

CITY OF FERNDALE MALLOY AVENUE WHISKEY CREEK CULVERT REPLACEMENT PROJECT

1420 4TH AVENUE, SUITE 650
SEATTLE, WA 98101
(206) 728-9655

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LOCATION MAP

NOT TO SCALE



DRAWING INDEX	
SHEET NO.	TITLE
G-01	COVER SHEET
G-02	LEGEND AND ABBREVIATIONS
C-01	EXISTING SITE PLAN
C-02	TESC AND SITE PREPARATION PLAN
C-03	TESC DETAILS
C-04	TEMPORARY STREAM BYPASS PLAN
C-05	SITE AND GRADING PLAN
C-06	STORMWATER SITE PLAN AND PROFILES
C-07	STORMWATER DETAILS
C-08	ROAD PLAN AND PROFILE
C-09	ROAD SECTIONS
C-10	ROAD DETAILS
C-11	BURIED STRUCTURE PLAN AND PROFILE
C-12	BURIED STRUCTURE DETAILS
C-13	BURIED STRUCTURE DETAILS
C-14	STREAMBED, HABITAT FEATURES AND CHANNEL DETAILS
C-15	WATER MAIN PLAN AND PROFILE
C-16	WATER MAIN DETAILS
C-17	SITE REVEGETATION PLAN AND DETAILS
C-18	TRAFFIC DETOUR PLAN
C-19	STANDARD DETAILS
C-20	STANDARD DETAILS
C-21	STANDARD DETAILS

PROJECT LOCATION:
6300 BLOCK MALLOY AVENUE
FERNDALE, WA 98248

CLIENT INFORMATION:
CITY OF FERNDALE
2095 MAIN STREET
FERNDALE, WA 98248

Tt PROJECT No.:
100-WTR-21-02

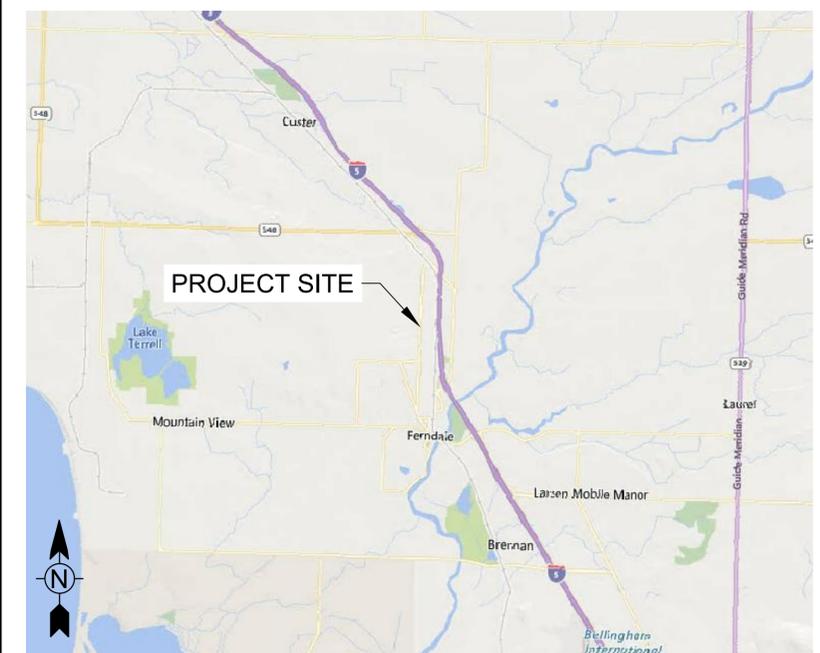
CLIENT PROJECT No.:
SW2020-03

PROJECT DESCRIPTION / NOTES:

REPLACE EXISTING 36" CONCRETE CULVERT WITH FISH PASSABLE CONCRETE BOX CULVERT. OTHER PROJECT FEATURES INCLUDE UPDATING ROADWAY SECTION TO CURRENT CITY STANDARDS, IMPROVING ROADWAY SIGHT DISTANCE AND EXTENSION OF WATER MAIN.

ISSUED:

VICINITY MAP:



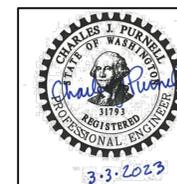
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The Contractor certifies that these record drawings are an accurate depiction of built conditions, and in conformance with the requirements detailed in Section 1-05.18 of the Malloy Avenue Whiskey Creek Culvert Replacement Project Contract Documents.

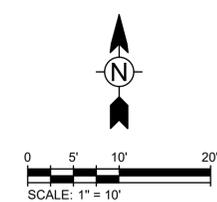
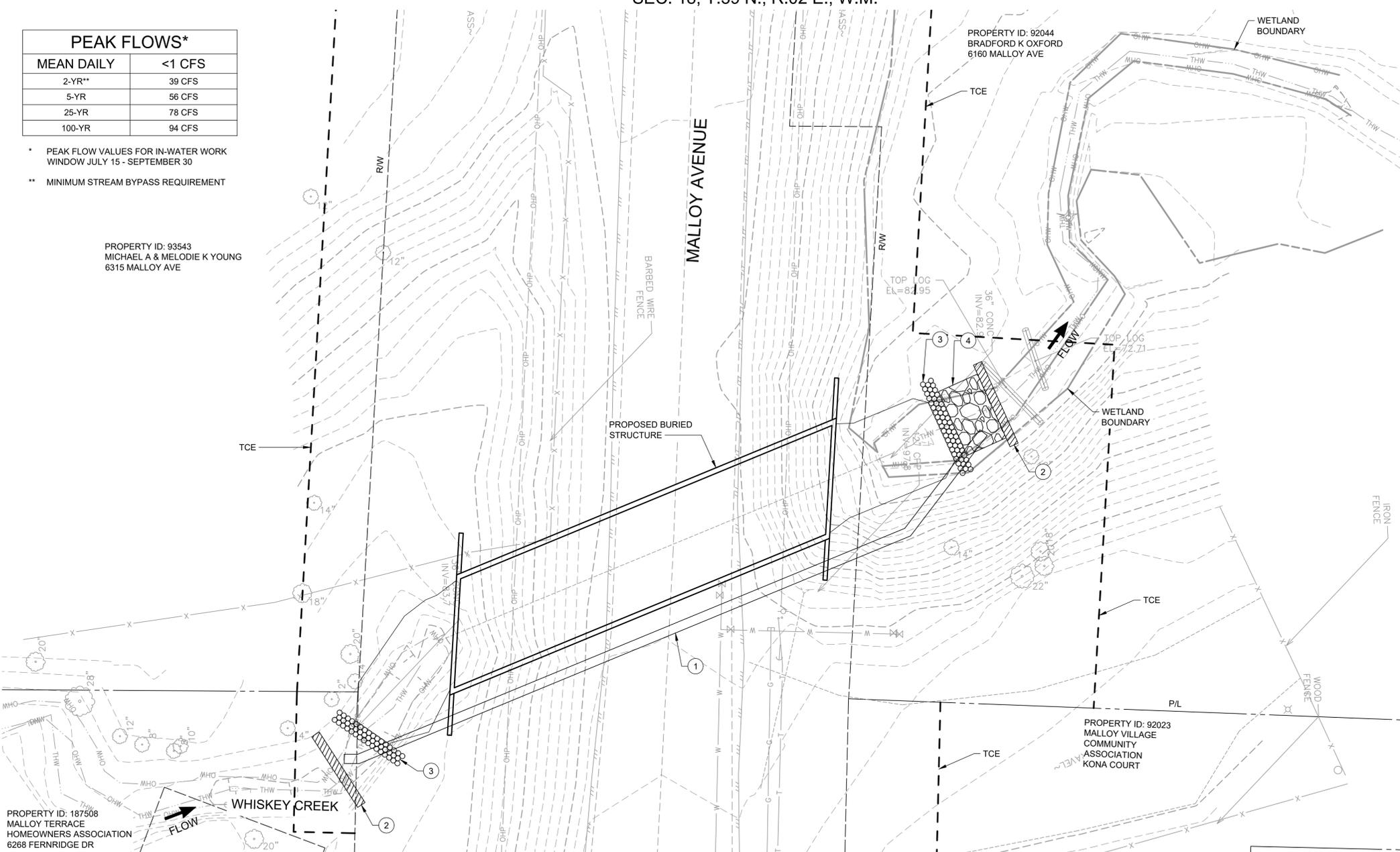
Colacurcio Brothers Construction, Inc.



PEAK FLOWS*	
MEAN DAILY	<1 CFS
2-YR**	39 CFS
5-YR	56 CFS
25-YR	78 CFS
100-YR	94 CFS

* PEAK FLOW VALUES FOR IN-WATER WORK WINDOW JULY 15 - SEPTEMBER 30
 ** MINIMUM STREAM BYPASS REQUIREMENT

PROPERTY ID: 93543
 MICHAEL A & MELODIE K YOUNG
 6315 MALLOY AVE



STREAM PROTECTION NOTES

1. THE LOCATION OF EXISTING UTILITIES SHOWN IS BASED ON THE PROJECT SURVEY AND UTILITY RECORD MAPS. THIS INFORMATION SHALL NOT BE RELIED UPON AS BEING EXACT OR COMPLETE. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS IN FIELD AS NECESSARY.
2. CONTRACTOR SHALL SUBMIT A TEMPORARY STREAM BYPASS AND CONSTRUCTION SITE DEWATERING PLAN FOR DIVERTING STREAM FLOW AND DEWATERING CONSTRUCTION AREA PER CONDITIONS OF THE HPA PERMIT PRIOR TO INITIATING CONSTRUCTION MOBILIZATION. THIS FLOW BYPASS AND FISH EXCLUSION SCHEMATIC REPRESENTS THE MINIMUM FLOW BYPASS REQUIREMENTS. ALTERNATIVE PROPOSALS FOR FLOW BYPASS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND ANY ADJUSTMENTS WILL BE MADE AT THE CONTRACTOR'S EXPENSE. CONDITIONS OF PROJECT PERMITS MUST BE FOLLOWED AT ALL TIMES. SEE CONTRACT PROVISIONS.
3. THE CONTRACTOR SHALL INSTALL TESC MEASURES AS NECESSARY TO PREVENT SEDIMENT DISCHARGE INTO THE STREAM IN EXCESS OF PERMITTED TURBIDITY LEVELS. THE CONTRACTOR SHALL STOP CONSTRUCTION IF TURBIDITY EXCEEDS PERMITTED LEVELS. DIVERSION DAM CONSTRUCTION SHALL NOT COMMENCE UNTIL THE UPSTREAM AND DOWNSTREAM TEMPORARY FISH EXCLUSION NETS HAVE BEEN INSTALLED AND FISH REMOVAL IS COMPLETE.
4. FISH EXCLUSION AND FISH REMOVAL WORK TO BE PERFORMED BY THE CONTRACTOR PROVIDED QUALIFIED PROFESSIONAL PER HPA PERMIT REQUIREMENTS. TEMPORARY FISH EXCLUSION NET MUST REMAIN IN PLACE DURING INSTREAM WORK AND DIVERSION DAM REMOVAL. ELECTROSHOCKING SHALL NOT BE PERMITTED.
5. SIZE, QUANTITY, AND CONFIGURATION OF DIVERSION DAMS ARE CONCEPTUAL ONLY AND WILL VARY WITH CHANGING SITE CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING APPROPRIATE SIZE, QUANTITY, AND CONFIGURATION NECESSARY TO BYPASS FLOW AND ISOLATE THE WORK AREA AND ENABLE SUCCESSFUL OPERATION OF BYPASS SYSTEM AND MINIMIZE FLOW LEAKAGE TO THE EXTENT NECESSARY.
6. TEMPORARY PUMPING OF STREAM DURING INSTALLATION AND REMOVAL OF UPSTREAM DIVERSION DAM AND DOWNSTREAM OUTLET ENERGY DISSIPATER, AND DURING ALL INSTREAM CONSTRUCTION, WILL BE REQUIRED EXCEPT DURING HIGH FLOWS. SEE CONTRACT SPECIFICATIONS REGARDING FLOW BYPASS REQUIREMENTS DURING HIGH FLOWS. BYPASS PUMPS AND PIPES TO BE PROTECTED FROM CONSTRUCTION ACTIVITIES AT ALL TIMES. SOME TEMPORARY PIPE ANCHORING MAY BE REQUIRED.
7. THE FLOW BYPASS AND FISH EXCLUSION SYSTEM SHALL BE MAINTAINED 24 HOURS PER DAY DURING CONSTRUCTION AND MONITORED BY THE CONTRACTOR DURING WORKING AND NON-WORKING HOURS.
8. EQUIPMENT FOR INSTREAM WORK SHALL BE CLEANED PRIOR TO WORK BELOW ORDINARY HIGH WATER.
9. CONTRACTOR SHALL SUBMIT A SPILL PREVENTION PLAN. CONTRACTOR SHALL HAVE ON SITE OIL ABSORBENT PADS AND CERTIFIED PERSONNEL DURING EQUIPMENT OPERATIONS.
10. EQUIPMENT FUELING, MAINTENANCE, AND STAGING SHALL OCCUR AT LEAST 100 FEET FROM THE CREEK.

STREAM BYPASS PLAN

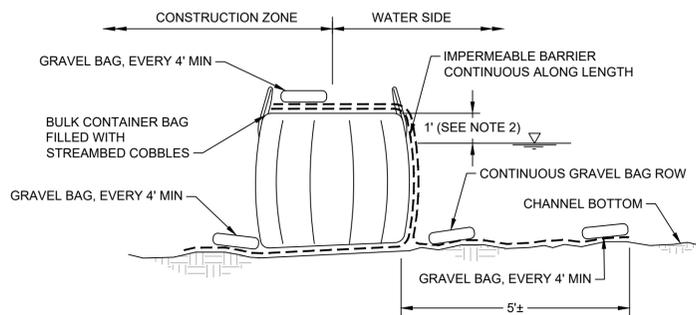
SCALE: 1" = 10'

STREAM BYPASS NOTES

- 1 SUGGESTED TEMPORARY BYPASS PIPE LOCATION, SEE GENERAL NOTE 2. AVOID DEWATERING DOWNSTREAM END OF STREAM DURING ANY ADJUSTMENTS TO THE TEMPORARY BYPASS.
- 2 FISH EXCLUSION NET AS REQUIRED BY WDFW HPA PERMIT.
- 3 EXAMPLE TEMPORARY DIVERSION DAM, SEE DETAIL 1/-.
- 4 CONTRACTOR DESIGNED ENERGY DISSIPATION.

STREAM BYPASS LEGEND

- TEMPORARY DIVERSION DAM
- FISH EXCLUSION NET
- CONTRACTOR DESIGNED ENERGY DISSIPATION



BULK CONTAINER BAG DAM

1 TEMPORARY DIVERSION DAM
 SCALE: NTS

DIVERSION DAM NOTES

1. DIVERSION DAM SHOWN IS SUGGESTED. THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE, WATER BLADDER OR OTHER, FOR APPROVAL BY THE ENGINEER.
2. THE CONTRACTOR SHALL PROVIDE 1-FOOT OF FREEBOARD AT ALL TIMES DURING DIVERSION DAM OPERATION.



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 CULVERT REPLACEMENT PROJECT
**TEMPORARY STREAM
 BYPASS PLAN**

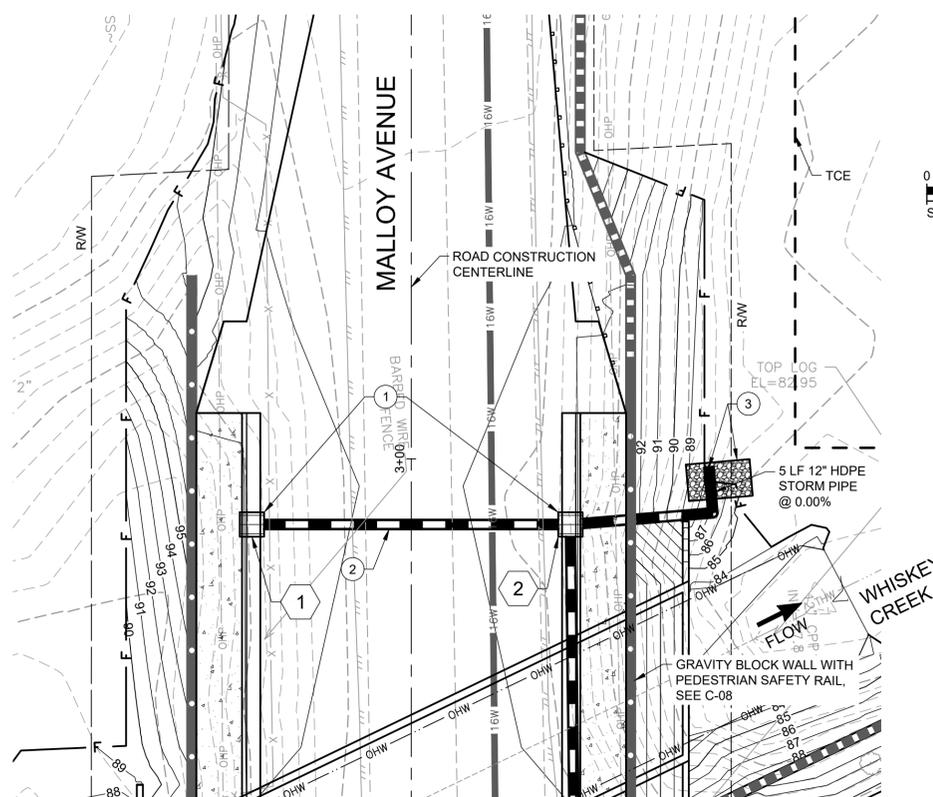
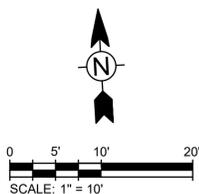
PROJ:	100-WTR-21-02
DESN:	KA
DRWN:	NS/AB
CHKD:	CP

C-04

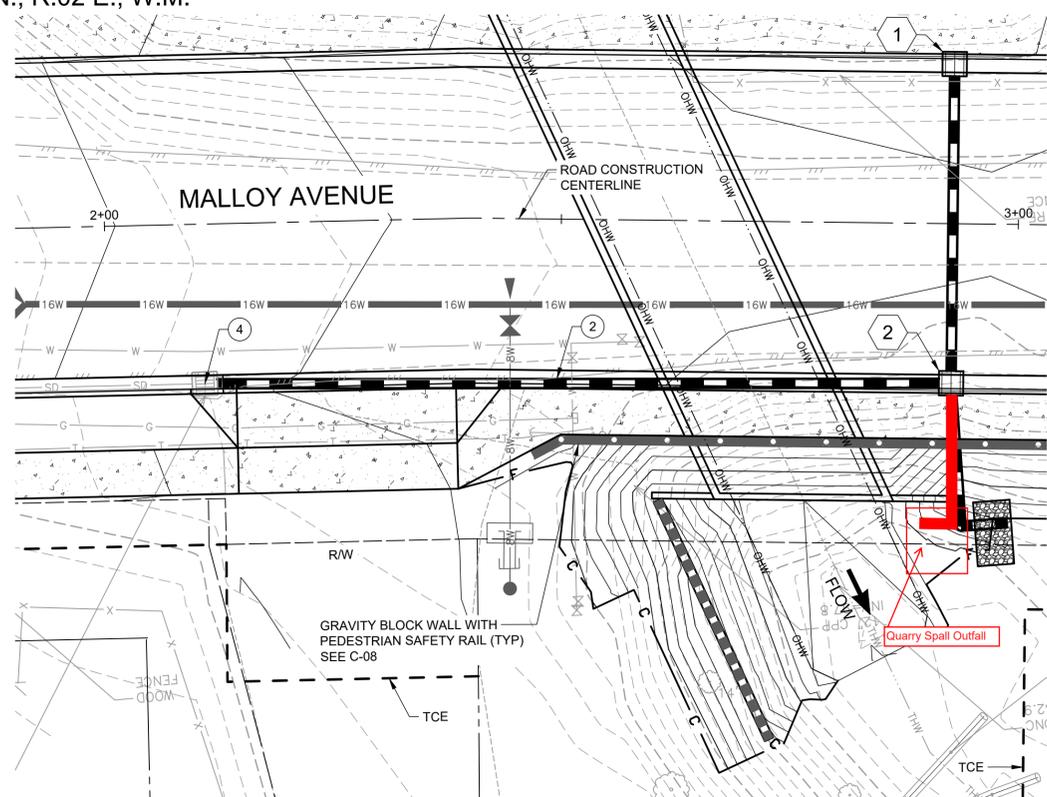
3/2/2023 3:41:38 PM - P:\21-02 FERNDALE MALLOY - WHISKEY CREEK\CAD\SHEETFILES\21-02 C-04 TEMPORARY STREAM BYPASS PLAN.DWG - STOCK, MADINE

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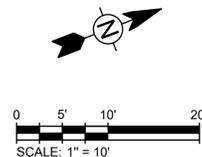
SEC. 18, T.39 N., R.02 E., W.M.



STORM PIPE NO. 1 PLAN
SCALE: 1" = 10'



STORM PIPE NO. 2 PLAN
SCALE: 1" = 10'



CONSTRUCTION NOTES

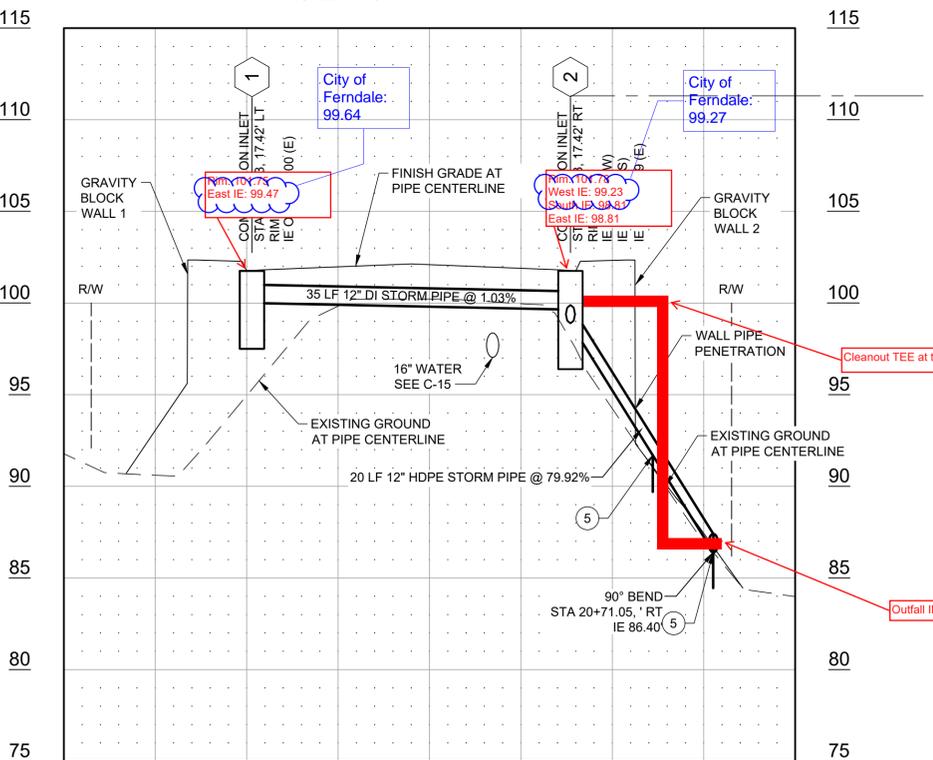
- 1 COMBINATION INLET PER COF STD DETAIL ST-5/C-21 WITH BI-DIRECTIONAL VANED GRATE PER WSDOT STD PLAN B-30.40-03/C-07 INSTALL COMBINATION INLET FRAME PER COF STD DETAIL R-8/C-19 INSTALL COMBINATION INLET FRAME ON CATCH BASIN TYPE 1 PER COF STD DETAIL ST-1/C-21
- 2 STORM SEWER PIPE 12 IN. DIAM.
- 3 STORM SEWER OUTFALL CONSTRUCT PER DETAIL 1/C-07
- 4 REMOVE COMBINATION INLET FRAME AND SALVAGE TO CITY. ADJUST CATCH BASIN TO GRADE AND RE-INSTALL GRATE WITH NEW FRAME PER WSDOT STD PLAN B-30.10-03/C-07
- 5 MANTA RAY MR88 EARTH ANCHOR OR APPROVED EQUAL, SEE DETAIL 1/C-07

GENERAL NOTES

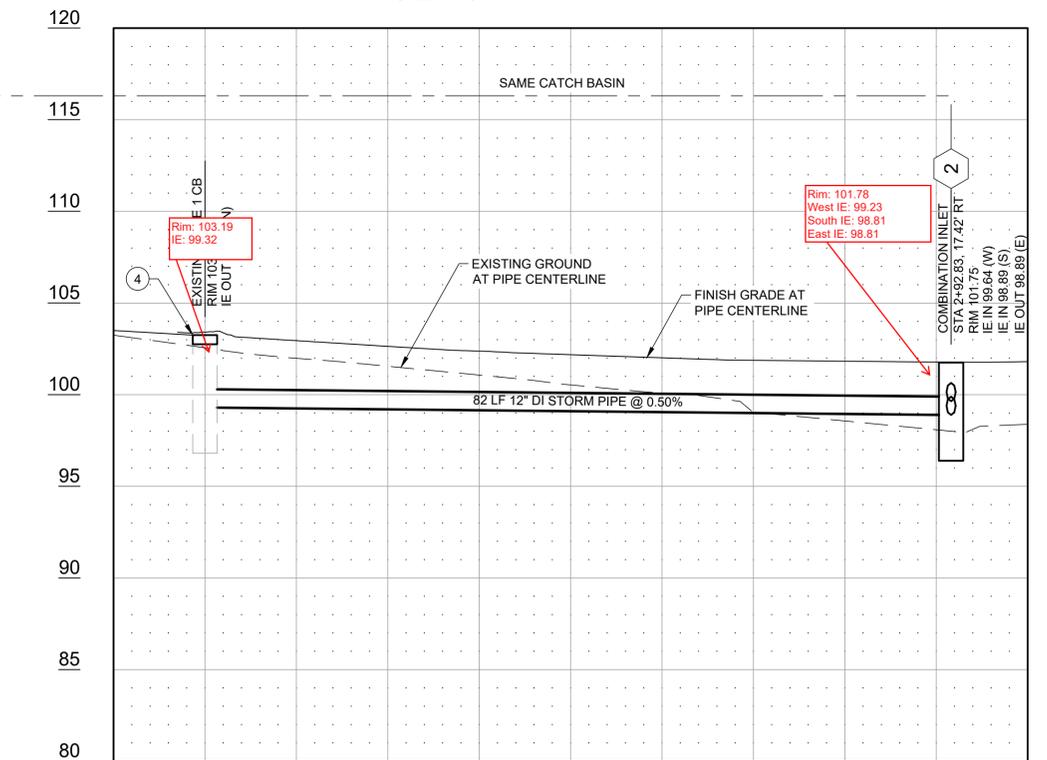
1. UTILITY LOCATIONS AND TYPES SHOWN ARE APPROXIMATE AND BASED ON VISIBLE FEATURES AND RECORD DRAWINGS. THE CONTRACTOR SHALL CONFIRM THE LOCATION, TYPE AND SIZE OF UTILITIES IN THE WORK AREA AND PROTECT FROM DAMAGE.
2. SEE C-11 FOR BURIED STRUCTURE
3. SEE C-15 FOR WATER MAIN
4. SEE C-08 FOR ROADWAY.
5. STATION AND OFFSET TO STORM STRUCTURES ARE TO CENTER OF STRUCTURE.
6. TRENCHING PER COF STD DETAIL SS-16/C-20.

LEGEND

- STORM SEWER PIPE
- CATCH BASIN
- DRAINAGE STRUCTURE NUMBER



STORM PIPE NO. 1 PROFILE
SCALE: 1" = 10'



STORM PIPE NO. 2 PROFILE
SCALE: 1" = 10'

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CULVERT REPLACEMENT PROJECT

**STORMWATER SITE
PLAN AND PROFILES**

PROJ:	100-WTR-21-02
DESN:	KA
DRWN:	NS/AB
CHKD:	CP

C-06



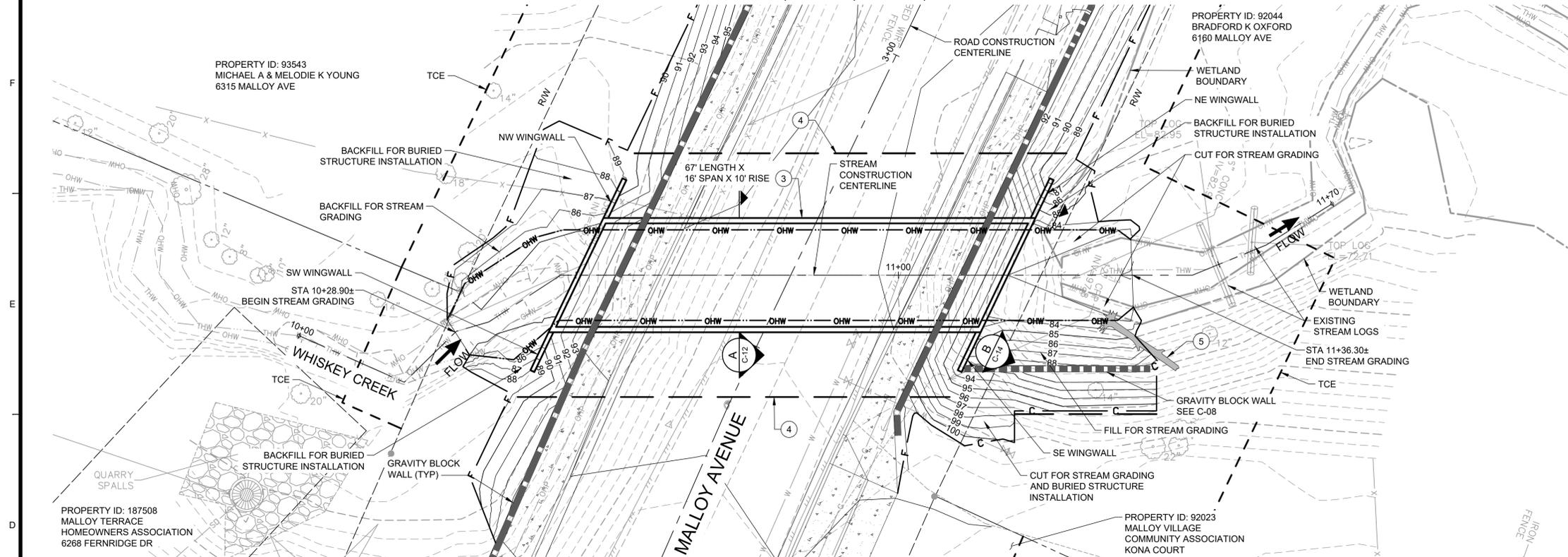
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Bar Measures 1 inch, otherwise drawing not to scale

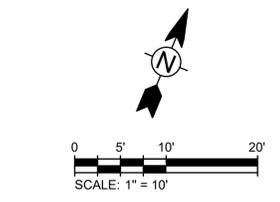
3/2/2023 3:49:23 PM - P:\21-02 FERNDALE MALLOY - WHISKEY CREEK\CAD\SHEETFILES\21-02 C-06 STORMWATER SITE PLAN.DWG - STOCK, NADINE

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BURIED STRUCTURE PLAN
SCALE: 1" = 10'



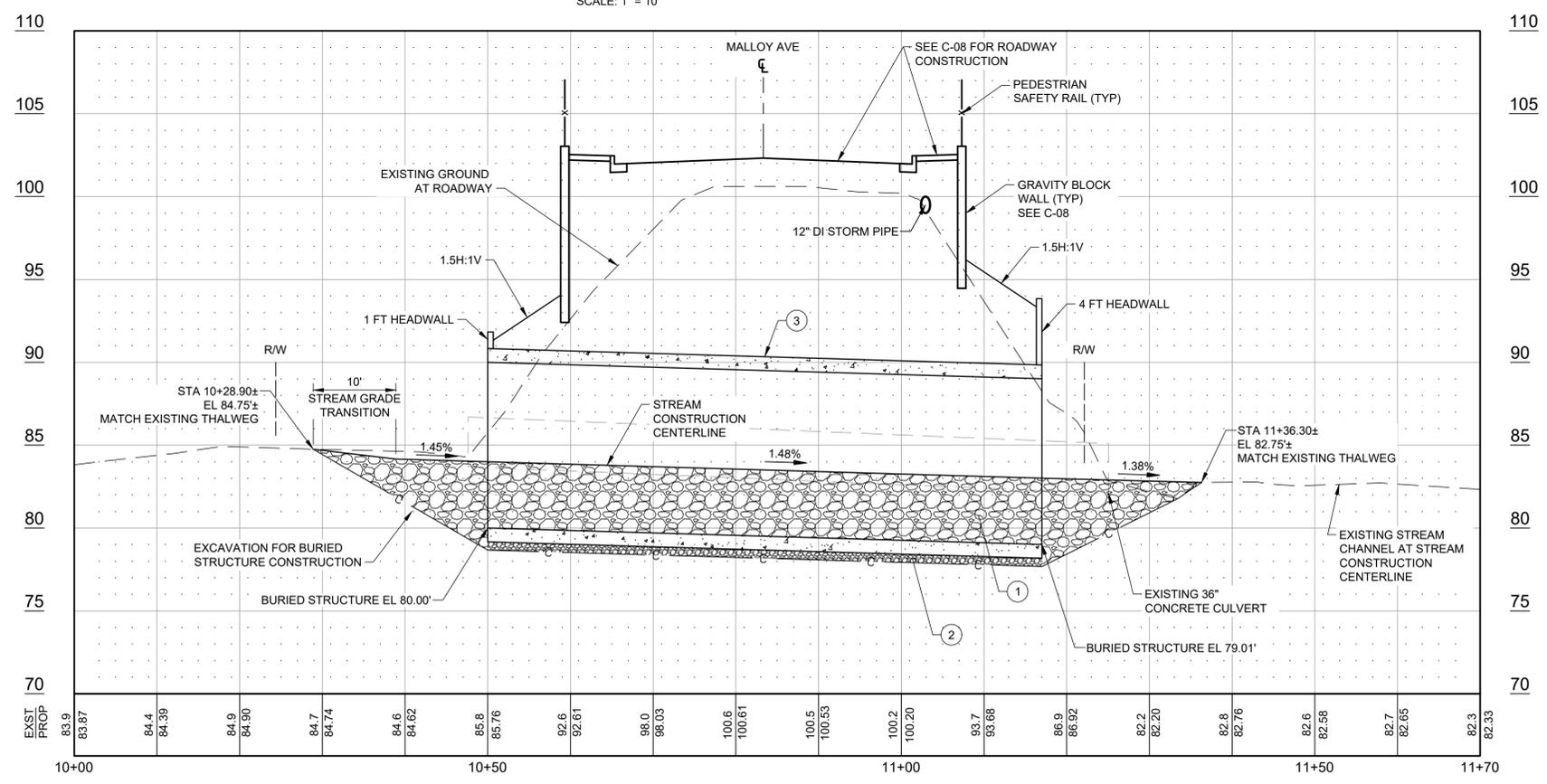
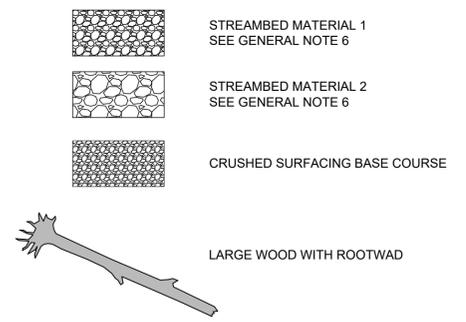
CONSTRUCTION NOTES

- 1 STREAMBED MATERIAL (4" THICK)
SEE SECTION A/C-12
- 2 CRUSHED SURFACING BASE COURSE (6" THICK)
- 3 BURIED STRUCTURE INSTALLATION
SEE GENERAL NOTE 4 AND DETAIL 1/C-12
- 4 CONTRACTOR DESIGNED TEMPORARY
SHORING FOR BURIED STRUCTURE
CONSTRUCTION, SEE ALSO GENERAL NOTE 7
FOR FIRST ORDER OF WORK
- 5 LARGE WOOD WITH ROOTWAD PER SECTION
C/C-14

GENERAL NOTES

1. UTILITY LOCATIONS AND TYPES SHOWN ARE APPROXIMATE AND BASED ON VISIBLE FEATURES AND RECORD DRAWINGS. THE CONTRACTOR SHALL CONFIRM THE LOCATION, TYPE AND SIZE OF UTILITIES IN THE WORK AREA AND PROTECT FROM DAMAGE.
2. SEE C-06 FOR STORMWATER.
3. SEE C-08 FOR ROADWAY.
4. SEE CONTRACT SPECIFICATIONS SECTION 6-20 FOR CONTRACTOR DESIGNED BURIED STRUCTURE.
5. SEE C-15 FOR WATER MAIN.
6. SEE CONTRACT SPECIFICATIONS SECTION 8-26 FOR STREAMBED MATERIAL.
7. FOR FIRST ORDER OF WORK BEFORE BEGINNING SHORING AND EXCAVATION FOR BURIED STRUCTURE, SEE C-15 WATER MAIN PLAN.

LEGEND



BURIED STRUCTURE PROFILE
SCALE: 1" = 10'

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CITY OF FERNDALE
MALLOY AVENUE WHISKEY CREEK
CULVERT REPLACEMENT PROJECT
**BURIED STRUCTURE
PLAN AND PROFILE**

PROJ:	100-WTR-21-02
DESN:	KA
DRWN:	NS/AB
CHKD:	CP

C-11

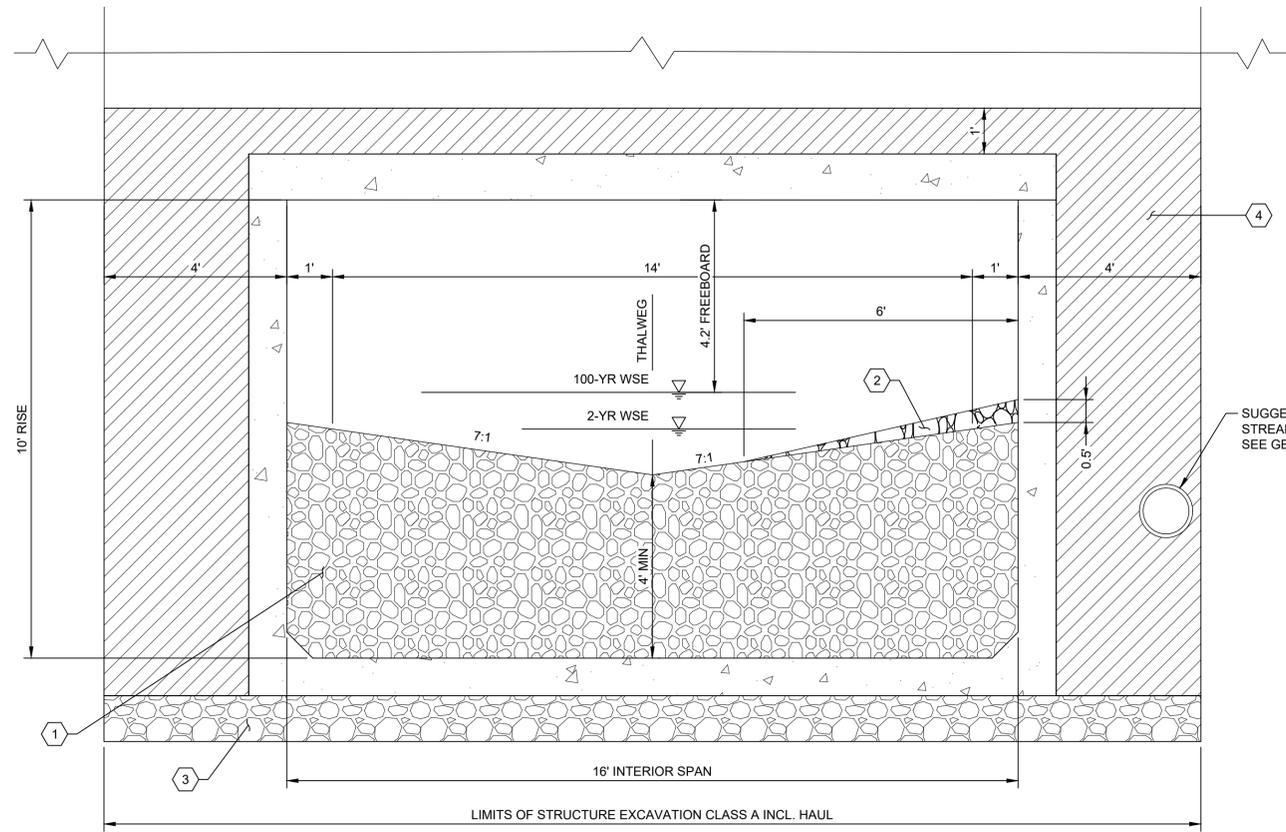


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Bar Measures 1 inch, otherwise drawing not to scale

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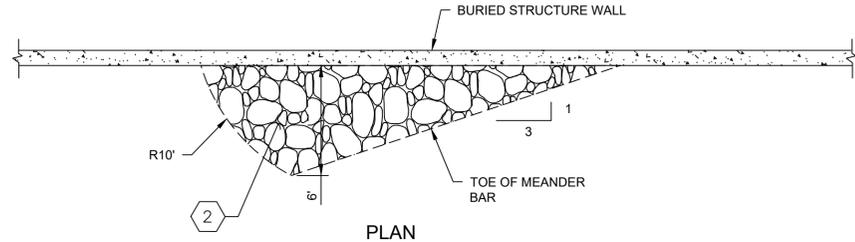
A TYPICAL BURIED STRUCTURE SECTION
C-11
LOOKING DOWNSTREAM (EAST)
SCALE: NTS

- MATERIALS LEGEND**
- 1 STREAMBED MATERIAL 1 (4-FOOT MIN)
 - 2 STREAMBED MATERIAL 2
 - 3 CRUSHED SURFACING BASE COURSE (6-INCH)
 - 4 GRAVEL BASE
 - 5 STREAMBED BOULDER TWO MAN EMBED IN STREAMBED 1/3 BOULDER DIAMETER

STREAMBED INSTALLATION NOTES (IN BURIED STRUCTURE)

1. STREAMBED MATERIAL IS REQUIRED WITHIN THE 16-FOOT PAY LIMITS SHOWN. NATIVE ALLUVIUM MATERIAL SALVAGED DURING CONSTRUCTION MAY BE STOCKPILED SEPARATELY AND APPROVED BY THE ENGINEER TO BE REUSED OUTSIDE THE PAY LIMIT TO CONSTRUCT FINISHED GRADE.
2. STREAMBED MATERIALS SHALL BE PLACED CONCURRENTLY AND INSTALLED IN 6" LIFTS TO THE DIMENSIONS AND THICKNESS INDICATED. THICKNESS IS MEASURED PERPENDICULAR TO FINISHED GRADE.
3. AFTER EACH LIFT IS PLACED, WASH ADDITIONAL STREAMBED SEDIMENT OR NATIVE FINES INTO THE VOID SPACES TO FILL INTERSTITIAL VOID SPACES.
4. AFTER FINAL LIFT IS PLACED, STREAM FLOW WILL BE GRADUALLY REINTRODUCED AND OBSERVED BY THE BIOLOGIST SO THAT WATER FLOWS OVER THE TOP OF THE CONSTRUCTED STREAMBED (NOT SUBSURFACE) UPON COMPLETION.
5. IF WATER FLOWS SUBSURFACE, THE BIOLOGIST OR ENGINEER MAY REQUIRE ADDITIONAL HAND WORKING OR WASHING OF STREAMBED SEDIMENT INTO VOID SPACES, AT NO ADDITIONAL COST TO THE CONTRACTING AGENCY.

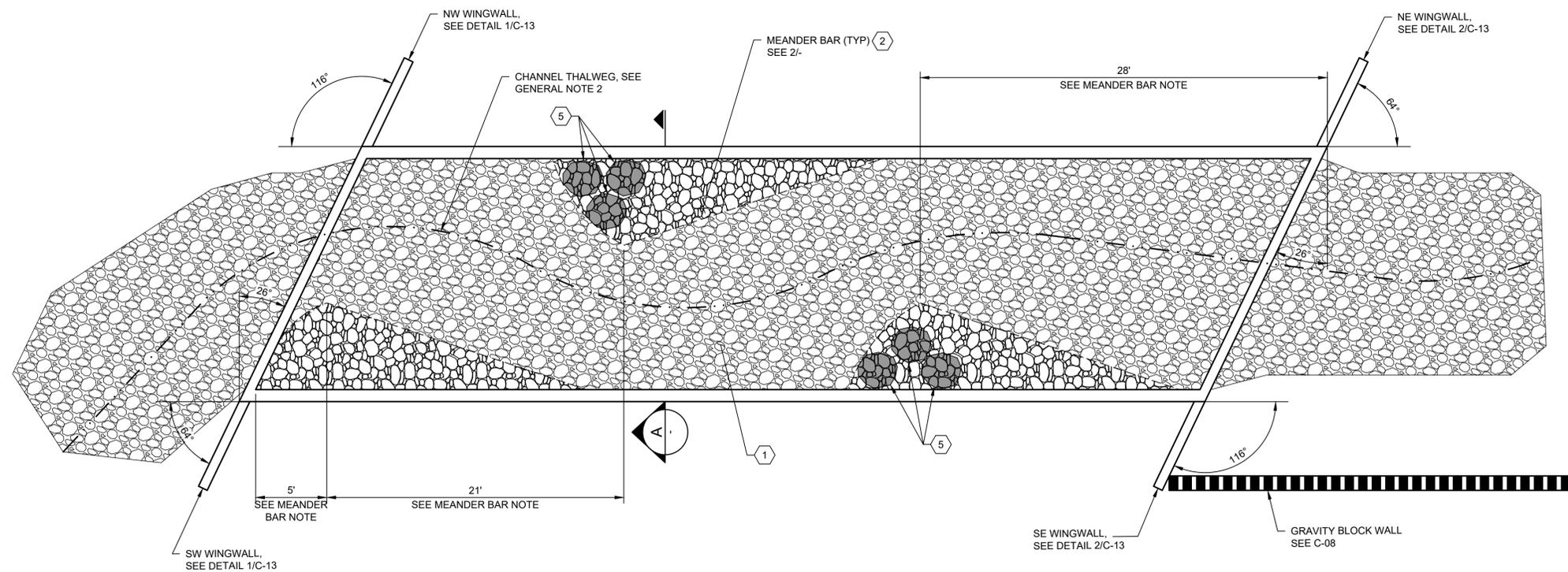
- GENERAL NOTES**
1. FOR DESCRIPTION OF STREAMBED MATERIAL, SEE CONTRACT SPECIFICATIONS SECTION 8-28 "AGGREGATES FOR STREAMS, RIVERS, AND WATERBODIES". STREAMBED MATERIAL 1 IS USED UNLESS WITHIN A MEANDER BAR WHERE STREAMBED MATERIAL 2 IS USED.
 2. CHANNEL THALWEG POSITION IS APPROXIMATE AND VARIES BY LOCATION WITHIN CULVERT. SEE 1/. FOR APPROXIMATE THALWEG POSITION. THE CONTRACTOR SHALL CONSTRUCT THE THALWEG WITH NO STRAIGHT TANGENTS.
 3. ALL IMPORTED STREAMBED MATERIALS SHALL BE INSPECTED AND APPROVED BY THE ENGINEER AT THE OFFSITE SOURCE, BEFORE DELIVERY TO THE PROJECT SITE. THE ENGINEER SHALL VISUALLY INSPECT THE MATERIAL AND MAY REQUIRE THE CONTRACTOR TO DUMP INDIVIDUAL LOADS ONTO A FLAT SURFACE FOR MEASUREMENT AND APPROVAL.
 4. THE SUGGESTED INITIAL POSITION OF THE TEMPORARY STREAM BYPASS PIPE POSITION IS SHOWN. TEMPORARY SUPPORT OF THE BYPASS PIPE THROUGH THE CONSTRUCTION AREA MAY BE REQUIRED AND WILL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AS PART OF THE TEMPORARY STREAM BYPASS PLAN. THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE TEMPORARY STREAM BYPASS PLAN FOR APPROVAL BY THE ENGINEER. SEE SHEET C-04 FOR ADDITIONAL TEMPORARY STREAM BYPASS REQUIREMENTS.



2 MEANDER BAR
SCALE: NTS

MEANDER BAR NOTES

SPACING OF MEANDER BAR APEX LOCATIONS SHOULD BE BETWEEN 17-34 FEET, CORRESPONDING TO A 3-6 INCH DROP IN BED ELEVATION.



1 CULVERT AND WINGWALL PLAN
C-11
SCALE: NTS

STREAMBED MATERIAL	
MATERIAL 1	
% BY VOLUME	MATERIAL
29	STREAMBED SEDIMENT
71	6" STREAMBED COBBLES
NOTE: 2 PARTS SEDIMENT TO 5 PARTS COBBLE	
MATERIAL 2	
% BY VOLUME	MATERIAL
100	6" STREAMBED COBBLES

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**BURIED STRUCTURE
DETAILS**

PROJ:	100-WTR-21-02
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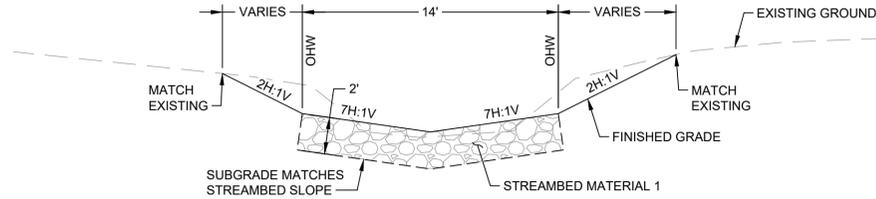
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C-12

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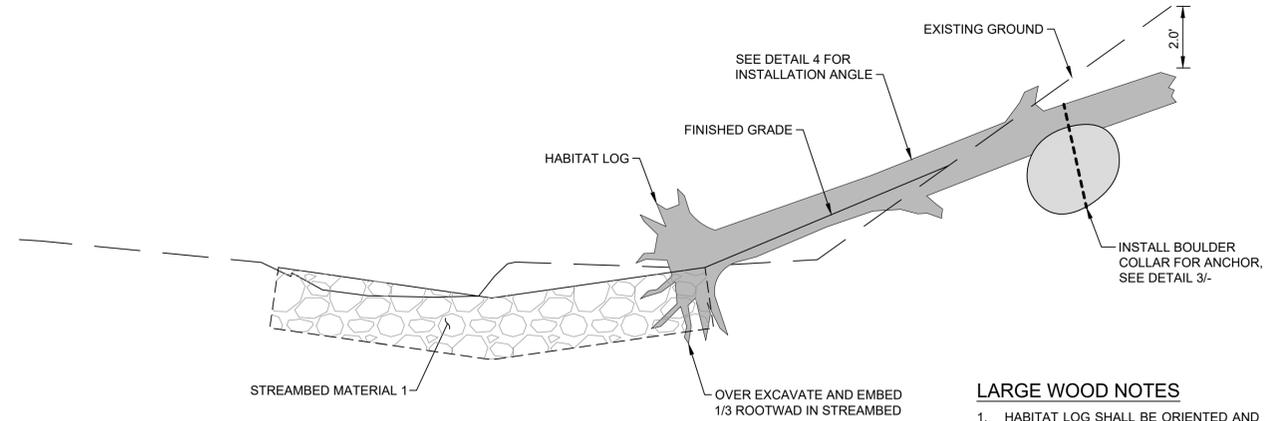
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STREAMBED MATERIAL	
MATERIAL 1	
% BY VOLUME	MATERIAL
29	STREAMBED SEDIMENT
71	6" STREAMBED COBBLES
NOTE: 2 PARTS SEDIMENT TO 5 PARTS COBBLE	

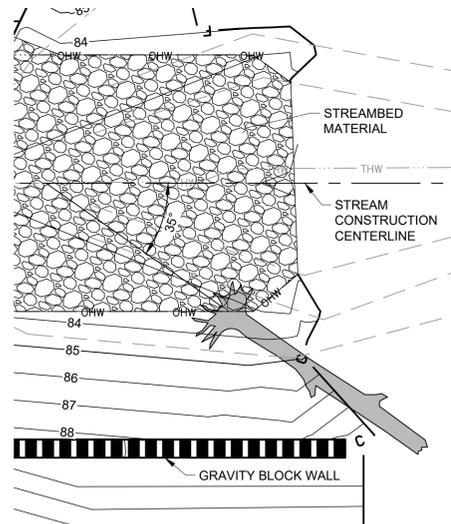


B TYPICAL STREAM SECTION
C-11 LOOKING DOWNSTREAM (EAST)
SCALE: 1" = 5'

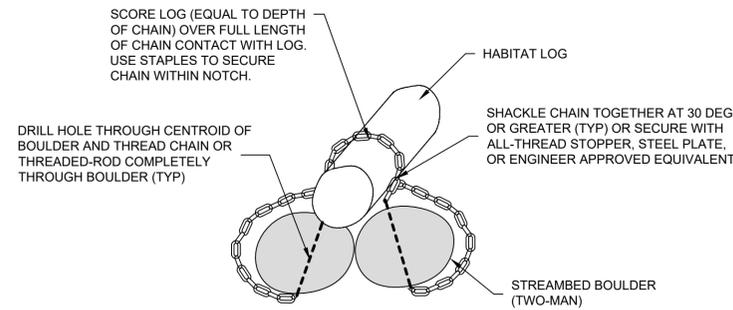
LARGE WOOD - MATERIAL SCHEDULE			
ITEM	QTY	DIA (IN)	LENGTH (FT)
HABITAT LOG	1	12" ± 3"	15' ± 2'
STREAMBED BOULDER (TWO MAN)	2	24" - 36"	-



C TYPICAL LARGE WOOD SECTION
C-11 LOOKING DOWNSTREAM (EAST)
SCALE: NTS



4 LARGE WOOD INSTALLATION
SCALE: 1" = 5'



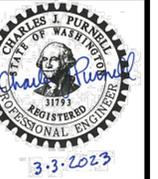
3 BOULDER COLLAR
SCALE: NTS

LARGE WOOD NOTES

- HABITAT LOG SHALL BE ORIENTED AND INSTALLED AT ANGLE AND LOCATION AS SHOWN ON THE PLANS UNLESS THE ENGINEER ADJUSTS THE PLACEMENT AND LOCATION DURING INSTALLATION.
- BACKFILL SHALL BE STREAMBED MATERIAL WITHIN THE STREAMBED SECTION. BACKFILL FOR HABITAT LOG SHALL BE GRAVEL BORROW.
- ALL BOULDER AND CHAIN CONNECTIONS WILL BE INSTALLED AT THE LOCATIONS SHOWN. CONNECTIONS MUST USE UNTREATED STEEL CHAIN MEETING THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS.
- BOULDERS SHALL BE SUFFICIENTLY BURIED WITHIN THE STREAMBANK AND NOT BE VISIBLE FOLLOWING INSTALLATION.
- RESTORE BANK TO EXISTING SLOPE AND ELEVATION UNLESS SHOWN OTHERWISE ON THE PLANS. BUCKET TAMP STREAMBANK FOLLOWING HABITAT LOG PLACEMENT AND BACKFILL UNTIL FIRM. SCARIFY SURFACE OF BACKFILLED AND GRADED AREAS TO FACILITATE REVEGETATION.

CHAIN CONNECTION NOTES

- CHAIN SHALL BE 1/2 INCH DIAMETER CARBON WELDED GRADE 43 HIGH-TEST CHAIN WITH A MINIMUM WORKING LOAD LIMIT OF 9,000 POUNDS. SEE CONTRACT SPECIFICATIONS SECTION 8-30 FOR CHAIN REQUIREMENTS.
- ALL HARDWARE USED FOR LASHING SHALL BE STAINLESS STEEL OR NATURAL UNTREATED STEEL AND CONNECTIONS SHALL BE OF THE QUANTITY AND TYPE SPECIFIED BY THE MANUFACTURER. HARDWARE SHALL HAVE AN EQUAL OR GREATER STRENGTH THAN THE CHAIN BREAKING STRENGTH.
- STEEL CABLE SHALL NOT BE APPROVED.
- CHAIN SHALL BE PUT IN TENSION DURING SHACKLING.
- CHAIN LENGTH REQUIRED FOR EACH CONNECTION WILL VARY BASED ON THE LOG DIAMETER.
- INSTALL BOULDERS WITH MINIMAL SLACK IN CHAIN.
- CONTRACTOR MAY SUBMIT ALTERNATIVE CHAIN CONNECTION SYSTEM TO THE ENGINEER FOR APPROVAL.



MARK	DATE	DESCRIPTION	BY

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CULVERT REPLACEMENT PROJECT
STREAMBED, HABITAT
FEATURES AND
CHANNEL DETAILS

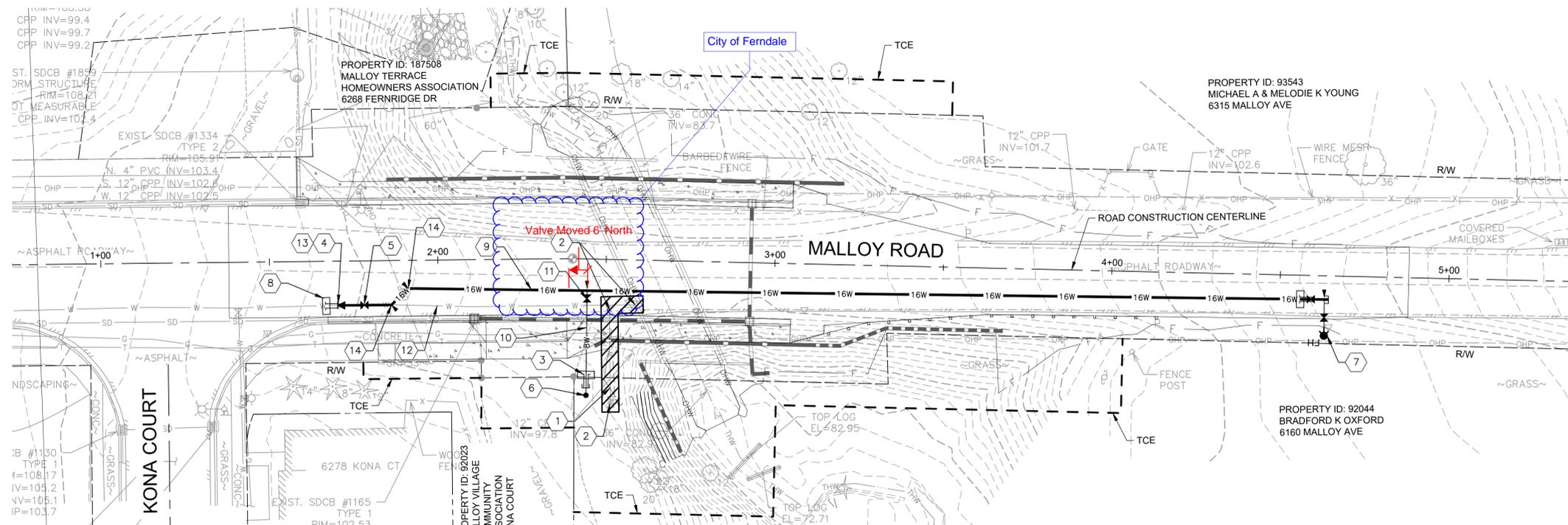
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C-14



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3/2/2023 4:11:03 PM - P:\21-02 FERNDALE MALLOY - WHISKEY CREEK\CAD\SHEETFILES\C-15 WATER MAIN PLAN AND PROFILE.DWG - STOCK, MADINE



WATER MAIN PLAN
SCALE: 1" = 20'

CONSTRUCTION NOTES

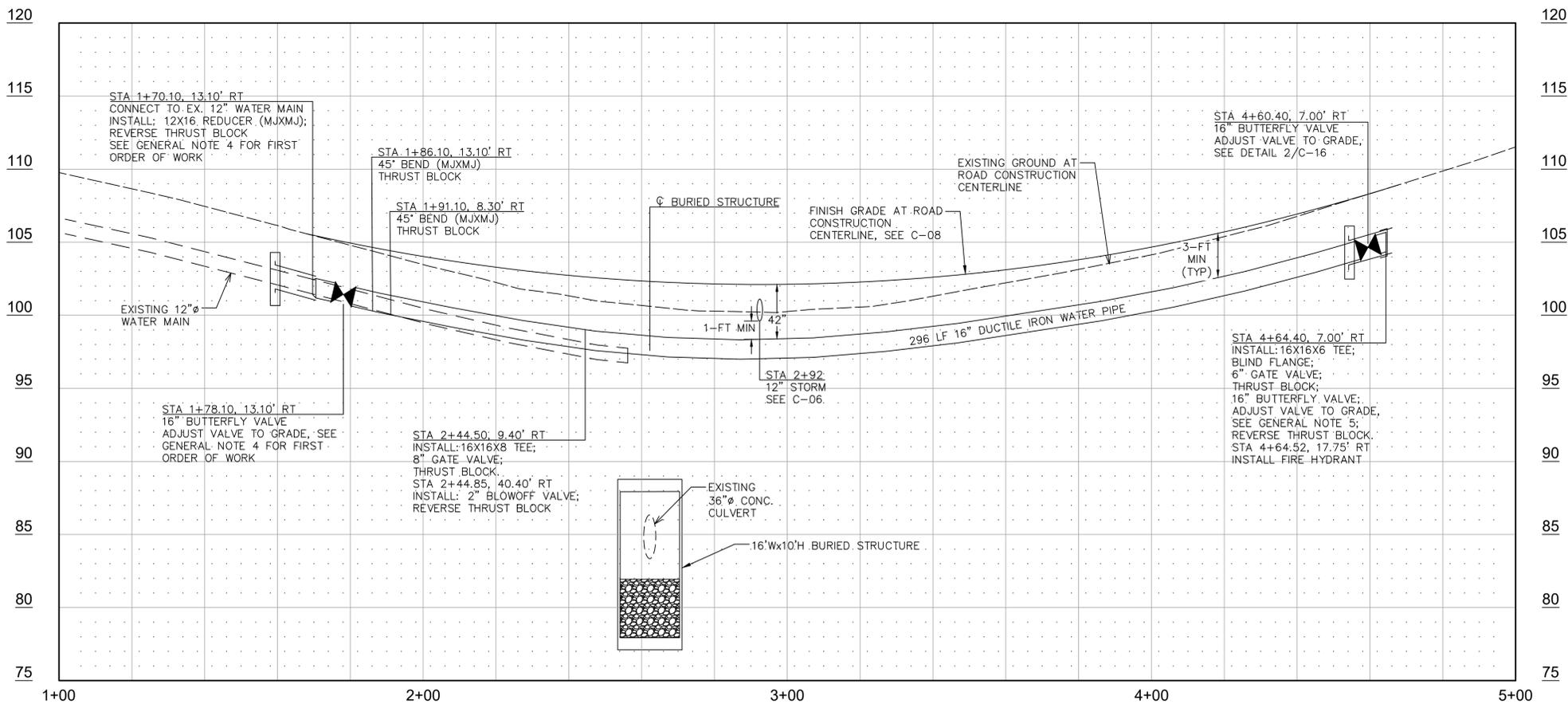
- ① DEMO EXISTING WATER PIPE
- ② DEMO EXISTING WATER VALVES
- ③ REVERSE THRUST BLOCK PER COF STD DETAIL W-2/C-16
- ④ 12x16 CONCENTRIC REDUCER (MJXMJ)
- ⑤ 16-IN BUTTERFLY VALVE
- ⑥ BLOWOFF ASSEMBLY PER COF STD DETAIL W-9/C-16
- ⑦ HYDRANT BLOWOFF PER DETAIL 2/C-16
- ⑧ REVERSE THRUST BLOCK PER DETAIL 1/C-16
- ⑨ 16-IN DUCTILE IRON WATER PIPE
- ⑩ 8-IN DUCTILE IRON WATER PIPE
- ⑪ 8-IN GATE VALVE
- ⑫ ABANDON IN PLACE EXISTING WATER PIPE NOT IMPACTED BY NEW WATER MAIN CONSTRUCTION. PLUG ENDS OF ABANDONED WATER PIPE.
- ⑬ CONNECT TO EXISTING 12" DUCTILE IRON WATER PIPE
- ⑭ 45° BEND (MJXMJ)

LEGEND

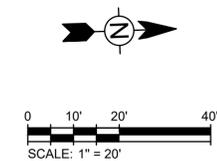
- w — EXISTING WATER PIPE
- 8w — 8-IN WATER PIPE
- 16w — 16-IN WATER PIPE
- ⊗ GATE VALVE
- ▼ THRUST BLOCK PER COF STD DETAIL W-2/C-16
- FH ↓ HYDRANT
- ⊙ BLOWOFF ASSEMBLY
- ⊞ REVERSE THRUST BLOCK

GENERAL NOTES

1. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN ARE APPROXIMATE, CONTRACTOR SHALL POTHOLE TO DETERMINE LOCATION AND DEPTH PRIOR TO CONSTRUCTION.
2. TRENCHING PER COF STD DETAIL W-11/C-16.
3. DEFLECT DUCTILE IRON PIPE AT EACH JOINT AS NEEDED TO INSTALL AS SHOWN IN PROFILE.
4. INSTALL BUTTERFLY VALVE, REDUCER AND REVERSE THRUST BLOCK AS FIRST ORDER OF WORK BEFORE BEGINNING BOX CULVERT CONSTRUCTION.
5. ADJUST VALVES TO GRADE PER COF STD DETAIL SS-19/C-16.



WATER MAIN PROFILE
SCALE: HORIZ. 1" = 20', VERT. 1" = 5'



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REGISTERED PROFESSIONAL ENGINEER
31793
3.3.2023

CITY OF FERNDALE HOLDINGS WASHINGTON

BY	DATE	DESCRIPTION

CITY OF FERNDALE
MALLOY AVENUE WHISKEY CREEK
CULVERT REPLACEMENT PROJECT

**WATER MAIN
PLAN AND PROFILE**

PROJ: 100-WTR-21-02
DES: KA
DRW: NS/AB
CHKD: CP

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

C-15

Bar Measures 1 inch, otherwise drawing not to scale

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