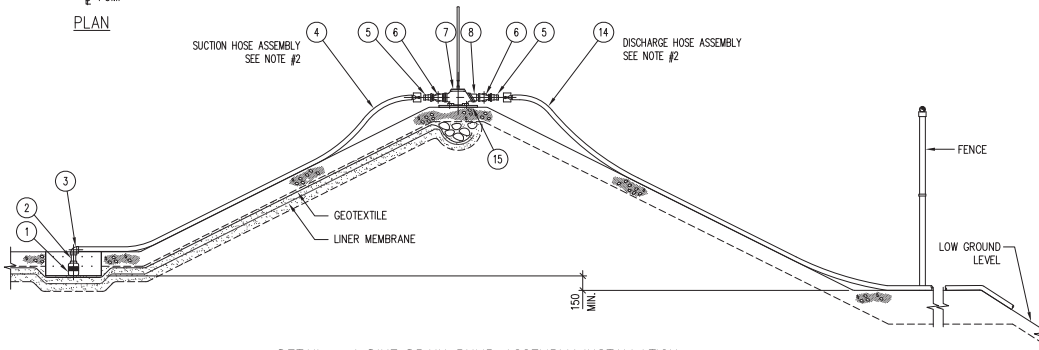
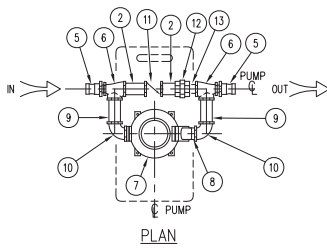


DETAIL - 2 PUMP CARRYING BOARD



DETAIL - 1 DIKE DRAIN PUMP ASSEMBLY INSTALLATION


LIST OF MATERIAL FOR DIKE DRAIN PUMP ASSEMBLY \*

ITEM	SIZE (S.I.)	DESCRIPTION
①	50ø	SUCTION STUB STRAINER.
②	50ø x 100 LG.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
③	50ø	ELBOW 90°, M. I. GALVANIZED, THREADED
④		SUCTION HOSE ASSEMBLY (SEE NOTE 2) & SPECIFICATIONS
⑤		OPW KAMLOK #633-F ADAPTER.
⑥	50ø x 38ø x 50ø	THREADED TEE, MALLABLE IRON, GALV'D
⑦	38ø x 38ø	DIAPHRAGM PUMP, GORMAN RUPP, MODEL 4790-97 (SEE SPECIFICATIONS).
⑧	38ø x 100 LG.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
⑨	38ø x 200 LG.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
⑩	38ø	ELBOW 90°, MALLABLE IRON THREADED, GALVANIZED
⑪	50ø	CHECK VALVE, BRONZE, THREADED ENDS, FEMALE NPT
⑫	50ø	UNION, MALLABLE IRON, CLASS 300 THREADED, GALVANIZED
⑬	50ø x TO SUIT	PIPE, ERW, GALVANIZED, THREADED
⑭	50ø	DISCHARGE HOSE ASSEMBLY (SEE NOTE 2) & SPECIFICATIONS.
⑮	-	PUMP CARRYING BOARD, SEE DETAIL-2

\* FOR DESCRIPTION OF ITEMS SEE SPECIFICATIONS, DIV. 15, SECTION 15010.

NOTES:

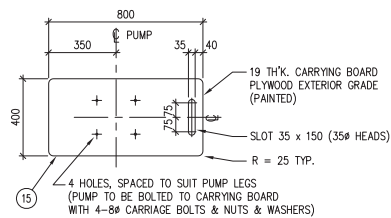
- 1- UNLESS OTHERWISE INDICATED ONE DIKE DRAIN PUMP ASSEMBLY TO BE PROVIDED FOR EACH SITE.
- 2- FOR LENGTH OF SUCTION & DISCHARGE HOSES REFER TO PARTICULAR PROJECT DRAWINGS. DISCHARGE HOSE SHALL EXTEND TO LOW GROUND LEVEL OUTSIDE OF FENCE.
- 3- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 15, SECTION 15010.
- 4- PUMP & HOSES TO BE STORED INDOORS WHEN NOT USED.



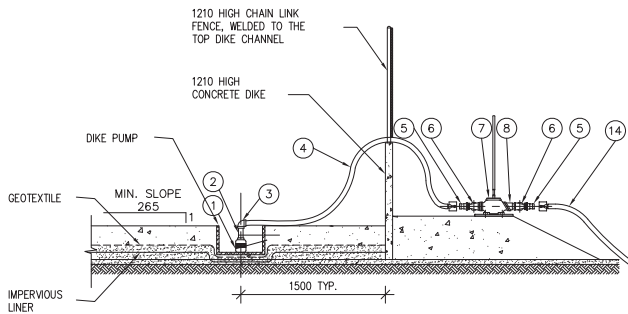
Northwest  
Territories Public Works & Services

Drawing Title  
DIKE DRAIN PUMP ASSEMBLY  
PLAN & DETAILS

Design EDZ	Ver. EDZ	Scale 1 : 40
Drawn KJ	Appr. REE	Date 95/02/28
Revised By REE	Drawing No. NT-P01	
Revised On 04/09/07		



DETAIL - 2 PUMP CARRYING BOARD

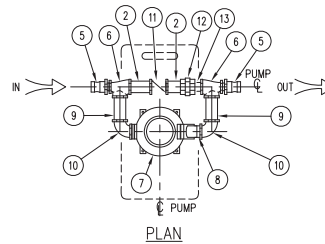


DETAIL - 1 DIKE DRAIN PUMP ASSEMBLY INSTALLATION

LIST OF MATERIAL FOR DIKE DRAIN PUMP ASSEMBLY \*

ITEM	SIZE (S.I.)	DESCRIPTION
①	50#	SUCTION STUB STRAINER.
②	50# x 100 LG.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
③	50#	ELBOW 90°, M. I. GALVANIZED, THREADED
④		SUCTION HOSE ASSEMBLY (SEE NOTE 2) & SPECIFICATIONS
⑤		OPW KAMLOK #633-F ADAPTER.
⑥	50# x 38# x 50#	THREADED TEE, MALLABLE IRON, GALV'D
⑦	38# x 38#	DIAPHRAGM PUMP, GORMAN RUPP, MODEL 4790-97 (SEE SPECIFICATIONS).
⑧	38# x 100 Lg.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
⑨	38# x 200 LG.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
⑩	38#	ELBOW 90°, MALLABLE IRON THREADED, GALVANIZED
⑪	50#	CHECK VALVE, BRONZE, THREADED ENDS, FEMALE NPT
⑫	50#	UNION, MALLABLE IRON, CLASS 300 THREADED, GALVANIZED
⑬	50# x TO SUIT	PIPE, ERW, GALVANIZED, THREADED
⑭	50#	DISCHARGE HOSE ASSEMBLY (SEE NOTE 2) & SPECIFICATIONS.
⑮	-	PUMP CARRYING BOARD, SEE DETAIL-2

\* FOR DESCRIPTION OF ITEMS SEE SPECIFICATIONS, DIV. 15, SECTION 15010.



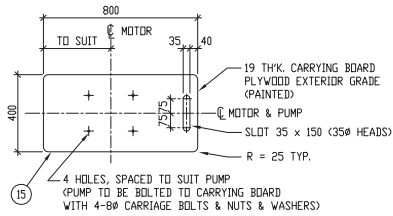
NOTES:

- 1- UNLESS OTHERWISE INDICATED ONE DIKE DRAIN PUMP ASSEMBLY TO BE PROVIDED FOR EACH SITE.
- 2- FOR LENGTH OF SUCTION & DISCHARGE HOSES REFER TO PARTICULAR PROJECT DRAWINGS. DISCHARGE HOSE SHALL EXTEND TO LOW GROUND LEVEL OUTSIDE OF FENCE.
- 3- FOR MATERIALS REFER TO SPECIFICATIONS, DIV. 15, SECTION 15010.
- 4- PUMP & HOSES TO BE DRAINED AND STORED INDOORS WHEN NOT USED.
- 5- FOR CONCRETE DIKES THE PUMP WILL BE LOCATED OUTSIDE THE DIKE AND THE SUCTION HOSE WILL BE RUN OVER THE DIKE AND UNDER THE FENCE.

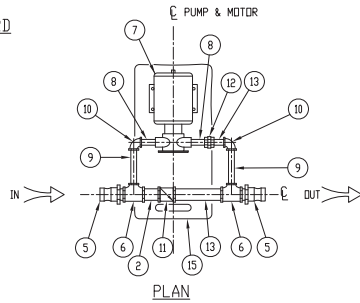


Drawing Title  
DIKE DRAIN PUMP ASSEMBLY  
FOR CONCRETE DIKE  
PLAN & DETAILS

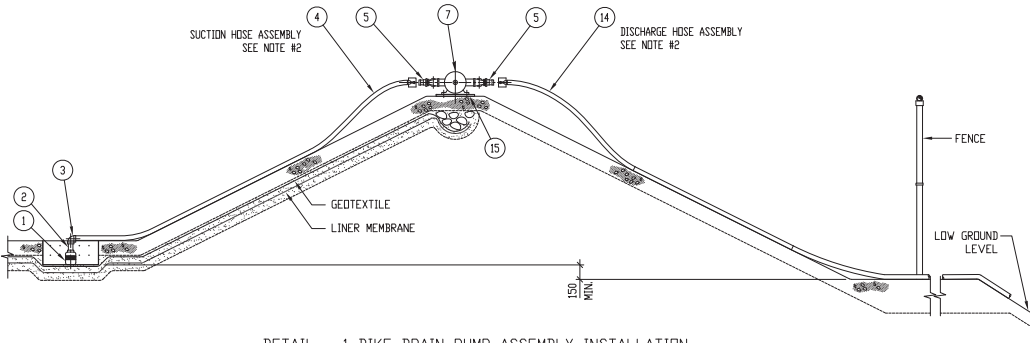
Design EDZ	Ver. EDZ	Scale 1 : 40
Drawn KJ	Appr. RCE	Date 95/02/28
Revised By RCE	Drawing No. NT-P01A	
Revised On 04/09/07		



DETAIL - 2 PUMP CARRYING BOARD



PLAN



DETAIL - 1 DIKE DRAIN PUMP ASSEMBLY INSTALLATION

LIST OF MATERIAL FOR DIKE DRAIN PUMP ASSEMBLY \*


ITEM	SIZE (S.I.)	DESCRIPTION
1	50Ø	SUCTION STUB STRAINER.
2	50Ø x 100 L.G.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
3	50Ø	ELBOW 90°, MALLABLE IRON, GALVANIZED, THREADED.
4		SUCTION HOSE ASSEMBLY (SEE NOTE #2 ) & SPEC'S.
5		DPW KAMLOK #633-F ADAPTER.
6	50Ø x 25Ø x 50Ø	THREADED TEE, MALLABLE IRON, GALVANIZED.
7	25Ø x 25Ø	3/4 HP DIRECT DRIVE ELECTRIC PUMP, JABSCO, MODEL 6050-0013
8	25Ø x 100 L.G.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
9	25Ø x 200 L.G.	GALVANIZED STEEL PIPE NIPPLE, THREADED ENDS.
10	25Ø	ELBOW 90°, MALLABLE IRON, GALVANIZED, THREADED.
11	50Ø	CHECK VALVE, BRONZE, THREADED ENDS, FEMALE NPT.
12	25Ø	UNION, M. I., CLASS 300 THREADED, GALVANIZED.
13	50Ø x TO SUIT	PIPE, ERW, THREADED, GALVANIZED.
14	38Ø	DISCHARGE HOSE ASSEMBLY (SEE NOTE #2 ) & SPEC'S.
15	-	PUMP CARRYING BOARD, SEE DETAIL-2.

\* FOR DESCRIPTION OF ITEMS SEE SPECIFICATIONS, DIV. 15, SECTION 15010.

NOTES:

- 1- UNLESS OTHERWISE INDICATED ONE DIKE DRAIN PUMP ASSEMBLY TO BE PROVIDED FOR EACH SITE.
- 2- FOR LENGTH OF SUCTION & DISCHARGE HOSES REFER TO PARTICULAR PROJECT DRAWINGS. DISCHARGE HOSE SHALL EXTEND TO LOW GROUND LEVEL OUTSIDE OF FENCE.
- 3- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 15, SECTION 15010.
- 4- PUMP & HOSES TO BE DRAINED AND STORED INDOORS WHEN NOT USED.

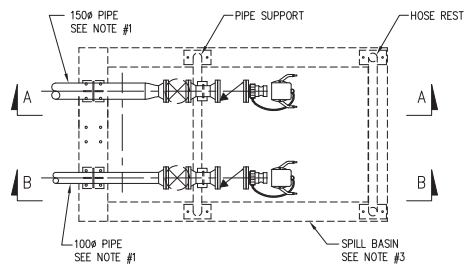
NOTE: THIS IS A WATER PUMP AND SHALL NOT BE USED FOR GASOLINE OR DIESEL FUEL.



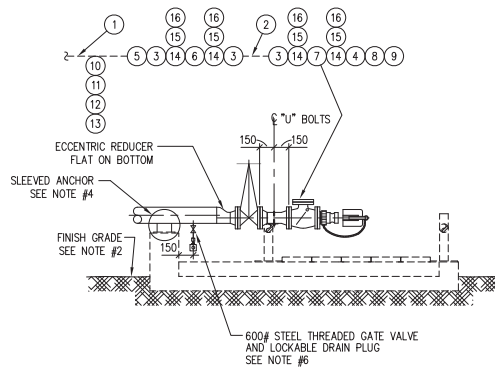
Northwest  
Territories Public Works & Services

Drawing Title  
ELECTRIC DIKE DRAIN PUMP ASSEMBLY  
PLAN & DETAILS

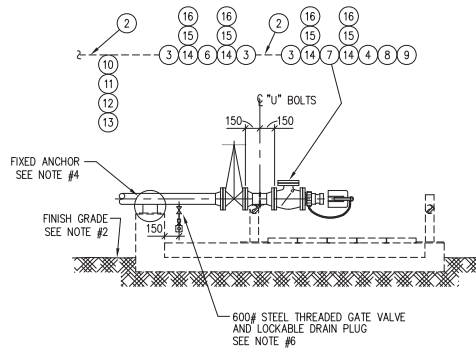
Design EDZ	Ver. EDZ	Scale 1 : 40
Drawn KJ	Appr. REE	Date 95/02/28
Revised By REE	Drawing No. NT-P01B	
Revised On 04/09/07		



PLAN VIEW  
(ONLY 1-150# & 1-100# PIPES SHOWN MAX 3 LINES SEE NOTE #1)



SECTION A-A  
(TYPICAL ARRANGEMENT FOR 1-150# PIPE)




SECTION B-B  
(TYPICAL ARRANGEMENT FOR 1-100# PIPE)

# LIST OF MATERIAL

ITEM	SIZE (S.I.)	DESCRIPTION
①	150#	CARBON STEEL PIPE, ERW, SCH. 40, A53 GR. B
②	100#	CARBON STEEL PIPE, ERW, SCH. 40, A53 GR. B
③		WELD NECK FLANGE, SCH. 40, A350, A350 GR. LF2
④		THREADED FLANGE, 150#, A350 GR LF2
⑤	150# x 100#	ECCENTRIC REDUCER, A234 GR. B
⑥	100#	GATE VALVE, FLANGED, 150# A352 GR. LCB
⑦		CHECK VALVE, FLANGED, 150# A352 GR. LCB
⑧		KAMLOK ADAPTOR, OPW No. 633-F, STAINLESS STEEL
⑨		KAMLOK CAP, LOCKABLE TYPE, OPW # 634-BK, ALUM.
⑩	25#	HALF COUPLING, THREADED, A350 GR. LF2
⑪		PIPE NIPPLE, TBE, SCH. 80, 100 LONG, A53 SMLS
⑫		600# STEEL THREADED GATE VALVE, 600#, A105N
⑬		LOCKABLE PLUG, SEE NOTE #6 (STEEL)
⑭	100#	GASKET, JOHN CRANE STYLE 2160, NON-ASBESTUS
⑮	16# x 89 Lg.	STUD BOLTS, A320 GR. L7
⑯	16#	NUTS, A194 GR. 4

## NOTES:

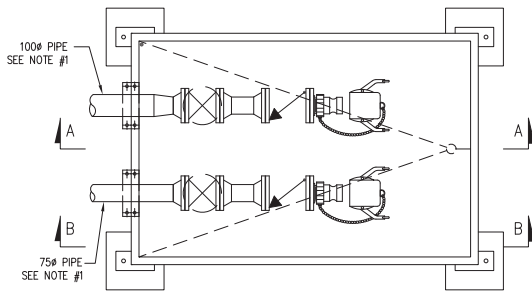
- 1- FOR NUMBER, SIZE & ARRANGEMENT OF PRODUCT PIPES SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- FOR SPILL BASIN SEE DWG. NT-S11
- 4- FOR SLEEVED ANCHOR SEE DWG. NT-S16.
- 5- FOR PIPING, VALVES & FITTING MATERIALS DETAILS SEE SPECIFICATIONS, DIV.15, SEC. 15010.
- 6- FOR LOCKABLE DRAIN PLUG SEE DWG. NT-P07



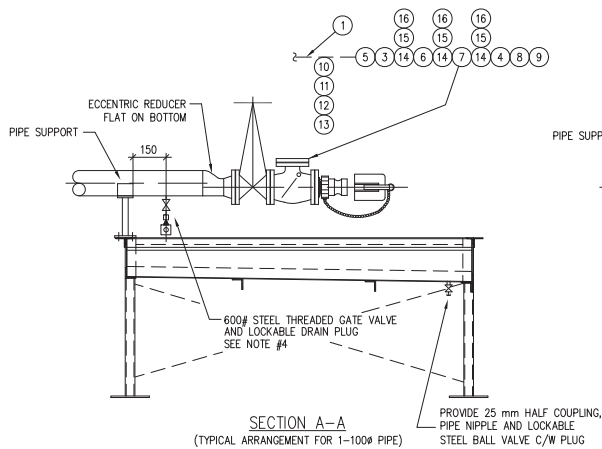
Northwest Territories Public Works & Services

Drawing Title  
SEA HOSE CONNECTION PIPING  
AT SPILL BASIN  
PLAN, SECTIONS

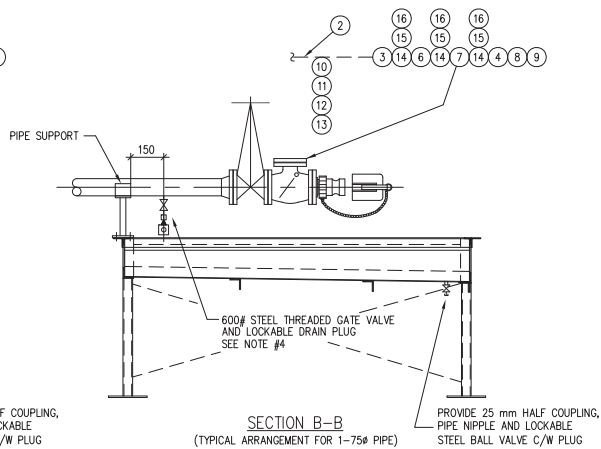
Design RW/LR	Ver. EDZ	Scale 1 : 40
Drawn KJ	Appr. REE	Date 95/02/28
Revised By REE	Drawing No. NT-P02	
Revised On 04/09/07		



PLAN VIEW  
(ONLY 1-100# & 1-75# PIPES SHOWN MAX 2 LINES SEE NOTE #1)



SECTION A-A  
(TYPICAL ARRANGEMENT FOR 1-100# PIPE)




SECTION B-B  
(TYPICAL ARRANGEMENT FOR 1-75# PIPE)

# LIST OF MATERIAL

ITEM	SIZE (S.I.)	DESCRIPTION
①	100#	CARBON STEEL PIPE, ERW, SCH. 80, A53 GR. B
②	75#	CARBON STEEL PIPE, ERW, SCH. 80, A53 GR. B
③		WELD NECK FLANGE, SCH. 40, A350, A350 GR. LF2
④		THREADED FLANGE, 150#, A350 GR LF2
⑤	1000# x 75#	ECCENTRIC REDUCER, A234 GR. B
⑥	75#	GATE VALVE, FLANGED, 150# A352 GR. LCB
⑦		CHECK VALVE, FLANGED, 150# A352 GR. LCB
⑧		KAMLOK ADAPTOR, OPW No. 633-F, STAINLESS STEEL
⑨		KAMLOK CAP, LOCKABLE TYPE, OPW # 634-BK, ALUM.
⑩	25#	HALF COUPLING, THREADED, A350 GR. LF2
⑪		PIPE NIPPLE, TBE, SCH. 80, 100 LONG, A53 SMLS
⑫		600# STEEL THREADED GATE VALVE, 600#, A105N
⑬	25#	LOCKABLE PLUG, SEE NOTE #6 (STEEL)
⑭	75#	GASKET, JOHN CRANE STYLE 2160, NON-ASBESTUS
⑮	16# x 89 Lg.	STUD BOLTS, A320 GR. L7
⑯	16#	NUTS, A194 GR. 4

## NOTES:

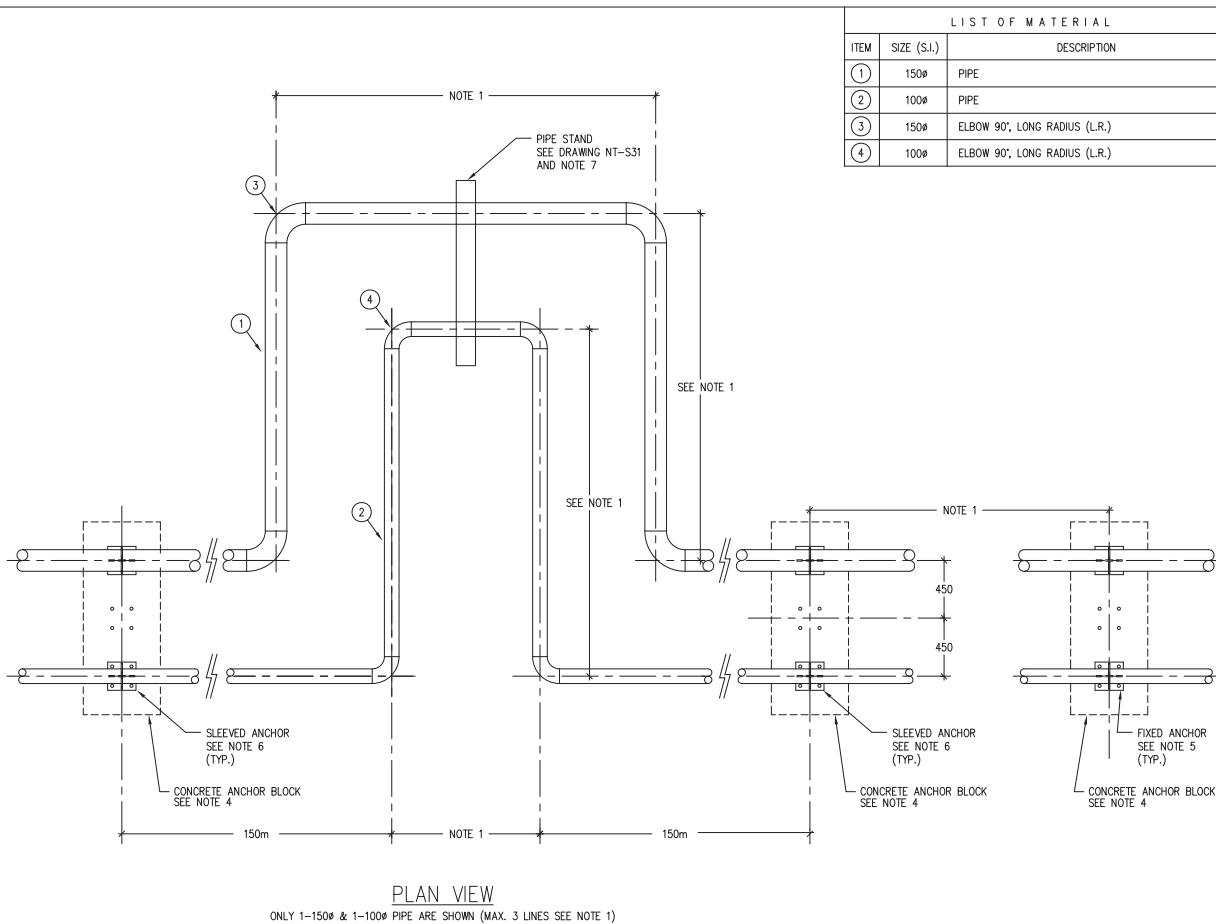
- 1- FOR NUMBER, SIZE & ARRANGEMENT OF PRODUCT PIPES SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR SPILL BASIN SEE DWG. NT-S11
- 3- FOR PIPING, VALVES & FITTING MATERIALS DETAILS SEE SPECIFICATIONS, DIV.15, SEC. 15010.
- 4- FOR LOCKABLE DRAIN PLUG SEE DWG. NT-P07



Northwest  
Territories Public Works & Services


Drawing Title  
FUEL TRUCK CONNECTION PIPING  
AT SPILL BASIN  
PLAN, SECTIONS

Design RW/LR	Ver. EDZ	Scale 1 : 20
Drawn KJ	Appr.	Date 95/02/28
Revised By REE	Drawing No. NT-P02A	
Revised On 04/08/31		



LIST OF MATERIAL		
ITEM	SIZE (S.I.)	DESCRIPTION
①	150"	PIPE
②	100"	PIPE
③	150"	ELBOW 90°, LONG RADIUS (L.R.)
④	100"	ELBOW 90°, LONG RADIUS (L.R.)

- NOTES:**
- 1- NUMBER, TYPE, LOCATION & SPACING OF EXPANSION LOOPS AND MANNER OF INSTALLATION SHALL BE AS INDICATED ON PARTICULAR PROJECT DRAWINGS AND SPECIFICATIONS. ASSUME SUMMER INSTALLATION AND PROVIDE FOR MAXIMUM OFFSET MOTION OCCURING DURING LOCAL LOW WINTER TEMPERATURE AT THE TIME OF INSTALLATION.
  - 2- FOR NUMBER, SIZE & ARRANGEMENT OF PRODUCT PIPES SEE PARTICULAR PROJECT DRAWINGS.
  - 3- FOR FINISH ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
  - 4- FOR LOCATION OF ANCHOR BLOCKS SEE PARTICULAR PROJECT DRAWINGS AND FOR CONCRETE ANCHOR BLOCK DETAIL SEE DWG. NT-S14.
  - 5- FOR FIXED ANCHOR SEE DWG. NT-S15.
  - 6- FOR SLEEVED ANCHOR SEE DWG. NT-S16.
  - 7- LOCATION OF PIPE STANDS TO BE AS SHOWN IN PARTICULAR PROJECT DRAWINGS.
  - 8- THIS DETAIL IS FOR GENERAL INFORMATION ONLY. EXPANSION LOOP DESIGN IS SITE SPECIFIC AND IS TO BE DESIGNED AND APPROVED BY THE ENGINEER FOR THE PARTICULAR INSTALLATION IN WHICH IT IS BEING USED.

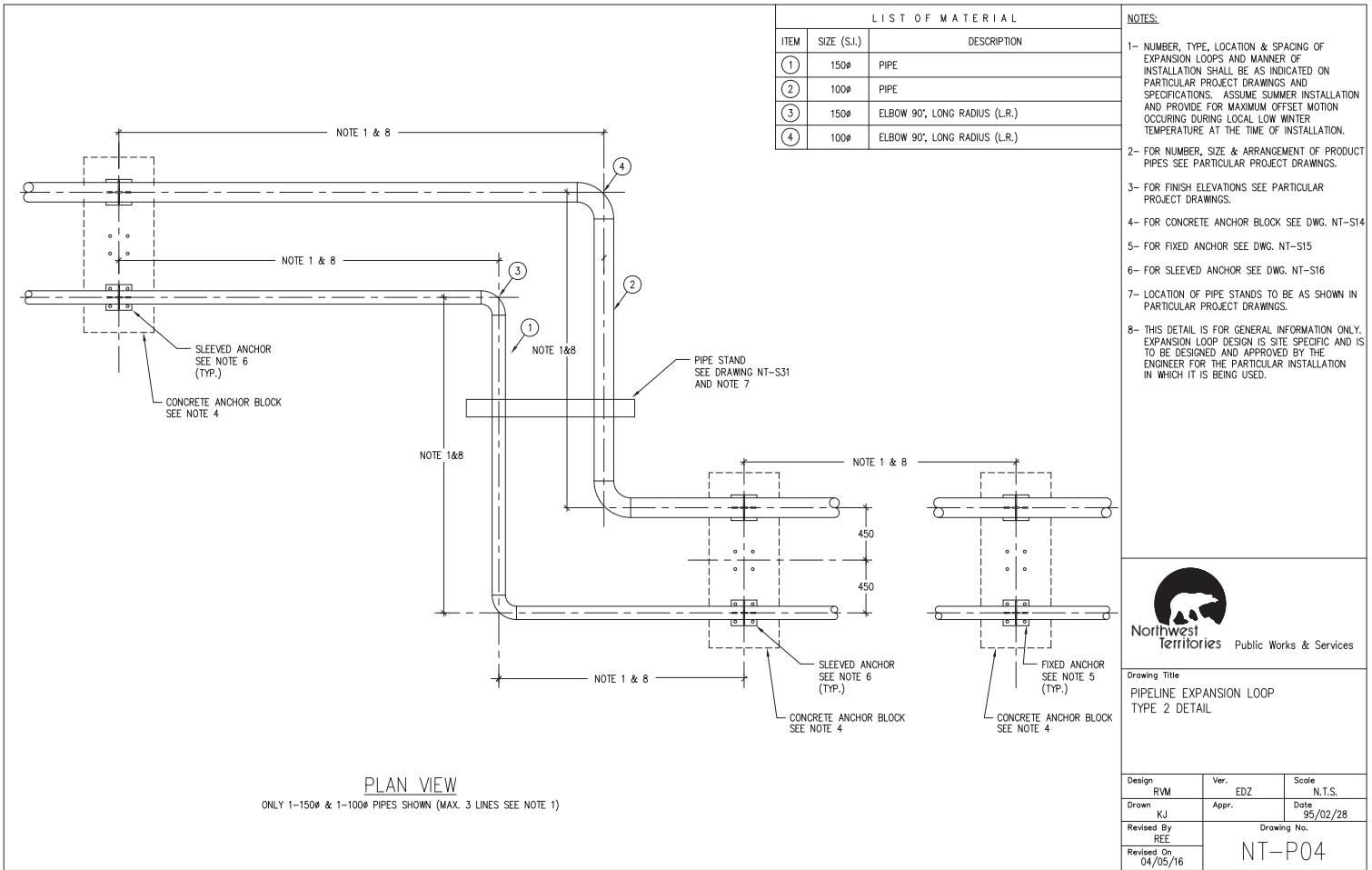


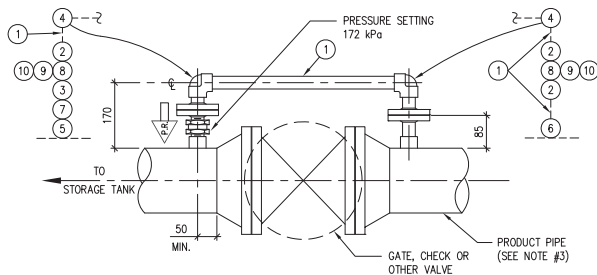
**Northwest Territories** Public Works & Services

Drawing Title  
PIPELINE EXPANSION LOOP  
TYPE 1 DETAIL

Design RVM	Ver. EDZ	Scale N.T.S.
Drawn KJ	Appr.	Date 95/02/28
Revised By REE	Drawing No. NT-P03	
Revised On 04/05/16		





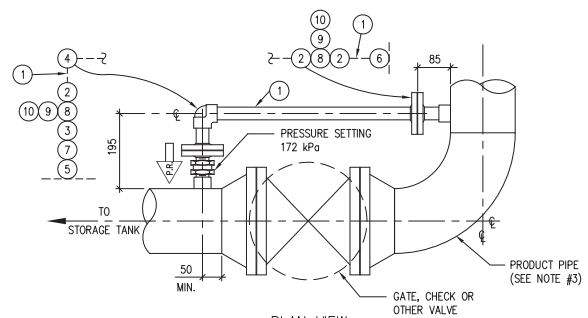


PLAN VIEW  
(BASIC ARRANGEMENT, RIGHT HAND SHOWN, LEFT HAND ON OPPOSITE SIDE)

LIST OF MATERIAL		
ITEM	SIZE (S.I.)	DESCRIPTION
1	25#	PIPE
2		SLIP-ON FLANGE
3		THREADED FLANGE
4		ELBOW 90°, SOCKET WELD
5		HALF COUPLING, THREADED
6		HALF COUPLING, SOCKET WELD
7		THERMAL PRESSURE RELIEF VALVE (SEE NOTES #1, 2, & 3)
8		GASKET
9	12# x 65 LG.	STUD BOLT
10	12#	NUT (2 EACH BOLT)

NOTES:

- 1- IN-LINE TYPE PRESSURE RELIEF VALVE WITH ENGRAVED ARROW ON ONE SIDE OF VALVE (TO INDICATE DIRECTION IN WHICH PRESSURE IS TO BE RELIEVED)
- 2- ENSURE THAT NAMEPLATE IS NOT DAMAGED OR PAINTED OVER.
- 3- BASIC ARRANGEMENT SHOWN IS APPLICABLE TO PRODUCT PIPE 50 mm THRU 150 mm DIAMETER.
- 4- HOLES AT FLANGES TO BE STRADDLED ABOUT HORIZONTAL & VERTICAL AXIS OF PIPE.
- 5- FOR MORE DESCRIPTION OF ITEMS REFER TO SPECIFICATIONS, DIVISION 15, SECTION 15010.
- 6- SEE SPECIFICATIONS, DIVISION 15, SECTION 15010, FOR ALTERNATIVE INSTALLATION ON VALVE BODY.



PLAN VIEW  
(BASIC ARRANGEMENT, RIGHT HAND SHOWN, LEFT HAND ON OPPOSITE SIDE)

LIST OF MATERIAL		
ITEM	SIZE (S.I.)	DESCRIPTION
1	25#	PIPE
2		SLIP-ON FLANGE
3		THREADED FLANGE
4		ELBOW 90°, SOCKET WELD
5		HALF COUPLING, THREADED
6		HALF COUPLING, SOCKET WELD
7		THERMAL PRESSURE RELIEF VALVE (SEE NOTES #1, 2, & 3)
8		GASKET
9	12# x 65 LG.	STUD BOLT
10	12#	NUT (2 EACH BOLT)

NOTES:

- 1- IN-LINE TYPE PRESSURE RELIEF VALVE WITH ENGRAVED ARROW ON ONE SIDE OF VALVE (TO INDICATE DIRECTION IN WHICH PRESSURE IS TO BE RELIEVED)
- 2- ENSURE THAT NAMEPLATE IS NOT DAMAGED OR PAINTED OVER.
- 3- BASIC ARRANGEMENT SHOWN IS APPLICABLE TO PRODUCT PIPE 50 mm THRU 150 mm DIAMETER.
- 4- HOLES AT FLANGES TO BE STRADDLED ABOUT HORIZONTAL & VERTICAL AXIS OF PIPE.
- 5- FOR MORE DESCRIPTION OF ITEMS REFER TO SPECIFICATIONS, DIVISION 15, SECTION 15010.
- 6- SEE SPECIFICATIONS, DIVISION 15, SECTION 15010, FOR ALTERNATIVE INSTALLATION ON VALVE BODY.



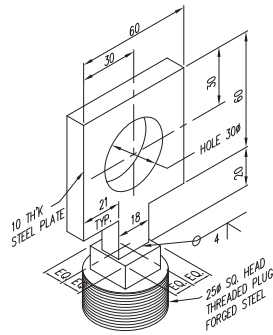
Drawing Title  
TYPICAL INSTALLATION OF TYPE 1 PRESSURE RELIEF BY-PASS  
(ACROSS VALVES AT EXTERIOR PIPING)

Design	Ver.	Scale	Revised By	Drawing No.
RVM	EDZ	1 : 10	REE	
Drawn	Appr.	Date	Revised On	
KJ		95/02/28	04/05/16	NT-P05

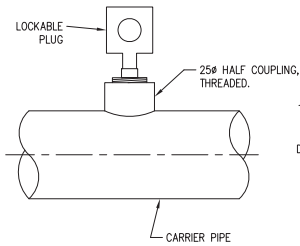


Drawing Title  
TYPICAL INSTALLATION OF TYPE 2 PRESSURE RELIEF BY-PASS  
(ACROSS VALVES AT EXTERIOR PIPING)

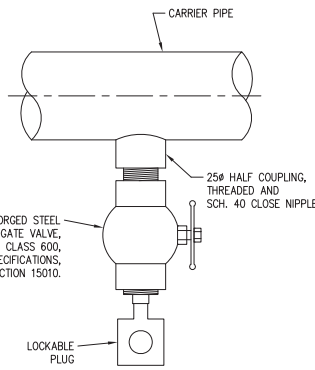
Design	Ver.	Scale	Revised By	Drawing No.
RVM	EDZ	1 : 10	REE	
Drawn	Appr.	Date	Revised On	
KJ		95/02/28	04/05/16	NT-P06



LOCKABLE PLUG DETAIL  
SCALE: 1 : 2



VENT DETAIL  
SCALE: 1 : 5



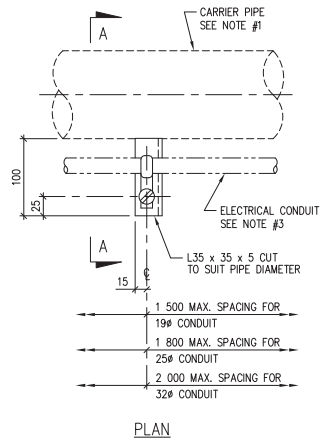
DRAIN VALVE DETAIL  
SCALE: 1 : 5

NOTES:

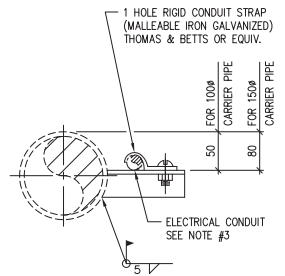
- 1- FOR LOCATION OF LOCKABLE PLUGS REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR MATERIAL REFER TO SPECIFICATIONS, DIV. 15, SECTION 15010.

Drawing Title  
PIPE DRAIN VALVE, VENT AND  
LOCKABLE PLUG DETAILS

Design	Ver.	Scale	Revised By	Drawing No.
EDZ	EDZ	AS SHOWN	REE	
Drawn	Appr.	Date	Revised On	
KJ		94/04/29	04/05/16	NT-P07



PLAN



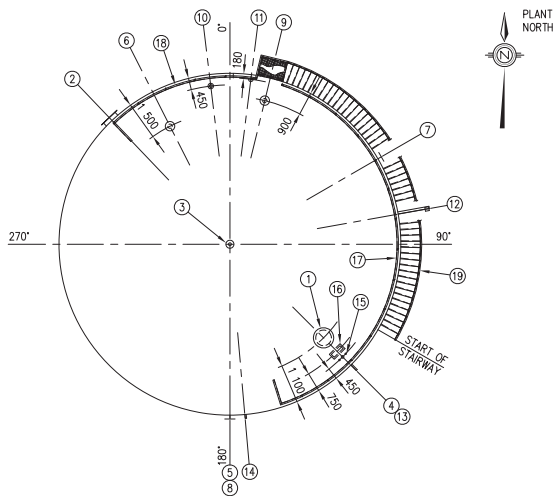
SECTION A-A

NOTES:

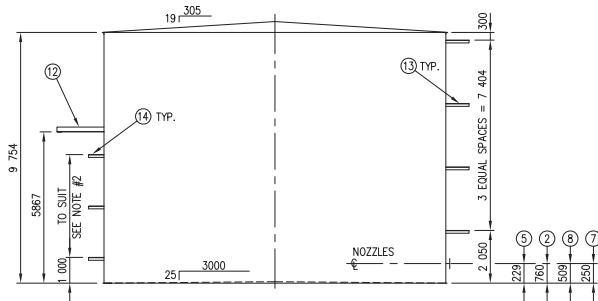
- 1- WELDING OF STEEL ANGLE TO PIPE ONLY TO BE DONE ON GAS FREE PIPE, SAFE FOR HOTWORK.
- 2- FOR SIZE OF CARRIER PIPE REFER TO PARTICULAR PROJECT DRAWINGS.
- 3- FOR SIZE OF RIGID CONDUIT REFER TO ELECTRICAL DRAWINGS FOR PARTICULAR PROJECT.

Drawing Title  
BRACKET, TYPE "PB1"  
FOR ELECTRICAL CONDUITS DETAIL

Design	Ver.	Scale	Revised By	Drawing No.
EDZ	EDZ	1 : 5	REE	
Drawn	Appr.	Date	Revised On	
KJ		95/02/28	04/05/16	NT-P08



ORIENTATION PLAN  
(TYPICAL)  
(BASIC TANK ELEMENTS)



ELEVATION  
(SHELL NOZZLES & BRACKETS)

#### LEGEND OF TANK APPURTENANCES

No.	DESCRIPTION	REMARKS
①	610ø mm ROOF MANHOLE	TO API 650 STANDARDS & NOTE #1
②	610ø mm SHELL MANHOLE	TO API 650 STANDARDS & NOTE #2
③	100ø PAINTER SCAFFOLD CABLE SUPPORT	TO API 650 STANDARDS
④	AUTOMATIC TANK LEVEL GAUGE	SEE DWG. NT-P11 & NOTE #2
⑤	SHELL NOZZLE - INLET / OUTLET	TO API 650 STANDARDS & NOTE #2
⑥	PRESSURE / VACUUM VENT OPENING	
⑦	WATER DRAW-OFF	SEE DWG. NT-P12 & NOTE #2
⑧	PRESSURE RELIEF LINE CONNECTION	SEE DWG. NT-P05 & P06 AND NOTE #2
⑨	ROOF 150ø GAUGE HATCH	TO API 650 STANDARDS & NOTE #2
⑩	ROOF 75ø COUPLING c/w PLUG	SEE DWG. NT-P13 & NOTE #2
⑪	ROOF COUPLING "RC1" FOR LIGHT FIXTURE POST	SEE DWG. NT-P18 & NOTE #2
⑫	SHELL LIGHT FIXTURE BRACKET "SB2"	SEE DWG. NT-P16 & NOTE #2
⑬	SHELL BRACKET "SB1" FOR AUTOMATIC TANK LEVEL GAUGE	SEE DWG. NT-P11 & NOTE #2
⑭	SHELL BRACKET "SB3" FOR VERTICAL ELECTRICAL CONDUIT	SEE DWG. NT-P17 & NOTE #2
⑮	ROOF COUPLING "RN3" FOR AUTOMATIC TANK GAUGE	SEE DWG. NT-P11 & NOTE #2
⑯	ROOF INSPECTION FRAME "RIF"	SEE DWG. NT-P12 & NOTE #3
⑰	ROOF HANDRAIL RH (LEFT)	SEE DWG. NT-P15 & NOTE #2
⑱	ROOF HANDRAIL RH (RIGHT)	
⑲	SPIRAL STAIRWAY (53 TREADS)	SEE DWG. NT-P14 & NOTE #2

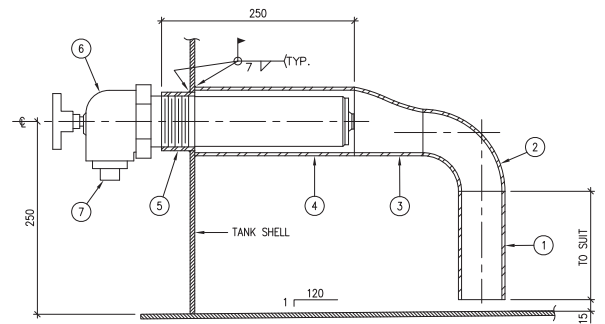
#### NOTES:

- 1- FOR NUMBER AND LOCATION OF ROOF MANHOLES REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR NUMBER, LOCATION AND SIZE OF TANK OPENINGS, APPURTENANCES AND BRACKETS REFER TO PARTICULAR PROJECT DRAWINGS.
- 3- ROOF INSPECTION FRAME "RIF" IS REQUIRED ONLY WHEN CALLED FOR IN PARTICULAR PROJECT DRAWINGS. (WHERE ROOF MANHOLE IS TOO FAR AWAY FROM ROOF COUPLINGS "RN3")
- 4- FOR TANK DIAMETER REFER TO PARTICULAR PROJECT DRAWINGS.
- 5- FOR MATERIAL REFER TO SPECIFICATIONS, DIV. 15, SECTION 15060.
- 6- ROOF HANDRAIL SHALL ONLY EXTEND 1 000 mm BEYOND LAST ROOF CONNECTION TO ENSURE THAT THE ROOF TO SHELL JOINT IS FRANGIBLE OTHERWISE EMERGENCY VENTING IS REQUIRED.



Drawing Title  
BASIC ARRANGEMENT OF  
TANK OPENINGS & APPURTENANCES  
FOR 9 754 HIGH VERTICAL TANK

Design RVM	Ver. EDZ	Scale 1 : 150
Drawn KJ	Appr.	Date 95/02/28
Revised By REE	Drawing No. NT-P09	
Revised On 04/09/07		



LIST OF MATERIAL		
ITEM	SIZE (S.I.)	DESCRIPTION
①	50ø	PIPE, A53, GR. B.
②	50ø	ELBOW 90°, L.R., A234, GR. B.
③	75ø x 50ø	ECCENTRIC REDUCER, FLAT ON BOTTOM, A234, GR. B.
④	75ø	PIPE, A53, GR. B.
⑤	50ø	HALF COUPLING, THREADED, A350, GR. LF2, CLASS 3000.
⑥	50ø	WATER DRAIN VALVE (LOCKABLE) S&J MODEL 96181.
⑦	38ø	PLUG, THREADED, SQUARE HEAD, STEEL.

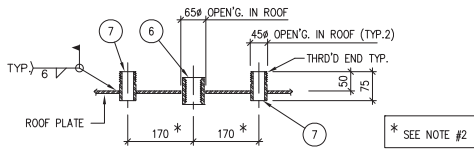
**NOTES:**

- 1- FOR LOCATION OF "SN3" SEE DWG. NT-P09  
 2- FOR MATERIAL SEE SPECIFICATIONS, DIV. 15, SECTION 15010.

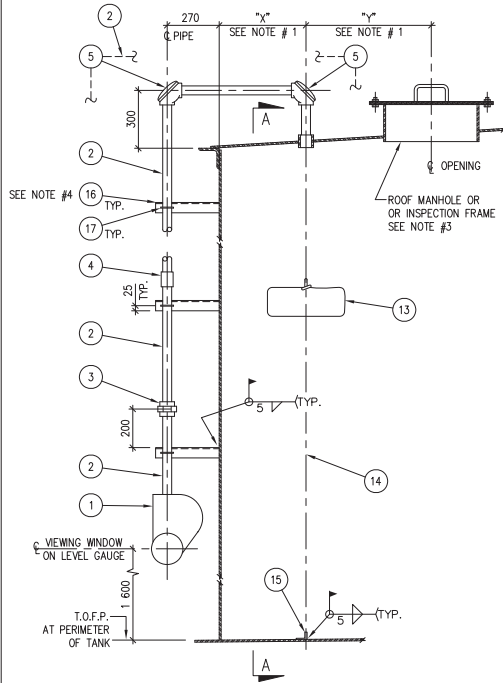


Drawing Title  
 WATER DRAIN VALVE CONNECTION "SN3"  
 & INTERNAL PIPING AT VERTICAL TANKS DETAIL

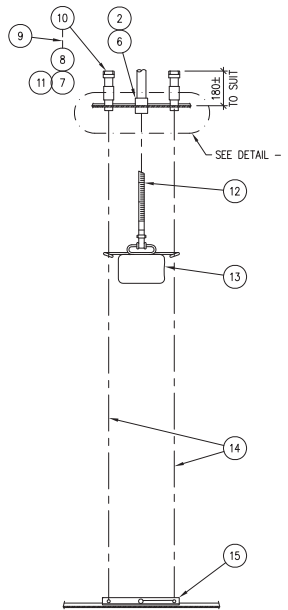
Design	Ver.	Scale	Revised By	Drawing No.
RVM	EDZ	1 : 5	REE	
Drawn	Appr.	Date	Revised On	
KJ		95/02/28	04/05/16	NT-P10



DETAIL-1 : ROOF NOZZLE "RN3"



ELEVATION



SECTION A-A

# LIST OF MATERIAL


No.	DESCRIPTION	SIZE OR REMARKS
1	AUTOMATIC LEVEL GAUGE HEAD	SEE NOTE #2
2	PIPE, GALVANIZED	38ø
3	UNION, MALLEABLE IRON, 300#, GALVANIZED	
4	COUPLING, MALLEABLE IRON, 150#, GALVANIZED	38ø
5	90° PULLEY ASSEMBLY	SEE NOTE #2
6	COUPLING, THREADED	38ø
7	PIPE NIPPLE, THREADED ONE END	32ø
8	COUPLING, THREADED	
9	PIPE	
10	CAP, MALLEABLE IRON, THREADED, 150#	
11	GUIDE WIRE SPRING ASSEMBLY	SEE NOTE #2
12	READING TAPE	
13	FLOAT	
14	GUIDE WIRES	
15	ANCHOR BAR	
16	PIPE BRACKET "SB1"	SEE NOTE #4
17	STANDARD "U" BOLT, GALVANIZED STEEL, 10# ROD	38ø

## NOTES:

- FOR DIMENSIONS "X" AND "Y" REFER TO DWG. NT-P09.
- DIMENSIONS SHOWN REFER TO SHAND & JURS TYPE AUTOMATIC LEVEL GAUGE. DIMENSIONS MAY VARY FOR OTHER MAKES OF LEVEL GAUGE. REFER TO SPECIFICATIONS AND MANUFACTURER'S DATA FOR ACTUAL DIMENSIONS & INSTALLATIONS.
- REFER TO PARTICULAR PROJECT DRAWINGS FOR ACTUAL ROOF OPENING REQUIRED.
- FOR NUMBER AND LOCATION OF SHELL BRACKETS "SB1" REFER TO DWG. NT-P09.
- FOR MATERIALS REFER TO SPECIFICATIONS, DIV. 15, SECTION 15010.

## LEGEND:

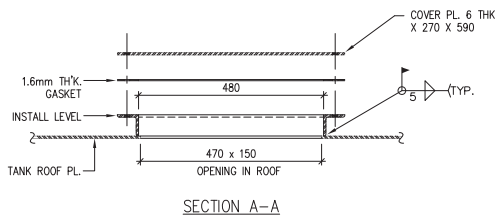
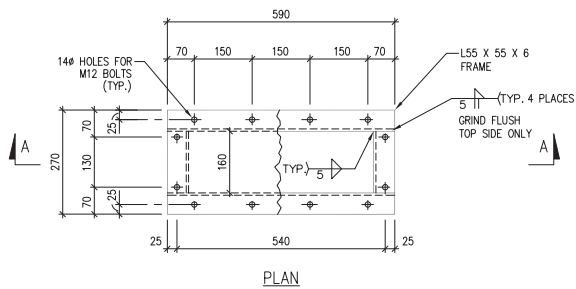
T.O.F.P. = TOP OF FLOOR PLATE



**Northwest Territories** Public Works & Services

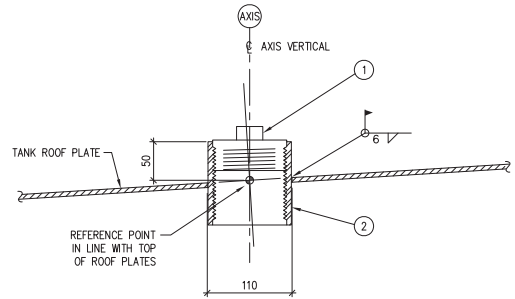
Drawing Title  
 INSTALLATION OF TANK  
 AUTOMATIC LEVEL GAUGE  
 ROOF NOZZLE "RN3" &  
 SHELL BRACKET "SB1"  
 AT VERTICAL TANKS DETAIL

Design RVM	Ver. EDZ	Scale 1 : 20
Drawn KJ	Appr.	Date 95/02/28
Revised By REE	Drawing No. NT-P11	
Revised On 04/05/16		



#### NOTES:

- 1- FOR LOCATION OF "RIF" ON TANK ROOF REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- GRIND ALL SHARP EDGES SMOOTH.
- 3- FOR MATERIAL AND OTHER NOTES REFER TO SPECIFICATIONS, DIV 15, SECTION 15010.
- 4- "RIF" IS NOT REQUIRED IF ROOF MANHOLE IS PROVIDED.

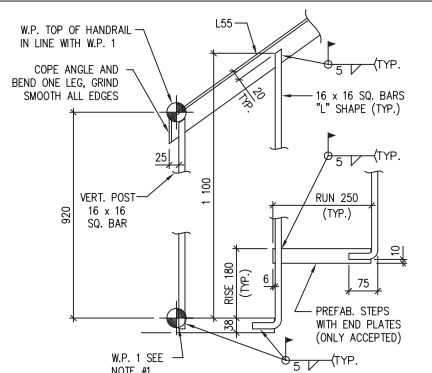



SECTION THROUGH "RN5"

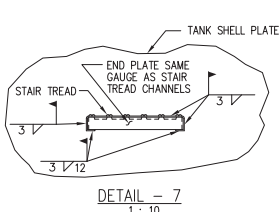
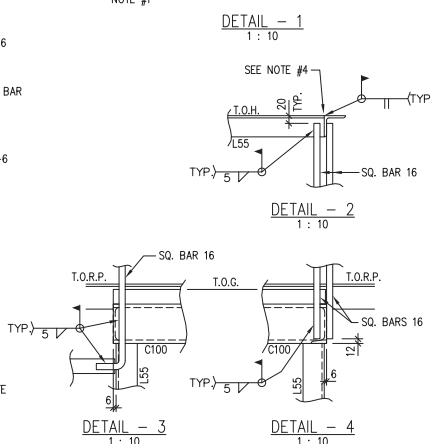
LIST OF MATERIAL		
ITEM	SIZE (S.I.)	DESCRIPTION
①	75#	PLUG, THREADED, SQUARE HEAD, STEEL
②		COUPLING, THREADED, A350, GR. LF2, CLASS 3000

#### NOTES:

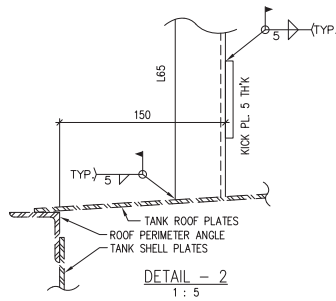
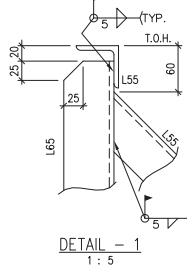
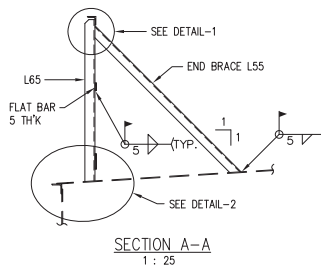
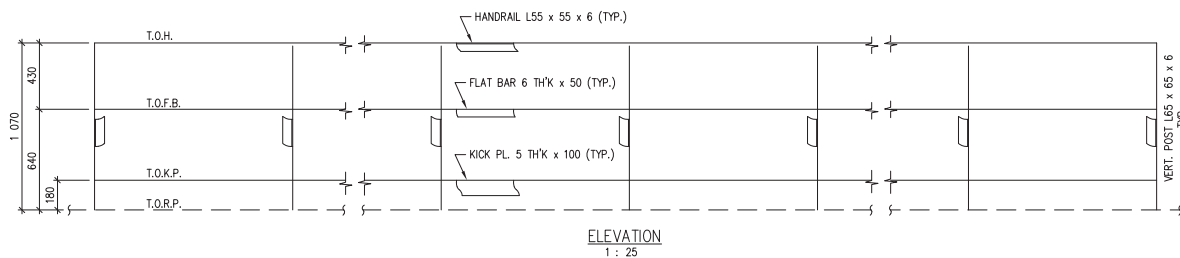
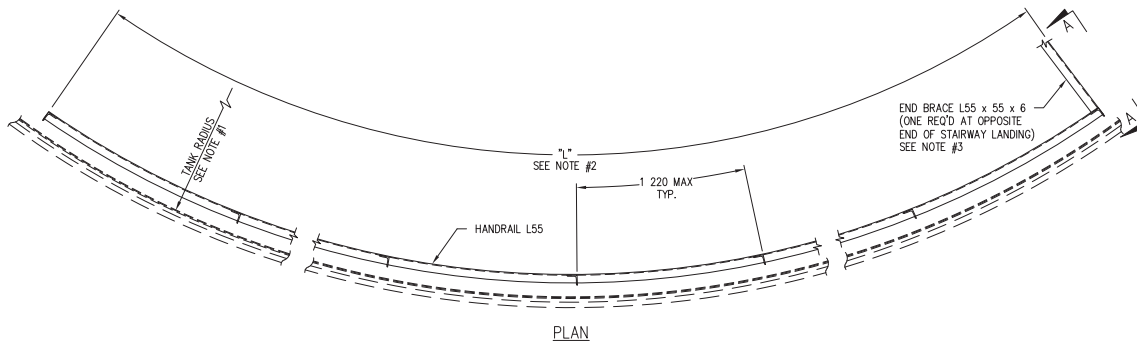
- 1- FOR LOCATION OF "RN5" ON TANK ROOF REFER TO DWG. NT-P09 AND PARTICULAR PROJECT DRAWINGS.
- 2- FOR MATERIAL AND NOTES REFER TO SPECIFICATIONS, DIV 15, SECTION 15010.



		
<b>Northwest Territories</b>		
Public Works & Services		
Drawing Title <b>STAIRWAY &amp; LANDING          AT 9 754 HIGH VERTICAL TANKS DETAILS</b>		
Design	Ver.	Scale
RVM	EDZ	AS SHOWN
Drawn	Appr.	Date
CAD/SL		95/02/28
Revised By REE		Drawing No. <b>NT-P14</b>
Revised On 04/09/07		







#### NOTES:

- 1- FOR TANK RADIUS REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR DIMENSION "L" REFER TO PARTICULAR PROJECT DRAWINGS.
- 3- LOCATION OF END BRACE SHALL BE 1 000 BEYOND LAST ROOF FITTING.
- 4- GRIND ALL SHARP EDGES SMOOTH.
- 5- FOR MATERIAL AND OTHER NOTES REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.

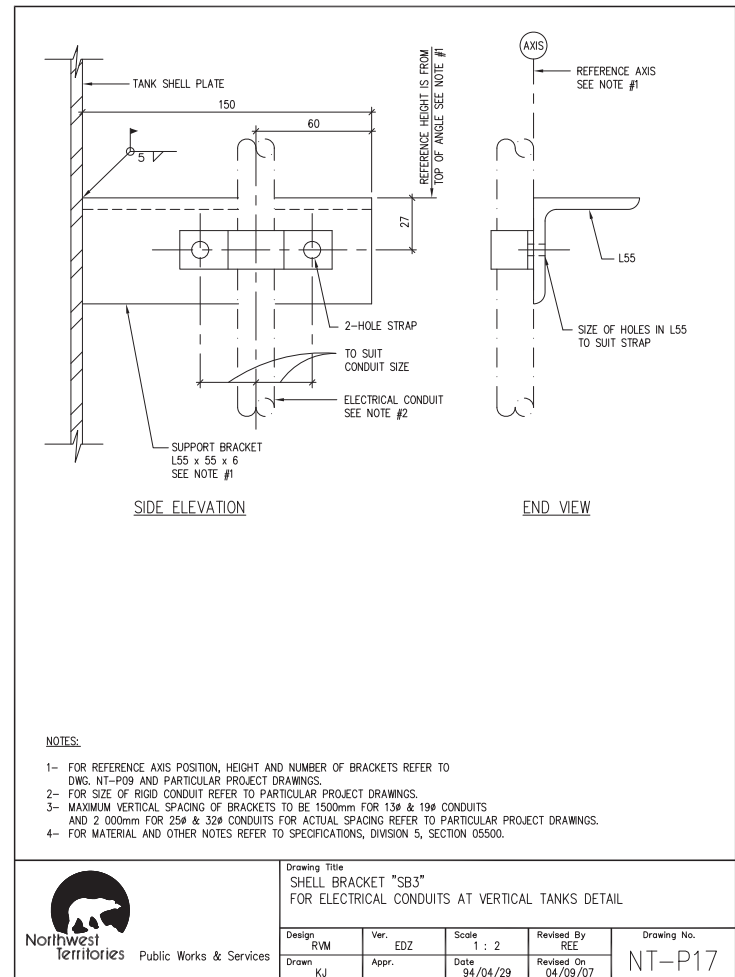
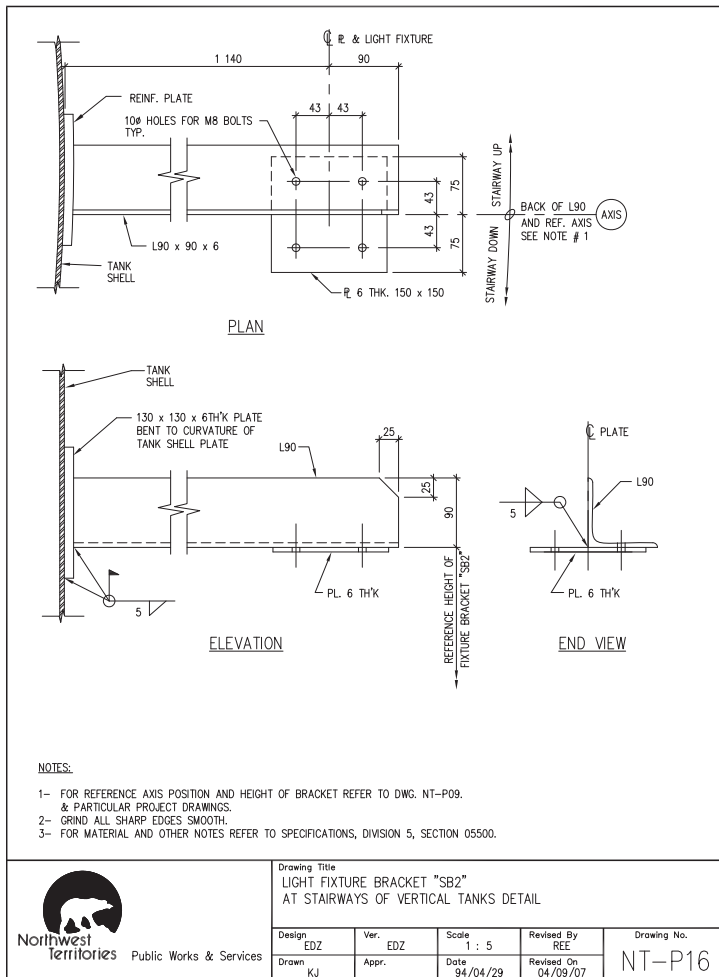
#### LEGEND:

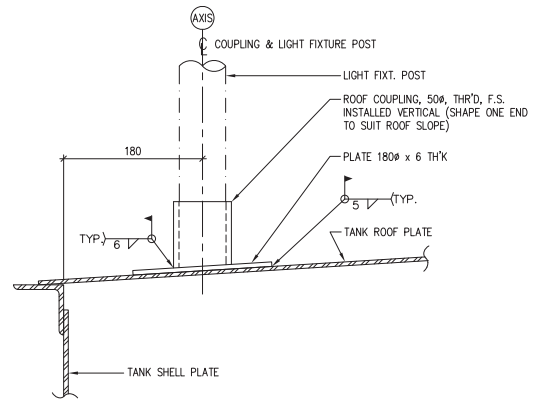
T.O.H. = TOP OF HANDRAIL  
T.O.F.B. = TOP OF FLAT BAR  
T.O.K.P. = TOP OF KICK PLATE  
T.O.R.P. = TOP OF ROOF PLATE



Drawing Title  
ROOF HANDRAIL "RH"  
AT VERTICAL TANKS DETAIL

Design	RVM	Ver.	EDZ	Scale	1 : 25
Drawn	CAD/SL	Appr.		Date	94/04/29
Revised By	REE	Drawing No.			
Revised On	04/09/07	NT-P15			





ELEVATION ROOF COUPLING "RC1"

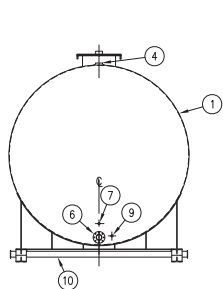
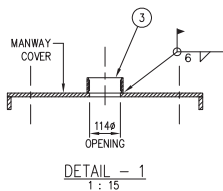
NOTES:

- 1- FOR POSITION OF ROOF COUPLING "RC1" REFER TO DWG. NT-P09 AND PARTICULAR PROJECT DRAWINGS.
- 2- FOR MATERIAL AND OTHER NOTES REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.

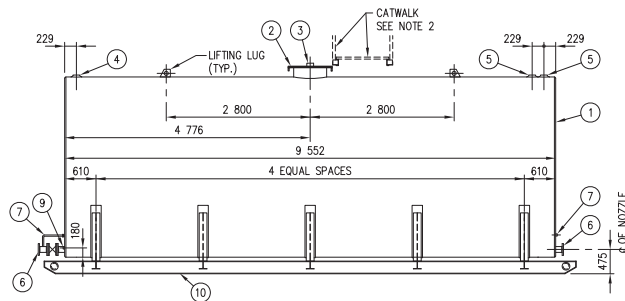


Drawing Title  
ROOF COUPLING "RC1"  
FOR LIGHT FIXTURE POST AT VERTICAL TANKS DETAIL

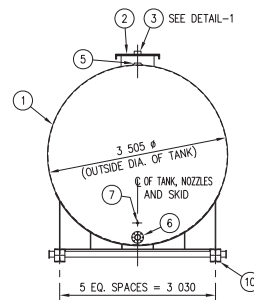
Design RVM	Ver. EDZ	Scale 1 : 5	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/09/07	NT-P18



LEFT SIDE ELEVATION  
1:75



SIDE ELEVATION  
1:75



RIGHT SIDE ELEVATION  
1:75

## LIST OF MATERIAL

No.	SERVICE	SIZE (S.I.)	SIZE (IMP.)	DESCRIPTION	REMARKS
1	FUEL STORAGE TANK	91,000 L	20,000 IGal.	91 cu. m. NOMINAL CAPACITY ABOVEGROUND HORIZONTAL TANK, STEEL	TO CAN4-S601-M SPEC.
2	MANWAY	610#	24" Ø	ULC MANHOLE DESIGN FIG. 9, COMPLETE WITH EMERGENCY VENT COVER PLATE	TO CAN4-S601-M SPEC. SEE DETAIL 1
3	GAUGE HATCH	100#	4" Ø	FORGED STEEL HALF COUPLING	SEE DETAIL-1 & NOTE 2
4	PRESSURE / VACUUM VENT	100#	4" Ø	FORGED STEEL THREADED FLANGE WITH PILOT	TO CAN4-S601-M SPEC.
5	SPARE	100#	4" Ø	FORGED STEEL THREADED FLANGE WITH PILOT	TO CAN4-S601-M SPEC. & NOTE 3, C/W PLUG
6	INLET / OUTLET	100#	4" Ø	1035 kPa FLANGED NOZZLE, C/W VALVE AND PRESSURE RELIEF	TO CAN4-S601-M SPEC., SEE DRAWING NT-P06
7	PRESSURE RELIEF BY-PASS	25#	1" Ø	HALF-COUPLING, THREADED FORGED STEEL	TO CAN4-S601-M SPEC., SEE DWG NT-P06.
8					
9	WATER DRAW-OFF	25#	1" Ø	HALF-COUPLING, THREADED FORGED STEEL	TO CAN4-S601-M SPEC. & NOTE 4
10	TANK SKID			TANK SKID ASSEMBLY	SEE NOTE 5

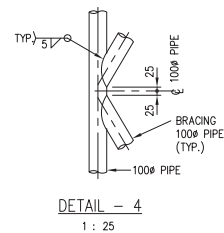
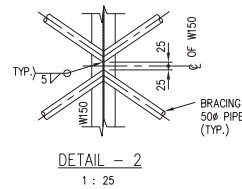
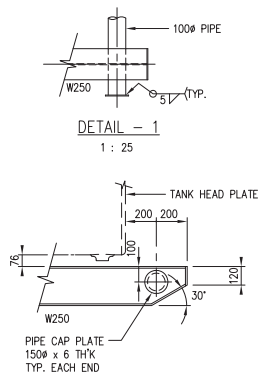
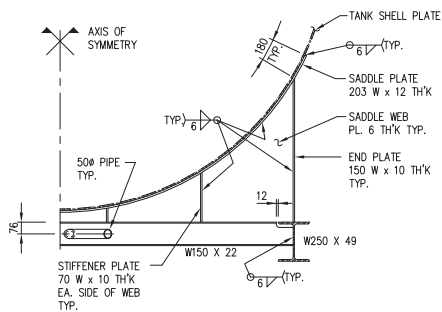
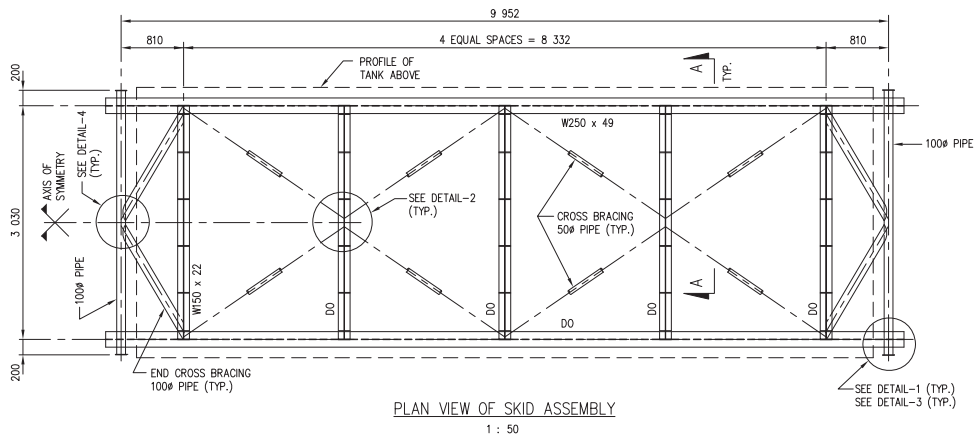
## NOTES:

- FOR LOCATION OF CATWALK REFER TO PARTICULAR PROJECT DRAWINGS.
- LOCATE GAUGE HATCH IN CENTRE OF EMERGENCY COVER PLATE.
- PROVIDE PLUG, THREADED, SQUARE HEAD, F.S. AT ALL NON-USED OPENINGS. PLUG TO BE SAME SIZE AS OPENING.
- REFER TO DWG. NT-P23 FOR WATER DRAW-OFF VALVE AND INTERNAL PIPING AT WATER DRAW-OFF VALVE.
- REFER TO DWG. NT-P20 FOR SKID ASSEMBLY DETAILS.
- FOR MATERIAL REFER TO SPECIFICATIONS, DIVISION 15, SECTION 15060.
- PROVIDE SHOP DRAWINGS OF TANK, APPURTENANCES AND SKID ASSEMBLY FOR APPROVAL PRIOR TO FABRICATION AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.



Drawing Title  
HORIZONTAL ABOVEGROUND TANK  
91 cu. m. NOMINAL CAPACITY  
ELEVATIONS AND DETAIL

Design RVM	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr. REE	Date 94/04/29
Revised By REE	Drawing No. NT-P19	
Revised On 04/09/07		



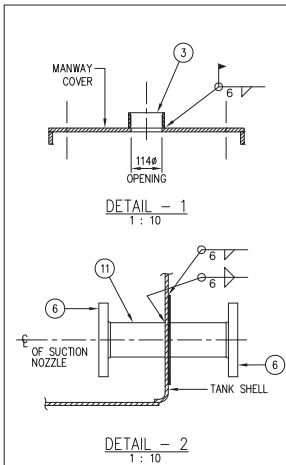
#### NOTES:

- 1- FOR MATERIAL REFER TO SPECIFICATIONS, DIVISION 15, SECTION 15060.
- 2- PROVIDE PROPER SHOP DRAWINGS OF SKID ASSEMBLY FOR APPROVAL PRIOR TO FABRICATION AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.



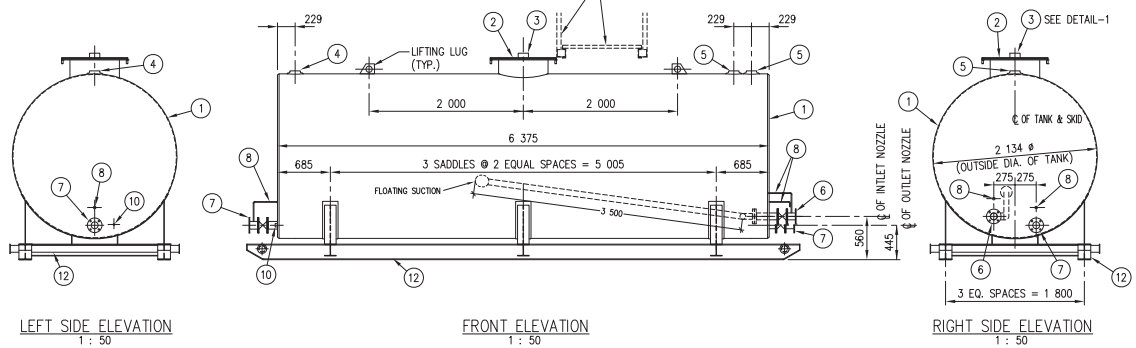
Drawing Title  
TANK SKID FOR 91 cu. m.  
HORIZONTAL TANKS  
PLAN, SECTION & DETAILS

Design	EDZ	Ver.	EDZ	Scale	AS SHOWN
Drawn	KJ	Appr.		Date	94/04/29
Revised By	REE	Drawing No. NT-P20			
Revised On	04/09/07				



LIST OF MATERIAL					
No.	SERVICE	SIZE (S.I.)	SIZE (IMP.)	DESCRIPTION	REMARKS
①	FUEL STORAGE TANK	23 000 L	5 000 IGal	23 cu. m. NOMINAL CAPACITY ABOVEGROUND HORIZONTAL TANK, STEEL	TO CAN4-S601-M SPEC.
②	MANWAY	610ø	24" ø	ULC MANHOLE DESIGN FIG. 9, COMPLETE WITH EMERGENCY VENT COVER	TO CAN4-S601-M SPEC. SEE DETAILS
③	GAUGE HATCH	100ø	4" ø	FORGED STEEL SCREWED WELDING FLANGE	ON MANWAY COVER SEE DETAIL-1 & NOTE 2
④	VENT	75ø	3" ø	SCRWD WELDING FLANGE WITH PILOT	TO CAN4-S601-M SPEC.
⑤	SPARE	100ø	4" ø	SCRWD WELDING FLANGE WITH PILOT	TO CAN4-S601-M SPEC. & NOTE 3
⑥	OUTLET VALVE ASSEMBLY C/W FLOATING SUCTION	75 ø	3" ø	ASA 1035 kPa (150#) FS RAISED FACE FLANGE C/W INTERNAL ASA 1035 kPa FS FLAT FACE FLANGE, VALVE AND PRESSURE BY-PASS	STD SPEC. SEC. 15010 CLAUSE 2.5.1 (STD DWG. NT-P06) FLOATING SUCTION, GAMMON, MODEL GTP-1644-3H
⑦	INLET VALVE ASSEMBLY	75 ø	3" ø	ASA 1035 kPa (150#) FS RAISED FACE FLANGE C/W VALVE AND PRESSURE BY-PASS	STD SPEC. SEC. 15010 CLAUSE 2.5.1 (STANDARD DRAWING NT-P06)
⑧	PRESSURE RELIEF BY-PASS	25ø	1" ø	HALF-COUPLING, THREADED FORGED STEEL	TO CAN4-S601-M SPEC.
⑨					
⑩	WATER DRAW-OFF	25ø	1" ø	HALF-COUPLING, THREADED FORGED STEEL	TO CAN4-S601-M SPEC. & NOTE 4
⑪	PIPE	75ø	3" ø	PIPE	SEE NOTE 6
⑫	TANK SKID			TANK SKID ASSEMBLY	SEE NOTE 5

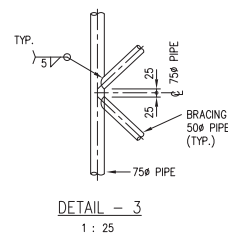
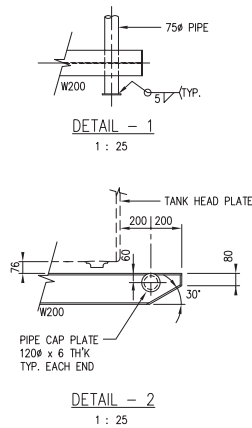
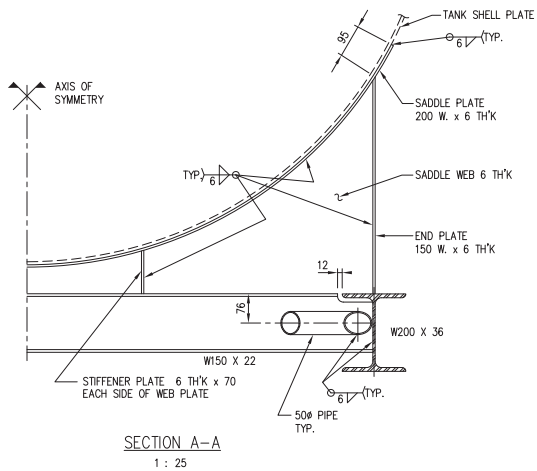
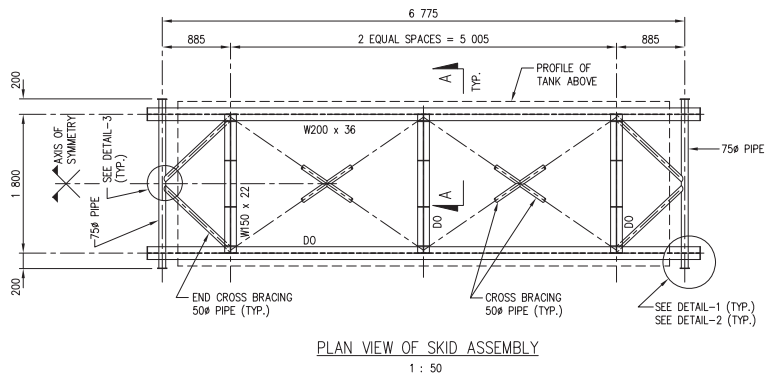
- NOTES:**
- FOR LOCATION OF CATWALK REFER TO PARTICULAR PROJECT DRAWINGS.
  - LOCATE LOCKABLE GAUGE HATCH IN CENTER OF EMERGENCY MANWAY COVER PLATE.
  - PROVIDE PLUG, THREADED, SQUARE HEAD, F.S. AT ALL NON-USED OPENINGS. PLUG TO BE SAME SIZE AS OPENING.
  - REFER TO DWG. NT-P23 FOR WATER DRAW-OFF AND INTERNAL PIPING AT WATER DRAW-OFF.
  - REFER TO DWG. NT-P22 FOR SKID ASSEMBLY DETAILS.
  - FOR MATERIAL REFER TO SPECIFICATIONS, DIVISION 15, SECTION 15060.
  - PROVIDE SHOP DRAWINGS OF TANK, APPURTENANCES AND SKID ASSEMBLY FOR APPROVAL PRIOR TO FABRICATION AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
  - ALL INTERIOR SURFACES TO BE LINED WITH EPOXY AS PER SECTION 9.0, PAINTING, OF THE SPECIFICATIONS.
  - TANK EXTERIOR TO BE GRIT BLASTED AND SHOP PAINTED AS PER SECTION 9.0, PAINTING.
  - ONE METER STRIP ALONG TOP OF TANK TO BE PAINTED WITH NON-SKID PAINT.
  - TANK SHALL BE FABRICATED CERTIFIED AND LABELED IN ACCORDANCE WITH ULC STANDARD CSA CAN4-S601.



Northwest Territories Public Works & Services

Drawing Title  
HORIZONTAL, EPOXY LINED,  
ABOVEGROUND TANK  
23 cu. m. NOMINAL CAPACITY  
ELEVATIONS AND DETAIL

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr. Date 94/04/29	
Revised By REE	Drawing No. NT-P21	
Revised On 04/09/07		



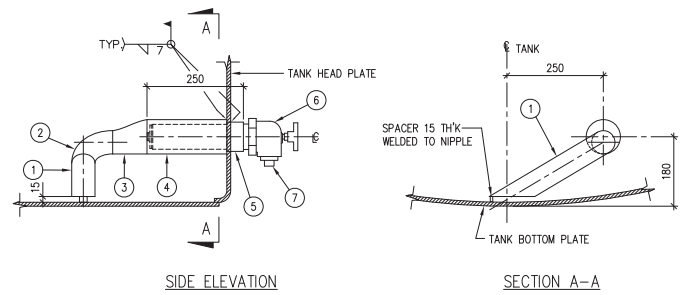
#### NOTES:

- 1- FOR MATERIAL REFER TO SPECIFICATIONS, DIVISION 15, SECTION 15060.
- 2- PROVIDE PROPER SHOP DRAWINGS OF TANK AND SKID ASSEMBLY FOR APPROVAL PRIOR TO FABRICATION AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.



Drawing Title  
TANK SKID FOR 23 cu. m.  
HORIZONTAL TANKS  
PLAN, SECTION & DETAILS

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr. RCE	Date 94/04/29
Revised By RCE	Drawing No. NT-P22	
Revised On 04/09/07		



LIST OF MATERIAL		
ITEM	SIZE (S.I.)	DESCRIPTION
①	50#	PIPE, A53, GR. B.
②	50#	ELBOW 90°, L.R., A234, GR. B.
③	75# x 50#	ECCENTRIC REDUCER, FLAT ON BOTTOM, A234, GR. B.
④	75#	PIPE, A53, GR. B.
⑤	50#	HALF COUPLING, THREADED, A350, GR. LF2, CLASS 3000.
⑥	50#	WATER DRAIN VALVE (LOCKABLE) S&J MODEL 96181.
⑦	38#	PLUG, THREADED, SQUARE HEAD, STEEL.

**NOTES:**

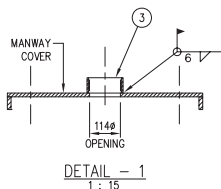
- 1- FOR LOCATION OF WATER DRAW-OFF VALVE REFER TO DWG. NT-P19, NT-P21, NT-P24 OR NT-P25.  
 2- FOR MATERIAL REFER TO SPECIFICATIONS, DIV. 15, SECT. 15010.



Drawing Title  
 WATER DRAW-OFF VALVE  
 FOR HORIZONTAL TANKS DETAIL

Design RVM	Ver. EDZ	Scale 1:10	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/07	NT-P23





# LIST OF MATERIAL

No.	SERVICE	SIZE (S.I.)	SIZE (IMP.)	DESCRIPTION	EQUIPMENT
1	Manway	610 Ø	24" Ø	ULC Manhole Design Fig. 9	ULC EMERGENCY VENT FIG. 8
2	Gauge Hatch	100 Ø	4" Ø	Forged Steel Scrw'd Welding Flange c/w pilot fitting	OCECO, MODEL F-1 (St'd Spec. Sec. 15010 Clause 2.11)
3	Vent	100 Ø	4" Ø	ASA 1035 kPa (150#) FS Flat Face Flange	Shand & Jurs Model 94020 P/V Vent (St'd Spec. Sec. 15010 Clause 2.12)
4	Spill Containment	407Ø	16" Ø	Pipe Section c/w Lockable Cover	ULC/ORD-C142.2, Clause 3.2.2
5	Overfill Protection Valve	100 Ø	4" Ø	Forged Steel Scrw'd Welding Flange c/w pilot fitting	OPW 61f Stop Overfill Protection Valve c/w Bottom Fill Pipe Extension
6	Spill Drain Valve				
7	Spare Fittings	100 Ø	4" Ø	Forged Steel Scrw'd Welding Flange c/w Pilot fitting	c/w Plug
8	Lifting Lug			Lifting Lug c/w Reinforcing Plate	ULC Lifting Lug Figure 2, Type II
9	Interstice Vent	100 Ø	4" Ø	Inspection/Emergency Vent Fitting	Vacuum/Vent Cap
10	Vacuum Gauge	12 Ø	1/2" Ø	Half-coupling, Threaded Forged Steel	Vacuum Monitor Gauge
11	Pressure Relief By-pass	25 Ø	1" Ø	Half-coupling, Threaded Forged Steel	St'd Spec. Sec. 15010 Clause 2.6 (Standard Drawing, NT-P06)
12	Water Draw-off Valve Assembly	50 Ø	2" Ø	Half-coupling, Threaded Forged Steel	Shand & Jurs, Model 96181, Water Drain Valve
13	Inlet/Outlet Valve Assembly	100 Ø	4" Ø	ASA 1035 kPa (150#) FS Raised Face Flange c/w Valve and Pressure By-pass	St'd Spec. Sec. 15010 Clause 2.5.1 (Standard Drawing, NT-P06)
14	Stair & Platform Assembly			Access Stairs and Platform to Gauge Hatch	
15	Skid Base Plate	12 Thick	1/2" Thick	1/2" Thick x 300mm wide steel plate	Full Length
16	Pull Bar	100 Ø	4" Ø	Schedule 80 Pipe c/w cross bracing	c/w 10mm x 120mm Ø end plates
17	Interstice Vent	50 Ø	2" Ø	Emergency Vent Fitting	Vacuum/Vent Cap
18	Fabricated Skids	6 Thick	1/4" plate	Formed Skid Assembly	

## NOTES:

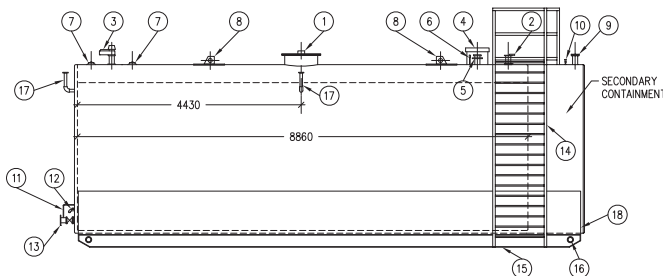
- 1- PRIMARY INTERNAL STORAGE TANK SHALL BE FABRICATED, CERTIFIED AND LABELLED IN STRICT ACCORDANCE WITH ULC STANDARD CAN4-9501-M LATEST EDITION, STANDARD FOR SHOP FABRICATED STEEL ABOVEGROUND HORIZONTAL TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.
- 2- DOUBLE WALL, VACUUM MONITORED SECONDARY CONTAINMENT SHALL BE DESIGNED, FABRICATED AND LABELLED IN ACCORDANCE WITH ULC/ORD C142.2, LATEST EDITION, CONTAINED STEEL ABOVEGROUND TANK ASSEMBLIES FOR FLAMMABLE LIQUIDS.
- 3- ALL WELDING SHALL BE BY A WELDER WITH A VALID ARC-WELDING CERTIFICATE FOR THE TYPE OF WORK PERFORMED AND HOLDING A MINIMUM OF A VALID NWT CLASS B PRESSURE WELDERS CERTIFICATE.
- 4- BOLT HOLES SHALL STRADDLE CENTRELINES.
- 5- MINIMUM WALL THICKNESS OF THE PRIMARY TANK SHALL BE 6mm AND MINIMUM SECONDARY CONTAINMENT SHELL THICKNESS SHALL BE 4.75mm.
- 6- STRAPPING AND CALIBRATION OF THE TANK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 15060, CLAUSE 3.9, PRIOR TO SHIPPING.
- 7- HEADS SHALL BE FLAT FLANGED WITH A MINIMUM THICKNESS OF 6mm.
- 8- SECONDARY CONTAINMENT SHALL BE PROVIDED WITH A POSITIVE VACUUM LEAK DETECTION SYSTEM.
- 9- REMOVABLE PLATFORM AND STAIRS SHALL BE FABRICATED FOR ACCESS TO THE GAUGE HATCH.
- 10- GAUGE HATCHES SHALL BE LOCKABLE.
- 11- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
- 12- TANK EXTERIOR TO BE GRIT BLASTED AND SHOP PAINTED AS PER SECTION 9.0, PAINTING.
- 13- ONE METRE WIDE STRIP ALONG TOP OF TANK TO BE PAINTED WITH NON-SKID PAINT.

Northwest Territories Public Works & Services

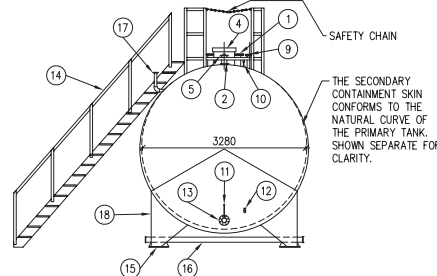
Drawing Title

75 m<sup>3</sup> FUEL STORAGE TANK  
HORIZONTAL, DOUBLE WALL,  
VACUUM MONITORED, SKID MOUNTED  
TANK DETAILS

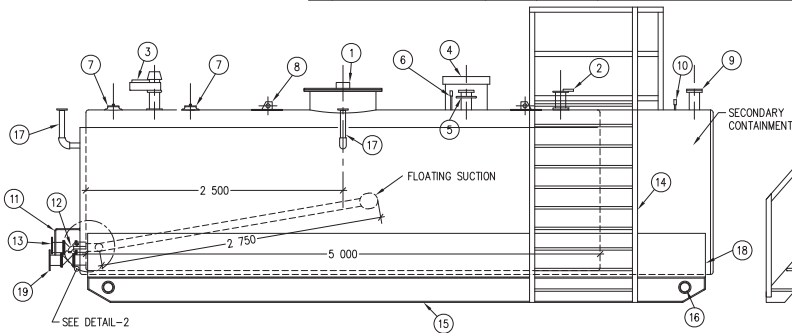
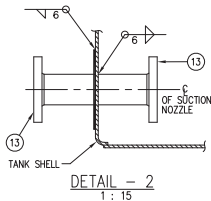
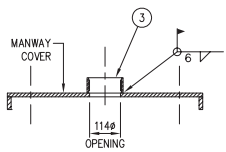
Design	LAJR	Ver.	LAJR	Scale	AS SHOWN
Drawn	KJ	Appr.		Date	97/04/22
Revised By	REE	Drawing No. <b>NT-P24</b>			
Revised On	04/09/07				



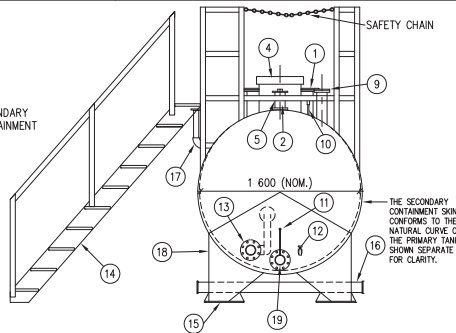
HORIZONTAL TANK - SIDE VIEW  
SCALE:N.T.S.



HORIZONTAL TANK - END VIEW  
SCALE:N.T.S.



HORIZONTAL TANK - SIDE VIEW  
SCALE:N.T.S.



HORIZONTAL TANK - END VIEW  
SCALE:N.T.S.

# LIST OF MATERIAL

No.	SERVICE	SIZE (S.I.)	SIZE (IMP.)	DESCRIPTION	EQUIPMENT
1	Manway	610 Ø	24" Ø	ULC Manhole Design Fig. 9	ULC EMERGENCY VENT FIG. 8
2	Gauge Hatch	150 Ø	6" Ø	Forged Steel Screw'd Welding Flange c/w pilot	OCECO, MODEL F-1 (St'd Spec. Sec. 15010 Clause 2.11)
3	Vent	100 Ø	4" Ø	ASA 1035 kPa (150#) FS Flat Face Flange	Shand & Jurs Model 94020 P/V Vent (St'd Spec. Sec. 15010 Clause 2.12)
4	Spill Containment	407#	16" Ø	Pipe Section c/w Lockable Cover	ULC/ORD-C142.2, Clause 3.2.2
5	Overfill Protection Valve	100 Ø	4" Ø	Forged Steel Screw'd Welding Flange c/w pilot	OPW 61F Stop Overfill Protection Valve c/w Bottom Fill Pipe Extension
6	Spill Drain Valve				
7	Spare Fittings	100 Ø	4" Ø	Forged Steel Screw'd Welding Flange c/w Pilot	c/w Plug
8	Lifting Lug			Lifting Lug c/w Reinforcing Plate	ULC Lifting Lug Figure 2, Type II
9	Interstice Vent	100 Ø	4" Ø	Inspection/Emergency Vent Fitting	Vacuum/Vent Cap
10	Vacuum Gauge	12 Ø	1/2" Ø	Half-coupling, Threaded Forged Steel	Vacuum Monitor Gauge
11	Pressure Relief By-pass	25 Ø	1" Ø	Half-coupling, Threaded Forged Steel	St'd Spec. Sec. 15010 Clause 2.6 (Standard Drawing, NT-P06)
12	Water Draw-off Valve Assembly	50 Ø	2" Ø	Half-coupling, Threaded Forged Steel	Shand & Jurs, Model 96180, Water Drain Valve
13	Outlet Valve Assembly c/w Floating Suction	75 Ø	3" Ø	ASA 1035 kPa (150#) FS Raised Face Flange c/w Internal ASA 1035 kPa FS Flat Face Flange, Valve and Pressure By-pass	St'd Spec. Sec. 15010 Clause 2.5.1 (Standard Drawing, NT-P06)
14	Stair & Platform Assembly			Access Stairs and Platform to Gauge Hatch	Floating Suction, Gammon, Model GTP-1644-3H
15	Skid Base Plate	12 Thick	1/2" Thick	1/2" Thick x 300mm wide steel plate	Full Length
16	Pull Bar	100 Ø	4" Ø	Schedule 80 Pipe c/w cross bracing	c/w 10mm x 120mm Ø end plates
17	Interstice Vent	50 Ø	2" Ø	Emergency Vent Fitting	Vacuum/Vent Cap
18	Fabricated Skids	6 Thick	1/4" plate	Formed Skid Assembly	
19	Inlet Valve Assembly	75 Ø	3" Ø	ASA 1035 kPa (150#) FS Raised Face Flange c/w Valve and Pressure By-pass	St'd Spec. Sec. 15010 Clause 2.5.1 (Standard Drawing, NT-P06)

## NOTES:

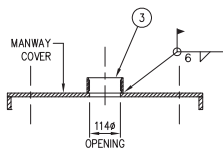
- PRIMARY INTERNAL STORAGE TANK SHALL BE FABRICATED, CERTIFIED AND LABELLED IN STRICT ACCORDANCE WITH ULC STANDARD CANA-5001-M LATEST EDITION, STANDARD FOR SHOP FABRICATED STEEL ABOVEGROUND HORIZONTAL TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.
- DOUBLE WALL, VACUUM MONITORED SECONDARY CONTAINMENT SHALL BE DESIGNED, FABRICATED AND LABELLED IN ACCORDANCE WITH ULC/ORD C142.3, LATEST EDITION, CONTAINED STEEL ABOVEGROUND TANK ASSEMBLIES FOR FLAMMABLE LIQUIDS.
- ALL WELDING SHALL BE BY A WELDER WITH A VALID ARC-WELDING CERTIFICATE FOR THE TYPE OF WORK PERFORMED AND HOLDING A MINIMUM OF A VALID NWT CLASS B PRESSURE WELDERS CERTIFICATE.
- BOLT HOLES SHALL STRADDLE CENTRELINES.
- MINIMUM WALL THICKNESS OF THE PRIMARY TANK SHALL BE 6mm AND MINIMUM SECONDARY CONTAINMENT SHELL THICKNESS SHALL BE 4.75mm.
- STRAPPING AND CALIBRATION OF THE TANK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 15060, CLAUSE 3.9, PRIOR TO SHIPPING.
- HEADS SHALL BE FLAT FLANGED WITH A MINIMUM THICKNESS OF 6mm.
- SECONDARY CONTAINMENT SHALL BE PROVIDED WITH A POSITIVE VACUUM LEAK DETECTION SYSTEM.
- REMOVABLE PLATFORM AND STAIRS SHALL BE FABRICATED FOR ACCESS TO THE GAUGE HATCH.
- GAUGE HATCHES SHALL BE LOCKABLE.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
- ONE METRE WIDE STRIP ALONG TOP OF TANK TO BE PAINTED WITH NON-SKID PAINT.
- ALL INTERIOR SURFACES TO BE LINED WITH EPOXY AS PER SECTION 9.0, PAINTING OF THE SPECIFICATIONS.

Northwest Territories Public Works & Services

Drawing Title

94 m<sup>3</sup> EPOXY LINED FUEL STORAGE TANK HORIZONTAL, DOUBLE WALL, VACUUM MONITORED, SKID MOUNTED TANK DETAILS

Design	LAJR	Ver.	LAJR	Scale	AS SHOWN
Drawn	KJ	Appr.		Date	97/04/22
Revised By	REP			Drawing No.	
Revised On	04/09/07				NT-P24A

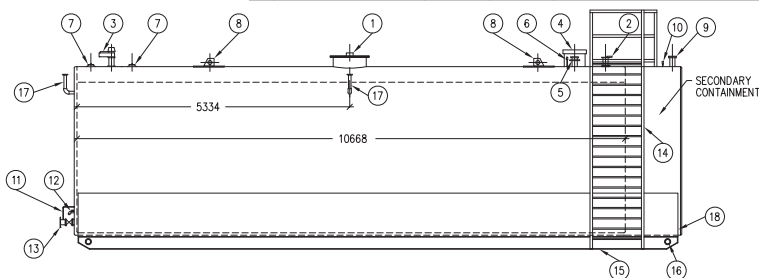


DETAIL - 1  
1 : 15

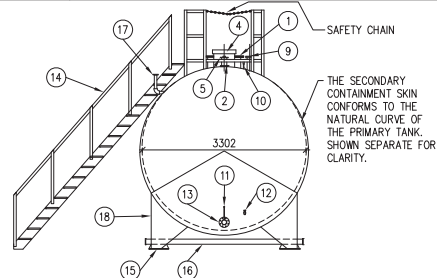
LIST OF MATERIAL					
No.	SERVICE	SIZE (S.I.)	SIZE (IMP.)	DESCRIPTION	EQUIPMENT
1	Manway	610 Ø	24" Ø	ULC Manhole Design Fig. 9	ULC EMERGENCY VENT FIG. 8
2	Gauge Hatch	150 Ø	6" Ø	Forged Steel Scrw'd Welding Flange c/w pilot fitting	OCECO, MODEL F-1 (St'd Spec. Sec. 15010 Clause 2.11)
3	Vent	100 Ø	4" Ø	ASA 1035 kPa (150#) FS Flat Face Flange	Shand & Jurs Model 94020 P/V Vent (St'd Spec. Sec. 15010 Clause 2.12)
4	Spill Containment	407Ø	16" Ø	Pipe Section c/w Lockable Cover	ULC/ORD-C142.2, Clause 3.2.2
5	Overfill Protection Valve	100 Ø	4" Ø	Forged Steel Scrw'd Welding Flange c/w pilot fitting	OPW 61f Stop Overfill Protection Valve c/w Bottom Fill Pipe Extension
6	Spill Drain Valve				
7	Spare Fittings	100 Ø	4" Ø	Forged Steel Scrw'd Welding Flange c/w Pilot fitting	c/w Plug
8	Lifting Lug			Lifting Lug c/w Reinforcing Plate	ULC Lifting Lug Figure 2, Type II
9	Interstice Vent	100 Ø	4" Ø	Inspection/Emergency Vent Fitting	Vacuum/Vent Cap
10	Vacuum Gauge	12 Ø	1/2" Ø	Half-coupling, Threaded Forged Steel	Vacuum Monitor Gauge
11	Pressure Relief By-pass	25 Ø	1" Ø	Half-coupling, Threaded Forged Steel	St'd Spec. Sec. 15010 Clause 2.6 (Standard Drawing, NT-P06)
12	Water Draw-off Valve Assembly	50 Ø	2" Ø	Half-coupling, Threaded Forged Steel	Shand & Jurs, Model 96180, Water Drain Valve
13	Inlet/Outlet Valve Assembly	100 Ø	4" Ø	ASA 1035 kPa (150#) FS Raised Face Flange c/w Valve and Pressure By-pass	St'd Spec. Sec. 15010 Clause 2.5.1 (Standard Drawing, NT-P06)
14	Stair & Platform Assembly			Access Stairs and Platform to Gauge Hatch	
15	Skid Base Plate	12 Thick	1/2" Thick	1/2" Thick x 300mm wide steel plate	Full Length
16	Pull Bar	100 Ø	4" Ø	Schedule 80 Pipe c/w cross bracing	c/w 10mm x 120mm Ø end plates
17	Interstice Vent	50 Ø	2" Ø	Emergency Vent Fitting	Vacuum/Vent Cap
18	Fabricated Skids	6 Thick	1/4" plate	Formed Skid Assembly	

NOTES:

- 1- PRIMARY INTERNAL STORAGE TANK SHALL BE FABRICATED, CERTIFIED AND LABELLED IN STRICT ACCORDANCE WITH ULC STANDARD CAN4-S601-M LATEST EDITION, STANDARD FOR SHOP FABRICATED STEEL ABOVEGROUND HORIZONTAL TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.
- 2- DOUBLE WALL, VACUUM MONITORED SECONDARY CONTAINMENT SHALL BE DESIGNED, FABRICATED AND LABELLED IN ACCORDANCE WITH ULC/ORD C142.3, LATEST EDITION, CONTAINED STEEL ABOVEGROUND TANK ASSEMBLIES FOR FLAMMABLE LIQUIDS.
- 3- ALL WELDING SHALL BE BY A WELDER WITH A VALID ARC-WELDING CERTIFICATE FOR THE TYPE OF WORK PERFORMED AND HOLDING A MINIMUM OF A VALID NWT CLASS B PRESSURE WELDERS CERTIFICATE.
- 4- BOLT HOLES SHALL STRADDLE CENTRELINES.
- 5- MINIMUM WALL THICKNESS OF THE PRIMARY TANK SHALL BE 6mm AND MINIMUM SECONDARY CONTAINMENT SHELL THICKNESS SHALL BE 4.75mm.
- 6- STRAPPING AND CALIBRATION OF THE TANK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 15060, CLAUSE 3.9, PRIOR TO SHIPPING.
- 7- HEADS SHALL BE FLAT FLANGED WITH A MINIMUM THICKNESS OF 6mm.
- 8- SECONDARY CONTAINMENT SHALL BE PROVIDED WITH A POSITIVE VACUUM LEAK DETECTION SYSTEM.
- 9- REMOVABLE PLATFORM AND STAIRS SHALL BE FABRICATED FOR ACCESS TO THE GAUGE HATCH.
- 10- GAUGE HATCHES SHALL BE LOOKABLE.
- 11- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
- 12- TANK EXTERIOR TO BE GRIT BLASTED AND SHOP PAINTED AS PER SECTION 9.0, PAINTING.
- 13- ONE METRE WIDE STRIP ALONG TOP OF TANK TO BE PAINTED WITH NON-SKID PAINT.



HORIZONTAL TANK - SIDE VIEW  
SCALE:N.T.S.



HORIZONTAL TANK - END VIEW  
SCALE:N.T.S.

Drawing Title 94 m <sup>3</sup> FUEL STORAGE TANK HORIZONTAL, DOUBLE WALL, VACUUM MONITORED, SKID MOUNTED TANK DETAILS		
Design LAJR	Ver. LAJR	Scale AS SHOWN
Drawn KJ	Appr. REE	Date 97/04/22
Revised By REE	Drawing No. NT-P25	
Revised On 04/09/07		

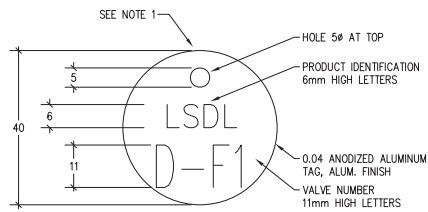


FIG. 1 - VALVE TAGS FOR DIESEL FUEL SYSTEM

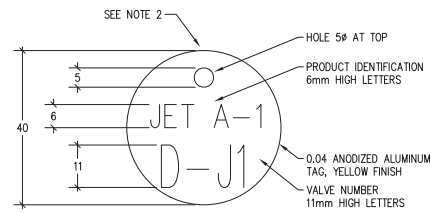


FIG. 2 - VALVE TAGS FOR JET A-1 AVIATION FUEL SYSTEM

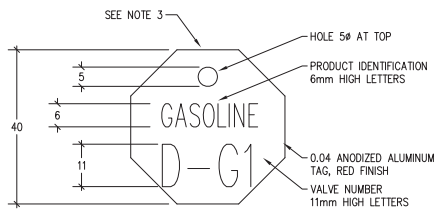


FIG. 3 - VALVE TAGS FOR GASOLINE SYSTEM

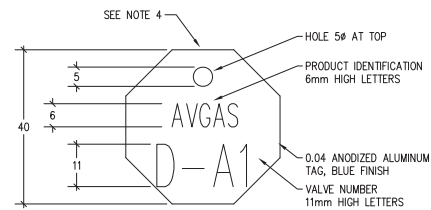


FIG. 3 - VALVE TAGS FOR AVGAS SYSTEM

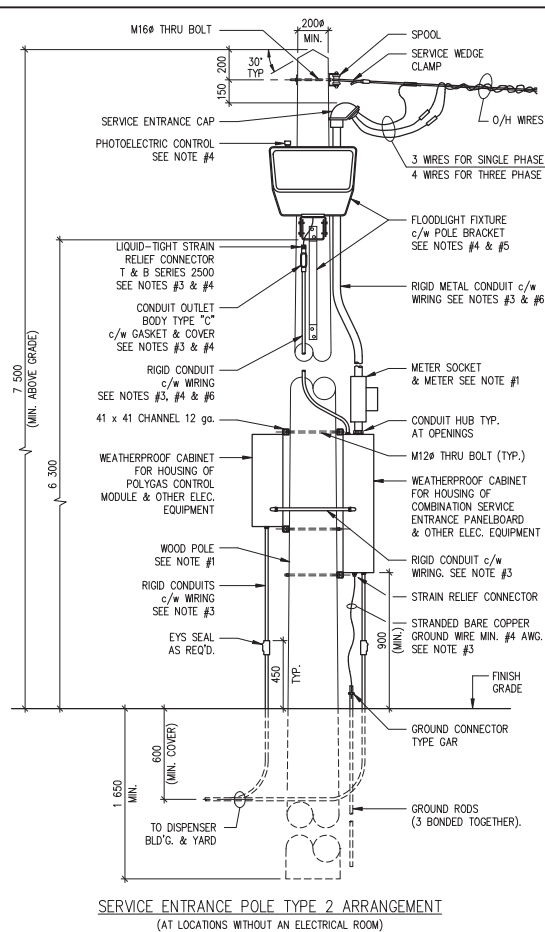
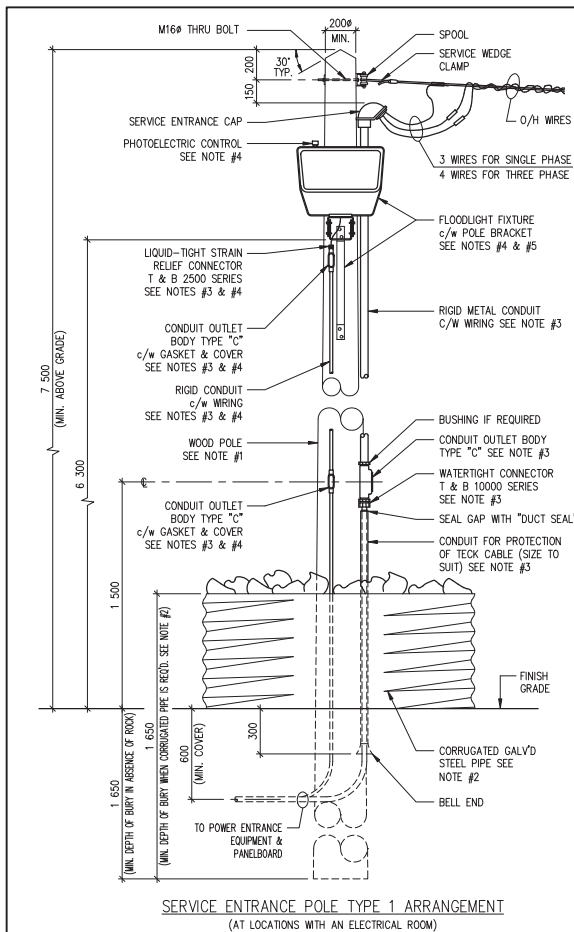
NOTES:

- 1- VALVE TAGS ON THE DIESEL FUEL SYSTEM TO BE BRADY #49904 OR APPROVED EQUIVALENT.
- 2- VALVE TAGS ON THE JET A-1 AVIATION FUEL SYSTEM TO BE BRADY #49900 OR APPROVED EQUIVALENT.
- 3- VALVE TAGS ON THE GASOLINE SYSTEM TO BE BRADY #49901 OR APPROVED EQUIVALENT.
- 4- VALVE TAGS ON THE AVGAS SYSTEM TO BE BRADY #49901 OR APPROVED EQUIVALENT.
- 5- SEE SPECIFICATIONS SECTION 01080 FOR DETAILS.




Drawing Title  
VALVE TAG DETAILS

Design BFG	Ver. BFG	Scale 1 : 1
Drawn KJ	Appr. REE	Date 99.03.19
Revised By REE	Drawing No. NT-P26	
Revised On 04/09/07		



**NOTES:**

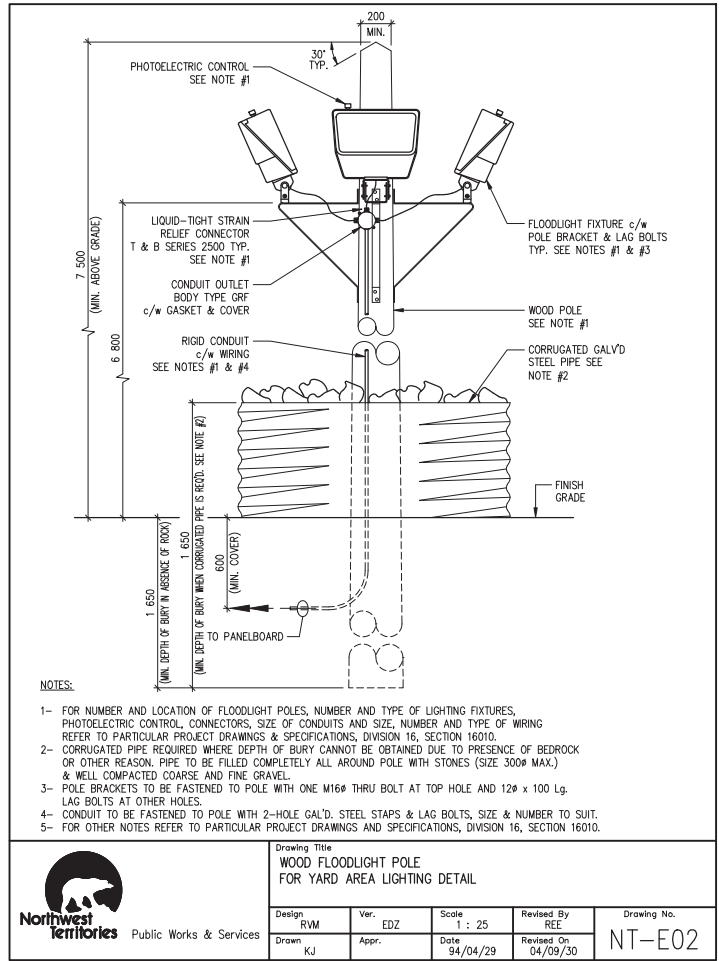
- SERVICE ENTRANCE POLE AND ELECTRICAL INSTALLATIONS AT POLE TO BE AS PER UTILITY COMPANY REQUIREMENTS.
- CORRUGATED PIPE REQUIRED WHERE DEPTH OF BURY CANNOT BE OBTAINED DUE TO PRESENCE OF ROCK OR OTHER REASON. PIPE TO BE FILLED COMPLETELY ALL AROUND POLE WITH STONES (SIZE 300# MAX.) AND WELL COMPACTED COARSE & FINE GRAVEL.
- FOR SIZES OF CONDUITS AND SIZE, NUMBER AND TYPE OF WIRING REFER TO PARTICULAR PROJECT DRAWINGS AND SPECIFICATIONS, DIVISION 16, SECTION 16010.
- FLOODLIGHT, PHOTOELECTRIC CONTROL AND BRACKET, CONDUIT AND WIRING ARE REQ'D. ONLY IF CALLED FOR BY PARTICULAR PROJECT DRAWINGS. FOR DESCRIPTION REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.
- POLE BRACKET TO BE FASTENED TO POLE WITH ONE M16# THRU BOLT AT TOP HOLE & THREE 12# x 100 Lg. LAG BOLTS AT OTHER HOLES.
- CONDUITS TO BE FASTENED TO POLE WITH 2 HOLE GALV'D. STEEL STRAPS & LAG BOLTS, SIZES & NUMBER TO SUIT.
- FOR OTHER NOTES REFER TO PARTICULAR PROJECT DRAWINGS AND SPECIFICATIONS, DIVISION 16, SECTION 16010.

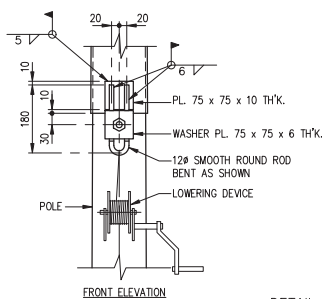
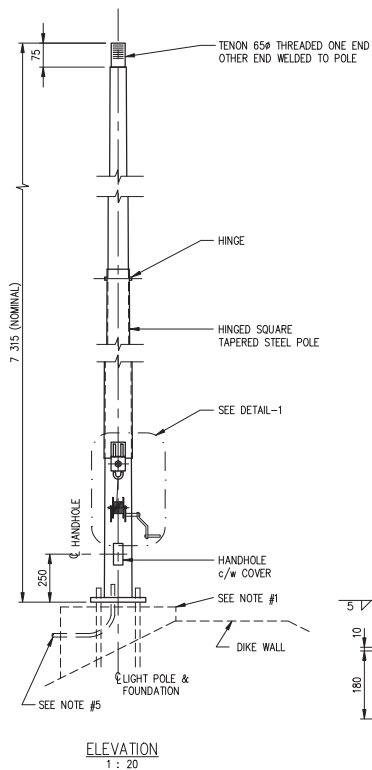


Northwest Territories Public Works & Services

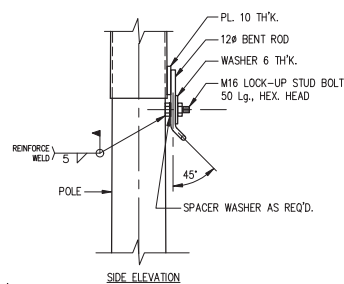
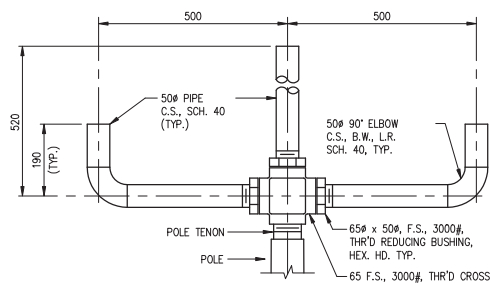
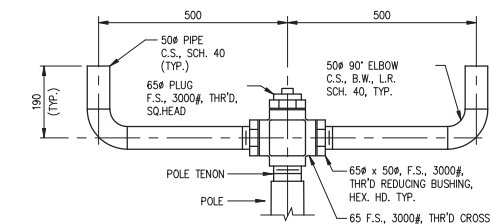
Drawing Title  
**SERVICE ENTRANCE POLE  
TYPE 1 AND TYPE 2 ARRANGEMENTS**

Design RVM	Ver. EDZ	Scale 1 : 25
Drawn KJ	Appr. REE	Date 94/04/29
Revised By REE	Drawing No. NT-E01	
Revised On 04/09/30		





DETAIL - 1  
1 : 10



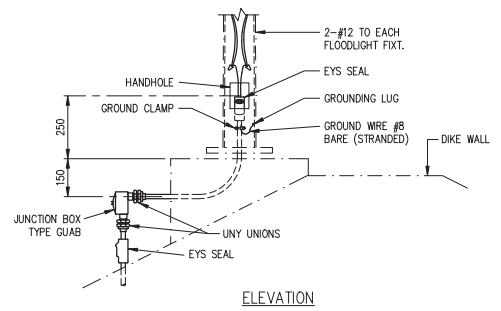
NOTES:

- 1- FOR DETAILS OF CONCRETE FOUNDATION & ANCHOR BOLTS REFER TO DWG. NT-S20.
- 2- LOWERING DEVICE TO BE INSTALLED SUCH THAT HINGED PORTION OF POLE IS LOWERED PARALLEL TO THE DIKE WALL.
- 3- POLE & BRACKETS TO BE PAINTED AS PER SPECIFICATIONS, DIVISION 9, SECTION 09900.
- 4- FOR MATERIAL REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.
- 5- FOR DETAIL OF ELECTRICAL INSTALLATION SEE DWG. NT-E04



Drawing Title  
HINGED FLOODLIGHT POLE  
& BRACKETS FOR  
DIKE AREA LIGHTING DETAILS

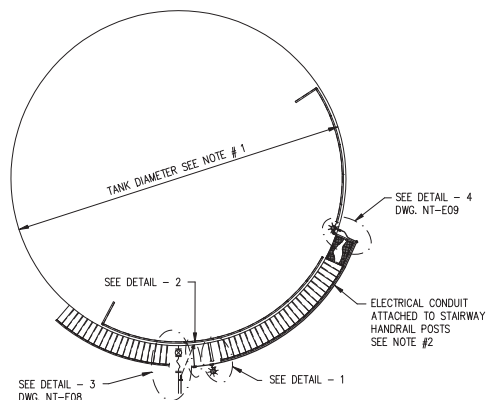
Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr.	Date 95/02/28
Revised By REE	Drawing No. NT-E03	
Revised On 04/09/30		



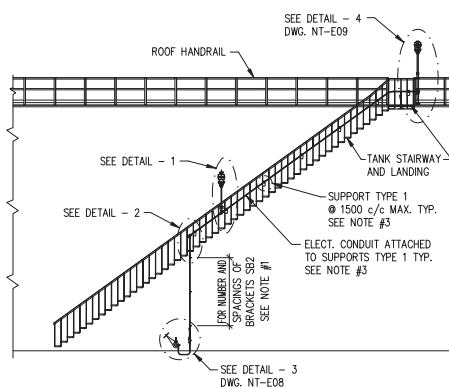
Drawing Title  
ELECTRICAL & GROUNDING INSTALLATION  
AT BASE OF FLOODLIGHT POLE

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/06/18	NT-E04

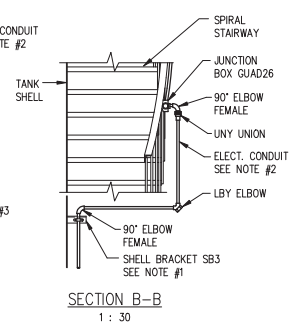
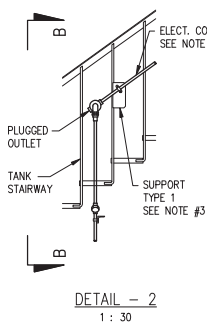
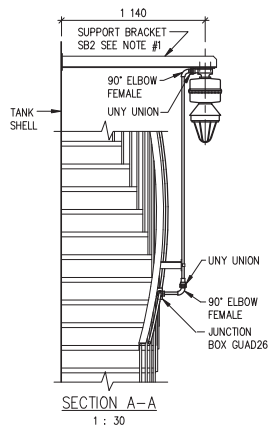
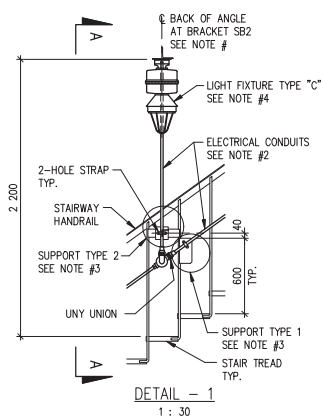




PLAN  
1 : 150



ELEVATION (DEVELOPED)  
1 : 150



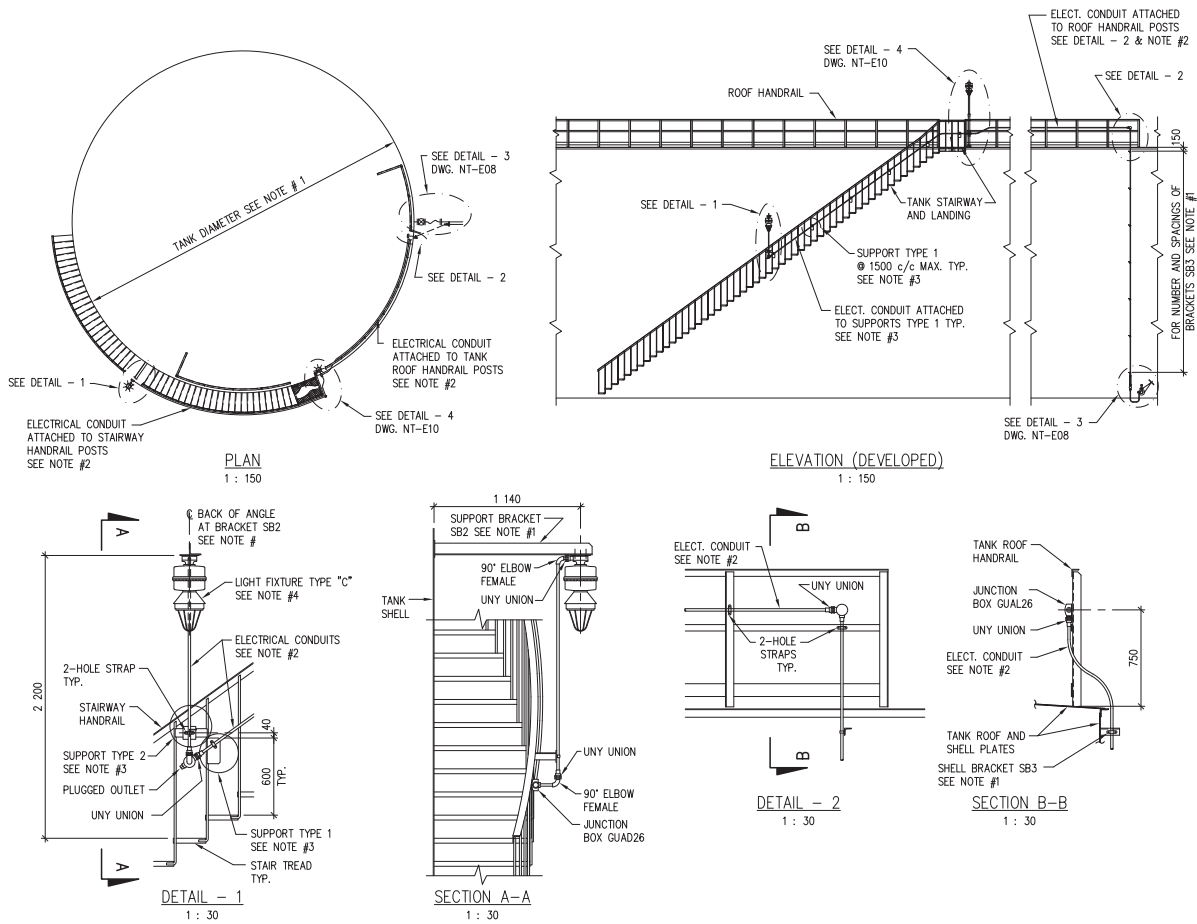
#### NOTES:

- 1- FOR SIZE OF TANK, ORIENTATION, NUMBER AND LOCATION OF BRACKETS SB2 AND SB3 REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- ALL CONDUITS TO BE RIGID METAL 19Ø WITH 2-#12 WIRES, UNLESS OTHERWISE SPECIFIED ON PARTICULAR PROJECT DRAWINGS.
- 3- FOR DETAILS OF SUPPORTS TYPE 1 AND TYPE 11 REFER TO DWG. NT-S48.
- 4- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.



Drawing Title  
TYPICAL LIGHTING ARRANGEMENT  
AT VERTICAL TANKS  
ALTERNATIVE 1  
PLAN, DEVELOPED ELEVATION  
SECTIONS AND DETAILS

Design	RVM	Ver.	EDZ	Scale	AS SHOWN
Drawn	KJ	Appr.		Date	95/02/28
Revised By	REE	Drawing No.			NT-E05
Revised On	04/09/30				



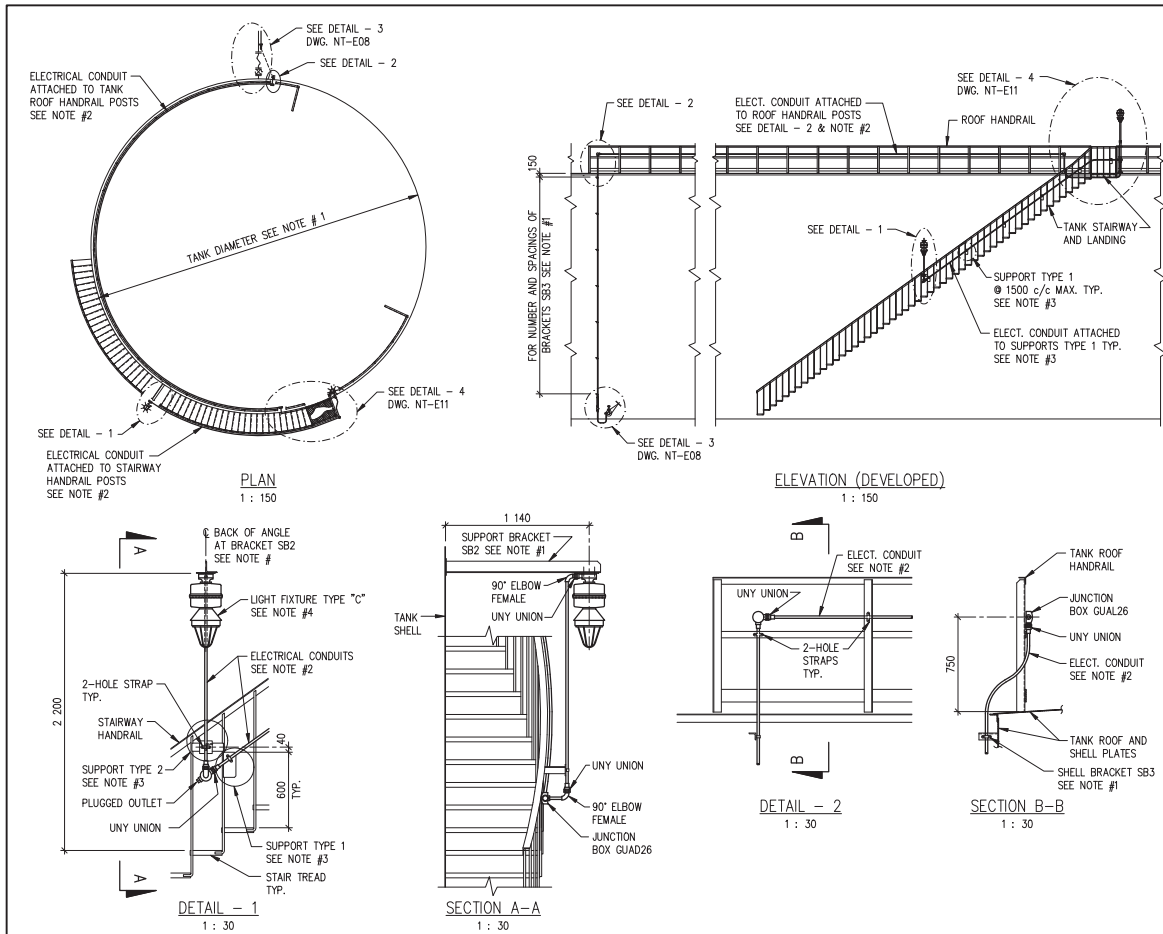
#### NOTES:

- 1- FOR SIZE OF TANK, ORIENTATION, NUMBER AND LOCATION OF BRACKETS SB2 AND SB3 REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- ALL CONDUITS TO BE RIGID METAL 19# WITH 2-#12 WIRES, UNLESS OTHERWISE SPECIFIED ON PARTICULAR PROJECT DRAWINGS.
- 3- FOR DETAILS OF SUPPORTS TYPE 1 AND TYPE 11 REFER TO DWG. NT-S48.
- 4- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.



Drawing Title  
**TYPICAL LIGHTING ARRANGEMENT  
AT VERTICAL TANKS  
ALTERNATIVE 2  
PLAN, DEVELOPED ELEVATION,  
SECTIONS AND DETAILS**

Design	RVM	Ver.	EDZ	Scale	AS SHOWN
Drawn	KJ	Appr.		Date	99/02/26
Revised By	REE	Drawing No. <b>NT-E06</b>			
Revised On	04/09/30				



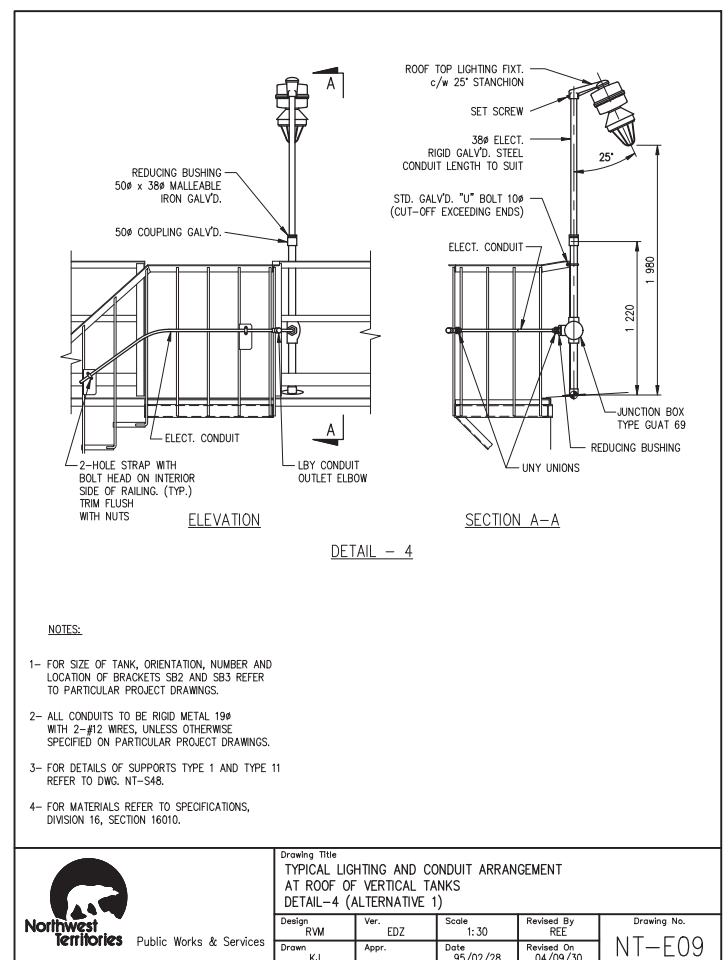
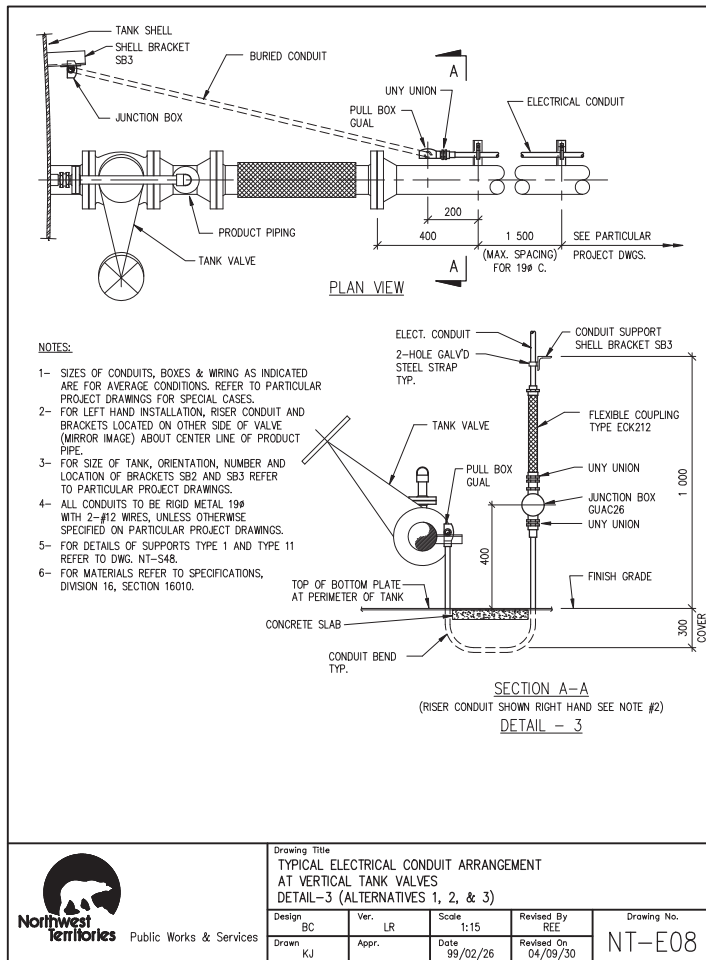
#### NOTES:

- 1- FOR SIZE OF TANK, ORIENTATION, NUMBER AND LOCATION OF BRACKETS SB2 AND SB3 REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- ALL CONDUITS TO BE RIGID METAL 19Ø WITH 2-#12 WIRES, UNLESS OTHERWISE SPECIFIED ON PARTICULAR PROJECT DRAWINGS.
- 3- FOR DETAILS OF SUPPORTS TYPE 1 AND TYPE 11 REFER TO DWG. NT-S48.
- 4- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.



Drawing Title  
TYPICAL LIGHTING ARRANGEMENT  
AT VERTICAL TANKS  
ALTERNATIVE 3  
PLAN, DEVELOPED ELEVATION,  
SECTIONS AND DETAILS

Design RVM	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr. REE	Date 99/02/26
Revised By REE	Drawing No. NT-E07	
Revised On 04/09/30		



Public Works & Services

Drawing Title  
TYPICAL ELECTRICAL CONDUIT ARRANGEMENT  
AT VERTICAL TANK VALVES  
DETAIL-3 (ALTERNATIVES 1, 2, & 3)

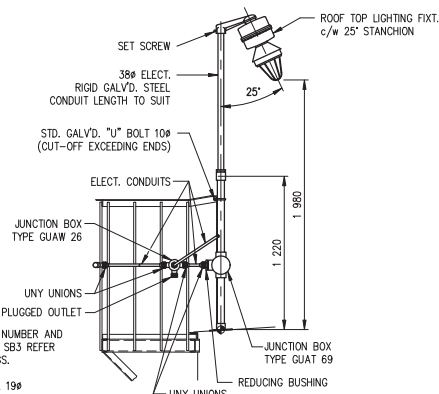
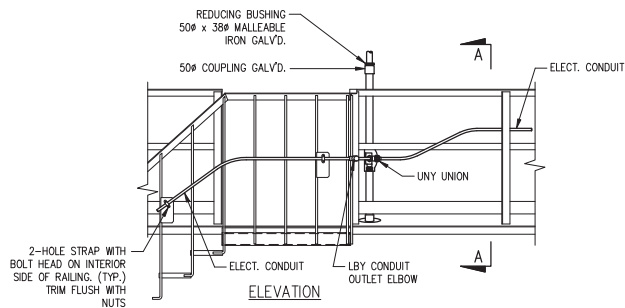
Design BC	Ver. LR	Scale 1:15	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 99/02/26	Revised On 04/09/30	NT-E08



Public Works & Services

Drawing Title  
TYPICAL LIGHTING AND CONDUIT ARRANGEMENT  
AT ROOF OF VERTICAL TANKS  
DETAIL-4 (ALTERNATIVE 1)

Design RVM	Ver. EDZ	Scale 1:30	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30	NT-E09



#### NOTES:

- 1- FOR SIZE OF TANK, ORIENTATION, NUMBER AND LOCATION OF BRACKETS SB2 AND SB3 REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- ALL CONDUITS TO BE RIGID METAL 19# WITH 2-#12 WIRES, UNLESS OTHERWISE SPECIFIED ON PARTICULAR PROJECT DRAWINGS.
- 3- FOR DETAILS OF SUPPORTS TYPE I AND TYPE II REFER TO DWG. NT-S48.
- 4- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.



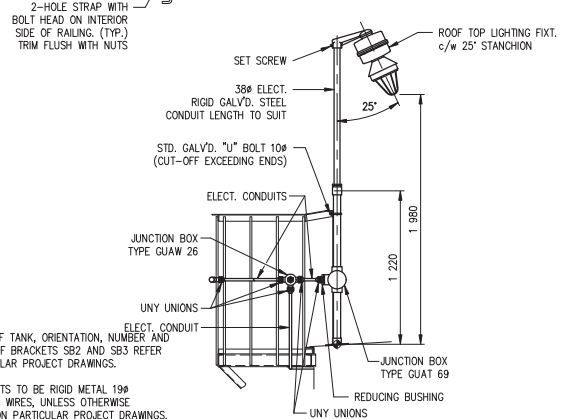
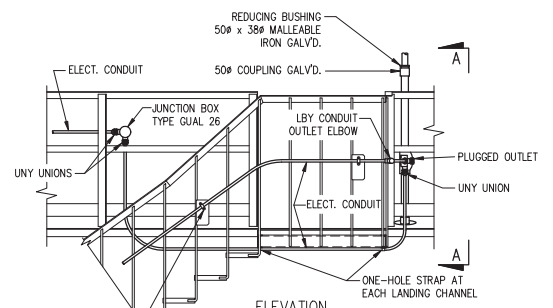
Public Works & Services

Drawing Title  
TYPICAL LIGHTING & CONDUIT ARRANGEMENT  
AT ROOF OF VERTICAL TANKS  
DETAIL-4 (ALTERNATIVE 2)

Design RVM	Ver. EDZ	Scale 1:30	Revised By REE
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/09/30

Drawing No.

NT-E10



#### NOTES:

- 1- FOR SIZE OF TANK, ORIENTATION, NUMBER AND LOCATION OF BRACKETS SB2 AND SB3 REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- ALL CONDUITS TO BE RIGID METAL 19# WITH 2-#12 WIRES, UNLESS OTHERWISE SPECIFIED ON PARTICULAR PROJECT DRAWINGS.
- 3- FOR DETAILS OF SUPPORTS TYPE I AND TYPE II REFER TO DWG. NT-S48.
- 4- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.



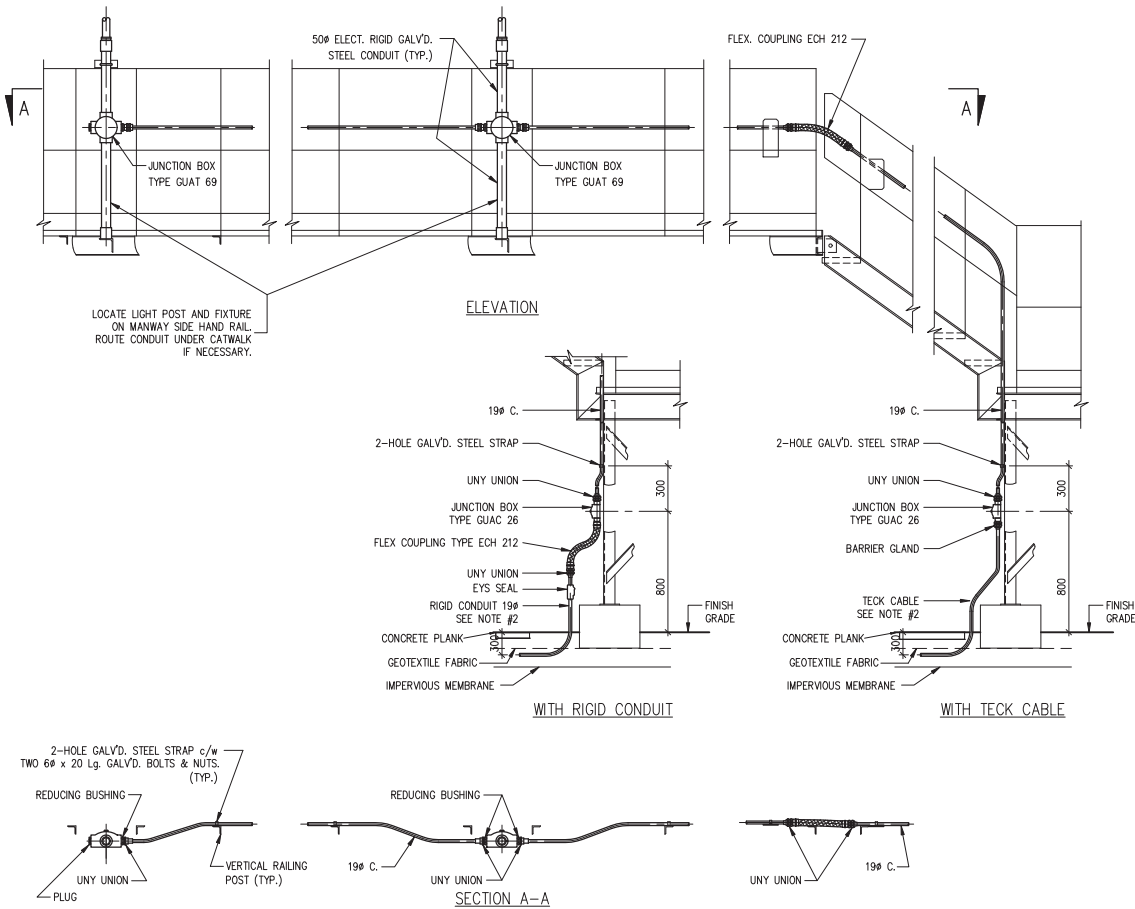
Public Works & Services

Drawing Title  
TYPICAL LIGHTING AND CONDUIT ARRANGEMENT  
AT ROOF OF VERTICAL TANKS  
DETAIL-4 (ALTERNATIVE 3)

Design RVM	Ver. EDZ	Scale 1:30	Revised By REE
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/09/30

Drawing No.

NT-E11



#### NOTES:

- 1- ALL CONDUITS TO BE RIGID METAL GALV'D. WITH 2 #12 WIRES, UNLESS OTHERWISE SPECIFIED ON PARTICULAR PROJECT DRAWINGS.
- 2- CONTRACTOR TO REFER TO PARTICULAR PROJECT DRAWING FOR INDICATION OF CONDUIT OR TECK CABLE INSTALLATION.
- 3- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.

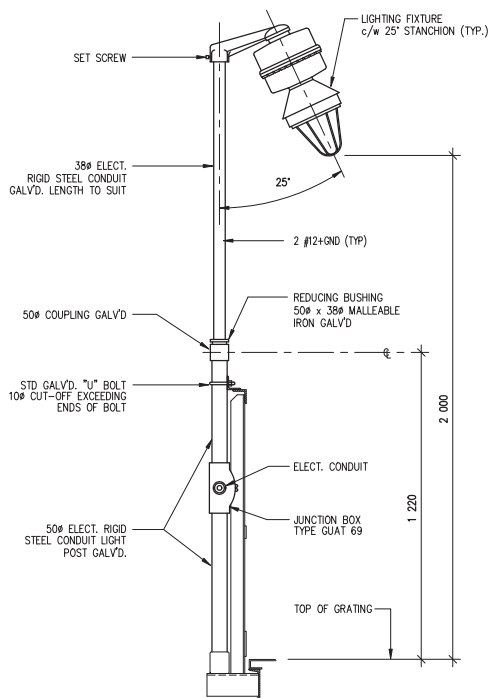


Public Works & Services

Drawing Title  
LIGHTING AT HORIZONTAL TANKS  
AT HANDRAIL OF CATWALK & STAIRWAY  
PLAN AND DETAILS

Design	BC	Ver.	LR	Scale	1:25
Drawn	KJ	Appr.		Date	95/02/28
Revised By	REE	Drawing No.			
Revised On	04/09/30				

NT-E12



#### NOTES:

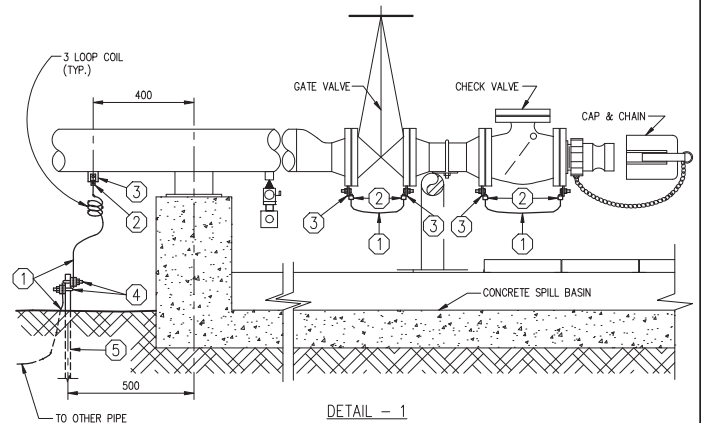
- 1- FOR NUMBER AND LOCATION OF LIGHT POSTS SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.
- 3- LOCATE LIGHT POST AND FIXTURE BETWEEN MANWAYS ON THE MANWAY SIDE HANDRAIL.



Public Works & Services

Drawing Title  
LIGHTING AT HORIZONTAL TANKS  
LIGHT POST & FIXTURE AT CATWALK DETAIL

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30	NT-E13



#### LIST OF MATERIAL

ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-S49
④	BURNDY GROUND CONNECTOR TYPE GAR
⑤	GROUND ROD 19# x 3 050 Lg. BLACKBURN #7510 COPPER-CLAD STEEL

#### NOTE:

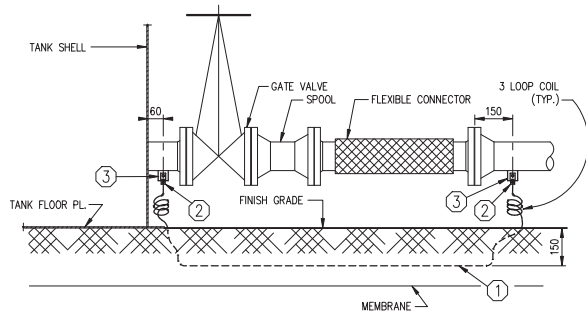
- 1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
AT SPILL BASIN AT SEA HOSE CONNECTION POINTS

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30	NT-E14

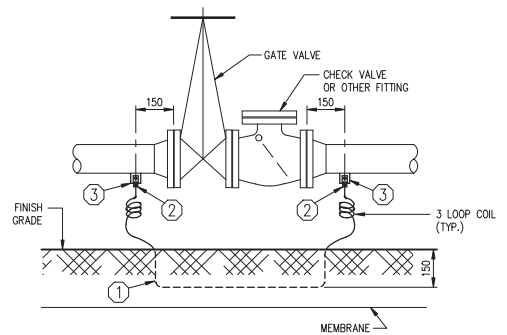


DETAIL - 2

LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



DETAIL - 3

LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
ACROSS TANK VALVES, SPOOL PIECES & FLEXIBLE CONNECTORS

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/09/30

Drawing No.

NT-E15



Public Works & Services

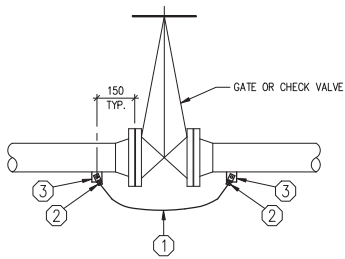
Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
ACROSS GATE AND CHECK VALVES

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/09/30

Drawing No.

NT-E16





DETAIL - 4

LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

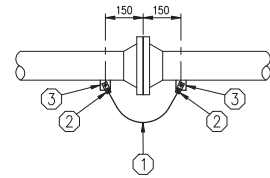
1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
ACROSS GATE OR CHECK VALVES

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No. <b>NT-E17</b>
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/09/30	



DETAIL - 5

LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

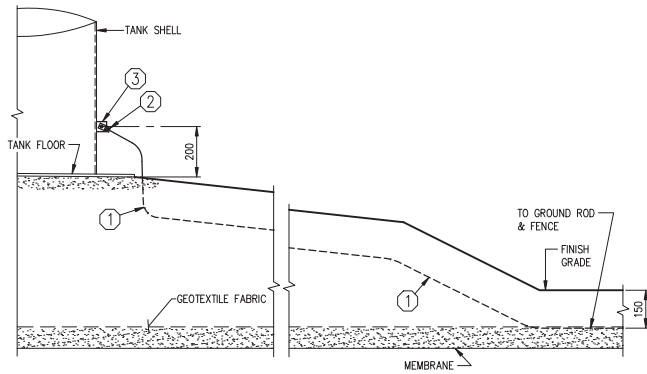
1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
AT FLANGED CONNECTIONS

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No. <b>NT-E18</b>
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/09/30	



DETAIL - 6

LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



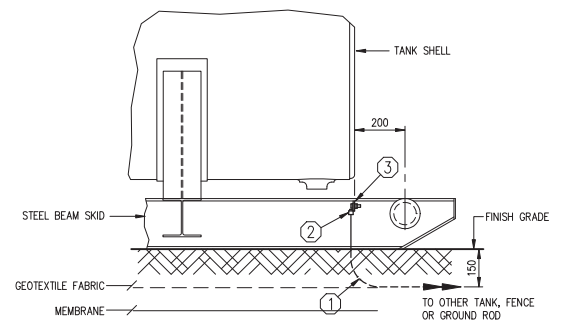
Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
AT VERTICAL TANKS

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30

Drawing No.

NT-E19



DETAIL - 7

LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



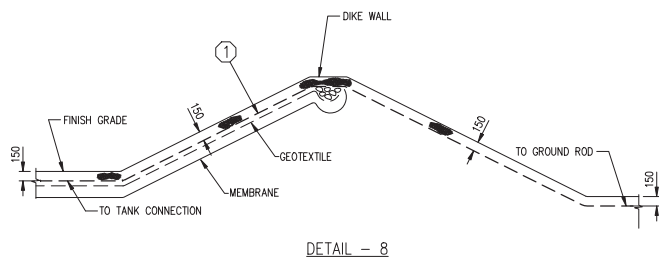
Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUND  
WIRE CONNECTION AT HORIZONTAL TANKS

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30

Drawing No.

NT-E20



DETAIL - 8

LIST OF MATERIAL	
ITEM	DESCRIPTION
1	#4 STRANDED BARE COPPER GROUND WIRE

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



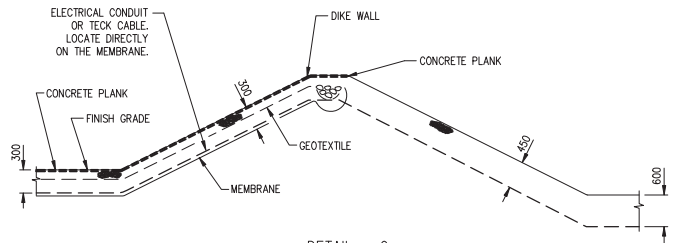
Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUND  
WIRE INSTALLATION OVER DIKE WALL

Design RVM	Ver. EDZ	Scale N.T.S.	Revised By REE
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30

Drawing No.

NT-E21



DETAIL - 9

NOTE:

- 1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.
- 2- LOCATE THE TECK CABLE DIRECTLY ON THE MEMBRANE. CUT THROUGH THE GEOTEXTILE AND COVER THE SEAM WITH 300mm WIDE STRIP OF GEOTEXTILE AND YELLOW MARKING TAPE.
- 3- COVER WITH A MINIMUM 300mm DEPTH OF GRAVEL WITH A CONCRETE SLAB FLUSH WITH GROUND SURFACE



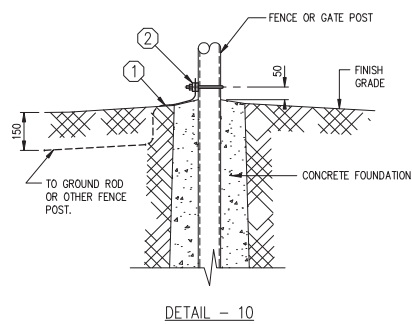
Public Works & Services

Drawing Title  
ELECTRICAL CONDUIT OR TECK CABLE  
INSTALLATION OVER DIKE WALL

Design BC	Ver. LR	Scale N.T.S.	Revised By REE
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30

Drawing No.

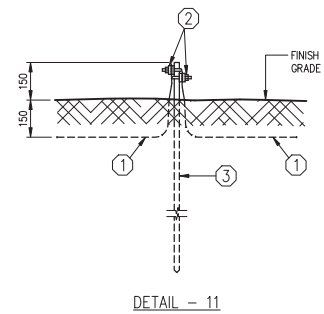
NT-E22



LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	THOMAS & BETTS HEAVY DUTY GROUND CLAMP #3903 FOR FENCE POST, #3904 FOR GATE POST

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY GROUND CONNECTOR TYPE GAR
③	GROUND ROD 19# x 3 050 Lg. BLACKBURN #7510 COPPER-CLAD STEEL

NOTE:

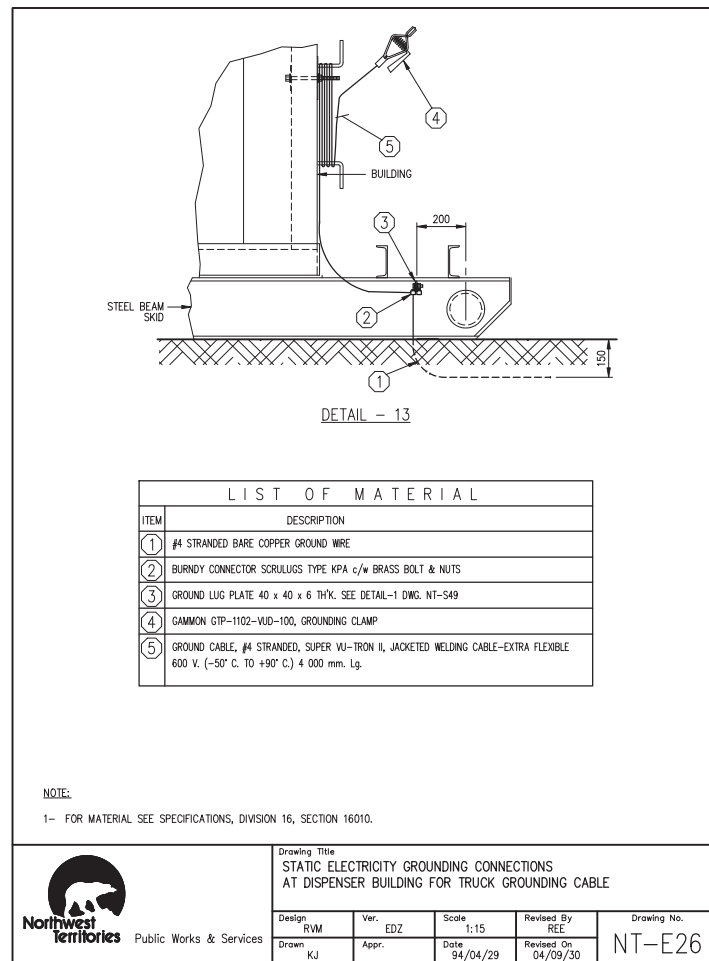
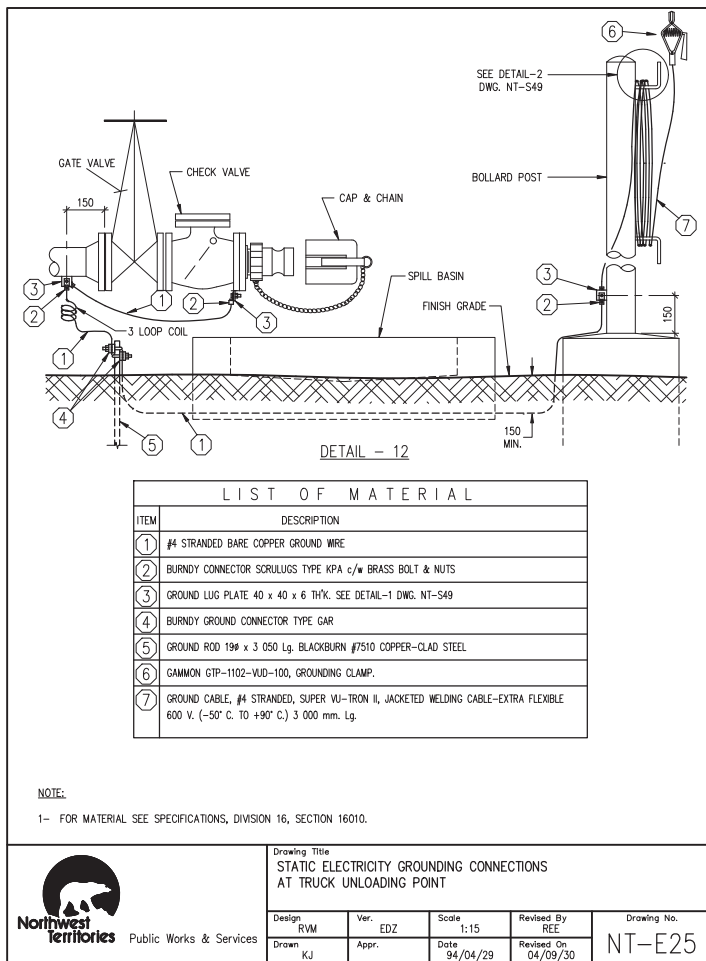
1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.

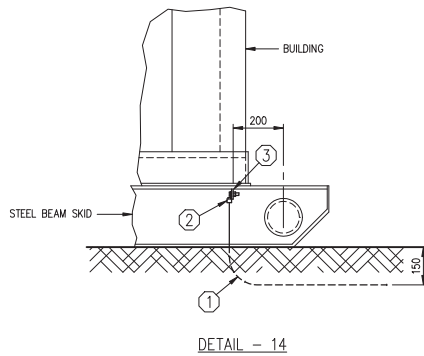
**Drawing Title**  
STATIC ELECTRICITY GROUND WIRE CONNECTION  
AT FENCE OR GATE POSTS

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No. <b>NT-E23</b>
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30	

**Drawing Title**  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
AT GROUND ROD

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No. <b>NT-E24</b>
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/09/30	





LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.

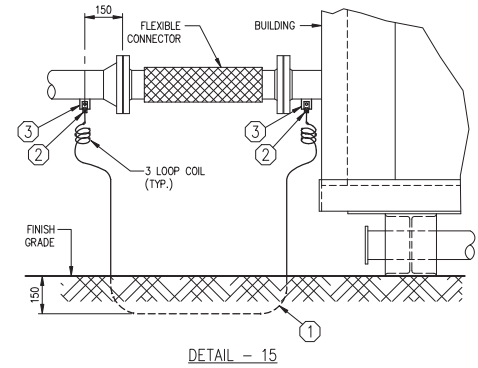


Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
OF GROUND LUG AND WIRE AT DISPENSER BUILDING

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30	NT-E27

NT-E27



LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.

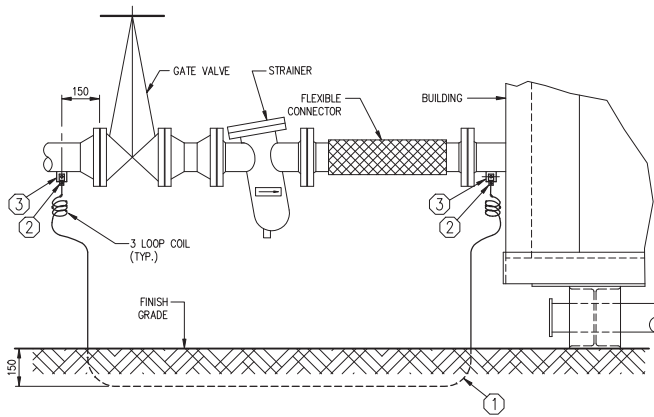


Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
ACROSS FLEXIBLE CONNECTOR AT DISPENSER BUILDING

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/06/30	NT-E28

NT-E28



DETAIL - 16

LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



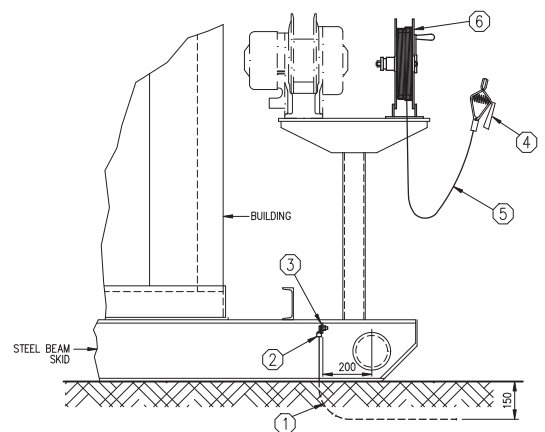
Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING CONNECTIONS  
ACROSS FLEXIBLE CONNECTOR, STRAINER  
& VALVE BEHIND DISPENSER BUILDING

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30

Drawing No.

NT-E29



DETAIL - 17

LIST OF MATERIAL	
ITEM	DESCRIPTION
①	#4 STRANDED BARE COPPER GROUND WIRE
②	BURNDY CONNECTOR SCROLLUGS TYPE KPA c/w BRASS BOLT & NUTS
③	GROUND LUG PLATE 40 x 40 x 6 THK. SEE DETAIL-1 DWG. NT-549
④	GAMMON GTP-1102-VUD-100
⑤	KINK RESISTANT STATIC GROUNDING CABLE, STAINLESS STEEL STRANDED (7 x 7) 2.38 mm DIA. 30480 mm Lg. UNCOATED.
⑥	STATIC ELECTRICITY HAND REWIND GROUNDING REEL NORDIC MODEL No. 340405 OR GAMMON MODEL ML-3418-20

NOTE:

1- FOR MATERIAL SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



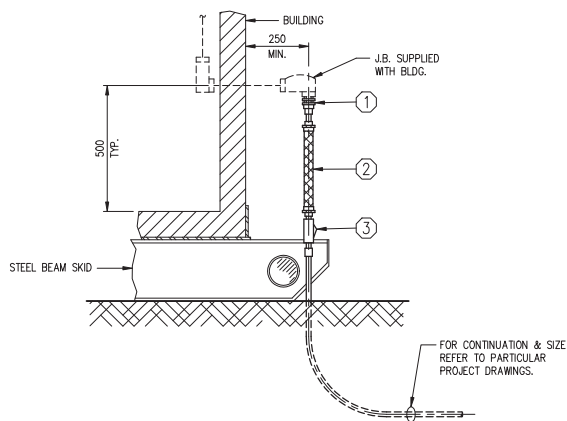
Public Works & Services

Drawing Title  
STATIC ELECTRICITY GROUNDING REEL  
AT JET A-1 DISPENSER BUILDING

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30

Drawing No.

NT-E30



LIST OF MATERIAL	
ITEM	DESCRIPTION
①	UNION TYPE CROUSE-HINDS "UNY" SERIES, SIZE TO SUIT
②	FLEXIBLE COUPLING 305 Lg. TYPE CROUSE-HINDS "ECH" SERIES, SIZE TO SUIT
③	SEAL TYPE CROUSE-HINDS "EYS" SERIES, SIZE TO SUIT

**NOTE:**

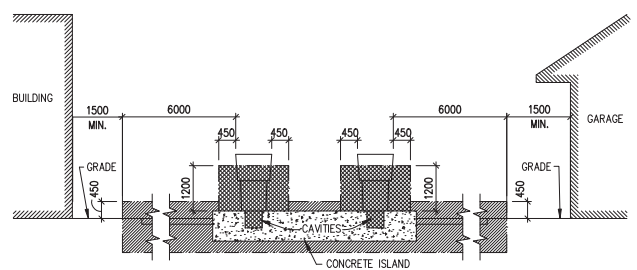
- 1- APPLICABLE TO OPERATOR'S SHELTER & DISPENSER BUILDINGS.  
2- FOR OTHER NOTES SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



Public Works & Services

Drawing Title  
ELECTRICAL CONDUIT ARRANGEMENT AT ENTRY  
OF BUILDING

Design RVM	Ver. EDZ	Scale 1:15	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30	NT-E31



**GASOLINE DISPENSING STATION**  
(SECTION 20-004 (1), (2), (4) & (6))

**HAZARDOUS AREA CLASSIFICATION:**

CLASS I,  
DIVISION 1  
(ZONE 1)



CLASS I,  
DIVISION 2  
(ZONE 2)



**NOTE:**

- 1- ALL DIMENSIONS ARE IN MILLIMETRES.  
2- FOR OTHER NOTES SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.

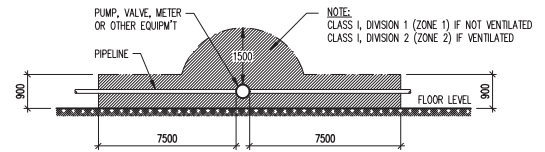


Public Works & Services

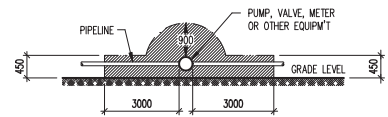
Drawing Title  
HAZARDOUS AREA CLASSIFICATIONS  
FOR ELECTRICAL INSTALLATIONS

Design RVM	Ver. EDZ	Scale 1:100	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30	NT-E32





INDOOR AREA

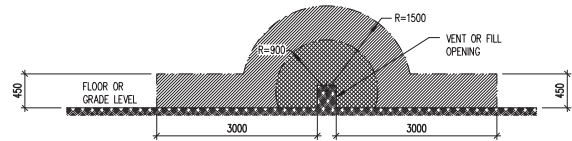


OUTDOOR AREA

#### BULK STORAGE

### FLAMMABLE LIQUIDS AT BULK FUEL STORAGE FACILITIES

(RULE: 20-302 (1) OF CANADIAN ELECTRICAL CODE)



### TRANSFER OF FLAMMABLE LIQUIDS

(OUTDOORS OR INDOORS WITH MECHANICAL VENTILATION)

(RULE: 20-302 (2) (a) OF CANADIAN ELECTRICAL CODE)

### HAZARDOUS AREA CLASSIFICATION:

CLASS I,  
DIVISION 1  
(ZONE 1)



CLASS I,  
DIVISION 2  
(ZONE 2)



#### NOTE:

1- ALL DIMENSIONS ARE IN MILLIMETRES.

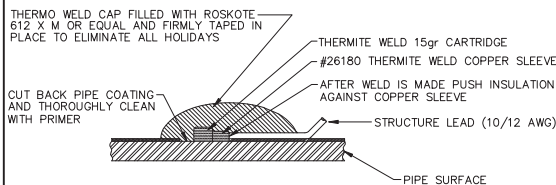
2- FOR OTHER NOTES SEE SPECIFICATIONS, DIVISION 16, SECTION 16010.



Public Works & Services

Drawing Title  
HAZARDOUS AREA CLASSIFICATIONS  
FOR ELECTRICAL INSTALLATIONS

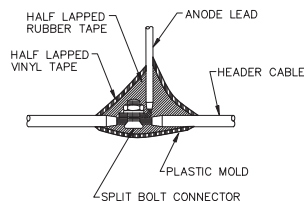
Design RVM	Ver. EDZ	Scale 1:100	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/09/30	NT-E33



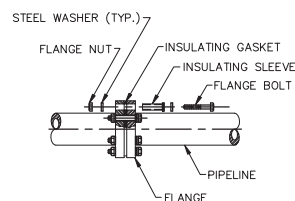
NOTES:

1. METAL SURFACE TO BE DRY AND FREE OF ALL FOREIGN MATERIAL.
2. CONNECTION AND EXPOSED METAL TO HAVE MIN. 12.7 mm INSULATION.

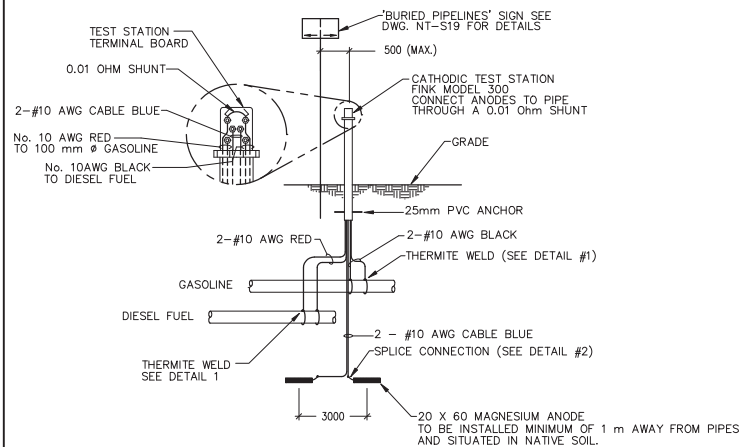
DETAIL 1: TYPICAL THERMITE WELD DETAIL



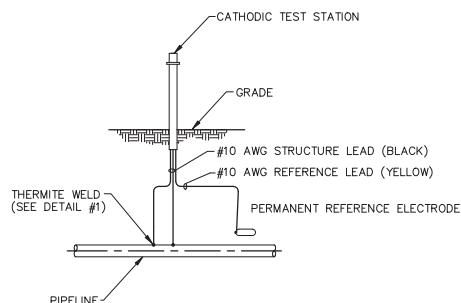
DETAIL 2: TYPICAL TWO TAPE CABLE SPLICE DETAIL



DETAIL 3: TYPICAL INSULATING FLANGE ASSEMBLY DETAIL



TYPICAL TEST/PROTECTION STATION AND ANODE INSTALLATION DETAIL



TYPICAL REFERENCE ELECTRODE INSTALLATION DETAIL

NOTES:

- 1- ALL CONDUITS TO BE RIGID METAL GALV'D. WITH 2 #12 WIRES, UNLESS OTHERWISE SPECIFIED ON PARTICULAR PROJECT DRAWINGS.
- 2- CONTRACTOR TO REFER TO PARTICULAR PROJECT DRAWING FOR INDICATION OF CONDUIT OR TEE/CABLE INSTALLATION.
- 3- FOR MATERIALS REFER TO SPECIFICATIONS, DIVISION 16, SECTION 16010.



Public Works & Services

Drawing Title  
CATHODIC PROTECTION DETAILS

Design BFG	Ver. BFG	Scale N.T.S.
Drawn KJ	Appr. REE	Date 99/03/20
Revised By REE	Drawing No. NT-E34	
Revised On 04/10/05		