

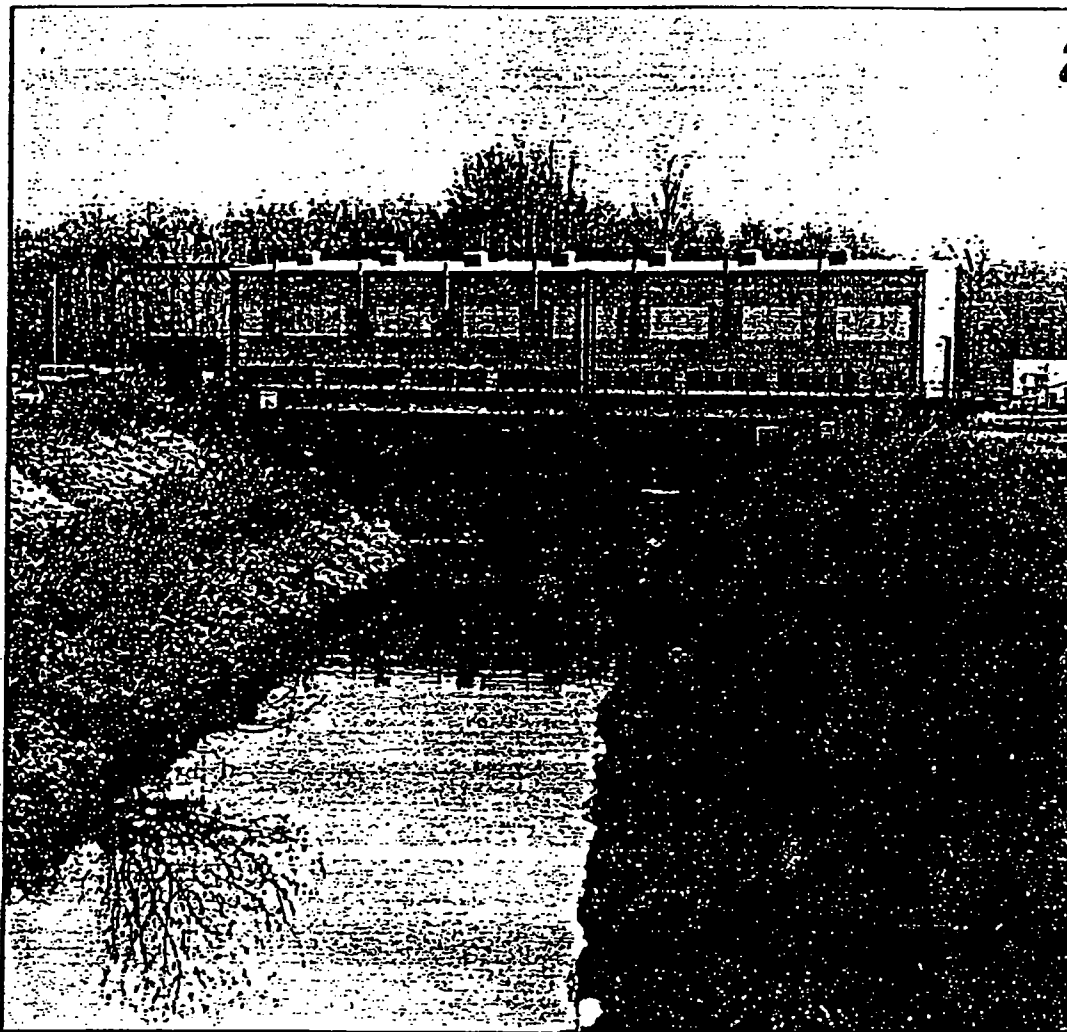
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ATTACHMENT D

Green River Pump Operations Procedures Plan

Appendices

2002 443



Green River Basin Program
serving Auburn, Kent, Renton, Tukwila and King County

PUMP OPERATIONS PROCEDURES PLAN

APPENDICES

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05/13/86

Appendix A

Green River Profiles and Elevations

(Under separate cover; up-to-date folios are maintained by the Cities of Auburn, Kent, Renton, and Tukwila, and by King County)

03/06/86

Appendix B

Stage - Discharge Tabulations

03/06/86

APPENDIX "g"
COMPARISONS (Existing Conditions)
10 YEAR FLOOD, 100 YEAR FLOOD, STANDARD PROJECT FLOOD (SPF)

COMPUTATIONAL NODE	10-YEAR FLOOD		100-YEAR FLOOD		SPF		INFLOWS (CFS)		
	ELEV.	CFS	ELEV.	CFS	ELEV.	CFS	10-YR	100-YR	SPF
1	73.31	12000.	73.31	12000.	73.31	12000.			
3	68.90	12000.	68.90	12000.	68.90	12000.			
5	67.49	12000.	67.49	12000.	67.49	12000.			
7	66.21	12000.	66.21	12000.	66.21	12000.			
9	64.03	12000.	64.03	12000.	64.03	12000.			Auburn (Porter) Gage
10	64.03	12000.	64.03	12000.	64.03	12000.			
12	59.24	12162.	59.28	12233.	55.09	12239.			
14	54.90	12156.	55.00	12233.	55.09	12239.			
16	52.57	12074.	52.67	12229.	52.85	12237.			
18	49.96	11963.	50.03	12168.	50.20	12215.			
20	47.44	11963.	47.49	12045.	47.67	12173.			
22	46.38	12042.	46.43	12100.	46.65	12155.			Kent Pump
24	44.95	12037.	45.00	12090.	45.26	12262.	90	90	90
26	42.99	12036.	43.04	12088.	43.39	12261.			
28	41.27	12035.	41.33	12086.	41.89	12260.			
29	41.75	650.	41.86	950.	43.61	1700.			M111 Creek
31	41.45	766.	41.52	503.	42.68	1522.			
33	41.44	1779.	41.50	1390.	42.68	1613.			
35	41.27	2180.	41.33	1752.	41.89	2220.			
36	41.27	12056.	41.33	12113.	41.89	12670.			
38	40.52	12056.	40.57	12113.	41.12	12667.			
40	39.49	12055.	39.55	12113.	40.10	12665.			
42	38.27	12055.	38.33	12113.	38.87	12655.			
44	37.26	12054.	37.32	12113.	37.87	12651.			
46	36.44	12053.	36.50	12113.	37.05	12650.			
48	35.82	12053.	35.88	12113.	36.44	12650.			
50	34.87	12053.	34.93	12113.	35.48	12650.			
52	34.09	12053.	34.15	12113.	34.70	12649.			
53	34.09	12053.	34.15	12113.	34.70	12649.			
55	32.88	12053.	32.94	12113.	33.49	12649.			
57	31.63	12053.	31.69	12113.	32.25	12649.			
59	30.63	12053.	30.69	12113.	31.25	12650.			
61	29.91	12053.	29.97	12114.	30.54	12650.			
63	29.52	12054.	29.58	12115.	30.16	12651.			
65	28.57	12054.	28.63	12116.	29.21	12652.			
67	27.14	12055.	27.21	12117.	27.78	12653.			
69	25.28	12207.	25.33	12270.	25.86	12806.			
71	23.78	12211.	23.83	12273.	24.38	12809.			Southcenter Drain(P-17)(Culvert) 150 150 150
73	22.42	12224.	22.46	12286.	22.95	13050.			
75	21.53	12229.	21.58	12289.	22.03	13053.			
77	19.65	12242.	19.70	12301.	20.17	13063.			
78	19.65	12242.	19.70	12301.	20.17	13063.			
80	17.06	12740.	17.10	12803.	17.47	13553.			Black River Pump (P-1) 400 400 400
82	14.28	12801.	14.31	12870.	14.73	13599.			
84	10.93	12838.	10.89	12910.	11.33	13627.			
86	7.91	12922.	7.87	13008.	8.18	13672.			
88	6.72	13570.	6.67	13580.	6.74	14409.			
90	6.56	15802.	6.53	15802.	6.56	16698.			
92	6.43	17910.	6.42	17911.	6.43	18857.			
94	6.32	20053.	6.35	19980.	6.32	20990.			
96	6.27	22535.	6.29	22368.	6.27	23414.			

NOTE: Datum: National Geodetic Vertical Datum (N.G.V.D.)
Highest Estimated Tide is 8.43' Level (M.S.L.)
Duration at which flows in the river remain at these levels will change with design storm events. The U. S. Army Corps of Engineers has estimated the river to remain bankfull (i.e., 19' above the 100 year flood elevation) for 100 years.

Appendix C

Surface Water Management

Facilities Inventory Forms

SHM FACILITIES INVENTORY SHEET

Facility name: _____ Project number: _____

D. River: _____ (14) River mile and bank: _____ (11)

Type of facility: _____ (10) Sec: _____ Twp: _____ Rng: _____

Address / Location: _____ (50)

Check any of the following if present:

	Quantity	Location w/ respect to facility	Measurements / Dimensions
Access gates	_____	_____	_____
Access road	_____	_____	_____
Boat ramps	_____	_____	_____
Slipway	_____	_____	_____
Catch basins	_____	_____	_____
Inverts: inflow	_____	_____	_____
outflow	_____	_____	_____
Docks	_____	_____	_____
Fencing	_____	_____	_____
Flood gates	_____	_____	_____
Manholes	_____	_____	_____
Open channel	_____	_____	_____
Rock structures	_____	_____	_____
Trash-/ Debris rack	_____	_____	_____
Reefs	_____	_____	_____

5. Is permission from property owner necessary for access? Y N

D. If yes, give name of property owner: _____ and ph. # of property owner: _____

n Mathewson 8 / 9 / 83

_____ ORIGINAL _____ UPDATE

Slope gradient: _____

Existing design drawings? Y N
 Is structure built in accordance to design? Y N

Is there an existing maintenance repair agreement? Y N

Is it: Federal State Participation project

Is there an existing access / repair easement? Y N
 With whom? _____
 date: _____

Potential Control Area _____ sq. yds.

- Multi-use Enhancement: (Indicate potential)
- A Water access
 - B Adjacent to park land
 - C Trail development
 - D Viewpoint
 - E Wildlife habitat enhancement
 - F Aesthetic character, nice
- Why: _____

Prepared by: _____
 date: _____

MAINTENANCE STANDARDS FOR PIPE, FLAP GATES
(CORRUGATED METAL, CONCRETE)

ITEM	DAMAGE TYPE	MAINTENANCE PROCEDURE
ALL PIPES	SEDIMENT, DEBRIS OR VEGETATION EXCEEDS 1/4 OF THE DIAMETER OF THE PIPE	CLEAN PIPE OF ALL MATERIAL ESTIMATE CUBIC YARDAGE
CORRUGATED METAL PIPE	RUST CAUSING 50% OR MORE DETERIORATION, TO PIPE, PROTECTIVE COATING DAMAGED, OR PIPE INOPERABLE	REPAIR OR REPLACE PIPE
	DENT DECREASES DIAMETER OF PIPE BY GREATER THAN 20%	REPAIR OR REPLACE PIPE
CONCRETE PIPE	CHIPS, CRACKS CAUSE PIPE NOT TO FUNCTION TO DESIGN	REPAIR OR REPLACE PIPE
FLAP GATES GENERAL	DEBRIS BLOCKING GATE, MAKING IT INOPERABLE	REMOVE ALL DEBRIS BLOCKING FLAP GATE ESTIMATE CUBIC YARDAGE
	CRACKED, BROKEN, MISSING	REPAIR OR REPLACE FLAP GATE
	OUT OF ALIGNMENT	REALIGN FLAP GATE TO DESIGN STANDARD
ALL PARTS	RUST CAUSING 50% OR MORE DETERIORATION, OR INOPERABLE	GREASE, PAINT, OR REMOVE RUST SPECIFY PART ON NEEDS ASSESSMENT FORM
	MISSING, BROKEN	REPAIR OR REPLACE PART SPECIFY PART ON NEEDS ASSESSMENT FORM

Facility Name: _____ Project number: _____
 B. River: _____ River Mile and Bank _____ Sec. _____ TWN _____ Rng. _____
 Type of Facility: _____
 Address/Location: _____

Check all appropriate maintenance needs:

MAINTENANCE NEEDS?

Y NA N Access Gate _____ broken/missing lock
 _____ Other (Specify)

619 Misc. Maintenance _____
 623 Hand Brush L: _____ W: _____ S.Y.: _____
 624 Hand Brush and Haul L: _____ W: _____ S.Y.: _____
 631 Gate Installation _____
 633 Fence & Gate Maintenance # _____

612 Access Surface Maintenance (Grading) _____ lineal feet
 632 Access Restoration/Construction _____ lineal feet

617 Debris-River (banks) L: _____ W: _____ C.Y.: _____
 619 Misc. Maintenance (Specify) _____

623 Hand Brush L: _____ W: _____ S.Y.: _____
 624 Hand Brush and Haul L: _____ W: _____ S.Y.: _____

619 Misc. Maintenance _____
 _____ Lock Missing
 _____ Broken Bollard
 _____ Missing Bollard
 _____ Stuck Bollard

614 Manhole Maintenance _____
 _____ Cover Missing
 _____ Cover Broken
 _____ Lock Missing
 _____ Ladder Unsafe
 _____ Cracks

Y NA N Catch Basins/Manholes _____
 616 Debris-Storm L: _____ W: _____ D: _____ C.Y.: _____
 618 Silt Removal L: _____ W: _____ D: _____ C.Y.: _____
 623 Hand Brush L: _____ W: _____ S.Y.: _____
 624 Hand Brush and Haul L: _____ W: _____ S.Y.: _____
 626 Manhole Replace/Construct _____ W: _____ S.Y.: _____

(continued)

Y HA N Culverts: Inflow
(Levees, Revetments)

617 Debris-River L: W: Cracks (Minor) C.Y.:
619 Misc. Maintenance W: Cracks (Major) C.Y.:
 W: New Culvert Needed

Y HA N Culverts: Outflow

623 Hand Brush L: W: Cracks (Minor) C.Y.:
624 Hand Brush and Haul L: W: Cracks (Major) C.Y.:
629 Flush Culverts W: New Culvert Needed
 W: S.Y.:
617 Debris-River L: W: S.Y.:
619 Misc. Maintenance W: S.Y.:

Y HA N Docks

623 Hand Brush L: W: Cracks (Minor) C.Y.:
624 Hand Brush and Haul L: W: Cracks (Major) C.Y.:
629 Flush Culverts W: New Culvert Needed
 W: S.Y.:
619 Misc. Maintenance W: S.Y.:

Y HA N Fencing

623 Hand Brush L: W: S.Y.:
624 Hand Brush and Haul L: W: S.Y.:
633 Fence and Gate Maintenance W: S.Y.:

Y HA N Flood Gates

616 Debris-Drainage L: W: D: C.Y.:
617 Debris-River (banks) L: W: D: C.Y.:
619 Misc. Maintenance W: D: C.Y.:
 W: Broken
 W: Missing
 W: Other (Specify)

Boards Missing/Broken
Needs Weather Proofing
Other (Specify)

HA N Levees
 HA N Revetments

HA N Open Channel/Ditch

HA N Pipe
 HA N Pump Plant

611 Rock Haul and Place

Toe Missing: L: _____ W: _____ D: _____ C.Y.: _____
 Toe Slip: L: _____ W: _____ D: _____ C.Y.: _____
 Slump: L: _____ W: _____ D: _____ C.Y.: _____
 Scour: L: _____ W: _____ D: _____ C.Y.: _____
 Subgrade NOT Exposed: L: _____ W: _____ D: _____ C.Y.: _____

Scour: L: _____ W: _____ D: _____ C.Y.: _____
 Subgrade Exposed: L: _____ W: _____ D: _____ C.Y.: _____
 Rock Missing: L: _____ W: _____ D: _____ C.Y.: _____
 Subgrade NOT Exposed: L: _____ W: _____ D: _____ C.Y.: _____
 Rock Missing: L: _____ W: _____ D: _____ C.Y.: _____
 Subgrade Exposed: L: _____ W: _____ D: _____ C.Y.: _____

622 Slope Mow Old, Decaying Rock: L: _____ W: _____ D: _____ C.Y.: _____
 623 Hand Brush River Side: L: _____ W: _____ D: _____ C.Y.: _____
 Back Side: L: _____ W: _____ D: _____ C.Y.: _____
 River Side: L: _____ W: _____ D: _____ C.Y.: _____
 Back Side: L: _____ W: _____ D: _____ C.Y.: _____
 River Side: L: _____ W: _____ D: _____ C.Y.: _____
 Back Side: L: _____ W: _____ D: _____ C.Y.: _____

616 Debris-Storm L: _____ W: _____ D: _____ C.Y.: _____
 618 Silt Removal L: _____ W: _____ D: _____ C.Y.: _____
 623 Hand Brush L: _____ W: _____ D: _____ C.Y.: _____
 624 Hand Brush and Haul L: _____ W: _____ D: _____ C.Y.: _____
 625 Clean/Reshape Ditch _____ W: _____ D: _____ C.Y.: _____

613 Pipe/Manhole System Cleaning _____ lineal feet
 615 Pipe Maintenance _____ lineal feet
 627 Pipe Replace Construct _____ lineal feet
 616 Debris-Storm L: _____ W: _____ D: _____ C.Y.: _____
 617 Debris-River (banks) L: _____ W: _____ D: _____ C.Y.: _____
 619 Misc. Maintenance _____ (Specify) _____ D: _____ C.Y.: _____

622 Slope Mow L: _____ W: _____ S.Y.: _____
 623 Hand Brush L: _____ W: _____ S.Y.: _____
 624 Hand Brush and Haul L: _____ W: _____ S.Y.: _____

Y N NA River Channel

Y N NA Sediment Pond/Basin,
Ornamental Pond

Y N NA Trash/Debris Rack

637 Debris-River Channel L: _____ W: _____ D: _____ C.Y.: _____

616 Debris-Storm L: _____ W: _____ D: _____ C.Y.: _____

622 Slope Mow L: _____ W: _____ S.Y.: _____ C.Y.: _____

623 Hand Brush L: _____ W: _____ S.Y.: _____

624 Hand Brush and Haul L: _____ W: _____ S.Y.: _____

616 Debris-Storm L: _____ W: _____ D: _____ C.Y.: _____

619 Misc. Maintenance _____ W: _____ (Specify) _____ C.Y.: _____

623 Hand Brush L: _____ W: _____ Repair Trash Rack _____

624 Hand Brush and Haul L: _____ W: _____ Replace Trash Rack _____

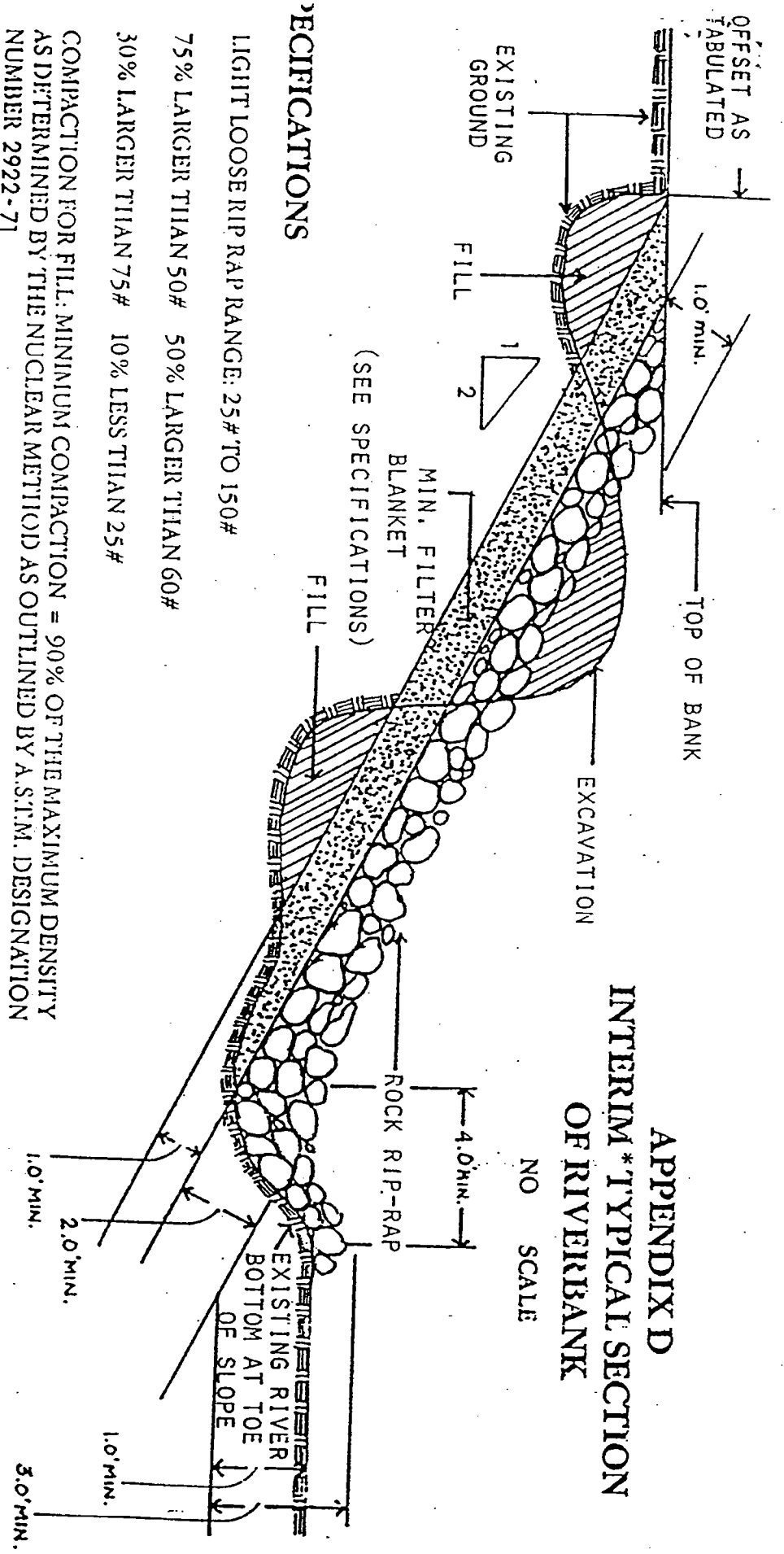
_____ W: _____ S.Y.: _____

_____ W: _____ S.Y.: _____

Appendix D

Interim Typical Cross-Section

03/06/86



APPENDIX D
 INTERIM * TYPICAL SECTION
 OF RIVERBANK
 NO SCALE

SPECIFICATIONS

LIGHT LOOSE RIP RAP RANGE: 25# TO 150#

75% LARGER THAN 50# 50% LARGER THAN 60#

30% LARGER THAN 75# 10% LESS THAN 25#

COMPACTION FOR FILL: MINIMUM COMPACTION = 90% OF THE MAXIMUM DENSITY AS DETERMINED BY THE NUCLEAR METHOD AS OUTLINED BY A.S.T.M. DESIGNATION NUMBER 2922-71

ROCK RIP RAP SHALL HAVE A MINIMUM OF 160# PER CUBIC FOOT AND IT SHALL CONTAIN NO SOIL OR EXTRANEOUS MATERIAL

ROCK SHALL BE TESTED USING TESTS DETAILED BY AASHTO T104-68 FOR SOUNDNESS, WITH A MAXIMUM OF 35%

FILTER BLANKET MATERIAL SHALL HAVE THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING (BY DRY WEIGHT)
1 1/4 inch	100
3/4 inch	50-80
1/2 inch	30-50
#10	3-18
#20	

* Typical cross-section and specifications are considered interim standards until the Green River Levee Improvement Plan