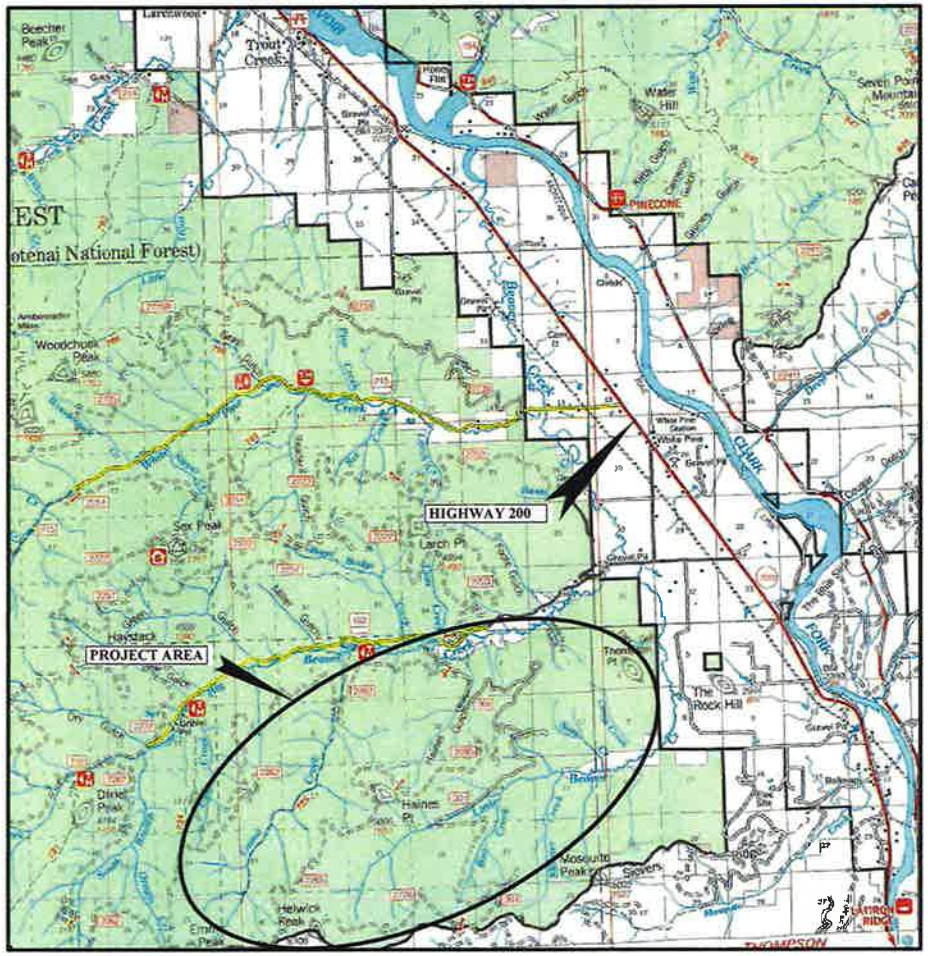



U.S. DEPARTMENT OF AGRICULTURE – FOREST SERVICE – REGION ONE

KOOTENAI NATIONAL FOREST ◇ CABINET RANGER DISTRICT

# PLANS FOR SPECIFIED ROADS

## HELWICK TIMBER SALE




VICINITY MAP

0 1 2 3 4 5 6 7

SCALE IN MILES

| DESCRIPTION | SHEETS |
|---|---|
| PROJECT AREA MAP | 2 |
| ESTIMATE OF QUANTITIES | 3 |
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| CONSTRUCTION PLAN DETAILS | 5 |
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| 301B PLAN & PROFILE | 13–23 |
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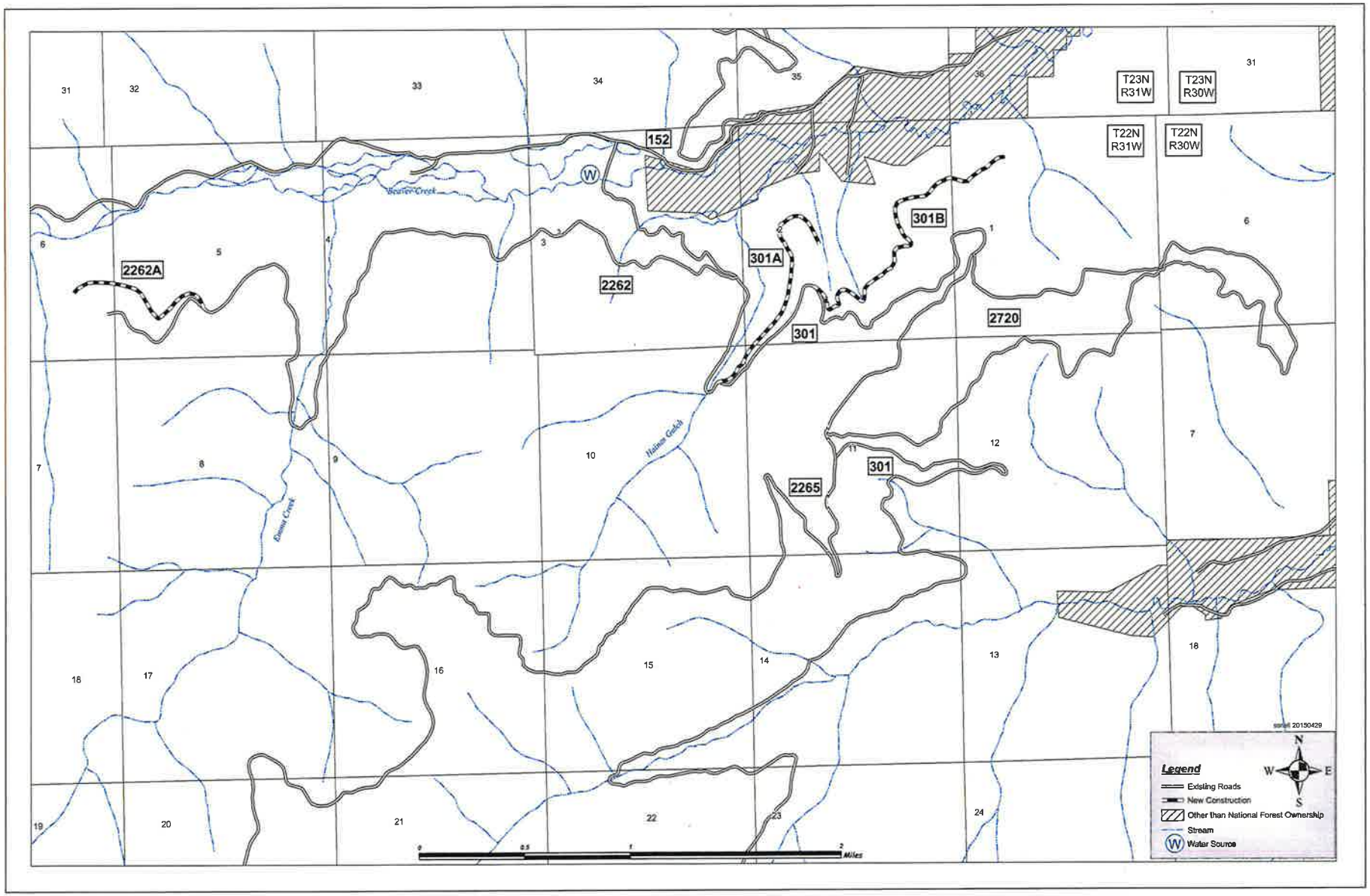
| DRAIN DIP DETAILS | 31 |
| METAL GATE DETAILS | 32 |
| CONSTRUCTION SIGNING DETAILS | 33 |

SUBMITTED _____ DATE 2/3/16
ZONE ENGINEER
I certify that this project has been designed with sound engineering practices and submit it for review and approval.

REVIEWED _____ DATE 2/8/16
FOREST ENGINEER
I certify the technical adequacy of this design and recommend approval for construction.

APPROVED _____ DATE 2-16-2016
DISTRICT RANGER
This project is necessary to the forest program needs and goals and is hereby approved for construction.

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

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|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE<br>FOREST SERVICE<br>KOOTENAI NATIONAL FOREST<br>CABINET RANGER DISTRICT | HELWICK TIMBERSALE | PROJECT MAP | NFSR<br>ALL | DESIGNED: _____ DATE: _____<br>CHECKED: _____ DATE: _____ |

SHEET NO. 2 OF 33

# ESTIMATE OF QUANTITIES



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ROAD NUMBER | 301A | 301B | 2262A | - | - | - | |
| | | | | MILE POST (MILES) | 1.12 | 1.64 | 0.77 | - | - | - | |
| ITEM NO. | DESCRIPTION | METHOD OF MEASURE | UNIT | REVISION DATE | QUANTITIES | | | | | | REMARKS |
| 151(01) | Mobilization | LSQ | LS | FP-03 | 1.00 | 1.00 | 1.00 | | | | |
| 152(01) | Construction Survey & Staking, Method II, Precision Class E, Tolerance E | AQ | MI | FP-03 | 1.12 | 1.64 | 0.77 | | | | |
| 201(01) | Clearing and Grubbing | AQ | AC | FP-03 | 0.68 | 4.57 | 2.77 | | | | |
| 204(01) | Excavation and Embankment | CQ | CY | FP-03 | 5,536.00 | 12,539.00 | 9,254.00 | | | | |
| 204)20) | Construct Dip | AQ | EA | FP-03 | 1.00 | 2.00 | 1.00 | | | | |
| 251(01) | Place Rip Rap, Class II | CQ | CY | FP-03 | | 4.00 | 1.00 | | | | |
| 602(50)24 | 24" Corrugated Metal Pipe | AQ | LF | FP-03 | | 120.00 | 42.00 | | | | |
| 602(50)36 | 36" Corrugated Metal Pipe | AQ | LF | FP-03 | | 60.00 | | | | | |
| 602(50)48 | 48" Corrugated Metal Pipe | AQ | LF | FP-03 | | 60.00 | | | | | |
| 625(01) | Seeding, Dry Method | CQ | AC | FP-03 | 3.02 | 4.70 | 3.42 | | | | |
| 650(01) | Metal Gate | AQ | EA | FP-03 | 1.00 | 1.00 | 1.00 | | | | |

## SPECIFICATION NOTES:

**151:**
ALL CONSTRUCTION EQUIPMENT SHALL BE WASHED AND INSPECTED PRIOR TO ENTERING THE PROJECT AREA.

**153:**
CONTRACTOR MUST AT ALL TIMES HAVE THEIR OWN QUALITY CONTROL PRACTICED ON SITE. CONTRACTOR MUST PROVIDE THE GOVERNMENT ANY NECESSARY SUBMITTALS CITED IN THIS SECTION PRIOR TO ANY PROGRESS PAYMENT TO BE MADE.

**201:**
ALL MERCHANTABLE TREES WITHIN THE CLEARING LIMITS SHALL BE CONSIDERED RIGHT-OF-WAY RIGHTS TO THE PURCHASER OF THE TIMBERSALE AND SHALL BE DECKED AT A LOCATION DESIGNATED BY THE C.O. STUMPS DESIGNATED FOR REMOVAL SHALL BE DISPOSED PER METHOD A OF SECTION 201 OF THE SPECIFICATIONS.

**203:**
WINDROW ALL DEBRIS GENERATED FROM CLEARING AND GRUBBING OUTSIDE THE ROADWAY PER DISPOSAL METHOD E OF SECTION 203 THE SUPPLEMENTAL SPECIFICATIONS. UNLESS SHOWN ON THE PLANS OR DESIGNATED BY THE C.O., REMOVE ALL DESIGNATED MATERIAL FROM THE PROJECT. ALL CULVERT REMOVALS ARE CONSIDERED MINOR (20' OR LESS EXCAVATIONS).

**204:**
QUANTITY REPRESENTS CUBIC YARDS COMPACTED IN PLACE. UNLESS OTHERWISE DIRECTED BY THE C.O. PLACE AND SPREAD UNIFORMLY ON THE ROAD SUBGRADE ALL EXCESS USEABLE MATERIAL GENERATED DURING EXCAVATION. SIDE CAST ALL UNUSABLE EXCAVATION MATERIAL UNIFORMLY ALONG THE FILL SLOPES UNLESS OTHERWISE SHOWN ON THE PLANS OR IN AREAS WITHIN 100 FEET OF A LIVE STREAM. CONSTRUCTION OF NEW DRAIN DIPS ARE DETAILED ON SHEET 30. RECONSTRUCTION OF EXISTING DRAIN DIPS REFERS TO RE-SHAPING AN EXISTING DRAIN DIP TO THE STANDARD DIMENSIONS DETAILED ON SHEET 30. THE WORKLISTS DO NO INDICATE ALL EXISTING DRAIN DIPS, CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE EXISTING SHAPE OF DRAIN DIPS NOT STAKED OUT FOR RECONSTRUCTION AND IS INCIDENTAL TO ITEM 303(01).

**251:**
RIPRAP MAY BE CONSERVED FROM EXCAVATION WORK ON THE PROJECT, OBTAINED FROM A COMMERCIAL SOURCE OR OBTAINED FROM OTHER SITES ALONG THE PROJECT ROADS AS APPROVED BY THE C.O.

**602:**
CONSTRUCTION OF A CATCH BASIN IS INCIDENTAL TO ITEM 602 ON ALL NEW CULVERT INSTALLATIONS. CONTRACTOR SHALL ORDER 16 GAGE FOR ALL NEW 18" DIAMETER CULVERTS, 14 GAGE FOR ALL NEW 24" CULVERTS AND 12 GAGE FOR ALL NEW 36" AND UP DIAMETER CULVERTS. CULVERTS THAT ARE DESIGNATED TO BE CUT OFF THE CONTRACTOR SHALL RE-GALVANIZE THE EXPOSED STEEL. CONTRACTOR SHALL NOT ORDER/DELIVER CULVERTS TO THE PROJECT SITE UNTIL A FINAL CULVERT LISTING IS PROVIDED BY THE C.O. CONTRACTOR SHALL INSTALL CULVERTS AT A SKEW AS STAKED AT INLET AND OUTLET.

**622:**
HOURLY EQUIPMENT SHALL BE ORDERED AND DIRECTED BY THE C.O. EQUIPMENT HOURS WILL BE PAID FOR AS ACTUAL AMOUNT OF WORK PERFORMED AND AGREED IN WRITING. THIS INCLUDES ANY UNFORESEEN WORK NOT ORGINALL PLANNED. WHEN INDICATED ON THE PLANS TO NARROW THE WIDTH THE CONTRACTOR SHALL ANTICIPATE AT LEAST 2 EXTRA PASSES INITIALLY TO BRING MATERIAL BACK ONTO THE ROAD. ANY NARROWING OR WIDENING INDICATED IN THE WORKLISTS WILL BE PAID FOR AS HOURLY EQUIPMENT RENTAL.

**625:**
ALL DISTURBED AREAS WILL BE SEEDED UPON COMPLETION OF OPERATIONS. SEED ALL AREAS WHERE CONTRACTOR'S OPERATIONS HAVE DAMAGED EXISTING VEGETATION INCLUDING DITCHES, SHOULDERS, CULVERT INLETS/OUTLETS, CATCH BASINS AND NEW CUT AND FILL SLOPES. SEEDING ACRES INCLUDE ESTIMATED DITCH AND SHOULDER DISTURBANCE, CATCH BASINS, CULVERT INLETS/OUTLETS, DRAIN DIPS AND NEW CUT AND FILL SLOPES. REFER TO SPECIFICATION SECTION 625 OF THE SUPPLEMENTAL SPECIFICATIONS FOR DETAILS. REFER TO FSSS 625 FOR PROPER SEED MIX.

## GENERAL NOTES:

**SPECIFICATIONS:**
MATERIALS AND CONSTRUCTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-03 (U.S. CUSTOMARY UNITS).

**STAKING:**
THE CONTRACTOR IS RESPONSIBLE FOR STAKING THE NEW CONSTRUCTION WORK OF THIS PROJECT AND WILL BE PAID UNDER 152(01). REFER TO FSSS 152. THE CONTRACTOR SHALL PROVIDE 30 DAYS ADVANCE NOTICE PRIOR TO STARTING CONSTRUCTION TO ALLOW TIME FOR CONSTRUCTION STAKING.

**EROSION CONTROL PLAN:**
ALL CONSTRUCTION ACTIVITIES AFFECTING LIVE STREAM CHANNELS SHALL BE PERFORMED BETWEEN JULY 15 AND SEPTEMBER 1 OR WHEN STREAM CHANNELS ARE DRY. SUBMIT A SOIL EROSION PLAN TO THE CONTRACTING OFFICER AND HAVE IT APPROVED PRIOR TO BEGINNING ANY WORK. PROVIDE METHODS TO MINIMIZE DISTURBANCE TO THE STREAM BED AND TO PREVENT RUNOFF FROM THE CONSTRUCTION SITE FROM ENTERING DIRECTLY INTO THE STREAM. CONSTRUCT TEMPORARY MEANS TO DIVERT THE FLOW OF THE LIVE STREAM AS NECESSARY TO PERFORM WORK. DO NOT PUMP WATER FROM EXCAVATIONS DIRECTLY INTO THE LIVE STREAM. A 124 PERMIT IS REQUIRED PRIOR TO CONSTRUCTION ON LIVE STREAMS AND SHALL BE PROVIDED BY THE GOVERNMENT. CONTRACTOR SHALL KEEP A COPY OF THE PERMIT AT ALL TIMES DURING LIVE STREAM WORK.

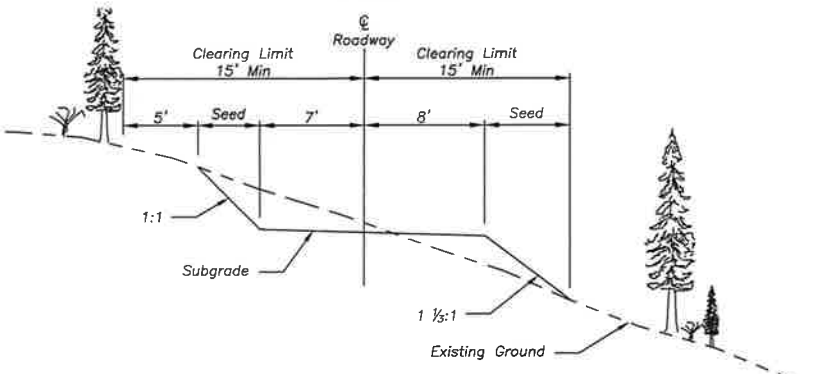
**UTILITY LOCATE:**
UTILITY LOCATIONS MUST BE CALLED IN AND LOCATED PRIOR TO BEGINNING ANY WORK ON ANY OF THE PROJECT ROADS.

**NEW ROAD CONSTRUCTION:**
J-HOLE TURN-A-ROUNDS AND DRAIN DIP LOCATIONS WILL BE STAKED BY THE ENGINEER AFTER PIONEER GRADE IS COMPLETE. THE DESIGN DOES NOT INCLUDE THESE ITEMS. J-HOLE TURN-A-ROUNDS SHALL BE PAID FOR UNDER 622(01)E. BACK SLOPES AND/OR FILL SLOPES SHALL CONFORM TO ADJACENT ROADWAY SLOPES AND SEEDED IN ACCORDANCE WITH SPECIFICATION SECTION 625.

NEW ROAD CONSTRUCTION DESIGNED STAKING NOTES AND CROSS SECTIONS ARE AVAILABLE IF REQUESTED TO THE C.O.

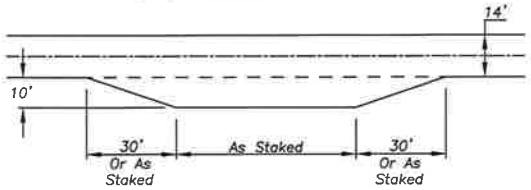
## TYPICAL SECTION - ROAD 301A, 301B, 2262A

NO SCALE



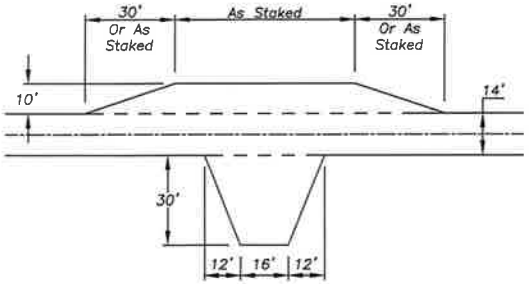

## TYPICAL TURNOUT

NO SCALE



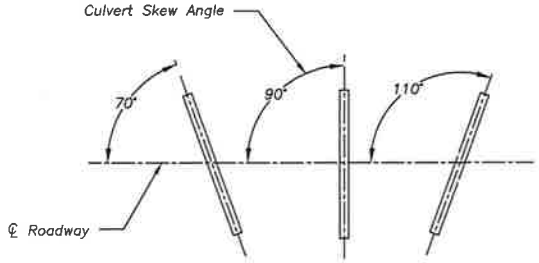

## J-HOLE TURN-A-ROUND

NO SCALE




## CULVERT SKEW ANGLE

NO SCALE




NOTE: For All Culvert Installations, Conserve Rock From The Pipe Excavation And Place As Riprap At The Culvert Inlets And Outlets. Conserving And Placing Riprap Is Considered Incidental To Culvert Installation.

## GENERAL NOTES:

15201 - CONSTRUCTION SURVEY & STAKING The Contractor Is Responsible For Construction Survey And Staking According To Section 152. A Preliminary Survey Line (P–Line) Has Been Established By The Government And Is Staked On The Ground. It Is The Responsibility Of The Contractor To Reestablish, Maintain, And Preserve All Stakes And Other Marks Set By The Government. Staking Notes Shall Be Provided By The Government.

| | | |
|---|---|---|
| Slope Stake & Reference Method | = Method II | |
| Tolerance Precision Class | = Class E | (See Table 152–1) |
| Tolerance Category | = Tolerance E | (See Table 152–2) |

20101 - CLEARING & GRUBBING Clear And Grub According To Section 201. Trees, Stumps, Roots And Other Vegetative Material Within The Clearing Limits Shall Be Cleared, Grubbed, Removed And Disposed Of As Follows:

UTILIZATION OF TIMBER – Dispose Of All Merchantable Timber In Accordance With The Provisions Of The Timber Sale Contract.

SLASH TREATMENT – All Tops And Limbs, Stumps, Cull Logs, And Other Vegetative Material Within The Clearing Limits Shall Be Cleared, Grubbed, Removed, And Piled In Clean Piles Adjacent To The Clearing Limits At Designated Locations For Later Burning By The Government. Clearing Required For Burn Bays Is Considered Incidental To This Pay Item. Place And Construct Piles So Future Burning Will Not Damage Remaining Trees.

20401 - EXCAVATION AND EMBANKMENT Excavation And Embankment Shall Be In Accordance With The Plans And Specification 204.

| | | |
|---|---|---|
| Compaction Method | = Method D | |
| Roadbed Finish Method | = Method A | |
| Construction Tolerance Class | = Class F | (See Table 204–2) |

602 - CORRUGATED STEEL PIPE Excavate And Backfill According To Section 209.

| | |
|---|---|
| Compaction Method | = Method B |

62501 SEEDING & FERTILIZING Apply Seed And Fertilizer At The Rates Specified In Section 625 To All Disturbed Areas Outside Of The Road Shoulders Including Fill Slopes, Cut Slopes, Drain Dip Outlets, Ect. Care Shall Be Taken Not To Distribute Any Fertilizer Into Streams.

## CULVERT LISTING

| ROAD NO. | STATION | LENGTH | SIZE | THICKNESS | SKEW |
|---|---|---|---|---|---|
| | | | | | |
| 301B | 8+02 | 60' | 48" | 0.064" | 90° |
| 301B | 10+88 | 60' | 36" | 0.064" | 90° |
| 301B | 20+96 | 60' | 24" | 0.064" | 90° |
| 301B | 41+97 | 60' | 24" | 0.064" | 90° |
| | | | | | |
| 2262A | 13+95 | 42' | 24" | 0.064" | 90° |
| | | | | | |

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
KOOTENAI NATIONAL FOREST
CABINET RANGER DISTRICT

IIELWICK TIMBERSALE

STANDARD CONSTRUCTION DETAILS

NFSR
ALL

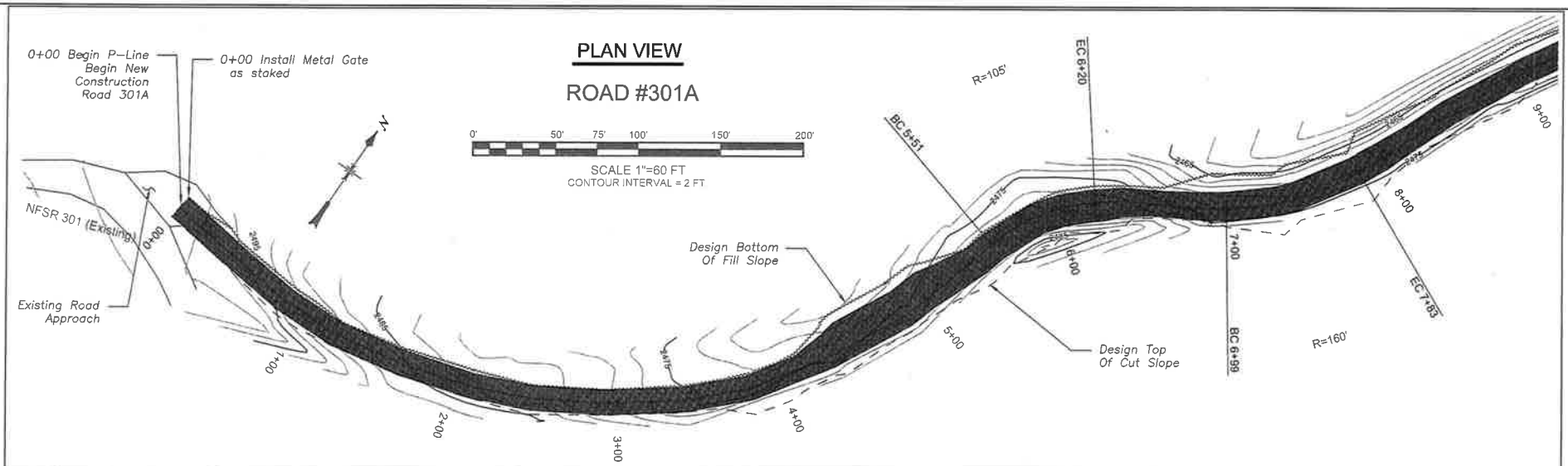
DESIGNED: _____ DATE: _____

CHECKED: _____ DATE: _____

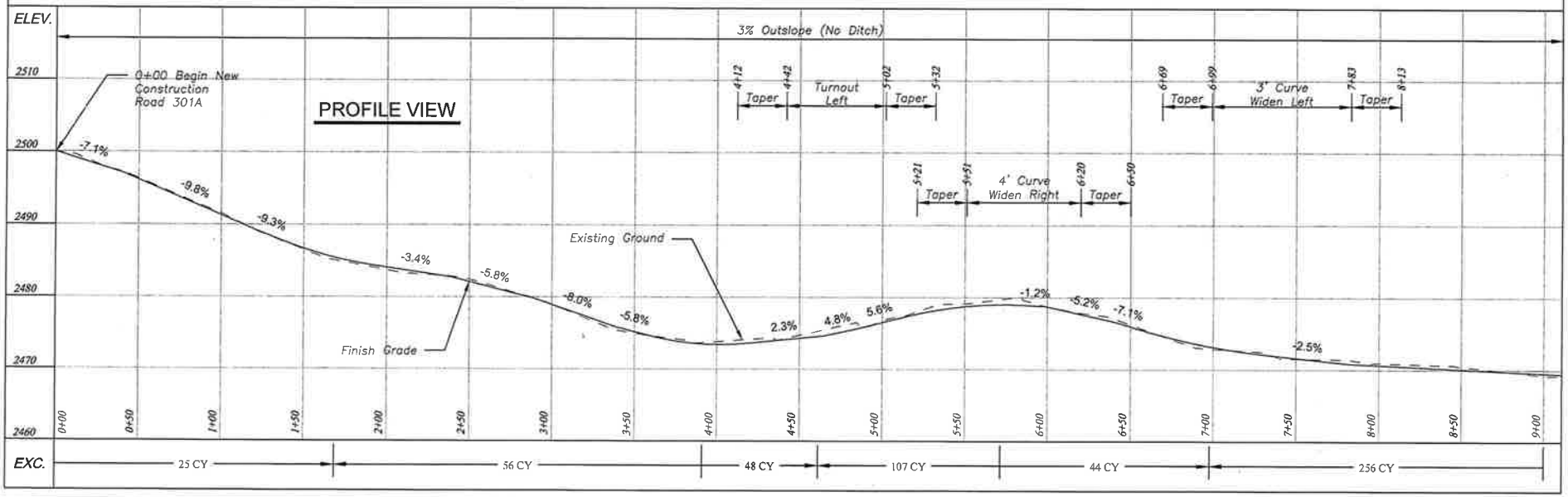
SHEET NO. 5 OF 33

## PLAN VIEW

## ROAD #301A




## PROFILE VIEW

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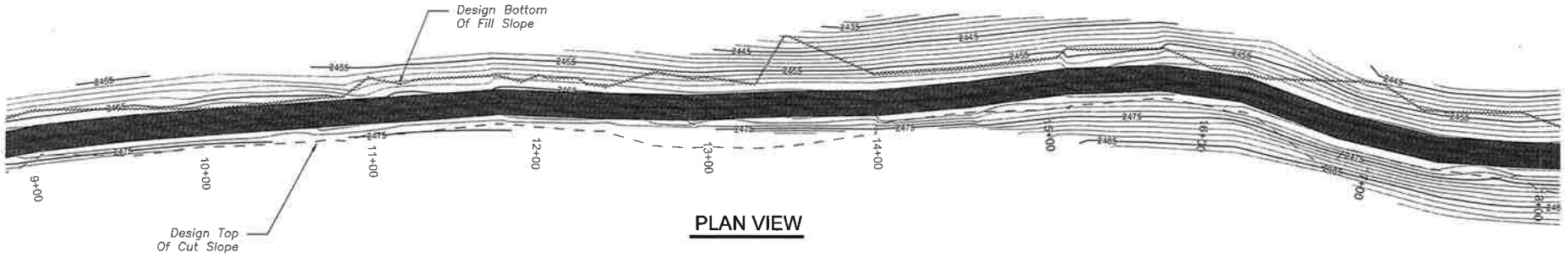
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301A - PLAN & PROFILE (1 OF 7) | NFSR 301A | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 6 OF 33 |

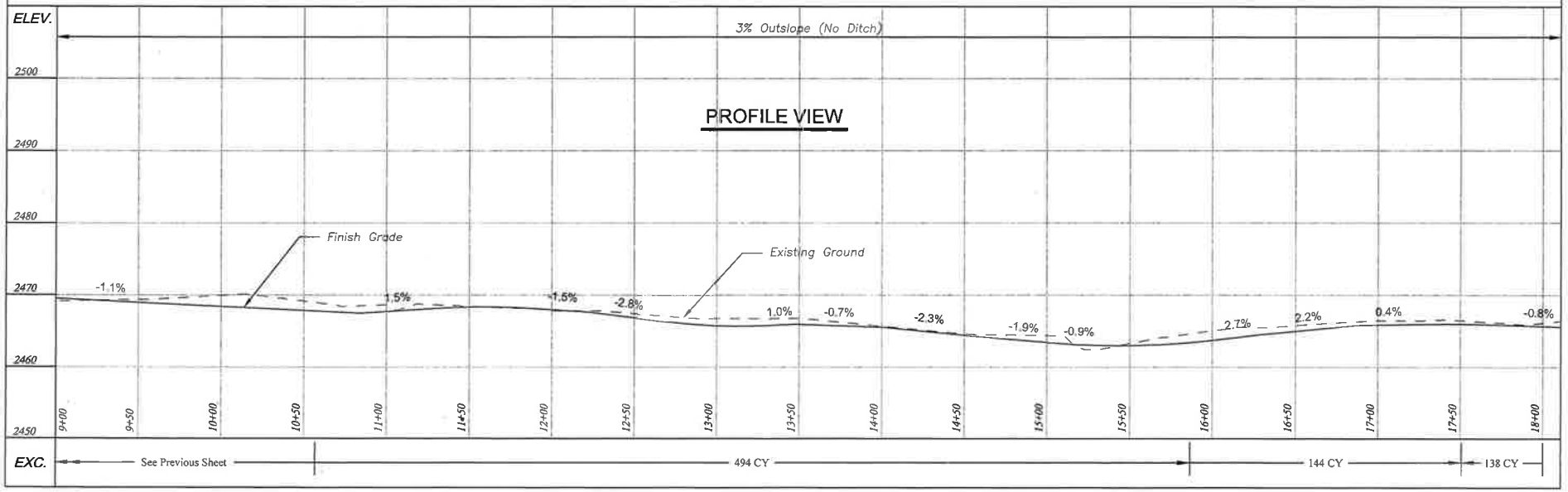
# ROAD #301A

0' 50' 75' 100' 150' 200'

CONTOUR INTERVAL = 2 FT




## PLAN VIEW

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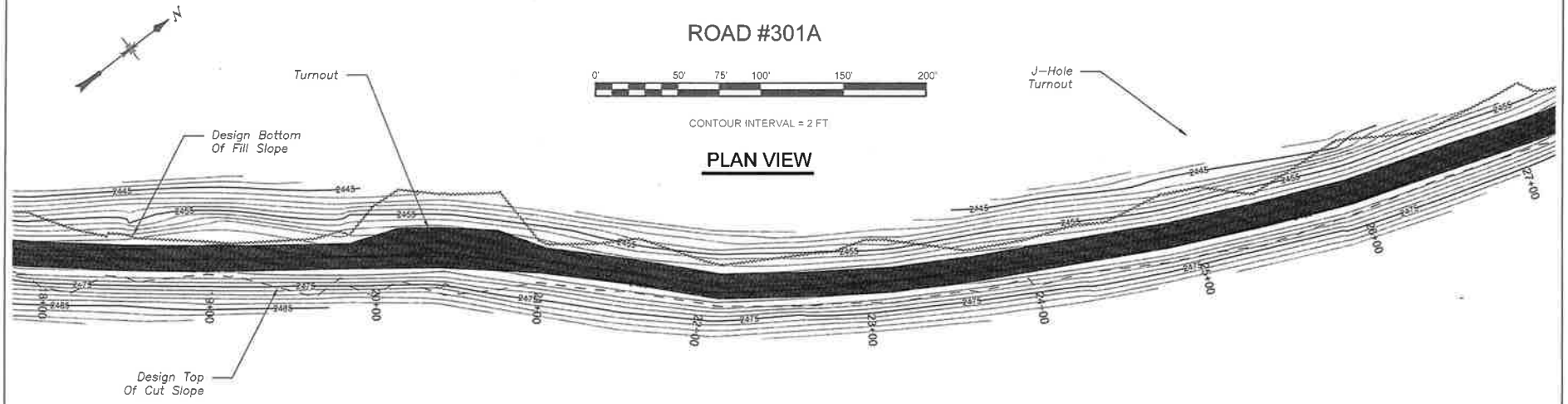
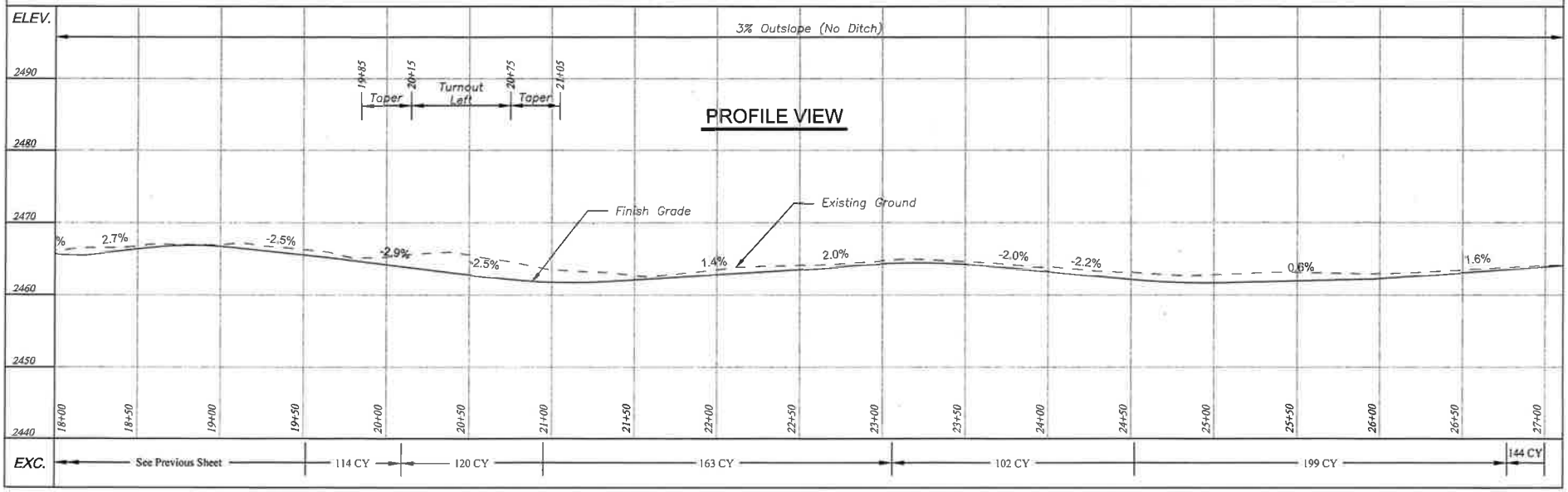
| U.S. DEPARTMENT OF AGRICULTURE<br>FOREST SERVICE<br>KOOTENAI NATIONAL FOREST<br>CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301A - PLAN & PROFILE (2 OF 7) | NFSR<br>301A | DESIGNED: C. STEEN DATE: 2/2015<br>CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO.<br>7 OF 33 |

# ROAD #301A

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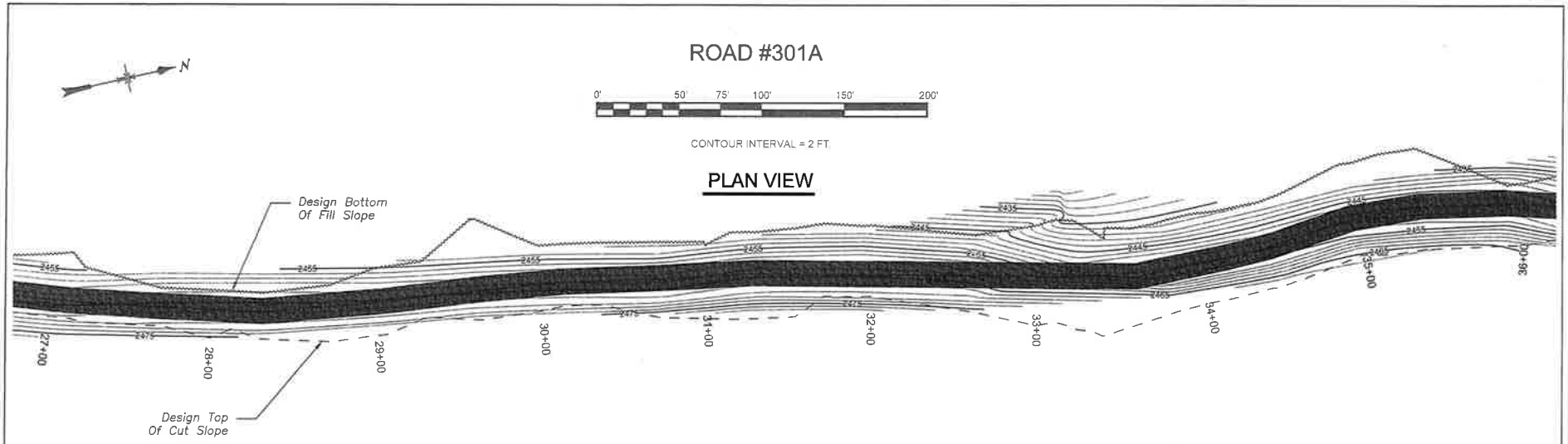
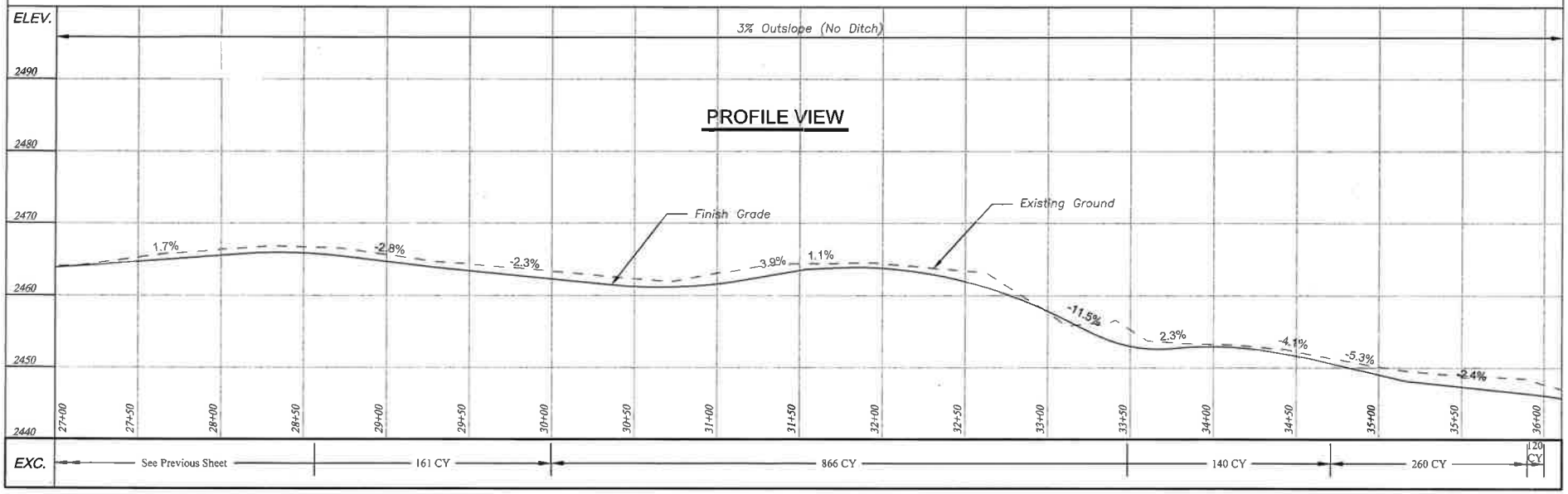
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301A - PLAN & PROFILE (3 OF 7) | NFSR 301A | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 8 OF 33 |

# ROAD #301A

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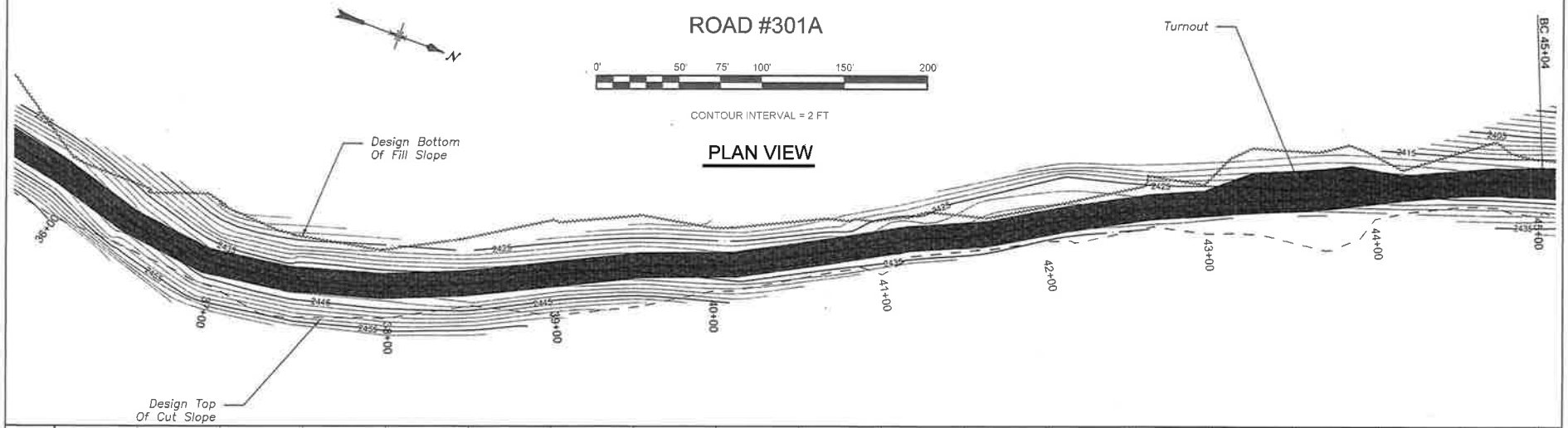
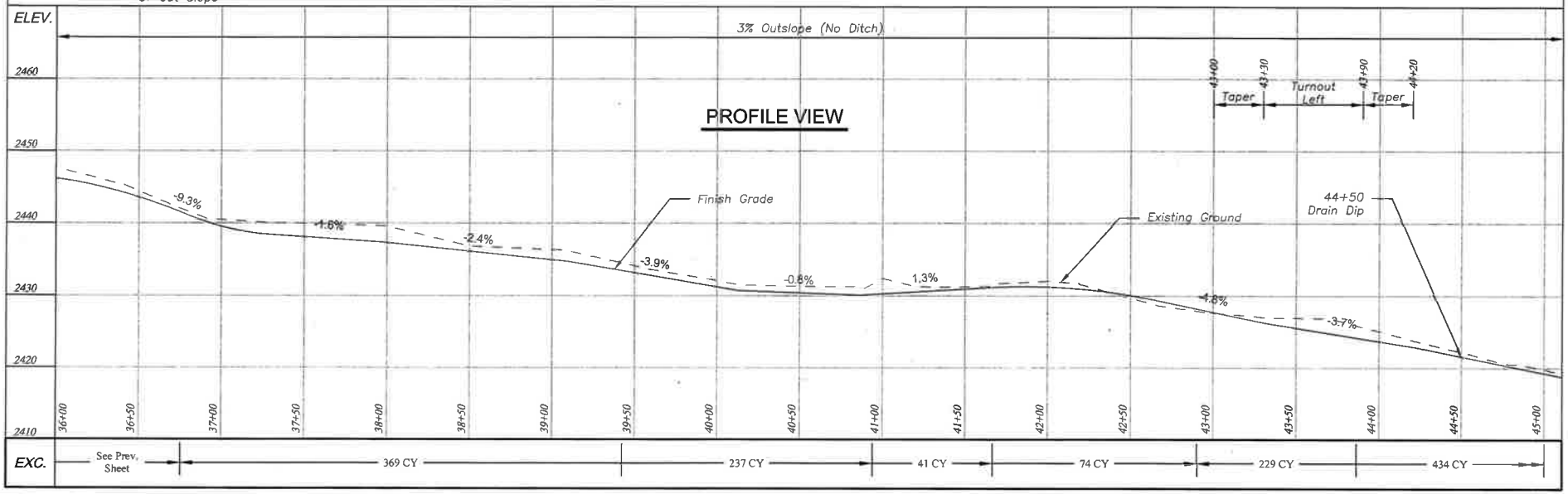
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301A - PLAN & PROFILE (4 OF 7) | NFSR 301A | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 9 OF 33 |

# ROAD #301A

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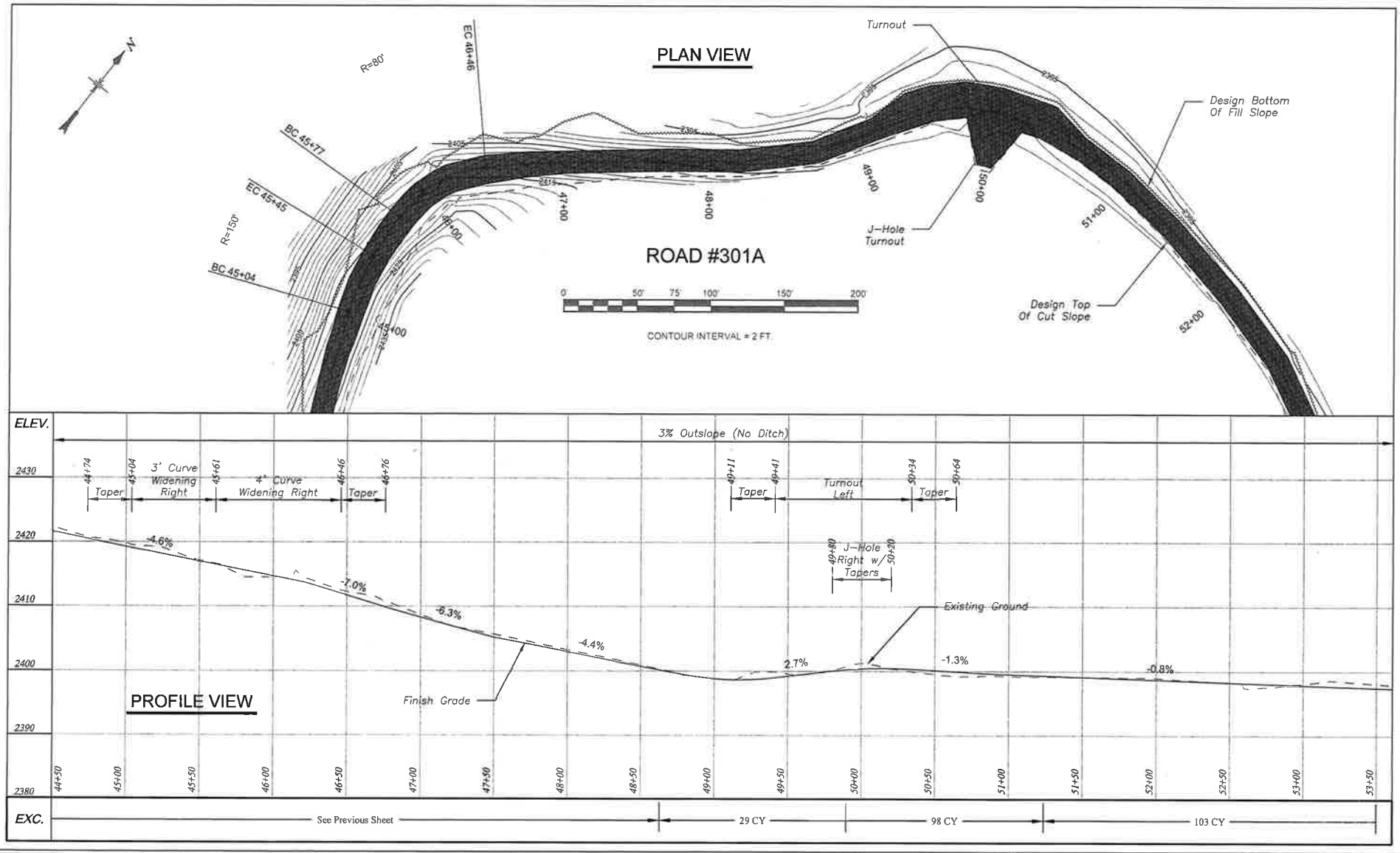
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301A - PLAN & PROFILE (5 OF 7) | NFSR 301A | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 10 OF 33 |

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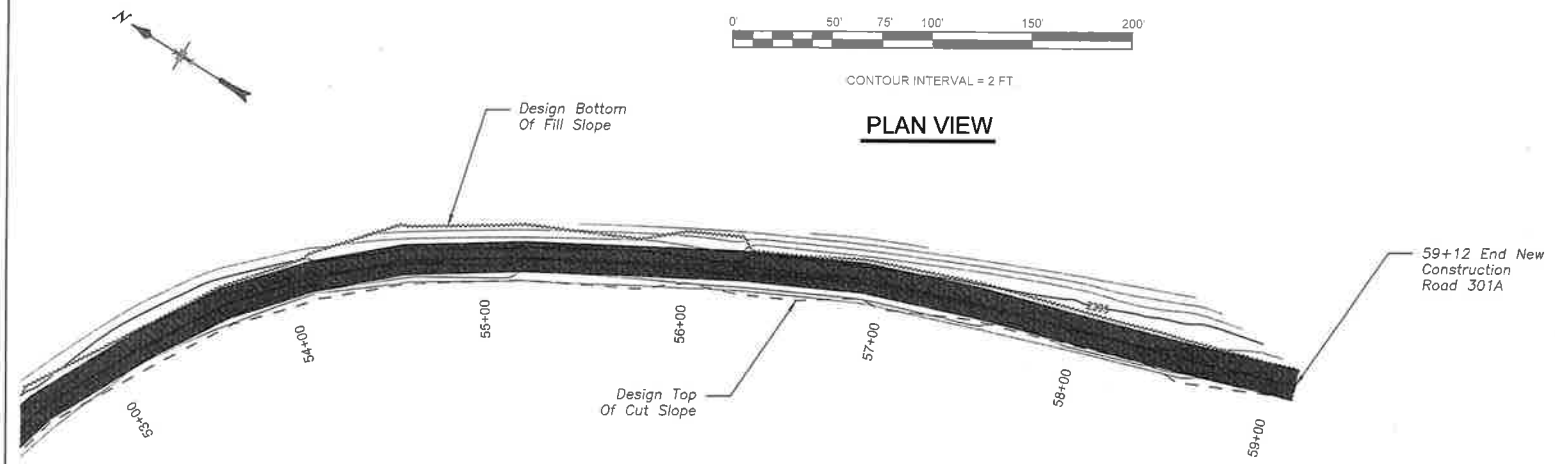
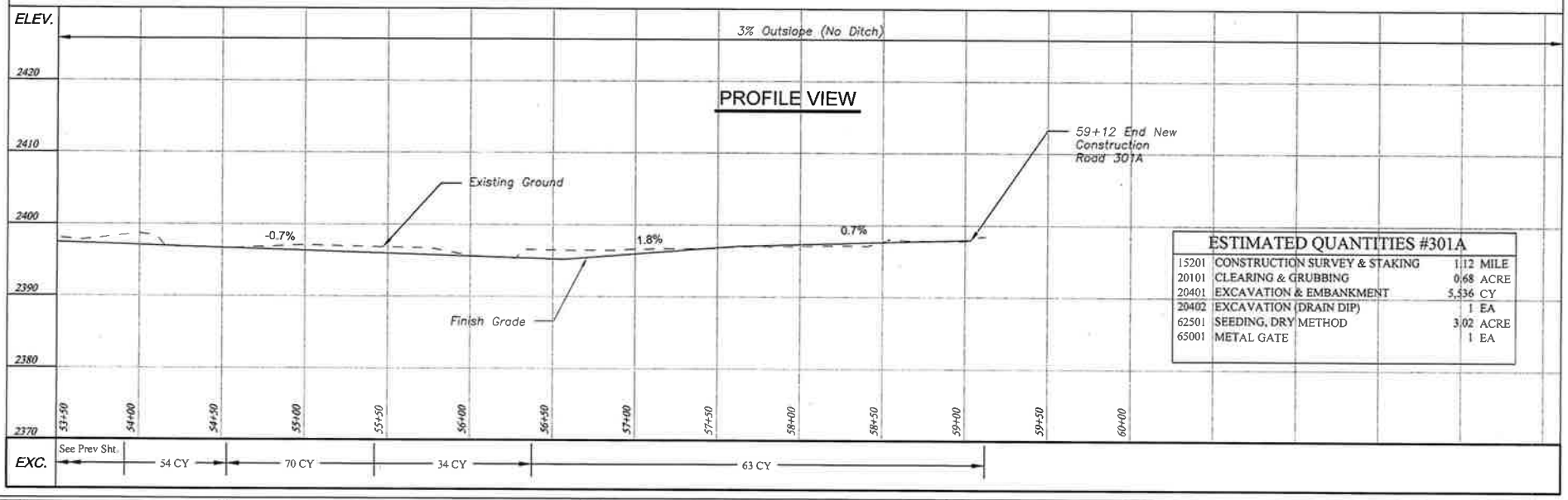
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301A - PLAN & PROFILE (6 OF 7) | NFSR 301A | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 11 OF 33 |

# ROAD #301A




## ESTIMATED QUANTITIES #301A

| | | |
|---|---|---|
| 15201 | CONSTRUCTION SURVEY & STAKING | 1.12 MILE |
| 20101 | CLEARING & GRUBBING | 0.68 ACRE |
| 20401 | EXCAVATION & EMBANKMENT | 5,536 CY |
| 20402 | EXCAVATION (DRAIN DIP) | 1 EA |
| 62501 | SEEDING, DRY METHOD | 3.02 ACRE |
| 65001 | METAL GATE | 1 EA |

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
KOOTENAI NATIONAL FOREST
CABINET RANGER DISTRICT

HELWICK TIMBERSALE

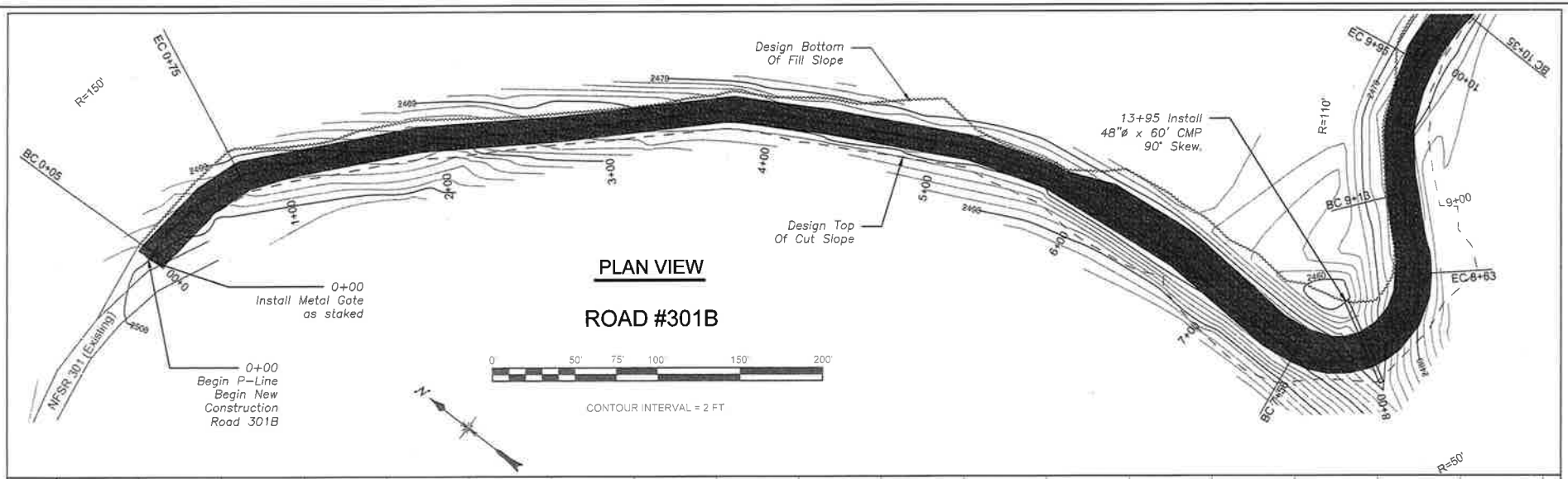
ROAD 301A - PLAN & PROFILE (7 OF 7)

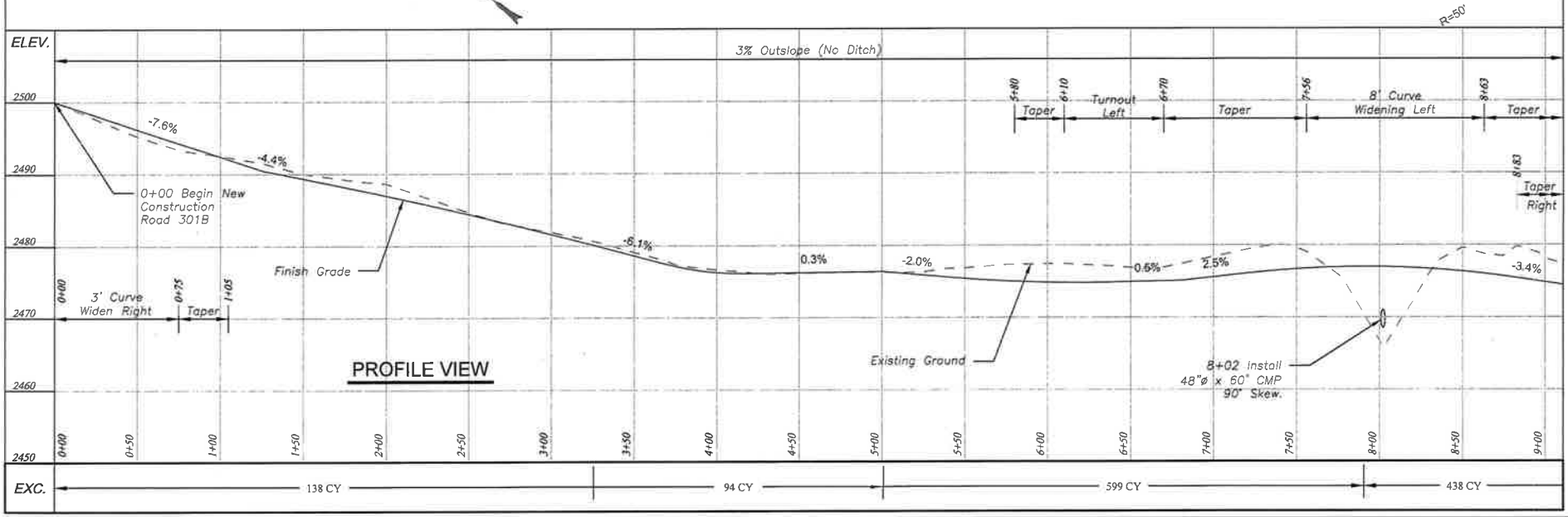
NFSR 301A

DESIGNED: C. STEEN DATE: 2/2015

CHECKED: K. MEREDITH DATE: 2/2015

SHEET NO. 12 OF 33

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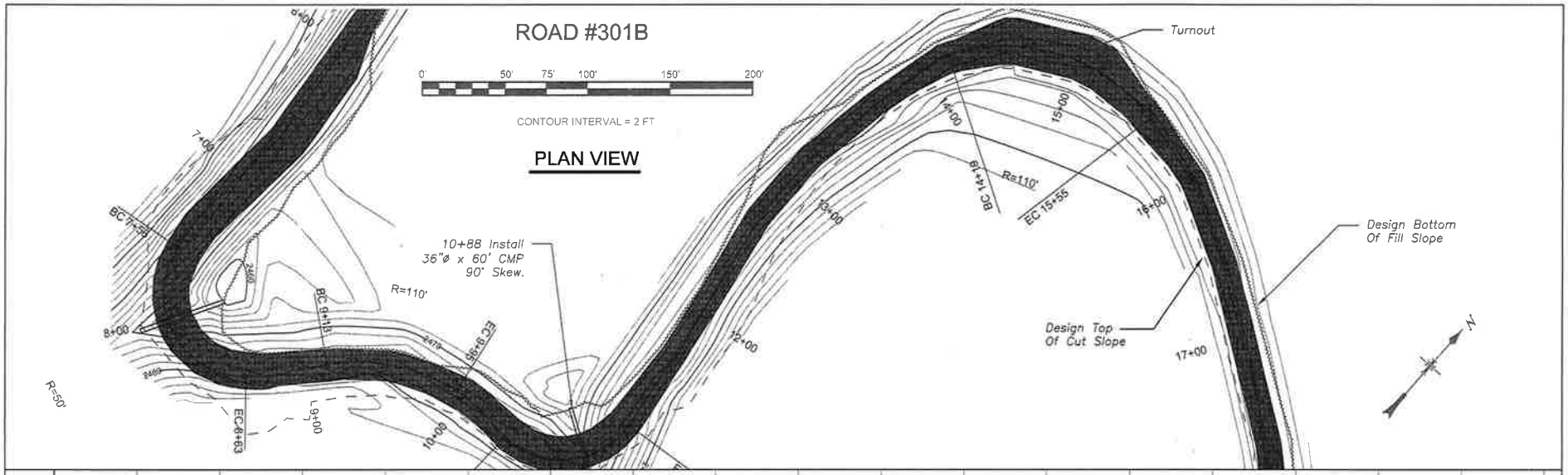
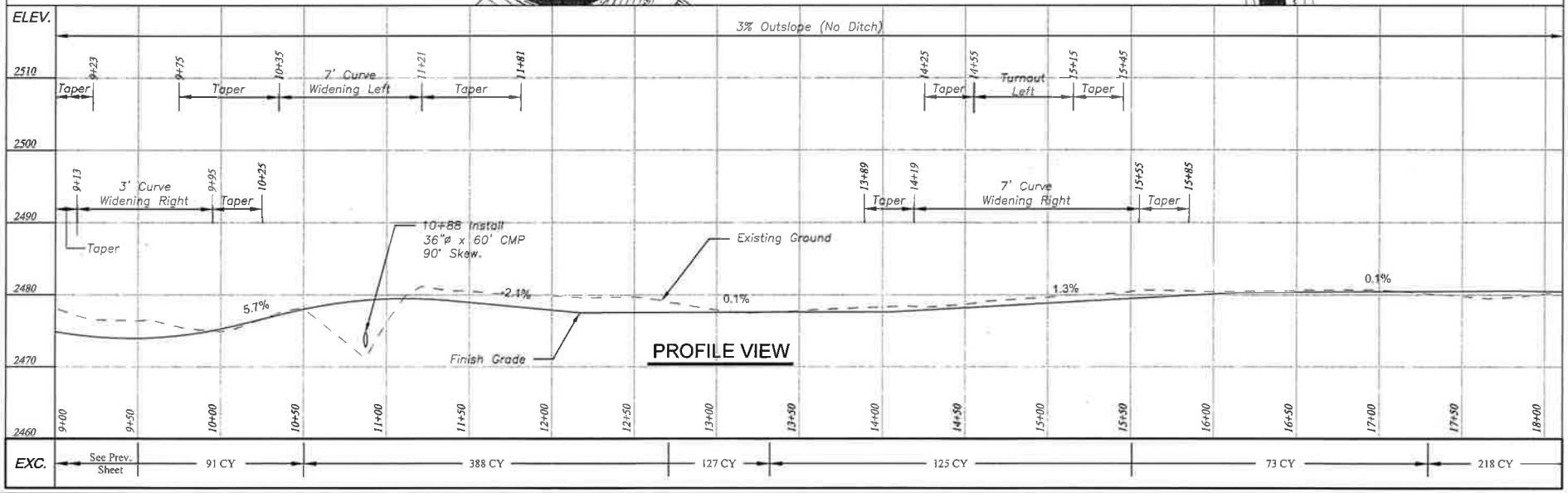
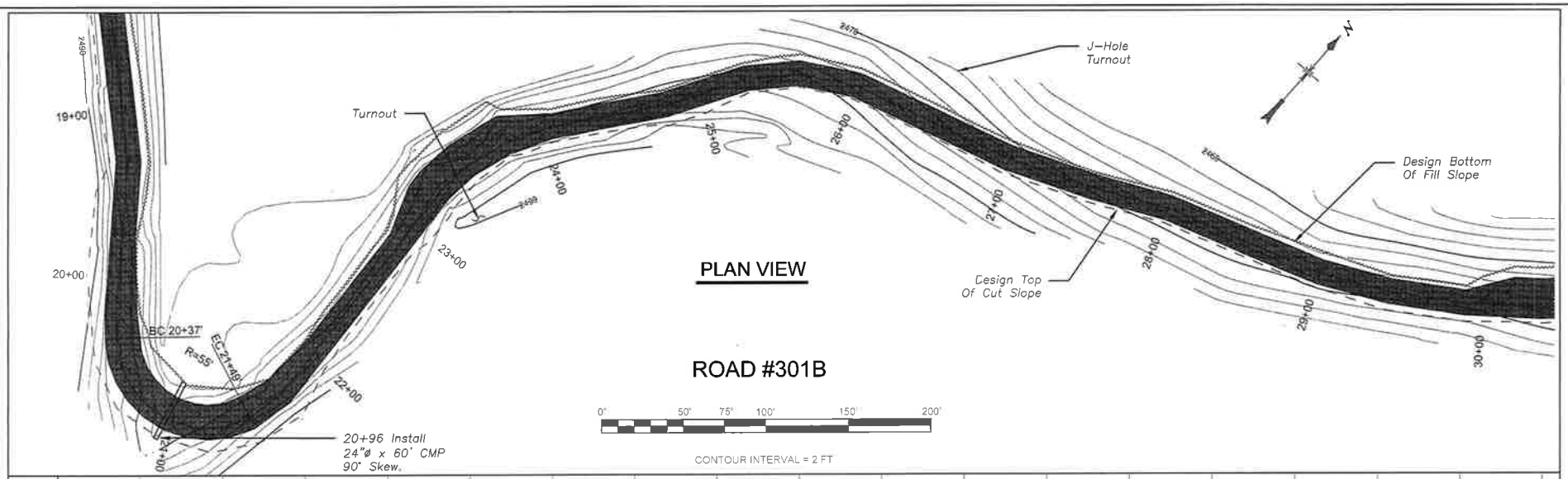
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (1 OF 11) | NFSR 301B | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 13 OF 33 |

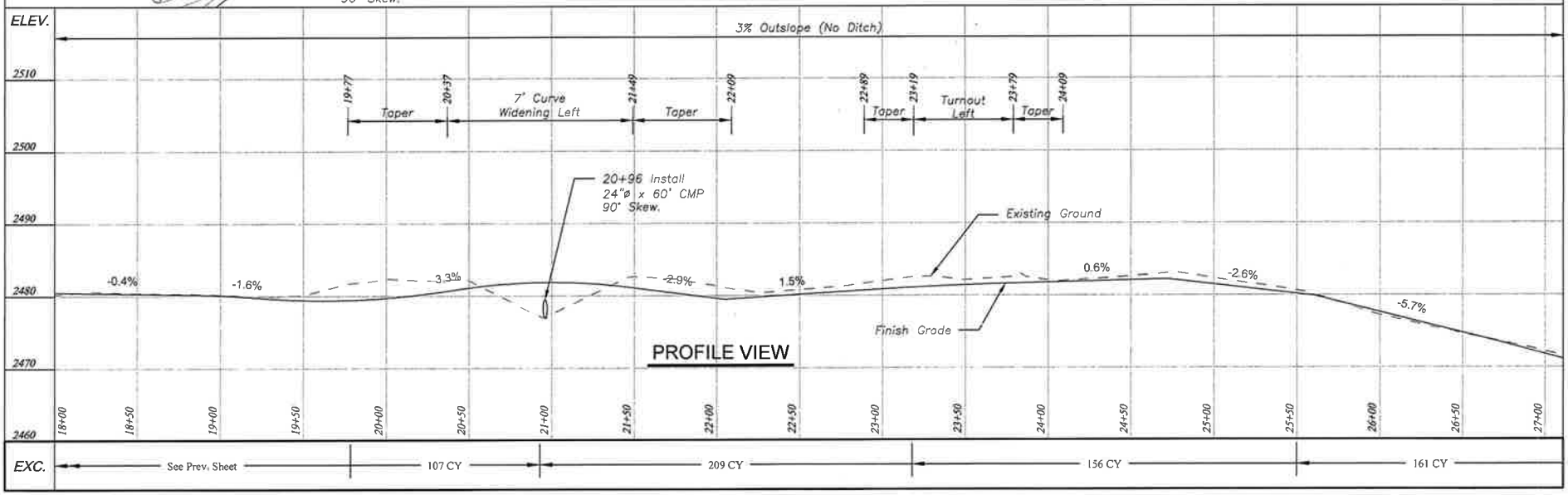
# ROAD #301B




| | | | | | |
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (2 OF 11) | NFSR 301B | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 14 OF 33 |

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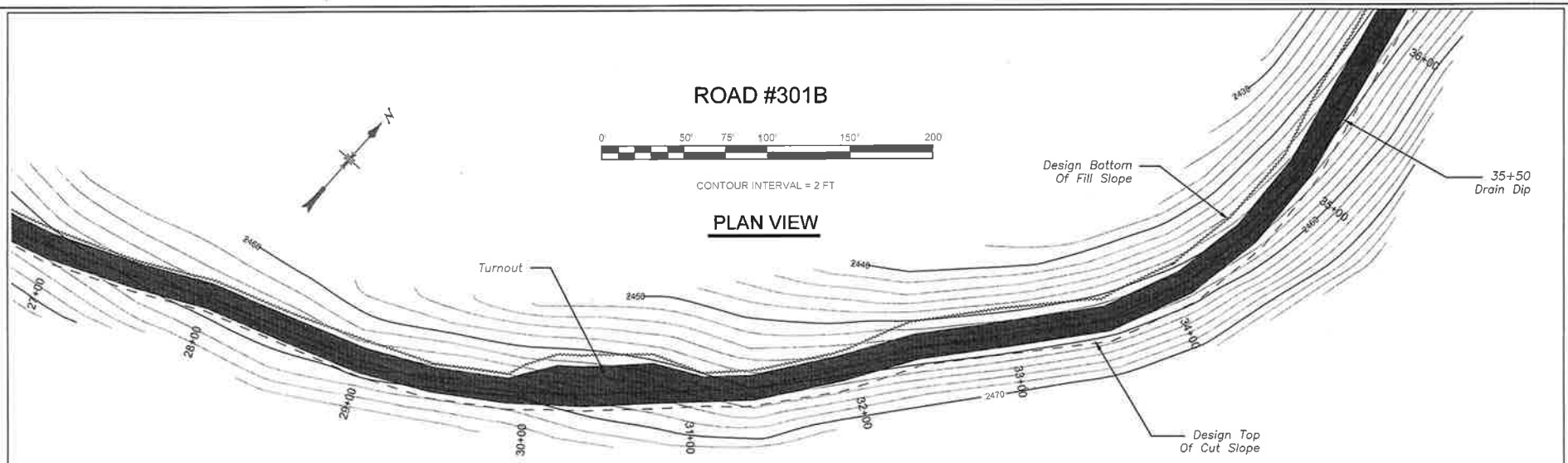
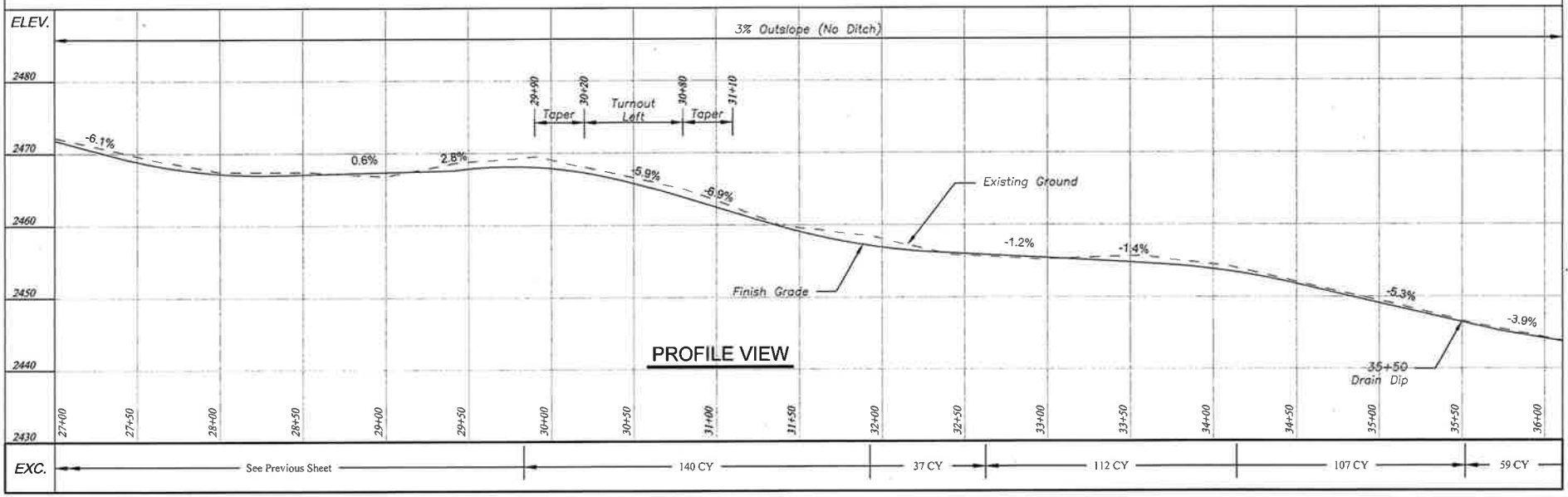
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (3 OF 11) | NFSR 301B | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 15 OF 33 |

# ROAD #301B

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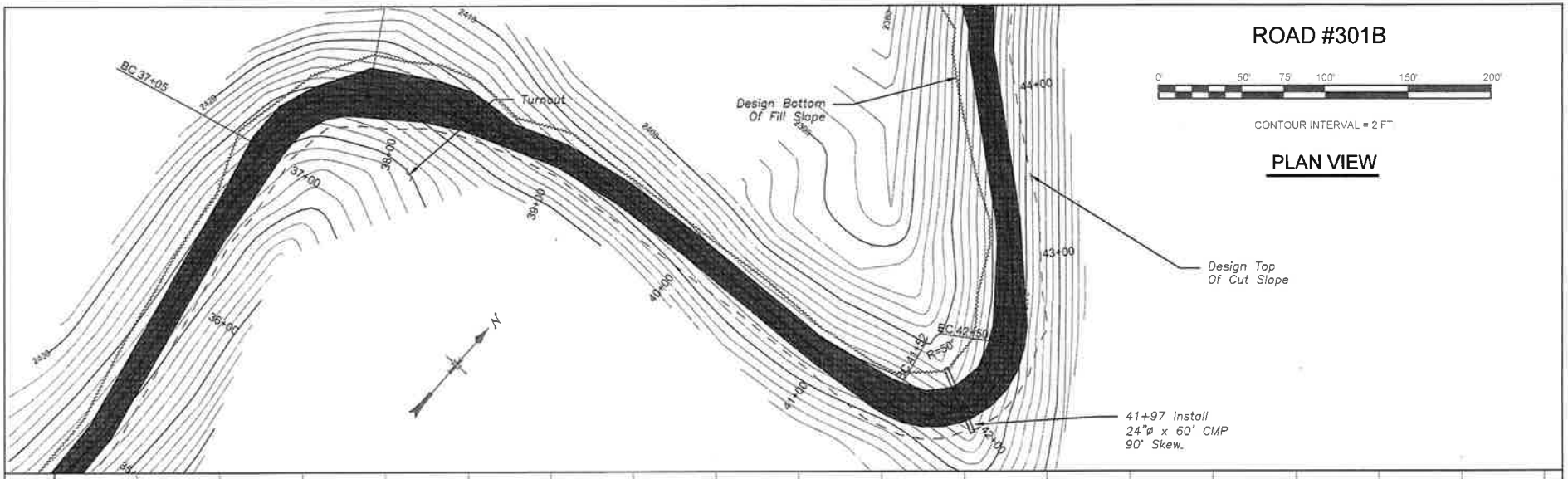
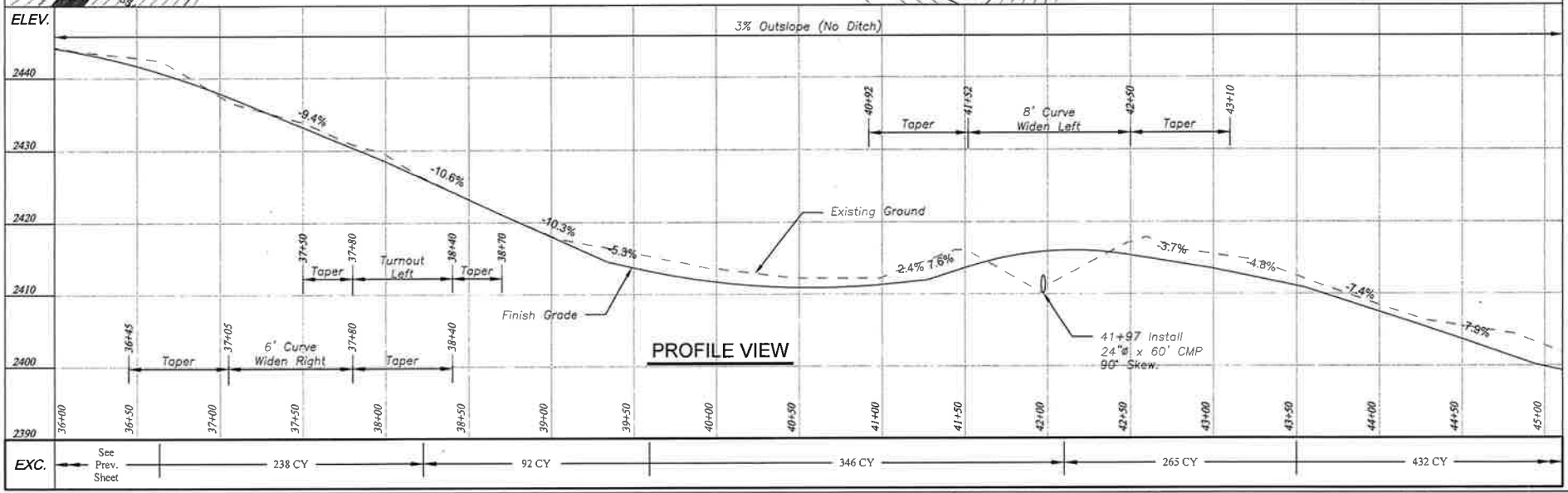
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (4 OF 11) | NFSR 301B | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 16 OF 33 |

# ROAD #301B

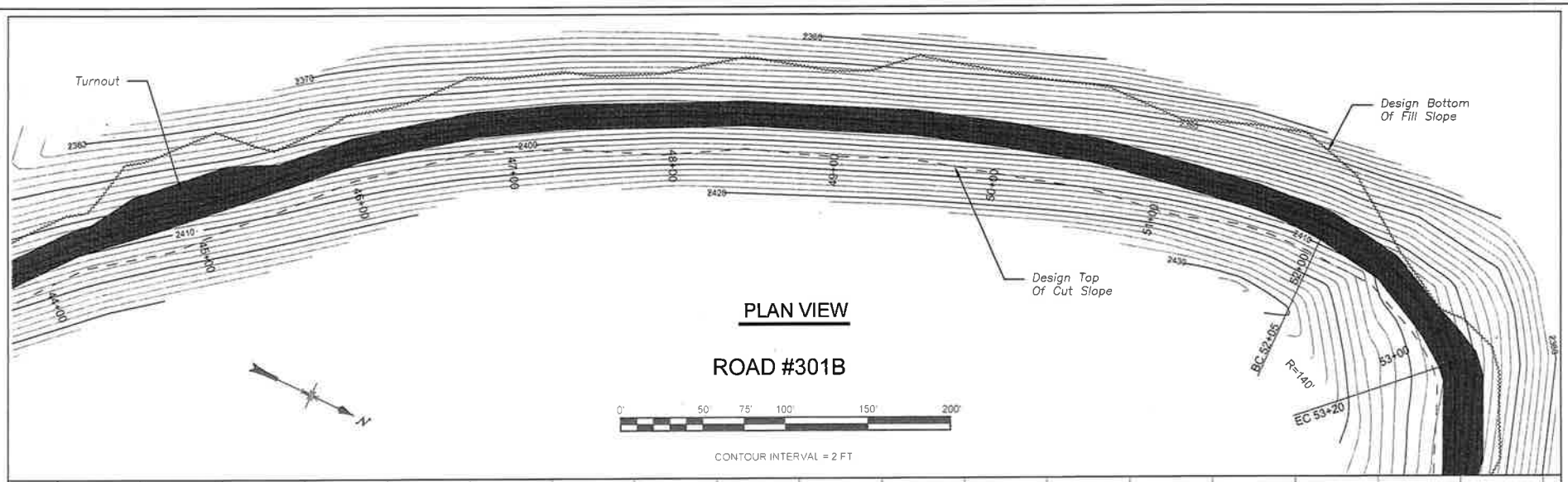


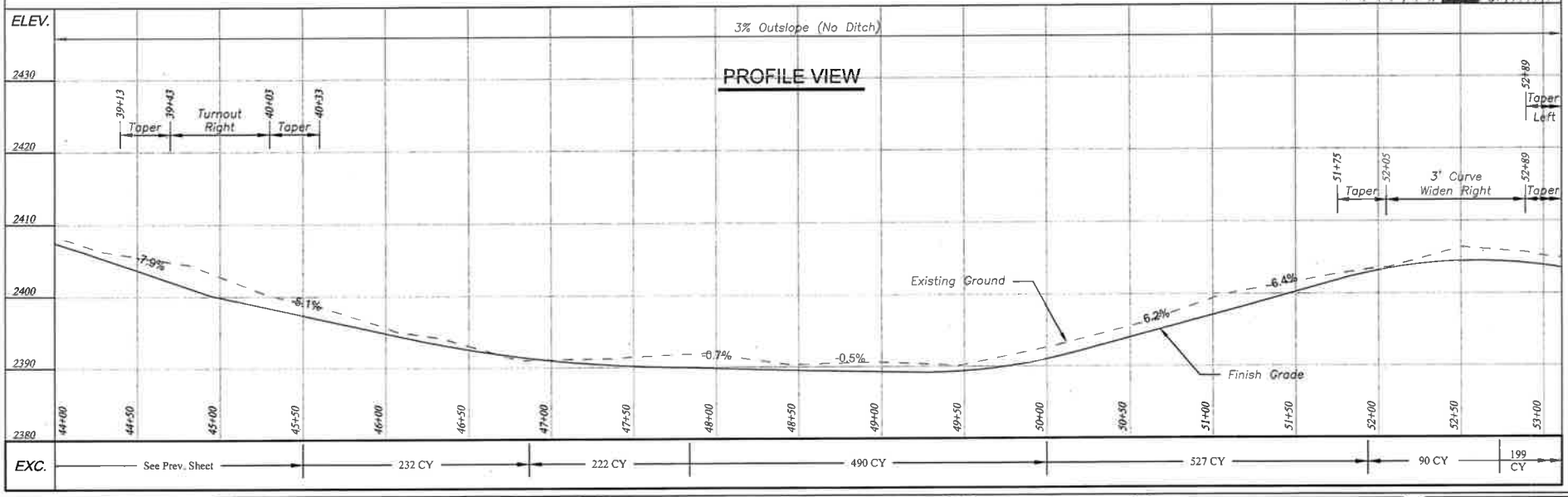

## PLAN VIEW




## PROFILE VIEW

| | | | | | |
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (5 OF 11) | NFSR 301B | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 17 OF 33 |

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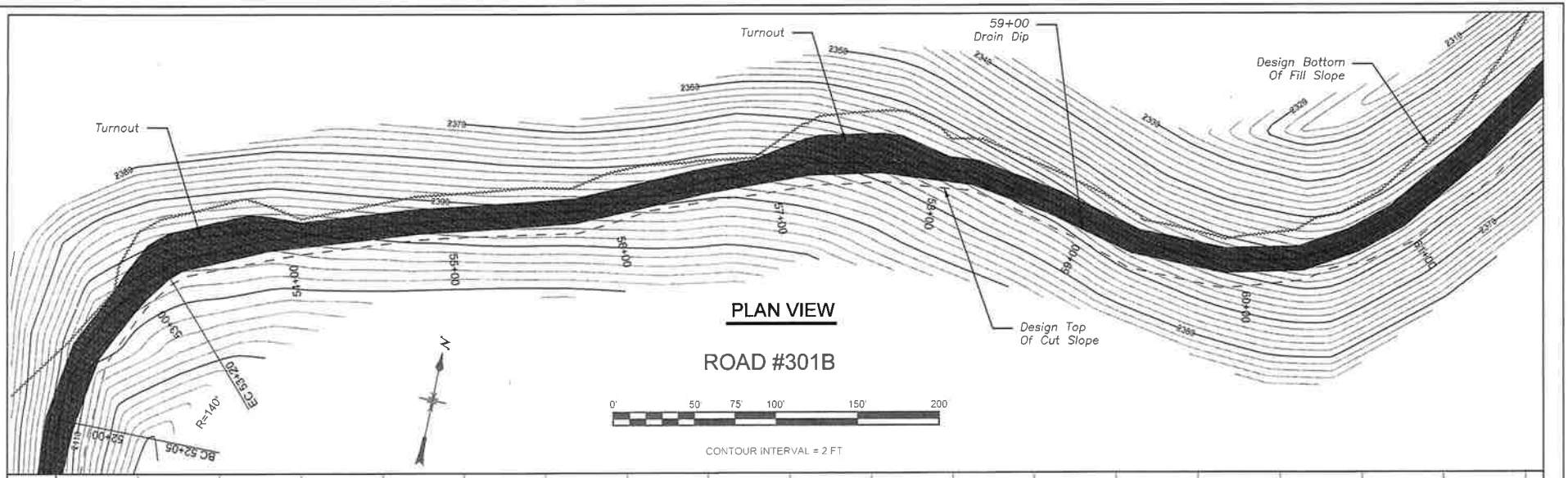
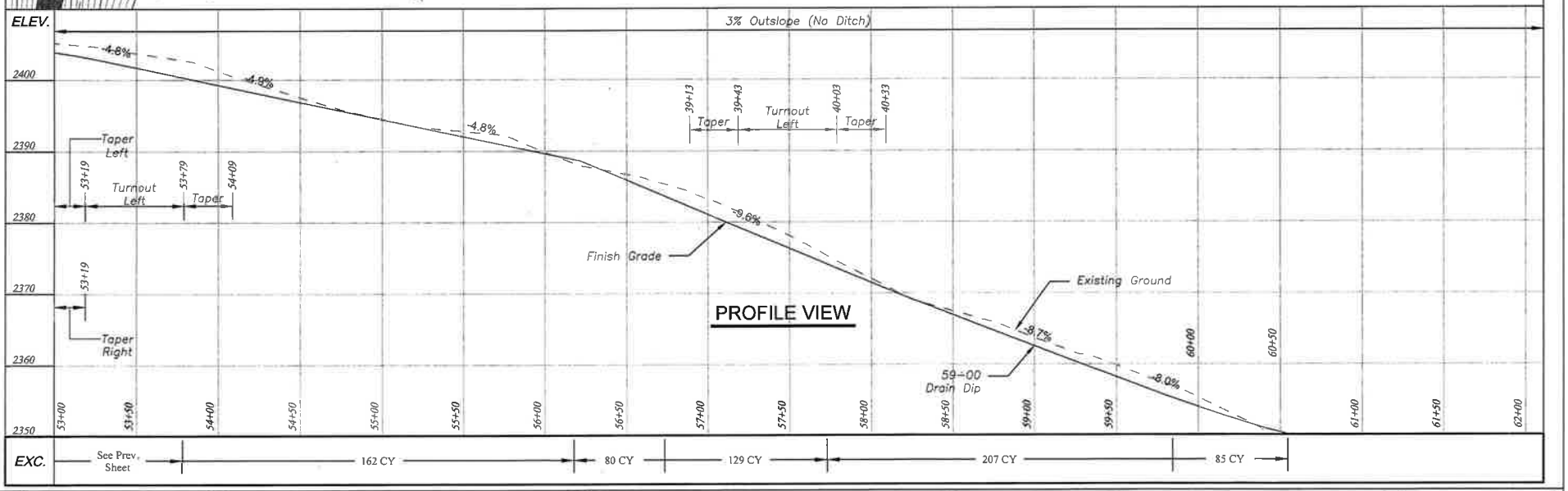
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (6 OF 11) | NFSR 301B | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 18 OF 33 |

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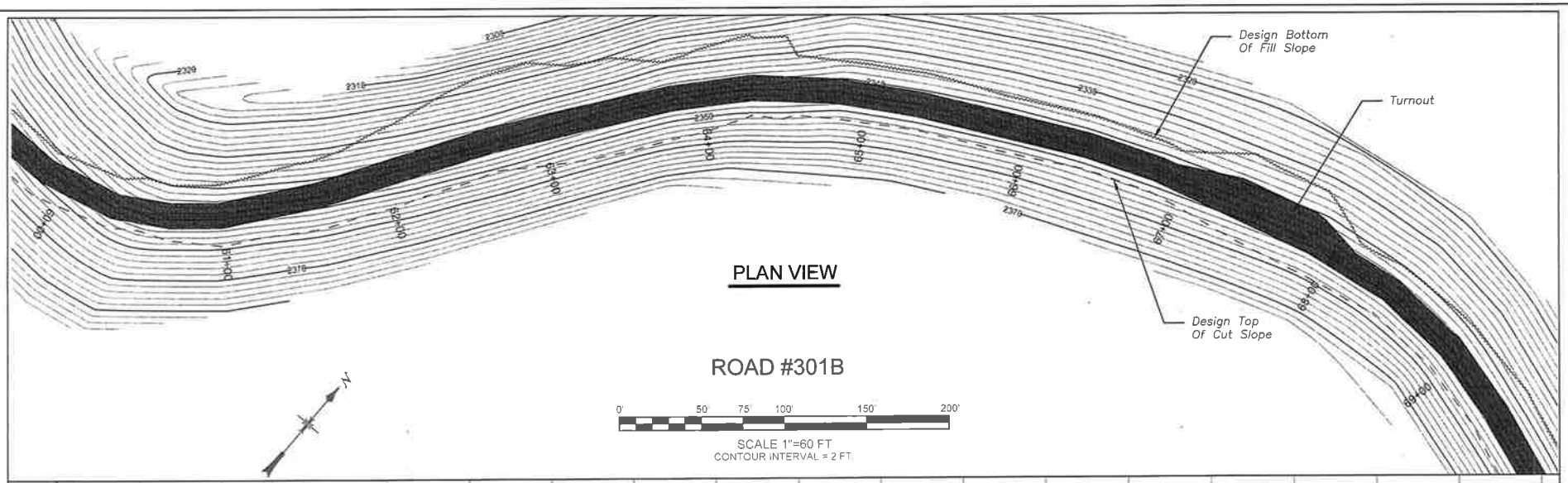
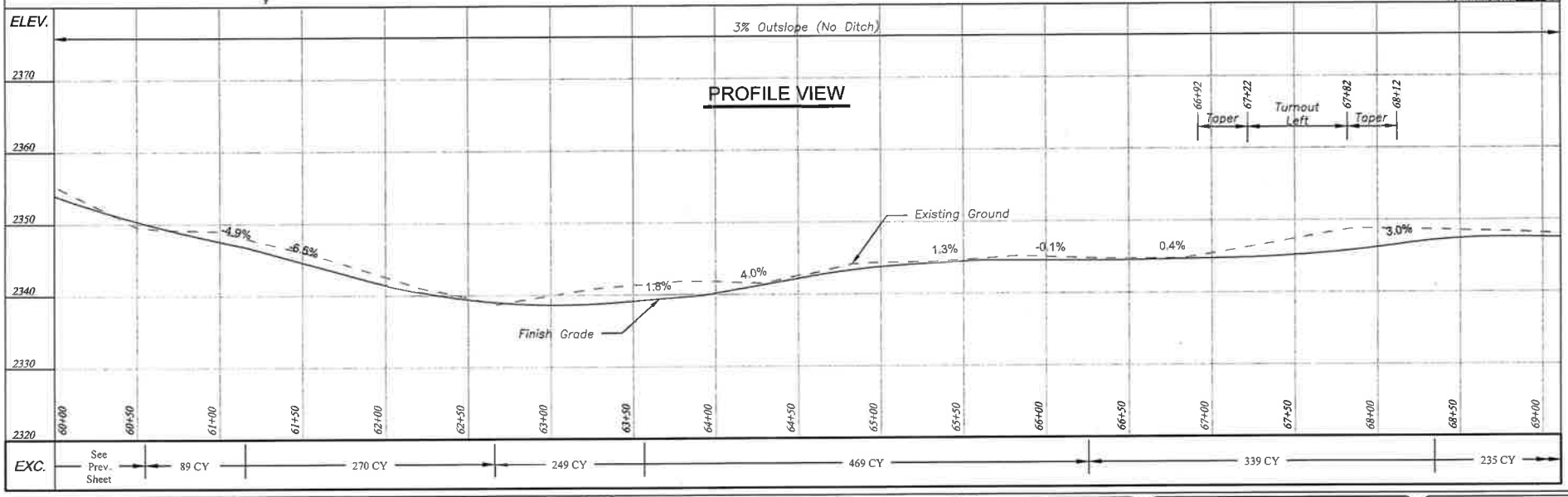
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE<br>FOREST SERVICE<br>KOOTENAI NATIONAL FOREST<br>CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (7 OF 11) | NFSR<br>301B | DESIGNED: C. STEEN DATE: 2/2015<br>CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO.<br>19 OF 33 |

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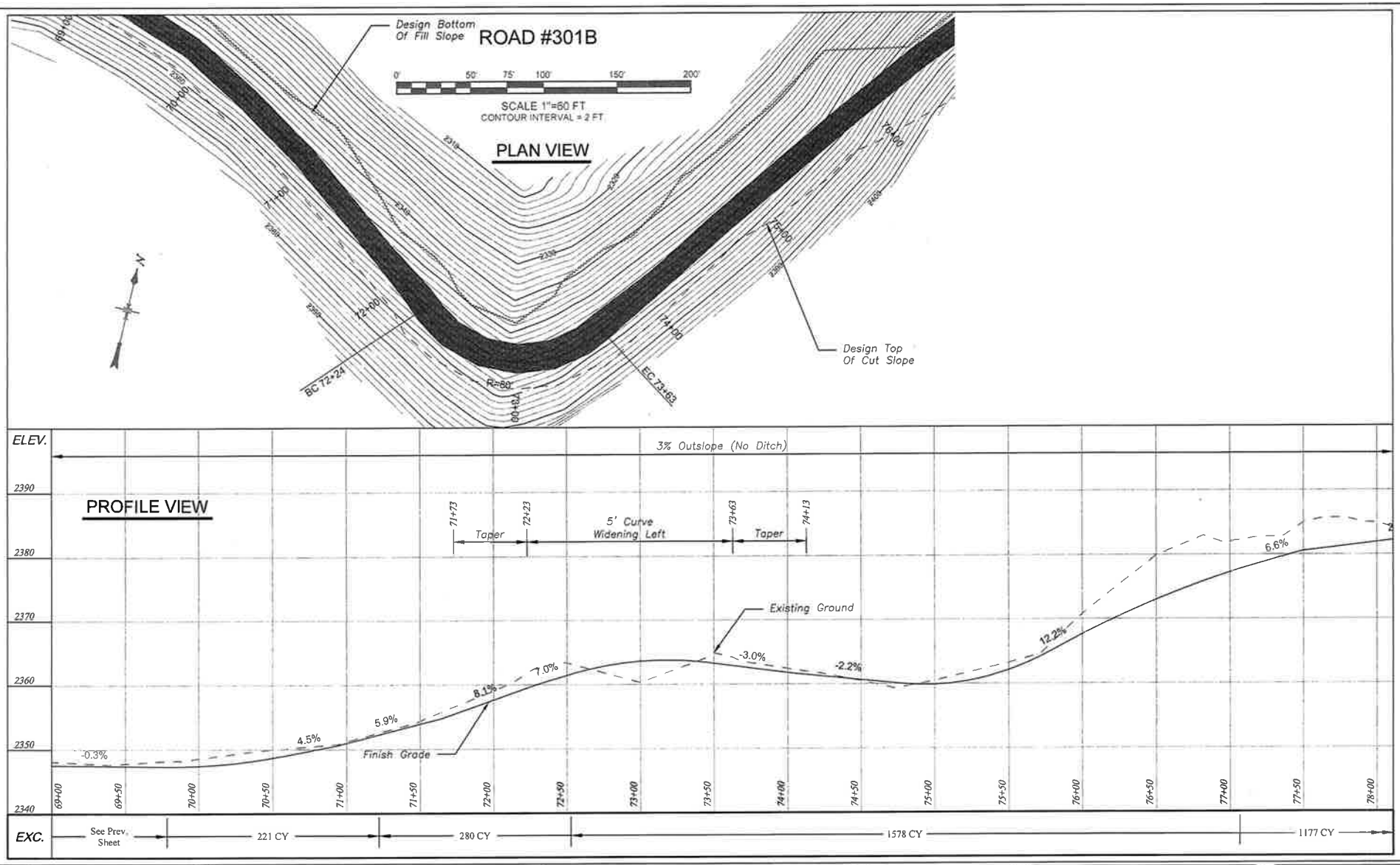
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (8 OF 11) | NFSR 301B | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 20 OF 33 |




U.S. DEPARTMENT OF AGRICULTURE
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KOOTENAI NATIONAL FOREST
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ROAD 301B - PLAN & PROFILE (9 OF 11)

NFSR 301B

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CHECKED: K. MEREDITH DATE: 2/2015

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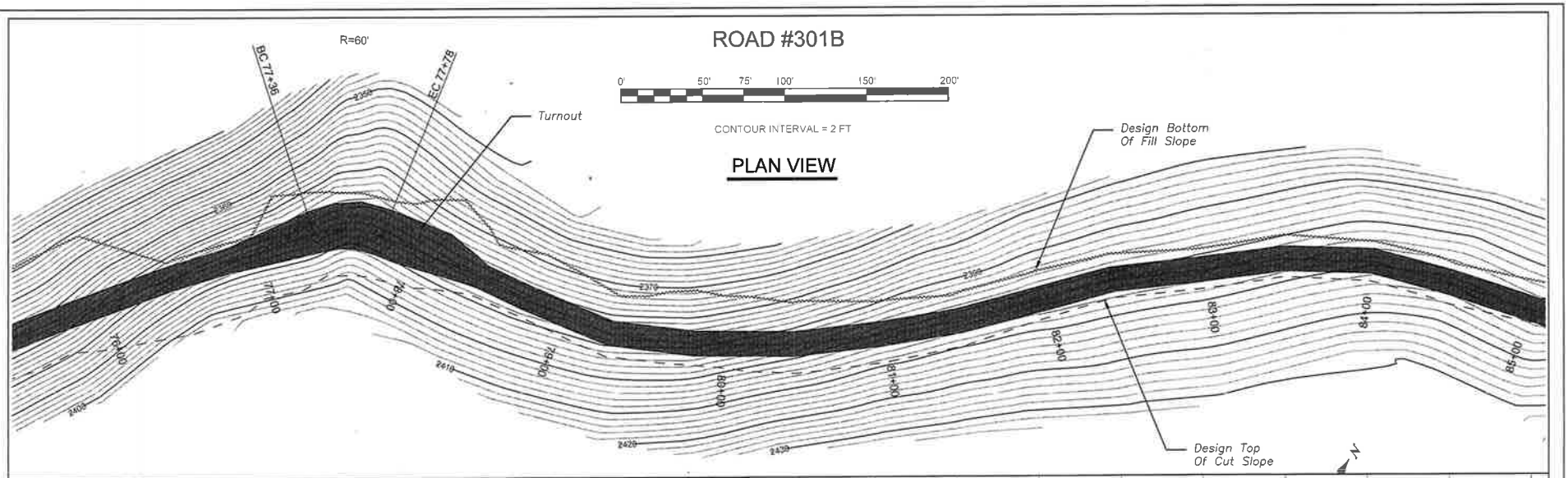
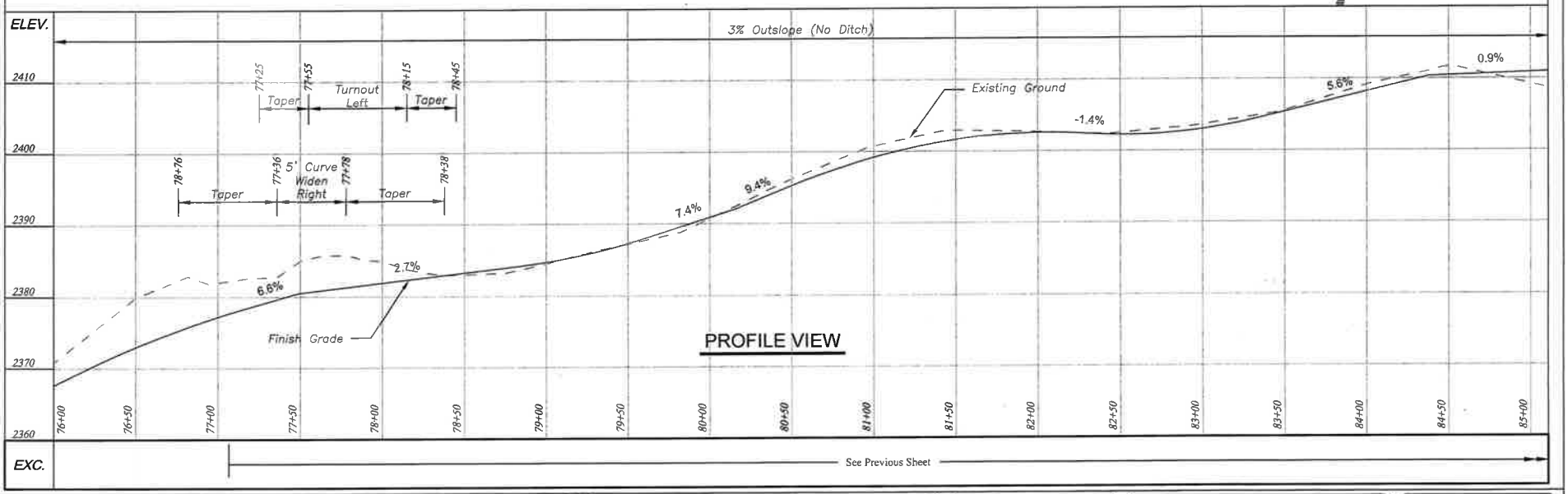
# ROAD #301B

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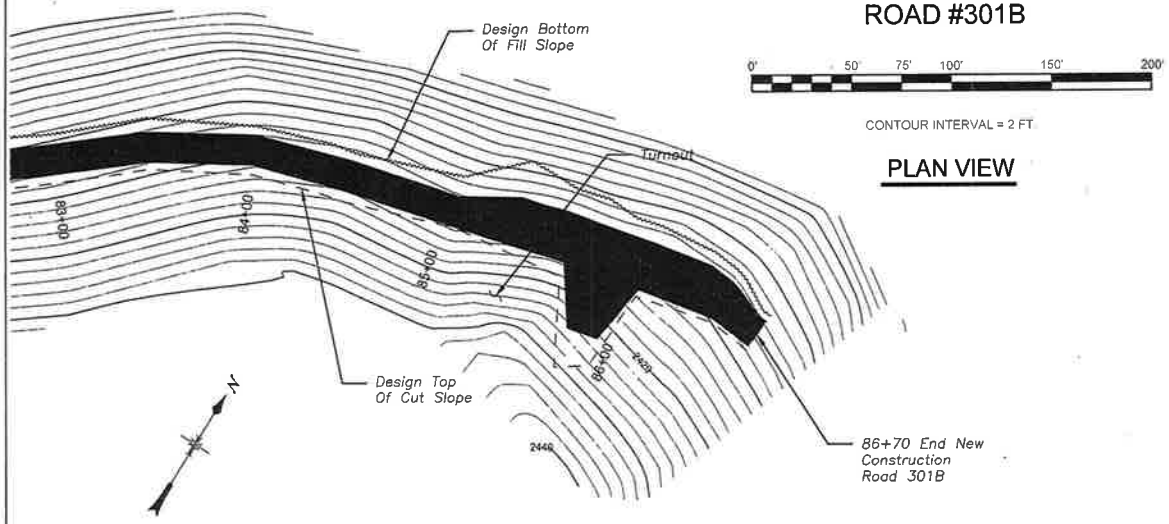
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 301B - PLAN & PROFILE (10 OF 11) | NFSR 301B | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 22 OF 33 |

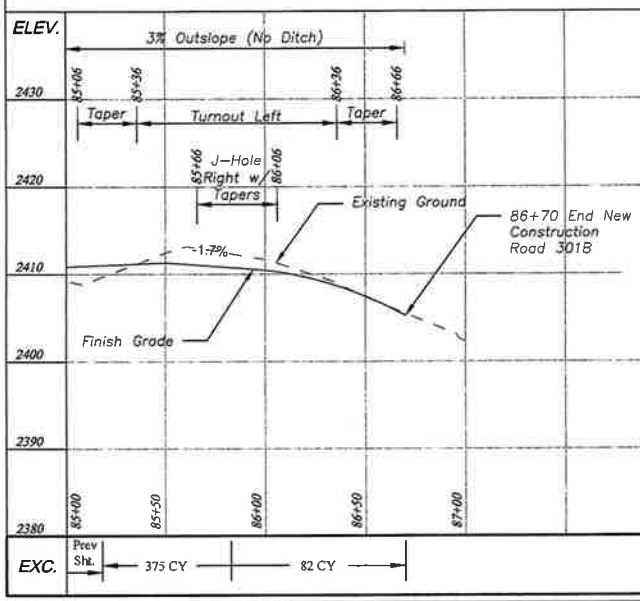
# ROAD #301B




0' 50' 75' 100' 150' 200'

CONTOUR INTERVAL = 2 FT

## PLAN VIEW




## PROFILE VIEW

### ESTIMATED QUANTITIES #301B

| | | | |
|---|---|---|---|
| 15201 | CONSTRUCTION SURVEY & STAKING | 1.64 | MILE |
| 20101 | CLEARING & GRUBBING | 4.57 | ACRE |
| 20401 | EXCAVATION & EMBANKMENT | 12,539 | CY |
| 20402 | EXCAVATION (DRAIN DIP) | 2 | EA |
| 60224 | CULVERT 24"Ø CSP | 120 | LF |
| 60236 | CULVERT 36"Ø CSP | 60 | LF |
| 60248 | CULVERT 48"Ø CSP | 60 | LF |
| 62501 | SEEDING, DRY METHOD | 4.70 | ACRE |
| 65001 | METAL GATE | 1 | EA |

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ROAD 301B - PLAN & PROFILE (11 OF 11)

NFSR 301B

DESIGNED: C. STEEN DATE: 2/2015

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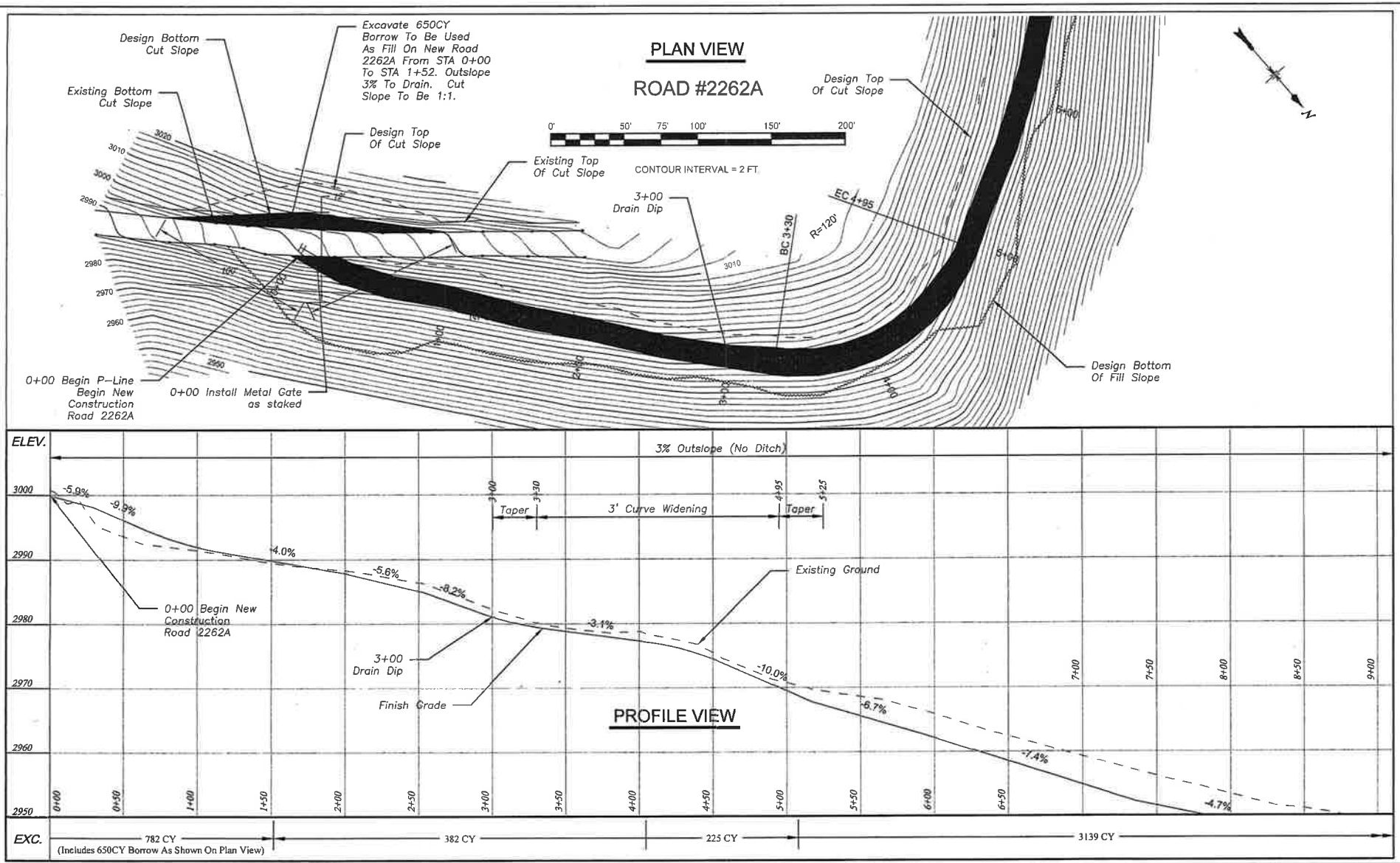
SHEET NO. 23 OF 33

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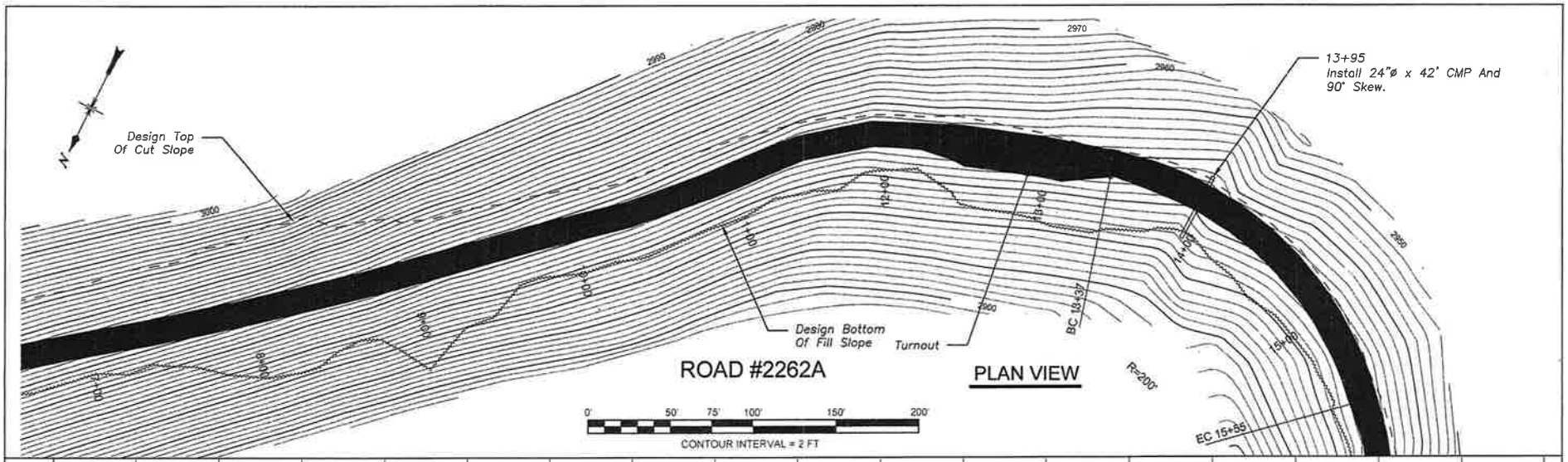
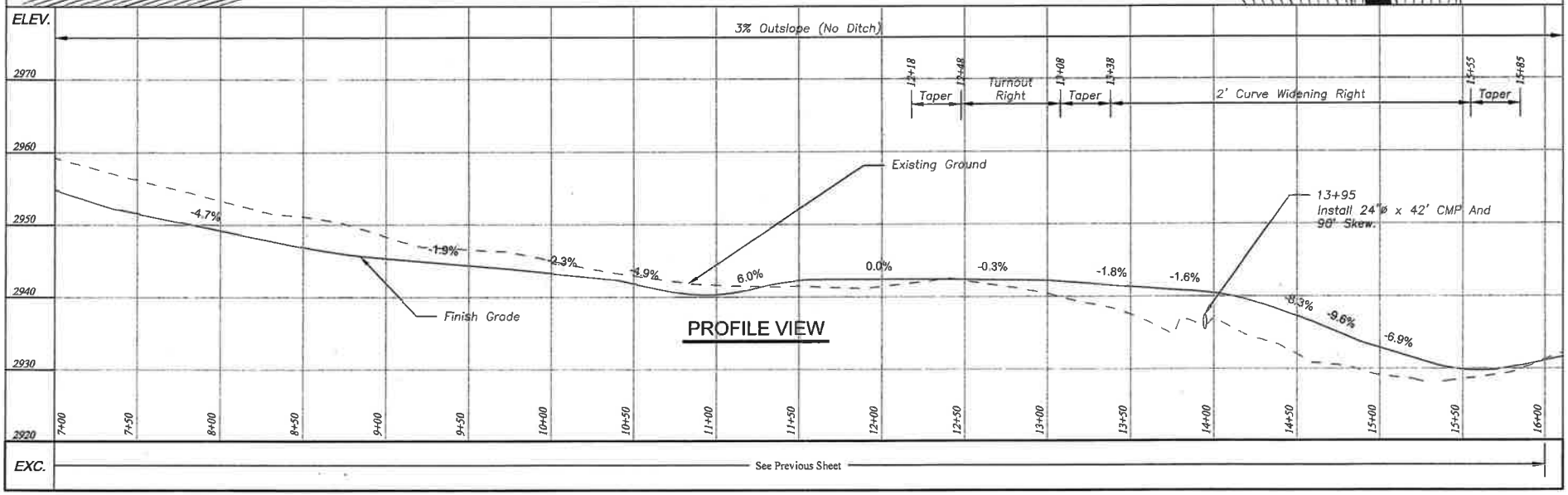
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 2262A - PLAN & PROFILE (1 OF 5) | NFSR 2262A | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 24 OF 33 |



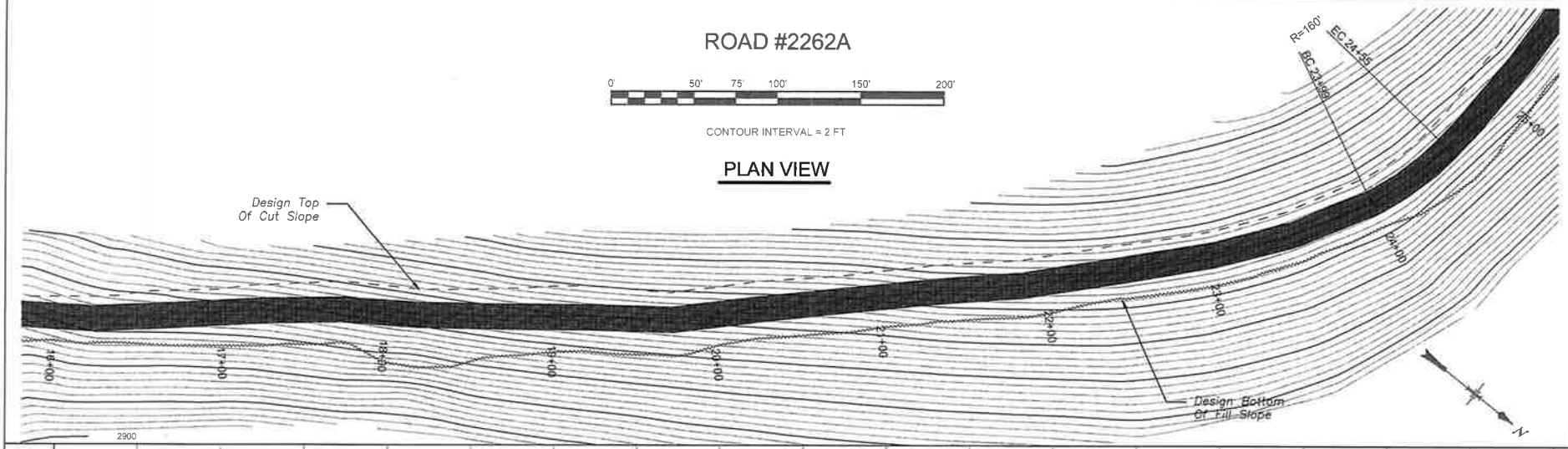

| | | | | |
|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE<br>FOREST SERVICE<br>KOOTENAI NATIONAL FOREST<br>CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 2262A - PLAN & PROFILE (2 OF 5) | NFSR<br>2262A | DESIGNED: C. STEEN DATE: 2/2015<br>CHECKED: K. MEREDITH DATE: 2/2015 |

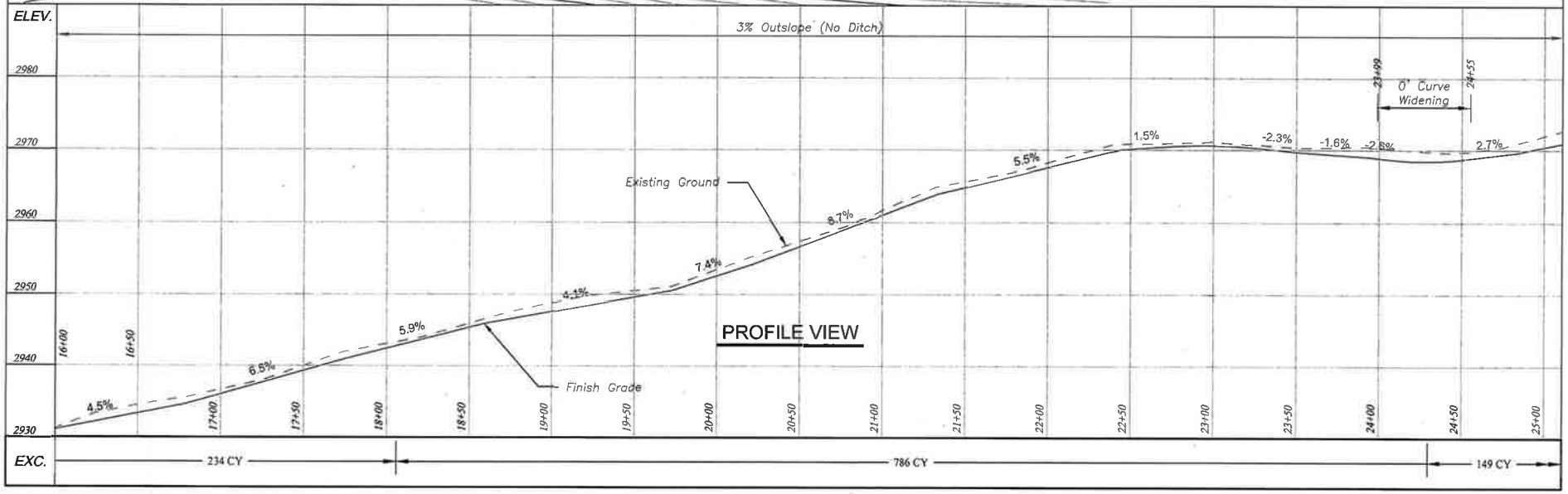
# ROAD #2262A

0' 50' 75' 100' 150' 200'

CONTOUR INTERVAL = 2 FT

## PLAN VIEW

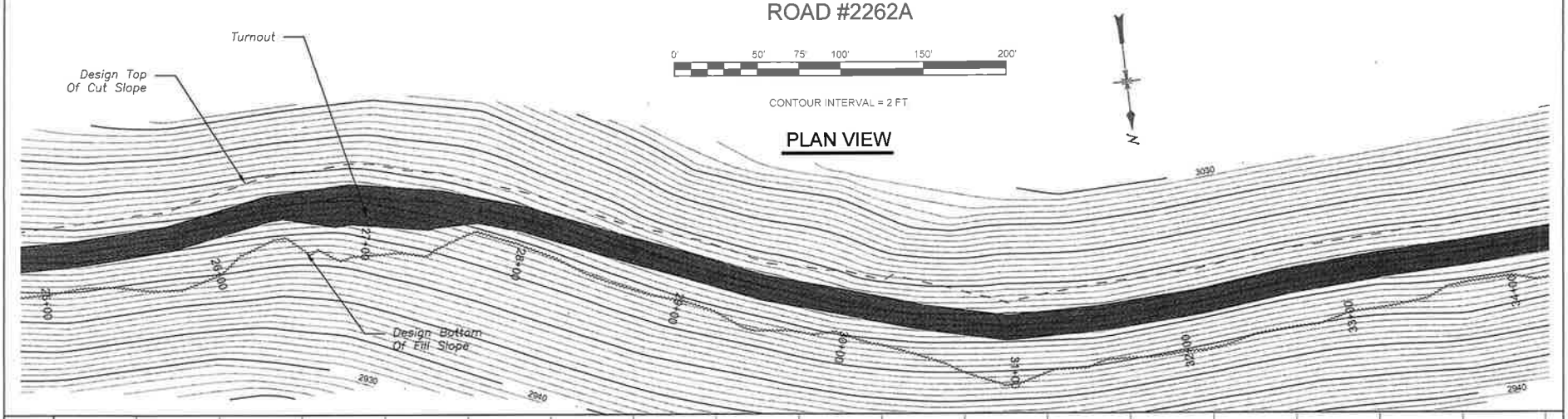


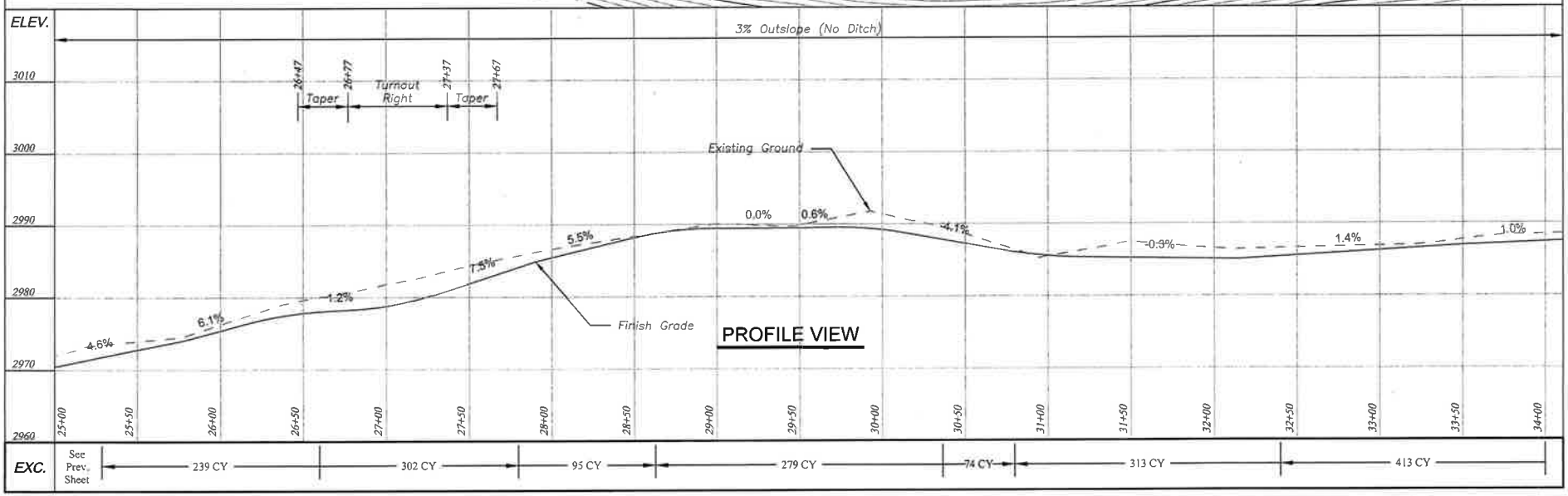




## PROFILE VIEW

| | | | | | |
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE<br>FOREST SERVICE<br>KOOTENAI NATIONAL FOREST<br>CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 2262A - PLAN & PROFILE (3 OF 5) | NFSR<br>2262A | DESIGNED: C. STEEN DATE: 2/2015<br>CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO.<br>26 OF 33 |

# ROAD #2262A

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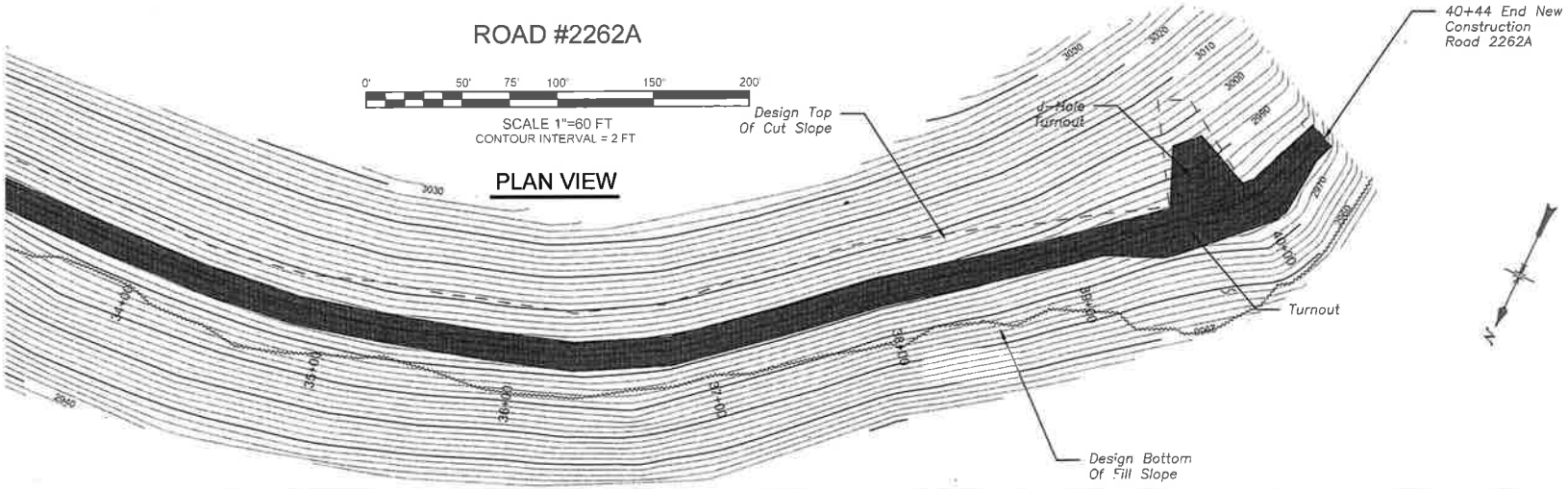
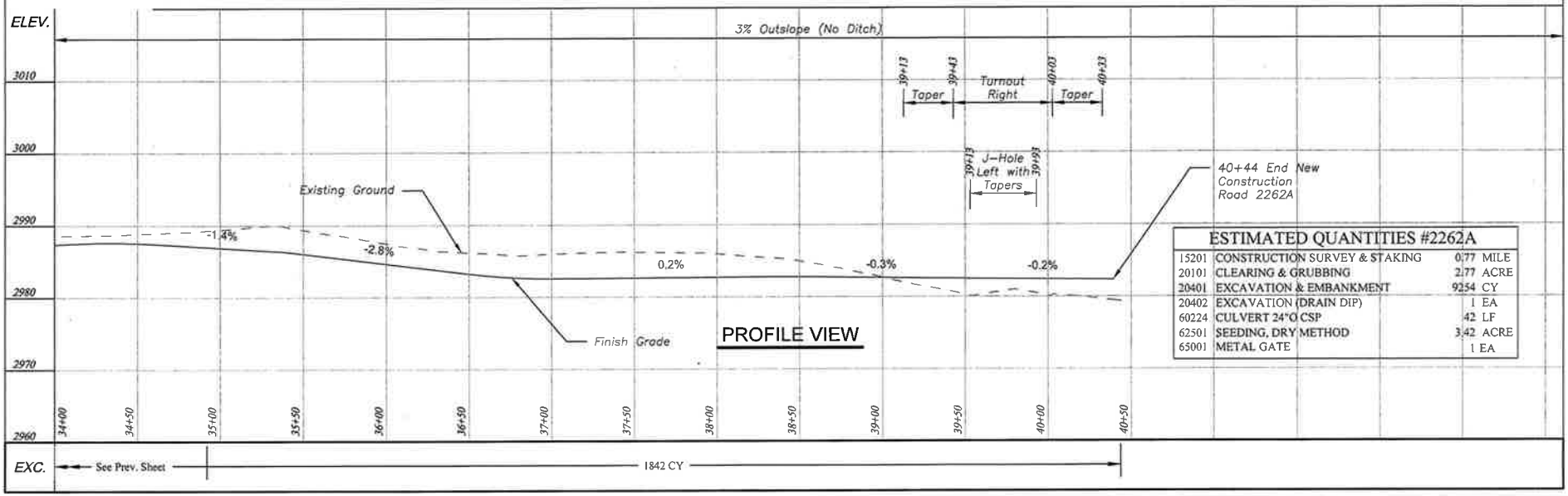
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | ROAD 2262A - PLAN & PROFILE (4 OF 5) | NFSR 2262A | DESIGNED: C. STEEN DATE: 2/2015 CHECKED: K. MEREDITH DATE: 2/2015 | SHEET NO. 27 OF 33 |

# ROAD #2262A




## ESTIMATED QUANTITIES #2262A

| | | |
|---|---|---|
| 15201 | CONSTRUCTION SURVEY & STAKING | 0.77 MILE |
| 20101 | CLEARING & GRUBBING | 2.77 ACRE |
| 20401 | EXCAVATION & EMBANKMENT | 9254 CY |
| 20402 | EXCAVATION (DRAIN DIP) | 1 EA |
| 60224 | CULVERT 24"O CSP | 42 LF |
| 62501 | SEEDING, DRY METHOD | 3.42 ACRE |
| 65001 | METAL GATE | 1 EA |

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ROAD 2262A - PLAN & PROFILE (5 OF 5)

NFSR 2262A

DESIGNED: C. STEEN DATE: 2/2015

CHECKED: K. MEREDITH DATE: 2/2015

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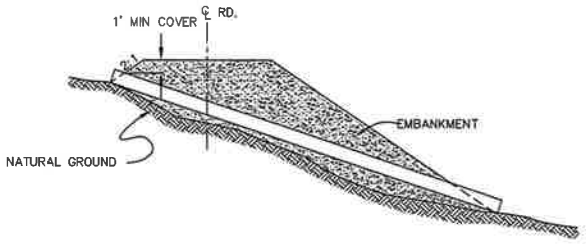
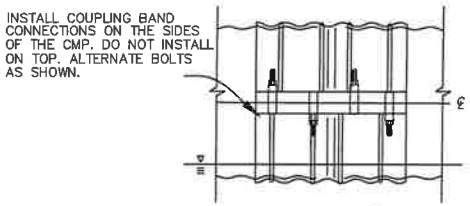
## TYPICAL INSTALLATION IN EMBANKMENT

NO SCALE



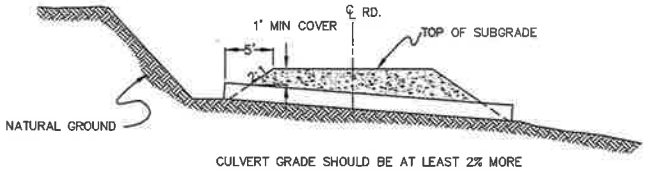

## CMP COUPLING BAND DETAILS

NO SCALE




## TYPICAL DITCH RELIEF INSTALLATION

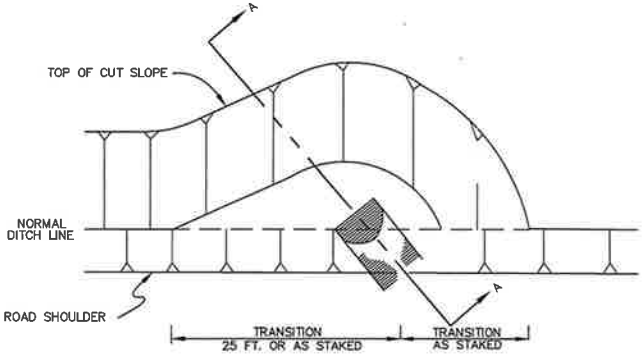
NO SCALE




CULVERT GRADE SHOULD BE AT LEAST 2% MORE THAN DITCH GRADE. SKEW CULVERT 30° UNLESS OTHERWISE NOTED.

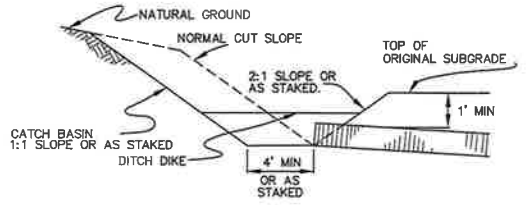
## DITCH RELIEF CATCH BASIN TYPICAL SECTION

NO SCALE



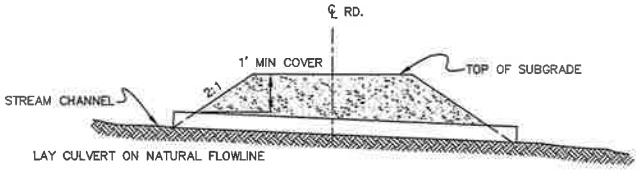

## SECTION A - A

NO SCALE




## TYPICAL INSTALLATION IN STREAM CHANNEL

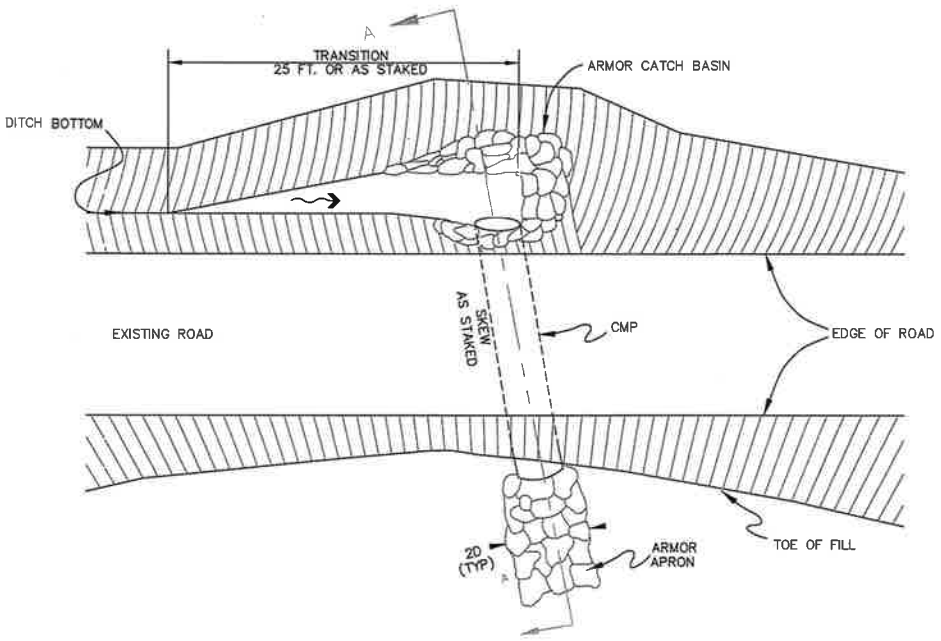
NO SCALE




| | | | | | |
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | CULVERT INSTALLATION DETAILS | NFSR ALL | DESIGNED: J. KOSKELA DATE: 2/2015 CHECKED: N. KEGEL DATE: 2/2015 | SHEET NO. 29 OF 33 |

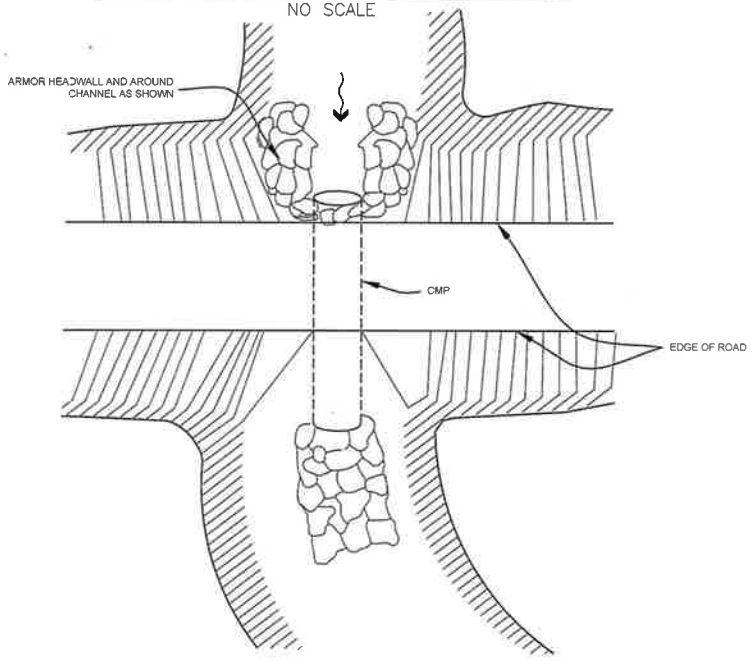
## DITCH RELIEF (PLAN VIEW)

NO SCALE



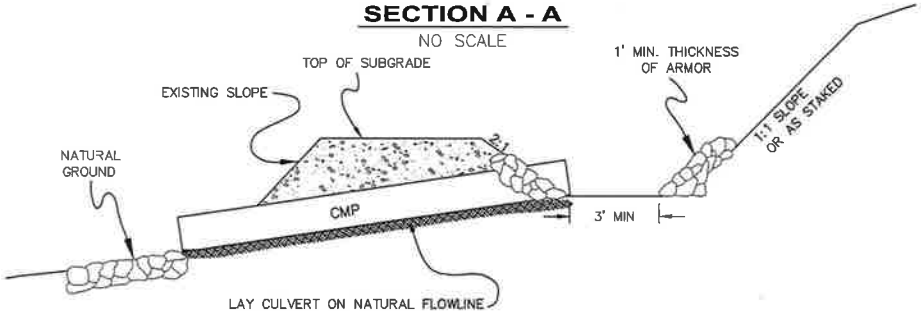

## EPHEMERAL DRAW (PLAN VIEW)

NO SCALE




## SECTION A - A

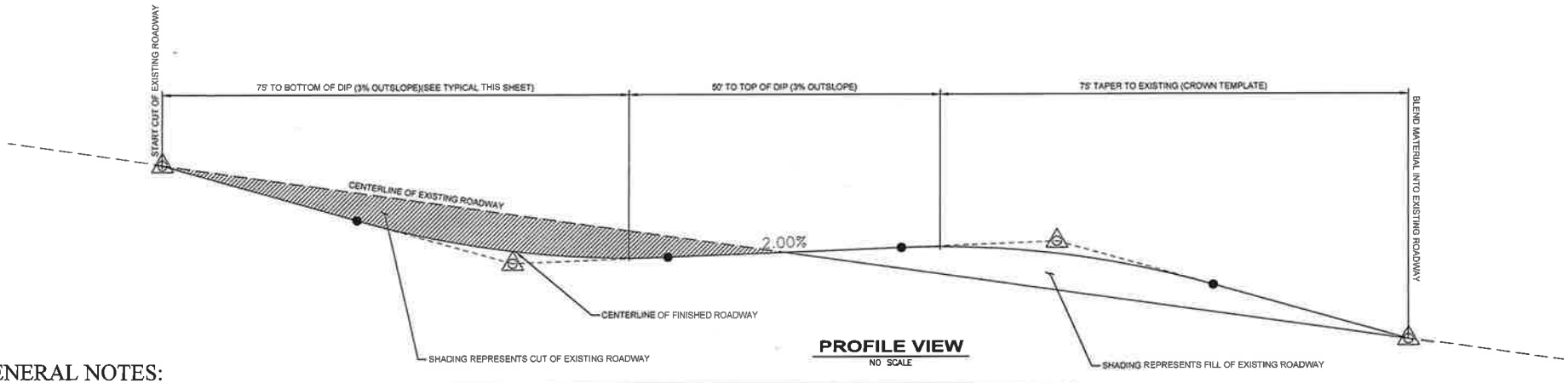
NO SCALE




CULVERT ARMORING & INSTALLATION DETAILS:

1. SIZE CLASS AND QUANTITIES OF RIPRAP ARE SHOWN ON THE WORKLISTS OR AS STAKED BY THE C.O.
2. ARMORING MATERIAL MAY BE OBTAINED AT LOCATIONS SHOWN ON THE PLANS, COLLECTED ALONG THE ROAD, OR CONSERVED DURING EXCAVATION.
3. CULVERT INLETS AND OUTLETS SHALL BE CLEANED PRIOR TO PLACING RIPRAP.
4. A TYPICAL INSTALLATION FOR A DITCH RELIEF CULVERT IS SHOWN ON THE PREVIOUS SHEET. A CULVERT INSTALLATION IN AN EPHEMERAL DRAW DOES NOT REQUIRE CONSTRUCTION OF A CATCH BASIN.
5. UNLESS OTHERWISE STATED, CULVERT THICKNESS SHALL BE MINIMUM OF 0.064" (18 GAGE).
6. COUPLING BANDS SHALL BE TORQUED TO 25' TO 30'-POUNDS. INSPECT FOR ADEQUATE SEATING OF THE BAND IN THE CORRUGATIONS. WHILE TIGHTENING THE BOLTS, ADJUST THE BAND BY TAPPING TO SEAT THE BAND IN THE CORRUGATIONS.
7. REFER TO THE TYPICALS ON THE WORKLIST SHEETS FOR ADDITIONAL ARMORING DETAILS.

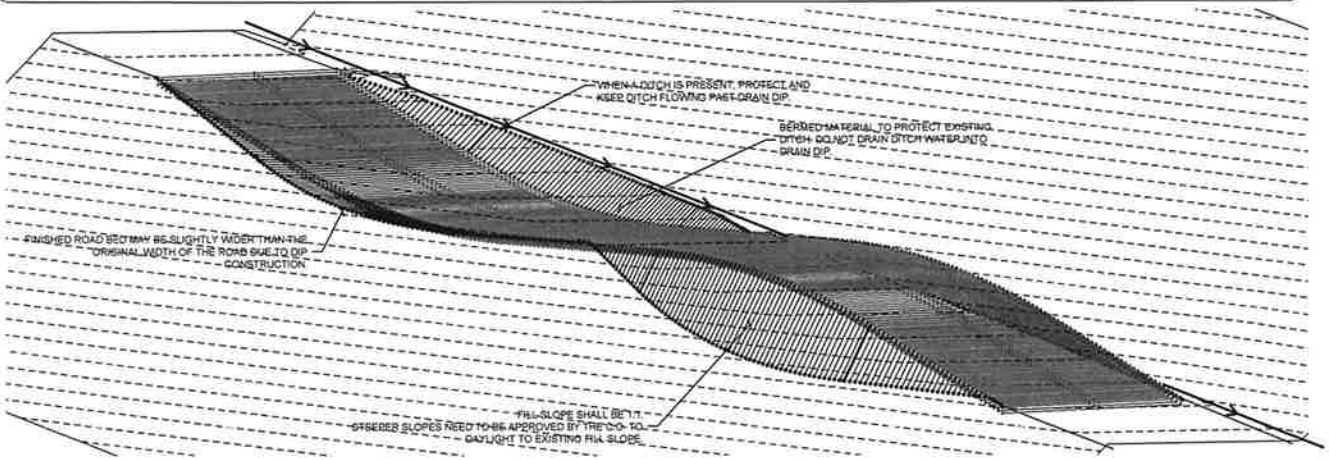
| | | | | | |
|---|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | CULVERT ARMORING DETAILS | NFSR ALL | DESIGNED: J. KOSKELA DATE: 2/2015 CHECKED: N. KEGEL DATE: 2/2015 | SHEET NO. 30 OF 33 |



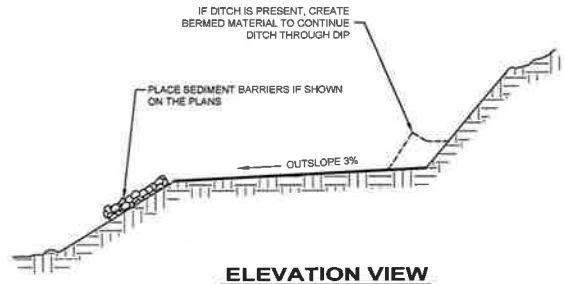

**PROFILE VIEW**
NO SCALE

## GENERAL NOTES:

1. DIPS SHALL BE CONSTRUCTED IN THE SUBGRADE PRIOR TO THE PLACEMENT OF ANY BASE OR SURFACE COURSE.
2. THE ELEVATION TOLERANCE SHALL BE ±0.2 FEET.
3. THE LOCATION AND TYPE OF DRAIN DIP SHALL BE SHOWN ON THE PLANS OR DESIGNATED ON THE GROUND BY THE ENGINEER.
4. WHERE DIPS ARE CONSTRUCTED IN DITCH SECTIONS AND DIP IS STAKED TO DRAIN TO THE OUTSLOPE SHOULDER, ENSURE THAT THE DIP DOES NOT DRAIN THE DITCH.
5. SUITABLE AND EXCESS MATERIAL GENERATED DURING EXCAVATION, SHALL BE UNIFORMLY SPREAD ALONG THE ADJACENT ROADBED AND NOT SIDE CAST. DIPS SHALL BE CONSTRUCTED SO THAT THE CUT MATERIAL IS SUFFICIENT ENOUGH FOR FILL MATERIAL ON THE SAME DIP.
6. WHERE SHOWN IN THE PLANS TO DRAIN DIP TO DITCH, THE SUBGRADE SHALL BE INSLOPED 3-5% AT THE LOW POINT OF THE DIP.
7. LENGTH AND DEPTH OF DRAIN DIP IS FOR 14' WIDE ROADBED. WIDER ROADS WILL REQUIRE ADDED LENGTH AND DEPTH. MORE EXCAVATION IS REQUIRED ON DIPS PLANNED ON STEEPER SLOPES. THE STEEPER THE SLOPE THE MORE VOLUME IS REQUIRED TO CONSTRUCT.



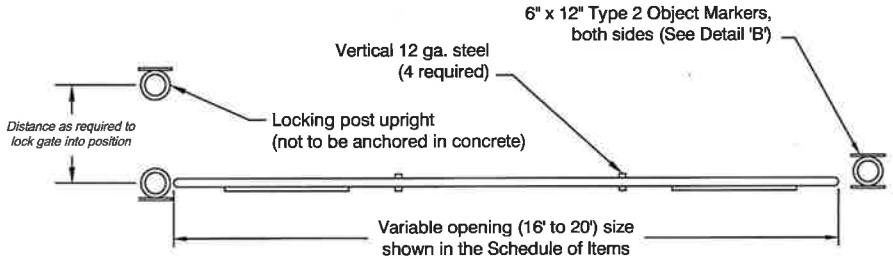

**DIMENSIONAL VIEW**
NO SCALE



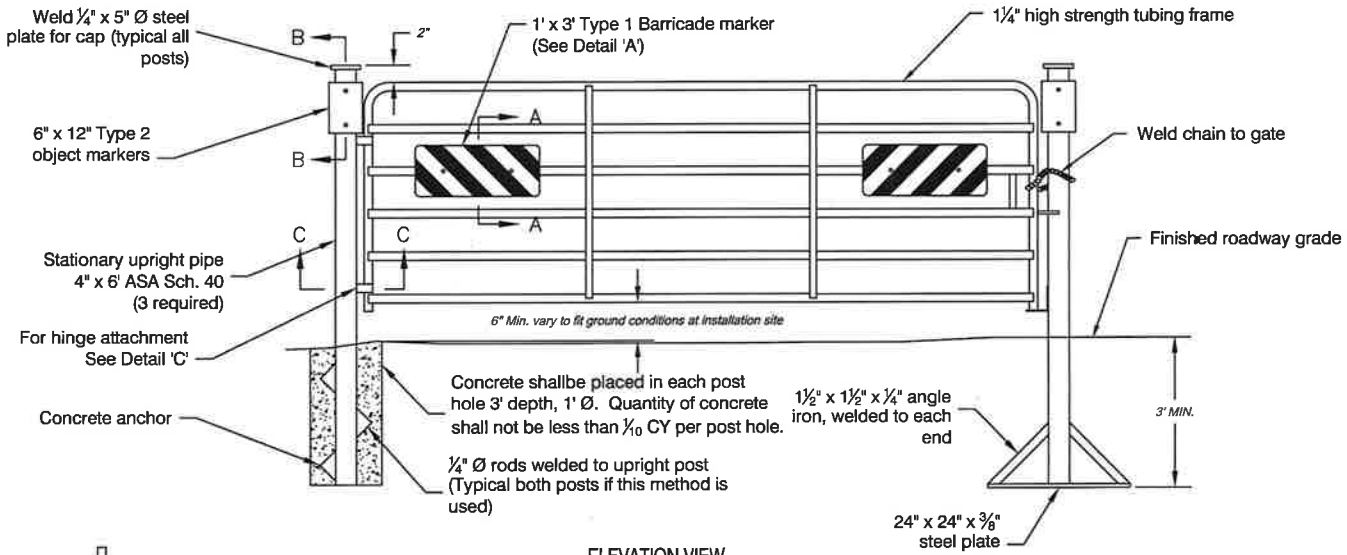

**ELEVATION VIEW**
NO SCALE

| | | | | |
|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | DRAIN DIP TYPICAL | NFSR ALL | DESIGNED: J. KOSKELA DATE: 2/2015 CHECKED: N. KEGEL DATE: 2/2015 |

SHEET NO. 31 OF 33




PLAN VIEW




ELEVATION VIEW

NOTES:

1.) Gate, all hardware, signs and sign placement, etc. typical with elevation shown this sheet. Heavy duty gate manufactured by Powder River Co. or equal is acceptable.

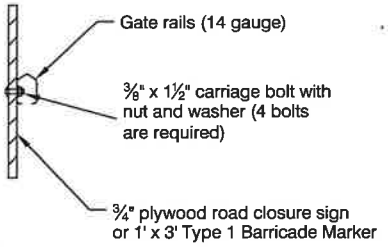
2.) All steel surfaces shall receive one coat of paint after fabrication and one coat after installation. Paint shall meet the requirements of Section 708.

3.) All signs and markers for the gate will be furnished by the Forest Sevice and installed by the contractor. In accordance with the "Manual of Uniform Traffic Contol Devices".

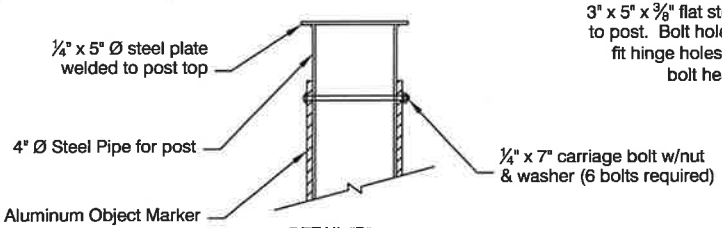
4.) After the gate is installed and adjusted, all bolt threads shall be peened or spot welded to prevent their removal.

5.) Gates shall be installed in the locations marked by the C.O.

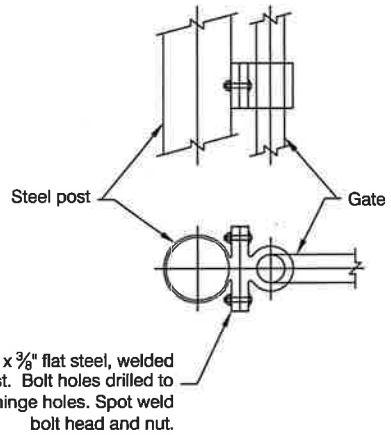
6.) When using concrete for setting posts, concrete shall be placed against undisturbed soil and shall meet the requirements of Section 602.




DETAIL "A"




DETAIL "B"




DETAIL "C"

Powder River Gate.dwg REV. 03/2007

| | | | | |
|---|---|---|---|---|
| U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE KOOTENAI NATIONAL FOREST CABINET RANGER DISTRICT | HELWICK TIMBERSALE | METAL GATE DETAILS | NFSR ALL | DESIGNED: _____ DATE: _____ CHECKED: _____ DATE: _____ |

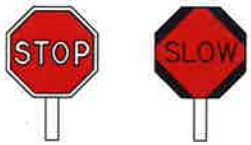
SHEET NO. 32 OF 33

| SIGN | SIGN NO. | MESSAGE | MIN. SIZE INCHES | COLORS | PLACEMENT |
|---|---|---|---|---|---|
| ROAD CONSTRUCTION NEXT 5 MILES | G20–1 | ROAD CONSTRUCTION NEXT *5 MILES | 36 x 24 | BLACK LTRS. ORANGE BKGRD. | AT EACH PROJECT TERMINUS |
| END CONSTRUCTION | G20–2 | END CONSTRUCTION | 36 x 18 | BLACK LTRS. ORANGE BKGRD. | AT EACH END OF PROJECT |
| DETOUR | M4–10R M4–10L | DETOUR | 36 x 12 | BLACK LTRS. ORANGE BKGRD. | AS NEEDED |
| ROAD CLOSED | R11–2 | ROAD CLOSED | 30 x 18 | BLACK LTRS. WHITE BKGRD. | AS NEEDED |
| ROAD CLOSED 10 MILES AHEAD LOCAL TRAFFIC ONLY | R11–3 | ROAD CLOSED *10 MILES AHEAD LOCAL TRAFFIC ONLY | 36 x 18 | BLACK LTRS. WHITE BKGRD. | 10 MILES AHEAD OF CONSTRUCTION |
| BE PREPARED TO STOP | W3–1c | BE PREPARED TO STOP | 24 x 24 | BLACK LTRS. ORANGE BKGRD. | AS NEEDED |
| TRUCK CROSSING | W8–6 | TRUCK CROSSING | 24 x 24 | BLACK LTRS. ORANGE BKGRD. | AS NEEDED |
| LOG TRUCKS | FW11–7 | LOG TRUCKS | 24 x 24 | BLACK LTRS. ORANGE BKGRD. | AS NEEDED |
| MEN WORKING | W21–1 | MEN WORKING | 24 x 24 | BLACK LTRS. ORANGE BKGRD. | AS NEEDED |
| FRESH OIL | W21–2 | FRESH OIL | 24 x 24 | BLACK LTRS. ORANGE BKGRD. | AS NEEDED |
| ROAD CONSTRUCTION 500 FEET | W20–1 | ROAD CONSTRUCTION *500 FEET | 30 x 30 | BLACK LTRS. ORANGE BKGRD. | 500 FT. BEFORE BEGINNING OF PROJECT |
| DETOUR 500 FEET | W20–2 | DETOUR *500 FEET | 30 x 30 | BLACK LTRS. ORANGE BKGRD. | 500 FT. PRIOR TO EACH DETOUR |
| ROAD CLOSED 500 FEET | W20–3 | ROAD CLOSED *500 FEET | 30 x 30 | BLACK LTRS. ORANGE BKGRD. | 500 FT. BEFORE BARRICADE |
| 35 MPH | W13–1 | *35 MPH | 13 x 13 | BLACK LTRS. YELLOW BKGRD. | AS NEEDED |
| ROAD MACHINERY 500 FEET | W21–3 | ROAD MACHINERY *500 FEET | 24 x 24 | BLACK LTRS. ORANGE BKGRD. | 500 FT. FROM EACH END OF WORK AREA |
| SURVEY CREW | W21–6 | SURVEY CREW | 24 x 24 | BLACK LTRS. ORANGE BKGRD. | AS NEEDED |
| BLASTING ZONE 1000 FEET | W22–1 | BLASTING ZONE *1000 FEET | 30 x 30 | BLACK LTRS. ORANGE BKGRD. | 1000 FT. FROM EACH END OF BLASTING AREA |
| TURN OFF 2-WAY RADIO AND CELL PHONE | W22–2 | TURN OFF 2--WAY RADIO AND CELL PHONE | 30 x 27 | BLACK LTRS. ORANGE BKGRD. | 1000 FT. FROM EACH END OF BLASTING AREA |
| END BLASTING ZONE | W22–3 | END BLASTING ZONE | 30 x 27 | BLACK LTRS. ORANGE BKGRD. | 1000 FT. FROM EACH END OF BLASTING AREA |
| FLAGMAN 500 FEET | W20–7 | FLAGMAN *500 FEET | 30 x 30 | BLACK LTRS. ORANGE BKGRD. | 500 FT. BEFORE EACH FLAGMAN |

## GENERAL SPECIFICATIONS:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH: (a) THE STANDARD SPECIFICATIONS APPLICABLE TO THE PROJECT, AND (b) THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.
2. WHERE TRAFFIC IS MAINTAINED THROUGH OR OVER ANY PART OF THE PROJECT, THE CONTRACTOR WILL BE REQUIRED TO MARK ALL HAZARDS WITHIN THE LIMITS OF THE PROJECT (INCLUDING CONNECTING ROADS) WITH WELL–MAINTAINED BARRICADES, WARNING, AND GUIDE SIGNS. ALL BARRICADES AND SIGNS SHALL BE MOVED, ADDED TO, CHANGED, OR REMOVED ENTIRELY WHEN THE PROJECT IS COMPLETED.
3. WHERE TRAFFIC IS PROHIBITED FROM THE PROJECT, THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN SIGNS AND BARRICADES, COMPLETED, AT THE ENDS OF THE PROJECT.
4. WORK ON THE PROJECT SHALL NOT BE STARTED UNTIL ALL REQUIRED SIGNS ARE IN PLACE AND APPROVED BY THE ENGINEER. WHERE SPEED CONTROL APPEARS NECESSARY SUCH SPEED CONTROL SHALL BE REQUESTED FROM THE ENGINEER BY THE CONTRACTOR. CONTROL OF SPEED THROUGH A CONSTRUCTION ZONE MAY BE ACHIEVED BY ADVISORY SPEED PLATES IN CONJUNCTION WITH WARNING SIGNS.
5. ALL SIGNS AND BARRICADES SHALL BE PLACED FOR BEST VISIBILITY AND LEGIBILITY, MAINTAINED IN GOOD CONDITION AND KEPT CLEAN AND FREE OF DIRT AT ALL TIMES. CONTRACTOR'S AND ENGINEER'S VEHICLES AND EQUIPMENT MUST BE PARKED SO THAT SIGNS AND BARRICADES ARE VISIBLE TO APPROACHING TRAFFIC AT ALL TIMES.
6. IN ALL CASES WARNING SIGNS ARE TO BE PLACED WELL IN ADVANCE OF THE HAZARD, THE DISTANCE DEPENDING ON TOPOGRAPHY AND EXISTING APPROACH SPEEDS.
7. SIGNS WITH THE PREFIX "R" IN THE SIGN CODE ARE REGULATORY SIGNS AND AS SUCH IMPOSE LEGAL COMPULSIONS OR RESTRICTION ON DRIVERS AND SHOULD ONLY BE USED AS AUTHORIZED BY THE ENGINEER.
8. SIGNS WITH THE PREFIX "W" IN THE SIGN CODE ARE WARNING SIGNS AND ARE USED TO ALERT TRAFFIC TO EXISTING OR POTENTIALLY HAZARDOUS CONDITIONS.
9. SIGNS WITH THE PREFIX "G" OR "M" IN THE SIGN CODE ARE GUIDE SIGNS. THOSE WITH THE PREFIX "G" CONVEY GENERAL INFORMATION AND THOSE WITH THE PREFIX "M" ARE USED FOR MARKING THE TRAFFIC ROUTE.
10. ALL SIGNS SHALL BE REFLECTORIZED UNLESS OTHERWISE SPECIFIED ON THE PLANS AND/OR BY THE C.O. REGULATORY SIGNS (UNLESS OTHERWISE SPECIFIED) SHALL HAVE A SREEN–PROCESSED BLACK LEGEND AND BORDER ON A WHITE FLEXIBLE REFLECTIVE SHEETING, NONEXPOSED LENS BACKGROUND. THE GUIDE AND WARNING SIGNS SHALL HAVE A SCREEN PROCESSED BLACK LEGEND AND BORDER ON AN ORANGE FLEXIBLE REFLECTIVE SHEETING, NONEXPOSED LENS BACKGROUND.
11. POSTS FOR REGULATORY, WARNING, AND GUIDE SIGNS WILL NORMALLY BE 4" ROUND OR 4"x4" – S4S WOOD POSTS.
12. SIGN PANELS FURNISHED BY THE CONTRACTOR FOR USE ONLY DURING CONSTRUCTION MAY BE FABRICATED FROM PLYWOOD, ALUMINUM, STEEL OR OTHER SUITABLE MATERIAL BUT SHALL BE STABLE AND DURABLE ENOUGH TO MEET OTHER REQUIREMENTS IN THIS STANDARD.
13. ALL MATERIAL SHALL BE SOUND AND DURABLE. BARRICADES, SIGNS, SYMBOLS, AND LETTERING SHALL BE OF GOOD WORKMANSHIP. UNEVEN LETTERING WILL NOT BE ACCEPTED.
14. ALTERNATE METHODS OF PROCESSING SIGNS OR THE SUBSTITUTION OF SYMBOLS OR OTHER REFLECTING ELEMENTS FOR PAINTED SYMBOLS WILL BE PERMITTED ONLY AFTER APPROVAL BY THE ENGINEER.
15. SIGNS AND BARRICADES USED AS "TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION" ARE NOT TO BE PAID FOR SEPARATELY.

TYPICAL BARRICADE



FLAGPERSON SIGNS

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
KOOTENAI NATIONAL FOREST
CABINET RANGER DISTRICT

HELWICK TIMBERSALE

CONSTRUCTION SIGNING DETAILS

NFSR
ALL

DESIGNED: J. KOSKELA DATE: 2/2015
CHECKED: N. KEGEL DATE: 2/2015

SHEET NO.
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