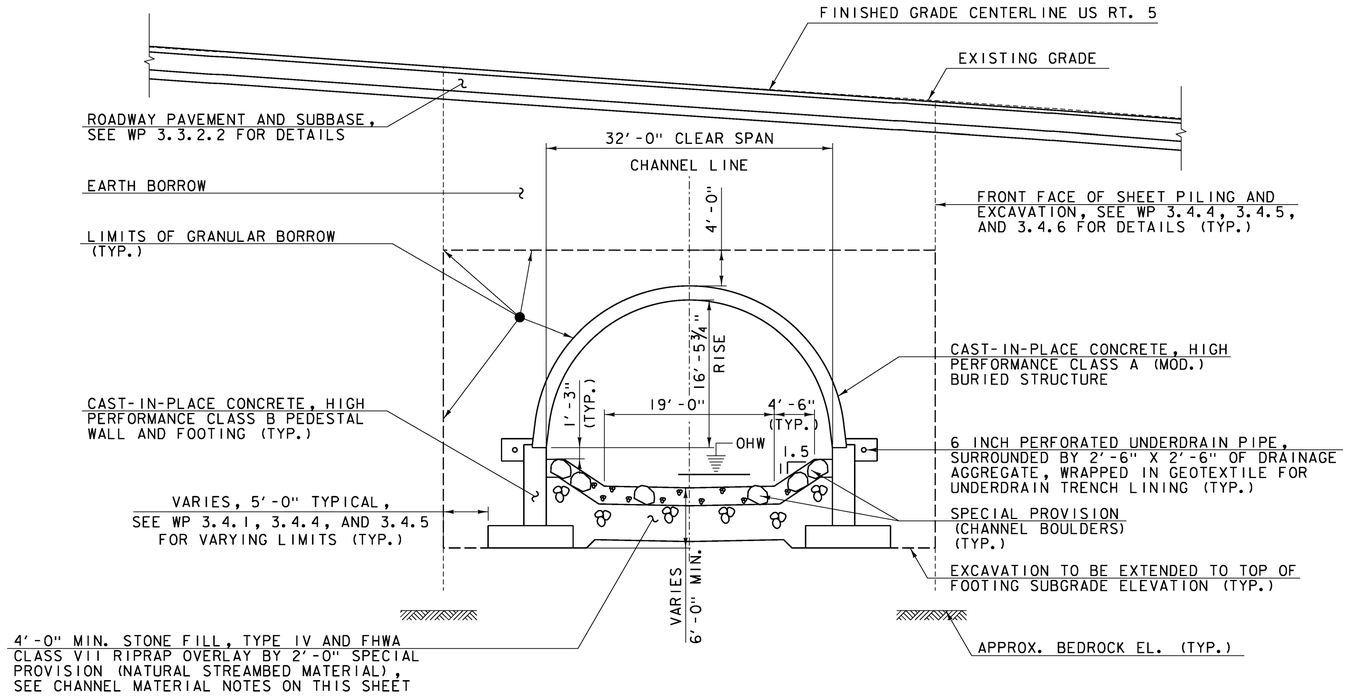
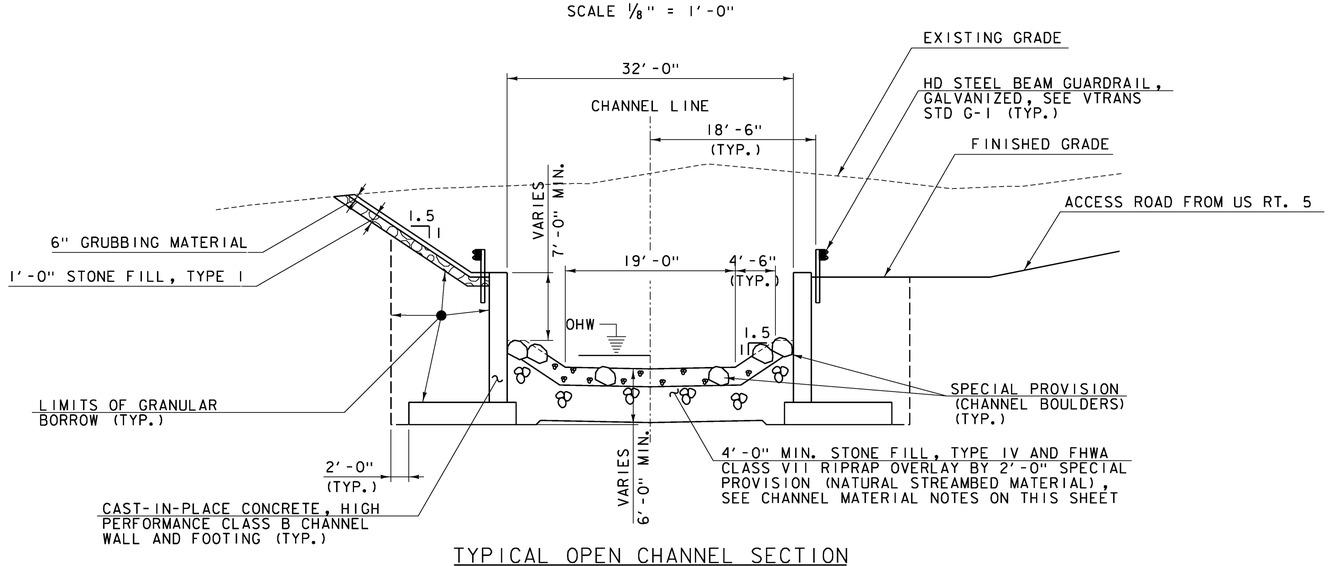


TYPICAL US 5 BURIED STRUCTURE SECTION

SCALE ⅛" = 1'-0"



TYPICAL OPEN CHANNEL SECTION

SCALE ⅛" = 1'-0"

CHANNEL MATERIAL NOTES

1. STONE FILL, TYPE IV AND FHWA CLASS VII RIPRAP WILL CONFORM TO SUBSECTION 706.04 OF THE SPECIFICATIONS. THE SPECIFICATION OF 706.04 WILL BE AUGMENTED WITH THE FOLLOWING GRADATION FOR FHWA CLASS VII RIPRAP:

FHWA CLASS VII RIPRAP
NOMINAL SIZE = 24 IN.

	MIN (IN.)	MAX (IN.)
D100	-	48.0
D85	31.0	37.0
D50	23.0	27.5
D15	14.5	21.0

FOLLOWING PLACEMENT OF STONE FILL, GRAVEL AND SAND BORROW WILL BE ADDED TO INFILL THE STONE AND INHIBIT SUBSURFACE FLOW.

2. CHANNEL BOULDERS WILL BE ANGULAR TO SUB-ANGULAR ROCK HAVING AN INTERMEDIATE AXIS RANGING FROM 24 TO 36 INCHES, AND OTHERWISE IN CONFORMANCE WITH 706.04, STONE FOR STONE FILL.

3. USE CHANNEL BOULDERS TO ESTABLISH DURABLE CHANNEL BANK LINES ALONG BOTH SIDES OF THE CHANNEL AGAINST THE STRUCTURE WALLS. VARIATION IN THE FINISHED CHANNEL WIDTH OF +/-2 FEET (26' TO 30') IS ACCEPTABLE AND EVEN DESIRABLE.

4. PLACE CHANNEL BOULDERS AT A RATE OF 25 PER 100 LINEAR FEET THROUGHOUT THE LENGTH OF THE STRUCTURES (NOT INCLUDING BOULDERS PLACED TO FORM BANK LINES, WEIRS, OR TAILWATER CONTROL ROCKS). THE BOULDERS WILL BE PLACED DIRECTLY ON THE IMMOBILE RIPRAP LAYOUT. THE BOULDERS WILL BE PLACED IN A GENERALLY RANDOM FASHION RATHER THAN A UNIFORM FASHION SO THAT GAPS BETWEEN BOULDERS ARE HIGHLY VARIABLE AND SOME CLUSTERS OF BOULDERS ARE PRESENT. THE TOPS OF SOME BOULDERS MAY PROTRUDE ABOVE THE FINISHED BED ELEVATION, AND THE TOPS OF OTHER BOULDERS MAY BE ENTIRELY COVERED.

5. AT THREE LOCATIONS WITHIN THE STRUCTURE (APPROXIMATELY STATIONS 11+50, 13+00, AND 13+70) PLACE CHANNEL BOULDERS TO FORM CHANNEL SPANNING WEIRS. THE WEIRS WILL DIP FROM BANK ELEVATION AT THE SIDES OF THE CHANNEL DOWN TO CHANNEL INVERT IN THE MIDDLE. THE WEIRS WILL FORM AN ARCH PROJECTING IN THE UPSTREAM DIRECTION TO RESIST DOWNSTREAM FORCES ON THE WEIR STRUCTURE. FOOTER ROCKS, WEIR ROCKS, AND TAILWATER CONTROL ROCKS SHALL CONFORM TO THE DIMENSIONS SPECIFIED FOR CHANNEL BOULDERS. SEE WEIR AND CHANNEL BOULDER DETAILS, SHEET 5.

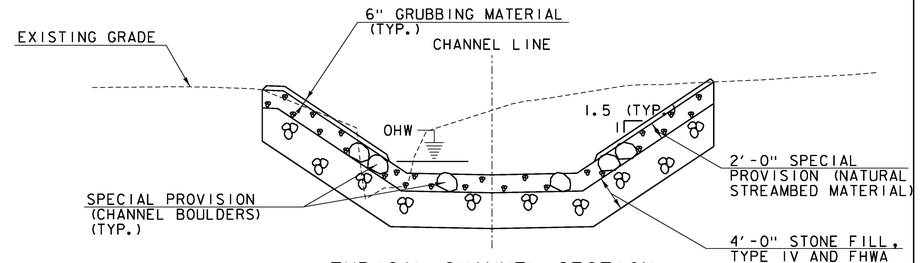
6. PLACE NATURAL STREAMBED MATERIAL THROUGHOUT THE CHANNEL BED FOLLOWING PLACEMENT OF CHANNEL BOULDERS. MATERIAL WILL CONFORM TO THE GRADATION BELOW AND WILL BE PLACED SO THERE IS A CONCENTRATED THREAD OF WATER DURING LOW FLOW CONDITIONS RATHER THAN A RELATIVELY SHALLOW VENEER OF WATER ACROSS THE ENTIRE CHANNEL WIDTH. ADD SAND BORROW ITEM AS NEEDED TO INFILL THE STONE AND INHIBIT SUBSURFACE FLOW.

NATURAL STREAMBED MATERIAL GRADATION

	MIN (IN.)	MAX (IN.)
D100	13.3	18.0
D50	10.5	12.0
D35	5.1	6.8
D15	0.8	2.0
D5	0.1	0.4

7. A FIELD REVIEW WILL BE PERFORMED BY THE HYDRAULICS ENGINEER TO ENSURE CHANNEL IS CONSTRUCTED AS DESIGNED.

8. 6" GRUBBING MATERIAL WILL BE PLACED ON TOP OF THE NATURAL STREAMBED MATERIAL IN CHANNEL LOCATIONS, ABOVE ORDINARY HIGH WATER, OR ON TOP OF STONE FILL IN EMBANKMENT LOCATIONS. GRUBBING MATERIAL WILL NOT BE PLACED INSIDE OF THE STRUCTURES OR IN THE OPEN CHANNEL SECTION.



TYPICAL CHANNEL SECTION
(US 5 INLET / WACR OUTLET)

NOT TO SCALE

PROJECT NAME:	RYEGATE
PROJECT NUMBER:	STP CULV(10)
FILE NAME: z06c156typ.dgn	PLOT DATE: 3/23/16
PROJECT LEADER: E. DETRICK	DRAWN BY: R. BARNES
DESIGNED BY: R. BARNES	CHECKED BY: E. DETRICK
TYPICAL STRUCTURE SECTIONS 1 OF 2	SHEET 3 OF 36

ECI ENGINEERS CONSTRUCTION — DuBois & King Inc.