

RETAINING WALL RECONSTRUCTION

SOUTH ROAD SMITH'S

41-113-120



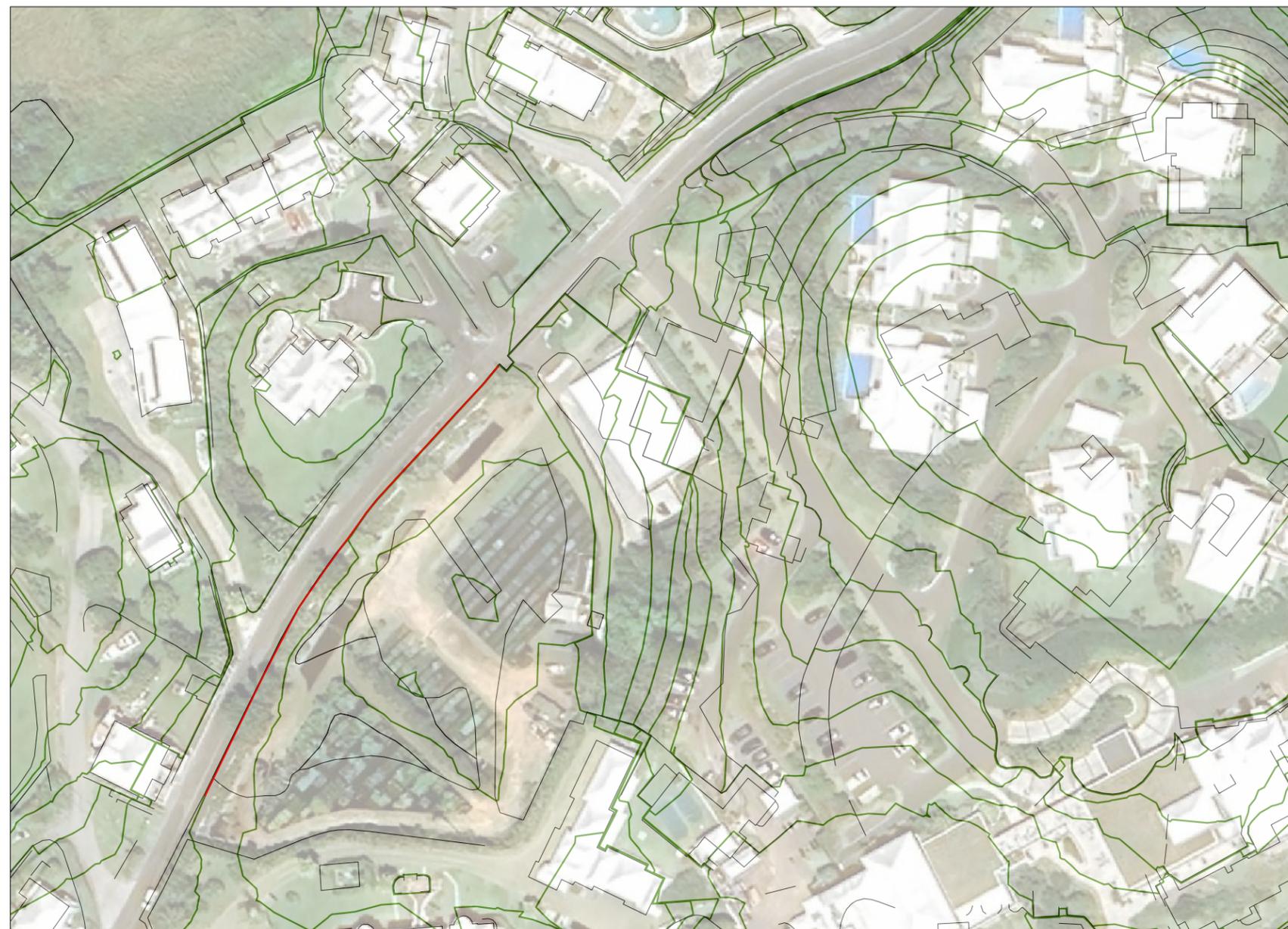
LOCATION
N.T.S.

THE MINISTRY OF
PUBLIC WORKS
P.O. Box HM525
Hamilton HMCX Bermuda
Phone: (441) 295-5151

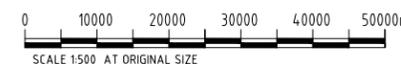
DEPARTMENT OF
WORKS AND ENGINEERING
Fax: (441) 295-5658

- GENERAL NOTES:
1. SURVEY GRID IS BNG2000
 2. LEVELS ARE IN METERS ABOVE ORDINANCE DATUM
 - 3.

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LOCALITY PLAN
1:500



ISSUED FOR: INFORMATION

AMENDMENTS:		
NO:	REVISION	DATE:
A	FOR INFORMATION	01/07/25

SCALE: AS SHOWN AT ANSI D

SURVEY	
PREPARED: -	DATE: -
DESIGN	
PREPARED: A.KENNY	DATE: 01/07/2025
CHECKED: -	DATE: -
DRAWING	
PREPARED: A.KENNY	DATE: 01/07/2025
CHECKED: -	DATE: -

APPROVED BY:
A.KENNY

PROJECT NUMBER:
41-113-120

PROJECT NAME:
**RETAINING WALL
RECONSTRUCTION**

SOUTH ROAD
SMITH'S-PARISH
SHEET TITLE:
**TITLE SHEET
AND LOCALITY PLAN**

SHEET NUMBER:
S001

REVISION
A

GENERAL

- ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION AND ANY OTHER WRITTEN INSTRUCTIONS ISSUED.
- WHERE APPROVAL IS REQUIRED, THIS SHALL BE OF THE SUPERINTENDENT OR HIS REPRESENTATIVE.
- ANY AMBIGUITY OR DISCREPANCY SHALL BE REFERRED FOR CLARIFICATION BEFORE WORK PROCEEDS.
- REFER TO THE DRAWING DIMENSIONS FOR SETTING OUT THE WORKS. HOWEVER, ALL EXISTING DIMENSIONS AND LEVELS ARE APPROXIMATE AND SHALL BE CONFIRMED BY THE CONTRACTOR ON SITE.
- DIMENSIONS ARE IN PRESENTED MILLIMETERS WITH EQUIVALENT FOOT/INCH VALUE SHOWN IN BRACKETS.
EXAMPLE: 1000mm [3'-3 3/8"]
- UNLESS NOTED OTHERWISE, ALL LEVELS ARE TO OD. SET OUT IS TO BNG 2000.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE STRUCTURE UNTIL ITS COMPLETION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVERSTRESSED DURING THE WORKS.
- WHERE STANDARDS ARE REFERRED TO, THEY SHALL BE THE LATEST EDITION.
- WHERE PROPRIETARY ITEMS ARE REQUIRED, THEY SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. WHERE NO SPECIFIC TYPE IS SPECIFIED, ANY SYSTEM SHALL BE APPROVED BEFORE USE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING WORK AREAS.
- ALL DEMOLITION SHALL BE IN AN ACCEPTABLE MANNER UNDER THE OCCUPATIONAL HEALTH AND SAFETY REGULATIONS 2009. ALL SURPLUS MATERIAL SHALL BE DISPOSED OF OFF SITE IN A LEGAL MANNER.

EXCAVATION AND EARTHWORKS

- FOUNDATIONS ARE TO BEAR ON UNDISTURBED AND SOUND GROUND/ROCK. BEARING MATERIAL IS TO REMAIN UNDISTURBED AND BE REVIEWED BY THE ENGINEER PRIOR TO POURING FOOTING.
- ALL SHORING, SHEETING AND DE-WATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR
- THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT ALL EXISTING AND SURROUNDING INFRASTRUCTURE
- ANY SOFT AREAS IN BEARING MATERIAL ARE TO BE REMOVED AND FILLED WITH MASS CONCRETE OF MINIMUM STRENGTH 25 MPa.
- A NOMINAL 50mm [2"] CONCRETE BLINDING LAYER TO BE POURED UNDER THE FULL EXTEND OF THE RETAINING WALL FOOTING.
- NO BACKFILLING UNTIL 7 DAYS AFTER LAST CONCRETE POUR
- BACKFILL MATERIAL SHALL BE FREE FROM ORGANIC MATTER, CONSTRUCTION DEBRIS AND LARGE ROCKS.
- BACKFILL MATERIAL SHALL BE WELL GRADED AND PLACED IN LAYERS NOT EXCEEDING 150mm [6"]
- BACKFILL MATERIAL TO BE COMPACTED EVERY 600mm [2']
- EXISTING VEGETATION ROOTS WITHIN THE EXTENTS OF THE NEW RETAINING WALL TO BE CUT/REMOVED AND TREATED WITH ROOT KILLER
- IF UNEXPECTED MECHANICAL, ELECTRICAL OR STRUCTURAL ELEMENTS ARE ENCOUNTERED, THE CONTRACTOR SHALL SUBMIT DETAILS OF SUCH TO THE ENGINEER.
- THE CONTRACTOR SHALL LOCATE AND IDENTIFY EXISTING UNDERGROUND UTILITIES WITHIN THE SITE EXTENTS. IF UTILITIES ARE TO REMAIN, THE CONTRACTOR SHALL ENSURE THAT THE UTILITIES ARE SUPPORTED AND PROTECTED THROUGHOUT THE WORKS.

CONCRETE

- CONCRETE SHALL COMPLY WITH THE FOLLOWING SPECIFICATION:
 - MINIMUM CONCRETE COVER TO REINFORCEMENT

FOOTINGS	
TOP	= 50mm.
BOTTOM	= 75mm
 - MINIMUM CONCRETE STRENGTH AT SERVICE F'c = 25 MPa
 - MINIMUM CEMENT CONTENT = 440 Kg/m³
 - MAXIMUM WATER/CEMENT RATIO = 0.4

- CONCRETE MIX DESIGNS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- NO ADDITIVES TO BE USED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- CAST IN ITEMS WITH LESS THAN 25mm COVER TO ATMOSPHERE SHALL BE HOT DIPPED GALVANISED IN ACCORDANCE WITH ASTM A153.
- ALL FORMWORK, SHORING AND RESHORING SHALL BE THE RESPONSIBILITY OF AND DESIGNED BY THE CONTRACTOR
- CONCRETE STRENGTH AND SLUMP TO BE AS FOLLOWS

MIN. SPECIFIED 28 DAY STRENGTH	SLUMP
25 MPa [3600PSI]	75mm ± 25mm [3" ± 1"]

REINFORCEMENT

- WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS. IF SHOWN/PERMITTED, WELDS SHALL DEVELOP THE FULL STRENGTH OF THE REINFORCING ELEMENT.
- ALL REINFORCING STEEL TO HAVE A MINIMUM YIELD STRENGTH OF 410 MPa AND SHALL BE TYPE 2 DEFORMED BARS
- ALL REINFORCING STEEL SHALL BE CLASS II GALVANISED IN ACCORDANCE WITH ASTM A767. TIE WIRE SHALL ALSO BE GALVANISED.
- REINFORCEMENT SPACING NOT SHOWN SHALL BE TAKEN AS EQUAL.
- REINFORCING CHAIRS ARE TO BE CONCRETE AND AS SMALL AS PRACTICABLE. PROPRIETARY PLASTIC COVER SUPPORTS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
- REINFORCING BARS SHOWN ON THESE DRAWINGS ARE DIAGRAMMATIC ONLY.
- BARS SHOWN MAY REPRESENT MORE THAN ONE LENGTH AND/OR PROFILE.
- BARS MAY NOT BE SHOWN IN TRUE POSITION FOR CLARITY. ALL HOOKS, BENDS AND COGS ARE STANDARD AND SHALL BE IN ACCORDANCE WITH ACI 318 UNLESS NOTED OTHERWISE.
- LAP SPLICES TO ALTERNATE AND NO MORE THAN 50% OF SPLICES SHALL BE IN ANY ONE SECTION.
- BARS SHALL NOT BE CUT NOR BENT ON SITE WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- BARS SHALL BE BENT COLD BY MACHINE OR OTHER APPROVED MEANS PRODUCING A GRADUAL AND EVEN MOTION. BARS INCORRECTLY BENT SHALL NOT BE RE-BENT AND INCORPORATED IN THE WORKS AND NO REINFORCEMENT SHALL BE BENT WHEN IN POSITION IN THE WORKS, WHETHER OR NOT IT IS PARTIALLY EMBEDDED IN HARDENED CONCRETE.
- CONTRACTOR TO PROVIDE 24 HOURS NOTICE FOR THE INSPECTION OF ALL REINFORCING PRIOR TO POURING CONCRETE.
- LAP LENGTHS SHALL BE AS TABULATED [SHOWN BELOW] UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

MINIMUM ALLOWABLE LAP LENGTHS	
BAR DIAMETER	MIN LAP LENGTH
T10	460mm [18"]
T12	600mm [24"]
T16	760mm [30"]
T20	900mm [36"]
T25	1500mm [60"]

ALTERNATIVE BAR SIZES		
METRIC BAR SIZE [mm]	IMPERIAL EQUIVALENT ["]	FORMER IMPERIAL DESIGNATION
T10	3/8"	#3
T12	1/2"	#4
T16	5/8"	#5
T20	3/4"	#6
T25	1"	#8

DESIGN

- THE DESIGN OF RETAINING WALLS AS SHOWN IN THIS PACKAGE OF DRAWINGS IS BASED ON THE FOLLOWING PARAMETERS:

<u>SAFETY FACTORS</u>	
OVERTURNING	> 2.0
SLIDING	> 1.5
[ACTIVE PRESSURE USED IN DESIGN]	
<u>RETAINED SOIL PROPERTIES</u>	
SATURATED DENSITY	= 23 kN/m ³
EFFECTIVE SHEAR RESISTANCE ANGLE	= 30°
SAFE ALLOWABLE BEARING PRESSURE	< 200 kN/m ²
<u>LOADING</u>	
GROUND SURCHARGE	= 10 kN/m ²
- TO MEET BS EN 1992-1-1:2004
- A HIGH WATER TABLE HAS NOT BEEN CONSIDERED WITHIN THE DESIGN
- THIS RETAINING WALL DRAWING PACKAGE SHOULD ONLY BE USED IF THE ABOVE CONDITIONS ARE CORRECT FOR THE PROPOSED PROJECT

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 - LEVELS ARE IN METERS ABOVE ORDINANCE DATUM
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<u>DESIGN</u>	
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CHECKED: -	DATE: -
<u>DRAWING</u>	
PREPARED: A.KENNY	DATE: 01/07/2025
CHECKED: -	DATE: -
APPROVED BY: A.KENNY	
PROJECT NUMBER: 41-113-120	

PROJECT NAME:
**SOUTH ROAD
RETAINING WALL
RECONSTRUCTION**

**ADDRESS
SMITH'S-PARISH**
SHEET TITLE:
GENERAL NOTES

SHEET NUMBER: S002	REVISION A
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- GENERAL NOTES:
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ABOVE ORDINANCE DATUM
3.



GENERAL ARRANGEMENT

1:200

VEGETATION NOTED TO BE REMOVED BY OTHERS
REPLACEMENT PLANTING BY OTHERS

ISSUED FOR: INFORMATION

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APPROVED BY: A.KENNY	

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41-113-120

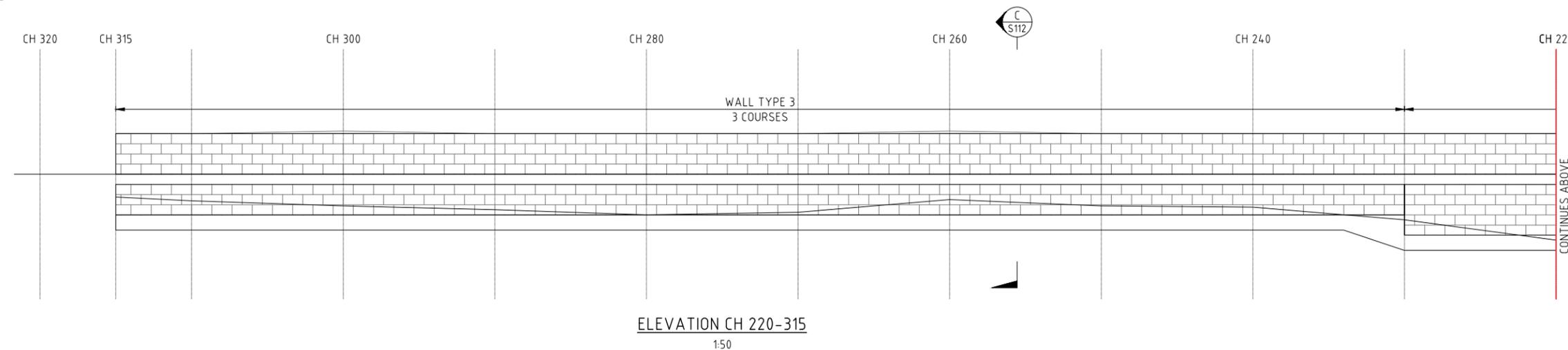
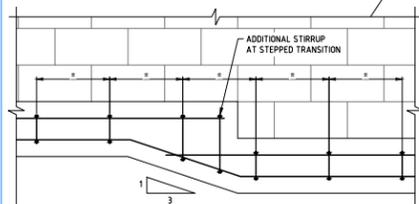
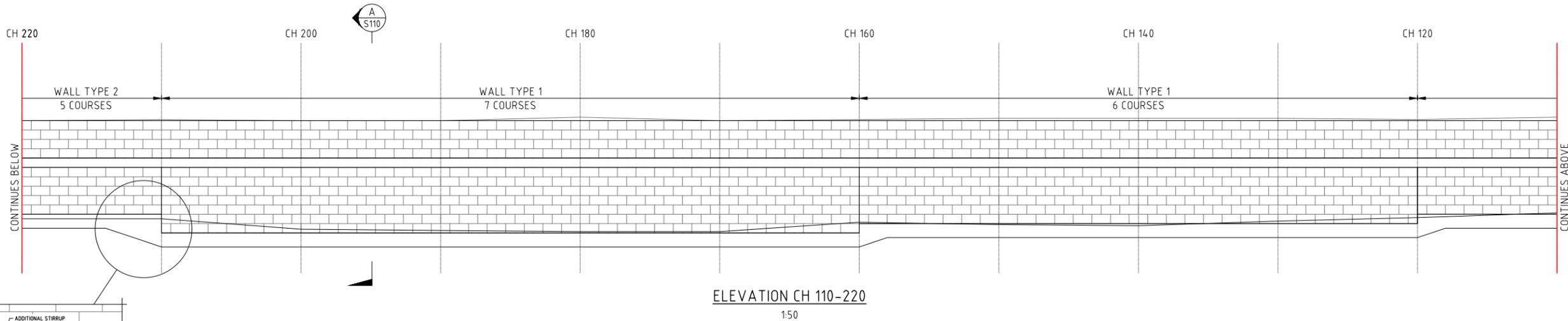
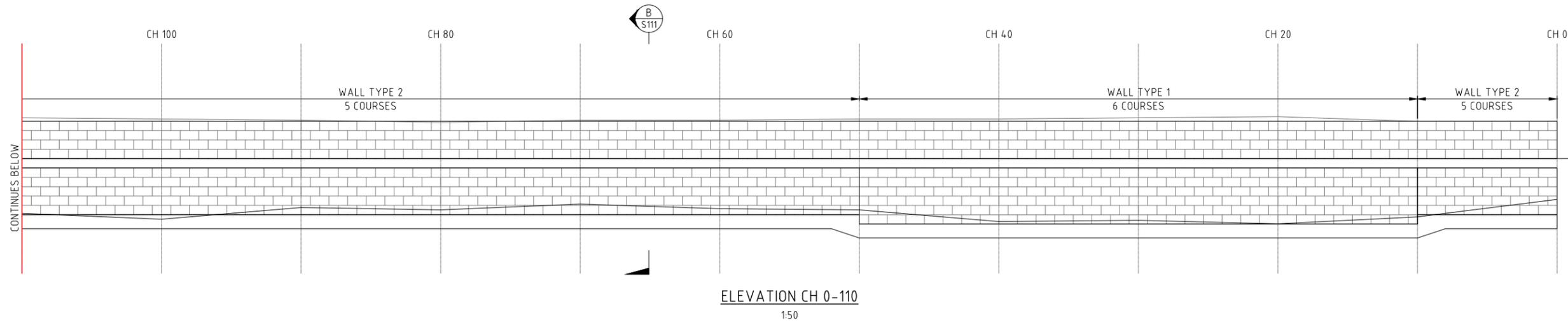
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**SOUTH ROAD
RETAINING WALL
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ADDRESS
SMITH'S-PARISH
SHEET TITLE:
GENERAL ARRANGEMENT



SHEET NUMBER: **S100** REVISION **A**

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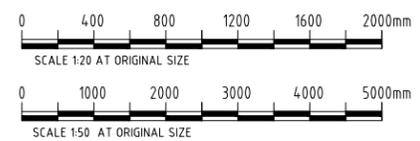
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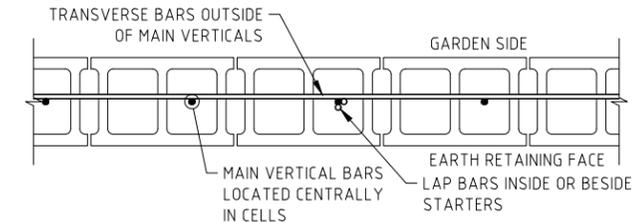
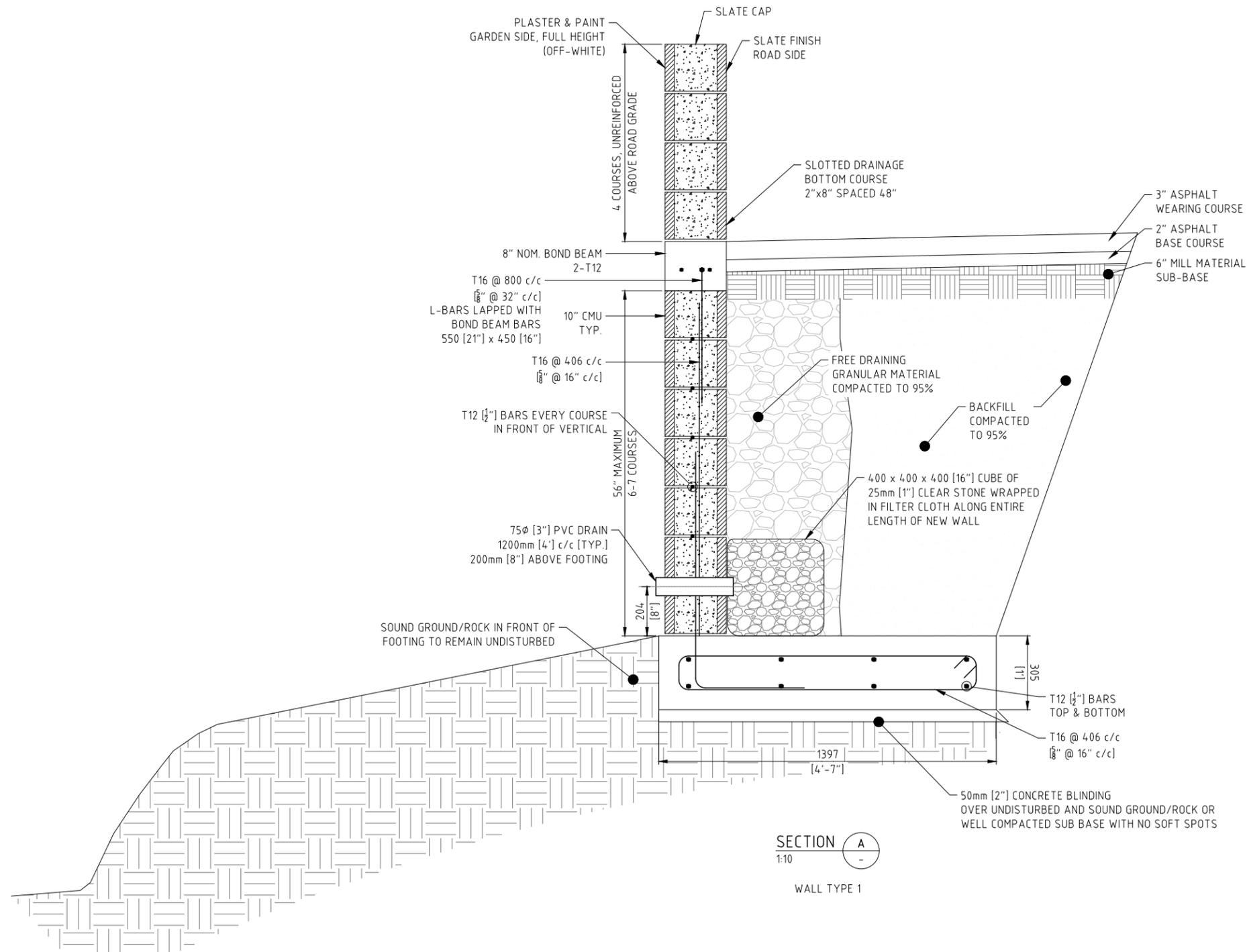
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**SOUTH ROAD
RETAINING WALL
RECONSTRUCTION**

ADDRESS:
SMITH'S-PARISH
SHEET TITLE:
ELEVATIONS



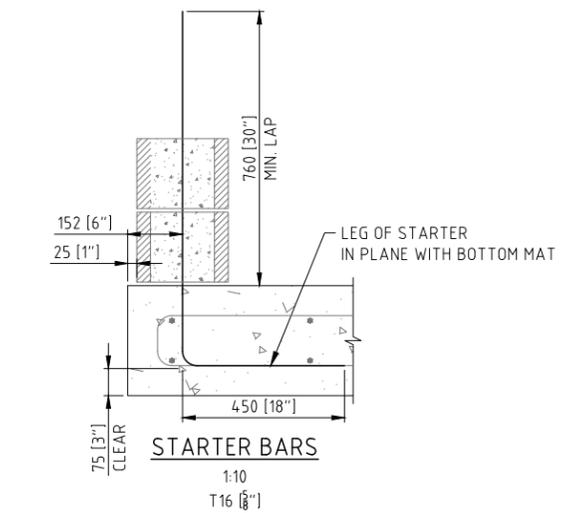
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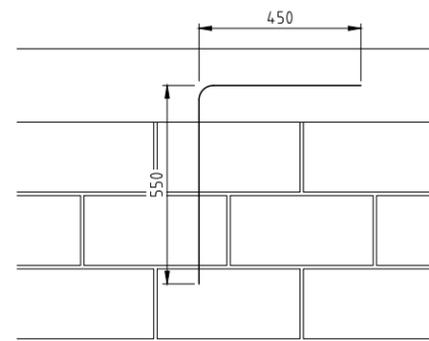
REBAR PLACEMENT

1:10
ALL CELLS FILLED



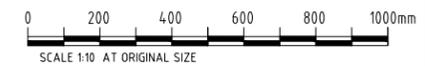
STARTER BARS

1:10
T16 [1/2"]



BOND BEAM HOOK

1:10



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SCALE: AS SHOWN AT ANSI D

SURVEY
PREPARED: - DATE: -

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PREPARED: A.KENNY DATE: 01/07/2025
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DRAWING
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APPROVED BY:
A.KENNY

PROJECT NUMBER:
41-113-120

PROJECT NAME:
**SOUTH ROAD
RETAINING WALL
RECONSTRUCTION**

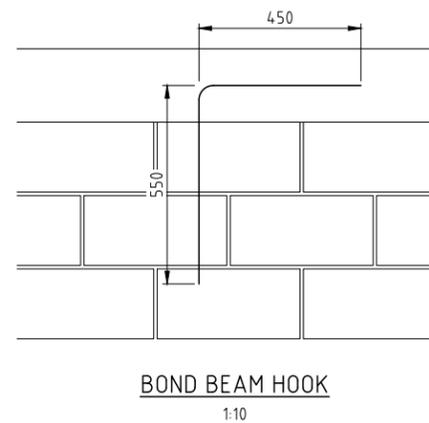
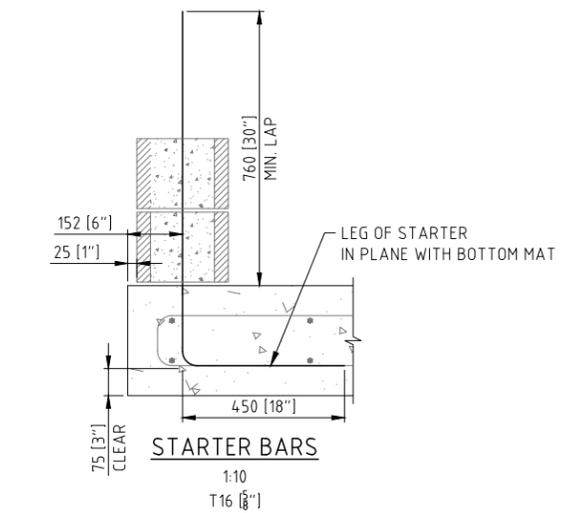
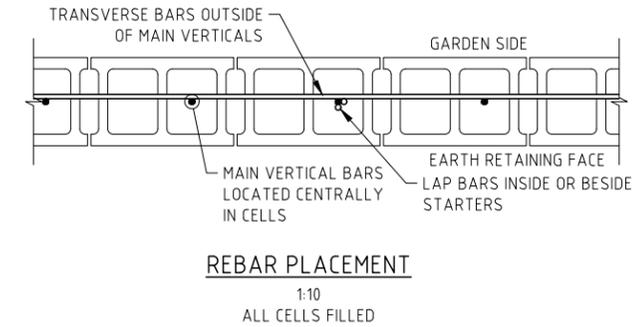
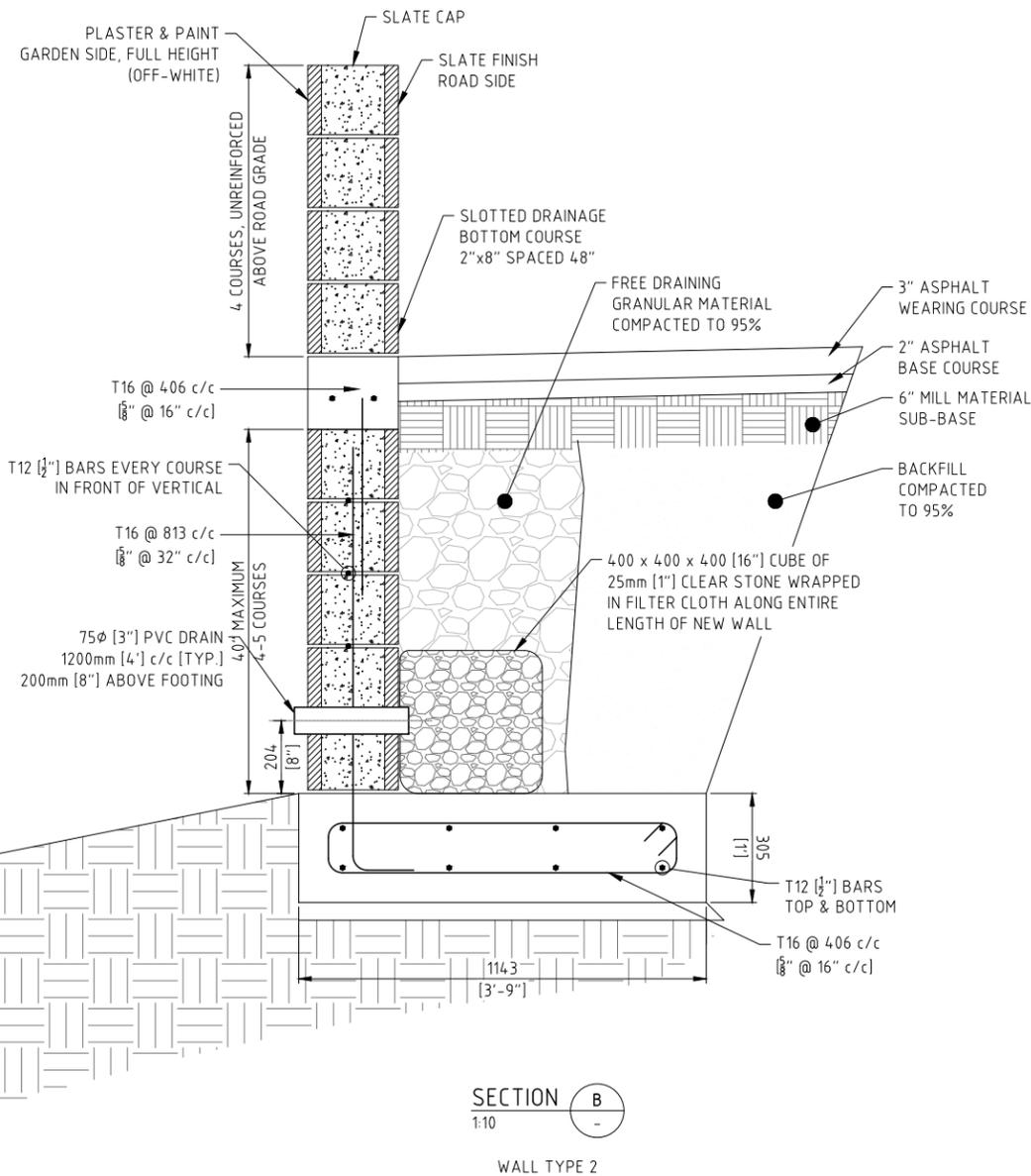
ADDRESS
SMITH'S-PARISH

SHEET TITLE:
WALL TYPE 1

SHEET NUMBER:
S110

REVISION
A

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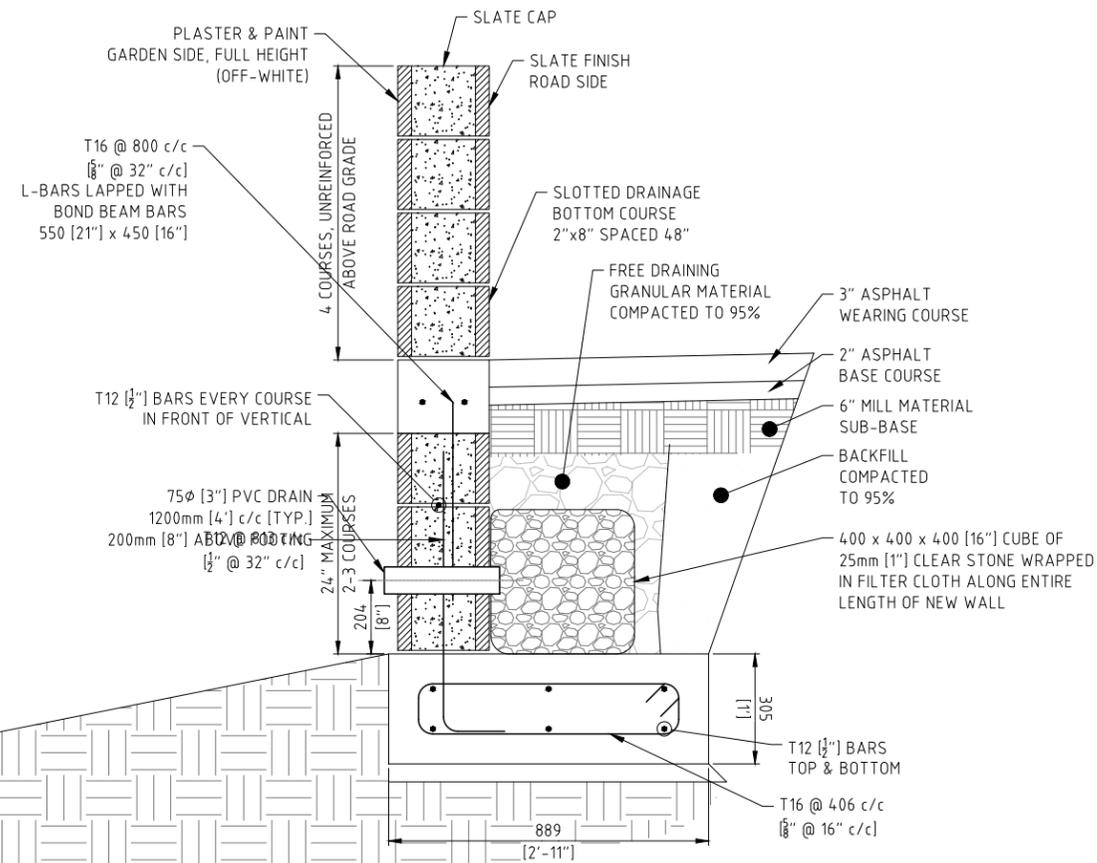
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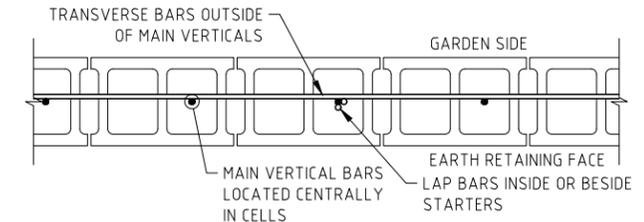
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41-113-120
PROJECT NAME:
**SOUTH ROAD
RETAINING WALL
RECONSTRUCTION**
ADDRESS:
SMITH'S-PARISH
SHEET TITLE:
WALL TYPE 2

SHEET NUMBER:	REVISION
S111	A

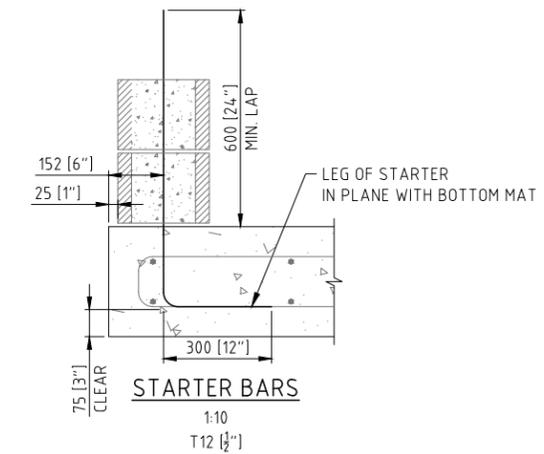
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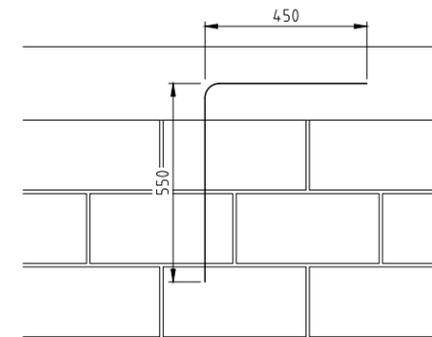
SECTION C
1:10
WALL TYPE 3



REBAR PLACEMENT
1:10
ALL CELLS FILLED



STARTER BARS
1:10
T12 1/2"



BOND BEAM HOOK
1:10



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WALL TYPE 3

SHEET NUMBER:	REVISION
S112	A