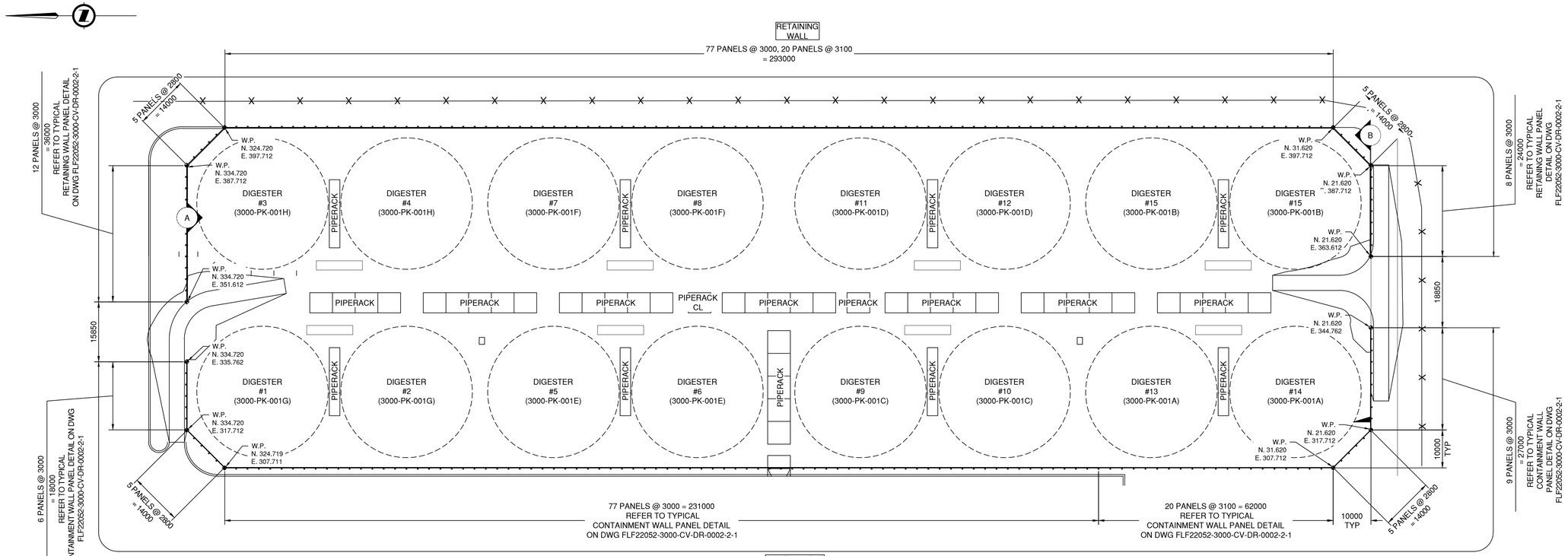
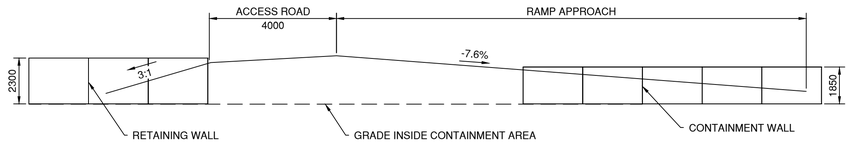
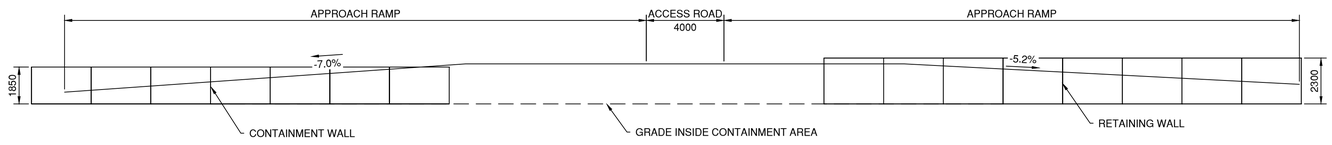



PLAN - BIOGAS (RNG) PLANT AREA 3000
1:600




A SECTION - NORTH ACCESS ROAD
1:50




B SECTION - SOUTH ACCESS ROAD
1:50

GENERAL NOTES (GN):
1. FOR GENERAL NOTES SEE DRAWING FLF22052-3000-CV-DR-0002-3-1.

**AMENDED DRAWINGS**
DP No: DP2023-08742
Date Received: Dec 12 2024
THESE DRAWINGS REFER TO THE ABOVE DEVELOPMENT PERMIT NO.

DEVELOPMENT PERMIT DECISION RENDERED ON THIS PLAN

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ARKK ENGINEERING CORPORATION
RM SIGNATURE:
RM APEGA ID #: 116193
DATE: 30 May 2024
PERMIT NUMBER: P013398
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

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PROFESSIONAL ENGINEER PROVINCE OF ALBERTA
29 May 2024
APEGA 90647

| | BY | DATE (YYYY-MM-DD) |
|---|---|---|
| DESIGNED | G. PADROS | 15-05-2024 |
| DRAWN | M. BALOG | 15-05-2024 |
| CHECKED | J. LARAMEE | 2024-05-29 |

SCALE: ####

Calgary
FUTURE ENERGY PARK

PROJECT
**GREEN IMPACT PARTNERS FUTURE ENERGY PARK INC.**
SEC: 1 - TWP: 24- RGE: 29 - W 4th M

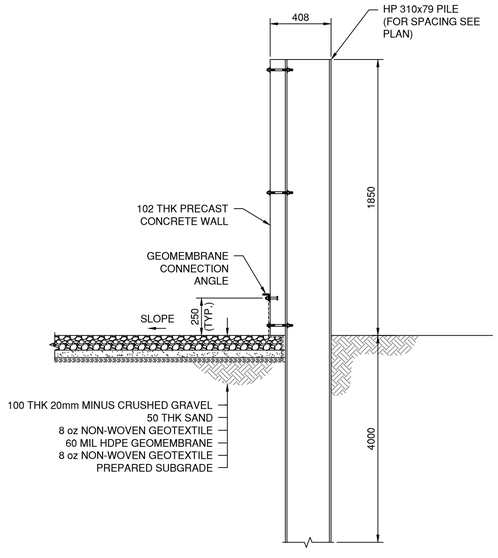
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|---|---|
| SHEET ID: C-601 | SHEET NO. |

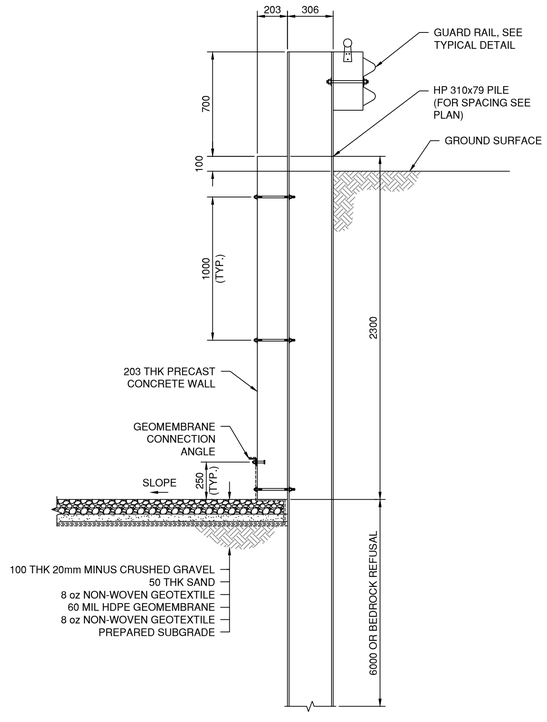
| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | M. BALOG | 2024-05-15 | |

ISC: ####
SHEET SIZE ANSI D
25 mm
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Plot Date: May 29, 2024 - 09:38:40pm Plotted by:jeff.laramee
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## TYPICAL CONTAINMENT WALL SECTION
1:50



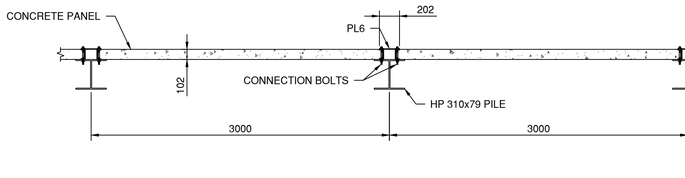

## TYPICAL RETAINING WALL SECTION
1:50



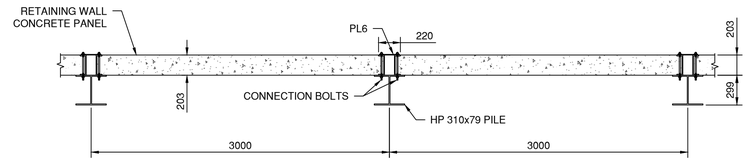

## TYPICAL CONTAINMENT WALL CONNECTION DETAIL
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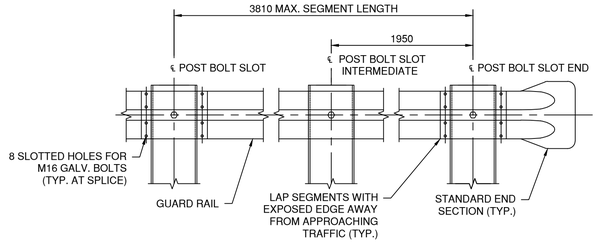

## TYPICAL RETAINING WALL CONNECTION DETAIL
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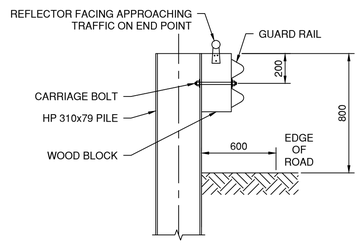



## PLAN - CONTAINMENT WALL
1:30




## PLAN - RETAINING WALL
1:30




## TYPICAL GUARD RAIL DETAIL
1:20

GENERAL NOTES (GN):

1. FOR GENERAL NOTES SEE DRAWING FLF22052-3000-CV-DR-0002-3-1.

**AMENDED DRAWINGS**

| DP No | Date Received |
|---|---|
| DP2023-08742 | Dec 12 2024 |

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| DRAWN | M. BALOG | 15-05-2024 |
| CHECKED | J. LARAMEE | 2024-05-29 |

SCALE ####

Calgary

FUTURE ENERGY PARK

PROJECT

**GREEN IMPACT PARTNERS FUTURE ENERGY PARK INC.**

SEC: 1 - TWP: 24- RGE: 29 - W 4th M

SHEET TITLE

**AREA 3000 BIOGAS PLANT SECONDARY CONTAINMENT SECTIONS AND DETAILS**

| FILE NO. | ENG DWG NO. |
|---|---|
| SHEET ID. C-602 | SHEET NO. |

| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | M. BALOG | 2024-05-15 | |

ISC: ####

SHEET SIZE ANSI D

25 mm 0

Plot Date: May 29, 2024 - 09:16:42am Plotted by:jeff.laramee
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NOTES

## 1. GENERAL

1.1 DIMENSIONS ARE IN MILLIMETERS, COORDINATES AND ELEVATIONS ARE IN METERS.

1.2 STRUCTURAL DESIGN BASED ON THE FOLLOWING SOURCES OF INFORMATION:

(A) ULS FACTORED LOADS DETERMINED BY ARKK ENGINEERING CORP.

(B) GEOTECHNICAL EVALUATION REPORT No. BRM-00260624-A0 (CGY-2201300-00) PREPARED BY EXP SERVICES INC, DATED FEBRUARY 4, 2022.

(C) GEOTECHNICAL EVALUATION REPORT No. CGY22001300-00) PREPARED BY EXP SERVICES INC, DATED NOVEMBER 8, 2023. S16-19 - DESIGN OF STEEL STRUCTURES.

(D) CSA A23.3-14 - DESIGN OF CONCRETE STRUCTURES.

## 2. MATERIALS

2.1 PRECAST REINFORCED CONCRETE PANELS:

(A) CONCRETE SHALL COMPLY WITH CAN/CSA A23.1-14 / A23.2-14 - CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION / TEST METHODS AND STANDARD PRACTICES FOR CONCRETE.
(B) MINIMUM SPECIFIED COMPRESSIVE STRENGTH AT 56 DAYS: 32 MPa

(C) PORTLAND CEMENT TYPE HS (SULPHATE RESISTANT).

(D) AIR-ENTRAINMENT BY VOLUME = 4% MIN, 7% MAX.

(E) MAXIMUM SIZE OF AGREGATE: 19 MM.

(F) CONCRETE MIX DESIGN SHALL BE BASED ON EXPOSURE CLASS S-2.

(G) THE CONCRETE COVER TO REBAR SHALL BE 40 MM.

2.2 STEEL REBAR:

(A) STEEL REBAR SHALL COMPLY WITH CAN/CSA G30.18 GRADE 400 " CARBON STEEL BARS FOR CONCRETE REINFORCEMENT" .

(B) REBAR BENDING, SPLICING AND HOOKS SHALL COMPLY WITH CAN/CSA A23.1-14 / A23.2-14.

2.3 STEEL PLATES SHALL COMPLY WITH CAN/CSA G40.21-300W (Fy = 300 MPa) " GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL / STRUCTURAL QUALITY STEEL" .

2.4 ANCHOR RODS SHALL COMPLY WITH ASTM F1554 GRADE 55 (MINIMUM YIELD STRENGTH = 379 MPa, MINIMUM TENSION STRENGTH = 517 MPa).

2.5 STEEL NUTS SHALL COMPLY WITH ASTM A194 GRADE 2HM.

2.6 WELDNG TO COMPLY WITH CSA W59-18 " WELDED STEEL CONSTRUCTION" AND CSA W48-18 " FILLER METALS AND ALLIED MATERIALS FOR METAL ARC WELDING" .

2.7 GEOMEMBRANE SHALL CONSIST OF TERRAFIX HDPE 60 MILL, SMOOTH TYPE (OR EQUIVALENT).

2.8 GEOTEXTILE LAYFIELD LP6 NON-WOVEN (OR EQUIVALENT).

2.9 GRAVEL 20 MM CRUSH SHALL BE COMPACTED TO 98% SPMDD, WITH A WATER CONTENT WITHIN ±3% OF THE OPTIMUM MOISTURE CONTENT, PLACED IN LIFTS NOT EXCEEDING 200 MM COMPACTED THICKNESS.

2.10 PIT-RUN SHALL BE COMPACTED TO 98% SPMDD, WITH A WATER CONTENT WITHIN ±3% OF THE OPTIMUM MOISTURE CONTENT, PLACED IN LIFTS NOT EXCEEDING 200 MM COMPACTED THICKNESS.

2.11 COMMON FILL MAY CONSIST OF COHESIVE OR GRANULAR SOIL, FREE OF ORGANIC AND DELETERIOUS MATERIAL, COMPACTED TO 95% SPMDD. COMPACTED LIFT THICKNESS SHALL NOT EXCEED 150 MM (COHESIVE SOIL) OR 200 MM (GRANULAR SOIL).

## 3. SITE PREPARATION

3.1 EXCAVATIONS NOT EXCEEDING 1.5 M DEPTH MAY BE CARRIED OUT USING A VERTICAL CUT. EXCAVATIONS DEEPER THAN 1.5 M WILL REQUIRE A CUT-SLOPE INCLINATION NOT STEEPER THAN 1H:1V. FOLLOW ALBERTA OCCUPATIONAL HEALTH AND SAFETY (OH&S) ACT.

3.2 DIRECT SURFACE WATER AWAY FROM THE EXCAVATION.

3.3 CONTRACTOR SHALL BE AWARE OF THE POSSIBILITY OF REQUIRING DRAINAGE MEASURES, WHICH ARE EXPECTED TO COMPRISE DITCHES ALONG THE PERIMETER OF THE EXCAVATION, DISCHARGING TO A SUMP CONTAINING A SUBMERSIBLE PUMP TO MANAGE WATER INFLUX.

3.4 THE BOTTOM OF THE EXCAVATION SHALL BE SCARIFIED 50 MM DEPTH FOLLOWED BY RECOMPACTION.

## DRIVEN STEEL PILES - GENERAL NOTES

1. DIMENSIONS ARE IN MILLIMETERS, COORDINATES AND ELEVATIONS ARE IN METERS.
2. PILE DESIGN BASED ON THE FOLLOWING SOURCES OF INFORMATION:
   (A) ULS FACTORED LOADS DETERMINED BY ARKK ENGINEERING CORP.
   (B) CSA S16-19 - DESIGN OF STEEL STRUCTURES.
   (C) GEOTECHNICAL EVALUATION REPORT No. BRM-00260624-A0 (CGY-2201300-00) PREPARED BY EXP SERVICES INC, DATED FEBRUARY 4, 2022.
   (D) GEOTECHNICAL EVALUATION REPORT No. CGY22001300-00) PREPARED BY EXP SERVICES INC, DATED NOVEMBER 8, 2023.
3. STEEL PILES SHALL COMPLY WITH CAN/CSA G40.21 " GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL / STRUCTURAL QUALITY STEEL" . STEEL PILES SHALL HAVE A MINIMUM YIELD STRESS OF 300 MPa.
4. WELDING TO COMPLY WITH CSA W59-18 " WELDED STEEL CONSTRUCTIONS" AND CSA W48-18 " FILLER METALS AND ALLIED MATERIALS FOR METAL ARC WELDING" .

## DRIVEN STEEL PILES - INSTALLATION NOTES

1. PILE DRIVING SHALL NOT COMMENCE UNTIL ALL EXISTING UNDERGROUND SERVICES AND STRUCTURES IN THE PROXIMITY OF THE WORK HAVE BEEN IDENTIFIED BY EXCAVATION AND/OR SURVEY MARKERS. IT IS THE PILING CONTRACTOR RESPONSIBILITY TO ENSURE THAT THE INTEGRITY OF EXISTING UNDERGROUND SERVICES AND STRUCTURES IS MAINTAINED AT ALL TIMES DURING THE WORK. ANY DAMAGES TO THESE SERVICES OR STRUCTURES CAUSED BY THE WORK SHALL BE REPAIRED IMMEDIATELY.
2. THE MAXIMUM HAMMER ENERGY PER BLOW DIVIDED BY THE PILE CROSS SECTION AREA SHOULD NOT EXCEED 600 JOULES / cm2.
3. PILES SHALL BE DRIVEN TO REACH THE EMBEDDED PILE LENGTH SHOWN IN THE PILE SCHEDULE DRAWINGS.
4. THE CENTER OF THE DRIVEN PILE SHOULD BE WITHIN 76 mm OF THE REQUIRED LOCATION. PILE LONGITUDINAL AXIS AFTER DRIVING TO BE A MAXIMUM 2% AWAY FROM VERTICAL.
5. THE PILE CONTRACTOR SHALL PROVIDE INFORMATION ON THE TYPE AND WEIGHT OF DRIVING EQUIPMENT THEY ARE PROPOSING TO USE (INCLUDING HAMMER AND HELMET). THE SET CRITERIA SHALL BE COMPUTED BY ARKK ENGINEERING CORP ONCE THIS INFORMATION HAS BEEN REVIEWED AND APPROVED.
6. PILE DRIVING OPERATIONS SHALL BE CONTINUOUSLY SUPERVISED BY QUALIFIED GEOTECHNICAL PERSONNEL.
7. RECORDS SHOULD BE PREPARED FOR EACH PILE DRIVEN. THE RECORDS SHOULD INCLUDE DATE, TIME, SIZE, LENGTH, HAMMER TYPE, HAMMER STROKE OR RELATED ENERGY, OTHER DRIVING EQUIPMENT, BLOW COUNT FOR EACH 250 mm OF PILE PENETRATION, AS WELL AS NUMBER OF BLOWS PER 25 mm FOR THE LAST 75 mm. PILE DRIVING RECORDS SHOULD ALSO INDICATE PILE INSTALLATION SEQUENCE AND OTHER PERTINENT INFORMATION SUCH AS INTERRUPTION OF CONTINUOUS DRIVING, PILE DAMAGE AND REPAIR.
8. PRE-BORING OF PILOT HOLES MAY BE REQUIRED IF SUPERFICIAL SOILS ARE FROZEN OR VERY HARD/DENSE. THE PRE-BORING DIAMETER SHOULD NOT EXCEED 90% OF THE PILE DIAMETER. PRIOR TO PRE-BORING, THE PROPOSED PRE-BORED LENGTH SHOULD BE REPORTED TO ARKK ENGINEERING CORP FOR REVIEW AND ACCEPTANCE.
9. SPLICING (IF REQUIRED) SHALL DEVELOP THE FULL STRENGTH OF THE PILE IN COMPRESSION, TENSION AND BENDING. PILE SPLICING DETAILS, INCLUDING TYPE OF SPLICE, GEOMETRY, TIME (START / FINISH) AND OTHER PERTINENT INFORMATION SHOULD BE INCLUDED IN THE PILE DRIVING RECORDS.
10. PILES SHOULD NOT BE DRIVEN BEYOND REFUSAL, WHICH IS CONSIDERED EQUAL TO 10 BLOWS PER 25 mm PENETRATION OVER A DRIVEN LENGTH OF AT LEAST 250 mm, FOR THE RECOMMENDED RANGE OF HAMMER ENERGIES, ARKK ENGINEERING CORP SHOULD BE CONTACTED IF ANY PILE ENCOUNTERS SIGNIFICANT RESISTANCE PRIOR TO REACHING FINAL EMBEDMENT.
11. PILE DRIVING SHOULD BE STOPPED IMMEDIATELY IF ABRUPT HIGH RESISTANCE IS ENCOUNTERED. THE PILE DRIVING RECORD SHOULD BE PROVIDED TO ARKK ENGINEERING CORP FOR REVIEW.
12. THE PILE TOP SHOULD BE INSPECTED AFTER DRIVING. SHOULD DAMAGE BE NOTED (PILE MUSHROOM) EXTENDING BELOW THE PILE CUT-OFF ELEVATION, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE THE DAMAGED PORTION AND SPLICE THE PILE ACCORDINGLY.
13. SELECTIVE PILE RE-STRIKE TO BE CARRIED OUT A FEW DAYS AFTER INSTALLATION MAY BE REQUESTED TO VERIFY OR REASSESS PILE CAPACITIES.
14. WHERE CONSIDERED NECESSARY BY THE GEOTECHNICAL FIELD INSPECTOR, SIGNIFICANT FLUTTER VOIDS AROUND THE PILE NEAR THE GROUND LEVEL SHALL BE BACKFILLED WITH CEMENTITIOUS GROUT OR BENTONITE CLAY AT THE END OF PILE DRIVING TO ACHIEVE THE SHAFT FRICTION REQUIRED.
15. PILE ELEVATION SHOULD BE SURVEYED BY PILE CONTRACTOR AFTER INSTALLATION AND SURVEYED AGAIN AFTER ADJACENT PILES HAVE BEEN INSTALLED. SHOULD PILE VERTICAL DISPLACEMENT BE DETECTED, THE HEAVED PILES SHALL BE RE-DRIVEN DEEPER THAN THEIR ORIGINAL EMBEDMENT DEPTH.

**AMENDED DRAWINGS**
DP No: DP2023-08742 | Date Received: Dec 12 2024
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RM SIGNATURE:
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APEGA 90647

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| DESIGNED | G. PADROS | 15-05-2024 |
| DRAWN | M. BALOG | 15-05-2024 |
| CHECKED | J. LARAMEE | 2024-05-29 |

SCALE: ####

Calgary

FUTURE ENERGY PARK

PROJECT

**GREEN IMPACT PARTNERS FUTURE ENERGY PARK INC.**

SEC: 1 - TWP: 24- RGE: 29 - W 4th M

SHEET TITLE

**SECONDARY CONTAINMENT GENERAL NOTES**

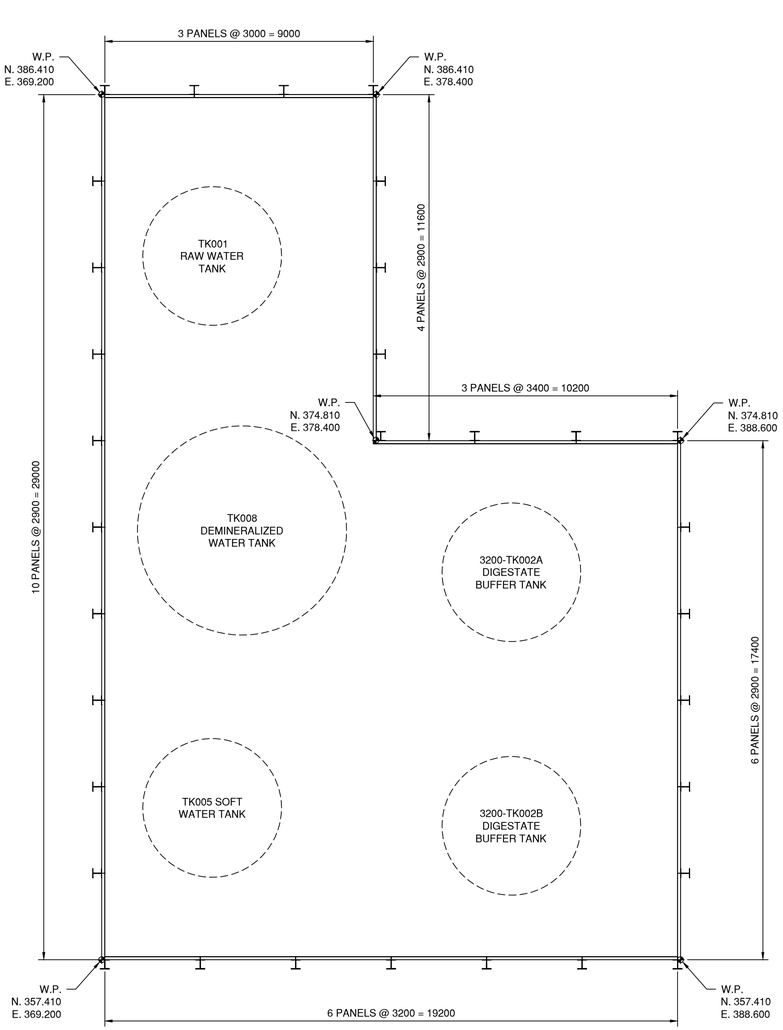
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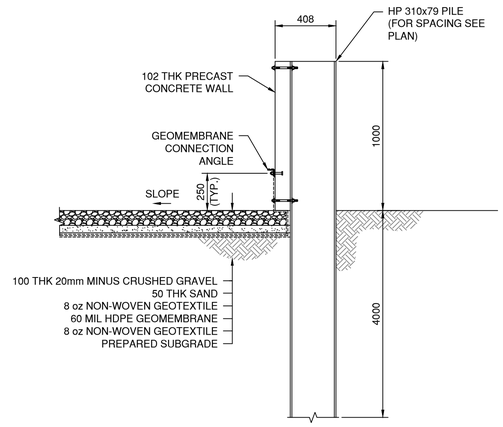
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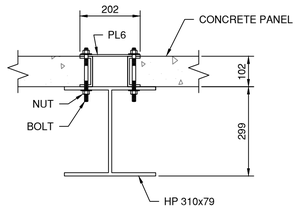

PLAN - (RAW WATER) - WATER TREATMENT AREA 5000

1:100



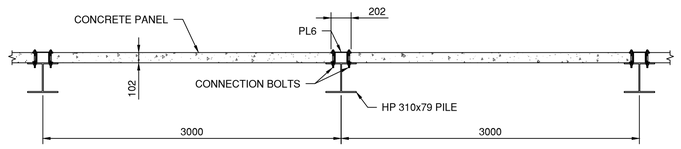

TYPICAL CONTAINMENT WALL SECTION

1:50




TYPICAL CONTAINMENT WALL CONNECTION DETAIL

1:10




PLAN - CONTAINMENT WALL

1:30

GENERAL NOTES (GN):

1. FOR GENERAL NOTES SEE DRAWING FLF22052-3000-CV-DR-0002-3-1.

**AMENDED DRAWINGS**

| DP No | Date Received |
|---|---|
| DP2023-08742 | Dec 12 2024 |

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| DRAWN | M. BALOG | 15-05-2024 |
| CHECKED | J. LARAMEE | 2024-05-29 |

SCALE: ####

PROJECT

**GREEN IMPACT PARTNERS**
**FUTURE ENERGY PARK INC.**

SEC: 1 - TWP: 24- RGE: 29 - W 4th M

SHEET TITLE

**AREA 5000 RAW WATER TANKS**
**SECONDARY CONTAINMENT**
**PLAN, SECTIONS AND DETAILS**

| FILE NO. | ENG DWG NO. |
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| FLF22052-5000-CV-DR-0002-1-1.dwg | |
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| C-603 | |

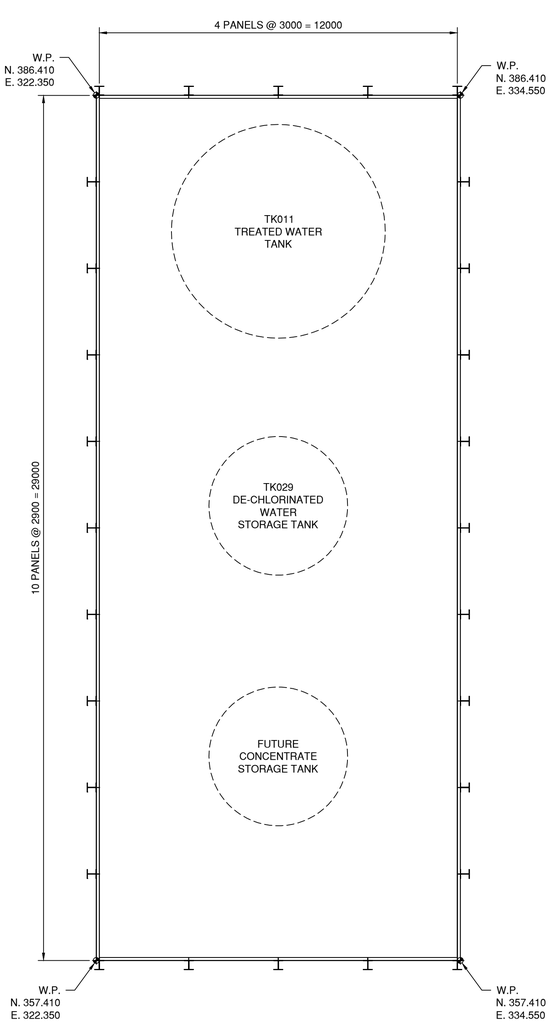
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| DRAWN | M. BALOG | 2024-05-15 | |

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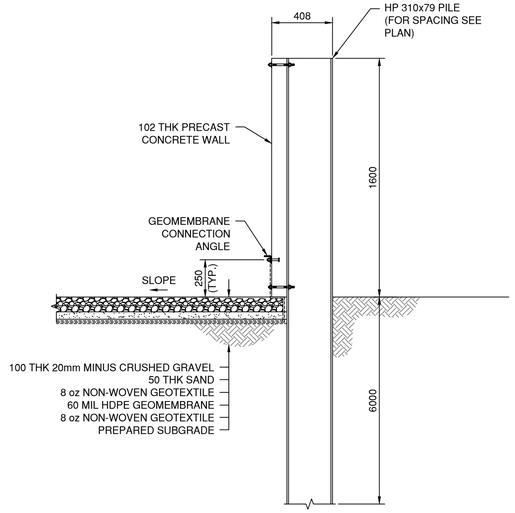
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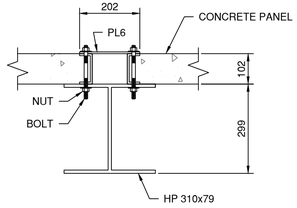
Plot Date: May 29, 2024 - 09:16:13am Plotted by:jeff.laramee
Xrefs file:o:\Projects\TDE\2024\24-004 FLF-22-052 Future Energy Park Detail Design\8.0_Drawings\8.15_Structural\8.15.4_Working_Files\City of Calgary Titleblock Drawings\FLF22052-5000-CV-DR-0002-1-1.dwg XREFS: FLF22052-0000-GN-LY-0001 - Base Plan Pipestacks.dwg; FLF22052-0000-GN-LY-0001 - Base Plan Pipestacks.dwg; Containment_model.dwg



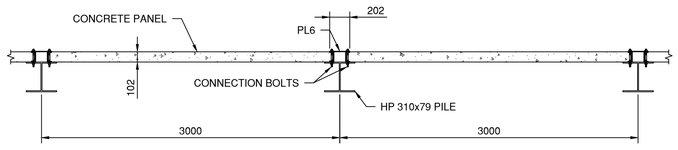

PLAN - TREATED WATER - WATER TREATMENT AREA 5000
1:100




TYPICAL CONTAINMENT WALL SECTION
1:50




TYPICAL CONTAINMENT WALL CONNECTION DETAIL
1:10




PLAN - CONTAINMENT WALL
1:30

GENERAL NOTES (GN):
1. FOR GENERAL NOTES SEE DRAWING FLF22052-3000-CV-DR-0002-3-1.

**AMENDED DRAWINGS**

| DP No | Date Received |
|---|---|
| DP2023-08742 | Dec 12 2024 |

**THESE DRAWINGS REFER TO THE ABOVE DEVELOPMENT PERMIT NO.**

DEVELOPMENT PERMIT DECISION RENDERED ON THIS PLAN

ARKK ENGINEERING CORPORATION
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NAD 83 COORDINATES

| NO. | DESCRIPTION | DATE (YYYY-MM-DD) | BY | APPD |
|---|---|---|---|---|
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| | | | | |
| | | | | |
| 1 | ISSUED FOR DEVELOPMENT PERMIT | 2024-05-29 | JL | BM |

PERMIT
PERMIT TO PRACTICE
ARKK ENGINEERING CORPORATION
RM SIGNATURE:
RM APEGA ID #: 116193
DATE: 29 May 2024
PERMIT NUMBER: P013398
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

STAMP
PROFESSIONAL ENGINEER
PROVINCE OF ALBERTA
29 May 2024
APEGA 90647

| | BY | DATE (YYYY-MM-DD) |
|---|---|---|
| DESIGNED | G. PADROS | 15-05-2024 |
| DRAWN | M. BALOG | 15-05-2024 |
| CHECKED | J. LARAMEE | 2024-05-29 |

SCALE AS SHOWN

Calgary
FUTURE ENERGY PARK

PROJECT
**GREEN IMPACT PARTNERS**
**FUTURE ENERGY PARK INC.**
**####**

SEC: 1 - TWP: 24- RGE: 29 - W 4th M

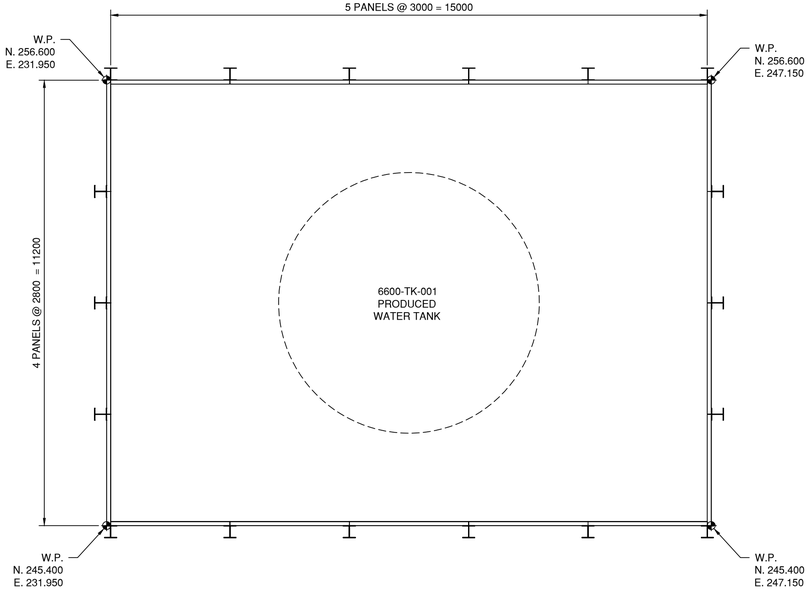
SHEET TITLE
**AREA 5000 TREATED WATER TANKS**
**SECONDARY CONTAINMENT**
**PLAN, SECTIONS AND DETAILS**

| FILE NO. | ENG DWG NO. |
|---|---|
| | #### |
| SHEET ID. C-604 | SHEET NO. #### |

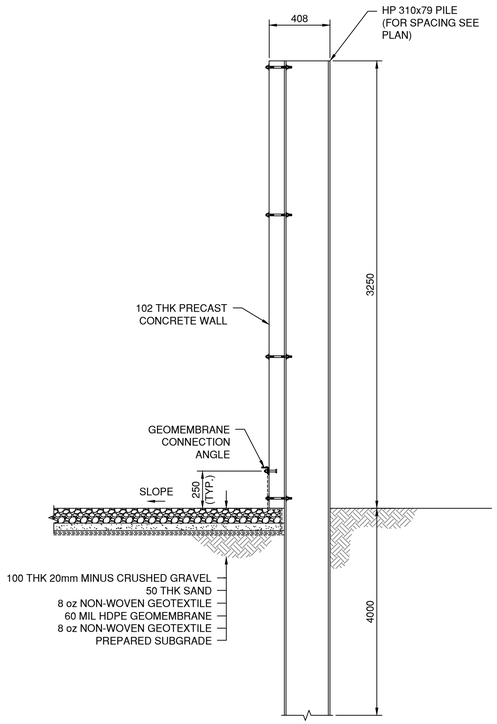
| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | M. BALOG | 2024-05-15 | #### |

ISC: ####
SHEET SIZE ANSI D
25 mm
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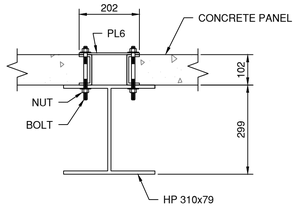
Plot Date: May 29, 2024 - 09:15:27am Plotted by:jeff.laramee
Name: File: o:\Projects\TDE\2024\24-004 FLF-22-052 Future Energy Park Detail Design\8.0_Drawings\8.15_Structural\8.15.4_Working_Files\City of Calgary Titleblock Drawings\FLF22052-5000-CV-DR-0002-2-1.dwg XREFS: FLF22052-0000-GN-LY-0001 - Base Plan Pipestacks.dwg; FLF22052-0000-GN-LY-0001 - Base Plan.dwg; Containment_model.dwg



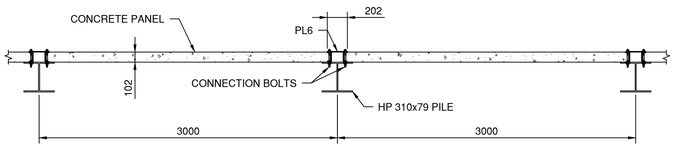

PLAN - PRODUCED WATER AREA 6600
1:75




TYPICAL CONTAINMENT WALL SECTION
1:50




TYPICAL CONTAINMENT WALL CONNECTION DETAIL
1:10




PLAN - CONTAINMENT WALL
1:30

GENERAL NOTES (GN):
1. FOR GENERAL NOTES SEE DRAWING FLF22052-3000-CV-DR-0002-3-1.

**AMENDED DRAWINGS**

| DP No | Date Received |
|---|---|
| DP2023-08742 | Dec 12 2024 |

**THESE DRAWINGS REFER TO THE ABOVE DEVELOPMENT PERMIT NO.**

DEVELOPMENT PERMIT DECISION RENDERED ON THIS PLAN

ARKK ENGINEERING CORPORATION

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NAD 83 COORDINATES

| NO. | DESCRIPTION | DATE (YYYY-MM-DD) | BY | APPD |
|---|---|---|---|---|
| 1 | ISSUED FOR DEVELOPMENT PERMIT | 2024-05-29 | JL | BM |

PERMIT

PERMIT TO PRACTICE
ARKK ENGINEERING CORPORATION
RM SIGNATURE:
RM APEGA ID #: 116193
DATE: 29 May 2024
PERMIT NUMBER: P013398
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

STAMP

PROFESSIONAL ENGINEER PROVINCE OF ALBERTA
APEGA 90647
29 May 2024

| | BY | DATE (YYYY-MM-DD) |
|---|---|---|
| DESIGNED | G. PADROS | 15-05-2024 |
| DRAWN | M. BALOG | 15-05-2024 |
| CHECKED | J. LARAMEE | 2024-05-29 |

SCALE AS SHOWN

Calgary

FUTURE ENERGY PARK

PROJECT

**GREEN IMPACT PARTNERS**
**FUTURE ENERGY PARK INC.**
**####**

SEC: 1 - TWP: 24- RGE: 29 - W 4th M

SHEET TITLE

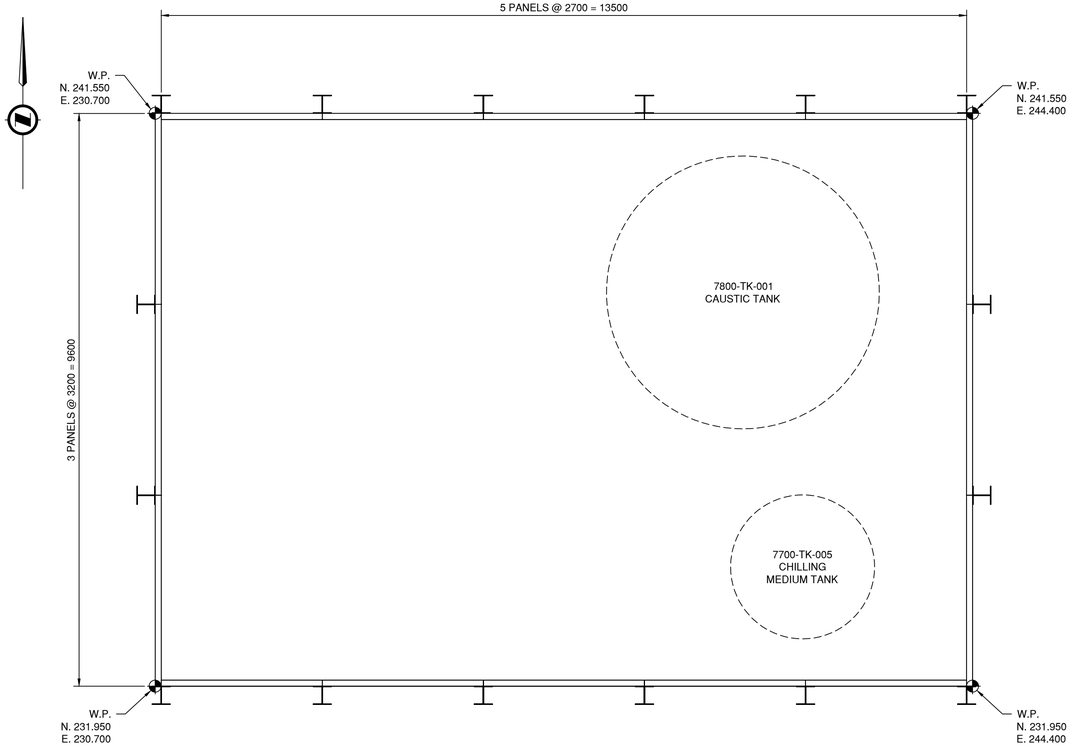
**AREA 6600 PRODUCED WATER TANK**
**SECONDARY CONTAINMENT**
**PLAN, SECTIONS AND DETAILS**

| FILE NO. | ENG DWG NO. |
|---|---|
| | #### |
| SHEET ID. C-605 | SHEET NO. #### |

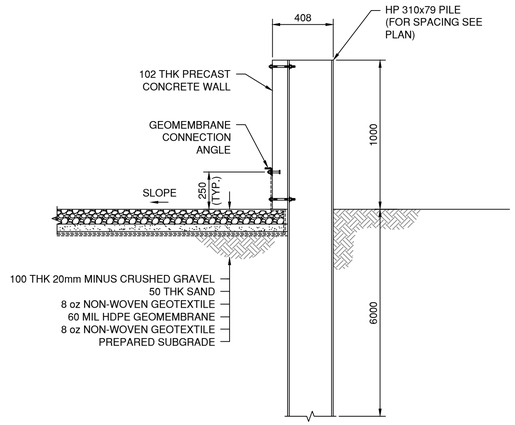
| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | M. BALOG | 2024-05-15 | #### |

ISC: ####
SHEET SIZE ANSI D
25 mm
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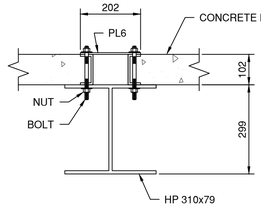
Plot Date: May 29, 2024 - 09:14:42am Plotted by:jeff.laramee
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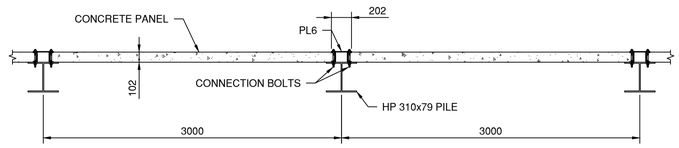

PLAN - CHILLING MEDIUM REFRIGERATION 7700/7800
1:100




TYPICAL CONTAINMENT WALL SECTION
1:50




TYPICAL CONTAINMENT WALL CONNECTION DETAIL
1:10




PLAN - CONTAINMENT WALL
1:30

GENERAL NOTES (GN):
1. FOR GENERAL NOTES SEE DRAWING FLF22052-3000-CV-DR-0002-3-1.

**AMENDED DRAWINGS**

| DP No | Date Received |
|---|---|
| DP2023-08742 | Dec 12 2024 |

THESE DRAWINGS REFER TO THE ABOVE DEVELOPMENT PERMIT NO.

DEVELOPMENT PERMIT DECISION RENDERED ON THIS PLAN

ARKK ENGINEERING CORPORATION

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COORDINATES

| NO. | DESCRIPTION | DATE (YYYY-MM-DD) | BY | APPD |
|---|---|---|---|---|
| 1 | ISSUED FOR DEVELOPMENT PERMIT | 2024-05-29 | JL | BM |

PERMIT

PERMIT TO PRACTICE
ARKK ENGINEERING CORPORATION
RM SIGNATURE:
RM APEGA ID #: 116193
DATE: 29 May 2024
PERMIT NUMBER: P013398
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

STAMP

PROFESSIONAL ENGINEER ALBERTA
29 May 2024
APEGA 90647

| | BY | DATE (YYYY-MM-DD) |
|---|---|---|
| DESIGNED | G. PADROS | 15-05-2024 |
| DRAWN | M. BALOG | 15-05-2024 |
| CHECKED | J. LARAMEE | 2024-05-29 |

SCALE ####

Calgary

FUTURE ENERGY PARK

PROJECT

**GREEN IMPACT PARTNERS**
**FUTURE ENERGY PARK INC.**

SEC: 1 - TWP: 24- RGE: 29 - W 4th M

SHEET TITLE

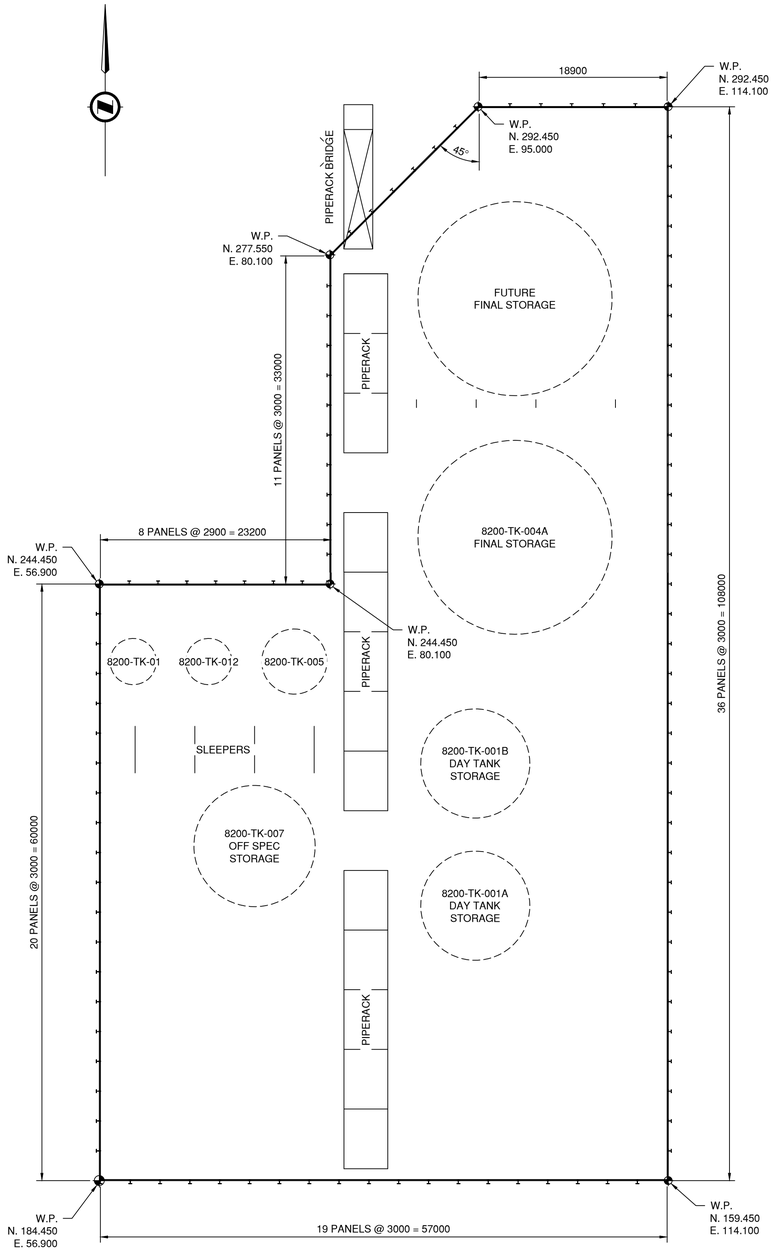
**AREA 7700/7800 CAUSTIC/CHILLING TANKS SECONDARY CONTAINMENT PLAN, SECTIONS AND DETAILS**

| FILE NO. | ENG DWG NO. |
|---|---|
| SHEET ID. C-606 | SHEET NO. |

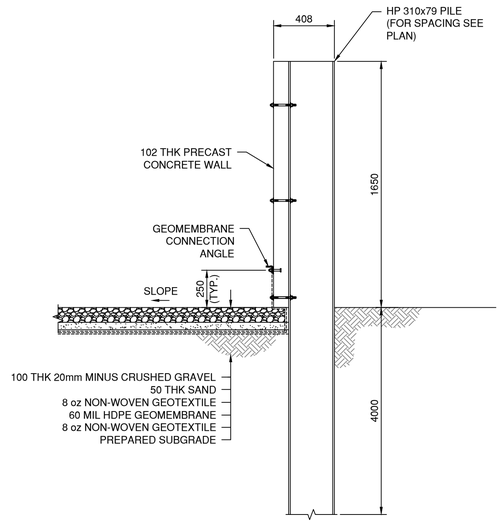
| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | M. BALOG | 2024-05-15 | |

ISC: ####
SHEET SIZE ANSI D
25 mm
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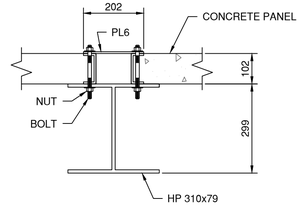
Plot Date: May 29, 2024 - 09:13:57am Plotted by:jeff.laramee
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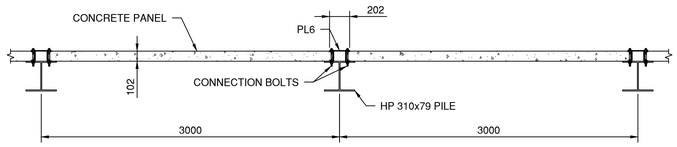

PLAN - ALCOHOL STORAGE AREA - 8200
1:100




TYPICAL CONTAINMENT WALL SECTION
1:50




TYPICAL CONTAINMENT WALL
CONNECTION DETAIL
1:10




PLAN - CONTAINMENT WALL
1:30

GENERAL NOTES (GN):
1. FOR GENERAL NOTES SEE DRAWING FLF22052-3000-CV-DR-0002-3-1.

**AMENDED DRAWINGS**

| DP No | Date Received |
|---|---|
| DP2023-08742 | Dec 12 2024 |

**THESE DRAWINGS REFER TO THE ABOVE DEVELOPMENT PERMIT NO.**

DEVELOPMENT PERMIT DECISION RENDERED ON THIS PLAN

ARKK ENGINEERING CORPORATION

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| NO. | DESCRIPTION | DATE (YYYY-MM-DD) | BY | APPD |
|---|---|---|---|---|
| 1 | ISSUED FOR DEVELOPMENT PERMIT | 2024-05-29 | JL | BM |

PERMIT

PERMIT TO PRACTICE
ARKK ENGINEERING CORPORATION
RM SIGNATURE:
RM APEGA ID #: 116193
DATE: 29 May 2024
PERMIT NUMBER: P013398
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

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PROFESSIONAL ENGINEER ALBERTA
29 May 2024
APEGA 90647

| | BY | DATE (YYYY-MM-DD) |
|---|---|---|
| DESIGNED | G. PADROS | 15-05-2024 |
| DRAWN | M. BALOG | 15-05-2024 |
| CHECKED | J. LARAMEE | 2024-05-29 |

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Calgary

FUTURE ENERGY PARK

PROJECT
**GREEN IMPACT PARTNERS**
**FUTURE ENERGY PARK INC.**

SEC: 1 - TWP: 24- RGE: 29 - W 4th M

SHEET TITLE
**AREA 8200 ALCOHOL STORAGE TANKS**
**SECONDARY CONTAINMENT**
**PLAN, SECTIONS AND DETAILS**

| FILE NO. | ENG DWG NO. |
|---|---|
| SHEET ID. C-607 | SHEET NO. |

| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | M. BALOG | 2024-05-15 | |

ISC: ####
SHEET SIZE ANSI D
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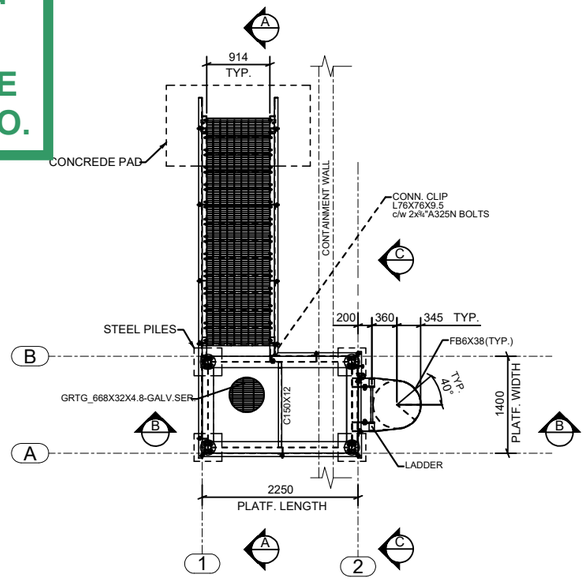
Plot Date: May 29, 2024 - 09:13:11am Plotted by:jeff.laramee
Xrefs file:///P:/Projects/TDE/22052/24-004 FLF 22-052 Future Energy Park Detail Design/r8.0_Drawings/8.15_Structural/8.15.4_Working_Files/City of Calgary Titleblock Drawings/FLF22052-8200-CV-DR-0006-1-1.dwg XREFS: FLF22052-0000-GN-LY-0001 - Base Plan Pipestxts.dwg; FLF22052-0000-GN-LY-0001 - Base Plan Piperacks.dwg; FLF22052-0000-GN-LY-0001 - Base Plan.dwg; Containment_model.dwg

**AMENDED DRAWINGS**

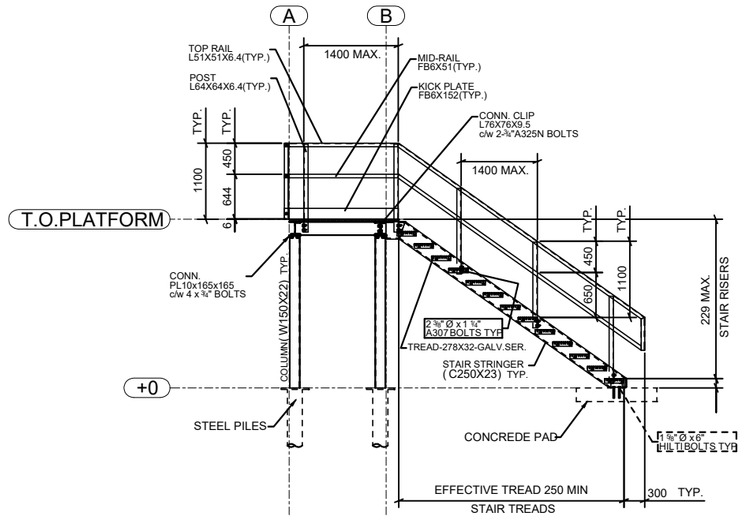
DP No: DP2023-08742

Date Received: Dec 12 2024

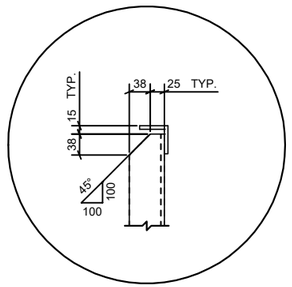
**THESE DRAWINGS REFER TO THE ABOVE DEVELOPMENT PERMIT NO.**



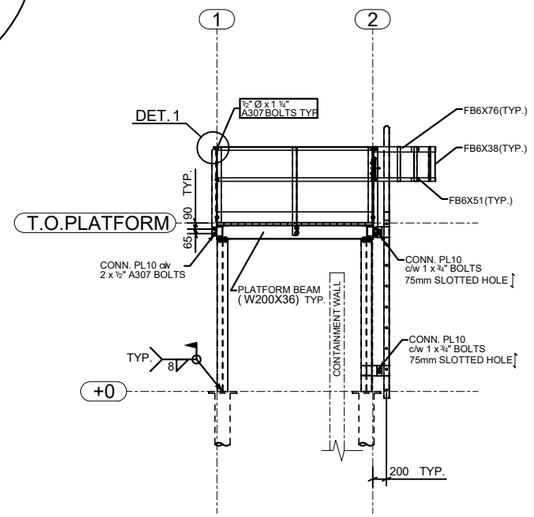

STAIRS WITH PLATFORM AND LADDER - TYPE1
PLAN VIEW



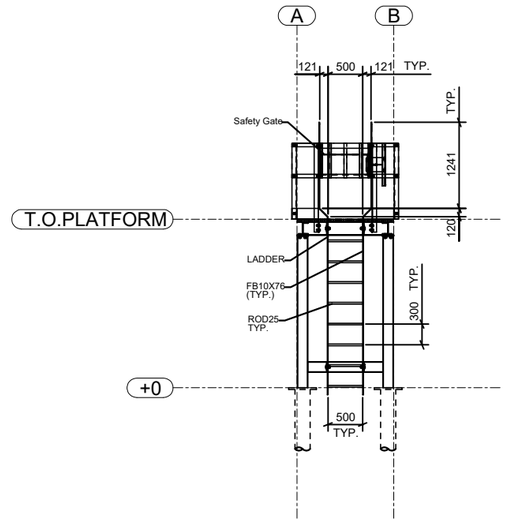

A SECTION




1 DETAIL
POST CUT




B SECTION




C SECTION

DEVELOPMENT PERMIT DECISION RENDERED ON THIS PLAN

## NOTES

1. DIMENSIONS GIVEN IN METRIC UNITS.
2. STRUCTURAL STEEL MATERIAL AS PER CSA G40.21M.
3. ANY FLIGHT OF STAIRS SHALL HAVE NOT MORE THAN 20 STEPS.
4. IN GENERAL, THERE SHALL BE NOT MORE THAN 40 STEPS WITHOUT CHANGE OF DIRECTION.
5. STAIRWAYS HAVING (4) FOUR OR MORE RISERS OR RISING MORE THAN 760mm SHALL BE EQUIPPED WITH AT LEAST ONE HANDRAIL.
6. CAGE IS NOT REQUIRED WHERE THE LENGTH OF CLIMB IS LESS THAN 2300mm ABOVE GROUND LEVEL.

TDE ThermoDesign

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NAD 83 COORDINATES

| NO. | DESCRIPTION | DATE (YYYY-MM-DD) | BY | APPD |
|---|---|---|---|---|
| A | ISSUED FOR INFORMATION | 2023.11.30 | JZ | DS |

PERMIT

SEAL | SEAL

DESIGN | REVIEW

| | BY | DATE (YYYY-MM-DD) |
|---|---|---|
| DESIGNED | JZ | 2023.11.30 |
| DRAWN | JZ | 2023.11.30 |
| REVIEWED | MP | 2023.11.30 |
| APPD | | |

NOT TO SCALE

Calgary | FUTURE ENERGY PARK

PROJECT

**FUTURE ENERGY PARK**
**4615 84th STREET S.E.**
**CALGARY, AB CANADA T2B 3C1**

SEC: - TWP: - RGE: - W th M

SHEET TITLE

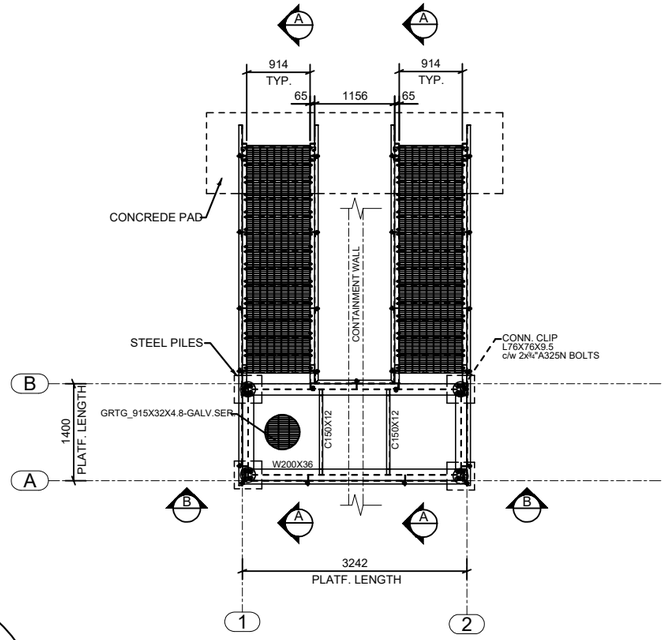
**CONTAINMENT DETAILS**
**AREA 0000**
**STAIR DETAILS**

| FILE NO. | ENG DWG NO. |
|---|---|
| FLF-STAIRS TYPE1.dwg | |
| SHEET ID. | SHEET NO. |
| | C-608 |

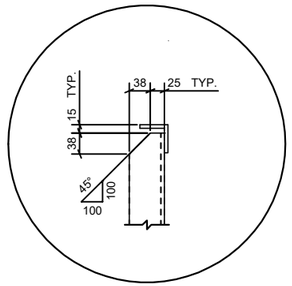
| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | JZ | 2023.11.30 | |

ISC: SHEET SIZE ANSI D 25 mm 0

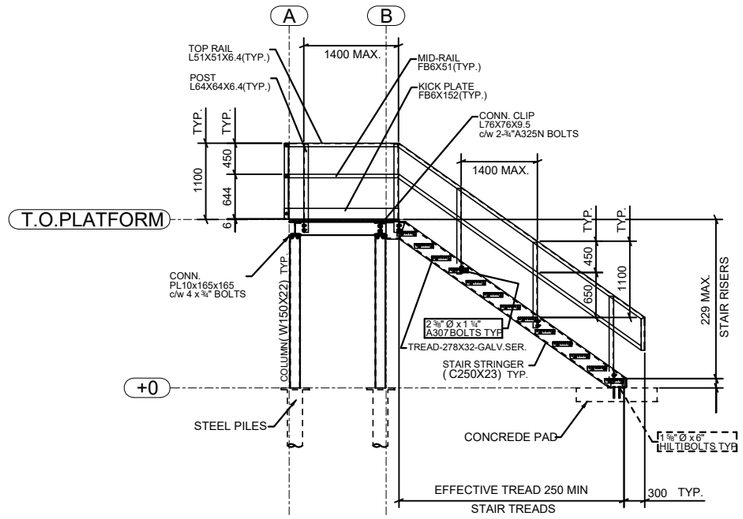
FILE: P:\FLF-22-052\DESIGN DRAFTING\STRUCTURAL\ST-DRFLF-STAIRS TYPE1.DWG | DATE: November 30, 2023 9:37:06 AM



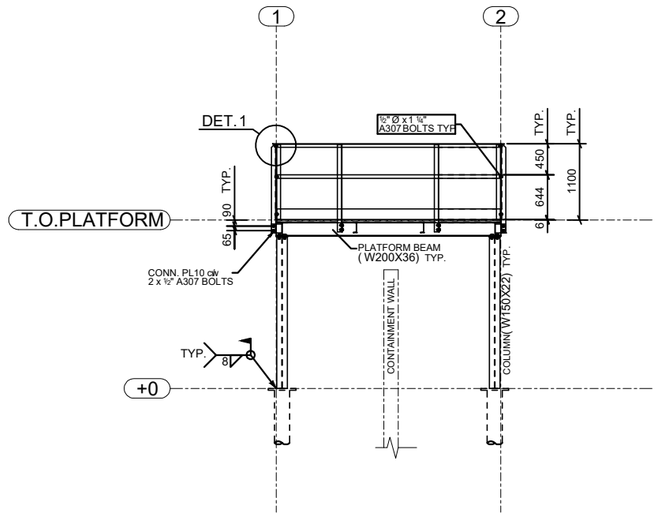

STAIRS WITH PLATFORM - TYPE 2
PLAN VIEW




1 DETAIL
POST CUT




A SECTION




B SECTION

## NOTES

1. DIMENSIONS GIVEN IN METRIC UNITS.
2. STRUCTURAL STEEL MATERIAL AS PER CSA G40.21M.
3. ANY FLIGHT OF STAIRS SHALL HAVE NOT MORE THAN 20 STEPS.
4. IN GENERAL, THERE SHALL BE NOT MORE THAN 40 STEPS WITHOUT CHANGE OF DIRECTION.
5. STAIRWAYS HAVING (4) FOUR OR MORE RISERS OR RISING MORE THAN 760mm SHALL BE EQUIPPED WITH AT LEAST ONE HANDRAIL.
6. CAGE IS NOT REQUIRED WHERE THE LENGTH OF CLIMB IS LESS THAN 2300mm ABOVE GROUND LEVEL.

TDE ThermoDesign

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NAD 83
COORDINATES

| NO. | DESCRIPTION | DATE (YYYY-MM-DD) | BY | APPD |
|---|---|---|---|---|
| A | ISSUED FOR INFORMATION | 2023.11.30 | JZ | DS |

PERMIT

SEAL — DESIGN

SEAL — REVIEW

| | BY | DATE (YYYY-MM-DD) |
|---|---|---|
| DESIGNED | JZ | 2023.11.30 |
| DRAWN | JZ | 2023.11.30 |
| CHECKED | MP | 2023.11.30 |

SCALE
NOT TO SCALE

Calgary

FUTURE ENERGY PARK

PROJECT
**FUTURE ENERGY PARK**
**4615 84th STREET S.E.**
**CALGARY, AB CANADA T2B 3C1**

SEC: - TWP: - RGE: - W th M

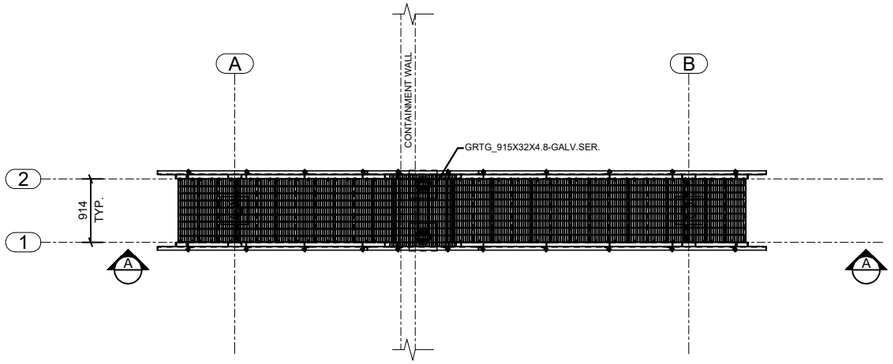
SHEET TITLE
**CONTAINMENT DETAILS**
**AREA 0000**
**STAIR DETAILS**

| FILE NO. | ENG DWG NO. |
|---|---|
| FLF-STAIRS TYPE2.dwg | |
| SHEET ID. | SHEET NO. |
| | C-609 |

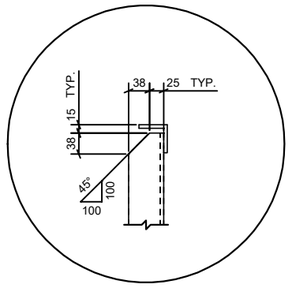
| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | JZ | 2023.11.30 | |

ISC: SHEET SIZE ANSI D 25 mm 0

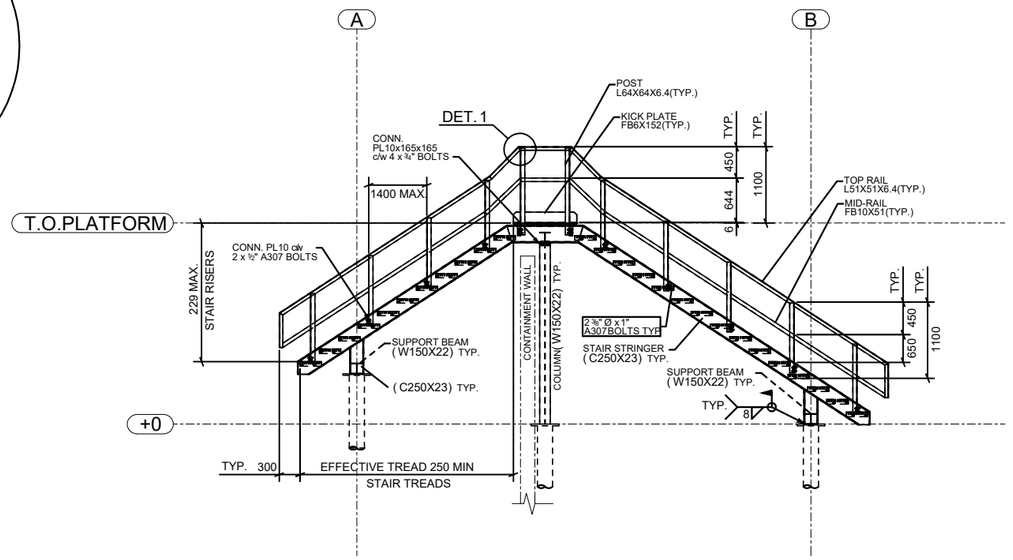
FILE: P:\FLF-22-0026\DESIGN (DRAFTING)\STRUCTURAL\SET-DRFT-F-STAIRS TYPE2.DWG | DATE: November 30, 2023 9:37:51 AM




STAIRS WITH PLATFORM - TYPE3
PLAN VIEW




1 DETAIL
POST CUT




A SECTION

## NOTES

1. DIMENSIONS GIVEN IN METRIC UNITS.
2. STRUCTURAL STEEL MATERIAL AS PER CSA G40.21M.
3. ANY FLIGHT OF STAIRS SHALL HAVE NOT MORE THAN 20 STEPS.
4. IN GENERAL, THERE SHALL BE NOT MORE THAN 40 STEPS WITHOUT CHANGE OF DIRECTION.
5. STAIRWAYS HAVING (4) FOUR OR MORE RISERS OR RISING MORE THAN 760mm SHALL BE EQUIPPED WITH AT LEAST ONE HANDRAIL.
6. CAGE IS NOT REQUIRED WHERE THE LENGTH OF CLIMB IS LESS THAN 2300mm ABOVE GROUND LEVEL.

NAD 83
COORDINATES

| NO. | DESCRIPTION | DATE (YYYY-MM-DD) | BY | APPD |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| A | ISSUED FOR INFORMATION | 2023.11.30 | JZ | DS |

PERMIT

SEAL | SEAL

DESIGN | REVIEW

| | BY | DATE (YYYY-MM-DD) |
|---|---|---|
| DESIGNED | JZ | 2023.11.30 |
| DRAWN | JZ | 2023.11.30 |
| CHECKED | MP | 2023.11.30 |

SCALE
NOT TO SCALE

PROJECT
**FUTURE ENERGY PARK**
**4615 84th STREET S.E.**
**CALGARY, AB CANADA T2B 3C1**
SEC: - TWP: - RGE: - W h M

SHEET TITLE
**CONTAINMENT DETAILS**
**AREA 0000**
**STAIR DETAILS**

| FILE NO. | ENG DWG NO. |
|---|---|
| FLF-STAIRS TYPE3.dwg | |
| SHEET ID. | SHEET NO. |
| | C-610 |

| | BY | DATE (YYYY-MM-DD) | PROFILE NO. |
|---|---|---|---|
| DRAWN | JZ | 2023.11.30 | |

ISC: SHEET SIZE ANSI D 25 mm 0

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