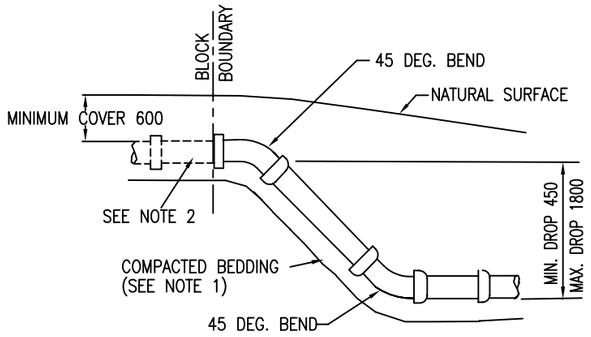
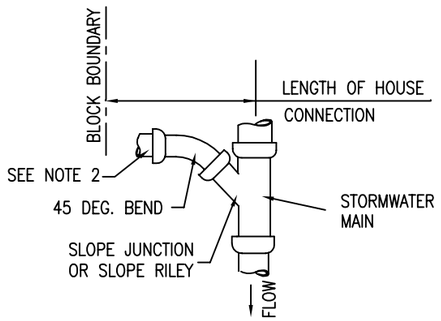



ELEVATION (SHOWING RISER DETAILS)




PLAN

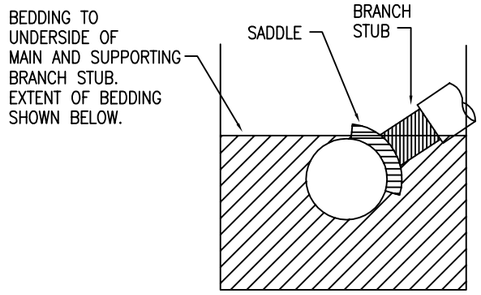
SERVICE TIE DETAILS

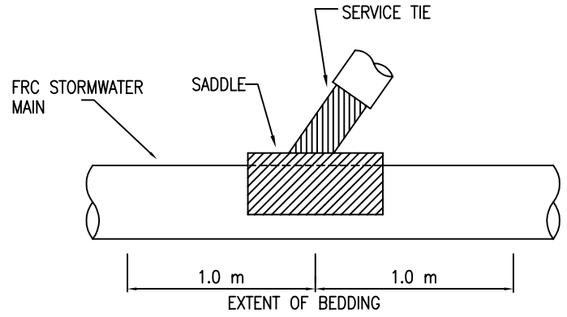
NOTE: 1. MATERIALS USED IN BEDDING AND BACKFILLING SHALL COMPLY WITH THE BASIC SPECIFICATION
2. EXTENT AS LISTED IN TABLE 1

TABLE 1

TERMINATION OF SERVICE TIES

| LOCATION STORMWATER MAIN | TERMINATION POINT |
|---|---|
| (i) WITHIN BLOCK TO BE SERVED | AT SOCKET OF SLOPE JUNCTION OFF MAIN |
| (ii) ADJACENT TO BUT OUTSIDE BLOCK TO BE SERVED | AT BOUNDARY LINE OF BLOCK TO BE SERVED |
| (iii) WITHIN ROAD RESERVATION | AT BOUNDARY LINE OF BLOCK TO BE SERVED |



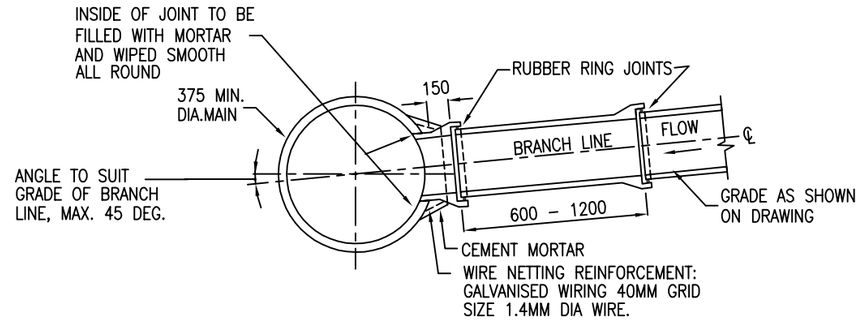

FRC SADDLE SLOPE JUNCTIONS

SERVICE TIES ONLY

TABLE 2

JUNCTION TYPES

| STORMWATER MAIN SIZE | JUNCTION TYPE | | | | |
|---|---|---|---|---|---|
| | MAX. SIZE OF BRANCH PERMITTED FOR TYPE OF CONNECTION SHOWN | | | TYPE OF JUNCTION WHEN BRANCH SIZE IS GREATER THAN LIMIT | |
| | SLOPE JUNCTION (VC) | SADDLE SLOPE JUNCTION (FRC) | BRANCH CONNECTION (SRC & FRC) | 1050 ND MANHOLE | SPECIAL CHAMBERED MANHOLE |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 225 | 150 | 150 | | x | |
| 300 | 150 | 225 | | x | |
| 375 | 150 | 225 | 150 | x | |
| 450 | | 225 | 150 | x | |
| 525 | | 225 | 150 | x | |
| 600 | | 225 | 300 | x | |
| 675 | | | 375 | x | |
| 750 | | | 375 | | x |
| 825 | | | 450 | | x |
| 900 | | | 450 | | x |
| 1050 | | | 525 | | x |
| 1200 | | | 600 | | x |




BRANCH CONNECTIONS

NOTES:

1. CENTRE LINE OF BRANCH SHALL INTERSECT CENTRE LINE OF MAIN
2. A MANHOLE SHALL BE LOCATED ON THE BRANCH WITHIN 20m OF MAIN.
3. THE CONNECTION ANGLE BETWEEN THE BRANCH AND THE UPSTREAM LEG OF THE MAIN SHALL BE IN THE RANGE 45° – 90°.

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

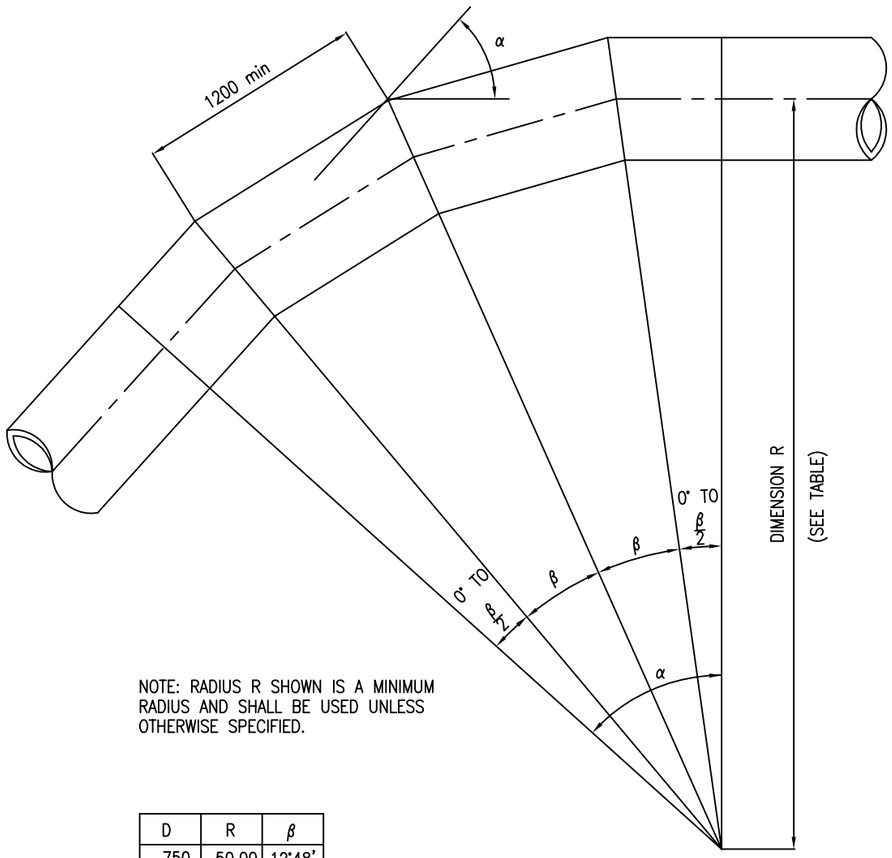
STANDARD DRAWING

PIPE JUNCTIONS

Date: Mar'98

Rev: 02

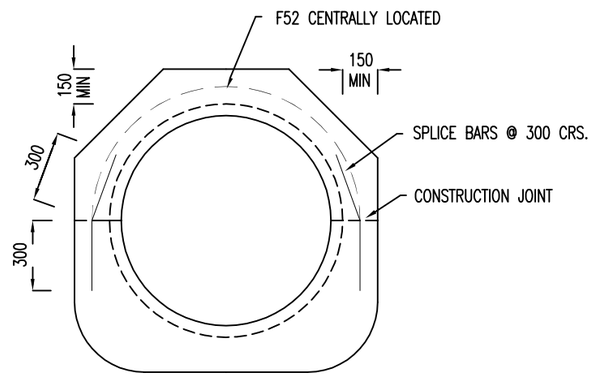
Drawing No.: ST–0001



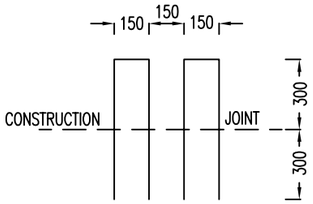

NOTE: RADIUS R SHOWN IS A MINIMUM RADIUS AND SHALL BE USED UNLESS OTHERWISE SPECIFIED.

| D | R | β |
|---|---|---|
| 750 | 50.00 | 12°48' |
| 900 | 50.00 | 12°38' |

BEND CONSTRUCTION DETAIL




SECTION

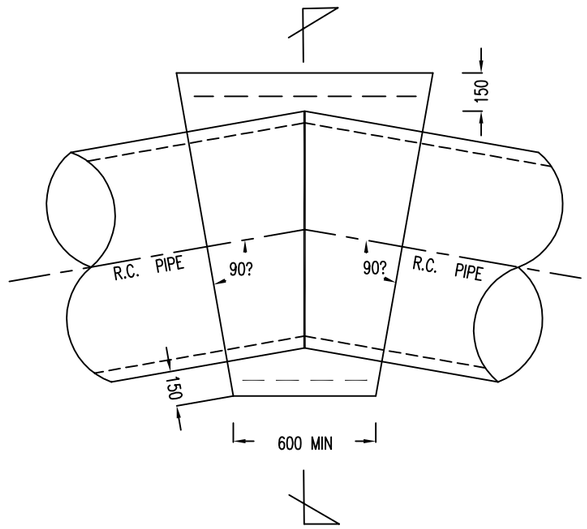



SPLICE BAR DETAIL

BANDAGE JOINT DETAILS

NOTES:

1 CONCRETE STRENGTH SHALL BE 35 MPa.
2 INSIDE OF JOINT TO BE FILLED WITH MORTAR FOR PIPES 900 OR LARGER.
3 CONCRETE IS NOT TO PROJECT INTO WATERWAY.




PLAN

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

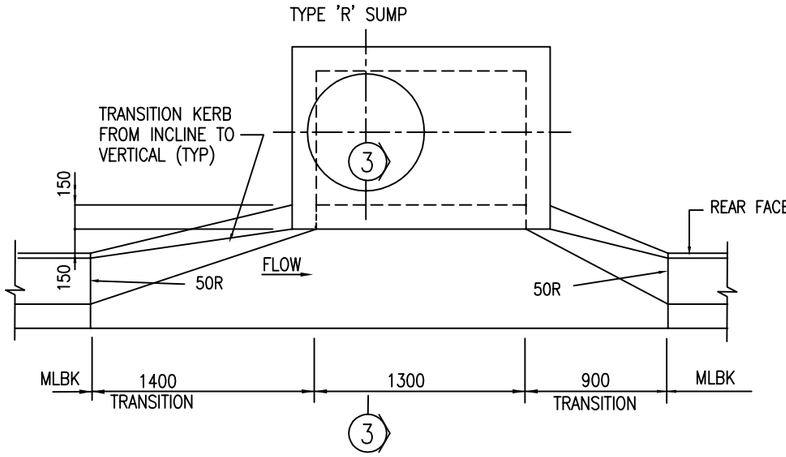
Manager

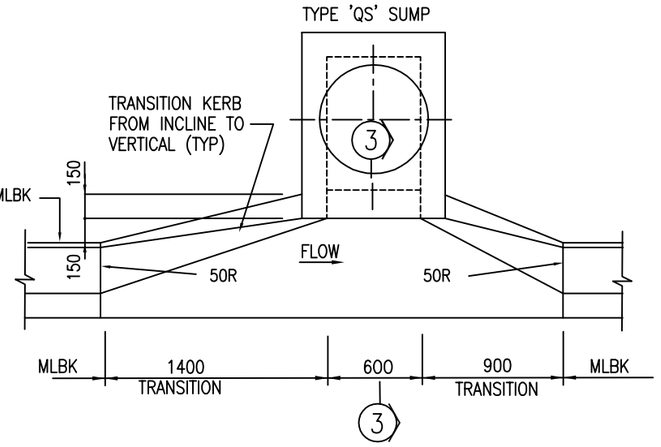
STANDARD DRAWING

PIPE DETAILS

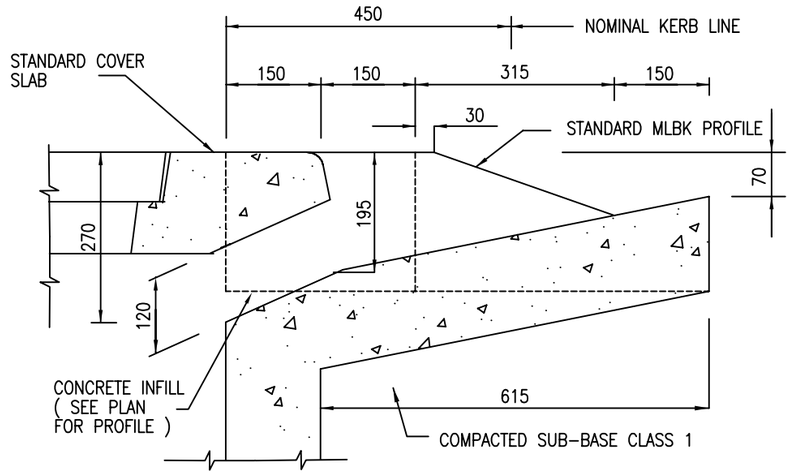
| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No.
ST–0002




ON MODIFIED LAYBACK KERB




SECTION 3







ON MOUNTABLE KERB AND GUTTER




SECTION 2

NOT TO SCALE







ON KERB AND GUTTER




SECTION 1

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

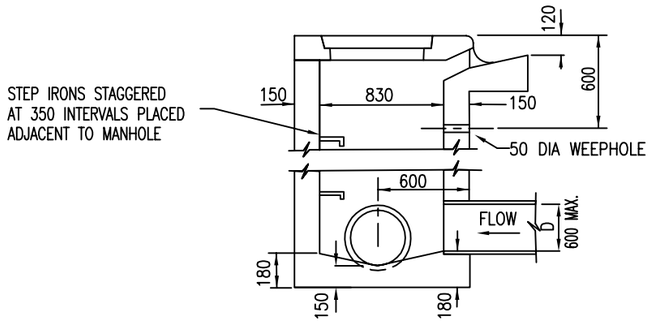
Manager

STANDARD DRAWING

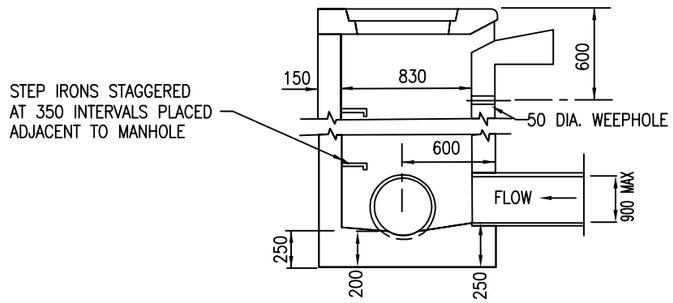
SUMP INLETS ON KERBS AND GUTTERS

| Date | Rev |
|---|---|
| Mar'98 | 04 |

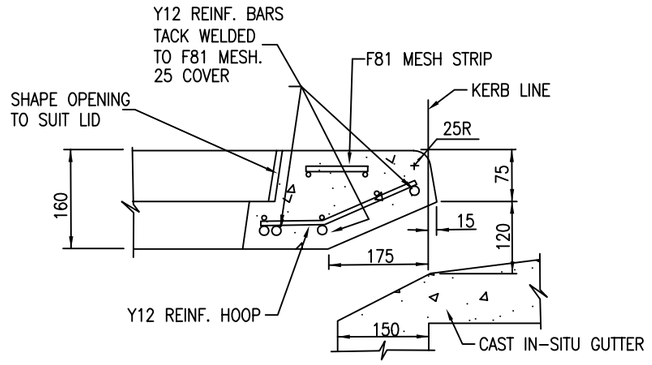
Drawing No. ST–0011



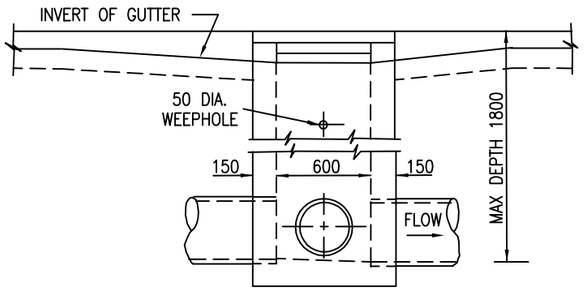

SECTION 1



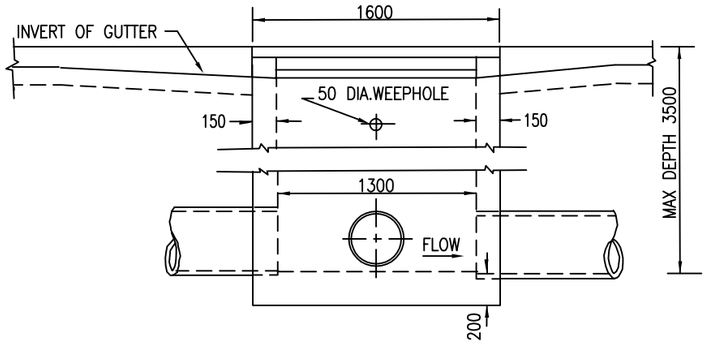

SECTION 3




NOSING DETAIL FOR COVER SLAB



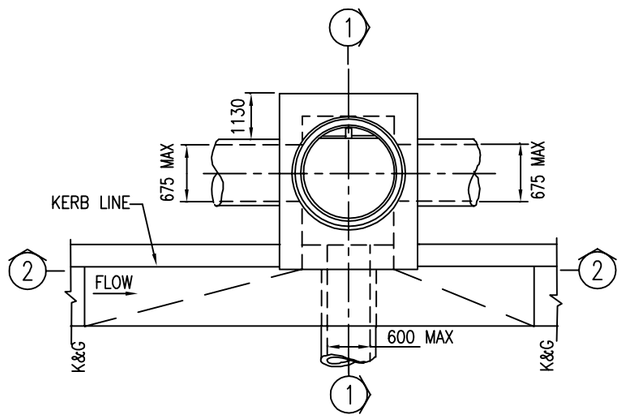

SECTION 2



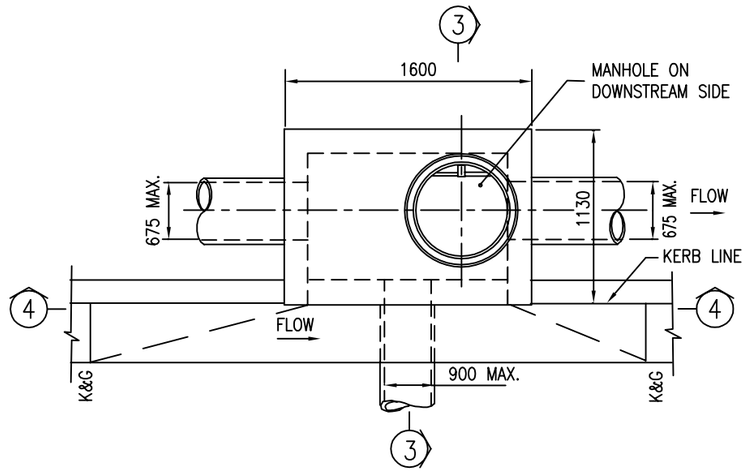

SECTION 4

NOTES

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
2. COVER SLABS SHALL BE BEDDED WITH MORTAR.
3. THE INVERTS OF ALL SUMPS SHALL BE GRADED 30 mm MIN. TOWARDS THE OUTLET.
4. SEALED SUMPS WHERE SHOWN SHALL BE STANDARD QS OR R TYPE SUMPS BROUGHT TO THE SURFACE OR KERB LEVEL WITH A STANDARD COVER SLAB AND THE ENTRY SEALED WITH CONCRETE. KERB PROFILE SHALL BE MAINTAINED WHERE NECESSARY.
5. SUMPS OF GREATER DEPTHS THAN 900 mm SHALL BE FITTED WITH GALVANISED STEP IRONS. SEE DRAWING No ST-0017.
6. BRONZE FLYWIRE SHALL BE PLACED OVER ALL WEEPHOLE ENTRIES.
7. FOR DETIALS OF INLETS AND TRANSITIONS ON ALL TYPES OF KERB AND GUTTER SECTIONS SEE DRAWING No. ST-0011




PLAN
SINGLE SUMP – TYPE QS
ON KERB AND GUTTER
MAX. DEPTH TO I.L. = 1800




PLAN
DOUBLE SUMP – TYPE R
ON KERB AND GUTTER
MAX DEPTH TO I.L. = 3500

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE
MANAGEMENT
– Stormwater

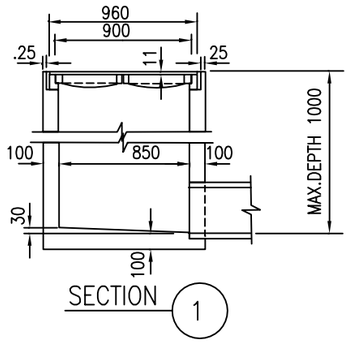
Manager

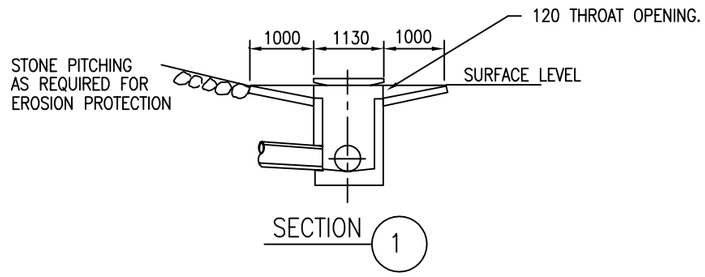
STANDARD DRAWING

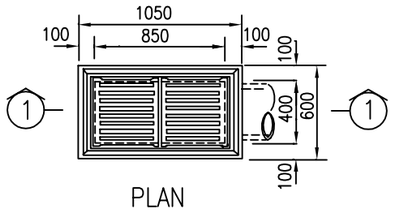
TYPE R AND QS SUMPS

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No.
ST–0012

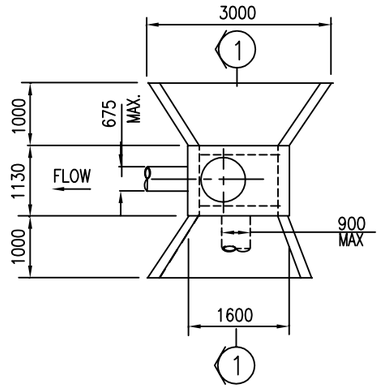


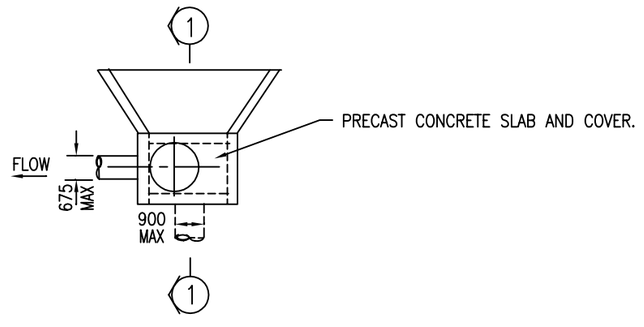




NOTE: OUTLET SHALL BE LOCATED ON NARROW SIDE

HEAVY DUTY GRATED SUMP




PLANTATION SUMP

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE
MANAGEMENT
– Stormwater

Manager

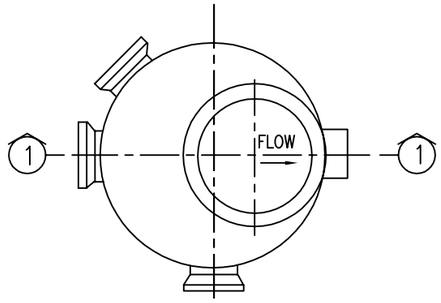
STANDARD DRAWING

PLANTATION AND

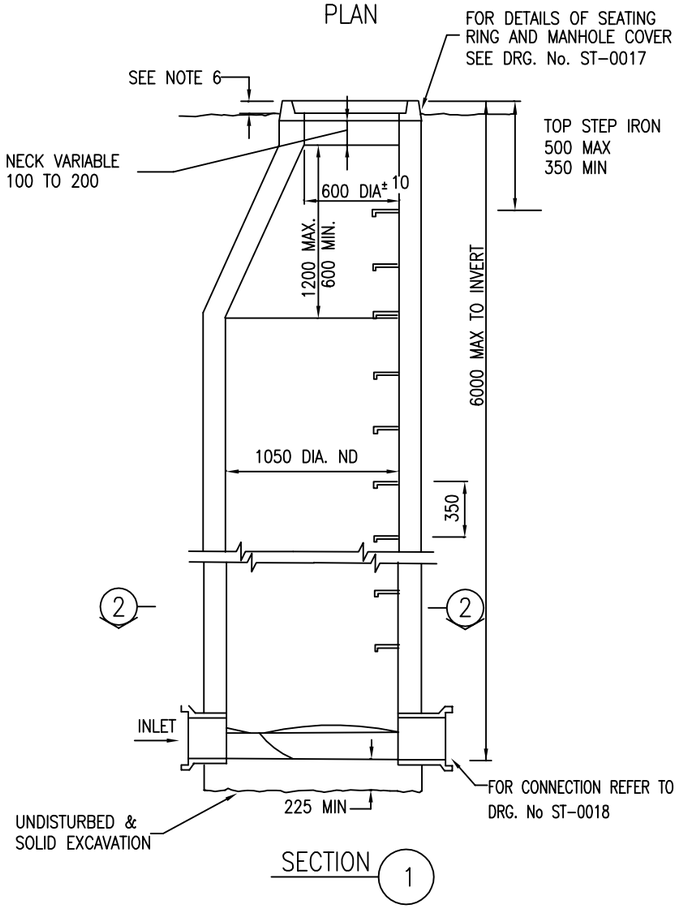
GRATED SUMPS

| Date | Rev |
|---|---|
| Mar'98 | 02 |

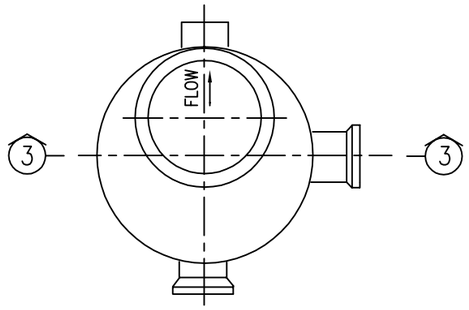
Drawing No.
ST–0013



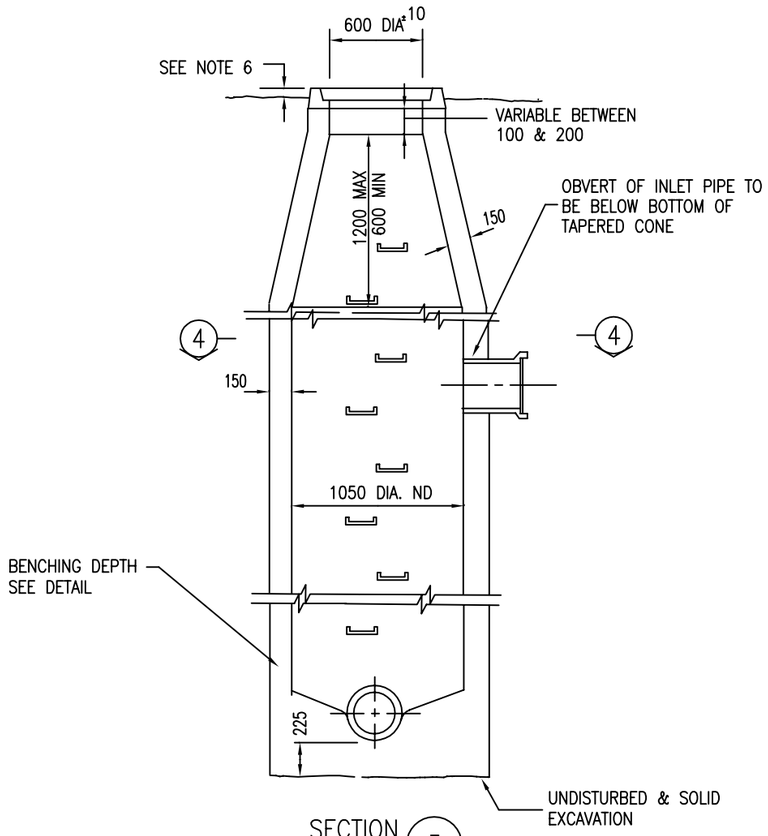

PLAN



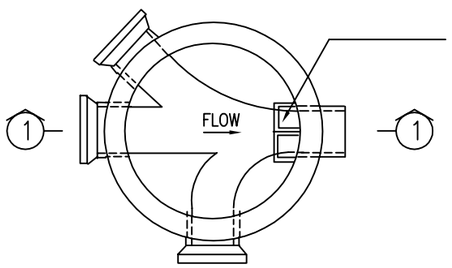

SECTION 1




PLAN



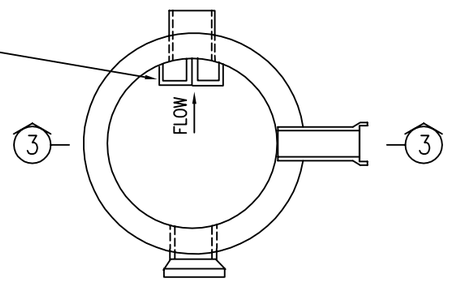

SECTION 3




SECTION 2

STANDARD TYPE

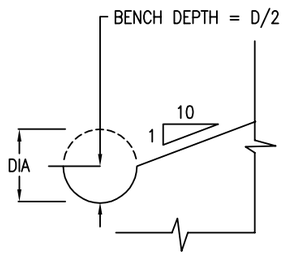
STEP IRONS STAGGERED AT 350 INTERVALS PLACED ABOVE OUTLET PIPE.




SECTION 4

STANDARD TYPE WITH VERTICAL DROP

MINIMUM FALL THROUGH MANHOLE TO BE 50 mm.




BENCHING

## NOTES

1. MAXIMUM PIPE SIZE = 675 mm
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
3. SPECIAL CHAMBERED MANHOLES ARE REQUIRED FOR MAINS 750mm AND LARGER. REFER TO DRAWING No. ST–0015
4. CONNECTIONS INTO STORMWATER MANHOLES SHALL BE MADE IN ACCORDANCE WITH DRAWING No ST–0018
5. IN TRAFFICABLE AREAS AND WHERE SHOWN ON DESIGN DRAWINGS, STEEL ACCESS COVERS SHALL BE USED.
6. COVER LEVELS SHALL BE FLUSH WITH THE FINISHED SURFACE IN PAVED AREAS AND LANDSCAPED AREAS AND 100mm ABOVE NATURAL SURFACE ELSEWHERE.
7. GALVANISED STEPIRONS SHALL BE PROVIDED IN ACCORDANCE WITH DRAWING No ST–0017

## PRECAST MANHOLES

PRECAST MANHOLES ARE AN ACCEPTABLE ALTERNATIVE PROVIDED THEY ARE CONSTRUCTED IN CONFORMITY WITH THE N.S.W. GOVERNMENT SEWERAGE STANDARD (N.S.W.G.S.S.) DRG.NO.1380, EXCEPT THAT:–

THE HEIGHT OF THE NECK OR MAKE–UP RING SHALL HAVE A MINIMUM DIMENSION OF 100mm.

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

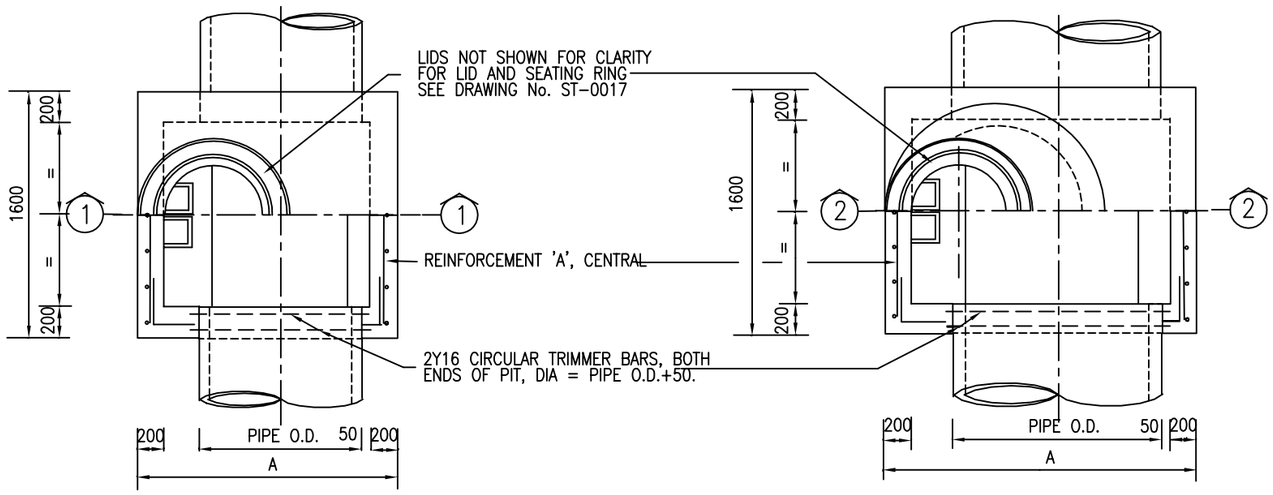
Manager

STANDARD DRAWING

1050 ND MANHOLES

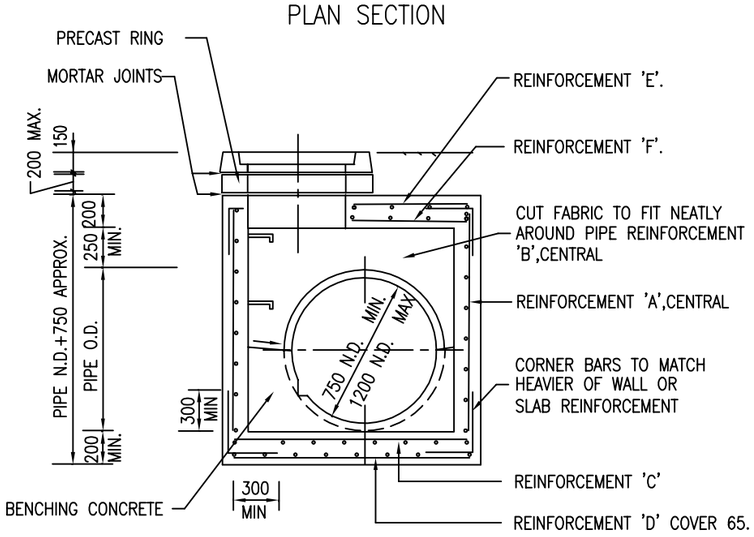
| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No. ST–0014

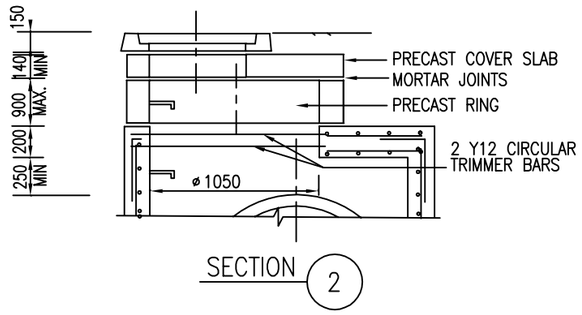



PLAN SECTION

PLAN SECTION

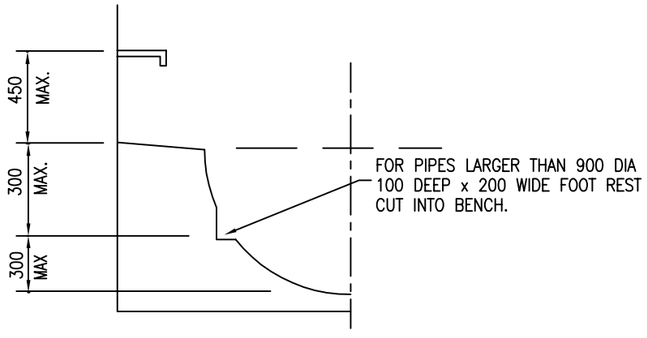



SECTION 1

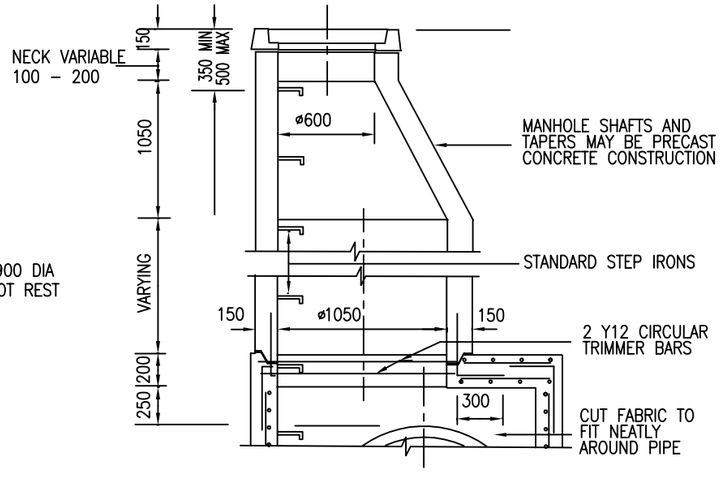



SECTION 2

FOR COVER TO PIPE OF 800 – 1650




BENCHING DETAIL




SECTION 2

FOR COVER TO PIPE GREATER THAN 1650

PROVIDE KEY ALL ROUND TO SUIT PRECAST UNITS WHERE USED AND ADJUST REINFORCEMENT

## STEEL REINFORCEMENT SCHEDULE

| REINFORCEMENT TYPE | REINFORCEMENT A&B | REINFORCEMENT C&D | REINFORCEMENT E&F |
|---|---|---|---|
| PIPE N.D. 750 – 900 | F81 | F82 | F81 |
| 1050 – 1200 | F81 | F82 | F81 |

NOTES:

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
2. CEMENT TYPE SHALL BE 'LH' OR 'SR'
3. GRADE 400Y DEFORMED BARS TO AS1302 MAY BE USED IN PLACE OF MESH PROVIDING STEEL AREAS ARE MATCHED AND SPLICES ARE PROVIDED IN ACCORDANCE WITH AS 3600
4. MINIMUM COVER TO REINFORCEMENT SHALL BE 45mm UNLESS OTHERWISE SHOWN.
5. MINIMUM FALL THROUGH MANHOLE SHALL BE 50mm.
6. BUTYL MASTIC JOINTING SHALL BE USED BETWEEN PRECAST COMPONENTS UNLESS OTHERWISE NOTED.
7. IN TRAFFICABLE AREAS OR WHERE SHOWN ON DESIGN DRAWINGS, STEEL ACCESS COVERS, GATIC OR EQUAL SHALL BE FITTED IN LIEU OF CONCRETE COVERS.
8. WHERE A CHANGE IN PIPE DIAMETER THROUGH THE MANHOLE IS INDICATED, REINFORCEMENT AND DIMENSIONS SHALL COMPLY WITH THAT FOR THE LARGER DIAMETER.

| LARGEST PIPE | A |
|---|---|
| 750 | 1550 |
| 825 | 1625 |
| 900 | 1700 |
| 1050 | 1850 |
| 1200 | 2000 |

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

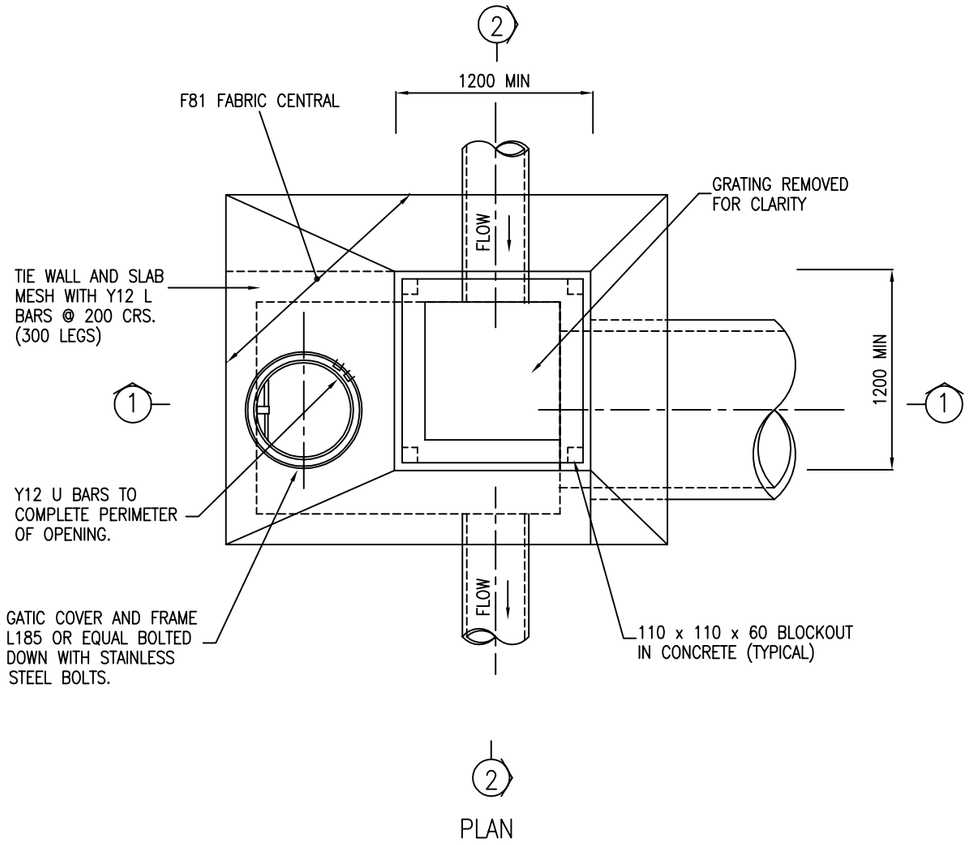
# STANDARD DRAWING

# SPECIAL CHAMBERED MANHOLES

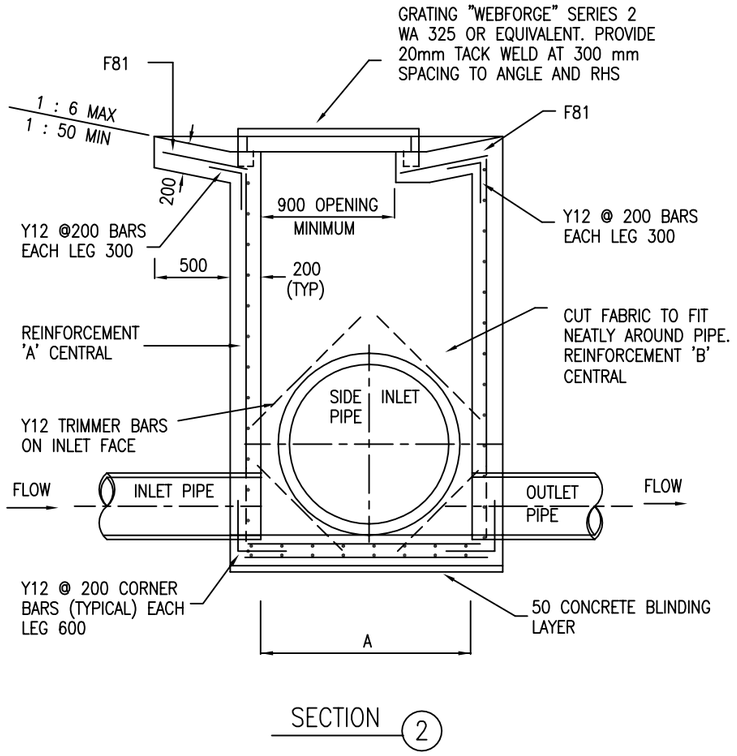
Date: Mar'98

Rev: 02

Drawing No.: ST–0015




PLAN

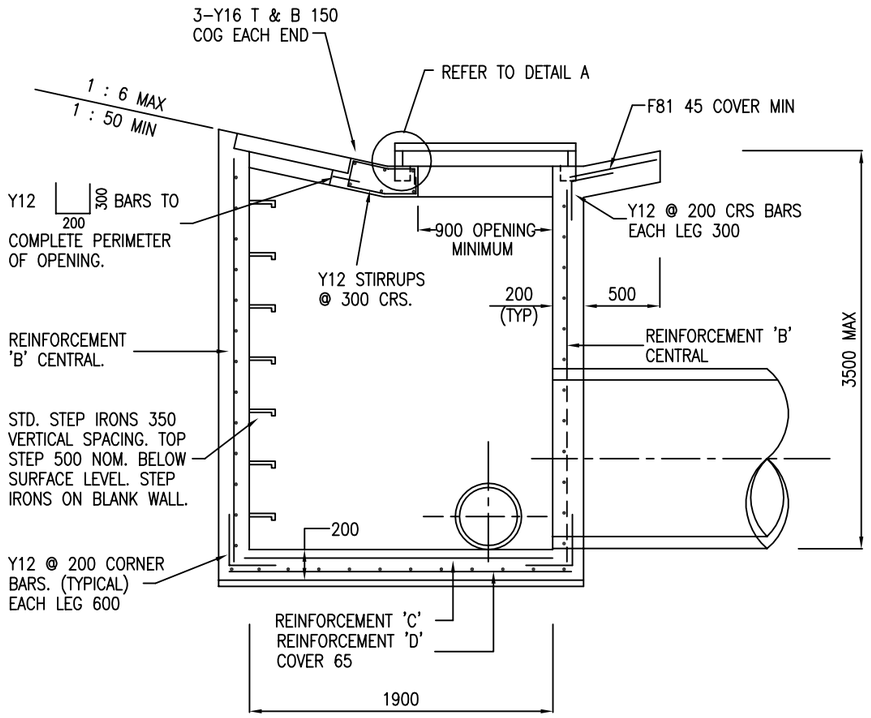



SECTION 2

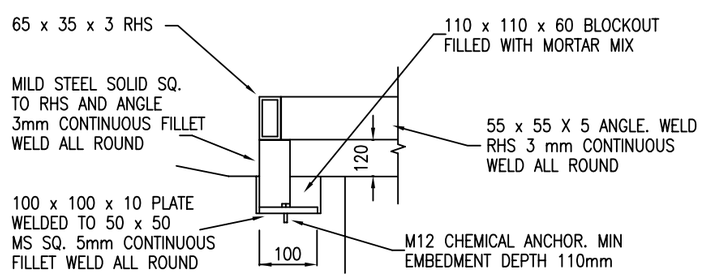
NOTES

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
2. GRADE 400Y DEFORMED BARS TO AS1302 MAY BE USED IN PLACE OF MESH PROVIDING STEEL AREAS ARE MATCHED AND SPLICES ARE PROVIDED IN ACCORDANCE WITH AS3600
3. MINIMUM COVER TO REINFORCEMENT 45mm UNLESS OTHERWISE SHOWN.
4. WHERE A CHANGE IN PIPE DIAMETER THROUGH THE MANHOLE IS INDICATED, REINFORCEMENT AND DIMENSIONS SHALL COMPLY WITH THAT FOR THE LARGER DIAMETER.
5. ALL EXPOSED STEEL WORK TO BE HOT DIPPED GALVANISED AFTER FABRICATION.

| LARGEST PIPE | A |
|---|---|
| 450 | 900 |
| 525 | 975 |
| 600 | 1050 |
| 675 | 1125 |
| 750 | 1200 |
| 825 | 1275 |
| 900 | 1350 |
| 1050 | 1500 |
| 1200 | 1650 |




SECTION 1




DETAIL A

STEEL REINFORCEMENT SCHEDULE

| REINFORCEMENT TYPE | REINFORCEMENT A&B | REINFORCEMENT C&D |
|---|---|---|
| PIPE N.D. | | |
| 750 – 900 | F81 | F82 |
| 1050 – 1200 | F81 | F81 |

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

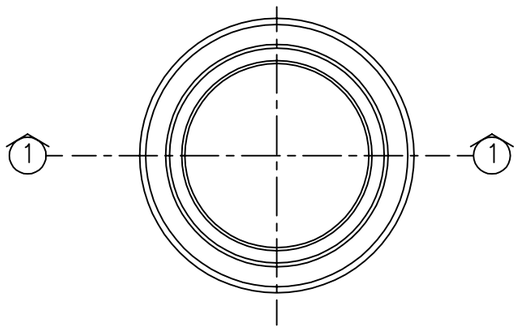
Manager

STANDARD DRAWING

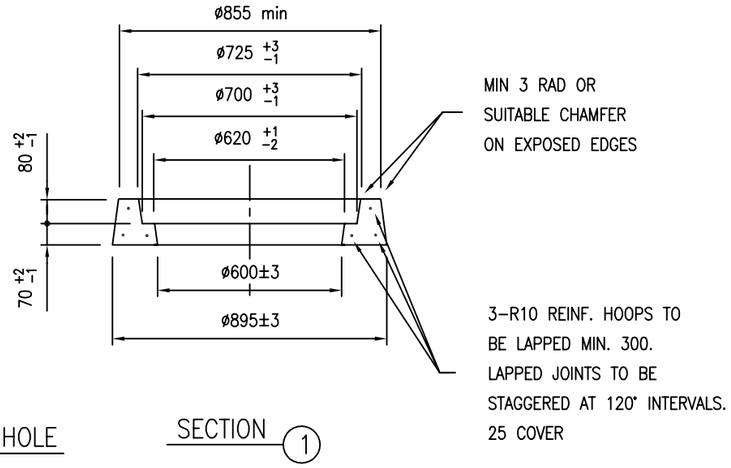
SURCHARGE STRUCTURES

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No. ST–0016

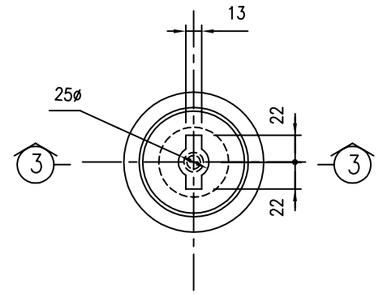



PLAN

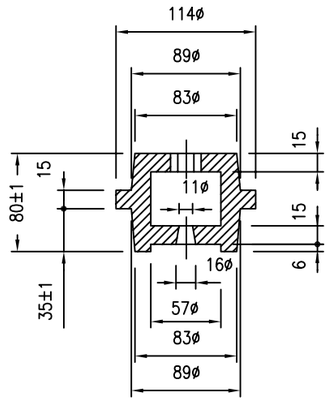



SECTION 1

## SEATING RING FOR MANHOLE COVER



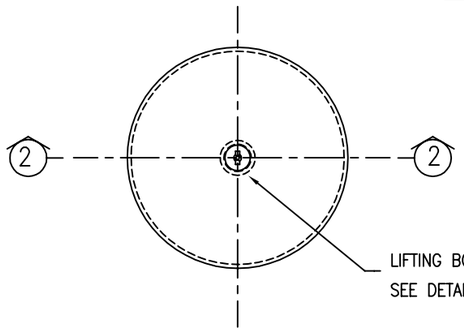

PLAN



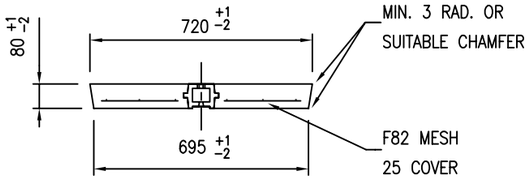

SECTION 3

## LIFTING BOSS

MATERIAL – CAST IRON AS1830 GRADE T200

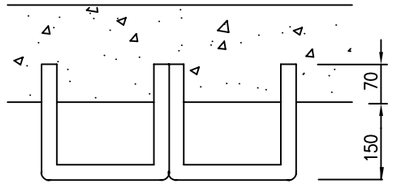



PLAN




SECTION 2

## MANHOLE COVER

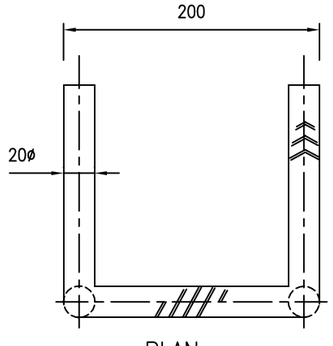



PLAN LAYOUT
FOR SUMPS

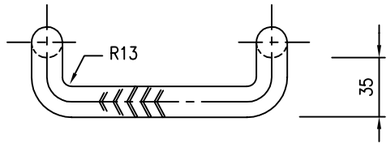
## NOTES

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
2. MANHOLE COVER AND SEATING RING SHALL COMPLY WITH AS 3996.
3. COVERS SHALL BE PROVIDED WITH A NON – SLIP SURFACE FINISH.
4. COVERS FOR STORMWATER MANHOLES SHALL HAVE THE LETTERS 'SW' 75 HIGH FORMED IN SURFACE.
5. STEPIRONS SHALL BE FORMED FROM 20mm DIAMETER DEFORMED BAR GRADE 230S IN ACCORDANCE WITH AS1302.
6. STEPIRONS SHALL BE HOT–DIPPED GALVANISED AFTER FORMING IN ACCORDANCE WITH AS1650.

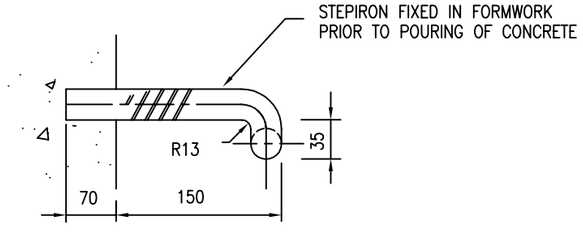
NOT TO SCALE



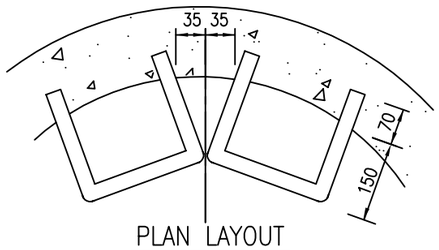

PLAN




FRONT ELEVATION




SIDE ELEVATION




PLAN LAYOUT
FOR MANHOLES

STEPIRON DETAILS

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

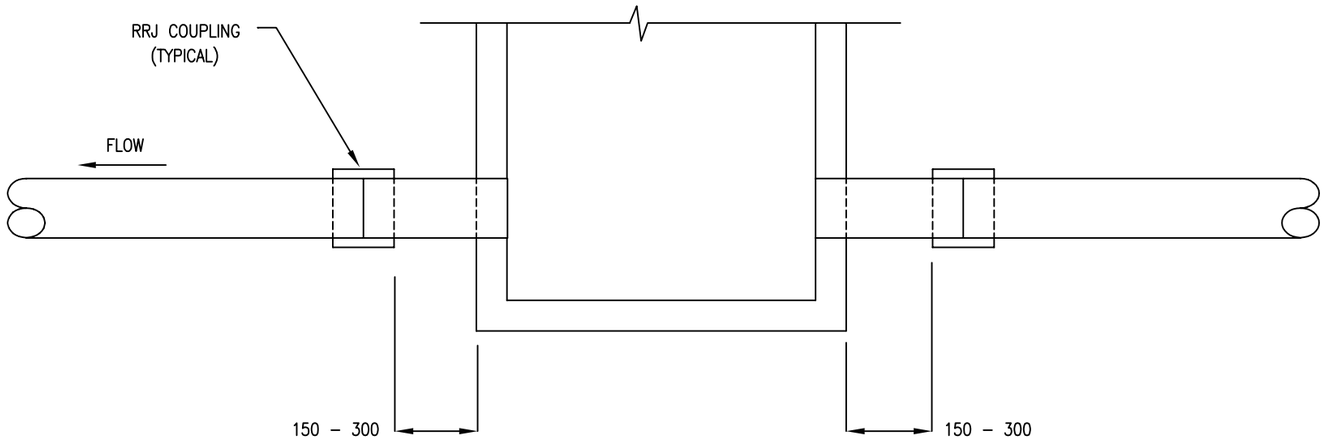
STANDARD DRAWING

STRUCTURES

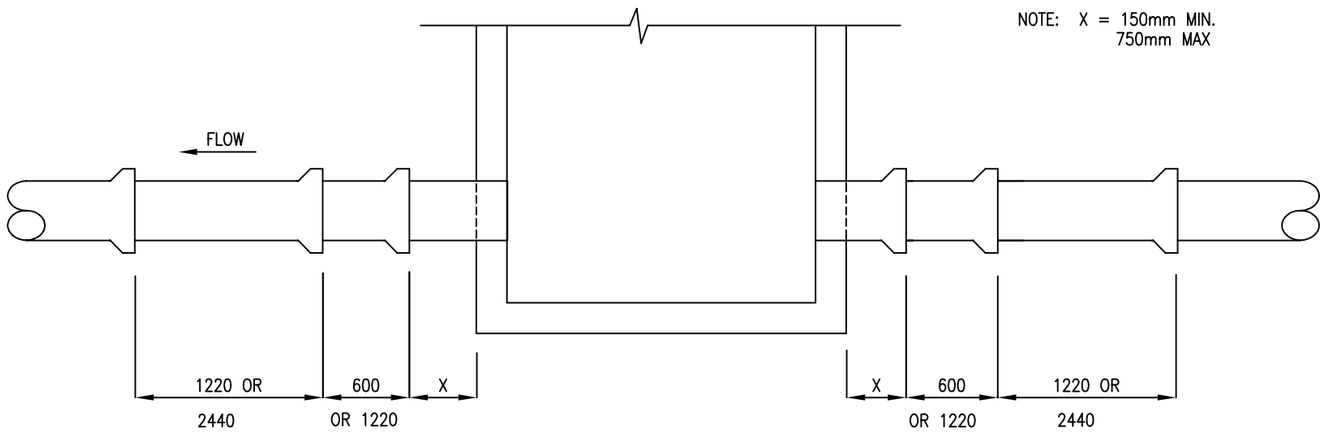
MISCELLANEOUS DETAILS

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No. ST–0017




FRC & UPVC CONNECTIONS TO STRUCTURES




CONCRETE PIPE CONNECTIONS TO STRUCTURES

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE
MANAGEMENT
– Stormwater

Manager

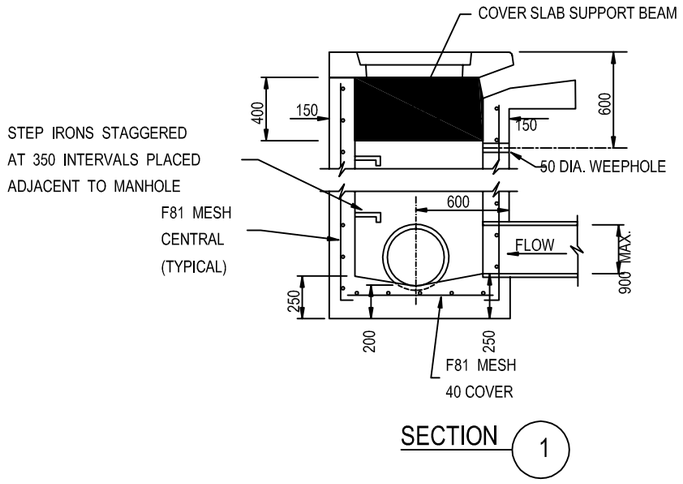
STANDARD DRAWING

PIPE CONNECTIONS

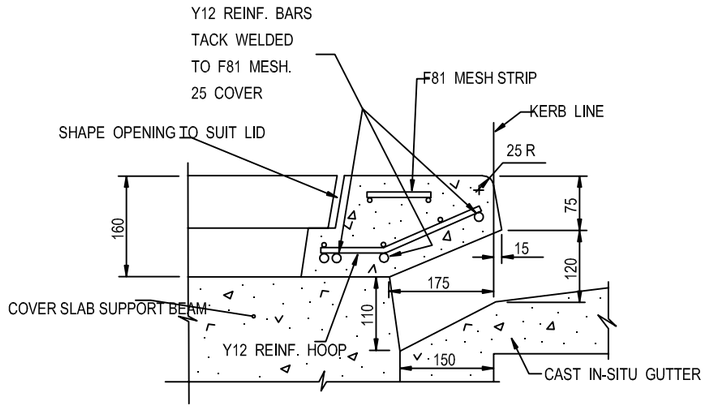
TO STRUCTURES

| Date | Rev |
|---|---|
| Mar'98 | 02 |

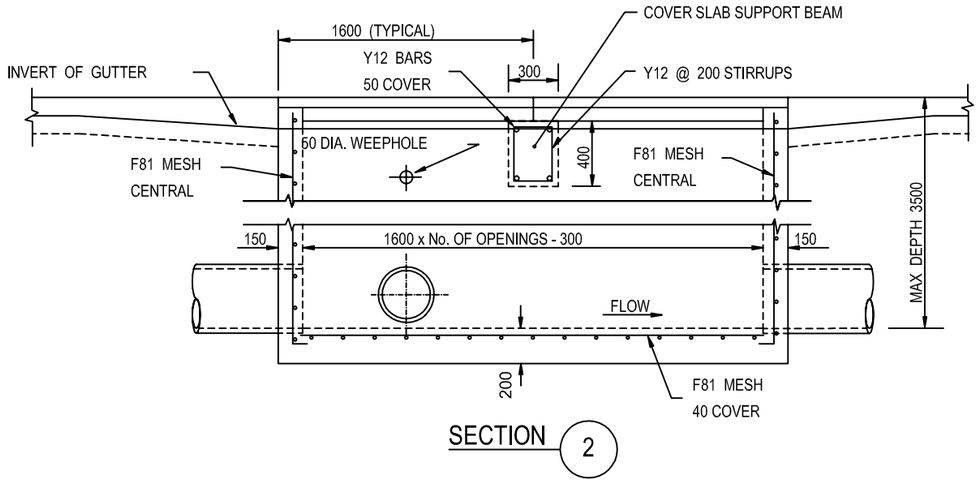
Drawing No.
ST–0018



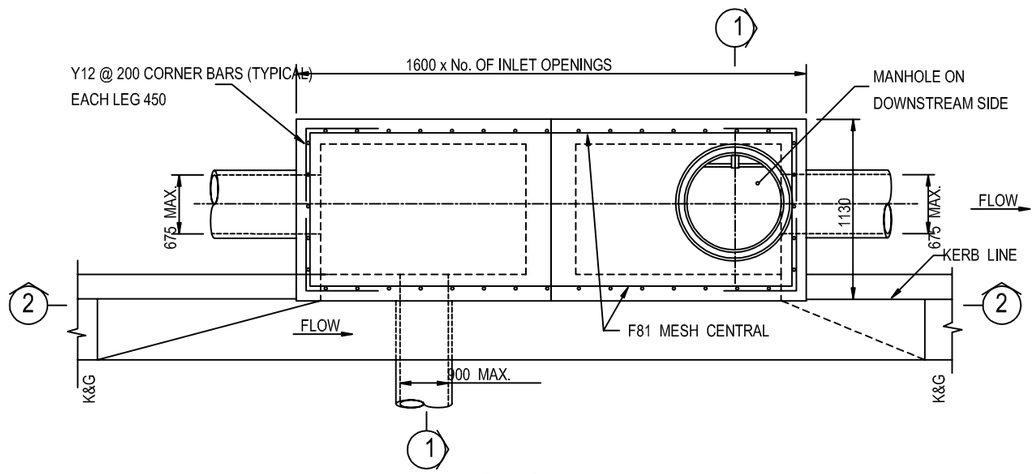

SECTION 1




## NOSING AND INTERMEDIATE SUPPORT BEAM DETAIL FOR COVER SLABS




SECTION 2




PLAN

(DOUBLE SUMP CONFIGURATION SHOWN ONLY)

MAX DEPTH TO I.L. = 3500

NOTES

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
2. COVER SLAB SHALL BE BEDDED IN MORTAR.
3. THE INVERTS OF ALL SUMPS SHALL BE GRADED 60mm MIN. TOWARDS THE OUTLET.
4. SUMPS OF GREATER DEPTHS THAN 900mm SHALL BE FITTED WITH GALVANISED STEP IRONS. SEE DRAWING No. ST-0017.
5. BRONZE FLYWIRE SHALL BE PLACED OVER ALL WEEPHOLE ENTRIES.
6. FOR DETAILS OF INLETS AND TRANSITION ON ALL TYPES OF KERB AND GUTTER SECTIONS SEE DRAWING No. ST-0011.

NOT TO SCALE

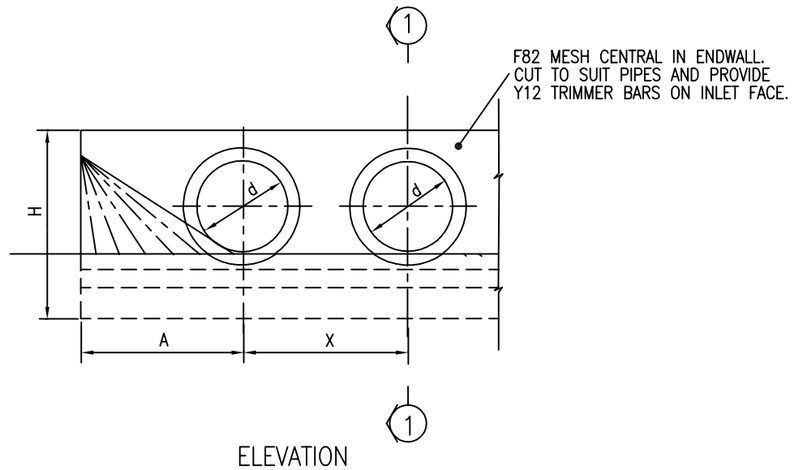
CITY MANAGEMENT
Roads ACT

Manager

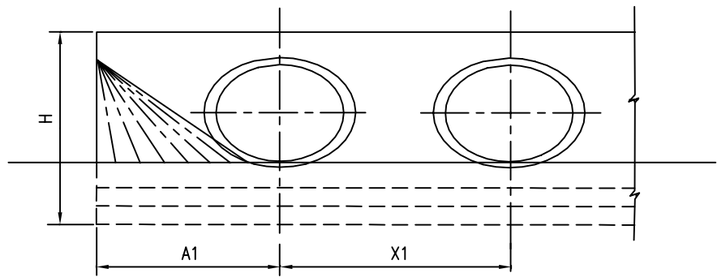
# STANDARD DRAWING
# MULTIPLE TYPE R SUMPS ON KERB AND GUTTER

| Date | Rev |
|---|---|
| Mar' 02 | 01 |

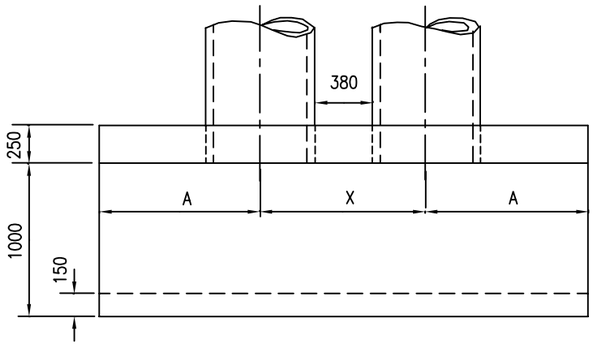
Drawing No. ST-0019



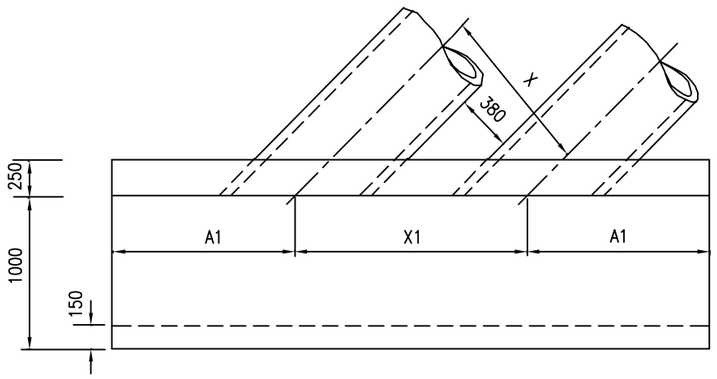

ELEVATION



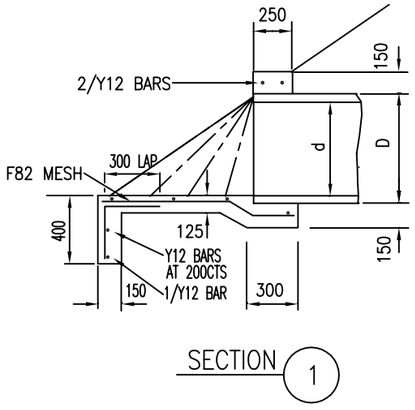

ELEVATION




PLAN




PLAN




SECTION 1

| NOMINAL PIPE SIZE d | SKEW 0 DEG. | | | |
|---|---|---|---|---|
| | D | H | A | X |
| 300 | 362 | 587 | 525 | 742 |
| 375 | 445 | 970 | 653 | 825 |
| 450 | 533 | 1058 | 788 | 913 |
| 525 | 616 | 1141 | 918 | 996 |
| 600 | 699 | 1224 | 1049 | 1079 |
| 675 | 781 | 1306 | 1181 | 1161 |
| | SKEW 15 DEG. | | | |
| | D | H | A1 | X1 |
| 300 | AS | AS | 525 | 768 |
| 375 | AS | AS | 656 | 854 |
| 450 | | | 790 | 945 |
| 525 | FOR | FOR | 921 | 1031 |
| 600 | | | 1052 | 1117 |
| 675 | 0° | 0° | 1185 | 1202 |
| | SKEW 30 DEG. | | | |
| 300 | AS | AS | 530 | 857 |
| 375 | AS | AS | 662 | 953 |
| 450 | | | 799 | 1054 |
| 525 | FOR | FOR | 931 | 1150 |
| 600 | | | 1063 | 1246 |
| 675 | 0° | 0° | 1197 | 1341 |
| | SKEW 45 DEG. | | | |
| 300 | AS | AS | 540 | 1049 |
| 375 | AS | AS | 677 | 1167 |
| 450 | | | 817 | 1291 |
| 525 | FOR | FOR | 952 | 1408 |
| 600 | | | 1087 | 1526 |
| 675 | 0° | 0° | 1224 | 1642 |

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
2. MINIMUM COVER TO REINFORCEMENT 45MM

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

STANDARD DRAWING

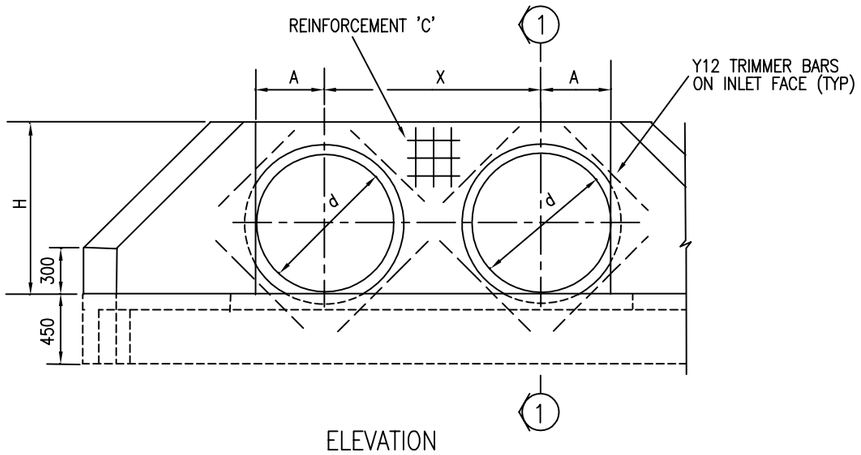
PIPE CULVERTS

300 – 675 DIA

ENDWALLS

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No.
ST–0021




ELEVATION

| NOMINAL PIPE SIZE d | SKEW 0 DEG. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | D | H | A | X | G | L | B | S |
| 750 | 864 | 963 | 381 | 1244 | 380 | 1380 | 762 | 1320 |
| 900 | 1029 | 1122 | 457 | 1409 | 380 | 1650 | 900 | 1558 |
| 1050 | 1194 | 1280 | 533 | 1574 | 380 | 1930 | 1038 | 1798 |
| 1200 | 1359 | 1439 | 609 | 1765 | 406 | 2203 | 1175 | 2035 |

| NOMINAL PIPE SIZE d | SKEW 15 DEG. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | D | H | A1 | X1 | G | L | B | S |
| 750 | 864 | 963 | 520 | 1288 | 380 | 1380 | 762 | 1320 |
| 900 | 1029 | 1122 | 610 | 1459 | 380 | 1650 | 900 | 1558 |
| 1050 | 1194 | 1280 | 690 | 1629 | 380 | 1930 | 1038 | 1798 |
| 1200 | 1359 | 1439 | 780 | 1827 | 406 | 2203 | 1175 | 2035 |

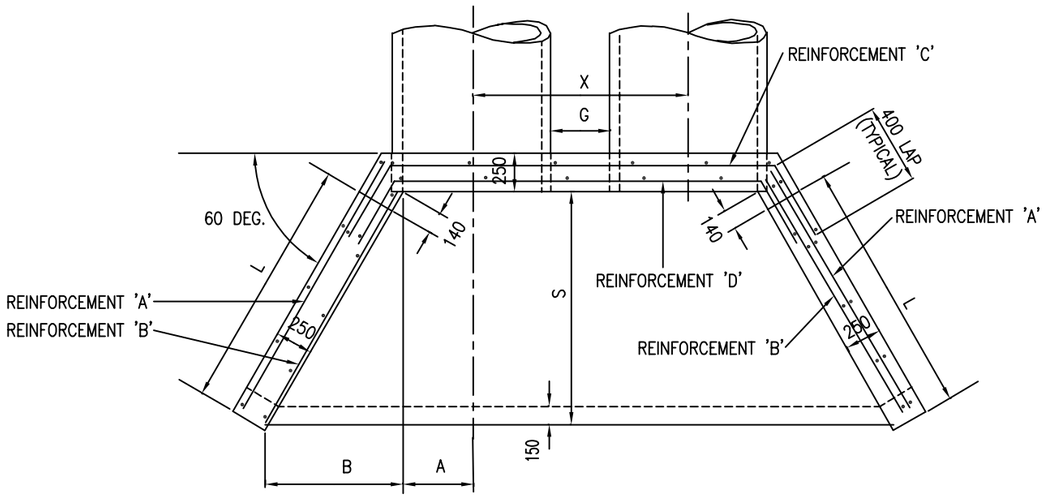
| NOMINAL PIPE SIZE d | SKEW 30 DEG. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | D | H | A1 | X1 | G | L | B | S |
| 750 | 864 | 963 | 570 | 1435 | 380 | 1380 | 762 | 1320 |
| 900 | 1029 | 1122 | 670 | 1627 | 380 | 1650 | 900 | 1558 |
| 1050 | 1194 | 1280 | 764 | 1817 | 380 | 1930 | 1038 | 1798 |
| 1200 | 1359 | 1439 | 860 | 2038 | 406 | 2203 | 1175 | 2035 |

| NOMINAL PIPE SIZE d | SKEW 45 DEG. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | D | H | A2 | A3 | X1 | G | L | B1 | S1 |
| 750 | 864 | 963 | 539 | 686 | 1759 | 380 | 2390 | 2445 | 1412 |
| 900 | 1029 | 1122 | 546 | 803 | 1993 | 380 | 2862 | 2850 | 1648 |
| 1050 | 1194 | 1280 | 754 | 919 | 2226 | 380 | 3341 | 3268 | 1887 |
| 1200 | 1359 | 1439 | 863 | 1036 | 2496 | 406 | 3816 | 3683 | 2127 |

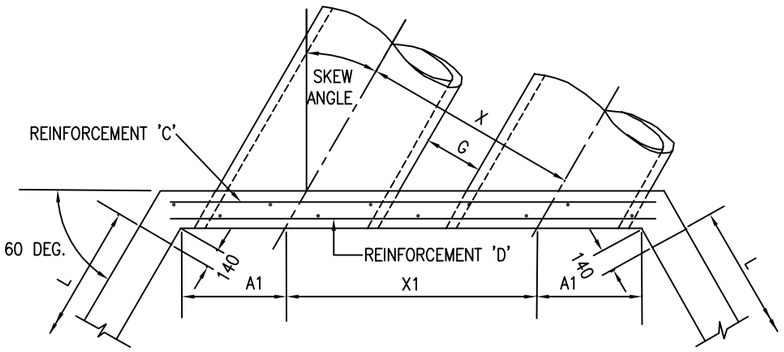
1. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
2. MINIMUM COVER TO REINFORCEMENT 45MM.

## STEEL REINFORCEMENT SCHEDULE

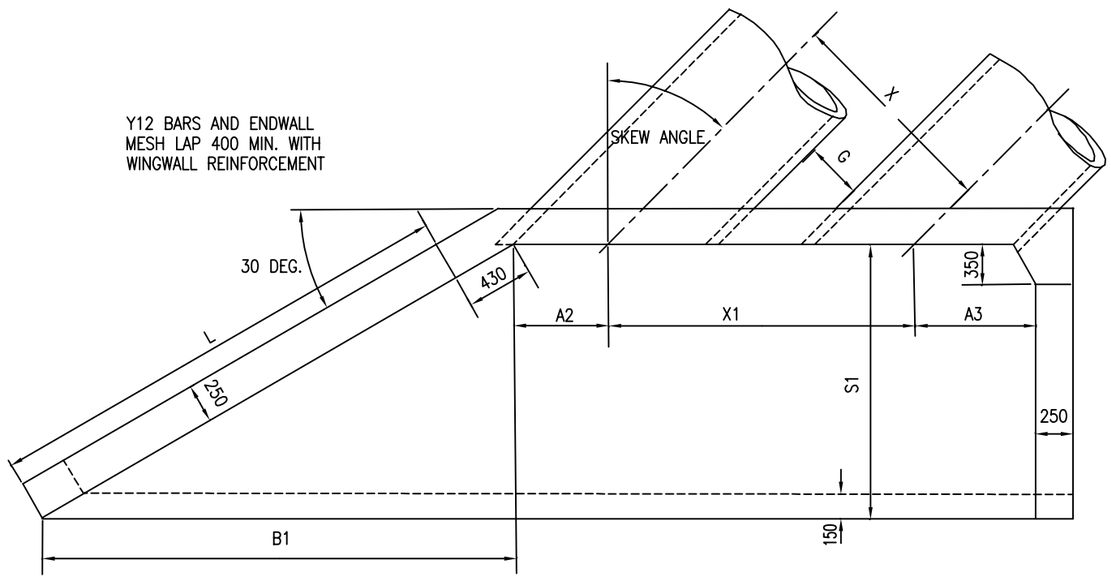
| REINFORCEMENT TYPE | REINFORCEMENT A&B | REINFORCEMENT C | REINFORCEMENT D |
|---|---|---|---|
| PIPE N.D. | | | |
| 750 – 1200 | F82 | F82 | F82 |



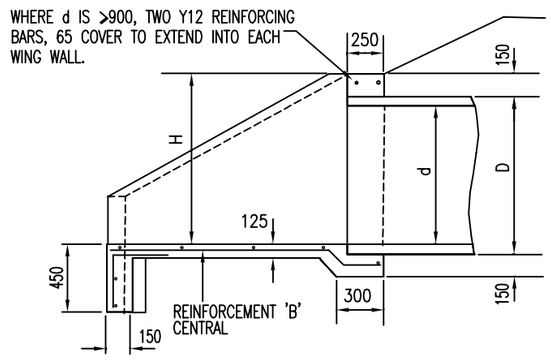

PLAN SQUARE HEADWALL




PLAN UP TO 30° SKEW




PLAN 35° TO 45° SKEW




SECTION 1

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

STANDARD DRAWING

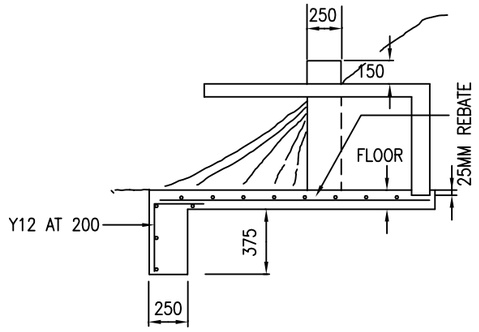
PIPE CULVERTS

750 –1200 DIA

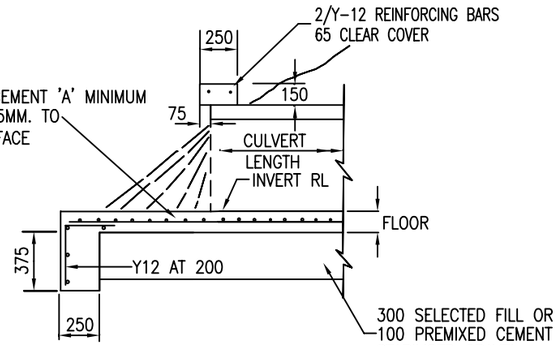
HEADWALLS

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No. ST–0022

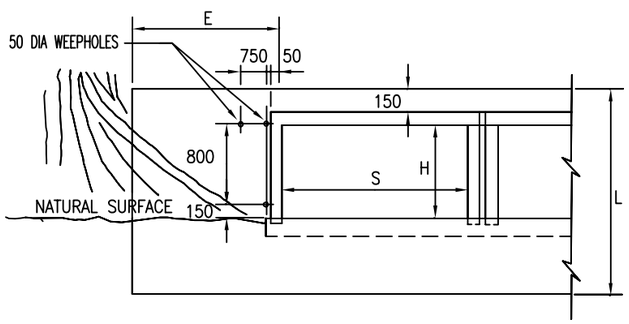



SECTION 2

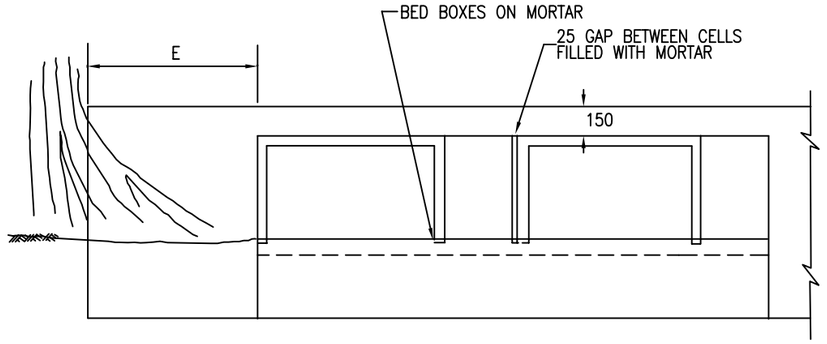



SECTION 1

| NOMINAL CULVERT SIZE | | FLOOR THICKNESS | ALL ANGLES θ | | ANGLE OF SKEW | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | θ=0 DEG. | θ=15 DEG. | | θ=30 DEG. | | θ=45 DEG. | |
| H | S | | L | E | E1 | E2 | E3 | E2 | E3 | E2 | E3 |
| 225 | 375 | 100 | 900 | 320 | 500 | 250 | 520 | 280 | 580 | 340 | 710 |
| 225 | 450 | 100 | 910 | 330 | 580 | 290 | 600 | 320 | 670 | 390 | 820 |
| 300 | 450 | 100 | 990 | 450 | 570 | 280 | 590 | 320 | 660 | 390 | 810 |
| 225 | 600 | 115 | 950 | 340 | 750 | 370 | 780 | 420 | 860 | 510 | 1060 |
| 300 | 600 | 115 | 1030 | 460 | 750 | 370 | 770 | 420 | 860 | 510 | 1060 |
| 375 | 600 | 115 | 1100 | 570 | 740 | 370 | 770 | 410 | 860 | 510 | 1050 |
| 450 | 600 | 115 | 1180 | 690 | 740 | 370 | 770 | 410 | 850 | 500 | 1050 |
| 300 | 750 | 115 | 1040 | 480 | 910 | 460 | 950 | 510 | 1060 | 630 | 1290 |
| 450 | 750 | 115 | 1190 | 710 | 910 | 460 | 940 | 510 | 1050 | 620 | 1280 |
| 600 | 750 | 115 | 1340 | 940 | 900 | 450 | 930 | 510 | 1040 | 620 | 1270 |
| 300 | 900 | 115 | 1040 | 480 | 1070 | 540 | 1110 | 610 | 1240 | 740 | 1520 |
| 450 | 900 | 115 | 1190 | 710 | 1070 | 540 | 1110 | 610 | 1240 | 740 | 1520 |
| 600 | 900 | 115 | 1340 | 940 | 1070 | 540 | 1110 | 600 | 1230 | 740 | 1510 |
| 300 | 1200 | 130 | 1060 | 500 | 1400 | 710 | 1450 | 790 | 1610 | 970 | 1970 |
| 450 | 1200 | 130 | 1210 | 730 | 1390 | 710 | 1440 | 790 | 1610 | 970 | 1970 |
| 600 | 1200 | 130 | 1370 | 960 | 1380 | 700 | 1430 | 780 | 1600 | 960 | 1960 |




ELEVATION



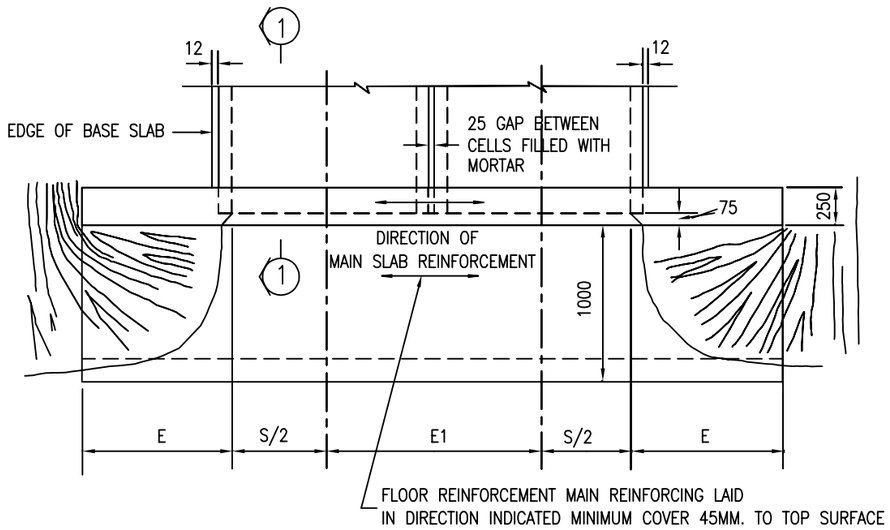

ELEVATION

## STEEL REINFORCEMENT SCHEDULE

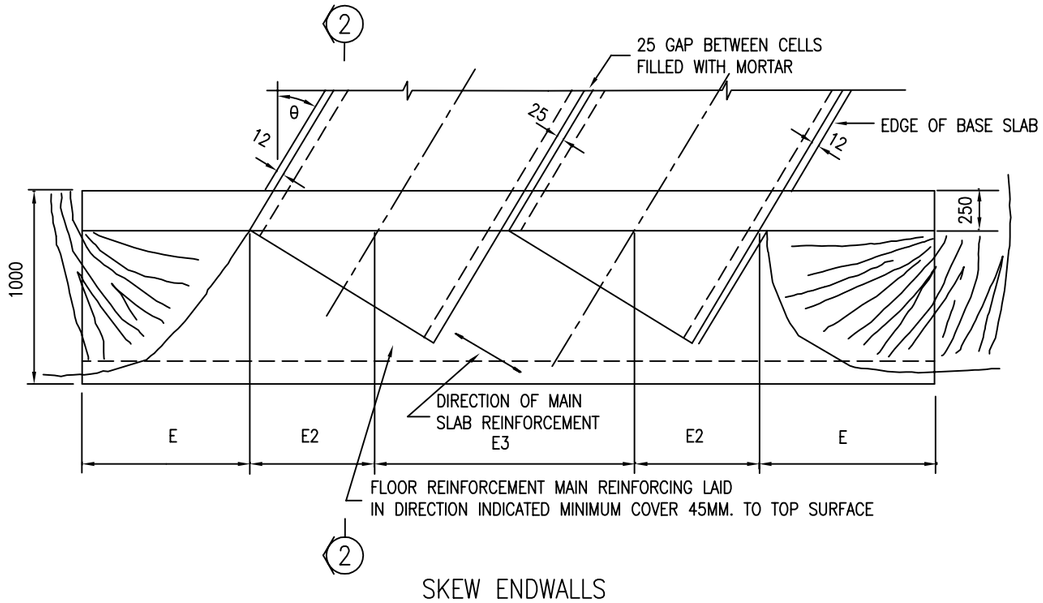
| REINFORCEMENT TYPE | REINFORCEMENT A |
|---|---|
| FOR SLABS UPTO 115MM | F918 |
| FOR SLABS 130MM | F1118 |

NOTES

1. PRECAST REINFORCED CONCRETE BOX CULVERTS SHALL COMPLY WITH THE REQUIREMENTS OF AS.1597, INCLUDING PROOF LOAD
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
3. MINIMUM COVER 45MM.




SQUARE ENDWALLS




SKEW ENDWALLS

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

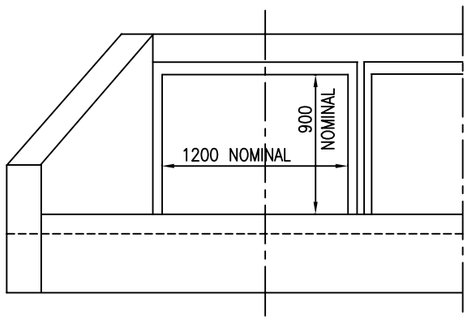
STANDARD DRAWING

PRECAST BOX CULVERTS

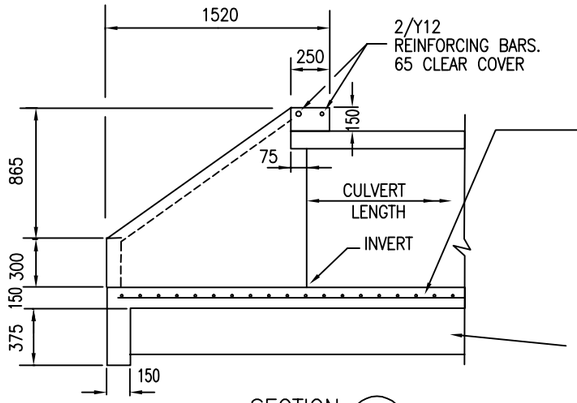
ENDWALLS

| Date | Rev |
|---|---|
| Mar'98 | 02 |

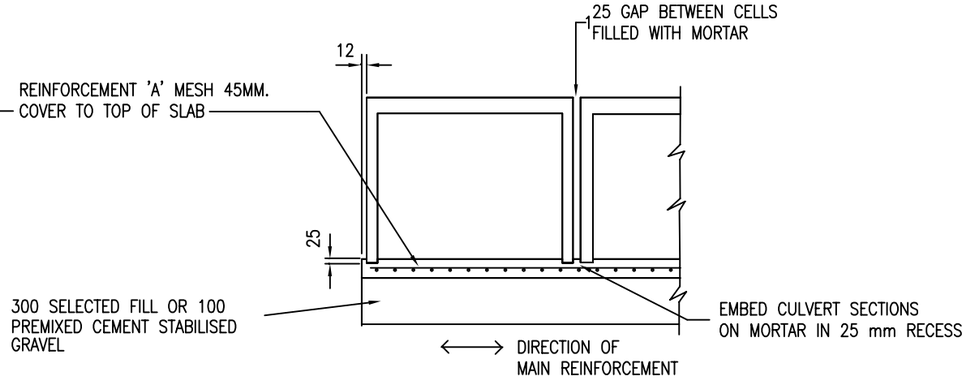
Drawing No.
ST–0023



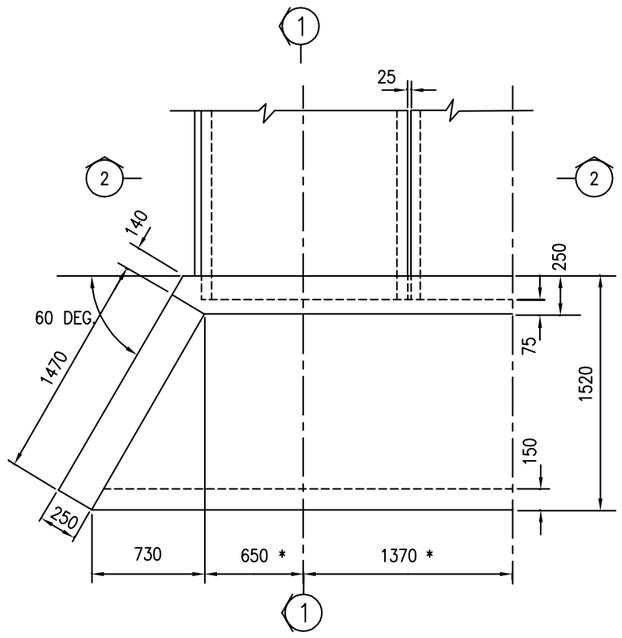

ELEVATION



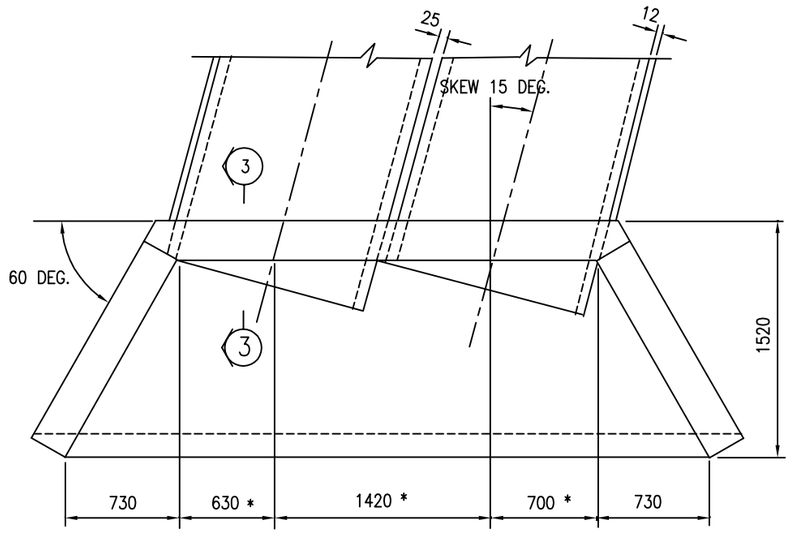

SECTION 1



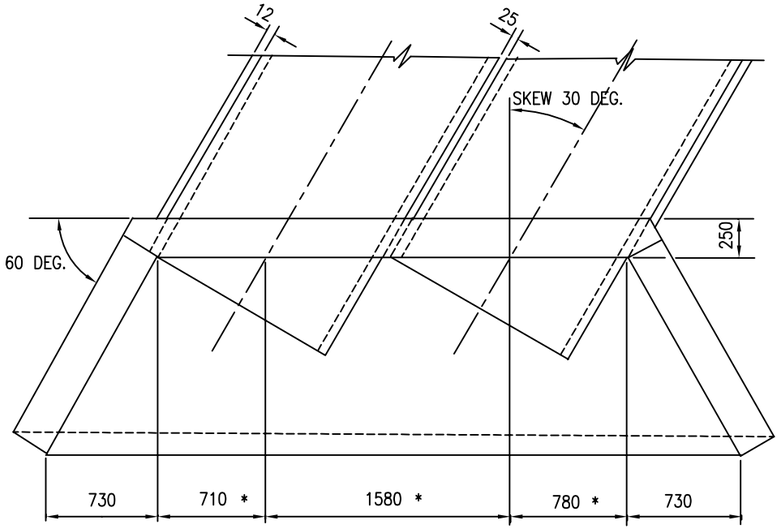

SECTION 2




PLAN 0° SKEW



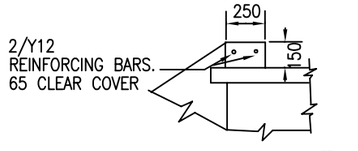

PLAN 15° SKEW




PLAN 30° SKEW

NOT TO SCALE

NOTE: DIMENSIONS MARKED * WILL VARY WITH CULVERT WIDTH




PART SECTION 3

NOTES:

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 32 MPa.
2. 2/Y12 REINFORCING BARS SHALL BE INCORPORATED IN THE HEADWALL EXTENDING 1000 INTO EACH WINGWALL.
3. PRECAST REINFORCED CONCRETE BOX CULVERTS SHALL COMPLY WITH THE REQUIREMENTS OF AS1597, INCLUDING PROOF LOAD.

STEEL REINFORCEMENT SCHEDULE

| REINFORCEMENT TYPE | REINFORCEMENT A |
|---|---|
| FOR SLABS UPTO 115MM | F918 |
| FOR SLABS 130MM | F1118 |

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

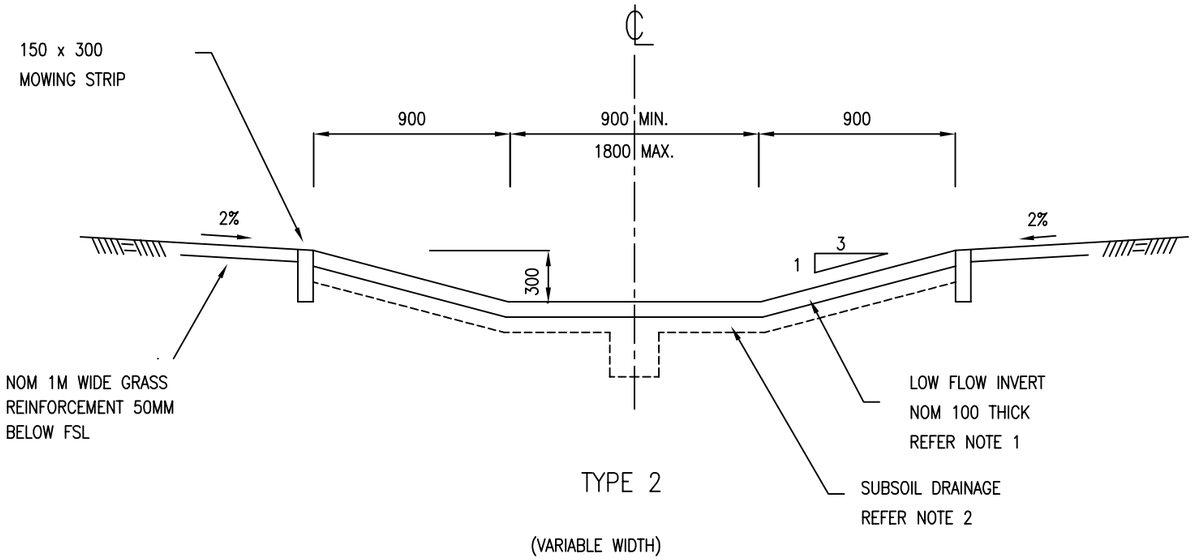
STANDARD DRAWING

PRECAST BOX CULVERTS

HEADWALLS

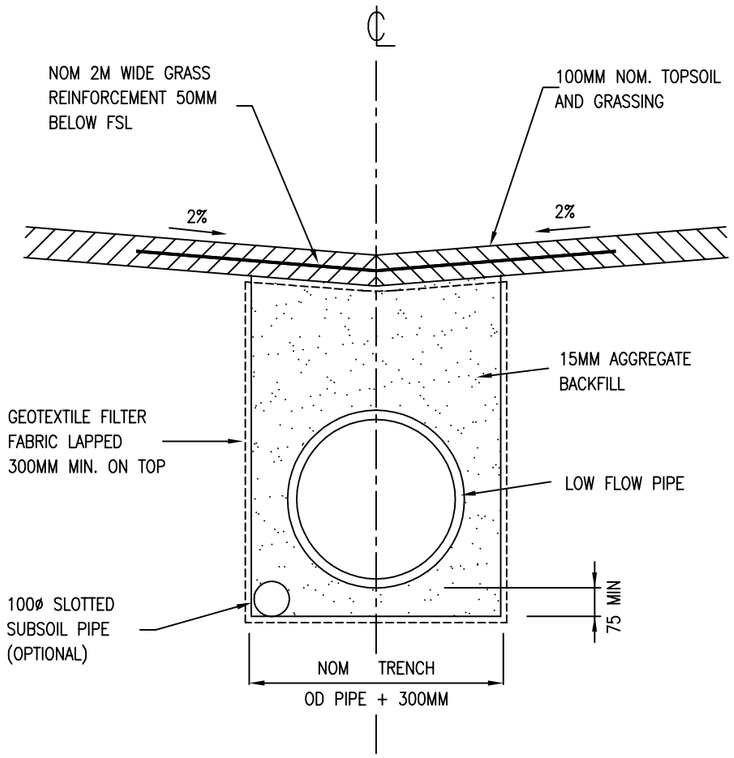
| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No.
ST–0024

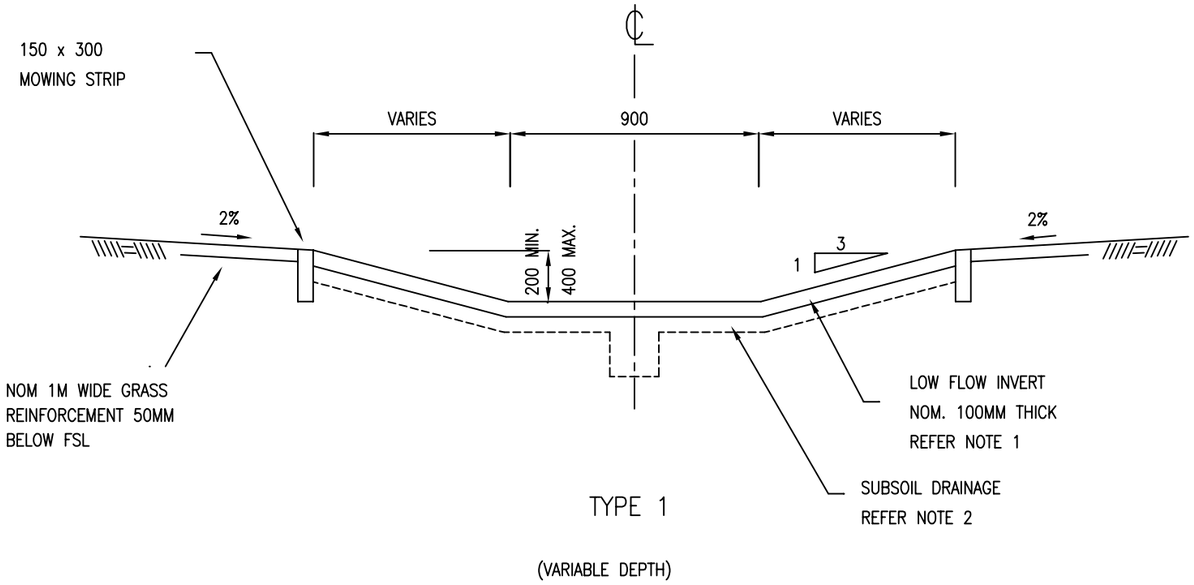



TYPE 2

(VARIABLE WIDTH)




LOW FLOW PIPE
TRENCH DETAIL




TYPE 1

(VARIABLE DEPTH)

LOW FLOW INVERT

NOTES

1. INVERTS MAY BE CONSTRUCTED FROM REINFORCED CONCRETE, GROUTED STONE PITCHING OR OTHER APPROVED MATERIAL.
2. SUBSOIL DRAINAGE SYSTEM SHALL BE PROVIDED BY EITHER:
   a) 100MM THICK SAND OR POROUS GRAVEL BEDDING AND SLOTTED PIPE.
   b) 100MM THICK GEOFABRIC WRAPPED 15MM AGGREGATE.
   c) 50MM THICK NO FINES CONCRETE AND SLOTTED PIPE.
3. GEOTEXTILE FILTER FABRICS SHALL BE BIDUM U24 OR EQUAL.
4. SOIL REINFORCEMENT TO BE TENSAR GEOGRID, PARAGRID OR SIMILAR.
5. MINIMUM CONCRETE COMRESSIVE STRENGTH SHALL BE 32 MPa.

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

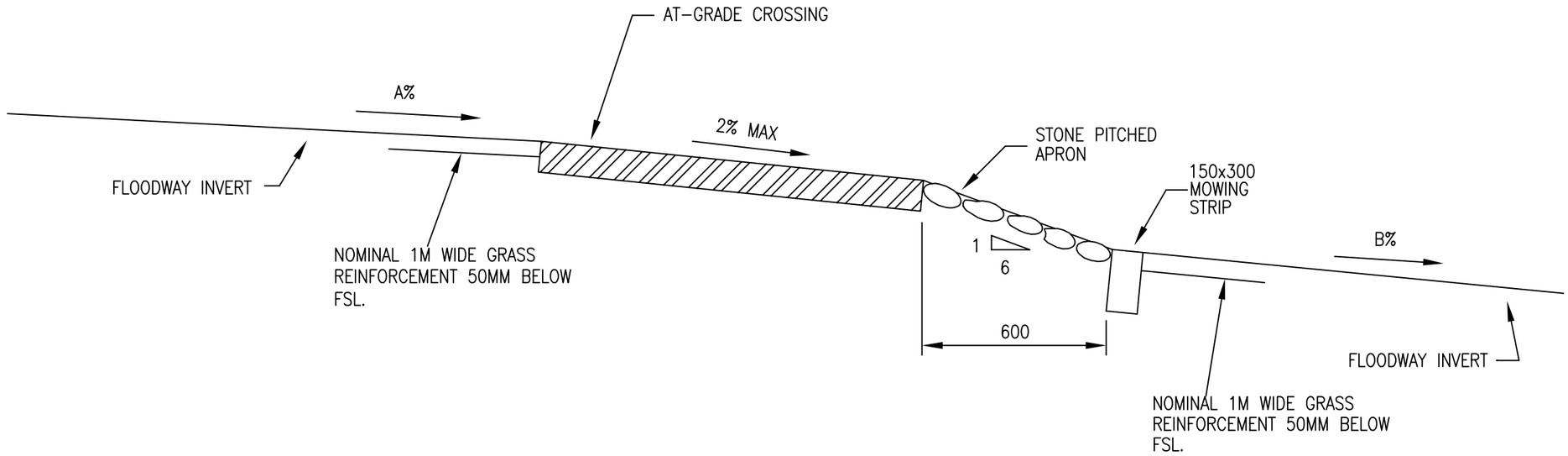
Manager

STANDARD DRAWING

FLOODWAY LOW FLOW PROVISIONS

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No.
ST–0025




NOT TO SCALE

NOTES:
1. GRASS REINFORCEMENT TO BE TENSAR GEOGRID, PARAGRID OR SIMILAR.
2. 150ø STONES SET IN MORTAR TO FORM APRON.

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

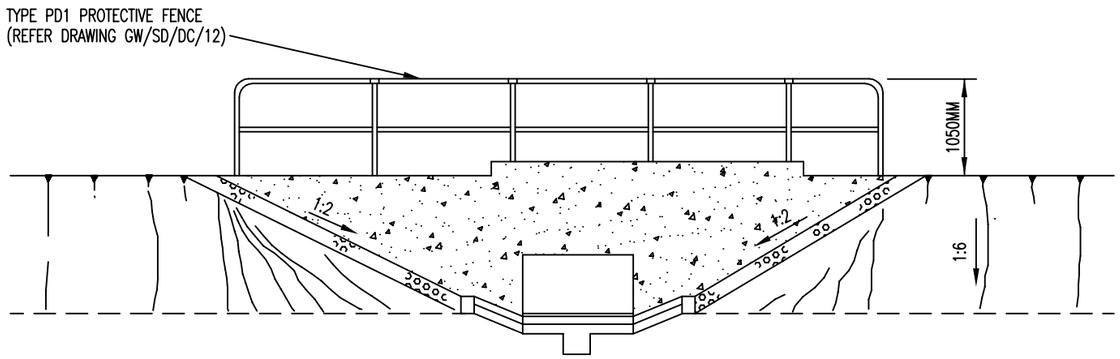
Manager

STANDARD DRAWING

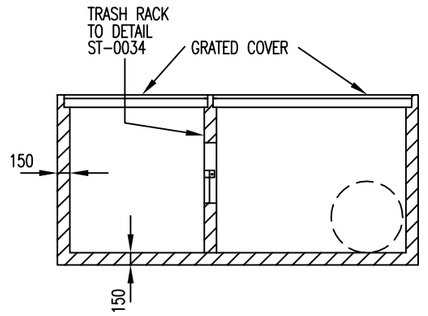
AT – GRADE FLOODWAY CROSSINGS

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No.
ST–0026

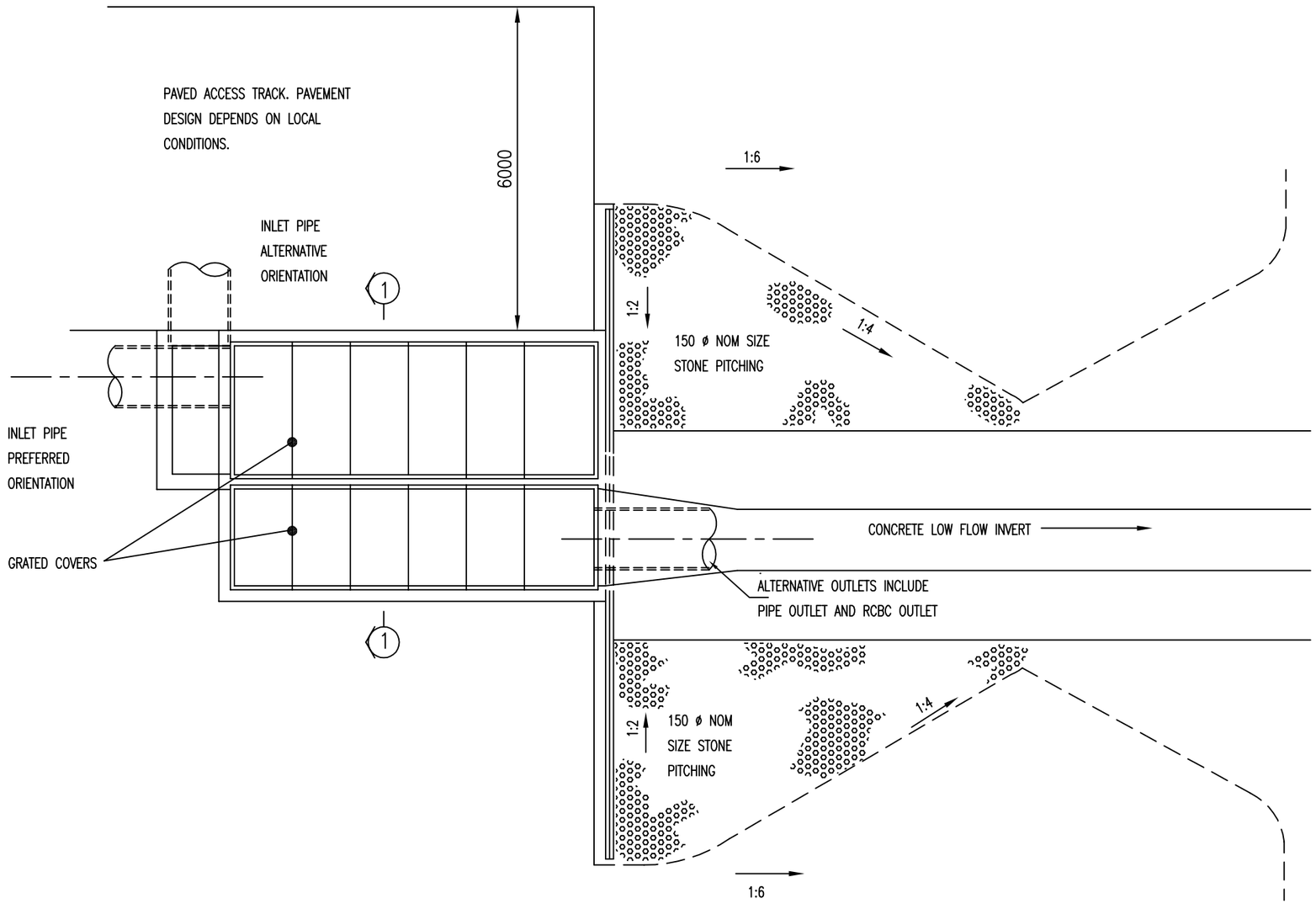



FRONT ELEVATION




SECTION 1

NOTES:
1. ALL CONCRETE TO BE 32MPa WITH 45 MM COVER MINIMUM.
2. F82 MESH CENTRAL TO BE LOCATED IN ALL CONCRETE.




GENERAL LAYOUT PLAN

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

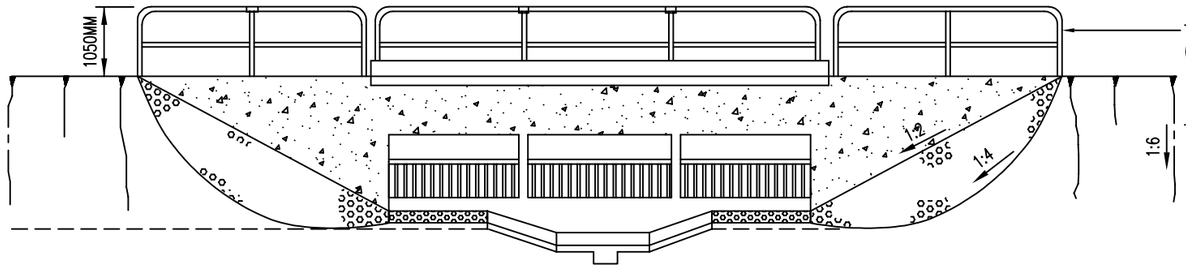
Manager

STANDARD DRAWING

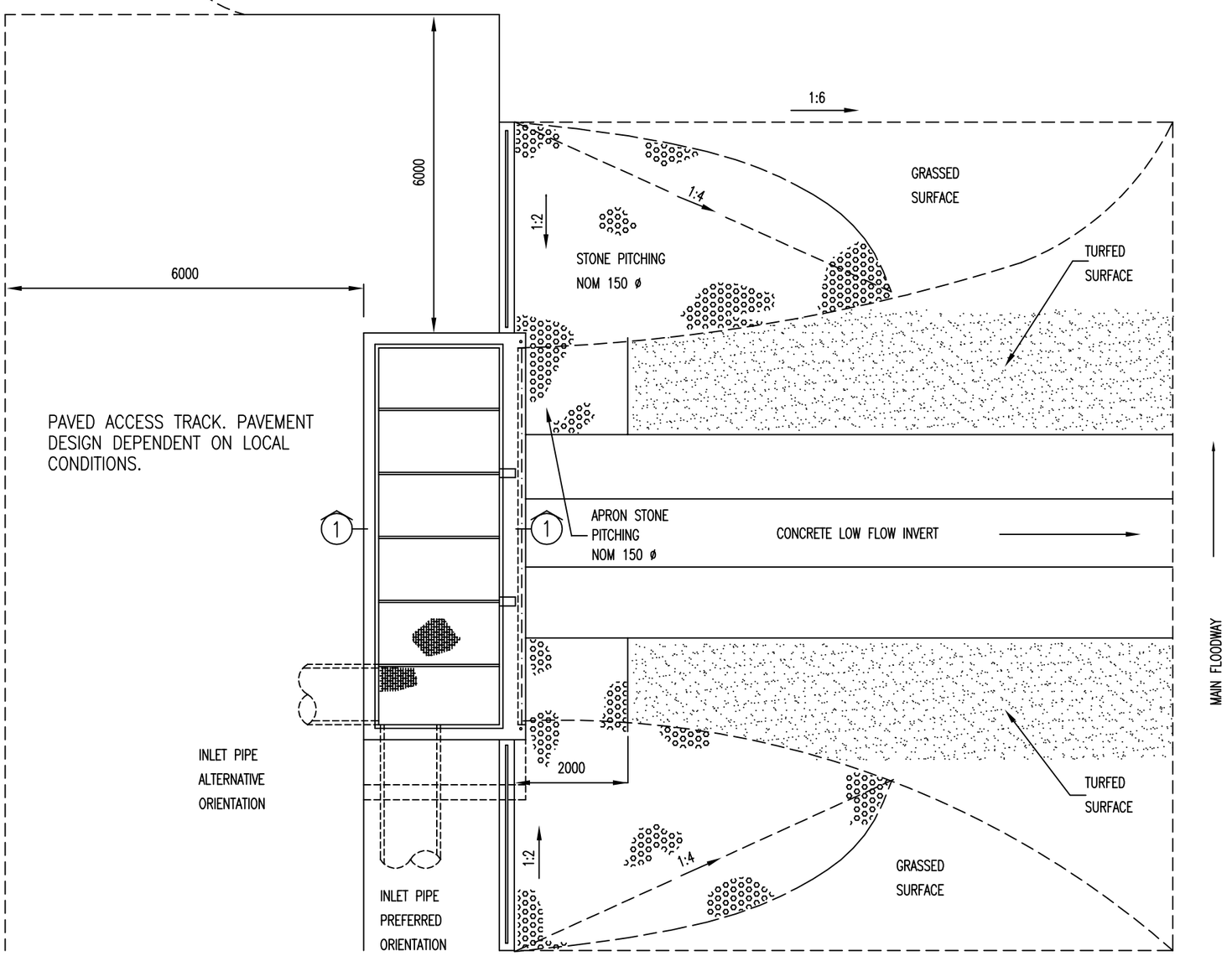
MINOR GPT LAYOUT
PARALLEL TO FLOODWAY

| Date | Rev |
|---|---|
| Mar'98 | 02 |

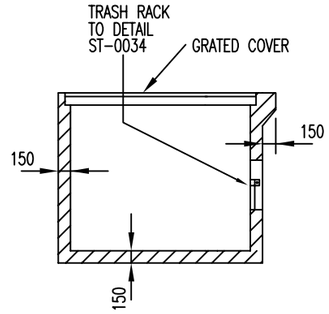
Drawing No.
ST-0031




FRONT ELEVATION




GENERAL LAYOUT PLAN




SECTION 1

NOTES:
1. ALL CONCRETE TO BE 32MPa WITH 45 MM COVER MINIMUM.
2. F82 MESH CENTRAL TO BE LOCATED IN ALL CONCRETE.

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

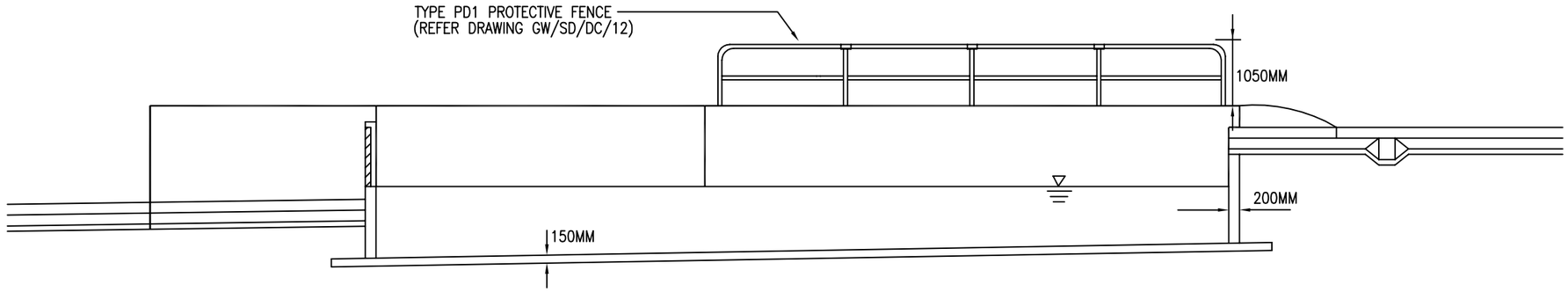
STANDARD DRAWING

MINOR GPT LAYOUT

PERPENDICULAR TO FLOODWAY

| Date | Rev |
|---|---|
| Mar'98 | 02 |

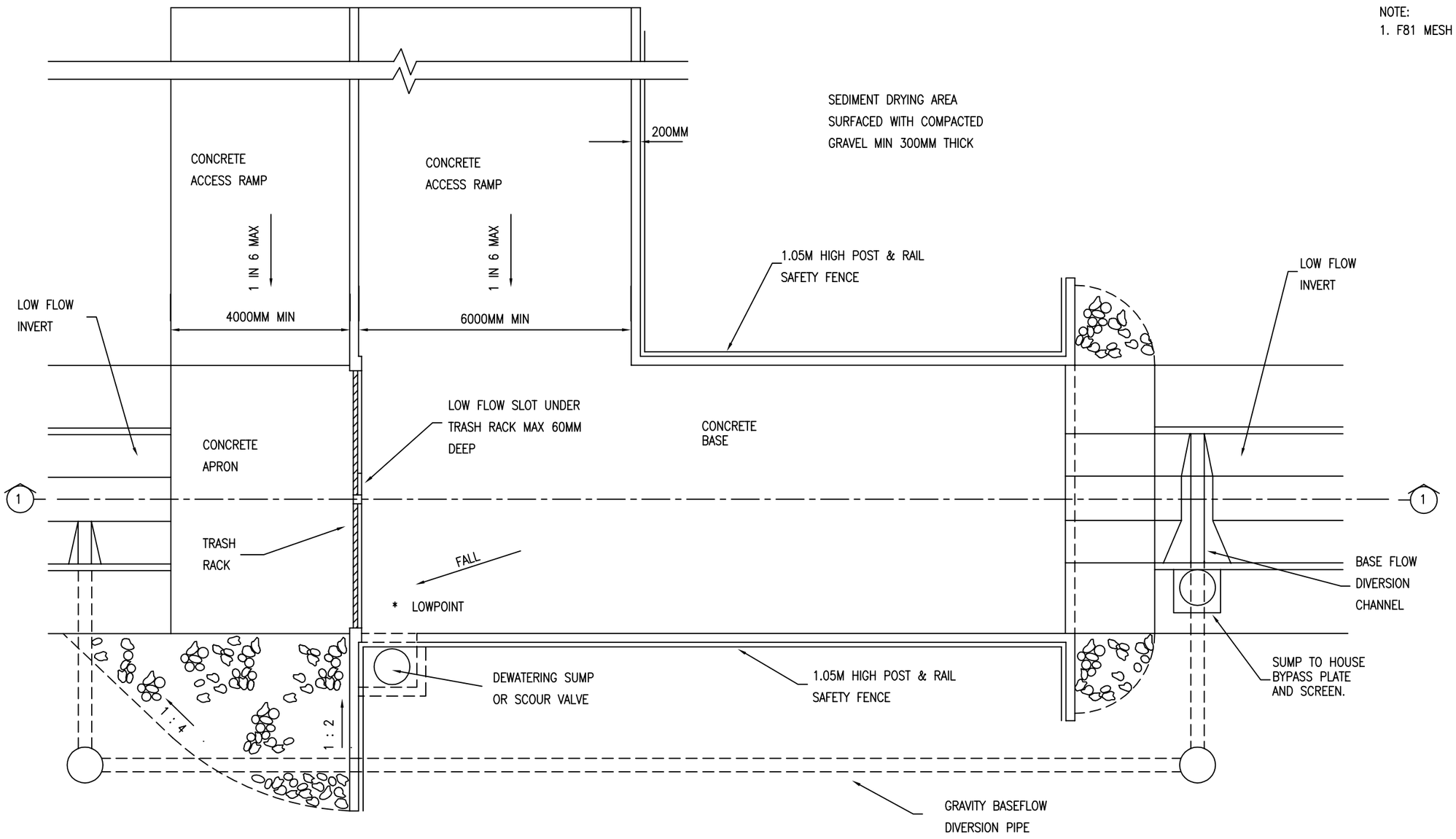
Drawing No.
ST–0032




SECTION 1

NOTE:
1. F81 MESH CENTRAL THROUGHOUT

SEDIMENT DRYING AREA
SURFACED WITH COMPACTED
GRAVEL MIN 300MM THICK




GENERAL LAYOUT PLAN

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE
MANAGEMENT
– Stormwater

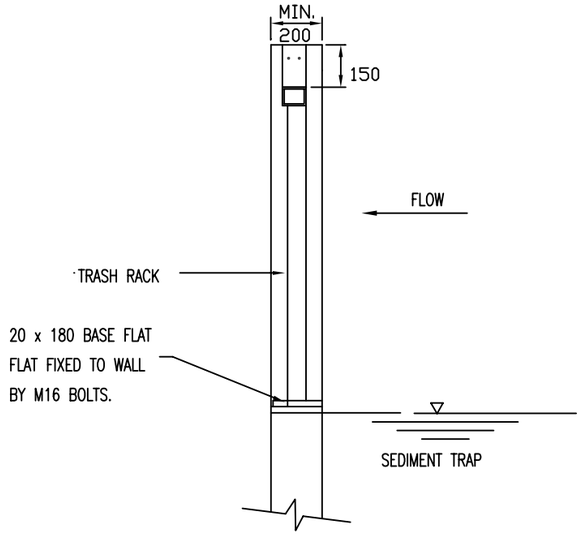
Manager

STANDARD DRAWING

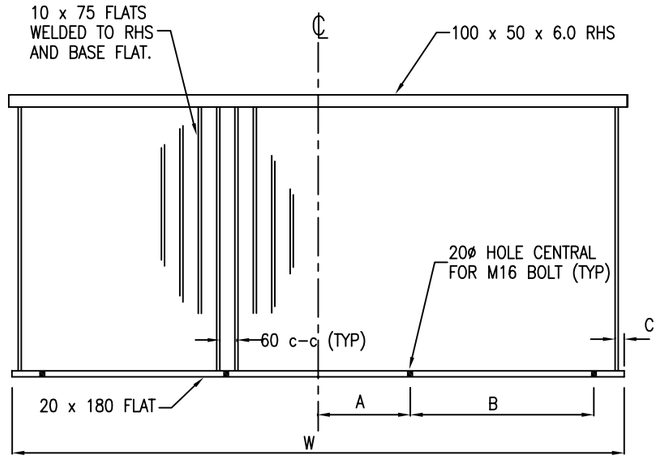
MAJOR GPT LAYOUT

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No.
ST–0033




SECTION 1

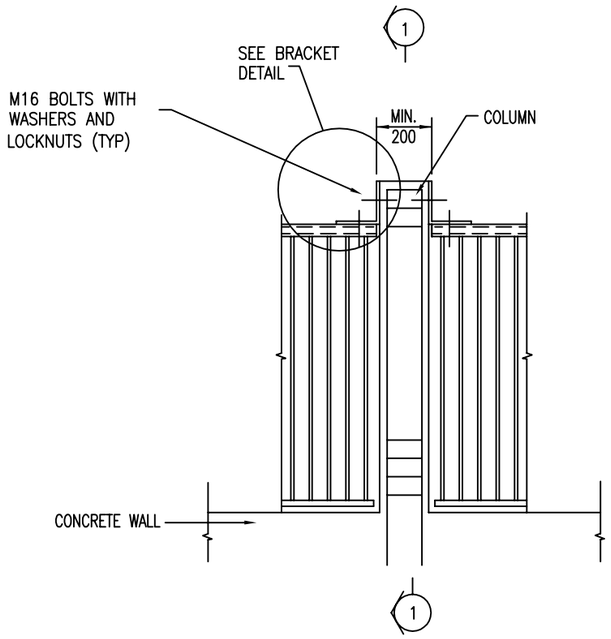



PANEL DETAILS

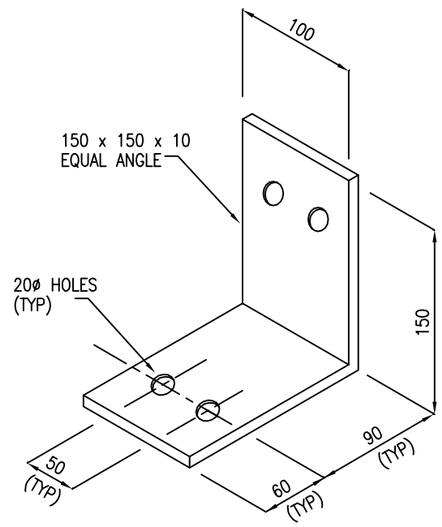
| GPT TYPE | W | A | B | C |
|---|---|---|---|---|
| MINOR | 1900 | 270 | 540 | 50 |
| MAJOR | 2800 | 420 | 840 | 50 |
| | 4800 | 450 | 900 | 60 |

NOTES

1. ALL METALWORK SHALL BE HOT–DIPPED GALVANISED AFTER FABRICATION IN ACCORDANCE WITH AS1650.
2. ALL WELDS SHALL BE 6mm CONTINUOUS FILLET OR BUTT WELDS IN ACCORDANCE WITH AS1554.
3. 4/Y12 BARS IN COLUMN WITH R10 LIGS AT 200 CTS.
4. ALL DIMENSIONS IN MIN U.N.O.
5. ANCHORS TO BE CHEMSETS




CONNECTION DETAILS




BRACKET DETAIL

NOT TO SCALE

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

STANDARD DRAWING

GPT TRASH RACKS

Date: Mar'98

Rev: 02

Drawing No.: ST–0034

# FLOODWAY
# TAKE CARE!

FLOODWATERS MAY RISE AFTER HEAVY RAIN

PARENTS SHOULD SEE THAT CHILDREN DO NOT USE THIS AREA ON RAINY DAYS

NOT TO SCALE

ACT DEPARTMENT OF URBAN SERVICES

INFRASTRUCTURE MANAGEMENT – Stormwater

Manager

STANDARD DRAWING

FLOODWAY ADVISORY SIGN

| Date | Rev |
|---|---|
| Mar'98 | 02 |

Drawing No. ST–0041