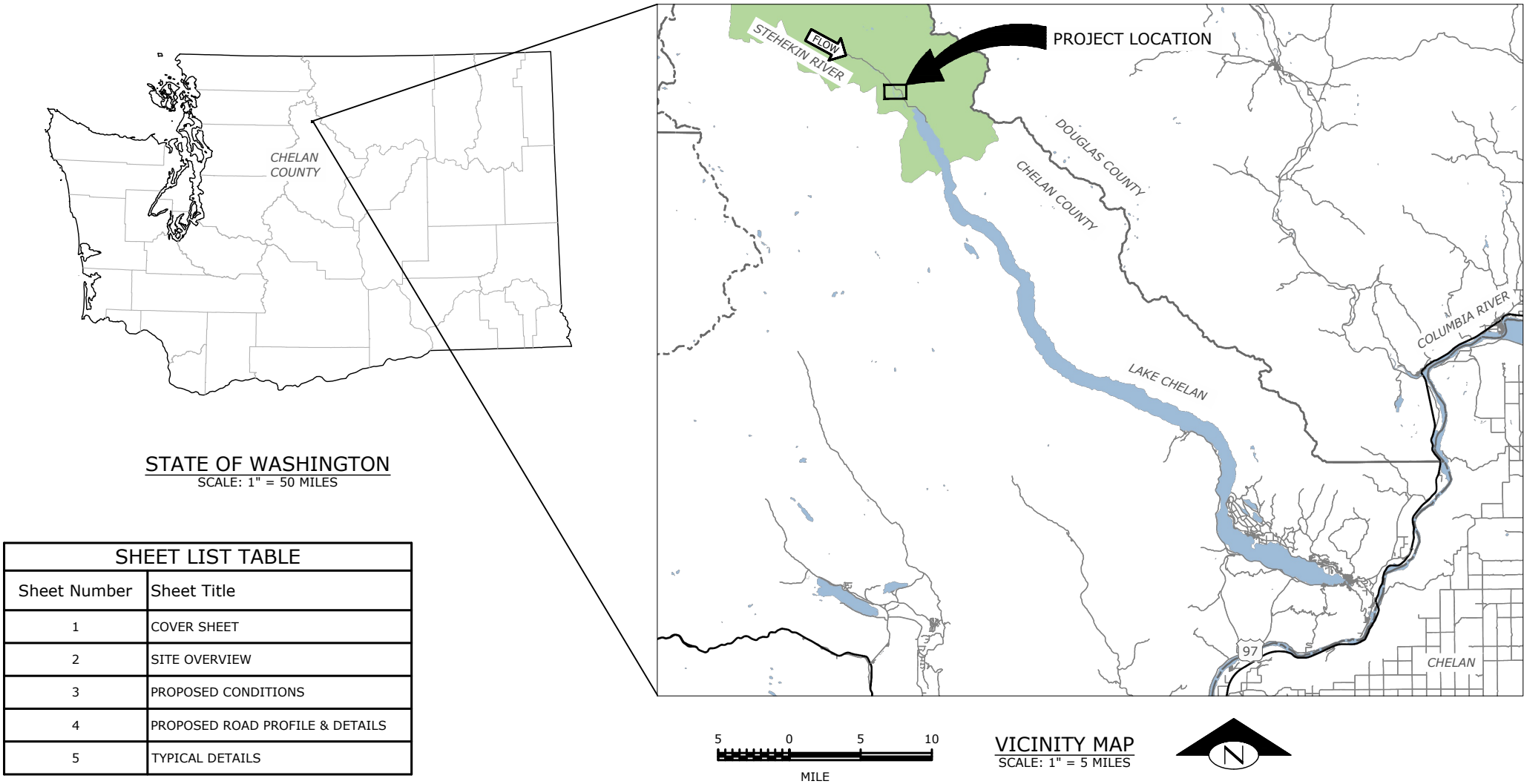


COMPANY CREEK ROAD REPAIR

CHELAN COUNTY NATURAL RESOURCES DEPARTMENT



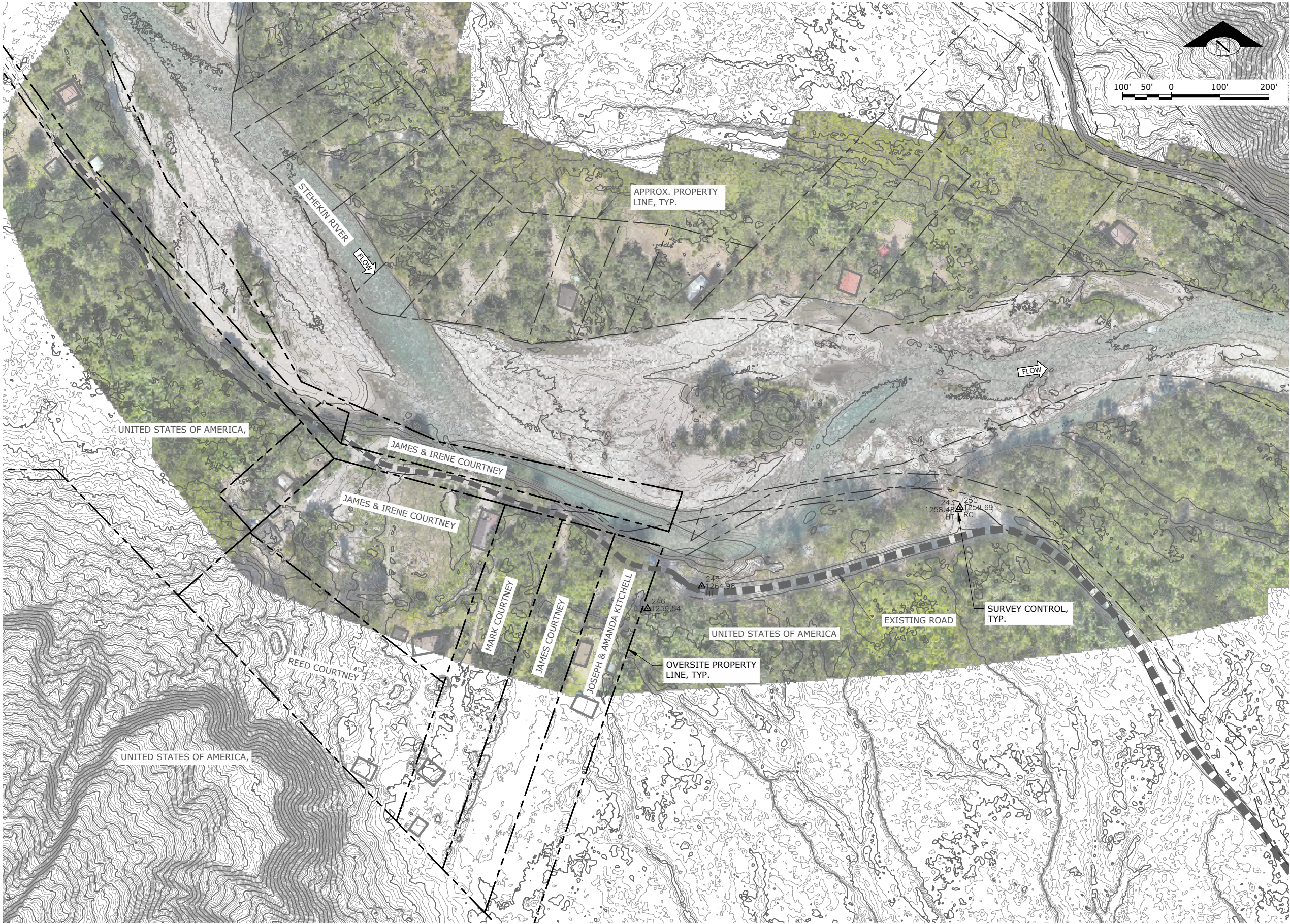
GENERAL NOTES

THIS DOCUMENT REFLECTS THE ENGINEER'S CONCEPT OF HOW THE PROPOSED PROJECT ELEMENTS MIGHT BE CONSTRUCTED. FINAL LINES, GRADES, AND MATERIALS SHALL BE AS DIRECTED IN THE FIELD BY THE CONTRACTING AGENCY.

THE EXISTING TOPOGRAPHY IS A COMPOSITE SURFACE OF: LIDAR COLLECTED IN 2022, PHOTOGRAMMETRY COLLECTED IN JULY 2026 BY CCNRD, AND ESTIMATED BATHYMETRY.

AERIAL IMAGERY IS FROM CCNRD, JULY 2026

THE VERTICAL DATUM IS NAVD 88 (FT). THE HORIZONTAL DATUM IS NAD 83 2011 WASHINGTON STATE PLANE NORTH AND THE UNIT IS US SURVEY FEET.

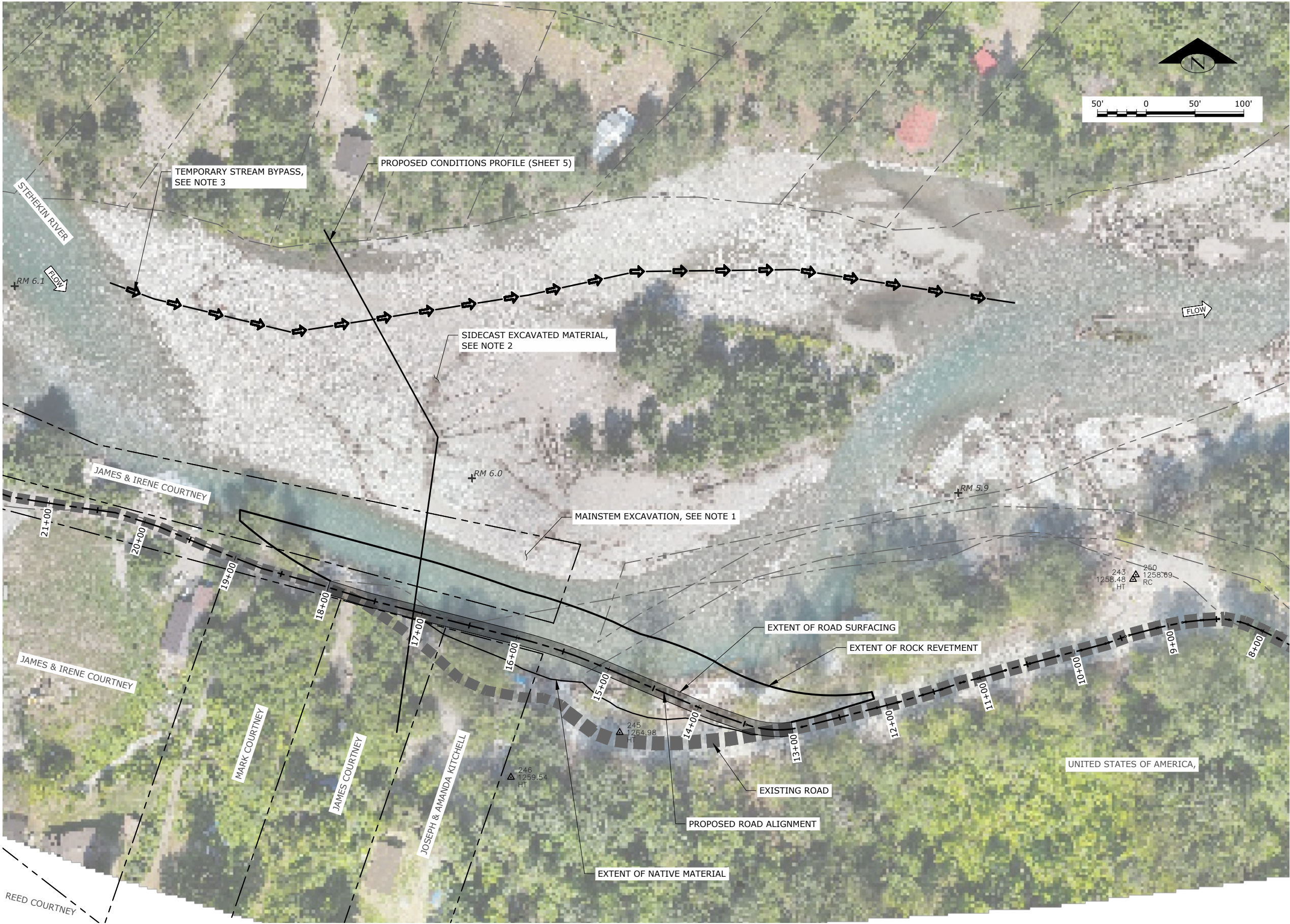


SITE OVERVIEW
SCALE: 1" = 100'

NOTES

- CONTROL POINTS WERE PUBLISHED BY OVERSITE ON 6/29/2026.

HORIZONTAL DATUM - NAD83
VERTICAL DATUM - NAVD88 GEOID 18
COORDINATE SYSTEM: WASHINGTON STATE PLANE NORTH ZONE, USFT.
- PROPERTY LINES PUBLISHED BY OVERSITE ON 6/29/2026 ARE CALLED OUT IN PLAN VIEW. ALL OTHER PROPERTY LINES ARE APPROXIMATE.
- THE BATHYMETRY OF THE STEHEKIN RIVER IS UNKNOWN. AN APPROXIMATION IS SHOWN.

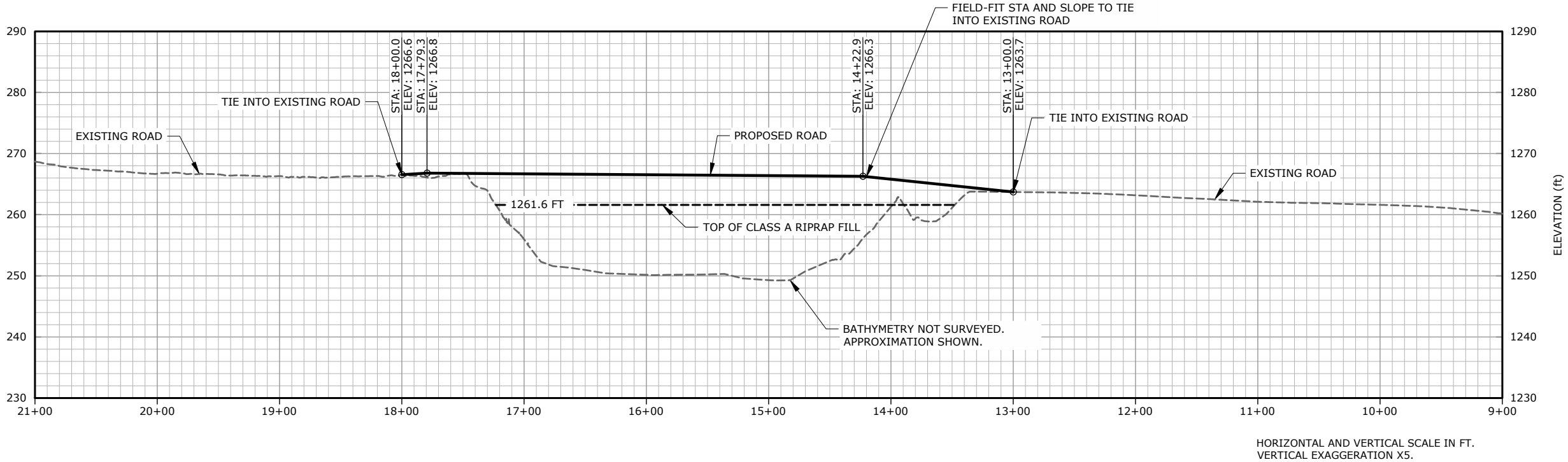


PROPOSED CONDITIONS
SCALE: 1" = 50'

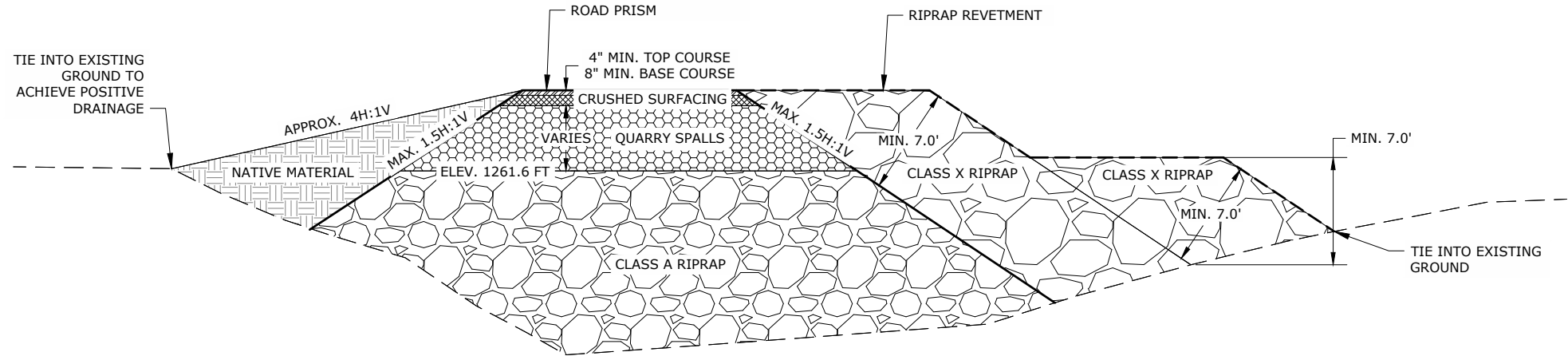
NOTES

1. THE CONTRACTOR SHALL PERFORM CHANNEL EXCAVATION WITHIN THE MAINSTEM TO RESTORE THE SAME CONVEYANCE AREA THAT STEHEKIN RIVER HAD PRIOR TO ROADWAY CONSTRUCTION.
2. EXCAVATED MATERIALS SHALL BE PLACED AND CONTOURED ON THE GRAVEL BAR WITHIN THE STEHEKIN RIVER, AS DIRECTED BY THE CONTRACTING AGENCY OR ENGINEER.
3. THE WORK AREA WILL BE ISOLATED TO THE EXTENT NECESSARY TO COMPLETE THE ROAD WORK. FINAL ISOLATION MEASURES ARE TO BE DETERMINED BY THE CONTRACTOR, AND APPROVED BY THE CONTRACTING AGENCY.
4. THE RECOMMENDED CONSTRUCTION SEQUENCE IS AS FOLLOWS:

STEP 1. EXCAVATE BYPASS CHANNEL.
STEP 2. INSTALL SHEET PILE TO TEMPORARILY DIVERT STEHEKIN RIVER THROUGH THE BYPASS CHANNEL.
STEP 3. CONSTRUCT ROAD PRISM AND REVETMENT, AND EXCAVATE MAINSTEM GRAVEL BAR.
STEP 4. REMOVE SHEET PILE.



PROFILE VIEW: PROPOSED ROAD



TYPICAL ROAD AND REVETMENT CROSS SECTION (FACING UPSTREAM)
NOT TO SCALE

GENERAL NOTES

- SEE CONTRACT PROVISIONS FOR ROADWAY AND REVETMENT MATERIALS DETAILS.
- ROAD PROFILE ELEV. IS BASED ON JOE KITCHELL, PROPERTY OWNER, OBSERVATION OF SITE CONDITIONS.
- PROPOSED ROAD TIE-IN TO EXISTING ROAD BASED ON FIELD CONDITIONS. REMOVE SUPER SACKS IF NECESSARY TO TIE-IN ROAD PRISM OR REVETMENT TO EXISTING TERRAIN.

ROAD DESIGN

GEOMETRY DESIGN CRITERIA: USFS "J-SERVICE LEVEL"

ALIGNMENT: TRAVEL WAY WITHIN NPS RIGHT OF WAY

TRAVEL WAY/ROAD WIDTH: 14 FT

MAX. SLOPE: 1.5H:1V

ROCK REVETMENT DESIGN

DESIGN GUIDELINES: HEC-23, DESIGN GUIDE 4, RIPRAP
REVETMENT WITH A LAUNCHABLE TOE.

ARMOR LAYER: CLASS X RIPRAP (HEC-23)

GRANULAR FILTER: QUARRY SPALLS

MAX SLOPE: 1.5H:1V

REVETMENT LAYER THICKNESS SHALL NOT BE LESS THAN THE D100 PARTICLE SIZE INTERMEDIATE DIMENSION, NOR LESS THAN 1.5 TIMES THE D50 PARTICLE SIZE INTERMEDIATE DIMENSION, WHICHEVER RESULTS IN GREATER THICKNESS.

REVETMENT LAYER THICKNESS SHALL BE INCREASED BY 50% WHEN RIPRAP IS INSTALLED UNDERWATER TO COMPENSATE FOR UNCERTAINTIES ASSOCIATED WITH THIS PLACEMENT CONDITION.

QUANTITIES*

MATERIAL	VOLUME
CRUSHED SURFACING TOP COURSE	10 TON
CRUSHED SURFACING BASE COURSE	15 TON
QUARRY SPALLS	95 TON
CLASS A RIPRAP	375 TON
CLASS X RIPRAP	445 TON
NATIVE MATERIAL	40 C.Y.
CHANNEL EXCAVATION	10,550 C.Y.

*THE BATHYMETRY OF THE STEHEKIN RIVER IS UNKNOWN, VOLUMES ARE APPROXIMATE.

WSDOT CLASS A

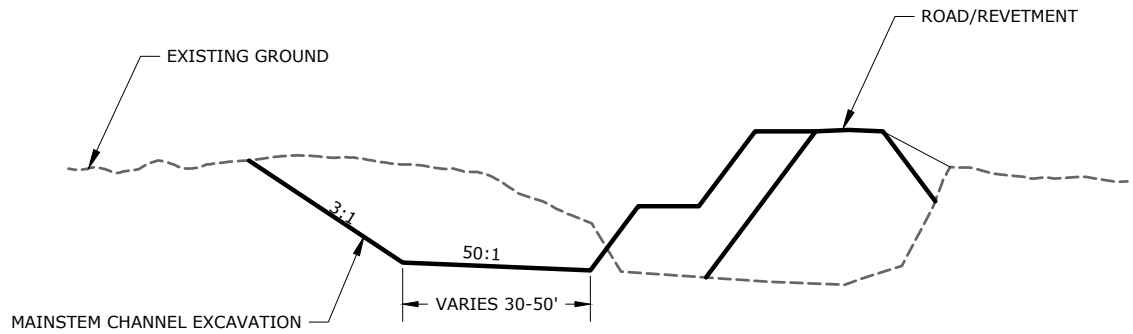
WSDOT 9-13.4(2)

APPROXIMATE SIZE (IN.)	PERCENT PASSING (SMALLER)
18"	100
16"	80-95
12"	50 - 80
8"	15 - 50
4"	15 MAX.

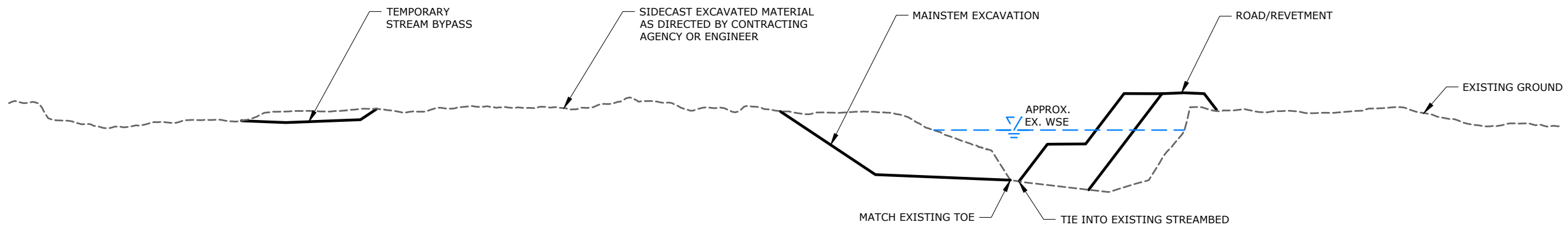
HEC-23 RIPRAP CLASS X

HEC-23 DESIGN GUIDE 4

SIEVE SIZE (IN.)	WEIGHT (LB)	PERCENT PASSING
84.0"	48,200 LB	D100
64.5"	22,000 LB	D85 MAX
54.5"	13,200 LB	D85 MIN
48.5"	9,200 LB	D50 MAX
40.0"	5,200 LB	D50 MIN
36.5"	4,000 LB	D15 MAX
25.5"	1,350 LB	D15 MIN



MAINSTEM EXCAVATION TYPICAL SECTION



PROPOSED CONDCTIONS PROFILE (FACING DOWNSTREAM)

GENERAL NOTES

1. EXCAVATION DEPTHS AND EXTENTS WILL BE FIT IN THE FIELD BY THE CONTRACTING AGENCY. THE LINES, GRADES, AND DIMENSIONS SHOWN ARE APPROXIMATE.
2. THE CONTRACTOR IS RESPONSIBLE FOR SIZING THE BYPASS CHANNEL TO EFFECTIVELY CONVEY THE FLOWS PRESENT DURING CONSTRUCTION.
3. MAINSTEM EXCAVATION IS INTENDED TO REPLACE THE CONVEYANCE AREA LOST DUE TO ROAD FILL PLACEMENT. THE BATHYMETRY OF THE STEHEKIN RIVER IS UNKNOWN, EXCAVATION VOLUMES ARE APPROXIMATE FOR REFERENCE ONLY. EXCAVATION DEPTHS AND EXTENTS WILL BE DIRECTED IN THE FIELD BY THE CONTRACTING AGENCY.
4. EXCAVATED MATERIAL SHALL BE PLACED AND CONTOURED ON THE GRAVEL BARS OF THE STEHEKIN RIVER, AS DIRECTED BY THE CONTRACTING AGENCY OR ENGINEER.