

|   |                       |          |
|---|-----------------------|----------|
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| 2 | 99% REVIEW            | 24/04/13 |
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| revisions | description                           | date |
|-----------|---------------------------------------|------|
| A         | A detail no. no. du detail            | A    |
| B         | B location drawing no. sur dessin no. | B    |
| C         | C drawing no. dessin no.              | C    |

project

CENTRAL EXPERIMENTAL FARM  
SITE SERVICE  
RECONSTRUCTION  
PHASE 5A

OTTAWA, ONTARIO

drawing

TYPICAL DETAILS

designed

date

drawn

date

reviewed

date

approved

date

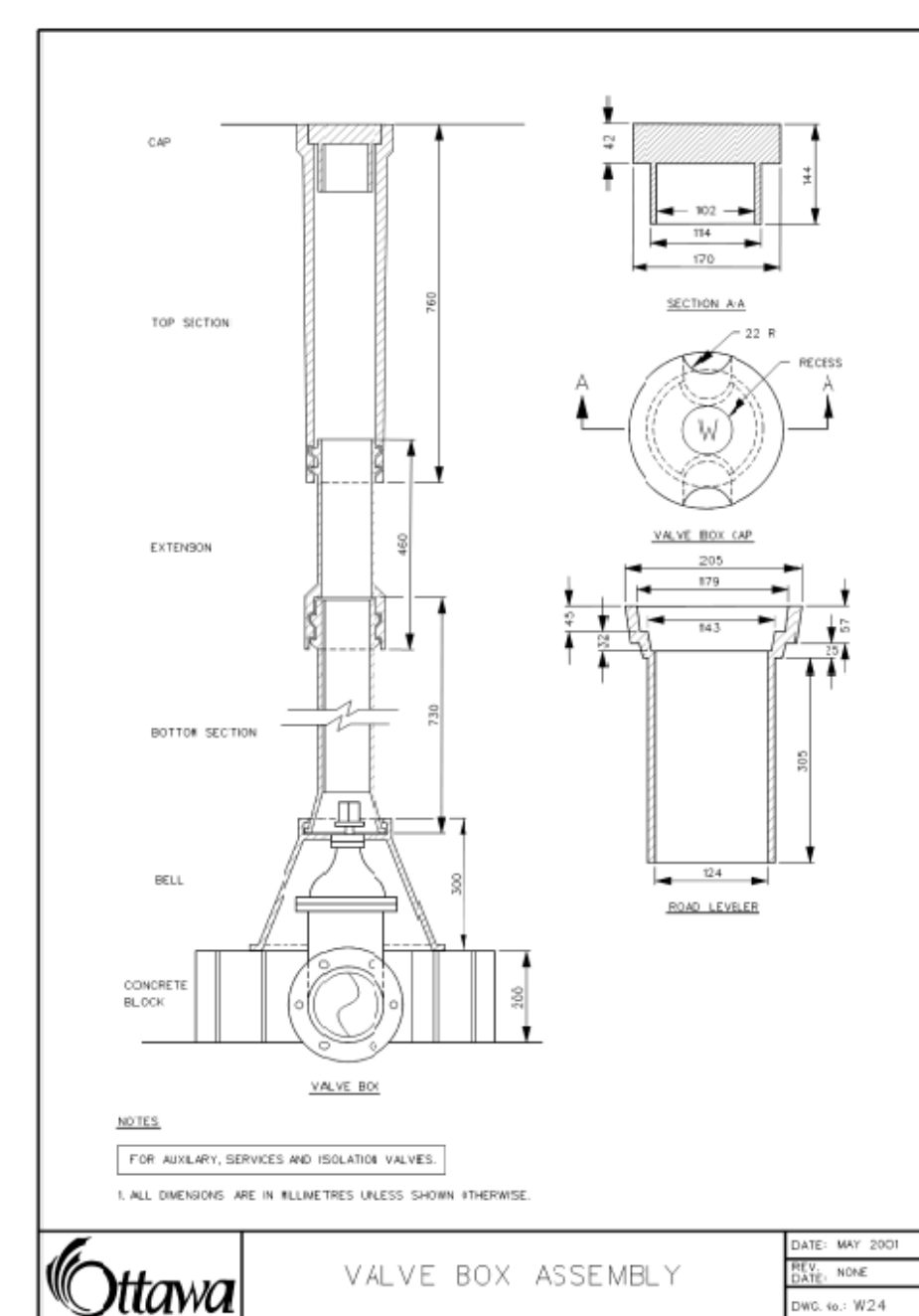
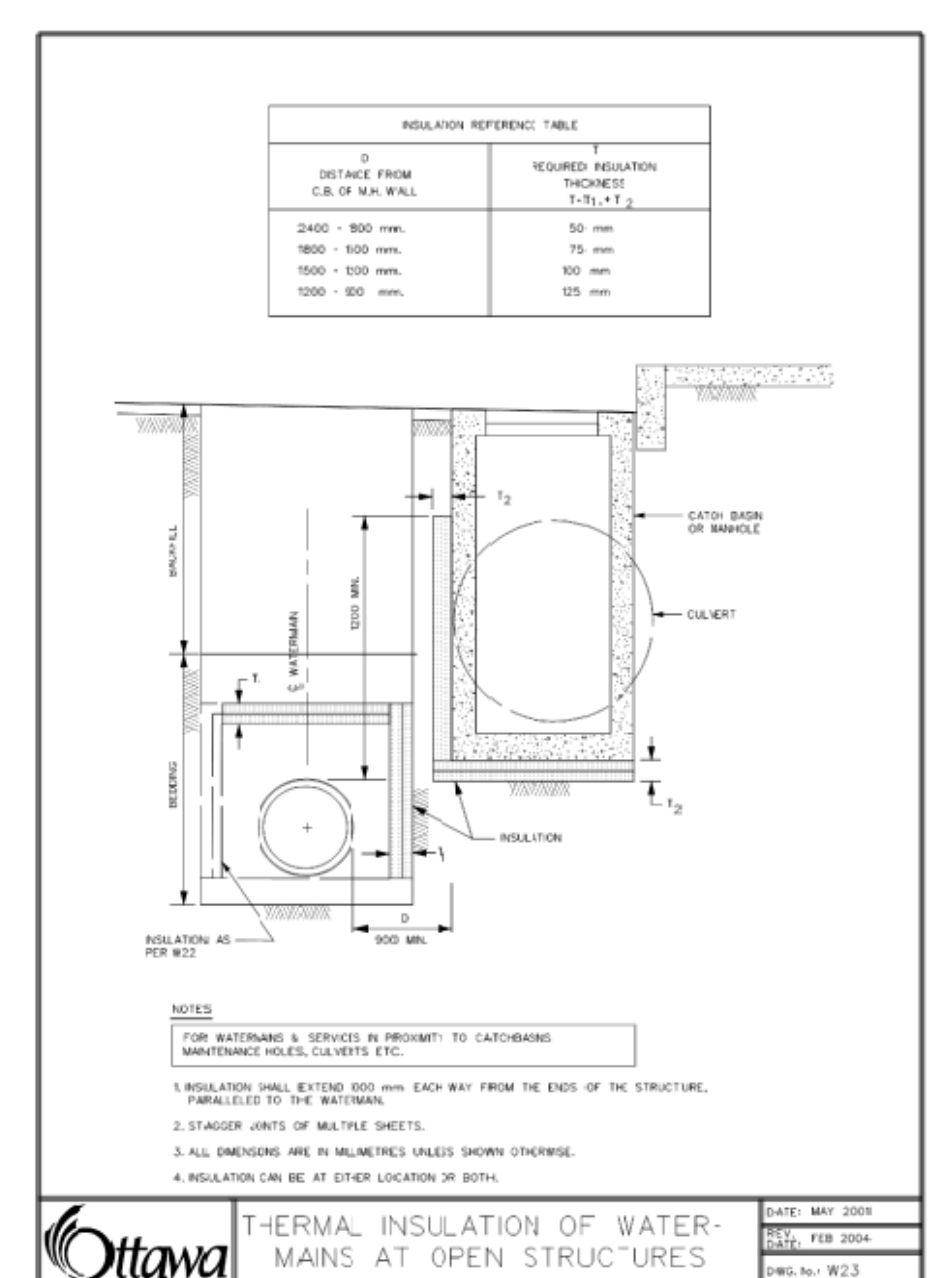
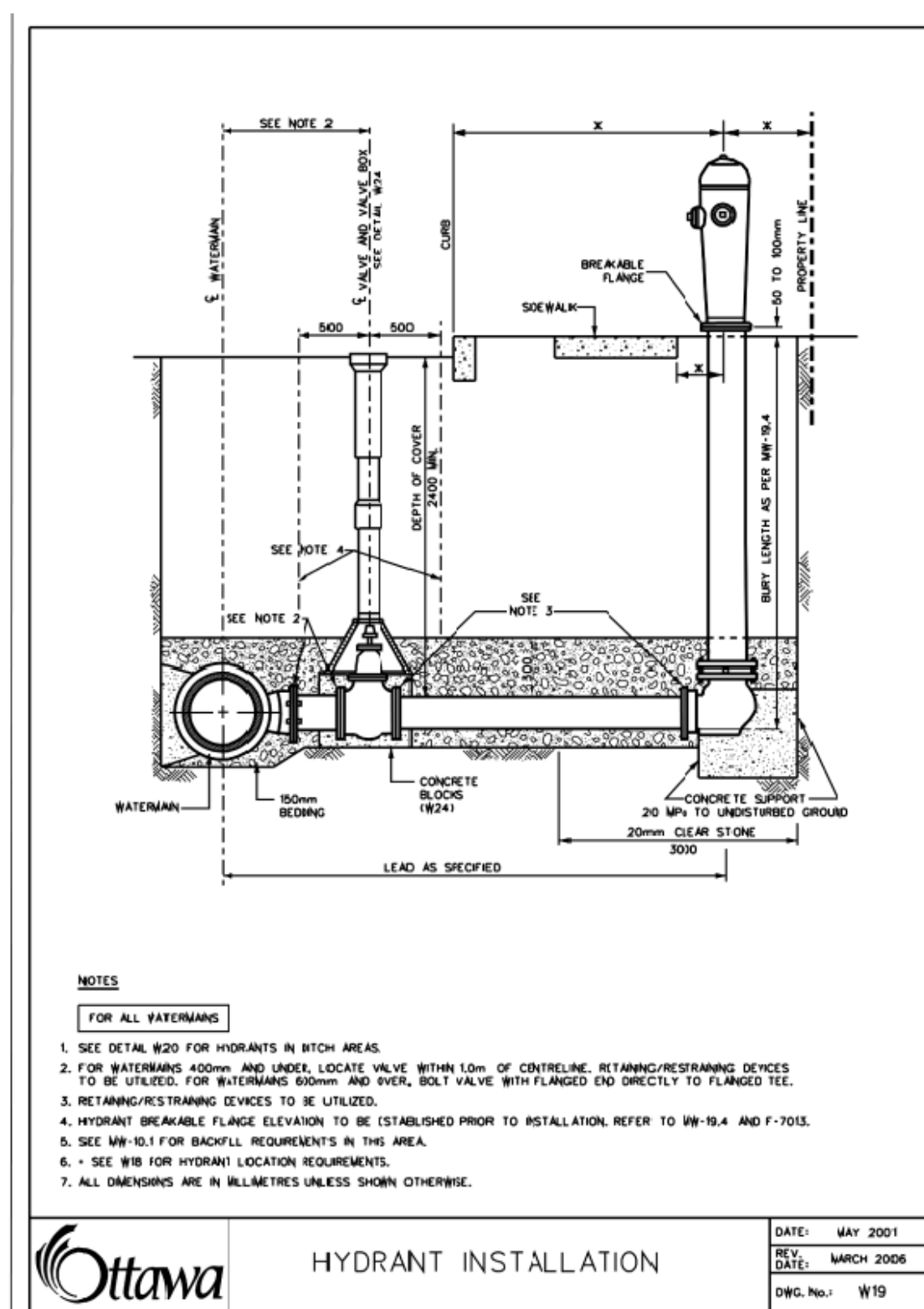
Tender

Project Manager

Project No.

drawing no.

C-19



**TABLES OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

**1. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**2. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**3. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**4. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**5. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**6. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**7. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**8. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**9. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**10. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**11. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**12. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**13. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**14. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**15. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**16. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**17. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**18. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**19. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**20. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**21. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**22. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**23. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**24. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**25. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**26. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**27. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**28. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**29. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**30. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**31. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**32. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**33. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**34. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**35. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**36. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**37. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**38. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**39. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**40. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**41. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**42. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**43. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**44. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**45. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**46. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**47. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**48. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**49. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**50. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**51. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**52. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**53. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**54. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**55. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**56. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**57. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**58. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**59. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**60. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**61. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**62. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**63. TABLE OF RESTRAINED LENGTHS FOR VALVE BOXES (CLAY CLAYS)**

| DIAMETER P.V. OR WATERMAIN | 300mm | 350mm | 400mm |
|----------------------------|-------|-------|-------|
| RESTRAINED LENGTH (mm)     | 1000  | 1200  | 1400  |

**64. TABLE OF RESTRAINED**