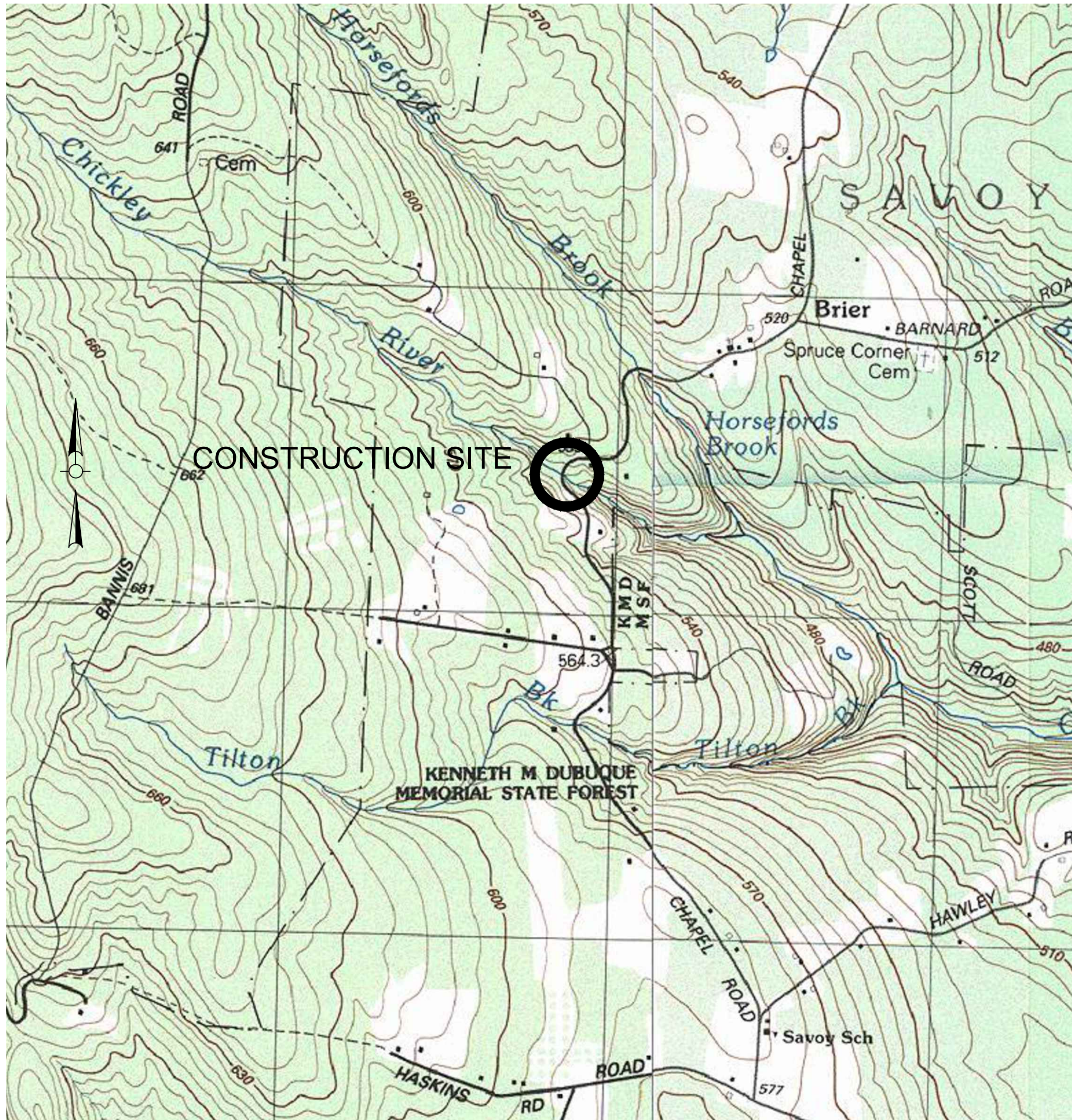


TOWN OF SAVOY
HIGHWAY DEPARTMENT

CHAPEL ROAD CULVERT REPLACEMENT
OVER CHICKLEY RIVER PROJECT



LOCATION MAP
SCALE: 1"=1000'

<u>SHEET NO.</u>	<u>TITLE</u>
2	CONSTRUCTION PLAN
3	PROFILE
4	PLAN, ELEVATION AND NOTES
5	TYPICAL SECTIONS AND DETAILS
6	WINGWALL ELEVATIONS
7	WINGWALL SECTION AND DETAILS
8	WATER HANDLING PLANS AND NOTES
9	TRAFFIC CONTROL PLANS
10	EROSION AND SEDIMENTATION CONTROL DETAILS

OCTOBER 2025

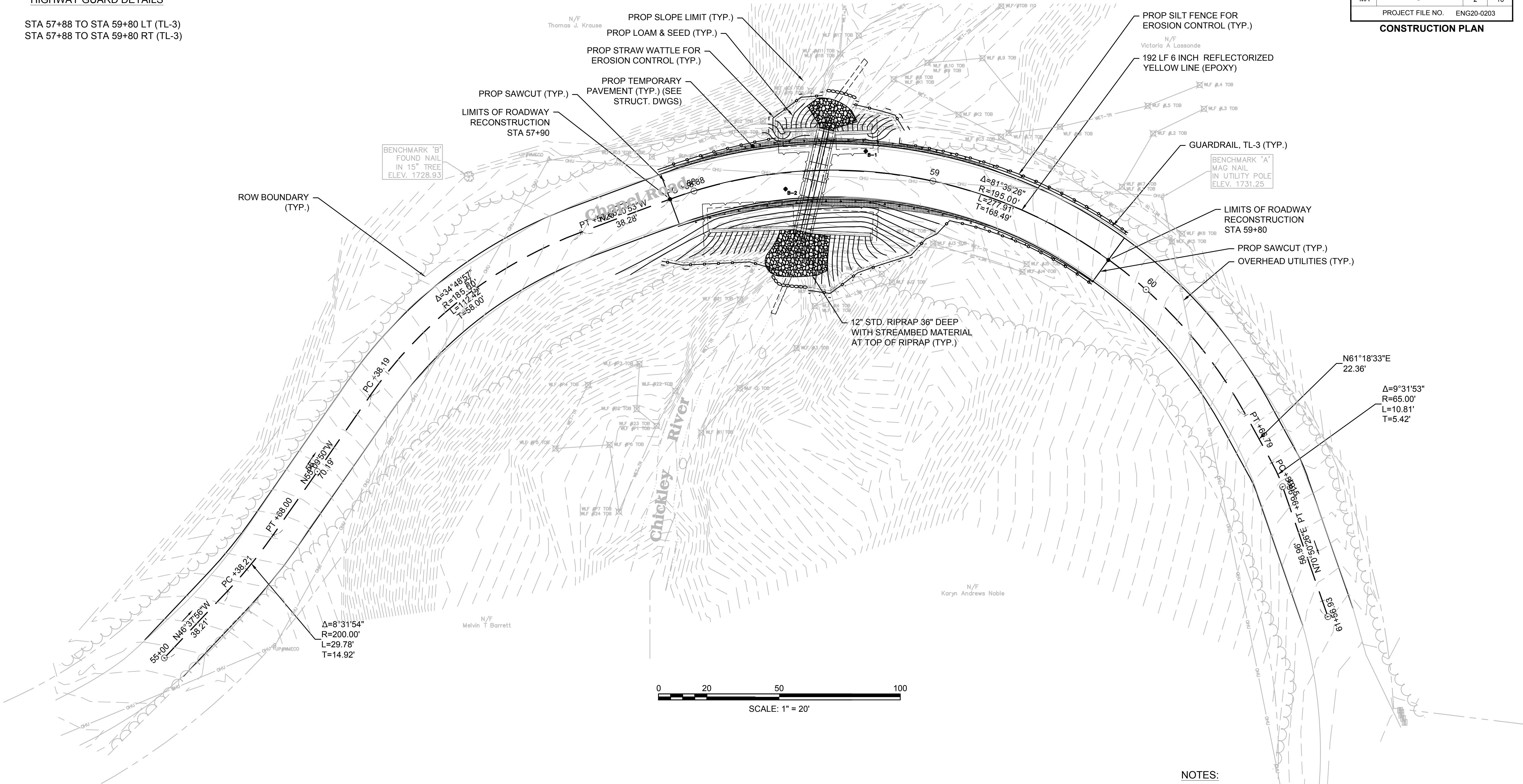
Weston & SampsonSM

SAVOY, MA
CHAPEL ROAD OVER CHICKLEY RIVER CULVERT

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	10
PROJECT FILE NO.		ENG20-0203	

HIGHWAY GUARD DETAILS

STA 57+88 TO STA 59+80 LT (TL-3)
STA 57+88 TO STA 59+80 RT (TL-3)



NOTES:

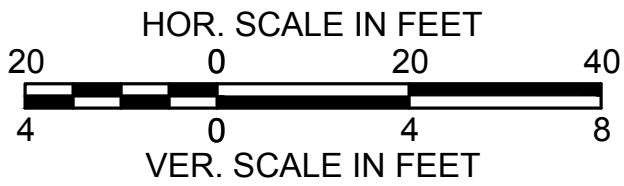
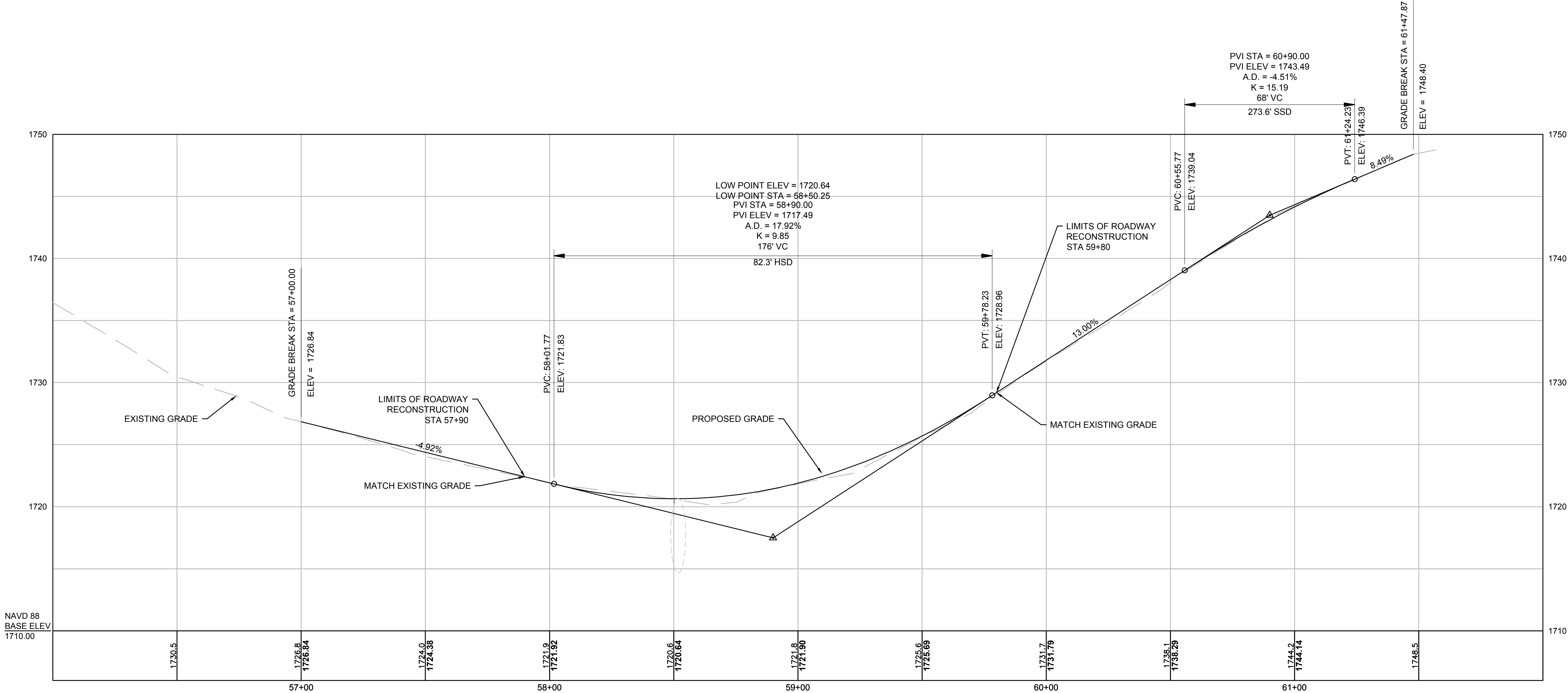
- FOR GENERAL NOTES SEE SHEET NO. 4.
- FOR HYDRAULIC DESIGN DATA, SEE SHEET NO. 4.

OCT. 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

SAVOY, MA
CHAPEL ROAD OVER CHICKLEY RIVER CULVERT

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	10
PROJECT FILE NO.		ENG20-0203	

PROFILE



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SAVOY, MA
CHAPEL ROAD OVER CHICKLEY RIVER CULVERT

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	10
PROJECT FILE NO. ENG20-0203			

PLAN, ELEVATION AND NOTES

GENERAL NOTES:

DESIGN:

IN ACCORDANCE WITH THE 2020 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS, FOR HL-93 LOADING.

EXISTING CONDITIONS:

DIMENSIONS SHOWN AND DETAILS DEPICTED ARE BASED UPON THE ORIGINAL BRIDGE PLANS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE AND NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL HE/SHE HAS MADE THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

BENCH MARK:

BENCHMARK "A": MAG NAIL IN UTILITY POLE, ELEV. 1731.25

BENCHMARK "B": FOUND NAIL IN 15" TREE, ELEV. 1728.93

SURVEY:

TOPOGRAPHICAL INFORMATION BASED ON THE GROUND SURVEY PERFORMED BY SURVEYING AND MAPPING CONSULTANTS ON THE MONTH OF MAY 2020. COORDINATES, IN US SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN DATUM (NAD) 1983.

SCALES:

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZE PRINTS.

FOUNDATIONS:

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIALS:

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS	#6 BARS
1. NONE	16"	17"	21"
2. 12" OF CONCRETE BELOW BAR	18"	22"	27"
3. COATED BARS, COVER < 3d _b , OR CLEAR SPACING < 6d _b	21"	26"	31"
4. COATED BARS, ALL OTHER CASES	17"	21"	25"
5. CONDITION 2. AND 3.	23"	29"	35"
6. CONDITION 2. AND 4.	21"	27"	32"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS

ALL REINFORCING STEEL SHALL HAVE A MIN. 2" COVER UNLESS NOTED OTHERWISE.

EPOXY COATED BARS:

ALL REINFORCING BARS AND SUPPORTING DEVICES SHALL BE COATED UNLESS OTHERWISE NOTED.

CURVE DATA	
T	168.49'
L	277.91'
R	195.00'
Δ	81° 39' 26"

PRECAST BOX CULVERT:

- THE SECTION IS A BOX CULVERT SECTION TO BE MONOLITHICALLY CAST OF REINFORCED CONCRETE. THE INSIDE SURFACE SHALL BE SMOOTH AS TO NOT RESTRICT FLOW
- THE INTERNAL DIMENSIONS OF THE BOX CULVERT ARE 6' WIDE, 8' HIGH AND A MINIMUM 10" SLAB AND WALL THICKNESS.
- DESIGN CRITERA:

3.1. DESIGN SHALL BE IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIAL (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS (9TH EDITION) SUPPLEMENTED BY MASSACHUSETTS DEPARTMENT OF TRANSPORTATION 2013 LRFD BRIDGE MANUAL.

3.2. STEEL REINFORCEMENT SHALL BE GRADED CONFORMING TO AASHTO M31.

3.3. MINIMUM 4000 PSI CEMENT CONCRETE STRENGTH @ 28 DAY.

3.4. CONCRETE COVER FOR REINFORCING STEEL BARS SHALL BE 2 INCHES.

CONCRETE MIX:

THE CEMENT CONCRETE SPECIFIED BELOW SHALL BE USED ON THE FOLLOWING BRIDGE COMPONENTS:

4000 PSI, 1½", 565 CEMENT CONCRETE..... WINGWALLS, BOX CULVERT, BAFFLES

UTILITIES:

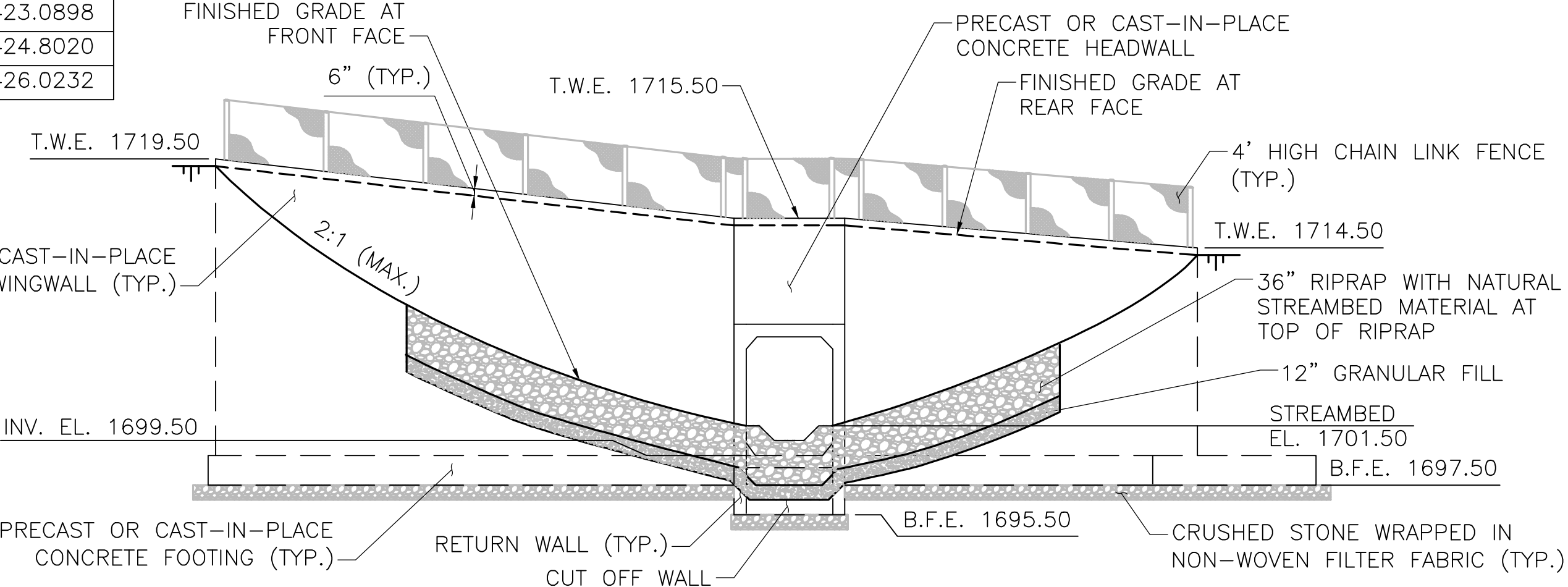
THE CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE ALL EXISTING UTILITIES.

FOUNDATION BEARING PRESSURE:

SERVICE LIMIT STATE: PSF MAX

EXTREME EVENT STATE: PSF MAX

WORKING POINTS AND COORDINATES		
W.P. #	NORTHING	EASTING
1	3041705.0625	251398.7300
2	3041711.2646	251398.5280
3	3041694.3528	251381.1971
4	3041708.3453	251380.6891
5	3041715.8174	251382.4027
6	3041730.5576	251381.8665
7	3041663.6447	251424.3607
8	3041698.5829	251423.0898
9	3041706.0936	251424.8020
10	3041730.0625	251426.0232



OUTLET ELEVATION

SCALE: 1/4" = 10'

HYDRAULIC DESIGN DATA:

HYDRAULIC EVALUATION WAS PERFORMED BY WESTON & SAMPSON.

DRAINAGE AREA:0.99 SQUARE MILES
DESIGN FLOOD DISCHARGE:254 CFS
DESIGN FLOOD RECURRENCE INTERVAL:10 YEAR
DESIGN FLOOD ELEVATION:1715.57 FT
DESIGN FLOOD VELOCITY:19.15 FEET PER SECOND
BASE FLOOD DISCHARGE:576 CFS
BASE FLOOD ELEVATION:1720.94 FT
MAX DISCHARGE:UNKNOWN
MAX ELEVATION:UNKNOWN
DATE:UNKNOWN
HISTORY OF ICE FLOES:UNKNOWN
EVIDENCE OF SCOUR OR EROSION:SOME SCOUR

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MA	-	5	10
PROJECT FILE NO. ENG20-0203			



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



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

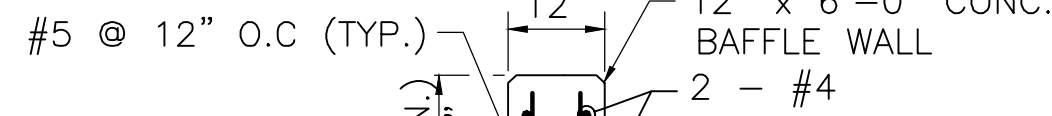


SCALE: 1/2" = 1'-0'



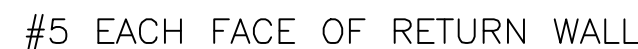
WINGWALL JOINT DETAIL

SCALE: 1" = 1'-0"



BAFFLE DETAIL

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



CURTAIN AND RETURN WALL DETAIL

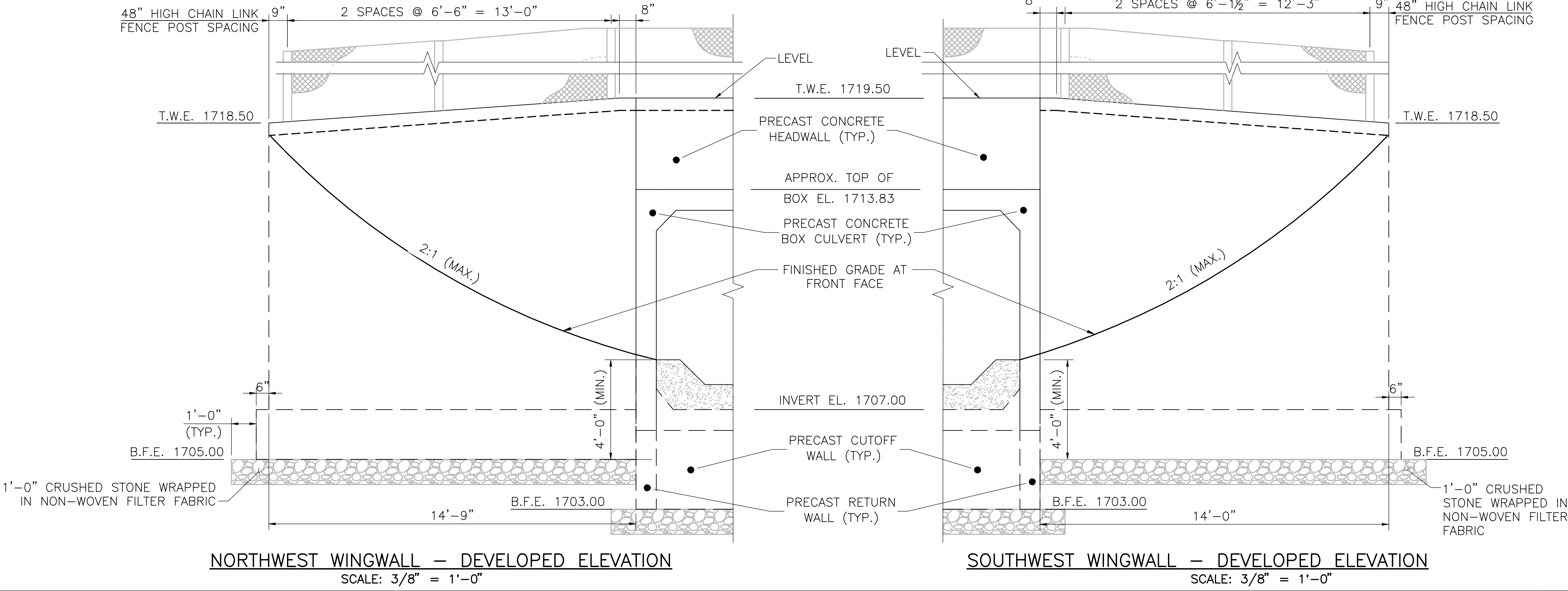
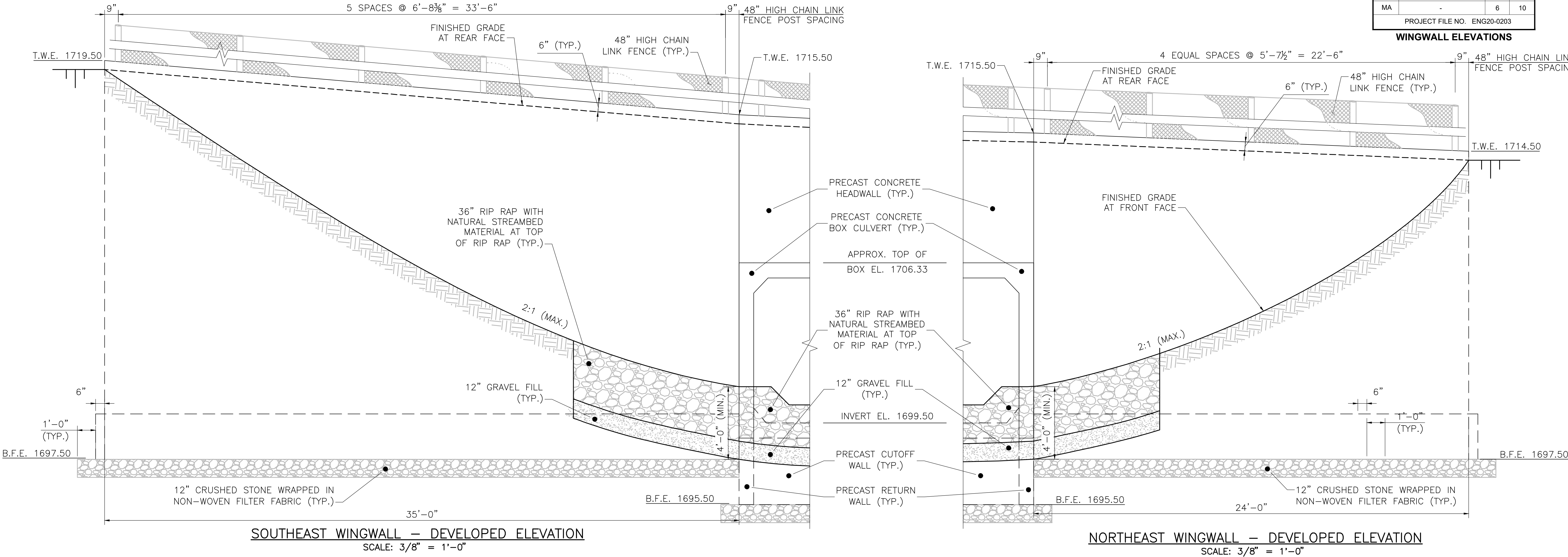
SCALE: $3/4" = 1'-0"$

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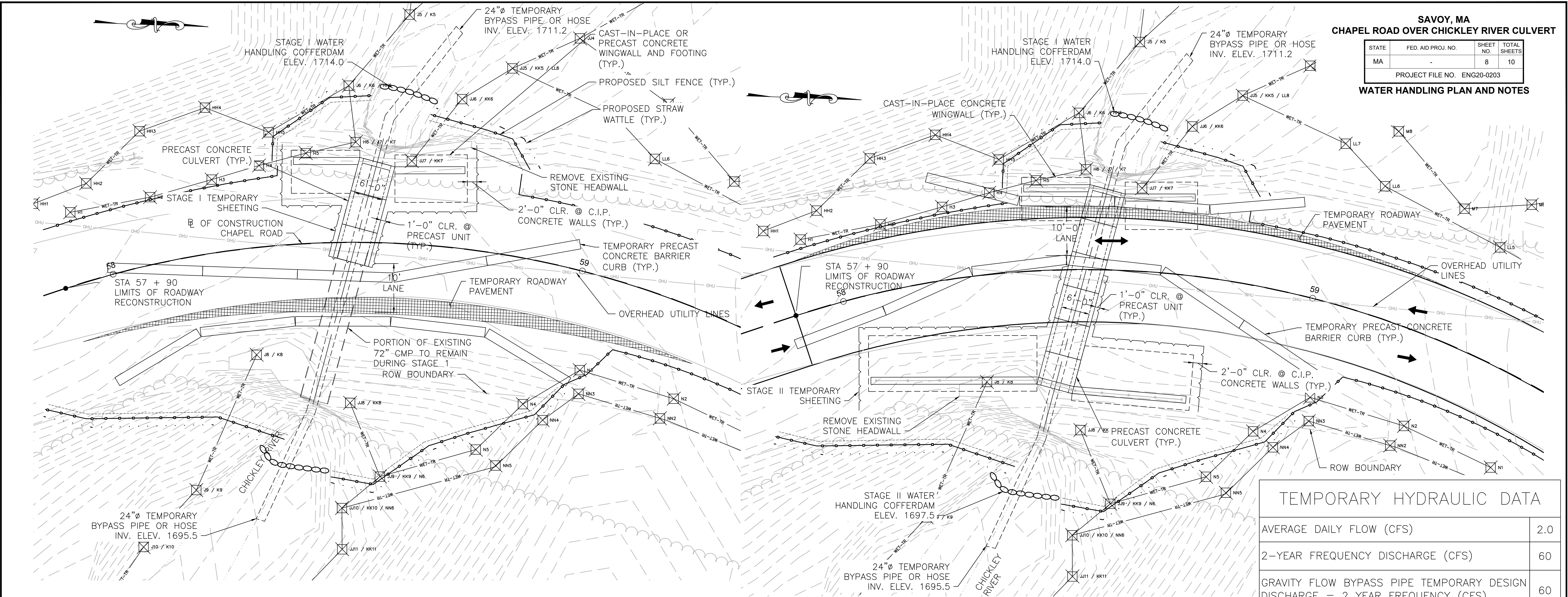
SAVOY, MA
CHAPEL ROAD OVER CHICKLEY RIVER CULVERT

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	6	10
PROJECT FILE NO. ENG20-0203			

WINGWALL ELEVATIONS



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SAVOY, MA
CHAPEL ROAD OVER CHICKLEY RIVER CULVERT

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	10

PROJECT FILE NO. ENG20-0203
WATER HANDLING PLAN AND NOTES

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW (CFS)	2.0
2-YEAR FREQUENCY DISCHARGE (CFS)	60
GRAVITY FLOW BYPASS PIPE TEMPORARY DESIGN DISCHARGE = 2 YEAR FREQUENCY (CFS)	60
LOW FLOW PUMPING TEMPORARY DESIGN DISCHARGE = 8XADF (CFS)	16

LOW FLOW PUMPING IS ALLOWED BETWEEN MAY 1 TO SEPTEMBER 30 FOR NO LONGER THAN 3 MONTHS AT ANY GIVEN TIME .

SEQUENCE NOTES:

- SEE SHEET NO. 8 FOR WATER HANDLING NOTES.
- FOR HYDRAULIC DESIGN DATA SEE SHEET NO. 2

SUGGESTED SEQUENCE OF CONSTRUCTION

STAGE 1:

- INSTALL EROSION CONTROL MEASURES ON THE INLET SIDE OF EXISTING PIPE. INSTALL TEMPORARY SANDBAGS UPSTREAM OF PIPE.
- RELOCATE OVERHEAD UTILITIES AS REQUIRED TO ALLOW FOR STAGE I EXCAVATION.
- PLACE TEMPORARY PAVEMENT IN SHOULDER, INSTALL TEMPORARY PRECAST CONCRETE BARRIER CURB AND ESTABLISH ALTERNATING ONE WAY TRAFFIC AT BRIDGE SITE.
- INSTALL SHEETING AS SHOWN TO ALLOW FOR STAGE I EXCAVATION AND CONSTRUCTION.
- EXCAVATE WITHIN LIMITS OF SHEETING, PLACE 24" TEMPORARY BYPASS PIPE OR HOSE AND COFFERDAM AT REMAINING EXISTING 72"Ø PIPE.
- PLACE GRANULAR FILL AS SHOWN FOR CAST-IN-PLACE WALL AND PRECAST BOX UNITS.
- INSTALL PRECAST BOX UNITS AS SHOWN, FORM AND POUR CAST-IN-PLACE WINGWALLS AND HEADWALL ON INLET SIDE.
- FURNISH AND COMPACT GRAVEL BORROW FOR BACKFILLING STRUCTURES, INCLUDING BACKFILLING STAGE I HEADWALL TO FINISHED GRADE.
- INSTALL UPSTREAM RIP RAP AND COMPLETE UPSTREAM GRADING.
- REMOVE STAGE I TEMPORARY SHEETING, INSTALL AND COMPACT TEMPORARY FILL ABOVE PRECAST UNITS TO ALLOW FOR STAGE 2 TRAFFIC INCLUDING TEMPORARY PAVEMENT IN SHOULDER.

STAGE I PLAN
SCALE: 1" = 10'

STAGE 2:

- RELOCATE TEMPORARY PRECAST CONCRETE BARRIER CURB FOR STAGE II TRAFFIC PATTERN. INSTALL STAGE II TEMPORARY SHEETING AS SHOWN.
- INSTALL EROSION CONTROL MEASURES ON OUTLET SIDE OF EXISTING PIPE, INSTALL STAGE II WATER HANDLING SAND BAGS AND ADDITIONAL 24"Ø TEMPORARY BYPASS PIPE OR HOSE.
- EXCAVATE WITHIN LIMITS OF SHEETING, PLACE GRANULAR FILL AS SHOWN FOR CAST-IN-PLACE WALL AND PRECAST BOX UNITS.
- INSTALL PRECAST CONCRETE BOX UNITS AS SHOWN, FORM AND POUR CAST-IN-PLACE OR PRECAST WINGWALLS AND HEADWALLS.
- FURNISH AND COMPACT GRAVEL BORROW FOR BACKFILLING STRUCTURES, INCLUDING BACKFILLING STAGE II HEADWALL TO FINISHED GRADE.
- INSTALL AND COMPACT TEMPORARY FILL TO ALLOW FOR TRAFFIC BEFORE PLACEMENT OF FINAL ROADWAY STRUCTURE.
- INSTALL DOWN STREAM RIP RAP AND COMPLETE DOWNSTREAM GRADING.
- REMOVE STAGE II TEMPORARY SHEETING AND WATER HANDLING SAND BAGS. REMOVE OR CAP EXISTING TEMPORARY BYPASS PIPE OR HOSE.
- RECONSTRUCT ROADWAY STRUCTURE AS PROPOSED IN HIGHWAY PLANS. INSTALL FENCING, HIGHWAY GUIDERAIL AND ROADWAY MARKINGS.
- REMOVE ALL SEDIMENTATION CONTROL SYSTEMS AND ESTABLISH VEGETATION IN DISTURBED AREAS AS SHOWN ON PLANS.
- REMOVE OVERALL EROSION AND SEDIMENTATION CONTROL UPON PERMANENT STABILIZATION.

STAGE II PLAN
SCALE: 1" = 10'

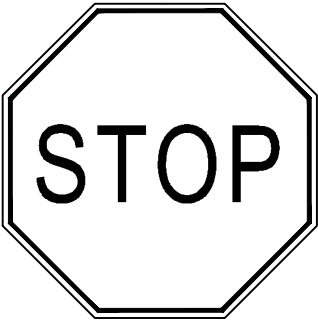
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SAVOY, MA
CHAPEL ROAD OVER CHICKLEY RIVER CULVERT

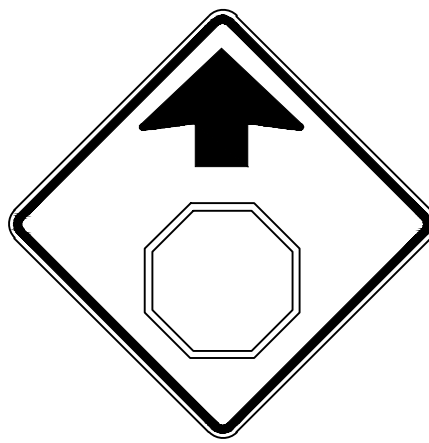
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	10
PROJECT FILE NO. ENG20-0203			

TRAFFIC CONTROL PLANS

LEGEND



R1-1

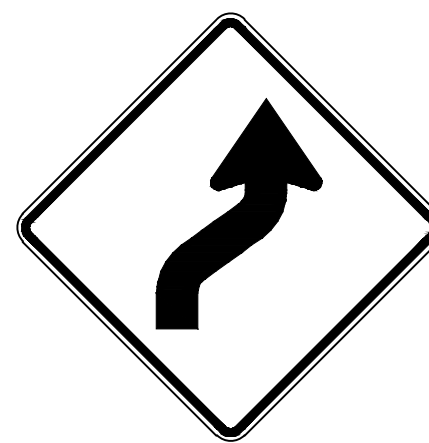


W3-1



W20-4

W13-1p



W1-4R

N/F
Thomas J. Krause

N/F
Victoria A. Lassonde

N/F
Victoria A. Lassonde

STAGE I TRAFFIC CONTROL PLAN / WATER HANDLING PLAN

SCALE: 1" = 20'

STAGE II TRAFFIC CONTROL PLAN / WATER HANDLING PLAN

SCALE: 1" = 20'

TWO LANE ROAD ONE LANE
ALTERNATING TRAFFIC WITH YIELD

FINE GRADING AND COMPACTING

TEMPORARY PAVEMENT DETAIL

N.T.S.

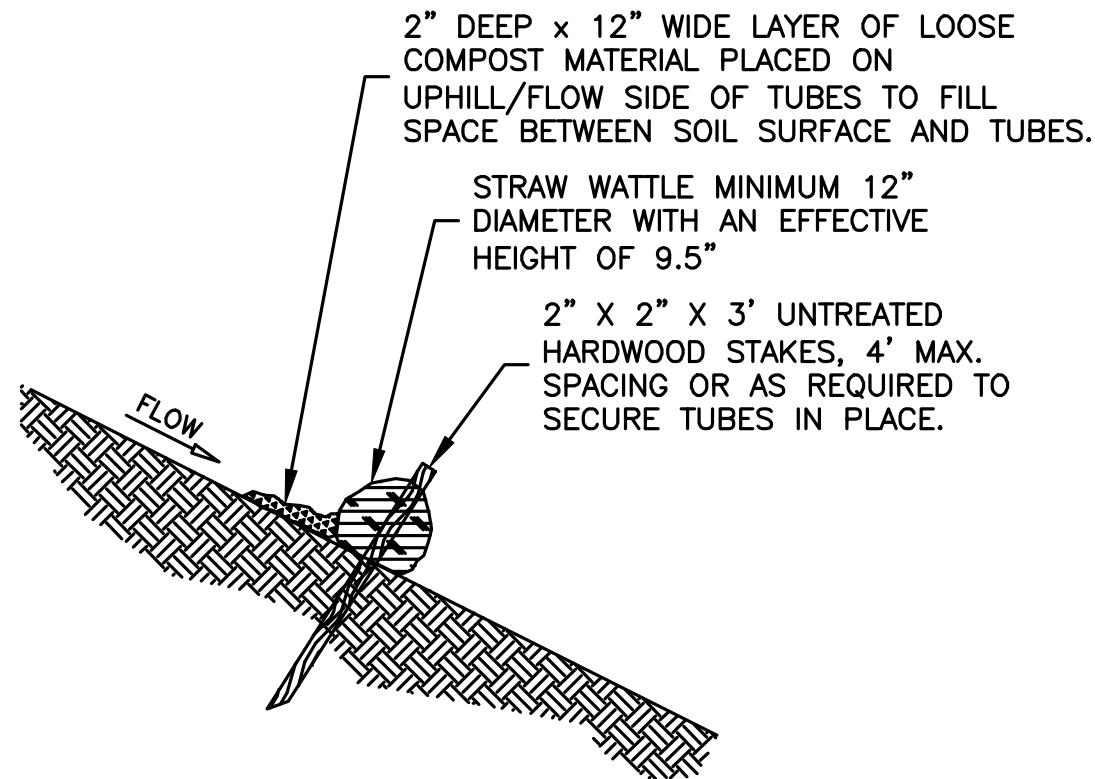
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	10
PROJECT FILE NO. ENG20-0203			

EROSION AND SEDIMENTATION
CONTROL DETAILS

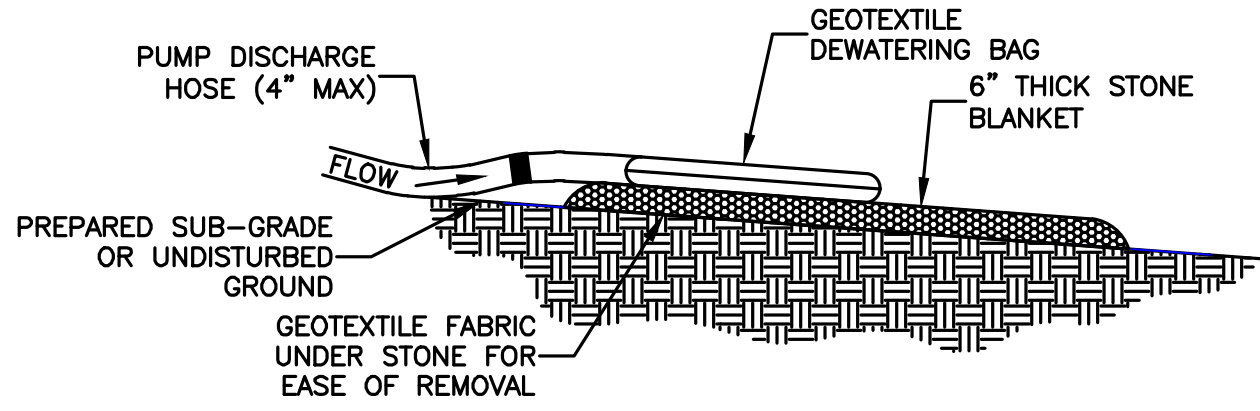
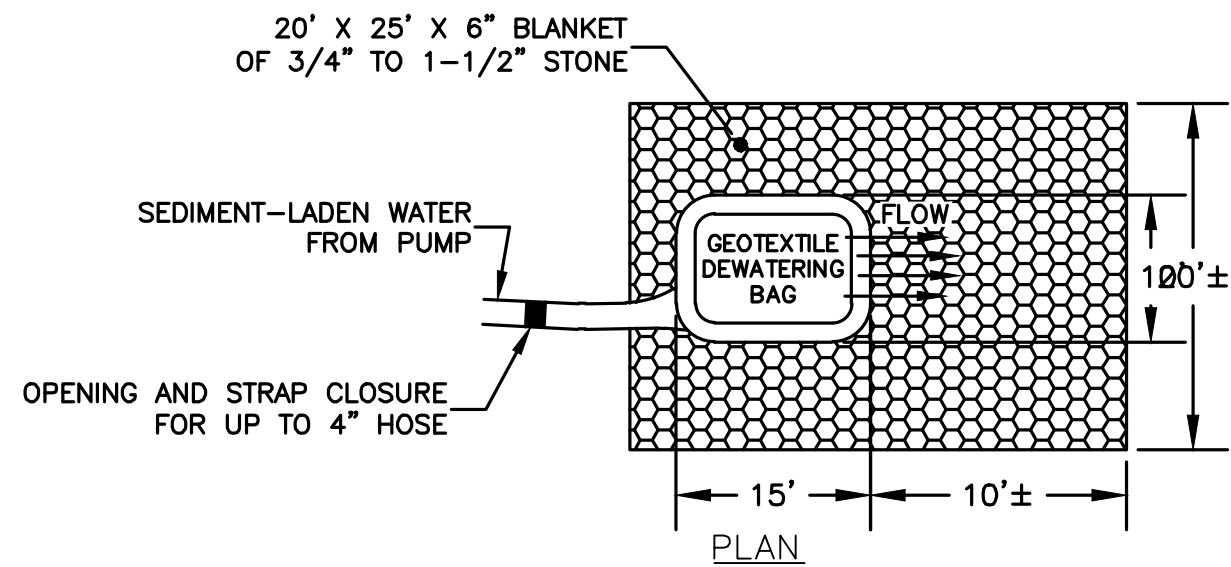
NOTES:

1. EROSION CONTROL MEASURES SHALL BE INCORPORATED IN THE SEQUENCE OF CONSTRUCTION TO PREVENT SEDIMENT LADEN WATER FROM LEAVING THE SITE.
2. AREAS SUBJECT TO EROSION SHALL BE MINIMIZED IN TERMS OF TIME AND AREA.
3. IN GENERAL, WORK REQUIRING EROSION CONTROL INCLUDES EXCAVATIONS, FILLS, DRAINAGE, SWALES AND DITCHES, ROUGH AND FINISH GRADING, AND STOCKPILING OF EARTH.
4. DO NOT DISTURB VEGETATION AND TOPSOIL BEYOND THE PROPOSED LIMIT OF SILT FENCE ACTIVITIES.
5. TEMPORARY SILT CONTROLS SHALL BE PLACED AS SHOWN ON THE PLAN. PERMANENTLY STABILIZE EACH COMPLETED SEGMENT OF CONSTRUCTION.
6. THE CONTRACTOR SHALL REMOVE TEMPORARY SILT CONTROLS AND ALL ACCUMULATED SILT AND DEBRIS AFTER COMPLETION OF CONSTRUCTION OPERATIONS.
7. SILT CONTROLS SHALL BE IN PLACE AT ALL TIMES DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL SILT AND DEBRIS FROM EACH DRAINAGE STRUCTURE UPON COMPLETION OF THE PROJECT.
9. OBJECTS AND/OR AREAS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
10. ALL DISTURBED AREAS SHALL BE RESTORED TO EXISTING GRADE. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE AS NEEDED.
11. SILT CONTROLS SHALL BE REMOVED UPON THE SATISFACTORY COMPLETION OF ALL WORK SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
12. SITE PERIMETER SHALL HAVE STRAW WATTLES INSTALLED AT THE LIMIT OF WORK.



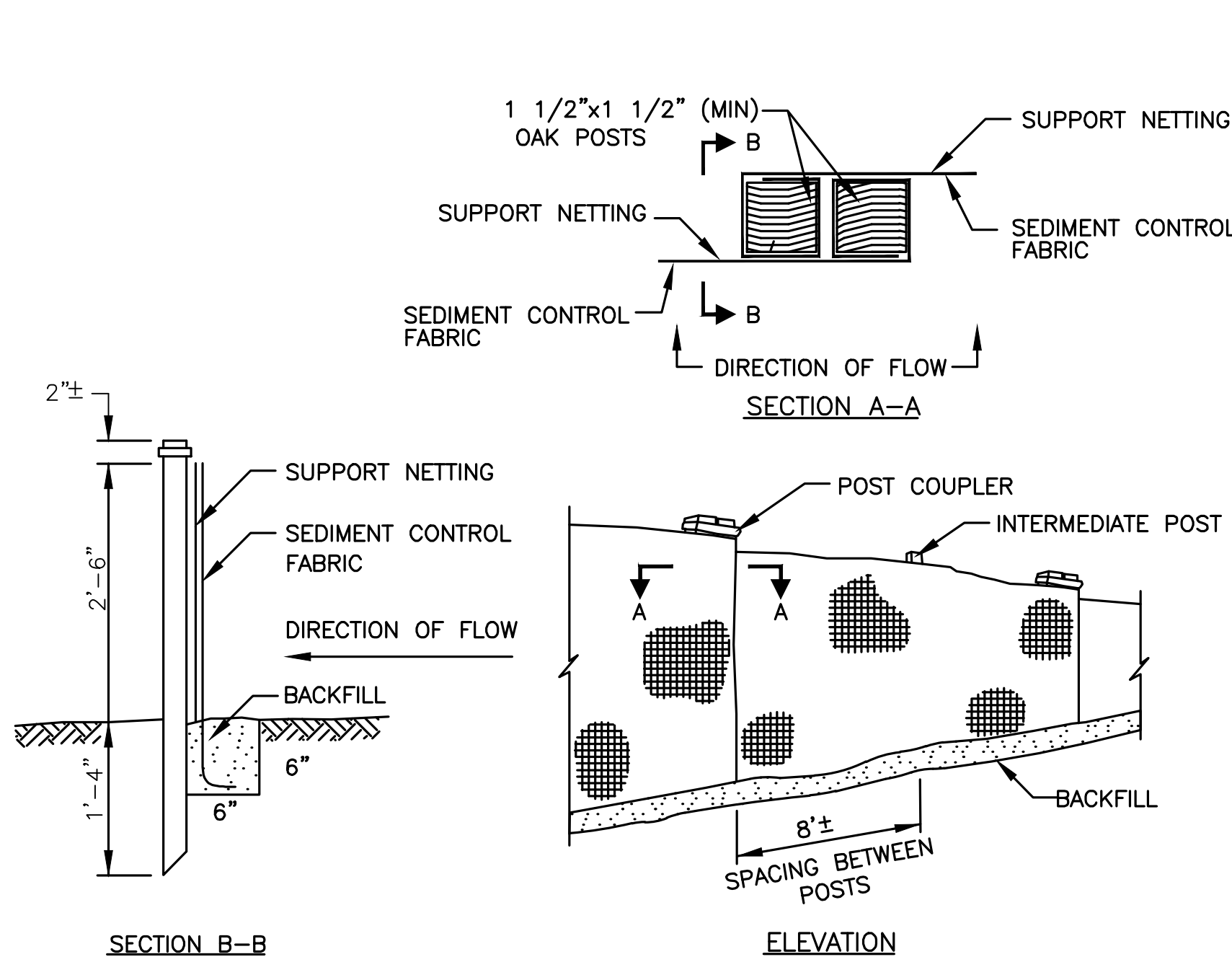
- NOTES:
1. TUBES FOR WATTLES SHALL BE JUTE MESH OR APPROVED BIODEGRADABLE MATERIAL. ADDITIONAL TUBES SHALL BE USED AT THE REQUIREMENT OF THE ENGINEER.
 2. TAMP TUBES IN PLACE TO ENSURE GOOD CONTACT WITH SOIL SURFACE.
 3. WHEN STAKING IS NOT POSSIBLE, SUCH AS WHEN TUBES MUST BE PLACED ON PAVEMENT, HEAVY CONCRETE OR CINDER BLOCKS CAN BE USED BEHIND TUBES UP TO 4 FEET APART OR AS REQUIRED TO SECURE TUBES IN PLACE.

STRAW WATTLE INSTALLATION DETAIL
N.T.S.

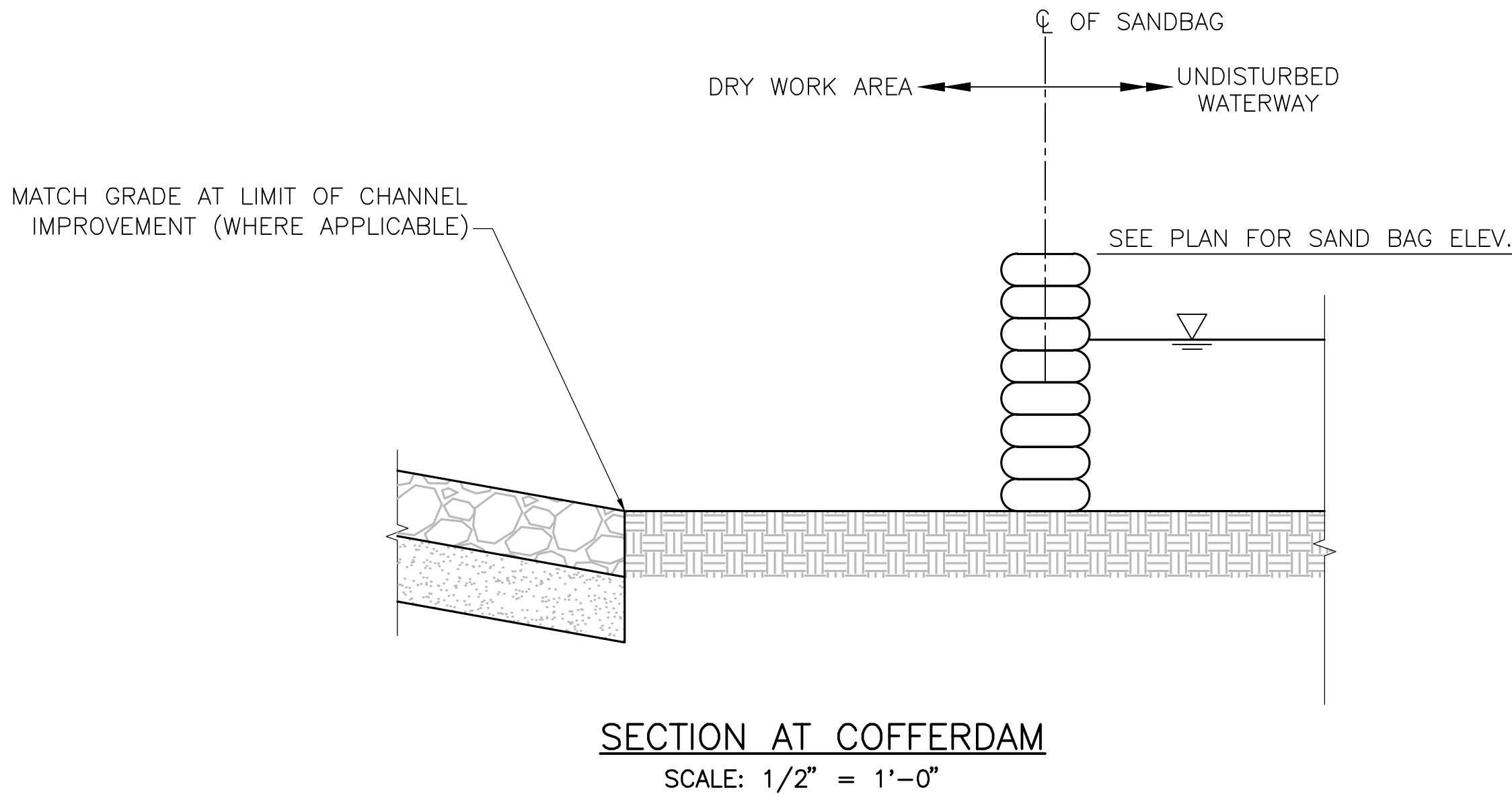
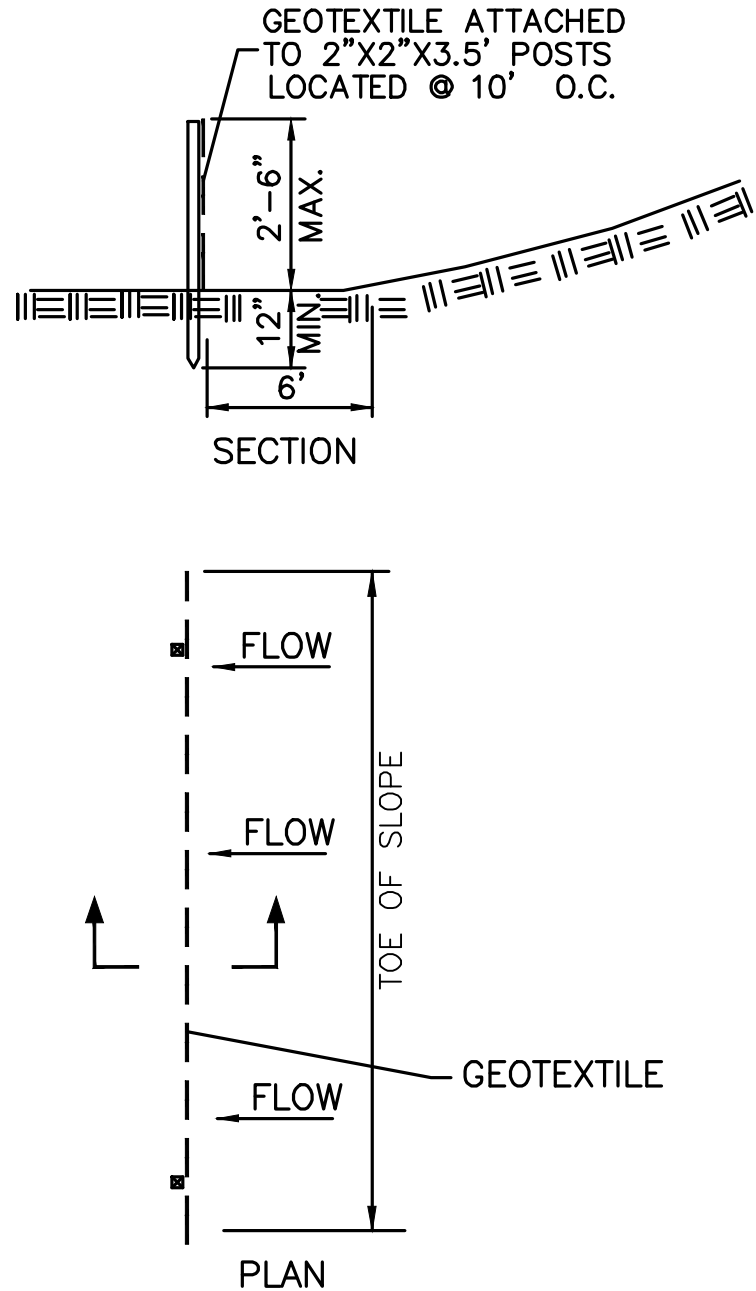


- NOTES:
1. GEOTEXTILE BAG MATERIAL SHALL BE A NON-WOVEN MATERIAL.
 2. DO NOT OVER PRESSURIZE BAG OR USE BEYOND CAPACITY.
 3. LOCATE DISCHARGE SITE ON FLAT UPLAND AREAS AS FAR AWAY AS POSSIBLE FROM STREAMS, WETLANDS, AND OTHER RESOURCES AND POINTS OF CONCENTRATED FLOW. ENGINEER TO APPROVE LOCATION.
 4. DOWNGRADIENT FROM RECEIVING AREA MUST BE WELL VEGETATED OR OTHERWISE STABLE FROM EROSION, E.G., FOREST FLOOR OR COARSE GRAVEL/STONE.

GEOTEXTILE DEWATERING BAG
N.T.S.



SEDIMENTATION AND EROSION CONTROL DETAIL
(SILT FENCE)
N.T.S.



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