

Your Ref: Proclaim No: SDW3453/23

Our Ref: WYP13135/21

Enquiries: Rabin Khad Thakuri

Tel: (03) 8754 4999

01 February 2024

Spiire Australia Pty Ltd
L 6 414 La Trobe St
MELBOURNE VIC 3000

Dear Rafe Wilson

RE: HARLOW STAGE 3 - AMENDMENTS TO CONSTRUCTION PLAN APPROVAL

Please be advised that the amended construction plans submitted to Council for Harlow Stage 3 are approved.

A copy of the following approved plans have been enclosed for your information.

- Drawing No. 309439R02 Revision 3
- Drawing No. 309439R03 Revision 1
- Drawing No. 309439R07 Revision 1
- Drawing No. 309439R08 Revision 1
- Drawing No. 309439R12 Revision 2
- Drawing No. 309439R13 Revision 1
- Drawing No. 309439R14 Revision 1
- Drawing No. 309439R15 Revision 1
- Drawing No. 309439R21 Revision 2
- Drawing No. 309439R23 Revision 1
- Drawing No. 309439R24 Revision 2
- Drawing No. 309439R25 Revision 1
- Drawing No. 309439R28 Revision 1
- Drawing No. 309439R35 Revision 1

Yours sincerely,



ABUL HOSSEN
SUBDIVISIONS CO-ORDINATOR



Civic Centre
Postal

Telephone
Facsimile
Email

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DX 30258 Werribee Vic
ABN: 38 393 903 860

Your Ref:

Our Ref: SDW3453/23
WYP13135/21

Enquiries: Rabin Khad Thakuri
Tel: (03) 8754 4999

30 August 2023

Spiire Australia Pty Ltd
L 6 414 La Trobe St
MELBOURNE VIC 3000

Dear Rafe Wilson

RE: HARLOW STAGE 3 - CONSTRUCTION PLAN APPROVAL

Please be advised that the road and drainage construction plans submitted to Council for Harlow Stage 3 are approved subject to the following conditions:-

1. **Prior to commencement of works, an on-site pre-commencement meeting must be held between Council, the Engineering Consultant and the Contractor. Please contact Natalie Coakley from Council on 0458676758 to book a precommencement meeting.**
2. **Prior to installation of any Tactile Ground Surface Indicators, the proposed product must be inspected and approved by Council. Please notify Councils construction supervisor to book an inspection prior to installation.**
3. **Prior to commencement of works, the Plan of Subdivision must be certified by Council.**
4. **Prior to commencement of approved works within ANY existing road reserves, the consultant/contractor MUST apply for consent to work within the road reserves from Council or any other relevant responsible authorities. The Contractor will be responsible for maintain all existing assets within the limit of works as demonstrated on the approved plans.**
5. **A free-flowing drainage outlet must be established and maintained throughout the entirety of construction works. No road boxing works are to commence in the absence of a free-flowing drainage outlet.**
6. **Prior to commencement of works, the consultant/contractor shall provide to Council the following information:-**
 - source of quarry material; and
 - optimum moisture content and maximum modified dry density of the F.C.R to be used (from N.A.T.A. approved laboratory).

If the source of the quarry material is changed during the course of the works, new test results shall be provided.

7. Prior to the commencement of works, a Site Environmental Management Plan (SEMP) must be submitted to and **approved** by Council.
8. Construction is to commence within twelve (12) months of approval, otherwise construction plans and specifications are to comply with design standards current at the time of re-submission.
9. Filled allotments shall be compacted in 150mm maximum layers, with compaction tests being taken at not more than 300mm lift on all allotments and filled areas. The test results and location of the tests on each allotment shall be forwarded to Council.
10. Wyndham City Council Specifications and standard details shall be read in conjunction with the approved plans.
11. Prior to Council issuing a Statement of Compliance, pursuant to the Subdivision Act 1988, your firm shall provide to Council the following:
 - Payment of construction supervision fees amounting to 2.5% of the total cost of road and drainage works;
 - Payment of a maintenance bond amounting to 5% of the total cost of road and drainage works;
 - An electronic copy of all as constructed drawings and relevant files in both AutoCad DWG and Adobe PDF file formats, to either subdiveng@wyndham.vic.gov.au or via Objective Connect. Please note that the minimum resolution of PDF files required is 300dpi;
 - An electronic copy of drainage catchment plans and detailed computations in Adobe PDF file format to either subdiveng@wyndham.vic.gov.au or via Objective Connect;
 - As constructed asset information for drainage and related assets in digital format in accordance with "D-Spec" to either subdiveng@wyndham.vic.gov.au or via Objective Connect; and
 - As-constructed asset information for assets within the road reserve in digital format in accordance with "R-Spec" to either subdiveng@wyndham.vic.gov.au or via Objective Connect; and
 - The A.H.D levels and M.G.A co-ordinates of the high stability P.S.Ms.
 - For further information please see: <https://www.wyndham.vic.gov.au/subdivisionguidelines>
12. Easements are to be created to cover all services which cross any part of private allotments.
13. During construction of works under this permit, access to and egress from the subject land must be via a route designed and approved by the Council. Where practical this access should be remote from established residential areas.
14. Provide Landscaping Plan for approval by Council. Please contact subdivlud@wyndham.vic.gov.au to arrange a pre-application meeting prior to the submission of landscape plans for municipal reserves and/or public open space.
15. WorkSafe Victoria is to be advised via E-mail (construction@workcover.vic.gov.au) of these Subdivisional works with the following details:
 - Name of the principal contractor
 - Name and phone contact of relevant Engineering Consultants supervisor dealing with the works
 - Brief description of the works
 - Locality/address of the works
 - Estimated commencement date of the works, and
 - Expected completion date of the works.

16. In undertaking the construction works, the developer shall ensure all works are undertaken in accordance with the OH & S Act, Regulation and Codes, and shall maintain a safe workplace for Council's staff undertaking inspections. The supervision of works by Council staff only extends to the quality of Council's future infrastructure and does not include ensuring that the works are undertaken safely.

Please find a set of stamped approved plans attached.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Abul Hossen', with a horizontal line extending to the right.

ABUL HOSSEN
SENIOR DEVELOPMENT ENGINEER

Encl: (1) Stamped approved plans

GENERAL NOTES:

SURVEY

1. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM AND ALL COORDINATES ARE TO MAP GRID OF AUSTRALIA (MGA) 2020, ZONE 55.
2. ALL EXISTING SURFACE LEVELS SHOWN ON THE ENGINEERING DRAWINGS HAVE BEEN INTERPOLATED FROM A DIGITAL TERRAIN MODEL. THESE LEVELS HAVE BEEN USED AS THE BASIS FOR ALL ENGINEERING DESIGN AND DETERMINATION OF QUANTITIES AND ARE ACCURATE TO WITHIN ±0.05m.
3. ROAD CHAINAGES REFER TO ROAD CENTRELINES. CHAINAGES FOR INTERSECTIONS AND CUL-DE-SACS REFER TO THE LIP OF KERB.

EARTHWORKS

4. THE LOCATION OF EXISTING SERVICES SHOULD BE DETERMINED BY THE CONTRACTOR PRIOR TO COMMENCING ANY EXCAVATION BY CONTACTING ALL LOCAL SERVICE AUTHORITIES. ANY EXISTING SERVICES SHOWN ON THESE DRAWINGS ARE OFFERED AS A GUIDE ONLY AND ARE NOT GUARANTEED AS CORRECT.
5. WHERE REQUIRED ANY BUILDINGS, TROUGHS, FENCES AND OTHER STRUCTURES ON SITE ARE TO BE REMOVED AS DIRECTED BY THE ENGINEER. THE COST OF REMOVAL IS TO BE INCLUDED IN THE OVERALL EARTHWORKS FIGURE UNLESS A SPECIFIC ITEM FOR REMOVAL IS DENOTED IN THE SCHEDULE.
6. ALL EXCAVATED ROCK AND SURPLUS SPOIL TO BE REMOVED AND DISPOSED OFF SITE UNLESS NOTED OTHERWISE.
7. ALL FILLING ON LOTS AND WITHIN ROAD RESERVES GREATER THAN 200mm IS TO BE UNDERTAKEN USING LEVEL 1 SUPERVISION AND BE COMPLETED IN ACCORDANCE WITH AS 3798. FILL AREAS ARE TO BE STRIPPED OF TOPSOIL, FILLED AND REPLACED WITH TOPSOIL (WHERE REQUIRED) TO OBTAIN THE FINAL LEVELS SHOWN ON THE DRAWINGS.
8. FILLING MATERIAL IS TO BE IN ACCORDANCE WITH THE SPECIFICATION, AS 3798 & TO THE SATISFACTION OF COUNCIL AND THE SUPERINTENDENT.
9. ALL BATTERS SHALL BE 1 IN 6, UNLESS OTHERWISE SHOWN.
10. NO FILL OR STOCKPILING OF MATERIAL IS TO BE PLACED ON ANY RESERVE FOR PUBLIC OPEN SPACE UNLESS OTHERWISE DIRECTED OR APPROVED BY THE SUPERINTENDENT.
11. TBM'S TO BE RE-ESTABLISHED BY THE LICENSED SURVEYOR IF FOUND TO BE MISSING AT THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR CARE AND MAINTENANCE OF TBM'S THEREAFTER.
12. AT LEAST 3 DAYS PRIOR TO COMMENCING WORK ON EXCAVATIONS IN EXCESS OF 150mm DEEP, A NOTIFICATION FORM MUST BE SENT TO WORKSAFE. THE CONTRACTOR IS TO COMPLY WITH WORKSAFE, THE MINES (TRENCHES) REGULATION 1982, THE MINES ACT 1958 AND OCCUPATIONAL HEALTH AND SAFETY ACT 1985, 2004.

13. ALL SERVICE TRENCHES UNDER DRIVEWAYS, FOOTPATHS AND PARKING BAYS TO BE BACKFILLED WITH CLASS 2 CRUSHED ROCK. SERVICE TRENCHES LESS THAN 750mm BEHIND KERB AND CHANNEL OR PAVED TRAFFIC AREAS ARE ALSO TO BE BACKFILLED WITH COMPACTED CLASS 2 CRUSHED ROCK.
14. WHERE REQUIRED, ALL EXISTING DAMS, DEPRESSIONS AND DRAINS ARE TO BE BREACHED, DRAINED, DESLUGGED AND SHALL BE EXCAVATED TO A CLEAN FIRM BASE. THE SURFACE SHALL BE INSPECTED, APPROVED AND LEVELED BY THE ENGINEER PRIOR TO COMMENCEMENT OF FILLING. THE FILL SHALL BE APPROVED SELECTED ON SITE MATERIAL OR APPROVED IMPORTED MATERIAL. THE FILL SHALL BE PLACED UNDER CONTROLLED MOISTURE CONDITIONS IN ACCORDANCE WITH THE SPECIFICATION.

15. NO BLASTING TO BE CARRIED OUT WITHIN THE MUNICIPALITY WITHOUT OBTAINING COUNCIL'S PERMISSION.

SERVICES

16. GAS AND WATER CONDUITS ARE TO BE .
Ø50mm CLASS 12 P.V.C. - SINGLE SERVICE
Ø100mm CLASS 12 P.V.C. - DUAL SERVICE (DRINKING AND NON DRINKING WATER)

WITH THE FOLLOWING MINIMUM COVER TO FINISHED SURFACE LEVELS:
ROAD PAVEMENT - 0.80m
VERGE, FOOTPATHS - 0.45m
17. ALL SERVICE CONDUIT TRENCHES UNDER ROAD PAVEMENTS TO BE BACKFILLED IN ACCORDANCE WITH RELEVANT MUNICIPALITY OR ROAD AUTHORITY SPECIFICATION.
18. WATER TAPPINGS TO BE LOCATED IN CENTRE OF ALLOTMENTS UNLESS OTHERWISE SHOWN.
19. TELSTRA ARE TO BE NOTIFIED 7 DAYS PRIOR TO PLACEMENT OF CONCRETE WORKS.

STORM WATER DRAINAGE

20. AG/SUBSOIL DRAIN TO BE LAID BEHIND KERB WHERE REQUIRED IN ACCORDANCE WITH THE COUNCIL STANDARD DRAWINGS AND CONNECTED TO UNDERGROUND DRAINAGE.
21. ALL STORMWATER DRAINS ARE TO BE CLASS '2' R.C. PIPES UNLESS OTHERWISE SHOWN. ALL R.C. JOINTS ARE TO BE RUBBER RING JOINTED (R.R.J.).
22. CENTRELINES OF ALL EASEMENT DRAINS ARE OFFSET 10m OR 2.2m (WHERE OUTSIDE OF SEWER) FROM THE PROPERTY LINE UNLESS SHOWN OTHERWISE.
23. WHERE CURVED PIPES ARE SHOWN ON THE FACE PLANS THEY ARE TO BE LAID PARALLEL TO THE BACK OF KERB, EXCEPT WHERE A RADIUS HAS BEEN SPECIFICALLY

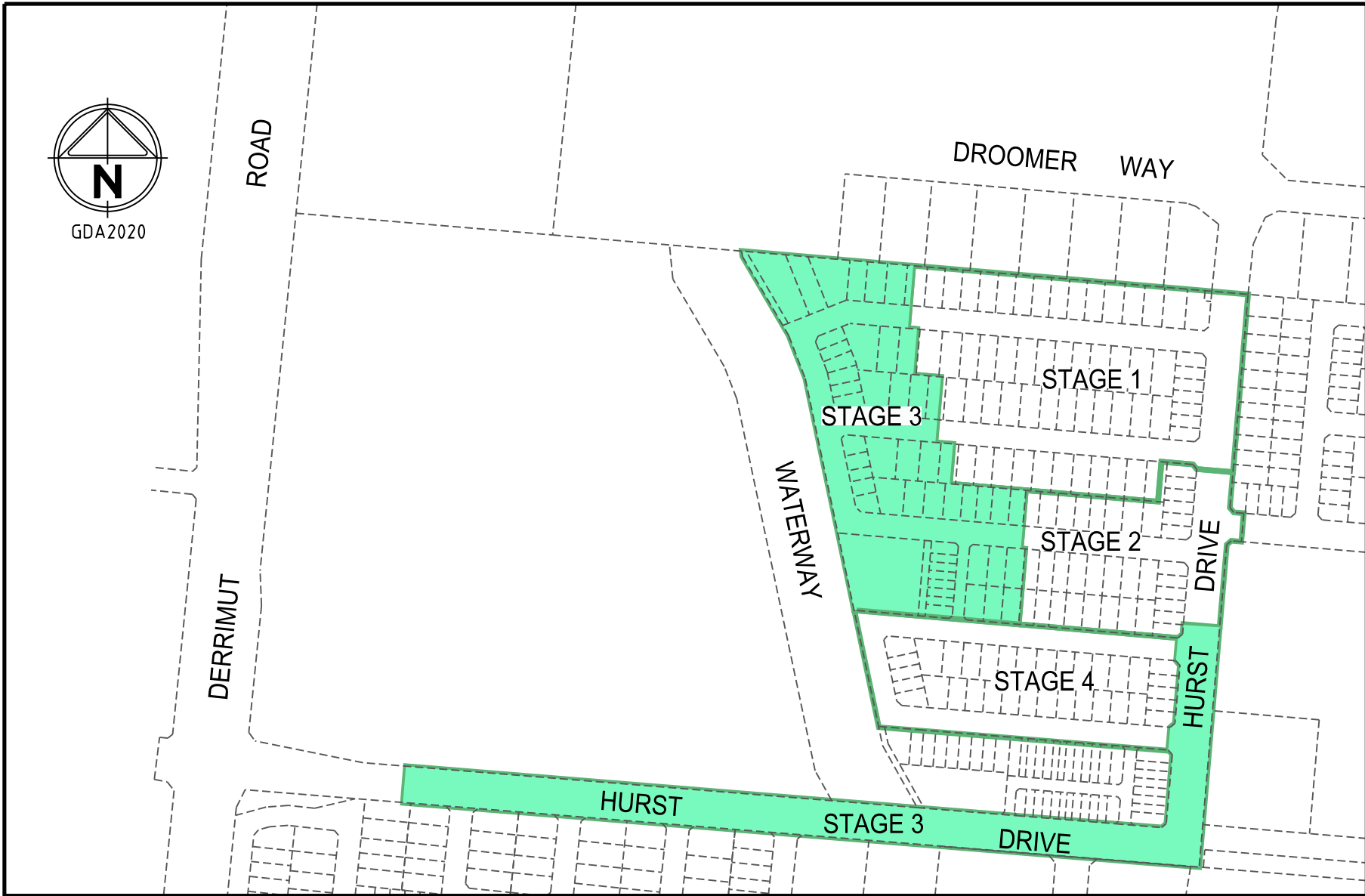
SERVICES OFFSETS AND LOCATION TABLE

Location	GAS	WATER		ELECTRICITY		TELECOM
		NDW	DW	CABLES	POLE	
LUICANIA CRES (LOT 301 TO 306)	2.10 N	2.50 N	3.00 N	2.30 S	0.90 BOK	1.85 S
LUICANIA CRES (WATERWAY)	2.10 E	2.50 E	3.00 E	2.60 W	0.90 BOK	1.85 W
LUCANIA CRES (328 TO 336)	2.10 N	2.50 N	3.00 N	2.65 S	0.90 BOK	1.85 S
FENDY STREET	2.10 N	2.50 N	3.00 N	2.30 S	0.90 BOK	1.85 S
PACT WAY	-	-	-	0.50 E	0.90 BOK	-
TAPE WALK	2.10 E	2.50 E	3.00 E	-	-	3.50 E
RUMBEE CRES (LOT 350 TO 342)	2.10 N	2.50 N	3.00 N	2.65 S	0.90 BOK	1.85 S
RUMBEE CRESCENT (WATERWAY)	2.10 E	2.50 E	3.00 E	2.60 W	0.90 BOK	1.85 W
HURST DRIVE (NORTH-SOUTH)	2.10 W	2.95 W	3.55 W	3.10 E	0.90 BOK	2.30 E
HURST DRIVE (EAST-WEST)	2.10 N	3.60 N	4.35 N	2.00 S	0.90 BOK	1.00 S

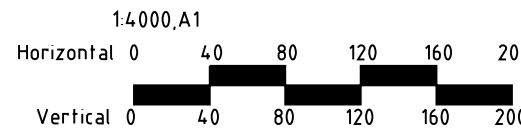
Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023

HARLOW ESTATE STAGE 3



LOCALITY PLAN



DRAWING SCHEDULE

DRAWING	DESCRIPTION	SHEET No.	REVISION
309439R01	FACE SHEET	1	0
309439R02	ROAD & DRAINAGE FACE PLAN - SHEET 1 OF 2	2	0
309439R03	ROAD & DRAINAGE FACE PLAN - SHEET 2 OF 2	3	0
309439R04	LONGITUDINAL SECTIONS - HURST DRIVE	4	0
309439R05	LONGITUDINAL SECTIONS - HURST DRIVE, LUCANIA CRESCENT & FENDY STREET	5	0
309439R06	LONGITUDINAL SECTIONS - RUMBEE CRESCENT & PACT WAY	6	0
309439R07	CROSS SECTIONS - HURST DRIVE & RUMBEE CRESCENT	7	0
309439R08	CROSS SECTIONS - HURST DRIVE & RUMBEE CRESCENT	8	0
309439R09	CROSS SECTIONS - HURST DRIVE	9	0
309439R10	CROSS SECTIONS - HURST DRIVE	10	0
309439R11	CROSS SECTIONS - HURST DRIVE	11	0
309439R12	CROSS SECTIONS - HURST DRIVE & LUCANIA CRESCENT	12	0
309439R13	CROSS SECTIONS - LUCANIA CRESCENT	13	0
309439R14	CROSS SECTIONS - LUCANIA CRESCENT	14	0
309439R15	CROSS SECTIONS - FENDY STREET	15	0
309439R16	INTERSECTION DETAILS - SHEET 1 OF 5	16	0
309439R17	INTERSECTION DETAILS - SHEET 2 OF 5	17	0
309439R18	INTERSECTION DETAILS - SHEET 3 OF 5	18	0
309439R19	INTERSECTION DETAILS - SHEET 4 OF 5	19	0
309439R20	INTERSECTION DETAILS - SHEET 5 OF 5	20	0
309439R21	DRAINAGE LONG SECTION SHEET 1 OF 8	21	0
309439R22	DRAINAGE LONG SECTION SHEET 2 OF 8	22	0
309439R23	DRAINAGE LONG SECTION SHEET 3 OF 8	23	0
309439R24	DRAINAGE LONG SECTION SHEET 4 OF 8	24	0
309439R25	DRAINAGE LONG SECTION SHEET 5 OF 8	25	0
309439R26	DRAINAGE LONG SECTION SHEET 6 OF 8	26	0
309439R27	DRAINAGE LONG SECTION SHEET 7 OF 8	27	0
309439R28	DRAINAGE LONG SECTION SHEET 8 OF 8	28	0
309439R29	DRAINAGE PIT SCHEDULE	29	0
309439R30	SIGNAGE & LINEMARKING PLAN - SHEET 1 OF 3	30	0
309439R31	SIGNAGE & LINEMARKING PLAN - SHEET 2 OF 3	31	0
309439R32	SIGNAGE & LINEMARKING PLAN - SHEET 3 OF 3	32	0
309439R33	PAVEMENT PLAN AND TYPICAL DETAILS	33	0
309439R34	CONCRETE JOINTING PLAN	34	0
309439R35	WEIR PITS - CONCRETE DETAILS	35	0

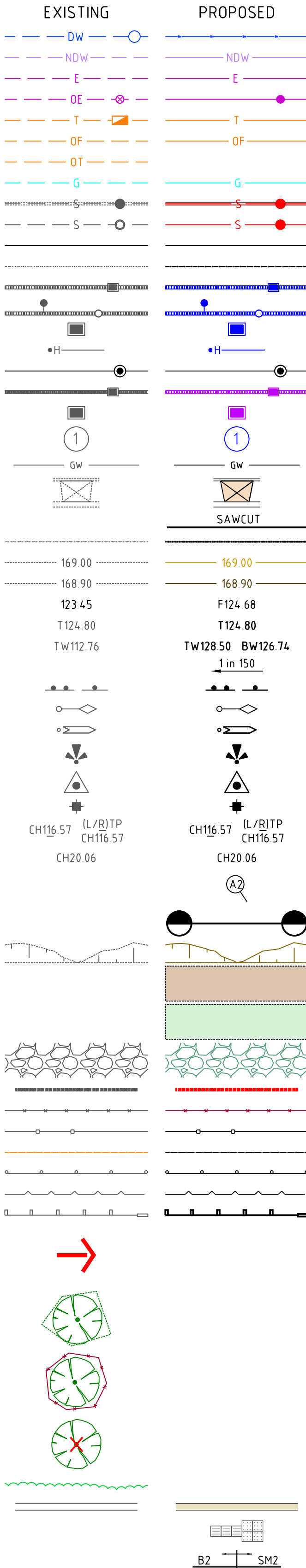


WARNING
BEWARE OF UNDERGROUND/OVERHEAD SERVICES
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES UNDER OVERHEAD ELECTRICITY TRANSMISSION LINES.

LEGEND

DESCRIPTION

- WATER MAIN, VALVE AND HYDRANT
WATER RECYCLED
UNDERGROUND ELECTRICITY
OVERHEAD ELECTRICITY & POLE
TELECOMMUNICATIONS & SERVICE PIT
OPTIC FIBRE
OVERHEAD TELECOMMUNICATIONS
GAS MAIN
BRANCH SEWER & MAINTENANCE STRUCTURE
SEWER & MAINTENANCE STRUCTURE
SEWER RISING MAIN
CENTRAL INVERT
COUNCIL STORMWATER DRAIN AND PIT
STORM WATER DRAINAGE PROPERTY INLETS
COUNCIL STORM WATER PITS
HOUSE DRAIN
AG DRAIN AND FLUSHER
MWC STORM WATER DRAIN & PIT
MWC STORM WATER PITS
STORM WATER DRAINAGE PIT NUMBER
GAS & WATER CONDUITS
CONCRETE VEHICLE CROSSING
PAVEMENT SAWCUT LINE
RIDGE / CHANGE OF GRADE LINE
SURFACE CONTOUR MINOR
SURFACE CONTOUR MAJOR
SURFACE LEVEL
BATTER LEVEL (TOP / TOE)
RETAINING WALL LEVEL (TOP/BOTTOM)
EARTHWORKS GRADE
SIGN AND POST
LIGHT & POLE (BY OTHERS)
STREET SIGN
PERMANENT SURVEY MARK
TEMPORARY BENCH MARK
BOLLARD
ROAD CHAINAGES
LOT CHAINAGES
SETOUT POINT
LIMIT OF WORKS
BATTER
EXCAVATION GREATER THAN 0.20m
FILLING GREATER THAN 0.20m
ROCK BEACHING
RETAINING WALL
FENCE - TREE PROTECTION
FENCE - VEHICLE EXCLUSION
FENCES
GUARD RAIL
OVERLAND FLOW PATH
TREE (& SURVEYED CANOPY) TO BE RETAINED
TREE TO BE PROTECTED
TREE TO BE REMOVED
VEGETATION LINE
FOOTPATH
TACTILE GROUND SURFACE INDICATOR
KERB TRANSITION



HARLOW ESTATE STAGE 3 FACE SHEET

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No **309439R01**

Rev **0**

0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



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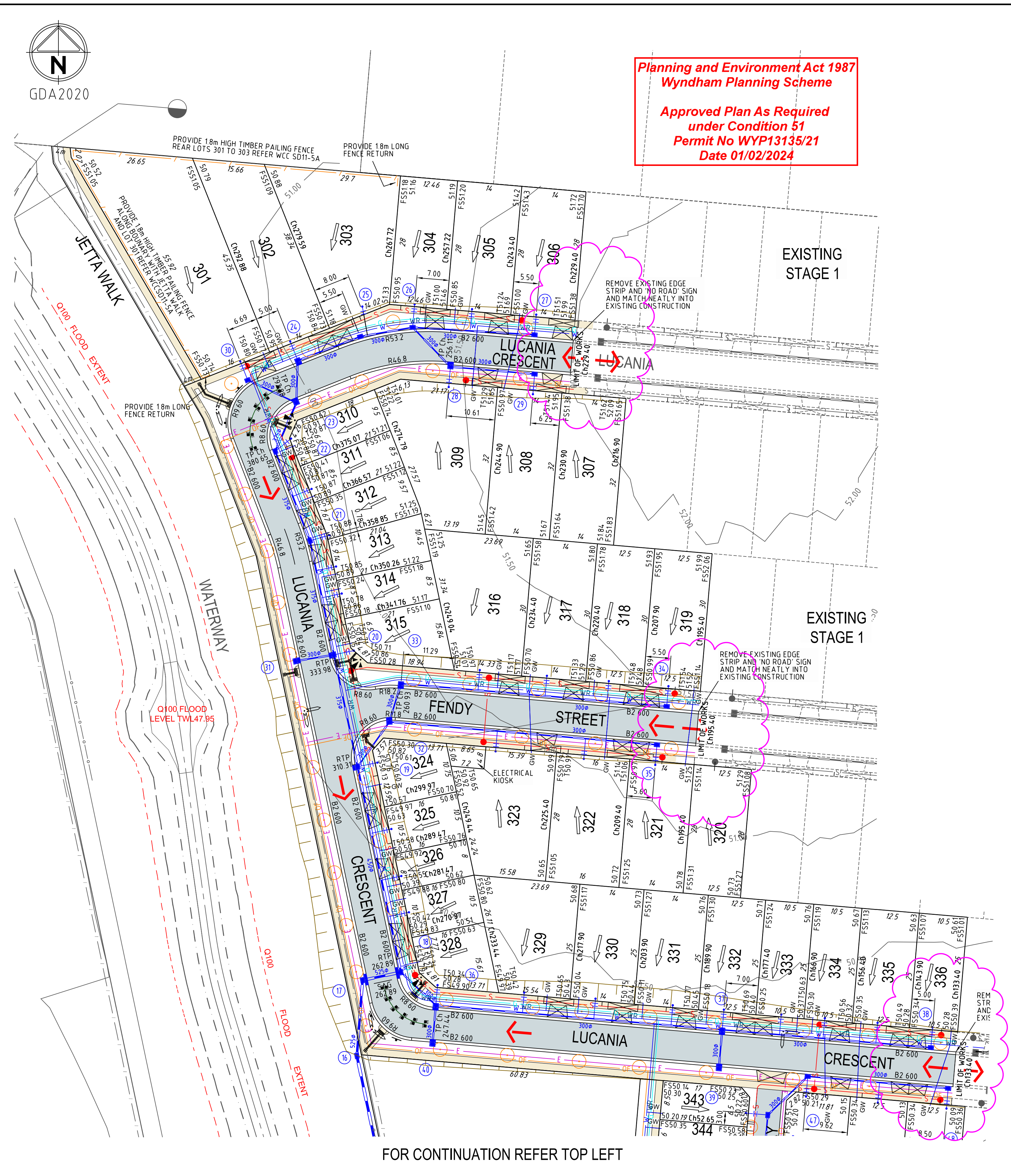
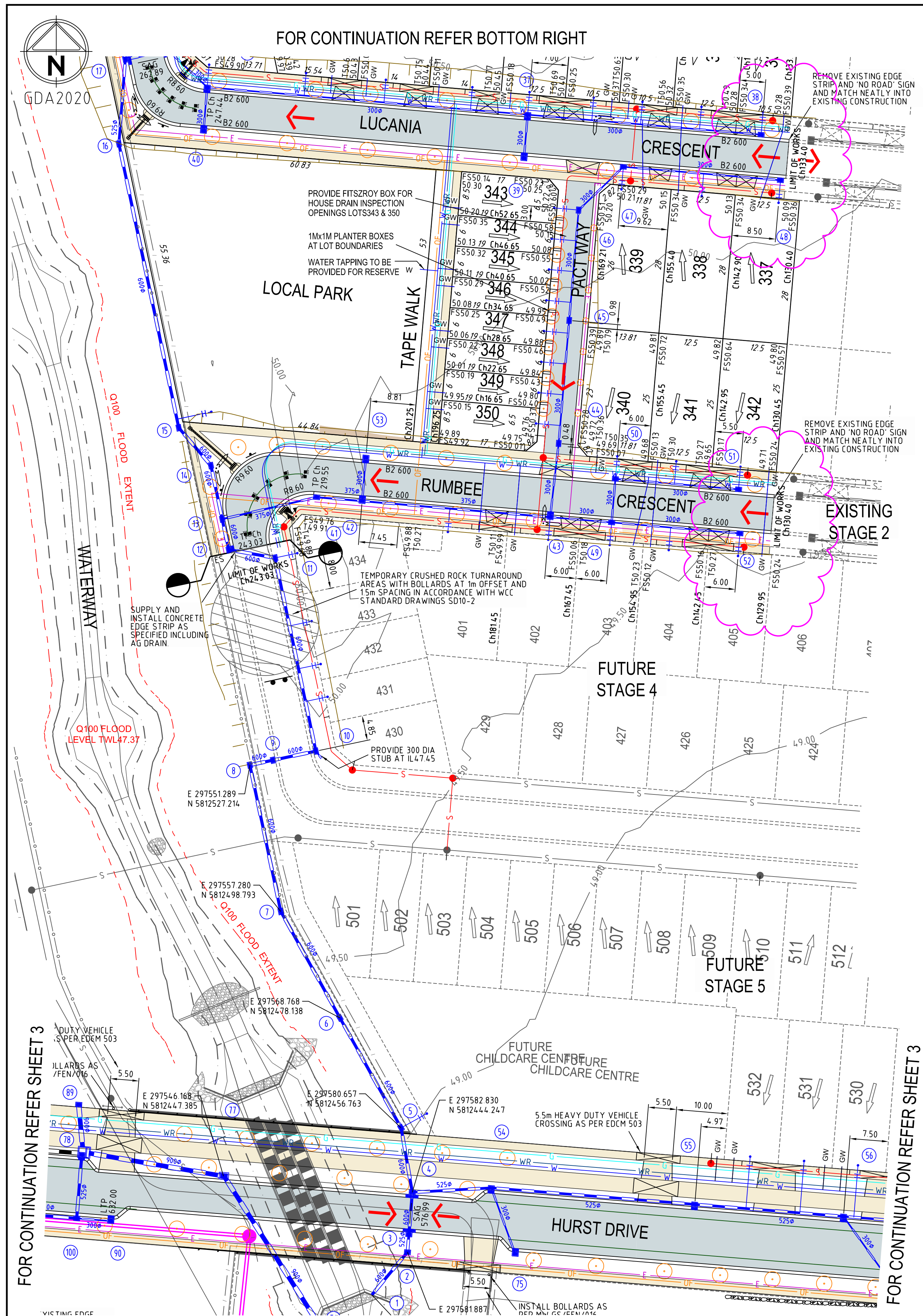
Harlow
T A R N E I T

Designed
R. WEINBER

Authorised
M. READMAN

Checked
R. WILSON

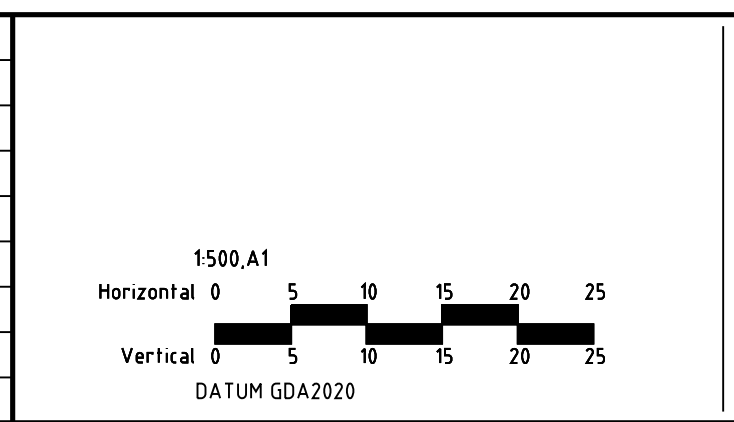
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16-05-2022



Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024

3	FS LEVELS LIMIT OF WORKS UPDATED	M.R	23/01/24
2	FS AND T LEVELS UPDATED, WATER TAPPING FOR RESERVE	M.R	04/12/23
1	STAGE 5 LOT LAYOUT UPDATED, HURST DRIVE DRIVEWAYS AND SERVICES UPDTD, CHILDCARE CENTRE SITE SERVICING ADDED		
1	SEWER AND DRAIN CONNECTION ADJUSTED LOT 401, ELEC SUB STN ADDED LOT 401	M.R	11/10/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



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Harlow
T A R N E I T

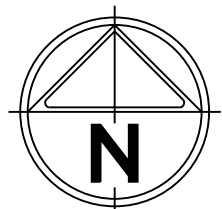
Designed R. WEINBER	Checked R. WILSON
Authorised M. READMAN	Date 16-05-2022

**HARLOW ESTATE
STAGE 3
ROAD AND DRAINAGE FACE PLAN
SHEET 1 OF 2**

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No
309439R02

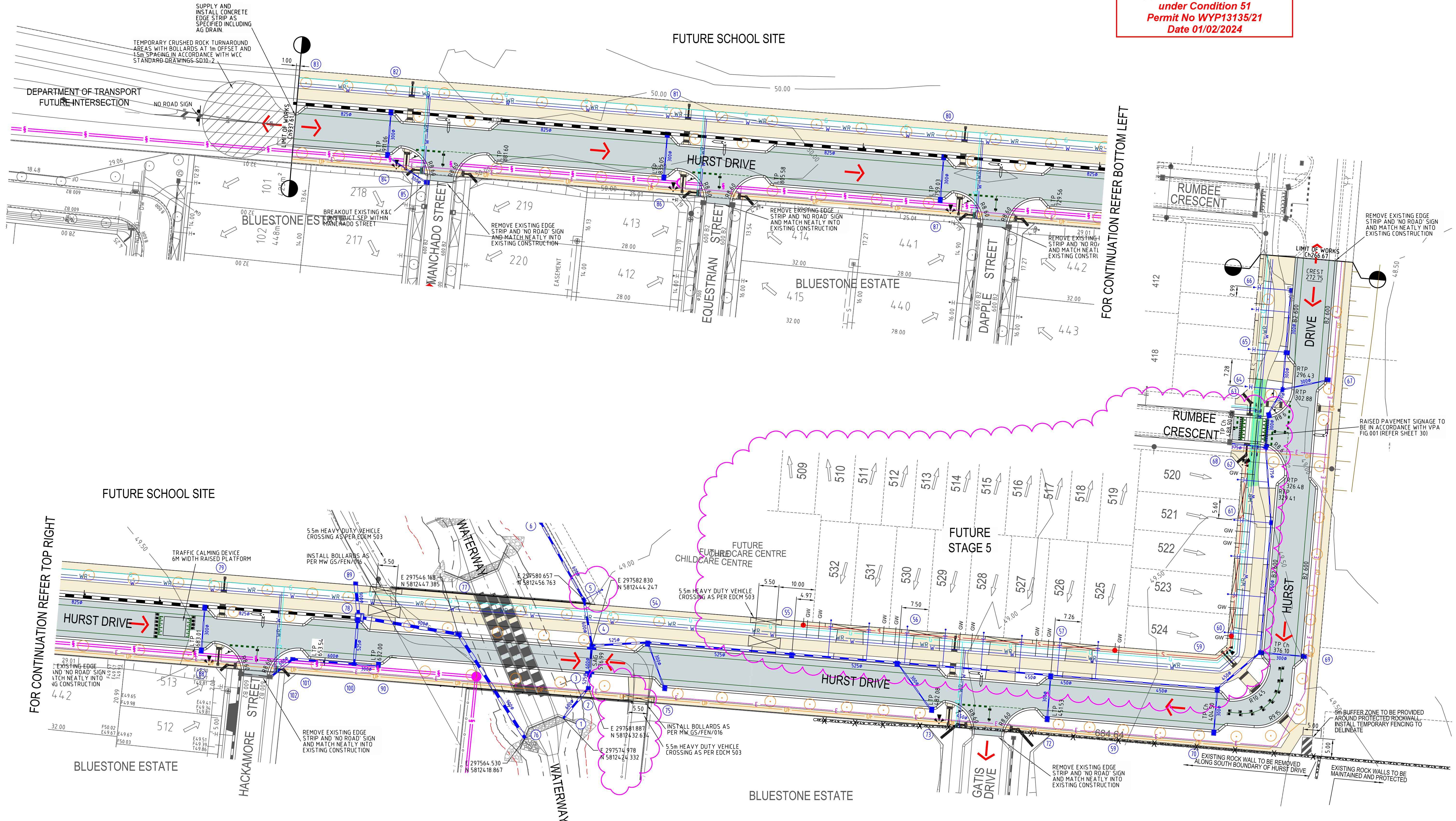
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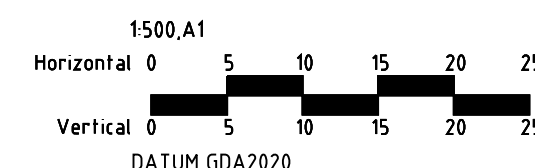
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Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024



Rev	Amendments	Approved	Date
1	FS AND T LEVELS UPDATED. WATER TAPPING FOR RESERVE STAGE 5 LOT LAYOUT UPDATED. HURST DRIVE DRIVEWAYS AND SERVICES UPDTD. PIT 3 EXTERNAL 3 MONTH DIVERSION REMOVED FROM STAGE 5 WORKS CHILDREAR CENTRE SITE SERVICING ADDED	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23

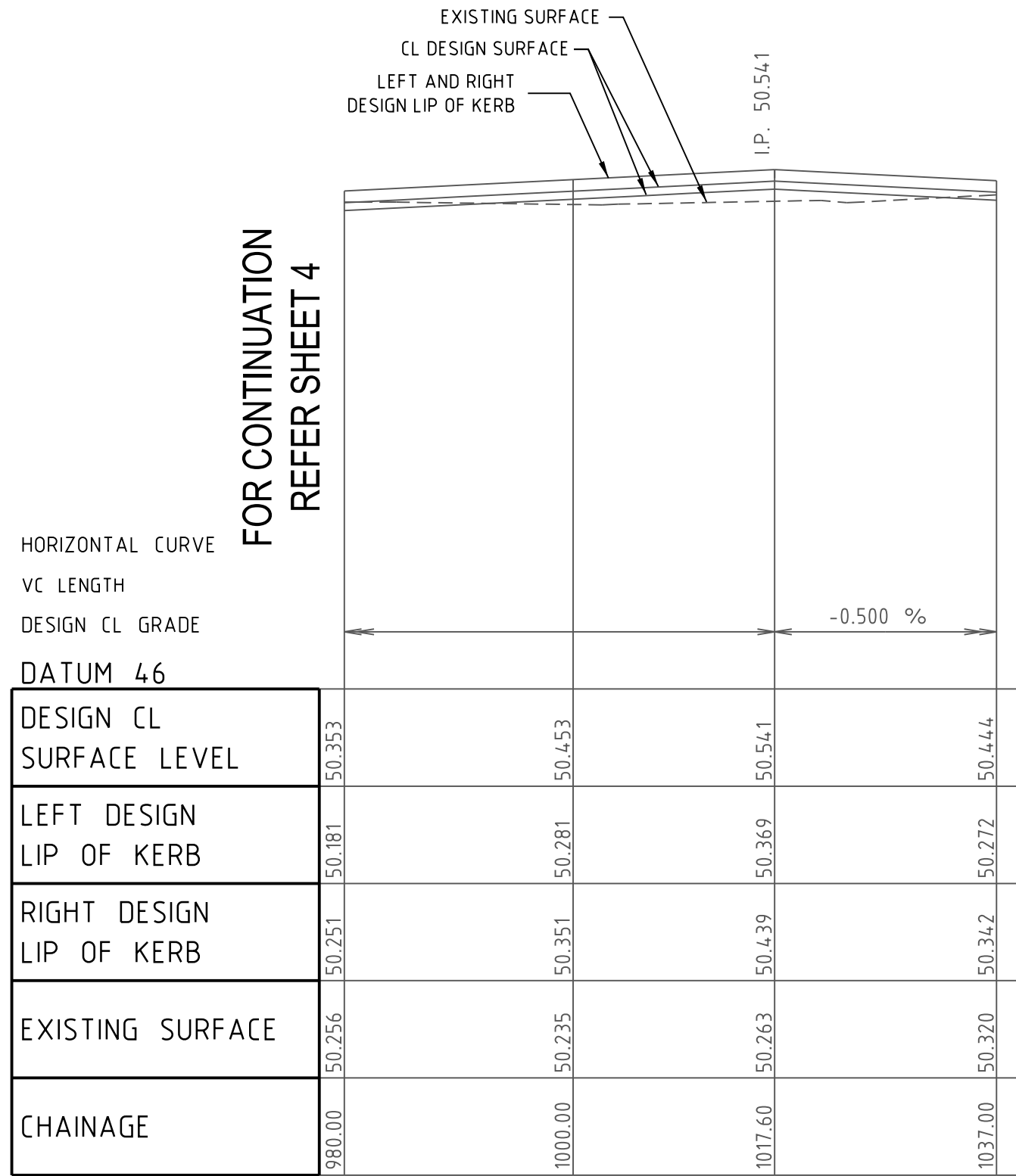


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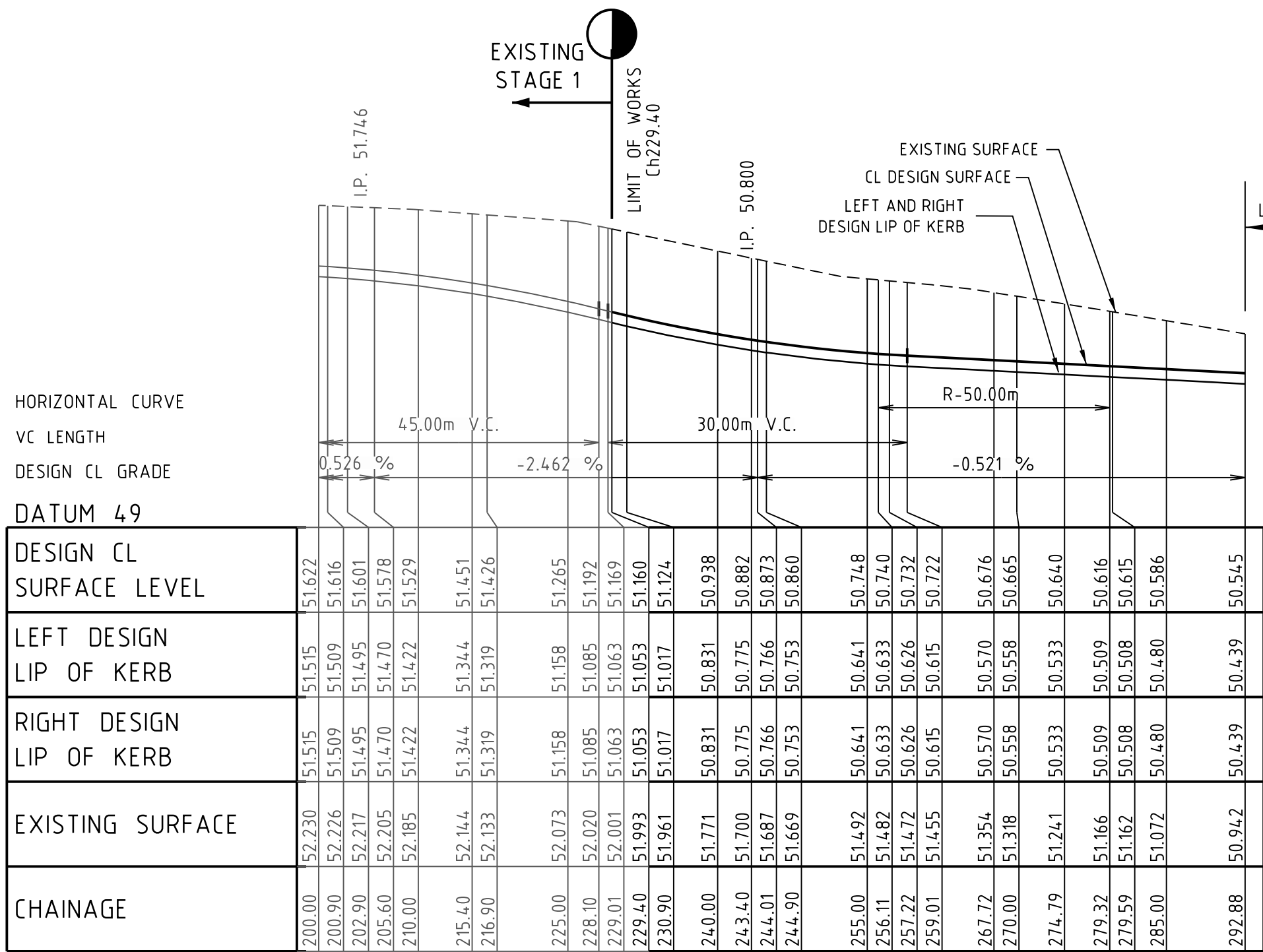
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Harlow
T A R N E I T
Designed
R. WEINBER
Authorised
M. READMAN
Checked
R. WILSON
Date
16-05-2022

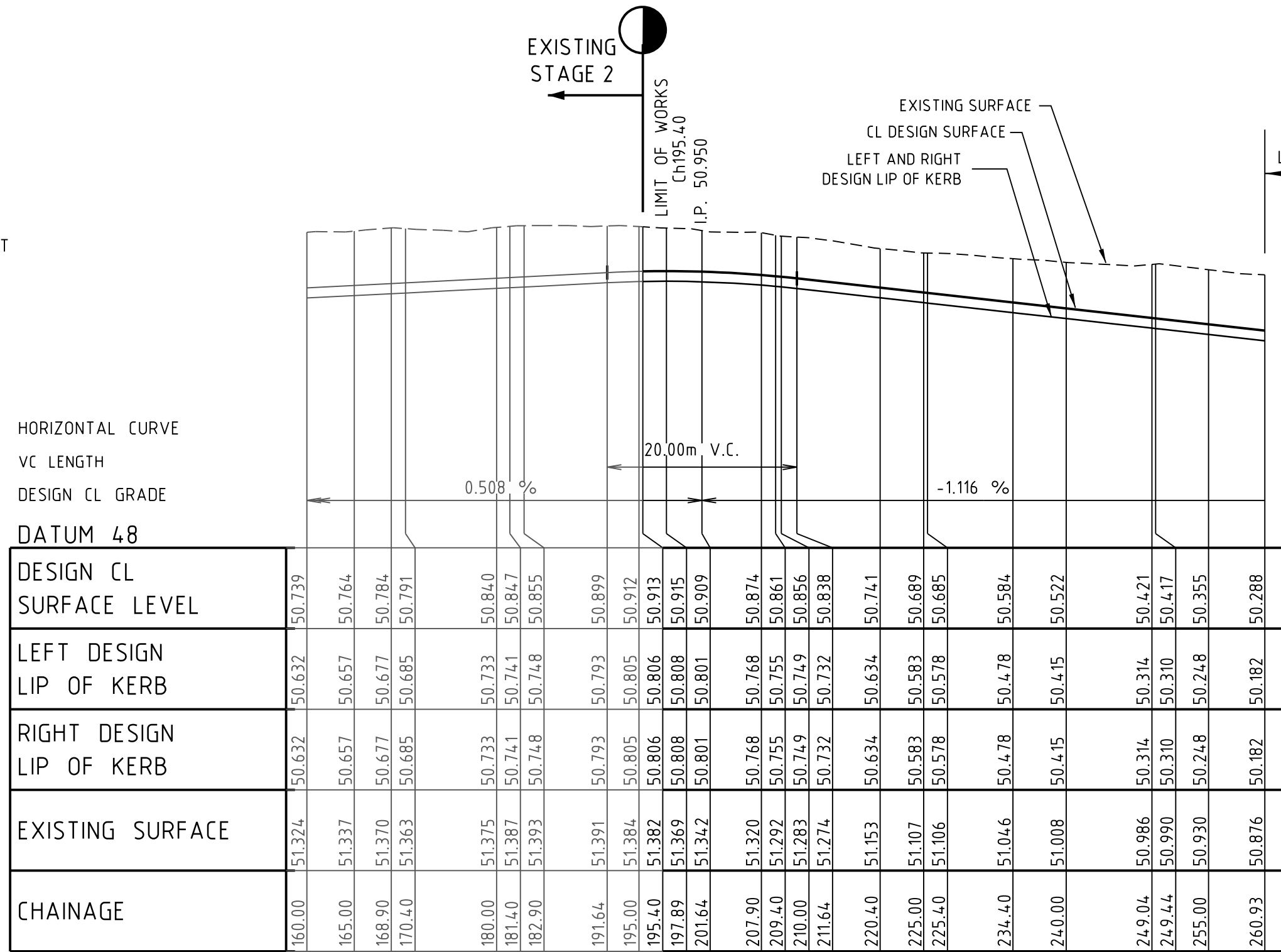
**HARLOW ESTATE
STAGE 3
ROAD AND DRAINAGE FACE PLAN
SHEET 2 OF 2**
SIG GROUP
WYNDHAM CITY COUNCIL
CONSTRUCTION Drg No
309439R03
Rev
1



HURST DRIVE



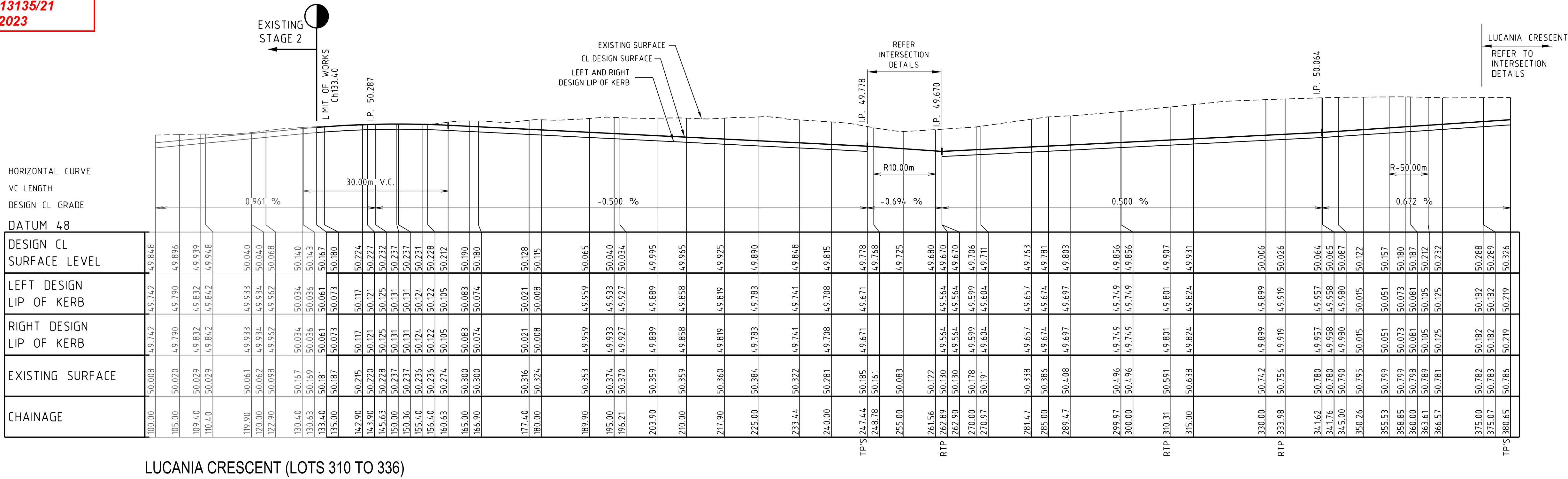
LUCANIA CRESCENT (LOTS 301 TO 306)



FENDY STREET

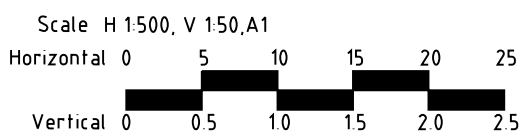
Planning and Environment Act 1987
Wyndham Planning Scheme

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under Condition 51
Permit No WYP13135/21
Date 30/08/2023



LUCANIA CRESCENT (LOTS 310 TO 336)

0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



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Harlow

T A R N E I T

Designed R. WEINBER	Checked R. WILSON
Authorised M. READMAN	Date 29-12-2022

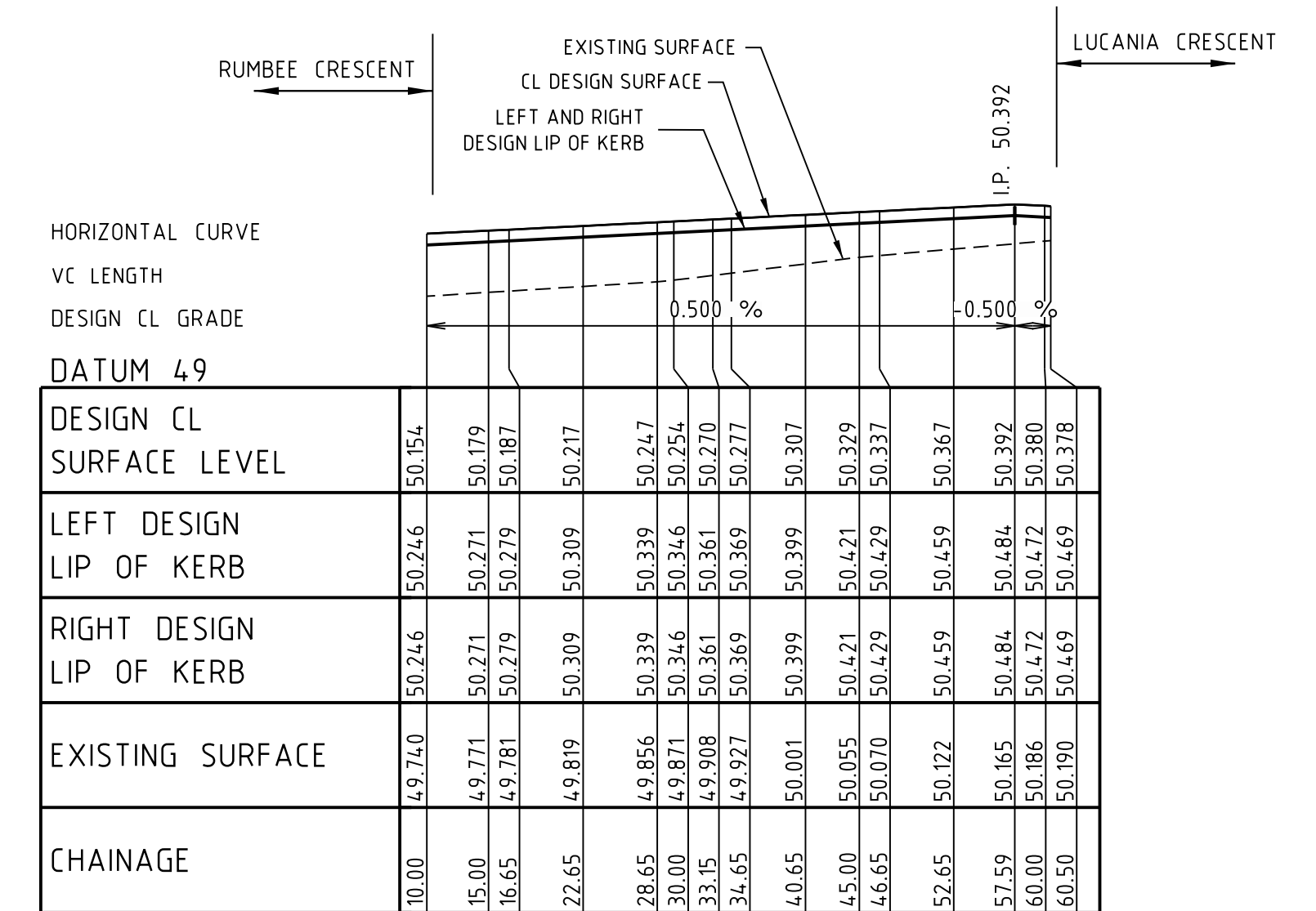
HARLOW ESTATE
STAGE 3
LONGITUDINAL SECTIONS - HURST DRIVE,
LUCANIA CRESCENT & FENDY STREET

SIG GROUP
WYNDHAM CITY COUNCIL

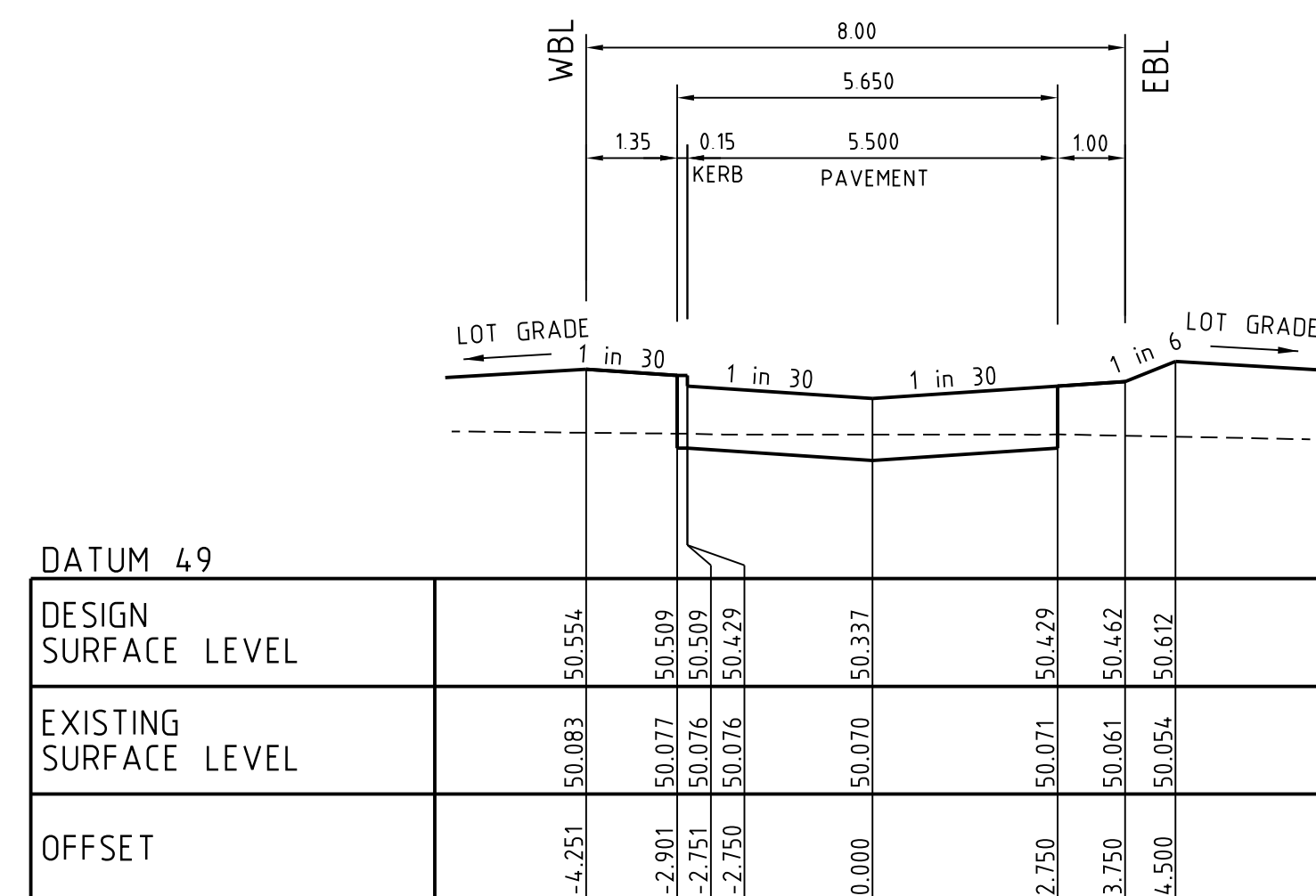
CONSTRUCTION

Drg No
309439R05

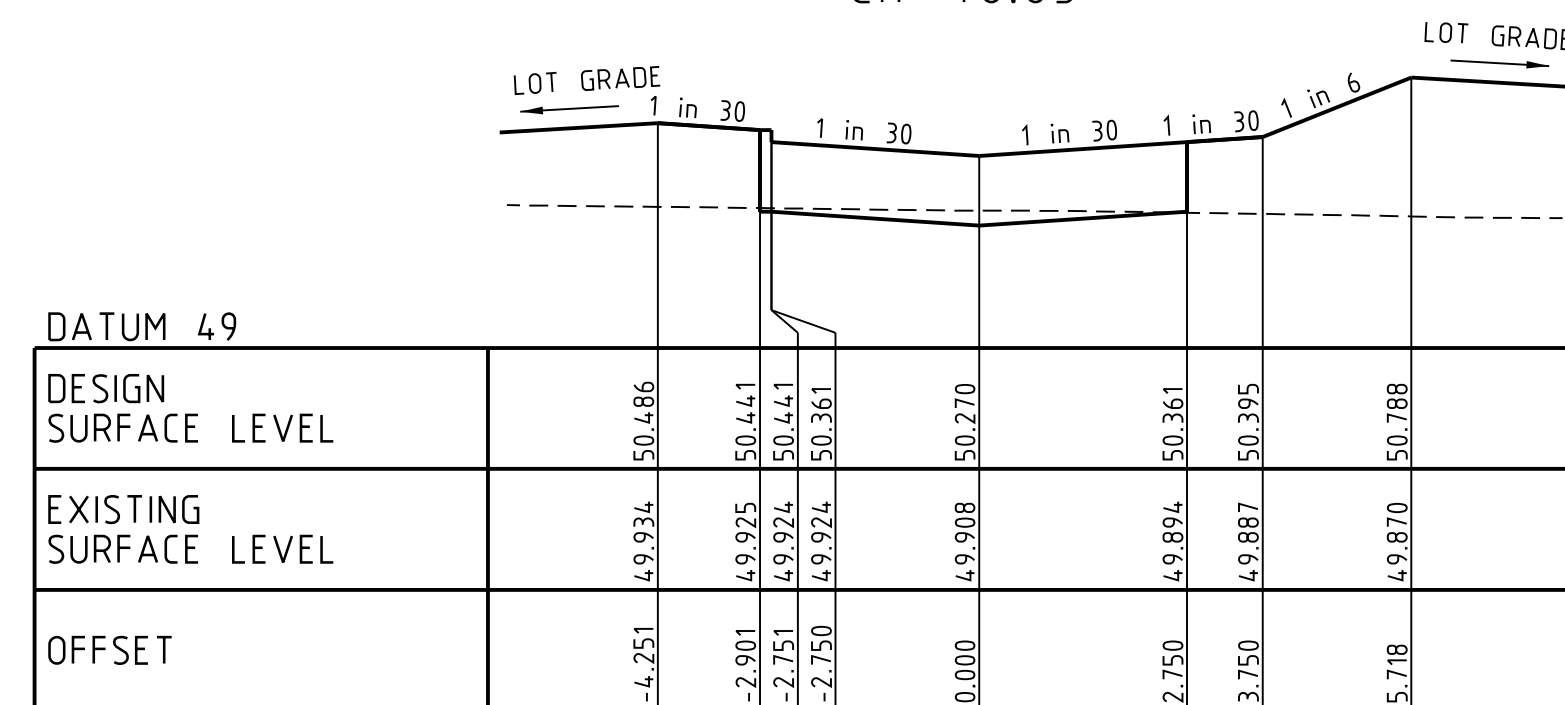
Rev
0



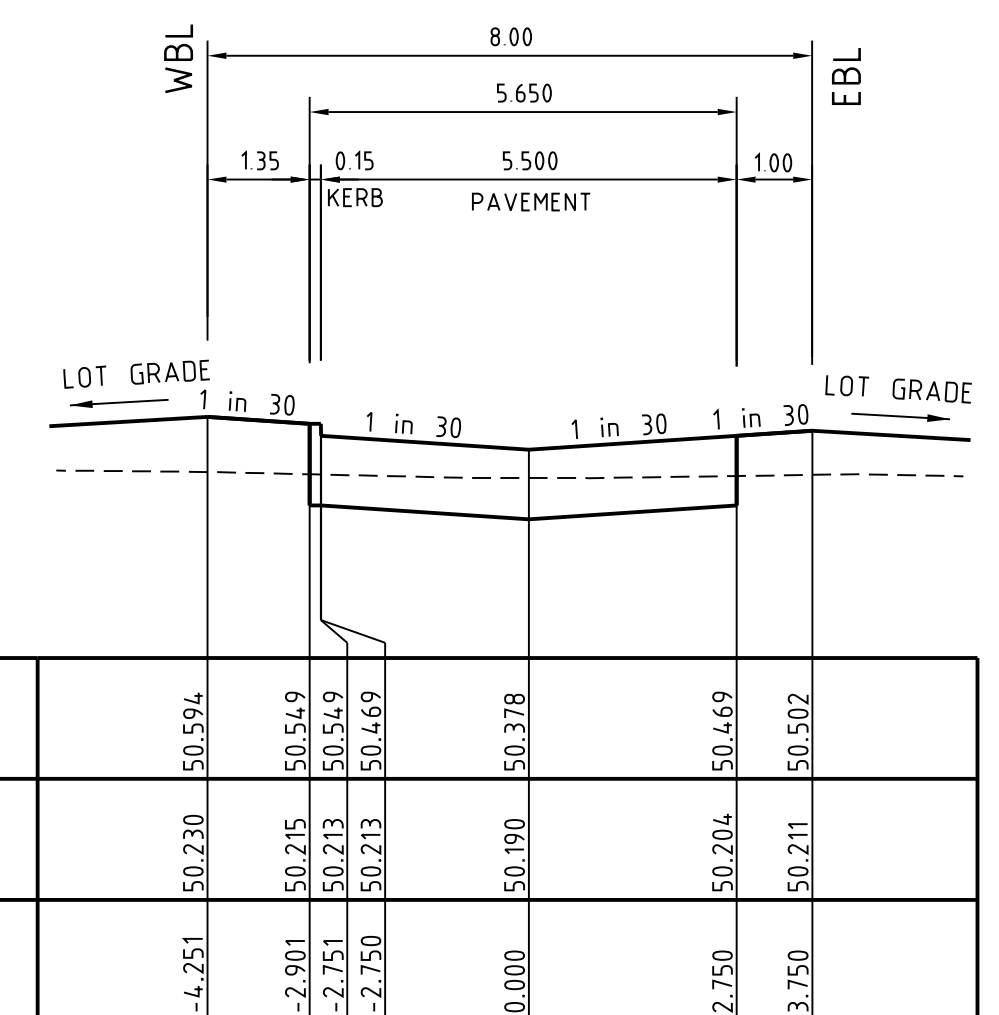
PACT WAY



Ch 46.65



Ch 33.15

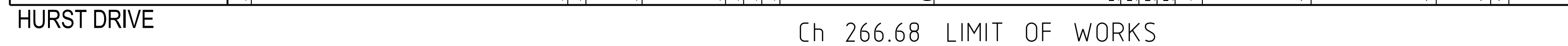
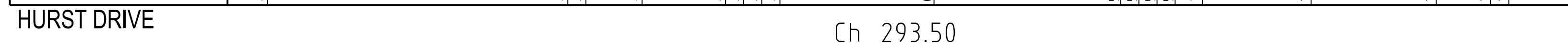
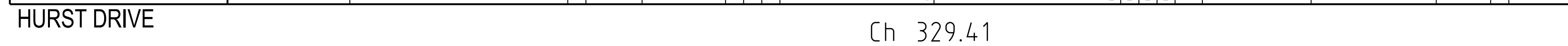
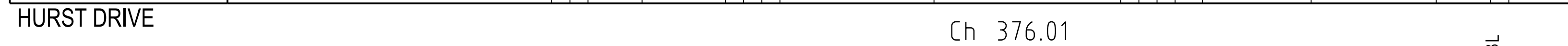


Ch 60.50

HARLOW ESTATE
STAGE 3
LONGITUDINAL SECTIONS - RUMBEE CRESCENT
& PACT WAY
SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No Rev
309439R06 **0**

Planning and Environment Act 1987
Wyndham Planning Scheme
Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024



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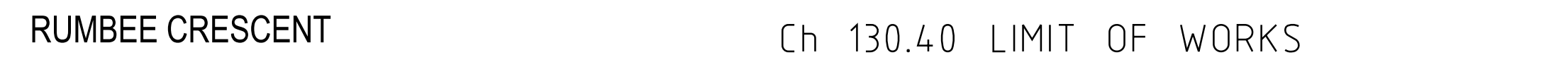
T A R N E I T

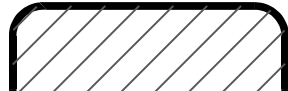
HARLOW ESTATE
STAGE 3
CROSS SECTIONS - HURST DRIVE & RUMBEE CRESCENT

SIG GROUP WYNDHAM CITY COUNCIL		Drg No 309439R07	Rev 1
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FILLING NOTE

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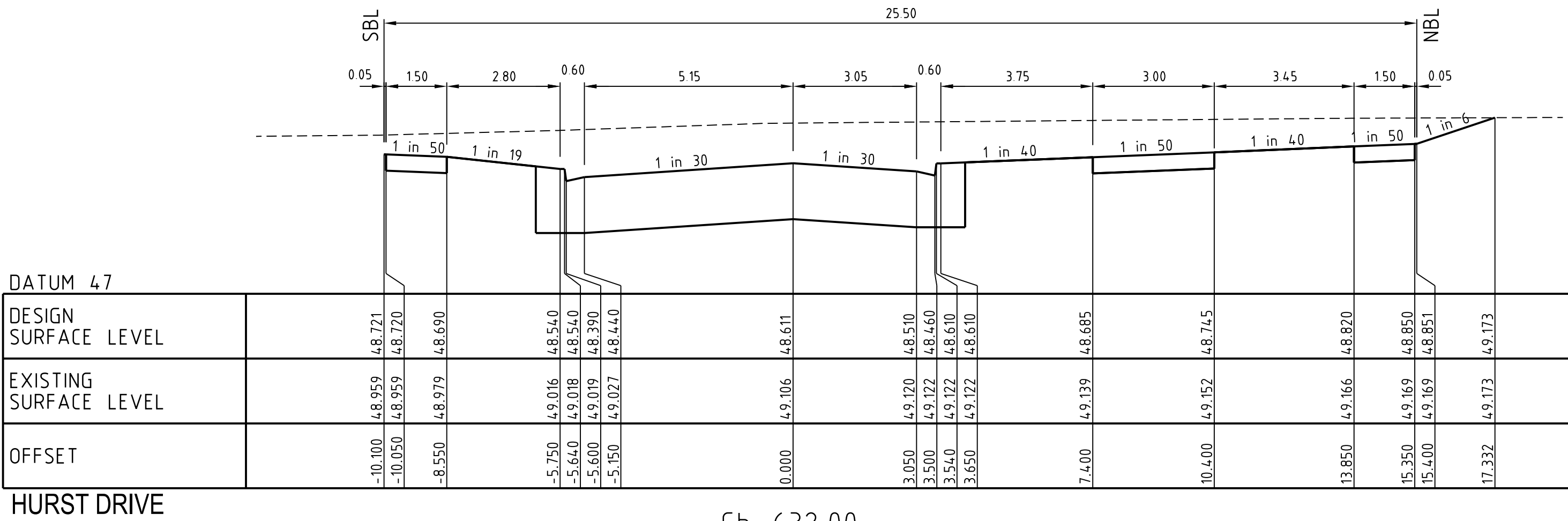




STRUCTURAL FILL
IN ACCORDANCE
WITH AS3798-2007,
LEVEL 1.

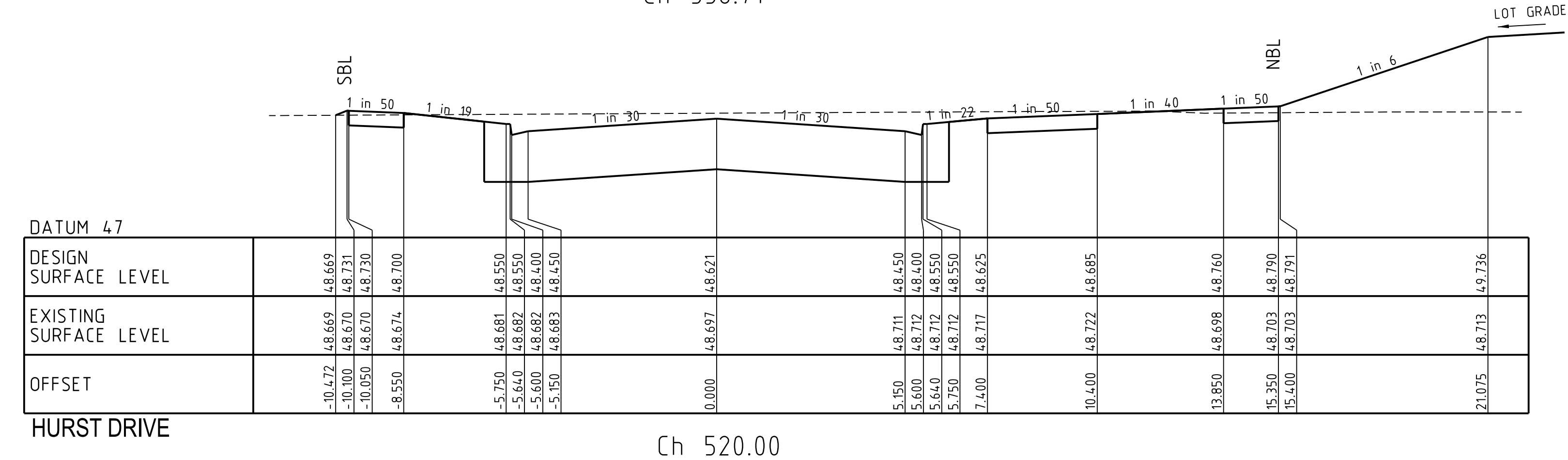
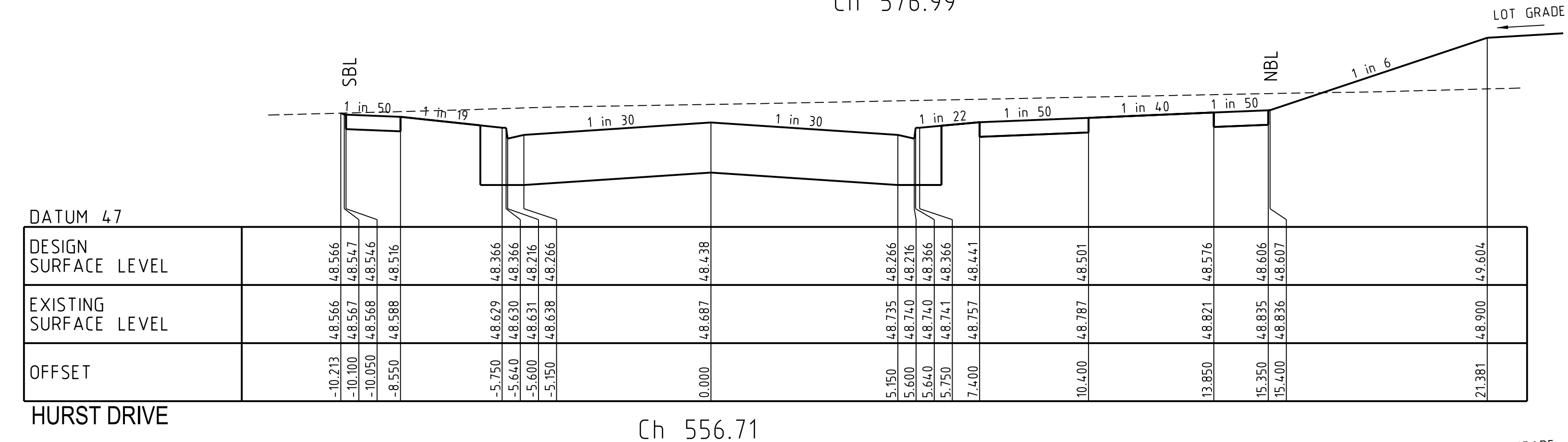
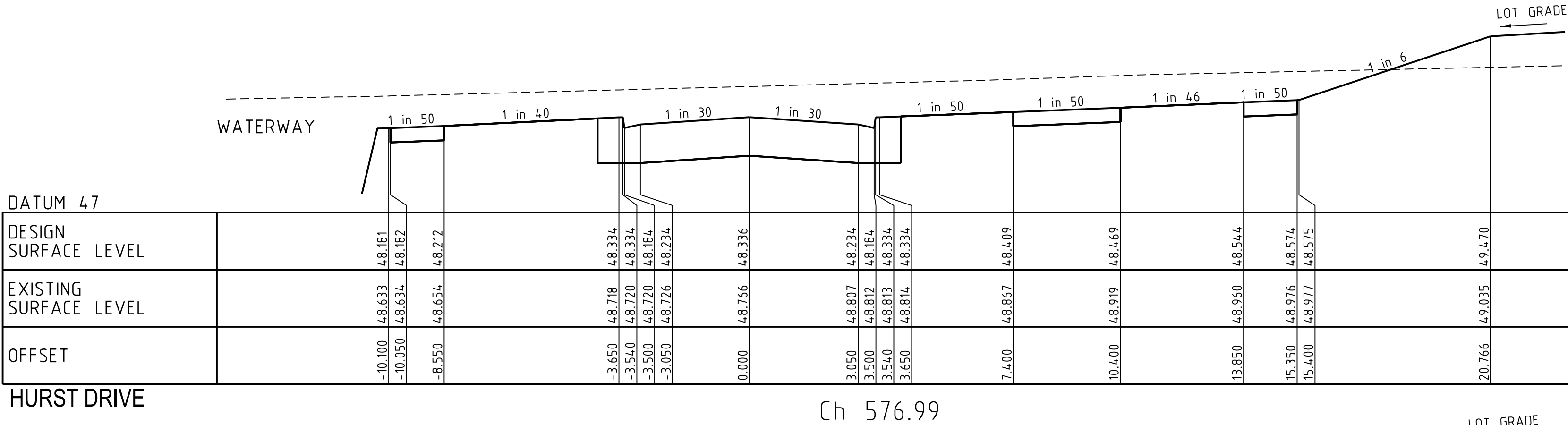
Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023

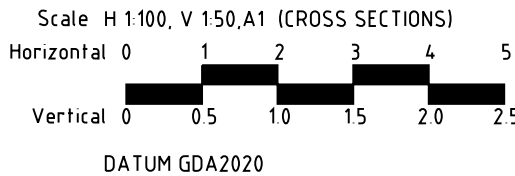


FILLING NOTE

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0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



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ABN 55 050 029 635

Harlow
T A R N E I T

Designed
R. WEINBER
Authorised
M. READMAN

Checked
R. WILSON
Date
28-12-2022

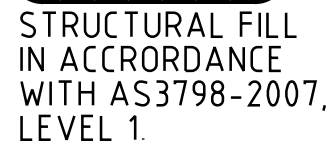
HARLOW ESTATE
STAGE 3
CROSS SECTIONS - HURST DRIVE

SIG GROUP
WYNDHAM CITY COUNCIL

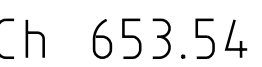
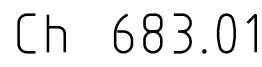
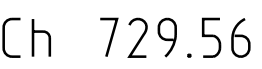
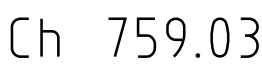
CONSTRUCTION

Drg No
309439R09

Rev
0



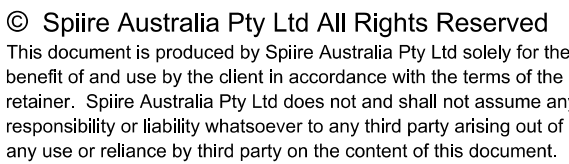
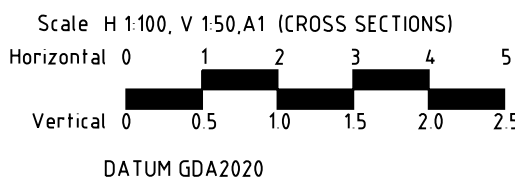
STRUCTURAL FILL
IN ACCORDANCE
WITH AS3798-2007,
LEVEL 1.



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**Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023**

0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M,R	29/08/23
Rev	Amendments	Approved	Date



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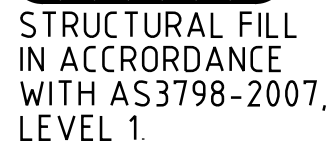
Designed
R. WEINBER
Authorised
M. READMAN

Checked
R. WILSON
Date
28-12-2022

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No **309439R10**

Rev
0

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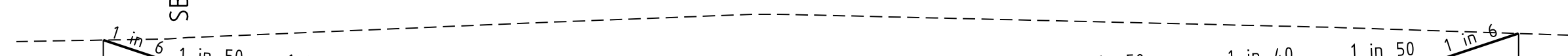
Ch 911.07

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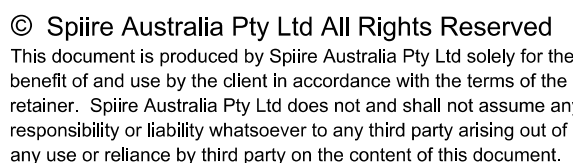
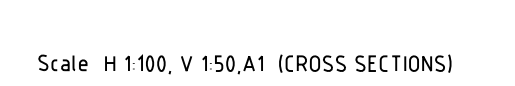
Ch 881.60

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Ch 835.05

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Ch 805.58



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Designed
R. WEINBER
Authorised
M. READMAN

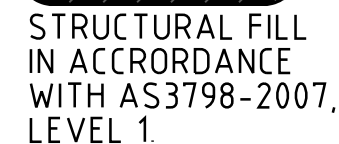
Checked
R. WILSON
Date
28-12-2022

SIG GROUP
WYNDHAM CITY COUNCIL

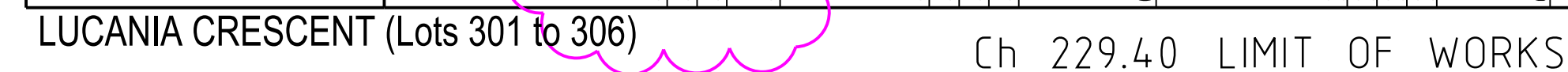
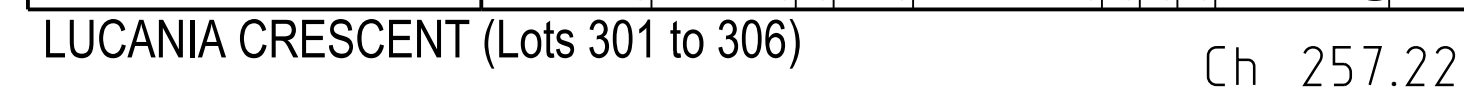
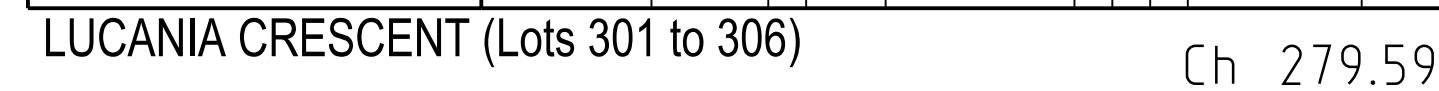
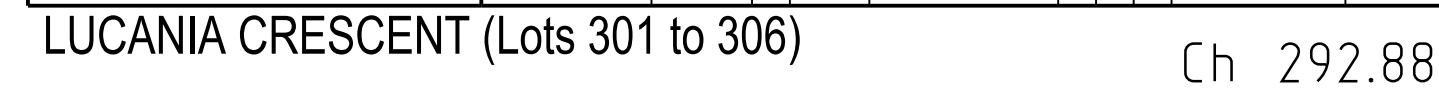
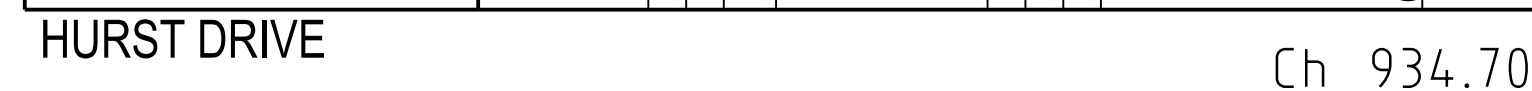
CONSTRUCTION Drg No **309439R11**

ev
0

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**Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024**

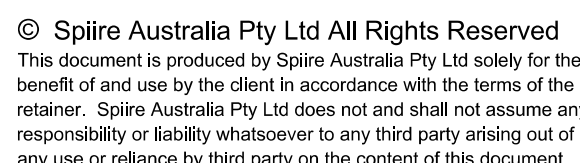


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Vertical 0 0.5 1.0 1.5 2.0 2.5

DATUM GDA2020



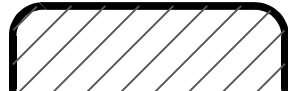
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Designed
R. WEINBER
Authorised
M. READMAN

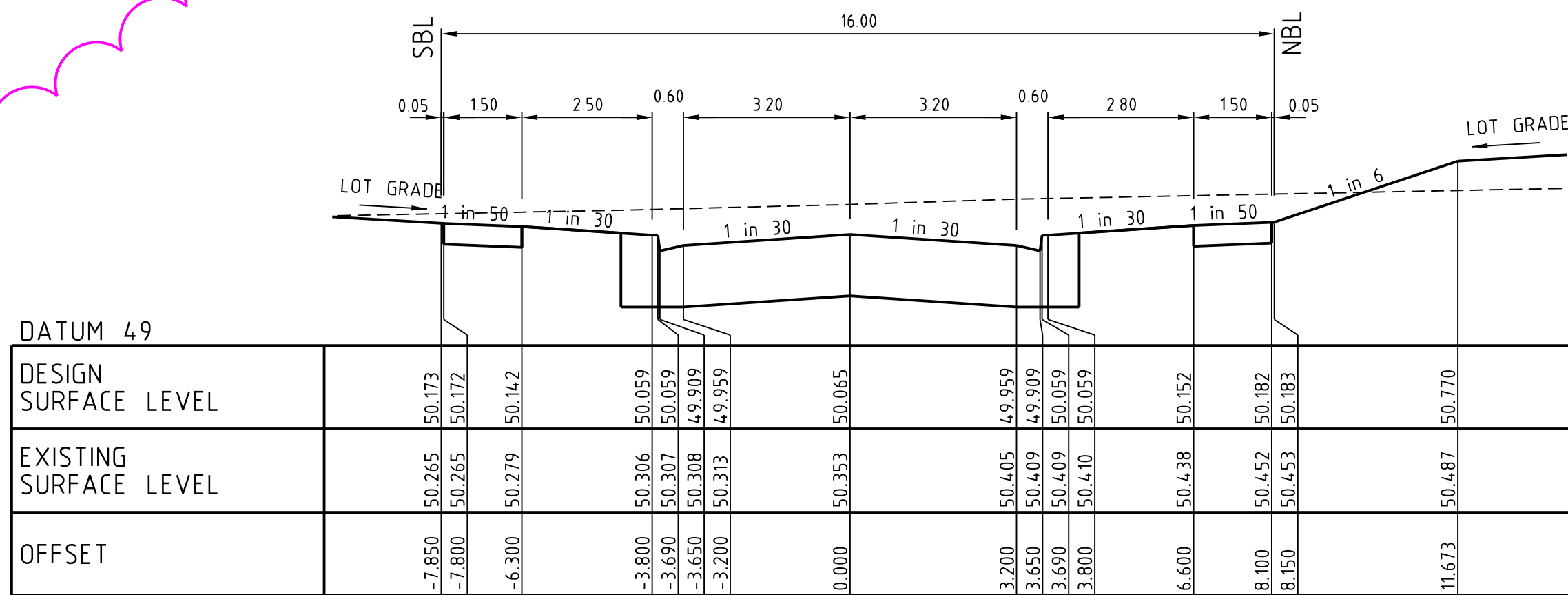
Checked
R. WILSON
Date
28-12-2022

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No
309439R12

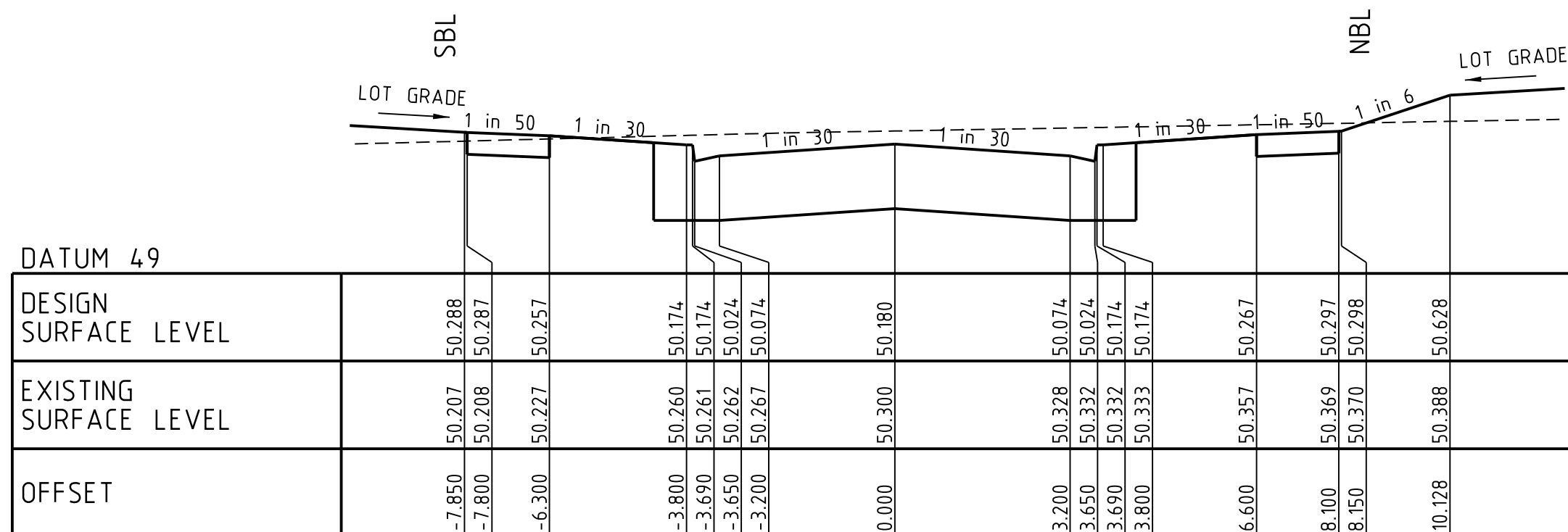


STRUCTURAL FILL
IN ACCORDANCE
WITH AS3798-2007,
LEVEL 1.



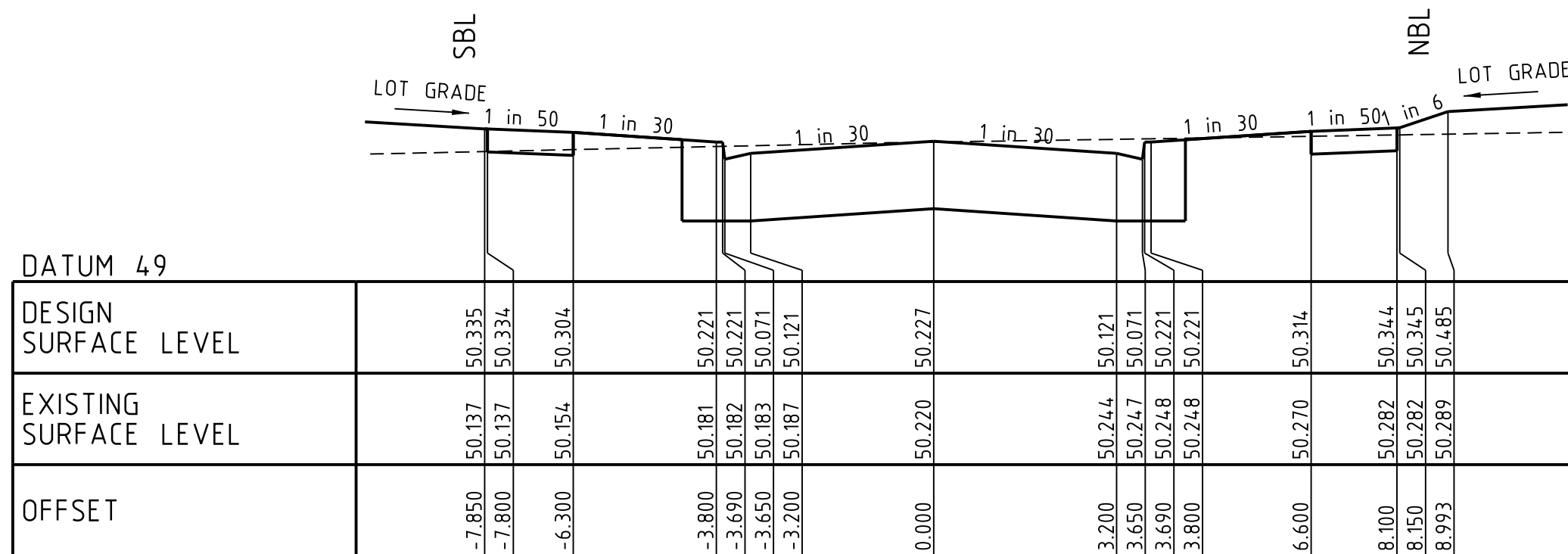
LUCANIA CRESCENT (Lots 310 to 336)

Ch 189.90



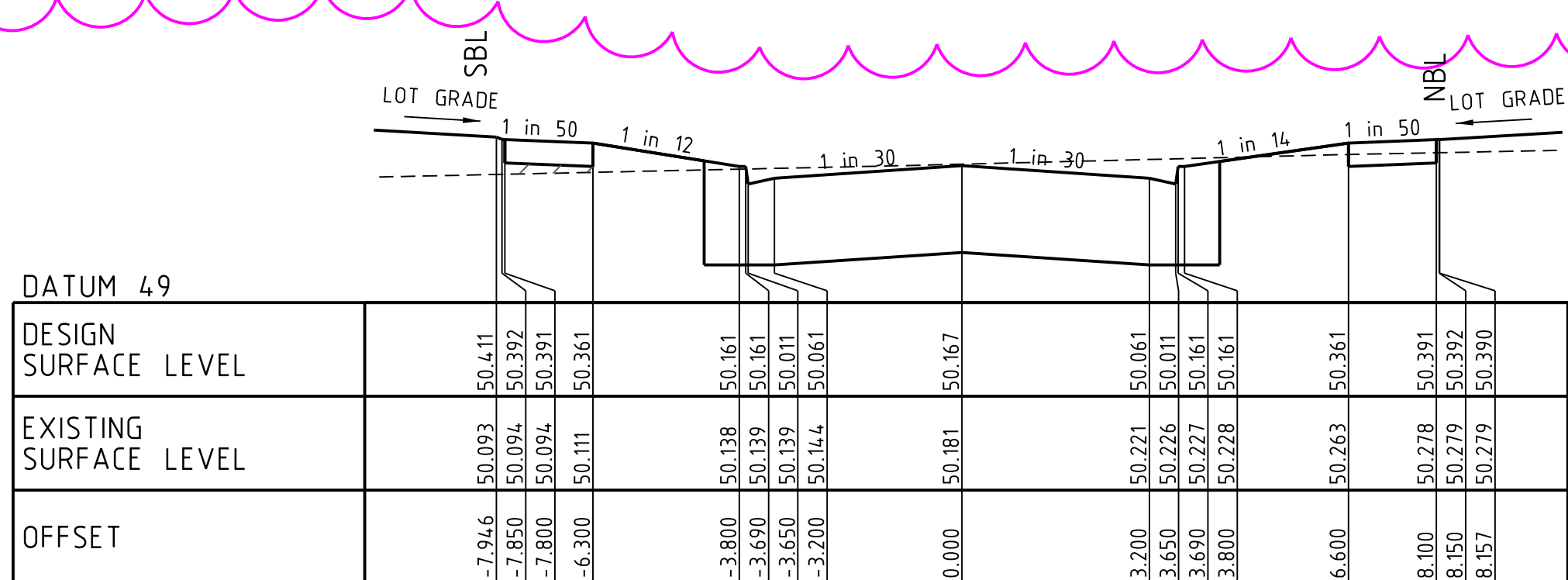
LUCANIA CRESCENT (Lots 310 to 336)

Ch 166.90



LUCANIA CRESCENT (Lots 310 to 336)

Ch 143.90

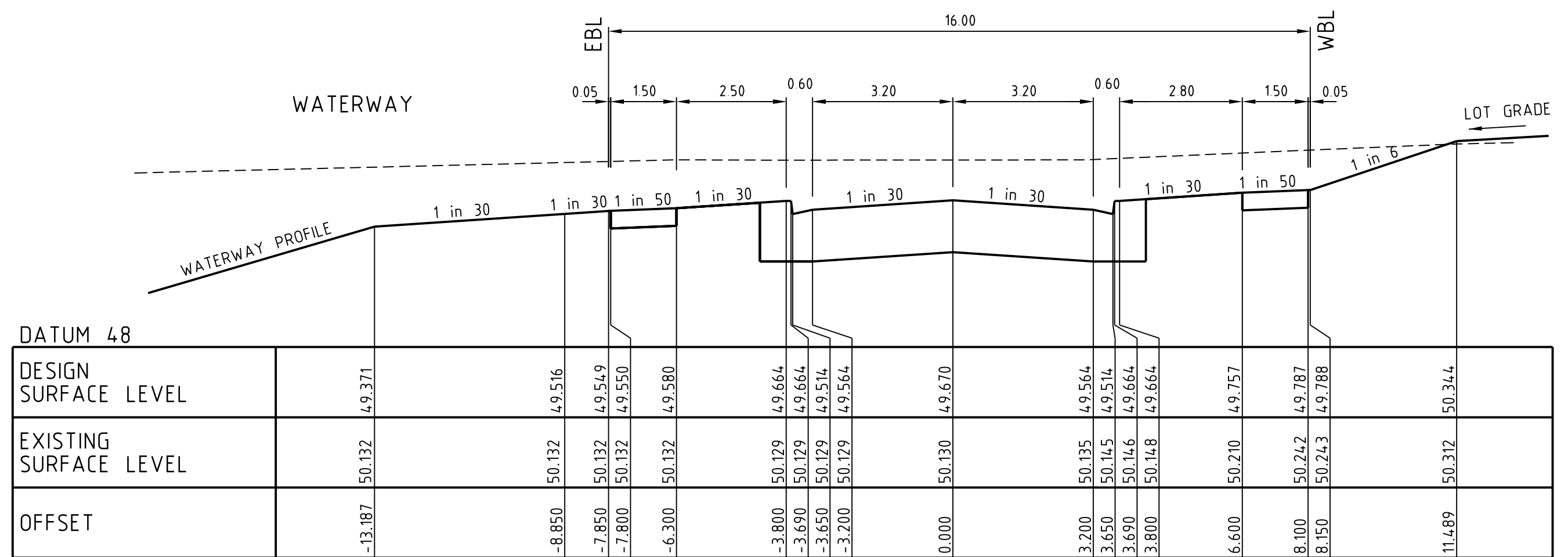


LUCANIA CRESCENT (Lots 310 to 336)

Ch 133.40 LIMIT OF WORKS

FILLING NOTE

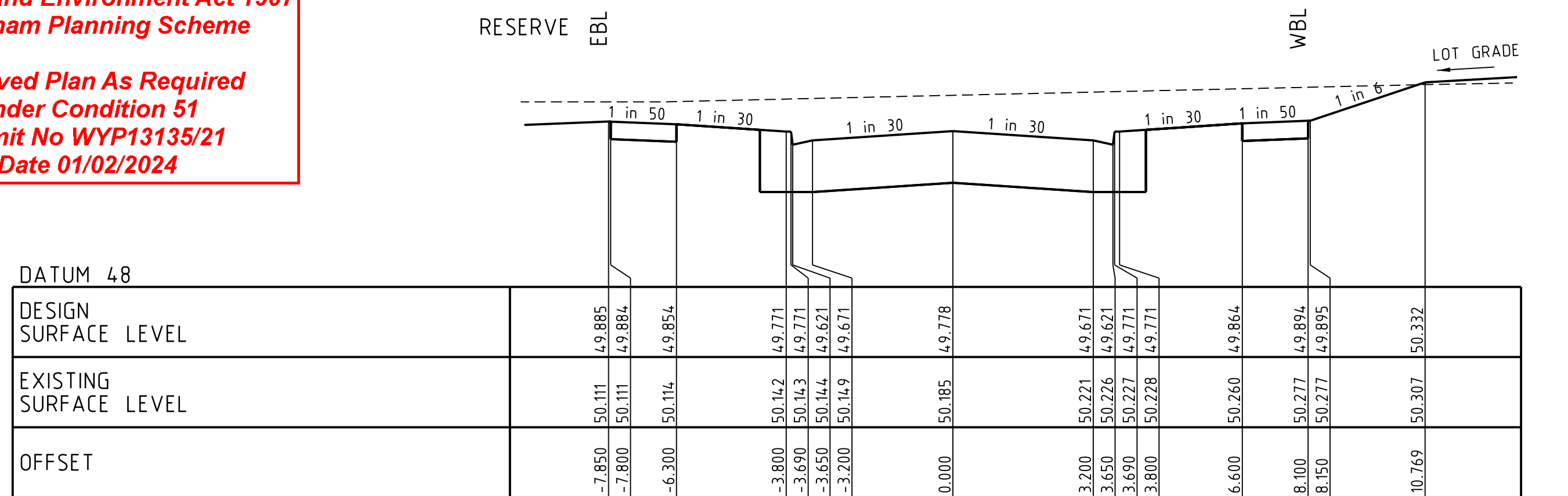
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LUCANIA CRESCENT (Lots 310 to 336)

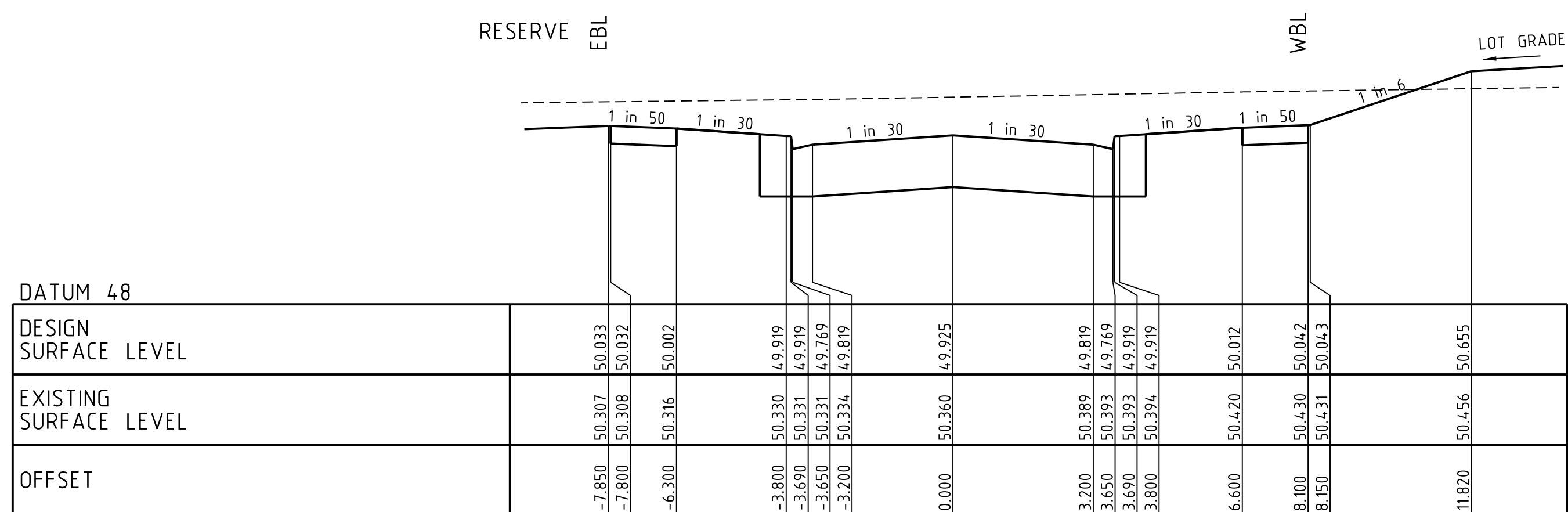
Ch 262.89

Planning and Environment Act 1987
Wyndham Planning Scheme
Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024



LUCANIA CRESCENT (Lots 310 to 336)

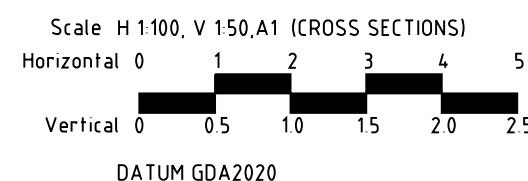
Ch 247.44



LUCANIA CRESCENT (Lots 310 to 336)

Ch 217.90

Rev	Amendments	Approved	Date
1	LUCANIA CRESCENT VERGE XFALL AMENDED TO 1 IN 30	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23



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R. WEINBER
Authorised
M. READMAN

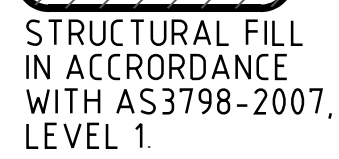
Checked
R. WILSON
Date
28-12-2022

HARLOW ESTATE
STAGE 3
CROSS SECTIONS - LUCANIA CRESCENT (LOTS 310 to 336)

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION
Drg No
309439R13

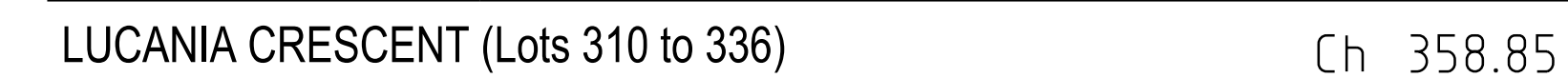
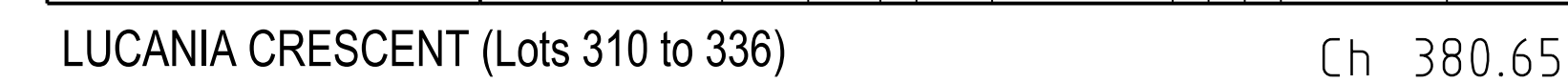
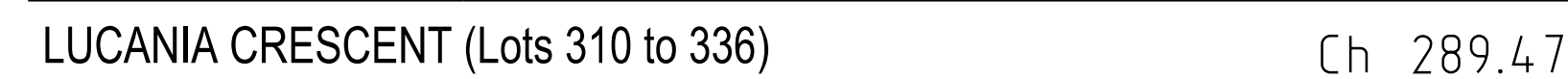
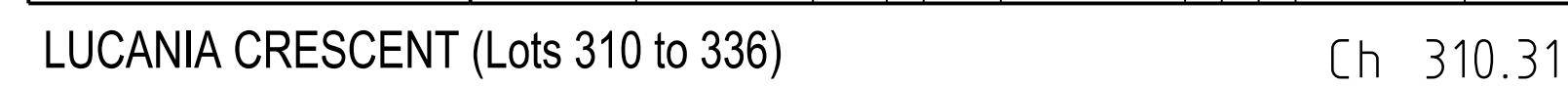
Rev
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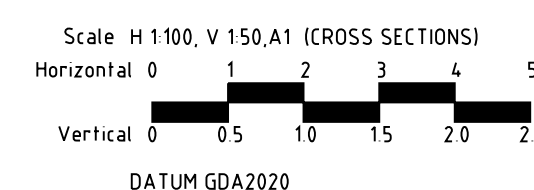
STRUCTURAL FILL
IN ACCORDANCE
WITH AS3798-2007,
LEVEL 1.

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**Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024**



1	LUCANIA CRESCENT VERGE XFALL AMENDED TO 1 IN 30	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



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R. WEINBER
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M. READMAN

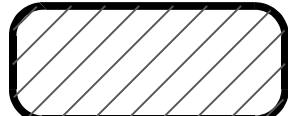
Checked
R. WILSON
Date
28-12-2022

HARLOW ESTATE
STAGE 3
CROSS SECTIONS - LUCANIA CRESCENT (LOTS 310 to 336)

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No **309439R14**

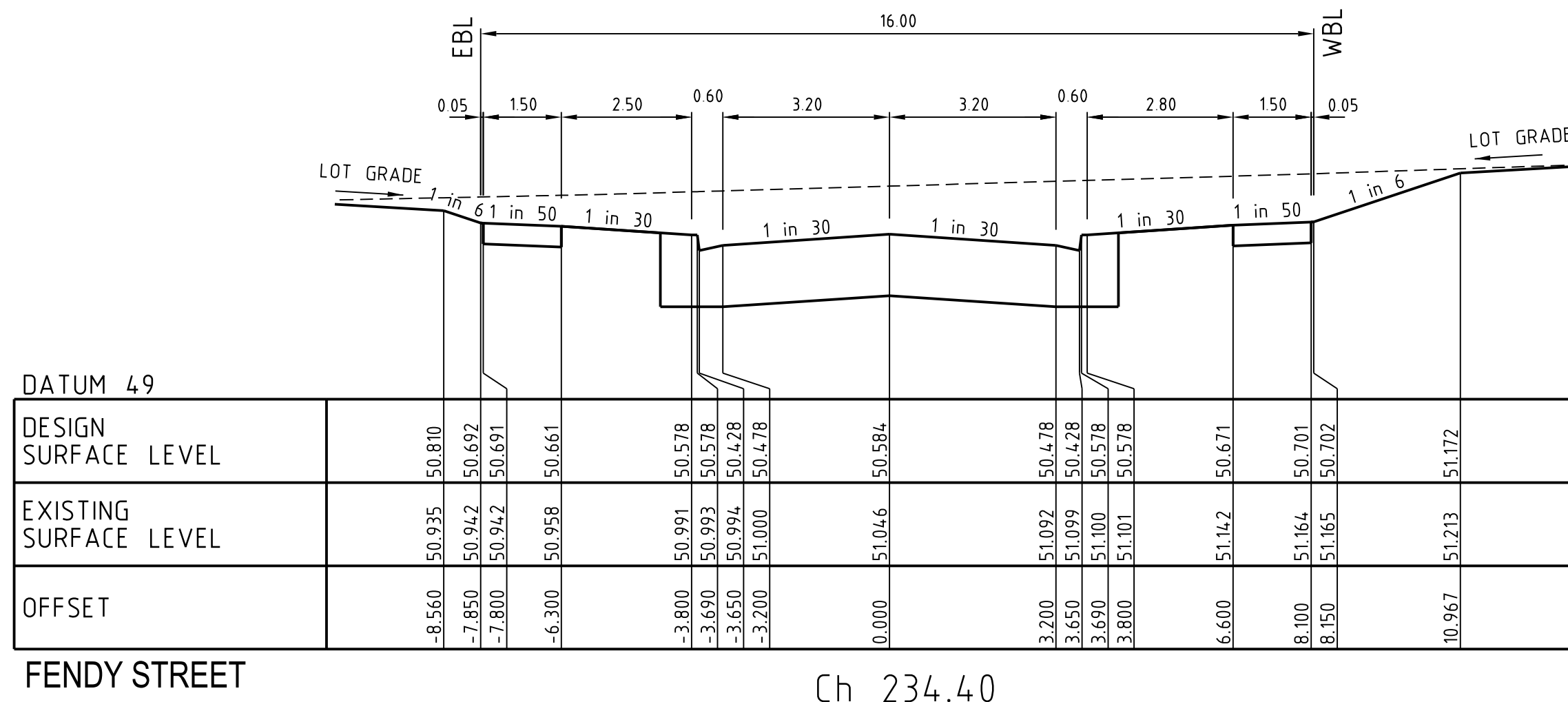
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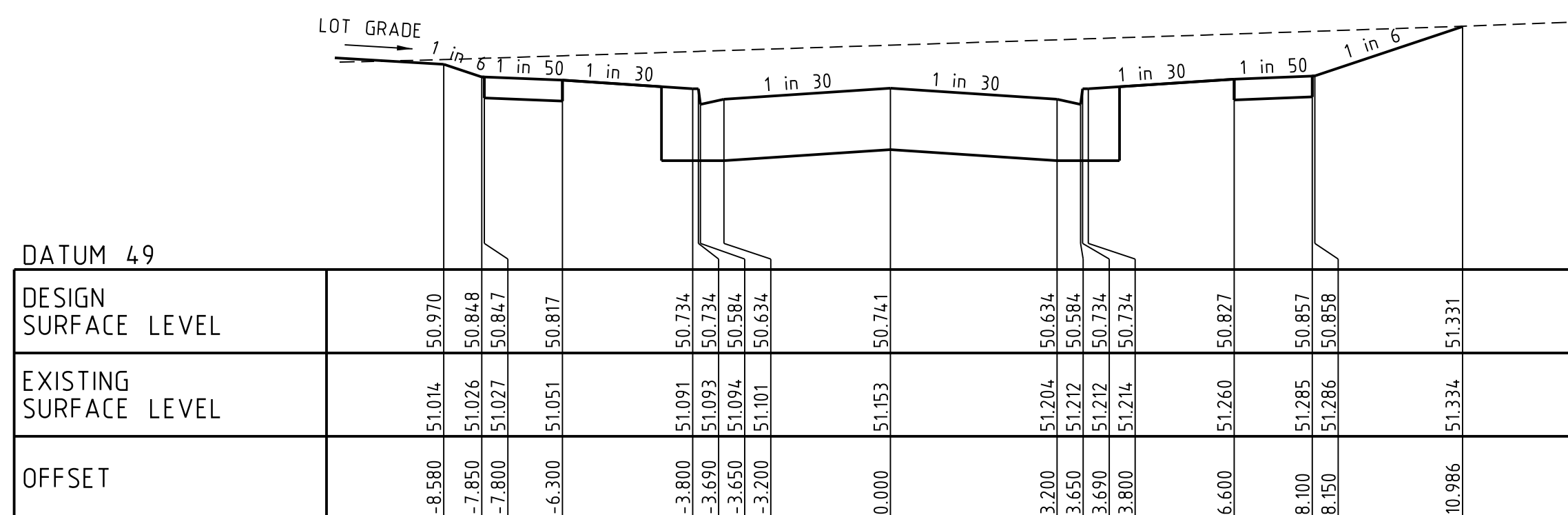
STRUCTURAL FILL
IN ACCORDANCE
WITH AS3798-2007,
LEVEL 1.

FILLING NOTE

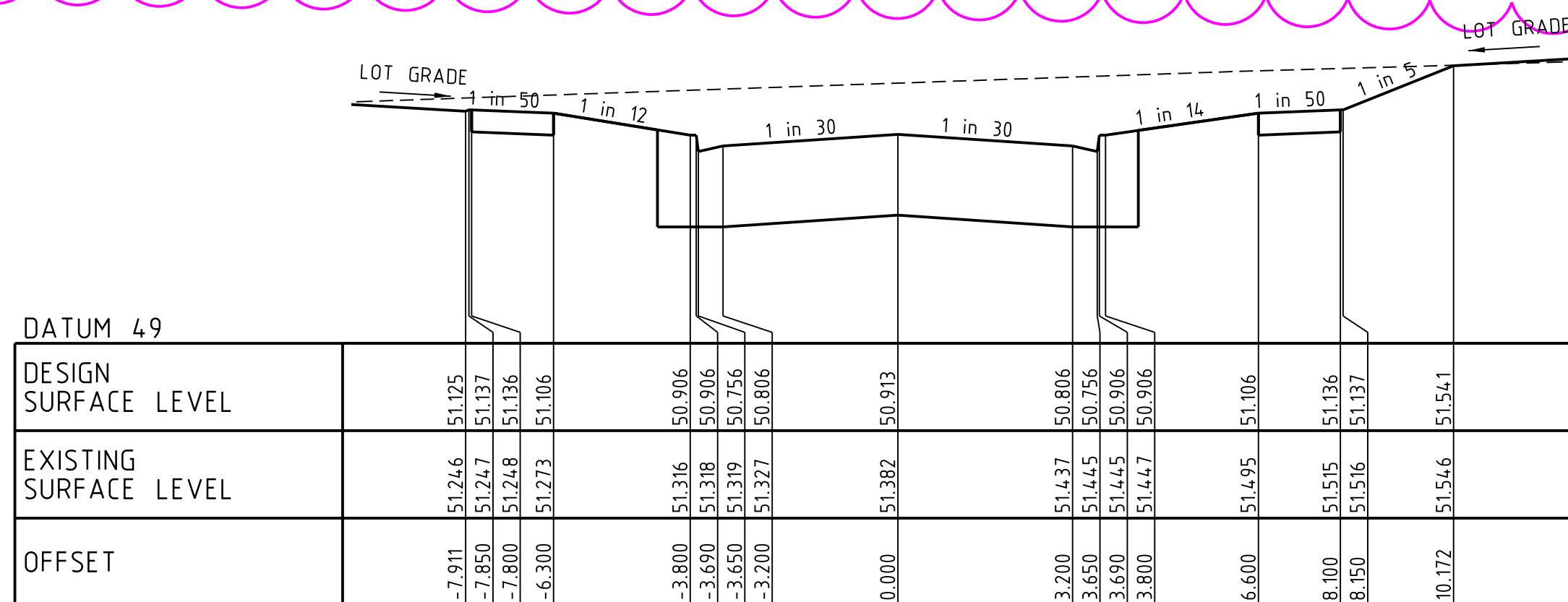
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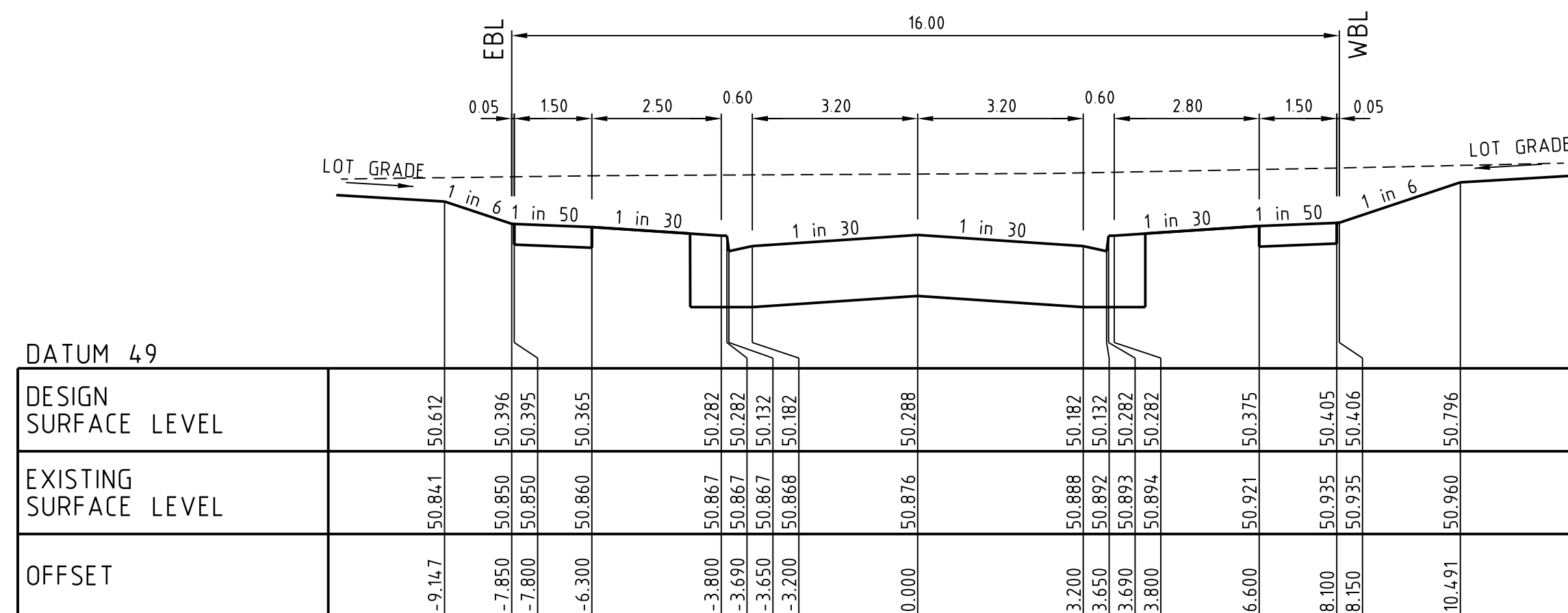
FENDY STREET Ch 234.40



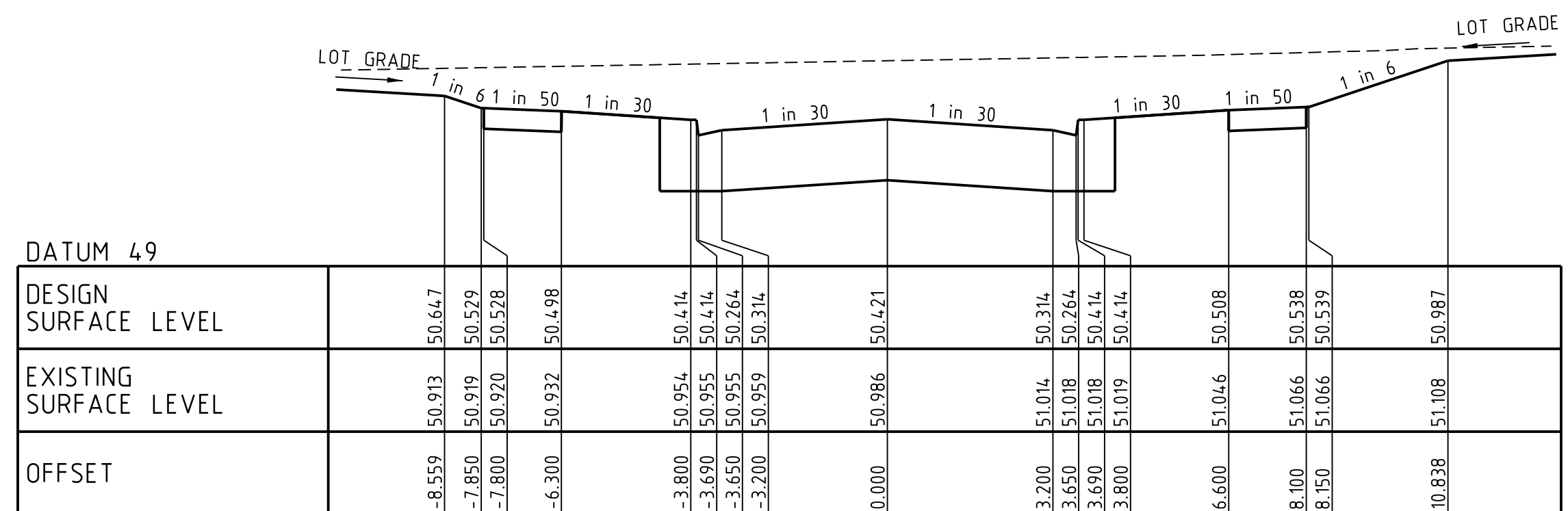
FENDY STREET Ch 220.40



FENDY STREET Ch 195.40 LIMIT OF WORKS

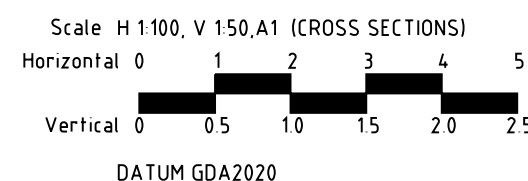


FENDY STREET Ch 260.94



FENDY STREET Ch 249.04

Rev	Amendments	Approved	Date
1	FENDY STREET VERGE XFALL AMENDED TO 1 IN 30	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23



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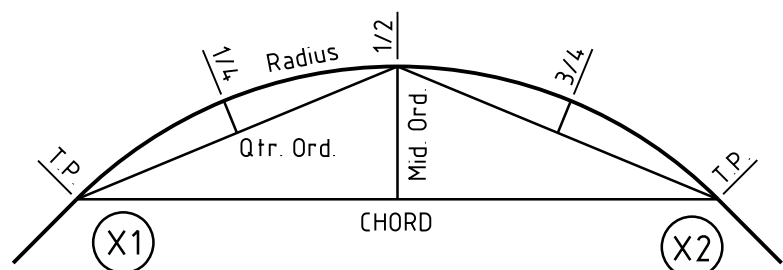
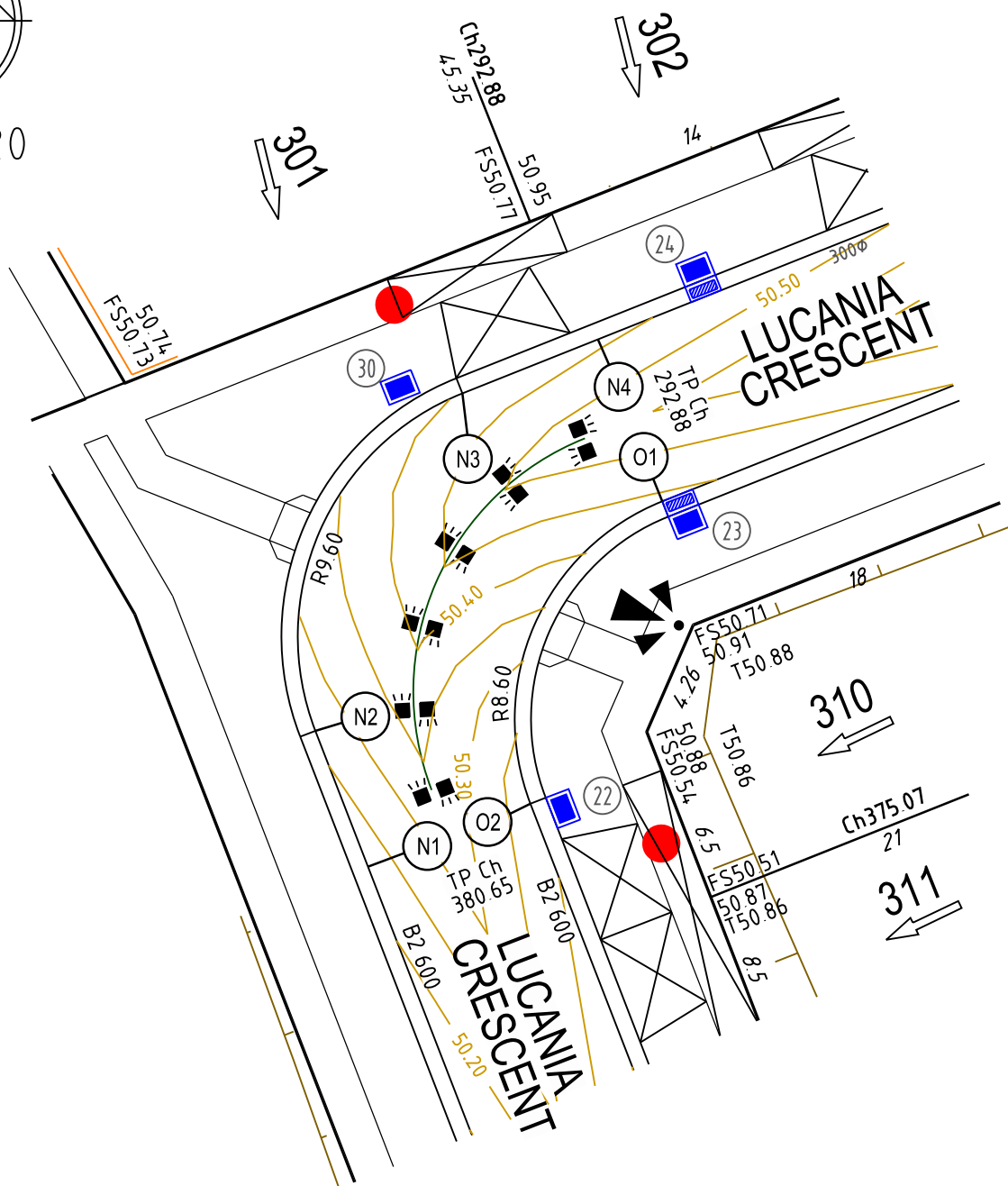
Designed R. WEINBER	Checked R. WILSON
Authorised M. READMAN	Date 28-12-2022

HARLOW ESTATE
STAGE 3
CROSS SECTIONS - FENDY STREET

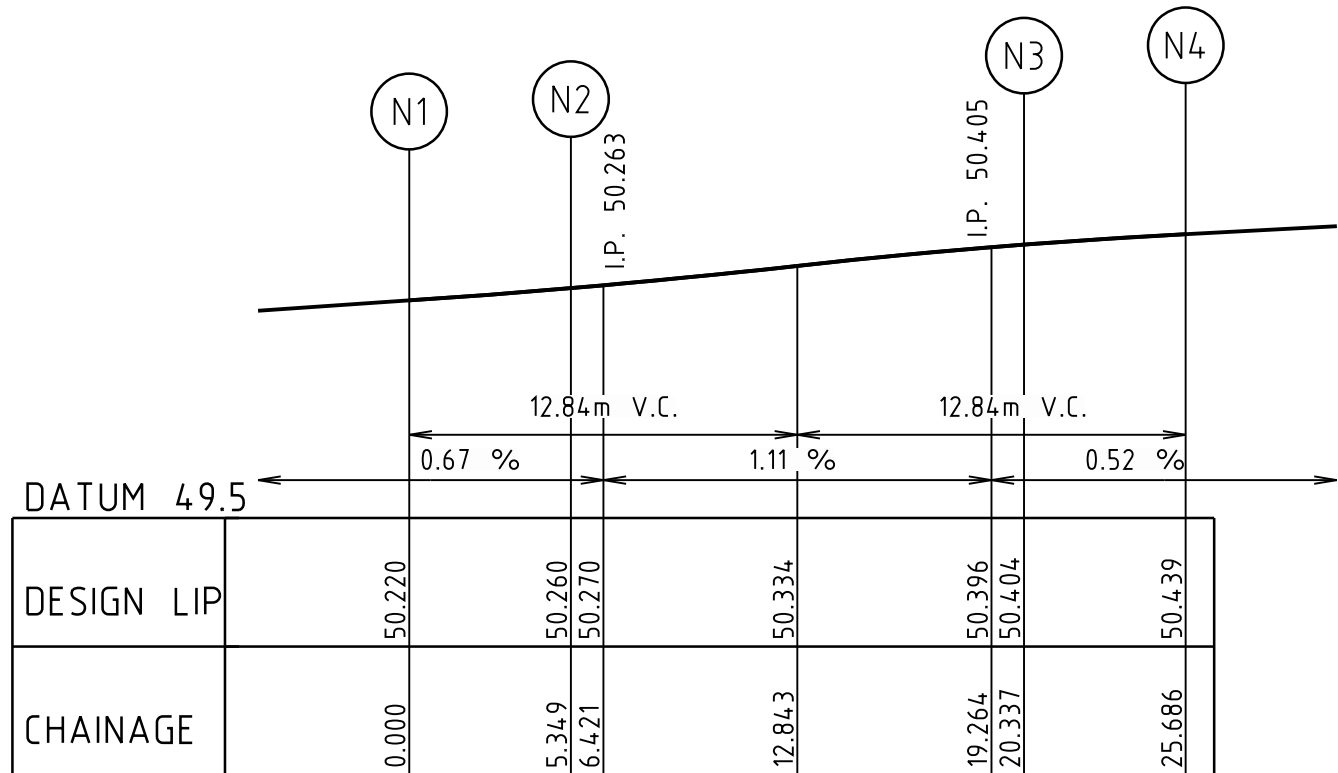
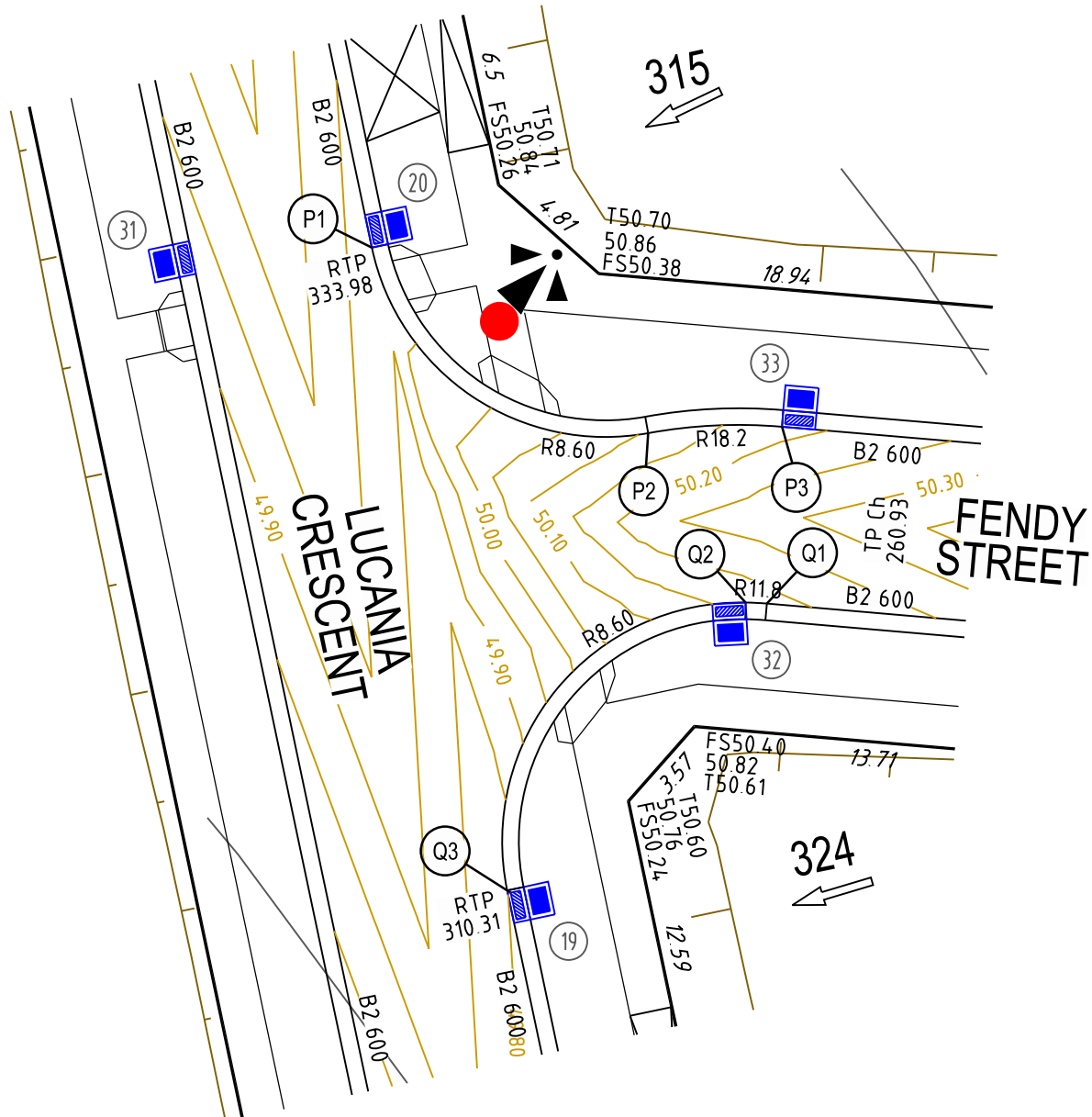
SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No 309439R15

Rev 1



KERB RETURN SETOUT DETAIL

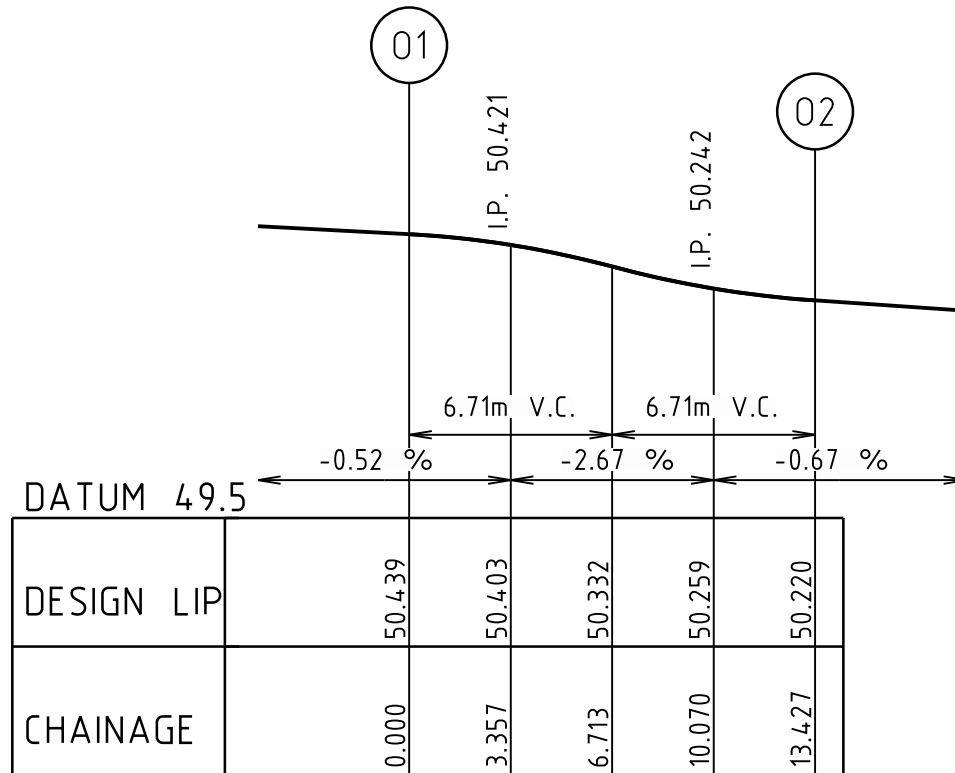


LIP LINE N
Hor250
Ver25

ALIGNMENT N

POINT NO	EASTING	NORTHING	RL
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N2	297499.038	5812782.077	50.260
1/4	297498.392	5812785.744	50.295
1/2	297499.190	5812789.381	50.334
3/4	297501.312	5812792.441	50.372
N3	297504.439	5812794.463	50.404
N4	297509.408	5812796.442	50.439

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
N2-N3	9.600	14.988	13.511	2.779	0.722



LIP LINE O
Hor250
Ver25

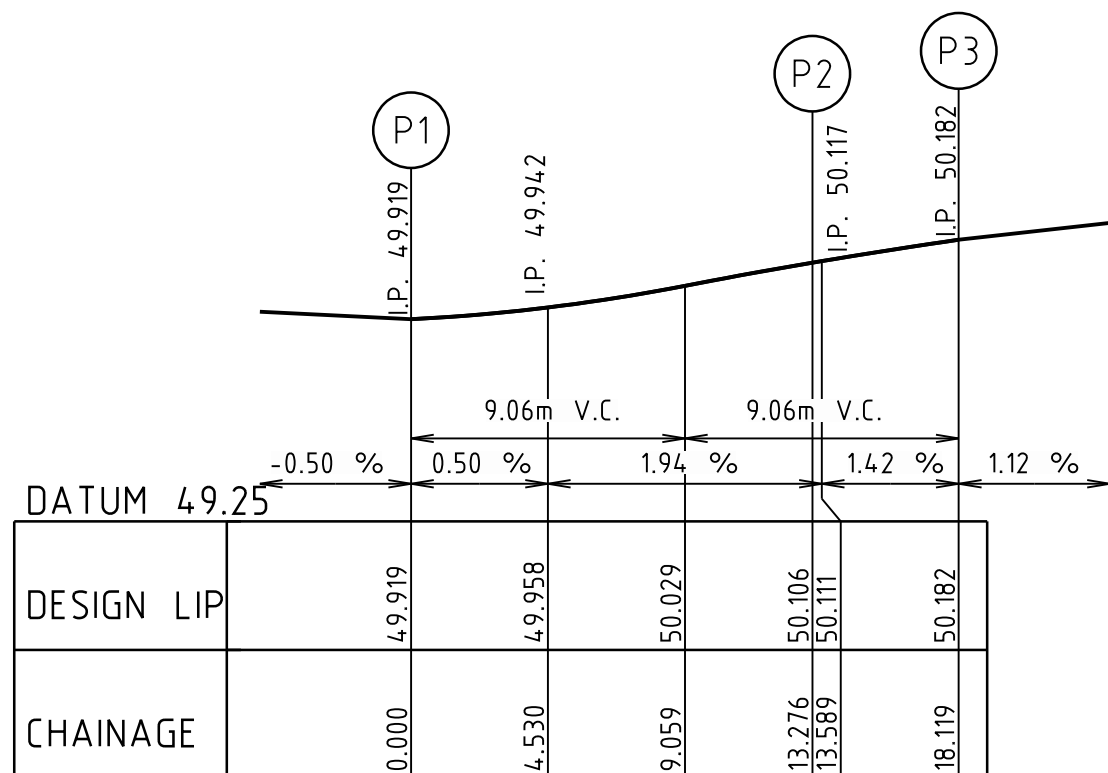
ALIGNMENT O

POINT NO	EASTING	NORTHING	RL
O1	297511.775	5812790.496	50.439
1/4	297508.975	5812788.684	50.403
1/2	297507.074	5812785.943	50.332
3/4	297506.359	5812782.685	50.259
O2	297506.937	5812779.401	50.220

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
O1-O2	8.600	13.427	12.104	2.490	-0.647

Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023

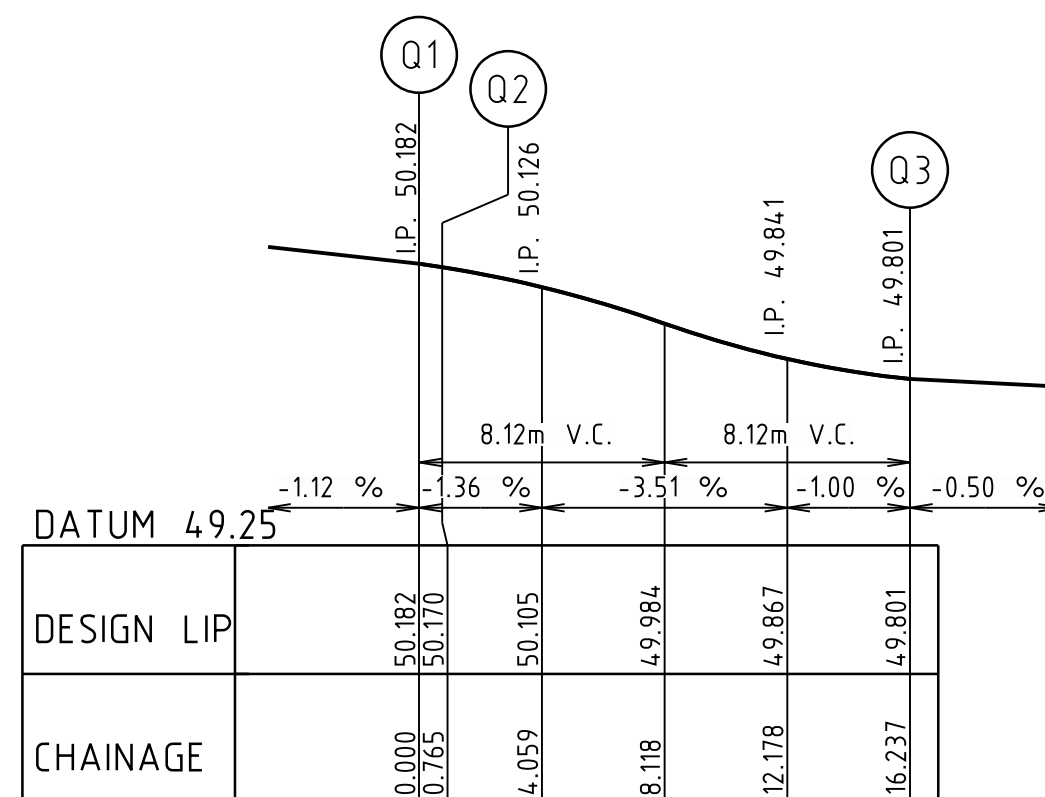


LIP LINE P
Hor250
Ver25

ALIGNMENT P

POINT NO	EASTING	NORTHING	RL
P1	297519.980	5812734.190	49.919
1/4	297521.266	5812731.153	49.944
1/2	297523.602	5812728.823	49.987
3/4	297526.642	5812727.544	50.047
P2	297529.941	5812727.504	50.106
1/4	297531.138	5812727.681	50.126
1/2	297532.344	5812727.779	50.146
3/4	297533.554	5812727.797	50.164
P3	297534.763	5812727.734	50.182

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
P1-P2	8.600	13.276	11.997	2.437	-0.633
P2-P3	18.200	4.842	4.828	0.161	0.040



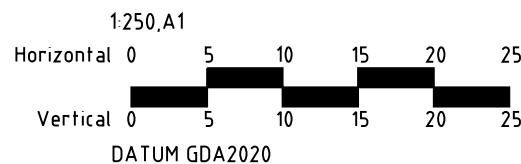
LIP LINE Q
Hor250
Ver25

ALIGNMENT Q

POINT NO	EASTING	NORTHING	RL
Q1	297534.217	5812721.357	50.182
1/4	297534.027	5812721.372	50.179
1/2	297533.836	5812721.383	50.176
3/4	297533.645	5812721.392	50.173
Q2	297533.454	5812721.397	50.170
1/4	297529.698	5812720.619	50.090
1/2	297526.654	5812718.285	49.971
3/4	297524.928	5812714.860	49.863
Q3	297524.862	5812711.026	49.801

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
Q0-Q2	11.800	0.765	0.765	0.006	-0.002
Q0-Q3	8.600	15.472	13.468	3.251	-0.855

Rev	Amendments	Approved	Date
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23



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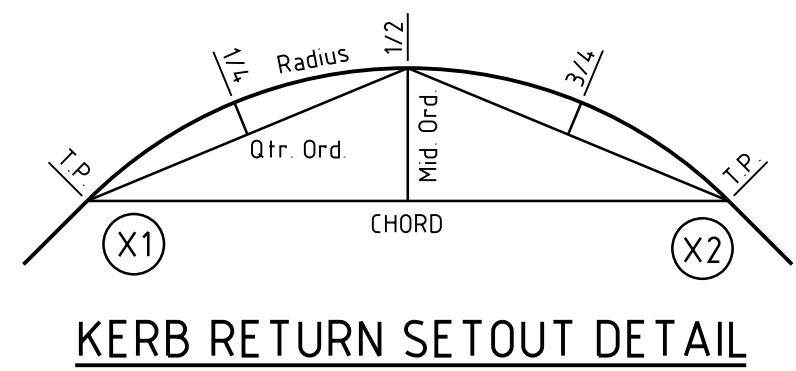
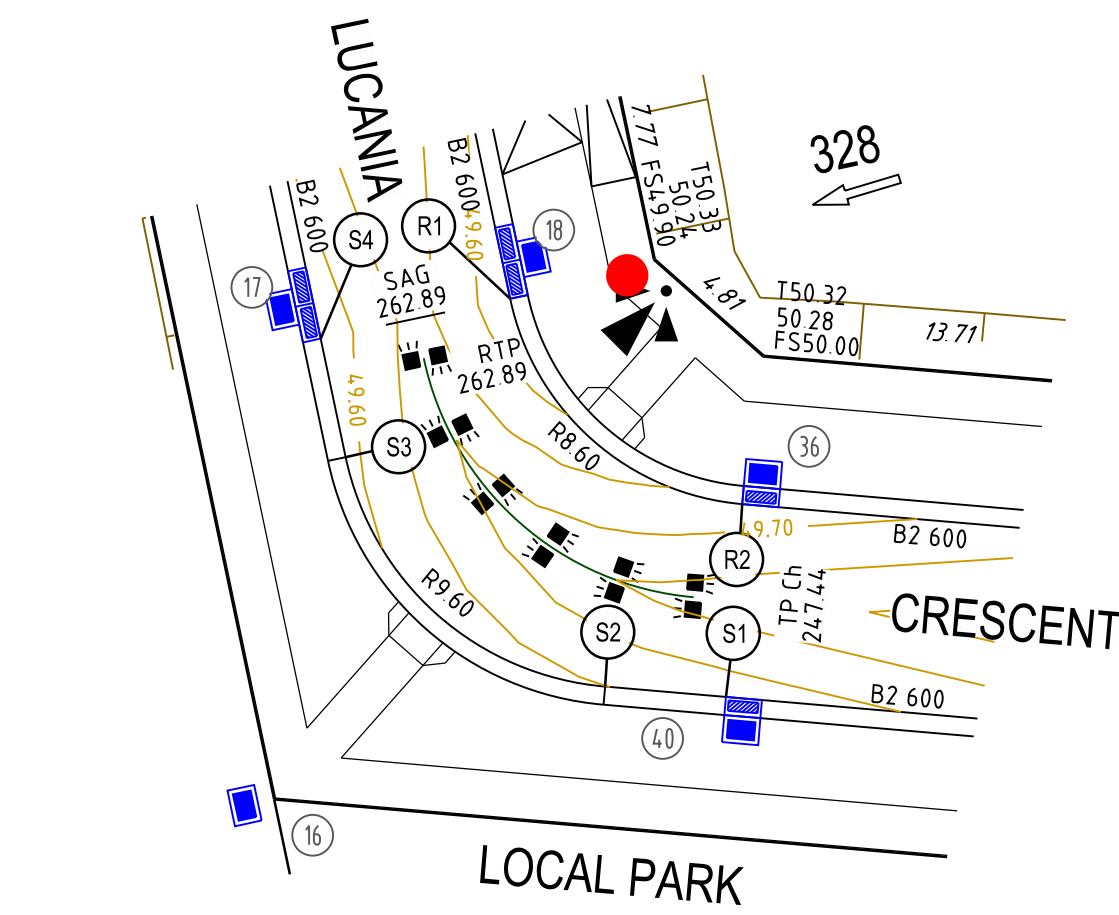
Designed	Checked
R. WEINBER	R. WILSON
Authorised	Date
M. READMAN	10-01-2023

HARLOW ESTATE
STAGE 3
INTERSECTION DETAILS

SIG GROUP
WYNDHAM CITY COUNCIL

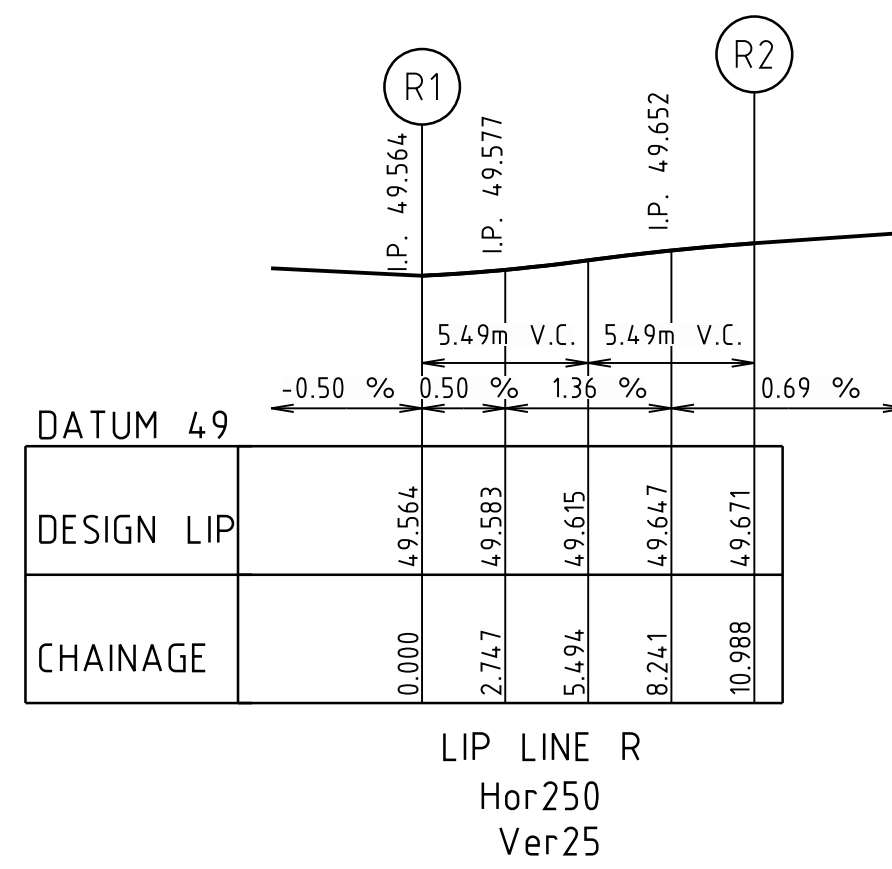
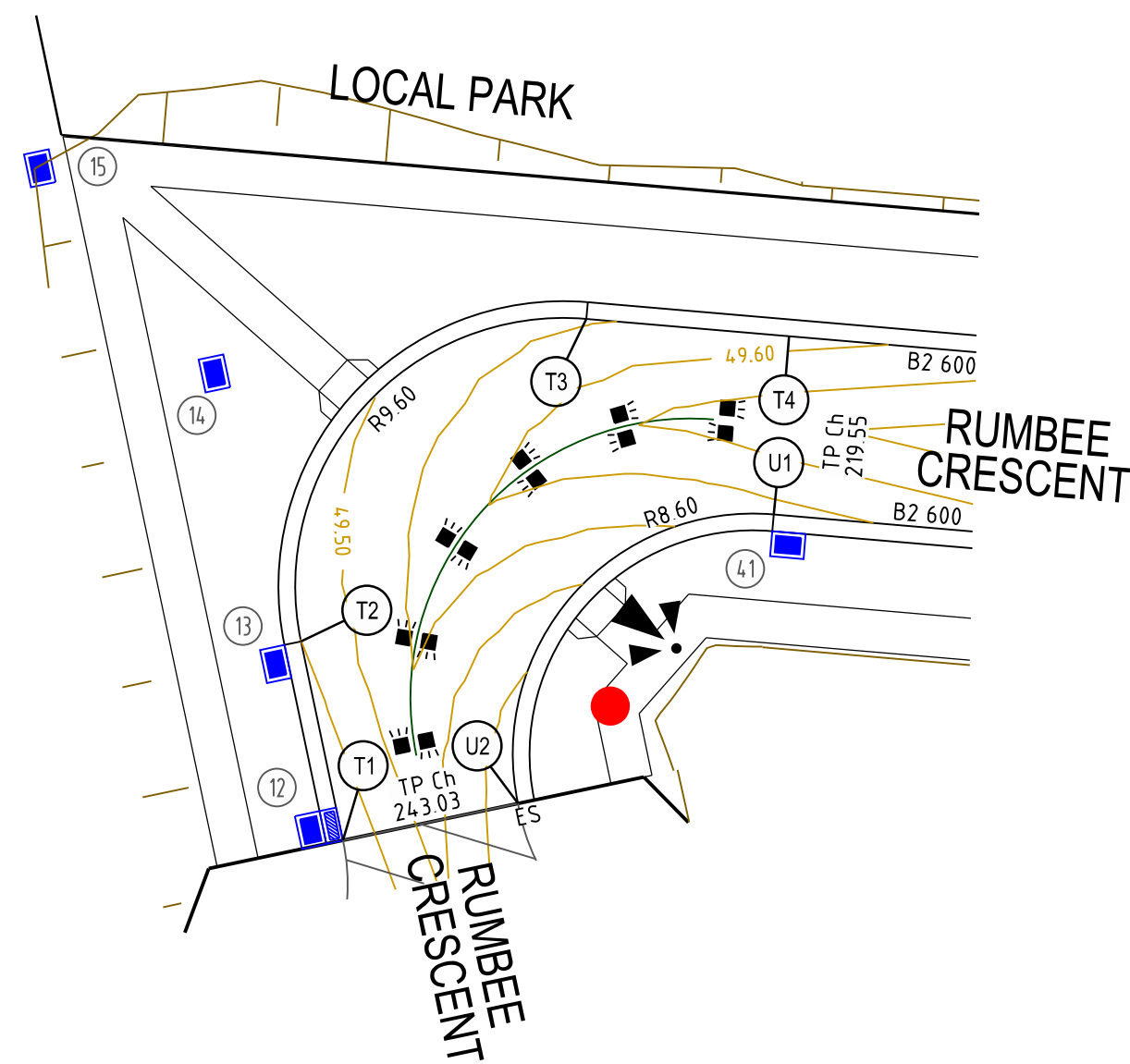
CONSTRUCTION Drg No 309439R16

Rev 0



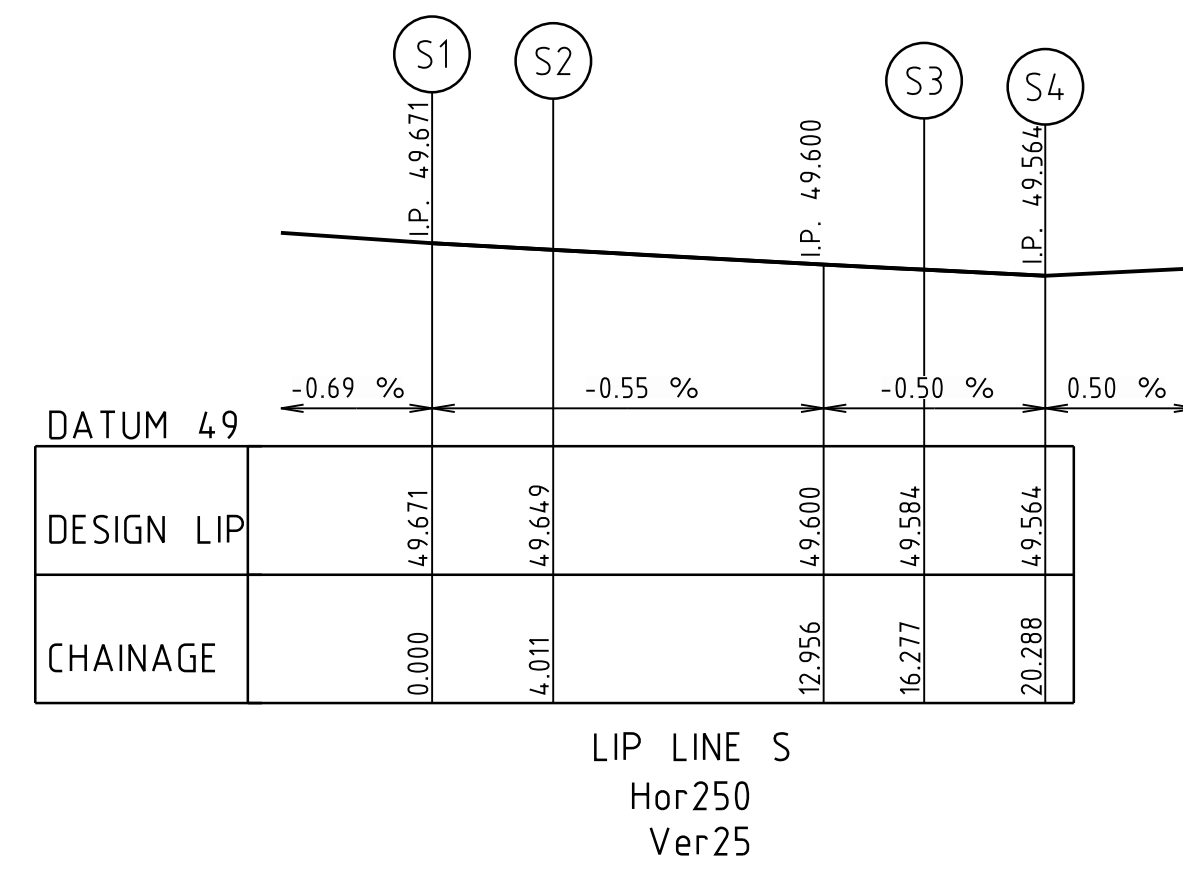
Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023



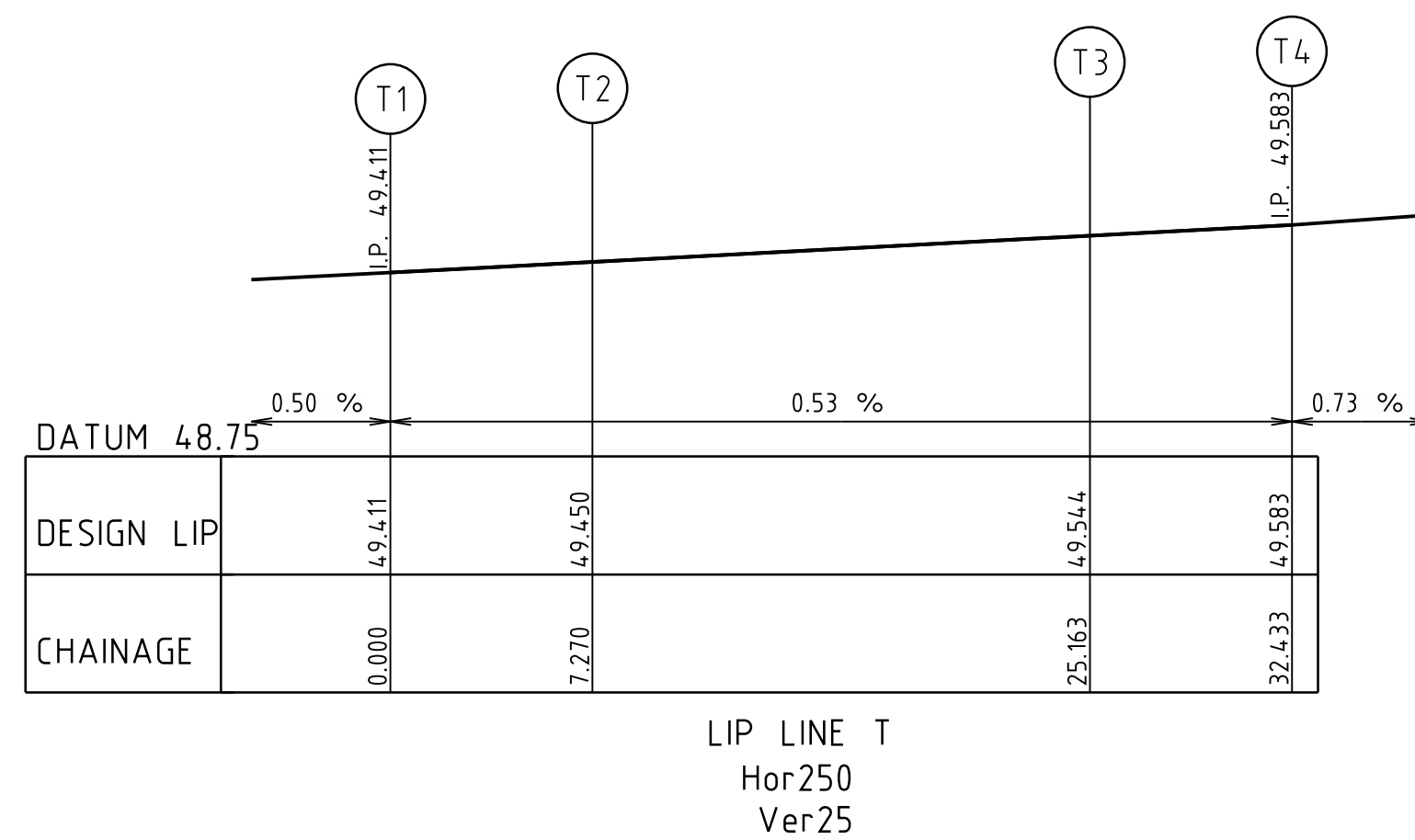
ALIGNMENT R				
POINT NO	EASTING	NORTHING	RL	
R1	297534.641	5812664.630	49.564	
1/4	297535.624	5812662.077	49.583	
1/2	297537.358	5812659.962	49.615	
3/4	297539.669	5812658.499	49.647	
R2	297542.323	5812657.835	49.671	

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
R1-R2	8.600	10.988	10.256	1.696	-0.435



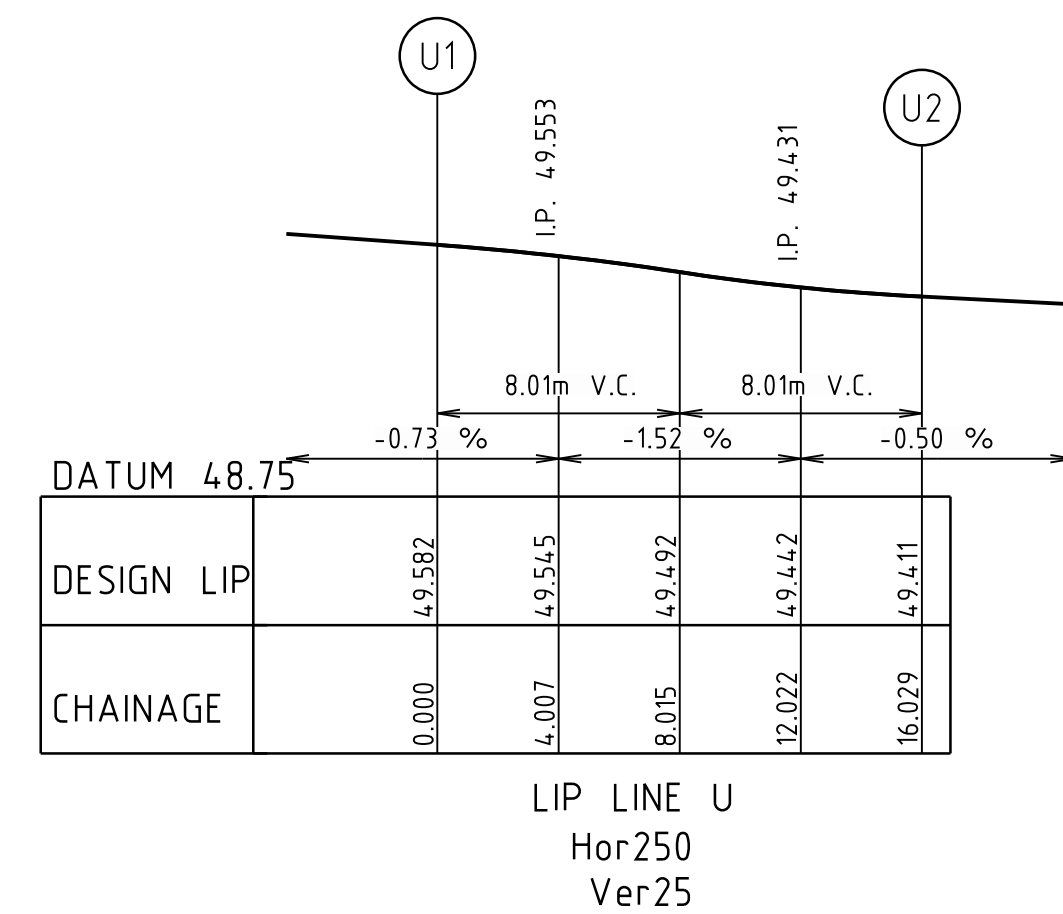
ALIGNMENT S				
POINT NO	EASTING	NORTHING	RL	
S1	297541.778	5812651.458	49.671	
S2	297537.781	5812651.800	49.649	
1/4	297534.819	5812652.541	49.632	
1/2	297532.239	5812654.174	49.616	
3/4	297530.303	5812656.536	49.599	
S3	297529.206	5812659.385	49.584	
S4	297528.378	5812663.310	49.564	

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
S2-S3	9.600	12.266	11.449	1.893	0.486



ALIGNMENT T				
POINT NO	EASTING	NORTHING	RL	
T1	297548.327	5812568.665	49.411	
T2	297546.827	5812575.779	49.450	
1/4	297546.939	5812580.210	49.473	
1/2	297549.030	5812584.119	49.497	
3/4	297552.655	5812586.672	49.521	
T3	297557.039	5812587.324	49.544	
T4	297564.283	5812586.704	49.583	

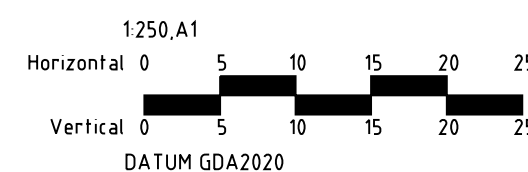
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
T2-T3	9.600	17.893	15.413	3.876	1.023



ALIGNMENT U				
POINT NO	EASTING	NORTHING	RL	
U1	297563.737	5812580.327	49.582	
1/4	297559.809	5812579.743	49.545	
1/2	297556.563	5812577.457	49.492	
3/4	297554.689	5812573.955	49.442	
U2	297554.589	5812569.985	49.411	

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
U1-U2	8.600	16.029	13.808	3.472	-0.917

Rev	Amendments	Approved	Date
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23

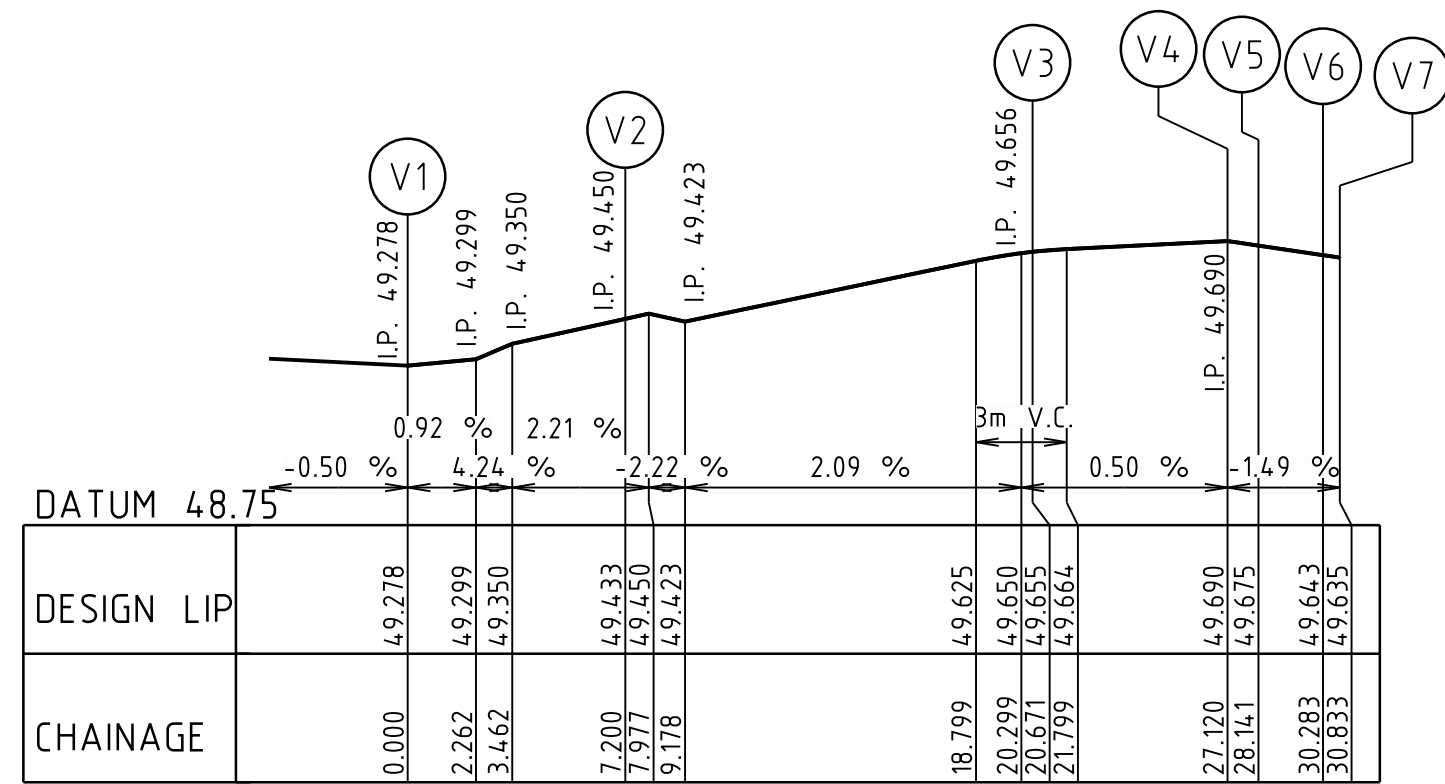
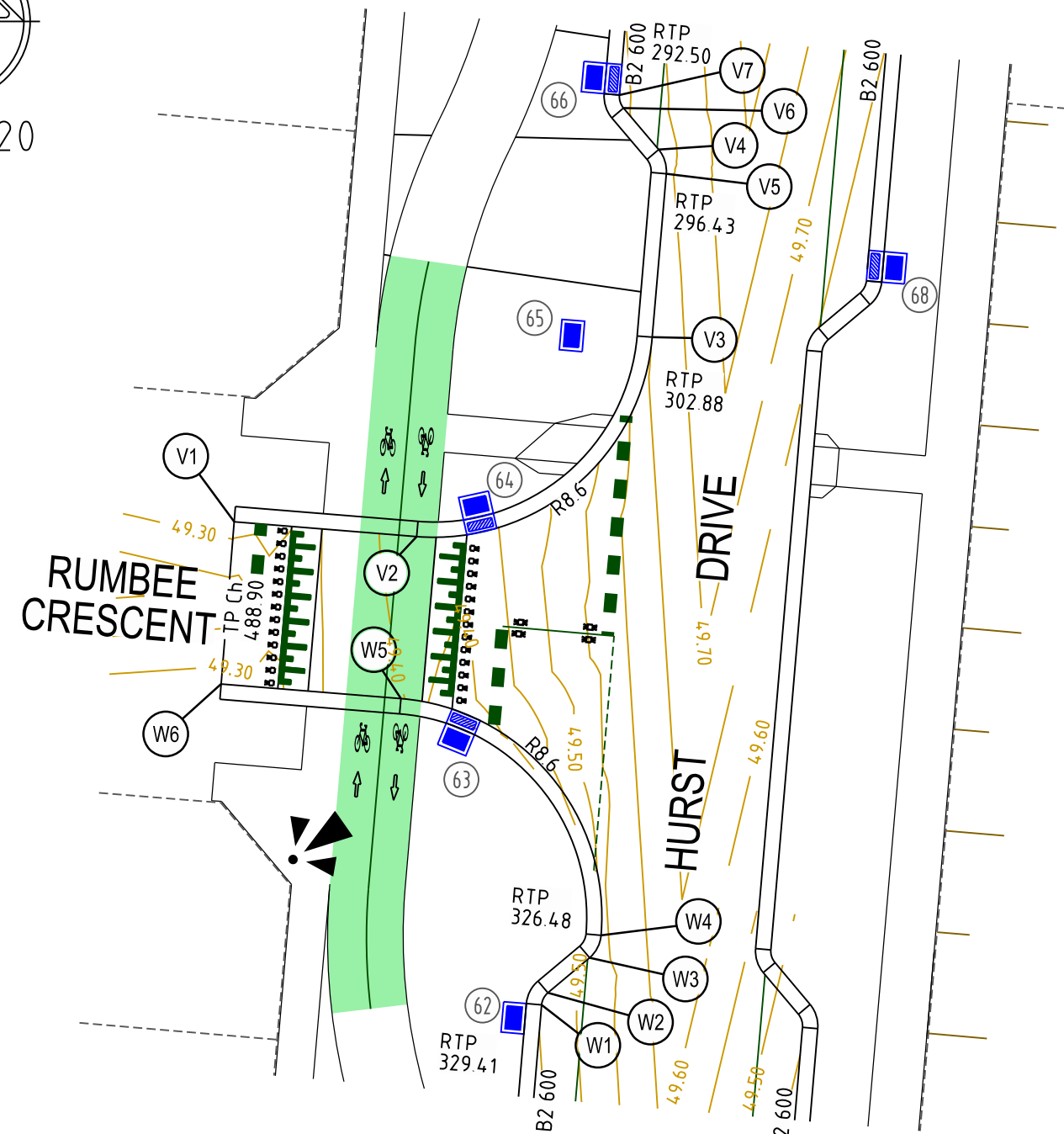


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Harlow T A R N E I T	
Designed R. WEINBER	Checked R. WILSON
Authorised M. READMAN	Date 10-01-2023

HARLOW ESTATE STAGE 3 INTERSECTION DETAILS	
SIG GROUP WYNDHAM CITY COUNCIL	
CONSTRUCTION	Drg No 309439R17
	Rev 0

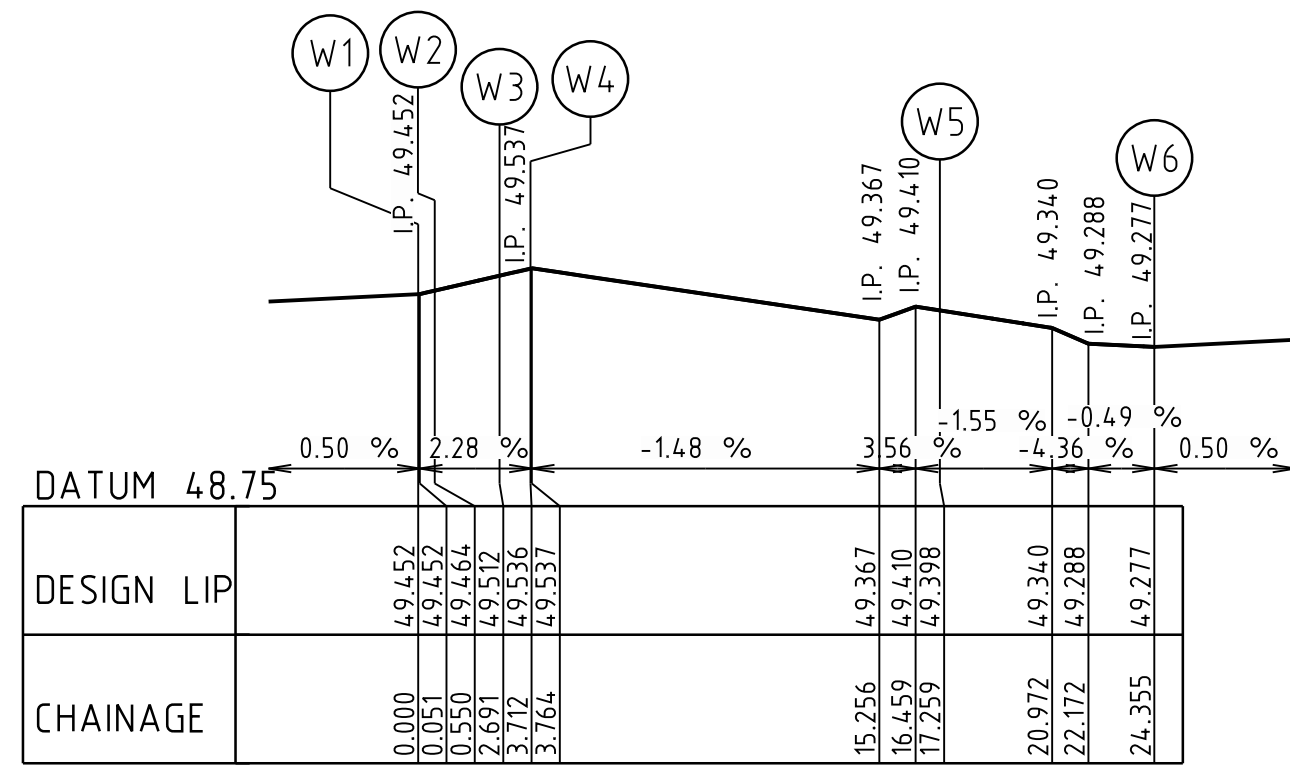


LIP LINE V
Hor250
Ver25

ALIGNMENT V

POINT NO	EASTING	NORTHING	RL
V1	297758.892	5812507.067	49.278
V2	297766.069	5812506.485	49.433
1/4	297769.393	5812506.868	49.453
1/2	297772.319	5812508.491	49.523
3/4	297774.404	5812511.108	49.594
V3	297775.333	5812514.323	49.655
V4	297775.882	5812520.749	49.690
1/4	297775.879	5812521.004	49.687
1/2	297775.826	5812521.253	49.683
3/4	297775.726	5812521.488	49.679
V5	297775.581	5812521.698	49.675
V6	297774.202	5812523.335	49.643
1/4	297774.124	5812523.449	49.641
1/2	297774.070	5812523.575	49.639
3/4	297774.041	5812523.709	49.637
V7	297774.040	5812523.846	49.635

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
V2-V3	8.600	13.471	12.135	2.506	-0.651
V4-V5	1.300	1.021	0.995	0.099	-0.025
V6-V7	0.700	0.550	0.536	0.053	0.013

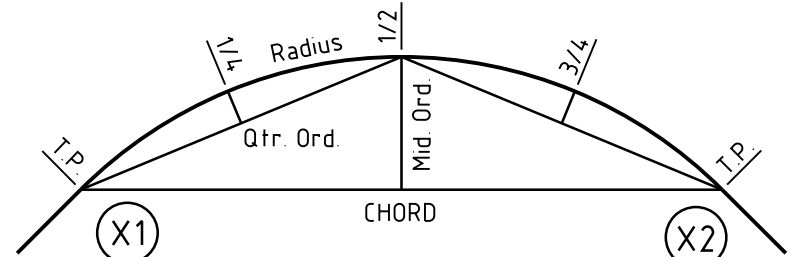


LIP LINE W
Hor250
Ver25

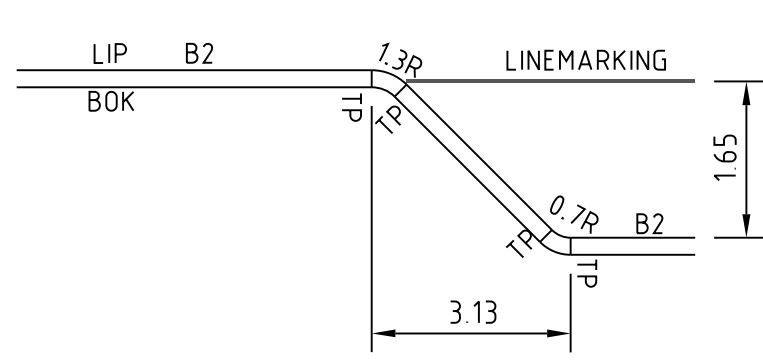
ALIGNMENT W

POINT NO	EASTING	NORTHING	RL
W1	297770.979	5812488.070	49.452
1/4	297771.004	5812488.205	49.454
1/2	297771.055	5812488.333	49.457
3/4	297771.130	5812488.448	49.460
W2	297771.226	5812488.546	49.464
W3	297772.863	5812489.926	49.512
1/4	297773.041	5812490.108	49.518
1/2	297773.180	5812490.322	49.524
3/4	297773.275	5812490.558	49.530
W4	297773.321	5812490.809	49.536
1/4	297772.946	5812494.153	49.488
1/2	297771.317	5812497.097	49.438
3/4	297768.683	5812499.191	49.388
W5	297765.448	5812500.114	49.398
W6	297758.375	5812500.688	49.277

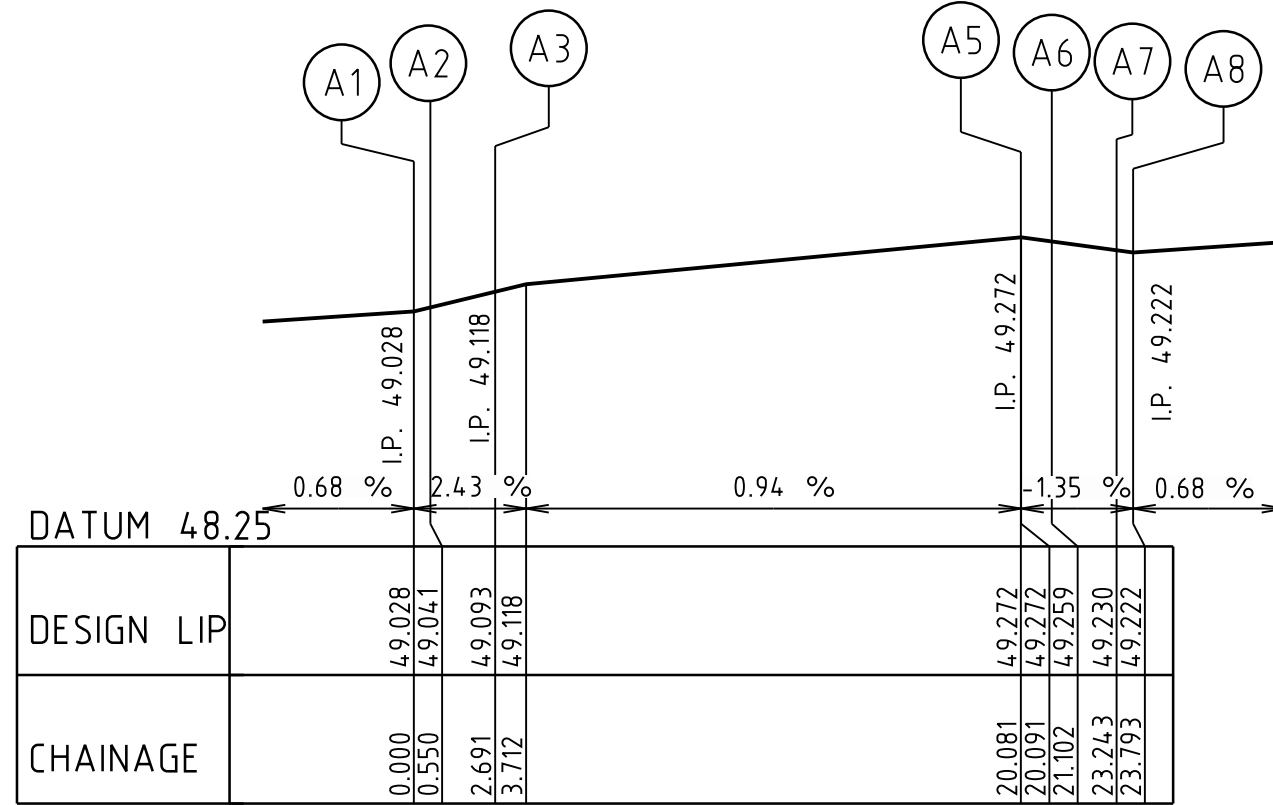
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
W1-W2	0.700	0.550	0.536	0.053	0.013
W3-W4	1.300	1.021	0.995	0.099	-0.025
W4-W5	8.600	13.547	12.189	2.532	-0.658



KERB RETURN SETOUT DETAIL



TYPICAL KERB INDENT DETAIL
N.T.S

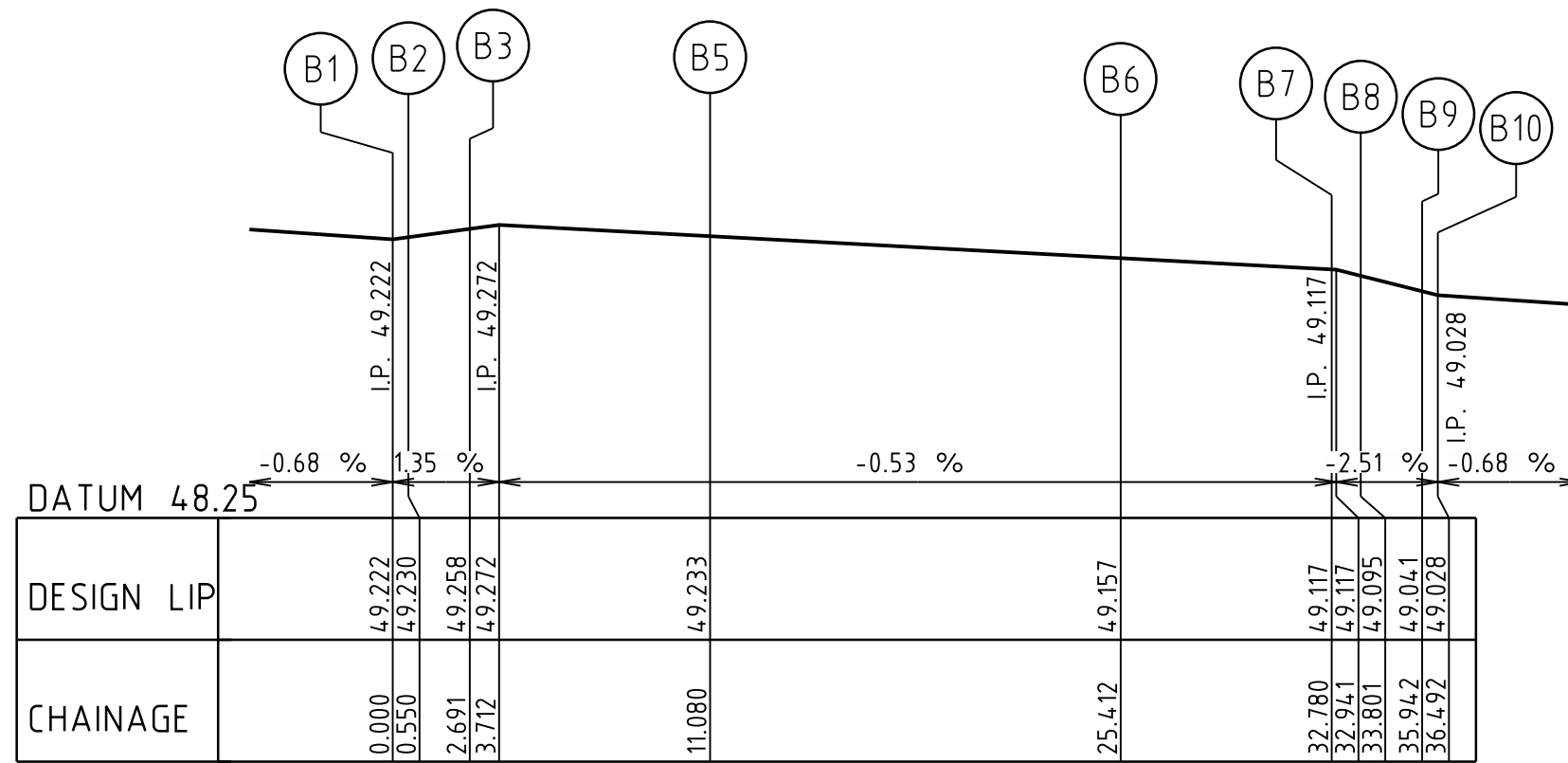


LIP LINE A
Hor250
Ver25

ALIGNMENT A

POINT NO	EASTING	NORTHING	RL
A1	297754.844	5812431.346	49.028
1/4	297754.979	5812431.322	49.031
1/2	297755.106	5812431.271	49.034
3/4	297755.222	5812431.197	49.038
A2	297755.321	5812431.102	49.041
A3	297756.707	5812429.470	49.093
1/4	297756.891	5812429.293	49.099
1/2	297757.105	5812429.155	49.105
3/4	297757.342	5812429.062	49.111
A4	297757.593	5812429.016	49.118
1/4	297761.632	5812429.482	49.156
1/2	297765.188	5812431.455	49.195
3/4	297767.721	5812434.635	49.234
A5	297768.850	5812438.541	49.272
1/4	297768.846	5812438.796	49.269
1/2	297768.793	5812439.045	49.266
3/4	297768.693	5812439.280	49.262
A6	297768.549	5812439.490	49.259
A7	297767.169	5812441.127	49.230
1/4	297767.091	5812441.240	49.228
1/2	297767.037	5812441.367	49.226
3/4	297767.009	5812441.501	49.224
A8	297767.007	5812441.638	49.222

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
A1-A2	0.700	0.550	0.536	0.053	0.013
A3-A4	1.300	1.021	0.995	0.099	-0.025
A4-A5	10.450	16.369	14.746	3.044	-0.791
A5-A6	1.300	1.021	0.995	0.099	-0.025
A7-A8	0.700	0.550	0.536	0.053	0.013

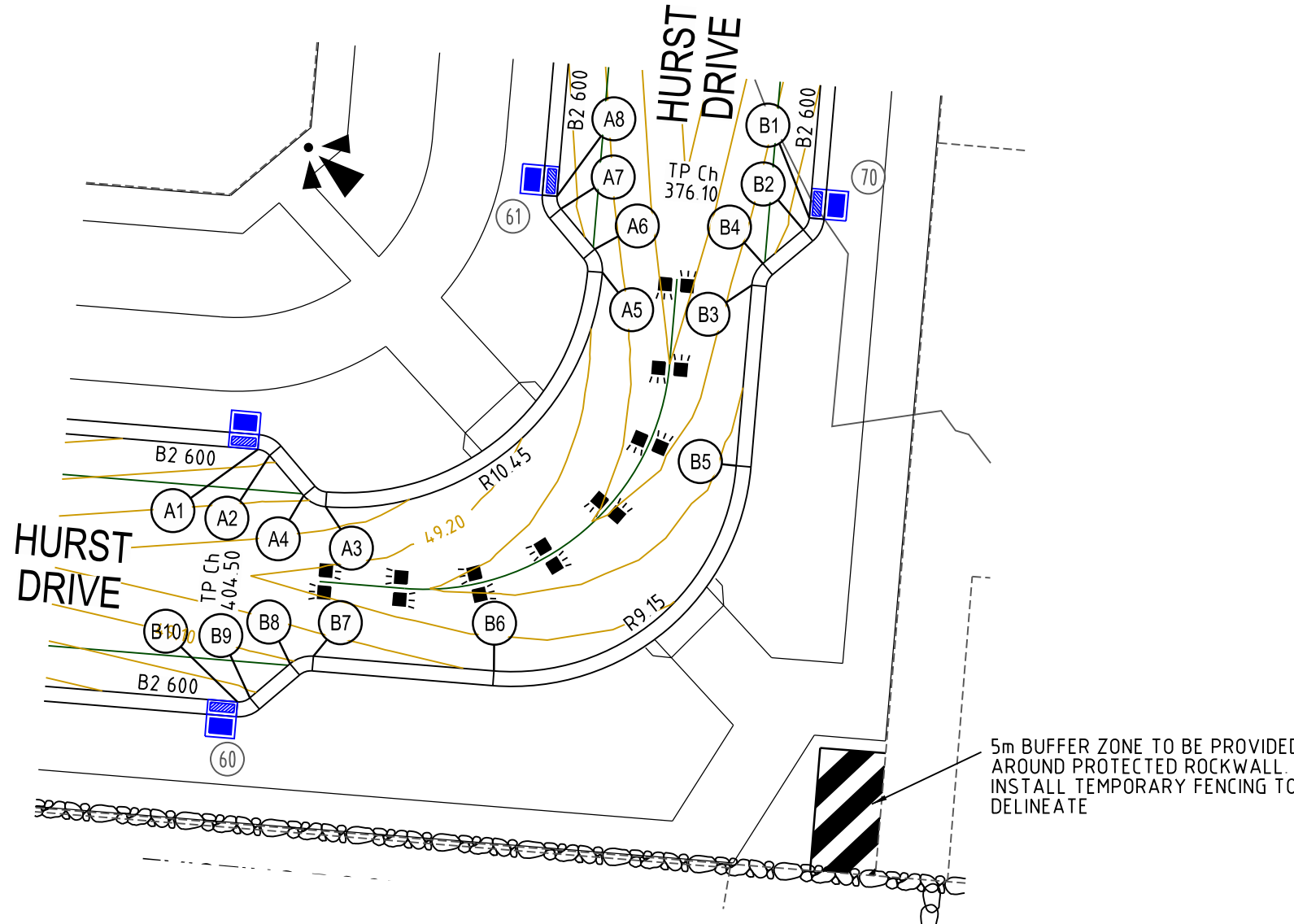


LIP LINE B
Hor250
Ver25

ALIGNMENT B

POINT NO	EASTING	NORTHING	RL
B1	297777.269	5812440.760	49.222
1/4	297777.244	5812440.625	49.224
1/2	297777.193	5812440.498	49.226
3/4	297777.119	5812440.383	49.228
B2	297777.023	5812440.284	49.230
B3	297775.385	5812438.905	49.258
1/4	297775.207	5812438.722	49.262
1/2	297775.068	5812438.509	49.265
3/4	297774.974	5812438.272	49.269
B4	297774.927	5812438.021	49.272
B5	297774.299	5812430.681	49.233
1/4	297773.312	5812427.260	49.214
1/2	297771.093	5812424.476	49.195
3/4	297767.980	5812422.749	49.176
B6	297764.443	5812422.341	49.157
B7	297757.099	5812422.936	49.117
1/4	297756.844	5812422.932	49.114
1/2	297756.595	5812422.878	49.108
3/4	297756.362	5812422.776	49.101
B8	297756.152	5812422.631	49.095
B9	297754.520	5812421.244	49.041
1/4	297754.408	5812421.166	49.038
1/2	297754.282	5812421.111	49.034
3/4	297754.148	5812421.082	49.031
B10	297754.011	5812421.080	49.028

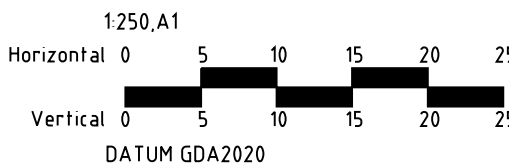
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
B1-B2	0.700	0.550	0.536	0.053	0.013
B3-B4	1.300	1.021	0.995	0.099	-0.025
B5-B6	9.150	14.333	12.912	2.666	0.693
B7-B8	1.300	1.021	0.995	0.099	-0.025
B9-B10	0.700	0.550	0.536	0.053	0.013



Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023

Rev	Amendments	Approved	Date
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23



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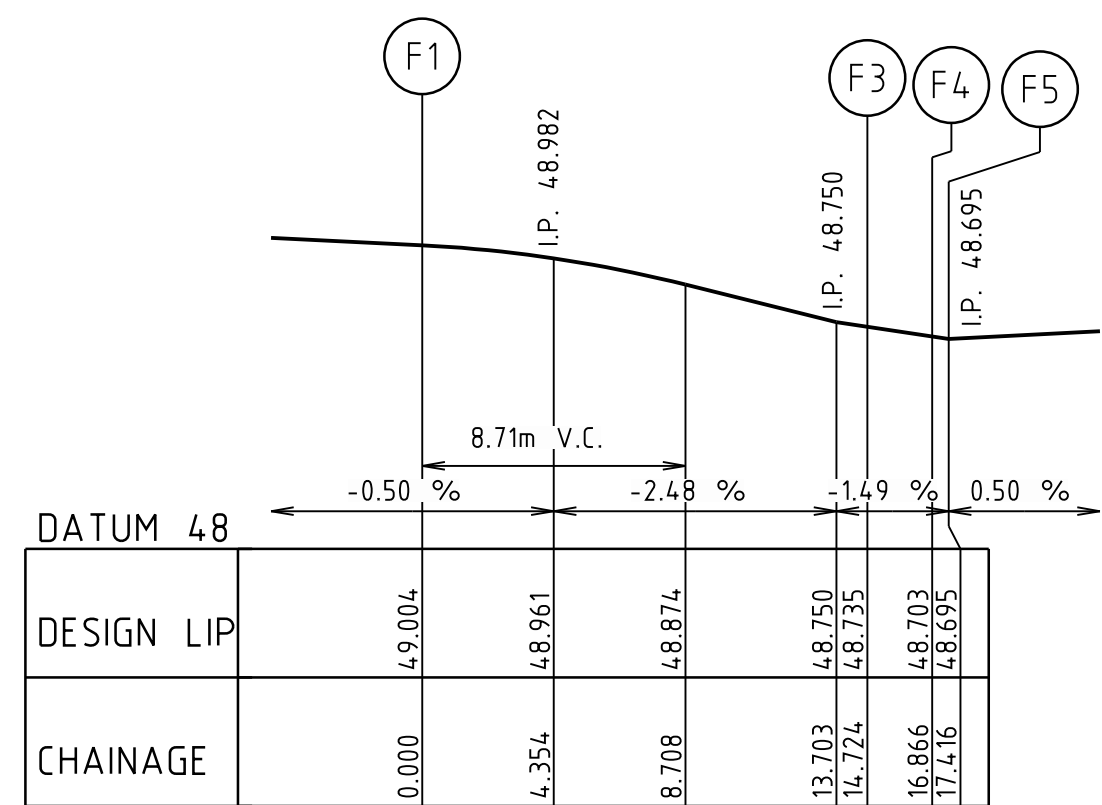
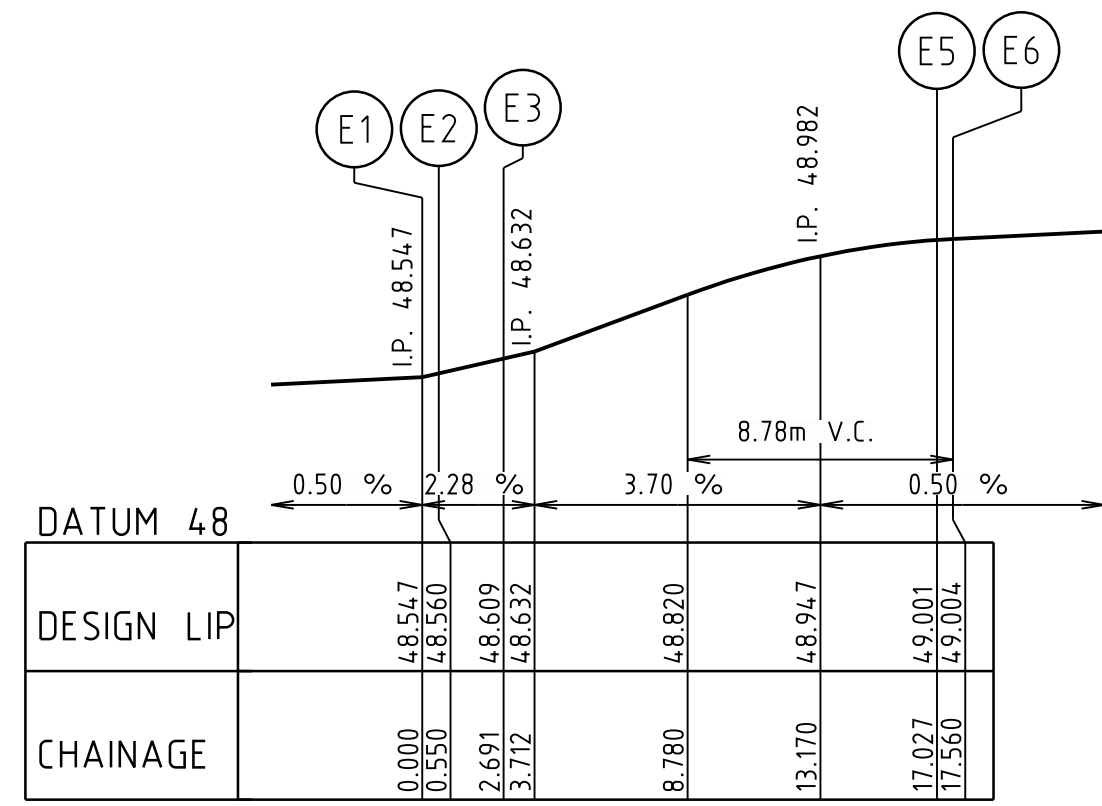
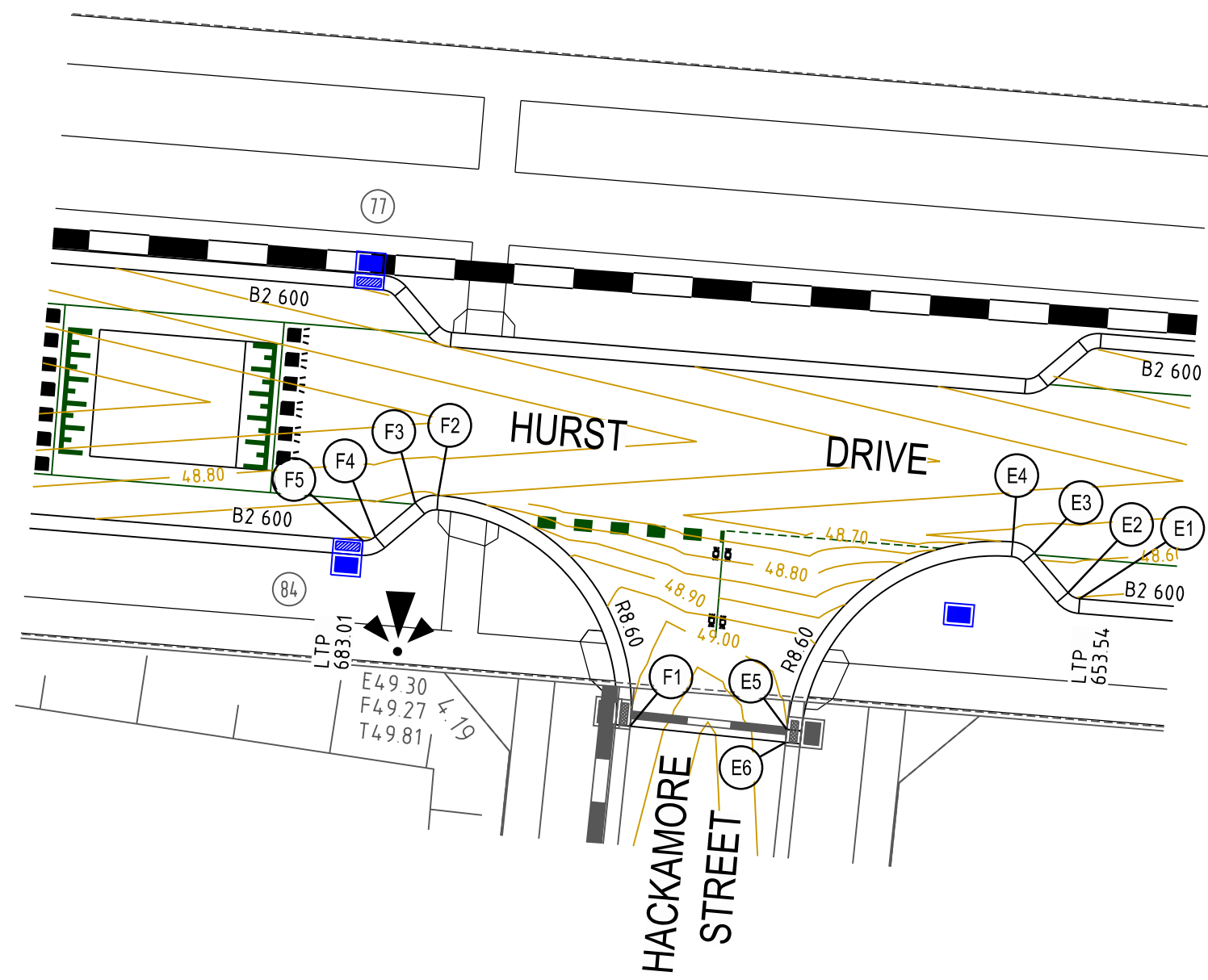
Designed	Checked
R. WEINBER	R. WILSON
Authorised	Date
M. READMAN	10-01-2023

HARLOW ESTATE
STAGE 3
INTERSECTION DETAILS

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No **309439R18**

Rev **0**



ALIGNMENT E

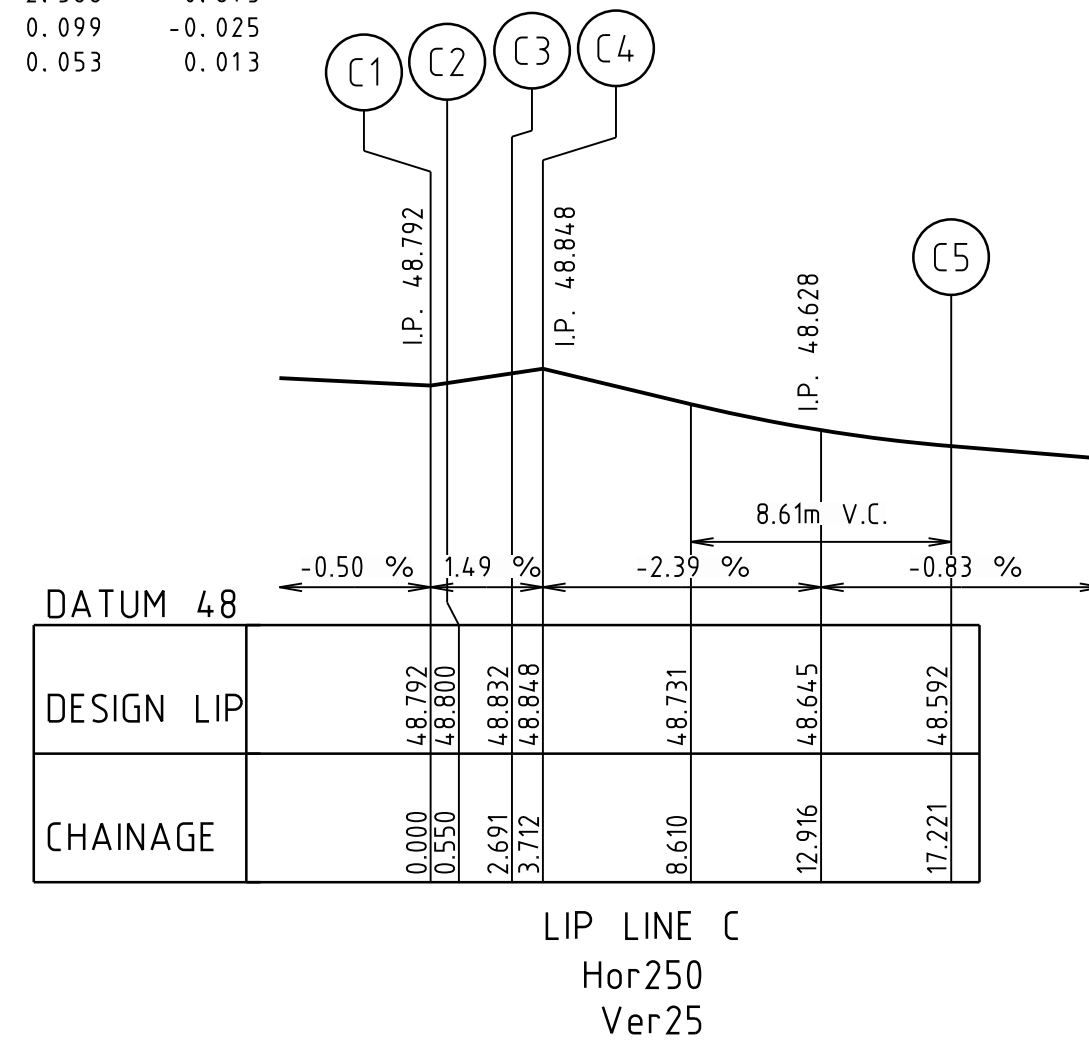
POINT NO	EASTING	NORTHING	RL
E1	297505.781	5812441.215	48.547
1/4	297505.646	5812441.240	48.551
1/2	297505.518	5812441.290	48.554
3/4	297505.403	5812441.365	48.557
E2	297505.304	5812441.460	48.560
E3	297503.917	5812443.092	48.609
1/4	297503.734	5812443.269	48.615
1/2	297503.520	5812443.406	48.621
3/4	297503.283	5812443.500	48.626
E4	297503.032	5812443.545	48.632
1/4	297499.745	5812443.174	48.755
1/2	297496.841	5812441.589	48.874
3/4	297494.751	5812439.025	48.958
E5	297493.783	5812435.863	49.001
E6	297493.727	5812435.332	49.004

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
E1-E2	0.700	0.550	0.536	0.053	0.013
E3-E4	1.300	1.021	0.995	0.099	-0.025
E4-E5	8.600	13.314	12.024	2.450	-0.636

ALIGNMENT F

POINT NO	EASTING	NORTHING	RL
F1	297487.362	5812435.993	49.004
1/4	297487.037	5812439.381	48.974
1/2	297485.423	5812442.377	48.917
3/4	297482.774	5812444.513	48.835
F2	297479.503	5812445.454	48.750
1/4	297479.248	5812445.450	48.747
1/2	297478.999	5812445.396	48.743
3/4	297478.765	5812445.294	48.739
F3	297478.556	5812445.149	48.735
F4	297476.924	5812443.762	48.703
1/4	297476.811	5812443.684	48.701
1/2	297476.686	5812443.629	48.699
3/4	297476.551	5812443.600	48.697
F5	297476.414	5812443.598	48.695

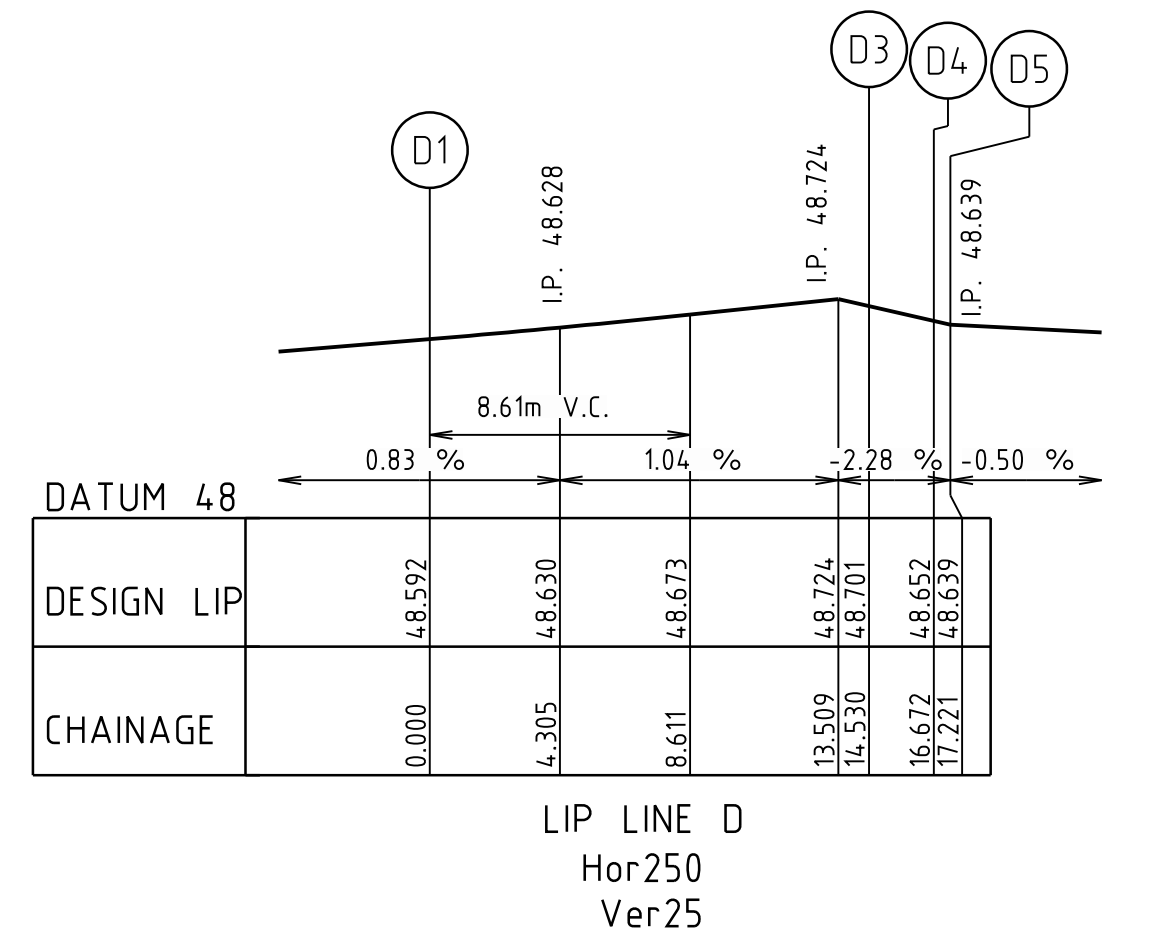
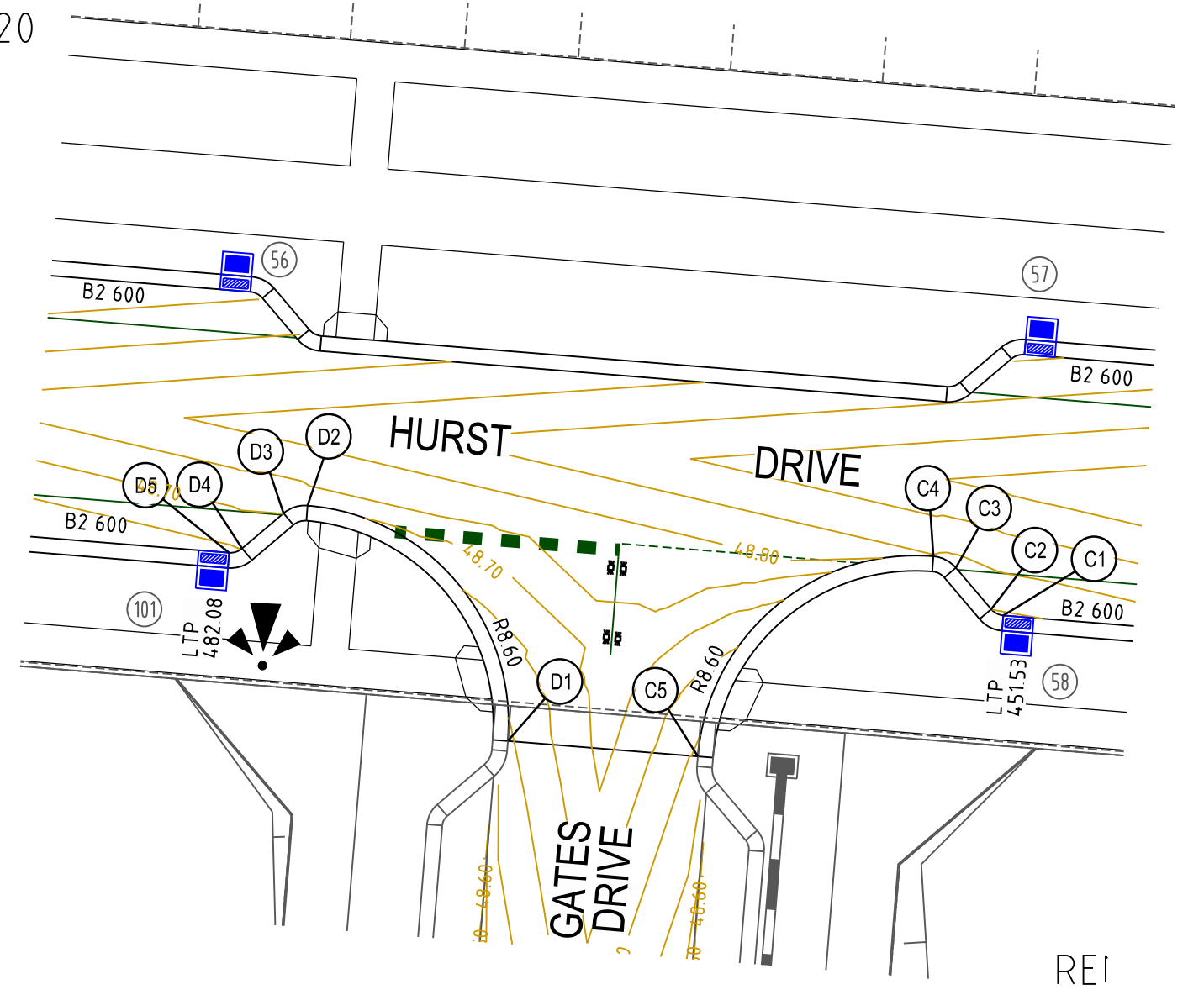
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
F1-F2	8.600	13.703	12.299	2.588	-0.673
F2-F3	1.300	1.021	0.995	0.099	-0.025
F4-F5	0.700	0.550	0.536	0.053	0.013



ALIGNMENT D

POINT NO	EASTING	NORTHING	RL
D1	297687.645	5812419.942	48.592
1/4	297687.259	5812423.275	48.622
1/2	297685.627	5812426.207	48.654
3/4	297682.996	5812428.290	48.689
D2	297679.769	5812429.209	48.724
1/4	297679.514	5812429.205	48.718
1/2	297679.265	5812429.151	48.712
3/4	297679.031	5812429.049	48.707
D3	297678.822	5812428.904	48.701
D4	297677.190	5812427.517	48.652
1/4	297677.077	5812427.439	48.649
1/2	297676.951	5812427.384	48.646
3/4	297676.817	5812427.355	48.642
D5	297676.680	5812427.353	48.639

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
D1-D2	8.600	13.509	12.162	2.519	-0.655
D2-D3	1.300	1.021	0.995	0.099	-0.025
D4-D5	0.700	0.550	0.536	0.053	0.013



ALIGNMENT C

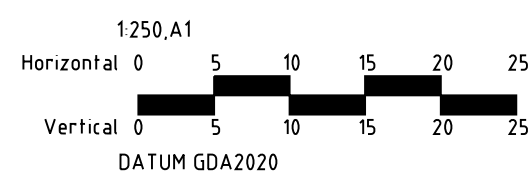
POINT NO	EASTING	NORTHING	RL
C1	297707.137	5812424.882	48.792
1/4	297707.002	5812424.907	48.794
1/2	297706.874	5812424.957	48.796
3/4	297706.759	5812425.031	48.798
C2	297706.660	5812425.126	48.800
C3	297705.274	5812426.758	48.832
1/4	297705.090	5812426.935	48.836
1/2	297704.876	5812427.073	48.840
3/4	297704.639	5812427.167	48.844
C4	297704.388	5812427.212	48.848
1/4	297701.055	5812426.826	48.767
1/2	297698.123	5812425.193	48.690
3/4	297696.040	5812422.563	48.631
C5	297695.121	5812419.336	48.592

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
C1-C2	0.700	0.550	0.536	0.053	0.013
C3-C4	1.300	1.021	0.995	0.099	-0.025
C4-C5	8.600	13.509	12.162	2.519	-0.655

Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023

Rev	Amendments	Approved	Date
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23



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ABN 55 050 029 635

Harlow

T A R N E I T

Designed	Checked
R. WEINBER	R. WILSON
Authorised	Date
M. READMAN	10-01-2023

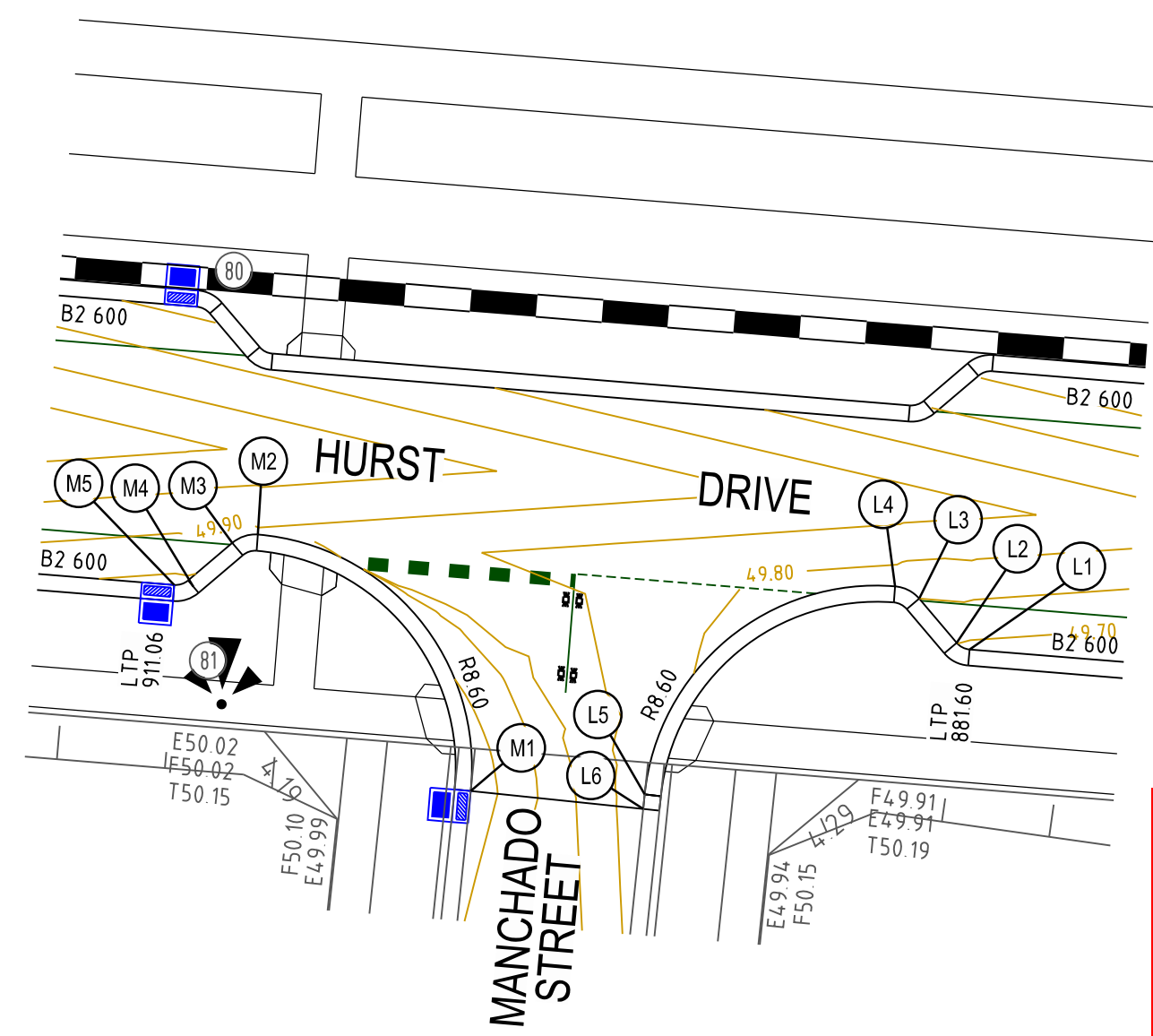
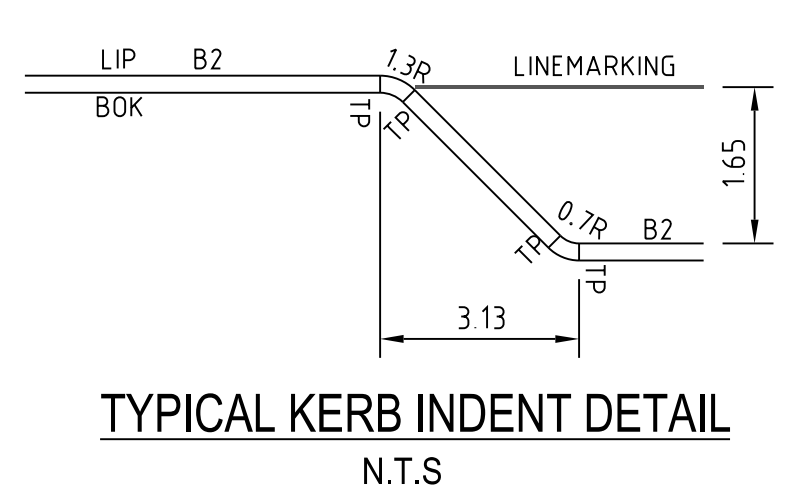
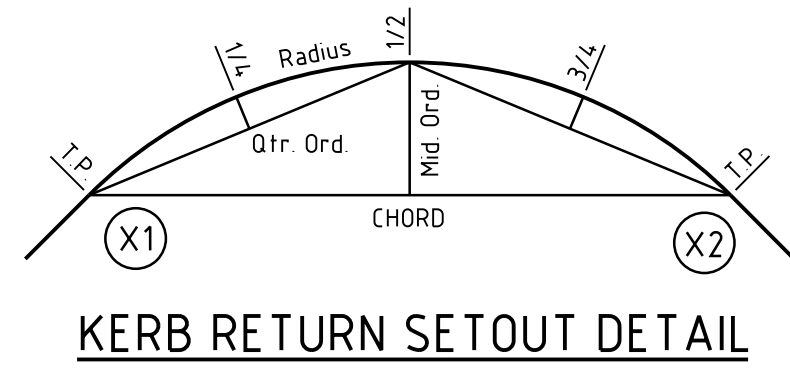
HARLOW ESTATE
STAGE 3
INTERSECTION DETAILS

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION

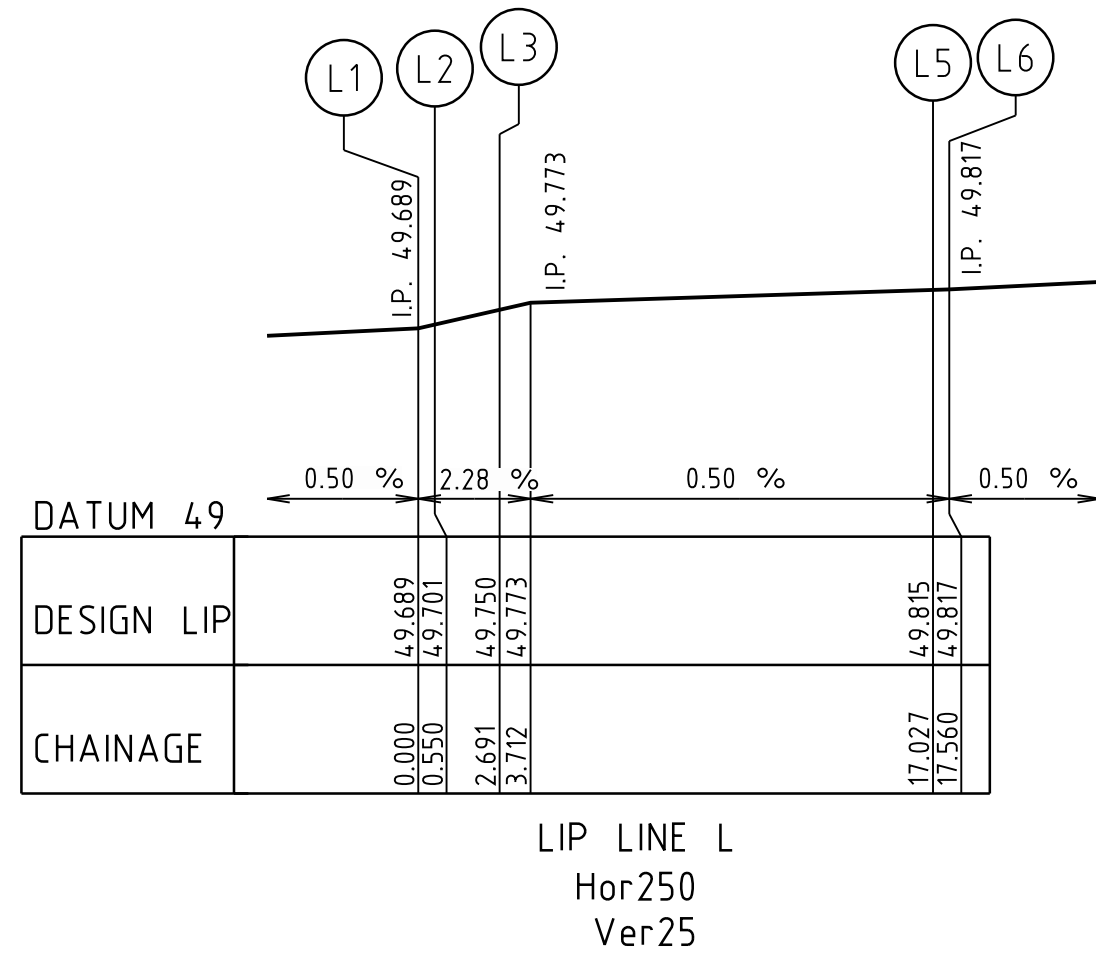
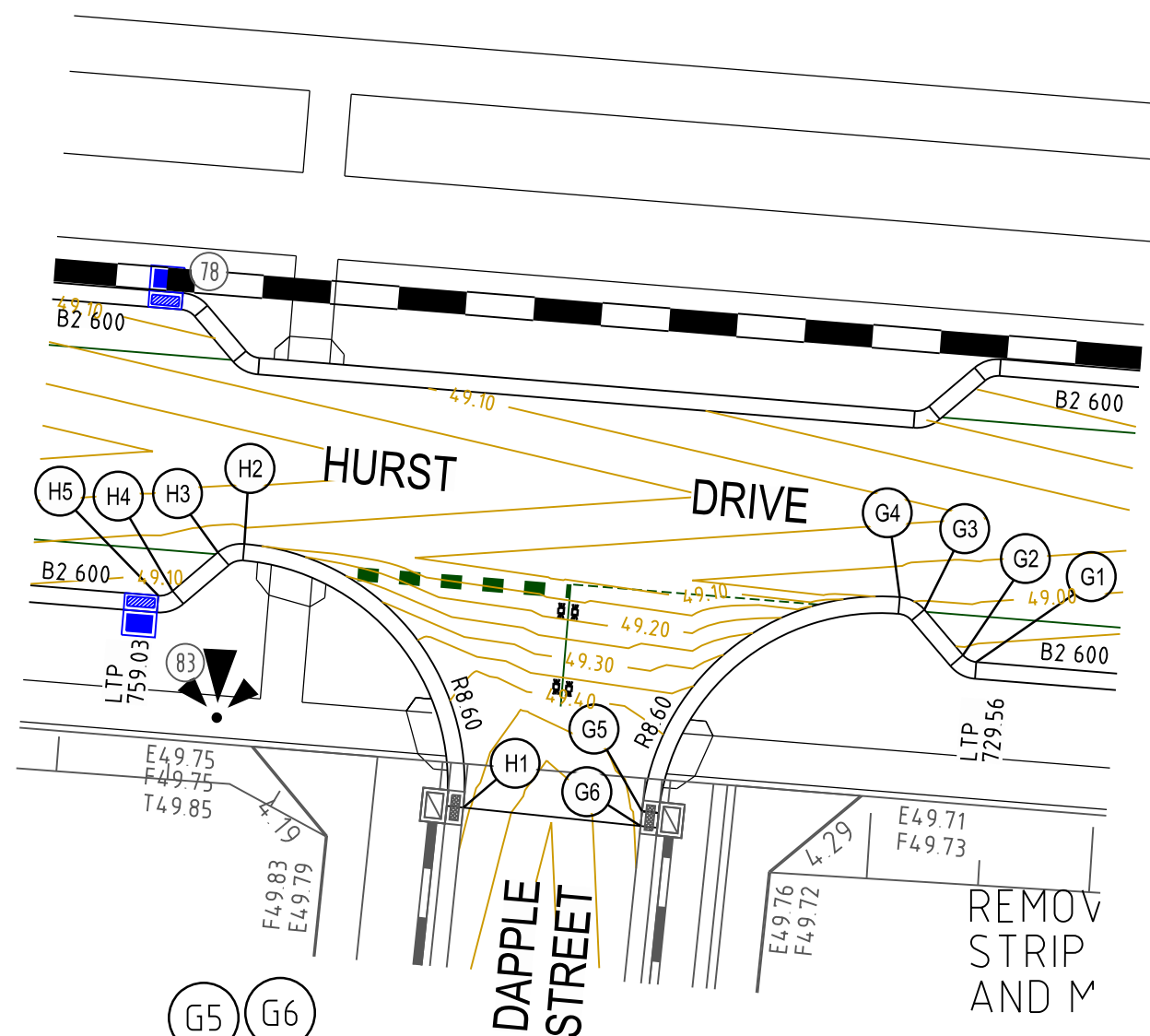
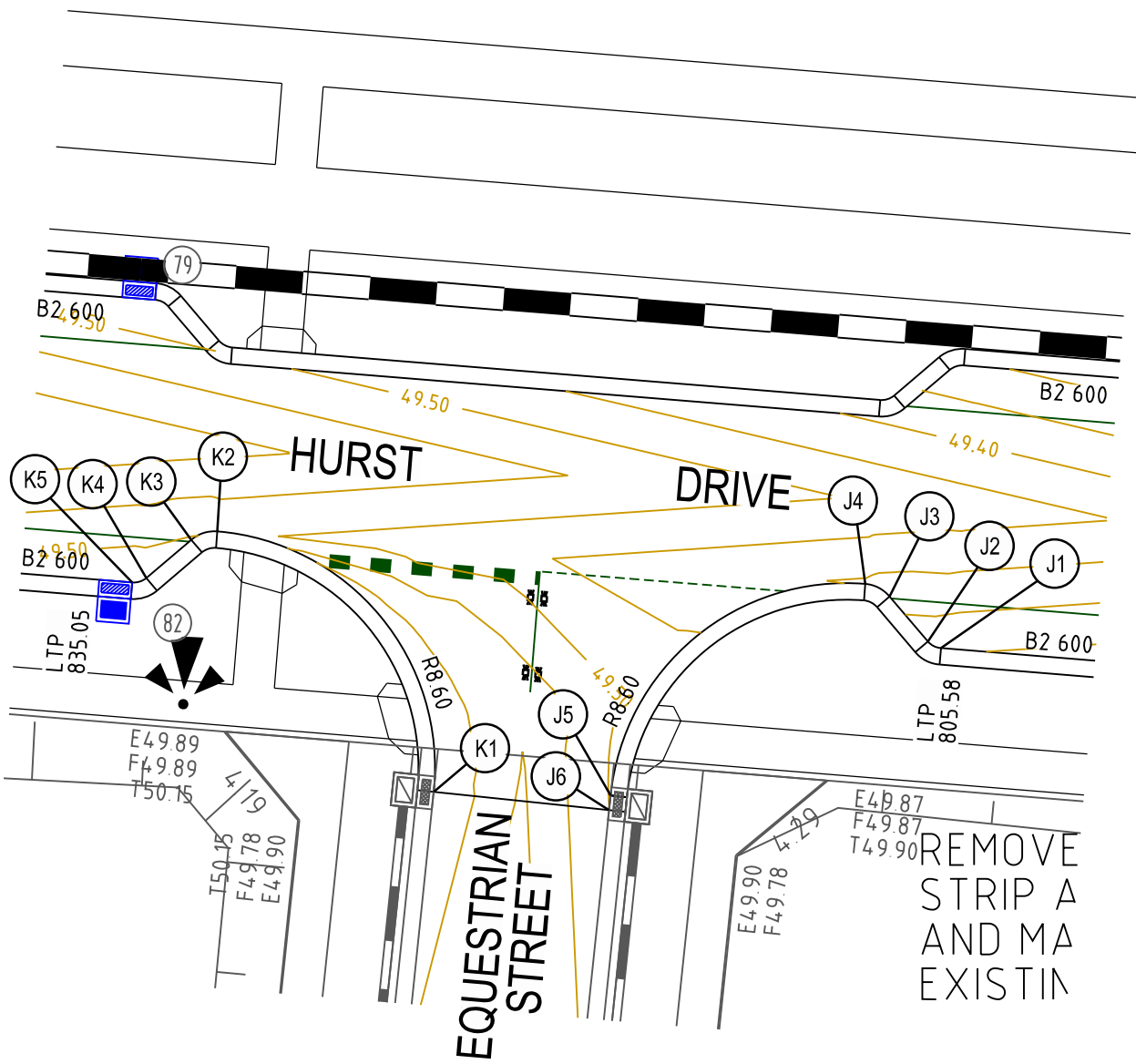
Drg No
309439R19

Rev
0



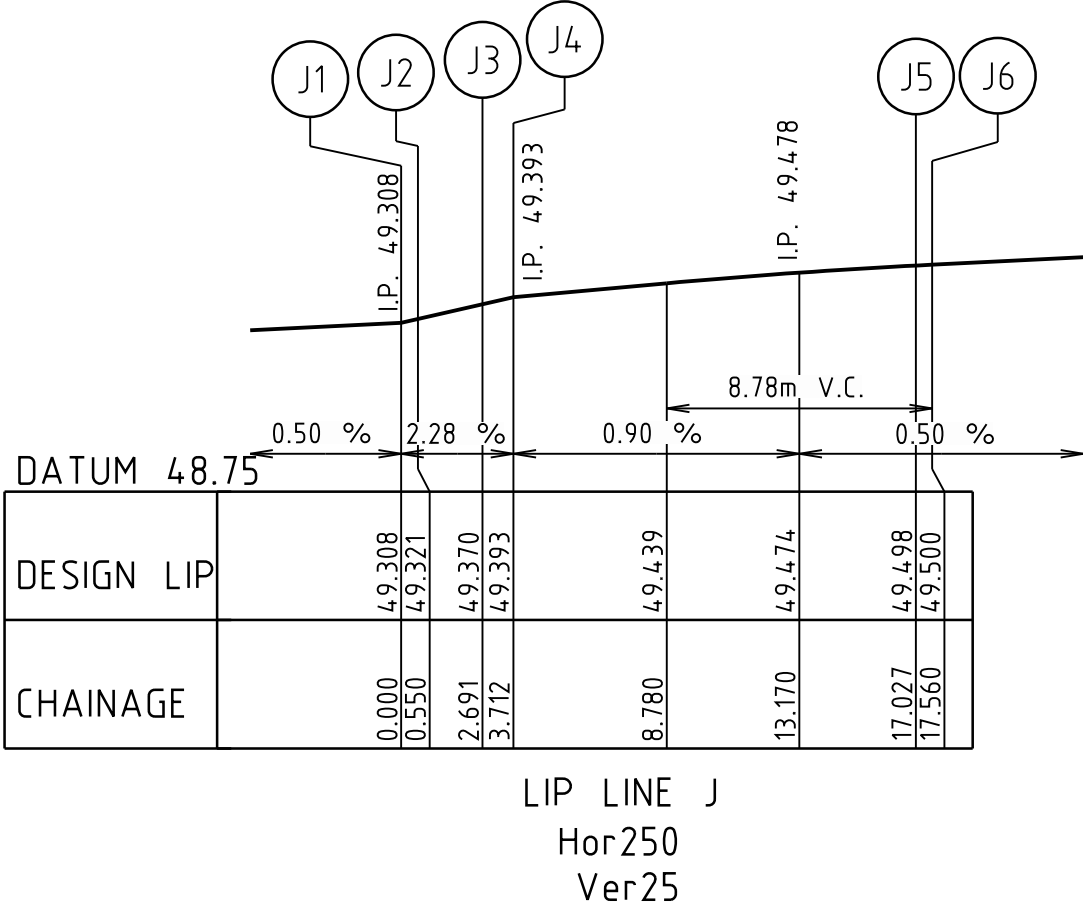
Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023



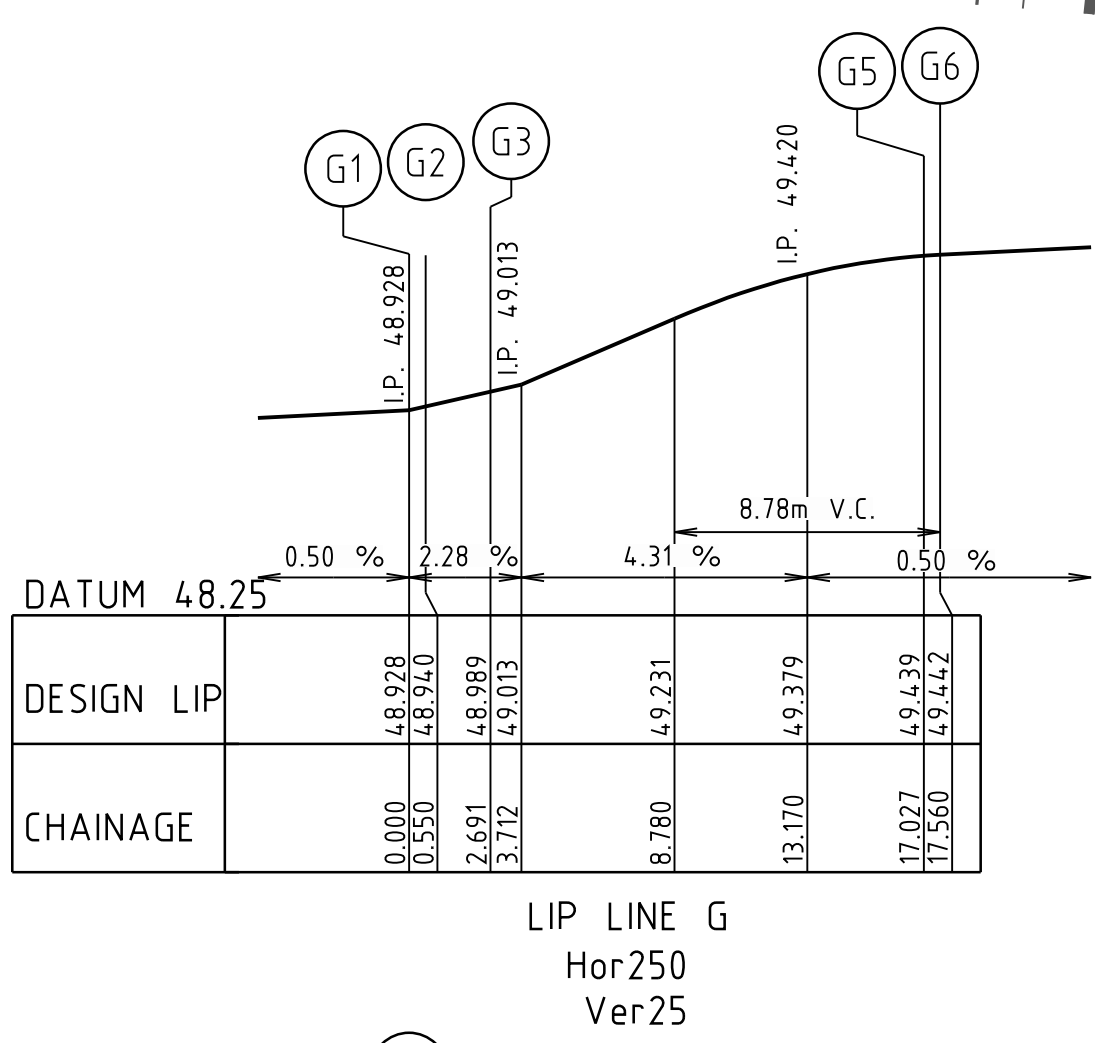
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L1	297278.469	5812459.654	49.689
1/4	297278.334	5812459.679	49.692
1/2	297278.206	5812459.729	49.695
3/4	297278.091	5812459.803	49.698
L2	297277.992	5812459.899	49.701
L3	297276.606	5812461.530	49.750
1/4	297276.422	5812461.707	49.756
1/2	297276.208	5812461.845	49.762
3/4	297275.971	5812461.939	49.768
L4	297275.720	5812461.984	49.773
1/4	297272.433	5812461.613	49.784
1/2	297269.530	5812460.028	49.794
3/4	297267.439	5812457.464	49.805
L5	297266.471	5812454.301	49.815
L6	297266.416	5812453.770	49.817

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
L1-L2	0.700	0.550	0.536	0.053	0.013
L3-L4	1.300	1.021	0.995	0.099	-0.025
L4-L5	8.600	13.314	12.024	2.450	-0.636



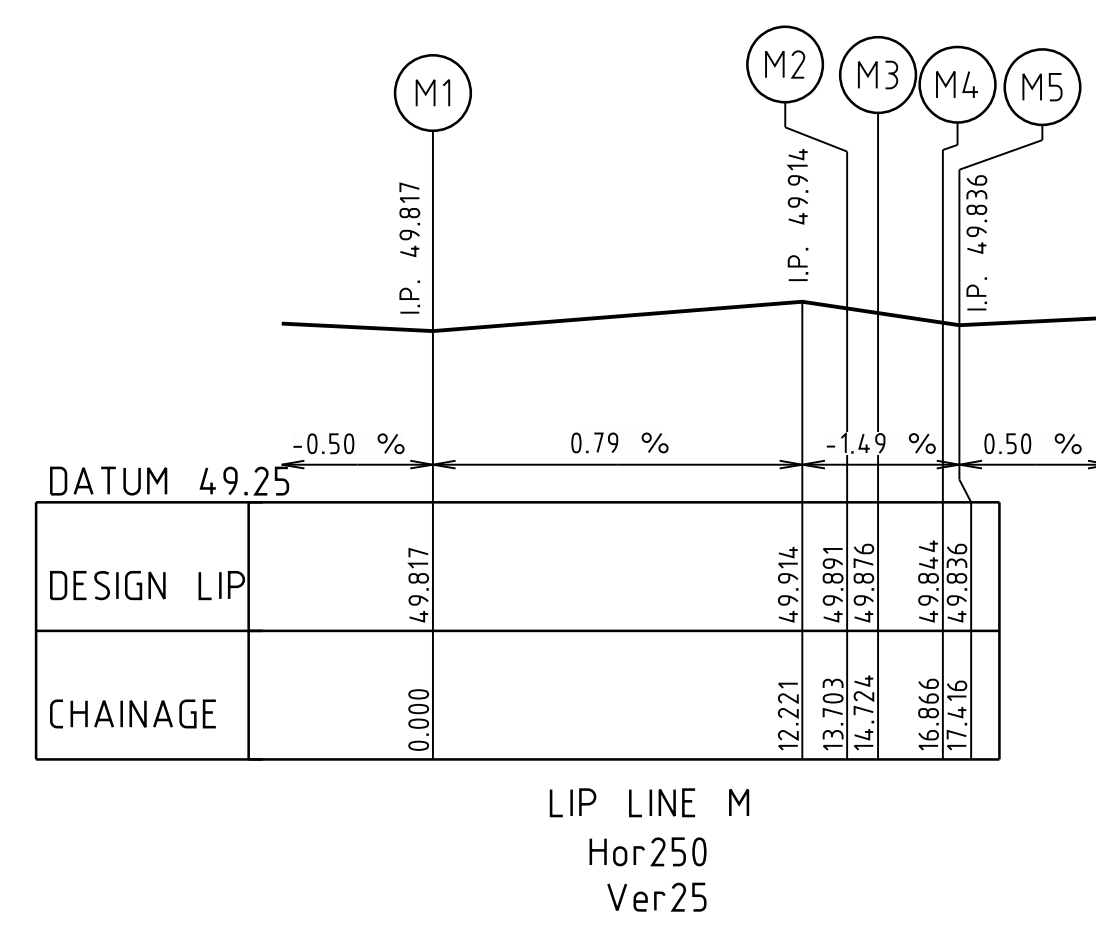
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J1	297354.240	5812453.508	49.308
1/4	297354.105	5812453.532	49.311
1/2	297353.977	5812453.583	49.315
3/4	297353.862	5812453.657	49.318
J2	297353.763	5812453.752	49.321
J3	297352.376	5812455.384	49.370
1/4	297352.193	5812455.561	49.376
1/2	297351.979	5812455.699	49.381
3/4	297351.741	5812455.792	49.387
J4	297351.491	5812455.838	49.393
1/4	297348.204	5812455.466	49.423
1/2	297345.300	5812453.881	49.453
3/4	297343.210	5812451.318	49.478
J5	297342.241	5812448.155	49.498
J6	297342.186	5812447.624	49.500

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
J1-J2	0.700	0.550	0.536	0.053	0.013
J3-J4	1.300	1.021	0.995	0.099	-0.025
J4-J5	8.600	13.314	12.024	2.450	-0.636



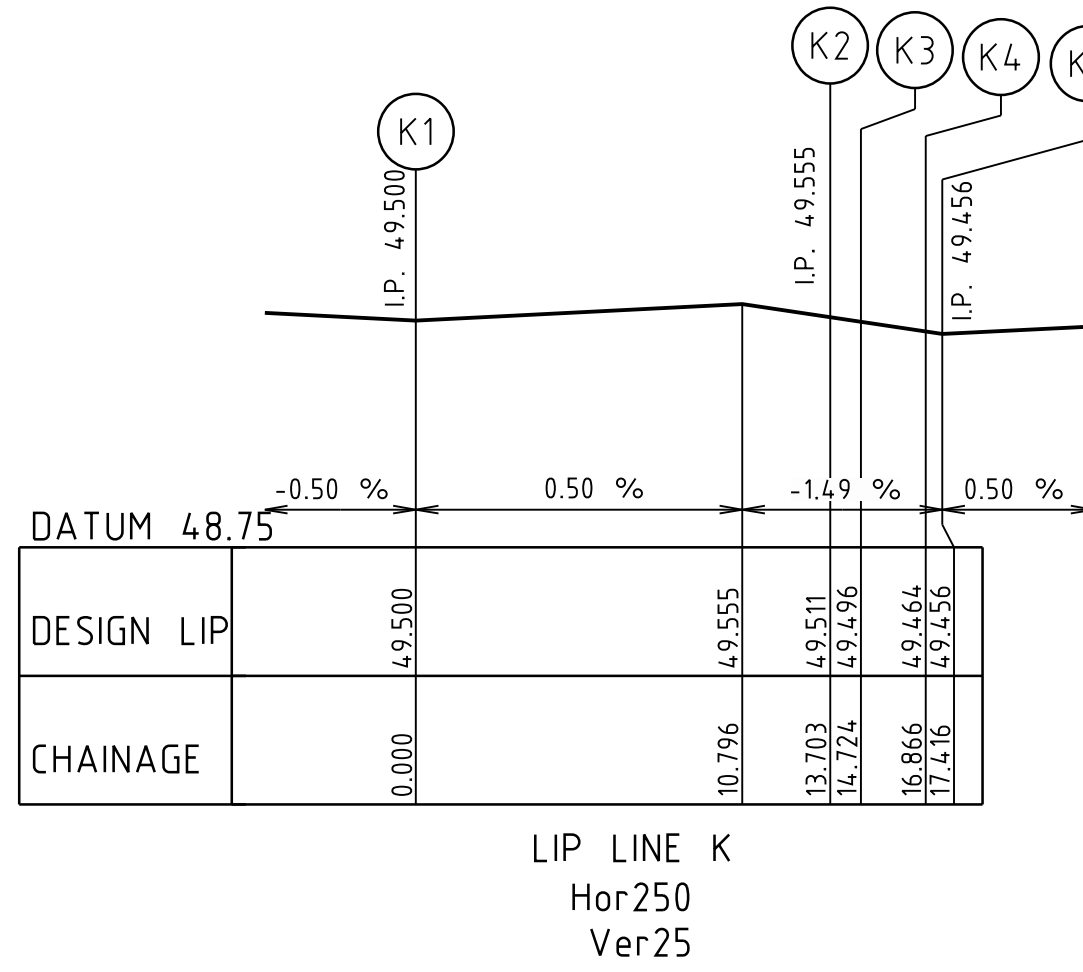
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G1	297430.010	5812447.362	48.928
1/4	297429.875	5812447.386	48.931
1/2	297429.748	5812447.437	48.934
3/4	297429.632	5812447.511	48.937
G2	297429.533	5812447.606	48.940
G3	297428.147	5812449.238	48.989
1/4	297427.963	5812449.415	48.995
1/2	297427.749	5812449.553	49.001
3/4	297427.512	5812449.646	49.007
G4	297427.261	5812449.692	49.013
1/4	297423.974	5812449.320	49.156
1/2	297421.071	5812447.735	49.294
3/4	297418.980	5812445.172	49.391
G5	297418.012	5812442.009	49.439
G6	297417.957	5812441.478	49.442

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
G1-G2	0.700	0.550	0.536	0.053	0.013
G3-G4	1.300	1.021	0.995	0.099	-0.025
G4-G5	8.600	13.314	12.024	2.450	-0.636



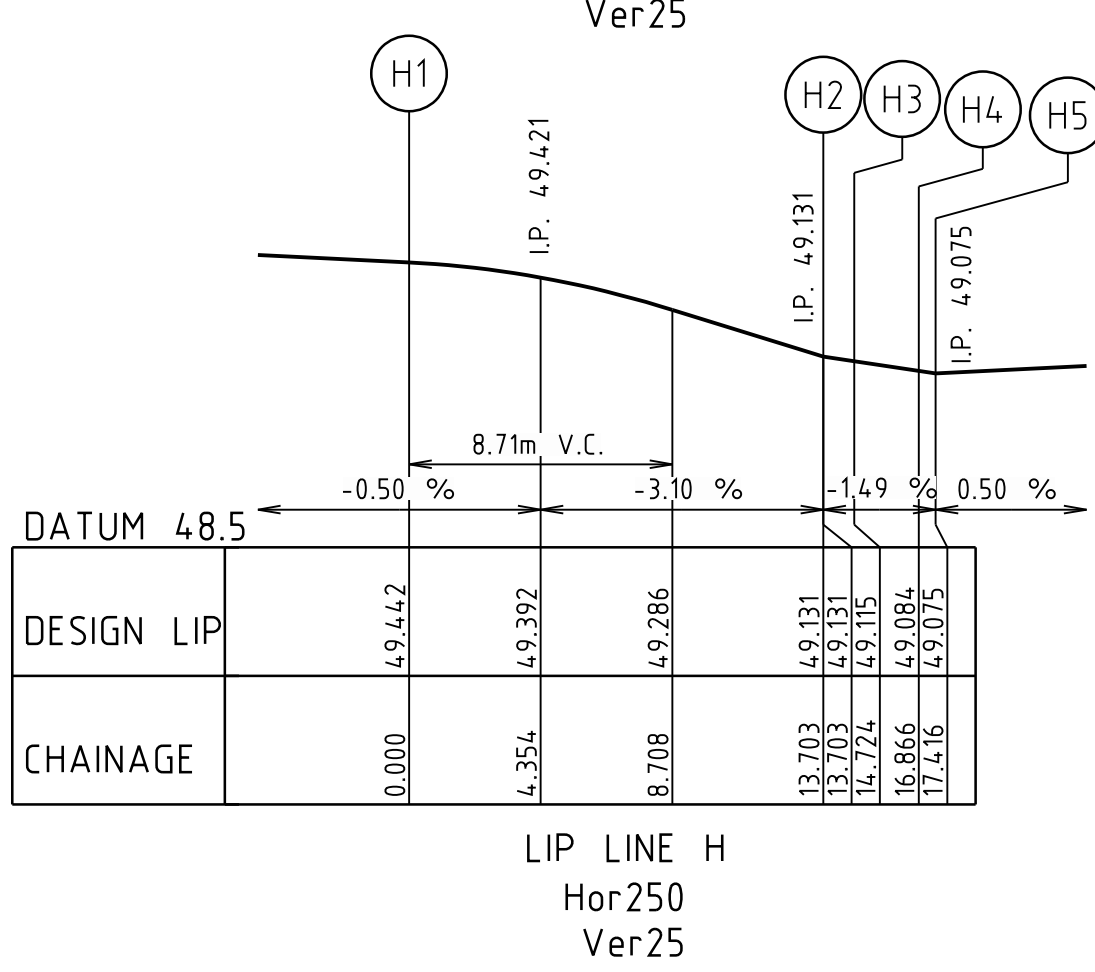
POINT NO	EASTING	NORTHING	RL
M1	297260.050	5812454.432	49.817
1/4	297259.725	5812457.820	49.844
1/2	297258.111	5812460.816	49.871
3/4	297255.462	5812462.952	49.898
M2	297252.191	5812463.893	49.891
1/4	297251.936	5812463.888	49.888
1/2	297251.687	5812463.834	49.884
3/4	297251.454	5812463.733	49.880
M3	297251.244	5812463.588	49.876
M4	297249.612	5812462.201	49.844
1/4	297249.500	5812462.123	49.842
1/2	297249.374	5812462.068	49.840
3/4	297249.240	5812462.039	49.838
M5	297249.103	5812462.036	49.836

CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
M1-M2	8.600	13.703	12.299	2.588	-0.673
M2-M3	1.300	1.021	0.995	0.099	-0.025
M4-M5	0.700	0.550	0.536	0.053	0.013



POINT NO	EASTING	NORTHING	RL
K1	297335.821	5812448.286	49.500
1/4	297335.496	5812451.673	49.518
1/2	297333.882	5812454.670	49.535
3/4	297331.232	5812456.806	49.552
K2	297327.962	5812457.746	49.511
1/4	297327.707	5812457.742	49.507
1/2	297327.458	5812457.688	49.503
3/4	297327.224	5812457.587	49.500
K3	297327.015	5812457.441	49.496
K4	297325.383	5812456.054	49.464
1/4	297325.270	5812455.976	49.462
1/2	297325.144	5812455.922	49.460
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K5	297324.873	5812455.890	49.456

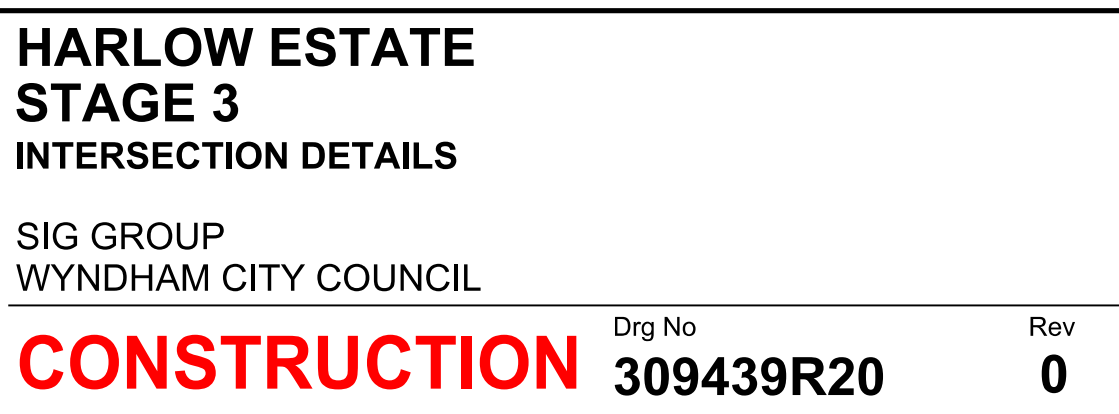
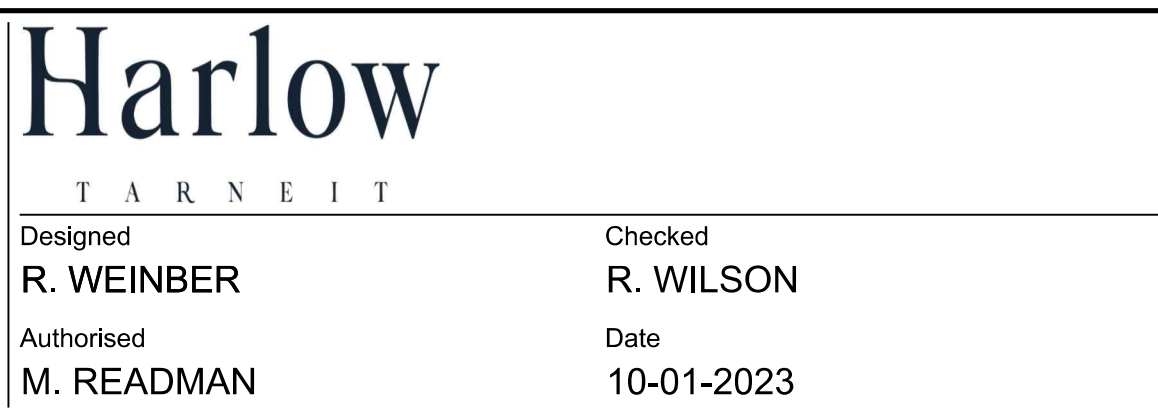
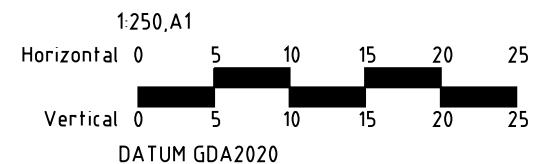
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
K1-K2	8.600	13.703	12.299	2.588	-0.673
K2-K3	1.300	1.021	0.995	0.099	-0.025
K4-K5	0.700	0.550	0.536	0.053	0.013

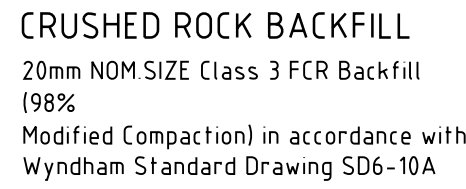


POINT NO	EASTING	NORTHING	RL
H1	297411.591	5812442.139	49.442
1/4	297411.266	5812445.527	49.408
1/2	297409.653	5812448.523	49.338
3/4	297407.003	5812450.659	49.237
H2	297403.732	5812451.600	49.131
1/4	297403.478	5812451.596	49.127
1/2	297403.229	5812451.542	49.123
3/4	297402.995	5812451.440	49.119
H3	297402.785	5812451.295	49.115
H4	297401.154	5812449.908	49.084
1/4	297401.041	5812449.830	49.081
1/2	297400.915	5812449.775	49.079
3/4	297400.781	5812449.746	49.077
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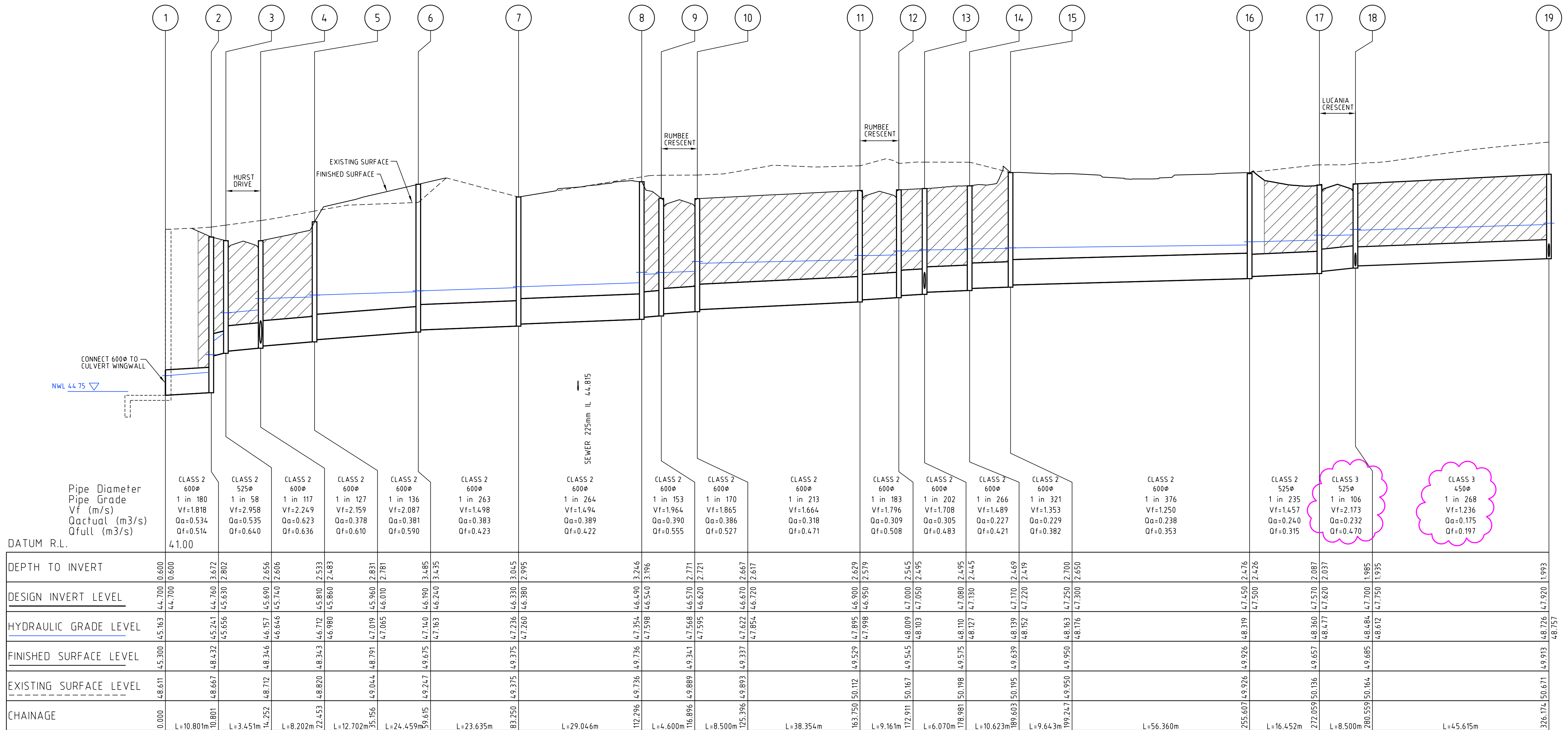
CURVE	RADIUS	ARC L	CHORD	MID ORD	QTR ORD
H1-H2	8.600	13.703	12.299	2.588	-0.673
H2-H3	1.300	1.021	0.995	0.099	-0.025
H4-H5	0.700	0.550	0.536	0.053	0.013

Rev	Amendments	Approved	Date
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23

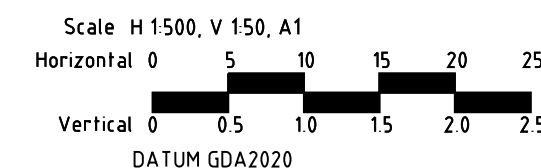




**Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024**



2	LINES 17 TO 18 & 18 TO 19 BACKFILL CLASS UPDATED TO CLASS 3	M.R	31/01/24
1	LINE 16 TO 19 UPDATED	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



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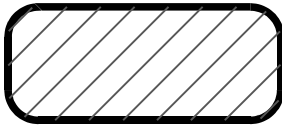
Designed
R. WEINBER
Authorised
M. READMAN

Checked
R. WILSON
Date
24-12-2022

**HARLOW ESTATE
STAGE 3
DRAINAGE LONG SECTION
SHEET 1 OF 8
SIG GROUP
WYNDHAM CITY COUNCIL**

CONSTRUCTION Drg No **309439R21**

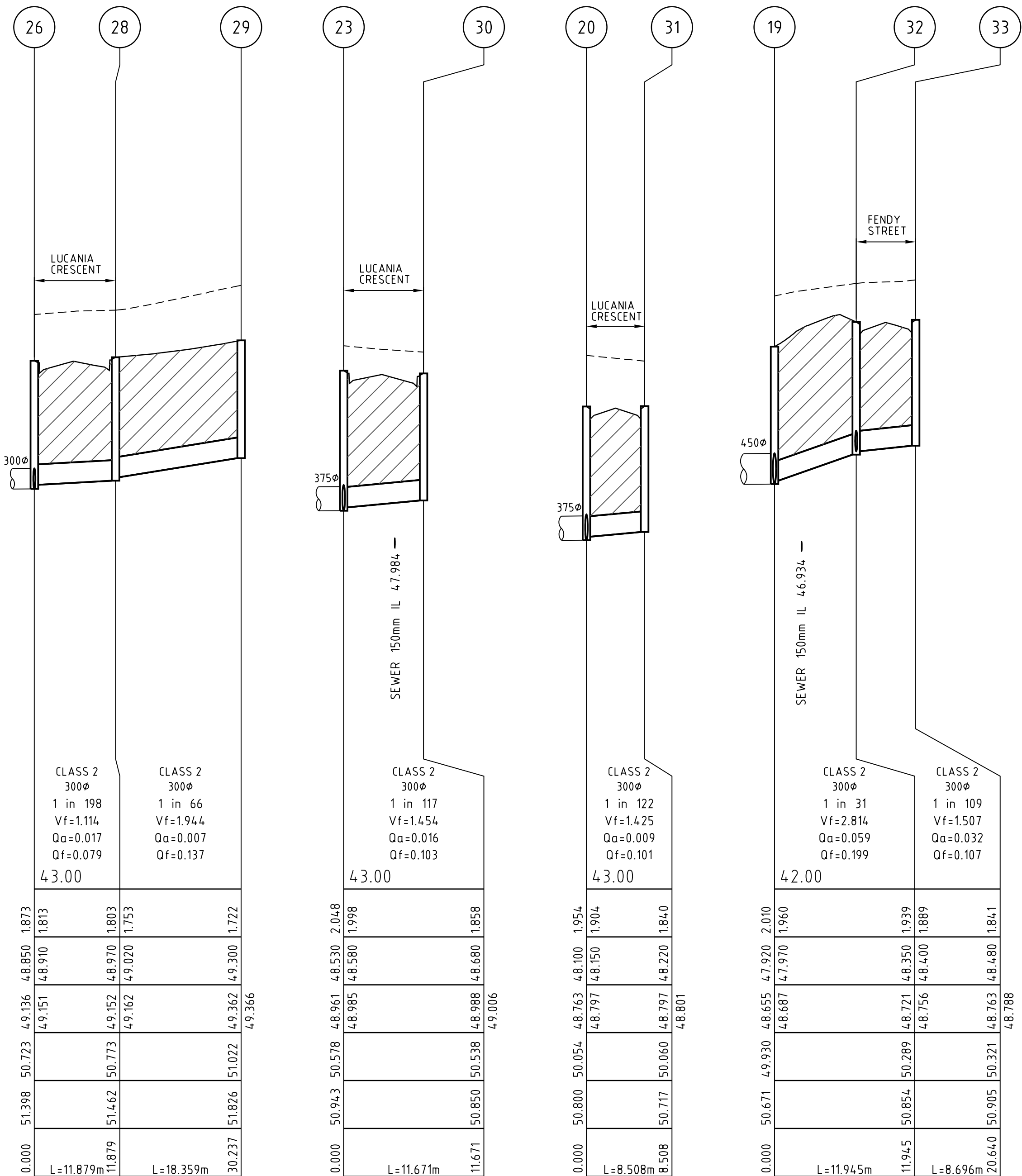
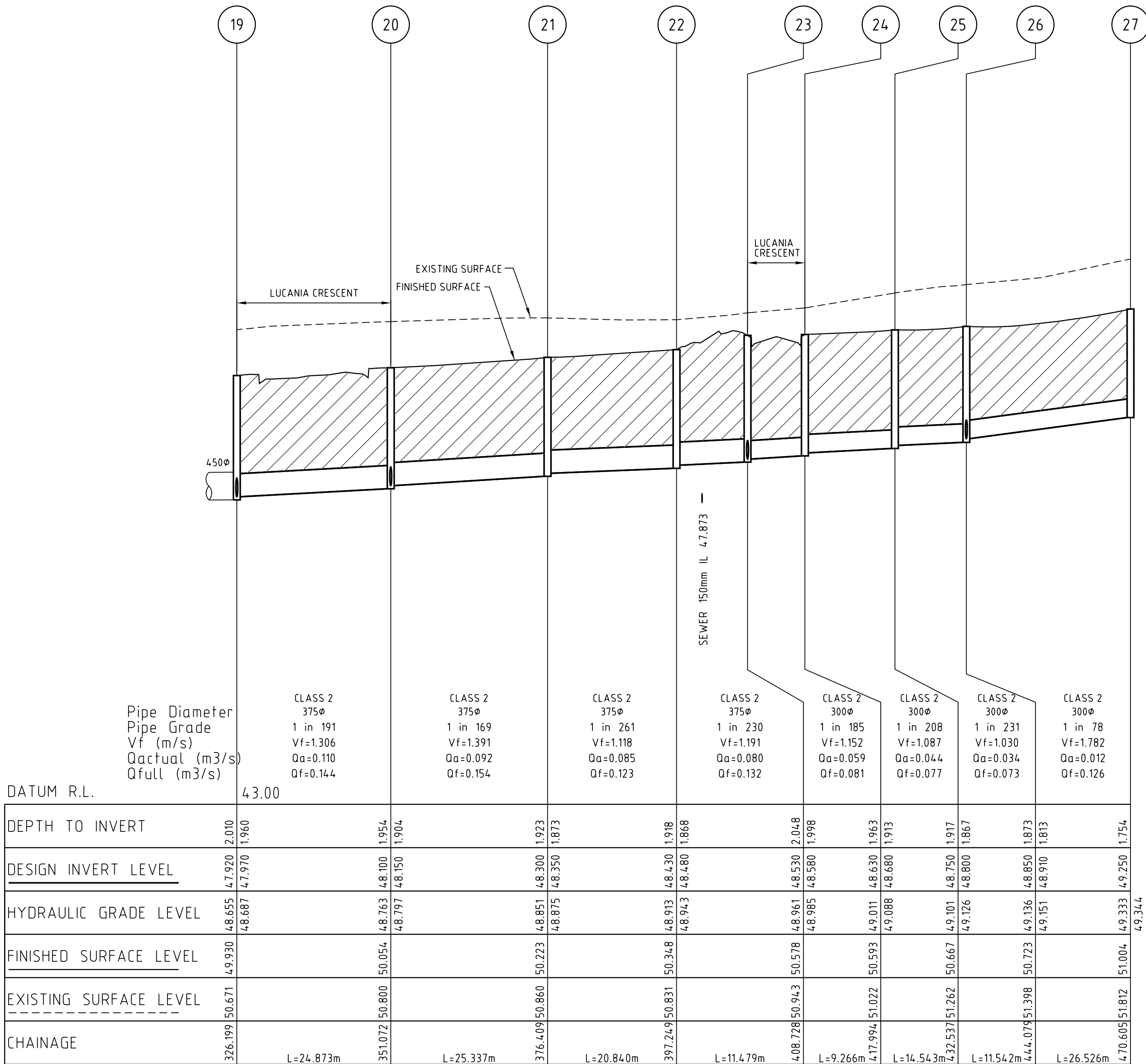
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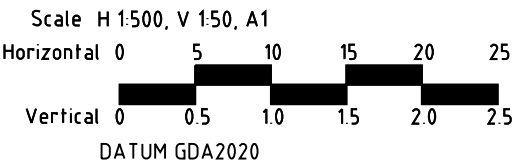
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20mm NOM SIZE (Class 3 FCR Backfill
(98%
Modified Compaction) in accordance with
Wyndham Standard Drawing SD6-10A

Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023

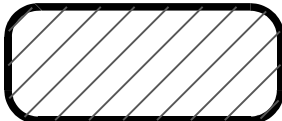


0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



Designed R. WEINBER	Checked R. WILSON
Authorised M. READMAN	Date 24-12-2022

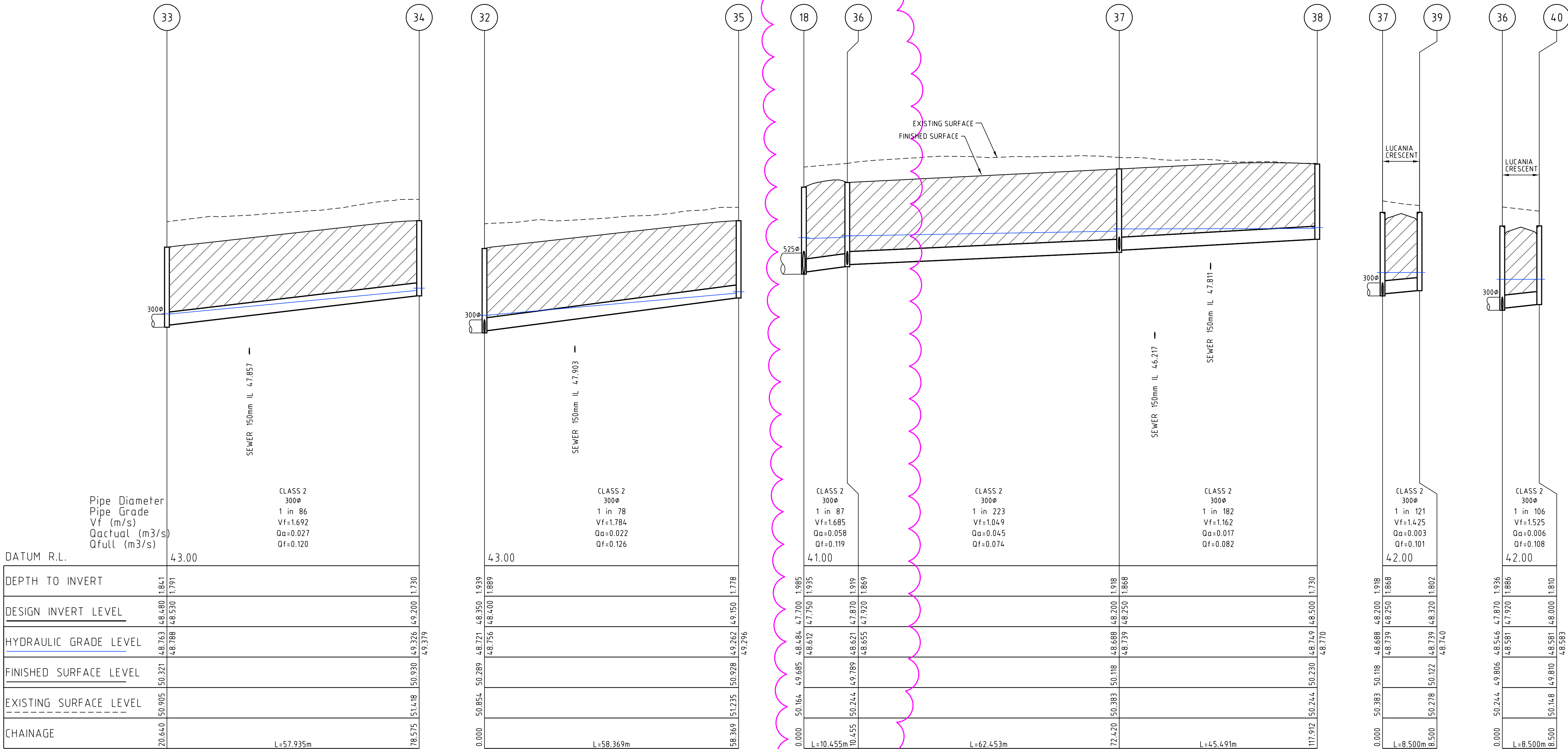
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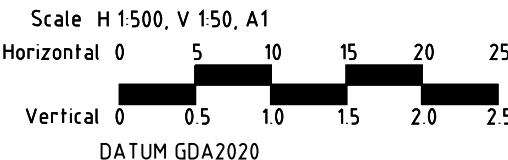
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Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024



1	LINE 18 TO 36 UPDATED	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
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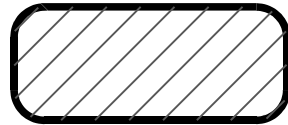
Designed	Checked
R. WEINBER	R. WILSON
Authorised	Date
M. READMAN	24-12-2022

HARLOW ESTATE
STAGE 3
DRAINAGE LONG SECTION
SHEET 3 OF 8
SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION

Drg No
309439R23

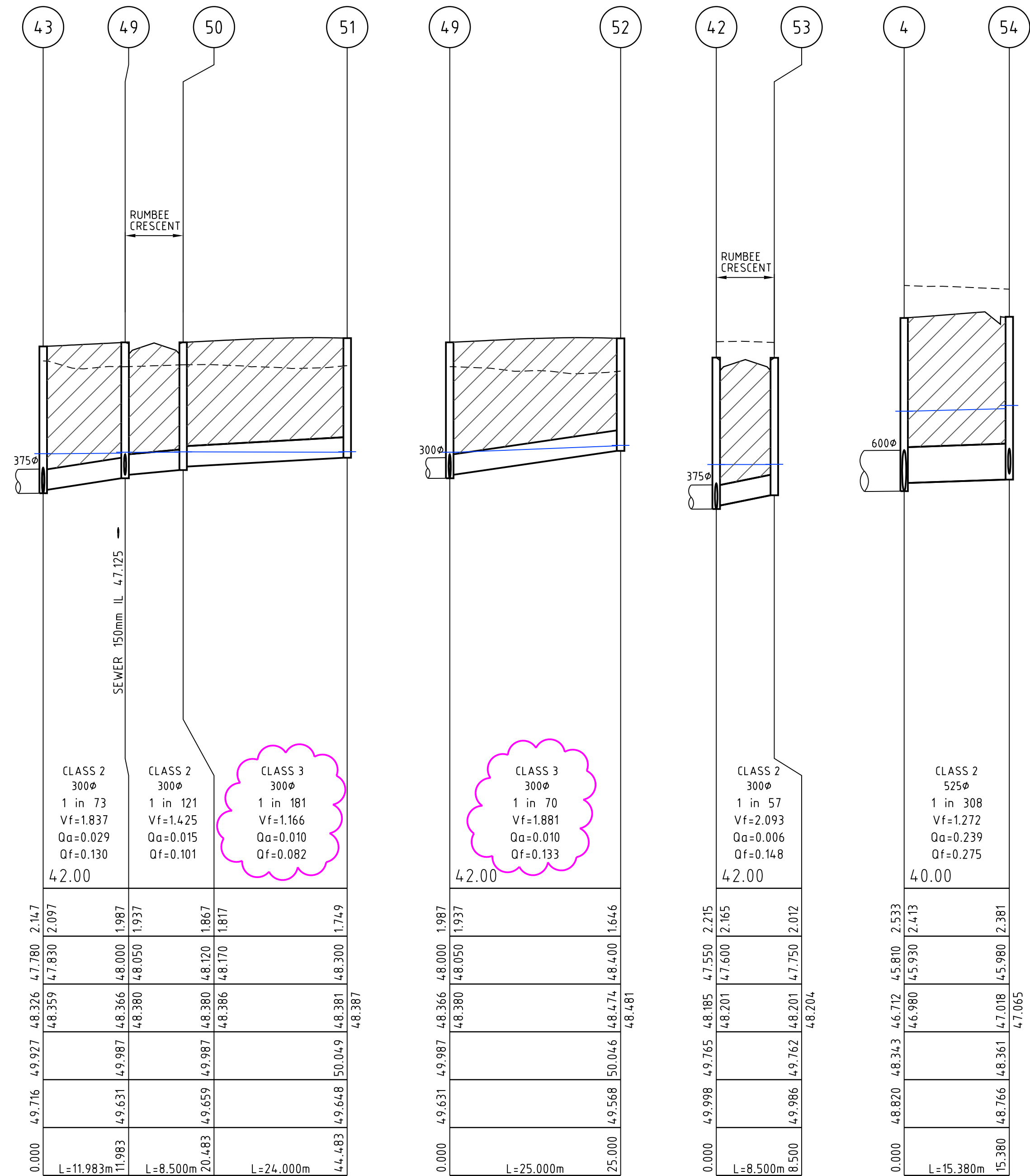
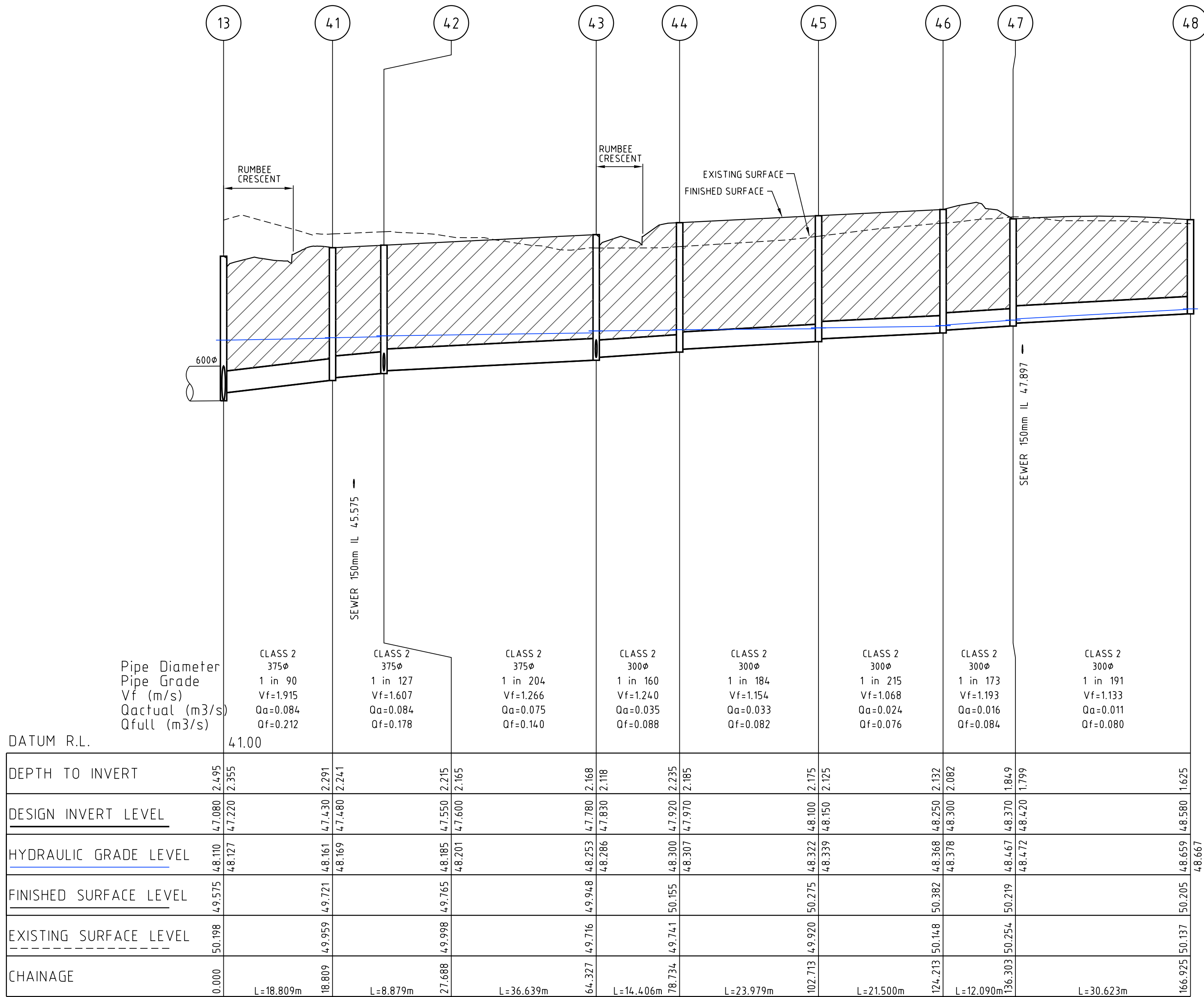
Rev
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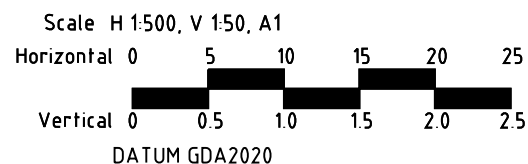
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20mm NOM SIZE Class 3 FCR Backfill
(98%
Modified Compaction) in accordance with
Wyndham Standard Drawing SD6-10A

Planning and Environment Act 1987
Wyndham Planning Scheme

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under Condition 51
Permit No WYP13135/21
Date 01/02/2024



2	LINES 49 TO 52 & 50 TO 51 BACKFILL CLASS UPDATED TO CLASS 3	M.R	31/01/24
1	LINES 43 TO 51 & 49 TO 52 UPDATED	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date

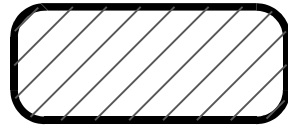


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Designed
R. WEINBER
Authorised
M. READMAN
Checked
R. WILSON
Date
24-12-2022

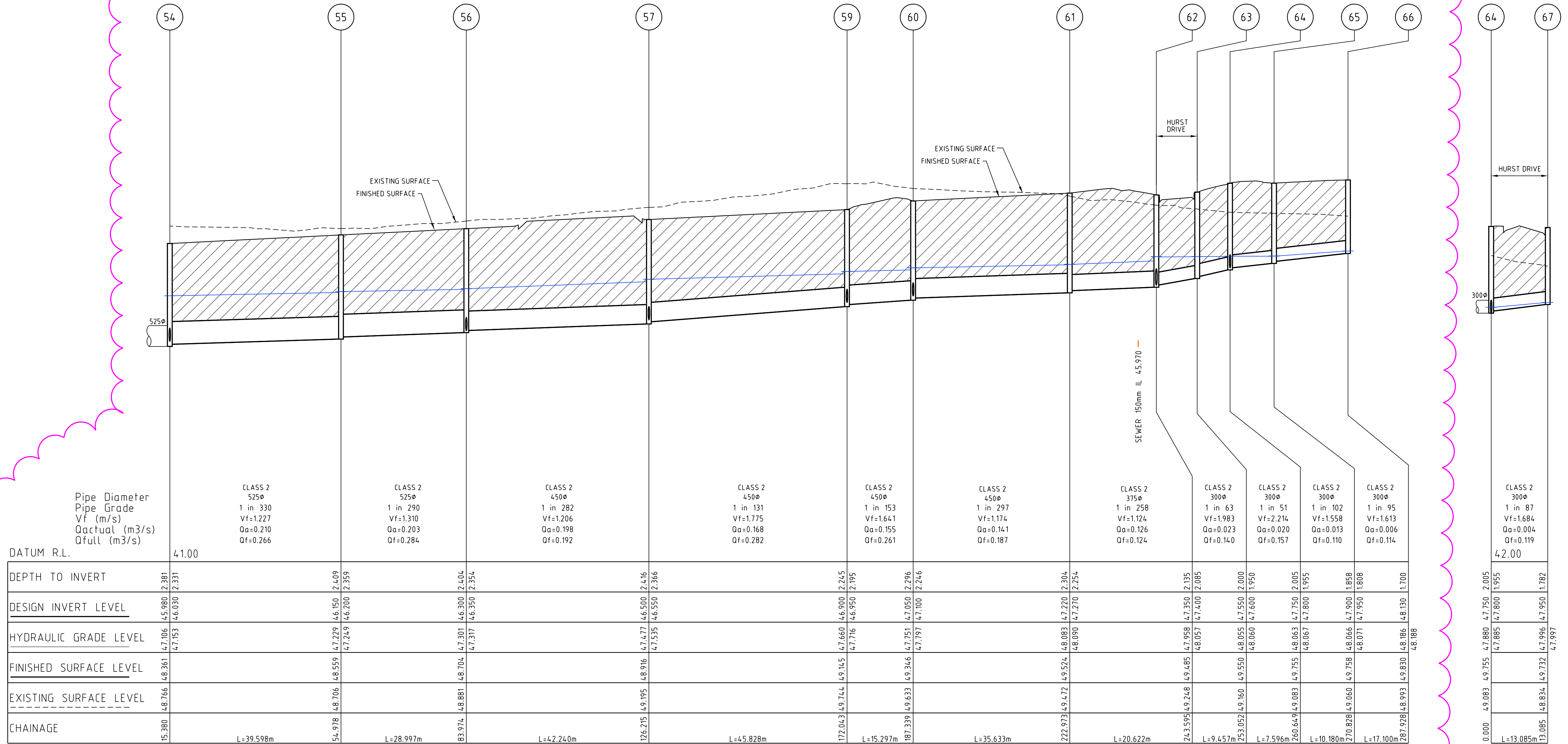
HARLOW ESTATE
STAGE 3
DRAINAGE LONG SECTION
SHEET 4 OF 8
SIG GROUP
WYNDHAM CITY COUNCIL
CONSTRUCTION Drg No **309439R24** Rev **2**



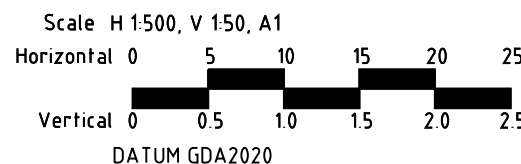
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20mm NOM SIZE Class 3 FCR Backfill
(98%
Modified Compaction) in accordance with
Wyndham Standard Drawing SD6-10A

Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024



1	LINE 54 TO 66 UPDATED	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



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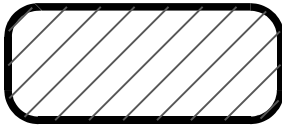
Harlow
T A R N E I T

Designed R. WEINBER	Checked R. WILSON
Authorised M. READMAN	Date 24-12-2022

**HARLOW ESTATE
STAGE 3
DRAINAGE LONG SECTION
SHEET 5 OF 8**
SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No **309439R25**

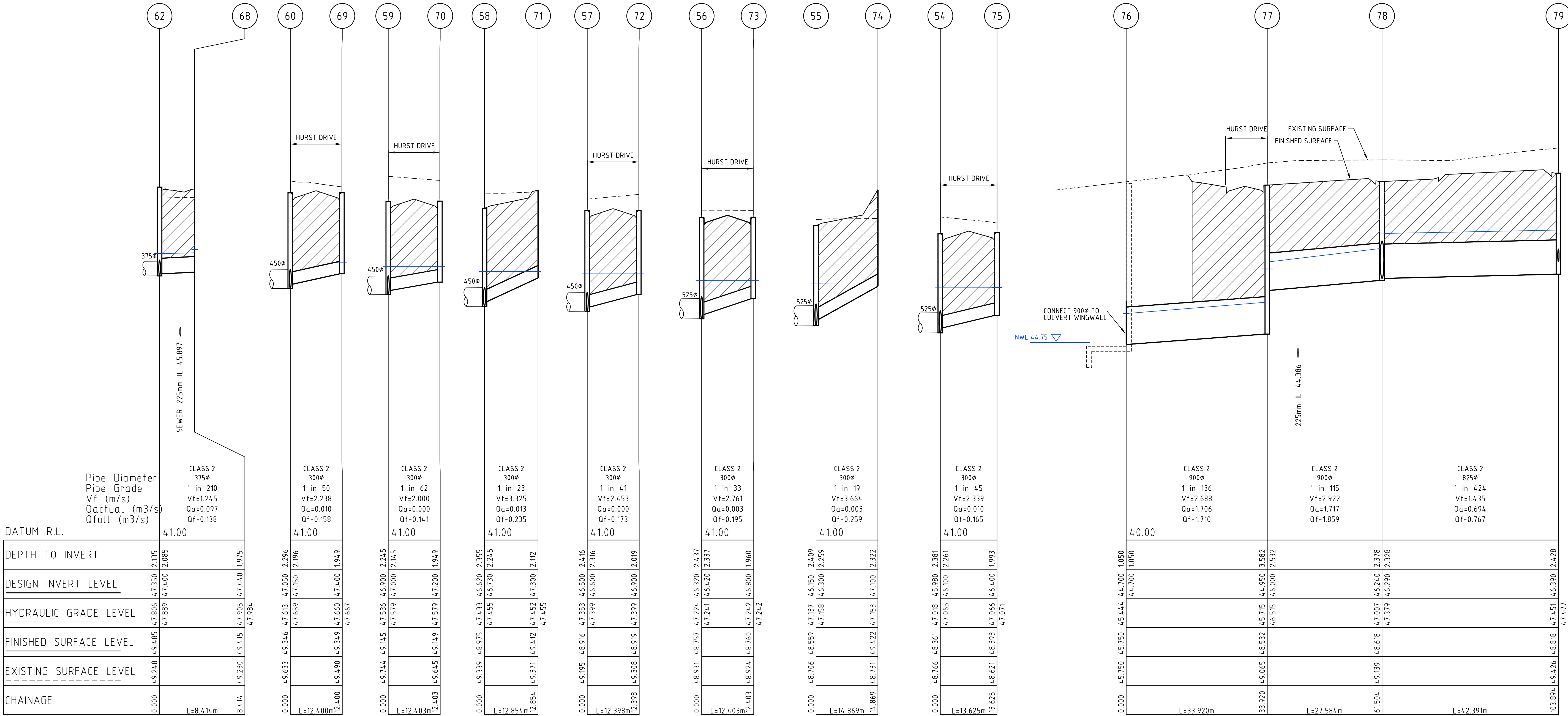
Rev
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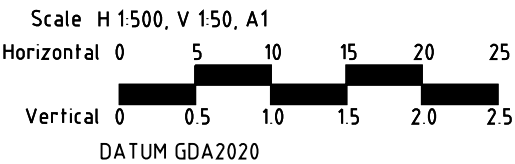
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20mm NOM SIZE Class 3 FCR Backfill
(98%
Modified Compaction) in accordance with
Wyndham Standard Drawing SD6-10A

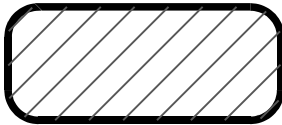
Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023



0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date

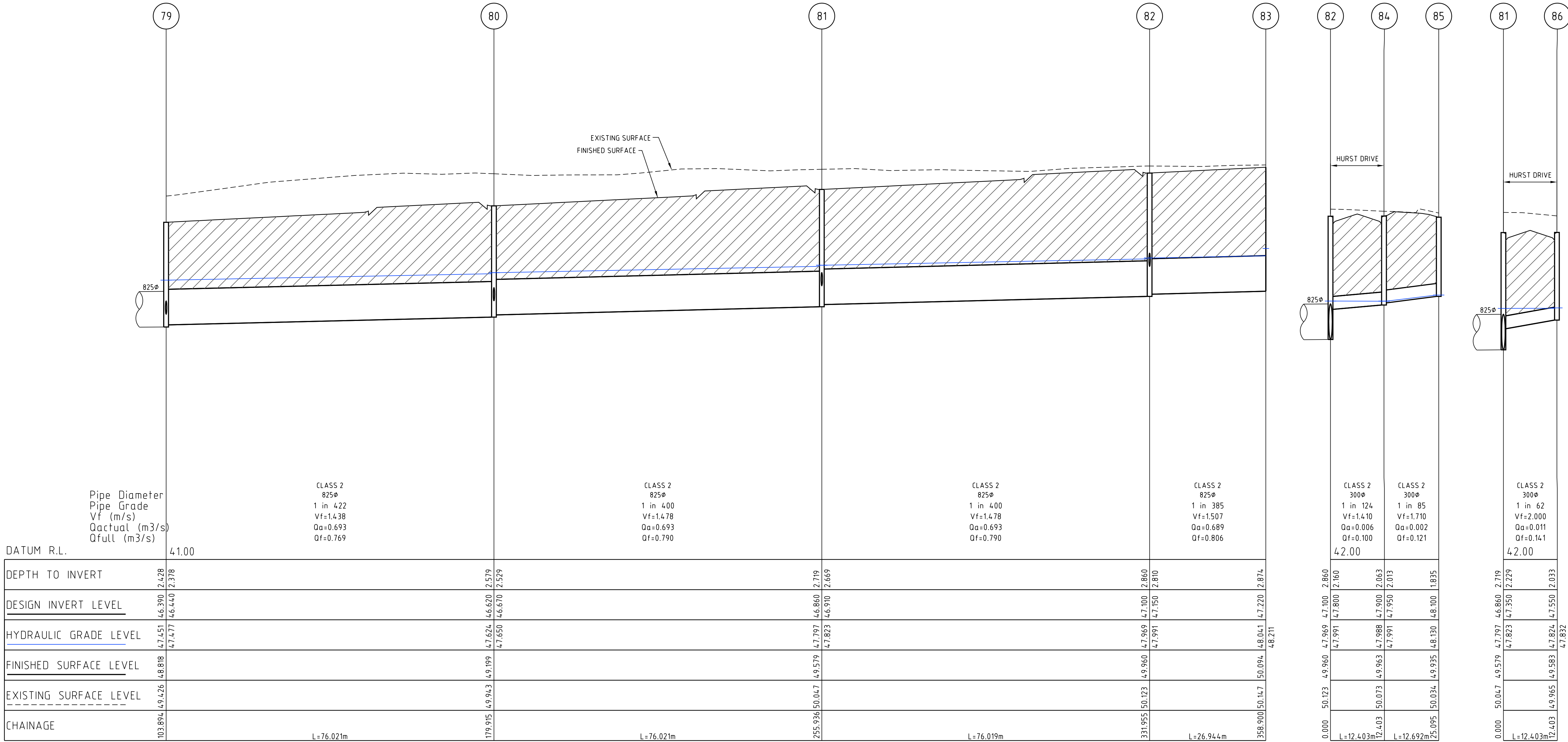




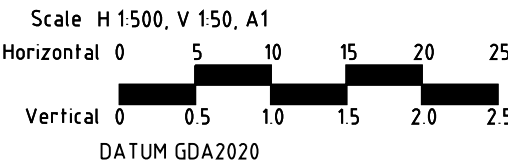
CRUSHED ROCK BACKFILL
20mm NOM SIZE Class 3 FCR Backfill
(98%
Modified Compaction) in accordance with
Wyndham Standard Drawing SD6-10A

Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023



0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



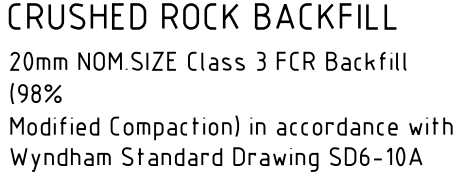
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Designed R. WEINBER	Checked R. WILSON
Authorised M. READMAN	Date 24-12-2022

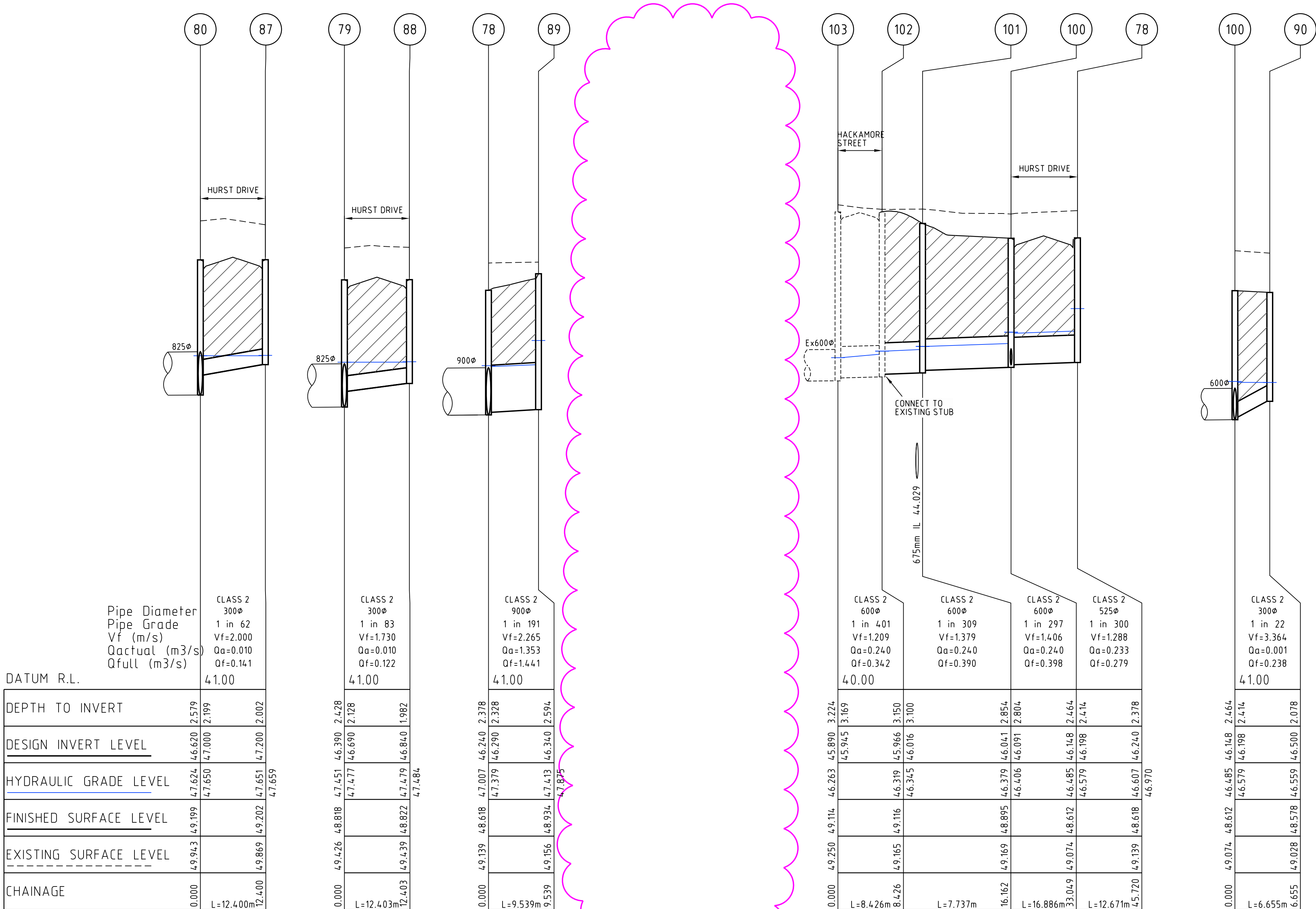
HARLOW ESTATE
STAGE 3
DRAINAGE LONG SECTION
SHEET 7 OF 8
SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No **309439R27** Rev **0**



CRUSHED ROCK BACKFILL
20mm NOM SIZE Class 3 FCR Backfill
(98%
Modified Compaction) in accordance with
Wyndham Standard Drawing SD6-10A

**Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 01/02/2024**



DATUM R.L.	41.00
DEPTH TO INVERT	2.519 2.199
DESIGN INVERT LEVEL	46.620 47.000
HYDRAULIC GRADE LEVEL	47.624 47.650
FINISHED SURFACE LEVEL	49.199 49.202
EXISTING SURFACE LEVEL	49.943 49.869
CHAINAGE	0.000 12.400

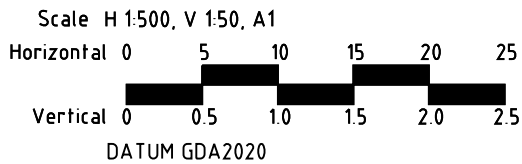
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0.000	4.9139	4.8.618	4.7.007	4.6.240	2.378
			4.7.379	4.6.290	2.328
	4.9.156	4.8.934	4.7.413	4.6.340	2.594
L=9.539m	9.539				
					41.00
					CLASS 2 900Ø 1 in 191 Vf=2.265 Qa=1.353 Qf=1.441

[illegible]

0.000	49.074	48.612	46.485	46.148	2.464
			46.579	46.198	2.414
					4.100
					CLASS 2 300φ 1 in 22 Vf=3.364 Qa=0.001 Qf=0.238
L=6.655m	4.9028	48.578	46.559	46.500	2.078
6.655					

1	LINE 3 TO 105 REMOVED	M,R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M,R	29/08/23
Rev	Amendments	Approved	Date



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Harlow

T A R N E I T

Designed
R. WEINBER
Authorised
M. READMAN

Checked
R. WILSON
Date
24-12-2022

**HARLOW ESTATE
STAGE 3
DRAINAGE LONG SECTION
SHEET 8 OF 8
SIG GROUP
WYNDHAM CITY COUNCIL**

CONSTRUCTION Drg No **309439R28**

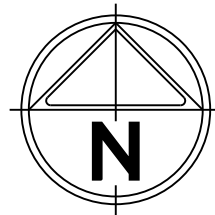
Rev
1

DRAINAGE PIT SCHEDULE

PIT		INTERNAL		INLET		OUTLET		PIT		REMARKS
NAME	TYPE	LENGTH	WIDTH	DIA	INV LEVEL	DIA	INV LEVEL	FS LEVEL	DEPTH	
1	HEADWALL CONNECTION			600	44.700			45.300	0.600	CONNECT TO CULVERT WING WALL
2	JUNCTION PIT	900	900	525	45.630	600	44.760	48.432	3.672	REFER DRAWING - EDCM 605 & 606
3	DOUBLE SIDE ENTRY PIT GRATED			600	45.740	525	45.690	48.346	2.656	REFER WEIR PIT DETAIL - SHEET 35
						450	45.690	48.346		CONSTRUCT PIT OVER EXISTING 450Ø END PIPE
4	DOUBLE SIDE ENTRY PIT GRATED	900	900	600	45.860	600	45.810	48.343	2.533	REFER DRAWING - EDCM 602
				525	45.930					
5	JUNCTION PIT	900	900	600	46.010	600	45.960	48.791	2.831	REFER DRAWING - EDCM 605
6	JUNCTION PIT	900	900	600	46.240	600	46.190	49.675	3.485	REFER DRAWING - EDCM 605
7	JUNCTION PIT	900	900	600	46.380	600	46.330	49.375	3.045	REFER DRAWING - EDCM 605
8	JUNCTION PIT	900	900	600	46.540	600	46.490	49.736	3.246	REFER DRAWING - EDCM 605 PROVIDE PIT DEFLECTOR
9	JUNCTION PIT	900	900	600	46.620	600	46.570	49.341	2.771	REFER DRAWING - EDCM 605
10	JUNCTION PIT	900	900	600	46.720	600	46.670	49.337	2.667	REFER DRAWING - EDCM 605 PROVIDE PIT DEFLECTOR
				300	47.450					PROVIDE STUB 300 DIA
11	JUNCTION PIT	900	900	600	46.950	600	46.900	49.529	2.629	REFER DRAWING - EDCM 605
12	SIDE ENTRY PIT GRATED	900	900	600	47.050	600	47.000	49.545	2.545	REFER DRAWING - EDCM 601 & 605
13	JUNCTION PIT	900	900	600	47.130	600	47.080	49.575	2.495	REFER DRAWING - EDCM 605 - PROVIDE PIT DEFLECTOR
				375	47.220					
14	JUNCTION PIT	900	900	600	47.220	600	47.170	49.639	2.469	REFER DRAWING - EDCM 605
15	JUNCTION PIT	900	900	600	47.300	600	47.250	49.950	2.700	REFER DRAWING - EDCM 605
16	JUNCTION PIT	900	900	525	47.500	600	47.450	49.953	2.503	REFER DRAWING - EDCM 605
17	DOUBLE SIDE ENTRY PIT GRATED	900	900	525	47.620	525	47.570	49.703	2.133	REFER DRAWING - EDCM 601 & 605
18	DOUBLE SIDE ENTRY PIT GRATED	900	900	450	47.750	525	47.700	49.699	1.999	REFER DRAWING - EDCM 601 & 605
				300	47.750					
19	SIDE ENTRY PIT GRATED	900	600	375	47.970	450	47.920	49.930	2.010	REFER DRAWING - EDCM 601 & 605
		900	600	300	47.970					
20	SIDE ENTRY PIT GRATED	900	600	375	48.150	375	48.100	50.054	1.954	REFER DRAWING - EDCM 601 & 605
				300	48.150					
21	JUNCTION PIT	900	600	375	48.350	375	48.300	50.223	1.923	REFER DRAWING - EDCM 605 - PROVIDE HEAVY DUTY COVER
22	JUNCTION PIT	900	600	375	48.480	375	48.430	50.348	1.918	REFER DRAWING - EDCM 605
23	SIDE ENTRY PIT GRATED	900	600	300	48.580	375	48.530	50.578	2.048	REFER DRAWING - EDCM 601 & 605
				300	48.580					
24	SIDE ENTRY PIT GRATED	900	600	300	48.680	300	48.630	50.593	1.963	REFER DRAWING - EDCM 601 & 605
25	JUNCTION PIT	900	600	300	48.800	300	48.750	50.667	1.917	REFER DRAWING - EDCM 605
26	JUNCTION PIT	900	600	300	48.910	300	48.850	50.723	1.873	REFER DRAWING - EDCM 605
				300	48.910					
27	JUNCTION PIT	900	600			300	49.250	51.004	1.754	REFER DRAWING - EDCM 605
28	SIDE ENTRY PIT GRATED	900	600	300	49.020	300	48.970	50.773	1.803	REFER DRAWING - EDCM 601 & 605
29	JUNCTION PIT	900	600			300	49.300	51.022	1.722	REFER DRAWING - EDCM 605
30	JUNCTION PIT	900	600			300	48.680	50.538	1.858	REFER DRAWING - EDCM 605 - PROVIDE HEAVY DUTY COVER
31	SIDE ENTRY PIT GRATED	900	600			300	48.220	50.060	1.840	REFER DRAWING - EDCM 601 & 605
32	SIDE ENTRY PIT GRATED	900	600	300	48.400	300	48.350	50.289	1.939	REFER DRAWING - EDCM 601 & 605 - PROVIDE HEAVY DUTY COVER
				300	48.400					
33	SIDE ENTRY PIT GRATED	900	600	300	48.530	300	48.480	50.321	1.841	REFER DRAWING - EDCM 601 & 605
34	JUNCTION PIT	900	600			300	49.200	50.930	1.730	REFER DRAWING - EDCM 605
35	JUNCTION PIT	900	600			300	49.150	50.928	1.778	REFER DRAWING - EDCM 605
36	SIDE ENTRY PIT GRATED	900	600	300	47.920	300	47.870	49.806	1.936	REFER DRAWING - EDCM 601 & 605
		900	600	300	47.920					
37	SIDE ENTRY PIT GRATED	900	600	300	48.250	300	48.200	50.118	1.918	REFER DRAWING - EDCM 601 & 605
		900	600	300	48.250					
38	JUNCTION PIT	900	600			300	48.500	50.230	1.730	REFER DRAWING - EDCM 605 - PROVIDE HEAVY DUTY COVER
39	SIDE ENTRY PIT GRATED	900	600			300	48.320	50.122	1.802	REFER DRAWING - EDCM 601 & 605
40	SIDE ENTRY PIT GRATED	900	600			300	48.000	49.810	1.810	REFER DRAWING - EDCM 601 & 605
41	JUNCTION PIT	900	600	375	47.480	375	47.430	49.721	2.291	REFER DRAWING - EDCM 605
42	SIDE ENTRY PIT GRATED	900	600	375	47.600	375	47.550	49.765	2.215	REFER DRAWING - EDCM 601 & 605
				300	47.600					
43	JUNCTION PIT	900	600	300	47.830	375	47.780	49.948	2.168	REFER DRAWING - EDCM 605
				300	47.830					
44	GRATED JUNCTION PIT	900	600	300	47.970	300	47.920	50.155	2.235	REFER DRAWING - EDCM 605 - PROVIDE HEAVY DUTY FLAT GRATE
45	GRATED JUNCTION PIT	900	600	300	48.150	300	48.100	50.275	2.175	REFER DRAWING - EDCM 605 - PROVIDE HEAVY DUTY FLAT GRATE
46	GRATED JUNCTION PIT	900	600	300	48.300	300	48.250	50.382	2.132	REFER DRAWING - EDCM 605 - PROVIDE HEAVY DUTY FLAT GRATE
47	JUNCTION PIT	900	600	300	48.420	300	48.370	50.219	1.849	REFER DRAWING - EDCM 605
48	JUNCTION PIT	900	600			300	48.580	50.205	1.625	REFER DRAWING - EDCM 605
49	JUNCTION PIT	900	600	300	48.050	300	48.000	50.011	2.011	REFER DRAWING - EDCM 605
				300	48.050					
50	JUNCTION PIT	900	600	300	48.170	300	48.120	50.007	1.887	REFER DRAWING - EDCM 605 - PROVIDE HEAVY DUTY COVER
51	JUNCTION PIT	900	600			300	48.300	50.066	1.766	REFER DRAWING - EDCM 605
52	JUNCTION PIT	900	600			300	48.400	50.067	1.667	REFER DRAWING - EDCM 605
53	SIDE ENTRY PIT GRATED	900	600			300	47.750	49.762	2.012	REFER DRAWING - EDCM 601 & 605
54	SIDE ENTRY PIT GRATED	900	600	525	46.030	525	45.980	48.361	2.381	REFER DRAWING - EDCM 601 & 605
				300	46.100					
55	SIDE ENTRY PIT GRATED	900	600	525	46.200	525	46.150	48.559	2.409	REFER DRAWING - EDCM 601 & 605
		900	600	300	46.300					
56	SIDE ENTRY PIT GRATED	900	600	450	46.370	525	46.320	48.757	2.437	REFER DRAWING - EDCM 601 & 605
				300	46.420					
57	SIDE ENTRY PIT GRATED	900	600	450	46.550	450	46.500	48.916	2.416	REFER DRAWING - EDCM 601 & 605
				300	46.600					
58	JUNCTION PIT	900	600	450	46.670	450	46.620	48.975	2.355	REFER DRAWING - EDCM 605
				300	46.730					
59	SIDE ENTRY PIT GRATED	900	600	450	46.950	450	46.900	49.145	2.245	REFER DRAWING - EDCM 601 & 605
				300	47.000					
60	SIDE ENTRY PIT GRATED	900	600	450	47.100	450	47.050	49.346	2.296	REFER DRAWING - EDCM 601 & 605
				300	47.150					
61	JUNCTION PIT	900	600	375	47.290	450	47.240	49.571	2.331	REFER DRAWING - EDCM 605
62	SIDE ENTRY PIT GRATED	900	600	300	47.400	375	47.350	49.485	2.135	REFER DRAWING - EDCM 601 & 605 - PROVIDE HEAVY DUTY COVER
				375	47.400					
63	SIDE ENTRY PIT GRATED	900	600	300	47.600	300	47.550	49.550	2.000	REFER DRAWING - EDCM 601 & 605 - PROVIDE HEAVY DUTY COVER
64	JUNCTION PIT	900	600	300	47.800	300	47.750	49.755	2.005	REFER DRAWING - EDCM 605
				300	47.800					
65	SIDE ENTRY PIT GRATED	900	600	300	47.950	300	47.900	49.758	1.858	REFER DRAWING - EDCM 601 & 605

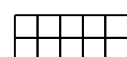
DRAINAGE PIT SCHEDULE

PIT		INTERNAL		INLET		OUTLET		PIT		REMARKS
NAME	TYPE	LENGTH	WIDTH	DIA	INV LEVEL	DIA	INV LEVEL	FS LEVEL	DEPTH	
66	JUNCTION PIT	900	600			300	48.130	49.830	1.700	REFER DRAWING - EDCM 605
67	SIDE ENTRY PIT GRATED	900	600			300	47.950	49.732	1.782	REFER DRAWING - EDCM 601 & 605
68	ENDPIPE					375	47.440	49.415	1.975	BLANK END WITH MARINE PLY
69	SIDE ENTRY PIT GRATED	900	600			300	47.400	49.349	1.949	REFER DRAWING - EDCM 601 & 605
70	SIDE ENTRY PIT GRATED	900	600			300	47.200	49.149	1.949	REFER DRAWING - EDCM 601 & 605
71	ENDPIPE					300	47.300	49.412	2.112	
72	SIDE ENTRY PIT GRATED	900	600			300	46.900	48.919	2.019	REFER DRAWING - EDCM 601 & 605
73	SIDE ENTRY PIT GRATED	900	600			300	46.800	48.760	1.960	REFER DRAWING - EDCM 601 & 605
74	ENDPIPE					300	47.100	49.422	2.322	BLANK END WITH MARINE PLY
75	SIDE ENTRY PIT GRATED	900	600			300	46.400	48.393	1.993	REFER DRAWING - EDCM 601 & 605
76	HEADWALL CONNECTION			900	44.700			45.750	1.050	CONNECT TO CULVERT WING WALL
77	JUNCTION PIT	1200	1200	900	46.000	900	44.950	48.532	3.582	REFER DRAWING - EDCM 605 FOR CHAMBER
										AND MELBOURNE WATER STANDARD DRAWING SD408 FOR BASE.
78	SIDE ENTRY PIT GRATED			825	46.290	900	46.240	48.618	2.378	REFER WEIR PIT DETAIL - SHEET 35
				900	46.290	525	46.240			
79	SIDE ENTRY PIT GRATED	900	1200	825	46.440	825	46.390	48.818	2.428	REFER DRAWING - EDCM 601 & 605
				300	46.690					
80	SIDE ENTRY PIT GRATED	900	1200	825	46.670	825	46.620	49.199	2.579	REFER DRAWING - EDCM 601 & 605
				300	47.000					
81	SIDE ENTRY PIT GRATED	900	1200	825	46.910	825	46.860	49.579	2.719	REFER DRAWING - EDCM 601 & 605
				300	47.350					
82	SIDE ENTRY PIT GRATED	900	1200	825	47.150	825	47.100	49.960	2.860	REFER DRAWING - EDCM 601 & 605
				300	47.800					
83	ENDPIPE					825	47.220	50.094	2.874	BLANK END WITH MARINE PLY
84	SIDE ENTRY PIT GRATED	900	600	300	47.950	300	47.900	49.963	2.063	REFER DRAWING - EDCM 601 & 605
85	SIDE ENTRY PIT GRATED	900	600			300	48.100	49.935	1.835	REFER DRAWING - EDCM 601 & 605 CONSTRUCT PIT IN EXISTING KERB
86	SIDE ENTRY PIT GRATED	900	600			300	47.550	49.583	2.033	REFER DRAWING - EDCM 601 & 605
87	SIDE ENTRY PIT GRATED	900	600			300	47.200	49.202	2.002	REFER DRAWING - EDCM 601 & 605
88	SIDE ENTRY PIT GRATED	900	600			300	46.840	48.822	1.982	REFER DRAWING - EDCM 601 & 605
89	JUNCTION PIT	1200	1200			900	46.340	48.934	2.594	REFER DRAWING - EDCM 605 FOR CHAMBER
										AND MELBOURNE WATER STANDARD DRAWING SD408 FOR BASE.
90	SIDE ENTRY PIT GRATED	900	600			300	46.500	48.578	2.078	REFER DRAWING - EDCM 601 & 605
100	JUNCTION PIT	900	900	525	46.198	600	46.148	48.612	2.464	REFER DRAWING - EDCM 605
101	JUNCTION PIT	900	900	600	46.091	600	46.041	48.895	2.854	REFER DRAWING - EDCM 605
102	Ex SIDE ENTRY PIT GRATED	900	900	600	46.016	600	45.966	49.116	3.150	CONNECT TO EXISTING PIT WITH BLUESTONE ESTATE

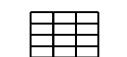


BIKE PATH CONTRASTING SURFACE COLOUR:

FOR ENHANCED VISIBILITY AT ALL ROAD CROSSINGS AND DRIVEWAY CROSSINGS AS SHOWN.
USE GREEN EPOXY MODIFIED ACRYLIC COATING WITH A NON SLIP SURFACE



TGSi KERB RAMP



TGSi DIRECTIONAL



1-WAY RRPM (5m SPACING)

NOTE:

1. STREET SIGNS ARE TO BE MOUNTED ON LIGHT POLES, WITH A COUNCIL APPROVED BRACKET, IN LIEU OF SIGN POLES WHERE THE TWO POLES ARE IN CLOSE PROXIMITY AND WHERE THE STREET SIGN WOULD NOT BE COMPROMISED IN ITS PURPOSE BY THE RELOCATION

HAZARD / DIRECTIONAL TGSi'S SHOW INDICATIVELY.
FOOTPATH RAMP SHALL BE CONSTRUCTED IN ACCORDANCE WITH EDM 403.
TGSi'S SHALL CONFORM TO SECTION 21.1 VICROADS TRAFFIC ENG. MANUAL VOL. 2
RRPM'S SHALL CONFORM TO SECTION 19.1 VICROADS TRAFFIC ENG. MANUAL VOL. 2

**Planning and Environment Act 1987
Wyndham Planning Scheme**

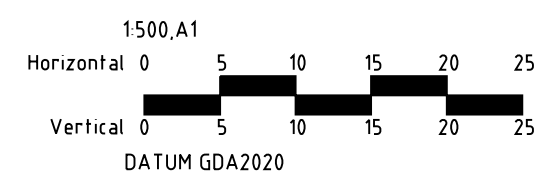
**Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023**

LEGEND

- STREET NAME PLATES TO BE IN ACCORDANCE WITH HCCSD408 & SD412, INCLUDING "NO THROUGH ROAD" NOMINATION WHERE APPLICABLE.
- ROAD CLOSED G9-20
- D4-5
- R1-2A
- ROAD HUMP SIGN (BLACK & YELLOW)
- ADVISORY SPEED SIGN (BLACK & YELLOW)
- ROAD HUMP SIGN (BLACK & YELLOW)
- D4-1-2 (L)
- D4-1-2 (R)
- R4-1



Rev	Amendments	Approved	Date
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23



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Harlow
T A R N E I T

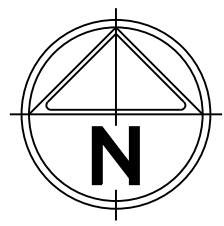
Designed R. WEINBER	Checked R. WILSON
Authorised M. READMAN	Date 10-01-2023

**HARLOW ESTATE
STAGE 3
SIGNAGE AND LINEMARKING**

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No
309439R30

Rev
0



Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023



LEGEND

- 1 STREET NAME
STREET NAME PLATES TO BE IN ACCORDANCE WITH HCCSD408 & SD412, INCLUDING "NO THROUGH ROAD" NOMINATION WHERE APPLICABLE
- 2 ROAD CLOSED
G9-20
- 3 D4-5
- 4 GIVE WAY
R1-2A
- 5 ROAD HUMP SIGN (BLACK & YELLOW)
ADVISORY SPEED SIGN (BLACK & YELLOW)
20 km/h
- 6 ROAD HUMP SIGN (BLACK & YELLOW)
W3-4A
- 7 D4-1-2 (L)
8 D4-1-2 (R)
- 9 W6-9
W8-23

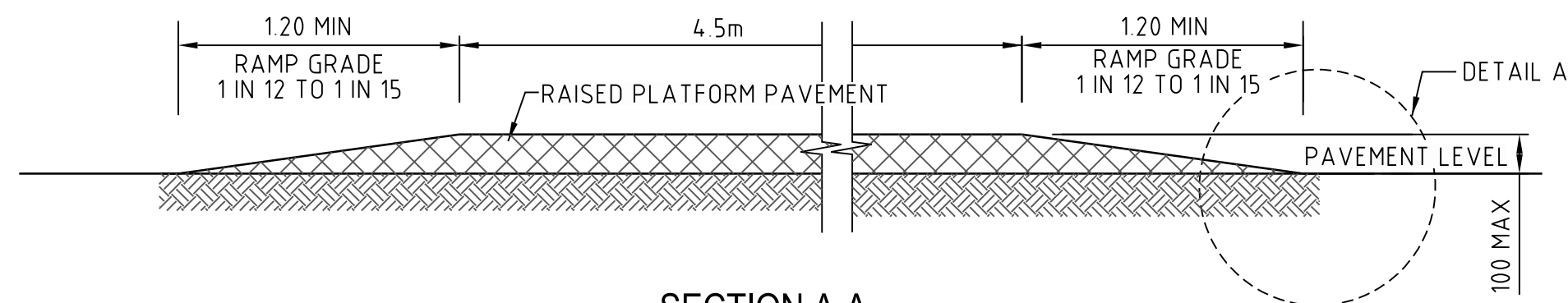
BIKE PATH CONTRASTING SURFACE COLOUR:

FOR ENHANCED VISIBILITY AT ALL ROAD CROSSINGS AND DRIVEWAY CROSSINGS AS SHOWN
USE GREEN EPOXY MODIFIED ACRYLIC COATING WITH A NON SLIP SURFACE.

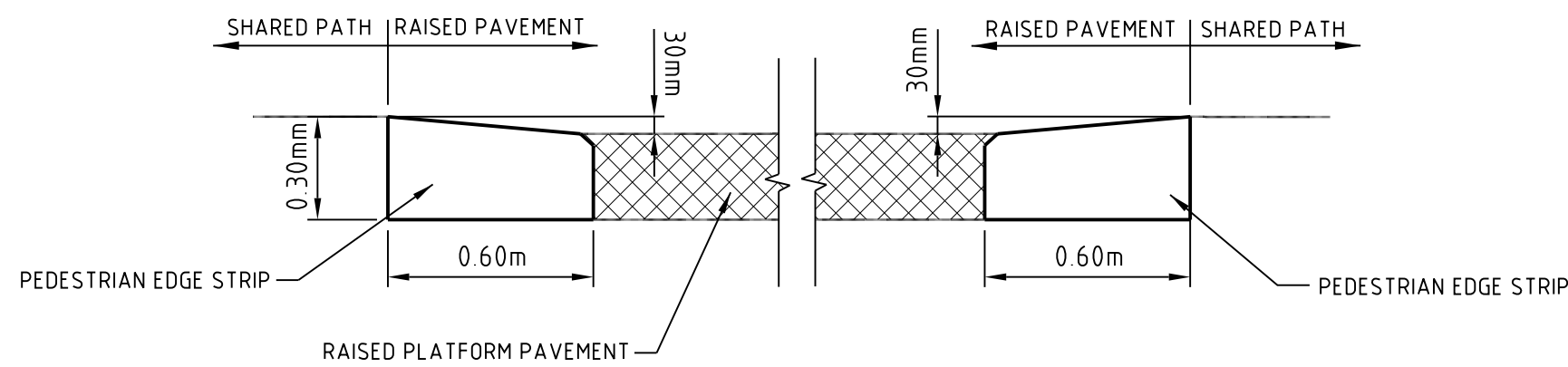
- TGSI KERB RAMP
HAZARD / DIRECTIONAL TGSI'S SHOW INDICATIVELY
FOOTPATH RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH EDGM 4.03
TGSI'S SHALL CONFORM TO SECTION 211 VICROADS TRAFFIC ENG. MANUAL VOL. 2
- TGSI DIRECTIONAL
RRPM'S SHALL CONFORM TO SECTION 19.1 VICROADS TRAFFIC ENG. MANUAL VOL. 2
- 1-WAY RRPM (5m SPACING)

NOTE:

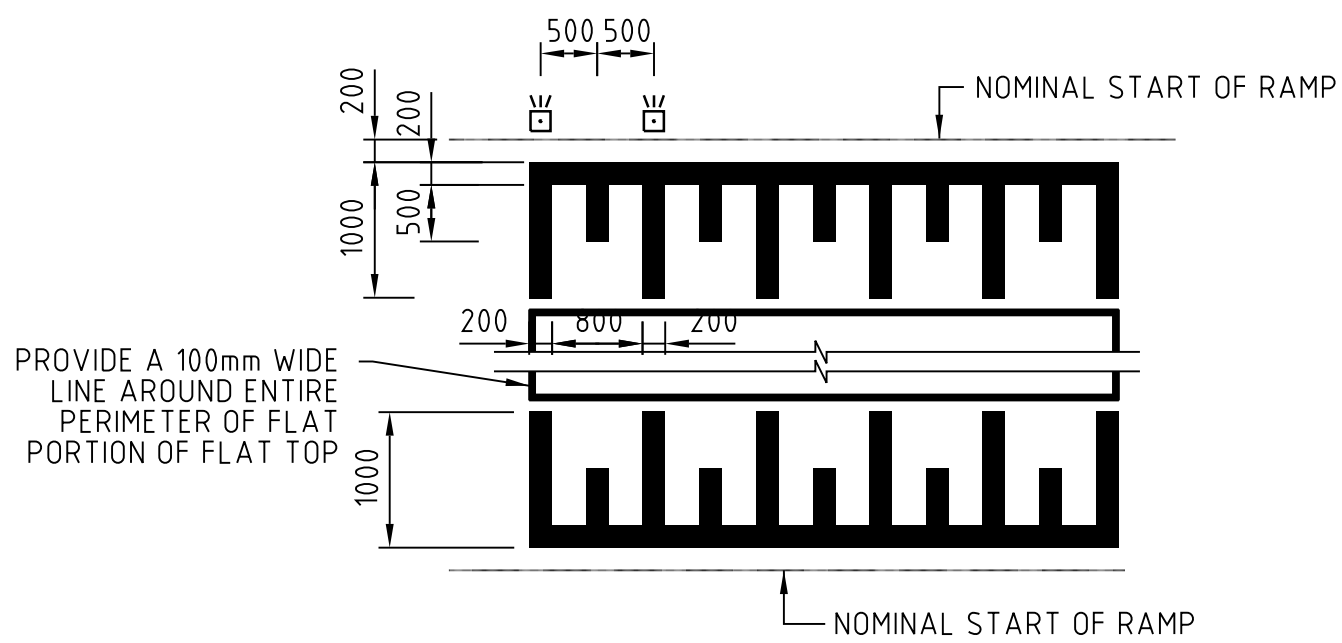
1. STREET SIGNS ARE TO BE MOUNTED ON LIGHT POLES, WITH A COUNCIL APPROVED BRACKET, IN LIEU OF SIGN POLES WHERE THE TWO POLES ARE IN CLOSE PROXIMITY AND WHERE THE STREET SIGN WOULD NOT BE COMPROMISED IN ITS PURPOSE BY THE RELOCATION



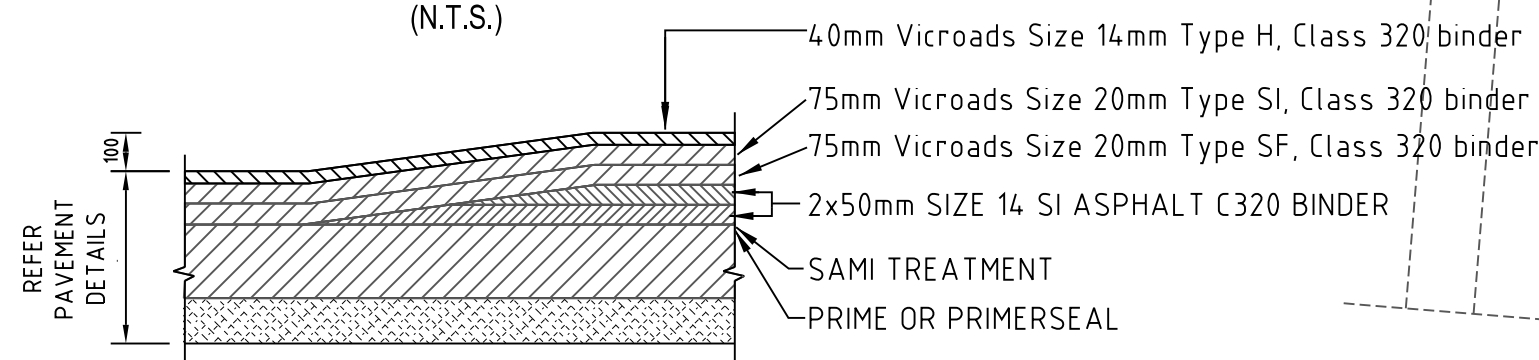
SECTION A-A
FLAT TOP RAISED PAVEMENT
NOT TO SCALE



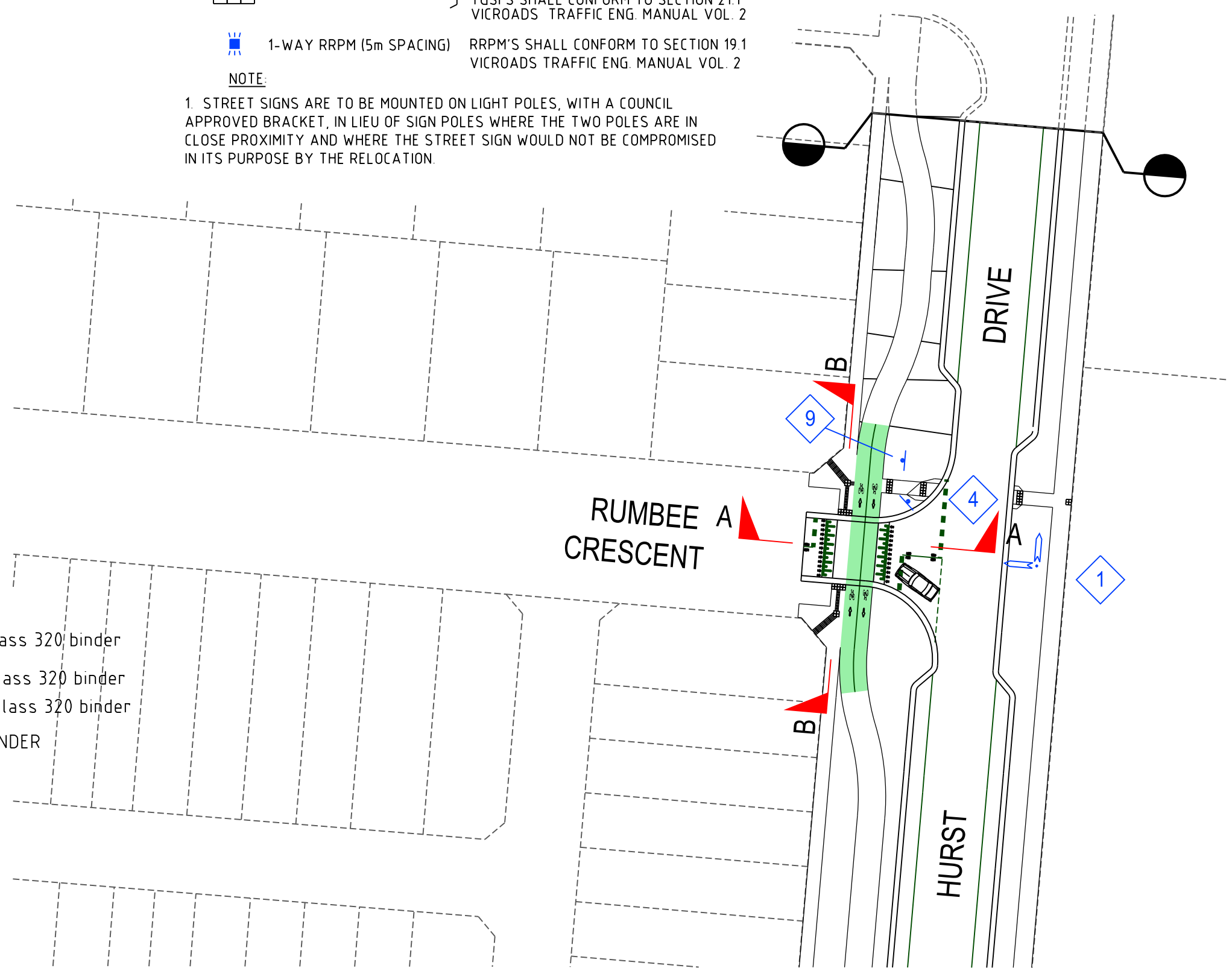
SECTION B-B
NOT TO SCALE



LINE MARKING FOR RAISED PAVEMENTS
(Dimensions in millimetres)
(N.T.S.)



DETAIL A
RAISED PLATFORM PROFILE
NOT TO SCALE



0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
Rev	Amendments	Approved	Date



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ABN 55 050 029 635

Harlow
T A R N E I T

Designed
R. WEINBER
Authorised
M. READMAN

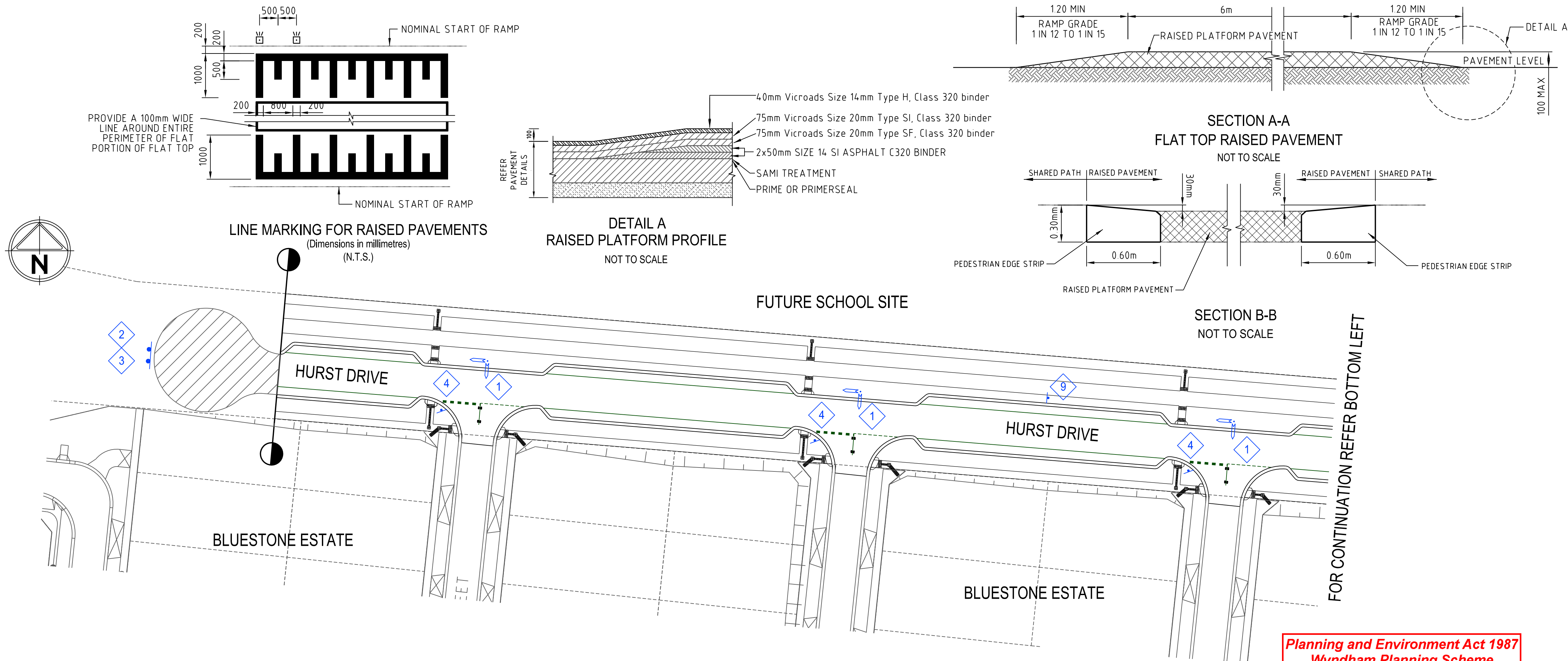
Checked
R. WILSON
Date
10-01-2023

**HARLOW ESTATE
STAGE 3
SIGNAGE AND LINEMARKING**

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No
309439R31

Rev
0



LEGEND

1

STREET NAME

STREET NAME PLATES TO BE IN ACCORDANCE WITH HCS04.08 & S04.12, INCLUDING "NO THROUGH ROAD" NOMINATION WHERE APPLICABLE.

2

ROAD CLOSED

G9-20

3

D4-5

4

GIVE WAY

R1-2A

5

ROAD HUMP SIGN (BLACK & YELLOW)

6

20

ADVISORY SPEED SIGN (BLACK & YELLOW)

7

W3-4A ROAD HUMP SIGN (BLACK & YELLOW)

8

D4-1-2 (L)

9

50

R4-1

BIKE PATH CONTRASTING SURFACE COLOUR:

FOR ENHANCED VISIBILITY AT ALL ROAD CROSSINGS AND DRIVEWAY CROSSINGS AS SHOWN
USE GREEN EPOXY MODIFIED ACRYLIC COATING WITH A NON SLIP SURFACE.

- TGSI KERB RAMP

TGSI DIRECTIONAL

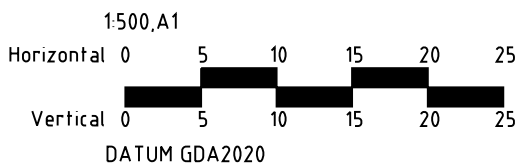
1-WAY RRPM (5m SPACING)
- HAZARD / DIRECTIONAL TGSI'S SHOW INDICATIVELY. FOOTPATH RAMP SHALL BE CONSTRUCTED IN ACCORDANCE WITH EDM 4.03. TGSI'S SHALL CONFORM TO SECTION 211 VICROADS TRAFFIC ENG MANUAL VOL. 2

RRPM'S SHALL CONFORM TO SECTION 19.1 VICROADS TRAFFIC ENG MANUAL VOL. 2

NOTE:
1. STREET SIGNS ARE TO BE MOUNTED ON LIGHT POLES, WITH A COUNCIL APPROVED BRACKET, IN LIEU OF SIGN POLES WHERE THE TWO POLES ARE IN CLOSE PROXIMITY AND WHERE THE STREET SIGN WOULD NOT BE COMPROMISED IN ITS PURPOSE BY THE RELOCATION.

Planning and Environment Act 1987
Wyndham Planning Scheme
Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023

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AS/NZS ISO 9001

AS/NZS ISO 14001

AS/NZS ISO 45001

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ABN 55 050 029 635

Harlow

T A R N E I T

Designed

R. WEINBER

Authorised

M. READMAN

Checked

R. WILSON

Date

10-01-2023

HARLOW ESTATE

STAGE 3

SIGNAGE AND LINEMARKING

SIG GROUP

WYNDHAM CITY COUNCIL

CONSTRUCTION

Drg No

309439R32

Rev

0

DESIGN PAVEMENT PROFILE FOR CONNECTOR STREET

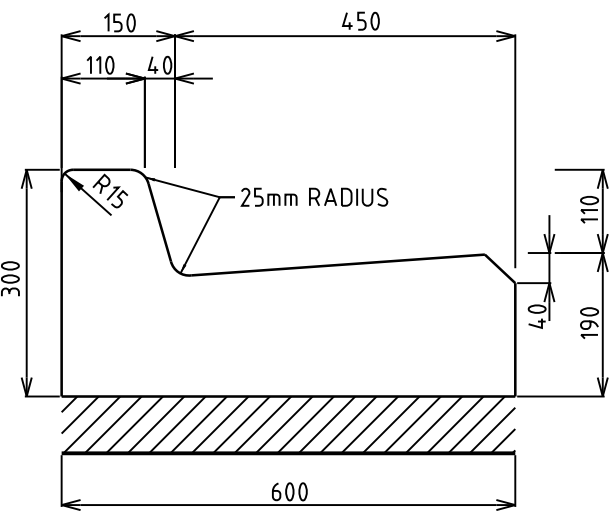
	PAVEMENT LAYER	DESCRIPTION	DEPTH (mm)
			CONNECTOR STREET
A	ASPHALT WEARING COURSE	Vicroads Size 14mm Type H, Class 320 binder	40
B	ASPHALT INTERMEDIATE COURSE	Vicroads Size 20mm Type SI, Class 320 binder	75
C	ASPHALT BASE COURSE	Vicroads Size 20mm Type SF, Class 320 binder	75
D	BITUMINOUS PRIME		nominal
UPPER PAVEMENT TOTAL			190
E	BASE	Vicroads 20mm Class 2 3% Cement Treated Crushed Rock	100
F	SUBBASE	VicRoads 20mm Class 3 Crushed Rock or equivalent	100
H	CAPPING LAYER	Type A material -Properties: CBR >10%, Swell <15 %, Permeability < 5x10 ⁻⁹ m/s To be Compacted in Two Layers	150
TOTAL			540
I	CONSTRUCTION LAYER	Type A material -Properties: CBR >10%, Swell <15 %, Permeability < 5x10 ⁻⁹ m/s To be Compacted in Two Layers	150

NOTE: CONNECTOR STREET
Subgrade = Clay with design CBR of 2%.

DESIGN PAVEMENT PROFILE FOR ACCESS STREET LEVEL 1

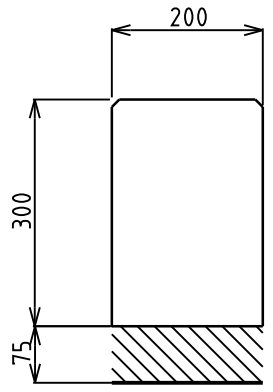
	PAVEMENT LAYER	DESCRIPTION	DEPTH (mm)
			ACCESS STREET LVL 1
A	ASPHALT WEARING COURSE	VicRoads Size 10 Type N, Class 320 binder	30
B	ASPHALT BASE COURSE	VicRoads Size 10 Type N, Class 320 binder	30
C	PRIMECOAT	Prime & 10mm SAMI (S 18RF)	10
D	BASE	Vicroads 20mm Class 2 Fine Crushed Rock or Equivalent	130
UPPER PAVEMENT TOTAL			200
E	UPPER SUBBASE	Vicroads Class 3 Crushed Rock or Equivalent	120
F	LOWER SUBBASE	Vicroads Class 4 Crushed Rock or Equivalent	120
G	CAPPING LAYER	Type A material -Properties: CBR >10%, Swell <15 %, Permeability < 5x10 ⁻⁹ m/s To be Compacted in Two Layers	150
TOTAL			590
H	CONSTRUCTION LAYER	Type A material -Properties: CBR >10%, Swell <15 %, Permeability < 5x10 ⁻⁹ m/s To be Compacted in Two Layers	150

NOTE: CONNECTOR STREET
Subgrade = Clay with design CBR of 2%.



STANDARD KERB PROFILES

NOT TO SCALE

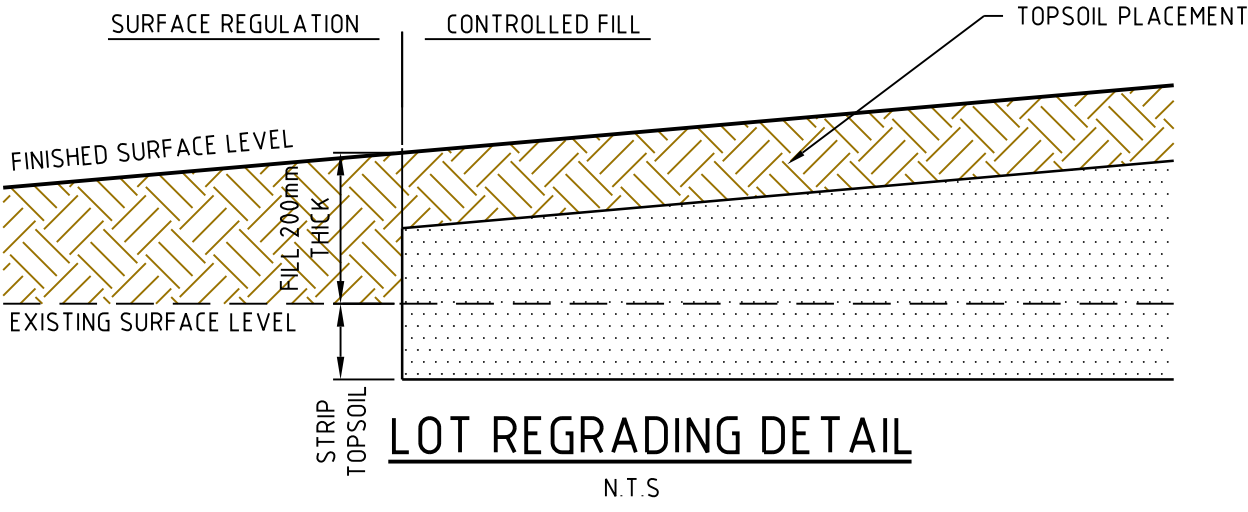


EDGE STRIP

- NOTES:
- ALL KERBS AND KERB & CHANNEL TO BE REINFORCED IN ACCORDANCE WITH MUNICIPALITY STD DRAWINGS
 - ALL KERBS AND KERB & CHANNEL TO HAVE 190mm DEPTH OF CONCRETE BELOW TOP OF PAVEMENT LEVEL

ROAD TYPE DESIGNATIONS

ROAD NAME	ROAD PAVEMENT TYPE
HURST DRIVE	CONNECTOR STREET
LUCANIA	ACCESS STREET LEVEL 1
RUMBEE CRESCENT	ACCESS STREET LEVEL 1
PACT WAY	RIGID PAVEMENT



LOT REGRADING DETAIL

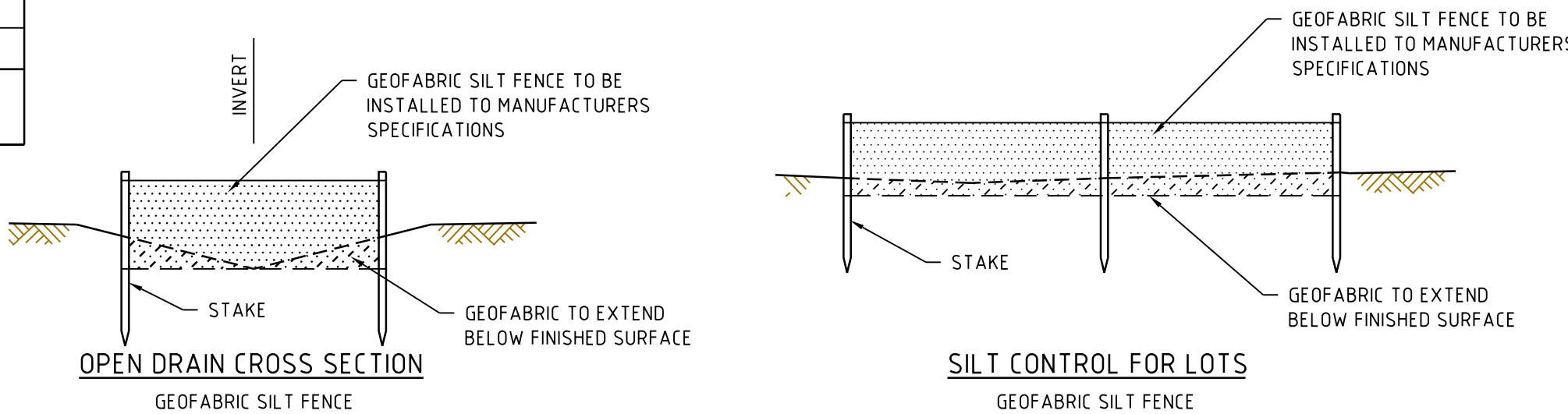
N.T.S

PAVEMENT DETAILS

THE PAVEMENT DESIGNS SHOWN HERE HAVE BEEN DESIGNED/PROVIDED BY GROUND SCIENCE PTY LTD. WHO ARE RESPONSIBLE FOR THE GEOTECHNICAL WORK ON THIS PROJECT. SPIIRE IS NOT RESPONSIBLE FOR THE WORK OF COFFEY SERVICES AUSTRALIA PTY LTD.

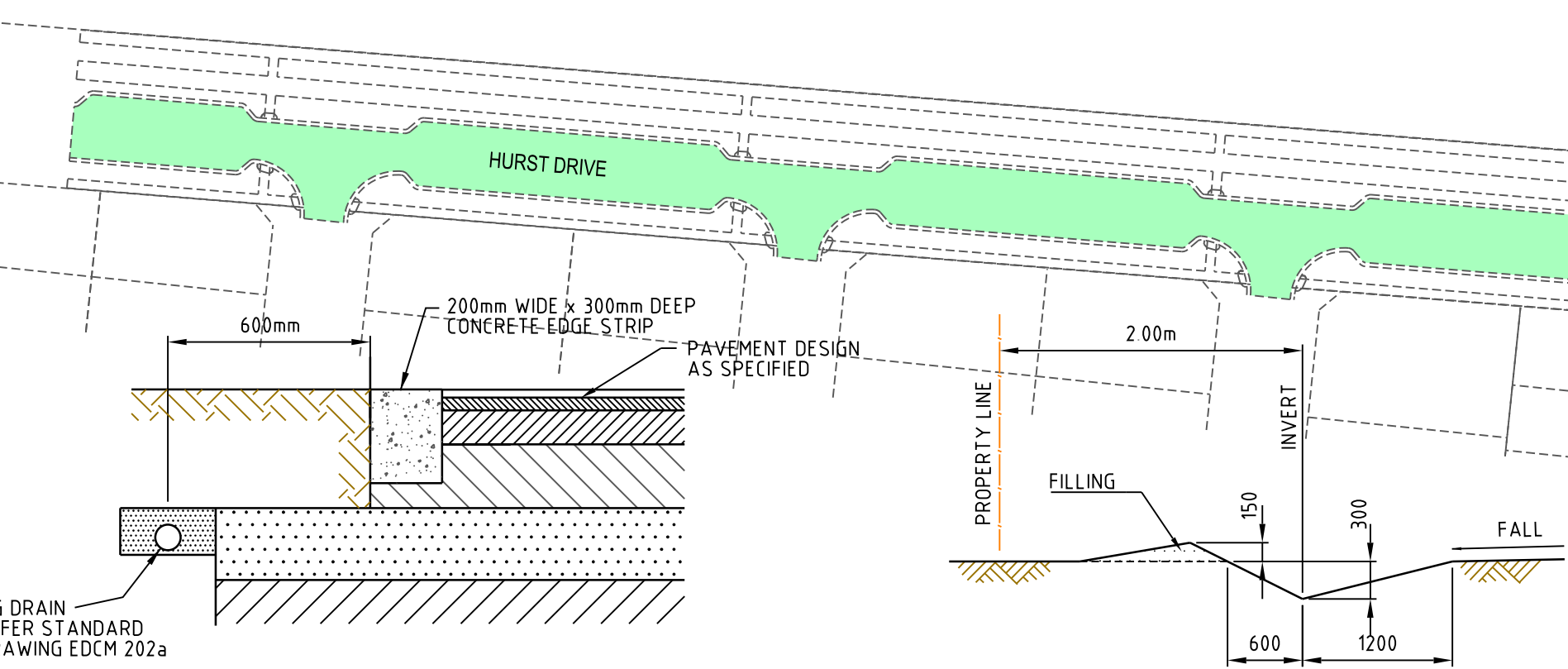
THE DESIGN HAS BEEN EXTRACTED FROM THE COFFEY SERVICES AUSTRALIA PTY LTD. REPORT TITLED "GEOTECHNICAL INVESTIGATION INCLUDING PAVEMENT DESIGN, FILL SPECIFICATION AND RECOMMENDATIONS FOR SEWERS, RETAINING WALLS AND WETLANDS" THIS DOCUMENT SHOULD BE REVIEWED TO ENSURE THAT THE DESIGN HAS BEEN ACCURATELY REPRODUCED. A COPY OF THE DOCUMENT WILL BE PROVIDED TO YOU ON REQUEST.

SPIIRE DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY, ADEQUACY OR APPROPRIATENESS OF THE GEOTECHNICAL WORK AND PAVEMENT DESIGNS. ANY QUERIES IN RESPECT TO THE GEOTECHNICAL WORK AND PAVEMENT DESIGNS SHOULD BE ADDRESSED TO GROUND SCIENCE PTY LTD AND SENT TO SPIIRE.



SILT CONTROL OPTIONS

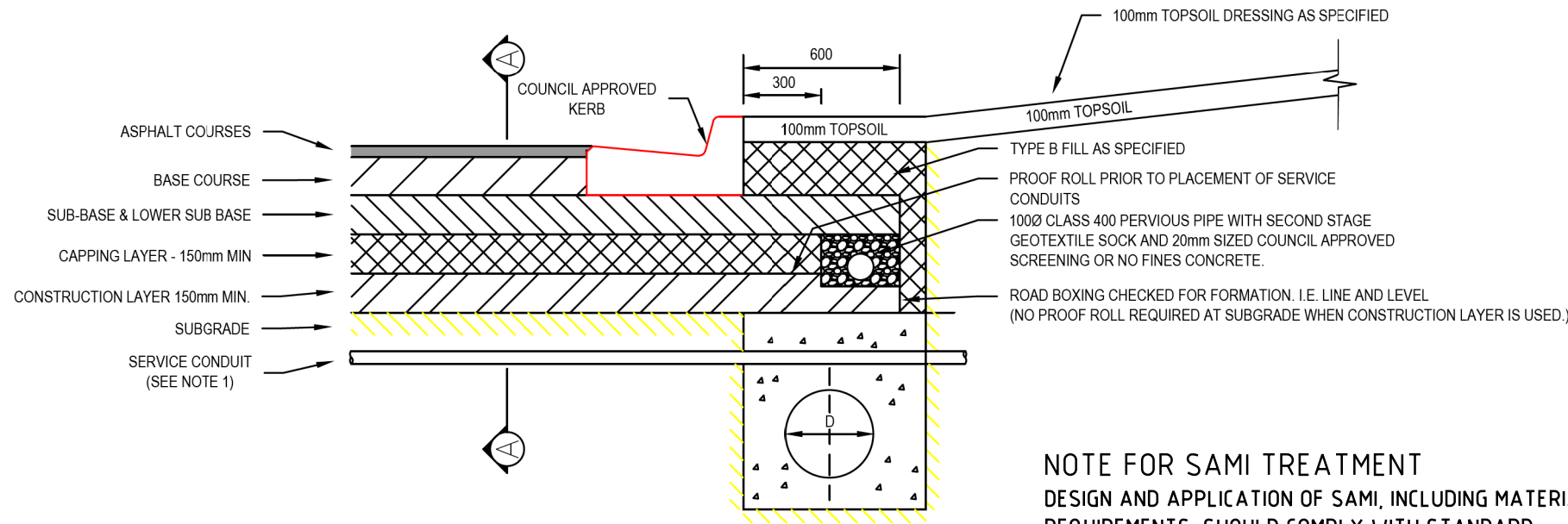
NOT TO SCALE



LIMIT OF WORKS CONCRETE EDGE STRIP & PAVEMENT INTERFACE - DETAIL

TYPICAL CATCH DRAIN SECTION

N.T.S

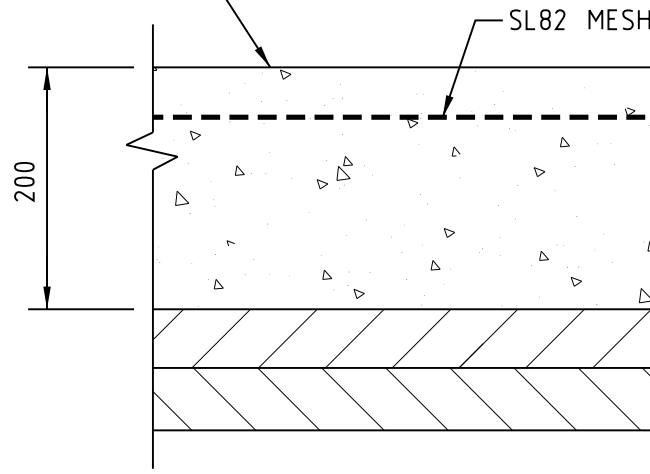


PAVEMENT MAKEUP

N.T.S

REFER STANDARD DRAWING EDCM 202a

32 MPA 200mm PLAIN GREY COLOURED BROOMED FINISHED CONCRETE WITH SL82 MESH AND 60mm TOP COVER.



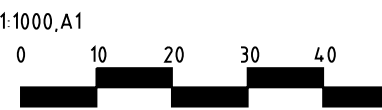
RIGID PAVEMENT DETAIL FOR PACT WAY

NOTE: ALL JOINTING TO BE AS PER C & C AA GUIDELINES.

Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 30/08/2023

PAVEMENT PLAN



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R. WEINBER
Authorised
M. READMAN

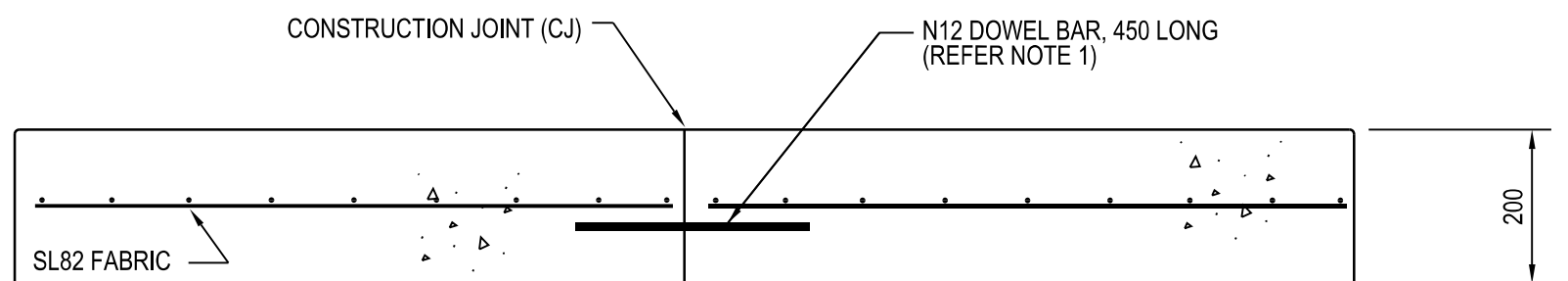
Checked
R. WILSON
Date
10-01-2023

HARLOW ESTATE
STAGE 3
PAVEMENT PLAN AND TYPICAL DETAILS

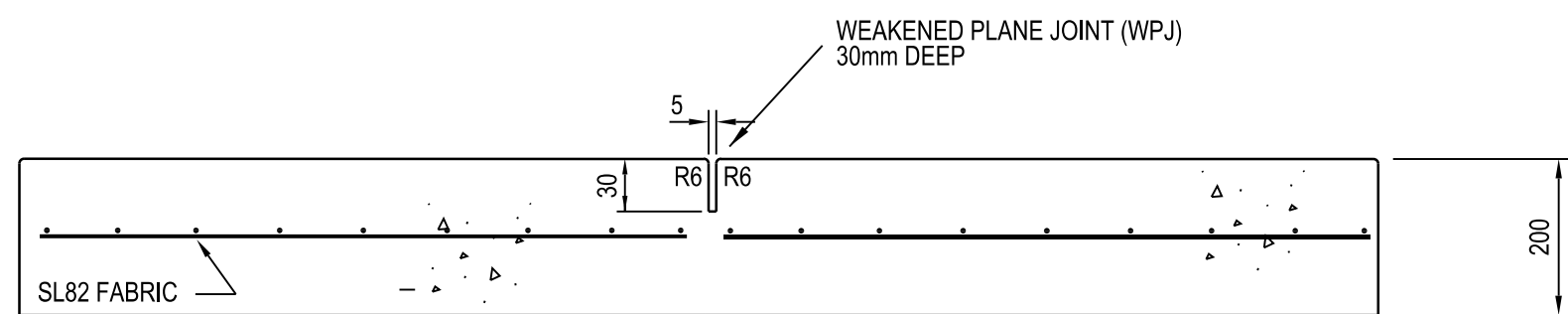
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WYNDHAM CITY COUNCIL

CONSTRUCTION
Drg No
309439R33

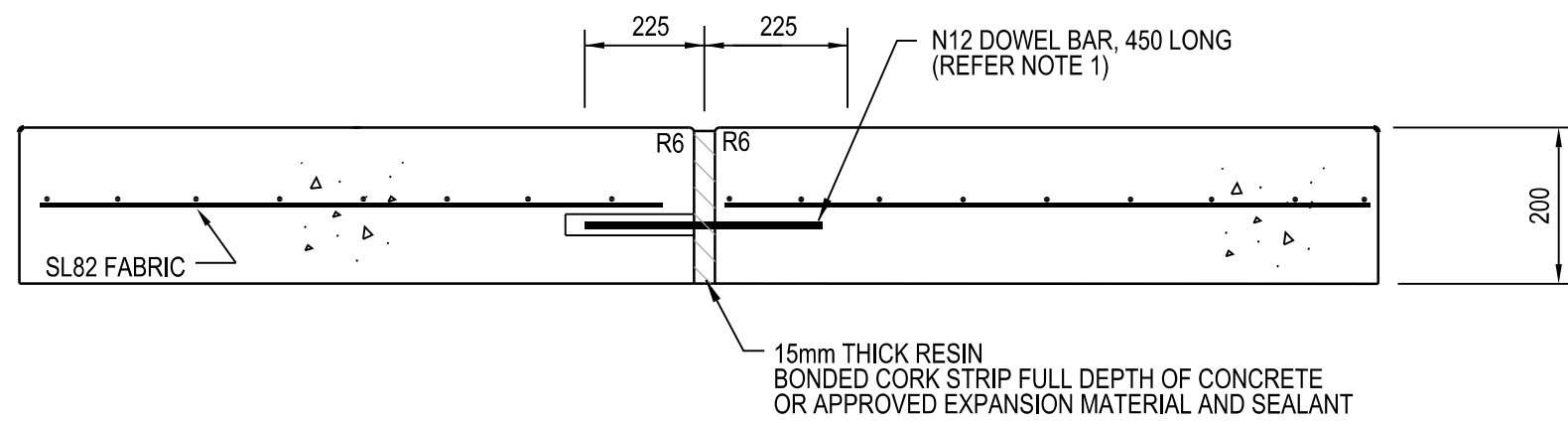
Rev
0



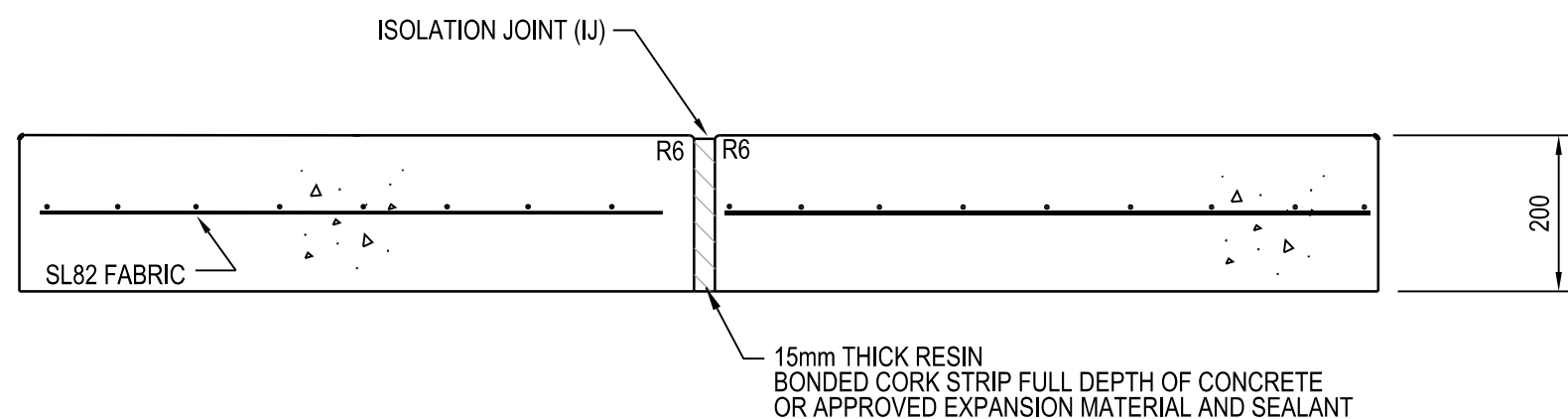
CONTRACTION JOINT (CJ)



WEAKENED PLANE JOINT (WPJ)



EXPANSION JOINT (EJ)



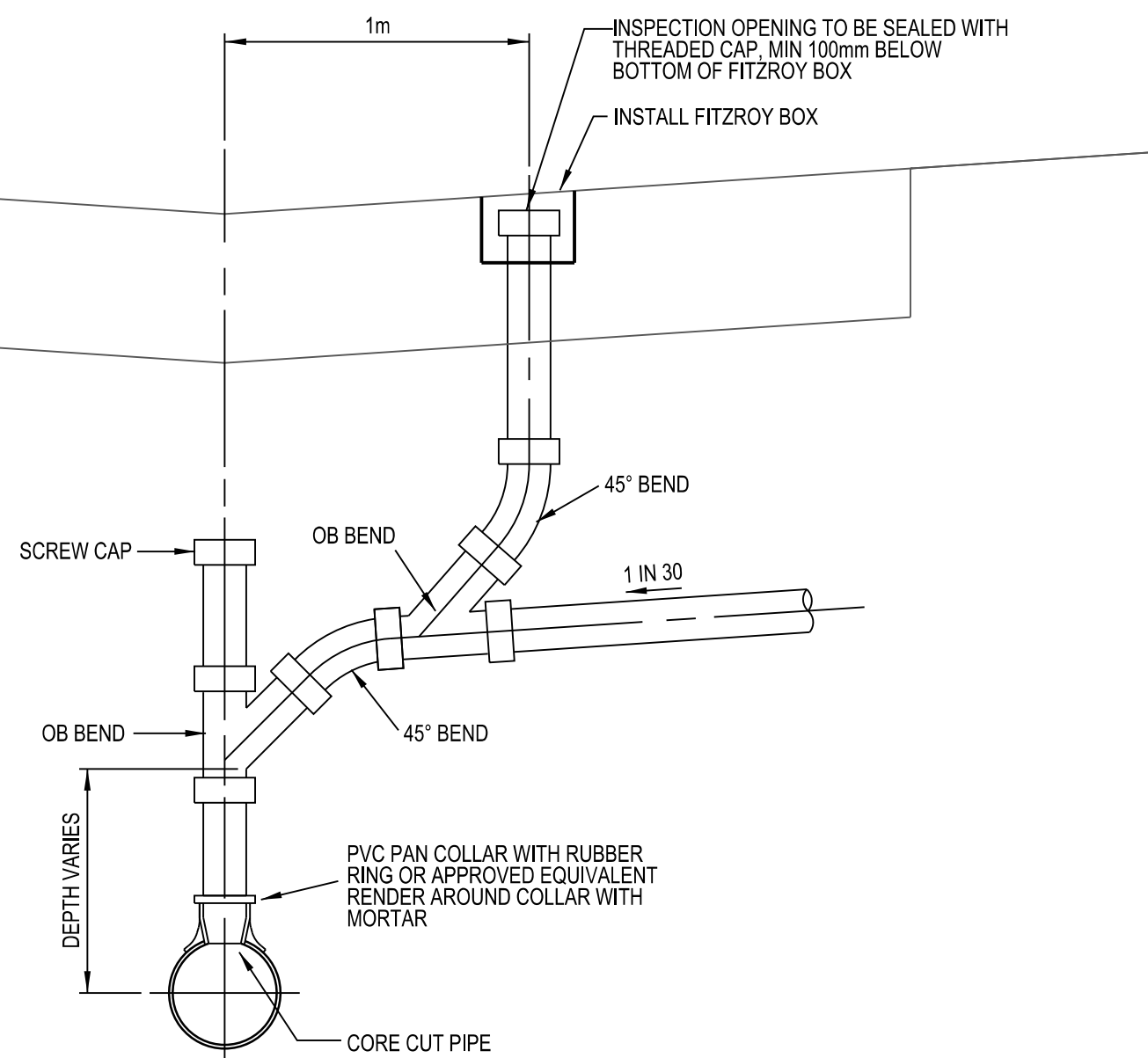
ISOLATION JOINT (IJ)

CONCRETE JOINTING NOTES

1. TIE BARS TO BE INSTALLED AT 400 MAX CENTRES COMMENCING 150 FROM EDGE
2. DOWEL BARS TO BE INSTALLED AT 400 CENTRES COMMENCING AT A MINIMUM OF 100 AND A MAXIMUM OF 200 FROM THE EDGE OF PATH. 16 DIAMETER PVC SLEEVE WITH END CAP OR CLOSED END TO BE FILTRED TO ONE END OF THE BAR. DOWEL BARS TO BE SECURELY TIED TO LONGITUDINAL REINFORCING MESH.
3. EXPANSION JOINTS (EJ) LOCATED BOTH SIDES OF VEHICLE CROSSING AND AT MAXIMUM 12m CENTRES.
4. WEAKENED PLANE JOINTS LOCATED AT SPACING EQUAL TO THE WIDTH OF THE PATH AND MADE WITH A 1" IRON OR CONCRETE SAW CUT.
5. IN SHARED PATHS WEAKENED PLANE JOINTS MUST BE MADE BY CONCRETE SAW CUTTING
6. CONCRETE TO BE LIGHT BROOMED FINISHED WITH EDGE AND JOINTS NEATLY TOOLED AFTER THE BROOM IS APPLIED.
7. ALL FINISHED SURFACES TO COMPLY WITH AS4586 SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIAL.
8. THE USE OF COLOURED CONCRETE MUST BE APPROVED BY COUNCIL. MINIMUM STRENGTH OF COLOURED CONCRETE TO BE 32MPa.
9. FORMWORK TIMBER TO BE MIN 125mm DEEP.
10. ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE NOTED.
11. SHARED PATHS TO BE 2.5m IN WIDTH MINIMUM. REFER TO APPROVED CONSTRUCTION PLANS FOR ACTUAL WITH.

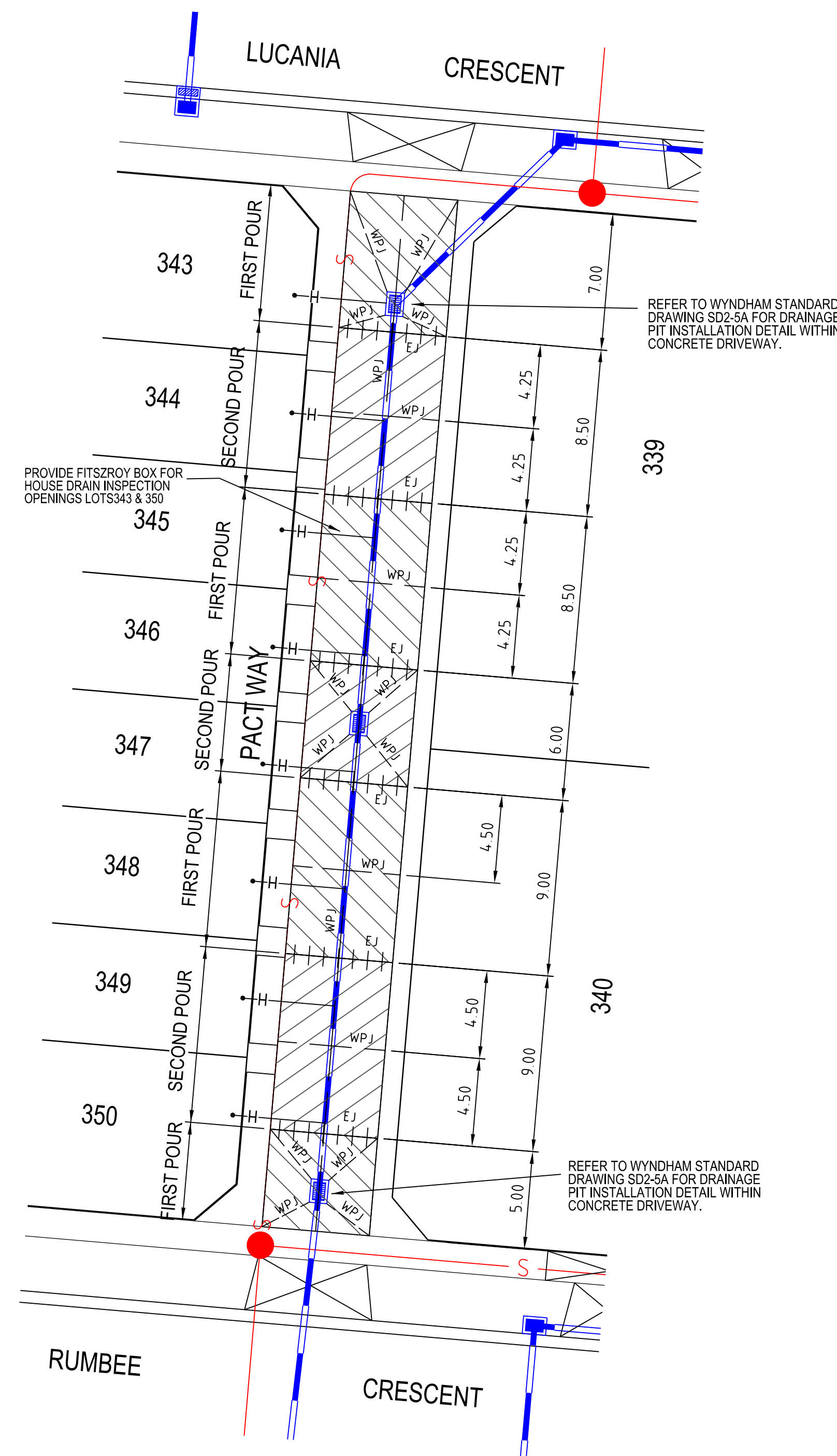
Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
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Permit No WYP13135/21
Date 30/08/2023

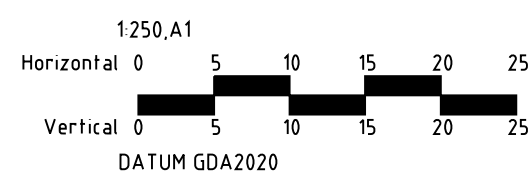


MODIFIED PROPERTY INLET TYPE A (EDCM 701)
FOR CONNECTION UNDER LANEWAY

NOT TO SCALE



Rev	Amendments	Approved	Date
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23



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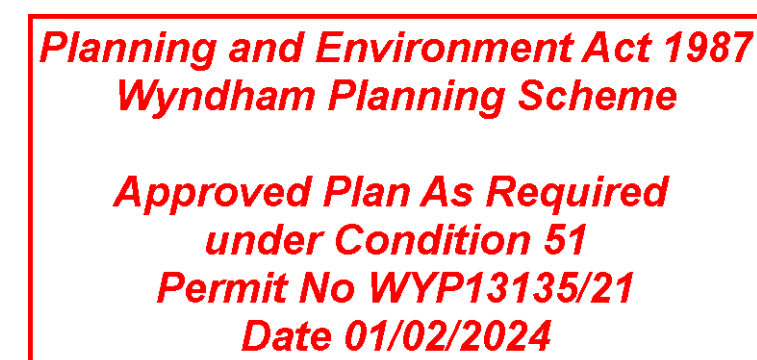
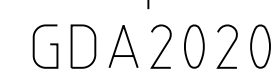
Checked
R. WILSON
Date
10-01-2023

**HARLOW ESTATE
STAGE 3
CONCRETE JOINTING PLAN**

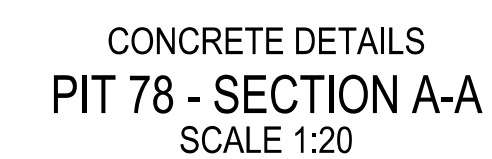
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WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No
309439R34

Rev
0



CONCRETE DETAILS
PLAN - WEIR JUNCTION PIT 78
SCALE 1:20



NOTE:
REFER TO REINFORCEMENT DRAWINGS
FOR REINFORCEMENT AND OTHER ADDITIONAL
DETAILS

1	WEIR PIT 3 REMOVED	M.R	04/12/23
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	29/08/23
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R. WEINBER
Authorised
M. READMAN

Checked
R. WILSON
Date
10-01-2023

HARLOW ESTATE

STAGE 3

WEIR PITS - CONCRETE DETAILS

SIG GROUP
WYNDHAM CITY COUNCIL

CONSTRUCTION Drg No **309439R35**

Rev
1

HARLOW ESTATE STAGE 3 PITS

STRUCTURAL DRAWINGS

DRAWING INDEX

- STR-001 - COVER PAGE AND DRAWING INDEX
- STR-002 - GENERAL NOTES
- STR-005 - TYPICAL CONCRETE DETAILS
- STR-010 - PIT NO. 3 DETAILS
- STR-015 - PIT NO. 78 DETAILS SHEET 1
- STR-016 - PIT NO. 78 DETAILS SHEET 2

GENERAL NOTES

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS, THE SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.
- G2. ANY DISCREPANCY ON THE DRAWINGS OR BETWEEN THE DRAWINGS AND/OR THE SPECIFICATION AND/OR THE SPECIFIED SAA STANDARD SHALL BE REFERRED TO THE SUPERINTENDENT AND A WRITTEN INSTRUCTION RECEIVED PRIOR TO PROCEEDING WITH THE WORK. DURING TENDERING THE TENDER SHALL ASSUME THE LARGEST GREATER CRITERIA IN TERMS OF COST IN THE ABSENCE OF OTHER INSTRUCTIONS.
- G3. THE DOCUMENTED DESIGN CONSTITUTES THE MAIN STRUCTURAL FRAMING BUT DOES NOT INCLUDE A FULL SCOPE OF SECONDARY STEEL TO SUPPORT FACADE CLADDING, HANDRAILS, INTERNAL PARTITION WALLS, ETC.
- G4. THE STRUCTURAL DRAWINGS DO NOT SHOW ALL DETAILS OF FIXTURES, INSERTS, SLEEVES, OPENINGS, ETC. REQUIRED BY THE VARIOUS TRADES. ALL SUCH DETAILS, INCLUDING OPENINGS FOR CONSTRUCTION PURPOSES, MUST BE APPROVED BY THE SUPERINTENDENT BEFORE PROCEEDING WITH CONSTRUCTION.
- G5. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT AUSTRALIAN STANDARDS INCLUDING ALL AMENDMENTS, AND THE REQUIREMENTS OF THE LOCAL STATUTORY AUTHORITIES, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- G6. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O. ALL LEVELS ARE IN METRES U.N.O.
- G7. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION OR FABRICATION IS COMMENCED. THE ENGINEER'S DRAWINGS SHALL NOT BE SCALED.
- G8. SCE'S ENGAGEMENT IS TO PROVIDE DESIGN WITHIN OUR AREA OF EXPERTISE AND AS SUCH THE DOCUMENTED DESIGN IS FOR THE PERMANENT CONDITION SUITABLE FOR THE DOCUMENTED INTENDED OCCUPANCY ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND ANY ADJACENT STRUCTURES IN A SAFE AND STABLE CONDITION AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS TO DEVELOP A DETAILED SAFE WORK METHOD STATEMENT OUTLINING THE CONSTRUCTION SEQUENCE AND METHODOLOGY. THE CONTRACTOR IS TO ENGAGE A QUALIFIED AND SUITABLY EXPERIENCED ERECTION ENGINEER TO REVIEW THE CONSTRUCTION METHODOLOGY AND PROVIDE DESIGN OF TEMPORARY WORKS (SUCH AS PROPPING AND TEMPORARY BRACING) TO SUIT THE CONSTRUCTION SEQUENCE AND METHODOLOGY, CHOSEN BY THE BUILDER.
- G9. THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE SUPERINTENDENT BUT IT IS NOT AN AUTHORISATION FOR AN EXTRA. ANY CLAIM FOR AN EXTRA MUST BE SUBMITTED TO THE SUPERINTENDENT BEFORE THE WORK COMMENCES.
- G10. THE STRUCTURAL WORK ON THESE DRAWINGS HAS BEEN DESIGNED FOR THE ROAD TRAFFIC LOADS IN ACCORDANCE WITH AS5100.2 AND THE SURCHARGE = 20.0 kPa IN ACCORDANCE WITH AS4678.
- G11. CONSTRUCTION ACTIVITIES SHALL NOT IMPEDE UPON OPERATIONS AT THE SITE EXCEPT BY PRIOR AGREEMENT IN WRITING BY THE SUPERINTENDENT.
- G12. ALL PROPRIETARY PRODUCTS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.

FOOTING NOTES

- F1. THE MINIMUM SAFE BEARING CAPACITY OF THE FOUNDATION MATERIAL IS TO BE:
150 kPa FOR BASE SLAB.
REFER TO GEOTECHNICAL REPORT NO G4572.1 AA DATED 18/10/2021 BY GROUND SCIENCE FOR GUIDANCE.
- F2. THE ASSUMED FOUNDING LEVELS OF THE FOOTINGS ARE TO BE AS INDICATED ON DRAWINGS. BEFORE ANY REINFORCEMENT OR CONCRETE IS PLACED, THE SAFE BEARING CAPACITY OF THE GROUND IS TO BE VERIFIED BY THE GEOTECHNICAL ENGINEER. EXCAVATION SHALL CONTINUE UNTIL THE REQUIRED BEARING CAPACITY IS FOUND. THE OVER-EXCAVATION SHALL BE BACK-FILLED WITH BLINDING CONCRETE TO THE ASSUMED FOUNDING LEVEL.
- F3. THE CONTRACTOR IS TO ALLOW FOR THE ENGAGEMENT OF THE GEOTECHNICAL ENGINEER TO VERIFY THE FOUNDING MATERIAL.
- F4. OVER-EXCAVATION WITHIN THE INFLUENCE ZONE (45° LINE DOWN FROM BASE OF WALL) OF ANY RETAINING WALL IS NOT ALLOWED WITHOUT THE PRIOR APPROVAL OF THE EXCAVATION SEQUENCE BY THE SUPERINTENDENT.

CONCRETE NOTES

- C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- C2. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHED.
- C3. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT.
- C4. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN ON THE DRAWINGS OR SPECIFICALLY APPROVED BY THE SUPERINTENDENT.
- C5. ALL EXPOSED CONCRETE CORNERS TO HAVE 15MM CHAMFER U.N.O.
- C6. CAMBER TO SUSPENDED SLABS SHALL BE POSITIVE UPWARD CAMBER OF 3MM PER 1000MM SPAN U.N.O. BEAMS SHALL BE CAMBERED AS SHOWN ON DRAWINGS. NO CAMBER IS REQUIRED TO POST-TENSIONED BEAMS AND SLABS.
- C7. FORMWORK AND BACK PROPPING SHALL BE DESIGNED, CONSTRUCTED AND STRIPPED IN ACCORDANCE WITH AS3610. REFER TO ARCHITECTURAL DRAWINGS AND THE SPECIFICATION FOR CLASSES OF SURFACE FINISH.
- C8. CONCRETE COMPONENTS AND QUALITY SHALL BE AS FOLLOWS:

ELEMENT	F ^c (MPa)	SPECIAL REQUIREMENTS
BASE SLAB	40	-
TOP SLAB	40	-
WALLS	40	-
MASS CONCRETE	25	-

MAXIMUM AGGREGATE SIZE SHALL BE 20MM.

- C9. ALL CEMENT IS TO BE 'GP' GENERAL PURPOSE PORTLAND CEMENT OR 'GB' GENERAL PURPOSE BLENDED CEMENT OR TYPE 'SR' SULPHATE-RESISTING CEMENT AS REQUIRED COMPLYING WITH AS3972 U.N.O. ON THE DRAWINGS. EXTRA RAPID HARDENING SUPERSULPHATED AND HIGH ALUMINA CEMENTS AND CEMENTS CONTAINING CHLORIDE SHALL NOT BE USED. THE USE OF FLY ASH AND/OR SILICA FUME AS A CEMENT SUBSTITUTE OTHER THAN THAT PROPORTION ALLOWED AS PART OF THE 'GB' CEMENT CONTENT WILL ONLY BE PERMITTED AS PART OF A DESIGNED CONCRETE MIX WHICH HAS BEEN APPROVED IN WRITING BY THE SUPERINTENDENT.
- C10. (D) DENOTES SPECIAL DURABLE CONCRETE WHERE THE ELEMENT HAS AT LEAST ONE FACE EXPOSED TO THE WEATHER OR POSSIBLE CORROSIVE ATTACK (THIS CONCRETE REQUIRES A SPECIAL TOLERANCE FOR THE COVERS OF -0MM, +10MM). SPECIAL PRECAUTIONS ARE REQUIRED TO IMPROVE THE LONG TERM PERFORMANCE OF THESE FACES OF CONCRETE. IN PARTICULAR, NO METAL INSERTS, METAL BAR CHAIRS OR METAL FORM SPACERS OF ANY KIND ARE TO BE PLACED IN THE COVER ZONES WITHOUT THE EXPRESS PERMISSION OF THE SUPERINTENDENT. TAKE SPECIAL CARE TO AVOID SCRAP TIE WIRE OR OTHER MATERIAL BEING PRESENT. REFER DRAWINGS FOR LOCATIONS.
- C11. CONCRETE SLUMP TO BE A MAXIMUM OF 80MM U.N.O. ON THE DRAWINGS.
- C12. FREE DROPPING OF CONCRETE FROM A HEIGHT GREATER THAN 1000MM IS NOT PERMITTED.
- C13. SURFACES RECEIVING GROUT SHALL BE LEFT ROUGH AND FREE OF LAITANCE.
- C14. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION OR SCALE.
- C15. REINFORCEMENT SYMBOLS:
N - NORMAL DUCTILITY CLASS HOT ROLLED DEFORMED BARS OR MESH TO AS/NZS 4671 WITH FSY = 500 MPa.
R - NORMAL DUCTILITY CLASS 250N PLAIN ROUND BAR TO AS/NZS 4671 WITH FSY = 250 MPa.
L - LOW DUCTILITY CLASS 500L REINFORCING MESH OR BAR TO AS/NZS 4671 WITH FSY = 500 MPa.
LOW DUCTILITY CLASS L REINFORCEMENT IS NOT TO BE USED OTHER THAN WHERE SHOWN ON DRAWINGS.
- C16. PULL OUT BARS OR OTHER BARS WHICH ARE SHOWN ON THESE DRAWINGS TO BE RE-BENT ON SITE SHALL BE MADE FROM QUENCHED AND SELF TEMPERED STEEL. THE BARS SHALL BE POSITIONED WITH THE INITIAL BEND CLEAR OF THE CONCRETE FACE.
- C17. SITE BENDING OF REINFORCEMENT BARS SHALL BE DONE WITHOUT HEATING USING PROPER BAR RE-BENDING TOOL. THE BARS SHALL BE RE-BENT AGAINST A FLAT SURFACE OR A PIN WITH A DIAMETER NOT LESS THAN THE MINIMUM PIN SIZE PRESCRIBED IN AS3600 (2009).
- C18. THE NUMBER FOLLOWING THE BAR SYMBOL IS THE NORMAL BAR DIAMETER IN MILLIMETRES.
- C19. MINIMUM COVER (MM) TO ALL REINFORCEMENT EXCEPT F41 MESH U.N.O. SHOWN SHALL BE AS FOLLOWS:

ELEMENT	TOP	BOTTOM	SIDES
BASE SLAB	50	50	50
TOP SLAB	40	40	40
WALLS	50	50	50

- C20. SPLICES IN REINFORCEMENT SHALL BE MADE IN THE POSITIONS SHOWN OR AS OTHERWISE APPROVED BY THE SUPERINTENDENT. MINIMUM LAP FOR ALL FABRICS SHALL BE THE SPACING OF TWO TRANSVERSE WIRES PLUS 25MM. GRADE 500N BARS SHALL BE LAPPED IN ACCORDANCE WITH THE STANDARD LAP LENGTH TABLE U.N.O. ON THE DRAWINGS.
- C21. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE SUPERINTENDENT.
- C22. ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION DURING CONCRETING BY APPROVED BAR CHAIRS, SPACERS OR SUPPORT BARS AT 1000MM MAXIMUM CENTRES. THE CHAIR MATERIAL SHALL SUIT THE EXPOSURE CONDITIONS.
- C23. 2N12 DIAGONAL CORNER BARS 1200MM LONG ARE REQUIRED AT ALL RE-ENTRANT CORNERS OF OPENINGS IN SLABS AND WALLS U.N.O.
- C24. REINFORCEMENT LENGTHS INDICATED ARE IN MILLIMETRES AND ARE PLAN LENGTH ONLY. TURN DOWNS AND CRANKS ARE NOT INCLUDED IN THE DIMENSION.
- C25. BARS SHOWN STAGGERED ON PLAN SHALL BE PLACED ALTERNATELY.
- C26. BARS SHALL BE EVENLY DISTRIBUTED OVER THE WIDTH OF THE STRIP INDICATED ON THE DRAWINGS U.N.O.
- C27. ALL EMBEDMENTS SHALL BE HOT DIP GALVANISED.
- C28. VERTICAL FACES OF CONCRETE SHALL BE KEPT FREE OF ADJOINING SURFACES BY 10MM THICKNESS OF ABLEFLEX (OR APPROVED EQUIVALENT) U.N.O. ON THE DRAWINGS.
- C29. CONCRETE MUST NOT BE PLACED WHEN THE AIR TEMPERATURE EXCEEDS OR IS FORECAST TO EXCEED 32°C. CONCRETE SHALL NOT BE PLACED AT A TEMPERATURE LESS THAN 5°C.
- C30. ALL FRESHLY FINISHED CONCRETE SURFACES MUST BE PROTECTED WHERE REQUIRED FROM THE SUN, WIND OR RAIN, UNTIL CURING IS IMPLEMENTED.
- C31. CONCRETE MUST BE CURED BY AN APPROVED METHOD IN ACCORDANCE WITH THE SPECIFICATION. THE PERIOD OF CURING MUST BE GREATER THAN THE NUMBER OF DAYS GIVEN IN THE CURING TABLE BELOW AFTER CONCRETE HAS BEEN POURED.

CONCRETE GRADE F ^c (MPa)	EXPOSURE CLASSIFICATION	TYPE OF CEMENT	PERIODS OF CURING (DAYS)	
			AVERAGE AIR TEMP DURING CURING	
32 MPa	-	GP	10°C - 17°C	ABOVE 17°C
		GP	7	6
40 MPa	-	GP	9	8
		GP	6	5
50 MPa	-	GP	8	7
		GP	5	5
		GP	7	7
		GP		

FOR CONCRETE AND SLABS, THE PERIODS OF CURING MUST BE EXTENDED BY 2 DAYS.

NOTES:

1. TYPE OF CEMENT:
GP - GENERAL PURPOSE PORTLAND CEMENT.
GB - GENERAL PURPOSE BLENDED CEMENT.
2. WHEN AVERAGE AIR TEMPERATURE DURING SPECIFIED PERIODS OF CURING FALLS BELOW 10°C, THE PERIODS OF CURING MUST BE EXTENDED BY 2 DAYS.
3. WHERE A HIGHER CONCRETE GRADE IS ADOPTED THAN THAT SHOWN FOR A PARTICULAR EXPOSURE CLASSIFICATION, THE PERIODS OF CURING FOR THE HIGHER CONCRETE GRADE MAY BE ADOPTED.

- C32. CONCRETE TESTING SHALL BE UNDERTAKEN IN ACCORDANCE WITH AS1379.

CLIENT

REV	DATE	REVISION DETAILS
A	20/06/23	PRELIMINARY
B	22/06/23	FOR CONSTRUCTION

APPROVED
TES
TES

DRAWN	DESIGNED
T. PHAN	V. KHARADE
CHECKED	
V. KHARADE	
APPROVED	
T. SHELDON	
DATE 22/06/2023	

PROJECT
HARLOW ESTATE STAGE 3 PITS
STRUCTURAL DRAWINGS

TITLE

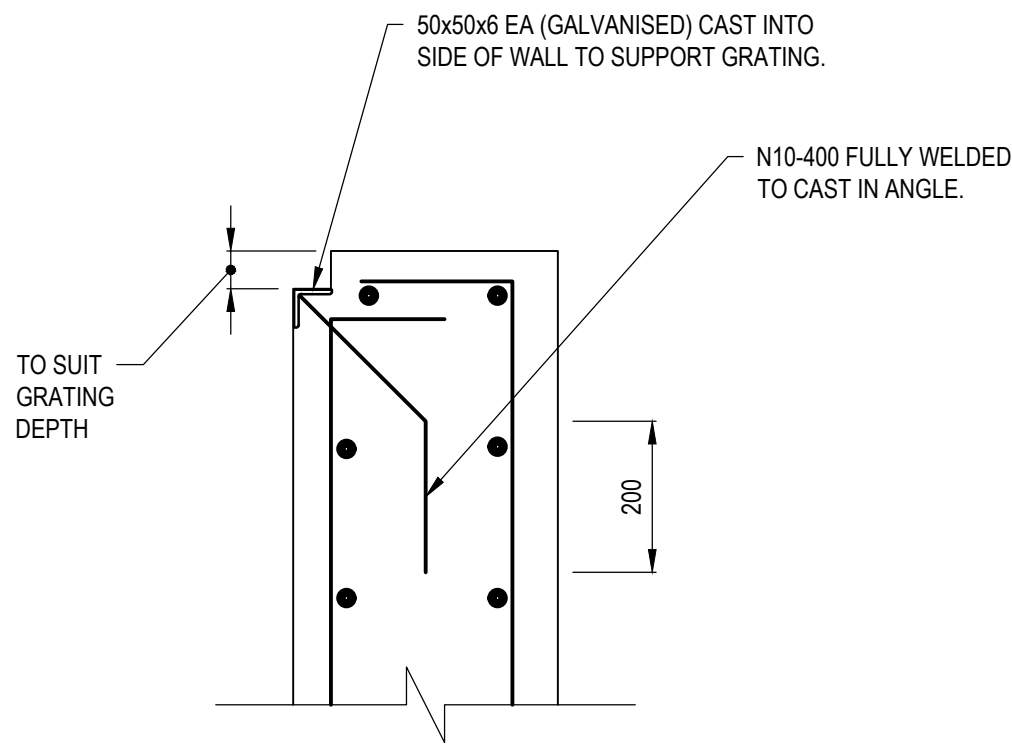
GENERAL NOTES

FOR CONSTRUCTION

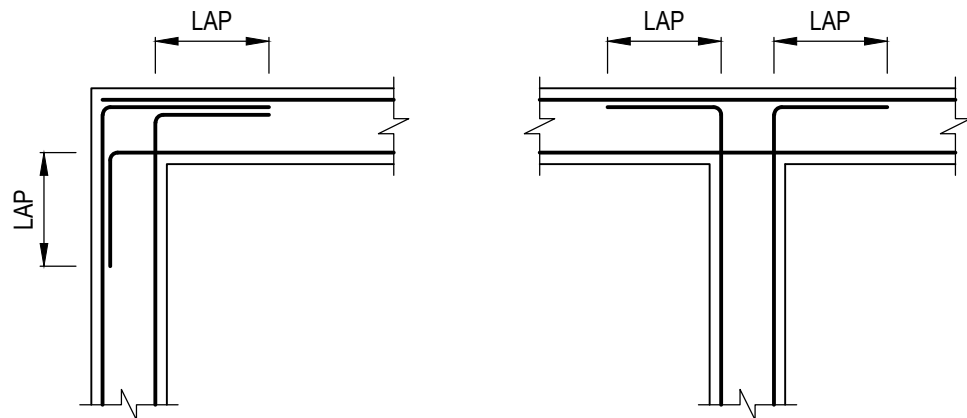
PROJECT No.

1021.009

SCALE	SIZE
AS SHOWN	A1
DRAWING No.	REV
STR-002	B



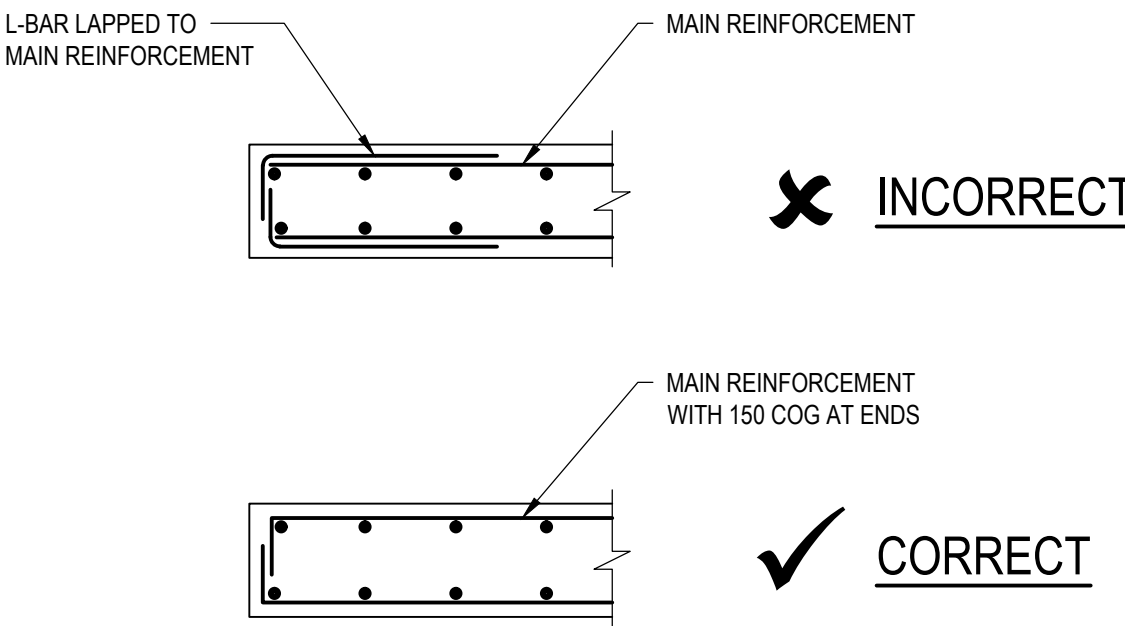
TYPICAL WALL CORNER DETAIL
1:20



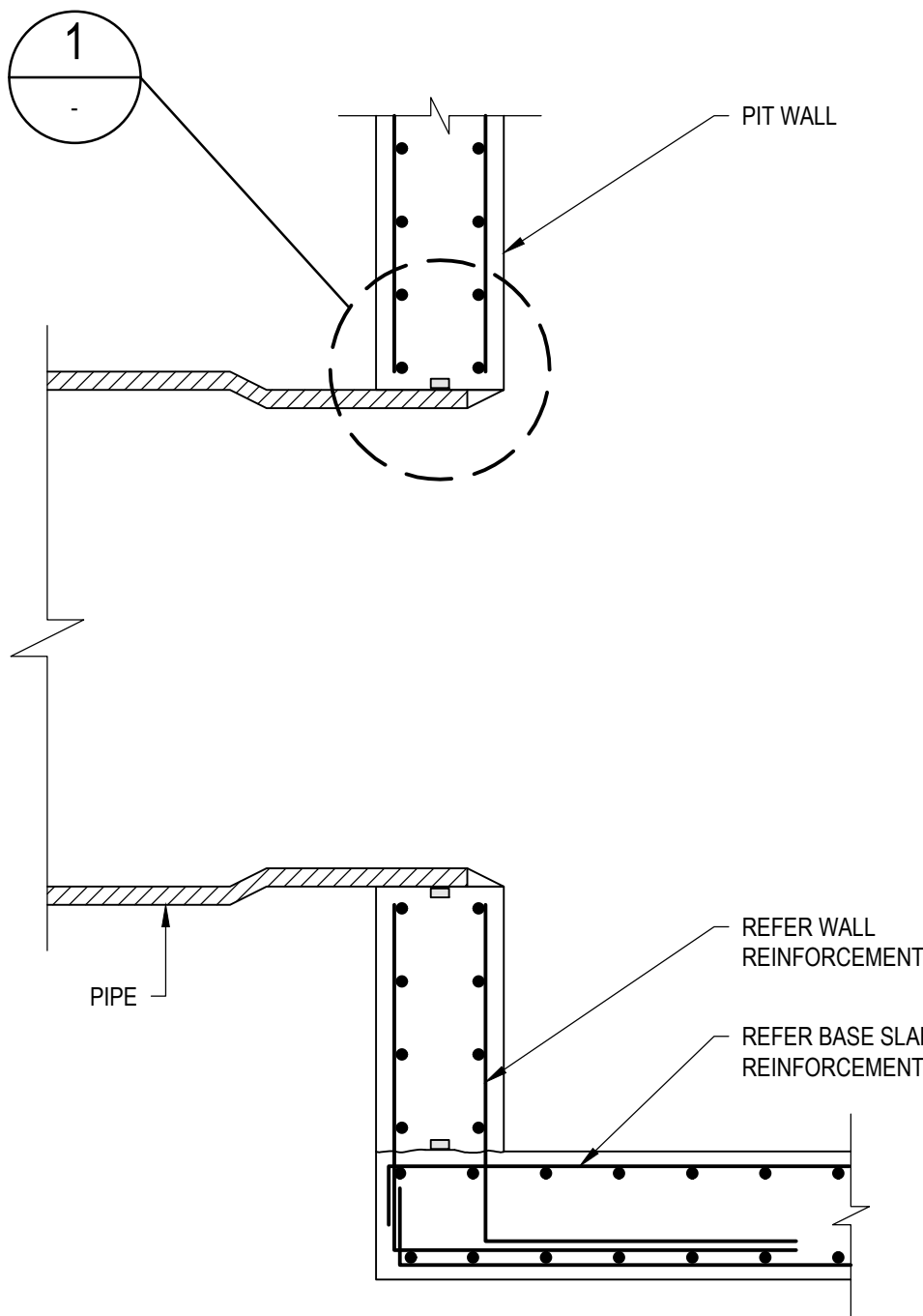
PLAN-DOUBLE REINFORCEMENT
THE DETAILS ABOVE ARE DRAWN WITH MESH REINFORCEMENT.

- NOTES
- FOR WALLS REINFORCED WITH BARS, THE DETAILS ABOVE APPLY, BUT THE LAPPING BARS SHALL BE OF THE SAME GRADE, SIZE AND SPACING AS THE WALL REINFORCEMENT WITH LAPS APPROPRIATE TO THE BAR SIZE.
 - DETAILS ABOVE APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

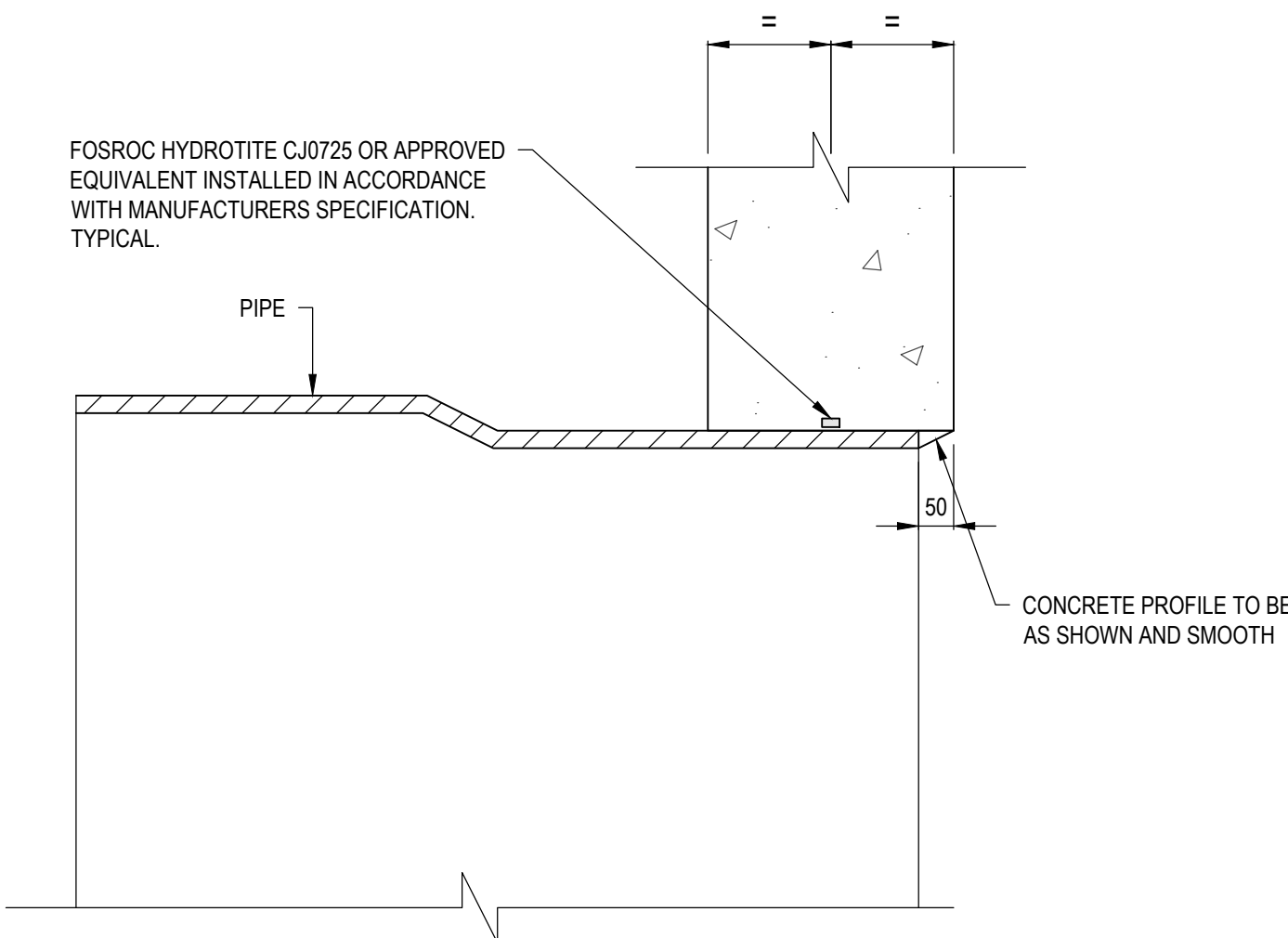
R.C. WALL INTERSECTIONS - STANDARD DETAIL
NTS



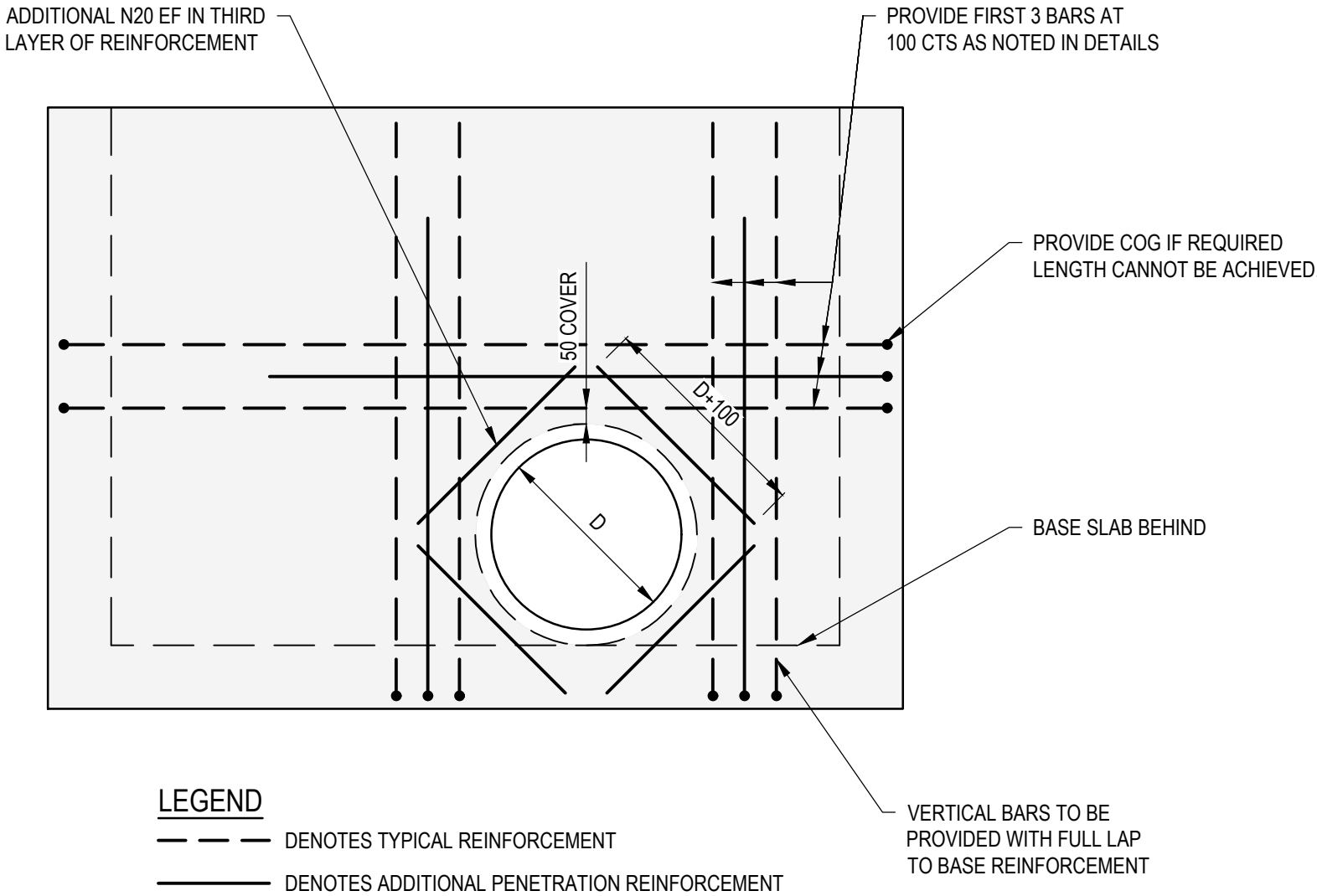
TYPICAL COG BAR DETAIL
NTS



TYPICAL PIPE PENETRATION DETAIL
1:20



DETAIL 1
1:10



LEGEND
--- DENOTES TYPICAL REINFORCEMENT
--- DENOTES ADDITIONAL PENETRATION REINFORCEMENT

TYPICAL WALL PENETRATION DETAIL
NTS

TENSION DEVELOPMENT LENGTH/SPLICE SCHEDULE				
BAR SIZE	LESS THAN 300MM CONCRETE BELOW BAR OR VERTICAL BAR.		MORE THAN 300MM CONCRETE BELOW BAR	
	CONCRETE	GRADE	CONCRETE	GRADE
	25 MPa	> 32 MPa	25 MPa	> 32 MPa
N10	250	250	350	350
N12	350	300	400	400
N16	550	500	650	600
N20	800	700	950	850
N24	1050	950	1300	1150
N28	1300	1150	1600	1400
N32	1600	1400	2000	1750
N36*	1950	1750	2450	2150
N40*	2350	2050	2900	2550

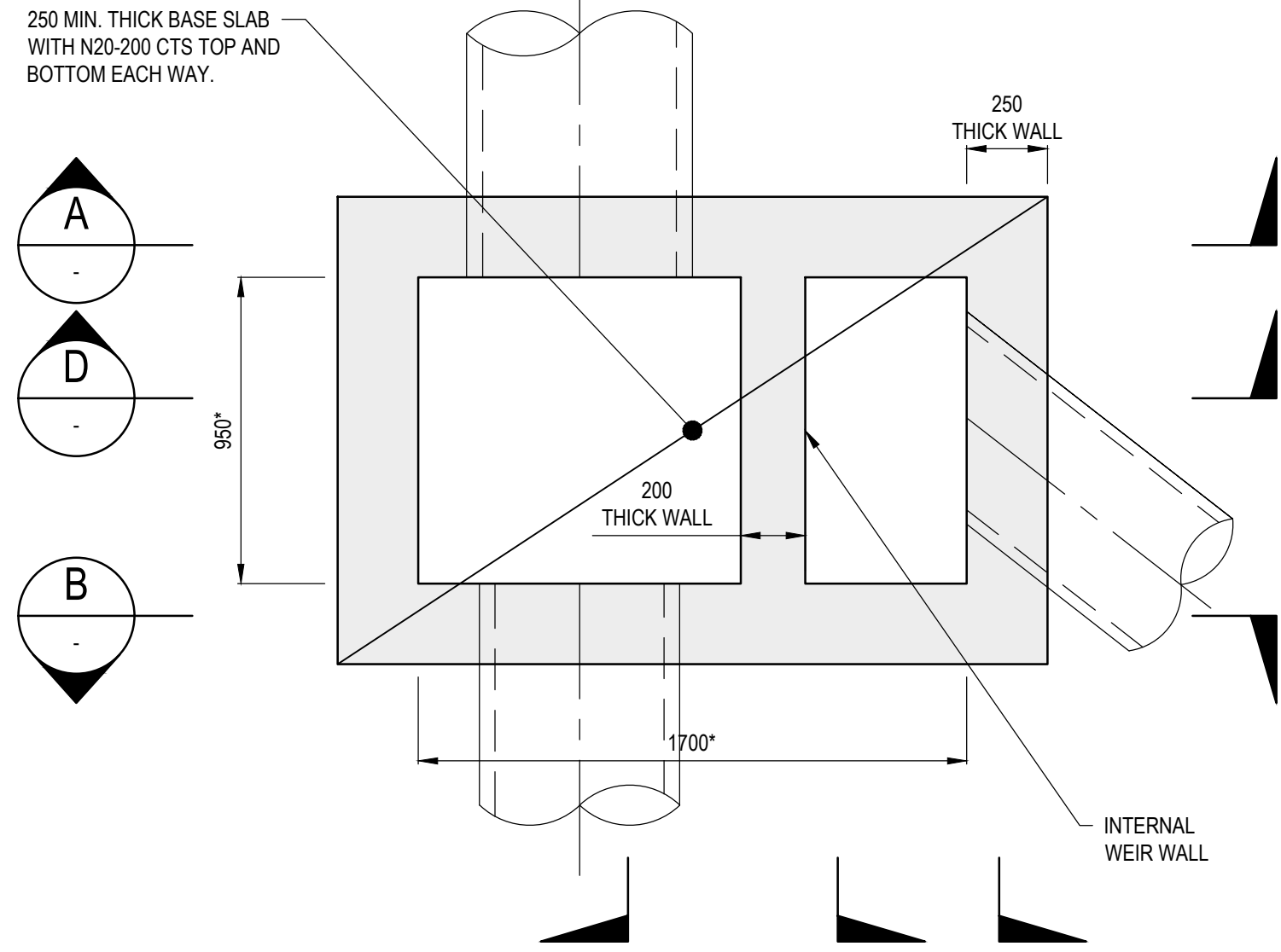
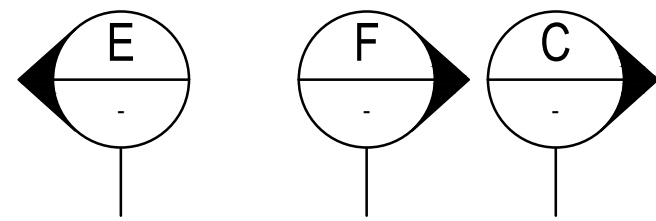
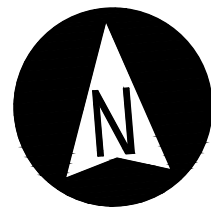
- NOTES:
- THESE TENSION DEVELOPMENT / SPLICE LENGTHS APPLY TO BEAMS, SLABS AND WALLS U.N.O.
 - THESE LENGTHS ARE BASED ON THE FOLLOWING MM COVER TO THE BAR: SLABS/WALLS - GREATER OF 25MM OR BAR DIA. BEAMS - 40MM
 - VALUES FOR SLABS AND WALLS APPLY ONLY FOR BAR CLEAR SPACING OF 150 OR GREATER. VALUES FOR BEAMS APPLY ONLY FOR BAR CLEAR SPACING OF 80 OR GREATER. FOR SPACINGS LESS THAN THESE VALUES TO THE DRAWINGS.
 - *VALUES FOR N36 AND N40 BARS ARE DEVELOPMENT LENGTHS ONLY. THESE BAR SIZES ARE NOT BE LAP SPLICED.

MINIMUM TENSION DEVELOPMENT LENGTHS/LAP
SPLICES FOR BARS STANDARD DETAILS

REV	DATE	REVISION DETAILS	APPROVED
A	20/06/23	PRELIMINARY	TES
B	22/06/23	FOR CONSTRUCTION	TES

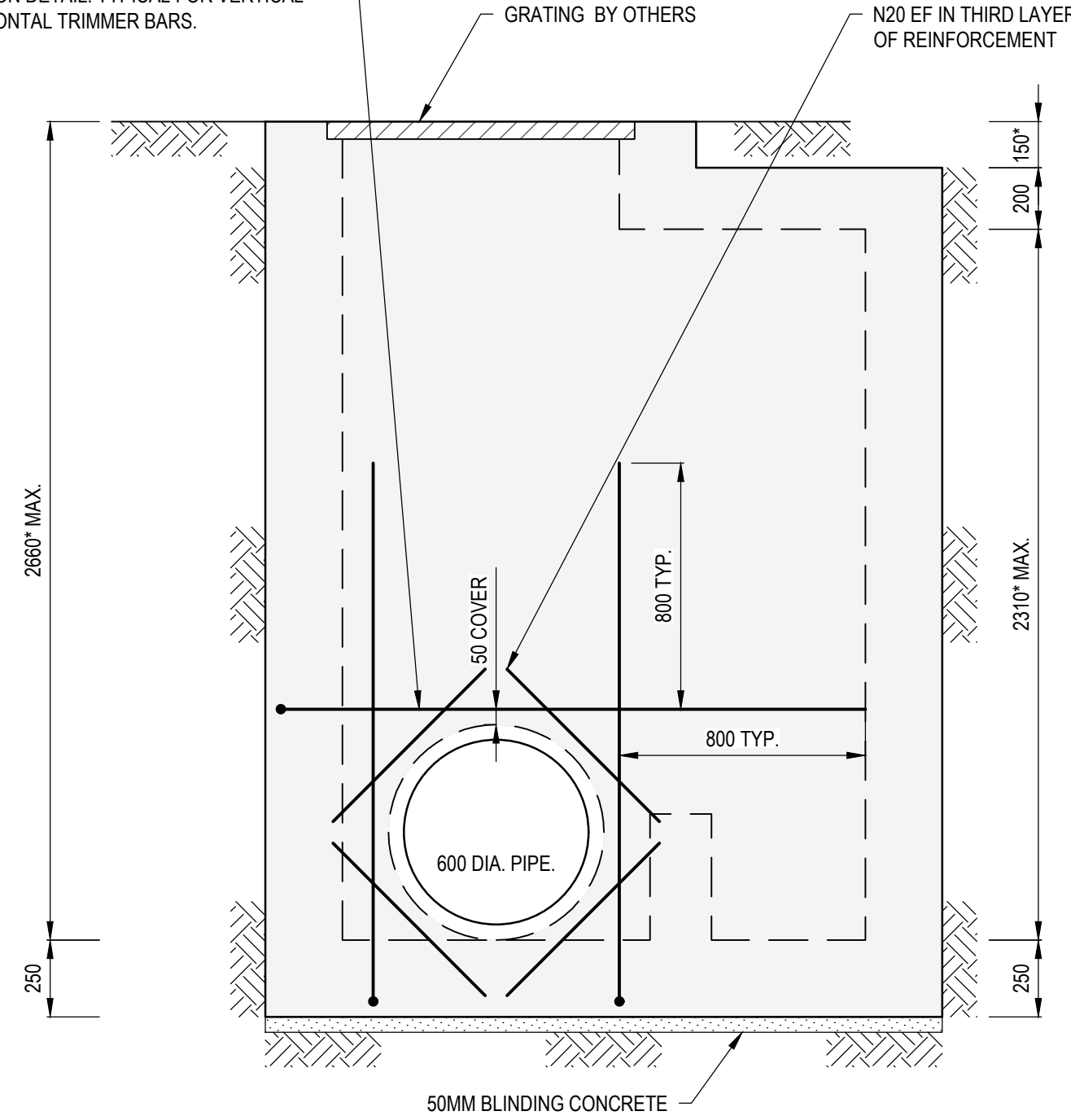
DRAWN	DESIGNED
T. PHAN	V. KHARADE
CHECKED	
V. KHARADE	
APPROVED	
T. SHELDON	
DATE 22/06/2023	

PROJECT	
HARLOW ESTATE STAGE 3 PITS STRUCTURAL DRAWINGS	
TITLE	
TYPICAL CONCRETE DETAILS	
FOR CONSTRUCTION	
PROJECT No. 1021.009	
SCALE AS SHOWN	SIZE A1
DRAWING No. STR-005	REV B

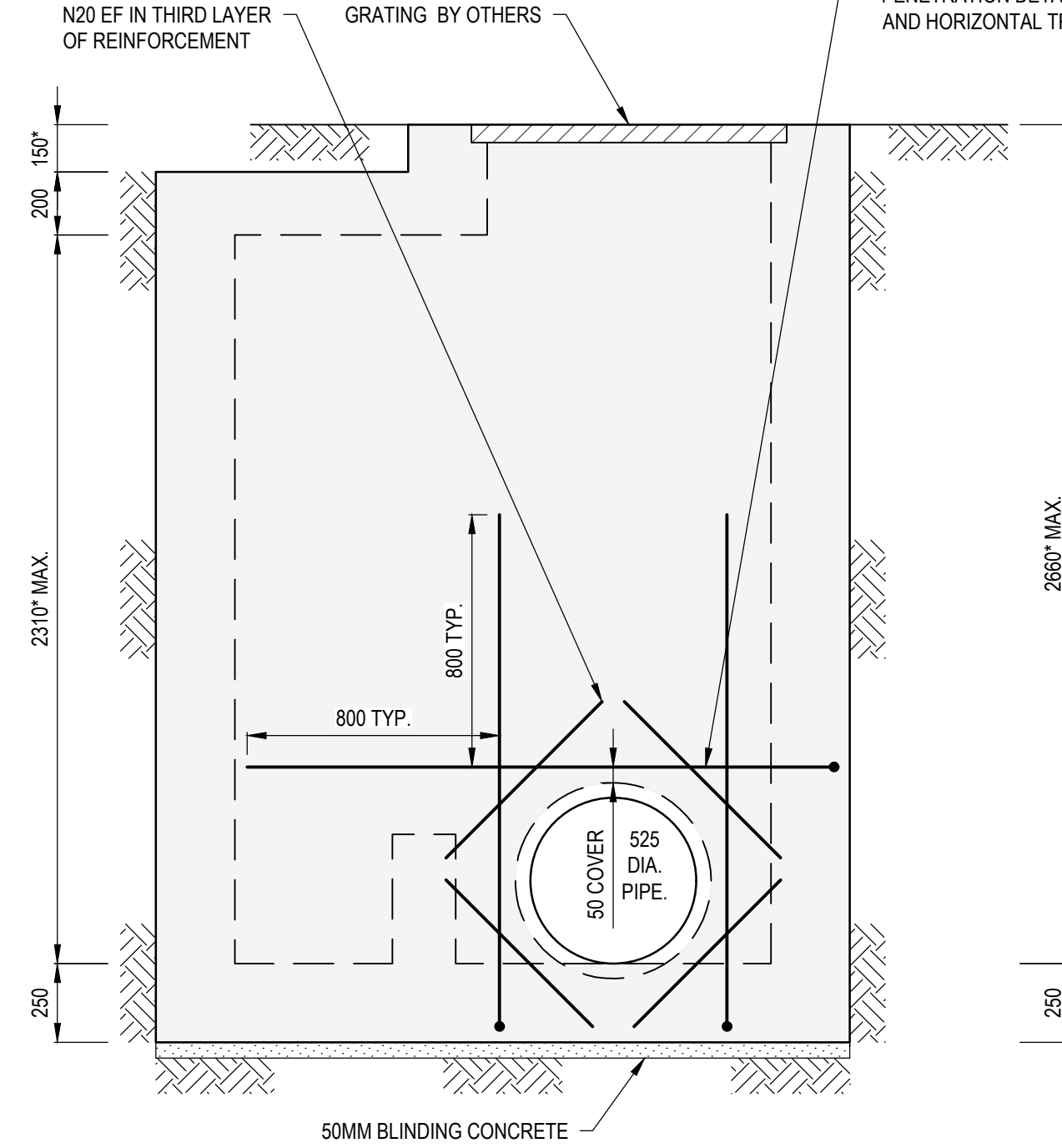


BASE SLAB PLAN
1:20

ADDITIONAL N20 TRIMMER BARS EACH FACE TYPICAL. I.E. BARS AT 100 CTS FOR FIRST 3 BARS WITH N20 TO BE SECOND BAR FROM PENETRATION AS SHOWN ON TYPICAL WALL PENETRATION DETAIL. TYPICAL FOR VERTICAL AND HORIZONTAL TRIMMER BARS.

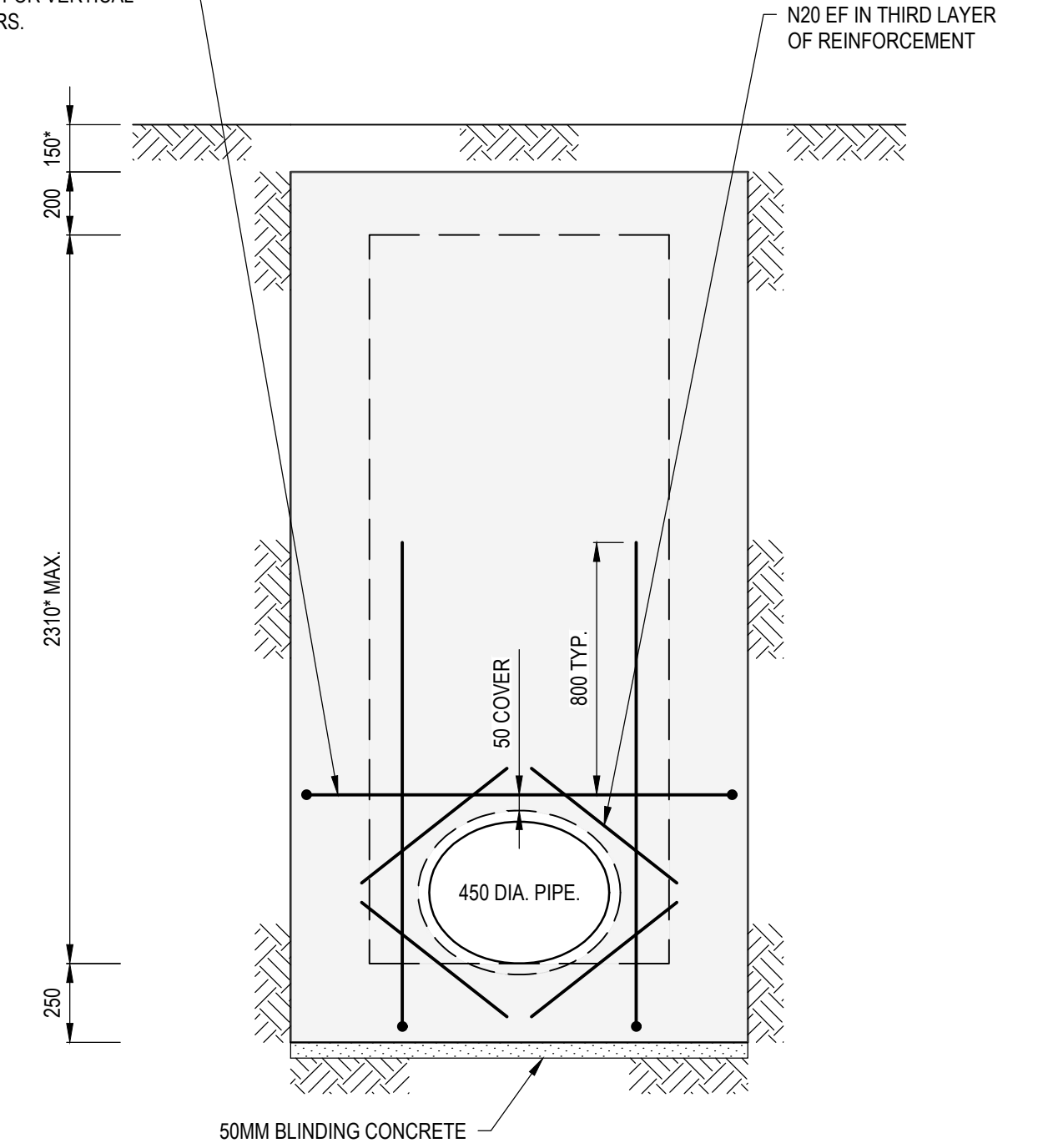


SECTION A
1:20



SECTION B
1:20

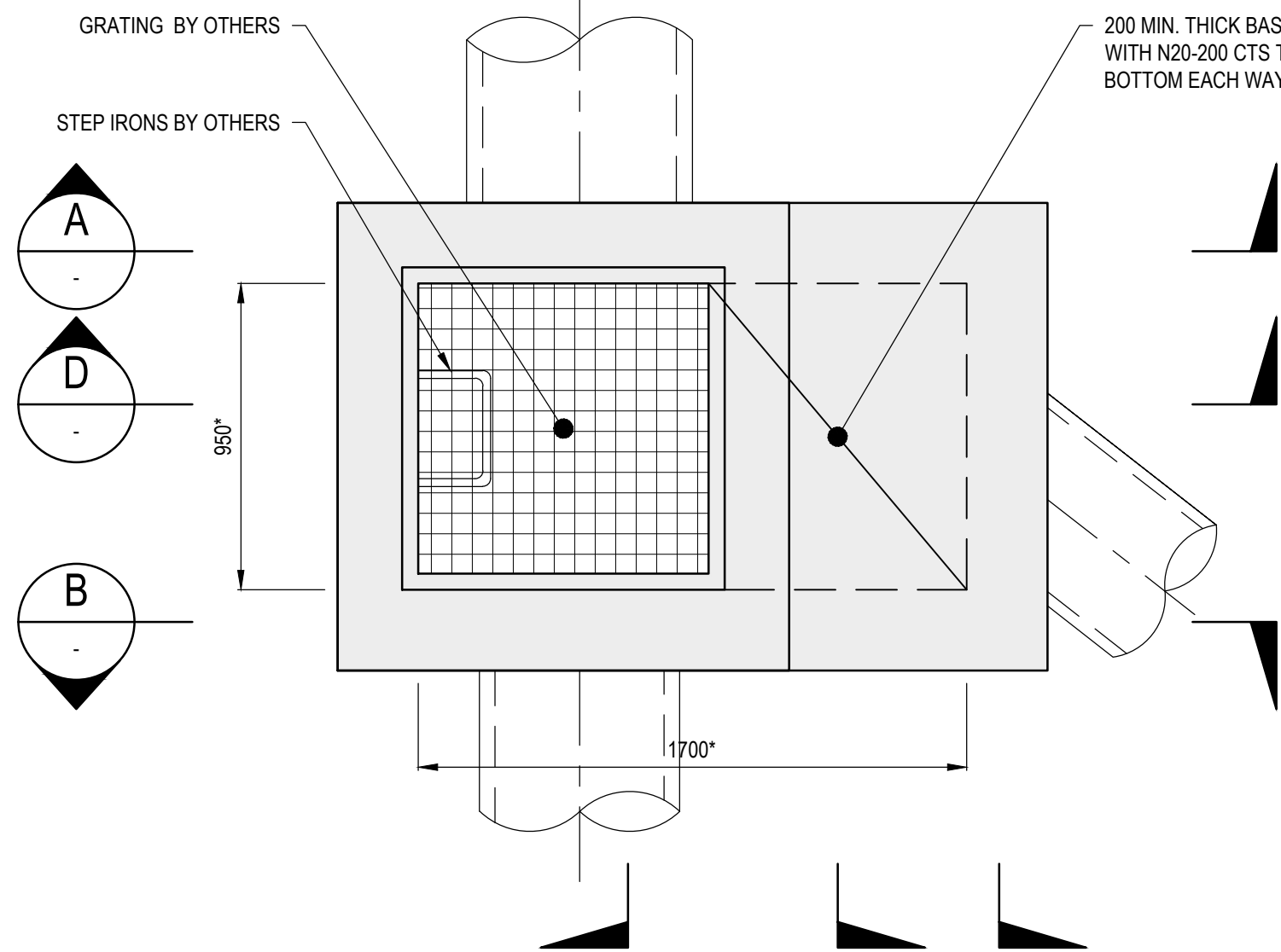
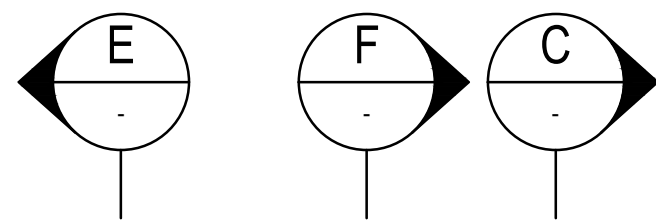
ADDITIONAL N20 TRIMMER BARS EACH FACE TYPICAL. I.E. BARS AT 100 CTS FOR FIRST 3 BARS WITH N20 TO BE SECOND BAR FROM PENETRATION AS SHOWN ON TYPICAL WALL PENETRATION DETAIL. TYPICAL FOR VERTICAL AND HORIZONTAL TRIMMER BARS.



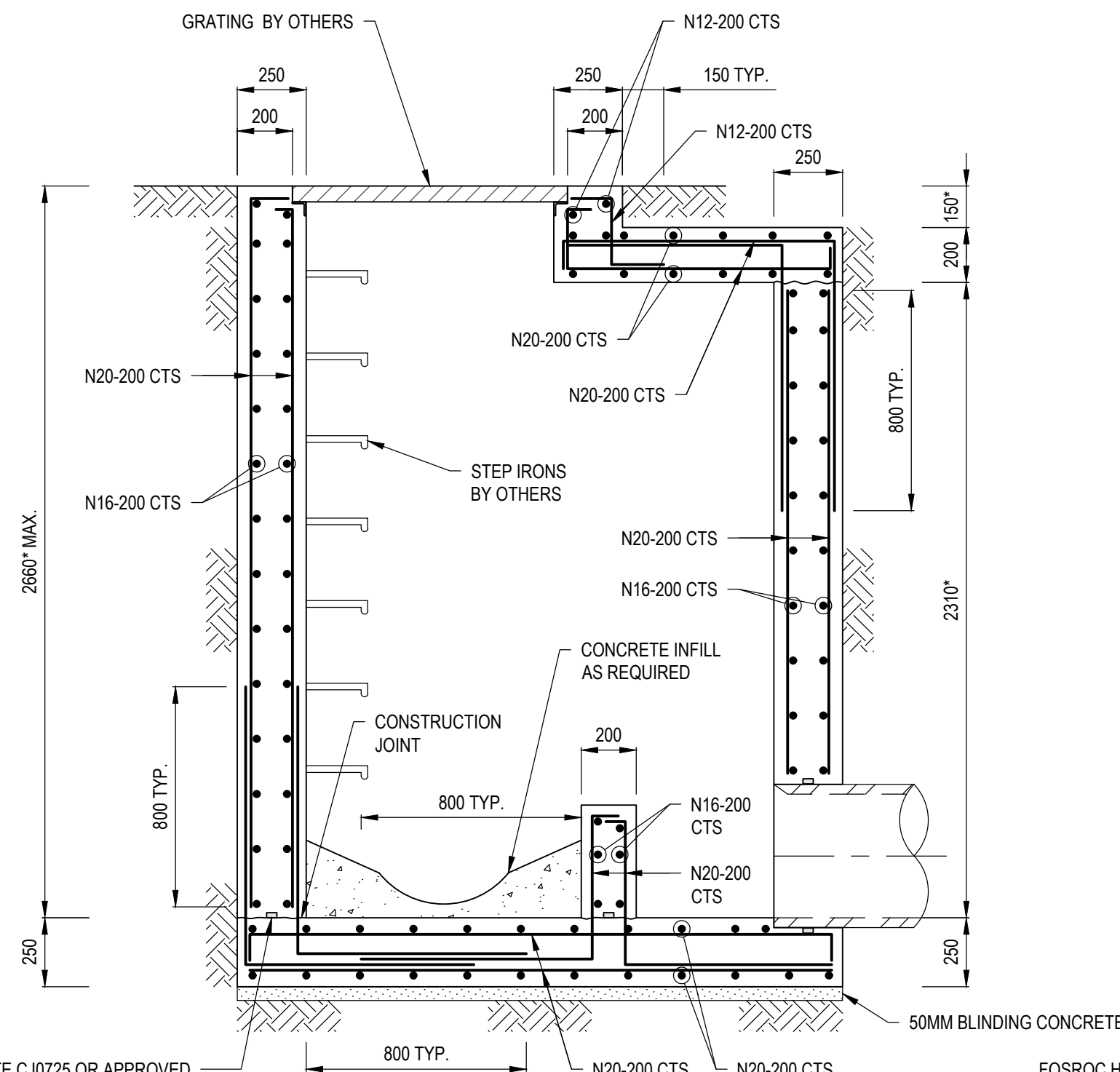
SECTION C
1:20

LEGEND

* FOR DIMENSIONS AND SETTING OUT, REFER SPIIRE DWG NO. 309439R35.

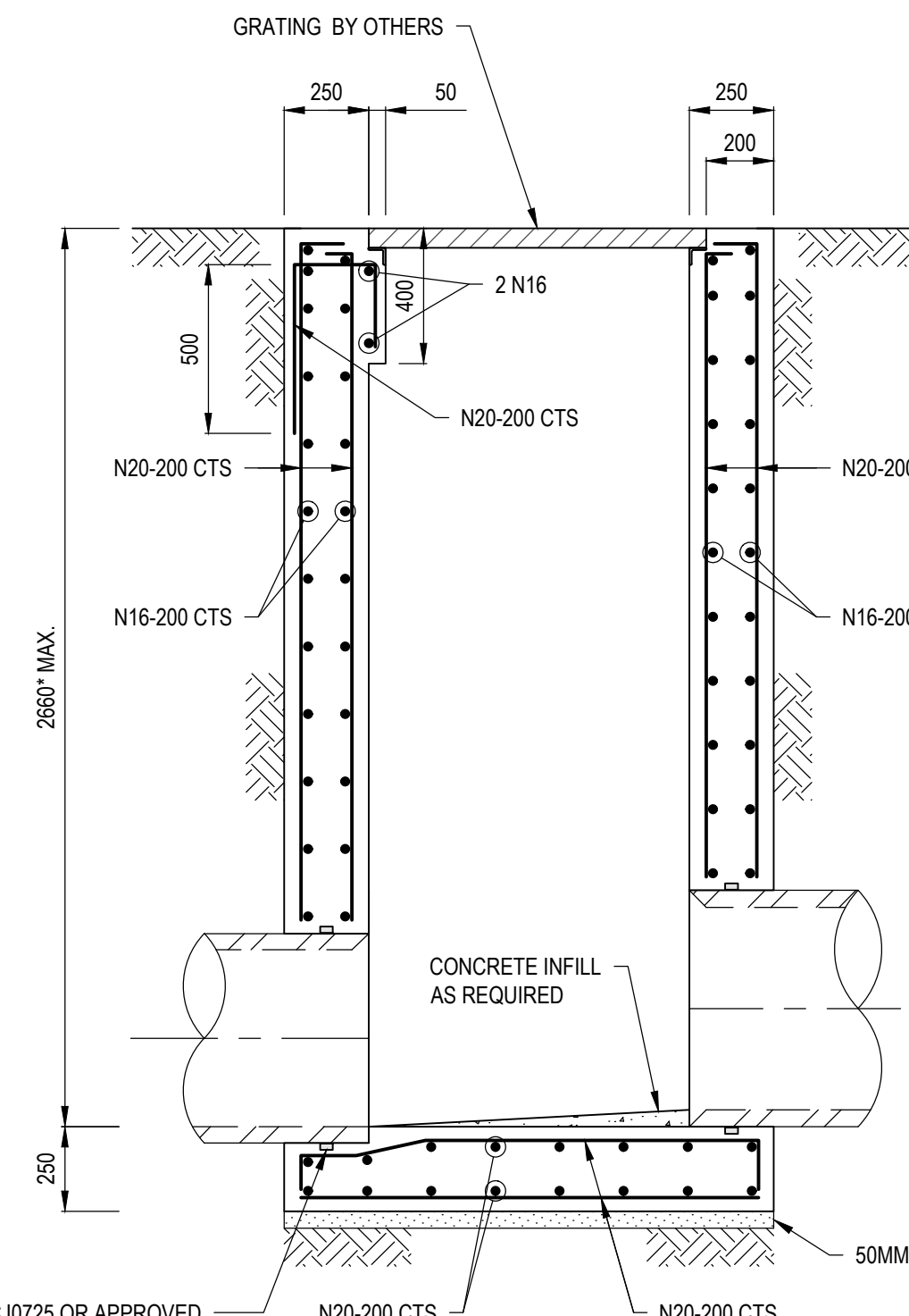


TOP PLAN
1:20



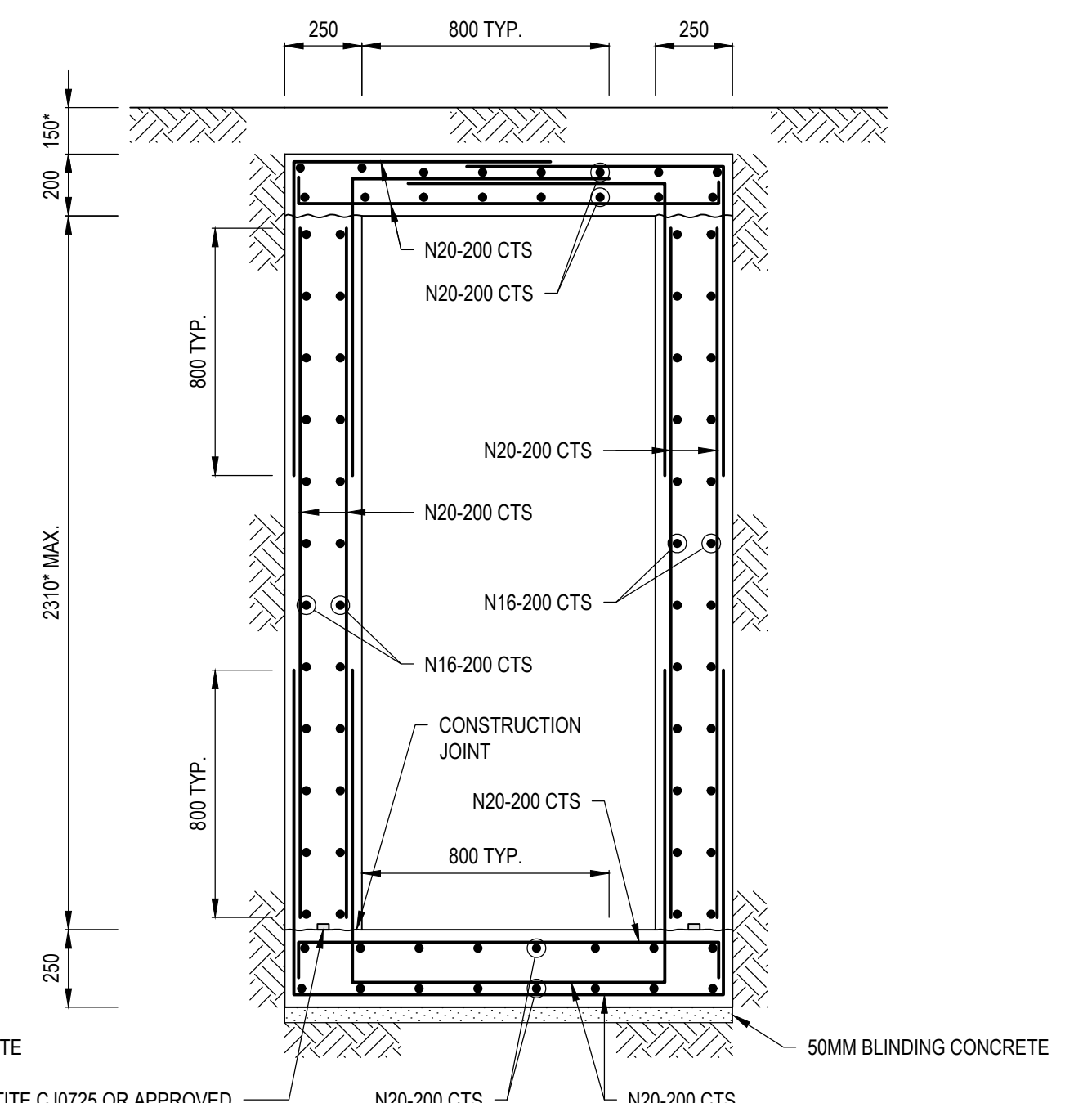
SECTION D
1:20

FOSROC HYDROTITE CJ0725 OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION. TYPICAL.



SECTION E
1:20

FOSROC HYDROTITE CJ0725 OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION. TYPICAL.



SECTION F
1:20

FOSROC HYDROTITE CJ0725 OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION. TYPICAL.

CLIENT

REV	DATE	REVISION DETAILS
A	20/06/23	PRELIMINARY
B	22/06/23	FOR CONSTRUCTION

APPROVED
TES
TES

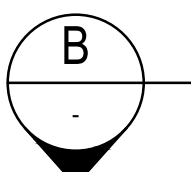
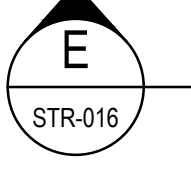
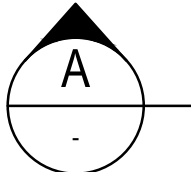
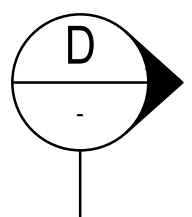
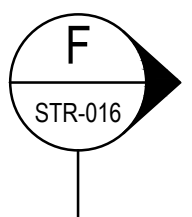
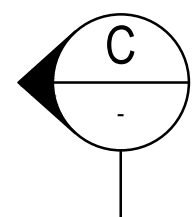
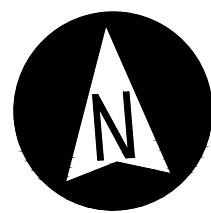
DRAWN	DESIGNED
T. PHAN	V. KHARADE
CHECKED	
V. KHARADE	
APPROVED	
T. SHELDON	
DATE 22/06/2023	

PROJECT
HARLOW ESTATE STAGE 3 PITS
STRUCTURAL DRAWINGS

TITLE
PIT NO. 3 DETAILS

FOR CONSTRUCTION

PROJECT No.	
1021.009	
SCALE	SIZE
AS SHOWN	A1
DRAWING No.	REV
STR-010	B



250 MIN. THICK BASE SLAB
WITH N20-200 CTS TOP AND
BOTTOM EACH WAY.

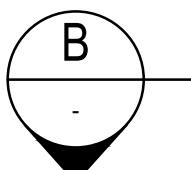
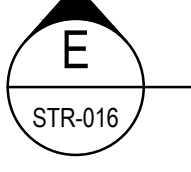
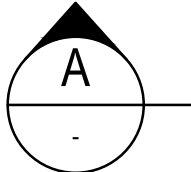
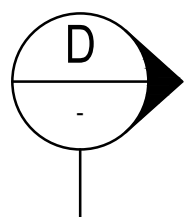
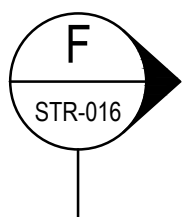
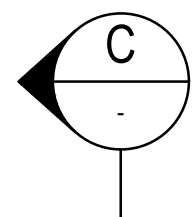
250
THICK WALL

200
THICK WALL

INTERNAL
WEIR WALL

BASE SLAB PLAN

1:20



GRATING BY OTHERS

STEP IRONS BY OTHERS

200 MIN. THICK BASE SLAB
WITH N20-200 CTS TOP AND
BOTTOM EACH WAY.

ADDITIONAL N20 TRIMMER BAR
BOTTOM BY 1200 LONG IN THIRD
LAYER OF REINFORCEMENT.

TOP PLAN

1:20

ADDITIONAL N20 TRIMMER BARS EACH FACE
TYPICAL. I.E. BARS AT 100 CTS FOR FIRST 3 BARS
WITH N20 TO BE SECOND BAR FROM
PENETRATION AS SHOWN ON TYPICAL WALL
PENETRATION DETAIL. TYPICAL FOR VERTICAL
AND HORIZONTAL TRIMMER BARS.

GRATING BY OTHERS

N20 EF IN THIRD LAYER
OF REINFORCEMENT

2430" MAX.

250

2080"

250

200

150"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

SECTION A

1:20

N20 EF IN THIRD LAYER
OF REINFORCEMENT

GRATING BY OTHERS

ADDITIONAL N20 TRIMMER BARS EACH FACE
TYPICAL. I.E. BARS AT 100 CTS FOR FIRST 3 BARS
WITH N20 TO BE SECOND BAR FROM
PENETRATION AS SHOWN ON TYPICAL WALL
PENETRATION DETAIL. TYPICAL FOR VERTICAL
AND HORIZONTAL TRIMMER BARS.

2430" MAX.

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

SECTION C

1:20

ADDITIONAL N20 TRIMMER BARS EACH FACE
TYPICAL. I.E. BARS AT 100 CTS FOR FIRST 3 BARS
WITH N20 TO BE SECOND BAR FROM
PENETRATION AS SHOWN ON TYPICAL WALL
PENETRATION DETAIL. TYPICAL FOR VERTICAL
AND HORIZONTAL TRIMMER BARS.

N20 EF IN THIRD LAYER
OF REINFORCEMENT

2430" MAX.

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

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2080"

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2080"

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2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

SECTION B

1:20

ADDITIONAL N20 TRIMMER BARS EACH FACE
TYPICAL. I.E. BARS AT 100 CTS FOR FIRST 3 BARS
WITH N20 TO BE SECOND BAR FROM
PENETRATION AS SHOWN ON TYPICAL WALL
PENETRATION DETAIL. TYPICAL FOR VERTICAL
AND HORIZONTAL TRIMMER BARS.

N20 EF IN THIRD LAYER
OF REINFORCEMENT

2430" MAX.

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

2080"

250

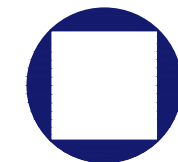
2080"

250

2080"

SECTION D

1:20



sce Sheldon
Consulting
Engineers

spiire

CLIENT

REV	DATE	REVISION DETAILS
A	20/06/23	PRELIMINARY
B	22/06/23	FOR CONSTRUCTION

APPROVED
TES
TES

DRAWN	DESIGNED
T. PHAN	V. KHARADE
CHECKED	
V. KHARADE	
APPROVED	
T. SHELDON	
DATE 22/06/2023	

PROJECT
HARLOW ESTATE STAGE 3 PITS
STRUCTURAL DRAWINGS

TITLE

PIT NO. 78 DETAILS SHEET 1

FOR CONSTRUCTION

PROJECT No.

1021.009

SCALE

AS SHOWN

DRAWING No.

STR-015

SIZE

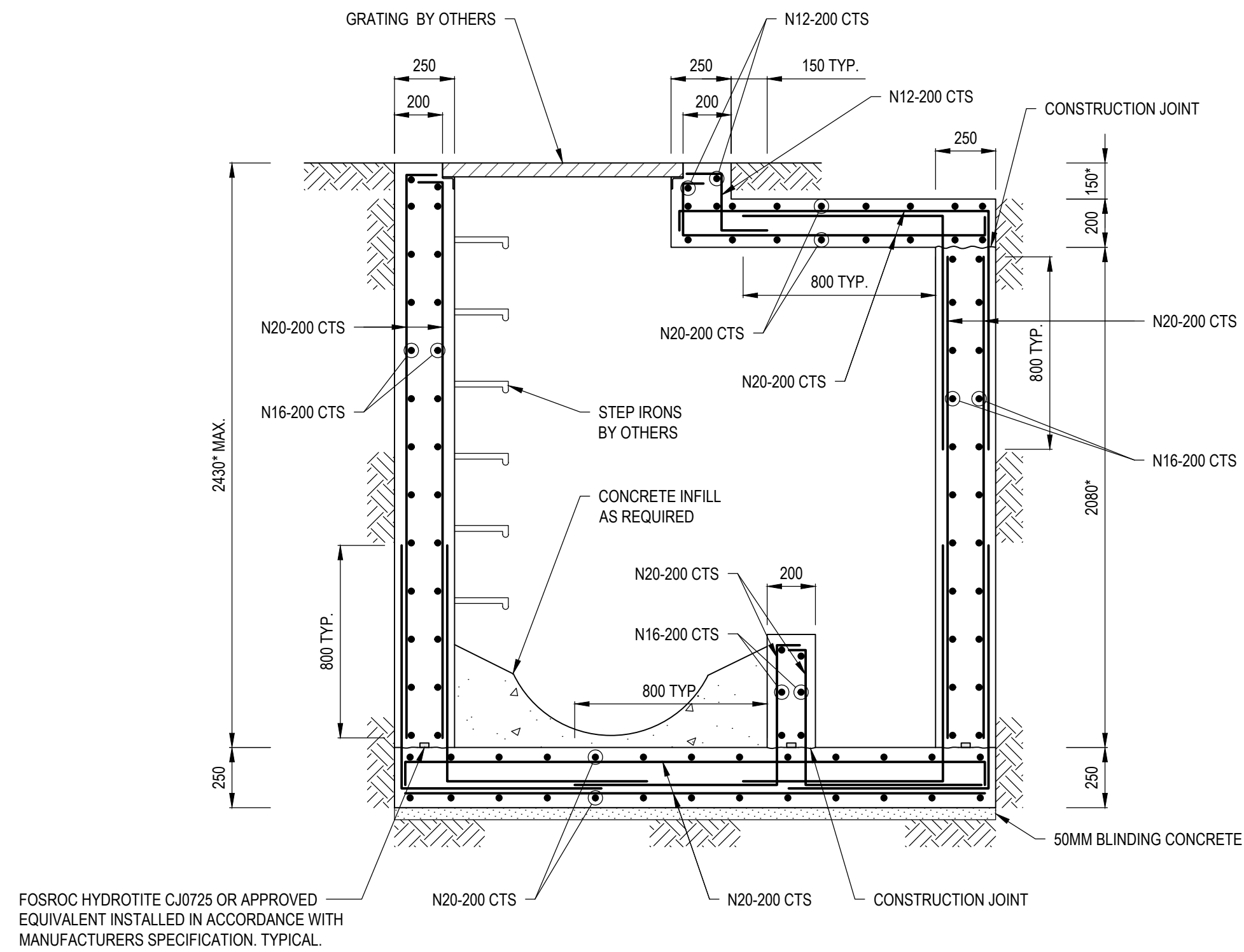
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REV

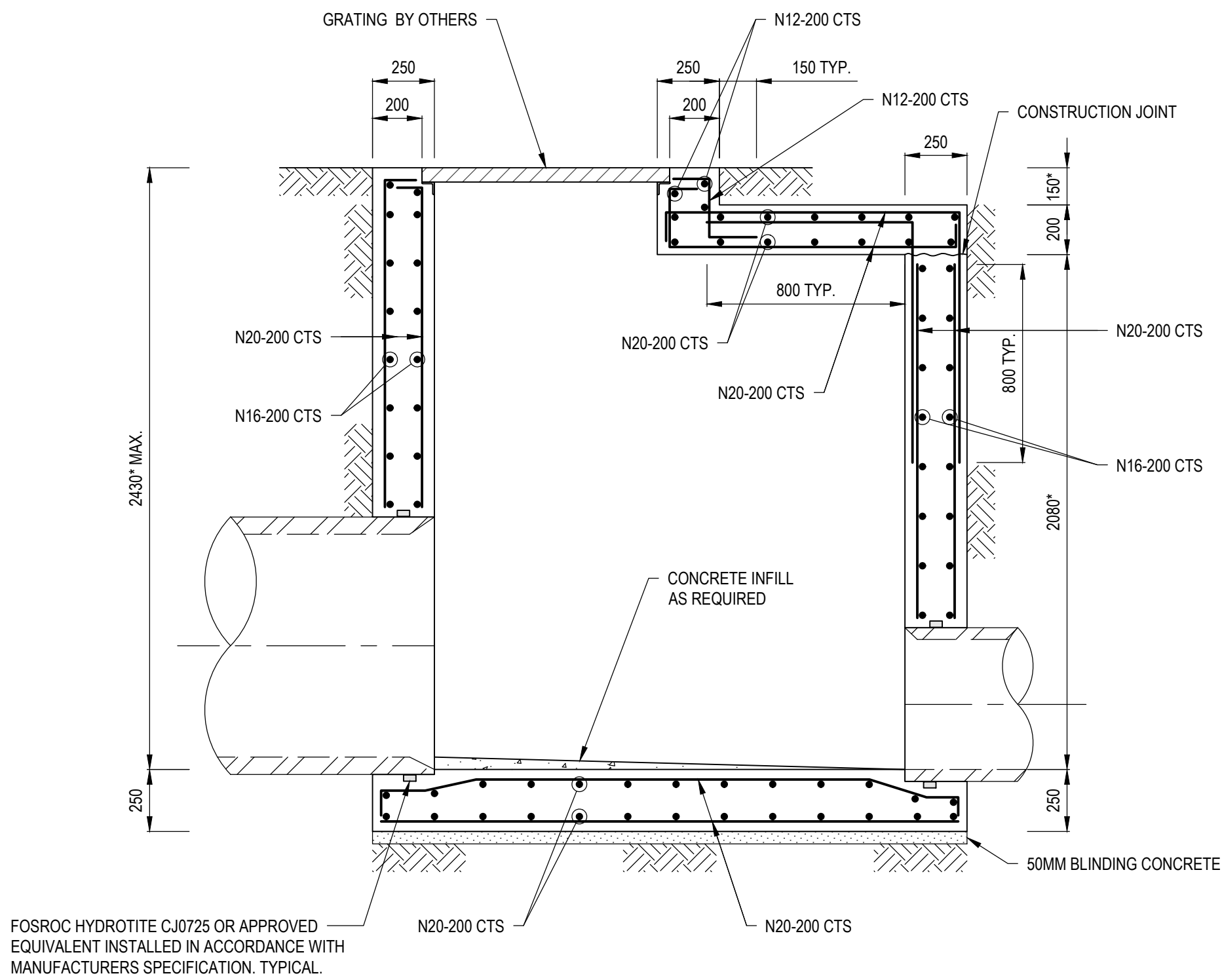
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LEGEND

* FOR DIMENSIONS AND SETTING OUT, REFER SPIIRE DWG NO. 309439R35.



SECTION E
1:20
STR-015



SECTION F
1:20
STR-015

REV	DATE	REVISION DETAILS
A	20/06/23	PRELIMINARY
B	22/06/23	FOR CONSTRUCTION

APPROVED
TES
TES

DRAWN	DESIGNED
T. PHAN	V. KHARADE
CHECKED	
V. KHARADE	
APPROVED	
T. SHELDON	
DATE 22/06/2023	

PROJECT
HARLOW ESTATE STAGE 3 PITS STRUCTURAL DRAWINGS
TITLE
PIT NO. 78 DETAILS SHEET 2

FOR CONSTRUCTION	
PROJECT No.	
1021.009	
SCALE	SIZE
AS SHOWN	A1
DRAWING No.	REV
STR-016	B

Building Act 1993
Section 238(1)(a)
Building Regulations 2018
Regulation 126

CERTIFICATE OF COMPLIANCE FOR PROPOSED WORK

This certificate is issued to **Rabin Khad Thakuri**
Postal address: Wyndham City Council
 45 Princes Highway, Werribee Victoria, 3030
 rabin.thakuri@wyndham.vic.gov.au

This certificate is issued in relation to the proposed work at:

Harlow Estate stage-3 pits.
860 Derrimut road
Tarneit, Victoria, 3029.

Nature of proposed work

Construction of pits.
Stories contained: --
Rise in storeys: --
Version of BCA applicable to certificate: 2022 Volume Two

Building classification

Part of Building	BCA Classification
Retaining wall	Class 10b

Prescribed class of building work for which this certificate is issued:

Design or part of the design of building work relating to structural matter.

Documents setting out the design that is certified by this certificate

Drawings				
Drawing No	Revision	Date	Title	Prepared by
STR-001	B	22/06/23	Cover page and Drawing Index	SCE
STR-002	B	22/06/23	General Notes	SCE
STR-005	B	22/06/23	Typical Concrete details	SCE
STR-010	B	22/06/23	Pit No-3 details	SCE
STR-015	B	22/06/23	Pit No-78 details sheet 1	SCE
STR-016	B	22/06/23	Pit No-78 details sheet 2	SCE

Computations				
Document No	Revision	Date	Pages	Prepared by
1021.009.CA.STR.001	A	06/06/23	1 to 8	SCE

The design certified by this certificate complies with the following provisions of Building Act 1993, Building Regulations 2018 or National Construction Code

Act, Regulation or NCC	Section, Regulation, Part, Performance Requirement or other provision
NCC 2022 Volume Two	Part H1D3(Retaining Wall), Part H1D4 (foundations only)
AS/NZS 1170.0:2002	Structural design actions. Part 0: General principles
AS/NZS 1170.1:2002	Structural design actions. Part 1: Permanent, imposed and other actions
AS 3600:2018	Concrete structures
AS 5100.2:2017	Bridge Design Part 2: Design loads

I prepared the design, set out in the documents listed above.

I certify that the design set out in the documents listed above complies with the provisions set out above

I believe that I hold the required skills, experience and knowledge to issue this certificate and can demonstrate this if requested to do so.

Endorsed Building Engineer

Name: Todd Sheldon

Address: Level 1, 43 Williamson Street, Bendigo, Vic, 3550

Email: todd.sheldon@sceaustalia.com

Endorsed building engineer area of engineering: Structural and Civil

Endorsed building engineer registration no.: PE0003718

Date of issue of certificate: 22/06/2023

Signature:



(for and on behalf of Sheldon Consulting Engineers)

Sheldon Consulting Engineers Australia
ABN 55 193 556 365
Level 1, 43 Williamson Street
Bendigo, Vic, 3550

P: 03 5443 3596
E: bendigo@sceaustalia.com
W: www.sceaustalia.com



Computations

Date: 06/06/2023

Job Number: 1021.009

Document No: 1021.009.CA.STR.001

Revision Number: A

Client: Harlow Development Pty Ltd

Name of Job: Harlow Estate Stage-3 Culvert,
860 Derrimut Road,
Tarneit, VIC, 3029, Australia.

Description of Work: Design of pits

Structural Engineer: Vipul Kharade

Project: Harlow Pits	Project No: 1021.009	Page No: 2
Subject: Pits Design Check	Date: 06/06/2023	Calc By: VVK

1.0 DESIGN BRIEF

Structural design of proposed concrete pits.

Pit no 78 : Walls to be 2230mm maximum high, man hole to be 350mm max. high.

Pit no 3: Walls to be 2310mm maximum high, man hole to be 350mm max. high.

Structural design required for concrete base slab, top slab and side walls.

2.0 DESIGN LOADS

2.1 SOIL AND SURCHARGE LOADS

Refer to geotechnical report No. G4572.1 AA dated 18/10/2021 by Ground Science. NOTE: This report is for the design of the thrust blocks and a geotechnical investigation shall be done specifically at the pit location before the start of work.

Ground Science has provided the following values as an assumption for design purposes, which needs to be verified before the start of work.

Soil Type	Design Parameter				
	Ka (active earth pressure)	Kp (passive earth pressure)	K _o [*] (at rest)	φ' Effective friction angle (degrees)	γ Unit Weight (kN/m ³)
Clayey sand (Wall)	0.37-0.33	2.66-3.0	0.54-0.50	27-30	19-21

Allowable Bearing Capacity (Unit 3 and controlled fill-depth 1-2m): 150 kPa.

Surcharge: 20.0 kPa (CL. J6 AS4678) and AS 5100 loading

2.2 CONCRETE AND REO PROPERTIES

Exposure classification: B2 (Pits to be underground and submerged under fresh water). Table 4.1-1(c) AS3735

CONCRETE:

Characteristic strength $f_c = 40$ MPa. Cover: 50mm

Table 4.2 AS3735

REO:

WALL:

Wall retaining liquid (restrained): $p_{min} = 0.80\%$

Table 3.1 AS3735

Minimum reinforcement ratio: $p_{min} = 0.25\%$ (vertical)

CL. 11.7.1 AS3600

→ $A_{s,min} = p_{min} \times A_{c,eff} = 0.80\% \times 25,000 = 200 \text{ mm}^2 \rightarrow$ adopt Ø20 dia. ($A_s = 314 \text{ mm}^2$) vertical bar.

where $A_{c,eff} = a_1 \times a_2 = 200 \times 250/2 = 25,000 \text{ mm}^2$.

$M_{max,provided} = A_{s,provided} \times \Phi \times f_{sy} \times 0.85 \times d = 1570 \times 0.8 \times 500 \times 0.85 \times (250 - 50 - 16 - 20/2) = \underline{\underline{92.88 \text{ kNm}}}$.

Project: Harlow Pits	Project No: 1021.009	Page No: 3
Subject: Pits Design Check	Date: 06/06/2023	Calc By: VVK

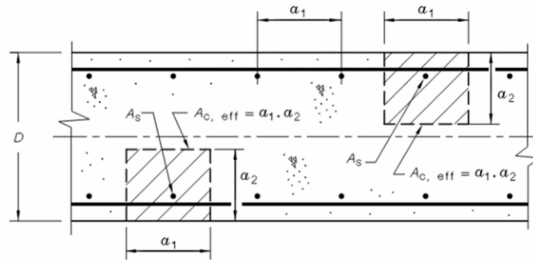


FIGURE 3.1 EFFECTIVE CONCRETE AREA

Crack control for exposure classification B2: $p_{min,cr} = 0.60\%$ (horizontal) CL. 11.7.2(b) AS3600

→ $A_{s,min} = p_{min} \times A_{c,eff} = 0.60\% \times 25,000 = 150 \text{ mm}^2 \rightarrow$ adopt $\varnothing 16$ dia. ($A_s = 201 \text{ mm}^2$) horizontal bar.
where $A_{c,eff} = a_1 \times a_2 = 200 \times 250/2 = 25,000 \text{ mm}^2$.

$M_{max,provided} = A_{s,provided} \times \Phi \times f_{sy} \times 0.85 \times d = 1005 \times 0.8 \times 500 \times 0.85 \times (250 - 50 - 16/2) = \underline{\underline{65.60 \text{ kNm}}}$.

- BASE:**

Slab retaining liquid (restrained): $p_{min} = 0.80\%$

Table 3.1 AS3735

Crack control for exposure classification B1: $p_{min,cr} = 0.60\%$

CL. 9.5.3.4(c) AS3600

→ $A_{s,min} = p_{min} \times A_{c,eff} = 0.8\% \times 25,000 = 200 \text{ mm}^2 \rightarrow$ adopt $\varnothing 20$ dia. 1 bar.

$M_{max,provided} = A_{s,provided} \times \Phi \times f_{sy} \times 0.85 \times d = 1570 \times 0.8 \times 500 \times 0.85 \times (250 - 50 - 20/2) = \underline{\underline{90.75 \text{ kNm}}}$.

- TOP SLAB:**

Crack control for exposure classification B1: $p_{min,cr} = 0.60\%$

CL. 9.5.3.4(c) AS3600

→ $A_{s,min} = p_{min} \times A_{c,eff} = 0.6\% \times 1000 \times 200 = 1200 \text{ mm}^2 \rightarrow$ adopt $\varnothing 20 @ 200 = 1570 \text{ mm}^2$

$M_{max,provided} = A_{s,provided} \times \Phi \times f_{sy} \times 0.85 \times d = 1570 \times 0.8 \times 500 \times 0.85 \times (200 - 50 - 20/2) = \underline{\underline{74.73 \text{ kNm}}}$.

Project: HARLOW PITS	Project No: 1021.009	Page no: 4
Subject: PITS DESIGN CHECK	Date: 06/06/2023	By: VVK

* PIT NO-78 (1.9 x 2.0 x 2.23 m INTERNAL DIMENSION)
TRIAL WITH 250THK WALLS AND BASE.

→ LOADING :

+ WATER : $\gamma_w \times 1m = 10 \text{ kN/m}^2$ ON WALLS [CONSERVATIVE]

$\gamma_w \times 2.31 = 23.1 \text{ kN/m}^2$ ON BASE SLAB

+ SOIL :

TOP SLAB : $\gamma_s \times 0.15 = 21 \times 0.15 = 3.15 \text{ kN/m}^2$

WALLS : $K_a \gamma_s \times 2.66 = 0.37 \times 21 \times 2.66 = 20.67 \text{ kN/m}^2$

+ LINE LOAD :

CONSIDERING M1600 LOADING

% SURCHARGE LOAD [REFER TO SURCHARGE CALCULATION]

$P_h = 43 \text{ kN/m}$ @ $\gamma_p = 1.525 \text{ m}$ FROM BASE

AND SURCHARGE = 20 kPa [AS PER AS 4678].

→ ANALYSIS :

REFER TO SPACEGASS MODEL "230606 VVK PIT NO. 78"

→ DESIGN CHECK :

+ MAX BEARING PRESSURE = 62.7 kPa < 150 kPa % ok

→ REINFORCEMENT :

+ BASE SLAB $M_x^{+ve} = 4.68 \text{ kN.m}$ $M_y^{+ve} = 0.84 \text{ kN.m}$

$M_x^{-ve} = 4.75 \text{ kN.m}$ $M_y^{-ve} = 3.66 \text{ kN.m}$

→ ADOPT N20-200 EACH FACE (5% STRESSED)

Project: HARLOW PITS	Project No: 1021.009	Page no: 5
Subject: PITS DESIGN CHECK	Date: 06/06/23	By: VVK

* WALLS

$$M_{VER}^{+ve} = 4.25 \text{ kN}\cdot\text{m}$$

$$M_{HOR}^{+ve} = 6.65 \text{ kN}\cdot\text{m}$$

$$M_{VER}^{-ve} = 6.25 \text{ kN}\cdot\text{m}$$

$$M_{HOR}^{-ve} = 7.65 \text{ kN}\cdot\text{m}$$

→ ADOPT N16-200 HORIZONTAL EACH FACE (6.8% STRESSED)

ADOPT N20-200 VERTICAL EACH FACE (11.66% STRESSED)

+ TOP SLAB

$$M^{+ve} = 0.32 \text{ kN}\cdot\text{m}$$

$$M^{-ve} = 1.66 \text{ kN}\cdot\text{m}$$

→ ADOPT N 20-200 BOTH DIRECTION (2.22% STRESSED)
EACH FACE

Project: HARLOW PITS	Project No: 1021-009	Page no: 6
Subject: PITS DESIGN CHECK	Date: 06/06/23	By: VVK

* PIT NO - 03 (1.7 x 0.95 x 2.31 m INTERNAL DIMENSION)
TRIAL WITH 250 THK WALLS AND BASE

→ LOADING :

+ WATER : $\gamma_w \times 1m = 10 \text{ kN/m}^2$ ON WALLS [CONSERVATIVE]

$\gamma_w \times 2.66 = 26.6 \text{ kN/m}^2$ ON BASE SLAB

+ SOIL :

TOP SLAB = $\gamma_s \times 0.15 = 21 \times 0.15 = 3.15 \text{ kN/m}^2$

WALLS : $K_a \times \gamma_s \times 2.66 = 0.37 \times 21 \times 2.66 = 20.67 \text{ kN/m}^2$

+ LIVE LOAD :

CONSIDERING M1600 LOADING

∴ SURCHARGE LOAD [REFER TO SURCHARGE CALCULATION]

$P_h = 43 \text{ kN/m}$ @ $Y_p = 1.525 \text{ m}$

AND SURCHARGE = 20 kPa [AS PER AS 4678]

→ ANALYSIS :

REFER TO SPACEGASS MODEL "230616 VVK PIT NO-3"

→ DESIGN CHECK :-

+ MAX. BEARING PRESSURE = 118 kPa < 150 kPa ∴ ok

→ REINFORCEMENT :

+ BASE SLAB $M_x^{+ve} = 2.17 \text{ kN.m}$ $M_y^{+ve} = 4.0 \text{ kN.m}$

$M_x^{-ve} = 1.81 \text{ kN.m}$ $M_y^{-ve} = 2.52 \text{ kN.m}$

→ ADOPT N20-200 EACH FACE (4.5% STRESSED)

Project: HARLOW PITS	Project No: 1021.009	Page no: 7
Subject: PITS DESIGN CHECK	Date: 06/06/23	By: VVK

+ WALLS

$$M_{VER}^{+ve} = 2.39 \text{ kN.m} \quad M_{HOR}^{+ve} = 6.09 \text{ kN.m}$$

$$M_{VER}^{-ve} = 6.23 \text{ kN.m} \quad M_{HOR}^{-ve} = 8.14 \text{ kN.m}$$

→ ADOPT N16-200 HORIZONTAL EACH FACE (12% STRESSED)

→ ADOPT N20-200 VERTICAL EACH FACE (6.7% STRESSED)

+ TOP SLAB

$$M^{+ve} = 0.31 \text{ kN.m}$$

$$M^{-ve} = 2.11 \text{ kN.m}$$

→ ADOPT N20-200 BOTH DIRECTION

EACH FACE (2.8% STRESSED)

Project:	Project No:	Page no: 8
Subject: SURCHARGE CALCULATION	Date: 9/06/23	By: WVK

* LETS ASSUME A PIT 2.5 m DEEP AND 2.2 m x 2.1 m SIZE

→ CONSIDERING SM1600 LOADING

M1600

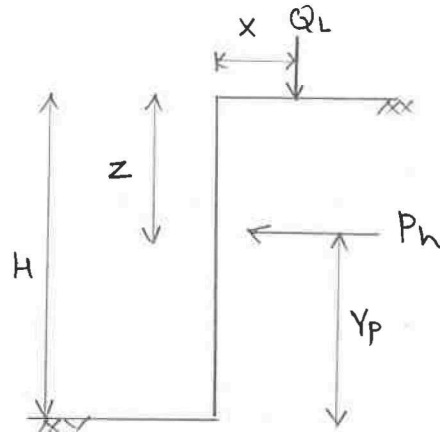
$$\left[\frac{360}{2.5} + 6 \right] = 78 \text{ kN/m}$$

S1600

$$\left[\frac{240}{2.5} + 24 \right] = 72 \text{ kN/m}$$

∴ CONSIDERING 78 kN/m LINE LOAD

→ CALCULATING EQUIVALENT LATERAL LOAD AS PER AS4678



CONSIDERING THE LOAD TO BE ACTING 100 mm AWAY FROM WALL $X = 0.1 \text{ m}$

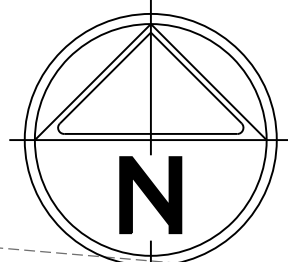
$$\therefore m = \frac{X}{H} = \frac{0.1}{2.5} = 0.04 \leq 0.4$$

$$\therefore \text{FOR } m = 0.4 \quad \frac{P_h}{Q_L} = 0.55 \quad [\text{FROM TABLE IN FIG 77}]$$

$$\therefore P_h = 0.55 \times 78 = 42.9 \approx 43 \text{ kN/m}$$

$$\text{AND } \frac{Y_p}{H} = 0.61$$

$$\therefore Y_p = 0.61 \times 2.5 = 1.525 \text{ m}$$



GDA2020

EXISTING
FRASER SITE

JETTA WALK

30(2)
0.1022ha

24(2)
0.0586ha

26(2)
0.0349ha

27(2)
0.0784ha

31
0.0685ha

22(2)
0.0374ha

28(2)
0.0638ha

29(2)
0.0448ha

20
0.0680ha

21(2)
0.0587ha

20(2)
0.0260ha

33
0.0513ha

32
0.0509ha

19(2)
0.0670ha

18
0.0763ha

36(2)
0.0207ha

37(2)
0.1495ha

36
0.0509ha

40
0.0490ha

12
0.0455ha

53
0.0515ha

43(2)
0.0785ha

49(2)
0.0312ha

10
0.0649ha

11(2)
0.0802ha

FUTURE SCHOOL SITE

EXISTING STAGE 2

12D MODEL - DRAINAGE CALCULATIONS

PROJECT No 309437

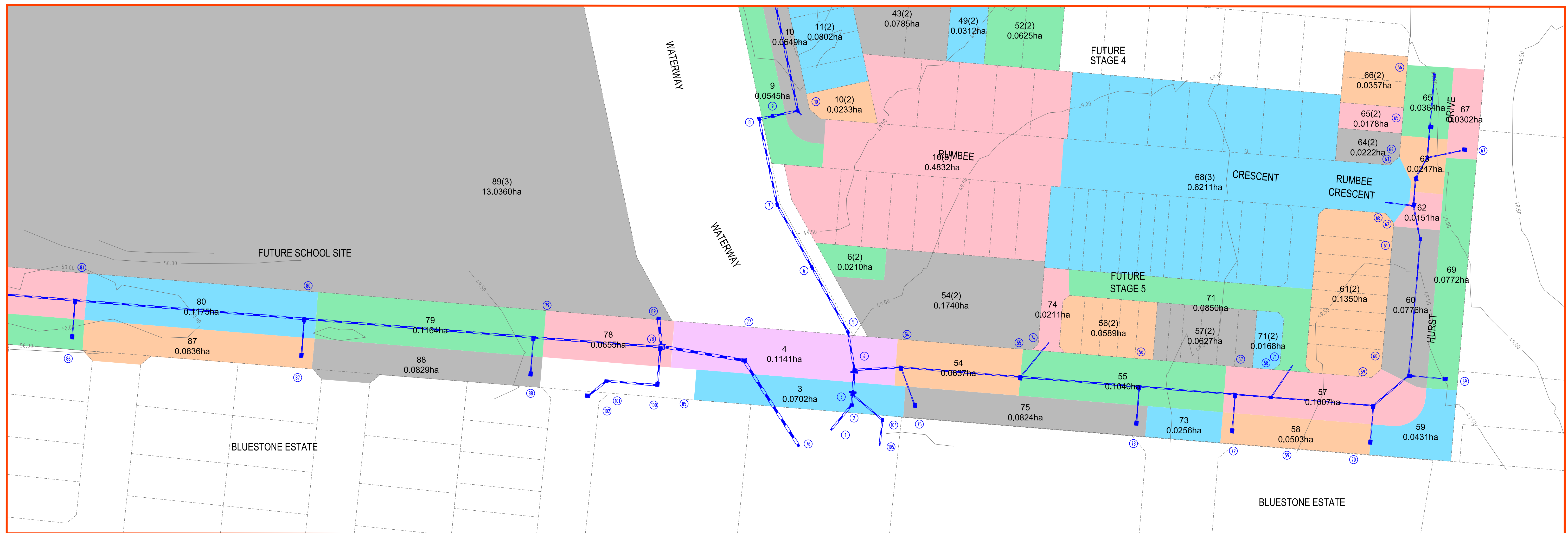
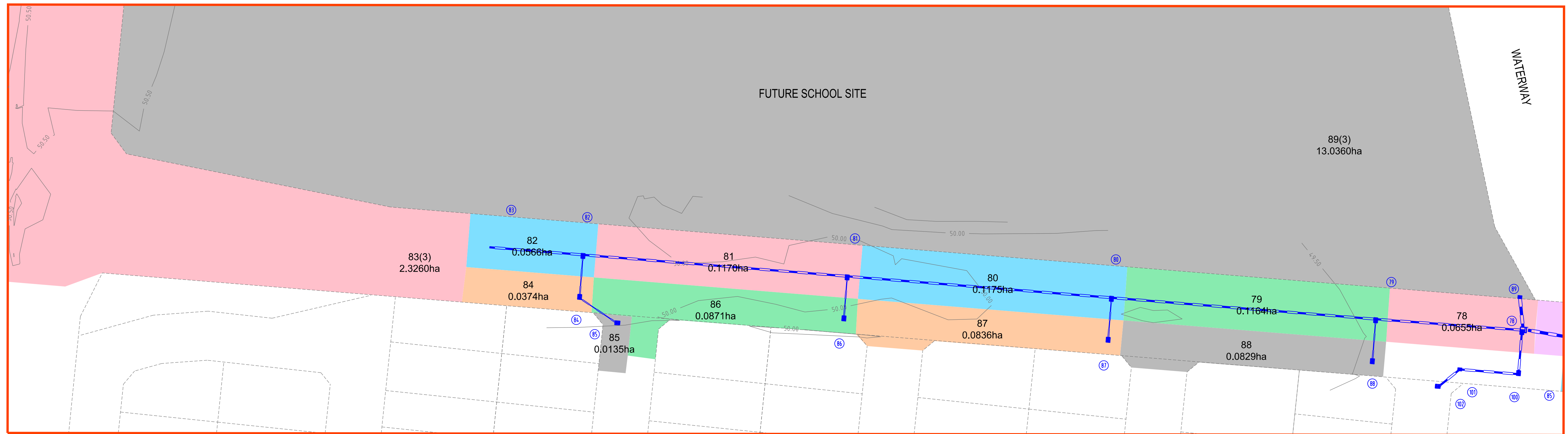
DESIGNED BY R Weinber

PROJECT NAME Harlow Estate Stage 3

DATE Jan-23

A.R.I. 5

		SUB-CATCHMENT RUNOFF										DRAIN DESIGN										HEADLOSSES										PART FILL		DESIGN LEVELS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
STRUCTURE No.	DOWNSTREAM STRUCTURE No.	PIT TYPE	COEFFICIENT OF RUNOFF	SUB-CATCHMENT AREA (ROAD)	COEFFICIENT OF RUNOFF	SUB-CATCHMENT AREA (LOT)	COEFFICIENT OF RUNOFF	SUB-CATCHMENT AREA (MISC.)	SUB-CATCHMENT DISCHARGE	CRITICAL TIME OF CONCENTRATION	RAINFALL INTENSITY	TOTAL (G.A.)	PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE DIAMETER	PIPE GRADE CAPACITY	Quality / Cleanliness	CAPACITY VELOCITY	TIME IN PIPE	PIPE VELOCITY HEAD	US PIT HEADLOSS COEFF	US PIT PRESSURE HEADLOSS	US PIT FRICTION HEADLOSS	W.S.E. COEFF	CHANGE IN W.S.E	PIPE FRICTION LOSS	PIPE FRICTION HEADLOSS	NORMAL DEPTH	NORMAL DEPTH VELOCITY	UPSTREAM PIPE I.D.	DOWNSTREAM PIPE I.D.	PIT GRADE LEVEL	CALCULATED FREEDOM	STRUCTURE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								



B	COUNCIL COMMENTS ADDED	M.R	03/03/23
A	ISSUE TO COUNCIL	M.R	25/01/23
Rev	Amendments	Approved	Date



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T A R N E I T

Designed
R. WEINBER

Authorised
M. READMAN

Checked
R. WILSON

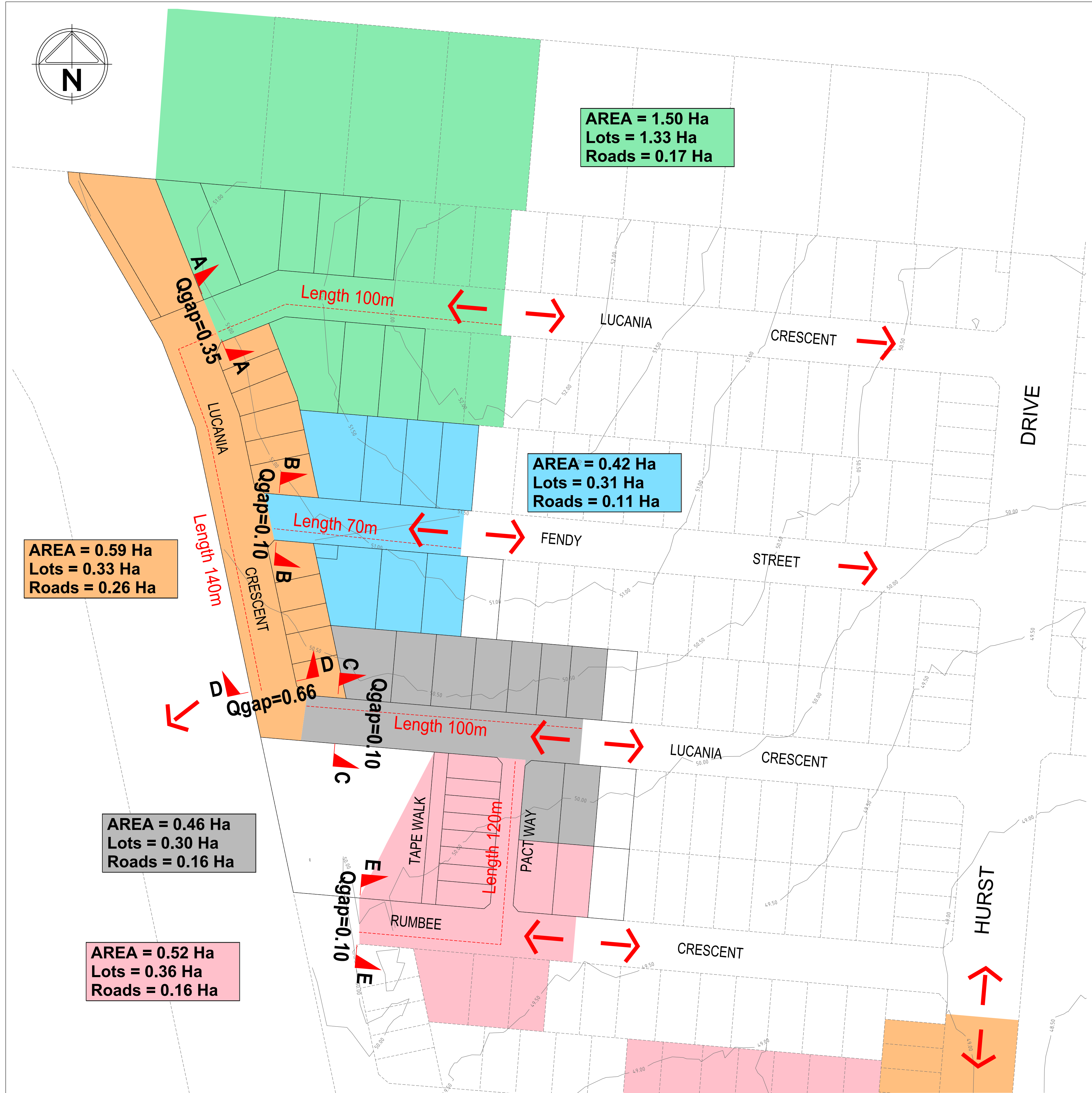
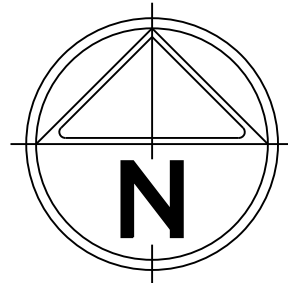
Date
10-01-2023

HARLOW ESTATE
STAGE 3
Q5 DRAINAGE CATCHMENT PLAN
SHEET 2
SIG GROUP
WYNDHAM CITY COUNCIL

PRELIMINARY

Drg No
309439D02

Rev
B



100YR OVERLAND FLOW COMPUTATIONS

Project:	Harlow Estate - Stage 3
Project Number:	309439
Version:	P1

Road Name	Ansley Crescent	Stillwell Street	Henry Crescent	Lucania Crescent	Runbee Crescent
Section:	Section AA	Section BB	Section CC	Section DD	Section EE
Catchment Areas:					
Lots (ha)	1.33	0.31	0.30	2.27	0.36
Road Reserves (ha)	0.17	0.11	0.16	0.70	0.16
Reserves (ha)	0.00	0.00	0.00	0.00	0.00
Totals (ha)	1.50	0.42	0.46	2.97	0.52
Minor Flow (5 Year):					
Equivalent Area (ha)	1.04	0.28	0.30	2.01	0.35
Time of Concentration (min)	6.83	6.58	6.83	7.00	8.00
Intensity (mm/hr)	74.32	75.45	74.32	73.59	69.62
Design Flow (m3/s)	0.21	0.06	0.06	0.41	0.07
Major Flow (100 Year):					
Equivalent Area (ha)	1.32	0.36	0.39	2.55	0.44
Time of Concentration (min)	7.67	7.17	7.67	8.00	10.00
Intensity (ha)	154.60	159.29	154.60	151.67	136.64
Design Flow (m3/s)	0.57	0.16	0.17	1.07	0.17
Overland Flow:					
Qgap (Q100-Q5 Estimate)	0.35	0.10	0.10	0.66	0.10

CO-EFFICIENT OF RUNOFF

	STORM EVENT	
	5 Year	100 Year
Lots	0.71	0.90
Road Reserve	0.57	0.72
Reserve	0.33	0.41

Table 16 (GAA)
Fraction Impervious f=0.8
Fraction Impervious f=0.6
Fraction Impervious f=0.25

Time Pipe

	Flow Length (m)	Velocity (m/s)	Tinitial (min)	Tc (mins)
Section AA	100	2	6	6.83
Section BB	70	2	6	6.58
Section CC	100	2	6	6.83
Section DD	120	2	6	7.00
Section EE	240	2	6	8.00

Time Overland

	Flow Length (m)	Velocity (m/s)	Tinitial (min)	Tc (mins)
Section AA	100	1	6	7.67
Section BB	70	1	6	7.17
Section CC	100	1	6	7.67
Section DD	120	1	6	8.00
Section EE	240	1	6	10.00

B	COUNCIL COMMENTS ADDED	M.R	03/03/23
A	ISSUE TO COUNCIL	M.R	25/01/23
Rev	Amendments	Approved	Date



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Designed
R. WEINBER

Authorised
M. READMAN

Checked
R. WILSON

Date
10-01-2023

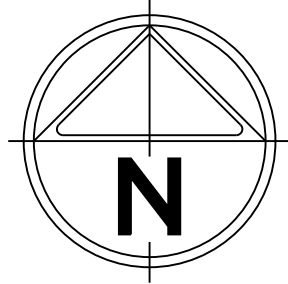
HARLOW ESTATE
STAGE 3
Q100 OVERLAND FLOW PLAN

SIG GROUP
WYNDHAM CITY COUNCIL

PRELIMINARY

Drg No
309439D03

Rev
B



100YR OVERLAND FLOW COMPUTATIONS

Project:	Harlow Estate - Stage 3 (Hurst Drive)
Project Number:	309439
Version:	P1

Road Name	Hurst Drive	Hurst Drive	Hurst Drive	Hurst Drive
Section:	Section SS	Section TT	Section UU	Section VV
Catchment Areas:				
Lots (ha)	0.24	0.52	0.90	1.06
Road Reserves (ha)	0.21	0.48	0.78	1.28
Reserves (ha)	0.00	0.00	0.00	0.00
Totals (ha)	0.45	1.00	1.68	2.34
Minor Flow (5 Year):				
Equivalent Area (ha)	0.29	0.64	1.08	1.48
Time of Concentration (min)	6.58	7.20	7.82	9.07
Intensity (mm/hr)	75.45	72.75	70.30	65.97
Design Flow (m3/s)	0.06	0.13	0.21	0.27
Major Flow (100 Year):				
Equivalent Area (ha)	0.37	0.82	1.37	1.88
Time of Concentration (min)	7.17	8.40	9.63	12.13
Intensity (ha)	159.29	148.33	139.11	124.20
Design Flow (m3/s)	0.16	0.34	0.53	0.65
Overland Flow:				
Qgap (Q100-Q5 Estimate)	0.10	0.21	0.32	0.38

Hurst Drive	Hurst Drive	Hurst Drive
Section XX	Section YY	Section ZZ
0.44	0.64	0.97
0.17	0.45	1.06
0.00	0.00	0.00
0.61	1.09	2.03
0.41	0.71	1.29
6.92	7.56	9.33
73.95	71.30	65.16
0.08	0.14	0.23
0.52	0.90	1.64
7.83	9.12	12.65
153.12	142.79	121.60
0.22	0.36	0.55
0.14	0.22	0.32

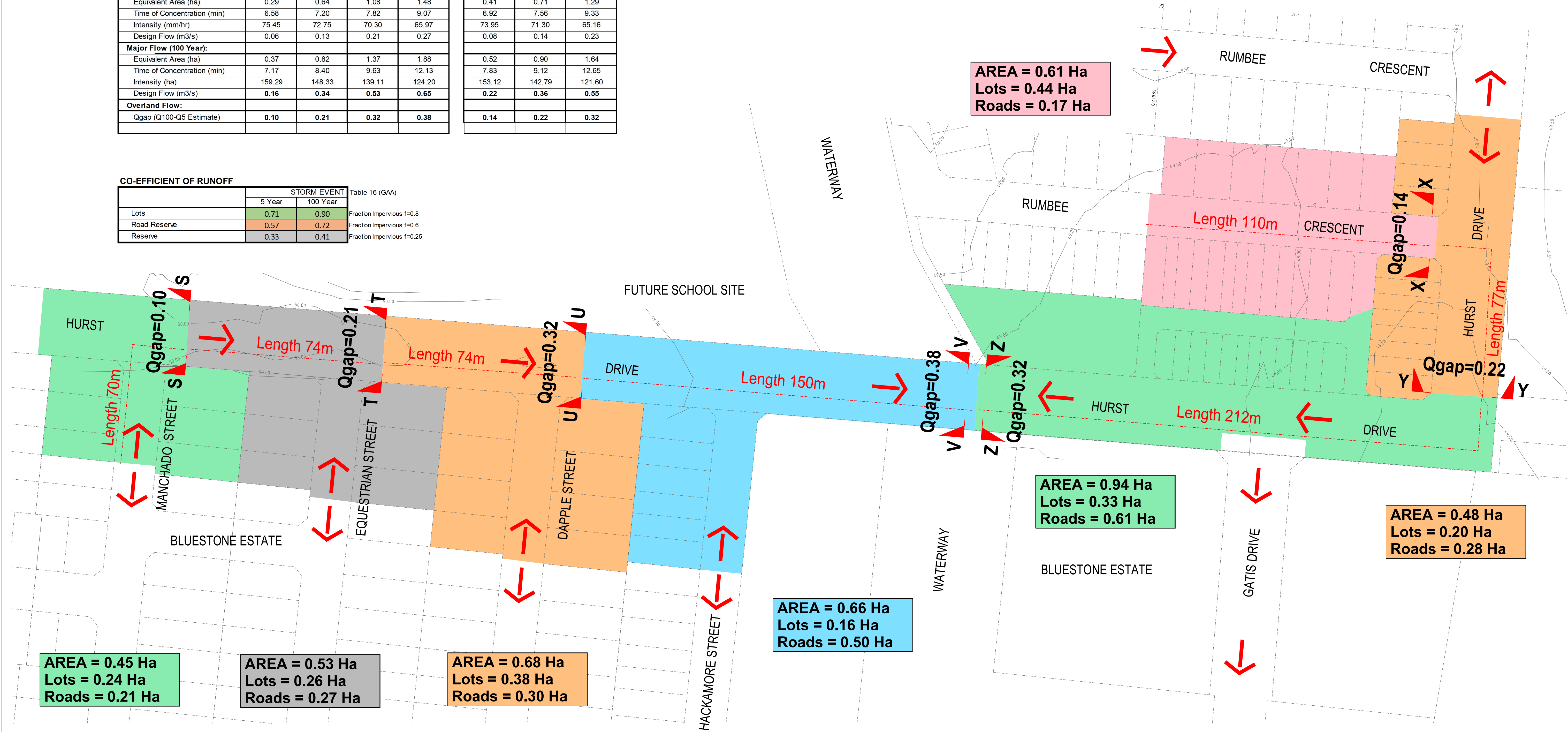
Time Pipe

	Flow Length (m)	Velocity (m/s)	Tinitia (min)	Tc (mins)
Section SS	70	2	6	6.58
Section TT	144	2	6	7.20
Section UU	218	2	6	7.82
Section VV	368	2	6	9.07
Section XX	110	2	6	6.92
Section YY	187	2	6	7.56
Section ZZ	399	2	6	9.33

Time Overland

	Flow Length (m)	Velocity (m/s)	Tinitia (min)	Tc (mins)
Section SS	70	1	6	7.17
Section TT	144	1	6	8.40
Section UU	218	1	6	9.63
Section VV	368	1	6	12.13
Section XX	110	1	6	7.83
Section YY	187	1	6	9.12
Section ZZ	399	1	6	12.65

CO-EFFICIENT OF RUNOFF			Table 16 (GAA)
	5 Year	100 Year	
Lots	0.71	0.90	Fraction Impervious f=0.8
Road Reserve	0.57	0.72	Fraction Impervious f=0.6
Reserve	0.33	0.41	Fraction Impervious f=0.25



B	COUNCIL COMMENTS ADDED	M.R	03/03/23
A	ISSUE TO COUNCIL	M.R	25/01/23
Rev	Amendments	Approved	Date

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Designed
R. WEINBER

Authorised
M. READMAN

Checked
R. WILSON

Date
10-01-2023

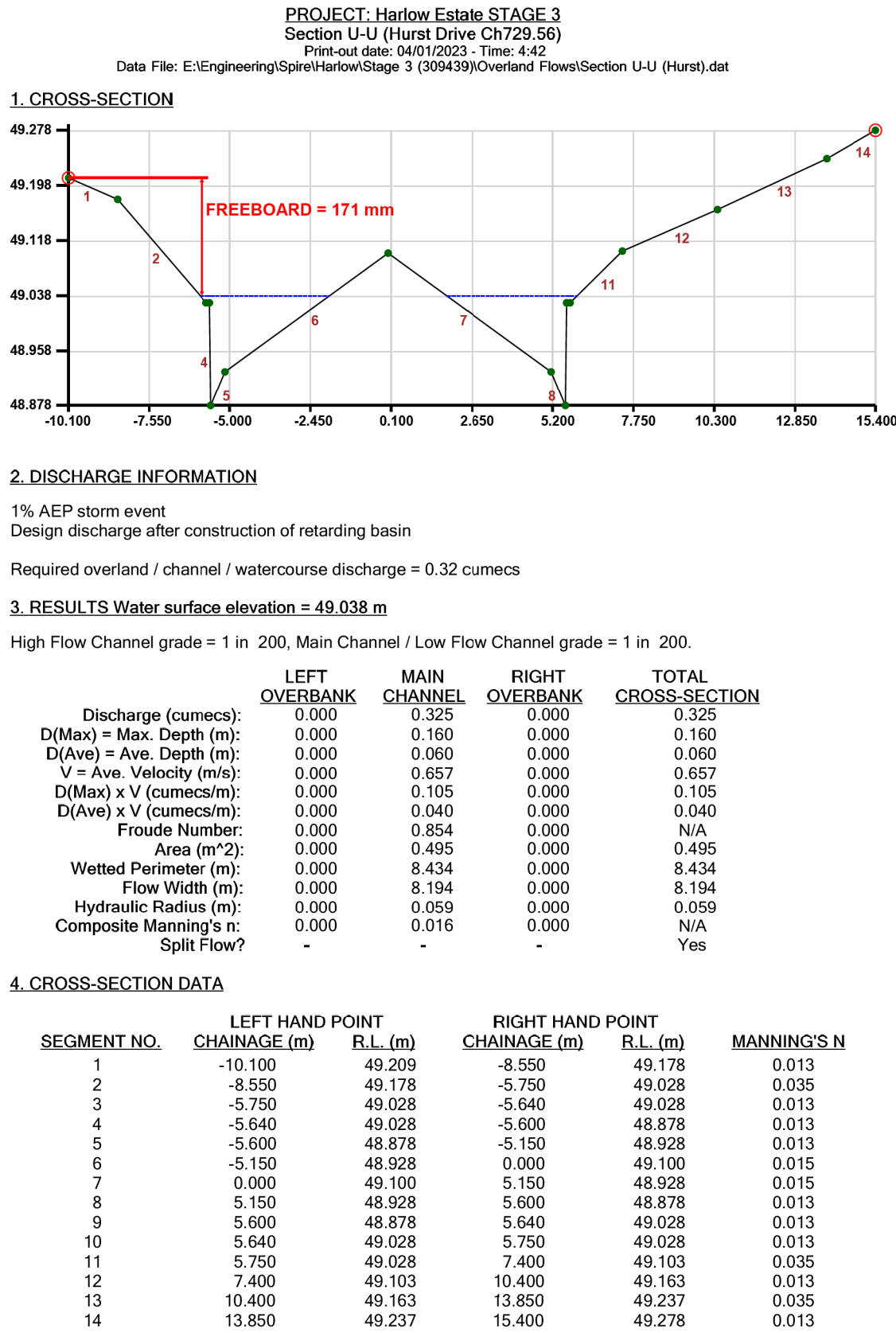
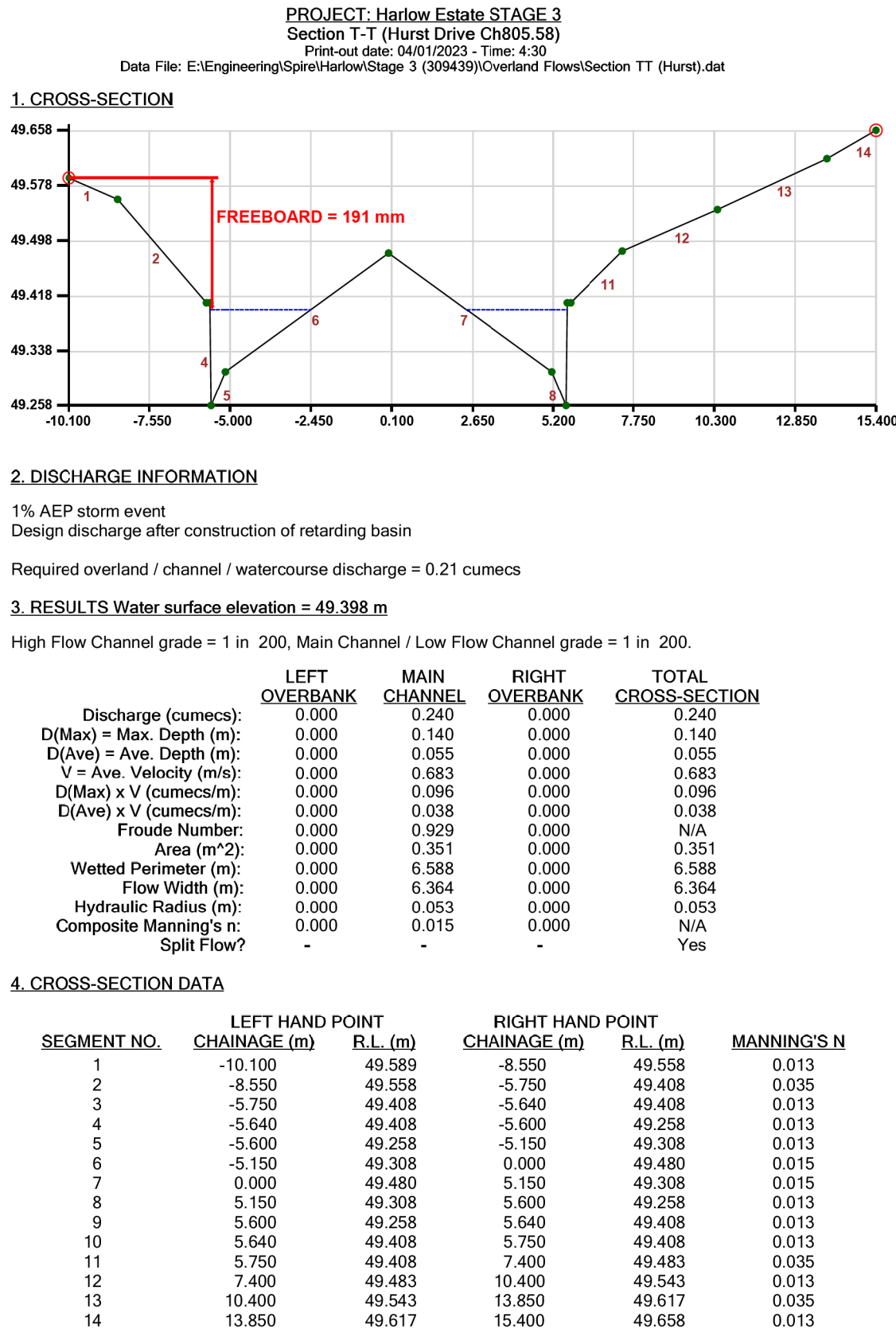
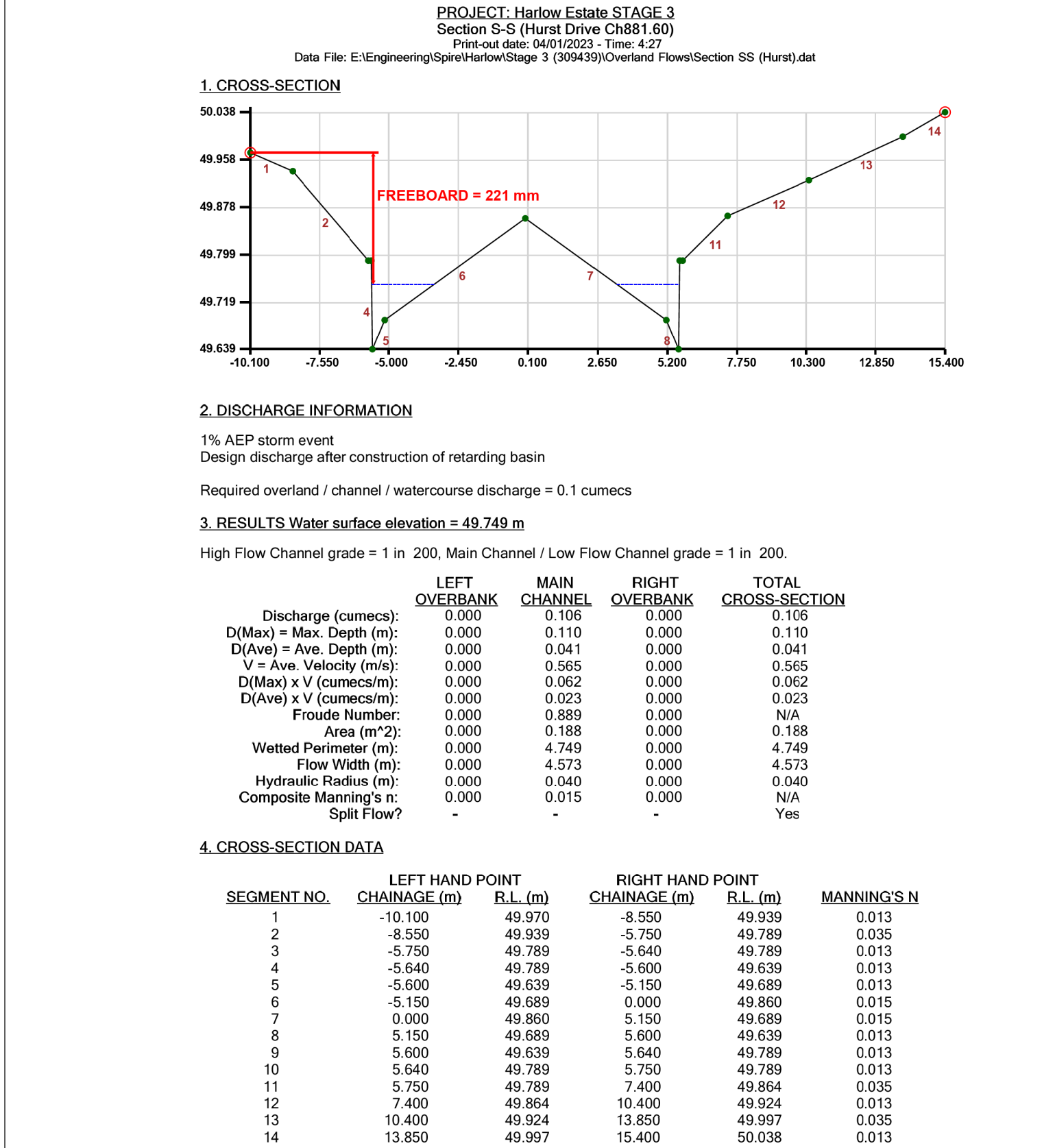
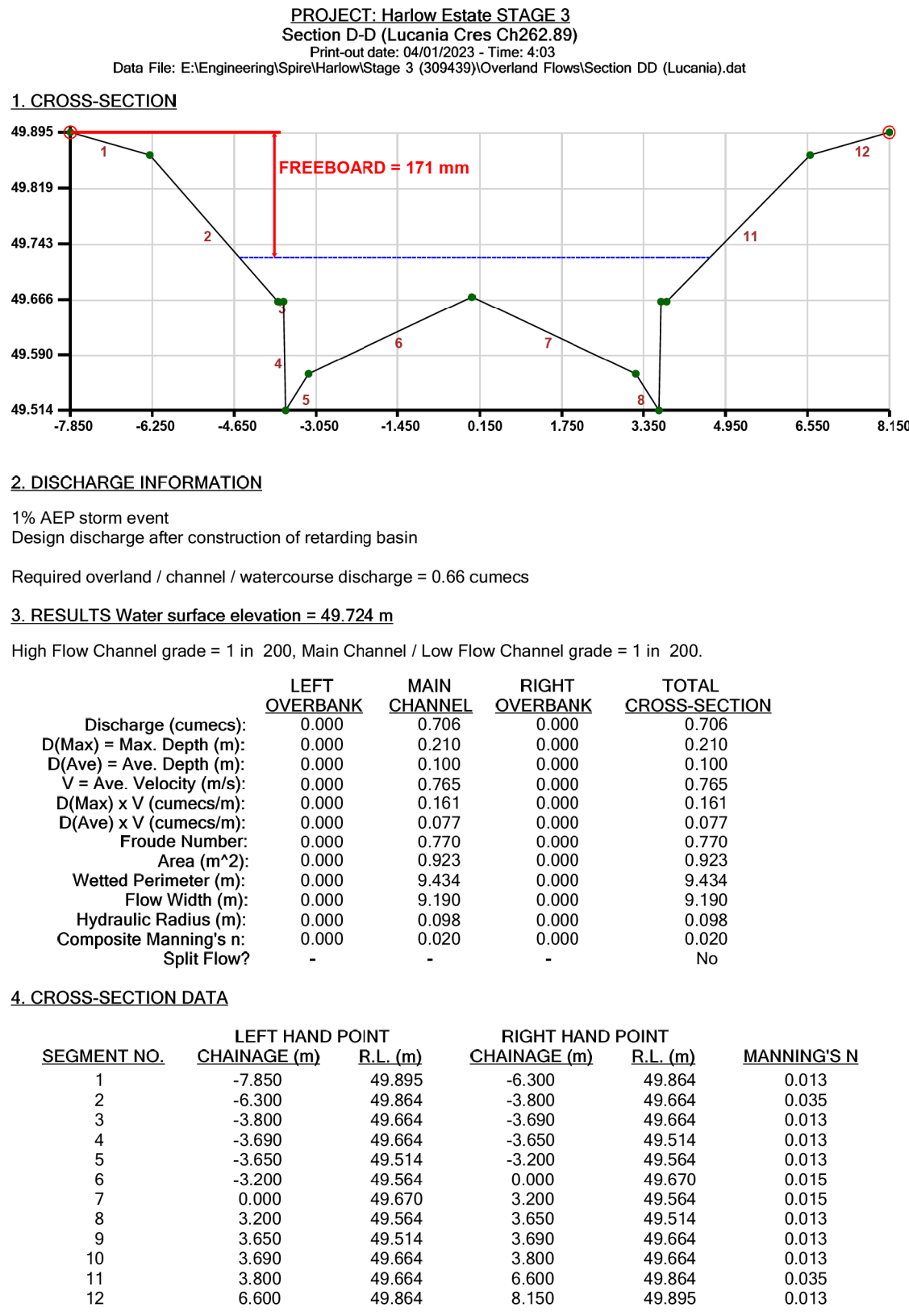
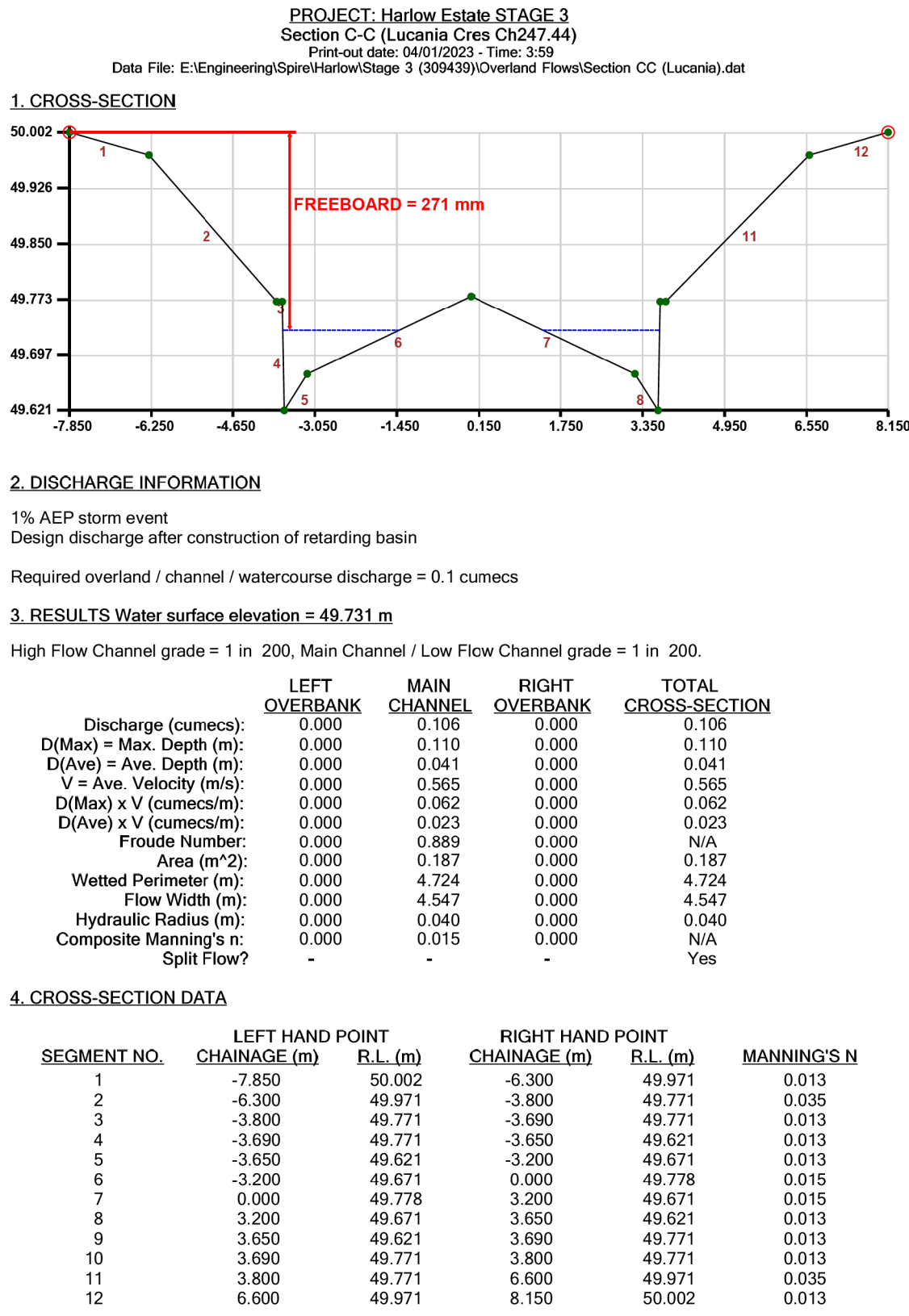
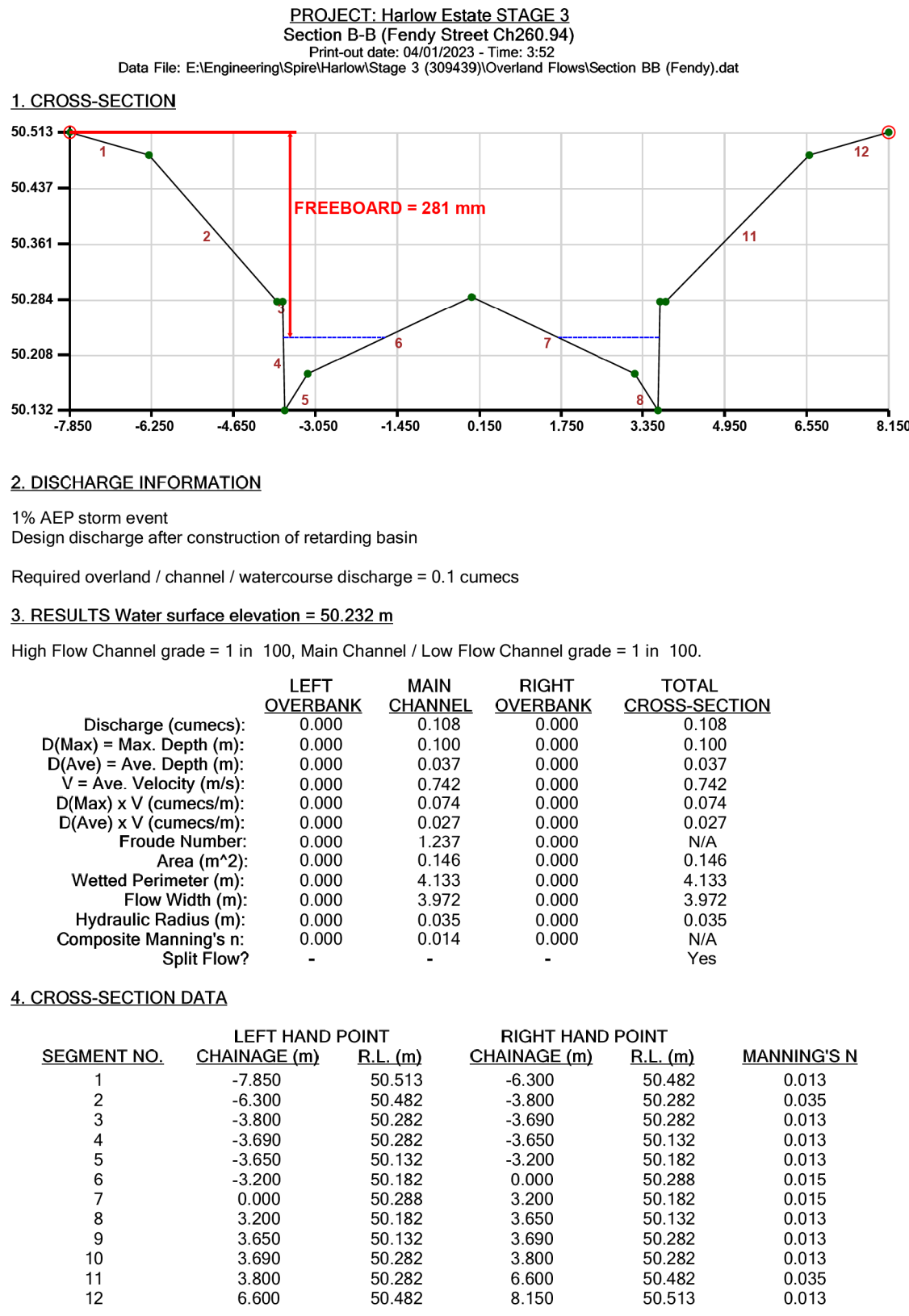
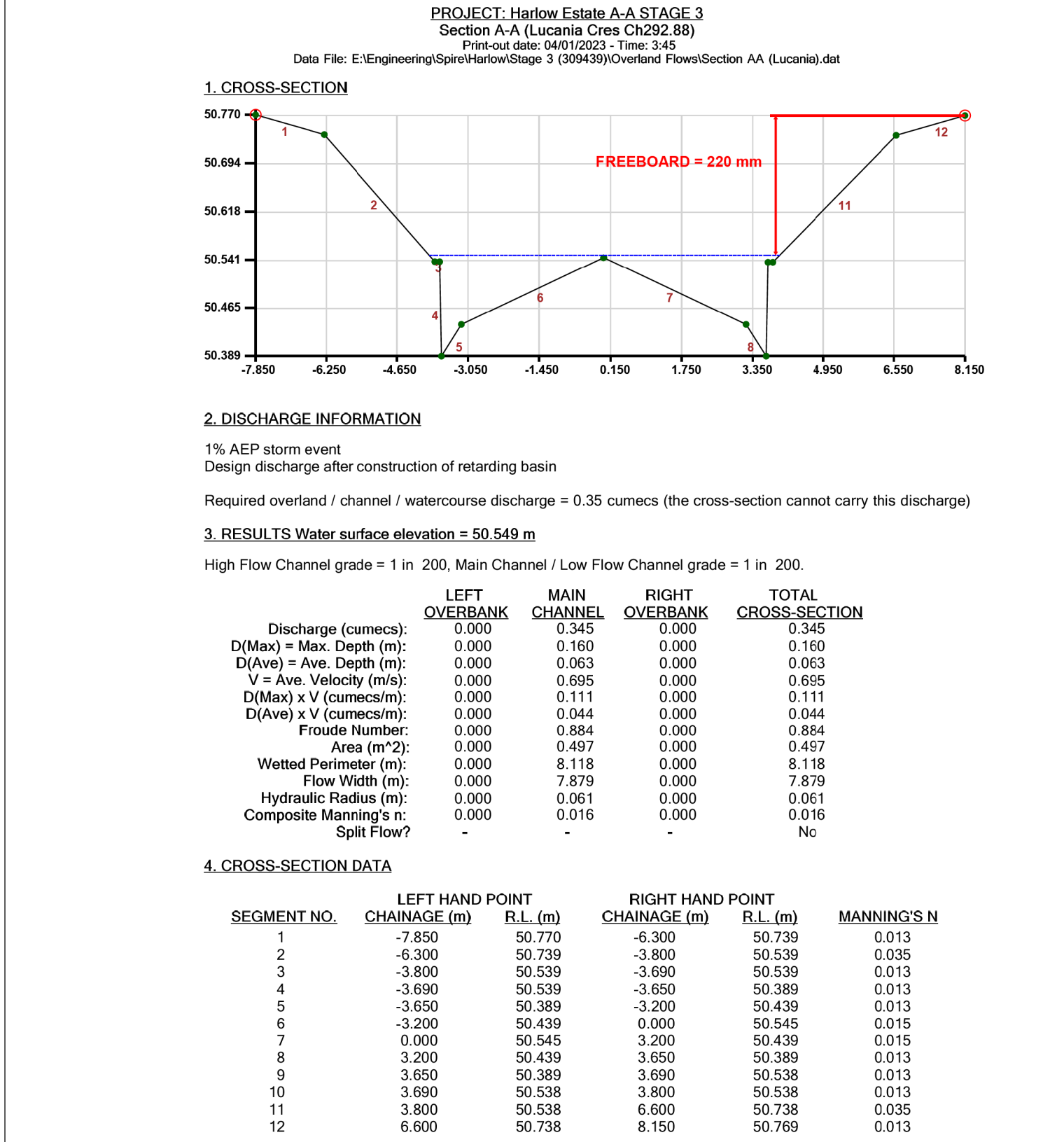
**HARLOW ESTATE
STAGE 3
Q100 OVERLAND FLOW PLAN**

SIG GROUP
WYNDHAM CITY COUNCIL

PRELIMINARY

Drg No
309439D04

Rev
B



B	COUNCIL COMMENTS ADDED	M.R	03/03/23
A	ISSUE TO COUNCIL	M.R	25/01/23
Rev	Amendments	Approved	Date



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TARNETT

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Date
10-01-2023

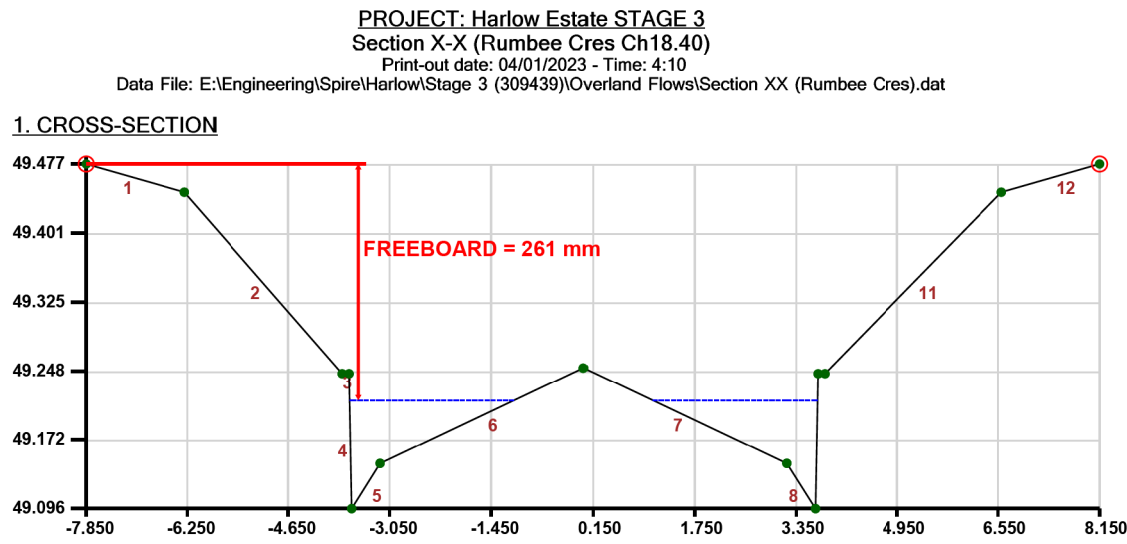
**HARLOW ESTATE
STAGE 3**
Q100 OVERLAND FLOW CROSS SECTIONS

**SIG GROUP
WYNDHAM CITY COUNCIL**

PRELIMINARY

Drg No
309439D06

Rev
B



2. DISCHARGE INFORMATION

1% AEP storm event
Design discharge after construction of retarding basin

Required overland / channel / watercourse discharge = 0.14 cumecs

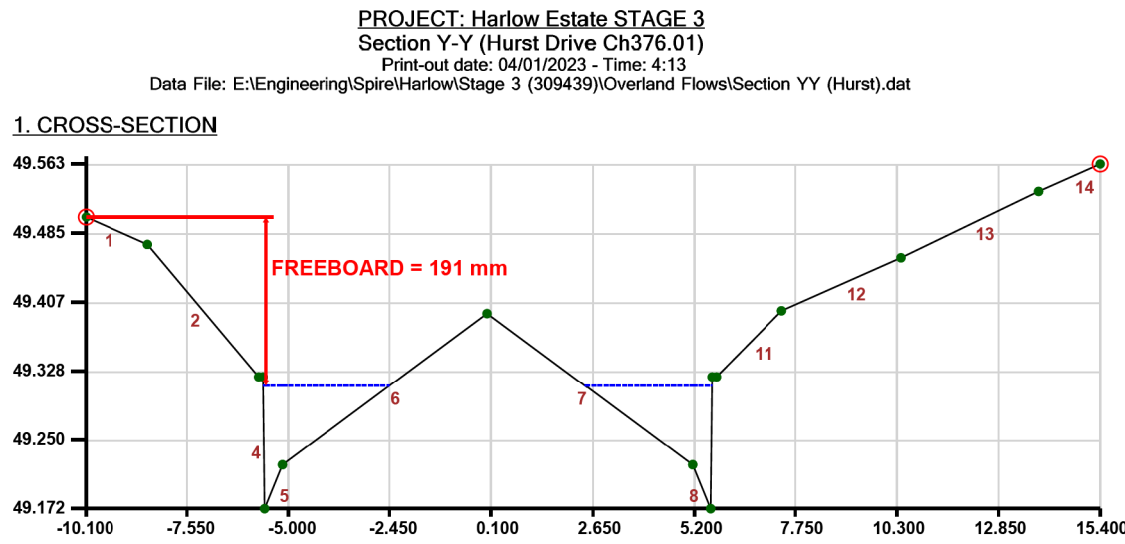
3. RESULTS Water surface elevation = 49.216 m

High Flow Channel grade = 1 in 200, Main Channel / Low Flow Channel grade = 1 in 200.

	LEFT OVERBANK	MAIN CHANNEL	RIGHT OVERBANK	TOTAL CROSS-SECTION
Discharge (cumecs):	0.000	0.143	0.000	0.143
D(Max) = Max. Depth (m):	0.000	0.120	0.000	0.120
D(Ave) = Ave. Depth (m):	0.000	0.046	0.000	0.046
V = Ave. Velocity (m/s):	0.000	0.605	0.000	0.605
D(Max) x V (cumecs/m):	0.000	0.073	0.000	0.073
D(Ave) x V (cumecs/m):	0.000	0.028	0.000	0.028
Froude Number:	0.000	0.903	0.000	N/A
Area (m²2):	0.000	0.237	0.000	0.237
Wetted Perimeter (m):	0.000	5.383	0.000	5.383
Flow Width (m):	0.000	5.190	0.000	5.190
Hydraulic Radius (m):	0.000	0.044	0.000	0.044
Composite Manning's n:	0.000	0.015	0.000	N/A
Split Flow?	-	-	-	Yes

4. CROSS-SECTION DATA

SEGMENT NO.	LEFT HAND POINT CHAINAGE (m)	R.L. (m)	RIGHT HAND POINT CHAINAGE (m)	R.L. (m)	MANNING'S N
1	-7.850	49.477	-6.300	49.446	0.013
2	-6.300	49.446	-3.800	49.246	0.035
3	-3.800	49.246	-3.690	49.246	0.013
4	-3.690	49.246	-3.650	49.096	0.013
5	-3.650	49.096	-3.200	49.146	0.013
6	-3.200	49.146	0.000	49.252	0.015
7	0.000	49.252	3.200	49.146	0.015
8	3.200	49.146	3.650	49.096	0.013
9	3.650	49.096	3.690	49.246	0.013
10	3.690	49.246	3.800	49.246	0.013
11	3.800	49.246	6.600	49.446	0.035
12	6.600	49.446	8.150	49.477	0.013



2. DISCHARGE INFORMATION

1% AEP storm event
Design discharge after construction of retarding basin

Required overland / channel / watercourse discharge = 0.22 cumecs

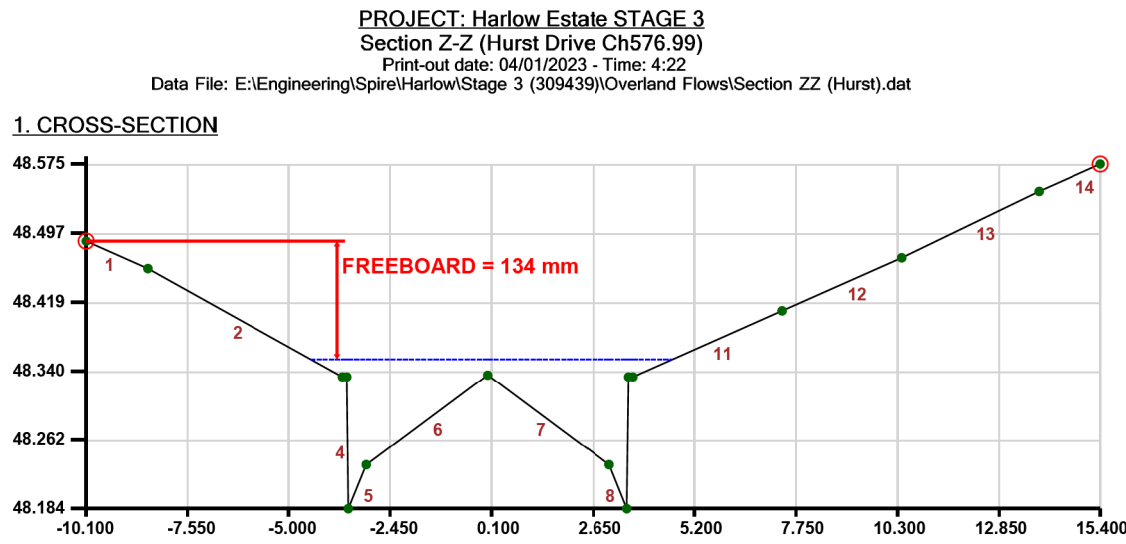
3. RESULTS Water surface elevation = 49.312 m

High Flow Channel grade = 1 in 200, Main Channel / Low Flow Channel grade = 1 in 200.

	LEFT OVERBANK	MAIN CHANNEL	RIGHT OVERBANK	TOTAL CROSS-SECTION
Discharge (cumecs):	0.000	0.240	0.000	0.240
D(Max) = Max. Depth (m):	0.000	0.140	0.000	0.140
D(Ave) = Ave. Depth (m):	0.000	0.055	0.000	0.055
V = Ave. Velocity (m/s):	0.000	0.683	0.000	0.683
D(Max) x V (cumecs/m):	0.000	0.096	0.000	0.096
D(Ave) x V (cumecs/m):	0.000	0.038	0.000	0.038
Froude Number:	0.000	0.929	0.000	N/A
Area (m²2):	0.000	0.351	0.000	0.351
Wetted Perimeter (m):	0.000	6.588	0.000	6.588
Flow Width (m):	0.000	6.384	0.000	6.384
Hydraulic Radius (m):	0.000	0.053	0.000	0.053
Composite Manning's n:	0.000	0.015	0.000	N/A
Split Flow?	-	-	-	Yes

4. CROSS-SECTION DATA

SEGMENT NO.	LEFT HAND POINT CHAINAGE (m)	R.L. (m)	RIGHT HAND POINT CHAINAGE (m)	R.L. (m)	MANNING'S N
1	-10.100	49.503	-8.550	49.472	0.013
2	-8.550	49.472	-5.750	49.322	0.035
3	-5.750	49.322	-5.640	49.322	0.013
4	-5.640	49.322	-5.600	49.172	0.013
5	-5.600	49.172	-5.150	49.222	0.013
6	-5.150	49.222	0.000	49.394	0.015
7	0.000	49.394	5.150	49.222	0.015
8	5.150	49.222	5.600	49.172	0.013
9	5.600	49.172	5.640	49.322	0.013
10	5.640	49.322	5.750	49.322	0.013
11	5.750	49.322	7.400	49.397	0.035
12	7.400	49.397	10.400	49.457	0.013
13	10.400	49.457	13.850	49.532	0.035
14	13.850	49.532	15.400	49.563	0.013



2. DISCHARGE INFORMATION

1% AEP storm event
Design discharge after construction of retarding basin

Required overland / channel / watercourse discharge = 0.32 cumecs (the cross-section cannot carry this discharge)

3. RESULTS Water surface elevation = 48.354 m

High Flow Channel grade = 1 in 200, Main Channel / Low Flow Channel grade = 1 in 200.

	LEFT OVERBANK	MAIN CHANNEL	RIGHT OVERBANK	TOTAL CROSS-SECTION
Discharge (cumecs):	0.000	0.319	0.000	0.319
D(Max) = Max. Depth (m):	0.000	0.170	0.000	0.170
D(Ave) = Ave. Depth (m):	0.000	0.064	0.000	0.064
V = Ave. Velocity (m/s):	0.000	0.549	0.000	0.549
D(Max) x V (cumecs/m):	0.000	0.093	0.000	0.093
D(Ave) x V (cumecs/m):	0.000	0.035	0.000	0.035
Froude Number:	0.000	0.694	0.000	0.694
Area (m²2):	0.000	0.581	0.000	0.581
Wetted Perimeter (m):	0.000	9.337	0.000	9.337
Flow Width (m):	0.000	9.097	0.000	9.097
Hydraulic Radius (m):	0.000	0.062	0.000	0.062
Composite Manning's n:	0.000	0.020	0.000	0.020
Split Flow?	-	-	-	No

4. CROSS-SECTION DATA

SEGMENT NO.	LEFT HAND POINT CHAINAGE (m)	R.L. (m)	RIGHT HAND POINT CHAINAGE (m)	R.L. (m)	MANNING'S N
1	-10.100	48.488	-8.550	48.457	0.013
2	-8.550	48.457	-3.650	48.334	0.035
3	-3.650	48.334	-3.540	48.334	0.013
4	-3.540	48.334	-3.500	48.184	0.013
5	-3.500	48.184	-3.050	48.234	0.013
6	-3.050	48.234	0.000	48.336	0.015
7	0.000	48.336	3.050	48.234	0.015
8	3.050	48.234	3.500	48.184	0.013
9	3.500	48.184	3.540	48.334	0.013
10	3.540	48.334	3.650	48.334	0.013
11	3.650	48.334	7.400	48.409	0.035
12	7.400	48.409	10.400	48.469	0.013
13	10.400	48.469	13.850	48.544	0.035
14	13.850	48.544	15.400	48.575	0.013