Report on Manning's "n" Values
Jackrabbit Wash Floodplain Delineation Study
FCD 90-05

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Jackrabbit Wash
Unnamed Tributary of Jackrabbit Wash
Star Wash

Flood Control District
of Maricopa County

Prepared By:

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January, 1991

On December 6, 1990, engineers from Burgess & Niple, Inc. and the Flood Control District of Maricopa County made a reconnaissance field trip to select Manning's "n" values for use in backwater modeling of Jackrabbit Wash from the CAP Canal to Vulture Mine Road; an unnamed tributary of Jackrabbit Wash from its mouth at Jackrabbit Wash River Mile 10.4 to Vulture Mine Road and Star Wash from its mouth at Jackrabbit Wash River Mile 8.0 to the first powerline crossing about 2.1 miles upstream. Manning's "n" values were selected based on visual observations for the channel and overbanks using, as a guide, the preliminary draft (7-3-90.2) of "Manning's Roughness Coefficients for Stream Channels and Floodplains in Maricopa County, Arizona", USGS.

The following report will illustrate with photos the selected Manning's "n" values.

In general, channel bottoms are relatively clear of vegetation and were assigned coefficients of 0.03 to 0.035. Channel banks and bars are more heavily vegetated, with coefficients near 0.05 for the immediate side slopes and 0.035 to 0.04 in the overbank areas.

Roughness coefficients have been assigned to subelements of individual cross-sections based upon the field reconnaissance and comparison with aerial photographs. Roughness coefficients are included in the HEC-2 computer model by use of NH cards.

Photo No. 1 (9007-2)
RM 17.8
Looking downstream from
Vulture Mine Road,
Jackrabbit Wash,
"n" = .030 for channel.
"n" = .035 for left
overbank and
"n" = .040 for right
overbank.

Photo No. 2 (9007-5)
RM 16.8
Looking downstream at
left overbank of Jackrabbit
Wash.
"n" = .040

Photo No. 3 (9007-6)
RM 15.8
Looking downstream,
Jackrabbit Wash.
"n" = .030 for channel.

Photo No. 4 (9007-8)
RM 14.8
Looking downstream,
Jackrabbit Wash.
"n" = .030 for channel.

Photo No. 5 (9007-9)
RM 14.8
Looking downstream at
left overbank of
Jackrabbit Wash.
"n" = .035

Photo No. 6 (9007-10)
RM 14.8
Looking downstream at
right overbank of
Jackrabbit Wash.
"n" = .035

Photo No. 7 (9007-14)
RM 12.8
Looking downstream,
Jackrabbit Wash.
"n" = .030 for channel.

Photo No. 8 (9007-15)
RM 12.8
Looking downstream at
left overbank of Jackrabbit
Wash.
"n" = .035

Photo No. 9 (9007-16)
RM 12.8
Looking downstream at
right overbank of
Jackrabbit Wash.
"n" = .035

Photo No. 10 (9007-19)
RM 10.9
Looking downstream,
Jackrabbit Wash.
"n" = 0.30 for channel.

Photo No. 11 (9007-20)
RM 10.9
Looking downstream at
left overbank of Jackrabbit
Wash.
"n" = .035

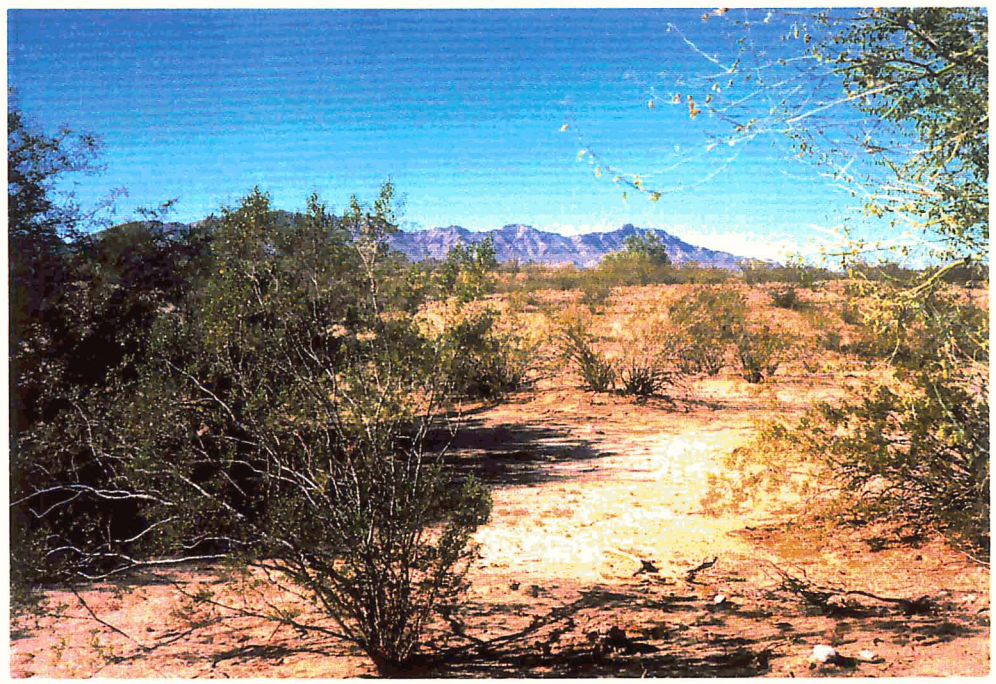


Photo No. 12 (9007-21)
RM 10.9
Looking downstream at
right overbank of
Jackrabbit Wash.
"n" = .035

Photo No. 13 (9008-2)
RM 8.9
Looking downstream,
Jackrabbit Wash.
"n" = .030 for channel.

Photo No. 14 (9008-3)
RM 8.9
Looking downstream at
left overbank of Jackrabbit
Wash.
"n" = .035 for channel.

Photo No. 15 (9008-4)
RM 8.9
Looking downstream at
right overbank of
Jackrabbit Wash.
"n" = .035

Photo No. 16 (9008-5)
RM 7.9
Looking upstream from Granite Reef Aqueduct, Jackrabbit Wash.
"n" = .035 for channel.

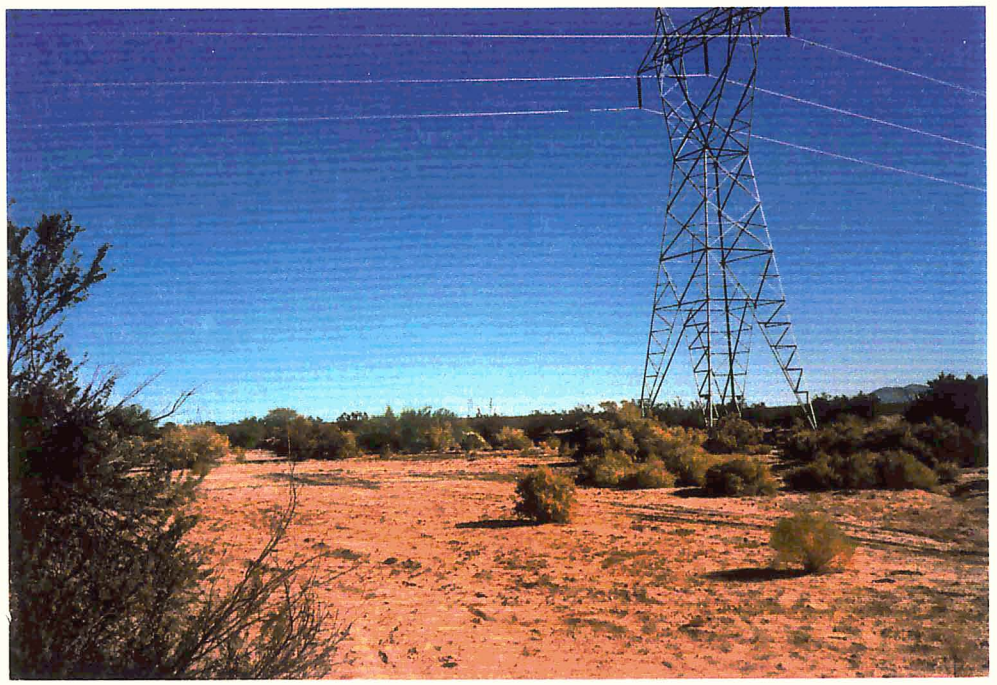


Photo No. 17 (9008-15)
RM 2.1
Looking upstream, Star Wash.
"n" = .035 for channel.

Photo No. 18 (9008-13)
RM 2.1
Looking downstream, Star Wash.
"n" = .035 for channel.
"n" = .040 for left and right overbanks.

Photo No. 19 (9008-9)
RM 1.0
Looking downstream, Star Wash.
"n" = .035 for channel.

Photo No. 20 (9008-10)
RM 1.0
Looking downstream at left overbank of Star Wash.
"n" = .040

Photo No. 21 (9008-11)
RM 1.0
Looking downstream at right overbank of Star Wash.
"n" = .040

Photo No. 22 (9009-10)
RM 6.4
Looking downstream,
Unnamed Wash.
"n" = .030 for channel.

Photo No. 23 (9009-11)
RM 6.4
Looking downstream at
left overbank of Unnamed
Wash.
"n" = .035

Photo No. 24 (9009-12)
RM 6.4
Looking downstream at
right overbank of
Unnamed Wash.
"n" = .035

Photo No. 25 (9009-9)
RM 5.4
Looking downstream,
Unnamed Wash.
"n" = .030 for channel.

Photo No. 26 (9009-5)
RM 3.7
Looking downstream,
Unnamed Wash.
"n" = .030 for channel.

Photo No. 27 (9009-6)
RM 3.7
Looking downstream at
left overbank of Unnamed
Wash.
"n" = .035

Photo No. 28 (9009-7)
RM 3.7
Looking downstream at
right overbank of
Unnamed Wash.
"n" = .035

Photo No. 29 (9009-3)
RM 3.0
Looking downstream at
left overbank of Unnamed
Wash.
"n" = .040

Photo No. 30 (9008-25)
RM 2.0
Looking upstream,
Unnamed Wash. of
"n" = .030 for channel.

Photo No. 31 (9008-23)
RM 2.0
Looking downstream,
Unnamed Wash.
"n" = .030 for channel.

Photo No. 32 (9008-24)
RM 2.0
Looking downstream at
left overbank of Unnamed
Wash.
"n" = .050

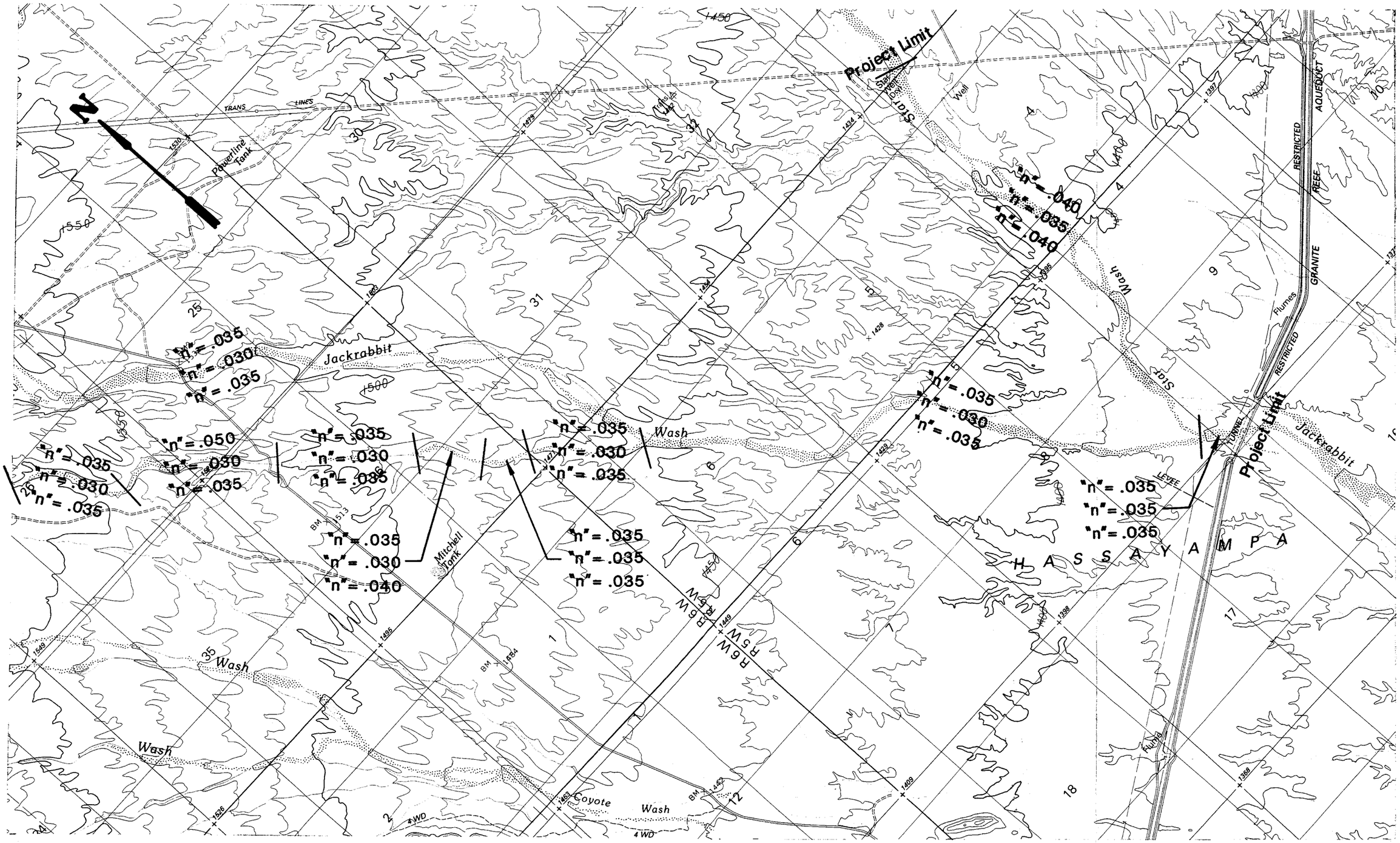
Photo No. 33 (9008-21)
RM 1.0
Looking downstream at
left overbank of Unnamed
Wash.
"n" = .035

Photo No. 34 (9008-22)
RM 1.0
Looking downstream at
right overbank of
Unnamed Wash.
"n" = .040

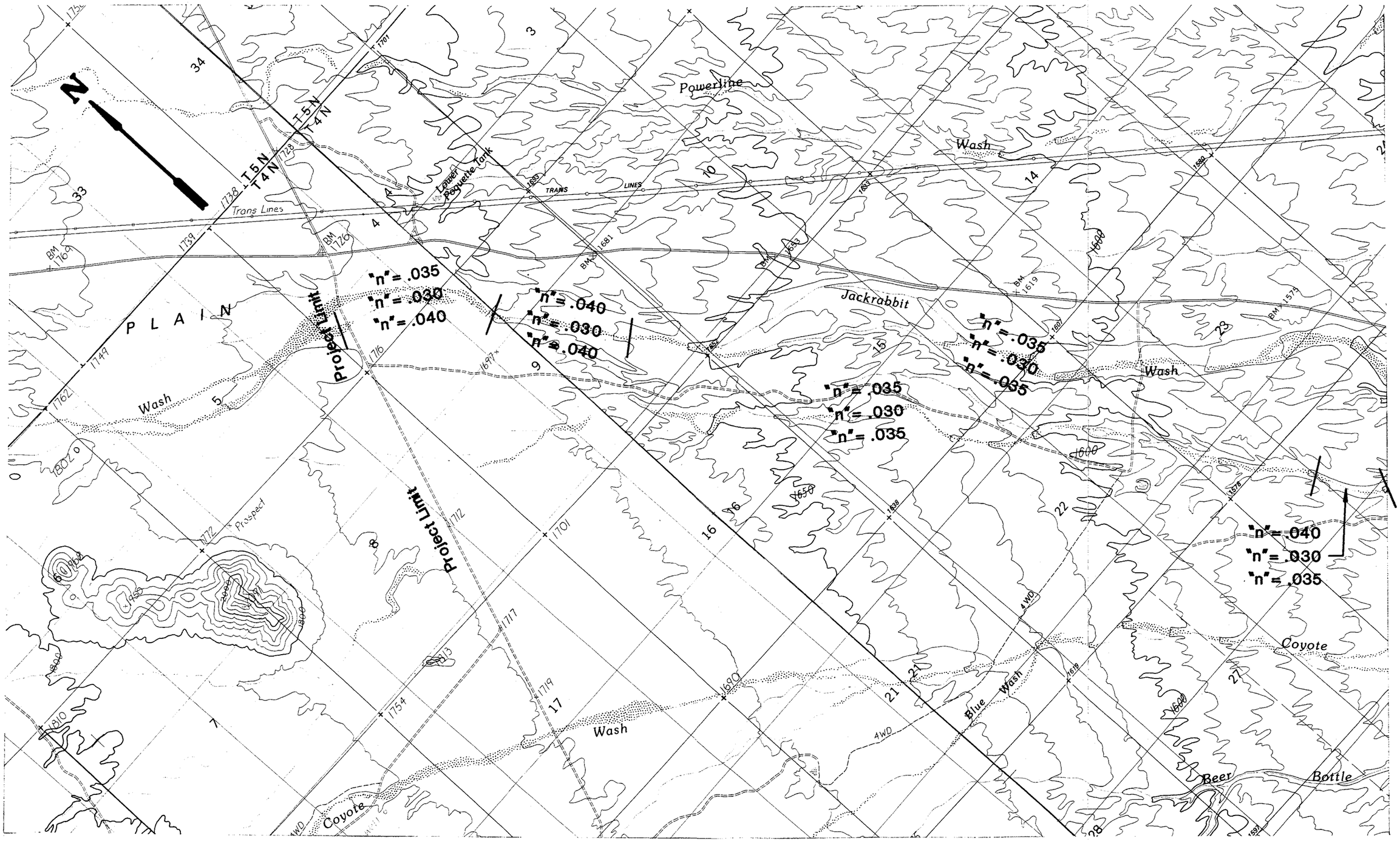
Photo No. 35 (9008-18)
RM 0.5
Looking downstream,
Unnamed Wash.
"n" = .035

Photo No. 36 (9008-16)
RM 0.1
Looking downstream,
Unnamed Wash.
"n" = .030

Photo No. 37 (9008-17)
RM 0.1
Looking downstream at typical overbank of Unnamed Wash.
"n" = .035



N
Project Limit
Star
Well
TRANS LINES
Powerline Tank
Jackrabbit
Wash
Mitchell Tank
Coyote Wash
Star Wash
Flumes
RESTRICTED
GRANITE REEF AQUEDUCT
TUNNEL
LEVEE
H A S S A Y A M P A
R6W
R5W
"n" = .035
"n" = .030
"n" = .040
"n" = .050



N
T 5 N
T 4 N
Trans Lines
Lower Poquette Tank
TRANS LINES
Powerline
Wash
Jackrabbit
Wash
P L A I N
Project Limit
Project Limit
Wash
Prospect
Wash
Coyote
Blue Wash
Coyote
Beer
Bottle
"n" = .035
"n" = .030
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