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TRAFFIC DATA

2008 AADT: 2600

QUALITY ASSURANCE PROGRAM: LEVEL 2

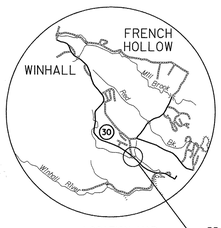
CONVENTIONAL SYMBOLS

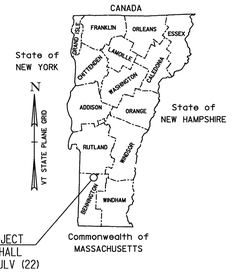
COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : VHB
SURVEYED DATE : DECEMBER 2008

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

STATE OF VERMONT
AGENCY OF TRANSPORTATION



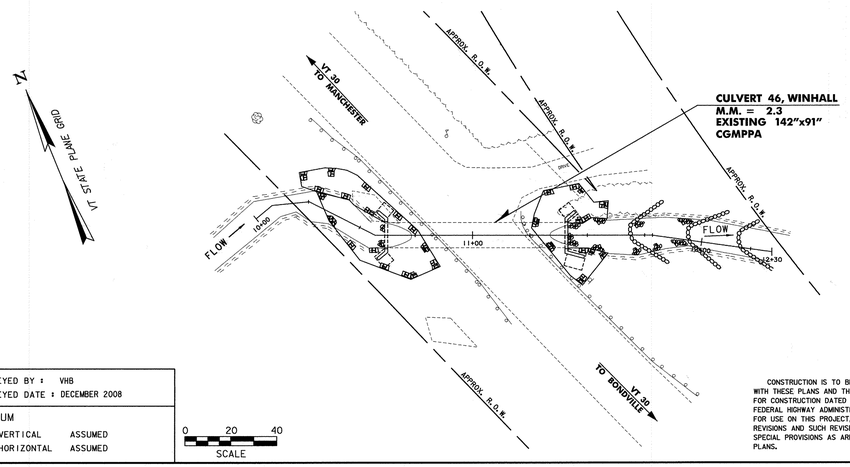


PROPOSED IMPROVEMENT
CULVERT REHABILITATION PROJECT

TOWN OF WINHALL
COUNTY OF BENNINGTON
VERMONT ROUTE 30 (MINOR ARTERIAL)

PROJECT LOCATION: WORK TO BE PERFORMED ON VERMONT ROUTE 30, 5.4 MILES SOUTH OF JUNCTION WITH VERMONT ROUTE 11.

PROJECT DESCRIPTION: THIS PROJECT INCLUDES CONCRETE INVERT REPAIR, INSTALLATION OF CRADLE WALLS AND CHANNEL AND EMBANKMENT STABILIZATION.



RECORD PLANS

CONTRACTOR: BRAZIN BROTHERS TRUCKING, INC. – WESTMINISTER, VT
RESIDENT ENGINEER: JUDY GILMORE
CONSTRUCTION BEGAN: JULY 20, 2011
CONSTRUCTION COMPLETE: AUGUST 13, 2012
RECORD PLANS BY: JUDY GILMORE & CRAIG PIERCE

I HEREBY CERTIFY THAT ALL THE CONSTUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY Judy Gilmore RESIDENT ENGINEER
DATE 26 March 2013

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

FINAL PLANS
JULY 2, 2010

Stantec
Stantec Consulting Services Inc.
55 Green Mountain Drive
South Burlington VT U.S.A. 05403
Tel. 802.864.0223
Fax. 802.864.0465
www.stantec.com

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE 3-17-10
PROJECT MANAGER : MARK SARGENT

PROJECT NAME : WINHALL
PROJECT NUMBER : STP CULV(22)

SHEET 1 OF 21 SHEETS

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.

2. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS SHOWN ON THE PLANS.

3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

4. IT IS EXPECTED THAT FILLING VOIDS UNDER THE CULVERT, CONSTRUCTION OF REINFORCED CONCRETE INVERT, WINGWALLS, CRADLE WALL, WEIRS AND STONE FILL WILL BE THE EXTENT OF THE WORK.

5. HAND PROBES TAKEN IN THE VICINITIES OF NEW HEADWALLS DID NOT INDICATE THE PRESENCE OF BEDROCK. IF BEDROCK IS ENCOUNTERED, IT SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK.

6. BED MATERIAL TO BE PLACED UPSTREAM AND DOWNSTREAM OF CULVERT IS INTENDED TO MIMIC THE NATIVE CHANNEL. THIS MATERIAL WILL BE PAID FOR UNDER ITEM 900.608 SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL).

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STAGING SCHEME. ALL WORK MUST BE DONE IN THE DRY AND ALL CAST-IN-PLACE CONCRETE SHALL BE CURED BEFORE THE STREAM IS ALLOWED TO FLOW THROUGH IT. A TEMPORARY STREAM DIVERSION SYSTEM IS NECESSARY TO CARRY THE STREAM DURING CONSTRUCTION. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TEMPORARY STREAM DIVERSION PLAN FOR APPROVAL. THE PLAN SHALL DEPICT MEASURES PROPOSED TO PREVENT EROSION AND SEDIMENTATION AND MAINTAIN STREAM WATER QUALITY. THE COST OF STREAM DIVERSION, INCLUDING ANY TEMPORARY PIPING AND/OR DEWATERING, WILL BE BE PAID FOR UNDER ITEM 900.645, SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM).

PIPE REHABILITATION NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ACCESS TO THE CULVERT REHABILITATION SITE. ALL RESULTING DISTURBED EARTH SHALL BE STABILIZED AND RESTORED UPON COMPLETION OF CONSTRUCTION. PAYMENT FOR THIS WORK WILL BE MADE UNDER CONTRACT ITEM 900.645, SPECIAL PROVISION (TEMPORARY ACCESS ROAD AND STAGING AREAS, CULVERT).

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARATION OF THE EXISTING PIPE TO THE SATISFACTION OF THE ENGINEER. IT IS ANTICIPATED THAT IT WILL BE NECESSARY FOR THE CONTRACTOR TO REMOVE SEDIMENT, LARGE STONES, AND/OR DEBRIS FROM INSIDE THE EXISTING CULVERT. PAYMENT FOR THIS WORK WILL BE MADE UNDER ITEM 900.640, SPECIAL PROVISION (REINFORCED CONCRETE INVERT) (EXISTING 142"x91" PIPE).

3. THE CONTRACTOR SHALL FILL ANY VOIDS UNDER THE CULVERT FROM WITHIN THE CULVERT BEFORE INSTALLING THE NEW CONCRETE INVERT. PAYMENT FOR THIS WORK WILL BE MADE UNDER ITEM 541.31, CONCRETE, CLASS D.

4. A NEW CONCRETE CRADLE AND WINGWALLS SHALL BE CONSTRUCTED AT THE INLET AND OUTLET OF THE PIPE AS SHOWN ON PLANS.

5. IT IS ANTICIPATED THAT A PORTION OF THE EXISTIING CORRUGATED INVERT PLATES MAY NEED TO BE TEMPORARILY REMOVED TO COMPLETE THE WORK. THE CONTRACTOR SHOULD BE AWARE THAT IT MAY BE NECESSARY TO INTERNALLY BRACE THE EXISTING CULVERT TO PREVENT DEFORMATION. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 900.640, SPECIAL PROVISION (REINFORCED CONCRETE INVERT) (EXISTING 142"x91" PIPE).

6. THE NEW REINFORCED CONCRETE INVERT SHALL BE SCREEDED TO A CONCAVE SHAPE AS SHOWN ON THE PLANS AND SHALL BE LEFT WITH A ROUGH RAKE FINISH. CAST-IN-PLACE CONCRETE WEIRS SHALL BE LOCATED AS SHOWN IN THE PROFILE.

CONCRETE NOTES

1. CONCRETE PAYMENT AND CLASSIFICATION WILL BE AS FOLLOWS:
   CRADLE AND WINGWALLS:
   ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B
   FILLING VOIDS BELOW PIPE FLOW LINE:
   ITEM 541.31, CONCRETE CLASS D

2. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH BY 1 INCH, UNLESS OTHERWISE NOTED.

3. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

4. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. PAYMENT WILL BE MADE UNDER ITEM 514.10, WATER REPELLENT, SILANE.

REINFORCING STEEL NOTES

1. ALL REINFORCING STEEL SHALL BE GRADE 60.

2. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE 3" UNLESS NOTED OTHERWISE.

3. REINFORCEMENT STEEL PLACEMENT TOLERANCES SHALL BE:
   SPACING = +/- 1 INCH
   CLEARANCE = +/- 1/4 INCH

TRAFFIC CONTROL NOTES

1. ALL TRAFFIC CONTROL MEASURES FOR THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE VTRANS STANDARD DRAWINGS, AS NEEDED. CONFLICTS BETWEEN THE MUTCD AND THE VTRANS STANDARD DRAWINGS WILL DEFER TO THE MUTCD.

2. TWO WEEKS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A SPECIFIC TRAFFIC CONTROL PLAN TO THE ROADWAY, TRAFFIC AND SAFETY ENGINEER FOR APPROVAL PER SUBSECTION 105.03. THIS WORK WILL BE PAID FOR UNDER ITEM 641.10, TRAFFIC CONTROL.

3. LARGE CONSTRUCTION VEHICLES MAY BE REQUIRED TO BACK DOWN THE TEMPORARY ACCESS ROADS. THESE VEHICLES WILL LIKELY NOT HAVE ADEQUATE SPACE AT THE INTERSECTION OF THE ACCESS ROADS AND THE MAIN ROAD TO PERFORM THE NECESSARY TURNING MOVEMENTS. AT THE OPTION OF THE CONTRACTOR, TEMPORARY CLOSURE OF ONE LANE WILL BE ALLOWED FOR ACCESS TO THE PROJECT SITE. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 641.10, TRAFFIC CONTROL.

4. TEMPORARY BARRIER, IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 621. BARRIER ENDS FACING ONCOMING TRAFFIC SHOULD BE TAPERED BEYOND THE CLEAR ZONE. IF NECESSARY, PAYMENT FOR INSTALLING, RESETTING, AND REMOVING ANY TEMPORARY TRAFFIC BARRIER WILL BE INCIDENTAL TO ITEM 641.10, TRAFFIC CONTROL.

5. ENERGY ABSORPTION ATTENUATORS, IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 621. PAYMENT FOR INSTALLING AND REMOVING ANY ENERGY ABSORPTION ATTENUATORS WILL BE INCIDENTAL TO ITEM 641.10, TRAFFIC CONTROL.

6. SIGNS, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY OR AS DIRECTED BY ENGINEER. THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 641.10, TRAFFIC CONTROL.

7. DESIGN OF THE SIGNAL SUPPORTS AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.

8. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT FOR THIS WORK WILL BE MADE UNDER ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM. THE ENGINEER SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.

TRAFFIC CONTROL NOTES (CONTINUED)

9. THE TEMPORARY TRAFFIC SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, TEMPORARY PAVEMENT MARKINGS, WARNING SIGNS, LUMINARIES, FLASHING BEACONS, HARD WIRED PREEMPTION SYSTEM AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN. IT ALSO INCLUDES PERMITS AND COSTS ASSOCIATED WITH PROVIDING ELECTRICAL POWER. THE HARD WIRED PREEMPTION SYSTEM SHALL BE ACTIVATED BY MANUALLY OPERATED BUTTONS LOCATED NEXT TO THE STOP BARS AT EACH END OF THE PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER, TOWN FIRE, AMBULANCE, POLICE AND ANY OTHER APPROPRIATE DEPARTMENTS TO DETERMINE THE PROPER TIMING REQUIRED FOR EMERGENCY VEHICLES TO CLEAR THE PROJECT AREA ONCE PREEMPTION IS ACTIVATED. SEVERAL TRIAL RUNS SHALL BE MADE. PAYMENT FOR THE TEMPORARY TRAFFIC SIGNAL SYSTEM AND ANY OTHER INCIDENTALS REQUIRED TO INSTALL, MAINTAIN & REMOVE THE FULLY OPERATIONAL SIGNAL SYSTEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 678.40 TEMPORARY TRAFFIC SIGNAL SYSTEM.

10. SIGNAL FACES SHALL CONSIST OF 12" LENSES. (RED, YELLOW, AND GREEN)

11. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16.5 FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND.

12. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER FACES.

13. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE OF NO GREATER THAN 14.5 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE CURRENT EDITION OF THE M.U.T.C.D. FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.

14. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.

15. INSTALL WIRING BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION. ATTACHMENT TO UTILITY POLES TO BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY COMPANY. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.

16. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE POSSIBLE.

17. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELING PUBLIC.

18. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL. THIS INCLUDES ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.

Stantec

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08b198notes.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: T. KNIGHT
PLOT DATE: 1/6/2011
DRAWN BY: J. SOTER
CHECKED BY: M. CHENETTE

PROJECT NOTES 1

TRAFFIC CONTROL NOTES (CONTINUED)

19. A 250 WATT MER/150 WATT HPS LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 30 FEET ABOVE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT. LIGHTING SHALL BE PAID INCIDENTAL TO ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.

20. STOP BARS SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST SIGNAL HEAD. PAYMENT WILL BE MADE UNDER ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.

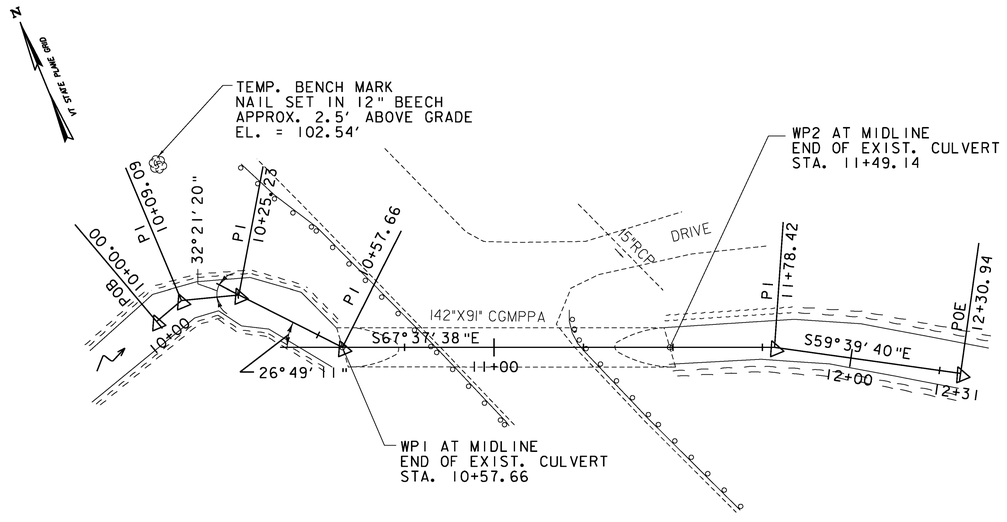
21. SEE STD. E-140 FOR "STOP HERE ON RED" SIGN DETAIL AND E-101 FOR "SIGNAL AHEAD" SYMBOL SIGN. SEE STD. E-121 FOR SIGN PLACEMENT. SEE STD, E-171A AND E-172 FOR ADDITIONAL INFORMATION ON SIGNALS.

22. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.

23. ALL STOP SIGNS AND ANY TRAFFIC SIGNS MADE IRRELEVANT DUE TO THE TEMPORARY SIGNAL SHALL BE COVERED DURING OPERATION OF THE TEMPORARY SIGNAL OR AT THE DISCRETION OF THE ENGINEER. THE COSTS OF COVERING AND UNCOVERING THESE SIGNS SHALL BE PAID INCIDENTAL TO ITEM 641.10 TRAFFIC CONTROL.

24. CONSTRUCTION APPROACH SIGNS SHALL BE PROVIDED ON EACH APPROACH PER THE "TRAFFIC CONTROL APPROACH SIGN PACKAGE" SHOWN ON SHEET 15. ADDITIONAL CONSTRUCTION APPROACH SIGNS SHALL BE INSTALLED AS REQUIRED BY THE ENGINEER PER STANDARD E-100A, E-101, E-102 AND E-102A. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC., SHALL BE PAID INCIDENTAL TO ITEM 641.10 TRAFFIC CONTROL.

25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING SIGNAL PHASING. THE CONTRACTOR SHALL SUBMIT PHASING DIAGRAM TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL MAKE SIGNALS OPERATIONAL ONLY AFTER RECEIVING APPROVAL OF THE PHASING DIAGRAM BY THE ENGINEER.



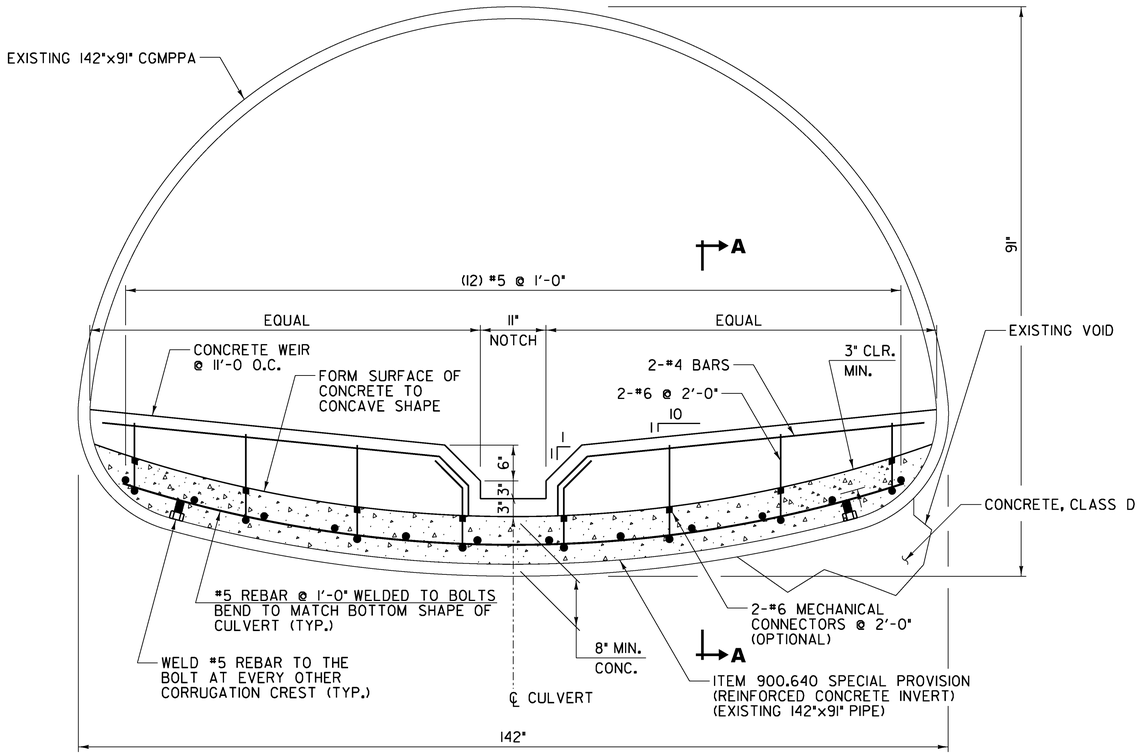
STREAM ALIGNMENT PLAN

0 20 40

SCALE

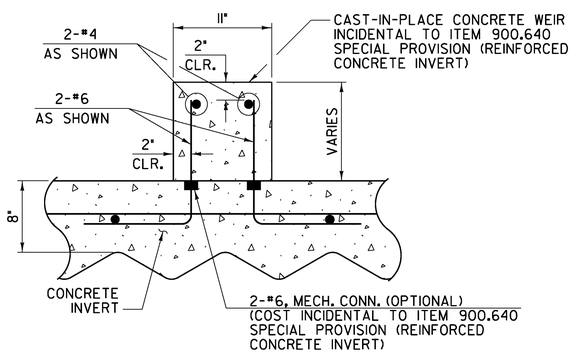
Stantec

PROJECT NAME:	WINHALL
PROJECT NUMBER:	STP CULV(22)
FILE NAME: ...\drawing\z08b198notes.dgn	PLOT DATE: 1/5/2011
PROJECT LEADER: G. BOGUE	DRAWN BY: J. SOTER
DESIGNED BY: T. KNIGHT	CHECKED BY: M. CHENETTE
PROJECT NOTES 2	SHEET 3 OF 21



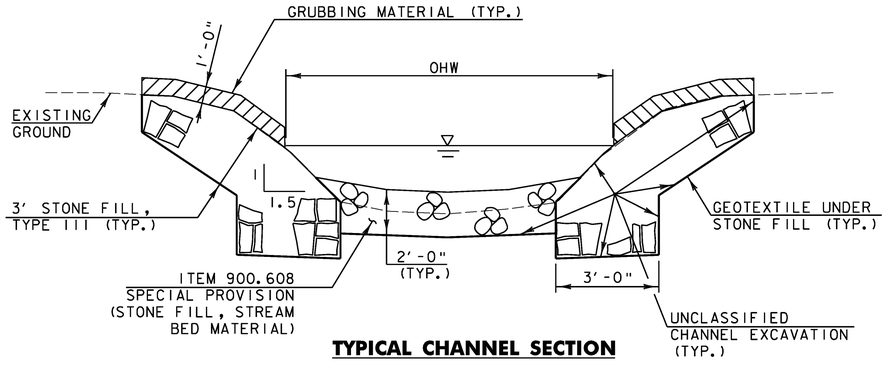
TYPICAL CULVERT REPAIR DETAIL

SCALE: 1" = 1'-0"



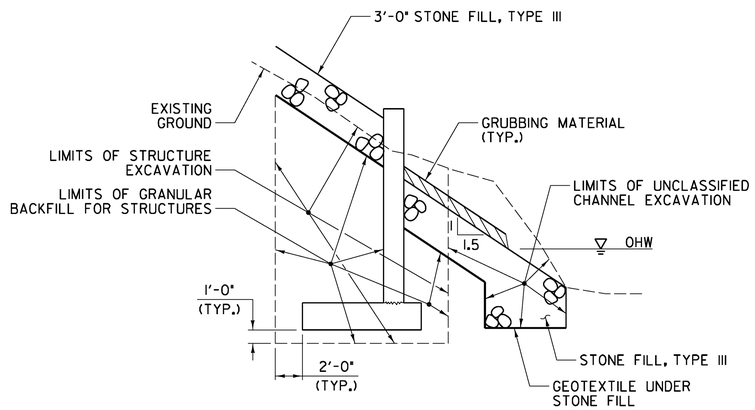
SECTION A-A

SCALE: 1½" = 1'-0"



TYPICAL CHANNEL SECTION

NOT TO SCALE



TYPICAL WINGWALL SECTION

NOT TO SCALE

Stantec

PROJECT NAME:	WINHALL
PROJECT NUMBER:	STP CULV(22)
FILE NAME: ...\drawing\z08b198typsecdets.dg	PLOT DATE: 1/6/2011
PROJECT LEADER: G. BOGUE	DRAWN BY: J. SOTER
DESIGNED BY: T. KNIGHT	CHECKED BY: M. CHENETTE
TYPICAL SECTIONS AND DETAILS	SHEET 4 OF 21

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES				TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
		250		250		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
		180		180		CY	STRUCTURE EXCAVATION	204.25				
		75		75		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
		22		22		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
		1200		1200		SF	TEMPORARY STEEL SHEET PILING	505.36				
		2460		2460		LB	REINFORCING STEEL	507.15				
		2		2		GAL	WATER REPELLENT, SILANE	514.10				
		1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
		30		30		CY	CONCRETE, CLASS D	541.31				
		230		230		CY	STONE FILL, TYPE III	613.12				
25				25		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20				
1				1		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50				
50				50		LF	REMOVE AND RESET GUARDRAIL	621.75				
63				63		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
40				40		HR	FLAGGERS	630.15				
			1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
1				1		LS	TRAFFIC CONTROL	641.10				
	250			250		SY	GEOTEXTILE UNDER STONE FILL	649.31				
	280			280		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
	10			10		LB	SEED	651.15				
	100			100		LB	FERTILIZER	651.18				
	1			1		TON	AGRICULTURAL LIMESTONE	651.20				
	1			1		TON	HAY MULCH	651.25				
	30			30		CY	TOPSOIL	651.35				
	230			230		SY	GRUBBING MATERIAL	651.40				
	1			1		LS	EPSC PLAN	652.10				
	80			80		HR	MONITORING EPSC PLAN	652.20				
	1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
	350			350		SY	TEMPORARY EROSION MATTING	653.20				
	150			150		SY	PERMANENT EROSION MATTING	653.21				
	10			10		CY	TEMPORARY STONE CHECK DAM, TYPE I	653.25				
	40			40		CY	VEHICLE TRACKING PAD	653.35				
	1			1		EACH	FILTER BAG	653.45				
	450			450		LF	BARRIER FENCE	653.50				
1				1		EACH	TEMPORARY TRAFFIC SIGNAL SYSTEM	678.40				
2				2		EACH	TEMPORARY DETECTOR	678.42				
		90		90		CY	SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL)	900.608				

Stantec

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08b198qty.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: T. KNIGHT
QUANTITY SHEET 1

PLOT DATE: 1/5/2011
DRAWN BY: J. SOTER
CHECKED BY: M. CHENETTE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

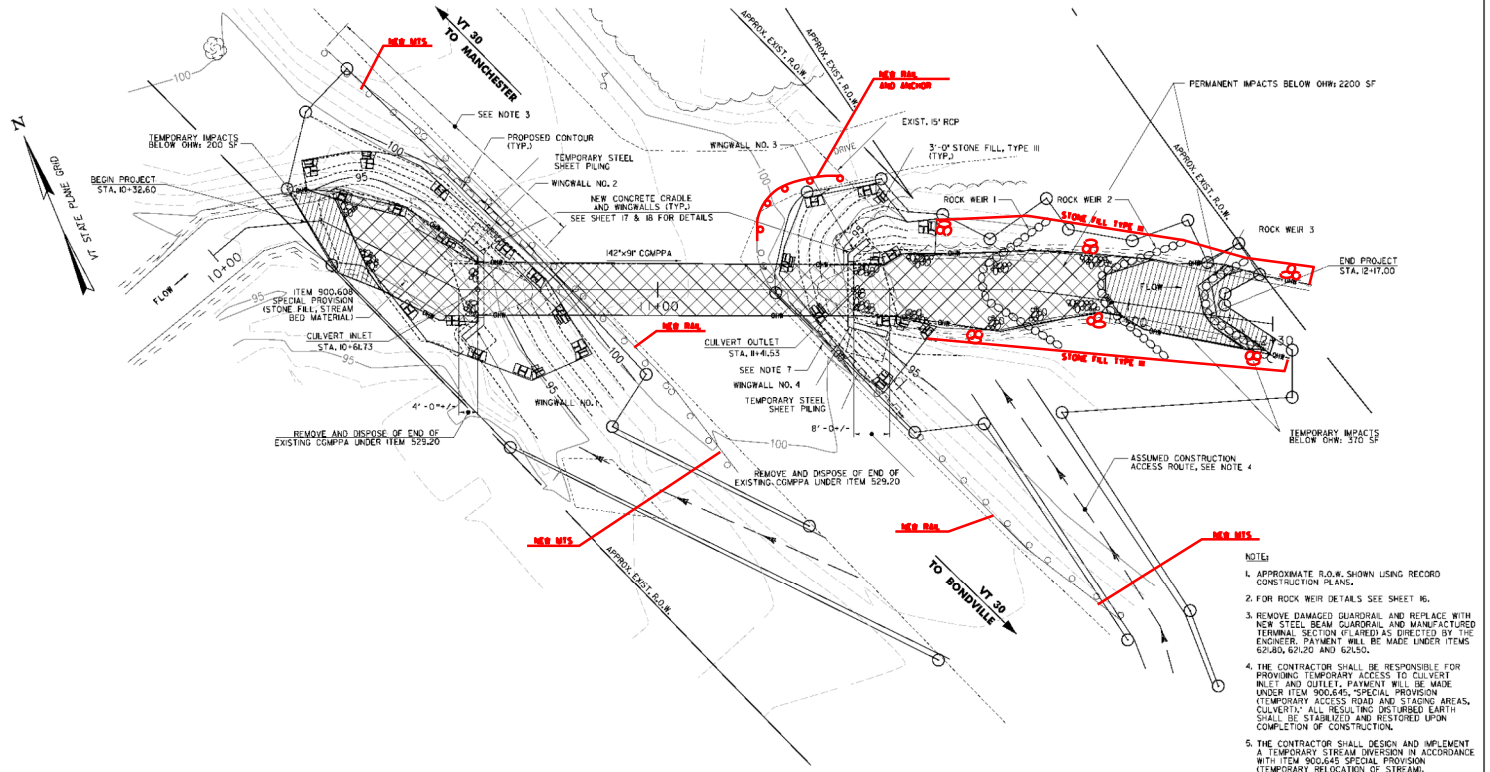
SUMMARY OF ESTIMATED QUANTITIES											TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
									3		3		EACH	SPECIAL PROVISION (ROCK WEIR)	900.620				
									80		80		LF	SPECIAL PROVISION (REINFORCED CONCRETE INVERT) (EXISTING 142" X 91" PIPE)	900.640				
									1		1		LS	SPECIAL PROVISION (TEMPORARY ACCESS ROAD AND STAGING AREAS, CULVERT)	900.645				
									1		1		LS	SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)	900.645				

Stantec

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08b198qty.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: T. KNIGHT
QUANTITY SHEET 2

PLOT DATE: 1/5/2011
DRAWN BY: J. SOTER
CHECKED BY: M. CHENETTE
SHEET 6 OF 21



NOTES:

1. APPROXIMATE R.O.W. SHOWN USING RECORD CONSTRUCTION PLANS.
2. FOR ROCK WEIR DETAILS SEE SHEET 16.
3. REMOVE DAMAGED GUARDRAIL AND REPLACE WITH NEW STEEL BEAM GUARDRAIL AND MANUFACTURED TERMINAL SECTION (FLARED) AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE MADE UNDER ITEMS 621.80, 621.20 AND 621.50.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ACCESS TO CULVERT INLET AND OUTLET. PAYMENT WILL BE MADE UNDER ITEM 900.645, "SPECIAL PROVISION (TEMPORARY ACCESS ROAD AND STAGING AREAS, CULVERTS)." ALL RESULTING DISTURBED EARTH SHALL BE STABILIZED AND RESTORED UPON COMPLETION OF CONSTRUCTION.
5. THE CONTRACTOR SHALL DESIGN AND IMPLEMENT A TEMPORARY STREAM DIVERSION IN ACCORDANCE WITH ITEM 900.645 SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM).
6. SEE SHEET 3 FOR ALIGNMENT PLAN.
7. REMOVE AND RESET GUARDRAIL AS NECESSARY TO INSTALL TEMPORARY SHEET PILING. PAYMENT WILL BE MADE UNDER ITEM 626.75, REMOVE AND RESET GUARDRAIL.

IMPACT SUMMARY

TEMPORARY IMPACTS BELOW OHW:	570 SF
PERMANENT IMPACTS BELOW OHW:	2200 SF
TOTAL IMPACTS:	2770 SF

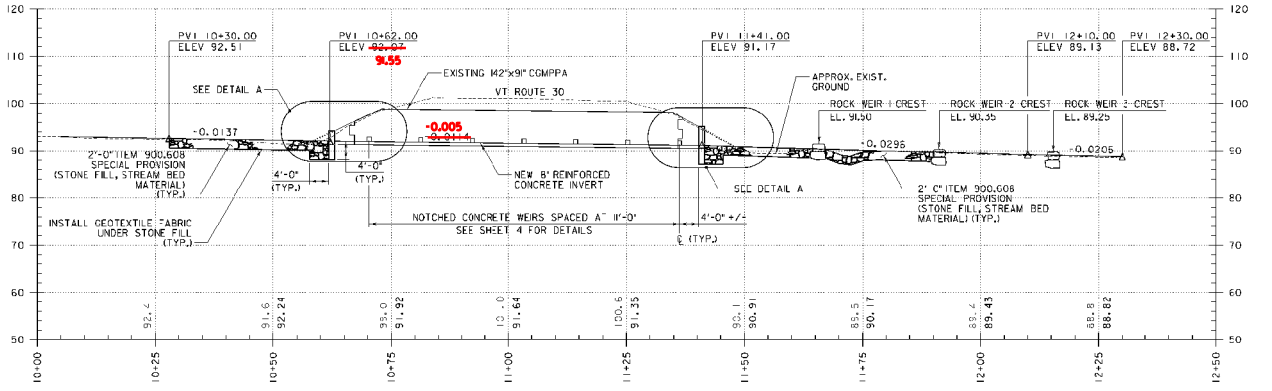
LEGEND

- OHW — ORDINARY HIGH WATER
- ITEM 900.608 SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL)
- 3'-0" STONE FILL, TYPE III
- LIMITS OF SOIL DISTURBANCE
- ITEM 505.36, TEMPORARY STEEL SHEET PILING

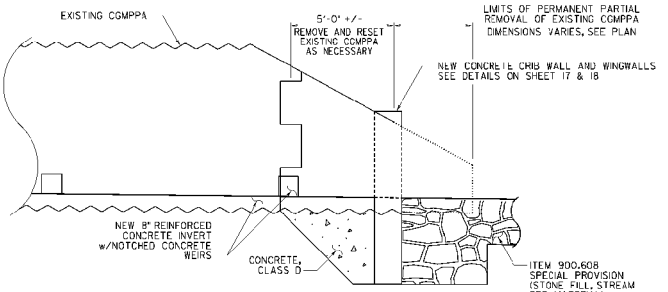
0 10 20
SCALE

Stantec

PROJECT NAME:	WINHALL
PROJECT NUMBER:	STP CULV(22)
FILE NAME:	...\drawing\z08bf98plan.dgn
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	T. KNIGHT
LAYOUT	
PLOT DATE:	1/20/2011
DRAWN BY:	J. SOTER
CHECKED BY:	M. CHENETTE
SHEET	7 OF 21



CULVERT PROFILE



DETAIL A
PARTIAL REMOVAL OF END SECTION
NOT TO SCALE

NOTE:
1. WINGWALL FOOTING NOT SHOWN.
2. DOWNSTREAM END SHOWN, UPSTREAM END SIMILAR.

Stantec

PROJECT NAME: WINHALL	
PROJECT NUMBER: STP CULV(22)	
FILE NAME: ...\drawing\z08bl98prof.dgn	PLOT DATE: 1/5/2011
PROJECT LEADER: C. BOGUE	DRAWN BY: J. SOTER
DESIGNED BY: T. KNIGHT	CHECKED BY: M. CHENETTE
CULVERT PROFILE	SHEET 8 OF 21

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THE PROJECT IS LOCATED IN THE TOWN OF WINHALL, ON VT ROUTE 30, 5.4 MILES SOUTH OF JUNCTION WITH VERMONT ROUTE 11 AND SHALL CONSIST OF INSTALLATION OF A CONCRETE INVERT WITHIN CULVERT 46 AND INSTALLATION OF CONCRETE HEADWALLS AND WINGWALLS, CHANNEL STABILIZATION, AND EMBANKMENT STABILIZATION.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.2 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE PROPERTY SURROUNDING THE PROJECT SITE IS WELL ESTABLISHED FOREST WITH MODERATE SLOPES. THE TOPOGRAPHY OF THE PROJECT AREA IS ROLLING AND MOSTLY OPEN AREA. THERE ARE TREES ON THE BANKS OF THE STREAM. VT ROUTE 30 AND A PAVED DRIVEWAY ARE WITHIN THE PROJECT SITE. THERE ARE RESIDENCES ON BOTH THE WEST AND EAST SIDE OF THE PROJECT WITH HOUSES LOCATED ON BOTH PROPERTIES. THERE ARE OVERHEAD AND UNDERGROUND UTILITIES THAT SHOULD NOT BE IMPACTED BY THE PROJECT.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE WATER SOURCE ON THE PROJECT SITE IS AN UNNAMED TRIBUTARY TO WINHALL RIVER. THE TRIBUTARY AREA AT THE CULVERT CROSSING IS 1.96 SQUARE MILES. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF FROM THE SURROUNDING SLOPES, ROADWAY DITCHES AND THE ROADWAY OVER TOP THE CULVERT. THE ADJACENT PROPERTIES ARE RESIDENTIAL WITH HOUSES UP THE SLOPES AND GRASSED. THERE IS A DRIVEWAY CULVERT ADJACENT TO THE OUTLET END OF THE CULVERT.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF SMALL TREES AND BRUSH ON THE BANKS OF THE STREAM. THE IMPACT WILL BE LIMITED TO THAT WHICH IS RELATED TO THE EXCAVATION REQUIRED FOR THE INSTALLATION OF HEADWALLS AND WINGWALLS, STONE FILL, TEMPORARY HAUL ROADS. UPON COMPLETION, THE CHANNEL AND ANY DISTURBED AREAS WITH SLOPES GREATER THAN 2:1 WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF BENNINGTON, VERMONT.

SOILS ON THE PROJECT SITE ARE PERU FINE SANDY LOAM WITH 3 TO 8 PERCENT SLOPES. THIS SOIL TYPE IS GENERALLY FOUND ON FOOTSLOPES OF HILLS AND MOUNTAINS. EROSION AND SEASONAL HIGH WATER TABLE IS A HAZARD FOR SOILS OF THIS TYPE.

K-FACTOR = .24.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: UNNAMED TRIBUTARY TO WINHALL RIVER
WETLANDS: A WETLAND AREA IS LOCATED APPROXIMATELY 40 FEET NORTHWEST OF THE PROJECT, BUT WILL NOT BE IMPACTED.

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

IN ADDITION, THE CONTRACTOR SHALL DESIGN AND IMPLEMENT A TEMPORARY STREAM DIVERSION, INCLUDING EPSC MEASURES IN ACCORDANCE WITH ITEM 900.645, SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM).

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED. BARRIER FENCE SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 STABILIZE CONSTRUCTION EXIT

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MNIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR'S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THERFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS WILL BE INSTALLED AS DIRECTED BY THE ENIGNEER, IF NEEDED.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

SEDIMENT CONTAINMENT BAGS (FILTER BAGS) FOR HEADWALL WORK SHALL BE USED AS NECESSARY AND AS DIRECTED BY THE ENGINEER. SEE SHEET 14 FOR DETAIL.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

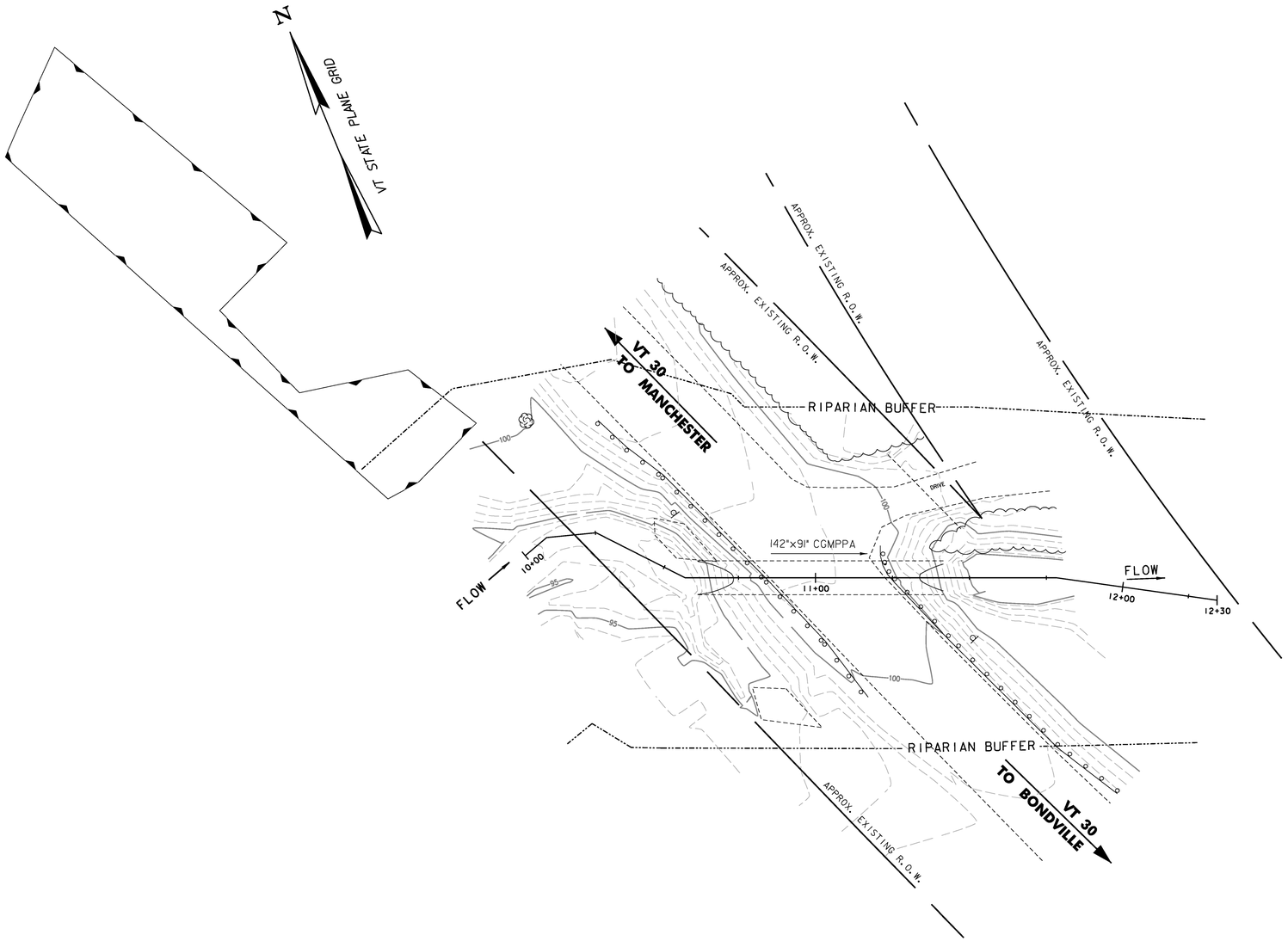
1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25-105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

EPSC NARRATIVE

PROJECT NAME:	WINHALL
PROJECT NUMBER:	STP CULV(22)
FILE NAME: ...\drawing\z08b198eronarr.dgn	PLOT DATE: 1/5/2011
PROJECT LEADER: G. BOGUE	DRAWN BY: J. SOTER
DESIGNED BY: T. KNIGHT	CHECKED BY: M. CHENETTE
EPSC NARRATIVE	SHEET 9 OF 21

Stantec



SOIL CLASSIFICATION

PERU FINE SANDY LOAM
3 TO 8 PERCENT SLOPES
K VALUE = 0.24

LEGEND

RIPARIAN BUFFER ZONE

WETLANDS AREA

0 20 40
SCALE

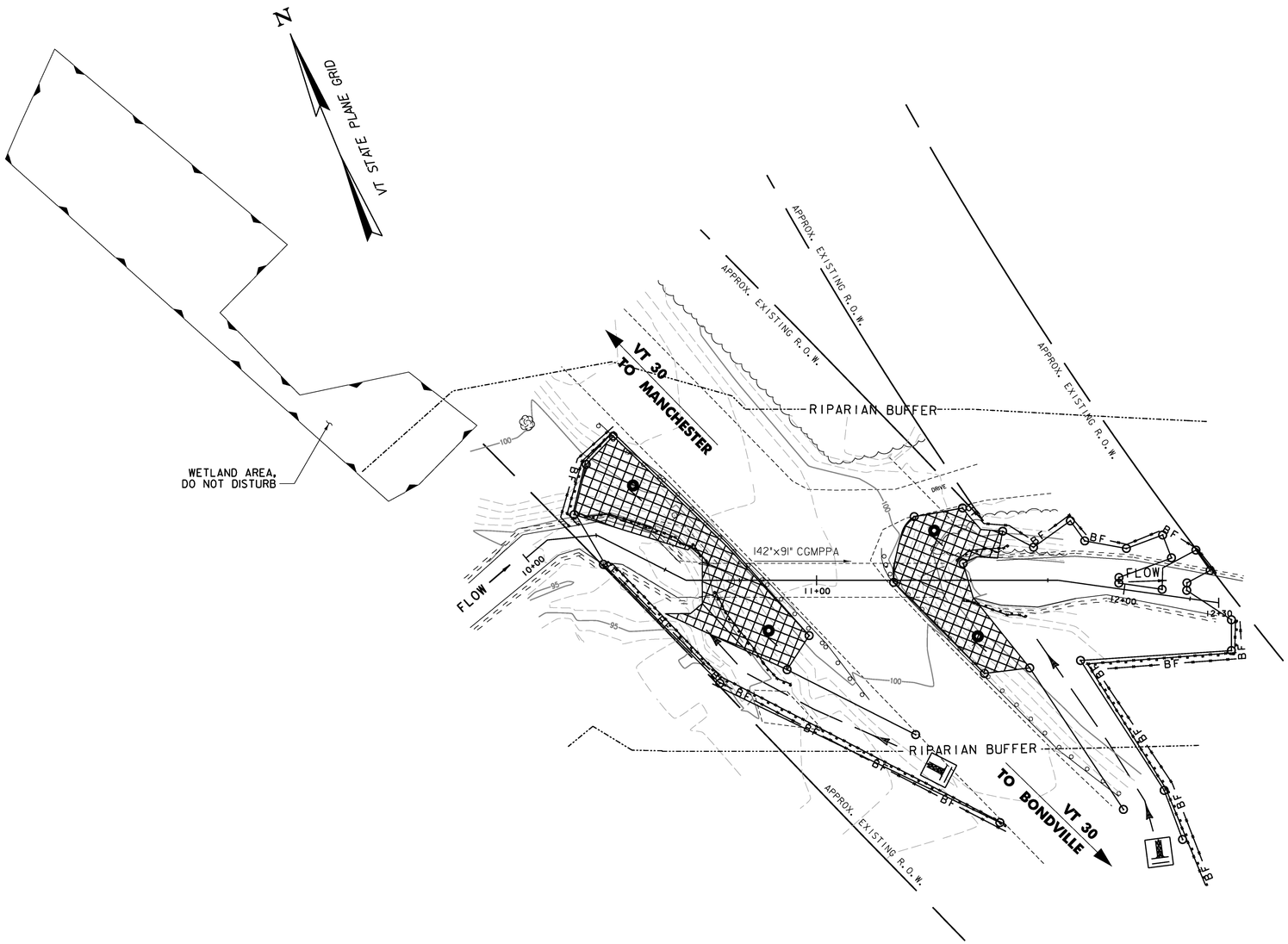
Stantec

EPSC EXISTING CONDITIONS SITE PLAN

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08b198ero.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: T. KNIGHT
EPSC EXISTING CONDITIONS SITE PLAN

PLOT DATE: 1/5/2011
DRAWN BY: E. ALLING
CHECKED BY: M. CHENETTE
SHEET 10 OF 21



NOTES

1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN. THE CONTRACTOR MUST SUBMIT A PROPOSED TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER OR ON SITE COORDINATOR.
4. REFER TO EPSC DETAIL SHEETS FOR ADDITIONAL DETAILS.
5. IN AREAS UNDER STONE FILL, GEOTEXTILE MAY BE SUITABLE FOR TEMPORARY SLOPE STABILIZATION.

LEGEND

- SILT FENCE, WOVEN WIRE REINFORCED
- LIMITS OF SOIL DISTURBANCE
- TEMPORARY EROSION MATTING (SEE NOTE 5)
- BF — BARRIER FENCE
- RIPARIAN BUFFER ZONE
- ASSUMED CONSTRUCTION ACCESS ROUTE
- STABILIZED CONSTRUCTION ENTRANCE
- WETLAND AREA

0 20 40
SCALE

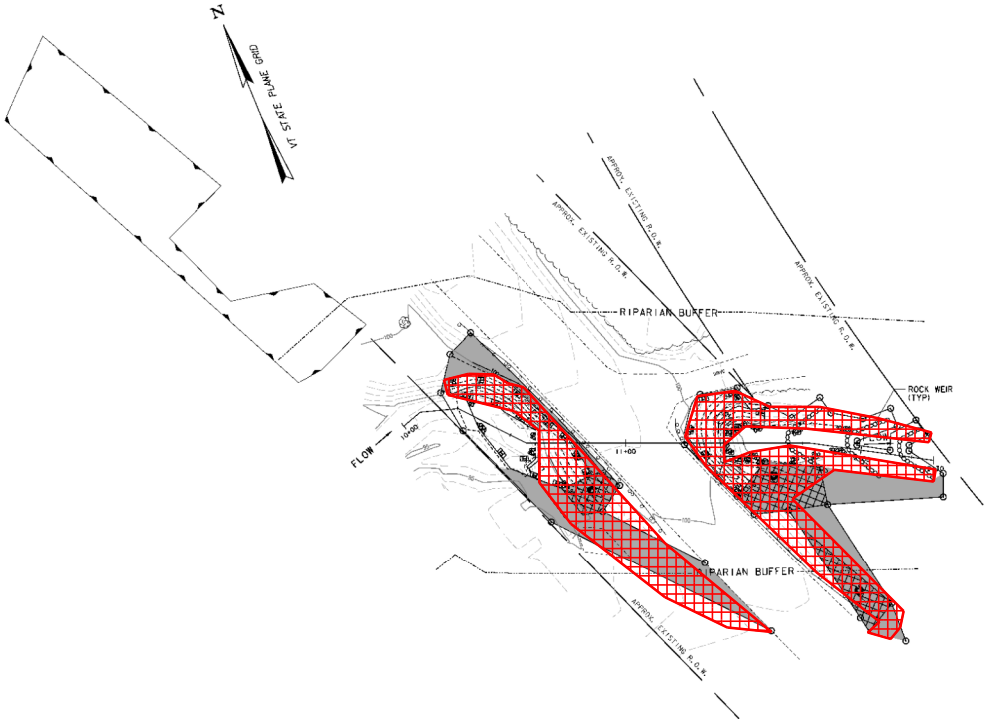
Stantec

EPSC CONSTRUCTION SITE PLAN

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08b198ero.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: T. KNIGHT
EPSC CONSTRUCTION SITE PLAN

PLOT DATE: 1/5/2011
DRAWN BY: E. ALLING
CHECKED BY: M. CHENETTE
SHEET 11 OF 21



TEMP. EROSION MATTING, SEED, FERT., LIME

LEGEND

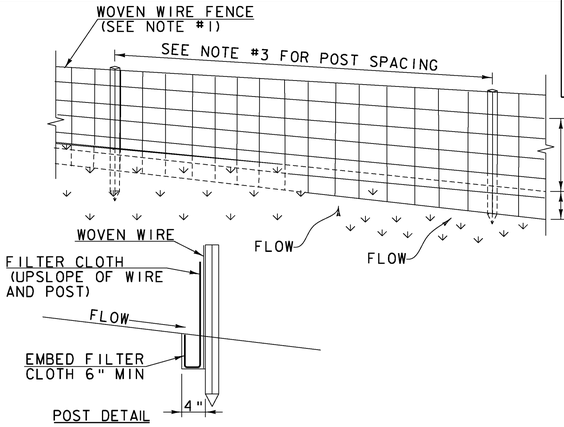
- LIMITS OF SOIL DISTURBANCE
- DISTURBED AREAS REQUIRING RE-VEGETATION
- ~~PERMANENT EROSION MATTING~~
- ITEM 900.608 SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL)
- 3'-0" STONE FILL, TYPE III
- RIPARIAN BUFFER ZONE

EPSC FINAL CONDITIONS SITE PLAN

0 20 40
SCALE

Stantec

PROJECT NAME:	WINHALL
PROJECT NUMBER:	STP CULV(22)
FILE NAME: ...\drawing\z088f98ero.dgn	PLOT DATE: 1/5/2011
PROJECT LEADER:	G. BOQUE
DESIGNED BY:	T. KNIGHT
DRAWN BY:	E. ALLING
CHECKED BY:	M. CHENETTE
EPSC FINAL CONDITIONS SITE PLAN	SHEET 12 OF 21



SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

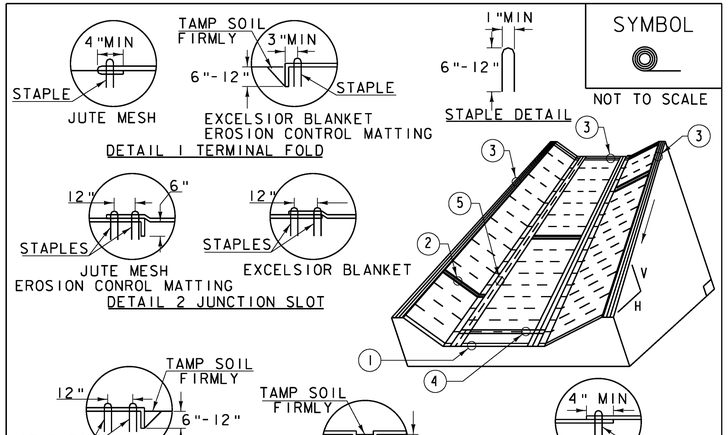
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

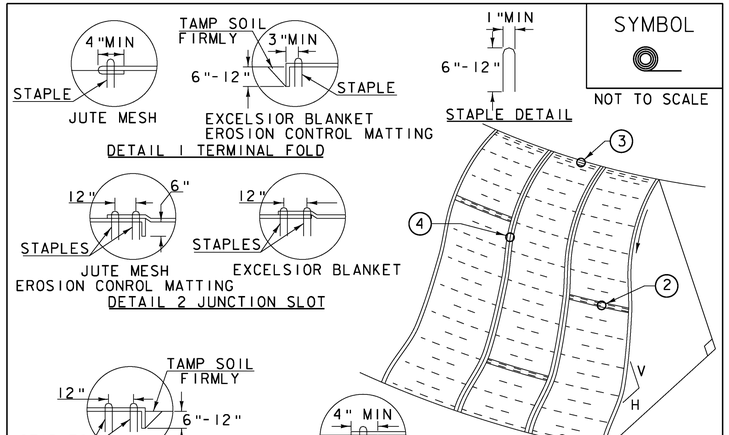
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS	
MARCH 8, 2007	JMF
APRIL 16, 2007	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

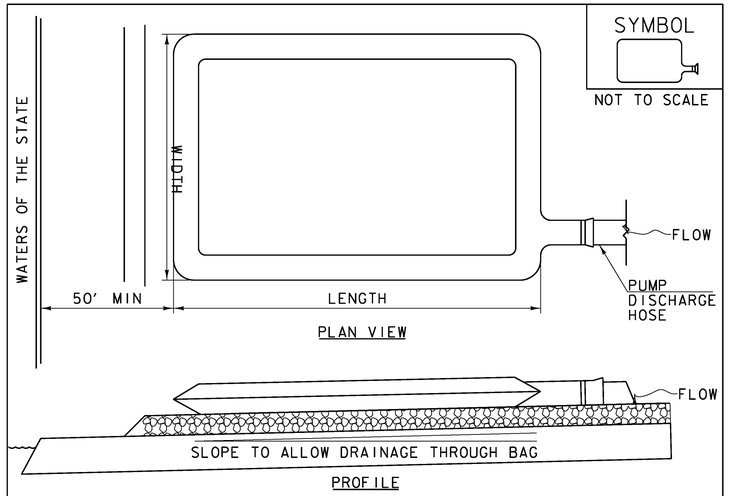
REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

EPSC DETAIL SHEET 1

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08b198epsc detls.dgr PLOT DATE: 1/5/2011
PROJECT LEADER: G. BOGUE DRAWN BY: J. SOTER
DESIGNED BY: T. KNIGHT CHECKED BY: M. CHENETTE
EPSC DETAIL SHEET 1 SHEET 13 OF 21

Stantec



CONSTRUCTION SPECIFICATIONS

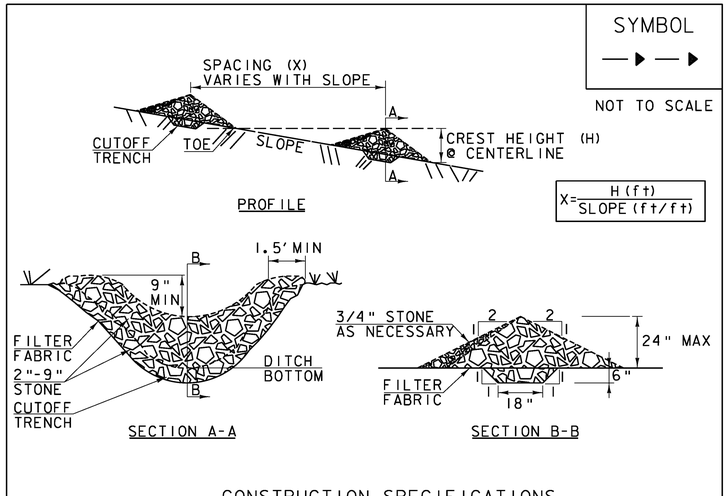
1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

FILTER BAG

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

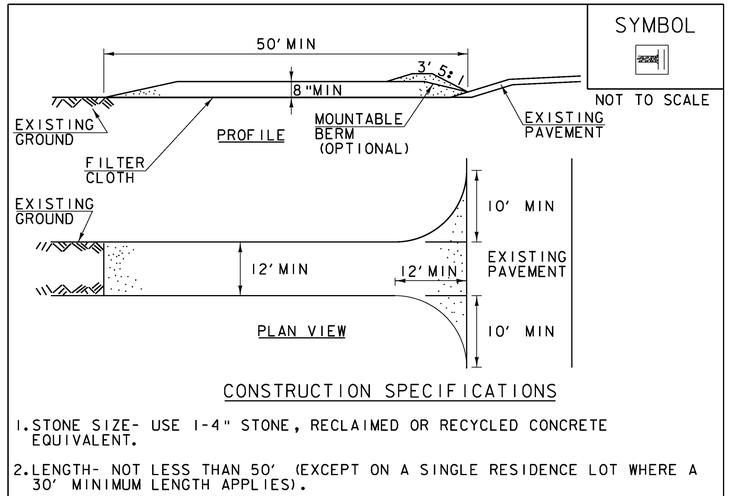
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

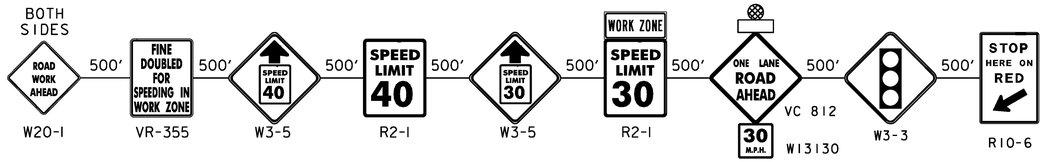
REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

EPSC DETAIL SHEET 2

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08bl98epsc detls.dgr PLOT DATE: 1/5/2011
PROJECT LEADER: G. BOGUE DRAWN BY: J. SOTER
DESIGNED BY: T. KNIGHT CHECKED BY: M. CHENETTE
EPSC DETAIL SHEET 2 SHEET 14 OF 21

Stantec

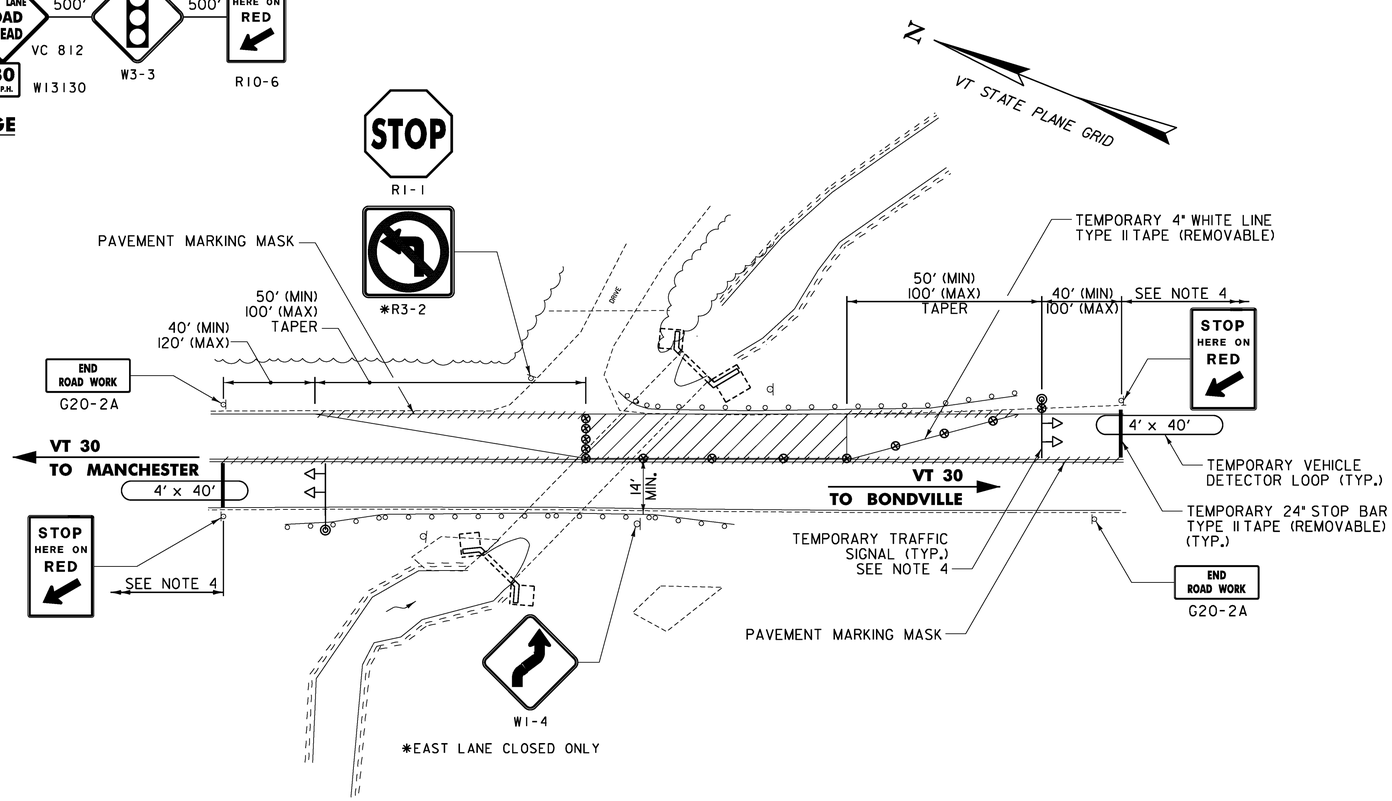


TRAFFIC CONTROL APPROACH SIGN PACKAGE (VT ROUTE 30)

1. SEE TRAFFIC CONTROL NOTES ON SHEET 2 & 3 FOR ADDITIONAL INFORMATION.
2. REFER TO STANDARD E-100 FOR CONSTRUCTION APPROACH SIGNS CRITERIA.
3. ALL SIGNS ARE TO BE LOCATED ON THE RIGHT SIDE OF THE ROAD APPROACHING THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED.
4. REFER TO "TRAFFIC CONTROL APPROACH SIGN PACKAGE (VT ROUTE 30)" ON THIS SHEET FOR APPROACH SIGNS NOT SHOWN.
5. CHANNELIZING DEVICE SPACING:
   TANGENT SECTIONS: 60 FT.
   TAPER SECTIONS: 30 FT.
6. THE TRAFFIC CONTROL PLAN IS SCHEMATIC ONLY AND SHOULD BE USED AS A REFERENCE. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT SITE SPECIFIC TRAFFIC CONTROL PLAN FOR ONE LANE CLOSURES PER THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL ALLOW THE RESIDENT ENGINEER 14 CALENDAR DAYS TO REVIEW AND ACCEPT THE PROPOSED PLANS BEFORE THEY ARE TO BE IMPLEMENTED. NO WORK SHALL COMMENCE UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED. DEVELOPMENT AND IMPLEMENTATION OF TRAFFIC CONTROL PLAN SHALL BE PAID UNDER ITEM 641.10, "TRAFFIC CONTROL".
7. ALL SIGNS, PAVEMENT MARKINGS, BARRELS, BARRICADES, AND OTHER INCIDENTALS REQUIRED FOR TRAFFIC CONTROL SHALL BE PAID FOR UNDER ITEM 641.10, "TRAFFIC CONTROL". TEMPORARY PAVEMENT MARKINGS SHALL MEET THE REQUIREMENTS OF SECTION 646. IN ACCORDANCE WITH SUBSECTION 678.14, TRAFFIC CONTROL DEVICES AND PAVEMENT MARKINGS RELATED TO THE TEMPORARY TRAFFIC SIGNAL SYSTEM ARE PAID UNDER THAT ITEM.
8. ACCESS TO ALL EXISTING SIDE ROADS, DRIVES, AND PARKING AREAS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

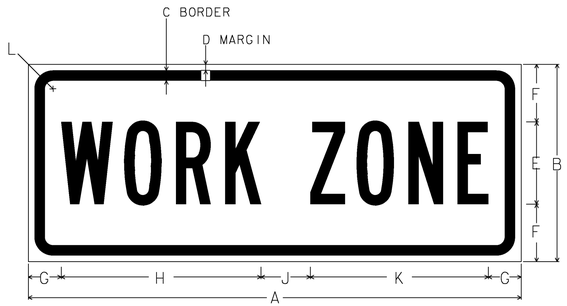
LEGEND

- ⊗ CHANNELIZING DEVICE
- TEMPORARY TRAFFIC SIGNAL
- TEMPORARY CONSTRUCTION SIGN
- FLASHING BEACON
- WORK ZONE



TRAFFIC CONTROL PLAN, EAST LANE CLOSED (WEST LANE CLOSURE SIMILAR)

NOT TO SCALE



DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L
MIN.	24	8	0.375	0.375	4B	2	2	9.5	2	8.5	1.5
SPEC.	30	12	0.375	0.625	5B	3.5	2	12.2	3	8.5	1.5
EXPWY.	36	12	0.50	0.75	6B	3	2.5	14.8	3	8.5	1.875
FWY.	48	18	0.625	0.875	8B	4	3.5	19.1	4	8.5	2.25

NOTE: THE SIGN IS TO HAVE A BLACK LEGEND ON AN ORANGE RETROREFLECTIVE BACKGROUND THAT IS ASTM TYPE 7, 8 OR 9. THE TEXT IS TO BE "B-TYPE".

WORK ZONE SIGN DETAIL

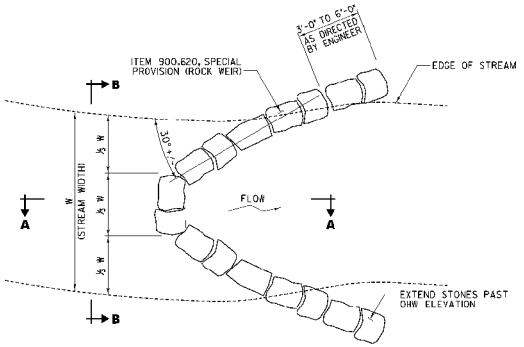
NOT TO SCALE

Stantec

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08b198tcs.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: T. KNIGHT
TRAFFIC CONTROL SHEET

PLOT DATE: 1/6/2011
DRAWN BY: J. SOTER
CHECKED BY: M. CHENETTE
SHEET 15 OF 21

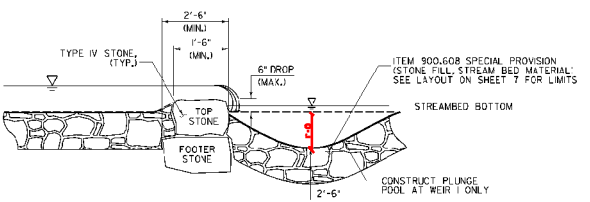


NOTES:

1. STONES USED FOR THE ROCK WEIRS SHALL BE TYPE IV STONE.
2. DUE TO VARIATIONS IN THE STREAM GRADE, EXACT LOCATION OF THE ROCK WEIRS SHALL BE DETERMINED IN THE FIELD. THE INTENTION IS TO PROVIDE A MAXIMUM OF 6" GRADE CHANGE EACH ROCK WEIR.
3. ROCK WEIRS SHALL BE PAID FOR AS ITEM 900.620, SPECIAL PROVISION (ROCK WEIR).

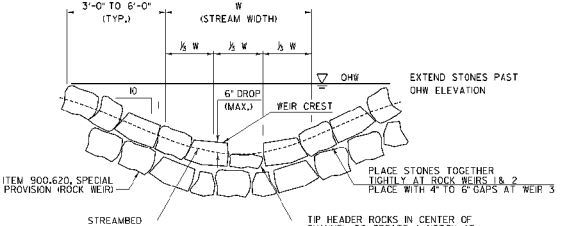
ROCK WEIR DETAIL

NOT TO SCALE



SECTION A–A

NOT TO SCALE

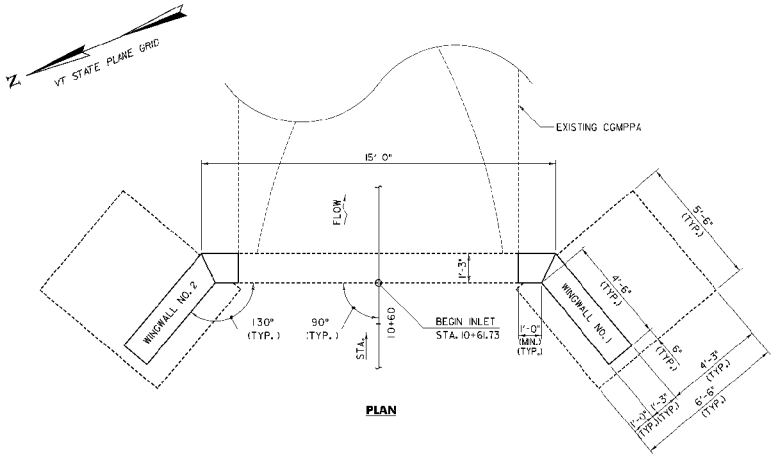


SECTION B–B

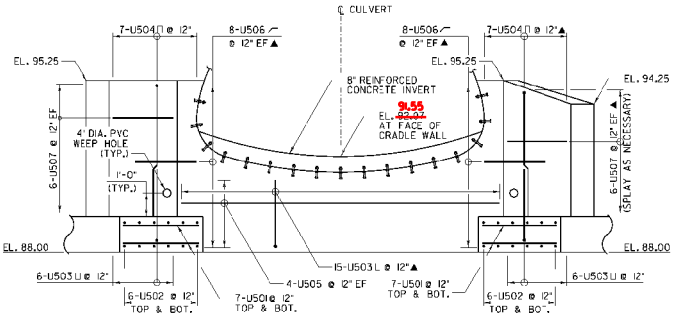
NOT TO SCALE

Stantec

PROJECT NAME: WINHALL	
PROJECT NUMBER: STP CULV(22)	
FILE NAME: ...\drawing\z08b198rwdets.dgn	PLOT DATE: 1/5/2011
PROJECT LEADER: C. BOGUE	DRAWN BY: J. SOTER
DESIGNED BY: T. KNIGHT	CHECKED BY: M. CHENETTE
ROCK WEIR DETAILS	SHEET 16 OF 21



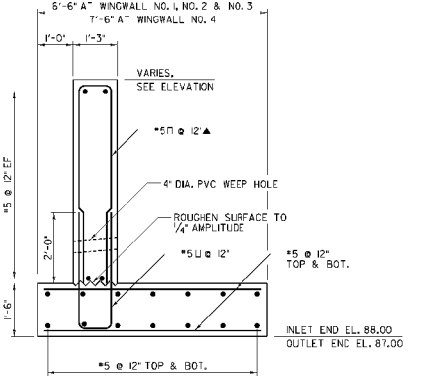
PLAN



ELEVATION

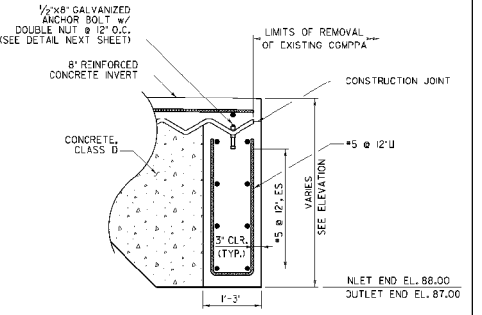
INLET CRADLE WALL

SCALE: ½" = 1'-0"



TYPICAL WINGWALL SECTION

NOT TO SCALE



CRADLE WALL SECTION

SCALE: 1" = 1'-0"

1 9 6 3 0 2

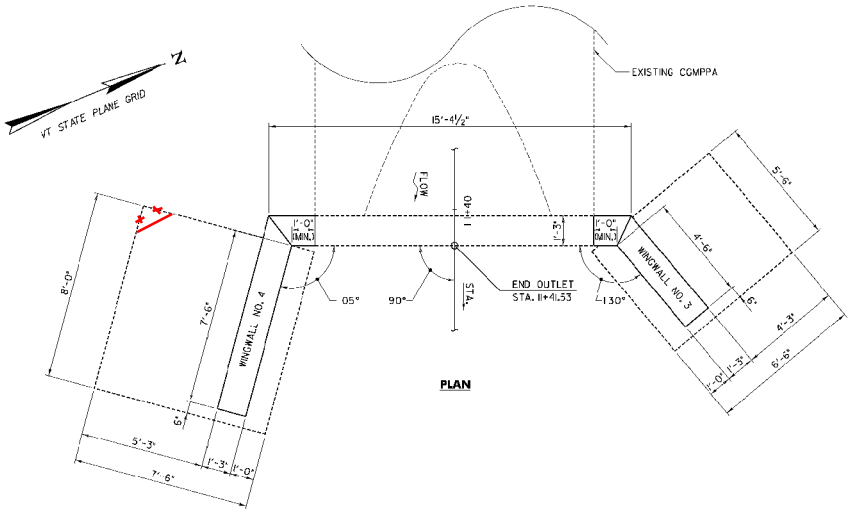
LEGEND

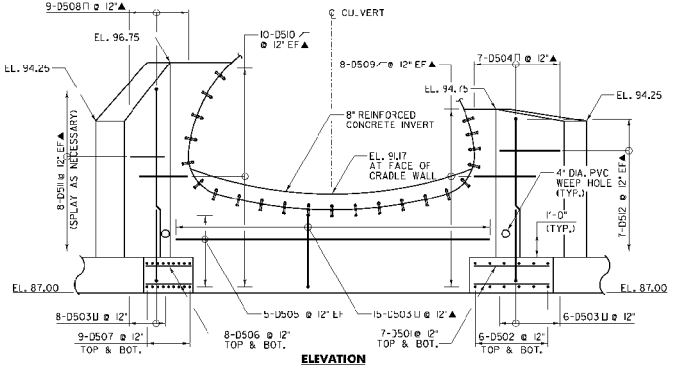
EF = EACH FACE

▲ = CUT TO FIT IN FIELD

Stantec

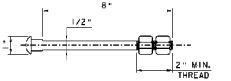
PROJECT NAME:	WINHALL
PROJECT NUMBER:	STP CULV(22)
FILE NAME:	...\drawing\z080198cradledets.dgn
PLOT DATE:	1/5/2011
PROJECT LEADER:	C. BOGUE
DRAWN BY:	J. SOTER
DESIGNED BY:	T. KNIGHT
CHECKED BY:	M. CHENETTE
CRADLE WALL DETAILS 1	SHEET 17 OF 21





OUTLET CRADLE WALL

SCALE: ½" = 1'-0"



GALVANIZED ANCHOR BOLT

NTS

NOTE:

ANCHOR BOLTS SHALL BE ½" DIA. x 8" WITH TWO HEXAGONAL NUTS. MATERIALS SHALL MEET THE REQUIREMENTS OF SUBSECTION 714.04 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232M/M 232. COST SHALL BE INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (REINFORCED CONCRETE INVERT).

LEGEND

EF = EACH FACE

▲ = CUT TO FIT IN FIELD

Stantec

PROJECT NAME: WINHALL

PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08bl98cradledets.dgn PLOT DATE: 1/5/2011

PROJECT LEADER: C. BOSJE — DRAWN BY: J. SOTER

DESIGNED BY: T. KNIGHT — CHECKED BY: M. CHENETTE

CRADLE WALL DETAILS 2 — SHEET 18 OF 21

STATE OF VERMONT
AGENCY OF TRANSPORTATION

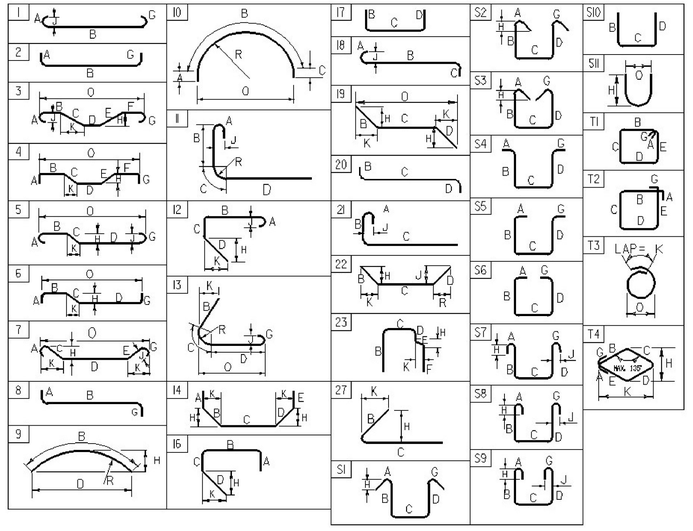
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
✳	29	5	5'- 0"	U501	STR												
	24	5	6'- 0"	U502	STR												
▲	27	5	7'- 3"	U503	17		3'- 3"	0'- 9"	3'- 3"								
▲	14	5	11'- 9"	U504	17		5'- 6"	0'- 9"	5'- 6"								
	8	5	14'- 6"	U505	STR												
▲	32	5	4'- 0"	U506	22		2'- 0"	2'- 0"					1'- 6"		1'- 3"		
▲	24	5	4'- 10"	U507	STR												
	14	5	5'- 0"	D501	STR												
	12	5	6'- 0"	D502	STR												
▲	29	5	7'- 3"	D503	17		3'- 3"	0'- 9"	3'- 3"								
▲	7	5	12'- 9"	D504	17		6'- 0"	0'- 9"	6'- 0"								
	10	5	15'- 1"	D505	STR												
	16	5	7'- 6"	D506	STR												
	18	5	7'- 0"	D507	STR												
▲	9	5	16'- 9"	D508	17		8'- 0"	0'- 9"	8'- 0"								
▲	16	5	4'- 0"	D509	22		2'- 0"	2'- 0"					1'- 6"		1'- 3"		
▲	20	5	4'- 9"	D510	22		2'- 9"	2'- 0"					1'- 11"		0'- 6"		
▲	16	5	7'- 11"	D511	STR												
✳ ▲	15	5	4'- 10"	D512	STR												

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



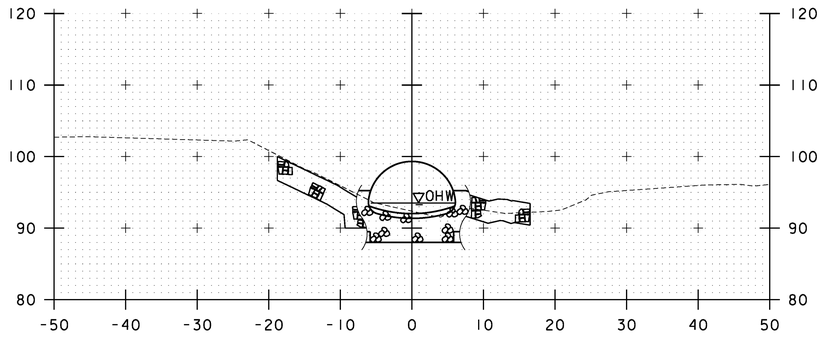
ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES ^{2}	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

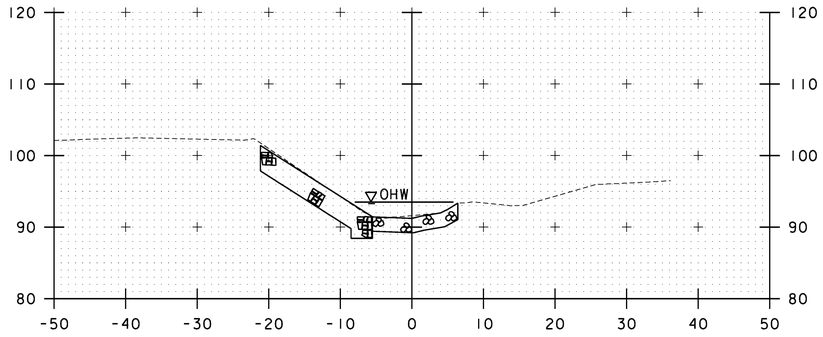
PROJECT NAME: **WINHALL**
PROJECT NUMBER: **STP CULV(22)**

FILE NAME:
PROJECT MANAGER: **G. BOGUE**
DESIGNED BY: **T. KNIGHT**
REINFORCING STEEL SCHEDULE

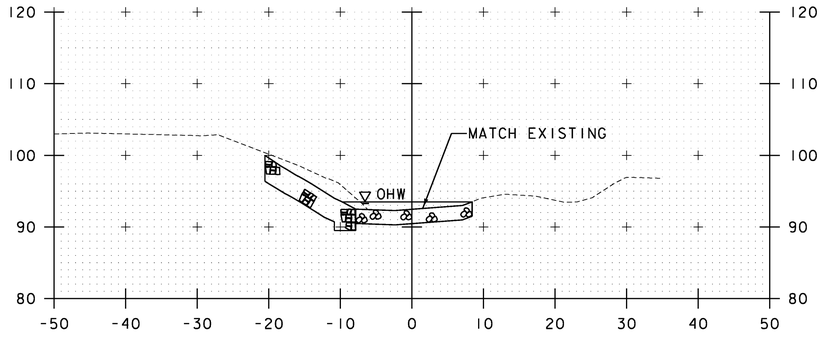
PLOT DATE: **7/1/2010**
DRAWN BY: **J. SOTER**
CHECKED BY: **M. CHENETTE**
SHEET 19 OF 21



10+61



10+50



10+30

LEGEND

3'-0" STONE FILL, TYPE III

ITEM 900.608 SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL)

NOTE: ROCK WEIRS NOT SHOWN FOR CLARITY.

0 10 20

SCALE

STA. 10+30 TO STA. 10+61

Stantec

PROJECT NAME: WINHALL

PROJECT NUMBER: STP CULV(22)

FILE NAME: ...\drawing\z08b198xs.dgn

PROJECT LEADER: G. BOGUE

DESIGNED BY: T. KNIGHT

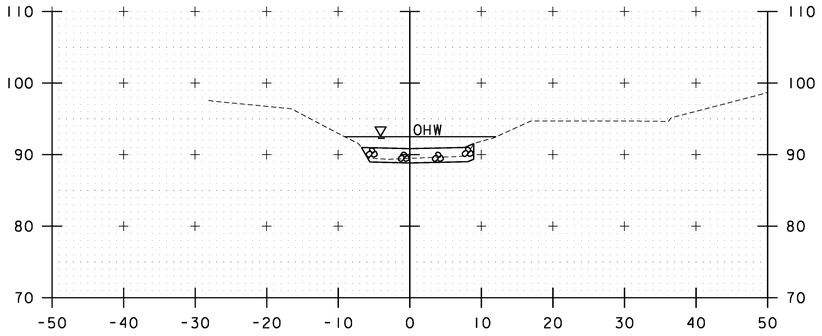
PLOT DATE: 1/5/2011

DRAWN BY: J. SOTER

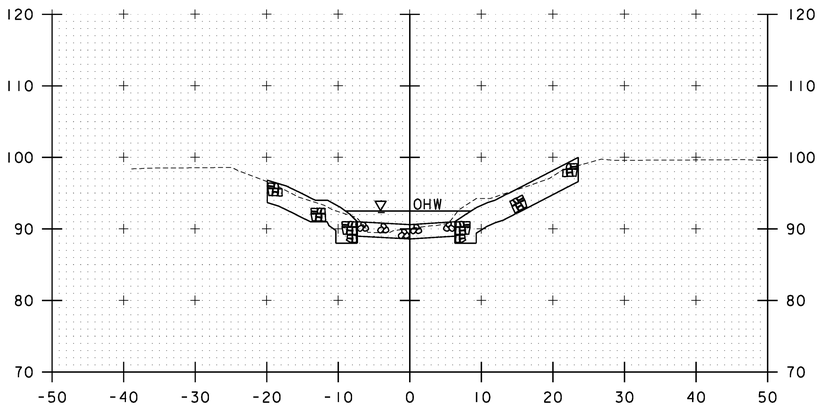
CHECKED BY: M. CHENETTE

CHANNEL CROSS SECTIONS 1

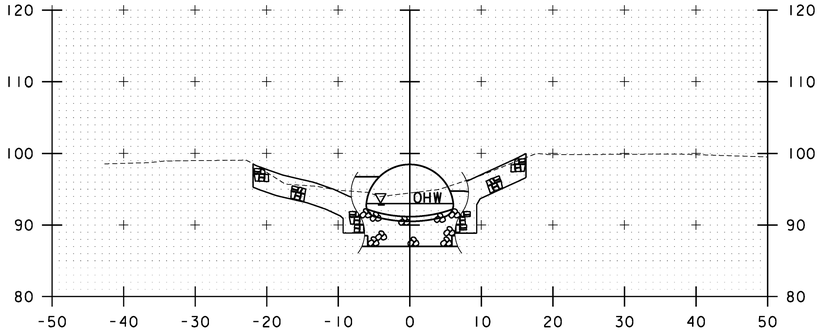
SHEET 20 OF 21



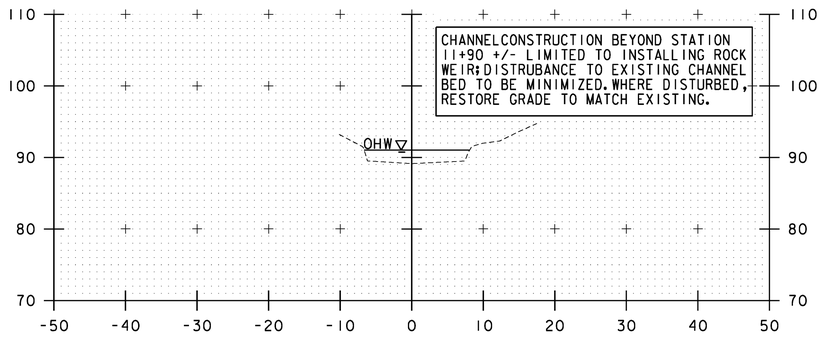
11+75



11+50

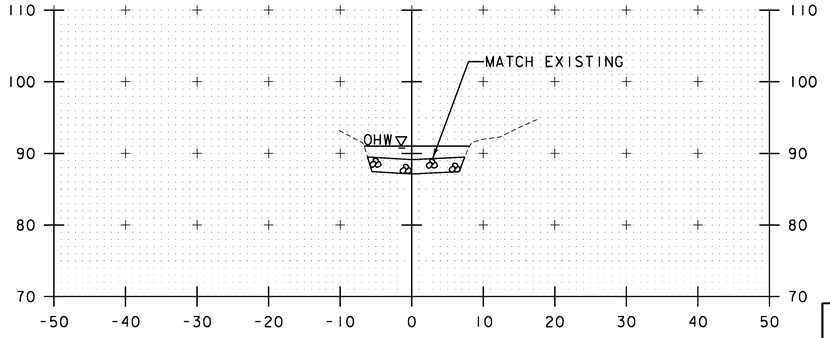


11+41



12+25

DUE TO LIMITED SURVEY, CROSS-SECTION AT 12+25 IS APPROXIMATE ONLY.



11+90+/-

STA. 11+41 TO STA. 11+90+/-

LEGEND

- 3'-0" STONE FILL, TYPE III
- ITEM 900.608 SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL)

NOTE: ROCK WEIRS NOT SHOWN FOR CLARITY.

0 10 20

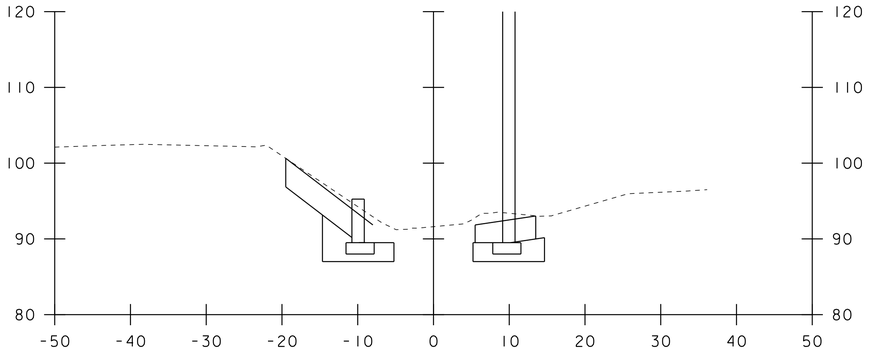
SCALE

Stantec

PROJECT NAME: WINHALL
PROJECT NUMBER: STP CULV(22)

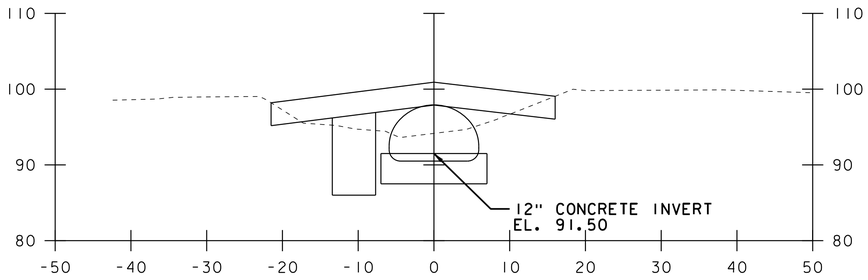
FILE NAME: ...\drawing\z08b198xs.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: T. KNIGHT
CHANNEL CROSS SECTIONS 2

PLOT DATE: 1/5/2011
DRAWN BY: J. SOTER
CHECKED BY: M. CHENETTE
SHEET 21 OF 21



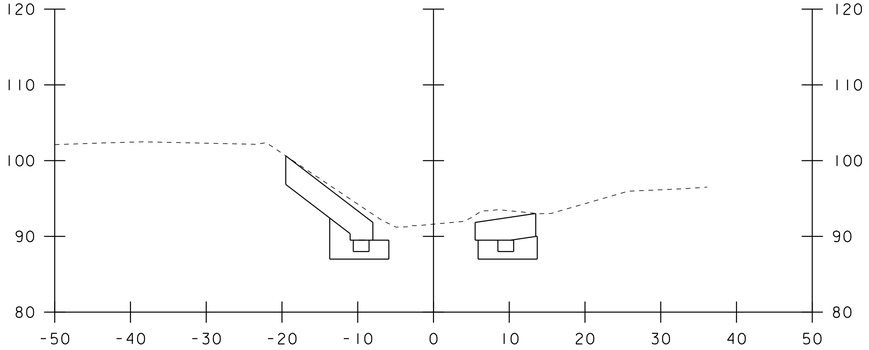
INLET
10+50

USED FOR
10+59.09



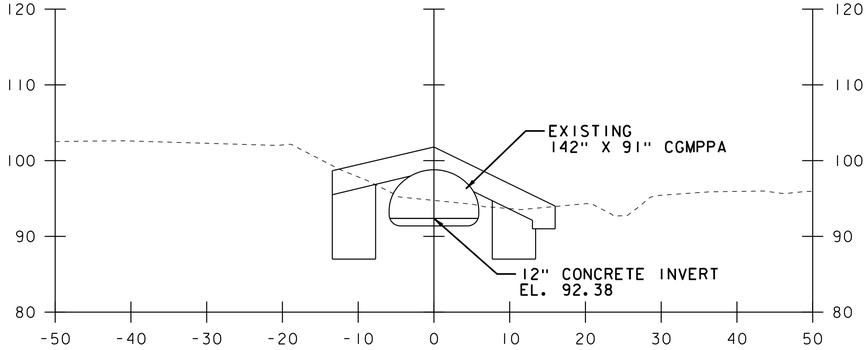
OUTLET
11+42

used for
11+37.61



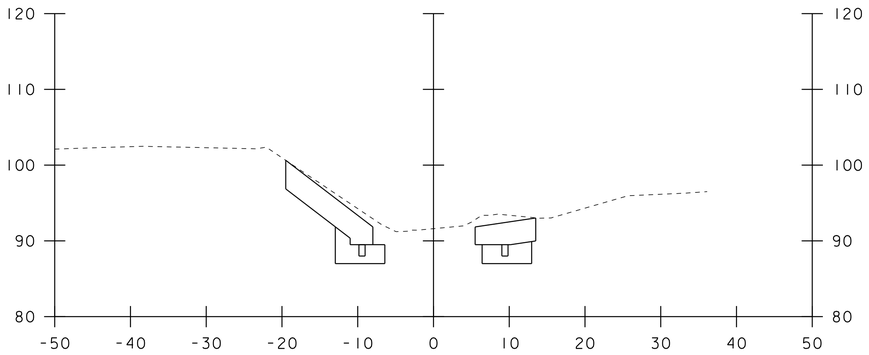
INLET
10+50

USED FOR
10+58.28



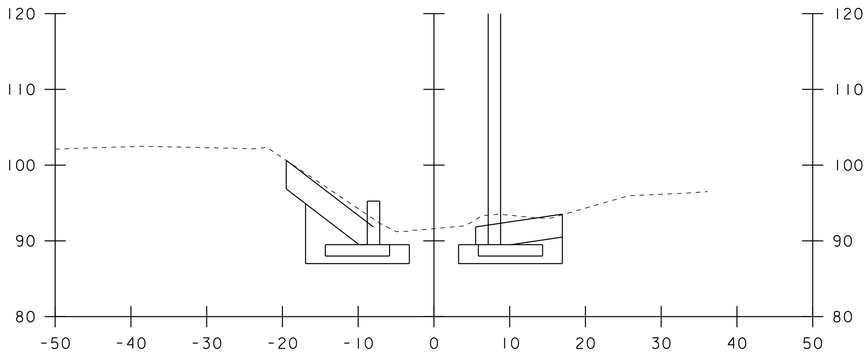
INLET
10+65

USED FOR
10+65.65



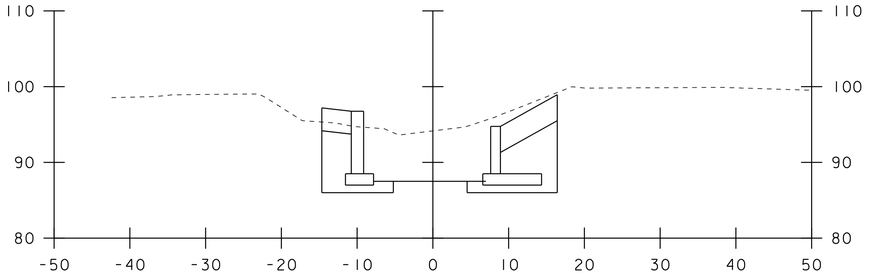
INLET
10+50

USED FOR
10+57.66

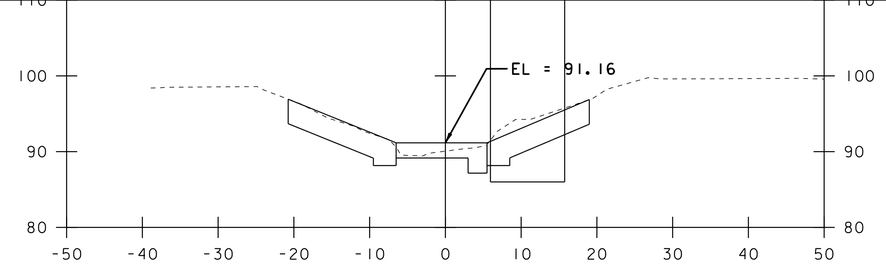


INLET
10+50

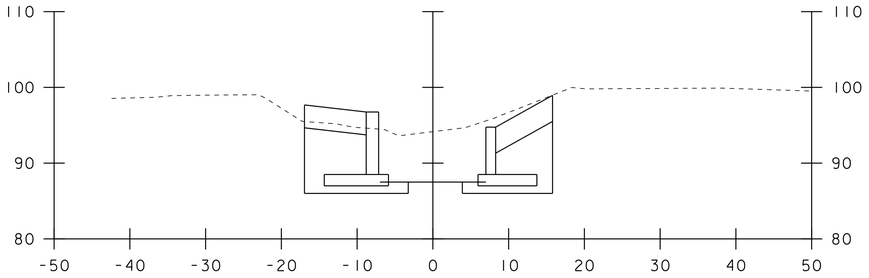
USED FOR
10+61.44



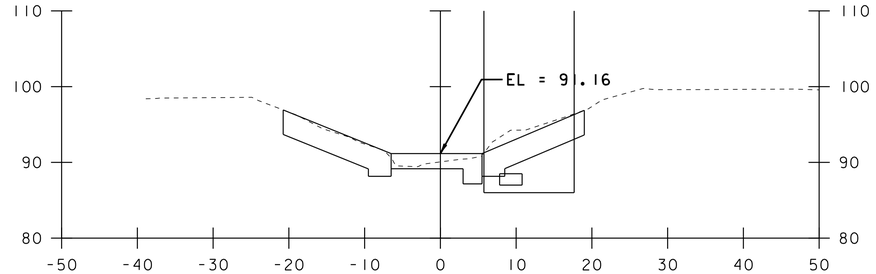
OUTLET
11+42 used for
11+44.98



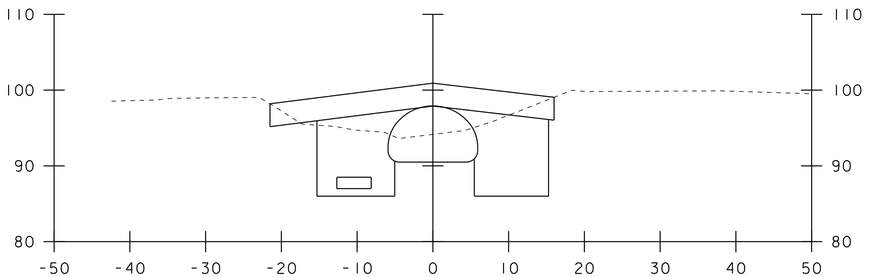
OUTLET
11+50 USED FOR
11+49.52



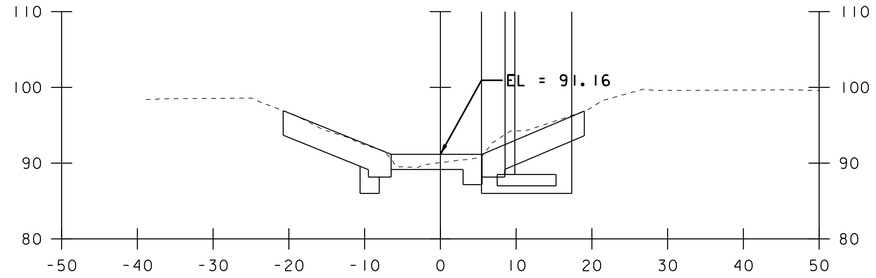
OUTLET
11+42 used for
11+41.82



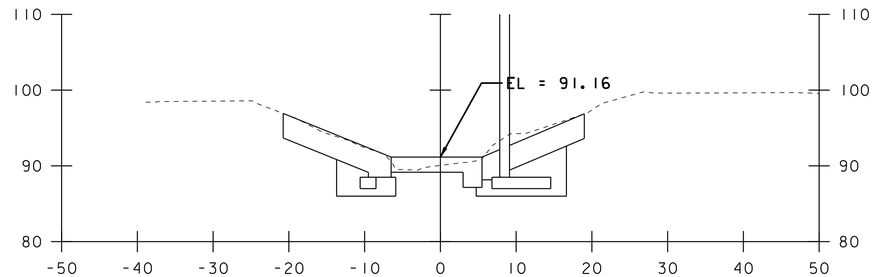
OUTLET
11+50 USED FOR
11+48.77



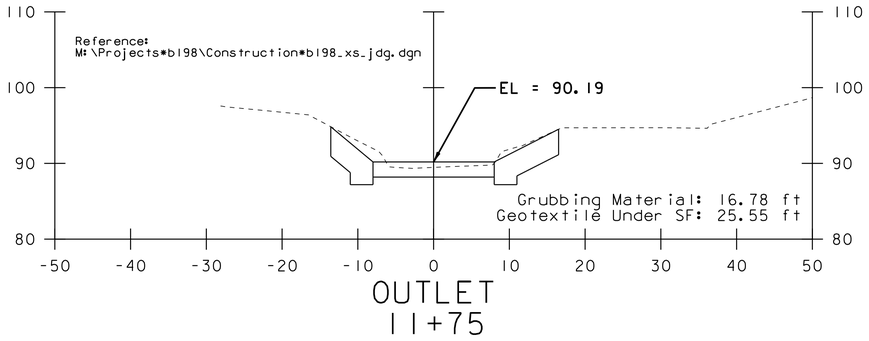
OUTLET
11+42 used for
11+39.85



OUTLET
11+50 USED FOR
11+47.58

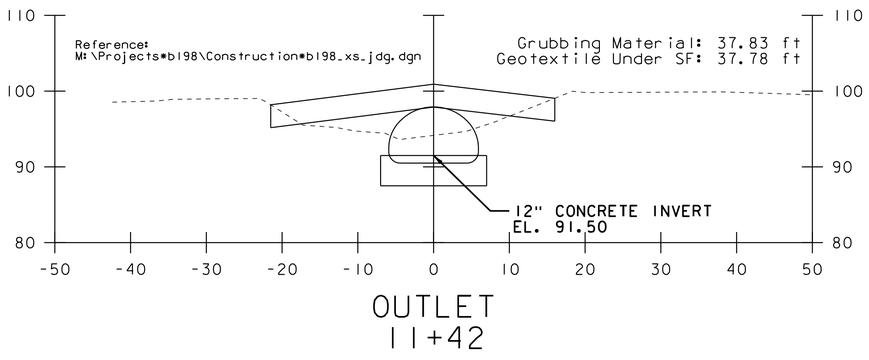


OUTLET
11+50 USED FOR
11+46.00

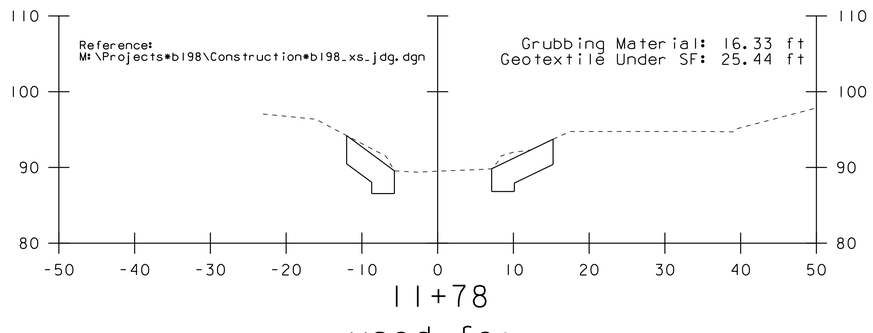


OUTLET
11+75

OUTLET
11+50

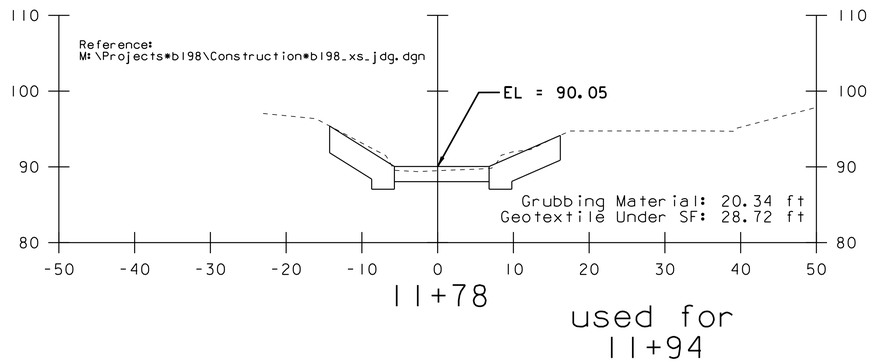


OUTLET
11+42



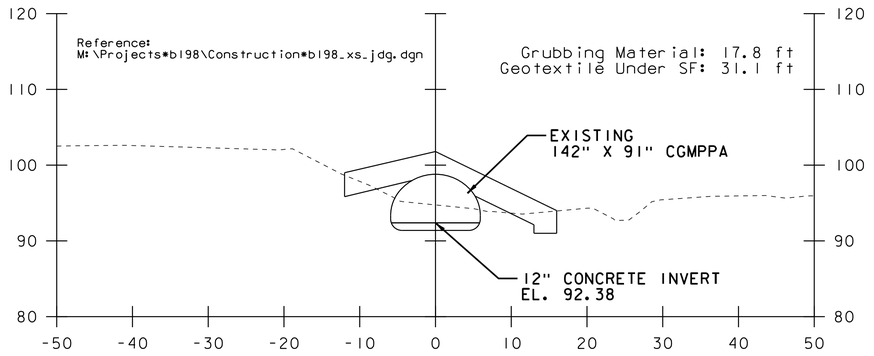
11+78
used for
12+30

CONTINUE STONE FILL TYPE III
TO STA. 11+90.00, MATCH EXISTING



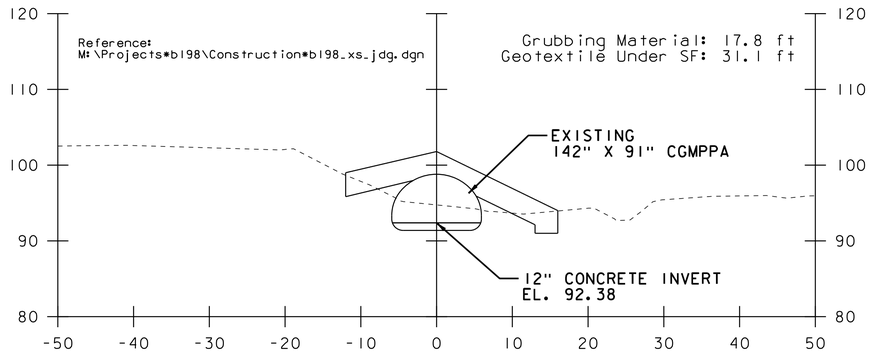
11+78
used for
11+94

STA. 11+42 TO STA. 11+78

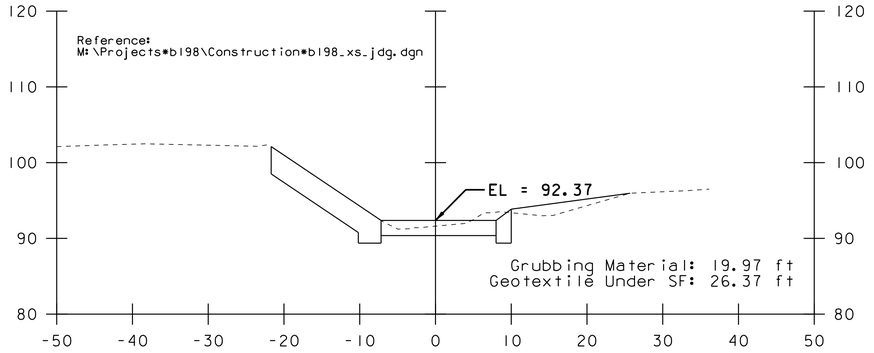


INLET
10+65

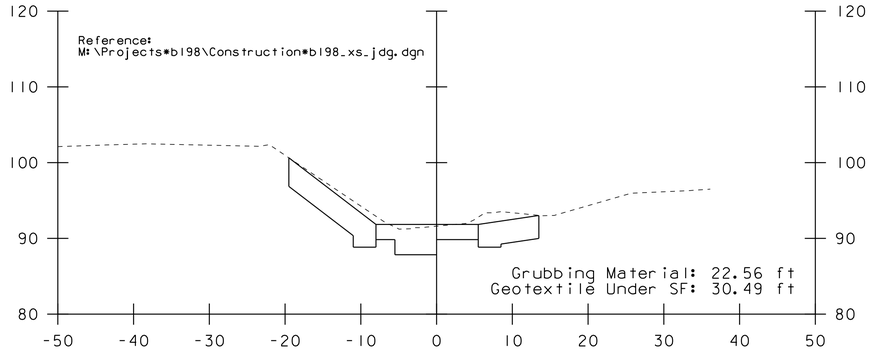
USED FOR
10+62



INLET
10+65

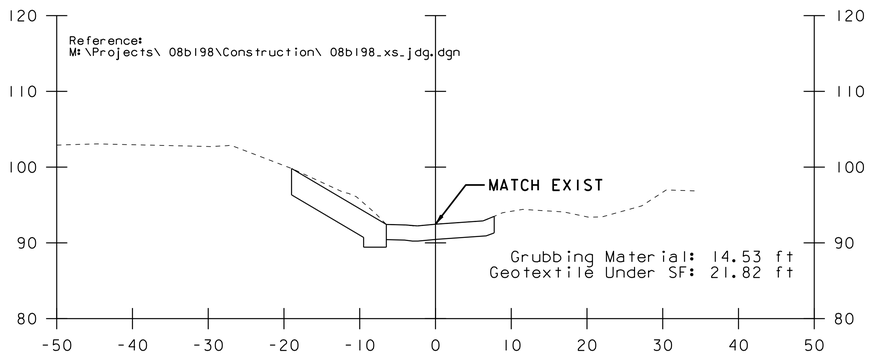


INLET
10+50



INLET
10+50

USED FOR
10+57



INLET
10+32

STA. 10+32 TO STA. 10+65