# SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

# HYDRAULIC DATA SHEET

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| County |  | | | | | Project No. | | |  | | | PCN |  | Sec. | |  | | Township | |  | | Range | |  |
| Existing Station | | | |  | | Over | |  | | | | Drainage Area | | |  | | | | Direction of Flow | | | | (N S E W) | |
| Preliminary | |  | | | Final |  | Q-Design Yr. Frequency | | | |  | | | | | | Observed H.W. Elev. | | | |  | | | |  |
| BRIDGE NO. | | |  | | | | | | | LOCATION | | |  | | | | | | | | | | | |

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|  |  | W.W. |  |  | Bottom | |  |  |  | D.H.W. Elev. | |  |  |
| Cross  Section | Qd  cfs | Area  sq ft | V  fps | So  ft/ft | Structure | Ch. | H.W.  ft | dn  ft | C.L.  FL Elev. | Culv.  Inlet | Bridge | Ch.  Ch. | Degree  Skew |
| Trapezoid  S:S |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rectangle |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Round |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Arch |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| Type: | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Size: | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proposed Location: | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Notes or Remarks: | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Distribution | | | | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydraulics | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bridge | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bridge Maint. | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rd. Design | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Foundations | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Environmental | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Right-of-Way | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIC | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FHWA | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| City | | |  | | | | | |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| County | | |  | | | | | |  | **Vertical Datum Used:** | | | | | | **NAVD 88:** | | | |  | | | | | | | | **NGVD 29:** | | | | | |  | | | **Unknown:** | | | | |  | | |
| Region | | |  | | | | | |  | **Topeka Shiner Stream:** | | | | | | | Yes |  | | | | | | No | | |  | | | | | **404 Permit:** | | | | | Yes | | | |  | No |  | |  | | | | 31 | | | | **NGVD 29:** | | 31 | | **UNKNOWN:** | | 31 | |
| Area Engineer | | |  | | | | | |  | **Community Participating in NFIP:** Yes | | | | | | | | | | | | | | | |  | | | |  | | | No | | |  | | |  | | | | |  |  | | Aerial Photo No. | | | | |  | | | | Flight | |  | | Erodible | |  | |
| Checked | | |  | | | | | |  | **Site in Identified NFIP Floodplain:** | | | | | | | | | | | Yes | | | |  | | | | | | No | | | |  | | |  | | | | | | |  | | |  | | |
|  | | |  | | | | | |  | **In-Place Structure:** | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | |  | | | | | |  | **100-Yr. HW Elev. (existing):** | | | | | | | | |  | | | | | | | | | | **OHW Elev. =** | | | | | | | | | | |  | | | | |
|  | | | | |  | |  | | | |  | |  | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |
| Revision No. | | | | |  | | Date: | | | |  | |  | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |  | | | | |  | | | |
| Supplement No. | | | | |  | | Date: | | | |  | | Prepared By: | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |
|  | | |  | | | |  | | | |  | |  | |  | | | | | | | Hydraulic Engineer | | | | | | | | | | | | | | | | | | | | | | |  | | | | |  | | | | | | | | | | | | |
|  | | |  | | | | | | | | | |  | |  | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |  | | | | |  | | | | | | | | | | | | |
| Reviewed By: | | |  | | | | | | | | | |  | | Date: | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |  | | | | |  | | | | | | | | | | | | |
|  | | | SDDOT Bridge Hydraulic Engineer | | | | | | | | | |  | |  | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |  | | | | |  | | | | | | | | | | | | |
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| Date: | | |  | | | | | | | | | |  | |  | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |  | | | | |  | | | | | | | | | | | | |

**HYDRAULIC SUMMARY FOR PLAN SHEET**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data Element** | **Alternative 1** | | **Alternative 2** | |
| Qd |  | cfs |  | cfs |
| Ad |  | sq ft |  | sq ft |
| Vd |  | fps |  | fps |
| QF |  | cfs |  | cfs |
| Q100 |  | cfs |  | cfs |
| QOT |  | cfs |  | cfs |
| Vmax |  | fps |  | fps |

Qd = design discharge for the proposed culvert or bridge based on      year frequency. El.      .

QOT = overtopping discharge and frequency       year recurrence interval. El.      .

Location      .

QF = designated peak discharge for the basin approaching proposed project based on       year frequency.

Q100 = computed discharge for the basin approaching proposed project based on 100 year frequency. El.      .

Vmax = maximum computed outlet velocity for the proposed culvert or bridge, based on a       year frequency.

The hydraulic data contained in these plans is valid only if the overflow section is maintained. Alteration of the overflow section will require re-analysis of the hydraulics at this site to determine its effect on public safety.

Hydraulic Data to be Included on Roadway Profile Sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Flow** | | | | | **Elevation** |
| Qd = |  | | | cfs |  |
| Q100 = |  | | | cfs |  |
| QOT = Q |  | = |  | cfs |  |