OFFICIAL USE ONLY	
File Number:	P23-029
Date Received:	5/1/23
By:	HLN
Fee Paid:	$1400
Approved Date:	
Denied Date:	
By:	

City of Ketchum
Planning & Building

Floodplain Development Permit and Riparian Alteration Application

NOTE: This permit is required for all properties containing 100 year floodplain area and Riparian Setbacks

PROPERTY OWNER INFORMATION			
Property Owner Name(s): 450-490 Wood River LLC			
Property Owner's Mailing Address: P.O. Box 14001-174, Ketchum, ID 83340			
Phone:			
Email:			
PROJECT INFORMATION			
Project Name: 490 Wood River Residence and Site Grading			
Project Representative's Name (main point of contact for project): Charles G. Brockway, P.E.			
Project Representative's Phone: (208) 736-8543			
Project Representative's Mailing Address: 2016 Washington St N, Ste 4, Twin Falls, ID 83301			
Project Representative's Email: charles.g.brockway@brockwayeng.com			
Architect's name, phone number, e-mail:			
Landscape Architect's name, phone number, e-mail:			
Environmental consultant's name, phone number, e-mail:			
Engineer's name, phone number, e-mail: Charles G. Brockway, P.E.			
Project Address: 490 Wood River Dr			
Legal Description of parcel: Mary's Place Subdivision Lot 4, Block 1			
Lot Size: 2.09			
Zoning District:			
Overlay Zones – indicate all that apply: ☒ Floodplain ☐ Floodway ☐ Riparian Zone ☐ Avalanche ☐ Mountain			
Brief description of project scope: Please see attached narrative			
Value of Project: $ Undetermined			
TYPE OF PROJECT – indicate all that apply:			
☒ New Building in Floodplain	☐ Building Addition in Floodplain	☐ Streambank Stabilization / Stream Alteration	☐ Other. Please describe:
☐ Riparian Alteration	☒ Floodplain Development		
PROPOSED SETBACKS – if project is a new building or an addition to an existing building			
Front:	Side:	Side:	Rear:
ADDITIONAL INFORMATION			
Will fill or excavation be required in floodplain, floodway or riparian zone? Yes ☒ No ☐			
If Yes, Amount in Cubic Yards: Fill: CY Excavation: CY		Please see attached narrative for details on project scope, modeling, quantities, and related information.	
Will Existing Trees or Vegetation be Removed? Yes ☐ No ☐			
Will new trees or vegetation be planted? Yes ☐ No ☐			

Applicant agrees in the event of a dispute concerning the interpretation or enforcement of the Floodplain Management Overlay Application, in which the City of Ketchum is the prevailing party, to pay reasonable attorney fees, including attorney fees on appeal, and expenses of the City of Ketchum. I, the undersigned, certify that all information submitted with and upon this application form is true and accurate to the best of my knowledge and belief.

Signature of Owner/Representative MATT SLOCUM Authorized Rep. Date 4/26/23

10/25/2023 10:33:12 AM

490 WOOD RIVER DRIVE

FLOODPLAIN DEVELOPMENT PERMIT SUBMITTAL - 10.25.2023

SHEET INDEX

SHEET #	SHEET NAME
TOPO	TOPOGRAPHIC SURVEY
F-1.0	HYDROLOGICAL ANAYLIS / AERIAL IMAGERY
C-1.0	GRADING AND DRAINAGE PLAN
C-4.0	SHEET PILE WALL
L-1.00	OVERAL MATERIALS & GRADING PLAN
L-1.01	MATERIALS & GRADING ENLARGEMENT
L-1.02	CROSS SECTION A
L-1.03	CROSS SECTION B
EX1.04	ROAD CROSS SECTION
L-2.00	OVERALL PLANTING PLAN
L-2.01	PLANTING DETAILS
A-100	SITE PLAN
A-101	REFERENCE PLAN / LEVEL 1
A-102	REFERENCE PLAN / LEVEL 2
A-103	REFERENCE PLAN / ROOF
A-300	EXTERIOR ELEVATIONS
A-301	EXTERIOR ELEVATIONS
A-400	BUILDING SECTIONS
A-401	BUILDING SECTIONS
A-402	BUILDING SECTIONS
A-403	BUILDING SECTIONS
G-011	BUILDING HEIGHT DIAGRAMS
G-012	LOT COVERAGE CALCULATIONS
G-013	FLOOD VENT DIAGRAM
G-014	FLOOD VENT SPECIFICATION / TESTING
G-100	MATERIAL SCHEDULE + EXTERIOR RENDERINGS
G-107	LIGHTING FIXTURE SCHEDULE

SUPPORTING DOCUMENTS

-FLOODPLAIN PERMIT APPLICATION + CHECKLIST
-NARRATIVE DOUMENT (RESPONSES TO CRITERIA)
-TECHNICAL NARRATIVE
-HYDRAULIC ANALYSIS

APPENDIX A: HEC RAS CROSS SECTION AND DATA
APPENDIX B CUT AND FILL CALCULATIONS
APPENDIX C: JOINT APPLICATION TO USACE

PROJECT DESCRIPTION:

NEW SINGLE FAMILY DWELLING W/ IN-GROUND JACUZZI ON AN UNIMPROVED SITE.

PROJECT ADDRESS:

490 WOOD RIVER DRIVE
KETCHUM, ID 83340

LEGAL DESCRIPTION:

MARY'S PLACE SUBDIVISION LOT 4 BLK 1, ACCORDING TO THE OFFICIAL PLAT THEREOF ON FILE AND OF RECORD IN BLAINE COUNTY GIS.

APPLICABLE REFERENCE CODES:

ALL CONSTRUCTION SHALL COMPLY WITH:

2018 INTERNATIONAL BUILDING CODE*
2018 INTERNATIONAL RESIDENTIAL CODE*
2018 INTERNATIONAL FIRE CODE WITH LOCAL AMENDMENTS*
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2018 INTERNATIONAL SWIMMING POOL AND SPA CODE
2018 INTERNATIONAL EXISTING BUILDING CODE
2018 INTERNATIONAL PROPERTY MAINTENANCE CODE

*AS AMENDED BY THE IDAHO BUILDING CODE BOARD AND INCLUDING NOTED APPENDICES.

NATIONAL GREEN BUILDING STANDARD [SILVER CERTIFICATION]
TITLE 15 KETCHUM MUNICIPAL CODE
APPENDIX M OF THE IBC AS AMENDED BY THE CITY OF KETCHUM

ALL APPLICABLE COUNTY ORDINANCES
CONTRACTOR SHALL KEEP A COPY OF THE ABOVE CODE SECTIONS ON THE JOB SITE AT ALL TIMES.

JURISDICTIONAL AGENCY SHALL BE THE KETCHUM BUILDING DEPARTMENT.

PROJECT DATA:

PARCEL #: RPK04740000040
PARCEL AREA: 2.095 ACRES, PER SURVEY
ZONING: GR-L (GENERAL RESIDENTIAL; LOW DENSITY DISTRICT)
OCCUPANCY: SINGLE FAMILY
CONSTRUCTION TYPE: TYPE V
HEIGHT LIMIT:35'-0"
STORIES: 2
SETBACKS: 15'-0": FRONT,
THE GREATER 1' FOR EVERY 3' BUILDING HEIGHT, OR 5': SIDE
THE GREATER 1' FOR EVERY 3' BUILDING HEIGHT, OR 15': REAR
SPRINKLER: REQUIRED
FLOODPLAIN MANAGEMETN OVERLAY DISTRICT: YES
ADU: MAX COVERAGE 1,200 SF
ELEVATION: 100'-0" = 5770.6'
BFE: 5768.6'

PROPOSED DEVELOPMENT:

FLOOR 1:	7,674 SF + 1,450 SF GARAGE	
FLOOR 2:	1,512 SF	
TOTAL SQUARE FOOTAGE:	9,186 SF + 1,450 SF GARAGE = 10,636 SF	
EXEMPT DECK		
FLOOR 1:	1,465 SF	
FLOOR 2:	642 SF	
ALLOWABLE LOT COVERAGE:	30%	
PROPOSED LOT COVERAGE:	11.3%	
MAXIMUM BUILDING HEIGHT:	ALLOWABLE:	35' - 0"
	TO PROPOSED GRADE:	31'- 7 1/4"
	TO EXISTING GRADE:	33'-5"
PARKING SPACES:	5 GARAGE	

NOTES:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DRAWINGS, CALCULATIONS, GOVERNMENTAL AGENCY APPROVALS AND FEES TO COMPLETE THIS WORK. CONTRACTOR/SUBCONTRACTORS SHALL SUBMIT MECHANICAL, ELECTRICAL, COMMUNICATIONS AND PLUMBING DRAWINGS TO RO ROCKETT DESIGN FOR PREVIEW OF DEVICE TYPES, LOCATIONS AND QUANTITIES, HVAC ZONING/THERMOSTAT LOCATIONS, ETC. PRIOR TO SUBMITTING FOR PERMIT AND CONSTRUCTION.

PROJECT LOCATION:

490 WOOD RIVER

OWNER:
450-490 WOOD RIVER, LLC
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:
RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:
BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:
BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:
FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:
LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:
CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:
KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
	5/25/23	PERMIT SET
	04/25/23	FDP SET

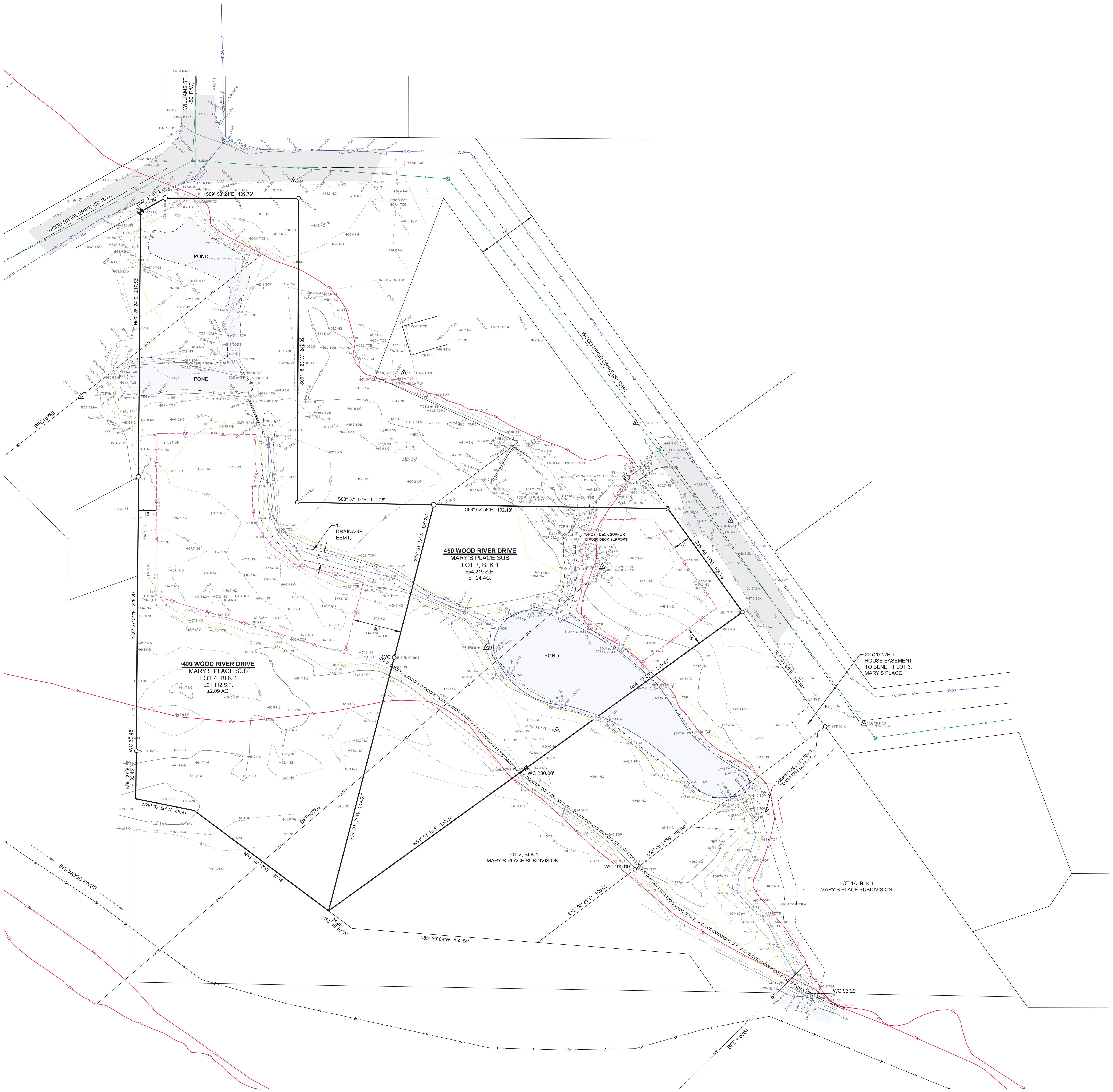
PROJECT:
490 WOOD RIVER
490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER
2109

DRAWING TITLE:
COVER SHEET FDP

DRAWING NUMBER:
G-003

-



LEGEND

- Property Line
- Adjoiner's Lot Line
- Centerline of Right of Way
- Building Envelope
- Easement, type and width as shown
- CNTRL = Survey Control
- FDBC = Found Brass Cap
- FD5/8 = Found 5/8" Rebar
- FD1/2 = Found 1/2" Rebar
- 5' Contour Interval
- 1' Contour Interval
- FL = Flow Line of Creek/Ditch
- Building
- Asphalt
- Wetlands, per Sawtooth Environmental 2016 Study
- Pavers
- Approximate Surface Water at time of Survey
- Thalweg, Big Wood River, per FEMA 2010
- Base Flood Elevation, per FEMA 2010
- Floodplain, per FEMA 2010
- Floodway, per FEMA 2010
- EOW = Approximate Edge of Water
- Sewer Main
- SMH = Sewer Manhole
- SDMH = Storm Drain Manhole
- Culvert
- Ketchum City Water Line (8")
- WV = Water Valve

CMP = Corrugated Metal Pipe
COR = Corner
EOA = Edge of Asphalt
EOP = Edge of Pavers
FL = Flow Line
NG = Natural Ground
TOE = Toe of Slope
TOP = Top of Slope
WC = Witness Corner

NOTES

1. The purpose of this map is to show topographical information as it existed on the date the field survey was performed. Changes may have occurred to site conditions since survey date (09/23/2022).
2. Boundary information is based on Found Monumentation, the recorded plat of Mary's Place Subdivision, Instrument Number 445345, records of Blaine County, Idaho, and the Record of Survey Showing Lots 2, 3, & 4, Block 1, Mary's Place Subdivision, Instrument Number 679251, records of Blaine County, Idaho. Refer to the Plat Notes, Conditions, Covenants, and Restrictions on the Original Plat.
3. Underground utility locations are based on above ground appurtenances, utilities visible at the time of the survey, and City Maps. Utilities should be located prior to any excavation.
4. Galena Engineering Inc. has not received a Title Policy from the client and has not been requested to obtain one. Relevant information that may be contained within a Title Policy may therefore not appear on this map and may affect items shown hereon. It is the responsibility of the client to determine the significance of the Title Policy information and determine whether it should be included. If the client desires for the information to be included they must furnish said information to Galena Engineering, Inc. and request it be added to this map.
5. Benchmark is top of Found Brass Cap marking the northwest corner of lot 4, elevation = 5768.11. Point elevations shown are truncated (i.e. 47.3 is 5747.28). Vertical Datum is NAVD 1988.

A TOPOGRAPHIC MAP SHOWING LOT 3 & 4, BLK 1, MARY'S PLACE SUBDIVISION (450 AND 490 WOOD RIVER DRIVE)

LOCATED WITHIN SECTION 13, T.4 N., R.17 E., B.M., CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR PRESIDIO VISTA PROPERTIES, LLC

PROJECT INFORMATION
P:\sdskproj\7193-01\dwg\Topo\7193-01-topo-with added areas.dwg 11/09/22 3:13:45 PM

PROFESSIONAL LAND SURVEYOR
LICENSED
16670
11/09/22
STATE OF IDAHO
MARK E. PHILLIPS

DESIGNED BY
IDV / MS
DRAWN BY
MEP
CHECKED BY

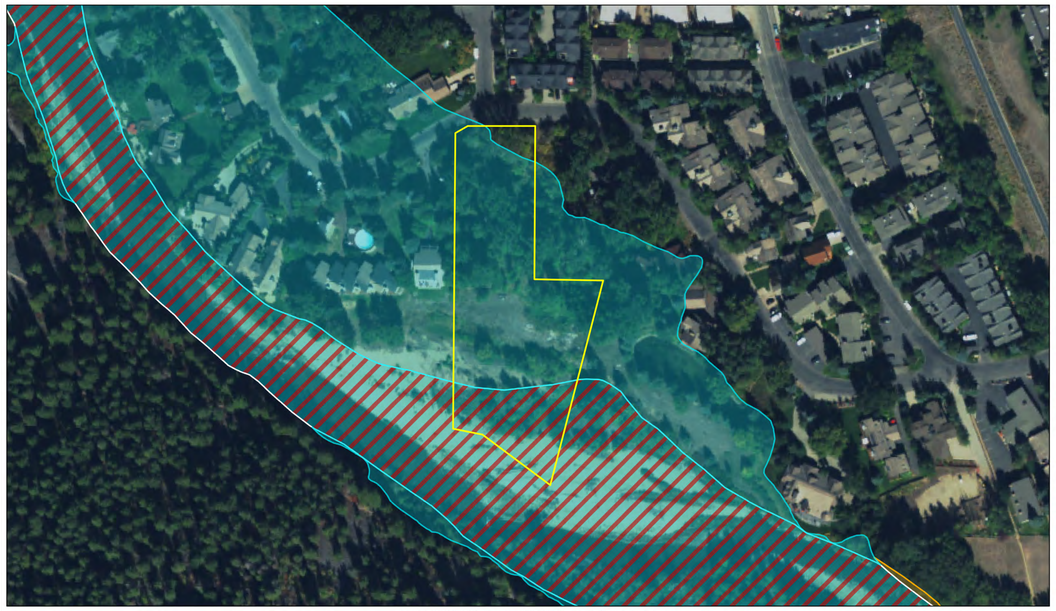
GALENA
ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE:

NO	DATE	BY	REVISIONS

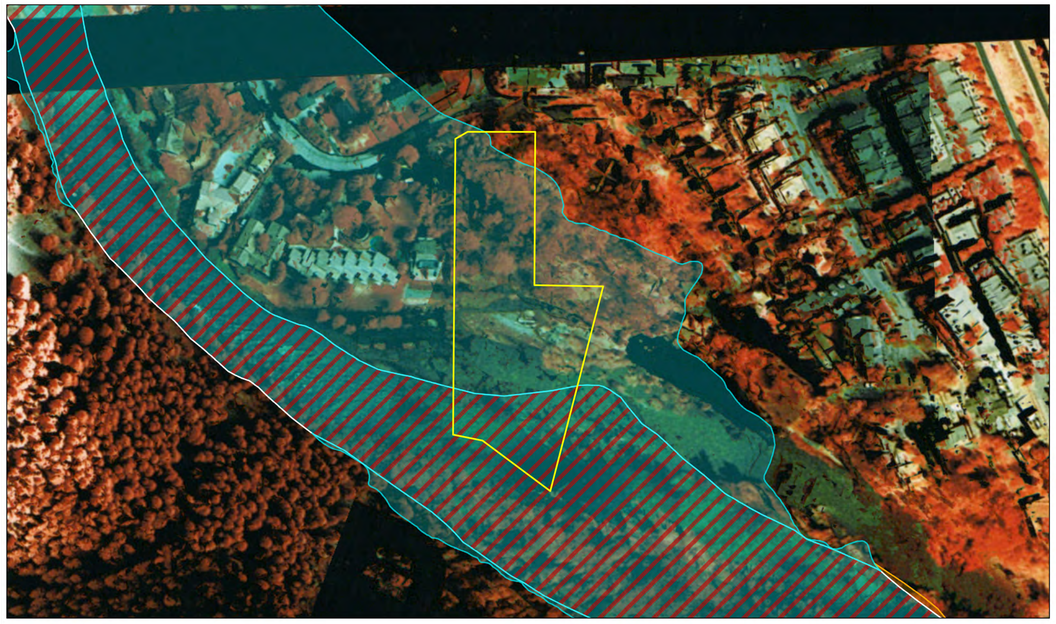
TOPO

Path: F:\Projects\Presidio Vista\ArcMap\490 Floodplain.mxd

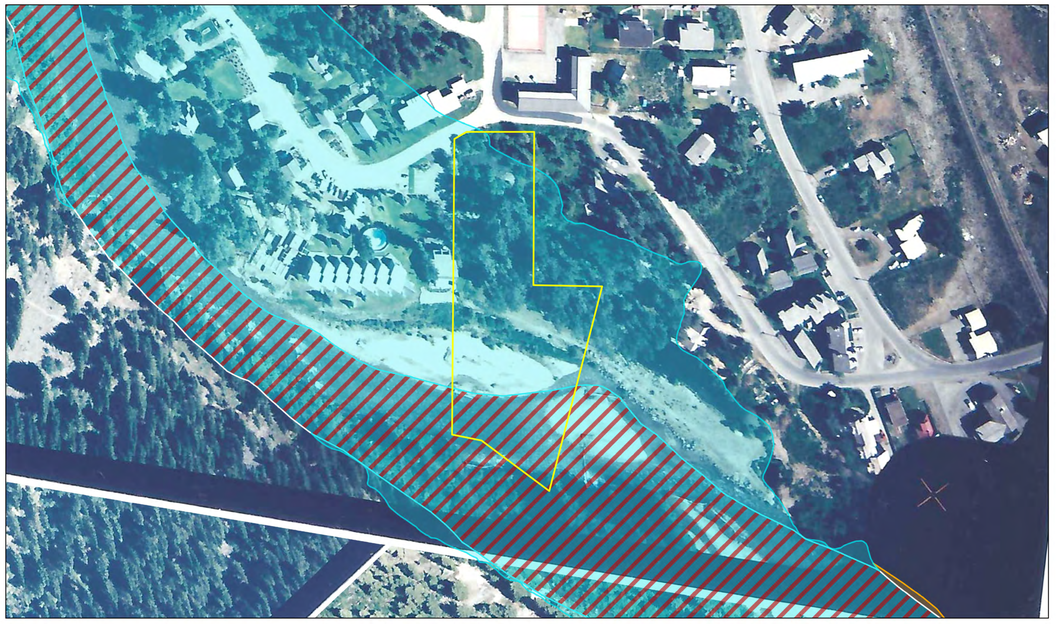


NAIP 2021 IMAGERY (NON-FLOOD IMAGERY)

BIG WOOD RIVER 5-11-2017 (FLOOD IMAGERY)



BIG WOOD RIVER 5-19-2006 (FLOOD IMAGERY)



BIG WOOD RIVER 6-23-1986 (FLOOD IMAGERY)

BROCKWAY ENGINEERING P.L.L.C.

1 inch = 100 feet

BROCKWAY ENGINEERING, PLLC.
JJJ - Date: 4/21/2023

490 WOOD RIVER DRIVE

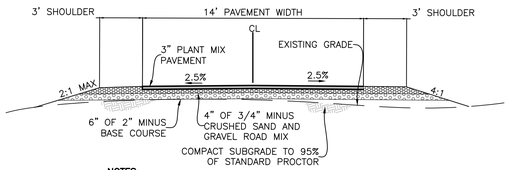
HYDROLOGY ANALYSIS

AERIAL IMAGES AS TITLED

Legend

- 490 Property
- Special Flood Hazard Area (Floodplain, 1%)
- Floodway
- 500 Year Floodplain (0.2%)
- X, Area of Minimal Flood Hazard
- D, Unstudied

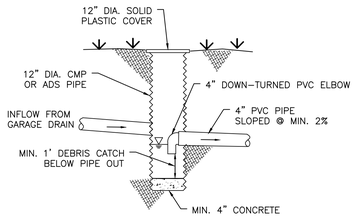
N



NOTES:

1. COMPACT DRIVEWAY SUBGRADE AND ALL STRUCTURAL FILL MATERIAL TO AT LEAST 95% OF THE MAXIMUM DENSITY OF EACH MATERIAL ACCORDING TO STANDARD PROCTOR ASTM D-698.

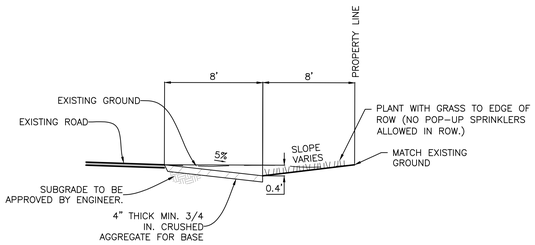
A — DRIVEWAY TYPICAL SECTION
SCALE: NTS



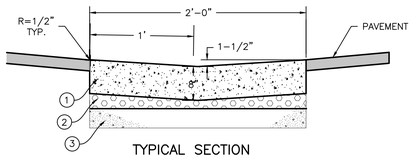
1 / C1 — OIL-WATER SEPARATOR
NOT TO SCALE

LEGEND

PROPERTY LINE	
ADJOINING PROPERTY LINE	
CENTERLINE	
FENCE	X
EDGE OF PAVEMENT	
EASEMENT	
WETLANDS DELINEATED JUNE 2022	WET
SEWER	S
SEWER MANHOLE (MH)	
WATER	W
WATER GATE VALVE	
WATER METER (WM)	
HYDRANT	
ELEVATION CONTOUR	5775
PROPOSED ELEV CONTOUR	59
SAWCUT LINE	
FLOW LINE	
CUT-OFF TRENCH	
FOOTING DRAIN	FD
STORM DRAIN PIPE (SD)	
DOWN SPOUT	DS
CATCH BASIN	
ASPHALT PAVEMENT	
GRASS PAVE	
GRAVEL	
INFILTRATION TRENCH	
FG	FINISHED GRADE
EG	EXISTING GROUND
GB	GRADE BREAK
ME	MATCH EXISTING



B — RIGHT OF WAY TYPICAL SECTION
SCALE: NTS



TYPICAL SECTION

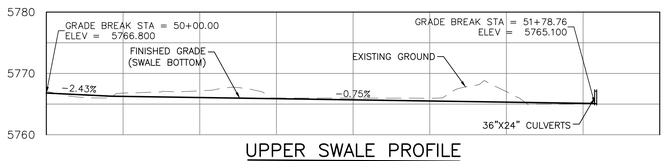
LEGEND

1. 8-INCH THICK CONCRETE
2. 2" MIN. OF ¾" TYPE 1 AGGREGATE BASE
3. 6" OF 2" TYPE II SUBBASE

NOTES:

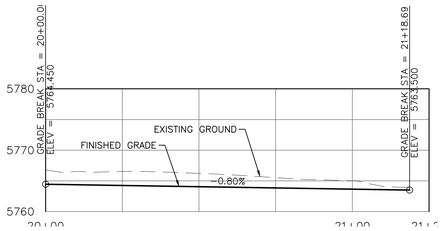
1. ½-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
2. CONTINUOUS PLACEMENT PREFERRED. SCORE INTERVALS TO MATCH SIDEWALK WITH 10-FEET MAXIMUM SPACING.
3. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.

2 — 2 FT CONCRETE VALLEY GUTTER
SCALE: N.T.S.



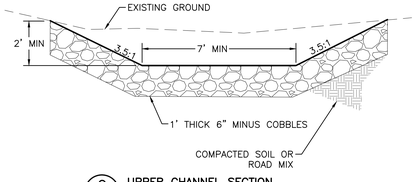
UPPER SWALE PROFILE

HORIZ: 1"=20'
VERT: 1"=5'

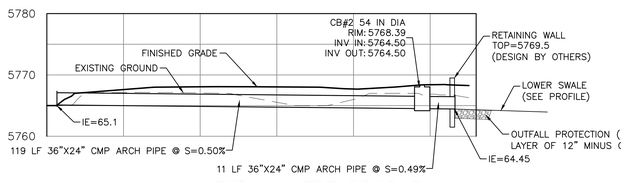


LOWER SWALE PROFILE

HORIZ: 1"=20'
VERT: 1"=10'

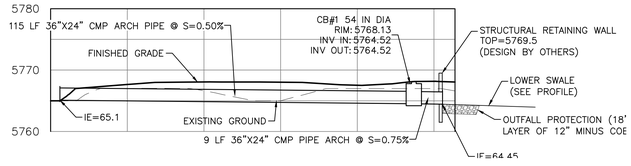


C — UPPER CHANNEL SECTION
NOT TO SCALE



WEST CULVERT PROFILE

NTS

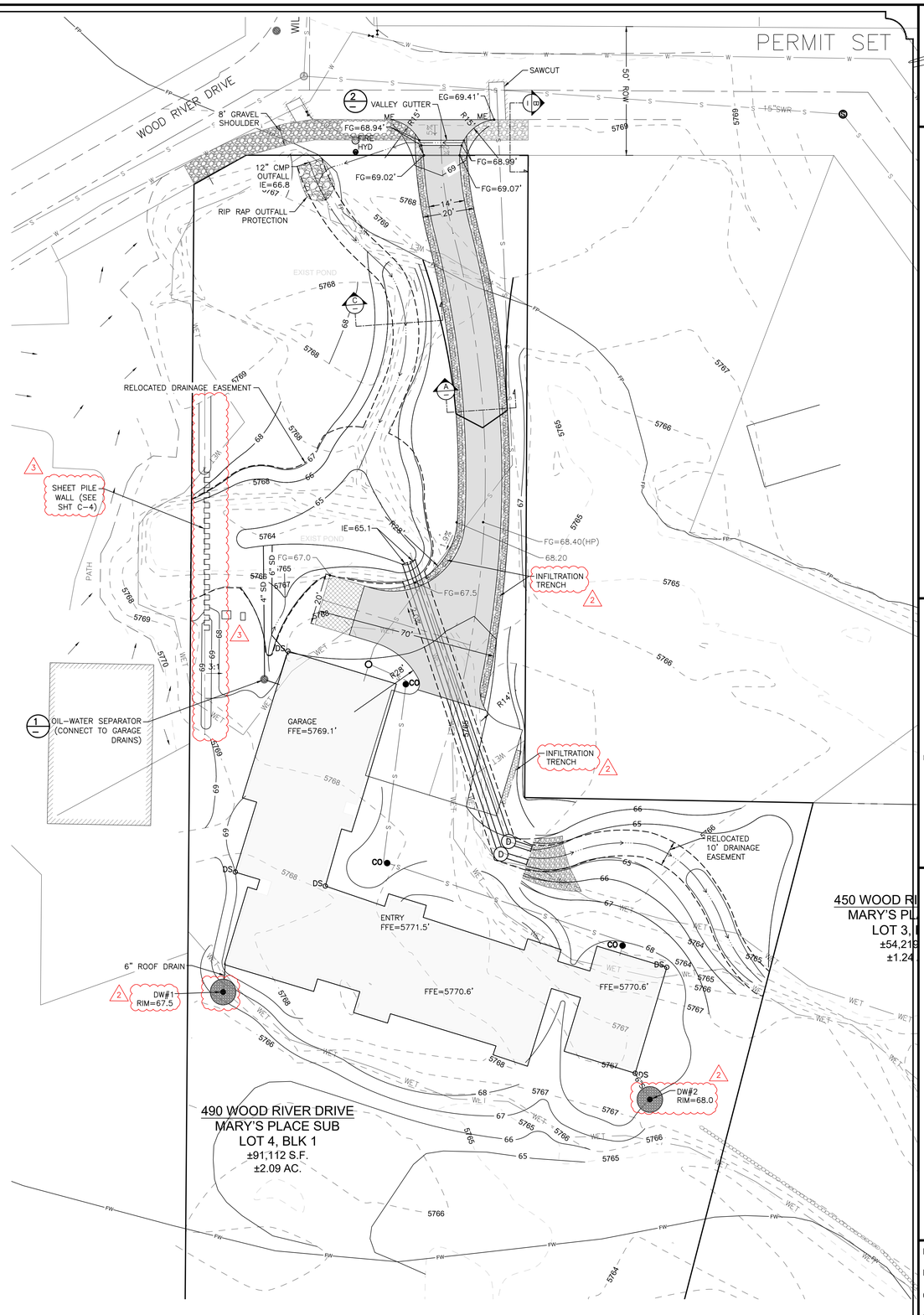


EAST CULVERT PROFILE

NTS

GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING CONSTRUCTION. ANY CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. CONTRACTOR SHALL NOTIFY DIGLINE (1-800-342-1585) AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION.
3. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN PER ISPWC SECTION 205 TO THE CITY, AND ALSO TO IDAHO DEQ IF DISCHARGING TO SURFACE WATER.
4. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CONSTRUCTION SWPPP. DEWATERING PLANS AND COPIES OF SUBMITTALS TO AND APPROVALS FROM IDAHO DEQ ARE REQUIRED TO BE PROVIDED AND PART OF THE SWPPP PRIOR TO NOI FILING AND IDEQ WAITING PERIOD BEGINS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING THE CONSTRUCTION OF ALL ITEMS HEREON. DUST CONTROL SHALL BE CONTINUOUS DURING CONSTRUCTION, 24 HOURS PER DAY 7 DAYS PER WEEK. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE STORM WATER POLLUTION PREVENTION PROGRAM AT ALL TIMES UNTIL PERMANENT EROSION CONTROL IS ESTABLISHED.
6. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM THE HOUSE.
7. ALL WORK WITHIN THE CITY RIGHT OF WAY SHALL CONFORM TO CITY OF KETCHUM STANDARDS.



PROFESSIONAL ENGINEER — LICENSED — PHOEBE JOHANNESSEN — 17661 — STATE OF IDAHO
5/22/2023

REVISIONS

No.	DESCRIPTION	DATE	BY
2	FDP REVISION 2	9/13/23	PLJ
3	FDP REVISION 3	10/25/23	PLJ

BENCHMARK ASSOCIATES

BENCHMARK ASSOCIATES, P.A.
P.O. BOX 733 100 BELL DRIVE
KETCHUM, IDAHO 83340
(208) 726-9512
(FAX) 726-9514
WEB:
www.benchmark-associates.com
MAIL:
mail@bma5b.com

GRADING & DRAINAGE PLAN

MARY'S PLACE SUB, BLOCK 1 LOT 4
T4N, R17E, SEC 13, B.M., KETCHUM, IDAHO

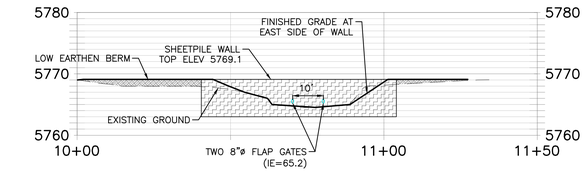
PREPARED FOR: VISTA PROPERTIES

DRAWN BY: PLJ
DESIGNED BY: PLJ
CHECKED: -
DATE: 5/22/2023
PROJECT NO.: 23187

SHEET NUMBER
C-1

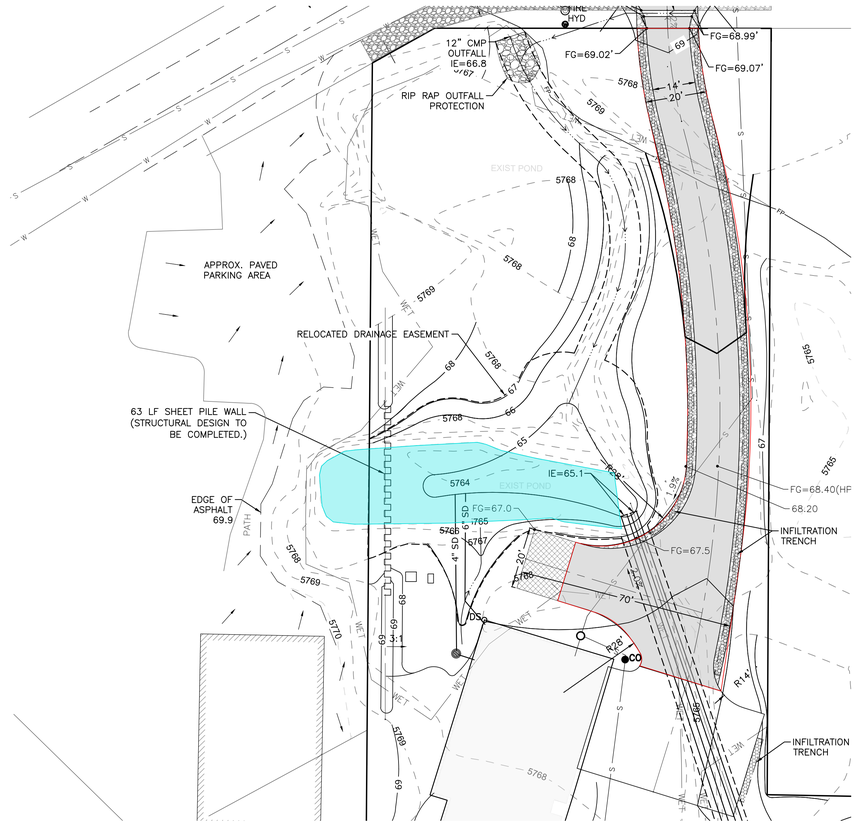
PERMIT SET

3



SHEETPILE WALL PROFILE

HORIZ: 1"=20'
VERT: 1"=5'



SHEET PILE WALL PLAN

SCALE IN FEET

0' 20' 40' 60'

AF-41 ALUMINUM DRAINAGE (FLAP) GATES

- LIGHTER WEIGHT REDUCES INSTALLATION COSTS
- SIZES 12" - 84" (CUSTOM SPIGOT SIZES AVAILABLE)
- SEATING HEADS TO 40 FEET.

A CORROSION-RESISTANT RUST-PROOF AUTOMATIC DRAINAGE GATE DESIGNED FOR USE WITH ALUMINUM CORRUGATED PIPE, OR FOR FLANGE MOUNTING OR USE WITH HDPE

PREVENTS ELECTROLYSIS ASSOCIATED WITH CAST IRON GATES TO ALUMINUM PIPE CONNECTIONS.

J-BULB NEOPRENE ADJUSTABLE SEATS PROVIDE EXCELLENT SEALING AGAINST RETURN FLOW.

FRAME, COVER, RETAINER RING, HINGE ARM, AND PIVOT LUG ARE OF ALUMINUM ALLOY 6061-T6. GATE HARDWARE IS STAINLESS STEEL.

- SPECIFY:
  - AF-41sb... for corrugated pipe
  - AF-41f... for wall mounting
  - AF-41ff... for flange mounting
  - AF-41-4... for plastic pipe
  - AF-41-6... for HDPE

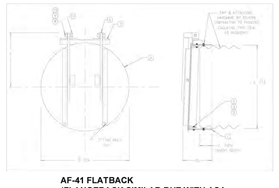
AF-41 FLATBACK

AF-41 SPIGOTBACK

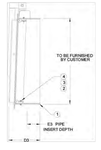
1

FLAP GATE – SHALL BE 8" DIAMETER ALUMINUM FLAP GATE WITH NEOPRENE SEAT (OR EQUAL).

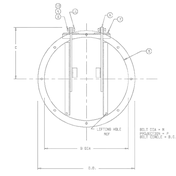
AF-41 SPIGOTBACK



AF-41 TYPE 6 SPIGOT FOR HDPE PIPE



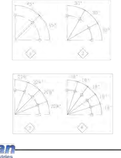
AF-41 FLATBACK (FLANGEBACK SIMILAR BUT WITH ASA STANDARD FLANGE DIMENSIONS)



PARTS LIST	
No.	Name
1	Frame
2	Seat
3	Retainer Ring
4	Hex Hd. Bolt/Nut
5	Cover
6	Hinge Arm
7	Pivot Lug
8	Hex Hd. Bolt/Nut
9	Hinge Pin
10	Bushing
11	Washer
12	Spring Pin

3

1. Add grout pad thickness to anchor bolt projection.
2. Also available with flange and drilling to attach to a 125# standard pipe flange.
3. If grout pad mounting is used add grout thickness to dimension.



N.T.S.

DIMENSIONS IN INCHES															
GAT. SIZE	A	B	C	D1	D2	D3	E	E3	O.D.	B.C.	M	P 1	◊
12	13½	13½	18½	8⅝	8⅝	11⅛	4	7	17½	15½	¾	1	1
15	16¾	17	12½	8⅝	8⅝	11⅛	4	7	20½	18½	¾	1	2
18	19¾	20	14¼	8⅝	8⅝	11⅛	4	7	23½	21½	¾	1	2
24	25¼	26½	16¾	8⅝	8⅝	11⅛	4	7	30½	28½	¾	1½	2
30	31½	32½	19¾	10½	10½	12	4½	7	36½	34½	¾	1½	3
36	37½	38½	24	10½	10½	12	4½	7½	42½	40½	¾	1½	3
42	43½	46	27½	13	13½	-	5½	-	48½	46½	¾	1½	3
48	49½	52	31	13½	13½	-	5½	-	54½	52½	¾	1½	4
54	55½	58	35	13½	13½	-	6½	-	60½	58½	¾	2	4
60	61½	64	38	16½	16½	-	6½	-	66½	64½	¾	2	4
72	73½	76	44½	17½	17½	-	7½	-	78½	76½	¾	2	4
84							DIMENSION ON APPLICATION						

2

REVISIONS			
No.	DESCRIPTION	DATE	BY
3	FDP REVISION 3	10/24/23	PLJ

PROFESSIONAL ENGINEER LICENSED 17661 STATE OF IDAHO PHOEBE JOHANNESSEN

10/24/2023

BENCHMARK ASSOCIATES, P.A.
P.O. BOX 733 100 BELL DRIVE
KETCHUM, IDAHO 83340
(208) 726-9512
(FAX) 726-9514
WEB:
www.benchmark-associates.com
MAIL:
mail@bma5b.com

SHEET PILE WALL

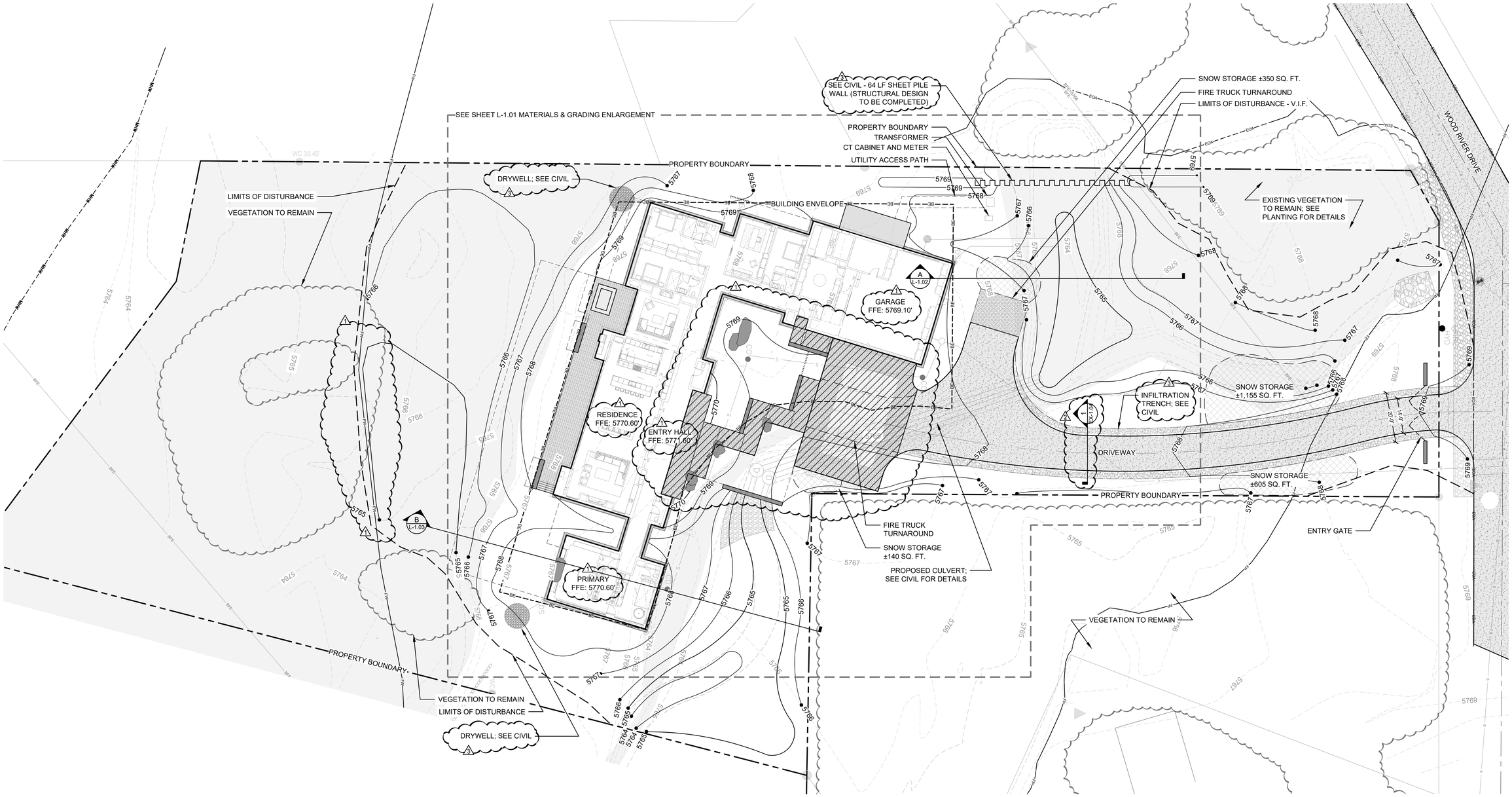
MARY'S PLACE SUB, BLOCK 1 LOT 4
T4N, R17E, SEC 13, B.M., KETCHUM, IDAHO

PREPARED FOR: VISTA PROPERTIES

DRAWN BY: PLJ
DESIGNED BY: PLJ
CHECKED: –
DATE: 10/24/2023
PROJECT NO.: 23187

SHEET NUMBER

C-4



SNOW STORAGE CALCULATIONS	
SNOW STORAGE PROVIDED (AS PERCENTAGE OF DRIVEWAY/PEDESTRIAN AREA)	30.00%
DRIVEWAY & PEDESTRIAN AREA	±7,821
SNOWMELT AREA	±3,000
NON-SNOWMELT AREA	±4,821
SNOW STORAGE REQUIRED	**±1,446**
SNOW STORAGE PROVIDED	**±2,250**
THESE CALCULATIONS ARE IN COMPLIANCE WITH CITY OF KETCHUM CODE	

SITE LEGEND

SYMBOL	ITEM
6970	EXISTING CONTOURS
6970	PROPOSED CONTOURS
	SWALE
	VEGETATION TO REMAIN
	PROPERTY BOUNDARY
	BUILDING ENVELOPE
	LIMITS OF DISTURBANCE
	DRYSTACK LANDSCAPE WALL
	CONCRETE
	GRASS PAVE
	STONE PAVING
	ASPHALT DRIVEWAY
	±3'-0" COMPACTED GRAVEL DRIVEWAY EDGE
	12" HORIZONTAL CRUSHED AGGREGATE
	LANDSCAPE BOULDERS

0' 8' 16' 32'
Scale: 1" = 16'

PRELIMINARY • NOT FOR CONSTRUCTION

FIELD STUDIO LANDSCAPE ARCHITECTS
722 N. ROUSE AVE.
BOZEMAN, MT 59715
(406)551-2098
www.fieldstudiola.com

PROJECT NUMBER: 2220

490 WOOD RIVER DRIVE
KETCHUM, ID

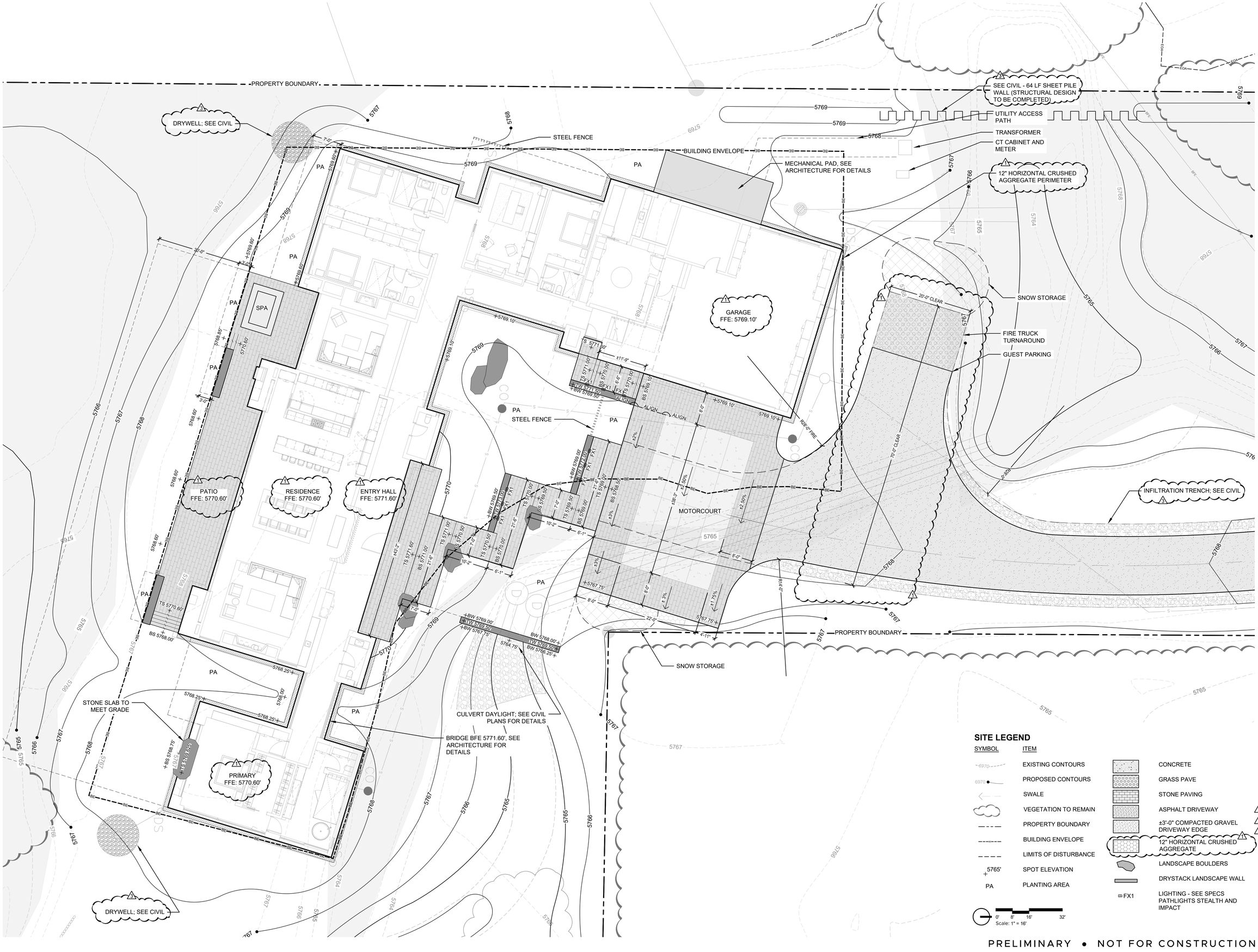
DATE • ISSUE	
2023.03.14	PD REV
2023.04.26	FDP SET
2023.06.20	FDP REV.
2023.08.17	FDP REV. 2
2013.10.26	FDP REV. 3

SHEET TITLE

OVERALL LAYOUT & GRADING PLAN

SHEET 1 OF 7

L-1.00



SITE LEGEND

SYMBOL	ITEM
6970	EXISTING CONTOURS
6970	PROPOSED CONTOURS
	SWALE
	VEGETATION TO REMAIN
	PROPERTY BOUNDARY
	BUILDING ENVELOPE
	LIMITS OF DISTURBANCE
5765'	SPOT ELEVATION
PA	PLANTING AREA
	CONCRETE
	GRASS PAVE
	STONE PAVING
	ASPHALT DRIVEWAY
	±3'-0" COMPACTED GRAVEL DRIVEWAY EDGE
	12" HORIZONTAL CRUSHED AGGREGATE
	LANDSCAPE BOULDERS
	DRYSTACK LANDSCAPE WALL
FX1	LIGHTING - SEE SPECS PATHLIGHTS STEALTH AND IMPACT

0' 8' 16' 32'
Scale: 1" = 16'

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SHEET TITLE

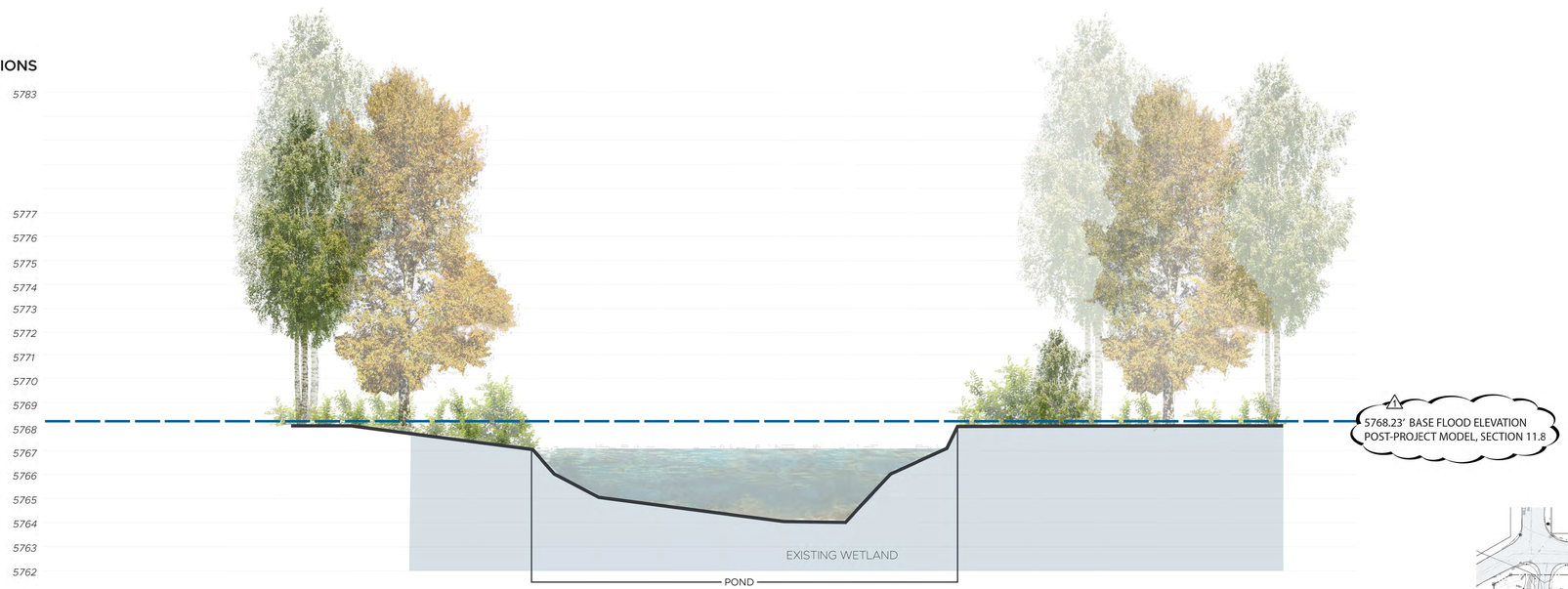
LAYOUT & GRADING ENLARGEMENT

SHEET 2 OF 7

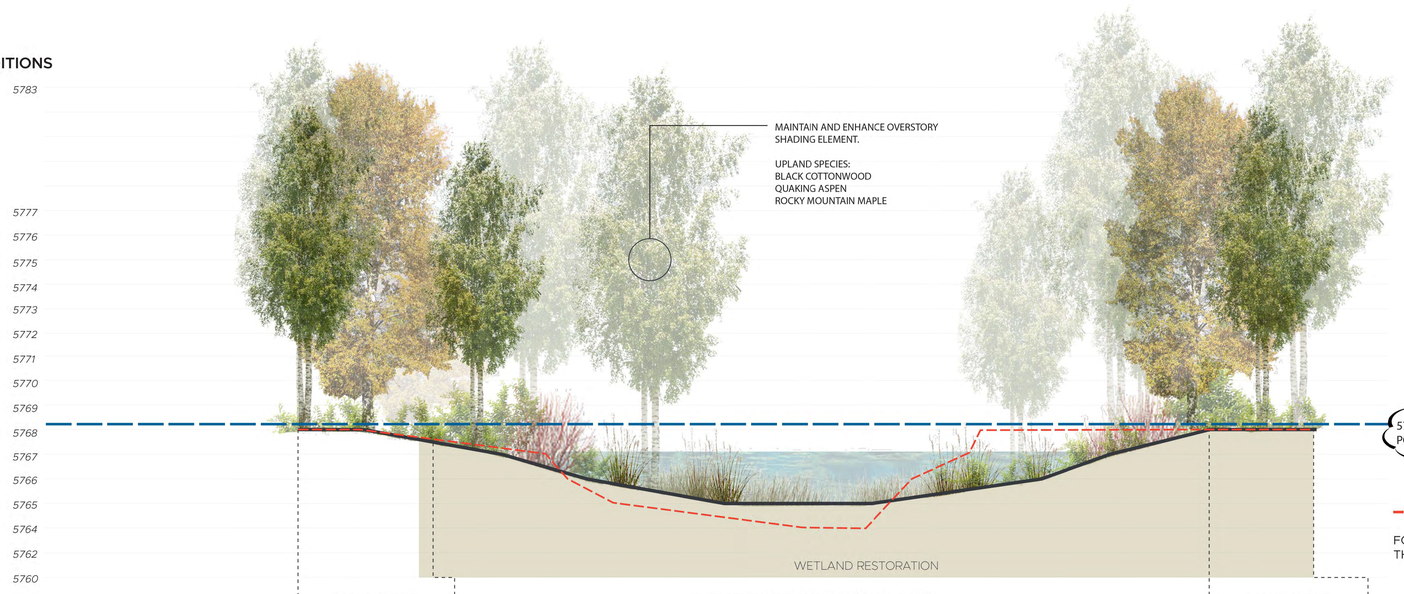
L-1.01

490 WOOD RIVER DRIVE
KETCHUM, ID

EXISTING CONDITIONS



PROPOSED CONDITIONS



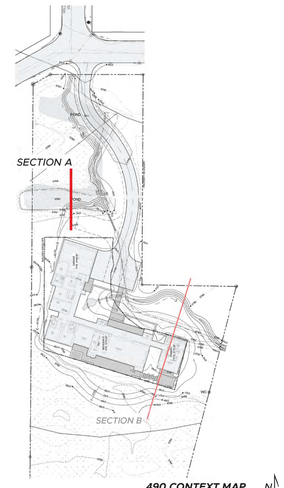
SCRUB SHRUB
BANK STABILIZERS
BLUE WILDRYE
BOOTH'S WILLOW
CHOKECHERRY
COMMON SNOWBERRY
GEYERS WILLOW
REDOSIER DOGWOOD
ROSE SPIREA
WOOD'S ROSE
THINLEAF ALDER

EMERGENT WETLAND/SEASONAL POND
BLISTER SEDGE
BROADLEAF ARROWHEAD
HARDSTEM BULRUSH
NARROWLEAF BUR-REED
NORTHWEST TERRITORY SEDGE

SCRUB SHRUB
BANK STABILIZERS
BLUE WILDRYE
BOOTH'S WILLOW
CHOKECHERRY
COMMON SNOWBERRY
GEYERS WILLOW
REDOSIER DOGWOOD
ROSE SPIREA
WOOD'S ROSE
THINLEAF ALDER

EXISTING TOPOGRAPHY

FOR VISUAL REPRESENTATION
THE SECTIONS ARE VERTICALLY EXAGGERATED BY 1'



490 CONTEXT MAP N

FIELD STUDIO
LANDSCAPE ARCHITECTS
722 N. ROUSE AVE.
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2013.10.26 FDP REV. 3

SHEET TITLE

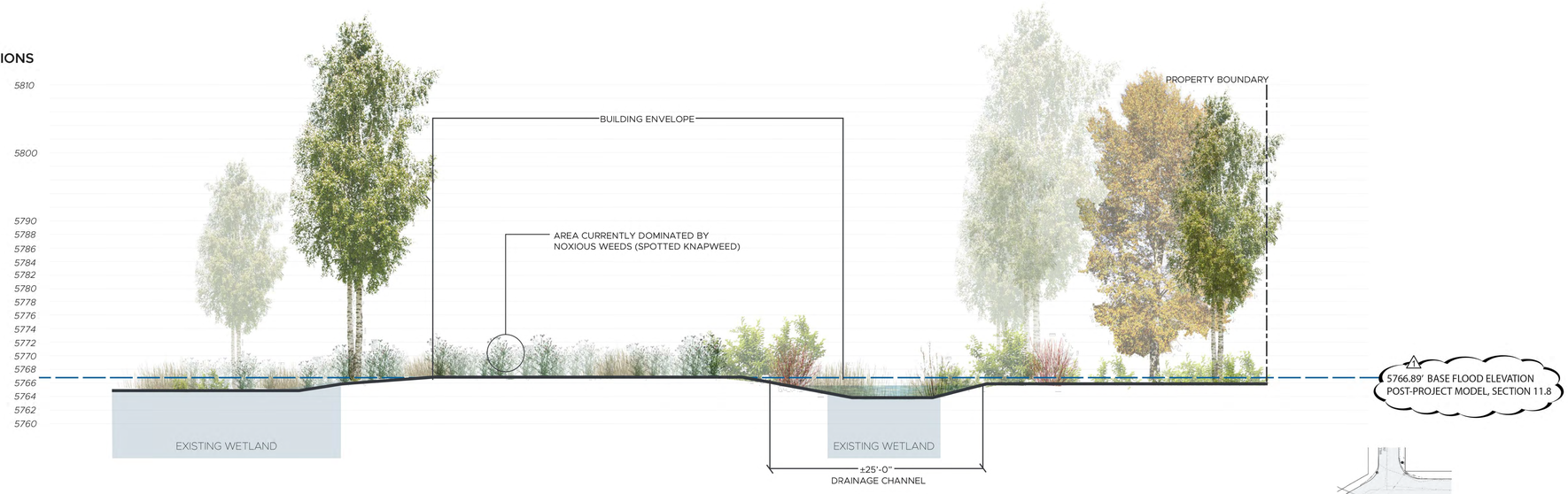
CROSS SECTION A

0' 2.5' 5' 10'
Scale: 1" = 5'

SHEET 3 OF 7
L-1.02

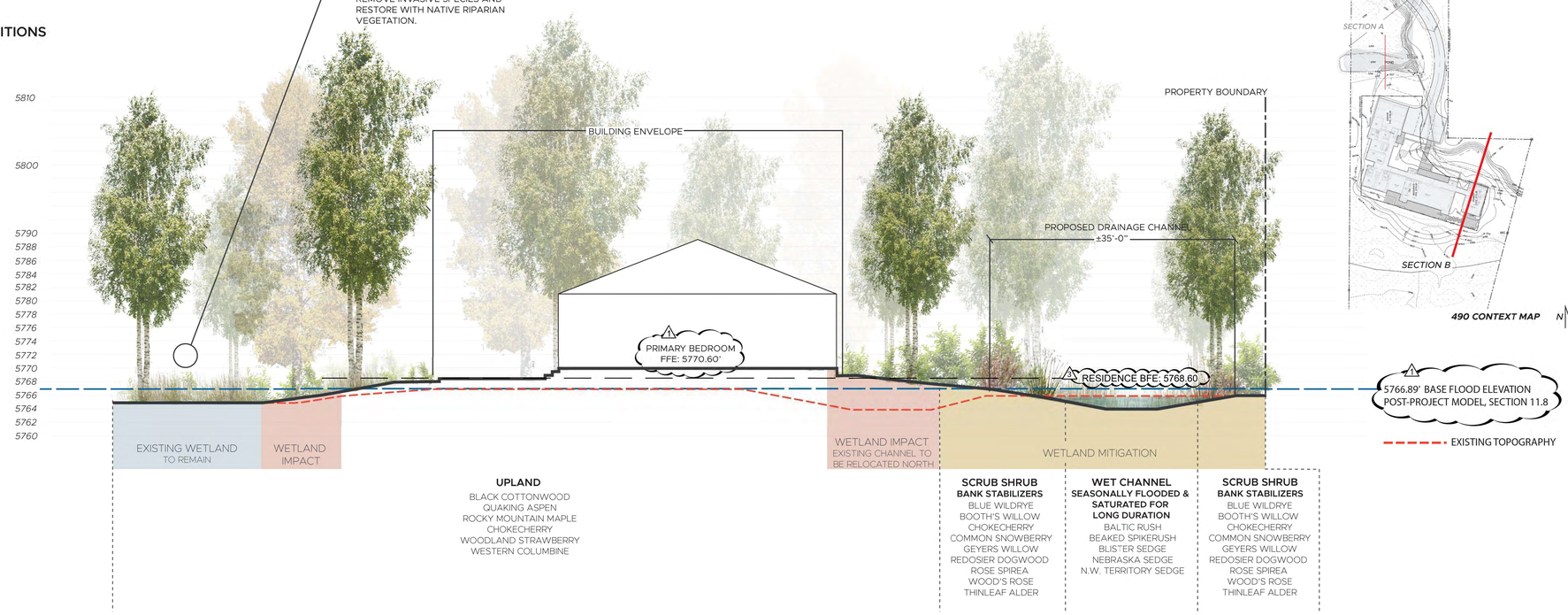
PRELIMINARY • NOT FOR CONSTRUCTION

EXISTING CONDITIONS



490 CONTEXT MAP N

PROPOSED CONDITIONS



UPLAND
BLACK COTTONWOOD
QUAKING ASPEN
ROCKY MOUNTAIN MAPLE
CHOKECHERRY
WOODLAND STRAWBERRY
WESTERN COLUMBINE

SCRUB SHRUB
BANK STABILIZERS
BLUE WILDRYE
BOOTH'S WILLOW
CHOKECHERRY
COMMON SNOWBERRY
GEYERS WILLOW
REDOSIER DOGWOOD
ROSE SPIREA
WOOD'S ROSE
THINLEAF ALDER

WET CHANNEL
SEASONALLY FLOODED & SATURATED FOR LONG DURATION
BALTIC RUSH
BEAKED SPIKERUSH
BLISTER SEDGE
NEBRASKA SEDGE
N.W. TERRITORY SEDGE

SCRUB SHRUB
BANK STABILIZERS
BLUE WILDRYE
BOOTH'S WILLOW
CHOKECHERRY
COMMON SNOWBERRY
GEYERS WILLOW
REDOSIER DOGWOOD
ROSE SPIREA
WOOD'S ROSE
THINLEAF ALDER

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2013.10.26	FDP REV. 3

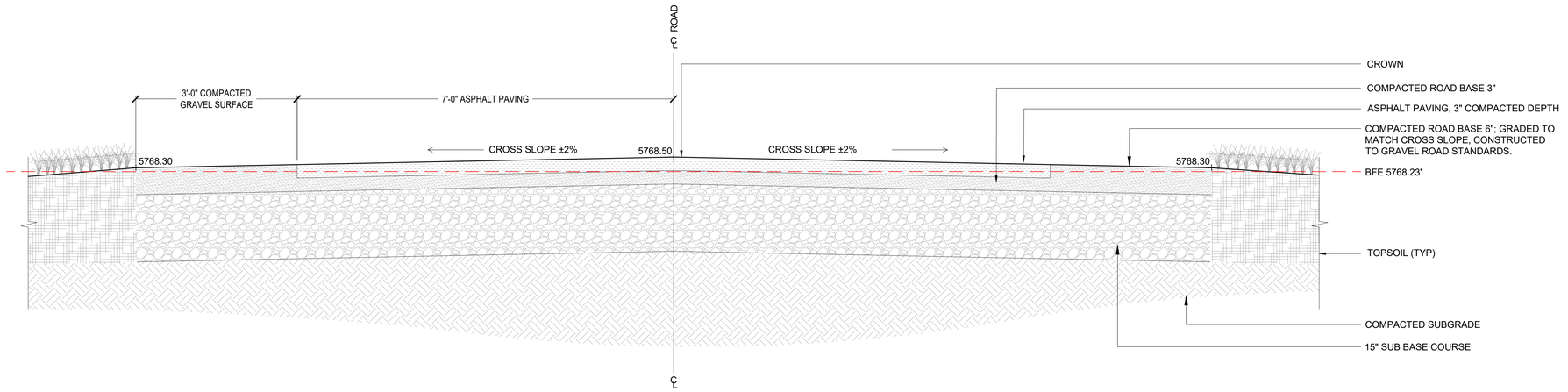
SHEET TITLE

CROSS SECTION B

0' 4' 8' 16'
Scale: 1" = 8'

SHEET 4 OF 7
L-1.03

PRELIMINARY • NOT FOR CONSTRUCTION



NOTES:
1. ROAD SECTION TO SHOW INTENT, CONTRACTOR TO REFER TO CIVIL FOR APPROPRIATE GRAVEL DEPTHS, SPECIFICATIONS, AND INSTALLATION NOTES.

1 20' DRIVEWAY SECTION (14' PAVE, 6' COMPACTED ROAD BASE GRAVEL)

SCALE: ##########

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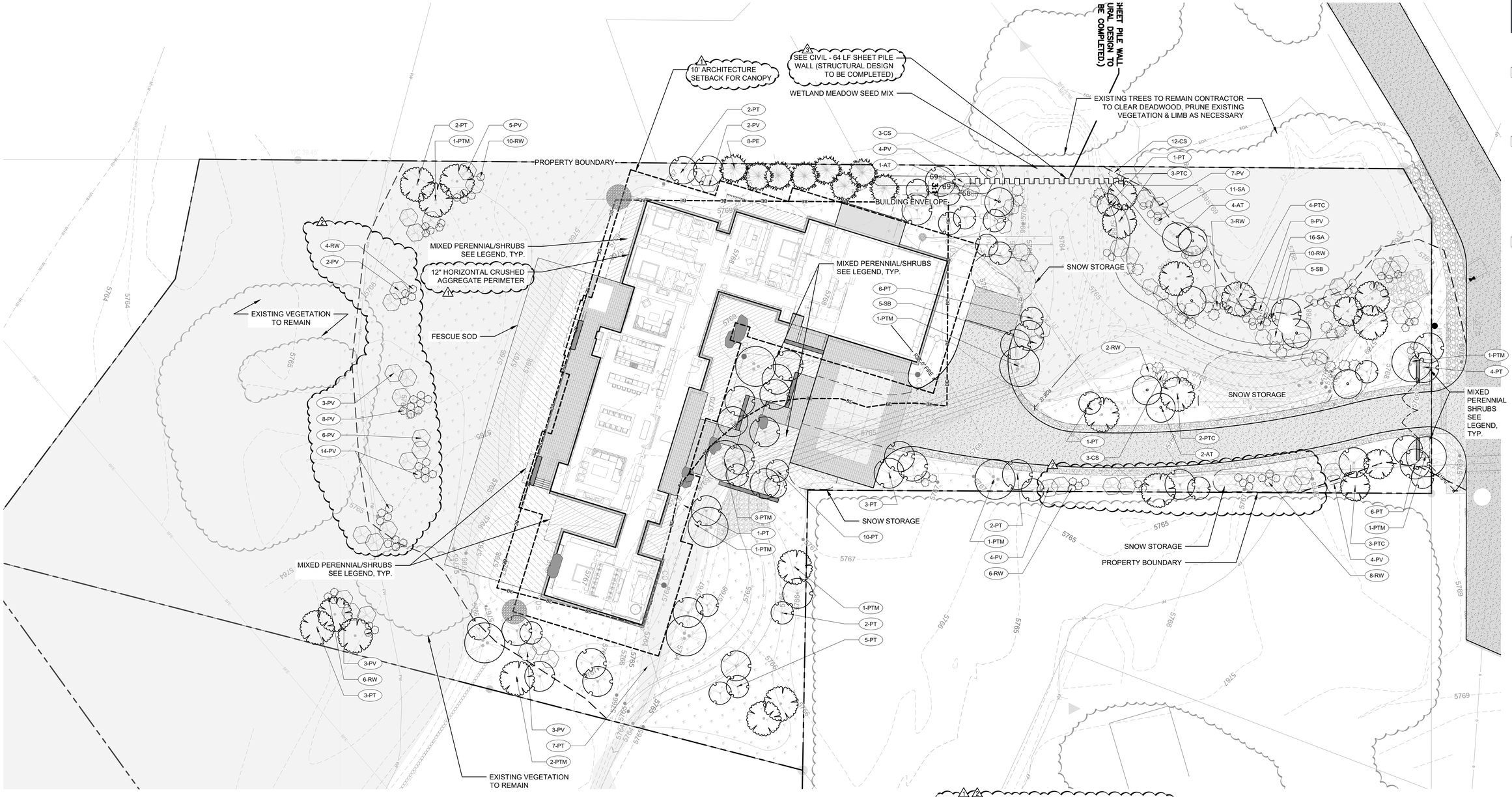
1 2023.06.20 FDP REV
2 2023.08.17 FDP REV. 2
3 2013.10.26 FDP REV. 3

SHEET TITLE

ROAD CROSS SECTION

4
SHEET 5 OF 7
EX-1.04

PRELIMINARY • NOT FOR CONSTRUCTION



RIPARIAN SHRUBS					
SYMBOL	CODE	BOTANICAL NAME/COMMON NAME	CONT.	QTY.	SPACING
	CS	*Cornus sericea*/Red-Osier Dogwood	#5	27	PER PLAN
	PV	*Prunus virginiana*/Common Chokecherry	#15-#25/ MULTI STEM	34	PER PLAN
	RW	*Rosa woodsii*/Woods' Rose	#5	30	PER PLAN
	SB	*Salix boothii*/Booth's Willow (15-20')	#5	17	PER PLAN
	SA	*Symphoricarpus albus*/Common Snowberry	#5	28	PER PLAN

TREES					
	AT	*Alnus tenuifolia*/Thinleaf Alder (15-30')	#15	9	PER PLAN
	PE	*Picea engelmannii*/Engelmann Spruce	8'-12' HT	8	PER PLAN
	PT	*Populus tremuloides*/Quaking Aspen	2" - 4" CAL.	55	PER PLAN
	PTC	*Populus trichocarpa*/Black Cottonwood	#5-#15	22	PER PLAN
	PTM	*Populus tremuloides*/Quaking Aspen	10' -14' HT/ MULTI-STEM	10	PER PLAN

PERENNIAL/SHRUB PLANTER BEDS				
BOTANICAL NAME/COMMON NAME	CONT.	QTY.	SPACING
Deschampsia capitosa/Tufted Hairgrass	#1	TBD	PER PLAN
Festuca glauca/Blue Fescue	#1	TBD	PER PLAN
Galium odoratum/Sweet Woodruff	#1	TBD	PER PLAN
Lavandula angustifolia/English Lavender	#1	TBD	PER PLAN
Panicum virgatum/Switchgrass	#1	TBD	PER PLAN
Talictrum dasycarpum/Purple Meadowrue	#1	TBD	PER PLAN

FESCUE SOD

AREA: ±3,350 SF - V.I.F.

WETLAND MEADOW SEED MIX	*Variety*	*Lbs/Ac*
AREA: ±40,750 SF (± 0.93 ACRES)	*Tufted Hairgrass/Deschampsia cespitosa*	1
	Blue Wildrye/Elymus glaucus	4
	Baltic Rush/Juncus balticus	0.25
	Beaked Sedge/Carex utriculata	2.0
	Nebraska Sedge/Carex nebrascensis	2.0
	Bluejoint Reedgrass/Calamagrostis canadensis	0.50

0' 8' 16' 32'
Scale: 1" = 16'

SITE LEGEND

SYMBOL	ITEM
6970	EXISTING CONTOURS
6970	PROPOSED CONTOURS
	10' SETBACK FOR TREE CANOPY
	PROPOSED SHRUBS & TREES
	VEGETATION TO REMAIN
	ASPHALT DRIVEWAY
	±3'-0" GRAVEL DRIVEWAY EDGE
	12" HORIZONTAL CRUSHED AGGREGATE

NOTES:
1. ALL TAKE-OFFS ARE APPROXIMATE AND SHOULD BE USED AS REFERENCE ONLY. CONTRACTOR TO VERIFY QUANTITIES AND COORDINATE WITH L.A. PRIOR TO PURCHASE AND INSTALLATION.
2. TREES AND RESTORATION AREAS TO BE STAKED IN FIELD; LOCATIONS TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

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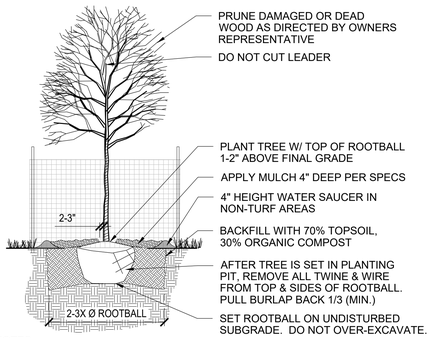
SHEET TITLE

OVERALL PLANTING PLAN

SHEET 6 OF 7

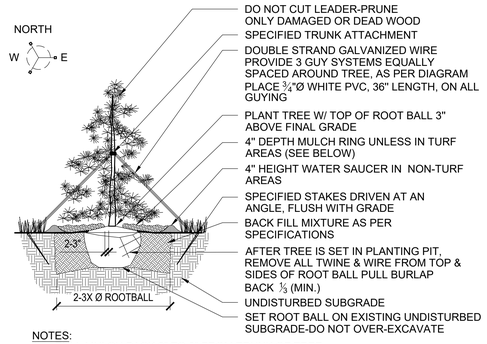
L-2.00



NOTES:
1. MULCH SHOULD BE 4" DEEP.
2. ALL TREES 3" DIAMETER OR LARGER MAY BE STAKED FOR ONE YEAR IF PROPOSED BY LANDSCAPE CONTRACTOR AND/OR APPROVED BY OWNER'S REPRESENTATIVE.

1 DECIDUOUS TREE PLANTING

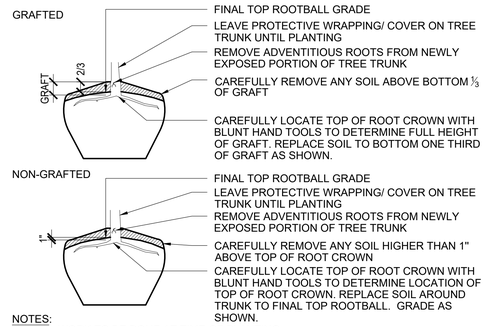
SCALE: 1/4" = 1'-0"



NOTES:
1. PULL MULCH BACK 2" TO 3" FROM TRUNK OF TREE
2. INSTALL SPECIFIED MULCH TO DRIP LINE OF TREE WHERE PLANTED IN LAWN AREAS. MULCH TO BE 2" DEEP IN LAWN AREAS.
3. DO NOT PROVIDE WATER BASIN IN IRRIGATED LAWN AREAS.

2 EVERGREEN TREE PLANTING

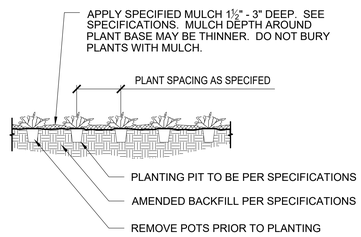
SCALE: 1/4" = 1'-0"



NOTES:
1. ALL WORK TO BE DONE AT TIME OF PLANTING
2. PEEL BACK ONLY TOP OF BURLAP REQUIRED TO PERFORM WORK. REPLACE BURLAP BEFORE MOVING TREE INTO PLANTING PIT. DO NOT REMOVE WIRE BASKET UNTIL INSIDE PLANTING PIT.
3. MEASURE NEW HEIGHT OF ROOTBALL AND DIG PLANTING PIT SO FINAL TOP ROOTBALL GRADE IS 3" ABOVE FINAL GRADE SURROUNDING BALL.

3 FINAL TOP OF ROOTBALL GRADE

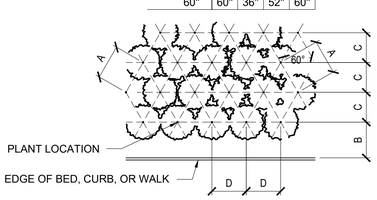
SCALE: 1/2" = 1'-0"



4 PERENNIALS AND GROUNDCOVERS

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

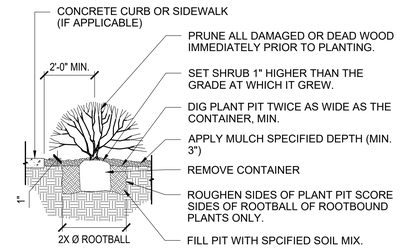
PLANT SPACING	A	B	C	D
6"	6"	6"	5"	6"
8"	8"	6"	7"	8"
12"	12"	8"	10"	12"
18"	18"	9"	15"	18"
24"	24"	18"	21"	24"
30"	30"	15"	26"	30"
36"	36"	30"	31"	36"
48"	48"	30"	42"	48"
60"	60"	36"	52"	60"



NOTES:
1. ALIGN FRONT ROW PARALLEL TO BED LINE

7 TRIANGULAR SPACING FOR PLANTING LAYOUT

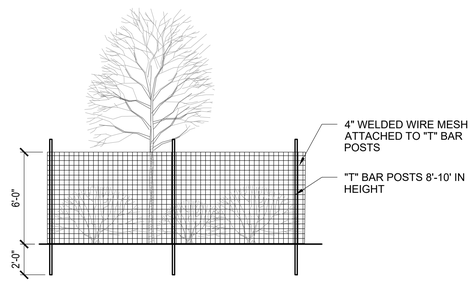
SCALE: 1/4" = 1'-0"



NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED.
2. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
3. HOLD GRADE 1" BELOW EDGE OF WALK OR CURB

5 SHRUB PLANTING

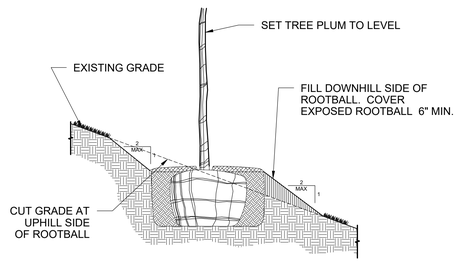
SCALE: 1/4" = 1'-0"



NOTES:
1. FINAL DESIGN AND LOCATION TO BE COORDINATED AND APPROVED IN FIELD BY LANDSCAPE ARCHITECT
2. "T" BAR POSTS TO BE SPACED APPROPRIATELY TO ENSURE INTEGRITY OF FENCE.
3. ALL TREES 2" DIAMETER OR LARGER MAY BE STAKED FOR ONE YEAR

8 WILDLIFE PROTECTION FENCING

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



NOTES:
1. REFER TO VARIOUS SPECIFIC TREE INSTALLATION DETAILS FOR STAKING, GUYING, MULCHING, ETC.
2. THIS INSTALLATION SHALL APPLY TO ALL TREE TYPES AND SIZES PLANTED ON SLOPES LESS THAN 2:1.

6 TREE PLANTING ON SLOPE

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

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2023.06.20	FDP REV
2023.08.17	FDP REV. 2
2013.10.26	FDP REV. 3

SHEET TITLE

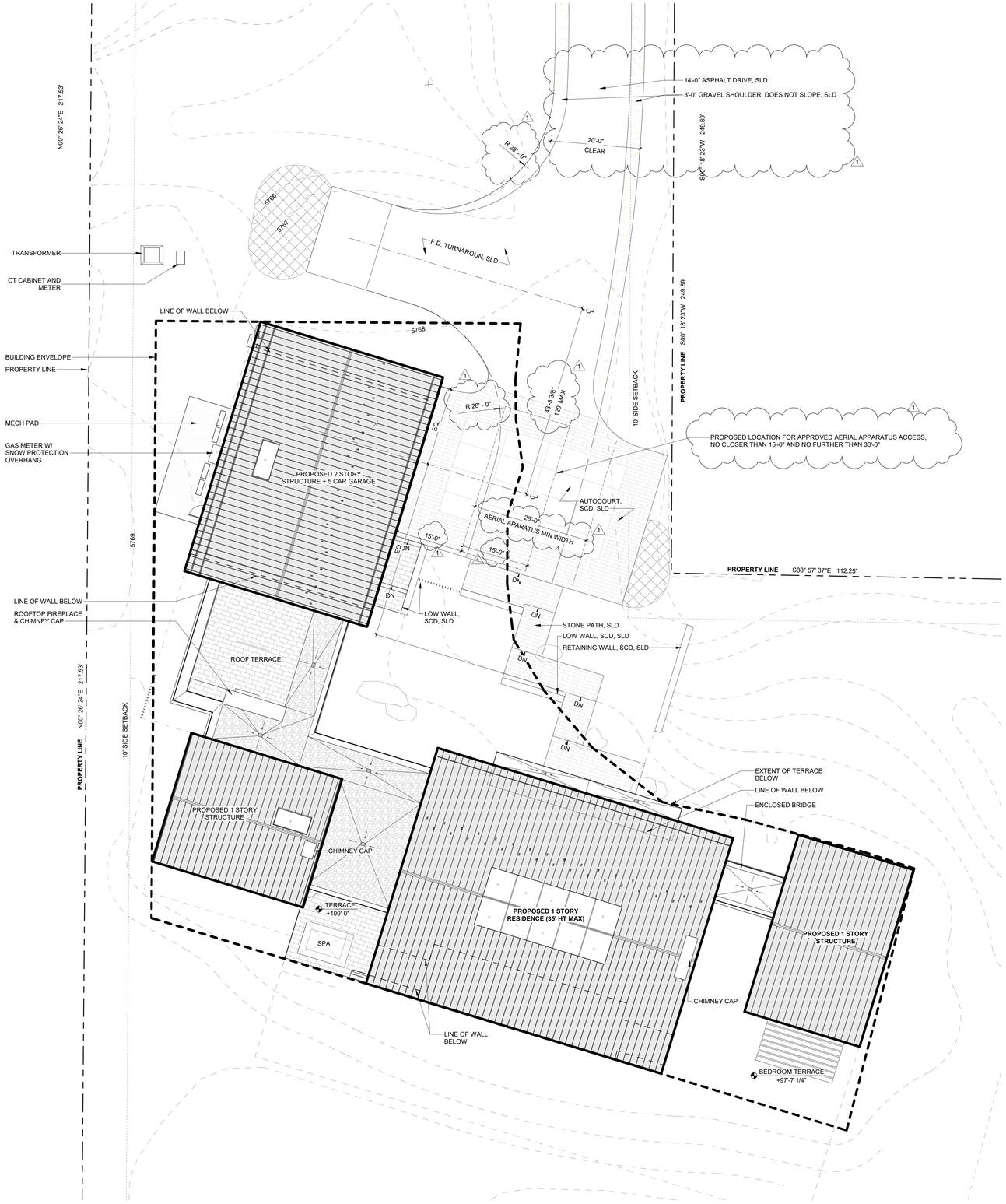
PLANTING DETAILS

SHEET 7 OF 7

L-2.01

PRELIMINARY • NOT FOR CONSTRUCTION

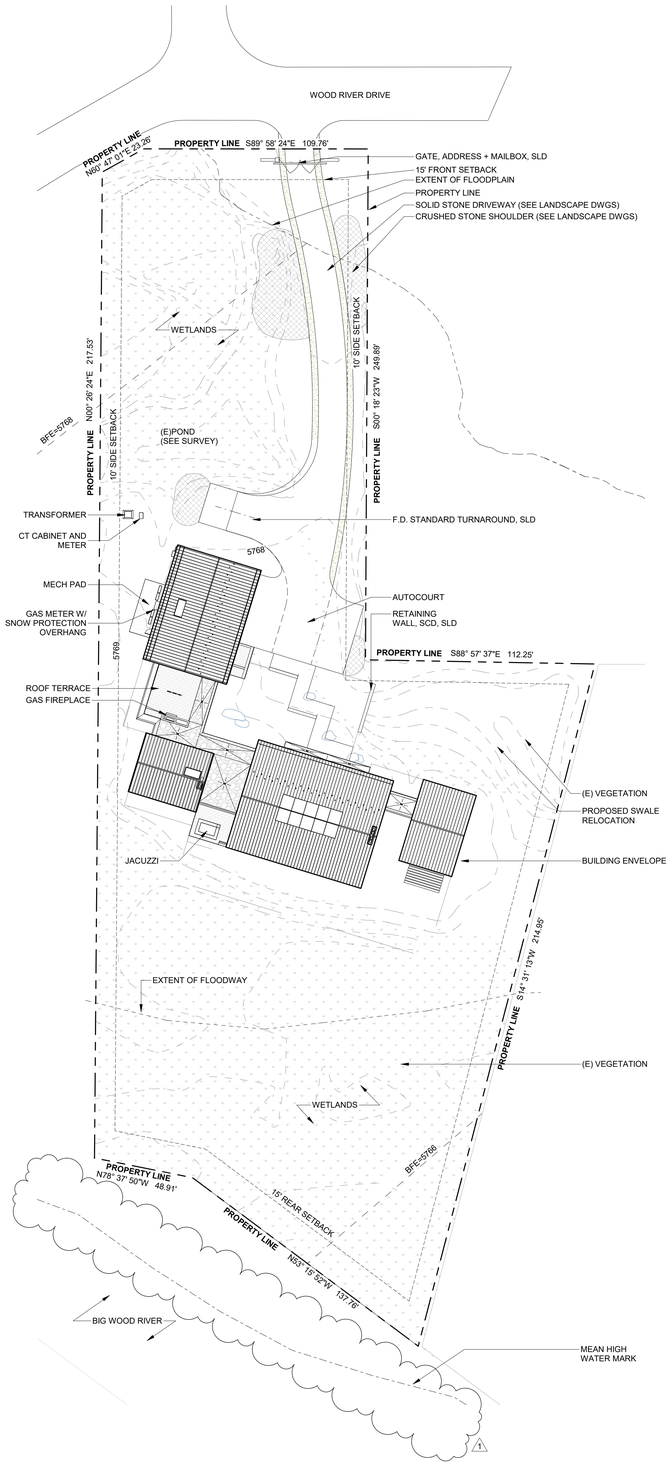
6/15/2023 3:45:10 PM



2 | 3/32" = 1'-0" | **SITE PLAN**

SITE PLAN NOTES:

1. ELEVATION: **100'-0" = 5770.6'**
2. SEE LANDSCAPE DRAWINGS FOR (E) AND (N) TREE LOCATIONS
3. SEE CIVIL DRAWINGS FOR DRIVEWAY LAYOUT, PROFILE & SITE DRAINAGE INFORMATION
4. SEE ROOF PLAN FOR MORE ROOF INFORMATION
5. SEE G-011 & G-012 FOR SITE COVERAGE AND HEIGHT CALCULATIONS
6. SEE GENERAL CONTRACTOR STAGING PLAN FOR ALL STAGING INFORMATION.



1 | 1" = 30'-0" | **SITE PLAN**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:
490 WOOD RIVER
490 WOOD RIVER
KETCHUM, ID 83340

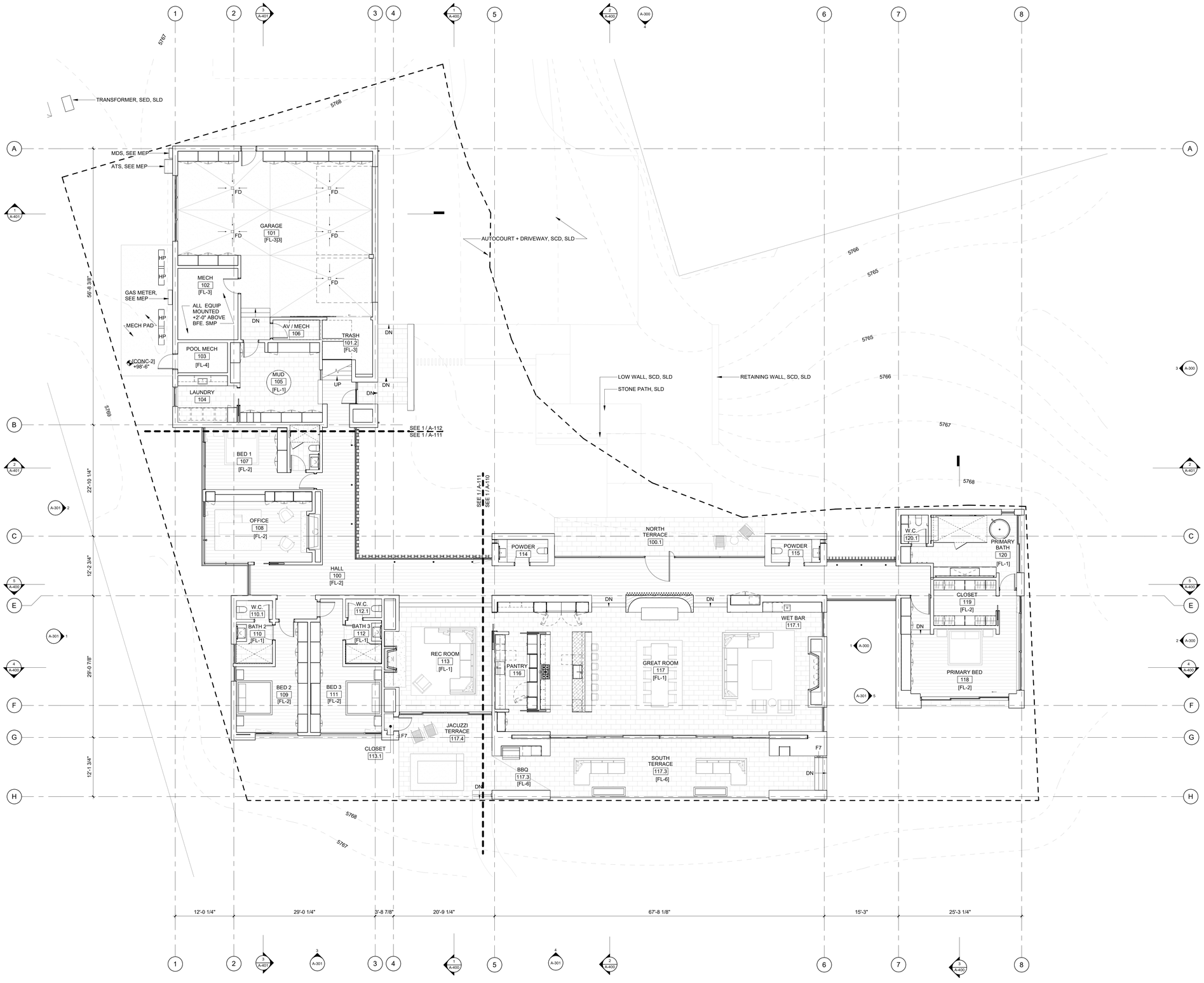
PROJECT NUMBER
2109

DRAWING TITLE:
SITE PLAN

DRAWING NUMBER:
A-100

-

4/25/2023 5:13:32 PM



NOTES:

1. SEE LANDSCAPE DRAWINGS FOR PLANTING AND LANDSCAPE INFORMATION
2. SEE CIVIL DRAWINGS FOR DRIVEWAY AND SITE DRAINAGE INFORMATION
3. USGS ELEVATION +5769.5' IS NOTED AS + 100'-0" IN SUBSEQUENT ARCHITECTURAL DRAWINGS
4. COORDINATE STARTPOINT WITH CIVIL
5. SEE G-200 FOR MORE INFORMATION REGARDING ROOF ASSEMBLIES

1 | 1/8" = 1'-0" | **REFERENCE PLAN / LEVEL 01**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER
2109

DRAWING TITLE:

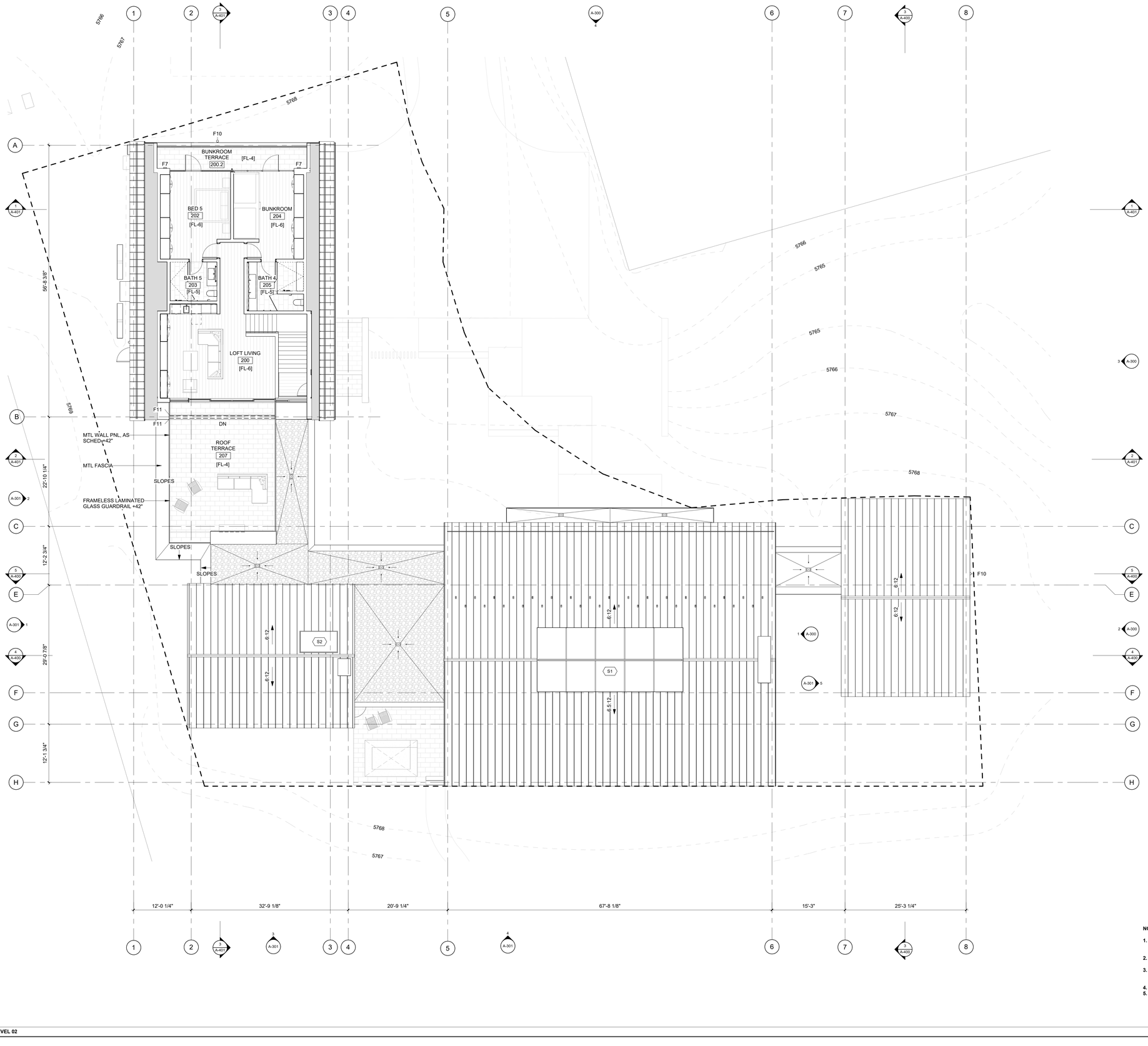
REFERENCE PLAN / LEVEL 01

DRAWING NUMBER:

A-101

-

4/25/2023 5:13:35 PM



NOTES:

1. SEE LANDSCAPE DRAWINGS FOR PLANTING AND LANDSCAPE INFORMATION
2. SEE CIVIL DRAWINGS FOR DRIVEWAY AND SITE DRAINAGE INFORMATION
3. USGS ELEVATION +5769.5' IS NOTED AS + 100'-0" IN SUBSEQUENT ARCHITECTURAL DRAWINGS
4. COORDINATE STARTPOINT WITH CIVIL
5. SEE G-200 FOR MORE INFORMATION REGARDING ROOF ASSEMBLIES

1 | 1/8" = 1'-0" | **REFERENCE PLAN / LEVEL 02**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER
2109

DRAWING TITLE:

REFERENCE PLAN / LEVEL 02

DRAWING NUMBER:

A-102

-

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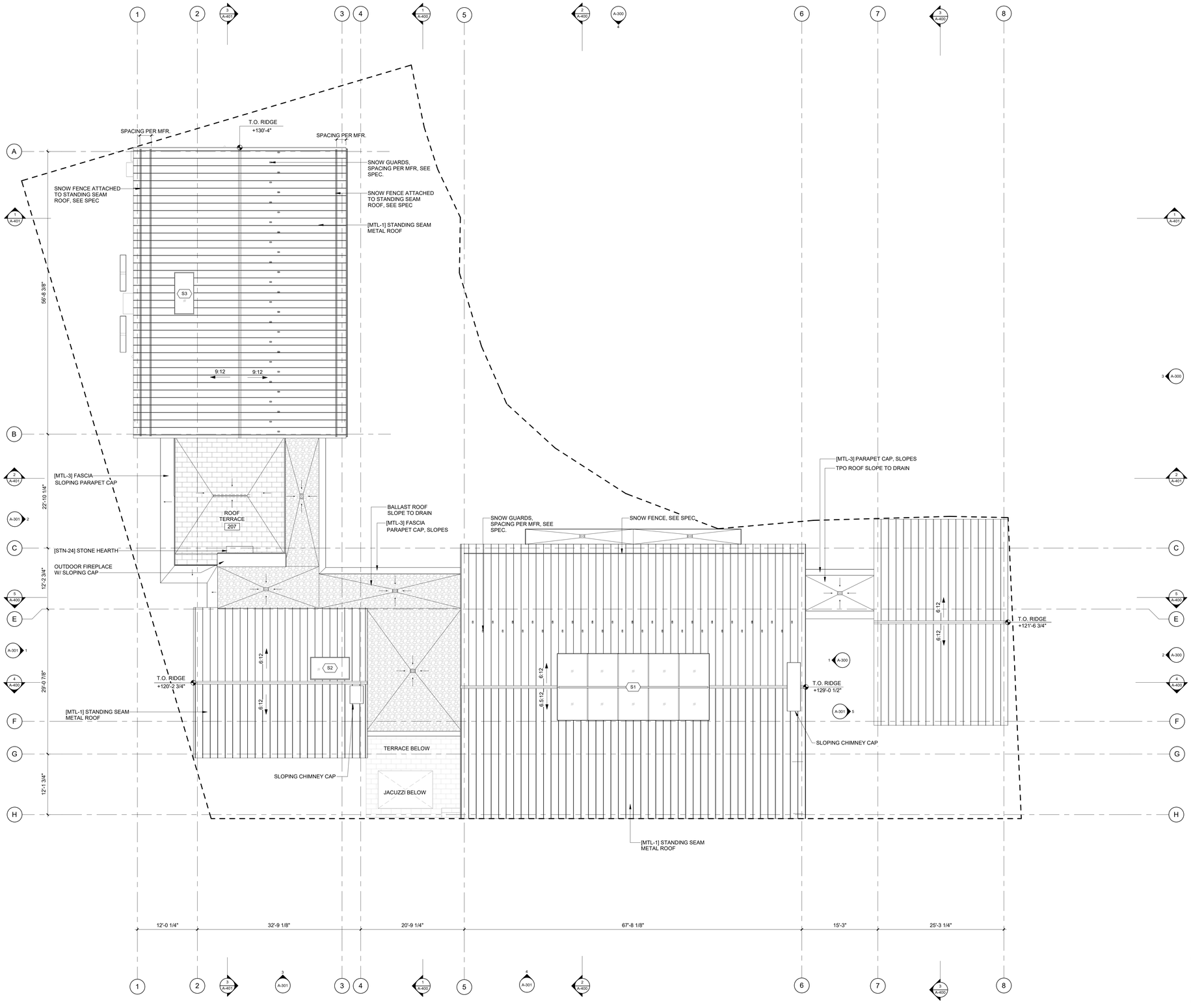


1 1/8" = 1'-0" **REFERENCE PLAN / ROOF**

NOTES:

1. SEE LANDSCAPE DRAWINGS FOR PLANTING AND LANDSCAPE INFORMATION
2. SEE CIVIL DRAWINGS FOR DRIVEWAY AND SITE DRAINAGE INFORMATION
3. USGS ELEVATION +5769.5' IS NOTED AS + 100'-0" IN SUBSEQUENT ARCHITECTURAL DRAWINGS
4. COORDINATE STARTPOINT WITH CIVIL
5. SEE G-200 FOR MORE INFORMATION REGARDING ROOF ASSEMBLIES

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER
2109

DRAWING TITLE:

REFERENCE PLAN / ROOF

DRAWING NUMBER:

A-103

-

6/15/2023 3:58:57 PM

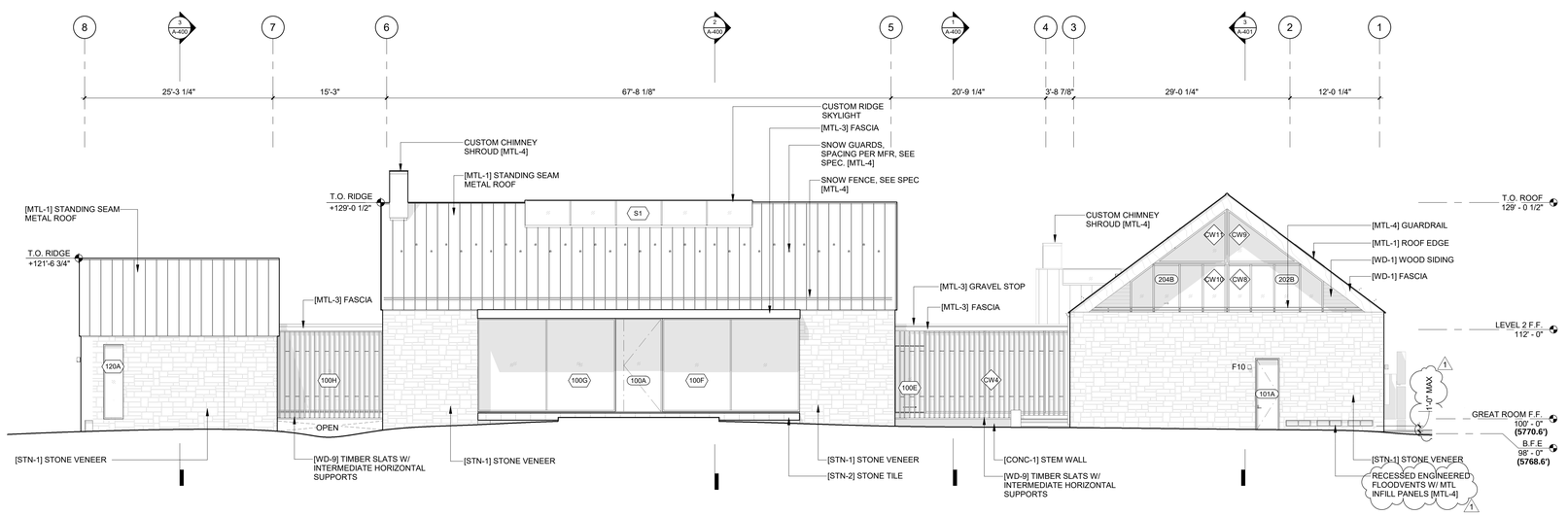
3

NOTES:

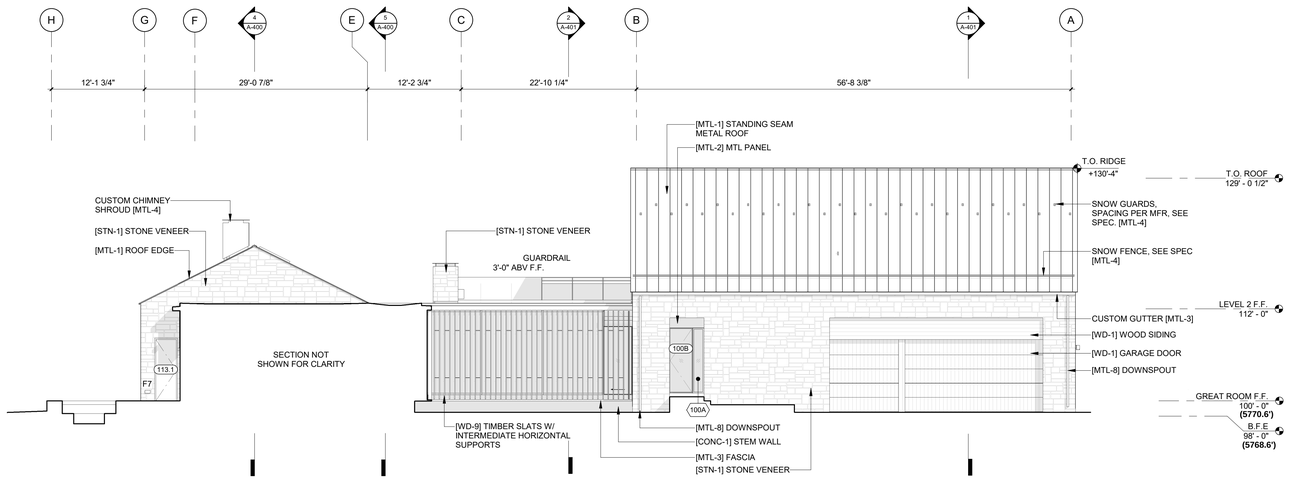
BFE OF RESIDENCE: 5768.6'

**FFE OF RESIDENCE: 5770.6' *

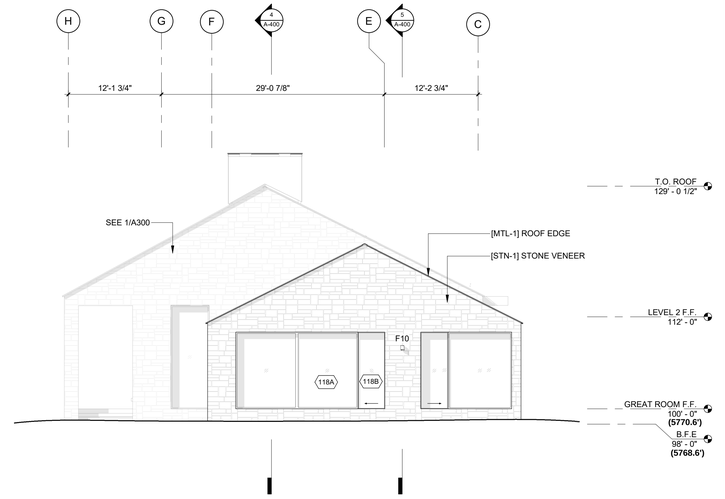
***NOTE: FFE OF RESIDENCE IS EQUIVALENT TO THE FLOOD PROTECTION ELEVATION (FPE), AND IS AT LEAST 2'-0" ABOVE THE BFE.**



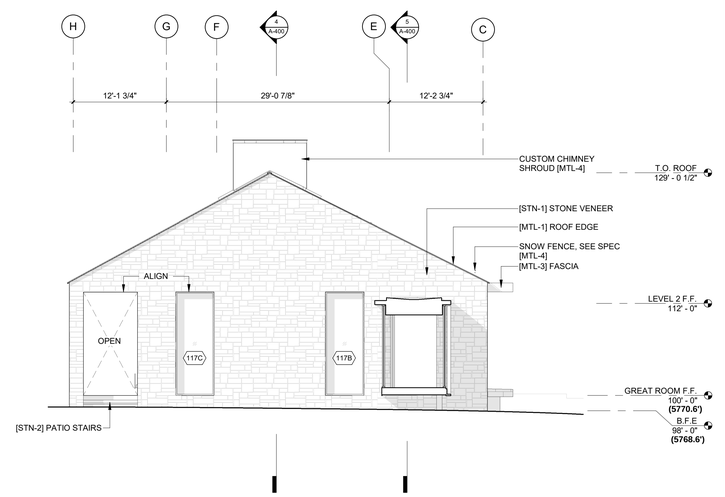
4 | 1/8" = 1'-0" | **ELEVATION / NORTH**



3 | 1/8" = 1'-0" | **ELEVATION / GARAGE**



2 | 1/8" = 1'-0" | **ELEVATION / EAST**



1 | 1/8" = 1'-0" | **ELEVATION / EAST GREAT ROOM**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

EXTERIOR ELEVATIONS

DRAWING NUMBER:

A-300

-

6/15/2023 3:09:26 PM

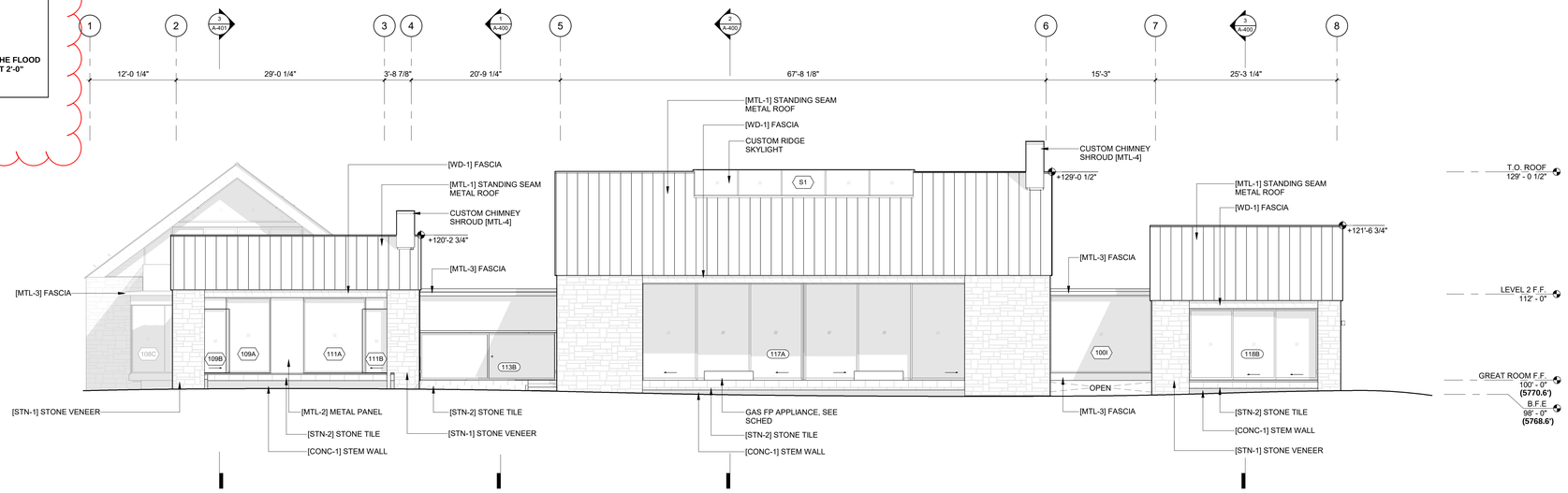
3

NOTES:

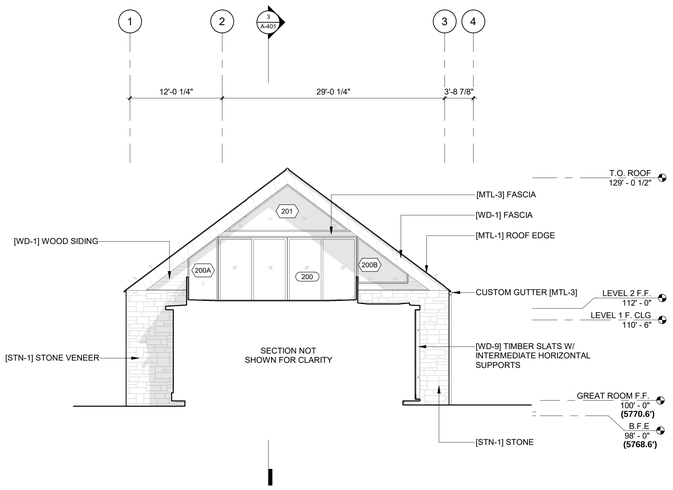
BFE OF RESIDENCE: 5768.6'

FFE OF RESIDENCE: 5770.6' *

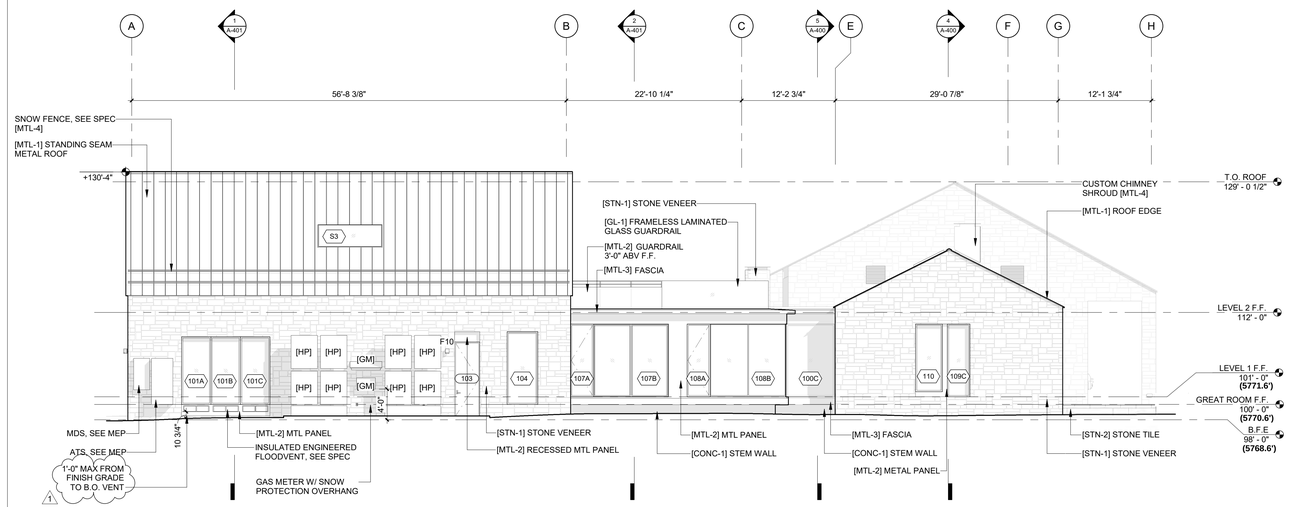
***NOTE: FFE OF RESIDENCE IS EQUIVALENT TO THE FLOOD PROTECTION ELEVATION (FPE), AND IS AT LEAST 2'-0" ABOVE THE BFE.**



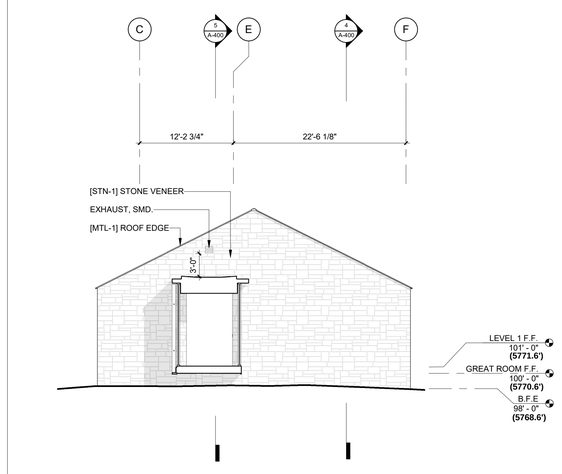
4 | 1/8" = 1'-0" | **ELEVATION / SOUTH**



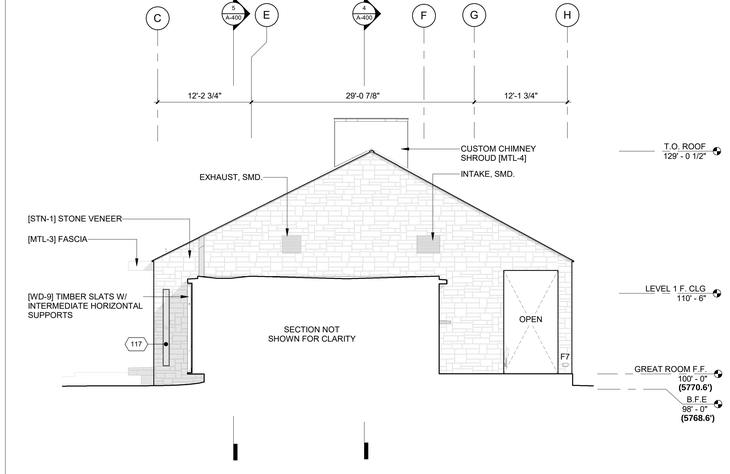
3 | 1/8" = 1'-0" | **ELEVATION / GARAGE / SOUTH**



2 | 1/8" = 1'-0" | **ELEVATION / WEST**



5 | 1/8" = 1'-0" | **ELEVATION / PRIMARY SUITE / WEST**



1 | 1/8" = 1'-0" | **ELEVATION / GREAT ROOM / WEST**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

EXTERIOR ELEVATIONS

DRAWING NUMBER:

A-301

-

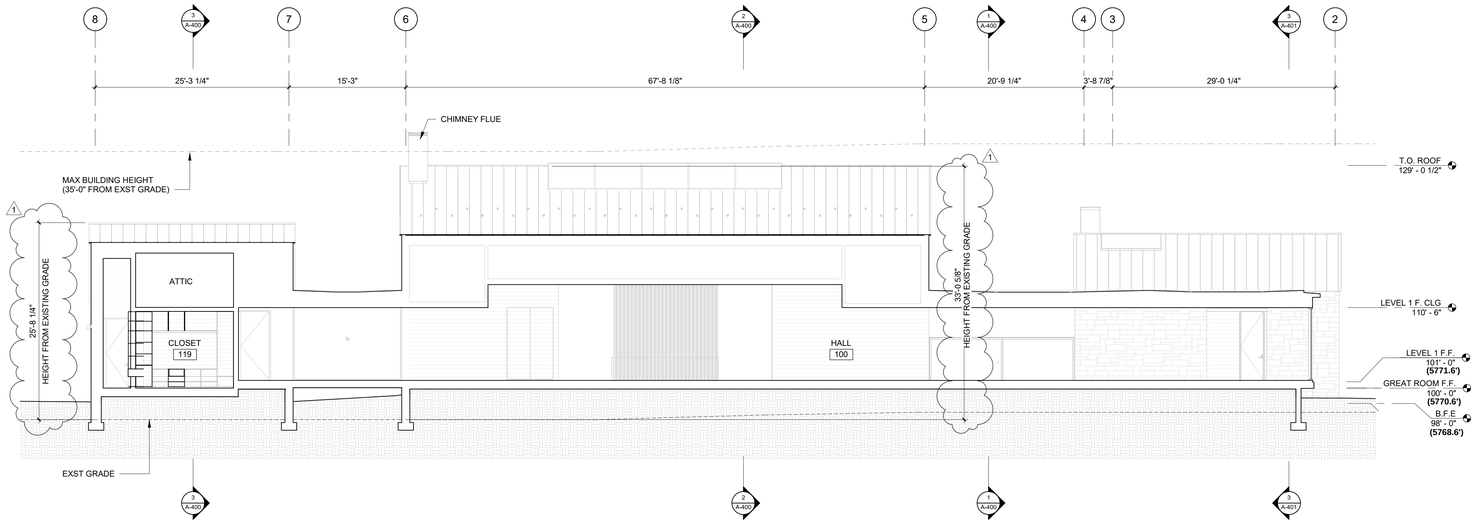
6/15/2023 3:09:57 PM

3 **NOTES:**

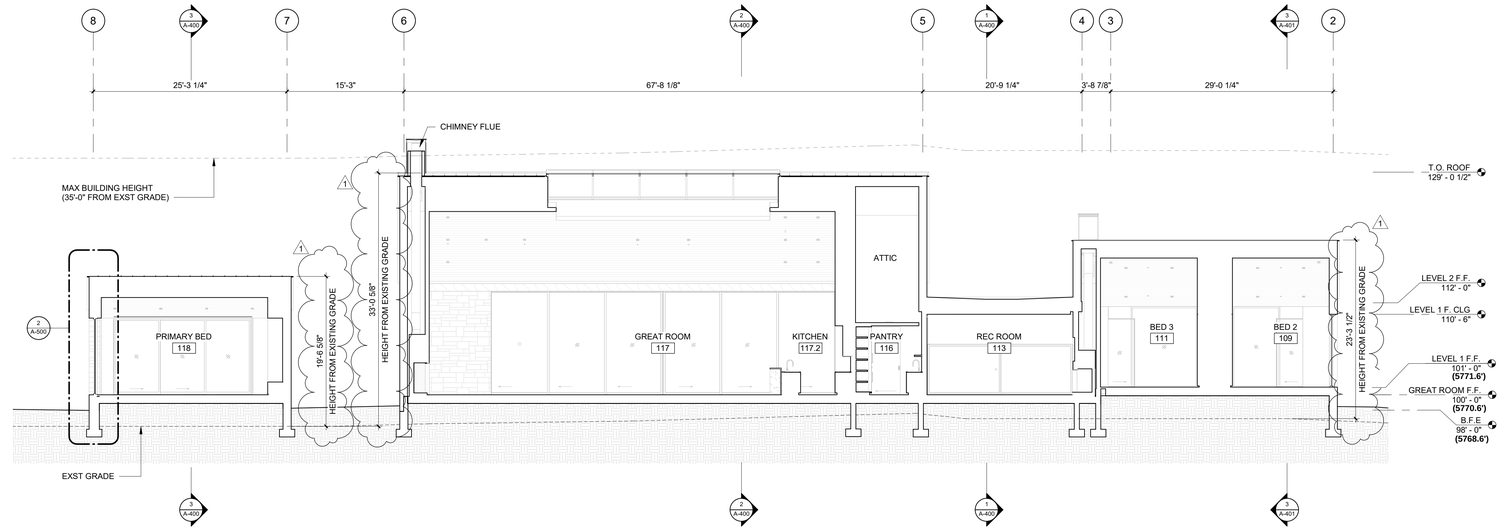
BFE OF RESIDENCE: 5768.6'

FFE OF RESIDENCE: 5770.6' *

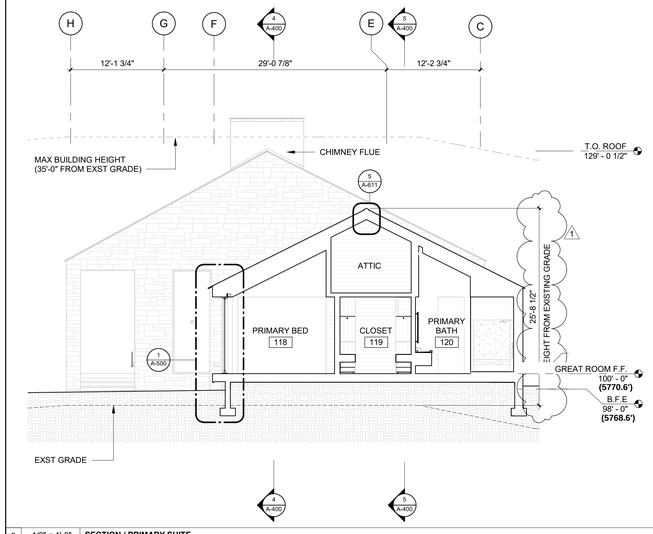
***NOTE: FFE OF RESIDENCE IS EQUIVALENT TO THE FLOOD PROTECTION ELEVATION (FPE), AND IS AT LEAST 2'-0" ABOVE THE BFE.**



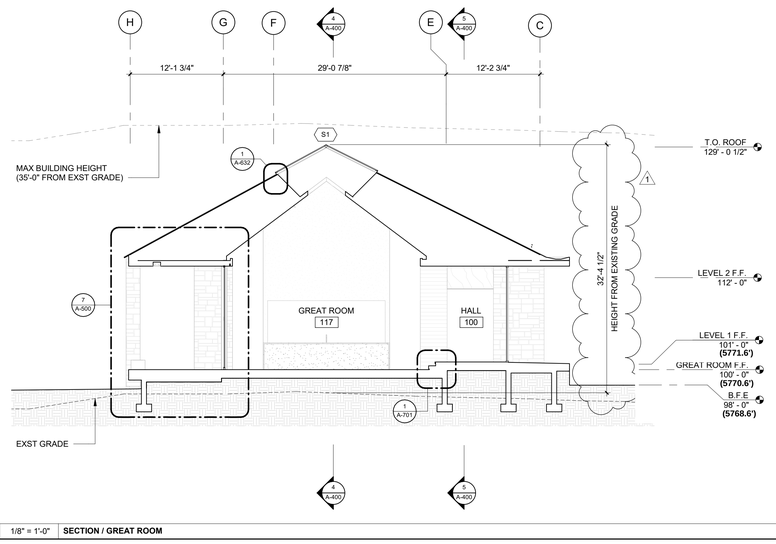
5 1/8" = 1'-0" **SECTION / EAST-WEST CORRIDOR**



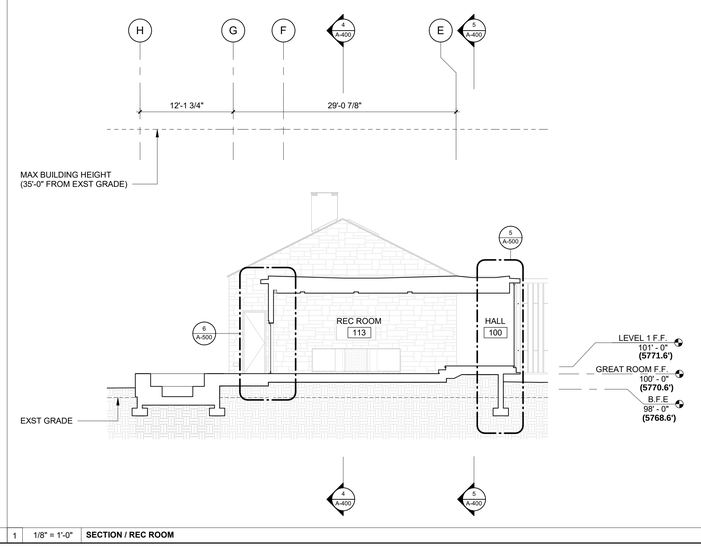
4 1/8" = 1'-0" **SECTION / EAST-WEST**



3 1/8" = 1'-0" **SECTION / PRIMARY SUITE**



2 1/8" = 1'-0" **SECTION / GREAT ROOM**



1 1/8" = 1'-0" **SECTION / REC ROOM**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

BUILDING SECTIONS

DRAWING NUMBER:

A-400

-

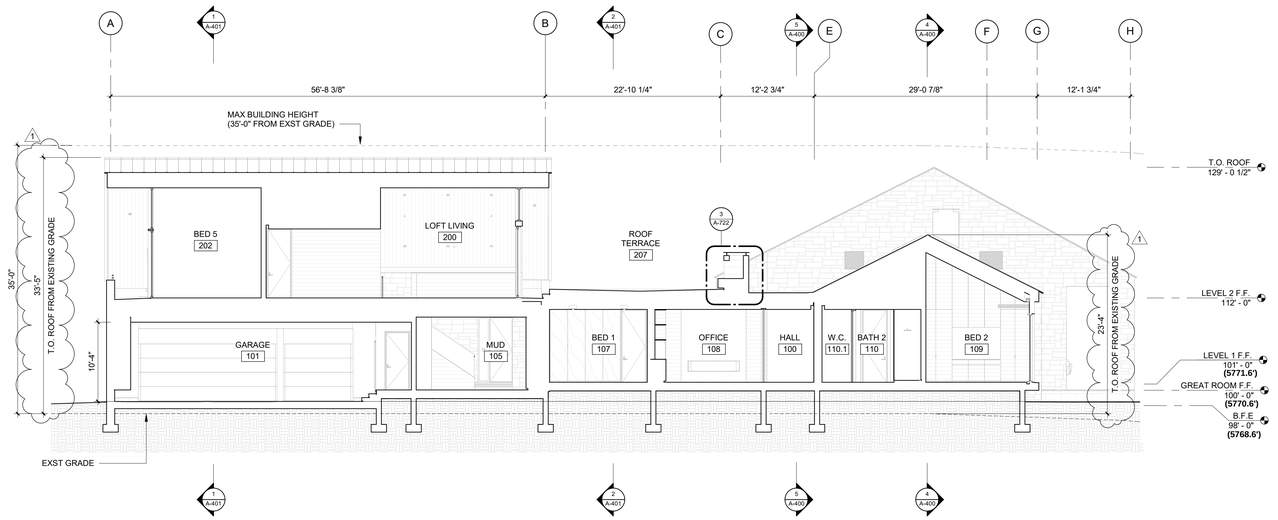
6/15/2023 4:05:16 PM

3 **NOTES:**

BFE OF RESIDENCE: 5768.6'

FFE OF RESIDENCE: 5770.6' *

***NOTE: FFE OF RESIDENCE IS EQUIVALENT TO THE FLOOD PROTECTION ELEVATION (FPE), AND IS AT LEAST 2'-0" ABOVE THE BFE.**



3 1/8" = 1'-0" **SECTION / NORTH-SOUTH**

2 1/8" = 1'-0" **SECTION / BED 1**

1 1/8" = 1'-0" **SECTION / GARAGE**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

BUILDING SECTIONS

DRAWING NUMBER:

A-401

-

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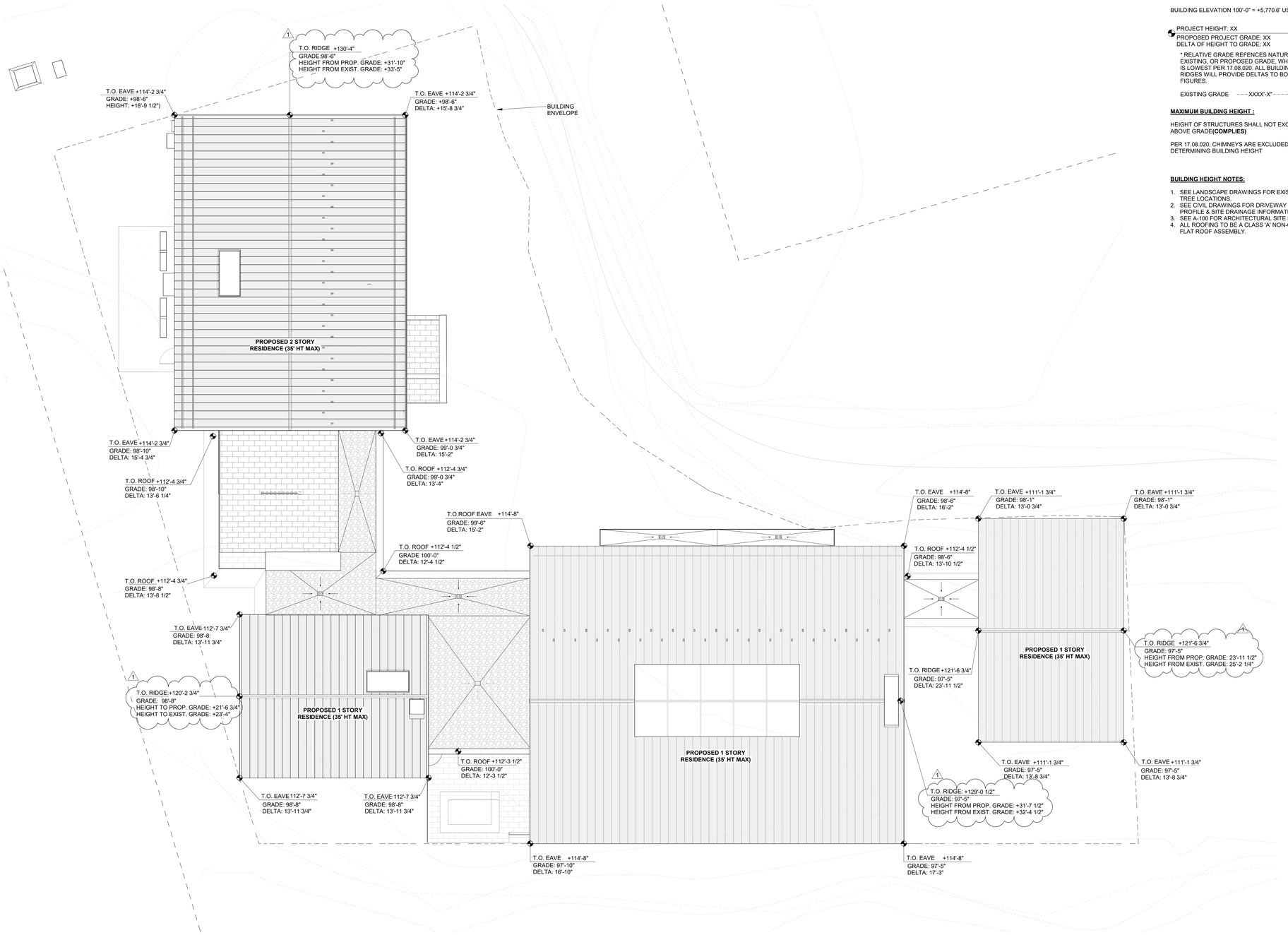

BUILDING ELEVATION 100'-0" = +5,770.6' USGS (5,770'-7 3/16")

PROJECT HEIGHT: XX
PROPOSED PROJECT GRADE: XX
DELTA OF HEIGHT TO GRADE: XX

* RELATIVE GRADE REFENCES NATURAL, EXISTING, OR PROPOSED GRADE, WHICHEVER IS LOWEST PER 17.08.020. ALL BUILDING RIDGES WILL PROVIDE DELTAS TO BOTH FIGURES.

EXISTING GRADE - - - XXXX'-X" - - - - -

MAXIMUM BUILDING HEIGHT :

HEIGHT OF STRUCTURES SHALL NOT EXCEED 35' ABOVE GRADE**(COMPLIES)**

PER 17.08.020, CHIMNEYS ARE EXCLUDED FROM DETERMINING BUILDING HEIGHT

BUILDING HEIGHT NOTES:

1. SEE LANDSCAPE DRAWINGS FOR EXISTING & NEW TREE LOCATIONS.
2. SEE CIVIL DRAWINGS FOR DRIVEWAY LAYOUT, PROFILE & SITE DRAINAGE INFORMATION.
3. SEE A-100 FOR ARCHITECTURAL SITE PLAN.
4. ALL ROOFING TO BE A CLASS 'A' NON-COMBUSTIBLE FLAT ROOF ASSEMBLY.

1 | 1/8" = 1'-0" | **HEIGHT DIAGRAM**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

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RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
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PO BOX 1034
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FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

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319 MAIN STREET
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EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER
2109

DRAWING TITLE:

BUILDING HEIGHT

DRAWING NUMBER:

G-011

-

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490 WOOD RIVER DR.
BUILDING COVERAGE:

AREA OF LOT: 91,112 S.F.
(PER SURVEY)

BUILDING COVERAGE AREA: 10,331 S.F.
(HATCHED AREA IN DIAGRAM)

COVERAGE ALLOWED: 30%

ACTUAL BUILDING COVERAGE (%) = 10,331 SF / 91,112 S.F. x100 = 11.3%

AREA OF BUILDING

APPLICABLE DEFINITIONS:

AREA OF LOT: The area within the boundaries of a lot, exclusive of any area contained within a public or private street, alley, fire lane or private driveway easement; also, exclusive of any narrow strip of land connecting a lot set back from any public street for the purpose of providing driveway access with that street and exclusive of any portion of the property that lies between the mean high water marks of the Big Wood River, Trail Creek and Warm Springs Creek. All exclusions shall not be used for the purpose of calculating density and building coverage. Lot area shall include the area of any dedicated public bike path, equestrian path or other public pathway within the boundaries of a lot.

BUILDING COVERAGE: The total square footage of the building foundation and all horizontal projections which constitute a "building" as defined in this section, but not including roof overhangs that are three feet (3') or less or uncovered decks less than thirty inches (30") above grade. Garages and guest homes shall be included in building coverage. The lot area used to determine building coverage shall be that area landward side of the mean high water mark on the Big Wood River, Trail Creek and Warm Springs Creek.

SITE PLAN NOTES:

1. ELEVATION: **100'-0"** = **5770.6'**
2. SEE LANDSCAPE DRAWINGS FOR (E) AND (N) TREE LOCATIONS
3. SEE CIVIL DRAWINGS FOR DRIVEWAY LAYOUT, PROFILE & SITE DRAINAGE INFORMATION
4. SEE ROOF PLAN FOR MORE ROOF INFORMATION
5. SEE G-011 & G-012 FOR SITE COVERAGE AND HEIGHT CALCULATIONS
6. SEE GENERAL CONTRACTOR STAGING PLAN FOR ALL STAGING INFORMATION.

NORTH

1 | 1" = 30'-0" | **LOT COVERAGE CALCULATIONS**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

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RO | ROCKETT DESIGN
1306 BRIDGEWAY. FLOOR 2
SAUSALITO, CA 94965
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100 BELL DRIVE. SUITE C
KETCHUM, IDAHO 83340
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LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
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2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

LOT COVERAGE CALCULATIONS

DRAWING NUMBER:

G-012

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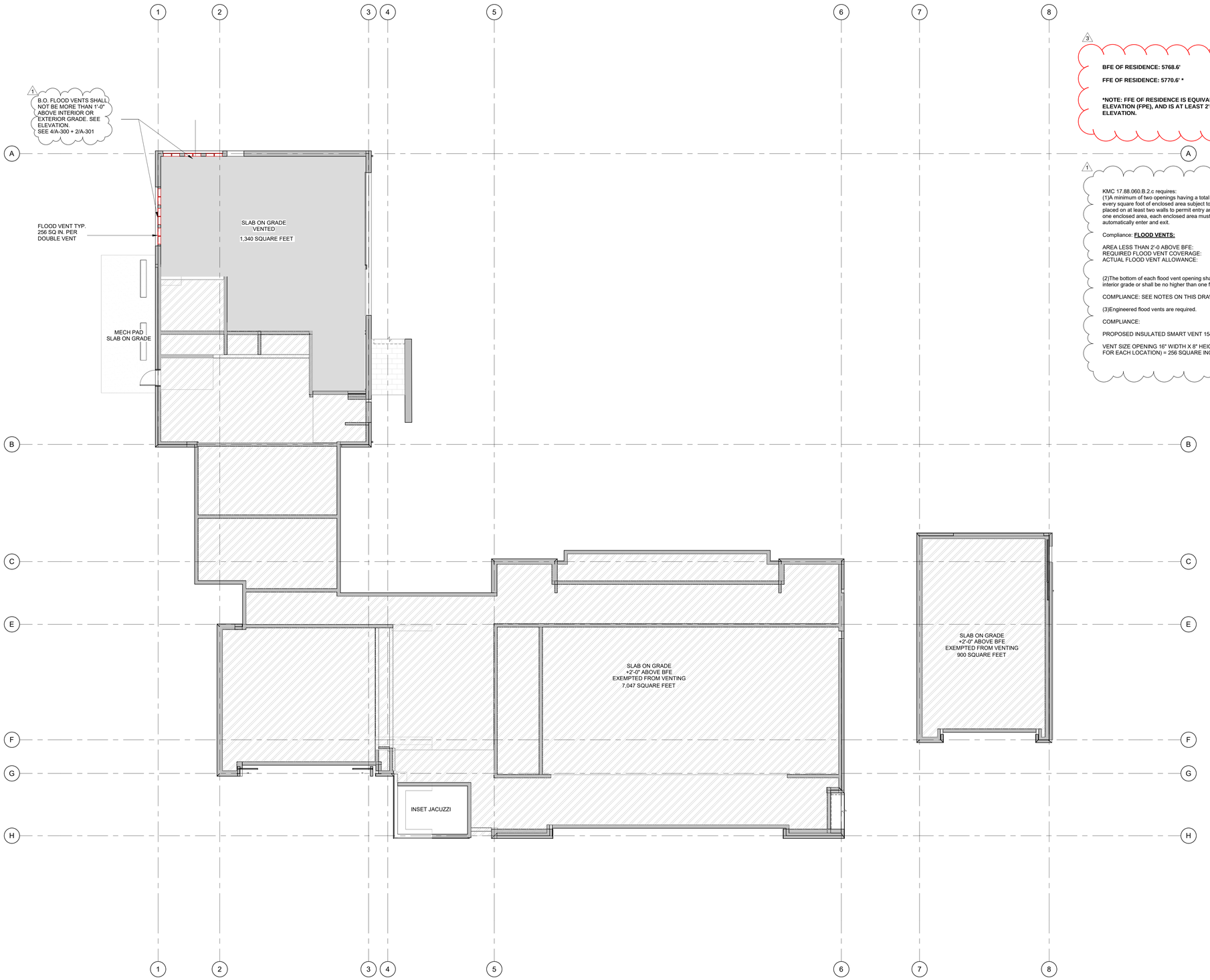

3

BFE OF RESIDENCE: 5768.6'

FFE OF RESIDENCE: 5770.6' *

***NOTE: FFE OF RESIDENCE IS EQUIVALENT TO THE FLOOD PROTECTION ELEVATION (FPE), AND IS AT LEAST 2'-0" ABOVE THE BASE FLOOD PLANE ELEVATION.**

1

KMC 17.88.060.B.2.c requires:
(1)A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. Openings shall be placed on at least two walls to permit entry and exit of floodwaters. If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit.

Compliance: **FLOOD VENTS:**

AREA LESS THAN 2'-0 ABOVE BFE:	1340 SF
REQUIRED FLOOD VENT COVERAGE:	1,349 SQ. IN.
ACTUAL FLOOD VENT ALLOWANCE:	1,500 SQ. IN.

(2)The bottom of each flood vent opening shall be no higher than either one foot above the interior grade or shall be no higher than one foot above the exterior adjacent grade.

COMPLIANCE: SEE NOTES ON THIS DRAWING. REFERENCE 4/A-300 + 2/A-301

(3)Engineered flood vents are required.

COMPLIANCE:

PROPOSED INSULATED SMART VENT 1540-520.

VENT SIZE OPENING 16" WIDTH X 8" HEIGHT PER VENT (DOUBLE VENTS PROPOSED FOR EACH LOCATION) = 256 SQUARE INCHES OF COVERAGE PER 2X VENT.

NORTH

1 | 1/8" = 1'-0" | **FLOOD VENT DIAGRAM**

490 WOOD RIVER

OWNER:
450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
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LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
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2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:
490 WOOD RIVER
490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER
2109

DRAWING TITLE:
FLOOD VENT DIAGRAM

DRAWING NUMBER:
G-013

-

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ICC-ES Evaluation Report

ESR-2074

Reissued 02/2023

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This report is subject to renewal 02/2025.

DIVISION: 08 00 00—OPENINGS
SECTION: 08 95 43—VENTS/FOUNDATION FLOOD VENTS

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514 FLOOD VENT SEALING KIT #1540-526

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ICC-ES Evaluation Report

Reissued February 2023

ESR-2074

This report is subject to renewal February 2025.

DIVISION: 08 00 00—OPENINGS
Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514 FLOOD VENT SEALING KIT #1540-526

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2021, 2018, 2015, 2012, 2009 and 2006 *International Residential Code®* (IRC)
- 2021 and 2018 *International Energy Conservation Code®* (IECC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Physical operation
- Water flow

2.0 USES

The Smart Vent® units are engineered mechanically operated flood vents (FVs) employed to equalize hydrostatic pressure on walls of enclosures subject to rising or falling flood waters. Certain models also allow natural ventilation.

3.0 DESCRIPTION

3.1 General:

When subjected to rising water, the Smart Vent® FVs' internal floats are activated, then pivot open to allow flow in either direction to equalize water level and hydrostatic pressure from one side of the foundation to the other. The FV pivoting door is normally held in the closed position by a buoyant release device. When subjected to rising water, the buoyant release device causes the unit to unlatch, allowing the door to rotate out of the way and allow flow. The water level stabilizes, equalizing the lateral forces. Each unit is fabricated from stainless steel. Smart Vent® Automatic Foundation Flood Vents are available in various models and sizes as described in Table 1. The SmartVENT® Stacking Model #1540-511 and FloodVENT® Stacking Model #1540-521 units each contain two vertically arranged openings per unit.

3.2 Engineered Opening:

The FVs comply with the design principle noted in Section 2.7.2.2 and Section 2.7.3 of ASCE/SEI 24-14 [Section 2.6.2.2 of ASCE/SEI 24-05 (2012, 2009, 2006 IBC and IRC)] for a maximum rate of rise and fall of 5.0 feet per hour (0.423 mm/s). In order to comply with the engineered opening requirement of ASCE/SEI 24, Smart Vent FVs must be installed in accordance with Section 4.0.

3.3 Ventilation:

The SmartVENT® Model #1540-510 and SmartVENT® Overhead Door Model #1540-514 both have screen covers with ¼-inch-by-¼-inch (6.35 by 6.35 mm) openings, yielding 51 square inches (32 903 mm²) of net free area to supply natural ventilation. The SmartVENT® Stacking Model #1540-511 consists of two Model #1540-510 units in one assembly, and provides 102 square inches (65 806 mm²) of net free area to supply natural ventilation. Other FVs described in this report do not offer natural ventilation.

3.4 Flood Vent Sealing Kit:

The Flood Vent Sealing Kit Model #1540-526 is used with SmartVENT® Model #1540-520. It is a Homasote 440 Sound Barrier® (ESR-1374) insert with 21 – 2-inch-by-2-inch (51 mm x 51 mm) squares cut in it. See Figure 4.

4.0 DESIGN AND INSTALLATION

4.1 SmartVENT® and FloodVENT®:

SmartVENT® and FloodVENT® are designed to be installed into walls or overhead doors of existing or new construction from the exterior side. Installation of the vents must be in accordance with the manufacturer's instructions, the applicable code and this report. Installation clips allow mounting in masonry and concrete walls of any thickness. In order to comply with the engineered opening design principle noted in Section 2.7.2.2 and 2.7.3 of ASCE/SEI 24-14 [Section 2.6.2.2 of ASCE/SEI 24-05 (2012, 2009, 2006 IBC and IRC)], the Smart Vent® FVs must be installed as follows:

- With a minimum of two openings on different sides of each enclosed area.
- With a minimum of one FV for every 200 square feet (18.6 m²) of enclosed area, except that the SmartVENT® Stacking Model #1540-511 and FloodVENT® Stacking Model #1540-521 must be installed with a minimum of one FV for every 400 square feet (37.2 m²) of enclosed area.
- Below the base flood elevation.
- With the bottom of the FV located a maximum of 12 inches (305.4 mm) above the higher of the final grade or floor and finished exterior grade immediately under each opening.

4.2 Flood Vent Sealing Kit:

The Flood Vent Sealing Kit Model 1540-526 is used in conjunction with FloodVENT® Model #1540-520. When installed and tested in accordance with ASTM E283, the FV and Flood Vent Sealing Kit assembly have an air leakage rate of less than 0.2 cubic feet per minute per lineal foot (18.56 l/min per lineal meter) at a pressure differential of 1 pound per square foot (50 Pa) based on 12.58 lineal feet (3.8 lineal meters) contained by the Flood Vent Sealing Kit.

5.0 CONDITIONS OF USE

The Smart Vent® FVs described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The Smart Vent® FVs must be installed in accordance with this report, the applicable code and the manufacturer's installation instructions. In the event of a conflict, the instructions in this report govern.

5.2 The Smart Vent® FVs must not be used in the place of "breakaway walls" in coastal high hazard areas, but are permitted for use in conjunction with breakaway walls in other areas.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Mechanically Operated Flood Vents (AC364), dated August 2015 (editorially revised February 2021).

6.2 Test report on air infiltration in accordance with ASTM E283.

7.0 IDENTIFICATION

7.1 The Smart VENT® models and the Flood Vent Sealing Kit described in this report must be identified by a label bearing the manufacturer's name (Smartvent Products, Inc.), the model number, and the evaluation report number (ESR-2074).

7.2 The report holder's contact information is the following:

SMART VENT PRODUCTS, INC.
18 MANTUA ROAD
MOUNT ROYAL, NEW JERSEY 08061
(877) 441-8368
www.smartvent.com
info@smartvent.com

TABLE 1—MODEL SIZES

MODEL NAME	MODEL NUMBER	MODEL SIZE (in.)	COVERAGE (sq. ft.)
FloodVENT®	1540-520	15⅞"x 7⅞"	200
SmartVENT®	1540-510	15⅞"x 7⅞"	200
FloodVENT® Overhead Door	1540-524	15⅞"x 7⅞"	200
SmartVENT® Overhead Door	1540-514	15⅞"x 7⅞"	200
Wood Wall FloodVENT®	1540-570	14" X 8⅛"	200
Wood Wall FloodVENT® Overhead Door	1540-574	14" X 8⅛"	200
SmartVENT® Stacker	1540-511	16" X 16"	400
FloodVent® Stacker	1540-521	16" X 16"	400

For SI: 1 inch = 25.4 mm, 1 square foot = m².

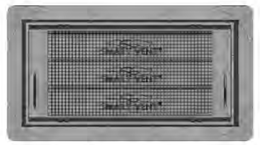

FIGURE 1—SMART VENT: MODEL 1540-510

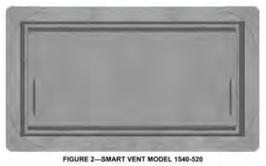

FIGURE 2—SMART VENT MODEL 1540-520

FIGURE 3—SMART VENT: SHOWN WITH FLOOD DOOR PIVOTED OPEN

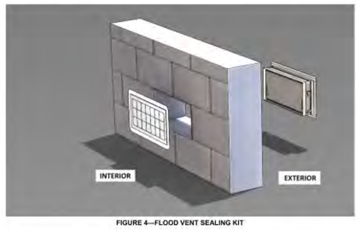

FIGURE 4—FLOOD VENT SEALING KIT

ICC ES EVALUATION SERVICE

ICC-ES Evaluation Report

ESR-2074 CBC and CRC Supplement

Reissued February 2023

This report is subject to renewal February 2025.

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DIVISION: 08 00 00—OPENINGS
Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514 FLOOD VENT SEALING KIT #1540-526

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Smart Vent® Automatic Foundation Flood Vents, described in ICC-ES evaluation report ESR-2074, have also been evaluated for compliance with codes noted below.

Applicable code editions:

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA, California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with 2019 CBC Chapter 12, provided the design and installation are in accordance with the 2018 *International Building Code®* (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 12 and 16 , as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with the 2019 CRC, provided the design and installation are in accordance with the 2018 *International Residential Code®* (IRC) provisions noted in the evaluation report.

This supplement expires concurrently with the evaluation report, reissued February 2023.

ICC ES EVALUATION SERVICE

ICC-ES Evaluation Report

ESR-2074 FBC Supplement

Reissued February 2023

This report is subject to renewal February 2025.

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SMART VENT PRODUCTS, INC.

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1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Smart Vent® Automatic Foundation Flood Vents, described in ICC-ES evaluation report ESR-2074, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 *Florida Building Code—Building*
- 2020 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design requirements are determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-2074 for 2018 *International Building Code®* meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable.

Use of the Smart Vent® Automatic Foundation Flood Vents has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential*.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued February 2023.

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

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722 N ROUSE AVE
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STRUCTURAL ENGINEER:

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319 MAIN STREET
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TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
3	10/25/23	FDP REVISION 3
2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

FLOOD VENT SPEC / TESTING

DRAWING NUMBER:

G-014

-

SCHEDULE / MATERIAL

MATERIAL	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	SIZE/DIM	SPECIES/COLOR	FINISH	COMMENTS
BRK-1	FIRE BRICK	FP-1/ FP-2 / FP-3	SUPERIOR CLAY	FIRE BRICK	9" X4.5" X 1.5"	BLACK	-	SPLIT FIRE BRICK INTO 9" X 2.25" X 1.5" THK PIECES AND INSTALL IN A STACKED BOND PATTERN WITH ZERO JOINTS
CONC-1	CAST-IN PLACE CONCRETE	SITE WALLS	CUSTOM	BOARD FORMED CONCRETE	2X6	PLAIN CONCRETE	MATTE SEALED & SANDBLASTED PLAIN SAWN DOUGLAS FIR BOARDS	BOARD FORMED CONCRETE SITE WALLS W/ SURFACE RETARDER BY DAYTON SUPERIOR TOP-CAST LIGHT BLUE 05 SANDBLAST FINISH AT TOP OF WALLS, RADIUS CORNERS OF BOARD FORMS, ARCHITECT TO REVIEW VIA MOCKUP
CONC-2	CAST-IN PLACE CONCRETE	MECH PAD	CUSTOM	-	SSD	PLAIN CONCRETE	SANDBLAST FINISH	1/8" THK SAWCUT JOINT LOCATIONS SEE PLAN & SURFACE RETARDER BY DAYTON SUPERIOR TOP-CAST LIGHT BLUE 05 SANDBLAST FINISH
CONC-3	CAST-IN PLACE CONCRETE	HOT TUB	CUSTOM					
CT-1	CERAMIC TILE	LOFT	INAX	FIELD TILE	98X12.5MM	WHITE	-	
EP-1	EPOXY FLOOR	GARAGE						
FC-1	FIBER CEMENT BOARD	CHIMNEY FLUE	TBD	-	-	BLACK	FIBER CEMENT BOARD	
GL-1	LAMINATED GLASS	GUARDRAILS	VITRO OR APPROVED EQ	STARPHIRE	1/2" THICK	CLEAR WATER WHITE	POLISHED	SIZE CRITICAL, FLAT POLISHED EDGES, TEMPERED AS REQ BY APPLICATION AND CODE
GL-2	MIRROR	BATHROOMS	VITRO OR APPROVED EQ	STARPHIRE	1/4" THICK	MIRROR	POLISHED	SIZE CRITICAL, FLAT POLISHED EDGES
GL-3	TEMPERED GLASS	FRAMELESS SHOWERS	VITRO OR APPROVED EQ	STARPHIRE	1/2" THICK	CLEAR WATER WHITE	POLISHED / ( ) ACID ETCHED ONE SIDE	SIZE CRITICAL, FLAT POLISHED EDGES
GWB-1	PAINTED DRYWALL FINISH	WALL, CEILINGS	BENJIMAN MOORE OR APPROVED EQ	AURA	-	TBD	LEVEL V DRYWALL / FLAT PAINT	PROVIDE PRIMER & TWO COATS. ALL DAMP AREAS SUCH AS BATHROOMS, GARAGE, & KITCHEN TO RECEIVE (EG), ALL TRIM TO RECEIVE (SG), TYPICAL CEILINGS TO RECEIVE (F), TYPICAL WALLS TO RECEIVE (V)
LACQ-1	LACQUERED WD	KITCHEN	TBD		-	TBD	TBD	
LACQ-2	LACQUERED WD	PANTRY						
LAM-1	LAMINATE	GARAGE	REHAU OR APPROVED EQ		-	TBD	MATTE	
LAM-2	LAMINATE	LAUNDRY	REHAU OR APPROVED EQ					
LAM-3	LAMINATE	BEDROOMS	REHAU OR APPROVED EQ					
MTL-1	STANDING SEAM METAL ROOFING	PITCHED ROOFS	VMZINC OR EQ	DOUBLE LOCK	18"	ANTHRA ZINC	-	STANDING SEAM ROOFING SYSTEM
MTL-2	METAL PANEL	EXTERIOR WALLS AND TRIM	VM ZINC OR APPROVED EQ	FLATLOCK	16 GA	ANTHRA ZINC	MATTE	FLAT LOCK METAL WALL PANEL SYSTEM, INSTALL VERTICAL W/ MIN REVEAL PER MFR SPECS
MTL-3	BRAKE METAL	TRIM, FLASHING, GUTTERS, ROOF, ETC.	DREXEL OR EQ	-	22 GA, UNO	FACTORY FINISH KYNAR, LOW GLOSS MATTE	COLOR TBD, MATTE	COLOR TO MATCH ADJ WIN/DOOR FRAMES OR ADJ MTL ROOFING TYP.
MTL-4	PTD STEEL SHAPES / MISC. METALS / EXTERIOR	EXTERIOR MISC METALS	CUSTOM	-	-	STAINLESS STEEL 316	PRIME & PAINTED, COLOR TBD	STL SHAPES BARS & PLATES AS REQ'D
MTL-5	BLACKENED STEEL SHAPES / MISC. METALS	FIREPLACE	CUSTOM	CUSTOM	-	-	COLD ROLLED STEEL	
MTL-6	METAL CABINET	BBQ	CUSTOM	CUSTOM		TBD	TBD	
MTL-7	METAL MESH	CHIMNEY SHROUD						
MTL-8	PTD MTL	DOWNSPOUTS						
PLAS-1	PLASTER	VARIES	TEXSTON	MARMORINO	-		SMOOTH TROWELED/ (W) WATERPROOF	GC TO PROVIDE SAMPLE, ARCHITECT TO VERIFY FINAL COLOR
SS-1	SOLID SURFACE	LAUNDRY	TBD	COUNTERTOP	2CM	TBD	TBD	
STN-1	STONE VENEER	EXTERIOR & INTERIOR WALLS	TBD	STONE VENEER	4" EXTERIOR / 2" INTERIOR	TBD	TBD	CONTRACTOR TO CONFIRM QUANTITY INCLUDING WASTE, MINIMAL GROUTED JOINTS, PROVIDE FULL DEPTH VENEER AT EXTERIOR
STN-2	STONE TILE FLOORING	EXTERIOR PAVING & SILL	TBD	STONE TILE	12" X 24"	TBD	FLAMED	CONTRACTOR TO CONFIRM QUANTITY INCLUDING WASTE, MINIMAL GROUTED JOINTS. PROVIDE 3CM AT EXTERIOR HORIZONTAL APPLICATION AND 2CM AT INTERIOR APPLICATION
STN-3	STONE TILE FLOORING	INTERIOR STONE FLOOR	TBD	STONE TILE	12" X 24"	TBD	TBD	CONTRACTOR TO CONFIRM QUANTITY INCLUDING WASTE, MINIMAL GROUTED JOINTS. PROVIDE 3CM AT EXTERIOR HORIZONTAL APPLICATION AND 2CM AT INTERIOR APPLICATION
STN-4	STONE SLAB	KITCHEN	TBD	STONE SLAB	2CM / 3/4" THK	TBD	TBD	SLABS SHALL BE BOOK MATCH OR SLIP MATCHED DEPENDING ON FINAL PATTERN OF STONE
STN-5	STONE SLAB	LIVING ROOM WETBAR	TBD	STONE SLAB	2CM / 3/4" THK	TBD	TBD	SLABS SHALL BE BOOK MATCH OR SLIP MATCHED DEPENDING ON FINAL PATTERN OF STONE
STN-6	STONE SLAB	LOFT LIVING	TBD	STONE SLAB	2CM / 3/4" THK	TBD	TBD	
STN-8	STONE SLAB	PRIMARY BATH	TBD	STONE SLAB	2CM / 3/4" THK	TBD	TBD	
STN-9	STONE SLAB	POWDER RM 114	TBD	STONE SLAB	2CM / 3/4" THK			
STN-10	STONE SLAB	POWDER RM 115	TBD	STONE SLAB	2CM / 3/4" THK	TBD	TBD	
STN-13	STONE TILE FLOORING	LEVEL 2 BATHS	TBD	STONE TILE FLOORING	12X24	TBD	TBD	
STN-14	STONE COUNTER	PRIMARY BATH	TBD	STONE SLAB	2CM	TBD	TBD	
STN-15	STONE COUNTER	LEVEL 1 BATHS	CEASARSTONE	TBD	2CM	TBD	TBD	
STN-17	STONE COUNTER	LEVEL 2 BATHS	CEASARSTONE	TBD	2CM	TBD	TBD	
STN-18	STONE COUNTER	POWDER RM 114						
STN-21	STONE COUNTER	BBQ	TBD	STONE SLAB	2CM	TBD	TBD	
STN-22	STONE HEARTH	REC ROOM	TBD	STONE SLAB		TBD	TBD	
STN-23	STONE HEARTH	TERRACE FIREPLACE	TBD	STONE SLAB		TBD	TBD	
TX-1	FABRIC	BUNKROOM	HOLLAND & SHERRY	WOOL FLANNEL	-	PEBBLE	-	
WD-1	EXTERIOR WOOD SIDING	VARIES	TBD	(EF)ENGINEERED WOOD FLOORING / (ES)ENGINEERED WOOD SIDING / (V)VENEER / (S)SOLID STOCK	(EF)(ES) 3/4" X 8" / (V)3/4" THICK / (S)AS NOTED	TBD	(EF)FLOOR SERVICE HARDWAX OIL / (ES)(V)(S)PRE-FINISHED STAIN	PRIME BACK & SIDES OF ALL BOARDS & TRIM, VENEER FOR CABINETS TO BE EDGE BANDED & APPLIED TO BALTIC BIRCH PLYWOOD, VENEERS TO BE BOOKMATCHED & USED IN SEQUENCE THROUGHOUT ROOMS
WD-2	EXTERIOR WOOD CEILING	VARIES	CUSTOM	(EF)ENGINEERED WOOD FLOORING / (ES)ENGINEERED WOOD SIDING / (V)VENEER / (S)SOLID STOCK	(EF)(ES) 3/4" X 8" / (V)3/4" THICK / (S)AS NOTED	TBD	(EF)FLOOR SERVICE HARDWAX OIL / (ES)(V)(S)PRE-FINISHED STAIN	PRIME BACK & SIDES OF ALL BOARDS & TRIM, VENEER FOR CABINETS TO BE EDGE BANDED & APPLIED TO BALTIC BIRCH PLYWOOD, VENEERS TO BE BOOKMATCHED & USED IN SEQUENCE THROUGHOUT ROOMS
WD-4	INTERIOR WOOD FLOORING	VARIES	TBD	(EF)ENGINEERED WOOD FLOORING / (ES)ENGINEERED WOOD SIDING / (V)VENEER / (S)SOLID STOCK	(EF)(ES) 3/4" X 8" / (V)3/4" THICK / (S)AS NOTED	TBD	(EF)FLOOR SERVICE HARDWAX OIL / (ES)(V)(S)PRE-FINISHED STAIN	PRIME BACK & SIDES OF ALL BOARDS & TRIM, VENEER FOR CABINETS TO BE EDGE BANDED & APPLIED TO BALTIC BIRCH PLYWOOD, VENEERS TO BE BOOKMATCHED & USED IN SEQUENCE THROUGHOUT ROOMS
WD-5	INTERIOR WOOD PANELING	VARIES	CUSTOM	(EF)ENGINEERED WOOD FLOORING / (ES)ENGINEERED WOOD SIDING / (V)VENEER / (S)SOLID STOCK	(EF)(ES) 3/4" X 8" / (V)3/4" THICK / (S)AS NOTED	TBD	(EF)FLOOR SERVICE HARDWAX OIL / (ES)(V)(S)PRE-FINISHED STAIN	
WD-6	INTERIOR WOOD CEILINGS	VARIES	TBD	(EF)ENGINEERED WOOD FLOORING / (ES)ENGINEERED WOOD SIDING / (V)VENEER / (S)SOLID STOCK	(EF)(ES) 3/4" X 8" / (V)3/4" THICK / (S)AS NOTED	TBD	(EF)FLOOR SERVICE HARDWAX OIL / (ES)(V)(S)PRE-FINISHED STAIN	
WD-7	INTERIOR WOOD TRIM	VARIES	CUSTOM	(EF)ENGINEERED WOOD FLOORING / (ES)ENGINEERED WOOD SIDING / (V)VENEER / (S)SOLID STOCK	(EF)(ES) 3/4" X 8" / (V)3/4" THICK / (S)AS NOTED	TBD	(EF)FLOOR SERVICE HARDWAX OIL / (ES)(V)(S)PRE-FINISHED STAIN	
WD-8	WOOD CASEWORK	VARIES	CUSTOM	(EF)ENGINEERED WOOD FLOORING / (ES)ENGINEERED WOOD SIDING / (V)VENEER / (S)SOLID STOCK	(EF)(ES) 3/4" X 8" / (V)3/4" THICK / (S)AS NOTED	TBD	(EF)FLOOR SERVICE HARDWAX OIL / (ES)(V)(S)PRE-FINISHED STAIN	
WD-9	TIMBER SLATS	VARIES	CUSTOM	(EF)ENGINEERED WOOD FLOORING / (ES)ENGINEERED WOOD SIDING / (V)VENEER / (S)SOLID STOCK	2X6	TBD	(EF)FLOOR SERVICE HARDWAX OIL / (ES)(V)(S)PRE-FINISHED STAIN	PRIME BACK & SIDES OF ALL BOARDS & TRIM, VENEER FOR CABINETS TO BE EDGE BANDED & APPLIED TO BALTIC BIRCH PLYWOOD, VENEERS TO BE BOOKMATCHED & USED IN SEQUENCE THROUGHOUT ROOMS

1 **MAIN HOUSE | NORTH - FRONT**

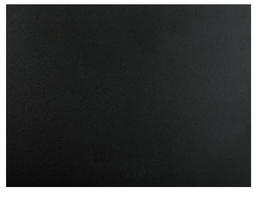
2 **MAIN HOUSE | SOUTH - REAR**

3 **MAIN HOUSE | CONNECTOR BRIDGE - NORTH**

PAINTED BLACK METAL: STANDING SEAM ROOF

WOOD: FINS + FASCIA

PARGED FIELD STONE: WALLS



BLACKENED METAL

STONE STRETCHER: TERRACE FLOORING

4 **EXTERIOR MATERIALS**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

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PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

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TEL: 406.551.2098

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TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
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1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

MATERIAL SCHEDULE

DRAWING NUMBER:

G-100

-

PATHLIGHTS
STEALTH AND IMPACT®

PROJECT NAME:	TYPE:

Low glare path lights lead the way through the out of doors, as built-ins or from freestanding bollards.

ORDERING INFORMATION AND DRAWINGS – FIXTURE

Quick Ship Product. All rough in components ship within 10 days up to quantities of 100.

FIXTURE	RATING	FLANGE FINISH	LUMEN PACKAGE	CCT
SSL1 Stealth Straight ISL1 Impact Straight	1 Dry / Damp (Non-Locking) 2 Wet (Locking)	POWDER COAT FINISH: WH White, BK Black, AG Satin Silver, AB Architectural Bronze, CP Custom Paint* (*Consult Factory) NATURAL FINISH: IG Industrial Grey, SS Brushed Stainless Steel, BR Brushed Bronze, NB Natural Bronze PLATED FINISH: CH Chrome (*Not available for wet locations), PB Polished 24k Plated Brass* (*Not available for wet locations), MB Matte 24k Plated Bronze* (*Not available for wet locations)	STEALTH & IMPACT 80LO2B 80+CRI, 200Source Lumens SSL1 (Delivered Lumens – 31) ISL1 (Delivered Lumens – 41)	27 2700K 30 3000K 35 3500K 40 4000K CC Custom Color (with Temp. ___K) *Custom color not assigned after order receipt. Contact Product Support for guidance.

A LED
Regressed LED with slot aperture for glare-free, energy-efficient path and step lighting; suitable for dry / damp or wet applications. 3.4W DC LED (dimming by power supply).

B EFFECTS DEVICES
Provided with sealed polycarbonate linear diffusion lens; consult factory for availability of color gels, which may achieve custom color temperatures.

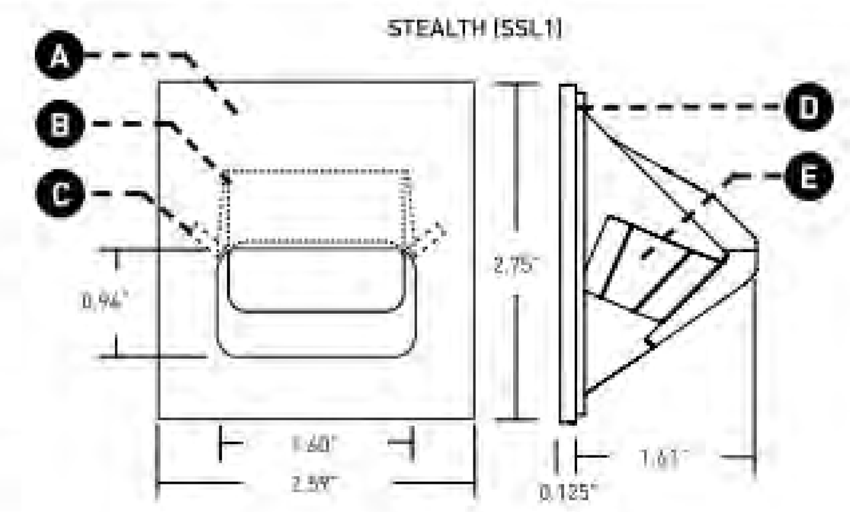
C LOCKING
Discreetly hidden tamper-resistant set screws. Included with IP65 Wet location luminaire.

D GASKET
Foam gasket provided. Required for IP65 wet location applications only.

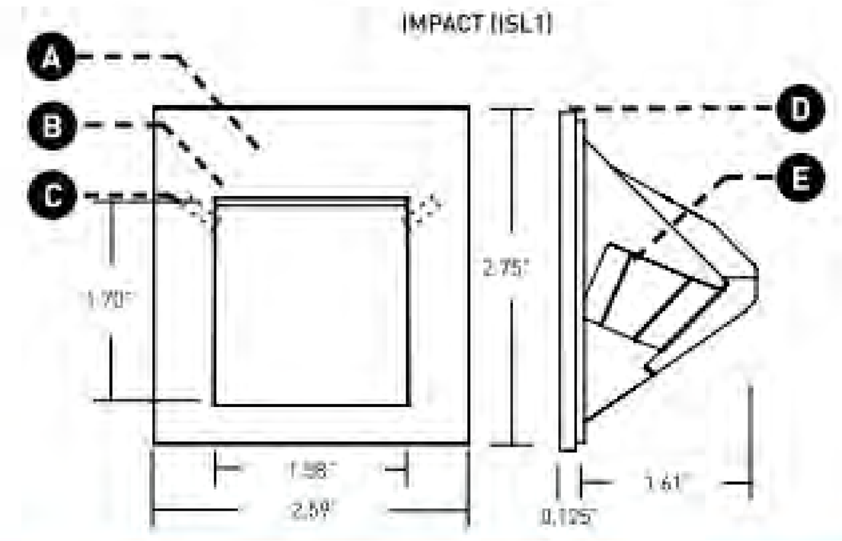
E RETENTION
Torsion spring clips secure fixture into back box, mounting plate, or appropriately sized cut-out.

- Available with Bollard mounting, please visit WEBSITE for additional information.
- Double Impact ISL2 pathlight available, please visit WEBSITE for additional information.

STEALTH (SSL1)



IMPACT (ISL1)



LUCIFER® LIGHTING COMPANY | luciferlighting.com | ©2022 Lucifer® Lighting Company

(DATE OF REV: 07052022)

FIXTURE FX1

Wall luminaire - directed light — **BEGA**

Type: LED
BEGA Product: 22115
Project: 490 WR
Modified: NA

Application
Wall luminaire with directed light. As individual luminaires with low mounting height, they can be used for marking danger areas or in rows for illuminating corridors and passageways. With high mounting heights they can be used as wall luminaires next to doors or for lighting small wall areas.

Materials
Luminaire housing constructed of die-cast marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
Matte safety glass
High temperature silicone gasket
Mechanically captive stainless steel fasteners

NRTL listed to North American Standards, suitable for wet locations
Protection class IP64
Weight: 0.9 lbs

Electrical

Operating voltage	120-277VAC
Minimum start temperature	-20°C
LED module wattage	2.1 W
System wattage	3.0 W
Controllability	Dimming not available
Color rendering index	Ra > 90
Luminaire lumens	172 lumens (4000K)
LED service life (L70)	60,000 hours

LED color temperature
☐ 4000K - Product number + **K4**
☐ 3500K - Product number + **K35**
☐ 3000K - Product number + **K3**
☐ 2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details.

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.
Available colors: ☐ Black (BLK) ☐ White (WHT) ☐ RAL ☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS

Wall luminaire · directed light

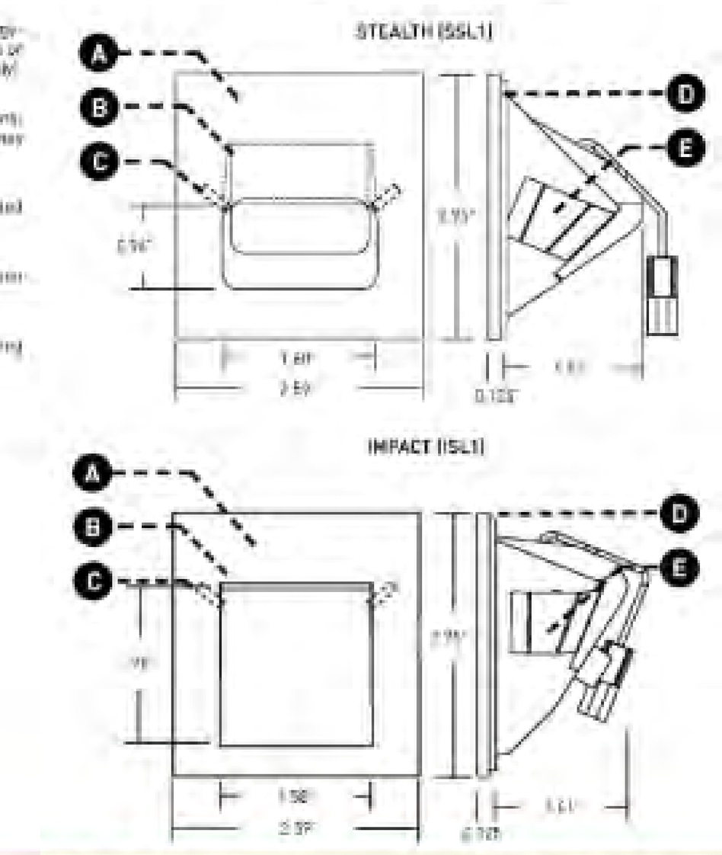
22115 ... 19538

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com

FIXTURE F10

PATHLIGHTS
STEALTH AND IMPACT®

STEALTH (SSL1)



IMPACT (ISL1)

LUCIFER® LIGHTING COMPANY

490 WOOD RIVER

RECESSED STEP LIGHT — F7

KGM — 270 CORAL CIRCLE | EL SEGUNDO, CALIFORNIA, 90245 | TEL: 310.552.2191

FIXTURE F7

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490 WOOD RIVER

OWNER:
450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:
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SURVEYOR & CIVIL ENGINEER:
BENCHMARK ASSOCIATES
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270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:
LICENSED ARCHITECT — ZACHARY ROCKETT — AR-987275 — STATE OF IDAHO

NO	DATE	ISSUE
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2	8/18/23	FDP REVISION 2
1	6/23/23	FDP REVISION 1
2	5/25/23	PERMIT SET
1	04/25/23	FDP SET

PROJECT:
490 WOOD RIVER
490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER
2109

DRAWING TITLE:
LIGHTING FIXTURE SCHEDULE

DRAWING NUMBER:
G-107

-

RECORDING REQUESTED BY AND WHEN RECORDED RETURN TO:	
City Clerk, City of Ketchum PO Box 2315 Ketchum Idaho, 83340	

(Space Above Line For Recorder's Use)

Acknowledgement of Floodplain Management Overlay District and Waterways Design Review District Affidavit

Property Owner:	450-490 Wood River, LLC
Building Permit Number:	Building permit # not issued. Per Adam Crutcher's recommendation, Floodplain Permit # is: P23-029
Property Address:	490 Wood River, Ketchum ID 83340
Legal Description:	Lot 4 Block 1, Mary's Place Subdivision
Parcel Number: RPK	04740000040
Scope of Work:	Single Family Residence: Main House Dwelling with in ground spa

Please initial and fill below:

FC I acknowledge that this development and the parcel of land, or portion thereof, on which the development will be situated are within the Floodplain Management Overlay District.

FC I acknowledge this property is within the Waterways Review District.

FC I have thoroughly read and fully understand Ketchum Municipal Code Title 17, Chapter 17.88 "Floodplain Management Overlay District", to include regulations for the Waterways Design Review District including regulations on activities within 100 feet of the mean high-water mark.

FC I fully understand and agree to comply with Ketchum Municipal Code Title 17, Chapter 17.88.040 C.

FC I, on behalf of myself, my personal representatives and my heirs, successors, and assignees, acknowledge by this written *affidavit* that said property is located within the one percent annual chance floodplain (SFHA) as defined herein, and/or said property is within the Waterways Design Review District and that a violation of the terms of Ketchum Municipal Code 17.88 shall cause the City to seek legal remedies.

FC I acknowledge that the City of Ketchum Planning & Building Department shall have the notarized affidavit recorded in the records of Blaine County for the property.

Property Owner Signature As a representative of Owner Date 6/14/2023

STATE OF ID, County of Blaine

On this 14th day of June, 2023, before me, the undersigned, a Notary Public in and for said State, personally appeared FRAZIER LOCKWOOD CAINES known or identified to me to be the person whose name is subscribed to the within instrument.

WITNESS my hand and seal the day and year in this certificate first above written.

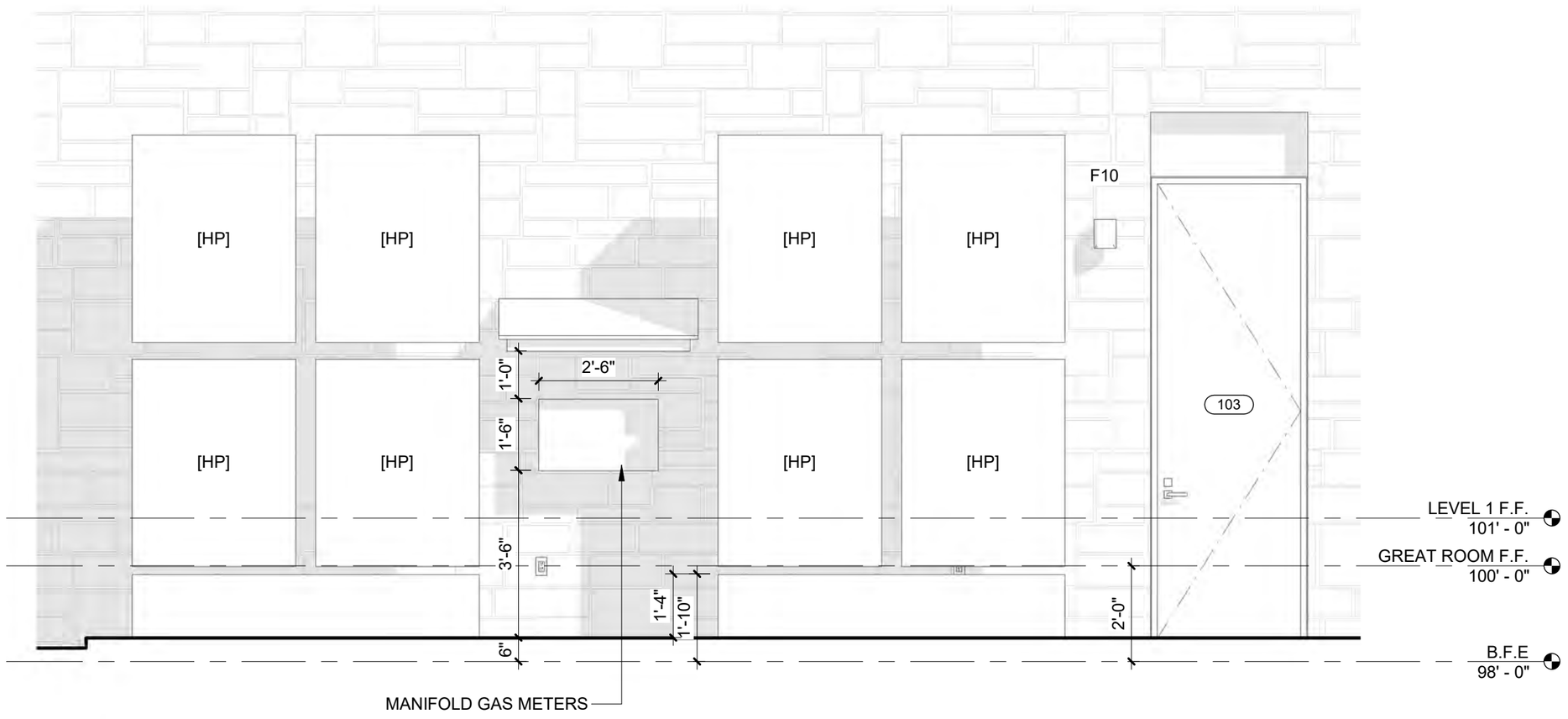
Notary Public for IDAHO (State) Residing at: KETCHUM, IDAHO

Commission Expires: 04-17-2025

Rocio Colan
Commission Number: 61468
Notary Public
State of Idaho
My Commission Expires: 04/17/2025

City of Ketchum accepts this Affidavit from (insert owner's name).

ATTEST: CITY CLERK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F10
103
1'-0"
2'-6"
1'-6"
3'-6"
6"
1'-4"
1'-10"
2'-0"
LEVEL 1 F.F.
101' - 0"
GREAT ROOM F.F.
100' - 0"
B.F.E
98' - 0"
MANIFOLD GAS METERS

Mary's Place Subdivision, Lot 4, Block 1
490 Wood River Drive
City of Ketchum, Blaine County, Idaho

February 2023

450 - 490 Wood River, LLC
Presidio Vista Properties
P.O. Box 10092
Ketchum, ID 83340

Pre-construction notification is being submitted on behalf of 450 - 490 Wood River, LLC owners of Lot 4, Block 1, of the Mary's Place Subdivision, located 490 Wood River Drive, within Section 13, Township 4N., Range 17E., City of Ketchum, Blaine County, Idaho. Applicant request permit approval for residential development within existing platted building envelope. Proposed development will impact waters of the United States, jurisdictional wetlands, development plan will require permanent wetland fill: residential homesite, access driveway, attendant landscape features and associated landscape grading applications.

Proposed development applications will impact approximately 0.424 ac (18,450 sq. ft.) of identified wetland resources: permanent fill approximately 0.125 ac. (5,450 sq. ft.), floodplain/riparian/wetland restoration applications approximately 0.298 ac. (13,000 sq. ft.).

Proposed development applicaitons have been designed and will be constructed to avoid and minimize adverse impacts to identified wetland resources to the maximum extent practicable. Mitigation to offset for the proposed wetland impacts [permanent fill] will be implemented in conjunction with the City of Ketchum Floodplain Development regulations and requirements.

On-site compensatory mitigation applications will be conducted on a 1 to 1 (minimum) replacement ratio. Proposed riparian/wetland mitigation applications will create enhance approx. 0.167 ac. (7,300 sq. ft.) of riparian wetland habitat resources.

Due to the proposed wetland mitigation applications, locations of proposed development applications, site drainage characteristics and preserved vegetative buffers, changes to wetland functions, hydrological characteristics and processes are not anticipated.

Project will incorporate all applicable Best Management Practices (BMPs) such as silt fence and straw wattles to protect resource values and ensure compliance with Water Quality Standards and applicable environmental regulations. All disturbed areas will be reclaimed and vegetated.

JOINT APPLICATION FOR PERMITS

U.S. ARMY CORPS OF ENGINEERS - IDAHO DEPARTMENT OF WATER RESOURCES - IDAHO DEPARTMENT OF LANDS

Authorities: The Department of Army Corps of Engineers (Corps), Idaho Department of Water Resources (IDWR), and Idaho Department of Lands (IDL) established a joint process for activities impacting jurisdictional waterways that require review and/or approval of both the Corps and State of Idaho. Department of Army permits are required by Section 10 of the Rivers & Harbors Act of 1899 for any structure(s) or work in or affecting navigable waters of the United States and by Section 404 of the Clean Water Act for the discharge of dredged or fill materials into waters of the United States, including adjacent wetlands. State permits are required under the State of Idaho, Stream Protection Act (Title 42, Chapter 38, Idaho Code and Lake Protection Act (Section 58, Chapter 13 et seq., Idaho Code). In addition the information will be used to determine compliance with Section 401 of the Clean Water Act by the appropriate State, Tribal or Federal entity.

Joint Application: Information provided on this application will be used in evaluating the proposed activities. Disclosure of requested information is voluntary. Failure to supply the requested information may delay processing and issuance of the appropriate permit or authorization. Applicant will need to send a completed application, along with one (1) set of legible, black and white (8½"x11"), reproducible drawings that illustrate the location and character of the proposed project / activities to both the Corps and the State of Idaho.

See Instruction Guide for assistance with Application. Accurate submission of requested information can prevent delays in reviewing and permitting your application. Drawings including vicinity maps, plan-view and section-view drawings must be submitted on 8-1/2 x 11 papers.

Do not start work until you have received all required permits from both the Corps and the State of Idaho

FOR AGENCY USE ONLY			
USACE NWW-	Date Received:	☐ Incomplete Application Returned	Date Returned:
Idaho Department of Water Resources No.	Date Received:	☐ Fee Received DATE:	Receipt No.:
Idaho Department of Lands No.	Date Received:	☐ Fee Received DATE:	Receipt No.:

INCOMPLETE APPLICATIONS MAY NOT BE PROCESSED

1. CONTACT INFORMATION - APPLICANT Required:			2. CONTACT INFORMATION - AGENT:		
Name: Matt Scoggins - Presidio Vista Properties			Name: Trent A. Stumph		
Company: 450-490 Wood River, LLC			Company: SAWTOOTH ENVIRONMENTAL CONSULTING, LLC		
Mailing Address: P.O. Box 14001-174			Mailing Address: P.O. Box 2707, 540 North 1st. Avenue		
City: Ketchum	State: ID	Zip Code: 83340	City: Ketchum	State: ID	Zip Code: 83340
Phone Number *(include area code)*: 214-557-5533	E-mail: matt@presidiovistaproperties.com		Phone Number *(include area code)*: 208-727-9748	E-mail: trent@sawtoothenvironmentalcom	

3. PROJECT NAME or TITLE: 490 Wood River Drive - Residential Dev.			4. PROJECT STREET ADDRESS: 490 Wood River Drive	
5. PROJECT COUNTY: Blaine	6. PROJECT CITY: Ketchum		7. PROJECT ZIP CODE: 83340	8. NEAREST WATERWAY/WATERBODY: Big Wood River
9. TAX PARCEL ID#: RPK04740000040	10. LATITUDE: 43.674745° N LONGITUDE: -114.371080° W	11a. 1/4: SE / 11b. 1/4: SE / 11c. SECTION: 13	11d. TOWNSHIP: 4N	11e. RANGE: 17E
12a. ESTIMATED START DATE: June 2023	12b. ESTIMATED END DATE: July 2025	13a. IS PROJECT LOCATED WITHIN ESTABLISHED TRIBAL RESERVATION BOUNDARIES? ☒ NO ☐ YES Tribe:		
13b. IS PROJECT LOCATED IN LISTED ESA AREA? ☒ NO ☐ YES		13c. IS PROJECT LOCATED ON/NEAR HISTORICAL SITE? ☒ NO ☐ YES		

14. DIRECTIONS TO PROJECT SITE: Include vicinity map with legible crossroads, street numbers, names, landmarks.

Parcel approximately 0.85 miles from downtown Ketchum. From the Main Street and Sun Valley Rd. intersection head southwest on Sun Valley Road, 0.27 mi. turn left onto Third Ave., 0.11 mi. turn right on to 1st St. (West Wood River Dr.), follow W Wood River Drive 0.47 mi. project site destination on the left, 490 Wood River Drive.

15. PURPOSE and NEED: ☐ Commercial ☐ Industrial ☐ Public ☒ Private ☐ Other

Describe the reason or purpose of your project; include a brief description of the overall project. Continue to Block 16 to detail each work activity and overall project.

Residential development (unimproved lot), Mary's Place Subd., Lot 4, Block 1 [490 Wood River Dr]. Proposed residential home-site development, access driveway, attendant landscape features and associated grading applications will impact (permanently fill) approx. 0.125 ac. (5,450 sq. ft.) of identified wetlands. Proposed floodplain, riparian, wetland restoration and mitigation: total area 0.46 ac. (20,300 sq. ft.) create/enhance riparian wetland habitat.

16. DETAILED DESCRIPTION OF EACH ACTIVITY WITHIN OVERALL PROJECT. Specifically indicate portions that take place within waters of the United States, including wetlands: Include dimensions; equipment, construction, methods; erosion, sediment and turbidity controls; hydrological changes: general stream/surface water flows, estimated winter/summer flows; borrow sources, disposal locations etc.:

490 Wood River Dr. residential development applications will result in impacts to WOTUS, impacts include: construction of residential home, driveway access, attendant landscape elements, associated grading applications and floodplain/riparian/wetland restoration applications. Project applications within identified wetlands / area of impact, approx. 0.424 ac (18,450 sq. ft.): permanent impact [fill] approx. 0.125 ac. (5,450 sq. ft.), and floodplain/riparian/ wetland restoration applications approx. 0.298 ac. (13,000 sq. ft.). Proposed riparian/wetland mitigation applications will create enhance approx. 0.167 ac. (7,300 sq. ft.) of riparian wetland habitat resources. Wetlands identified within the subject parcel are classified as Freshwater Forested Shrub Seasonally Flooded (USFWS-NWI: PSSC). Wetland characteristics associated with the identified wetland resources include predominant wetland vegetation (native trees, shrubs and facultative grasses) and hydric soils.

Project applications involve the import and placement of approximately 340 cu. yds. of material: soil/gravel/stone mix and associated roadway materials (permanent fill). Proposed riparian wetland restoration applications: grading and associated fill, approximately 45 cu. yds. Standard construction equipment utilized to excavate, place and distribute materials (track excavator, loader and dozer).

Due to the locations of the proposed development applications, site drainage characteristics, proposed floodplain/riparian/wetland mitigation applications and preserved vegetative buffers, changes to the hydrological characteristics and processes (periodic floodplain inundation and associated groundwater dynamics) are not anticipated.

17. DESCRIBE ALTERNATIVES CONSIDERED to AVOID or MEASURES TAKEN to MINIMIZE and/ or COMPENSATE for IMPACTS to WATERS of the UNITED STATES, INCLUDING WETLANDS: See Instruction Guide for specific details.

Proposed development applications and associated locations are considered to be the best alternative to gain access to the existing designated building envelope, provide for reasonable use of the existing platted parcel, and to achieve project objectives. Project has been designed to avoid and minimize impacts to wetlands to the greatest extent practicable.

18. PROPOSED MITIGATION STATEMENT or PLAN: If you believe a mitigation plan is not needed, provide a statement and your reasoning why a mitigation plan is NOT required. Or, attach a copy of your proposed mitigation plan.

490 Wood River Drive residential development project has been designed and will be constructed to avoid and minimize adverse impacts to identified wetland resources to the maximum extent practicable. Mitigation to offset for the proposed wetland impacts [permanent fill] will be implemented in conjunction with the City of Ketchum Floodplain Development regulations and FEMA requirements. On-site compensatory mitigation applications will be conducted on a 1 to 1 (minimum) replacement ratio. Due to the proposed wetland mitigation applications, locations of proposed development applications, site drainage characteristics and preserved vegetative buffers, changes to wetland functions, hydrological characteristics and processes are not anticipated.

ATTACHED: CONCEPTUAL MITIGATION PLAN

19. TYPE and QUANTITY of MATERIAL(S) to be discharged below the ordinary high water mark and/or wetlands:

Dirt or Topsoil:		cubic yards
Dredged Material:	45	cubic yards
Clean Sand:		cubic yards
Clay:		cubic yards
Gravel, Rock, or Stone:	340	cubic yards
Concrete:		cubic yards
Other (describe):		cubic yards
Other (describe:		cubic yards

TOTAL: 385 cubic yards

20. TYPE and QUANTITY of impacts to waters of the United States, including wetlands:

Filling:	0.125	acres	5,450	sq ft.	340	cubic yards
Backfill & Bedding:	0.03	acres	1,210	sq ft.	45	cubic yards
Land Clearing:		acres		sq ft.		cubic yards
Dredging:		acres		sq ft.		cubic yards
Flooding:		acres		sq ft.		cubic yards
Excavation:	0.298	acres	11,790	sq ft.	346	cubic yards
Draining:		acres		sq ft.		cubic yards
Other:		acres		sq ft.		cubic yards

TOTALS: 0.453 acres 18,450 sq ft. 731 cubic yards

21. HAVE ANY WORK ACTIVITIES STARTED ON THIS PROJECT? ☒ NO ☐ YES If yes, describe ALL work that has occurred including dates.

NONE

22. LIST ALL PREVIOUSLY ISSUED PERMIT AUTHORIZATIONS:

NONE

23. ☐ YES, Alteration(s) are located on Public Trust Lands, Administered by Idaho Department of Lands

24. SIZE AND FLOW CAPACITY OF BRIDGE/CULVERT and DRAINAGE AREA SERVED: 24"x36" arch Square Miles

25. IS PROJECT LOCATED IN A MAPPED FLOODWAY? ☒ NO ☐ YES If yes, contact the floodplain administrator in the local government jsrisdiction in which the project is located. A Floodplain Development permit and a No-rise Certification may be required.

26a WATER QUALITY CERTIFICATION: Pursuant to the Clean Water Act, anyone who wishes to discharge dredge or fill material into the waters of the United States, either on private or public property, must obtain a Section 401 Water Quality Certification (WQC) from the appropriate water quality certifying government entity.
See Instruction Guide for further clarification and all contact information.

The following information is requested by IDEQ and/or EPA concerning the proposed impacts to water quality and anti-degradation:

☒ NO ☐ YES Is applicant willing to assume that the affected waterbody is high quality?
☒ NO ☐ YES Does applicant have water quality data relevant to determining whether the affected waterbody is high quality or not?
☒ NO ☐ YES Is the applicant willing to collect the data needed to determine whether the affected waterbody is high quality or not?

26b. BEST MANAGEMENT PRACTICTES (BMP's): List the Best Management Practices and describe these practices that you will use to minimize impacts on water quality and anti-degradation of water quality. All feasible alternatives should be considered - treatment or otherwise. Select an alternative which will minimize degrading water quality

Proposed project applications will incorporate all applicable Best Management Practices to protect resource values and to ensure compliance with local, state and Federal Water Quality Standards and applicable environmental regulations. The following applications will be implemented throughout the identified project areas during all construction phases of the project and site reclamation to ensure successful project results.

1) Project applications will be constructed and completed when conditions are favorable and project locations are suitable for construction applications.
2) Practical construction sequencing and appropriate BMP applications, silt fence and/or straw wattles utilized and placed in appropriate locations within and along delineated limits of disturbance [LOD] to ensure compliance with Federal, state and local regulations.
4) All construction equipment will be free of leaks and in good working order. Storage, fueling and any unexpected repairs of equipment will be completed outside of wetlands and other sensitive habitat areas.
5) An emergency spill kit will be kept on site during construction activities.
6) All disturbed areas outside of the identified development footprint will be reclaimed and vegetated with native grass, shrub and tree species, bare soils will be stabilized with broadcast seed applications and containerized plantings. Reclamation applications will occur as soon as the proposed construction activities are complete.
7) Preserve and maintain native vegetation buffers within sensitive areas not disturbed by proposed development applications.

Through the 401 Certification process, water quality certification will stipulate minimum management practices needed to prevent degradation.

27. LIST EACH IMPACT to stream, river, lake, reservoir, including shoreline: Attach site map with each impact location.

Activity	Name of Water Body	Intermittent Perennial	Description of Impact and Dimensions	Impact Length Linear Feet
NA	Big Wood River	Perennial	NONE	
			TOTAL STREAM IMPACTS (Linear Feet):	

28. LIST EACH WETLAND IMPACT include mechanized clearing, filL excavation, flood, drainage, etc. Attach site map with each impact location.

Activity	Wetland Type: Emergent, Forested, Scrub/Shrub	Distance to Water Body (linear ft)	Description of Impact Purpose: road crossing, compound, culvert, etc.	Impact Length (acres, square ft linear ft
Residential development	Forested Scrub/Shrub (PSSC) and Emergent (PEMC)	130	Permanent Fill: building pad, driveway, landscape grading	5,450
Floodplain restoration	Forested Scrub/Shrub (PSSC)	100 [+]	Restore Habitat elements: excavation, fill, associated grading	13,000
			TOTAL WETLAND IMPACTS (Square Feet):	18,450

29. ADJACENT PROPERTY OWNERS NOTIFICATION REQUIREM: Provide contact information of ALL adjacent property owners below.

Name: City of Ketchum Mailing Address: PO Box 2315 City: Ketchum State: ID Zip Code: 83340 Phone Number (include area code): 208.726.3841 E-mail: participate@ketchumidaho.org	Name: Steven and Lauren Chung Mailing Address: 1100 SW 21st Avenue City: Boca Raton State: FL Zip Code: 33486 Phone Number (include area code): E-mail:
Name: Sun Valley Resorts Mailing Address: PO Box 2315 City: Sun Valley State: ID Zip Code: 83353 Phone Number (include area code): (800) 894-9946 E-mail: sunvalley.com/contact-info/	Name: Russell and Carol Newcomb Mailing Address: 3392 Highlawn Drive, City: Twin Falls State: ID Zip Code: 83301 Phone Number (include area code): E-mail:
Name: Wood River Group LLP Mailing Address: 10 Starlight City: Irvine State: CA Zip Code: 92603-3722 Phone Number (include area code): E-mail:	Name: Don and Carole Armand Mailing Address: PO Box 5404, 460 Wood River Drive City: Ketchum State: ID Zip Code: 83340 Phone Number (include area code): E-mail:
Name: Amy Weyler Mailing Address: PO Box 5463, 511 Wood River Drive City: Ketchum State: ID Zip Code: 83340 Phone Number (include area code): E-mail:	Name: 450-490 Wood River LLC [Applicant] Mailing Address: PO Box 14001-174, 450 Wood River Drive City: Ketchum State: ID Zip Code: 83340 Phone Number (include area code): 214-557-5533 E-mail: matt@presidiovistaproperties.com

30. SIGNATURES: STATEMENT OF AUTHORIAZATION / CERTIFICATION OF AGENT / ACCESS

Application is hereby made for permit, or permits, to authorize the work described in this application and all supporting documentation. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein; or am acting as the duly authorized agent of the applicant (Block 2). I hereby grant the agencies to which this application is made, the right to access/come upon the above-described location(s) to inspect the proposed and completed work/activities.

Signature of Applicant: _____ *Date:* 2/14/23

For 450-490 Wood River LLC

Signature of Agent: _____ *Date:* 2/20/2023

This application must be signed by the person who desires to undertake the proposed activity AND signed by a duly authorized agent (see Block 1, 2, 30). Further, 18 USC Section 1001 provides that: "*Whoever, in any manner within the jurisdiction of any department of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both*".

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
BOISE REGULATORY OFFICE
720 EAST PARK BOULEVARD, SUITE 245
BOISE, IDAHO 83712-7757

May 15, 2023

WALLA WALLA DISTRICT
REGULATORY DIVISION

SUBJECT: NWW-2023-00101, Blaine County - 490 Wood River Drive Residential Development

Matt Scoggins
Presidio Vista Properties
P.O. Box 14001-174
Ketchum, Idaho 83340

Dear Mr. Scoggins:

We have determined that your proposed project, Blaine County - 490 Wood River Drive Residential Development, is authorized in accordance with Department of the Army (DA) **Nationwide Permit (NWP) No. 29: Residential Developments**. This project is located at 490 Wood River Drive, within Section 13 of Township 4 North, Range 17 East, near coordinates 43.674745º N latitude and -114.371080º W longitude, in Ketchum, Blaine County, Idaho. Please refer to File Number NWW-2023-00101 in all future correspondence with our office regarding this project.

Project activities include the discharge of fill and dredged material within PSSC wetlands, which are adjacent to the Big Wood River, which may be considered waters of the United States. The purpose of the proposed project is to construct a driveway access, building pad and other amenities associated with residential development. The work will entail the placement of roadway materials to allow for the construction of a driveway access road, landscape grading applications and landscape elements associated with residential development. The proposed work will result in the discharge of approximately 385 cubic yards of fill and dredged material, impacting approximately 0.125 acres of wetland resources. Additional impacts include the restoration of 0.298 acres of wetlands associated with the Wetland Mitigation Plan. All work shall be done in accordance with the enclosed drawings, titled: *450-490 Wood River, LLC Maps and Designs,* dated *February 2, 2023.*

DA permit authorization is necessary because your project may involve the discharge of fill material into waters of the U.S. This authorization is outlined in Section 404 of the Clean Water Act (33 U.S.C. 1344).

You must comply with all general, regional, and special conditions, for this verification letter to remain valid and to avoid possible enforcement actions. The general and regional permit conditions for *NWP No. 29: Residential Developments* are attached and also available online[1]. In addition, you must also comply with the special conditions listed below.

The following Special Conditions include:

Special Condition 1: Permittee shall mitigate for the impacts to 0.298 acres of PEM wetlands by enhancing portions of PEM wetlands which occur on the parcel in accordance with the approved plan titled: *450-490 Wood River Wetland Mitigation Plan* dated *February 2023.*

Special Condition 2: Upon construction of the mitigation site, the Permittee shall submit a monitoring report to the Corps by January 1st of each year following construction for a period of three years or until the Corps has determined the mitigation site has met its performance standards as described in *450-490 Wood River Wetland Mitigation Plan* dated *February 2023.*

Special Condition 3: The permittee is responsible for all work done by any contractor. Permittee shall ensure any contractor who performs the work is informed of and follows all the terms and conditions of this authorization, including any Special Conditions listed above. Permittee shall also ensure these terms and conditions are incorporated into engineering plans and contract specifications.

You must also comply with the conditions detailed in the attached Section 401 Water Quality Certification (WQC) issued by the Idaho Department of Environmental Quality (IDEQ) on December 4, 2020. If you have any questions regarding the conditions set forth in the WQC, please contact IDEQ directly at 208-736-2190, Twin Falls Regional Office.

Nationwide Permit General Condition 30 (Compliance Certification) requires that every permittee who has received NWP verification must submit a signed certification regarding the completed work and any required mitigation. This Compliance Certification form is enclosed for your convenience and must be completed and returned to us within 30 days of your project's completion.

This letter of authorization does not convey any property rights, or any exclusive privileges and does not authorize any injury to property or excuse you from compliance with other Federal, State, or local statutes, ordinances, regulations, or requirements

[1] http://www.nww.usace.army.mil/Business-With-Us/Regulatory-Division/Nationwide-Permits/

which may affect this work.

This verification is valid until **March 14, 2026**, unless the NWP is modified, suspended or revoked. If your project, as permitted under this NWP verification, is modified in any way you must contact our office prior to commencing any work activities. In the event that you have not completed construction of your project by March 14, 2026, please contact us at least 60-days prior to this date. A new application and verification may be required.

We actively use feedback to improve our delivery and provide you with the best possible service. If you would like to provide feedback, please take our online survey[2]. If you have questions or if you would like a paper copy of the survey, please contact the Walla Walla District Regulatory. For more information about the Walla Walla District Regulatory program, you can visit us online[3].

If you have any questions or need additional information about this permit authorization, you can contact me by phone at 208-433-4469, by mail at the address in the letterhead, or email at sarah.v.windham@usace.army.mil. For informational purposes, a copy of this letter has been sent to: Sean Woodhead with the Idaho Department of Environmental Quality, Aaron Golart with the Idaho Department of Water Resources, Trent Stumph, designated agent with Sawtooth Environmental Consulting, LLC and Kristine Hilt with Blaine County.

Sincerely,

Sarah V Windham

Sarah Windham
Project Manager, Regulatory Division

Encls
Transfer of Nationwide Permit Form
Compliance Certification
Drawings titled: *450-490 Wood River, LLC Maps and Designs,* dated *February 2, 2023.*
Nationwide Permit 29: Residential Developments general and regional conditions

[2] https://regulatory.ops.usace.army.mil/customer-service-survey/
[3] http://www.nww.usace.army.mil/Business-With-Us/Regulatory-Division/

IDEQ General Water Quality Certification dated December 04, 2020

TRANSFER OF NATIONWIDE PERMIT

When the structures or work authorized by this Nationwide Permit, **NWW-2023-00101 Blaine County - 490 Wood River Drive Residential Development**, are still in existence at the time the property is transferred. The terms and conditions of this Nationwide Permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this Nationwide Permit, the associated liabilities and compliance with the terms and conditions the transferee must sign and date below.

Name of New Owner:

Street Address:

Mailing Address:

City, State, Zip:

Phone Number:

_____ _____

Signature of TRANSFEREE *DATE*

COMPLIANCE CERTIFICATION

US Army Corps of Engineers
Walla Walla District

Permit Number: NWW-2023-00101

Name of Permittee: Presidio Vista Properties

Date of Issuance: May 15, 2023

Upon completion of the activity authorized by this permit and any mitigation required by the permit, please sign this certification and return it to the following address:

U.S. Army Corps of Engineers
Walla Walla District
Boise Regulatory Office
720 East Park Blvd., Suite 245
Boise, Idaho 83712-7757

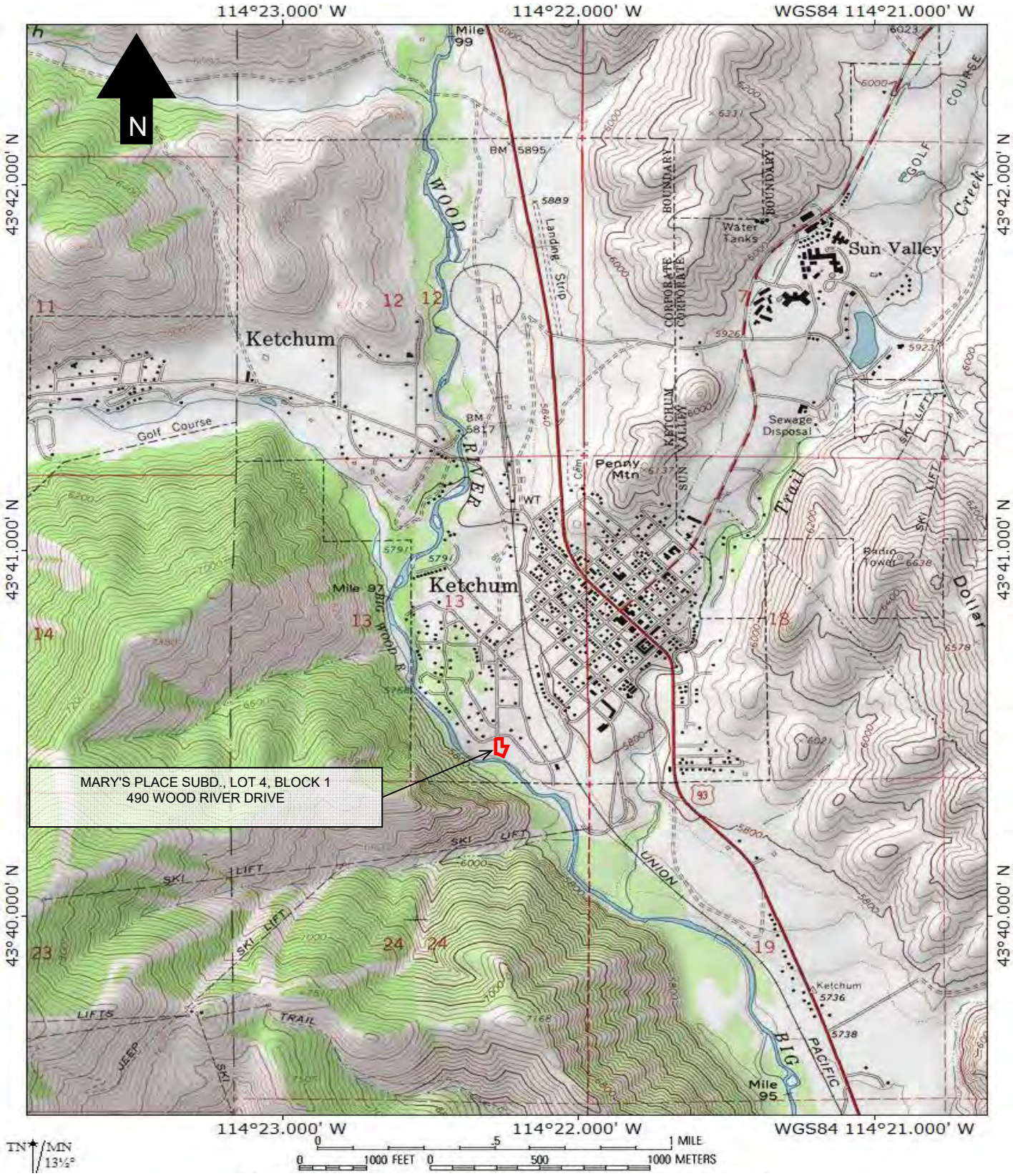
Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with all terms and conditions of this permit, the permit is subject to suspension, modification, or revocation and you are subject to an enforcement action by this office.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit. The required mitigation was also completed in accordance with the permit conditions.

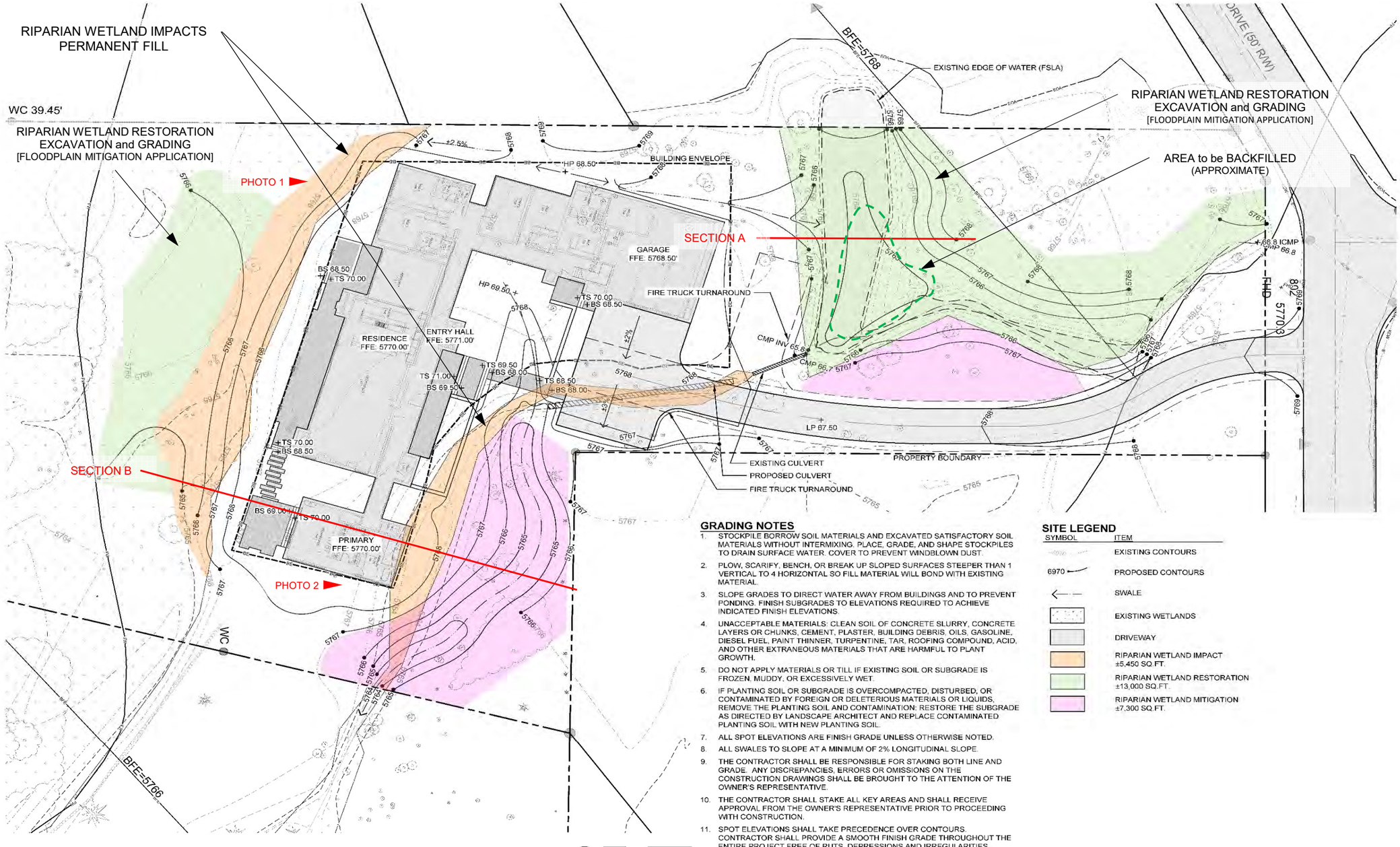
_____ _____

Signature of PERMITEE *DATE*

450 - 490 WOOD RIVER, LLC
MARY'S PLACE SUBDIVISION LOT 4, BLOCK 1 - RESIDENTIAL DEVELOPMENT
JOINT APPLICATION for PERMITS - PROJECT LOCATION VICINITY MAP



450 - 490 WOOD RIVER , LLC
Mary's Place Subdivision, Lot 4, Block 1, 490 Wood River Drive
Section 13, TWN., 4N. RNG., 17E, City of Ketchum, Blaine County, ID



GRADING NOTES

1. STOCKPILE BORROW SOIL MATERIALS AND EXCAVATED SATISFACTORY SOIL MATERIALS WITHOUT INTERMIXING. PLACE, GRADE, AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.
2. PLOW, SCARIFY, BENCH, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING MATERIAL.
3. SLOPE GRADES TO DIRECT WATER AWAY FROM BUILDINGS AND TO PREVENT PONDING. FINISH SUBGRADES TO ELEVATIONS REQUIRED TO ACHIEVE INDICATED FINISH ELEVATIONS.
4. UNACCEPTABLE MATERIALS: CLEAN SOIL OF CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, BUILDING DEBRIS, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, ACID, AND OTHER EXTRANEOUS MATERIALS THAT ARE HARMFUL TO PLANT GROWTH.
5. DO NOT APPLY MATERIALS OR TILL IF EXISTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.
6. IF PLANTING SOIL OR SUBGRADE IS OVERCOMPACTED, DISTURBED, OR CONTAMINATED BY FOREIGN OR DELETERIOUS MATERIALS OR LIQUIDS, REMOVE THE PLANTING SOIL AND CONTAMINATION; RESTORE THE SUBGRADE AS DIRECTED BY LANDSCAPE ARCHITECT AND REPLACE CONTAMINATED PLANTING SOIL WITH NEW PLANTING SOIL.
7. ALL SPOT ELEVATIONS ARE FINISH GRADE UNLESS OTHERWISE NOTED.
8. ALL SWALES TO SLOPE AT A MINIMUM OF 2% LONGITUDINAL SLOPE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING BOTH LINE AND GRADE. ANY DISCREPANCIES, ERRORS OR OMISSIONS ON THE CONSTRUCTION DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
10. THE CONTRACTOR SHALL STAKE ALL KEY AREAS AND SHALL RECEIVE APPROVAL FROM THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH CONSTRUCTION.
11. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS. CONTRACTOR SHALL PROVIDE A SMOOTH FINISH GRADE THROUGHOUT THE ENTIRE PROJECT FREE OF RUTS, DEPRESSIONS AND IRREGULARITIES. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES. ALL SWALES, DEPRESSIONS, ETC. NOT SHOWN ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF LANDSCAPE ARCHITECT IMMEDIATELY IN WRITING.

SITE LEGEND

SYMBOL	ITEM
	EXISTING CONTOURS
6970	PROPOSED CONTOURS
	SWALE
	EXISTING WETLANDS
	DRIVEWAY
	RIPARIAN WETLAND IMPACT ±5,450 SQ.FT.
	RIPARIAN WETLAND RESTORATION ±13,000 SQ.FT.
	RIPARIAN WETLAND MITIGATION ±7,300 SQ.FT.

FIELD STUDIO
722 N.ROUSE AVE.
BOZEMAN, MT 59715
(406)551-2098
www.fieldstudioia.com

PROJECT NUMBER: 2220

DATE	ISSUE
2022.11.30	PD SET
2023.02.10	PD REVISED

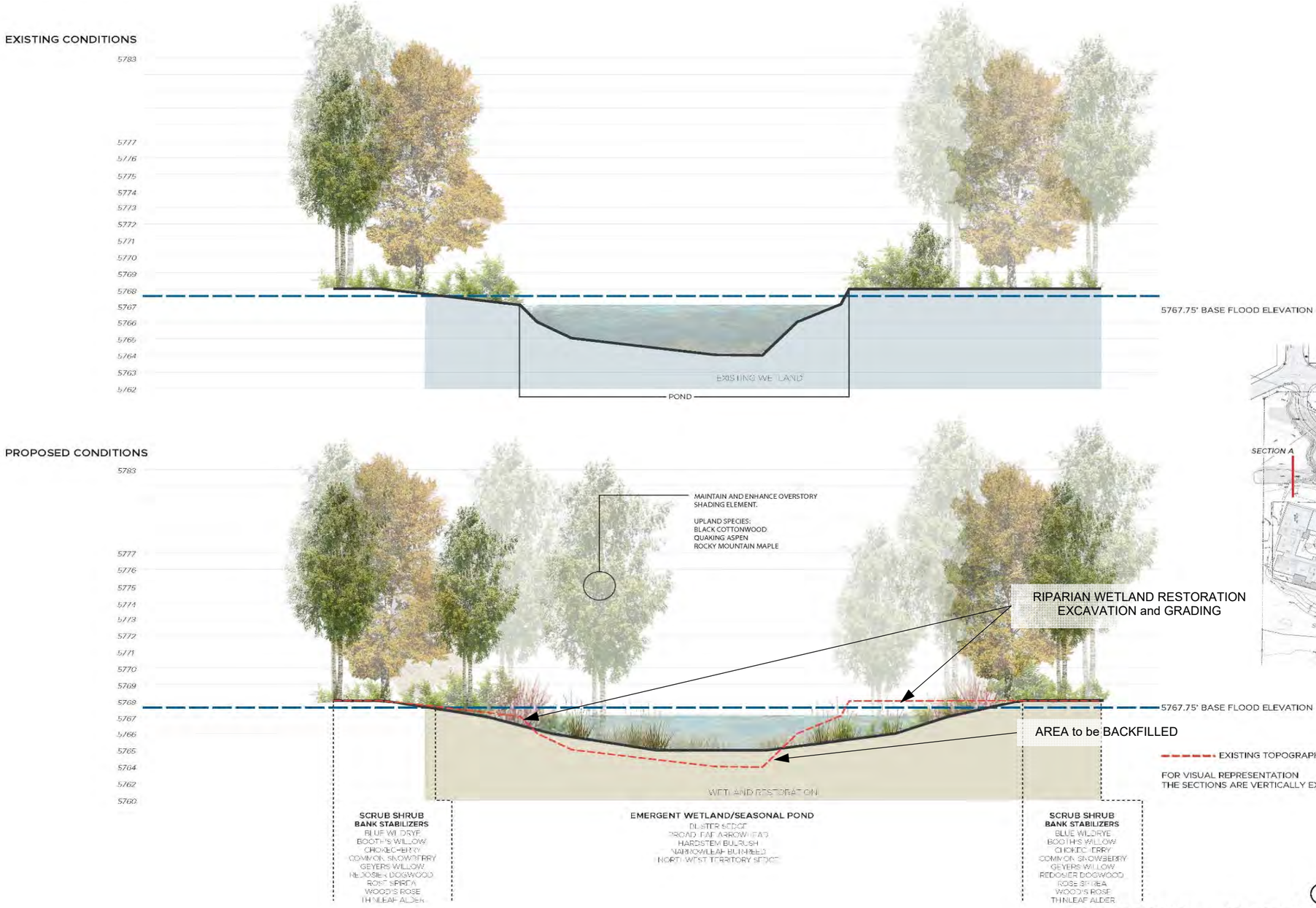
SHEET TITLE

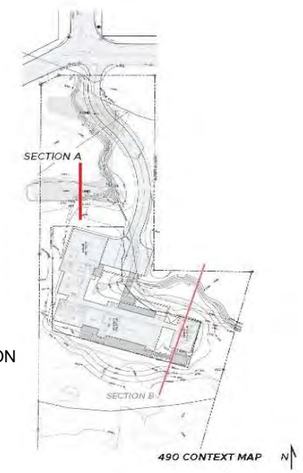
SITE WETLAND IMPACT

SHEET 1 OF 4

L-2.01

PRELIMINARY • NOT FOR CONSTRUCTION





FIELD STUDIO
722 N. ROUSE AVE.
BOZEMAN, MT 59715
(406)551-2098
www.fieldstudiola.com

PROJECT NUMBER: 2220

490 WOOD RIVER DRIVE
KETCHUM, ID

DATE	ISSUE
2022.11.30	PD SET
2023.01.27	PD REVISED

SHEET TITLE

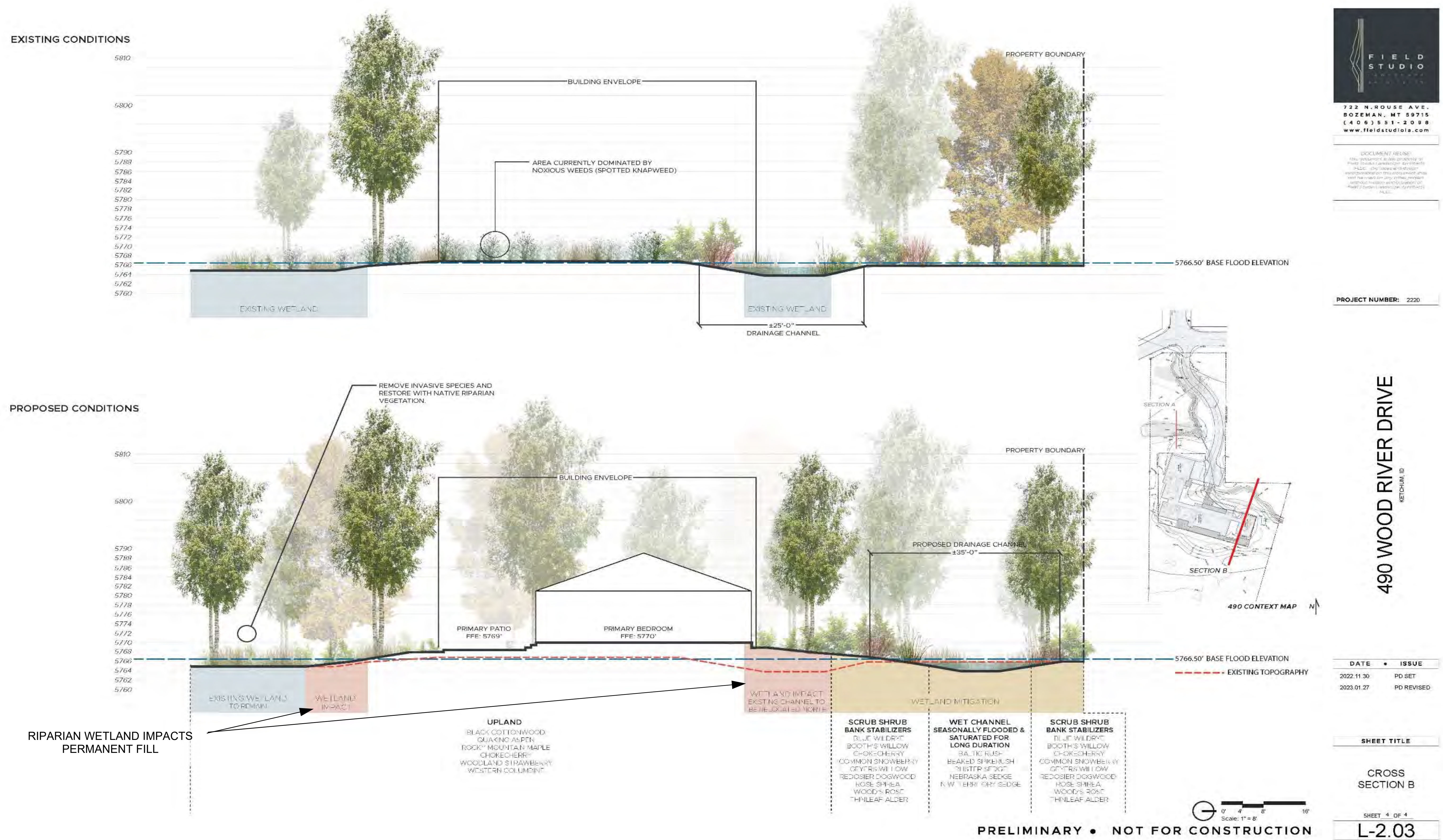
CROSS SECTION A

SHEET 3 OF 4

L-2.02

PRELIMINARY • NOT FOR CONSTRUCTION

450 - 490 WOOD RIVER, LLC
MARY'S PLACE SUBDIVISION LOT 4, BLOCK 1 - RESIDENTIAL DEVELOPMENT
JOINT APPLICATION for PERMITS - WETLAND CROSS SECTION B



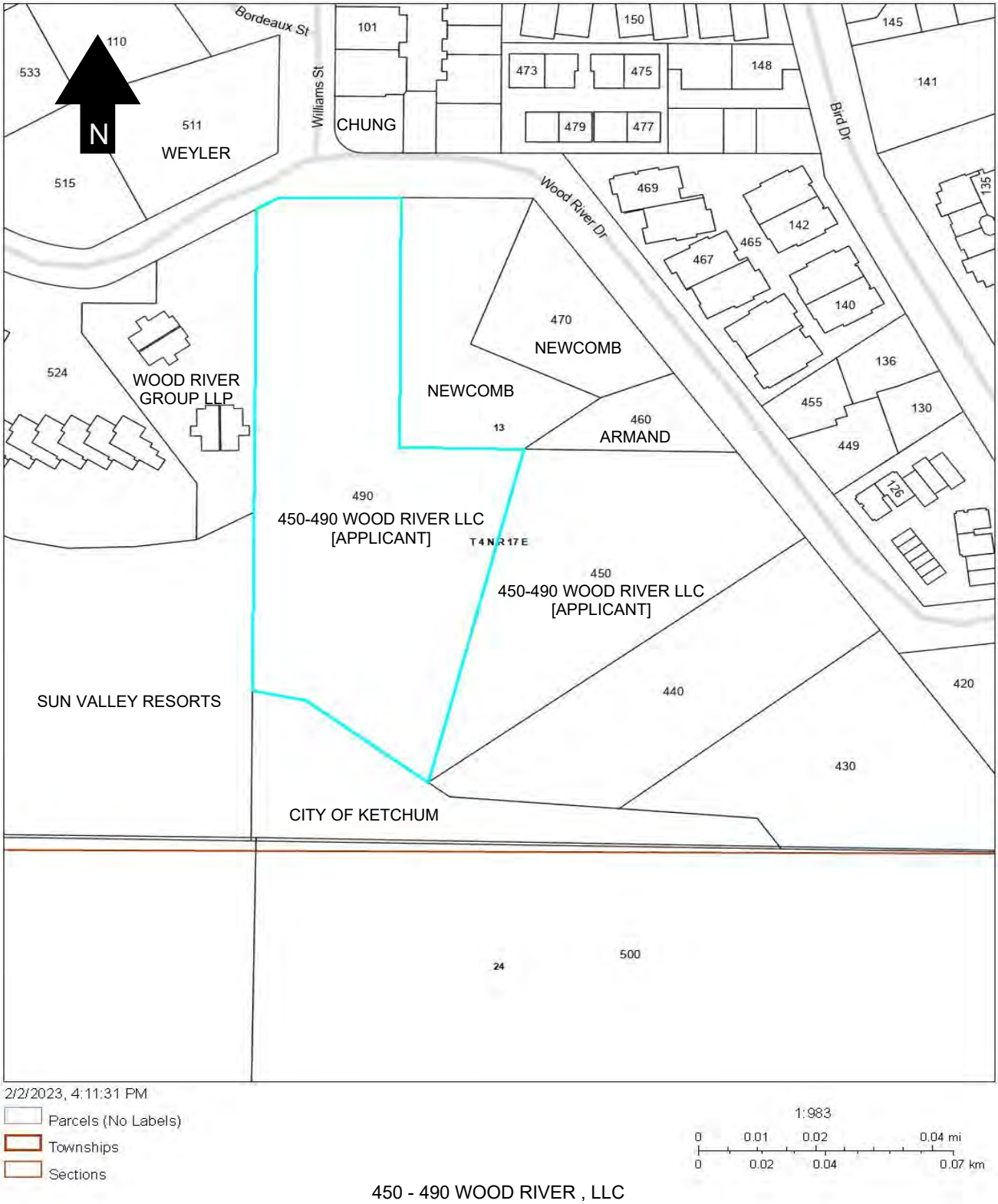
WETLAND CROSS SECTION A

450 - 490 WOOD RIVER , LLC
Mary's Place Subdivision, Lot 4, Block 1, 490 Wood River Drive
Section 13, TWN., 4N. RNG., 17E, City of Ketchum, Blaine County, ID

PHOTO 1 - 490 WOOD RIVER DRIVE. Identified wetland resources and associated site characteristics in vicinity of the proposed residential structure along western property boundary. Looking north towards *Cross-Section A* (August 22, 2022).

PHOTO 2 - 490 WOOD RIVER DRIVE. Site characteristics in vicinity of the proposed residential structure and *Cross-Section B*, adjacent to southern property boundary. Looking north north-east (August 22, 2022).

450 - 490 WOOD RIVER, LLC
MARY'S PLACE SUBDIVISION LOT 4, BLOCK 1 - RESIDENTIAL DEVELOPMENT
JOINT APPLICATION for PERMITS - ADJACENT LANDOWNERS



450 - 490 WOOD RIVER , LLC
Mary's Place Subdivision, Lot 4, Block 1, 490 Wood River Drive
Section 13, TWN., 4N. RNG., 17E, City of Ketchum, Blaine County, ID

Blaine County GIS

PHOTO EXHIBIT
450 - 490 Wood River Drive, LLC - Joint Application for Permits, February 2, 2023.

NATIONWIDE PERMIT 29

Residential Developments:

Discharges of dredged or fill material into non-tidal waters of the United States for the construction or expansion of a single residence, a multiple unit residential development, or a residential subdivision. This NWP authorizes the construction of building foundations and building pads and attendant features that are necessary for the use of the residence or residential development. Attendant features may include but are not limited to roads, parking lots, garages, yards, utility lines, storm water management facilities, septic fields, and recreation facilities such as playgrounds, playing fields, and golf courses (provided the golf course is an integral part of the residential development).

The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters.

Subdivisions: For residential subdivisions, the aggregate total loss of waters of United States authorized by this NWP cannot exceed 1/2-acre. This includes any loss of waters of the United States associated with development of individual subdivision lots.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 32.) (Authorities: Sections 10 and 404)

WATER QUALITY CERTIFICATION, NWP 29:

Agency responsible for administration of water quality, based on project location is listed below. If DENIED, then an Individual Water Quality Certification or Waiver of Certification is required, prior to the commencement of any work activities and/or issuance of a DA verification, authorization and/or permit.

State of Idaho: **PARTIALLY DENIED**;
Activities Denied Certification:
- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in a loss in excess of ½ acre of jurisdictional wetlands

Coeur d'Alene Tribal Lands: **DENIED**

Shoshone-Bannock Tribal Lands: **DENIED**

U.S. Environmental Protection Agency for all other Tribal Lands: **DENIED**

2021 Nationwide Permits
Regional Conditions
Walla Walla District Regulatory Division (State of Idaho)

March 15, 2021

The following Nationwide Permit (NWP) regional conditions are required in the state of Idaho and apply to all 2021 NWPs[1]. Regional conditions are established by individual Corps Districts to ensure projects result in no more than minimal adverse impacts to the aquatic environment and to address local resources concerns. This document also includes regional additions to the NWP General Conditions, notification procedures pertaining to certain NWP's, and regional additions to the definitions.

REGIONAL CONDITIONS

A. Watersheds Requiring Pre-Construction Notification, Specific to Anadromous Fish

This Regional Condition applies to all 2021 NWPs.

- Pre-construction notification (PCN) will be required for the above listed nationwide permits in the geographic area as shown on Figure 1: *Watersheds Requiring Pre-Construction Notification*, dated January 6, 2021.

B. Vegetation Preservation and Replanting

- To avoid impacts to aquatic habitat and to reduce sedimentation and erosion, permittee shall avoid and minimize the removal of vegetation in waters of the U.S. to the maximum extent practicable. Areas subject to temporary vegetation removal in waters of the U.S. during construction shall be replanted with appropriate native[2] species by the end of the first growing season, unless conditioned otherwise. Permittee shall avoid introducing or spreading noxious or invasive plants[3].

- Replanted vegetation that does not survive the first growing season shall be replanted before the end of the next growing season. Re-plantings shall continue to occur until desired vegetation densities are achieved. Re-vegetation densities should be based on reference conditions.

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[1] For the list of 2017 Nationwide Permits please see: https://www.nww.usace.army.mil/Business-With-Us/Regulatory-Division/Nationwide-Permits/

[2] Idaho Department of Transportation, Native Plants for Idaho Roadside Restoration and Revegetation Programs: https://itd.idaho.gov/wp-content/uploads/2016/06/RP171Roadside_Revegetation.pdf

[3] U.S. Department of Agriculture, Natural Resource Conservation Service Plant Database of introduced, invasive, and noxious plants for Idaho: https://plants.usda.gov/java/noxious?rptType=State&statefips=16.

C. De-watering & Re-watering (as applicable)

- Cofferdams shall be constructed of non-erosive material such as concrete jersey barriers, bulk bags, water bladders, sheet pile, and other similar non-erosive devices. Cofferdams may not be constructed by using mechanized equipment to push streambed material through flowing water.

- Diversion channels constructed to bypass flow around the construction site shall be lined with plastic, large rock, pipe or otherwise protected from erosion prior to releasing flows into or through the diversion channel.

- Water removed from within the coffered area shall be pumped to a sediment basin or otherwise treated to remove suspended sediments prior to its return to the waterway.

- To prevent unwanted passage of state or federally-protected fish, if present, from the coffered area, Water pipe intakes shall be screened with openings measuring < 3/32 inch to prevent entrainment of fish trapped in the coffered area.

- Should fish be present within the coffered areas contact your local Idaho Department of Fish and Game (IDFG) office prior to performing fish removal or salvage. Fish shall be collected by electrofishing, seining or dip net, or otherwise removed and returned to the waterway upstream of the project area. If electrofishing is used, the National Marine Fisheries Service (NMFS) guidelines for electrofishing should be followed[4], unless conditioned otherwise.

- Stream channels that have been dewatered during project construction shall be re-watered slowly to avoid lateral and vertical erosion of the de-watered channel, prevent damage to recently reclaimed work areas and/or damage to permitted work.

- Temporary stockpiles in waters of the United States shall be removed in their entirety so as not to form a berm or levee parallel to the stream that could confine flows or restrict overbank flow to the floodplain.

D. In-Water Structures and Complexes

- PCN notification in accordance with General Condition 32 is required for all non-federal applicants with activities involving gabion baskets placed below the ordinary high water mark.
- Stream meanders, riffle and pool complexes, pool stream structures, rock/log barbs, rock J-hooks, drop structures, sills, engineered log jams or similar structures/features when used shall be site specifically designed by an appropriate professional with experience in hydrology or fluvial geomorphology.

[4] Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act (June 2000) https://archive.fisheries.noaa.gov/wcr/publications/reference_documents/esa_refs/section4d/electro2000.pdf

E. Temporary Sidecasting

- Materials from exploratory trenching and installation of utility lines may be temporarily side cast into a de-watered coffered area for up to 30 days but not within flowing waters. Material from exploratory trenching and installation of utility lines in wetlands may be temporarily side cast for up to 30 days.

F. Suitability of Sediments for Open Water Disposal and us as Fill

- Sampling for determination of suitability of sediments for open water disposal or for use as fill, must comply with the Sediment Evaluation Framework for the Pacific Northwest (SEF)[5].

G. Avoidance and Minimization

- In addition to information required under General Condition 32(b), the applicant shall include information about previous discharges of fill material into waters of the United States within the project area. This is only for non-federal applicants where a PCN is required.

- Discharges of dredged or fill material into waters of the U.S., including wetlands, to meet set back requirements are not authorized under NWP.

H. Erosion Control

- Erosion control blanket or fabric used in or adjacent to waters of the U.S. shall be comprised of biodegradable material, to ensure decomposition and reduced risk to fish, wildlife and public safety, unless conditioned otherwise. If the applicant proposes to use materials other than as indicated above they must demonstrate how the use of such materials will not cause harm to fish, wildlife and public safety.

I. Reporting Requirement for Federal Permittees

- Federal Agencies with projects that require compensatory mitigation for loss of waters of the U.S. and who propose to purchase credits from an approved wetland and/or stream mitigation bank must provide proof of purchase within 30 days of when the credits were purchased. Purchase of credits from an approved mitigation bank must be IAW the Mitigation Banking Instrument of Record.

[5] Northwest Regional Sediment Evaluation Team (RSET) 2016. Sediment Evaluation Framework for the Pacific Northwest. Prepared by the RSET Agencies, July 2016, 160 pp plus appendices. http://nwd.usace.army.mil/Missions/Civil-Works/Navigation/RSET/SEF

REGIONAL ADDITIONS TO THE GENERAL CONDITIONS

General Condition 4. Migratory Bird Breeding Areas. Regional Addition: For additional information please contact the US Fish and Wildlife Service at the following field office locations: State Office (Boise) at (208) 387-5243; Northern Idaho Field Office (Spokane) at (509) 891-6839; or the Eastern Idaho Field Office (Chubbuck) at (208) 237-6975. https://www.fws.gov/idaho/promo.cfm?id= 177175802

General Condition 6. Suitable Material. Regional Addition: Erosion control blanket or fabric used in or adjacent to waters of the U.S. shall be comprised of biodegradable material, to ensure decomposition and reduced risk to fish, wildlife and public safety, unless conditioned otherwise. If the applicant proposes to use materials other than as indicated above they must demonstrate how the use of such materials will not cause harm to fish, wildlife and public safety.

General Condition 9. Management of Water Flows. Regional Addition: To obtain information on State of Idaho definition of high water refer to Idaho Department of Water Resources (IDAPA 37.03.07. Rule 62.03.04.a). For culverts or bridges located in a community qualifying for the national flood insurance program, the minimum size culvert shall accommodate the 100-year flood design flow frequency (IDAPA 37.03.07. Rule 62.03.04.c).

General Condition 12. Soil Erosion and Sediment Controls. Regional Addition: For additional information refer to the Idaho Department of Environmental Quality Catalog of Stormwater Best Management Practices for Idaho Cities and Counties, available online at: https://www.deq.idaho.gov/public-information/laws-guidance-and-orders/guidance/.

General Condition 18. Endangered Species. Regional Addition: For additional information on ESA listed species in north Idaho please contact the US Fish and Wildlife Service (USFWS) Northern Idaho Field Office (Spokane) at (509) 893-8009, for all other counties in Idaho contact the USFWS State Office (Boise) at (208) 378-5388.

General Condition 20. Historic Properties. Regional Addition: Property is generally considered “historic” if it is at least 50 years old, and is not limited to buildings. For additional information on the potential for cultural resources in proximity to the project site, contact the Idaho State Historic Preservation Office at (208) 334-3847 located in Boise, Idaho.

NOTIFICATION PROCEDURES BY THE CORPS FOR CERTAIN NATIONWIDE PERMITS

Waivers: For nationwide permits with a waiver provision, District coordination with Idaho Department of Environmental Quality (IDEQ) and Environmental Protection Agency (tribal lands) will be conducted prior to the District Engineer making a waiver determination to ensure the proposed activity is in compliance with Section 401 Water Quality Standards.

Select Waters and Wetlands: The Corps will coordinate with the Idaho Department of Fish and Game (IDFG) for activities in the following waters and wetlands that require notification and are authorized by NWP:

- Waters: Anadromous waters as shown on Figure 1: *Watersheds Requiring Pre-Construction Notification*, dated January 6, 2021; Henry's Fork of the Snake River and its tributaries; South Fork Snake River and its tributaries; Big Lost River and its tributaries upstream of the US 93 crossing; Beaver, Camas, and Medicine Lodge Creeks; Snake River; Blackfoot River above Blackfoot Reservoir; Portneuf River; Bear River; Boise River including South Fork, North Fork and Middle Fork; Payette River including South Fork, North Fork and Middle Fork; Coeur d'Alene River, including the North Fork; St. Joe River; Priest River; Kootenai River; Big Wood River; and Silver Creek and its tributaries.

- Wetlands identified in Idaho Department of Fish and Game, Wetland Conservation Strategy as Class I, Class II and Reference Habitat Sites[6].

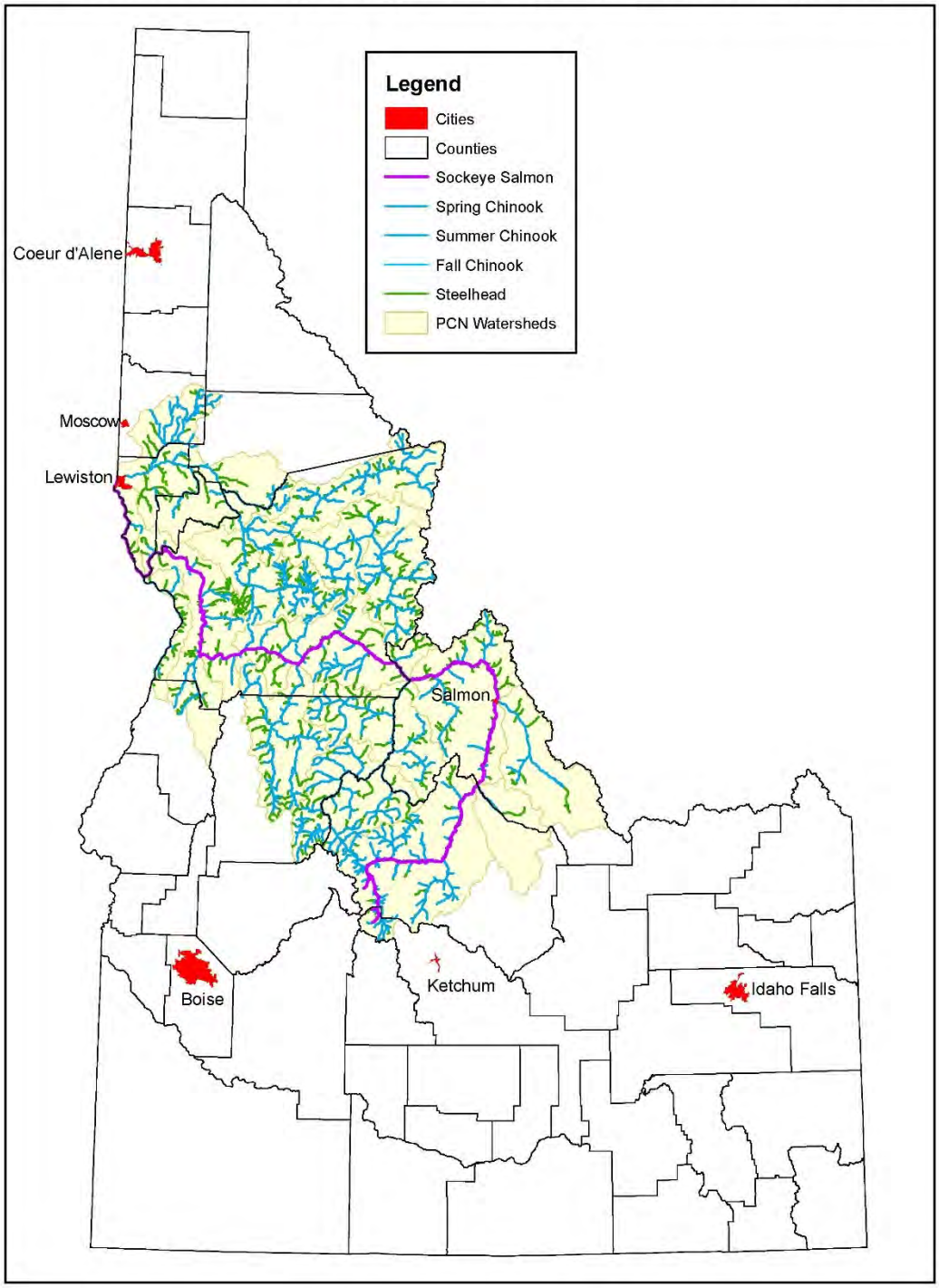
- Wetlands identified in the Idaho Wetland Conservation Prioritization Plan-2012[7].

[6] Idaho Department of Fish and Game (IDFG) Wetland Conservation Strategies have been developed for the Henrys Fork Basin, Northern Idaho, Big Wood River, Southeast Idaho, East-Central Idaho and Spokane River Basin, Middle and Western Snake River and tributaries, and the Upper Snake River–Portneuf Drainage, Weiser River Basin, and West Central Mountain Valleys and adjacent wetlands. Closed basins of Beaver-Camas Creeks, Medicine Lodge Creek, Palouse River and lower Clearwater River sub-basins, Middle Fork and South Fork Clearwater Basins and Camas Prairie in northern Idaho. Refer to the internet site at: http://fishandgame.idaho.gov/content/page/wetlands-publications-idaho-natural-heritage-program#reports

[7] Murphy, C., J. Miller and A. Schmidt. 2012. https://idfg.idaho.gov/species/bibliography/project/wetlands

Figure 1

Watersheds Requiring Pre-Construction Notification



0 20 40 80 Miles

US Army Corps of Engineers

6 January 2021

2021 Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements

No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas

Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas

Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds

No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material

No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes

No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments

If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows
To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains
The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment
Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls
Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Structures and Fills
Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance
Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project
The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers
(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency

with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights

No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of "effects of the action" for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding "activities that are reasonably certain to occur" and "consequences caused by the proposed action."

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be

affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take'' means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at

http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. Migratory Birds and Bald and Golden Eagles

The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties

(a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)).

Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts

Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters

Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment,

additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. <u>Mitigation</u>

The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of

streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14)

must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. <u>Safety of Impoundment Structures</u>

To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have

been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality

(a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management.

In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions

The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits

The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated

bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1⁄3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. Transfer of Nationwide Permit Verifications

If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

_____

(Transferee)

_____

_____

(Date)

30. Compliance Certification

Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory

mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States

If an NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification

(a) *Timing*. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification*: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) (i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining

why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatenedspecies (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) *Form of Pre-Construction Notification*: The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) *Agency Coordination*: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iii)

NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 N Hilton Street, Boise, ID 83706
(208) 373-0502

Brad Little, Governor
Jess Byrne, Director

December 4, 2020

Kelly J. Urbanek, Chief
U.S. ACOE Regulatory Division
Walla Walla District
720 East Park Boulevard, Suite 245
Boise, Idaho 83712-7757

Subject: Final §401 Water Quality Certification for 2020 Nationwide Permits in Idaho

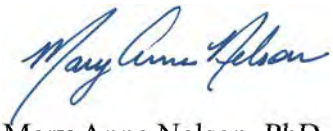
Dear Ms. Urbanek:

Enclosed please find the Idaho Department of Environmental Quality (DEQ) final water quality certification for the 2020 Nationwide Permits in Idaho. DEQ offered a 21-day public comment period, beginning on November 2, 2020, and ending on November 23, 2020.

DEQ received a single comment letter. After review of the comments received, minor modifications were made to the final certification in order to provide additional clarity.

If you have any questions or concerns regarding this certification, please contact Jason Pappani at (208) 373-0515 or via email at jason.pappani@deq.idaho.gov.

Sincerely,



Mary Anne Nelson, PhD
Surface and Wastewater Division Administrator

MAN:JP:lf

cc: Jason Pappani, DEQ State Office
DEQ Regional Administrators
James Joyner, ACOE Walla Walla District
Brent King, Idaho Attorney General's Office

Idaho Department of Environmental Quality

Final §401 Water Quality Certification

December 4, 2020

2020 U.S. Army Corps of Engineers §404 Nationwide Permits (NWPs)

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review activities receiving Section 404 dredge and fill permits and issue water quality certification decisions.

Based upon its review of the proposed 2020 Nationwide Permits published in the Federal Register on September 15, 2020, DEQ certifies that if the permittee complies with the terms and conditions imposed by the permits, including the Regional Conditions set forth by the Army Corps of Engineers (ACOE), along with the conditions set forth in this water quality certification, then activities will comply with the applicable water quality requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits, including without limitation, the approval from the owner of a private water conveyance system, if one is required, to use the system in connection with the permitted activities.

1 Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier I Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier I review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier II Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).

- Tier III Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier I protection for that use, unless specific circumstances warranting Tier II protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

1.1 Pollutants of Concern

The primary pollutant of concern, for projects permitted under the 2020 NWPs administered by the ACOE, is sediment. In locations where heavy metals are present due to mining activities, or where high concentrations of nutrients may be associated with sediments, additional considerations may be necessary. If the project reduces riparian vegetation, then temperature (thermal loading) may also be of concern.

The procedures outlined in the Sediment Evaluation Framework for the Pacific Northwest[1] may be applied to assess and characterize sediment to determine the suitability of dredged material for unconfined aquatic placement, to determine the suitability of post dredge surfaces, and to predict effects on water quality during dredging (See Section 2.4 for more details).

As part of the Section 401 water quality certification, DEQ is requiring the applicant to comply with various conditions to protect water quality and to meet Idaho WQS, including the criteria applicable to sediment.

1.2 Receiving Water Body Level of Protection

The ACOE NWPs authorize construction activities in waters of the United States. In Idaho, jurisdictional waters of the state can potentially receive discharges either directly or indirectly from activities authorized under the NWPs. DEQ applies a water body by water body approach to determine the level of antidegradation protection a water body will receive. (IDAPA 58.01.02.052.05).

All waters in Idaho that receive discharges from activities authorized under a NWP will receive, at minimum, Tier I antidegradation protection because Idaho's Tier I antidegradation policy applies to all state waters (IDAPA 58.01.02.052.01). Water bodies that fully support their aquatic life or recreational uses are considered *high quality waters* and will receive Tier II antidegradation protection (IDAPA 58.01.02.051.02). Because of the statewide applicability, the antidegradation review will assess whether the NWP permit complies with both Tier I and Tier II antidegradation provisions (IDAPA 58.01.02.052.03).

Although Idaho does not currently have any Tier III designated outstanding resource waters (ORWs), it is possible for a water body to be designated as an ORW during the life of the NWPs.

[1] Northwest Regional Sediment Evaluation Team (RSET). 2018. Sediment Evaluation Framework for the Pacific Northwest. *Prepared by* the RSET Agencies, May 2018, 183 pp plus appendices.

Because of this potential, the antidegradation review also assesses whether the permit complies with the outstanding resource water requirements of Idaho's antidegradation policy (IDAPA 58.01.02.051.03).

To determine the support status of the receiving water body, the most recent EPA-approved Integrated Report, available on Idaho DEQ's website, is to be used: http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report/. (IDAPA 58.01.02.052.05).

High quality waters are identified in Categories 1 and 2 of the Integrated Report. If a water body is in either Category 1 or 2, it is a Tier II water body.

Unassessed waters are identified in Category 3 of DEQ's Integrated Report. These waters require a case by case determination to be made by DEQ based on available information at the time of the application for permit coverage (IDAPA 58.01.02.052.05.b). For activities occurring on unassessed waters under this certification, DEQ has determined that complying with the conditions of the NWP, the regional conditions, and this certification will ensure the provisions of IDAPA 58.01.02.052 are met.

Impaired waters are identified in Categories 4 and 5 of the Integrated Report. Category 4(a) contains impaired waters for which a TMDL has been approved by EPA. Category 4(b) contains impaired waters for which controls other than a TMDL have been approved by EPA. Category 5 contains waters which have been identified as "impaired", for which a TMDL is needed. These waters are Tier I waters, for the use which is impaired. With the exception, if the aquatic life uses are impaired for any of these three pollutants—dissolved oxygen, pH, or temperature—and the biological or aquatic habitat parameters show a healthy, balanced biological community, then the water body shall receive Tier II protection, in addition to Tier I protection, for aquatic life uses (IDAPA 58.01.02.052.05.c.i).

DEQ's webpage also has a link to the state's map-based Integrated Report which presents information from the Integrated Report in a searchable, map-based format: http://www.deq.idaho.gov/assistance-resources/maps-data/.
Water bodies can be in multiple categories for different causes. If assistance is needed in using these tools, or if additional information/clarification regarding the support status of the receiving water body is desired, please feel free to contact your nearest DEQ regional office or the State Office (Table 1).

Table 1. Idaho DEQ Regional and State Office Contacts

Regional Office	*Address*	*Phone Number*	*Email*
Boise	1445 N. Orchard Rd., Boise 83706	208-373-0550	kati.carberry@deq.idaho.gov
Coeur d'Alene	2110 Ironwood Parkway, Coeur d'Alene 83814	208-769-1422	chantilly.higbee@deq.idaho.gov
Idaho Falls	900 N. Skyline, Suite B., Idaho Falls 83402	208-528-2650	troy.saffle@deq.idaho.gov
Lewiston	1118 "F" St., Lewiston 83501	208-799-4370	sujata.connell@deq.idaho.gov
Pocatello	444 Hospital Way, #300 Pocatello 83201	208-236-6160	matthew.schenk@deq.idaho.gov
Twin Falls	650 Addison Ave. W., Suite 110, Twin Falls 83301	208-736-2190	balthasar.buhidar@deq.idaho.gov
State Office	1410 N. Hilton Rd., Boise 83706	208-373-0502	jason.pappani@deq.idaho.gov

1.3 Protection and Maintenance of Existing Uses (Tier I Protection)

A Tier I review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected (IDAPA 58.01.02.051.01; 052.01 and 04). The numeric and narrative criteria in the WQS are set at levels that ensure protection of existing and designated beneficial uses.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment (IDAPA 58.01.02.055.02). Once a TMDL is completed, discharges of causative pollutants shall be consistent with the allocations in the TMDL (IDAPA 58.01.02.055.05). Prior to the completion of a TMDL, the WQS require the application of the antidegradation policy and implementation provisions to maintain and protect beneficial uses (IDAPA 58.01.02.055.04).

The general (non-numeric) effluent limitations in the NWPs and associated Regional Conditions for the ACOE Walla Walla District address best management practices (BMPs) aimed at minimizing impacts to the aquatic environment, especially sediment and turbidity impacts including: vegetation protection and restoration, de-watering requirements, erosion and sediment controls, soil stabilization requirements, pollution prevention measures, prohibited discharges, and wildlife considerations. Although the NWPs do not contain specific (numeric) effluent limitations for sediment or turbidity, the conditions identified in the permits and in this water quality certification will ensure compliance with DEQ's water quality standards, including the narrative sediment criteria (IDAPA 58.01.02.200.08) and DEQ's turbidity criteria (IDAPA 58.01.02.250.02.e).

In order to ensure compliance with Idaho WQS, DEQ has included a condition requiring the permittee(s) to comply with Idaho's numeric turbidity criteria, developed to protect aquatic life

uses. The criterion states, "Turbidity shall not exceed background turbidity by more than 50 nephelometric turbidity units (NTU)[2] instantaneously or more than 25 NTU for more than 10 consecutive days" (IDAPA 58.01.02.250.02.e). DEQ is requiring turbidity monitoring when project activities result in a discharge to waters of the United States that causes a visible sediment plume (IDAPA 58.01.02.054.01) (See Section 2.5 for more details).

If an approved TMDL exists for a receiving water body that requires a load reduction for a pollutant of concern, then the project must be consistent with the provisions of that TMDL (IDAPA 58.01.02.055.05).
For authorized activities requiring a pre-construction notification (PCN), the Corps will have the opportunity to evaluate the NWP activities on a case by case basis to ensure that the activity will not cause more than a minimal adverse environmental effect, individually and cumulatively. The Corps has agreed to forward the verification letters to the appropriate DEQ regional office (Table 1) for all authorized activities including the NWP activities that require a PCN. This will better inform DEQ of the authorized activities that are occurring throughout the state and determine if additional conditions will need to be implemented when the ACOE reissues the NWPs.

1.3.1 DEQ's Determination

DEQ concludes that, given the nature of the activities authorized by the 2020 NWPs, such activities will comply with Idaho's Tier I requirements under IDAPA 58.01.02.051.01 and 58.01.02.052.07, provided the permitted activities are carried out in compliance with the limitations and associated requirements of the 2020 NWPs, Regional Conditions, and conditions set forth in this water quality certification.

1.4 Protection of High-Quality Waters (Tier II Protection)

Water bodies that fully support their beneficial uses are recognized as high-quality waters and will be provided Tier II protection in addition to Tier I protection (IDAPA 58.01.02.051.02; 58.01.02.052.05.a). Water quality parameters applicable to existing or designated beneficial uses must be maintained and protected under Tier II, unless a lowering of water quality is deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).

The ACOE does not authorize projects with more than minimal individual and cumulative impacts on the aquatic environment under a NWP (33 U.S.C.A. § 1344(e)). As required by the National Environmental Policy Act (NEPA) the Corps has analyzed the individual and cumulative effects for the NWP activities. DEQ recognizes that short term changes in water quality may occur with respect to sediment as a result of the authorized activities, but has determined that adherence to the terms and conditions imposed by the permits, including the Regional Conditions set forth by the Army Corps of Engineers (ACOE or Corps), along with the conditions set forth in this water quality certification will ensure that there are no long-term adverse changes to water quality or beneficial use support as a result of any activity authorized under this certification (IDAPA 58.01.02.052.03). As a general principle, DEQ believes degradation of water quality should be viewed in terms of permanent or long-term adverse

[2] *NTU is a unit of measure of the concentration of suspended particles in the water (turbidity). It is determined by shining a light through a sample and measuring the incident light scattered at right angles from the sample.*

changes. Short-term or temporary reductions in water quality, if reasonable measures are taken to minimize them (such as the certification conditions in Section 2), may occur without triggering a Tier II analysis (IDAPA 58.01.02.052.03; 080.02).

To ensure proposed regulated activities will not cause more than minimal individual and cumulative impacts on the aquatic environment, certain NWPs require project proponents to notify district engineers (in the form of a PCN) of their proposed activities prior to conducting regulated activities. This level of review gives the district engineer the opportunity to evaluate activities on a case by case basis to determine whether additional conditions or mitigation requirements are warranted to ensure that the proposed activity results in no more than the minimal individual and cumulative impacts on the aquatic environment.

DEQ has denied certification for NWP 16, NWP 23, and NWP 53 (see Section 3.1); and for certain activities associated with NWP 3, NWP 12, NWP 13, NWP 14, NWP 21, NWP 29, NWP 39, NWP 40, NWP 42, NWP 43, NWP 44, NWP 50, NWP 51, NWP 52, NWP C, NWP D, and NWP E (see Section 3.2). Projects seeking coverage under these NWPs will need to request individual certification from DEQ. DEQ will consider any additional conditions or denial of certification if necessary to ensure no lowering of water quality occurs for any of these projects proposed on Tier II water.

Additionally, if an authorized project causes a visible sediment plume then turbidity monitoring is required (see Section 2.5 for more details).

1.4.1 DEQ's Determination

DEQ concludes that the activities authorized by the 2020 NWPs and this certification will comply with Idaho's Tier II requirements under IDAPA 58.01.02.051.02 and 58.01.02.052.08 providing permitted activities are carried out in compliance with the limitations and associated requirements of the 2020 NWPs, Regional Conditions, and conditions of this water quality certification.

1.5 Protection of Outstanding Resource Waters (Tier III Protection)

Idaho's antidegradation policy requires that the quality of outstanding resource waters (ORWs) be maintained and protected from the impacts of point and nonpoint source activities (IDAPA 58.01.02.051.03). No water bodies in Idaho have been designated as ORWs to date. Because it is possible waters may become designated during the term of the 2020 NWPs, DEQ has evaluated whether the NWPs comply with the ORW antidegradation provision.

DEQ has denied certification for any activities on any Outstanding Resource Water (ORW) (see Section 3) and is requiring that any activities proposed on an ORW apply for individual certification (see Section 2.3).

1.5.1 DEQ's Determination

DEQ concludes that the activities authorized by the 2020 NWPs and this certification will comply with Idaho's Tier III requirements under IDAPA 58.01.02.051.03 providing permitted activities are carried out in compliance with the limitations and associated requirements of the 2020 NWPs, Regional Conditions, and conditions of this water quality certification.

2 Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

For all activities covered under this certification, the following conditions are necessary to ensure that permitted projects comply with water quality requirements.

2.1 Design, Implementation, and Maintenance of Appropriate Best Management Practices

Best Management Practices (BMPs) must be designed, implemented, and maintained by the permittee to fully protect and maintain the beneficial uses and ambient water quality of waters of the state and to prevent exceedances of WQS (IDAPA 58.01.02.350.01.a).

BMPs must be selected and properly installed. Proper installation and operation of BMPs are required to ensure the provisions of IDAPA 58.01.02.052 are met. In order to ensure that BMPs are operating properly and to demonstrate that degradation has not occurred, the permittee must monitor and evaluate BMP effectiveness daily during project activities to assure that water quality standards are being met.

Approved BMPs for specific activities (mining, forestry, stream channel alteration, etc.) are codified in IDAPA 58.01.02.350. Additionally, DEQ provides a catalog of storm water best management practices, available at: http://www.deq.idaho.gov/media/60184297/stormwater-bmp-catalog.pdf. This catalog presents a variety of BMPs that can be used to control erosion and sediment during and after construction. Other sources of information are also available and may be used for selecting project appropriate BMPs.

This condition is necessary meet the following water quality requirements:

Control of erosion, sediment, and turbidity to maintain beneficial use support and compliance with the following water quality standards:

- General Surface Water Criteria for Sediment (IDAPA 58.01.02.200.08)
- Numeric Turbidity Criteria for Aquatic Life (IDAPA 58.01.02.250.02.e)
- Numeric turbidity criteria for protection of domestic water supply (IDAPA 58.01.02.252.01.b)
- Point source wastewater treatment requirements (IDAPA 58.01.02.401.02)

2.2 TMDL Compliance

If there is an approved or established TMDL, then the permittee must comply with the established loads in the TMDL. Approved TMDLs can be found on DEQ's website (https://www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls/) or by contacting the appropriate regional office contact (Table 1).

This condition is necessary to meet the following water quality requirements:

Ensure projects are consistent with waste load and load allocations established in approved TMDLs (IDAPA 58.01.02.055.04 and .05).

2.3 Outstanding Resource Waters

If waters become designated as ORWs during the term of the NWPs, a permittee proposing a project on an ORW must contact the appropriate DEQ regional office and apply for individual certification.

This condition is necessary to meet the following water quality requirements:

Ensure there is no lowering of water quality in any ORW as required by the Idaho Antidegradation Policy (IDAPA 58.01.02.051.03).

2.4 Fill Material

Material subject to suspension, including suspended dredge material, shall be free of easily suspended fine material. The fill material to be placed in waters of the United States shall be clean material only. If dredged material is proposed to be used as fill material and there is a possibility the material may be contaminated, then the permittee must apply the procedures in the *Sediment Evaluation Framework for the Pacific Northwest* (RSET, 2018) to assess and characterize sediment to determine the suitability of dredged material for unconfined-aquatic placement; determine the suitability of post dredge surfaces; and to predict effects on water quality during dredging.

This condition is necessary to meet the following water quality requirements:

Prevent suspension of fine sediment and turbidity in order to provide beneficial use support and compliance with the following water quality standards:

- General Surface Water Criteria for Sediment (IDAPA 58.01.02.200.08)
- Numeric Turbidity Criteria for Aquatic Life (IDAPA 58.01.02.250.02.e)
- Numeric turbidity criteria for protection of domestic water supply (IDAPA 58.01.02.252.01.b)
- Point source wastewater treatment requirements (IDAPA 58.01.02.401.02)

Prevent suspension of hazardous, toxic, or deleterious materials or other pollutants that may be associated with fill material in order to ensure beneficial use support and compliance with the following water quality standards:

- General Surface Water Criteria for hazardous materials (IDAPA 58.01.02.200.01), toxic substances (IDAPA 58.01.02.200.02), deleterious materials (IDAPA 58.01.02.200.03), excess nutrients (IDAPA 58.01.02.200.06), or oxygen demanding materials (IDAPA 58.01.02.200.09)
- Numeric toxics criteria for aquatic life and human health (IDAPA 58.01.02.210)

2.5 Turbidity

If no visible sediment plume is present, it is reasonable to assume that there is no potential violation of the water quality criteria for turbidity (IDAPA 58.01.02.250.02.e). Therefore, turbidity monitoring is only required when activities cause a visible sediment plume.

A properly and regularly calibrated turbidimeter is required for measurements analyzed in the field, but grab samples may be collected and taken to a laboratory for analysis. When monitoring is required a sample must be taken at an undisturbed area immediately up-current from in-water disturbance or discharge to establish background turbidity levels. Background turbidity, latitude/longitude, date, and time must be recorded prior to monitoring down-current. Then a sample must be collected immediately down-current from the in-water disturbance or point of discharge and within any visible sediment plume. The turbidity, latitude/longitude, date, and time must be recorded for each sample. The downstream sample must be taken immediately following the upstream sample in order to obtain meaningful and representative results.

Results from the down-current sampling point must be compared to the up-current or background level to determine whether project activities are causing an exceedance of state WQS. If the downstream turbidity is 50 NTUs or more greater than the upstream turbidity, then the project is causing an exceedance of the WQS (IDAPA 58.01.02.250.02.e).
Any exceedance of the turbidity standard must be reported to the appropriate DEQ regional office (Table 1) within 24 hours.

The following steps should be followed to ensure compliance with the turbidity standard:

1. If a visible plume is observed, collect turbidity measurements at 1) an upstream location; and, 2) from within the plume, and compare the results to Idaho's instantaneous numeric turbidity criterion (50 NTU over background).
2. If turbidity in the plume is less than 50 NTU instantaneously over the background turbidity continue monitoring as long as the plume is visible. If turbidity exceeds background turbidity by more than 50 NTU instantaneously then stop all earth disturbing construction activities immediately and proceed to Step 3. If turbidity exceeds background turbidity by more than 25 NTU, or if a visible plume is observed for more than 10 consecutive days, then stop all earth disturbing construction activities and proceed to Step 3.
3. Notify the appropriate DEQ regional office within 24 hours of any turbidity criteria exceedance. Take action to address the cause of the exceedance. That may include inspecting the condition of project BMPs. If the BMPs are functioning to their fullest capability, then the permittee must modify project activities and/or BMPs to correct the exceedance.
4. Earth disturbing activities may continue once turbidity readings return to within 50 NTU over background instantaneously; or, if turbidity has exceeded 25 NTU over background for more than ten consecutive days, once turbidity readings have no longer exceeded 25 NTU over background for at least 24 consecutive hours.

Copies of daily logs for turbidity monitoring must be available to DEQ upon request. The report must describe all exceedances and subsequent actions taken, including the effectiveness of the action.

This condition is necessary to meet the following water quality requirements:

Ensure that activities do not impair beneficial uses, and ensure and document compliance with the following water quality standards:

- General Surface Water Criteria for Sediment (IDAPA 58.01.02.200.08)
- Numeric Turbidity Criteria for Aquatic Life (IDAPA 58.01.02.250.02.e)
- Numeric turbidity criteria for protection of domestic water supply (IDAPA 58.01.02.252.01.b)

2.6 Mixing Zones

No mixing zones are authorized through this certification. If a mixing zone, or alternatively, a point of compliance, is desired, the permittee must apply for an individual certification and must contact the appropriate DEQ regional office (Table 1) to request authorization for a mixing zone.

This condition is necessary to meet the following water quality requirements:

Ensure any mixing zone is properly authorized in accordance with the Idaho Mixing Zone Policy (IDAPA 58.01.02.060).

2.7 Culverts

To prevent road surface and culvert bedding material from entering a stream, culvert crossings must include best management practices to retain road base and culvert bedding material. For perennial waters, the permittee should consider the Idaho Stream Channel Alterations rules (IDAPA 37.03.07). Another source of BMPs for culvert installation can be found in the Idaho Forest Practices Act (IDAPA 20.20.01). Examples of best management practices include, but are not limited to: parapets, wing walls, inlet and outlet rock armoring, compaction, suitable bedding material, anti-seep barriers such as bentonite clay, or other acceptable roadway retention systems.

This condition is necessary to meet the following water quality requirements:

Control of erosion, sediment, and turbidity to provide beneficial use support and compliance with the following water quality standards:

- General Surface Water Criteria for Sediment (IDAPA 58.01.02.200.08)
- Numeric Turbidity Criteria for Aquatic Life (IDAPA 58.01.02.250.02.e)
- Numeric turbidity criteria for protection of domestic water supply (IDAPA 58.01.02.252.01.b)

2.8 Wood Preservatives

DEQ's *Guidance for the Use of Wood Preservatives and Preserved Wood Products In or Around Aquatic Environments* must be considered when using treated wood materials in the aquatic environment. Within this guidance document DEQ references the *Best Management Practices*

for the Use of Treated Wood in Aquatic and Wetland Environments[3]. This document provides recommended guidelines for the production and installation of treated wood products destined for use in sensitive environments.

This condition is necessary to meet the following water quality requirements:

Ensure that toxic chemicals are not introduced into waters and to ensure compliance with the following water quality standards:

- General Surface Water Criteria for hazardous materials (IDAPA 58.01.02.200.01), toxic substances (IDAPA 58.01.02.200.02), and deleterious materials (IDAPA 58.01.02.200.03)
- Numeric toxics criteria for aquatic life and human health (IDAPA 58.01.02.210)

2.9 Reporting of Discharges Containing Hazardous Materials or Deleterious Materials

All spills of hazardous material, deleterious material or petroleum products which may impact waters (ground and surface) of the state shall be immediately reported. Call 911 if immediate assistance is required to control, contain or clean up the spill. If no assistance is needed in cleaning up the spill, contact the appropriate DEQ regional office in Table 2 during normal working hours or Idaho State Communications Center after normal working hours. If the spilled volume is above federal reportable quantities, contact the National Response Center.

For immediate assistance: Call 911

National Response Center: (800) 424-8802

Idaho State Communications Center: (800) 632-8000

Table 2. Idaho DEQ regional contacts for reporting discharge or spill of hazardous or deleterious materials.

Regional Office	*Toll Free Phone Number*	*Phone Number*
Boise	888-800-3480	208-373-0550
Coeur d'Alene	877-370-0017	208-769-1422
Idaho Falls	800-232-4635	208-528-2650
Lewiston	877-541-3304	208-799-4370
Pocatello	888-655-6160	208-236-6160
Twin Falls	800-270-1663	208-736-2190

[3] Western Wood Preservers Institute, Wood Preservation Canada, Southern Pressure Treaters' Association, and Southern Forest Products Association. 2011. "Best Management Practices: For the Use of Treated Wood in Aquatic and Wetland Environments" Vancouver, WA: Western Wood Preservers Institute.

This condition is necessary to meet the following water quality requirements:

Ensure compliance with the following water quality standards:

- Hazardous Material Spills (IDAPA 58.01.02.850)
- Petroleum release reporting, investigation, and confirmation (IDAPA 58.01.02.851)
- Petroleum release response and corrective action (IDAPA 58.01.02.852)

2.10 Other Conditions

This certification is conditioned upon the requirement that if there are material modifications of the NWPs or the permitted activities—including without limitation, significant changes from the draft NWPs to final NWPs, or significant changes to the draft Regional Conditions, then DEQ must re-evaluate the certification to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401.

This condition is necessary to ensure that DEQ can evaluate any material modification to ensure it meets water quality requirements and complies with the Idaho antidegradation policy (IDAPA 58.01.02.051) and its implementation (IDAPA 58.01.02.052), general surface water quality criteria (200), numeric toxics criteria for aquatic life and human health (IDAPA 58.01.02.210), numeric criteria for aquatic life (IDAPA 58.01.02.250), recreation (IDAPA 58.01.02.251), and water supply uses (IDAPA 58.01.02.252).

3 Projects for Which Certification Is Denied

DEQ cannot certify that the following activities will comply with water quality requirements, including State WQS and other appropriate requirements of state law, and is therefore denying certification for the activities listed below.

For activities for which certification has been denied, the applicant will be required to request an individual certification before the activity can be conducted. Individual certification requests will provide DEQ with the opportunity to review project details and determine if additional conditions are necessary to ensure that water quality requirements will be met.

Upon review and evaluation of individual certification requests, DEQ may 1) certify without condition, 2) provide individual certification with conditions necessary to ensure water quality requirements will be met, or 3) deny certification for projects that will not meet water quality requirements.

3.1 NWPs denied

DEQ denies certification for all activities proposed to occur on waters designated as ORWs during the term of the permit. This denial is necessary to ensure compliance with the water quality requirements of Idaho's antidegradation policy (IDAPA 58.01.02.051.03) and implementation procedures (IDAPA 58.01.02.052.09.g).

In addition, the following NWPs are denied certification for all Idaho waters. Projects seeking coverage under these NWPs must request individual certification from DEQ.

NWP 16 - Return Water from Upland Contained Disposal Areas

Basis for denial:

Return water from upland disposal areas has the potential to contribute turbidity, sediment, and other toxic and non-toxic pollutants to receiving waters.

To ensure that discharge from upland contained disposal areas meets water quality requirements, DEQ must evaluate the quality of the return water and evaluate the potential pollutants associated with return water on a case-by-case basis to determine compliance with general surface water quality criteria (IDAPA 58.01.02.200); numeric toxics criteria for aquatic life and human health (IDAPA 58.01.02.210); and use specific criteria for aquatic life (IDAPA 58.01.02.250), recreation (IDAPA 58.01.02.251), and water supply uses (IDAPA 58.01.02.252).

NWP 23 - Approved Categorical Exclusions

Basis for denial:

DEQ is unable to determine that meeting the requirements for categorical exclusion under the National Environmental Policy Act will meet state water quality requirements.

DEQ will evaluate categorically excluded activities on a case-by-case basis to determine compliance with general surface water quality criteria (IDAPA 58.01.02.200); numeric toxics criteria for aquatic life and human health (IDAPA 58.01.02.210); and use specific criteria for aquatic life (IDAPA 58.01.02.250), recreation (IDAPA 58.01.02.251), and water supply uses (IDAPA 58.01.02.252).

NWP 53 – Removal of Low-Head Dams

Basis for denial:

Material released from the removal of low head dams has the potential to contribute turbidity, sediment, and other toxic and non-toxic pollutants to receiving waters.

In order to ensure that release of materials from the removal of low head dams meets water quality requirements, DEQ must evaluate the potential pollutants associated with this release on a case-by-case basis to determine compliance with general surface water quality criteria (IDAPA 58.01.02.200); numeric toxics criteria for aquatic life and human health (IDAPA 58.01.02.210); and use specific criteria for aquatic life (IDAPA 58.01.02.250), recreation (IDAPA 58.01.02.251), and water supply uses (IDAPA 58.01.02.252).

3.2 NWPs partially denied

The following activities have the potential to disturb significant areas and could disturb a significant fraction of entire Assessment Units, causing permanent and significant impairment of designated and existing beneficial uses. The conditions associated with the NWP, regional conditions, and the conditions associated with this certification are not sufficient to provide DEQ with assurance that projects of this magnitude would not result in impairment of existing or

designated beneficial uses in all waters, and potentially increase degradation in high quality (Tier II) waters.

In order to meet the requirements of Idaho's antidegradation implementation procedures (IDAPA 58.01.02.052), ensure that beneficial uses are not impaired, and ensure compliance with general surface water quality criteria for sediment (IDAPA 58.01.02.200.08), DEQ must evaluate these projects on a case-by-case basis and provide individual certification where applicable.

3.2.1 NWPs 3, 13, and 14

The 2020 NWPs 3, 13, and 14 require preconstruction notification (PCN) for certain activities when it is necessary for the district engineer to review activities to ensure only minimal adverse environmental effects.

While the additional district engineer review is intended to ensure that activities will cause only minimal adverse environmental effects, it is not reasonable to expect that the district engineer review will consider the requirements of Idaho's antidegradation implementation procedures (IDAPA 58.01.02.052) when making their determination. Consequently, DEQ cannot certify that activities requiring PCN under these NWPs would not cause degradation of water quality, and therefore cannot certify that these activities would meet Idaho's antidegradation implementation procedures (IDAPA 58.01.02.052).

Therefore, DEQ is denying certification for the following activities that require PCN under the proposed 2020 NWPs:

NWP 3 – Maintenance

Activities Denied Certification

- Activities authorized by paragraph (b) of NWP 3

NWP 13 – Bank Stabilization

Activities Denied Certification:

- activities involving discharge into special aquatic sites;
- activities in excess of 500 linear feet;
- activities that involve discharge of greater than one cubic yard per running foot measured along the length of the treated bank below the plane of the ordinary high water mark

NWP 14 – Linear Transportation Projects

Activities Denied Certification:

- activities resulting in the loss of waters of the United States in excess of 1/10 acre;
- discharge in a special aquatic site, including wetlands

3.2.2 NWPs 12, C, and D

The 2017 NWP 12 included activities proposed to be permitted under the 2020 NWPs C and D.

The 2017 NWP 12 required PCN for activities that, among other thresholds, involved mechanized clearing in forested wetlands, exceeded 500 linear feet, or that resulted in loss of greater than 1/10 acre of waters of the United States. The 2020 NWP proposes removal of these thresholds for PCN, and does not require additional review from the ACOE district engineer to ensure only minimal adverse environmental effects.

Without the requirement for PCN and additional review from the district engineer, DEQ cannot certify that these activities will not result in degradation. Therefore, DEQ is denying certification for the following activities:

NWP 12 – Oil or Natural Gas Pipeline Activities

Activities Denied Certification:

- activities that involve mechanized clearing of a wooded wetland;
- oil or natural gas pipelines in waters of the United States that exceed 500 linear feet or that run adjacent to a water body for greater than 500 linear feet;
- activities where discharge will result in loss of greater than 1/10-acre, as determined by ACOE, of waters of the United States

NWP C – Electric Utility Line and Telecommunications Activities

Activities Denied Certification:

- activities that involve mechanized clearing of a wooded wetland;
- electric utility line and telecommunications activities in waters of the United States that exceed 500 linear feet;
- activities where discharge will result in loss of greater than 1/10-acre, as determined by ACOE, of waters of the United States

NWP D – Utility Line Activities for Water and Other Substances

Activities Denied Certification:

- activities that involve mechanized clearing of a wooded wetland;
- utility line activities in waters of the United States that exceed 500 linear feet;
- activities where discharge will result in loss of greater than 1/10-acre, as determined by ACOE, of waters of the United States

3.2.3 NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, 52, and E

The 2017 NWPs for the following activities had a 300 linear foot limit for losses of stream bed. The 2020 NWP proposes removal of the 300 linear foot limit for losses of stream bed and instead rely solely on the ½ acre limit.

The median bankfull width measured from 48 wadeable streams monitored in 2010 as part of DEQ's Beneficial Use reconnaissance Program (BURP) was 19.7 feet. A loss of ½ acre at this stream width would correspond to 1,105 linear feet of loss, or the equivalent of 0.2 miles of stream. DEQ cannot certify that losses of this magnitude of stream bed, or that losses of stream

bed based solely on the ½ acre limit, would not result in permanent degradation. Therefore, DEQ is denying certification for the following activities that exceed the 300 linear foot limit previously imposed by the 2017 NWP:

NWP 21 – Surface Coal Mining Activities

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 29 – Residential Developments

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 39 – Commercial and Institutional Developments

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 40 – Agricultural Activities

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 42 – Recreational Facilities

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 43 – Stormwater Management Facilities

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 44 – Mining Activities

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 50 – Underground Coal Mining Activities

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 51 – Land Based Renewable Energy Generation Facilities

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP 52 – Water-Based Renewable Energy Generation Pilot Projects

Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

NWP E – Water Reclamation and Reuse Facilities

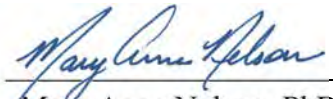
Activities Denied Certification:

- activities resulting in loss in excess of 300 linear feet of streambed
- activities resulting in loss in excess of ½ acre of jurisdictional wetlands

4 Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the "Rules of Administrative Procedure before the Board of Environmental Quality" (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions or comments regarding the actions taken in this certification should be directed to Jason Pappani, State Office IDEQ, at (208) 373-0515 or via email at jason.pappani@deq.idaho.gov.



Mary Anne Nelson, PhD
Surface and Wastewater Division
Administrator

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 N Hilton Street, Boise, ID 83706
(208) 373-0502

Brad Little, Governor
Jess Byrne, Director

MEMORANDUM

TO: James Joyner, Chief, Upper Snake and Idaho Panhandle Branch, U.S. Army Corps of Engineers

FROM: Mary Anne Nelson, Surface and Wastewater Division Administrator of the Department of Environmental Quality

DATE: 01/10/23

SUBJECT: 2020 Final § 401 Water Quality Certification Contact and Hyperlink Updates

The Department of Environmental Quality (DEQ) is submitting an update for agency contacts and hyperlinks to be included as an attachment to the § 401 Water Quality Certification dated December 4, 2020, upon authorization of a federal permit or license.

Table 1. DEQ state and regional office contacts.

Regional Office	Address	Phone Number	Email
Boise	1445 N. Orchard St., Boise, ID 83706	(208) 373-0490	*chase.cusack@deq.idaho.gov*
Coeur d'Alene	2110 Ironwood Parkway, Coeur d'Alene, ID 83814	(208) 666-4605	*chantilly.higbee@deq.idaho.gov*
Idaho Falls	900 N. Skyline, Suite B., Idaho Falls, ID 83402	(208) 528-2679	*alex.bell@deq.idaho.gov*
Lewiston	1118 "F" St., Lewiston, ID 83501	(208) 799-4874	*sujata.connell@deq.idaho.gov*
Pocatello	444 Hospital Way, #300 Pocatello, ID 83201	(208) 239-5007	*matthew.schenk@deq.idaho.gov*
Twin Falls	650 Addison Ave. W., Suite 110, Twin Falls, ID 83301	(208) 737-3877	*sean.woodhead@deq.idaho.gov*
State Office	1410 N. Hilton St., Boise, ID 83706	(208) 373-0570	*tambra.phares@deq.idaho.gov*

Table 2. Updated hyperlinks.

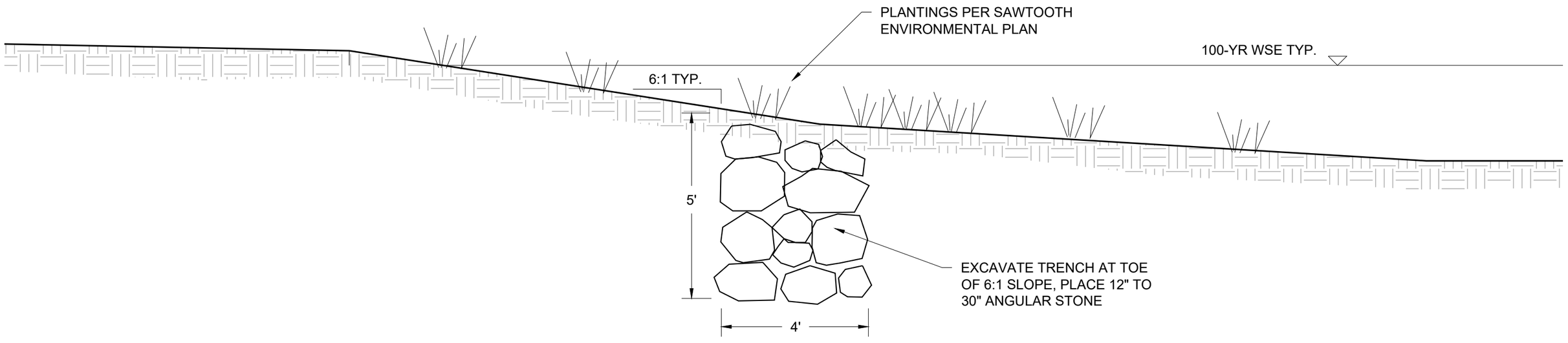
Section	Hyperlink
1.2	*Integrated Report*
1.2	*Final 2022 Integrated Report Interactive Mapper*
2.1	*Catalog of Storm Water Best Management Practices*
2.2	*Approved TMDLs*
2.8	*Guidance for the Use of Wood Preservatives and Preserved Wood Products In or Around Aquatic Environments*
2.8	*Best Management Practices for the Use of Treated Wood in Aquatic and Wetland Environments*

Please direct questions or comments about the actions taken in the 2020 Final § 401 Water Quality Certification to Tambra Phares, State Office DEQ, (208) 373-0187, or email at *tambra.phares@deq.idaho.gov*.

APPROVAL: 01/10/2023

Mary Anne Nelson, PhD — Date
Department of Environmental Quality
Surface and Wastewater Division Administrator

F:\Projects\Presidio Vista\CAD\Toe trench detail.dwg



NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	APPD.
A	ISSUED FOR PERMITTING	6/15/2023	

DESIGNED BY CGB | DRAFTED BY CGB

NO SCALE
(11 X 17 DWG ONLY)

BROCKWAY ENGINEERING, PLLC.
HYDRAULICS - HYDROLOGY - WATER RESOURCES
2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, ID. 83301
(208) 736-8543

490 WOOD RIVER
FLOODPLAIN DEVELOPMENT PERMIT

PROJECT # 1575-01-2021

TYPICAL TOE TRENCH DETAIL

DWG # D-1

REV A

Analysis of Cut and Fill Volume Below BFE -- Revised for Split-Flow Model and Sheet Pile Wall

490 standalone project 2023.03.09 final rev 2023.04.26, revised split-flow model, update with sheet pile wall 2023.1
BFE calculated with PROPOSED CONDITIONS model
Volumes calculated using frustum formula
CGB 10/26/2023

Section	Station	Avg dist between sections	Cut Area (ft2)	Fill Area (ft2)	Delta V (cy) Cut	Delta V (cy) Fill	Associated house fill* Area (ft2)	Associated house fill* Delta V
Start grading (prop line)	0		0.0	0.0			0	
11.8	57	57	74.9	107.8	52.7	75.9	83.3	58.6
12	90	33	104.5	56.3	109.1	98.6	32.4	68.3
12.5	128	38	60.4	57.0	114.6	79.7	23.9	39.5
12.7	170	42	4.0	18.0	41.5	55.5	4.5	20.1
13	230	60	14.4	11.6	19.3	32.6	0.0	3.3
13.5	297	67	56.7	54.5	82.4	75.5	0.0	0.0
End grading	302	5	0.0	0.0	3.5	3.4	0.0	0.0
				Totals	423.1	421.1		189.8
Additional fill:								
Driveway - road access					0.0	92.8		
Driveway pad at garage					0.0	34.6		
Retaining wall area - section area 15.3' x length 37.8'					0.0	21.4		
Sheet pile wall and low berms						14.3		

* 5% for first 10 feet from foundation, then 4:1

Total gross cut	423.1 cy
Total gross fill	584.2 cy
Associated house fill	189.8 cy
Net fill (gross minus associated house fill)	394.4 cy
Net cut-fill balance excluding associated house fill	**28.7 cy**

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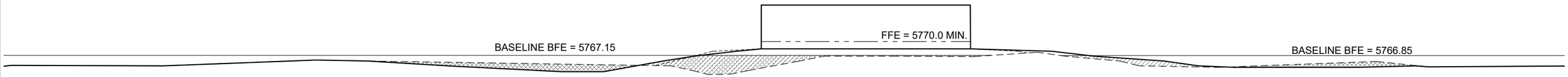
EXISTING GRADE
PROJECT GRADE
BASELINE BFE CALCULATED
FILL BELOW BFE
CUT BELOW BFE
HOUSE-ASSOCIATED FILL BELOW BFE, WITH CRITERIA: 5% FOR FIRST 10 FT (IRC) THEN 4:1 (MAX. REASONABLE WALKING SURFACE)

BFE FROM SPLIT FLOW ANALYSIS, PROPOSED CONDITIONS MODEL 9/4/2023

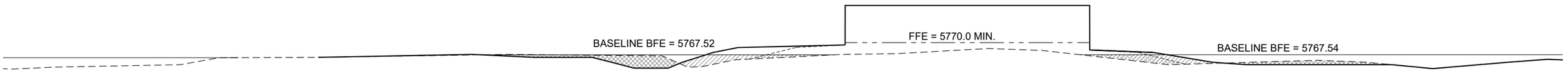


CUT AREA BELOW BFE = 74.9 SF
TOTAL FILL AREA BELOW BFE = 107.8 SF
HOUSE-ASSOCIATED FILL BELOW BFE = 83.3 SF

SECTION 11.8

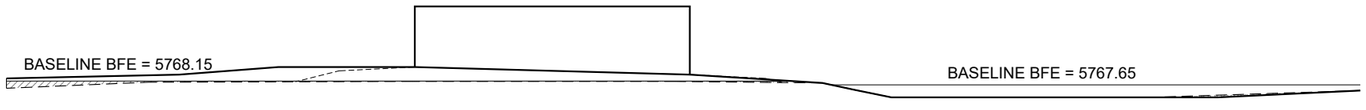
CUT AREA BELOW BFE = 104.5 SF
FILL AREA BELOW BFE = 56.3 SF
HOUSE ASSOCIATED FILL BELOW BFE = 32.4 SF

SECTION 12



CUT AREA BELOW BFE = 60.4 SF
FILL AREA BELOW BFE = 57.0 SF
HOUSE ASSOCIATED FILL BELOW BFE = 23.9 SF

SECTION 12.5



CUT AREA BELOW BFE = 4.0 SF
FILL AREA BELOW BFE = 18.0 SF
HOUSE ASSOCIATED FILL BELOW BFE = 4.5 SF

SECTION 12.7

REV	DESCRIPTION	DATE	APPD.
E	SPLIT-FLOW MODEL	9/4/2023	
D	CHANGED BFE TO POST-PROJECT MODEL	6/15/2023	

DESIGNED BY CGB | DRAFTED BY CGB

NO SCALE

BROCKWAY ENGINEERING, PLLC.
HYDRAULICS - HYDROLOGY - WATER RESOURCES
2016 NORTH WASHINGTON, SUITE 4
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490 WOOD RIVER
FLOODPLAIN DEVELOPMENT PERMIT

PROJECT # 1575-01-2021

CUT AND FILL AREAS BELOW CALCULATED BASELINE BFE (100-YEAR FLOW)

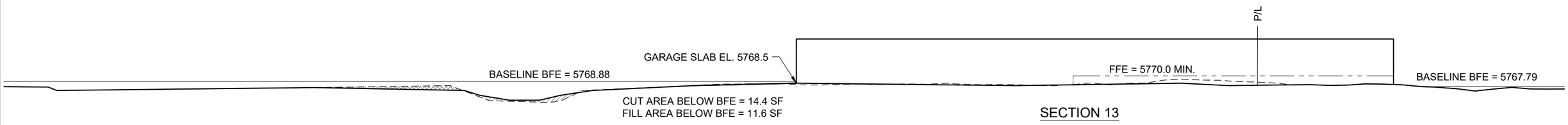
DWG # FIGURE 3

REV E

F:\Projects\Presidio Vista\CAD\Cut-fill-project-2023.09.04.dwg

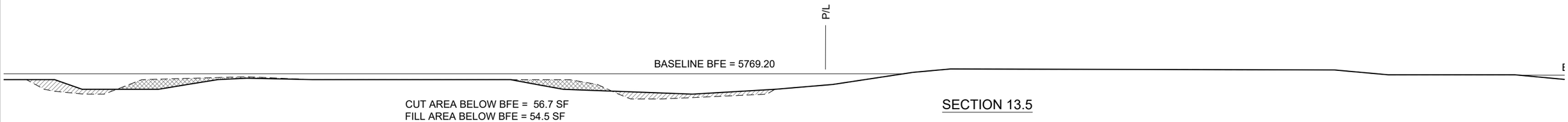
BFE FROM SPLIT FLOW ANALYSIS, PROPOSED CONDITIONS MODEL 9/4/2023

EXISTING GRADE
PROJECT GRADE
BASELINE BFE CALCULATED
FILL BELOW BFE
CUT BELOW BFE



CUT AREA BELOW BFE = 14.4 SF
FILL AREA BELOW BFE = 11.6 SF

SECTION 13



CUT AREA BELOW BFE = 56.7 SF
FILL AREA BELOW BFE = 54.5 SF

SECTION 13.5

CUT AREA BELOW BFE = 0 SF
FILL AREA BELOW BFE = 167 SF

DRIVEWAY - ROAD ACCESS

DRIVEWAY PAD AT GARAGE WEST-EAST SECTION

CUT AREA BELOW BFE = 0 SF
FILL AREA BELOW BFE = 26.7 SF

REV	DESCRIPTION	DATE	APPD.
E	SPLIT-FLOW MODEL	9/4/2023	
D	CHANGED BFE TO POST-PROJECT MODEL	6/15/2023	

DESIGNED BY CGB | DRAFTED BY CGB

NO SCALE

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HYDRAULICS - HYDROLOGY - WATER RESOURCES
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(208) 736-8543

490 WOOD RIVER
FLOODPLAIN DEVELOPMENT PERMIT

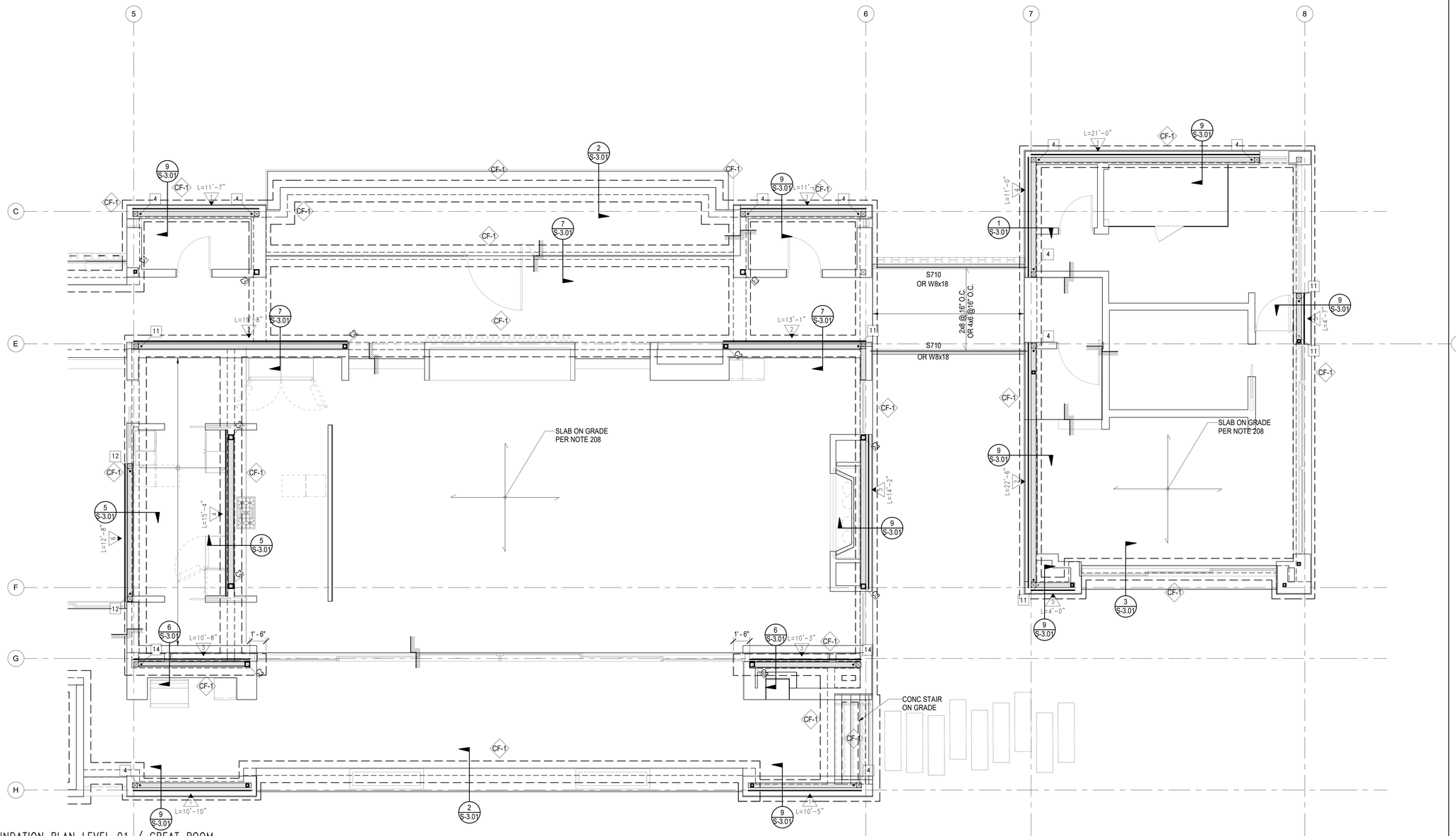
PROJECT # 1575-01-2021

CUT-FILL BELOW CALCULATED BFE

DWG # FIGURE 4

REV E

5/26/2023 10:12:15 AM



1 FOUNDATION PLAN LEVEL 01 / GREAT ROOM
S-110 1/4" = 1'-0"

COLUMN SCHEDULE		
MARK	COLUMN TYPE AND SHAPE	NOTES
C1	HSS3x3x3/8	-
C2	HSS4x4x1/4	-
C3	HSS5x5x1/4	-

SYMBOLS - WOOD FRAMING CONT.

S### — STRUCTURAL COMPOSITE LUMBER (SCL) CALLOUT: ENGINEERED LUMBER LVL OR PSL PER GENERAL NOTES
SECOND AND THIRD DIGIT: NOMINAL MEMBER DEPTH

04 = 3½"	06 = 5½"	08 = 7¼"	10 = 9½"
12" = 11⅞"	14 = 14"	16 = 16"	18 = 18"
20 = 20"	22 = 22"	24 = 24"	-

*11.25" & 13.25" WHEN USED WITH SAWN LUMBER

FIRST DIGIT: NOMINAL MEMBER WIDTH

2 = 1½"	4 = 3½"	6 = 5¼"	7 = 7"

PREFIX "S" INDICATES SCL MEMBER

DRAG — DRAG BEAM WITH BOUNDARY NAILING. FOR CONSTRUCTION OF DRAG BEAMS AND DRAG STRAP SEE "DRAGS & CONN. TO SHEAR WALLS" TYPICAL DETAIL

DRAG — STRAP & BLOCKING WITH BOUNDARY NAILING.

INDICATES OPENING IN DIAPHRAGM/SLAB

INDICATES CHANGE IN FLOOR ELEVATION

PA — INDICATES WOOD POST ABOVE

XP — INDICATES WOOD POST ABOVE

INDICATES STEEL COLUMN

HDR — INDICATES LOAD BEARING HEADER PER "TYP. STUD WALL FRAMING ELEVATION"

C1 — INDICATES STEEL COLUMN PER SCHEDULE ON THIS SHEET C1 TYPICAL UNLESS NOTED OTHERWISE

SYMBOLS - WOOD FRAMING

INDICATES WOOD WALLS UNLESS OTHERWISE SPECIFIED ON THE FRAMING PLAN OR WALL STUD SCHEDULE PROVIDE:
- EXTERIOR WALLS: S.A.D. OR 2x6 @ 16" O.C., WHICHEVER IS GREATER
- INTERIOR WALLS: S.A.D. OR 2x4 @ 16" O.C., WHICHEVER IS GREATER

XXX PA — INDICATES WOOD POST. UNLESS OTHERWISE SPECIFIED ON THE FRAMING PLAN THE POST SIZE SHALL BE THE GREATER OF THE FOLLOWING:
- MIN. SIZE PER POST SCHEDULE WHERE PRESENT
- 4x DEPTH OF WALL
- SIZE INDICATED IN "HOLDOWN SCHEDULE" (FOR POSTS AT ENDS OF SHEAR WALLS ONLY)

POST ABOVE - WHERE OCCURS. POST STARTS AT THIS LEVEL AND IT IS DISCONTINUOUS BELOW

#/"-#" — INDICATES WOOD SHEATHED SHEAR WALL: TYPE PER SHEAR WALL SCHEDULE UNDER TYP. DETAILS MINIMUM LENGTH

— INDICATES HOLDOWN TYPE PER TYPICAL DETAILS SHEETS S1.37 & S1.38.

INDICATES EXTENT OF WOOD JOIST

INDICATES DIRECTION OF WOOD JOIST

2- #x## — WOOD MEMBER CALLOUT
SIZE: #x## SAWN LUMBER - S### SCL (SEE SCHED.)
NUMBER OF MEMBERS IN A BUILTUP ASSEMBLY (OMITTED IF = 1). SEE "BUILTUP BEAM/SISTERED JOIST" AND "BUCKETS OF BUILTUP BEAMS" PER TYPICAL DETAILS

PLAN NOTES - WOOD FRAMING:

301. PROVIDE WALL SHEATHING AT ALL EXTERIOR WALLS OTHER THAN SHEAR WALLS AS FOLLOWS: WOOD STRUCTURAL PANEL, 15/32" CD APA RATED PLYWOOD OR OSB SHEATHING, EXPOSURE 1, SPAN RATING 32/16, NAILED WITH 8d COMMONS SPACED AT 6" O.C. ALONG ALL PANEL EDGES (E.N.) AND 12" O.C. ALONG INTERMEDIATE SUPPORTS (FIELD) (F.N.)

302. HOLD DOWNS/TIE-DOWNS SHALL BE RE-TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.

303. PROVIDE DOUBLE JOISTS BENEATH ALL PARALLEL WALLS. PROVIDE SOLID BLOCK BENEATH ALL WALLS PERPENDICULAR TO JOISTS. SEE "FRAMING AT NON BEARING WALLS" PER TYPICAL DETAILS SHEETS.

321. FLOOR AND DECK SHEATHING: WOOD STRUCTURAL PANEL, 1 1/8" CD APA RATED STRUCT I PLYWOOD SHEATHING, EXPOSURE 1, SPAN RATING 48 O.C. GLUE WOOD STRUCTURAL PANELS TO JOISTS AND BLK'G. NAILING PER NAILING SCHEDULE.

323. ROOF SHEATHING CONSTRUCTION AT SLOPED AND PITCHED ROOFS: WOOD STRUCTURAL PANEL 3/4" CD APA RATED PLYWOOD SHEATHING, EXPOSURE 1, SPAN RATING 48/24. NAILING PER NAILING SCHEDULE.

325. FLOOR SHEATHING CONSTRUCTION: NON-STRUCTURAL LIGHT WEIGHT CONCRETE (110 PCF MAX), THICKNESS S.A.D. 1 1/2" MAX. OVER WOOD STRUCTURAL PANEL, 1 1/8" CD APA RATED STRUCT I PLYWOOD SHEATHING, EXPOSURE 1, SPAN RATING 48 O.C. GLUE WOOD STRUCTURAL PANELS TO JOISTS AND BLK'G. NAILING PER NAILING SCHEDULE.

SYMBOLS - FOUNDATION

INDICATES CHANGE IN FLOOR ELEVATION

INDICATES CONCRETE WALL

INDICATES CONCRETE WALL BELOW

INDICATES CONCRETE FOOTING

S S — INDICATES STEPPED FOOTING PER 18/S1.01

GB-# — INDICATES CONCRETE GRADE BEAM PER SCHEDULE THIS SHEET

F# — INDICATES CONCRETE FOOTING PER SCHEDULE THIS SHEET

C# — INDICATES CONCRETE COLUMN PER SCHEDULE #/##

GB-# — INDICATES CONCRETE GRADE BEAM PER SCHEDULE THIS SHEET

PLAN NOTES - FOUNDATION:

201. ALL GRADING & FOUNDATION WORK MUST BE OBSERVED AND APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF STEEL REINFORCEMENT AND POURING CONCRETE.

202. RECOMMENDED MATERIAL IS NATIVE SOIL BELOW THE FROST LINE.

203. IF FOR LIMITS AND EXTENT OF OVER EXCAVATION SEE CIVIL DRAWINGS.

204. U.N.O. TOP OF CONC. FOOTING ELEVATION SHALL BE 32" BELOW THE LOWEST GRADE. FOR TOP OF SLAB ELEVATION SEE ARCH'L DRAWINGS.

205. ALL HOLDOWN HARDWARE IS TO BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION. HOLDOWNS SHALL BE RE-TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING PLATE WASHERS ARE REQUIRED FOR ALL HOLDOWNS.

206. FOR SLAB ON GRADE SUB-GRADE PREPARATION SEE SOILS REPORT.

207. FOR VAPOR BARRIER AT INTERIOR SPACES S.A.D. SPECIFICATIONS/DRAWINGS.

208. CONCRETE SLAB ON GRADE: 5" THICK, REINFORCED WITH #5 BARS AT 16" O.C. EACH WAY.

209. THE BUILDING HAS BEEN DESIGNED TO BE ANCHORED INTO THE BEARING MATERIAL PER THE DESIGN REQUIREMENTS OF ASCE 24-14.

210. THE ONLY STRUCTURAL MATERIAL OCCURING BELOW THE B.F.E. IS REINFORCED CONCRETE, WHICH IS WITHIN THE ACCEPTABLE MATERIALS LIST FOR FLOORS AND WALLS IN TABLE 2 OF THE FEMA TECHNICAL BULLETIN.

PLAN NOTES - SHEETS AND GENERAL:

101. GENERAL NOTES AND TYPICAL DETAILS SHEETS: SEE S0.01 THRU S0.62 SHEETS. GENERAL NOTES & TYPICAL DETAILS APPLY TO ALL PARTS OF THE WORK EXCEPT WHERE SPECIFICALLY DETAILED OR U.N.O. ON THE FLOOR PLANS AND PLAN NOTES.

102. VERIFY ALL DIMENSIONS, ELEVATIONS, SLAB EDGES, SLAB DEPRESSIONS, SLAB OPENINGS, CURBS, FOOTING, PENETRATIONS, WALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL & CIVIL DRAWINGS.

103. FOR ALL DIMENSIONS & ROOF SLOPES S.A.D.

104. NON-BEARING WALLS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FOR NON-BEARING WALL LOCATIONS S.A.D.

CONC. FOOTING SCHEDULE	
MARK	SIZE AND REINFORCEMENT
F1	3'-6" SQUARE x 12" THICK W/ 4-#6 BOTTOM EACH WAY
F2	3'-0" SQUARE x 12" THICK W/ 3-#6 BOTTOM EACH WAY
F3	5'-0" SQUARE x 12" THICK W/ 5-#6 BOTTOM EACH WAY
F4	7'-6" SQUARE x 12" THICK W/ 7-#6 BOTTOM EACH WAY
CF1	2'-0" WIDE x 12" THICK W/ 3-#5 T&B LONG REINF.
CF2	4'-0" WIDE x 12" THICK W/ 5-#5 T&B LONG REINF.

490 WOOD RIVER

OWNER:
PRESIDIO VISTA PROPERTIES
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:
RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:
GALENA ENGINEERING, INC.
317 NORTH RIVER ST.
HAILEY, ID 83333
TEL: 208.788.1705

GEOTECHNICAL ENGINEER:
BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:
FIELD STUDIO
722 N ROUSE AVE
BOSEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:
LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700
LFA Job no. 22776

Labib Funk + Associates
Structural | Shoring | Civil | EBM

MEP ENGINEER:

LIGHTING DESIGNER:

SEAL:

PROFESSIONAL ENGINEER LICENSED P-21490 STATE OF IDAHO DAVID L. FUNK

NO	DATE	ISSUE
2	04/26/2023	PC SUBMITTAL
1	11/11/2022	PROGRESS SET

PROJECT:
490 WOOD RIVER
490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER
2109

DRAWING TITLE:
FOUNDATION PLAN LEVEL 01 /GREAT ROOM

DRAWING NUMBER:
S-110

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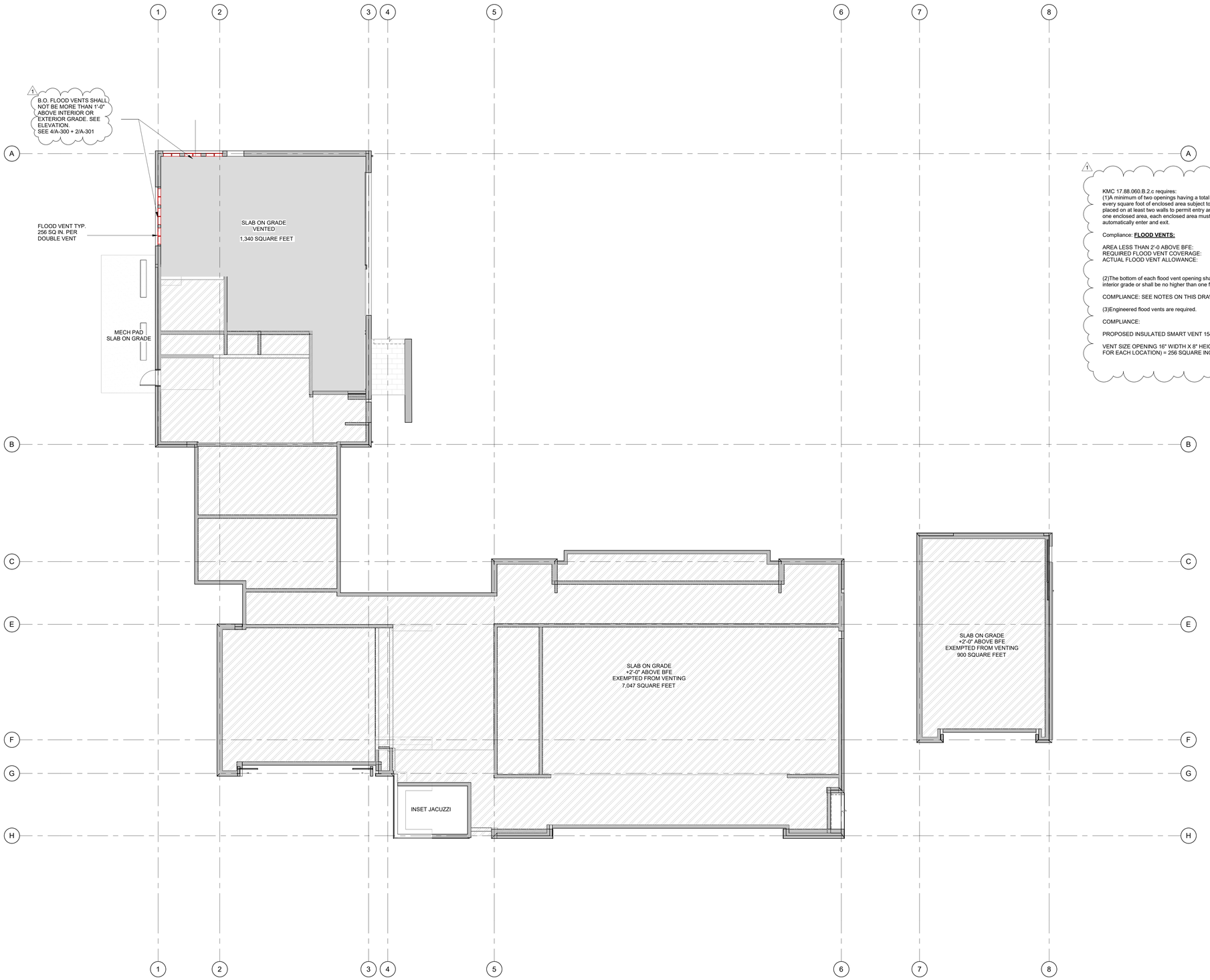

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KMC 17.88.060.B.2.c requires:
(1)A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. Openings shall be placed on at least two walls to permit entry and exit of floodwaters. If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit.

Compliance: **FLOOD VENTS:**

AREA LESS THAN 2'-0 ABOVE BFE:	1340 SF
REQUIRED FLOOD VENT COVERAGE:	1,349 SQ. IN.
ACTUAL FLOOD VENT ALLOWANCE:	1,500 SQ. IN.

(2)The bottom of each flood vent opening shall be no higher than either one foot above the interior grade or shall be no higher than one foot above the exterior adjacent grade.

COMPLIANCE: SEE NOTES ON THIS DRAWING. REFERENCE 4/A-300 + 2/A-301

(3)Engineered flood vents are required.

COMPLIANCE:

PROPOSED INSULATED SMART VENT 1540-520.

VENT SIZE OPENING 16" WIDTH X 8" HEIGHT PER VENT (DOUBLE VENTS PROPOSED FOR EACH LOCATION) = 256 SQUARE INCHES OF COVERAGE PER 2X VENT.

NORTH

1 | 1/8" = 1'-0" | **FLOOD VENT DIAGRAM**

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
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EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
1	6/23/23	FDP REVISION 1
	5/25/23	PERMIT SET
	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

FLOOD VENT DIAGRAM

DRAWING NUMBER:

G-013

-

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ICC-ES Evaluation Report

ESR-2074

Reissued 02/2023

ICC-ES | (800) 423-6587 | (562) 699-0543 | www.icc-es.org

This report is subject to renewal 02/2025.

DIVISION: 08 00 00—OPENINGS
SECTION: 08 95 43—VENTS/FOUNDATION FLOOD VENTS

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514 FLOOD VENT SEALING KIT #1540-526

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"2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence"

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ICC-ES Evaluation Report

Reissued February 2023

ESR-2074

This report is subject to renewal February 2025.

DIVISION: 08 00 00—OPENINGS
Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514 FLOOD VENT SEALING KIT #1540-526

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2021, 2018, 2015, 2012, 2009 and 2006 *International Residential Code®* (IRC)
- 2021 and 2018 *International Energy Conservation Code®* (IECC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Physical operation
- Water flow

2.0 USES

The Smart Vent® units are engineered mechanically operated flood vents (FVs) employed to equalize hydrostatic pressure on walls of enclosures subject to rising or falling flood waters. Certain models also allow natural ventilation.

3.0 DESCRIPTION

3.1 General:

When subjected to rising water, the Smart Vent® FVs' internal floats are activated, then pivot open to allow flow in either direction to equalize water level and hydrostatic pressure from one side of the foundation to the other. The FV pivoting door is normally held in the closed position by a buoyant release device. When subjected to rising water, the buoyant release device causes the unit to unlatch, allowing the door to rotate out of the way and allow flow. The water level stabilizes, equalizing the lateral forces. Each unit is fabricated from stainless steel. Smart Vent® Automatic Foundation Flood Vents are available in various models and sizes as described in Table 1. The SmartVENT® Stacking Model #1540-511 and FloodVENT® Stacking Model #1540-521 units each contain two vertically arranged openings per unit.

3.2 Engineered Opening:

The FVs comply with the design principle noted in Section 2.7.2.2 and Section 2.7.3 of ASCE/SEI 24-14 [Section 2.6.2.2 of ASCE/SEI 24-05 (2012, 2009, 2006 IBC and IRC)] for a maximum rate of rise and fall of 5.0 feet per hour (0.423 mm/s). In order to comply with the engineered opening requirement of ASCE/SEI 24, Smart Vent FVs must be installed in accordance with Section 4.0.

3.3 Ventilation:

The SmartVENT® Model #1540-510 and SmartVENT® Overhead Door Model #1540-514 both have screen covers with ¼-inch-by-¼-inch (6.35 by 6.35 mm) openings, yielding 51 square inches (32 903 mm²) of net free area to supply natural ventilation. The SmartVENT® Stacking Model #1540-511 consists of two Model #1540-510 units in one assembly, and provides 102 square inches (65 806 mm²) of net free area to supply natural ventilation. Other FVs described in this report do not offer natural ventilation.

3.4 Flood Vent Sealing Kit:

The Flood Vent Sealing Kit Model #1540-526 is used with SmartVENT® Model #1540-520. It is a Homasote 440 Sound Barrier® (ESR-1374) insert with 21 – 2-inch-by-2-inch (51 mm x 51 mm) squares cut in it. See Figure 4.

4.0 DESIGN AND INSTALLATION

4.1 SmartVENT® and FloodVENT®:

SmartVENT® and FloodVENT® are designed to be installed into walls or overhead doors of existing or new construction from the exterior side. Installation of the vents must be in accordance with the manufacturer's instructions, the applicable code and this report. Installation clips allow mounting in masonry and concrete walls of any thickness. In order to comply with the engineered opening design principle noted in Section 2.7.2.2 and 2.7.3 of ASCE/SEI 24-14 [Section 2.6.2.2 of ASCE/SEI 24-05 (2012, 2009, 2006 IBC and IRC)], the Smart Vent® FVs must be installed as follows:

- With a minimum of two openings on different sides of each enclosed area.
- With a minimum of one FV for every 200 square feet (18.6 m²) of enclosed area, except that the SmartVENT® Stacking Model #1540-511 and FloodVENT® Stacking Model #1540-521 must be installed with a minimum of one FV for every 400 square feet (37.2 m²) of enclosed area.
- Below the base flood elevation.
- With the bottom of the FV located a maximum of 12 inches (305.4 mm) above the higher of the final grade or floor and finished exterior grade immediately under each opening.

4.2 Flood Vent Sealing Kit:

The Flood Vent Sealing Kit Model 1540-526 is used in conjunction with FloodVENT® Model #1540-520. When installed and tested in accordance with ASTM E283, the FV and Flood Vent Sealing Kit assembly have an air leakage rate of less than 0.2 cubic feet per minute per lineal foot (18.56 l/min per lineal meter) at a pressure differential of 1 pound per square foot (50 Pa) based on 12.58 lineal feet (3.8 lineal meters) contained by the Flood Vent Sealing Kit.

5.0 CONDITIONS OF USE

The Smart Vent® FVs described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The Smart Vent® FVs must be installed in accordance with this report, the applicable code and the manufacturer's installation instructions. In the event of a conflict, the instructions in this report govern.

5.2 The Smart Vent® FVs must not be used in the place of "breakaway walls" in coastal high hazard areas, but are permitted for use in conjunction with breakaway walls in other areas.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Mechanically Operated Flood Vents (AC364), dated August 2015 (editorially revised February 2021).

6.2 Test report on air infiltration in accordance with ASTM E283.

7.0 IDENTIFICATION

7.1 The Smart VENT® models and the Flood Vent Sealing Kit described in this report must be identified by a label bearing the manufacturer's name (Smartvent Products, Inc.), the model number, and the evaluation report number (ESR-2074).

7.2 The report holder's contact information is the following:

SMART VENT PRODUCTS, INC.
18 MANTUA ROAD
MOUNT ROYAL, NEW JERSEY 08061
(877) 441-8368
www.smartvent.com
info@smartvent.com

TABLE 1—MODEL SIZES

MODEL NAME	MODEL NUMBER	MODEL SIZE (in.)	COVERAGE (sq. ft.)
FloodVENT®	1540-520	15⅞"x 7⅞"	200
SmartVENT®	1540-510	15⅞"x 7⅞"	200
FloodVENT® Overhead Door	1540-524	15⅞"x 7⅞"	200
SmartVENT® Overhead Door	1540-514	15⅞"x 7⅞"	200
Wood Wall FloodVENT®	1540-570	14" X 8⅛"	200
Wood Wall FloodVENT® Overhead Door	1540-574	14" X 8⅛"	200
SmartVENT® Stacker	1540-511	16" X 16"	400
FloodVent® Stacker	1540-521	16" X 16"	400

For SI: 1 inch = 25.4 mm, 1 square foot = m².

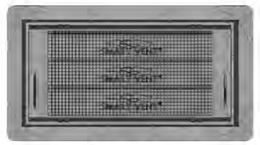

FIGURE 1—SMART VENT: MODEL 1540-510

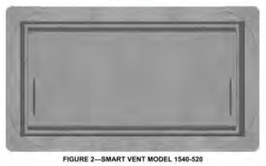

FIGURE 2—SMART VENT MODEL 1540-520

FIGURE 3—SMART VENT: SHOWN WITH FLOOD DOOR PIVOTED OPEN

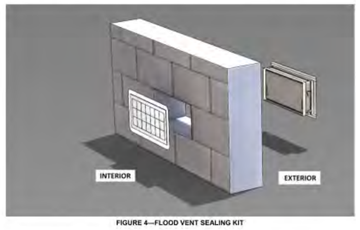

FIGURE 4—FLOOD VENT SEALING KIT

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ICC-ES Evaluation Report

ESR-2074 CBC and CRC Supplement

Reissued February 2023

This report is subject to renewal February 2025.

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DIVISION: 08 00 00—OPENINGS
Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514 FLOOD VENT SEALING KIT #1540-526

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Smart Vent® Automatic Foundation Flood Vents, described in ICC-ES evaluation report ESR-2074, have also been evaluated for compliance with codes noted below.

Applicable code editions:

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA, California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with 2019 CBC Chapter 12, provided the design and installation are in accordance with the 2018 *International Building Code®* (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 12 and 16 , as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with the 2019 CRC, provided the design and installation are in accordance with the 2018 *International Residential Code®* (IRC) provisions noted in the evaluation report.

This supplement expires concurrently with the evaluation report, reissued February 2023.

ICC ES ICC EVALUATION SERVICE

ICC-ES Evaluation Report

ESR-2074 FBC Supplement

Reissued February 2023

This report is subject to renewal February 2025.

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DIVISION: 08 00 00—OPENINGS
Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510; #1540-511; #1540-570; #1540-574; #1540-524; #1540-514 FLOOD VENT SEALING KIT #1540-526

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Smart Vent® Automatic Foundation Flood Vents, described in ICC-ES evaluation report ESR-2074, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 *Florida Building Code—Building*
- 2020 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design requirements are determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-2074 for 2018 *International Building Code®* meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable.

Use of the Smart Vent® Automatic Foundation Flood Vents has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential*.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued February 2023.

490 WOOD RIVER

OWNER:

450-490 WOOD RIVER, LLC
ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

PROJECT ARCHITECT:

RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

SURVEYOR & CIVIL ENGINEER:

BENCHMARK ASSOCIATES
100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
TEL: 208.726.9512

GEOTECHNICAL ENGINEER:

BUTLER ASSOCIATES, INC.
PO BOX 1034
KETCHUM, IDAHO 83340
TEL: 208.720.6432

LANDSCAPE ARCHITECT:

FIELD STUDIO
722 N ROUSE AVE
BOZEMAN, MT 59715
TEL: 406.551.2098

STRUCTURAL ENGINEER:

LABIB FUNK + ASSOCIATES
319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

MEP ENGINEER:

CES
1001 W. OAK STREET, SUITE 107
BOZEMAN, MT 59715
TEL: 406.272.0352

LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

LICENSED ARCHITECT
ZACHARY ROCKETT
AR-987275
STATE OF IDAHO

NO	DATE	ISSUE
1	6/23/23	FDP REVISION 1
	5/25/23	PERMIT SET
	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

FLOOD VENT SPEC / TESTING

DRAWING NUMBER:

G-014

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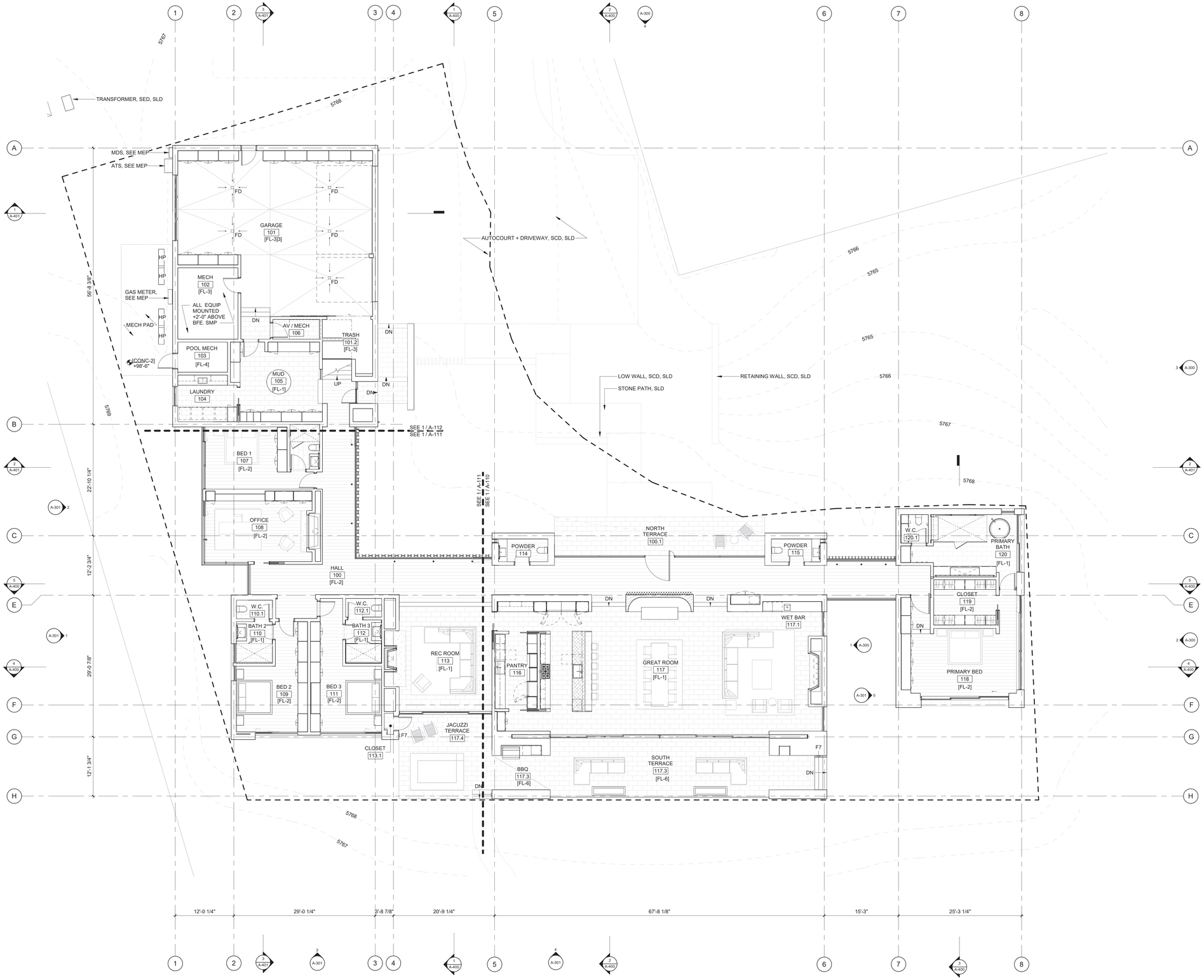

NOTES:

1. SEE LANDSCAPE DRAWINGS FOR PLANTING AND LANDSCAPE INFORMATION
2. SEE CIVIL DRAWINGS FOR DRIVEWAY AND SITE DRAINAGE INFORMATION
3. USGS ELEVATION +5769.5" IS NOTED AS + 100'-0" IN SUBSEQUENT ARCHITECTURAL DRAWINGS
4. COORDINATE STARTPOINT WITH CIVIL
5. SEE G-200 FOR MORE INFORMATION REGARDING ROOF ASSEMBLIES

1 | 1/8" = 1'-0" | **REFERENCE PLAN / LEVEL 01**

490 WOOD RIVER

OWNER:

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ATTN: MATT SCOGGINS
PO BOX 1400-174
KETCHUM, ID 83340
TEL: 214.557.5533

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RO | ROCKETT DESIGN
1306 BRIDGEWAY, FLOOR 2
SAUSALITO, CA 94965
TEL: 415.289.0830

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100 BELL DRIVE, SUITE C
KETCHUM, IDAHO 83340
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319 MAIN STREET
EL SEGUNDO, CA 90245
TEL: 213.239.9700

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CES
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LIGHTING DESIGNER:

KGM ARCHITECTURAL LIGHTING
270 CORAL CIR
EL SEGUNDO, CA 90245
TEL: 310.552.2191

SEAL:

NO	DATE	ISSUE
1	04/25/23	FDP SET

PROJECT:

490 WOOD RIVER

490 WOOD RIVER
KETCHUM, ID 83340

PROJECT NUMBER

2109

DRAWING TITLE:

REFERENCE PLAN / LEVEL 01

DRAWING NUMBER:

A-101

-

National Flood Insurance Program

Elevation Certificate

and Instructions

2022 EDITION

FEMA

OMB Control No. 1660-0008
Expiration Date: 06/30/2026

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

ELEVATION CERTIFICATE AND INSTRUCTIONS

PAPERWORK REDUCTION ACT NOTICE

Public reporting burden for this data collection is estimated to average 3.75 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and submitting this form. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street SW, Washington, DC 20742, Paperwork Reduction Project (1660-0008). **NOTE: Do not send your completed form to this address.**

PRIVACY ACT STATEMENT

Authority: Title 44 CFR § 61.7 and 61.8.

Principal Purpose(s): This information is being collected for the primary purpose of documenting compliance with National Flood Insurance Program (NFIP) floodplain management ordinances for new or substantially improved structures in designated Special Flood Hazard Areas. This form may also be used as an optional tool for a Letter of Map Amendment (LOMA), Conditional LOMA (CLOMA), Letter of Map Revision Based on Fill (LOMR-F), or Conditional LOMR-F (CLOMR-F), or for flood insurance rating purposes in any flood zone.

Routine Use(s): The information on this form may be disclosed as generally permitted under 5 U.S.C. § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/ FEMA-003 – *National Flood Insurance Program Files System of Records Notice* 79 Fed. Reg. 28747 (May 19, 2014) and upon written request, written consent, by agreement, or as required by law.

Disclosure: The disclosure of information on this form is voluntary; however, failure to provide the information requested may impact the flood insurance premium through the NFIP. Information will only be released as permitted by law.

PURPOSE OF THE ELEVATION CERTIFICATE

The Elevation Certificate is an important administrative tool of the NFIP. It can be used to provide elevation information necessary to ensure compliance with community floodplain management ordinances, to inform the proper insurance premium, and to support a request for a LOMA, CLOMA, LOMR-F, or CLOMR-F.

The Elevation Certificate is used to document floodplain management compliance for Post-Flood Insurance Rate Map (FIRM) buildings, which are buildings constructed after publication of the FIRM, located in flood Zones A1–A30, AE, AH, AO, A (with Base Flood Elevation (BFE)), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, and A99. It may also be used to provide elevation information for Pre-FIRM buildings or buildings in any flood zone.

As part of the agreement for making flood insurance available in a community, the NFIP requires the community to adopt floodplain management regulations that specify minimum requirements for reducing flood losses. One such requirement is for the community to obtain the elevation of the lowest floor (including basement) of all new and substantially improved buildings, and maintain a record of such information. The Elevation Certificate provides a way for a community to document compliance with the community's floodplain management ordinance.

Use of this certificate does not provide a waiver of the flood insurance purchase requirement. Only a LOMA or LOMR-F from the Federal Emergency Management Agency (FEMA) can amend the FIRM and remove the federal mandate for a lending institution to require the purchase of flood insurance. However, the lending institution has the option of requiring flood insurance even if a LOMA/LOMR-F has been issued by FEMA. The Elevation Certificate may be used to support a LOMA, CLOMA, LOMR-F, or CLOMR-F request. Lowest Adjacent Grade (LAG) elevations certified by a land surveyor, engineer, or architect, as authorized by state law, will be required if the certificate is used to support a LOMA, CLOMA, LOMR-F, or CLOMR-F request. A LOMA, CLOMA, LOMR-F, or CLOMR-F request must be submitted with either a completed FEMA MT-EZ or MT-1 application package, whichever is appropriate. If the certificate will only be completed to support a LOMA, CLOMA, LOMR-F, or CLOMR-F request, there is an option to document the certified LAG elevation on the Elevation Form included in the MT-EZ and MT-1 application.

This certificate is used only to certify building elevations. A separate certificate is required for floodproofing. Under the NFIP, non-residential buildings can be floodproofed up to or above the BFE. A floodproofed building is a building that has been designed and constructed to be watertight (substantially impermeable to floodwaters) below the BFE. Floodproofing of residential buildings is not permitted under the NFIP unless FEMA has granted the community an exception for residential floodproofed basements. The community must adopt standards for design and construction of floodproofed basements before FEMA will grant a basement exception. For both floodproofed non-residential buildings and residential floodproofed basements in communities that have been granted an exception by FEMA, a floodproofing certificate is required.

The expiration date on the form herein does not apply to certified and completed Elevation Certificates, as a completed Elevation Certificate does not expire, unless there is a physical change to the building that invalidates information in Section A Items A8 or A9, Section C, Section E, or Section H. In addition, this form is intended for the specific building referenced in Section A and is not invalidated by the transfer of building ownership.

Additional guidance can be found in FEMA Publication 467-1, *Floodplain Management Bulletin: Elevation Certificate*.

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB Control No. 1660-0008
Expiration Date: 06/30/2026

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

Policy Number:

Company NAIC Number:

A1. Building Owner's Name: 450-490 Wood River, LLC

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.:
490 Wood River Drive

City: Ketchum State: ID ZIP Code: 83340

A3. Property Description (e.g., Lot and Block Numbers or Legal Description) and/or Tax Parcel Number:
RPK04740000040

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Residential

A5. Latitude/Longitude: Lat. 43.67418 Long. -114.37100 Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983 ☐ WGS 84

A6. Attach at least two and when possible four clear photographs (one for each side) of the building (see Form pages 7 and 8).

A7. Building Diagram Number: 1B

A8. For a building with a crawlspace or enclosure(s):

a) Square footage of crawlspace or enclosure(s): _____ sq. ft.

b) Is there at least one permanent flood opening on two different sides of each enclosed area? ☐ Yes ☐ No ☒ N/A

c) Enter number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade:
Non-engineered flood openings: _____ Engineered flood openings: _____

d) Total net open area of non-engineered flood openings in A8.c: _____ sq. in.

e) Total rated area of engineered flood openings in A8.c (attach documentation – see Instructions): _____ sq. ft.

f) Sum of A8.d and A8.e rated area (if applicable – see Instructions): _____ sq. ft.

A9. For a building with an attached garage:

a) Square footage of attached garage: 1,340.00 sq. ft.

b) Is there at least one permanent flood opening on two different sides of the attached garage? ☒ Yes ☐ No ☐ N/A

c) Enter number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade:
Non-engineered flood openings: _____ Engineered flood openings: 12

d) Total net open area of non-engineered flood openings in A9.c: _____ sq. in.

e) Total rated area of engineered flood openings in A9.c (attach documentation – see Instructions): 2,400.00 sq. ft.

f) Sum of A9.d and A9.e rated area (if applicable – see Instructions): _____ sq. ft.

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1.a. NFIP Community Name: City of Ketchum B1.b. NFIP Community Identification Number: 160023

B2. County Name: Blaine B3. State: ID B4. Map/Panel No.: _____ B5. Suffix: _____

B6. FIRM Index Date: 11/26/2010 B7. FIRM Panel Effective/Revised Date: 11/26/2010

B8. Flood Zone(s): AE B9. Base Flood Elevation(s) (BFE) (Zone AO, use Base Flood Depth): 5768.6

B10. Indicate the source of the BFE data or Base Flood Depth entered in Item B9:
☐ FIS ☐ FIRM ☐ Community Determined ☒ Other: Draft floodplain maps per city's direction (published Oct. 2022)

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: _____ ☐ CBRS ☐ OPA

B13. Is the building located seaward of the Limit of Moderate Wave Action (LiMWA)? ☐ Yes ☒ No

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 490 Wood River Drive

City: Ketchum State: ID ZIP Code: 83340

FOR INSURANCE COMPANY USE

Policy Number:

Company NAIC Number:

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☒ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, AO, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, A99. Complete Items C2.a–h below according to the Building Diagram specified in Item A7. In Puerto Rico only, enter meters.
Benchmark Utilized: N/A For Construction Drawings Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below.
☐ NGVD 1929 ☒ NAVD 1988 ☐ Other:

Datum used for building elevations must be the same as that used for the BFE. Conversion factor used? ☐ Yes ☒ No
If Yes, describe the source of the conversion factor in the Section D Comments area.

		Check the measurement used:
a) Top of bottom floor (including basement, crawlspace, or enclosure floor):	5,770.60	☒ feet ☐ meters
b) Top of the next higher floor (see Instructions):	5,782.60	☒ feet ☐ meters
c) Bottom of the lowest horizontal structural member (see Instructions):		☐ feet ☐ meters
d) Attached garage (top of slab):	5,769.10	☒ feet ☐ meters
e) Lowest elevation of Machinery and Equipment (M&E) servicing the building (describe type of M&E and location in Section D Comments area):	5,770.60	☒ feet ☐ meters
f) Lowest Adjacent Grade (LAG) next to building: ☐ Natural ☒ Finished	5,768.00	☒ feet ☐ meters
g) Highest Adjacent Grade (HAG) next to building: ☐ Natural ☒ Finished	5,770.60	☒ feet ☐ meters
h) Finished LAG at lowest elevation of attached deck or stairs, including structural support:	5,768.00	☒ feet ☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by state law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

Were latitude and longitude in Section A provided by a licensed land surveyor? ☐ Yes ☒ No

☐ Check here if attachments and describe in the Comments area.

Certifier's Name: Phoebe Johanessen License Number: 17661

Title: Engineering Manager

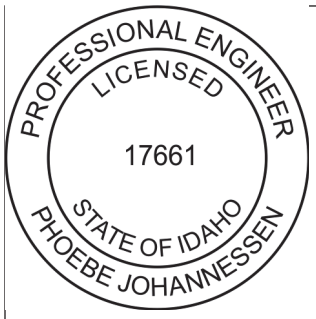
Company Name: Galena-Benchmark Engineering

Address: 100 Bell Drive

City: Ketchum State: ID ZIP Code: 83340

Signature: Phoebe Johannessen Date: 8/23/2023

Telephone: (208) 726-9512 Ext.: Email: phoebe@galena-benchmark.com



Place Seal Here

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including source of conversion factor in C2; type of equipment and location per C2.e; and description of any attachments):
Flood vents are Smart Vent Model #1540-520. (See attachment G-014)
Flood Vent Diagram (G-013)
Elevation of Mechanical Equipment (Sheet A-101)

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 490 Wood River Drive

City: Ketchum State: ID ZIP Code: 83340

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

SECTION E – BUILDING MEASUREMENT INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO, ZONE AR/AO, AND ZONE A (WITHOUT BFE)

For Zones AO, AR/AO, and A (without BFE), complete Items E1–E5. For Items E1–E4, use natural grade, if available. If the Certificate is intended to support a Letter of Map Change request, complete Sections A, B, and C. Check the measurement used. In Puerto Rico only, enter meters.

Building measurements are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction

*A new Elevation Certificate will be required when construction of the building is complete.

E1. Provide measurements (C.2.a in applicable Building Diagram) for the following and check the appropriate boxes to show whether the measurement is above or below the natural HAG and the LAG.

a) Top of bottom floor (including basement, crawlspace, or enclosure) is: _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is: _____ ☐ feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of Instructions), the next higher floor (C2.b in applicable Building Diagram) of the building is: _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is: _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is: _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without BFE) or Zone AO must sign here. *The statements in Sections A, B, and E are correct to the best of my knowledge*

☐ Check here if attachments and describe in the Comments area.

Property Owner or Owner's Authorized Representative Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Signature: _____ Date: _____

Telephone: Ext.: _____ Email: _____

Comments:

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 490 Wood River Drive

City: Ketchum State: ID ZIP Code: 83340

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

SECTION G – COMMUNITY INFORMATION (RECOMMENDED FOR COMMUNITY OFFICIAL COMPLETION)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Section A, B, C, E, G, or H of this Elevation Certificate. Complete the applicable item(s) and sign below when:

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by state law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2.a. ☐ A local official completed Section E for a building located in Zone A (without a BFE), Zone AO, or Zone AR/AO, or when item E5 is completed for a building located in Zone AO.

G2.b. ☐ A local official completed Section H for insurance purposes.

G3. ☐ In the Comments area of Section G, the local official describes specific corrections to the information in Sections A, B, E and H.

G4. ☐ The following information (Items G5–G11) is provided for community floodplain management purposes.

G5. Permit Number: _____ G6. Date Permit Issued: _____

G7. Date Certificate of Compliance/Occupancy Issued: _____

G8. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement

G9.a. Elevation of as-built lowest floor (including basement) of the building: _____ ☐ feet ☐ meters Datum: _____

G9.b. Elevation of bottom of as-built lowest horizontal structural member: _____ ☐ feet ☐ meters Datum: _____

G10.a. BFE (or depth in Zone AO) of flooding at the building site: _____ ☐ feet ☐ meters Datum: _____

G10.b. Community's minimum elevation (or depth in Zone AO) requirement for the lowest floor or lowest horizontal structural member: _____ ☐ feet ☐ meters Datum: _____

G11. Variance issued? ☐ Yes ☐ No If yes, attach documentation and describe in the Comments area.

The local official who provides information in Section G must sign here. *I have completed the information in Section G and certify that it is correct to the best of my knowledge. If applicable, I have also provided specific corrections in the Comments area of this section.*

Local Official's Name: _____ Title: _____

NFIP Community Name: _____

Telephone: Ext.: _____ Email: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Signature: _____ Date: _____

Comments (including type of equipment and location, per C2.e; description of any attachments; and corrections to specific information in Sections A, B, D, E, or H):

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 490 Wood River Drive

City: Ketchum State: ID ZIP Code: 83340

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

SECTION H – BUILDING'S FIRST FLOOR HEIGHT INFORMATION FOR ALL ZONES (SURVEY NOT REQUIRED) (FOR INSURANCE PURPOSES ONLY)

The property owner, owner's authorized representative, or local floodplain management official may complete Section H for all flood zones to determine the building's first floor height for insurance purposes. Sections A, B, and I must also be completed. Enter heights to the nearest tenth of a foot (nearest tenth of a meter in Puerto Rico). ***Reference the Foundation Type Diagrams (at the end of Section H Instructions) and the appropriate Building Diagrams (at the end of Section I Instructions) to complete this section.***

H1. Provide the height of the top of the floor (as indicated in Foundation Type Diagrams) above the Lowest Adjacent Grade (LAG):

a) **For Building Diagrams 1A, 1B, 3, and 5–9.** Top of bottom floor (include above-grade floors only for buildings with subgrade crawlspaces or enclosure floors) is: _____ ☐ feet ☐ meters ☐ above the LAG

b) **For Building Diagrams 2A, 2B, 4, and 6–9.** Top of next higher floor (i.e., the floor above basement, crawlspace, or enclosure floor) is: _____ ☐ feet ☐ meters ☐ above the LAG

H2. Is **all** Machinery and Equipment servicing the building (as listed in Item H2 instructions) elevated to or above the floor indicated by the H2 arrow (shown in the Foundation Type Diagrams at end of Section H instructions) for the appropriate Building Diagram?

☐ Yes ☐ No

SECTION I – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and H must sign here. *The statements in Sections A, B, and H are correct to the best of my knowledge.* **Note:** If the local floodplain management official completed Section H, they should indicate in Item G2.b and sign Section G.

☐ Check here if attachments are provided (including required photos) and describe each attachment in the Comments area.

Property Owner or Owner's Authorized Representative Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Signature: _____ Date: _____

Telephone: Ext.: _____ Email: _____

Comments:

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

BUILDING PHOTOGRAPHS

See Instructions for Item A6.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.:
490 Wood River Drive

City: Ketchum State: ID ZIP Code: 83340

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

Instructions: Insert below at least two and when possible four photographs showing each side of the building (for example, may only be able to take front and back pictures of townhouses/rowhouses). Identify all photographs with the date taken and "Front View," "Rear View," "Right Side View," or "Left Side View." Photographs must show the foundation. When flood openings are present, include at least one close-up photograph of representative flood openings or vents, as indicated in Sections A8 and A9.

Photo One

Photo One Caption:

Clear Photo One

Photo Two

Photo Two Caption:

Clear Photo Two

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

BUILDING PHOTOGRAPHS

Continuation Page

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.:
490 Wood River Drive

City: Ketchum State: ID ZIP Code: 83340

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

Insert the third and fourth photographs below. Identify all photographs with the date taken and "Front View," "Rear View," "Right Side View," or "Left Side View." When flood openings are present, include at least one close-up photograph of representative flood openings or vents, as indicated in Sections A8 and A9.

Photo Three

Photo Three Caption:

Clear Photo Three

Photo Four

Photo Four Caption:

Clear Photo Four

INSTRUCTIONS FOR COMPLETING THE ELEVATION CERTIFICATE

The Elevation Certificate is to be completed by a land surveyor, engineer, or architect who is authorized by state law to certify elevation information when elevation information is required or used for Zones A1–A30, AE, AH, AO, A (with Base Flood Elevation (BFE)), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, or A99.

Community officials who are authorized by law or ordinance to provide floodplain management information (herein referred to as "local floodplain management official") may also complete this form. For Zones AO, AR/AO, and A (without BFE), a local floodplain management official, a property owner, or an owner's authorized representative may provide floodplain management compliance information on this certificate in Section E, unless the elevations are intended for use in supporting a request for a LOMA, CLOMA, LOMR-F, or CLOMR-F. Certified elevations must be included if the purpose of completing the Elevation Certificate is to obtain a LOMA, CLOMA, LOMR-F, or CLOMR-F.

The property owner, the owner's authorized representative, or local floodplain management official can complete Section A and Section B. The partially completed form can then be given to the land surveyor, engineer, or architect to complete Section C. The land surveyor, engineer, or architect should verify the information provided by the property owner or owner's representative to ensure that this certificate is complete.

For insurance purposes only, a local floodplain management official, a property owner, or an owner's authorized representative may provide First Floor Height details in Section H for any zone.

In Puerto Rico only, elevations for building information and flood hazard information may be entered in meters.

Note: Section C can be used for insurance and compliance in any zone; however, Section E can be used only for compliance in Zone AO and Zone A.

SECTION A – PROPERTY INFORMATION

Items A1–A4. This section identifies the building, its location, and its owner. Enter the name(s) of the building owner(s), the building's complete street address or property description (e.g., lot and block numbers or legal description), and/or tax parcel number. If the building's address is different from the owner's address, enter the address of the building being certified. If the address is a rural route or a Post Office box number, enter the lot and block numbers, the tax parcel number, the legal description, or an abbreviated location description based on distance and direction from a fixed point of reference. For the purposes of this certificate, "building" means both a building and a manufactured (mobile) home. For properties with multiple buildings, include a description for the specific building.

A map may be attached to this certificate to show the location of the building on the property. A tax map, Flood Insurance Rate Map (FIRM), or detailed community map is appropriate. If no map is available, provide a sketch of the property location, and the location of the building on the property. Include appropriate landmarks such as nearby roads, intersections, and bodies of water. For building use, indicate whether the building is residential, non-residential, an addition to an existing residential or non- residential building, an accessory building (e.g., garage), or other type of structure. Use the Comments area of the appropriate section if needed, or attach additional comments.

Item A5. Provide latitude and longitude coordinates for the center of the front of the building. Use either decimal degrees (e.g., 39.504322°, −110.758522°) or degrees, minutes, seconds (e.g., 39° 30' 15.56", −110° 45' 30.68") format. If decimal degrees are used, provide coordinates to at least six decimal places or better. When using degrees, minutes, seconds, provide seconds to at least two decimal places or better. Provide the datum of the latitude and longitude coordinates (FEMA prefers the use of NAD 1983). Indicate the method or source used to determine the latitude and longitude in the Comments area of the appropriate section. When the latitude and longitude are provided by a land surveyor, check the "Yes" box in Section D.

Item A6. The certifier must provide at least two and when possible four photographs showing each side of the building taken within 90 days from the date of certification. The photographs must be taken with views confirming the building description and Building Diagram number provided in Item A7. To the extent possible, these photographs should show the entire building including foundation. In addition, when applicable, provide a photograph of the foundation showing a representative example of the flood openings or vents. All photographs must be in color and measure at least 3"×3". Digital photographs are acceptable. Additional photographs may be requested by local floodplain management officials or for insurance purposes to show additional detail regarding the building characteristics or features.

Item A7. Select the Building Diagram (shown on pages 17-19) that best represents the building. Then enter the diagram number and use the diagram to identify and determine the appropriate elevations requested in Items C2.a–h. If you are unsure of the correct diagram, select the diagram that most closely resembles the building being certified.

Item A8.a. Provide the square footage of the crawlspace or enclosure(s) below the lowest elevated floor of an elevated building with or without permanent flood openings. Take the measurement from the outside of the crawlspace or enclosure(s). Examples of elevated buildings constructed with crawlspace and enclosure(s) are shown in Diagrams 6-9 on pages 18-19. Diagram 2A, 2B, 4, or 9 should be used for a building constructed with a crawlspace floor that is below the exterior grade on all sides. If there is no crawlspace or enclosure, enter "N/A" for Items A8.a-f.

Item A8.b. Indicate if there is at least one permanent flood opening within 1.0 foot of the adjacent grade on at least two exterior walls of each enclosed area identified in A8.a. A permanent flood opening is a flood vent or other opening that allows the free passage of water automatically in both directions without human intervention. If the crawlspace or enclosure(s) have no permanent flood openings, or if none of the openings are within 1.0 foot above adjacent grade, enter "0" (zero) in Item A8.c-f. If there is no crawlspace or enclosure, enter "N/A".

SECTION A – PROPERTY INFORMATION *(Continued)*

Item A8.c. Enter the total number of permanent non-engineered and/or engineered flood openings in the crawlspace or enclosure(s) that are no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. If the interior grade elevation is used, note this in the Comments area of Section D.

Item A8.d. Enter the total measured net open area of permanent non-engineered flood openings indicated in A8.c in square inches, excluding any bars, louvers, or other covers of the permanent flood openings. Non-engineered openings that meet the requirements of NFIP Technical Bulletin 1 are assumed to provide one square foot of rated area for each square inch of net open area. If the net open area cannot be measured, provide in the Comments area of the appropriate section the size of the flood openings without consideration of any covers and indicate the type of cover that exists in the flood openings.

Item A8.e. Enter the total rated area of the permanent engineered flood openings indicated in A8.c, in square feet. Attach a copy of the Individual Engineered Flood Openings Certification for a specific building or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES) for all engineered openings, and indicate the manufacturer's name and model number in the Comments area of the appropriate section, if applicable. Flood openings cannot be considered engineered flood openings without documentation. If no documentation is available/ provided, enter the net open (unobstructed) area of the flood openings in A8.d instead.

Item A8.f. Complete only if permanent engineered and permanent non-engineered flood openings are both present. Enter the sum of A8.d (net open area of all non-engineered openings) and A8.e (total rated area of all engineered openings). Non-engineered openings that meet the requirements of NFIP Technical Bulletin 1 are assumed to provide one square foot of rated area for each square inch of net open area. For example, a non-engineered opening with 140 sq. in. of net open area (i.e., rated for 140 sq. ft. of enclosure area), combined with two (2) engineered openings rated for 200 sq. ft. each, would yield 140 + 400 = 540 sq. ft. rated area. If either A8.d or A8.e is “0”, then enter “N/A” for A8.f.

Item A9.a. Provide the square footage of the attached garage with or without permanent flood openings. Take the measurement from the outside of the garage. If there is no attached garage, enter "N/A" for items A9.a-f.

Item A9.b. Indicate if there is at least one permanent flood opening within 1.0 foot of the adjacent grade on at least two exterior walls of the attached garage identified in A9.a. If the attached garage has no permanent flood openings, or if none of the openings are within 1.0 foot above adjacent grade, enter “0” (zero) in Items A9.c-f. If there is no attached garage, enter “N/A”.

Item A9.c. Enter the total number of permanent non-engineered and/or engineered flood openings in the attached garage that are no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. This includes any openings that are in the garage door that are no higher than 1.0 foot above the adjacent grade. If the interior grade elevation is used, note this in the Comments area of Section D.

Item A9.d. Enter the total measured net open area of permanent non-engineered flood openings indicated in A9.c in square inches, excluding any bars, louvers, or other covers of the permanent flood openings, and enter the total in Item A9.d. Non-engineered openings that meet the requirements of NFIP Technical Bulletin 1 are assumed to provide one square foot of rated area for each square inch of net open area. If the net open area cannot be measured, provide in the Comments area of the appropriate section the size of the flood openings without consideration of any covers and indicate the type of cover that exists in the flood openings.

Item A9.e. Enter the total rated area of the permanent engineered flood openings indicated in A9.c in square feet. Attach a copy of the Individual Engineered Flood Openings Certification for a specific building or an Evaluation Report issued by the ICC ES for all engineered openings, and indicate the manufacturer's name and model number in the Comments area of the appropriate section, if applicable. Flood openings cannot be considered engineered flood openings without documentation. If no documentation is available/provided, enter the net open (unobstructed) area of the flood openings in A9.d instead.

Item A9.f. Complete only if permanent engineered and permanent non-engineered flood openings are both present. Enter the sum of A9.d (net open area of all non-engineered openings) and A9.e (total rated area of all engineered openings). Non-engineered openings that meet the requirements of NFIP Technical Bulletin 1 are assumed to provide one square foot of rated area for each square inch of net open area. For example, a non-engineered opening with 140 sq. in. of net open area (i.e., rated for 140 sq. ft. of enclosure area), combined with two (2) engineered openings rated for 200 sq. ft. each, would yield 140 + 400 = 540 sq. ft. rated area. If either A9.d or A9.e is “0”, then enter “N/A” for A9.f.

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Complete the Elevation Certificate using the Flood Insurance Study (FIS) and FIRM in effect at the time of the certification.

The information for Section B is obtained by reviewing the FIS and the FIRM panel that includes the building's location. Information about the current FIS and FIRM is available from FEMA by visiting msc.fema.gov or contacting the local floodplain management official. If a Letter of Map Amendment (LOMA), Letter of Map Revision Based on Fill (LOMR-F), or Letter of Map Revision (LOMR) has been issued by FEMA, please provide the letter date and case number in the Comments area of Section D or Section G, as appropriate.

For a building in an area that was mapped in one community but is now in another community due to annexation or dissolution, enter the community name and six-digit Community Identification Number of the community in which the building is now located in Items B1.a and B1.b; the name of the county or new county, if necessary, in Item B2; and the FIRM index date for the community identified in B1.a, in Item B6. Enter information from the actual FIRM panel that shows the building location, even if it is the FIRM for the previous jurisdiction, in Items B4, B5, B7, B8, and B9.

If the map in effect at the time of the building's construction was other than the current FIRM, and you have the past map information pertaining to the building, provide the information in the Comments area of Section D.

Note: Indicate in the Comments area of Section D if using information based on best available data, such as base-level engineering or advisory flood hazard data (contact the local floodplain management official to confirm).

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION *(Continued)*

Items B1.a–b NFIP Community Name and Community Identification Number. Enter the complete name of the community in which the building is located in B1.a, and the associated six-digit Community Identification Number in B1.b. For an unincorporated area of a county, enter the county name and “unincorporated area”, and the six-digit number of the county. For a newly incorporated community, use the name and six-digit number of the new community. Under the NFIP, a "community" is any state or area or political subdivision thereof, or any Indian tribe or authorized native organization which has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction. To determine the current community number, see the NFIP *Community Status Book*, available on FEMA's website at **www.fema.gov/national-flood-insurance-program-community-status-book**.

Item B2. County Name. Enter the name of the county or counties in which the community is located. For an unincorporated area of a county, enter the county name. For an independent city, enter "independent city."

Item B3. State. Enter the two-letter state abbreviation (for example, VA, TX, CA).

Items B4–B5. Map/Panel Number and Suffix. Enter the 10-character "Map Number" or "Community Panel Number" shown on the FIRM where the building or manufactured (mobile) home is located. For maps in a county-wide format, the sixth character of the "Map Number" is the letter "C" followed by a four-digit map number. For maps not in a county-wide format, enter the "Community Panel Number" shown on the FIRM.

Item B6. FIRM Index Date. Enter the effective date or the map revised date shown on the FIRM Index.

Item B7. FIRM Panel Effective/Revised Date. Enter the effective date shown on the current FIRM panel. The current FIRM panel effective date can be determined by visiting **msc.fema.gov** or contacting the local floodplain management official. If the area where the building is located was revised by a LOMR, include the LOMR effective date and the LOMR case number in the comments area of Section D.

Item B8. Flood Zone(s). Enter the flood zone, or flood zones, in which the building is located. All flood zones containing the letter "A" or "V" are considered Special Flood Hazard Areas (SFHAs). Each flood zone is defined in the legend of the FIRM panel on which it appears. If the area where the building is located was revised by a LOMA, CLOMA, LOMR-F, or CLOMR-F, include the flood zone shown on the LOMA, CLOMA, LOMR-F, or CLOMR-F, and add the effective date and case number in the comments area of Section D.

Item B9. Base Flood Elevation(s) (BFE). Using the appropriate Flood Insurance Study (FIS) Profile, FIS Data Table (e.g. Transect, Floodway, etc.), or FIRM panel, locate the property and enter the BFE (or base flood depth) of the building site to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico). If the building is located in more than one flood zone in Item B8, list all appropriate BFEs in Item B9.

BFEs are shown in the FIS or on a FIRM for Zones A1–A30, AE, AH, V1–V30, VE, AR, AR/A, AR/AE, AR/A1–A30, and AR/AH; base flood depths are shown for Zones AO and AR/AO. Use the AR BFE (or base flood depth) if the building is located in any of these zones: AR/A, AR/AE, AR/A1–A30, AR/AH, or AR/AO.

In A or V zones where BFEs are not provided in the FIS or on the FIRM, BFEs may be available from another source. For example, the community may have established BFEs or obtained BFE data from other sources (e.g., Base Level Engineering) for the building site. For subdivisions and other developments of more than 50 lots or 5 acres in Zone A, establishment of BFEs is required by the community's floodplain management ordinance. If a BFE is obtained from another source, enter the BFE in Item B9. The BFE entered in Item B9 must be based on hydrologic and hydraulic analyses. In an A Zone where BFEs are not obtained from another source, enter N/A in Item B9 and complete Section E.

Item B10. Indicate the source of the BFE or base flood depth that you entered in Item B9. If the BFE is from a source other than the FIS, FIRM, or community, include the name of the study, the agency or company that produced it, and the date when the study was completed. Visit msc.fema.gov or contact the local floodplain management official to access the current FIS and FIRM.

Item B11. Indicate the elevation datum to which the elevations on the applicable FIRM are referenced as shown on the map legend. The vertical datum is shown in the Map Legend and/or the Notes to Users on the FIRM.

Item B12. Indicate whether the building is located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA). OPAs are portions of coastal barriers that are owned by Federal, State, or local governments or by certain non-profit organizations and used primarily for natural resources protection. CBRS areas and OPAs are no longer shown on the FIRM; please use the maps available at **www.fws.gov/cbra/maps/index.html** to complete Item B12. Federal flood insurance is prohibited in designated CBRS areas or OPAs for buildings or manufactured (mobile) homes built or substantially improved after the date of the CBRS or OPA designation. For the first CBRS designations, that date is October 1, 1983. Information about CBRS areas and OPAs may be obtained on the FEMA website at **www.fema.gov/national-flood-insurance-program/coastal-barrier-resources-system**.

Item B13. Indicate whether the building is located seaward of the Limit of Moderate Wave Action (LiMWA). If the LiMWA is not shown on the FIRM, check the “No” box. Information about the LiMWA and other coastal flood zones may be obtained on the FEMA website at **www.fema.gov/flood-maps/coastal/insurance-rate-maps**.

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

Complete Section C if the building is located in any of Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, or A99. If the Certificate is being completed to demonstrate compliance with local floodplain management requirements, contact the local floodplain management official to find out any additional requirements. Section C may also be completed for insurance purposes to determine the building's First Floor Height in any flood zone (including Zones AO, AR/AO, B, C, X and D). In addition, complete Section C if this certificate is being used to support a request for a LOMA, CLOMA, LOMR-F, or CLOMR-F.

To ensure that all required elevations are obtained, it may be necessary to physically enter the building (for instance, if the building has a basement or sunken living room, split-level construction, or Machinery and Equipment (M&E)).

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED) *(Continued)*

Land surveyors may not be able to gain access to some crawlspaces to shoot the elevation of the crawlspace floor. If access to the crawlspace is limited or cannot be gained, follow one of these procedures.

- Use a yardstick or tape measure to measure the height from the floor of the crawlspace to the "next higher floor," and then subtract the crawlspace height from the elevation of the "next higher floor." If there is no access to the crawlspace, use the exterior grade next to the structure to measure the height of the crawlspace to the "next higher floor."
- Contact the local floodplain management official of the community in which the building is located. The community may have documentation of the elevation of the crawlspace floor as part of the permit issued for the building.
- If the property owner has documentation or knows the height of the crawlspace floor to the next higher floor, try to verify this by looking inside the crawlspace through any openings or vents.

In all three cases, use the Comments area of Section D to provide the elevation and a brief description of how the elevation was obtained.

Note: If any item does not apply to the building, enter "N/A" for not applicable.

Item C1. Indicate whether the elevations to be entered in this section are based on construction drawings, a building under construction, or finished construction. For either of the first two choices, a post-construction Elevation Certificate will be required when construction is complete. If the building is under construction, include only those elevations that can be surveyed in Items C2.a–h. Use the Comments area of Section D to provide elevations obtained from the construction plans or drawings. Select "Finished Construction" only when all M&E such as furnaces, water heaters, heat pumps, air conditioners, and elevators and their associated equipment have been installed and the grading around the building is completed.

Item C2. A field survey is required for Items C2.a–h. Most control networks will assign a unique identifier for each benchmark. For example, the National Geodetic Survey uses the Permanent Identifier (PID). For the benchmark utilized, provide the PID or other unique identifier assigned by the maintainer of the benchmark. For GPS survey, indicate the benchmark used for the base station, the Continuously Operating Reference Stations (CORS) sites used for an Online Positioning User Service (OPUS) solution (also attach the OPUS report), or the name of the Real Time Network used.

Also provide the vertical datum for the benchmark elevation. All elevations for the certificate, including the elevations for Items C2.a–h, must use the same datum on which the BFE is based. Show the conversion from the field survey datum used if it differs from the datum used for the BFE entered in Item B9 and indicate the conversion software used. Show the datum conversion, if applicable, in the Comments area of Section D.

For property experiencing ground subsidence, the most recent reference mark elevations must be used for determining building elevations. However, when subsidence is involved, the BFE should not be adjusted.

Note: Enter elevations in Items C2.a–h to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico); if data is surveyed to the nearest hundredth, round to the nearest tenth.

Item C2.a. Enter the elevation measured at the top of the bottom floor (excluding the attached garage) indicated by the selected Building Diagram (Item A7). For buildings elevated on a crawlspace, Building Diagrams 8 and 9, enter the lowest elevation of the top of the crawlspace floor in Item C2.a, whether or not the crawlspace has permanent flood openings (flood vents).

Item C2.b. For Building Diagrams 2A through 9 in any flood zone, including Zones B, C, X, and D, enter the elevation measured at the top of the next higher floor (excluding the attached garage) indicated by the selected Building Diagram (Item A7). For buildings requiring more than two floors or levels to be surveyed, such as those with multiple floors or multi-level enclosures, enter the additional surveyed elevations and floor descriptions in the Section D Comments, and clarify which floors are entered as Item C2.a and C2.b.

Item C2.c. For floodplain management compliance, this elevation is required for all Building Diagrams 5 and 6 in V Zones in areas seaward of the LiMWA, and in other areas regulated for coastal flooding hazards. Enter the elevation measured at the bottom of the lowest horizontal structural member of the floor indicated by the selected Building Diagram (Item A7) or the figure below. This elevation can be entered for Building Diagrams 5 and 6 in any flood zone, including Zones B, C, X, and D. For Building Diagrams other than 5 and 6 (if applicable), enter the C2.c elevation as indicated in the figure below. *If this item does not apply to the building, enter "N/A" for not applicable.*

Item C2.d. If there is an attached garage, enter the lowest elevation for top of attached garage slab. (Because elevation for top of attached garage slab is self-explanatory, attached garages are not illustrated in the Building Diagrams.)

Item C2.e. Enter the lowest platform, floor, or ground elevation supporting the lowest electrical, heating, ventilation, plumbing, and air conditioning M&E and other utilities servicing the building, which may be located in an attached garage or enclosure or on an open utility platform. Note that elevations for the M&E items are required regardless of their location. Local floodplain management officials are required to ensure that ***all*** new M&E servicing the building are protected from flooding. Thus, local officials may require that elevation information for all M&E, including ductwork, be documented on the Elevation Certificate. If the M&E is mounted to a wall, pile, etc., enter the platform elevation of the M&E. Indicate the lowest M&E type and its general location (e.g., on floor inside garage, on platform affixed to exterior wall) in the Comments area of Section D or Section G, as appropriate.

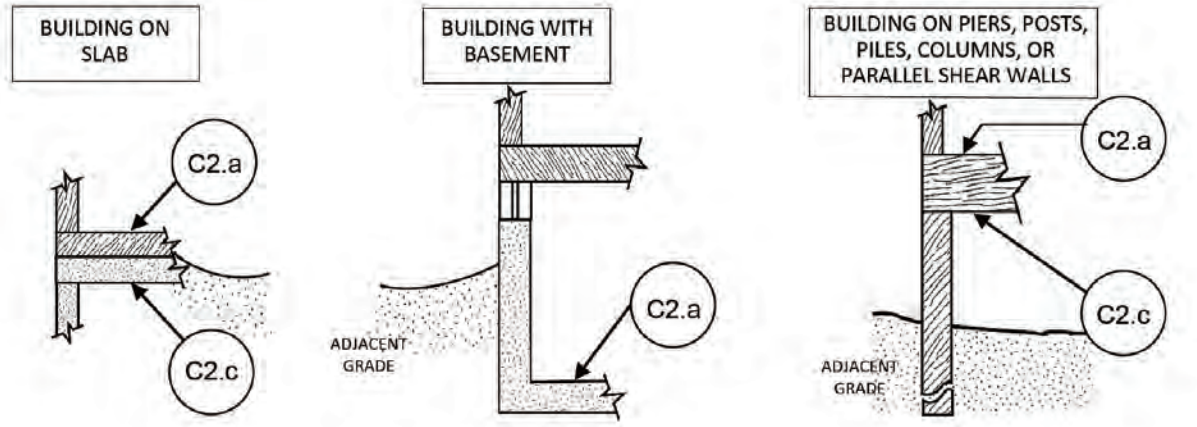
Note: For more guidance on floodplain management compliance for utilities, including M&E, refer to FEMA P-348, *Protecting Building Utility Systems from Flood Damage*. The list of M&E and the elevation requirements for documenting floodplain management compliance are different than the NFIP insurance M&E discount eligibility considerations. See Section H Instructions for additional information.

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED) *(Continued)*

Item C2.f. Enter the finished Lowest Adjacent Grade (LAG) elevation of the ground, sidewalk, or patio slab next to and in direct contact with the building. For a building in Zone AO, use the natural grade elevation, if available. Indicate whether the natural or finished grade was used. If natural grade was used, attach the source of the information (e.g., a grading plan). For buildings under construction in any flood zone, enter the LAG elevation at the time of the survey. **Note:** Natural grade means the undisturbed natural surface of the ground prior to any excavation or fill.

Item C2.g. Enter the finished Highest Adjacent Grade (HAG) elevation of the ground, sidewalk, or patio slab next to and in direct contact with the building. For a building in Zone AO, use the natural grade elevation if available. Indicate whether the natural or finished grade was used. If natural grade was used, attach the source of the information (e.g., a grading plan). For buildings under construction in any flood zone, enter the HAG elevation at the time of the survey.

Item C2.h. Enter the finished LAG elevation of the lowest ground, sidewalk, or patio slab next to and in direct contact with the structurally-attached-deck supports or stairs structurally attached to the building. For buildings under construction in any flood zone, enter the lowest LAG at the time of the survey.



Figures for use in determining Item C2.c

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This section of the Elevation Certificate may be signed by only a land surveyor, engineer, or architect who is authorized by state law to certify elevation information. Complete as indicated and place your license number, your seal (as allowed by the state licensing board), your signature, and the date in Section D. You are certifying that the information on this certificate represents your best efforts to interpret the data available and that you understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001. Use the Comments area of Section D to provide relevant and clarifying information not specified elsewhere on the certificate, including supporting information for latitude/longitude source for A5; openings for A8/A9; LOMR data for Section B; BFE and BFE source data for B9/B10; datum conversion for C2; grading plan for natural grade used in C2.f-g; machinery type and location for C2.e; and any other relevant information identified in the instructions or needed for clarification. If attachments are included, check the attachments box and describe the attachments in the Comments area.

SECTION E – BUILDING MEASUREMENT INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO, ZONE AR/AO, AND ZONE A (WITHOUT BFE)

Complete Section E if the building is located in Zone AO, Zone AR/AO, or Zone A (without BFE) and the Certificate is being completed for the purpose of documenting compliance with local floodplain management requirements. If the Certificate is being completed to document compliance in other flood zones, including Zone A (with BFE), to support a LOMA, CLOMA, LOMR-F, or CLOMR-F request, or to provide a ground elevation for flood insurance rating, complete Section C instead of Section E. Explain in the Section F Comments area if the measurement provided under Items E1–E4 is not based on the "natural grade." Natural grade means the undisturbed natural surface of the ground prior to any excavation or fill.

Indicate whether the measurements to be entered in this section are based on construction drawings, a building under construction, or finished construction. For either of the first two choices, a post-construction Elevation Certificate will be required when construction is complete. If the building is under construction, include only those measurements that can be determined in Items E1–E4. Use the Comments area of Section F to provide measurements obtained from the construction plans or drawings. Select "Finished Construction" only when all Machinery and Equipment (M&E) such as furnaces, water heaters, heat pumps, air conditioners, and elevators and their associated equipment have been installed and the grading around the building is completed.

Note: Enter heights in Items E1–E4 to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico).

Items E1.a and b. Enter in Item E1.a the height of the top of the bottom floor (as indicated by C2.a in the selected Building Diagram, Item A7) above or below the natural HAG. Enter in Item E1.b the height of the top of the bottom floor (as indicated by C2.a in the selected Building Diagram, Item A7) above or below the natural LAG. For buildings in Zone AO, the community's floodplain management ordinance requires the lowest floor of the building be elevated above the HAG at least as high as the base flood depth on the FIRM.

SECTION E – BUILDING MEASUREMENT INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE) *(Continued)*

Item E2. For Building Diagrams 6–9 with permanent flood openings (see pages 18–19), enter the height of the next higher floor or elevated floor (as indicated by C2.b in the selected Building Diagram, Item A7) above or below the HAG.

Item E3. Enter the height, in relation to the HAG next to the building, for the top of attached garage slab. (Because elevation for top of attached garage slab is self-explanatory, attached garages are not illustrated in the diagrams.) *If this item does not apply to the building, enter "N/A" for not applicable.*

Item E4. Enter the height, in relation to the HAG next to the building, of the platform elevation that supports the M&E servicing the building. See Item C2.e for additional details on M&E. Indicate the M&E type in the Comments area of Section F.

Item E5. For those communities where this base flood depth is not available, the community will need to determine whether the top of the bottom floor is elevated in accordance with the community's floodplain management ordinance.

SECTION F – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

Complete as indicated. This section is provided for certification of measurements when completing Sections A, B, and E. If Section E is completed by a property owner or property owner's authorized representative in Zone AO, AR/AO, or A (without BFE), then the community should confirm the heights in Section E to ensure compliance with community floodplain management ordinances. If Section E is completed by a local floodplain management official, then complete Item G2.a and Section G instead of Section F. The address entered in this section must be the actual mailing address of the individual who provided the information on the certificate. Check the box as indicated if including attachments and describe in the Comments area.

SECTION G – COMMUNITY INFORMATION (RECOMMENDED FOR COMMUNITY OFFICIAL COMPLETION)

The community official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C, E, G or H of this Elevation Certificate and sign this section. Section C may be completed by the local official per the instructions below for Item G1.

Item G1. Check if Section C is completed with elevation data from other documentation that has been signed and sealed by a licensed land surveyor, engineer, or architect who is authorized by state law to certify elevation information. Indicate the source of the elevation data and the date obtained in the Comments area of Section G. If you are both a community official and a licensed land surveyor, engineer, or architect authorized by state law to certify elevation information, and you performed the actual survey for a building in any flood zones (including Zones A99, B, C, X and D), you must also complete Section D.

Item G2.a. Check if information is entered in Section E by the community for a building in Zone A (without a BFE), Zone AO, or Zone AR/AO, or when the community certifies Item E5 for a building in Zone AO.

Item G2.b. Check if information is entered in Section H by the community for insurance purposes.

Item G3. Check if the community official is correcting information provided in Sections A, B, E and H. Describe corrections in the Comments area of Section G.

Item G4. Check if the information in Items G5–G11 has been completed for community floodplain management purposes to document the as-built lowest floor elevation of the building. Section C of the Elevation Certificate records the elevation of various building components but does not determine the lowest floor of the building or whether the building, as constructed, complies with the community's floodplain management ordinance. This must be done by the community. Items G5–G11 provide a way to document these determinations.

Item G5. Permit Number. Enter the permit number or other identifier to key the Elevation Certificate to the permit issued for the building.

Item G6. Date Permit Issued. Enter the date the permit was issued for the building.

Item G7. Date Certificate of Compliance/Occupancy Issued. Enter the date that the Certificate of Compliance or Occupancy or similar written official documentation of as-built lowest floor elevation was issued by the community as evidence that all work authorized by the floodplain development permit has been completed in accordance with the community's floodplain management laws or ordinances.

Item G8. New Construction or Substantial Improvement. Check the applicable box. "Substantial Improvement" means any reconstruction, rehabilitation, addition, or other improvement of a building, the cost of which equals or exceeds 50 percent of the market value of the building before the start of construction of the improvement (or meets the community's more restrictive standards, if applicable). The term includes buildings that have incurred substantial damage, regardless of the actual repair work performed.

Item G9.a. As-built lowest floor elevation. Enter the elevation of the lowest floor (including basement) when the construction of the building is completed and a final inspection has been made to confirm that the building is built in accordance with the permit, the approved plans, and the community's floodplain management laws or ordinances. Indicate the elevation datum used.

Item G9.b. As-built lowest horizontal structural member. Enter the elevation measured at the bottom of the lowest horizontal structural member of the floor indicated by the selected Building Diagram (Item A7) or in the figure at the end of the instructions for Section C. Indicate the elevation datum used.

SECTION G – COMMUNITY INFORMATION (RECOMMENDED FOR COMMUNITY OFFICIAL COMPLETION) *(Continued)*

Item G10.a. BFE. Using the appropriate FIRM panel, FIS, or other data source, locate the property and enter the BFE (or base flood depth) of the building site. Indicate the elevation datum used.

Item G10.b. Community's minimum elevation or depth requirement. Enter the elevation (including freeboard above the BFE) to which the community requires the lowest floor or the lowest horizontal structural member to be elevated. Indicate the elevation datum used.

Item G11. Indicate Yes if a variance from the floodplain management regulations (Title 44 CFR § 60.6) has been issued for the building, attach the supporting documentation, and describe the attachment in the Comments area of this section. If no such variance has been issued, indicate No.

Enter your name, title, and telephone number, and the name of the community and add any comments. Sign and enter the date in the appropriate blanks.

SECTION H – BUILDING'S FIRST FLOOR HEIGHT INFORMATION FOR ALL ZONES (SURVEY NOT REQUIRED) (FOR INSURANCE PURPOSES ONLY)

In any flood zone the property owner, owner's authorized representative, or local floodplain management official may complete this certificate for rating purposes to determine the building's first floor height and identify the elevation of Machinery and Equipment (M&E) servicing the building. Sections A, B, and I must also be completed.

Note: If Sections C and/or E and H are all completed, then information in Section C will prevail for insurance purposes and for compliance.

Item H1.a. For Building Diagrams 1A, 1B, 3, and 5–9 shown on pages 17–19, enter in Item H1.a the height to the nearest tenth of a foot (tenth of a meter in Puerto Rico) of the top of the bottom floor (as indicated in the selected Building Diagram, Item A7) above the LAG. Refer to the arrows on the Foundation Type Diagrams on page 16 that indicate which floor to use to determine the height for Item H1.a.

Item H1.b. For Building Diagrams 2A, 2B, 4, and 6–9 shown on pages 17–19, enter in Item H1.b the height to the nearest tenth of a foot (tenth of a meter in Puerto Rico) of the top of the next higher floor or elevated floor (as indicated in the selected Building Diagram, Item A7) above the LAG. Refer to the arrows on the Foundation Type Diagrams on page 16 that indicate which floor to use to determine the height for Item H1.b.

Note: The LAG is the lowest point of the ground level immediately next to a building.

Item H2. Indicate “Yes” if ***all*** of the following M&E servicing the building, inside or outside the building, are elevated to at least the height of the location shown by the H2 arrow in the Foundation Type Diagrams on page 16: central air conditioner (including exterior compressor), furnace, heat pump (including exterior compressor), water heater, and elevator M&E. For contents-only insurance coverage, ***all*** of the following appliances will need to be elevated to at least the height of the location shown by the H2 arrow in the Foundation Type Diagrams below: clothes washers and dryers and food freezers.

Note: For both building and contents coverage, ***all*** of the M&E and appliances listed above must be elevated per the Foundation Type Diagrams on page 16 to be considered for the M&E mitigation discount.

Indicate “No” if any of the M&E listed above is not elevated to at least the height of the location shown by the H2 arrow in the Foundation Type Diagrams on page 16.

The diagrams on the following page illustrate the six NFIP Foundation Type Diagrams. Each foundation type corresponds with one or more of the eleven Building Diagrams shown at the end of this Elevation Certificate. The arrows on the diagrams indicate which floor to use to determine H1.a and H1.b The arrows marked as H2 show the minimum elevation required to be eligible for the M&E mitigation discount.

SECTION I – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

Complete as indicated. This section is provided for certification of measurements when completing Sections A, B, and H. If Section H is completed by a local floodplain management official, then complete Item G2.b and Section G instead of Section I. The address entered in this section must be the actual mailing address of the individual who provided the information on the certificate.

Check the box as indicated if including attachments (e.g., required photos) and describe in the Comments area.

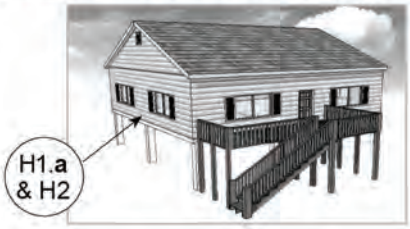
Foundation Type Diagrams (for use in Section H):

Slab on Grade (Non-Elevated)

Corresponds to EC Diagrams 1A, 1B and 3

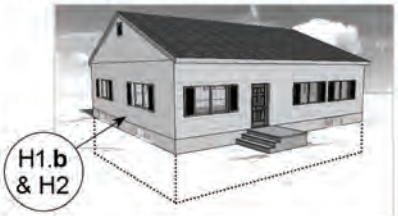
Note: If the building has more than one floor, the Machinery and Equipment should be on the second floor or higher.

Elevated without Enclosure on Posts, Piles, or Piers



Corresponds to EC Diagram 5

Basement (Non-Elevated)



Corresponds to EC Diagrams 2A, 2B and 4

Elevated with Enclosure on Posts, Piles, or Piers

Corresponds to EC Diagram 6

Crawlspace (Elevated, including Non-Elevated Sub-Grade Crawlspace)

Corresponds to EC Diagrams 8 and 9

Elevated with Enclosure Not on Posts, Piles, or Piers (Solid Foundation Walls)

Corresponds to EC Diagram 7

BUILDING DIAGRAMS

The following diagrams illustrate various types of buildings. Compare the features of the building being certified with the features shown in the diagrams and select the diagram most applicable. Enter the diagram number in Item A7, the square footage of crawlspace or enclosure(s) and the area of flood openings as indicated in Items A8.a–f, the square footage of attached garage and the area of flood openings as indicated in Items A9.a–f, and the elevations in Items C2.a–h.

In A, B, C, X and D zones, the floor elevation is taken at the top finished surface of the floor indicated; in V zones, areas seaward of the LiMWA, and in other areas regulated for coastal flooding hazards, the floor elevation is taken at the bottom of the lowest horizontal structural member (see figure at end of instructions for Section C).

DIAGRAM 1A:

All slab-on-grade single- and multiple-floor buildings (other than split-level) and high-rise buildings, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least one side.*

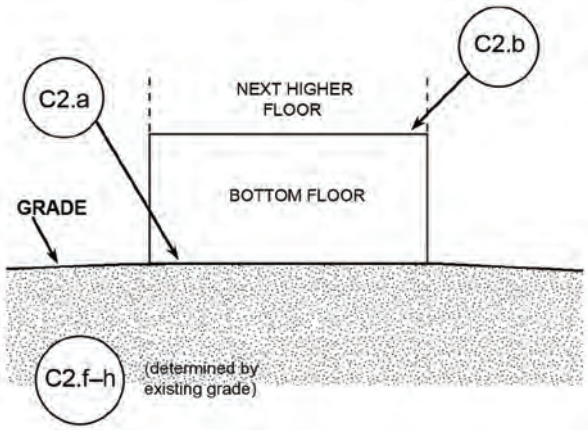


DIAGRAM 1B:

All raised-slab-on-grade or slab-on-stem-wall-with-fill single- and multiple-floor buildings (other than split- level), either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least one side.*

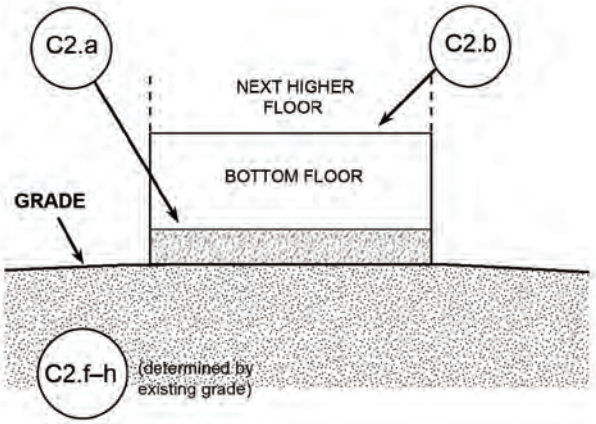


DIAGRAM 2A:

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*

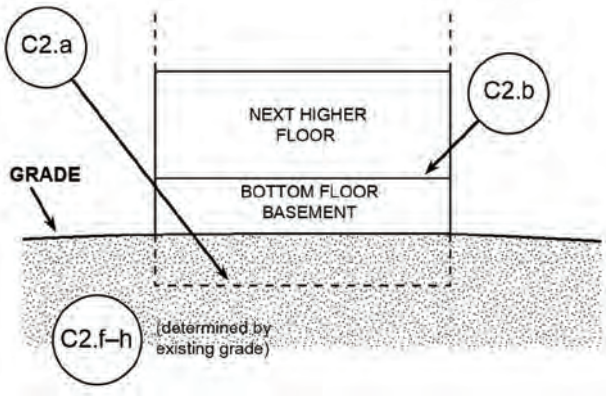
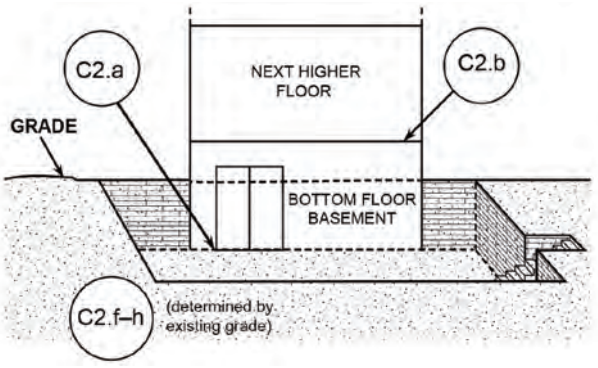


DIAGRAM 2B:

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides; most of the height of the walls is below ground level on all sides; and the door and area of egress are also below ground level on all sides.*



* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.

BUILDING DIAGRAMS

DIAGRAM 3:

All split-level buildings that are slab-on-grade, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (excluding garage) is at or above ground level (grade) on at least one side.*

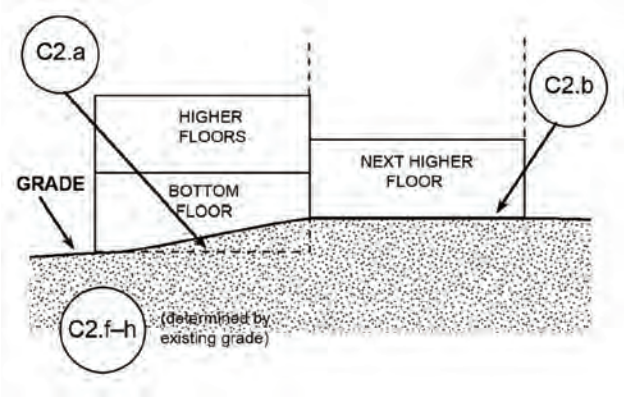


DIAGRAM 4:

All split-level buildings (other than slab-on-grade), either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*

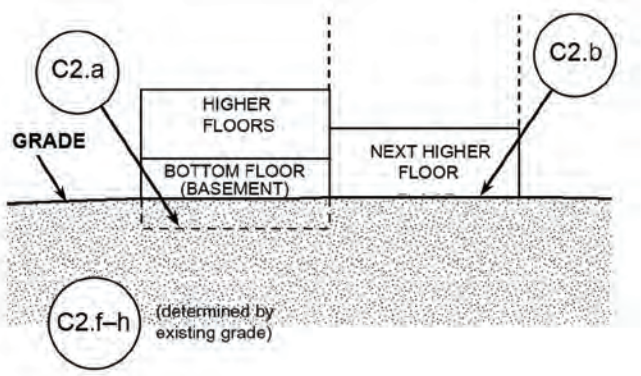


DIAGRAM 5:

All buildings elevated on piers, posts, piles, columns, or parallel shear walls. No obstructions below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is open, with no obstruction to flow of floodwaters (open lattice work and/or insect screening is permissible).

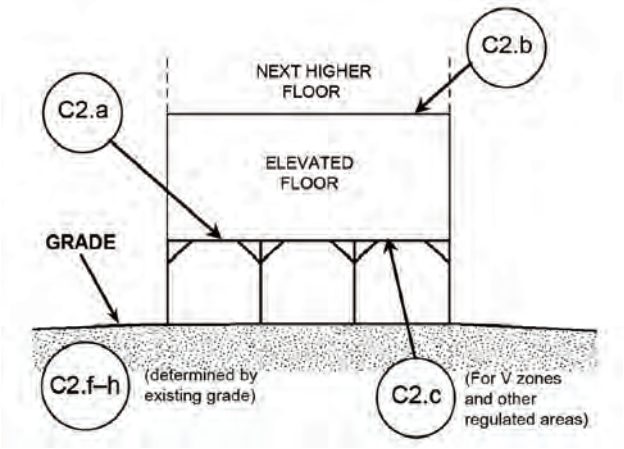
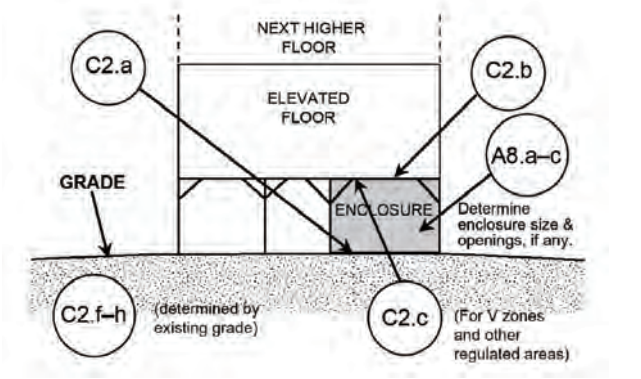


DIAGRAM 6:

All buildings elevated on piers, posts, piles, columns, or parallel shear walls with full or partial enclosure below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A - Property Information.



* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.

** An "opening" is a permanent opening that allows for the free passage of water automatically in both directions without human intervention. Under the NFIP, a minimum of two openings is required for enclosures or crawlspaces. The openings shall provide a total net area of not less than one square inch for every square foot of area enclosed, excluding any bars, louvers, or other covers of the opening. Alternatively, an Individual Engineered Flood Openings Certification or an Evaluation Report issued by the ICC ES must be submitted to document that the design of the openings will allow for the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening; openings may be installed in doors. Openings shall be on at least two sides of the enclosed area. If a building has more than one enclosed area, each area must have openings to allow floodwater to directly enter. The bottom of the openings must be no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. For more guidance on openings, see NFIP Technical Bulletin 1.

BUILDING DIAGRAMS

DIAGRAM 7:

All buildings elevated on full-story foundation walls with a partially or fully enclosed area below the elevated floor. This includes walkout levels, where at least one side is at or above grade. The principal use of this building is located in the elevated floors of the building.

Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A - Property Information.

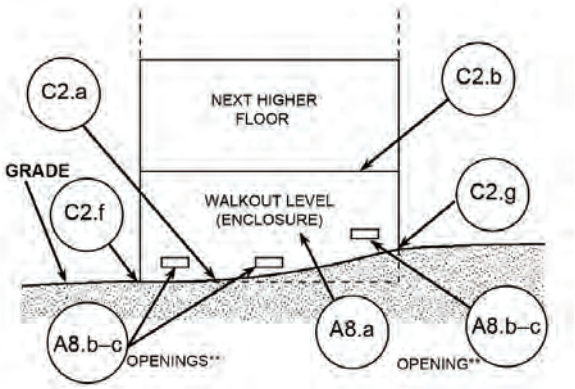


DIAGRAM 8:

All buildings elevated on a crawlspace with the floor of the crawlspace at or above grade on at least one side, with or without an attached garage.

Distinguishing Feature – For all zones, the area below the first floor is enclosed by solid or partial perimeter walls. In all A zones, the crawlspace is with or without openings** present in the walls of the crawlspace. Indicate information about crawlspace size and openings in Section A - Property Information. (If the distance from the crawlspace floor to the top of the next higher floor is more than 5 feet, use Diagram 7.)

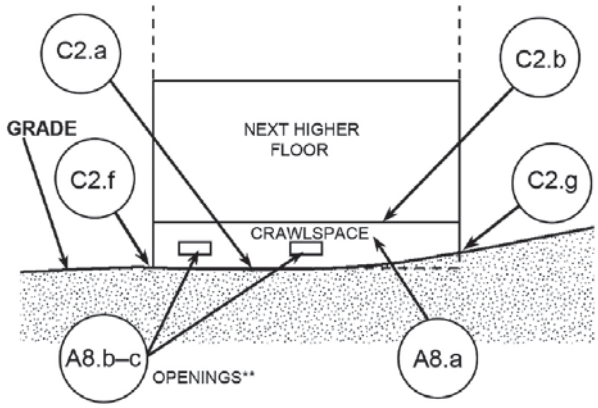
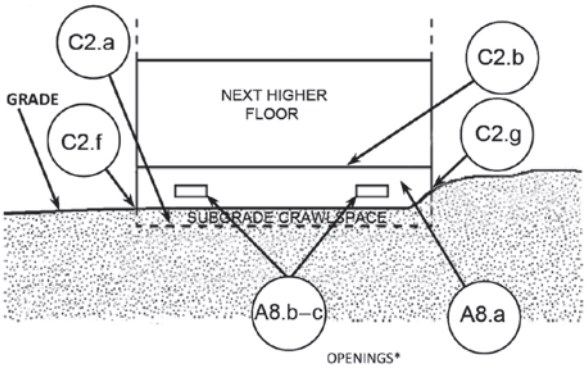


DIAGRAM 9:

All buildings (other than split-level) elevated on a sub-grade crawlspace, with or without attached garage.

Distinguishing Feature – The bottom (crawlspace) floor is below ground level (grade) on all sides.* (If the distance from the crawlspace floor to the top of the next higher floor is more than five feet, or the crawlspace floor is more than two feet below the grade [LAG] on all sides, use Diagram 2A or 2B.)



* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.

** An "opening" is a permanent opening that allows for the free passage of water automatically in both directions without human intervention. Under the NFIP, a minimum of two openings is required for enclosures or crawlspaces. The openings shall provide a total net area of not less than one square inch for every square foot of area enclosed, excluding any bars, louvers, or other covers of the opening. Alternatively, an Individual Engineered Flood Openings Certification or an Evaluation Report issued by the ICC ES must be submitted to document that the design of the openings will allow for the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening; openings may be installed in doors. Openings shall be on at least two sides of the enclosed area. If a building has more than one enclosed area, each area must have openings to allow floodwater to directly enter. The bottom of the openings must be no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. For more guidance on openings, see NFIP Technical Bulletin 1.

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 490 Wood River Drive

City: Ketchum State: ID ZIP Code: 83340

FOR INSURANCE COMPANY USE

Policy Number:

Company NAIC Number:

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☒ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, AO, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, A99. Complete Items C2.a–h below according to the Building Diagram specified in Item A7. In Puerto Rico only, enter meters.
Benchmark Utilized: N/A For Construction Drawings Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below.
☐ NGVD 1929 ☒ NAVD 1988 ☐ Other:

Datum used for building elevations must be the same as that used for the BFE. Conversion factor used? ☐ Yes ☒ No
If Yes, describe the source of the conversion factor in the Section D Comments area.

		Check the measurement used:
a) Top of bottom floor (including basement, crawlspace, or enclosure floor):	5,770.60	☒ feet ☐ meters
b) Top of the next higher floor (see Instructions):	5,782.60	☒ feet ☐ meters
c) Bottom of the lowest horizontal structural member (see Instructions):		☐ feet ☐ meters
d) Attached garage (top of slab):	5,769.10	☒ feet ☐ meters
e) Lowest elevation of Machinery and Equipment (M&E) servicing the building (describe type of M&E and location in Section D Comments area):	5,770.60	☒ feet ☐ meters
f) Lowest Adjacent Grade (LAG) next to building: ☐ Natural ☒ Finished	5,768.00	☒ feet ☐ meters
g) Highest Adjacent Grade (HAG) next to building: ☐ Natural ☒ Finished	5,770.60	☒ feet ☐ meters
h) Finished LAG at lowest elevation of attached deck or stairs, including structural support:	5,768.00	☒ feet ☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by state law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

Were latitude and longitude in Section A provided by a licensed land surveyor? ☐ Yes ☒ No

☐ Check here if attachments and describe in the Comments area.

Certifier's Name: Phoebe Johanessen License Number: 17661

Title: Engineering Manager

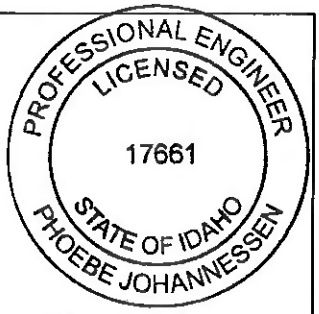
Company Name: Galena-Benchmark Engineering

Address: 100 Bell Drive

City: Ketchum State: ID ZIP Code: 83340

Signature: Phoebe Johanessen Date: 8/16/23

Telephone: (208) 726-9512 Ext.: Email: phoebe@galena-benchmark.com



Place Seal Here

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including source of conversion factor in C2; type of equipment and location per C2.e; and description of any attachments):
Flood vents are Smart Vent Model #1540-520. (See attachment G-014)
Flood Vent Diagram (G-013)
Elevation of Mechanical Equipment (Sheet A-101)

DATE: January 20, 2023

South Central Public Health District
Health and Environmental Services
117 Ash Street
Bellevue, ID 83313

Re: 490 Wood River Drive

The City of Ketchum has the capacity and is willing to serve or continue to serve the development located at 490 Wood River Drive, Ketchum, ID 83340.

Sincerely,

Gio Tognoni, Ketchum City Water

Mick Mummert, Ketchum City Sewer

OFFICIAL USE ONLY
File Number:
Date Received:
By:
Fee Paid:
Approved Date:
Denied Date:
By:

City of Ketchum
Planning & Building

Floodplain Development Permit and Riparian Alteration Application

NOTE: This permit is required for all properties containing 100 year floodplain area and Riparian Setbacks

PROPERTY OWNER INFORMATION			
Property Owner Name(s): 450-490 Wood River LLC			
Property Owner's Mailing Address: P.O. Box 14001-174, Ketchum, ID 83340			
Phone:			
Email:			
PROJECT INFORMATION			
Project Name: 490 Wood River Residence and Site Grading			
Project Representative's Name (main point of contact for project): Charles G. Brockway, P.E.			
Project Representative's Phone: (208) 736-8543			
Project Representative's Mailing Address: 2016 Washington St N, Ste 4, Twin Falls, ID 83301			
Project Representative's Email: charles.g.brockway@brockwayeng.com			
Architect's name, phone number, e-mail:			
Landscape Architect's name, phone number, e-mail:			
Environmental consultant's name, phone number, e-mail:			
Engineer's name, phone number, e-mail: Charles G. Brockway, P.E.			
Project Address: 490 Wood River Dr			
Legal Description of parcel: Mary's Place Subdivision Lot 4, Block 1			
Lot Size: 2.09			
Zoning District:			
Overlay Zones – indicate all that apply: ☒ Floodplain ☐ Floodway ☐ Riparian Zone ☐ Avalanche ☐ Mountain			
Brief description of project scope: Please see attached narrative			
Value of Project: $ Undetermined			
TYPE OF PROJECT – indicate all that apply:			
☒ New Building in Floodplain	☐ Building Addition in Floodplain	☐ Streambank Stabilization / Stream Alteration	☐ Other. Please describe:
☐ Riparian Alteration	☒ Floodplain Development		
PROPOSED SETBACKS – if project is a new building or an addition to an existing building			
Front:	Side:	Side:	Rear:
ADDITIONAL INFORMATION			
Will fill or excavation be required in floodplain, floodway or riparian zone? Yes ☒ No ☐			
If Yes, Amount in Cubic Yards: Fill: CY Excavation: CY		Please see attached narrative for details on project scope, modeling, quantities, and related information.	
Will Existing Trees or Vegetation be Removed? Yes ☐ No ☐			
Will new trees or vegetation be planted? Yes ☐ No ☐			

Applicant agrees in the event of a dispute concerning the interpretation or enforcement of the Floodplain Management Overlay Application, in which the City of Ketchum is the prevailing party, to pay reasonable attorney fees, including attorney fees on appeal, and expenses of the City of Ketchum. I, the undersigned, certify that all information submitted with and upon this application form is true and accurate to the best of my knowledge and belief.

Signature of Owner/Representative MATT SLOCUM Authorized Rep. Date 4/26/23

Evaluation Criteria for Ketchum Floodplain Development Permit application, 450-490 Wood River

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Brockway Engineering PLLC
March 21, 2023

1. The proposal preserves or restores the inherent natural characteristics of the river, floodplain, and Riparian Zone, including riparian vegetation and wildlife habitat. Development does not alter river channel unless all stream alteration criteria for evaluation are also met.

   The proposal will include restoration of wetland and riparian areas. Natural riparian swale will ensure continuity of water connection to river. Restored area will provide enhanced natural characteristics, riparian vegetation, and wildlife habitat. No alteration of river channel is proposed.

2. No temporary construction activities, encroachment, or other disturbance into the twenty-five foot (25') Riparian Zone, including encroachment of below grade structures, shall be permitted, except for approved stream stabilization work and restoration work associated with a riparian zone that is degraded.

   This criteria will be adhered to.

3. No permanent development shall occur within the twenty-five foot (25') Riparian Zone, except for approved stream stabilization work and restoration work associated with permit issued under this title, or exceptions as described below:

   a. Access to a property where no other primary access is available. b. Emergency access required by the Fire Department.
   b. A single defined pathways or staircases for the purpose of providing access to the river channel and in order to mitigate multiple undefined social paths.

   c. Development by the City of Ketchum

   This criteria is met since the work is to be authorized under an approved permit.

4. New or replacement planting and vegetation in the Riparian Zone shall include plantings that are low growing and have dense root systems for the purpose of stabilizing stream banks and repairing damage previously done to riparian vegetation. Examples of such plantings most commonly include red osier dogwood, common chokecherry, serviceberry, elderberry, river birch, skunk bush sumac, Beb's willow, Drummond's willow, little wild rose, gooseberry, and honeysuckle. However, in rare instances the distance from the top-of-bank to the mean high-water mark is significant and the native vegetation appropriate for the Riparian Zone are low growing, drought resistant grasses and shrubs. Replacement planting and vegetation shall be appropriate for the specific site conditions. Proposal does not include vegetation within

the twenty-five foot (25') Riparian Zone that is degraded, not natural, or which does not promote bank stability.

These types of plantings are being proposed. The plan will include a revegetation plan as specified by the landscape architect.

5. Landscaping and driveway plans to accommodate the function of the floodplain allow for sheet flooding.
    a. Surface drainage is controlled and shall not adversely impact adjacent properties including driveways drained away from paved roadways. Culvert(s) under driveways may be required. Landscaping berms
    b. shall be designed to not dam or otherwise obstruct floodwaters or divert same onto roads or other public pathways.

Culvert systems will be installed to control ordinary water occurrence and drainage, and will not adversely affect flood elevations as shown by the modeling described in the technical narrative. No water will be diverted onto roads or public pathways.

6. Floodwater carrying capacity is not diminished by the proposal.

See narrative for more detail.

7. Impacts of the development on aquatic life, recreation, or water quality upstream, downstream or across the stream are not negative.

Restoration of natural riparian waterway will enhance habitat and improve water quality.

8. Building setback in excess of the minimum required along waterways is encouraged. An additional ten- foot (10') building setback beyond the required twenty-five foot (25') Riparian Zone is encouraged to provide for yards, decks and patios outside the twenty five foot (25') Riparian Zone.

Buildings will be located within platted building envelopes.

9. The top of the lowest floor of a building located in, or partially within, the SFHA shall be at or above the Flood Protection Elevation (FPE). A building is considered to be partially within the SFHA if any portion of the building or appendage of the building, such as footings, attached decks, posts for upper story decks, are located within the SFHA. See section 17.88.060, figures 1 and 2 of this chapter to reference construction details. See Chapter 17.08 of this title for definition of "lowest floor."

    a. In the SFHA where Base Flood Elevations (BFEs) have been determined, the FPE shall be twenty-four inches (24") above the BFE for the subject property; twenty-four inches (24") or two (2) feet is the required freeboard in Ketchum city limits.

b. In the SFHA where no BFE has been established, the FPE shall be at least two (2) feet above the highest adjacent grade.

This criteria is met. See architectural drawings for more detail.

10. The backfill used around the foundation in the SFHA floodplain shall provide a reasonable transition to existing grade but shall not be used to fill the parcel to any greater extent.

    a. Compensatory storage shall be required for any fill placed within the floodplain.

    b. A CLOMR-F shall be obtained prior to placement of any additional fill in the floodplain.

See narrative for additional detail. The grade away from the foundation provides a reasonable transition and safe walking surface. No "additional" fill is proposed.

11. All new buildings located partially or wholly within the SFHA shall be constructed on foundations that are designed by a licensed professional engineer.

See architectural plans for more detail.

12. Driveways shall comply with City of Ketchum street standards; access for emergency vehicles has been adequately provided for by limiting flood depths in all roadways to one foot (1-ft) or less during the 1% annual chance event.

This criteria is met. See narrative.

13. Landscaping or revegetation shall conceal cuts and fills required for driveways and other elements of the development.

Owner will comply with this requirement.

14. (Stream alteration.) The proposal is shown to be a permanent solution and creates a stable situation.

Not applicable

15. (Stream alteration.) No increase to the one percent (1%) annual chance flood elevation at any location in the community, based on hydrologic and hydraulic analysis performed in accordance with standard engineering practice and has been certified and submitted with supporting calculations and a No Rise Certificate, by a registered Idaho engineer.

Not applicable, but see narrative for description of modeling for the project.

16. (Stream alteration.) The project has demonstrated No Adverse Impact or has demonstrated all impacts will be mitigated.

Not, but see narrative.

17. (Stream alteration.) The recreational use of the stream including access along any and all public pedestrian/fisher's easements and the aesthetic beauty shall not be obstructed or interfered with by the proposed work.

    Not applicable

18. (Stream alteration.) Fish habitat shall be maintained or improved as a result of the work proposed.

    Not applicable.

19. (Stream alteration.) The proposed work shall not be in conflict with the local public interest, including, but not limited to, property values, fish and wildlife habitat, aquatic life, recreation and access to public lands and waters, aesthetic beauty of the stream and water quality.

    Not applicable.

20. (Stream alteration.) The work proposed is for the protection of the public health, safety and/or welfare such as public schools, sewage treatment plant, water and sewer distribution lines and bridges providing particularly limited or sole access to areas of habitation.

    Not applicable.

21. (Wetlands) Where development is proposed that impacts any wetland the first priority shall be to move development from the wetland area. Mitigation strategies shall be proposed at time of application that replace the impacted wetland area with an equal amount and quality of new wetland area or riparian habitat improvement.

    See analysis and Joint Application for Permits prepared by Sawtooth Environmental.

Project No. 1575-01-2021

Technical Narrative in Support of Floodplain Development Plan for 490 Wood River

Prepared for:

450-490 Wood River, LLC
Ketchum, Idaho

April 26, 2023

For information concerning this report, contact
Charles G. Brockway, Ph.D., P.E.

BROCKWAY ENGINEERING PLLC

CHARLES E. BROCKWAY, PH.D., P.E. (EMERITUS)
CHARLES G. BROCKWAY, PH.D., P.E.

2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, IDAHO 83301

Technical Narrative in Support of Floodplain Development Plan for 490 Wood River

Brockway Engineering, PLLC
April 26, 2023

A. Existing conditions and hydrology

The subject property is 490 Big Wood Drive, a platted lot within Mary's Place Subdivision in Ketchum, Idaho. The property includes an authorized building envelop, but the property is within the effective 100-year floodplain and subject to the pertinent requirements in the City of Ketchum municipal code.

Two marshy areas exist in the north area of 490. These are either swampy areas or open-water ponds, depending on water levels that fluctuate seasonally according to groundwater levels and levels in the adjacent Big Wood River, which is hydraulically connected with the shallow groundwater. The outlet of this area during normal water conditions is a 16-inch CMP culvert under a 2-track access roadway. The culvert feeds a natural channel that drains to the adjacent property to the east. Flow in this channel varies and has been observed to follow the expected seasonal pattern: low or nonexistent in the late summer, fall, and winter, rising in the spring and early summer as river levels and infiltration increase.

Most of the property is within the 100-year effective floodplain defined by FEMA. During flood conditions, sheet flow from the property to the west will inundate the marshy area and channels and will flow over the access roadway. A wide swale east of the access road will carry a portion of this flood water, which will combine with the above-mentioned channel on the property to the east. The existing culvert capacity is insignificant during flood events.

Comparing the effective base flood elevations with LiDAR and other topographic data, it was determined that the effective floodplain limit is reasonably accurate. During the 100-year event, the existing channels will act as conveyances, but most of the land will be subject to shallow overland flow with the exception of the high area which encompasses most of the platted building envelope. This high area is recognized as being above the BFE in the "Draft" flood maps, prepared by FEMA and issued for informational purposes in September 2022 as part of the agency's comprehensive restudy of the Big Wood River and tributaries.

Portions of the property lie within the defined regulatory floodway. However, no grading or development is proposed within the floodway.

B. Proposed project

The proposed project includes the following elements:

1. **Construction of proper driveway to allow access to a residence.** This drive will consist of a 14-foot asphalt roadway and 3-foot gravel shoulders, with a minimum of fill ranging from 0.4 feet to 1.4 feet above existing grade. The driveway will be finished with an elevation of 5769.4 at the public street, declining to 5768.0 feet at the culvert crossing, and rising to 5768.5 feet which is the approximate finished slab elevation at the garage. The access will include a gate structure on the extreme fringe of the floodplain, modeled as an obstruction. The model-computed floodplain in this area is relatively small in terms of both depth and flow, and this activity amounts to a very small effect on the overall floodplain. However, by necessity the roadway embankment will be built within the floodplain and the water level will rise locally and overtop the driveway. Culverts will be installed to provide cross-drainage (#4 below). This effect was included in the hydraulic modeling for the project.

2. **Construction of residence within platted building envelope.** The building footprint will be outside of the Draft floodplain limits with the exception of the extreme eastern portion and the garage. The building will be above the modeled 100-year flood elevations, either Effective or Draft, as described below. Fill within the floodplain will occur to a reasonable extent necessary to construct the residence, and a portion of this fill will be below the 100-year flood elevation.

3. **Enhancement of the existing drainage channel in accordance with the grading shown on the plans.** This swale will have a minimum bottom width of 7 feet, side slope of 3.5:1 or flatter, and overall slope of 0.75%. The enhanced swale will have an increased conveyance capacity and will provide a portion of the mitigation required for the hydraulic impact analysis and the compensatory storage analysis. The swale will be vegetated in accordance with plans prepared by Field Studio and Sawtooth Environmental. With an assumed roughness coefficient of 0.065, this swale will have a minimum capacity of 66 cfs at a flow depth of 2.0 feet. Benefits of this activity include maintaining and enhancing the natural pre-pond conveyance regime, providing more natural riparian habitat, and reducing nuisance water to adjacent landowners. This element is pursuant to and in accordance with plat note #7 regarding enhancement plans for relocation of drainage provisions.

4. **Installation of two (2) 36x24 pipe-arch culverts to replace the existing single 16-inch pipe.** The inlet invert will be the same as the existing culvert at 5764.8 feet, the length will be 120 feet. This culvert system will operate under inlet control, and will have a capacity of 54 cfs with the headwater level at the top of driveway, compared to 7 cfs for the existing situation. This will be more than adequate to handle the ordinary drainage flows, and the driveway will not overtop except in extreme flooding situations. The outlet area of the culvert will include an architectural headwall with backfill behind the wall to create a smooth grade to the driveway slab. The culverts will include a bend near the outlet to align the outlet with the constructed swale and prevent water from being directed at the house foundation.

5. **Construction of a wide, shallow swale between the residence and the river.** This swale will be constructed in accordance with the grading plan, and is needed for mitigation of hydraulic conveyance impact and compensatory storage. It will also provide a flow path for overbank water adjacent to the residential foundation fill. Construction of the swale will include a toe trench with buried 12" to 24" stone to provide protection of the residential fill. This stone will tie in to existing legacy riprap at the eastern side of the property.

C. HEC-RAS model analysis

HEC-RAS was used to model the existing conditions and the conditions with the proposed project including grading and structures. The purpose of this effort was to establish a baseline model representing existing conditions, and use this model to evaluate the effect of the project including proposed mitigation. Figure 1 shows an overall view of the model study area and cross-sections, and Figures 2a and 2b show close-in views of the project and grading plan. Inputs an assumptions for the model are described below.

C.1. Topographic data

Data used to develop cross-sections was derived from detailed ground survey and topographic contour mapping created by Galena Engineering for the project, as well as from the 2017 Blaine County LiDAR data. For the most part, the two sources were in close agreement, but where significant differences occurred, the ground shots were assumed to be the more accurate data. Once section was created from LiDAR as it was located off the property.

The model geometry upstream and downstream of the project was based on FEMA's draft model, made public in September 2022. New cross-sections representing current ground conditions were inserted, starting with Section 90690.8 as the downstream limit. These sections are shown on the attached map and Table 1.

Since the LiDAR data reflects the water surface rather than the channel bottom in the Big Wood River when the flight was made (which was at low water), the shape of the channel bottom was approximated by reference to the draft model sections and elevations adjusted according to channel slope.

C.1. 100-year peak annual flow

The "1% annual chance flow" or the 100-year flow is the discharge that forms the basis of modeling for current conditions and post-project conditions. The value in the effective model is 4,740 cfs. FEMA increased this flow to 6,363 cfs in the draft model. For reasons related to statistical calculations on the stream gauge north of Ketchum, this value is not correct. Nevertheless, FEMA is continuing to use it for its analyses and therefore it was used for this project because the City of Ketchum has elected to use the draft maps for regulatory purposes.

In the course of developing the model for this project, it was discovered that the discharge used in FEMA's draft model is 6,879 cfs, which is incorrect for this reach. According to the

hydrology report prepared for FEMA by the U.S. Army Corps of Engineers, the 6,879 cfs value is supposed to be the discharge below Trail Creek. The discharge from the Warm Springs confluence downstream to Trail Creek is supposed to be 6,363 cfs. This is discussed further in a memo submitted to Blaine County and the City of Ketchum dated March 31, 2023.

Table 1. Cross-sections from upstream to downstream

River Station in FEMA model	Section No.	Remarks
93417.33	16	Section in FEMA draft model
92671.74	15.5	Inserted section from LiDAR
92471.74	15	Section in FEMA draft model
92232	14	Inserted section using ground shots and LiDAR
92123	13.5	Inserted section using ground shots and LiDAR, alignment selected to characterize flow in existing and future "swales" upstream of access roadway.
92065	13	Inserted section using ground shots and LiDAR. Generally aligns with access roadway, used for upstream section of existing and new culvert. Reflects house and associated regrading.
92021		Culvert station
91977	12.5	Inserted section using ground shots and LiDAR. Used for downstream section of culvert. Reflects house and associated regrading.
91945	12	Inserted section using ground shots and LiDAR. Reflects house and associated regrading.
91911	11.8	Inserted section using ground shots and LiDAR. Reflects house and associated regrading.
91836	11.5	Inserted section using ground shots and LiDAR
91715	11	Inserted section using ground shots and LiDAR
91565	10	Inserted section using ground shots and LiDAR
91427	9	Section in FEMA draft model
91103.24	8	Section in FEMA draft model
90690.8	7	Section in FEMA draft model

Rather than compound error upon error, a value of 6,363 cfs was used for the modeling of this project even though it differs from the FEMA model. FEMA should be notified that its model contains an error and the base flood elevations and floodplain delineation in the reach from Warm Springs to Trail Creek should be recomputed. Base flood elevations on the draft maps in this reach should not be relied upon.

C.2. Starting downstream WSE

The downstream water surface elevation at Section 7 (RS 90690.8) was set by the normal depth method with a slope of 0.005 ft/ft.

C.3. Roughness coefficients

Roughness coefficients for the new cross sections developed for this project were 0.04 for the channel and 0.06 to 0.10 for the overbanks, horizontally varying depending on the extent and nature of vegetation. For sections 11.5, 11.8 and 12, which contain areas of vegetation within the channel, the roughness coefficient was set to 0.06 rather than 0.04 in the vegetated area. For the post-project model, overbank coefficients were adjusted to reflect the fact that the regrading and channel improvements will slightly lower the roughness coefficient.

The FEMA draft model cross-sections generally have coefficients of 0.035 for the channel and 0.1 or 0.12 for overbanks. The channel coefficient is reasonable but an overbank coefficient of 0.12 is too high. The standard reference for roughness coefficients (Chow, 1959) indicates that a value of 0.12 would be characteristic of very dense brush, heavy tree growth, and downed trees. Nevertheless, these values were used where the draft model sections were directly used, i.e. Sections 7-9 and 15-16.

C.4. Ineffective flow

The ineffective flow option was used in the left overbank of section 13.5 to characterize the backwater area above the culvert, and at the upstream culvert section 13.

C.5. Culvert parameters

The existing and new culvert systems, and associated top of roadway, were inserted between sections 12.5 and 13. Culverts were modeled with entrance projecting from fill with an entrance loss coefficient of 0.9, an exit loss coefficient of 1.0, and a roughness coefficient of 0.022. The distance between sections 12.5 and 13 is less than the length of the proposed new culvert because the culvert will be skewed, as compared to the existing culvert which is perpendicular to the sections. Therefore, the culvert length was set at 80 feet rather than 120 feet and the roughness increased to 0.027 to model the equivalent pipe length. The top of roadway is based on the grading plan provided by the landscape architect, including an approximate garage slab elevation of 5768.5 feet. Ineffective flow areas were set, but do not come into play since the flow overtops the roadway.

The deck width in the direction of flow was computed as the average width of the driveway and garage pad over which water flows. The standard weir coefficient of 2.6 was used for overtopping flow. Similarly, distances to upstream and downstream cross-sections represent averages for the culvert area.

C.6. Channel regrading

Regrading of the drainage swale was modeled by modifying all cross-sections where the swale is changing. The roughness coefficient for regraded swale areas was set to 0.06 to simulate the improved condition.

C.7. Building obstruction

The proposed residence was modeled with the HEC-RAS blocked obstruction feature, but this feature does not come into play at some cross-sections since the computed water surface elevation does not reach the building. The adjacent grade was modeled by modifying the cross-sections to reflect the proposed fill around the building to a grade of 5768.5 feet. Since the building and associated fill was modeled as a complete obstruction, this adequately represents the proposed slab-on-grade construction.

C.8. Mitigation

Mitigation for project impacts takes two forms: compensatory storage (Section D), and mitigation of hydraulic impacts to the extent feasible. Hydraulic impacts arise due to fill or obstruction of flow, reducing the overall section conveyance and resulting increase in modeled water elevation during the 100-year event. In this case, the enlargement of the swale and the construction of the shallow swale between the residence and the river provide both compensatory storage mitigation and hydraulic mitigation. The resulting net effect is discussed below.

C.9. Model results

The current conditions model results are reasonably consistent with the draft model, but not exactly the same due to the reasons discussed above. The new cross-sections better describe the channel changes and deposition that have occurred since the effective model development, and provide closer spacing in order to model the proposed grading plan. The baseline model is more detailed and simulates reality better than the draft model, and was deemed to be a suitable current-conditions model from which to evaluate changes due to proposed project grading.

With the building and grading plan as proposed, which includes the mitigation described above, the computed water surface elevations are either unchanged or slightly lower than for the existing conditions scenario (Table 2). The primary impact occurs directly upstream of the driveway, where the model predicts an increase of 0.38 feet. This increase is necessary since the access roadway must include a small roadbed and cannot be constructed at grade; thus the water upstream must rise to flow over the roadway during the flood event. However, the model predicts that this increase does not propagate upstream off of the property – for example, the impact is essentially zero at Section 14. The project is not within the regulatory floodway and subject to FEMA's "no-rise" requirement. The impact should be acceptable as it is 1) highly localized on the subject property, 2) a necessary consequence of creating an access to a platted building envelope, and 3) offset by the significant restorative benefits to the riparian area, much of which is in poor condition (see Sawtooth Environmental report).

The model predicts the water surface elevation at the upstream side of the driveway to be 5768.24, or a depth of 0.24 feet over the roadway. This meets the maximum 1.0-foot depth requirement by the Ketchum Fire Department.

Table 2. Model-computed water surface elevations.

Section	River Sta	Water surface elevation (ft)			FEMA Draft 2022*
		Existing Conditions	With Project	Change	
16	93417.33	5776.17	5776.17	0.00	5777.63
15.5	92671.74	5773.22	5773.22	0.00	
15	92471.74	5770.90	5770.90	0.00	5770.67
14	92232	5769.40	5769.37	-0.03	
13.5	92123	5768.94	5768.89	-0.05	
13	92065	5767.85	5768.23	0.38	
Culvert	92021				
12.5	91977	5767.57	5767.51	-0.06	
12	91945	5766.80	5766.80	0.00	
11.8	91911	5766.89	5766.88	-0.01	
11.5	91836	5766.51	5766.51	0.00	
11	91715	5765.89	5765.89	0.00	
10	91565	5764.88	5764.88	0.00	
9	91427	5764.80	5764.8	0.00	
8	91103.24	5761.89	5761.89	0.00	5762.08
7	90690.8	5759.68	5759.68	0.00	5761.33

* Shown for information only, not comparable to project modeling since incorrect discharge was used in FEMA model.

D. Compensatory storage and fill mitigation

Because of the City's requirement for 1-for-1 compensatory storage, the volumes of cut and fill within the floodplain and below the base flood were balanced to ensure no loss of floodplain storage. Based on current guidance from the city, it is understood that the fill associated with a residential foundation, including both within the footprint and the fill needed to create a reasonable grading away from the foundation, will not be counted in the compensatory storage analysis.

The final average grade elevation around the foundation of 5768.5 feet is generally zero to 1.0 feet above existing grade, and most of the existing grade is above the BFE as described above, so that the fill will not reduce floodplain storage. The primary exception is the eastern portion of the residence, where the building envelope includes some of the existing swale. Maximum fill

depth in this area will be 4.2 feet, but will be mitigated by the regrading of the swales. A modest net fill will also occur in the entrance area in the course of restoring the area to functional emergent wetlands.

The gross volumes of cut and fill below the BFE for the proposed grading plan were calculated from the existing and project cross-sections utilized for the hydraulic modeling. The volumes were calculated from the areas of cut and fill below the model-calculated base flood elevation for existing conditions. Fill for the driveway, pad, and culvert headwall backfill were calculated separately and added to the section volumes.

A definition of "reasonable grading" away from the foundation for this specific case is proposed as follows: 5% slope for 10 feet away from the foundation (based on the IRC), and a 5:1 slope further away from the foundation until intersection with natural grade. A 5:1 slope is an estimate of the maximum safe slope for a grassed walking surface. This definition may not be universally applicable, but appears to give reasonable results in this case. The foundation fill volume based on this criteria and that is also below the BFE was subtracted from the gross fill.

The cross-sectional areas of gross cut, gross fill, and reasonable associated foundation fill are illustrated on Figures 3 and 4, and calculations are shown in Table 3. Note that the distances between sections are not necessarily the same as the values in the model, because the modeling represents an average for the entire section whereas the cut/fill calculations are specific to a small area. The computed cut volume is 485 cy and the fill volume accounting for reasonable associated grading is 373 cy, indicating that the compensatory storage requirement can be met.

Table 3. Cut and fill balance below BFE.

Section	Station (ft)	Avg dist between Sections (ft)	Cut Area (ft2)	Fill Area (ft2)	Delta V (cy)		Associated House Fill*	
					Cut	Fill	Area (ft2)	Delta V (cy)
Start grading (prop line)	0		0.0	0.0			0.0	
11.8	57	57	74.9	94.0	52.7	66.1	73.8	51.9
12	90	33	99.6	44.3	106.3	82.6	28.0	60.0
12.5	128	38	60.8	58.8	111.8	72.3	30.3	41.0
13	230	102	13.6	11.6	129.9	121.5	0.0	38.2
13.5	297	67	56.7	54.5	81.1	75.5	0.0	0.0
End grading	302	5	0.0	0.0	3.5	3.4	0.0	0.0
				Subtotals	485.3	421.5		191.1
Driveway - road access					0.0	84.4		
Driveway pad at garage					0.0	36.7		
Retaining wall area - section area 15.3' x length 37.8'					0.0	21.4		
TOTAL GROSS CUT					**485.3**	**cy**		

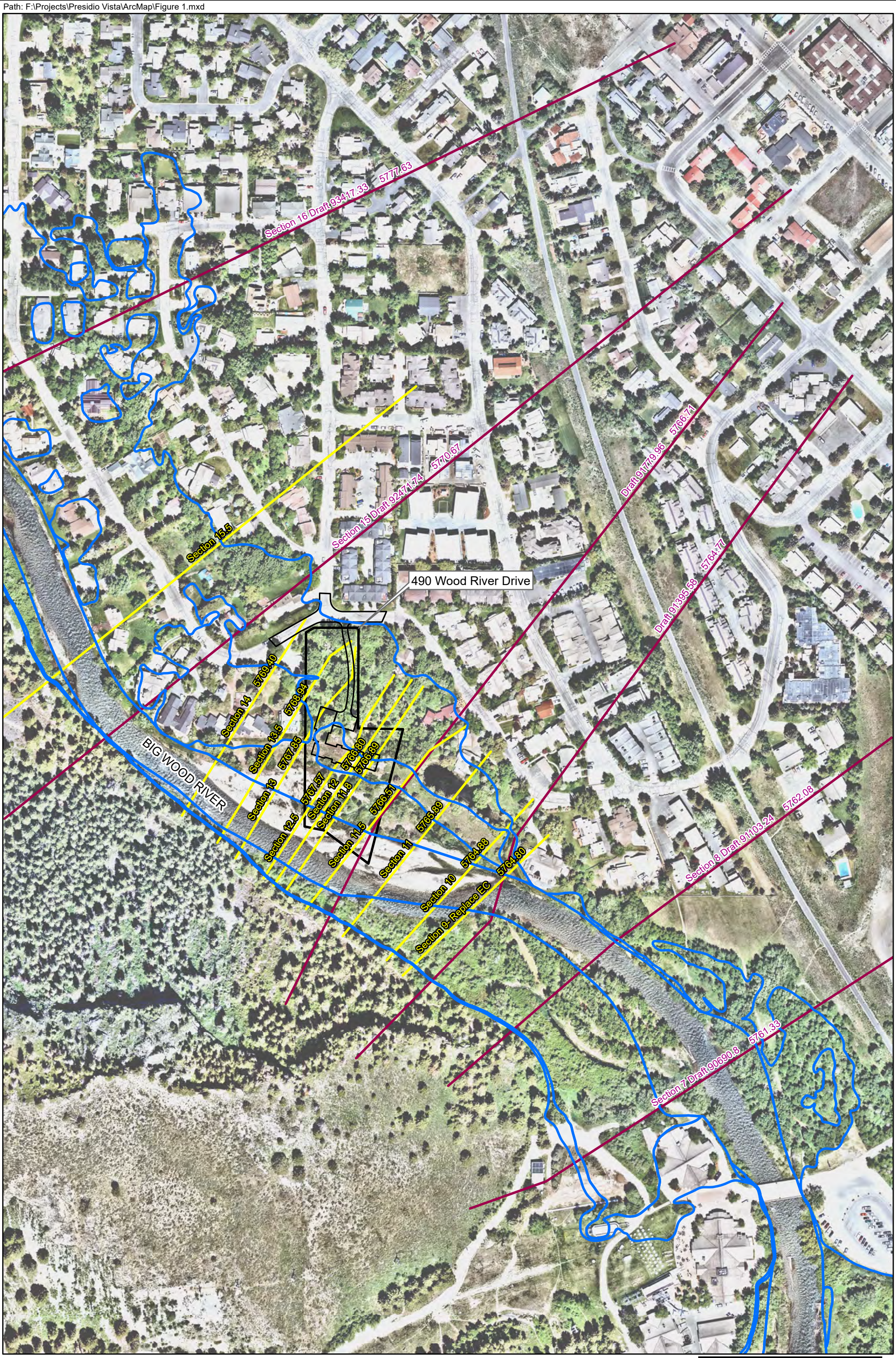
TOTAL GROSS FILL	**564.0**	**cy**		
ASSOCIATED HOUSE FILL	**191.1**	**cy**		
NET FILL (gross fill minus associated house fill)	**372.9**	**cy**		
NET CUT-FILL BALANCE	**112.4**	**cy**		

* 5% slope for 10 feet away from the foundation (based on the IRC), and a 5:1 slope further away from the foundation until intersection with natural grade

E. Wetland and vegetation plan

Sawtooth Environmental has prepared a Joint Application for Permits, including a plan for wetlands management to meet the requirements of the Corps of Engineers. The plan includes a revegetation plan for the project, including site preparation and planting of native species appropriate for riparian and wetland environments. This plan will be implemented in conjunction with coordinated plans prepared by the landscape architect.

Path: F:\Projects\Presidio Vista\ArcMap\Figure 1.mxd



0 80 160 320 Feet

BROCKWAY ENGINEERING, PLLC.
JJJ - Date: 4/26/2023

FIGURE 1

CITY OF KETCHUM- FLOODPLAIN DEVELOPMENT PERMIT
PRESIDIO VISTA

2022 BLAINE COUNTY NEARMAP AERIAL

Legend
- FEMA Draft Model Sections
- Brockway Model Sections
- FEMA Draft Floodplain 2022

N

F:\Projects\Presidio Vista\CAD\Floodplain Development Permit v3-2023.03.09.dwg

LEGEND

FEMA DRAFT FLOODPLAIN 2022 — FP22

PROPERTY LINE

FLOODWAY

EXT'G CONTOURS

PROPOSED GRADING

BROCKWAY MODEL SECTIONS

BUILDING ENVELOPE — BE

CULVERTS

TOPOGRAPHIC DATA FROM 2017 LIDAR AND GALENA ENGINEERING SURVEY OCTOBER 2022.

FOLLOW GRADING PLAN SHOWN, INCLUDING THE FOLLOWING PARTICULAR ELEMENTS:

ELEMENT #1
DRIVEWAY WITHIN FLOODPLAIN, TOP ROAD 0.4' TO 1.4' ABOVE EXISTING GRADE, WATER DEPTH 0.38' MAX. DURING 100-YR FLOOD

ELEMENT #2
CONSTRUCT RESIDENCE WITHIN PLATTED BUILDING ENVELOPE, INCLUDING ASSOCIATED REASONABLE FILL.

ELEMENT #3
RELOCATE AND ENHANCE DRAINAGE SWALE
BOTTOM WIDTH 7 FT
SIDE SLOPE 4:1 OR FLATTER
CHANNEL SLOPE 1.1%±

ELEMENT #4
REPLACE EXISTING 16" CULVERT WITH (2) 36X24 CMP PIPE-ARCH CULVERTS, INLET - MITERED TO SLOPE, OUTLET - HEADWALL AND FILL TO DRIVEWAY PAD
INLET I.E.5764.8
OUTLET I.E.5764.6

ELEMENT #5
CONSTRUCT SHALLOW SWALE TO GRADES SHOWN, DO NOT ENCROACH ON FLOODWAY. INSTALL BURIED STONE ALONG TOE OF RESIDENTIAL FILL.

WOOD RIVER DRIVE (50' R/W)

450 WOOD RIVER DRIVE
MARY'S PLACE SUB
LOT 3, BLK 1
±54,219 S.F.
±1.24 AC.

490 WOOD RIVER DRIVE
MARY'S PLACE SUB
LOT 4, BLK 1
±91,112 S.F.
±2.09 AC.

LOT 2, BLK 1
MARY'S PLACE SUBDIVISION

SCALE IN FEET: 0, 50, 100

NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE
A	ISSUE FOR PERMITTING	4/26/2023

SCALE AS SHOWN (11 X 17 DWG ONLY)
DESIGNED BY CGB
DRAFTED BY JJJ

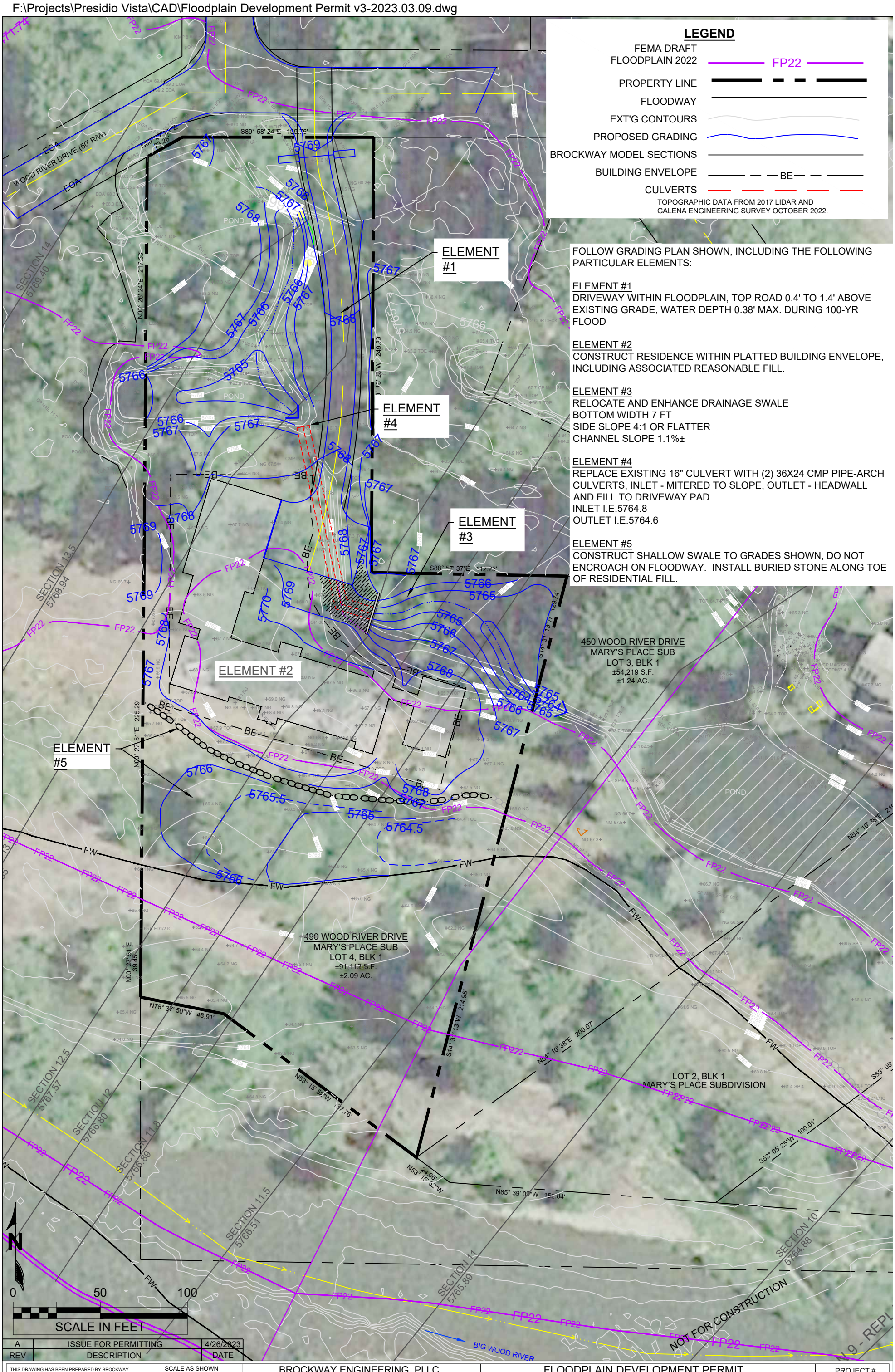
BROCKWAY ENGINEERING, PLLC
HYDRAULICS - HYDROLOGY - WATER RESOURCES
2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS ID, 83301
(208) 736-8543

FLOODPLAIN DEVELOPMENT PERMIT
490 WOOD RIVER

FIGURE 2. SITE PLAN AND PROJECT ELEMENTS

PROJECT # 1575-01-2021
DWG # 1
REV A

F:\Projects\Presidio Vista\CAD\Floodplain Development Permit v3-2023.03.09.dwg



REV	DESCRIPTION	DATE
A	ISSUE FOR PERMITTING	4/26/2023

SCALE AS SHOWN (11 X 17 DWG ONLY)
DESIGNED BY CGB
DRAFTED BY JJJ

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FLOODPLAIN DEVELOPMENT PERMIT
490 WOOD RIVER

FIGURE 2. SITE PLAN AND PROJECT ELEMENTS

PROJECT # 1575-01-2021
DWG # 1
REV A

Appendix A
HEC-RAS Output and Cross-Sections

Presidio Vista - 490 Wood River HEC-RAS Model Output

Models with more refined horizontally-varied n-values (0.1 in left overbank thick vegetation areas) 4/26/2023

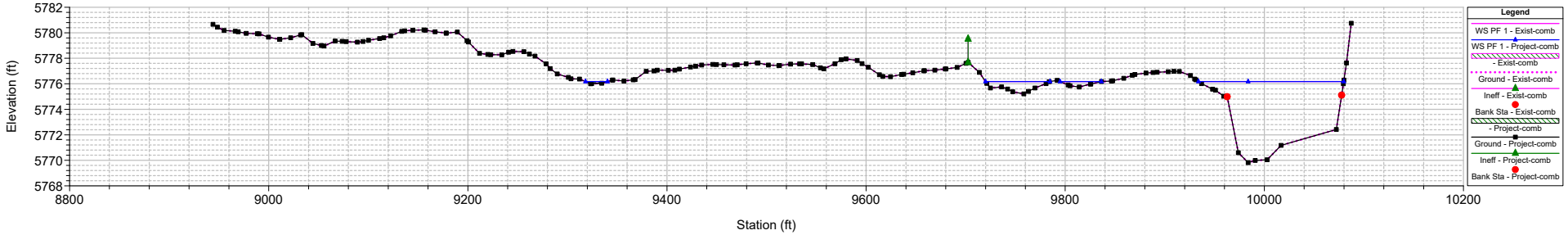
BASELINE EXISTING CONDITIONS

Sec No	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Ch	Draft model
16	Reach-1	93417.33	PF 1	6363	5769.82	5776.17	5776.173	5778.2	0.009273	11.49	612.51	274.18	0.93	5777.63
15.5	Reach-1	92671.74	PF 1	6363	5765	5773.22	5771.454	5773.86	0.002402	6.79	1516.95	550.9	0.49	
15	Reach-1	92471.74	PF 1	6363	5763.7	5770.90	5770.378	5772.95	0.00722	11.54	611.6	554.57	0.84	5770.67
14	Reach-1	92232	PF 1	6363	5762.2	5769.40	5768.914	5770.61	0.009666	8.9	775.68	313.54	0.8	
13.5	Reach-1	92123	PF 1	6363	5761.6	5768.94	5767.999	5769.62	0.006205	6.74	1036.11	494.29	0.63	
13	Reach-1	92065	PF 1	6363	5761.3	5767.85	5767.849	5769.02	0.016779	8.82	804.5	413.79	0.98	
	Reach-1	92021		Culvert										
12.5	Reach-1	91977	PF 1	6363	5760.4	5767.57	5766.424	5768.07	0.00439	5.83	1307.2	532.45	0.54	
12	Reach-1	91945	PF 1	6363	5760	5766.80	5766.727	5767.8	0.01153	8.23	888.32	419.77	0.93	
11.8	Reach-1	91911	PF 1	6363	5759.7	5766.89	5766.024	5767.38	0.005825	5.9	1345.34	527.11	0.58	
11.5	Reach-1	91836	PF 1	6363	5758.42	5766.51	5765.453	5766.97	0.004833	5.6	1311.04	500.92	0.54	
11	Reach-1	91715	PF 1	6363	5757.02	5765.89	5764.713	5766.39	0.004675	6.02	1311.87	444.77	0.55	
10	Reach-1	91565	PF 1	6363	5756.85	5764.88	5763.686	5765.69	0.004594	7.8	1135.68	345.48	0.59	
9	Reach-1	91427	PF 1	6363	5756.85	5764.80	5762.283	5765.37	0.002357	6.29	1324.93	373.55	0.43	
8	Reach-1	91103.24	PF 1	6363	5755.22	5761.89	5761.734	5763.89	0.009221	11.61	730.72	275.48	0.93	5762.08
7	Reach-1	90690.8	PF 1	6363	5752.51	5759.68	5758.641	5760.93	0.005003	9.02	772.47	374.2	0.69	5761.33

WITH PROJECT 2023.03.09 / 2023.03.14 FINAL REV 2023.04.26

Sec No	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Ch	Delta WSE
16	Reach-1	93417.33	PF 1	6363	5769.82	5776.173	5776.173	5778.2	0.009273	11.49	612.51	274.18	0.93	0.00
15.5	Reach-1	92671.74	PF 1	6363	5765	5773.222	5771.454	5773.86	0.002406	6.8	1515.88	550.9	0.49	0.00
15	Reach-1	92471.74	PF 1	6363	5763.7	5770.904	5770.378	5772.95	0.007183	11.52	614.37	561.51	0.84	0.00
14	Reach-1	92232	PF 1	6363	5762.2	5769.37	5768.914	5770.6	0.009892	8.98	766.83	311.48	0.81	-0.03
13.5	Reach-1	92123	PF 1	6363	5761.6	5768.886	5767.996	5769.58	0.006453	6.81	1020.66	489.06	0.65	-0.05
13	Reach-1	92065	PF 1	6363	5761.3	5768.225	5767.831	5769.09	0.010548	7.62	979.85	481.1	0.8	0.38
	Reach-1	92021		Culvert										
12.5	Reach-1	91977	PF 1	6363	5760.4	5767.514	5766.363	5767.99	0.004401	5.68	1287.99	487.62	0.53	-0.06
12	Reach-1	91945	PF 1	6363	5760	5766.803	5766.66	5767.74	0.010662	7.99	918.03	410.56	0.88	0.00
11.8	Reach-1	91911	PF 1	6363	5759.7	5766.877	5765.944	5767.35	0.005206	5.88	1315.94	493.44	0.57	-0.01
11.5	Reach-1	91836	PF 1	6363	5758.42	5766.51	5765.453	5766.97	0.004833	5.6	1311.04	500.92	0.54	0.00
11	Reach-1	91715	PF 1	6363	5757.02	5765.889	5764.713	5766.39	0.004675	6.02	1311.87	444.77	0.55	0.00
10	Reach-1	91565	PF 1	6363	5756.85	5764.875	5763.686	5765.69	0.004594	7.8	1135.68	345.48	0.59	-0.01
9	Reach-1	91427	PF 1	6363	5756.85	5764.803	5762.283	5765.37	0.002357	6.29	1324.93	373.55	0.43	0.00
8	Reach-1	91103.24	PF 1	6363	5755.22	5761.894	5761.734	5763.89	0.009221	11.61	730.72	275.48	0.93	0.00
7	Reach-1	90690.8	PF 1	6363	5752.51	5759.681	5758.641	5760.93	0.005003	9.02	772.47	374.2	0.69	0.00

Presidio3 based on FEMA draft Plan: 1) Project-comb 2) Exist-comb
RS = 93417.33 Section 16 / From draft model



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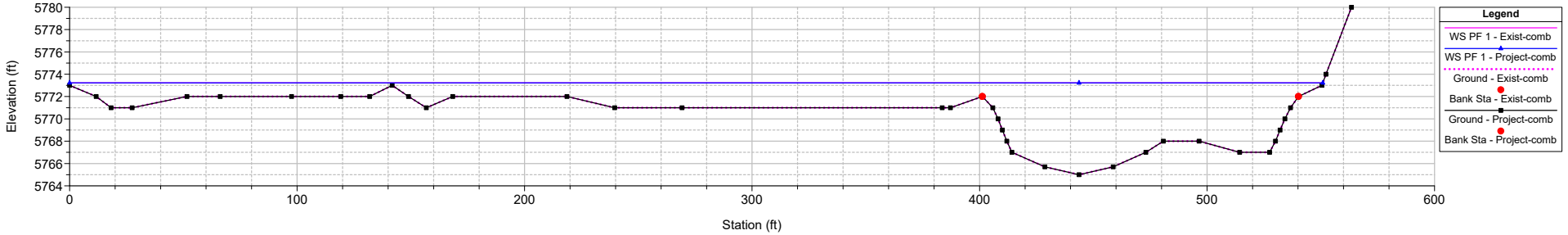

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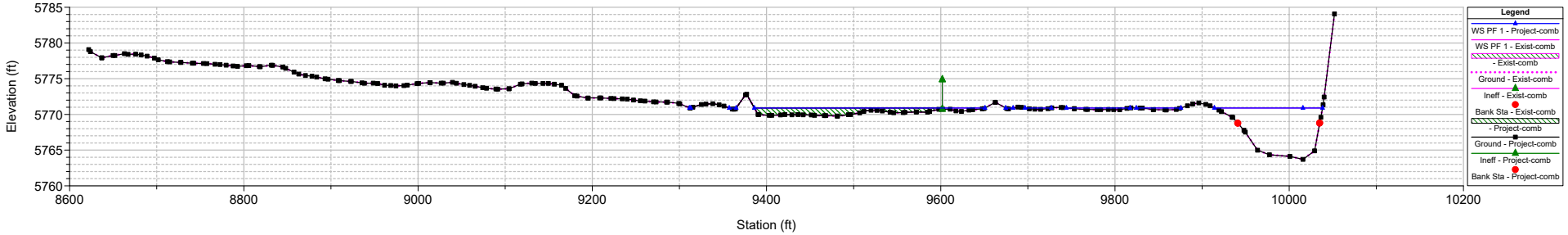

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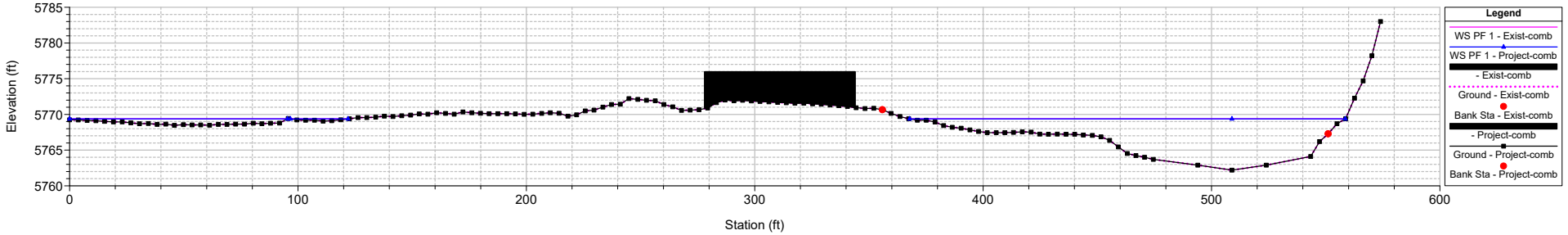

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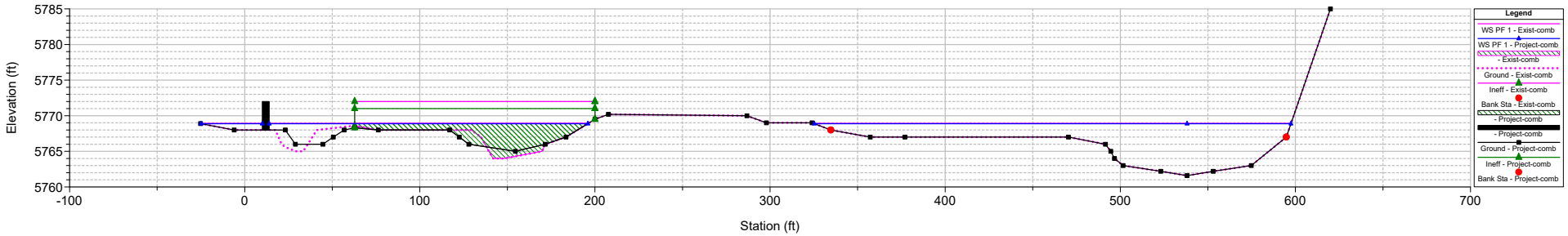

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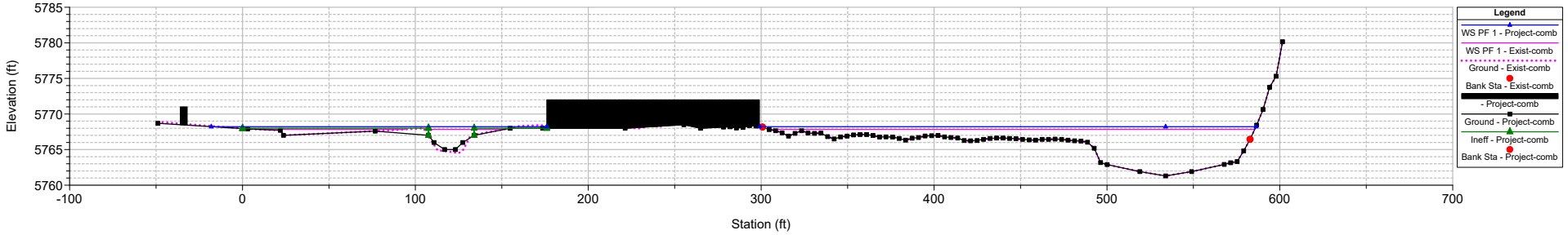

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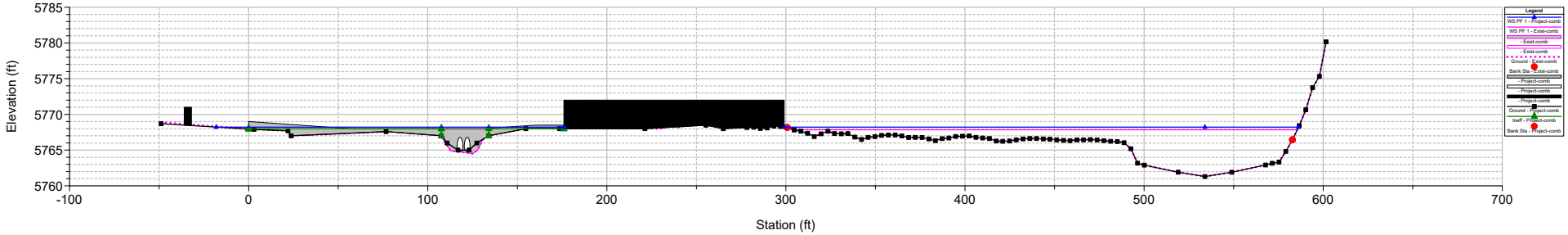

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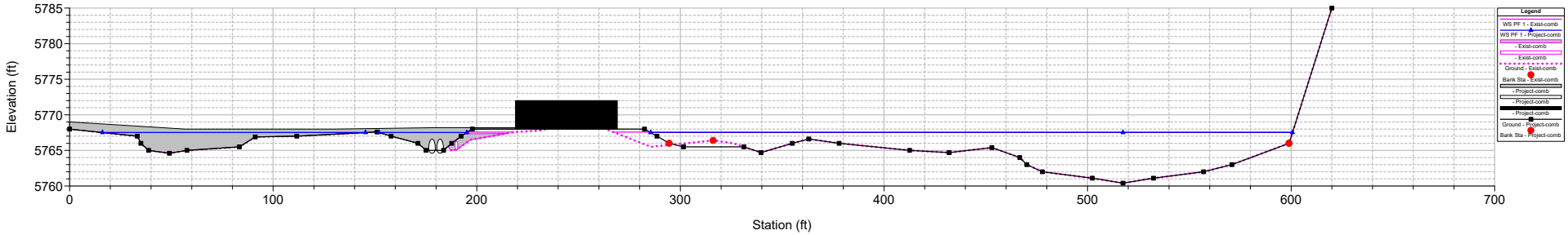

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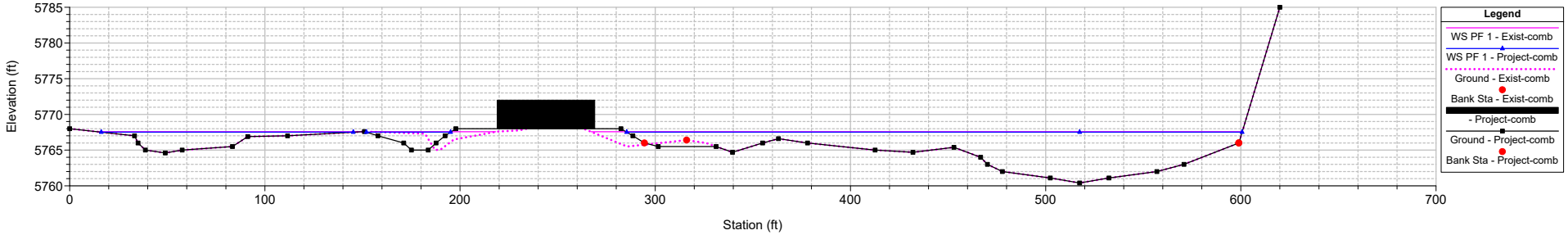

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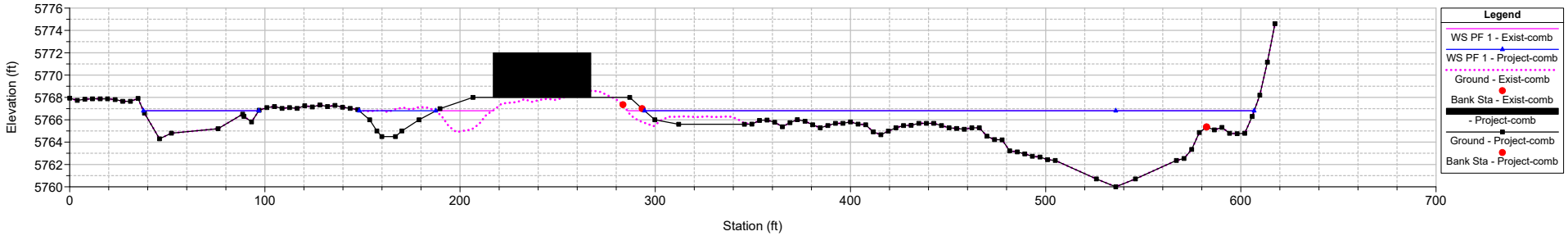

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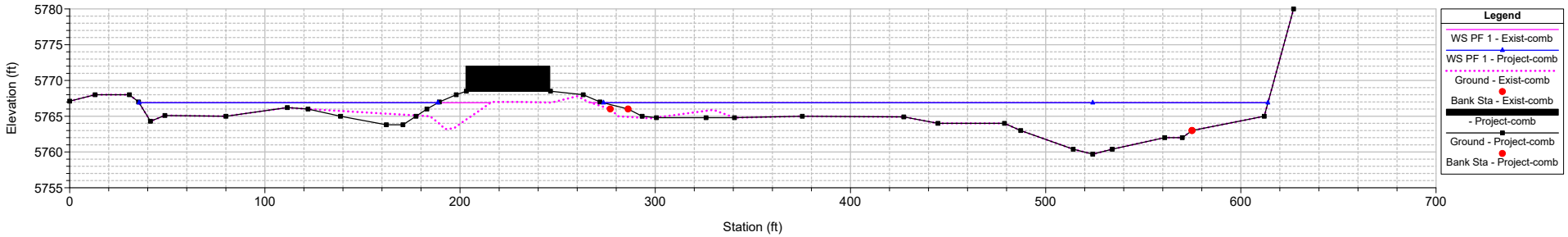
RS = 91911 Section 11.8



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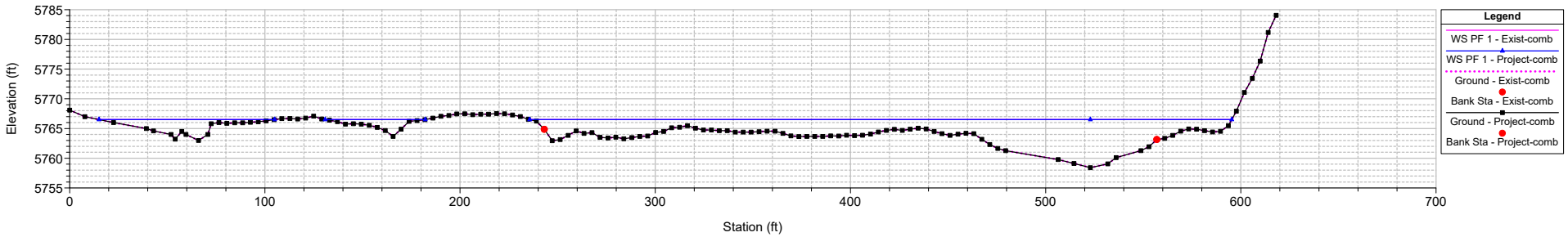

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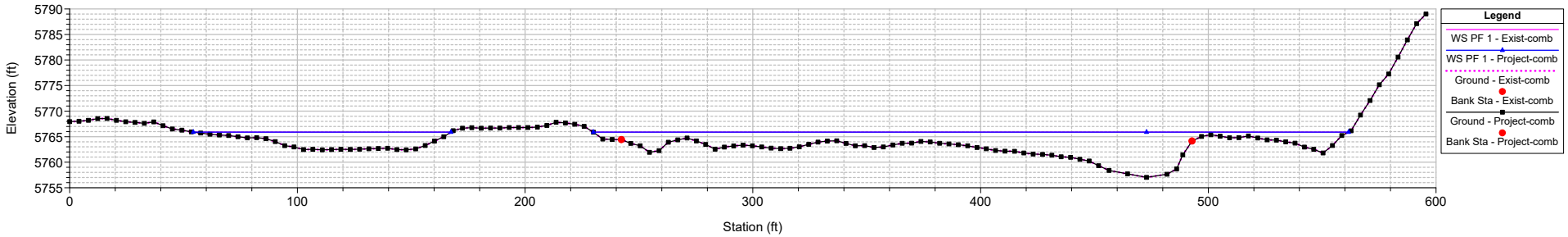

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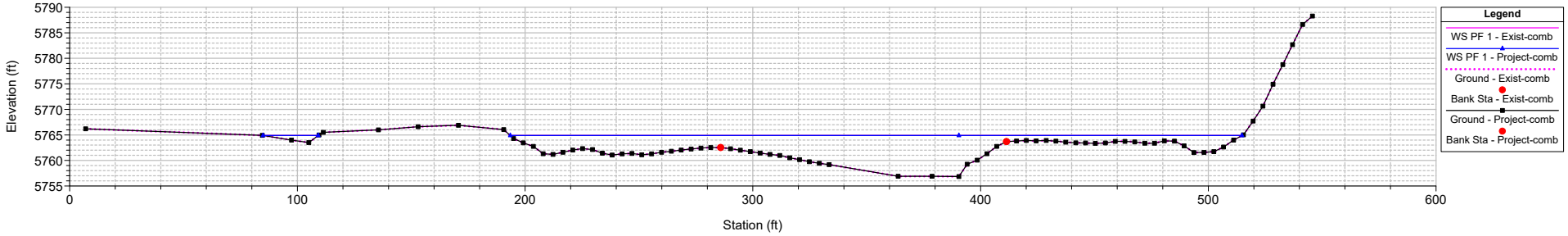

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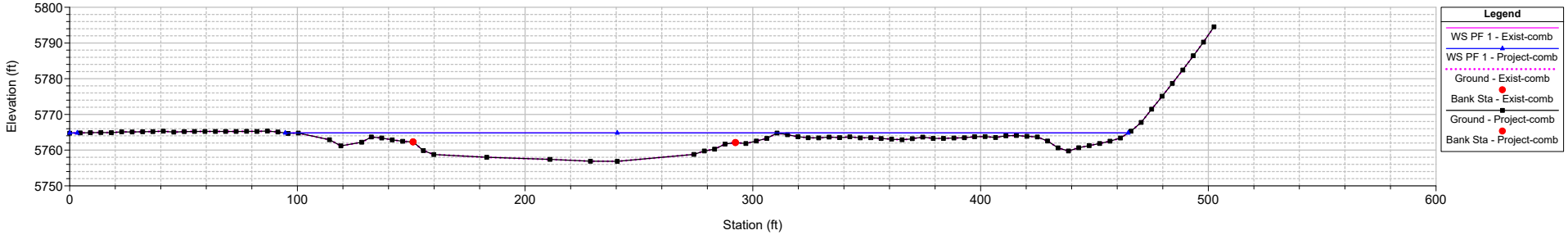

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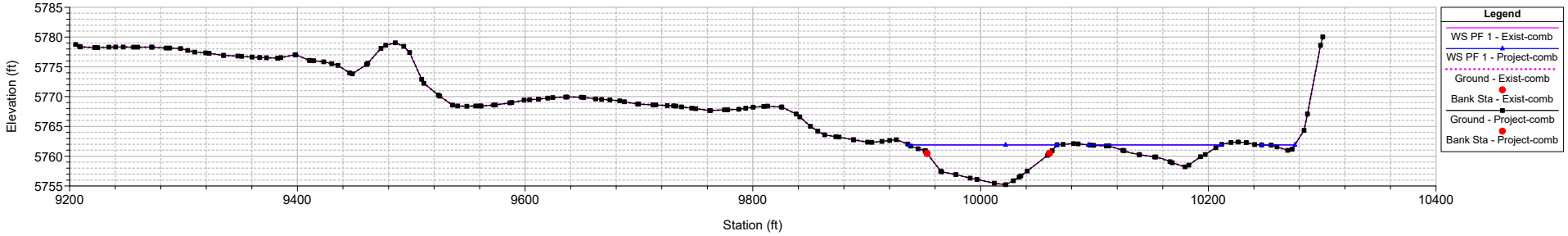

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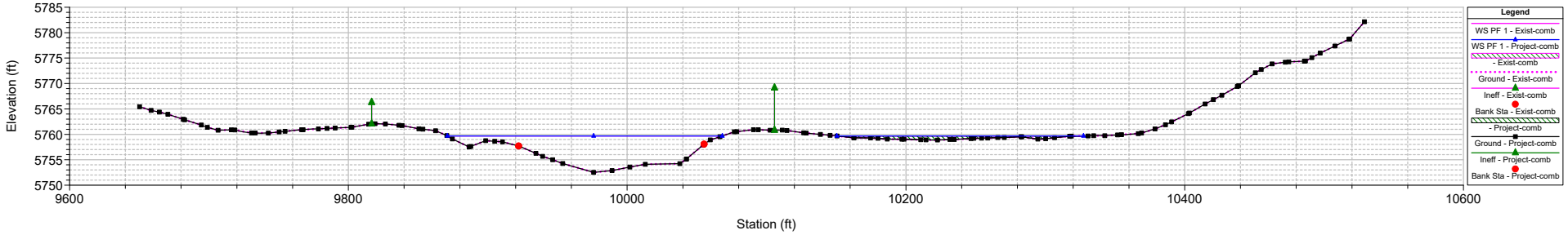
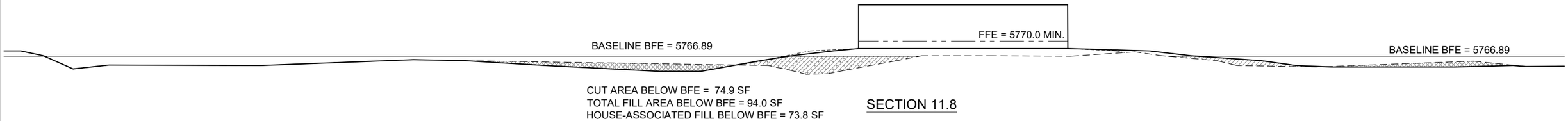


Appendix B
Cut-Fill Analysis

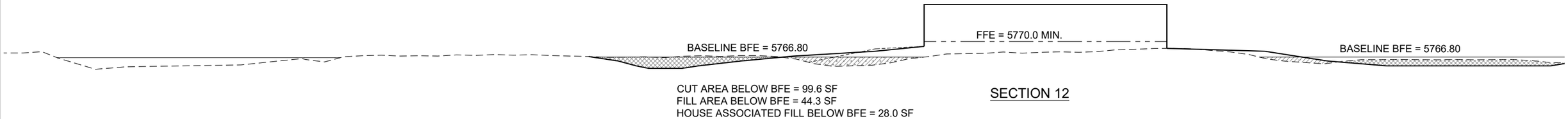
F:\Projects\Presidio Vista\CAD\Cut-fill-project-2023.03.09.dwg

EXISTING GRADE
PROJECT GRADE
BASELINE BFE CALCULATED
CUT BELOW BFE
FILL BELOW BFE
HOUSE-ASSOCIATED FILL BELOW BFE, WITH CRITERIA: 5% FOR FIRST 10 FT (IRC) THEN 5:1 (MAX. REASONABLE WALKING SURFACE)



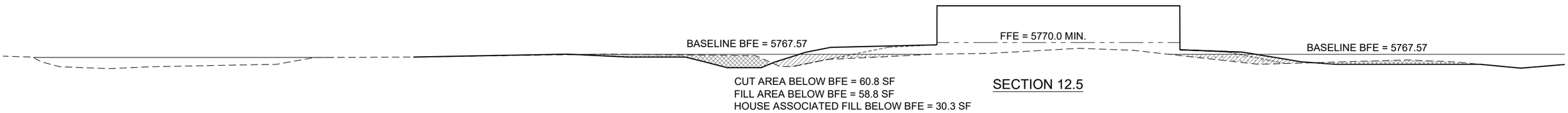
CUT AREA BELOW BFE = 74.9 SF
TOTAL FILL AREA BELOW BFE = 94.0 SF
HOUSE-ASSOCIATED FILL BELOW BFE = 73.8 SF

SECTION 11.8



CUT AREA BELOW BFE = 99.6 SF
FILL AREA BELOW BFE = 44.3 SF
HOUSE ASSOCIATED FILL BELOW BFE = 28.0 SF

SECTION 12



CUT AREA BELOW BFE = 60.8 SF
FILL AREA BELOW BFE = 58.8 SF
HOUSE ASSOCIATED FILL BELOW BFE = 30.3 SF

SECTION 12.5

REV	DESCRIPTION	DATE	APPD.
C	ISSUED FOR PERMITTING	4/5/2023	

DESIGNED BY CGB | DRAFTED BY CGB

NO SCALE

BROCKWAY ENGINEERING, PLLC.
HYDRAULICS - HYDROLOGY - WATER RESOURCES
2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, ID. 83301
(208) 736-8543

490 WOOD RIVER FLOODPLAIN DEVELOPMENT PERMIT

PROJECT # 1575-01-2021

CUT AND FILL AREAS BELOW CALCULATED BASELINE BFE (100-YEAR FLOW)

DWG # FIGURE 3

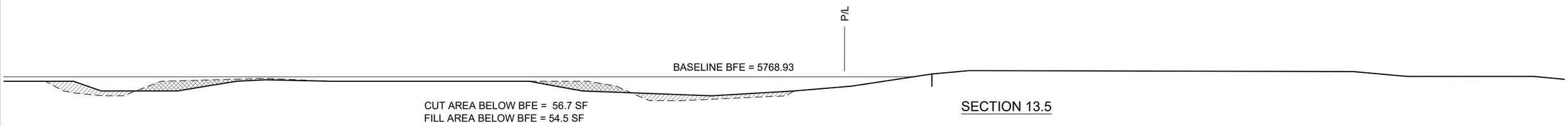
REV C

F:\Projects\Presidio Vista\CAD\Cut-fill-project-2023.03.09.dwg

EXISTING GRADE
PROJECT GRADE
BASELINE BFE CALCULATED
CUT BELOW BFE
FILL BELOW BFE

CUT AREA BELOW BFE = 13.6 SF
FILL AREA BELOW BFE = 11.6 SF

SECTION 13



CUT AREA BELOW BFE = 56.7 SF
FILL AREA BELOW BFE = 54.5 SF

SECTION 13.5

CUT AREA BELOW BFE = 0 SF
FILL AREA BELOW BFE = 152 SF

DRIVEWAY - ROAD ACCESS

DRIVEWAY PAD AT GARAGE WEST-EAST SECTION

CUT AREA BELOW BFE = 0 SF
FILL AREA BELOW BFE = 28.3 SF

THIS DRAWING HAS BEEN PREPARED BY BROCKWAY ENGINEERING, PLLC. FOR A SPECIFIC PROJECT TAKING INTO ACCOUNT THE SPECIFIC AND UNIQUE REQUIREMENTS OF THE PROJECT. REUSE OF THIS DRAWING FOR ANY PURPOSE IS PROHIBITED UNLESS WRITTEN PERMISSION FROM BOTH BROCKWAY ENGINEERING & THE CLIENT IS GRANTED.

REV	DESCRIPTION	DATE	APPD.
C	ISSUED FOR PERMITTING	4/5/2023	

DESIGNED BY CGB | DRAFTED BY CGB

NO SCALE

BROCKWAY ENGINEERING, PLLC.
HYDRAULICS - HYDROLOGY - WATER RESOURCES
2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, ID. 83301
(208) 736-8543

450-490 WOOD RIVER FLOODPLAIN DEVELOPMENT PERMIT

PROJECT # 1575-01-2021

CUT-FILL BELOW CALCULATED BFE

DWG # FIGURE 4

REV C

Analysis of Cut and Fill Volume Below BFE

490 standalone project 2023.03.09 final rev 2023.04.26

BFE calculated with site-specific HEC-RAS model described in technical report

Volumes calculated using frustum formula

CGB 4/26/2023

Section	Station	Avg dist between sections	Cut Area (ft2)	Fill Area (ft2)	Delta V (cy) Cut	Delta V (cy) Fill	Associated house fill* Area (ft2)	Associated house fill* Delta V
Start grading (prop line)	0		0.0	0.0			0	
11.8	57	57	74.9	94.0	52.7	66.1	73.8	51.9
12	90	33	99.6	44.3	106.3	82.6	28.0	60.0
12.5	128	38	60.8	58.8	111.8	72.3	30.3	41.0
13	230	102	13.6	11.6	129.9	121.5	0.0	38.2
13.5	297	67	56.7	54.5	81.1	75.5	0.0	0.0
End grading	302	5	0.0	0.0	3.5	3.4	0.0	0.0
				Totals	485.3	421.5		191.1
Additional fill:								
Driveway - road access					0.0	84.4		
Driveway pad at garage					0.0	36.7		
Retaining wall area - section area 15.3' x length 37.8'					0.0	21.4		

* 5% for first 10 feet from foundation, then 5:1

Total gross cut	485.3	cy
Total gross fill	564.0	cy
Associated house fill	191.1	cy
Net fill (gross minus associated house fill)	372.9	cy
Net cut-fill balance excluding associated house fill	**112.4**	**cy**

Roadway drive profile

Existing ground profile

Sta	GS
0	5769.3
28	5768.6
46	5768.5
62	5768
71	5767
143	5767.6
175	5767.8
213	5766.7
234	5765

Top of road finished grade profile

Sta	GS
0	5769.3
23	5769
122	5767.9
190	5767.9
234	5768

Baseline BFE

0	5768.71
234	5768.71

Fill section area below BFE	152	sf
Average width of fill	15	feet
Volume of fill	84	yd3

Driveway at garage West-East section

Existing ground

Sta	GS
0	5767.4
27.7	5767.8
36	5765
38.6	5765
42.8	5767
62	5767.6

Finished grade

Sta	GS
0	5768.5
26.2	5768.3
53	5768

Baseline BFE

0	5767.57
62	5767.57

Fill section area below BFE	28.3	sf
Width of fill	35	ft
Volume of fill	36.7	yd3

Appendix C
Joint Application for Permits

Mary's Place Subdivision, Lot 4, Block 1
490 Wood River Drive
City of Ketchum, Blaine County, Idaho

February 2023

450 - 490 Wood River, LLC
Presidio Vista Properties
P.O. Box 10092
Ketchum, ID 83340

Pre-construction notification is being submitted on behalf of 450 - 490 Wood River, LLC owners of Lot 4, Block 1, of the Mary's Place Subdivision, located 490 Wood River Drive, within Section 13, Township 4N., Range 17E., City of Ketchum, Blaine County, Idaho. Applicant request permit approval for residential development within existing platted building envelope. Proposed development will impact waters of the United States, jurisdictional wetlands, development plan will require permanent wetland fill: residential homesite, access driveway, attendant landscape features and associated landscape grading applications.

Proposed development applications will impact approximately 0.424 ac (18,450 sq. ft.) of identified wetland resources: permanent fill approximately 0.125 ac. (5,450 sq. ft.), floodplain/riparian/wetland restoration applications approximately 0.298 ac. (13,000 sq. ft.).

Proposed development applicaitons have been designed and will be constructed to avoid and minimize adverse impacts to identified wetland resources to the maximum extent practicable. Mitigation to offset for the proposed wetland impacts [permanent fill] will be implemented in conjunction with the City of Ketchum Floodplain Development regulations and requirements.

On-site compensatory mitigation applications will be conducted on a 1 to 1 (minimum) replacement ratio. Proposed riparian/wetland mitigation applications will create enhance approx. 0.167 ac. (7,300 sq. ft.) of riparian wetland habitat resources.

Due to the proposed wetland mitigation applications, locations of proposed development applications, site drainage characteristics and preserved vegetative buffers, changes to wetland functions, hydrological characteristics and processes are not anticipated.

Project will incorporate all applicable Best Management Practices (BMPs) such as silt fence and straw wattles to protect resource values and ensure compliance with Water Quality Standards and applicable environmental regulations. All disturbed areas will be reclaimed and vegetated.

JOINT APPLICATION FOR PERMITS

U.S. ARMY CORPS OF ENGINEERS - IDAHO DEPARTMENT OF WATER RESOURCES - IDAHO DEPARTMENT OF LANDS

Authorities: The Department of Army Corps of Engineers (Corps), Idaho Department of Water Resources (IDWR), and Idaho Department of Lands (IDL) established a joint process for activities impacting jurisdictional waterways that require review and/or approval of both the Corps and State of Idaho. Department of Army permits are required by Section 10 of the Rivers & Harbors Act of 1899 for any structure(s) or work in or affecting navigable waters of the United States and by Section 404 of the Clean Water Act for the discharge of dredged or fill materials into waters of the United States, including adjacent wetlands. State permits are required under the State of Idaho, Stream Protection Act (Title 42, Chapter 38, Idaho Code and Lake Protection Act (Section 58, Chapter 13 et seq., Idaho Code). In addition the information will be used to determine compliance with Section 401 of the Clean Water Act by the appropriate State, Tribal or Federal entity.

Joint Application: Information provided on this application will be used in evaluating the proposed activities. Disclosure of requested information is voluntary. Failure to supply the requested information may delay processing and issuance of the appropriate permit or authorization. Applicant will need to send a completed application, along with one (1) set of legible, black and white (8½"x11"), reproducible drawings that illustrate the location and character of the proposed project / activities to both the Corps and the State of Idaho.

See Instruction Guide for assistance with Application. Accurate submission of requested information can prevent delays in reviewing and permitting your application. Drawings including vicinity maps, plan-view and section-view drawings must be submitted on 8-1/2 x 11 papers.

Do not start work until you have received all required permits from both the Corps and the State of Idaho

FOR AGENCY USE ONLY			
USACE NWW-	Date Received:	☐ Incomplete Application Returned	Date Returned:
Idaho Department of Water Resources No.	Date Received:	☐ Fee Received DATE:	Receipt No.:
Idaho Department of Lands No.	Date Received:	☐ Fee Received DATE:	Receipt No.:

INCOMPLETE APPLICATIONS MAY NOT BE PROCESSED

1. CONTACT INFORMATION - APPLICANT Required:			2. CONTACT INFORMATION - AGENT:		
Name: Matt Scoggins - Presidio Vista Properties			Name: Trent A. Stumph		
Company: 450-490 Wood River, LLC			Company: SAWTOOTH ENVIRONMENTAL CONSULTING, LLC		
Mailing Address: P.O. Box 14001-174			Mailing Address: P.O. Box 2707, 540 North 1st. Avenue		
City: Ketchum	State: ID	Zip Code: 83340	City: Ketchum	State: ID	Zip Code: 83340
Phone Number *(include area code)*: 214-557-5533	E-mail: matt@presidiovistaproperties.com		Phone Number *(include area code)*: 208-727-9748	E-mail: trent@sawtoothenvironmentalcom	

3. PROJECT NAME or TITLE: 490 Wood River Drive - Residential Dev.			4. PROJECT STREET ADDRESS: 490 Wood River Drive	
5. PROJECT COUNTY: Blaine	6. PROJECT CITY: Ketchum		7. PROJECT ZIP CODE: 83340	8. NEAREST WATERWAY/WATERBODY: Big Wood River
9. TAX PARCEL ID#: RPK04740000040	10. LATITUDE: 43.674745° N LONGITUDE: -114.371080° W	11a. 1/4: SE / 11b. 1/4: SE / 11c. SECTION: 13	11d. TOWNSHIP: 4N	11e. RANGE: 17E
12a. ESTIMATED START DATE: June 2023	12b. ESTIMATED END DATE: July 2025	13a. IS PROJECT LOCATED WITHIN ESTABLISHED TRIBAL RESERVATION BOUNDARIES? ☒ NO ☐ YES Tribe:		
13b. IS PROJECT LOCATED IN LISTED ESA AREA? ☒ NO ☐ YES		13c. IS PROJECT LOCATED ON/NEAR HISTORICAL SITE? ☒ NO ☐ YES		

14. DIRECTIONS TO PROJECT SITE: Include vicinity map with legible crossroads, street numbers, names, landmarks.

Parcel approximately 0.85 miles from downtown Ketchum. From the Main Street and Sun Valley Rd. intersection head southwest on Sun Valley Road, 0.27 mi. turn left onto Third Ave., 0.11 mi. turn right on to 1st St. (West Wood River Dr.), follow W Wood River Drive 0.47 mi. project site destination on the left, 490 Wood River Drive.

15. PURPOSE and NEED: ☐ Commercial ☐ Industrial ☐ Public ☒ Private ☐ Other

Describe the reason or purpose of your project; include a brief description of the overall project. Continue to Block 16 to detail each work activity and overall project.

Residential development (unimproved lot), Mary's Place Subd., Lot 4, Block 1 [490 Wood River Dr]. Proposed residential home-site development, access driveway, attendant landscape features and associated grading applications will impact (permanently fill) approx. 0.125 ac. (5,450 sq. ft.) of identified wetlands. Proposed floodplain, riparian, wetland restoration and mitigation: total area 0.46 ac. (20,300 sq. ft.) create/enhance riparian wetland habitat.

16. DETAILED DESCRIPTION OF EACH ACTIVITY WITHIN OVERALL PROJECT. Specifically indicate portions that take place within waters of the United States, including wetlands: Include dimensions; equipment, construction, methods; erosion, sediment and turbidity controls; hydrological changes: general stream/surface water flows, estimated winter/summer flows; borrow sources, disposal locations etc.:

490 Wood River Dr. residential development applications will result in impacts to WOTUS, impacts include: construction of residential home, driveway access, attendant landscape elements, associated grading applications and floodplain/riparian/wetland restoration applications. Project applications within identified wetlands / area of impact, approx. 0.424 ac (18,450 sq. ft.): permanent impact [fill] approx. 0.125 ac. (5,450 sq. ft.), and floodplain/riparian/ wetland restoration applications approx. 0.298 ac. (13,000 sq. ft.). Proposed riparian/wetland mitigation applications will create enhance approx. 0.167 ac. (7,300 sq. ft.) of riparian wetland habitat resources. Wetlands identified within the subject parcel are classified as Freshwater Forested Shrub Seasonally Flooded (USFWS-NWI: PSSC). Wetland characteristics associated with the identified wetland resources include predominant wetland vegetation (native trees, shrubs and facultative grasses) and hydric soils.

Project applications involve the import and placement of approximately 340 cu. yds. of material: soil/gravel/stone mix and associated roadway materials (permanent fill). Proposed riparian wetland restoration applications: grading and associated fill, approximately 45 cu. yds. Standard construction equipment utilized to excavate, place and distribute materials (track excavator, loader and dozer).

Due to the locations of the proposed development applications, site drainage characteristics, proposed floodplain/riparian/wetland mitigation applications and preserved vegetative buffers, changes to the hydrological characteristics and processes (periodic floodplain inundation and associated groundwater dynamics) are not anticipated.

17. DESCRIBE ALTERNATIVES CONSIDERED to AVOID or MEASURES TAKEN to MINIMIZE and/ or COMPENSATE for IMPACTS to WATERS of the UNITED STATES, INCLUDING WETLANDS: See Instruction Guide for specific details.

Proposed development applications and associated locations are considered to be the best alternative to gain access to the existing designated building envelope, provide for reasonable use of the existing platted parcel, and to achieve project objectives. Project has been designed to avoid and minimize impacts to wetlands to the greatest extent practicable.

18. PROPOSED MITIGATION STATEMENT or PLAN: If you believe a mitigation plan is not needed, provide a statement and your reasoning why a mitigation plan is NOT required. Or, attach a copy of your proposed mitigation plan.

490 Wood River Drive residential development project has been designed and will be constructed to avoid and minimize adverse impacts to identified wetland resources to the maximum extent practicable. Mitigation to offset for the proposed wetland impacts [permanent fill] will be implemented in conjunction with the City of Ketchum Floodplain Development regulations and FEMA requirements. On-site compensatory mitigation applications will be conducted on a 1 to 1 (minimum) replacement ratio. Due to the proposed wetland mitigation applications, locations of proposed development applications, site drainage characteristics and preserved vegetative buffers, changes to wetland functions, hydrological characteristics and processes are not anticipated.

ATTACHED: CONCEPTUAL MITIGATION PLAN

19. TYPE and QUANTITY of MATERIAL(S) to be discharged below the ordinary high water mark and/or wetlands:

Dirt or Topsoil:		cubic yards
Dredged Material:	45	cubic yards
Clean Sand:		cubic yards
Clay:		cubic yards
Gravel, Rock, or Stone:	340	cubic yards
Concrete:		cubic yards
Other (describe):		cubic yards
Other (describe:		cubic yards

TOTAL: 385 cubic yards

20. TYPE and QUANTITY of impacts to waters of the United States, including wetlands:

Filling:	0.125	acres	5,450	sq ft.	340	cubic yards
Backfill & Bedding:	0.03	acres	1,210	sq ft.	45	cubic yards
Land Clearing:		acres		sq ft.		cubic yards
Dredging:		acres		sq ft.		cubic yards
Flooding:		acres		sq ft.		cubic yards
Excavation:	0.298	acres	11,790	sq ft.	346	cubic yards
Draining:		acres		sq ft.		cubic yards
Other:		acres		sq ft.		cubic yards

TOTALS: 0.453 acres 18,450 sq ft. 731 cubic yards

21. HAVE ANY WORK ACTIVITIES STARTED ON THIS PROJECT? ☒ NO ☐ YES If yes, describe ALL work that has occurred including dates.

NONE

22. LIST ALL PREVIOUSLY ISSUED PERMIT AUTHORIZATIONS:

NONE

23. ☐ YES, Alteration(s) are located on Public Trust Lands, Administered by Idaho Department of Lands

24. SIZE AND FLOW CAPACITY OF BRIDGE/CULVERT and DRAINAGE AREA SERVED: 24"x36" arch Square Miles

25. IS PROJECT LOCATED IN A MAPPED FLOODWAY? ☒ NO ☐ YES If yes, contact the floodplain administrator in the local government jsrisdiction in which the project is located. A Floodplain Development permit and a No-rise Certification may be required.

26a WATER QUALITY CERTIFICATION: Pursuant to the Clean Water Act, anyone who wishes to discharge dredge or fill material into the waters of the United States, either on private or public property, must obtain a Section 401 Water Quality Certification (WQC) from the appropriate water quality certifying government entity.
See Instruction Guide for further clarification and all contact information.

The following information is requested by IDEQ and/or EPA concerning the proposed impacts to water quality and anti-degradation:

☒ NO ☐ YES Is applicant willing to assume that the affected waterbody is high quality?
☒ NO ☐ YES Does applicant have water quality data relevant to determining whether the affected waterbody is high quality or not?
☒ NO ☐ YES Is the applicant willing to collect the data needed to determine whether the affected waterbody is high quality or not?

26b. BEST MANAGEMENT PRACTICTES (BMP's): List the Best Management Practices and describe these practices that you will use to minimize impacts on water quality and anti-degradation of water quality. All feasible alternatives should be considered - treatment or otherwise. Select an alternative which will minimize degrading water quality

Proposed project applications will incorporate all applicable Best Management Practices to protect resource values and to ensure compliance with local, state and Federal Water Quality Standards and applicable environmental regulations. The following applications will be implemented throughout the identified project areas during all construction phases of the project and site reclamation to ensure successful project results.

1) Project applications will be constructed and completed when conditions are favorable and project locations are suitable for construction applications.
2) Practical construction sequencing and appropriate BMP applications, silt fence and/or straw wattles utilized and placed in appropriate locations within and along delineated limits of disturbance [LOD] to ensure compliance with Federal, state and local regulations.
4) All construction equipment will be free of leaks and in good working order. Storage, fueling and any unexpected repairs of equipment will be completed outside of wetlands and other sensitive habitat areas.
5) An emergency spill kit will be kept on site during construction activities.
6) All disturbed areas outside of the identified development footprint will be reclaimed and vegetated with native grass, shrub and tree species, bare soils will be stabilized with broadcast seed applications and containerized plantings. Reclamation applications will occur as soon as the proposed construction activities are complete.
7) Preserve and maintain native vegetation buffers within sensitive areas not disturbed by proposed development applications.

Through the 401 Certification process, water quality certification will stipulate minimum management practices needed to prevent degradation.

27. LIST EACH IMPACT to stream, river, lake, reservoir, including shoreline: Attach site map with each impact location.

Activity	Name of Water Body	Intermittent Perennial	Description of Impact and Dimensions	Impact Length Linear Feet
NA	Big Wood River	Perennial	NONE	
			TOTAL STREAM IMPACTS (Linear Feet):	

28. LIST EACH WETLAND IMPACT include mechanized clearing, filL excavation, flood, drainage, etc. Attach site map with each impact location.

Activity	Wetland Type: Emergent, Forested, Scrub/Shrub	Distance to Water Body (linear ft)	Description of Impact Purpose: road crossing, compound, culvert, etc.	Impact Length (acres, square ft linear ft
Residential development	Forested Scrub/Shrub (PSSC) and Emergent (PEMC)	130	Permanent Fill: building pad, driveway, landscape grading	5,450
Floodplain restoration	Forested Scrub/Shrub (PSSC)	100 [+]	Restore Habitat elements: excavation, fill, associated grading	13,000
			TOTAL WETLAND IMPACTS (Square Feet):	18,450

29. ADJACENT PROPERTY OWNERS NOTIFICATION REQUIREM: Provide contact information of ALL adjacent property owners below.

Name: City of Ketchum Mailing Address: PO Box 2315 City: Ketchum State: ID Zip Code: 83340 Phone Number (include area code): 208.726.3841 E-mail: participate@ketchumidaho.org	Name: Steven and Lauren Chung Mailing Address: 1100 SW 21st Avenue City: Boca Raton State: FL Zip Code: 33486 Phone Number (include area code): E-mail:
Name: Sun Valley Resorts Mailing Address: PO Box 2315 City: Sun Valley State: ID Zip Code: 83353 Phone Number (include area code): (800) 894-9946 E-mail: sunvalley.com/contact-info/	Name: Russell and Carol Newcomb Mailing Address: 3392 Highlawn Drive, City: Twin Falls State: ID Zip Code: 83301 Phone Number (include area code): E-mail:
Name: Wood River Group LLP Mailing Address: 10 Starlight City: Irvine State: CA Zip Code: 92603-3722 Phone Number (include area code): E-mail:	Name: Don and Carole Armand Mailing Address: PO Box 5404, 460 Wood River Drive City: Ketchum State: ID Zip Code: 83340 Phone Number (include area code): E-mail:
Name: Amy Weyler Mailing Address: PO Box 5463, 511 Wood River Drive City: Ketchum State: ID Zip Code: 83340 Phone Number (include area code): E-mail:	Name: 450-490 Wood River LLC [Applicant] Mailing Address: PO Box 14001-174, 450 Wood River Drive City: Ketchum State: ID Zip Code: 83340 Phone Number (include area code): 214-557-5533 E-mail: matt@presidiovistaproperties.com

30. SIGNATURES: STATEMENT OF AUTHORIAZATION / CERTIFICATION OF AGENT / ACCESS

Application is hereby made for permit, or permits, to authorize the work described in this application and all supporting documentation. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein; or am acting as the duly authorized agent of the applicant (Block 2). I hereby grant the agencies to which this application is made, the right to access/come upon the above-described location(s) to inspect the proposed and completed work/activities.

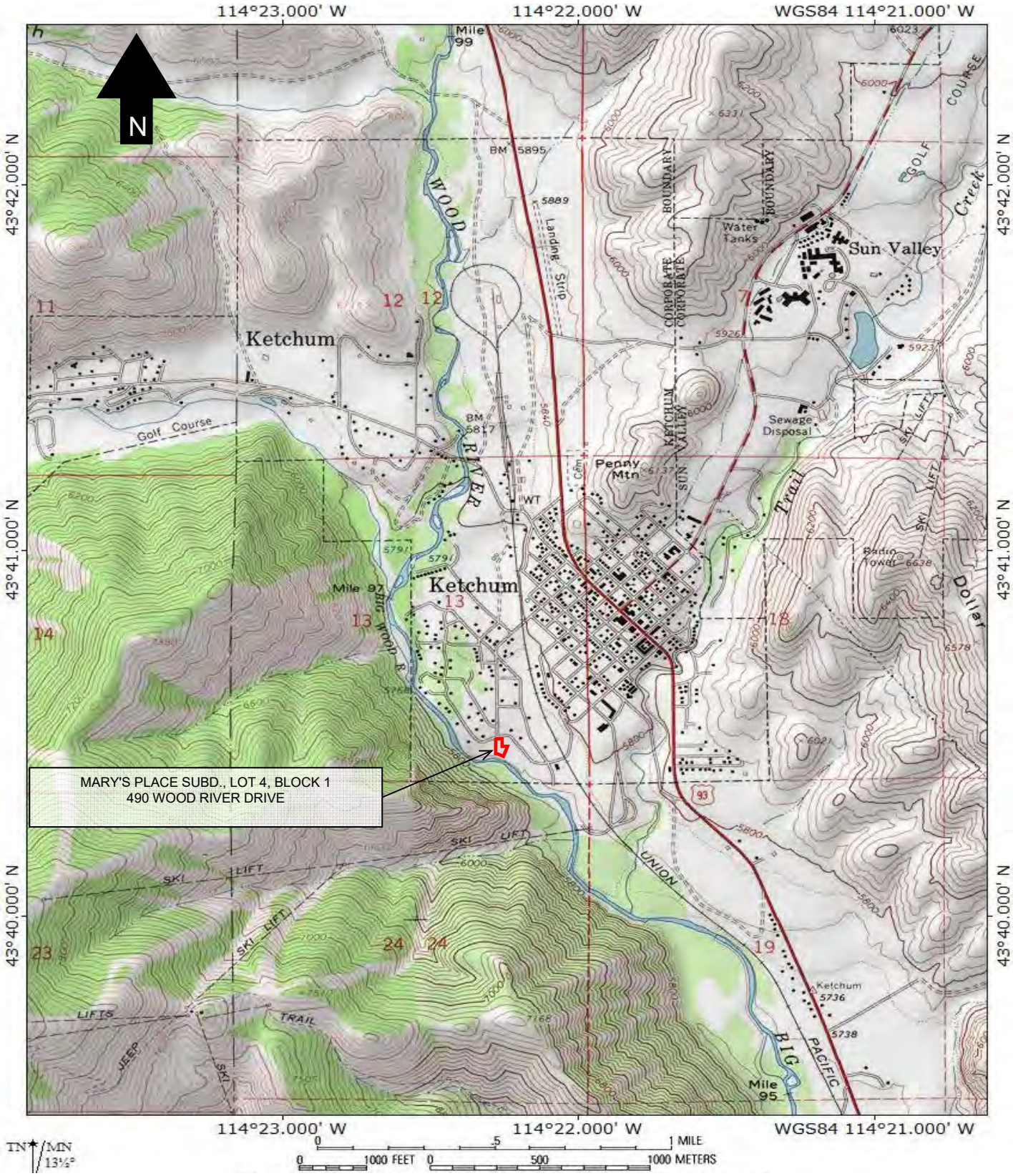
Signature of Applicant: _____ *Date:* 2/14/23

For 450-490 Wood River LLC

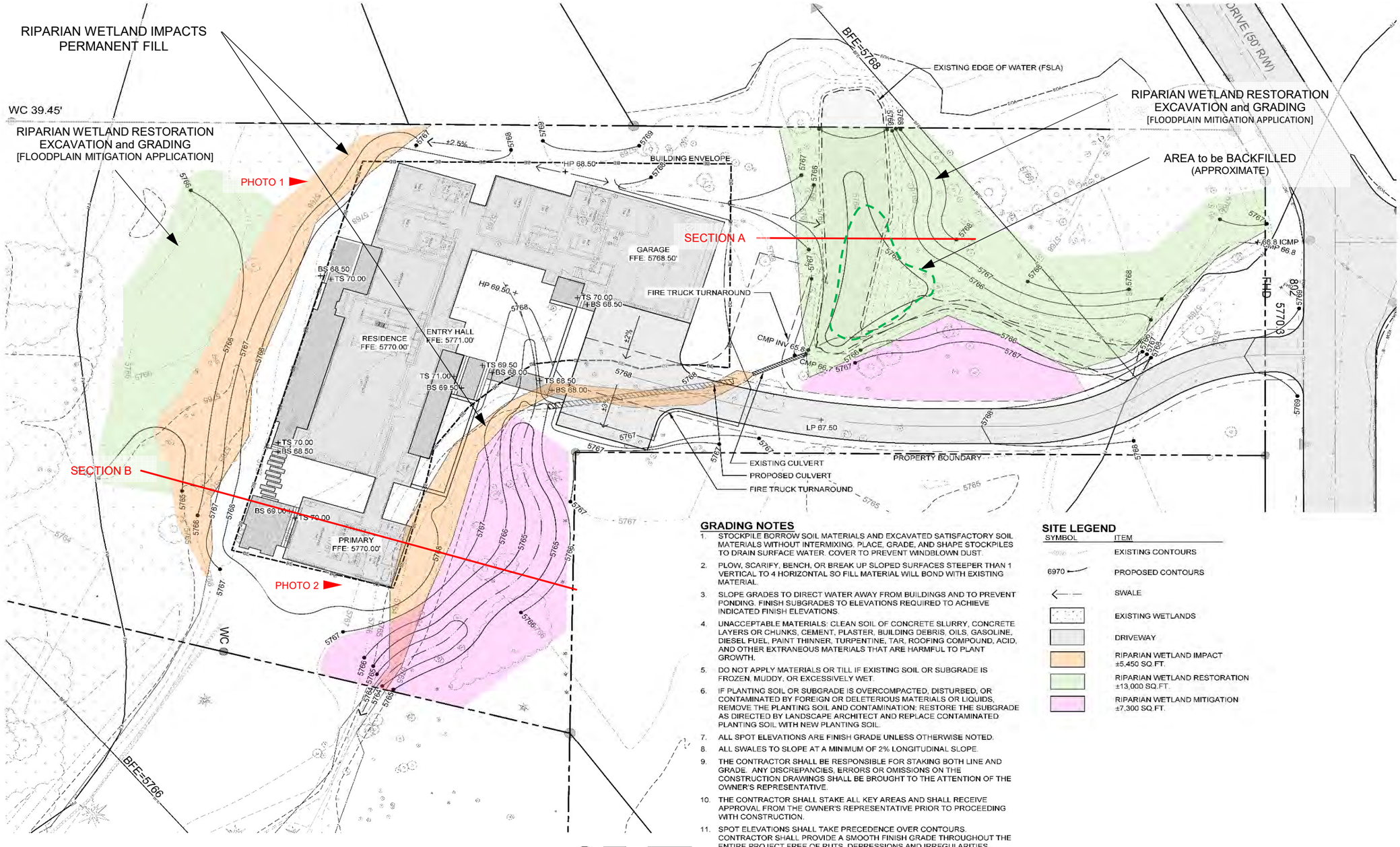
Signature of Agent: _____ *Date:* 2/20/2023

This application must be signed by the person who desires to undertake the proposed activity AND signed by a duly authorized agent (see Block 1, 2, 30). Further, 18 USC Section 1001 provides that: "*Whoever, in any manner within the jurisdiction of any department of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both*".

450 - 490 WOOD RIVER, LLC
MARY'S PLACE SUBDIVISION LOT 4, BLOCK 1 - RESIDENTIAL DEVELOPMENT
JOINT APPLICATION for PERMITS - PROJECT LOCATION VICINITY MAP



450 - 490 WOOD RIVER , LLC
Mary's Place Subdivision, Lot 4, Block 1, 490 Wood River Drive
Section 13, TWN., 4N. RNG., 17E, City of Ketchum, Blaine County, ID



GRADING NOTES

1. STOCKPILE BORROW SOIL MATERIALS AND EXCAVATED SATISFACTORY SOIL MATERIALS WITHOUT INTERMIXING. PLACE, GRADE, AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.
2. PLOW, SCARIFY, BENCH, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING MATERIAL.
3. SLOPE GRADES TO DIRECT WATER AWAY FROM BUILDINGS AND TO PREVENT PONDING. FINISH SUBGRADES TO ELEVATIONS REQUIRED TO ACHIEVE INDICATED FINISH ELEVATIONS.
4. UNACCEPTABLE MATERIALS: CLEAN SOIL OF CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, BUILDING DEBRIS, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, ACID, AND OTHER EXTRANEOUS MATERIALS THAT ARE HARMFUL TO PLANT GROWTH.
5. DO NOT APPLY MATERIALS OR TILL IF EXISTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.
6. IF PLANTING SOIL OR SUBGRADE IS OVERCOMPACTED, DISTURBED, OR CONTAMINATED BY FOREIGN OR DELETERIOUS MATERIALS OR LIQUIDS, REMOVE THE PLANTING SOIL AND CONTAMINATION; RESTORE THE SUBGRADE AS DIRECTED BY LANDSCAPE ARCHITECT AND REPLACE CONTAMINATED PLANTING SOIL WITH NEW PLANTING SOIL.
7. ALL SPOT ELEVATIONS ARE FINISH GRADE UNLESS OTHERWISE NOTED.
8. ALL SWALES TO SLOPE AT A MINIMUM OF 2% LONGITUDINAL SLOPE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING BOTH LINE AND GRADE. ANY DISCREPANCIES, ERRORS OR OMISSIONS ON THE CONSTRUCTION DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
10. THE CONTRACTOR SHALL STAKE ALL KEY AREAS AND SHALL RECEIVE APPROVAL FROM THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH CONSTRUCTION.
11. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS. CONTRACTOR SHALL PROVIDE A SMOOTH FINISH GRADE THROUGHOUT THE ENTIRE PROJECT FREE OF RUTS, DEPRESSIONS AND IRREGULARITIES. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES. ALL SWALES, DEPRESSIONS, ETC. NOT SHOWN ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF LANDSCAPE ARCHITECT IMMEDIATELY IN WRITING.

SITE LEGEND

SYMBOL	ITEM
	EXISTING CONTOURS
6970	PROPOSED CONTOURS
	SWALE
	EXISTING WETLANDS
	DRIVEWAY
	RIPARIAN WETLAND IMPACT ±5,450 SQ.FT.
	RIPARIAN WETLAND RESTORATION ±13,000 SQ.FT.
	RIPARIAN WETLAND MITIGATION ±7,300 SQ.FT.

FIELD STUDIO
722 N.ROUSE AVE.
BOZEMAN, MT 59715
(406)551-2098
www.fieldstudioia.com

PROJECT NUMBER: 2220

DATE	ISSUE
2022.11.30	PD SET
2023.02.10	PD REVISED

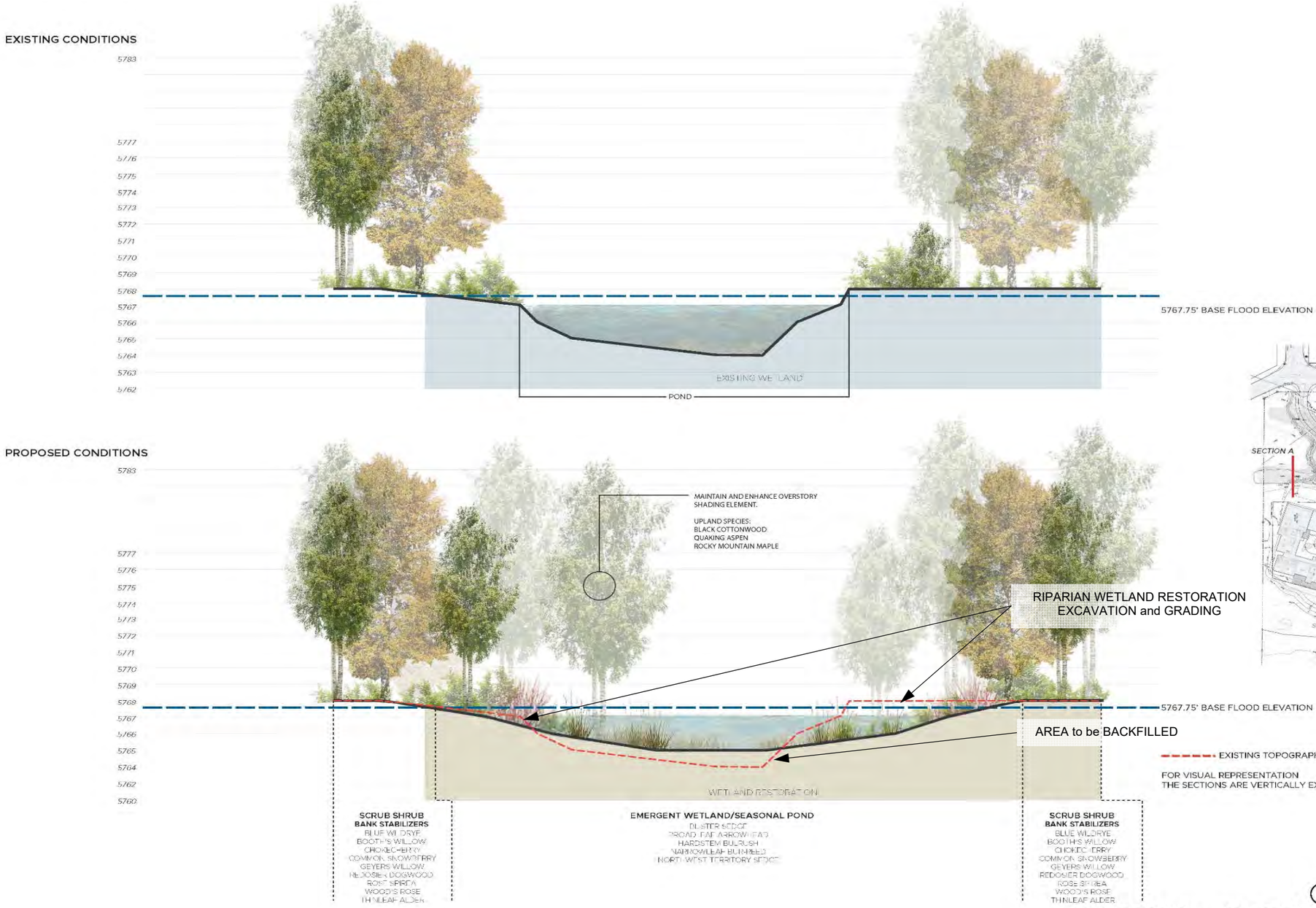
SHEET TITLE

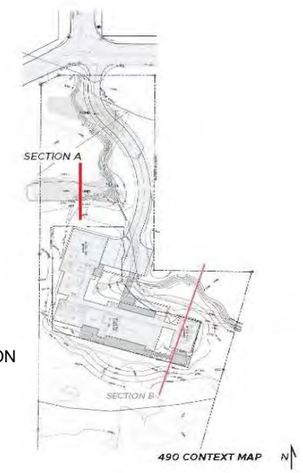
SITE WETLAND IMPACT

SHEET 1 OF 4

L-2.01

PRELIMINARY • NOT FOR CONSTRUCTION





FIELD STUDIO
722 N. ROUSE AVE.
BOZEMAN, MT 59715
(406)551-2098
www.fieldstudiola.com

PROJECT NUMBER: 2220

490 WOOD RIVER DRIVE
KETCHUM, ID

DATE	ISSUE
2022.11.30	PD SET
2023.01.27	PD REVISED

SHEET TITLE

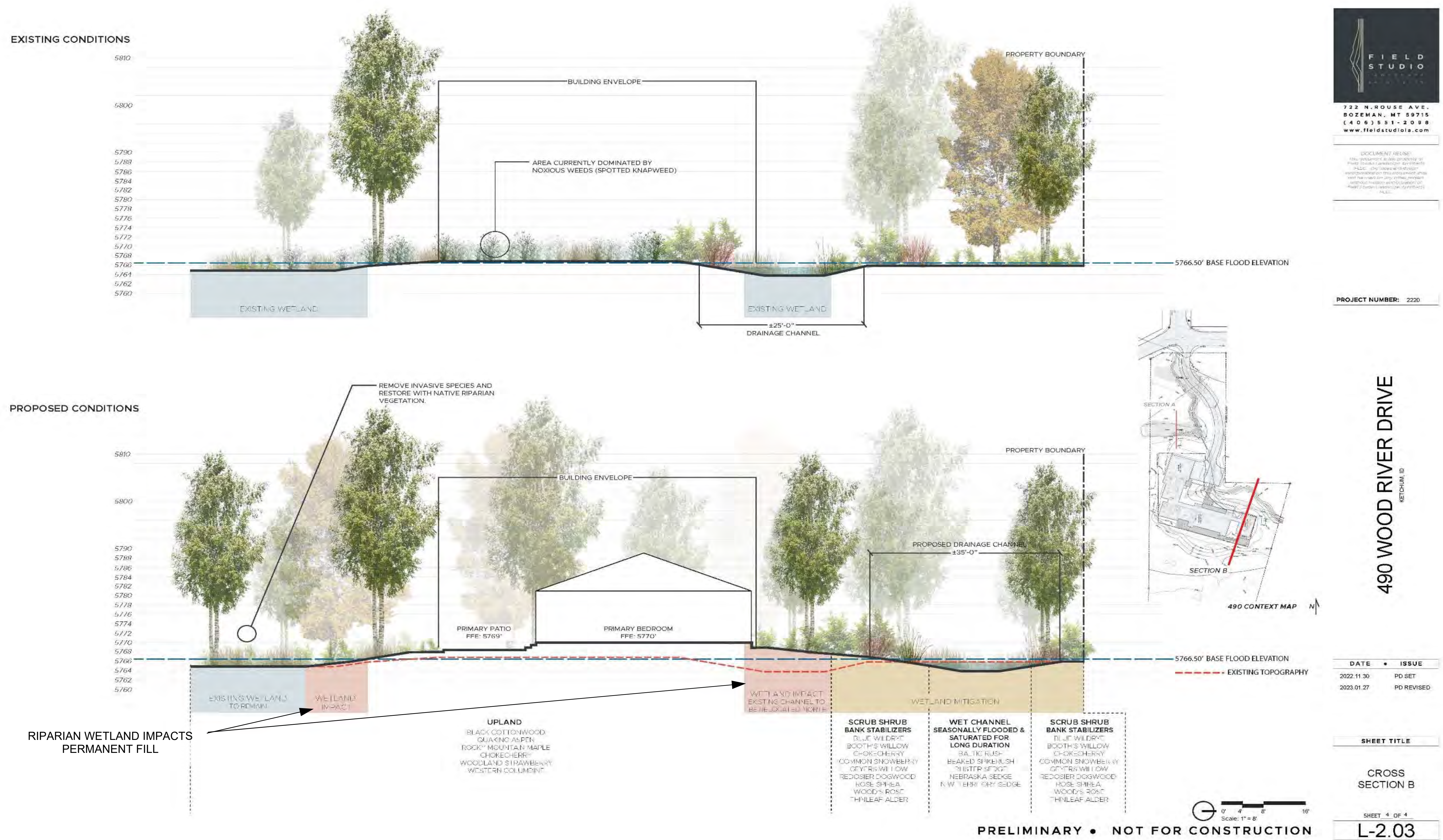
CROSS SECTION A

SHEET 3 OF 4

L-2.02

PRELIMINARY • NOT FOR CONSTRUCTION

450 - 490 WOOD RIVER, LLC
MARY'S PLACE SUBDIVISION LOT 4, BLOCK 1 - RESIDENTIAL DEVELOPMENT
JOINT APPLICATION for PERMITS - WETLAND CROSS SECTION B



WETLAND CROSS SECTION A

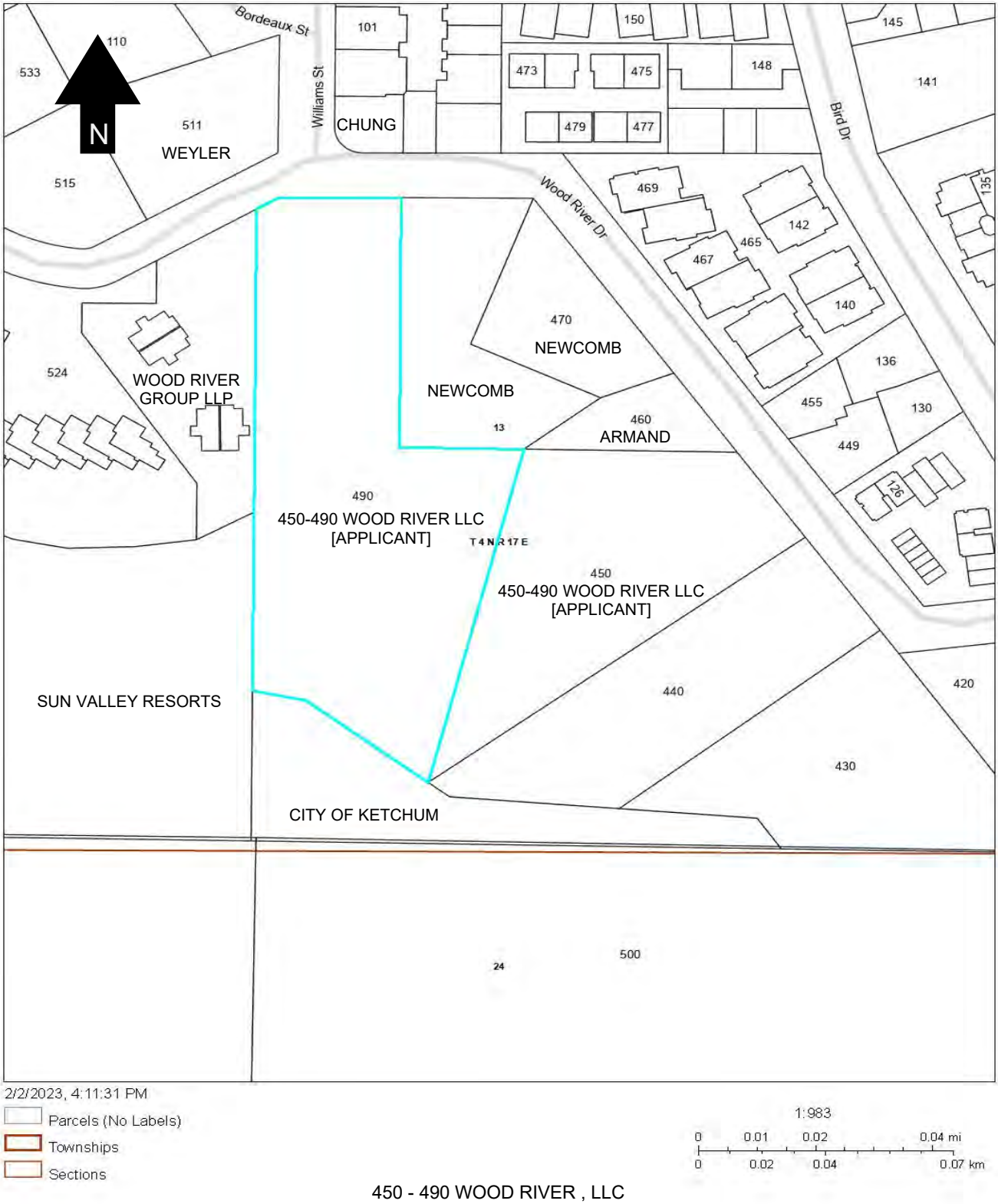
450 - 490 Wood River Drive, LLC - Joint Application for Permits, February 2, 2023.

450 - 490 WOOD RIVER , LLC
Mary's Place Subdivision, Lot 4, Block 1, 490 Wood River Drive
Section 13, TWN., 4N. RNG., 17E, City of Ketchum, Blaine County, ID

PHOTO 1 - 490 WOOD RIVER DRIVE. Identified wetland resources and associated site characteristics in vicinity of the proposed residential structure along western property boundary. Looking north towards *Cross-Section A* (August 22, 2022).

PHOTO 2 - 490 WOOD RIVER DRIVE. Site characteristics in vicinity of the proposed residential structure and *Cross-Section B*, adjacent to southern property boundary. Looking north north-east (August 22, 2022).

450 - 490 WOOD RIVER, LLC
MARY'S PLACE SUBDIVISION LOT 4, BLOCK 1 - RESIDENTIAL DEVELOPMENT
JOINT APPLICATION for PERMITS - ADJACENT LANDOWNERS



450 - 490 WOOD RIVER , LLC
Mary's Place Subdivision, Lot 4, Block 1, 490 Wood River Drive
Section 13, TWN., 4N. RNG., 17E, City of Ketchum, Blaine County, ID

Blaine County GIS

PHOTO EXHIBIT
450 - 490 Wood River Drive, LLC - Joint Application for Permits, February 2, 2023.

P.O. Box 2707
Ketchum, Idaho 83340
Phone (208) 727-9748
Fax (208) 727-9758
trent@sawoothenvironmental.com

SAWTOOTH ENVIRONMENTAL CONSULTING, LLC

Memo

To: Matt Scoggins Presidio Vista Properties
Charlie Kees Field Studio Landscape Architects

From: Trent Stumph – Sawtooth Environmental Consulting, LLC

Date: August 23, 2022

Re: 490 Wood River Drive, Mary's Place Subdivision, Lot 4, Block 1, Section 13, T.4N., R.17E. Preliminary Jurisdictional Determination Wetland Delineation

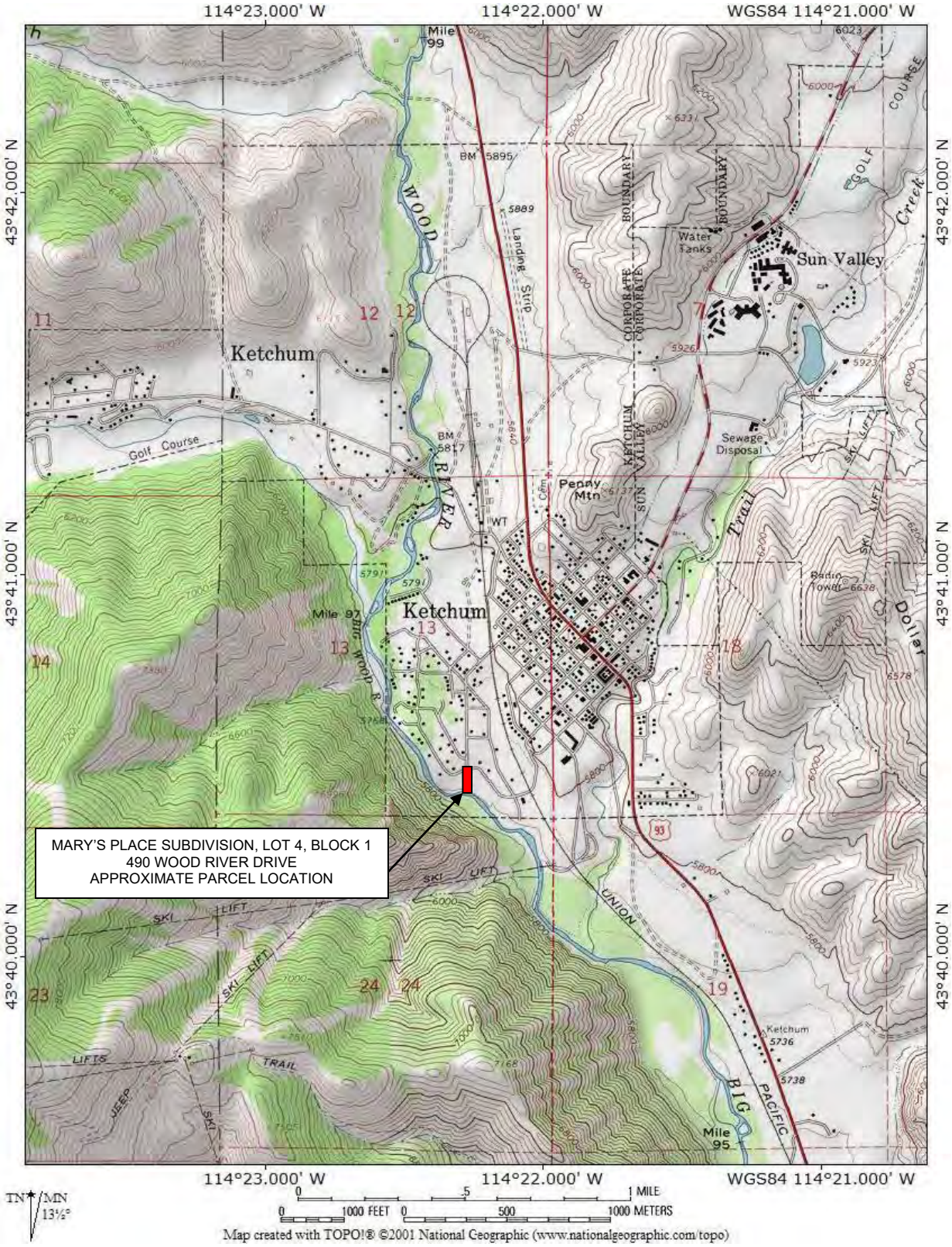
---

Summer 2022, Sawtooth Environmental Consulting, LLC (SEC), conducted preliminary jurisdictional determination wetland delineation for the subject parcel, Mary's Place Subdivision, Lot 4, Block 1, located 490 Wood River Drive, within Section 13, Township 4 North, Range 17 East, B.M., City of Ketchum, Blaine County, Idaho (Figure 1).

Sawtooth Environmental Consulting (SEC) was retained by Presidio Vista Properties to conduct site study jurisdictional determination wetland delineation for the subject parcel, approximate area 2.095 acres (91,258 sq. ft.). The parcel is currently undergoing preliminary planning for single-family residential homesite development. This report presents the findings of the jurisdictional determination wetland delineation study.

The purpose of the preliminary jurisdictional determination wetland delineation was to identify areas within the subject lot that would be considered 'Waters of the United States' including potential jurisdictional wetlands, which are given federal protection under Section 404 of the federal Clean Water Act (CWA). Section 404 of the CWA, provides the regulatory authority of the U.S. Army Corps of Engineers (USACE) over activities that involve the discharge of dredge/fill material into waters of the U.S. The USACE has the authority to approve all jurisdictional determinations and issue relevant permits for activities that involve the discharge of dredge/fill material into waters of the United States. Other Federal, State and local regulations may also have bearing on such activities.

FIGURE 1 – VICINITY MAP: Mary's Place Subdivision, Lot 4, Block1, 490 Wood River Drive



BASE MAP: USGS – SUN VALLEY, ID National Geographic, 2001

Waters of the United States includes most perennial and intermittent streams, wetlands, natural and man-made lakes and ponds, as well as irrigation and drainage canals and ditches which flow year-round or have continuous flow at least seasonally (e.g. typically three months) and are connected to jurisdictional waters. The Big Wood River, its tributaries and associated wetlands are designated as jurisdictional resources under Section 404 of the Clean Water Act.

Wetlands are “those areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b]). Jurisdictional wetlands are “wetlands which are within the extent of the Corps of Engineers regulatory overview” (33 CFR 328.1 and 2). To be determined as a jurisdictional wetland, an area must exhibit positive indicators of wetland hydrology, wetland vegetation and hydric soils. Those areas that do not meet the three-wetland parameters are either uplands or non-jurisdictional wetlands (Environmental Laboratory 1987).

The scope and intent of this preliminary jurisdictional determination wetland delineation is to describe the findings of the investigation and present a map illustrating the occurrence and distribution of identified jurisdictional resources, including potential jurisdictional wetlands within the subject parcel. The jurisdictional determination will be used to further plan and design future development applications and ensure impacts to jurisdictional resources are avoided and/or minimized.

The subject parcel is located within the City of Ketchum, approximately 0.53 miles southwest of the downtown core. The parcel lies within the Big Wood River Sub-basin, Hydrologic Unit Code (HUC) 13135500. The greater majority of the parcel area is located within the identified *Special Flood Hazard Zone*: Floodplain – 1%, 100-year floodplain (FEMA-Blaine County GIS, 2021), with the active river channel and associated floodway located within the southern portion of the parcel.

A mix of ground water influenced forested, scrub-shrub and emergent floodplain riparian habitat elements occur within and adjacent to the subject parcel. Undisturbed riparian habitat elements are of moderate to high quality and perform important functional values with floodplain functions and wildlife habitat being the current primary resource use.

Summer 2022, reconnaissance level field investigations were performed to characterize the site and identify jurisdictional resources, including potential jurisdictional wetlands. Site evaluations were conducted during the months of June, July and August, and involved on the ground surveys throughout the parcel area to determine the range of conditions present. Field surveys associated with the wetland evaluation coincided with the 2022 snowmelt runoff period, which produced above average stream flows within the Big Wood River watershed for a sustained period of time. The Big Wood River

peaked above flood stage, gauge height 5.5 feet, on June 13th, 2022 (USGS 13139510 Big Wood River, Hailey, Idaho).

The Routine On-site Method, as referenced in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987), including protocol methods outlined in the Army Corps Interim Regional Supplement for Western Mountains, Valleys, and Coast Region, were used to investigate the occurrence and distribution of 'Waters of the United States' within the property. All relevant environmental information was utilized to further the jurisdictional determination wetland evaluation. Information included topographical maps and aerial images from the United States Geological Services (USGS), the National List of Wetland Plant Species, the National Wetland Inventory Map (NWI) and Blaine County GIS Map Services.

Sample observation points were established in and adjacent to the potential jurisdictional wetland areas, in locations that would best illustrate the representative characteristics of the site and accurately verify the jurisdictional boundaries. Data was recorded at 6 sample points on August 22, 2022. Data forms filled out for the sample points evaluated are presented in Appendix A of this report. Each form summarizes the existing characteristics of the sample point and outlines the decision-making process used to determine if the site qualifies as being wetland.

Wetlands

Based on the information gathered during the onsite investigation and best professional assessment of the investigator support the findings that Waters of the United States, including "potential jurisdictional wetlands" do exist within the subject parcel. Identified wetland resources include open water, forested, scrub-shrub and emergent wetland habitat elements, located within lowland topographic areas where hydrologic inputs are sufficient enough to support wetland characteristics.

Wetland characteristics must be present for all three wetland parameters: vegetation, soil and hydrology for an area to be included within the wetland boundary. Sample points #1, #4 and #5 exhibited positive indicators for the three wetland parameters, and were included within the delineated wetland boundary. While sample points #2, #3 and #6 did not support positive indicators for at least one, if not all three of the required wetland parameters (vegetation, soil and hydrology) and were determined to be non-wetland.

The boundary for the identified wetland area was marked in the field with survey pin flags and corresponding wetland delineation survey flagging attached to overhanging vegetation, so the location and boundary of the identified wetland resources could be surveyed and accurately mapped (Galena Engineering – July 26, 2022).

Findings

Identified wetland resources are illustrated on the ***Mary's Place Subdivision, Lot 4, Block 1 - Preliminary Jurisdictional Determination Wetland Delineation Site Map***, Figure 2. Based on the USACE criteria for the delineation of jurisdictional waters of the United States and the information gathered during the on-site investigation the following resources have been identified as Waters of the United States, including "potential jurisdictional wetlands":

Riverine / Open Water Intermittently Flooded. Approximately 0.77 acres (33,410 +/- sq. ft.) of river channel represented by the presence of bed, bank and scour elements and associated riparian wetland habitat elements, this habitat cover type occupies all area below the ordinary mean high-water mark associated with the Big Wood River, spring seeps within the floodplain, floodway and adjacent wetland margins, located within the southern portion of subject parcel.

Forested / Scrub Shrub Wetland. Approximately 0.37 acres (15,835 sq. ft.) forested, scrub shrub wetland habitat elements represented by the presence of a dominant riparian wetland forest and shrub community comprised primarily of cottonwood trees, native willows, red-osier dogwood and reed canarygrass, this habitat cover type occupies low-land topographic features within the subject parcel where hydrologic inputs are sufficient to support wetland characteristics.

Vegetation

Typical riparian vegetation dominants undisturbed portions of the parcel and adjacent areas. Predominant vegetation consists of a cottonwood (*Populus trichocarpa*), Quaking aspen (*Populus tremuloides*) and White alder (*Alnus incana*) upper tree canopy. With a woody shrub component predominately consisting of native willows (*Salix spp.*), red osier dogwood (*Cornus stolonifera*), woods rose (*Rosa woodsii*) and currant (*Ribes spp*.) shrub species, and a diverse herbaceous ground cover. Primary herbaceous species include rushes (Juncus spp.), sedges (Carex spp.), Bluejoint reedgrass (*Calamagrostis Canadensis*) and Reed canarygrass (*Phalaris arundinacea*) in the wetter zones. While Smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), Idaho fescue (*Festuca idahoensis*), Orchardgrass (*Dactylis glomerata*) and Canada goldenrod (*Solidago Canadensis*) herbaceous species colonize the drier zones. Along with a mixed presence of various dryland weed species including Canada thistle (*Cirsium arvense*), cheatgrass (*Bromus tectorum*), and spotted knapweed (*Centaurea maculosa*) in disturbed areas cleared of native vegetation.

Soils

Characteristics for the soils associated with the property are consistent with the soil types and characteristics defined by the USDA Soil Map Unit for Blaine County Idaho

(USDA Web Soil Survey, 2022). One primary mapped soil unit has been identified for the parcels, the identified map unit and soil type description is listed below:

Balaam-Adamson-Riverwash complex, (0 to 2 percent slopes):

The Balaam-Adamson-Riverwash complex (Map Soil Unit #8) consists of well drained to somewhat excessively drained soils that occur on floodplains and are formed from deposits of mixed alluvium from various kinds of rock. The soils are generally very deep with moderate to rapid permeability.

Contrasting inclusions that occur within this complex are the Bruneel loams. The Bruneel loam series consists of very deep poorly drained soils that occur on floodplains and are formed from recent deposits of alluvium derived from various kinds of rock. Bruneel loams are listed on the State of Idaho's hydric soils list.

Sample soil observations made during the jurisdictional determination wetland delineation consisted predominantly of fine sandy silt loams in the designated wetland areas and well-drained extremely coarse sands, gravels and cobbles in the designated upland areas.

Soils associated with the identified wetland areas consisted predominantly of a very dark (black) fine sandy silt loam from the surface to depths of 8 to 12 inches with an, underlying sand gravel cobble layer. Dominant hydric soil characteristics observed within the designated wetland areas consisted primarily of low matrix chroma colors (10YR 2/1 – 10YR 3/2), evident throughout the upper soil horizon and the saturated soil conditions present at the time of the field investigation.

Hydrology

Visual observation of inundation, high ground water elevations, soil saturation and drainage patterns observed within the identified wetland areas during field investigations provided the primary indicators for wetland hydrology used to support the jurisdictional determination within the parcel and adjacent areas.

It has been assumed that the identified wetland resources have a continuing hydrologic regime and that the wetland vegetation and hydric soils associated with the identified areas are not relicts of a past hydrologic regime. Future hydrologic monitoring may be required to confirm if the timing, duration and frequency (5 years in 10, 50 percent or higher probability) of the hydrologic inputs are in fact sufficient enough to meet United States Army Corps of Engineers criteria for jurisdictional wetlands.

Summary

Based on the information gathered during the onsite investigation, the interpretations of wetland characteristics based on the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the best professional assessment of the investigator, support the findings that Waters of the United States, including potential jurisdictional wetlands exist within the subject parcel, Mary's Place Subdivision, Lot 4, Block 1, located 490 Wood River Drive, within Section 13, Township 4 North, Range 17 East, B.M., City of Ketchum, Blaine County, Idaho.

Identified jurisdictional resources include riverine habitat elements associated with the Big Wood River, approximately 0.77 acres (33,410 +/- sq. ft.) and the identified forested / scrub shrub riparian wetland habitat, approximately 0.37acres (15,835 sq. ft.). The identified wetland resources are located in areas where hydrologic inputs are sufficient enough to support wetland characteristics. While non-wetlands and/or uplands occupy the drier and topographically higher areas. Observations made within the identified wetland areas revealed the positive occurrence of wetland vegetation, hydric soils, wetland hydrology.

It is important for all future proposed development applications to be in compliance with Section 404 of the CWA, which provides the regulatory authority of the U.S. Army Corps of over activities that involve the discharge of dredge/fill material into 'waters of the United States', including jurisdictional wetlands. If any future potential developments applications involve the discharge of dredge and/or fill into the identified wetland areas, the project must be approved by the USACE prior to construction. Other local, state, and federal laws may also have bearing on such activities. This may include, but not limited to State of Idaho Water Quality Certification, State of Idaho Stream Channel Protection Program administered by the Idaho Department of Water Resources, as well as City of Ketchum Floodplain Management Overlay District (FP 17.88) and Waterways Design Review zoning regulations.

If the landowner applicant plans to engage in activities involving the modifications within or adjacent to floodplain and wetland resources, they should contact the appropriate Federal, State and local agencies for advice concerning specific agency regulatory requirements and proprietary jurisdictions that may affect the planned development applications prior to any site alterations.

Please don't hesitate to call me if you have any questions or if I can be of any further assistance.

Trent Stumph
Sawtooth Environmental Consulting, LLC

FIGURE 2

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION SITE MAP

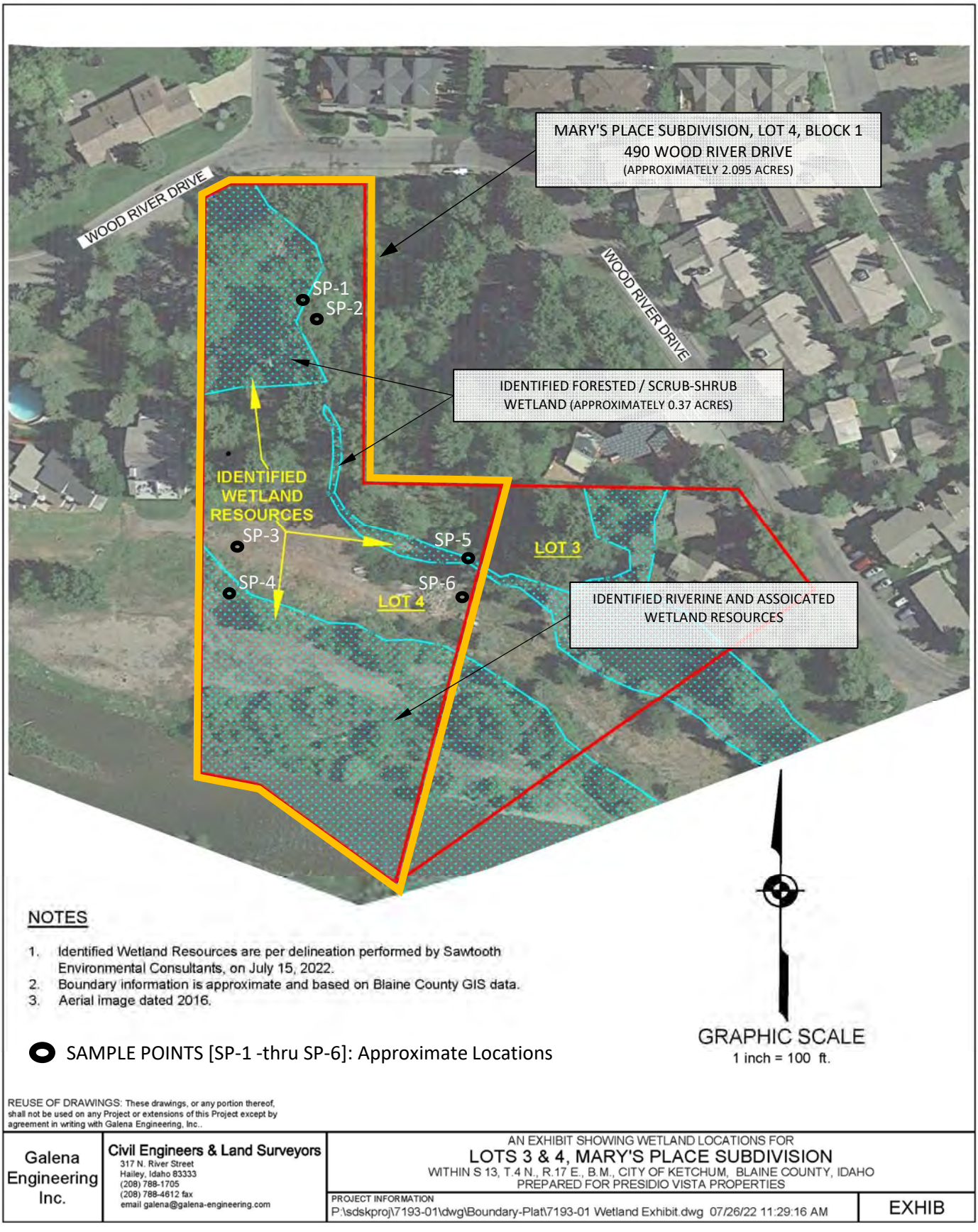


PHOTO EXHIBIT

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION

PHOTO 1 - LOT 4, BLOCK 1, MARY'S PLACE SUBDIVISION. Sample Point 1 [SP-1] and associated site characteristics. Identified wetland resource (August-22, 2022).

PHOTO EXHIBIT

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION

PHOTO 2 - LOT 4, BLOCK 1, MARY'S PLACE SUBDIVISION. Sample Point 2 [SP-2] and associated site characteristics. Identified non-wetland resource (August-22, 2022).

PHOTO EXHIBIT

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION

PHOTO 3 - LOT 4, BLOCK 1, MARY'S PLACE SUBDIVISION. Sample Point 3 [SP-3] and associated site characteristics. Identified non-wetland resource (August-22, 2022).

PHOTO EXHIBIT

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION

PHOTO 4 - LOT 4, BLOCK 1, MARY'S PLACE SUBDIVISION. Sample Point 4 [SP-4] and associated site characteristics. Identified wetland resource (August-22, 2022).

PHOTO EXHIBIT

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION

PHOTO 5: LOT 4, BLOCK 1, MARY'S PLACE SUBDIVISION. Identified wetland boundary, transition between SP-3 AND SP-4, and associated site characteristics (August-22, 2022).

PHOTO EXHIBIT

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION

PHOTO 6 - LOT 4, BLOCK 1, MARY'S PLACE SUBDIVISION. Sample Point 5 [SP-5] and associated site characteristics. Identified wetland resource (August-22, 2022).

PHOTO EXHIBIT

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION

PHOTO 7 - LOT 4, BLOCK 1, MARY'S PLACE SUBDIVISION. Sample Point 6 [SP-6] and associated site characteristics. Identified non-wetland resource (August-22, 2022).

PHOTO EXHIBIT

MARY'S PLACE SUBDIVISION, LOT 4, BLOCK 1, 490 WOOD RIVER DRIVE
PRELIMINARY JURISDICTIONAL DETERMINATION WETLAND DELINEATION

PHOTO 8: LOT 4, BLOCK 1, MARY'S PLACE SUBDIVISION. Identified wetland boundary, transition between SP-5 AND SP-6, and associated site characteristics (August-22, 2022).

APPENDIX A

WETLAND DATA FORMS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: PVP - 490 Wood River Drive | City/County: Ketchum/Blaine County | Sampling Date: Aug-22, 2022

Applicant/Owner: Presidio Vista Properties | State: ID | Sampling Point: SP-1

Investigator(s): SEC - T. Stumph | Section, Township, Range: Section 13, T.4N., R.17E.

Landform (hillslope, terrace, etc.): Floodplain Terrace | Local relief (concave, convex, none): concave | Slope (%): < 1.0%

Subregion (LRR): B - Columbia/Snake River Plateau | Lat: 43.67450° N | Long: -114.37099° W | Datum: NAD83

Soil Map Unit Name: MU#8: Balaam-Adamson-Riverwash | NWI classification: Wetland - PSSC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

Designated wetland plot; Position on landscape, floodplain low-land topographic feature (excavated?). Positive wetland indicators (vegetation, soils and hydrology) present at time of field investigation.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *POBA - Black Cottonwood*	25	Yes	FAC
2. *ALTE - Thinleaf alder*	20	Yes	FACW
3.			
4.			
Total Cover:	45 %		
Sapling/Shrub Stratum			
1. *LOUT - Utha Honeysuckle*	15	Yes	FAC
2. *ROWO - Woods rose*	15	Yes	FACU
3.			
4.			
5.			
Total Cover:	30 %		
Herb Stratum			
1. *PHAR - Reed canarygrass*	20	Yes	FACW
2. *EQAR - Common horsetail*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	35 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	40	x 2 =	80
FAC species	55	x 3 =	165
FACU species	15	x 4 =	60
UPL species		x 5 =	0
Column Totals:	110 (A)		305 (B)

Prevalence Index = B/A = 2.77

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

Wetland plant community dominant. Riparian / Cottonwood forest.

SOIL

Sampling Point: SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0 - 4"	10YR 2/1						Silty Sand Loam	Wet

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [x] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

Confirmed soil type: Balaam-Adamson-Riverwash [MU#8], Bruneel loam inclusion: designated as hydric due to hydric soil indicators and the presence of wetland hydrology inputs [2b3: high ground water elevation @ 8"]. Adj to surface waters.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [x] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [x] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes (•) No ( ) Depth (inches): adjacent

Water Table Present? Yes (•) No ( ) Depth (inches): 8"

Saturation Present? (includes capillary fringe) Yes (•) No ( ) Depth (inches): surface

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Positive wetland hydrology indicators present at time of field investigation. Surface water and saturation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: PVP - 490 Wood River Drive | City/County: Ketchum/Blaine County | Sampling Date: Aug-22, 2022

Applicant/Owner: Presidio Vista Properties | State: ID | Sampling Point: SP-2

Investigator(s): SEC - T. Stumph | Section, Township, Range: Section 13, T.4N., R.17E.

Landform (hillslope, terrace, etc.): Floodplain Terrace | Local relief (concave, convex, none): none | Slope (%): < 1.0%

Subregion (LRR): B - Columbia/Snake River Plateau | Lat: 43.67439° N | Long: -114.37096° W | Datum: NAD83

Soil Map Unit Name: MU#8: Balaam-Adamson-Riverwash | NWI classification: Wetland - PSSC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

Designated non-wetland plot; Position on landscape. Lack of positive indicators for hydric soils and wetland hydrology. Well drained soils (sand/gravel/cobble) no evidence of saturation an/or inundation within the upper 12" of the soil horizon.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *POBA - Black Cottonwood*	15	Yes	FAC
2. *ALTE - Thinleaf alder*	25	Yes	FACW
3.			
4.			
Total Cover:	40 %		
Sapling/Shrub Stratum			
1. *RILA - Prickley currant*	15	Yes	FAC
2. *ROWO - Woods rose*	15	Yes	FACU
3. *LOUT - Utah Honeysuckle*	15	Yes	FAC
4. *COST - Red-osier dogwood*	5	No	FACW
5.			
Total Cover:	50 %		
Herb Stratum			
1. *PHAR - Reed canarygrass*	20	Yes	FACW
2. *EQAR - Common horsetail*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	35 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	50	x 2 =	100
FAC species	60	x 3 =	180
FACU species	15	x 4 =	60
UPL species		x 5 =	0
Column Totals:	125 (A)		340 (B)

Prevalence Index = B/A = 2.72

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

Riparian / wetland plant community present. Riparian / Cottonwood forest.

SOIL

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0 - 18"	10YR 3/3						Coarse	sand/gravel/cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: Confirmed soil type: Balaam-Adamson-Riverwash [MU#8]: designated as non-hydric due to position on landscape and lack of sufficient wetland hydrology inputs, well drained soils with no evidence of inundation and/or saturation within 12" SH

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive wetland hydrology indicators present at time of field investigation. Ground water observed at 3.3' below existing grade June 3, 2022 (Butler Associates - Geotechnical Report).

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: PVP - 490 Wood River Drive | City/County: Ketchum/Blaine County | Sampling Date: Aug-22, 2022

Applicant/Owner: Presidio Vista Properties | State: ID | Sampling Point: SP-3

Investigator(s): SEC - T. Stumph | Section, Township, Range: Section 13, T.4N., R.17E.

Landform (hillslope, terrace, etc.): Floodplain Terrace | Local relief (concave, convex, none): none | Slope (%): < 1.0%

Subregion (LRR): B - Columbia/Snake River Plateau | Lat: 43.673985° N | Long: -114.371266° W | Datum: NAD83

Soil Map Unit Name: MU#8: Balaam-Adamson-Riverwash | NWI classification: Non-Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: Designated non-wetland plot; Position on landscape. Lack of positive indicators for wetland vegetation, hydric soils and wetland hydrology. Well drained soils (sand/gravel/cobble) no evidence of saturation an/or inundation within the upper 12" of the soil horizon.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *CIAR - Spotted knapweed*	20	Yes	UPL
2. *AGSMA - Western wheatgrass*	15	Yes	FACU
3. *THAR - field pennycress*	5	No	NI
4.			
5.			
6.			
7.			
8.			
Total Cover:	40 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	15	x 4 =	60
UPL species	25	x 5 =	125
Column Totals:	40 (A)		185 (B)

Prevalence Index = B/A = 4.63

Hydrophytic Vegetation Indicators:

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

Upland plant community present (UPL and FACU). Spotted knapweed dominant.

SOIL

Sampling Point: SP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0 - 8"	10YR 3/3						Coarse	sand/gravel/cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: Confirmed soil type: Balaam-Adamson-Riverwash [MU#8]: designated as non-hydric due to position on landscape and lack of sufficient wetland hydrology inputs, well drained soils with no evidence of inundation and/or saturation within 12" SH

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches): +8"
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches): +8"

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive wetland hydrology indicators present at time of field investigation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: PVP - 490 Wood River Drive | City/County: Ketchum/Blaine County | Sampling Date: Aug-22, 2022

Applicant/Owner: Presidio Vista Properties | State: ID | Sampling Point: SP-4

Investigator(s): SEC - T. Stumph | Section, Township, Range: Section 13, T.4N., R.17E.

Landform (hillslope, terrace, etc.): Floodplain Terrace | Local relief (concave, convex, none): concave | Slope (%): < 1.0%

Subregion (LRR): B - Columbia/Snake River Plateau | Lat: 43.673865° N | Long: -114.371280° W | Datum: NAD83

Soil Map Unit Name: MU#8: Balaam-Adamson-Riverwash | NWI classification: Wetland - PEMC1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

Designated wetland plot; Position on landscape, floodplain low-land topographic feature. Positive wetland indicators (vegetation, soils and hydrology) present at time of field investigation.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *ALTE - Thinleaf alder*	15	Yes	FACW
2.			
3.			
4.			
Total Cover:	15 %		
Sapling/Shrub Stratum			
1. *SALIX - Native willow*	30	Yes	FACW
2.			
3.			
4.			
5.			
Total Cover:	30 %		
Herb Stratum			
1. *PHAR - Reed canarygrass*	60	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	105	x 2 =	210
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	105 (A)		210 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

Wetland plant community dominant within floodplain swale.

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0 - 8"	10YR 3/2						Sand Loam	Saturarted

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

Confirmed soil type: Balaam-Adamson-Riverwash [MU#8], Bruneel loam inclusion: designated as hydric due to hydric soil indicators and the presence of wetland hydrology inputs [2b3: saturation @ 4"]. Inundated June 2022.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [x] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [x] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (•)	No ( )	Depth (inches):	June 2022
Water Table Present?	Yes (•)	No ( )	Depth (inches):	+8"
Saturation Present? (includes capillary fringe)	Yes (•)	No ( )	Depth (inches):	4"

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Positive wetland hydrology indicators present at time of field investigation. Saturation, inundation observed June 2022.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: PVP - 490 Wood River Drive | City/County: Ketchum/Blaine County | Sampling Date: Aug-22, 2022

Applicant/Owner: Presidio Vista Properties | State: ID | Sampling Point: SP-5

Investigator(s): SEC - T. Stumph | Section, Township, Range: Section 13, T.4N., R.17E.

Landform (hillslope, terrace, etc.): Floodplain Terrace | Local relief (concave, convex, none): concave | Slope (%): < 1.0%

Subregion (LRR): B - Columbia/Snake River Plateau | Lat: 43.67393° N | Long: -114.37055° W | Datum: NAD83

Soil Map Unit Name: MU#8: Balaam-Adamson-Riverwash | NWI classification: Non-Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

Designated wetland plot; Position on landscape, floodplain low-land topographic drainage swale. Positive wetland indicators (vegetation, soils and hydrology) present at time of field investigation.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *POBA - Black Cottonwood*	30	Yes	FAC
2.			
3.			
4.			
Total Cover:	30 %		
Sapling/Shrub Stratum			
1. *COST - Red-osier dogwood*	20	Yes	FACW
2. *RIAU - Golden currant*	15	Yes	FAC
3. *ROWO - Woods rose*	5	No	FACU
4.			
5.			
Total Cover:	40 %		
Herb Stratum			
1. *PHAR - Reed canarygrass*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	30 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	50	x 2 =	100
FAC species	45	x 3 =	135
FACU species	5	x 4 =	20
UPL species		x 5 =	0
Column Totals:	100 (A)		255 (B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

Wetland plant community dominant within floodplain swale.

SOIL

Sampling Point: SP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
							coarse	sand/gravel/cobble
								Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

Confirmed soil type: Balaam-Adamson-Riverwash [MU#8], drainage swale (bed/bank/scour) designated as hydric due to hydric soil indicators and the presence of wetland hydrology inputs. Inundated June - July 2022.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [x] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [x] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes (•) No ( ) Depth (inches): June 2022

Water Table Present? Yes (•) No ( ) Depth (inches):

Saturation Present? (includes capillary fringe) Yes (•) No ( ) Depth (inches): Surface

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Positive wetland hydrology indicators present at time of field investigation. Saturation, inundation observed June - July 2022.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: PVP - 490 Wood River Drive | City/County: Ketchum/Blaine County | Sampling Date: Aug-22, 2022

Applicant/Owner: Presidio Vista Properties | State: ID | Sampling Point: SP-6

Investigator(s): SEC - T. Stumph | Section, Township, Range: Section 13, T.4N., R.17E.

Landform (hillslope, terrace, etc.): Floodplain Terrace | Local relief (concave, convex, none): none | Slope (%): < 1.0%

Subregion (LRR): B - Columbia/Snake River Plateau | Lat: 43.673869° N | Long: -114.370565° W | Datum: NAD83

Soil Map Unit Name: MU#8: Balaam-Adamson-Riverwash | NWI classification: Non-Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: Designated non-wetland plot; Position on landscape. Lack of positive indicators for wetland vegetation, hydric soils and wetland hydrology. Well drained soils (sand/gravel/cobble) no evidence of saturation an/or inundation within the upper 12" of the soil horizon.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *RIAU - Golden currant*	5	No	FAC
2. *CAAR - Siberian peashrub*	10	No	FACU
3.			
4.			
5.			
Total Cover:	15 %		
Herb Stratum			
1. *CIAR - Spotted knapweed*	25	Yes	UPL
2. *AGSMA - Western wheatgrass*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	50 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	5	x 3 =	15
FACU species	35	x 4 =	140
UPL species	25	x 5 =	125
Column Totals:	65 (A)		280 (B)

Prevalence Index = B/A = 4.31

Hydrophytic Vegetation Indicators:

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

Upland plant community present (UPL and FACU). *Spotted knapweed dominant.

SOIL

Sampling Point: SP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0 - 8"	10YR 3/3						Coarse	sand/gravel/cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: Confirmed soil type: Balaam-Adamson-Riverwash [MU#8]: designated as non-hydric due to position on landscape and lack of sufficient wetland hydrology inputs, well drained soils with no evidence of inundation and/or saturation within 12" SH

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

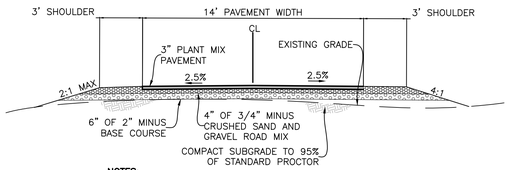
Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches): +8"
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches): +8"

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

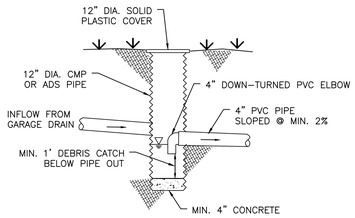
No positive wetland hydrology indicators present at time of field investigation.



NOTES:

1. COMPACT DRIVEWAY SUBGRADE AND ALL STRUCTURAL FILL MATERIAL TO AT LEAST 95% OF THE MAXIMUM DENSITY OF EACH MATERIAL ACCORDING TO STANDARD PROCTOR ASTM D-698.

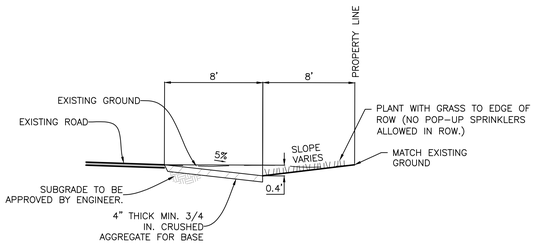
A — DRIVEWAY TYPICAL SECTION
SCALE: NTS



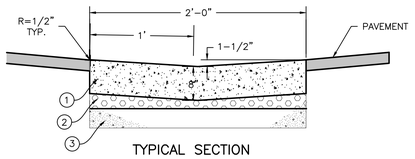
1 / C1 — OIL-WATER SEPARATOR
NOT TO SCALE

LEGEND

PROPERTY LINE	
ADJOINING PROPERTY LINE	
CENTERLINE	
FENCE	X
EDGE OF PAVEMENT	
EASEMENT	
WETLANDS DELINEATED JUNE 2022	WET
SEWER	S
SEWER MANHOLE (MH)	
WATER	W
WATER GATE VALVE	
WATER METER (WM)	
HYDRANT	
ELEVATION CONTOUR	5775
PROPOSED ELEV CONTOUR	59
SAWCUT LINE	
FLOW LINE	
CUT-OFF TRENCH	
FOOTING DRAIN	FD
STORM DRAIN PIPE (SD)	
DOWN SPOUT	DS
CATCH BASIN	
ASPHALT PAVEMENT	
GRASS PAVE	
GRAVEL	
INFILTRATION TRENCH	
FG	FINISHED GRADE
EG	EXISTING GROUND
GB	GRADE BREAK
ME	MATCH EXISTING



B — RIGHT OF WAY TYPICAL SECTION
SCALE: NTS



TYPICAL SECTION

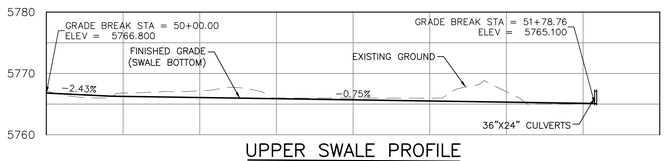
LEGEND

1. 8-INCH THICK CONCRETE
2. 2" MIN. OF ¾" TYPE 1 AGGREGATE BASE
3. 6" OF 2" TYPE II SUBBASE

NOTES:

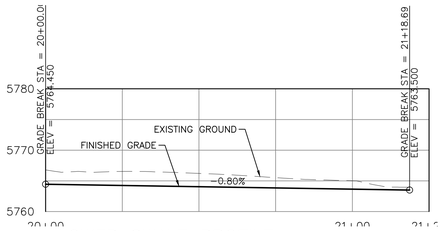
1. ½-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
2. CONTINUOUS PLACEMENT PREFERRED. SCORE INTERVALS TO MATCH SIDEWALK WITH 10-FEET MAXIMUM SPACING.
3. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.

2 — 2 FT CONCRETE VALLEY GUTTER
SCALE: N.T.S.



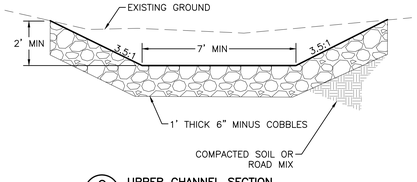
UPPER SWALE PROFILE

HORIZ: 1"=20'
VERT: 1"=5'

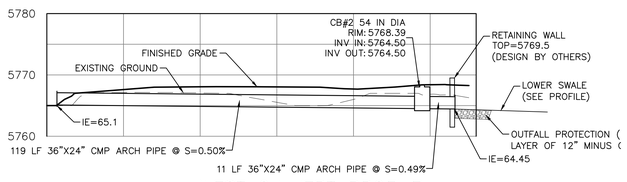


LOWER SWALE PROFILE

HORIZ: 1"=20'
VERT: 1"=10'

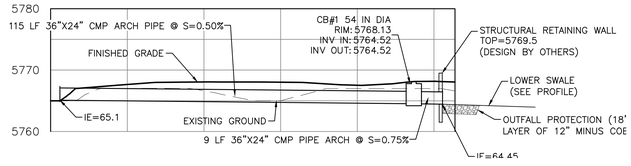


C — UPPER CHANNEL SECTION
NOT TO SCALE



WEST CULVERT PROFILE

NTS

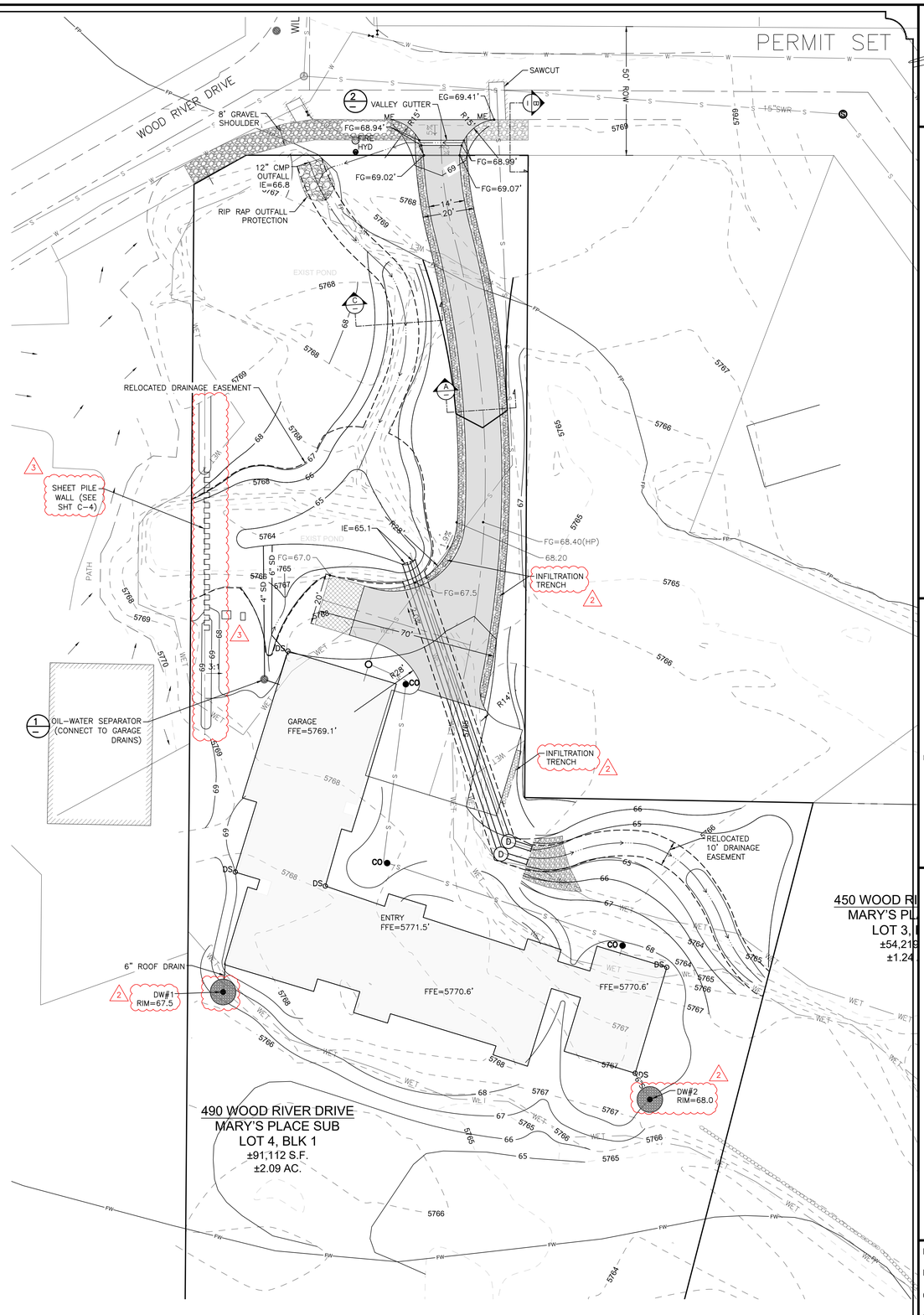


EAST CULVERT PROFILE

NTS

GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING CONSTRUCTION. ANY CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. CONTRACTOR SHALL NOTIFY DIGLINE (1-800-342-1585) AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION.
3. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN PER ISPWC SECTION 205 TO THE CITY, AND ALSO TO IDAHO DEQ IF DISCHARGING TO SURFACE WATER.
4. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CONSTRUCTION SWPPP. DEWATERING PLANS AND COPIES OF SUBMITTALS TO AND APPROVALS FROM IDAHO DEQ ARE REQUIRED TO BE PROVIDED AND PART OF THE SWPPP PRIOR TO NOI FILING AND IDEQ WAITING PERIOD BEGINS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING THE CONSTRUCTION OF ALL ITEMS HEREON. DUST CONTROL SHALL BE CONTINUOUS DURING CONSTRUCTION, 24 HOURS PER DAY 7 DAYS PER WEEK. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE STORM WATER POLLUTION PREVENTION PROGRAM AT ALL TIMES UNTIL PERMANENT EROSION CONTROL IS ESTABLISHED.
6. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM THE HOUSE.
7. ALL WORK WITHIN THE CITY RIGHT OF WAY SHALL CONFORM TO CITY OF KETCHUM STANDARDS.



PROFESSIONAL ENGINEER — LICENSED — PHOEBE JOHANNESSEN — 17661 — STATE OF IDAHO
5/22/2023

REVISIONS

No.	DESCRIPTION	DATE	BY
2	FDP REVISION 2	9/13/23	PLJ
3	FDP REVISION 3	10/25/23	PLJ

BENCHMARK ASSOCIATES

BENCHMARK ASSOCIATES, P.A.
P.O. BOX 733 100 BELL DRIVE
KETCHUM, IDAHO 83340
(208) 726-9512
(FAX) 726-9514
WEB:
www.benchmark-associates.com
MAIL:
mail@bma5b.com

GRADING & DRAINAGE PLAN

MARY'S PLACE SUB, BLOCK 1 LOT 4
T4N, R17E, SEC 13, B.M., KETCHUM, IDAHO

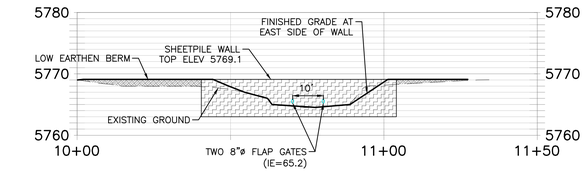
PREPARED FOR: VISTA PROPERTIES

DRAWN BY: PLJ
DESIGNED BY: PLJ
CHECKED: -
DATE: 5/22/2023
PROJECT NO.: 23187

SHEET NUMBER
C-1

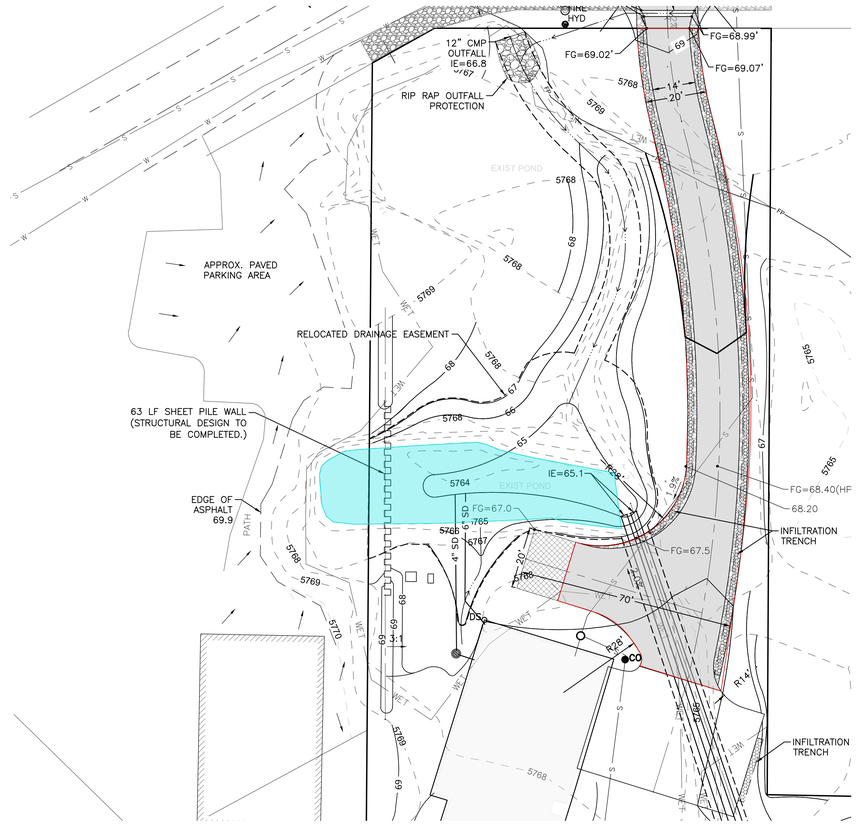
PERMIT SET

3



SHEETPILE WALL PROFILE

HORIZ: 1"=20'
VERT: 1"=5'



SHEET PILE WALL PLAN

SCALE IN FEET

0' 20' 40' 60'

AF-41 ALUMINUM DRAINAGE (FLAP) GATES

- LIGHTER WEIGHT REDUCES INSTALLATION COSTS
- SIZES 12" - 84" (CUSTOM SPIGOT SIZES AVAILABLE)
- SEATING HEADS TO 40 FEET.

A CORROSION-RESISTANT RUST-PROOF AUTOMATIC DRAINAGE GATE DESIGNED FOR USE WITH ALUMINUM CORRUGATED PIPE, OR FOR FLANGE MOUNTING OR USE WITH HDPE

PREVENTS ELECTROLYSIS ASSOCIATED WITH CAST IRON GATES TO ALUMINUM PIPE CONNECTIONS.

J-BULB NEOPRENE ADJUSTABLE SEATS PROVIDE EXCELLENT SEALING AGAINST RETURN FLOW.

FRAME, COVER, RETAINER RING, HINGE ARM, AND PIVOT LUG ARE OF ALUMINUM ALLOY 6061-T6. GATE HARDWARE IS STAINLESS STEEL.

- SPECIFY:
  - AF-41sb... for corrugated pipe
  - AF-41f... for wall mounting
  - AF-41ff... for flange mounting
  - AF-41-4... for plastic pipe
  - AF-41-6... for HDPE

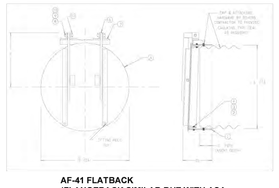
AF-41 FLATBACK

AF-41 SPIGOTBACK

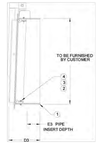
1

FLAP GATE – SHALL BE 8" DIAMETER ALUMINUM FLAP GATE WITH NEOPRENE SEAT (OR EQUAL).

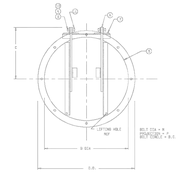
AF-41 SPIGOTBACK



AF-41 TYPE 6 SPIGOT FOR HDPE PIPE



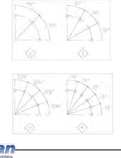
AF-41 FLATBACK (FLANGEBACK SIMILAR BUT WITH ASA STANDARD FLANGE DIMENSIONS)



PARTS LIST	
No.	Name
1	Frame
2	Seat
3	Retainer Ring
4	Hex Hd. Bolt/Nut
5	Cover
6	Hinge Arm
7	Pivot Lug
8	Hex Hd. Bolt/Nut
9	Hinge Pin
10	Bushing
11	Washer
12	Spring Pin

3

1. Add grout pad thickness to anchor bolt projection.
2. Also available with flange and drilling to attach to a 125# standard pipe flange.
3. If grout pad mounting is used add grout thickness to dimension.



N.T.S.

DIMENSIONS IN INCHES															
GAT. SIZE	A	B	C	D1	D2	D3	E	E3	O.D.	B.C.	M	P 1	◊
12	13½	13½	18½	8⅝	8⅝	11⅛	4	7	17½	15½	¾	1	1
15	16¾	17	12½	8⅝	8⅝	11⅛	4	7	20½	18½	¾	1	2
18	19¾	20	14¼	8⅝	8⅝	11⅛	4	7	23½	21½	¾	1	2
24	25¼	26½	16¾	8⅝	8⅝	11⅛	4	7	30½	28½	¾	1½	2
30	31½	32½	19¾	10½	10½	12	4½	7	36½	34½	¾	1½	3
36	37½	38½	24	10½	10½	12	4½	7½	42½	40½	¾	1½	3
42	43½	46	27½	13	13½	-	5½	-	48½	46½	¾	1½	3
48	49½	52	31	13½	13½	-	5½	-	54½	52½	¾	1½	4
54	55½	58	35	13½	13½	-	6½	-	60½	58½	¾	2	4
60	61½	64	38	16½	16½	-	6½	-	66½	64½	¾	2	4
72	73½	76	44½	17½	17½	-	7½	-	78½	76½	¾	2	4
84							DIMENSION ON APPLICATION						

2

REVISIONS			
No.	DESCRIPTION	DATE	BY
3	FDP REVISION 3	10/24/23	PLJ

PROFESSIONAL ENGINEER LICENSED 17661 STATE OF IDAHO PHOEBE JOHANNESSEN

10/24/2023

BENCHMARK ASSOCIATES, P.A.
P.O. BOX 733 100 BELL DRIVE
KETCHUM, IDAHO 83340
(208) 726-9512
(FAX) 726-9514
WEB:
www.benchmark-associates.com
MAIL:
mail@bma5b.com

SHEET PILE WALL

MARY'S PLACE SUB, BLOCK 1 LOT 4
T4N, R17E, SEC 13, B.M., KETCHUM, IDAHO

PREPARED FOR: VISTA PROPERTIES

DRAWN BY: PLJ
DESIGNED BY: PLJ
CHECKED: –
DATE: 10/24/2023
PROJECT NO.: 23187

SHEET NUMBER

C-4

500 Wood River Drive runoff to pond
BY: P. Johannessen
DATE: 10/24/2023

Storm Intensity:	0.4	in/hr	Runoff Coefficients	
			C: 0.2	Grassed landscape strip
			C: 0.9	(Pavement)
			C: 0.1	Sage (unimproved)

Drainage Basin	Pavement (SF)	Pavement (AC)	FLOW RATE (cfs) Q=CIA
House	2050	0.05	0.02

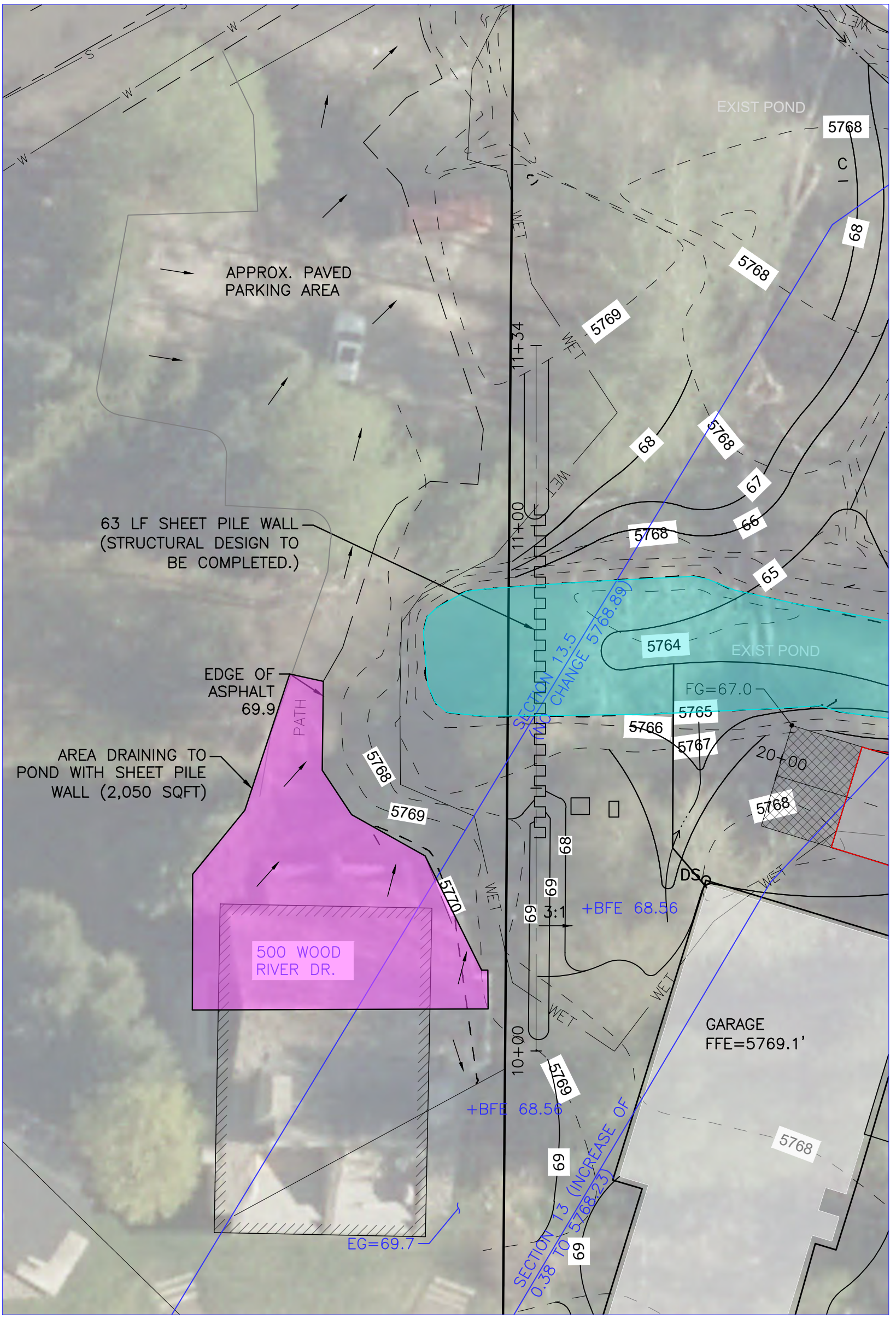
Flow through flap gate

Model as orifice

Q=(Cd)(Ao) sqrt(2gh)

Coefficient of Discharge (Cd) =	0.61		
Area of Orifice (Ao) =	0.34	sqft	
gravitational force	32.2	fps	
Height of water	0.25	ft	(Rule of thumb, gate opens at 1/3 diameter)
Q =	0.84	cfs	

One gate will pass the 0.2 cfs anticipated for the 25-year storm.
Two gates will be used in case one is blocked.



0 20 40 Feet

490 WOOD RIVER DRIVE
EXHIBIT A
FLOW FROM 500 WOOD RIVER DR.

Infiltration System Sizing Worksheet

The proposed infiltration system design below allows for infiltration of stormwater collected from the driveway. The below calculation shows required drywell dimensions to infiltrate the 25- year storm.

Onsite Native Soil Infiltration

Infiltration Rate:	120	in/hr	Assumed T_c:	10 min
Factor of Safety:	2		Intensity (25-yr, 10-min):	0.4 in/hr
Design Infiltration Rate:	60.00	**in/hr**		

Site Infiltration Sizing

Impervious Area:	0.13	ac	Driveway	5,500	sf
Runoff Coefficient (Imp.):	0.9				
25-Year Design Runoff:	0.05	cfs			

Infiltration Trench Dimensions

Trench Width	2	ft	Right trench =	**210**	ft
Total Length	380	ft	Left trench=	**170**	ft
Total Base Area	760	sf			

Drain Rock Void Ratio:	0.4		
Top Trench Elevation:	68.00		
Max Storage Elevation:	67.00		Bottom of road section
Depth to Bottom of Trench	2.0	ft	Depth to water table = 3.3 to 3.9 ft
Bottom Elevation:	66.0		

Trench Stage-Storage-Discharge

Drywell Stage	Water Surface Depth	Elevation	Storage in MH	Storage in Drain Rock	Total Storage	Bottom Wetted Area	Side Wetted Area	Total Wetted Area	Drywell Infiltration Flow Rate
(ft)	(ft)		(cf)	(cf)	(cf)	(sf)	(sf)	(sf)	(cfs)
0.00	2.00	66.00	0.0	0.0	0.0	760.0	0.0	760.0	1.056
0.10	1.90	66.10	76.0	30.4	106.4	760.0	76.0	836.0	1.161
0.20	1.80	66.20	152.0	60.8	212.8	760.0	152.0	912.0	1.267
0.30	1.70	66.30	228.0	91.2	319.2	760.0	228.0	988.0	1.372
0.40	1.60	66.40	304.0	121.6	425.6	760.0	304.0	1064.0	1.478
0.50	1.50	66.50	380.0	152.0	532.0	760.0	380.0	1140.0	1.583
0.60	1.40	66.60	456.0	182.4	638.4	760.0	456.0	1216.0	1.689
0.70	1.30	66.70	532.0	212.8	744.8	760.0	532.0	1292.0	1.794
0.80	1.20	66.80	608.0	243.2	851.2	760.0	608.0	1368.0	1.900
0.90	1.10	66.90	684.0	273.6	957.6	760.0	684.0	1444.0	2.006
1.00	**1.00**	**67.00**	**760.0**	304.0	**1064.0**	760.0	760.0	**1520.0**	**2.111**

Driveway Infiltration Trench

490 Wood River Drive

Ketchum, Idaho

BY: PLJ DATE: 09/13/23

Infiltration System Sizing Worksheet

The proposed infiltration system design below allows for infiltration of stormwater collected from half of the house. The below calculation shows required drywell dimensions to infiltrate the 25- year storm.

Onsite Native Soil Infiltration

Infiltration Rate:	120	in/hr
Factor of Safety:	2	
Design Infiltration Rate:	60	**in/hr**

Assumed T_c:	10	min
Intensity (25-yr, 10-min):	0.4	in/hr

Site Infiltration Sizing

Impervious Area:	0.115	ac
Runoff Coefficient (Imp.):	0.9	
25-Year Design Runoff:	0.041	cfs

House	10,000	sf
1/2 of house =	5,000	sf

Drywell Structure Dimensions

Drywell Manhole Diameter:	24	in
Drain Rock Thickness:	36	in
Drain Rock Void Ratio:	0.4	
Drywell Rim Elevation:	67.50	
Max Storage Elevation:	66.50	
Depth to Bottom of Drywell:	3.9	ft
Bottom Elevation:	63.6	

Nearest Test Pit is TP#6
Groundwater @ 3.9 feet

Drywell Stage-Storage-Discharge

Drywell Stage	Water Surface Depth	Elevation	Storage in MH	Storage in Drain Rock	Total Storage	Bottom Wetted Area	Side Wetted Area	Total Wetted Area	Drywell Infiltration Flow Rate
(ft)	(ft)		(cf)	(cf)	(cf)	(sf)	(sf)	(sf)	(cfs)
0.00	3.90	63.60	0.0	0.0	0.0	50.3	0.0	50.3	0.070
0.29	3.61	63.89	0.9	5.5	6.4	50.3	7.3	57.6	0.080
0.58	3.32	64.18	1.8	10.9	12.8	50.3	14.6	64.8	0.090
0.87	3.03	64.47	2.7	16.4	19.1	50.3	21.9	72.1	0.100
1.16	2.74	64.76	3.6	21.9	25.5	50.3	29.2	79.4	0.110
1.45	2.45	65.05	4.6	27.3	31.9	50.3	36.4	86.7	0.120
1.74	2.16	65.34	5.5	32.8	38.3	50.3	43.7	94.0	0.131
2.03	1.87	65.63	6.4	38.3	44.6	50.3	51.0	101.3	0.141
2.32	1.58	65.92	7.3	43.7	51.0	50.3	58.3	108.6	0.151
2.61	1.29	66.21	8.2	49.2	57.4	50.3	65.6	115.9	0.161
2.90	**1.00**	**66.50**	**9.1**	**54.7**	**63.8**	**50.3**	72.9	**123.2**	**0.171**

Drywell #1

490 Wood River Drive

BY: PLJ DATE: 09/13/23

Infiltration System Sizing Worksheet

The proposed infiltration system design below allows for infiltration of stormwater collected from half of the house. The below calculation shows required drywell dimensions to infiltrate the 25- year storm.

Onsite Native Soil Infiltration

Infiltration Rate:	120	in/hr	Assumed T_c:	10	min
Factor of Safety:	2		Intensity (25-yr, 10-min):	0.4	in/hr
Design Infiltration Rate:	60	**in/hr**			

Site Infiltration Sizing

Impervious Area:	0.115	ac	House	10,000	sf
Runoff Coefficient (Imp.):	0.9		1/2 of house =	5,000	sf
25-Year Design Runoff:	0.041	cfs			

Drywell Structure Dimensions

Drywell Manhole Diameter:	24	in	
Drain Rock Thickness:	36	in	
Drain Rock Void Ratio:	0.4		
Drywell Rim Elevation:	68.00		
Max Storage Elevation:	67.00		Nearest Test Pit is TP#10
Depth to Bottom of Drywell:	3.2	ft	Groundwater @ 3.2 feet
Bottom Elevation:	64.8		

Drywell Stage-Storage-Discharge

Drywell Stage	Water Surface Depth	Elevation	Storage in MH	Storage in Drain Rock	Total Storage	Bottom Wetted Area	Side Wetted Area	Total Wetted Area	Drywell Infiltration Flow Rate
(ft)	(ft)		(cf)	(cf)	(cf)	(sf)	(sf)	(sf)	(cfs)
0.00	3.20	64.80	0.0	0.0	0.0	50.3	0.0	50.3	0.070
0.22	2.98	65.02	0.7	4.1	4.8	50.3	5.5	55.8	0.077
0.44	2.76	65.24	1.4	8.3	9.7	50.3	11.1	61.3	0.085
0.66	2.54	65.46	2.1	12.4	14.5	50.3	16.6	66.9	0.093
0.88	2.32	65.68	2.8	16.6	19.4	50.3	22.1	72.4	0.101
1.10	2.10	65.90	3.5	20.7	24.2	50.3	27.6	77.9	0.108
1.32	1.88	66.12	4.1	24.9	29.0	50.3	33.2	83.4	0.116
1.54	1.66	66.34	4.8	29.0	33.9	50.3	38.7	89.0	0.124
1.76	1.44	66.56	5.5	33.2	38.7	50.3	44.2	94.5	0.131
1.98	1.22	66.78	6.2	37.3	43.5	50.3	49.8	100.0	0.139
2.20	**1.00**	**67.00**	**6.9**	**41.5**	**48.4**	**50.3**	55.3	**105.6**	**0.147**

Drywell #2

490 Wood River Drive

BY: PLJ DATE: 09/13/23

Memo

HARMONY
DESIGN & ENGINEERING

To: Adam Crutcher, City of Ketchum

From: Jennifer Zung, PE, CFM

CC:

Date: 8/23/2023

Re: 490 Wood River Drive Floodplain Development Permit, Ketchum, ID (P23-029)

PROFESSIONAL ENGINEER REGISTERED 11539 8/23/2023 STATE OF IDAHO JENNIFER P. ZUNG

This memo outlines comments in response to the memo from Galena-Benchmark Engineering dated July 21, 2023, and additional data and responses received on July 13, 2023, which was composed in response to our comment memos dated June 5, 2023 and June 19, 2023.

1. Compensatory Storage Volume – The applicant replied they would like to maintain the existing proposed code compliant grading. This is acceptable, but the amount of compensatory storage required should be calculated based on the suggested minimum amount of grading needed around the house. Thus, the amount of associated house fill used in the calculations in Appendix F will decrease and the compensatory storage requirement will increase.

2. Volume Calculations – The cut and fill volumes provided are based on the cross sections in the HEC-RAS model. A large amount of fill on the site below the BFE is occurring between cross section 12.5 and 13, and this area is not represented in the calculations. The volume provided upstream of the existing culvert is based on only two cross sections. Volumes should be calculated using either more cross sections spaced closer together without large gaps or by subtracting proposed and existing DEM surfaces to create a volume surface and then subtracting that surface from a BFE surface.

3. Upstream Impacts - The 7/21/2023 response memo states that since the water surface elevation at cross section 13.5 has not increased in the HEC-RAS model, that there will be no impact to the upstream property. However, there is an increase in water surface elevation at cross section 13, which also extends onto the upstream property. Additionally, relying on the HEC-RAS model to show no impact on the upstream property is not adequate. The RAS model cross sections extend across the entire Big Wood River, and water is allowed to move freely between the left overbank and the main channel. At cross section 15.5 where the split flow into the left overbank begins, flow in the left overbank is just under 700 cfs. At cross sections 13 and 13.5 located just upstream of the driveway, the flow in the left overbank is reduced to 250 cfs in the model because more water is being conveyed in the main channel even though it may not physically be able to get there. Downstream as cross section 12, the flow in the left overbank increases to 312 cfs in the model even though the proposed house is

between the main channel of the river and the overbank flows on the property. If the RAS model is used to evaluate the impact of the proposed driveway on the upstream property, a split flow model should be used.

Additionally, although the culvert capacity is proposed to increase from 7 cfs to 43 cfs, the proposed driveway is being raised up to 2-ft on the north end, which will decrease the amount of weir flow over the road at a given water surface elevation. Please demonstrate the ability of the driveway to convey 700 cfs (flow in left overbank from cross section 15.5) through the culverts and via weir flow without impacting the upstream property. Note that the proposed road deck in the HEC-RAS geometry should be extended to the left to prevent the model allowing flow around the end of the road in the upstream road cross section.

4. Downstream Impacts – The project needs to demonstrate that post-development drainage is equal or less than pre-development drainage. The 7/21/2023 memo states that the proposed development will add 0.1 cfs to the swale from the driveway and house during the 25-year event. This does not meet Ketchum requirements for not increasing off-site runoff.

BROCKWAY ENGINEERING PLLC

Technical Memo

To: City of Ketchum
From: Charles G. Brockway, P.E.
Cc:
Date: September 5, 2023
Re: Additional technical information for 490 Wood River Drive Floodplain Development Permit Application

This memo provides additional information in response to the memo from Harmony Design and Engineering dated August 23, 2023. The Harmony memo included comments on the modeling and calculations for the project that were originally submitted to the City on June 15, 2023.

A. Split-Flow 100-Year Flood Model (Item #3 of Harmony memo)

Because of the high ground between the main river channel and the landward side of the proposed residence, Harmony suggests using a split-flow model to simulate the flow in the project area independently from the river. To address this comment, a split-flow HEC-RAS model was created from the data contained in the non-split model submitted on June 15, 2023, for both existing and proposed conditions. The cross-section geometry for the existing and proposed projects was duplicated in the split-flow model with the following minor adjustments: a small correction was made to the driveway profile to make a linear grade from the street to the low elevation of 5768 feet; cross-section 13.5 elevation point upstream of the driveway low point was reduced by 0.3' to better match proposed grading; and cross-sections 13.5 and 14 were extended eastward so that the computed water surface elevation would properly intersect the ground surface. Also note that in the east flow reach, lengths between cross-sections are not exactly the same as those in the non-split model, because they were adjusted to reflect the actual average distances within the overbank.

Attempts were made to utilize the HEC-RAS flow optimization feature across the reach junctions to compute the split flow distribution between the main channel and east flow path. These attempts resulted in unrealistic flow splits and water surface elevations. After investigation, it was determined that HEC-RAS is unable to handle the particular situation where there is a very large velocity differential between the main channel and the split flow reach that violates certain assumptions employed in the model.[i]

The work-around for this problem was to model the flow splitting off to the east as a lateral structure with flow optimization. The lateral outflow was assumed to be reasonably represented as a weir stretching between the east floodplain boundary and the high area between Sections 15 and 15.5, i.e. at the upstream "entrance" to the east flow path (Figure 1). The elevations were taken from the LiDAR topography, with the crest elevation varying from 5770.5 to 5772.0 feet, averaging about 5771.0 feet. The weir coefficient was taken to be 2.0, representing a wide, flat, broad-crested weir with a very rough surface. The starting station for the lateral outflow was set equal to the Section 15 station. In general, the location and parameters were selected to ensure that this approach did not underestimate the discharge in the east flow area.

HEC-RAS calculated the east flow to be 357 cfs. This is very close to the average east overbank flow in the non-split model of 350 cfs, although that flow varies from 83 to 703 cfs. Pertinent findings from the split-flow model are as follows:

- The maximum water surface elevation over the driveway, i.e. at the upstream bounding cross-section of the driveway, is 5768.88 feet, which meets the fire department requirement of less than 1.0-foot depth during the 100-year flood. The lowest elevation of the garage slab is 5767.5, where the corresponding water surface elevation is 5768.02 (estimated by interpolation between the downstream internal crossing section and downstream Section 12.5). The fire department criteria is satisfied here as well.

- Compared to the existing conditions model, the proposed-conditions model predicts the following changes within the east flow path:
    - An increase of 0.45 feet at Section 13, necessary for the water to flow over the driveway.
    - No increase at Section 13.5 and a slight decrease of -0.02 feet at Section 14.0.
    - A decrease downstream of the driveway, ranging from -0.22 feet at Section 12.5 to -0.09 feet at Section 11.8. Downstream of the property, the model predicts no change.

- Within the main river channel, compared to the existing conditions model, the proposed-conditions model predicts either no change or very slight decreases of -0.02 feet.

- The model predicts a discharge through the proposed culverts across the driveway of 43 cfs, and a weir flow, i.e. flow over the driveway, of 314 cfs. This calculation includes the effect of the proposed road profile and garage pad geometry that is of concern (see Figure 2).

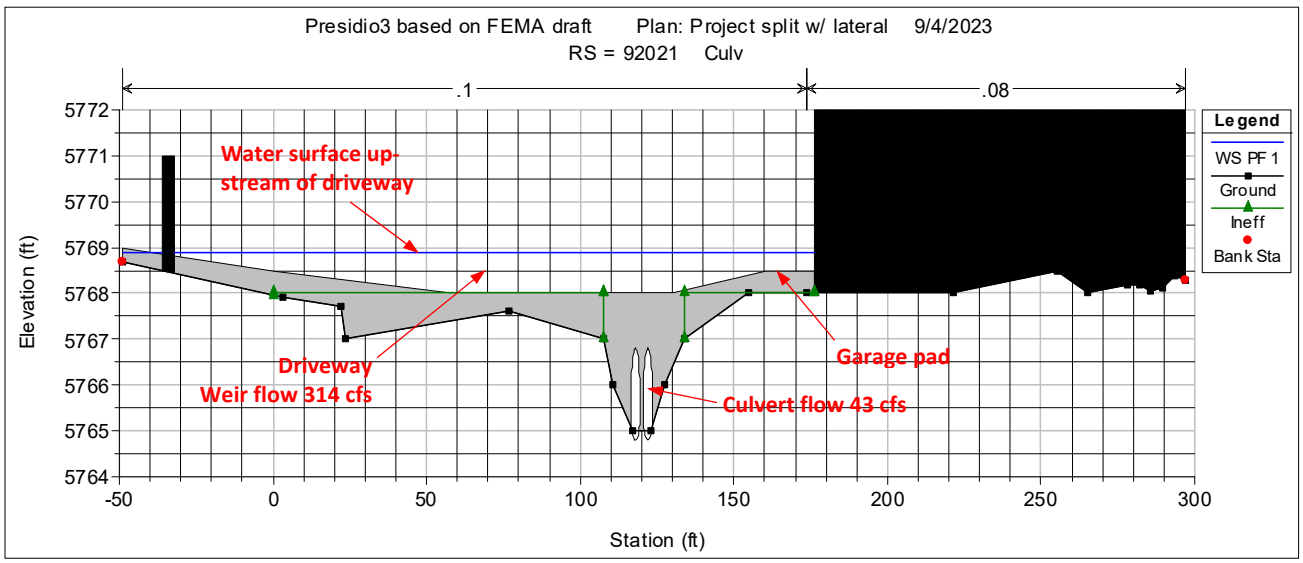


Figure 2. HEC-RAS split-flow model calculation of flow over roadway and through culvert system.

B. Cut-Fill Calculation (Items #1 and #2 of Harmony memo)

The calculated BFEs with the split-flow proposed-project model were used to re-evaluate cut and fill for the project as shown on the attached sheets. As before, separate calculations were made for the driveway fill, garage pad fill, and the retaining wall area fill. The calculated gross fill volume was decreased by the fill volume that is directly related to the residence, defined in our second round of responses to the city on August 24, 2023 as a 5% slope for the first 10 feet from the house, and a 4:1 slope thereafter (this addresses Item #1 of the Harmony memo). To address concerns about fill not being accurately calculated between Sections 12.5 and 13, a cross-section was added between these sections for cut-fill calculation purposes (Section 12.7). Most of the fill in this area is above the BFE.

The density of cross-sections used to evaluate cut and fill is more than adequate to describe all cut and fill features, and the methodology used is standard practice. This project is not of sufficient scale or complexity to warrant development of a digital-elevation model to evaluate cut and fill volumes.

The calculated net fill (gross fill minus associated residential fill) is 380 cy, and the calculated cut is 423 cy, for a net positive cut-fill balance of 43 cy.

[i] Technical note on HEC-RAS split-flow optimization: In this case, the main channel velocity is very high (11 ft/s with a velocity head of 1.9 feet), whereas the flow leaving the main channel is wide and slow, with a velocity head nearly zero. In such a situation, the shear stresses between the narrow, high-velocity main channel and the relatively placid channel leaving to the east will be extremely high. Turbulent eddy losses will essentially dissipate the energy differential, resulting in similar water surface elevations. However, HEC-RAS employs an approximation that assumes the computed energy grade lines at the junction are nearly the same, neglecting all turbulent shear losses. This results in the impossible situation of a water surface that actually increases substantially from the main channel into the east split. The HEC-RAS approximation is only reasonable if the main and split channels have similar velocity characteristics without large turbulent losses.

Presidio Vista - 490 Wood River HEC-RAS Split-Flow Model Output

CGB 9/4/2023

BASELINE EXISTING CONDITIONS SPLIT FLOW MODEL

Sec No		Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl	Draft model
16	Main river	Reach-1	93417.33	PF 1	6363	5769.82	5776.17	5776.17	5778.20	0.009273	11.49	612.51	274.18	0.93	5777.63
15.5	Main river	Reach-1	92671.74	PF 1	6363	5765.00	5772.92	5771.45	5773.68	0.002992	7.32	1348.5	547.29	0.54	
	Main river	Reach-1	92572		Lat Struct										5770.67
15	Main river	Reach-1	92471.74	PF 1	6006.86	5763.70	5770.80	5770.15	5772.71	0.006852	11.12	572.94	237.46	0.82	
14	Main river	Reach-1	92232	PF 1	6006.86	5762.20	5769.39	5768.70	5770.52	0.008874	8.53	709.88	191.35	0.77	
13.5	Main river	Reach-1	92123	PF 1	6006.86	5761.60	5768.93	5767.99	5769.60	0.005957	6.59	917.37	272.7	0.62	
13	Main river	Reach-1	92065	PF 1	6006.86	5761.30	5767.81	5767.81	5769.00	0.016887	8.77	686.59	280.83	0.98	
12.5	Main river	Reach-1	91977	PF 1	6006.86	5760.40	5767.56	5766.32	5768.06	0.004239	5.72	1101.32	333.54	0.53	
12	Main river	Reach-1	91945	PF 1	6006.86	5760.00	5766.87	5766.66	5767.81	0.010376	7.87	790.79	321.49	0.87	
11.8	Main river	Reach-1	91911	PF 1	6006.86	5759.70	5766.87	5765.99	5767.42	0.006236	6.08	1048.49	346.71	0.6	
11.5	Main river	Reach-1	91836	PF 1	6006.86	5758.42	5766.55	5765.38	5767.00	0.004452	5.42	1162.76	360.33	0.52	
11	Main river	Reach-1	91715	PF 1	6006.86	5757.02	5765.71	5764.78	5766.36	0.00595	6.57	996.72	330.3	0.62	
10	Main river	Reach-1	91565	PF 1	6006.86	5756.85	5764.98	5763.52	5765.67	0.003809	7.19	1153.72	322.03	0.53	
15	Split	East Flow	92471.74	PF 1	357	5769.77	5771.11	5770.58	5771.13	0.007774	1.17	304.6	502.83	0.27	
14	Split	East Flow	92232	PF 1	357.14	5768.47	5770.25	5769.53	5770.29	0.008893	1.63	230.65	288.08	0.3	5762.08
13.5	Split	East Flow	92123	PF 1	357.14	5764.00	5769.17	5767.84	5769.28	0.01108	2.6	138.21	232.18	0.37	5761.33
13	Split	East Flow	92065	PF 1	357.14	5764.50	5768.43	5767.48	5768.47	0.013025	1.65	216.55	263.28	0.32	
	Split	East Flow	92021		Culvert										
12.5	Split	East Flow	91977	PF 1	357.14	5764.60	5767.74	5766.20	5767.77	0.008363	1.49	239.04	220.54	0.25	
12	Split	East Flow	91945	PF 1	357.14	5764.30	5767.35	5766.16	5767.40	0.011847	1.83	195.44	184.25	0.31	
11.8	Split	East Flow	91911	PF 1	357.14	5763.20	5767.24	5765.61	5767.25	0.002053	0.99	360.16	219.55	0.14	
11.5	Split	East Flow	91836	PF 1	357.14	5763.00	5766.85	5765.44	5766.89	0.005863	1.65	216.99	172.13	0.26	
11	Split	East Flow	91715	PF 1	357.14	5762.43	5766.65	5763.65	5766.67	0.000814	1.03	347.84	128.27	0.11	
10	Split	East Flow	91565	PF 1	357.14	5763.50	5765.86	5765.86	5766.23	0.10779	4.89	73.07	101.45	1.01	
9	Main river	Reach-3	91427	PF 1	6363	5756.85	5764.80	5762.28	5765.37	0.002357	6.29	1324.93	373.55	0.43	
8	Main river	Reach-3	91103.24	PF 1	6363	5755.22	5761.89	5761.73	5763.89	0.009221	11.61	730.72	275.48	0.93	
7	Main river	Reach-3	90690.8	PF 1	6363	5752.51	5759.68	5758.64	5760.93	0.005003	9.02	772.47	374.2	0.69	

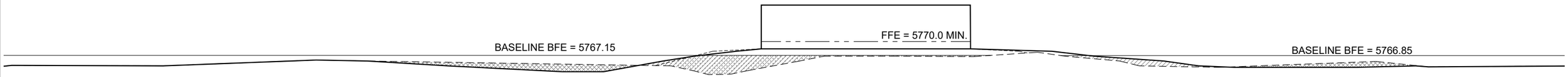
WITH PROJECT REV 2023.04.26 AND SPLIT FLOW MODEL

Sec No		Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl	Delta WSE	
16	Main river	Reach-1	93417.33	PF 1	6363	5769.82	5776.17	5776.17	5778.20	0.009273	11.49	612.51	274.18	0.93	0.00	
15.5	Main river	Reach-1	92671.74	PF 1	6363	5765.00	5772.92	5771.45	5773.68	0.002992	7.32	1348.5	547.29	0.54	0.00	
	Main river	Reach-1	92572		Lat Struct											
15	Main river	Reach-1	92471.74	PF 1	6006.86	5763.70	5770.80	5770.15	5772.71	0.006852	11.12	572.94	237.46	0.82	0.00	
14	Main river	Reach-1	92232	PF 1	6006.86	5762.20	5769.39	5768.70	5770.52	0.008874	8.53	709.88	191.35	0.77	0.00	
13.5	Main river	Reach-1	92123	PF 1	6006.86	5761.60	5768.93	5767.99	5769.60	0.005957	6.59	917.37	272.7	0.62	0.00	
13	Main river	Reach-1	92065	PF 1	6006.86	5761.30	5767.81	5767.81	5769.00	0.016887	8.77	686.59	280.83	0.98	0.00	
12.5	Main river	Reach-1	91977	PF 1	6006.86	5760.40	5767.54	5766.27	5768.02	0.004198	5.57	1084.14	315.49	0.52	-0.02	
12	Main river	Reach-1	91945	PF 1	6006.86	5760.00	5766.85	5766.60	5767.78	0.010013	7.8	797.84	312.63	0.85	-0.02	
11.8	Main river	Reach-1	91911	PF 1	6006.86	5759.70	5766.85	5765.92	5767.41	0.005733	6.13	1043.58	339.98	0.6	-0.02	
11.5	Main river	Reach-1	91836	PF 1	6006.86	5758.42	5766.55	5765.38	5767.00	0.004452	5.42	1162.76	360.33	0.52	0.00	
11	Main river	Reach-1	91715	PF 1	6006.86	5757.02	5765.71	5764.78	5766.36	0.00595	6.57	996.72	330.3	0.62	0.00	
10	Main river	Reach-1	91565	PF 1	6006.86	5756.85	5764.98	5763.52	5765.67	0.003809	7.19	1153.72	322.03	0.53	0.00	
15	Split	East Flow	92471.74	PF 1	357	5769.77	5771.11	5770.58	5771.14	0.007676	1.17	305.82	503.15	0.26	0.00	
14	Split	East Flow	92232	PF 1	357.14	5768.47	5770.24	5769.53	5770.28	0.009353	1.66	226.31	285.41	0.31	-0.02	
13.5	Split	East Flow	92123	PF 1	357.14	5765.00	5769.17	5768.25	5769.27	0.010434	2.58	139.24	228.04	0.36	0.00	
13	Split	East Flow	92065	PF 1	357.14	5765.00	5768.88	5767.54	5768.90	0.003263	1.1	325.89	220.9	0.16	0.45	Over driveway
	Split	East Flow	92021		Culvert											
12.5	Split	East Flow	91977	PF 1	357.14	5764.60	5767.52	5766.12	5767.56	0.006846	1.68	212.62	172.93	0.27	-0.22	Dnstrm of drive
12	Split	East Flow	91945	PF 1	357.14	5764.30	5767.21	5766.02	5767.27	0.008393	1.97	180.99	144.01	0.31	-0.13	
11.8	Split	East Flow	91911	PF 1	357.14	5763.80	5767.15	5765.50	5767.17	0.001367	1.17	304.92	156.76	0.15	-0.09	
11.5	Split	East Flow	91836	PF 1	357.14	5763.00	5766.85	5765.44	5766.89	0.005863	1.65	216.99	172.13	0.26	0.00	
11	Split	East Flow	91715	PF 1	357.14	5762.43	5766.65	5763.65	5766.67	0.000814	1.03	347.84	128.27	0.11	0.00	
10	Split	East Flow	91565	PF 1	357.14	5763.50	5765.86	5765.86	5766.23	0.10779	4.89	73.07	101.45	1.01	0.00	
9	Main river	Reach-3	91427	PF 1	6363	5756.85	5764.80	5762.28	5765.37	0.002357	6.29	1324.93	373.55	0.43	0.00	
8	Main river	Reach-3	91103.24	PF 1	6363	5755.22	5761.89	5761.73	5763.89	0.009221	11.61	730.72	275.48	0.93	0.00	
7	Main river	Reach-3	90690.8	PF 1	6363	5752.51	5759.68	5758.64	5760.93	0.005003	9.02	772.47	374.2	0.69	0.00	

F:\Projects\Presidio Vista\CAD\Cut-fill-project-2023.09.04.dwg

EXISTING GRADE
PROJECT GRADE
BASELINE BFE CALCULATED
FILL BELOW BFE
CUT BELOW BFE
HOUSE-ASSOCIATED FILL BELOW BFE, WITH CRITERIA: 5% FOR FIRST 10 FT (IRC) THEN 4:1 (MAX. REASONABLE WALKING SURFACE)

BFE FROM SPLIT FLOW ANALYSIS, PROPOSED CONDITIONS MODEL 9/4/2023

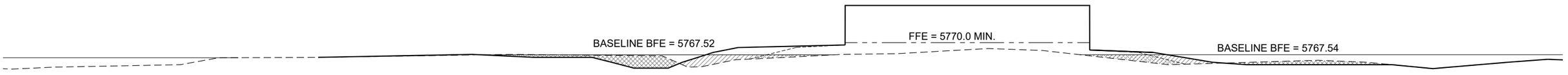


CUT AREA BELOW BFE = 74.9 SF
TOTAL FILL AREA BELOW BFE = 107.8 SF
HOUSE-ASSOCIATED FILL BELOW BFE = 83.3 SF

SECTION 11.8

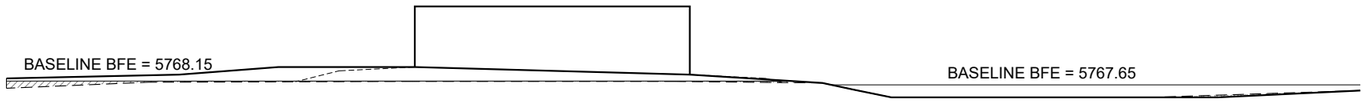
CUT AREA BELOW BFE = 104.5 SF
FILL AREA BELOW BFE = 56.3 SF
HOUSE ASSOCIATED FILL BELOW BFE = 32.4 SF

SECTION 12



CUT AREA BELOW BFE = 60.4 SF
FILL AREA BELOW BFE = 57.0 SF
HOUSE ASSOCIATED FILL BELOW BFE = 23.9 SF

SECTION 12.5



CUT AREA BELOW BFE = 4.0 SF
FILL AREA BELOW BFE = 18.0 SF
HOUSE ASSOCIATED FILL BELOW BFE = 4.5 SF

SECTION 12.7

REV	DESCRIPTION	DATE	APPD.
E	SPLIT-FLOW MODEL	9/4/2023	
D	CHANGED BFE TO POST-PROJECT MODEL	6/15/2023	

DESIGNED BY CGB | DRAFTED BY CGB

NO SCALE

BROCKWAY ENGINEERING, PLLC.
HYDRAULICS - HYDROLOGY - WATER RESOURCES
2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, ID. 83301
(208) 736-8543

490 WOOD RIVER
FLOODPLAIN DEVELOPMENT PERMIT

PROJECT # 1575-01-2021

CUT AND FILL AREAS BELOW CALCULATED BASELINE BFE (100-YEAR FLOW)

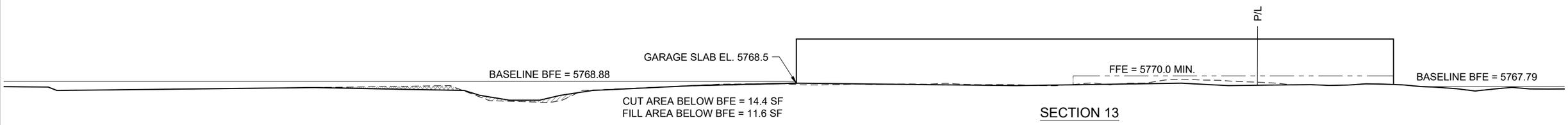
DWG # FIGURE 3

REV E

F:\Projects\Presidio Vista\CAD\Cut-fill-project-2023.09.04.dwg

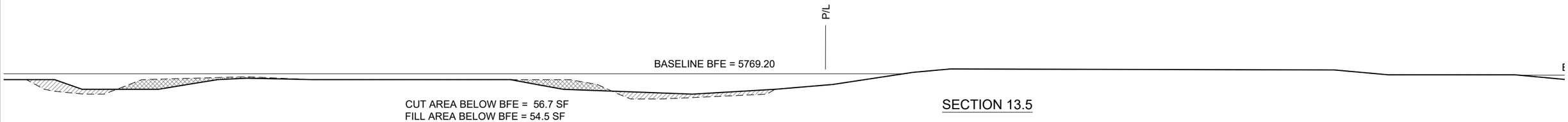
BFE FROM SPLIT FLOW ANALYSIS, PROPOSED CONDITIONS MODEL 9/4/2023

EXISTING GRADE
PROJECT GRADE
BASELINE BFE CALCULATED
FILL BELOW BFE
CUT BELOW BFE



CUT AREA BELOW BFE = 14.4 SF
FILL AREA BELOW BFE = 11.6 SF

SECTION 13



CUT AREA BELOW BFE = 56.7 SF
FILL AREA BELOW BFE = 54.5 SF

SECTION 13.5

CUT AREA BELOW BFE = 0 SF
FILL AREA BELOW BFE = 167 SF

DRIVEWAY - ROAD ACCESS

DRIVEWAY PAD AT GARAGE WEST-EAST SECTION

CUT AREA BELOW BFE = 0 SF
FILL AREA BELOW BFE = 26.7 SF

REV	DESCRIPTION	DATE	APPD.
E	SPLIT-FLOW MODEL	9/4/2023	
D	CHANGED BFE TO POST-PROJECT MODEL	6/15/2023	

DESIGNED BY CGB | DRAFTED BY CGB

NO SCALE

BROCKWAY ENGINEERING, PLLC.
HYDRAULICS - HYDROLOGY - WATER RESOURCES
2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, ID. 83301
(208) 736-8543

490 WOOD RIVER
FLOODPLAIN DEVELOPMENT PERMIT

PROJECT # 1575-01-2021

CUT-FILL BELOW CALCULATED BFE

DWG # FIGURE 4

REV E

Analysis of Cut and Fill Volume Below BFE -- Revised for Split-Flow Model

490 standalone project 2023.03.09 final rev 2023.04.26, revised split-flow model 2023.09.04
BFE calculated with PROPOSED CONDITIONS model
Volumes calculated using frustum formula
CGB 9/4/2023

Section	Station	Avg dist between sections	Cut Area (ft2)	Fill Area (ft2)	Delta V (cy) Cut	Delta V (cy) Fill	Associated house fill* Area (ft2)	Associated house fill* Delta V
Start grading (prop line)	0		0.0	0.0			0	
11.8	57	57	74.9	107.8	52.7	75.9	83.3	58.6
12	90	33	104.5	56.3	109.1	98.6	32.4	68.3
12.5	128	38	60.4	57.0	114.6	79.7	23.9	39.5
12.7	170	42	4.0	18.0	41.5	55.5	4.5	20.1
13	230	60	14.4	11.6	19.3	32.6	0.0	3.3
13.5	297	67	56.7	54.5	82.4	75.5	0.0	0.0
End grading	302	5	0.0	0.0	3.5	3.4	0.0	0.0
				Totals	423.1	421.1		189.8
Additional fill:								
Driveway - road access					0.0	92.8		
Driveway pad at garage					0.0	34.6		
Retaining wall area - section area 15.3' x length 37.8'					0.0	21.4		

* 5% for first 10 feet from foundation, then 4:1

Total gross cut	423.1	cy
Total gross fill	569.9	cy
Associated house fill	189.8	cy
Net fill (gross minus associated house fill)	380.1	cy
Net cut-fill balance excluding associated house fill	**43.0**	**cy**

BROCKWAY ENGINEERING PLLC

Technical Memo

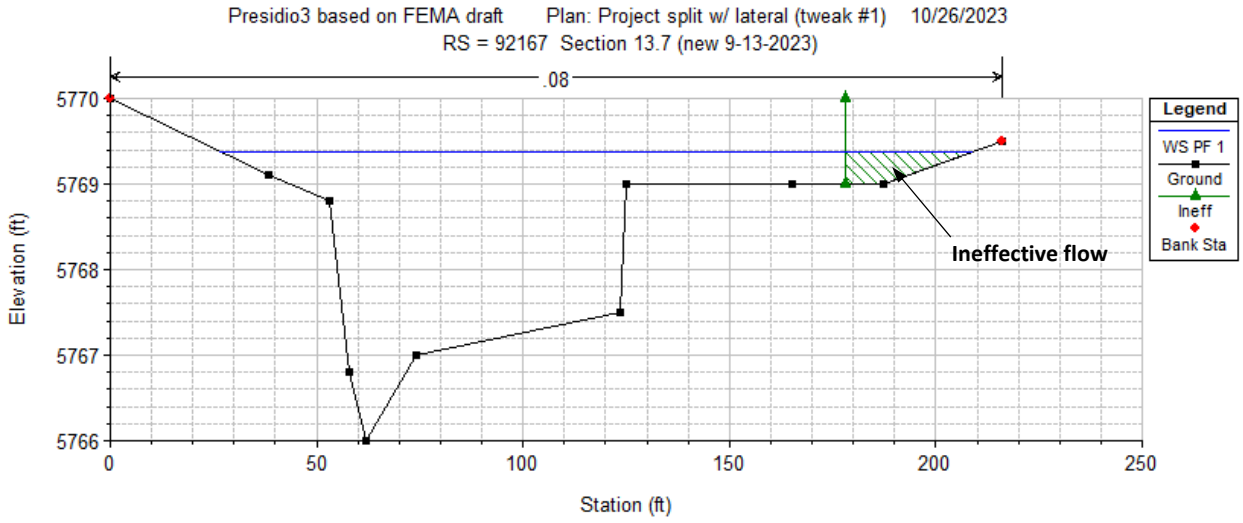
To: City of Ketchum
From: Charles G. Brockway, P.E.
Cc:
Date: October 26, 2023
Re: 490 Wood River Drive Floodplain Development Permit Application – Backwater Prevention

Additional concerns were received from the City of Ketchum regarding the potential for backwater occurrence within the ponded area upgradient of the proposed driveway. During the 100-year flood event, the predicted water surface elevation over the driveway at Section 13.0 is 5768.88 feet, an increase of 0.45 feet over the existing conditions at this location (Brockway memo 9/5//2023). The ponded area is an ineffective flow area in the HEC-RAS model, not contributing to conveyance, but the increased elevation at Section 13.5 will back up into the ponded area and increase the static water elevation in the pond by 0.45 feet. As the ponded area extends into the upstream adjacent parcel by approximately 20 feet, the increased elevation would result in additional ponded water on the adjacent parcel, though it would not inundate the driveway on this property. This is viewed by the City as a potential impact on neighboring property.

The proposed mitigating measure to prevent this potential impact is a barrier across the ponded area consisting of a sheet pile wall with low berms on either side of the wall to tie in to natural ground. This element is depicted on the revised civil drawing submitted to the city. The elevation of the top of the wall would be 5769.1 feet to provide a modest amount of freeboard without being unsightly. The wall would have a maximum height of 3.5 feet in the center of the ponded area. The low berms would have an average height of 1.0 feet.

To mitigate for the barrier to stormwater runoff from the upgradient property, flap gates will be installed in the wall as shown on the civil drawings. These gates will allow stormwater to flow as it has historically, while blocking reverse flow.

Relative to modeling, the ponded area is an ineffective flow area and so no significant changes to the model are needed. The low berm on the north side may cause a slight effect on the hydraulic conveyance at Section 13.7 – not because any part of the berm is at this location, but because of the upstream hydraulic "shadow" of the berm. To assess this effect a small ineffective flow area was placed as shown below. The ineffective flow limit at Section 13.5 is already set far enough left to account for the berm, so no changes are needed at this section. This change resulted in only minute changes in the model output, actually slight decreases in water surface at 13.7 and 14 due to the slight contraction effect (see table below).



Section	WSE (ft)	Delta WSE
15	5771.12	0.00
14	5769.99	-0.03
13.7	5769.38	-0.03
13.5	5769.12	0.06
13	5768.88	0.45
	Culvert	
12.5	5767.52	-0.22
12	5767.21	-0.13
11.8	5767.15	-0.09
11.5	5766.85	0.00
11	5766.65	0.00
10	5765.86	0.00

Cut/Fill update

The previous cut and fill calculations for compensatory storage evaluation in the Brockway memo dated 9/5/2023 were updated to include the sheet pile wall and low berms, which have a calculated fill volume below the modeled BFE of 14.3 yd^3 (see attached spreadsheet). There remains a net positive cut - fill balance.

Analysis of Cut and Fill Volume Below BFE -- Revised for Split-Flow Model and Sheet Pile Wall

490 standalone project 2023.03.09 final rev 2023.04.26, revised split-flow model, update with sheet pile wall 2023.1
BFE calculated with PROPOSED CONDITIONS model
Volumes calculated using frustum formula
CGB 10/26/2023

Section	Station	Avg dist between sections	Cut Area (ft2)	Fill Area (ft2)	Delta V (cy) Cut	Delta V (cy) Fill	Associated house fill* Area (ft2)	Associated house fill* Delta V
Start grading (prop line)	0		0.0	0.0			0	
11.8	57	57	74.9	107.8	52.7	75.9	83.3	58.6
12	90	33	104.5	56.3	109.1	98.6	32.4	68.3
12.5	128	38	60.4	57.0	114.6	79.7	23.9	39.5
12.7	170	42	4.0	18.0	41.5	55.5	4.5	20.1
13	230	60	14.4	11.6	19.3	32.6	0.0	3.3
13.5	297	67	56.7	54.5	82.4	75.5	0.0	0.0
End grading	302	5	0.0	0.0	3.5	3.4	0.0	0.0
				Totals	423.1	421.1		189.8
Additional fill:								
Driveway - road access					0.0	92.8		
Driveway pad at garage					0.0	34.6		
Retaining wall area - section area 15.3' x length 37.8'					0.0	21.4		
Sheet pile wall and low berms						14.3		

* 5% for first 10 feet from foundation, then 4:1

Total gross cut	423.1 cy
Total gross fill	584.2 cy
Associated house fill	189.8 cy
Net fill (gross minus associated house fill)	394.4 cy
Net cut-fill balance excluding associated house fill	**28.7 cy**

From: Robyn Mattison
To: Phoebe Johannessen
Cc: Frazier Cavness; ACrutcher@ketchumidaho.org; Dave Patrie
Subject: RE: 490 Wood River Drive - Storm Drainage
Date: Monday, October 9, 2023 1:19:44 PM

Thank you Phoebe. I've reviewed your calculations. The two drywells and driveway infiltration trench will infiltrate the increased runoff of a 25-year event due to the new impervious area of the site. This meets the intent of the city's code.

I don't need any further information at this time.

Robyn

From: Phoebe Johannessen <phoebe@galena-benchmark.com>
Sent: Thursday, October 5, 2023 9:43 AM
To: Robyn Mattison <rmattison@forsgren.com>
Cc: Frazier Cavness <frazier@presidiovistaproperties.com>; ACrutcher@ketchumidaho.org; Dave Patrie <dave@galena-benchmark.com>
Subject: FW: 490 Wood River Drive - Storm Drainage

EXTERNAL MESSAGE

Robyn,
Please see email below and attachments including calculations for drywells and driveway infiltration trenches for 490 Wood River Drive. This submittal is 60% Design Review and not for Building Permit. I think this is enough to establish that we are meeting the city's drainage code. Please let me know if you need additional information at this point.

Best regards,
Phoebe

From: Phoebe Johannessen
Sent: Wednesday, September 13, 2023 2:40 PM
To: rmattison@forsgren.com
Cc: ACrutcher@ketchumidaho.org; Frazier Cavness <frazier@presidiovistaproperties.com>; Dave Patrie <dave@galena-benchmark.com>
Subject: 490 Wood River Drive - Storm Drainage

Robyn,
In order to mitigate the 0.1 cfs runoff increase I had from the 490 Wood River Drive project, I am adding two drywells to infiltrate runoff from the roof of the house and infiltration trenches along both sides of the driveway under the gravel shoulder to collect runoff from the driveway. The

infiltration trench is loosely based on BMP 17 of the 2020 Catalog of Storm Water BMPs, but adapted to the unique conditions of this project. These additions will infiltrate the 25-year runoff from nearly all of the new impervious surfaces except for the patios and walkways.

I have added these features to the plan view, but still need to work on the details. I am sending you the calcs for your review and will send the plans again when they are complete. Let me know if this works for you. Also, I will send the Geotech report if you don't have it.

Thanks,

Phoebe Johannessen, P.E.

Engineering Manager

Galena-Benchmark Engineering

www.benchmark-associates.com | Main (208)726-9512 | Direct (208)481-8281

GALENA-BENCHMARK ENGINEERING

ENGINEERING, PLANNING, SURVEYING & MAPPING
PO Box 733: 100 Bell Drive
Ketchum, Idaho 83340
208-726-9512

MEMO

DATE: October 26, 2023

TO: Adam Crutcher
City of Ketchum

FROM: Phoebe Johannessen P.E.
Galena-Benchmark Engineering

RE: 490 Wood River Drive Floodplain Development Permit

Dear Mr. Crutcher,

This letter is to address comment No. 4 from the Harmony's comment letter dated 8/23/2023. Copied here:

4. Downstream Impacts – The project needs to demonstrate that post-development drainage is equal or less than pre-development drainage. The 7/21/2023 memo states that the proposed development will add 0.1 cfs to the swale from the driveway and house during the 25-year event. This does not meet Ketchum requirements for not increasing off-site runoff.

This comment was addressed with the following response with supporting revised civil drawings.

"In order to mitigate the 0.1 cfs runoff increase I had from the 490 Wood River Drive project, I am adding two drywells to infiltrate runoff from the roof of the house and infiltration trenches along both sides of the driveway under the gravel shoulder to collect runoff from the driveway. The infiltration trench is loosely based on BMP 17 of the 2020 Catalog of Storm Water BMPs, but adapted to the unique conditions of this project. These additions will infiltrate the 25-year runoff from nearly all of the new impervious surfaces except for the patios and walkways."

The response was found acceptable by the city engineer and is documented in an email from Robyn Mattison on October 9, 2023 (attached).

Additionally, the sheet pile wall with flap gates will not change the response to the above comment.

Please contact me if you have any questions.

Phoebe Johannessen

Sincerely,
Phoebe Johannessen, P.E.