# UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

# USAID THREE TOWERS KANDAHAR AIR FIELD AFGHANISTAN

NOT FOR CONSTRUCTION

NOTE: A3 SIZE REDUCED TO HALF SCALE.

FINAL DESIGN SUBMITTAL

This project was made possible by the United States Agency for International Development and the generous support of the American People through USAID Global Architecture and Engineering IQC Contracts.

| SYMB | DESCRIPTION | DATE | APR |
|---|---|---|---|
| A | FINAL DESIGN SUBMITTAL | 08/15/10 | KWC |

DESIGNED BY: PJB
DATE: 08-15-10
DRAWN BY: PJB
SUBMITTED BY: TETRA TECH
CHECKED BY: KWC
FILE NO.: TWR01-G-000

USAID FROM THE AMERICAN PEOPLE
TETRA TECH

USAID THREE TOWERS
KANDAHAR AIR FIELD, AFGHANISTAN

TITLE SHEET

SHEET REFERENCE NUMBER:
TWR01
G-000

P:\1298\127-1298-10001-LT0013\CAD\SheetFiles\TWR01_KAN\00_General\TWR01-G-000.dwg 8/13/2010 3:30:26 PM Lorides, Stephen

# INDEX OF DRAWINGS
# KANDAHAR AIR FIELD

| SHEET REFERENCE NUMBER | ISSUE STATUS | DATE OF ISSUE | DRAWING TITLE |
|---|---|---|---|
| GENERAL DRAWINGS | | | |
| TWR01-G-000 | REV A | 08-15-10 | TITLE SHEET |
| TWR01-G-001 | REV A | 08-15-10 | INDEX OF DRAWINGS |
| | | | |
| CIVIL / SITE DRAWINGS | | | |
| TWR01-C-001 | REV A | 08-15-10 | SITE PLAN |
| TWR01-C-002 | REV A | 08-15-10 | FENCE AND GATE DETAILS SHEET 1 OF 2 |
| TWR01-C-003 | REV A | 08-15-10 | FENCE AND GATE DETAILS SHEET 2 OF 2 |

| SHEET REFERENCE NUMBER | ISSUE STATUS | DATE OF ISSUE | DRAWING TITLE |
|---|---|---|---|
| | | | |

| SHEET REFERENCE NUMBER | ISSUE STATUS | DATE OF ISSUE | DRAWING TITLE |
|---|---|---|---|
| | | | |

NOT FOR CONSTRUCTION

NOTE: A3 SIZE REDUCED TO HALF SCALE.

FINAL DESIGN SUBMITTAL

| SYMB | DESCRIPTION | DATE | APR |
|---|---|---|---|
| A | FINAL DESIGN SUBMITTAL | 08/15/10 | KWC |

This project was made possible by the United States Agency for International Development and the generous support of the American People through USAID Global Architecture and Engineering IQC Contracts.

DESIGNED BY: PJB
DATE: 08-15-10
DRAWN BY: PJB
SUBMITTED BY: TETRA TECH
CHECKED BY: KWC
FILE NO.: TWR01-G-001

USAID FROM THE AMERICAN PEOPLE

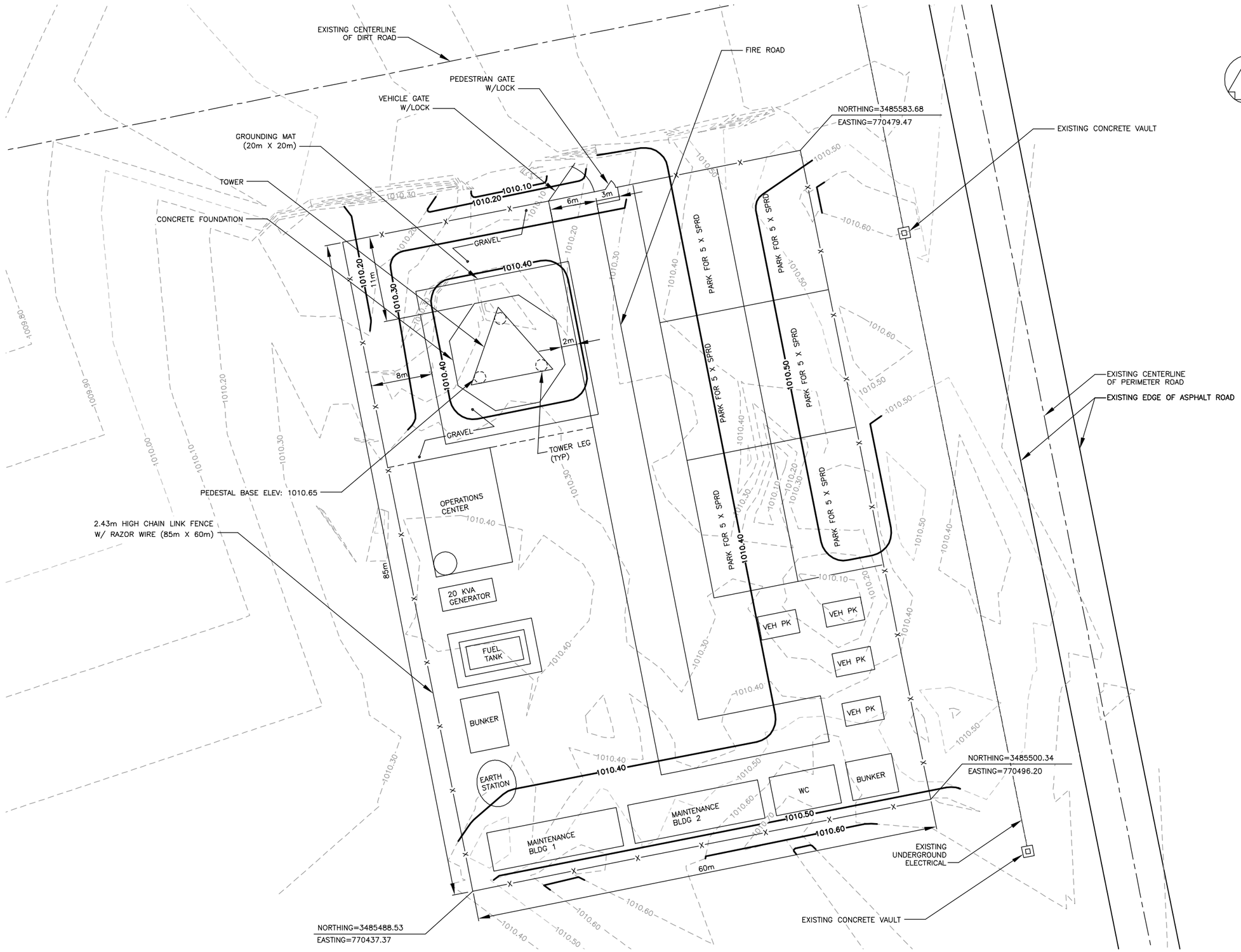
TETRA TECH

USAID THREE TOWERS
KANDAHAR AIR FIELD, AFGHANISTAN

INDEX OF DRAWINGS

SHEET REFERENCE NUMBER:
TWR01
G-001

P:\1298\127-1298-10001-LT0013\CAD\SheetFiles\TWR01_KAN\00_General\TWR01-G-001.dwg 8/13/2010 3:30:36 PM Loridas, Stephen




NOT FOR CONSTRUCTION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS SHOWN ARE IN METERS.

1:250

NOTE: A3 SIZE REDUCED TO HALF SCALE.

**FINAL DESIGN SUBMITTAL**

| SYMB | DESCRIPTION | DATE | APR |
|---|---|---|---|
| A | FINAL DESIGN SUBMITTAL | 08/15/10 | KWC |

This project was made possible by the United States Agency for International Development and the generous support of the American People through USAID Global Architecture and Engineering IQC Contracts.

DESIGNED BY: KWC
DATE: 08-15-10
DRAWN BY: SLO
SUBMITTED BY: TETRA TECH
CHECKED BY: KWC
FILE NO.: TWR01-C-001

USAID FROM THE AMERICAN PEOPLE

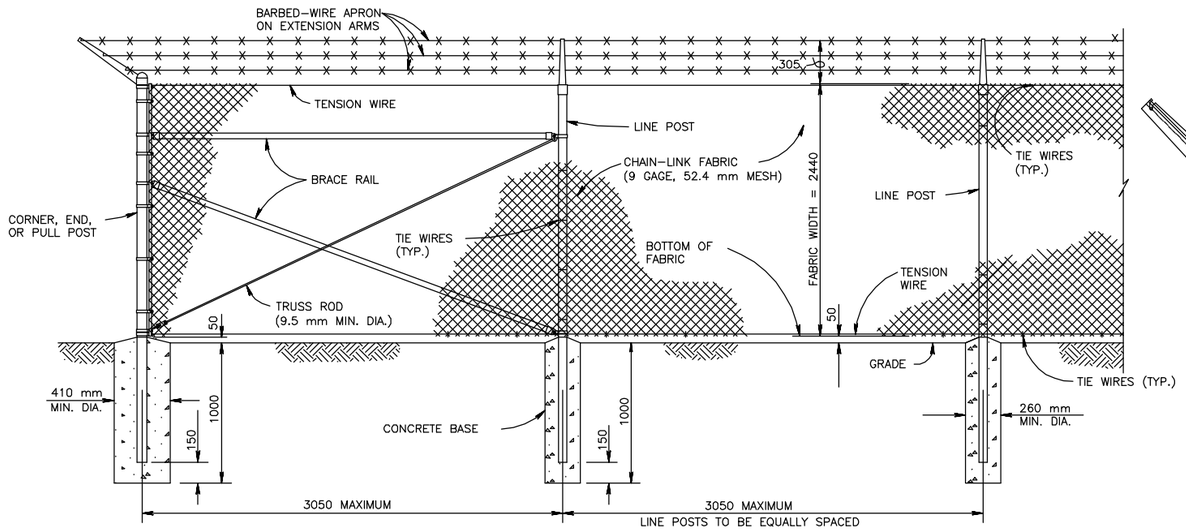
TETRA TECH

USAID THREE TOWERS
KANDAHAR AIR FIELD, AFGHANISTAN

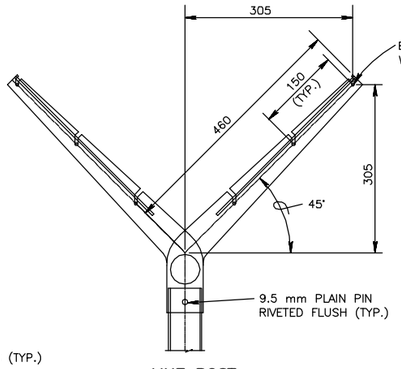
SITE PLAN

SHEET REFERENCE NUMBER:
TWR01
C-001

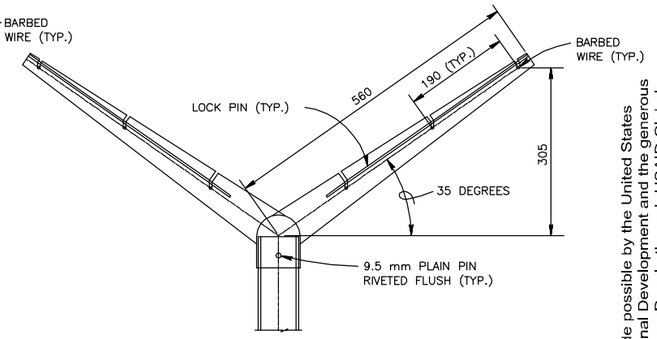
P:\1298\127-1298-10001-LT0013\CAD\SheetFiles\TWR01_KAN\02_Civil\TWR01-C-001.dwg 8/13/2010 3:30:49 PM Lorides, Stephen




## CHAIN-LINK SECURITY FENCE DETAIL
N.T.S.

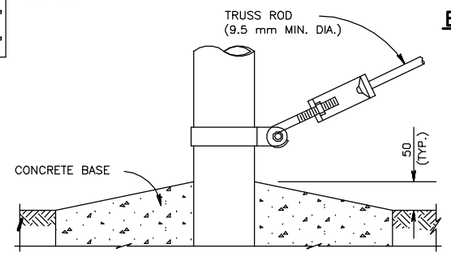



LINE POST

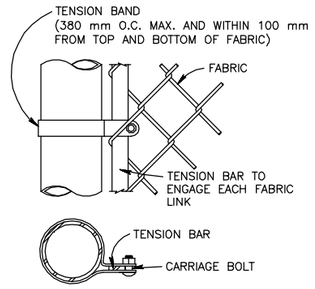



CORNER POST

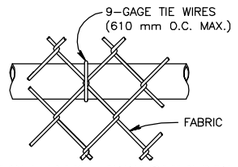
## EXTENSION ARM DETAILS
N.T.S.



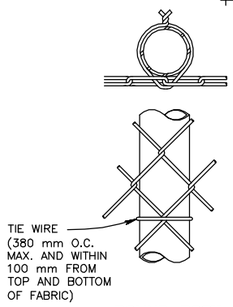

TRUSS ROD AND BAND



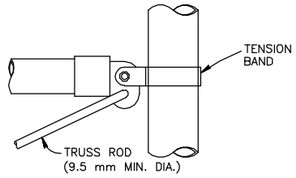

END OR GATE POST DETAIL




BRACE RAIL ATTACHMENT

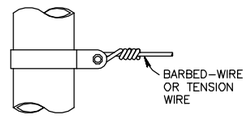



ROUND POST



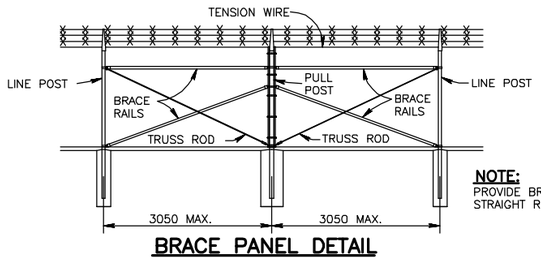

ROUND POST

BRACE RAIL CLAMP DETAILS




TENSION BAND DETAIL

## FASTENING DETAILS
N.T.S.

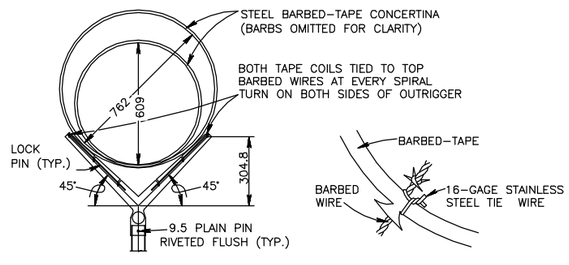



**NOTE:**
PROVIDE BRACE PANEL WHENEVER STRAIGHT RUNS EXCEED 152.4 m.

## BRACE PANEL DETAIL
N.T.S.

### STEEL POST SCHEDULE

| USE AND SECTION | MINIMUM OUTSIDE DIMENSIONS (NOMINAL) | | |
|---|---|---|---|
| | FABRIC LESS THAN 1830 mm | FABRIC 1830 mm TO 2440 mm | FABRIC OVER 2440 mm |
| CORNER, END & PULL POSTS | | | |
| TUBULAR – ROUND | 60.3 mm O.D. | 73.0 mm O.D. | 101.6 mm O.D. |
| TUBULAR – SQUARE | 50.8 mm SQ. | 63.5 mm SQ. | 76.2 mm SQ. |
| C-SECTION (ROLL-FORMED) | 88.9 mm x 88.9 mm | 88.9 mm x 88.9 mm | ——— |
| LINE POSTS | | | |
| TUBULAR – ROUND | 48.2 mm O.D. | 60.3 mm O.D. | 73.0 mm O.D. |
| H-SECTION | 57.1 mm x 43.1 mm | 57.1 mm x 42.1 mm | 57.1 mm x 43.1 mm |
| C-SECTION (ROLL-FORMED) | 47.6 mm x 41.2 mm | 57.1 mm x 43.1 mm | ——— |
| TOP, BOTTOM & BRACE RAILS | | | |
| TUBULAR – ROUND | 42.3 mm O.D. | | |
| TUBULAR – SQUARE | 38.1 mm O.D. | | |
| H-SECTION | 41.2 mm x 38.1 mm | | |
| C-SECTION (ROLL-FORMED) | 41.2 mm x 31.7 mm | | |




BARBED-TAPE MOUNTING DETAIL
N.T.S.

DETAIL
N.T.S.

**NOTES:**

1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION.
2. WIRE TIES, RAILS, POSTS AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL PLACED ON THE OPPOSITE SIDE OF THE SECURE AREA.
3. UNLESS SPECIFICALLY SHOWN OR SPECIFIED, ALL FE6 FENCE SHALL HAVE APRON EXTENDED OUTWARD FROM THE AREA BEING PROTECTED.
4. C-SECTION POSTS SHALL BE INSTALLED SO THAT THE VOID INSIDE THE POST IS COMPLETELY FILLED WITH CONCRETE UP TO THE TOP OF THE FOUNDATION.
5. FENCES SHALL BE GROUNDED ON EACH SIDE OF ALL GATES, AT EACH CORNER, AND WHERE THE FENCE ALIGNMENT CHANGES MORE THAN 15 DEGREES. GROUNDING LOCATIONS SHALL NOT EXCEED 198m (650 FT). EACH GATE PANEL SHALL BE BONDED WITH A FLEXIBLE BOND STRAP TO ITS GATE POST.
6. WHERE DRIVING THE GROUNDING ROD IS IMPRACTICAL, THEY SHALL BE BURIED A MINIMUM OF 305mm (12 IN) DEEP AND RADIAL FROM THE FENCE. THE CLOSEST END OF THE ELECTRODE SHALL NOT BE LESS THAN 610mm (2 FT) OR MORE THAN 2.4m (8 FT) FROM THE FENCE.
7. GROUND CONDUCTOR SHALL BE CLAMPED TO THE FENCE POST AND RODS TO CREATE ELECTRICAL CONTINUITY BETWEEN FENCE POSTS, FENCE FABRIC, AND GROUND RODS.
8. CHAIN LINK FENCE AND MATERIALS SHALL BE GALVANIZED.

This project was made possible by the United States Agency for International Development and the generous support of the American People through USAID Global Architecture and Engineering IQC Contracts.

**FINAL DESIGN SUBMITTAL**

| SYMB | DESCRIPTION | DATE | APR |
|---|---|---|---|
| A | FINAL DESIGN SUBMITTAL | 08/15/10 | KWC |

DESIGNED BY: RBB
DATE: 08-15-10
DRAWN BY: SCJ
SUBMITTED BY: TETRA TECH
CHECKED BY: KWC
FILE NO.: TWR01-C-002

USAID FROM THE AMERICAN PEOPLE
TETRA TECH

USAID THREE TOWERS
KANDAHAR AIR FIELD, AFGHANISTAN

FENCE AND GATE DETAILS
SHEET 1 OF 2

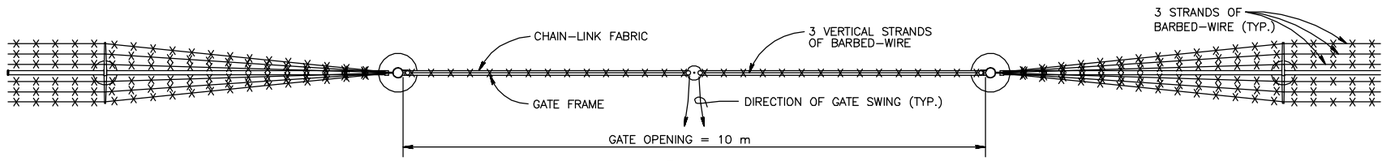
SHEET REFERENCE NUMBER:
TWR01
C-002

NOT FOR CONSTRUCTION

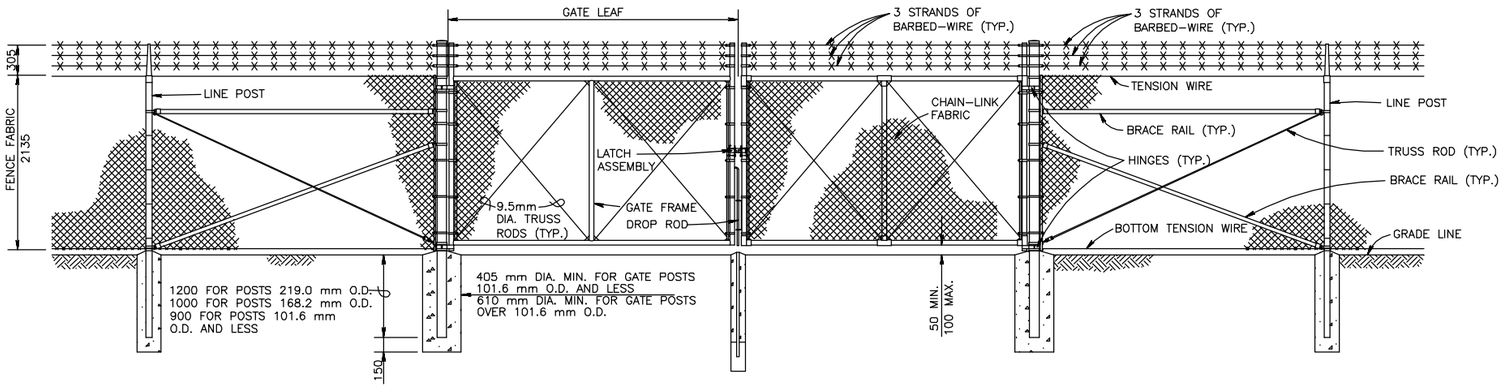
UNLESS OTHERWISE NOTED, ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

NOTE: A3 SIZE REDUCED TO HALF SCALE.

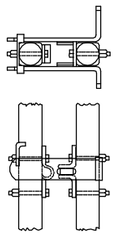
P:\1298\127-1298-10001-LT0013\CAD\SheetFiles\TWR01_KAN\02_Civil\TWR01-C-002.dwg 8/13/2010 3:30:59 PM Loridas, Stephen



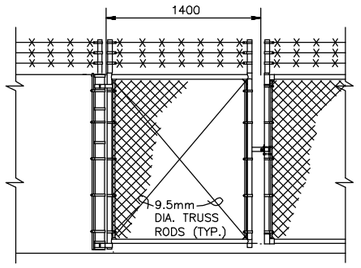

## PLAN
N.T.S.



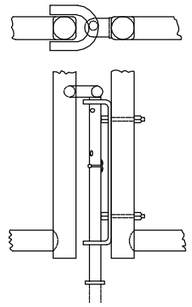

## ELEVATION
## DOUBLE SWING GATE
N.T.S.



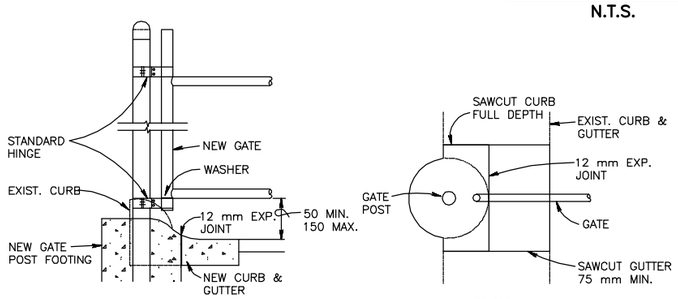
## LATCH ASSEMBLY




## SINGLE SWING GATE
N.T.S.



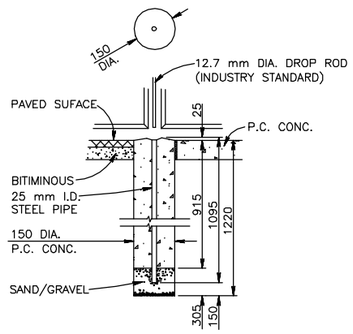
## DROP ROD ASSEMBLY



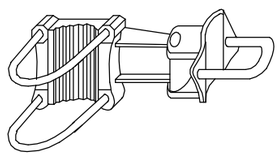

SECTION

PLAN

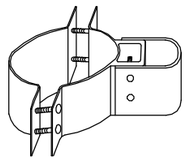
## GATE POST DETAIL AT CURB AND GUTTER
N.T.S.



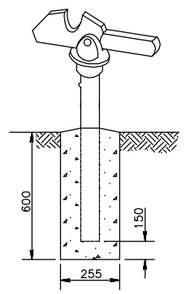

DROP ROD FOUNDATION



OFFSET HINGE



STANDARD HINGE




GATE KEEPER
(TO HOLD GATE OPEN)

## SWING GATE DETAILS
N.T.S.

| GATE POST SCHEDULE | |
|---|---|
| GATE LEAF WIDTH (NOMINAL) | OUTSIDE DIMENSION (NOMINAL) |
| 1830 mm OR LESS | 73.0 mm O.D.<br>63.5 mm SQ |
| MORE THAN 1830 mm TO 3960 mm | 101.6 mm O.D. |
| MORE THAN 3960 mm TO 5480 mm | 168.2 mm O.D. |
| MORE THAN 5480 mm | 219.0 mm |

## NOTES:

1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION.
2. SWING GATES SHALL BE CONSTRUCTED WITH DROP RODS, PADLOCKS, LATCH ASSEMBLY, AND GATE KEEPERS EXCEPT AS NOTED.
3. ALL GATE FRAMES SHALL BE A MINIMUM 48.2 mm NOMINAL (ROUND) OR 50.8 mm NOMINAL (SQUARE). GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR SHALL BE ASSEMBLED USING HEAVY FITTINGS. AT THE CONTRACTOR'S OPTION A WELDED HORIZONTAL BRACE MAY BE USED IN LIEU OF TRUSS RODS TO BRACE ALL WELDED GATE FRAMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OFF ALL GATES SUPPLIED.
4. CHAIN LINK FENCE AND MATERIALS SHALL BE GALVANIZED.

NOT FOR CONSTRUCTION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

NOTE: A3 SIZE REDUCED TO HALF SCALE.

**FINAL DESIGN SUBMITTAL**

| SYMB | DESCRIPTION | DATE | APR |
|---|---|---|---|
| A | FINAL DESIGN SUBMITTAL | 08/15/10 | KWC |

This project was made possible by the United States Agency for International Development and the generous support of the American People through USAID Global Architecture and Engineering IQC Contracts.

DESIGNED BY: RBB
DRAWN BY: SCJ
CHECKED BY: KWC
DATE: 08-15-10
SUBMITTED BY: TETRA TECH
FILE NO.: TWR01-C-003

USAID FROM THE AMERICAN PEOPLE
TETRA TECH

USAID THREE TOWERS
KANDAHAR AIR FIELD, AFGHANISTAN

FENCE AND GATE DETAILS
SHEET 2 OF 2

SHEET REFERENCE NUMBER:
TWR01
C–003

P:\1298\127-1298-10001-LT0013\CAD\SheetFiles\TWR01_KAN\02_Civil\TWR01-C-003.dwg 8/13/2010 3:31:10 PM Loridas, Stephen