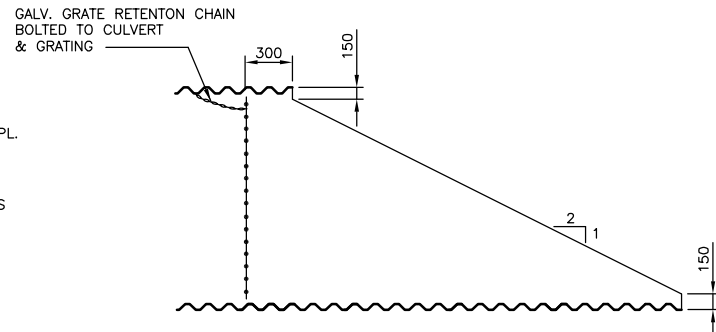
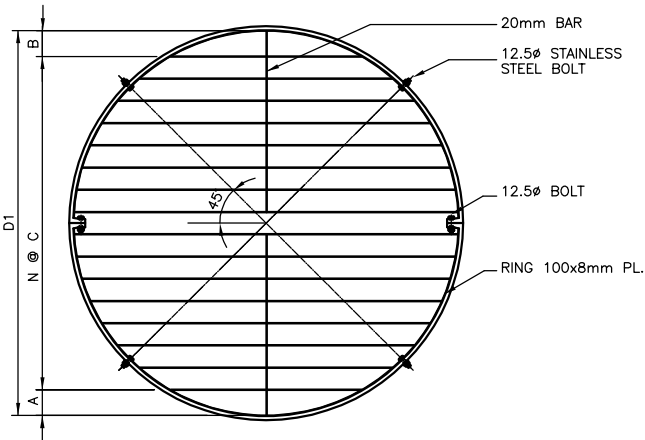


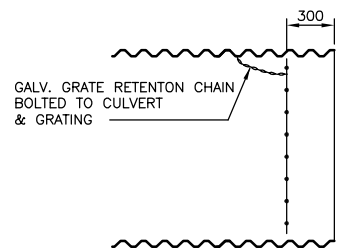
GRATING TYPE 'X'
SCALE: N.T.S.



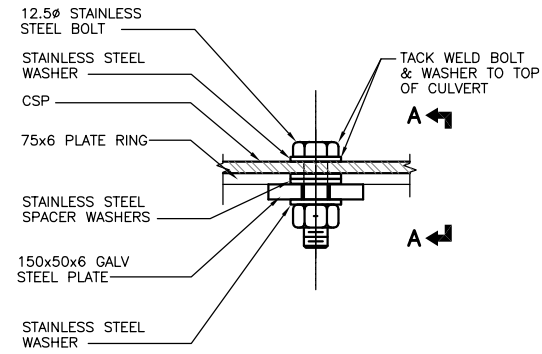
END CONDITION '1'
SCALE: N.T.S.



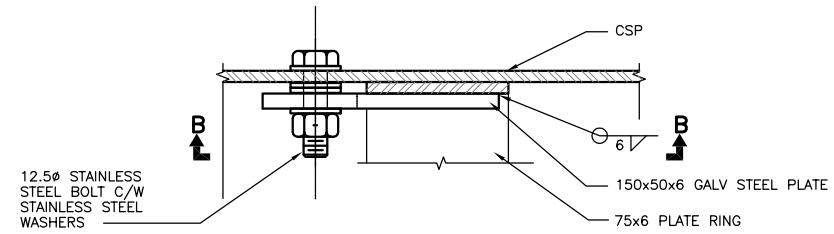
GRATING TYPE 'Y'
SCALE: N.T.S.



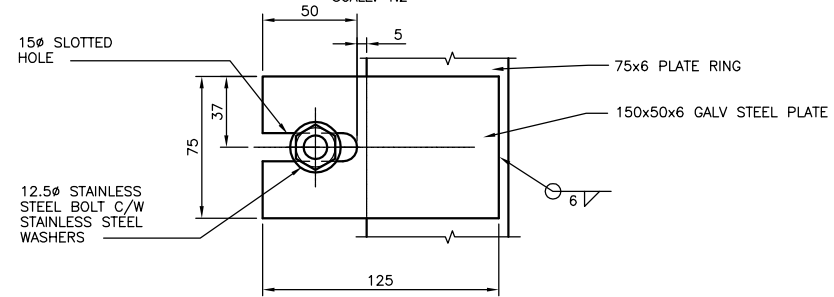
END CONDITION '2'
SCALE: N.T.S.



1 DETAIL
SCALE: 1:2



SECTION A-A
SCALE: 1:2



SECTION B-B
SCALE: 1:2

| OUTFALL DEBRIS GRATING | | | | | | | | | | | |
|---------------------------|------------|----------|---------------|-------------|------|----------|-----|-----|-----|----|--------------|
| LOCATION | PIPE | | END CONDITION | GRATING | | | | | | | |
| | DIAMETER D | MATERIAL | | DIAMETER D1 | TYPE | BAR DIA. | A | B | C | N | WEIGHT (lbs) |
| ARCHIBALD ST. U/P (RR-68) | 750 | CSP | 1 | 735± | X | 15 | 150 | 90 | 135 | 3 | 25 |
| * LARCHDALE CRES. (RR-96) | 1050 | CSP | N/A | 1035± | X | 20 | 150 | 225 | 165 | 4 | 60 |
| DUNKIRK DR. (RR-31) | 1350 | CSP | 1 | 1335 | X | 20 | 150 | 240 | 135 | 7 | 90 |
| VALHALLA DR. (RR-103) | 1660 | SPCSP | 1 | 1645 | X | 20 | 150 | 150 | 135 | 10 | 145 |

- NOTE:**
1. ALL PLATES AND BARS ARE CSA G40.21-300W.
 2. ALL COMPONENTS ARE GALVANIZED.
 3. ALL BOLTS TO BE TYPE 316 STAINLESS STEEL CONFORMING TO ASTM A320 GRADE B8M
 - * 4. THE CONTRACTOR TO CONFIRM THE CULVERT DIAMETER LARCHDALE CRES. PRIOR TO FABRICATION

STANDARD GRATING AND END CONDITION DETAILS

WARNING

IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:
 1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
 2) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.
 SEE PROVINCIAL REGULATION 210/72 FOR DETAILS.

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES



| LOCATION APPROVED UNDERGROUND STRUCTURES | | | |
|--|------|--|--|
| SUPV. U/G STRUCTURES COMMITTEE | DATE | | |
| | | | |

NOTE:
 LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

| B.M. ELEV. | NO. | REVISIONS | DATE | BY |
|------------|-----|-----------|------|----|
| | | | | |

KGS GROUP
 CONSULTING ENGINEERS & PROJECT MANAGERS
 WINNIPEG (204) 896-1209
 THUNDER BAY (807) 345-2233

| | |
|----------------------|----------------------------|
| DESIGNED BY: DGG | CHECKED BY: RJH |
| DRAWN BY: DW | APPROVED BY: |
| HOR. SCALE: AS NOTED | RELEASED FOR CONSTRUCTION: |
| VERTICAL: | DATE: |

ENGINEER'S SEAL

 CONSULTANT DRAWING NO.
04-107-13_08R0

THE CITY OF WINNIPEG
 WATER & WASTE DEPARTMENT

2004 OUTFALL REPAIRS
DEBRIS GRATE DETAILS

| |
|-----------------------------------|
| SHEET 08 OF 09 |
| CAD FILE DRAWING NUMBER 03-107-13 |
| CITY DRAWING NUMBER LD-3080 |