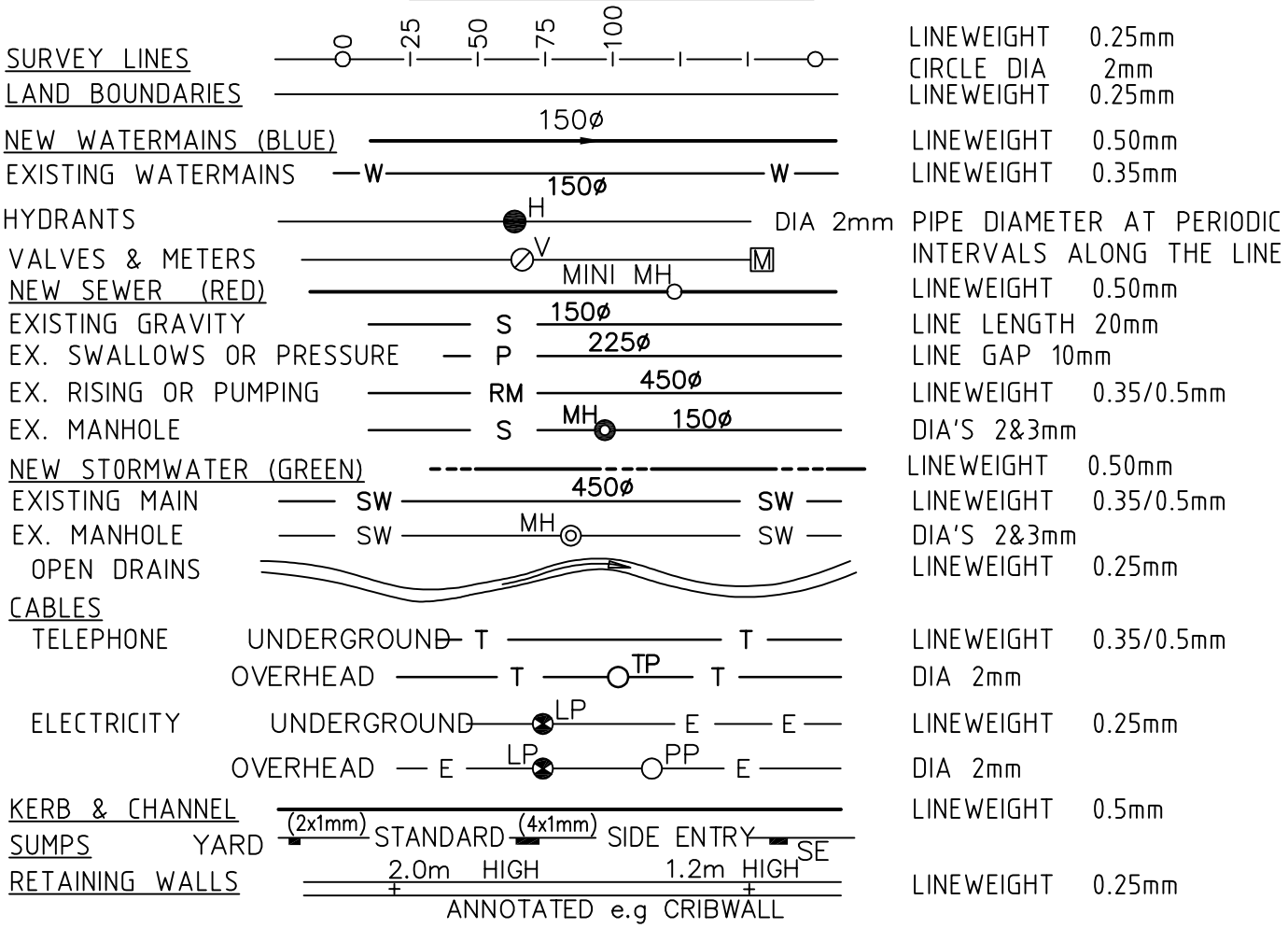
STANDARD SYMBOLS



TYPICAL SIGNATURE BLOCK

NELSON CITY COUNCIL	NCC PLAN No. . . . .
	SHEET OF
. . . . .	RESOURCE CONSENT No.
SENIOR EXECUTIVE INFRASTRUCTURE DATE	. . . . .

SITE CONTOURS 1:1000 1:500 1:250 1:200

STREETS KERB & CHANNEL AND FOOTPATHS
- PLAN 1:500 1:250 1:200
- LONGITUDINAL SECTION :
  - HORIZONTAL 1:500 1:250 1:200
  - VERTICAL 1:50 1:25 1:20

CROSS SECTIONS
- HORIZONTAL 1:50
- VERTICAL 1:100 1:50 1:20

ANY VARIATION FROM THESE SCALES AS SHOWN SHALL HAVE THE PRIOR APPROVAL OF THE COUNCIL

SHEET SIZES: A1 594mm x 841mm
A2 420mm x 594mm

SOIL & STORMWATER SEWERS
- PLAN 1:500 1:250 1:200
- LONGITUDINAL SECTION :
  - HORIZONTAL 1:500 1:250 1:200
  - VERTICAL 1:50 1:100
- DETAILS 1:20 1:10 1:5

SERVICES GENERAL
- PLAN 1:500 1:250 1:200
- CROSS SECTIONS 1:50

MAIN SHEETS REQUIRED:
1. ROADING
2. SEWERS-STORMWATER-KERBS
3. WATER-TELEPHONE-POWER-KERBS

ALL INKS AND LETTERING USED SHOULD BE SUITABLE FOR SCANNING REPRODUCTION.

NELSON CITY COUNCIL

DRAWING SYMBOLS & SCALES

INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 201

LONGITUDINAL SECTION

ROADS

H.A.D (N.C.C.)

OTHER LEVELS (E.G. EXISTING SERVICES)	
TOP OF KERB LEVEL R.H. SIDE	
TOP OF KERB LEVEL L.H. SIDE	
GROUND LEVEL PEG LEVEL	
HORIZONTAL DISTANCE	
GRADIENT R.H SIDE (% OR 1 IN ...) V.C.	
GRADIENT L.H SIDE	
HORIZONTAL CURVE H.C. %S.E.	

SEWER & STORMWATER

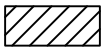
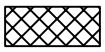
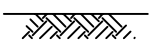
H.A.D (N.C.C.)

OTHER LEVELS (E.G. SERVICES CROSSING THE LINE)	
HYDRAULIC GRADE LEVEL (IF APPLICABLE)	
GROUND LEVEL PEG LEVEL	
CUT (GROUND LEVEL TO INVERT.)	
SEWER INVERT	
SEWER DISTANCE (TRUE HORIZONTAL DISTANCE ALONG SEWER)	
GRADIENT (% OR 1 IN ...)	
DIAMETER (MILLIMETERS INTERNAL) & PIPE TYPE/MATERIAL	

NOTE

1. ALL LEVELS IN TERMS OF HEIGHT ABOVE NCC DATUM IN METRES
2. ALL DISTANCES IN METRES.
3. GROUND OR PEG LEVELS SHOWN ON SECTIONS ARE TO BE THOSE ON THE LINE OF THE SEWER
4. PIPELINES DESIGNED TO OPERATE UNDER PRESSURE SHALL INCLUDE THE HYDRAULIC GRADE LINE, ITS LEVELS AND GRADIENTS.
5. BLOCKS MAYBE EXTENDED TO ALLOW "AS BUILT" DATA TO BE ADDED.
   e.g: AS BUILT SEWER INVERT
   AS BUILT DISTANCE
   AS BUILT GRADIENT
6. LOWEST LEVEL ON LONGITUDINAL SECTION ON LHS

COLOUR CODE FOR EARTHWORKS IN SECTION

FILLING	GREEN	SYMBOL =	
CUTTING	RED	SYMBOL =	
REPLACEMENT GRAVEL	BROWN	SYMBOL =	
BASECOURSE	BLUE	SYMBOL =	
EARTH (TOPSOIL)		SYMBOL =	

COLOUR CODE

COLOUR CODE PRIMARILY FOR USE ON WHITE PAPER. ALL INKS USED SHOULD BE SUITABLE FOR DYELINE PHOTOCOPYING AND REPRODUCTION.

SYMBOL IS FOR WHEN COLOURS ARE TO BE REPRODUCED IN BLACK

NELSON CITY COUNCIL

DRAWING STANDARDS & SYMBOLS

INFRASTRUCTURAL ASSETS

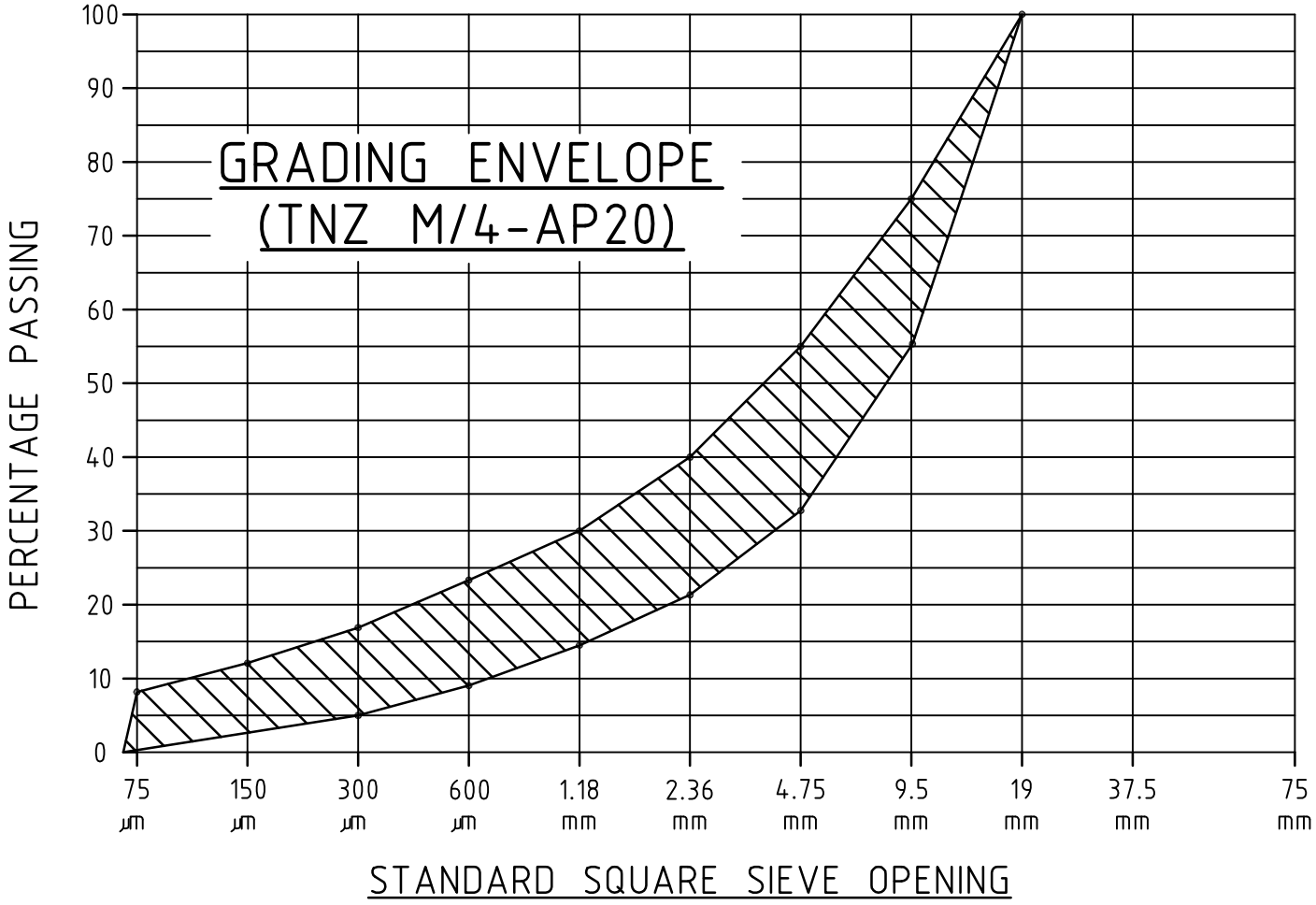
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 202



A. PROPORTION OF BROKEN ROCK:

THE PERCENTAGE BY WEIGHT OF MATERIAL IN EACH OF THE FRACTIONS BETWEEN THE 19mm AND 4.75mm SIEVES HAVING TWO OR MORE BROKEN FACES SHALL NOT BE LESS THAN 70%

B. CRUSHING RESISTANCE:

THE CRUSHING RESISTANCE SHALL NOT BE LESS THAN 130kN

C. WEATHERING RESISTANCE:

THE AGGREGATE SHALL FALL INTO ONE OF THE FOLLOWING WEATHERING RESISTANCE CATEGORIES:- AA AB AC BA BB CA.

D. SAND EQUIVALENT:

THE SAND EQUIVALENT SHALL NOT BE LESS THAN 40 WHEN THE AGGREGATE IS TESTED ACCORDING TO NZS 4407: 1991.

NELSON CITY COUNCIL

20mm BASECOURSE AGGREGATE

INFRASTRUCTURAL ASSETS

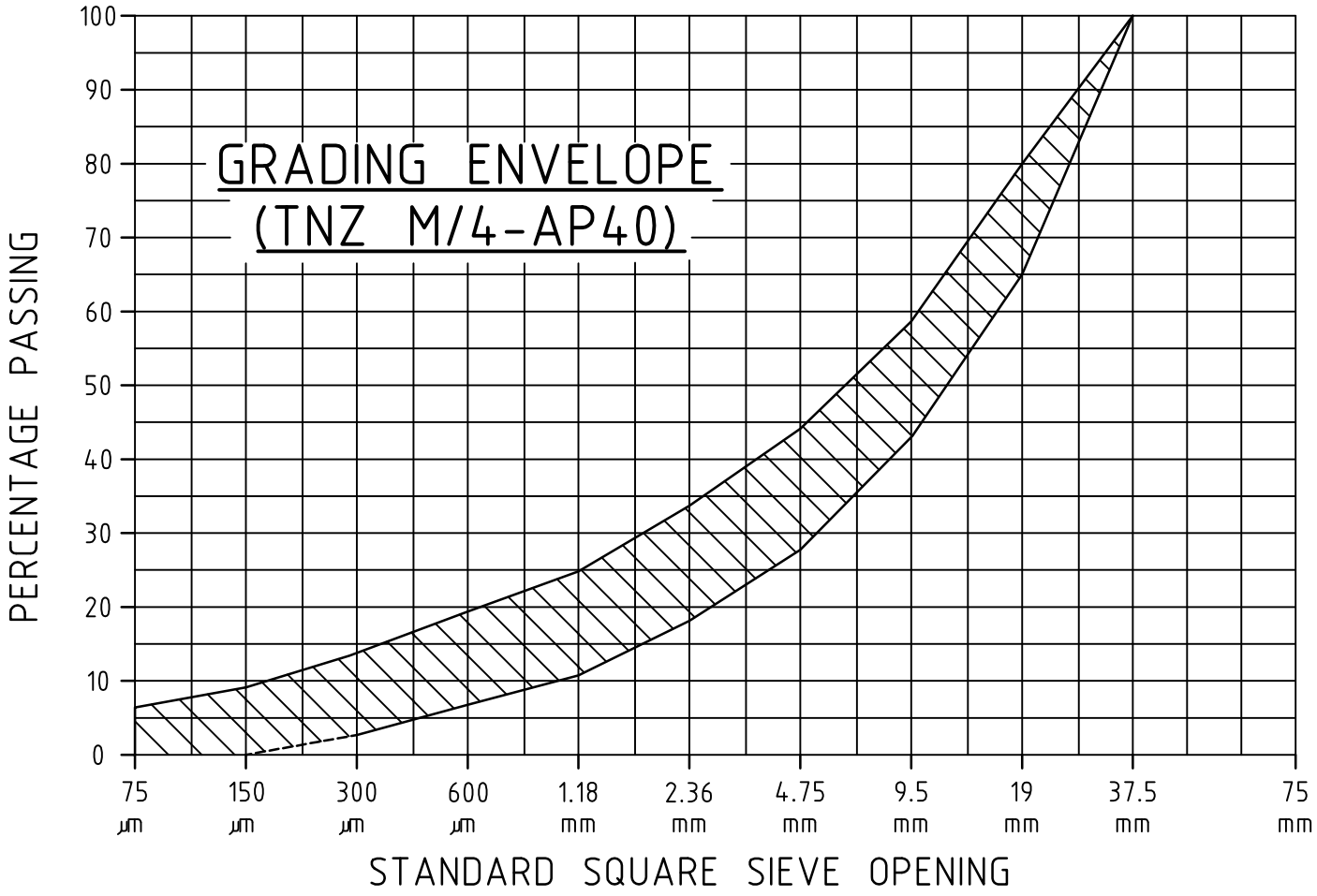
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 401



A. PROPORTION OF BROKEN ROCK:

THE PERCENTAGE BY WEIGHT OF MATERIAL IN EACH OF THE FOUR FRACTIONS BETWEEN THE 37.5mm AND 4.5mm SIEVES HAVING TWO OR MORE BROKEN FACES SHALL NOT BE LESS THAN 70%

B. CRUSHING RESISTANCE:

THE CRUSHING RESISTANCE SHALL NOT BE LESS THAN 130kN

C. WEATHERING RESISTANCE:

THE AGGREGATE SHALL FALL INTO ONE OF THE FOLLOWING WEATHERING RESISTANCE CATEGORIES:- AA AB AC BA BB CA.

D. SAND EQUIVALENT:

THE SAND EQUIVALENT SHALL NOT BE LESS THAN 40 WHEN THE AGGREGATE IS TESTED ACCORDING TO NZS 4407: 1991.

NELSON CITY COUNCIL

40mm BASECOURSE AGGREGATE

INFRASTRUCTURAL ASSETS

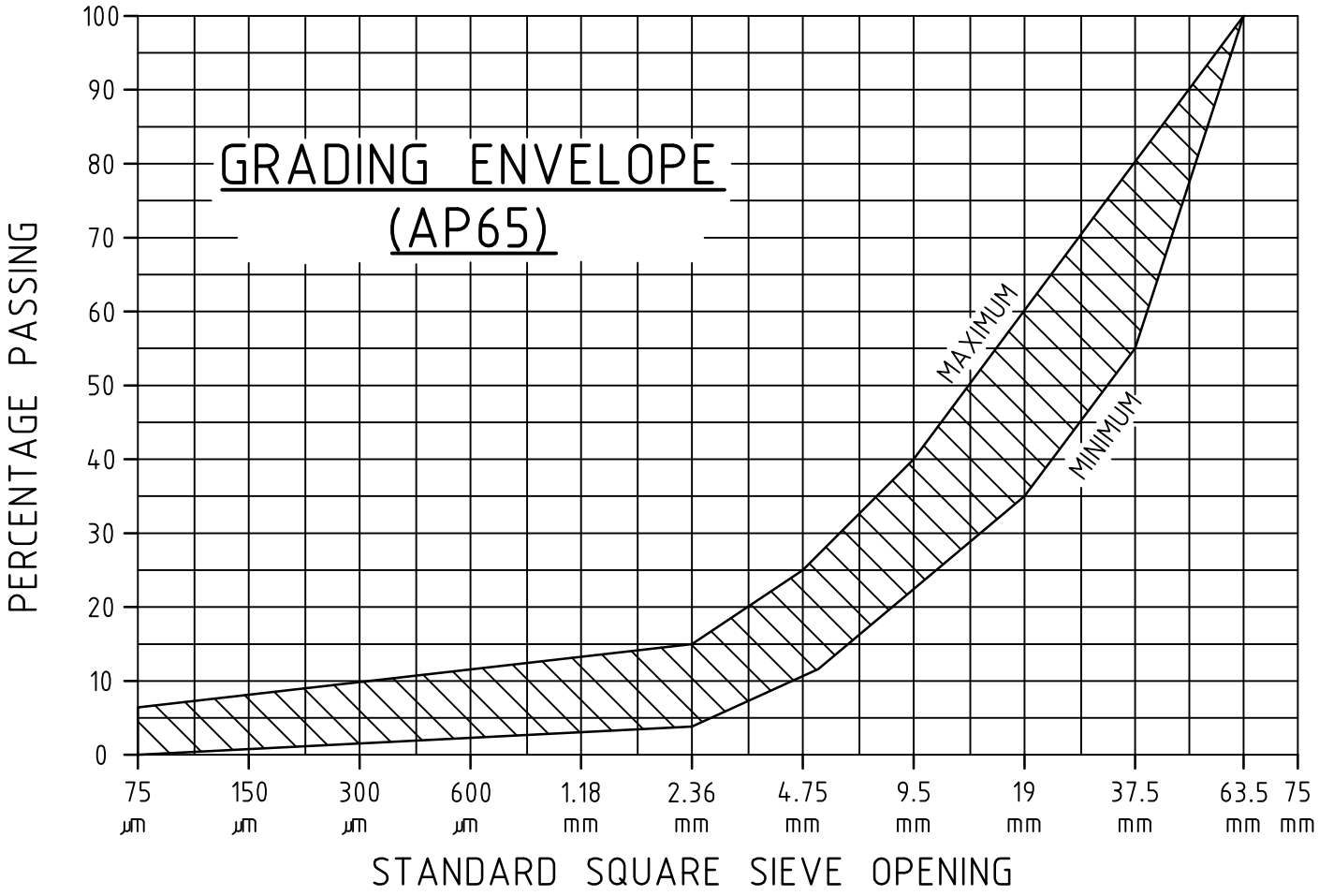
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 402



A. PROPORTION OF BROKEN ROCK:

THE PERCENTAGE BY WEIGHT OF MATERIAL IN EACH OF THE FOUR FRACTIONS BETWEEN THE 63.5mm AND 4.5mm SIEVES HAVING TWO OR MORE BROKEN FACES SHALL NOT BE LESS THAN 70%

B. CRUSHING RESISTANCE:

THE CRUSHING RESISTANCE SHALL NOT BE LESS THAN 110kN

C. WEATHERING RESISTANCE:

THE AGGREGATE SHALL FALL INTO ONE OF THE FOLLOWING WEATHERING RESISTANCE CATEGORIES:- AA AB AC BA BB CA.

D. SAND EQUIVALENT:

THE SAND EQUIVALENT SHALL NOT BE LESS THAN 40 WHEN THE AGGREGATE IS TESTED ACCORDING TO NZS 4407: 1991.

NELSON CITY COUNCIL

65mm SUB–BASECOURSE AGGREGATE

INFRASTRUCTURAL ASSETS

APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

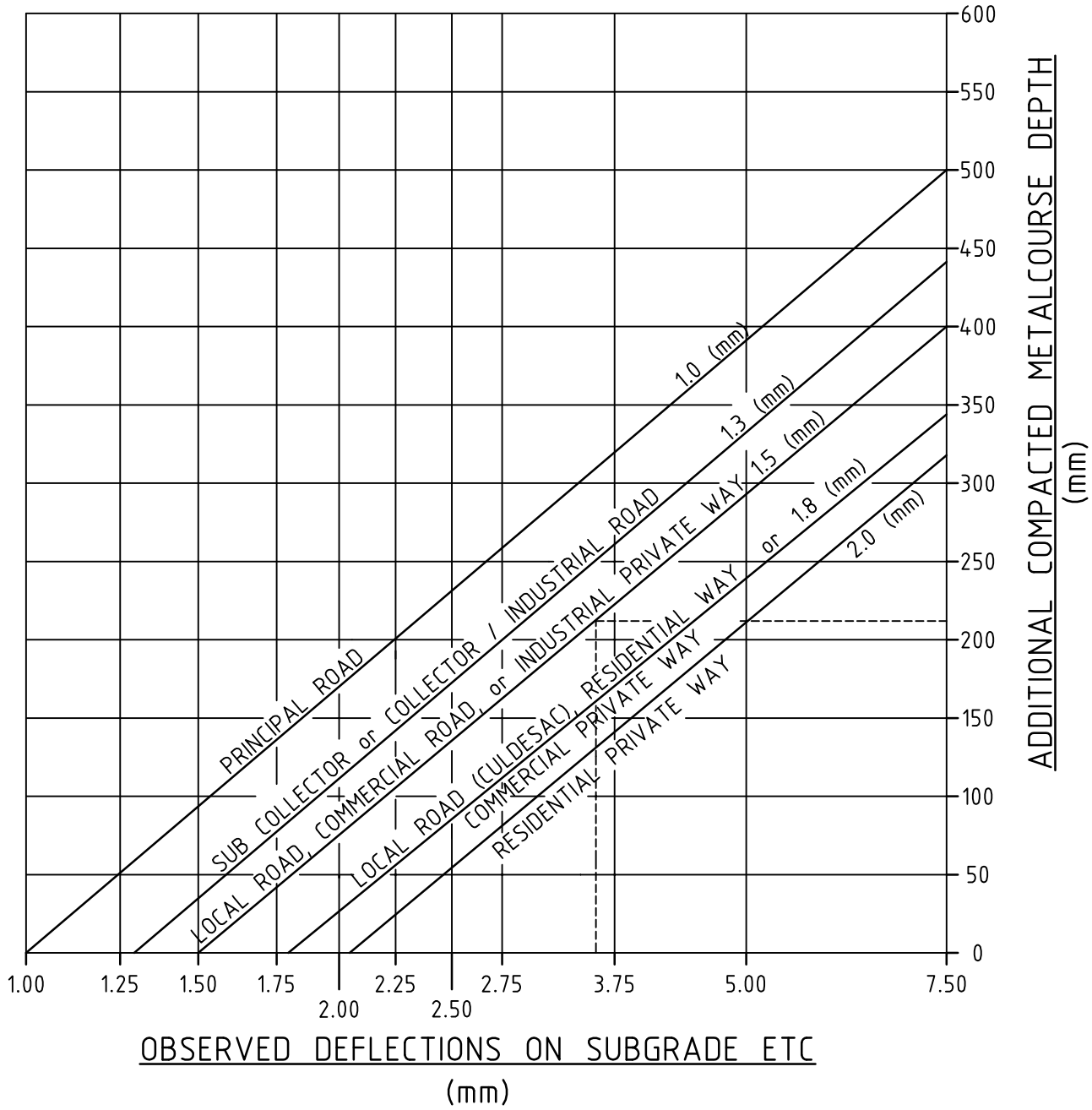
29/07/2010

DATE

SD 403

EXAMPLE: (SHOWN IN DOTTED LINE)
RESIDENTIAL ROAD
OBSERVED DEFLECTIONS 3.6mm ADDITIONAL DEPTH OF METALCOURSE REQUIRED = 210mm

NOTE: MINIMUM M/4 AP40 BASECOURSE LAYER REQUIRED IS 100mm FOR CONCRETE FOOTPATHS, 150mm FOR ASPHALTIC CONCRETE FOOTPATHS & RESIDENTIAL ROW's, 200mm FOR ROADS & COMMERCIAL/INDUSTRIAL PRIVATE WAY



NELSON CITY COUNCIL

DESIGN GRAPH FOR FLEXIBLE PAVEMENTS BENKLEMAN BEAM DEFLECTIONS

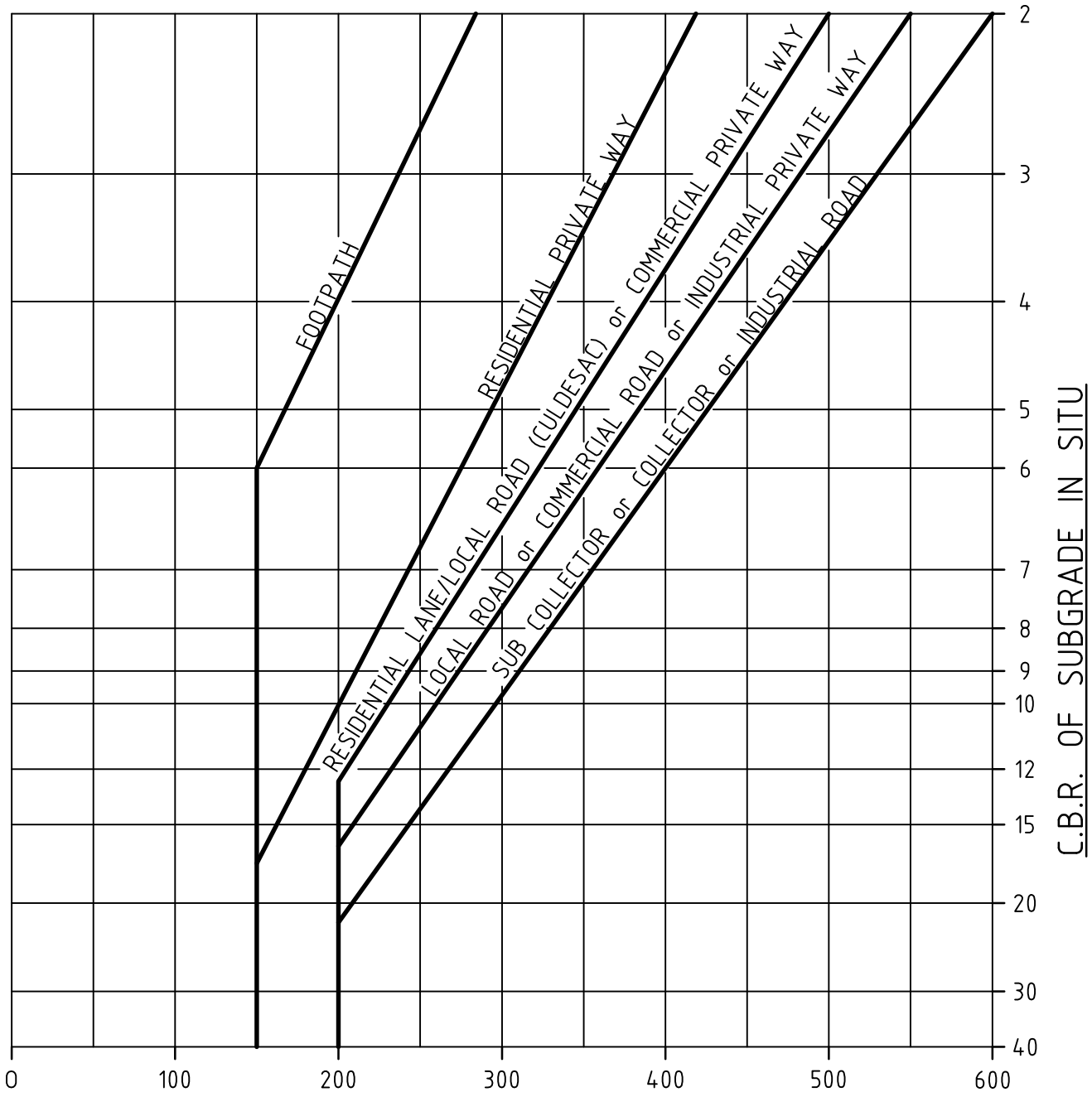
INFRASTRUCTURAL ASSETS

APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010
DATE

SD 404



NOTE: MINIMUM M/4 AP40 BASECOURSE LAYER REQUIRED IS 100mm FOR CONCRETE FOOTPATHS, 150mm FOR ASPHALTIC CONCRETE FOOTPATHS & RESIDENTIAL PRIVATE WAY's, 200mm FOR ROADS & COMMERCIAL/INDUSTRIAL PRIVATE WAY's

NELSON CITY COUNCIL

DESIGN GRAPH FOR FLEXIBLE PAVEMENTS CBR METHOD

INFRASTRUCTURAL ASSETS

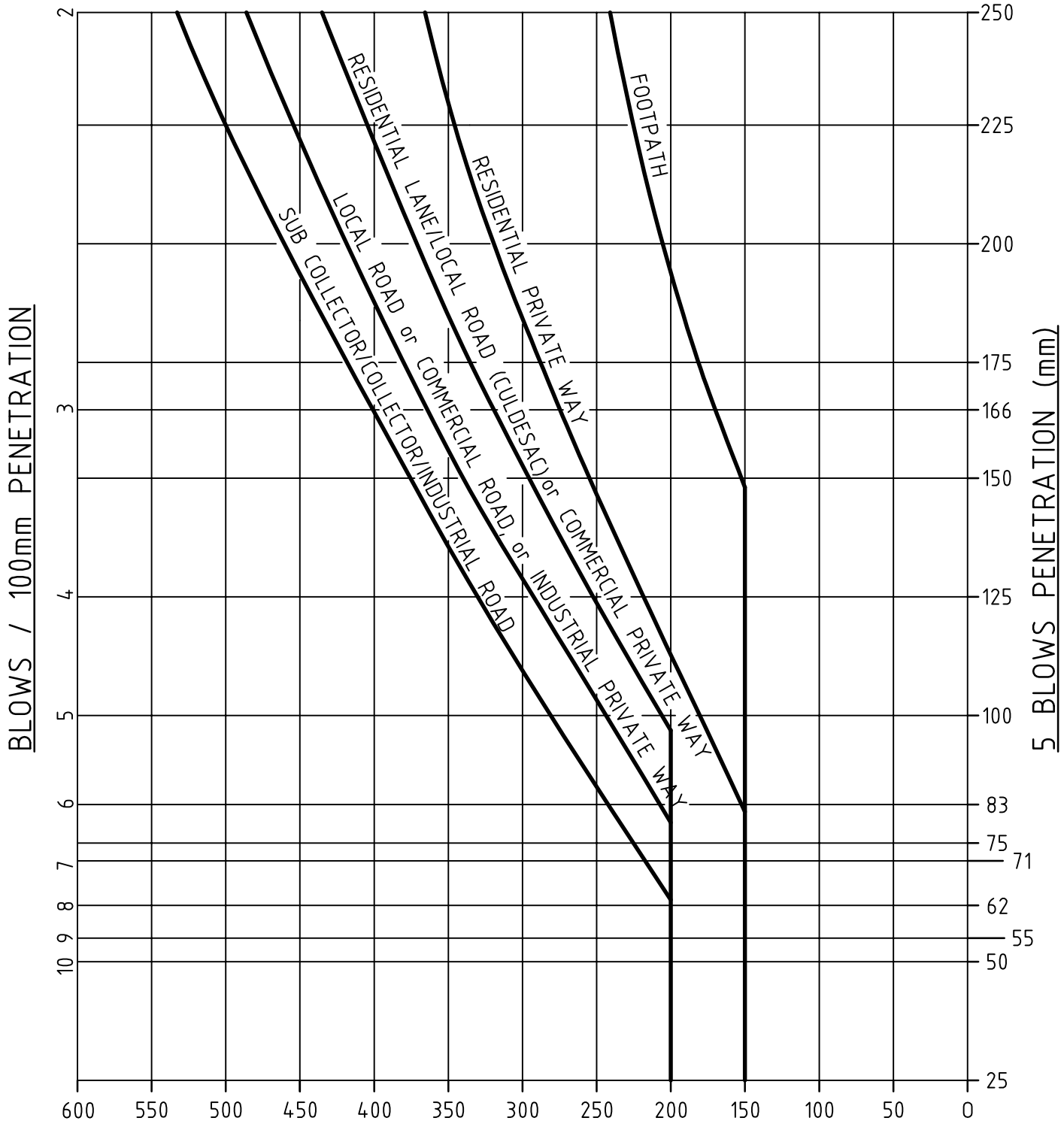
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 405



NOTE: MINIMUM M/4 AP40 BASECOURSE LAYER REQUIRED IS 100mm FOR CONCRETE FOOTPATHS, 150mm FOR ASPHALTIC CONCRETE FOOTPATHS & RESIDENTIAL PRIVATE WAY's, 200mm FOR ROADS & COMMERCIAL/INDUSTRIAL PRIVATE WAY's

NELSON CITY COUNCIL

DESIGN GRAPH FOR FLEXIBLE PAVEMENTS SCALA DYNAMIC CONE PENETROMETER

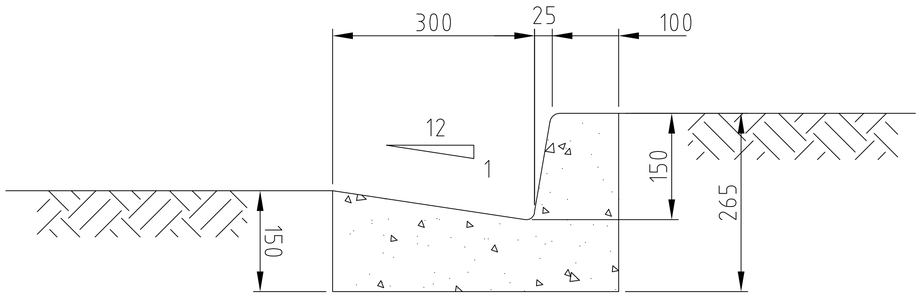
INFRASTRUCTURAL ASSETS

APPROVED

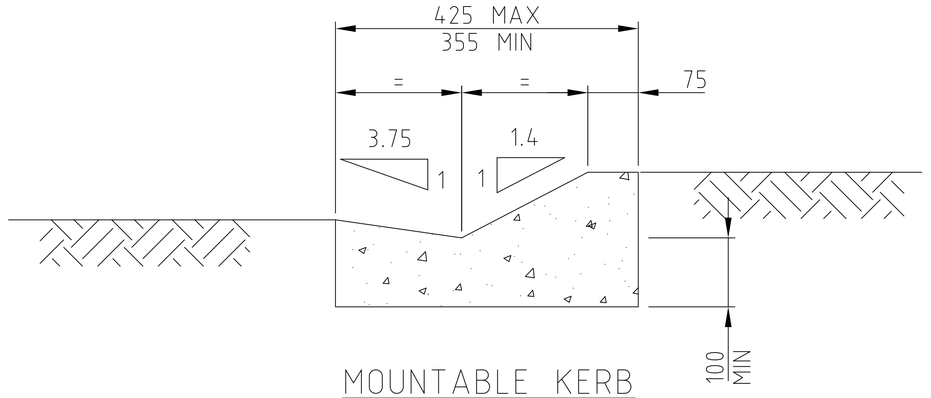
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

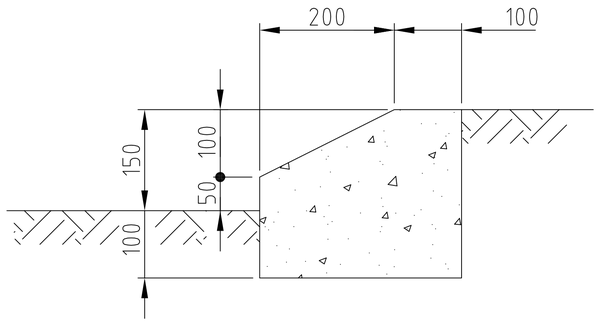
SD 406



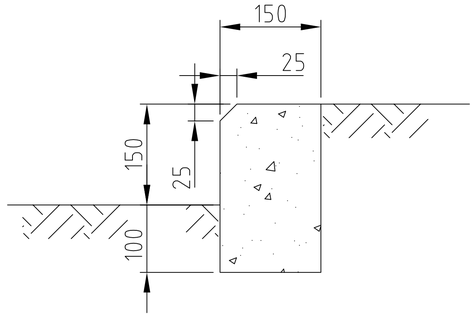
KERB & CHANNEL



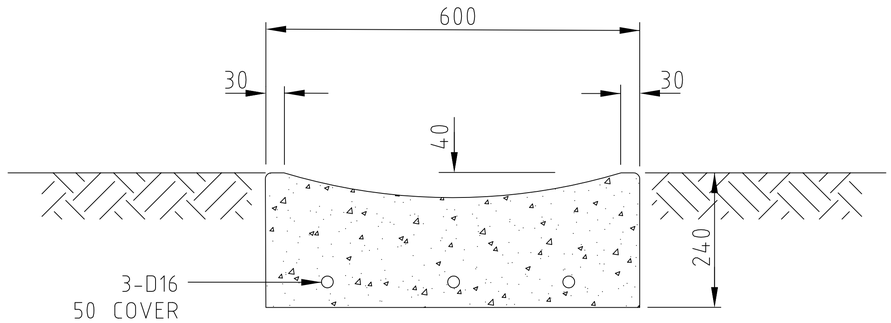
MOUNTABLE KERB
& CHANNEL



MOUNTABLE KERB



UNMOUNTABLE KERB



DISH CHANNEL

NELSON CITY COUNCIL

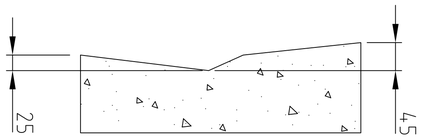
STANDARD KERB & CHANNEL PROFILES

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

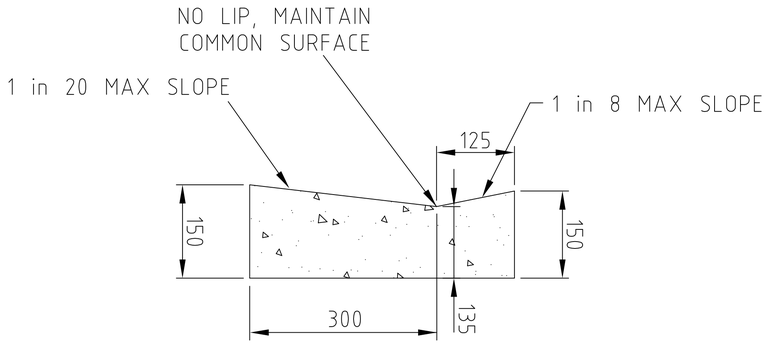
SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 407

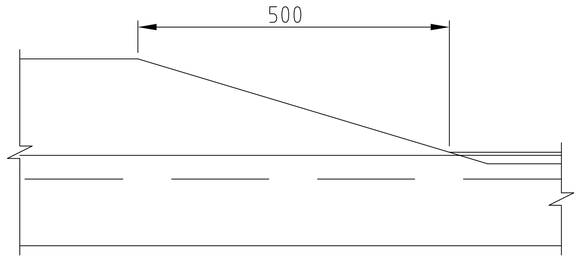


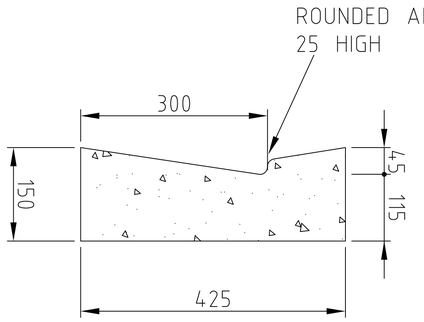
*SEE NOTE

MOUNTABLE KERB CROSSING

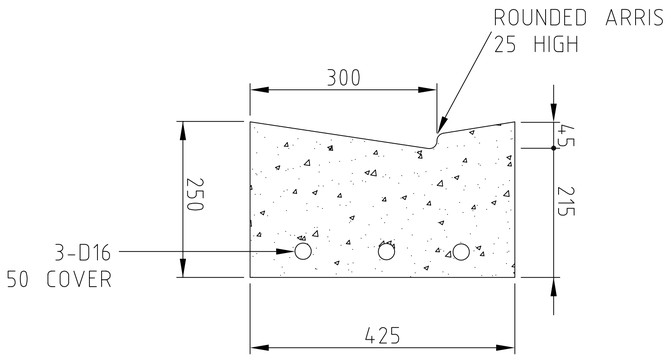


PRAM CROSSING

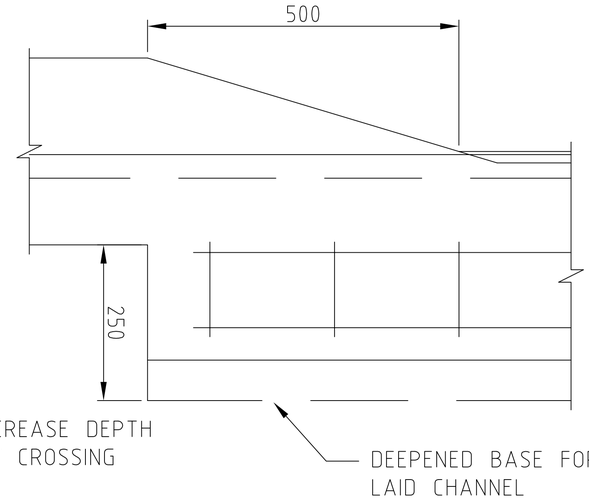


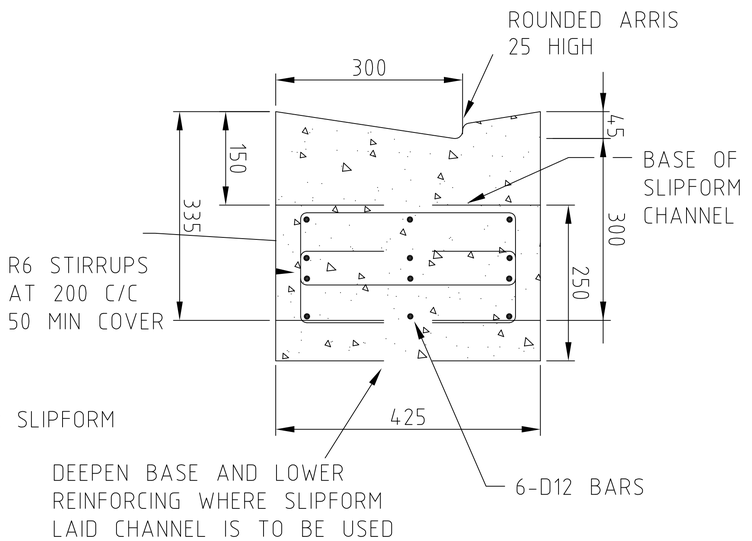


STANDARD RESIDENTIAL CROSSING



STANDARD COMMERCIAL CROSSING





STANDARD INDUSTRIAL CROSSING

* NOTE:
FOR LOCAL ROADS WHERE THE VEHICLE DESIGN SPEED IS 40km/hr or LESS, AND THE FOOTPATH IS ADJACENT THE KERB, THEN FULL HEIGHT MOUNTABLE KERB MUST BE USED

NELSON CITY COUNCIL

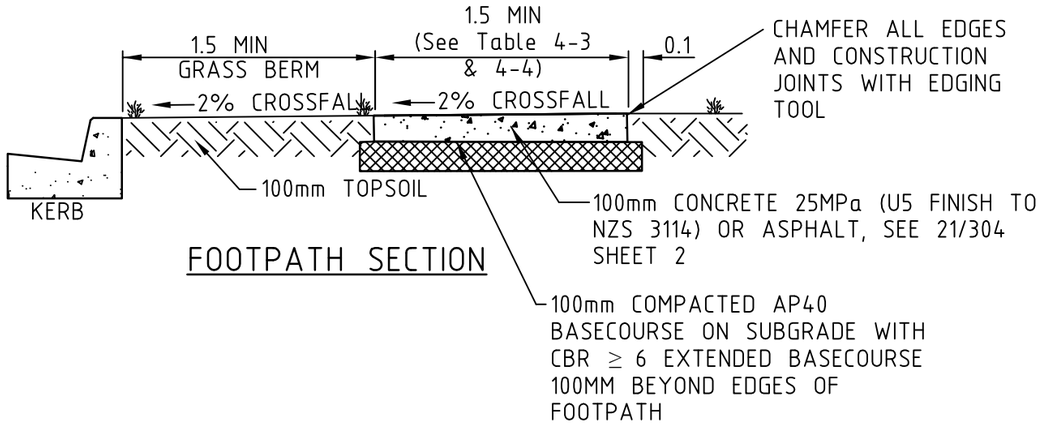
STANDARD KERB & CHANNEL CROSSINGS

INFRASTRUCTURAL ASSETS

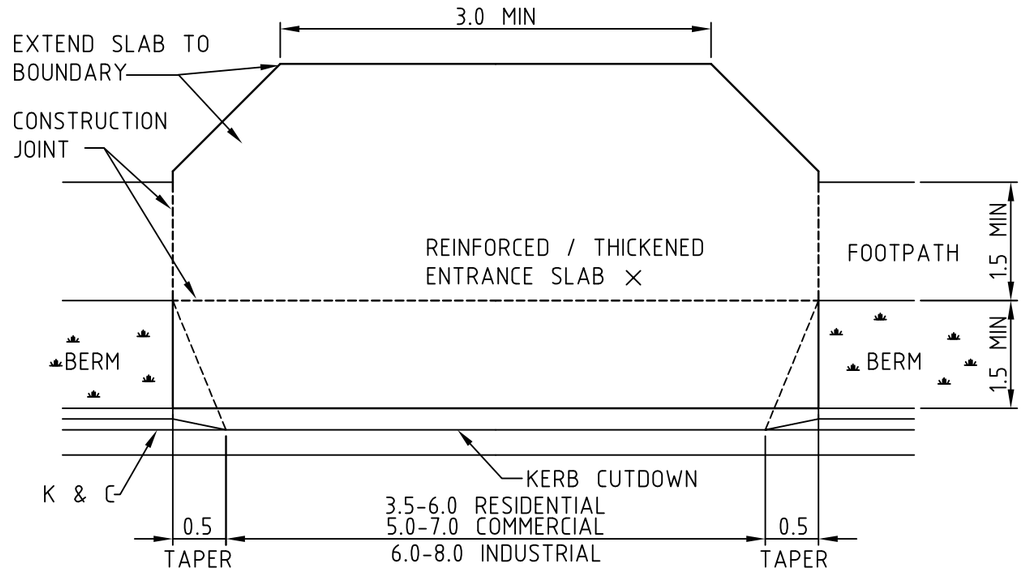
APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

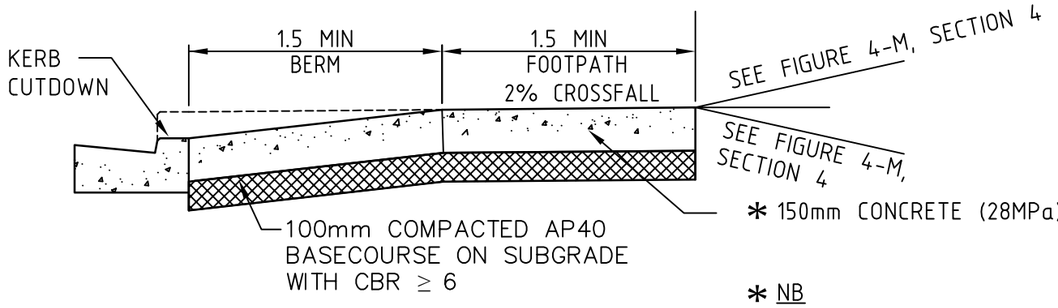
SD 408



FOOTPATH SECTION



VEHICLE ENTRANCE PLAN



VEHICLE ENTRANCE SECTION

* NB

COMMERCIAL VEHICLE ENTRANCE
200mm DEPTH CONCRETE, 30MPa
REINFORCED WITH ONE LAYER
665 WWF WITH 50mm COVER
FROM UNDERSIDE OF CONCRETE
SURFACE.

INDUSTRIAL VEHICLE ENTRANCE
300mm THICK CONCRETE, 30MPa
WITH 2 LAYERS of 665 WWF
REINFORCING. WWF SHALL HAVE
200mm SEPERATION AND 50mm
COVER.

NELSON CITY COUNCIL

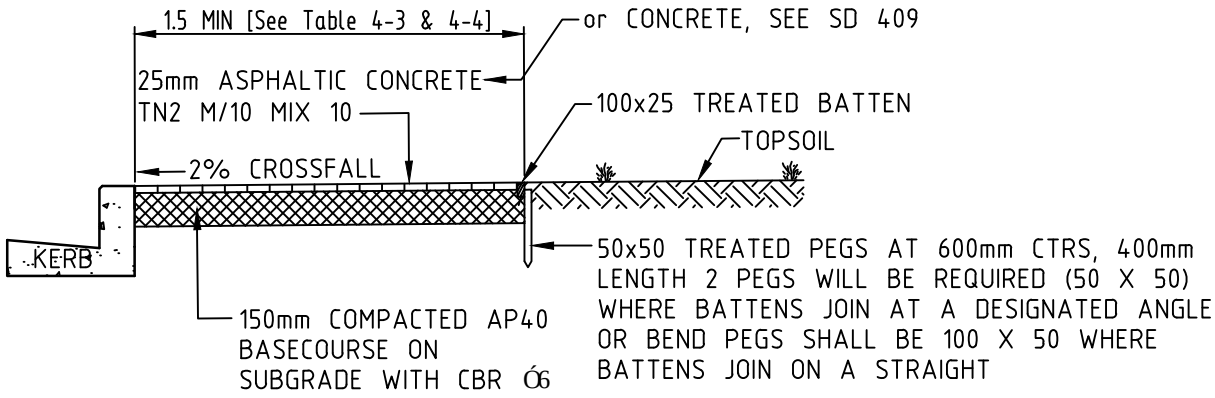
1.5m WIDE FOOTPATH OFFSET FROM KERB

INFRASTRUCTURAL ASSETS

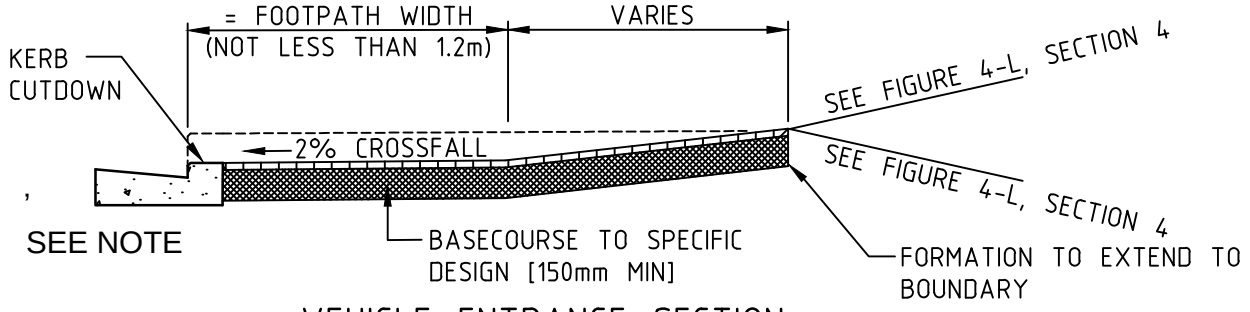
APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

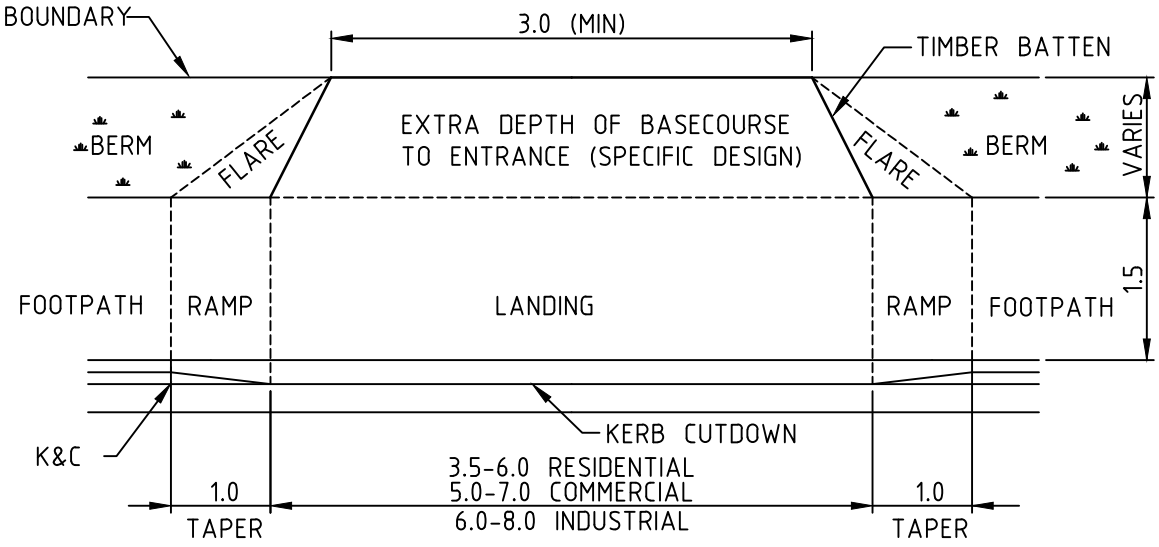
SD 409



FOOTPATH SECTION



VEHICLE ENTRANCE SECTION



VEHICLE ENTRANCE PLAN

NOTE:

1. FOR LOCAL ROADS WHERE THE VEHICLE DESIGN SPEED IS 40km/hr or LESS, AND THE FOOTPATH IS ADJACENT THE KERB, THEN FULL HEIGHT MOUNTABLE KERB & CHANNEL MUST BE USED
2. VEHICLE ENTRANCE & FOOTPATH TRANSITION MUST COMPLY WITH FIGURE 15.1 & TABLE 15.2 OF THE LAND TRANSPORT NZ 'PEDESTRIAN PLANNING & DESIGN GUIDE

NELSON CITY COUNCIL

1.5m WIDE FOOTPATH ADJACENT KERB

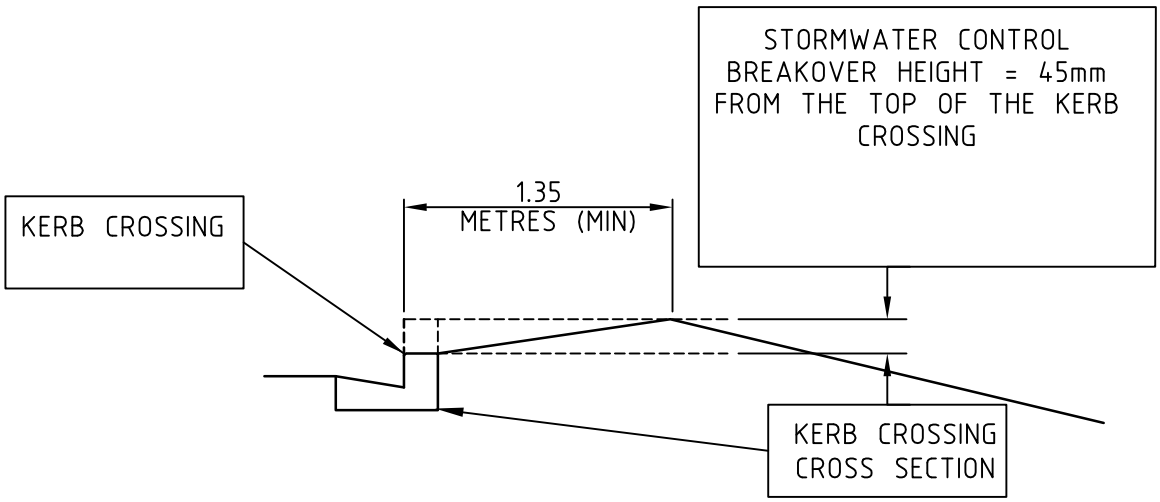
INFRASTRUCTURAL ASSETS

APPROVED

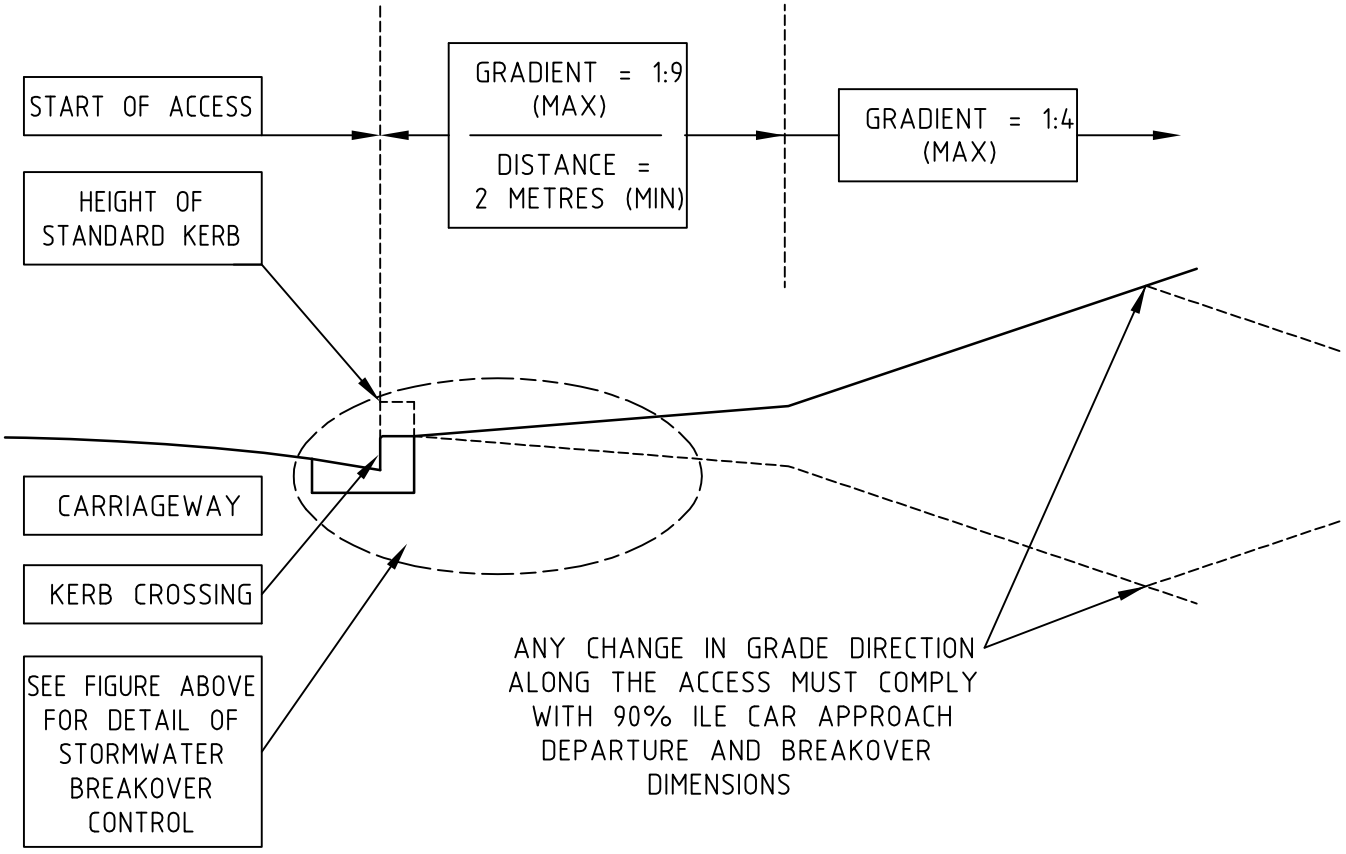
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 410



DIMENSIONS OF STORMWATER BREAKOVER CONTROL FOR ACCESSES BELOW THE ROAD



GRADIENT OF ACCESS AND BREAKOVER ANGLES FOR ACCESS TO SITES WHERE THE IS NO EXISTING OR PROPOSED FOOTPATH

NELSON CITY COUNCIL

ACCESS BREAKOVER ANGLES WHERE NO PROPOSED FOOTPATH

INFRASTRUCTURAL ASSETS

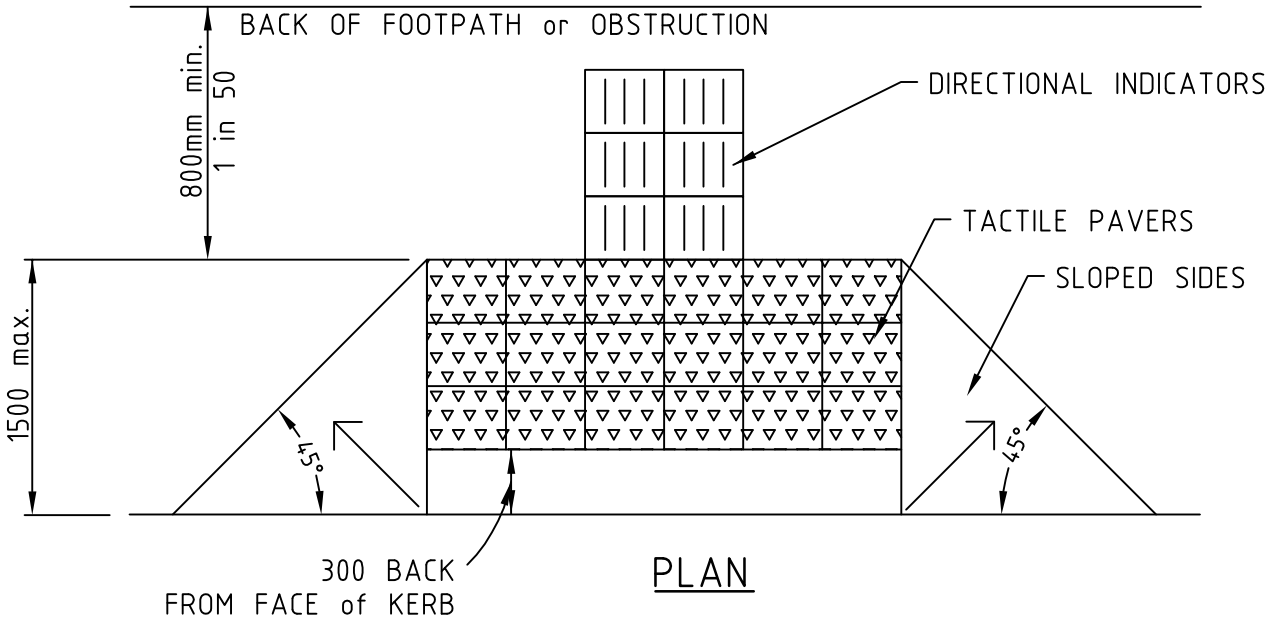
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

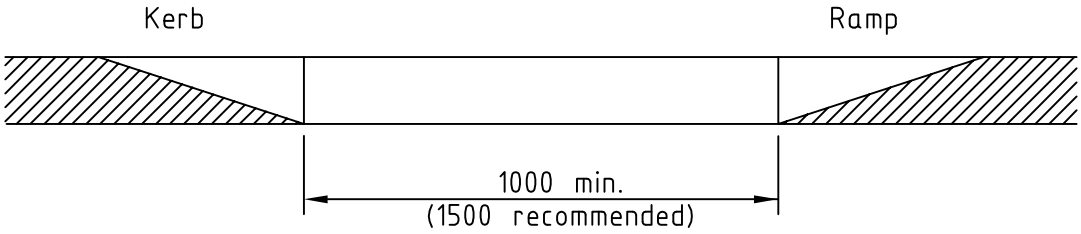
29/07/2010

DATE

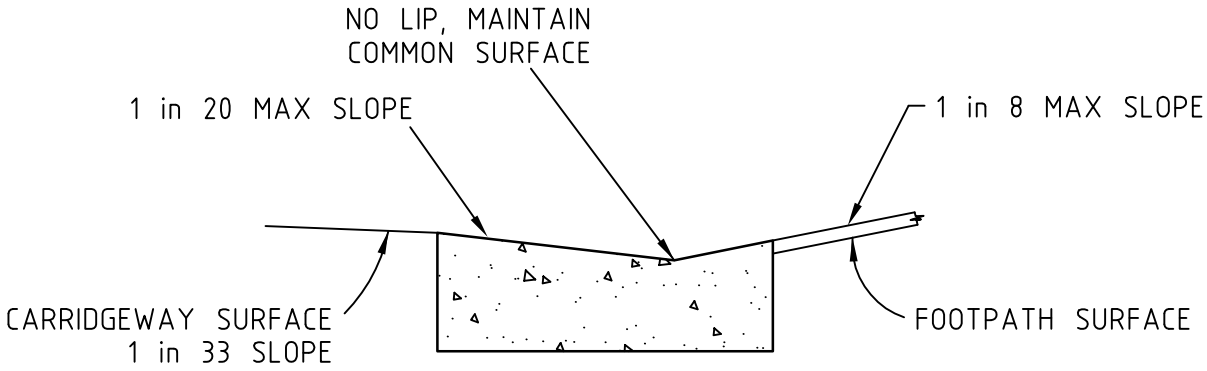
SD 411



PLAN



ELEVATION



CROSS SECTION

NOTE: FOR LAYOUT and INSTALLATION OF TACTILE PAVING & DIRECTIONAL INDICATORS, SEE SECTION 4.3.12.8

NELSON CITY COUNCIL	PEDESTRIAN KERB CROSSING AND RAMP	
	INFRASTRUCTURAL ASSETS APPROVED  29/07/2010 SENIOR EXECUTIVE INFRASTRUCTURE DATE	SD 412

NELSON CITY COUNCIL

TYPICAL CROSS SECTION CARRIAGEWAY

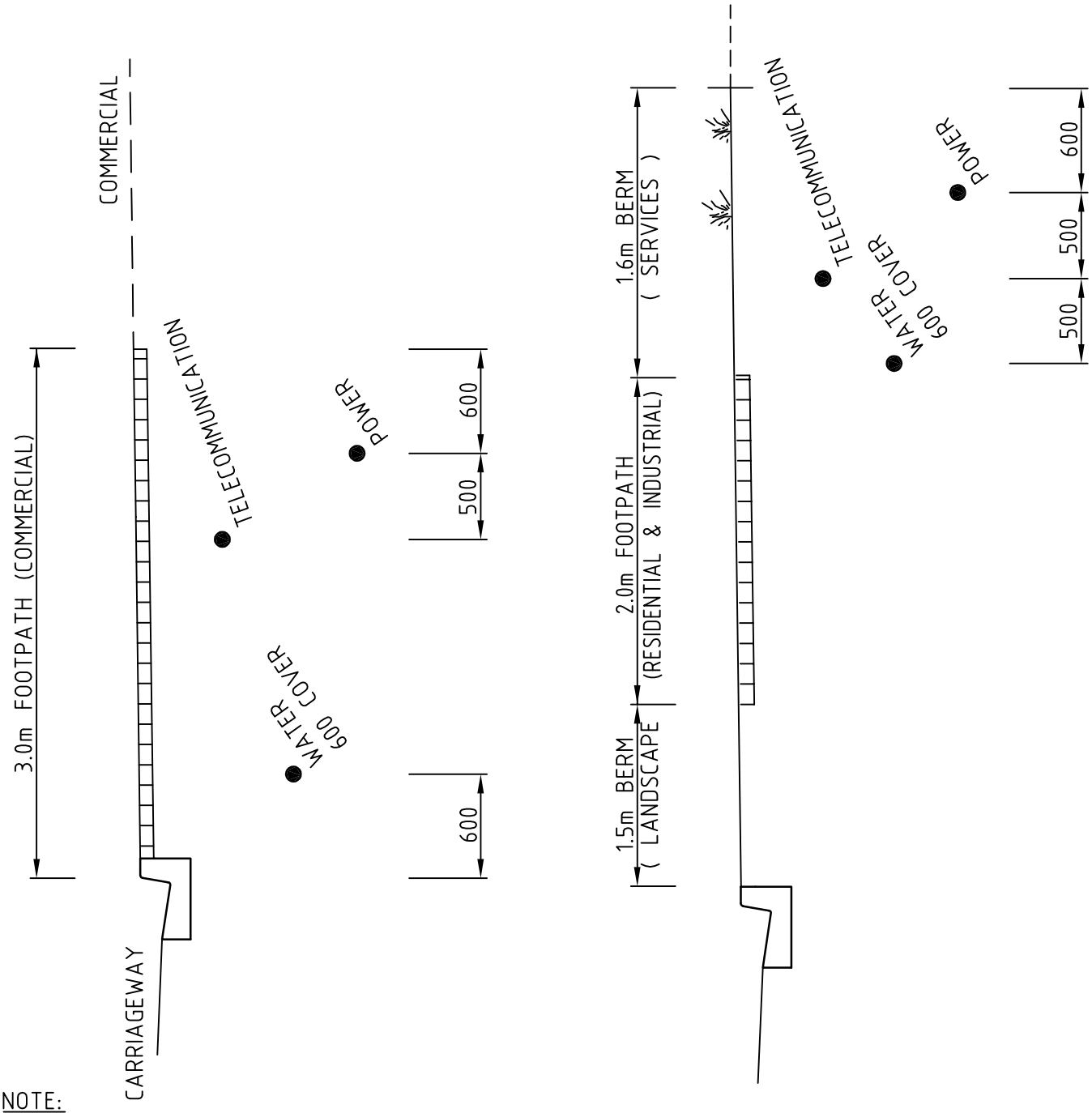
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 413



NOTE:

1. SERVICES BERM CAN BE REDUCED TO 0.5m WHERE SERVICES ARE UNDER THE FOOTPATH PROVIDED THEY DO NOT PRECLUDE THE INTRODUCTION OF STREET TREES

2. THE DEPTH OF CABLES MAY VARY. SEE SECTION 10 FOR POWER, & SECTION 11 FOR COMMUNICATION CABLE RETICULATION

3. SEE SECTION 4.4.15.3 REGARDING ALTERNATIVE OPTIONS TO GRASS SURFACES & PLANTING WITHIN LANDSCAPE AREAS

NELSON CITY COUNCIL

TYPICAL CROSS SECTIONS (BERMS) ARTERIAL & PRINCIPAL ROADS

INFRASTRUCTURAL ASSETS

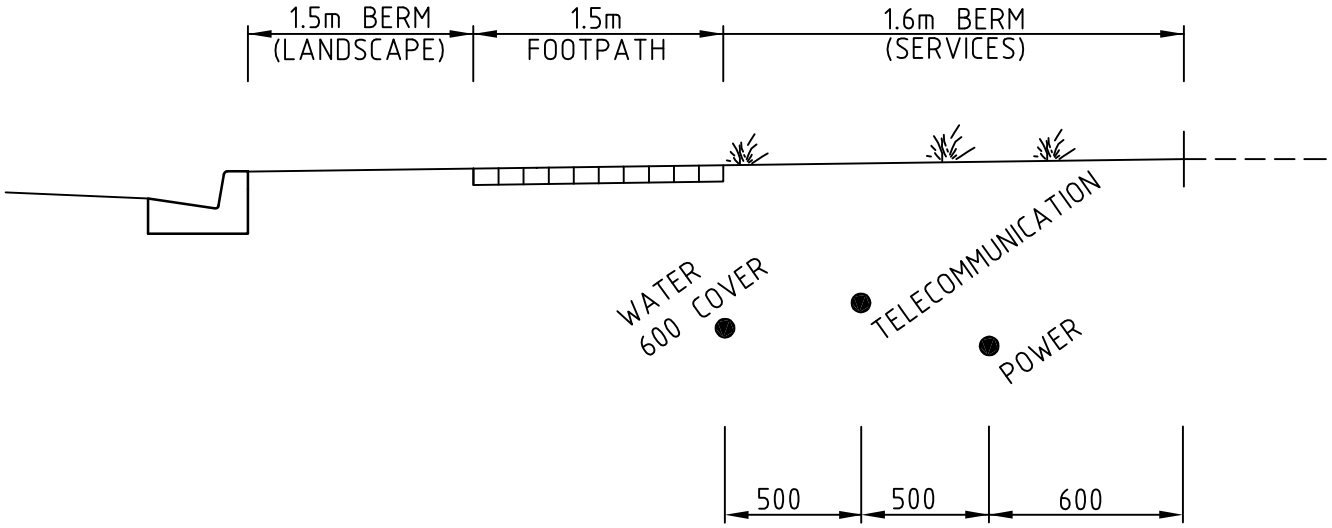
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 414



NOTE:

1. SERVICES BERM CAN BE REDUCED TO 0.5m WHERE SERVICES ARE LOCATED UNDER THE FOOTPATH PROVIDED THEY DO NOT PRECLUDE THE INTRODUCTION OF STREET TREES

2. THE DEPTH OF CABLES MAY VARY. SEE SECTION 10 FOR POWER, & SECTION 11 FOR COMMUNICATION CABLE RETICULATION

3. SEE SECTION 4.4.15.3 REGARDING ALTERNATIVE OPTIONS TO GRASS SURFACES & PLANTING WITHIN LANDSCAPE AREAS

NELSON CITY COUNCIL

TYPICAL CROSS SECTIONS (BERMS) COLLECTOR, SUB COLLECTOR & LOCAL ROADS

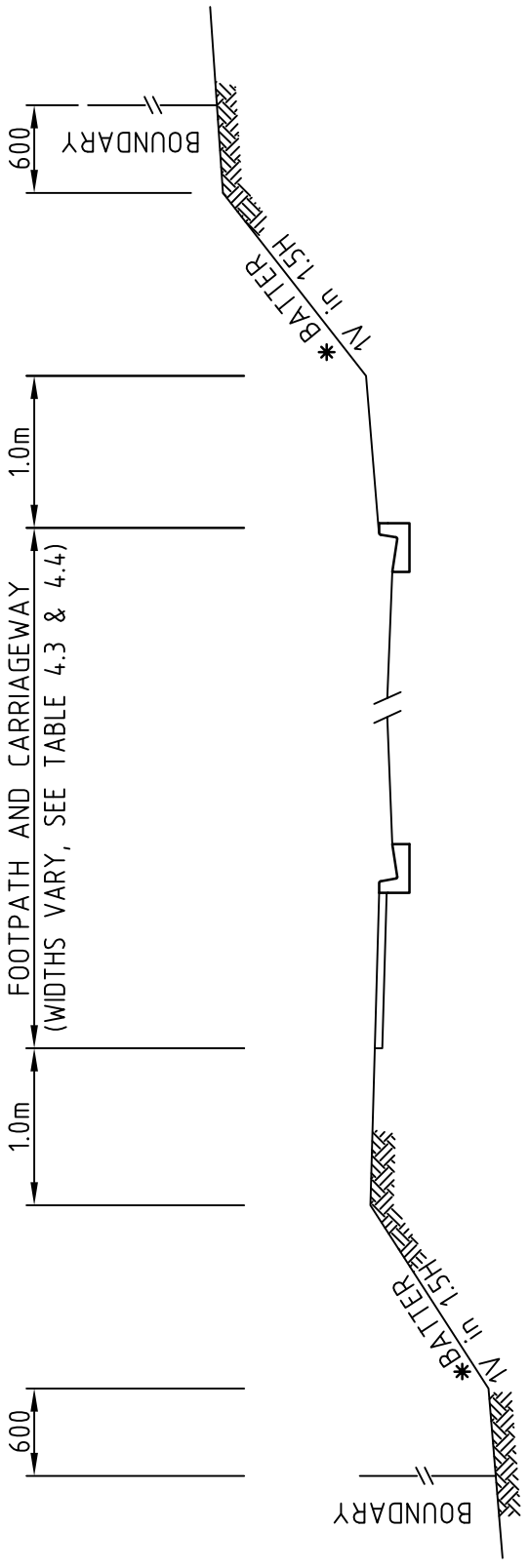
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 415



* NOTES:

BATTER SLOPES MAY BE REPLACED BY RETAINING WALLS TO SPECIFIC DESIGN WHERE APPROVED BY THE COUNCIL. RETAINING WALLS WHICH ARE NOT FOR SUPPORTING THE ROAD CARRIGEWAY or FOOTPATH MUST BE LOCATED OUTSIDE LEGAL ROAD RESERVE

THE 1.0m DISTANCE FROM BACK OF FOOTPATH/KERB MAY BE INCREASED WHERE THE AREA IS REQUIRED AS SERVICE STRIPS BY TABLE 4.3 & 4.4

NELSON CITY COUNCIL

TYPICAL CROSS SECTIONS ROADSIDE BATTERS

INFRASTRUCTURAL ASSETS

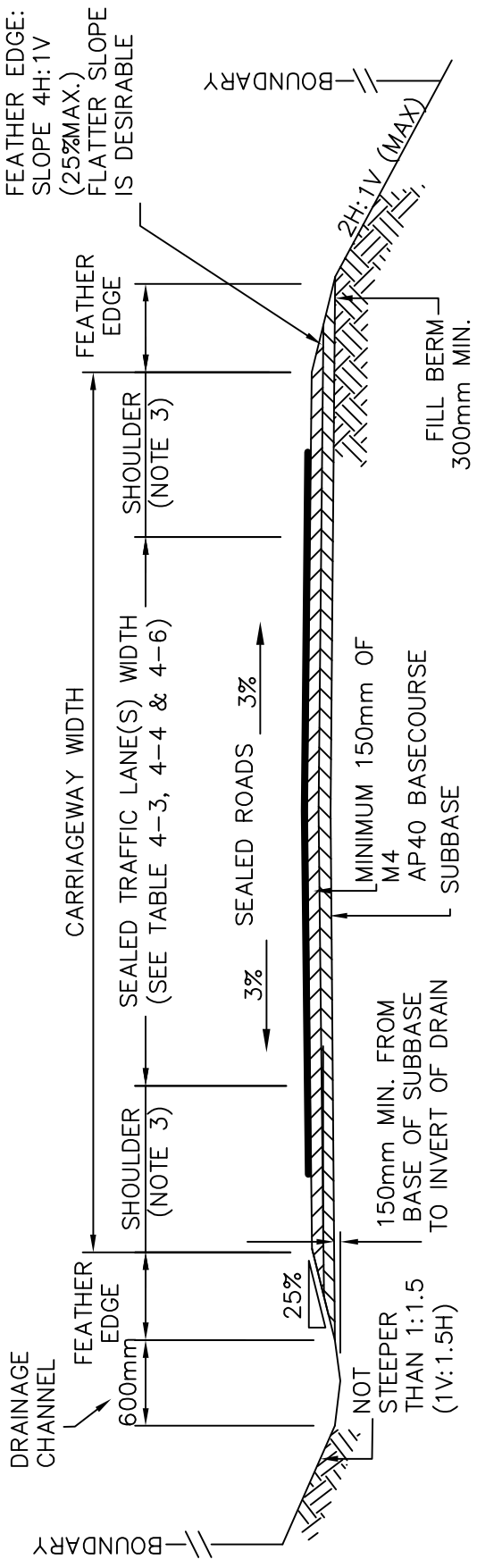
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 416



NOTE:-

1. DEPTH OF SUBBASE DETERMINED BY INDIVIDUAL PAVEMENT DESIGN FOR EACH STREET/ROAD
2. DRAINAGE CHANNEL SIZE AND SPACING OF STORMWATER CULVERTS, SUBJECT TO SPECIFIC DESIGN.
3. FOR SHOULDER WIDTHS, SEE TABLE 4-5, SECTION 4 OF THE LAND DEVELOPMENT MANUAL

NELSON CITY COUNCIL

TYPICAL CROSS SECTIONS RURAL CARRIGEWAY

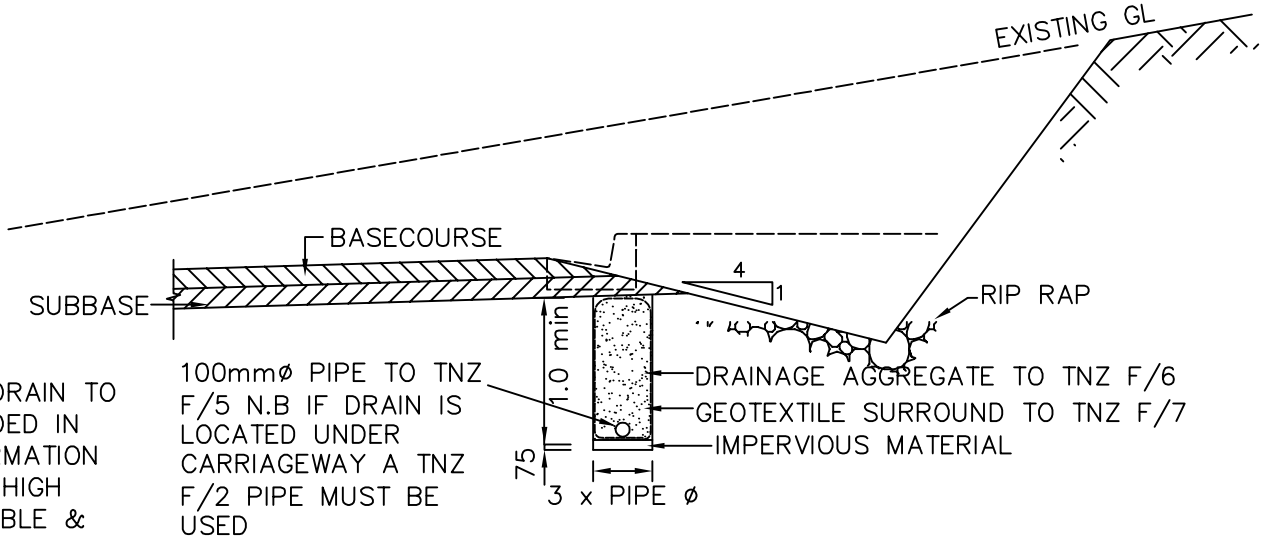
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

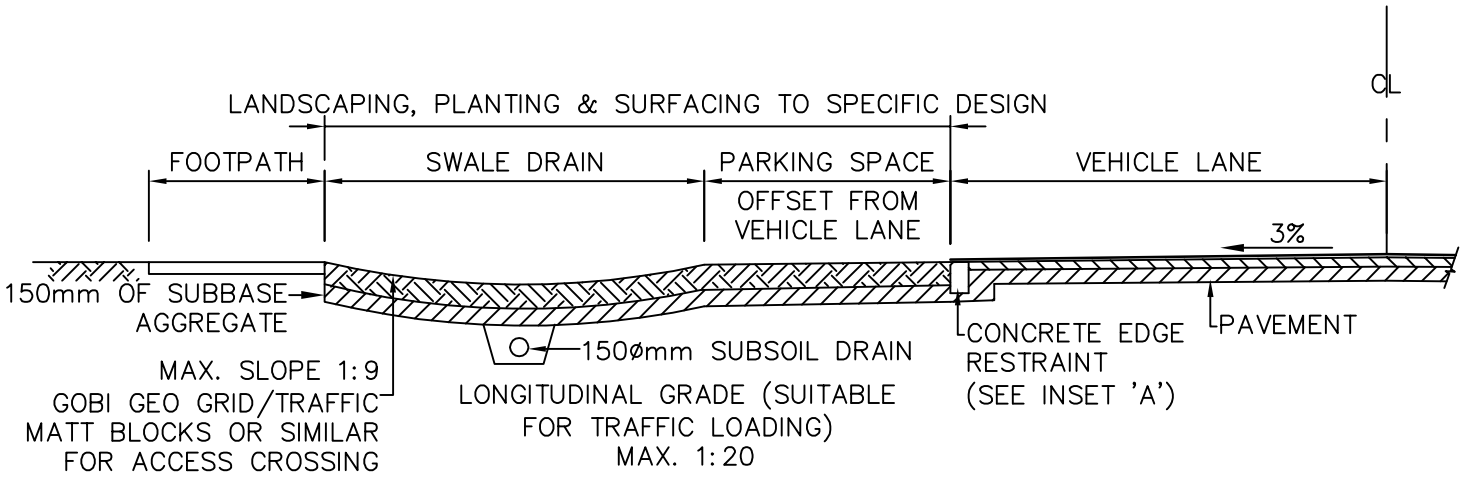
SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 417

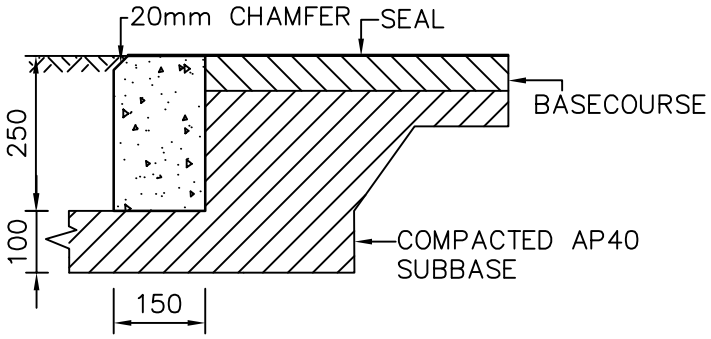


NOTE:
SUBSOIL DRAIN TO BE INCLUDED IN ROAD FORMATION WHERE A HIGH WATER TABLE & NON FREE DRAINING SUBGRADE MATERIALS EXIST

SUBSOIL DRAIN FILTER DETAIL (WHEN IN CUT)



ROADSIDE SWALE DRAINS – SUBJECT TO SITE CONDITIONS



INSET 'A'

NELSON CITY COUNCIL

TYPICAL DRAINAGE FOR ROADSIDE SWALES & LOW IMPACT STORMWATER

INFRASTRUCTURAL ASSETS

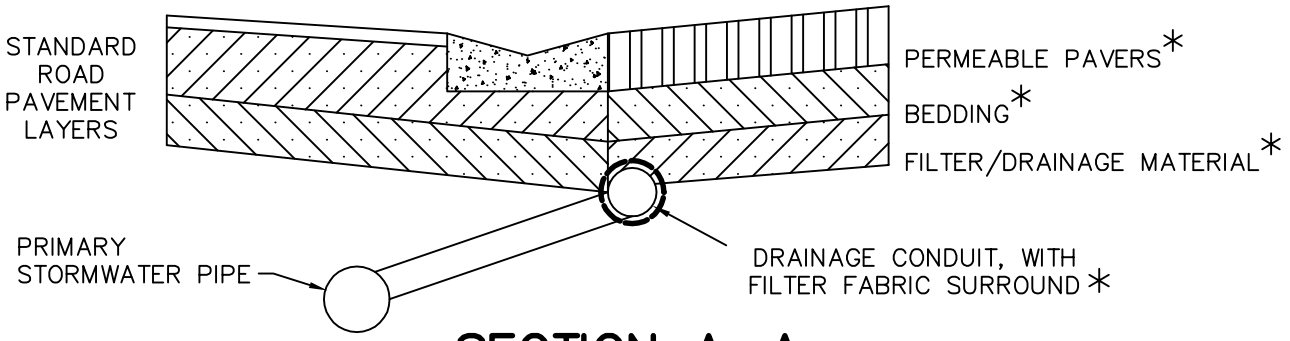
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

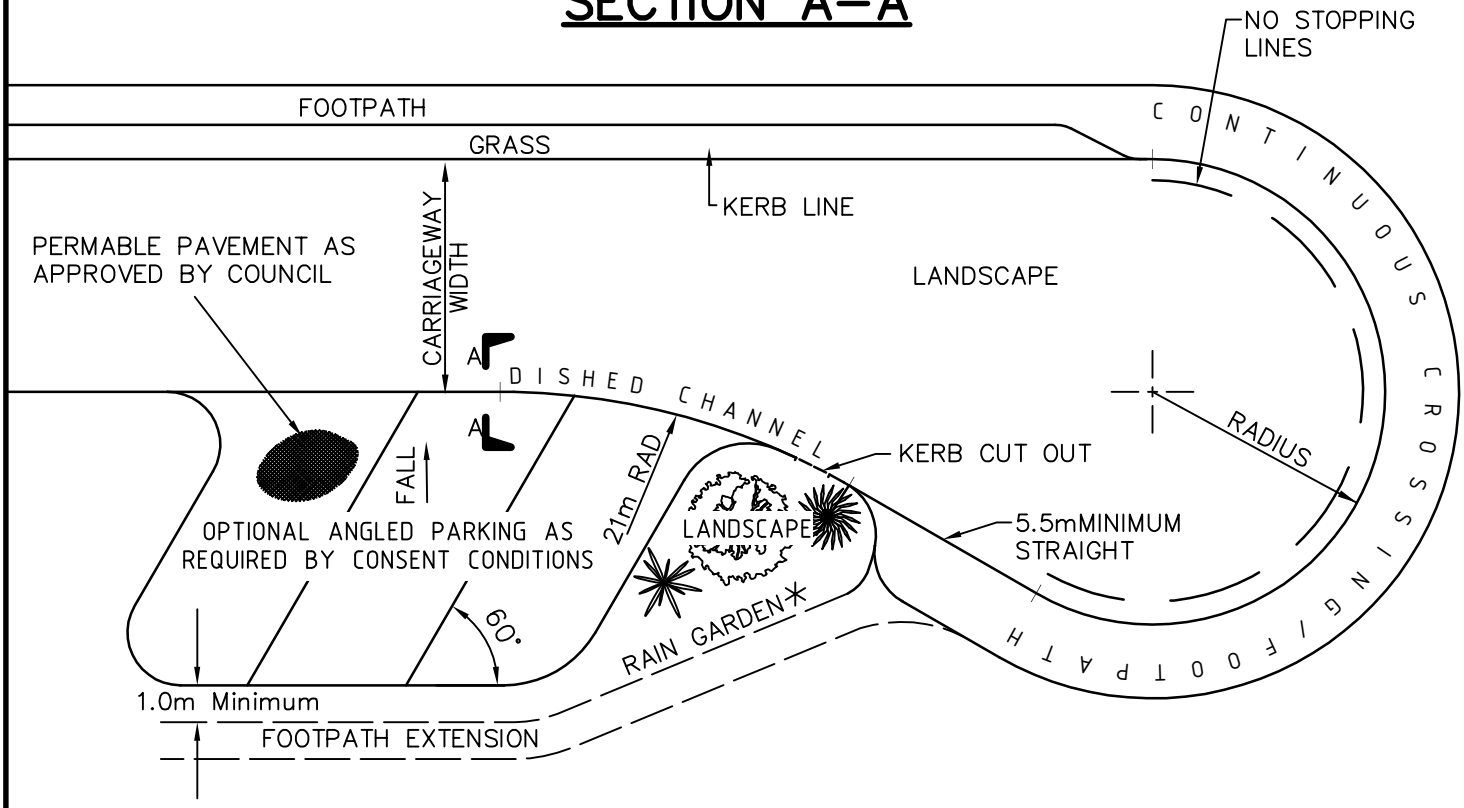
29/07/2010

DATE

SD 418



SECTION A–A



ZONE	RADIUS
RESIDENTIAL	7.0
COMMERCIAL	11.0
INDUSTRIAL	12.0

NOTE:-

1. NO KERBSIDE PARKING WITHIN THE TURNING CIRCLE
2. FOR RESIDENTIAL DEVELOPMENT ON STEEP HILLSIDE, THE CUL-DE-SAC RADIUS CAN BE REDUCED TO 7.0m OR A 'FISH-TAIL' OR 'HAMMERHEAD' DESIGN PROVIDED THE TURNING AREA PERMITS A 90 PERCENTILE 2 AXLE TRUCK TO UNDERTAKE A 3 POINT TURN
3. THIS DRAWING IS AN EXAMPLE ONLY AND THERE ARE OTHER COMPLYING DESIGNS FOR CUL-DE-SAC TURNING HEADS

*(SPECIFIC DESIGN REQUIRED)

NELSON CITY COUNCIL

CUL-DE-SAC TURNING CIRCLES

INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 419

CAMBER TABLE

OFFSET CROWN

NOTE:
CARRIAGEWAY CAMBER ON EITHER SIDE OF OFFSET CROWN SHOULD BE BALANCED IN TERMS OF THE ABOVE CAMBER TABLES.

NELSON CITY COUNCIL

CAMBER TABLE

INFRASTRUCTURAL ASSETS

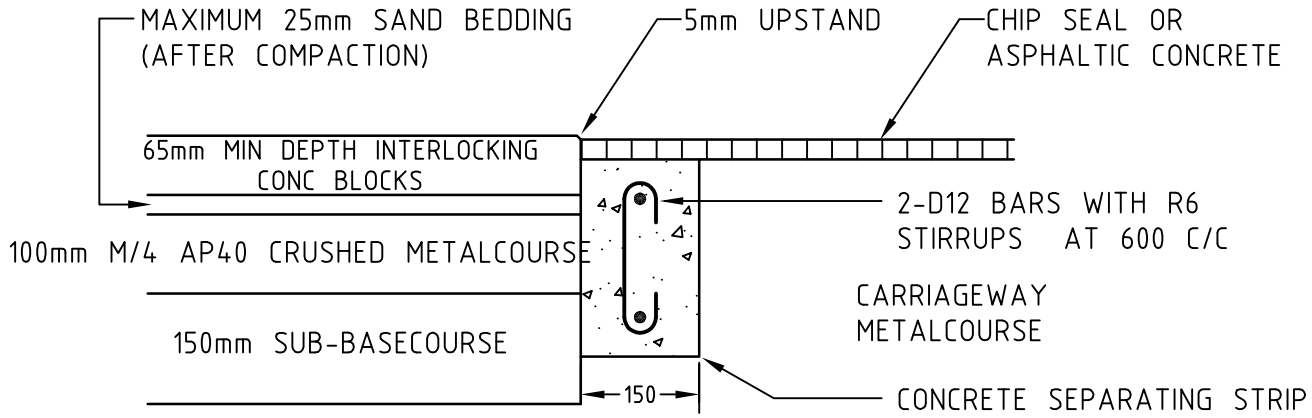
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

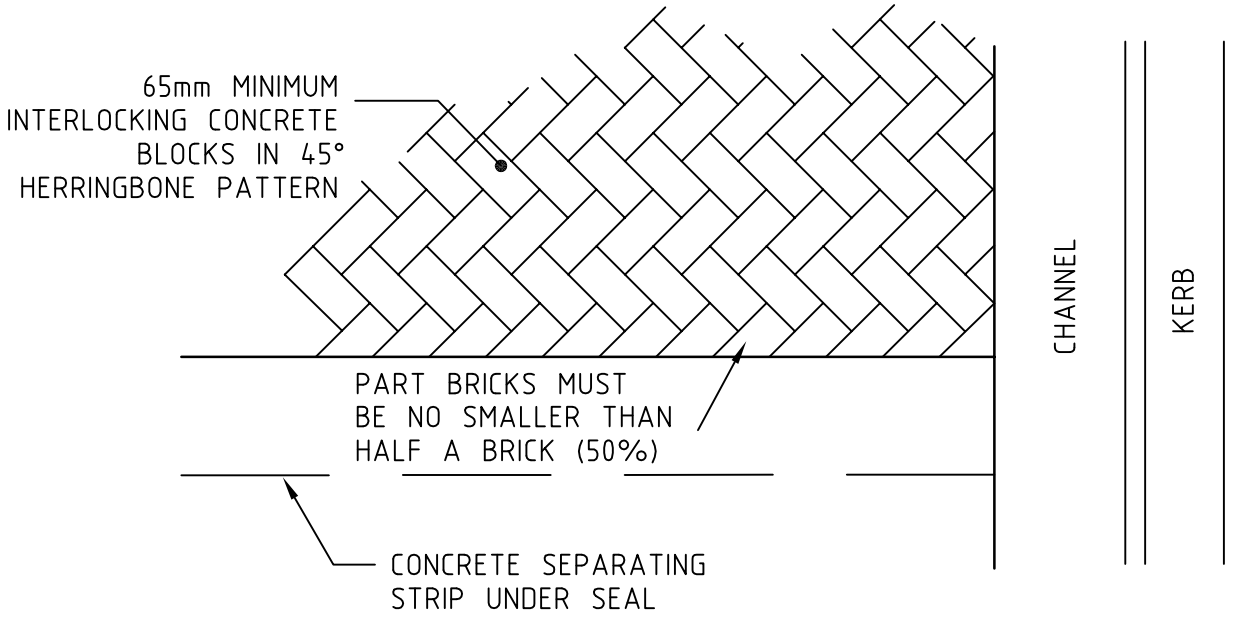
29/07/2010

DATE

SD 420



CARRIAGEWAY THRESHOLDS (LONGITUDINAL SECTION)



CARRIAGEWAY THRESHOLDS PART PLAN

NOTES:

1. CONCRETE BLOCKS SHALL COMPLY WITH NZS 3116: 1981
2. LAYING OF BLOCKS SHALL COMPLY WITH THE CEMENT AND CONCRETE ASSOCIATION OF NZ "INTERLOCKING CONCRETE BLOCK ROAD PAVEMENTS" (SEPT 1988)
3. COLOUR OF BRICKS TO BE NOMINATED ON ENGINEERING DRAWINGS AND APPROVED BY COUNCIL

   IN HIGH TRAFFIC AREAS (COLLECTOR ROAD CATEGORY OR HIGHER) THE BLOCKS SHALL BE LAID ON 150mm DEPTH OF REINFORCED CONCRETE AS DETAILED ON SD 423

NELSON CITY COUNCIL

CARRIAGEWAY THRESHOLDS (CONCRETE BLOCKS)

INFRASTRUCTURAL ASSETS

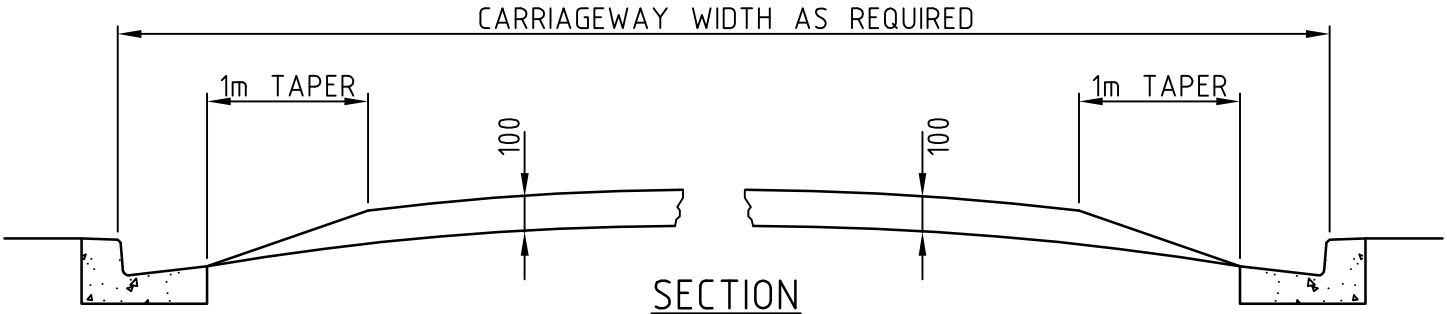
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

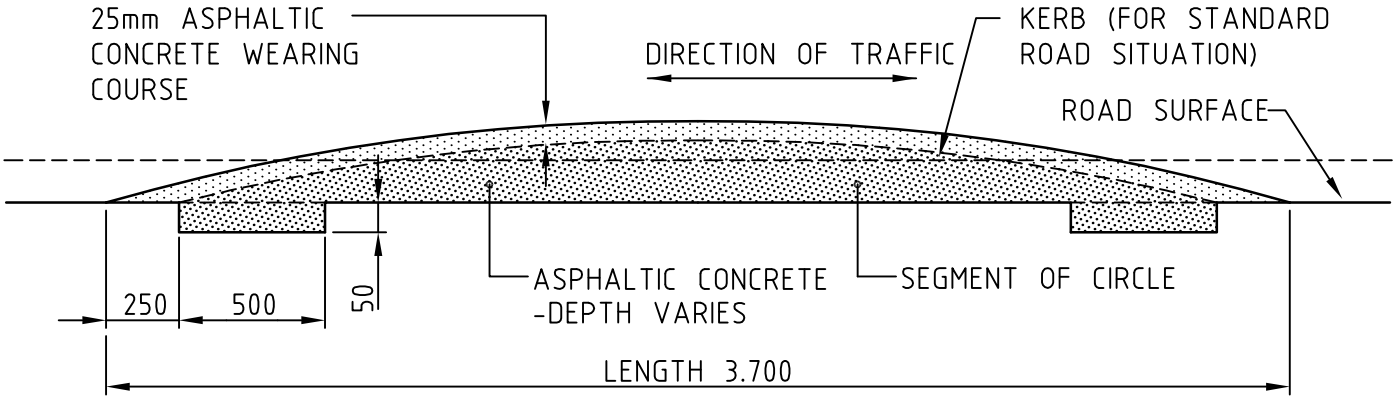
29/07/2010

DATE

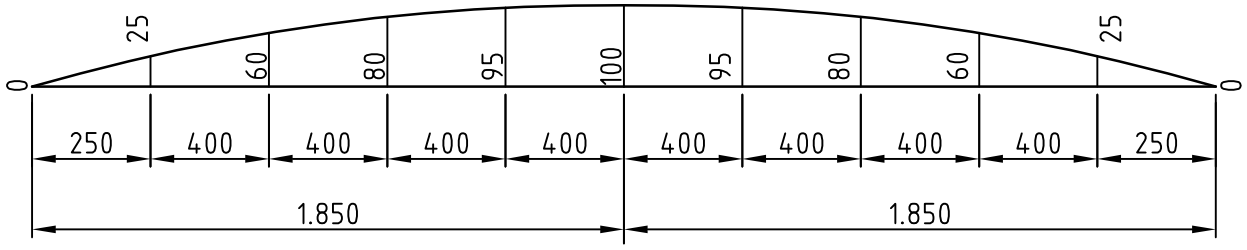
SD 421



SECTION
FOR STANDARD ROAD SITUATION
3.70m SPEED CONTROL RAMP



SECTION-SPEED CONTROL RAMP PROFILE
FOR KERB AND CHANNEL
STANDARD ROAD SITUATION



SETTING OUT PROFILE
FOR SECTION (ALL CASES)

NELSON CITY COUNCIL

SPEED CONTROL DETAILS

INFRASTRUCTURAL ASSETS

APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 422

BRICKS LAID IN 45° HERRINGBONE PATTERN ON 150mm OF CONCRETE (30 MPa) AND 665 MESH. BRICKS TO BE SECURED TO CLEAN SCABBLED CONCRETE WITH AN APPROVED EPOXY BEDDING MORTAR.

1. RAMP HAS MONO CAMBER
2. ONE ROW OF RED PAVERS IN SOLDIER PATTERN TO FACE EACH CONCRETE RAMP
3. JOINTING SAND SHALL BE 'PAVELOCK' OR SIMILAR APPROVED SAND
4. THE MINIMUM SIZE FOR PART BLOCKS/PAVERS SHALL BE 50% OF FULL SIZE

NELSON CITY COUNCIL

CBD PEDESTRIAN RAMP DETAILS

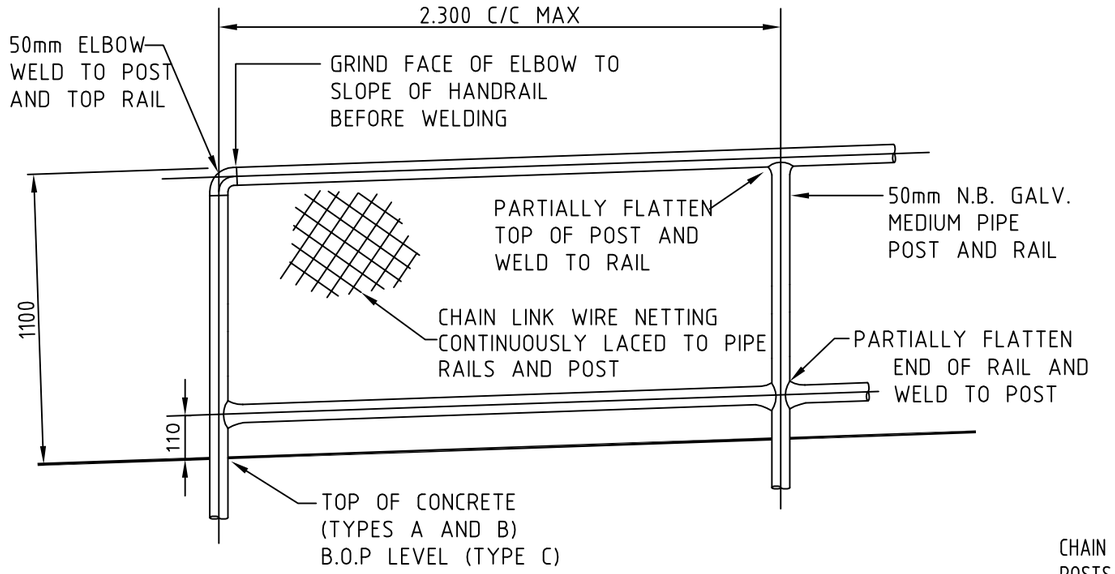
INFRASTRUCTURAL ASSETS

APPROVED

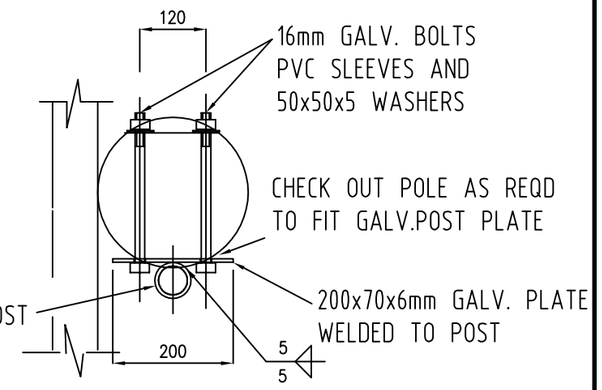
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

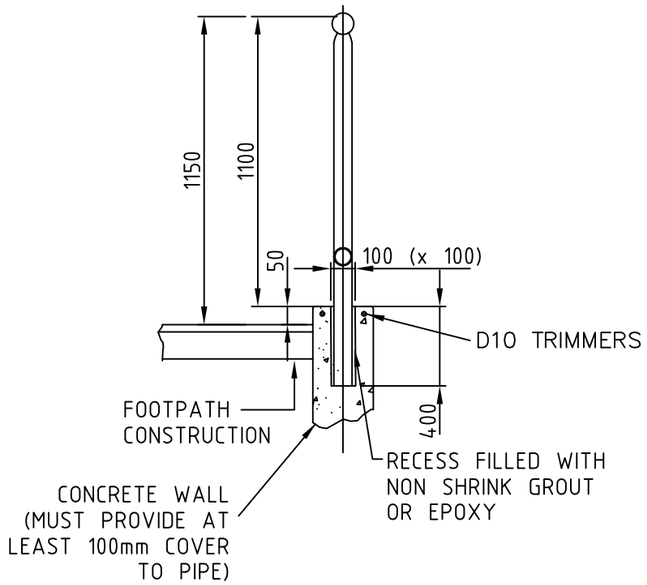
SD 423



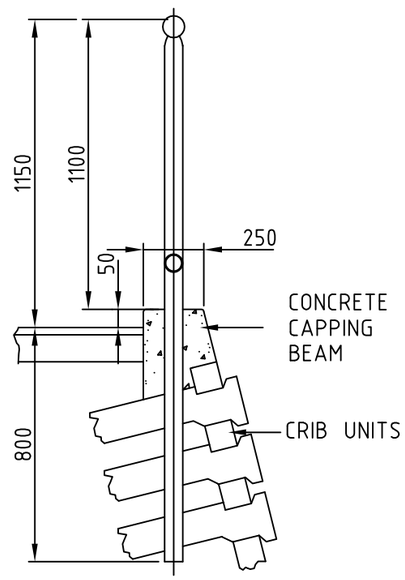
TYPICAL ELEVATION



SECTION 1 / —

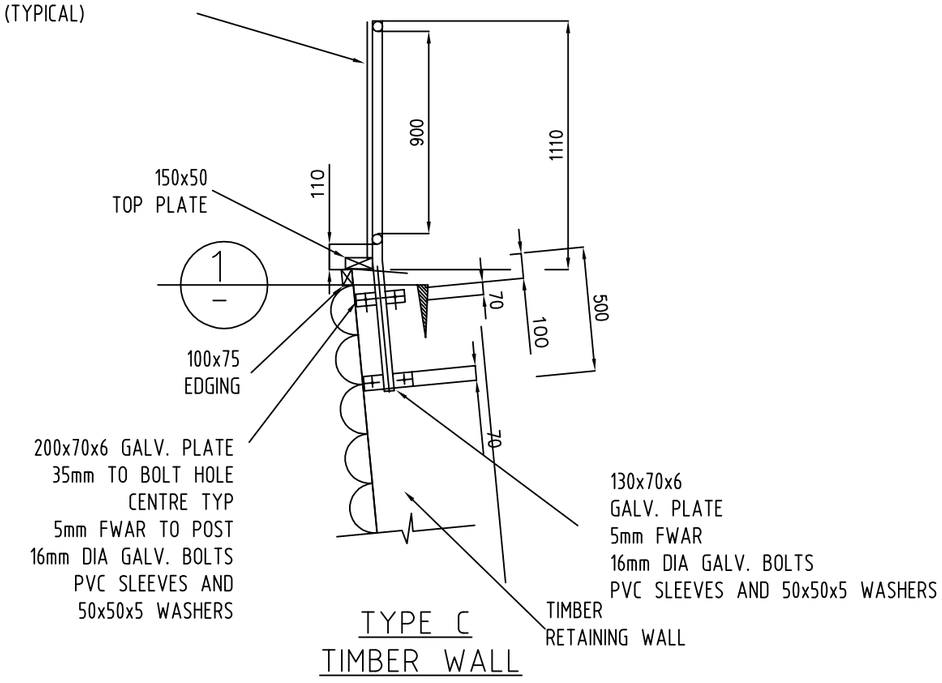


TYPE A
RECESSED



TYPE B
CRIB WALL

CHAIN LINK SAFETY FENCE
POSTS AT 2.3m CRS WITH 50mm GALV. MESH FIXED TO POST AND RAILS WITH CONTINUOUS SOFT GALV. WIRE LACING.
(TYPICAL)



TYPE C
TIMBER WALL

NOTE:
1. MAXIMUM OPENING SPACE OF THE CHAIN LINK SHALL BE 35mm or 50mm DIAMETER
2. SEE SECTION 4.4.12.4

NELSON CITY COUNCIL

ALTERNATIVE HANDRAIL CHAIN LINK

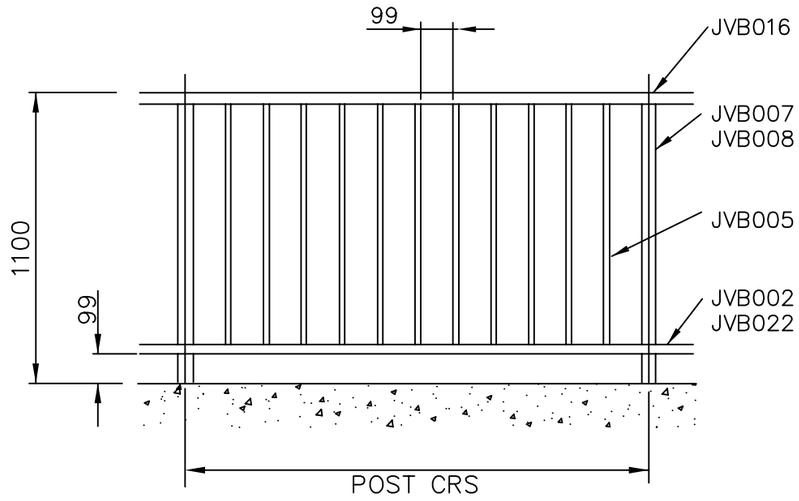
INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

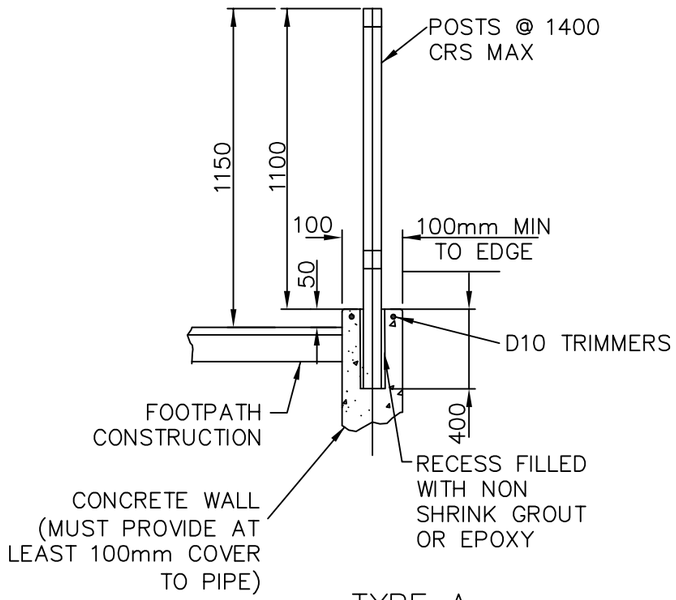
SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 424

NOTE:
BALUSTRADE TO BE JURALCO VIKING BALUSTRADE (FULL HEIGHT BALUSTRADES) POWDERCOATED ALUMINIUM (INTERPON GHOST GREY) or SIMILAR APPROVED, PROVIDED ALTERNATIVE MEETS REQUIREMENTS B1, B2, & F4 OF THE BUILDING CODE

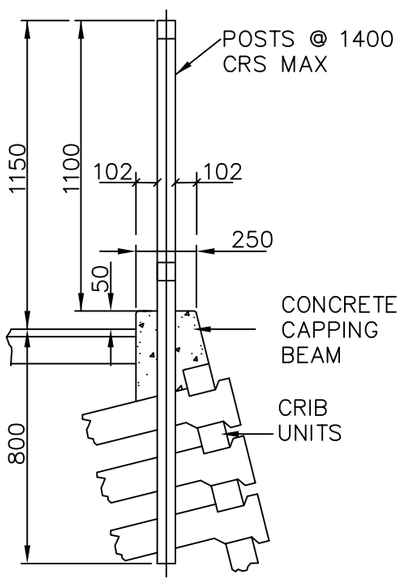


TYPICAL ELEVATION



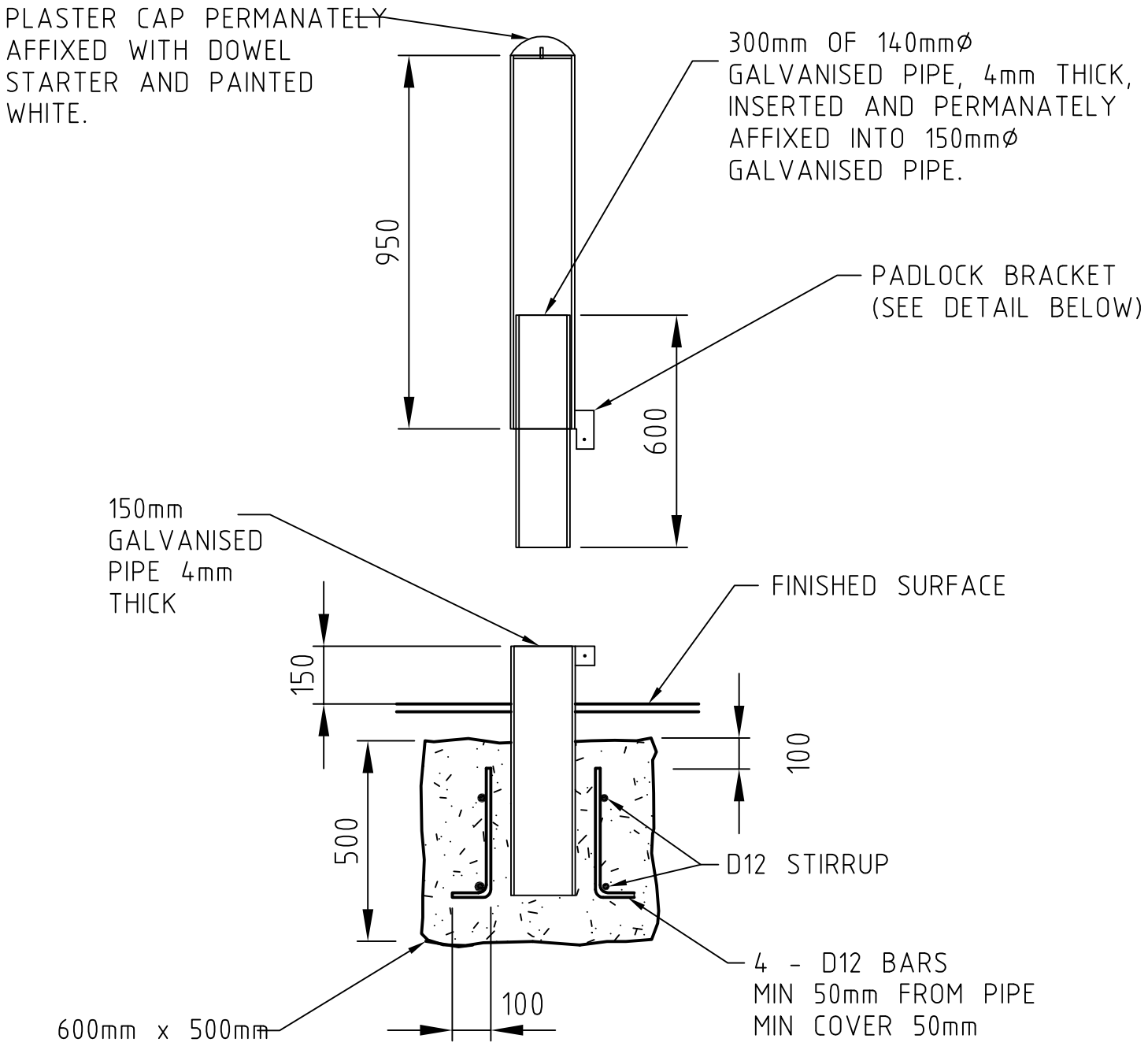
TYPE A
RECESSED

NOTES:
1. MINIMUM COVER TO D10 REINFORCING FROM EXPOSED SURFACE SHALL BE 50mm
2. FOR TIMBER WALL FIXING DETAIL, SEE TYPE 'C' ON SD 424
3. SEE SECTION 4.4.12.4

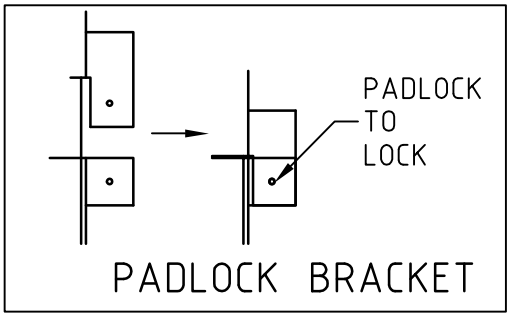


TYPE B
CRIB WALL

NELSON CITY COUNCIL	STANDARD HANDRAIL – BALUSTRADES	
	INFRASTRUCTURAL ASSETS APPROVED 29/07/2010 SENIOR EXECUTIVE INFRASTRUCTURE DATE	SD 425



ELEVATION



NOTES:

1. ALL STEELWORK SHALL BE PRIMED AND PAINTED WHITE WITH REFLECTORISED STRIPS VISIBLE FROM BOTH WAYS
2. PADLOCK TO BE POSITIONED FACING DIRECTION OF CYCLE TRAFFIC

NELSON CITY COUNCIL

REMOVABLE CYCLE BOLLARD

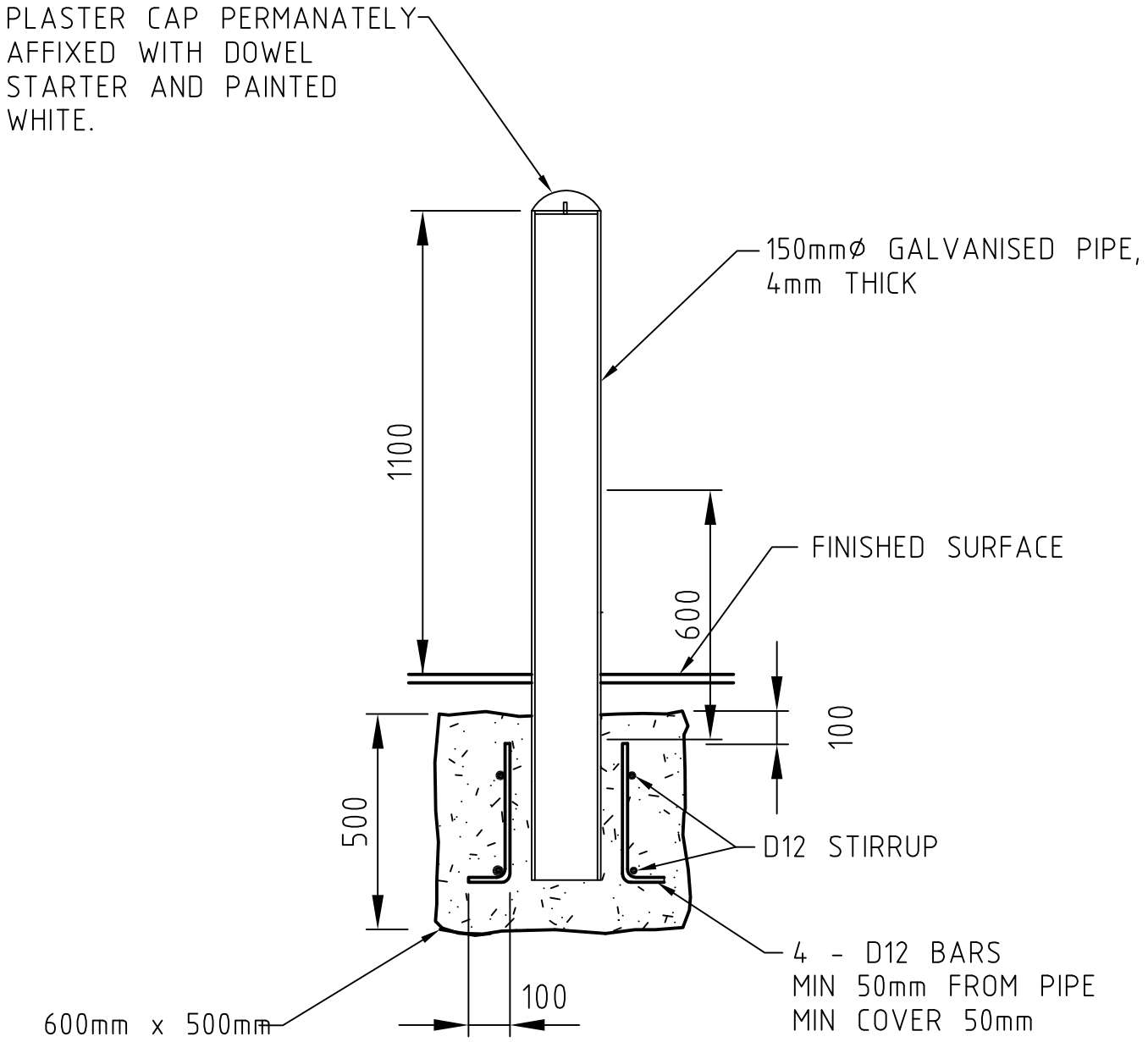
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 426

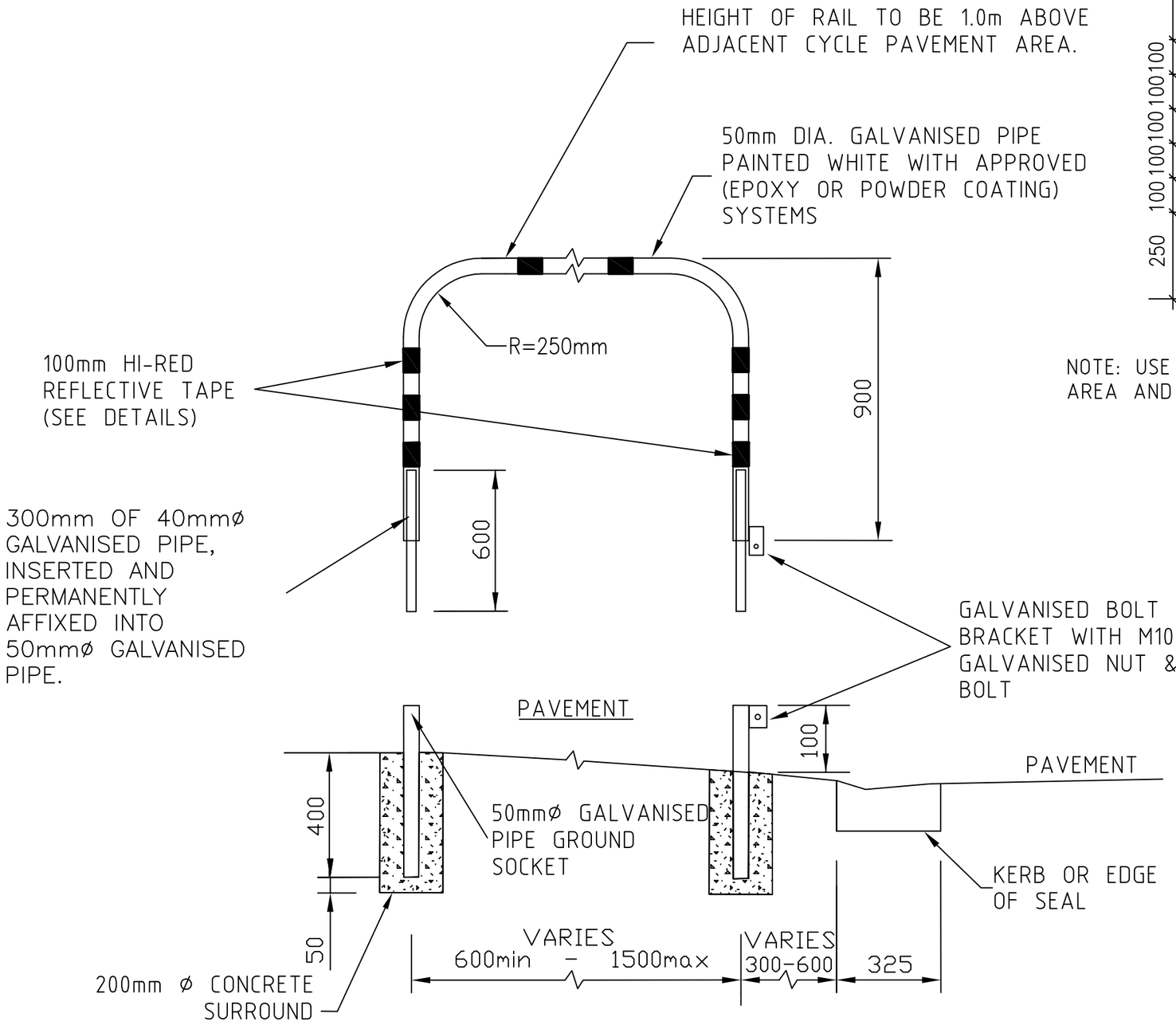


ELEVATION

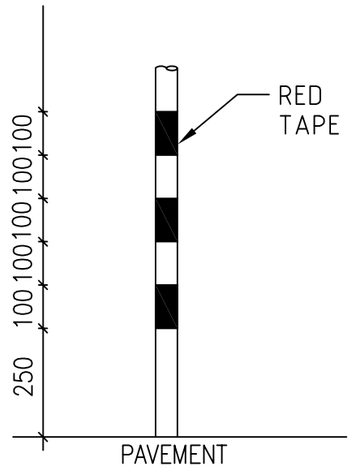
NOTES:

× ALL STEELWORK SHALL BE PRIMED AND PAINTED WHITE WITH REFLECTORISED STRIPS VISABLE FROM BOTH WAYS

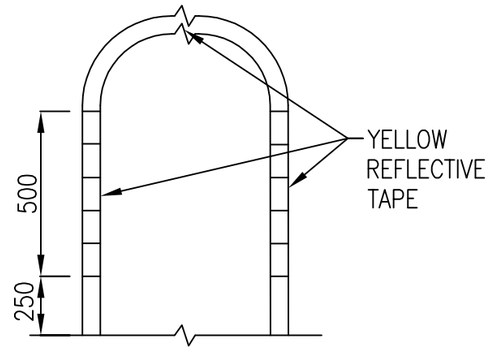
NELSON CITY COUNCIL	STANDARD CYCLE BOLLARD	
	INFRASTRUCTURAL ASSETS APPROVED  29/07/2010 SENIOR EXECUTIVE INFRASTRUCTURE DATE	SD 427



HOLDING RAIL ELEVATION



NOTE: USE THIS DETAIL WHEN RAILS ARE WITHIN CARRIAGEWAY AREA AND SEEN BY MOTOR VEHICLES.



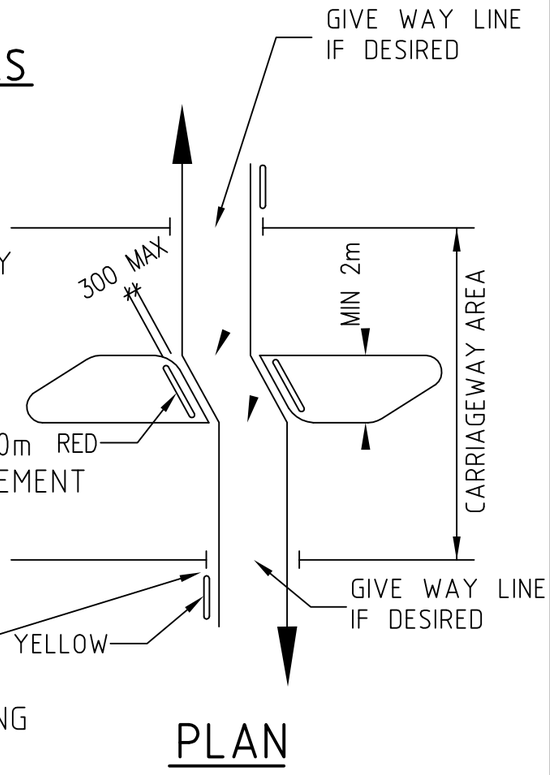
NOTE: USE THIS DETAIL WHEN RAILS ARE OUTSIDE CARRIAGEWAY AREA AND SEEN BY CYCLISTS.

DETAILS

NOTE:

1 RAIL TO BE PLACED AT EDGE OF CYCLEWAY PAVEMENT OR 300mm FROM EDGE OF PEDESTRIAN REFUGES.

2 TOP RAIL SHALL BE 1.0m ABOVE ADJACENT PAVEMENT



PLAN

NELSON CITY COUNCIL

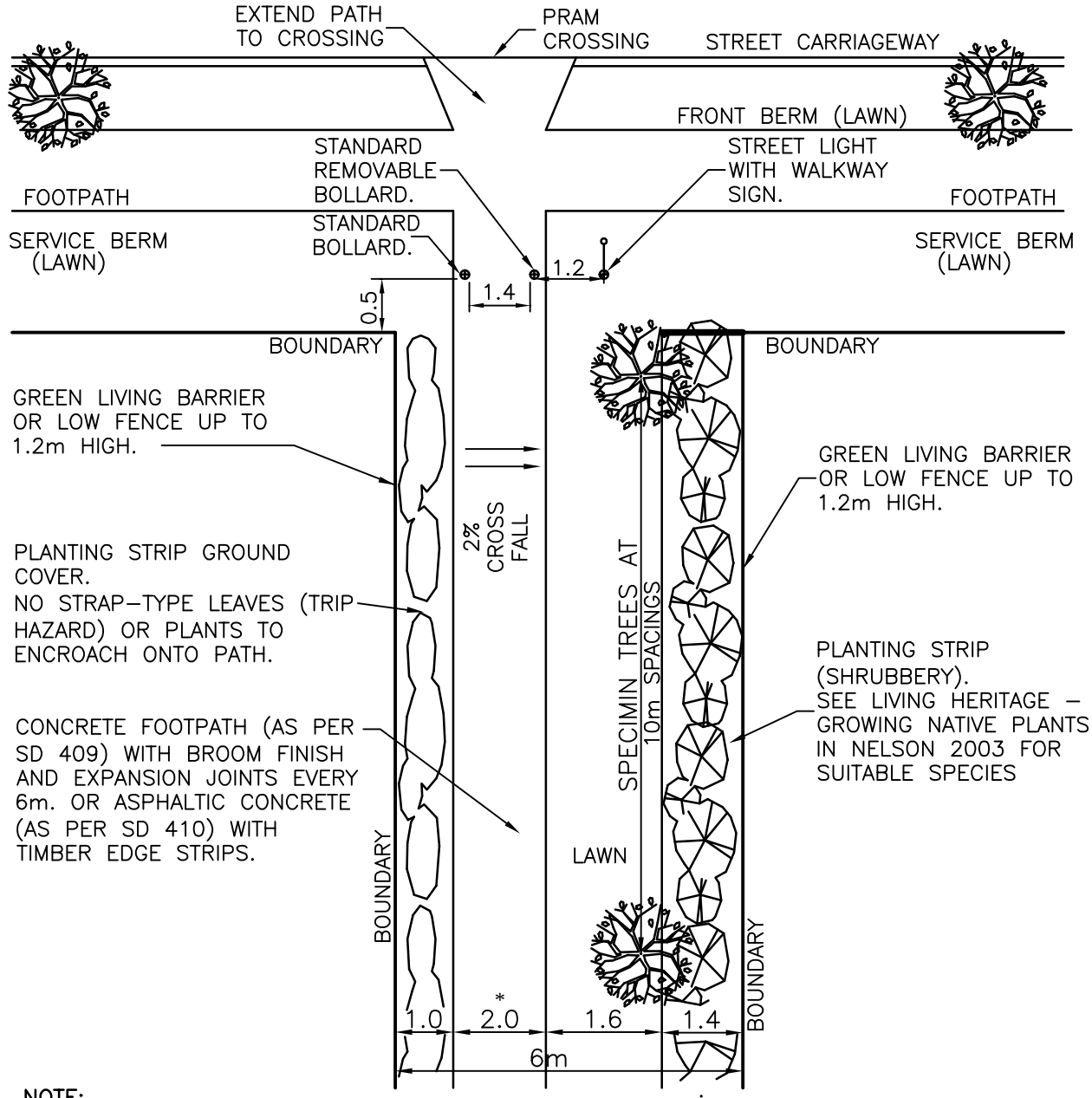
CYCLE HOLDING RAIL

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 428



NOTE:

* THE PEDESTRIAN/CYCLE ACCESS IS TO BE USED TO LINK A ROAD TO A ROAD OR ROAD TO RESERVE. FOR SHARED ACCESSWAYS THAT ARE ON A MAIN ROUTE & WILL HAVE A HIGH USE, THEN THE SEALED PATHWAY SHALL BE 3.0m & SUBJECT TO SPECIFIC DESIGN. SEE TABLE 4–15

WITH WALKWAYS ORIENTED EAST/WEST PLANT TREES ON THE NORTHERN SIDE OF THE FOOTPATH.

IF STEPS ARE REQUIRED FOR GRADES GREATER THAN 1:5 THEN STREET LIGHTING SHALL BE PROVIDED AS WELL AS A HANDRAIL TO ONE SIDE. ALSO, A HALF–ROUND OPEN CONCRETE CHANNEL SHALL BE FORMED ADJACENT THE STEPS TO ASSIST CYCLE MOVEMENT,

STEPS SHALL BE NO NARROWER THAN 300mm TREAD WITH 150–180 RISER. A LANDING SHALL BE PROVIDED EVERY 20 STEPS. NO LESS THAN 3 STEPS SHALL BE PROVIDED IN ANY ONE AREA.

FOR BOLLARD DETAILS SEE SD 426 & SD 427

NELSON CITY COUNCIL

ACCESSWAY

COMMUNITY SERVICES

APPROVED

MANAGER PARKS & FACILITIES

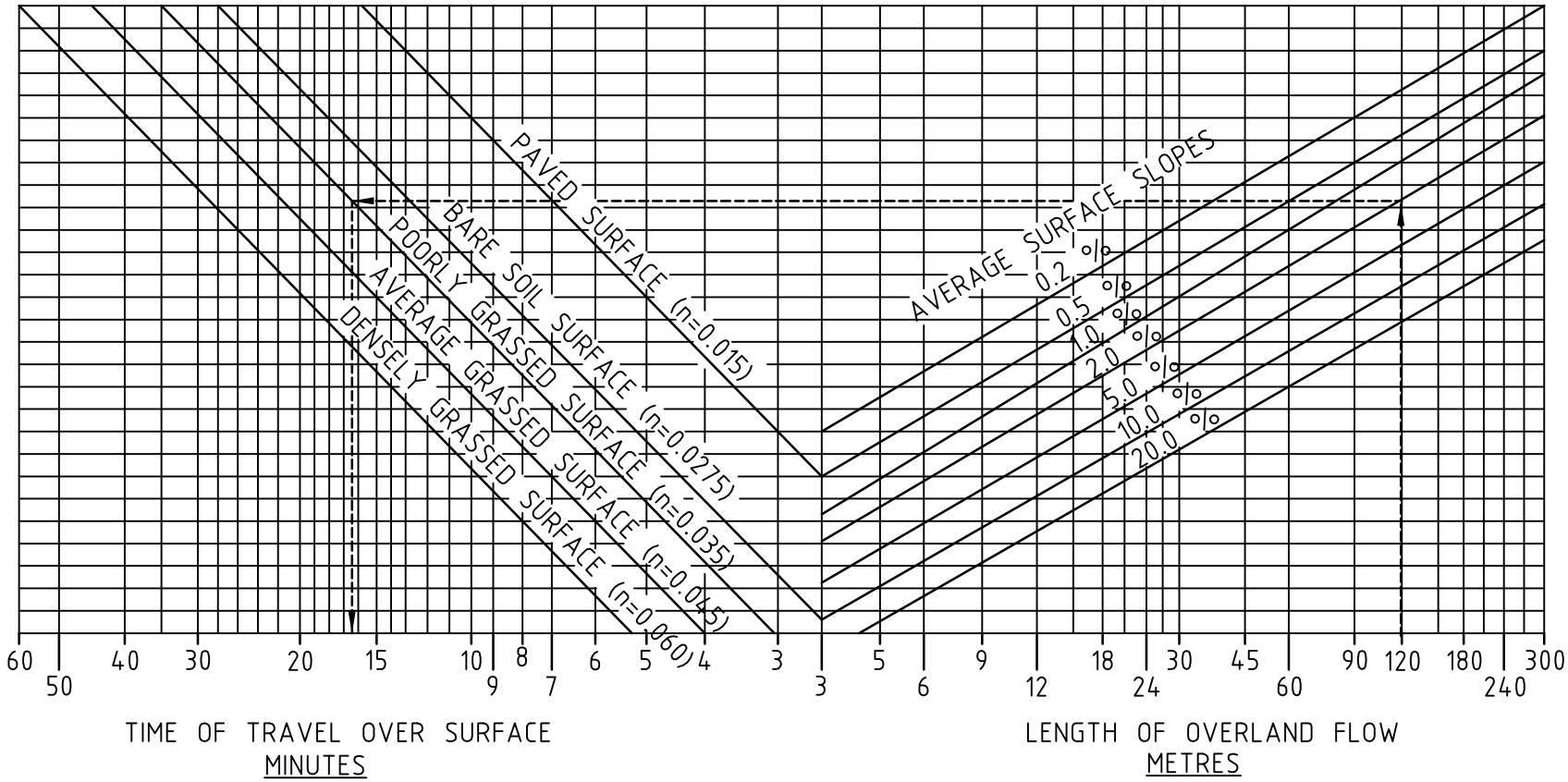
29/07/2010

DATE

SD 429

NELSON CITY COUNCIL

TIMES FOR SURFACE FLOW



FORMULA

$$t = \frac{107 n^3 \sqrt{\ell}}{\sqrt[5]{S}} \text{ MINUTES}$$

WHERE t = TIME OF TRAVEL OVER SURFACE IN MINUTES
n = HORTON'S VALUES FOR THE SURFACE
ℓ = LENGTH OF FLOW IN METRES
S = SLOPE OF SURFACE IN %

EXAMPLE

LENGTH OF OVERLAND FLOW = 120m
AVERAGE SLOPE OF SURFACE = 2%
POORLY GRASSED SURFACE
∴ TIME OF TRAVEL = 16.3 MINUTES

DATA ATTRIBUTED TO U.S. DEPT OF AGRICULTURE 1942.

NOMOGRAPH PUBLISHED IN "MUNICIPAL UTILIES"
SEPTEMBER 1951.

FORMULA AND VALUES .OF "n" ADDED BY J.A. FRIEND
19th NOVEMBER 1954.

APPROVED

INFRASTRUCTURAL ASSETS

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 501

NELSON CITY COUNCIL

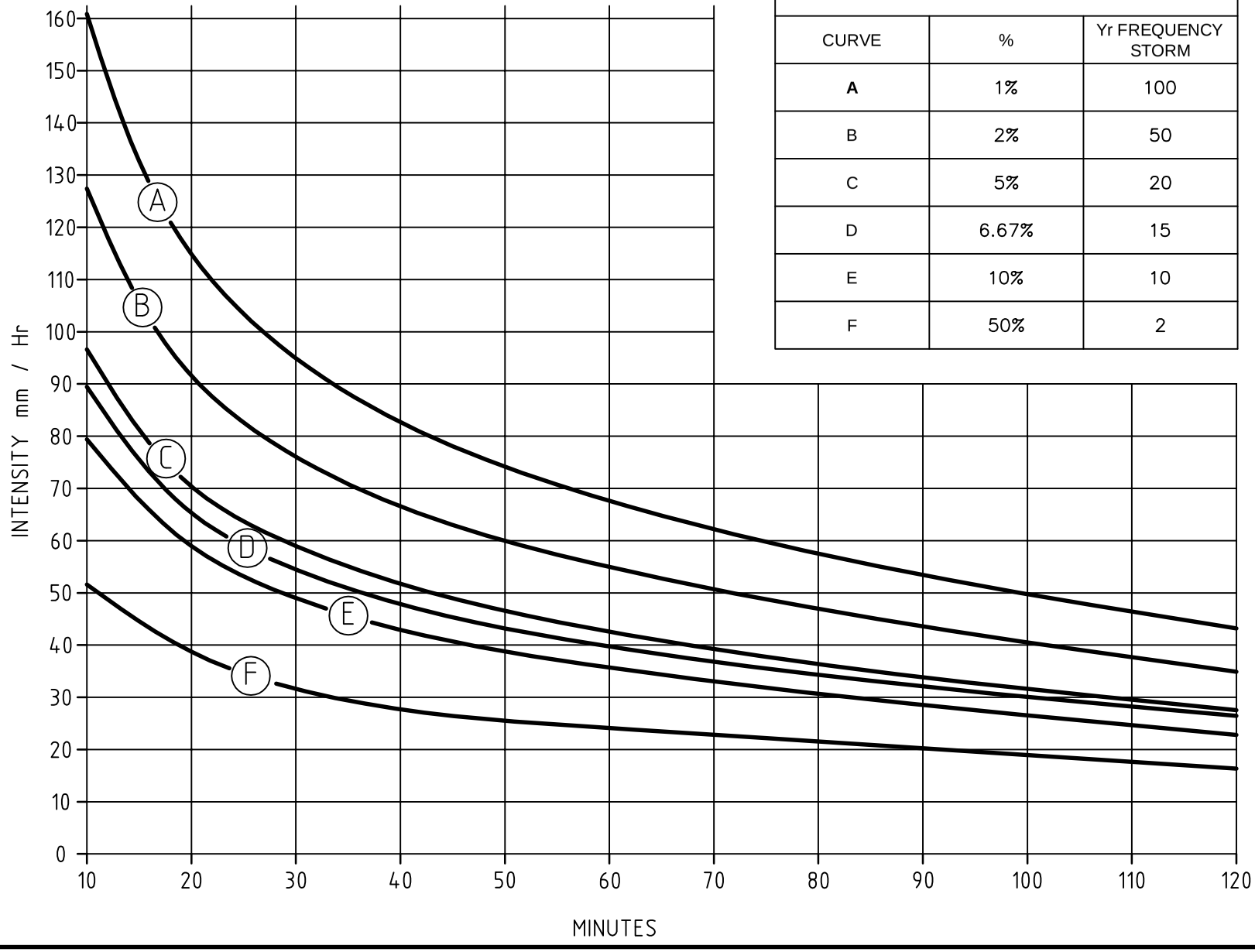
RAINFALL INTENSITY CURVE

SD 502

RAINFALL INTENSITY CURVES

REVISED JULY 2008, BASED ON HIGH INTENSITY RAINFALL ANALYSIS FOR NELSON URBAN AREA (NIWA PROJECT ELF09211)
FIGURES INCLUDE 16% INCREASE TO ALLOW FOR CLIMATE CHANGE TO 2100.

PROBABILITY OF OCCURRING ANNUALLY		
CURVE	%	Yr FREQUENCY STORM
A	1%	100
B	2%	50
C	5%	20
D	6.67%	15
E	10%	10
F	50%	2



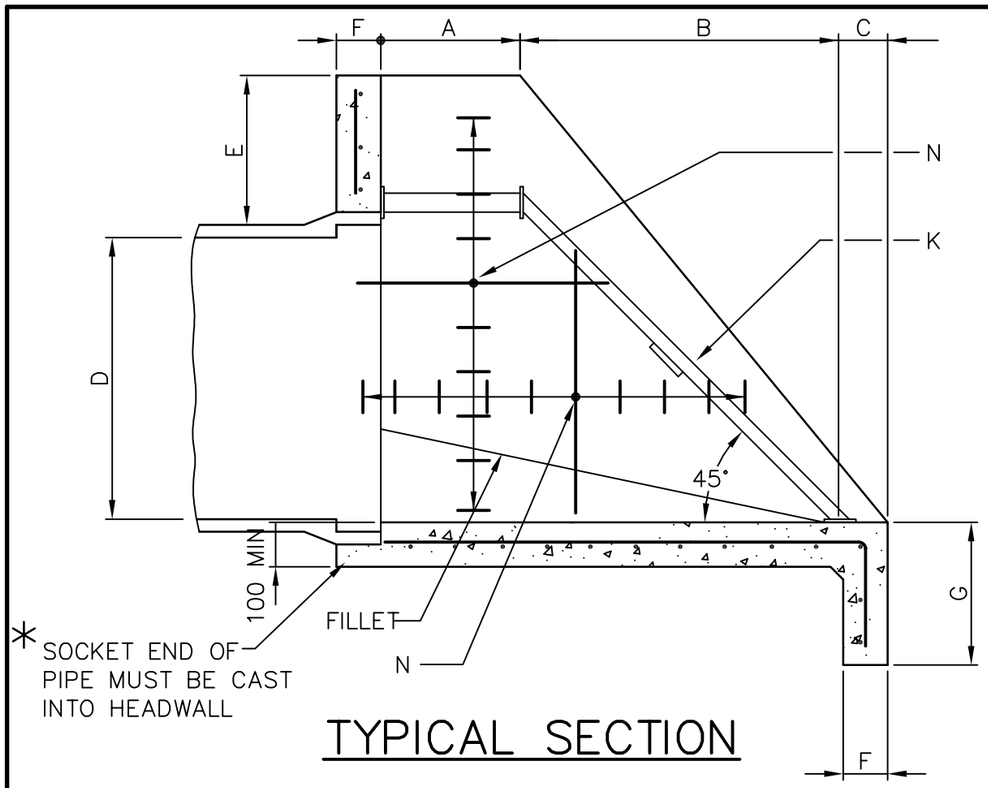
APPROVED

INFRASTRUCTURAL ASSETS

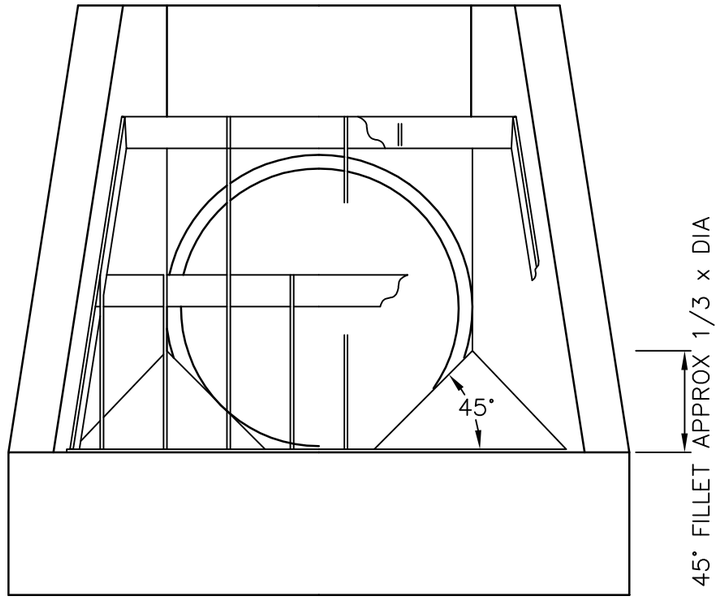
SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE



TYPICAL SECTION

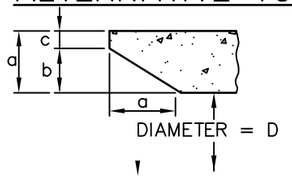


TYPICAL ELEVATION

NOTES

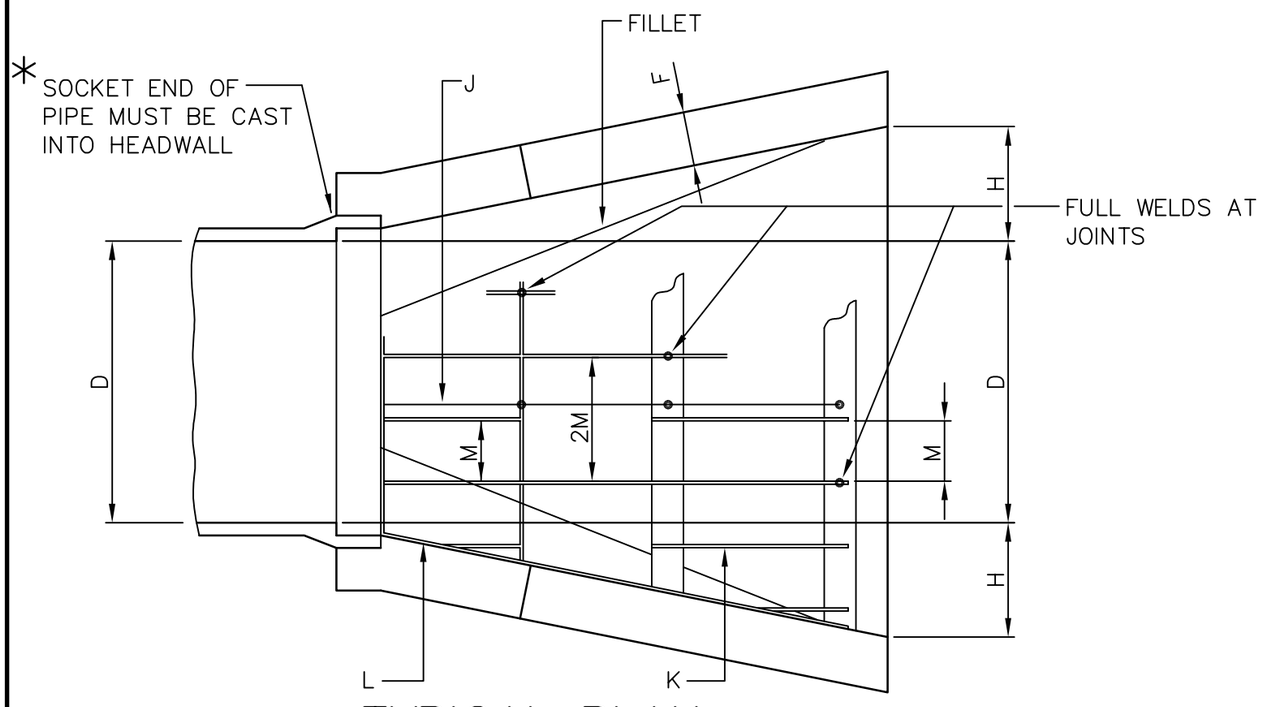
1. SKEW AND/OR VERY STEEP APPROACH INLETS WILL REQUIRE DETAIL DESIGN BASED ON THIS STANDARD.
2. REINFORCING IS MINIMUM AND RETAINING WALL MUST BE DESIGNED FOR INDIVIDUAL CIRCUMSTANCES.
3. ALL REINFORCEMENT TO BE PLACED CENTRALLY IN WALLS AND FLOOR AND TO BE CONTINUOUS BETWEEN WALLS AND BETWEEN FLOOR AND WALLS.
4. AT LEAST 2 HORIZONTAL BARS TO BE PLACED OVER THE PIPE IN THE END WALL.
5. GRADE OF APRON TO BE NOT LESS THAN GRADE OF PIPE.
6. DIMENSIONS OF GRILL TO BE FULLY DETAILED FOR EACH CASE.
7. FULL HEADWALLS AND SIDEWALLS TO BE PROVIDED AS CASE REQUIRES IN ADDITION TO MINIMUM REQUIREMENT SHOWN.
8. THIS STANDARD SHOWS MINIMUM REQUIREMENTS : THE DETAILS OF CHANNEL APPROACH : DEPTH, STABILITY OF GROUND AND OTHER FACTORS IN EACH CASE MUST BE TAKEN INTO ACCOUNT IN THE DESIGN.

* ALTERNATIVE TO SOCKET END OF PIPE



b/D	a/D	c/D	d/D	ENTRANCE TYPE
0.042	0.063	0.042	0.083	A

BEVELLED RING MINIMUM 300°



TYPICAL PLAN

PIPE INLET SCHEDULE

NOMINAL PIPE DIA	300	375	450	525	600	675	750	825	900	1075	1200	1350	1500	1575	1800
DETAIL A	300	300	300	300	400	400	400	400	400	600	600	700	700	800	800
B	500	500	600	700	800	800	900	1000	1100	1200	1400	1500	1700	1800	2000
C min	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
D	305	381	457	533	610	686	762	833	914	1067	1219	1372	1524	1600	1829
E min	300	300	450	450	450	450	450	450	450	450	450	450	450	450	450
F min	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
G min	400	400	400	400	500	500	500	500	500	600	600	600	600	600	600
H min	300	300	300	300	400	400	400	400	400	500	500	500	600	600	600
J	75x10 MS	75x10 MS	75x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS	100x10 MS
K	25x10 MS	25x10 MS	25x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS	50x10 MS
L	50x10 MS	50x10 MS	50x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS	75x10 MS
M	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
N	← 6mm dia bars at 150 crs EW or equivalent mesh. →									← 10mm dia bars at 150 crs EW or equivalent mesh →					
H.D BOLTS LINTEL	2x12 dia	2x12 dia	2x12 dia	2x12 dia	2x12 dia	2x12 dia	2x12 dia	2x12 dia	3x12 dia	3x12 dia	3x12 dia	4x12 dia	4x12 dia	4x12 dia	4x12 dia
H.D BOLTS APRON	3x12 dia	3x12 dia	3x12 dia	4x12 dia	4x12 dia	4x12 dia	4x12 dia	4x12 dia	5x12 dia	5x12 dia	5x12 dia	6x12 dia	6x12 dia	6x12 dia	6x12 dia

APPROVED PRECAST INLET STRUCTURES MAY BE USED

NELSON CITY COUNCIL

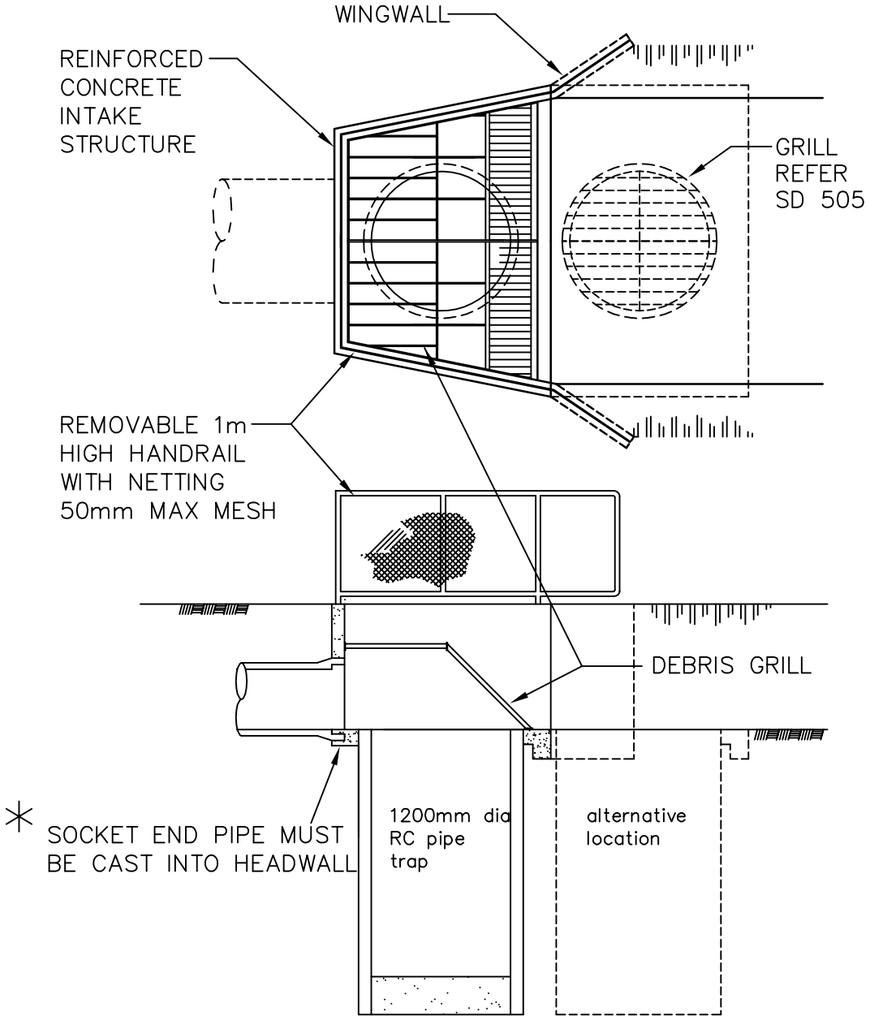
TYPICAL STORMWATER INTAKE STRUCTURE

INFRASTRUCTURAL ASSETS

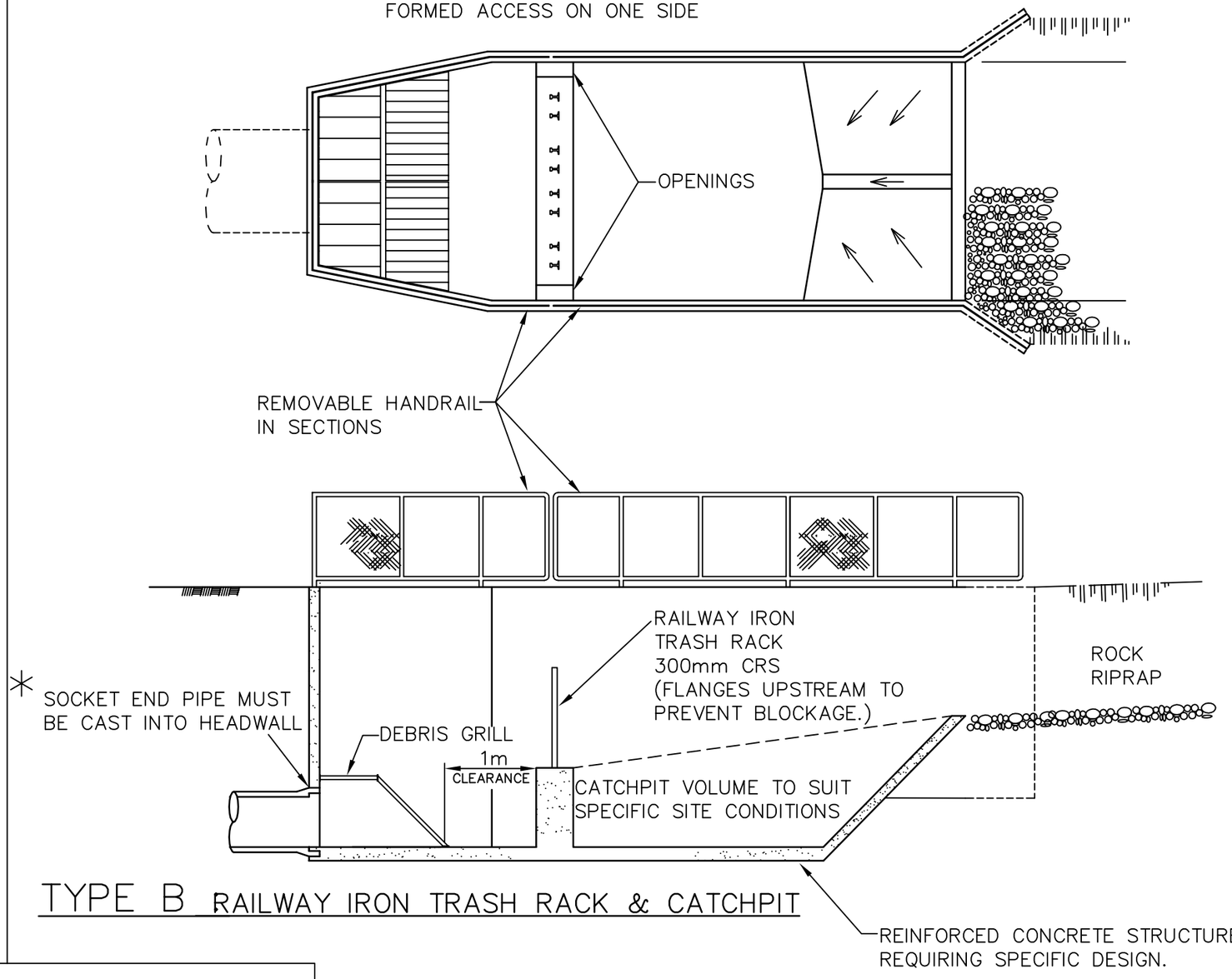
APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

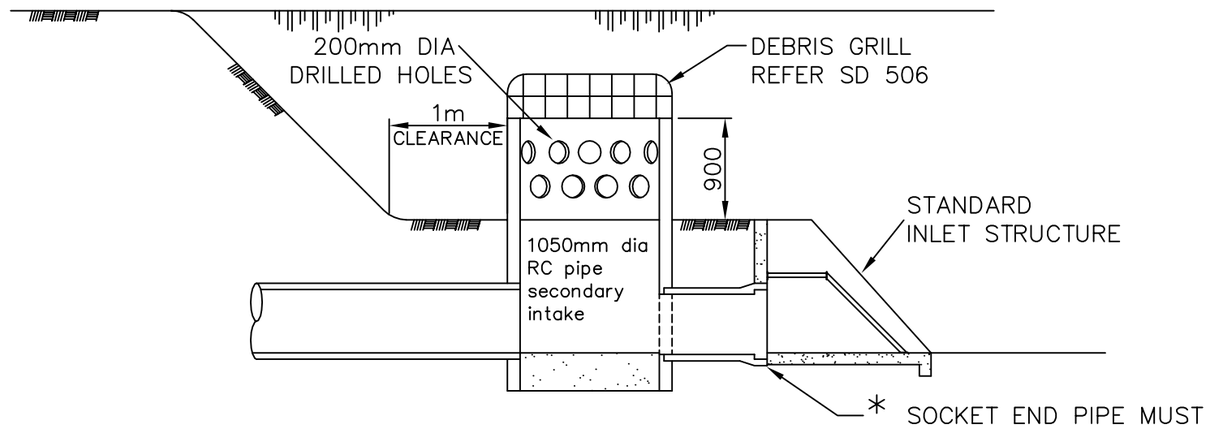
SD 503



TYPE A :DEEP TRAP SUMP



TYPE B RAILWAY IRON TRASH RACK & CATCHPIT



TYPE C SECONDARY INTAKE

NOTES

1. TYPES A,B,C AS SHOWN ARE GENERAL EXAMPLES – EACH CASE WILL REQUIRE DESIGN TO SUIT THE SITE WITH REGARD TO PEAK FLOWS AND ANTICIPATED DEBRIS: FINAL DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL

* SEE SD 503 FOR ALTERNATIVE

NELSON CITY COUNCIL

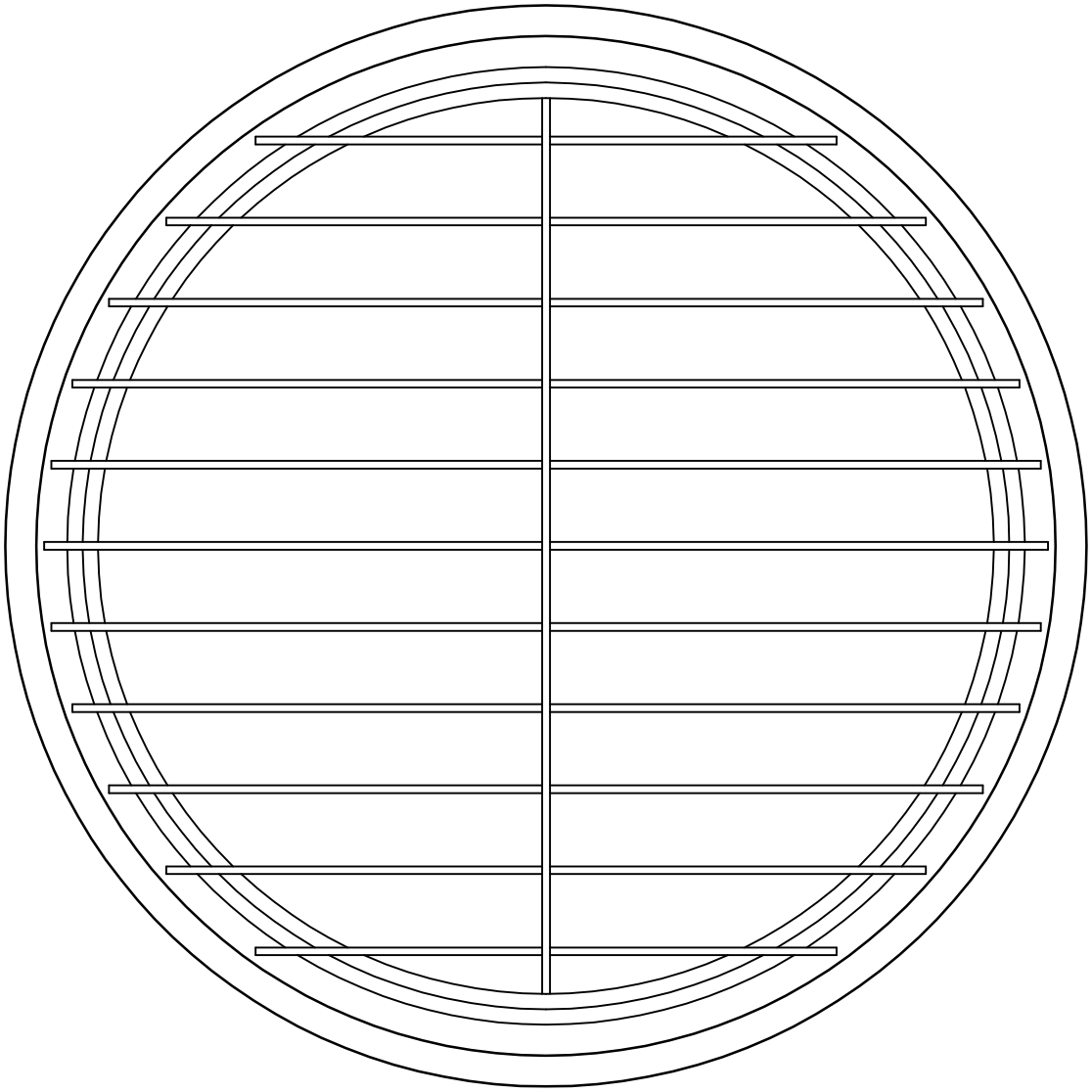
STORMWATER INTAKE STRUCTURES WITH DEBRIS TRAPS

INFRASTRUCTURAL ASSETS

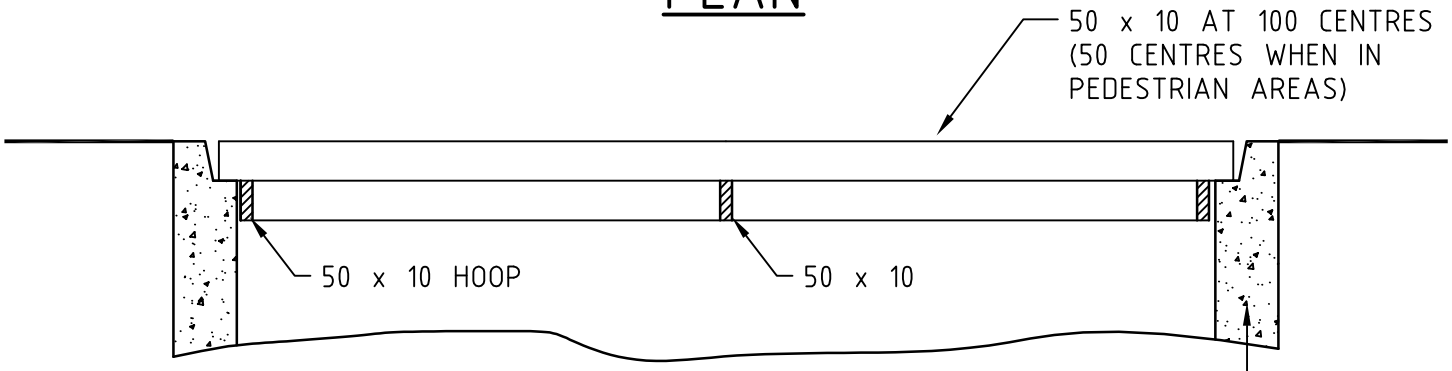
APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 504



PLAN



SECTION

NELSON CITY COUNCIL

DEBRIS TRAP GRILL

INFRASTRUCTURAL ASSETS

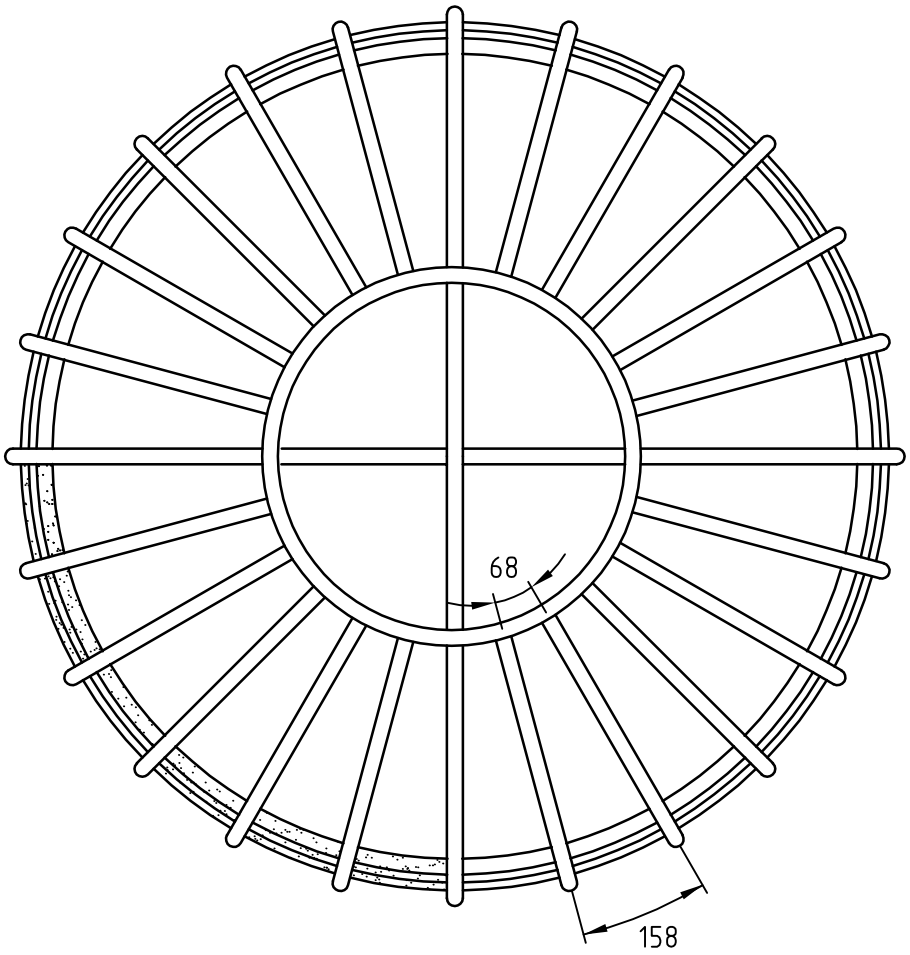
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

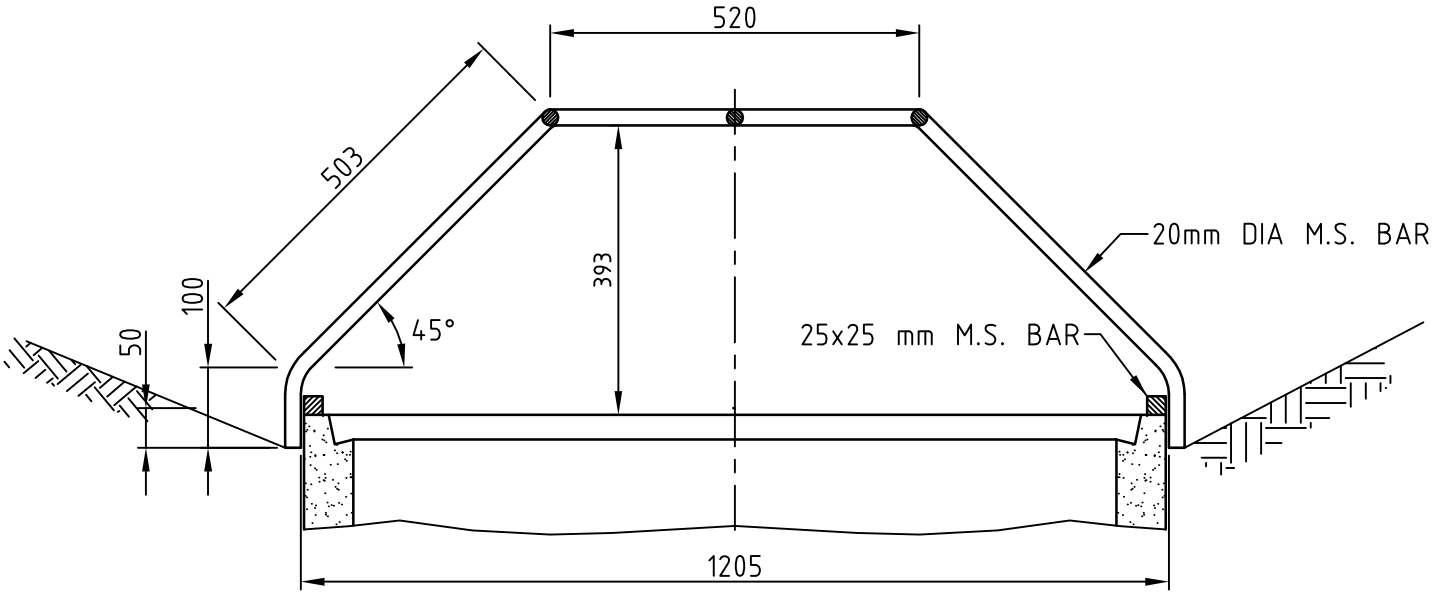
29/07/2010

DATE

SD 505



PLAN



SECTION

NELSON CITY COUNCIL

SECONDARY INTAKE DEBRIS GRILL

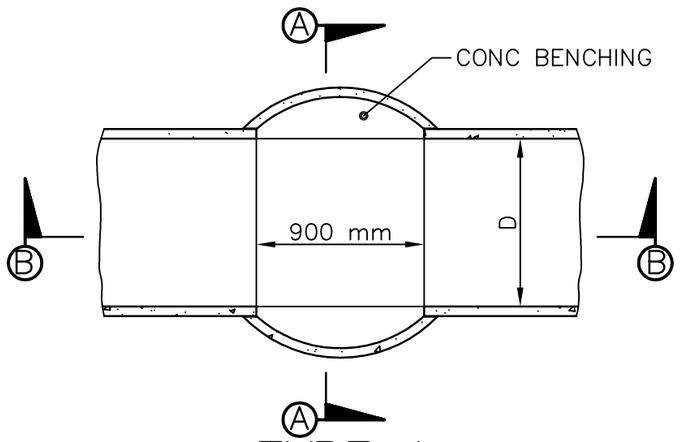
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

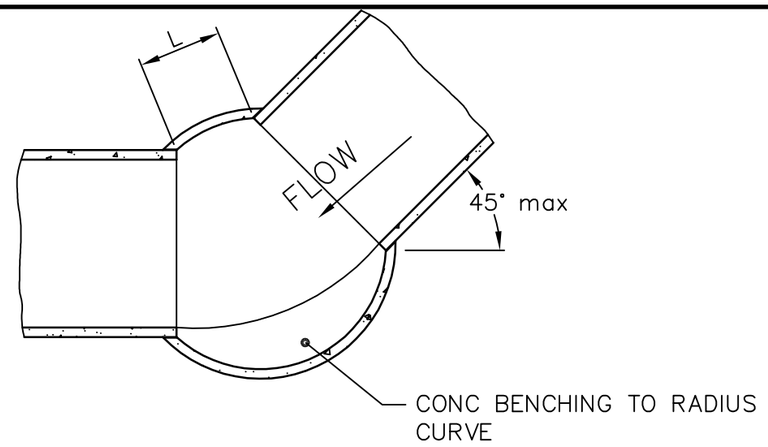
SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD506



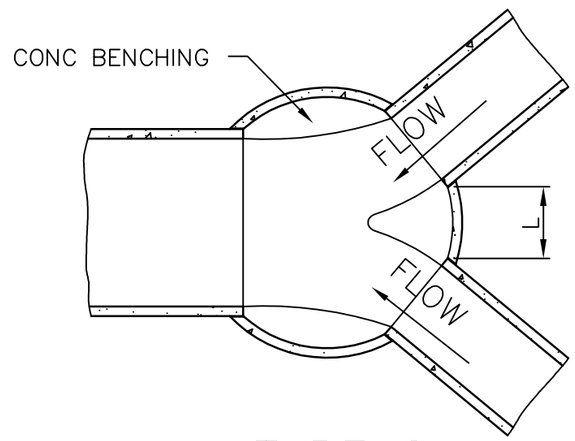
TYPE A

THROUGH CHANNEL ONE PIPE DIA.



TYPE B

ANGLE CHANNEL ONE PIPE DIA.



TYPE C

TYPICAL JUNCTION MANHOLE.

NOTES

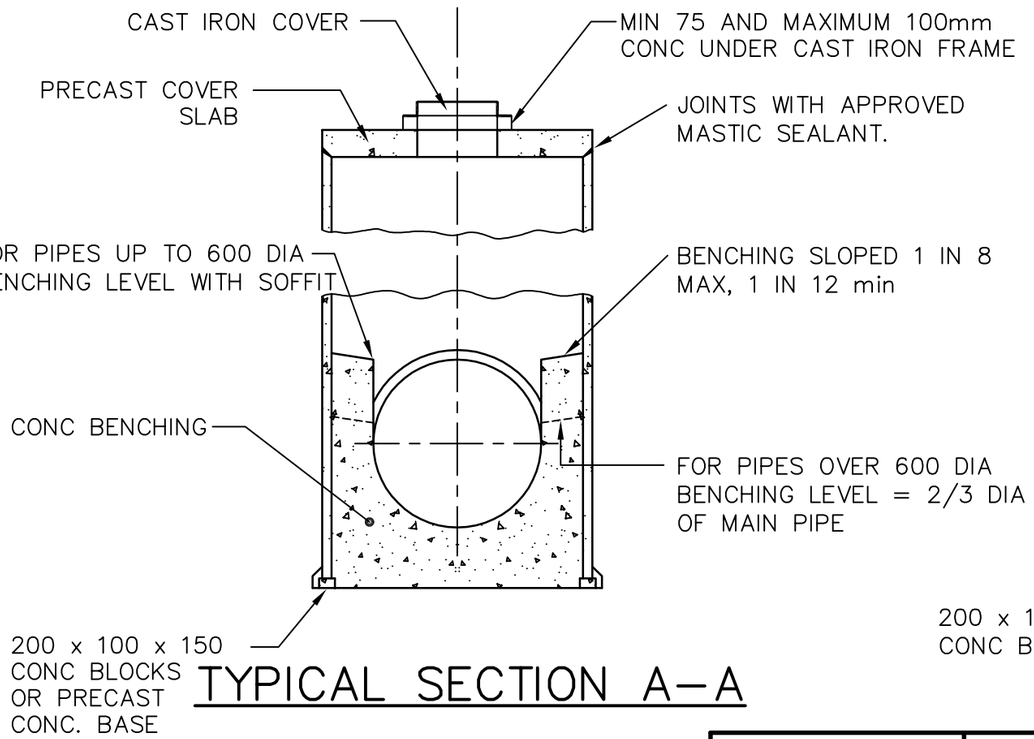
1. FOR PIPES OVER 1050 DIA, MANHOLES ARE TO BE A SPECIFIC DESIGN.

2. TABLE OF DIMENSIONS

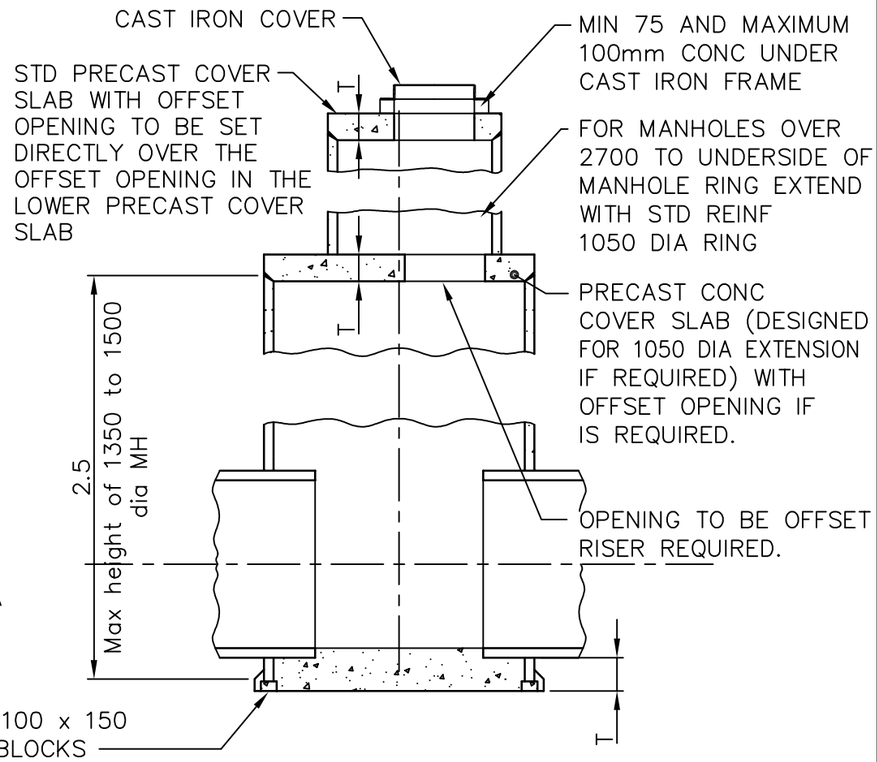
M.H(DIA)	L (MIN)	T (MIN)	D (MAX)
1500	500	200	1050
1350	400	200	750
1050	350	150	450

3. PRECAST CONCRETE MANHOLE RISERS SHALL COMPLY WITH THE REQUIREMENTS FOR CLASS 2 PRECAST CONCRETE PIPES TO AS/NZS 4058.

4. FOR MANHOLE FINISHING OFF DETAILS E.G. HAUNCHING, MAX. DEPTH OF LID, etc SEE SD 602



TYPICAL SECTION A–A



TYPICAL SECTION B–B

NELSON CITY COUNCIL

STANDARD STORMWATER MANHOLE

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 507

NELSON CITY COUNCIL

TOOTHED CONNECTOR

INFRASTRUCTURAL ASSETS

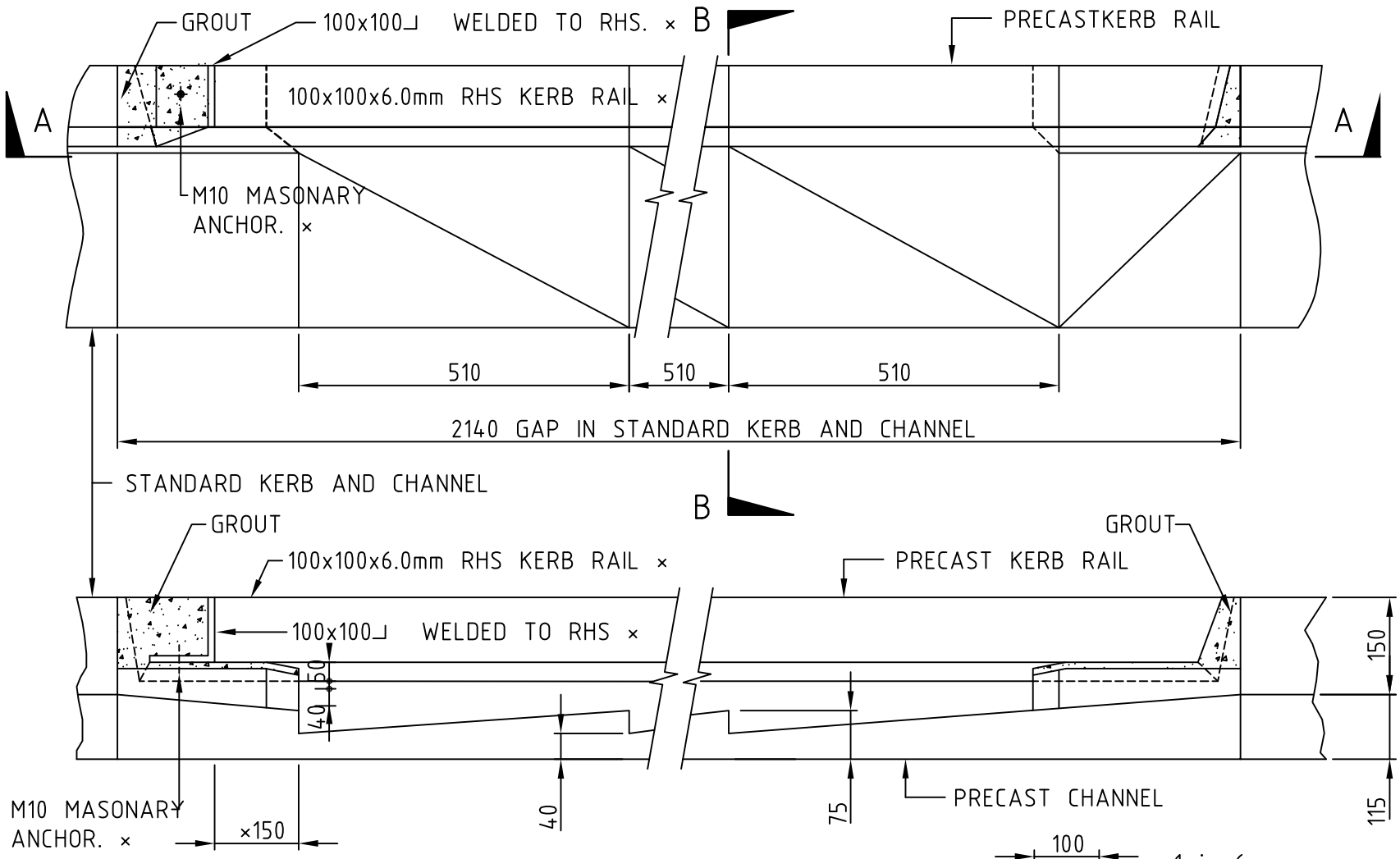
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

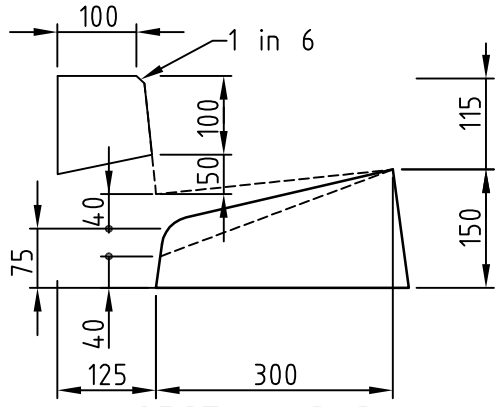
29/07/2010

DATE

SD 508



SECTION A-A



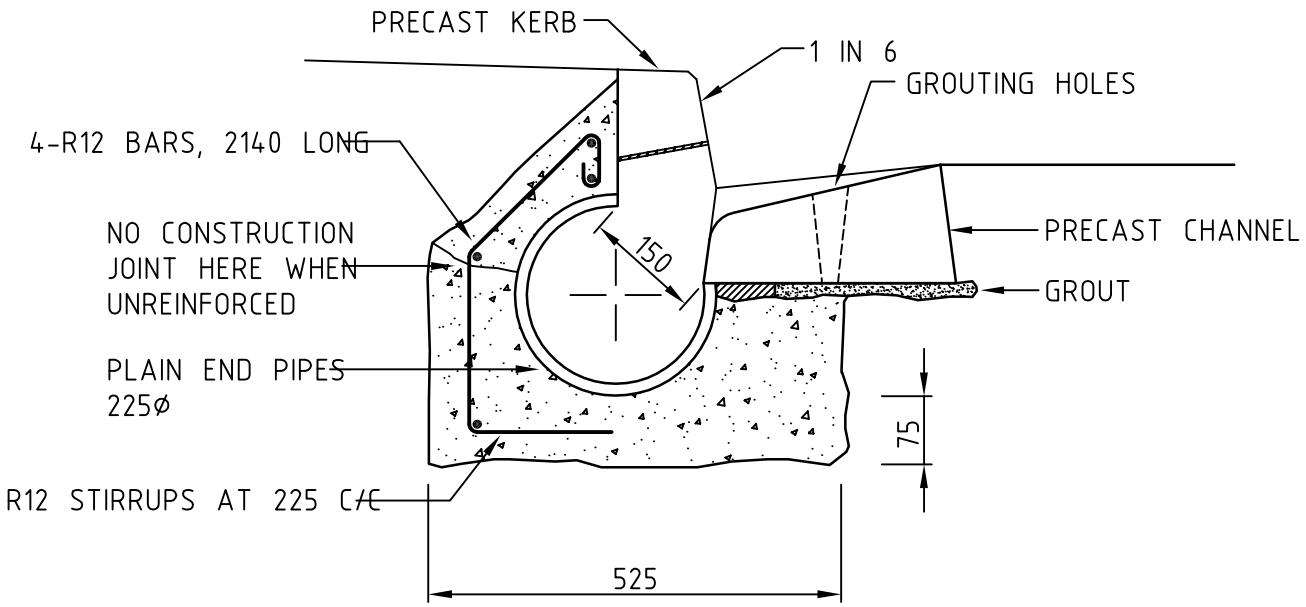
SECTION B-B

NOTE

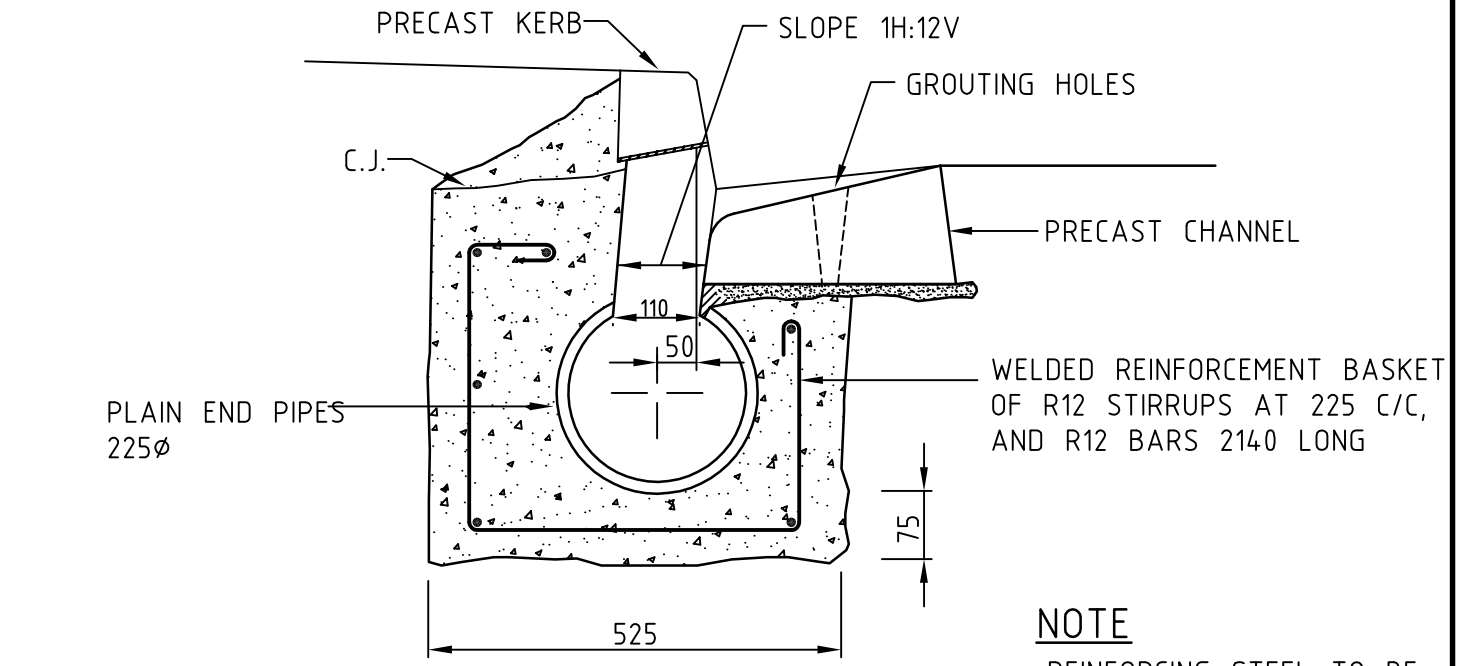
×DENOTES STEEL RHS KERB RAIL DETAIL

STEEL RHS KERB RAIL TO BE USED AS DIRECTED BY THE NCC

RIGHT HAND TOOTHED CONNECTOR



SPECIAL SHALLOW SECTION OF TOOTHED CONNECTOR



STANDARD INTAKE SECTION OF TOOTHED CONNECTOR

NOTE

REINFORCING STEEL TO BE USED WHEN REQUIRED BY THE ENGINEER

NELSON CITY COUNCIL

INTAKE SECTION ON TOOTHED CONNECTOR

INFRASTRUCTURAL ASSETS

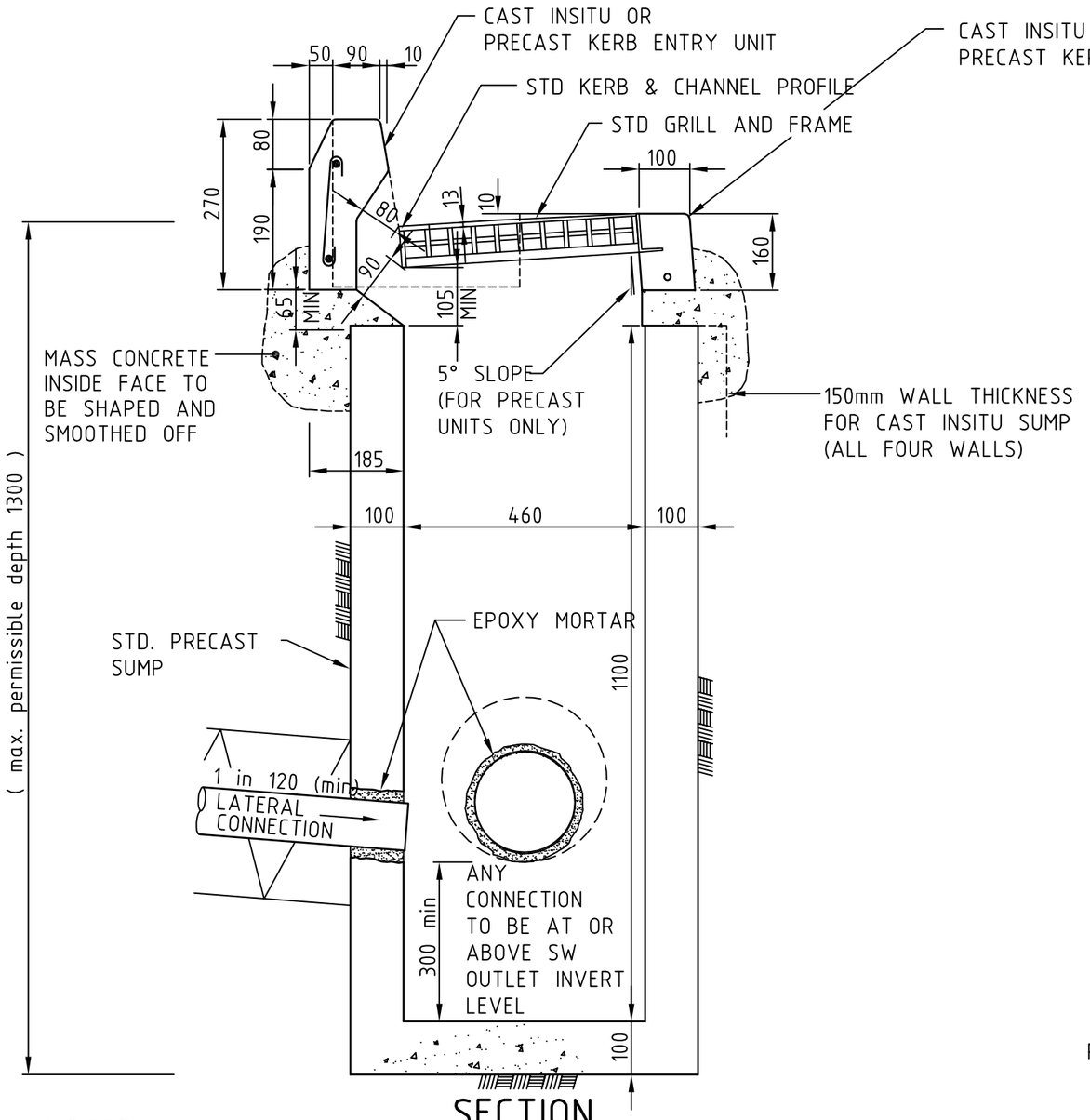
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

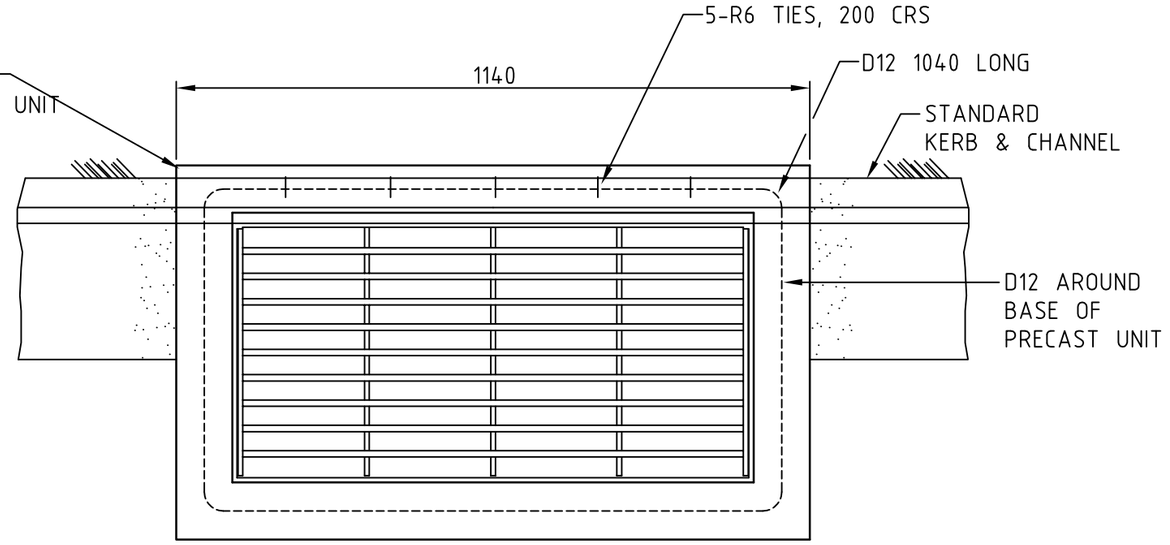
29/07/2010

DATE

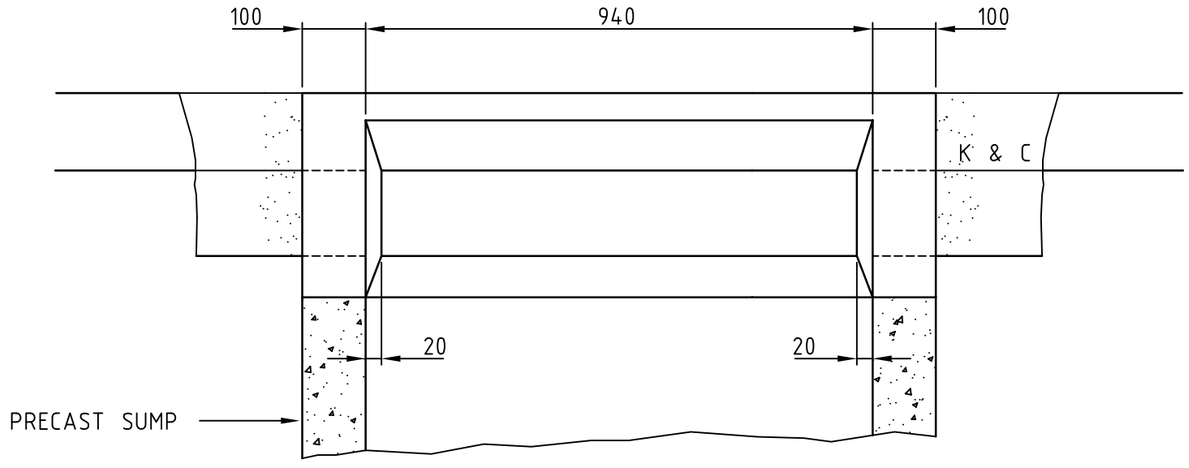
SD 509



SECTION



PLAN



ELEVATION

GRATE AND FRAME NOT SHOWN

NOTES

1 SEE SHEETS 21/207 SHEET 3 FOR DETAILS OF STD GRATING AND FRAME
2 INSITU CONCRETE TO BE 20 MPa AFTER 28 DAYS
3 NO REINFORCING REQUIRED FOR CAST INSITU BACK ENTRY UNIT
4 WHERE SUMP IS CONCRETED TO INTERCEPT K & C AT DISTINCT GRADE THE ENTRY UNIT SHALL BE INCLINED ON THE INSITU PAD EXTENDED OVER THE SUMP WALL WIDTH

NELSON CITY COUNCIL

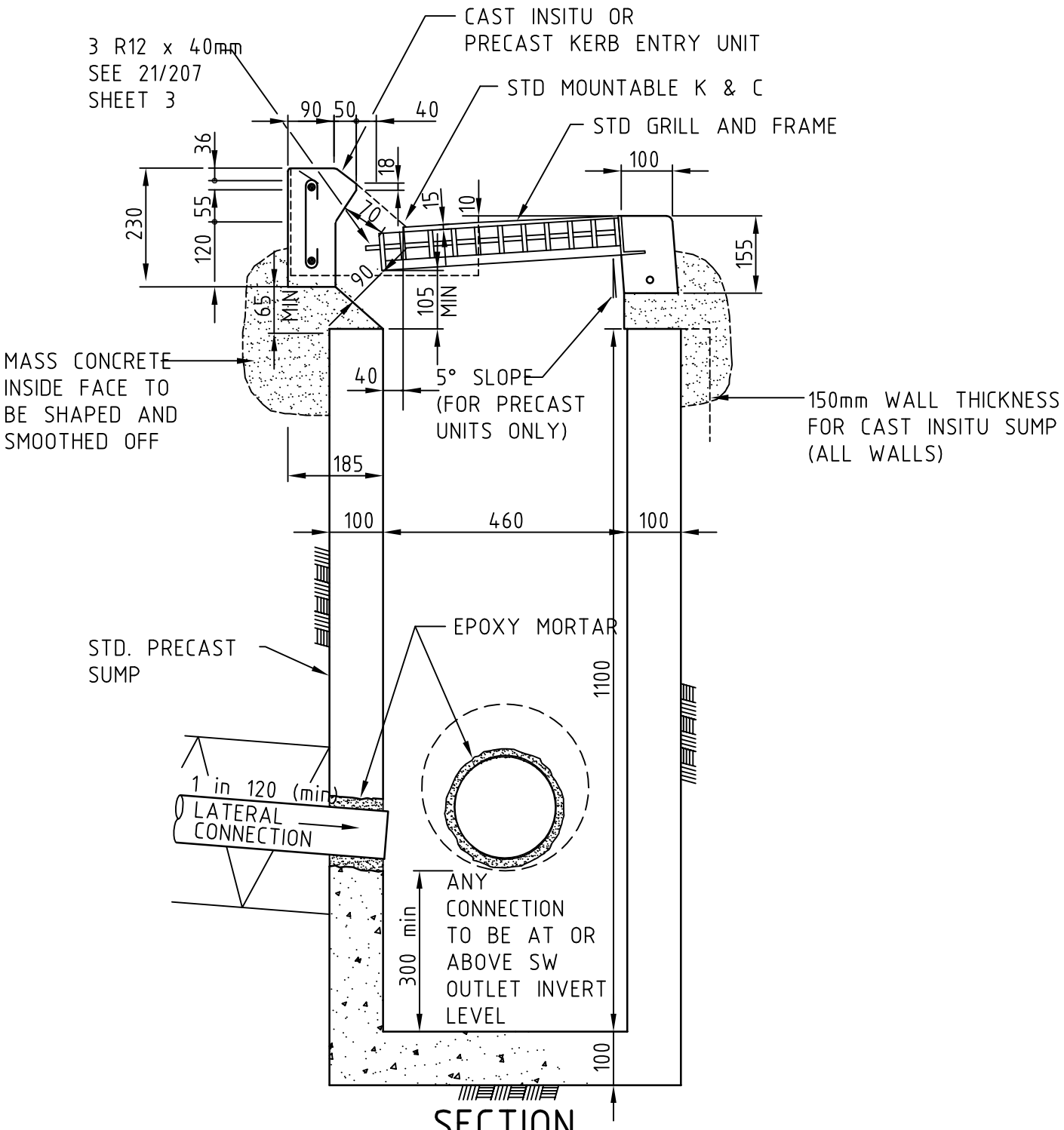
BACK ENTRY SUMP IN STANDARD KERB & CHANNEL

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 510



SECTION

NOTES

1 SEE SHEETS 21/207 SHEET 3 FOR DETAILS OF STD GRATING AND FRAME
2 INSITU CONCRETE TO BE 20 MPa AFTER 28 DAYS
3 NO REINFORCING REQUIRED FOR CAST INSITU BACK ENTRY UNIT
4 WHERE SUMP IS CONSTRUCTED TO INTERCEPT K & C AT DISTINCT GRADE THE ENTRY UNIT SHALL BE INCLINED ON THE INSITU PAD EXTENDED OVER THE SUMP WALL WIDTH

NELSON CITY COUNCIL

BACK ENTRY SUMP IN STANDARD MOUNTABLE KERB & CHANNEL

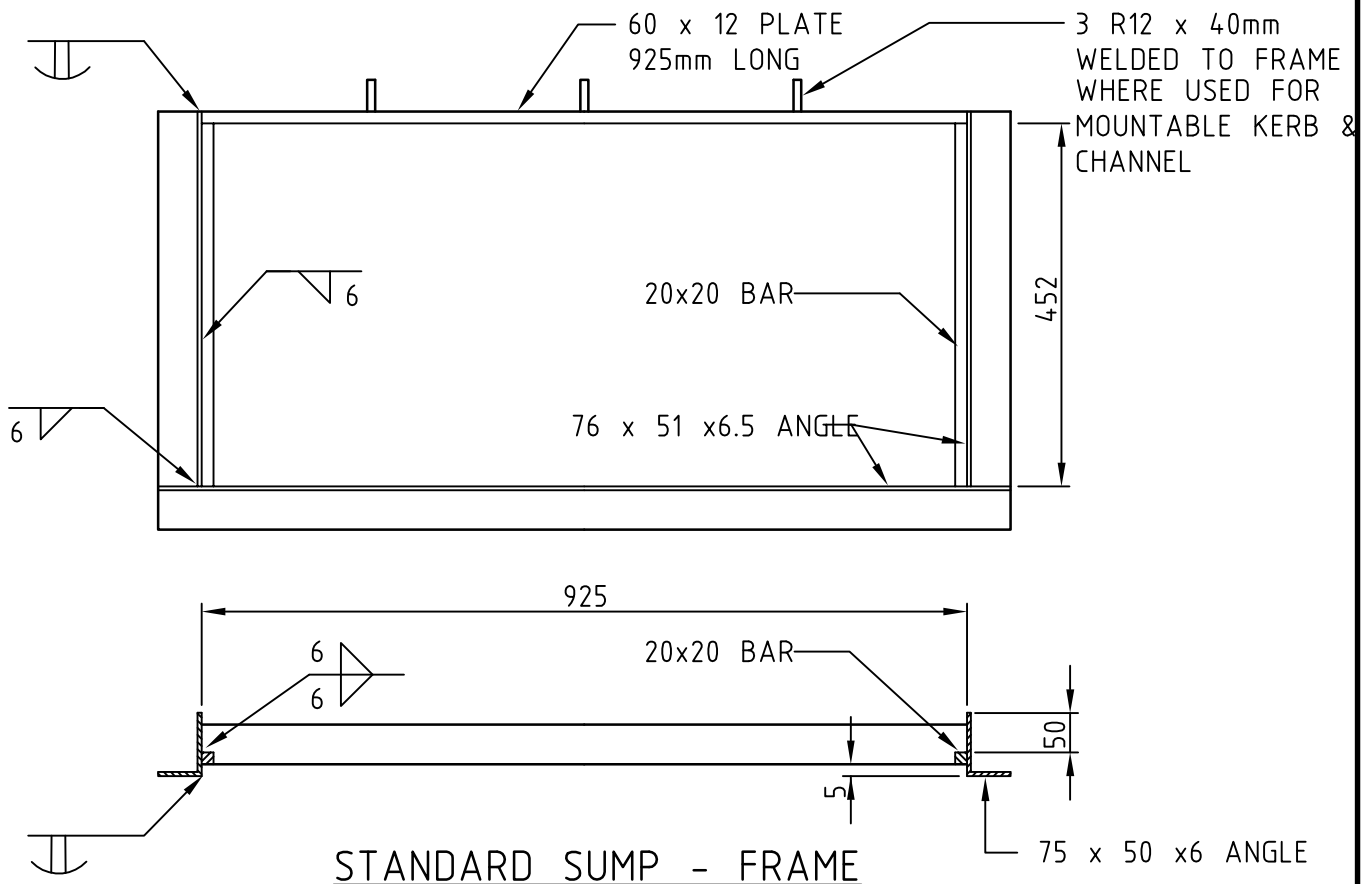
INFRASTRUCTURAL ASSETS

APPROVED

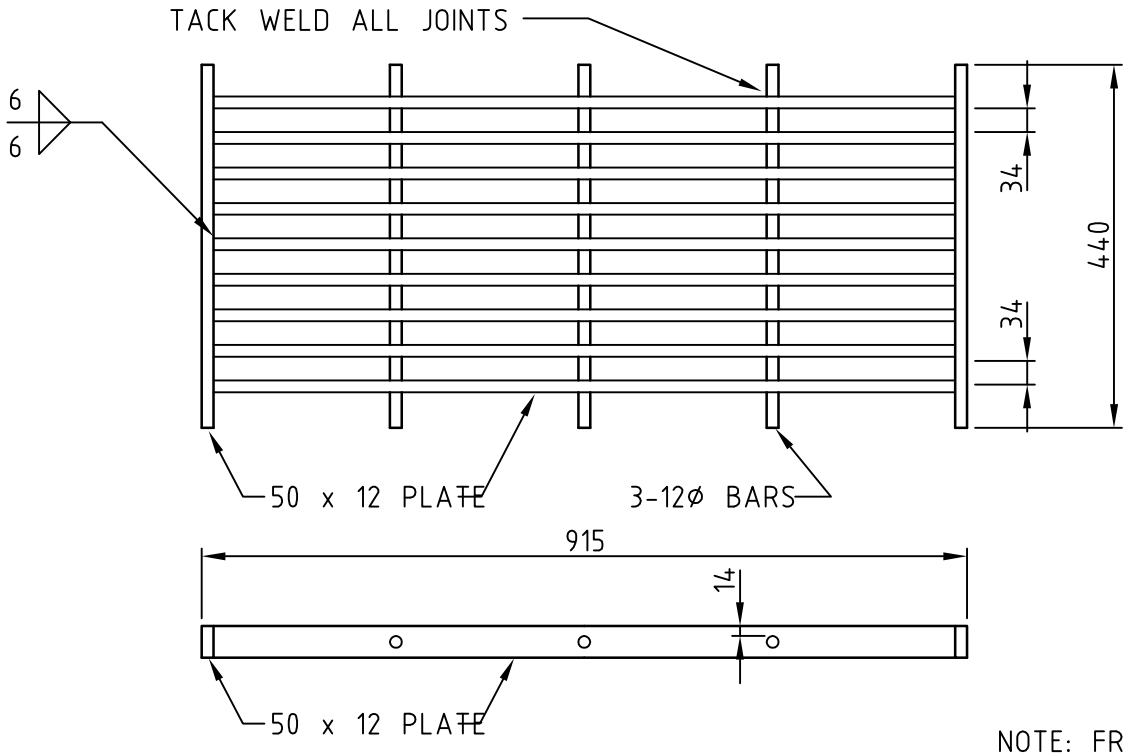
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 511



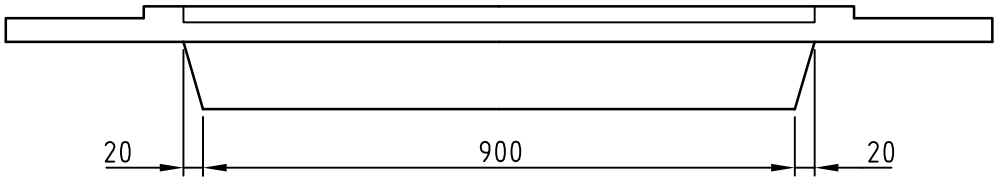
STANDARD SUMP - FRAME



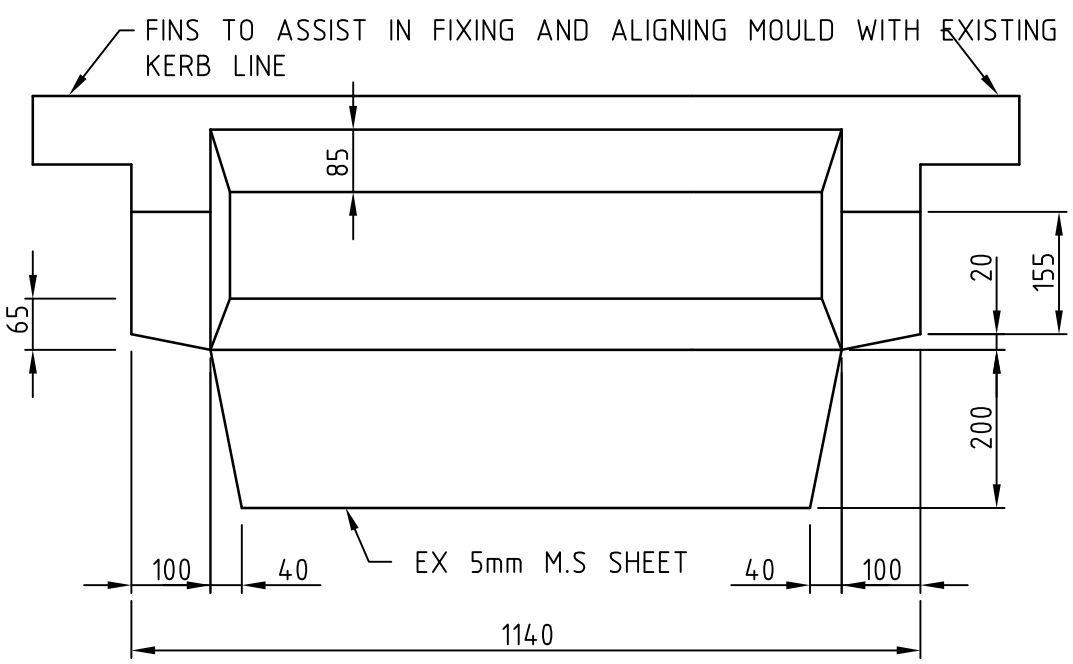
NOTE: FRAME AND GRILL TO BE MILD STEEL

STANDARD SUMP - GRATING

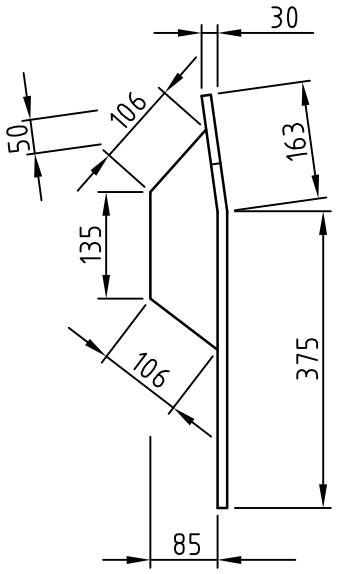
NELSON CITY COUNCIL	STANDARD SUMP FRAME & GRILL	
	INFRASTRUCTURAL ASSETS APPROVED SENIOR EXECUTIVE INFRASTRUCTURE	29/07/2010 DATE
		SD 512



PLAN



ELEVATION



END ELEVATION

NOTE

DIMENSIONS ARE FOR BACK FACE.

NELSON CITY COUNCIL

SUMP TOP MOULD FOR STANDARD KERB & CHANNEL

INFRASTRUCTURAL ASSETS

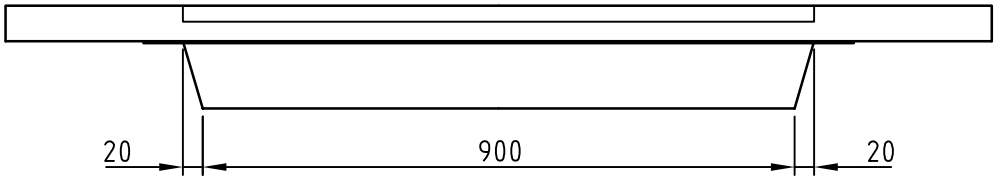
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

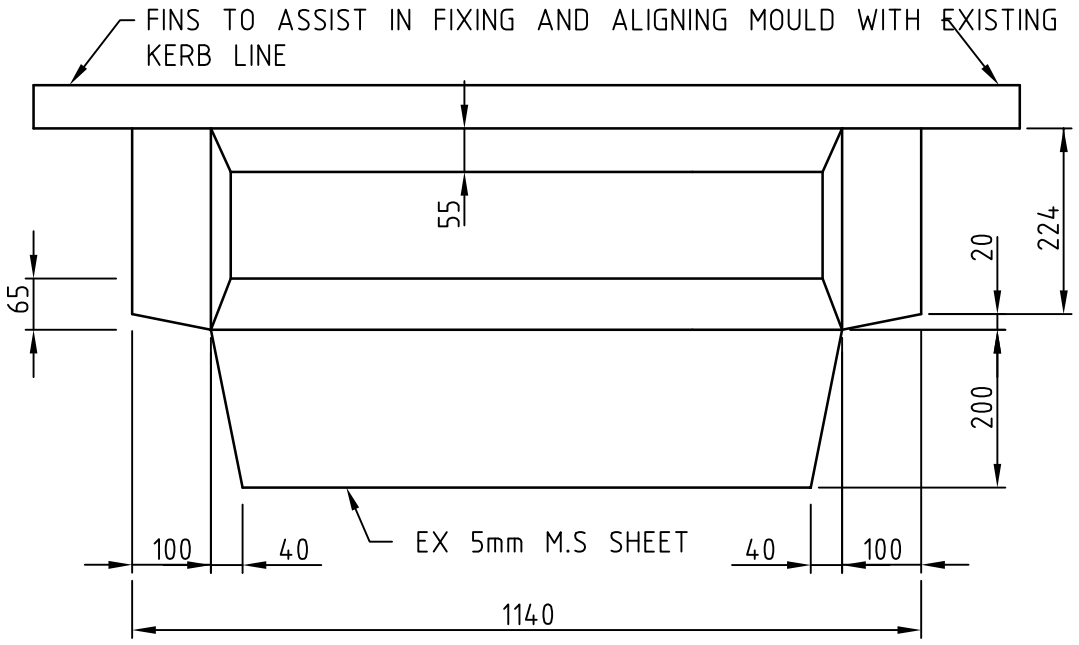
29/07/2010

DATE

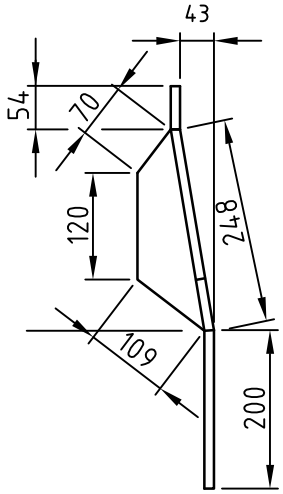
SD 513



PLAN



ELEVATION



END ELEVATION

NOTE

DIMENSIONS ARE FOR BACK FACE.

NELSON CITY COUNCIL

SUMP TOP MOULD FOR STANDARD MOUNTABLE KERB

INFRASTRUCTURAL ASSETS

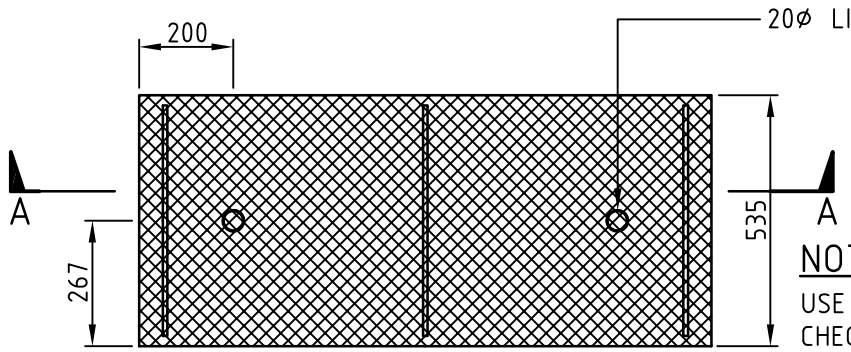
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

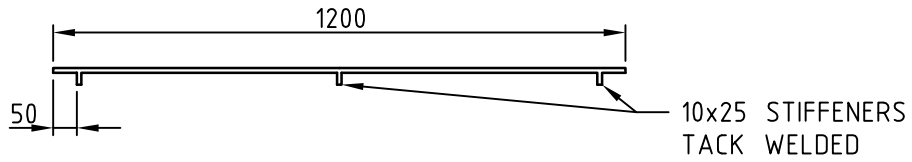
SD 514



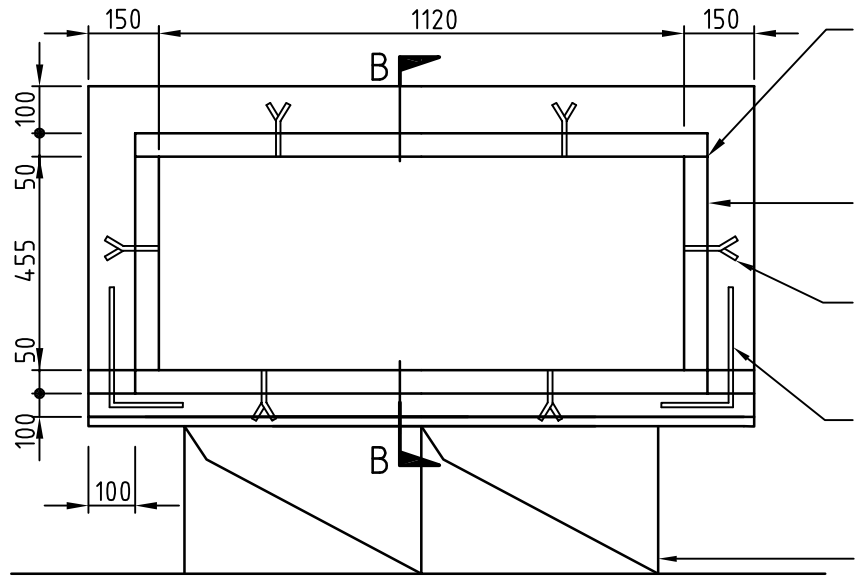
PLAN OF 6mm CHEQUER PLATE

NOTE

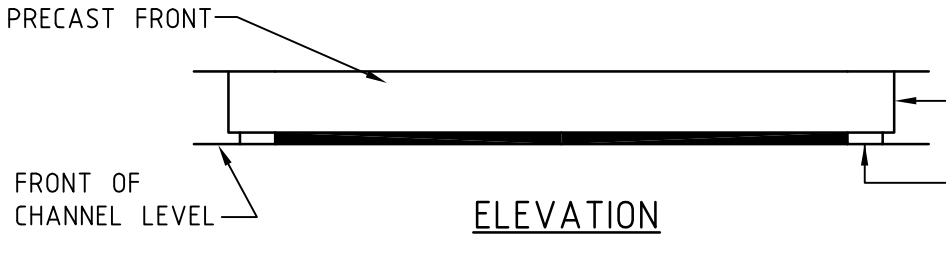
USE 2400x1200x6mm CHEQUER PLATE SHEET
CUT 4 SHEETS 535x1200
CUT 30 RAGGED ENDS 100x40 EACH



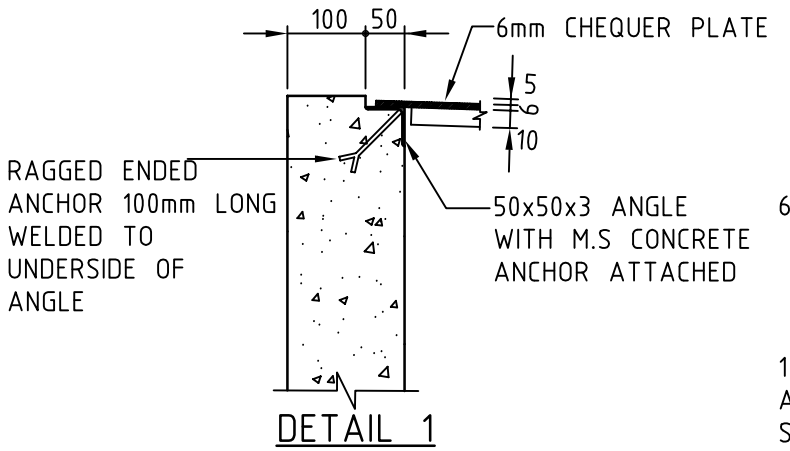
SECTION A-A



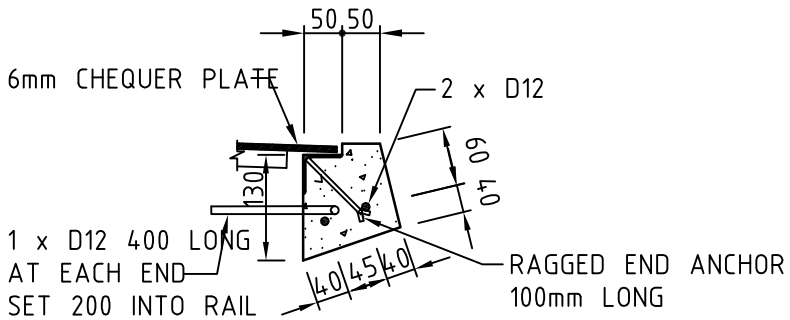
PLAN OF SUMP



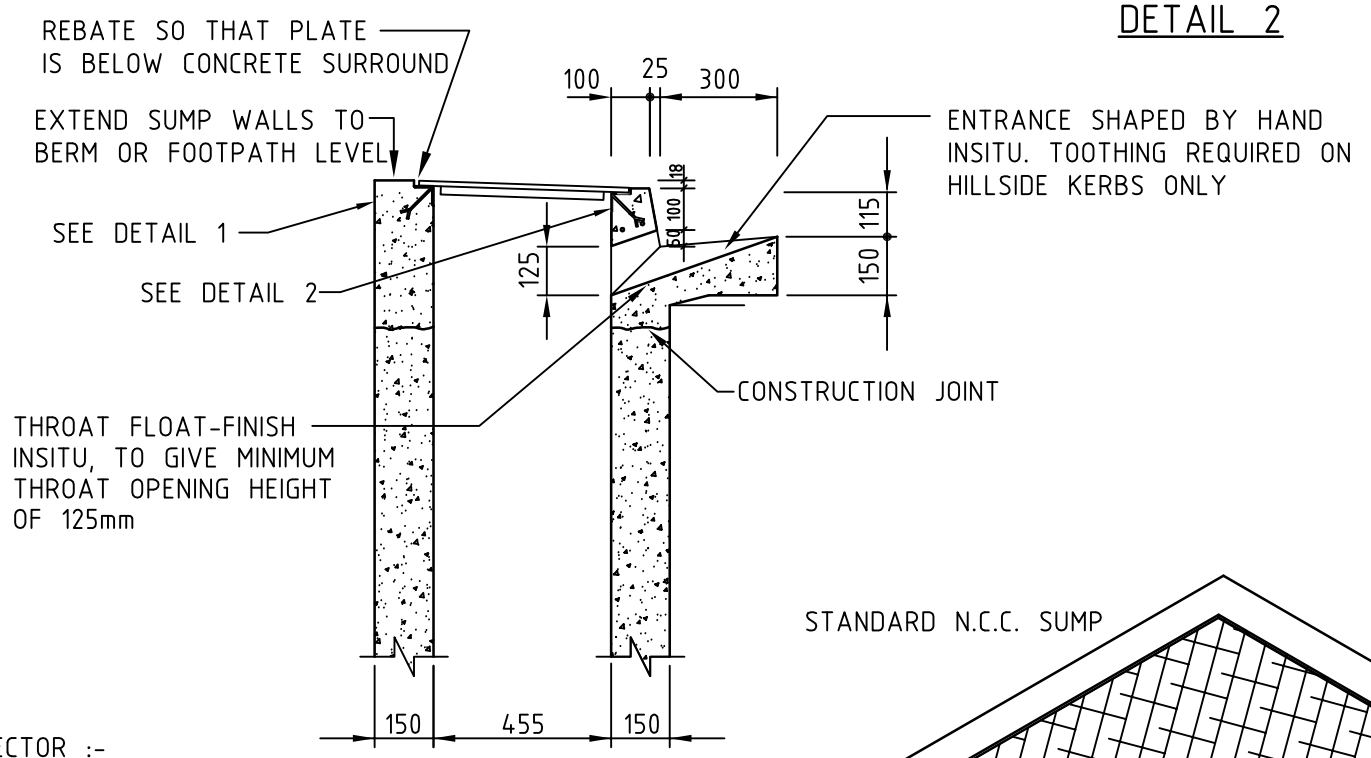
ELEVATION



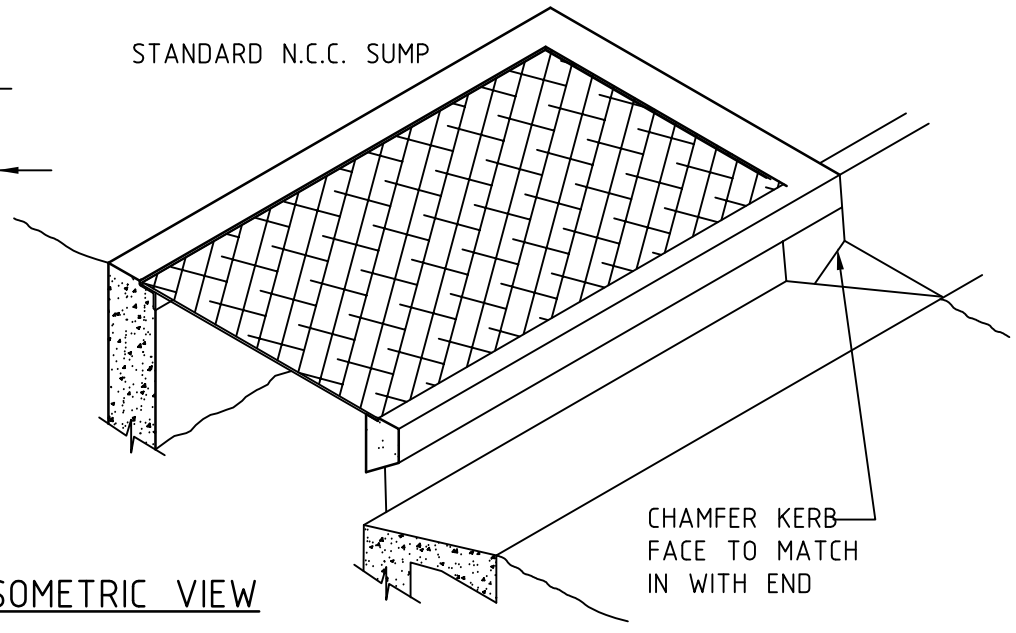
DETAIL 1



DETAIL 2



SECTION B-B



ISOMETRIC VIEW

×× ALTERNATIVELY FOR VEHICLE LOADING 150mm THICK REINFORCED CONCRETE COVER SLAB WITH A PICTON TOP CAST IN MAY BE USED. THE REINFORCEMENT SHALL BE TO A SPECIFIC DESIGN

NELSON CITY COUNCIL

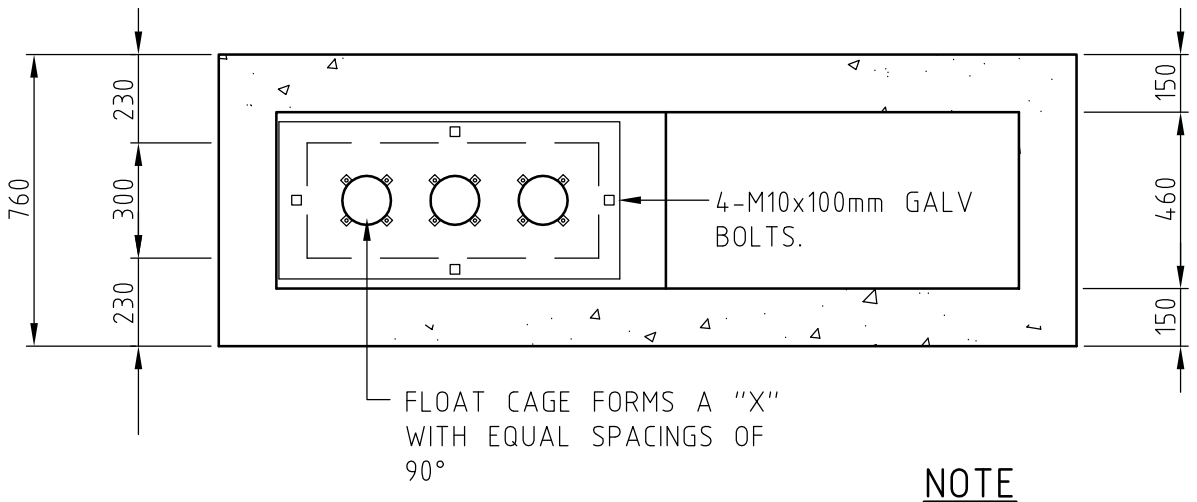
BERM SUMP

INFRASTRUCTURAL ASSETS

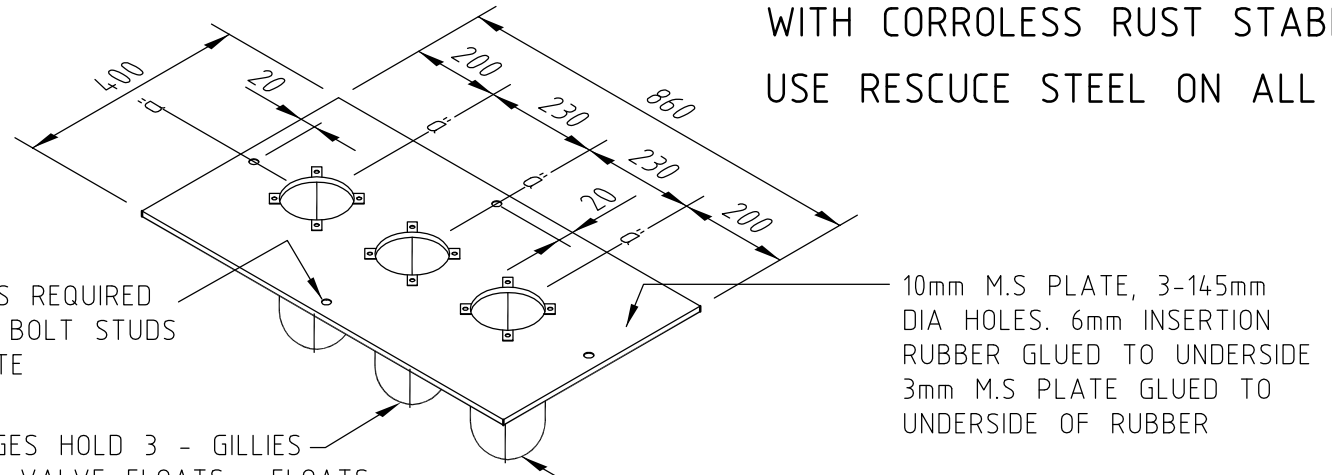
APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 515



TYPICAL PLAN SECTION

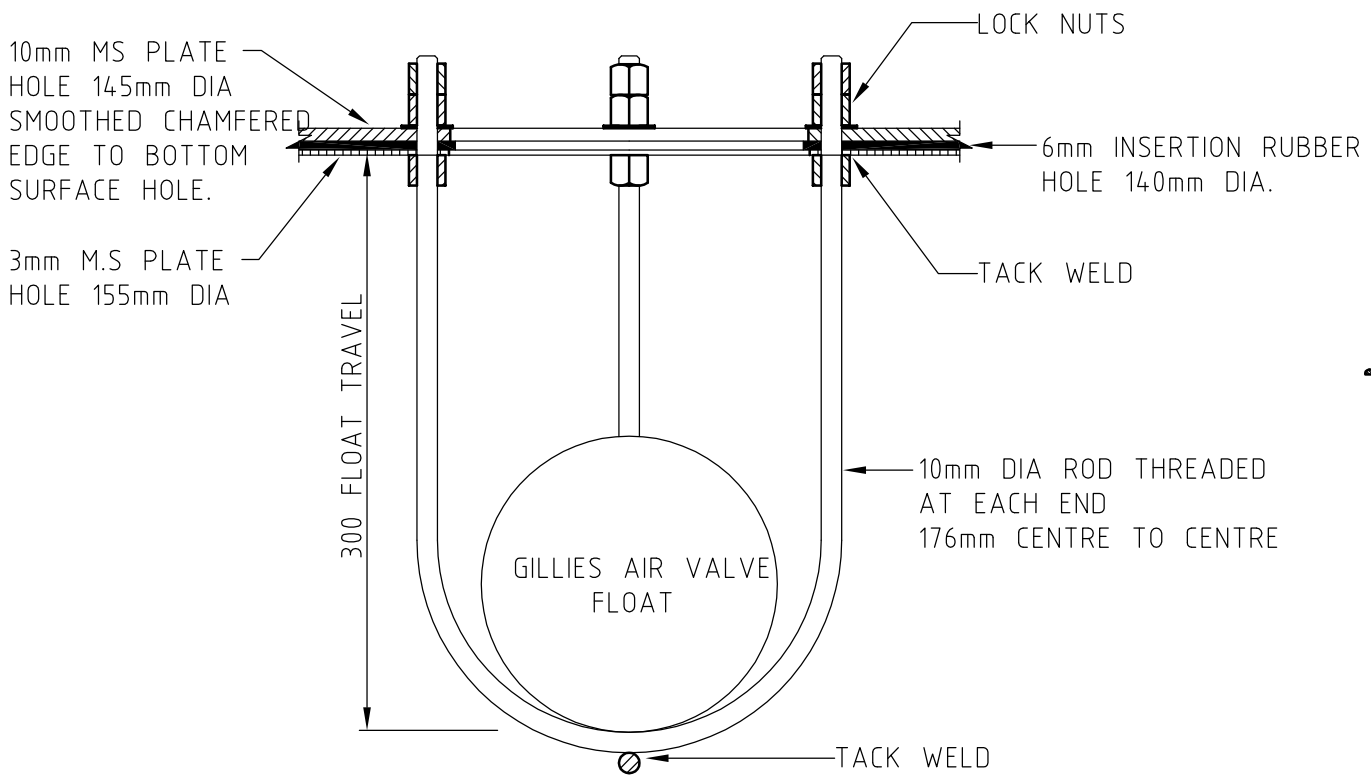


NOTE

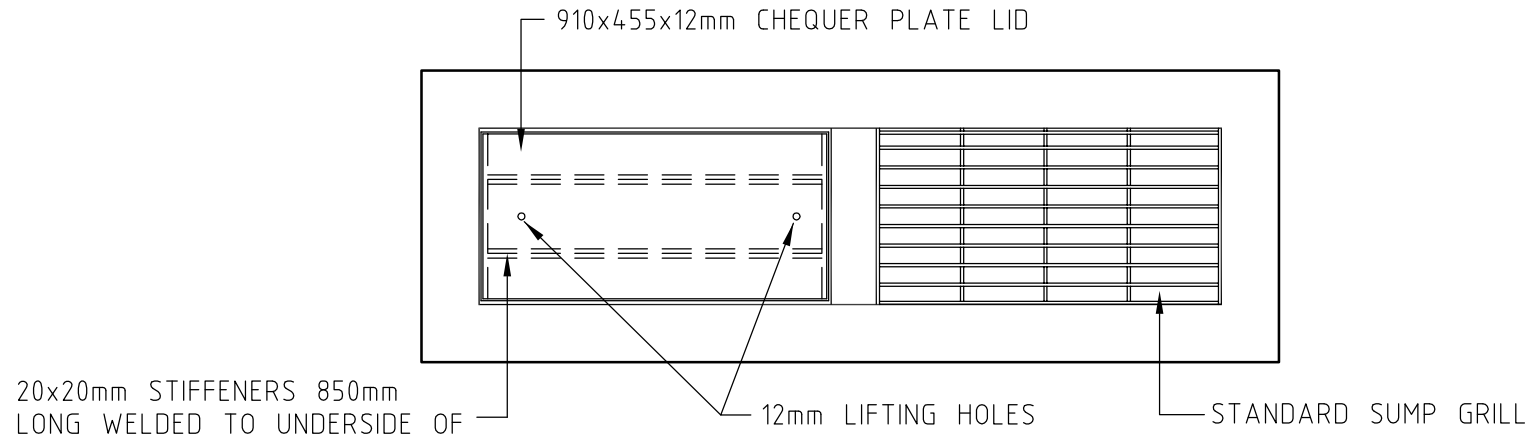
PRIME ALL STEELWORK SURFACES WITH CORROLESS RUST STABILISER "S2"

USE RESCUCE STEEL ON ALL BOLTS

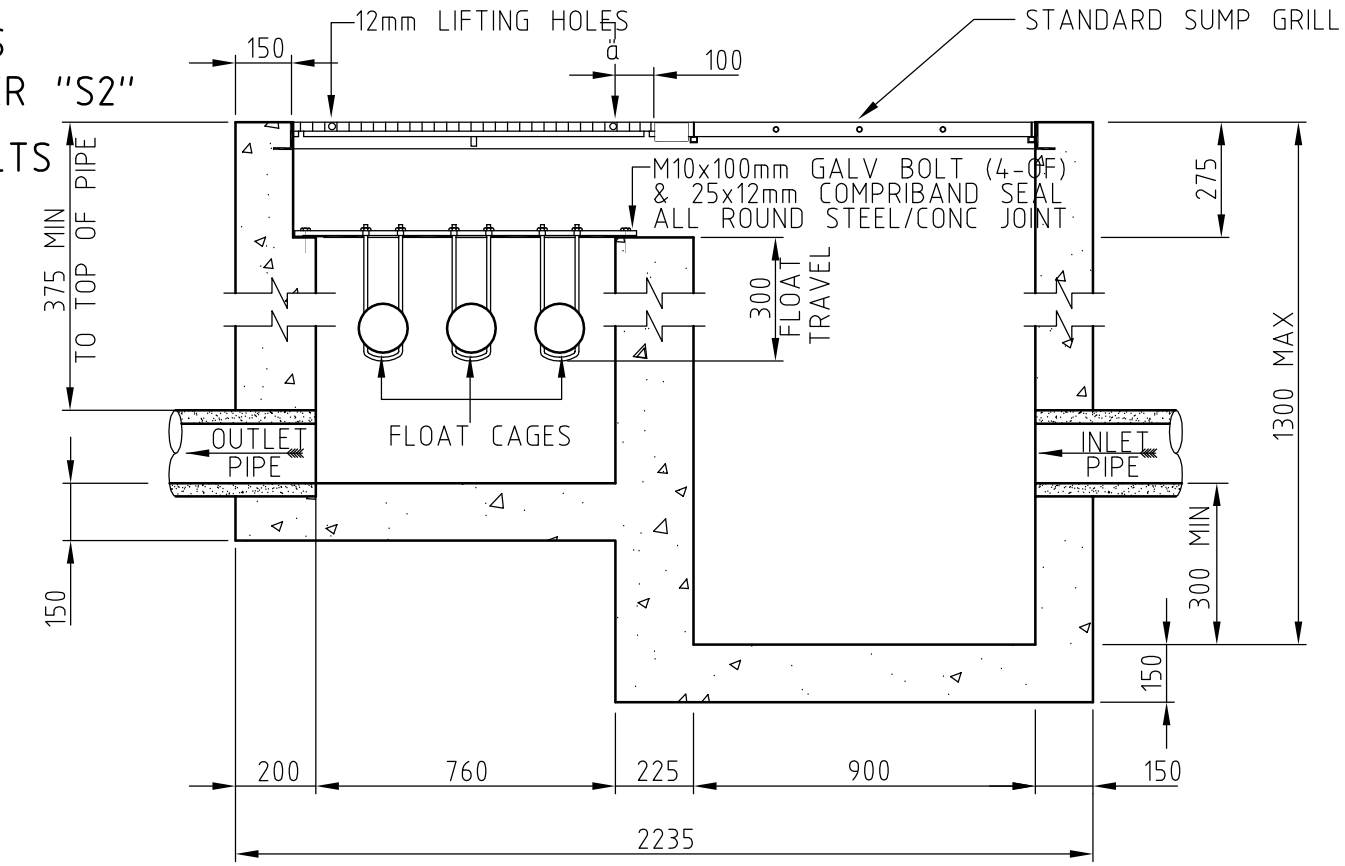
FLOAT CAGE & SUPPORT DETAIL



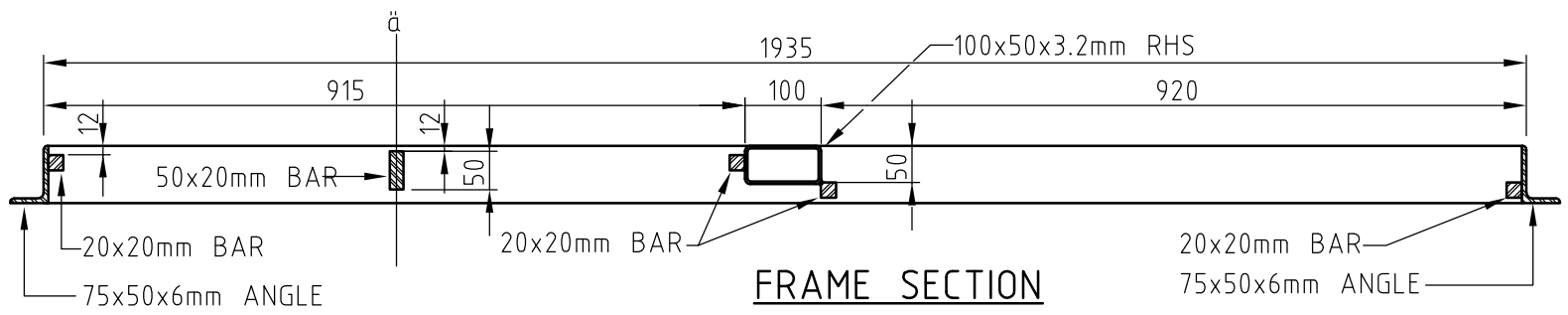
FLOAT CAGE DETAIL



PLAN



TYPICAL ELEVATON SECTION



FRAME SECTION

NELSON CITY COUNCIL

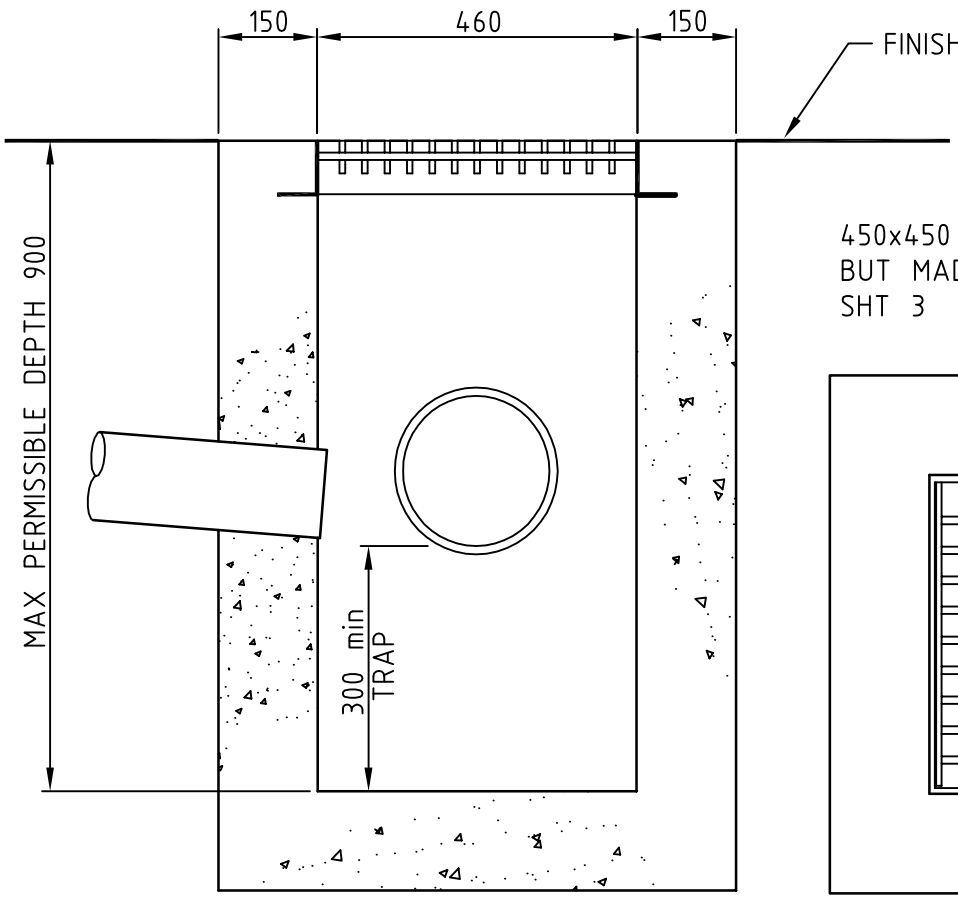
SUMP WITH NON-RETURN CHAMBER

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

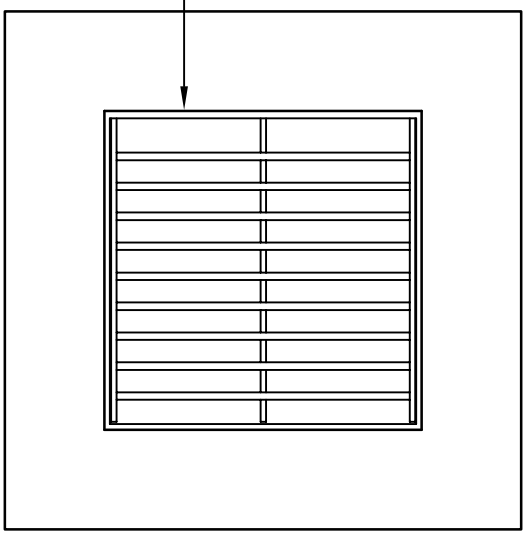
SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 516



SECTION

450x450 GRILL SIMILAR TO STD. SUMP BUT MADE HALF SIZE. SEE 21/207 SHT 3



PLAN

NOTE

WHERE PIPE DEPTH REQUIRES SUMP DEPTH IN EXCESS OF 900mm A STANDARD 940 x 460 mm SUMP SHALL BE PROVIDED.

NELSON CITY COUNCIL

YARD SUMP

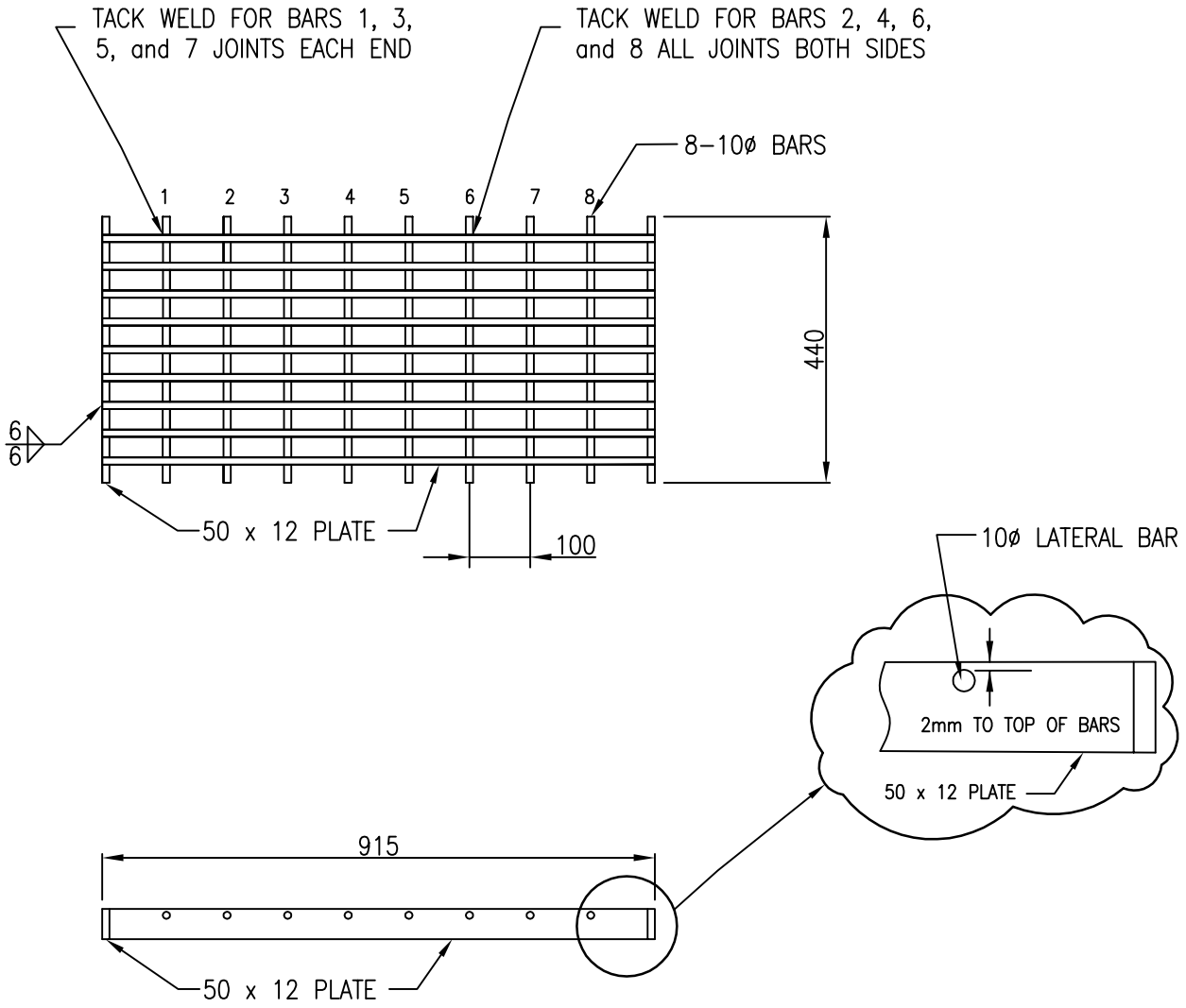
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 517



CYCLE FRIENDLY SUMP – GRATING

NOTES:

1) LOCATION OF CYCLE FRIENDLY SUMP GRILL IS AT THE COUNCILS DISCRETION

2) GRILL TO BE MILD STEEL

3) DRAWING NOT TO SCALE

NELSON CITY COUNCIL

CYCLE FRIENDLY SUMP GRATE

INFRASTRUCTURAL ASSETS

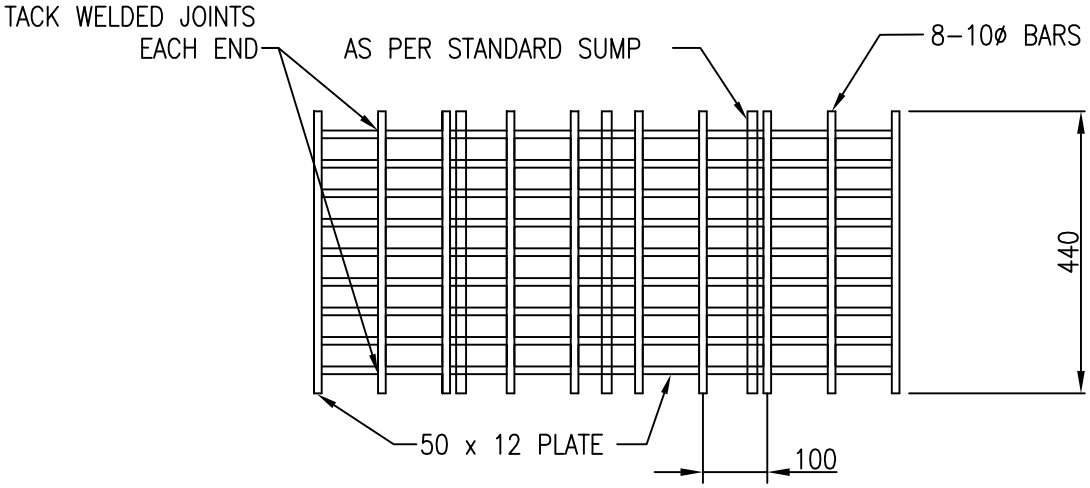
APPROVED

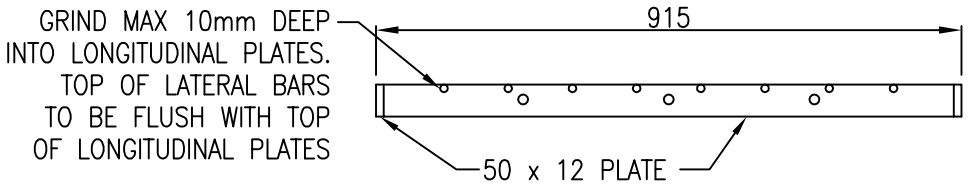
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE

DATE

SD 518





CYCLE FRIENDLY SUMP – GRATING

NOTES:

1) LOCATION OF CYCLE FRIENDLY SUMP GRILL AT COUNCIL'S DISCRETION

2) THE SUMP GRATE IS A STANDARD SUMP GRATE AS PER DRAWING 21/207 SHEET 3 WITH THE ADDITION OF 8 LATERAL BARS

3) FRAME AND GRILL TO BE MILD STEEL

4) DRAWING NOT TO SCALE

NELSON CITY COUNCIL

CYCLE FRIENDLY SUMP GRATE
Modification of Standard Sump Grate

INFRASTRUCTURAL ASSTES

APPROVED

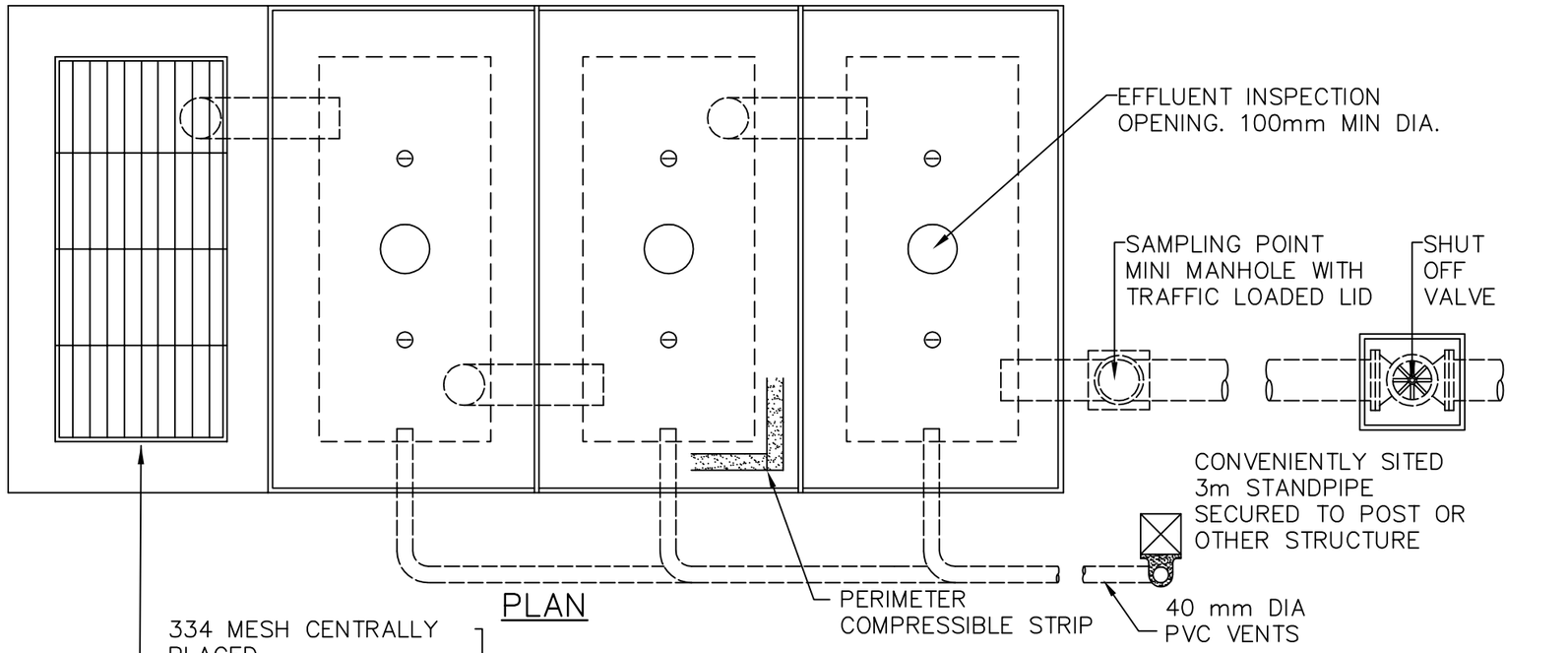
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

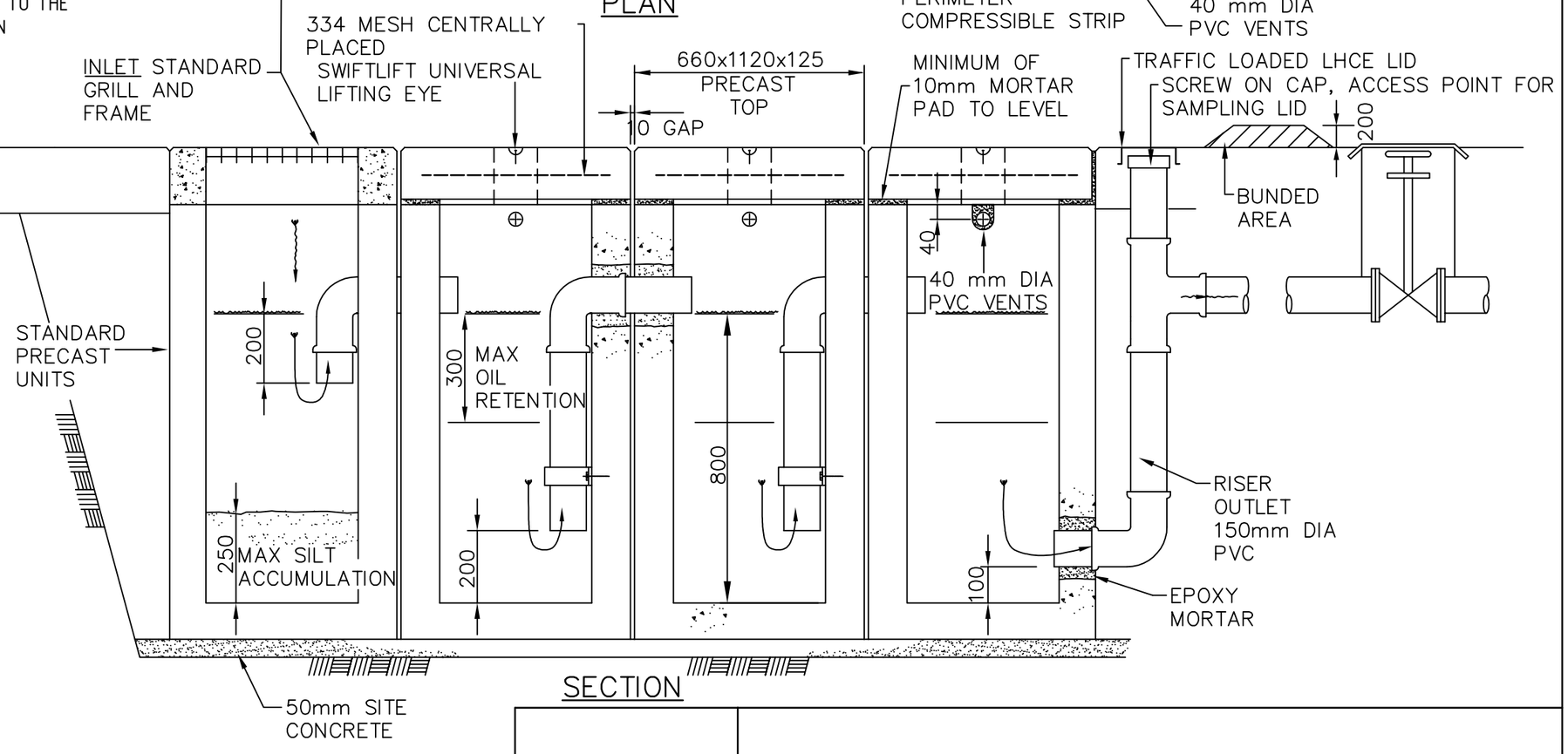
SD 519

NOTES:

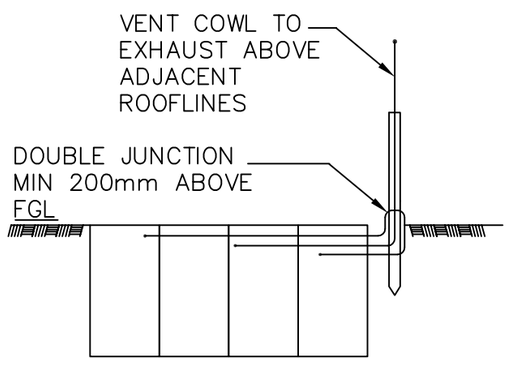
1. THE STANDARD SILT & OIL TRAP IS DESIGNED TO SERVE SMALL INSTALLATIONS SUCH AS TRUCK DEPOTS ETC. (MAJOR INSTALLATIONS WILL REQUIRE SPECIFIC DESIGN.)
2. SILT & OIL TRAP IS MADE UP OF FOUR STANDARD PRECAST SUMP UNITS.
3. LIDS TO BE PRECAST REINFORCED CONCRETE LID MASS APPROXIMATELY 226kg.
4. OIL CAPACITY 390 LITRES. SILT VOLUME $0.1m^3$
5. DRAIN PIPE WORK MIN 100MM DIA PVC.
6. VENT PIPE WORK MIN 40mm DIA PVC, ABOVE GROUND VENTS MAY BE GALVANISED STEEL IF IN AN EXPOSED POSITION.
7. A CONTINUOUS MORTAR PAD MINIMUM THICKNESS 10mm, SHALL BE LAID ROUND THE TOP OF EACH SUMP UNIT TO ALLOW FOR SHAPING TO THE REQUIRED FINISHED GROUND LEVEL.
   A COMPRESSIBLE SEALANT STRIP OF COMPRIBAND OR SIMILAR APPROVED SHALL BE LAID ON EACH MORTAR PAD.
8. WHERE A STEAM CLEANING OPERATION OR DETERGENTS OR DEGREASER ARE USED:
   * AN APPLICATION FORM TO DISCHARGE TRADE WASTE FROM A SILT & OIL TRAP TO THE SEWERAGE SYSTEM SHALL BE SUBMITTED TO THE ENGINEERING MANAGER FOR HIS/HER APPROVAL.
   * STORMWATER SHALL NOT BE ALLOWED TO DISCHARGE TO THE SEWERAGE SYSTEM.
9. BUNDED AREAS AROUND FUEL STORAGE AREAS SHOULD DISCHARGE TO THE STORMWATER VIA A SUITABLY DESIGNED OIL INTERCEPTOR WITH AN APPROPRIATE SHUT-OFF VALVE INSITU.
10. BUND TO BE 200mm HIGH AROUND SITE.



PLAN



SECTION



VENT DETAIL

NELSON CITY COUNCIL

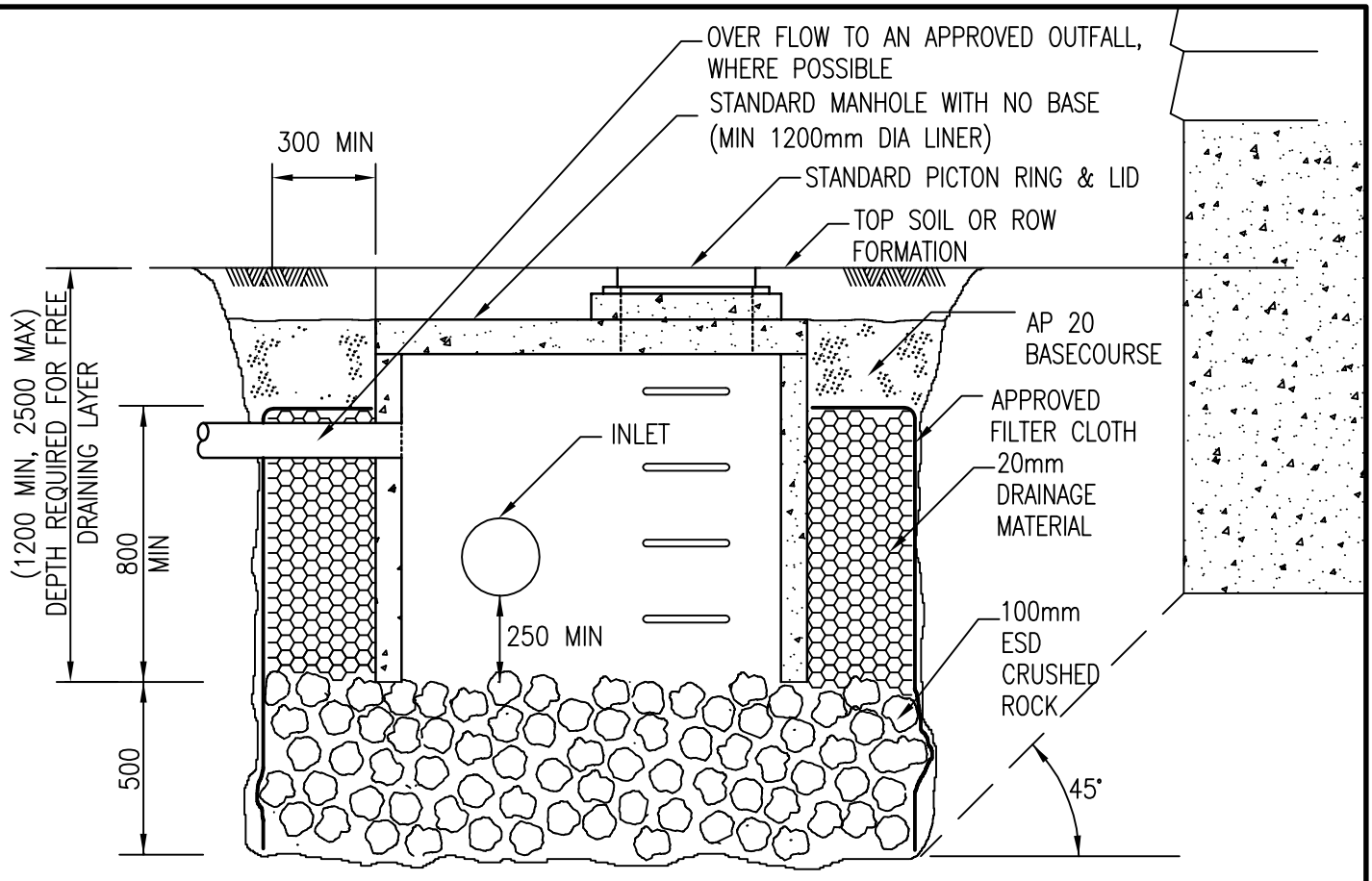
SILT & OIL TRAP

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE ..... DATE

SD 520



THIS DETAIL SHALL BE USED WHERE ONE SOAKPIT IS PROPOSED PER LOT

NOTE:

1. SOAK PITS SHALL BE SITED AWAY FROM SERVICES BY 2m AND AWAY FROM BUILDING FOUNDATIONS BY 45° TO PIT BASE AS MINIMUM.

2. SILT TRAPS SHALL BE CONSTRUCTED WITH EVERY SOAKPIT WHERE DRAINING SURFACE WATER. (SEE NCC 21/207 SHT 1)

3. SOAKPITS MAY ONLY BE ALLOWED:

   A) ON FLAT LAND IN THE WOOD AREA, BROOK VALLEY AND STOKE.

   B) WHERE REASONABLE GROUND SOAKAGE CAN BE PROVEN BY TESTING TO THE ENGINEERS SATISFACTION IE. FOR RESIDENTIAL BUILDINGS 4500L IN 20 MINUTES. GARAGE OR ACCESSORY BLGS. 200L IN 4 MINUTES.

   C) ON EXISTING RESIDENTIAL LOTS FOR NEW BUILDINGS OR EXTENSIONS OVER $10m^2$.

   D) IN NEW SUBDIVISIONS WHERE ONLY ONE NEW LOT IS BEING CREATED.

4. WHERE POSSIBLE AND PRACTICAL AN OVERFLOW CONNECTION IS REQUIRED FROM A SOAKPIT TO AN APPROVED OUTFALL.

5. SOAK PIT WILL EVENTUALLY SILT UP AND WILL REQUIRE ONGOING MAINTENANCE. OWNERS SHOULD BE MADE AWARE OF THIS.

NELSON CITY COUNCIL

STANDARD SOAK PIT DETAIL

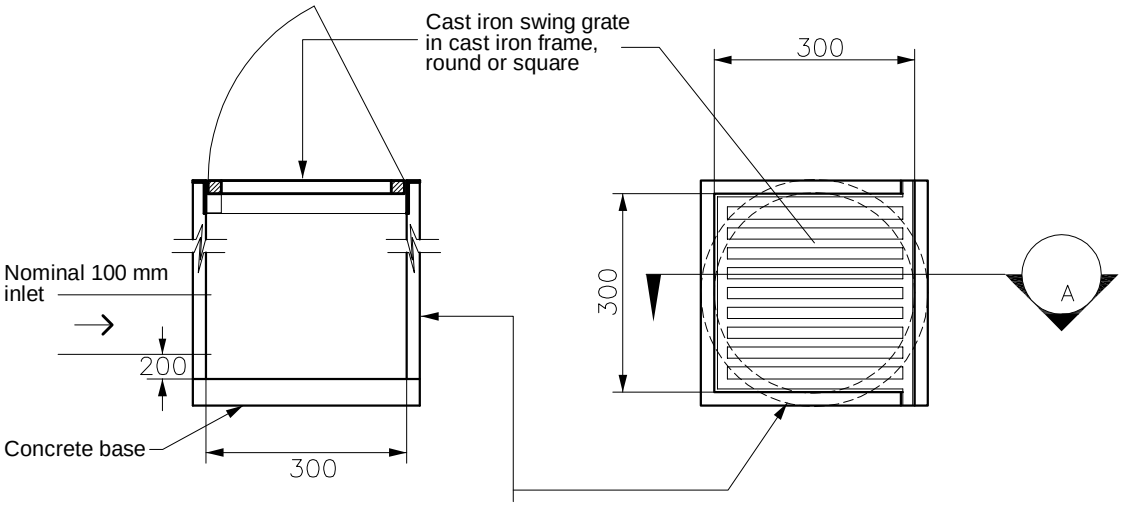
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 521

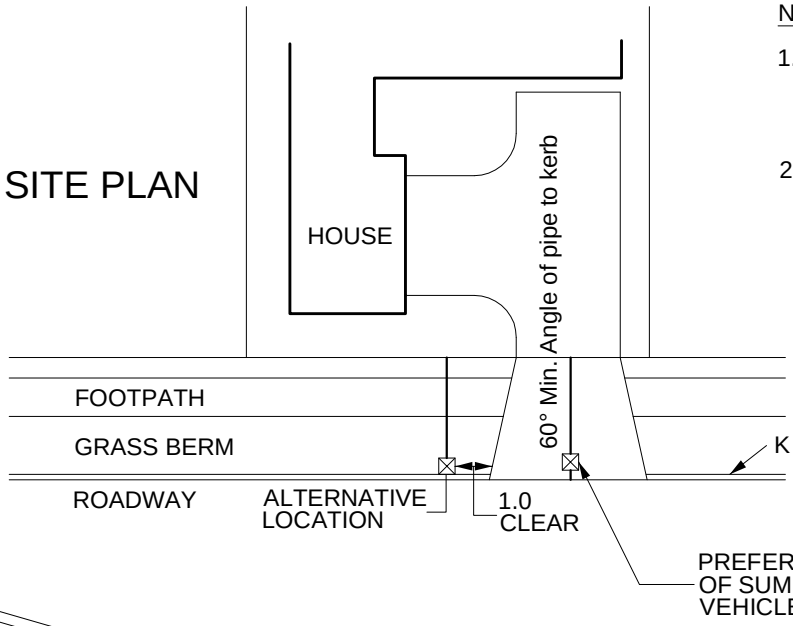


SECTION A

300 ID CONCRETE PIPE OR PIT.
STANDARD 800MM DEEP,
CAN BE CUT TO SUIT SITE.

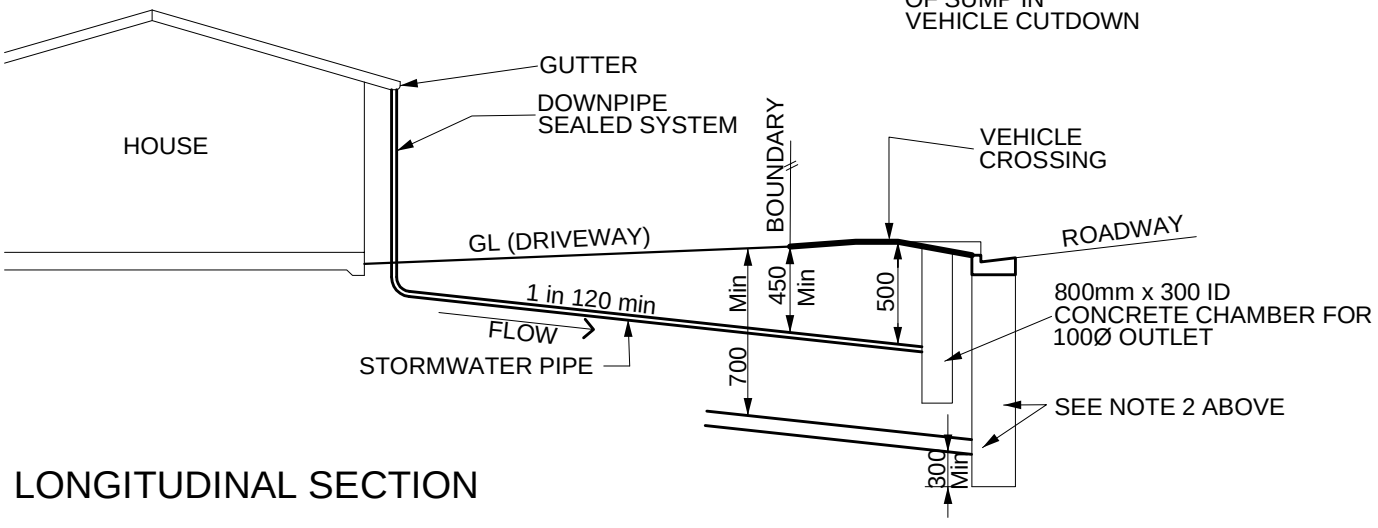
SUMP PLAN

SITE PLAN



NOTES:

1. FINISHED FLOOR LEVEL MUST NOT BE LESS THAN 150mm HIGHER THAN LID LEVEL OF SUMP
2. SUMP IN ROADWAY MAY BE PERMITTED WHERE NOT POSSIBLE TO POSITION IN DRIVEWAY OR BERM



LONGITUDINAL SECTION

NELSON CITY COUNCIL

INFILL BUBBLE-UP SUMP LOCATION

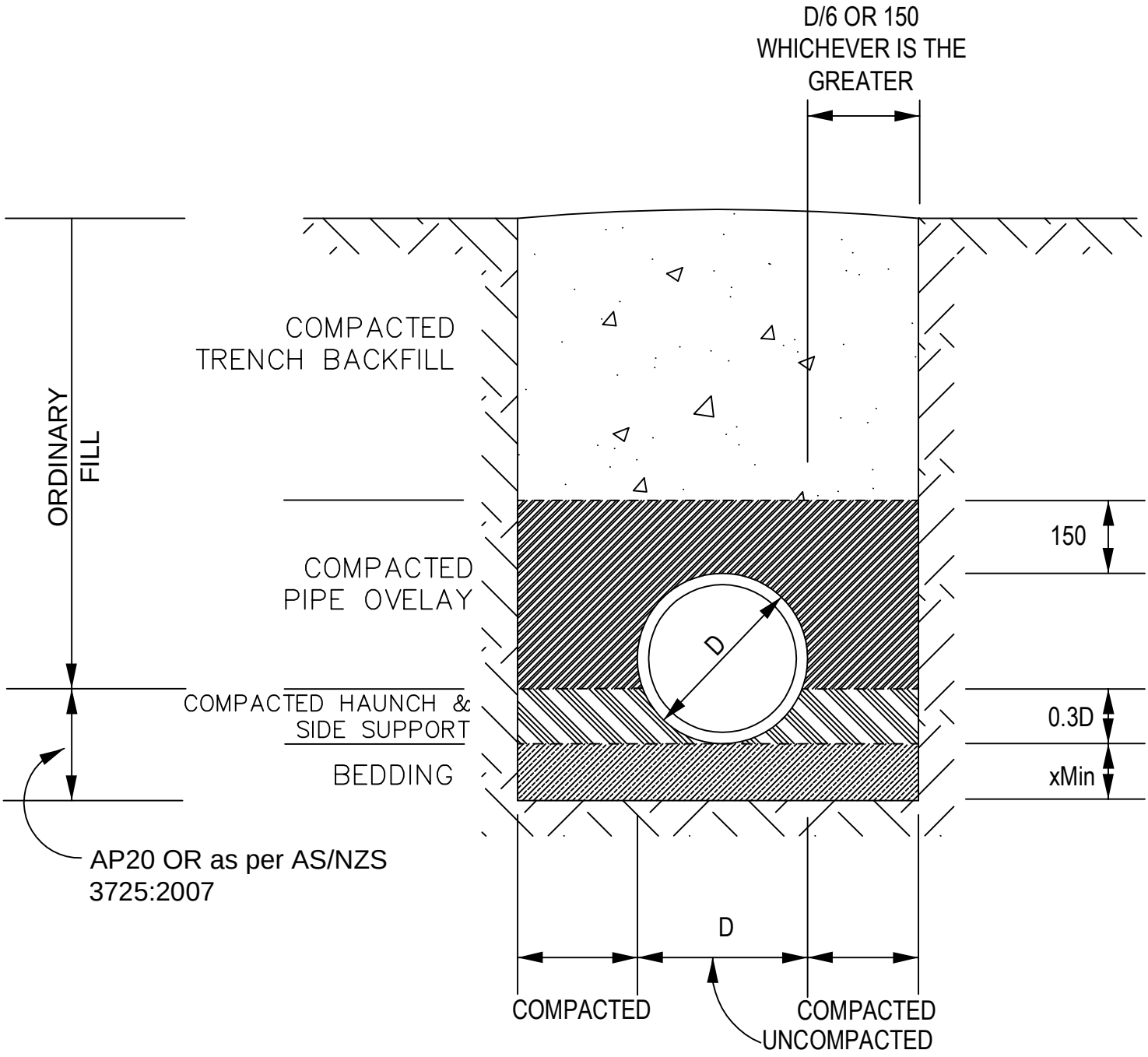
INFRASTRUCTURE DIVISION

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURAL ASSETS DATE

SD 522



x = 100mm if D <= 1500
x = 150mm if D > 1500

NELSON CITY COUNCIL

PIPE BEDDING for CONCRETE PIPES

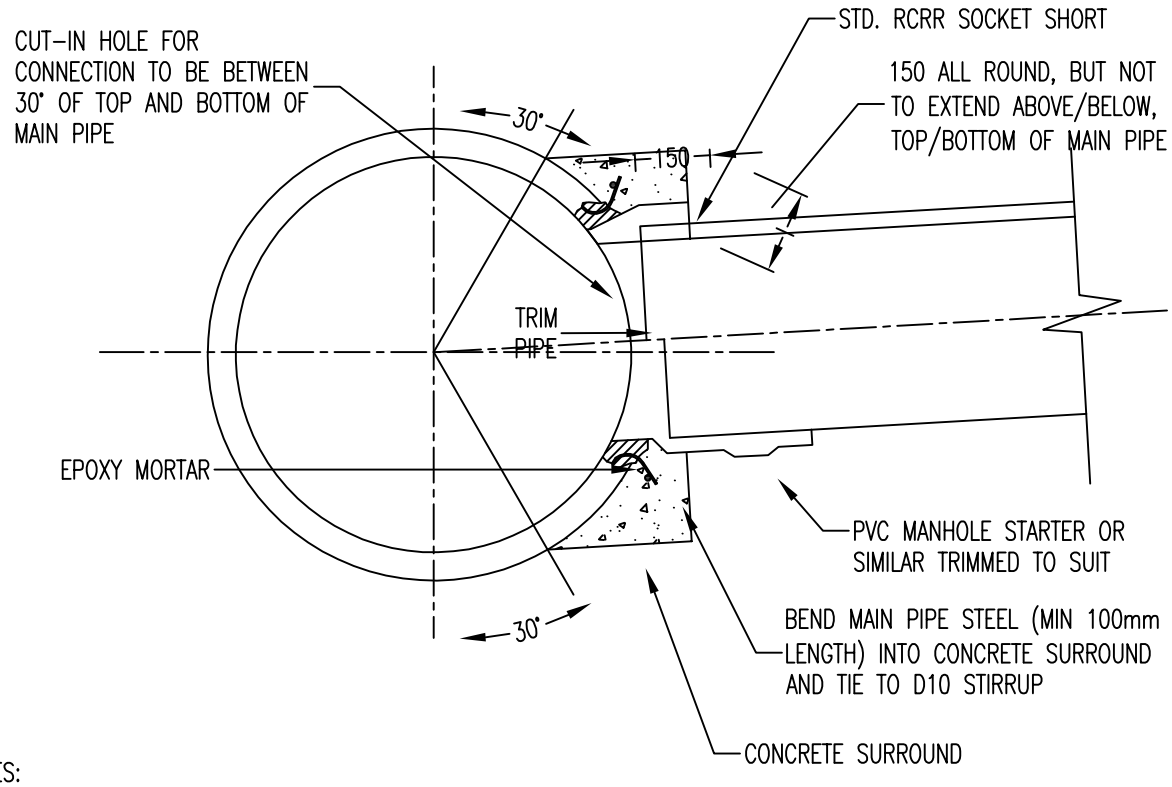
INFRASTRUCTURAL ASSTES

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURAL ASSETS DATE

SD 523



NOTES:

1) SPECIAL DESIGN REQUIRED FOR:
   MAIN PIPES OTHER THAN REINFORCED CONCRETE, MORE THAN ONE CONNECTION PER MAIN.
2) DIRECT CONNECTIONS OF THIS TYPE ARE NOT PERMITTED ON PLASTIC MAINS.
3) OUTSIDE EDGE OF MAIN PIPE CUT–IN HOLE SHALL BE NOT LESS THAN 300mm FROM COLLAR OR END OF PIPE.
4) MAXIMUM DIAMETER OF CUT–IN HOLE SHALL BE LESS THAN TWO THIRDS OF THE INTERNAL DIAMETER OF MAIN PIPE.
5) EPOXY MORTAR SHALL BE APPLIED STRICTLY ACCORDING TO THE MANUFACTURER'S RECOMMENDATION AND SHALL BE FULLY CURED BEFORE THE SURROUND IS POURED AND THE SIDELINE LAID.
6) MAIN PIPE SURFACE SHALL BE ROUGHENED AND GROUT COATED BEFORE CONCRETE SURROUND IS POURED.
7) DIRECT CONNECTIONS MUST BE APPROVED BY THE ENGINEER, AND NORMALLY SHALL ONLY BE USED WHERE THE SIDE LINE IS LESS THAN 10m LONG, AND ACCESS FOR CLEANING THE SIDELINE IS EASILY OBTAINABLE AT THE UPSTREAM END. THAT IS THE SIDELINE SHALL TERMINATE WITH A MANHOLE, LHCE OR SUMP.
8) DIAMETER OF SIDELINE PIPE SHALL BE LESS THAN HALF THE INTERNAL DIAMETER OF THE MAIN PIPE.

SQUARE RADIAL DIRECT CONNECTIONS:

NOMINAL SIDELINE DIAMETER	MINIMUM MAIN PIPE DIAMETER
100	225
150	375
200	450
225/250	525
300	675
375	825
450	975
525	1050
600/675	1350
750	1600
825/900	1800
975	1950
1050	2100

NELSON CITY COUNCIL

DIRECT CONNECTIONS TO STORMWATER PIPES

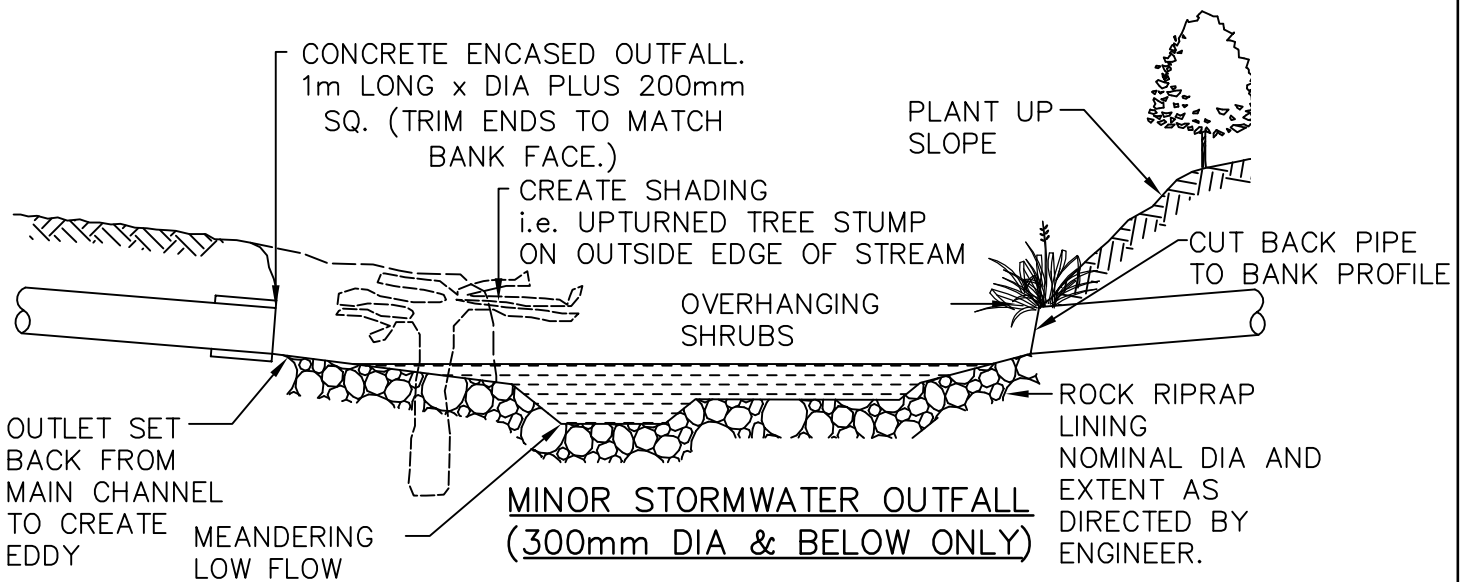
INFRASTRUCTURAL ASSETS

APPROVED

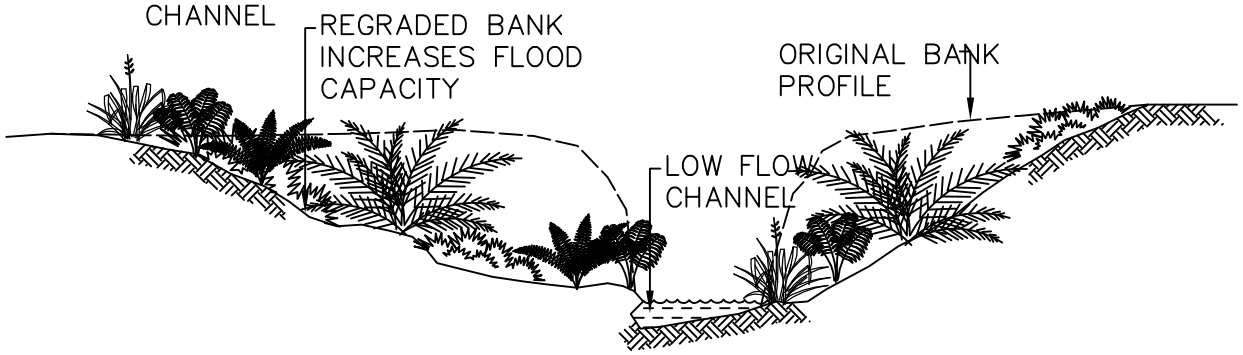
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

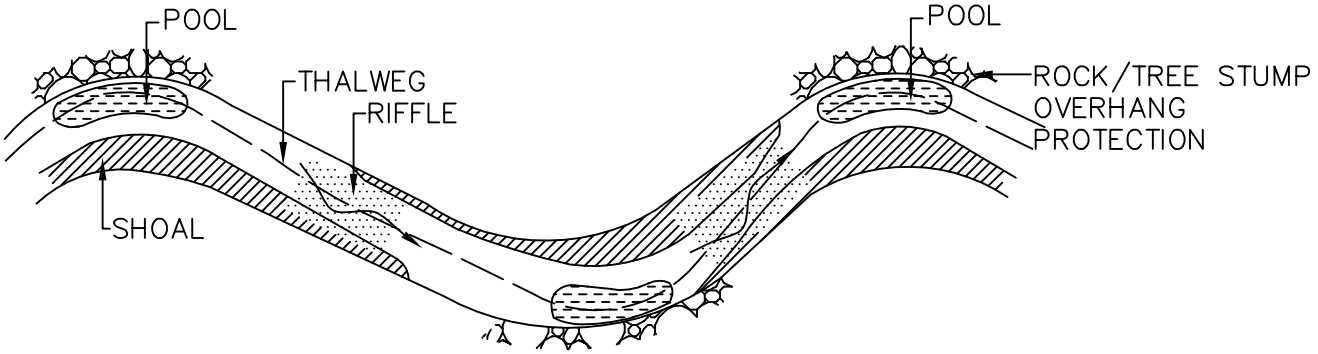
SD 524



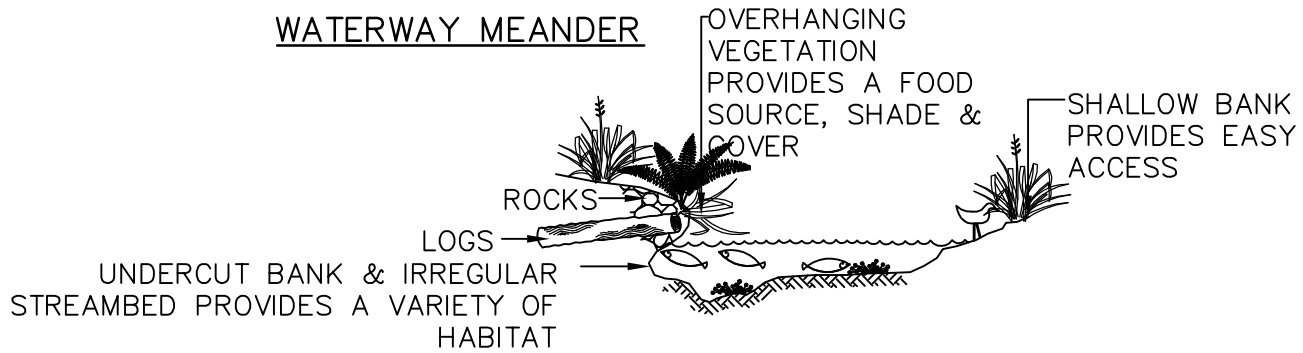
MINOR STORMWATER OUTFALL
(300mm DIA & BELOW ONLY)



GENTLY SLOPING BANKS WILL BECOME INUNDATED DURING FLOOD FLOWS, ENABLING THE DISSIPATION OF FLOW ENERGY THAT WOULD OTHERWISE CONTRIBUTE TO CHANNEL DAMAGE. ENSURE FLOOD WATERWAY CAPACITY IS MAINTAINED WHERE THERE IS HEAVY VEGETATION.



WATERWAY MEANDER



NELSON CITY COUNCIL

OUTFALL DETAILS & DRAINAGE WATERWAY CONCEPTS

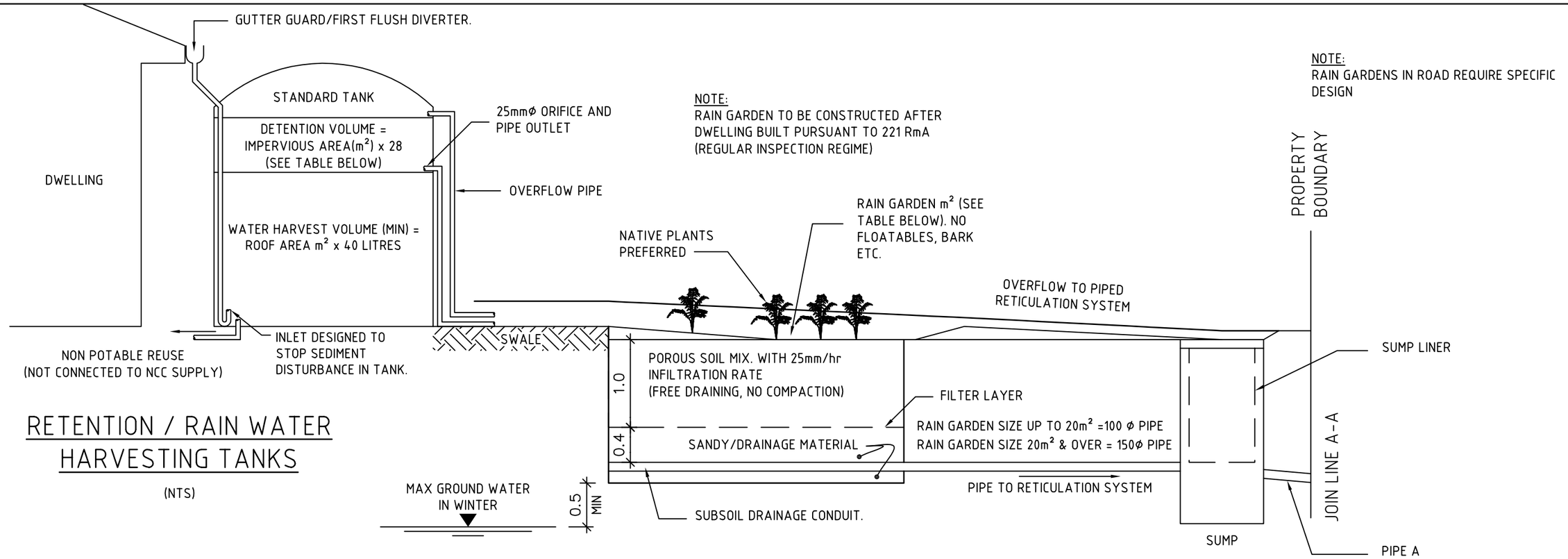
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

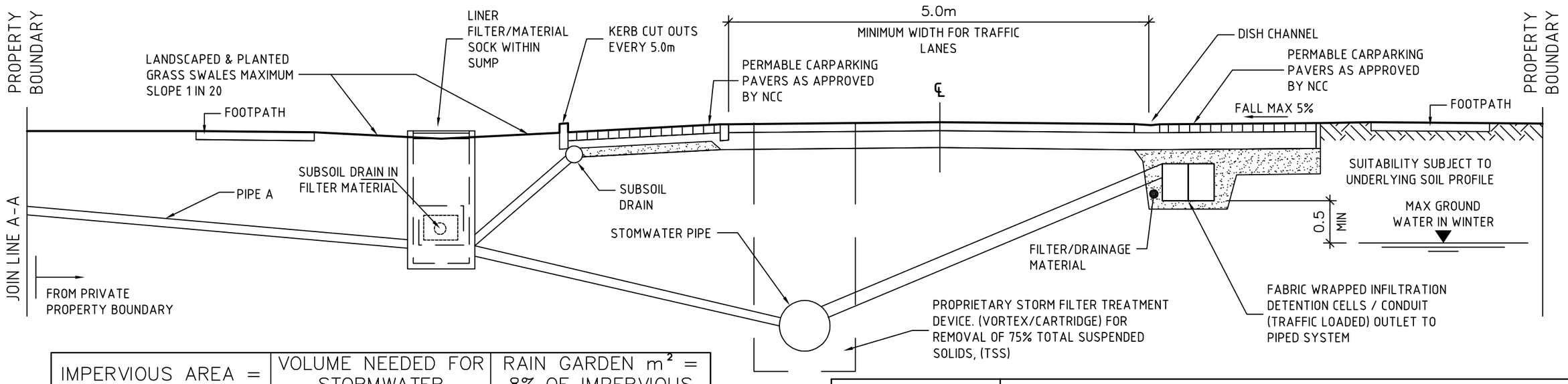
SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 525



RETENTION / RAIN WATER HARVESTING TANKS

(NTS)



IMPERVIOUS AREA = ROOF + PAVED AREA	VOLUME NEEDED FOR STORMWATER RETENTION	RAIN GARDEN m² = 8% OF IMPERVIOUS SURFACE
150m²	4200 LITRES	12m²
200m²	5600 LITRES	16m²
250m²	7000 LITRES	20m²
300m²	8400 LITRES	25m²
350m²	9800 LITRES	30m²
400m²	11200 LITRES	35m²
500m²	14000 LITRES	40m²

NELSON CITY COUNCIL

LOW IMPACT DESIGN CONCEPTS (SPECIFIC DESIGN REQUIRED)

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 526

THE COUNCIL ACCEPTS RESPONSIBILITY FOR ANY SEWER LINE MORE THAN 15m FROM THE BOUNDARY OF THE LAST PROPERTY SERVED (CROSS LEASED UNITS ARE CONSIDERED ONE PROPERTY)

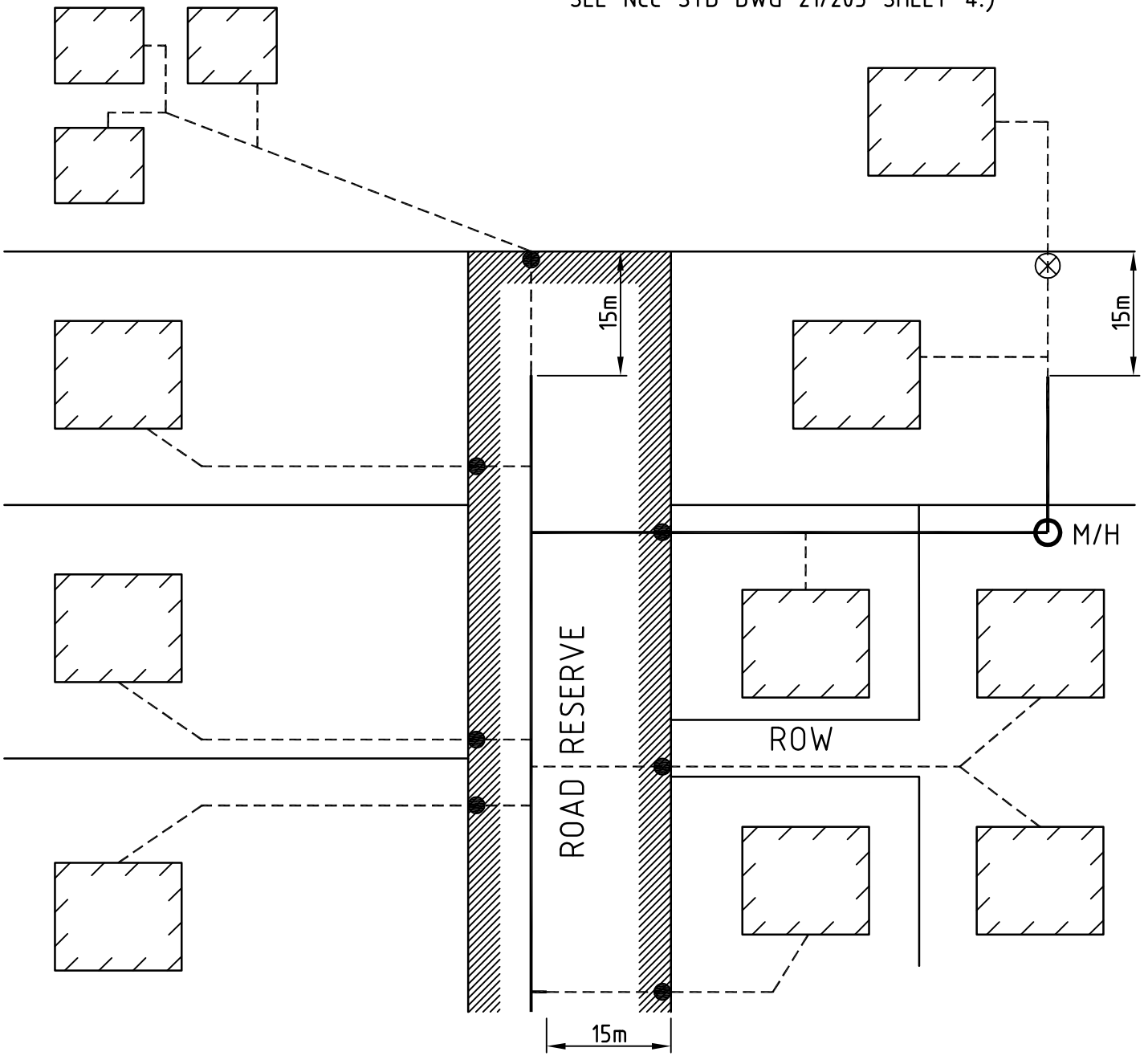
PUBLIC SEWER

PRIVATE SEWER

LHCE

INSPECTION 'T'

(100mm 'T' JUNCTION VERTICAL INSPECTION PIPE. SEE NCC STD DWG 21/205 SHEET 4.)



NELSON CITY COUNCIL

DEFINITION OF PUBLIC SEWER

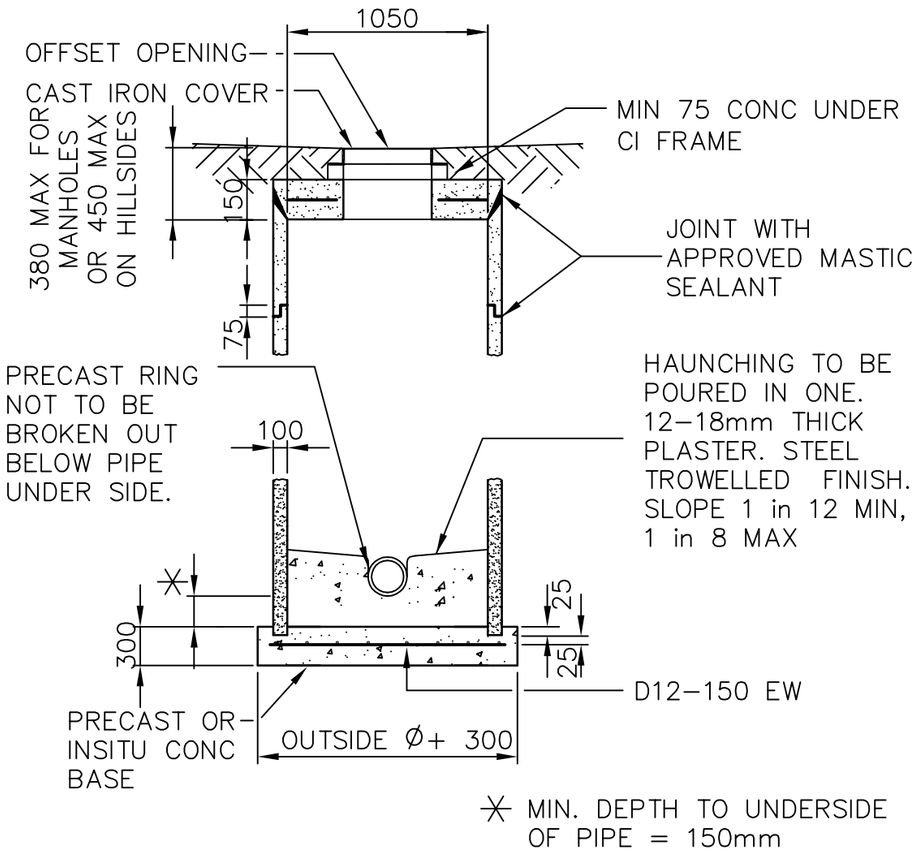
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

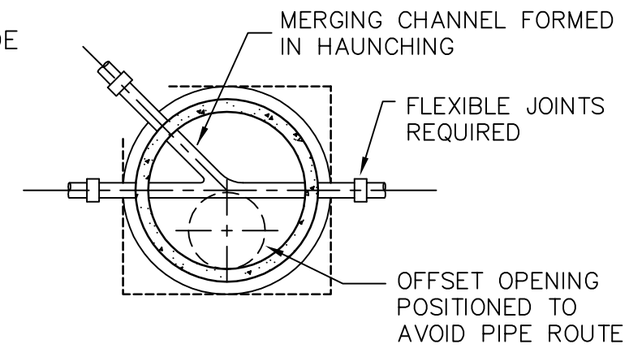
SD 601



PRECAST MANHOLE DETAIL

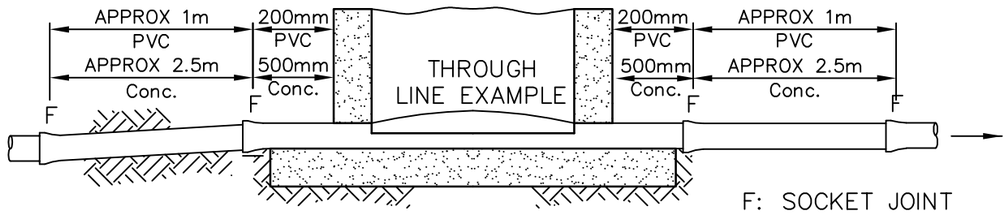
NOTES

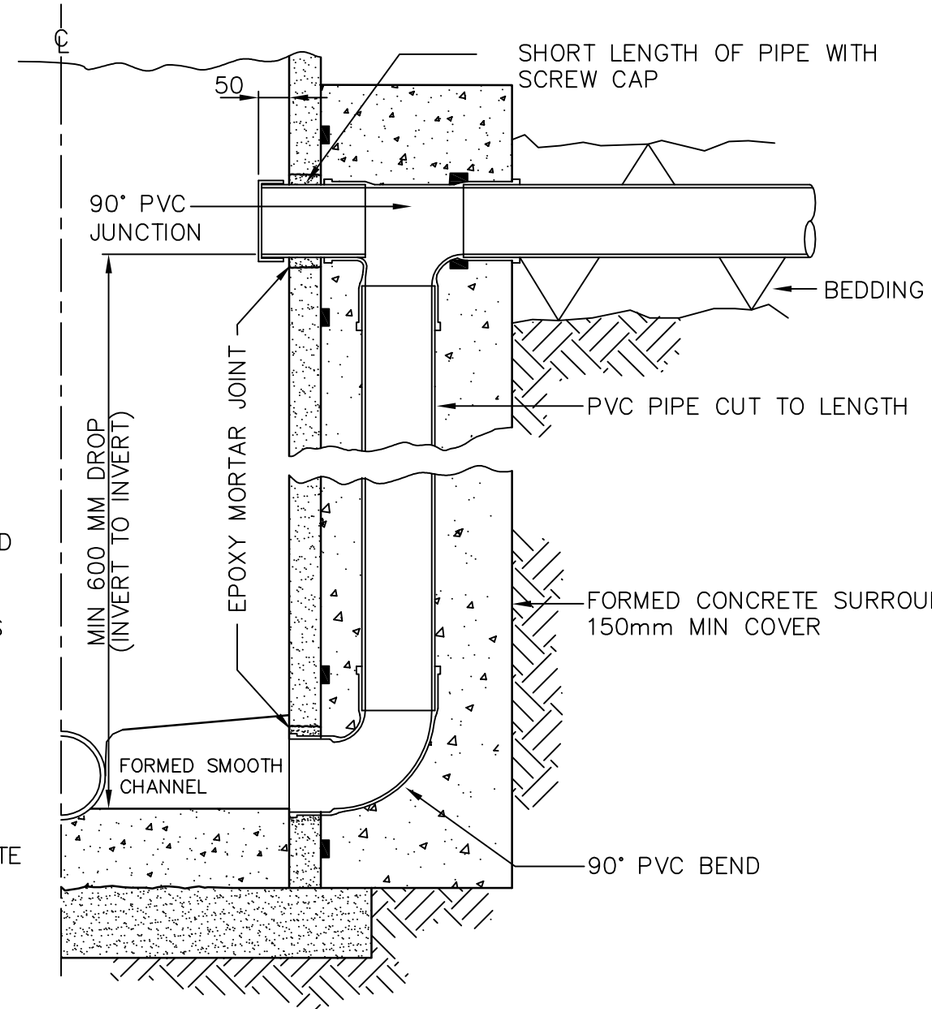
1. ALL "INSITU" CONCRETE TO BE VIBRATED
2. CONCRETE CRUSHING STRENGTH TO BE 20 MPa AFTER 28 DAYS
3. MAX. SIZE OF PIPE TO BE 450 mm DIA FOR 1050mm MANHOLE
4. PRECAST CONCRETE MANHOLE RISERS SHALL COMPLY WITH THE REQUIREMENTS FOR CLASS 2 PRECAST CONCRETE PIPES TO AS/NZS 4058, 2007
5. MAXIMUM GRADIENT FOR HAUNCHING THROUGH MANHOLES SHALL BE 1 in 3
6. HYDROPHILLIC SEALANT SHALL BE USED WHERE THERE IS A HIGH GROUNDWATER LEVEL OR WHERE DRAINAGE OF THE TRENCH IS NOT POSSIBLE. THIS SHALL BE USED FOR ALL WASTEWATER MANHOLES, AS PER 21/204 Sht6 (UNLESS APPROVED OTHERWISE BY COUNCIL).
   SEALANT TO BE ADEKA ULTRASEAL P–201, (or similar) WATER SWELLING ELASTIC SEALANT 10mm MIN. THICKNESS AROUND THE PIPE AT PUDDLE FLANGE CURED BEFORE PLACING EPOXY MORTAR IN LINEAR JOINT. MIN. COVER TO SEALANT FROM FREE EDGE OF INSITU CONCRETE IS 75mm



TYPICAL PLAN

FLEXIBLE JOINTS AT MANHOLES





EXTERNAL DROP MANHOLE DETAIL PVC 150ø

(FOR DROPS LESS THAN 600mm SEE 21/204 SHEET 2)

NELSON CITY COUNCIL

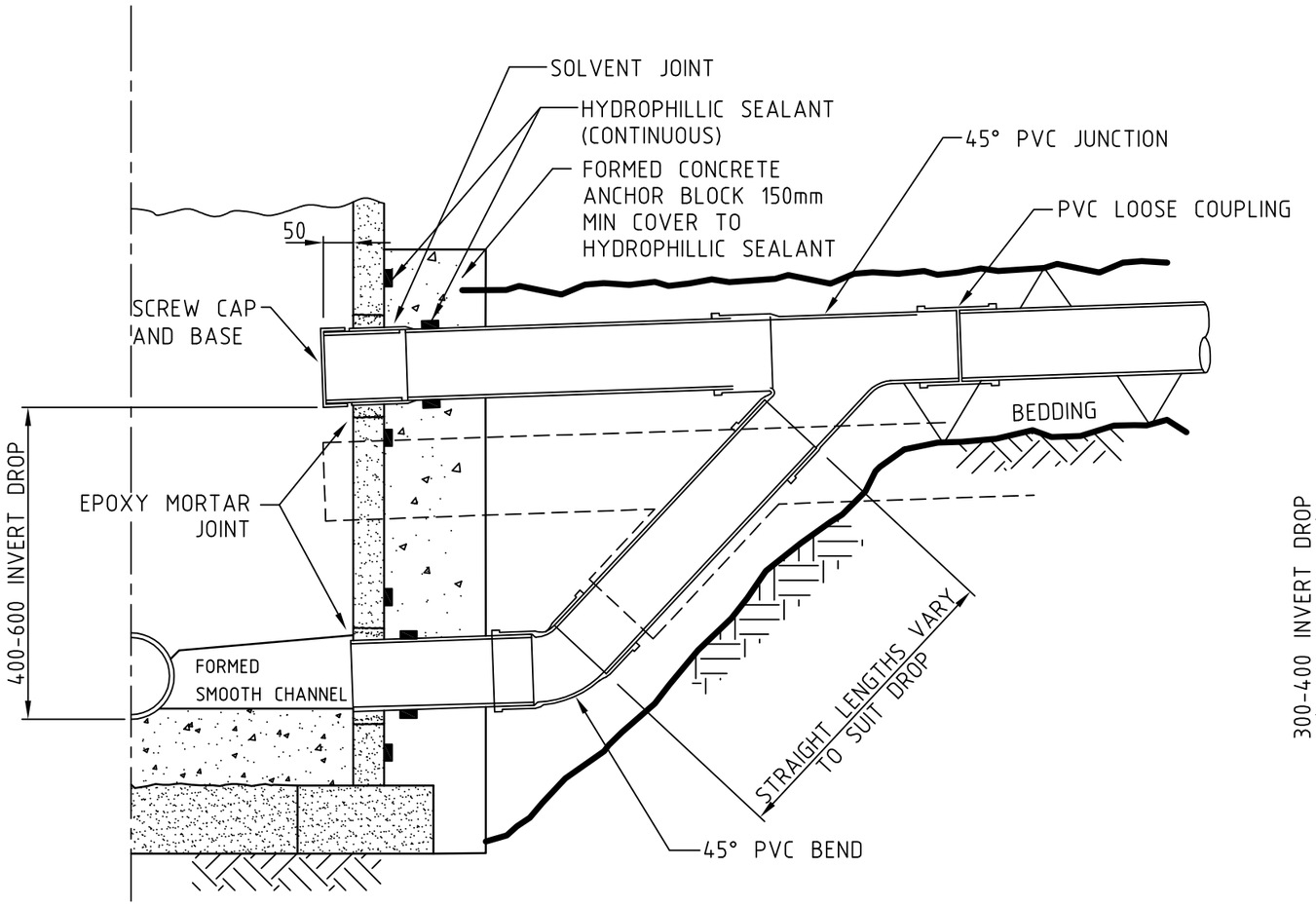
1050ø PRECAST MANHOLE FOR PIPELINES UP TO AND INCL. 450ø

INFRASTRUCTURAL ASSETS

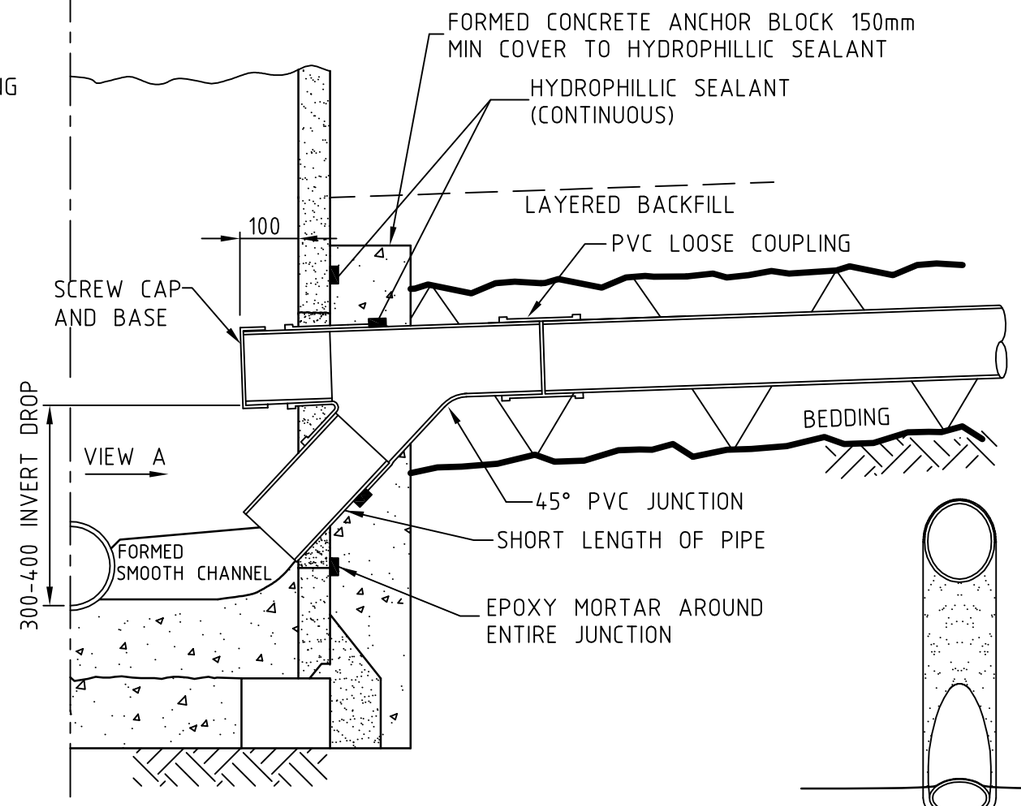
APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 602



CASE OF DROP OF 400-600 mm



CASE OF DROP OF 300-400 mm

VIEW A

NOTES

1. HYDROPHILLIC SEALANT as per NCC STANDARD DRAWING 21/204-1

DROP MANHOLE DETAIL PVC 150 ø

(FOR DROPS MORE THAN 600mm SEE 21/204 SHEET 1)

NELSON CITY COUNCIL

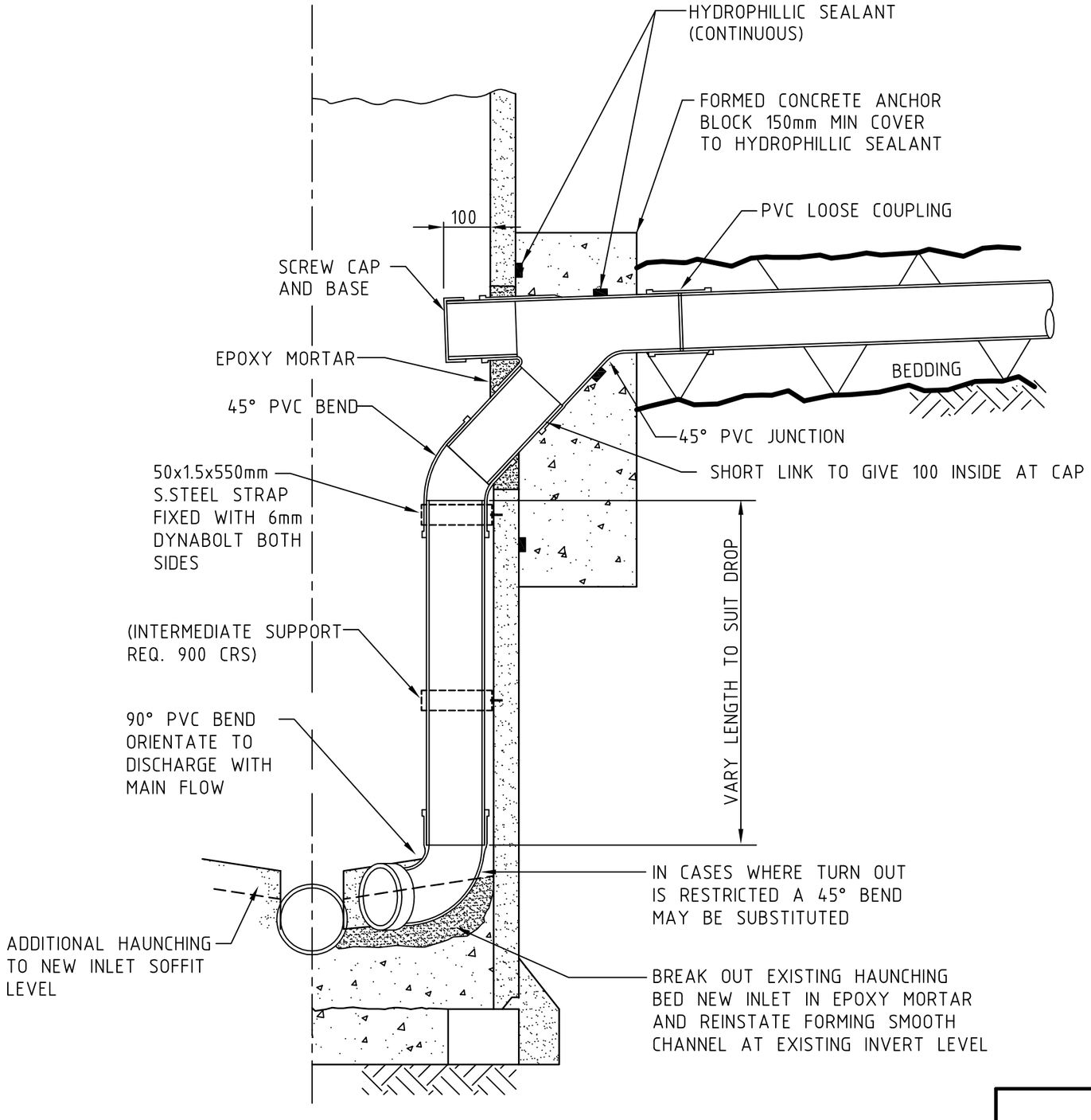
WASTEWATER DROP MANHOLE

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

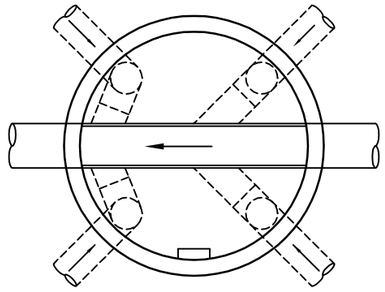
SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 603



INTERNAL DROP MANHOLE DETAIL PVC 150 ø

TO BE USED IN SPECIAL CASES AT ENGINEERS DIRECTION
FOR EXISTING MANHOLES ONLY



GENERAL APPROACH
POSITION RELATED
TO MANHOLE -1 ONLY

NOTES

1. HYDROPHILLIC SEALANT as per NCC STANDARD DRAWING 21/204-1

NELSON CITY COUNCIL

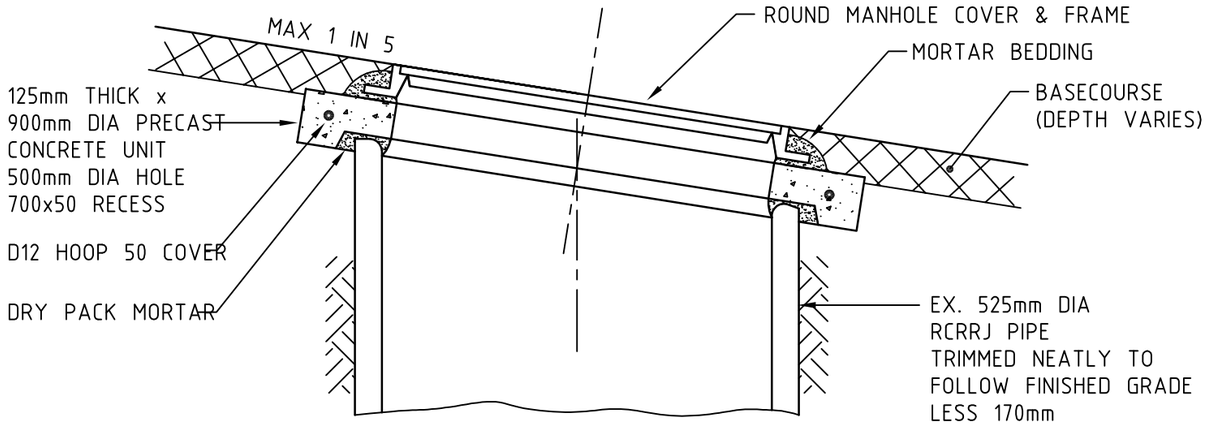
INTERNAL DROP MANHOLE

INFRASTRUCTURAL ASSETS

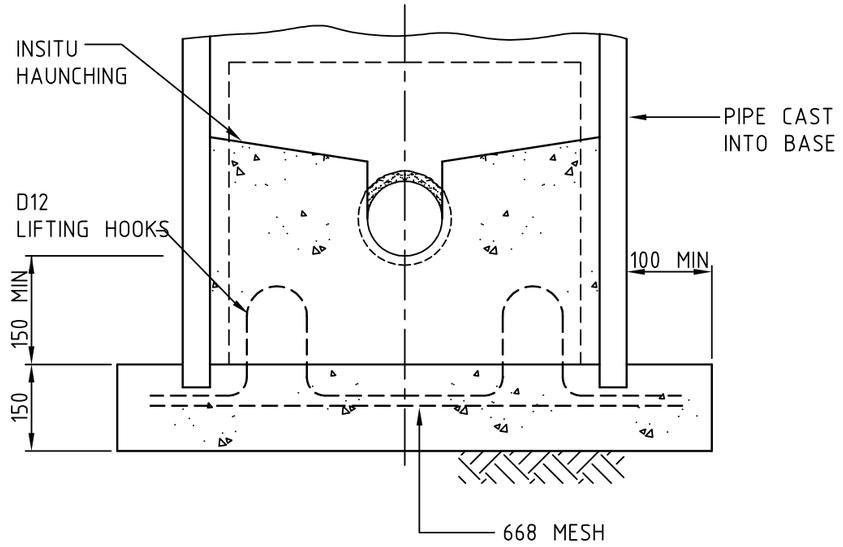
APPROVED _____ 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

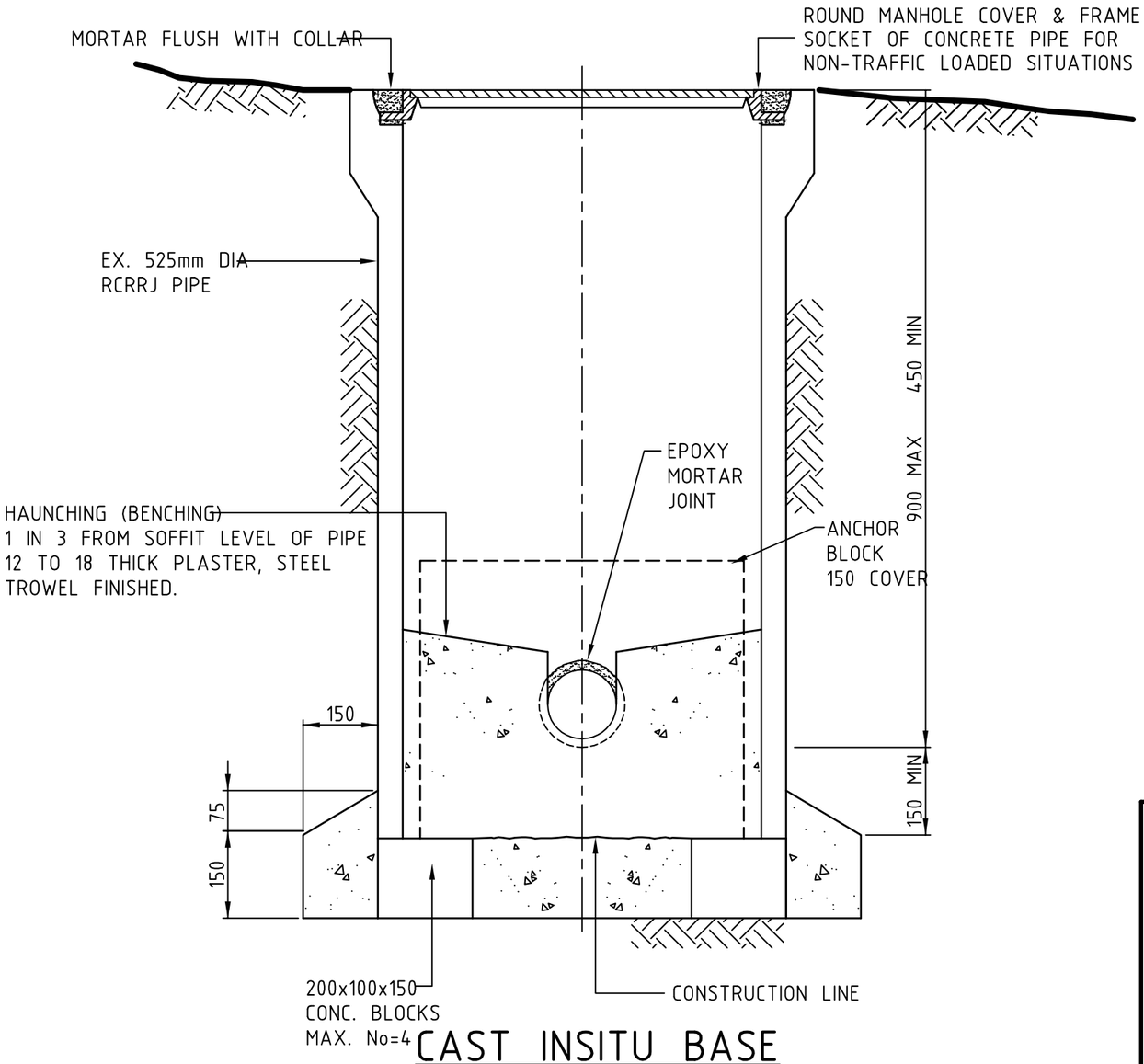
SD 604



TOP FOR DRIVEWAYS OR R.O.W.



ALTERNATIVE PRECAST UNIT



CAST INSITU BASE

NOTES

1. APPROVED PRE-FORMED PLASTIC INSPECTION CHAMBERS MAY BE USED AS MINI-MANHOLES FOR PIPE SIZES 100mm Ø & 150mm Ø SUITABLE FOR SEWER & STORMWATER SEWERS
2. MINI-MANHOLES ARE NOT TO BE ASSUMED TO REPLACE THE STANDARD MANHOLE
3. MINI-MANHOLES SHALL NOT BE USED IN AREAS SUBJECT TO VEHICULAR TRAFFIC, EXCEPT IN FORMED RESIDENTIAL DRIVEWAYS OR RIGHTS OF WAYS FOR LIGHT DOMESTIC VEHICLES
4. THE USE OF MINI-MANHOLES IS TO BE LIMITED, AND AT THE DISCRETION OF COUNCIL:
   A) MANHOLES LESS THAN 1M DEEP
   B) THE MAXIMUM PIPE SIZES OF 150mm Ø FOR SEWERS & 225mm Ø FOR STORMWATER DRAINS
   C) MANHOLES AT THE HEAD OF A LINE
   D) STRAIGHT THROUGH MANHOLES
   E) CHANGES OF GRADE
5. CONCRETE MINI-MANHOLES AS DETAILED ARE NOT TO BE USED IN SEWERS AT:
   A) JUNCTIONS
   B) DEFLECTIONS GREATER THAN 45 DEGREES.
6. COVER & FAME SHALL BE CAST IRON or DUCTILE IRON TO CLASS C STRENGTH TO AS3996(CLASS & STANDARD TO BE STAMPED OF FRAME & LID
7. COVER MUST HAVE 2 SEPARATE RECESSED SLOTS TO FACILITATE LIFTING & REMOVAL OF COVER, AND MUST BE WATER TIGHT TO PREVENT SW INGRESS
8. COVERS MUST HAVE ANTI-SKID PATTERN EMBOSSED ON TOP WITH THE WORDS WASTEWATER or STORMWATER. ALL FONT TO BE GOTHIC, 15mm HEIGHT RAISED 2.5mm
9. ANY OTHER WORDING, SUCH AS THE SUPPLIERS & MANUFACTURERS NAME, SHALL BE PLACED ON THE UNDERSIDE OF THE COVER (NOT ON THE TOP)

NELSON CITY COUNCIL

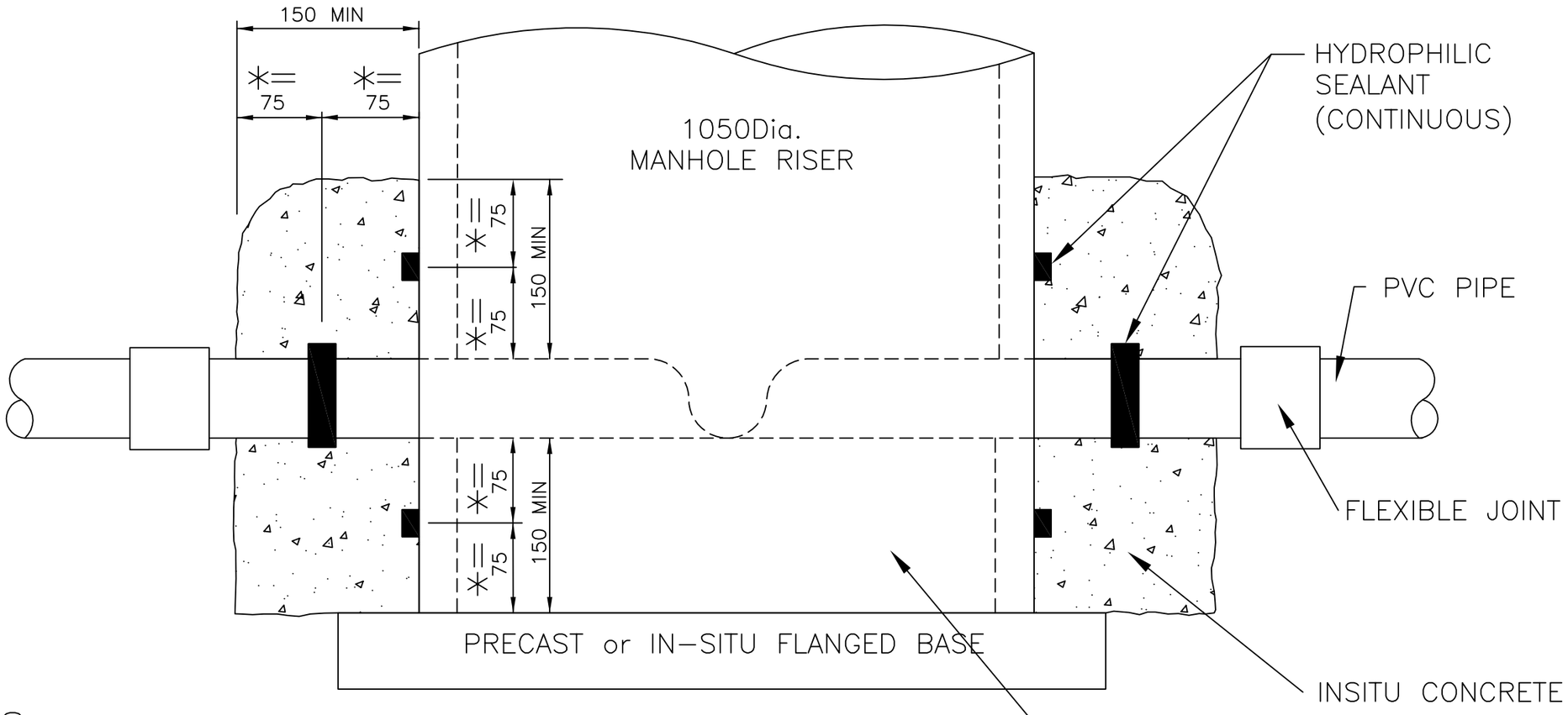
SHALLOW MINI–MANHOLE

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE ..... DATE

SD 605



NOTES:

1. HYDROPHILLIC SEALANT TO BE ADEKA ULTRASEAL P–201 (OR SIMILAR) WATER SWELLING ELASTIC SEALANT 10mm MIN. THICKNESS AROUND THE PIPE CURED BEFORE PLACING IN–SITU CONCRETE.
2. DETAIL APPLIES TO ALL WASTEWATER MANHOLES WHERE THE WASTEWATER PIPELINE MAY BE DEEPER THAN THE WATER TABLE &/or WHERE TRENCH DRAINAGE (NCC 21/212) IS NOT POSSIBLE
3. WRAP EACH INCOMING & OUTGOING PIPE WITH HYDROPHILIC SEALANT PRIOR TO CONCRETE POUR
4. HYDROSTATIC WATER TEST EACH SEALED MANHOLE PRIOR TO BACKFILLING MANHOLES
5. ALL WORKS TO BE INSPECTED BY NCC PRIOR TO PLACING OF IN–SITU CONCRETE

∗ MINIMUM COVER TO SEALANT FROM FREE EDGE OF IN–SITU CONCRETE

NELSON CITY COUNCIL

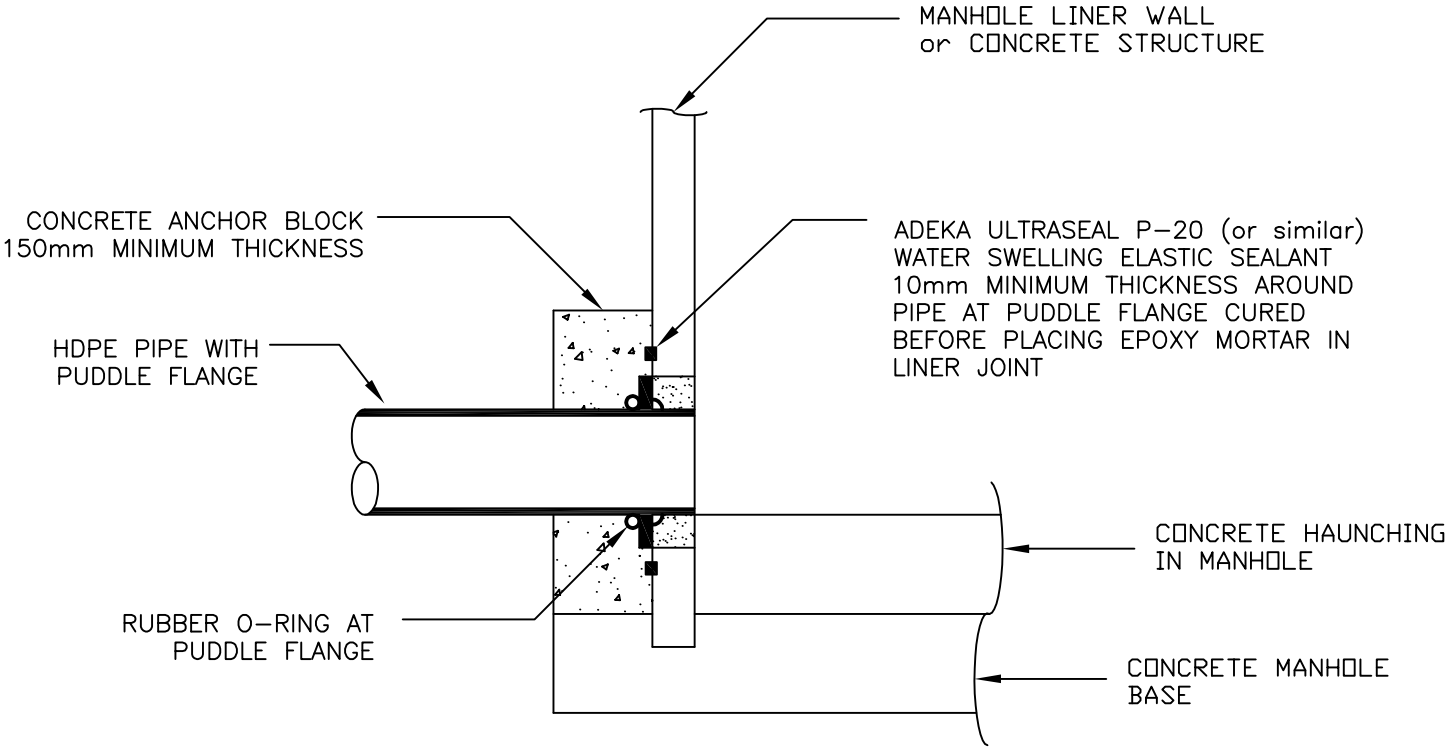
WASTEWATER MANHOLE WATER TIGHTNESS FOR PVC PIPES

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 606



NOTE:

ALL WORKS TO BE INSPECTED BY NCC BEFORE CONCRETE ANCHOR BLOCK HAS BEEN POURED

NELSON CITY COUNCIL

WASTEWATER MANHOLE WATER TIGHTNESS & PIPE RESTRAINT FOR HDPE PIPES

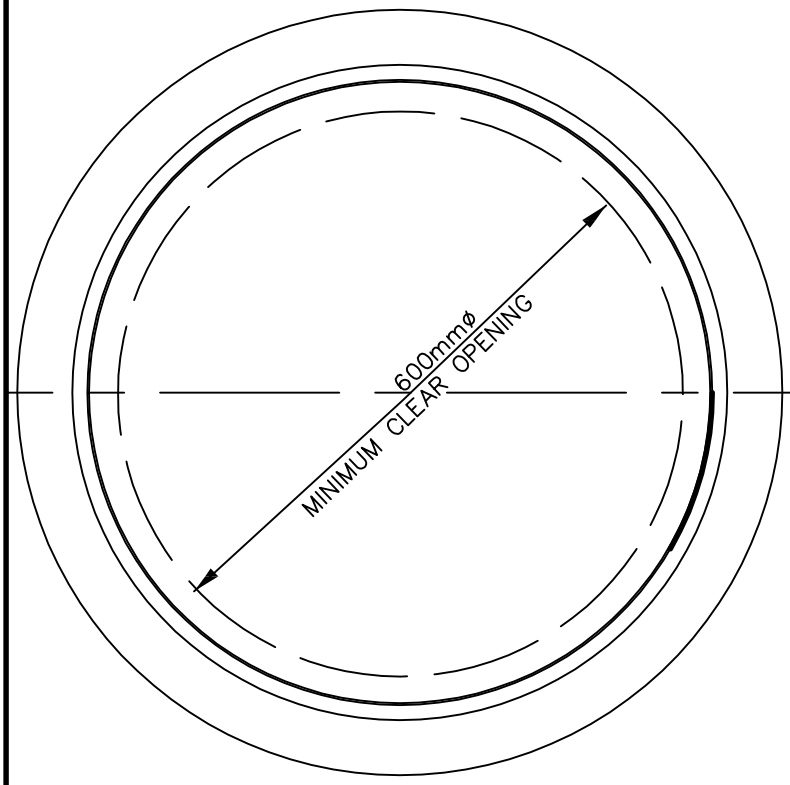
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 607



PLAN – COVER + FRAME
(PATTERN OMITTED)

PLAN – COVER
(WITH PATTERN SHOWN)

NOTES:

1. TO BE USED ON ALL STANDARD 1050ø MANHOLES OR LARGER
2. MATERIAL DUCTILE IRON TO AS1831:2007
3. ALL DIMENSIONS ARE IN mm
4. FRAME and COVER SHALL BE CERTIFIED TO MEET CLASS D STRENGTH CLASSIFICATION to AS 3996 (THE CLASS STRENGTH and STANDARD MUST BE STAMPED ON UNDERSIDE OF THE COVER
5. COVER TO HAVE AT LEAST 2 SEPARATE RECESSED SLOTS TO FACILITATE LIFTING AND REMOVAL OF COVER
6. THE LIFTING HOLES FOR THE WASTERWATER COVER MUST BE SEALED TO PREVENT STORMWATER INGRESS
7. SEATS OF COVER AND FRAME TO BE FINISHED BY MACHINING OR OTHERWISE, SO THAT THE CENTRE SEATS EVENLY AND COMPLETELY COVER THE FULL CIRCUMFERENCE IN ANY POSITION IN THE FRAME
8. COVERS MUST HAVE NCC PATTERN FORMED INTO TOP OF COVER AS 5mm DEPTH RAISED LINEWORK
9. ALL FONT TO BE CENTURY GOTHIC, 15mm HEIGHT RAISED 2.5mm
10. THE FOLLOWING INFORMATION SHALL BE PLACED ON THE UNDERSIDE OF THE COVER:
    SUPPLIERS NAME & PRODUCT CODE
    BATCH NUMBER, DATE OF MANUFACTURE

NELSON CITY COUNCIL

NCC STANDARD PATTERN for 600mmø (NOMINAL) D.I. FRAME AND COVER

INFRASTRUCTURAL ASSETS

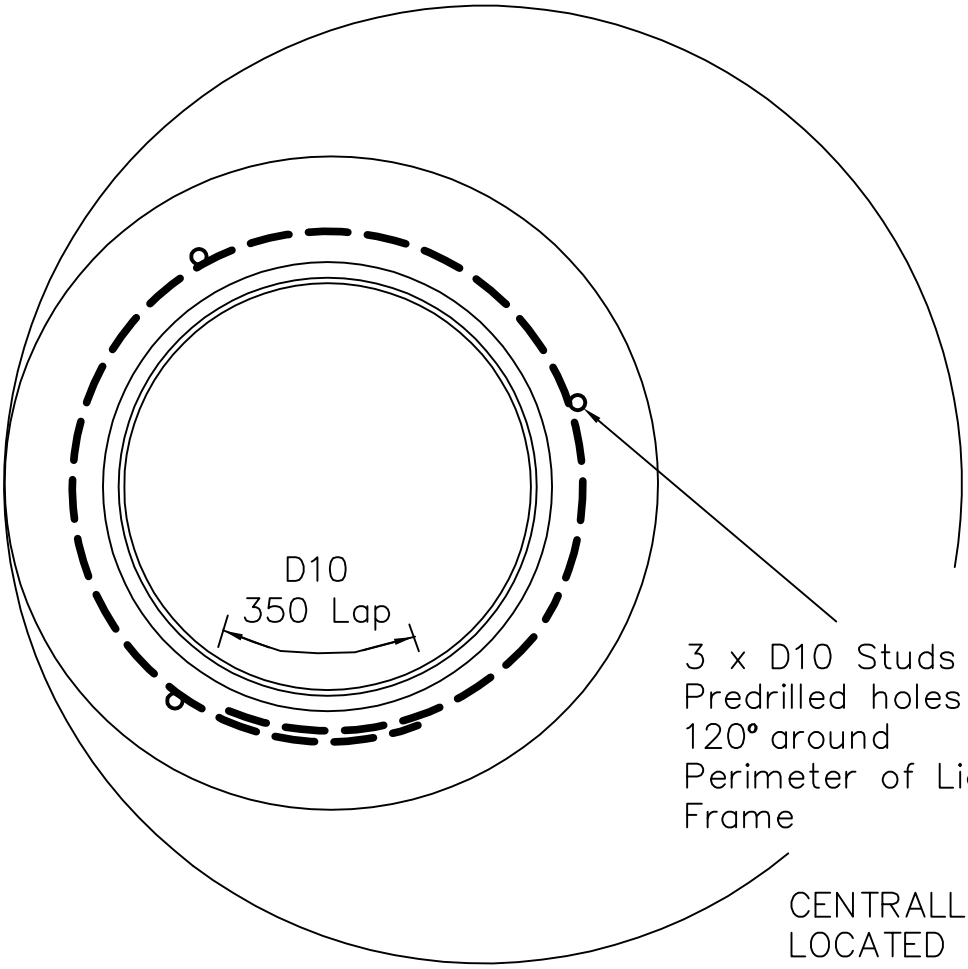
APPROVED

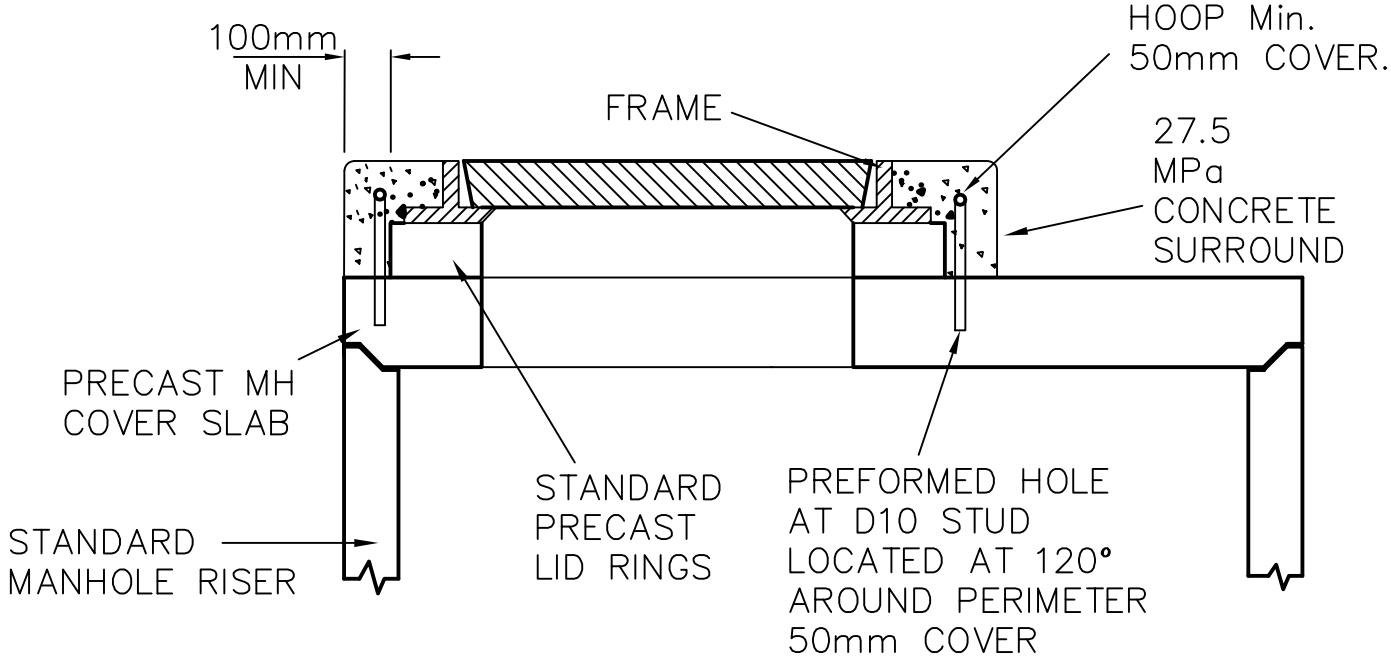
SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010
DATE

SD 608

PLAN





SECTION

NELSON CITY COUNCIL

MANHOLE FRAME & COVER FIXING

INFRASTRUCTURAL ASSETS

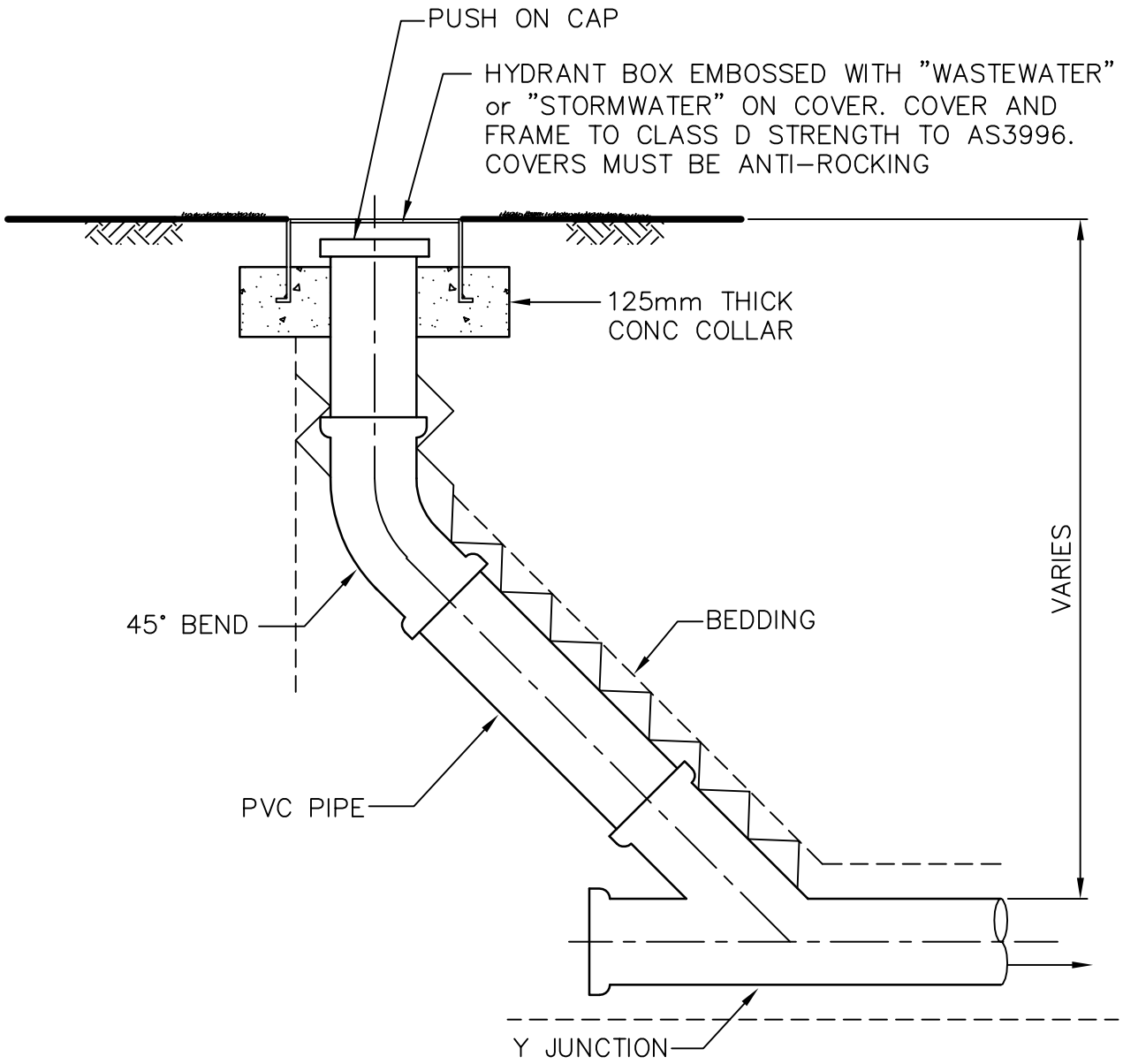
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 609



FOR TRAFFIC LOADED RODING POINTS REFER TO STANDARD DRAWING 21/205 SHEET 2.

NOTES

1. RODING POINTS MAY BE USED IN LIEU OF MANHOLES IN ANY OR ALL OF THE FOLLOWING CIRCUMSTANCES:
   - A) AT CHANGE OF DIRECTION or GRADE. (BURIED, PRE-FORMED BENDS MAY BE USED IN LIEU OF RODING POINT WHERE THE CHANGE ON DIRECTION or GRADE IS CLOSER THAN 20m FROM A RODING POINT or MANHOLE
   - B) AT THE HEAD OF A WASTEWATER SYSTEM
   - C) AT THE TOP OF STEEP BANKS WHERE A STANDARD MANHOLE WOULD BE IMPRACTICAL

NELSON CITY COUNCIL

RODING POINT (NON TRAFFIC LOADED)

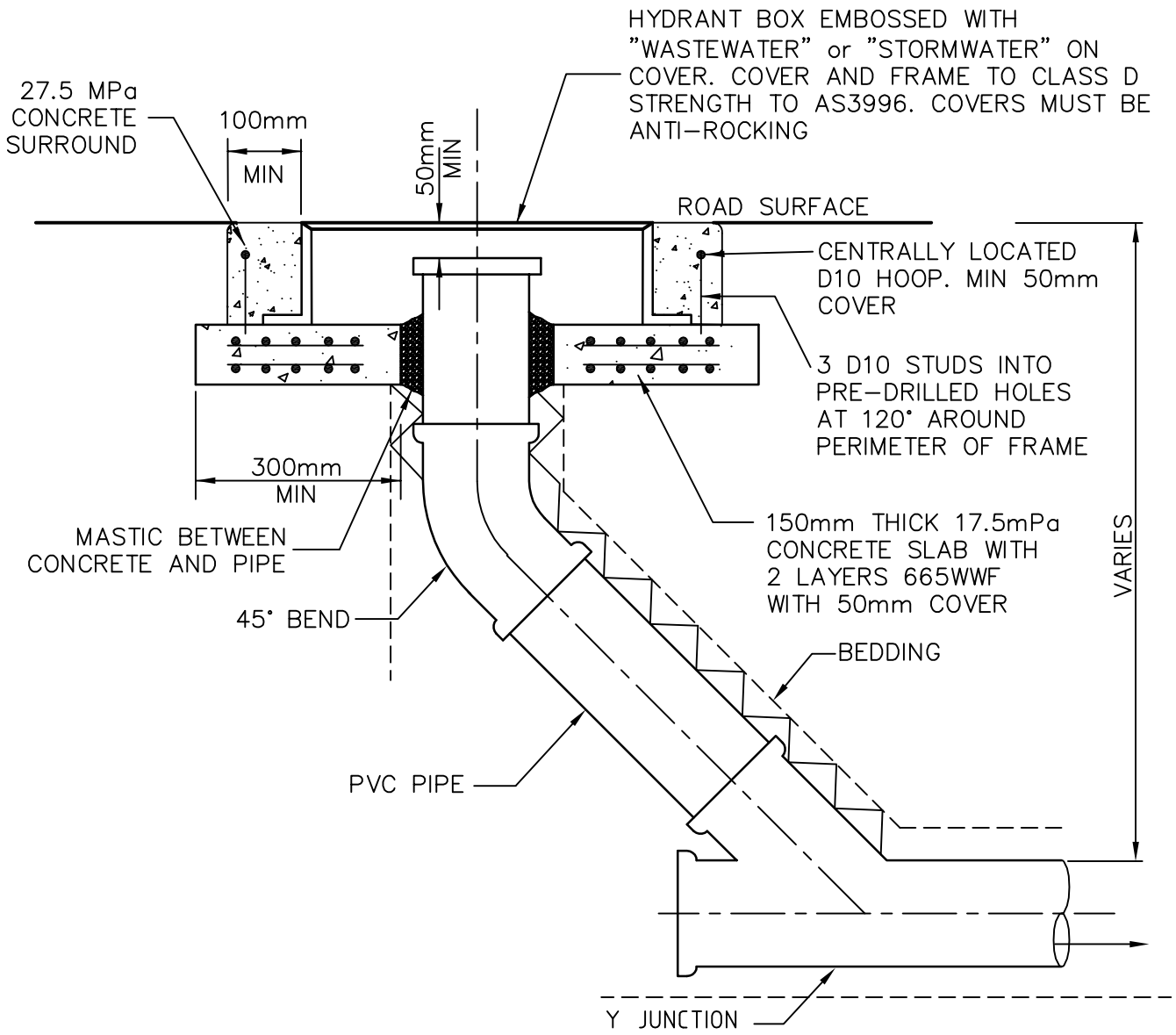
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 610



FOR NON TRAFFIC LOADED RODING POINTS, REFER TO SD 601

NOTES

1. RODING POINTS MAY BE USED IN LIEU OF MANHOLES IN ANY OR ALL OF THE FOLLOWING CIRCUMSTANCES:
   - A) AT CHANGE OF DIRECTION or GRADE. (BURIED, PRE-FORMED BENDS MAY BE USED IN LIEU OF RODING POINT WHERE THE CHANGE ON DIRECTION or GRADE IS CLOSER THAN 20m FROM A RODING POINT or MANHOLE)
   - B) AT THE HEAD OF A WASTEWATER SYSTEM
   - C) AT THE TOP OF STEEP BANKS WHERE A STANDARD MANHOLE WOULD BE IMPRACTICAL

NELSON CITY COUNCIL

RODING POINT (TRAFFIC LOADED)

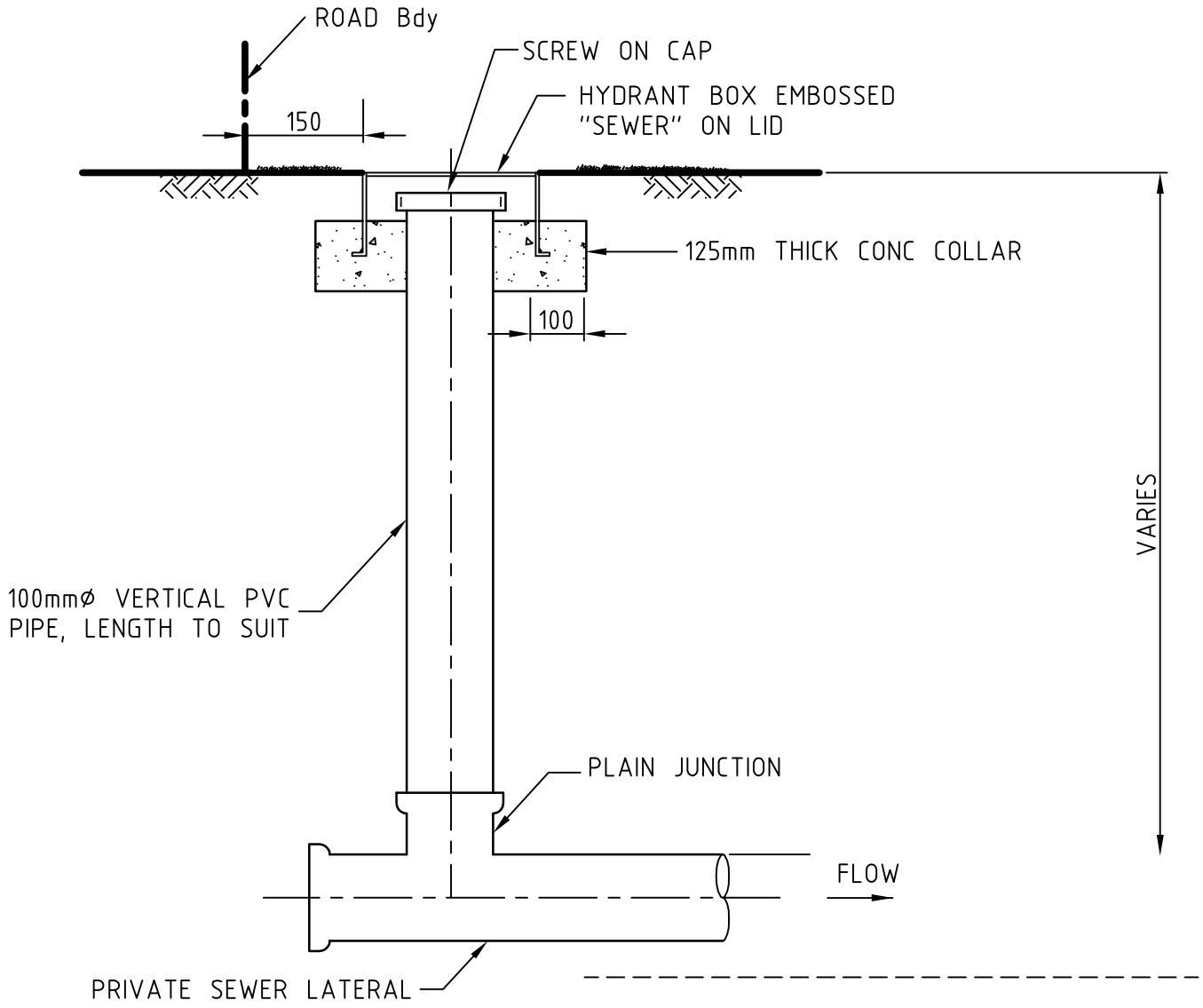
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 611



NOTES

1. IF USED IN AREAS SUBJECT TO VEHICULAR TRAFFIC, THEN USE A TRAFFIC LOADED LID DESIGN, AS PER 21/205 SHEET 2
2. INSPECTION T's SHALL BE POSITIONED 150mm ON THE ROAD RESERVE SIDE OF THE BOUNDARY

NELSON CITY COUNCIL

INSPECTION TEE

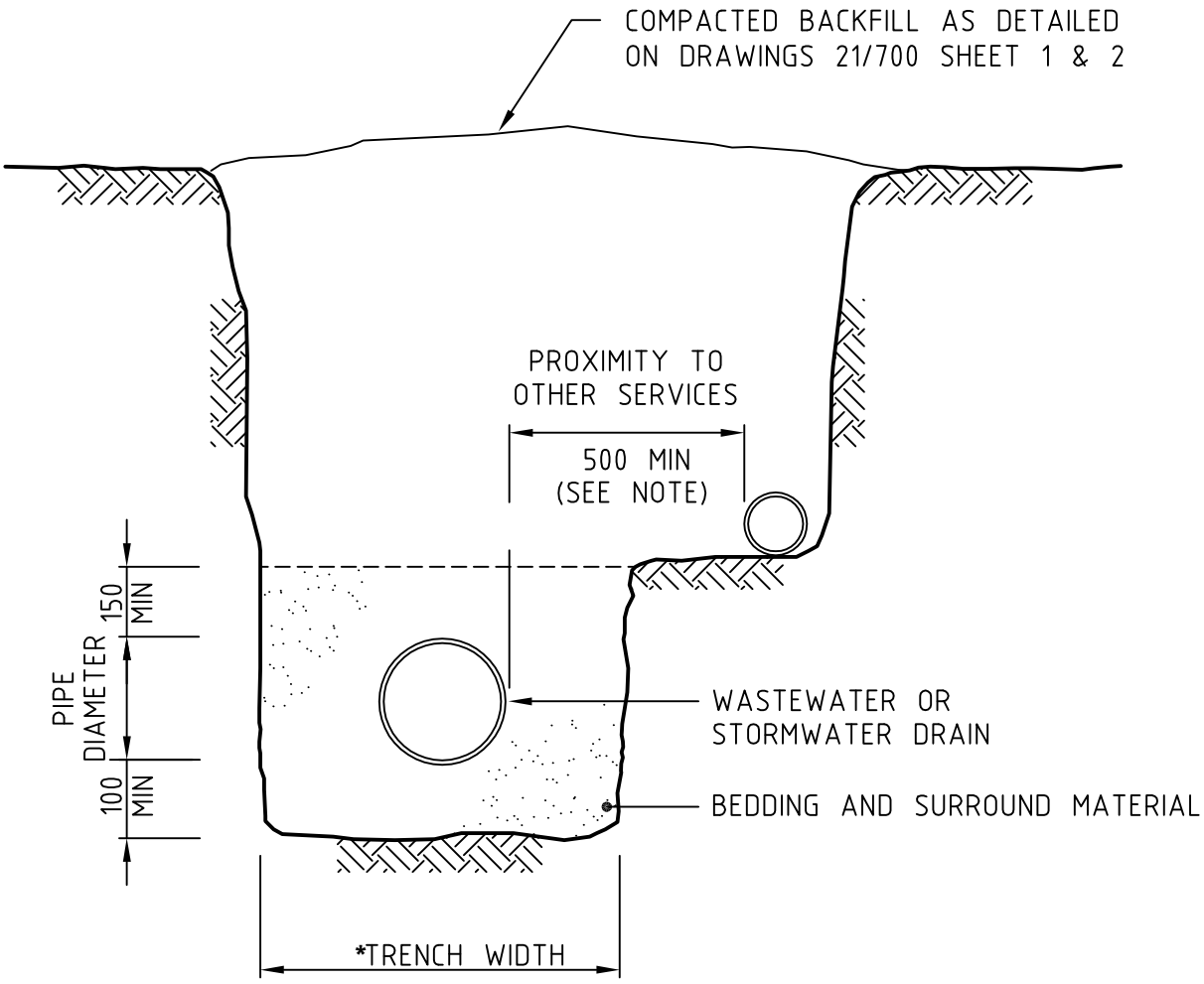
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 612



NOTES:

1. SEE SD 617 & SD 523 FOR TRENCH WIDTHS

2. THE TRENCH WIDTH SHALL BE THE MINIMUM NECESSARY TO ADEQUATELY AND SAFELY LAY THE PIPE AND TO COMPACT THE SIDE SUPPORT ZONE

3. A MINIMUM HORIZONTAL SEPARATION OF 300mm MAY BE USED WHERE 500mm IS NOT PRACTICAL

NELSON CITY COUNCIL

DRAINAGE SHARED TRENCH CLEARANCES

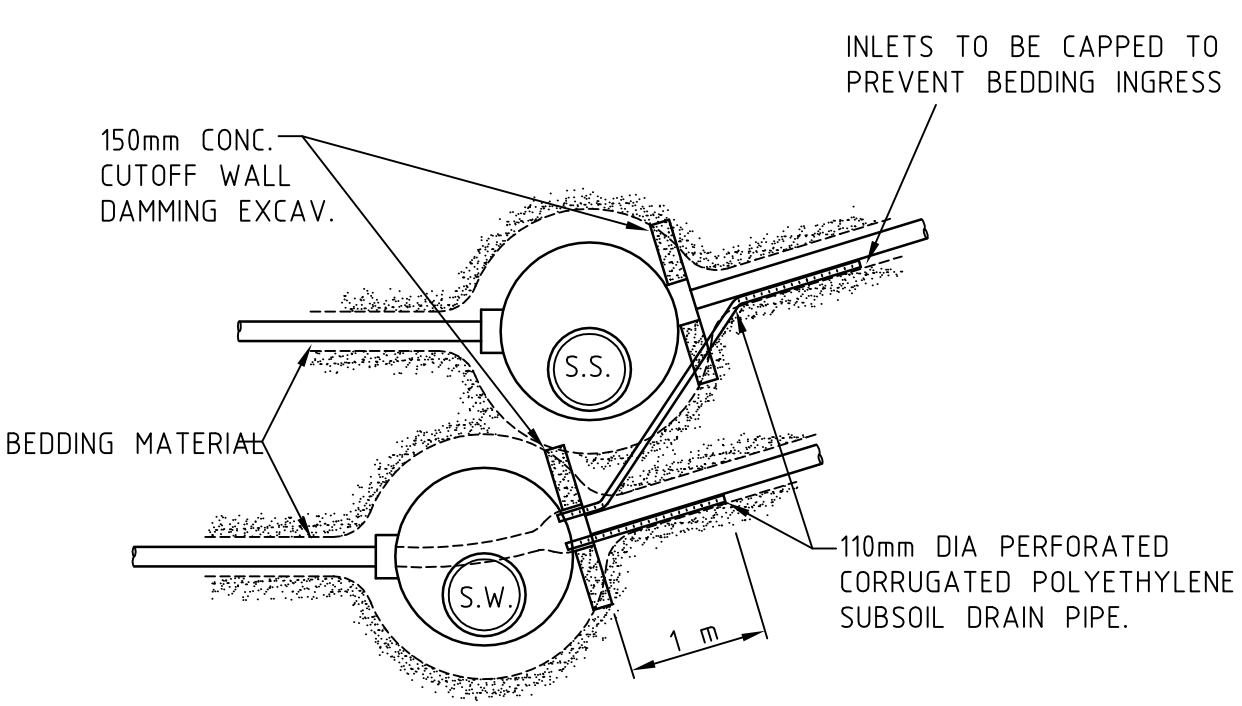
INFRASTRUCTURAL ASSETS

APPROVED

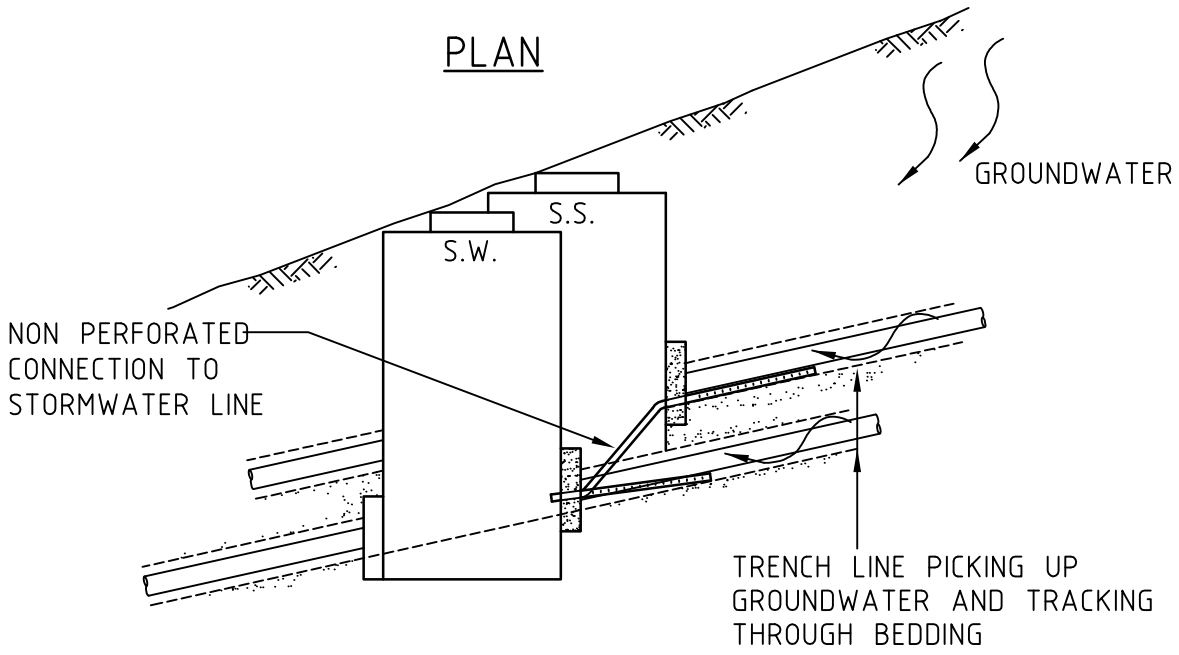
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 613



PLAN

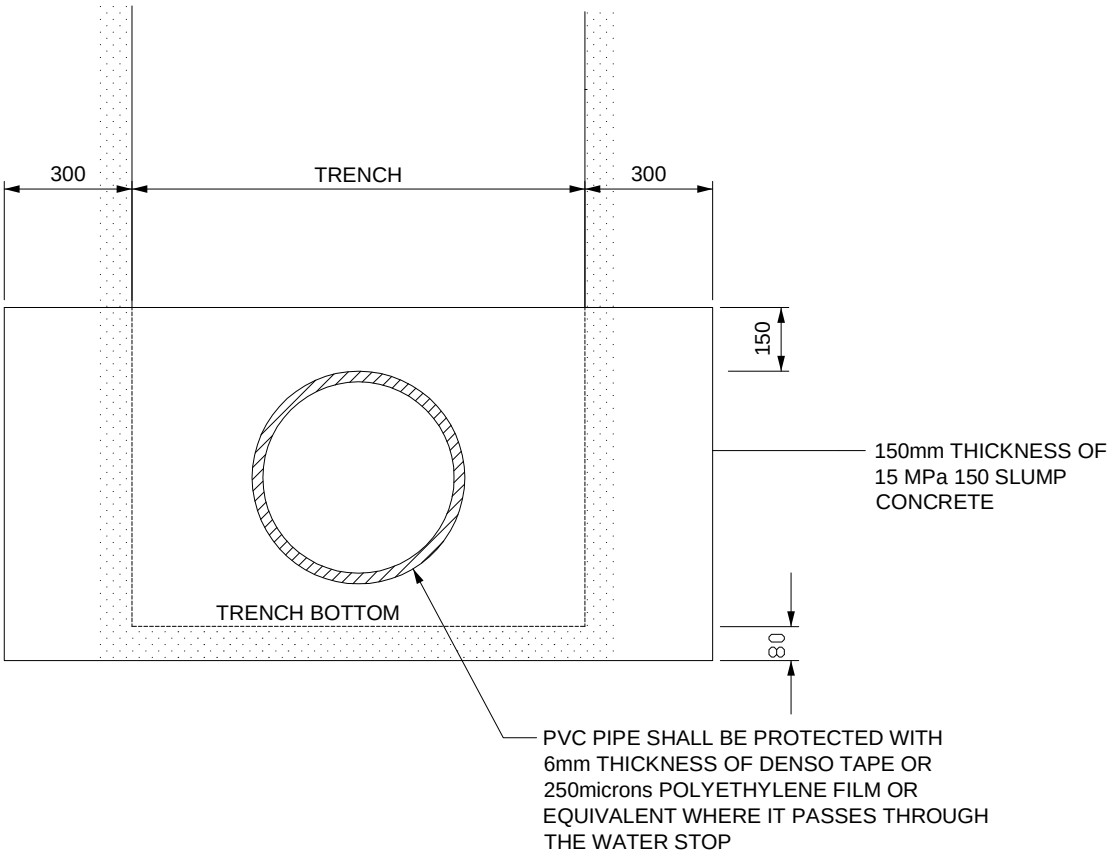


ELEVATION

NOTE:

1. SIMILAR PROVISION FOR DRAINAGE OF CABLE AND WATER TRENCHS MAY BE REQUIRED.
2. STORMWATER TRENCHES TO BE LAID SLIGHTLY DEEPER THAN SEWER TRENCHES WHERE POSSIBLE.
3. WHERE DRAINAGE OF THE WASTEWATER IS NOT POSSIBLE, ADDITIONAL WATERTIGHT CONSTRUCTION AS PER 21/204 SHEET 6 WILL BE REQUIRED. ALTERNATELY, AN APPROVED THERMOPLASTIC MANHOLE MAY BE PERMITTED.

NELSON CITY COUNCIL	TRENCH DRAINAGE DETAILS	
	INFRASTRUCTURAL ASSETS APPROVED SENIOR EXECUTIVE INFRASTRUCTURE	29/07/2010 DATE
		SD 614



NOTES:

1. WATER STOPS SHALL GENERALLY BE AT THE FOLLOWING SPACINGS:

PIPE GRADIENT	MAXIMUM SPACING (metres)
1 : 15 or steeper	12
1 : 25	15
1 : 50	30
1 : 100	60

PROVIDED:

a. INTERMEDIATE GRADES ARE DETERMINED BY INTERPOLATION

b. MANHOLES POURED AGAINST A TRIMMED EXCAVATION MAY BE RECKONED AS WATER STOPS

c. WHERE A FLATTER GRADE OCCURS BELOW A STEEPER GRADE, AT LEAST ONE FURTHER WATER STOP SHALL BE LOCATED ON THE UPPER SECTION OF THE FLATTER GRADE AT A DISTANCE FROM THE CHANGE IN GRADE EQUAL TO THE ABOVE TABLE SPACING FOR THE STEEPER GRADE

NELSON CITY COUNCIL

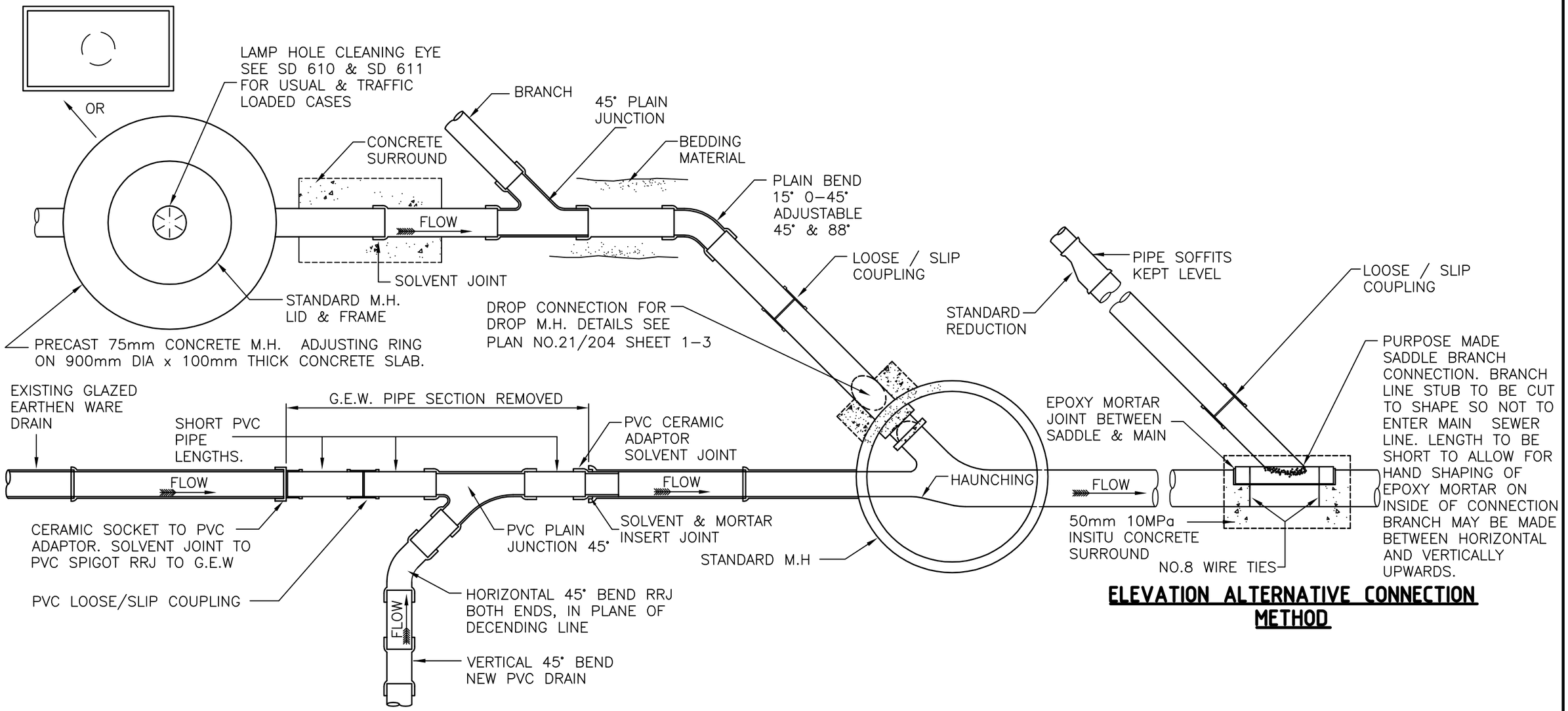
WATER STOPS

INFRASTRUCTURAL ASSETS

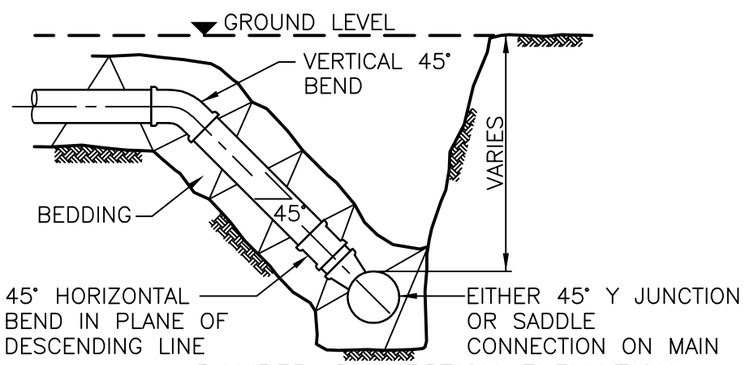
APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 615



ELEVATION ALTERNATIVE CONNECTION METHOD



RAMPED CONNECTION ELEVATION

SCHEMATIC OF ELEMENTS USED IN PVC DRAIN CONSTRUCTION

PREFERRED CONNECTION METHOD

SIMILAR SYSTEM TO BE USED CONNECTING INTO EXISTING PVC PIPELINES. PVC CONNECTIONS AS DETAILED TO BE USED IN NEW PVC DRAINS.

NELSON CITY COUNCIL

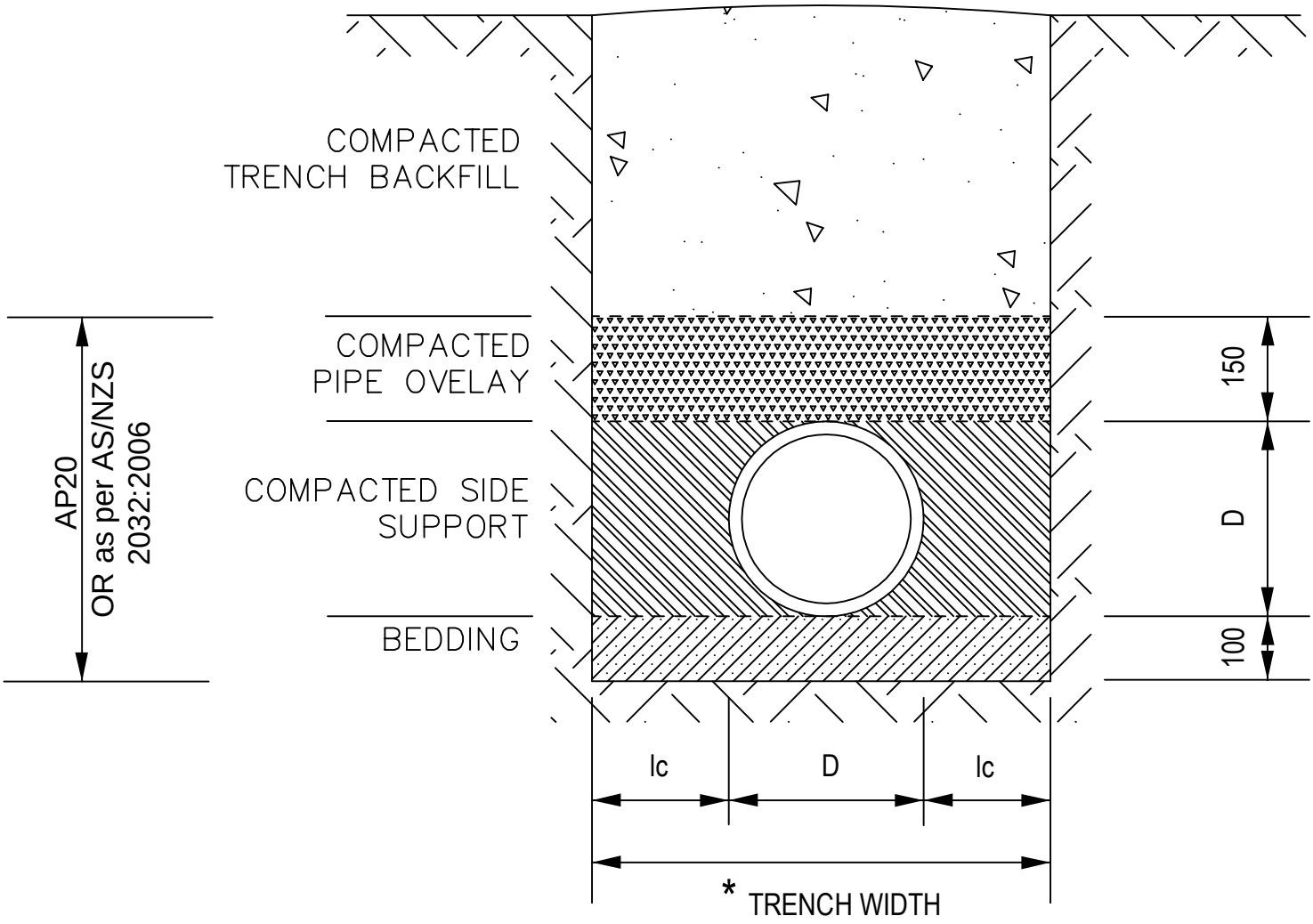
STANDARD PVC PIPE DETAILS

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 616



*TRENCH WIDTH

NOMINAL DIAMETER DN (mm)	MINIMUM TRENCH SIDE CLEARANCE " lc " TO AS/NZS 2566	* MAXIMUM
UP TO 150	100	600
200 - 250	150	600
300 - 375	200	775

THE TRENCH WIDTH SHALL BE THE MINIMUM NECESSARY TO ADEQUATELY AND SAFELY LAY THE PIPE AND TO COMPACT THE SIDE SUPPORT ZONE

NELSON CITY COUNCIL

PIPE BEDDING for PVC, PE & OTHER FLEXIBLE PIPES

INFRASTRUCTURE DIVISION

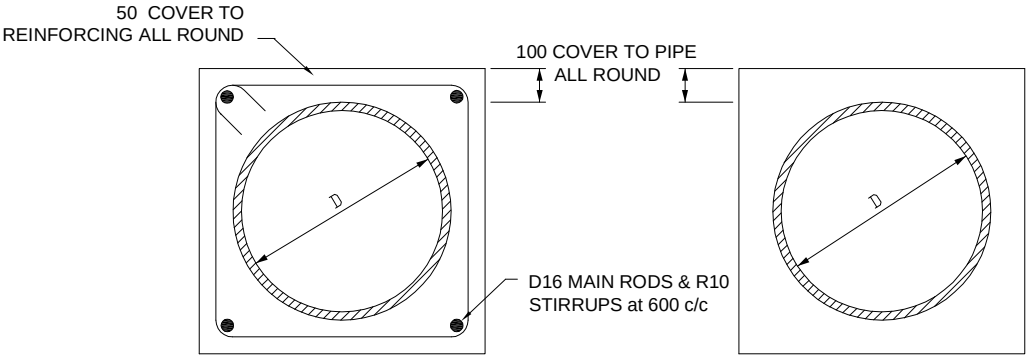
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

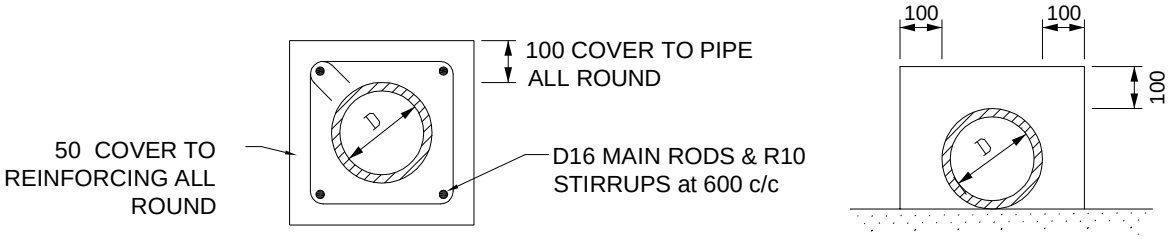
DATE

SD 617



REINFORCED
CONCRETE SURROUND
D=150Ø to 450Ø
TYPE A

PLAIN CONCRETE
SURROUND
D=150Ø to 450Ø
TYPE B



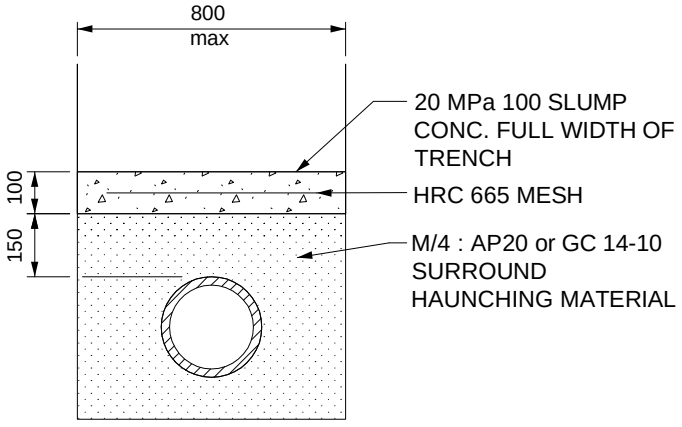
REINFORCED
CONCRETE SURROUND
D=100Ø
TYPE C

CONCRETE COVER
D=100Ø
TYPE D

NOTES:
1. FOR DIAMETERS GREATER THAN 450MM SPECIAL DESIGN APPLIES.
2. CONCRETE SHALL BE 20 MPa 100 SLUMP WITH A TOLERANCE OF +0,-20mm.
3. TYPE OF SURROUND SHALL BE SPECIFIED.
4. CONCRETE SURROUND SHALL TERMINATE AT A PIPE JOINT.
5. CONTRACTION JOINTS SHALL BE FORMED AT PIPE JOINTS BY INTERRUPTING CONCRETE WITH 12mm SOFTBOARD OR EQUIVALENT AND APPLYING APPROVED SEALANT TO THE PIPE JOINT TO PREVENT ENTRY OF CONCRETE. ANY REINFORCING STEEL SHALL BE STOPPED UNHOOKED 50mm FROM JOINT.
6. CONTRACTION JOINT SPACING - MAXIMUM:

	R.C.R.R.
TYPE A	10m
TYPE B	5m
TYPE C	} Engineer to
TYPE D	} Specify

7. WITH PVC PIPE TYPE E PROTECTION TO BE USED UNLESS OTHERWISE SPECIFIED.



CONCRETE COVER SLAB
MAXIMUM PIPE SIZE 375Ø
TYPE E

NELSON CITY COUNCIL

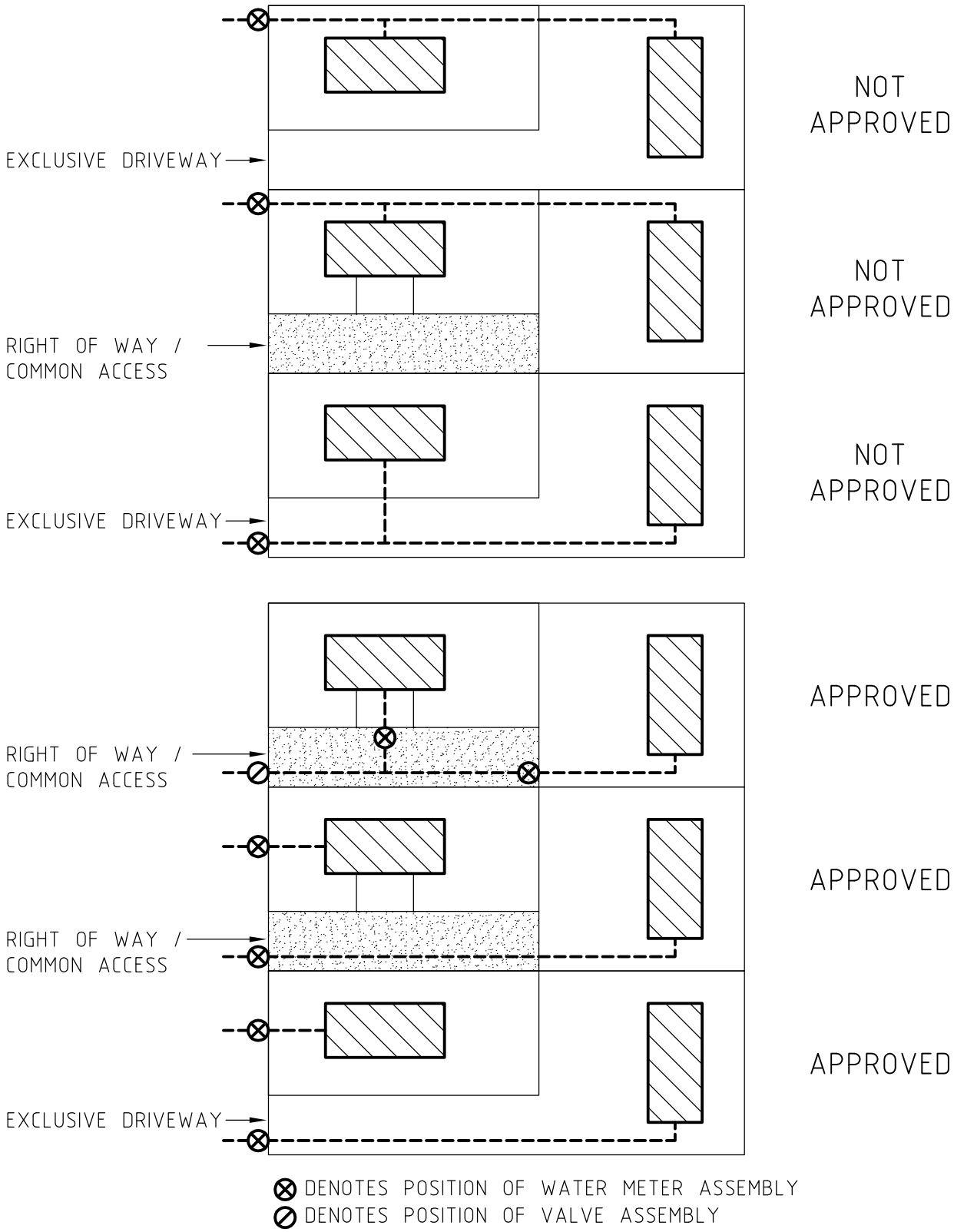
PIPE CONCRETE SURROUND & COVER SLAB

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE ..... DATE

SD 618



NELSON CITY COUNCIL

WATER CONNECTION POLICY SUBDIVISION & CROSS LEASE

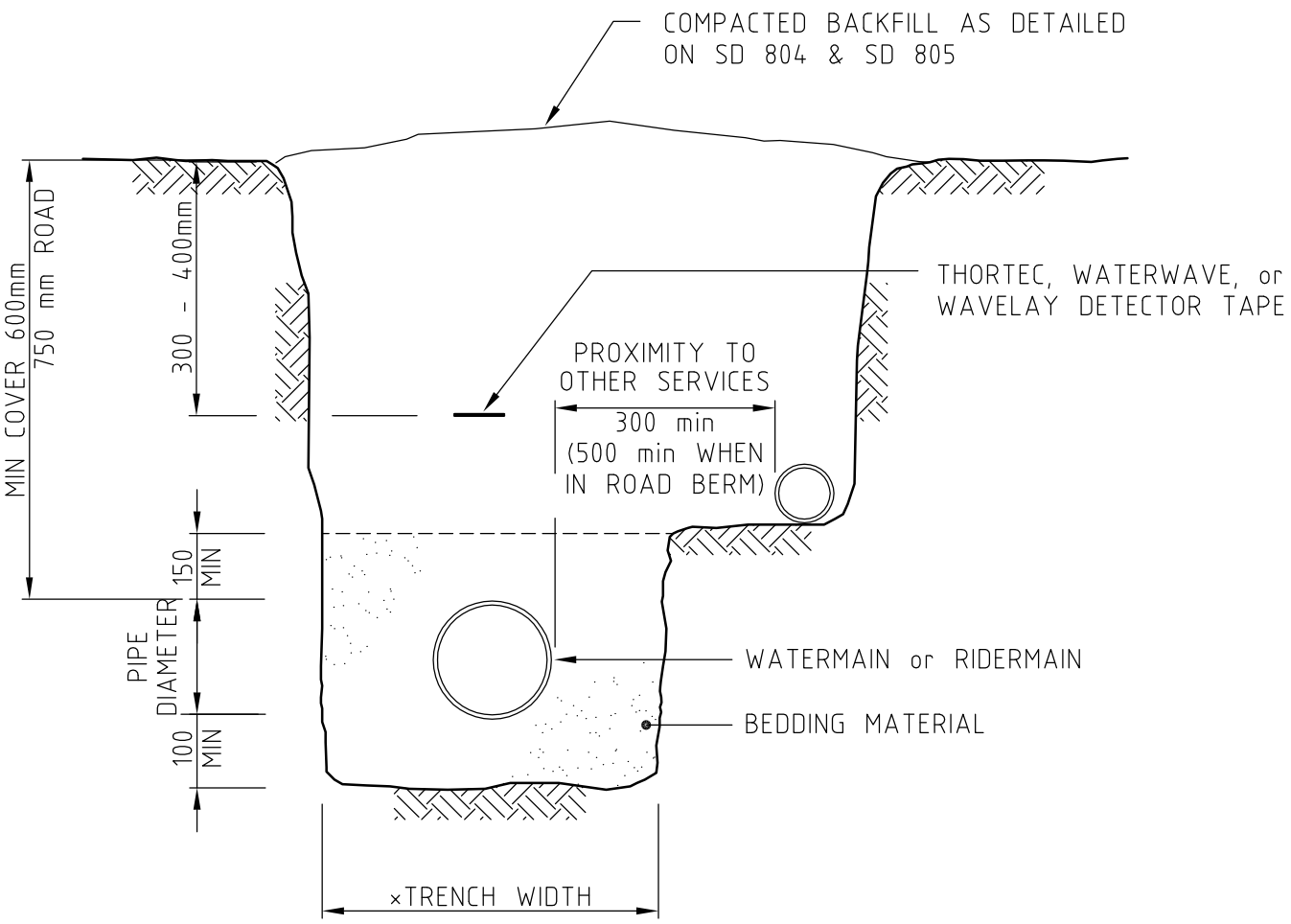
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 701



NOTES:
1. SEE SD 617 FOR TRENCH WIDTHS
2. THE TRENCH WIDTH SHALL BE THE MINIMUM NECESSARY TO ADEQUATELY AND SAFELY LAY THE PIPE AND TO COMPACT THE SIDE SUPPORT ZONE

NELSON CITY COUNCIL

WATER SHARED TRENCH CLEARENCES

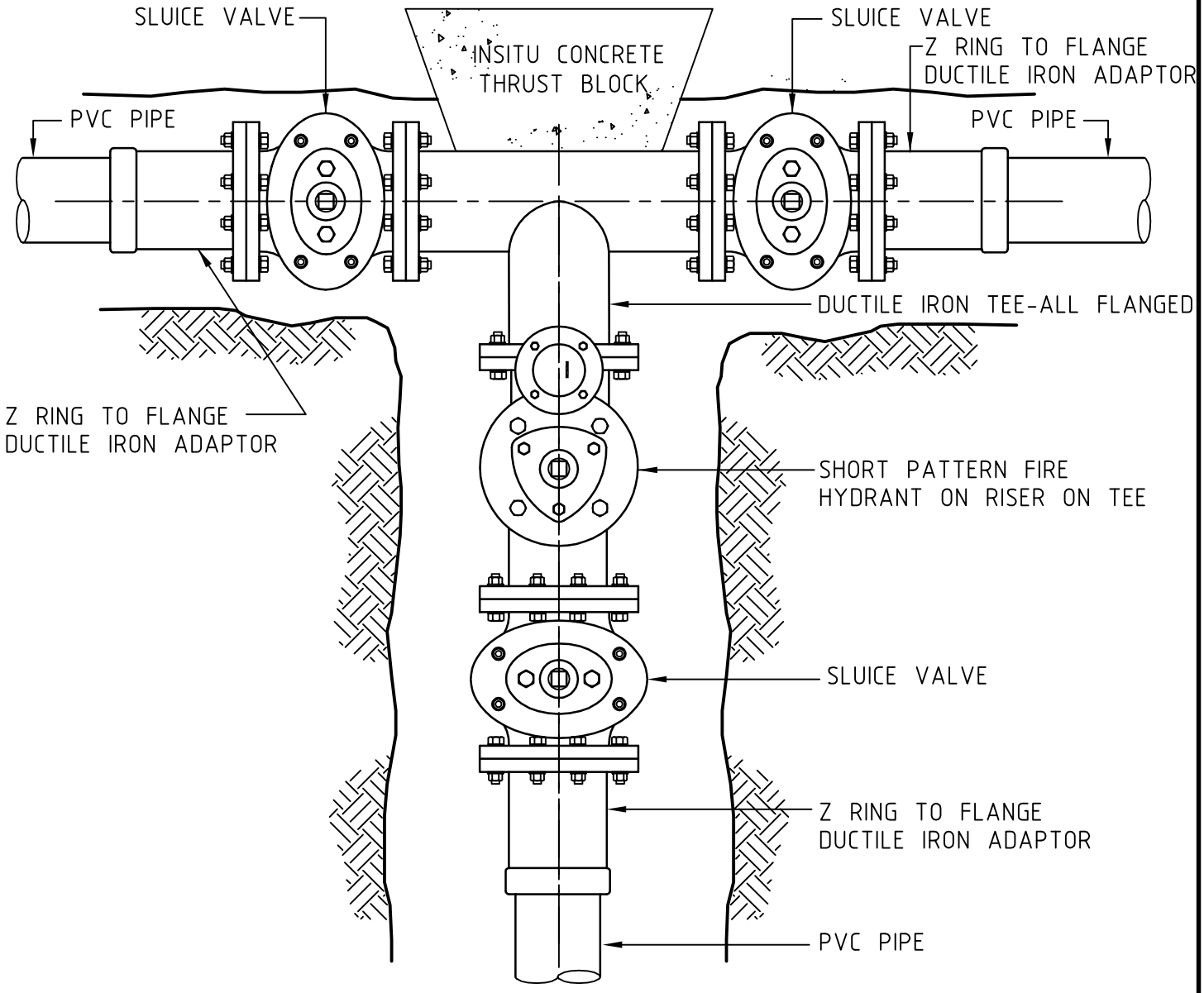
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 702



NOTE:

1) ALL FITTINGS TO BS 10 TABLE E (UNRESTRAINED MECHANICAL COUPLING ONLY ON ENGINEERS APPROVAL & ADEQUATELY PROTECTED - CATHODIC & MOISTURE BARRIERS).
2) UNRESTRAINED MECHANICAL COUPLING MAY ONLY BE USED WHEN CUTTING INTO AN EXISTING MAIN
3) SEE SD 710 FOR FLANGE PROTECTION DETAILS
4) ADJUST FITTINGS TO ALLOW HYDRANTS/LIDS TO BE INSTALLED
5) ALL FITTINGS IN CONTACT WITH CONCRETE SHALL HAVE A PROTECTIVE MEMBRANE INSTALLED BETWEEN THE CONCRETE AND THE FITTING, TO ENGINEERS APPROVAL

NELSON CITY COUNCIL

WATERMAIN TEE JUNCTION

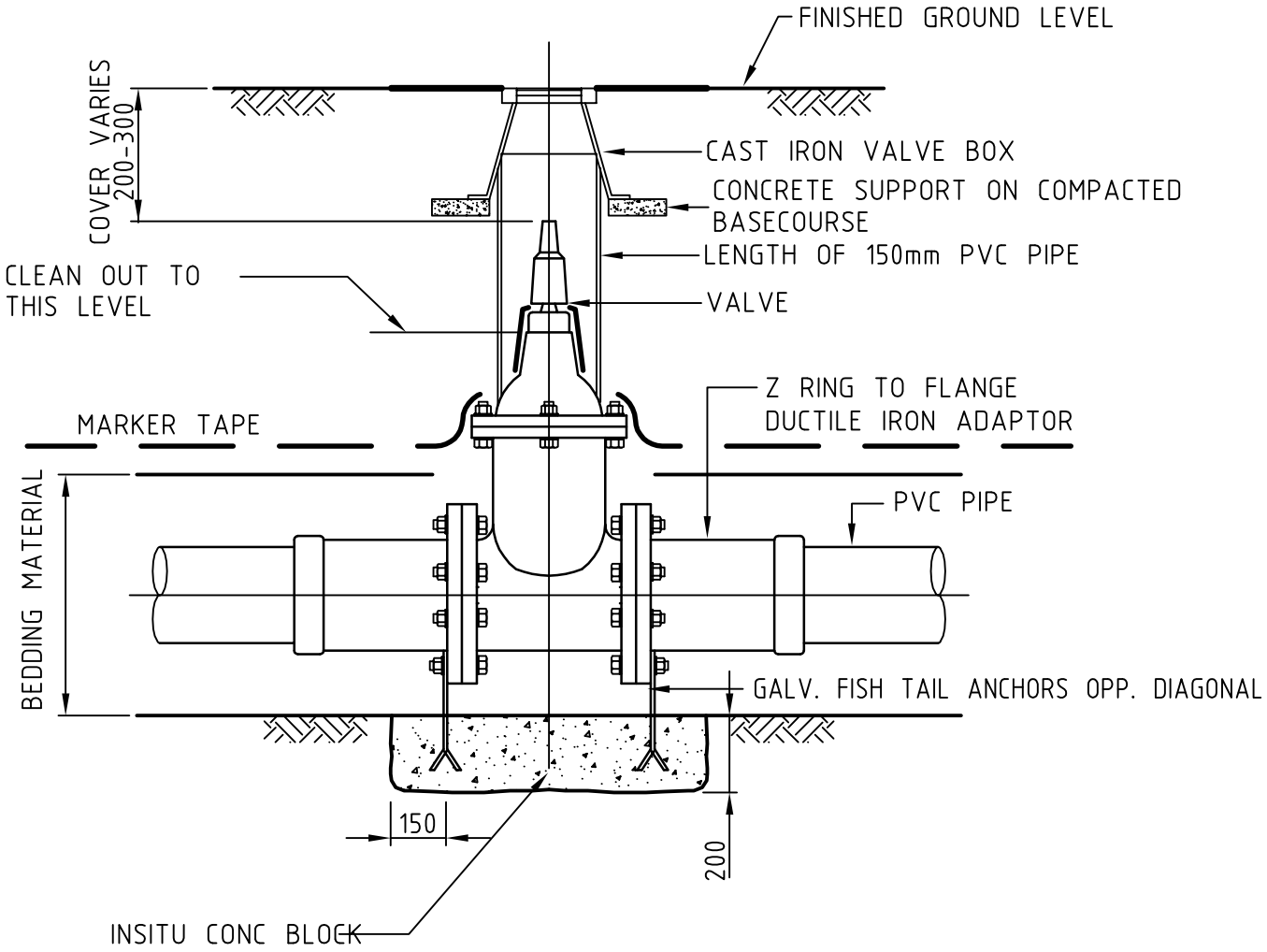
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 703



NELSON CITY COUNCIL

SLUICE VALVE INSTALLATION

INFRASTRUCTURAL ASSETS

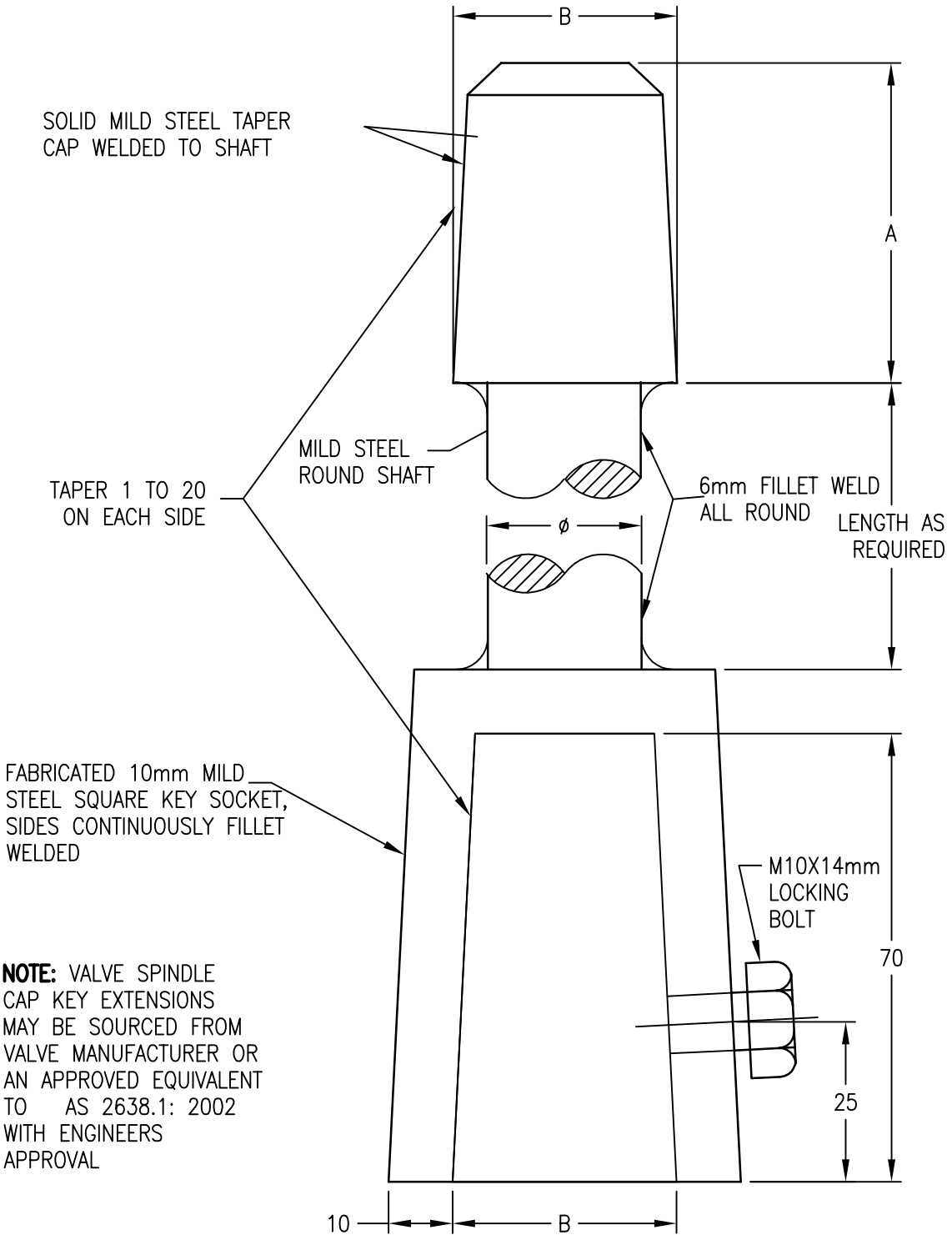
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 704



NOTE: VALVE SPINDLE CAP KEY EXTENSIONS MAY BE SOURCED FROM VALVE MANUFACTURER OR AN APPROVED EQUIVALENT TO AS 2638.1: 2002 WITH ENGINEERS APPROVAL

NOMINAL SIZE OF VALVE DN mm	ø mm	LENGTH OF SQUARE ON CAP (A) mm	SQUARE ON CAP AND KEY (B) mm
80–150	24	50	35
200–900	32	57	35

NELSON CITY COUNCIL

SLUICE VALVE KEY CAP EXTENSION

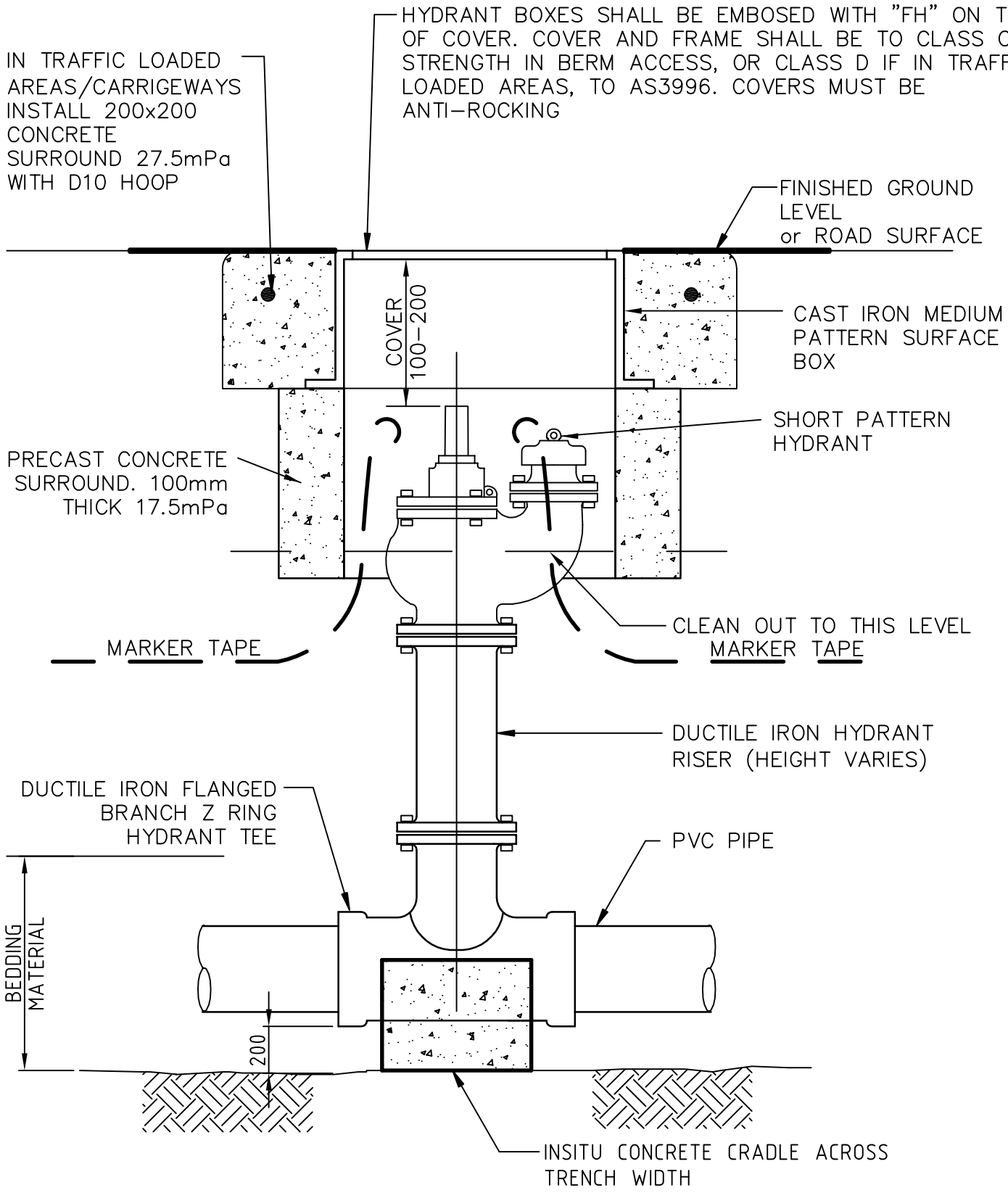
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 705



NELSON CITY COUNCIL

FIRE HYDRANT INSTALLATION

INFRASTRUCTURAL ASSETS

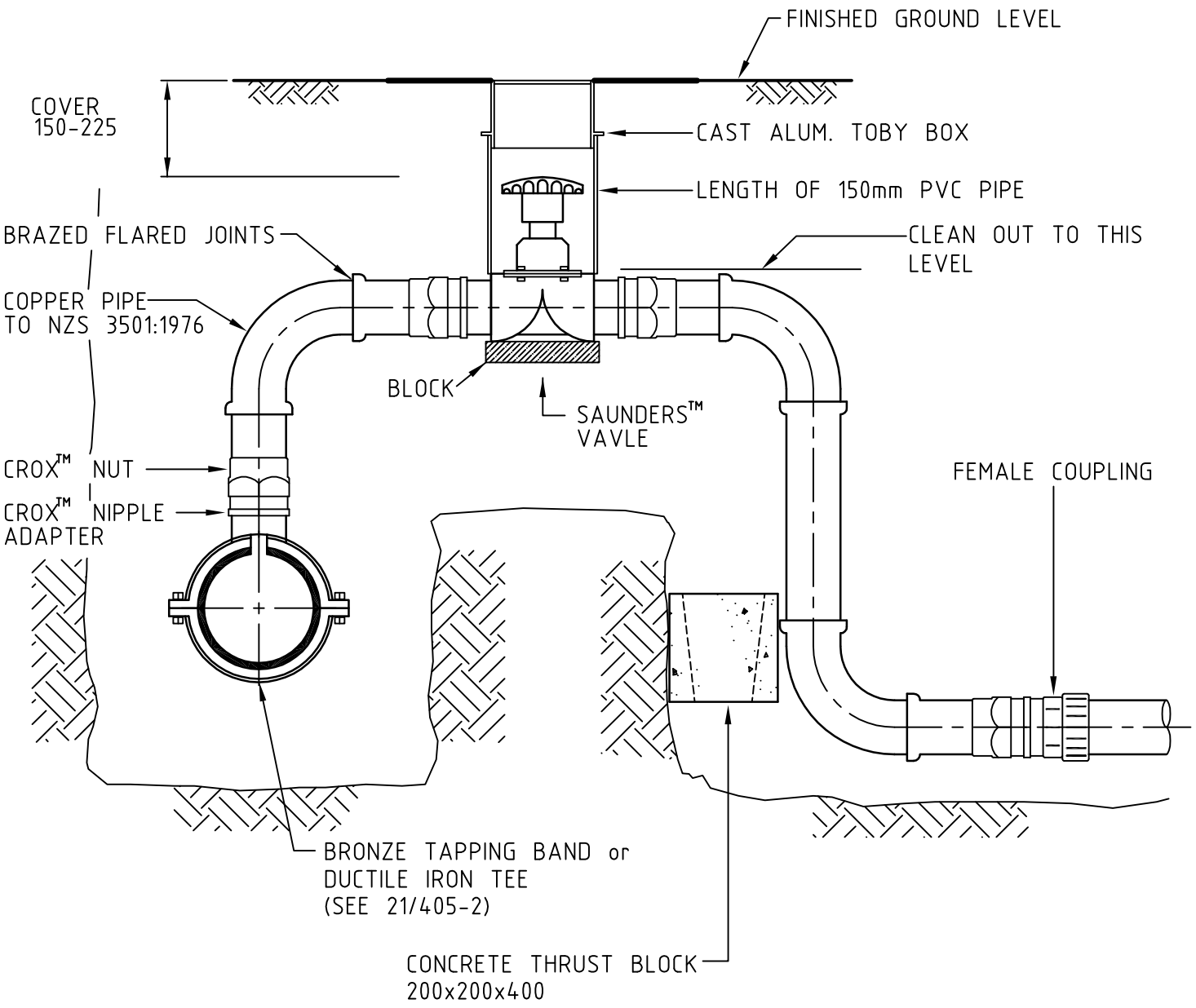
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 706

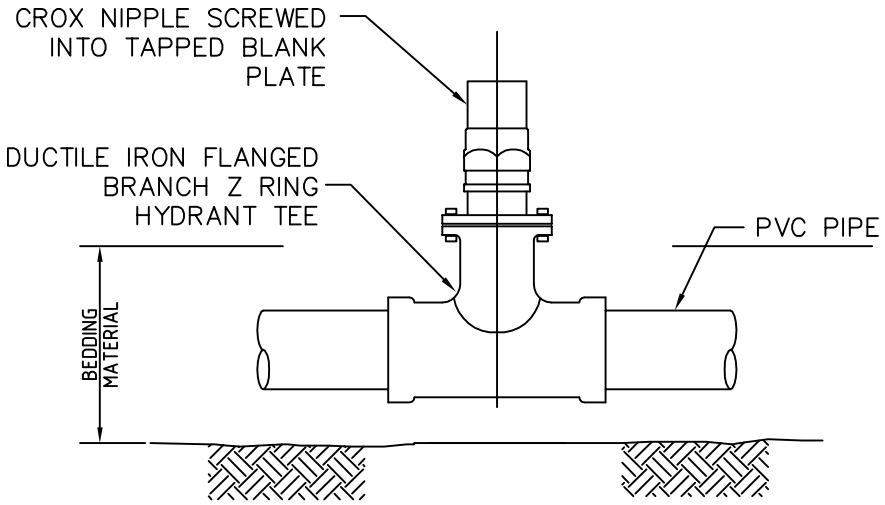


NOTE:

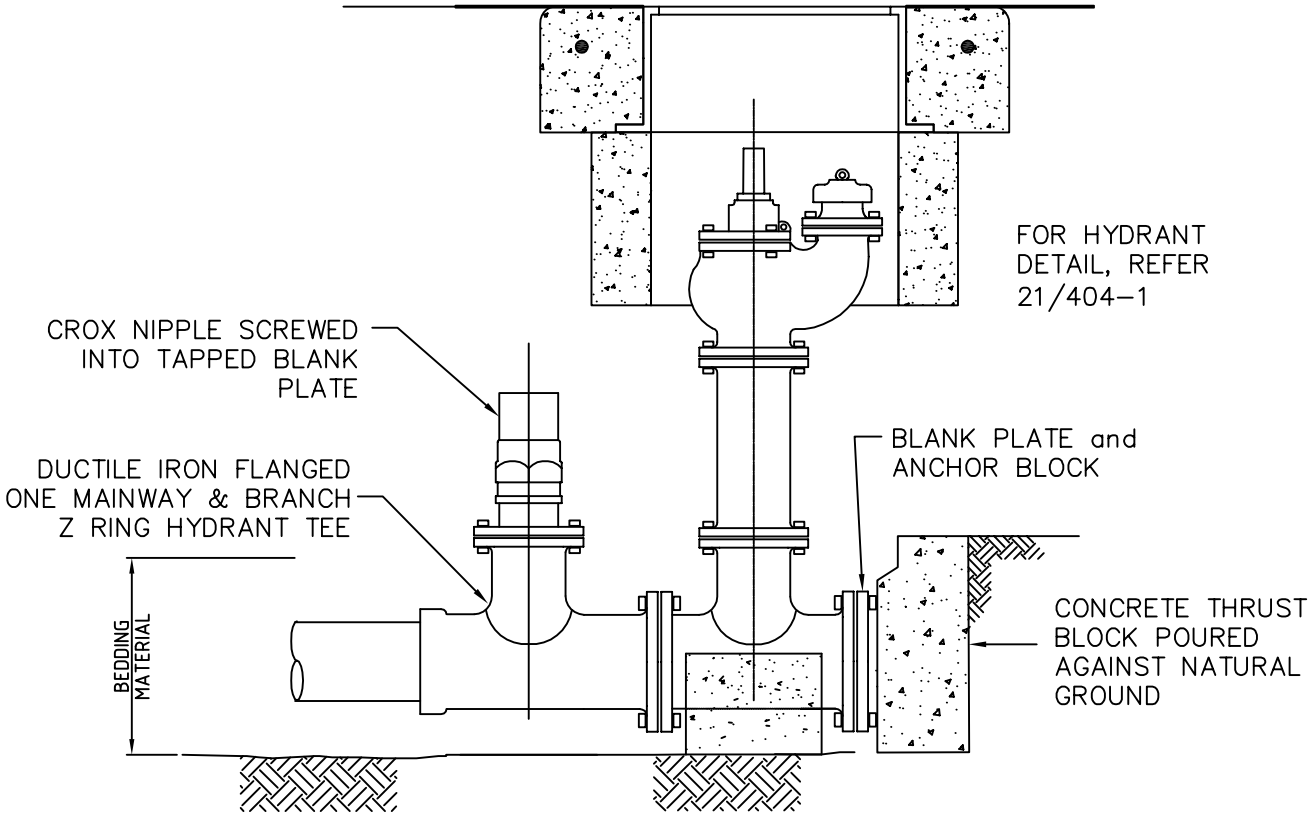
THIS DIAGRAM APPLIES TO THE SITUATION WHERE THE MAIN IS LOCATED IN THE FOOTPATH OR BERM

WHERE THE MAIN IS LOCATED IN THE ROAD THE LAYOUT SHALL BE MODIFIED SO THAT THE SAUNDERS VALVE IS LOCATED IN THE FOOTPATH OR BERM

NELSON CITY COUNCIL	RIDERMAIN CONNECTION	
	INFRASTRUCTURAL ASSETS APPROVED SENIOR EXECUTIVE INFRASTRUCTURE — DATE 29/07/2010	SD 707



AT TEE JUNCTION



AT PIPE END

NELSON CITY COUNCIL

RIDERMAIN CONNECTION USING "TEE"

INFRASTRUCTURAL ASSETS

APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 708

NELSON CITY COUNCIL

WATERMAIN LATERAL FOR PROPERTY CONNECTION

APPROVED

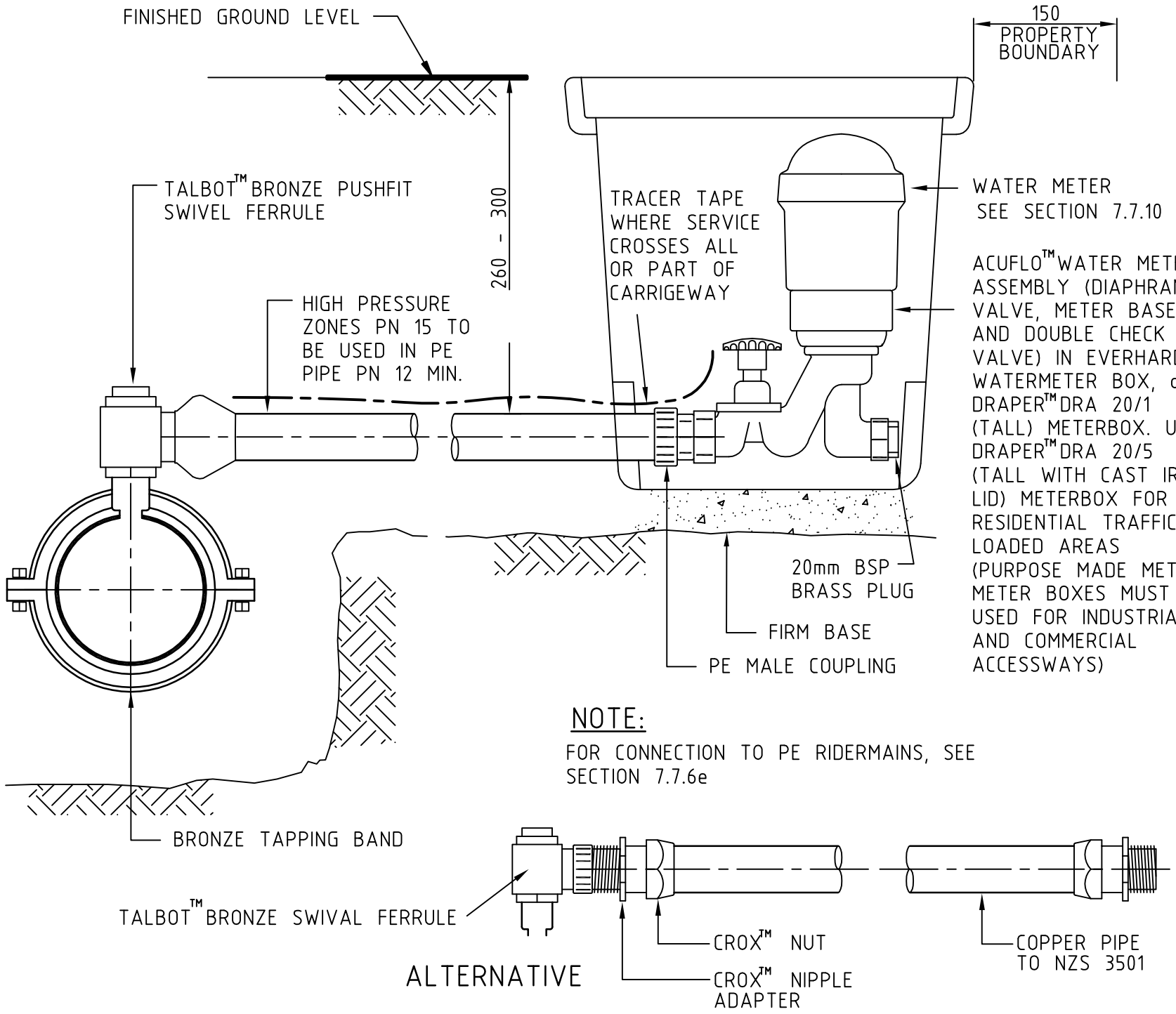
INFRASTRUCTURAL ASSETS

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 709



FLANGES FOR PIPES, VALVES & FITTINGS TO AS-2129

SURFACE PREPARATION

WIRE BRUSH LOOSE DIRT AND RUST FROM THE FLANGE AND ADJACENT PIPE, IF APPROPRIATE AND 100mm ONTO ANY SHOP COATING. ENSURE ALL SURFACES ARE CLEAN.
DENSO PRIMER CAN BE APPLIED TO MOIST OR DAMP SURFACES, BUT VERY WET SURFACES SHOULD BE DRIED

PRIMING

APPLY DENSO PRIMER TO ALL METAL SURFACES WHERE POSSIBLE, PROTECT NUTS AND BOLTS BY DIPPING IN DENSO PRIMER BEFORE ASSEMBLY

FILLING

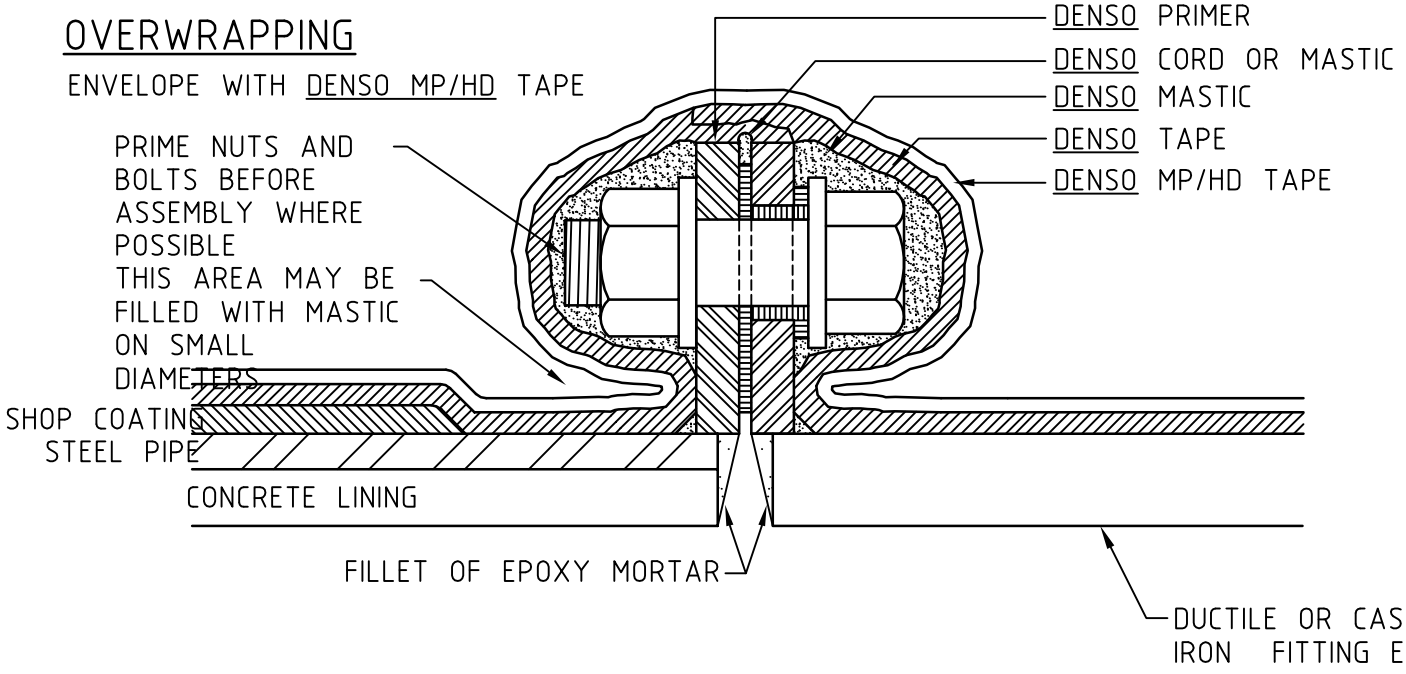
FLANGES TO TABLES A & D MOULD DENSO MASTIC OVER THE HEADS OF BOLTS, NUTS AND SCREW THREADS WITH A MINIMUM COVERAGE OF 5mm TAPER ONTO FLANGE FACE TO PROVIDE A SUITIBLE CONTOUR FOR TAPE WRAPPING FLANGES TO TABLES E DUE TO THE INCREASED NUMBER OF BOLTS IN THIS CASE, IT IS NECESSARY TO USE DENSO MASTIC BETWEEN INDIVIDUAL BOLTS AND NUTS TO PROVIDE A SUITABLE CONTOUR FOR TAPING

WRAPPING

APPLY ONE COMPLETE TURN OF DENSO TAPE CIRCUMFERENTIALLY AROUND FLANGE WITH ONE SIDE AGAINST THE EDGE OF THE THE FLANGE. OVERLAP ABOUT 80mm. MOULD THE OVERHANGING TAPE OVER THE MASTIC. APPLY A SECOND TURN OF TAPE TO PROVIDE A DOUBLE THICKNESS AROUND THE FLANGE AND COVER THE OPPOSITE SIDE FOR FLANGES ON SHOP COATED LINES, SPIRALLY WRAP DENSO TAPE FROM THE PROTECTED FLANGE AND 100mm ONTO THE SHOP COATING ON EITER SIDE.

OVERWRAPPING

ENVELOPE WITH DENSO MP/HD TAPE



NELSON CITY COUNCIL

CORROSION PROTECTION FOR FLANGES

INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 710

All Unrestrained Mechanical Couplings shall be wrapped as detailed below where materials other than 316 stainless steel and coatings to AS/NZS 4158 are used.

SURFACE PREPARATION

WIRE BRUSH LOOSE DIRT AND LOOSE RUST FROM THE JOINT AND ADJACENT PIPE.
DENSO PRIMER CAN BE APPLIED TO MOIST OR DAMP SURFACES, BUT VERY WET SURFACES SHOULD BE DRIED

PRIMING

APPLY DENSO PRIMER TO ALL METAL SURFACES
WHERE POSSIBLE, PROTECT NUTS AND BOLTS BY DIPPING IN DENSO PRIMER BEFORE ASSEMBLY

FILLING

FILL BETWEEN BOLTS AND SLEEVE, AND BOLTS TO TOP FLANGES WITH DENSO MASTIC
COVER BOLT HEADS, NUTS AND ANY PROTRUDING THREAD WITH DENSO MASTIC

WRAPPING

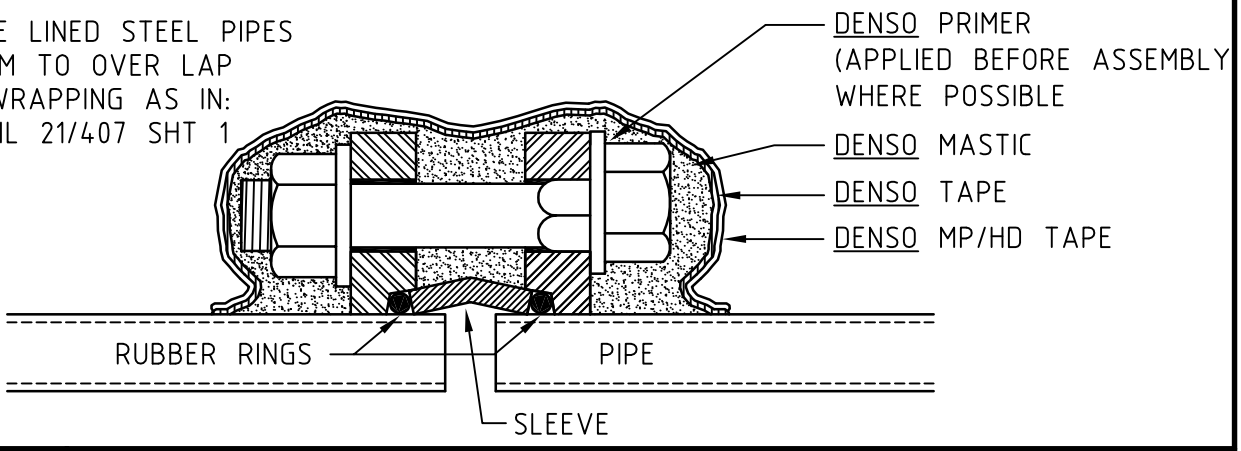
WHERE A SERVICE TAPPING MAY BE INCLUDED WITH THE UNRESTRAINED MECHANICAL COULING, APPLY ONE COMPLETE TURN OF DENSO TAPE AROUND THE JOINT LAPPING BOTH ENDS ONTO THE SERVICE PIPE.
APPLY DENSO TAPE AROUND ONE END OF JOINT WITH AN END LAP OF 80mm. MOULD THE TAPE FROM THE HIGHEST POINT ON THE FLANGE WORKING DOWN TO EXCLUDE AIR BUBBLES.
APPLY ANOTHER COMPLETE TURN OF TAPE SIMILARLY WITH MINIMUM SIDE LAP OF 20mm. MOULD THE TAPE AROUND THE MASTIC COVERED BOLT HEADS, E.T.C.

OVERWRAPPING

ENVELOPE WITH DENSO MP/HD TAPE

NOTE

FOR CONCRETE LINED STEEL PIPES DENSO SYSTEM TO OVER LAP ONTO SHOP WRAPPING AS IN: FLANGE DETAIL 21/407 SHT 1



NELSON CITY COUNCIL

CORROSION PROTECTION FOR UNRESTRAINED MECHANICAL COUPLINGS

INFRASTRUCTURAL ASSETS

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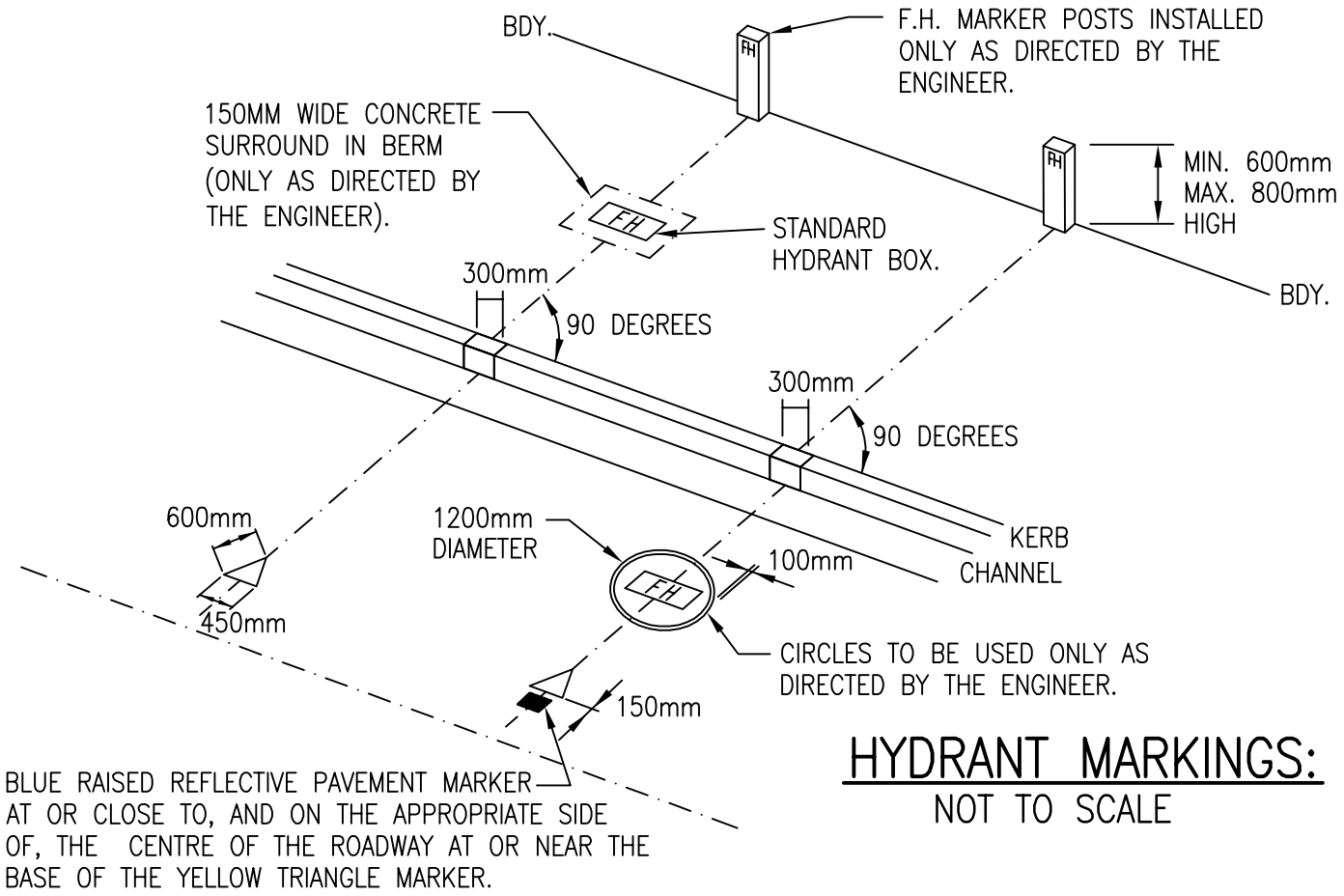
29/07/2010

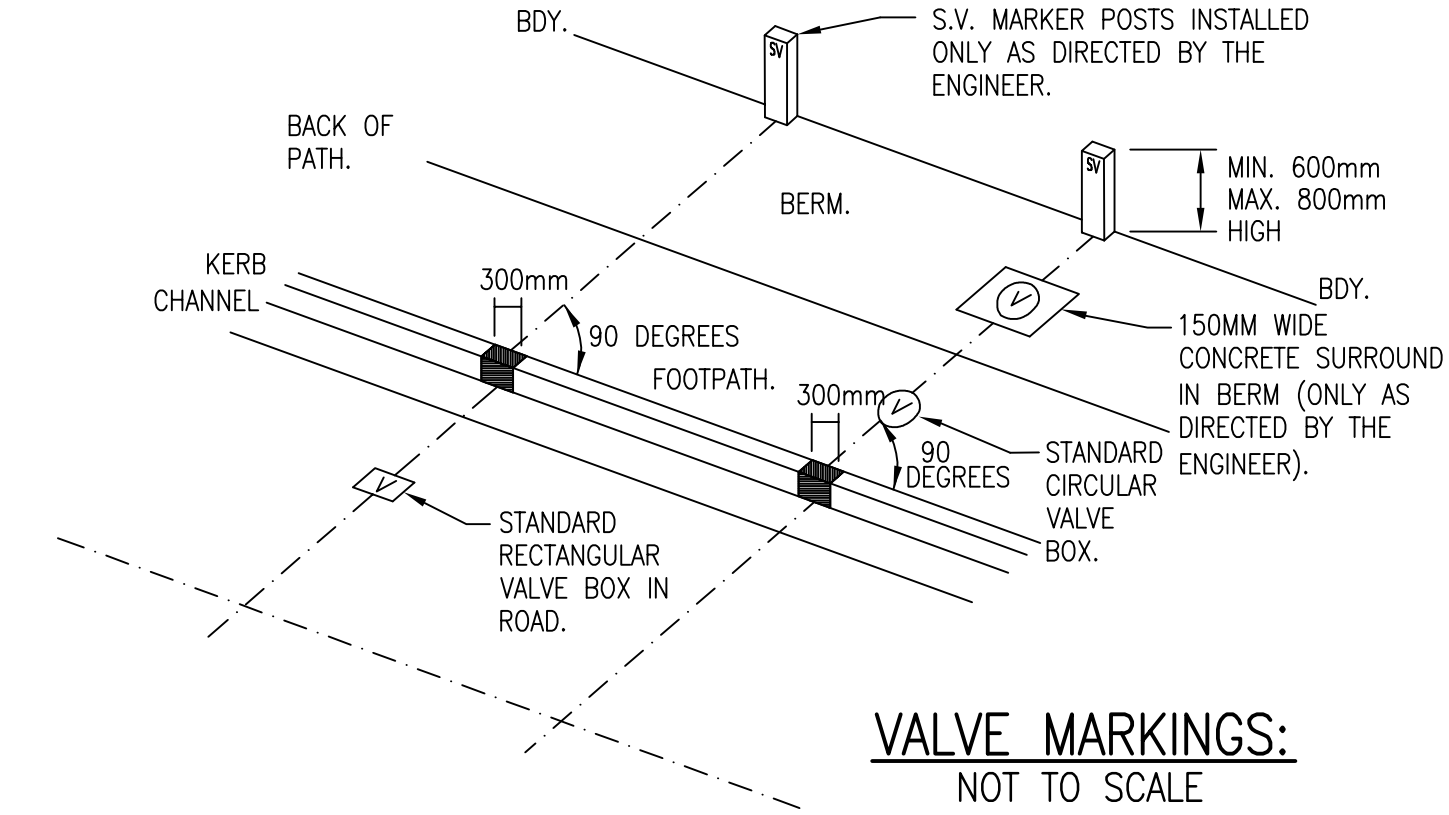
SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 711



HYDRANT MARKINGS:

NOT TO SCALE



VALVE MARKINGS:

NOT TO SCALE

NELSON CITY COUNCIL

VALVE & HYDRANT ROAD MARKINGS

INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

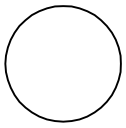
SD 712

VALVE CODING:

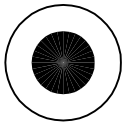

YELLOW


RED

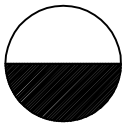

RED


LOW LEVEL

AIR VALVE


HIGH LEVEL

PRESSURE REDUCING VALVE

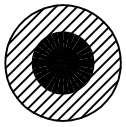

SHUT

NON RETURN VALVE


BYPASS


SCOUR VALVE

LEFT HAND VALVE
(ie. ANTICLOCKWISE TO OPEN)


PUMPED SUPPLY
(EXTRA HIGH LEVEL)

NOTES:

1. PAINT USED FOR ALL ROAD MARKINGS SHALL BE NRB "ROAD MARKING PAINT" (YELLOW – NRB M/7–Y) AND PLASTI–KOTE INDUSTRIAL TRAFFIC PAINT "6639N RED" OR EQUIVALENT.

2. ALL HYDRANT KERB MARKINGS SHALL BE YELLOW AND ALL VALVE KERB MARKINGS SHALL BE RED.

NELSON CITY COUNCIL

VALVE & HYDRANT ROAD MARKINGS

INFRASTRUCTURAL ASSETS

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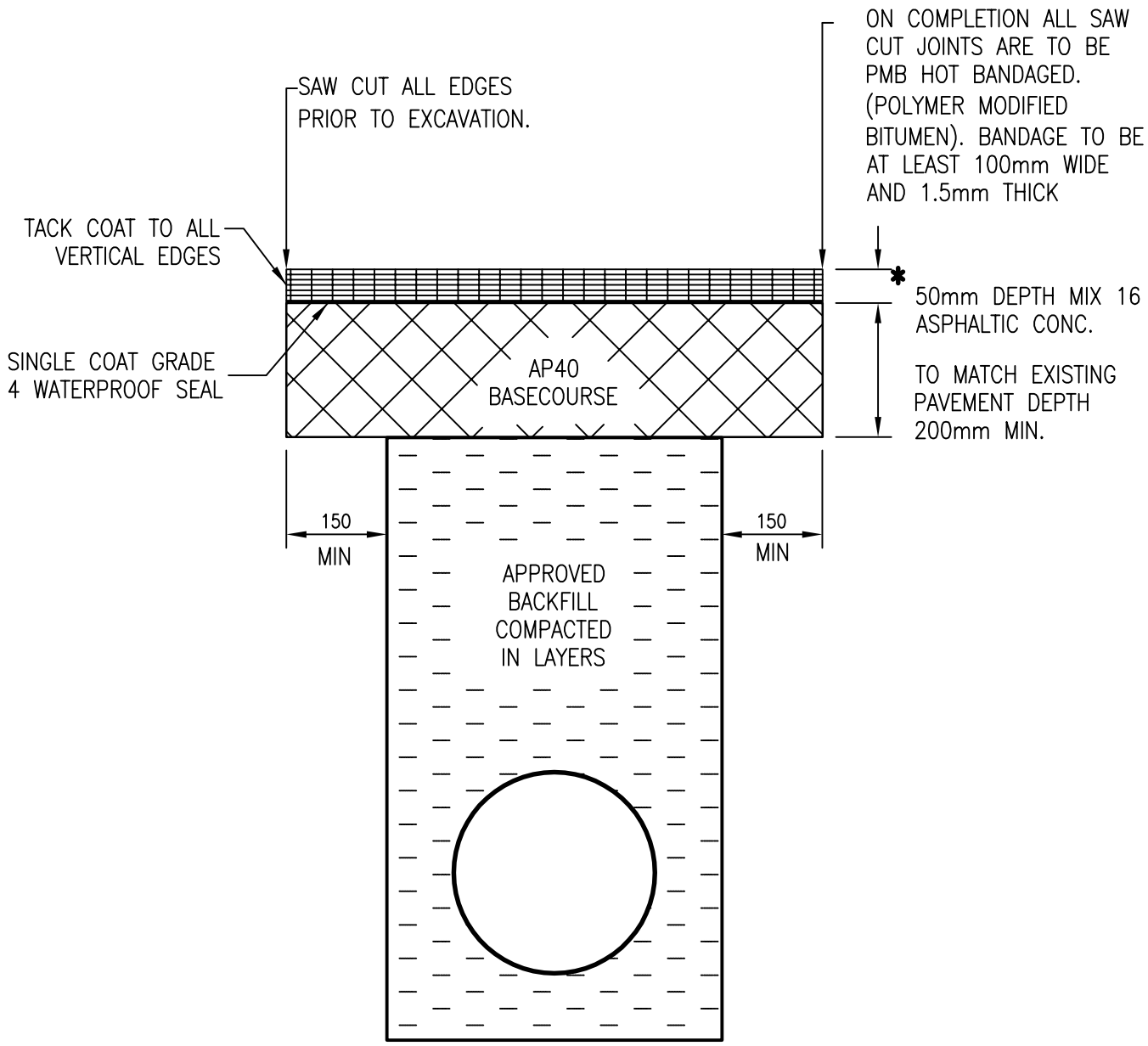
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 713



FOR CHIP SEAL, THIN ASPHALT & DEEP ASPHALT

1. UNSEALED ROADS & SHOULDERS. REINSTATEMENT TO BE 150MM DEPTH OF 40MM BASECOURSE TOPPED OFF WITH 50MM DEPTH OF 20MM BASECOURSE
2. FOR FINISHED SEAL LEVEL TOLERANCES SEE SECTION 8.7.2
3. *DEPTH TO MATCH EXISTING BITUMINOUS LAYER DEPTH, WHERE DEPTH IS GREATER THAN 50mm

NELSON CITY COUNCIL

TRENCH REINSTATEMENT IN CARRIAGEWAY

INFRASTRUCTURAL ASSETS

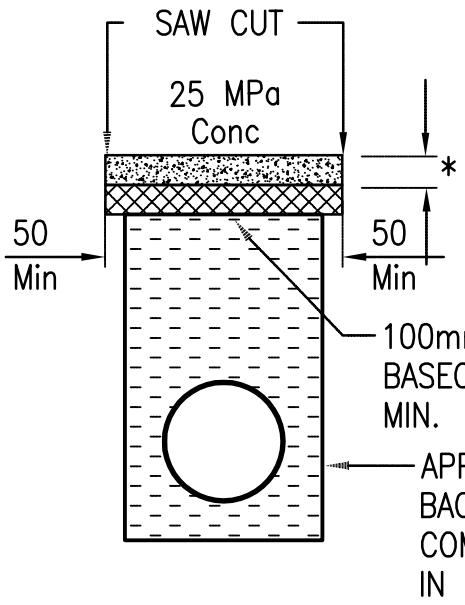
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

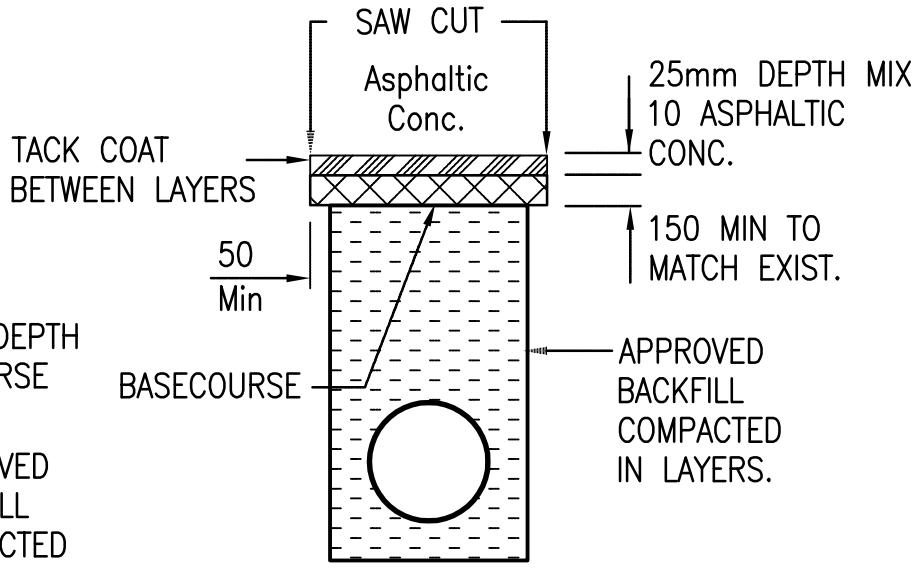
DATE

SD 801



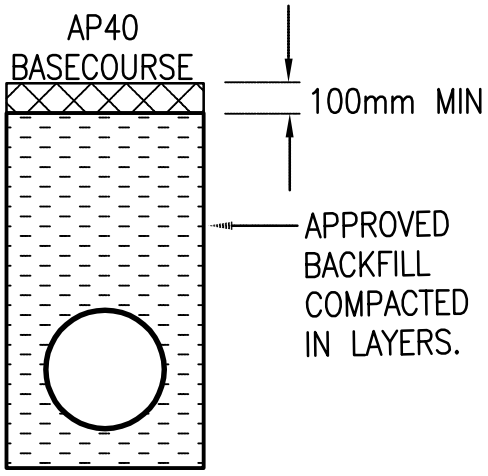
* 100mm FOR FOOTPATH. 150mm FOR RESIDENTIAL CROSSING. 200mm FOR COMMERCIAL CROSSING WITH 665 MESH. FOR INDUSTRIAL CROSSING PAVEMENT TO SPECIFIC DESIGN (TO MATCH EXISTING).

CONCRETE

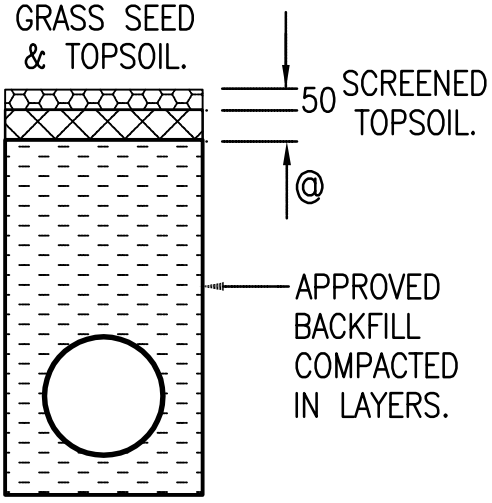


THIN ASPHALTIC
(FOR CHIP SEAL FOOTPATHS ALSO)

FOR VEHICLE CROSSINGS DETAILS REFER TO 21/304 SHEETS 1 AND 2



GRAVEL



@ UNSCREENED TOPSOIL (50mm FOR CLAY FILLS, 100MM FOR GRAVEL OR SAND FILLS).

GRASS

NELSON CITY COUNCIL

TRENCH REINSTATEMENT IN FOOTPATH

INFRASTRUCTURAL ASSETS

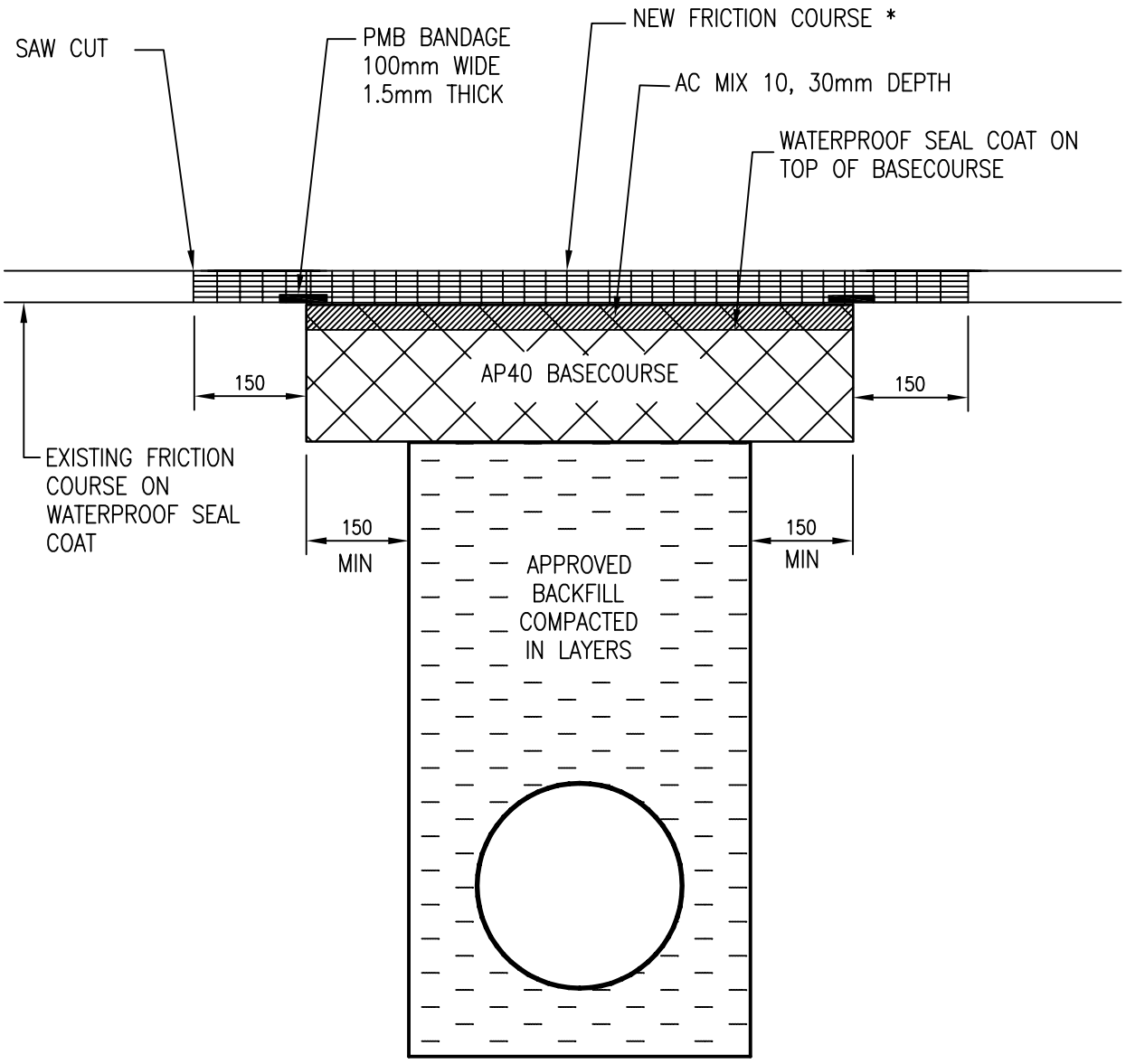
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

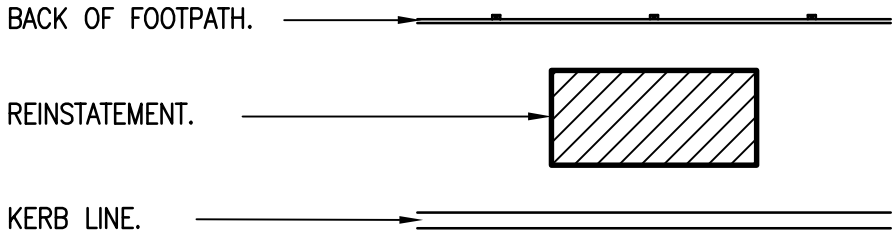
SD 802



FOR FRICTION COURSE

1. FOR FINISHED SEAL LEVEL TOLERANCES SEE SECTION 8.7.2
2. *DEPTH TO MATCH EXISTING BITUMINOUS LAYER DEPTH, WHERE DEPTH IS GREATER THAN 50mm

NELSON CITY COUNCIL	TRENCH REINSTATEMENT IN CARRIAGEWAY (FRICTION COURSE)	
	INFRASTRUCTURAL ASSETS APPROVED 29/07/2010 SENIOR EXECUTIVE INFRASTRUCTURE DATE	SD 803



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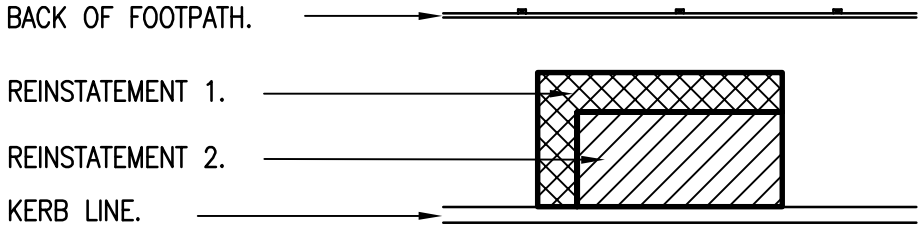

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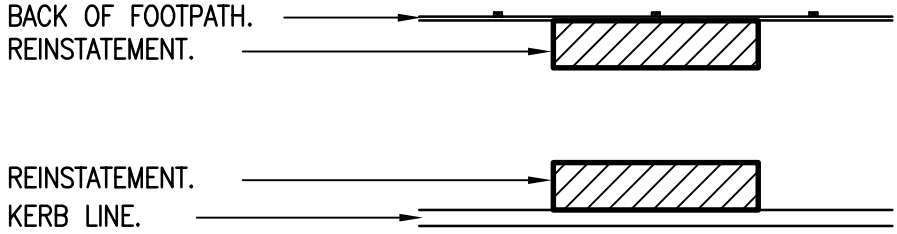

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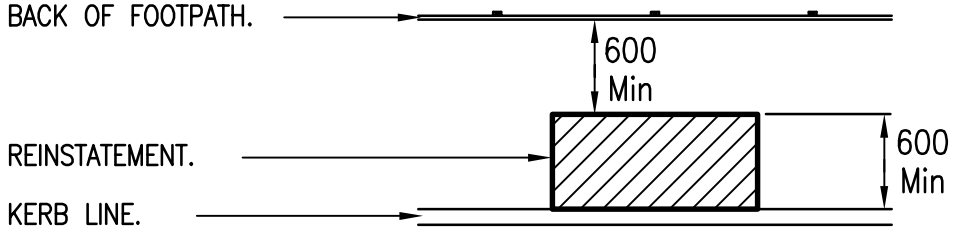
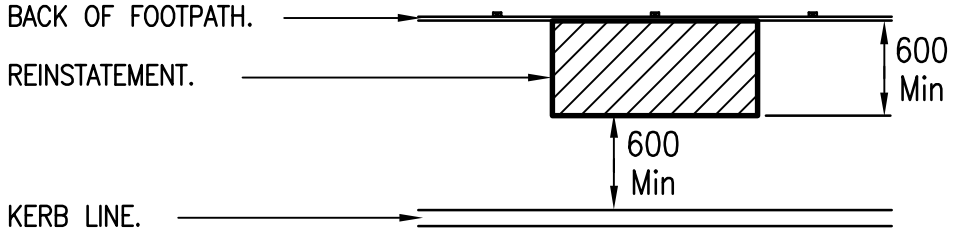
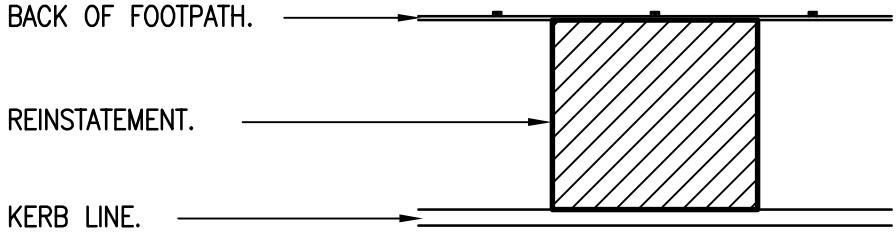


APPROVED
(Excluding Arterial & Principal roads & CBD areas or Footpath Surfaces less than 5years old)



APPROVED
(Excluding Arterial & Principal roads & CBD areas or Footpath Surfaces less than 5years old)



APPROVED

NELSON CITY COUNCIL

FOOTPATH SURFACE REINSTATEMENT

INFRASTRUCTURAL ASSETS

APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 804

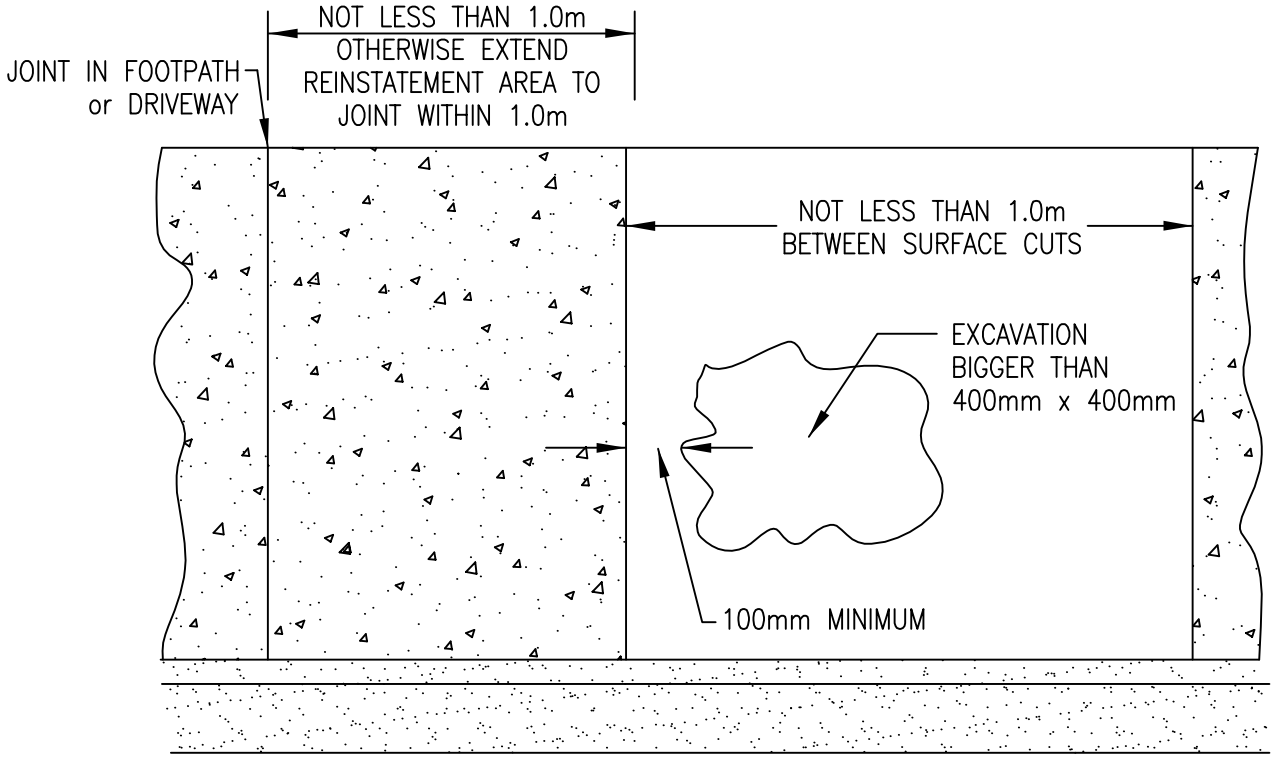


Fig 1 – REINSTATEMENT OF CONCRETE PATH OR DRIVEWAY

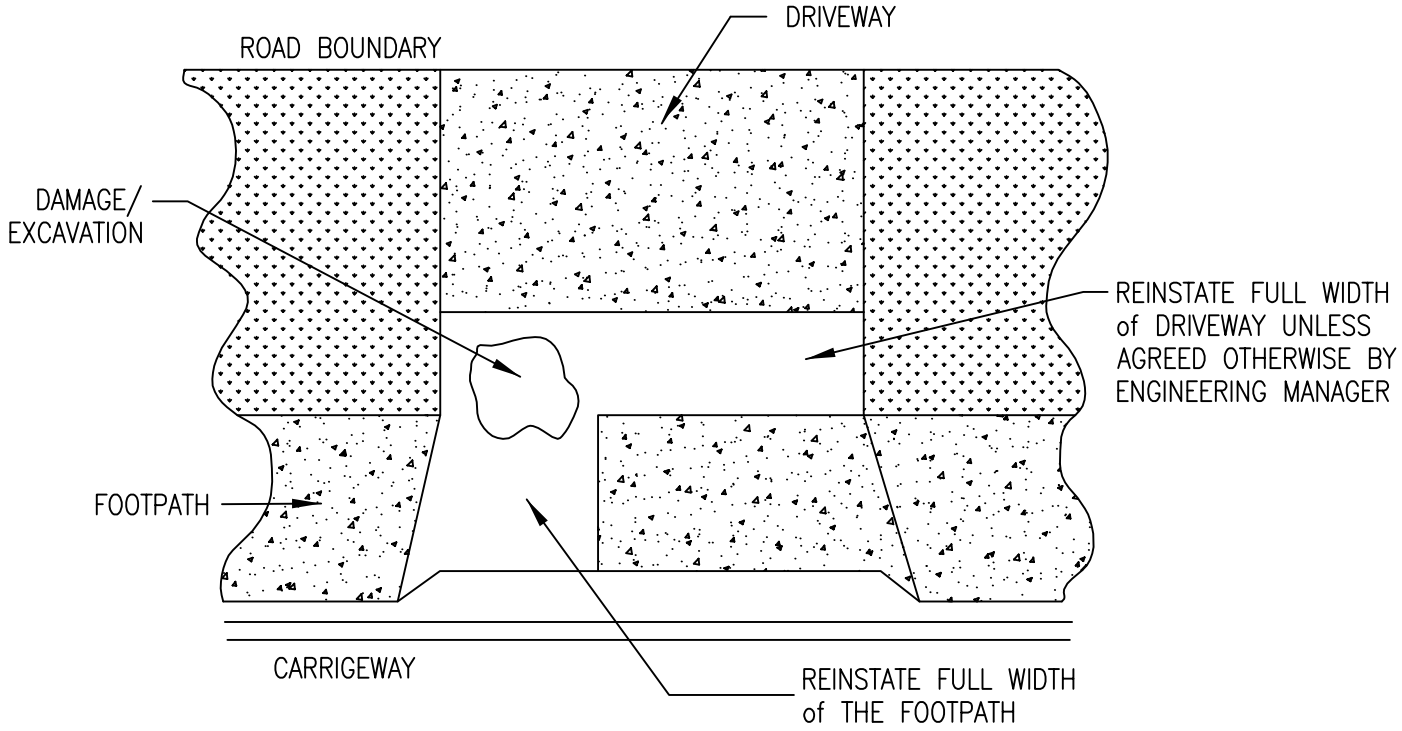


Fig 2 – EXCAVATION IN FOOTPATH OR DRIVEWAY

NELSON CITY COUNCIL	FOOTPATH SURFACE REINSTATEMENT	
	INFRASTRUCTURAL ASSETS APPROVED SENIOR EXECUTIVE INFRASTRUCTURE	29/07/2010 DATE
		SD 805

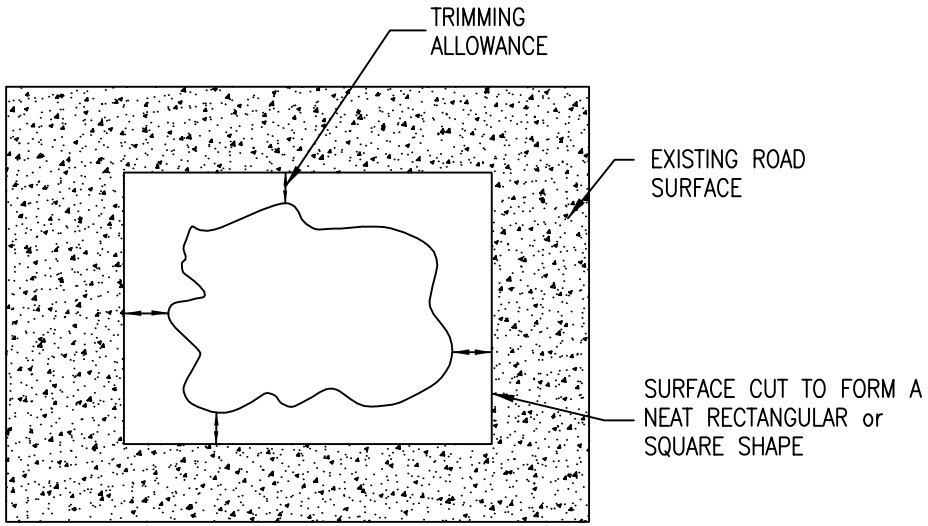


Fig 1 – FINISHING OF IRREGULAR SHAPED EXCAVATIONS

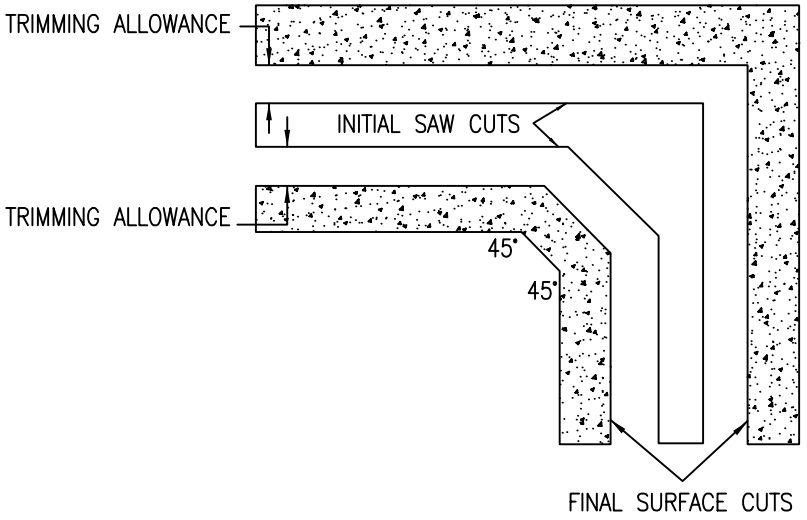


Fig 2 – TRENCH EXCAVATION WITH CORNERS

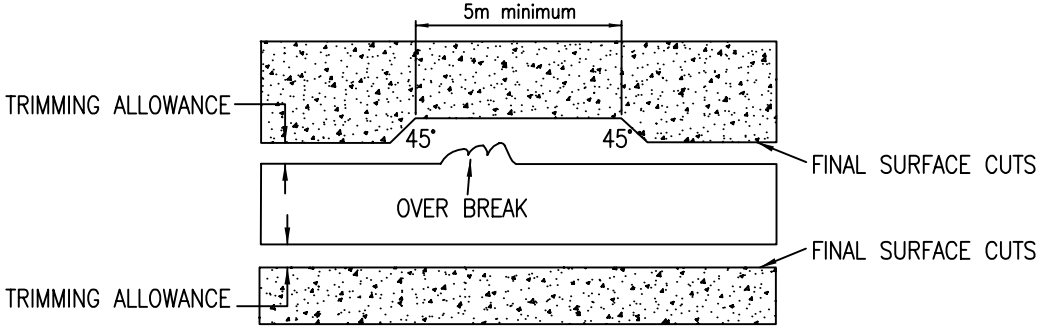


Fig 3 – PARALLEL CUTTING OF JOINTS

NOTE:

1. A MINIMUM TRIMMING ALLOWANCE OF 150mm

2. TOTAL LENGTH OF OVER BREAK OF THE TRENCH MUST NOT EXCEED 10% OF ITS LENGTH. THE LENGTH OF TRIM AT ANY SINGLE SECTION OF OVER BREAK SHOULD NOT BE LESS THAN 5m (See Fig. 3). THE PURPOSE OF THESE REQUIREMENTS IS TO AVOID AN UNDESIRABLE VISUAL IMPACT.

NELSON CITY COUNCIL

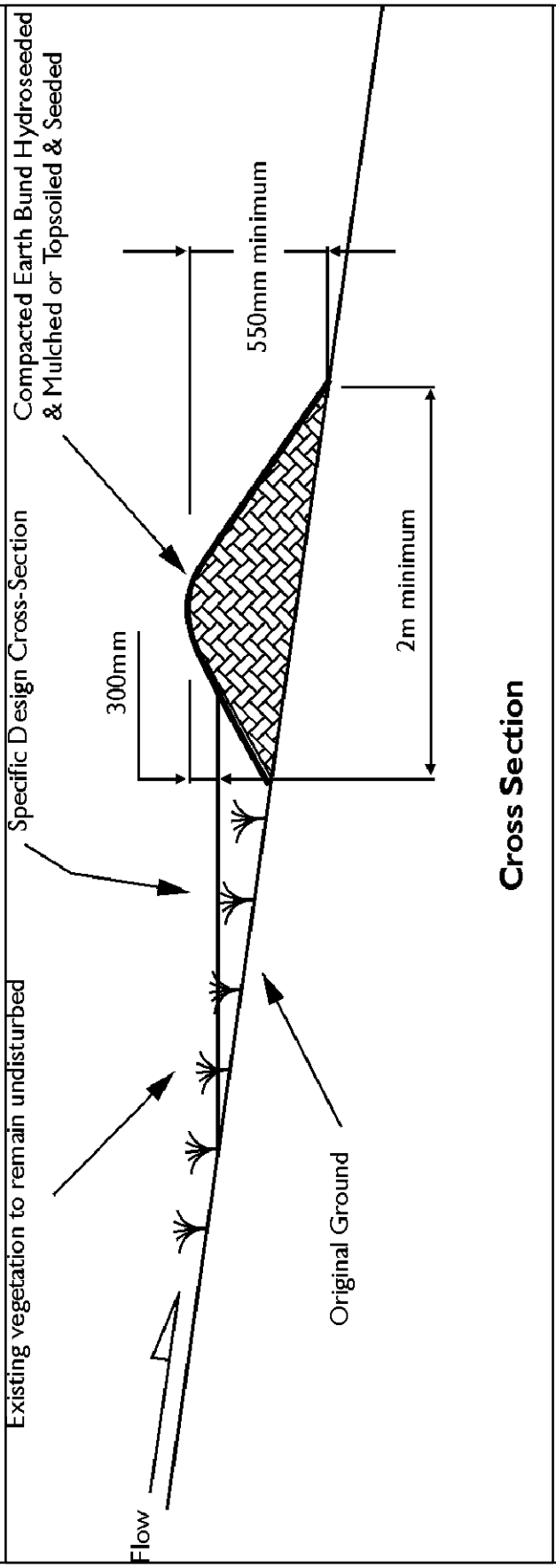
SURFACE REINSTATEMENT
TRIMMING ALLOWANCE

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE ..... DATE

SD 806



NELSON CITY COUNCIL

CLEARWATER RUNOFF DIVERSION BUND

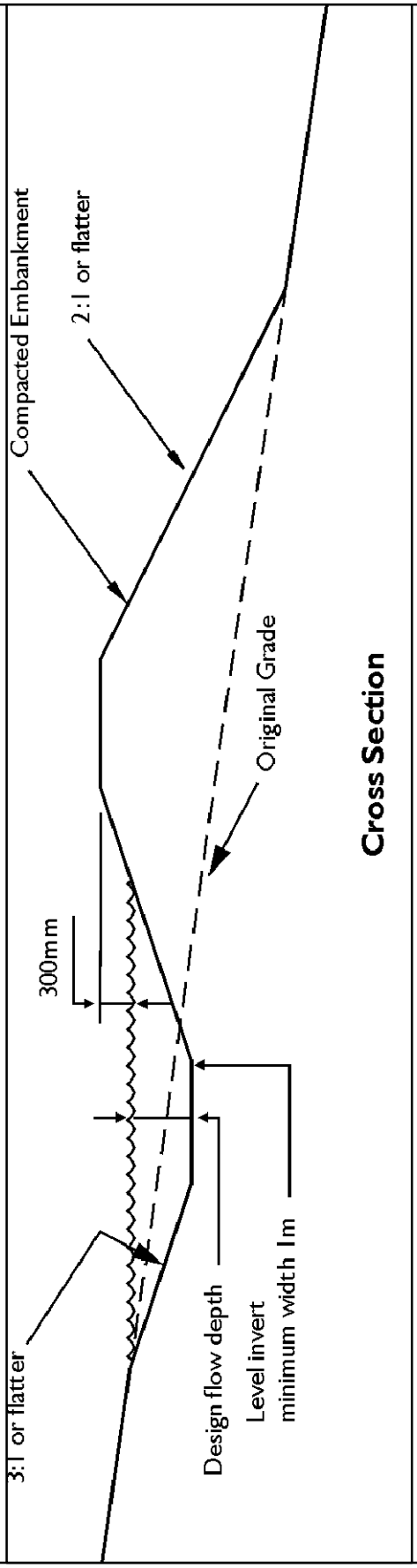
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 901



Cross Section

NELSON CITY COUNCIL

RUNOFF DIVERSION CHANNEL

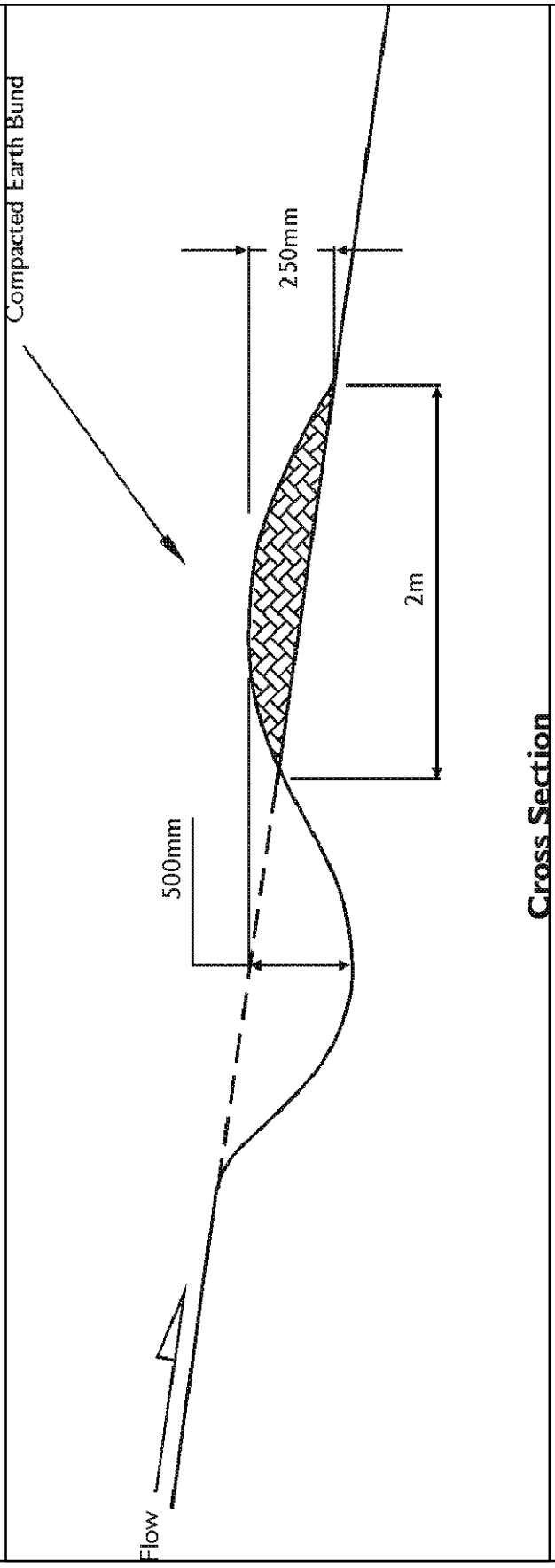
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 902



NELSON CITY COUNCIL

CONTOUR DRAIN

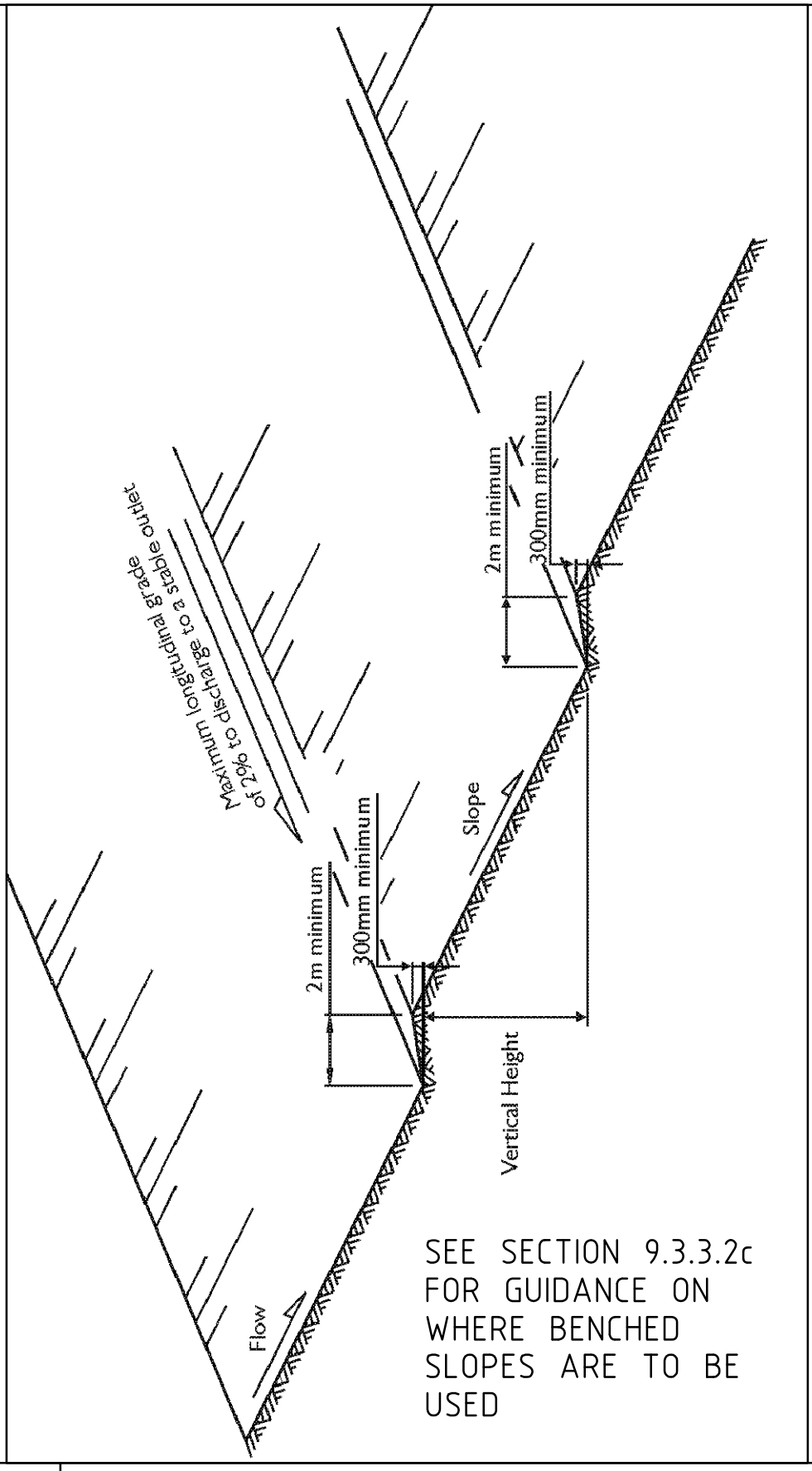
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 903



SEE SECTION 9.3.3.2c FOR GUIDANCE ON WHERE BENCHED SLOPES ARE TO BE USED

NELSON CITY COUNCIL

BENCHED SLOPE

INFRASTRUCTURAL ASSETS

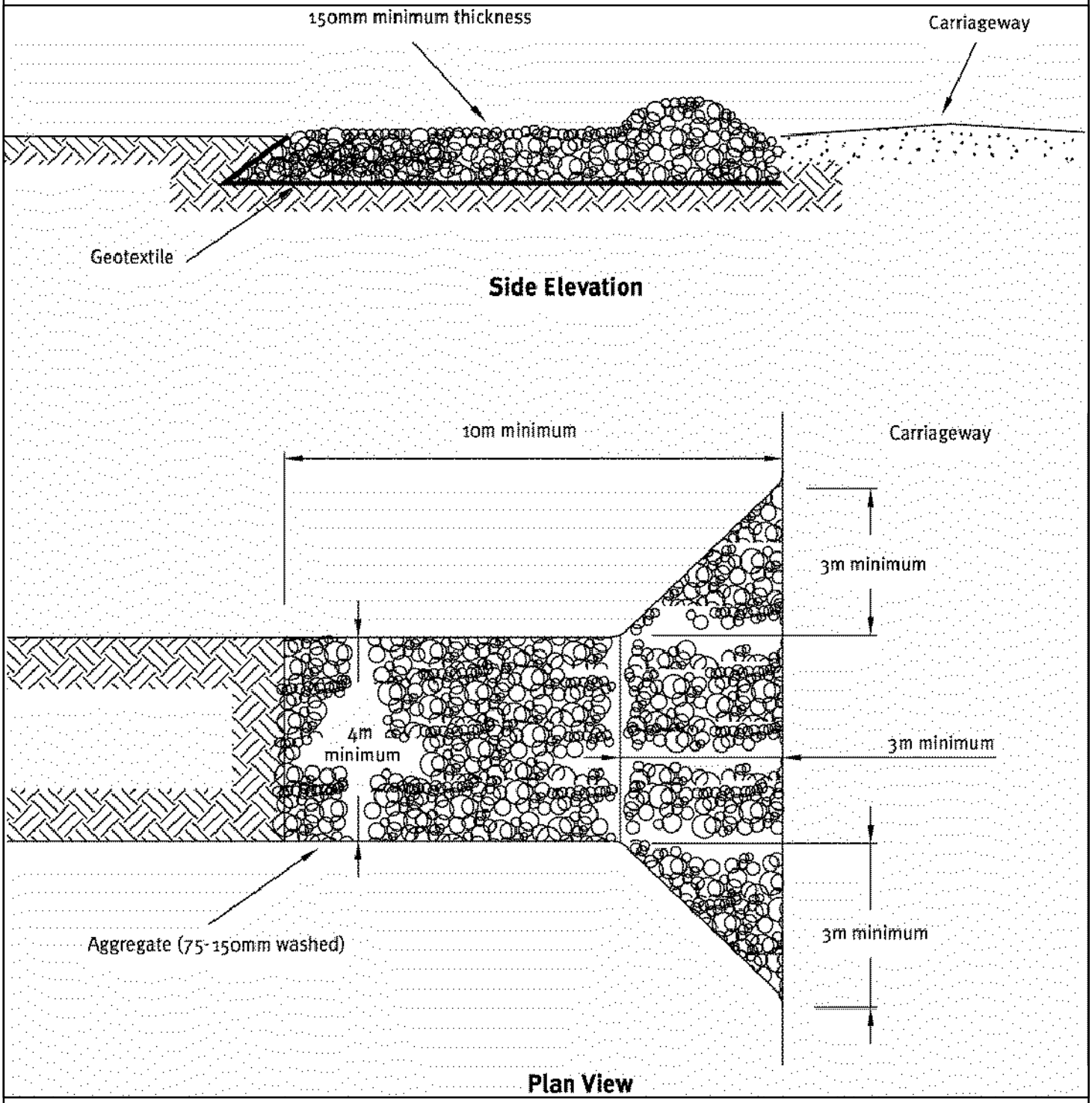
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 904



NELSON CITY COUNCIL

STABILISED CONSTRUCTION ENTRANCE

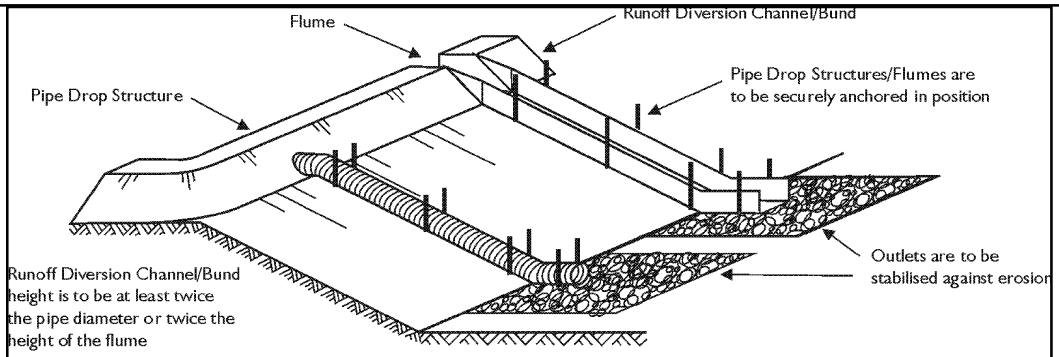
INFRASTRUCTURAL ASSETS

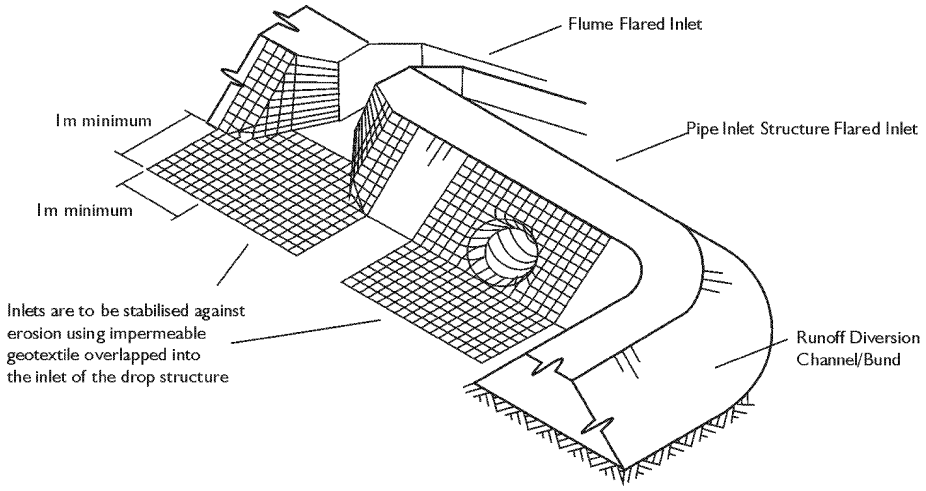
APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 905





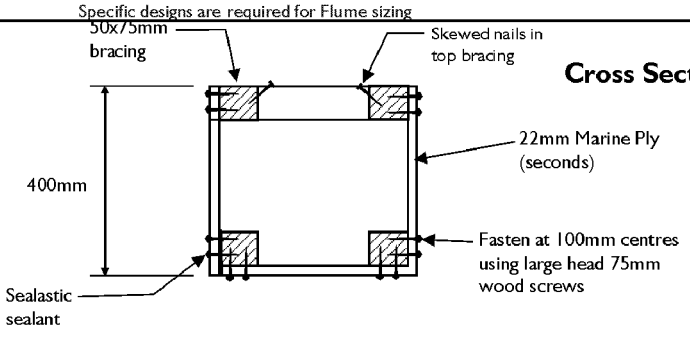
Design Criteria for Pipe Drop Structure

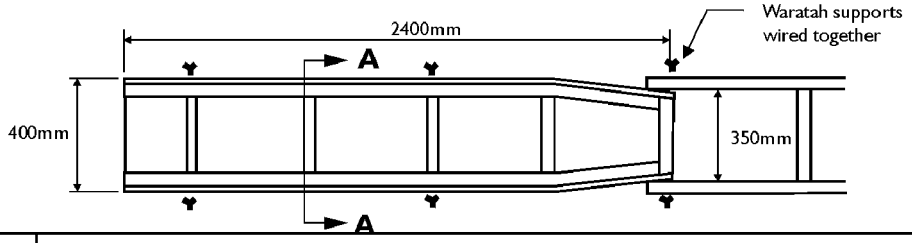
Pipe Diameter (mm)	Maximum Catchment area (ha)
150	0.05
350	0.20
450	0.60
500	1.00
600	1.00

Specific designs are required for Flume sizing

Flume detail
For catchments up to 1ha

Cross Section A-A





NELSON CITY COUNCIL

PIPE DROP STRUCTURE

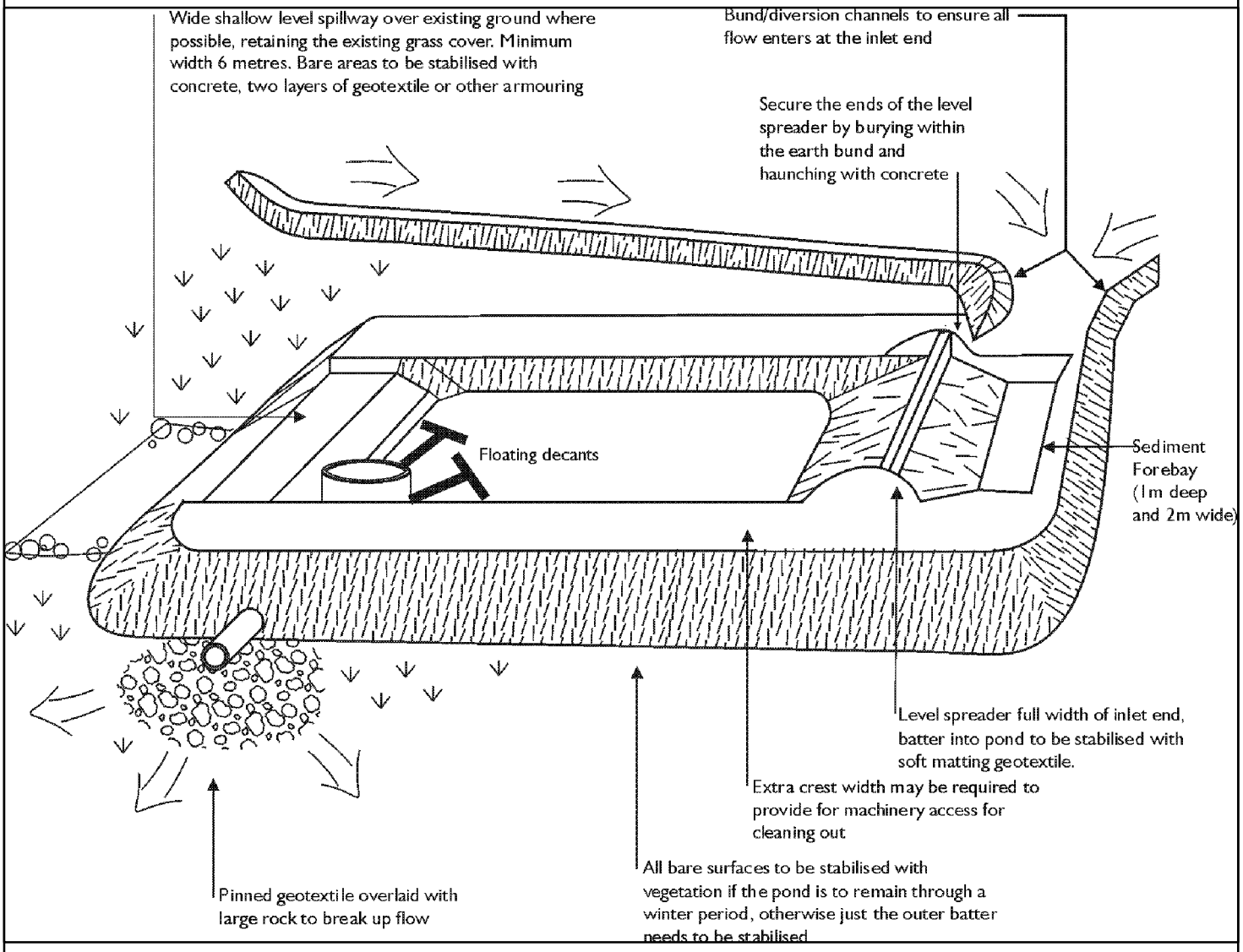
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 906



NELSON CITY COUNCIL

SEDIMENT RETENTION POND

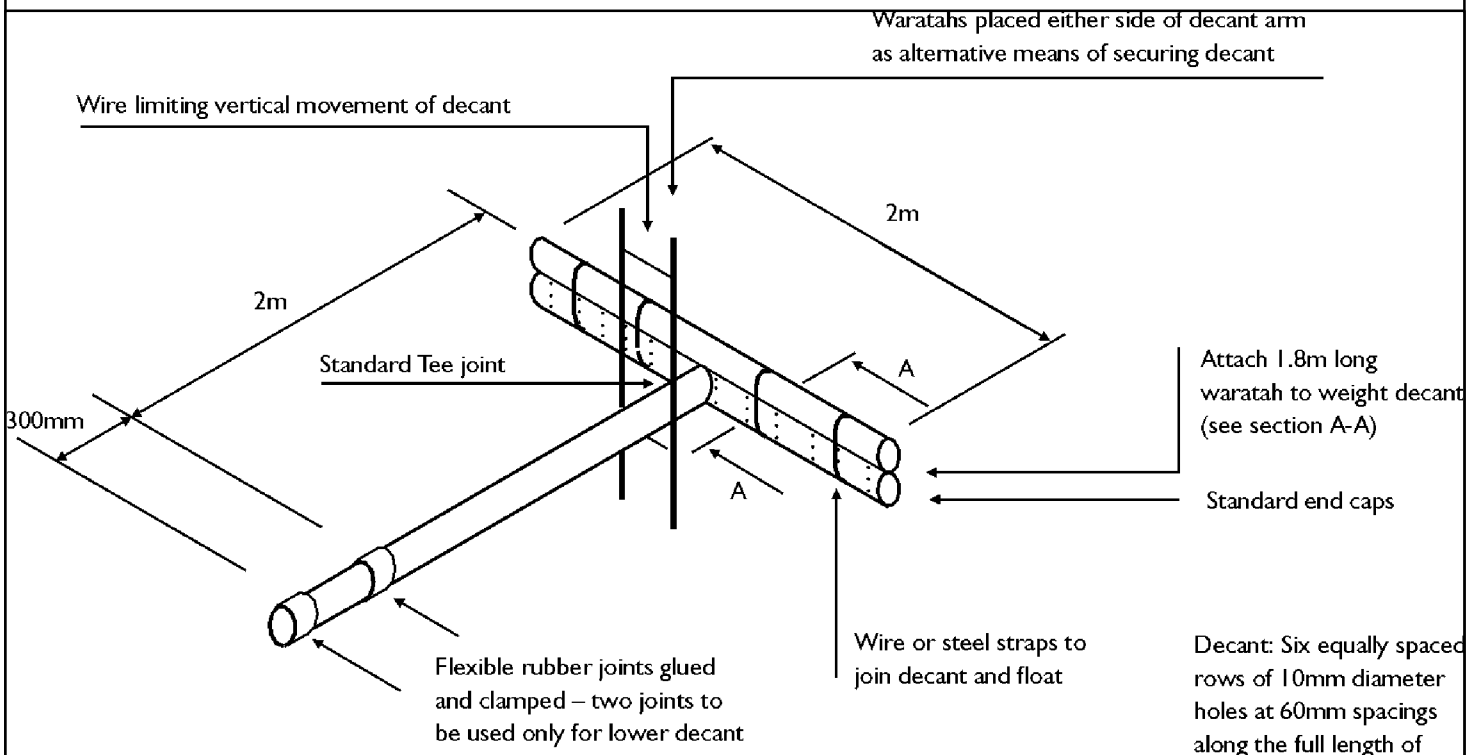
INFRASTRUCTURAL ASSETS

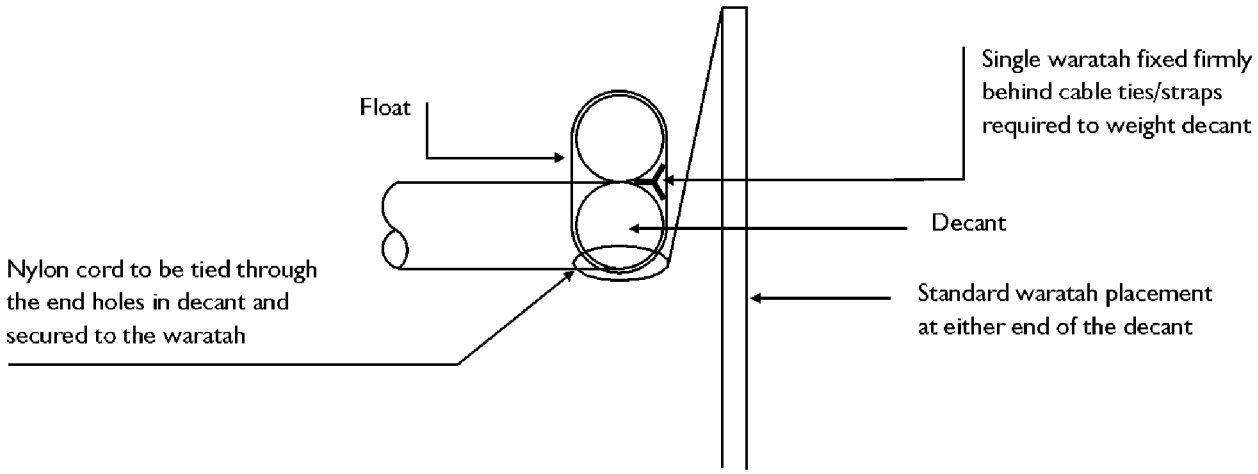
APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 907





Section A-A

NELSON CITY COUNCIL

DECANT DETAIL

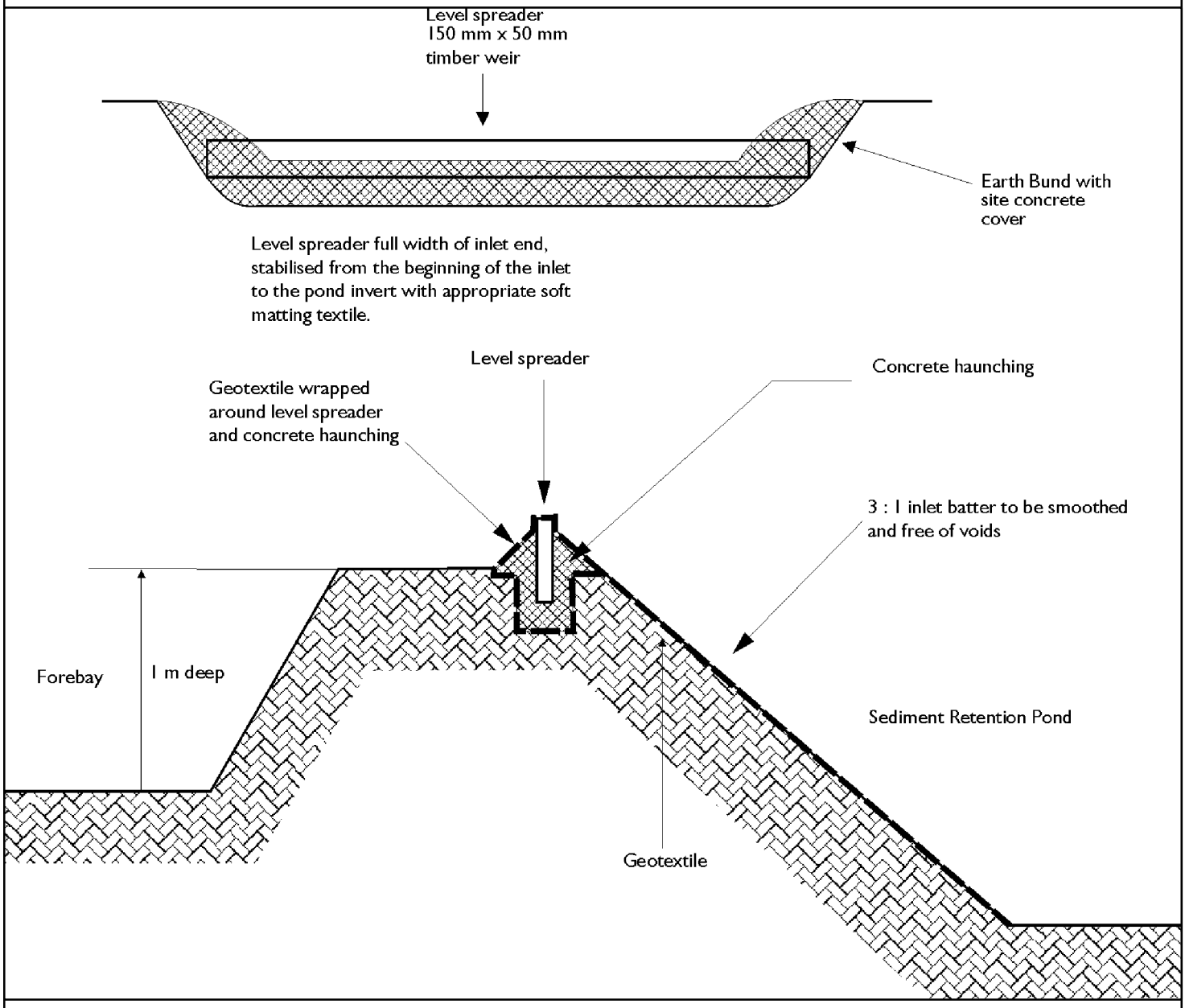
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 908



NELSON CITY COUNCIL

LEVEL SPREADER

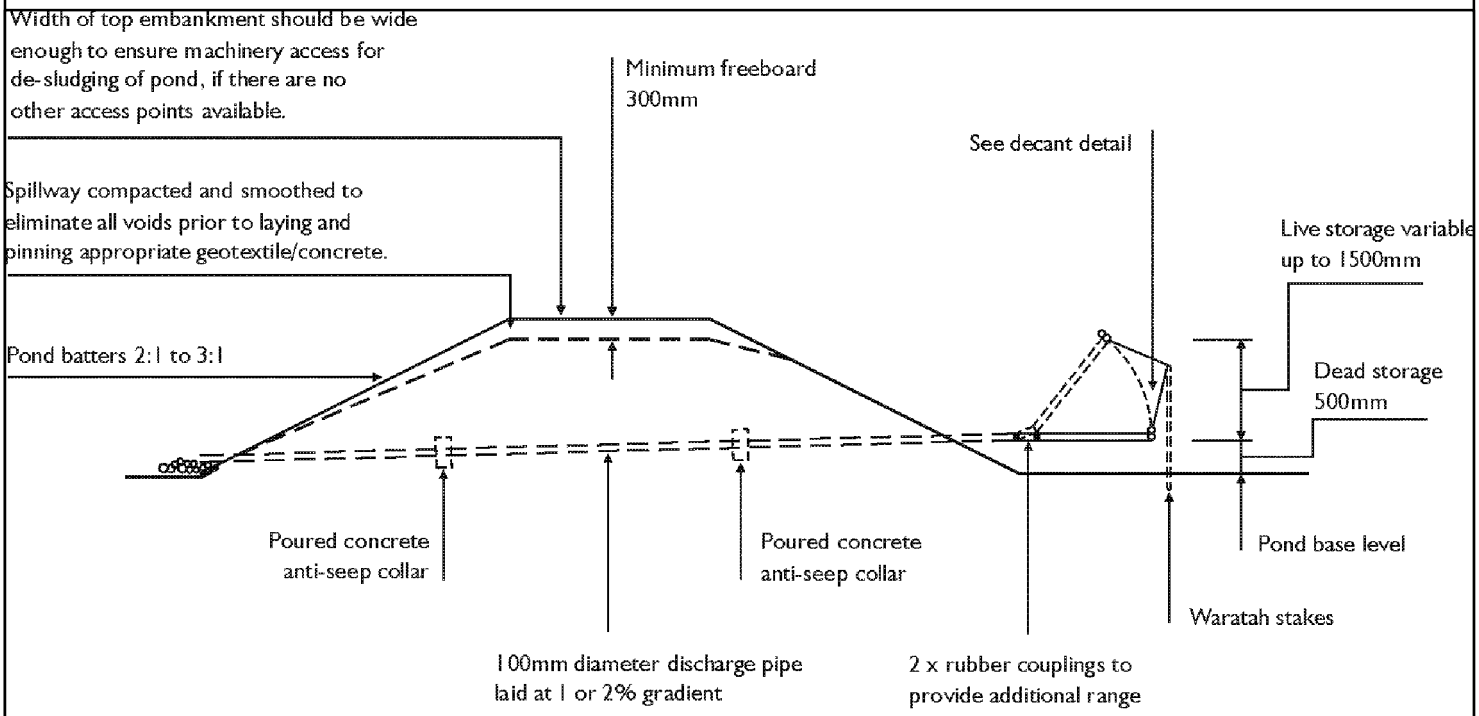
INFRASTRUCTURAL ASSETS

APPROVED

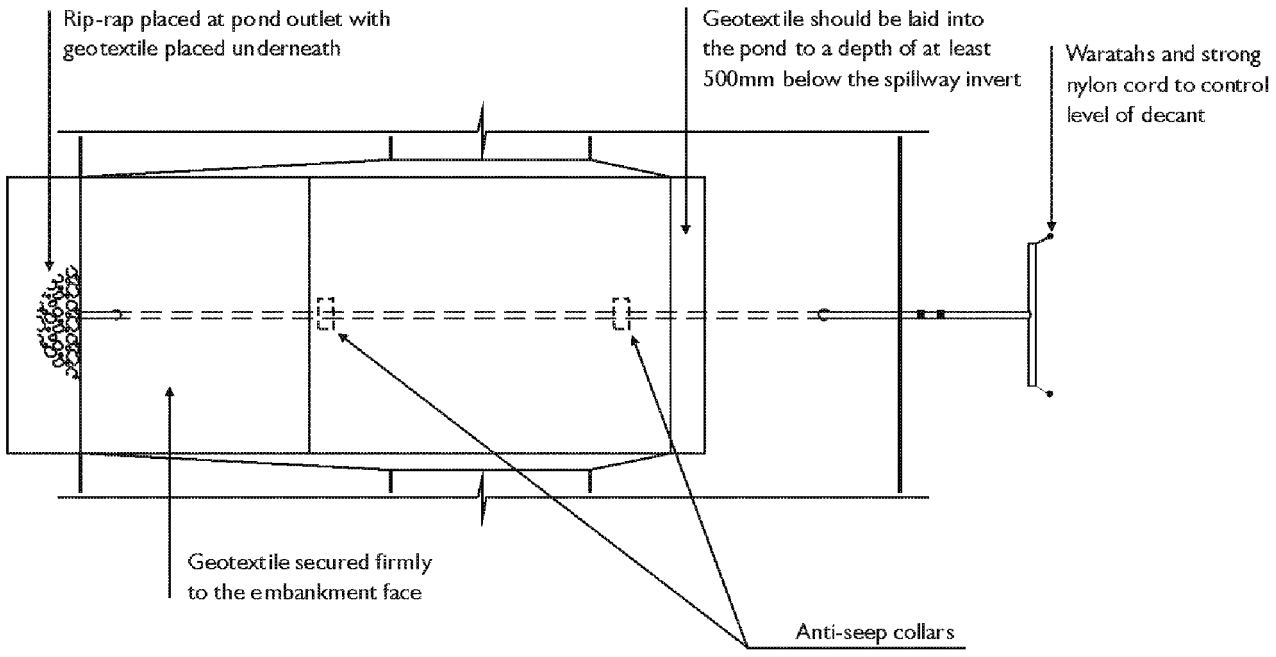
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 909



Cross Section



Plan

NELSON CITY COUNCIL

SEDIMENT RETENTION POND FOR CATCHMENTS UP TO 1.5ha

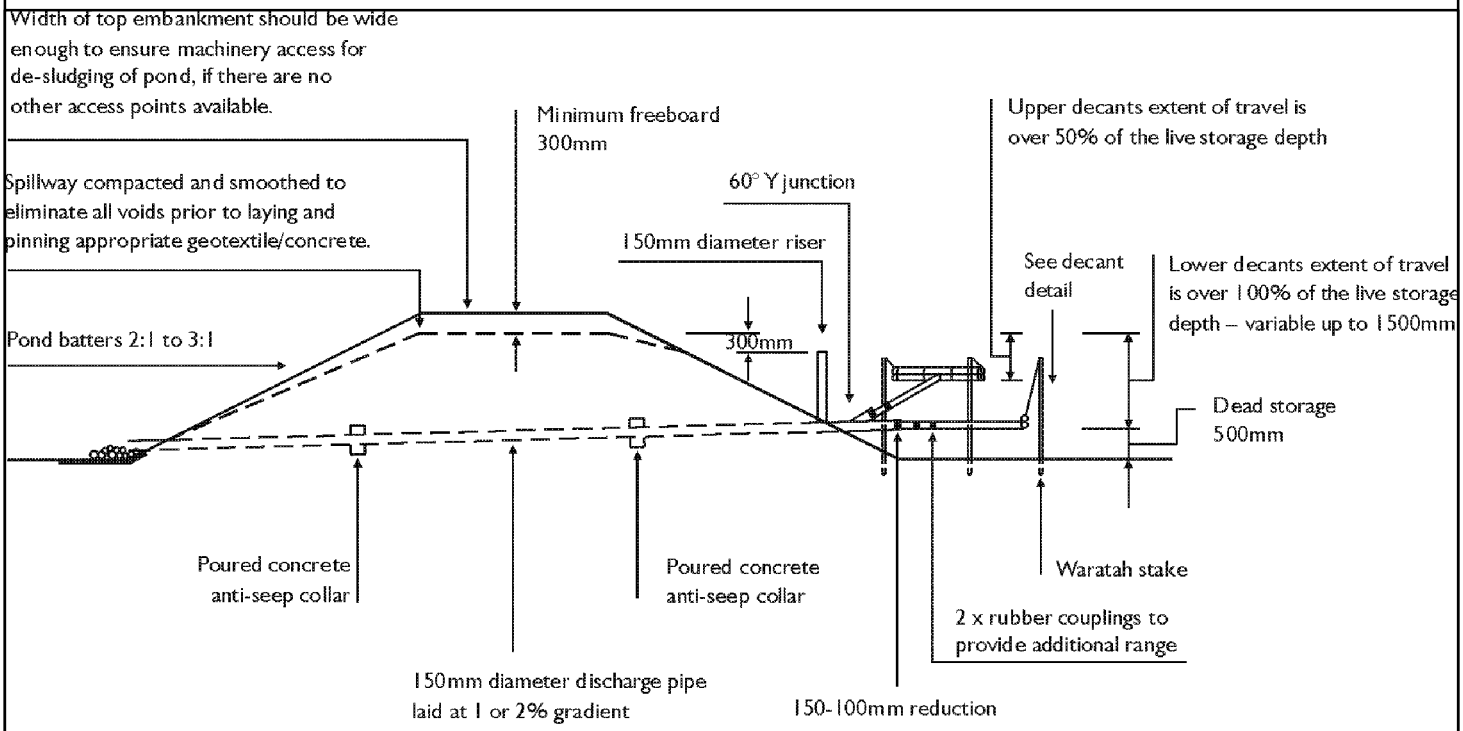
INFRASTRUCTURAL ASSETS

APPROVED

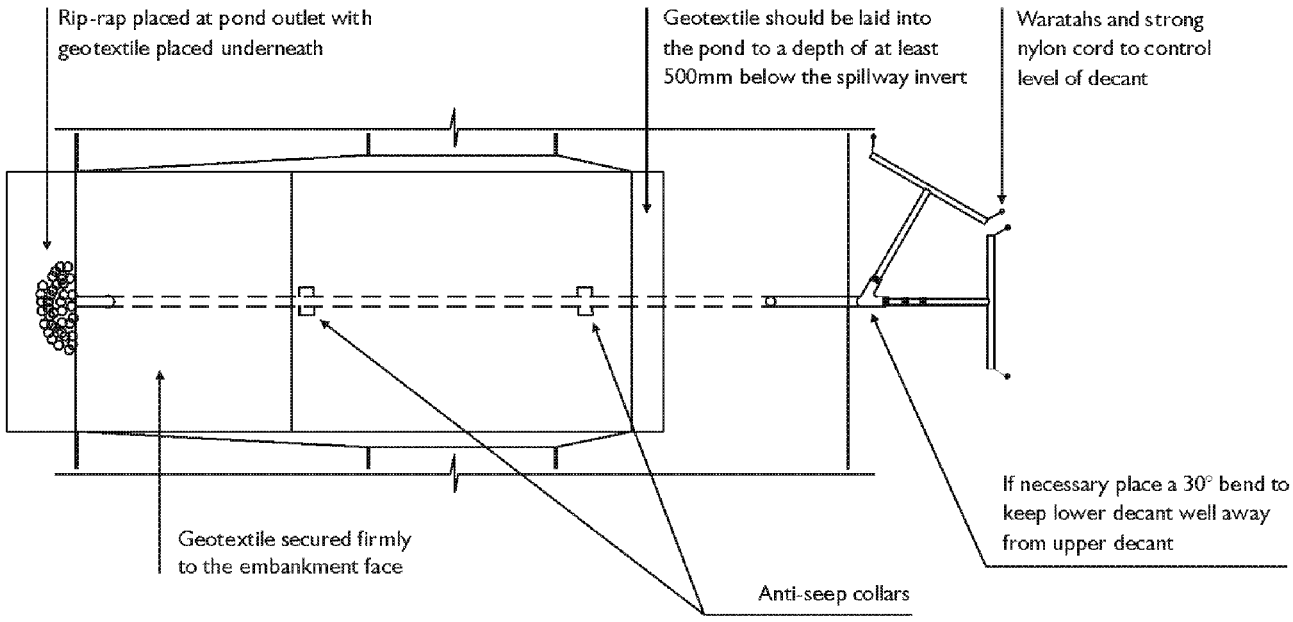
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 910



Cross Section



Plan

NELSON CITY COUNCIL

SEDIMENT RETENTION POND FOR CATCHMENTS BETWEEN 1.5ha and 3ha

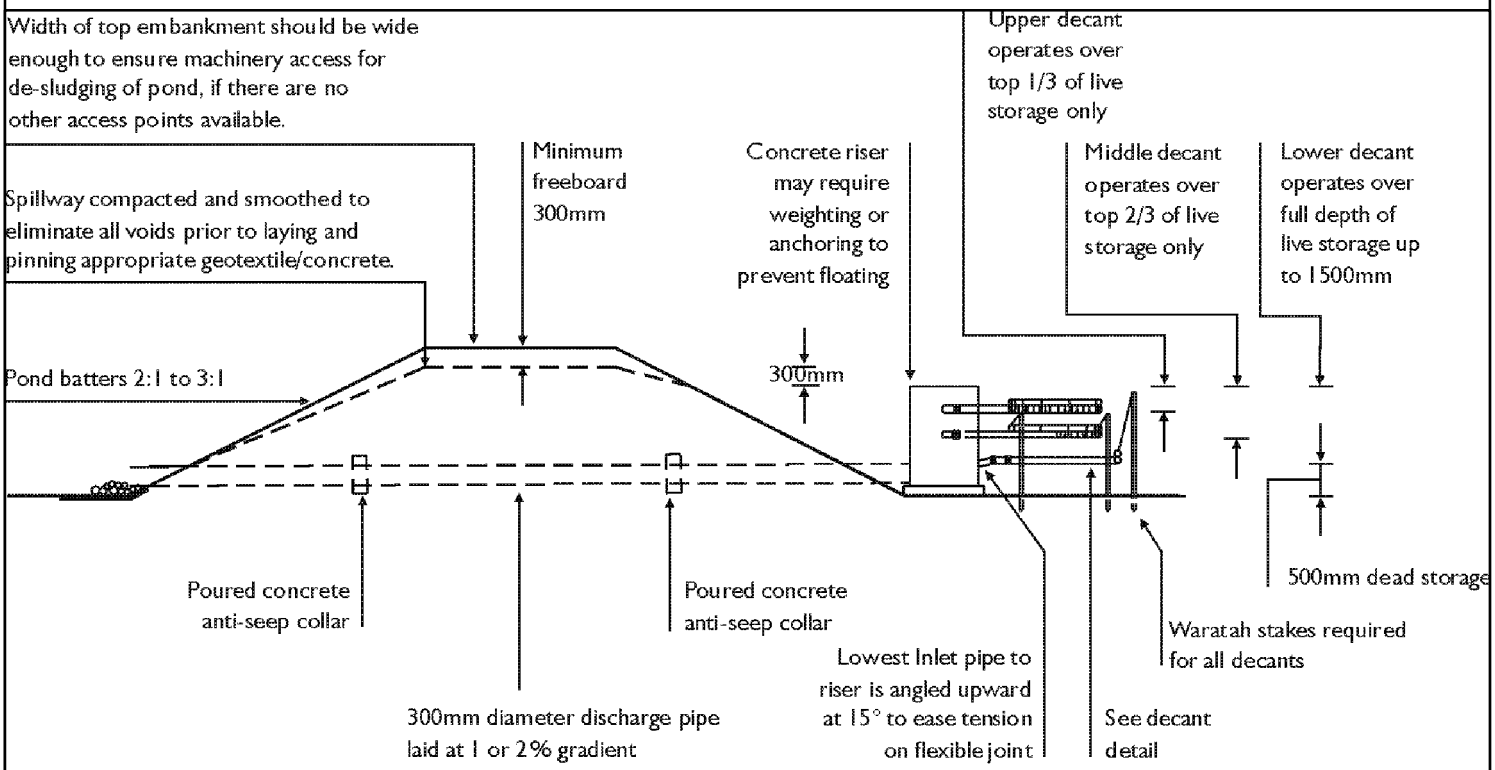
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 911



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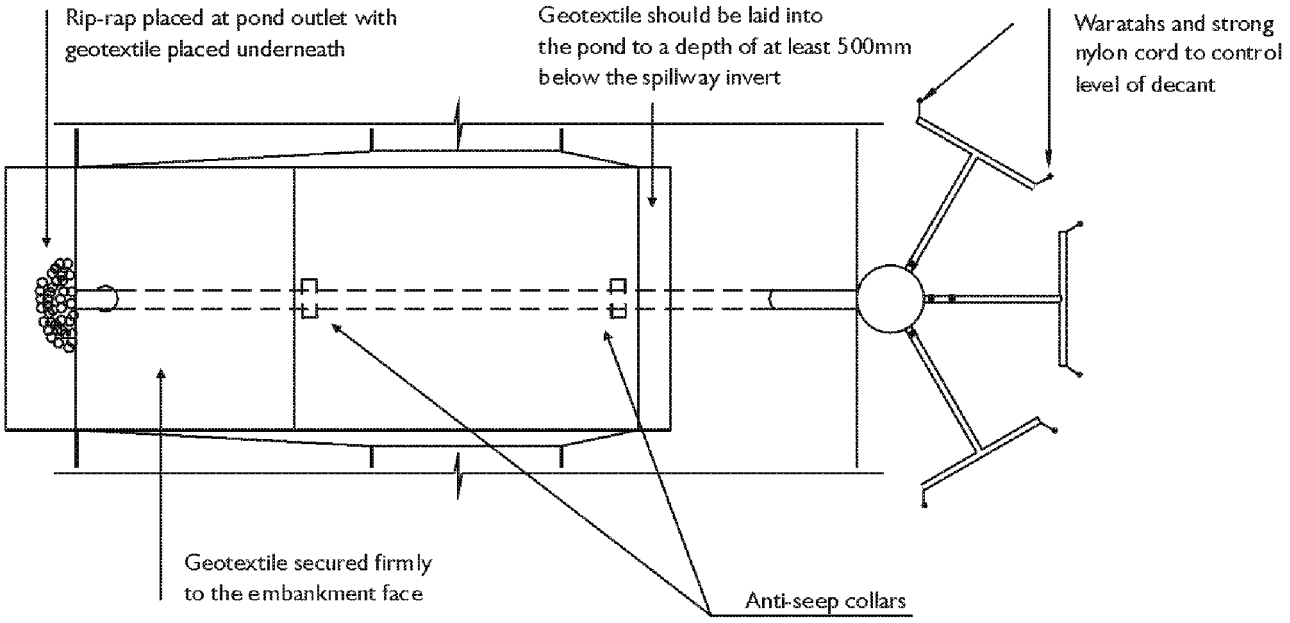


Plan

NELSON CITY COUNCIL

SEDIMENT RETENTION POND FOR CATCHMENTS BETWEEN 3ha and 5ha

INFRASTRUCTURAL ASSETS

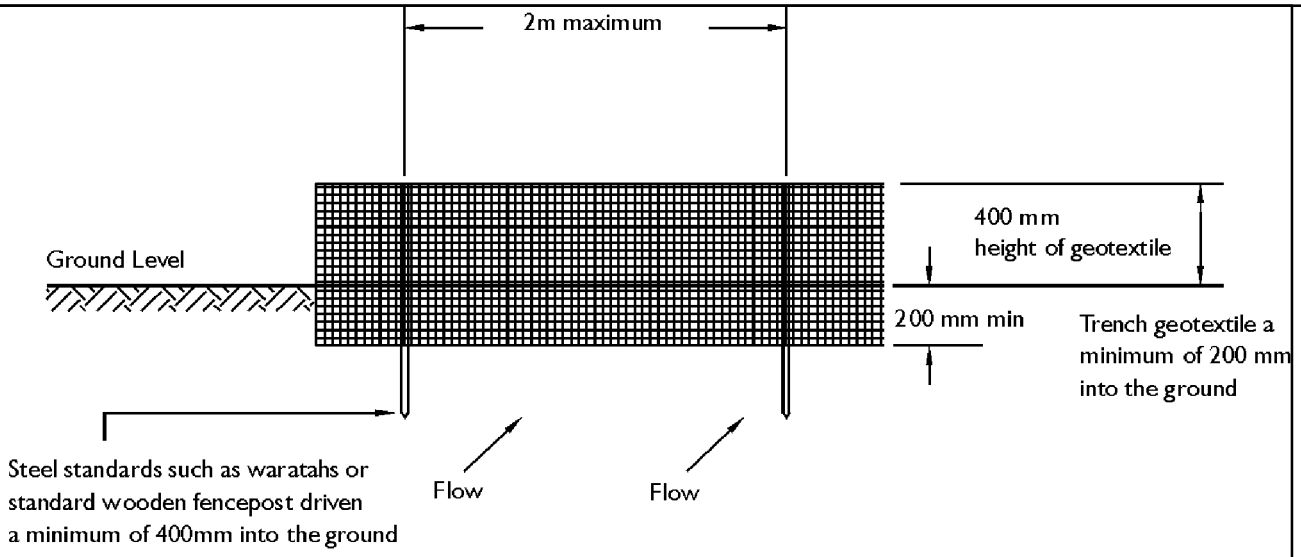
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

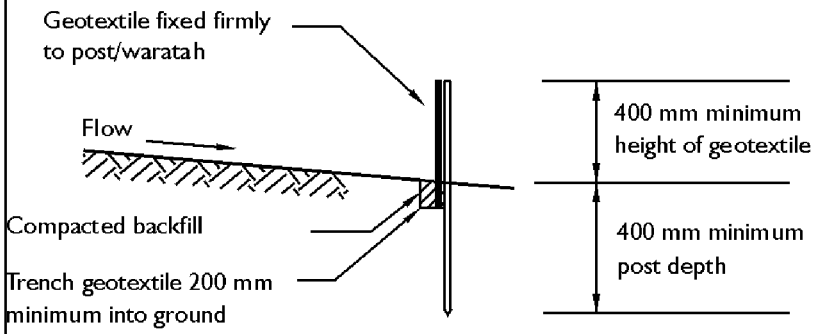
29/07/2010

DATE

SD 912



Elevation



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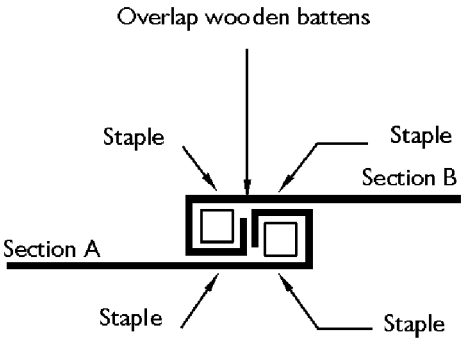
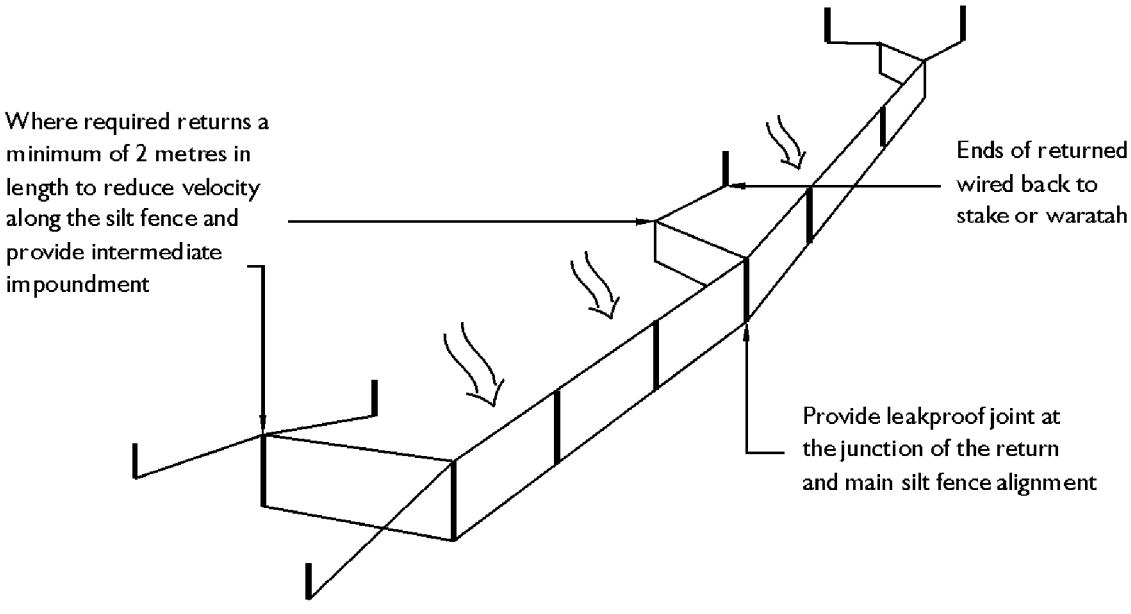


Standard Fabric Joint



Perspective View

NELSON CITY COUNCIL

SILT FENCE

INFRASTRUCTURAL ASSETS

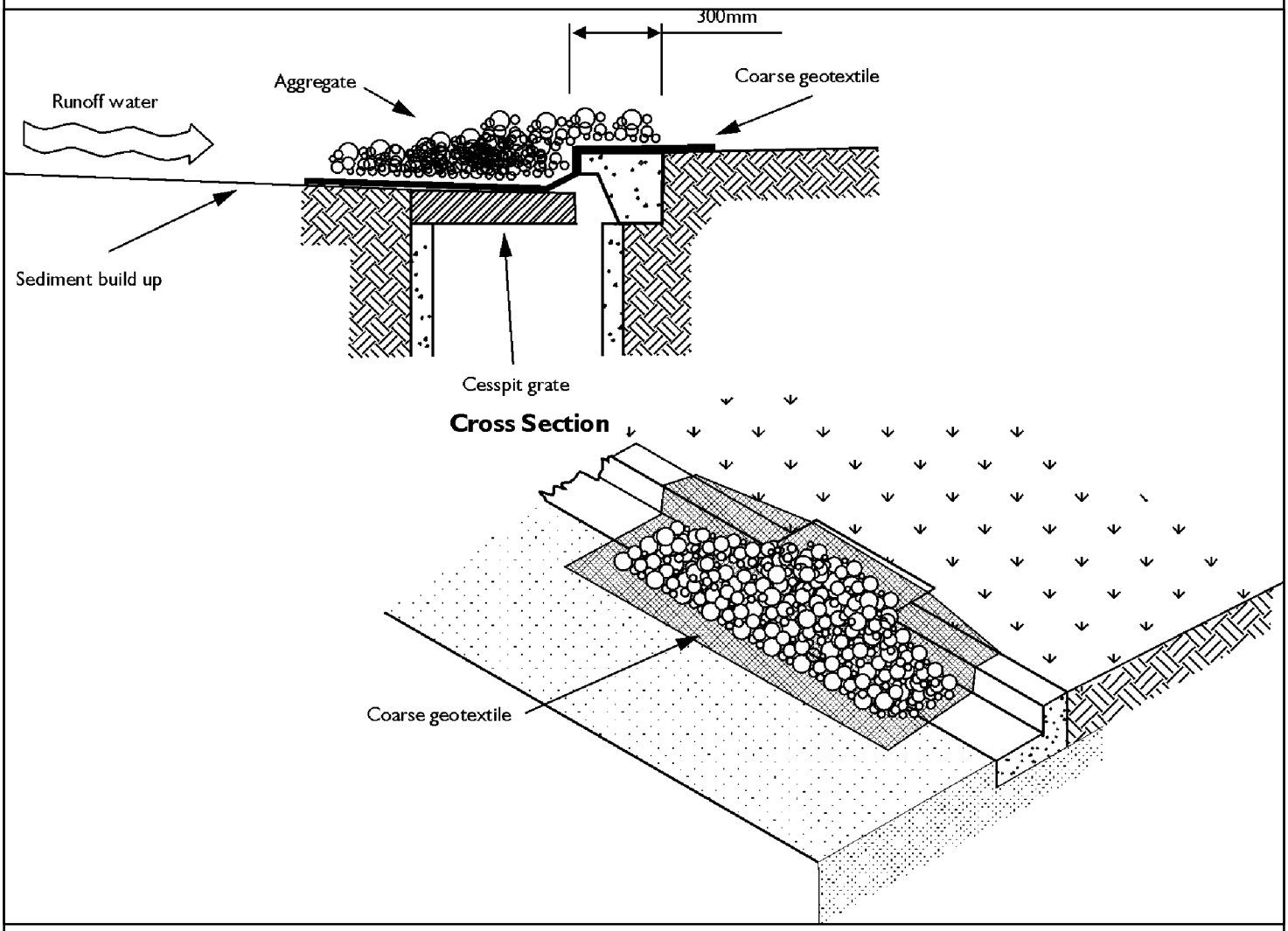
APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 913



NELSON CITY COUNCIL

STORMWATER INLET PROTECTION

INFRASTRUCTURAL ASSETS

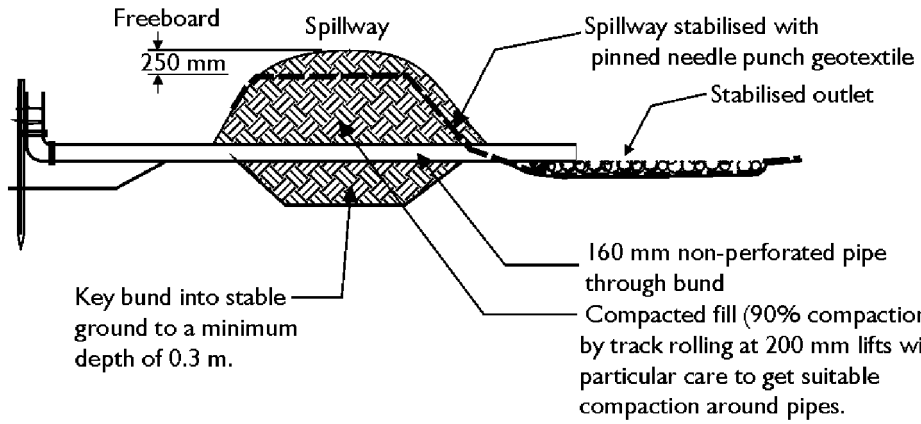
APPROVED

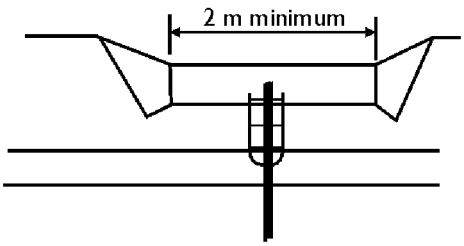
29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

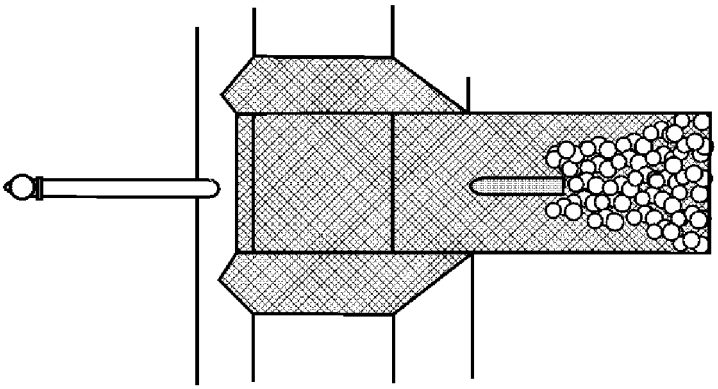
SD 914

Cross Section





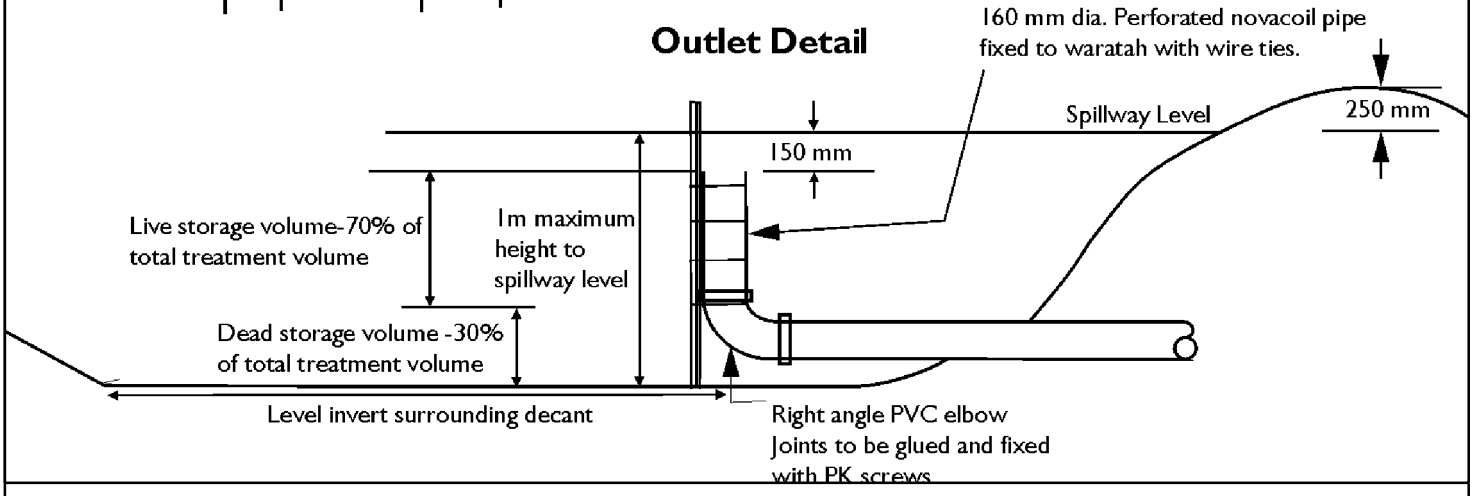
Elevation



Plan

Decanting Earth Bund
Maximum Catchment 0.3 ha
2% volume
($60m^3$ per 0.3 ha catchment)

Outlet Detail



NELSON CITY COUNCIL

EARTH BUND

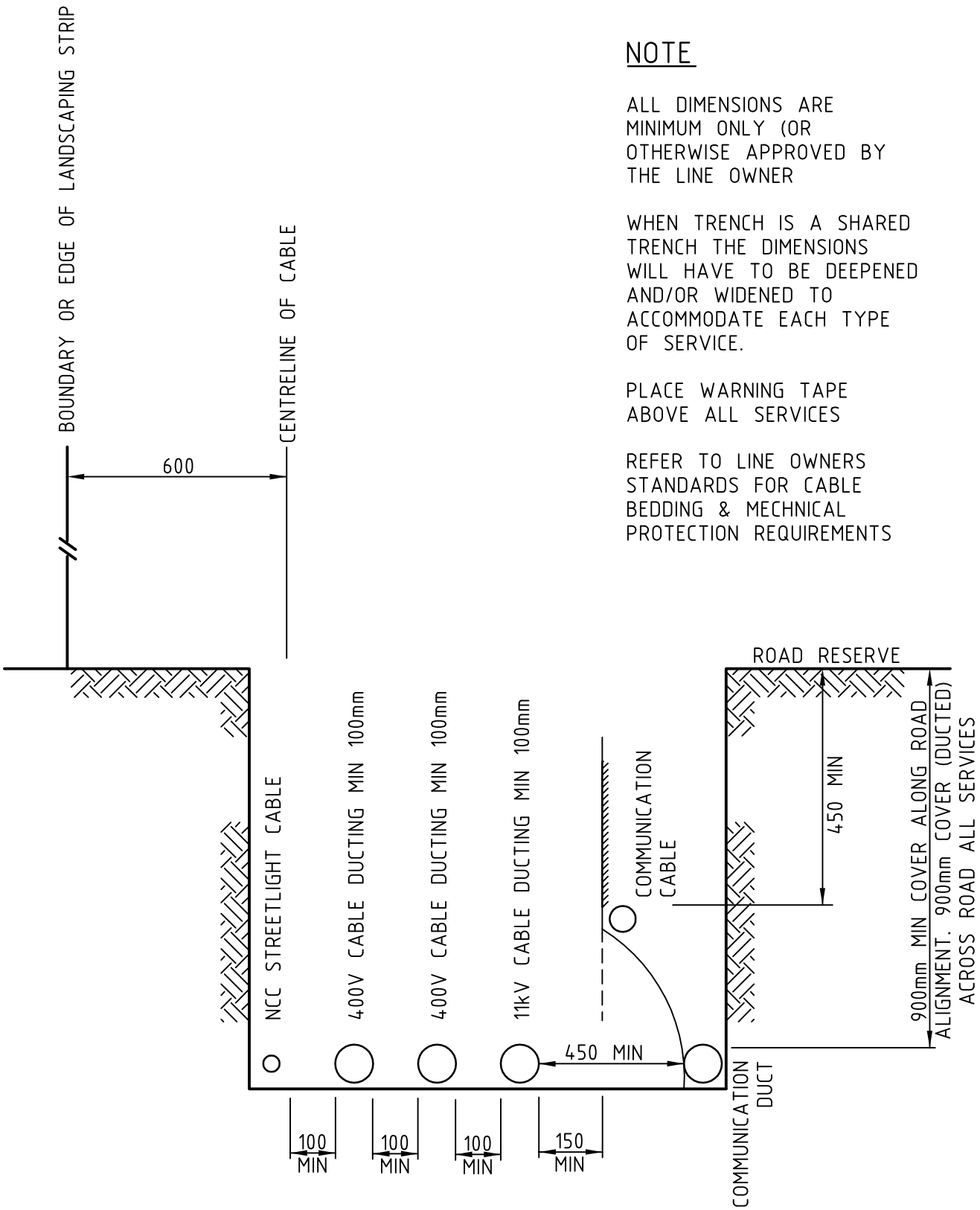
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 915



NELSON CITY COUNCIL

UTILITY RETICULATION ROAD RESERVE (DEPTH, LOCATION & CLEARANCES)

INFRASTRUCTURAL ASSETS

APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010

DATE

SD 1001

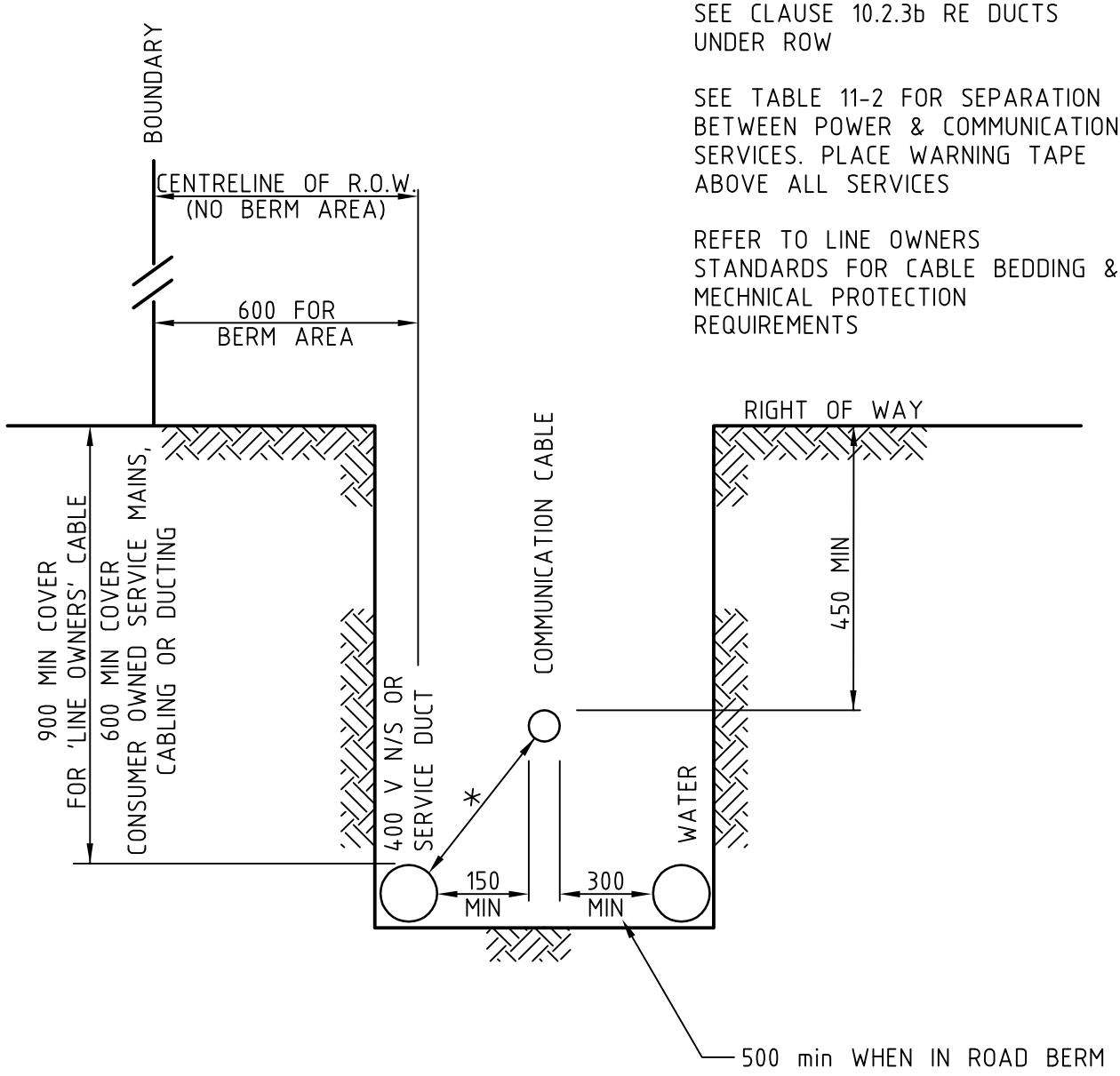
NOTE

* ANY CABLE WHETHER OWNED BY A LINE OPERATOR or CUSTOMER MUST BE SEGREGATED FROM A TELEPHONE CABLE BY MIN 450mm IF UNSCREENED or 150mm IF SCREENED

SEE CLAUSE 10.2.3b RE DUCTS UNDER ROW

SEE TABLE 11-2 FOR SEPARATION BETWEEN POWER & COMMUNICATION SERVICES. PLACE WARNING TAPE ABOVE ALL SERVICES

REFER TO LINE OWNERS STANDARDS FOR CABLE BEDDING & MECHNICAL PROTECTION REQUIREMENTS



NELSON CITY COUNCIL

UTILITY RETICULATION RIGHT OF WAY (DEPTH, LOCATION & CLEARANCES)

INFRASTRUCTURAL ASSETS

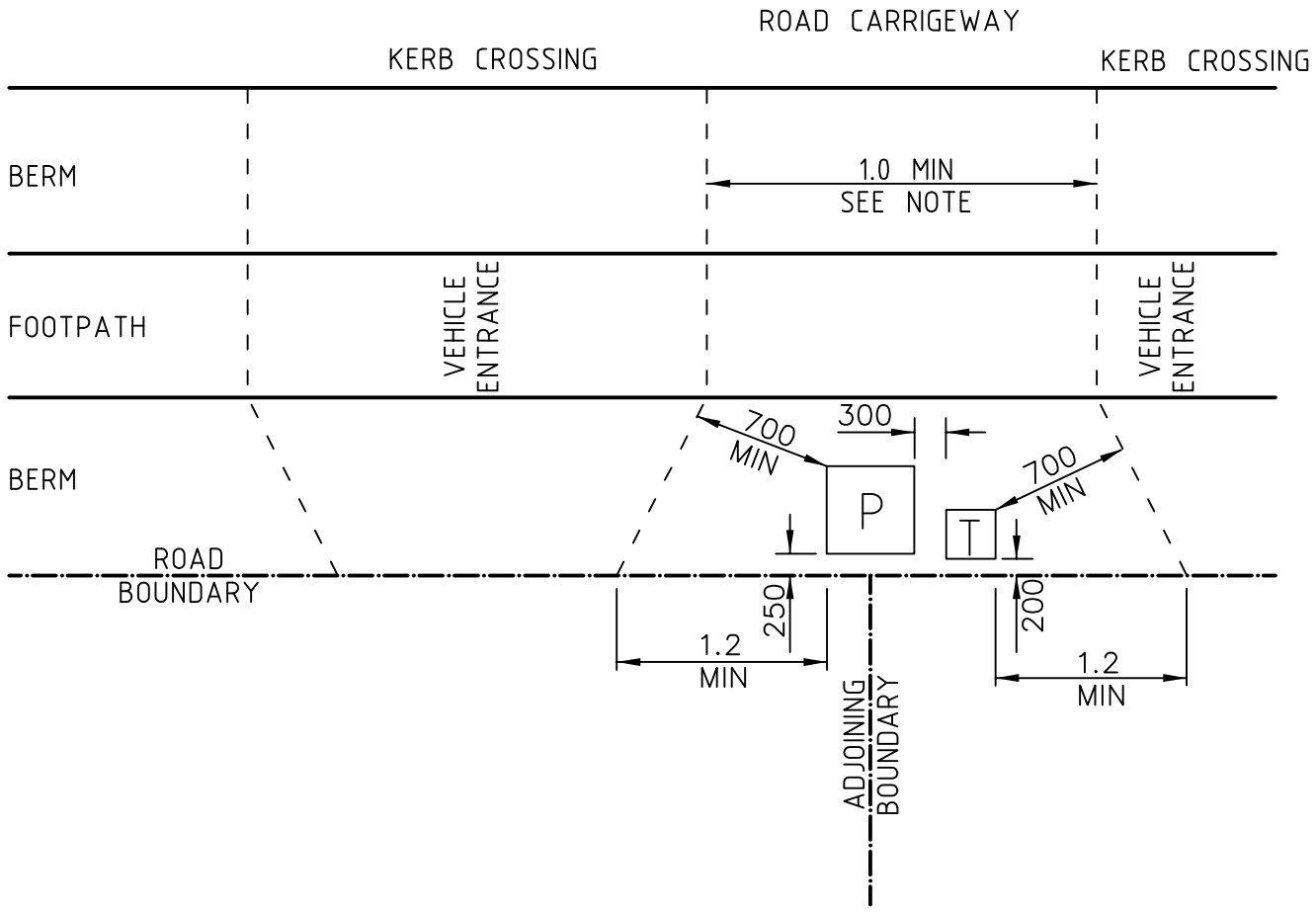
APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 1002

DRAWING NOT TO SCALE



NOTE:

VEHICLE ENTRANCES AT ADJOINING BOUNDARIES CAN BE JOINED TOGETHER AND HAVE A CONTINUOUS KERB CROSSING WHERE THERE ARE NO ABOVE GROUND UTILITY BOXES AND THE KERB CROSSING LENGTH DOES NOT EXCEED 6.0m

P = POWER BOX
T = TELECOMMUNICATION BOX

NELSON CITY COUNCIL

ABOVE GROUND UTILITY BOX LAYOUT

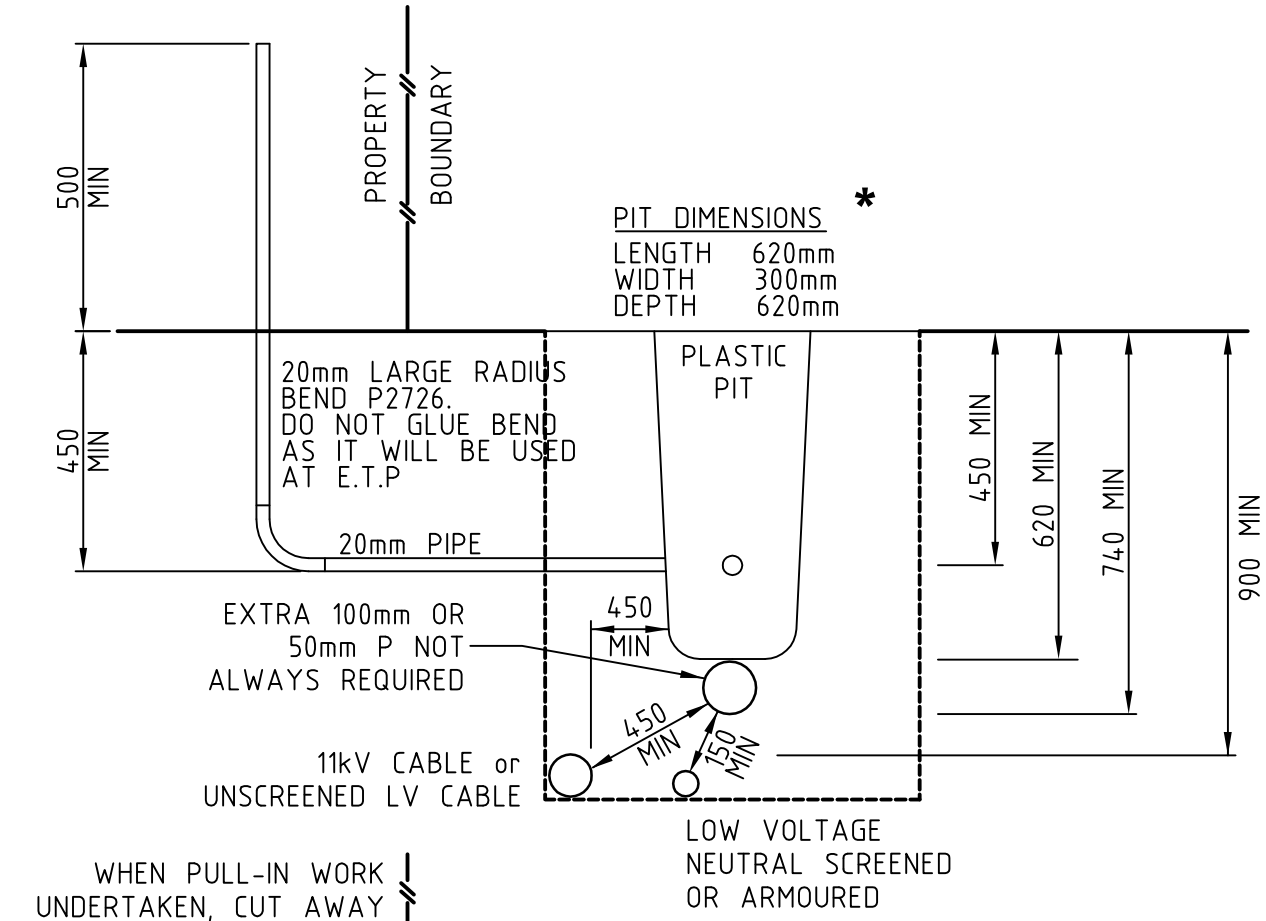
INFRASTRUCTURAL ASSETS

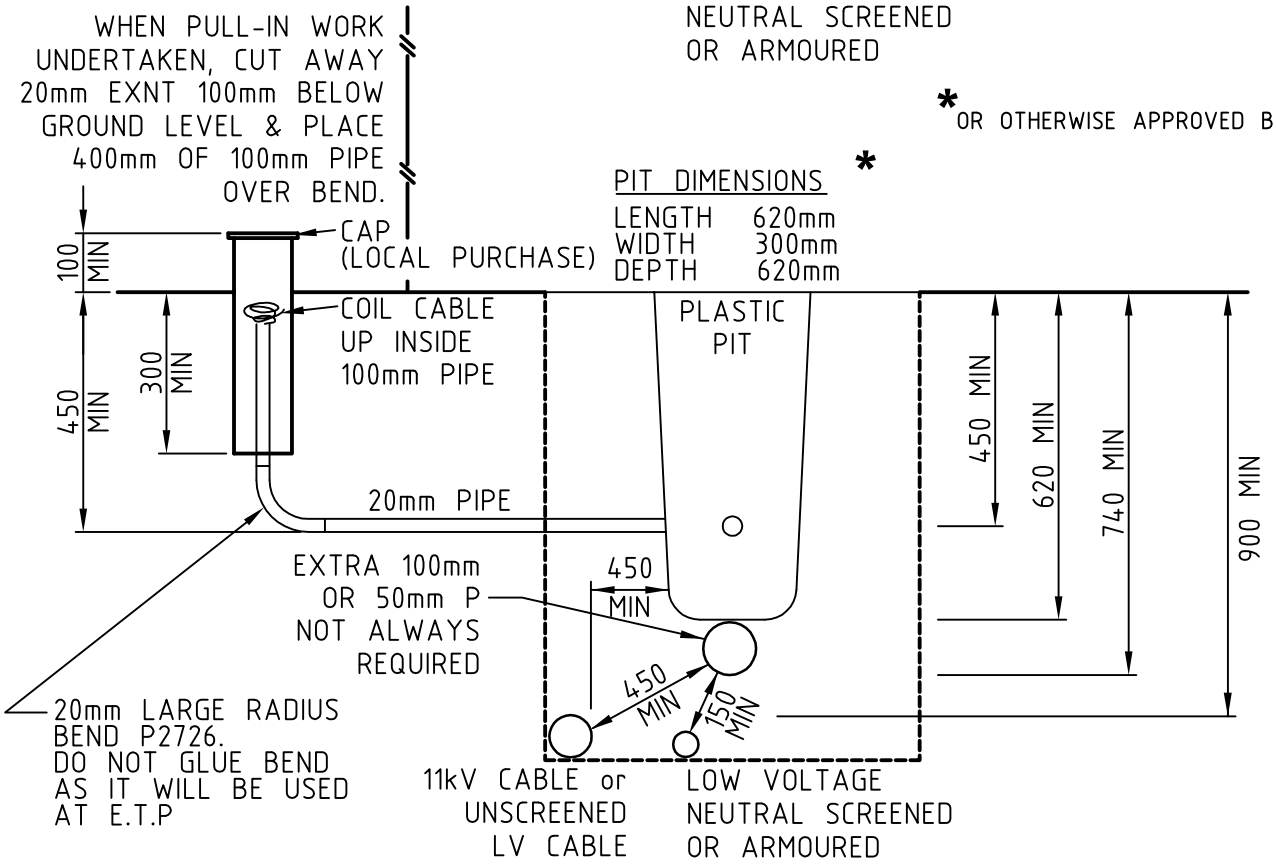
APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 1003





* OR OTHERWISE APPROVED BY LINE OWNER

NELSON CITY COUNCIL

TELECOMMUNICATION SERVICE PIT DEPTHS & CLEARANCES

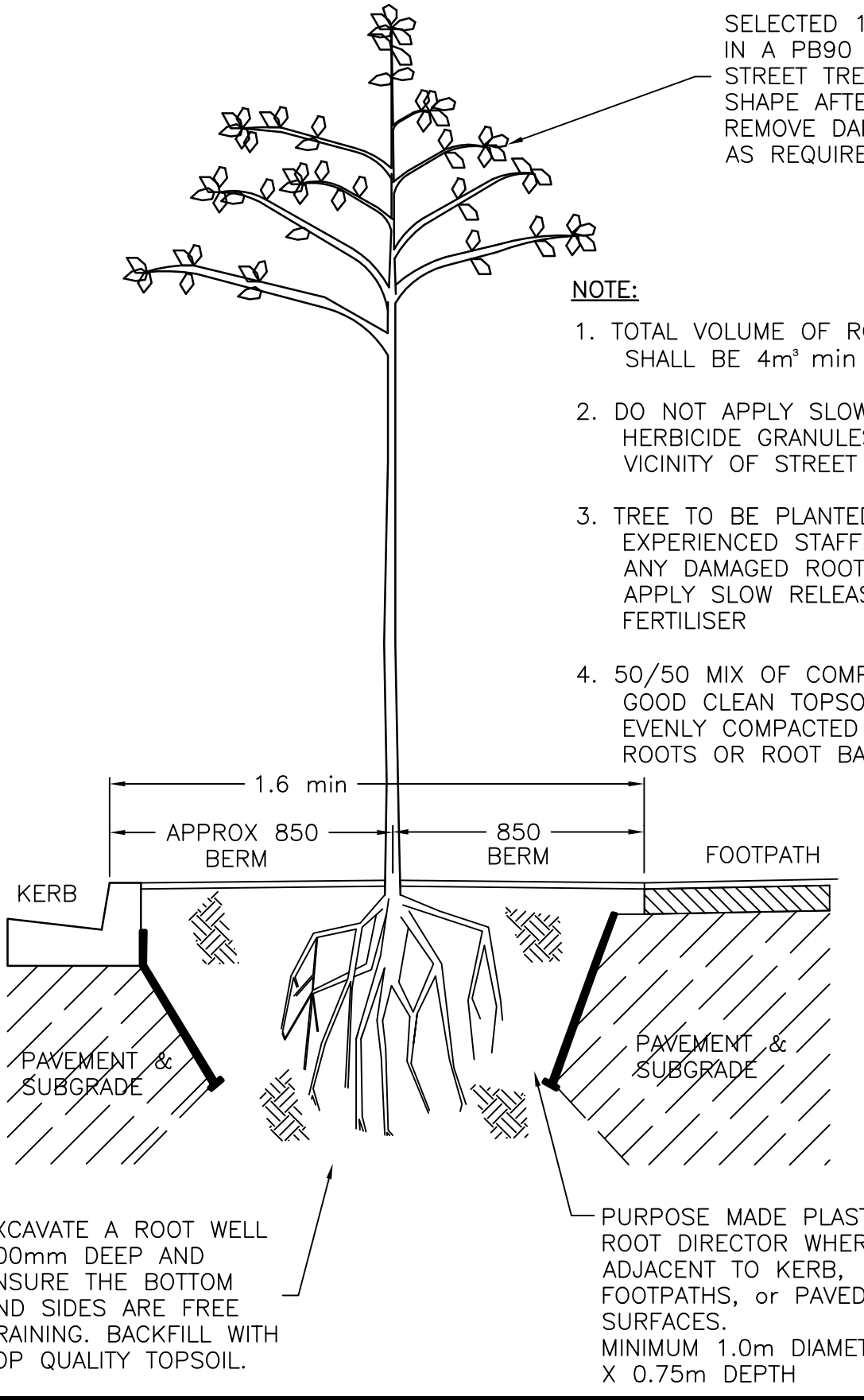
INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE — DATE

SD 1101



NELSON CITY COUNCIL

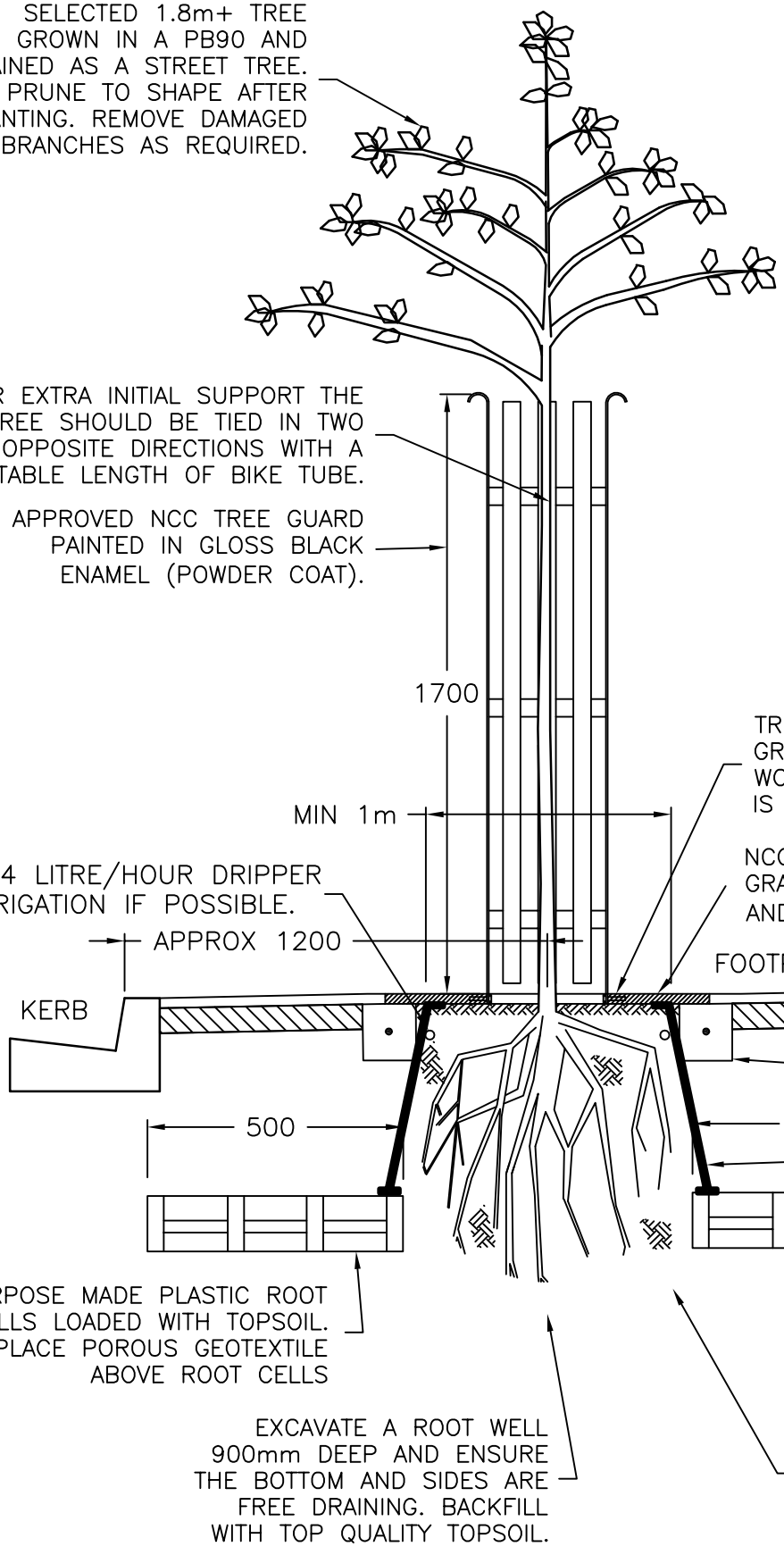
STREET TREE PLANTER IN BERM

COMMUNITY SERVICES

APPROVED 29/07/2010

MANAGER PARKS & FACILITIES — DATE

SD 1201



NOTE:

1. TOTAL VOLUME OF ROOT CELLS PLUS ROOT WELL SHALL BE 4m³ min
2. DO NOT APPLY SLOW RELEASE HERBICIDE GRANULES IN THE VICINITY OF STREET TREES.
3. REMOVE BOTH GRATES AND GUARD AFTER 5 YEARS FROM PLANTING.
4. TOP UP TO PATH LEVEL WITH PEA METAL OR SIMILAR.
5. IF IRRIGATION IS NOT AVAILABLE, A 50mm GAP SHOULD BE LEFT BETWEEN THE GRATE AND THE SOIL TO ALLOW A 'WELL' FOR TREE WATERING. THE GRATES WILL BE SUPPORTED BY THE CONCRETE PLANTER.
6. TREE TO BE PLANTED BY EXPERIENCED STAFF. PRUNE ANY DAMAGED ROOTS, AND APPLY SLOW RELEASE FERTILISER.

NELSON CITY COUNCIL

STREET TREE PLANTER IN FOOTPATH or PEDESTRIAN AREAS

COMMUNITY SERVICES

APPROVED 29/07/2010

MANAGER PARKS & FACILITIES — DATE

SD 1202

IF PLAQUE IS FITTED IT IS TO BE SET INTO THE CENTRE OF THE TOP BOARD SO THAT THE FRONT OF THE PLAQUE IS FLUSH.

LENGTH OF SEAT IS 1.8m WITH PIPE LEGS 300mm IN FROM EACH END.

CAP EACH END OF GALVANISED PIPE. PIPE IS 900mm LONG. BEND TO 100°.

EXCESS THREAD TO BE TRIMMED OFF AND ENDS PENNED OVER OR LIGHTLY WELDED TO REMOVE SHARP EDGES AND PREVENT REMOVAL.

120mm RADIUS

WELDS TO BE WIRE BRUSHED AND PAINTED WITH GREY ANTI RUST PRIMER PAINT SUCH AS COLDGALV.

CONCRETE PAD 2.2 x 1.0 x 0.1 STEEL FLOAT FINISH WITH EDGING TROWEL FINISH AROUND OUTSIDE EDGE. PAD TO HAVE 3% CROSSFALL TO DISPERSE RAIN.

40mm NOMINAL GALVANISED PIPE 740mm LONG. PRESS AND SHAPE TO FIT AT 93° AND WELD WITH 6mm FILLET ALL ROUND.

10mm ø GALVANISED COACH BOLTS. ROUND HEAD.

DRESSED EX 200 x 50 No.1 H3 TREATED PINE POPLAR OR MACROCARPA.

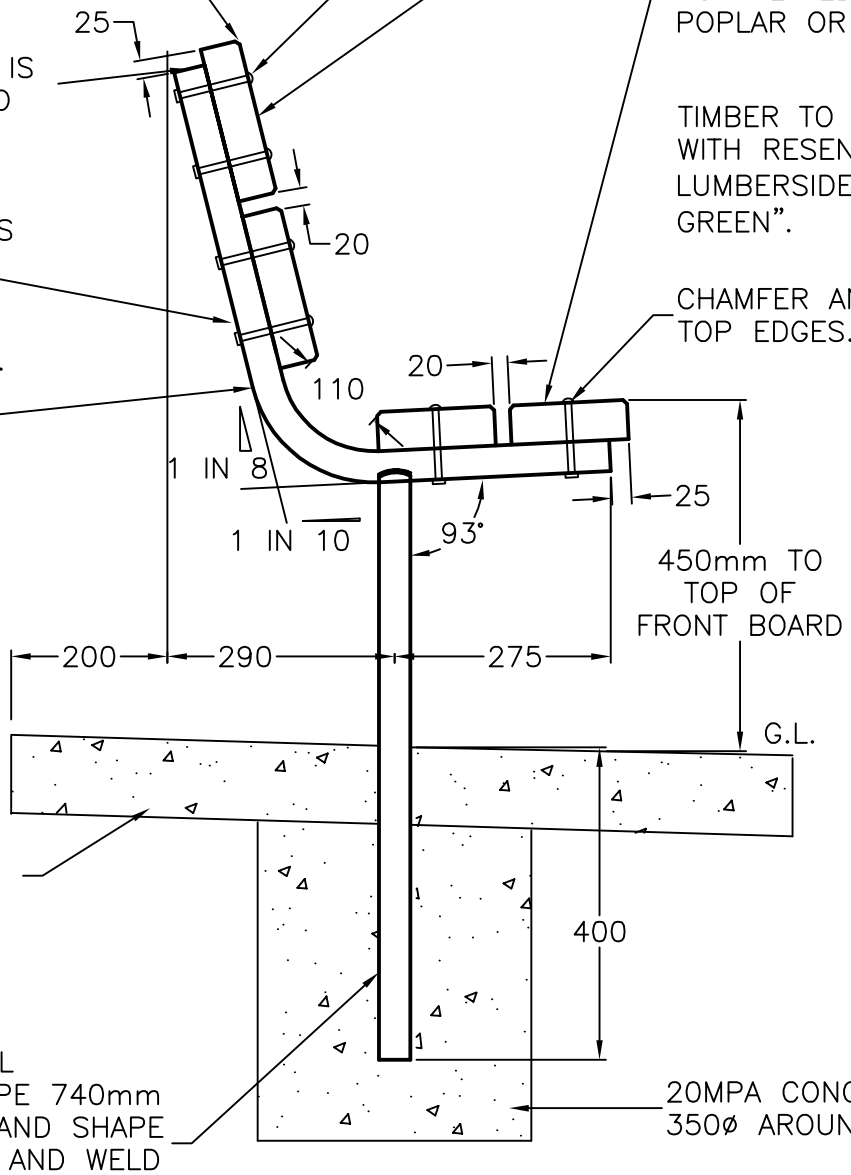
DRESSED 150 x 50 No. 1 H3 TREATED PINE. POPLAR OR MACROCARPA

TIMBER TO BE PAINTED WITH RESENE LUMBERSIDER "DOC GREEN".

CHAMFER AND SAND ALL TOP EDGES.

20MPA CONCRETE MIN 350ø AROUND PIPE.

STEEL LEGS ARE TO BE BENT IN A HYDRAULIC PIPE BENDER WITH SUITABLE FORMER AND WELDED IN A JIG TO ENSURE UNIFORMITY.



NTS

NELSON CITY COUNCIL

STANDARD PARK BENCH

COMMUNITY SERVICES

APPROVED

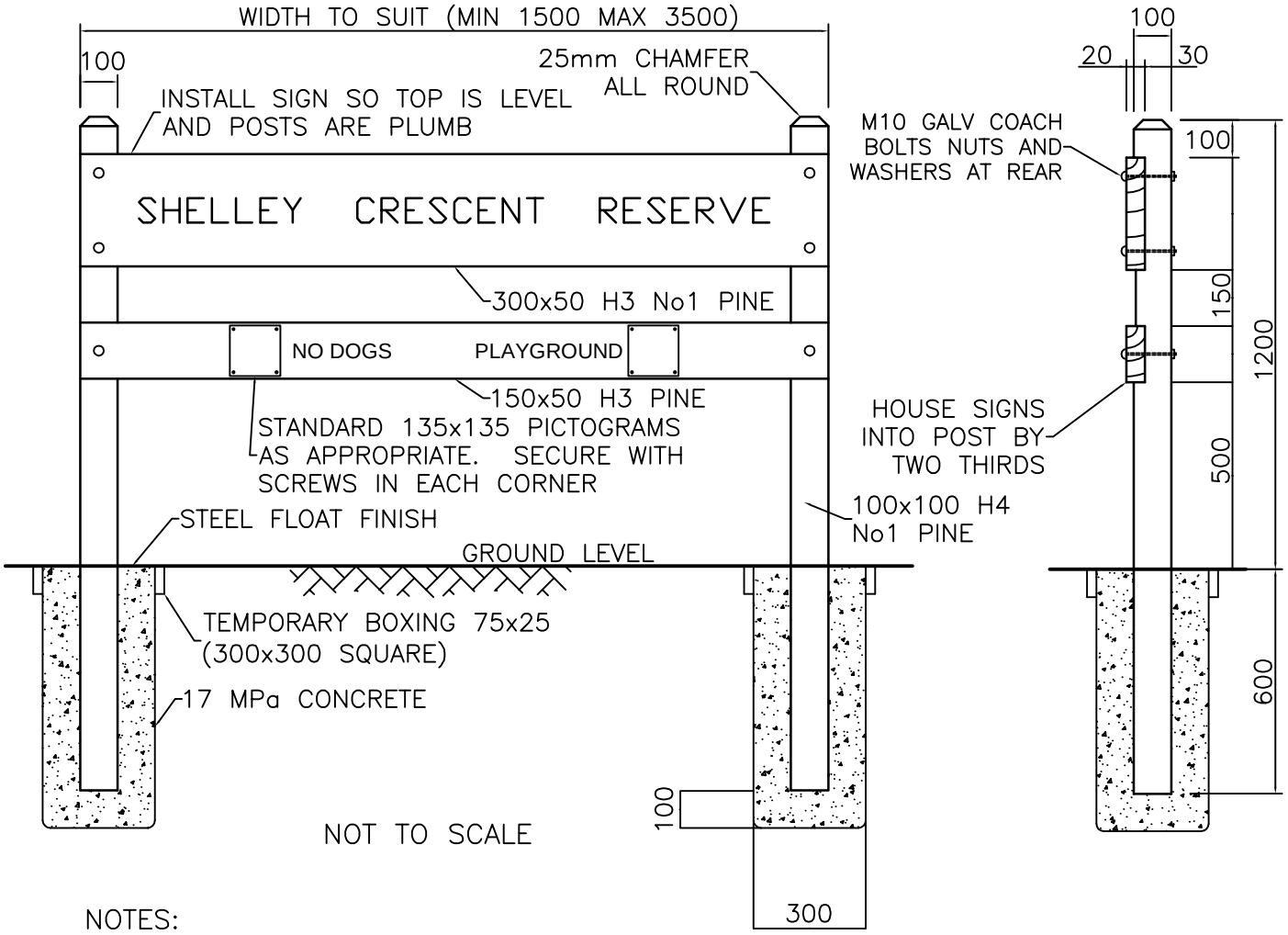
MANAGER PARKS & FACILITIES

29/07/2010

DATE

PLAN No.

SD 1203



NOTES:

1. LETTER FONT TO BE 'ARIAL BOLD'
   SIZE AS APPROPRIATE TO FIT
   CENTRE WORDS TO SIGN BOARD

2. WHERE APPROPRIATE INCLUDE
   MAORI NAME BELOW NAME ON
   SAME SIGN BOARD
   AND REDUCE FONT SIZE AS
   REQUIRED TO FIT

3. ALL TIMBER ABOVE GROUND TO BE
   PAINTED WITH RESENE
   LUMBERSIDER 'DOC GREEN'
   LETTERING TO BE ROUTED TO
   DEPTH OF 5mm WITH CLEAN
   EDGES (LIGHTLY SANDED)
   LETTER COLOUR TO BE RESENE
   'BUTTERMILK' 6BY50

NELSON CITY COUNCIL

STANDARD PARK SIGN

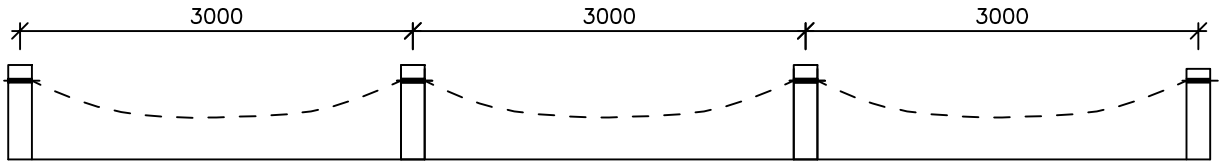
COMMUNTIY SERVICES

APPROVED ..... MANAGER PARKS & FACILITIES

29/07/2010 DATE

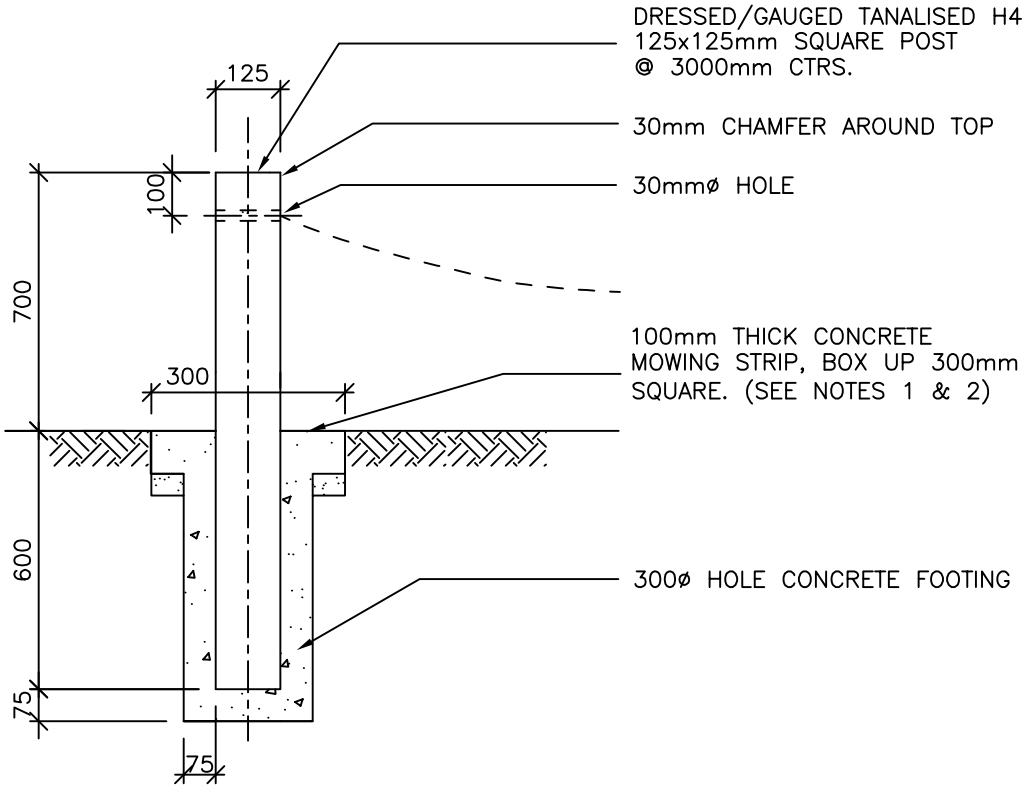
PLAN No.

SD 1204

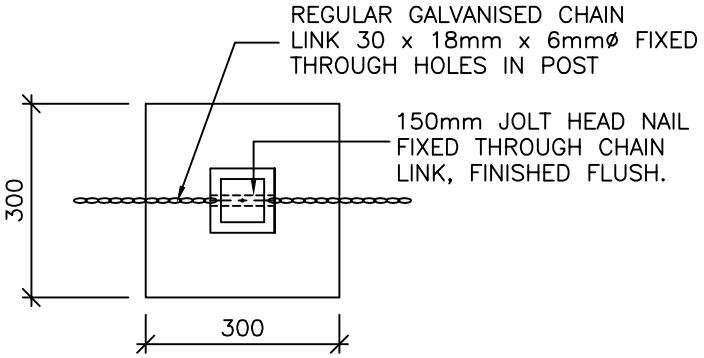


ELEVATION
SCALE 1:50

NOTE
A GAP OF 1.5m FOR EASY PEDESTRIAN ACCESS SHOULD BE ALLOWED FOR EVERY FEW BOLLARDS.



TYPICAL SECTION
SCALE 1:20



PLAN
SCALE 1:20

NOTES

1. REINSTATE WITH TOPSOIL & GRASSING TO BE FLUSH WITH CONCRETE.

NELSON CITY COUNCIL

WOODEN BOLLARD & CHAIN FENCE

INFRASTRUCTURAL ASSETS

APPROVED

SENIOR EXECUTIVE INFRASTRUCTURE

29/07/2010
DATE

SD 1205