WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

METHOW WLA
WENNER LAKES 3 AND 5 DAMS
ON:R2:14-2

INDEX

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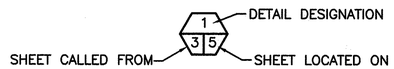
7. STANDARD ARTICULATED CONCRETE MAT INSTALLATION

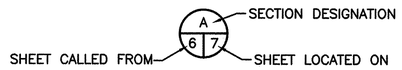
ABBREVIATIONS

ALUM	–	ALUMINUM
L	–	ANGLE
APPROX	–	APPROXIMATELY
BM	–	BENCH MARK
CL	–	CENTERLINE
CMP	–	CORRUGATED METAL PIPE
CLR	–	CLEARANCE
CONC	–	CONCRETE
CSBC	–	CRUSHED SURFACE BASE COURSE
CSTC	–	CRUSHED SURFACE TOP COURSE
DIA	–	DIAMETER
ELEV	–	ELEVATION
FB	–	FLAT BAR
FTG	–	FOOTING
GALV	–	GALVANIZED
ID	–	INSIDE DIAMETER
IE	–	INVERT ELEVATION
MFG	–	MANUFACTURER'S
MISC	–	MISCELLANEOUS
OC	–	ON CENTER
OD	–	OUTSIDE DIAMETER
PL	–	PLATE
REQ'D	–	REQUIRED
SEC	–	SECTION
SPEC'S	–	PROJECT SPECIFICATIONS
SS	–	STAINLESS STEEL
TYP	–	TYPICAL
WS	–	WATER SURFACE

SHEET SYMBOLS



DETAIL

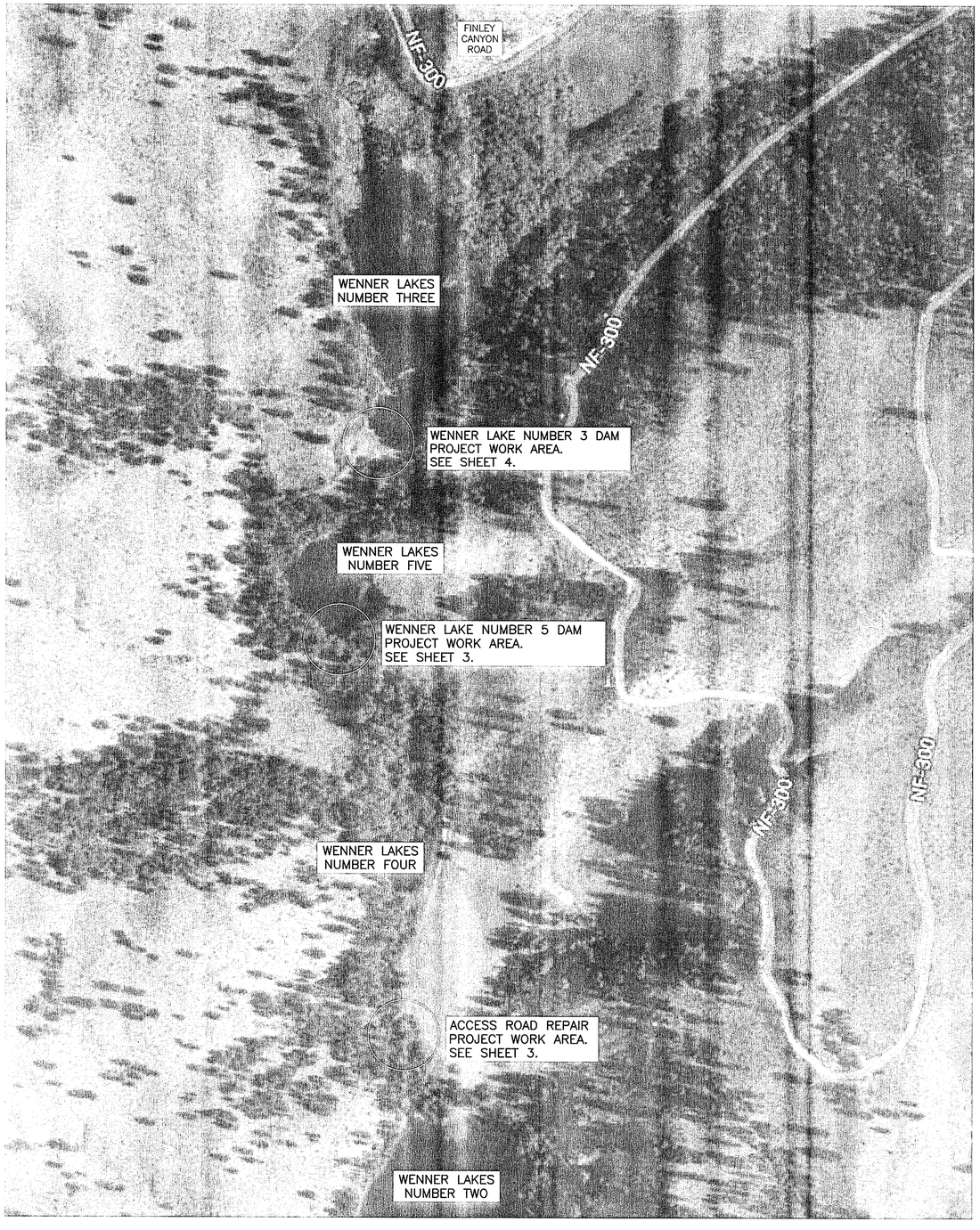


SECTION

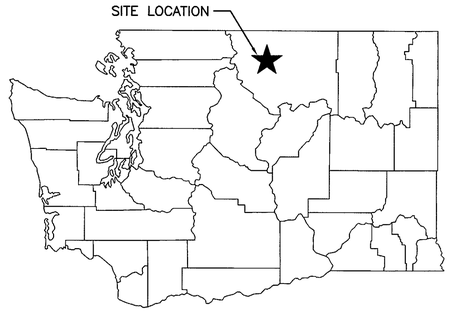
NOTE REFERENCE

REFERENCE DESIGNATION TO NOTE OR A PART OR MATERIAL IN A SCHEDULE/TABLE

PROJECT NO. ON:R2:14-2	
SHEET 1	OF 7



SITE MAP
NOT TO SCALE



STATE MAP
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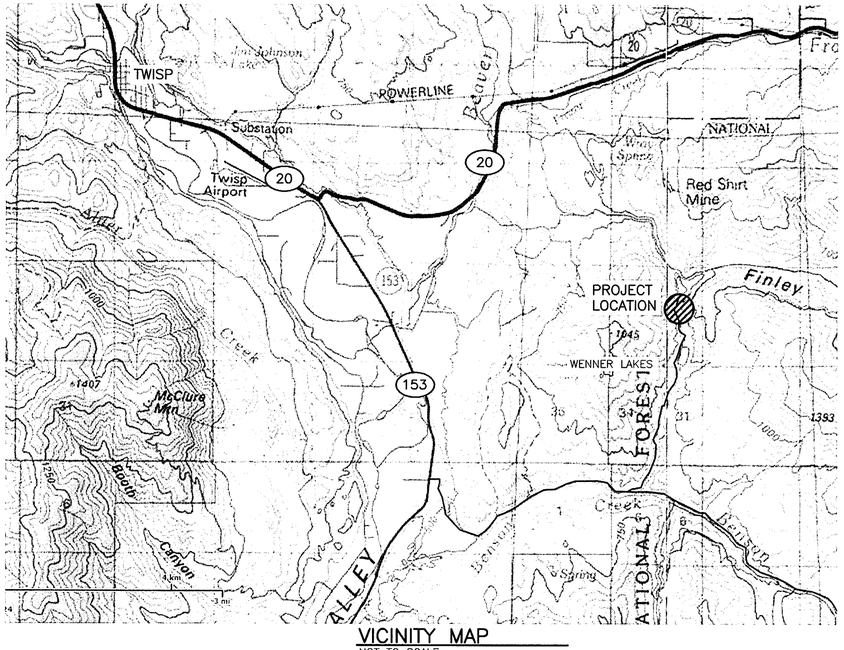


VICINITY MAP
NOT TO SCALE

COUNTY:	OKANOGAN
SECTION:	30
TOWNSHIP:	33 N
RANGE:	23 E WM
WENNER LAKE 3 DAM	
LAT.:	48.3322
LONG.:	−119.9982
WENNER LAKE 5 DAM	
LAT.:	48.3303
LONG.:	−119.9984
ACCESS ROAD REPAIR	
LAT.:	48.3264
LONG.:	−119.9974

WASHINGTON STATE
DEPARTMENT OF FISH AND WILDLIFE

GLENN F. GERTH, STATE OF WASHINGTON, 30721, REGISTERED PROFESSIONAL ENGINEER, 9/02/15

SYM	DATE	REVISION DESCRIPTION	BY

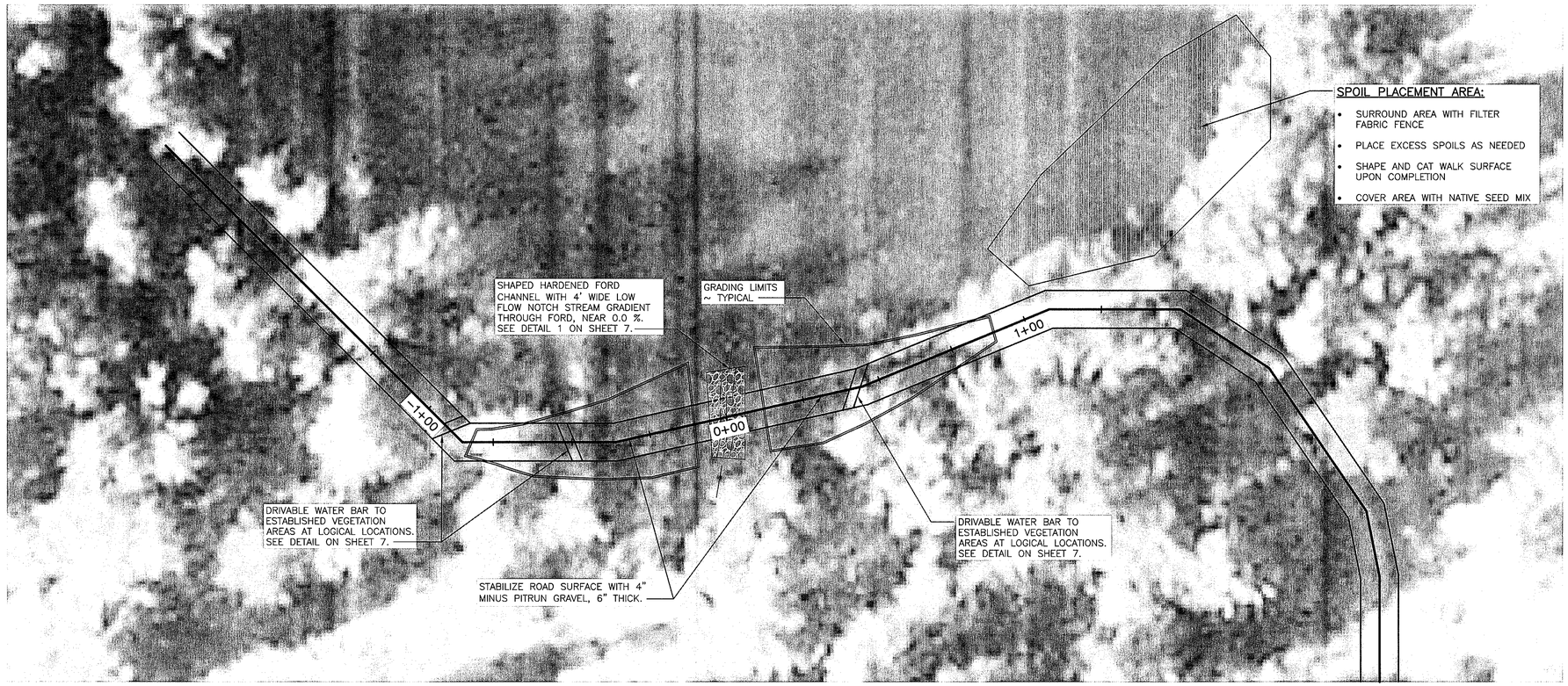
APPROVED AND RELEASED FOR CONSTRUCTION
CHIEF ENGINEER ..... DATE: 9/02/15
PROGRAM ..... DATE:

0 — 1"
BAR MEASURES ONE INCH ON ORIGINAL DRAWINGS

DESIGNED BY
CHECKED BY
DRAWN BY D.S.
DATE 10/9/2015

METHOW WLA
WENNER LAKES 3 & 5 DAMS
SITE AND VICINITY MAPS

PROJECT NO. ON:R2:14−2
SHEET 2 OF 7

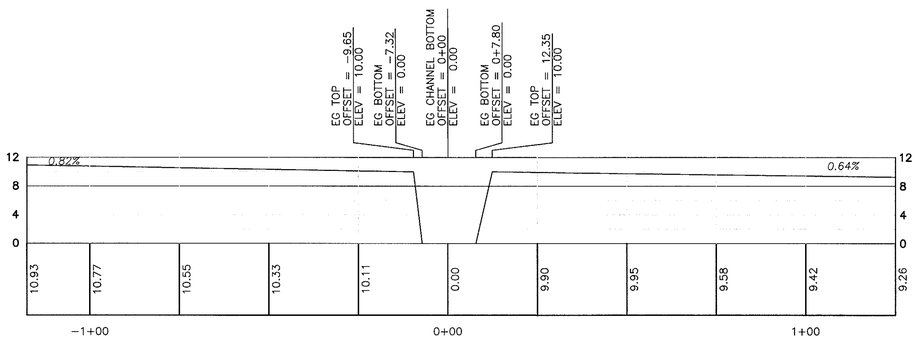


PLAN
SCALE: 1" = 20'

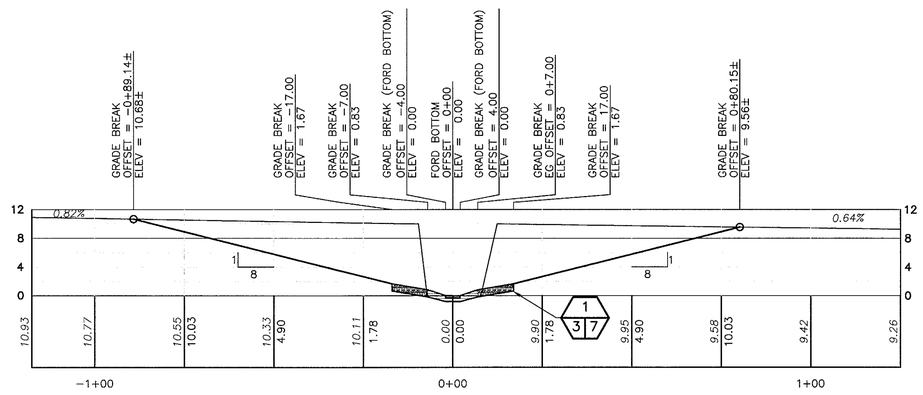
ADDITIONAL CONSTRUCTION NOTES:

CONSTRUCT FORMAL CREEK FORDS AT ALL WATER CROSSINGS DOWNSTREAM OF WENNER LAKE 3 AS NEEDED CONSTRUCTION ACCESS.

COUNTY:	OKANOGAN
SECTION:	30
TOWNSHIP:	33 N
RANGE:	23 E WM
WENNER LAKE 3 DAM	
LAT.:	48.3322
LONG.:	−119.9982
ACCESS ROAD REPAIR (NOT SHOWN)	
LAT.:	48.3264
LONG.:	−119.9974



EXISTING ROAD SECTION
SCALE: HORZ. 1" = 20'
VERT. 1" = 10'



NEW ROAD SECTION
SCALE: HORZ. 1" = 20'
VERT. 1" = 10'

WASHINGTON STATE
DEPARTMENT OF FISH AND WILDLIFE

GLENN F. GERTH
STATE OF WASHINGTON
30721
REGISTERED PROFESSIONAL ENGINEER
9oct15

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0 —— 1"
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DESIGNED BY
CHECKED BY wtd
DRAWN BY D.S.
DATE 10/9/2015

METHOW WLA
WENNER LAKES 3 & 5 DAMS
WENNER LAKE 5 DAM ACCESS ROAD REPAIR
ACCESS ROAD REPAIR

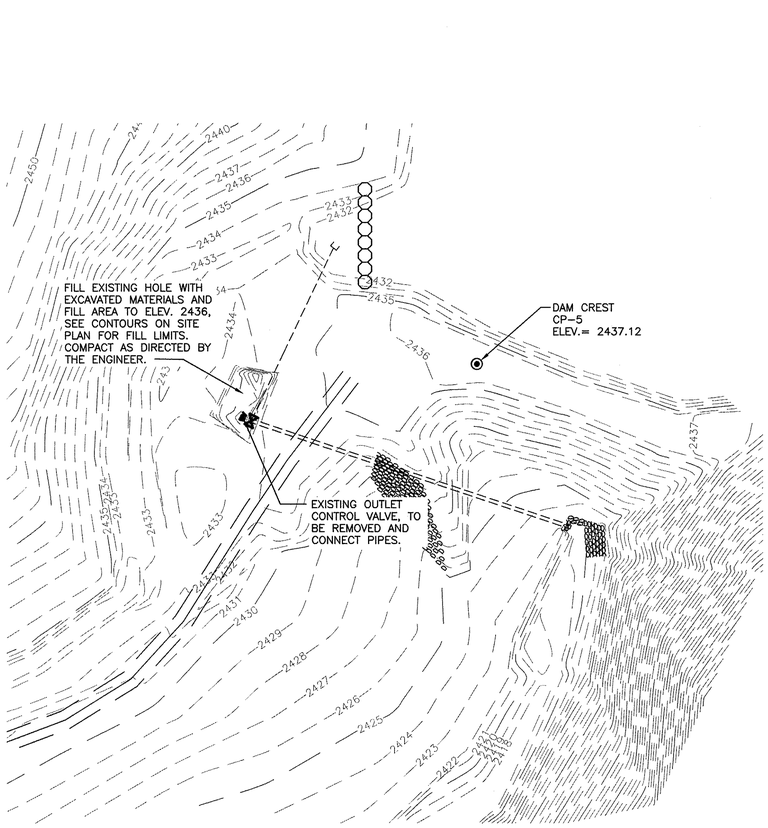
PROJECT NO. ON:R2:14−2
SHEET 3 OF 7

ADDITIONAL CONSTRUCTION NOTES:

1. ACCESS ROUTE FROM SOUTH BE REPAIRED TO THE EXTENT THAT ALLOWS CONSTRUCTION EQUIPMENT TO ACCESS WENNER LAKE NUMBER 3 (CHALFA) DAM IF FUTURE WORK IS DEEMED NECESSARY.

DEWATERING IN PREPARATION FOR CONTROL STRUCTURE INSTALLATION:

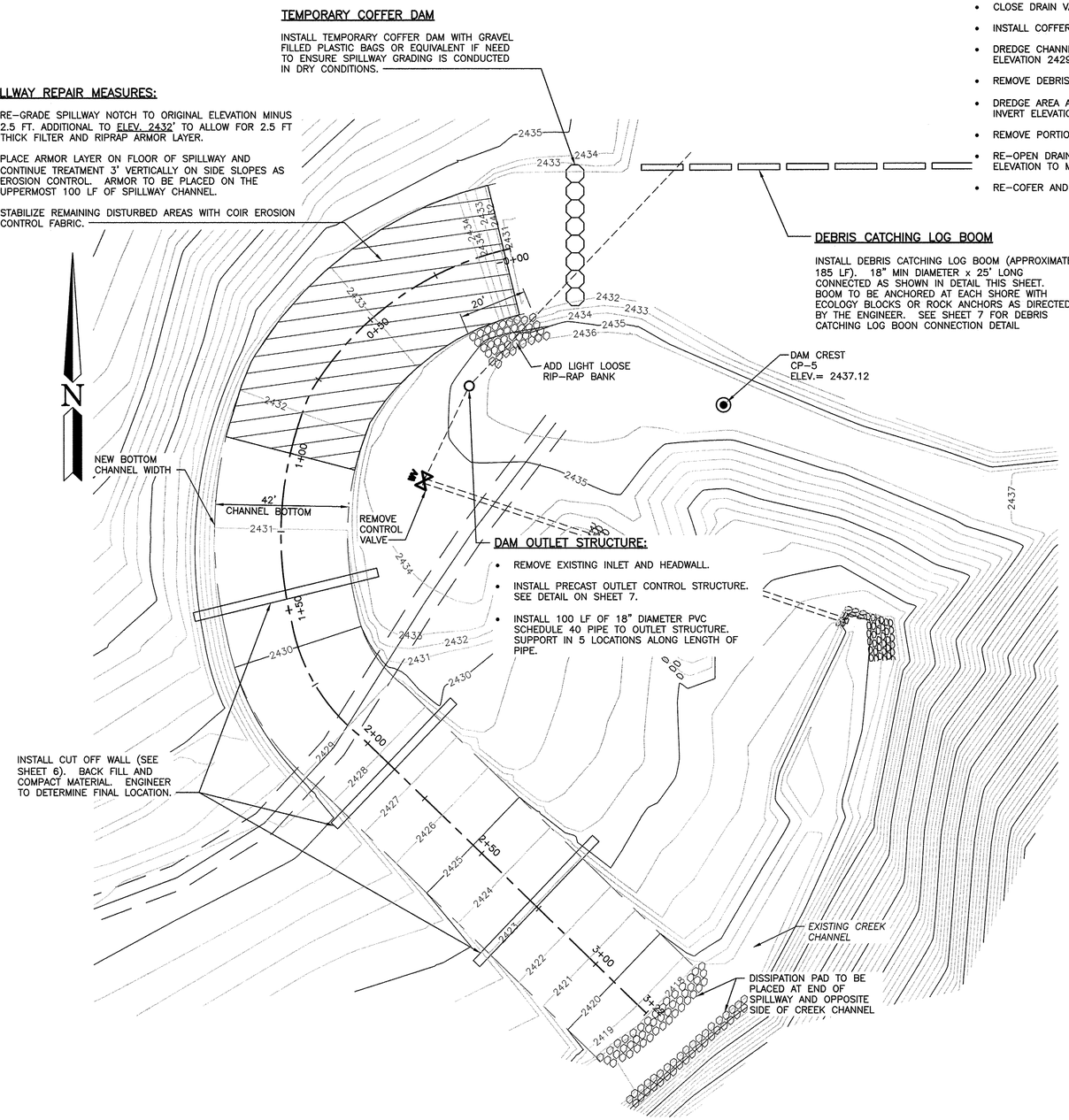
- CLOSE DRAIN VALVE.
- INSTALL COFFER DAM NEAR INLET.
- DREDGE CHANNEL TO INLET OF DRAIN PIPE. DREDGE TO ELEVATION 2429.0
- REMOVE DEBRIS FROM INLET PIPE TRASH RACK.
- DREDGE AREA AROUND CONTROL VALVE TO DEPTH 2' BELOW INVERT ELEVATION.
- REMOVE PORTION OF COFFER DAM.
- RE–OPEN DRAIN TO ALLOW CONTINUED LOWERING OF POOL ELEVATION TO MAXIMUM EXTENT POSSIBLE.
- RE–COFER AND INSTALL CONTROL STRUCTURE.



EXISTING SITE PLAN
SCALE: 1" = 30'

SPILLWAY REPAIR MEASURES:

- RE–GRADE SPILLWAY NOTCH TO ORIGINAL ELEVATION MINUS 2.5 FT. ADDITIONAL TO ELEV. 2432' TO ALLOW FOR 2.5 FT THICK FILTER AND RIPRAP ARMOR LAYER.
- PLACE ARMOR LAYER ON FLOOR OF SPILLWAY AND CONTINUE TREATMENT 3' VERTICALLY ON SIDE SLOPES AS EROSION CONTROL. ARMOR TO BE PLACED ON THE UPPERMOST 100 LF OF SPILLWAY CHANNEL.
- STABILIZE REMAINING DISTURBED AREAS WITH COIR EROSION CONTROL FABRIC.



SITE PLAN
SCALE: 1" = 20'

WASHINGTON STATE
DEPARTMENT OF FISH AND WILDLIFE

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CHIEF ENGINEER ..... DATE: 9/24/15
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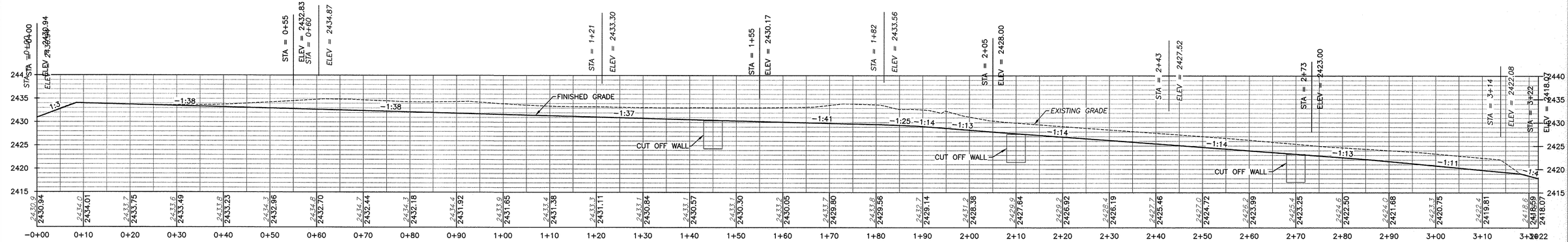
0 —— 1"
BAR MEASURES ONE INCH ON ORIGINAL DRAWINGS

DESIGNED BY
CHECKED BY
DRAWN BY R. ENGELHARDT
DATE 10/9/2015

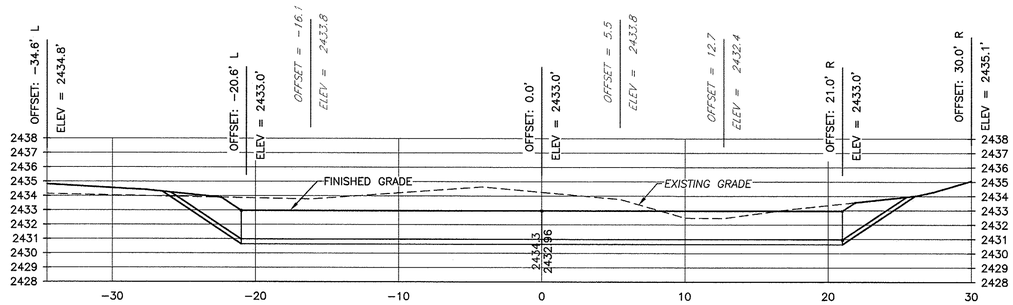
METHOW WLA
WENNER LAKES 3 & 5 DAMS
WENNER LAKE DAM 3
SPILLWAY REPAIR

PROJECT NO. ON:R2:14–2
SHEET 4 OF 7



SPILLWAY PROFILE

SCALE: 1" = 10'



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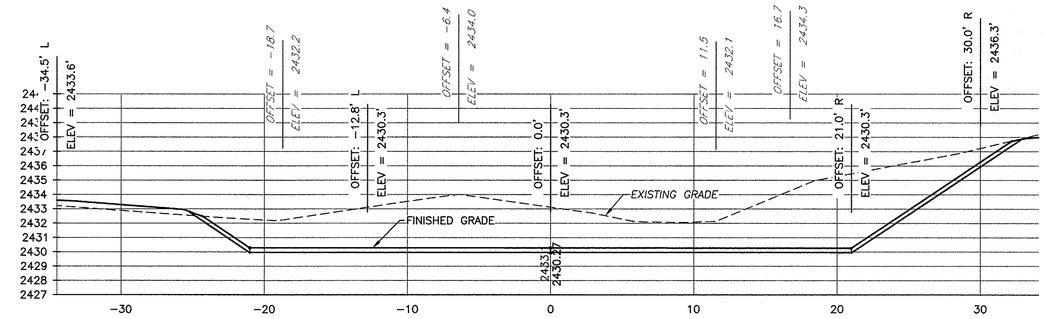

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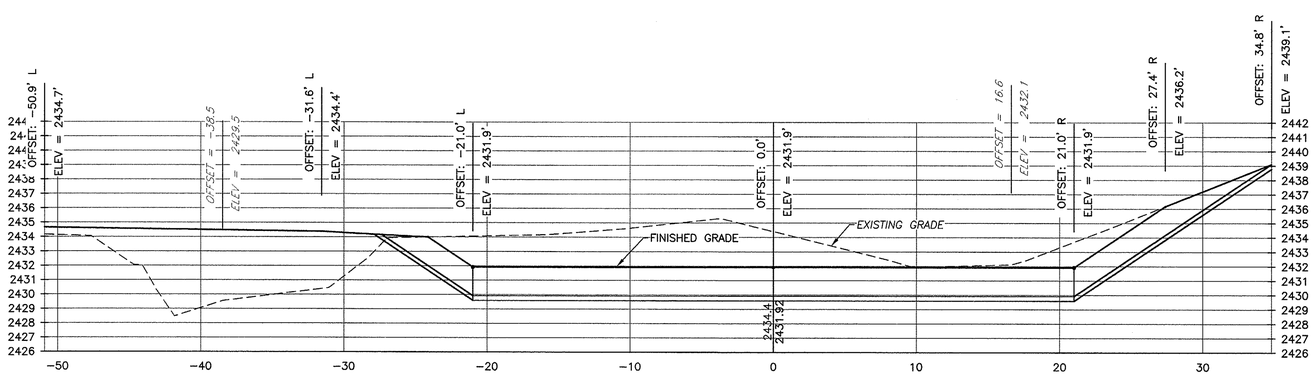


0+90

SPILLWAY SECTIONS

SCALE: 1" = 5'

WASHINGTON STATE DEPARTMENT OF FISH AND WILDLIFE	GLENN F. GERTH, STATE OF WASHINGTON, 30721, REGISTERED PROFESSIONAL ENGINEER, 9/25/15	SYM / DATE / REVISION DESCRIPTION / BY APPROVED AND RELEASED FOR CONSTRUCTION CHIEF ENGINEER ..... DATE: 9/25/15 PROGRAM ..... DATE:	0 — 1" BAR MEASURES ONE INCH ON ORIGINAL DRAWINGS DESIGNED BY CHECKED BY DRAWN BY R. ENGELHARDT DATE 10/9/2015

METHOW WLA

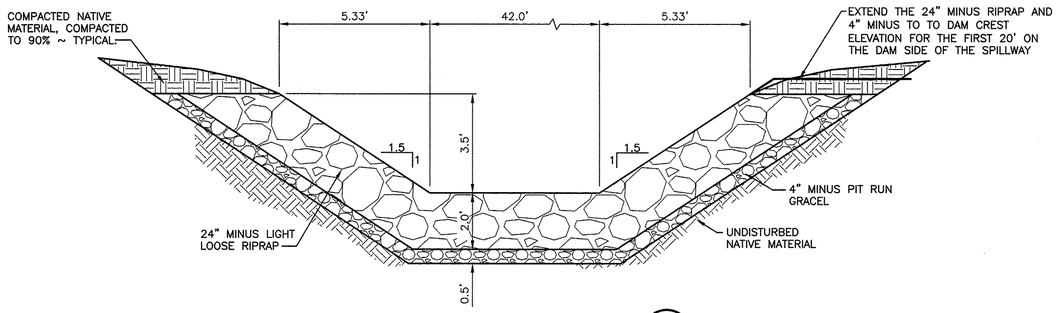
WENNER LAKES 3 & 5 DAMS

WENNER LAKE DAM 3

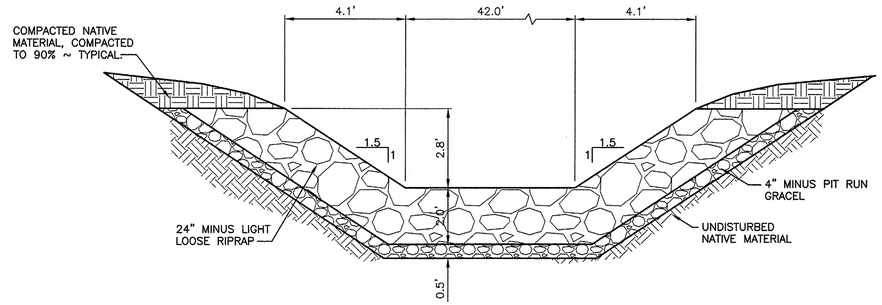
SPILLWAY PROFILE & SECTIONS

PROJECT NO. ON:R2:14-2

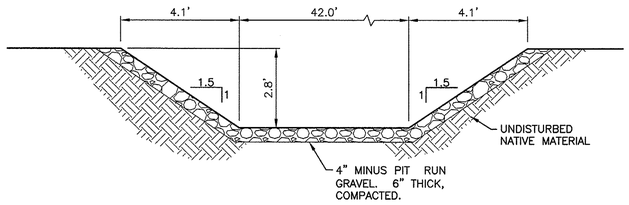
SHEET 5 OF 7



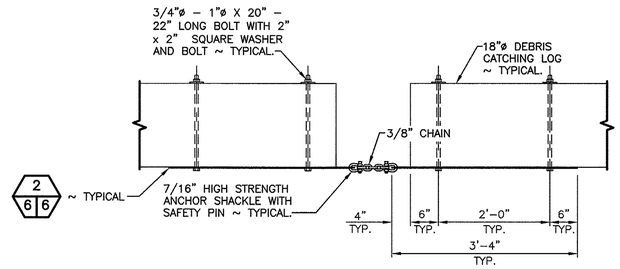
UPPER SPILLWAY SECTION (A / 4 | 6)
NOT TO SCALE



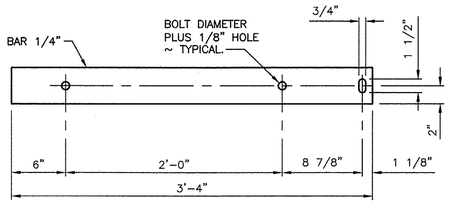
CUTOFF WALL SECTION
NOT TO SCALE
NOTE: CUTOFF WALL TO BE MINIMUM OF 6.0' DEEP.



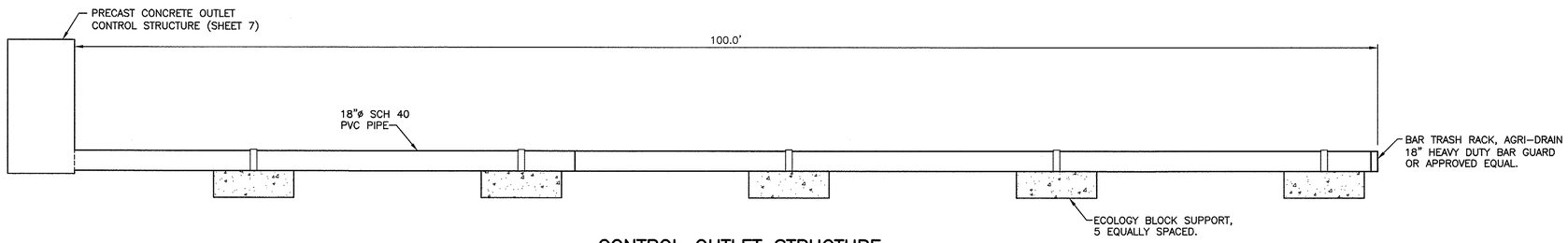
LOWER SPILLWAY SECTION (B / 4 | 6)
NOT TO SCALE



DEBRIS CATCHING LOG BOOM CONNECTION
NOT TO SCALE



DETAIL (2 / 6 | 6)
NOT TO SCALE



CONTROL OUTLET STRUCTURE
NOT TO SCALE

WASHINGTON STATE
DEPARTMENT OF FISH AND WILDLIFE

GLENN F. GERTH, STATE OF WASHINGTON, 30721, REGISTERED PROFESSIONAL ENGINEER

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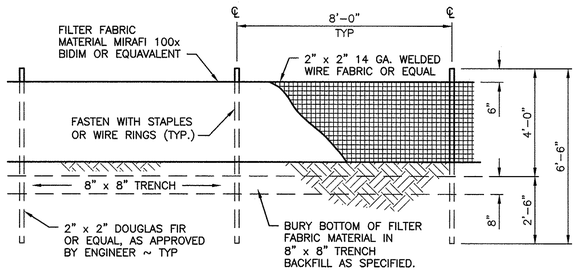
CHIEF ENGINEER ..... DATE: 20 Oct 15
PROGRAM ..... DATE:

0 — 1"
BAR MEASURES ONE INCH ON ORIGINAL DRAWINGS

DESIGNED BY
CHECKED BY wcl
DRAWN BY d.s.
DATE 10/9/2015

METHOW WLA
WENNER LAKE 3 & 5
WENNER LAKE 3 DAM
SPILLWAY PROFILE

PROJECT NO. ON:R2:14-2
SHEET 6 OF 7

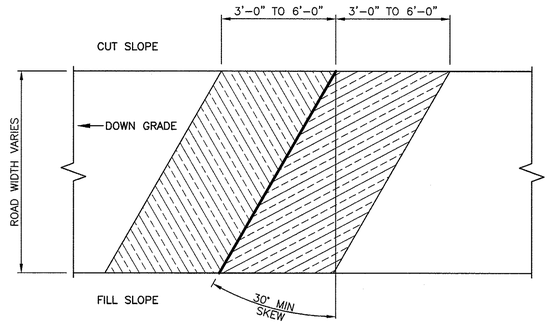


FILTER FABRIC FENCE

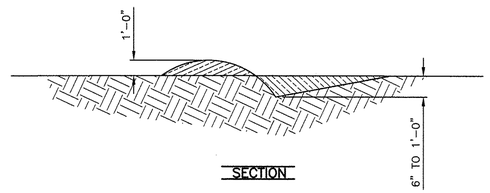
NOT TO SCALE

FILTER FABRIC NOTES:

1. FILTER FABRIC SHALL BE PURCHASED CONTINUOUS ROLL CUT TO LENGTH OF BARRIER AS NEEDED. IF JOINTS ARE NECESSARY FABRIC SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POSTS WITH A MINIMUM OF (6) INCH OVERLAP. BOTH ENDS SHALL BE SECURED AS REQUIRED.
2. FILTER FABRIC SHALL BE INSTALLED TO FOLLOW CONTOURS. FENCE POSTS SHALL BE SPACED A MAXIMUM OF EIGHT (8) FEET APART UNLESS OTHERWISE SHOWN HEREIN. ALL POSTS SHALL BE DRIVEN INTO THE GROUND A MINIMUM OF 30 INCHES.
3. A TRENCH SHALL BE EXCAVATED, ROUGHLY EIGHT (8) INCHES WIDE BY EIGHT (8) INCHES DEEP UP SLOPE AND ADJACENT TO THE POST TO ALLOW THE FILTER FABRIC TO BE BURIED.
4. WHEN STANDARD STRENGTH FILTER FABRIC IS UTILIZED, A WIRE SINGLE SPACE MESH SUPPORT FENCE SHALL BE FASTENED TO THE UPSLOPE (OR UPSTREAM) SIDE OF THE POSTS USING ONE (1) INCH MINIMUM LENGTH WIRE STAPLES, TIE WIRE OR APPROVED HOG RINGS. ALL WIRE SUPPORT SHALL EXTEND INTO THE TRENCH A MINIMUM OF FOUR (4) INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE ORIGINAL GRADE.
5. ALL FILTER FABRIC SHALL BE STAPLED OR WIRED TO SUPPORT FENCING AND A MINIMUM OF 20 INCHES OF FABRIC SHALL BE EXTENDED INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED OR FASTENED TO EXISTING TREES OF STRUCTURES UNLESS OTHERWISE APPROVED BY THE ENGINEER.
6. IF HIGH STRENGTH FILTER FABRIC AND CLOSER SPACING ARE USED, THE WIRE SUPPORT FENCING MAY BE ELIMINATED. HIGH STRENGTH FABRIC SHALL BE STAPLED OR WIRED DIRECTLY TO POSTS AS REQUIRED BY THE ENGINEER.
7. CUTOFF TRENCH SHALL BE BACKFILLED WITH 3/4 INCH MINIMUM DIAMETER WASHED GRAVEL OR OTHER SIMILAR SOURCE AS APPROVED BY THE ENGINEER.
8. FILTER FENCING SHALL BE INSTALLED WHERE SHOWN ON THE PLAN, OR AS MARKED IN THE FIELD BY THE ENGINEER, PRIOR TO COMMENCEMENT OF WORK. ALL FENCING SHALL BE INSPECTED DAILY DURING CONSTRUCTION AND AFTER EACH SIGNIFICANT RAINFALL EVENT UNTIL SITE HAS BEEN PERMANENTLY STABILIZED. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
9. REMOVAL OF TRAPPED SEDIMENT SHALL BE PERFORMED WHEN AMOUNTS REACH APPROXIMATELY 1/3 HEIGHT OF THE FENCE.
10. FILTER FENCING SHALL REMAIN IN-PLACE UNTIL SITE HAS BEEN REVEGETATED TO ORIGINAL CONDITION OR DIRECTED BY THE ENGINEER.



PLAN



SECTION

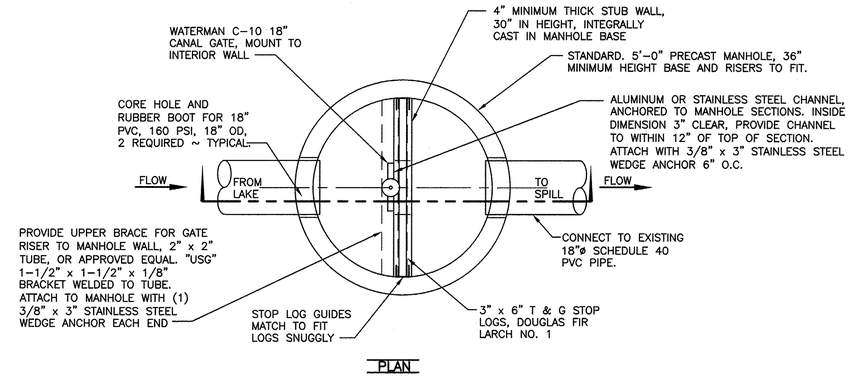
DRIVABLE WATER BAR

NOT TO SCALE

WATER BAR NOTES:

1. ALL WATER BARS SHALL BEGIN AT THE INTERSECTION OF THE ROAD BED AND CUT SLOPE THEN RUN ACROSS THE ENTIRE WIDTH OF THE ROAD BED.
2. ALL WATER BARS SHALL HAVE FREE FLOWING OUTLETS.
3. WHEN STAKES ARE USED TO LOCATE WATER BARS, THIS DESIGNATE THE OUTLET LOCATION.
4. WATER BAR SPACING–

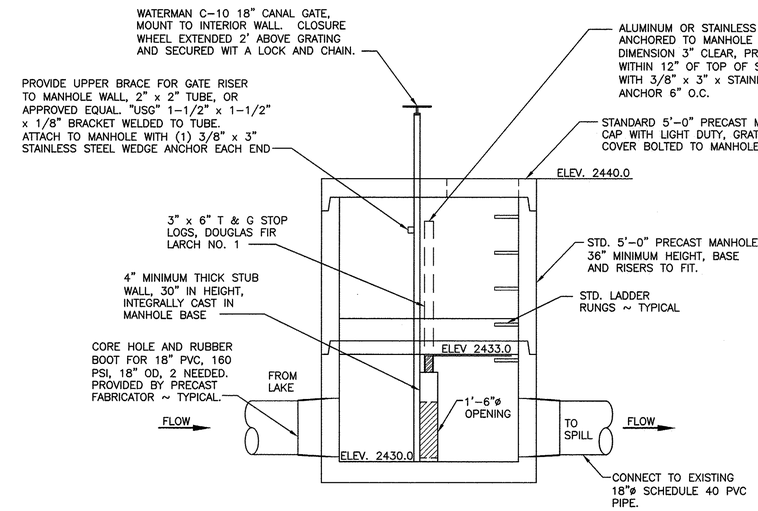
   AT LESS THAN 5% SLOPE – 125'
   BETWEEN 5% AND 10% – 80'
   BETWEEN 10% AND 20% – 50'
   GREATER THAN 20% – 30'



PLAN

NOTE:

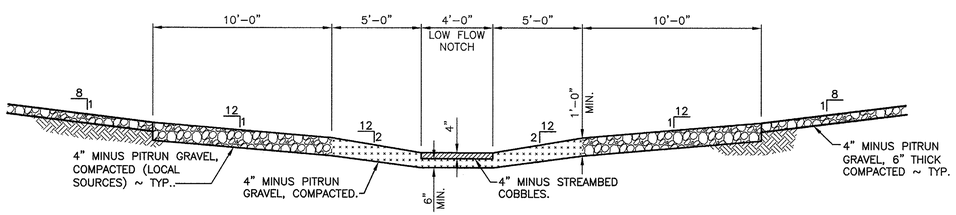
LID NOT SHOWN
FOR CLARITY



SECTION

POND OUTLET CONTROL STRUCTURE

NOT TO SCALE



FORD DETAIL

SCALE: 1/4" = 1'-0"

1 / 3 7

WASHINGTON STATE

DEPARTMENT OF FISH AND WILDLIFE

GLENN F. GREEN — STATE OF WASHINGTON — 30721 — REGISTERED PROFESSIONAL ENGINEER — 9/24/15

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PROGRAM ..... DATE:

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ONE INCH ON
ORIGINAL DRAWINGS

DESIGNED BY
CHECKED BY
DRAWN BY D.SMITH
DATE 10/9/2015

METHOW WLA

WENNER LAKES 3 & 5 DAMS

MISCELLANEOUS DETAILS

PROJECT NO. ON:R2:14–2

SHEET 7 OF 7