

HOUSING UNITS HEAT TRACE CONTROLLERS:
 WATER SERVICE (UTC 2030-11)
 SANITARY SERVICE (UTC 2030-11)
 COORDINATE INSTALL W/ ELECTRICAL.
 TS1 FOR BOTH WATER & SANITARY SERVICES
 TO BE LOCATED ALONG PIPE IN CRAWL SPACE.



CATTERALL & WRIGHT
 CONSULTING ENGINEERS
 1221 - 8th Street East
 SASKATOON SK S7H 0S5
 Tel: (306) 343-7280, Fax: (306) 956-3199



Association of Professional Engineers & Geoscientists
 of Saskatchewan
 CERTIFICATE OF AUTHORIZATION
CATTERALL & WRIGHT
 Number C848
 Permission to Consult held by:
 Discipline Sk. Reg. No. Signature
 CIVIL 13385



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| Revision/ | Description/Description | Date/Date |
|-----------|-------------------------|------------|
| 0 | ISSUED FOR TENDER | 2015/12/04 |

Project title/Titre du projet

**NEW MODULAR POLICE BUILDING
 AND EMPLOYEE HOUSING
 BLACK LAKE, SASKATCHEWAN**

Approved by/Approve par

Designed by/Concept par

Drawn by/Dessine par

Project Manager/Administrateur de Projets

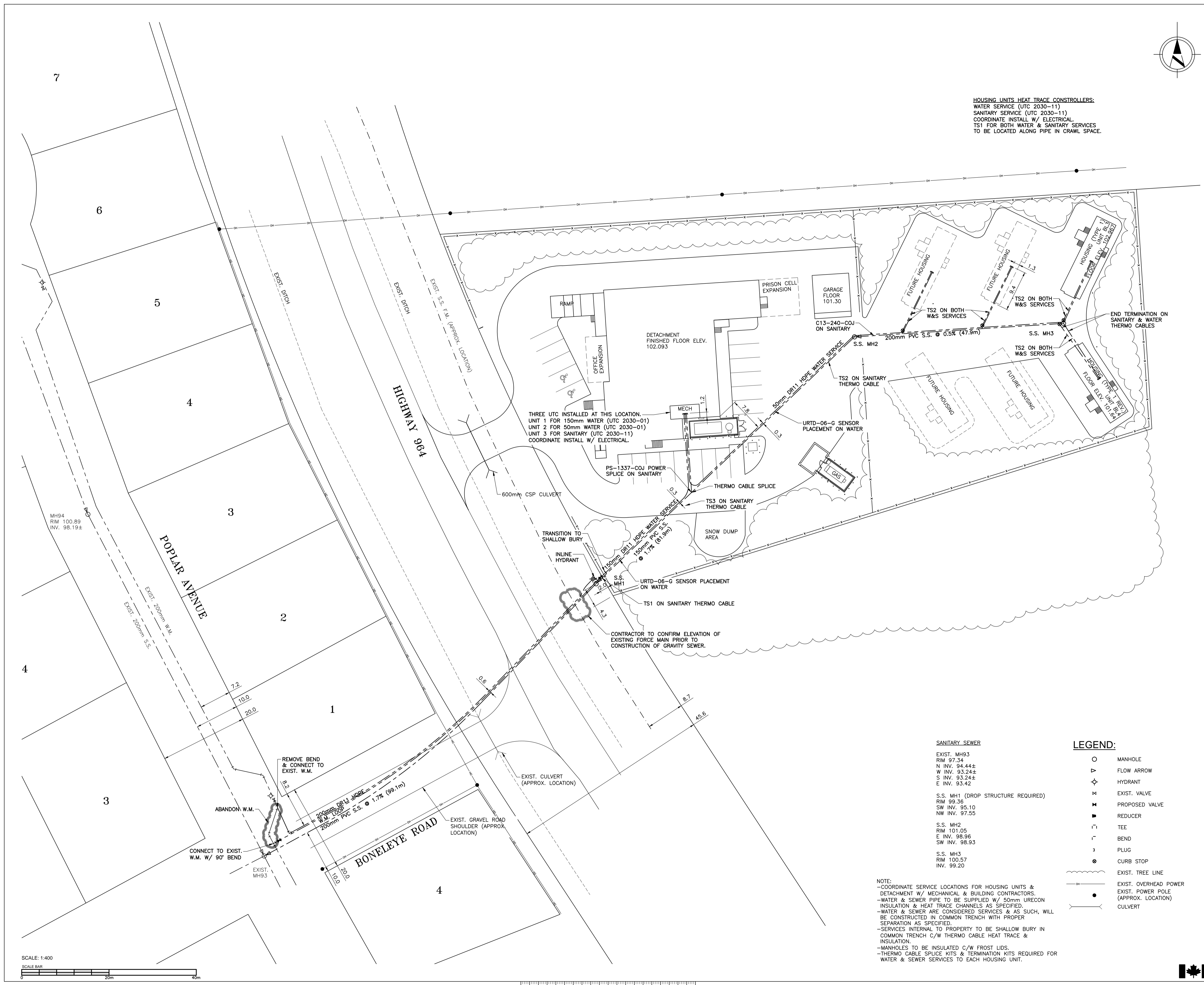
Architectural and Engineering Resources Manager/
 Ressources Architectural et de Directeur d'Ingénierie

Client/client

Drawing title/Titre du dessin

**BLACK LAKE
 SITE SERVICING PLAN**

Project No./No. du projet: **S-03-2014**
 Sheet/Fauille: **C1.0**
 Revision no./La Révision no.: **0**



THREE UTC INSTALLED AT THIS LOCATION:
 UNIT 1 FOR 150mm WATER (UTC 2030-01)
 UNIT 2 FOR 50mm WATER (UTC 2030-01)
 UNIT 3 FOR SANITARY (UTC 2030-11)
 COORDINATE INSTALL W/ ELECTRICAL.

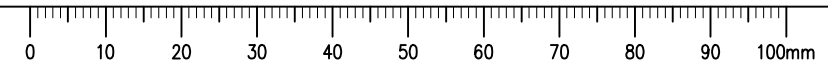
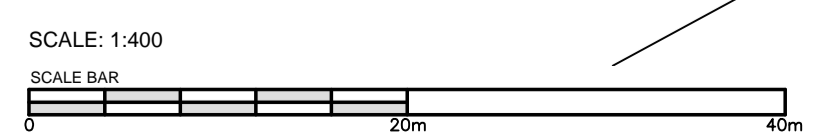
SANITARY SEWER

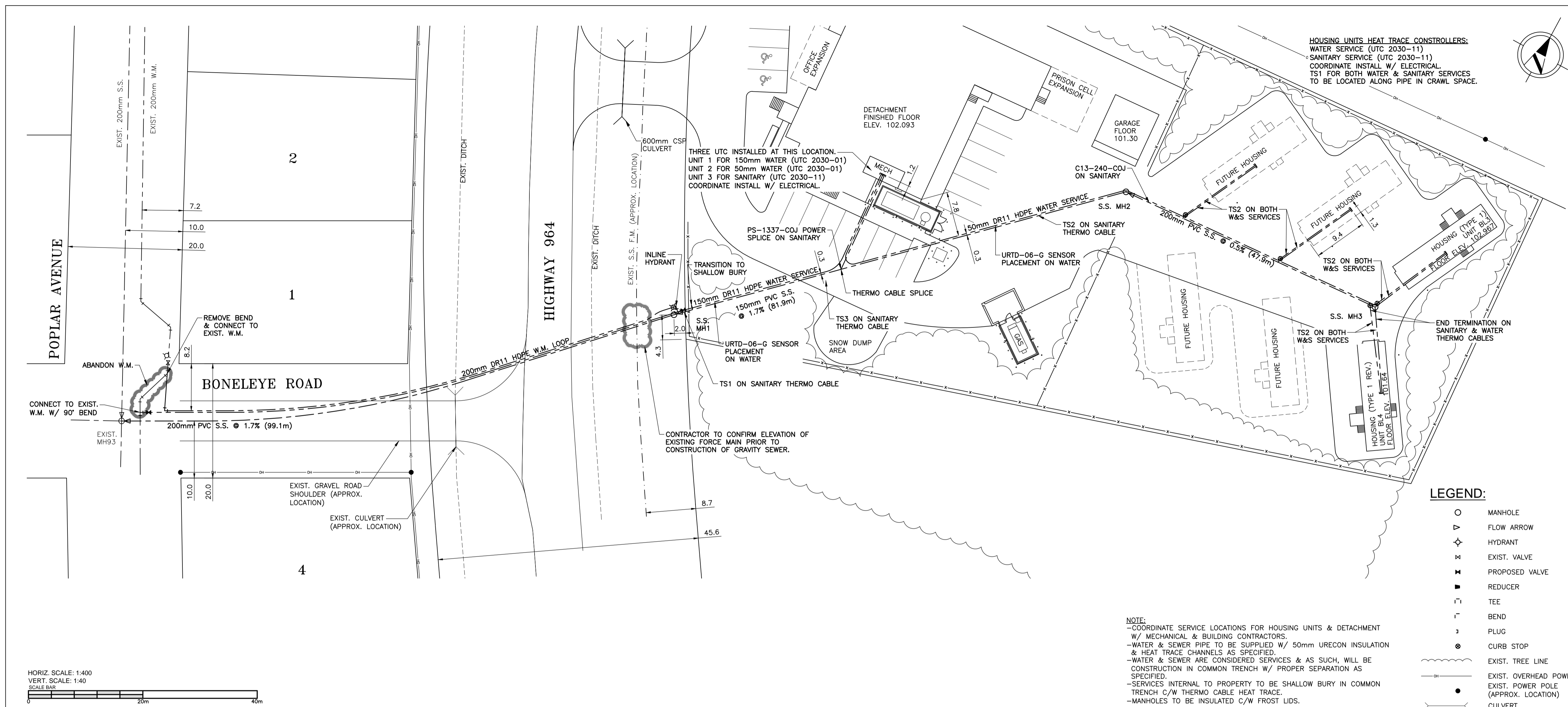
- EXIST. MH93
RIM 97.34
N INV. 94.44±
W INV. 93.24±
S INV. 93.24±
E INV. 93.42
- S.S. MH1 (DROP STRUCTURE REQUIRED)
RIM 99.36
SW INV. 95.10
NW INV. 97.55
- S.S. MH2
RIM 101.05
E INV. 98.96
SW INV. 98.93
- S.S. MH3
RIM 100.57
INV. 99.20

LEGEND:

- MANHOLE
- ▷ FLOW ARROW
- ◇ HYDRANT
- ✕ EXIST. VALVE
- ✕ PROPOSED VALVE
- ▬ REDUCER
- ┌ TEE
- └ BEND
- ⊥ PLUG
- ⊙ CURB STOP
- EXIST. TREE LINE
- EXIST. OVERHEAD POWER
- EXIST. POWER POLE (APPROX. LOCATION)
- CULVERT

NOTE:
 -COORDINATE SERVICE LOCATIONS FOR HOUSING UNITS & DETACHMENT W/ MECHANICAL & BUILDING CONTRACTORS.
 -WATER & SEWER PIPE TO BE SUPPLIED W/ 50mm URECON INSULATION & HEAT TRACE CHANNELS AS SPECIFIED.
 -WATER & SEWER ARE CONSIDERED SERVICES & AS SUCH, WILL BE CONSTRUCTED IN COMMON TRENCH WITH PROPER SEPARATION AS SPECIFIED.
 -SERVICES INTERNAL TO PROPERTY TO BE SHALLOW BURY IN COMMON TRENCH C/W THERMO CABLE HEAT TRACE & INSULATION.
 -MANHOLES TO BE INSULATED C/W FROST LIDS.
 -THERMO CABLE SPLICE KITS & TERMINATION KITS REQUIRED FOR WATER & SEWER SERVICES TO EACH HOUSING UNIT.

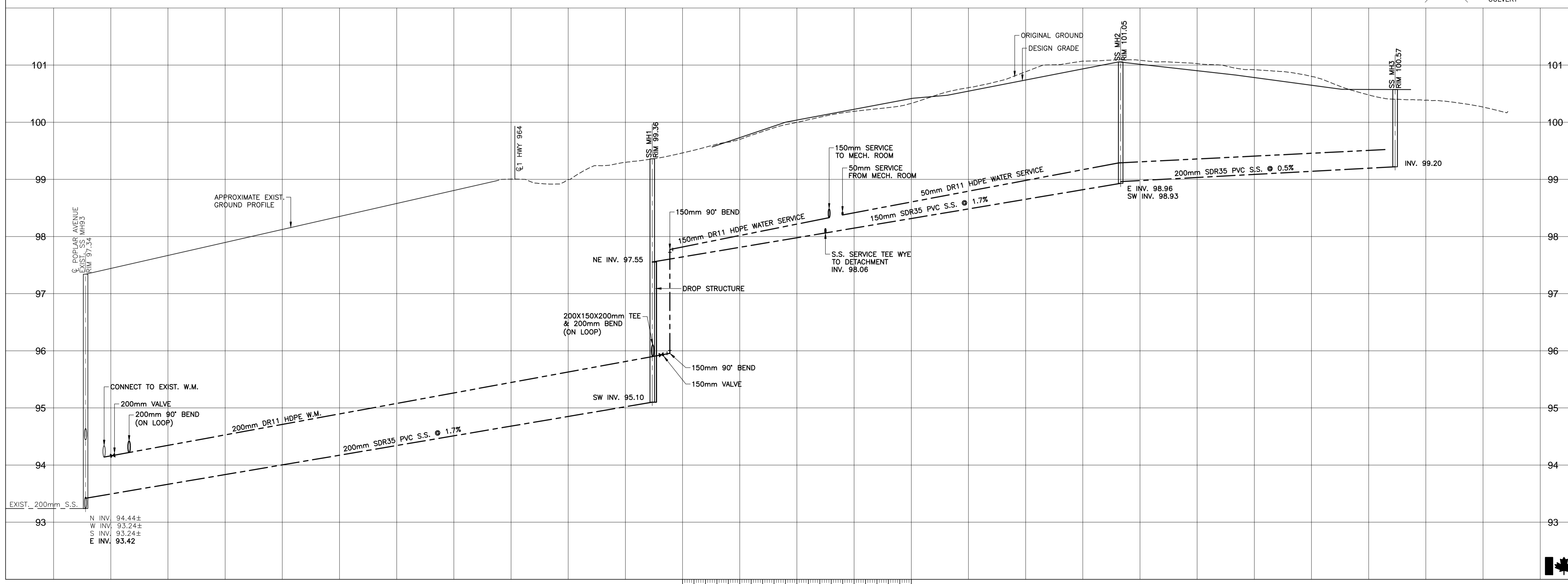
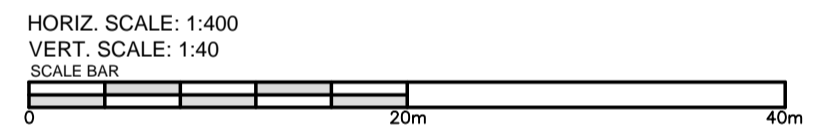




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PROFESSIONAL ENGINEER
 B. A. LAROCHE
 MEMBER 13385
 15 12 16
 YR. MN. DAY
 SASKATCHEWAN

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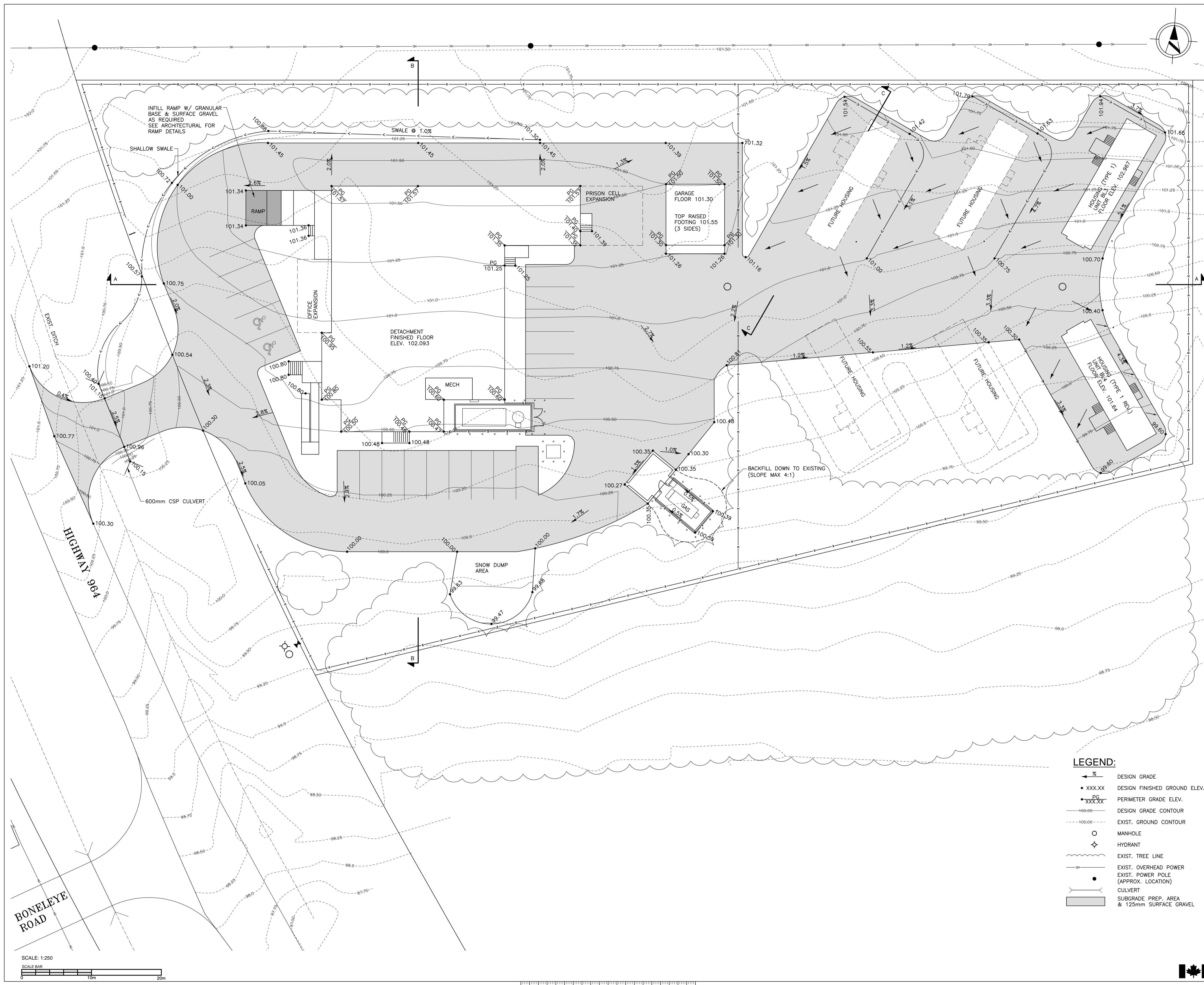
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Project title/Titre du projet
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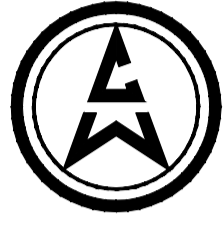
Drawing title/Titre du dessin
BLACK LAKE SEWER & WATER PLAN & PROFILE

| Project No./No. du projet | Sheet/Fauille | Revision no./La Révision no. |
|---------------------------|---------------|------------------------------|
| S-03-2014 | C2.0 | 0 |



SEPW Architecture Inc.
 103-3725 Pelly Street Regina, SK S4S 0A8 ph: (306) 969-2255
 102-3718 Kenebec Place Saskatoon SK S7P 2A6 ph: (306) 953-6457
 website: www.sepw.ca

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 CONSULTING ENGINEERS
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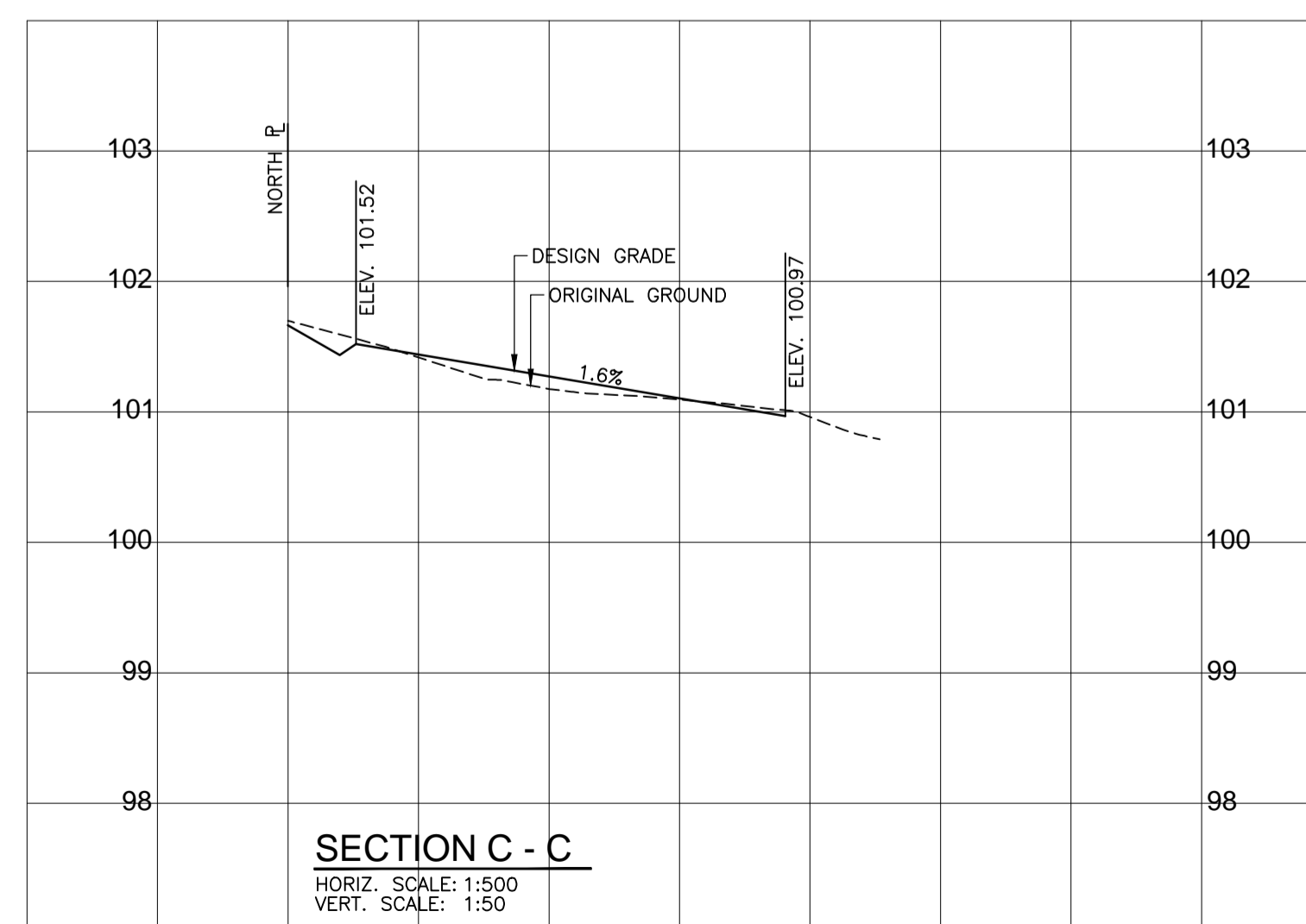
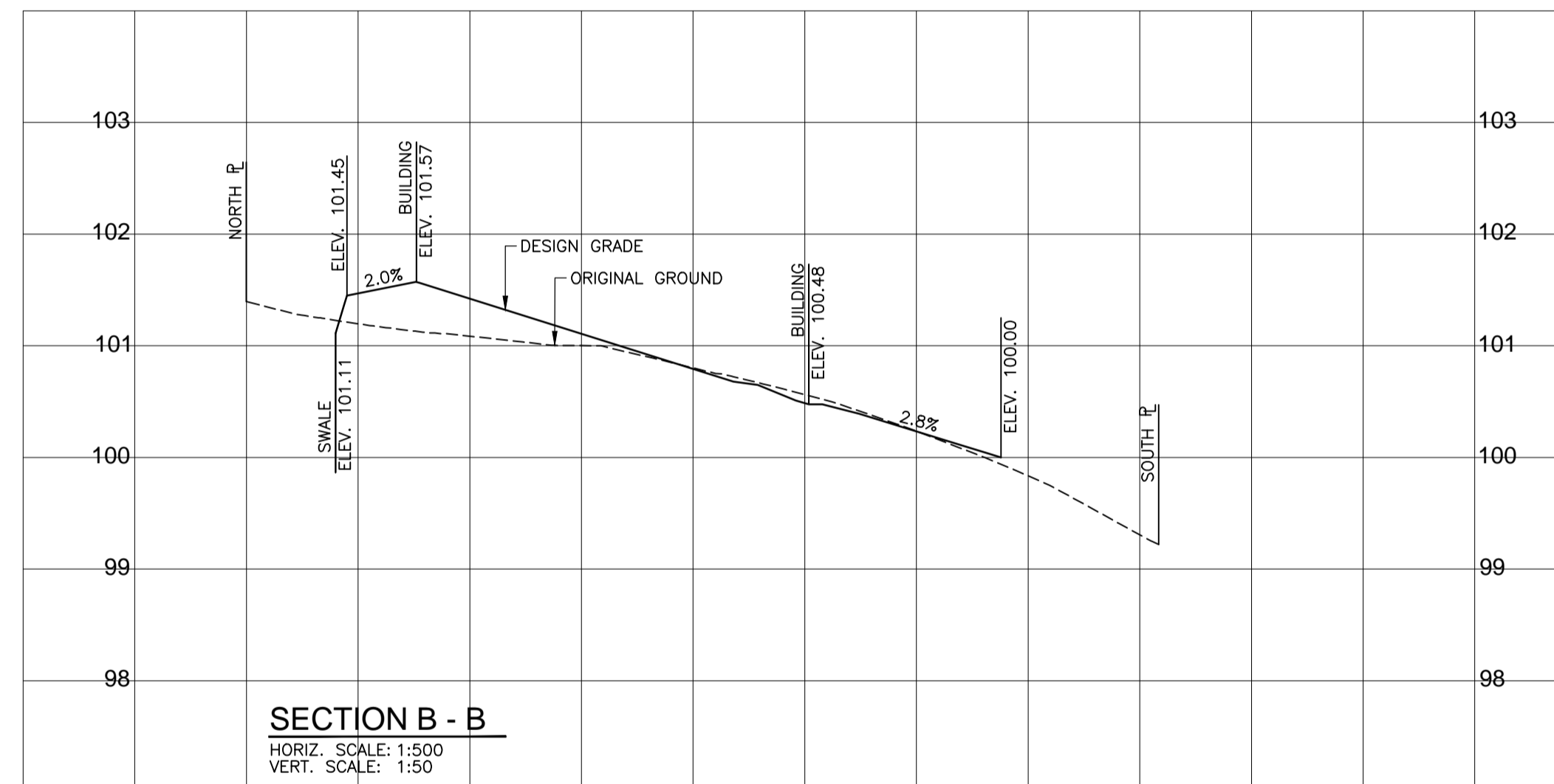
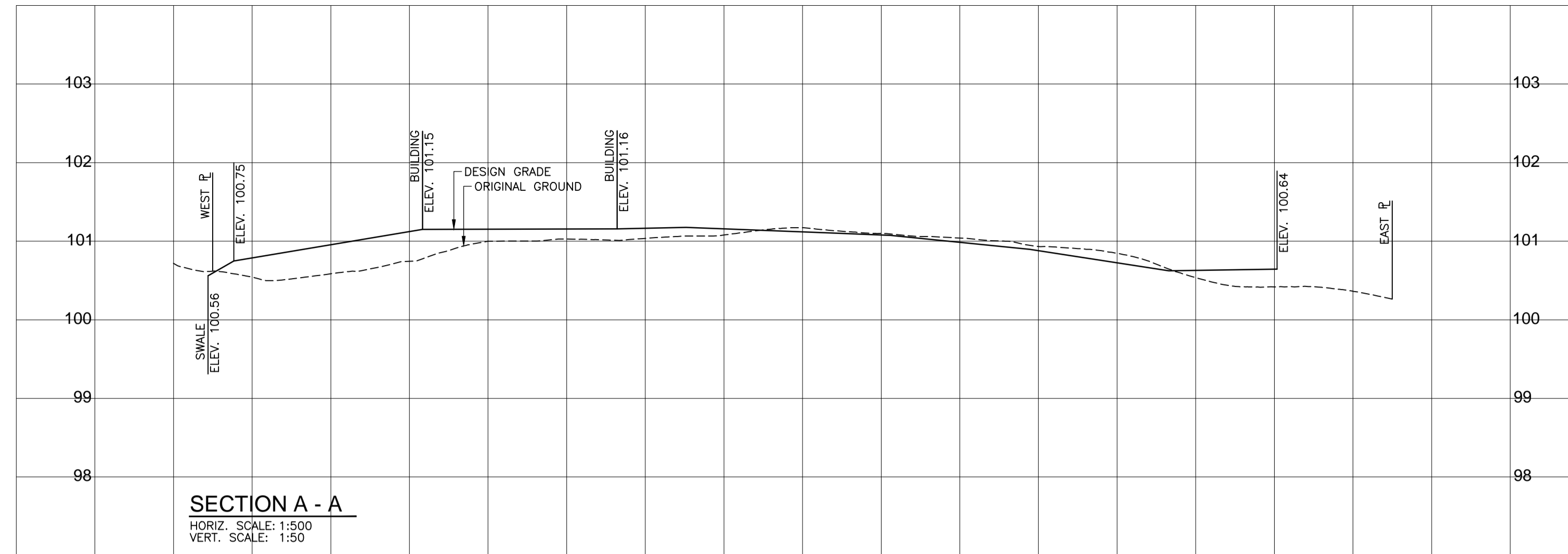
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**BLACK LAKE
 SITE GRADING PLAN**

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|---------------------------|---------------|------------------------------|
| S-03-2014 | C3.0 | 0 |

- LEGEND:**
- %— DESIGN GRADE
 - XXX.XX DESIGN FINISHED GROUND ELEV.
 - PG PERIMETER GRADE ELEV.
 - 100.00— DESIGN GRADE CONTOUR
 - - - - - EXIST. GROUND CONTOUR
 - MANHOLE
 - ◇ HYDRANT
 - |— EXIST. TREE LINE
 - |— EXIST. OVERHEAD POWER
 - EXIST. POWER POLE (APPROX. LOCATION)
 - |— CULVERT
 - ▨ SUBGRADE PREP. AREA & 125mm SURFACE GRAVEL

SCALE: 1:250
 SCALE BAR
 0 10m 20m



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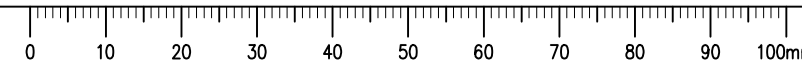
Architectural and Engineering Resources Manager/
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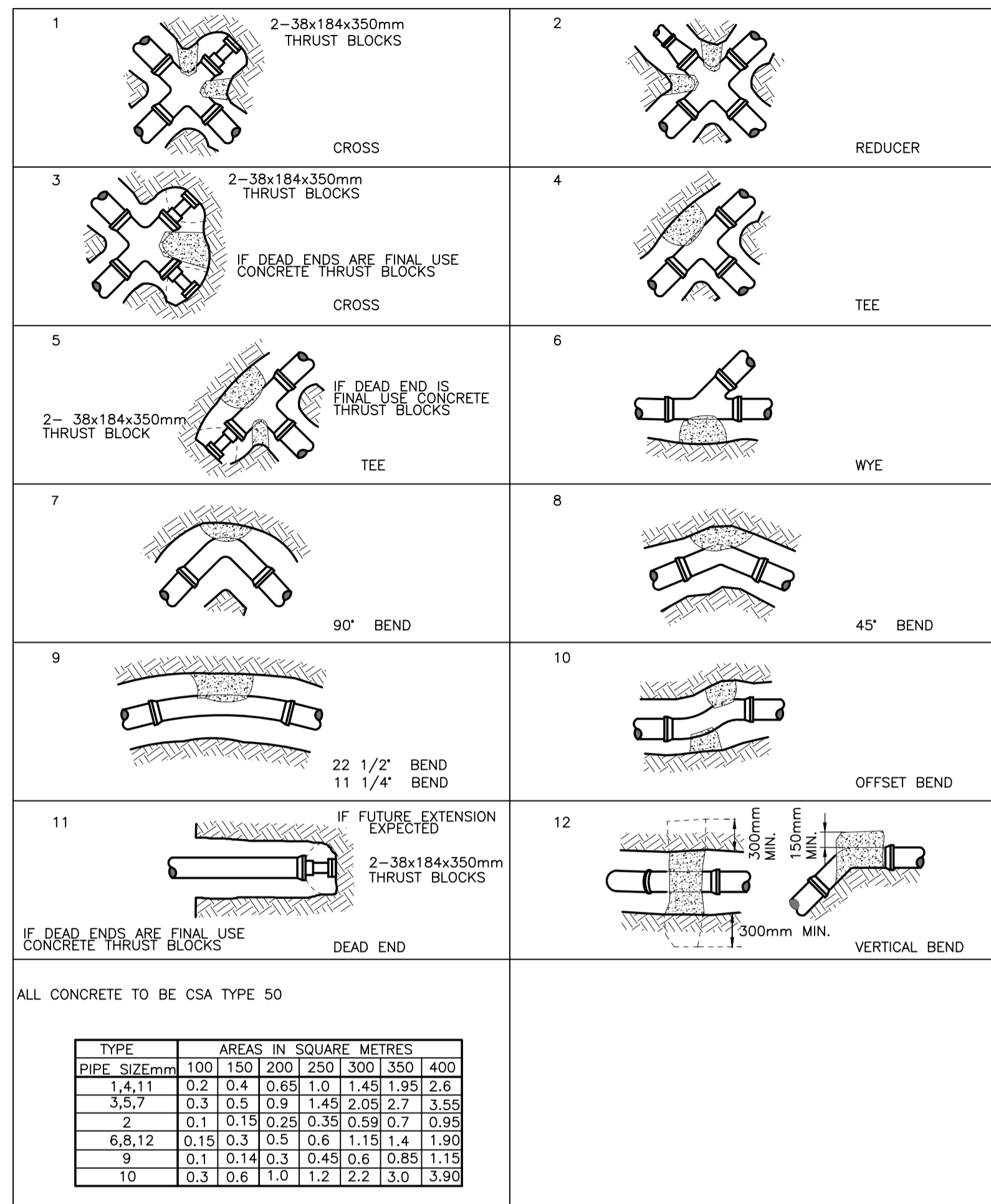
Client/client

Drawing title/Titre du dessin

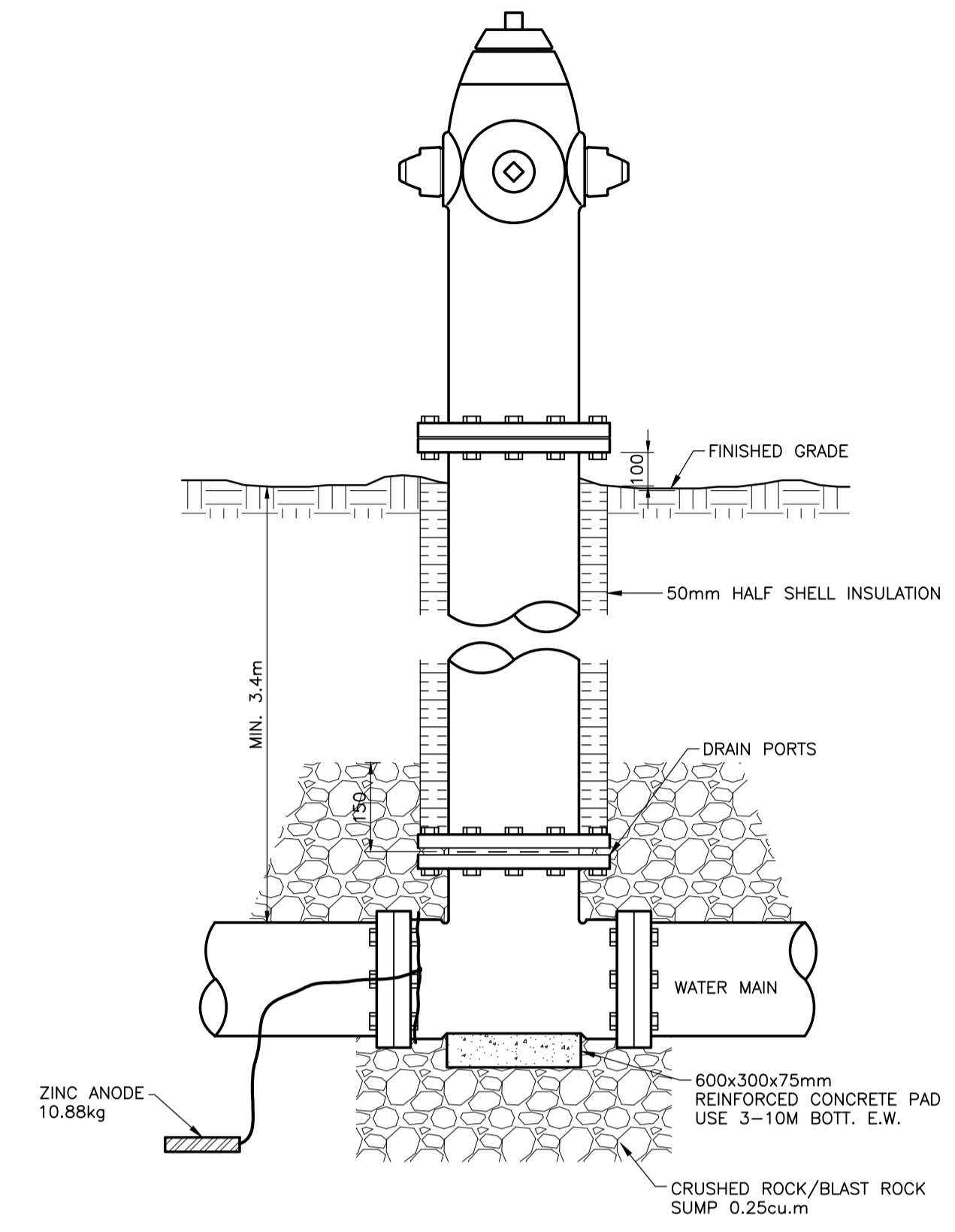
**BLACK LAKE
 SITE GRADING SECTIONS**

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| S-03-2014 | C4.0 | 0 |

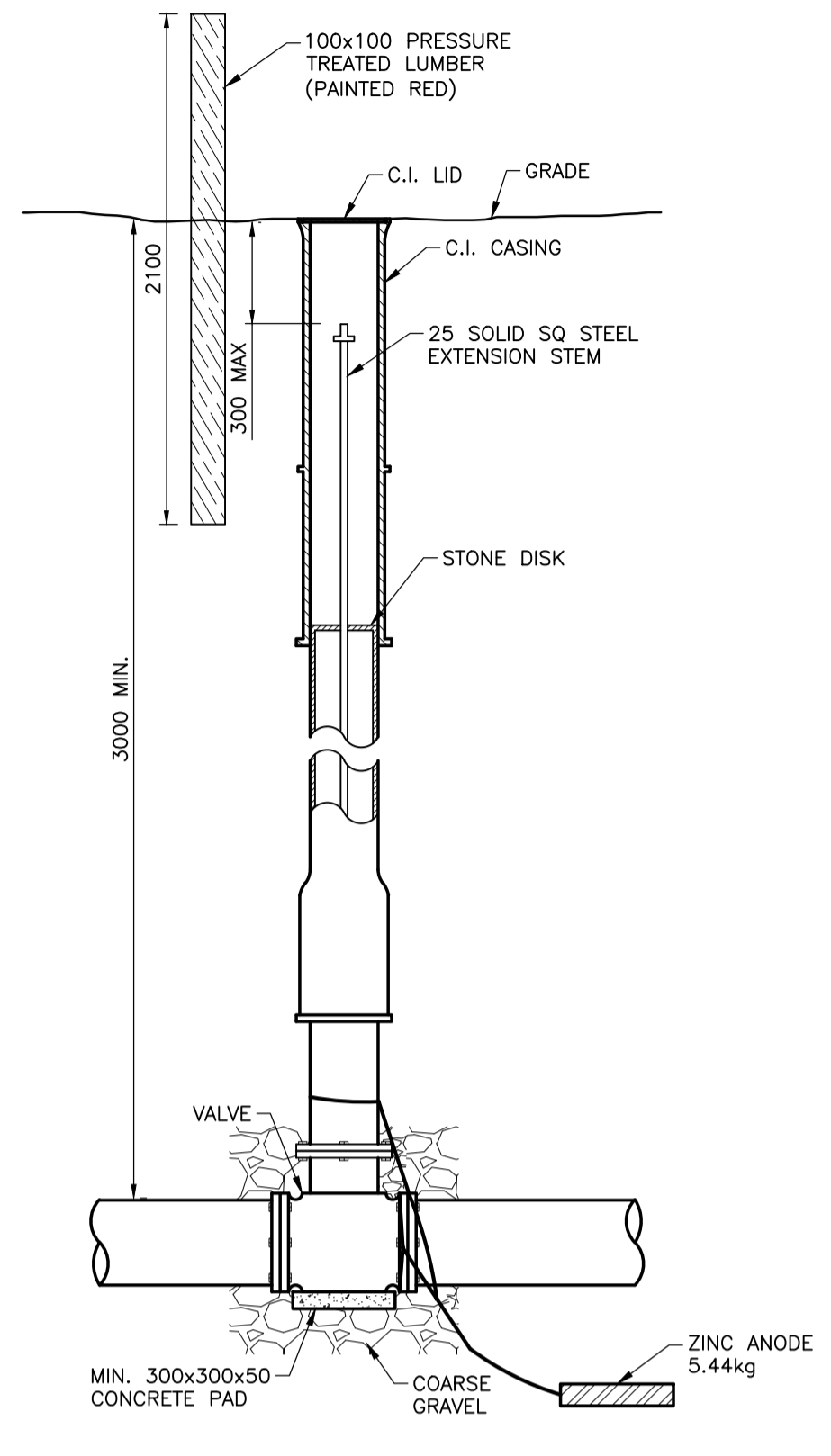




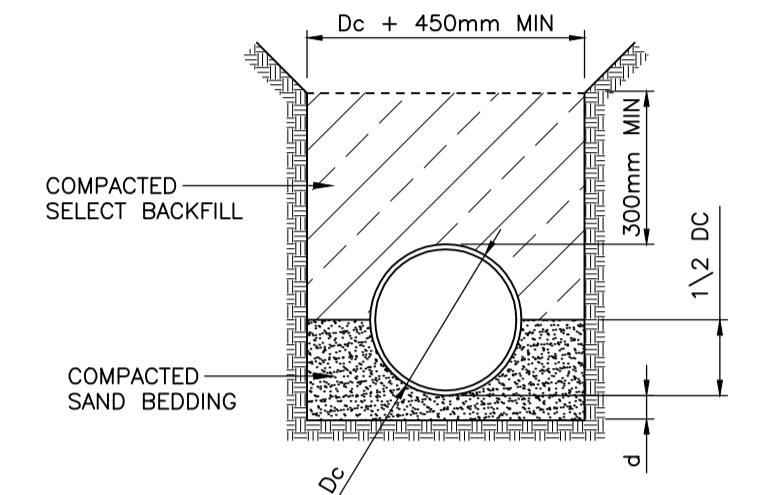
THRUST BACKING DETAILS
SCALE: N.T.S.



ONLINE HYDRANT DETAIL
SCALE: N.T.S.



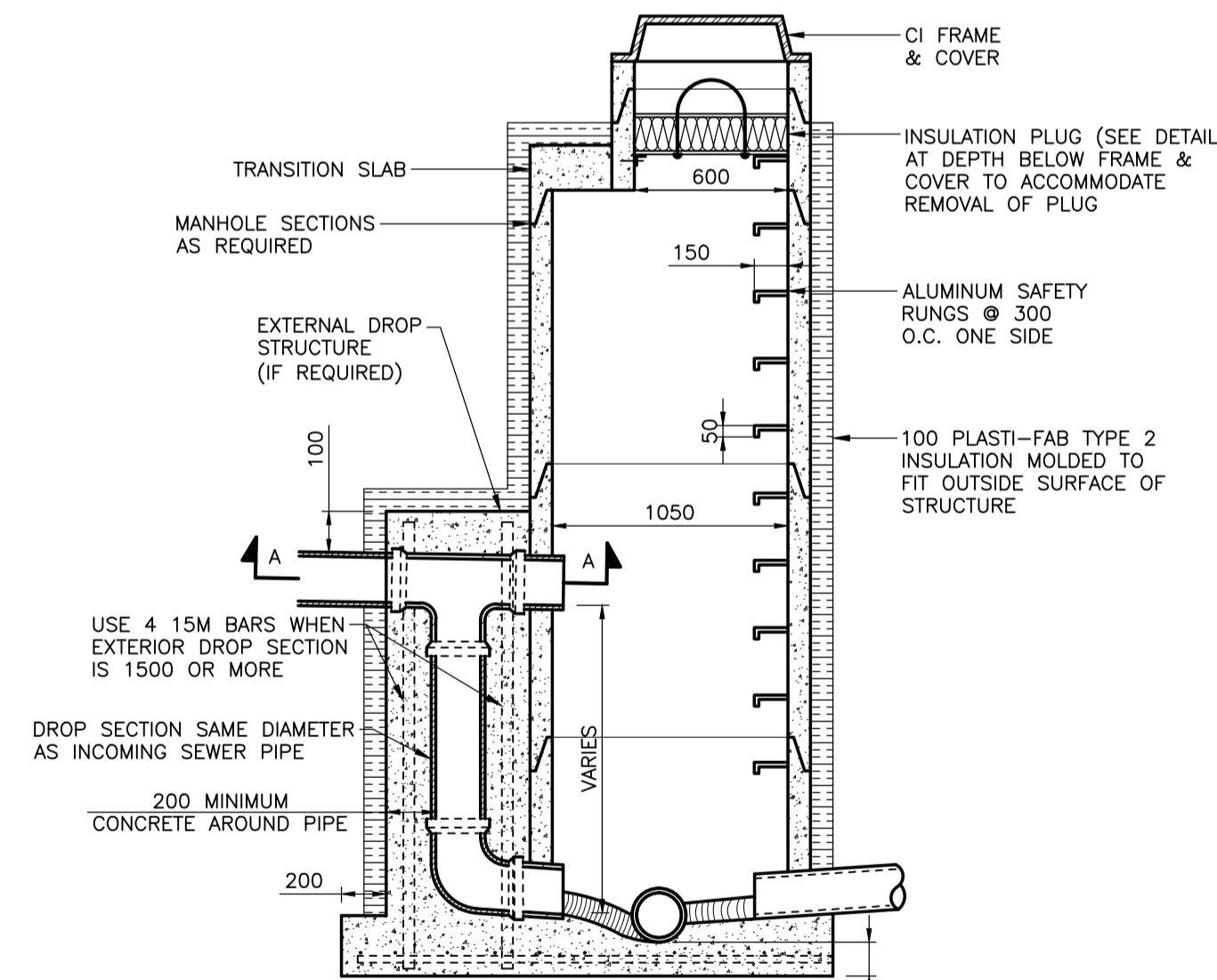
VALVE DETAIL
SCALE: N.T.S.



- NOTES:
 1. SELECT BACKFILL TO BE FREE OF ALL LUMPS, STONES AND SUBSTANCES WHICH COULD REACT CHEMICALLY WITH PIPE MATERIAL.
 2. PNEUMATIC OR MECHANICAL EQUIPMENT SHALL BE USED TO COMPACT THE BEDDING MATERIAL AND SELECT BACKFILL MATERIAL.
 3. MINIMUM BEDDING REQUIREMENT FOR CLASS B SOIL TYPES.

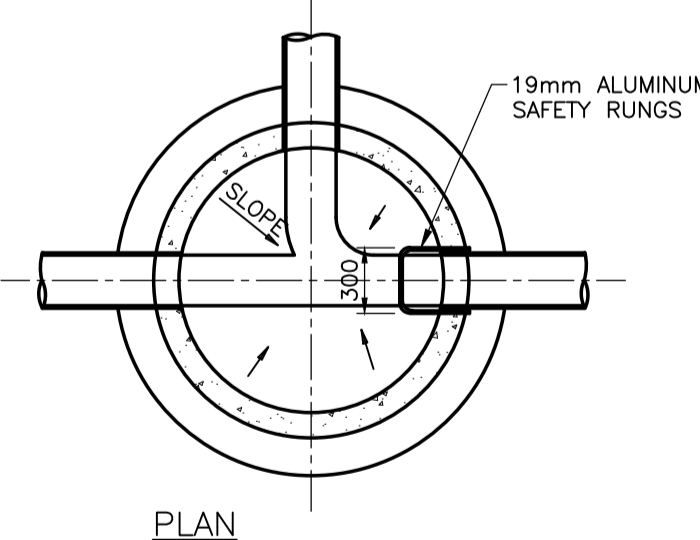
| BEDDING MAT. BELOW PIPE | LEGEND |
|-------------------------|--------|
| D | d(MIN) |
| 450mm & SMALLER | 80mm |
| 1050mm TO 100mm | 100mm |
| 1200mm TO 1650mm | 150mm |
| 1800mm & LARGER | 200mm |

PIPE BEDDING DETAIL
SCALE: N.T.S.

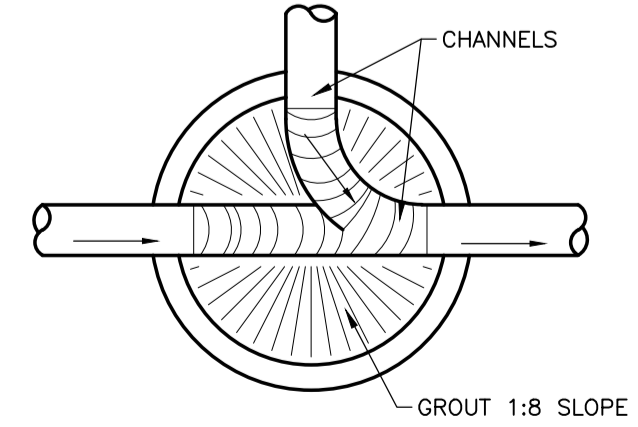


SECTION THROUGH MANHOLE

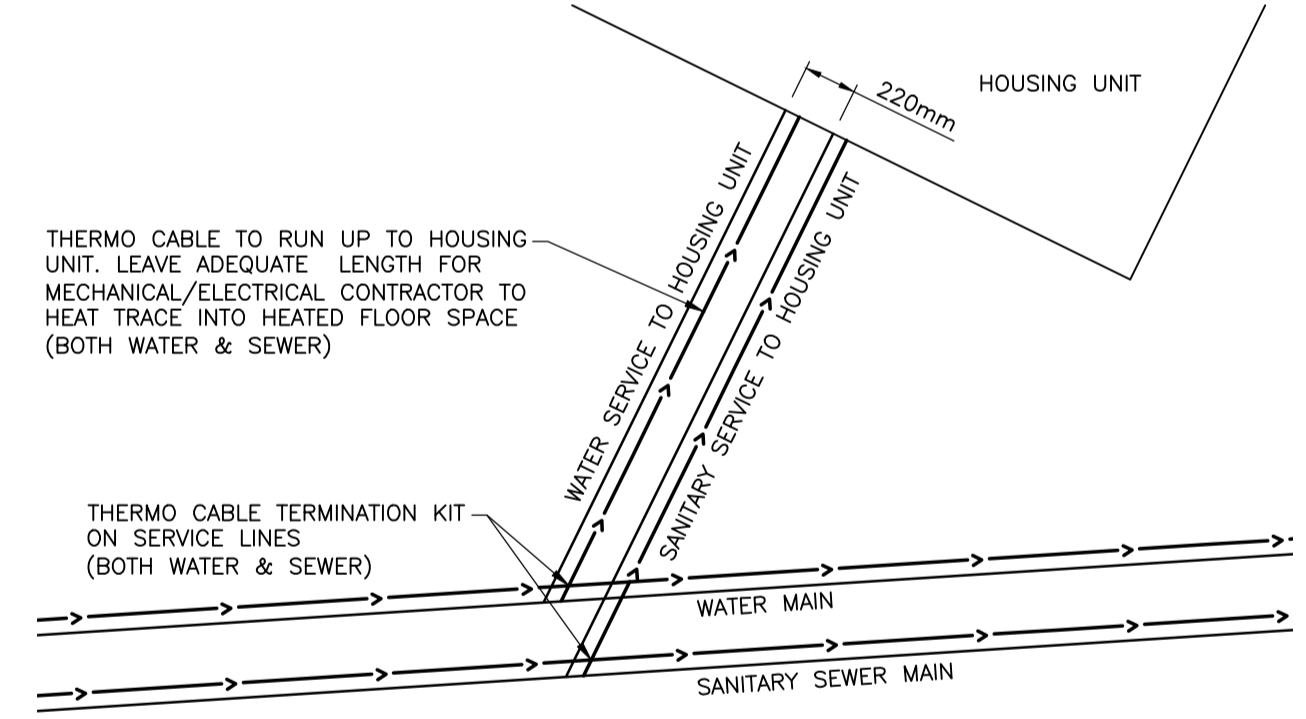
- NOTES:
 1. EXTERNAL DROP STRUCTURE REQUIRED WHEN INVERT OF INLET PIPE IS 750mm OR MORE ABOVE INVERT OF OUTLET PIPE.
 2. ALL CAST IN PLACE CONCRETE TO BE 20MPa CSA TYPE 50.
 3. SAFETY PLATFORMS REQUIRED FOR MANHOLES WITH DEPTHS GREATER THAN 6.0 METERS & ARRANGE IN SUCH A MANNER SO THAT NO VERTICAL FALL DISTANCE EXCEEDS 5.0 METERS OR IS LESS THAN 2.4 METERS.
 4. MANHOLE RUNGS SHALL BE ORIENTED TO PROVIDE A CLEAR LANDING AT BASE.
 5. GROUT FLOW CHANNELS IN MANHOLE BASE AT LEAST 1/2 OF THE DIAMETER OF THE PIPE. SLOPE M.H. FLOOR TOWARDS FLOW CHANNELS.



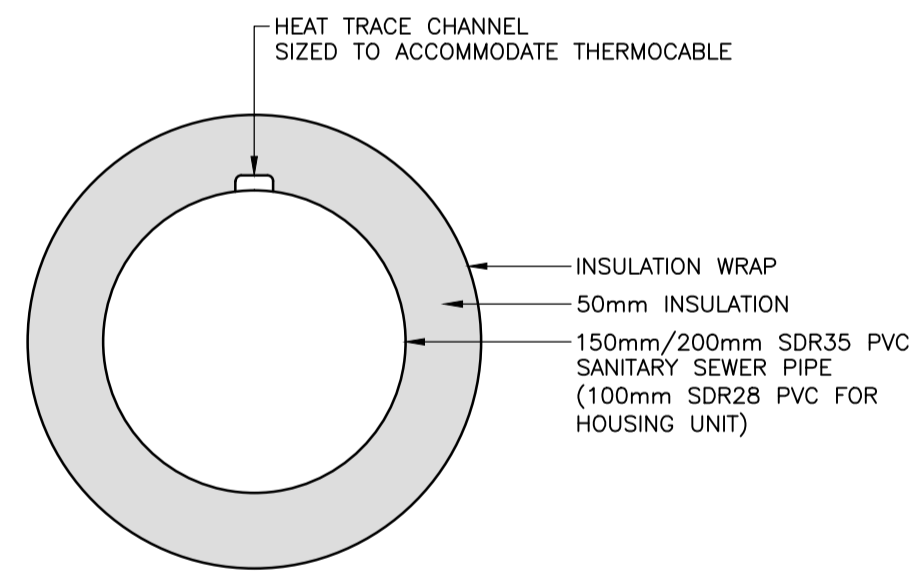
PLAN



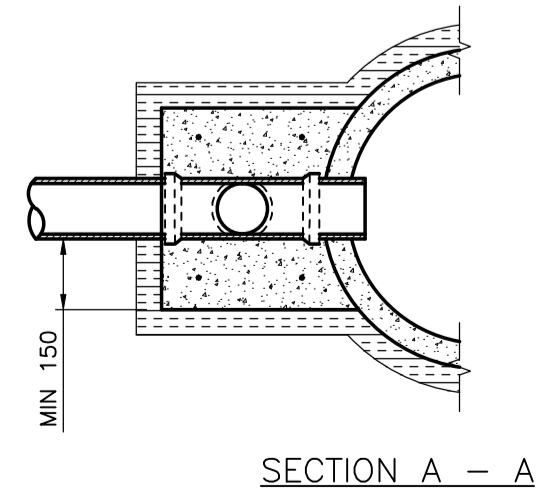
GROUTING DETAIL



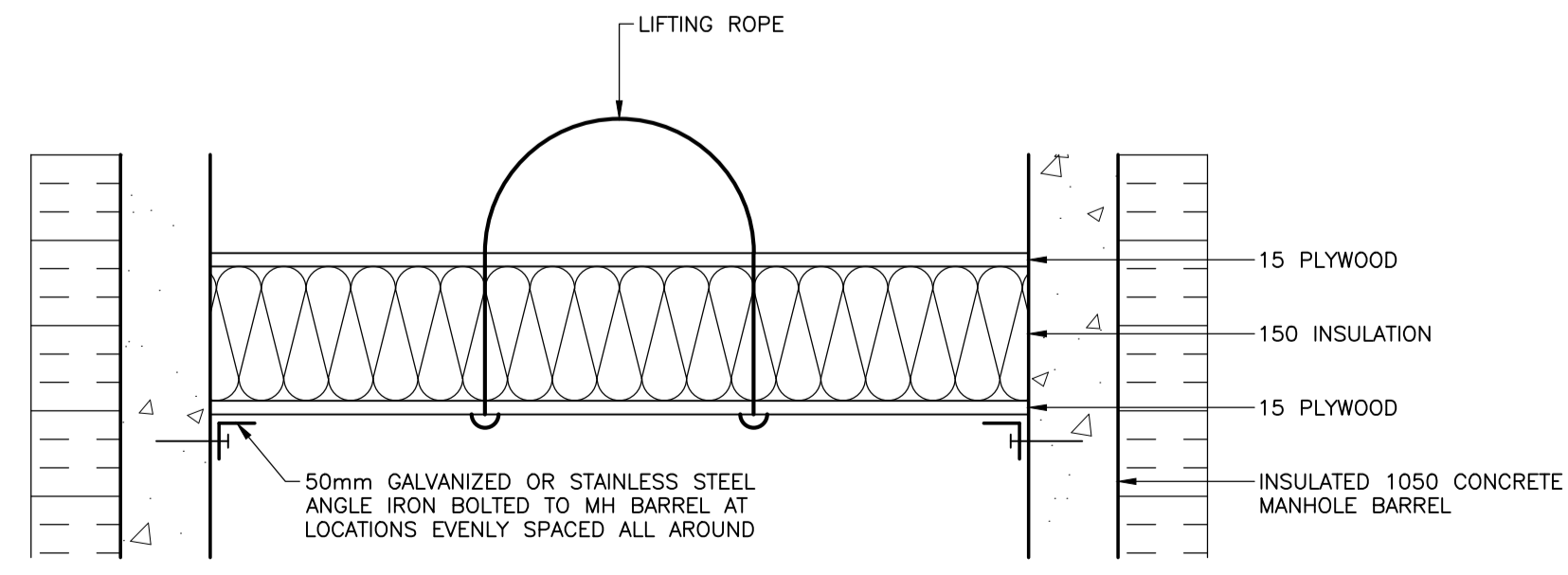
HEAT TRACING CHANNELS SCHEMATIC FOR HOUSING UNIT - DETAIL
SCALE: N.T.S.



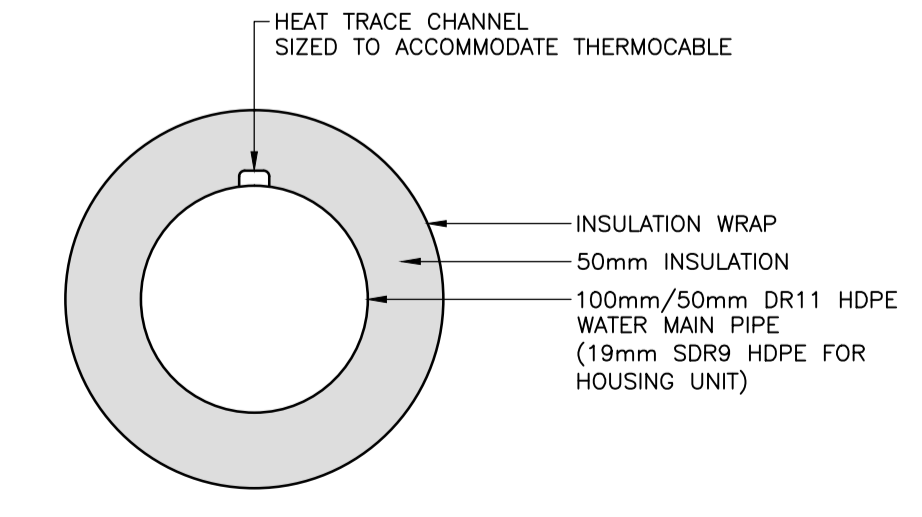
SANITARY SEWER URECON PIPE INSULATION DETAIL
SCALE: N.T.S.



INSULATED MANHOLE DETAIL
SCALE: N.T.S.



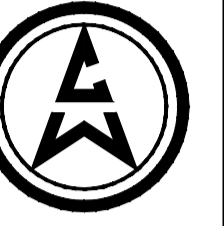
INSULATION PLUG DETAIL
SCALE: N.T.S.



WATER MAIN URECON PIPE INSULATION DETAIL
SCALE: N.T.S.



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