## Council

# NEW LOADING RAMP – MOUNT BARKER REGIONAL SALEYARDS

Detailed Plans – Loading Ramp

Meeting Date: 17 July 2018

Number of Pages: 15

### GENERAL

- GL. THESE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH EXISTING STRUCTURAL DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH THE WORK.
- G2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT STANDARDS AUSTRALIA CODES, THE BUILDING CODE OF AUSTRALIA, AND STATUTORY Q.H.S.AR. REQUIREMENTS.
- G3. ALL DIMENSIONS SHOWN ON THESE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE BUILDER ON SITE. THESE STRUCTURAL DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
- G4. UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- G. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERLOADED. TEMPERATY BRADING SHALL BE PROVIDED BY THE CONTRACTOR IN GROEN TO KEEP THE BUILDING WORKS AND EXCAVATIONS STABLE AT ALL THES.

### SITE PREPARATION, CLEARING AND GRUBBING

- SI. ALL WORK TO BE IN ACCORDANCE WITH AS 3798 U.N.O.
- 52. BYERTING WATER AND DEWATERING THE CONTRACTOR SHALL TAKE ALL HELESSARY ACTION TO PREVIOUS HAVE SURFACE OR SUSSOL WATER HOW INTERPEDING WITH THE REPORT HAVE SURFACE OR SUSSOL WATER HOW INTERPEDING WITH THE REPORT HAVE SUBJECT TO REMOVE THE SHALL BE CENTRED PRIOR TO VIOLOGISH IN THOSE AREAS, MY WORK OR DAMAGED BY MATER FROM ANY SURFACE SHALL BE REMOVED, REALABOR THIS REMOVED, RESTAULTED IN THE CONTRACTOR.
- 53. THE SITE AREA SUBJECT TO NEW WORKS IS TO BE CLEARED OF ALL VEGETATION, FALLEN TIMBER, RUBBISH, DEBRIS AND CONCRETE FOUNDATIONS.

#### **FOOTINGS**

- FL FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 100 MPa.
- F2. FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.
- F4. FOOTINGS SHALL BE CONSTRUCTED AND BACKFILLED AS SOON AS POSSIBLE FOLLOWING EXCAVATION TO AVOID EITHER SOFTENING OF THE FOUNDING MATERIAL OR DRYING OUT BY SEPOSLIPE.
- FS. EXCAVATE FOR FOOTINGS TO THE NOMINATED SIZE AND DEPTH.

### CONCRETE

- CI. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS 3600 AND AS 3610 FORMWORK FOR CONCRETE, INCLUDING AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- C2. PRE-MIXED CONCRETE SUPPLY SHALL COMPLY WITH AS 1379.
- CI. CONCRETE QUALITY.

ELEMENT	STRENGTH GRADE (MPa)	SLUMP (mm)	MAX. AGG. SIZE (mm)	
FOUNDATIONS	N25	80	30	
SLAB ON FILL	N25	80	20	
RETAINING WALL	N25	80	30	

- CA. PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379.
- C5. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
- C6. CLEAR COVER TO REINFORCEMENT SHALL BE -

FOOTING	65mm BOTTOM AND SIDES IF CAST AGAINST
	GROUND, OTHERWISE 50mm
SLAB ON GROUND	25mm TOP COVER
RETAINING WALL	CENTRAL MESH

- C7. CONCRETE SIZES SHOWN DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- CO. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE HADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
- C9. WHERE NOT SHOWN ON THE STRUCTURAL DRAWINGS, CONSTRUCTION JOINTS SHALL BE LOCATED TO THE APPROVAL OF THE STRUCTURAL ENGINEER.
- C19. THE FINSHED CONCRETE SHALL BE A DDISE HOMOGENEOUS HASS, COMPLETELY FILLING THE FORMHORK THEROUGHLY EMBEDONG THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUMING FOOTINGS AND SLADS ON GROUND SHALL BE COMPACTED WITH HECHANICAL VIBRATORS.
- CIT. CURNIC OF ALL CONCRETE IS TO BE ACHEVED BY NEIPPMS SURFACES CONTINUOUSLY WET FOR A PERSON OF 3 DAYS, OR BY PREVIETION OF 1055 OF HOSTLINE FOR A TOTAL OF 7 DAYS FOLLOWIDD BY A GRADUAL CHRISTING OUT, APPROVED SHAPP—AND CURRISK GORDON THAT CLORELY WITH A 5 TYP HAY 3 E USED WHITE FLOOR FRUNCES WILL HAVE THE APPEXET OR BETTER AMMAGATURESE SECREPATIONS IN, A PHYSICE SHEET WAS ON WET HE SSAM HAY BE USED TO RETAIN CONCRETE MISSTURE WHERE PROTECTED FROM WHID AND TRAFFE.
- C12. CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVER-STRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING, NO BRICKWORK OR PARTITION WALLS ARE TO BE CONSTRUCTED ON SUSPENDED LEVELS UNTIL ALL PROPPING IS REPOVED AND THE SLAB HAS ABSORDED ITS DEAD LOAD DEFLECTION.

## STRUCTURAL NOTES

#### REINFORCEMENT

- R1. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
- R2. SITE BENDING OF REINFORCING BARS SHALL BE DONE WITHOUT HEATING USING
- R3. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER. IF PERMITTED WELDING IS TO BE CARRIED AT IM ACCROPING WITH AS INZR 5554.3
- R4. REBFORCEMENT SYMBOLS:R DENOTES GRADE SISE NOT BOLLED PLAN BARS TO AS/NZS 4-671.
  N DENOTES GRADE DENO REGENERD BARS TO AS/NZS 4-671.
  SL et RL DENOTES SQUARE OR RECTANDALAR GRAD DEFORMED REPORCED FARSK GRADE DSNL TO AS/NZS 4-671.
  L ... TH DENOTES TREDITIONES GRADE DSNL TO AS/NZS 4-671.
- RS. REINFORCEMENT NOTATION:-

NUMBER OF BARS IN GROUP

ANZO-200

SPACING IN INIT

- R6. REINFORCEMENT LAYERS DENOTED THUS (UJLO,)TT DENOTES TOP BARS LAID LAST
  T DENOTES TOP BARS LAID HISST
- T DENOTES TOP BARS LAID FIRST
  B DENOTES BOTTON BARS LAID SECOND
- R7. WHERE TRANSVERSE TIE BARS ARE NOT SHOWN PROVIDE N12-300 SPLICED WHERE NECESSARY AND LAP WITH MAIN BARS 500\*\*\*, UNLESS MOTED OTHERWISE.
- RR. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON HILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCEPTE CHAIRS AT NOT GREATER THAN 14ETRE CENTERS BOTH WAYS FOR BASK OR FROM CONTREST CHAIRS OR FARK, IN EXPOSURE CONDITION B2 OR C USE ONLY PLASTIC OR CONCRETE CHAIRS, BARS SHALL BE TIED AT ALTERNATE INTERSECTION.
- R9. SPLICES IN THE REINFORCEMENT SHALL BE HADE ONLY IN THE POSITIONS SHOWN.
  THE WRITTEN APPROVAL OF THE ENGINEER SHALL BE OBTAINED FOR AIM OTHER
  SPLICES. WHERE THE LAP LENGTH IS NOT SHOWN IT SHALL BE AS PER THE MINIMUM LAP
- R10. MINIMUM LAP LENGTHS FOR BARS IN TENSION (U.N.O.) SHALL BE-

BAR SIZE	NIZ	N16	N20	N24	N28	N32
WALLS AND SLABS LESS THAN 320mm THICK (K <sub>1</sub> = 1.0, K <sub>2</sub> = 1.7)	400	650	900	1200	1550	1900
BEAMS (K <sub>1</sub> = 1.25, K <sub>2</sub> = 2.2)	500	750	1100	1500	1950	2400

FOR K1 & K2 REFER TO AS 3600 SECTION 13.1.2.1.

RII. TYPICAL FABRIC LAPI-



- R12. BUNDLED BARS SHALL BE TIED TOGETHER AT 30 BAR DIAMETER CENTRES WITH 3 WRAPS OF WIRE.
- RIS. JOGGLES TO BARS SHALL BE 1 BAR DIAMETER OVER A LENGTH OF 12 BAR DIAMETERS.
- R14. THE STRUCTURAL ENGINEER SHALL BE GIVEN 48 HOURS NOTICE FOR REMFORCEMENT INSPECTION AND CONCRETE SHALL NOT BE DELIVERED UNTIL FINAL APPROVAL HAS BEEN GOTAINED.

### STRUCTURAL STEELWORK

SS1. ALL WORKHANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH AS/NZS 4:00. FABRICATION SHALL BE CARRIED OUT IN ACCORDANCE WITH SECTION 14 OF AS/NZS 4:00. ERICTION SHALL BE CARRIED OUT IN ACCORDANCE WITH SECTION SHALL BE CARRIED OUT IN ACCORDANCE

SS2. UNLESS NOTED OTHERWISE, ALL STEEL SHALL BE OF THE FOLLOWING GRADES IN ACCORDANCE WITH THE FOLLOWING AUSTRALIAN STANDARDS:-

TYPE OF STEEL	GRADE
UNIVERSAL BEAMS AND COLUMNS, PARALLEL FLANGE CHANNELS, LARGE ANGLES TO AS/NZS 3679,1	300
WELDED SECTIONS TO AS/NZS 3679.2	300
HOT ROLLED PLATES, FLOOR PLATES AND SLABS TO AS/NZS 3678	250
HOLLOW SECTIONS TO AS 1143	(C250 FOR DIA. 4 90mm)
COLD FORMED PURLINS AND GIRTS TO AS/NZS 4600	G450, Z350
TAPER FLANGE CHANNELS AND BEAMS, SMALL ANGLES TO AS/NZS 3679.1	250

- SS3. DIGITAL COPES AND THREE (B) COPES OF WORKSHOP FABRICATION DRAWNIGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGREER FOR REVIEW AT LEAST 16 ADAYS PROFIT COMPRENEEMENT OF FABRICATORY FABRICATION SHALL NOT COPPERICE WITHOUT THE STRUCTURAL ENGREERS REVIEW OF THE WORKSHOP DRAWNIGS. WHICH EXCLUDES DIMONISTOR, ALL SETOUT DIMENSIONS TO BE OBTAINED FROM STEE ANALONG ANGITECTURAL DRAWNIGS.
- SS4. PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING OTHER BLDHENTS TO THE STEEL WHETHER OR NOT DETAILED ON THE STRUCTURAL DRAWNINGS.
- SSS. ALL MEMBERS SHALL BE SUPPLIED IN SINGLE LENGTHS. SPLICES SHALL ONLY BE PERMITTED IN LOCATIONS SHOWN ON THE STRUCTURAL DRAVINGS.
- SS6. ALL STEELWORK SHALL BE SECURELY TEMPORARILY BRACED AS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.
- SS7. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE FABRICATION COMMENCES.
- SS8. UNLESS OTHERWISE NOTED USE NON-SHRINK GROUT UNDER ALL SEATING AND BASE PLATES ENSURING THE SPACE UNDER THE PLATES IS CLEARED OUT AND COMPLETELY FILLED.

### **BOLTING**

SS9. BOLTING CATEGORIES ARE IDENTIFIED ON THE STRUCTURAL DRAWINGS IN THE FOLLOWING MANNER-

4.4/S - COMMERCIAL BOLTS OF GRADE 4.6 TO AS 1111 SNUG TIGHTENED.

8.8/S - HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS/NZS 1252 SNUG TIGHTENED.

B.B/TB - HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS/NZS 1252 FULLY TENSIONED TO AS 4100 AS A BEARING TYPE JOINT,

8.8/TF - HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS/NZS 1252 FULLY TEXSIONED TO AS 4140 AS A FRICTION TYPE JOINT WITH FAYING SURFACES LEFT UNCOATED.

SSID. UNLESS NOTEO OTHERWISE ALL BOLTS SHALL BE M26 CATEGORY 8.9/S AND CLEAT PLATES 10mm THOCK NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS. ALL BOLTS AND WASHERS SHALL BE GALVANZED, IN LOLES SHALL BE 2mm LABER THAN THE BOLT DIAMETER UNLESS NOTEO OTHERWISE.

SS11. /TB AND /TF BOLT CATEGORIES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 15 OF AS 4100, USING EITHER THE PART-TURN METHOD OR THE DIRECT-TENSION INDICATOR METHOD.

### WELDING

- SS12. ALL WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS/NZS 1554.1. ELECTRODES SHALL BE TO EITHER AS/NZS 1553, AS 1858, AS 2203 OR AS/NZS 2717, AS APPROPRIATE.
- SS13. UNLESS NOTED OTHERWISE, ALL FILLET WELDS SHALL BE 61M CONTINUOUS
  CATEGORY SP USING E48XX ELECTRODES OR EQUIVALENT, ALL BUTT WELDS SHALL
  BE COMPLETE PENETRATION BUTT WELDS CATEGORY SP TO AS/NZS 1554.1.
- SSIL. THE EXTENT OF NON-DESTRUCTIVE WELD EXAMINATION SHALL BE AS NOTED BELOW, RADIOGRAPHIC OR ULTRASONIC EXAMINATION SHALL BE TO AS/NZS 1554.1, AS 2711.1 AND AS 2207 AS APPORPARTE AND CARRIED OUT BY AN INDEPENDENT NATA REGISTERED/CERTIFED WELDING INSPECTION.

TYPE OF WELD CATEGORY	EXAMINATION METHOD	EXTENT (% OF TOTAL LENGTH OF WELD TYPE)
FILLET WELDS, GP + SP	VISUAL INSPECTION	100
BUTT WELDS.	VISUAL" INSPECTION	100
BUTT WELDS, SP	VISUAL INSPECTION	100
	RADIOGRAPHIC OR ULTRASONIC INSPECTION	10

### CORROSION PROTECTION

SS15. SURFACE TREATMENT:- (UNLESS SPECFIED OTHERWISE)

TYPE A - CLASS 2 BLAST CLEAN, 75µm RED OXIDE ZINC

TYPE B - CLASS 2.5 BLAST CLEAN, 75µM WORGANIC ZINC

TYPE C - INTERZONE 954HS TO A MINIMUM THICKNESS OF 400µm (APPLIED OVER TYPE B)

TYPE D - HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS 4680.
MINIMUM COATING MASS 500G/m<sup>2</sup>

SS16. SURFACE TREATMENT PARTS OF STEELWORK

URFACE TREATMENT PARTS OF STEELWORK

TYPE A INTERNAL STEELWORK (CONCEALED)
TYPE B VISIBLE INTERNAL STEELWORK.
EXTERNAL STEELWORK CONCEALED
TYPE C MEMBERS IN CONTACT WITH GROUND

CAVITY BRICK WALLS AND EXTERNAL STEELWORK VISIBLE

SS17. ALL GALVANZING OF STRUCTURAL STEELWORK SHALL BE TO AS/NZS 4680.THE CONTINUOUS AVERAGE ZINC COATING MASS SHALL BE 400g/m, 1550g/m, HINIPUMI.

SS17. PROVIDE SEAL PLATES TO THE ENDS OF ALL HOLLOW SECTIONS, WITH "BREATHER" HOLES IF MEMBERS ARE TO BE HOT DIP GALVANIZED.

SSIN. STEELMORK INTENDED TO BE CONCRETE DIKASED SHALL BE UIRPAINTED, EXICASING CONCRETE SHALL BE GRADE 25 MP PROVIDING A COVER ADDIDUATE TO SUIT FIRE RATING OR DEPOSING CONTROLNS. CONCRETE ENAMESPERS SHALL BE ECOTRALE. PROVIDED WITH 5 M WRE TO AS ANZS 4671 OR 4 mm STRUCTURAL GRADE BARS TO AS ANZS 4671 AT

SS20. COATINGS DAMAGED DURING ERECTION OR SUBSEQUENT STAGES OF THE WORK SHALL BE MADE GOOD AND/OR REPAIRED.











