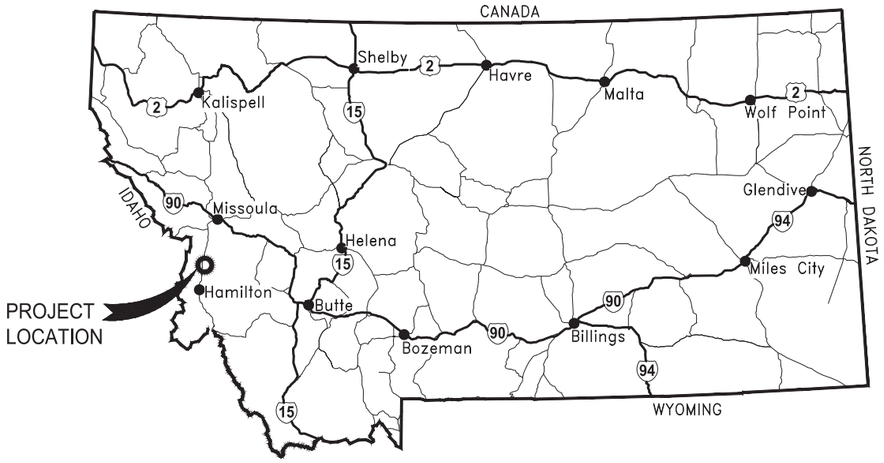
CONSTRUCTION PLANS FOR:

JOHN OWEN FAS

FWP #7173727



LOCATION MAP

VICINITY MAP

SHEET INDEX	
SHEET NO.	DRAWING DESCRIPTION
1	Cover Sheet
2	General Notes and Legend
3	Quantities and Abbreviations
4	Existing Conditions
5	Overall Site Plan
6	Tree Removal Plan
7	Demolition Plan
8	Site Plan (1 of 2)
9	Site Plan (2 of 2)
10	Grading Plan (1 of 2)
11	Grading Plan (2 of 2)
12	Plan and Profile
13	Typical Sections Details
14	Sign and Parking Details
15	Latrine Details
16	Fencing Details
17	Gate Details
18	Right of Way Details
19	Erosion Control Plan
20	Erosion Control Details

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF MONTANA
1-800-424-5555
CALL FOR THE MARKING OF UNDERGROUND UTILITIES
2 BUSINESS DAYS BEFORE
YOU DIG, GRADE, OR EXCAVATE

PREPARED BY:

MISSOULA ENGINEERING
PO Box 2833 Missoula, Montana 59806
Phone # (406) 215-1555

PREPARED FOR:

MONTANA FISH, WILDLIFE & PARKS
PO Box 200701 Helena, Montana 59620
Phone # (406) 841-4000

MONTANA
JAMES W. SAGE
No.48763PE
1/03/25
LICENSED
PROFESSIONAL ENGINEER

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

MONTANA FISH, WILDLIFE & PARKS

COVER SHEET
JOHN OWEN FAS FWP #7173727

SHEET: 1 of 20

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY CONFLICTS EXIST BETWEEN THE PLANS AND WHAT IS FOUND IN THE FIELD.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND PROTECT ALL UTILITY LINES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ONE CALL UTILITY LOCATION CENTER AT 1-800-424-5555 AT LEAST 2 BUSINESS DAYS PRIOR TO PERFORMING ANY EXCAVATION.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS, (AT THEIR EXPENSE) REQUIRED TO PERFORM THE WORK. THESE PERMITS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: RAVALLI COUNTY AND STATE OF MONTANA PERMITS.
4. ALL WORK SHALL BE COMPLETED IN A SAFE MANNER AND CONSISTENT WITH O.S.H.A GUIDELINES.
5. CONTRACTOR SHALL PROTECT ALL ADJACENT IMPROVEMENTS FROM DAMAGE AND EROSION. DISTURBED AREAS SHALL BE RESTORED TO THE ORIGINAL CONDITION OR TO THE PROPOSED DESIGN GRADE AS INDICATED ON THE PLANS.
6. ALL CIVIL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES AS APPLICABLE: MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS 7TH EDITION AND INTERNATIONAL BUILDING CODE. IN INSTANCES WHERE A CONFLICT EXISTS BETWEEN THE REFERENCED CODES CONTACT THE ENGINEER. THE MOST STRINGENT CODE SHALL RULE.
7. ALL REQUIRED COMPACTION TESTING SHALL BE PROVIDED BY AN INDEPENDENT TESTING FIRM AT THE EXPENSE OF THE CONTRACTOR.
8. IMPORT MATERIAL REQUIRED TO COMPLETE EARTHWORK SHALL BE IMPORTED FROM OFF-SITE OR DETERMINED TO BE SUITABLE BY SUPPLYING INDEPENDENT TESTING OF MATERIAL AND AFTER INSPECTION BY ENGINEER AND WRITTEN APPROVAL BY THE OWNER. CONTRACTOR IS RESPONSIBLE FOR SOURCING AND DELIVERY OF ALL IMPORTED FILL MATERIAL AND SHALL BE CONSIDERED INCIDENTAL TO THE WORK. ALL IMPORT MATERIAL SHALL BE CLEAN MATERIAL FREE OF DEBRIS AND SUITABLE FOR USE AS STRUCTURAL FILL.
9. ALL WORK WITHIN THE MDT ROW SHALL BE IN CONFORMANCE WITH MDT STANDARDS AND REGULATIONS INCLUDING BUT NOT LIMITED TO RE-VEGETATION.
10. WATER NECESSARY FOR CONSTRUCTION ACTIVITIES SHALL BE PROVIDED BY THE CONTRACTOR AND CONSIDERED INCIDENTAL TO THE WORK. ALL PERMITTING FOR USE OF ANY ON-SITE WATER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SURVEY NOTES:

1. SURVEY DATUM:
   HORIZONTAL - STATE PLANE, NAD 83
   VERTICAL - NAVD 88
2. SURVEY INFORMATION SHOWN ON DRAWINGS ARE BASED UPON LIMITED SURVEY DATA. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
3. CONTRACTOR SHALL MAINTAIN OR REPLACE ANY EXISTING SURVEY MONUMENTS, CONTROL POINTS, AND STAKING. REPLACEMENT COSTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE COMPLETED BY A LICENSED SURVEYOR IN THE STATE OF MONTANA.

CONSTRUCTION STAKING NOTES:

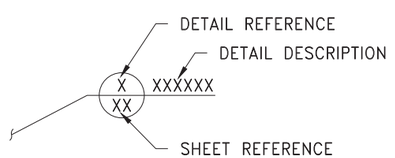
1. STAKING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR SCHEDULING AND PAYMENT

LEGEND

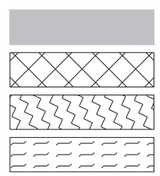
EXISTING	PROPOSED		EXISTING	PROPOSED	
		PROPERTY LINE	⊗	⊗	BOLLARD
		EASEMENT	⊸	⊸	SIGN
		CENTERLINE	MB	MB	MAILBOX
		EDGE OF ROAD	WV		WATER VALVE
3100	3100	MAJOR CONTOUR	WM	W	WATER METER
3102	3102	MINOR CONTOUR			FIRE HYDRANT
W	W	WATER MAIN	MW	MW	MONITORING WELL
WS	WS	WATER SERVICE	W	W	POTABLE WATER WELL
S	S	SEWER MAIN			BLOW-OFF ASSEMBLY
SS	SS	SEWER SERVICE	SS	S	SEWER MANHOLE
FM	FM	SEWER FORCE MAIN	CO	CO	SEWER CLEAN-OUT
		CURB	ST	ST	SEPTIC TANK
X X X	X X X	FENCE			STORMWATER SUMP
OHP		OVERHEAD POWER LINE	TP		TEST PIT
UGP		UNDERGROUND POWER LINE	E		ELECTRIC METER
G		UNDERGROUND GAS LINE	T		TELEPHONE RISER
TV		UNDERGROUND TELEVISION LINE	T		TELEPHONE MANHOLE
T		UNDERGROUND TELEPHONE LINE			LIGHT POLE
FO		UNDERGROUND FIBER OPTIC LINE	TV		CATV RISER
IRR		UNDERGROUND IRRIGATION LINE	G		GAS METER
		STORMWATER SWALE	GV		GAS VALVE

* THIS IS A STANDARD LEGEND, NOT ALL SYMBOLS MAY BE USED OR SHOWN ON THIS PROJECT *

DETAIL CALLOUT



HATCH LEGEND



TYPICAL GRAVEL SECTION

ROAD RECONDITIONING

BANK RESTORATION

RIVER ACCESS

JLS	01/03/25	JLS	01/03/25			MONTANA FISH, WILDLIFE & PARKS	GENERAL NOTES AND LEGEND
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:		
JWS	01/03/25	JWS	01/03/25				JOHN OWEN FAS FWP #7173727
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:		A#1

SHEET: 2 of 20

ABBREVIATIONS

A.C.I.	AMERICAN CONCRETE INSTITUTE
AC	ASBESTOS CONCRETE
AFF	ABOVE FINISHED FLOOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECTURAL
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AVE	AVENUE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BLK	BLOCK
BLVD	BOULEVARD
BM	BENCHMARK
BSMT	BASEMENT
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BW	BOTTOM OF WALL
CB	CATCH BASIN
CCJ	CONCRETE CONTROL JOINT
CEJ	CONCRETE EXPANSION JOINT
CF	CUBIC FEET
CIP	CAST IRON PIPE
CL, ℄	CENTERLINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
CONC	CONCRETE
CP	CONTROL PANEL, CONTROL POINT
CULV	CULVERT
CY	CUBIC YARD
DET	DETAIL
DIA, ø	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DRWY	DRIVEWAY
DWG	DRAWING
(E)	EXISTING
E	EAST
E:	EASTING
EA	EACH
EG	EXISTING GRADE/ELEVATION
EL	ELEVATION
ELEC	ELECTRIC, ELECTRICAL
EOP	EDGE OF PAVEMENT
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX	EXISTING
EXC	EXCAVATE
(F)	FUTURE
FC	FACE OF CURB
FCV	FLOW CONTROL VALVE
FD	FOUNDATION DRAIN
FDN	FOUNDATION
FF	FINISHED FLOOR
FG	FINISHED GRADE/ELEVATION
FL	FLOWLINE
FLG	FLANGE
FO	FIBER OPTIC
FTG	FOOTING
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GND	GROUND
GVL	GRAVEL
GW	GROUNDWATER
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HWY	HIGHWAY
HYD	HYDRANT
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INV	INVERT
K	RATE OF VERTICAL CURVE
LBS	POUNDS
LF	LINEAR FOOT
LPG	LIQUID PROPANE GAS
LT	LEFT
LVC	LENGTH OF VERTICAL CURVE
MAX	MAXIMUM
MDT	MONTANA DEPARTMENT OF TRANSPORTATION
MECH	MECHANICAL
MFD	MANUFACTURED
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MJ	MECHANICAL JOINT
MPWSS	MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS
N	NORTH
N:	NORTHING
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHP	OVER HEAD POWER
(P)	PROPOSED
P.U.E.	PUPLIC/PRIVATE UTILITY EASEMENT
PC	POINT OF CURVATURE
PE	POLYETHYLENE
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
PL, ℄	PROPERTY LINE
PRELIM	PRELIMINARY
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
R/W	RIGHT OF WAY
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REQD	REQUIRED
RM	REFERENCE MARK
RR	RAILROAD
RT	RIGHT
S	SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SDI	STORM DRAIN INLET
SDWK	SIDEWALK
SE	SOUTHEAST
SF	SQUARE FEET
SHT	SHEET
SS	SANITARY SEWER
SSTL	STAINLESS STEEL
ST	STREET
STA	STATION
SW	SOUTHWEST
SY	SQUARE YARD
TA	TOP OF ASPHALT
TBC	TOP BACK OF CURB
TC	TOP OF CONCRETE
TEL	TELEPHONE
TMB	TEMPORARY BENCH MARK
TS	TOP OF SLAB
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
UTIL	UTILITY
V	VALVE, VOLTAGE
VB	VALVE BOX
VERT	VERTICAL
VOL	VOLUME
W	WEST
W/	WITH
W/O	WITHOUT
WD	WOOD
WM	WATER METER
WTR	WATER
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
XS	CROSS SECTION
YD	YARD

* THIS IS A STANDARD ABBREVIATION LIST, NOT ALL ABBREVIATIONS MAY BE USED OR SHOWN ON THIS PROJECT *

SYMBOLS

@	AT
Δ	ANGLE OF DEFLECTION

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

MONTANA FISH, WILDLIFE & PARKS

197

QUANTITIES AND ABBREVIATIONS

JOHN OWEN FAS FWP #7173727

SHEET: 3 of 20

(E) EDGE OF WATER

BITTERROOT RIVER

(E) BRIDGE

(E) EDGE OF DISTURBANCE

(E) FLOATERS SIGN-IN SIGN

(E) RIVER ACCESS

(E) STEVENSVILLE RIVER PARKING SIGN

(E) GRAVEL ACCESS

(E) SURVEYED TREES (TYP)

(E) GUARDRAIL

MT HWY 269

(E) STEVENSVILLE CROSSING FISHING ACCESS

PROPERTY BOUNDARY

(E) 45 MPH SIGN

(E) FENCE (TYP)

(E) OVERHEAD POWER

(E) EDGE OF ASPHALT

(E) PEDESTRIAN/BICYCLE TRAIL

OHP

GENERAL NOTES:

1. SURVEY PERFORMED BY MOUNTAIN PLAINS, LLC ON JULY 27TH, 2018.
2. CONTOUR INTERVALS SHOWN AT 1' AND 5'
3. PROJECT LOCATED IN "ZONE AE" PER FIRM MAP NUMBER 30081C0215D, DATED JULY 6TH, 2015.
4. SURVEY DATUM:
   HORIZONTAL – STATE PLANE, NAD 83
   VERTICAL – NAVD 88

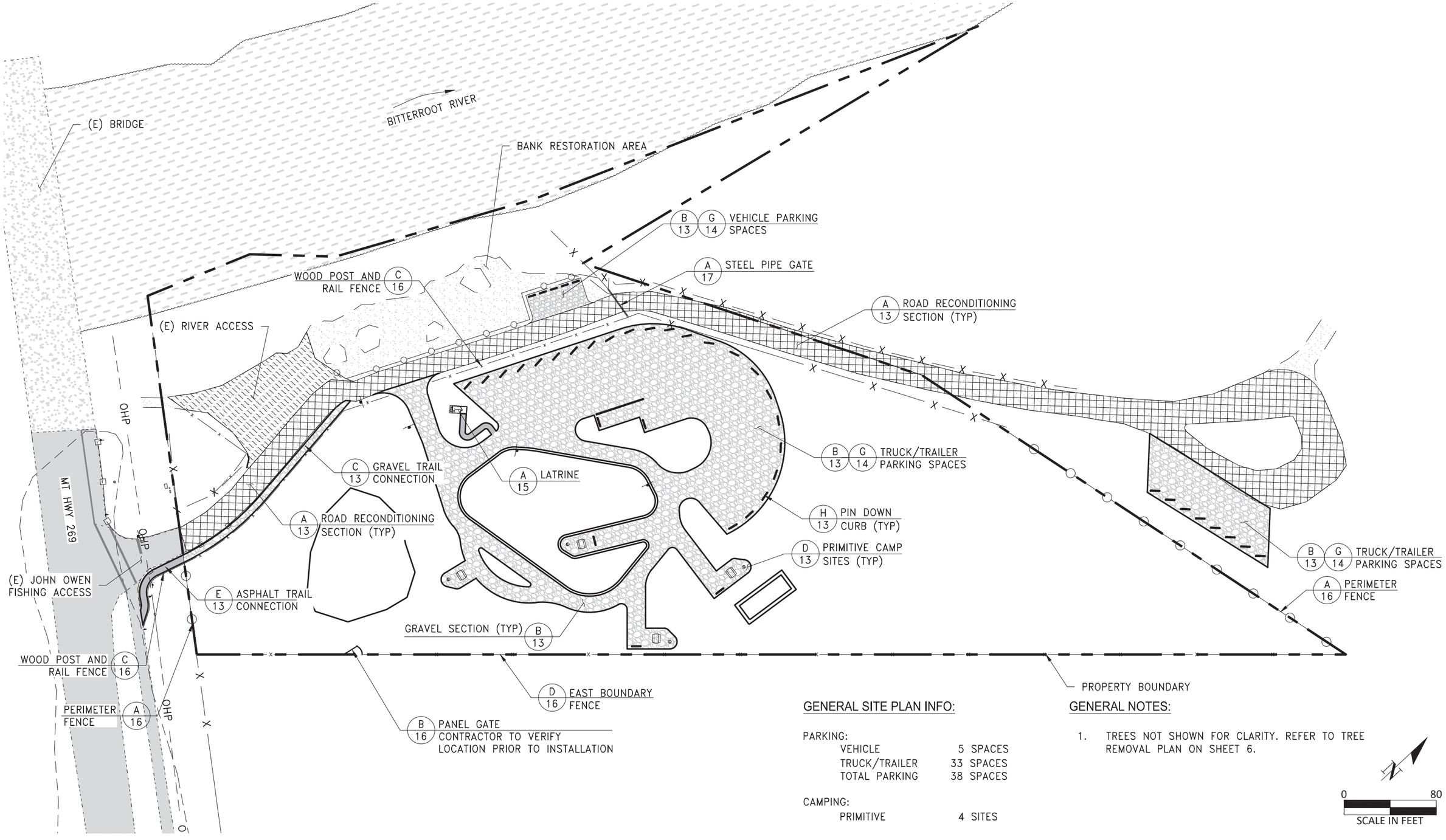
0 80
SCALE IN FEET

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

MONTANA FISH, WILDLIFE & PARKS

EXISTING CONDITIONS

JOHN OWEN FAS FWP #7173727



GENERAL SITE PLAN INFO:

PARKING:

VEHICLE	5 SPACES
TRUCK/TRAILER	33 SPACES
TOTAL PARKING	38 SPACES

CAMPING:

PRIMITIVE	4 SITES

GENERAL NOTES:

1. TREES NOT SHOWN FOR CLARITY. REFER TO TREE REMOVAL PLAN ON SHEET 6.

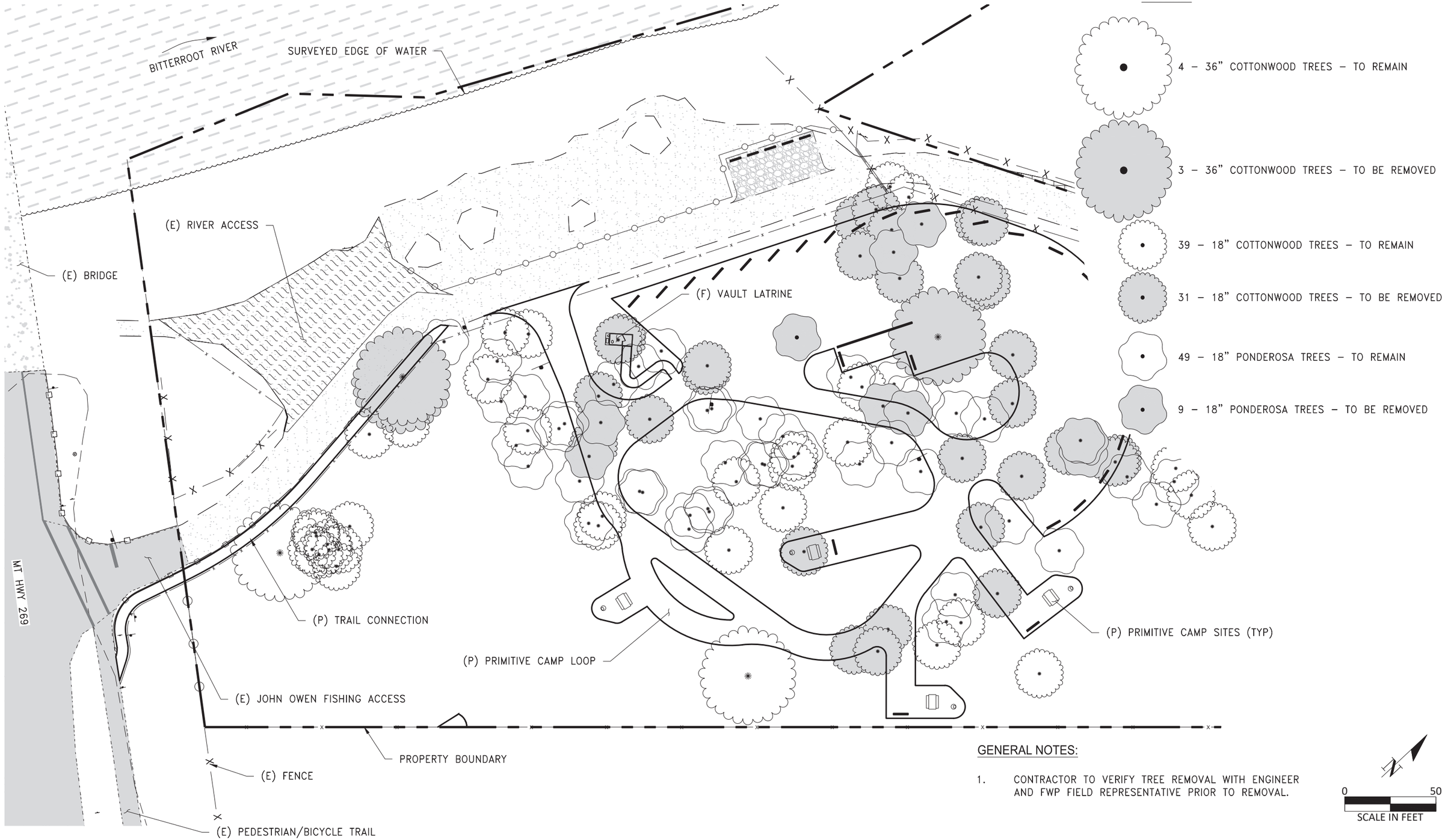
0 80
SCALE IN FEET

JLS	01/03/25	JLS	01/03/25	APPROVED BY:	DATE:
DRAWN BY:	DATE:	REVISED BY:	DATE:		
JWS	01/03/25	JWS	01/03/25	APPROVED BY:	DATE:
CHECKED BY:	DATE:	APPROVED BY:	DATE:		

MONTANA FISH, WILDLIFE & PARKS
199

OVERALL SITE PLAN
JOHN OWEN FAS FWP #7173727

SHEET: 5 of 20



GENERAL NOTES:

1. CONTRACTOR TO VERIFY TREE REMOVAL WITH ENGINEER AND FWP FIELD REPRESENTATIVE PRIOR TO REMOVAL.

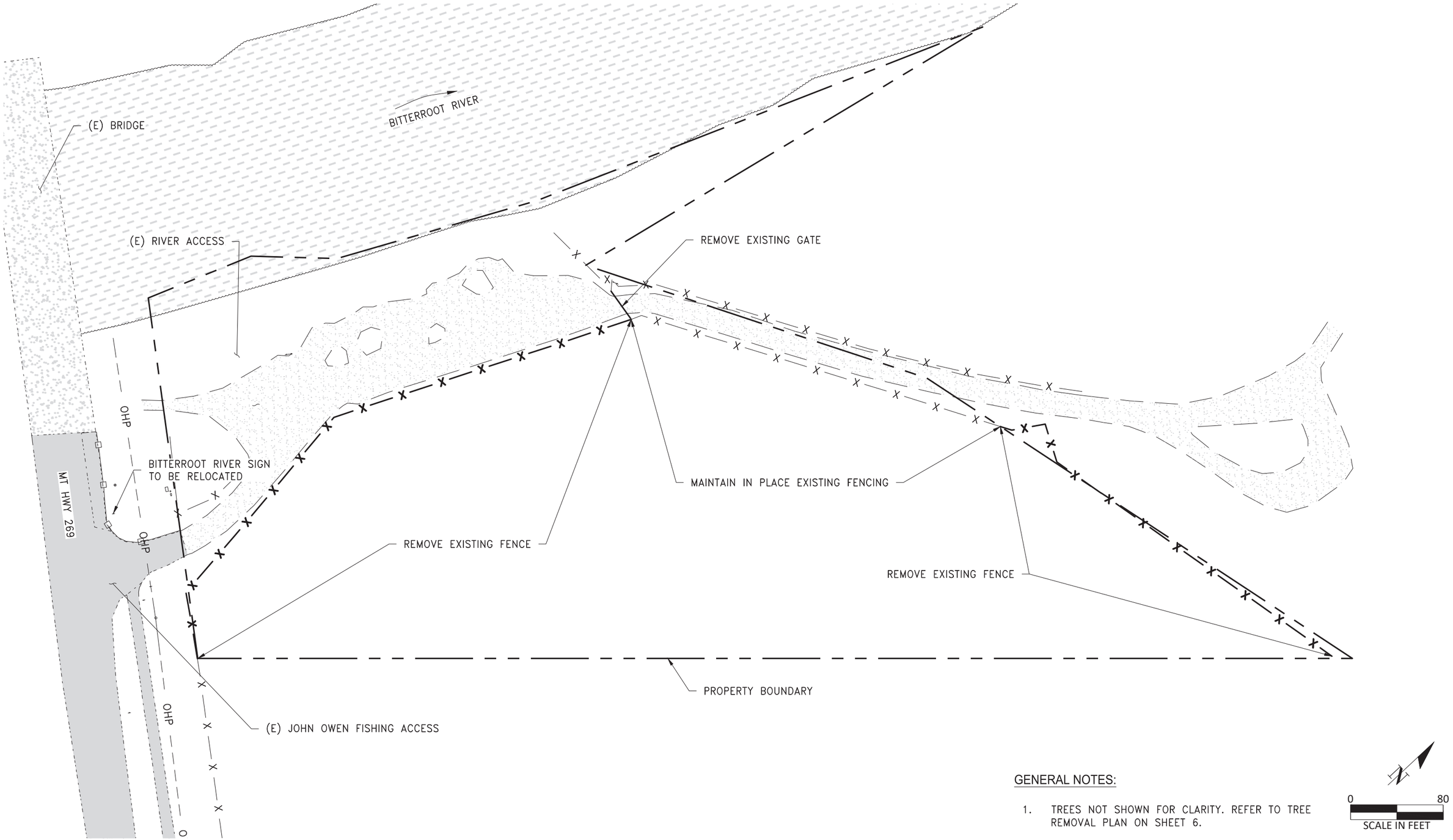
0 50
SCALE IN FEET

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

MONTANA FISH, WILDLIFE & PARKS
200

TREE REMOVAL PLAN
JOHN OWEN FAS FWP #7173727

SHEET: 6 of 20



GENERAL NOTES:

1. TREES NOT SHOWN FOR CLARITY. REFER TO TREE REMOVAL PLAN ON SHEET 6.

0 80
SCALE IN FEET

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

MONTANA FISH, WILDLIFE & PARKS
201

DEMOLITION PLAN
JOHN OWEN FAS FWP #7173727

A#1

SHEET: 7 of 20

BITTERROOT RIVER
SURVEYED EDGE OF WATER
BANK RESTORATION AREA
(E) BRIDGE
WOOD POST AND RAIL FENCE C 16
B 13 G 14 VEHICLE PARKING SPACES
(E) STEVENSVILLE RIVER PARKING SIGN
A 17 STEEL PIPE GATE
(E) ACCESS ROAD TO ADDITIONAL PARKING SEE SHEET 9
(E) EDGE OF DISTURBANCE
(E) FLOATERS SIGN-IN SIGN
(E) RIVER ACCESS
24' (TYP)
10' (TYP)
14' (TYP)
45' (TYP)
PEDESTRIAN CROSSING SIGN E 14
A 15 LATRINE
OHP
(E) RELOCATE BITTERROOT RIVER SIGN
MT HWY 269
(E) GUARDRAIL
5 MPH SIGN B 14
A 13 ROAD RECONDITIONING SECTION (TYP)
H 13 PIN DOWN CURB (TYP)
D 14 ONE WAY SIGN
G 13 SWALE
DO NOT ENTER SIGN C 14
A 14 STOP SIGN
C 13 F 13 GRAVEL TRAIL CONNECTION
TYPE D REFLECTOR E 18
B 18 D 18 METAL GUARDRAIL
CROSS WALK A 18
E 13 F 13 ASPHALT TRAIL CONNECTION
(E) JOHN OWEN FISHING ACCESS
C 16 WOOD POST AND RAIL FENCE
RESET FATALITY MARKER
RELOCATE EXISTING BIKE PATH SIGN
14' (TYP)
18'
16'
D 13 PRIMITIVE CAMP SITES (TYP)
GUARD RAIL TERMINAL D 18
A 16 PERIMETER FENCE
(P) PRIMITIVE CAMP LOOP
14'
16'
TYPE D REFLECTOR E 18
D 16 EAST BOUNDARY FENCE
GRAVEL SECTION (TYP) B 13
PROPERTY BOUNDARY
(E) FENCE
(E) OVERHEAD POWER
B 16 PANEL GATE CONTRACTOR TO VERIFY LOCATION PRIOR TO INSTALLATION
(E) EDGE OF ASPHALT
(E) 45 MPH SIGN
(E) PEDESTRIAN/BICYCLE TRAIL

GENERAL NOTES:

1. TREES NOT SHOWN FOR CLARITY. REFER TO TREE REMOVAL PLAN ON SHEET 6.

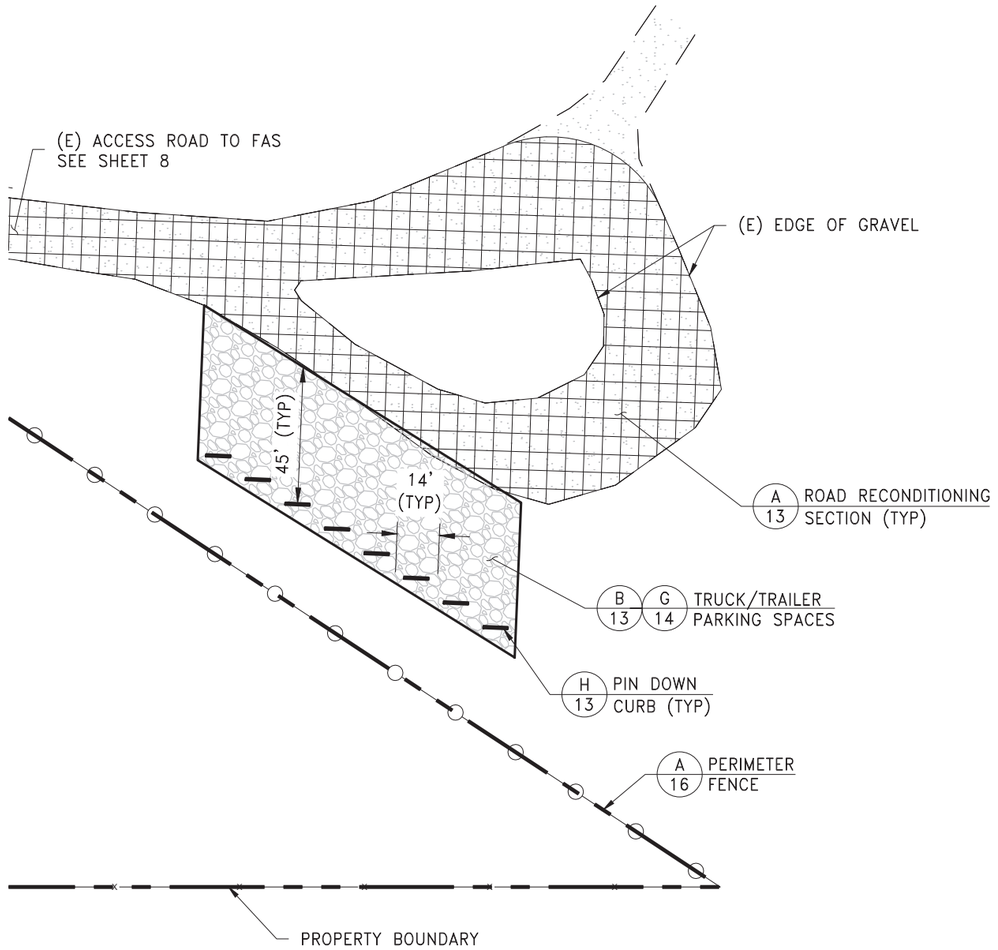
0 50
SCALE IN FEET

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

MONTANA FISH, WILDLIFE & PARKS
202

SITE PLAN (1 OF 2)
JOHN OWEN FAS FWP #7173727

SHEET: 8 of 20

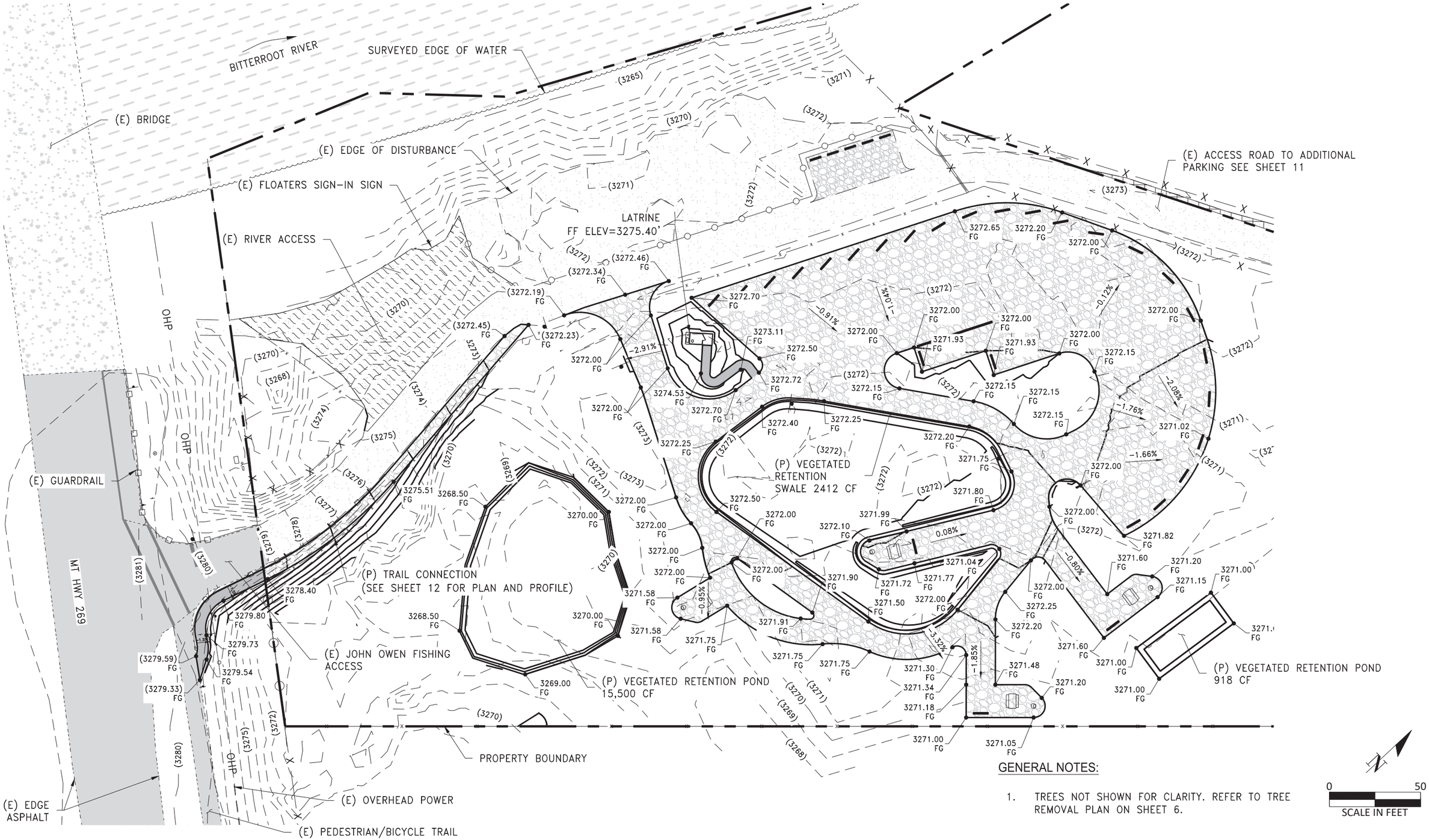


GENERAL NOTES:

1. TREES NOT SHOWN FOR CLARITY. REFER TO TREE REMOVAL PLAN ON SHEET 6.

0 50
SCALE IN FEET

JLS	01/03/25	JLS	01/03/25			MONTANA FISH, WILDLIFE & PARKS	SITE PLAN (2 OF 2)
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:	203	JOHN OWEN FAS FWP #7173727
JWS	01/03/25	JWS	01/03/25				SHEET: 9 of 20
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:		

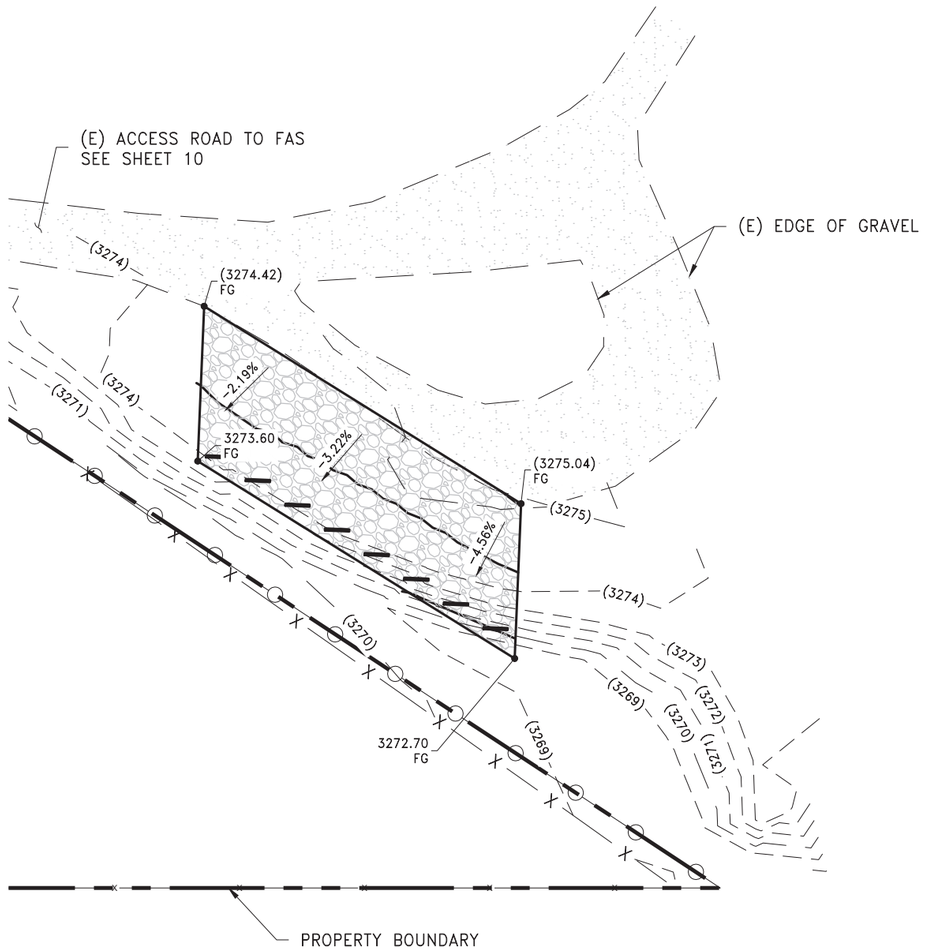


GENERAL NOTES:

1. TREES NOT SHOWN FOR CLARITY. REFER TO TREE REMOVAL PLAN ON SHEET 6.

0 50
SCALE IN FEET

JLS	01/03/25	JLS	01/03/25			MONTANA FISH, WILDLIFE & PARKS	GRADING PLAN (1 OF 2)
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:		JOHN OWEN FAS FWP #7173727
JWS	01/03/25	JWS	01/03/25				SHEET: 10 of 20
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:		



GENERAL NOTES:

1. TREES NOT SHOWN FOR CLARITY. REFER TO TREE REMOVAL PLAN ON SHEET 6.

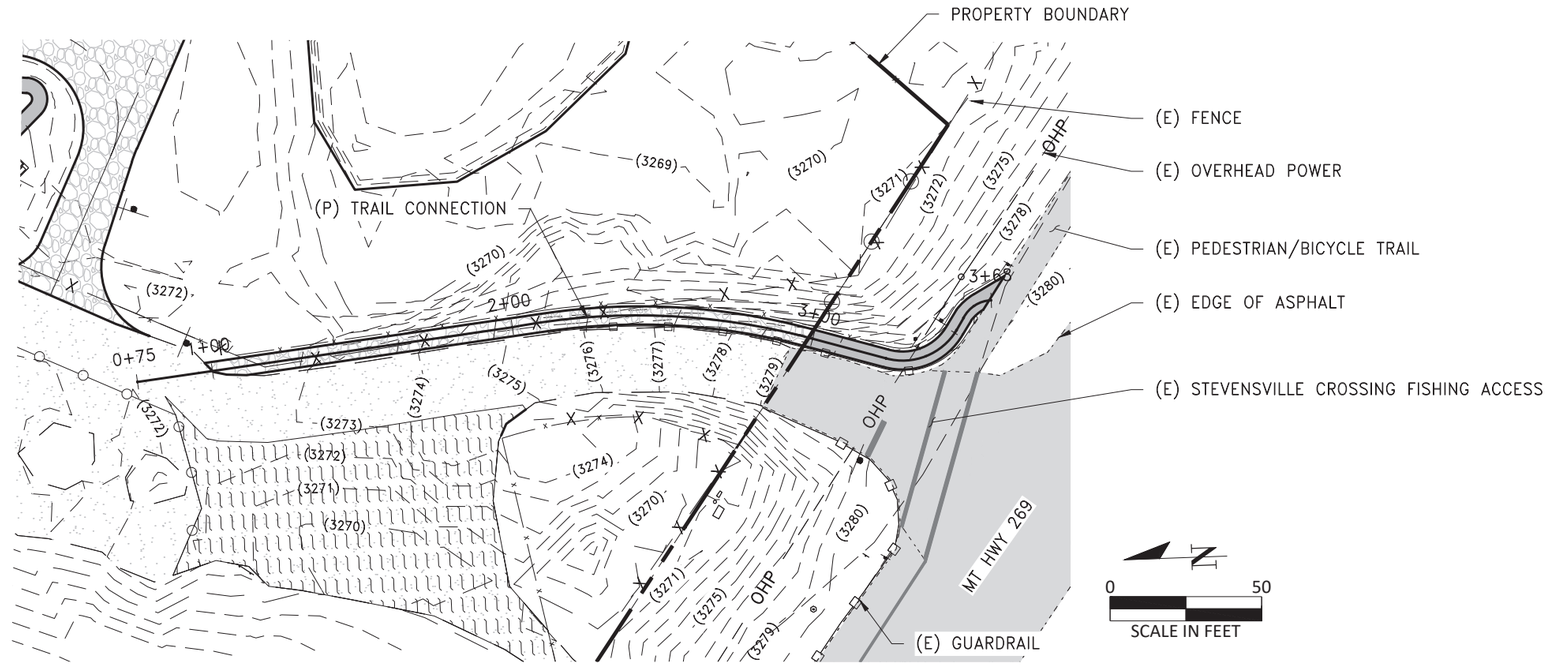
0 50
SCALE IN FEET

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

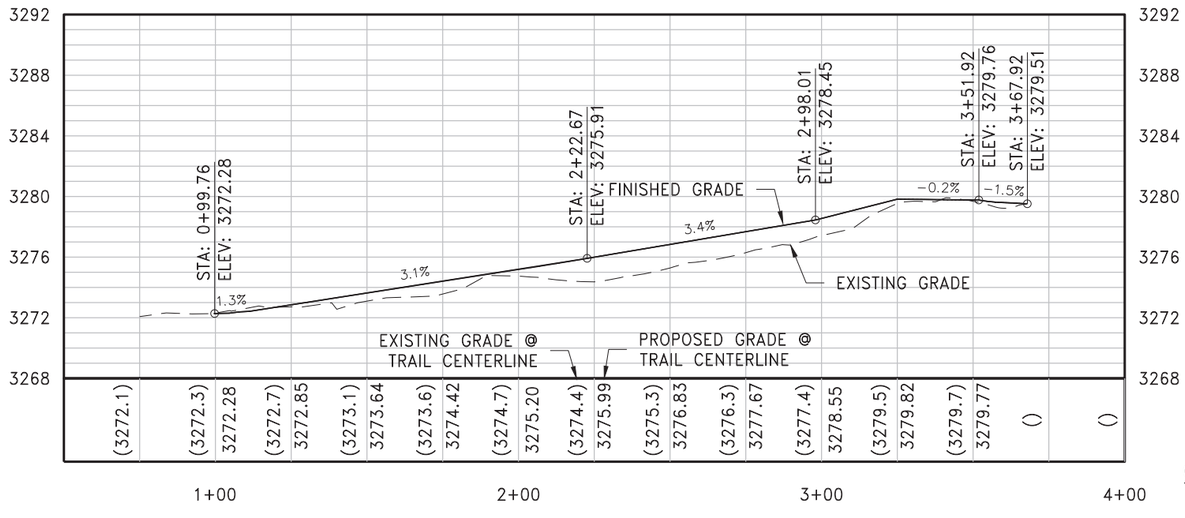
MONTANA FISH, WILDLIFE & PARKS
205

GRADING PLAN (2 OF 2)
JOHN OWEN FAS FWP #7173727

SHEET: 11 of 20



PLAN VIEW



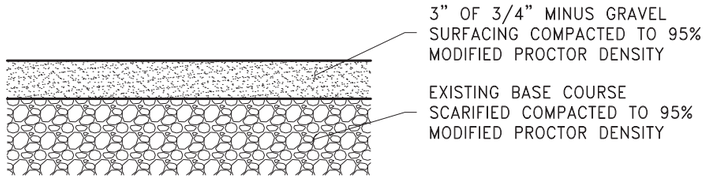
PROFILE VIEW

GENERAL NOTES:

1. TREES NOT SHOWN FOR CLARITY. REFER TO TREE REMOVAL PLAN ON SHEET 6.

JLS	01/03/25	JLS	01/03/25			MONTANA FISH, WILDLIFE & PARKS	PEDESTRIAN PATH PLAN & PROFILE
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:		
JWS	01/03/25	JWS	01/03/25				JOHN OWEN FAS FWP #7173727
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:		

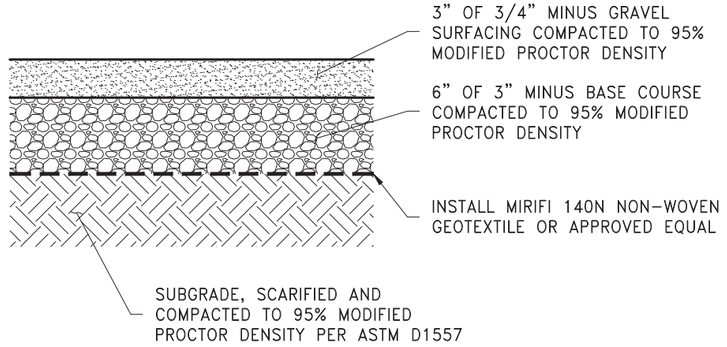
SHEET: 12 of 20



A 13 TYPICAL ROAD RECONDITIONING SECTION

NOT TO SCALE

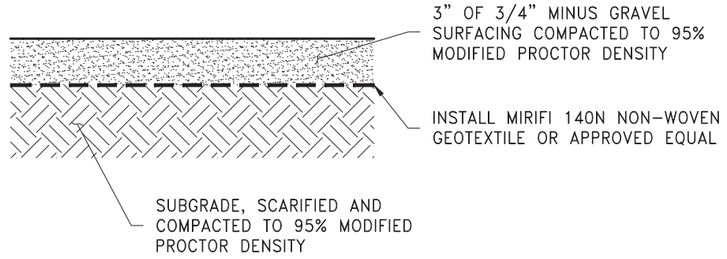
NOTE:
1. PLEASE SEE TABLE A-1 FOR MATERIAL SPECIFICATIONS.



B 13 TYPICAL GRAVEL SECTION

NOT TO SCALE

NOTE:
1. PLEASE SEE TABLE A-1 FOR MATERIAL SPECIFICATIONS.



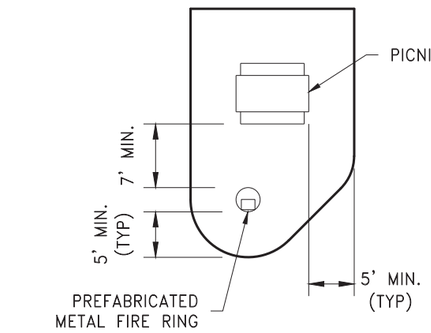
C 13 GRAVEL TRAIL SECTION

NOT TO SCALE

NOTE:
1. PLEASE SEE TABLE A-1 FOR MATERIAL SPECIFICATIONS.

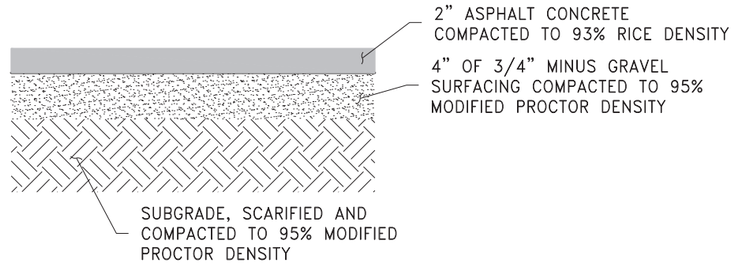
TABLE A-1

GRADATION SPECIFICATIONS		
SIEVE SIZE	GRAVEL SURFACING % SPECIFICATION	BASE COURSE % SPECIFICATION
3" (75 MM)		100
2" (50 MM)		
1" (25 MM)		
3/4" (19 MM)	100	
1/2" (12.5 MM)		
3/8" (9.5 MM)		
#4 (4.75 MM)	40-70	25-60
#8 (2.36 MM)		
#10 (2 MM)	25-55	
#40 (425 μm)		
#200 (75 μm)	2-10*	12



D 13 CAMPSITE LIVING AREA DETAIL

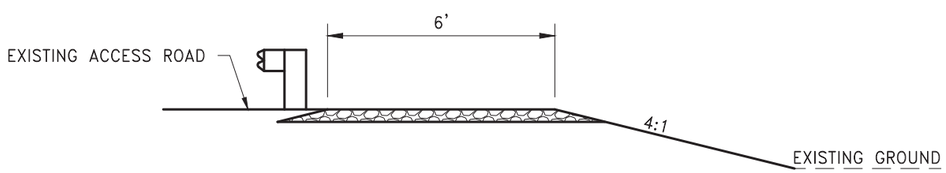
NOT TO SCALE



E 13 ASPHALT TRAIL SECTION

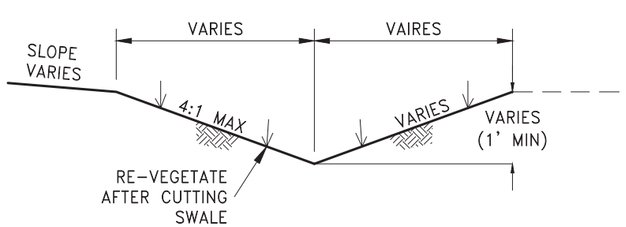
NOT TO SCALE

NOTE:
1. PLEASE SEE TABLE A-1 FOR MATERIAL SPECIFICATIONS.



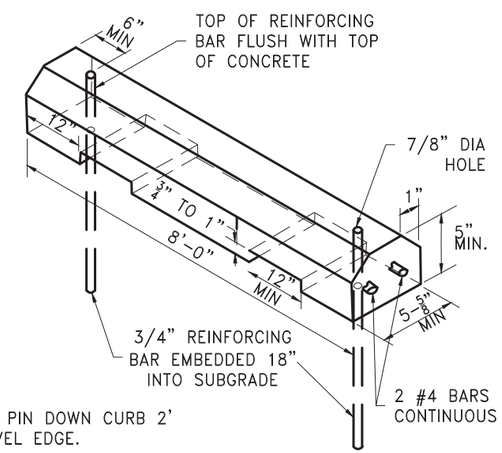
F 13 PEDESTRIAN TRAIL SECTION

NOT TO SCALE



G 13 TYPICAL SWALE DETAIL

NOT TO SCALE



NOTE:
1. INSTALL PIN DOWN CURB 2' FROM GRAVEL EDGE.

H 13 PIN DOWN CURB DETAIL

NOT TO SCALE

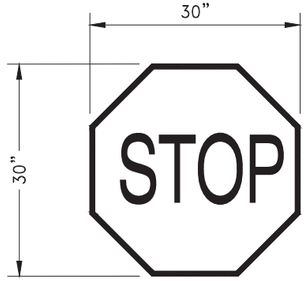
JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

MONTANA FISH, WILDLIFE & PARKS
207

TYPICAL SECTIONS DETAILS

JOHN OWEN FAS FWP #7173727

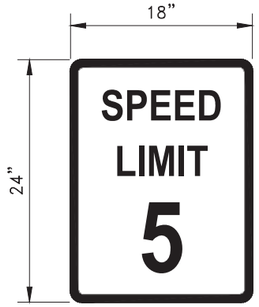
SHEET: 13 of 20



MUTCD – R1-1
TEXT – WHITE
BACKGROUND – RED
BORDER – WHITE

A 14 STOP SIGN

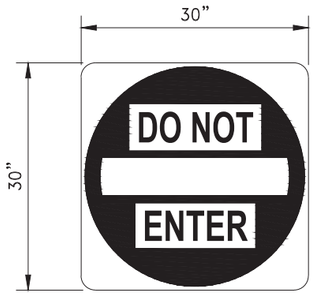
NOT TO SCALE



MUTCD – R2-1
TEXT – BLACK
BACKGROUND – WHITE
BORDER – BLACK

B 14 5 M.P.H. SPEED LIMIT SIGN

NOT TO SCALE



MUTCD – R5-1
TEXT – RED
BACKGROUND – WHITE
BORDER – BLACK

C 14 DO NOT ENTER SIGN

NOT TO SCALE

MUTCD – R6-2R
TEXT – BLACK
BACKGROUND – WHITE
BORDER – BLACK

D 14 ONE WAY SIGN

NOT TO SCALE

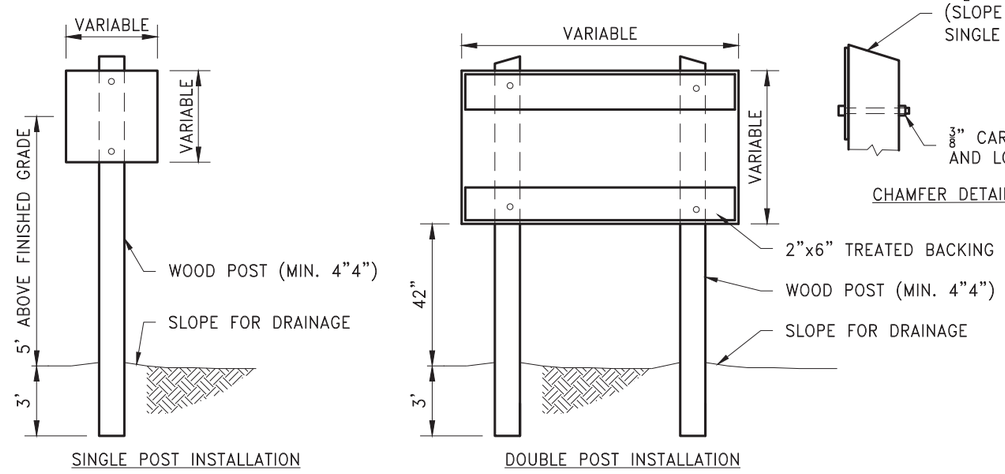
MUTCD – W11-2
IMAGE – BLACK
BACKGROUND – YELLOW
BORDER – BLACK

E 14 PEDESTRIAN CROSSING SIGN

NOT TO SCALE

G 14 GENERAL PARKING LAYOUT DIMENSIONS

NOT TO SCALE



NOTES:
1. USE PRESSURE TREATED TIMBERS FOR ALL SIGN POSTS. NEED BREAK-AWAY HOLES (OR DEVICE) FOR LARGER POSTS.
2. COAT ALL POSTS WITH PRESERVATIVE FOR ALL DRILLED HOLES AND CUT SURFACES.
3. USE CADMIUM PLATED OR GALVANIZED STEEL FOR ALL BOLTS, NUTS & WASHERS.
4. PLACE BOLTS TO NOT INTERFERE WITH SIGN LETTERING. PAINT BOLT HEADS TO MATCH SIGN.
5. CENTER SINGLE POST PANELS TO POST, OVERHANG PANELS 3" BEYOND POSTS FOR DOUBLE POST INSTALLATIONS. EXTEND ALL POSTS 3" ABOVE SIGN PANELS.

H 14 SIGN INSTALLATION DETAIL

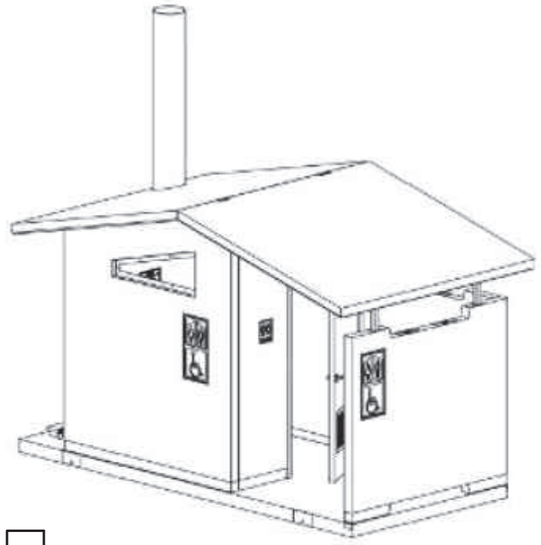
NOT TO SCALE

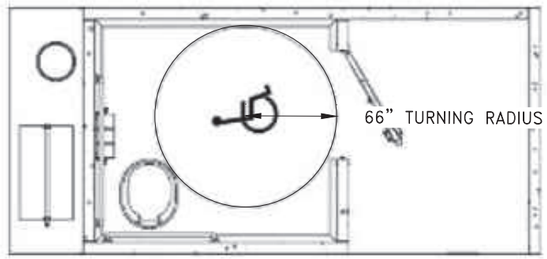
JLS	01/03/25	JLS	01/03/25				
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:	MONTANA FISH, WILDLIFE & PARKS	SHEET: 14 of 20
JWS	01/03/25	JWS	01/03/25				
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:		

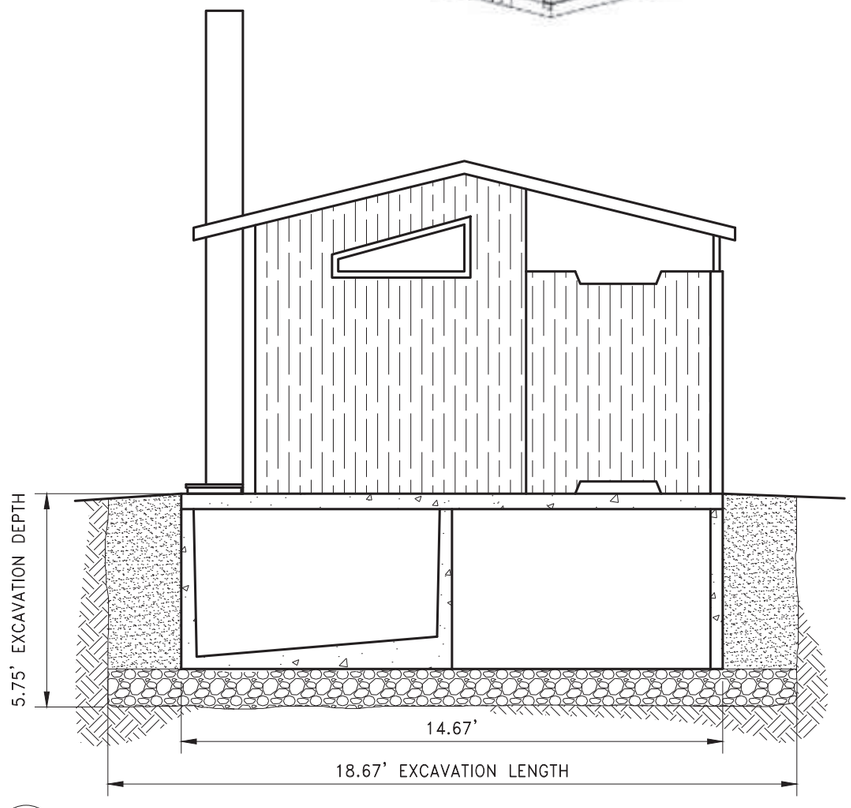
208

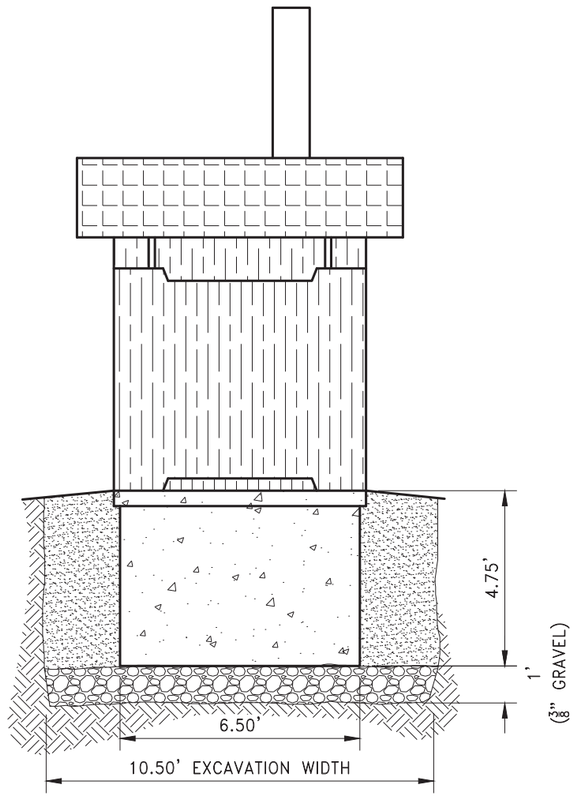
SIGN AND PARKING DETAILS

JOHN OWEN FAS FWP #7173727









A/15 LATRINE INSTALLATION DETAIL

NOT TO SCALE

GENERAL

THE LATRINE WILL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

INSTALLATION

GENERAL INSTALLATION INVOLVES EXCAVATION, LEVELING BOTTOM OF HOLE WITH DRAIN AGGREGATE, INSTALLING LATRINE, BACKFILLING AROUND LATRINE AND LANDSCAPING.

EXCAVATION:

A. EXCAVATE SUBSOIL TO A POINT 12 INCHES DEEPER THAN REQUIRED FOR LATRINE INSTALLATION.
   1. DEPTH OF EXCAVATION IS 5.75' FOR THE PRECAST LATRINES MANUFACTURED BY MISSOULA CONCRETE.
   2. FINISH FLOOR ELEVATION IS SHOWN ON THE SITE PLAN.
B. MINIMIZE OVER EXCAVATION. STOCKPILE EXCAVATED MATERIAL FOR LATER BACKFILLING AND LANDSCAPING.
C. COMPACT BOTTOM OF HOLE WITH THREE PASSES OF WHACKER OR SKID PLATE COMPACTION DEVICE.

LEVELING:

A. USE SMALL GRAVEL, 3/8 INCH MINUS CRUSHED OR SCREENED GRAVEL, AND PLACE ENOUGH IN BOTTOM OF HOLE SUCH THAT WHEN COMPACTED, IT WILL BE 12 INCHES DEEP.
B. COMPACT LEVELING MATERIAL WITH THREE PASSES OF COMPACTION DEVICE.
C. LEVEL BASE FOR INSTALLATION OF LATRINE.

LATRINE INSTALLATION:

A. THE PRECAST LATRINE WILL BE SET BY THE SUPPLIER.
B. INSURE THAT LATRINE SITS LEVEL AND PLUMB WHEN DONE INSTALLING.

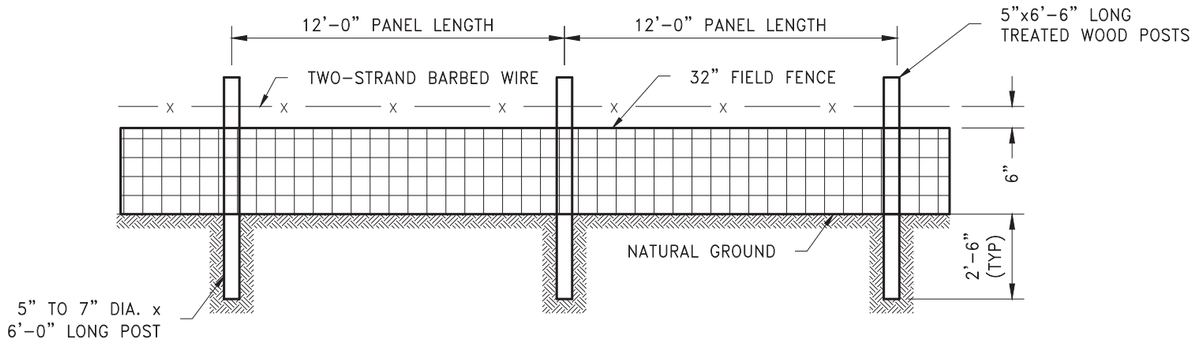
BACKFILLING:

A. PLACE IN SUCCESSIVE 8 INCH LAYERS MATERIAL PREVIOUSLY EXCAVATED FROM HOLE AND COMPACT.
   1. REMOVE ROCKS LARGER THAN 6 INCHES IN DIAMETER FROM THE FILL.
   2. REMOVE BRANCHES, ROOTS AND OTHER OR ORGANIC DEBRIS IN FILL.

LANDSCAPING:

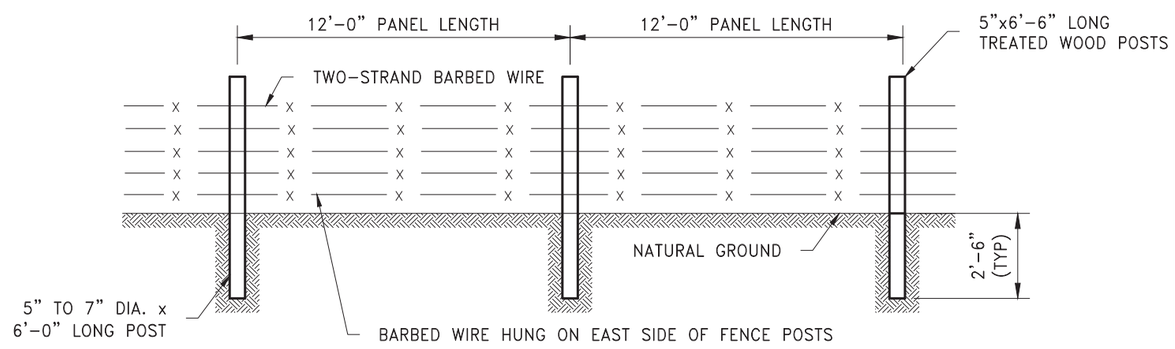
A. SLOPE GRADE AWAY FROM LATRINE.
B. BLEND FILL SLOPE INTO SURROUNDING TERRAIN.
C. REMOVE SURPLUS FILL MATERIAL.
D. REMOVE SOIL TO A DEPTH OF 2 INCHES BENEATH LOCATION FOR ENTRANCE SLAB AND COMPACT.
E. PLACE TWO INCHES OF 3/4 INCH PEA GRAVEL FOR BEDDING, LEVEL AND COMPACT.

JLS	01/03/25	JLS	01/03/25			MONTANA FISH, WILDLIFE & PARKS	LATRINE DETAILS
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:		JOHN OWEN FAS FWP #7173727
JWS	01/03/25	JWS	01/03/25				SHEET: 15 of 20
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:		



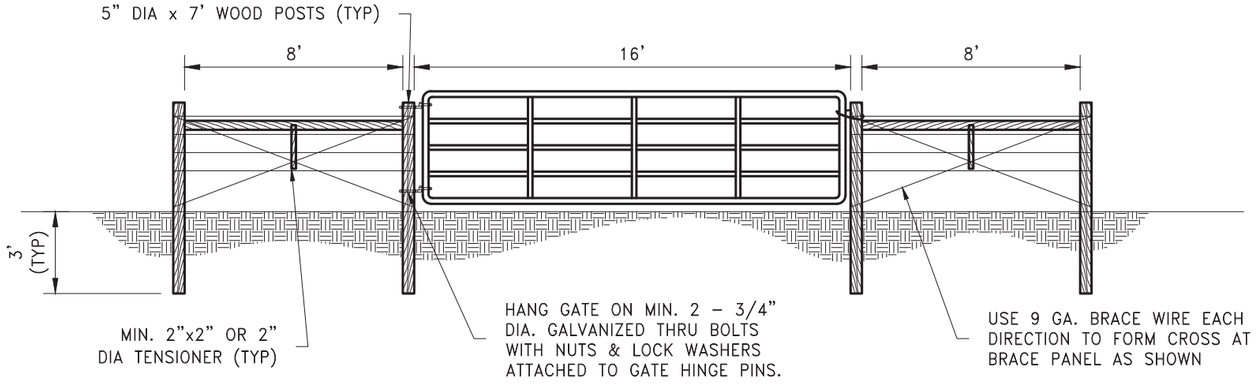
A 16 PERIMETER FENCE DETAIL

NOT TO SCALE



D 16 EAST BOUNDARY FENCE DETAIL

NOT TO SCALE

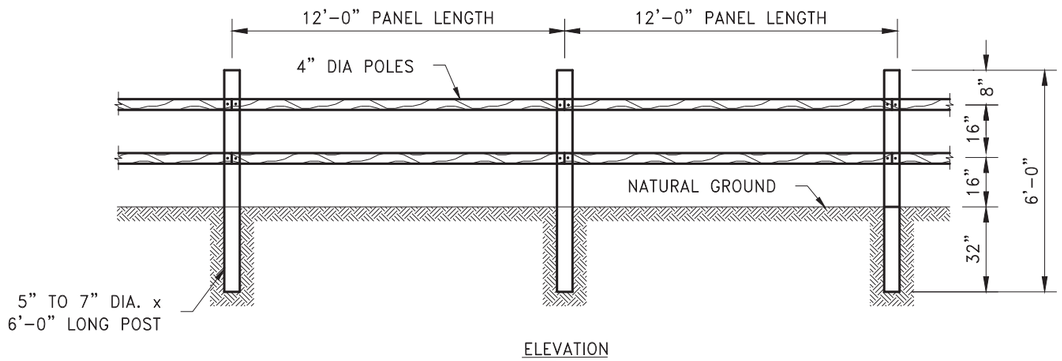


B 16 PANEL GATE DETAIL

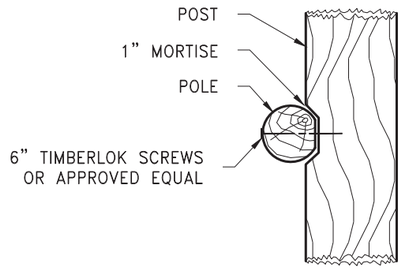
NOT TO SCALE

GENERAL NOTES:

1. ALL WIRE TO BE TWO-STRAND BARBLESS WIRE



ELEVATION



POST AND POLE CONNECTION

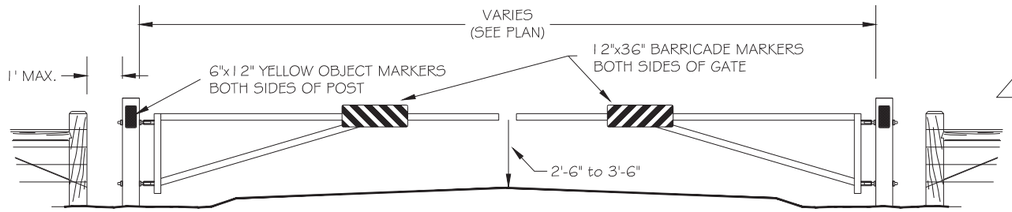
GENERAL NOTES:

1. BEVEL POLE @ POST TO ACHIEVE 3" THICKNESS
2. POST AND POLES TO BE FULLY TREATED, SEE SECTION 02820

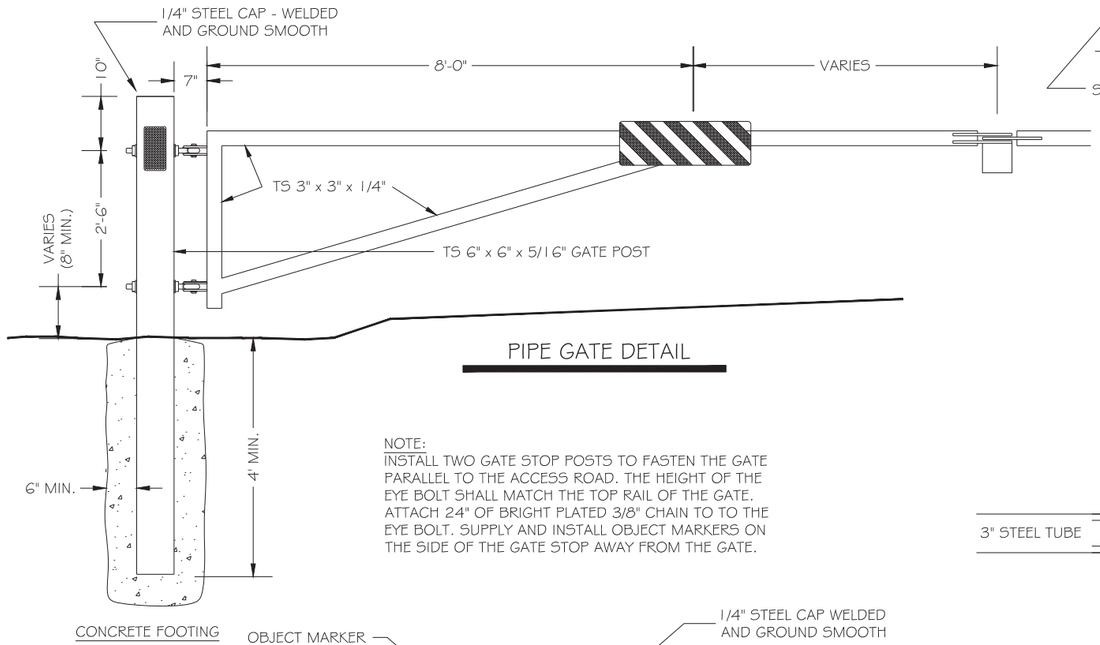
C 16 WOOD POST AND RAIL FENCE DETAIL

NOT TO SCALE

JLS	01/03/25	JLS	01/03/25			MONTANA FISH, WILDLIFE & PARKS	FENCING DETAILS
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:		JOHN OWEN FAS FWP #7173727
JWS	01/03/25	JWS	01/03/25				SHEET: 16 of 20
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:		

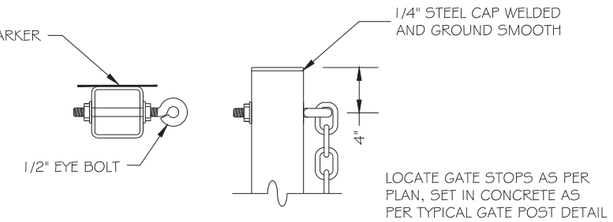


ELEVATION



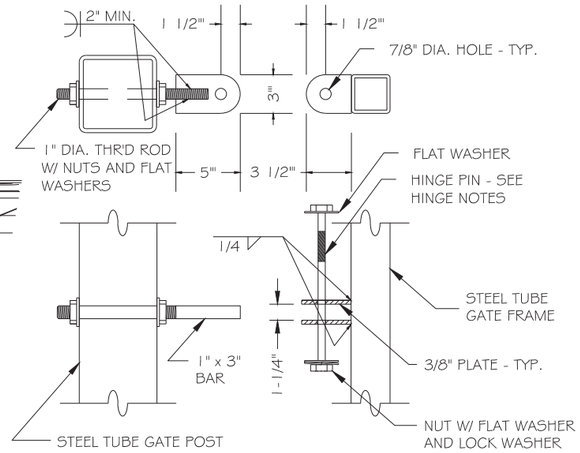
PIPE GATE DETAIL

NOTE:
INSTALL TWO GATE STOP POSTS TO FASTEN THE GATE PARALLEL TO THE ACCESS ROAD. THE HEIGHT OF THE EYE BOLT SHALL MATCH THE TOP RAIL OF THE GATE. ATTACH 24" OF BRIGHT PLATED 3/8" CHAIN TO TO THE EYE BOLT. SUPPLY AND INSTALL OBJECT MARKERS ON THE SIDE OF THE GATE STOP AWAY FROM THE GATE.

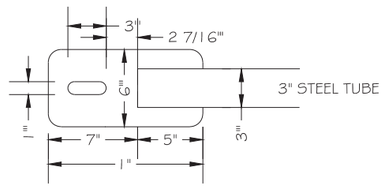


LOCATE GATE STOPS AS PER PLAN, SET IN CONCRETE AS PER TYPICAL GATE POST DETAIL

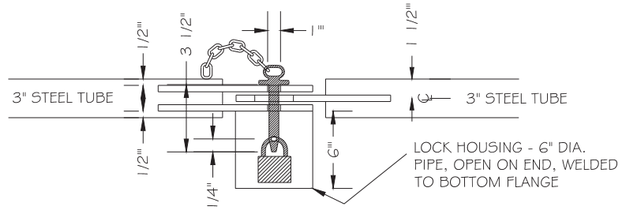
GATE STOP DETAIL



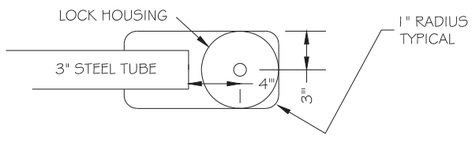
HINGE DETAIL



MIDDLE FLANGE



LOCKING DETAIL



TOP AND BOTTOM FLANGE

GENERAL NOTES:

1. TUBE STEEL TO BE ASTM A500 GRADE B
2. BOLTS TO BE ASTM A325, GRADE A
3. LENGTHS OF GATE AND STOP POSTS VARY DEPENDING ON TERRAIN. FIELD VERIFY REQUIRED LENGTH PRIOR TO CONSTRUCTION TO ENSURE MINIMUM BURY DEPTH.
4. ALL WELDS TO BE GROUND SMOOTH.
5. ALL STEEL TO BE FINISHED W/ INDUSTRIAL ACRYLIC POLYURETHANE, SEMI-GLOSS FINISH, COLOR TO BE SELECTED BY OWNER.

HINGE NOTES:

1. HINGE BOLT THREADS TO BE EXPOSED 1" MINIMUM BEYOND NUTS ON EITHER SIDE OF GATE POST TO ALLOW ADJUSTMENT.
2. PROVIDE 3/4" DIA. X 3" HINGE PINS AT EACH HINGE.
3. GREASE THREADS OF HINGE BOLTS BEFORE INSTALLATION.

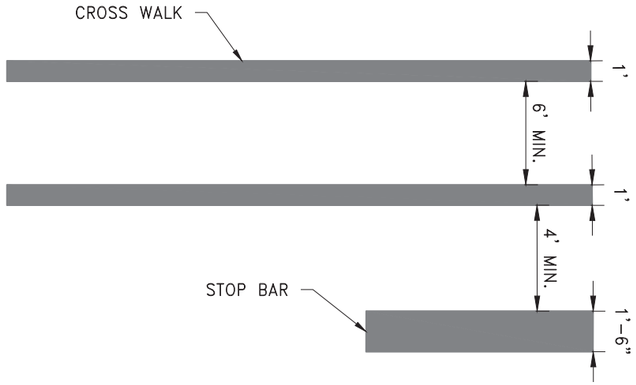
LOCK NOTES:

1. PROVIDE 7/8" DIA. X 3 1/2" HITCH PIN. BEVEL END OF PIN AND DRILL HOLE TO ACCEPT 3/8" DIA. PADLOCK HASP.
2. ATTACH PIN TO GATE WITH 24" BRIGHT PLATED 3/8" CHAIN.
3. IF THE CONTRACTOR CHOOSES TO USE THEIR OWN LOCK DURING CONSTRUCTION, A KEY MUST BE PROVIDED TO FWP PROJECT MANAGER AND REGIONAL STAFF. INSTALL FWP LOCK #2661 AT FINAL ACCEPTANCE.

A
17
STEEL PIPE GATE INSTALLATION DETAIL

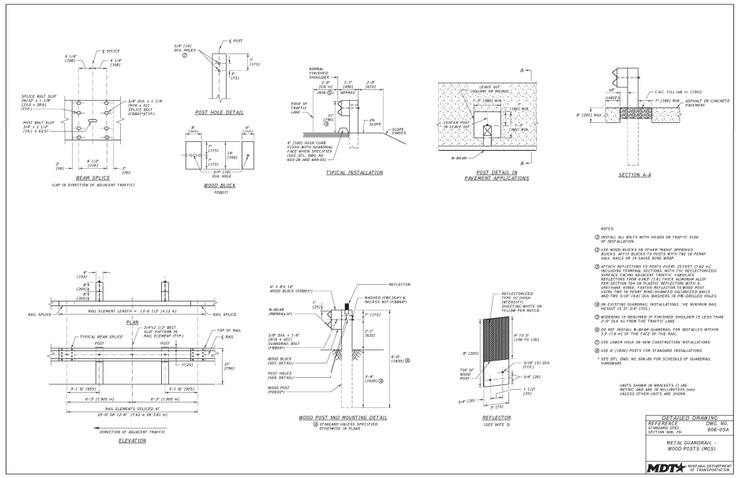
NOT TO SCALE

JLS	01/03/25	JLS	01/03/25			MONTANA FISH, WILDLIFE & PARKS	GATE DETAILS
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:		JOHN OWEN FAS FWP #7173727
JWS	01/03/25	JWS	01/03/25				SHEET: 17 of 20
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:		



A 18 CROSS WALK DETAIL

NOT TO SCALE

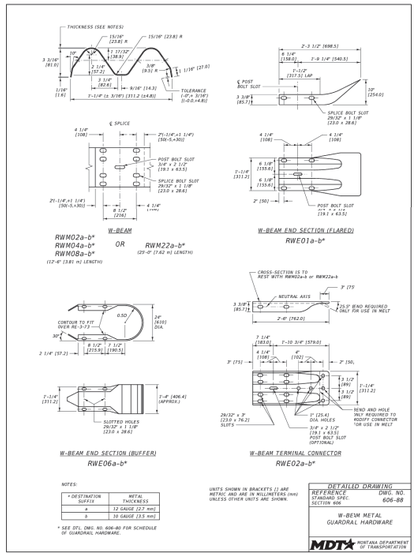


B 18 METAL GUARDRAIL WITH WOOD POSTS DETAIL

NOT TO SCALE

C 18 GUARDRAIL TERMINAL DETAIL

NOT TO SCALE



D 18 W-BEAM RUB RAIL DETAIL

NOT TO SCALE

E 18 TYPE D REFLECTORS DETAIL

NOT TO SCALE

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

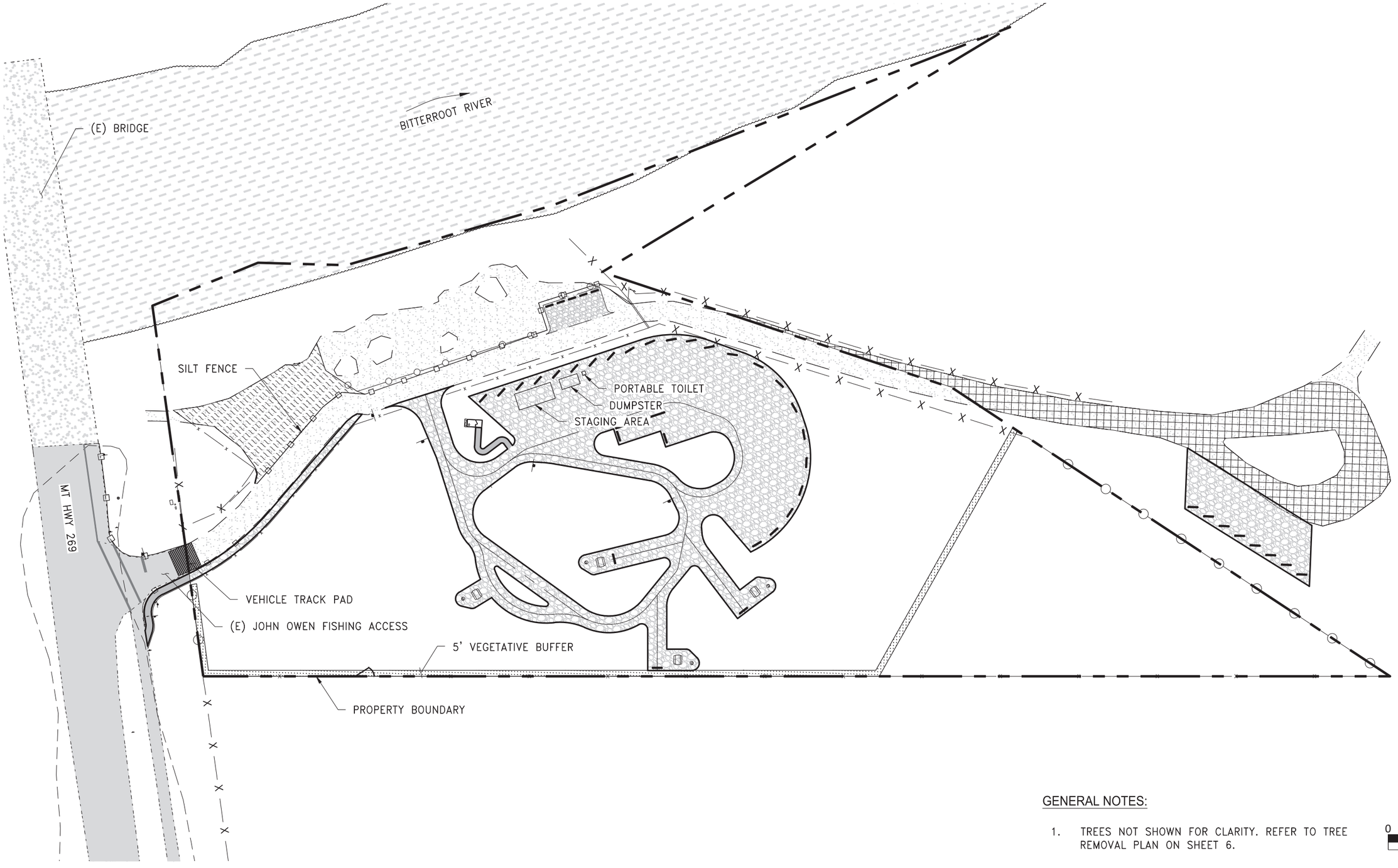
MONTANA FISH, WILDLIFE & PARKS

212

RIGHT OF WAY DETAILS

JOHN OWEN FAS FWP #7173727

SHEET: 18 of 20



GENERAL NOTES:

1. TREES NOT SHOWN FOR CLARITY. REFER TO TREE REMOVAL PLAN ON SHEET 6.

0 80
SCALE IN FEET

JLS DRAWN BY:	01/03/25 DATE:	JLS REVISED BY:	01/03/25 DATE:	APPROVED BY:	DATE:
JWS CHECKED BY:	01/03/25 DATE:	JWS APPROVED BY:	01/03/25 DATE:	APPROVED BY:	DATE:

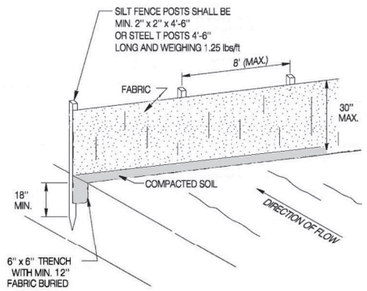
MONTANA FISH, WILDLIFE & PARKS

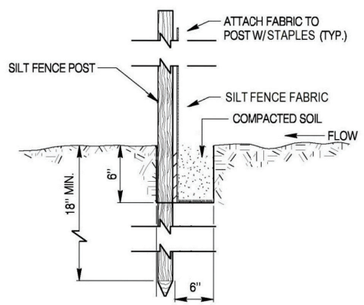
EROSION CONTROL PLAN

JOHN OWEN FAS FWP #7173727

SHEET: 19 of 20

SILT FENCE (con.)

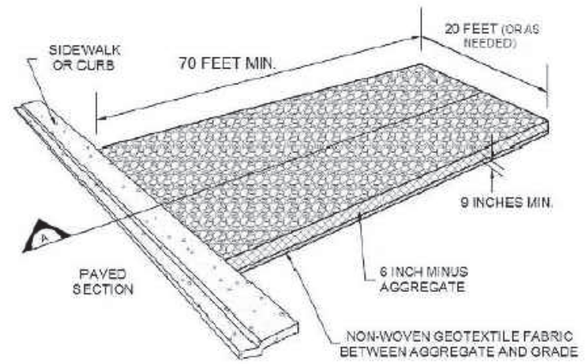


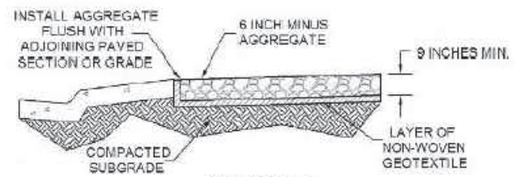


Adapted from WYDOT Temp. Erosion Control Measures

A 19 SILT FENCE DETAIL

NOT TO SCALE





SECTION A

VEHICLE TRACK PAD

Not to Scale

B 19 VEHICLE TRACK PAD DETAIL

NOT TO SCALE

NOTE:
1. VEHICLE TRACK PAD IS TEMPORARY AND SHALL BE REMOVED AFTER CONSTRUCTION.

JLS	01/03/25	JLS	01/03/25		
DRAWN BY:	DATE:	REVISED BY:	DATE:	APPROVED BY:	DATE:
JWS	01/03/25	JWS	01/03/25		
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:

MONTANA FISH, WILDLIFE & PARKS

214

EROSION CONTROL DETAILS

JOHN OWEN FAS FWP #7173727

SHEET: 20 of 20