

PRELIMINARY INFORMATION SHEET (CULVERT)

INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

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STANDARDS LIST

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	06-01-1994
C-10	CURBING	02-11-2008
D-11	STEEL OR IRON GRATES & COVERS (TYPE A)	06-01-1994
D-15	PRECAST REINF CONC. MH-GRATES, CAST IRON GRATE WITH FRAME, TYPE D & E	06-01-1994
D-20	HIGHWAY CROSSING FOR UNDERGROUND UTILITIES	03-03-2003
D-22	SANITARY SEWER SYSTEMS	03-10-1995
E-119	UTILITY WORK ZONE	03-01-2004
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-171A	TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS	08-09-1995
E-171B	TRAFFIC CONTROL SIGNALS MISC. DETAILS	08-09-1995
E-173	PULL BOXES AND JUNCTION BOXES	08-09-1995
E-175	POWER DROP STANCHIONS	06-08-2009
E-191	PAVEMENT MARKING DETAILS	02-01-1999
E-192	PAVEMENT MARKING DETAILS	10-12-2000
E-193	PAVEMENT MARKING DETAILS	08-18-1995
F-2	CHAIN LINK FENCE, TYPE II DETAILS	06-01-1994
F-4	CHAIN LINK FENCE, TYPE II DETAILS	06-01-1994
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	02-10-2014
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-29	CONSTRUCTION SIGN DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-31	CONSTRUCTION SIGN DETAILS	08-06-2012
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	08-06-2012
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

STRUCTURES DETAIL SHEETS

- ADDED SHEETS FOLLOWING SHEET 8
 - CHANGE DETAIL #1
 - CHANGE DETAIL #2
 - SINGLE LEAF ACCESS DOOR
- SHEET 9 REPLACED
- SHEET 12 REPLACED
- SHEET 29 REPLACED

HYDROLOGIC DATA

Date: February 2014

DRAINAGE AREA: 120 acres
 CHARACTER OF TERRAIN: Mountainous, open and forested, steep
 STREAM CHARACTERISTICS: Perennial, alluvial and wandering
 NATURE OF STREAMBED: Large boulders and debris

PEAK FLOW DATA

Q 2.33 = 58 cfs Q 50 = 75 cfs
 Q 10 = 125 cfs Q 100 = 225 cfs
 Q 25 = 155 cfs Q 500 = N/A

DATE OF FLOOD OF RECORD: Unknown
 ESTIMATED DISCHARGE: Unknown
 WATER SURFACE ELEV.: Unknown
 NATURAL STREAM VELOCITY: Unknown
 ICE CONDITIONS: Moderate
 DEBRIS: Severe
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? N/A
 IS ORDINARY RISE RAPID? N/A
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
 IF YES, DESCRIBE: Upstream end is controlled by a headwall and 36" CMP, downstream condition is free flow.

WATERSHED STORAGE: 1% HEADWATERS: _____
 UNIFORM: X
 IMMEDIATELY ABOVE SITE: _____

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Corrugated Metal Pipe
 YEAR BUILT: CA 1977
 CLEAR SPAN(NORMAL TO STREAM): 3'
 VERTICAL CLEARANCE ABOVE STREAMBED: 3'
 WATERWAY OF FULL OPENING: 7.07 sq. ft.
 DISPOSITION OF STRUCTURE: Abandon in place
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: N/A

WATER SURFACE ELEVATIONS AT:

Q2.33 = N/A VELOCITY = -
 Q10 = N/A " -
 Q25 = N/A " -
 Q50 = N/A " -
 Q100 = N/A " -

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: N/A
 RELIEF ELEVATION: N/A - Culvert headwall is not in roadway vicinity
 DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: Peru DISTANCE: _____
 HIGHWAY #: _____ STRUCTURE #: _____
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____
 STRUCTURE TYPE: Headwall

DOWNSTREAM STRUCTURE

TOWN: Peru DISTANCE: 24'
 HIGHWAY #: _____ STRUCTURE #: _____
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____
 STRUCTURE TYPE: Discharge to pond

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEM
TONNAGE							
INVENTORY							
POSTING							
OPERATING							
COMMENTS:	TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER						

PROPOSED STRUCTURE

STRUCTURE TYPE: 72" PCCSP/CAAP

CLEAR SPAN(NORMAL TO STREAM): 6'
 VERTICAL CLEARANCE ABOVE STREAMBED: 6'
 WATERWAY OF FULL OPENING: 28.3 sq. ft.

WATER SURFACE ELEVATIONS AT: (REPORTED @ OUTFALL)

Q2.33 = 1932.03' VELOCITY= 6.9 FPS
 Q10 = 1932.99' " 8.7 FPS
 Q25 = 1933.35' " 9.4 FPS
 Q50 = 1933.88' " 10.0 FPS
 Q100 = 1934.10' " 10.9 FPS

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: _____
 RELIEF ELEVATION: N/A - Culvert headwall is not in roadway vicinity
 DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: N/A
 VERTICAL CLEARANCE: @ Q50 = 2.3'

SCOUR: N/A

REQUIRED CHANNEL PROTECTION: Stone Fill, Type II

PERMIT INFORMATION

AVERAGE DAILY FLOW: 0.63 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 0.20 cfs 0.5'
 ORDINARY HIGH WATER: 25 cfs -2.64'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A
 CLEAR SPAN (NORMAL TO STREAM): N/A
 VERTICAL CLEARANCE ABOVE STREAMBED: N/A
 WATERWAY AREA OF FULL OPENING: N/A

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

- ONE-WAY ALTERNATING TRAFFIC WITH TEMPORARY TRAFFIC SIGNAL ON VT ROUTE 11
- MAINTAIN PEDESTRIAN ACCESS TO BROMLEY MOUNTAIN SKI RESORT

DESIGN VALUES

- DESIGN LIVE LOAD: N/A
- FUTURE PAVEMENT: d_p : 7.0 INCH
- DESIGN SPAN: L: 6.0 FEET
- MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS): Δ : _____
- PRESTRESSING STRAND: f_y : _____
- PRESTRESSED CONCRETE STRENGTH: f'_c : _____
- PRESTRESSED CONCRETE RELEASE STRENGTH: f'_{ci} : _____
- CONCRETE, HIGH PERFORMANCE CLASS AA: f'_c : _____
- CONCRETE, HIGH PERFORMANCE CLASS A: f'_c : _____
- CONCRETE, HIGH PERFORMANCE CLASS B: f'_c : 3500 PSI
- CONCRETE, CLASS C: f'_c : _____
- REINFORCING STEEL (LEVEL I): f_y : 60 KSI
- STRUCTURAL STEEL AASHTO M270: f_y : _____
- NOMINAL BEARING RESISTANCE OF SOIL: q_n : 19 KSF
- SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD): ϕ : 0.45
- NOMINAL BEARING RESISTANCE OF ROCK: q_n : _____
- ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD): ϕ : _____
- PILE RESISTANCE FACTOR: ϕ : _____
- LATERAL PILE DEFLECTION: Δ : _____
- BASIC WIND SPEED: V_{3s} : _____
- MINIMUM GROUND SNOW LOAD: p_g : _____
- SEISMIC DATA: PGA: 0 S: _____
 S I: _____
- _____
- _____
- _____
- _____

VT ROUTE 11 TRAFFIC DATA

YEAR	ADT	DHV	%D	%T	ADTT	20 year ESAL for flexible pavement from 2015 to 2035 : 3,703,00	40 year ESAL for flexible pavement from 2015 to 2055 : 8,380,000	Posted Speed: 50 mph
2015	4200	650	53	8.8	480			
2035	4600	710	53	12.8	770			

PROJECT NAME: PERU
 PROJECT NUMBER: STP SCRP(4)

FILE NAME: z07b106pl.dgn PLOT DATE: 12/31/2014
 PROJECT LEADER: E. ATKINS DRAWN BY: M. BRADLEY
 DESIGNED BY: M. BRADLEY CHECKED BY: E. ATKINS
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