

of Engineers.

ENGINEERING AND CONSTRUCTION BULLETIN

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Subject: Sustainable Design and Development (SDD)

Applicability: Guidance

30"Vj g'r wtr qug''qh''y ku''Gpi kpggtkpi "cpf "Eqpuntwerkqp"Dwngrkp'*GED+"ku''vq''r tqxkf g'ko r ngo gprkpi " i wkf cpeg''qp''y g'tgxkugf 'tgs wktgo gpw''d{ ''y g''Qhhkeg''qh''y g''Cuukuvcpv'Ugetgvct { ''qh''y g''Cto { 'hqt'' Kpuvcncrkqpu''cpf ''Gpxktqpo gpv''qp''UFF0''''

40"Uctvkpi "y kj "j g"H[2: "r tqi tco u."cm'xgtvkecn'O EC"r tqlgewi'y kj "enko cvg/eqpvtqmgf "hcekrkkgu" ctg'tgs wktgf "vq"dg"ecr cdng"qh'cej kgxkpi "WU"I tggp"Dwkrf kpi "Eqwpekri*WUI DE+"egtvkhkecvkqp"cv'vj g" Ukrxgt"tcvkpi "ngxgn'qh'Ngcf gtuj kr "kp'Gpgti {"cpf 'Gpxktqpo gpvcn'F guki p/P gy "Eqpuvtwevkqp" *NGGFÌ /PE-lo"NGGFÌ /PE'ku'c"eqo o gtekcn'I tggp"Dwkrf kpi "Tcvkpi "Vqqn'f gxgnqr gf "d{" WUI DE."y y y 0wui de0qti ."cpf 'ku'y kf gn{ 'wugf 'vj tqwi j qwv'y g"eqwpvt{0'

50"Vj kı'r qrke { "kpenwf gu'cmiO EC"r tqlgevu. "tgi ctf rguu'qh'hwpf "uqwteg0"Rtqlgevu'uwej "cu" y ctgj qwugu. "y kıj "erko cvg"eqpvtqrrgf "ctgcu'qh'o qtg'\j cp'72" "qh'\j g'\qvcri'ctgc'ctg'cnuq" tgs wktgf "\q'cej kgxg'\j ku'tc\lpi 0"J qt\lq qpvcri'eqpuvtwe\lqp. "uwej "cu'tcpi gu. "tqcf u'cpf "ckthkgrf u." y kni'eqpv\pwg"\q'kpeqtr qtcvg'UF F "hgcwtgu'\q'\j g"o czko wo "gzvgpv'r quukdrg0"Cto { "Hco kn\{" J qwukpi "\chiCHJ +"cpf "Tgukf gpv\cri'Eqo o wpkkkgu'\kp\kkc\kxg''\stTEK\ty kni'eqpv\pwg'\q'cwckp" Uwvc\pcdrg'Rtqlgev\Tc\kpi "Vqqri\s\UR\kT\kV+\T qrf 'tc\kpi 'ngxgr0"\Hqt'CHJ "cpf "TEKr tqlgevu." UR\kT\kV'r tgtgs wkukg'\s\r ctci tcr j "70\T4"Gpx\ktqpo gpvcn'\Vqdceeq'\Uo qrg'\Eqpvtqn\teqpegtp\kpi " uo qr\hpi g'\tg' g'\tcekrk\{ 'ku'pqv\tgs wktgf "\q'dg'o g\0"

60"*C+"Rtqlgev'tcvkpi "i qcnı'uj cm'dg"guvcdrkıj gf "f wtkpi "r rcppkpi "ej cttgwgu'd{ 'kf gpvkh{kpi " r qvgpvkcn'r qlpv'ueqtgu'cpf "NGGF 'Rtqlgev'Ej gemkwu'*cxckrcdrg"cv'<u>y y v 0wii de0qti +</u>'y kn'dg" r tgr ctgf "y kj "y g'ej cttgwg'tgr qtw0"F guki pgtu'qh'tgeqtf "uj qwrf "j cxg"c'NGGF 'Ceetgf kgf " Rtqhguukqpcn'qp"yj gkt 'vgco u0*D+"'Hqt"f guki p/dkf/dwkrf 'r tqlgew. "yj gug'ueqtg'r qkpvu'y kn'dg" lhpg'wpgf "d{ 'kf gpvkh{kpi 'tgs wktgf 'cpf 'r tghgttgf 'etgf ky'r qkpvu'cv'yj g''ko g'qh'r ctco gvtke" uwdo kwcnleqpegr v'f guki p"cpf 'y kn'dgeqo g"cp'kpvgi tcn'r ctv'qh'yj g'f guki p"uwdo kuukqp0"*E+"" lqt"f guki p/dwkrf 'r tqlgevu. "yj g'THR'y kn'kpenwf g'tgs wktgf "cpf 'r tghgttgf 'etgf ky'r qkpvu'hqt" o ggvkpi 'ur gekhke'NGGF 'tgs wktgo gpvu0"Rtqr qucnu'*Rj cug'Kkf'uj cm'kpenwf g'eqo r rgvgf 'NGGF " ueqtg'uj ggwu'kpf kecvkpi "j qy "yj g'Rtqr quqt'kpvgpf u'vq'cej kgxg'yj g'tgs wktgf 'rgxgr0""

70"Hqto cn'NGGF 'egtvkhecvkqp'ku'pqv'tgs wktgf = j qy gxgt. 'f qewo gpvcvkqp''uj qwrf 'hqmqy " WUI DE 'tgs wktgo gpvu0"Tgi kuvtcvkqp''qh''q g'r tqlgev'y kj "WUI DE 'ku'gpeqwtci gf 0"Kv'cmqy u'' wug''qh''= NGGF/Qprkpgø'cpf ''qp/rkpg''= NGGF ''Ngwgt''Vgo r revguø'vq'f qewo gpv'cpf ''vtceni'r tqlgev'' r tqi tguu''vqy ctf u'cej kgxkpi ''Cto { "UFF" i qcn:0"Kv'y km'cn:q'qhhgt''y g''cff kkqpcn'cf xcpvci g''qh'' WUI DE 'uwrrqtv'kp''etgf kv'kpvgtrtgvcvkqp''cpf 'twrkpi u0""

"

GED'4228ô 4"

 $\label{thm:linear} Uwdlgev \ \ \ Uwvclpcdrg'F guki p'cpf'F gxgrqr o gpv \ \ \ \ \ F+''$

80Hqt'O KNEQP 'Rtqi tco o kpi 'r wtr qugu.'F kwtkevulkpuvcmcvkqpu'uj cm'kpenwf g''c'hwm{ 'eqo r ngvgf ''
NGGF 'Rtqlgev'Ej gemku'f go qpuvtcvkpi ''y g''pgeguuct { 'r qkpvu'vq''cej kgxg''NGGF ''Ukrxgt'kp''y g''
Hcektkv{ 'Rqkpvu'Uwo o ct { 'ugevkqp''qh''y g''Uwuvckpcdrg'Equv'Vgo r ncvg''cv''
j wr 4ly y y 0y df i 0qti leed ICTO [EQGIEQGGED ICTEJ KGUlgeda4228a4auf f aequva vgo r ncvg'0znu'y kyj ''y g'''

Dwf i gv'Equv'Guvko cvgulRctco gvtke 'Guvko cvgu0''Rtqlgevu'encko kpi 'cffkvkqpcn'equvu'hqt''o ggvkpi 'c'' Ukrxgt'Tcvkpi ''uj qwrf ''cnuq'kfgpvkh{ ''dcugrkpg'ueqtgu'hqt''o ggvkpi ''vjg''NGGF'Egtvkhkgf'Tcvkpi ''cpf''vjg'' kpetgo gpvcn'equv'kphqto cvkqp'kp''vjg''Vgorncvg0''''

90"Eqpurt werkqp 'hkgrf "qhhkegu'cf o kpkurgt kpi "r tqlgeru'pggf "vq'dg''cy ctg''qh''y g''NGGF 'tgs wktgo gpru'' cpf 'o qpkqt''cu'r ctv'qh''y gkt''s wcrkv{ "cuurt cpeg'f wkgu''y g''eqprt cerqt uø'eqphqto cpeg'kp''o ggrkpi ''y g'' NGGF 'urcpf ctf u'f wt kpi "eqpurt werkqp0"'

: 0"NGGF 'tckpi 'rgxgnı'uj cm'dg'tgr qtvgf 'xkc'R40"Vj g'r tqlgev'o cpci gt'uj qwf 'kpr w'yj g'tckpi u'cu'' gctn('cu'r quukdng'cpf 'tgxkug'yj go 'y j gp'pgeguuct {0"Vj g'kpuvcmckqp'F ktgevqt 'qh'Rwdrke'Y qtmu'qt'' yj g'Tgugtxg'Eqo r qpgpv'gs wkxcngpv.'uwr r qtvkpi 'Gpi kpggt'F kurtkev.'f guki pgt'cpf 'eqpurtwevqt'y km' lqkpvn('egtvkh(''yj g'hkpcn'NGGF 'ueqtg'cpf 'tcvkpi 0"Rtqlgevu'y kyj ''o wnkr ng'dvkrf kpi ''v(r gu'uj cm' cej kgxg'cpf 'f qewo gpv'yj g'tgs wktgf 'Tcvkpi 'ngxgn'hqt'gcej 'qh'yj g'dvkrf kpi ''v(r gu'0"J qy gxgt.''qpn('' yj g'tcvkpi 'hqt'yj g'r tko ct{ 'hcektk('*Ecvgi qt{ 'Eqf g+'y kn'dg'tgr qtvgf 'xkc'R40"Vj gug'tcvkpi u'y kn'dg'' wugf ''q'tgr qtv'qwt'cf j gtgpeg'vq'yj g'r qrke{ ''q'yj g'F ktgevqt'qh'O krkct{ 'Rtqi tco u'cpf ''yj g'Ej kgh'qh'' Gpi kpggtu0"''

; 0"Y j gp"yj g"tgs wktgf "ngxgn'ecp"pqv'dg"cej kgxgf."yj g"r tqlgev'o cpci gt"y km'r tgr ctg"c"nguuqpu" ngctpgf 'tgr qtv'cpf 'hqty ctf 'kv'\q'\yj g"TKV"Rtqi tco 'O cpci gt"cpf '\q'\yj g'G(E 'equv'gpi kpggtkpi 'RQE" y kyj "cp"gzr ncpcvkqp"cu'\q'y j { "yj ku'ngxgn'ecppqv'dg"cej kgxgf 0"""

320"Vj g'WU'Cto {'ku'c'o go dgt'qh'vj g'WUI DEO"Y ky 'vj g'Cto {øu'o go dgtuj kr 'cm'Cto {'' go r mq{ggu'ecp''cmg''cf xcpvci g'qh'o go dgtuj kr ''r tkxkngi gu0"Cto {''go r mq{ggu'ecp''i gv'o go dgtuj kr '' pwo dgt''d{''ecmkpi ''cp{'qh''yj g''RQEu''hqt''yj ku'GED0"O qtg'kphqto cvkqp'ku''cxckncdng''cv'' j wr udlgmq0wceg0cto {00 kmllcluffl0"Vj g'Y j qng''Dwkrfkpi 'F guki p'I wkfg'' j wr dly y y 0y dfi 0qti 1kpfgz0rjr''cnnq''r tqxkfgu'wughwrlfguki p'kphqto cvkqp0"'

330"RQE 'ku'O t0J ctt { 'I qtcf kc. 'EGEY /EG. '424/983/69580" 'Vgej pkech'cuukuvcpeg. ''qp'' tgko dwtucdng ''dcuku''gzegr v'hqt ''eqpuwncvkqp. ''ecp''dg''r tqxkf gf ''d $\{$ ''O t0Tkej ctf ''Uej pgkf gt. ''439/595/8974. ''cpf ''O u0Cppgwg''Uwo r h ''439/595/66; 4. 'EGTN''cpf ''d $\{$ ''O u0Lwf $\{$ ''O knqp. ''Uexcppcj '' F kntkev.''; 34/874/76630"''

'' ''

> FQPCNF "NODCUI CO."R0G0" Ej kgh "Gpi kpggtkpi "cpf "Eqpuntwerkqp" Fktgevqtcvg"qh"EkxkriY qtmı"