



**PUBLIC WORKS AND SERVICES  
PETROLEUM PRODUCTS DIVISION**

**STANDARD DETAILED DRAWINGS FOR NORTHERN  
FUEL STORAGE AND DISTRIBUTION FACILITIES**

**3rd EDITION - 01/2006**

Prepared by:

Petroleum Products Division and  
Asset Management Division (Technical Support Services)  
Public Works and Services, Government of the Northwest Territories

**Foreword**

This publication, together with the Specifications for Fuel Storage Facilities and the Design Rationale for Fuel Storage Facilities, documents performance criteria, preferred materials or methods, and logistical considerations for the design and construction of GNWT fuel storage facilities. Over time, certain products or approaches to construction have proven successful and have been adopted by the GNWT, private consultants, and contractors working in the NWT. It is expected and hoped that comments, discussion, and further research will lead to revisions and additions that will keep the document current and relevant.

**1.0 Criteria for Standard Drawings**

The Standard Detail Drawings for Fuel Storage Facilities contained herein do not supplant any mandatory Codes or Regulations. Rather, they cover the following areas:

- 1) Where the GNWT believes that more stringent requirements should apply than the National Fire Code of Canada or local municipal requirements;
- 2) Where the GNWT believes that there is a need to augment or clarify a Code requirement;
- 3) Where the GNWT experience has shown that conditions particular to remote northern communities require an approach different from typical Canadian construction industry practice;
- 4) Where the GNWT has developed preferences for specific products, systems, or methods.

**2.0 Application of Standards**

The Specifications and Drawings have been prepared specifically for construction of publicly funded, northern fuel storage and distribution facilities.

The drawings contained in this document relate directly to and should be used in conjunction with:

- 1) Specifications for Northern Fuel Storage Facilities;
- 2) Design Rationale for Northern Fuel Storage Facilities.

It is intended that specific Drawings and application sections of the Specifications be copied and included in the Contract Documents for new, or upgraded fuel storage and distribution facilities.

**3.0 Alternatives**

Consultants are encouraged to present, for consideration by PW&S, alternatives to any design requirements or standard included here or to present new or innovative ways to resolve problems or reduce costs.

**4.0 Development of Standards**

The Drawings included in this edition of the Standard Detail Drawings for Northern Fuel Storage Facilities have developed from design and construction of similar facilities in the Northwest Territories. Document users are encouraged to comment or submit suggested changes to the GNWT, PW&S Asset Management Division, throughout the year. Based on the comments received, revisions will be proposed and broadly distributed for review each year. It is anticipated that a review and revision process will be carried out each year in an effort to ensure this document remains relevant and reflects the collective knowledge of all parties involved in construction projects in the NWT.

The proposed revisions to this edition of the Standard Detail Drawings for Northern Fuel Storage Facilities were received and compiled by members of the Public Works and Services, Asset Management Division, Technical Support Services.

**Revisions**

Periodic reviews will be undertaken to reconfirm, revise, or update design standards or guidelines. Your comments and suggestions are invited. Proposed changes or additions should be submitted to:

Asset Management Division, Department of Public Works and Services, Government of the Northwest Territories, Box 1320, Yellowknife, NT, X1A 2L9, Facsimile (867) 873-0226.

\_\_\_\_\_  
(attach additional pages if necessary)

Brief description of the changes or additions you propose:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Rationale (relate experiences which have led you to make this recommendation):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Facsimile: \_\_\_\_\_

## LIST OF STANDARD DRAWINGS

DRAWING #	DATE	DRAWING TITLE "S"	DRAWING #	DATE	DRAWING TITLE
NT-S01	04/04/01	TYPICAL BACKFILL PROFILES FOR VERTICAL TANKS	NT-S29	04/05/14	PIPE SUPPORT – TYPE 3 (PIPES DIFFERENT DIAMETER AND SAME CENTRE OF PIPE ELEVATION)
NT-S02	04/04/01	TYPICAL GRANULAR BASE FOR VERTICAL TANKS	NT-S30	04/05/14	PIPE SUPPORT – TYPE 4 (PIPES SAME DIAMETER AND DIFFERENT CENTRE OF PIPE ELEVATION)
NT-S03	04/04/02	TYPICAL SECTION THROUGH DIKE WALL & DRAIN SUMP	NT-S31	04/09/07	PIPE SUPPORT – TYPE 5,6,7,8 (FOR ABOVEGROUND PIPELINES ONLY)
NT-S04	04/04/02	TYPICAL SLEEVE AT PIPE THROUGH DIKE MEMBRANE DETAIL	NT-S32	04/09/07	TYPE 1 STILE (OVER DIKE WALLS) PLAN & SECTION
NT-S05	04/08/31	TYPICAL SECTION THROUGH UNDERGROUND AND BURIED PIPELINE	NT-S32A	04/09/07	TYPE 1 STILE (OVER CONCRETE DIKE WALLS) PLAN & SECTION
NT-S06	04/08/31	TYPICAL TRENCHES FOR UNDERGROUND ELECTRICAL CONDUITS OR TECK CABLE	NT-S33	04/09/07	TYPE 2 STILE (OVER PRODUCT PIPING) PLAN & SECTIONS
NT-S07	04/04/02	CHAIN LINK FENCING DETAILS	NT-S34	04/09/07	TYPE 1 & TYPE 2 STILES SECTIONS & DETAILS
NT-S07A	04/04/02	CHAIN LINK FENCING ON A CONCRETE DYKE DETAILS	NT-S34A	04/06/08	TYPE 1 STILE AT CONCRETE DIKE SECTIONS AND DETAILS
NT-S08	04/04/02	SIGNS AT FENCES & GATES DETAILS	NT-S35	04/09/07	TYPICAL CATWALK & STAIRWAY ARRANGEMENT FOR TWO 91 cu. m. HORIZONTAL TANKS, PLAN, ELEVATION
NT-S09	04/04/02	BOLLARD DETAILS	NT-S36	04/09/07	TYPICAL CATWALK & STAIRWAY ARRANGEMENT FOR THREE 91 cu. m. HORIZONTAL TANKS, PLAN, ELEVATION
NT-S10	04/09/07	SPILL BASIN AT TRUCK UNLOADING POINT DETAIL	NT-S37	04/09/07	TYPICAL CATWALK & STAIRWAY ARRANGEMENT FOR FOUR OR MORE 91 cu. m. HORIZONTAL TANKS, PLAN, ELEVATION
NT-S11	04/09/07	MARINE SPILL BASIN DETAILS	NT-S38	04/09/07	TYPICAL CATWALK & STAIRWAY ARRANGEMENT FOR TWO 23 cu. m. HORIZONTAL TANKS, PLAN, ELEVATION
NT-S11A	04/10/05	SEA HOSE VALVE COVET AT SPILL BASIN, PLAN & SECTION	NT-S39	04/09/07	SINGLE SECTION FOR TWO 91 cu. m. HORIZONTAL TANKS, PLAN, VIEW, SECTIONS & DETAILS
NT-S12	04/04/02	PIPE SUPPORT & HOSE REST AT SPILL BASIN DETAILS	NT-S40	04/09/07	BEGINNING SECTION FOR THREE OR MORE 91 cu. m. HORIZONTAL TANKS, PLAN, VIEW, SECTIONS & DETAILS
NT-S13	04/09/07	SEA HOSE ANCHOR DETAIL	NT-S41	04/09/07	END SECTION FOR THREE OR MORE 91 cu. m. HORIZONTAL TANKS, PLAN, VIEW, SECTIONS & DETAILS
NT-S14	04/04/02	CONCRETE ANCHOR BLOCK DETAIL	NT-S42	04/09/07	ADD-ON SECTION FOR FOUR OR MORE 91 cu. m. HORIZONTAL TANKS, PLAN, VIEW, SECTIONS & DETAILS
NT-S15	04/04/02	FIXED ANCHOR BRACKET DETAIL	NT-S43	04/09/07	STAIRWAY FOR TWO 91 cu. m. HORIZONTAL TANKS, PLAN, VIEW, SECTIONS & DETAILS
NT-S16	04/04/02	SLEEVED ANCHOR BRACKET DETAIL	NT-S44	04/09/07	SINGLE SECTION FOR TWO 23 cu. m. HORIZONTAL TANKS, PLAN, VIEW, SECTIONS & DETAILS
NT-S17	04/05/07	SIGN AT SPILL BASIN DETAIL	NT-S45	04/09/07	STAIRWAY FOR TWO 23 cu. m. HORIZONTAL TANKS, PLAN, VIEW, SECTIONS & DETAILS
NT-S18	04/05/11	FIRE EXTINGUISHER CABINET DETAILS	NT-S46	04/09/07	CATWALKS & STAIRWAY FOR HORIZONTAL TANKS, MISCELLANEOUS DETAILS
NT-S19	04/05/11	MARKER SIGN AT BURIED PIPELINES	NT-S47	04/09/07	CATWALKS & STAIRWAY FOR HORIZONTAL TANKS, MISCELLANEOUS DETAILS
NT-S20	04/05/11	DIKE AREA LIGHT POLE FOUNDATION, PLAN, ELEVATION, SECTION & DETAILS	NT-S48	04/09/07	TYPE I AND TYPE II SUPPORTS FOR ELECTRICAL CONDUITS AT VERTICAL TANK STAIRWAY DETAILS
NT-S21	04/05/11	CONCRETE ISLAND & APRON, PLAN & SECTIONS	NT-S49	04/09/07	GROUND LUG PLATE & HOOKS AT BOLLARD AT TRUCK UNLOADING POINT DETAIL
NT-S22	04/05/14	CONCRETE ISLAND & APRON, PLAN, SECTIONS AND DETAILS			
NT-S23	04/05/14	OPERATOR'S SHELTER BUILDING, CONCRETE SIDEWALK, GRAVEL PAD & BOLLARDS ARRANGEMENT, PLAN & SECTIONS			
NT-S24	04/05/14	JET A-1 AVIATION FUEL DISPENSER BUILDING CONCRETE SIDEWALK, LINER GRAVEL PAD & BOLLARDS			
NT-S25	04/05/14	GASOLINE/LSDL FUEL DISPENSER BUILDING CONCRETE SIDEWALK, LINER GRAVEL PAD & BOLLARDS ARRANGEMENT PLAN & SECTIONS			
NT-S27	04/05/14	PIPE SUPPORT – TYPE 1 (PIPES SAME DIAMETER AND SAME BOTTOM OF PIPE ELEVATION)			
NT-S28	04/05/14	PIPE SUPPORT – TYPE 2 (PIPES DIFFERENT DIAMETER AND SAME BOTTOM OF PIPE ELEVATION)			

## LIST OF STANDARD DRAWINGS

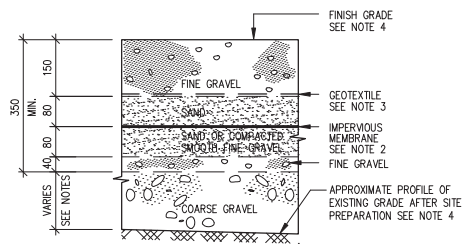
DRAWING #	DATE	DRAWING TITLE "P"	DRAWING #	DATE	DRAWING TITLE
NT-P01	04/09/07	DIKE DRAIN PUMP ASSEMBLY, PLAN & DETAILS	NT-P22	04/09/07	TANK SKID FOR 23 cu. m. HORIZONTAL TANKS, PLAN, SECTION & DETAILS
NT-P01A	04/09/07	DIKE DRAIN PUMP ASSEMBLY FOR CONCRETE DIKE, PLAN & DETAILS	NT-P23	04/09/07	WATER DRAW-OFF VALVE FOR HORIZONTAL TANKS DETAIL
NT-P01B	04/09/07	ELECTRIC DIKE DRAIN PUMP ASSEMBLY, PLAN & DETAILS	NT-P24	04/09/07	75 cu. m. FUEL STORAGE TANK, HORIZONTAL, DOUBLE WALL, VACUUM MONITORED, SKID MOUNTED TANK DETAILS
NT-P02	04/09/07	SEA HOSE CONNECTION PIPING AT SPILL BASIN, PLAN, SECTIONS	NT-P24A	04/09/07	9 cu. m. EPOXY LINED FUEL STORAGE TANK, HORIZONTAL, DOUBLE WALL, VACUUM MONITORED, SKID MOUNTED TANK DETAILS
NT-P02A	04/08/31	FUEL TRUCK CONNECTION PIPING AT SPILL BASIN, PLAN, SECTIONS	NT-P25	04/09/07	94 cu. m. FUEL STORAGE TANK, HORIZONTAL, DOUBLE WALL, VACUUM MONITORED, SKID MOUNTED TANK DETAILS
NT-P03	04/05/16	PIPELINE EXPANSION LOOP, TYPE 1 DETAIL	NT-P26	04/09/07	VALVE TAG DETAILS
NT-P04	04/05/16	PIPELINE EXPANSION LOOP, TYPE 2 DETAIL			
NT-P05	04/05/16	TYPICAL INSTALLATION OF TYPE 1 PRESSURE RELIEF BY-PASS (ACROSS VALVES AT EXTERIOR PIPING)			
NT-P06	04/05/16	TYPICAL INSTALLATION OF TYPE 2 PRESSURE RELIEF BY-PASS (ACROSS VALVES AT EXTERIOR PIPING)	NT-E01	04/09/30	"E" SERVICE ENTRANCE POLE, TYPE 1 AND 2 ARRANGEMENTS
NT-P07	04/05/16	PIPE DRAIN VALVE, DRAIN AND LOCKABLE PLUG DETAIL	NT-E02	04/09/30	FLOOD LIGHT POLE FOR YARD AREA LIGHTING DETAIL
NT-P08	04/05/16	BRACKET FOR TYPE "PB1", FOR ELECTRICAL CONDUITS	NT-E03	04/09/30	HINGED FLOOD LIGHT POLE & BRACKETS FOR DIKE AREA LIGHTING DETAILS
NT-P09	04/09/07	BASIC ARRANGEMENT OF TANK OPENINGS & APPURTENANCES FOR 9 754 HIGH VERTICAL TANK	NT-E04	04/06/18	ELECTRICAL & GROUNDING INSTALLATION AT BASE OF FLOODLIGHT POLE
NT-P10	04/05/16	WATER DRAIN VALVE CONNECTION "SN3" & INTERNAL PIPING AT VERTICAL TANKS DETAIL	NT-E05	04/09/30	TYPICAL LIGHTING ARRANGEMENT AT VERTICAL TANKS, ALTERNATIVE 1, PLAN, DEVELOPED ELEVATION SECTIONS AND DETAILS
NT-P11	04/05/16	INSTALLATION OF AUTOMATIC TANK LEVEL GAUGE ROOF NOZZLE "RN3" & SHELL BRACKET "SB1" AT VERTICAL TANKS DETAIL	NT-E06	04/09/30	TYPICAL LIGHTING ARRANGEMENT AT VERTICAL TANKS, ALTERNATIVE 2, PLAN, DEVELOPED ELEVATION SECTIONS AND DETAILS
NT-P12	04/09/07	ROOF INSPECTION FRAME "RIF" FOR AUTOMATIC TANK LEVEL GAUGE AT VERTICAL TANKS DETAIL	NT-E07	04/09/30	TYPICAL LIGHTING ARRANGEMENT AT VERTICAL TANKS, ALTERNATIVE 3, PLAN, DEVELOPED ELEVATION SECTIONS AND DETAILS
NT-P13	04/09/07	ROOF NOZZLE "RN5" FOR FUTURE	NT-E08	04/09/30	TYPICAL ELECTRICAL CONDUIT ARRANGEMENT AT VERTICAL TANK VALVES, DETAIL - 3 (ALTERNATIVES 1,2 & 3)
NT-P14	04/09/07	STAIRWAY & LANDING AT 9 754 HIGH VERTICAL TANKS	NT-E09	04/09/30	TYPICAL LIGHT AND CONDUIT ARRANGEMENT AT ROOF OF VERTICAL TANKS, DETAIL -4 (ALTERNATIVE 1)
NT-P15	04/09/07	ROOF HANDRAIL "RH" AT VERTICAL TANKS DETAILS	NT-E10	04/09/30	TYPICAL LIGHT AND CONDUIT ARRANGEMENT AT ROOF OF VERTICAL TANKS, DETAIL -4 (ALTERNATIVE 2)
NT-P16	04/09/07	LIGHT FIXTURE BRACKET "SB2" AT STAIRWAYS OF VERTICAL TANKS DETAIL	NT-E11	04/09/30	TYPICAL LIGHT AND CONDUIT ARRANGEMENT AT ROOF OF VERTICAL TANKS, DETAIL -4 (ALTERNATIVE 3)
NT-P17	04/09/07	SHELL BRACKET "SB3" FOR ELECTRICAL CONDUITS AT VERTICAL TANKS DETAIL	NT-E12	04/09/30	LIGHTING AT HORIZONTAL TANKS, AT HANDRAIL OF CATWALK & STAIRWAY PLAN & DETAILS
NT-P18	04/09/07	ROOF COUPLING "RC1" FOR LIGHT FIXTURE POST AT VERTICAL TANKS DETAIL	NT-E13	04/09/30	LIGHTING AT HORIZONTAL TANKS, LIGHT POST & FIXTURE AT CATWALK DETAIL
NT-P19	04/09/07	HORIZONTAL ABOVE GROUND TANK, 91 cu. m. NOMINAL CAPACITY, ELEVATIONS AND DETAIL			
NT-P20	04/09/07	TANK SKID FOR 91 cu. m. HORIZONTAL TANKS, PLAN, SECTION & AND DETAILS			
NT-P21	04/09/07	HORIZONTAL, EPOXY LINED, ABOVEGROUND TANK, 23 cu. m. NOMINAL CAPACITY, ELEVATIONS AND DETAIL			

## LIST OF STANDARD DRAWINGS

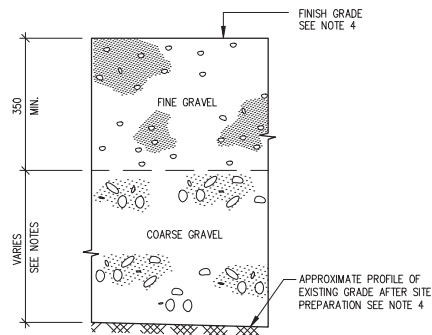
DRAWING #	DATE	DRAWING TITLE	DRAWING #	DATE	DRAWING TITLE
NT-E14	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS AT SPILL BASIN AT SEA HOSE CONNECTION POINTS	A-AVA-01	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT AND JET A-1 / LSDL FLOOR PLAN AND ELEVATIONS
NT-E15	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS ACROSS TANK VALVES, SPOOL PIECES & FLEXIBLE CONNECTORS	A-AVA-02	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT AND JET A-1 / LSDL SECTIONS AND DETAILS
NT-E16	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS ACROSS GATE AND CHECK VALVES	S-AVA-01	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT AND JET A-1 / LSDL SKID ASSEMBLY, PLAN, SECTIONS & DETAILS
NT-E17	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS ACROSS GATE OR CHECK VALVES	S-AVA-02	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT AND JET A-1 / LSDL DRIP PAN & METER SUPPORT, ANCHOR PLATE FOR HOSE REEL & PUMP BASE SECTIONS & DETAILS
NT-E18	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS AT FLANGED CONNECTIONS	S-AVA-03	94/02/21	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT AND JET A-1 / LSDL FILTER/SEPARATOR, SAMPLE BARRIER AND RELAXATION CHAMBER SECTIONS & DETAILS
NT-E19	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS AT VERTICAL TANKS	S-AVA-04	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT AND JET A-1 / LSDL PIPE SUPPORTS SECTIONS & DETAILS
NT-E20	04/09/30	STATIC ELECTRICITY GROUND WIRE CONNECTION AT HORIZONTAL TANKS	P-AVA-01	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT PIPING PLAN, SECTIONS & DETAILS
NT-E21	04/09/30	STATIC ELECTRICITY GROUND WIRE INSTALLATION OVER DIKE WALL	P-AVA-01A	04/10/07	DISPENSER BUILDING FOR JET A-1 / LSDL AT TANK FARM PIPING PLAN, SECTIONS & DETAILS
NT-E22	04/09/30	ELECTRICAL CONDUIT OR TECK CABLE INSTALLATION OVER DIKE WALL	P-AVA-02	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT PIPING ISOMETRIC
NT-E23	04/09/30	STATIC ELECTRICITY GROUND WIRE CONNECTION AT FENCE OR GATE POSTS	P-AVA-02A	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT BILL OF MATERIALS
NT-E24	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS AT GROUND ROD	P-AVA-03	04/10/07	DISPENSER BUILDING FOR JET A-1 / LSDL AT TANK FARM PIPING ISOMETRIC
NT-E25	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS AT TRUCK UNLOADING POINT	P-AVA-03A	04/10/07	DISPENSER BUILDING FOR JET A-1 / LSDL AT TANK FARM BILL OF MATERIALS
NT-E26	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS AT DISPENSER BUILDING FOR TRUCK GROUNDING CABLE	M-AVA-01	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT AND JET A-1 / LSDL VENTILATION PLAN, SECTIONS & DETAILS
NT-E27	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS OF GROUND LUG AND WIRE AT DISPENSER BUILDING	E-AVA-01	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT ELECTRICAL PLAN, SECTIONS & DETAILS
NT-E28	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS ACROSS FLEXIBLE CONNECTOR AT DISPENSER BUILDING	E-AVA-01A	04/10/07	DISPENSER BUILDING FOR JET A-1 / LSDL AT TANK FARM ELECTRICAL PLAN, SECTIONS & DETAILS
NT-E29	04/09/30	STATIC ELECTRICITY GROUNDING CONNECTIONS ACROSS FLEXIBLE CONNECTOR, STRAINER & VALVE BEHIND DISPENSER BUILDING	E-AVA-02	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT ELECTRICAL DIAGRAMS & TERMINAL BLOCKS
NT-E30	04/09/30	STATIC ELECTRICITY GROUNDING REEL AT JET A-1 DISPENSER BUILDING	E-AVA-02A	04/10/07	DISPENSER BUILDING FOR JET A-1 / LSDL AT TANK FARM ELECTRICAL DIAGRAMS & TERMINAL BLOCKS
NT-E31	04/09/30	ELECTRICAL CONDUIT ARRANGEMENT AT ENTRY OF BUILDING	E-AVA-03	04/10/07	DISPENSER BUILDING FOR JET A-1 AVIATION FUEL AT AIRPORT AND JET A-1 / LSDL REMOTE ELECTRICAL EQUIPMENT FOR DISPENSER AT AIRPORT
NT-E32	04/09/30	HAZARDOUS AREA CLASSIFICATIONS FOR ELECTRICAL INSTALLATIONS			
NT-E33	04/09/30	HAZARDOUS AREA CLASSIFICATIONS FOR ELECTRICAL INSTALLATIONS			
NT-E34	04/10/05	CATHODIC PROTECTION DETAILS			

## LIST OF STANDARD DRAWINGS

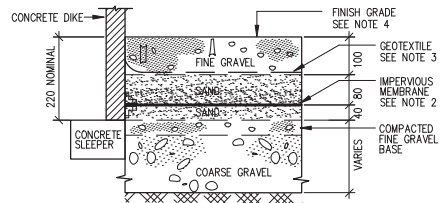
DRAWING #	DATE	DRAWING TITLE "SB"	DRAWING #	DATE	DRAWING TITLE "GP"
A-SB-01	04/10/08	OPERATOR'S SHELTER BUILDING, FLOOR PLAN AND ELEVATION	A-GP-01	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL FLOOR PLAN & ELEVATIONS
A-SB-02	04/10/08	OPERATOR'S SHELTER BUILDING, SECTIONS AND DETAILS	A-GP-02	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL SECTIONS & DETAILS
A-SB-03	04/06/24	OPERATOR'S SHELTER BUILDING, DESK AND SHELVING DETAILS	S-GP-01	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL SKID ASSEMBLY PLAN, SECTIONS & DETAILS
S-SB-01	04/10/08	OPERATOR'S SHELTER BUILDING, SKID ASSEMBLY PLAN, SECTION & DETAILS	S-GP-02	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL DRIP PAN & METER SUPPORT, ANCHOR PLATE FOR HOSE REEL & PUMP BASE SECTIONS & DETAILS
E-SB-01	04/10/08	OPERATOR'S SHELTER BUILDING, ELECTRICAL PLAN, ELEVATION, SCHEMATICS & DETAILS	S-GP-03	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL SUPPORT & SAMPLE BARREL SECTIONS & DETAILS
E-SB-02	04/10/08	OPERATOR'S SHELTER BUILDING, ELECTRICAL PLAN, ELEVATION & SCHEMATICS	P-GP-01	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL PIPING PLAN, SECTIONS & DETAILS
			P-GP-02	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL PIPING ISOMETRIC
			P-GP-02A	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL BILL OF MATERIALS
			M-GP-01	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL VENTILATION PLAN, SECTIONS & DETAILS
			E-GP-01	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL ELECTRICAL PLAN, SECTIONS & DETAILS
			E-GP-02	04/10/05	DISPENSER BUILDING FOR GASOLINE / LSDL FUEL ELECTRICAL DIAGRAMS & TERMINAL BLOCKS



PROFILE 1 - INSIDE DIKE AREAS  
(EXCEPT AT VERTICAL TANK BASES)



PROFILE 2 - OUTSIDE DIKE AREAS,  
AT VEHICULAR TRAFFIC & SPILL BASIN AREAS



PROFILE 3 - INSIDE CONCRETE DIKE AREAS

#### NOTES:

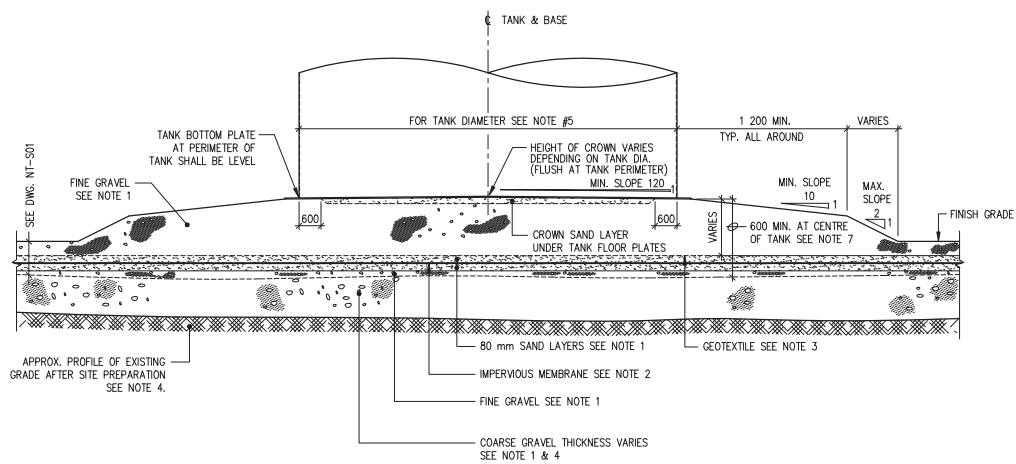
- 1- FOR BACKFILL MATERIAL & SOIL CLASSIFICATION SEE SPECIFICATIONS, DIVISION 2, SECTION 02224.
- 2- FOR MEMBRANE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02592.
- 3- FOR GEOTEXTILE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02270.
- 4- FOR EXISTING & FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS.



Drawing Title  
TYPICAL BACKFILL PROFILES

Design EDZ	Ver. EDZ	Scale 1 : 10
Drawn KJ	Appr. REE	Date 94/04/29
Revised By REE	Drawing No. NT-S01	
Revised On 04/04/01		





TYPICAL SECTION

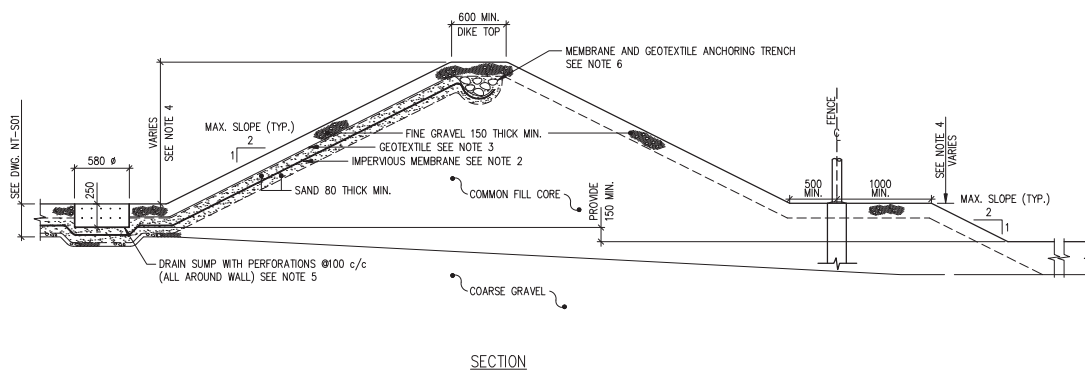
NOTES:

- 1- FOR BACKFILL MATERIAL & SOIL CLASSIFICATION SEE SPECIFICATIONS, DIVISION 2, SECTION 02224 AND DRAWING NT-S01.
- 2- FOR MEMBRANE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02592.
- 3- FOR GEOTEXTILE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02270.
- 4- FOR EXISTING & FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS.
- 5- FOR VERTICAL TANK DIAMETER SEE PARTICULAR PROJECT DRAWINGS.
- 6- MIN. SLOPES AT EDGES OF GRANULAR BASE SHALL BE MAINTAINED AS SHOWN.
- 7- FOR ACTUAL THICKNESS OF TANK BASE FOUNDATION SEE PARTICULAR PROJECT DRAWING.



Drawing Title  
TYPICAL GRANULAR BASE  
FOR VERTICAL TANKS

Design EDZ	Ver. EDZ	Scale N.T.S.
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S02	
Revised On 04/04/01		



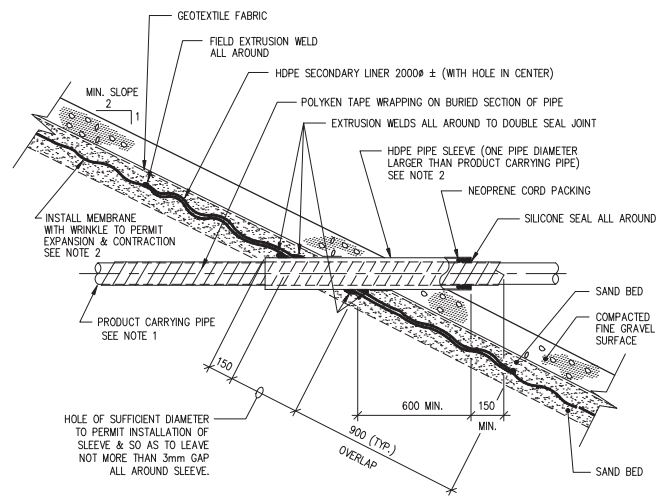
#### NOTES:

- 1- FOR BACKFILL MATERIAL & SOIL CLASSIFICATION SEE SPECIFICATIONS, DIVISION 2, SECTION 02224 AND DRAWING NT-S01.
- 2- FOR MEMBRANE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02592.
- 3- FOR GEOTEXTILE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02270.
- 4- FOR EXISTING & FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS, DIVISION 2, SECTION 02224.
- 5- FOR DRAIN SUMP SEE SPECIFICATIONS, DIVISION 15, SECTION 15010.
- 6- FOR ANCHORING TRENCH SEE SPECIFICATIONS, DIVISION 2, SECTION 02592.



Drawing Title  
TYPICAL SECTION THROUGH  
DIKE WALL & DRAIN SUMP

Design EDZ	Ver. EDZ	Scale N.T.S.
Drawn CAD/SL	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S03	
Revised On 04/04/02		



TYPICAL SECTION

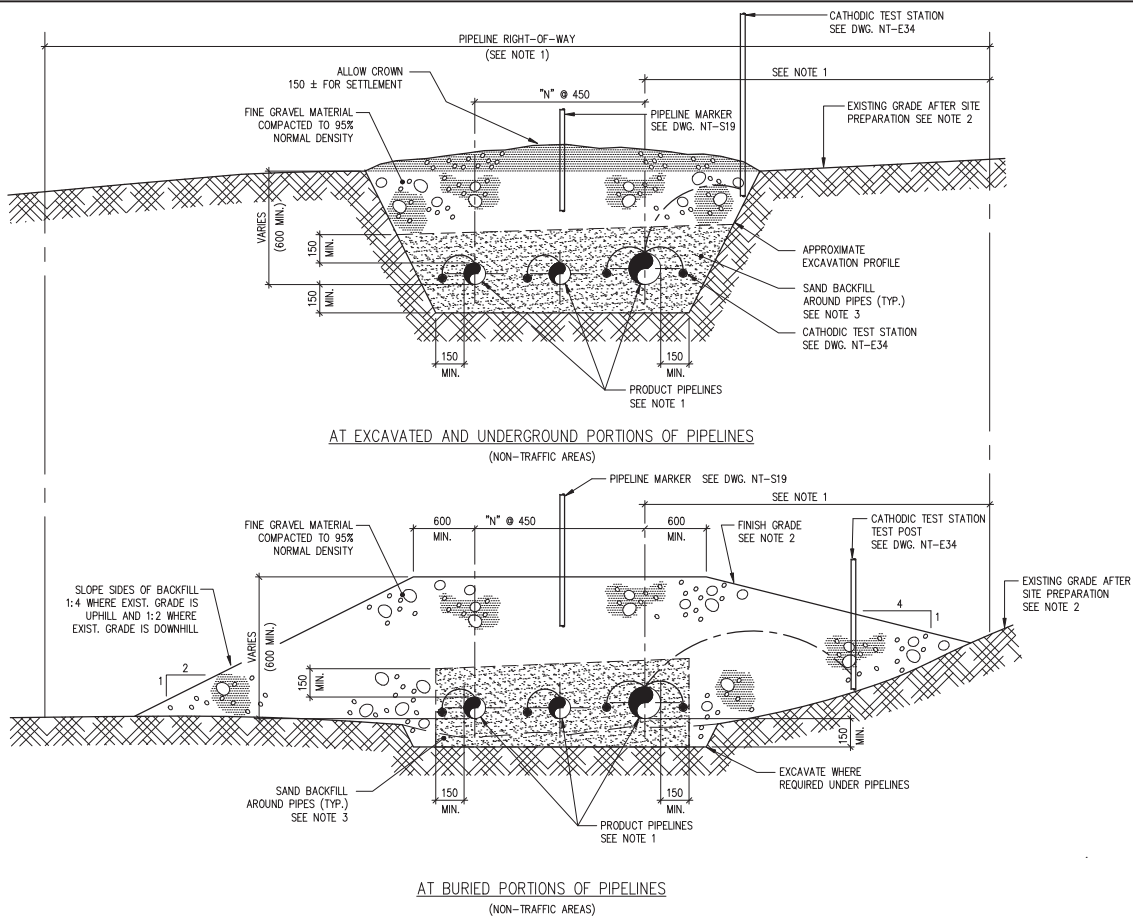
NOTES:

- 1- FOR SIZE OF PROJECT PIPING SEE PARTICULAR PROJECT DRAWINGS.  
 2- FOR MEMBRANE & SLEEVE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02592.



Drawing Title  
TYPICAL SLEEVE AT PIPE THROUGH DIKE MEMBRANE DETAIL

Design EDZ	Ver. EDZ	Scale N.T.S.	Revised By REE	Drawing No.
Drawn CAD/SL	Appr.	Date 94/04/29	Revised On 04/04/02	NT-S04



#### NOTES:

- 1- FOR WIDTH OF PIPELINE RIGHT-OF-WAY, NUMBER AND LOCATION OF PRODUCT PIPES SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR EXISTING AND FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS.
- 3- FOR BACKFILL MATERIAL AND SOIL CLASSIFICATION SEE SPECIFICATIONS, DIVISION 2, SECTION 02224.
- 4- ENSURE THAT MINIMUM COVER AND CLEARANCES OF BACKFILL COMPLY WITH CAN/CSA Z662-03 OIL AND GAS PIPELINE SYSTEMS, TABLE 4.8

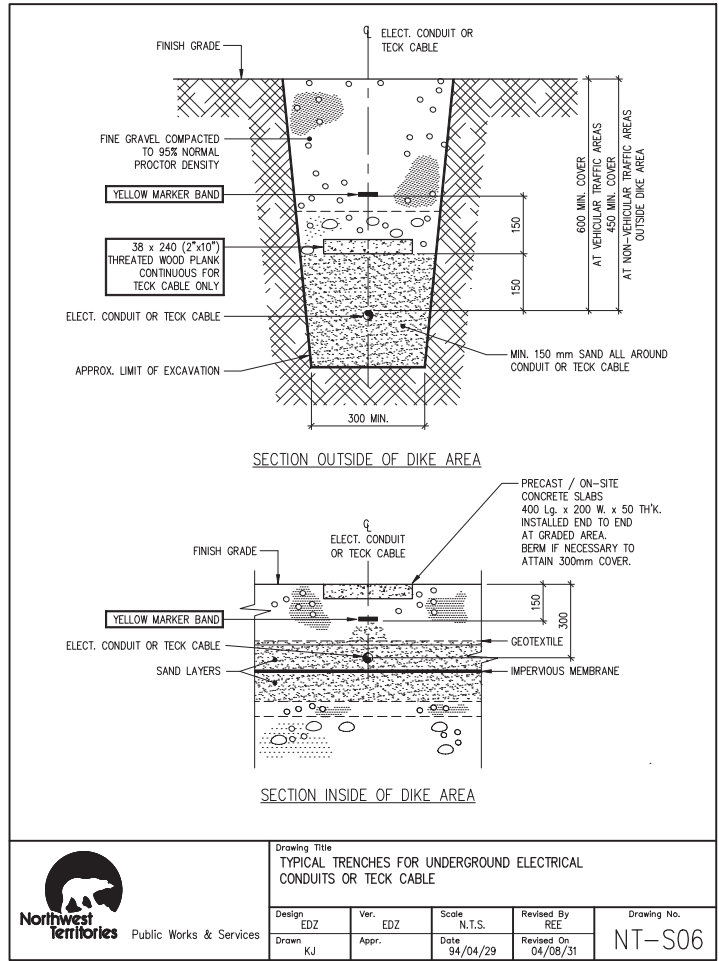
#### LEGEND:

N = NUMBER OF SPACES (DEPENDS ON NUMBER OF PIPELINES), SEE NOTE 1



Drawing Title  
TYPICAL SECTIONS THROUGH  
UNDERGROUND AND BURIED  
PIPELINE

Design EDZ	Ver. EDZ	Scale N.T.S.
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S05	
Revised On 04/08/31		

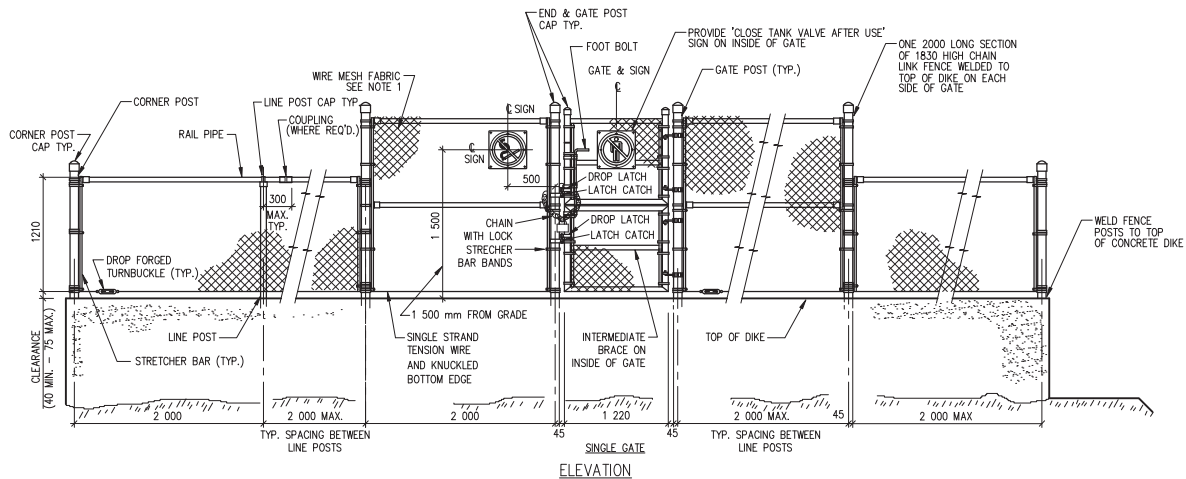


Public Works & Services

Drawing Title  
TYPICAL TRENCHES FOR UNDERGROUND ELECTRICAL  
CONDUITS OR TECK CABLE

Design: EDZ	Ver.: EDZ	Scale: N.T.S.	Revised By: REE	Drawing No.
Drawn: KJ	Appr.:	Date: 94/04/29	Revised On: 04/08/31	NT-S06





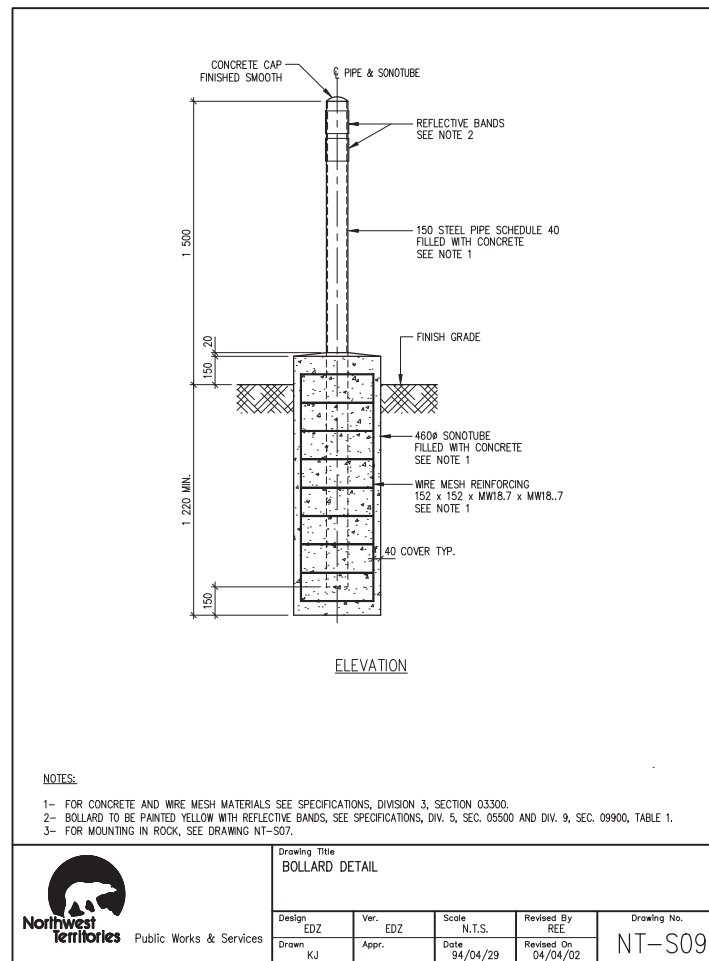
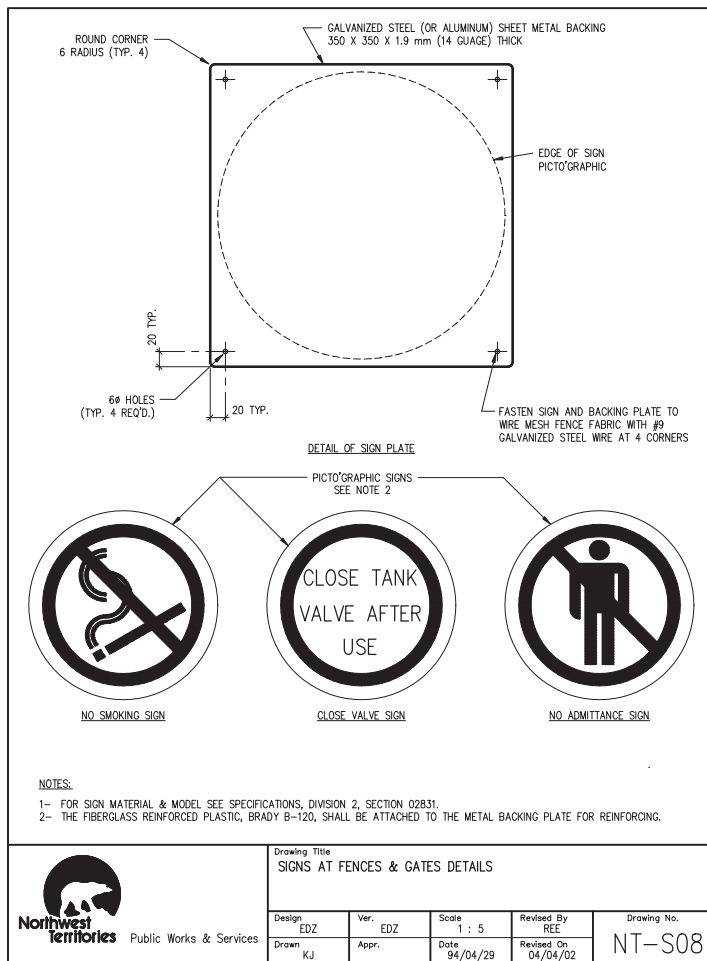
#### NOTES:

- 1- FOR FENCE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02831.
- 2- FOR BACKFILL MATERIALS & SOIL CLASSIFICATION SEE SPECIFICATIONS, DIVISION 2, SECTION 02224.
- 3- FOR CONCRETE MATERIAL SEE MANUFACTURER'S SPECIFICATIONS.
- 4- FOR TYPE AND DIMENSION OF GATE REFER TO PARTICULAR PROJECT DRAWINGS.
- 5- FENCE POSTS AND FENCING TO BE PLUMB AND STRAIGHT.

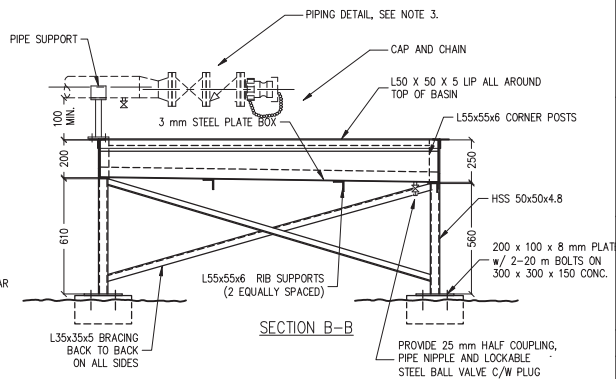
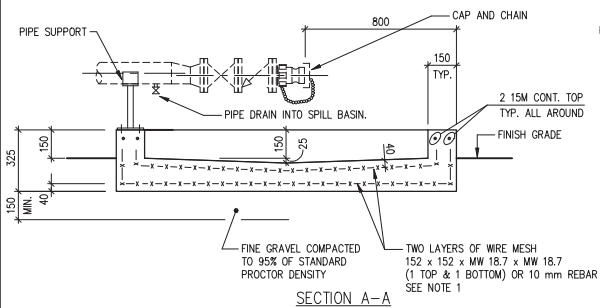
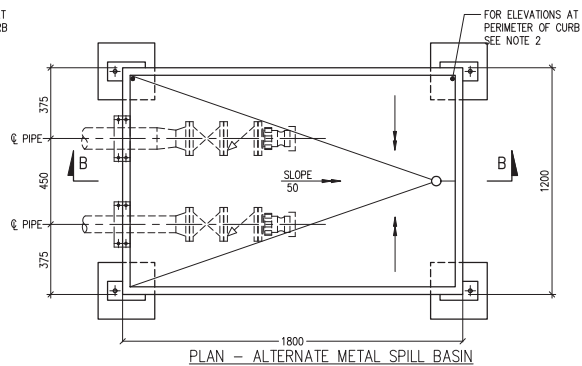
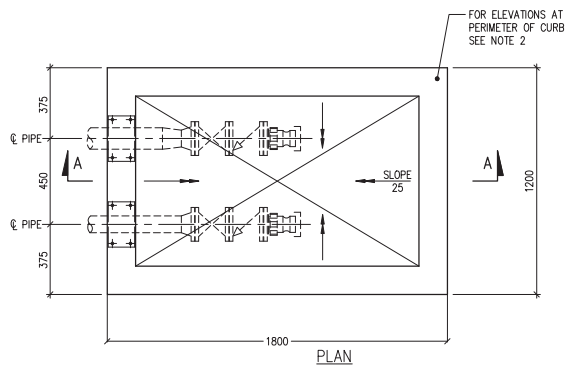


Drawing Title  
CHAIN LINK FENCING  
ON A CONCRETE DIKE  
DETAILS

Design EDZ	Ver. EDZ	Scale N.T.S.
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S07A	
Revised On 04/04/02		







#### NOTES:

- 1- FOR CONCRETE AND REINFORCING MATERIALS SEE SPECIFICATIONS, DIVISION 3.
- 2- FOR ELEVATIONS AT TOP OF CURB AT PERIMETER OF BASIN SEE PARTICULAR PROJECT DRAWINGS.
- 3- FOR TRUCK SPILL BASIN PIPING DETAIL DRAWING SEE DWG. NT-PO2A.
- 4- PAINT AS PER SPECIFICATIONS, DIV. 5, SEC. 05500 AND DIVISION 9 SECTION 09900, TABLE 1.



Public Works & Services

Drawing Title  
SPILL BASIN AT TRUCK  
UNLOADING POINT DETAIL

Design EDZ	Ver. EDZ	Scale N.T.S.
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S10	
Revised On 04/09/07		



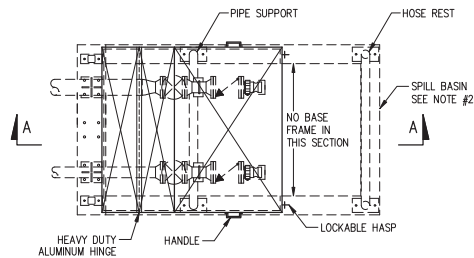
- 1- FOR CONCRETE & REINFORCING MATERIALS SEE SPECIFICATIONS, DIVISION 3.
- 2- FOR SEA HOSE ANCHORS SEE DWG. NT-513.
- 3- FOR NUMBER & SIZE OF PRODUCT PIPES SEE PARTICULAR PROJECT DRAWINGS.
- 4- FOR DETAILS OF PIPE ANCHOR BRACKETS SEE DRAWING NT-516.
- 5- FOR SIGN DETAILS SEE DRAWING NT-517.
- 6- FOR PIPE SUPPORT & HOSE REST SEE DRAWING NT-512.
- 7- FOR GRATING MATERIAL SEE SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 8- FOR DETAILS OF PIPING SEE DWG. NT-P02.
- 9- FOR DETAILS OF PORTABLE SEA HOSE WINCH ASSEMBLY SEE SPECIFICATIONS, DIVISION 15, SECTION 1510.
- 10- NOMINAL SPILL BASIN VOLUME IS 860 L.



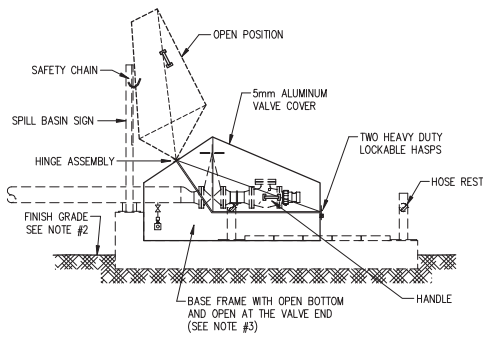
Northwest Territories Public Works &amp; Services

Drawing Title
MARINE SPILL BASIN DETAILS

Design EDZ	Ver. EDZ	Scale N.T.S.
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S11	
Revised On 04/09/07		



PLAN VIEW



SECTION A-A

NOTES:

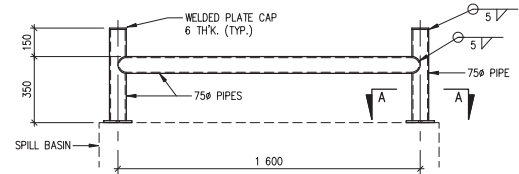
- 1- FOR NUMBER, SIZE & ARRANGEMENT OF PRODUCT PIPES SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR SPILL BASIN SEE DWG. NT-S11
- 3- THE BASE FRAME SHALL BE ALL WELDED 5mm THICK ALUMINUM WITH REINFORCED EDGES AND SHALL BE BOLTED TO THE SPILL BASIN. THE VALVE END SHALL BE LEFT OPEN SO THAT A 250mm HIGH DRIP PAN CAN BE PLACED UNDER THE CAMLOCK FITTING.
- 4- PROVIDE SAFETY CHAIN IN OPEN POSITION (FIELD INSTALLED).
- 5- HEAVY DUTY ALUMINUM HINGES AND HEAVY DUTY LOCKABLE HASPS SHALL BE USED. BOLTS AND RIVETS SHALL BE STAINLESS STEEL.



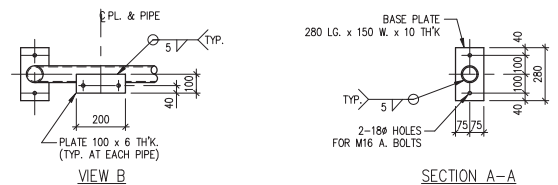
Public Works & Services

Drawing Title  
SEA HOSE VALVE COVER AT SPILL BASIN  
PLAN & SECTION

Design LR	Ver.	Scale 1:40	Revised By	Drawing No.
Drawn KJ	Appr.	Date 04/10/05	Revised On	NT-S11A

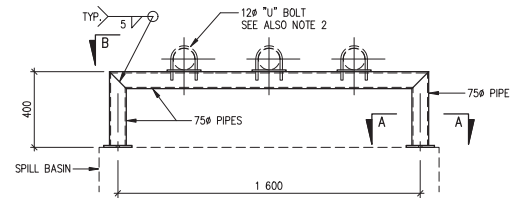


HOSE REST ELEVATION



VIEW B

SECTION A-A



PIPE SUPPORT ELEVATION

NOTES:

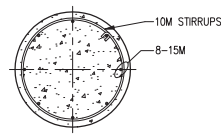
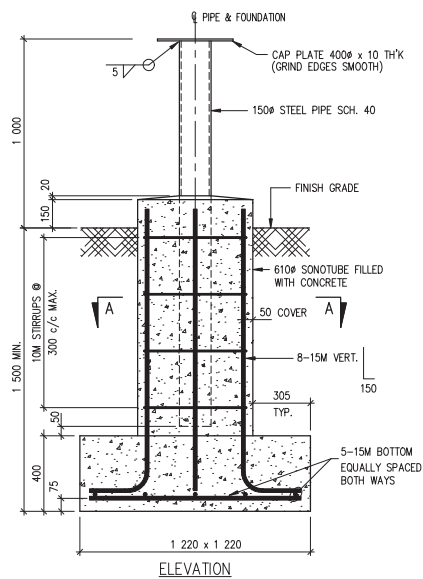
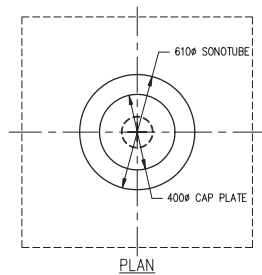
- 1- FOR PIPE SUPPORTS & HOSE REST MATERIALS SEE SPECIFICATIONS, DIVISION 15, SECTION 15010
- 2- FOR NUMBER OF PRODUCT PIPES SEE PARTICULAR PROJECT DRAWINGS.
- 3- FOR LOCATION OF ANCHOR BOLTS SEE DRAWING NT-S14.



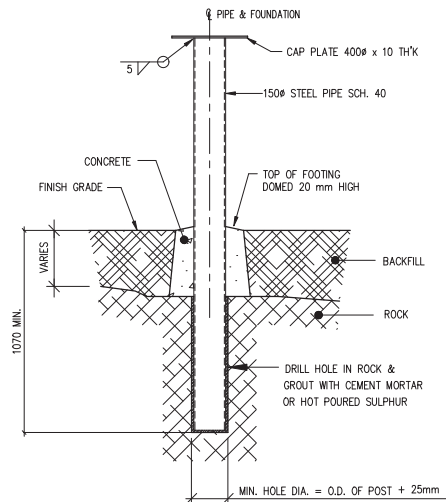
Public Works & Services

Drawing Title  
PIPE SUPPORT & HOSE REST AT SPILL BASIN DETAILS

Design EDZ	Ver. EDZ	Scale N.T.S.	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/04/02	NT-S12



SECTION A-A



ALTERNATE ANCHOR  
IN SOLID ROCK  
N.T.S.

NOTES:

- 1- FOR CONCRETE AND REINFORCING MATERIALS SEE SPECIFICATIONS, DIV. 3, SECTION 03200 AND SECTION 03300.
- 2- FOR MISCELLANEOUS STEEL & PIPE MATERIALS SEE SPECIFICATIONS, DIVISION 5, SECTION 05120.

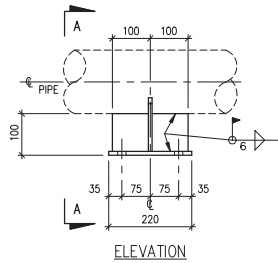


Public Works & Services

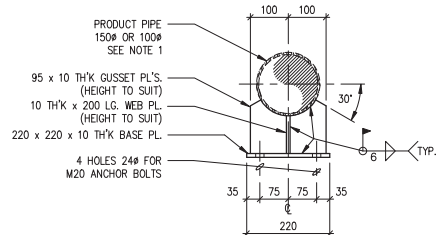
Drawing Title  
SEA HOSE ANCHOR DETAIL

Design EDZ	Ver. EDZ	Scale N.T.S.
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S13	
Revised On 04/09/07		





ELEVATION



SECTION A-A

NOTES:

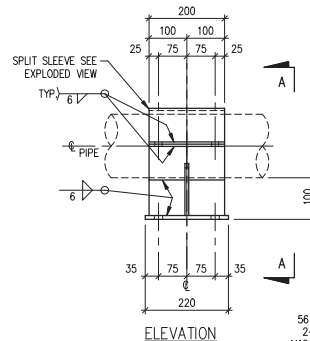
- 1- FOR SIZE OF PRODUCT PIPE SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR BRACKET & ANCHOR BOLT MATERIAL SEE SPECIFICATIONS, DIVISION 5, SECTION 05120.
- 3- FOR ASSEMBLY DETAILS SEE DRAWING NT-S14.



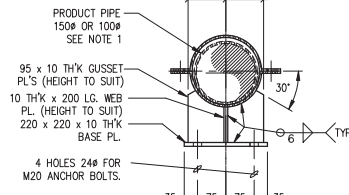
Public Works & Services

Drawing Title  
FIXED ANCHOR BRACKET DETAILS

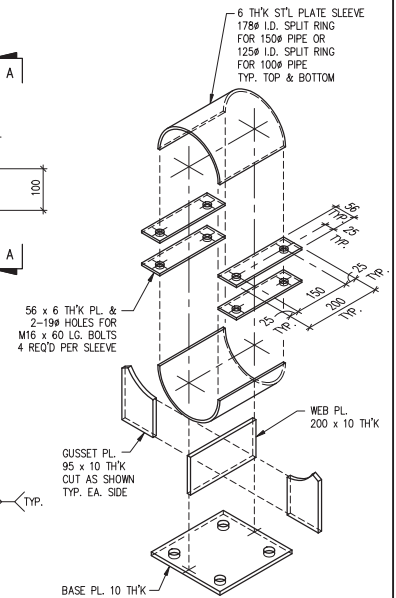
Design EDZ	Ver. EDZ	Scale N.T.S.	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/04/02	NT-S15



ELEVATION



SECTION A-A



SPLIT SLEEVE EXPLODED VIEW

NOTES:

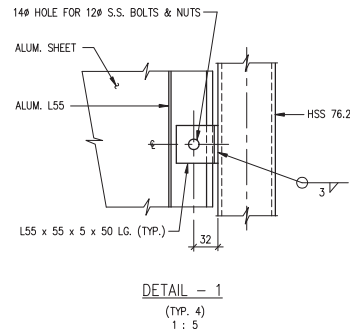
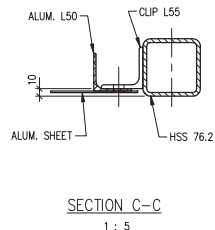
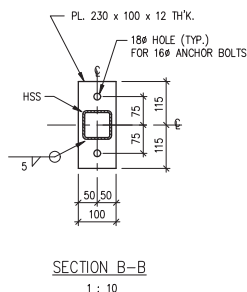
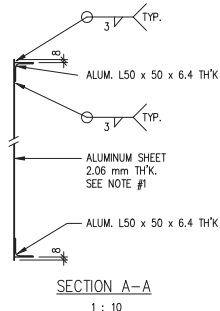
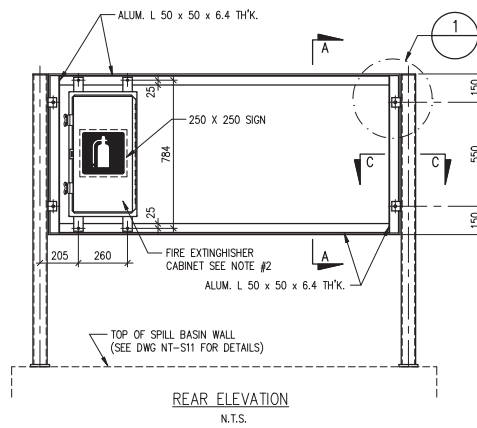
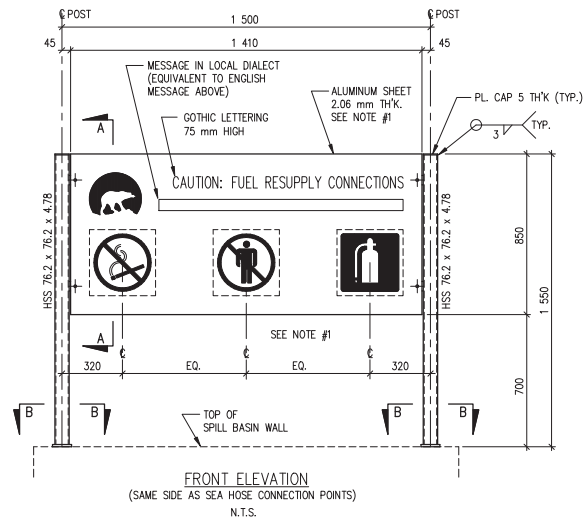
- 1- FOR SIZE OF PRODUCT PIPE SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR BRACKET & ANCHOR BOLT MATERIAL SEE SPECIFICATIONS, DIVISION 5, SECTION 05120.
- 3- FOR ASSEMBLY DETAILS SEE DRAWING NT-S14.



Public Works & Services

Drawing Title  
SLEEVED ANCHOR BRACKET DETAILS

Design EDZ	Ver. EDZ	Scale N.T.S.	Revised By REE	Drawing No.
Drawn KJ	Appr.	Date 95/02/28	Revised On 04/04/02	NT-S16



#### NOTES:

- 1- ALUMINUM SHEET, PICTOGRAPHIC SIGNS AND LETTERING SEE SPECIFICATIONS, DIVISION 2, SECTION 02831.
- 2- FOR DETAIL OF FIRE EXTINGUISHER CABINET SEE DRAWING NT-S18.
- 3- FOR STEEL POSTS & ANCHOR BOLTS SEE SPECIFICATIONS, DIV. 5, SECTION 05120.
- 4- FOR LOCATION OF ANCHOR BOLTS AND SPILL BASIN SEE DRAWING NT-S11.

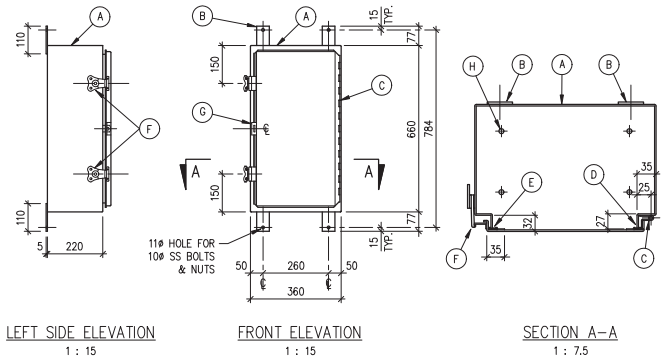


Drawing Title  
SIGN AT SPILL BASIN DETAIL

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S17	
Revised On 04/05/11		

**LEGEND:**

- |   |   |
|---|---|
| <p>(A) - BOX FORMED FROM 14 GAUGE STAINLESS STEEL (TYPE 304) SHEET, INCLUDING STAINLESS STEEL DOOR, PROVIDE CONTINUOUSLY WELDED SEAMS.</p> <p>(B) - STAINLESS STEEL MOUNTING LUGS 50 W. x 5 THK. (4 PER BOX)</p> <p>(C) - COUNTINUOUS STAINLESS STEEL PIANO HINGE ON RIGHT SIDE OF DOOR.</p> <p>(D) - PROVIDE ROLLED LIP AROUND DOOR OPENING TO PREVENT WATER FROM DRIPPING INTO ENCLOSURE.</p> | <p>(E) - SOLID NEOPRENE GASKET WITH SEALED CORNERS PERMANENTLY SECURED BY WELDED STAINLESS STEEL RETAINING BRACKETS (2 TOP, 2 BOTTOM AND 3 EACH SIDE.)</p> <p>(F) - STAINLESS STEEL DOOR LATCH (2 PER DOOR PANEL)</p> <p>(G) - PADLOCKING HASP (HOLE TO SUIT 10mm SHANK)</p> <p>(H) - 4-10# DRAIN HOLES IN BOTTOM PLATE</p> |
|---|---|



**NOTES:**

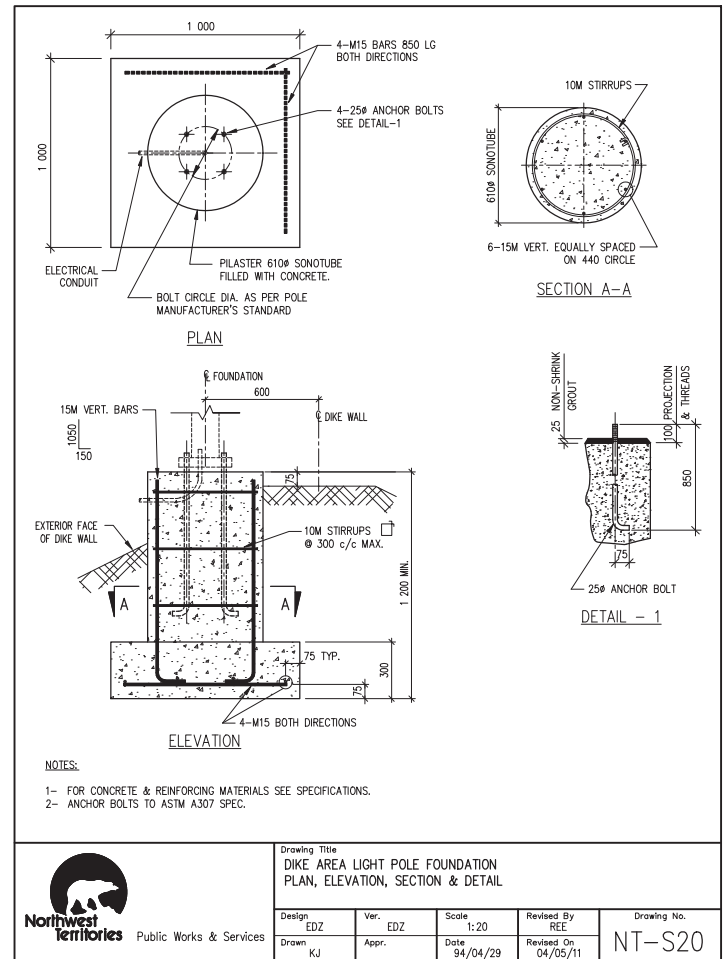
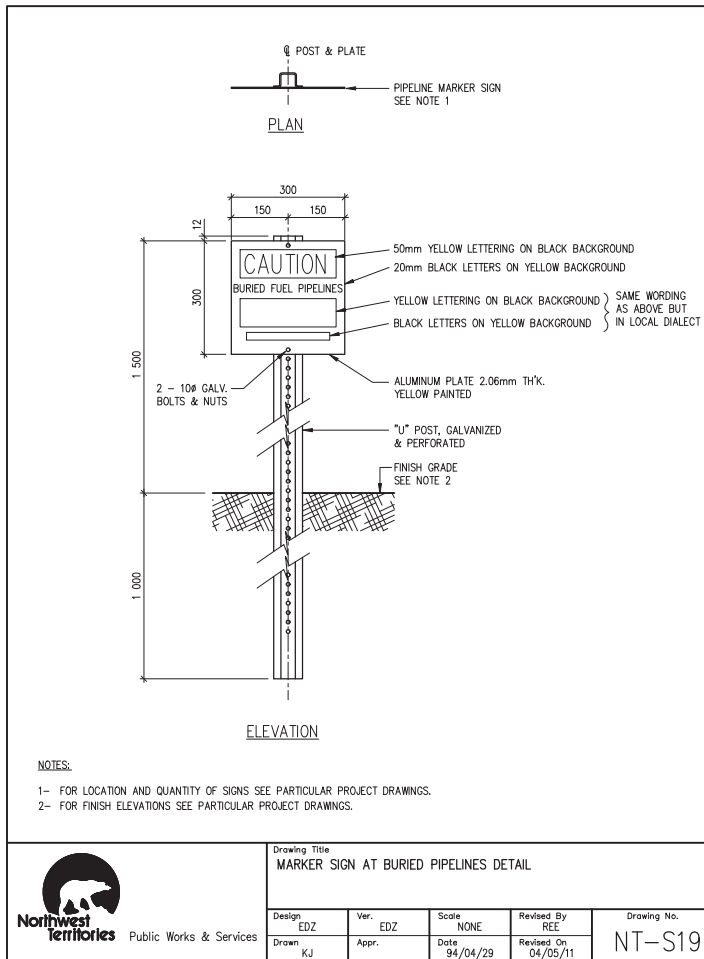
- 1- ALL STAINLESS STEEL MATERIAL SHALL BE TYPE 304, BOX & DOOR TO BE UNPAINTED, FRONT AND SIDE SURFACES TO BE DISK SMOOTH FINISH.
- 2- ARRANGEMENT AS SHOWN IS TYPICAL. CABINET SHALL BE WEATHERPROOF CONSTRUCTION
- 3- SHOP DRAWINGS SHALL BE PROVIDED FOR APPROVAL PRIOR TO FABRICATION

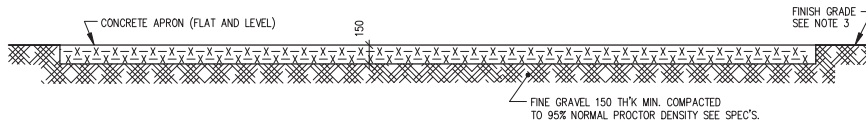
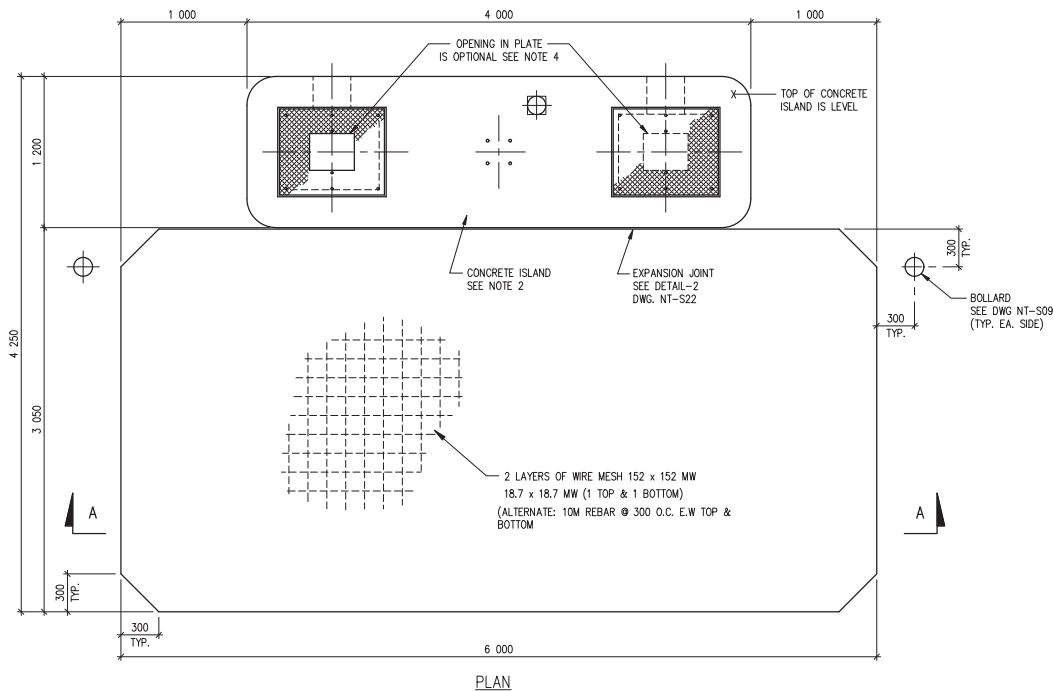


Drawing Title  
FIRE EXTINGUISHER CABINET DETAILS

Design	Ver.	Scale	Revised By	Drawing No.
EDZ	EDZ	AS SHOWN	REE	
Drawn KJ	Appr.	Date 94/04/29	Revised On 04/05/11	NT-S18







#### NOTES:

- 1- FOR CONCRETE, REBAR, & WIRE MESH MATERIALS SEE SPECIFICATIONS, DIV. 3, SECTION 03200.
- 2- FOR ISLAND DETAILS SEE DWG. NT-S22.
- 3- FOR EXISTING & FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS.
- 4- ONE OPENING IN PLATE IS REQUIRED FOR EACH DISPENSER PEDESTAL. FOR NUMBER OF DISPENSER PEDESTALS REFER TO PARTICULAR PROJECT DRAWINGS.



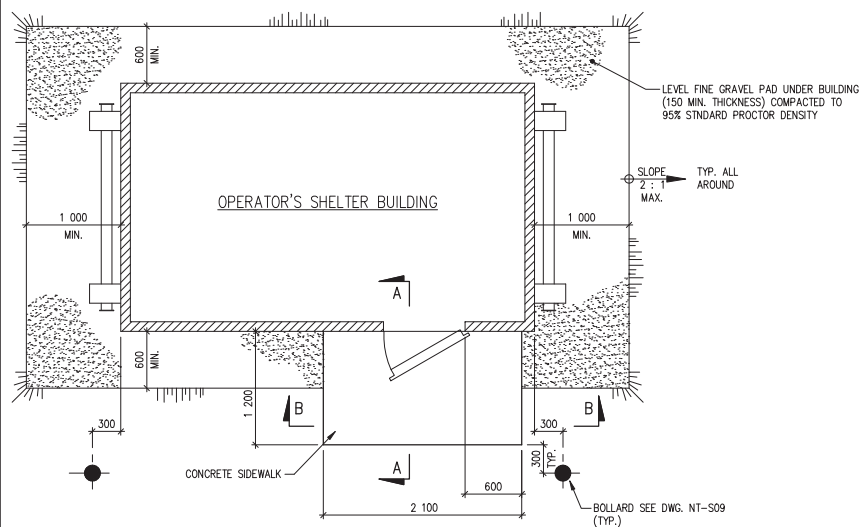
Public Works & Services

#### Drawing Title

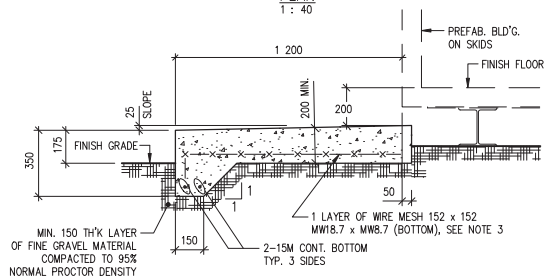
CONCRETE ISLAND & APRON  
PLAN & SECTION

Design EDZ	Ver. EDZ	Scale N.T.S.
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S21	
Revised On 04/05/11		

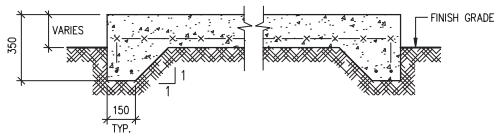




PLAN  
1:40



SECTION A-A  
1:20



SECTION B-B  
1:20

NOTES:

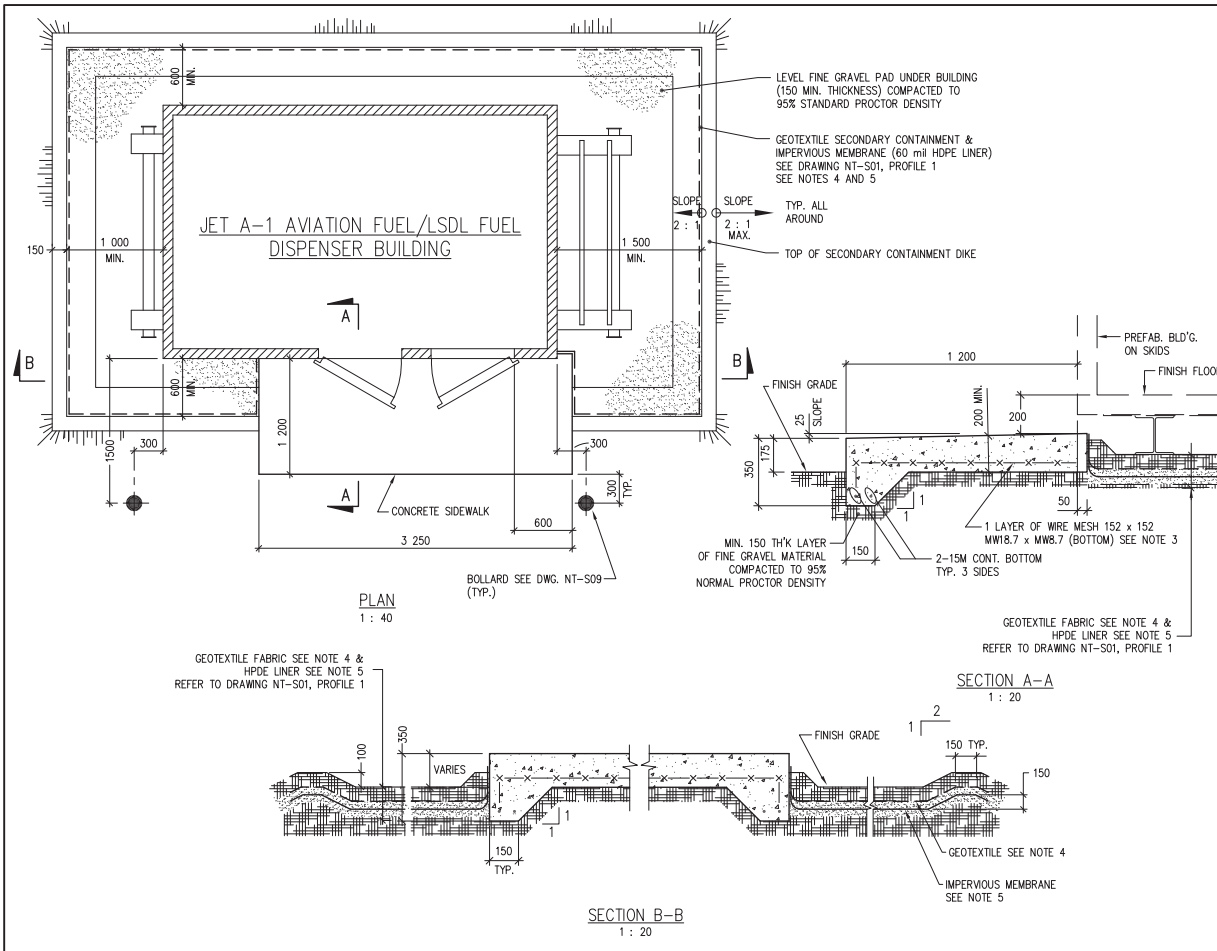
- 1- FOR CONCRETE & REINFORCING MATERIAL SEE SPECIFICATIONS, DIV. 3, SECTION 03200 AND 03300.
- 2- FOR FINISH ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- 10M @ 300 O.C. E.W. BOTTOM MAY BE USED IN PLACE OF WIRE MESH.




Public Works & Services

Drawing Title  
OPERATOR'S SHELTER BUILDING  
CONCRETE SIDEWALK, GRAVEL PAD &  
BOLLARDS ARRANGEMENT  
PLAN & SECTIONS

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr.	Date 95/02/28
Revised By REE	Drawing No. NT-S23	
Revised On 04/05/14		



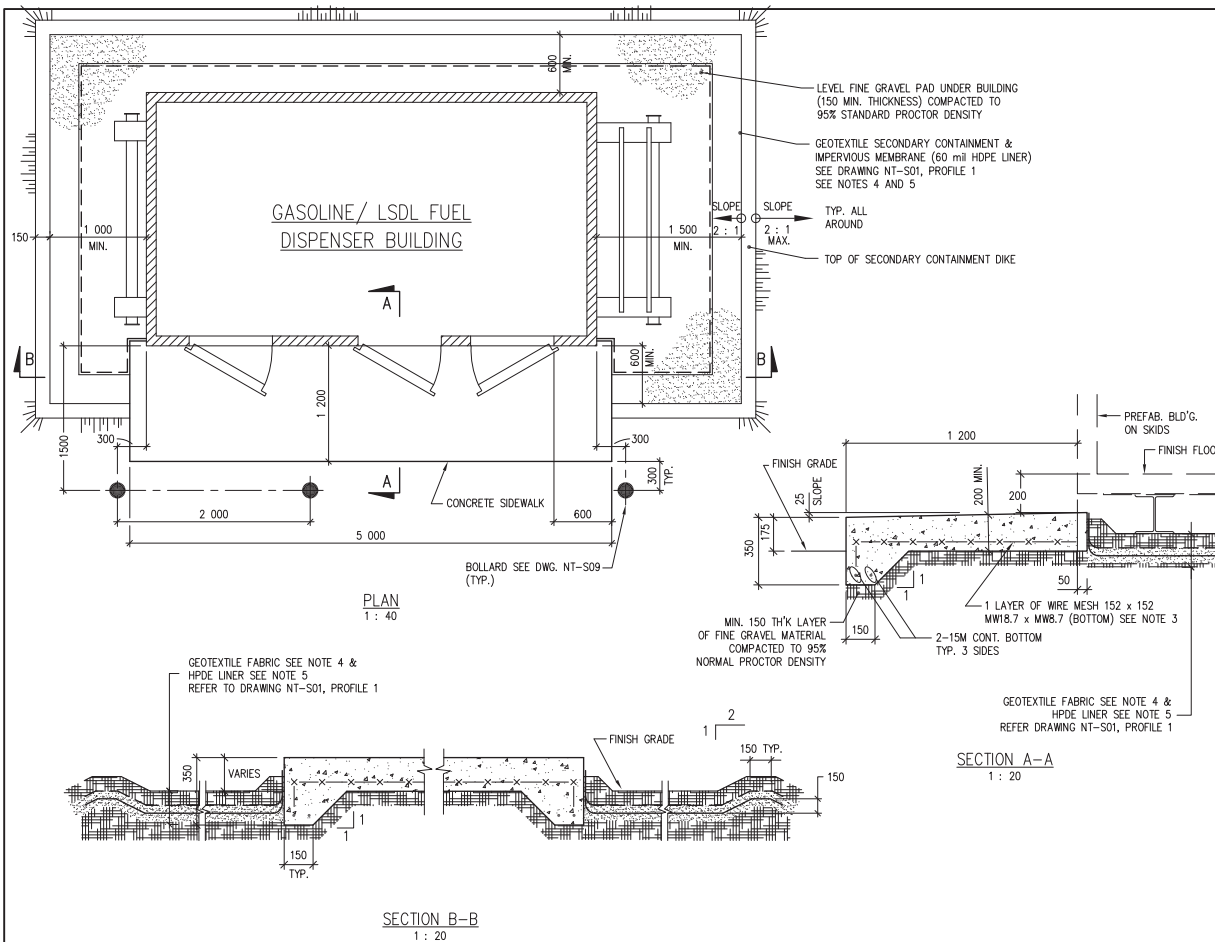
- NOTES:**
- 1- FOR CONCRETE & REINFORCING MATERIAL SEE SPECIFICATIONS, DIVISION 3, SECTION 03200 AND 03300.
  - 2- FOR FINISH ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
  - 3- 10M @ 300 O.C. E.W. BOTTOM MAY BE USED IN PLACE OF WIRE MESH.
  - 4- FOR GEOTEXTILE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02270.
  - 5- FOR MEMBRANE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02592.



**Northwest Territories** Public Works & Services

Drawing Title  
**JET A-1 AVIATION FUEL/LSDL FUEL DISPENSER BUILDING, CONCRETE SIDEWALK, LINER, GRAVEL PAD & BOLLARDS**

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr. REE	Date 95/02/28
Revised By REE	Drawing No. NT-S24	
Revised On 04/05/14		



#### NOTES:

- 1- FOR CONCRETE & REINFORCING MATERIAL SEE SPECIFICATIONS, DIVISION 3, SECTION 03200 AND 03300.
- 2- FOR FINISH ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- 10M @ 300 O.C. E.W. BOTTOM MAY BE USED IN PLACE OF WIRE MESH.
- 4- FOR GEOTEXTILE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02270.
- 5- FOR MEMBRANE MATERIAL SEE SPECIFICATIONS, DIVISION 2, SECTION 02592.

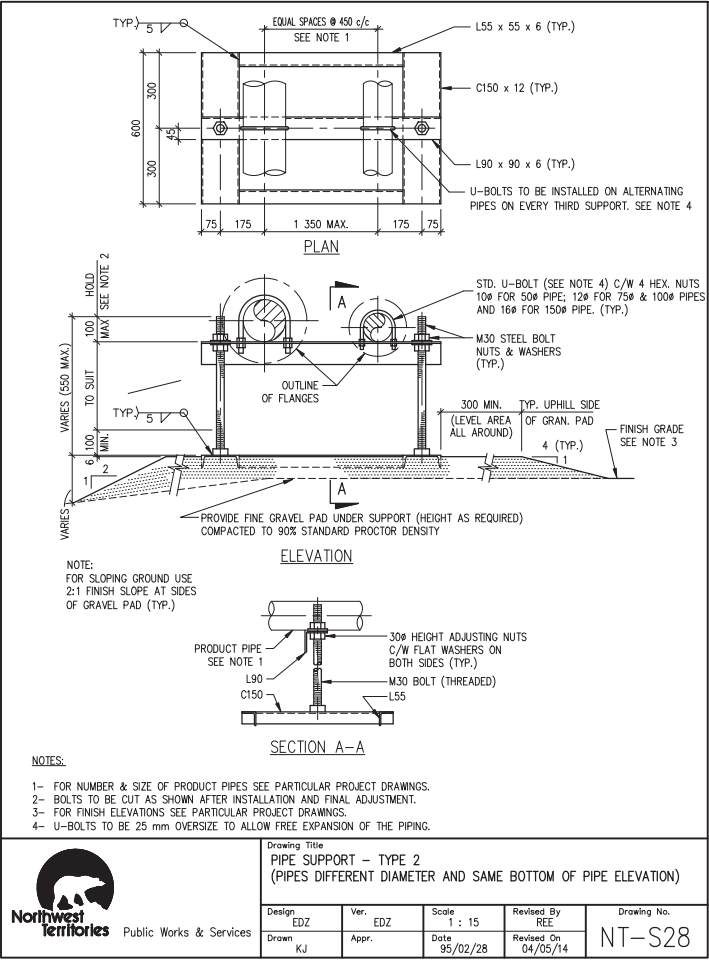
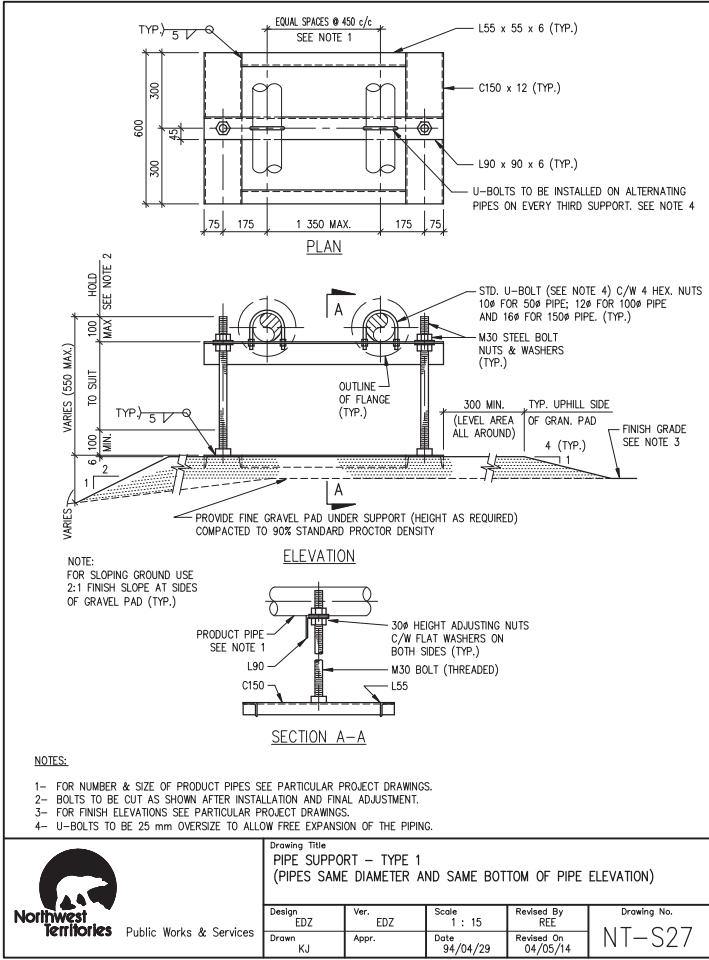


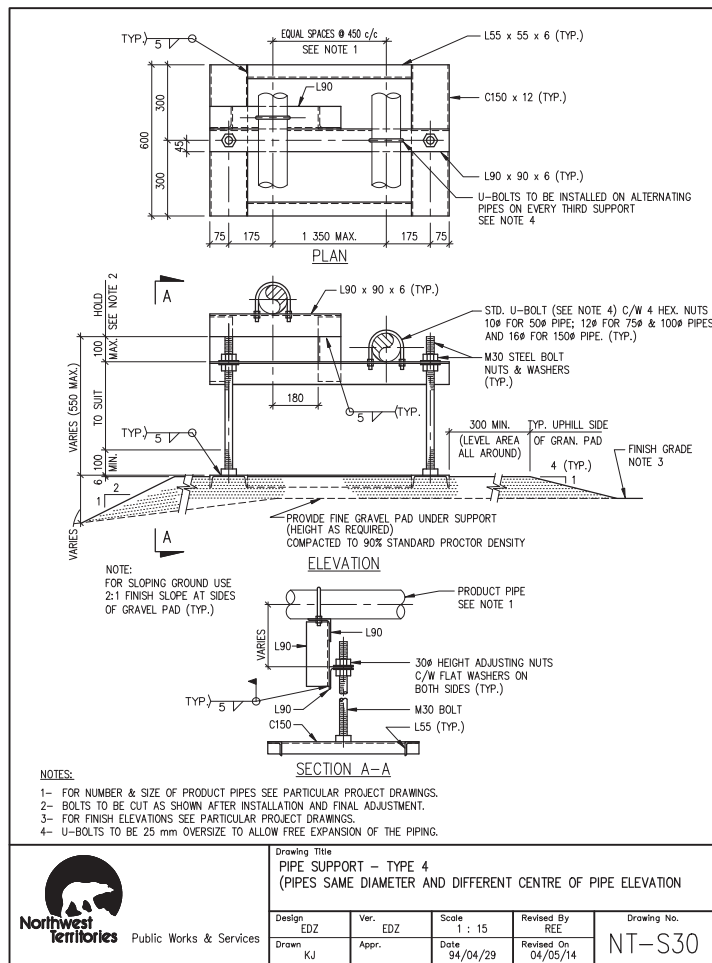
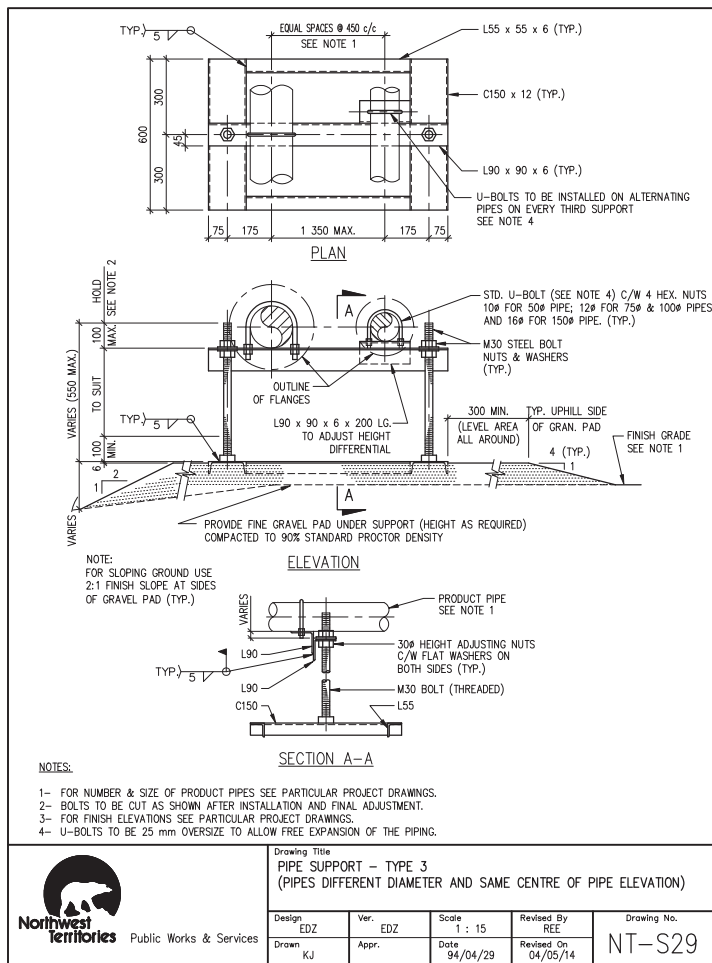
**Northwest Territories** Public Works & Services

#### Drawing Title

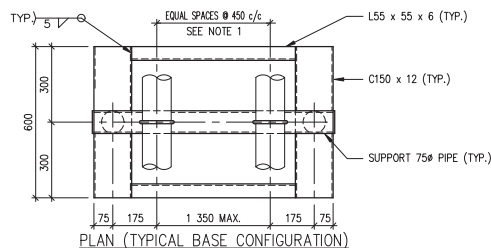
GASOLINE / LSDL FUEL OIL DISPENSER BUILDING  
CONCRETE SIDEWALK, GRAVEL PAD, LINER & BOLLARDS ARRANGEMENT  
PLAN & SECTIONS

Design	EDZ	Ver.	EDZ	Scale	AS SHOWN
Drawn	KJ	Appr.		Date	95/02/28
Revised By	REE	Drawing No. <b>NT-S25</b>			
Revised On	04/05/14				

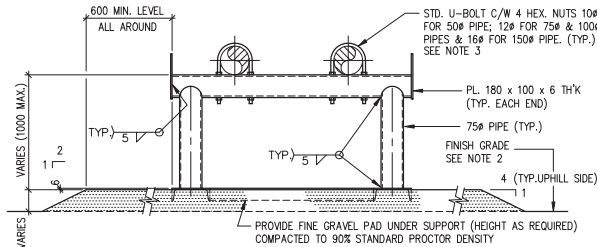




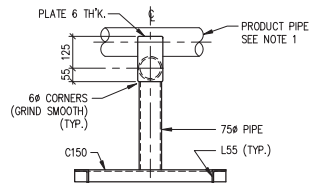




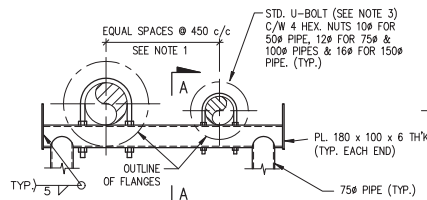
PLAN (TYPICAL BASE CONFIGURATION)



TYPE 5 SUPPORT (TYPICAL BASE ELEVATION)

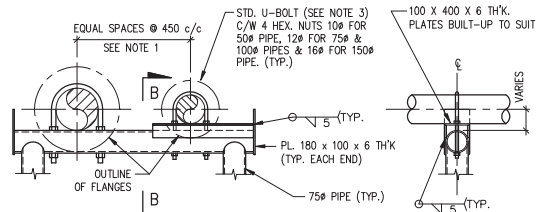


TYPE 5 SIDE ELEVATION (TYPICAL SIDE ELEVATION)



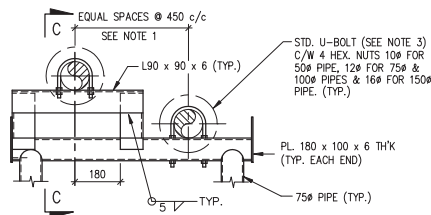
PIPE SUPPORT TYPE 6-ELEVATION  
PIPES DIFFERENT DIAMETER AND  
SAME BOTTOM OF PIPE ELEVATION

SECTION A-A



PIPE SUPPORT TYPE 7-ELEVATION  
PIPES DIFFERENT DIAMETER AND  
SAME CENTRE OF PIPE ELEVATION

SECTION B-B



PIPE SUPPORT TYPE 8-ELEVATION  
PIPES SAME DIAMETER BUT DIFFERENT  
CENTRE OF PIPE ELEVATION

SECTION C-C

#### NOTES:

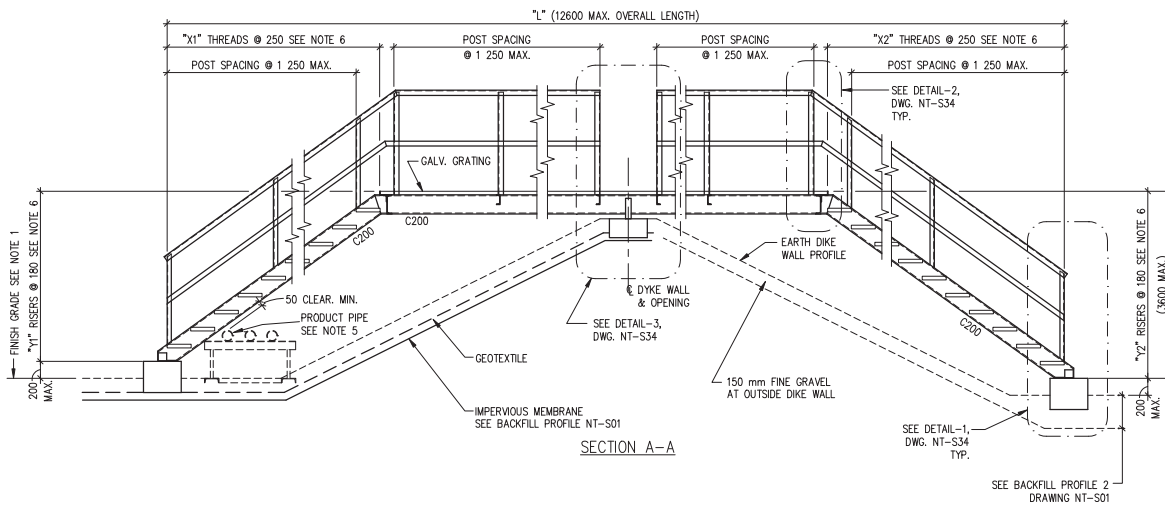
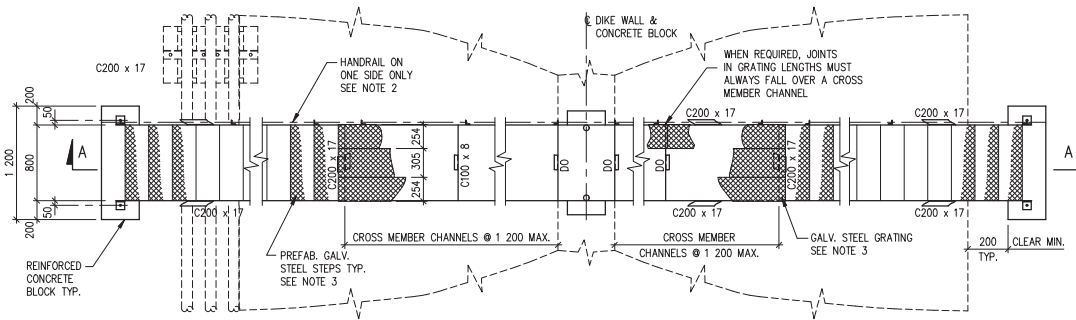
- 1- FOR NUMBER & SIZE OF PRODUCT PIPES SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- LOOSE 25mm OVERSIZE U-BOLT GUIDE PROVIDED ON ALTERNATE PIPELINES ON EVERY THIRD SUPPORT.



Public Works & Services

Drawing Title  
PIPE SUPPORT-TYPE 5, 6, 7, 8  
(FOR ABOVEGROUND PIPELINES ONLY)

Design EDZ	Ver. EDZ	Scale 1:15
Drawn KJ	Appr.	Date 95/02/28
Revised By REE	Drawing No. NT-S31	
Revised On 04/09/07		



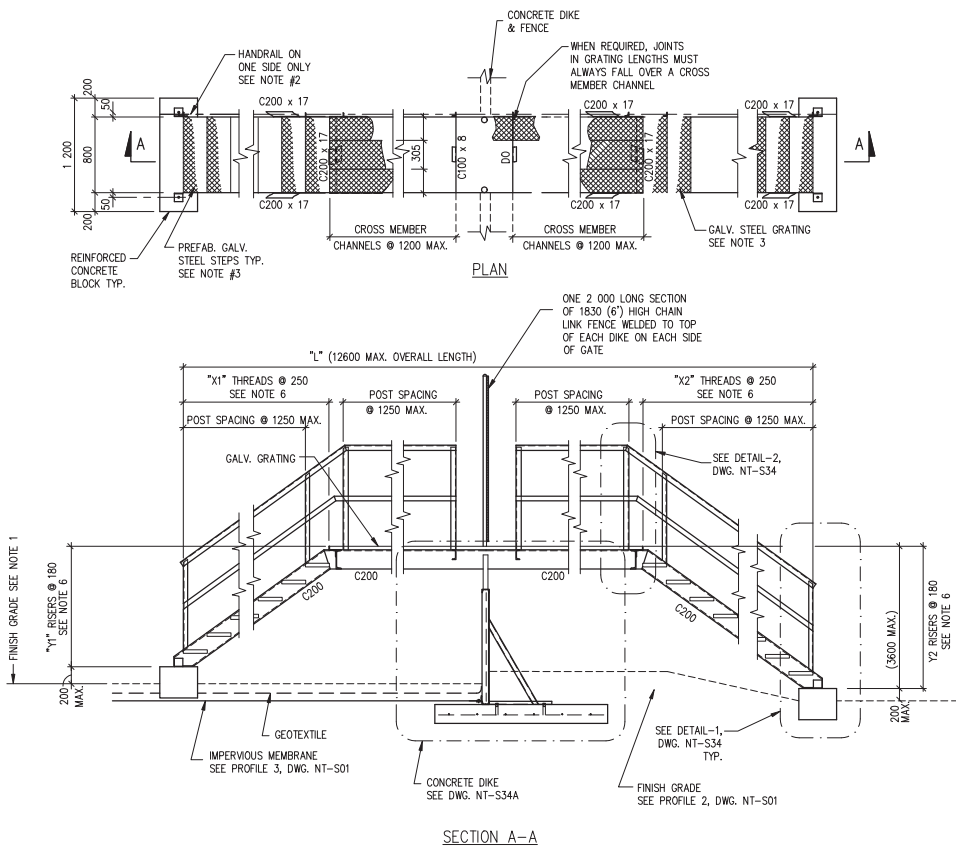
#### NOTES:

- 1- FOR EXISTING & FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR POSITION OF HANDRAIL SEE PARTICULAR PROJECT DRAWINGS.
- 3- FOR GRATING AND PREFABRICATED STEPS MATERIAL SEE SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 4- FOR STEEL, CONCRETE AND REINFORCING MATERIALS SEE SPECIFICATIONS, DIVISION 3 AND DIVISION 5, SECTION 05120.
- 5- FOR NUMBER, SIZE AND LOCATION OF PRODUCT PIPING SEE PARTICULAR PROJECT DRAWINGS.
- 6- ACTUAL VALUES FOR "L", "X1", "X2", "Y1" AND "Y2" SHALL BE DETERMINED BY STILE FABRICATOR BASED ON REQUIREMENTS OF PARTICULAR PROJECT DRAWINGS.
- 7- STILE FABRICATOR SHALL PROVIDE PROPER SHOP DRAWINGS OF STILES FOR APPROVAL PRIOR TO FABRICATION AS PER SPECIFICATIONS.



Drawing Title  
TYPE 1 STILE  
(OVER DIKE WALLS)  
PLAN & SECTION

Design EDZ	Ver. EDZ	Scale 1 : 40
Drawn CAD/SL	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S32	
Revised On 04/09/07		



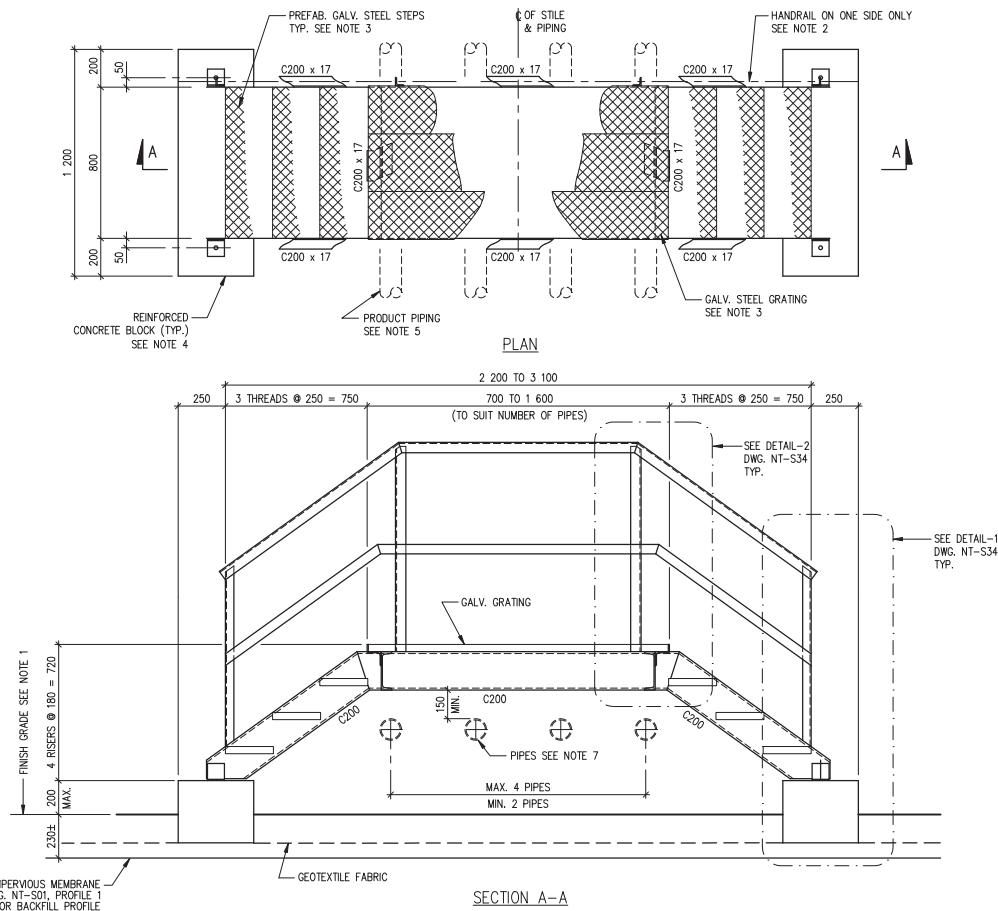
#### NOTES:

- 1- FOR EXISTING & FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR POSITION OF HANDRAIL SEE PARTICULAR PROJECT DRAWINGS.
- 3- FOR GRATING AND PREFABRICATED STEPS MATERIAL SEE SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 4- FOR STEEL, CONCRETE AND REINFORCING MATERIALS SEE SPECIFICATIONS, DIVISION 3 AND DIVISION 5, SECTION 05120.
- 5- FOR NUMBER, SIZE AND LOCATION OF PRODUCT PIPING SEE PARTICULAR PROJECT DRAWINGS.
- 6- ACTUAL VALUES FOR "L", "X1", "X2", "Y1" AND "Y2" SHALL BE DETERMINED BY STILE FABRICATOR BASED ON REQUIREMENTS OF PARTICULAR PROJECT DRAWINGS.
- 7- STILE FABRICATOR SHALL PROVIDE PROPER SHOP DRAWINGS OF STILES FOR APPROVAL PRIOR TO FABRICATION AS PER SPECIFICATIONS.



Drawing Title  
**TYPE 1 STILE  
 (OVER CONCRETE DIKE WALLS)  
 PLAN & SECTION**

Design EDZ	Ver. EDZ	Scale 1 : 40
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. <b>NT-S32A</b>	
Revised On 04/09/07		



#### NOTES:

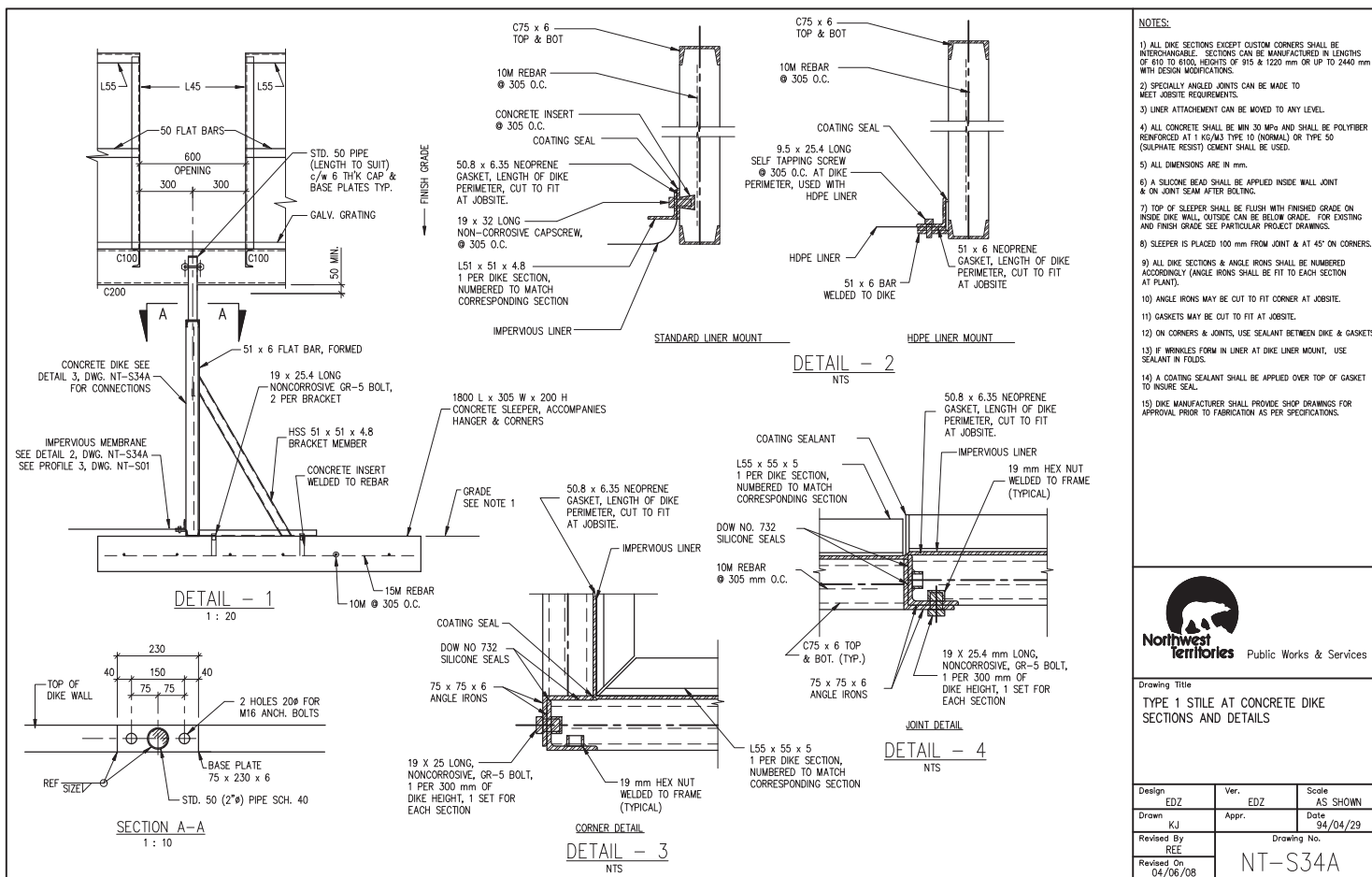
- 1- FOR EXISTING & FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS.
- 2- FOR POSITION OF HANDRAIL SEE PARTICULAR PROJECT DRAWINGS.
- 3- FOR GRATING AND PREFABRICATED STEPS MATERIAL SEE SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 4- FOR STEEL, CONCRETE AND REINFORCING MATERIALS SEE SPECIFICATIONS, DIVISION 3 AND DIVISION 5, SECTION 05120.
- 5- FOR NUMBER, SIZE AND LOCATION OF PRODUCT PIPING SEE PARTICULAR PROJECT DRAWINGS.
- 6- STILE FABRICATOR TO PROVIDE PROPER SHOP DRAWINGS OF STILE FOR APPROVAL PRIOR TO FABRICATION AS PER SPECIFICATIONS.
- 7- FOR PIPE SUPPORT DETAILS SEE DRAWINGS NT-S27 TO NT-S31.



Drawing Title  
**TYPE 2 STILE  
(OVER PRODUCT PIPING)  
PLAN & SECTION**

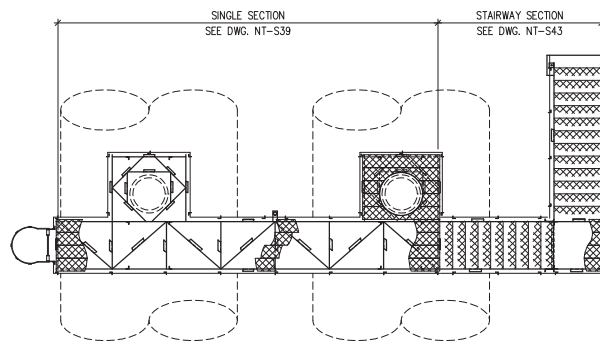
Design EDZ	Ver. EDZ	Scale 1 : 20
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. <b>NT-S33</b>	
Revised On 04/09/07		



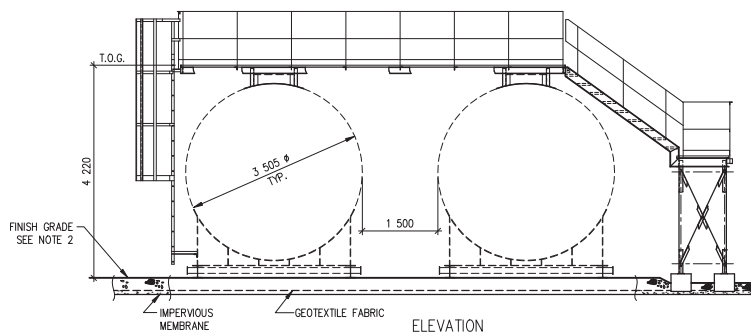


Drawing Title  
TYPE 1 STILE AT CONCRETE DIKE  
SECTIONS AND DETAILS

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr. REE	Date 94/04/29
Revised By REE	Drawing No. NT-S34A	
Revised On 04/06/08		



PLAN



ELEVATION

**NOTES:**

- 1- FOR TANK AND CATWALK ARRANGEMENT REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALK AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALK & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS.

**LEGEND:**

T.O.G. = TOP OF GRATING

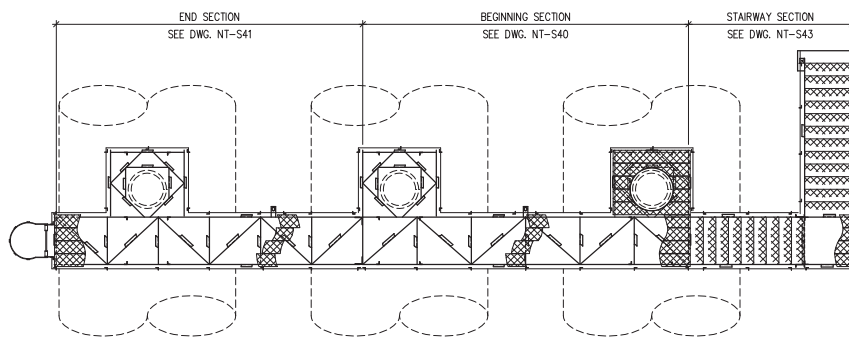


Public Works & Services

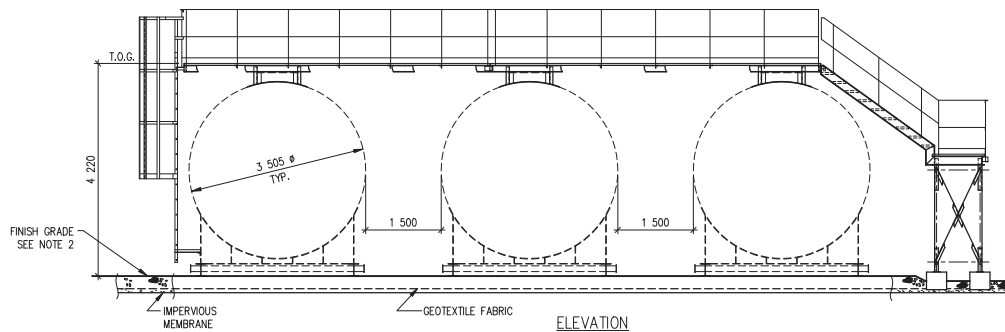
**Drawing Title**

TYPICAL CATWALK & STAIRWAY  
ARRANGEMENT FOR TWO 91 cu. m.  
HORIZONTAL TANKS  
PLAN, ELEVATION

Design EDZ	Ver. EDZ	Scale 1 : 75
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S35	
Revised On 04/09/07		



PLAN



ELEVATION

**NOTES:**

- 1- FOR TANK AND CATWALK ARRANGEMENT REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALKS AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALKS & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS.

**LEGEND:**

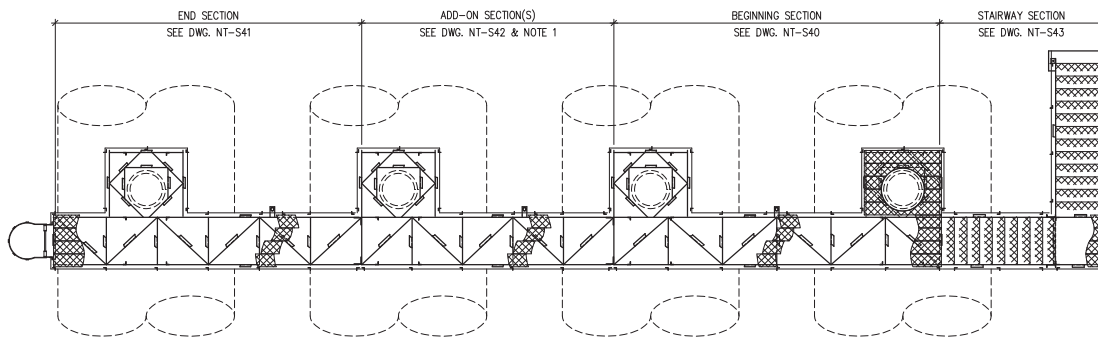
T.O.G. = TOP OF GRATING



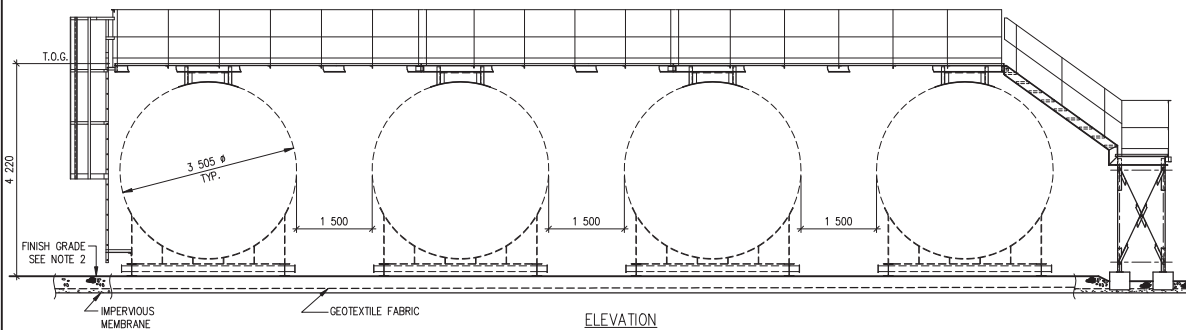
Drawing Title  
TYPICAL CATWALK & STAIRWAY  
ARRANGEMENT FOR THREE 91 cu. m.  
HORIZONTAL TANKS  
PLAN, ELEVATION

Design EDZ	Ver. EDZ	Scale 1 : 75
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S36	
Revised On 04/09/07		





PLAN



ELEVATION

**NOTES:**

- 1- FOR NUMBER OF TANKS AND ARRANGEMENT OF CATWALKS REFER TO PARTICULAR PROJECT DRAWINGS. PROVIDE NUMBER OF ADD-ON SECTIONS TO SUIT ACTUAL NUMBER OF TANKS AT EACH PARTICULAR PROJECT.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALKS AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALKS & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS.

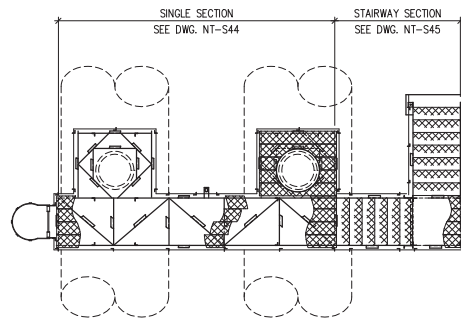
**LEGEND:**

T.O.G. = TOP OF GRATING

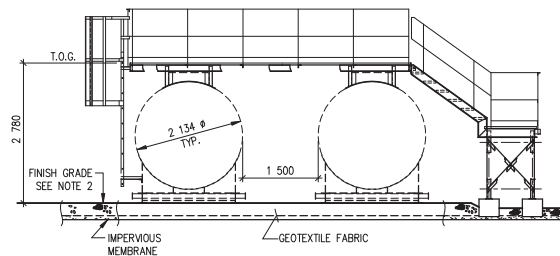


Drawing Title  
TYPICAL CATWALK & STAIRWAY  
ARRANGEMENT FOR FOUR OR MORE  
91 cu. m. HORIZONTAL TANKS  
PLAN, ELEVATION

Design EDZ	Ver. EDZ	Scale 1 : 75
Drawn KJ	Appr. REE	Date 94/04/29
Revised By REE	Drawing No. NT-S37	
Revised On 04/09/07		



PLAN



ELEVATION

**NOTES:**

- 1- FOR TANK AND CATWALK ARRANGEMENT REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALK AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALK & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS.

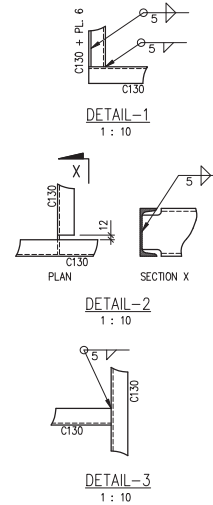
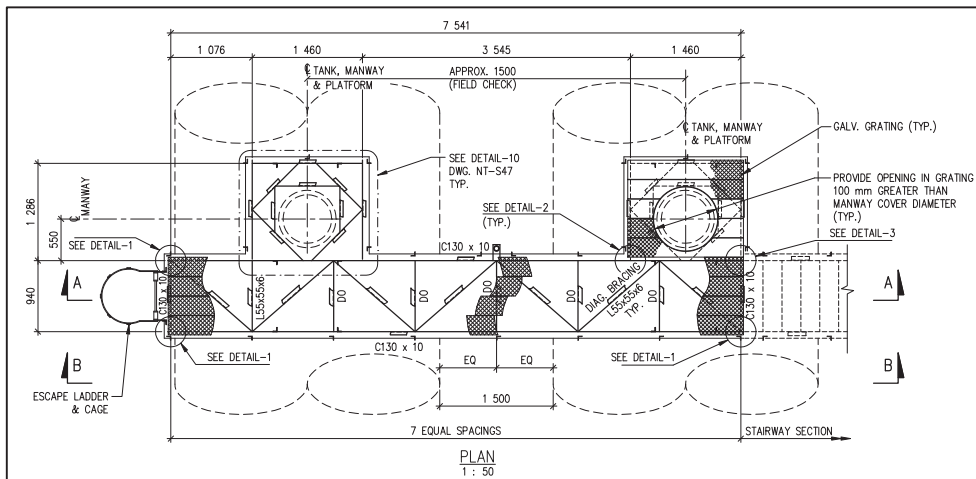
**LEGEND:**

T.O.G. = TOP OF GRATING



Drawing Title  
TYPICAL CATWALK & STAIRWAY  
ARRANGEMENT FOR TWO 23 cu. m.  
HORIZONTAL TANKS  
PLAN, ELEVATION

Design EDZ	Ver. EDZ	Scale 1 : 75
Drawn KJ	Appr. KJ	Date 94/04/29
Revised By REE	Drawing No. NT-S38	
Revised On 04/09/07		



#### NOTES:

- 1- FOR TANK AND CATWALK ARRANGEMENT REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALK AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALK & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS, DIVISION 16, SECTION 16010.

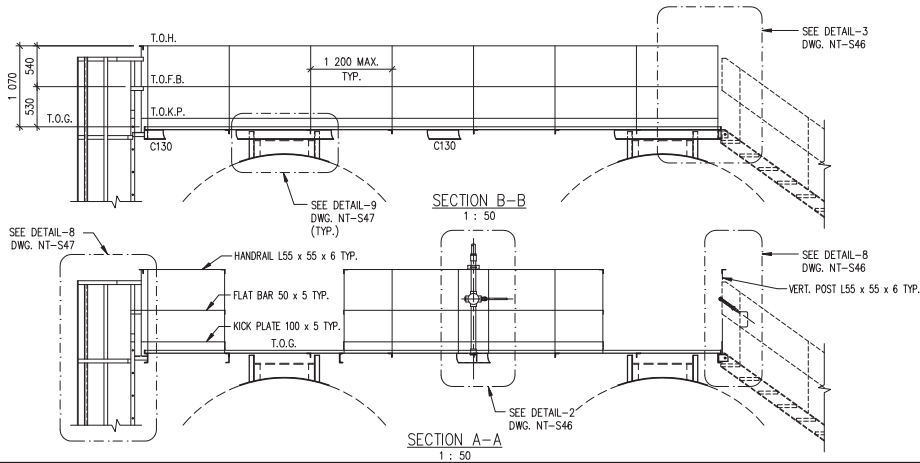
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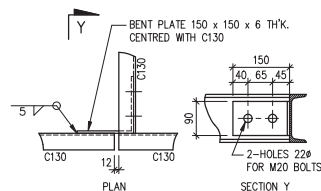
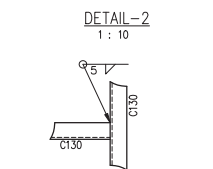
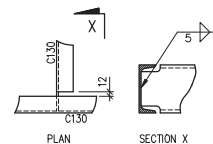
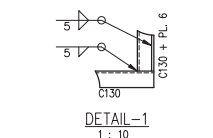
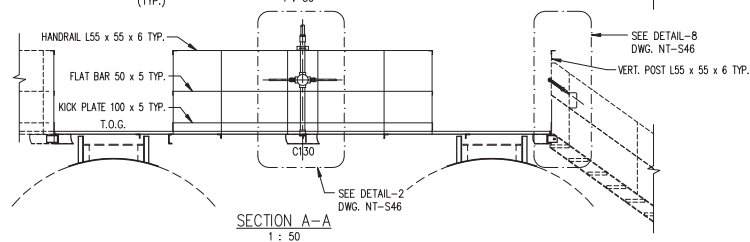
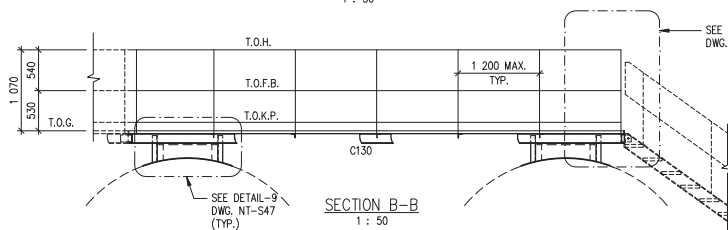
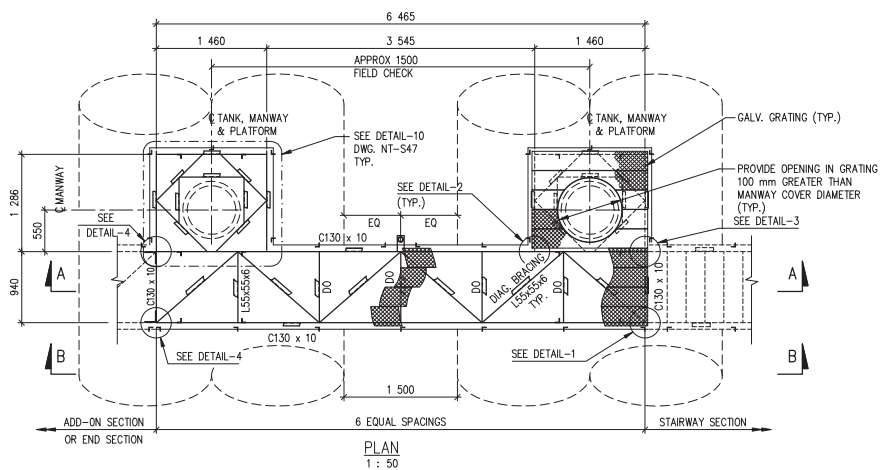
T.O.H. = TOP OF HANDRAIL  
T.O.F.B. = TOP OF FLAT BAR  
T.O.K.P. = TOP OF KICK PLATE  
T.O.G. = TOP OF GRATING



Drawing Title  
SINGLE SECTION FOR  
TWO 91 cu. m.  
HORIZONTAL TANKS  
PLAN, VIEW, SECTIONS & DETAILS

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S39	
Revised On 04/09/07		





#### NOTES:

- 1- FOR TANK AND CATWALK ARRANGEMENT REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALK AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALK & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS, DIVISION 16, SECTION 16010.

#### LEGEND:

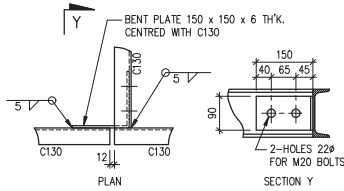
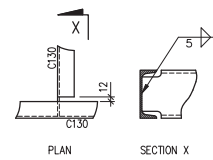
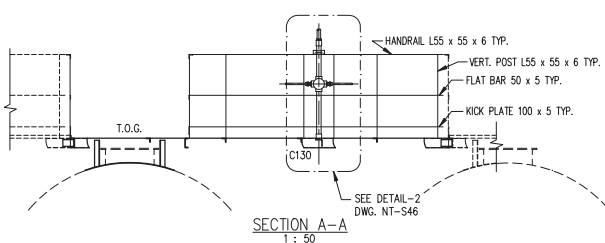
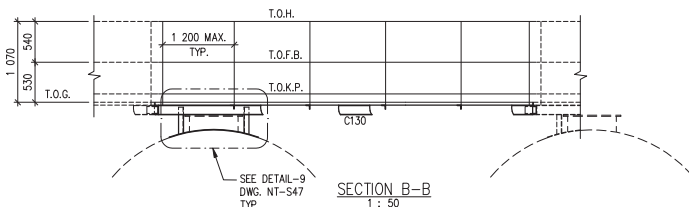
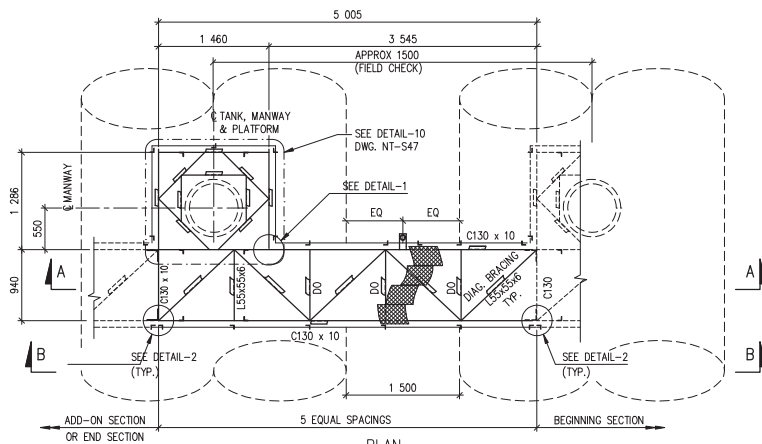
- T.O.H. = TOP OF HANDRAIL  
T.O.F.B. = TOP OF FLAT BAR  
T.O.K.P. = TOP OF KICK PLATE  
T.O.G. = TOP OF GRATING



Drawing Title  
BEGINNING SECTION  
FOR THREE OR MORE 91 cu. m.  
HORIZONTAL TANKS  
PLAN, VIEW, SECTIONS & DETAILS

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr.	Date 94/04/29
Revised By REE	Drawing No. NT-S40	
Revised On 04/09/07		





# NOTES:

- 1- FOR TANK AND CATWALK ARRANGEMENT REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALK AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALK & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS, DIVISION 16, SECTION 16010.

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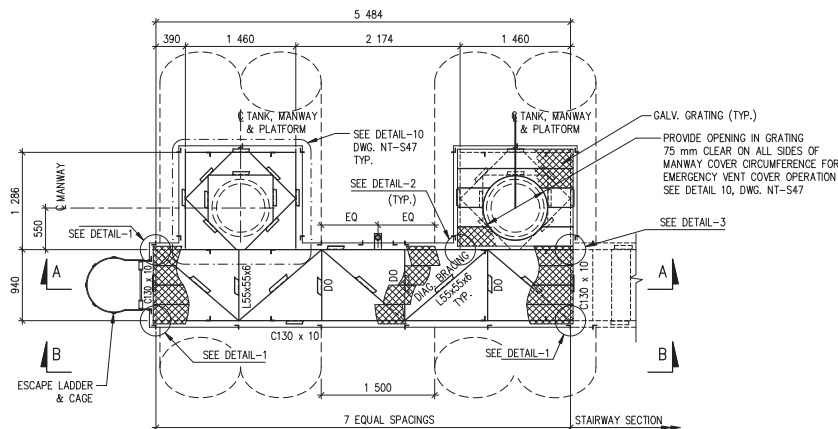
- T.O.H. = TOP OF HANDRAIL  
T.O.F.B. = TOP OF FLAT BAR  
T.O.K.P. = TOP OF KICK PLATE  
T.O.G. = TOP OF GRATING



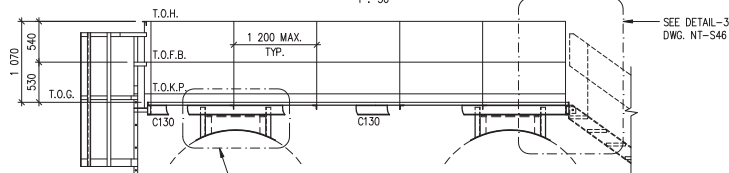
Drawing Title  
ADD-ON SECTION  
FOR FOUR OR MORE 91 cu. m.  
HORIZONTAL TANKS  
PLAN, VIEW, SECTIONS & DETAILS

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr. REE	Date 94/04/29
Revised By REE	Drawing No. NT-S42	
Revised On 04/09/07		

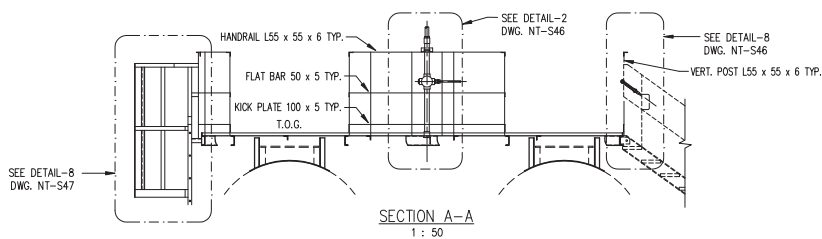




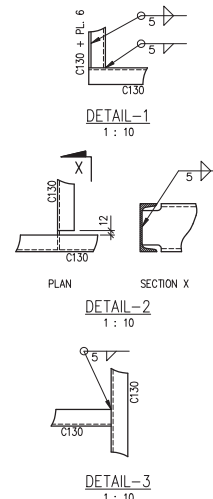
PLAN  
1 : 50



SECTION B-B  
1 : 50



SECTION A-A  
1 : 50



#### NOTES:

- 1- FOR TANK AND CATWALK ARRANGEMENT REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALK AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALK & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS, DIVISION 16, SECTION 16010.

#### LEGEND:

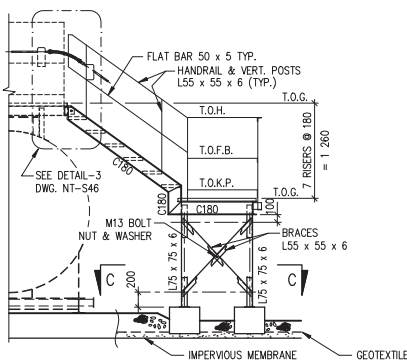
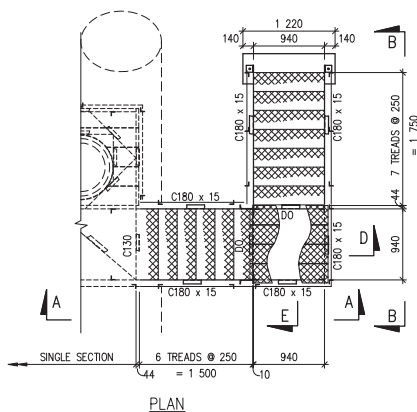
- T.O.H. = TOP OF HANDRAIL  
T.O.F.B. = TOP OF FLAT BAR  
T.O.K.P. = TOP OF KICK PLATE  
T.O.G. = TOP OF GRATING



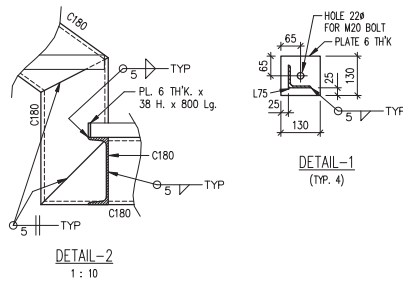
Drawing Title  
SINGLE SECTION  
FOR TWO 23 cu. m.  
HORIZONTAL TANKS  
PLAN, VIEW, SECTIONS & DETAILS

Design EDZ	Ver. EDZ	Scale AS SHOWN
Drawn KJ	Appr. REE	Date 94/04/29
Revised By REE	Drawing No. NT-S44	
Revised On 04/09/07		



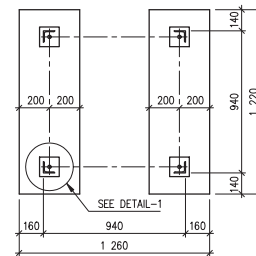


SECTION A-A

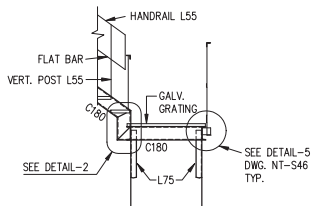


DETAIL-2  
1 : 10

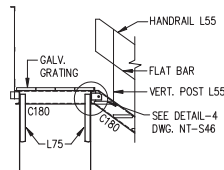
DETAIL-1  
(TYP. 4)



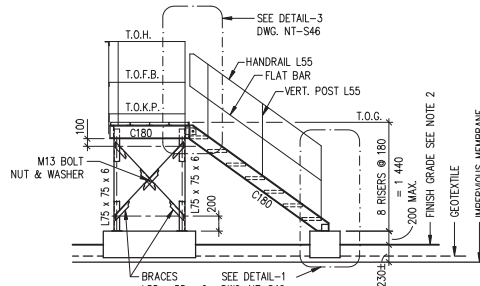
SECTION C-C



SECTION D-D



SECTION E-E



SECTION B-B

#### NOTES:

- 1- FOR TANK AND CATWALK ARRANGEMENT REFER TO PARTICULAR PROJECT DRAWINGS.
- 2- FOR FINISH GRADE ELEVATIONS SEE PARTICULAR PROJECT DRAWINGS.
- 3- PROVIDE SHOP DRAWINGS OF CATWALK AND STAIRWAY AS PER SPECIFICATIONS, DIVISION 1, SECTION 01340.
- 4- FOR MATERIAL FOR CATWALK & STAIRWAY, GRATING & STEPS REFER TO SPECIFICATIONS, DIVISION 5, SECTION 05500.
- 5- FOR ELECTRICAL REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS, DIVISION 16, SECTION 16010.

#### 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.G. = TOP OF GRATING



Drawing Title  
STAIRWAY FOR 23 cu. m.  
HORIZONTAL TANKS  
PLAN, VIEW, SECTIONS & DETAILS

Design EDZ	Ver. EDZ	Scale 1:50
Drawn KJ	Appr. REE	Date 94/04/29
Revised By REE	Drawing No. NT-S45	
Revised On 04/09/07		

