STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

Design: AASHTO LRFD Bridge Design Specifications, Fourth Edition, 2007 and Interim Specifications through 2009.

DESIGN LOADING

Strength I Case Live Load	HL - 93 Modified
All Other Cases	HL - 93

TRAFFIC DATA

Current (2009) AADT	15,910
Future (2029) AADT	19,090
DHV - % of AADT	10%
Design Hour Volume	1,909
% Heavy Trucks (AADT)	5%
% Heavy Trucks (DHV)	3%
Directional Distribution (DHV)	53%
18 kip Equivalent P 2.0	354
18 kip Equivalent P 2.5	337
Design Speed (mph)	25

HYDROLOGIC DATA

Not available

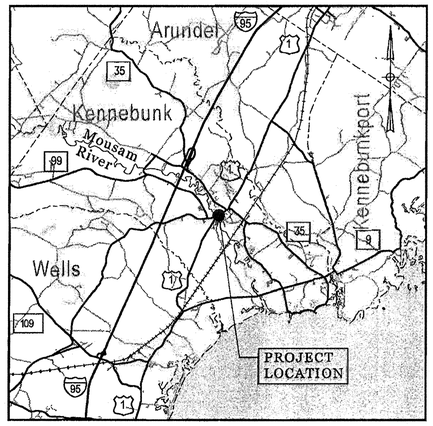
KENNEBUNK
YORK COUNTY
KENNEBUNK BRIDGE
OVER
MOUSAM RIVER

PIN 15098.00

PROJECT LENGTH 0.065 mi.

A BRIDGE REPLACEMENT, GRADING, DRAINAGE, BASE AND PAVEMENT PROJECT

BRIDGE NO. 2431



LOCATION MAP

2 0 2 4

Scale In Miles

MATERIALS

Concrete Fill	Class "S"
Concrete (Unless noted otherwise)	Class "A"
Concrete (Precast)	Class "P"
Concrete (Curbs, Sidewalks & Transition Barriers)	Class "LP"
Reinforcing Steel:	
Curbs, Sidewalks & Transition Barriers	Corrosion Resistant Reinforcing System
All Other	ASTM A615/A615M, Grade 60
Structural Steel:	
All Material (except as noted)	ASTM A709/A709M, Grade 50W
High Strength Bolts	ASTM A325, Type 3
Prestressing Strand	AASHTO 203 (ASTM A416) Grade 270 Low Relaxatioin

BASIC DESIGN STRESSES

Concrete:	
Class "S"	f'c = 2,900 psi
Class "A"	f 'c = 4,350 psi
Class "P"	f ' c = 6,500 psi
	f ' ci = 4,500 psi
Class "LP"	f 'c = 5,075 psi
Reinforcing Steel:	
Corrosion Resistant Reinforcing System	See Special Provision for Section 503
ASTM A615/A615M, Grade 60	f y = 60,000 psi
Structural Steel:	
ASTM A 709/A 709M, Grade 50W	F y = 50,000 psi
ASTM A 709/A 709M, Grade 36	F y = 36,000 psi
ASTM A 325	F μ = 120,000 psi
Prestressing Strand	F μ = 270,000 psi

UTILITIES

Kennebunk Light and Power	Town of Kennebunk
Fairpoint Communication	Time Warner Cable
Kennebunk Sewer District	Kennebunk Water District

MAINTENANCE OF TRAFFIC

Traffic will be maintained using a temporary two-lane bridge.

LIST OF DRAWINGS

The PE stamp on this sheet is for sheets developed by HNTB which exclude the Detour Plans (Sheets 44, 45) and Landscape Plans (Sheets 46-47) developed by MaineDOT.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE 8/11/10

COMMISSIONER: David Cole

CHIEF ENGINEER: Bruce A. Van Note 8/10/10

STATE OF MAINE — ROLAND A. MAILLET — No. 9452 — REGISTERED PROFESSIONAL ENGINEER

SIGNATURE

P.E. NUMBER 9452

DATE 8/2/10

15098.00

PROJECT INFORMATION	
PROGRAM	Bridge
PROJECT MANAGER	Kevin Cummings
DESIGNER	Don Ettinger
CONSULTANT	HNTB
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

TITLE SHEET

SHEET NUMBER 1

OF 48

ESTIMATED QUANTITIES

	ITEM NO	DESCRIPTION	QUANTITY	UNIT
		BRIDGE ITEMS - SECTION 1		
	201.23	REMOVING SINGLE TREE TOP ONLY	1	EA
	201.24	REMOVING STUMP	1	EA
	202.19	REMOVING EXISTING BRIDGE (2350 CY)	1	LS
	203.20	COMMON EXCAVATION	1250	CY
	203.20	COMMON EXCAVATION - SLUICEWAY REMOVAL	2200	CY
x	203.2312	HEALTH AND SAFETY PLAN	1	LS
x	203.24	COMMON BORROW	10	CY
	203.24	COMMON BORROW - SLUICEWAY REMOVAL	500	CY
	203.25	GRANULAR BORROW	1610	CY
x	203.25	GRANULAR BORROW - SLUICEWAY REMOVAL	300	CY
x	206.061	STRUCTURAL EARTH EXCAVATION - DRAINAGE MINOR STRUCTURES BELOW GRADE	10	CY
	206.07	STRUCTURAL ROCK EXCAVATION - DRAINAGE AND MINOR STRUCTURES	10	CY
	206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES, PLAN QUANTITY	1900	CY
	206.092	STRUCTURAL ROCK EXCAVATION - MAJOR STRUCTURES	75	CY
	304.10	AGGREGATE SUBBASE COURSE-GRAVEL	940	CY
	403.207	HOT MIX ASPHALT, 19.0MM NOMINAL MAXIMUM SIZE	210	TON
	403.209	HOT MIX ASPHALT, 9.5MM NOMINAL MAXIMUM SIZE (SIDEWALKS, DRIVES, ISLANDS, AND INCIDENTALS)	50	TON
	403.210	HOT MIX ASPHALT, 9.5MM NOMINAL MAXIMUM SIZE	295	TON
	403.213	HOT MIX ASPHALT, 12.5MM NOMINAL MAXIMUM SIZE, BASE	140	TON
	409.15	BITUMINOUS TACK COAT, APPLIED	106	GAL
	502.21	STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	865	CY
	502.261	STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLAB ON CONCRETE BRIDGES (175 CY)	1	LS
	502.31	STRUCTURAL CONCRETE APPROACH SLAB (35 CY)	1	LS
	502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS (50 CY)	1	LS
	502.56	CONCRETE FILL	260	CY
	503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	64800	LB
	503.13	REINFORCING STEEL, PLACING	64800	LB
	503.30	CORROSION RESISTANT REINFORCING SYSTEM, FABRICATED AND DELIVERED	850	LB
	503.31	CORROSION RESISTANT REINFORCING SYSTEM, PLACING	850	LB
	508.14	HIGH PERFORMANCE WATERPROOFING MEMBRANCE (517 SY)	1	LS
	510.12	SPECIAL DETOUR 28 FOOT ROADWAY WIDTH VEHICULAR AND PEDESTRIAN SEPARATED	1	LS
	511.07	COFFERDAM (ABUTMENT NO. 1)	1	LS
	511.07	COFFERDAM (ABUTMENT NO. 2)	1	LS
	511.07	COFFERDAM (SLUICEWAY REMOVAL)	1	LS
	511.08	COFFERDAM SPECIAL: TEMPORARY EARTH SUPPORT STRUCTURE (LAFAYETTE BUILDING)	1	LS
	511.08	COFFERDAM SPECIAL: TEMPORARY EARTH SUPPORT STRUCTURE (MOUSAM RIVER IMPOUNDMENT)	1	LS
	511.08	COFFERDAM SPECIAL: TEMPORARY EARTH SUPPORT STRUCTURE (RELOCATED ELEC. VAULT)	1	LS
	512.081	FRENCH DRAINS (215 LF)	1	LS
	514.06	CURING BOX FOR CONCRETE CYLINDERS	1	EA
	515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (515 SY)	1	LS
	523.52	BEARING INSTALLATION	14	EA
	523.5401	LAMINATED ELASTOMERIC BEARINGS, FIXED	7	EA
	523.5402	LAMINATED ELASTOMERIC BEARINGS, EXPANSION	7	EA
	525.61	EXISTING GRANITE WALL REPAIR	1	LS
	526.301	TEMPORARY CONCRETE BARRIER TYPE I (110 LF)	1	LS
	526.323	TEXAS CLASSIC RAIL (295 LF)	1	LS
	527.303	ENERGY ABSORBING SYSTEM (ET-PLUS)	1	EA
	535.61	PRESTRESSED STRUCTURAL CONCRETE I-GIRDERS (651 LF)	1	LS
	603.175	18" RCP CLASS III	22	LF
	603.179	18" CULVERT PIPE OPTION III	104	LF
	604.072	CATCH BASIN TYPE A1-C	6.4	EA
	604.15	MANHOLE	1	EA
	604.16	ALTERING CATCH BASIN TO MANHOLE	1	EA
	604.18	ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	2	EA
	604.23	STEP	11	EA
	605.13	18 INCH UNDERDRAIN TYPE C	80	LF
	606.1721	BRIDGE TRANSITION - TYPE 1	1	EA
	606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	2	EA
	607.25	REMOVE AND RESET CHAIN LINK FENCE	24	LF
	607.421	SCREENING FENCE	110	LF
	608.253	MASONRY PAVER WITH TRUNCATED DOME	76	SF
	609.11	VERTICAL CURB TYPE 1	375	LF
	609.12	VERTICAL CURB TYPE 1 - CIRCULAR	2	LF
	609.13	VERTICAL BRIDGE CURB TYPE 1	195	LF
	609.237	TERMINAL CURB TYPE 1 - 7 FOOT	11	EA
	610.08	PLAIN RIPRAP	29	CY
	615.07	LOAM	20	CY
	618.1301	SEEDING METHOD NUMBER 1 - PLAN QUANTITY	3.5	UN
	618.15	TEMPORARY SEEDING	0.5	LB
	619.1201	MULCH - PLAN QUANTITY	4.5	UN
	620.58	EROSION CONTROL GEOTEXTILE	12	SY
x	621.043	EVERGREEN TREE 6'-8' B&B GROUP A	12	EA
x	621.053	EVERGREEN TREE 10'-12' B&B GROUP B	1	EA
x	621.101	STARTER GROUNDCOVER PLUGS 2 1/4" PEAT POTS/PLUGS GROUP B	600	EA
x	621.121	SMALL DECIDUOUS TREES 5'-6' MULTISTEM GROUP B B&B	3	EA
x	621.273	MEDIUM DECIDUOUS TREES 2"-2 1/2" CAL B&B GROUP B	8	EA
x	621.281	MEDIUM DECIDUOUS TREES 2 1/2"" - 3"" CAL B&B GROUP C	6	EA
x	621.409	DWARF EVERGREENS 30"-36" GROUP C	18	EA
x	621.499	BROADLEAF EVERGREENS 30"-36"	24	EA
x	621.540	DECIDUOUS FLOWERING SHRUB 18" - 24" GROUP C CONT.	12	EA
x	621.541	DECIDUOUS FLOWERING SHRUB 18" - 24" GROUP C CONT.	42	EA
x	621.546	DECIDUOUS FLOWERING SHRUB 2" - 3" GROUP A CONT.	12	EA
x	621.553	DECIDUOUS FLOWERING SHRUB GROUP 3' - 4' SHRUB FORM CONT.	9	EA
x	621.710	HERBACEOUS PERENNIALS GROUP A 1 GAL CONT.	124	EA
x	621.80	ESTABLISHMENT PERIOD	1	LS

ESTIMATED QUANTITIES

	ITEM NO	DESCRIPTION	QUANTITY	UNIT
	626.11	PRECAST CONCRETE JUNCTION BOX	10	EA
	626.21	METALLIC CONDUIT (2")	85	LF
	626.22	NON-METALLIC CONDUIT (3" &4")	950	LF
	626.31	18" FOUNDATION	8	EA
	627.733	4" WHITE OR YELLOW PAVEMENT MARKING LINE	1300	LF
	627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	970	SF
	627.76	TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW	1	LS
	627.77	REMOVING EXISTING PAVEMENT MARKINGS	470	SF
x	629.05	HAND LABOR, STRAIGHT TIME	80	HR
x	631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	40	HR
x	631.11	AIR TOOL (INCLUDING OPERATOR)	40	HR
x	631.12	ALL-PURPOSE EXCAVATOR (INCLUDING OPERATOR)	80	HR
x	631.13	BULLDOZER (INCLUDING OPERATOR)	10	HR
x	631.172	TRUCK-LARGE (INCLUDING OPERATOR)	40	HR
x	631.18	CHAIN SAW RENTAL (INCLUDING OPERATOR)	20	HR
x	631.32	CULVERT CLEANER (INCLUDING OPERATOR)	10	HR
	634.16	HIGHWAY LIGHTING	1	LS
	637.071	DUST CONTROL	1	LS
	639.18	FIELD OFFICE TYPE A	1	EA
	642.183	GRANITE STEPS	1	LS
	643.711	TEMPORARY TRAFFIC SIGNAL MODIFICATION: ROUTE 1/WATER STREET	1	LS
	652.30	FLASHING ARROW BOARD	2	EA
	652.312	TYPE III BARRICADE	20	EA
	652.33	DRUMS	50	EA
	652.34	CONES	50	EA
	652.35	CONSTRUCTION SIGNS	1050	SF
	652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	427	CD
	652.38	FLAGGERS	1600	HR
	652.41	PORTABLE CHANGEABLE MESSAGE SIGN	2	EA
	656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	1	LS
	659.10	MOBILIZATION	1	LS
	841.48	BOLLARDS	9	EA
		TOWN ITEMS - SECTION 2		
	608.15	BRICK SIDEWALK WITH BITUMINOUS BASE	390	SF
		FAIRPOINT ITEMS - SECTION 3		
	806.671	FIBERGLASS CONDUIT SYSTEM - 4" DIA.	2200	LF
	890.01	SPECIAL WORK #1 - TELEPHONE SYSTEM	1	LS
		KENNEBUNK LIGHT & POWER ITEMS - SECTION 4		
	890.021	SPECIAL WORK #2 - KENNEBUNK LIGHT AND POWER CONDUIT SYSTEM	1	LS

x UNDETERMINED LOCATIONS

GENERAL NOTES (Sluiceway Demolition)

1. An abandoned sluiceway is located west of Abutment 1. The sluiceway, believed to be 14 feet wide by 6 feet deep based on historical documents, is oriented roughly perpendicular to the roadway alignment with the centerline at approximately Station 14+40. The bottom of the sluiceway is believed to be between 17 and 20 feet below existing ground surface. The actual depth and lateral extent of the sluiceway excavation will be determined by the Geotechnical Engineer during removal.

2. For bid purposes, the sluiceway removal limits should be assumed to be from Sta.14+33 to Sta 14+47, 25'Lt to 31' Rt, and from the ground surface to a depth of 20 feet.

3. Temporary excavation support systems and additional excavation are anticipated to be required to achieve removal within the assumed limits.

4. Removal of abandoned sluiceway shall include sluiceway structural elements (wood, metal or other), nearby undocumented abandoned piping, debris and fill materials within the excavation area.

5. Excavation work shall be conducted under the observation of the Geotechnical Engineer. Sluiceway remnants, fill and other materials within the removal limits shall be removed to expose naturally deposited soil or rock as determined by the Geotechnical Engineer. Excavated material shall become the property of the Contractor.

6. Backfill for the excavation shall consist of Maine DOT 703.19 Granular Borrow for Underwater Backfill below elevation 35. Estimated quantities for required common excavation for removal of the abandoned sluiceway are informational only and represent the approximate minimum quantity required to remove sluiceway and replace with common and granular borrow. Additional excavation for the Contractor's convenience or to comply with backsloping requirements will not be paid for directly, but will be considered incidental to the related excavation. Additional excavation beyond the limits described above, if directed by the Geotechnical Engineer or Resident based on observations made during the Work, will be paid for in accordance with Section 109.7 - Equitable Adjustments to Compensation.

7. See next sheet for additional General Notes.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN
15098.00

HIGHWAY PLANS

SIGNATURE

P.E. NUMBER

DATE

		DATE
BY	MPC	07\10
-	-	07\10

PROJ. MANAGER DSE
DESIGN-DETAILED RWH
CHECKED-REVIEWED DSE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

ESTIMATED QUANTITIES AND GENERAL NOTES

SHEET NUMBER

2

OF 48

Filename: 003_gennotes.dgn Division: HIGHWAY Username: rhanf Date:8/3/2010

GENERAL NOTES

1. For easements, construction limits, and right-of-way lines, refer to Right of Way Plans.

2. Protective coating for concrete surfaces shall be applied to the following areas:
   All exposed surfaces of concrete barrier, curbs and sidewalk.
   Fascias down to the drip notch.
   All exposed surfaces of concrete transition barrier.
   Concrete wearing surfaces.

3. Quantities included for pay items measured and paid for by lump sum are estimated quantities and are provided by mainedot for informational purposes only. Lump sum pay items will be paid for at the contract bid amount, with no addition or reduction in payment to the contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:
   A. If a lump sum pay item is eliminated, the requirements of Standard Specification Section 109.2 elimination of items, will take presedence.

   B. If other contract documents specifically allow a change in payment for a lump sum pay item, those requirements will be followed.

   C. If a design change results in changes to estimated quantities for lump sum pay items, price adjustments will be made in accordance with Standard Specification 109.7 Equitable Adjustments to Compensation.

4. The Contractor shall submit an Erection Plan stamped by a professional engineer. The erection plan shall include the number and location of crane(s), the weight of picks, crane capacities and all other pertinent information.

5. The existing bridge shall be removed as noted on the plans by, and become property of, the Contractor.

6. The Contractor shall submit a Bridge Demolition Plan to the Resident at least 10 days prior to the start of demolition work. The plan shall outline the methods and equipment to be used to remove and dispose of all materials included in the existing bridge. No work related to the removal of the bridge shall be undertaken by the Contractor until MaineDOT has reviewed the Bridge Demolition Plan for appropriateness and completeness. Payment for all work necessary for developing, submitting and finalizing the Demolition Plan will be considered incidental to the Bridge Removal Pay Item.

7. Removal of the existing bridge including masonry granite blocks will be paid for under Item 202.19, Removing Existing Bridge.

8. Do not excavate for aggregate subbase course where existing material is suitable as determined by the Resident.

9. In areas where the Resident directs the Contractor not to excavate to the subgrade line shown on the plans, payment for removing existing pavement, grubbing, shaping, ditching, and compacting the existing subbase and layers of new subbase 6 inches or less thick will be made under appropriate equipment rental items.

10. Extended-use erosion control blanket, seeded gutters, riprap downspouts, and other gutters lined with stone ditch protection shall be constructed after paving and shoulder work is completed, where it is apparent that runoff will cause continual erosion. Payment will be made under appropriate contract items.

11. The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.

12. Geotechnical information furnished or referred to in this plan set is for the bidder's and contractor's use. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the time of construction. The Department shall not be responsible for the bidder's and contractor's interpretations of, or conclusions drawn from, the geotechnical information. The oring logs contained in the plan set present factual and interpretive subsurface information collected at discrete locations. Data provided may not be representative of the subsurface conditions between boring locations.

13. The temporary earth support systems shall conform to Special Provision Section 511.

14. The project geotechnical report titled "Kennebunk Bridge, PIN 15098.00 Final Geotechnical Design Report" may be accessed at the MaineDOT web address.

15. During construction, the road will be closed to traffic and a temporary detour constructed for a time period specified in the Special Provisions.

16. All embankment material, except as otherwise shown, placed below elevation 35 shall be granular borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.

17. The utilities involved in this contract are as follows :
    Kennebunk Water District
    Fairpoint Communications
    Time Warner Cable
    Kennebunk Light and Power
    Town of Kennebunk
    Kennebunk Sewer District

18. All utility facilities shall be adjusted by the respective utilities unless otherwise noted or planned.

19. Clearing limits shall be 5 ft. beyond and parallel to the construction slope lines, or as shown on the plans unless otherwise authorized by the Resident.

20. All clearing shall be considered incidental to the contract and no separate payment will be made. The actual lines for clearing shall be established in the field by the Resident.

21. Any stumps removed for this project shall be paid for under Item 201.24, removing stumps. However, where directed by the Resident, Item 631.20, Stump Chipper Rental (incl. Operator) may be used to remove stumps.

22. All ditch elevations shown on the cross sections are for the finish ditch flow line.

23. Required ditch protection shown on the plans is for estimating purposes only. Actual type and location for erosion control blanket, stone ditch protection, and riprap shall be determined in the field by the Resident.

24. If foundation material is required under culverts, it shall meet the requirements for granular borrow - underwater back fill and shall be paid for as granular borrow.

25. Granular borrow used to backfill muck excavation or in low wet areas to 1 ft. above water level or old ground shall meet requirements for granular borrow underwater back fill.

26. Estimated structural excavation (drainage & minor structures) required is 220 cubic yards.

27. Existing inslopes steeper than 2:1 in proposed fill areas shall be benched as directed by the resident.

28. Entrances shall be constructed with:

    Commercial paved: 3" hot mix asphalt - grading 9.5mm
    11" aggregate subbase course - gravel

    See special details for brick sidewalk driveway details.

29. All paved walks to be constructed with 2" hot mix asphalt and 12" aggregate subbase course - gravel.

30. Where pavement under this contract joins an existing pavement or concrete, the existing pavement or concrete shall be saw cut along a smooth line to a neat, even, vertical joint, as directed by the Resident. Broken or raveled edges shall not be permitted. All work necessary for the preparation of this joint shall be considered incidental to the related contract items.

31. Existing culverts to remain shall be cleaned as directed by the Resident. Payment shall be made under item 631.32 Culvert Cleaner (Including Operators).

32. No existing drainage shall be abandoned, removed or plugged without prior approval of the resident. Abandoned structures to remain shall be plugged with brick and mortar, incidental to "drainage items".

33. Inlets and outlets of all culverts shall be riprapped unless otherwise noted on the plans or directed by the Resident.

34. Any necessary cutting of existing pipes to fit in areas of proposed catch basins and modifying existing catch basins to fit new pipes shall not be paid for separately and shall be considered incidental to 604 pay items.

35. Two reflectorized flexible guardrail markers (Item 606.353) will be installed at each leading guardrail end. A delineator post (Item 606.356) will be installed at each underdrain outlet.

36. An NCHRP350 compliant guardrail end treatments shall be installed concurrently with the placement of each section of beam guardrail.

37. Guardrail station and offset information is to face of rail.

38. All catch basins Type A1-C placed on runs of circular curb type 1 shall have the curb inlet cut the same radius as adjacent circular curb. Payment shall be incidental to Item 604.072.

39. Catch basin and rim elevations noted on the cross sections are the top of grate elevations at the center of grate. Catch basin offset locations are measured to the center of the grate.

40. Removal of existing drainage pipes, as noted on the plans, shall be considered incidental to Item 203.20, Common Excavation.

41. The 4 ft. Or 7 ft. Of circular curb type 1 required to be cut for a terminal curb section shall be paid for under Item 609.234 or Item 609.237, respectively.

42. Loam has been estimated for 100% of the disturbed slope area. Actual placement of the loam used shall be as designated by the resident.

43. Unless otherwise noted seeding method no. 1 shall be utilized on all lawns and developed areas; seeding method no. 2 shall be utilized on all non-guardrail foreslopes from the edge of shoulder to the ditch line or toe of fill; seeding method no.3 shall be utilized on all backslopes and guardrail fill slopes.

44. Mulch shall be applied in areas seeded by seeding method no. 1, seeding method no. 2 and seeding method no. 3.

45. Loam shall be placed to a depth of 4" in developed lawn areas and 2" in all other areas or as directed by the Resident.

46. All pedestrian ramps shall be 6 ft. Wide.

47. Excavations accomplished as part of this project shall be constructed in accordance with Subpart P of 29 CFR Part 1926.650-.652 (Construction Standard for Excavations).

48. Estimated quantities for required structural earth excavation drainage and minor structures are informational only and represent the approximate minimum quantity required to install drainage structures. Additional excavation for the Contractor's convenience or to comply with backsloping requirements will not be paid for directly, but will be considered incidental to the related drainage items.

49. No separate payment for superintendent or foreman shall be made for the supervision of equipment being paid for under the equipment rental items.

50. The location of the existing utilities and drainage shown on the plans and cross sections were compiled from field survey and various other sources. Locations are approximate and not guaranteed to be accurate nor is it guaranteed that all utilities are shown. No separate or additional compensation will be allowed to the contractor due to any variance between the data shown on the plans and the actual field conditions encountered.

51. The normal grubbing width in fills are shown on the cross sections. The grubbing depth has been estimated as 12" in wooded areas and 6" in all other areas.

52. Any necessary fine grading or recompaction of existing gravel shall not be paid for directly and shall be construction incidental to item 304.10.

53. Pavement markings shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highway" U.S.D.O.T. F.H.W.A. Latest edition. Pavement marking pay items are listed on the quantity sheet.

54. See Special Provision Section 104 for information on proposed utility work and schedule.

55. Any damage to the existing roads, slopes, pipes or drainage structures caused by the contractor's equipment, personnel or operation shall be repaired to the satisfaction of the resident. All work, equipment and materials required to make repairs shall be at the contractor's expense.

56. Temporary erosion control measures shall be maintained as specified in the soil erosion and water pollution control plan. Payment will be made under Item 656.75.

57. The Contractor shall submit a Traffic Control Plan (TCP) in accordance with the Standard Specification, Section 652. In addition to the standard requirements, the TCP shall address construction phasing including the wide load restrictions, truck detour as well as driveways in the work zone and pedestrian access to businesses in the work zone.

58. The location of proposed plantings and hardscape work are not shown on the plans. The Maine DOT Architect or Designee will stake the locations of the proposed plantings/hardscape in the field at the time of planting. Contractor shall coordinate work with the Resident and Kent Cooper, Landscape Architect.

59. All waste material not used on the project shall be disposed of off the project in waste areas approved by the Resident.

60. The Contractor shall install detectable warning pavers on pedestrian ramps at street crossings and intersections, in accordance with the Special Details and Special Provision 608, "Detectable Warning Pavers." Coordinate work with resident.

61. Existing abandoned water mains broken by the contractor during construction shall have the ends plugged with brick and mortar. Cost for all labor and material will be considered incidental to the contract and no direct payment will be made.

62. The Contractor shall place a 2 foot wide strip of temporary erosion control blanket on the side slopes along the top of the riprap and behind the wingwalls.

63. All masonry granite blocks and granite curbing that is removed from the project shall become the property of the Town of Kennebunk. Contractor shall transport, unload and stack materials at the Kennebunk Public Works Facility at 36 Sea Road in Kennebunk. Coordinate work with Resident and Mike Claus, Public Works Director at 468-3020. Payment for work shall be considered incidental to items 202.19 and 203.20 respectively. All other demolition material shall become the property of the Contractor.

64. Some of the masonry granite blocks removed from the project will be reused in Rotary Park as part of the proposed landscaping. Contractor shall coordinate work with the Resident and Landscape Architect. Placement of blocks in Rotary Park will be paid for with equipment rental and hand labor pay items.

65. "Undetermined Locations" shall be determined by the Resident.

66. Compaction conducted within 15 feet laterally of the existing walls of the Lafayette Building shall be conducted with hand-operated vibratory plate compaction equipment. Construction equipment within this area shall be limited to track-mounted equipment unless otherwise approved by the Resident.

67. Project information referred to below may be accessed at the following MaineDOT web address:
    http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php.

68. See Estimated Quantites and General Notes Sheet for additional general notes.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

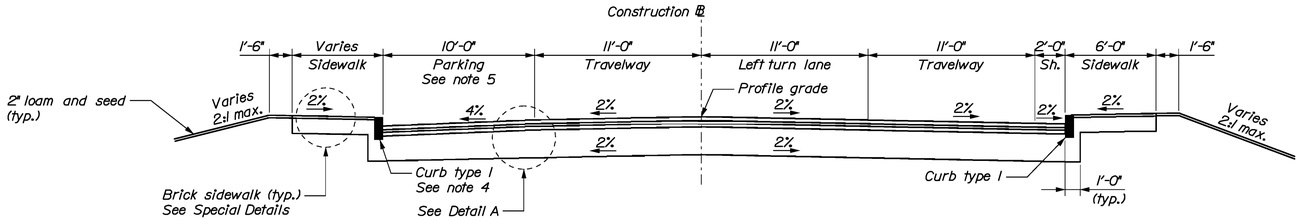
HIGHWAY PLANS
PIN 15098.00

PROJ. MANAGER
DESIGN-DETAILED RWH MPC 07/10
CHECKED-REVIEWED DGE - 07/10
SIGNATURE
P.E. NUMBER
DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

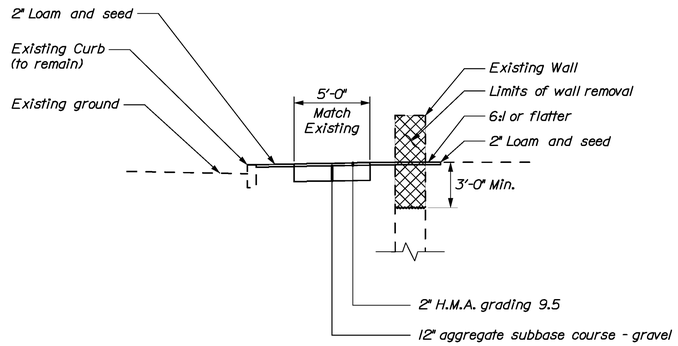
GENERAL NOTES

SHEET NUMBER
3
OF 48



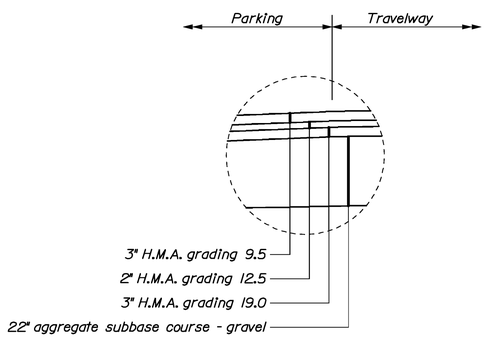
APPROACH DESIGN SECTION

N.T.S.



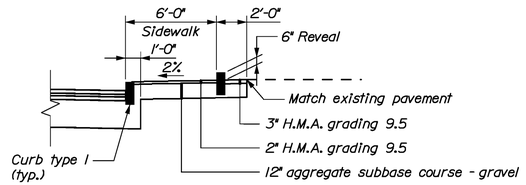
WATER STREET SIDEWALK RECONSTRUCTION DETAIL

N.T.S.



DETAIL A

N.T.S.



SIDEWALK BACK CURB DETAIL

Sta. 14+06.91 to Sta. 14+24.87, Rt.
N.T.S.

Notes:

1. The pavement, base, subbase depth as shown on plans are intended to be nominal.
2. Crowns for all sections and courses of subbase and pavement shall be straight.
3. The stationing shown under each typical section is approximate.
4. Curb Type 1 reveal from Sta. 16+25 to Sta. 16+75 Lt. shall be 6" to provide adequate sidewalk cross slope. Back of sidewalk shall match existing ground along building edge. Coordinate work with Resident.
5. Parking cross slope at 16+50 Lt. shall be 5% to provide adequate sidewalk cross slope and cross slopes at Sta. 14+75 Lt. and Sta. 15+00 Lt. shall be 3% and 2% respectively to provide proper gutter flow.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	DGE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	DGE	MPC	07/10
CHECKED-REVIEWED	DGE	-	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

TYPICAL SECTIONS

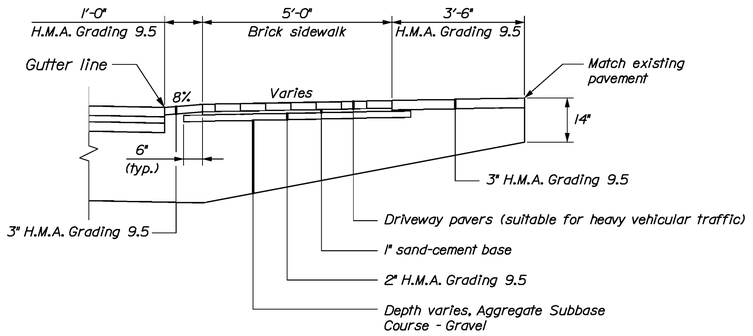
SHEET NUMBER

4

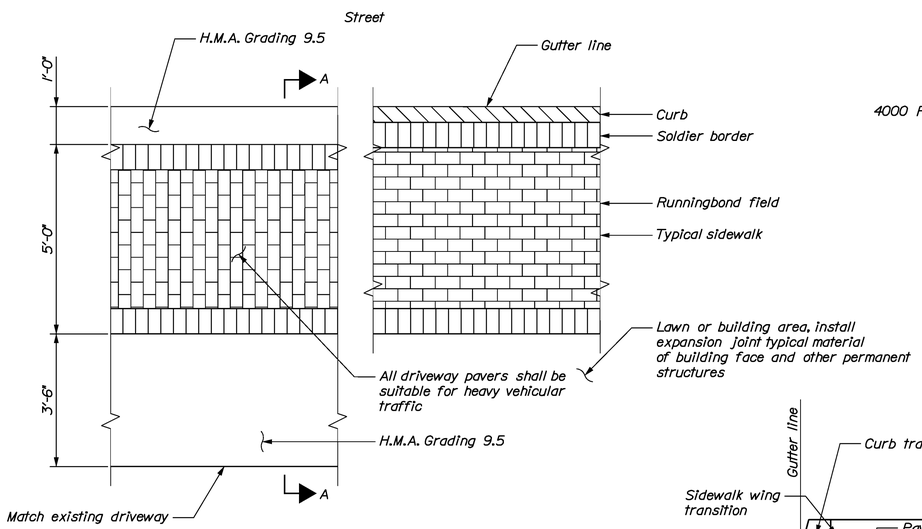
OF 48

Division: HIGHWAY Username: rhanf Date:8/3/2010

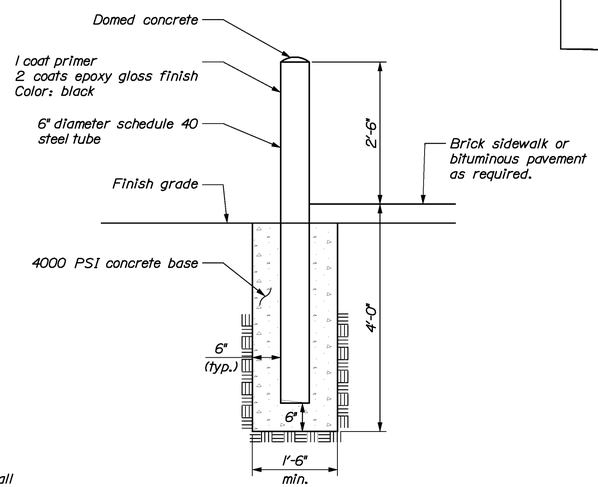
Filename: 004_TypSec.dgn



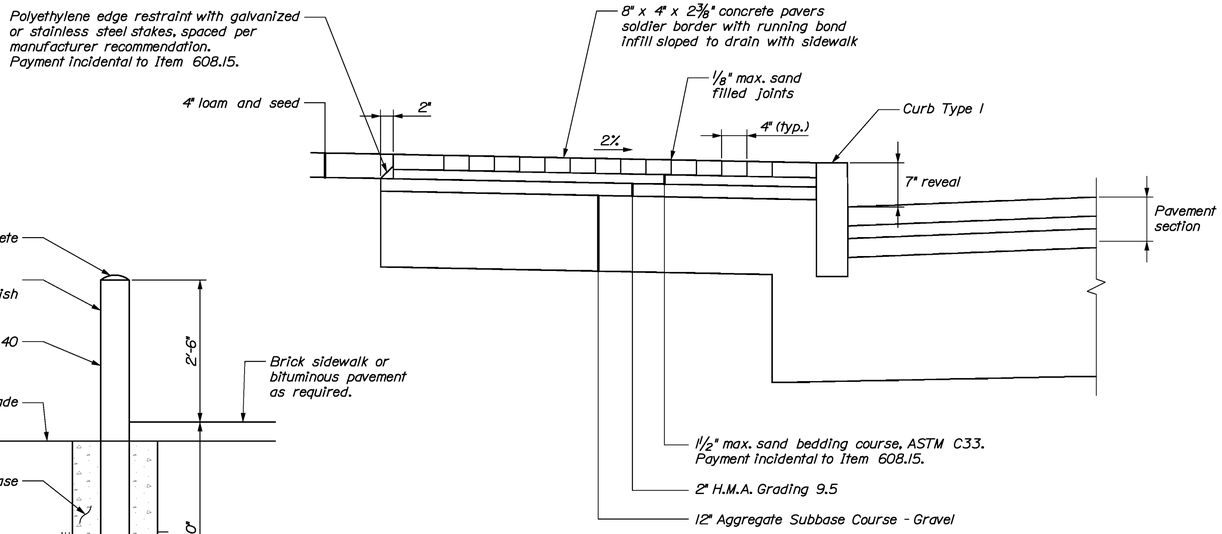
SECTION A-A
N.T.S.



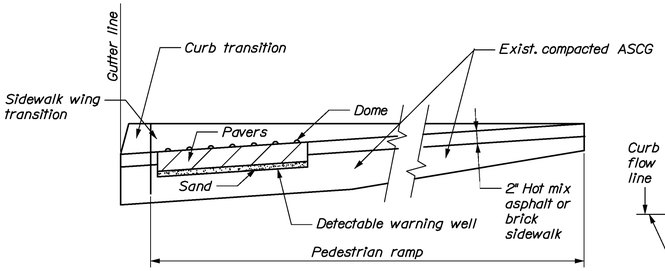
BRICK SIDEWALK DRIVEWAY CROSSING
N.T.S.



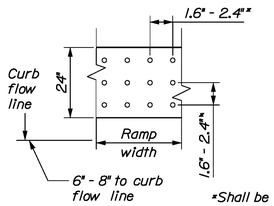
STEEL BOLLARD
N.T.S.



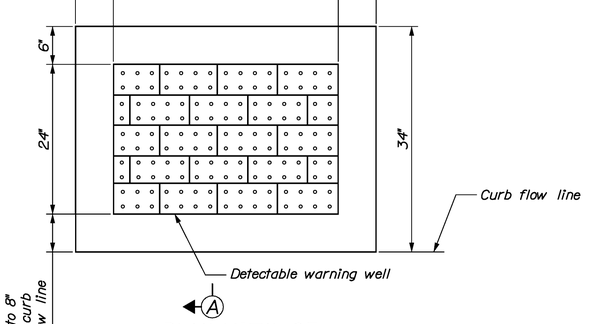
BRICK SIDEWALK TYPICAL SECTION
N.T.S.



SIDE SECTION VIEW OF DETECTABLE WARNING, WELL, CURB, AND GUTTER



PLAN VIEW



PLAN VIEW OF DETECTABLE WARNING AND WELL

BRICK SIDEWALK NOTES:
1. Brick sidewalks shall be Concrete Harborline Brick of Cumberland Blend color placed in a running bond with soldier border pattern.

2. Brick sidewalks within driveways shall be Concrete Hollandstone suitable for heavy vehicular traffic of Cumberland Bond color placed in a running bond with soldier border pattern rotated 90° from sidewalks.

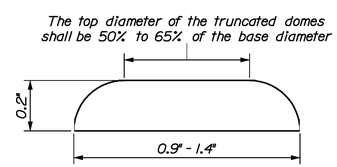
3. Finishes for paving stone:
   Top: Thermal
   Sides: Sawn
   Pencil round top outside edges abutting concrete pavers.

4. Brick sidewalk patterns to match Town of Kennebunk Main Street Reconstruction Project. Coordinate with Resident and Town.

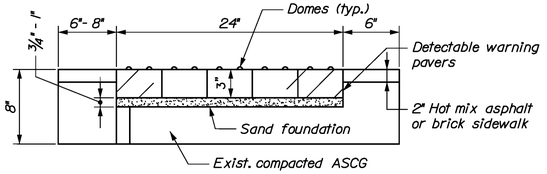
NOTE:
1. All detectable warning areas shall start 6" from the flow line of the curb and be 24" in depth and cover the complete width of the ramp area only.

2. Detectable warnings required at street crossings & intersections.

3. See Special Provision 608, Masonry Paver With Truncated Dome, for construction requirements.



ELEVATION VIEW



SECTION A-A

DETECTABLE WARNING DETAILS
N.T.S.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

	DGE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	RWH	MPC	07/10
CHECKED-REVIEWED	RWH	DGE	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

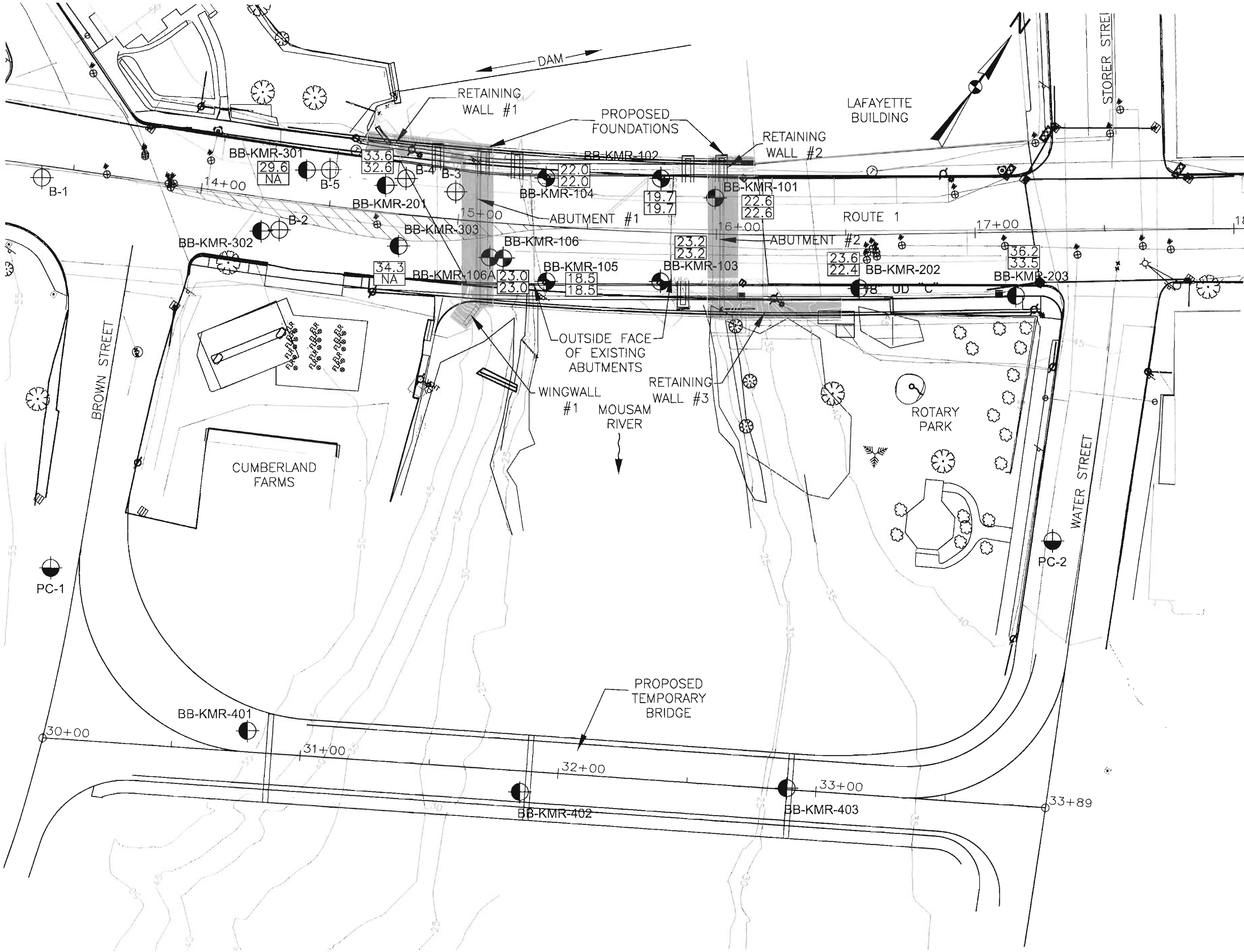
DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

SPECIAL DETAILS

SHEET NUMBER
5
OF 48

Date:8/3/2010
Username: rhanf
Division: HIGHWAY
Filename: 005_MiscDetails.dgn



NOTES:

1) BASE MAP DEVELOPED FROM ELECTRONIC MICROSTATION FILES PROVIDED BY DONALD ETTINGER OF HNTB, TRANSMITTED VIA EMAIL ON MAY 24, 2010 AND JUNE 15, 2010 (FILES INCLUDED: 3DTOPO_10JUNE10.dgn, 001_PLAN.dgn, TOPO.dgn, ALIGNMENTS.dgn, APPROACH.dgn, CONTOURS.dgn, and 001_DETOURPLAN.dgn).

2) THE LOCATION OF THE BB-KMR-100 SERIES TEST BORINGS WERE APPROXIMATELY DETERMINED BY TAPE MEASUREMENTS FROM EXISTING TOPOGRAPHIC AND BRIDGE STRUCTURE FEATURES. THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) THE AS-DRILLED LOCATION OF THE BB-KMR-200 THROUGH THE BB-KMR-400 SERIES TEST BORINGS WERE DETERMINED BY MAINE DOT USING GPS EQUIPMENT.

4) THE LOCATION OF THE B-SERIES BORINGS WERE ESTIMATED USING A SITE PLAN IN THE R.W. GILLESPIE GEOTECHNICAL REPORT AND SHOULD BE CONSIDERED APPROXIMATE.

5) BB-KMR-200 SERIES BORINGS WERE CONDUCTED FOR FOUNDATION EVALUATION. BB-KMR-300 SERIES BORINGS WERE CONDUCTED FOR SINKHOLE EVALUATION. BB-KMR-400 SERIES BORINGS WERE CONDUCTED FOR THE PROPOSED TEMPORARY BRIDGE.

6) THE BB-KMR-100 SERIES TEST BORINGS WERE PERFORMED BY NEW HAMPSHIRE BORING, INC OF LONDONDERRY, NEW HAMPSHIRE BETWEEN DECEMBER 16, 2008 AND JANUARY 5, 2009 AND OBSERVED BY GZA PERSONNEL.

7) THE B-SERIES TEST BORINGS WERE DRILLED BY GREAT WORKS PUMP AND TEST BORING INC. OF BERWICK, MAINE ON OCTOBER 18, 2004.

8) THE BB-KMR-200 SERIES THROUGH THE BB-KMR-400 SERIES TEST BORINGS AND PC-SERIES PAVEMENT PROBES WERE PERFORMED BY MAINE TEST BORING OF BREWER, MAINE BETWEEN MAY 25, 2010 AND JUNE 8, 2010 AND OBSERVED BY GZA PERSONNEL.

LEGEND:

BB-KMR-105 — PRELIMINARY DESIGN BORING LOCATION AND DESIGNATION (DRILLED BY NHB FOR GZA)

B-2 — BORING LOCATION AND DESIGNATION (DRILLED BY GREAT WORKS FOR R.W. GILLESPIE)

BB-KMR-302 — DESIGN-PHASE BORING LOCATION AND DESIGNATION (DRILLED BY MTB FOR GZA)

PC-2 — DESIGN-PHASE PAVEMENT PROBE LOCATION AND DESIGNATION (DRILLED BY MTB FOR GZA)

33.6 — ESTIMATED TOP OF BEDROCK ELEVATION (FEET NAVD 88)

32.6 — ESTIMATED TOP OF COMPETENT ROCK ELEVATION (FEET NAVD 88); CORED BORINGS ONLY

0 10 20 40 60
SCALE IN FEET

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1509(800)X
BRIDGE NO. 2431
PIN 15098.00
BRIDGE PLANS

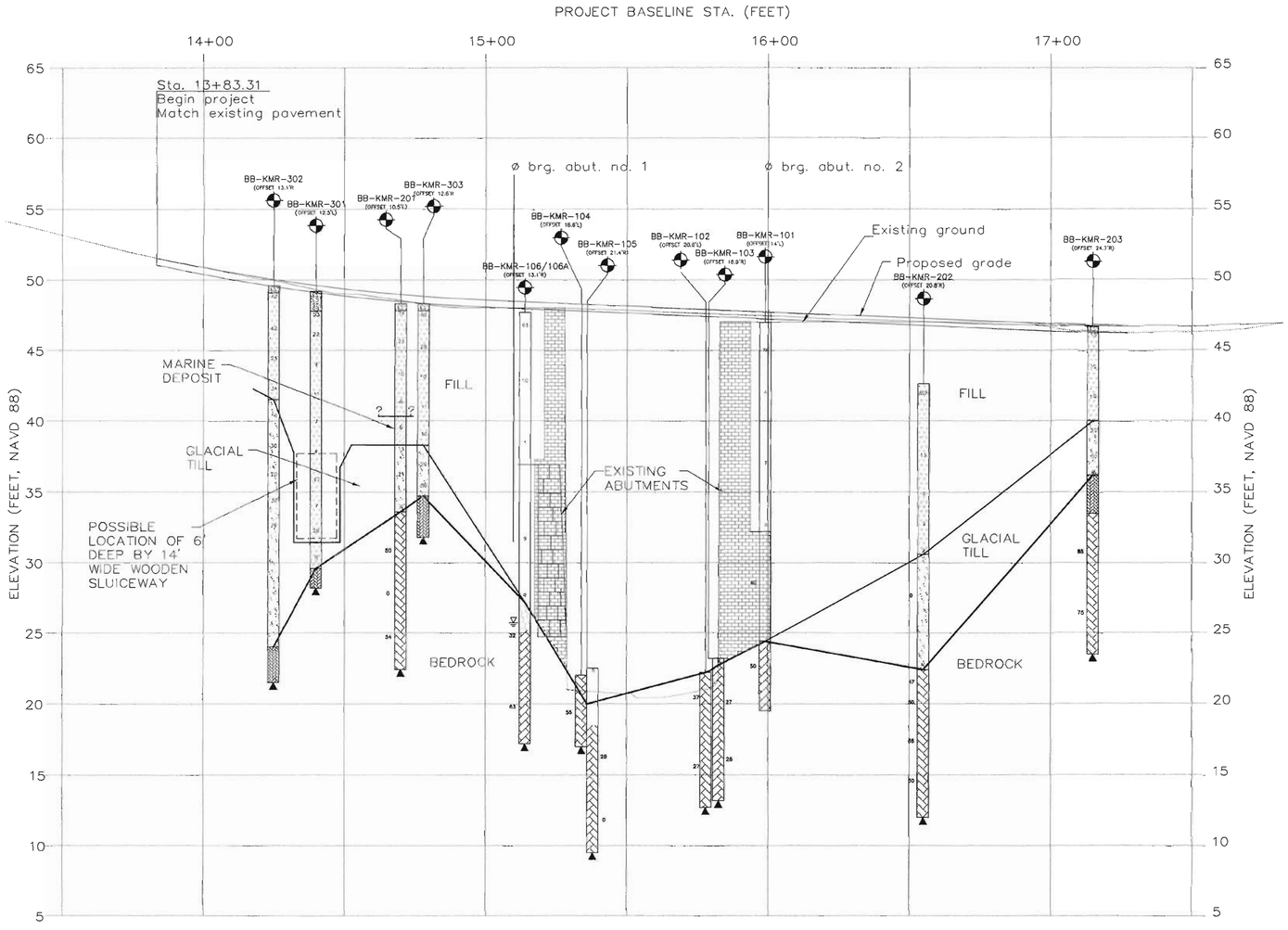
CHRISTOPHER L. SNOW
SIGNATURE
7275
P.E. NUMBER
7/30/2010
DATE

		BY	DATE
PROJ. MANAGER	DCE		
DESIGN-DETAILED	MJD	ARB	7/10
CHECKED-REVIEWED	CLS	JVE	7/10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

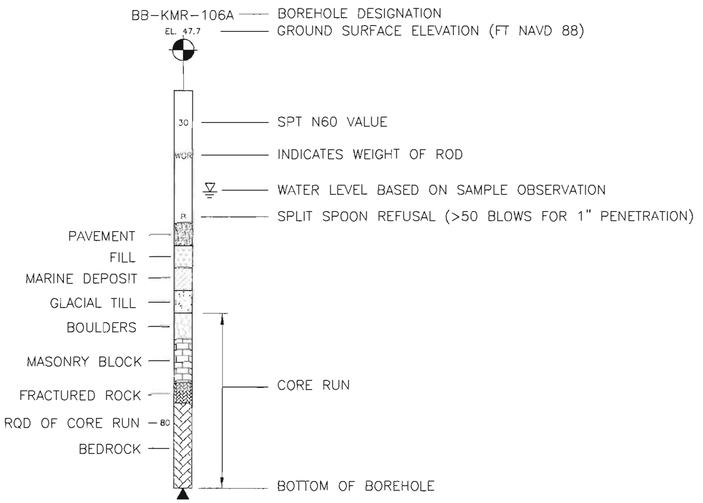
KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK
YORK COUNTY

BORING LOCATION PLAN

SHEET NUMBER
6
OF 48



LEGEND:



NOTES:

1) THIS GENERALIZED INTERPRETIVE SOIL PROFILE IS INTENDED TO CONVEY TRENDS IN SUBSURFACE CONDITIONS. THE BOUNDARIES BETWEEN STRATA ARE APPROXIMATE AND IDEALIZED, AND HAVE BEEN DEVELOPED BY INTERPRETATIONS OF WIDELY SPACED EXPLORATIONS AND SAMPLES. ACTUAL SOIL TRANSITIONS MAY VARY AND ARE PROBABLY MORE ERRATIC. FOR MORE SPECIFIC INFORMATION REFER TO THE EXPLORATION LOGS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1509(800)X
BRIDGE NO. 2431 15098.00 BRIDGE PLANS

CHRISTOPHER L. SNOW
SIGNATURE
7275
P.E. NUMBER
7/30/2010
DATE

DATE	BY	CHK
PROJ. MANAGER	DSC	
DESIGN DETAILED	MJG	
DRAWN BY	TWD	
CHECKED BY	CLS	
DESIGN REVIEW	DSC	
QUALITY REVIEW	DSC	
WORKING DRAWINGS	DSC	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
AS BUILT CHANGES		

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

INTERPRETIVE SUBSURFACE PROFILE

SHEET NUMBER
7
OF 48

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement | Location: Kennebunk, ME | Boring No.: BB-KMR-101 | PIN: 15098.00

Driller:	New Hampshire Boring	Elevation (ft.)	47.0	Auger ID/OD:	NA
Operator:	Greg/Gerry Michael	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/19/08-01/05/09	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	St. 15+99, 14.0 L	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.45		Hammer Type:	Automatic ☐ Hydraulic ☒ Rope & Cathead ☐		

Definitions:
D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample attempt; V = Insitu Vane Shear Test; MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; WOH = weight of 140lb. hammer; WOR = weight of rods; WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf); $S_{u(lab)}$ = Lab Vane Shear Strength (psf); T_v = Pocket Torvane Shear Strength (psf); q_p = Unconfined Compressive Strength (ksf); N-uncorrected = Raw field SPT N-value; Hammer Efficiency Factor = Annual Calibration Value; N_{60} = SPT N-uncorrected corrected for hammer efficiency; N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
WC = water content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							12		Asphalt	
	1D	24/16	1.0 - 3.0	76-58-43-23	101	76	0	46.0	1.0 — Very dense, brown, fine to coarse SAND and GRAVEL, trace silt. Dry.	A-1-b, SP-SM WC=4.4%
							10			
							6			
5	2D	24/10	4.0 - 6.0	7-3-2-2	5	4	10		Very loose, brown, fine to coarse SAND, Trace Gravel, Trace Silt. Moist.	A-3, SW-SM WC=10.2%
							13			
							15			
							14			
							13			
10	3D	24/0	9.0 - 11.0	WOH-3-6-18	9	7	6		No Recovery.	
							11			
							30		See Remark 1.	
							29			
							43			
	4D	9/0	14.0 - 14.8	49-53/3"-100/0"			NQ	32.2	Split spoon refusal at 14.8 feet. No Recovery. — 14.8	
15	R1	48/12	15.8 - 19.8						15.8' to 16.8': Hard, fresh, medium to coarse grained GRANITE. Bottom 2" Hard, fresh, fine grained gray PHYLLITE. See Remark 2. (Probable Stone Masonry) R1: Core Times (min) 15.8-16.8 (3) 16.8-17.8 (1) 17.8-18.8 (2) 18.8-19.8 (1)	
20	R2	60/40	20.2 - 25.2	RQD = 0%			NQ	26.8	20.2 — 22.6' to 24.4': Highly fractured PHYLLITE fragments. Probable top of bedrock at 24.4'.	
								22.6	24.4 — 24.4' to 25.2': Hard, fresh, fine grained,	

Remarks:
1. Advanced roller cone through probable cobble or boulders.
2. Advanced casing to 15.0 feet; advanced roller cone 15.0' to 15.8' through possible granite block.
3. Resumed drilling on 1/5/09; roller coned bore hole to 20.2 feet to clear hole to resume rock coring.
4. R2 RQD based only on bedrock; does not include masonry block rock lengths.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2 — Boring No.: BB-KMR-101

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement | Location: Kennebunk, ME | Boring No.: BB-KMR-101 | PIN: 15098.00

(Header data as page 1: Driller New Hampshire Boring; Operator Greg/Gerry Michael; Logged By Jennifer Tooley; Date Start/Finish 12/19/08-01/05/09; Boring Location St. 15+99, 14.0 L; Elevation (ft.) 47.0; Datum NAVD 88; Rig Type Truck; Drilling Method Cased Wash Boring; Casing ID/OD 4"/4.5"; Auger ID/OD NA; Sampler Standard Split Spoon; Hammer Wt./Fall 140#/30"; Core Barrel NQ; Hammer Efficiency Factor 0.45; Hammer Type Hydraulic ☒)

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
25	R3	27/27	25.2 - 27.5	RQD = 50%				19.5	highly fractured PHYLLITE with low angle to near-vertical fractures. See Remark 4. R2: Core Times (min) 20.2-21.2 (6) 21.2-22.2 (2) 22.2-23.2 (5) 23.2-24.2 (4) 24.2-25.2 (8) Hard, fresh, fine-grained, gray PHYLLITE. Joints are close, low angle, planar, smooth, fresh and tight to partially open. Highly fractured zone with some rust discoloration 25.2' to 25.7'. Occasional calcite stringers and banding noticeable throughout core. — 27.5. Bottom of Exploration at 27.50 feet below ground surface.	

Remarks:
1. Advanced roller cone through probable cobble or boulders.
2. Advanced casing to 15.0 feet; advanced roller cone 15.0' to 15.8' through possible granite block.
3. Resumed drilling on 1/5/09; roller coned bore hole to 20.2 feet to clear hole to resume rock coring.
4. R2 RQD based only on bedrock; does not include masonry block rock lengths.

Page 2 of 2 — Boring No.: BB-KMR-101

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement | Location: Kennebunk, ME | Boring No.: BB-KMR-102 | PIN: 15098.00

Driller:	New Hampshire Boring	Elevation (ft.)	22.2	Auger ID/OD:	NA
Operator:	Greg/Gerry Michael	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	01/05/09-01/05/09	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	St. 15+78, 20.8 L	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.45		Hammer Type:	Automatic ☐ Hydraulic ☒ Rope & Cathead ☐		

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							RC		Probable boulder.	
	R1	54/54	2.5 - 7.0	RQD = 37%			NQ	19.7	2.5 — Hard, fresh, fine to medium grained, dark gray PHYLLITE. Joints are closely spaced, primarily low angle with occasional vertical fractures, planar, smooth to rough, fresh to slightly discolored, and partially open to moderately open. Some silt in filling. Highly fractured zone from 3.25 to 3.75 feet. See Remark 2. R1: Core Times (min) 2.5-3.5 (5) 3.5-4.5 (5) 4.5-5.5 (5) 5.5-6.5 (5) 6.5-7.0 (10)	
	R2	30/30	7.0 - 9.5	RQD = 27%				12.7	Hard, fresh to slightly weathered, fine to medium grained, dark gray PHYLLITE. Joints are very closely spaced, primarily low angle with occasional vertical fractures, planar, smooth to rough, fresh to slightly discolored and partially open. Some Silt in filling. Highly fractured zone from approximately 8.0-9.0 feet. See Remark 2. R2: Core Times (min) 7.0-7.5 (2.5) 7.5-8.5 (5) 8.5-9.5 (5) — 9.5. Bottom of Exploration at 9.50 feet below ground surface.	

Remarks:
1. Rock at 25 feet from bridge deck; advanced casing 2.0 feet into bedrock; roller cone to 2.5 feet (probable boulder from 0 to 2 feet.)
2. Highly fractured section likely the result of rock coring; the driller had difficulty with rock core and likely caused rock to become fractured.

Page 1 of 1 — Boring No.: BB-KMR-102

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement | Location: Kennebunk, ME | Boring No.: BB-KMR-103 | PIN: 15098.00

Driller:	New Hampshire Boring	Elevation (ft.)	23.2	Auger ID/OD:	NA
Operator:	Greg/Gerry Michael	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/16/08-12/18/08	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	St. 15+79, 18.9 R	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.45		Hammer Type:	Automatic ☐ Hydraulic ☒ Rope & Cathead ☐		

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	R1	60/54	0.5 - 5.5	RQD = 27%			NQ		See Remark 1. Hard, fresh, fine grained gray PHYLLITE. Joints and fractures are very close to close, low angle to moderately dipping, planar, smooth to rough, fresh to discolored and tight to partially open. Thin calcite stringers throughout core. Area of larger calcite veins at approximately 3.2 to 3.5 feet. Banding noticeable throughout core. R1: Core Times (min) 0.5-1.5 (6) 1.5-2.5 (5) 2.5-3.5 (8) 3.5-4.5 (8) 4.5-5.5 (9)	
5	R2	54/42	5.5 - 10.0	RQD = 26%				13.2	5.5' to 7.5': Hard, fresh, fine grained gray PHYLLITE. Joints and fractures are very close to close, low angle to moderately dipping, planar, smooth to rough, fresh to discolored and tight to moderately wide. Banding noticeable throughout core. 7.5' to 10.0': Moderately weathered, fine grained, gray PHYLLITE. Highly fractured with discolored and decomposed rock fragments. R2: Core Times (min) 5.5-6.5 (8) 6.5-7.5 (8) 7.5-8.5 (9) 8.5-9.5 (8) 9.5-10.0 (5) — 10.0. Bottom of Exploration at 10.00 feet below ground surface.	

Remarks:
1. Advanced roller cone into rock to seat casing for rock core.

Page 1 of 1 — Boring No.: BB-KMR-103

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement | Location: Kennebunk, ME | Boring No.: BB-KMR-104 | PIN: 15098.00

Driller:	New Hampshire Boring	Elevation (ft.)	22.0	Auger ID/OD:	NA
Operator:	Greg/Gerry Michael	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	01/05/09-01/05/09	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	St. 15+34, 18.6 L	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.45		Hammer Type:	Automatic ☐ Hydraulic ☒ Rope & Cathead ☐		

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	R1	60/35	0.0 - 5.0	RQD = 55%			NQ	17.0	Hard, fresh, fine-grained, gray, PHYLLITE. Joints and fractures are close to moderately spaced, primarily low angle with occasional vertical fractures, planar, smooth, slightly discolored (rust colored near surface) to fresh and partially open to tight. Calcite stringers throughout core. R1: Core Times (min) 0-1.0 (6) 1.0-2.0 (5) 2.0-3.0 (6) 3.0-4.0 (7) 4.0-5.0 (7) — 5.0. Bottom of Exploration at 5.00 feet below ground surface.	

Remarks:

Page 1 of 1 — Boring No.: BB-KMR-104

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement | Location: Kennebunk, ME | Boring No.: BB-KMR-105 | PIN: 15098.00

Driller:	New Hampshire Boring	Elevation (ft.)	22.5	Auger ID/OD:	NA
Operator:	Greg/Gerry Michael	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/16/08-12/16/08	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	St. 15+35, 21.0 L	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.45		Hammer Type:	Automatic ☐ Hydraulic ☒ Rope & Cathead ☐		

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	0/0	0.0 - 0.0				OH		Attempted spoon sample. Encountered probable boulders or cobbles. See Remark 1. OH=Open Hole	
5	R1	54/48	4.0 - 8.5	RQD = 28%			NQ	18.5	4.0 — Hard, fresh to slightly weathered, fine grained, gray PHYLLITE. Joints and fractures are very close to close, low angle to moderately dipping, planar, rough, discolored, partially open to moderately wide. At approximately 5.75 to 6.5 feet, weathered zone with pieces discolored, rough and approximately 1/2 to 2 inches in size. At approximately 7.5 to 8.5, highly weathered gravel size rock and silt pieces. Occasional calcite veins throughout core. Rust discoloration in top 6 inches at joints. R1: Core Times (min) 4-5 (9) 5-6 (6) 6-7 (9) 7-8 (8) 8-8.5 (5)	
	R2	54/54	8.5 - 13.0	RQD = 0%				9.5	8.5' to 10.0': Apparent open joint filled with rock fragments and sandy silt seams up to 2" thick. 10.0' to 13.0': Hard, fresh to slightly weathered, fine grained, gray, PHYLLITE. Joints are very close to close, moderately dipping to vertical, planar, smooth, fresh and tight to partially open, with continuous vertical fracture throughout. Occasional calcite stringers. R2: Core Times (mins) 8.5-9.5 (8) 9.5-10.5 (6) 10.5-11.5 (6) 11.5-12.5 (5) 12.5-13.0 (2) — 13.0. Bottom of Exploration at 13.00 feet below ground surface.	

Remarks:
1. Advanced bore hole from 0 to 4 feet by roller cone and advanced the casing in 1-2 foot increments. Encountered probable boulders or cobbles. OH= Open Hole

Page 1 of 1 — Boring No.: BB-KMR-105

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement | Location: Kennebunk, ME | Boring No.: BB-KMR-106 | PIN: 15098.00

Driller:	New Hampshire Boring	Elevation (ft.)	47.7	Auger ID/OD:	NA
Operator:	Greg/Gerry Michael	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/18/08-12/18/08	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	St. 15+17, 13.1 R	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.45		Hammer Type:	Automatic ☐ Hydraulic ☒ Rope & Cathead ☐		

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							20		Asphalt.	
	1D	24/18	1.0 - 3.0	118-50-34-15	84	63	18	46.7	1.0 — Very dense, brown, fine to medium SAND, some Gravel, Trace Silt. Dry.	A-1-b, SP-SM WC=3.5%
							12			
							12			
5	2D	24/10	4.0 - 6.0	2-5-8-9	13	10	11		Loose, brown, fine to coarse SAND, trace Silt. Wet.	
							10			
							8			
							10			
							6			
10	3D	24/4	9.0 - 11.0	WOH-1/12"-45	1	1	2		Very loose, brown, fine to coarse SAND, little Gravel, trace Silt. Wet.	
							2			
							4			
							38			
							42	33.7	14.0 — Bottom of Exploration at 14.00 feet below ground surface. See Remark 1.	

Remarks:
1. While advancing boring to 14 feet the lead casing broke off. Unable to retrieve casing and the hole was abandoned. Moved boring location south approximately 5 feet. Advanced new boring (BB-KMR-106A) to 14 feet with no sampling. See Boring NO. BB-KMR-106A for additional subsurface data.

Page 1 of 1 — Boring No.: BB-KMR-106

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1509(800)X
PIN 15098.00
BRIDGE PLANS
BRIDGE NO. 2431

CHRISTOPHER L. SNOW — SIGNATURE
7275 — P.E. NUMBER
7/30/2010 — DATE

PROJ. MANAGER | DESIGN-DETAILED | CHECKED-REVIEWED | DESIGN2-DETAILED2 | DESIGN3-DETAILED3 | REVISIONS 1 | REVISIONS 2 | REVISIONS 3 | REVISIONS 4 | FIELD CHANGES — BY / DATE: MJD, ARB 7/10, C.S, JVE 7/10

KENNEBUNK BRIDGE OVER MOUSAM RIVER
KENNEBUNK — YORK COUNTY

BORING LOGS

SHEET NUMBER
8
OF 48

Maine Department of Transportation — Soil/Rock Exploration Log (US CUSTOMARY UNITS)

Boring No.: BB-KMR-106A (Page 1 of 2)

Project:	Kennebunk Bridge Replacement	Location:	Kennebunk, ME	PIN:	15098.00
Driller:	New Hampshire Boring	Elevation (ft.)	47.7	Auger ID/OD:	NA
Operator:	Greg/Gerry Michael	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/18/08-12/19/08	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	St. 15+14, 13.1 R	Casing ID/OD:	4"/4.5"	Water Level*:	22'
Hammer Efficiency Factor: 0.45		Hammer Type:	Automatic ☐ Hydraulic ☒ Rope & Cathead ☐		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							RC		For upper 14 feet: See BB-KMR-106 for soil descriptions. See Remark 1.	
15	4D	24/5	15.0 - 17.0	WOH-4-5-8	9	7	8	32.7	15.0 Loose, brown, fine to coarse SAND, little Gravel, little Silt. Organic odor. Pockets and/or clumps of Silt.	A-2-4, SM WC=16.5%
							10			
							3			
							5			
	5D	15/5	19.0 - 20.3	20-21-10/3"-50/0			10		Medium dense, fine to coarse SAND and GRAVEL, some Silt. Split Spoon refusal at 20.3 feet.	
20	R1	60/34	20.5 - 25.5	RQD = 32%			NQ	27.2	20.5 20.5' to 22.0': Hard, fresh, fine grained, gray PHYLLITE. Joints are very close to close, low angle to moderately dipping, planar, smooth, fresh and tight with calcite veins and stringers. (Probable Stone Masonry) 22.0' to 23.0': Hard, slightly weathered, medium to coarse grained, pink GRANITE. (Probable Stone Masonry) 23.0' to 24.7': Fractured rock fragments.	
25								23.0		

Remarks:
1. Advanced casing to 12 feet; casing refusal; roller cone from 12 to 13 feet; void under boulder or block caused rods to drop to 15 feet.
2. Water level taken at completion of drilling prior to backfilling bore hole.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2 — Boring No.: BB-KMR-106A

Boring No.: BB-KMR-106A (Page 2 of 2)

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS. Project: Kennebunk Bridge Replacement. Location: Kennebunk, ME. PIN: 15098.00. Driller: New Hampshire Boring. Elevation (ft.) 47.7. Auger ID/OD: NA. Operator: Greg/Gerry Michael. Datum: NAVD 88. Sampler: Standard Split Spoon. Logged By: Jennifer Tooley. Rig Type: Truck. Hammer Wt./Fall: 140#/30". Date Start/Finish: 12/18/08-12/19/08. Drilling Method: Cased Wash Boring. Core Barrel: NQ. Boring Location: St. 15+14, 13.1 R. Casing ID/OD: 4"/4.5". Water Level*: 22'. Hammer Efficiency Factor: 0.45. Hammer Type: Automatic ☐ Hydraulic ☒ Rope & Cathead ☐. (Definitions as above.)

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
25	R2	60/54	25.5 - 30.5	RQD = 63%					(Probable Stone Masonry) 24.7' to 25.5': Hard, fresh to slightly weathered, fine-grained PHYLLITE fragments. (Probable top of bedrock at 24.7'.) R1: Core Times (min) 20.5-21.5 (5) 21.5-22.5 (5) 22.5-23.5 (2) 23.5-24.5 (3) 24.5-25.5 (2)	
									24.7 Hard, fresh, fine to medium grained, gray PHYLLITE. Joints are close, low angle to moderately dipping, planar, smooth, fresh to discolored, tight to partially open. Calcite stringers and veins throughout core. Occasional fine sand and silt in filling (mid core depth). Upper 6 inches and bottom 12 inches: Fractures and joints surfaces are rust colored. R2: Core Times (min) 25.5-26.5 (6) 26.5-27.5 (5) 27.5-28.5 (5) 28.5-29.5 (5) 29.5-30.5 (10)	
30								17.2	30.5 Bottom of Exploration at 30.50 feet below ground surface.	
35–50										

Remarks:
1. Advanced casing to 12 feet; casing refusal; roller cone from 12 to 13 feet; void under boulder or block caused rods to drop to 15 feet.
2. Water level taken at completion of drilling prior to backfilling bore hole.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 2 of 2 — Boring No.: BB-KMR-106A

Boring No.: BB-KMR-201 (Page 1 of 2)

Project:	Kennebunk Bridge Replacement	Location:	Kennebunk, ME	PIN:	15098.00
Driller:	Maine Test Boring	Elevation (ft.)	48.3	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Eric Baron	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	06/01/10-06/01/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 14+70, 10.5' L	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.6		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

(Definitions as above.)

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	18/18	0.5 - 2.0	40-38-36	74	74	Auger	47.8	Asphalt. 0.5 Brown, dry, very dense, gravelly fine to coarse SAND, trace silt. -FILL- Top 12": Same as 1D.	SP-SM/A-1-b/0
	2D	24/16	2.0 - 4.0	13-16-7-6	23	23		45.3	3.0 Bottom 4": Black/brown, dry, dense, fine to coarse Sandy GRAVEL, coal/wood. -FILL-	
	3D	24/14	4.0 - 6.0	6-5-5-7	10	10	12		Brown/gray, layered, moist, loose fine to coarse SAND, some Gravel, trace Silt.	
5							13			
	4D	24/15	6.0 - 8.0	5-3-3-3	6	6	13		Top 2": Brown, moist, loose, silty fine to coarse SAND, trace Gravel, nested. Bottom 14": Brown, moist, loose, fine to coarse SAND, little Gravel, little Silt, areas with fine SAND only then fine to coarse SAND, layered.	SM/A-2-4/0
							14	40.3		
	5D	24/18	8.0 - 10.0	2-2-4-6	6	6	18		8.0 Gray/brown, mottled, moist, medium stiff, Silty CLAY, little fine Sand, fine sand lenses, rootlets present. (Former surface layer/possibly reworked.) -MARINE DEPOSIT-	CL/A-6/IV
							14	38.3		
10	6D	24/21	10.0 - 12.0	6-7-8-13	15	15	14		10.0 Gray/brown, mottled, moist, medium dense, sandy SILT, little Gravel, trace Clay. -GLACIAL TILL-	ML/A-4/IV
							15			
	7D	24/22	12.0 - 14.0	21-10-11-35	21	21	22		Gray/brown, moist, medium dense, silty fine to medium SAND, trace Gravel.	
							21			
	8D	8/8	14.0 - 14.7	45-50/0.2			RC	33.6	Same as 7D with weathered rock fragments.	
15	R1	60/58	15.7 - 20.7	RQD = 50%				32.6	14.7 -FRACTURED ROCK-	
									15.7 Rolled to 15.7' to set casing in sound rock for coring. Gray, fine grained, metamorphic PHYLLITE, hard fresh, weak along foliation. Primary joints are low angle, close to moderate, partially open, undulating, rough, fresh, quartz/calcite banding. Secondary joints are moderately dipping, wide, partially open. Rock Mass Quality= Fair.	
20	R2	14/13	20.7 - 21.9	RQD = 0%					Same as R1. Primary joints are very close to close.	
	R3	48/48	21.9 - 25.9	RQD = 54%					Gray, fine grained, metamorphic PHYLLITE, hard, fresh, weak along foliation. Primary joints are low angle, close to moderate spacing, partially open, undulating, rough, fresh, quartz/ calcite banding. Secondary joints are moderately dipping to high angle, close to moderate spacing, partially open,	

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2 — Boring No.: BB-KMR-201

Boring No.: BB-KMR-201 (Page 2 of 2)

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS. Project: Kennebunk Bridge Replacement. Location: Kennebunk, ME. PIN: 15098.00. Driller: Maine Test Boring. Elevation (ft.) 48.3. Auger ID/OD: NA. Operator: Brad Enos. Datum: NAVD 88. Sampler: Standard Split Spoon. Logged By: Eric Baron. Rig Type: Truck. Hammer Wt./Fall: 140#/30". Date Start/Finish: 06/01/10-06/01/10. Drilling Method: Cased Wash Boring. Core Barrel: NQ. Boring Location: Sta. 14+70, 10.5' L. Casing ID/OD: 4"/4.5". Water Level*:. Hammer Efficiency Factor: 0.6. Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒. (Definitions as above.)

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
25								22.4	undulating, rough, fresh. Highly fractured zone from approximately 24.8- 25.9' due to breaks when removing from core barrel. 25.9 Bottom of Exploration at 25.90 feet below ground surface.	
30–50										

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 2 of 2 — Boring No.: BB-KMR-201

Boring No.: BB-KMR-202 (Page 1 of 2)

Project:	Kennebunk Bridge Replacement	Location:	Kennebunk, ME	PIN:	15098.00
Driller:	Maine Test Boring	Elevation (ft.)	42.6	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Pisani/J. Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	05/26/10-05/26/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 16+55, 20.8' R	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.6		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

(Definitions as above.)

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/0	0.0 - 2.0	1-WOH/18"			Auger		Dry, loose, SAND. See Note 1. -FILL-	
5	2D	24/8	5.0 - 7.0	11-7-8-3	15	15			Dark brown/black, wet, medium dense, fine to coarse SAND, trace Silt.	
	3D	24/0	7.0 - 9.0	4-3-3-10	6	6			No Recovery.	
	4D	24/5	9.0 - 11.0	5-3-2-25	5	5			Dark brown/gray, wet, loose, GRAVEL, some fine to coarse Sand, trace Silt. Piece of wood and large gravel in spoon tip, potential wood layer between 10.5-11'. -FILL- See Note 2.	GP-GM/A-1a/0
10	5D	6/6	11.5 - 12.0	30-50/0"				30.6	Dark brown, wet, fine to coarse SAND and WOOD, some Gravel, trace Silt. See Note 3.	
	R1	60/0	12.4 - 17.4	RQD = 0%					12.0 Advanced NQ core barrel from 12.4 to 17.4 feet. No recovery. Last 3' of wash water changed to light brown. R1 Core Time (mins): 12.4-13.4 (1) 13.4-14.4 (1) 14.4-15.4 (.5) 15.4-16.4 (.5) 16.4-17.4 (.5) See Note 4. 12.4 to 14.4': Probable boulder. 14.4 to 17.4': Light brown with rust color and gray mottling, damp, medium stiff, SILT, trace Sand. -GLACIAL TILL-	
15	6D	24/20	15.0 - 17.0	2-2-6-15	8	8				
	7D	7/7	17.0 - 17.6	48-50/0.1"				23.6	Light brown with rust color and gray mottling, damp, hard, SILT, some Gravel, little Sand. Split spoon refusal at 19.0'.	
	MD	0/0	19.0 - 19.0	50/0"				22.4	19.0 No Recovery. Drove casing to refusal. Rolled to 20.2' through fractured rock to set casing for coring.	
20	R2	17/14	20.2 - 21.6	RQD = 47%					20.2 Gray, fine grained, metamorphic PHYLLITE, very hard, fresh. Primary joints are horizontal to low angle, close to moderate spacing, partially open, discolored, rust staining, undulating, rough. Secondary joints are steep, moderate spacing, partially open, undulating, rough, discolored, iron staining.	
	R3	10/11	21.6 - 22.4	RQD = 60%						
	R4	61/63	22.4 - 27.5	RQD = 66%						

Remarks:
1. Elevation is at ground surface. Cored through elevated sidewalk (3' thick of asphalt and concrete) to drill boring, located 4.7' above ground surface..
2. Casing refusal at 11.2' below ground surface, rolled ahead to 11.5' for sample 5D.
3. Split spoon refusal on apparent bedrock at 12.0'. Advanced roller bit from 12.0-12.4' below ground surface.
4. Borehole collapsed to 15.0' after core barrel pulled from hole. Took samples 6D and 7D in disturbed material, blow counts not representative due to disturbance.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2 — Boring No.: BB-KMR-202

Boring No.: BB-KMR-202 (Page 2 of 2)

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS. Project: Kennebunk Bridge Replacement. Location: Kennebunk, ME. PIN: 15098.00. Driller: Maine Test Boring. Elevation (ft.) 42.6. Auger ID/OD: NA. Operator: Brad Enos. Datum: NAVD 88. Sampler: Standard Split Spoon. Logged By: Jennifer Pisani/J. Tooley. Rig Type: Truck. Hammer Wt./Fall: 140#/30". Date Start/Finish: 05/26/10-05/26/10. Drilling Method: Cased Wash Boring. Core Barrel: NQ. Boring Location: Sta. 16+55, 20.8' R. Casing ID/OD: 4"/4.5". Water Level*:. Hammer Efficiency Factor: 0.6. Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒. (Definitions as above.)

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
25									Rock Mass Quality= Poor Core Time (mins): 20.2-21.2 (2) 21.2-22.2 (3) Same as R2 with no Secondary Joints. Rock Mass Quality= Fair Core Time (min): 21.6-22.6 (6)	
	R5	36/36	27.6 - 30.6	RQD = 50%					Gray, fine grained, metamorphic PHYLLITE, very hard, slightly weathered. Primary joints are low angle to moderately dipping, close, partially open, undulating, rough, discolored, Calcite present. Secondary joints are steep, close to moderate spacing, partially open, undulating, rough, fresh, Calcite present. Rock Mass Quality= Fair Core Time (min): 22.4-25.4 (3) 25.4-26.4 (2) 26.4-27.4 (3) 27.4-28.4 (2) 28.4-29.4 (2)	
30								12.0	Gray, fine grained, metamorphic PHYLLITE, very hard, fresh with slightly weathered zone at 28.2'. Primary joints are horizontal, very close to close, partially open, undulating, rough, fresh. Secondary joints are steep, wide, partially open, undulating, rough. Rock Mass Quality= Poor 30.6 Bottom of Exploration at 30.60 feet below ground surface.	
35–50										

Remarks:
1. Elevation is at ground surface. Cored through elevated sidewalk (3' thick of asphalt and concrete) to drill boring, located 4.7' above ground surface..
2. Casing refusal at 11.2' below ground surface, rolled ahead to 11.5' for sample 5D.
3. Split spoon refusal on apparent bedrock at 12.0'. Advanced roller bit from 12.0-12.4' below ground surface.
4. Borehole collapsed to 15.0' after core barrel pulled from hole. Took samples 6D and 7D in disturbed material, blow counts not representative due to disturbance.
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 2 of 2 — Boring No.: BB-KMR-202

Boring No.: BB-KMR-203 (Page 1 of 1)

Project:	Kennebunk Bridge Replacement	Location:	Kennebunk, ME	PIN:	15098.00
Driller:	Maine Test Boring	Elevation (ft.)	46.7	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Pisani/Eric Baron	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	05/27/10-05/27/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 17+15, 24.7' R	Casing ID/OD:	4"/4.5"	Water Level*:	
Hammer Efficiency Factor: 0.6		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

(Definitions as above.)

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	18/14	0.5 - 2.0	6-7-8	15	15	Auger	46.2	Asphalt. 0.5 Brown, dry, medium dense, fine to coarse SAND, some Gravel, trace Silt. -FILL-	SP-SM/A-1-b/0
	2D	24/14	2.0 - 4.0	8-7-8-13	15	15		43.8	Top 11": Brown, dry, medium dense, fine to coarse SAND, little Gravel, trace Silt. Bottom 3": Black, dry, GRAVEL/COAL. -FILL-	
	3D	24/4	4.0 - 6.0	11-7-11-12	18	18			2.9 Brown, dry, medium dense, fine to medium SAND, some Gravel, little Silt. -FILL-	SM/A-1-b/0
5	4D	24/20	6.0 - 8.0	10-14-11-11	25	25		40.0	Top 8": Brown, dry, medium dense, fine to coarse SAND, some Gravel, little Silt. -FILL-	
	5D	24/22	8.0 - 10.0	29-32-18-18	50	50			6.7 Bottom 12": Brown/gray, mottled, moist, medium dense, Silty fine SAND, trace coarse Sand/Gravel. -GLACIAL TILL- Brown/gray, mottled, dense, fine to medium SAND, some Silt, little Gravel. -GLACIAL TILL-	
10	6D	7/6	10.0 - 10.6	56-50/0.1'			OH	36.2	Top 6": Brown/gray, mottled, very dense, Silty fine to medium SAND, some Gravel. Bottom: Fractured Bedrock.	
	7D	2/2	12.0 - 12.2	75/0.2'					10.5 Rolled through fractured bedrock; began coring at 13.2'.	
	R1	60/60	13.2 - 18.2	RQD = 85%				33.5	13.2 Gray, fine grained, metamorphic PHYLLITE, very hard, fresh with moderate to severe weathered zone at 19.5'. Primary joints are horizontal, very close, partially open, undulating, rough, discolored. Secondary joints are steep, close, open, undulating, rough, discolored. Rock Mass Quality=Good Core Time (min): 13.2-14.2 (2), 14.2-15.2 (3), 15.2-16.2 (2), 16.2-17.2 (2), 17.2-18.2 (2)	
15	R2	60/60	18.2 - 23.2	RQD = 75%					Gray, fine grained, metamorphic PHYLLITE, very hard, fresh. Primary joints are horizontal, very close, partially open, undulating, rough, fresh. Secondary joints are steep, close, partially open, undulating, rough, discolored. Rock Mass Quality= Fair Core Time (min): 18.2-19.2 (2), 19.2-20.2 (3), 20.2-21.2 (3), 21.2-22.2 (3), 22.2-23.2 (3)	
20								23.5	23.2 Bottom of Exploration at 23.20 feet below ground surface.	
25										

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: BB-KMR-203

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1509(800)X

BRIDGE PLANS

PIN 15098.00

BRIDGE NO. 2431

CHRISTOPHER L. SNOW — SIGNATURE
7275 — P.E. NUMBER
7/30/2010 — DATE

KENNEBUNK BRIDGE OVER MOUSAM RIVER

KENNEBUNK — YORK COUNTY

BORING LOGS

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement
Location: Kennebunk, ME
Boring No.: BB-KMR-301
PIN: 15098.00

Driller:	Maine Test Boring	Elevation (ft.)	49.2	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Eric Baron	Rig Type:	Mobile B 53 Truck Rig	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	06/02/10-06/02/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 14+40, 18.5' L	Casing ID/OD:	3"/3.5"	Water Level*:	

Hammer Efficiency Factor: 0.6 — Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows
						Auger
1D	18/14	1.4 - 2.9	20-29-24	53	53	
2D	24/24	3.0 - 5.0	13-13-9-9	22	22	
3D	24/21	5.0 - 7.0	4-5-4-5	9	9	8
						6
4D	24/16	7.0 - 9.0	4-3-8-9	11	11	10
						13
5D	24/8	9.0 - 11.0	5-4-3-4	7	7	15
						9
6D	24/9	11.0 - 13.0	4-2-2-3	4	4	10
						12
7D	19/9	13.0 - 14.6	2-1-46-50/0.1'	47	47	15
8D	24/8	15.0 - 17.0	8-4-3-3	7	7	18
						20
9D	24/10	17.0 - 19.0	1-1-25-7	26	26	21
						35
10D	7/1	19.0 - 19.6	30-50/0.1'			RC

Elevation (ft.)	Visual Description and Remarks	Depth (ft.)	Laboratory Testing Results/AASHTO and Unified Class
	Asphalt.		
47.8	Brown, dry, very dense, gravelly fine to coarse SAND, trace Silt. -FILL-	1.4	
	Brown/dark brown, layered, dry, medium dense, fine to coarse SAND, little Gravel, trace Silt, layering of fine to coarse sand and fine sand. -FILL-		
44.2	Top 3": Brown, moist, loose, fine to medium SAND, layered with Sandy Clay. Bottom 18": Gray/brown, moist, stiff, lean CLAY, some fine to medium Sand, trace Gravel, appeared reworked. -FILL-	5.0	CL/A-6/IV
	Gray/brown, moist, stiff, fine to medium Sandy CLAY. -FILL-		
39.9	Top 4": Gray/brown, moist, medium stiff, fine to coarse Sandy CLAY.	9.3	
	Bottom 4": Gray, moist, loose, silty fine SAND, poorly graded, non plastic, organic fibers within. Top 7": Blue/gray, medium stiff, fine to coarse silty SAND, brick fragments within.		SM/A-4/II
37.5	Horizontal grained wood in tip.	11.7	
37.3	Apparent void from 11.9' to 13.0'.	11.9	
36.2	Top: Horizontal grained wood.	13.0	
36.0	Bottom: Light gray/white, moist, medium SAND, little Silt, probable voids. -FILL-	13.2	SM/A-1-b/0
	Gray, wet, medium dense, fine to coarse SAND, some Gravel, little Silt. -FILL-		
	Top 8": Gray, wet, very loose, medium SAND, little Silt, trace Gravel. Probable voids from 17 to 17.7'. 1911 penny in recovery.		SM/A-1-b/0
31.5	Bottom 2": Wood, horizontal grained.	17.7	
31.3	Piece of Gravel/ledge.	17.9	
29.6	Rolled to 21' below ground surface. Consistent resistance indicates probable bedrock from 19.6 to 21.0'.	19.6	
28.2	Bottom of Exploration at 21.00 feet below ground surface.	21.0	

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: BB-KMR-301

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement
Location: Kennebunk, ME
Boring No.: BB-KMR-302
PIN: 15098.00

Driller:	Maine Test Boring	Elevation (ft.)	49.6	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Eric Baron	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	06/03/10-06/03/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 14+25, 13.1' R	Casing ID/OD:	3"/3.5"	Water Level*:	

Hammer Efficiency Factor: 0.6 — Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows
1D	18/10	0.5 - 2.0	11-22-20	42	42	Auger
2D	24/10	2.0 - 4.0	8-16-26-28	42	42	
3D	24/2	4.0 - 6.0	18-13-10-13	23	23	
4D	24/18	6.0 - 8.0	16-18-16-23	34	34	22
						14
5D	24/24	8.0 - 10.0	8-10-6-6	16	16	18
						42
6D	24/14	10.0 - 12.0	16-17-13-13	30	30	21
						26
7D	24/24	12.0 - 14.0	10-10-10-12	20	20	OH
8D	24/24	14.0 - 16.0	11-12-20-20	32	32	
9D	24/24	16.0 - 18.0	14-13-16-17	29	29	RC

Elevation (ft.)	Visual Description and Remarks	Depth (ft.)	Laboratory Testing Results/AASHTO and Unified Class
	Asphalt.		
49.1	Brown, dense, fine to coarse SAND, some Gravel, trace Silt. -FILL-	0.5	SP-SM/A-1-b/0
	Top 6": Brown, dry, fine to medium SAND, little Gravel, trace Silt. Bottom 4": Brown, dry, dense, Sandy GRAVEL, little Silt.		
45.6	Brown, dry, dense, fine to medium SAND, trace Silt.	4.0	
	Top 8": Brown, moist, dense, fine to coarse SAND, some Silt, little Gravel.		SM/A-2-4/II
42.9	Bottom 10": Brown/gray, wet, dense, GRAVEL, little Silt, little Sand, angular. -FILL-	6.7	
41.5	Top 1": Brown/gray, wet, GRAVEL, little Sand and Silt, angular.	8.1	
	Bottom 23": Brown/gray, mottled, wet, very stiff, fine to coarse Silty SAND, little Gravel. -GLACIAL TILL-		SM/A-4/II
	Olive, wet, medium dense, fine to coarse silty SAND, little Gravel.		
	Olive/brown, wet, medium dense, fine to coarse SAND, some Silt and Clay, trace Gravel. Transition of color to Gray.		
	Gray, wet, dense, fine to coarse SAND, some Silt and Clay, trace Gravel.		
	Gray, wet, medium dense, fine to coarse SAND, some Silt and Clay, trace Gravel. -GLACIAL TILL-		
	Rolled ahead to 28.1'. Consistent resistance to 25.6'.		

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2 — Boring No.: BB-KMR-302

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement
Location: Kennebunk, ME
Boring No.: BB-KMR-302
PIN: 15098.00

Driller:	Maine Test Boring	Elevation (ft.)	49.6	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Eric Baron	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	06/03/10-06/03/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 14+25, 13.1' R	Casing ID/OD:	3"/3.5"	Water Level*:	

Hammer Efficiency Factor: 0.6 — Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
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SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Elevation (ft.)	Visual Description and Remarks	Depth (ft.)	Laboratory Testing Results/AASHTO and Unified Class
24.0	Probable Fractured rock (based on drill action and cuttings). Consistent resistance in probable bedrock from 25.6 to 28.1'	25.6	
21.5	Bottom of Exploration at 28.10 feet below ground surface.	28.1	

Remarks:

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Page 2 of 2 — Boring No.: BB-KMR-302

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS

Project: Kennebunk Bridge Replacement
Location: Kennebunk, ME
Boring No.: BB-KMR-303
PIN: 15098.00

Driller:	Maine Test Boring	Elevation (ft.)	48.3	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Eric Baron	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	06/03/10-06/03/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 14+78, 12.6' R	Casing ID/OD:	3"/3.5"	Water Level*:	

Hammer Efficiency Factor: 0.6 — Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows
1D	18/14	0.6 - 2.1	27-30-35	65	65	Auger
2D	24/18	2.0 - 4.0	21-16-12-6	28	28	
3D	24/16	4.0 - 6.0	3-5-5-4	10	10	
4D	24/24	6.0 - 8.0	3-4-7-10	11	11	9
						18
5D	24/9	8.0 - 10.0	17-19-11-6	30	30	34
						41
6D	24/9	10.0 - 12.0	11-10-10-9	20	20	58
						26
7D	24/20	12.0 - 14.0	10-12-47-56	59	59	29
						36
8D	5/5	14.0 - 14.4	75/0.4			RC

Elevation (ft.)	Visual Description and Remarks	Depth (ft.)	Laboratory Testing Results/AASHTO and Unified Class
	Asphalt.		
47.7	Brown, dry, very dense, gravelly fine to coarse SAND, trace Silt. -FILL- Top 6": Same as 1D.	0.6	
45.8	Bottom 12": Dark brown, dry, fine to coarse SAND, some Silt, little Gravel. -FILL-	2.5	
	Brown, dry, loose, fine to coarse SAND, some Gravel, little Silt. -FILL-		
	Brown, moist, medium dense, fine to medium SAND, some Silt, little Gravel. Chunks of Silt/loam. -FILL-		SM/A-2-4/II
	Top 3": Brown, moist, dense, fine to coarse SAND, some Silt, some Gravel. Bottom 6": Gray, moist, silty fine to medium SAND, trace Gravel. Very small, horizontally grained Wood pieces within.		SM/A-2-4/II
38.3	Brown/gray, mottled, moist, medium dense, silty fine to medium SAND, little Gravel. -GLACIAL TILL-	10.0	
	Top 13": Brown/gray, moist, medium dense, fine to medium SAND, little Silt, little Gravel. Bottom 7": Gray, wet, very dense, GRAVEL, trace Sand, trace Silt, probable fractured rock.		
34.3	Fractured Rock fragments. Rolled from 14.4 to 16.5' with consistent resistance through probable fractured rock.	14.0	
31.8	Bottom of Exploration at 16.50 feet below ground surface.	16.5	

Remarks:

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* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: BB-KMR-303

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1509(800)X
PIN 15098.00
BRIDGE NO. 2431
BRIDGE PLANS

CHRISTOPHER L. SNOW
SIGNATURE
7275
P.E. NUMBER
7/30/2010
DATE

		BY	DATE
PROJ. MANAGER	DGE		
DESIGN-DETAILED	MJD	ARB	7/10
CHECKED-REVIEWED	CLS	JVE	7/10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

KENNEBUNK
KENNEBUNK BRIDGE
OVER MOUSAM RIVER
YORK COUNTY

BORING LOGS

SHEET NUMBER
10A
OF 48

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS	Project: Kennebunk Bridge Replacement Location: Kennebunk, ME	Boring No.: BB-KMR-401 PIN: 15098.00

Driller:	Maine Test Boring	Elevation (ft.)	50.4	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Pisani	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	06/07/10-06/07/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 30+79, 8.2' L	Casing ID/OD:	3"/3.5"	Water Level*:	
Hammer Efficiency Factor: 0.6		Hammer Type:	Automatic ☐	Hydraulic ☐	Rope & Cathead ☒

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N60	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/20	0.0 - 2.0	1-4-3-3	7	7	AUGER		Brown, moist, loose, fine to medium SAND, some Gravel, trace Silt, top is topsoil. -FILL-	
	2D	24/8	2.0 - 4.0	5-3-3-5	6	6			Brown, damp, loose, fine to medium SAND, some Gravel, some Silt.	
5	3D	24/6	4.0 - 6.0	3-2-4-15	6	6			Dark brown, moist, loose, fine to medium SAND, little Gravel, some Silt. -FILL-	
	4D	24/4	6.0 - 8.0	5-4-5-8	9	9			Brown, dry, loose, fine to medium SAND, some Gravel, concrete pieces.	
	5D	24/6	8.0 - 10.0	5-5-5-11	10	10			Dark brown, moist, loose, fine to medium SAND, little Gravel, trace Silt, concrete piece in tip.	
10	6D	24/18	10.0 - 12.0	5-9-6-9	15	15		40.4	10.0 — Black, moist, medium dense, fine to medium SAND, some Gravel, little Silt, potentially former topsoil layer. -FILL-	
	7D	24/14	12.0 - 14.0	7-6-5-4	11	11		38.4	12.0 — Brown and yellow-brown, wet, medium dense, fine SAND, some Gravel, some Silt. -FILL-	
15	8D	24/18	14.0 - 16.0	1-2-3-1	5	5		36.4	14.0 — Brown to dark brown, wet, loose, fine Silty SAND, some Gravel, brick fragments. -FILL-	
	9D	24/20	16.0 - 18.0	2-0-1-2	1	1			Brown to dark brown, very loose, fine to coarse Silty SAND, some Gravel, trace brick fragments.	
	10D	24/24	18.0 - 20.0	4-7-9-12	16	16		31.7	Top 8": Brown, saturated, medium dense, fine to coarse SAND, some Gravel, some Silt, trace brick fragments. 18.7 — Bottom 12": Gray, wet, medium dense, fine to medium Silty SAND, little Gravel. -GLACIAL TILL-	
20	11D	24/24	20.0 - 22.0	12-12-8-9	20	20			Top 6": Brown to gray, wet, medium dense, fine to medium Silty SAND, some gravel, sandy silt lenses. -GLACIAL TILL-	
25										

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2 — Boring No.: BB-KMR-401

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS	Project: Kennebunk Bridge Replacement Location: Kennebunk, ME	Boring No.: BB-KMR-401 PIN: 15098.00

Driller: Maine Test Boring; Elevation (ft.) 50.4; Auger ID/OD: NA; Operator: Brad Enos; Datum: NAVD 88; Sampler: Standard Split Spoon; Logged By: Jennifer Pisani; Rig Type: Truck; Hammer Wt./Fall: 140#/30"; Date Start/Finish: 06/07/10-06/07/10; Drilling Method: Cased Wash Boring; Core Barrel: NQ; Boring Location: Sta. 30+79, 8.2' L; Casing ID/OD: 3"/3.5"; Water Level*:; Hammer Efficiency Factor: 0.6; Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N60	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
25	12D	24/14	25.0 - 27.0	31-65-40-50	105	105			Gray, wet, very dense, fine to coarse Silty SAND, some Gravel. -GLACIAL TILL-	
	R1	60/13	28.7 - 33.7	RQD = 15%				21.7	28.7 — Casing refusal at 28.7 below ground surface; begin coring. 28.7 to 29.6' - Boulder. 29.6' to 32.0' - Soil. Gray, wet, Silty SAND, some Gravel. -GLACIAL TILL-	
30								18.4	32.0 — Bottom 20": Gray, medium grained, metamorphic PHYLLITE, hard, fresh. Primary joints are low angle, very close to close, open, undulating, rough, fresh. Secondary joints are high angle, moderately spaced, open, undulating, rough, fresh. R1 Core Times (mins) 28.7-29.7 (2), 29.7-30.7 (2), 30.7-31.7 (1), 31.7-32.7 (2), 32.7-33.7 (2)	
	R2	29/5	33.7 - 36.1	RQD = 14%					Gray, medium grained, metamorphic PHYLLITE, hard, fresh. Primary joints are low angle, very close to close, open, undulating, rough, fresh to slightly weathered. Secondary joints are high angle, close to very close, partially open to open, undulating, rough, fresh to slightly weathered. R2 Core Times (mins) 33.7-34.7 (2), 34.7-35.7 (2), 35.7-36.1 (2)	
35	R3	17/0	36.1 - 37.5	RQD = 0%					Gray, medium grained, metamorphic PHYLLITE, hard, fresh, primary joints are low angle, close to very close, partially open to open, undulating, rough, fresh to slightly weathered. Secondary joints are same, high angle. R3 Core Times (mins): 36.1-37.1 (2), 37.1-37.1 (3), 37.1-37.5 (3)	
	R4	33/16	37.5 - 40.3	RQD = 36%					R4: Same description as R2. R4 Core Times (mins): 37.5-38.5 (1), 38.5-39.5 (2), 39.5-40.3 (3)	
40	R5	21.5/5	40.3 - 42.1	RQD = 0%				8.3	R5: Same description as R3. R5 Core Times (mins): 40.3-42.1 (3) 42.1 — Bottom of Exploration at 42.10 feet below ground surface.	
45										
50										

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 2 of 2 — Boring No.: BB-KMR-401

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS	Project: Kennebunk Bridge Replacement Location: Kennebunk, ME	Boring No.: BB-KMR-402 PIN: 15098.00

Driller:	Maine Test Boring	Elevation (ft.)	22.6	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Pisani	Rig Type:	Tripod	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	06/07/10-06/07/10	Drilling Method:	Cased Wash Boring	Core Barrel:	
Boring Location:	Sta. 31+86, 8.1' R	Casing ID/OD:	3"/3.5"	Water Level*:	
Hammer Efficiency Factor: 0.6		Hammer Type:	Automatic ☐	Hydraulic ☐	Rope & Cathead ☒

Definitions: D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample attempt; V = Insitu Vane Shear Test; MV = Unsuccessful Insitu Vane Shear Test attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; WOH = weight of 140lb. hammer; WOR = weight of rods; WO1P = Weight of one person; S_u = Insitu Field Vane Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Shear Strength (psf); T_v = Pocket Torvane Shear Strength (psf); q_p = Unconfined Compressive Strength (ksf); N-uncorrected = Raw field SPT N-value; Hammer Efficiency Factor = Annual Calibration Value; N_{60} = SPT N-uncorrected corrected for hammer efficiency; N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected; WC = water content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N60	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/8	0.0 - 2.0	7-4-3-7	7	7			Dark brown, damp, loose, fine SAND, some Gravel, little Silt, with organics. -TOPSOIL/FILL-	
	2D	24/18	2.0 - 4.0	10-19-23-27	42	42		19.3	Top 16": Brown, wet, medium dense SAND, some Gravel, trace Silt, brick fragments. -FILL- 3.3 — Bottom 2": Gray, wet, very dense, GRAVEL, little Sand. -FRACTURED ROCK-	
5	3D	14/14	4.0 - 5.2	32-33-50/2"				17.4	Gray-brown, wet, very dense, GRAVEL, some Sand, little Silt. -FRACTURED ROCK- 5.2 — Bottom of Exploration at 5.20 feet below ground surface.	
10										
15										
20										
25										

Remarks:

1. Reached refusal resistance at 2.4', moved hole to attempt sampling again. Samples 2D and 3D were collected at second location.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: BB-KMR-402

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS	Project: Kennebunk Bridge Replacement Location: Kennebunk, ME	Boring No.: BB-KMR-403 PIN: 15098.00

Driller:	Maine Test Boring	Elevation (ft.)	32.4	Auger ID/OD:	NA
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	Jennifer Pisani	Rig Type:	Tripod	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	06/07/10-06/07/10	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ
Boring Location:	Sta. 32+89, 0.6' L	Casing ID/OD:	3"/3.5"	Water Level*:	
Hammer Efficiency Factor: 0.6		Hammer Type:	Automatic ☐	Hydraulic ☐	Rope & Cathead ☒

Definitions: D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample attempt; V = Insitu Vane Shear Test; MV = Unsuccessful Insitu Vane Shear Test attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; WOH = weight of 140lb. hammer; WOR = weight of rods; WO1P = Weight of one person; S_u = Insitu Field Vane Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Shear Strength (psf); T_v = Pocket Torvane Shear Strength (psf); q_p = Unconfined Compressive Strength (ksf); N-uncorrected = Raw field SPT N-value; Hammer Efficiency Factor = Annual Calibration Value; N_{60} = SPT N-uncorrected corrected for hammer efficiency; N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected; WC = water content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N60	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/20	0.0 - 2.0	1-9-4-1	13	13	Auger		Top 3": Gray-brown, moist, medium dense, Sandy SILT. -FILL- Bottom 17": Brown, damp, medium dense, fine to medium SAND, some Gravel, trace Silt. -FILL-	
	2D	24/6	2.0 - 4.0	1-1-7-2	8	8			Brown, damp, loose, fine to medium SAND, some Gravel, trace Silt.	
5	3D	24/6	4.0 - 6.0	2-5-5-9	10	10			Brown and black, moist, loose, fine to medium SAND, some Gravel, little Silt, some burnt wood chips.	
	4D	14/8	6.0 - 7.2	4-7-50/0.2'					Dark brown to gray, wet, medium dense, fine SAND, some Gravel, little Silt. -FILL-	
	5D	14/6	8.0 - 9.2	24-13/2"				24.2	Caved in. Top 1.5": Gray-brown, wet, dense, fine SAND, some Gravel, trace Silt. -FILL- 8.2 — Bottom 4": Gray, dry, dense, GRAVEL, some Sand, trace Silt, fractured rock.	
10	R1	57.6/31	9.2 - 14.0	RQD = 54%				23.2	9.2 — Gray, fine grained, metamorphic, PHYLLITE, very hard, fresh. Primary joints are horizontal, very dense, open, undulating, smooth, fresh. Secondary joints are steep, close, open, undulating, rough, fresh to slightly discolored. R1 Core Times (min): 9.2-10.2 (2), 10.2-11.2 (2), 11.2-12.2 (2), 12.2-13.2 (2), 13.2-14.2 (1)	
15	R2	12/7	14.0 - 15.0	RQD = 58%					Gray, fine grained, metamorphic, PHYLLITE, very hard, fresh. Primary joints are horizontal, close, open, undulating, smooth, fresh. Secondary joints are steep, moderately close, open, rough, fresh.	
	R3	60/20.5	15.0 - 20.0	RQD = 34%					Gray, fine grained, metamorphic, PHYLLITE, very hard, fresh. Primary joints are horizontal, very close, open, undulating, smooth, fresh, fractured zone at 19' below ground surface. R3 Core Times (min): 15-16 (2), 16-17 (2), 17-18 (2), 18-19 (2), 19-20 (1)	
20								12.4	20.0 — Bottom of Exploration at 20.00 feet below ground surface.	
25										

Remarks:

1. Casing encountered obstruction between 8 and 9.2'. Moved approximately 1' away from retaining wall and advanced casing to top of bedrock at 9.2' below ground surface.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2 — Boring No.: BB-KMR-403

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1509(800)X
PIN 15098.00
BRIDGE NO. 2431 — BRIDGE PLANS

STATE OF MAINE — CHRISTOPHER L. SNOW — No. 7275 — LICENSED PROFESSIONAL ENGINEER

CHRISTOPHER L. SNOW
SIGNATURE
7275
P.E. NUMBER
7/30/2010
DATE

	DCE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	MJD	ARB	7/10
CHECKED-REVIEWED	CLS	JWE	7/10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK — YORK COUNTY

BORING LOGS

SHEET NUMBER
10B
OF 48

CURVE DATA

PI = 15+41.77
D = 3° - 49' - 11.0"
Δ = 9° - 07' - 47.4" Lt.
R = 1500.00'
L = 239.02'
T = 119.76'
E = 4.77'

MOUSAM RIVER CONDOMINIUM ASSOCIATION
J & D DUBE PROPERTIES, LLC
LAFAYETTE CONDOMINIUM
KENNEBUNK LIGHT & POWER DISTRICT
M & S REALTY LLC
TOWN OF KENNEBUNK
T & B, INC.
CD ARMSTRONG
CUMBERLAND FARMS INC.
MAUREEN M. BOWLEY
Rotary Park
TOWN OF KENNEBUNK

Mousam River impoundment
Limit of work
Pleasant Street
PC = STA. 14+22.00
Steel bollards, spaced 6' o.c. (typ.) See Special Details
℄ Brg. Abut. No. 1 Sta. 15+09.99
90' span
℄ Brg. Abut. No. 2 Sta. 16+00.00
PT = STA. 16+61.02
Storer Street
POE = STA. 18+87.99
Remove
Retaining Wall #1
18" RCP Class III See Note 1
Face of dam
Retaining Wall #2
Sta. 17+27.23
End project BH-1509(800)X
End full depth reconstruction
Match existing pavement
Proposed sidewalk
Existing curb to remain
Adjust CB to grade
Adjust CB to grade
12+00 Route 1 Construction ℄ 13+00 N63°10'19.7"E 14+00 15+00 16+00 17+00 N54°2'32.3"E 18+00 Route 1 Main Street 18+88 N54°54'40.6"E
6' 10' 11' 22' 2'
4°48'25.8" Skew
r227.1' Skew
18" Option III
Remove
Prop. closure wall
18" RCP Class III See Note 1
2' 18" UD "C"
18" UD "C"
18" Option III
Remove
Alter CB to MH
Proposed sidewalk
Remove
Riprap downspout
Retaining Wall #3
Plain riprap
Wingwall #1
CLL
Remove
Relocate electrical vault (by others)
Remove and reset chain link fence and gate
Rebuild sidewalk after wall removal. See Typical Sections.
Limit of Bituminous Pavement Sidewalk
Remove existing wall and chain link fence to minimum 3' below existing ground. Payment incidental to Item 203.20.
Limit of work
PC = STA. 17+69.75
PT = STA. 18+45.58
PT = STA. 13+29.84
Brown Street
Sta. 13+83.31
Begin project BH-1509(800)X
Begin full depth reconstruction
Match existing pavement
Install Energy Absorbing System (ET-PLUS Tangential)
Install Bridge Transition Type I
Mousam River
Water Street

CURVE DATA

PI = 11+69.60
D = 9° - 57' - 52.1"
Δ = 32° - 52' - 00.0" Rt.
R = 575.00'
L = 329.84'
T = 169.60'
E = 24.49'

CURVE DATA

PI = 18+07.66
D = 1° - 08' - 45.3"
Δ = 0° - 52' - 08.3" Rt.
R = 5000.00'
L = 75.83'
T = 37.92'
E = 0.14'

Paved Walkway
Sta. 14+05, Lt.

Item 608.253 Masonry Paver with Truncated Dome
Sta. 13+69, Lt.
Sta. 13+97, Lt.
Sta. 14+04, Rt.
Sta. 17+26, Lt.
Sta. 17+30, Rt.

Item 201.23 Removing Single Tree - Top Only
Item 201.24 Removing Stump

Sta.	Offset	Tree
14+14.4	27.10' Rt.	20" Oak

Clearing
Sta. 15+12 to Sta. 15+25, Rt.
Sta. 16+06 to Sta. 16+42, Rt.

Drives and Entrances

Sta.	Type	Opening
14+40, Rt.	Paved	30'

Item 610.08 Plain Riprap (18" depth) CY
Sta. 15+96, 35' Rt. to Sta. 16+16, 35' Rt. 6
(6' wide downspout)

Item 527.303 Energy Absorbing System (ET-PLUS) Ea.
Sta. 14+91.75, 30.67' Rt. 1

Item 606.1721 Bridge Transition - Type 1 Ea.
Sta. 14+91.75, 30.67' Rt. 1

Construct Pedestrian Ramp
Sta. 13+69, Lt.
Sta. 13+97, Lt.
Sta. 14+04, Rt.
Sta. 17+26, Lt.
Sta. 17+30, Rt.

Item 841.48 Bollards
Sta. 14+10.92, 27.83' Lt.
Sta. 14+16.92, 27.83' Lt.
Sta. 14+22.94, 27.83' Lt.
Sta. 14+29.05, 27.83' Lt.
Sta. 14+35.16, 27.83' Lt.
Sta. 14+41.28, 27.83' Lt.
Sta. 14+47.39, 27.83' Lt.
Sta. 14+53.50, 27.83' Lt.
Sta. 14+59.62, 27.83' Lt.

Item 607.25 Remove and Reset Chain Link Fence LF
Sta. 16+38, 52' Rt. to Sta. 16+38, 32' Rt. 20'

NOTES:
1. Cut culvert pipe parallel to face of wall, two inches beyond face of wall. After cutting apply two coats of brush-applied "ZRC Cold Galvanizing Compound", as manufactured by "ZRC Products Company" in accordance with the manufacturers specifications to achieve a minimum dry film thickness of 3 mils.
2. R/W not shown for clarity.

25 0 25 50
SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
-
PIN 15098.00
BRIDGE PLANS
BRIDGE NO. 2431

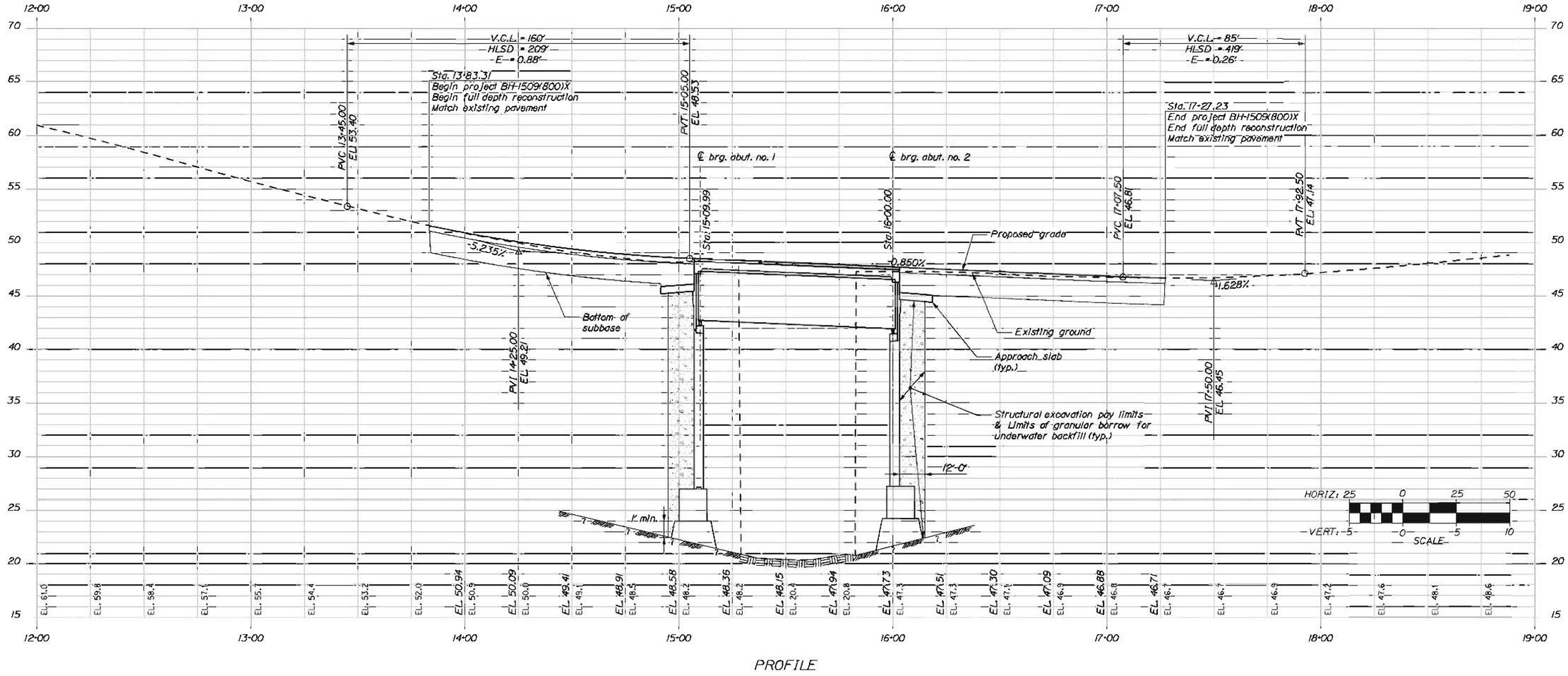
	BY	DATE
DESIGNED	JDW	
DETAILED	MPC	07/10
CHECKED-REVIEWED	TRC	07/10
PROJ. MANAGER	DGE	
DESIGN1-DETAILED2	-	-
DESIGN2-DETAILED3	-	-
DESIGN3-DETAILED4	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE
P.E. NUMBER
DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

GENERAL PLAN

SHEET NUMBER
11
OF 48



PROFILE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

	DES	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	JDW	WFC	07/10
CHECKED-REVIEWED	TRC	DGE	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

PROFILE

SHEET NUMBER

12

OF 48

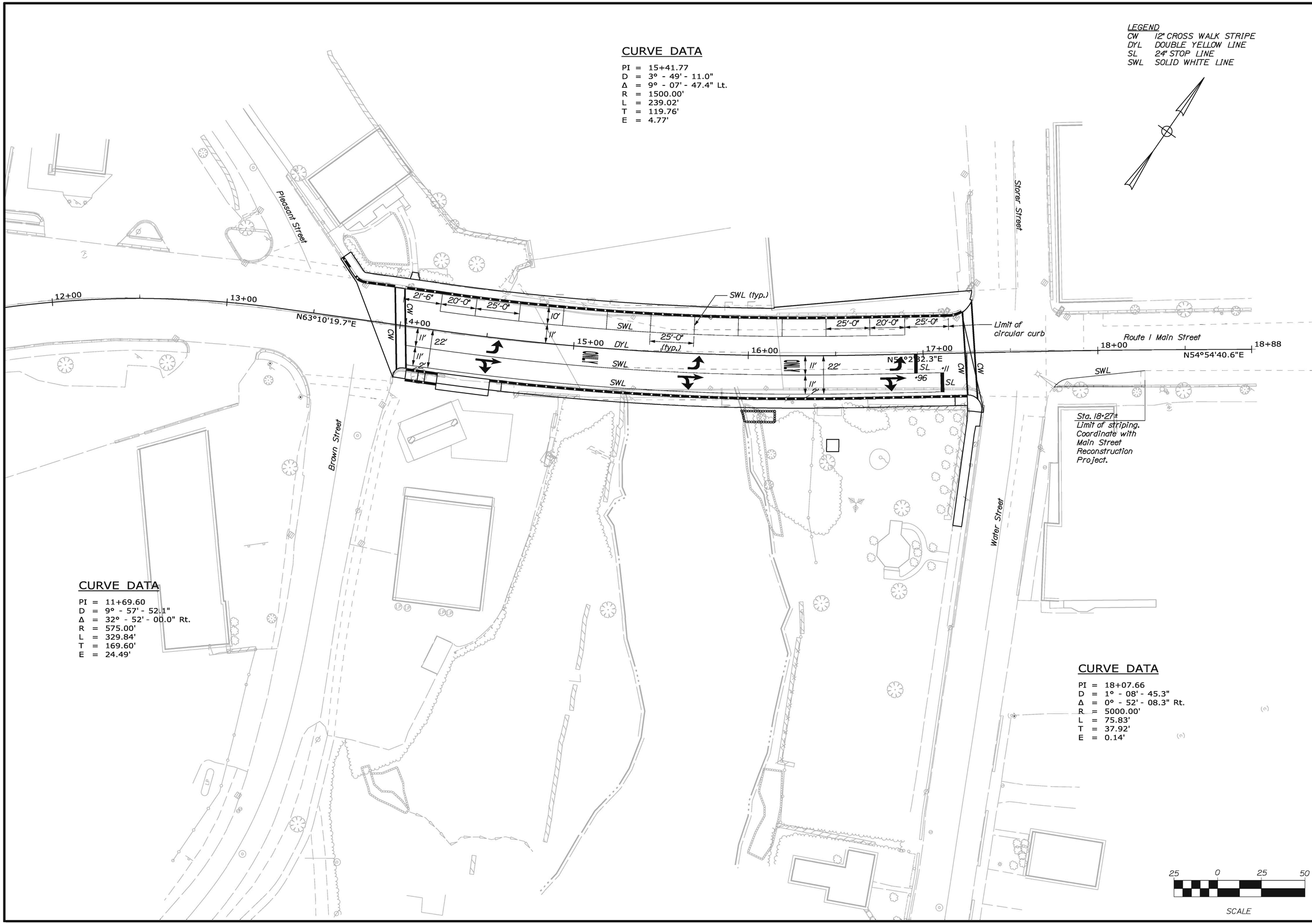
Username: rhanf
Date:8/3/2010
Division: HIGHWAY
Filename: 012_Profile.dgn

Username: rhanf
Division: HIGHWAY
Filename: 013_Striping01.dgn
Date:8/3/2010

CURVE DATA

PI = 15+41.77
D = 3° - 49' - 11.0"
Δ = 9° - 07' - 47.4" Lt.
R = 1500.00'
L = 239.02'
T = 119.76'
E = 4.77'

LEGEND
CW 12" CROSS WALK STRIPE
DYL DOUBLE YELLOW LINE
SL 24" STOP LINE
SWL SOLID WHITE LINE



CURVE DATA

PI = 11+69.60
D = 9° - 57' - 52.1"
Δ = 32° - 52' - 00.0" Rt.
R = 575.00'
L = 329.84'
T = 169.60'
E = 24.49'

CURVE DATA

PI = 18+07.66
D = 1° - 08' - 45.3"
Δ = 0° - 52' - 08.3" Rt.
R = 5000.00'
L = 75.83'
T = 37.92'
E = 0.14'

25 0 25 50
SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	DGE	
DESIGN-DETAILED	MPC	07/10
CHECKED-REVIEWED	DGE	07/10
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

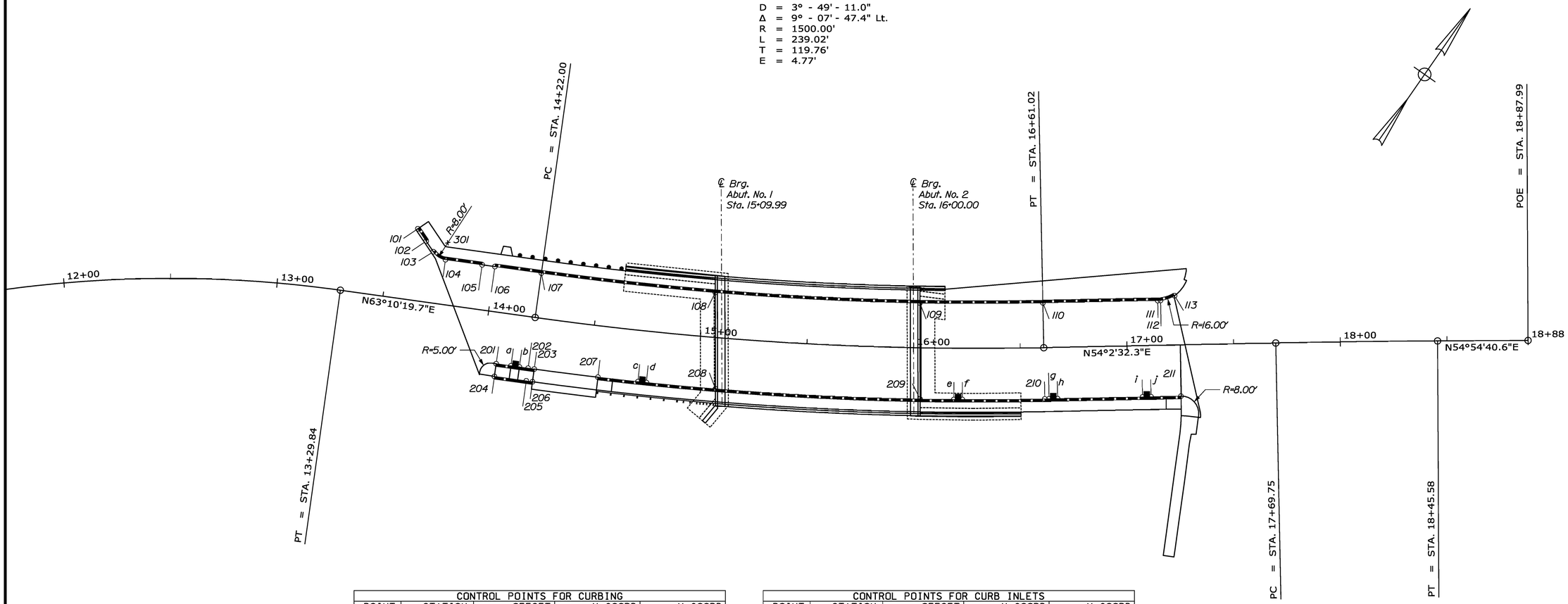
KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

STRIPING PLAN

SHEET NUMBER
13
OF 48

CURVE DATA

PI = 15+41.77
D = 3° - 49' - 11.0"
Δ = 9° - 07' - 47.4" Lt.
R = 1500.00'
L = 239.02'
T = 119.76'
E = 4.77'



CURVE DATA

PI = 11+69.60
D = 9° - 57' - 52.1"
Δ = 32° - 52' - 00.0" Rt.
R = 575.00'
L = 329.84'
T = 169.60'
E = 24.49'

CONTROL POINTS FOR CURBING				
POINT	STATION	OFFSET	X-COORD	Y-COORD
101	13+61.80	33.54' LT.	939548.571	201073.436
102	13+66.48	28.33' LT.	939555.094	201070.897
103	13+70.49	23.87' LT.	939560.687	201068.725
104	13+76.63	21.00' LT.	939567.463	201068.933
105	13+94.00	21.00' LT.	939582.964	201076.773
106	14+00.00	21.00' LT.	939588.318	201079.481
107	14+22.00	21.00' LT.	939607.952	201089.411
108	15+05.18	21.00' LT.	939680.074	201128.434
109	16+02.57	21.00' LT.	939761.615	201179.119
110	16+61.02	21.00' LT.	939808.913	201212.043
111	17+14.83	21.00' LT.	939852.468	201243.638
112	17+16.17	21.06' LT.	939853.520	201244.471
113	17+22.80	23.13' LT.	939857.670	201250.038
201	14+06.91	24.00' RT.	939614.797	201042.445
202	14+22.00	24.00' RT.	939628.261	201049.254
203	14+24.87	24.00' RT.	939630.859	201050.571
204	14+06.91	30.00' RT.	939617.505	201037.091
205	14+22.00	30.00' RT.	939630.969	201043.900
206	14+24.87	30.00' RT.	939633.577	201045.222
207	14+54.50	24.00' RT.	939657.561	201064.473
208	15+08.97	24.00' RT.	939705.910	201091.394
209	16+03.48	24.00' RT.	939787.368	201142.206
210	16+61.02	24.00' RT.	939835.334	201175.616
211	17+24.82	24.00' RT.	939886.977	201213.079
301	13+76.63	29.00' LT.	939563.852	201076.072

CONTROL POINTS FOR CURB INLETS				
POINT	STATION	OFFSET	X-COORD	Y-COORD
a	14+13.91	24.00' RT.	939621.044	201045.604
b	14+17.91	24.00' RT.	939624.613	201047.409
c	14+73.03	24.00' RT.	939674.119	201073.435
d	14+76.97	24.00' RT.	939677.623	201075.365
e	16+19.03	24.00' RT.	939800.458	201151.054
f	16+22.97	24.00' RT.	939803.758	201153.315
g	16+63.00	24.00' RT.	939836.938	201176.780
h	16+67.00	24.00' RT.	939840.176	201179.128
i	17+06.82	24.00' RT.	939872.407	201202.509
j	17+10.82	24.00' RT.	939875.645	201204.858

CURVE DATA

POINT	RADIUS	LENGTH
111 TO 113	16.00'	8.34'

ITEM 609.11 VERTICAL CURB TYPE 1

POINT	LENGTH
103 TO 105	10.37'
106 TO 108	97.02'
109 TO 111	111.44'
201 TO 203	0.00'
204 TO 206	4.01'
207 TO 208	44.34'
209 TO 211	103.26'

ITEM 609.237 TERMINAL CURB TYPE 1 - 7 FOOT

POINT	
102	204
105	206
106	207
201	211
203	

ITEM 609.12 VERTICAL CURB TYPE 1 - CIRCULAR

POINT	LENGTH	RADIUS
111 TO 112	1.34	16.00'

ITEM 609.13 VERTICAL BRIDGE CURB TYPE 1

POINT	LENGTH
108 TO 109	96.03'
208 TO 209	96.02'

ITEM 609.237 TERMINAL CURB TYPE 1 - 7 FOOT CIRCULAR

POINT	RADIUS
103	8.00'
113	16.00'

CURVE DATA

PI = 18+07.66
D = 1° - 08' - 45.3"
Δ = 0° - 52' - 08.3" Rt.
R = 5000.00'
L = 75.83'
T = 37.92'
E = 0.14'

25 0 25 50
SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00
BRIDGE NO. 2431
BRIDGE PLANS

	DSE	BY	DATE	SIGNATURE
PROJ. MANAGER	RWH	MPC	07/10	
DESIGN-DETAILED	DSE	-	07/10	
CHECKED-REVIEWED	-	-	-	P.E. NUMBER
DESIGN2-DETAILED2	-	-	-	
DESIGN3-DETAILED3	-	-	-	DATE
REVISIONS 1	-	-	-	
REVISIONS 2	-	-	-	
REVISIONS 3	-	-	-	
REVISIONS 4	-	-	-	
FIELD CHANGES	-	-	-	

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

GEOMETRIC CURBING PLAN

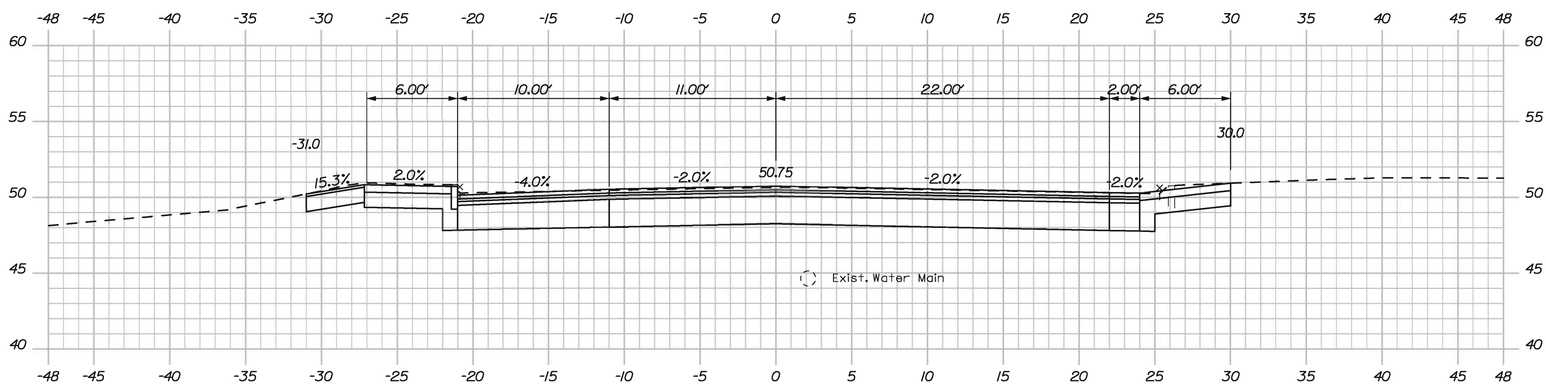
SHEET NUMBER
14
OF 48

Sta. 14+15.9l, Rt. to Sta. 14+75.00, Rt.
Install 55.l' x 18" Option III

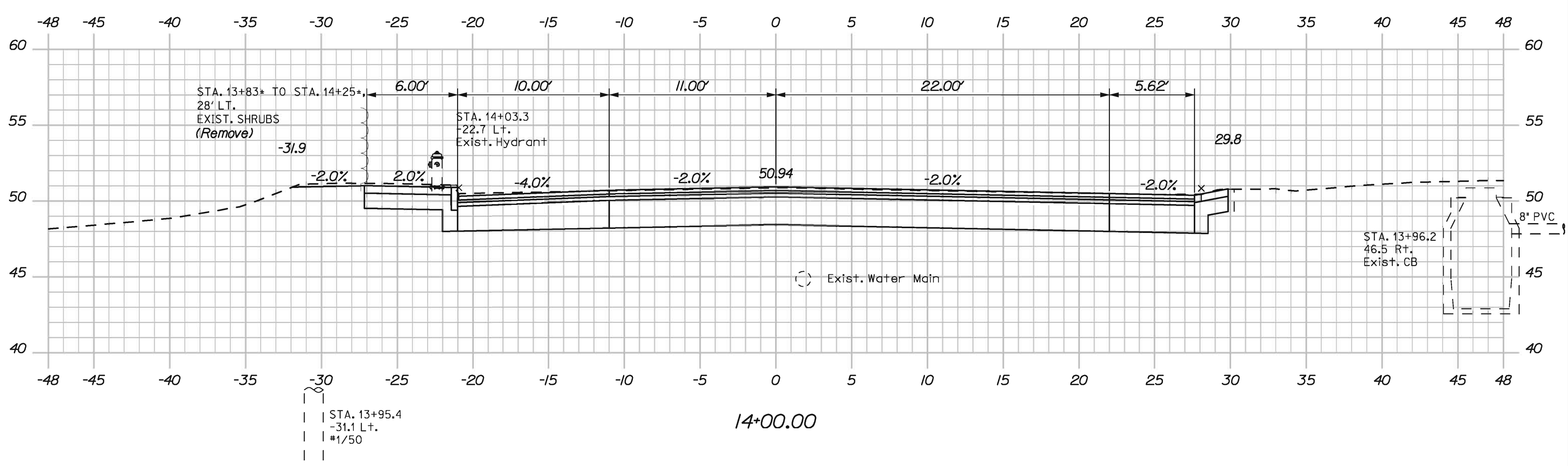
Sta. 14+15.9l, 22.88' Rt.
Install CB Type Al-C
Rim elev. = 49.80

Inv. out = 44.50

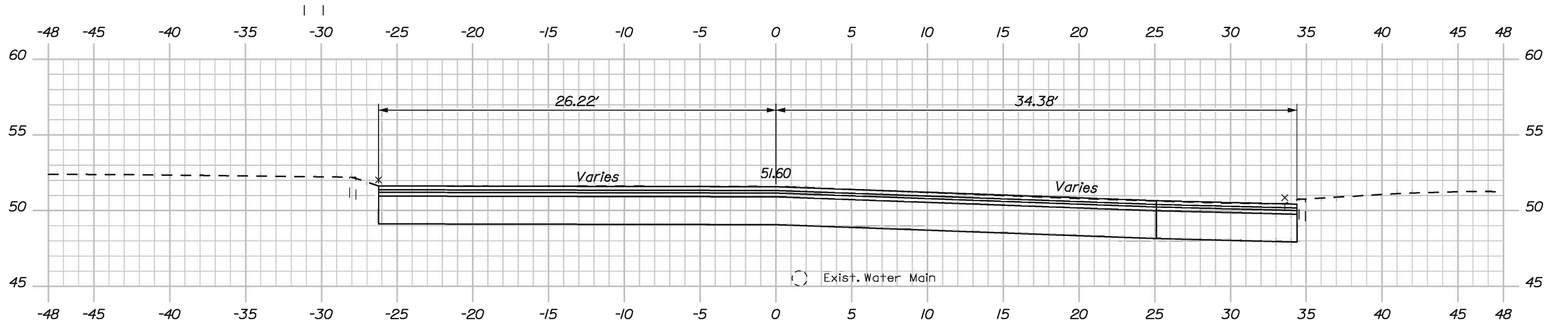
STA. 14+14.4
27.1 Rt.
Exist. 20" OAK
(Remove)



14+05.00 WALKWAY LEFT

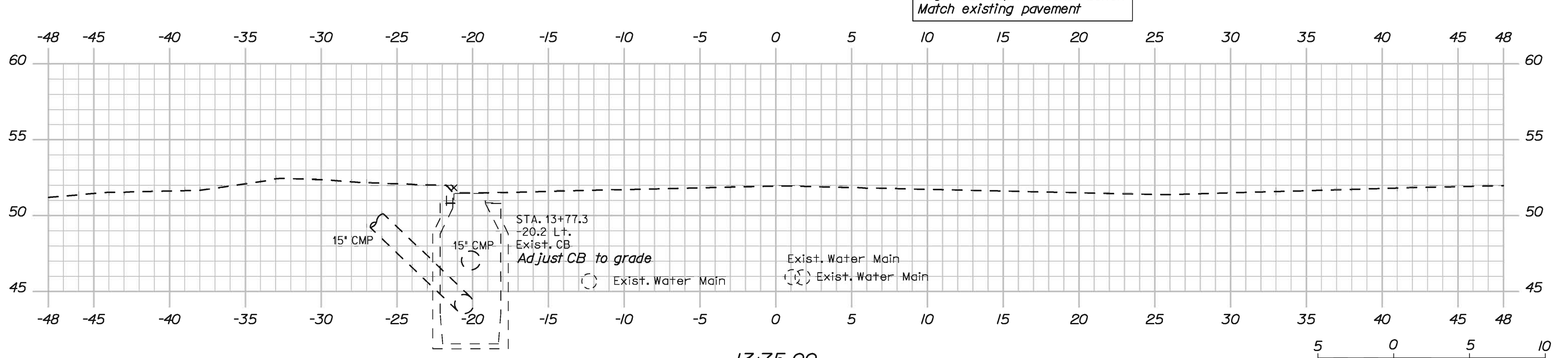


14+00.00



13+83.31 (Skewed)

Sta. 13+83.31
Begin project BH-1509(800)X
Begin full depth reconstruction
Match existing pavement



13+75.00

(Typ., all sections)

Sta. 13+75.00 to Sta. 14+05.00

SHEET NUMBER 15 OF 48

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

CROSS SECTIONS

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	DGE	MPC	07\10
CHECKED-REVIEWED	DGE	_	07\10
DESIGN2-DETAILED2	_	_	_
DESIGN3-DETAILED3	_	_	_
REVISIONS 1	_		_
REVISIONS 2	_		_
REVISIONS 3	_		_
REVISIONS 4	_		_
FIELD CHANGES	_		_

SIGNATURE

P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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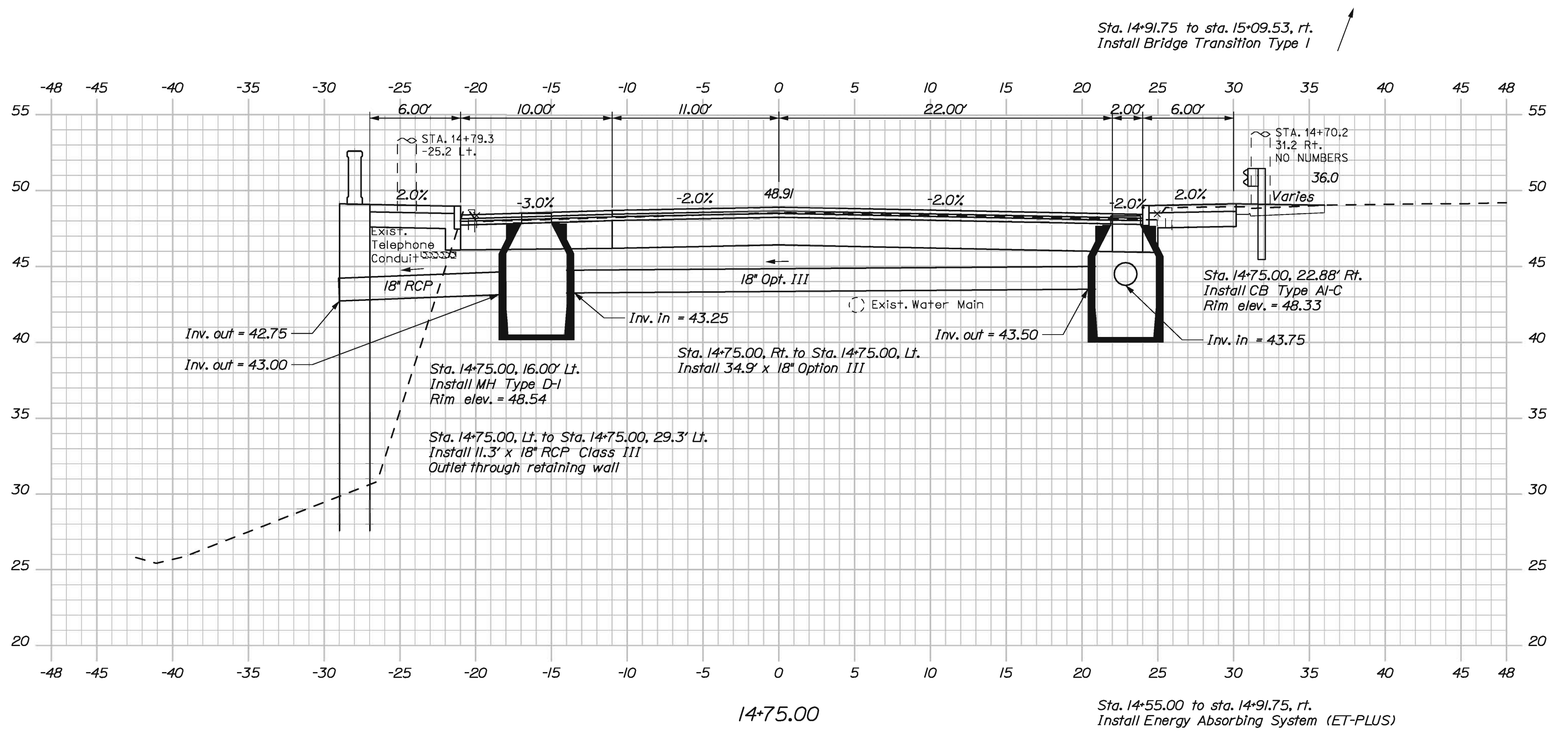
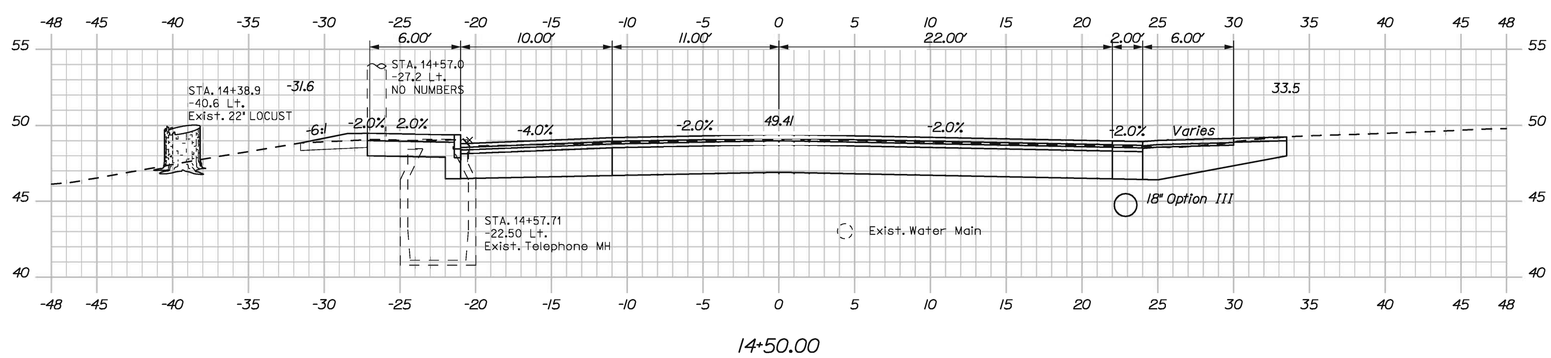
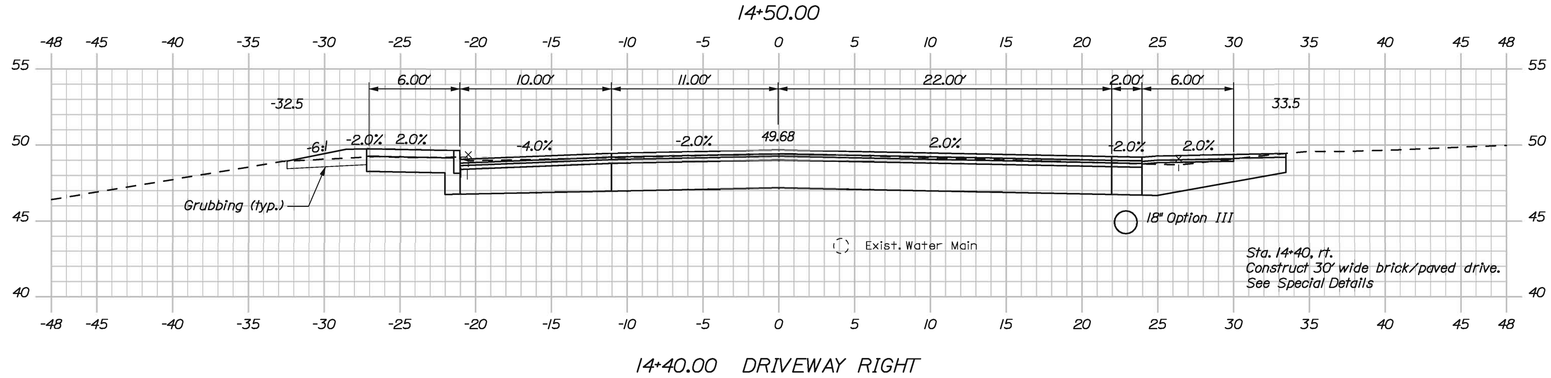
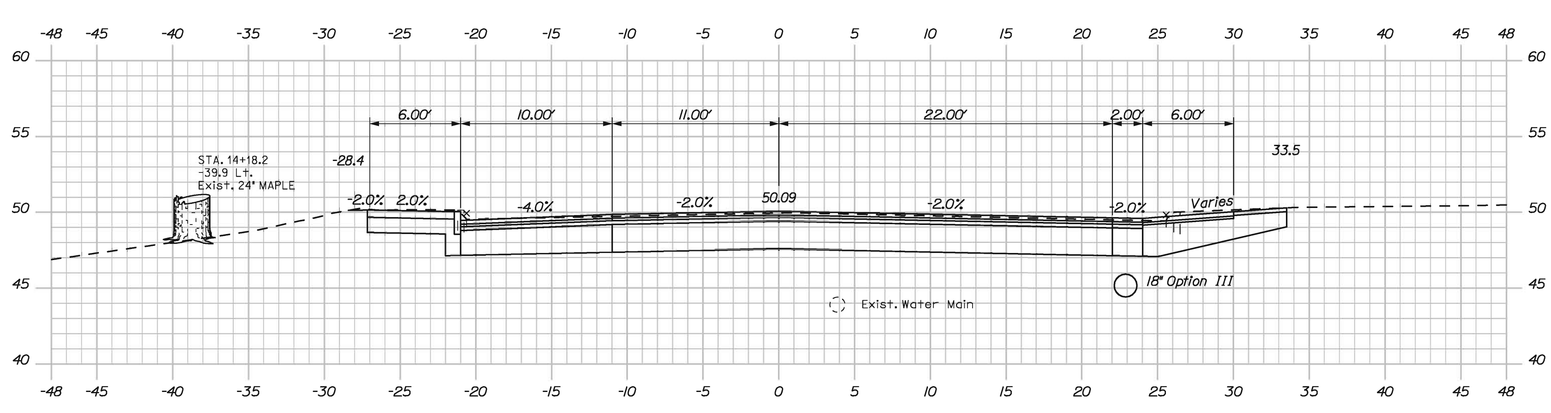
BRIDGE NO. 2431 PIN 15098.00 BRIDGE PLANS









Sta. 14+25.00 to Sta. 14+75.00

SHEET NUMBER 16 OF 48

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

CROSS SECTIONS

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	DGE	MPC	07\10
CHECKED-REVIEWED	DGE	_	07\10
DESIGN2-DETAILED2	_	_	_
DESIGN3-DETAILED3	_	_	_
REVISIONS 1	_		_
REVISIONS 2	_		_
REVISIONS 3	_		_
REVISIONS 4	_		_
FIELD CHANGES	_		_

SIGNATURE

P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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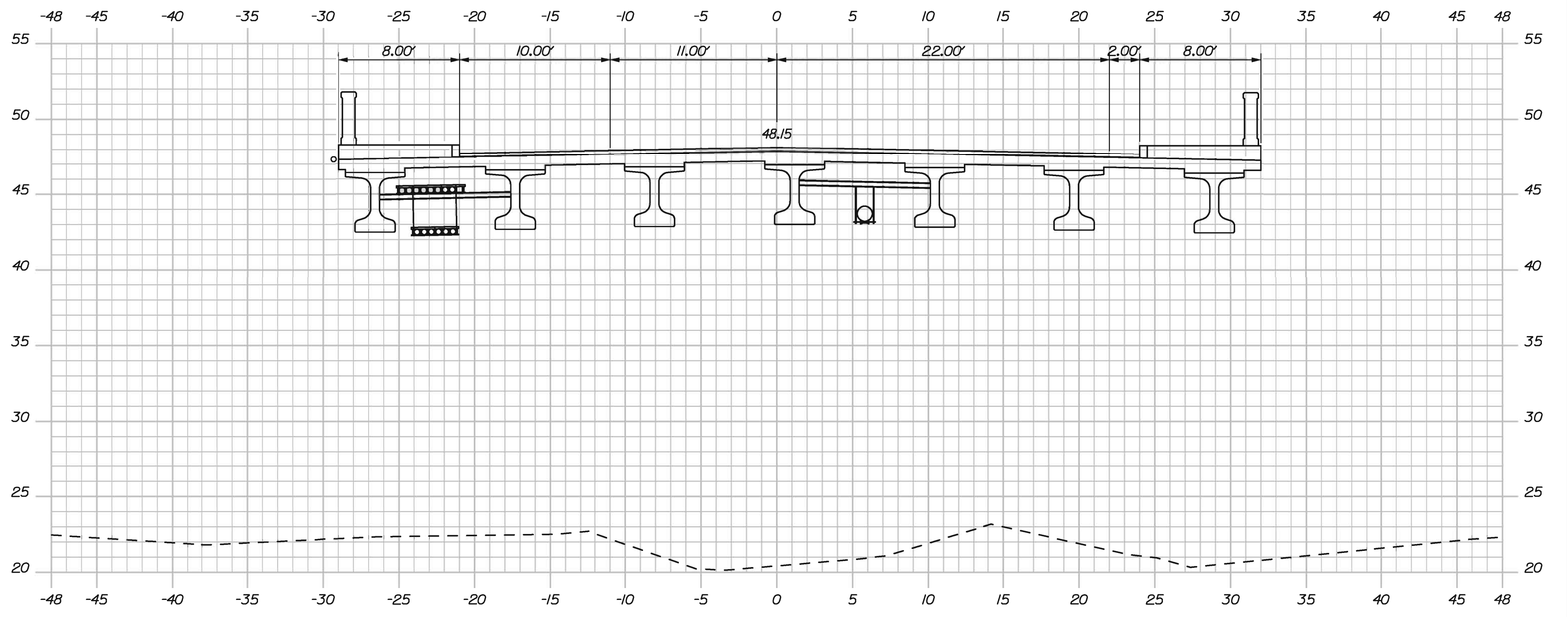
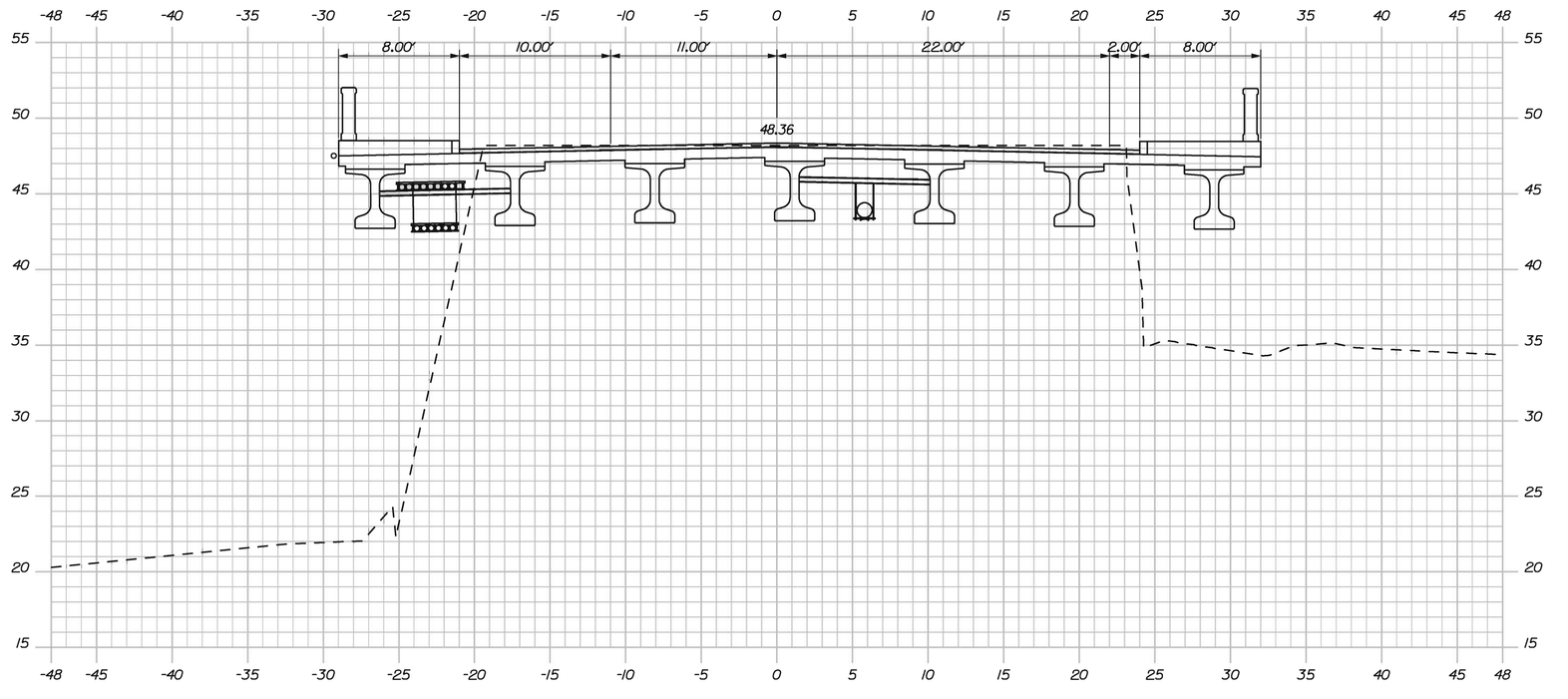
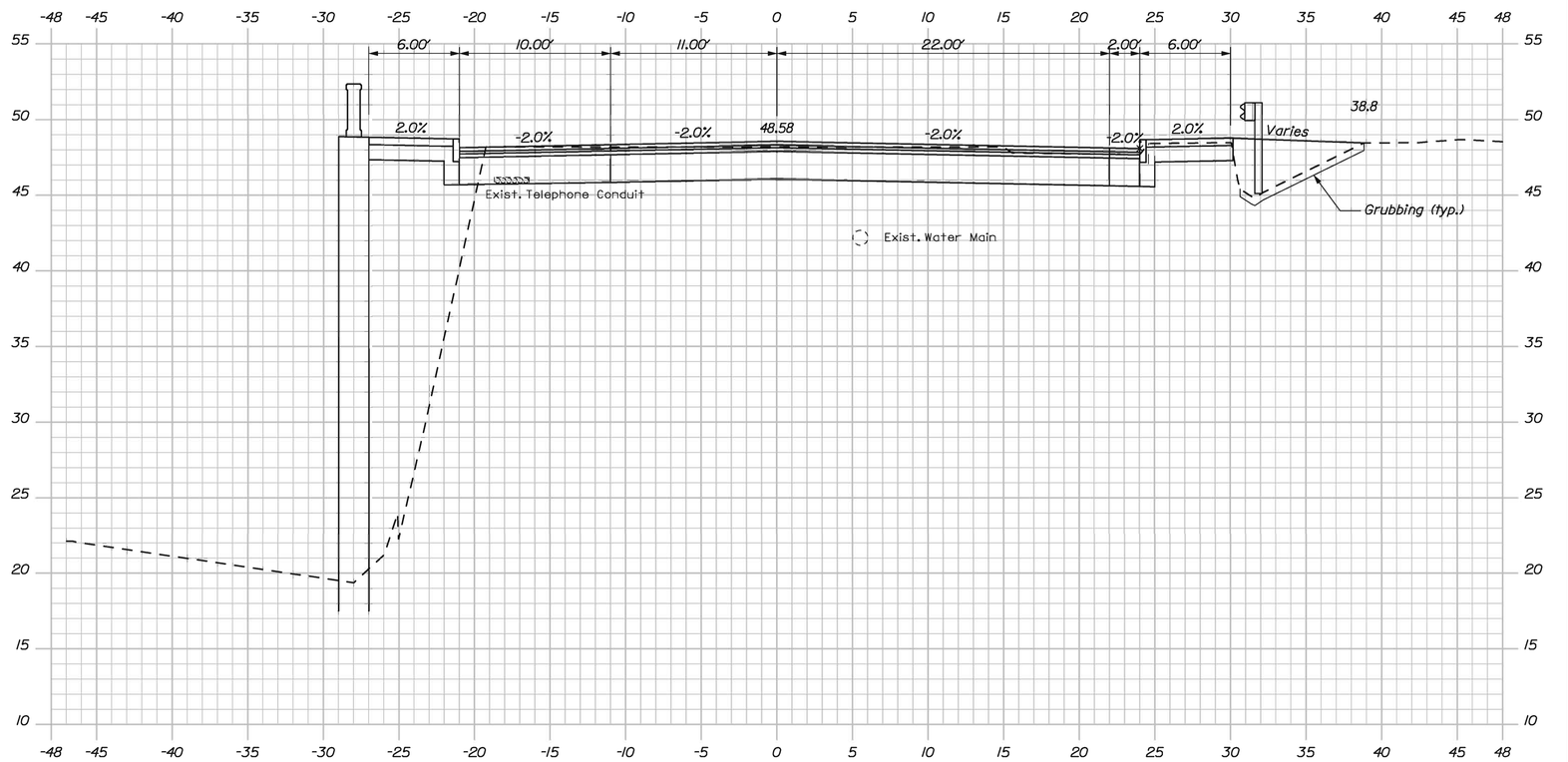
BRIDGE NO. 2431 PIN 15098.00 BRIDGE PLANS



15+50.00



15+25.00



15+00.00

Sta. 15+00.00 to Sta. 15+50.00

SHEET NUMBER 17 OF 48

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

CROSS SECTIONS

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	DGE	MPC	07\10
CHECKED-REVIEWED	DGE	_	07\10
DESIGN2-DETAILED2	_	_	_
DESIGN3-DETAILED3	_	_	_
REVISIONS 1	_		_
REVISIONS 2	_		_
REVISIONS 3	_		_
REVISIONS 4	_		_
FIELD CHANGES	_		_

SIGNATURE

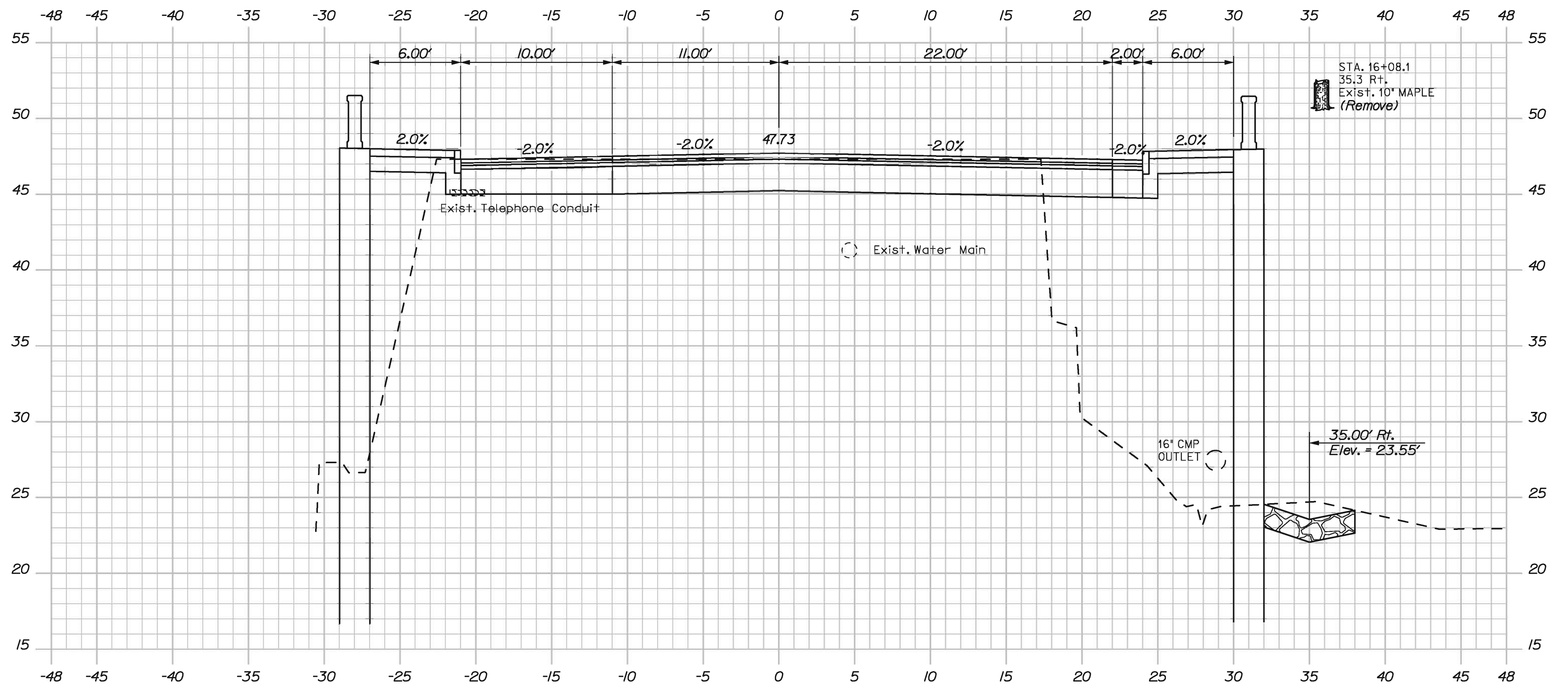
P.E. NUMBER

DATE

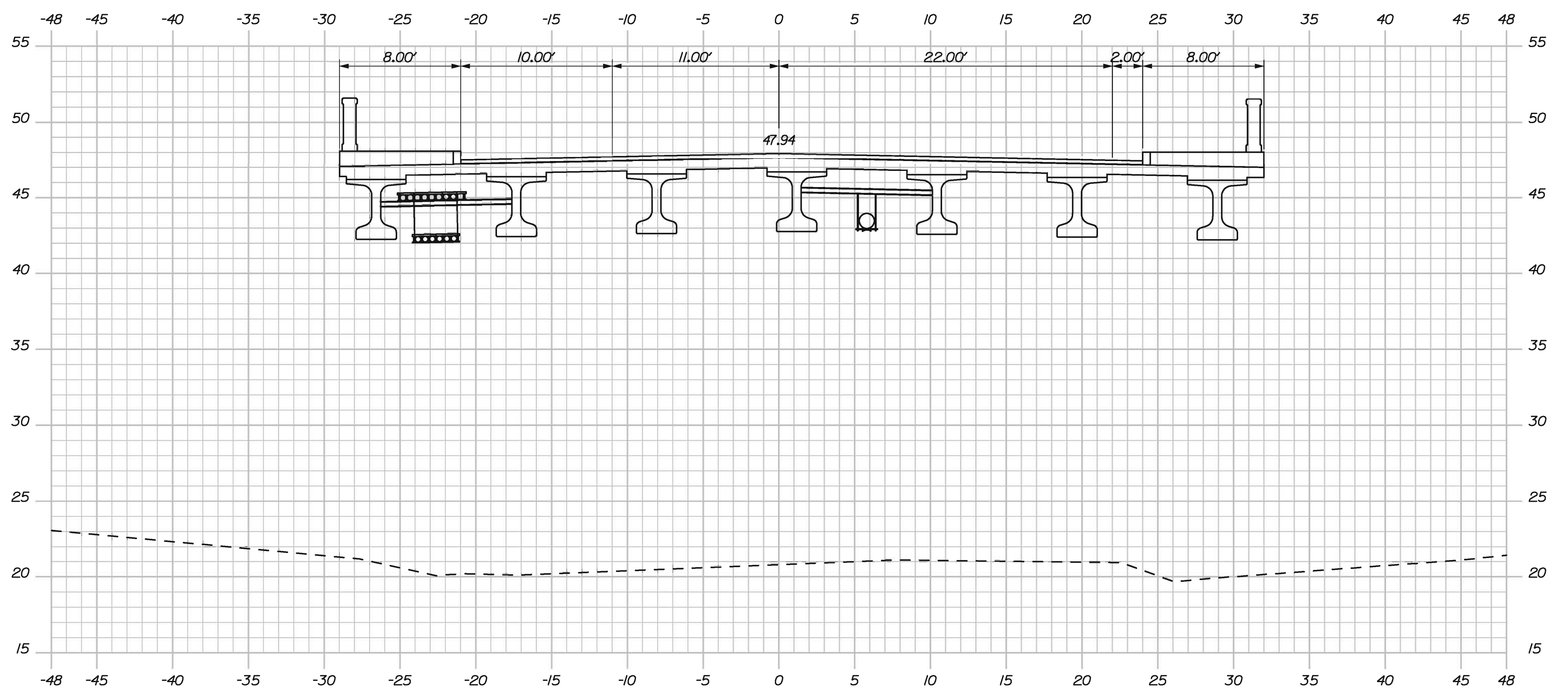
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

BRIDGE NO. 2431 PIN 15098.00 BRIDGE PLANS



16+00.00



15+75.00

Sta. 15+75.00 to Sta. 16+00.00

SHEET NUMBER 18 OF 48

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

CROSS SECTIONS

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	DGE	MPC	07\10
CHECKED-REVIEWED	DGE	_	07\10
DESIGN2-DETAILED2	_	_	_
DESIGN3-DETAILED3	_	_	_
REVISIONS 1	_		_
REVISIONS 2	_		_
REVISIONS 3	_		_
REVISIONS 4	_		_
FIELD CHANGES	_		_

SIGNATURE

P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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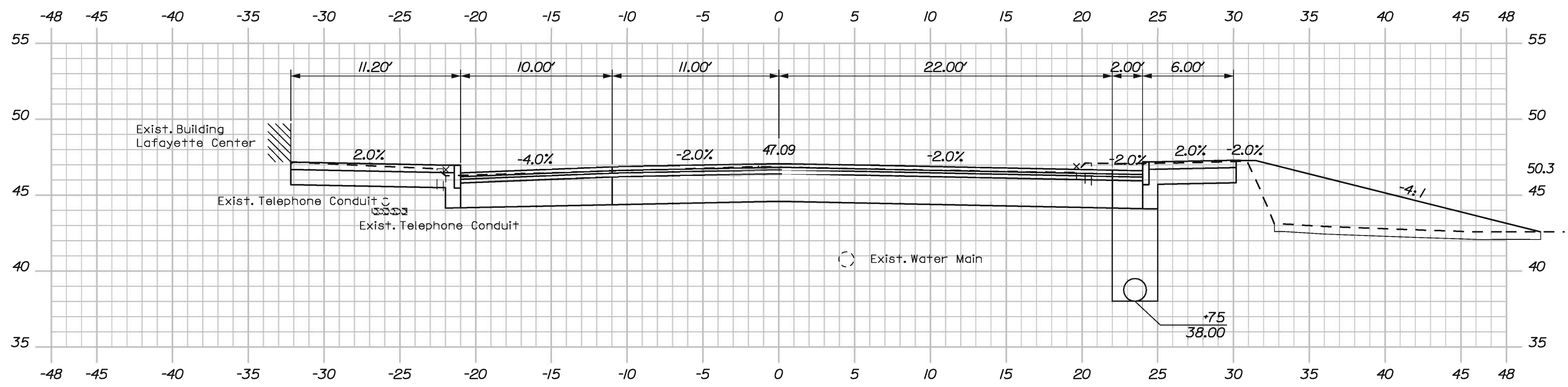
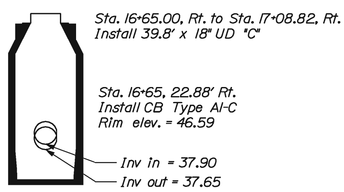
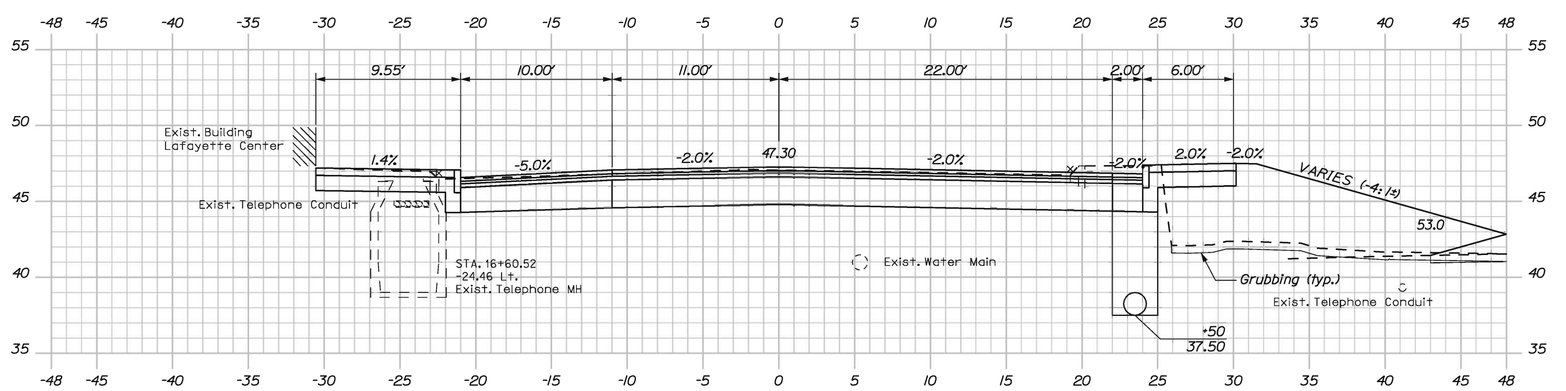
BRIDGE NO. 2431 PIN 15098.00 BRIDGE PLANS



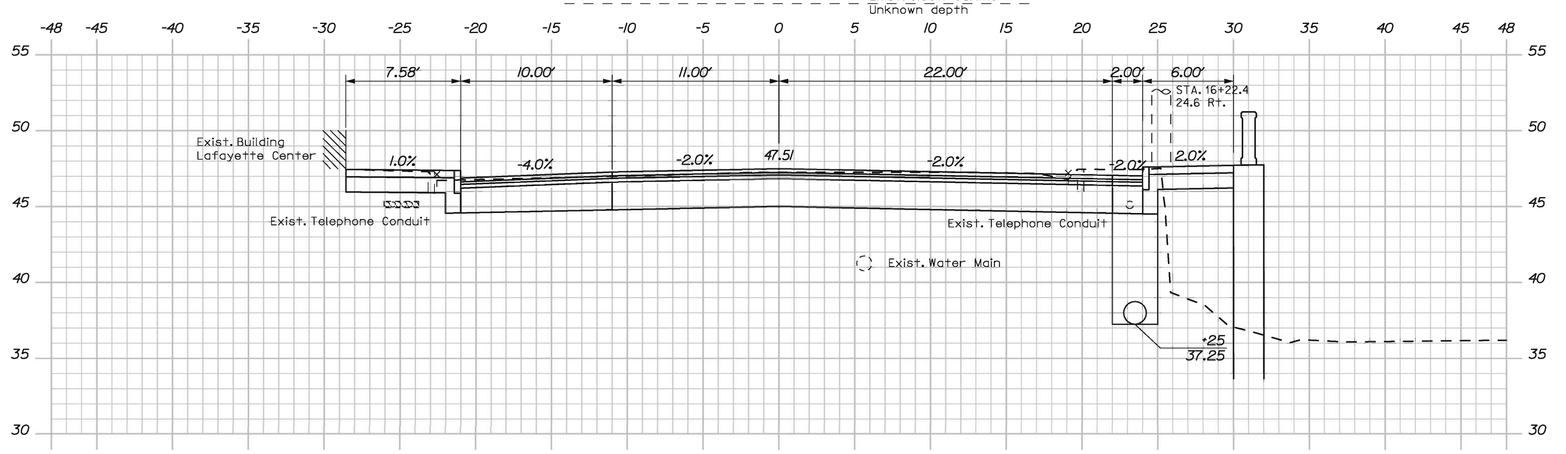
16+75.00



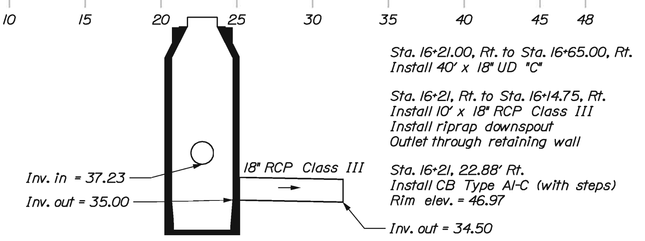


16+50.00

Exist. electrical line
Unknown depth



16+25.00



Sta. 16+25.00 to Sta. 16+75.00

SHEET NUMBER 19 OF 48

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

CROSS SECTIONS

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	DGE	MPC	07\10
CHECKED-REVIEWED	DGE	_	07\10
DESIGN2-DETAILED2	_	_	_
DESIGN3-DETAILED3	_	_	_
REVISIONS 1	_		_
REVISIONS 2	_		_
REVISIONS 3	_		_
REVISIONS 4	_		_
FIELD CHANGES	_		_

SIGNATURE

P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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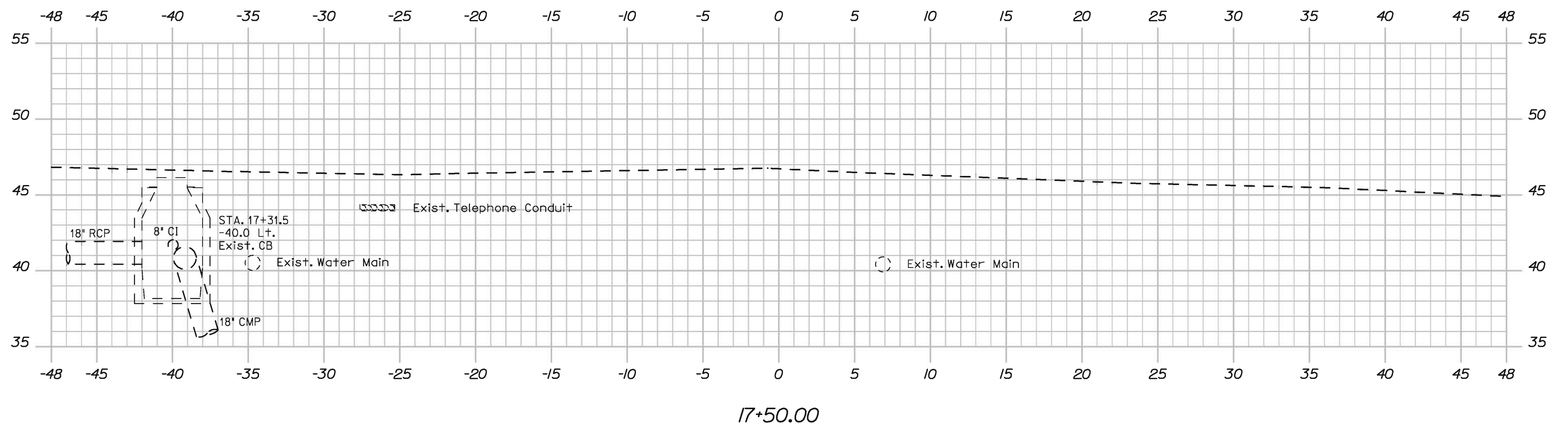
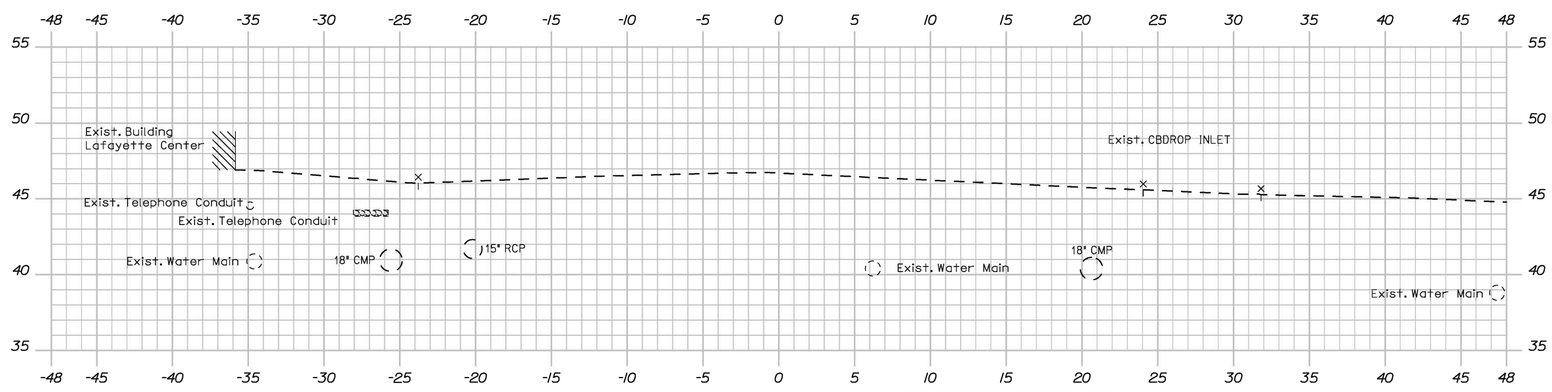
BRIDGE NO. 2431 PIN 15098.00 BRIDGE PLANS

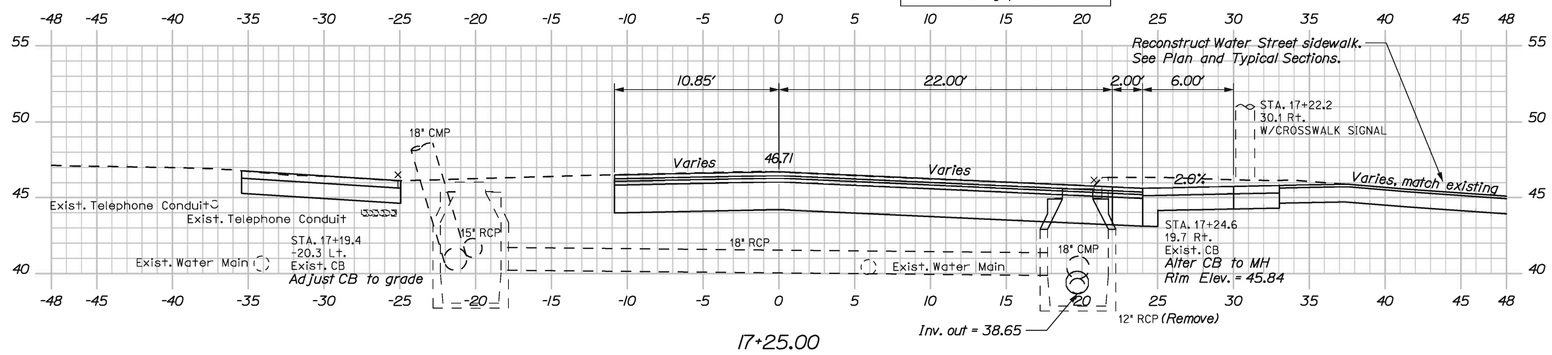


17+50.00

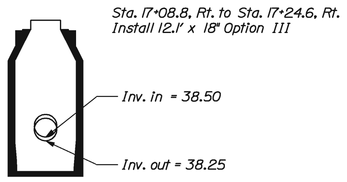


17+27.23 (Skewed)

Sta. 17+27.23
End project BH-1509(800)X
End full depth reconstruction
Match existing pavement

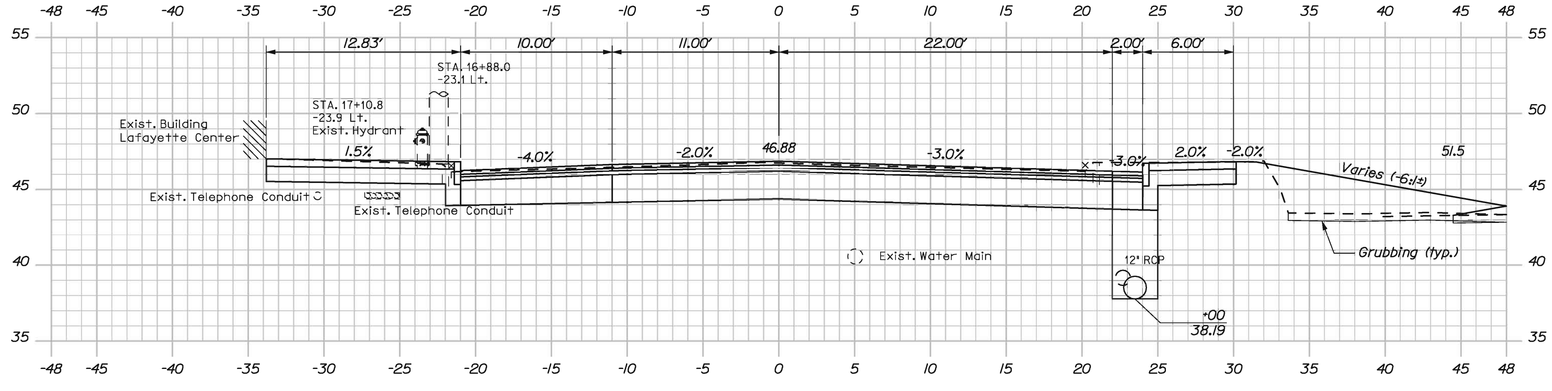


17+25.00



Sta. 17+08.8, Rt. to Sta. 17+24.6, Rt.
Install 12.1' x 18" Option III

Sta. 17+08.82, 22.88' Rt.
Install CB Type AI-C
Rim Elev. = 46.00



17+00.00

Sta. 17+00.00 to Sta. 17+50.00

SHEET NUMBER 20 OF 48

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

CROSS SECTIONS

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	DGE	MPC	07\10
CHECKED-REVIEWED	DGE	_	07\10
DESIGN2-DETAILED2	_	_	_
DESIGN3-DETAILED3	_	_	_
REVISIONS 1	_		_
REVISIONS 2	_		_
REVISIONS 3	_		_
REVISIONS 4	_		_
FIELD CHANGES	_		_

SIGNATURE

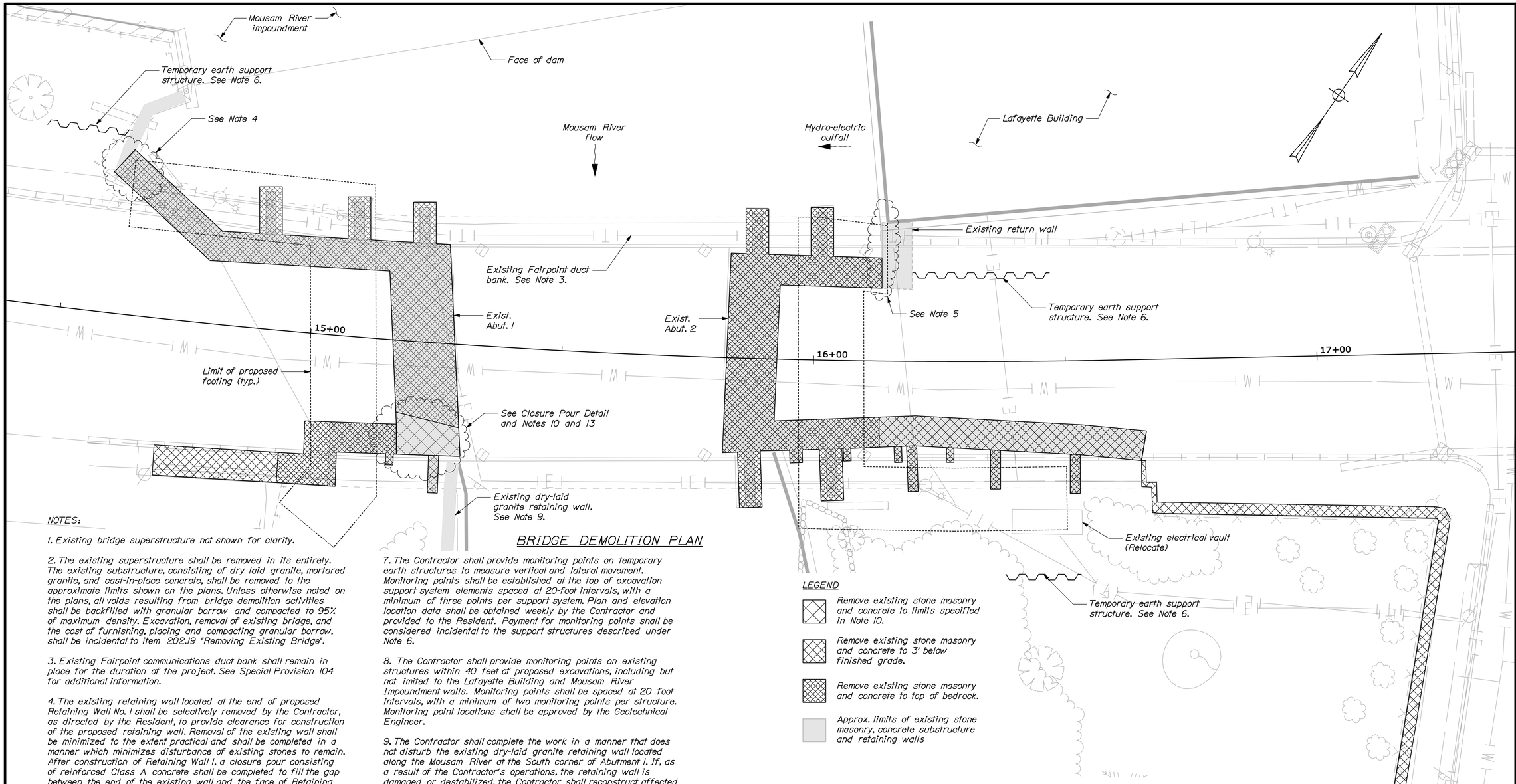
P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

BRIDGE NO. 2431 PIN 15098.00 BRIDGE PLANS



BRIDGE DEMOLITION PLAN

NOTES:

1. Existing bridge superstructure not shown for clarity.

2. The existing superstructure shall be removed in its entirety. The existing substructure, consisting of dry laid granite, mortared granite, and cast-in-place concrete, shall be removed to the approximate limits shown on the plans. Unless otherwise noted on the plans, all voids resulting from bridge demolition activities shall be backfilled with granular borrow and compacted to 95% of maximum density. Excavation, removal of existing bridge, and the cost of furnishing, placing and compacting granular borrow, shall be incidental to item 202.19 "Removing Existing Bridge".

3. Existing Fairpoint communications duct bank shall remain in place for the duration of the project. See Special Provision 104 for additional information.

4. The existing retaining wall located at the end of proposed Retaining Wall No. 1 shall be selectively removed by the Contractor, as directed by the Resident, to provide clearance for construction of the proposed retaining wall. Removal of the existing wall shall be minimized to the extent practical and shall be completed in a manner which minimizes disturbance of existing stones to remain. After construction of Retaining Wall 1, a closure pour consisting of reinforced Class A concrete shall be completed to fill the gap between the end of the existing wall and the face of Retaining Wall No. 1. Payment shall be made under item 502.21 "Structural Concrete, Abutments and Retaining walls".

5. The existing return wall located at the end of proposed Retaining Wall No. 2 shall be selectively removed by the Contractor, as directed by the Resident, to allow construction of the proposed retaining wall to match into the face of the existing return wall. Removal of the existing return wall shall be minimized to the extent possible and shall be completed in a manner which minimizes disturbance to existing stones to remain and does not disturb the Lafayette Building foundation.

6. The limits of temporary earth support structures shown on this sheet are conceptual. The Contractor shall locate, design and construct temporary earth support structures along the existing Lafayette Building, and along areas of excavation adjacent to the Mousam River impoundment and the relocated electrical vault. The purpose of these systems is to isolate the existing building foundation, dam, impoundment, and vault from all construction activities, including the effects of removing soil around and adjacent to the existing features. The design and construction of the temporary earth support structures shall be in accordance with Special Provision, Section 511. Payment for temporary earth support structures will be made under the related 511.08 pay items.

7. The Contractor shall provide monitoring points on temporary earth structures to measure vertical and lateral movement. Monitoring points shall be established at the top of excavation support system elements spaced at 20-foot intervals, with a minimum of three points per support system. Plan and elevation location data shall be obtained weekly by the Contractor and provided to the Resident. Payment for monitoring points shall be considered incidental to the support structures described under Note 6.

8. The Contractor shall provide monitoring points on existing structures within 40 feet of proposed excavations, including but not limited to the Lafayette Building and Mousam River Impoundment walls. Monitoring points shall be spaced at 20 foot intervals, with a minimum of two monitoring points per structure. Monitoring point locations shall be approved by the Geotechnical Engineer.

9. The Contractor shall complete the work in a manner that does not disturb the existing dry-laid granite retaining wall located along the Mousam River at the South corner of Abutment 1. If, as a result of the Contractor's operations, the retaining wall is damaged or destabilized, the Contractor shall reconstruct affected portions of the wall to a stable condition at no additional expense to the Department.

10. The Contractor shall selectively demolish the top portion of existing Abutment 1 in the location identified, as directed by the Resident. The anticipated limits of removal include the cast-in-place concrete cap atop the original granite masonry, the concrete backwall, and the top three rows of granite blocks.

11. The limits of the existing abutments, dam and Lafayette Building foundation are approximated. Actual limits and field conditions may vary from those shown on the plans. As-built drawings for the dam and Lafayette Building are not available.

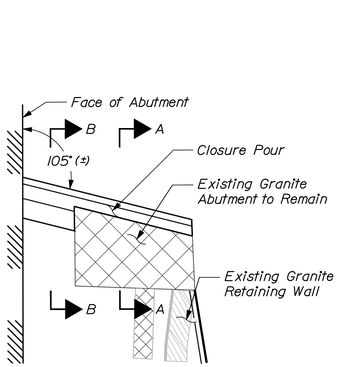
12. The hydroelectric outfall shall remain in service during the entire duration of the project. The Contractor shall plan the work such that the outfall is not blocked or otherwise obstructed as a result of the Contractor's activities.

13. Construct a concrete closure pour in accordance with the Closure Pour Detail shown on this sheet after abutment construction is complete. Payment for construction of the closure pour shall not be paid direcity, but shall be considered incidental to the Removing Exisiting Bridge pay item.

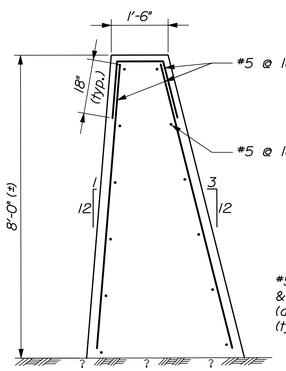
14. Concrete closure pours shall be constructed on sound bedrock prepared as described for footing surfaces on Sheet 22.

LEGEND

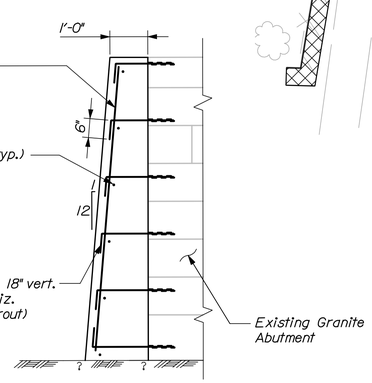
- Remove existing stone masonry and concrete to limits specified in Note 10.
- Remove existing stone masonry and concrete to 3' below finished grade.
- Remove existing stone masonry and concrete to top of bedrock.
- Approx. limits of existing stone masonry, concrete substructure and retaining walls



Closure Pour Detail



Section B-B



Section A-A

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	TRC	07/10
CHECKED-REVIEWED	JDW	07/10
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

DEMOLITION PLAN

SHEET NUMBER

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OF 48

Abutment and Retaining Wall Notes

1. Maximum calculated footing pressure is 18.5 kips per square foot (LRFD limit state Strength-I). Maximum Factored bearing resistance is 31 kips per square foot

2. Reinforcing steel shall have 2 inches cover in the walls and 3 inches cover in the footings unless otherwise noted.

3. Abutments, wings, retaining walls, and their footings shall be backfilled with granular borrow for underwater backfill. Pay limits will be the structural excavation limits in cut areas and a vertical plane located 12 feet behind the base of retaining walls and abutments and 1 foot behind the footings in fill areas.

4. Foundation concrete shall be placed on bedrock cleaned of all loose rock or soil. Prior to placing the concrete, the bearing surface shall be washed with high-pressure water and air.

5. When the prepared bedrock surface is below the bottom of the footing, concrete fill may be placed to fill the void. Alternatively, the footing thickness may be increased up to an additional 1 foot as approved by the Resident. If the footing thickness is increased, the top of the footing elevation shall be as shown on the plans.

6. When bedrock protrudes above the bottom of the footing, the footing may be raised and vertical reinforcing may be cut in the field with the approval of the Resident. The minimum allowable footing thickness is shown on the Plans. Payment for adjusting footing depth and adjusting reinforcing steel shall be considered incidental to related contract items. No separate payment shall be made.

7. At the option of the Resident, bedrock that protrudes above a horizontal plane 12 inches below the proposed footing elevation may be removed. Payment for bedrock removal shall be made under Item No. 206.092, Structural Rock Excavation - Major Structures.

8. The foundation bearing areas shall be approximately level. Where the bedrock surface slope exceeds 4H:1V the bedrock surface shall be benched in level steps or made completely level. With the approval of the Geotechnical Engineer, bedrock slopes that are greater than 4H:1V may be prepared for seals or footings with grouted dowels in the sloping bedrock surface. Dowels should be #9 reinforcing bars or larger, and be embedded into bedrock and footings or seals at 2 foot maximum grid spacing, with 2.0 foot development in the footing/seal and 1 foot development in the bedrock. Drilling and grouting of dowels shall be incidental to related pay items.

9. When bedrock surface is stepped with lower bedrock level adjacent to the river, the bedrock surface shall be made completely level at the lower elevation or may be prepared for seals or footings with grouted dowels as described in Note 7 with the approval of the Geotechnical Engineer.

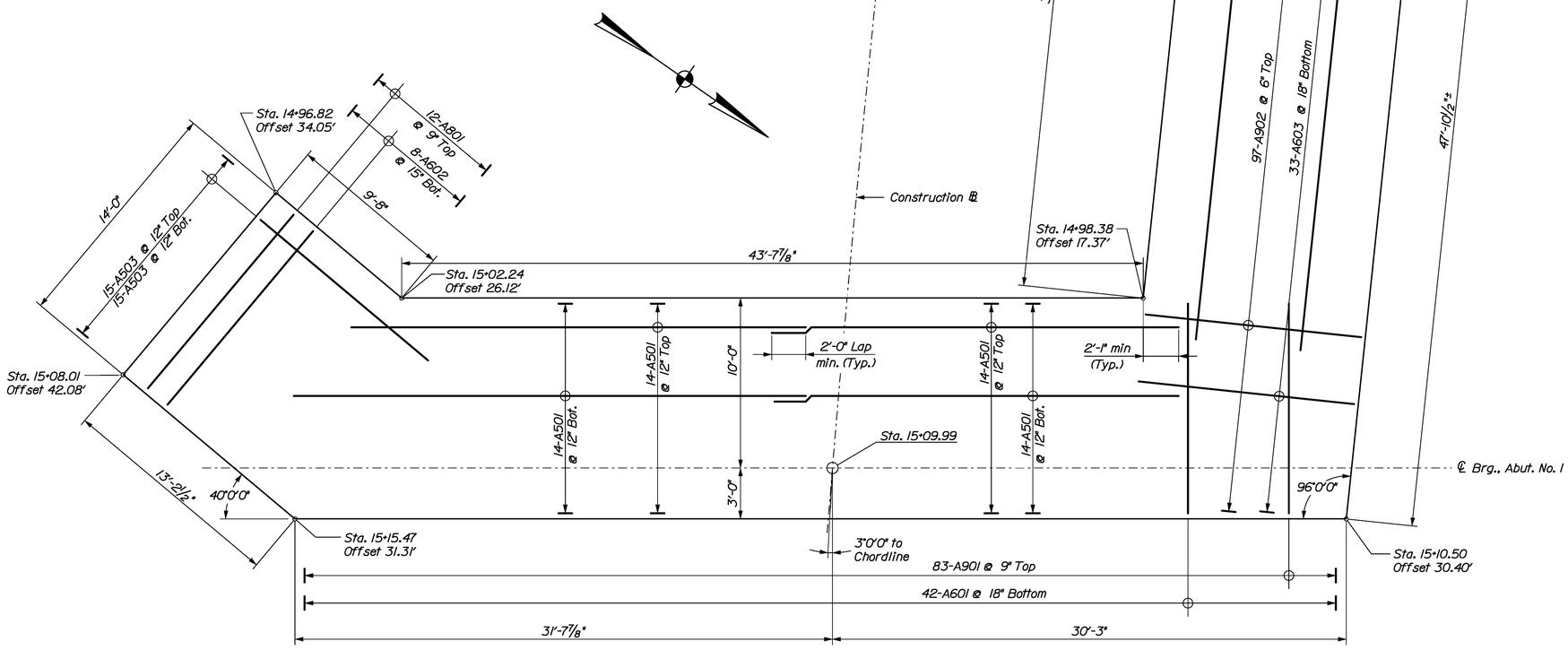
10. Chamfer exposed concrete edges ¾in. by ¾in.

11. Cover joints in accordance with Standard Detail 502 (01) where waterstops are not required.

12. Place 4 inch diameter drains in breastwall and wings at 10 feet maximum spacing. Exact location to be determined by the Resident in the field.

13. Construct french drains behind the abutments and wings in accordance with Standard Specification Section 512. French Drains, except Stone for French Drains (Section 703.24) shall be replaced with Type C Underdrain Backfill Material (Section 703.22).

14. The contractor shall install Texas Rail vertical stirrups as shown in these plans and in Standard Details Section 526, prior to placement of wingwall concrete.



Plan - Abutment No. 1 Footing

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	-	PIN 15098.00	BRIDGE PLANS
		BRIDGE NO. 2431	

DGE	BY	DATE	
AMV	JJR	07/10	SIGNATURE
JMA	VN	07/10	
-	-	-	P.E. NUMBER
-	-	-	
-	-	-	DATE
-	-	-	

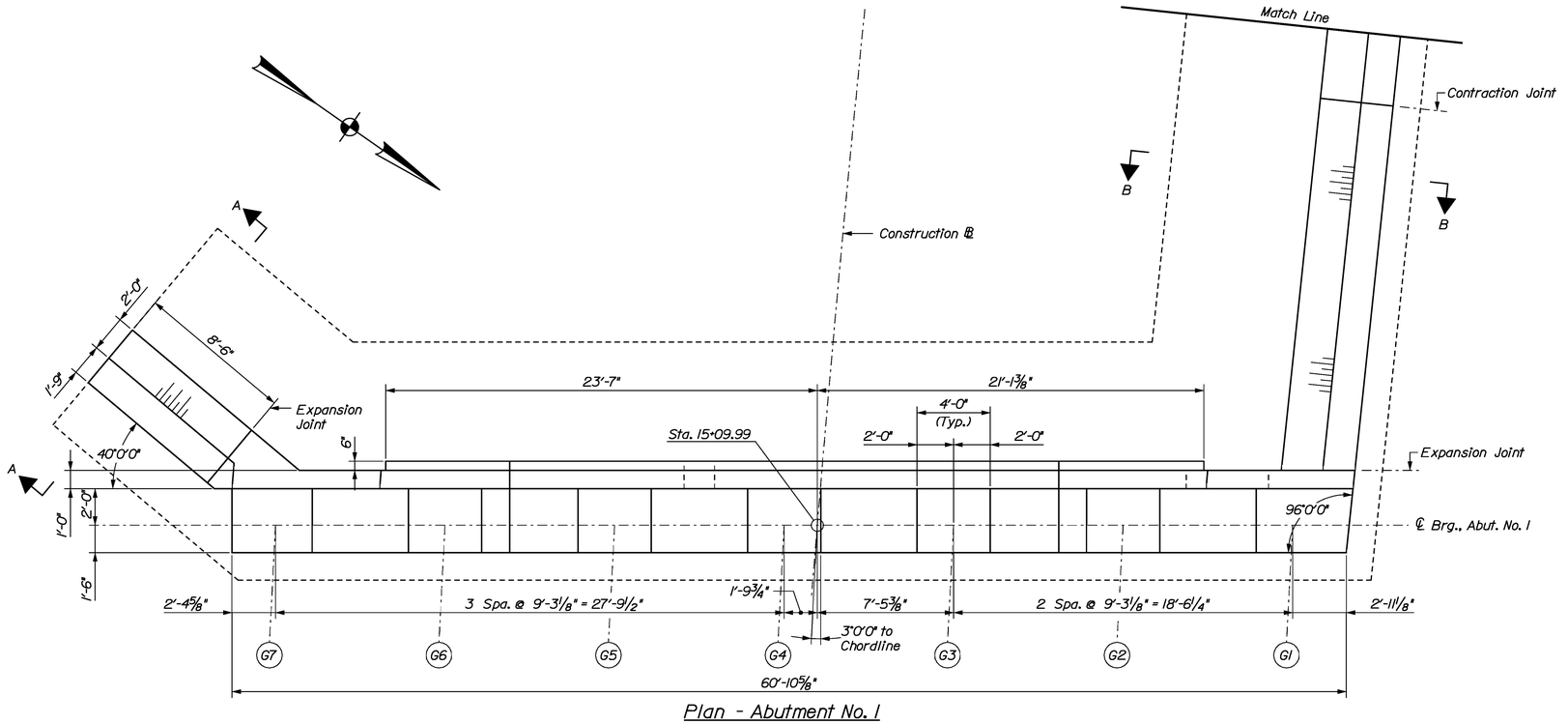
PROJ. MANAGER	REVISIONS 1	-
DESIGN-DETAILED AMV	REVISIONS 2	-
CHECKED-REVIEWED JMA	REVISIONS 3	-
DESIGN2-DETAILED2 -	REVISIONS 4	-
DESIGN3-DETAILED3 -	FIELD CHANGES	-

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

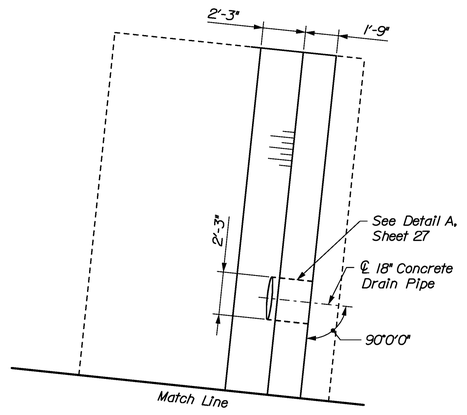
ABUTMENT NO. 1 FOOTING

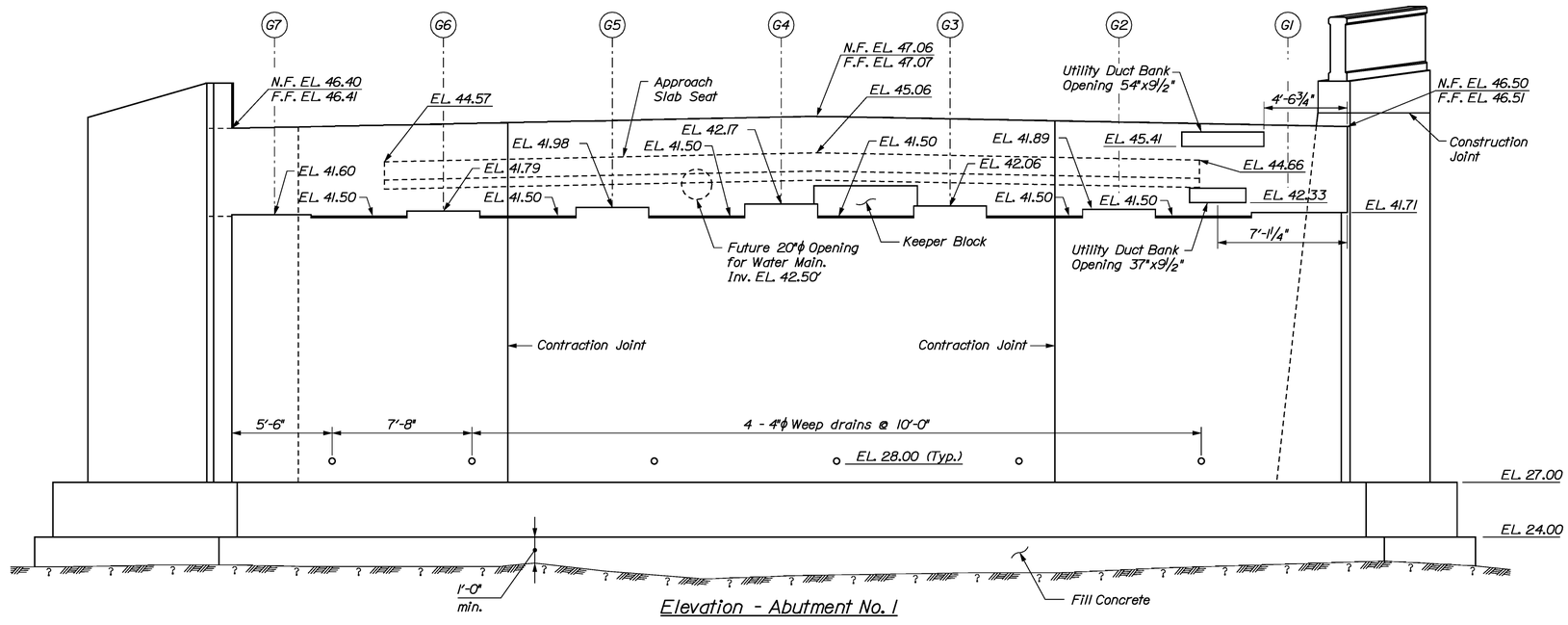
SHEET NUMBER
22
OF 48

Filename: 022_Abut 1 Footing.DGN Division: HIGHWAY Username: rhanf Date:8/3/2010



Plan - Abutment No. 1





Elevation - Abutment No. 1

Notes

1. Keeper blocks to be cast after installation of girders. Edge of blocks shall be ½" from edge of sole plate. Slope keeper blocks ¼"/ft back to front. For additional information, see Keeper Block Elevation and Section, Sheet 31.
2. Fill concrete not shown on plan view for clarity.
3. Elevation points at top of backwall are given at fascia and PGL.
4. For additional information on opening for future 18" water main, see Water Main Penetration Detail, Sheet 31.

Sections

For Section A-A, See Abutment 1 Wingwall Section, Sheet 26.

For Section B-B. See Retaining Wall No. 1 Seciton, Sheet 27.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	DONE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	AMV	JJR	07/10
CHECKED-REVIEWED	JMA	VN	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

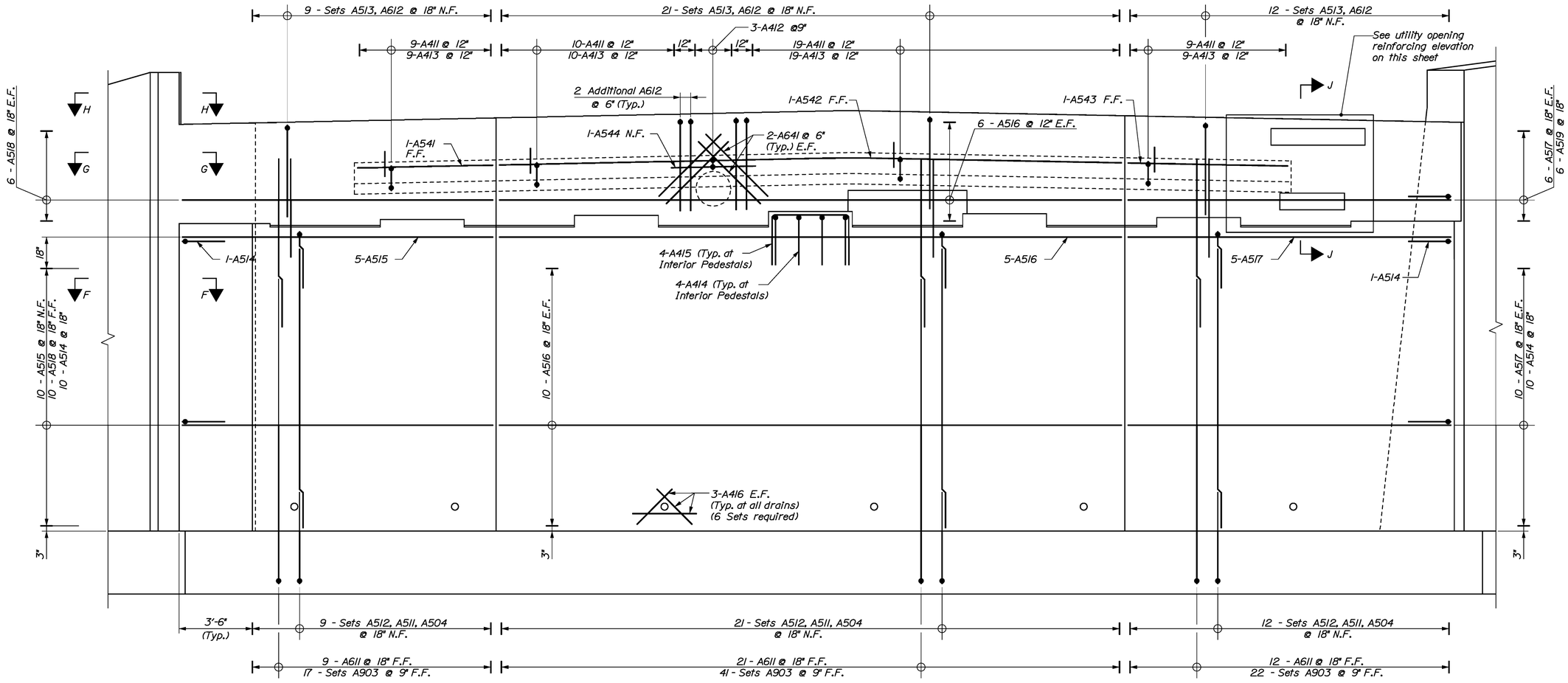
KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

ABUTMENT NO. 1

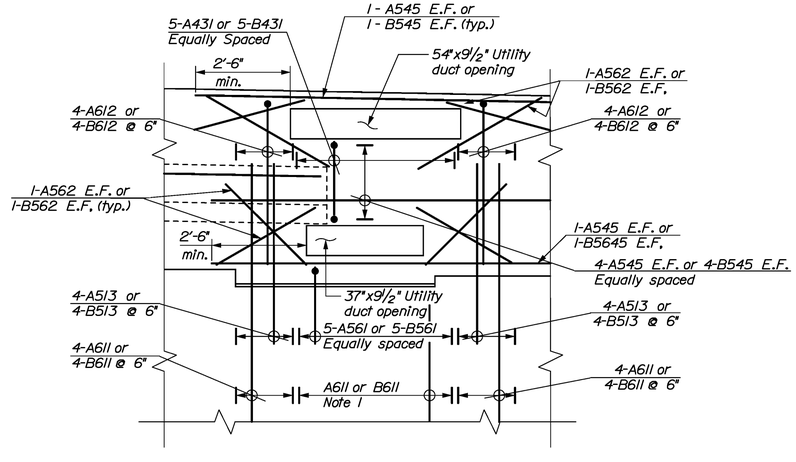
SHEET NUMBER

23

OF 48



Elevation - Abutment No. I Reinforcement



Utility Opening Reinforcing Elevations

Notes

1. Cut reinforcement as directed by the Resident to provide 3" clearance at openings.
2. For Keeper block reinforcement, see Keeper Block Elevation and Section, Sheet 3I.
3. For more information on corbel reinforcement at future water main opening, see Corbel at Water Main Penetration Detail, Sheet 3I.
4. For section J-J, see sheet 3I.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	DES	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	AMV	JJR	07/10
CHECKED-REVIEWED	JMA	VN	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

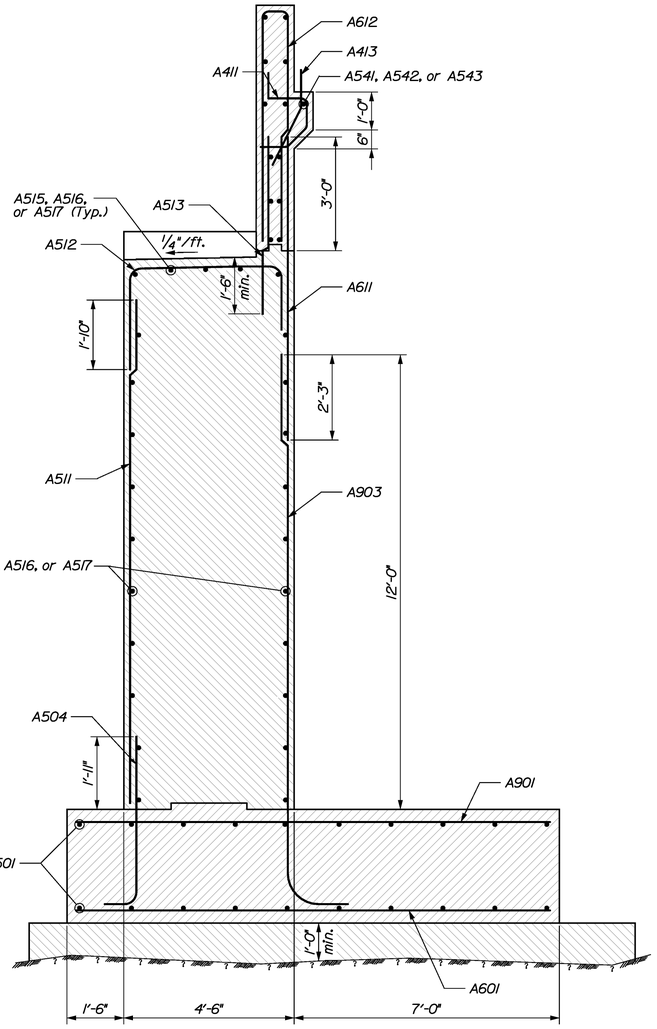
ABUTMENT NO. 1 REINFORCEMENT

SHEET NUMBER

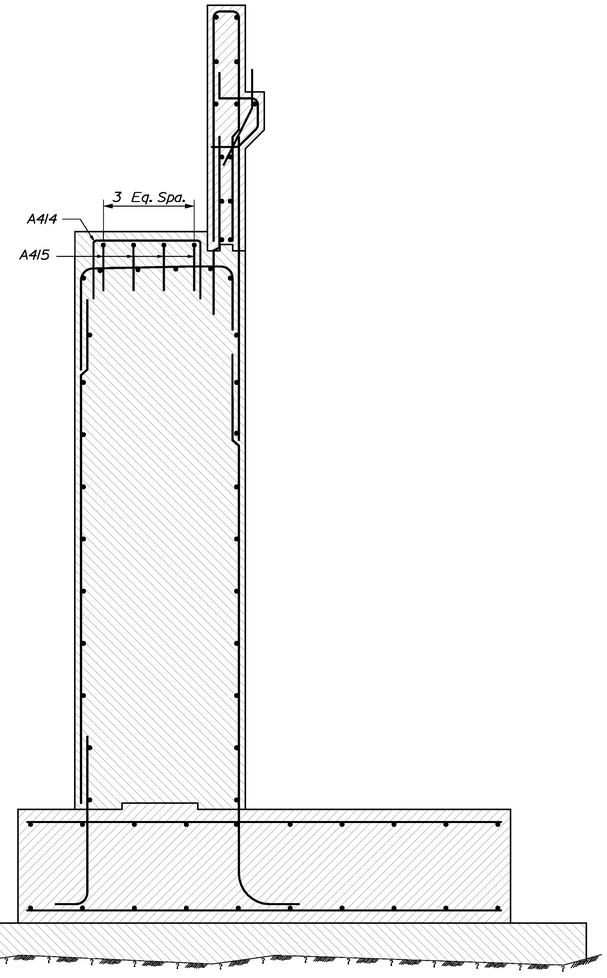
24

OF 48

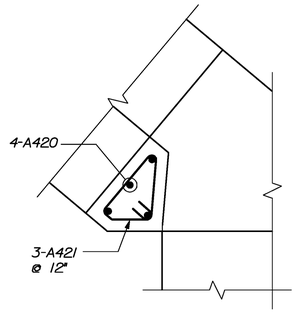
Filename: 024_Abut 1 Reinf.DGN Division: HIGHWAY Username: rhanf Date:8/3/2010



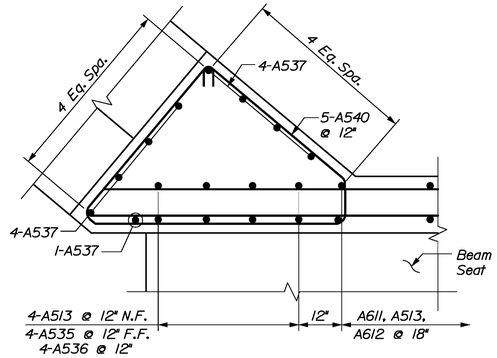
Abutment No. 1 Section
(Section between Bridge Seat Pedestal)



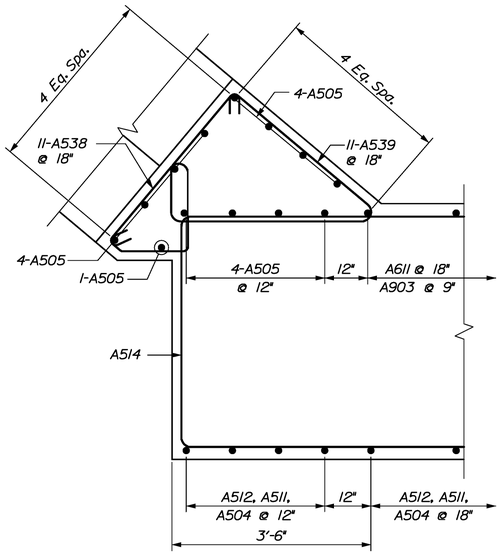
Abutment No. 1 Section
(Section through Bridge Seat Pedestal)



SECTION H-H



SECTION G-G



SECTION F-F

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	AMV	JJR	07/10
CHECKED-REVIEWED	JMA	VN	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

SIGNATURE

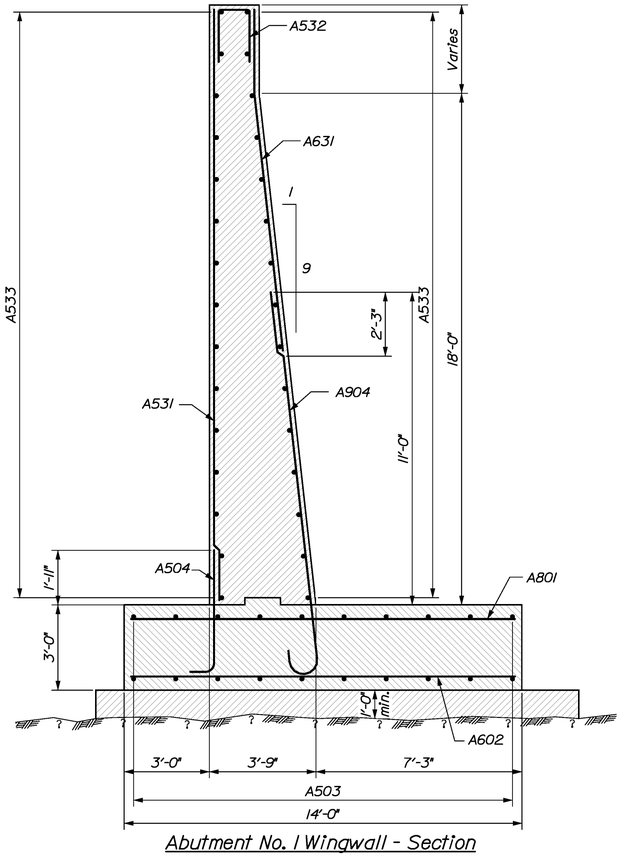
P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

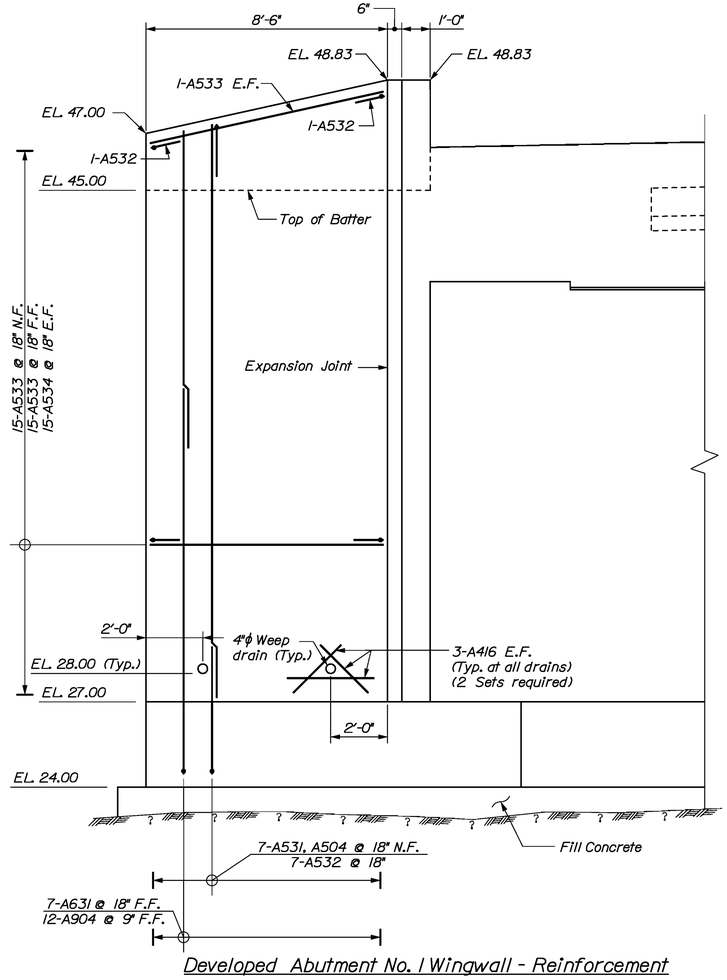
ABUTMENT NO. 1 SECTIONS

SHEET NUMBER
25
OF 48



Abutment No. 1 Wingwall - Section

Note: For location of section, see Abutment No. 1, Sheet 23.



Developed Abutment No. 1 Wingwall - Reinforcement

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431 BRIDGE PLANS

	DGE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	AMV	JJR	07/10
CHECKED-REVIEWED	JMA	VN	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

ABUTMENT NO. 1 WINGWALL 1

SHEET NUMBER

26

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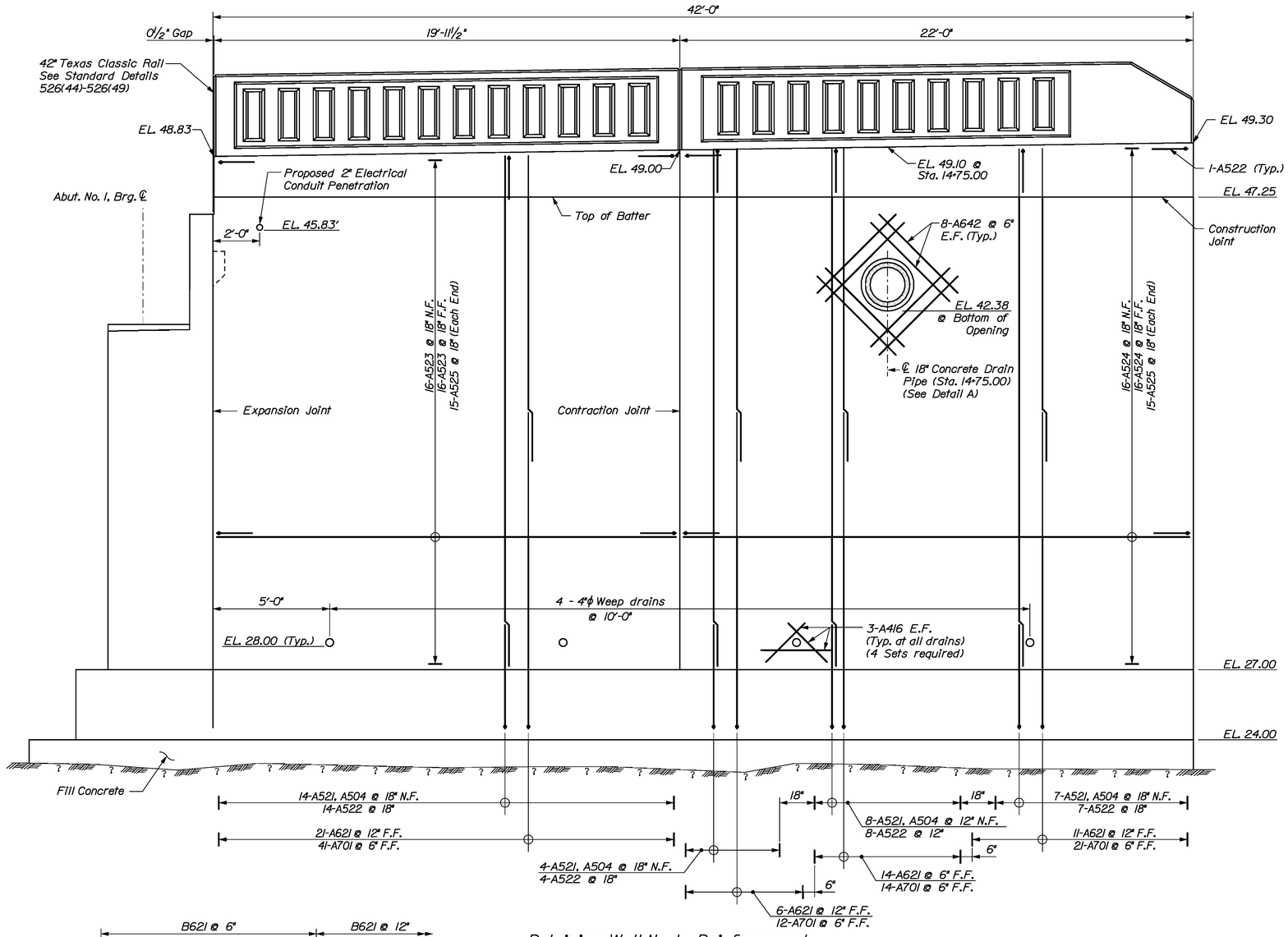
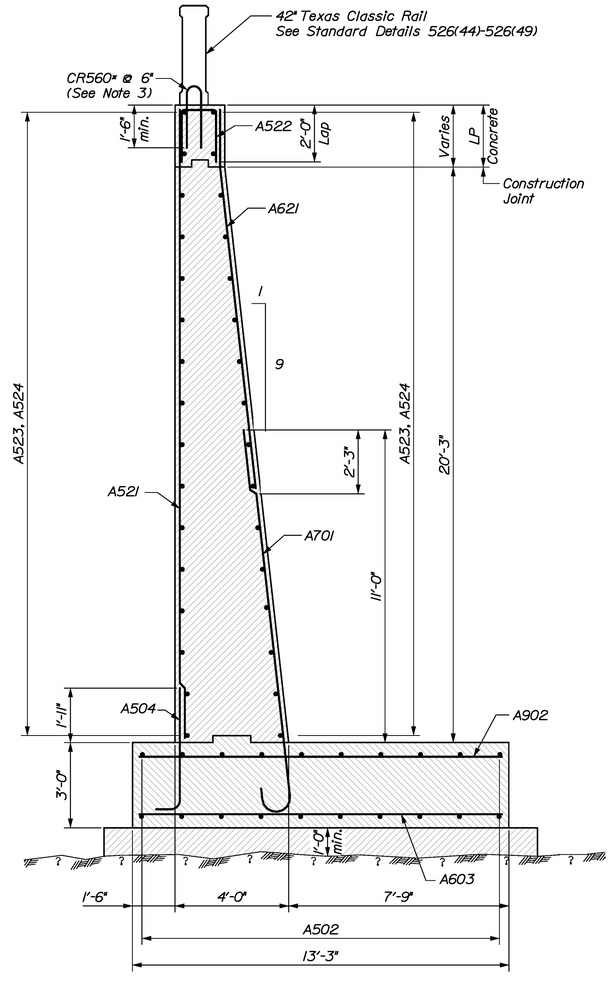
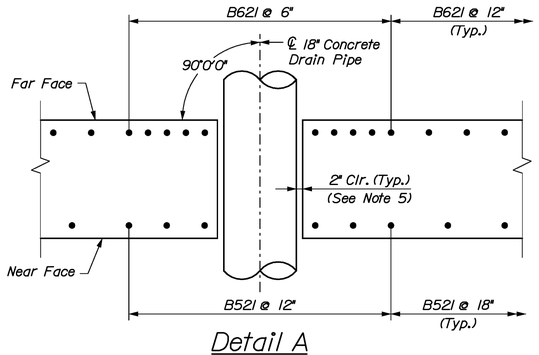


Retaining Wall No. 1 - Reinforcement



Retaining Wall No. 1 - Section



Detail A

Notes

1. Cut bars as directed by the Resident to provide 3" clear around 18" drain pipe hole.
2. Hole for 18" concrete drain pipe shall be 27" diameter. A permanent sleeve shall not be used to form hole.
3. 42" Texas classic rail reinforcing bar CR560, per standard detail 526(49), shall be modified to bar CR560*. Bar CR560* shall have 90° bend removed and shall have the length of each leg increased to 2'-2"
4. For location of section, see Abutment No. 1, Sheet 23.
5. The Contractor shall grout the annular space between the 18" concrete drain pipe and retaining wall. Grouting shall be completed using a material included on the MaineDOT Qualified Products List of Cementitious Grout for Keyways.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

DGE	BY	DATE
PROJ. MANAGER	JJR	07/10
DESIGN-DETAILED	ANV	07/10
CHECKED-REVIEWED	JMA	-
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

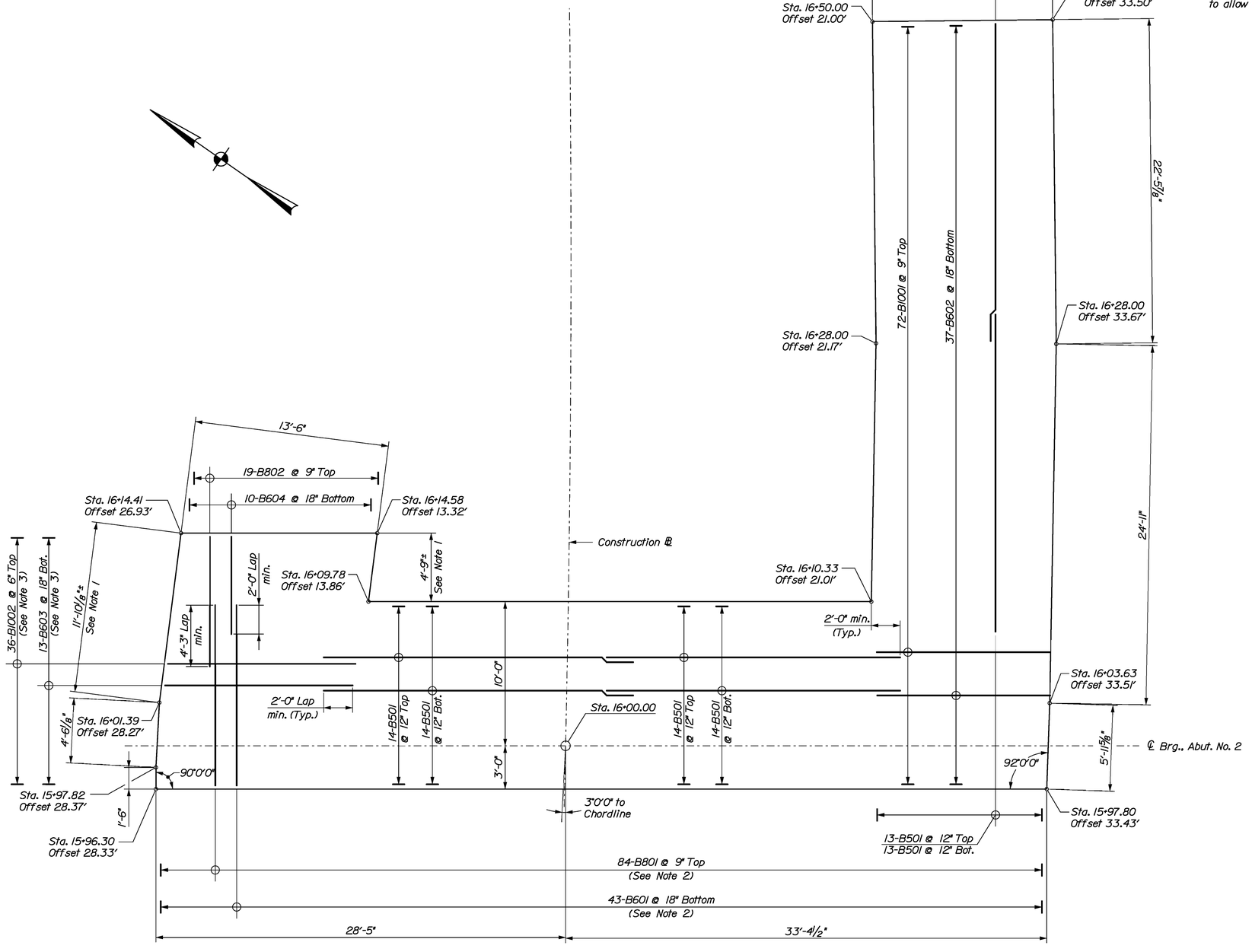
RETAINING WALL NO. 1

SHEET NUMBER

27

OF 48

Filename: 027_Abut 1 RW1.DGN Username: rhanf Division: HIGHWAY Date:8/3/2010



Plan - Abutment No. 2 Footing

Notes

1. Length of Retaining Wall No. 2 footing may vary. Adjust length of footing as needed to allow new footing to be cast against existing stone masonry wall.
2. Contractor may fan B801 & B601 bars as needed, to provide minimum clearances.
3. 4 Additional B1002 and B603 bars have been included to allow for increases in footing length if required.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

DGE	BY	DATE	SIGNATURE
	JJR	07/10	
	VN	07/10	
	-	-	P.E. NUMBER
	-	-	
		-	DATE
		-	

PROJ. MANAGER	DGE
DESIGN-DETAILED	AMV
CHECKED-REVIEWED	JMA
DESIGN2-DETAILED2	-
DESIGN3-DETAILED3	-
REVISIONS 1	-
REVISIONS 2	-
REVISIONS 3	-
REVISIONS 4	-
FIELD CHANGES	-

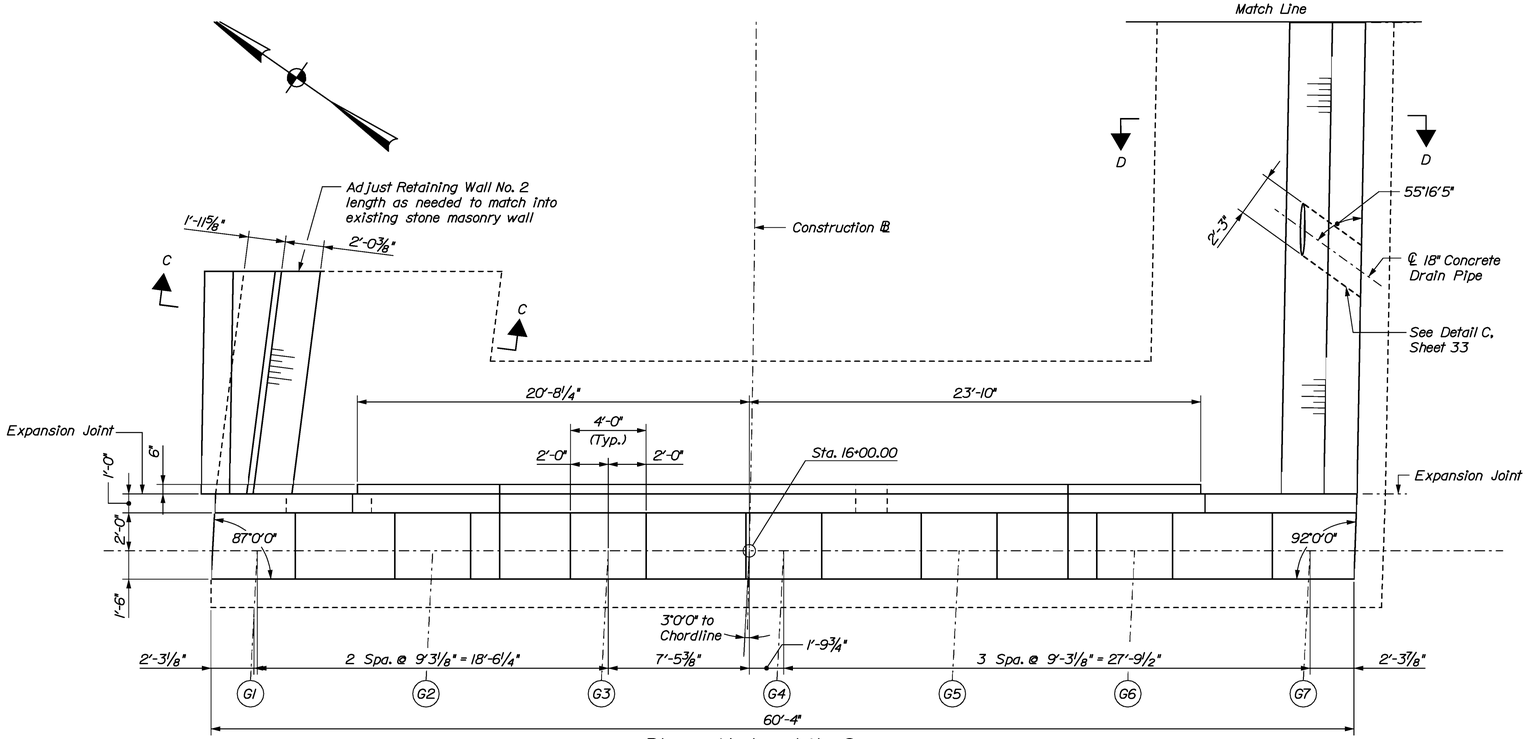
KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

ABUTMENT NO. 2 FOOTING

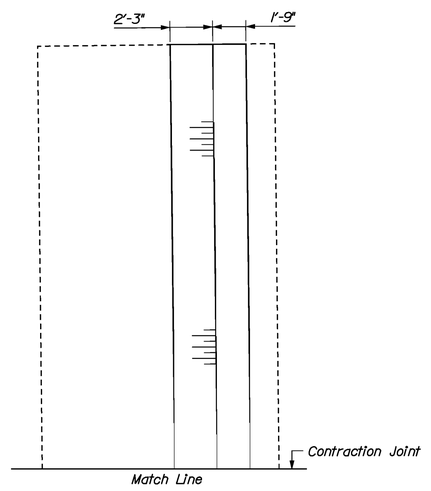
SHEET NUMBER

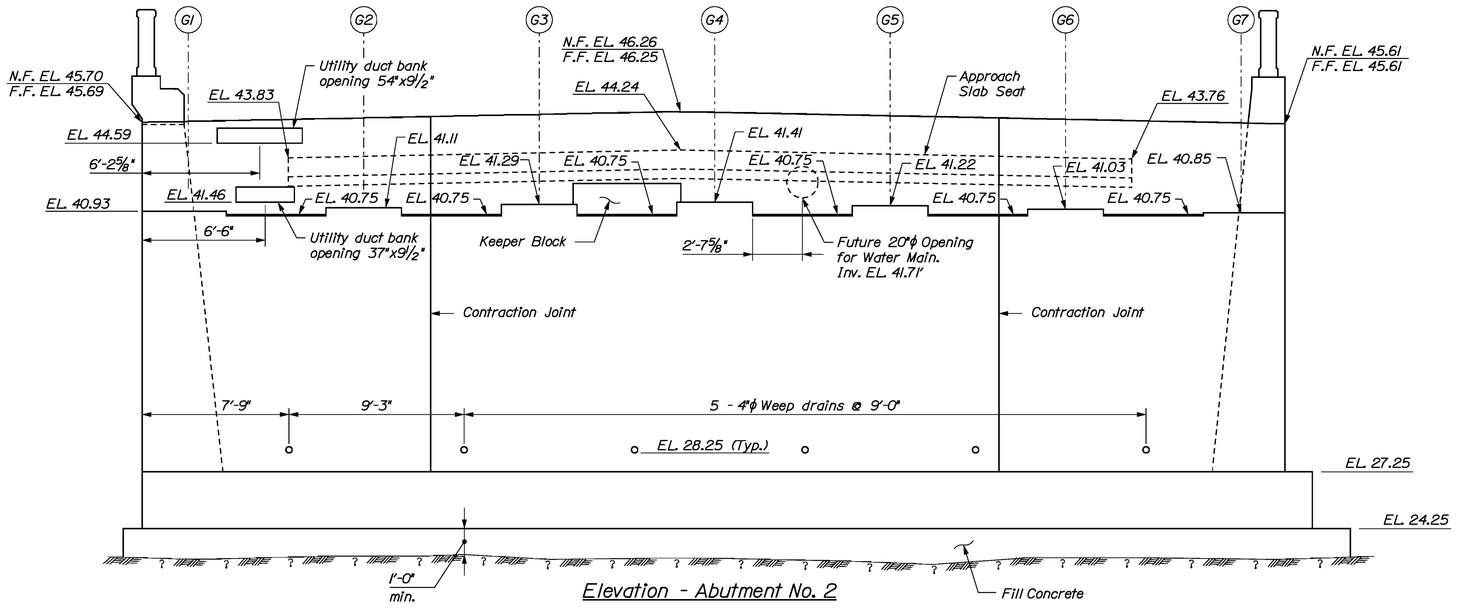
28

OF 48



Plan - Abutment No. 2





Elevation - Abutment No. 2

Notes

1. Fill concrete not shown on plan view for clarity.
2. Elevation points at top of backwall are given at fascia and PGL.
3. Keeper blocks to be cast after installation of girders. Edge of blocks shall be 1/2 " from edge of sole plate. Slope keeper blocks 1/4 "/ft back to front. For additional information, see Keeper Block Elevation and Section, Sheet 31.
4. For additional information on opening for future 18" water main, see Water Main Penetration Detail, Sheet 31.

Sections

For Section C-C, see Retaining Wall No. 2 Section, Sheet 32.

For Section D-D, see Retaining Wall No. 3 Section, Sheet 33.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	DGE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	AMV	JJR	07/10
CHECKED-REVIEWED	JMA	VN	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

ABUTMENT NO. 2

SHEET NUMBER

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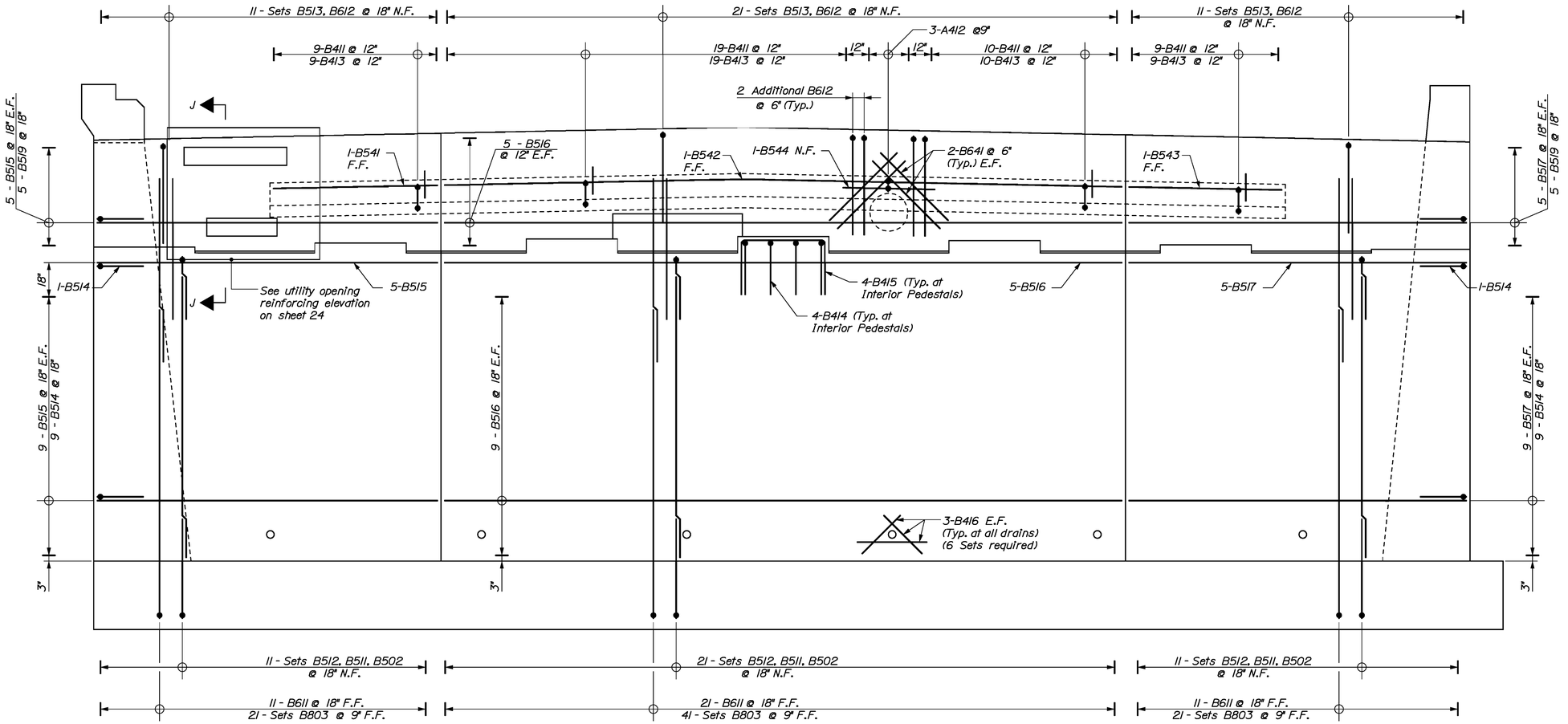
OF 48

Notes

1. Cut reinforcement as directed by the Resident to provide 3" clearance at openings.
2. For Keeper block reinforcement, see Keeper Block Elevation and Section, Sheet 31.
3. For additional information on opening for future 18" water main, see Corbel at Water Main Penetration Detail, Sheet 31.
4. For section J-J, see sheet 31.



Elevation - Abutment No. 2 Reinforcement

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	DGE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	AMV	JJR	07/10
CHECKED-REVIEWED	JMA	VN	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

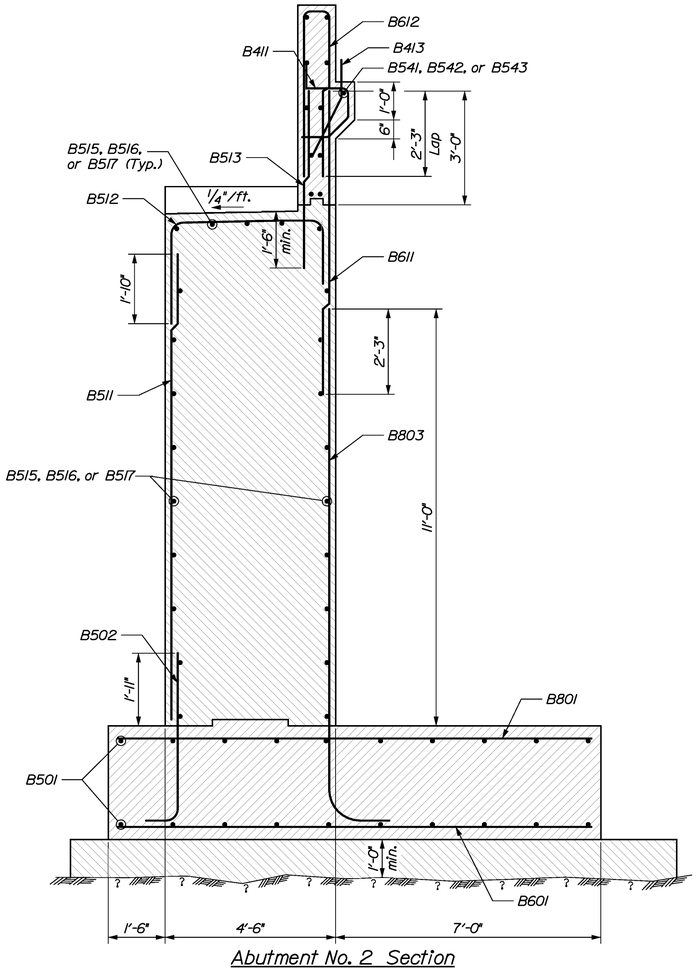
KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

ABUTMENT NO. 2 REINFORCEMENT

SHEET NUMBER

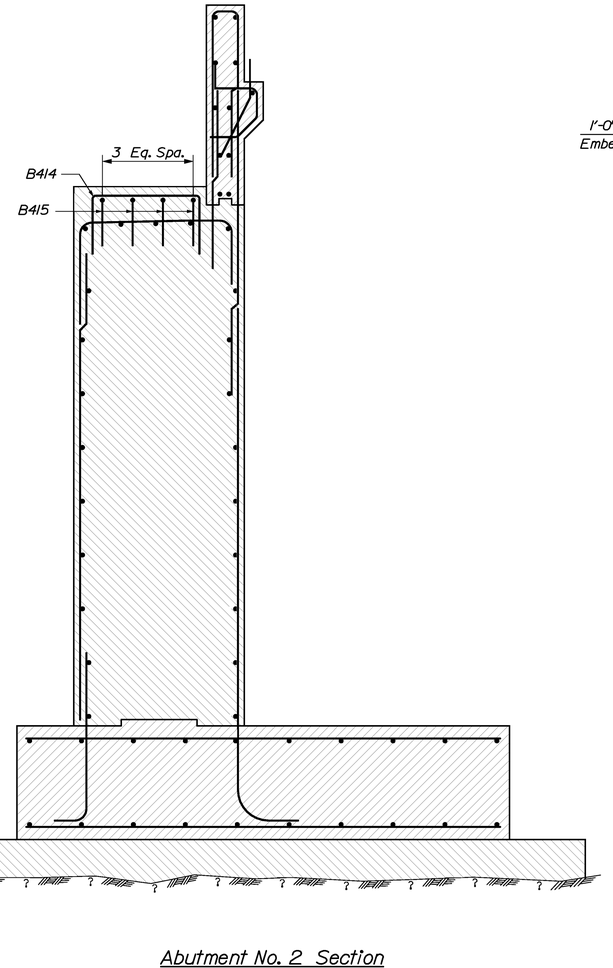
30

OF 48



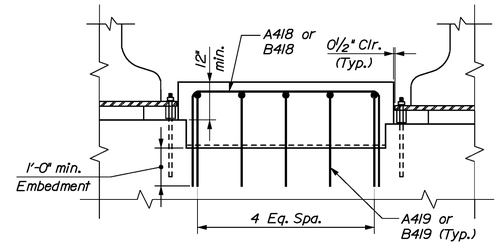
Abutment No. 2 Section

(Section between Bridge Seat Pedestal)

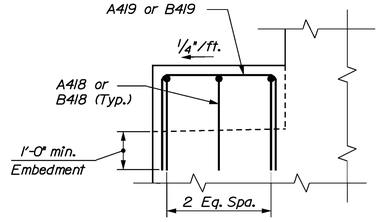


Abutment No. 2 Section

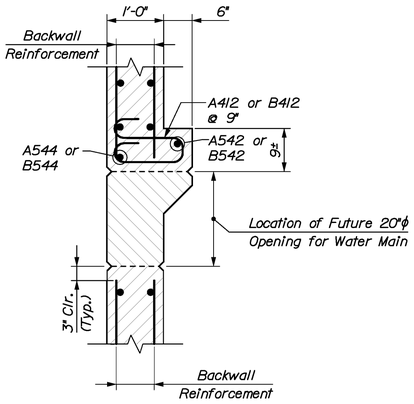
(Section through Bridge Seat Pedestal)



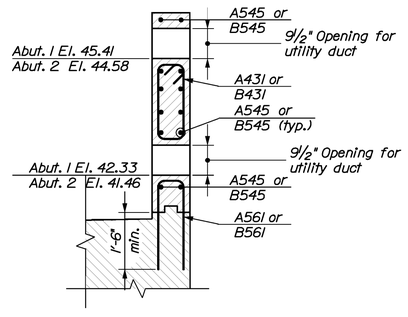
Keeper Block Elevation



Keeper Block Section



Water Main Penetration



Section J-J

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	DGE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	AMV	JJR	07/10
CHECKED-REVIEWED	JMA	VN	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

ABUTMENT NO. 2 SECTIONS

SHEET NUMBER

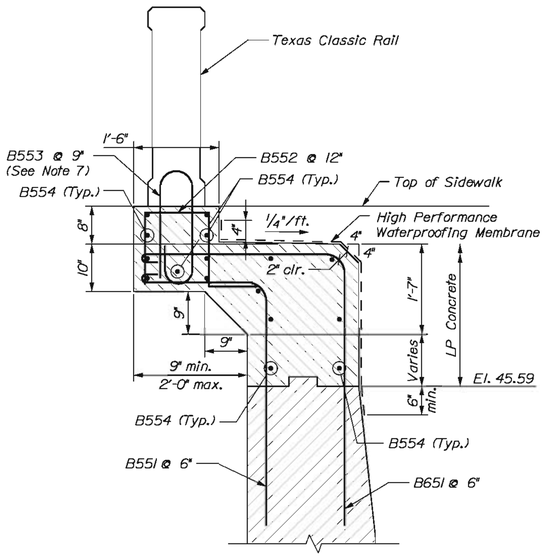
31

OF 48

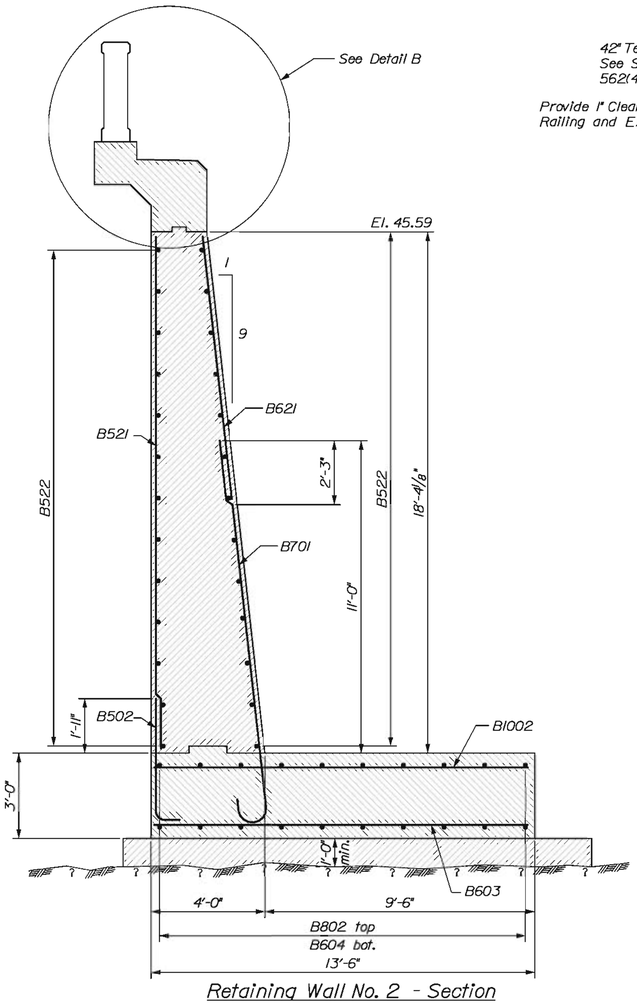
Username: rhanf Date:8/3/2010

Division: HIGHWAY

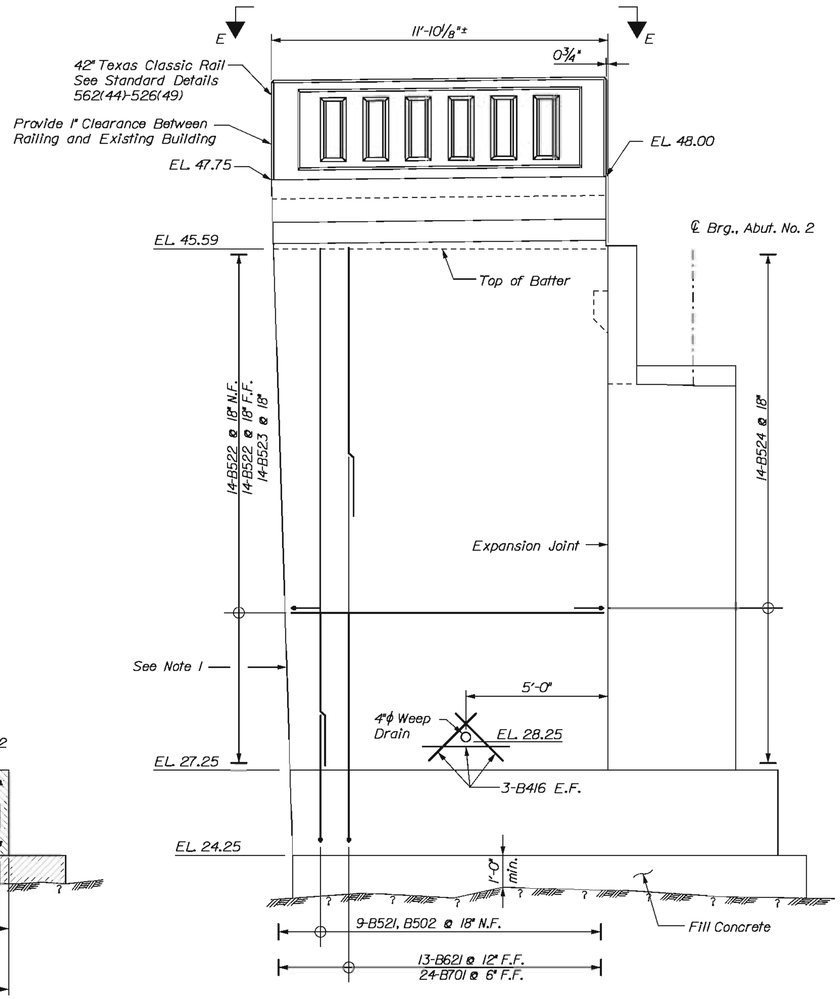
Filename: 031_Abut 2 Sections.DGN



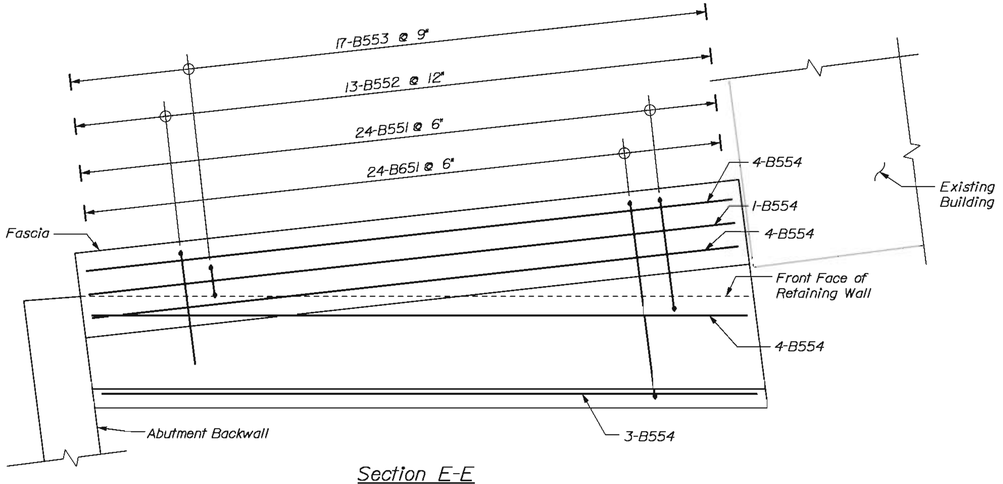
DETAIL B



Retaining Wall No. 2 - Section



Retaining Wall No. 2 - Reinforcement



Section E-E

Notes

1. Vary length of wall as needed to match into existing stone masonry wall.
2. Provide ½" gap between the existing building and Retaining Wall No. 2, existing building being defined as existing brick masonry. Concrete shall be cast directly against the existing stone masonry. Fill gap with Preformed Expansion Joint Filler, per standard spec. 705.01. The material used for the performed joint filler shall be approved by the Resident. Payment of the preformed joint filler shall be incidental to Item No. 502.21 Structural Concrete, Abutments and Retaining Walls.
3. For location of section, see Abutment No. 2, Sheet 29.
4. 4 Additional B521, B502, B621, and B701 bars have been included to allow for increases in retaining wall length if required.
5. Horizontal bars that are too long, may be field cut at the direction of the Resident.
6. Reinforcing bars above elevation 45.59' in the cantilever and extending in the retaining wall below elevation 45.59' shall be corrosion resistant reinforcing.
7. Bar B553 replaces bar CR560 shown in MaineDOT Texas Classic Rail Standard Details.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	AMV	JJR	07/10
CHECKED-REVIEWED	JMA	VN	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

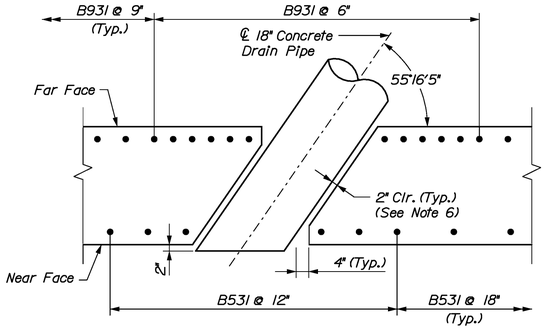
RETAINING WALL NO. 2

SHEET NUMBER

32

OF 48

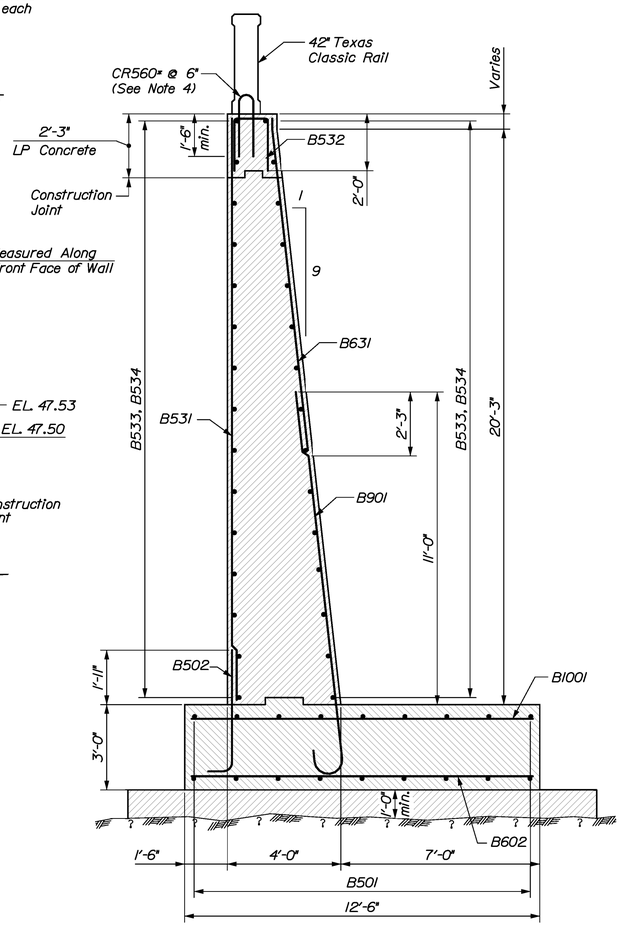
Filename: 032_Abut 2 RW2.DGN Division: HIGHWAY Username: rhanf Date:8/3/2010



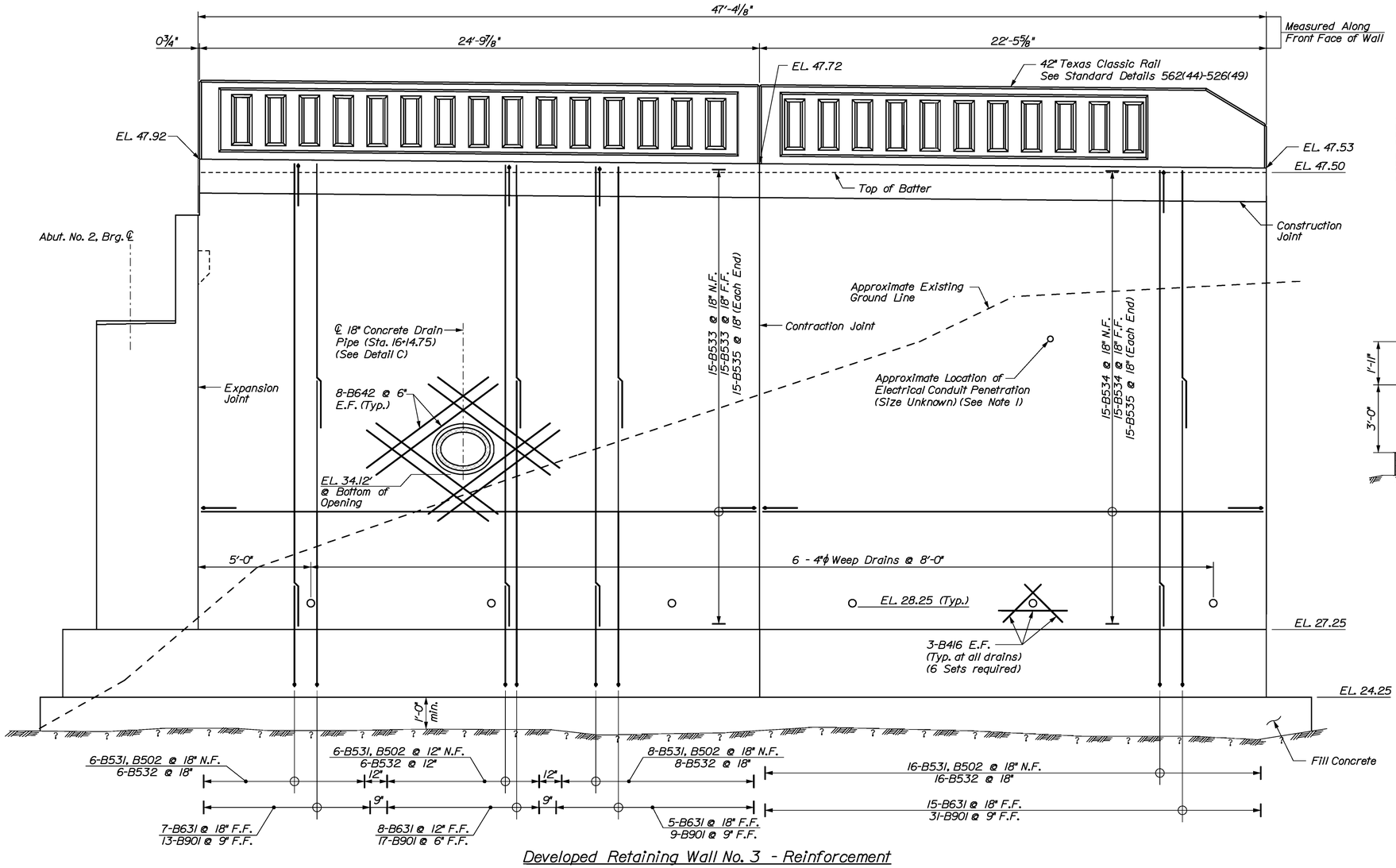
Detail C

Notes

1. Existing electrical conduit to be maintained during construction. Exact size and location may vary. Coordinate work with Resident and respective Utility.
2. Cut bars as directed by the Resident to provide 3" clear at concrete drain pipe.
3. Hole for 18" concrete pipe shall be 27" diameter. A permanent sleeve shall not be used to form hole.
4. 42" Texas classic rail reinforcing bar CR560, per standard detail 526(49), shall be modified to bar CR560*. Bar CR560* shall have 90° bend removed and shall have the length of each leg increased to 2'-2".
5. For location of section, see Abutment No. 2, Sheet 29.
6. The Contractor shall grout the annular space between the 18" concrete drain pipe and retaining wall. Grouting shall be completed using a material included on the MaineDOT Qualified Products List of Cementitious Grout for Keyways.



Retaining Wall No. 3 - Section



Developed Retaining Wall No. 3 - Reinforcement

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

PROJ. MANAGER	DGE	BY	DATE	SIGNATURE
DESIGN-DETAILED	AMV	JJR	07/10	
CHECKED-REVIEWED	JMA	VN	07/10	
DESIGN2-DETAILED2	-	-	-	P.E. NUMBER
DESIGN3-DETAILED3	-	-	-	
REVISIONS 1	-	-	-	DATE
REVISIONS 2	-	-	-	
REVISIONS 3	-	-	-	
REVISIONS 4	-	-	-	
FIELD CHANGES	-	-	-	

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

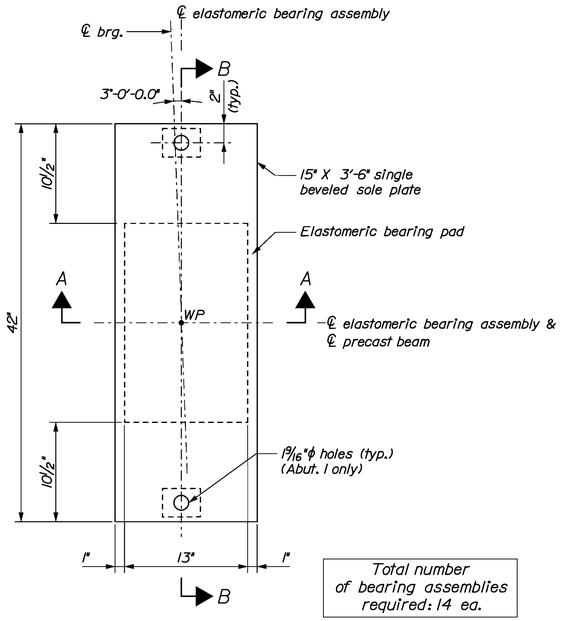
RETAINING WALL NO. 3

SHEET NUMBER

33

OF 48

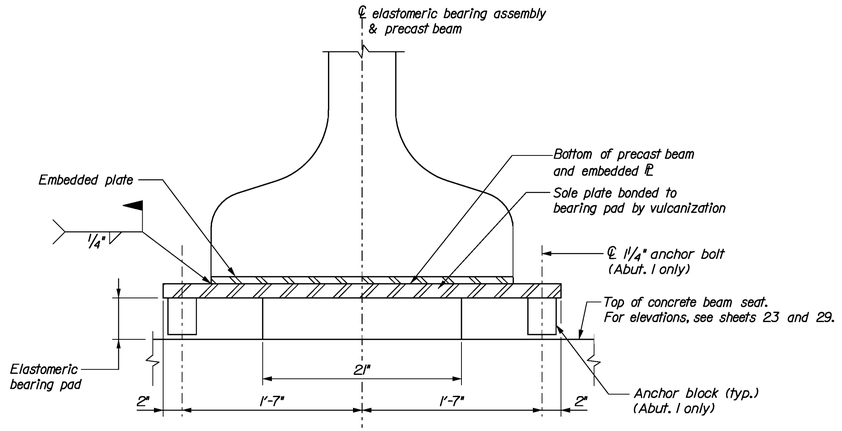
Filename: 033_Abut 2 RW3.DGN Division: HIGHWAY Username: rhanf Date:8/3/2010



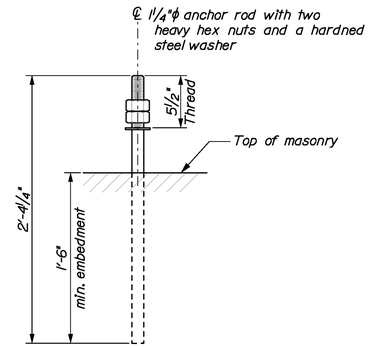
Total number of bearing assemblies required: 14 ea.

PLAN

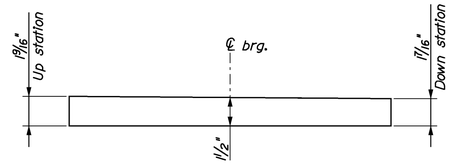
ABUTMENT ELASTOMERIC BEARING ASSEMBLY



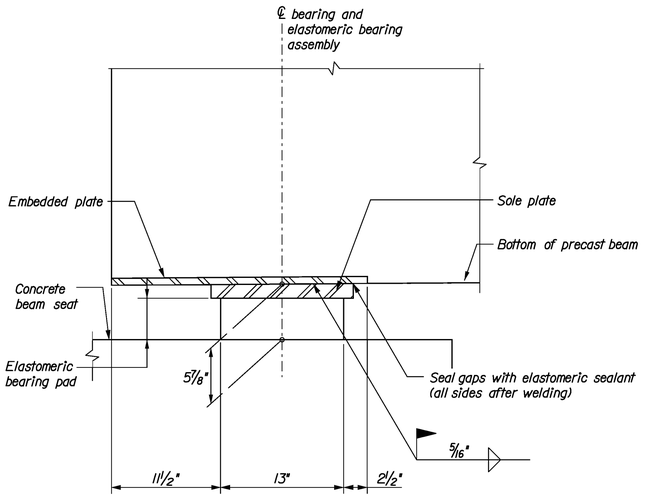
SECTION B-B



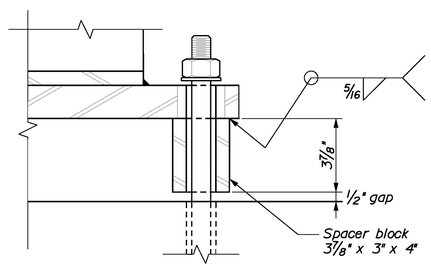
ANCHOR BOLT DETAIL



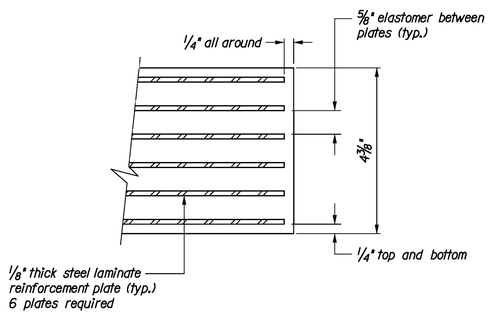
SOLE PLATE BEVEL
All bearings



SECTION A-A



DETAIL A



ABUTMENT ELASTOMERIC PAD DETAIL

NOTES:

1. Elastomer shall be 100% polychloroprene (neoprene) grade 3, meeting the requirements of AASHTO M251. Elastomer shall have a durometer hardness of 60. The shear modulus of the elastomer shall be between 130 and 175 psi.
2. Sole plate, spacer block, anchor rods, bolts, washer and nuts shall be AASHTO M270 Grade 50 and hot-dip galvanized in accordance with ASTM A153 and A123 as applicable.
3. Contractor shall re-finish galvanizing, in accordance with ASTM A780, after welding.
4. Bearing pads were designed using "Method A" from the AASHTO LRFD specifications and shall be subsequently tested in accordance with the specifications.
5. All steel reinforcing plates shall meet the requirements of ASTM A36 unless otherwise noted. Steel reinforcement plates shall be deburred prior to molding the bearing.
6. Vulcanize elastomer to sole plate during the primary mold process.
7. All bearings shall be marked prior to shipping. The marks shall include the bearing location on the bridge, and a direction arrow that points up-station. All marks shall be permanent and shall be visible after the bearing is installed.
8. Bearings shall be covered during transit.
9. The bearings are designed so that the superstructure may be erected when the ambient air temperature is within the range of 30° F and 60° F.
10. All precautions necessary shall be taken to protect bearing components from field weld flash and spatter. Welding procedures shall be established by the contractor to restrict the maximum temperature of steel adjacent to the elastomer to 200°F through use of temperature indicating crayons or other suitable means.
11. Anchor rods shall meet the requirements of ASTM F1554, Grade 55, and shall be swedged or threaded on the embedded portion of the rod.

Elastomeric Bearing Design Criteria	
Criteria	Abut. bearings
Unfactored dead load	127 kips
Unfactored live load	92 kips
Max. longitudinal displ.	0.858 inch
Max. dead load rotation	0.0044 rad.
Max. live load rotation	0.0003 rad.
Rotational tolerance	0.005 rad.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	DGE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	JDW	JDW	07/10
CHECKED-REVIEWED	MDK	TRC	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

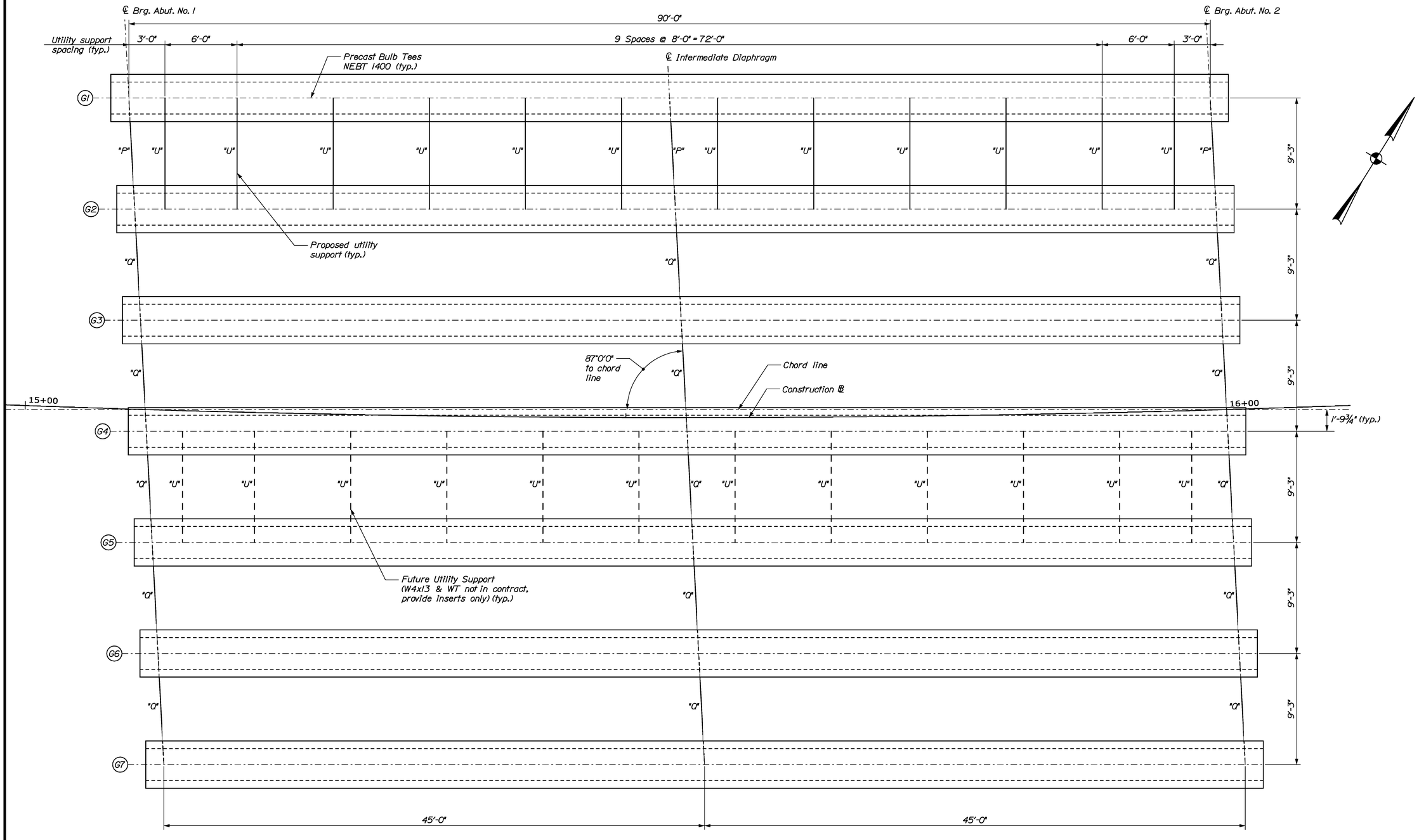
DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

BEARING DETAILS

SHEET NUMBER
34
OF 48

Date:8/3/2010
Username: rhanf
Division: HIGHWAY
Filename: 034_Bearings.dgn



FRAMING PLAN

Date:8/3/2010

Username: rhanf

Division: HIGHWAY

Filename: 035_Framing Plan.DGN

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

	DONE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	JDW	JDW	07/10
CHECKED-REVIEWED	MDK	TRC	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

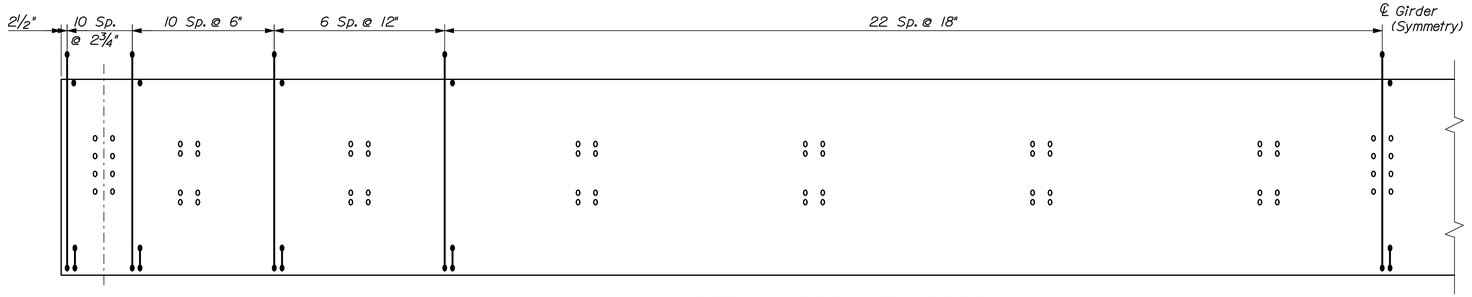
KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

FRAMING PLAN

SHEET NUMBER

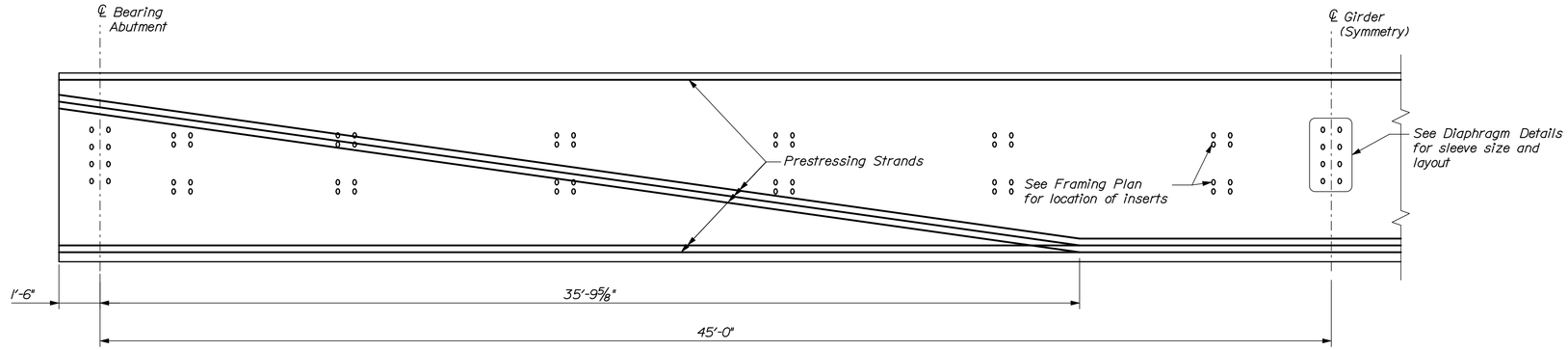
35

OF 48



NEBT 1400 PRECAST GIRDER

Reinforcing layout
Vertically Exaggerated for Clarity



NEBT 1400 PRECAST GIRDER

Strand Layout
Vertically Exaggerated for Clarity

PRECAST CONCRETE SUPERSTRUCTURE NOTES

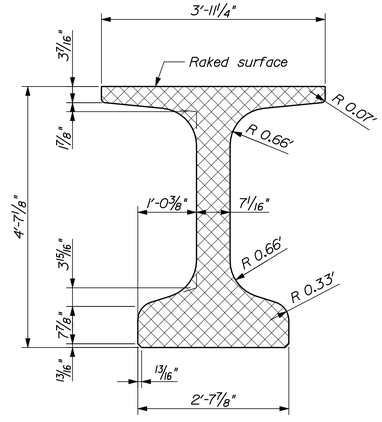
1. Prestressing strands shall be 0.6-in. diameter. The tensioning force is 44 kips per prestressing strand.

2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.

3. The top surface of the upper flange of the prestressed beams shall be raked to a surface roughness of ±¼ inch, except at locations corresponding to the blocking points. At these locations a flattened area of sufficient size shall be finished to facilitate taking elevations for setting bottom of slab elevations.

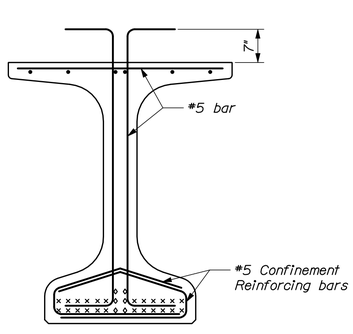
4. The drilling of holes in the prestressed beams and the use of power actuated tools on the beams will not be permitted.

5. Concrete shall contain a calcium nitrate solution in accordance with Special Provision 535



TYPICAL GIRDER SECTION

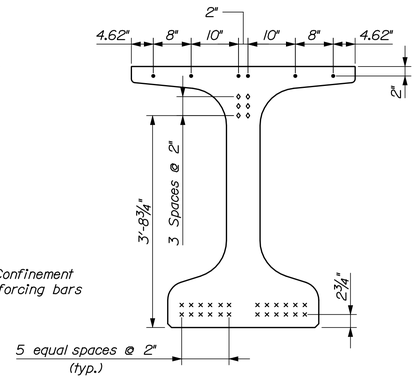
NEBT 1400



GIRDER REINFORCING

MIDSPAN PATTERN

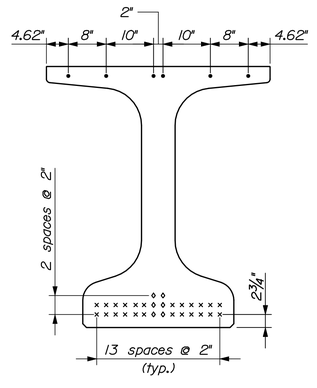
All Strands ~ 0.6" dia
f'ci = 4.5 ksi
f'c = 6.5 ksi
Span = 90'
One diaphragm @ midspan



× ~ Straight Strand
◇ ~ Draped Strand
• ~ Strand Tensioned to 2 Kips

PRESTRESSING STRANDS

END OF BEAM PATTERN



× ~ Straight Strand
◇ ~ Draped Strand
• ~ Strand Tensioned to 2 Kips

PRESTRESSING STRANDS

MIDSPAN PATTERN

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	JDW	JDW	07/10
CHECKED-REVIEWED	MDK	TRC	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

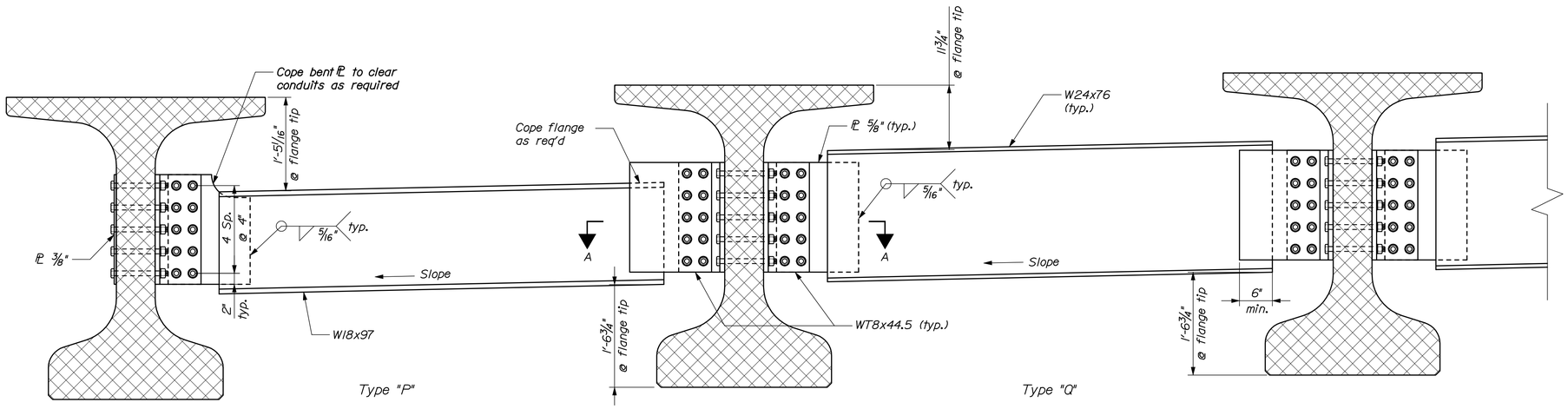
PRECAST GIRDERS

SHEET NUMBER

36

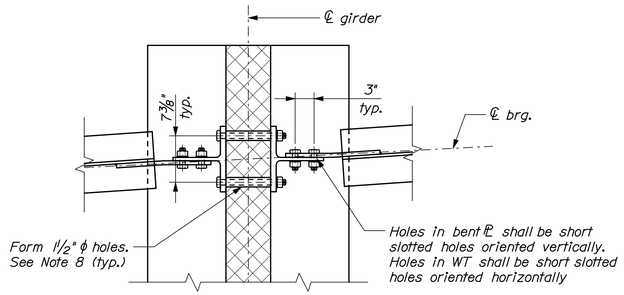
OF 48

Username: mcundiff Date:8/10/2010
Division: BRIDGE
Filename: 036_Precast Girder.DGN

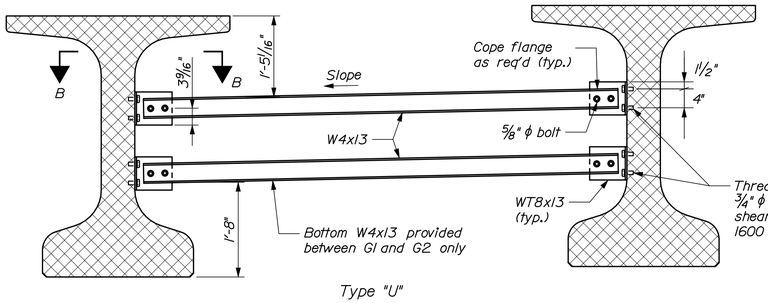


Type "P" Type "Q"

DIAPHRAGM DETAILS

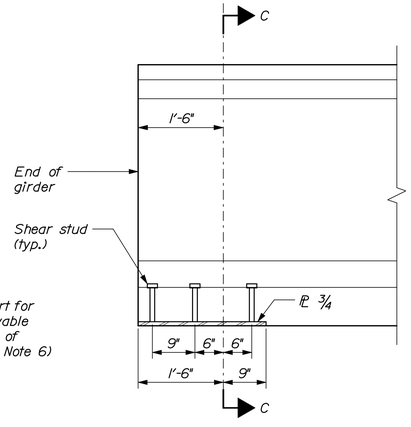


SECTION A-A

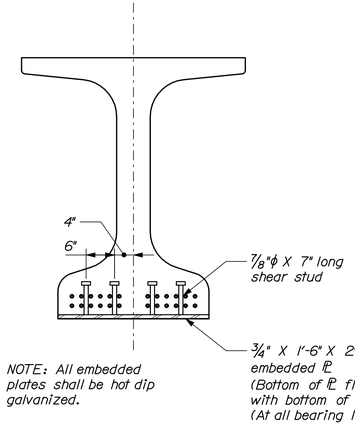


Type "U"

UTILITY SUPPORT

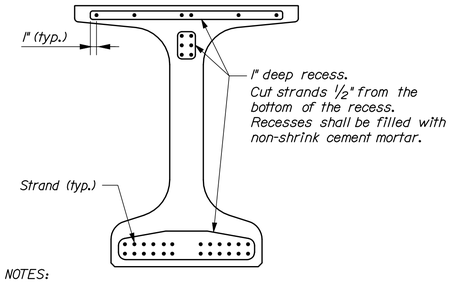


BEAM END ELEVATION



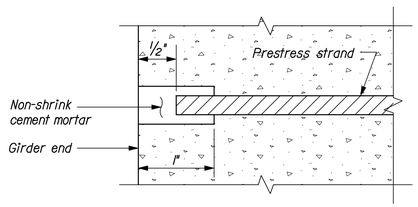
NOTE: All embedded plates shall be hot dip galvanized.

SECTION C-C

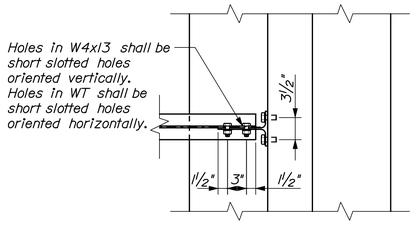


NOTES:
1. Recesses may be made for a single strand or for the entire group of strands.

STRAND END PROTECTION



RECESS FOR STRANDS AT GIRDER ENDS



SECTION B-B

TYPE OF GIRDER	NO. STRANDS	f'c	f'ci	Fi	g ℄	g end
NEBT 1400	36	6,500	4,500	1,330	4.39	12.72

Initial prestress force per strand before losses: 30 strands @ 44 kips
6 strands @ 2 kips

f'c = 28 day compressive strength of concrete (psi).
f'ci = Concrete compressive strength at release of prestress force (psi).
Fi = Total intial prestress force before losses (kips).
g ℄ = Distance from bottom of girder to C.G. of all prestressing strands at girder centerline (inches) (see girder elevation).
gend = Distance from bottom of girder to C.G. of all prestressing strands at end of girder (inches) (See girder elevation).

NOTES:

1. All bolts shall be 7/8"ϕ unless otherwise noted.

2. All pretensioning strands shall be 0.6" dia. uncoated, seven-wire, low relaxation steel strands conforming to AASHTO M203.

3. All reinforcing steel, sleeves, inserts and other items embedded in girders shall be included for payment under Item 535.611, Prestressed Structural Concrete I-Girders.

4. At girder diaphragm locations, 1 1/2"ϕ PVC sleeves shall be provided. All sleeves and threaded inserts shall be placed perpendicular to the girder.

5. Suggested end zone reinforcement may be adjusted by fabricator to reflect the fabricator's experience and to reduce the potential for cracking. All adjustments shall be clearly flagged on the girder shop drawings and will be subject to the engineers approval.

6. Threaded inserts and embedded plate studs shall not interfere with prestressing strands.

7. Payment for fabrication and installation shall be incidental to Item 535.611, Prestressed Structural Concrete I-Girders.

8. Annular space shall be filled with epoxy after bolt has been installed. Epoxy shall be a high strength, low viscosity resin suitable for exterior use. Payment shall be incidental to Item 535.61.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

	DSE	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	JDW	JDW	07/10
CHECKED-REVIEWED	MDK	TRC	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

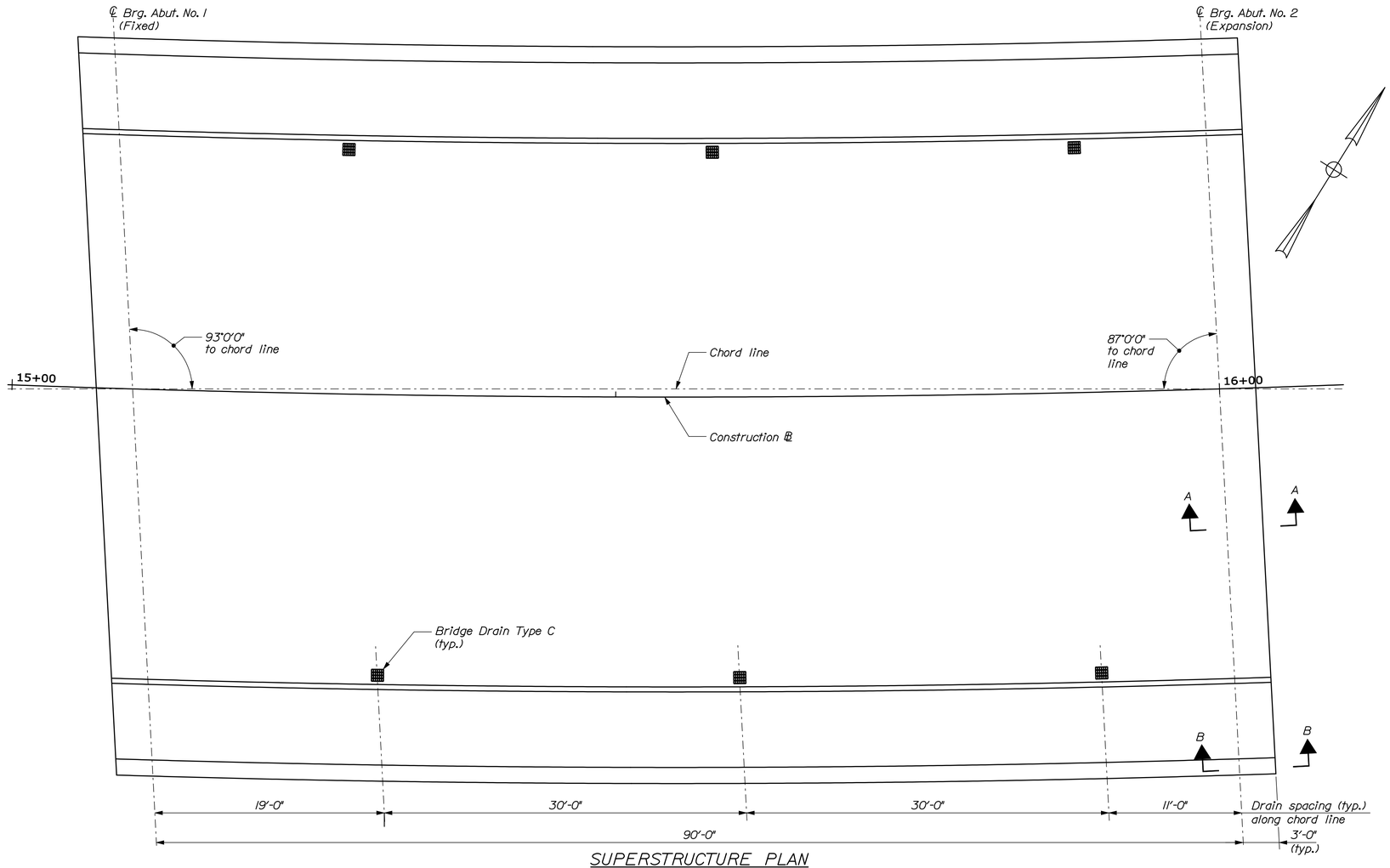
DIAPHRAGM AND GIRDER DETAILS

SHEET NUMBER

37

OF 48

Filename: 037_Diaphragm and Girder Details.DGN Division: BRIDGE Username: mcundiff Date:8/10/2010



SUPERSTRUCTURE PLAN

SUPERSTRUCTURE NOTES

1. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.

2. Adjust reinforcing steel to fit around the bridge drains in a manner approved by the Resident. Do not cut transverse reinforcing bars.

3. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.

4. The superstructure slab concrete shall be placed in one continuous operation and shall be kept plastic until the entire placement has been made.

5. At the Contractor's option, Precast Deck Panels may be used in place of the full depth cast-in-place deck slab, in accordance with Special Provisions Section 502, Structural Concrete - Precast Deck Panels, and in accordance with the Standard Details.

6. Mortar for bedding and for joints in the granite curb shall contain an approved non-shrink additive.

7. The Contractor shall install Transition Barrier vertical closed stirrups, as shown in Standard Details Section 526, prior to the placement of the sidewalk concrete.

8. Payment for reinforcing steel fabricated, delivered, and placed in the cast-in-place portion of the structural concrete slab, curbs, and sidewalks will be considered incidental to the appropriate Standard Specifications Section 502 pay items.

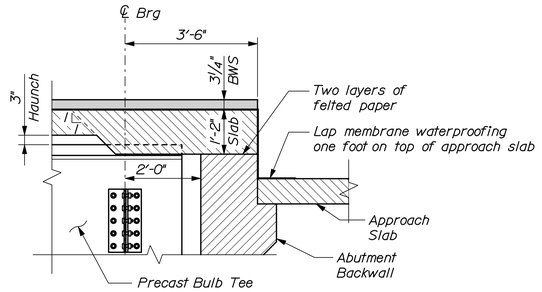
9. Reinforcing steel in the curbs, sidewalks, and railing shall incorporate a corrosion resistant reinforcing system conforming to the requirements of Special Provision 503.

10. Felted paper shall be asphalt impregnated felted paper conforming to ASTM D227.

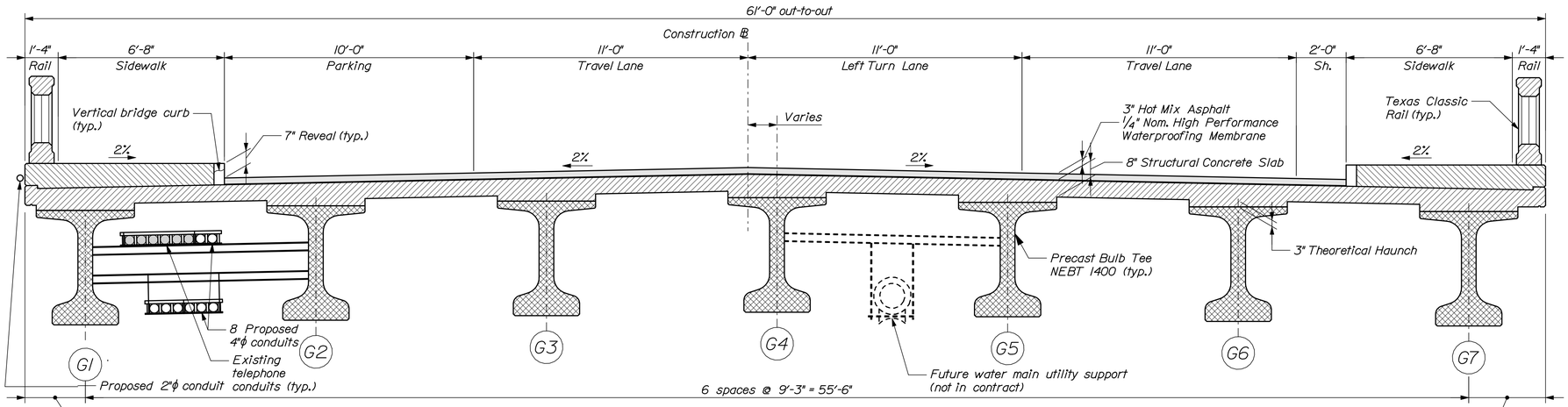
11. The theoretical blocking used for design of the structure is 3 inches at the centerline of bearings of the abutments. Refer to Standard Detail 502(02) for blocking details.

12. For fascia offset diagram see Sheet 40.

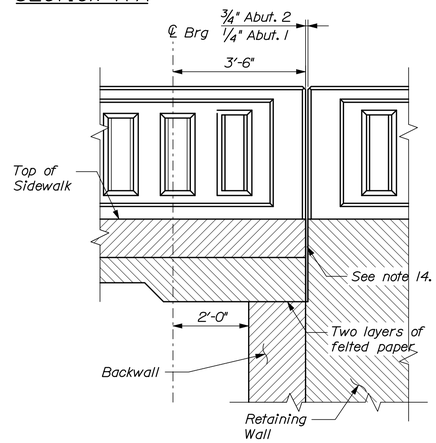
13. Fill gap with Preformed Expansion Joint Filler, per Standard Specification 705.01. The material used for the preformed joint filler shall be approved by the Resident. Payment of the preformed joint filler shall be incidental to Item 502.261.



SECTION A-A



PROPOSED BRIDGE SECTION



SECTION B-B

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

DSE	BY	DATE	SIGNATURE
	JDW	07/10	
	TRC	07/10	
	-	-	P.E. NUMBER
	-	-	
	-	-	DATE

PROJ. MANAGER	-	-
DESIGN-DETAILED	JDW	-
CHECKED-REVIEWED	MDK	-
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

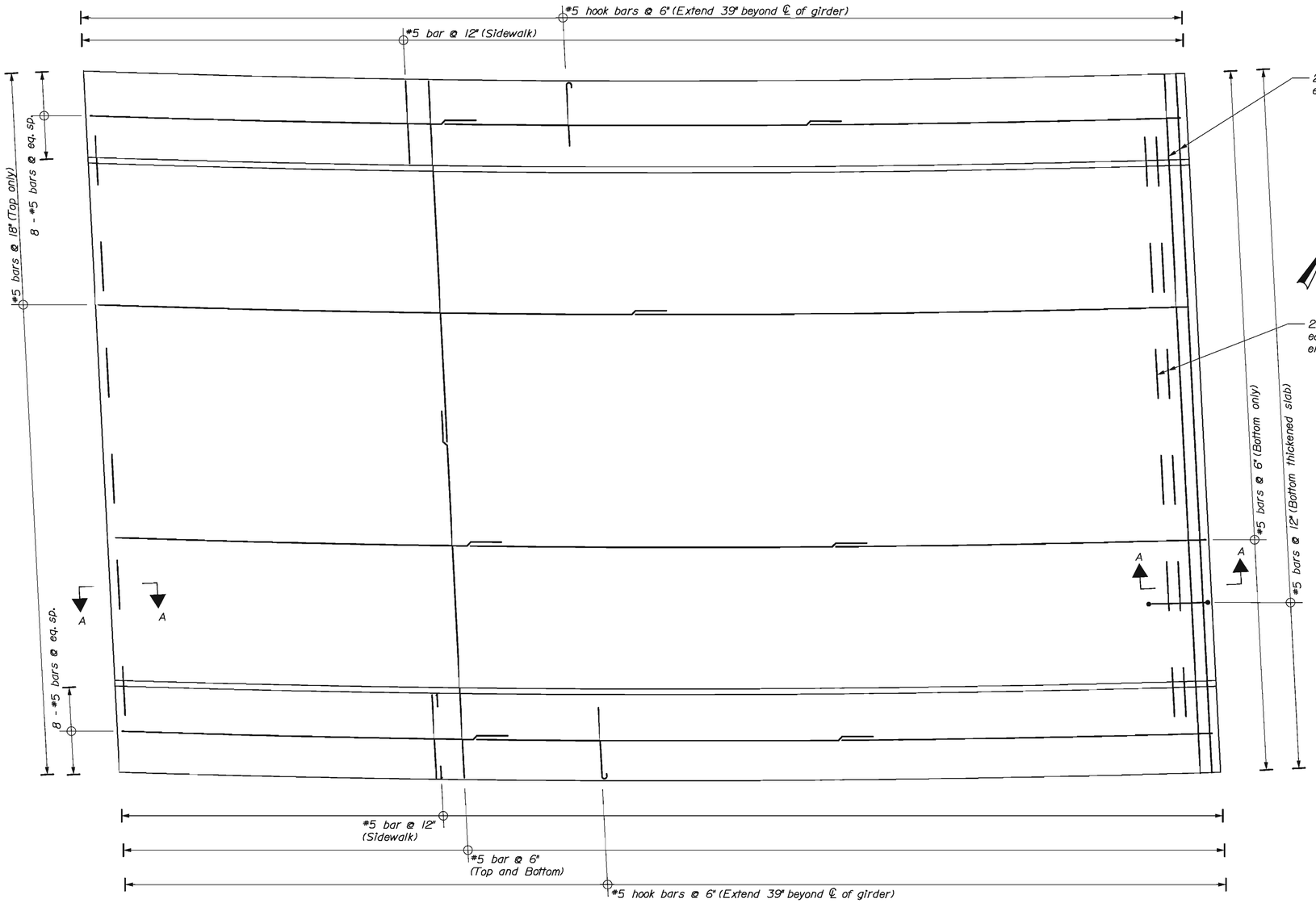
SUPERSTRUCTURE PLAN & TYPICAL SECTION

SHEET NUMBER

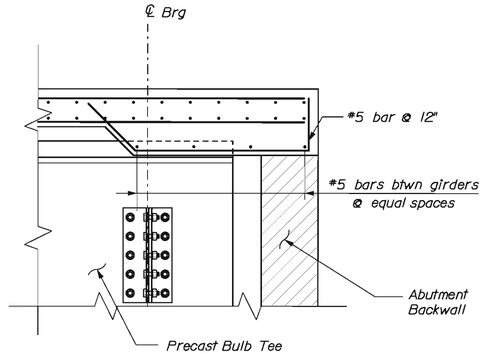
38

OF 48

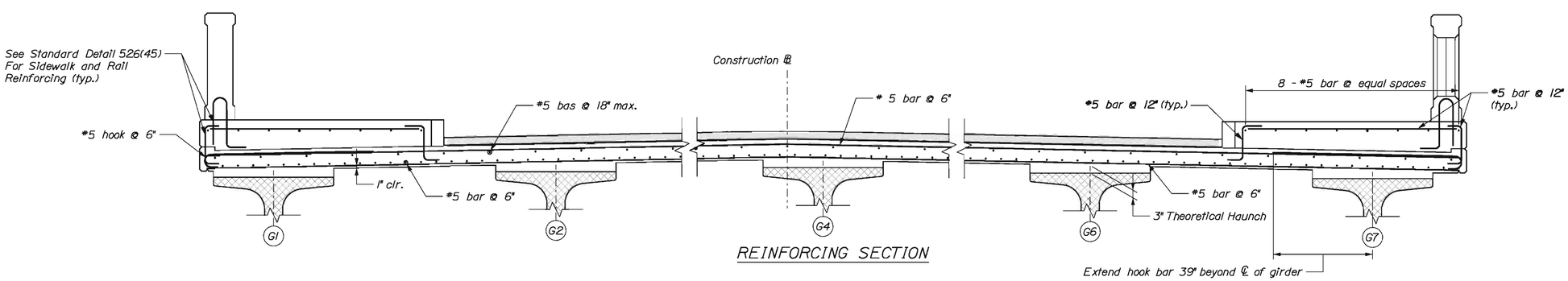
Filename: 038_Superstr Plan.DGN Division: BRIDGE Username: mcundiff Date:8/10/2010



SUPERSTRUCTURE REINFORCING PLAN



SECTION A-A



REINFORCING SECTION

NOTE:
All reinforcing steel shall be placed in the deck unless otherwise noted.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

PROJ. MANAGER	DGE	BY	DATE
DESIGN-DETAILED	JDW	JDW	07/10
CHECKED-REVIEWED	MDK	TRC	07/10
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

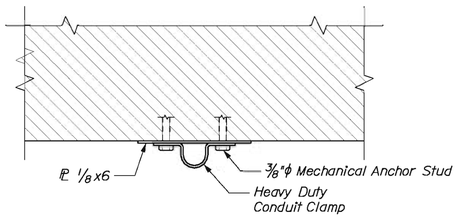
DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

SUPERSTRUCTURE REINFORCING

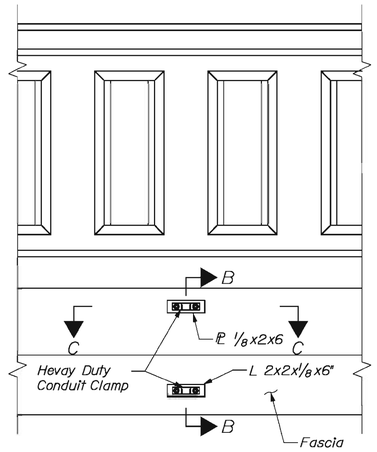
SHEET NUMBER
39
OF 48

Filename: 039_Superstr Reinf.DGN Division: HIGHWAY Username: rhanf Date:8/3/2010

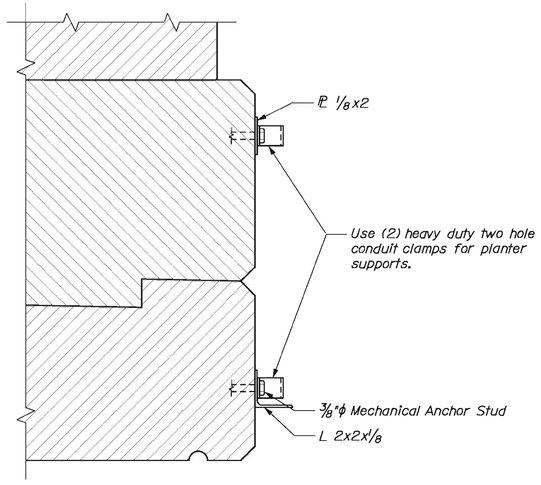


SECTION C-C

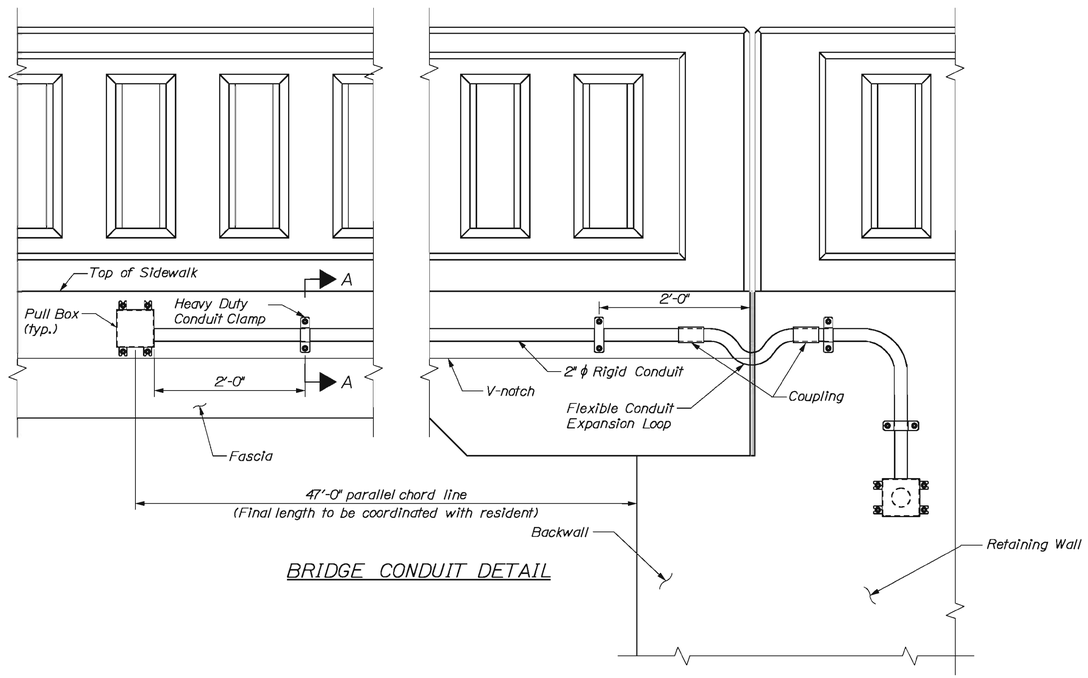
LOCATION	CL BRG ABUT 1	BOTTOM OF SLAB ELEVATIONS SPAN LOCATION 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG ABUT 1
GIRDER 1	47.05	46.93	46.83	46.74	46.66	46.58	46.51	46.43	46.36	46.31	46.27
GIRDER 2	47.23	47.11	47.02	46.94	46.86	46.78	46.70	46.63	46.56	46.49	46.45
GIRDER 3	47.41	47.29	47.20	47.12	47.04	46.96	46.88	46.81	46.74	46.68	46.64
GIRDER 4	47.51	47.41	47.32	47.25	47.17	47.10	47.02	46.94	46.87	46.80	46.75
GIRDER 5	47.32	47.22	47.13	47.06	46.98	46.91	46.83	46.75	46.68	46.61	46.56
GIRDER 6	47.13	47.03	46.94	46.87	46.79	46.72	46.64	46.56	46.49	46.42	46.37
GIRDER 7	46.94	46.83	46.74	46.66	46.59	46.51	46.44	46.36	46.29	46.23	46.19



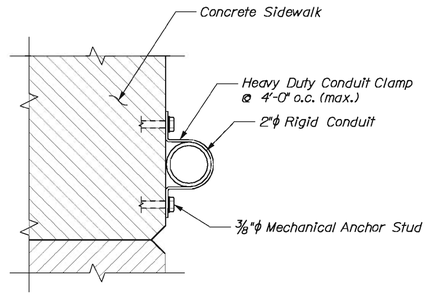
PLANTER SUPPORT DETAILS



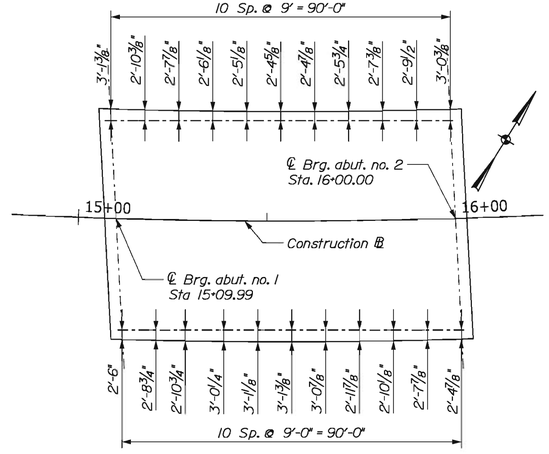
SECTION B-B



BRIDGE CONDUIT DETAIL



SECTION A-A



FASCIA OFFSET PLAN

CONDUIT AND PULL BOX NOTES:

1. The conduit, junction boxes, couplers, conduit clamps, and anchor studs shall be hot dipped galvanized in accordance with ASTM A123 or A153 as applicable.

2. The Contractor shall submit his proposed junction box and expansion loop details to the resident for approval.

3. Anchor studs for attaching conduit clamps and junction boxes to the bridge fascia shall be installed after sidewalk concrete has been placed and cured. Anchor studs shall be either epoxy grouted or mechanically anchored. Mechanical anchors shall be "Set-Bolt" by Powers Fasteners, or approved equal.

4. All junction boxes shall be flanged, tamper-proof, and water-tight units. The junction box mounted on the retaining wall shall allow penetration through the back of the box. The minimum internal dimensions of all junction boxes shall be 6"Hx6"Wx3"D.

5. A flexible conduit expansion loop shall be provided across the joint between the retaining wall and deck slab. The expansion loop and fittings shall be water-tight and shall allow for expansion and contraction in both the longitudinal and transverse directions. The proposed expansion loop shall be capable of taking longitudinal and transverse movements of ±1".

6. Payment for bridge mounted conduit and related components shall be made under Item 626.21, Metallic Conduit (2").

7. A pull wire shall be provided between all pull boxes.

PLANTER SUPPORT NOTES:

1. Locate planter supports as directed by the resident. Two pairs of supports shall be installed on each bridge fascia.

2. The support angles, anchor studs, and clamps shall be hot dipped galvanized in accordance with ASTM A153 or A123 as applicable.

3. Anchor studs for attaching conduit clamps and junction boxes to the bridge fascia shall be installed after sidewalk concrete has been placed and cured. Anchor studs shall be either epoxy grouted of mechanically anchored. Mechanical anchors shall be "Set-Bolt" by Powers Fasteners, or approved equal.

4. Payment for planter support assemblies shall be made under Item 634.161, Bridge Mounted Conduit.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

DGE	BY	DATE	SIGNATURE
DESIGN-DETAILED	JDW	07/10	
CHECKED-REVIEWED	MDK	07/10	
DESIGN2-DETAILED2	-	-	P.E. NUMBER
DESIGN3-DETAILED3	-	-	
REVISIONS 1	-	-	DATE
REVISIONS 2	-	-	
REVISIONS 3	-	-	
REVISIONS 4	-	-	
FIELD CHANGES	-	-	

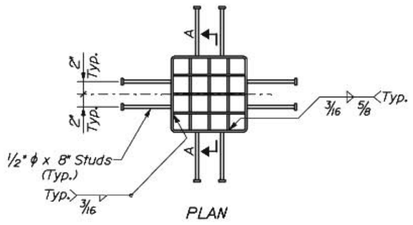
PROJ. MANAGER

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

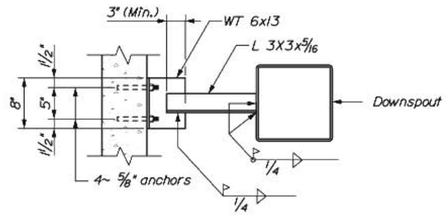
SUPERSTRUCTURE DETAILS

SHEET NUMBER
40
OF 48

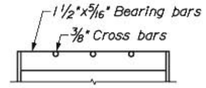
Filename: 040_Superstr Details.DGN Division: HIGHWAY Username: rhanf Date:8/3/2010



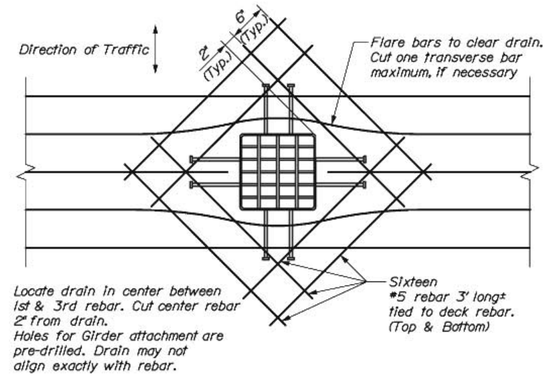
BRIDGE DRAIN TYPE C



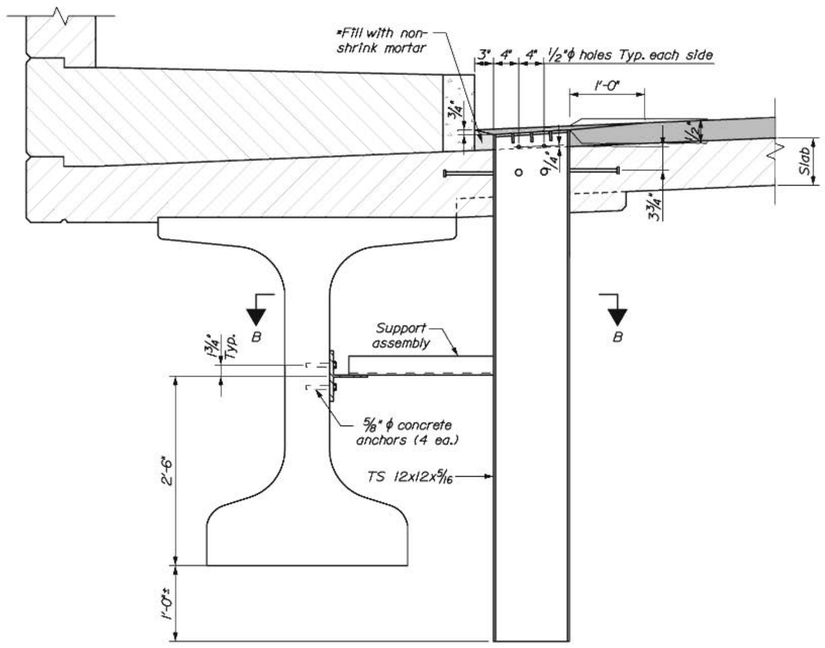
SECTION B-B



SECTION A-A

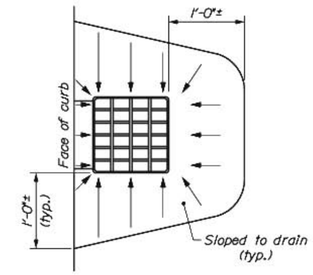


SLAB REINFORCEMENT AT BRIDGE DRAINS



SECTION

BRIDGE DRAIN TYPE C



PAVEMENT DEPRESSION AROUND BRIDGE DRAINS

BRIDGE DRAIN NOTES:

1. All plates, if any, shall be 1/4" thick and shall conform to ASTM A36.

2. The downspout shall conform to ASTM A500.

3. Grating shall be a commercial heavy - duty grating with 1 1/2"x5/16" bearing bars spaced at 2 3/8" and 3/8"ϕ cross bars spaced at 4". Grating shall be centered in the drain top.

4. If the minimum thickness of concrete below the drain is 2" or less, the concrete haunch shall be extended as shown.

5. Drains and L 3x3x5/16 shall be blast cleaned to the requirements of SSPC-SP6/NACE 3 and hot-dipped galvanized in accordance with ASTM A123. Steel beam attachment: WT 6x13 and associated fasteners shall meet the same material specification and protective coating requirements as the structural steel.

6. Concrete superstructure support assembly configuration shall be similar to views utilizing anchoring material from the Maine Department of Transportation Prequalified List. WT 6x13 and fastener hardware shall be galvanized in accordance with ASTM A123 and A153 or B695, Class 50, Type 1.

7. Payment for bridge drains will be as specified under Subsection 502.19 of the Standard Specifications.

8. The additional reinforcing steel around each bridge drain will not be paid for directly. Payment will be considered incidental to contract items.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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PIN 15098.00

BRIDGE PLANS

BRIDGE NO. 2431

DSGD	BY	DATE
JDW	JDW	06/10
-	-	06/10
-	-	-
-	-	-
-	-	-
-	-	-

SIGNATURE

P.E. NUMBER

DATE

PROJ. MANAGER	JDW
DESIGN-DETAILED	-
CHECKED-REVIEWED	-
DESIGN2-DETAILED2	-
DESIGN3-DETAILED3	-
REVISIONS 1	-
REVISIONS 2	-
REVISIONS 3	-
REVISIONS 4	-
FIELD CHANGES	-

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

BRIDGE DRAINS

SHEET NUMBER

41

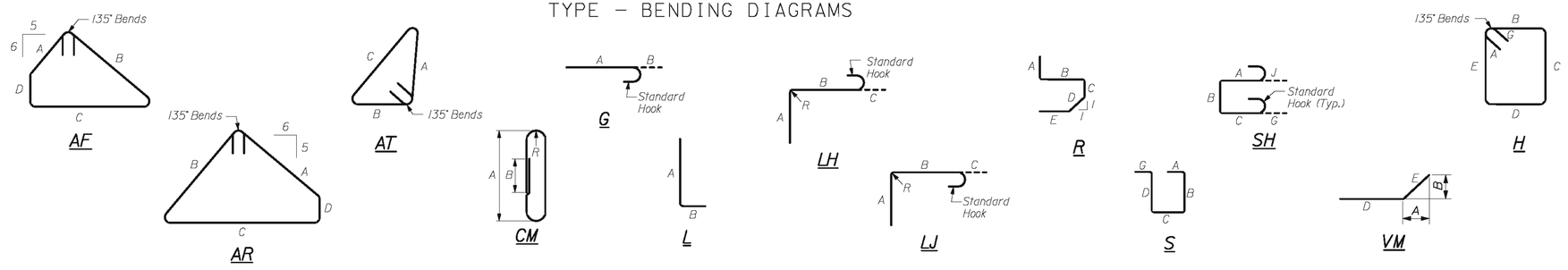
OF 48

Filename: 041_BridgeDrains.dgn Division: HIGHWAY Username: rhanf Date:8/3/2010

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	INCR.	REMARKS
ABUTMENT #1, RETAINING WALL #1, WINGWALL #1												
A411	4	47	3'-11 1/2"	R	8"	1'-2"	10"	5 1/2"	10"			corbel
A412	4	3	3'-11"	SH	1'-3"	5"	1'-3"					Dim. J&G = 6", corbel @ pipe
A413	4	47	2'-6"	VM	1'-6"	9"		1'-0"	1'-6"			approach slab dowel
A414	4	20	7'-1"	S	2'-0"	3'-1"	2'-0"					Pedestal bars
A415	4	20	7'-7"	S	2'-0"	3'-7"	2'-0"					Pedestal bars
A416	4	72	2'-6"									French drains
A418	4	4	10'-5"	S		2'-9"	4'-11"	2'-9"				Keeper block Long.
A419	4	5	8'-6"	S		2'-9"	3'-0"	2'-9"				Keeper block Trans.
A420	4	4	3'-6"									Wingwall abutment corner
A421	4	3	3'-1"	AT	9"	1'-0"	1'-2"					Wingwall abutment corner
A431	4	5	7'-5"	H	4 1/2"	8"	2'-8"	8"	2'-8"			G =4 1/2"
A501	5	56	29'-3"									Footing
A502	5	28	38'-0"									Footing
A503	5	30	13'-0"									Footing
A504	5	89	5'-6"	L	4'-8"	10"						Footing
A505	5	10	15'-7"	L	14'-9"	10"						Footing
A511	5	49	13'-10"									Stem vert.
A512	5	47	8'-4"	S		2'-4"	4'-2"	1'-10"				Beam seat
A513	5	51	3'10"									Backwall
A514	5	22	8'-0"	S		2'-0"	4'-0"	2'-0"				Stem horz.
A515	5	15	14'-8"									Stem horz.
A516	5	37	29'-8"									Stem horz.
A517	5	37	14'-9"									Stem horz.
A518	5	22	15'-8"									Stem horz.
A519	5	6	4'-6"	S		2'-0"	6"	2'-0"				Backwall horz.
A520	5	2	8'-0"									Wingwall abutment corner
A521	5	33	21'-6"									Retaining Wall No.1
A522	5	37	6'-9"	S		2'-8"	1'-5"	2'-8"				Retaining Wall No.1
A523	5	32	19'-7"									Retaining Wall No.1
A524	5	32	21'-7"									Retaining Wall No.1
A525	5	60	min 5'-5"	S		2'-0"	min 1'-5"	2'-0"			2"	INCR. = Dim C, 4-sets of 15
A531	5	7	min 19'-6"								3"	Variable, Abutment No.1 retainingwall
A532	5	9	5'-5"	S		2'-0"	1'-5"	2'-0"				Abutment No.1 retaining wall
A533	5	32	8'-2"									Abutment No.1 retaining wall
A534	5	30	min 5'-5"	S		2'-0"	min 1'-3"	2'-0"			2"	INCR. = Dim C, 2-sets of 15
A535	5	5	8'-0"									Wingwall abutment corner
A536	5	5	9'-4"	S		4'-4"	8"	4'-4"				Wingwall abutment corner
A537	5	10	9'-4"									Wingwall abutment corner
A538	5	11	5'-4"	AT	1'-2"	1'-6"	1'-9"					Wingwall abutment corner
A539	5	11	10'-3"	AF	1'-6"	3'-3"	3'-6"	1'-1"				Wingwall abutment corner
A540	5	5	12'-5"	AR	3'-2"	3'-4"	3'-6"	8"				Wingwall abutment corner
A541	5	1	6'-4"									Corbel
A542	5	1	29'-6"									Corbel
A543	5	1	7'-6"									Corbel
A544	5	1	4'-0"									Backwall pipe block-out
A545	5	12	9'-6"									Backwall conduit block-out
A561	5	5	5'-8"	S		2'-6"	8"	2'-6"				Backwall conduit block-out
A562	5	16	3'-0"									Backwall conduit block-out
A601	6	42	12'-6"									Footing
A602	6	8	13'-6"									Footing
A603	6	33	12'-9"									Footing
A611	6	46	8'-0"									Stem
A612	6	54	9'-4"	S		4'-4"	8"	4'-4"				Backwall
A621	6	52	13'-6"									Retaining Wall No.1
A631	6	7	12'-0"									Abutment No.1 retaining wall
A641	6	8	5'-0"									Backwall pipe block-out
A642	6	16	5'-9"									Retaining Wall No. 1 pipe block-out
A701	7	88	14'-7"	G	13'-9"	10"						Footing
A801	8	12	13'-6"									Footing
A901	9	83	12'-6"									Footing
A902	9	97	12'-9"									Footing
A903	9	80	16'-3"	L	14'-9"	1'-7"						Footing
A904	9	12	15'-0"	G	13'-9"	1'-3"						Footing

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	INCR.	REMARKS
ABUTMENT #2												
B411	4	47	3'-11 1/2"	R	8"	1'-2"	10"	5 1/2"	10"			Corbel
B412	4	3	3'-11"	SH	1'-3"	5"	1'-3"					Dim. J&G = 6", corbel @ pipe
B413	4	47	2'-6"	VM	1'-6"	9"		1'-0"	1'-6"			approach slab dowel
B414	4	20	7'-1"	S	2'-0"	3'-1"	2'-0"					Pedestal bars
B415	4	20	7'-7"	S	2'-0"	3'-7"	2'-0"					Pedestal bars
B416	4	78	2'-6"									French drains
B418	4	4	10'-5"	S		2'-9"	4'-11"	2'-9"				Keeper block Long.
B419	4	5	8'-6"	S		2'-9"	3'-0"	2'-9"				Keeper block Trans.
B431	4	5	7'-5"	H	4 1/2"	8"	2'-8"	8"	2'-8"			G = 4 1/2"
B501	5	108	21'-6"									Footing
B502	5	92	5'-5"	L	4'-7"	10"						Footing
B511	5	43	12'-11"									Stem vert.
B512	5	43	8'-4"	S		2'-4"	4'-2"	1'-10"				Beam seat
B513	5	48	4'-9"									Stem vert.
B514	5	20	8'-0"	S		2'-0"	4'-0"	2'-0"				Stem horz.
B515	5	33	14'-9"									Stem horz.
B516	5	33	29'-7"									Stem horz.
B517	5	33	14'-9"									Stem horz.
B519	5	10	4'-6"	S		2'-0"	6"	2'-0"				Backwall horz.
B521	5	13	18'-1"									Retaining Wall No.2
B522	5	28	9'-6"									Retaining Wall No.2
B523	5	14	min. 13'-1"	S		5'-10"	min. 1'-5"	5'-10"			2"	INCR. = Dim C
B524	5	14	min. 5'-5"	S		2'-0"	min. 1'-5"	2'-0"			2"	INCR. = Dim C
B531	5	36	19'-11"									Retaining Wall No.3
B532	5	36	6'-1"	S		2'-4"	1'-5"	2'-4"				Retaining Wall No.3
B533	5	30	24'-4"									Retaining Wall No.3
B534	5	30	22'-0"									Retaining Wall No.3
B535	5	60	min. 5'-3"	S		2'-0"	min. 1'-3"	2'-0"			2"	INCR. = Dim C, 2-sets of 15
B541	5	1	7'-2"									Corbel
B542	5	1	29'-6"									Corbel
B543	5	1	6'-8"									Corbel
B544	5	1	4'-0"									Backwall pipe block-out
B545	5	12	9'-6"									Backwall conduit block-out
B551	5	24	min. 4'-11"	LH	min. 10"	3'-6"	7"				5/8"	INCR. = Dim C, corrosion resistant
B552	5	15	4'-4"	S		1'-2"	1'-2"	1'-2"				Dim. G = 10", corrosion resistant
B553	5	19	6'-1"	CM	2'-0"							R = 3", corrosion resistant
B554	5	16	12'-0"									Corrosion resistant
B561	5	5	5'-8"	S		2'-6"	8"	2'-6"				Backwall conduit block-out
B562	5	16	3'-0"									Backwall conduit block-out
B601	6	43	12'-6"									Footing
B602	6	37	12'-0"									Footing
B603	6	17	13'-0"									Footing
B604	6	10	8'-0"									Footing
B611	6	47	8'-6"									Stem vert.
B612	6	55	9'-8"	S		4'-6"	8"	4'-6"				Backwall
B621	6	16	9'-5"									Retaining Wall No.2
B631	6	35	11'-9"									Retaining Wall No.3
B641	6	8	5'-0"									Backwall pipe block-out
B642	6	16	7'-0"									Retaining Wall No. 3 pipe block-out
B651	6	24	min. 7'-3"	LJ	2'-4"	4'-3"	8"				5/8"	INCR. = Dim C, min. corner R=6", corrosion resistant
B701	7	28	14'-7"	G	13'-9"	10"						Footing
B801	8	84	12'-6"									Footing
B802	8	19	10'-0"									Footing
B803	8	83	15'-1"	L	13'-9"	1'-4"						Footing
B901	9	70	15'-0"	G	13'-9"	1'-3"						Footing
B1001	10	72	12'-0"									Footing
B1002	10	40	13'-0"									Footing

TYPE – BENDING DIAGRAMS



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00
BRIDGE PLANS
BRIDGE NO. 2431

	DATE	BY
PROJ. MANAGER		
DESIGN-DETAILED	07/10	JJR
CHECKED-REVIEWED	07/10	VN
DESIGN2-DETAILED2	_	_
DESIGN3-DETAILED3	_	_
REVISIONS 1	_	_
REVISIONS 2	_	_
REVISIONS 3	_	_
REVISIONS 4	_	_
FIELD CHANGES	_	_

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

REINFORCING STEEL SCHEDULE I

SHEET NUMBER
42
OF 48

Date:8/3/2010
Username: rhanf
Division: HIGHWAY
Filename: 042_Reinf Steel1.DGN

CURVE DATA

PI = 11+69.60
D = 9° - 57' - 52.1"
Δ = 32° - 52' - 00.0" Rt.
R = 575.00'
L = 329.84'
T = 169.60'
E = 24.49'

CURVE DATA

PI = 15+41.77
D = 3° - 49' - 11.0"
Δ = 9° - 07' - 47.4" Lt.
R = 1500.00'
L = 239.02'
T = 119.76'
E = 4.77'

CURVE DATA

PI = 18+07.66
D = 1° - 08' - 45.3"
Δ = 0° - 52' - 08.3" Rt.
R = 5000.00'
L = 75.83'
T = 37.92'
E = 0.14'

PC = STA. 14+22.00
PT = STA. 16+61.02
POE = STA. 18+87.99
PT = STA. 13+29.84
PC = STA. 17+69.75
PT = STA. 18+45.58

Y.C.C.R. VOL 5 PAGE 49 S.J. AS PLOTTED FROM DOCUMENT
Y.C.C.R. VOL 5 PAGE 49 S.J. AS PLOTTED FROM DOCUMENT

12+00 13+00 14+00 15+00 16+00 17+00 18+00 18+88

N63°10'19.7"E
N54°2'32.3"E
N54°54'40.6"E
N59°19'57.3"E

Route 1 Main Street
Brown Street
Water Street
Mousam River

Close sidewalk
Pave around utility pole
Pave existing shoulder for cross walk
Pavement butt joint Limit of 2" pavement overlay
Close sidewalk
Approx. canopy of tree (overhead)
Match existing pavement
Painted cross walk (typ.)
60" dia. drainage pipe

R=75'
R=70'
R=40'
R=48'
R=60'
R=200'
R=8'

2' shoulder
12'
12'
28'
2' shoulder
5' sidewalk
15'± (typ.)
200'± Limits of temporary bridge

CLL CLL CLL CLL CLL CLL

TEMPORARY DETOUR PLAN

25 0 25 50
1" = 25'

DETOUR NOTES:

1. See Special Provisions Section 510, Special Detours for detour requirements.
2. The geometry shown reflects minimum requirements for BUS-45 turning movements.
3. Special detour must be pile supported in wetland/river locations. No fill may be placed in the wetland/river associated with the temporary detour. See Environmental Permits and Special Provision Section 105 for in - stream work restrictions.
4. This detour plan is provided for reference only. Actual detour design will vary. The Contractor is responsible for the design of the temporary detour in accordance with Special Provisions Section 510.
5. Contractor shall avoid impacts to trees and tree canopies in Rotary Park.
6. Contractor shall provide a 2" pavement overlay on Brown Street and Cumberland Farms back parking lot prior to opening detour to traffic. Pavement butt joints shall be constructed at all locations where matching to existing pavement. Pavement overlay and butt joints necessary for temporary detour shall be incidental to Item 510.12.
7. Upon completion of project and removal of temporary bridge and associated approaches, Contractor shall loam and seed disturbed areas.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

-

PIN 15098.00

BRIDGE NO. 2431 BRIDGE PLANS

DGE	BY	DATE
PROJ. MANAGER	-	07/10
DESIGN-DETAILED MPC	-	07/10
CHECKED-REVIEWED DGE	-	-
DESIGN2-DETAILED2 -	-	-
DESIGN3-DETAILED3 -	-	-
REVISIONS 1 -	-	-
REVISIONS 2 -	-	-
REVISIONS 3 -	-	-
REVISIONS 4 -	-	-
FIELD CHANGES -	-	-

SIGNATURE

P.E. NUMBER

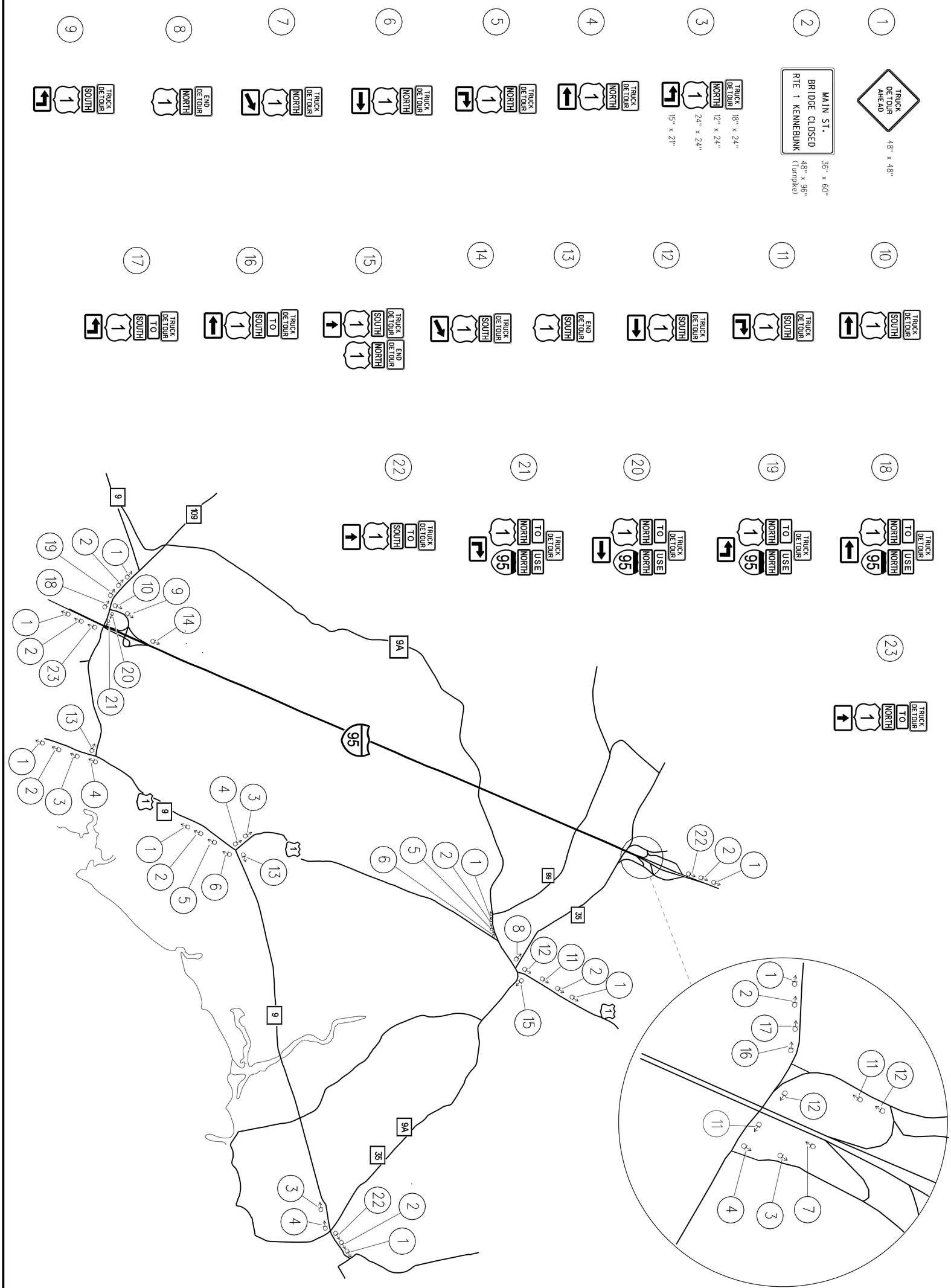
DATE

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

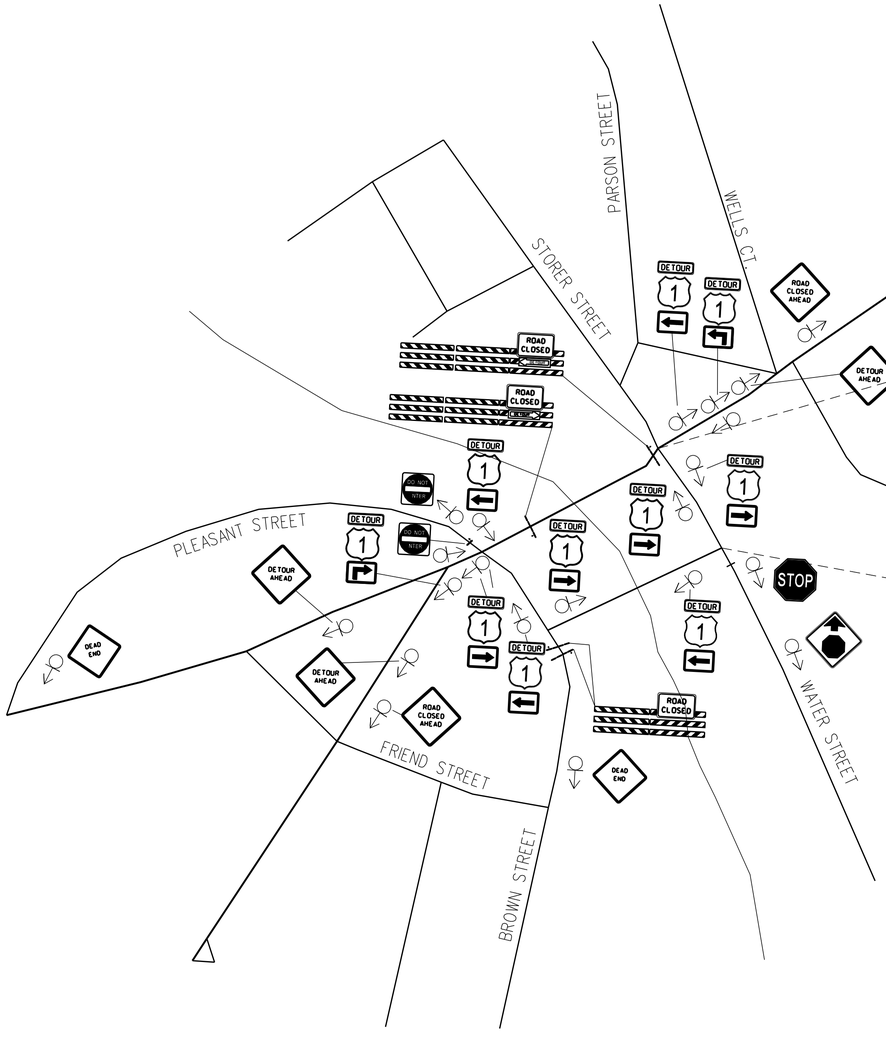
TEMPORARY DETOUR PLAN

SHEET NUMBER
43
OF 48

Filename: REGION 1 Username: D.M.Hanks Date: July 2010

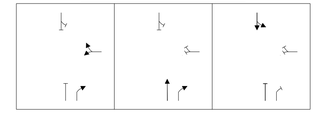


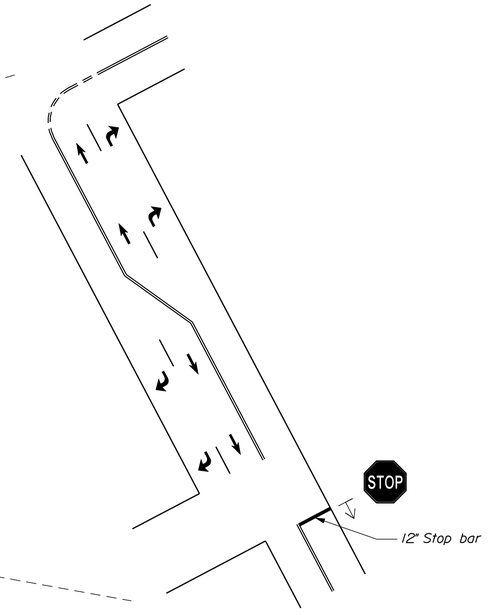
SHEET NUMBER 44 OF 48	KENNEBUNK PIN 15098.00 TRUCK DETOUR PLAN	D. Hanks	D. Hanks	STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1509(800)X BRIDGE NO. 2431 PIN 15098.00 BRIDGE PLANS



DETOUR PLAN

Route 1/ Water Street
TEMPORARY PHASING SEQUENCE





TURNING LANE DETAIL

DETOUR NOTES

1. The Contractor shall stripe double yellow centerline through the detour. The layout will be approved by the Resident.

2. The Contractor shall stripe stop bars, lane lines and arrows. The layout will be approved by the Resident.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1509(800)X

PIN 15098.00

BRIDGE NO. 2431 — BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	K. Cummings	K. Cummings	
DESIGN-DETAILED	D. Hanks	D. Hanks	-----
CHECKED-REVIEWED	-----	-----	-----
DESIGN2-DETAILED2	-----	-----	-----
DESIGN3-DETAILED3	-----	-----	-----
REVISIONS 1	-----	-----	-----
REVISIONS 2	-----	-----	-----
REVISIONS 3	-----	-----	-----
REVISIONS 4	-----	-----	-----
FIELD CHANGES	-----	-----	-----

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
MOUSAM RIVER
KENNEBUNK YORK COUNTY

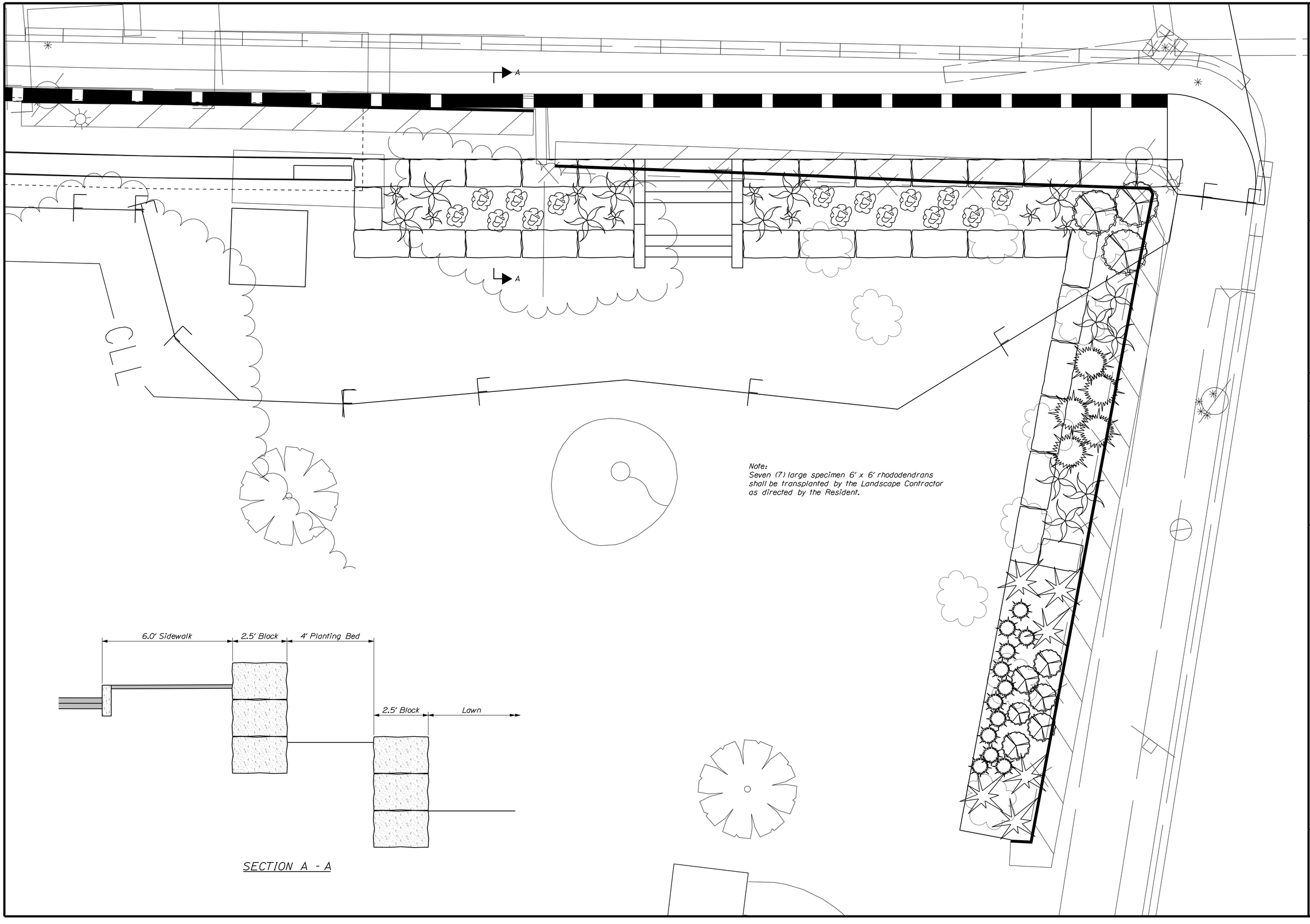
DETOUR PLAN

SHEET NUMBER

45

OF 48

Filename: ...\bridge\rmsto\999_Landscape.dgn Division: BRIDGE Username: kevin.cummings Date:8/4/2010



SECTION A - A

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1509(800)X

PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

PROJ. MANAGER	J. Wentworth	BY	DATE
DESIGN-DETAILED	K. Cooper	Team South	
CHECKED-REVIEWED	-----	-----	-----
DESIGN2-DETAILED2	-----	-----	-----
DESIGN3-DETAILED3	-----	-----	-----
REVISIONS 1	-----	-----	-----
REVISIONS 2	-----	-----	-----
REVISIONS 3	-----	-----	-----
REVISIONS 4	-----	-----	-----
FIELD CHANGES	-----	-----	-----

SIGNATURE

P.E. NUMBER

DATE

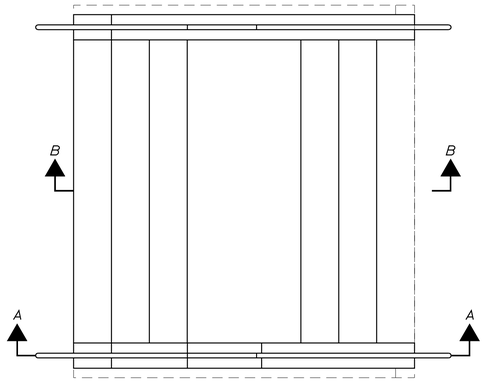
KENNEBUNK BRIDGE
MOUSAM RIVER
KENNEBUNK YORK COUNTY

PLANS

SHEET NUMBER

46

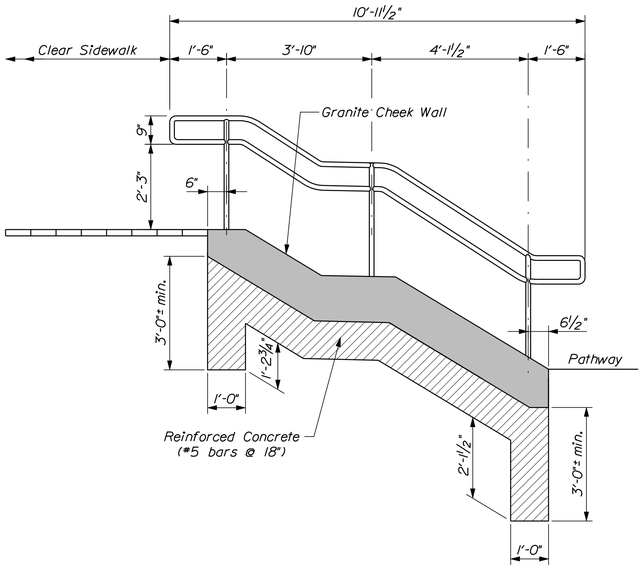
OF 48



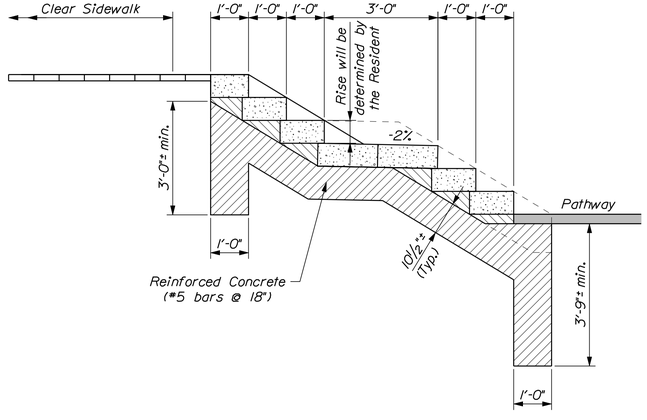
PLAN

ABUTMENT NOTES

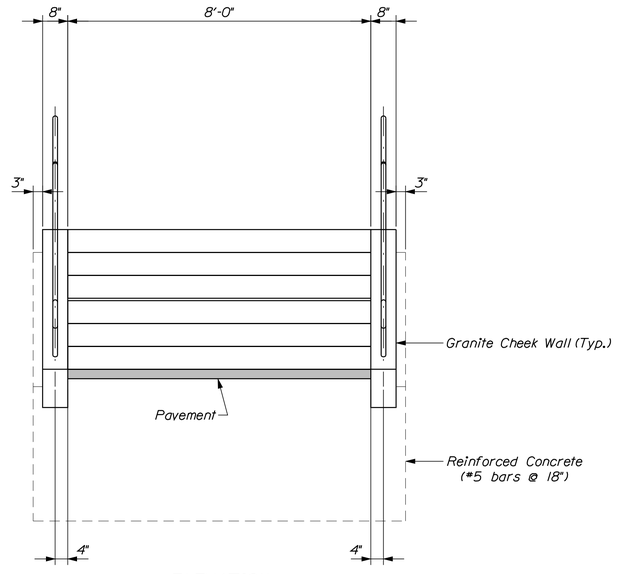
1. The steps shall be paid under Pay Item 642.183 Granite Steps. Reinforcing steel required for the concrete steps will be considered incidental. No separate payment will be made for reinforcing steel, black powder coated steel pipe handrails, and any necessary excavation and backfill, materials, equipment and labor associated with the steps, as this will be considered incidental. The installation and any necessary drilling into the granite (to be supplied by others) to accommodate the still pipe handrails is also to be considered incidental.
2. The installation, equipment and labor necessary to install the granite associated with the steps will be considered incidental to Pay Item 642.183, Granite Steps.
3. Granite step shop drawings need to be approved before fabrication
4. Granite to be a flame finished uniform gray color New England granite sample to be approved by Resident.
5. Reinforcing steel shall have a minimum cover of 2" unless otherwise noted.



SECTION A-A
Concrete Foundation for Cheek Walls



SECTION B-B
Concrete Foundation for Stairs



ELEVATION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1509(800)X

PIN 15098.00

BRIDGE NO. 2431

BRIDGE PLANS

PROJ. MANAGER	J. Wentworth	BY	DATE
DESIGN-DETAILED	K. Cooper	Team South	
CHECKED-REVIEWED	-----	-----	-----
DESIGN2-DETAILED2	-----	-----	-----
DESIGN3-DETAILED3	-----	-----	-----
REVISIONS 1	-----	-----	-----
REVISIONS 2	-----	-----	-----
REVISIONS 3	-----	-----	-----
REVISIONS 4	-----	-----	-----
FIELD CHANGES	-----	-----	-----

SIGNATURE

P.E. NUMBER

DATE

KENNEBUNK BRIDGE
MOUSAM RIVER
KENNEBUNK YORK COUNTY

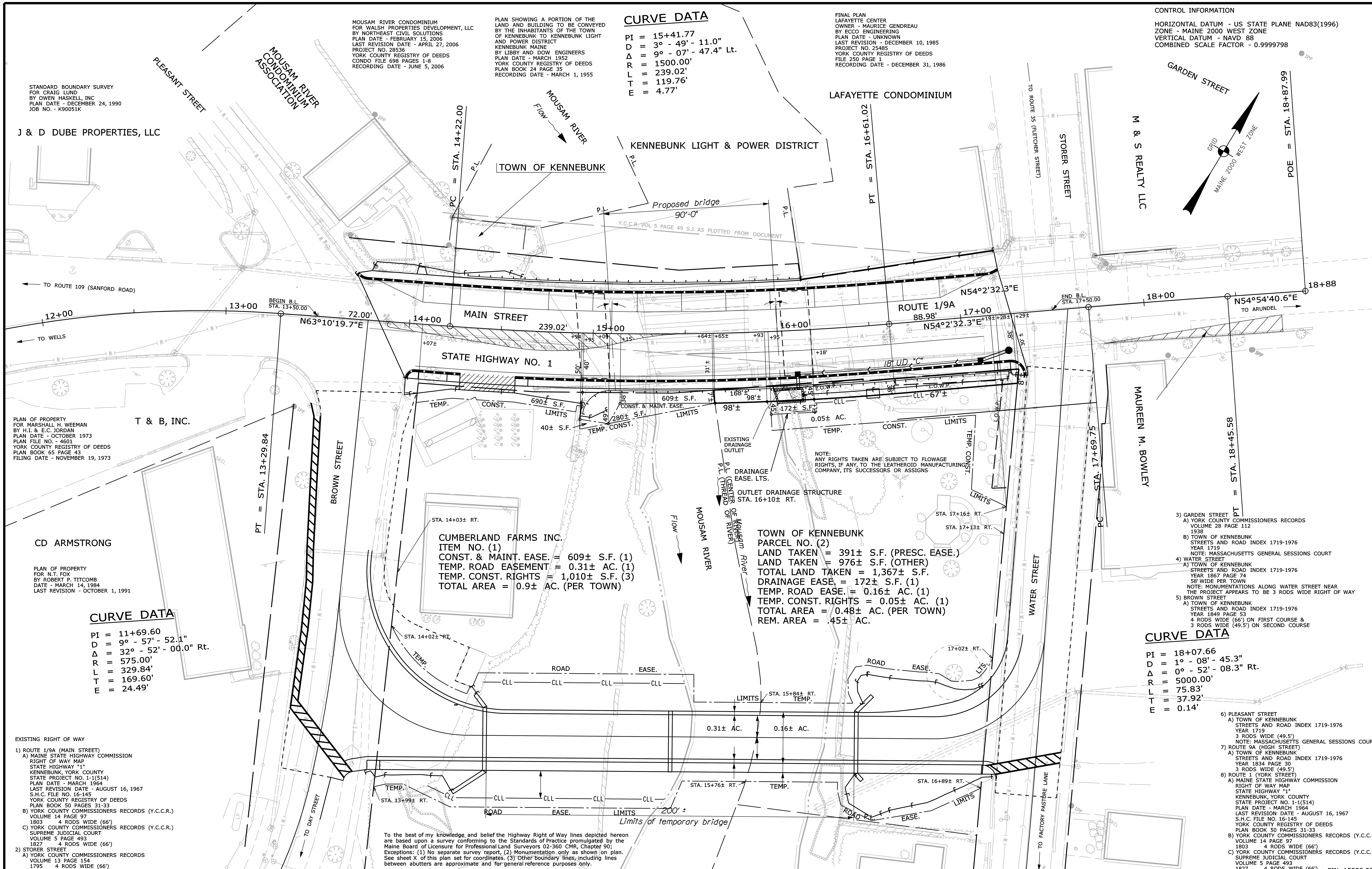
GRANITE STAIR DETAILS

SHEET NUMBER

47

OF 48

Filename: ...\MSTA\001_Granite_Stairs.dgn Division: BRIDGE Username: kevin.cummings Date:8/13/2010



STANDARD BOUNDARY SURVEY
FOR CRAIG LUND
BY OWEN HASKELL, INC
PLAN DATE - DECEMBER 24, 1990
JOB NO. - K90051K
J & D DUBE PROPERTIES, LLC
PLEASANT STREET
MOUSAM RIVER CONDOMINIUM ASSOCIATION
MOUSAM RIVER CONDOMINIUM
FOR WALSH PROPERTIES DEVELOPMENT, LLC
BY NORTHEAST CIVIL SOLUTIONS
PLAN DATE - FEBRUARY 15, 2006
LAST REVISION DATE - APRIL 27, 2006
PROJECT NO. 28536
YORK COUNTY REGISTRY OF DEEDS
CONDO FILE 698 PAGES 1-8
RECORDING DATE - JUNE 5, 2006
PLAN SHOWING A PORTION OF THE
LAND AND BUILDING TO BE CONVEYED
BY THE INHABITANTS OF THE TOWN
OF KENNEBUNK TO KENNEBUNK LIGHT
AND POWER DISTRICT
KENNEBUNK MAINE
BY LIBBY AND DOW ENGINEERS
PLAN DATE - MARCH 1952
YORK COUNTY REGISTRY OF DEEDS
PLAN BOOK 24 PAGE 35
RECORDING DATE - MARCH 1, 1955
CURVE DATA
PI = 15+41.77
D = 3° - 49' - 11.0"
Δ = 9° - 07' - 47.4" Lt.
R = 1500.00'
L = 239.02'
T = 119.76'
E = 4.77'
FINAL PLAN
LAFAYETTE CENTER
OWNER - MAURICE GENDREAU
BY ECCO ENGINEERING
PLAN DATE - UNKNOWN
LAST REVISION - DECEMBER 10, 1985
PROJECT NO. 25485
YORK COUNTY REGISTRY OF DEEDS
FILE 250 PAGE 1
RECORDING DATE - DECEMBER 31, 1986
LAFAYETTE CONDOMINIUM
CONTROL INFORMATION
HORIZONTAL DATUM - US STATE PLANE NAD83(1996)
ZONE - MAINE 2000 WEST ZONE
VERTICAL DATUM - NAVD 88
COMBINED SCALE FACTOR - 0.9999798
GARDEN STREET
GRID
MAINE 2000 WEST ZONE
POE = STA. 18+87.99
MOUSAM RIVER
Flow
TOWN OF KENNEBUNK
KENNEBUNK LIGHT & POWER DISTRICT
PC = STA. 14+22.00
PT = STA. 16+61.02
TO ROUTE 35 (FLETCHER STREET)
STORER STREET
M & S REALTY LLC
Proposed bridge
90'-0"
Y.C.C.R. VOL 5 PAGE 49 S.I. AS PLOTTED FROM DOCUMENT
TO ROUTE 109 (SANFORD ROAD)
TO WELLS
12+00
13+00
BEGIN B.L.
STA. 13+50.00
N63°10'19.7"E
72.00'
14+00
MAIN STREET
239.02'
15+00
16+00
ROUTE 1/9A
N54°2'32.3"E
88.98'
17+00
END B.L.
STA. 17+50.00
18+00
18+88
N54°54'40.6"E
TO ARUNDEL
STATE HIGHWAY NO. 1
IB' UD 'C'
TEMP. CONST. LIMITS
690± S.F.
40± S.F.
280± S.F.
609± S.F.
CONST. & MAINT. EASE.
168±
98'±
172± S.F.
0.05± AC.
CLL - 67'±
PLAN OF PROPERTY
FOR MARSHALL H. WEEMAN
BY H.I & E.C. JORDAN
PLAN DATE - OCTOBER 1973
PLAN FILE NO. - 4601
YORK COUNTY REGISTRY OF DEEDS
PLAN BOOK 65 PAGE 43
FILING DATE - NOVEMBER 19, 1973
T & B, INC.
PT = STA. 13+29.84
BROWN STREET
CD ARMSTRONG
PLAN OF PROPERTY
FOR N.T. FOX
BY ROBERT P. TITCOMB
DATE - MARCH 14, 1984
LAST REVISION - OCTOBER 1, 1991
CURVE DATA
PI = 11+69.60
D = 9° - 57' - 52.1"
Δ = 32° - 52' - 00.0" Rt.
R = 575.00'
L = 329.84'
T = 169.60'
E = 24.49'
EXISTING DRAINAGE OUTLET
DRAINAGE EASE. LTS.
OUTLET DRAINAGE STRUCTURE
STA. 16+10± RT.
NOTE:
ANY RIGHTS TAKEN ARE SUBJECT TO FLOWAGE RIGHTS, IF ANY, TO THE LEATHEROID MANUFACTURING COMPANY, ITS SUCCESSORS OR ASSIGNS
P.L. CENTER OF RIVER (THREAD OF RIVER)
Mousam River
STA. 14+03± RT.
CUMBERLAND FARMS INC.
ITEM NO. (1)
CONST. & MAINT. EASE. = 609± S.F. (1)
TEMP. ROAD EASEMENT = 0.31± AC. (1)
TEMP. CONST. RIGHTS = 1,010± S.F. (3)
TOTAL AREA = 0.9± AC. (PER TOWN)
TOWN OF KENNEBUNK
PARCEL NO. (2)
LAND TAKEN = 391± S.F. (PRESC. EASE.)
LAND TAKEN = 976± S.F. (OTHER)
TOTAL LAND TAKEN = 1,367± S.F.
DRAINAGE EASE. = 172± S.F. (1)
TEMP. ROAD EASE. = 0.16± AC. (1)
TEMP. CONST. RIGHTS = 0.05± AC. (1)
TOTAL AREA = 0.48± AC. (PER TOWN)
REM. AREA = .45± AC.
STA. 17+16± RT.
STA. 17+13± RT.
PC = STA. 17+69.75
MAUREEN M. BOWLEY
PT = STA. 18+45.58
WATER STREET
STA. 14+02± RT.
ROAD EASE.
0.31± AC.
0.16± AC.
STA. 15+84± RT.
17+02± RT.
STA. 13+99± RT.
STA. 15+76± RT.
STA. 16+89± RT.
200' ±
Limits of temporary bridge
TO DAY STREET
TO FACTORY PASTURE LANE
EXISTING RIGHT OF WAY
1) ROUTE 1/9A (MAIN STREET)
A) MAINE STATE HIGHWAY COMMISSION
RIGHT OF WAY MAP
STATE HIGHWAY "1"
KENNEBUNK, YORK COUNTY
STATE PROJECT NO. 1-1(514)
PLAN DATE - MARCH 1964
LAST REVISION DATE - AUGUST 16, 1967
S.H.C. FILE NO. 16-145
YORK COUNTY REGISTRY OF DEEDS
PLAN BOOK 50 PAGES 31-33
B) YORK COUNTY COMMISSIONERS RECORDS (Y.C.C.R.)
VOLUME 14 PAGE 97
1803 4 RODS WIDE (66')
C) YORK COUNTY COMMISSIONERS RECORDS (Y.C.C.R.)
SUPREME JUDICIAL COURT
VOLUME 5 PAGE 493
1827 4 RODS WIDE (66')
2) STORER STREET
A) YORK COUNTY COMMISSIONERS RECORDS
VOLUME 13 PAGE 154
1795 4 RODS WIDE (66')
3) GARDEN STREET
A) YORK COUNTY COMMISSIONERS RECORDS
VOLUME 28 PAGE 112
1938
B) TOWN OF KENNEBUNK
STREETS AND ROAD INDEX 1719-1976
YEAR 1719
NOTE: MASSACHUSETTS GENERAL SESSIONS COURT
4) WATER STREET
A) TOWN OF KENNEBUNK
STREETS AND ROAD INDEX 1719-1976
YEAR 1867 PAGE 74
58' WIDE PER TOWN
NOTE: MONUMENTATIONS ALONG WATER STREET NEAR THE PROJECT APPEARS TO BE 3 RODS WIDE RIGHT OF WAY
5) BROWN STREET
A) TOWN OF KENNEBUNK
STREETS AND ROAD INDEX 1719-1976
YEAR 1849 PAGE 53
4 RODS WIDE (66') ON FIRST COURSE &
3 RODS WIDE (49.5') ON SECOND COURSE
CURVE DATA
PI = 18+07.66
D = 1° - 08' - 45.3"
Δ = 0° - 52' - 08.3" Rt.
R = 5000.00'
L = 75.83'
T = 37.92'
E = 0.14'
6) PLEASANT STREET
A) TOWN OF KENNEBUNK
STREETS AND ROAD INDEX 1719-1976
YEAR 1719
3 RODS WIDE (49.5')
NOTE: MASSACHUSETTS GENERAL SESSIONS COURT
7) ROUTE 9A (HIGH STREET)
A) TOWN OF KENNEBUNK
STREETS AND ROAD INDEX 1719-1976
YEAR 1834 PAGE 30
3 RODS WIDE (49.5')
8) ROUTE 1 (YORK STREET)
A) MAINE STATE HIGHWAY COMMISSION
RIGHT OF WAY MAP
STATE HIGHWAY "1"
KENNEBUNK, YORK COUNTY
STATE PROJECT NO. 1-1(514)
PLAN DATE - MARCH 1964
LAST REVISION DATE - AUGUST 16, 1967
S.H.C. FILE NO. 16-145
YORK COUNTY REGISTRY OF DEEDS
PLAN BOOK 50 PAGES 31-33
B) YORK COUNTY COMMISSIONERS RECORDS (Y.C.C.R.)
VOLUME 14 PAGE 97
1803 4 RODS WIDE (66')
C) YORK COUNTY COMMISSIONERS RECORDS (Y.C.C.R.)
SUPREME JUDICIAL COURT
VOLUME 5 PAGE 493
1827 4 RODS WIDE (66')
PIN 15098.00
To the best of my knowledge and belief the Highway Right of Way lines depicted hereon are based upon a survey conforming to the Standards of Practice promulgated by the Maine Board of Licensure for Professional Land Surveyors 02-360 CMR, Chapter 90; Exceptions: (1) No separate survey report, (2) Monumentation only as shown on plan. See sheet X of this plan set for coordinates. (3) Other boundary lines, including lines between abutters are approximate and for general reference purposes only.

SYMBOLS

ITEM	TECH	CHECKED
BASE MAP	G.L.L.	C.W.K.
EXIST. R/W	G.L.L.	
PROP. LINES		
AREAS		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016
KENNEBUNK
RIGHT OF WAY MAP

Filename: ...\00\ROW\MSTA\048_RWPLAN1.dgn Division: BRIDGE Username: kevin.cummings Date:8/4/2010

REVISIONS

NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK PAGE COUNTY RECORD

NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE
		COND.	7/12/10	15895	132

DAVID A. COLE
COMMISSIONER
KENNETH L. SWEENEY
CHIEF ENGINEER
DATE

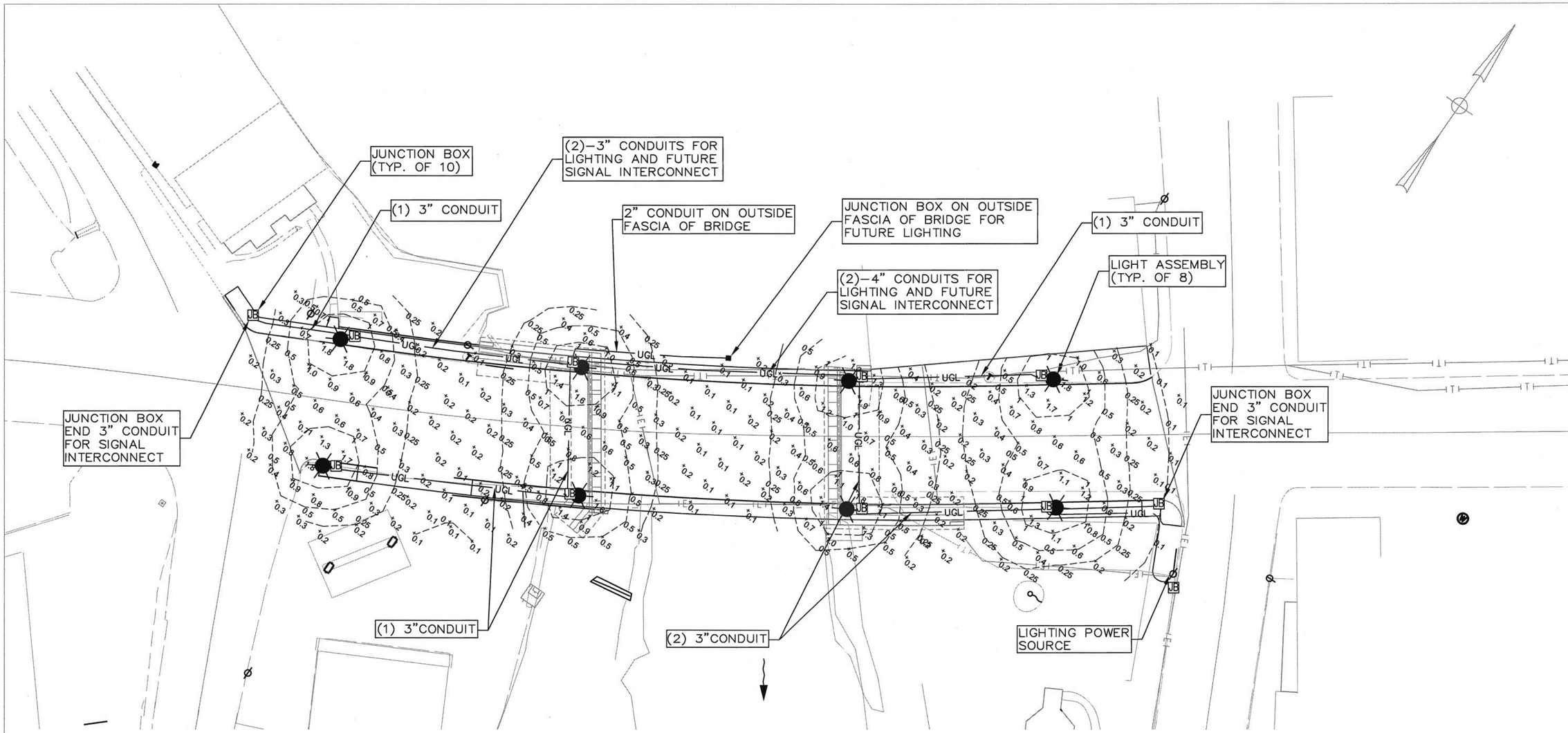
STATE OF MAINE · CHRISTOPHER W. KNIGHT · 2257 · PROFESSIONAL LAND SURVEYOR

STATE OF MAINE
REGISTRY OF DEEDS
COUNTY ____
RECEIVED ____
at ____h____m____M and recorded in
Plan Book ____, Page ____
Attest: ____ REGISTER

STATE HIGHWAY "1"
ROUTE 1\9A (MAIN STREET)
KENNEBUNK YORK COUNTY
FEDERAL AID PROJECT NO. BH-1509(800)X

NOVEMBER 2009 | RIGHT-OF-WAY MAP
SCALE 1" = 25' | SHEET 1 OF 1
D.O.T. FILE NO. 16-463

SHEET NUMBER
48
OF 48



LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
✷	A	8	1843LED/6A1R4ST 3/WA	112 WHITE CREE LEDS (6ARC & 1RND)w/TYPE III OPTICS/HEATSINK ROOF TOP OPTIC 1843 LUMINAIRE w/WHITE ACRYLIC LENS ADVANCE DRIVER #LEDINTA0700C210FO ELEC:120V 1.042A 124.9W	128 W CLEAR FROSTED ACRYLIC LENS LED	1843LED-6A1R4ST3-WA.IES	Absolute	0.81	125

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
MOUSAM RIVER BRIDGE	+	0.5 fc	2.0 fc	0.0 fc	N / A	N / A

LUMINAIRE LOCATIONS

No.	Label	Location X	Location Y	Z	MH	Orientation	Tilt	Aim X	Aim Y	Aim Z
1	A	939616.8	201041.1	12.0	12.0	-24.9	0.0	939616.8	201041.1	0.0
2	A	939594.6	201084.9	12.0	12.0	150.8	0.0	939594.6	201084.9	0.0
3	A	939676.4	201128.6	12.0	12.0	148.3	0.0	939676.4	201128.6	0.0
4	A	939703.3	201087.6	12.0	12.0	-30.0	0.0	939703.3	201087.6	0.0
5	A	939790.7	201141.9	12.0	12.0	-34.4	0.0	939790.7	201141.9	0.0
6	A	939763.3	201182.7	12.0	12.0	147.0	0.0	939763.3	201182.7	0.0
7	A	939856.0	201187.9	12.0	12.0	-36.2	0.0	939856.0	201187.9	0.0
8	A	939827.1	201227.8	12.0	12.0	143.9	0.0	939827.1	201227.8	0.0

LIGHTING LEGEND

✷ LIGHTING ASSEMBLY

UB JUNCTION BOX

——— UGL ——— UNDERGROUND CONDUIT FOR LIGHTING

GENERAL NOTES - HIGHWAY LIGHTING

SCOPE OF WORK - INSTALL EIGHT LIGHT POLES, CONDUIT, WIRE AND JUNCTION BOXES WITHIN PROJECT AREA. POLES AND WIRE WILL BE PROVIDED TO THE CONTRACTOR BY THE TOWN OF KENNEBUNK. METER AND POWER SOURCE TO BE PROVIDED BY THE TOWN OF KENNEBUNK & KENNEBUNK LIGHT & POWER.

ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO NATIONAL ELECTRIC SAFETY CODE (ANSI C2), NATIONAL ELECTRIC CODE (NFPA 70), MAINE DOT STANDARDS SPECIFICATIONS AND STANDARD DETAILS AND ANY REQUIREMENTS OF THE LOCAL UTILITY (KENNEBUNK LIGHT & POWER).

ALL WORK NECESSARY TO COMPLETE THE HIGHWAY LIGHTING SHALL BE PAID UNDER ITEM 634.16

ALL LIGHT POLES SHALL BE MOUNTED ON AN 18" PRECAST CONCRETE BASE. BASE SHALL BE SET BELOW AND ANCHOR BOLTS EXTENDED SUCH THAT POLE BASE IS FLUSH WITH SIDEWALK.

CENTERLINE OF PRECAST CONCRETE BASE SHALL BE SET BACK 2 FEET FROM FACE OF CURB. REVIEW BOLT CIRCLE DIAMETER AND ANCHOR BOLT PATTERN PRIOR TO INSTALLATION OF BASE, AS THE LIGHT BASE IS SQUARE AND A DIAMOND PATTERN IS REQUIRED TO ALIGN BASE PARALLEL WITH CURB LINE.

APPENDIX A

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH–1509(800)X

PIN 15098.00 BRIDGE PLANS

STATE OF MAINE · CHRISTOPHER J. OSTERRIEDER · No. 9106 · LICENSED PROFESSIONAL ENGINEER

SIGNATURE 9106 P.E. NUMBER 7/24/10 DATE

	BY	DATE
PROJ. MANAGER	----	
DESIGN–DETAILED	DH	AUG 2010
CHECKED–REVIEWED	CJD	----

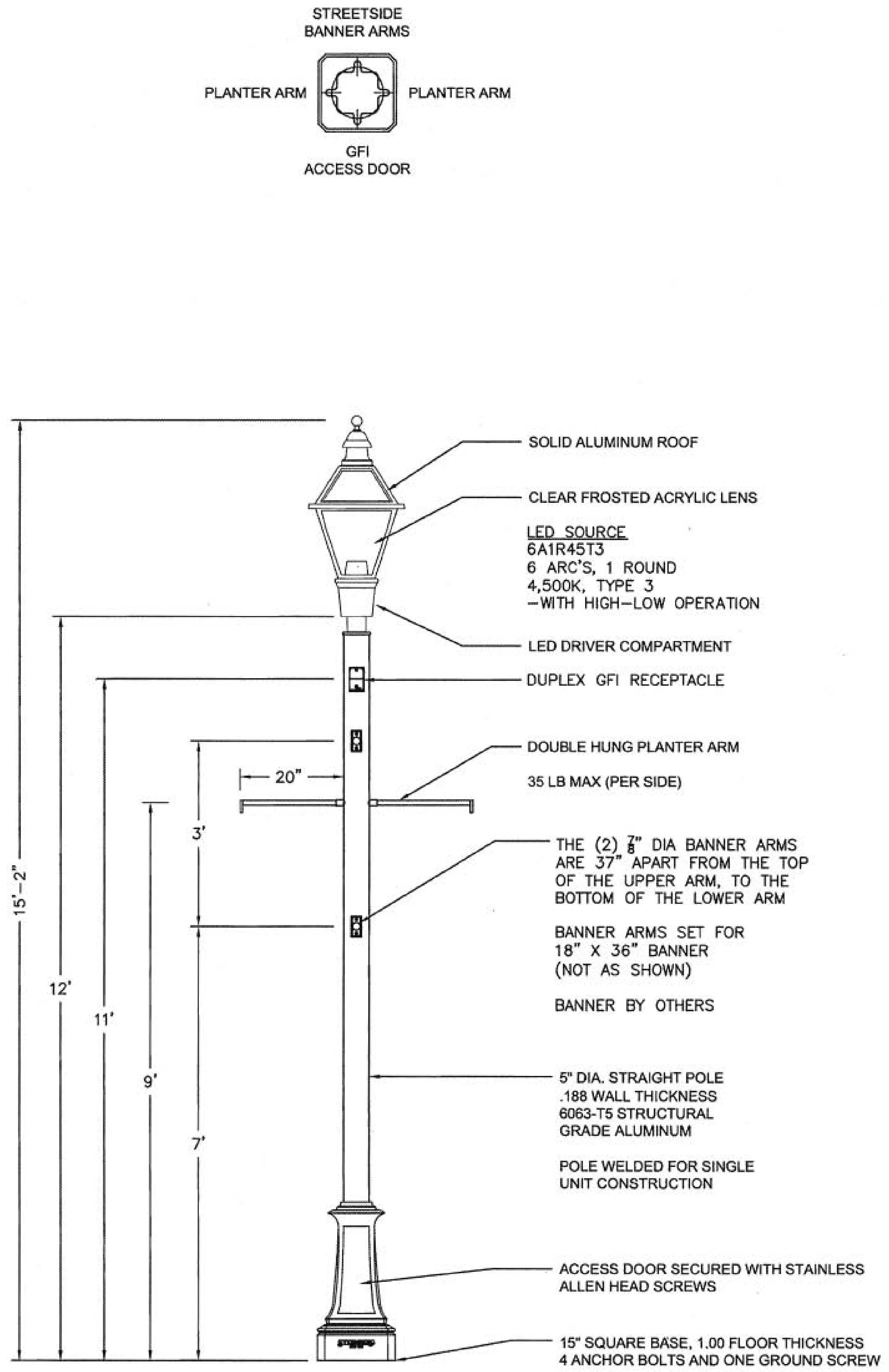
KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

LIGHTING PLAN

SHEET NUMBER 1 OF 3

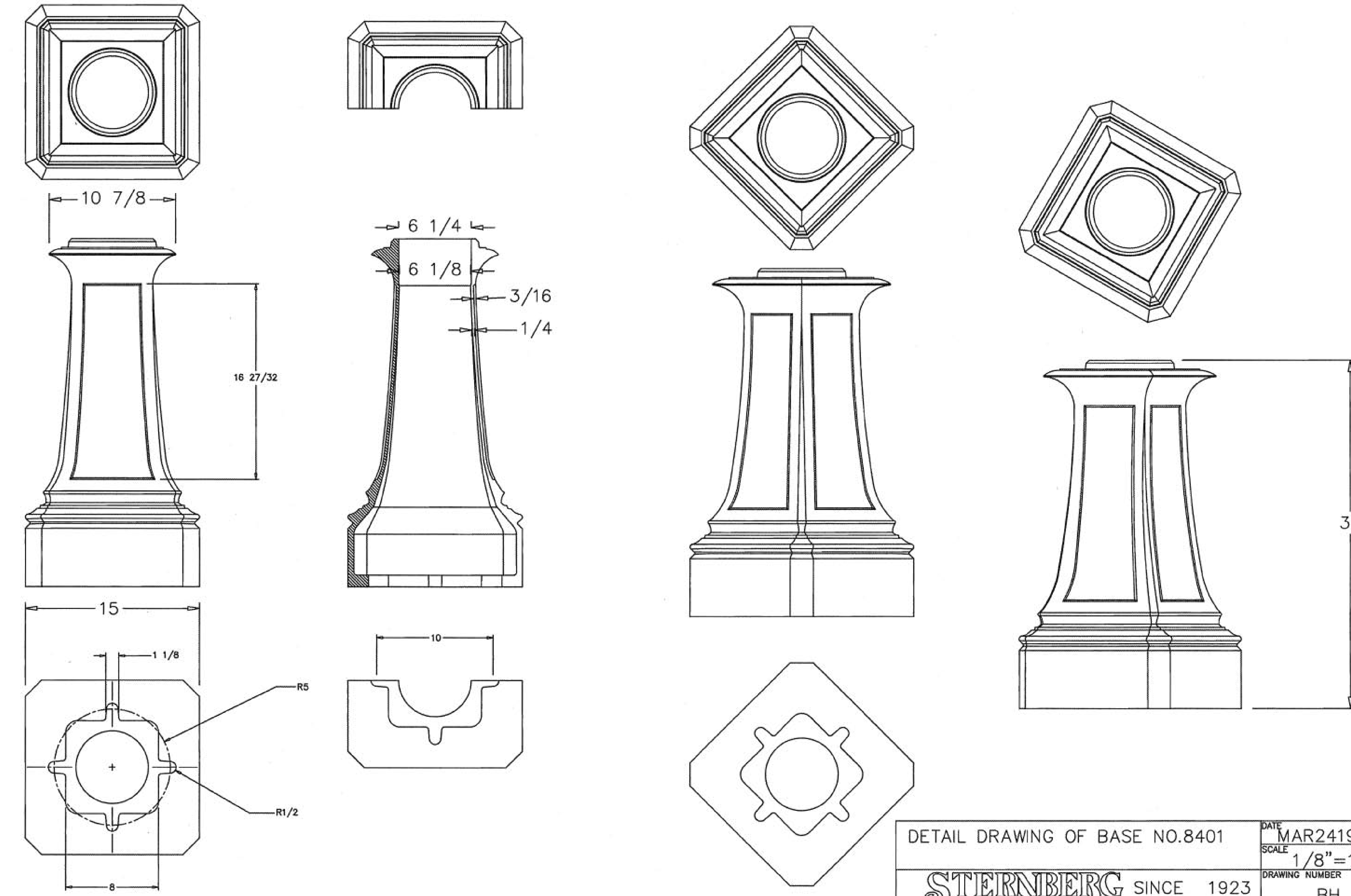
Division: MUNICPALITY Username: CJO Date:AUGUST 2010

Filename: 2822–MB–LIGHTING



KENNEBUNK DOWNTOWN LIGHTING KENNEBUNK, ME 1843LED / 8412P5	POLE HEIGHTS HAVE A TOLERANCE OF + OR - 2"
STERNBERG SINCE 1923	6/3/10
DRAWN DRE	1/2"=1'
	DRAWING NUMBER SC8782C
SOCKET TYPE	
WATTAGE	126w
LIGHT SOURCE	6A1R45T3
VOLTAGE	120v-277v
FUSE	
FINISH	BLACK

LIGHT ASSEMBLY – TO BE PROVIDED BY TOWN OF KENNEBUNK AND INSTALLED BY CONTRACTOR



DETAIL DRAWING OF BASE NO.8401	DATE MAR241997
	SCALE 1/8"=1"
STERNBERG SINCE 1923	DRAWING NUMBER BH

APPENDIX A

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1509(800)X
PIN 15098.00
BRIDGE PLANS

STATE OF MAINE CHRISTOPHER J. OSTERREDER NO. 9106 LICENSED PROFESSIONAL ENGINEER

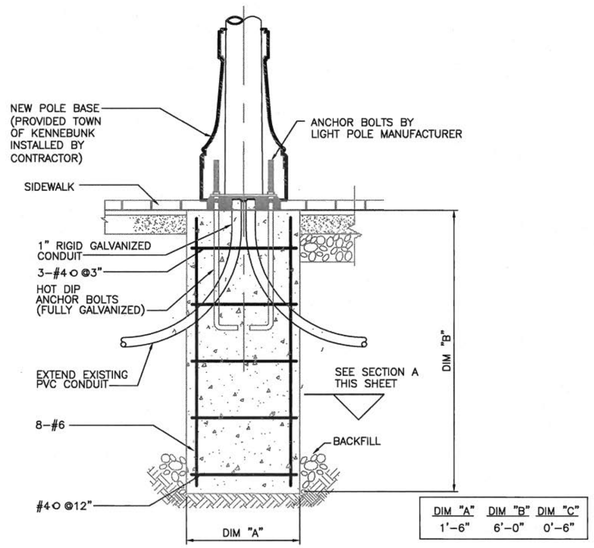
SIGNATURE
P.E. NUMBER 9106
DATE 7/28/10

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	DH	AUG 2010
CHECKED-REVIEWED	CJO	

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

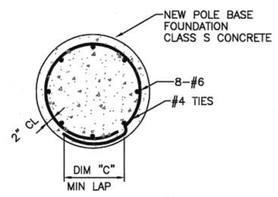
LIGHTING DETAILS

SHEET NUMBER
2
OF 3



NEW POLE FOUNDATION

3/4" = 1'-0"



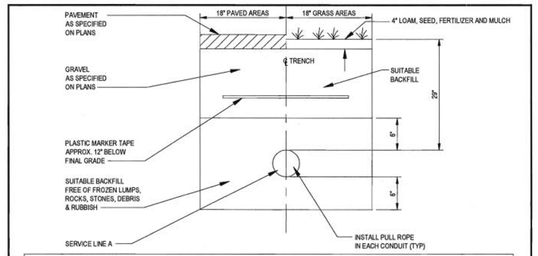
SECTION A

3/4" = 1'-0"

TYPICAL LIGHT POLE FOUNDATION

N.T.S.

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
626.11	PRECAST CONCRETE JUNCTION BOX	10	EA
626.21	METALLIC CONDUIT [2"]	85	LF
626.22	NON-METALLIC CONDUIT [3" & 4"]	950	LF
626.31	450 mm [18 in] FOUNDATION	8	EA
634.16	HIGHWAY LIGHTING	1	LS



CONDUIT TYPE

SERVICE	CONDUIT SIZE	SIDEWALK & GRASS AREAS	PAVED AREAS	UTILITY	REMARKS
A	3"	SCHEDULE 40 PVC ELECTRICAL GRADE	RIGID GALVANIZED STEEL, ASTM A120	POWER (LIGHTING)	SITE LIGHTING

(E) UTILITY TRENCH - SECONDARY ELECTRIC

N.T.S.

APPENDIX A

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1509(800)X

PIN
15098.00

BRIDGE PLANS

STATE OF MAINE · CHRISTOPHER OSTERRIEDER No. 9196 · LICENSED PROFESSIONAL ENGINEER

SIGNATURE
P.E. NUMBER
DATE

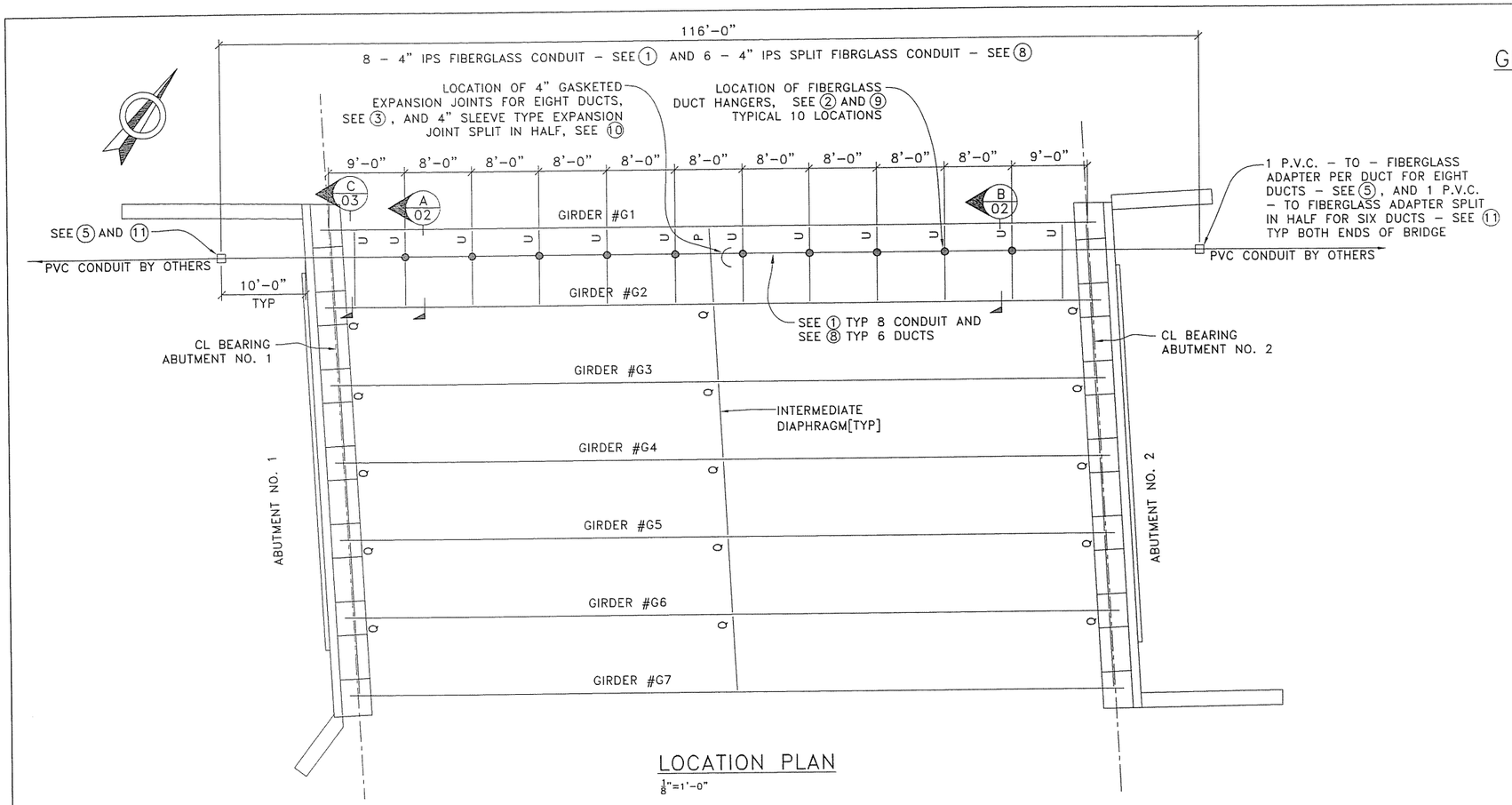
	BY	DATE
PROJ. MANAGER	----	
DESIGN-DETAILED	DH	AUG 2010
CHECKED-REVIEWED	CJD	----

KENNEBUNK BRIDGE
OVER MOUSAM RIVER
KENNEBUNK YORK COUNTY

LIGHTING DETAILS

SHEET NUMBER
3
OF 3

Date:AUGUST 2010
Division: MUNICIPALITY Username: CJD
Filename: 2822-MB-LIGHTING



LOCATION PLAN

$\frac{1}{8}$"=1'-0"

MATERIAL LIST

ITEM NO.	DESCRIPTION AND AMERICAN U-TEL[PART NO.]	QUANTITY
(1)	4" IPS - $4\frac{1}{2}$" O.D. FIBERGLASS DUCT WITH THREADED ENDS [12370]. SEE G.N. NO'S 7 & 9.	960 FT
(2)	FIBERGLASS 8x1 BASEMOUNT MOUNT 4" DUCT HANGER. SEE G.N. NO. 11.	10
(3)	4" GASKETED EXPANSION JOINT [12352]. SEE G.N. NO'S 8 & 9.	8
(4)	4" STRAIGHT COUPLING [12348]. SEE G.N. NO'S 5 & 9.	8
(5)	PVC ADAPTER TO FIBERGLASS [12357]. SEE G.N. NO 9.	16
(6)	ADHESIVE KIT [12358].	16
(7)	5" DIA. ASTM A53, SCH. 40 STEEL PIPE, 2'-0" LONG, GALVANIZED. SEE G.N. NO. 13.	16
(8)	4" IPS - $4\frac{1}{2}$" O.D. FIBERGLASS SPLIT DUCT WITH H-STRIP [12370-SP]. SEE G.N. NO. 7 & 9.	720 FT
(9)	FIBERGLASS 6x1 MODIFIED HANGING MOUNT 4" DUCT HANGER. SEE G.N. NO. 11.	10
(10)	4" SLEEVE TYPE EXPANSION JOINT SPLIT IN HALF LENGTHWISE [12328-SP]. SEE G.N. NO. 8 & 9.	6
(11)	4" PVC ADAPTER TO FIBERGLASS SPLIT IN HALF [12357-SP]	12
(12)	4" STRAIGHT COUPLING SPLIT IN HALF [12348-SP]. SEE G.N. NO. 5 & 9.	6
(13)	5"ø ASTM A53, SCH 40 STEEL SLEEVE SPLIT IN HALF LENGTHWISE x 2'-0" LONG. SEE G.N. NO. 13.	12

GENERAL NOTES

1) ALL ITEMS WITH PART NUMBERS ARE AMERICAN U-TEL, INC. STANDARD ITEMS SUPPLIED BY:
AMERICAN U-TEL, INC.
9760 SMITH ROAD
WILLOUGHBY, OHIO 44094
UNLESS OTHERWISE NOTED.
2) THESE DRAWINGS ARE BASED ON AVAILABLE BRIDGE DESIGN DRAWINGS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE FABRICATION AND INSTALLATION OF CONDUITS AND SUPPORTS.
3) SUBGRADE CONDUIT INSTALLATION BY OTHERS.
4) FIBERGLASS DUCT SUPPORTS ARE DESIGNED FOR A MAXIMUM CABLE LOAD OF 8.0 LBS PER FT PER DUCT. THE TOTAL TELEPHONE AND CONDUIT LOAD AT A SUPPORT IS 700 LBS MAXIMUM.
5) 4" STRAIGHT COUPLINGS SHALL BE INSTALLED AS REQUIRED.
6) THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL NATIONALLY ACCEPTED SAFETY PRACTICES, OSHA AND ANY OTHER SAFETY REQUIREMENTS IMPOSED BY THE OWNER, AGENCY OR ANY OTHER PARTIES WHICH MAY HAVE JURISDICTION OVER SAFETY.
7) DESIGN OF 4" DUCT BASED ON AMERICAN U-TEL PART NO. [12370] FIBERGLASS CONDUIT WITH THE FOLLOWING CHARACTERISTICS LISTED IN A THRU D:
A)4" FIBERGLASS DUCTS ARE TO HAVE THREADED JOINTS WITH 3000 LBS PULL OUT STRENGTH UNBONDED.
B)4" DIA. FIBERGLASS DUCTS ARE TO HAVE ULTIMATE TENSILE STRENGTH OF 10,500 PSI PER ASTM D-2105.
C)4" IPS:4.5" O.D. x 4.36" I.D. x 30 FT LENGTH
D)CAPABLE OF MAIN/INTERIOR HANGER SUPPORT SPANS OF UP TO 21.2 FT. FOR 3 LBS. PER FT. CABLE, 17.2 FT. FOR 8 LBS. PER FT. CABLE, AND 25.5 FT. FOR 1 LBS. PER FT. CABLE BASED ON NOT EXCEEDING 5/8" MIDSPAN DEFLECTION.
8) DURING INSTALLATION, THE DUCT EXPANSION JOINTS MUST BE SET TO THE PROPER LENGTH ACCORDING TO THE AMBIENT TEMPERATURE. REFER TO THE EXPANSION JOINT MANUFACTURER'S INSTRUCTIONS.
9) ALL CONNECTION BETWEEN DUCT SECTIONS, EXPANSION JOINTS, ADAPTERS AND COUPLINGS ARE TO BE BONDED. REFER TO MANUFACTURER'S INSTRUCTIONS FOR BONDING PROCEDURES.
10) CAP THE ENDS OF THE DUCTS IF THE UNDERGROUND PORTION OF THE WORK IS NOT DONE AT THE SAME TIME AS THE BRIDGE PORTION.
11) ALL ATTACHMENT RODS, SPACER RODS, NUTS, LOCK AND FLAT WASHERS IN ITEMS 2 AND 9 TO BE ZINC PLATED. THE PART (C) RODS IN ITEM 2 TO BE 16" LONG, THE PART (C) RODS IN ITEM 9 TO BE 30" LONG.
12) CONTRACTOR SHALL UTILIZE EXISTING UTILITY SUPPORT TO SUPPORT THE PROPOSED UTLILTY HANGER. DESIGN AND INSTALLATION OF UTILITY SUPPORT BY OTHERS. THE SLEEVES FOR THE TELEPHONE CONDUIT HAVE BEEN LOCATED IN THESE DRAWINGS AT BOTH ABUTMENTS RELATIVE TO THE GIRDERS.
13) STEEL PIPE SLEEVES TO BE ASTM A53, GALVANIZED PER ASTM A123.
14) THIS DESIGN IS FOR THE EXPRESS PURPOSE FOR USE ON THE KENNEBUNK BRIDGE OVER THE MOUSAM RIVER IN KENNEBUNK, MAINE AND IS NOT TO BE USED ELSEWHERE.
15) THE END CONNECTIONS FOR THE END AND INTERMEDIATE DIAPHRAGMS WHERE THEY CONNECT TO GIRDER G1 NEED TO BE MOFIFIED TO ACCOMODATE THE PROPOSED CONDUIT.

LEGEND
(1) - DENOTES MATERIAL ITEM NUMBER
-(- - DENOTES GASKETED EXPANSION JOINT
-⊕- - DENOTES HANGER AND CONDUIT SUPPORT LOCATION
U - UTILITY SUPPORT
P,Q - DIAPHRAGM

STATE OF MAINE
ANDREW J. ELD
No. 10262
REGISTERED
PROFESSIONAL ENGINEER

APPENDIX B

REV	COMMENTS	BY	DATE
1	ADD ADDITIONAL CONDUIT	AE	8/09/10
0	FOR APPROVAL	AE	7/12/10

KENNEBUNK BRIDGE OVER MOUSAM RIVER IN KENNEBUNK, MAINE

LOCATION PLAN
TELEPHONE CONDUIT SUPPORTS

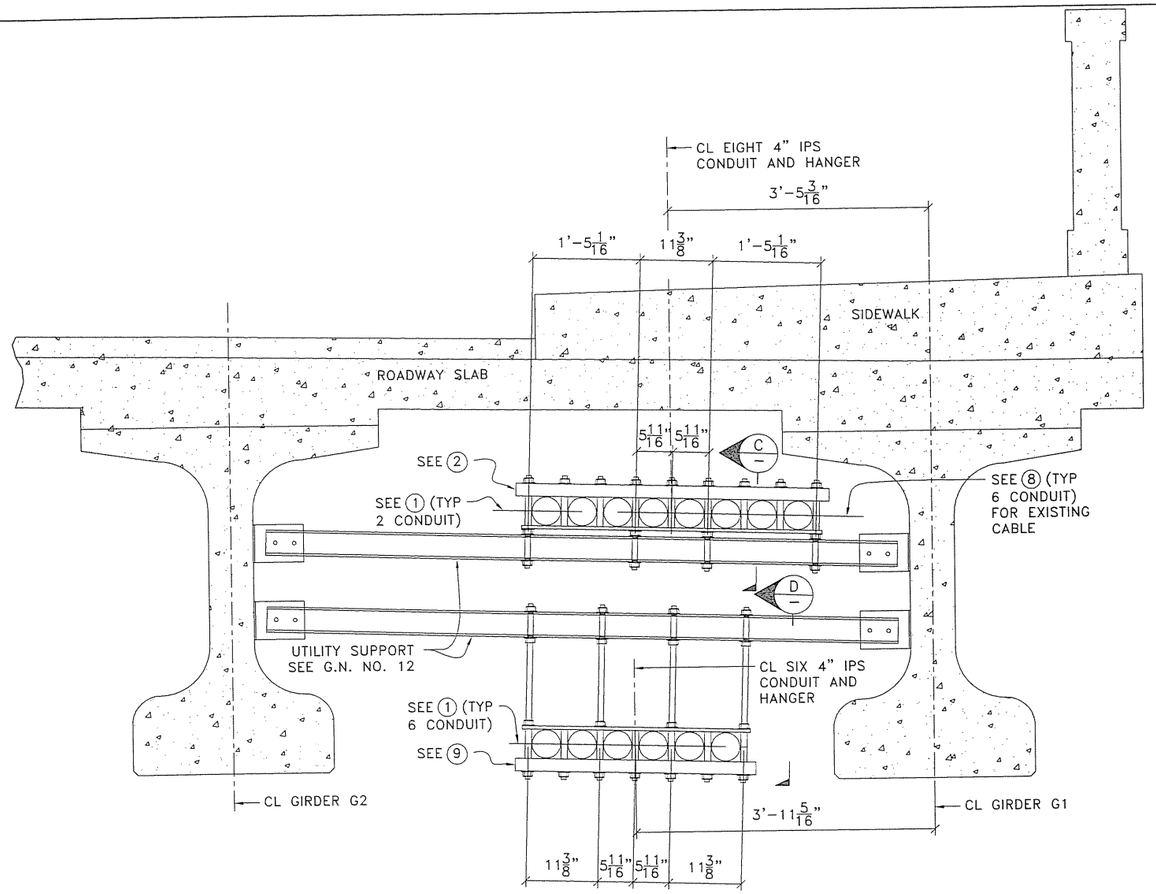
ANDREW J. ELD, P.E.

JOB NO. 16-10

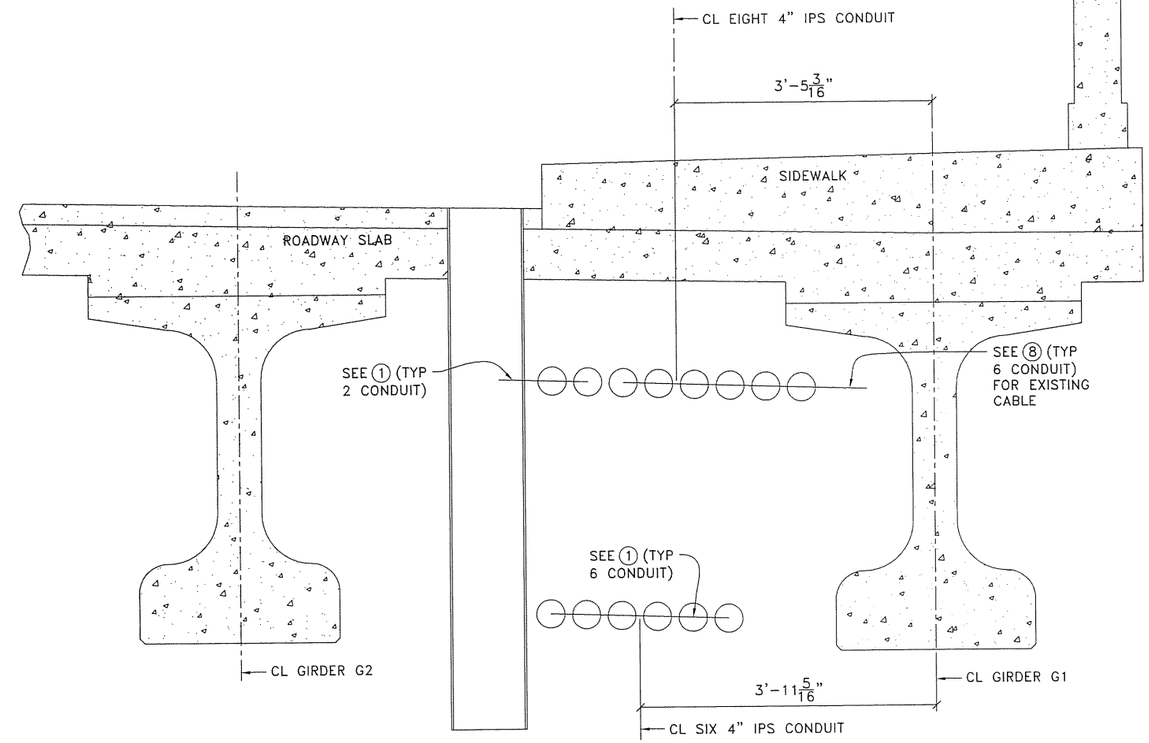
OWNER: FAIRPOINT

FURNISHED BY: AMERICAN U-TEL
9760 SMITH ROAD
WILLOUHGBY, OHIO 44094
(440)946-6027 FAX:(440)946-7285

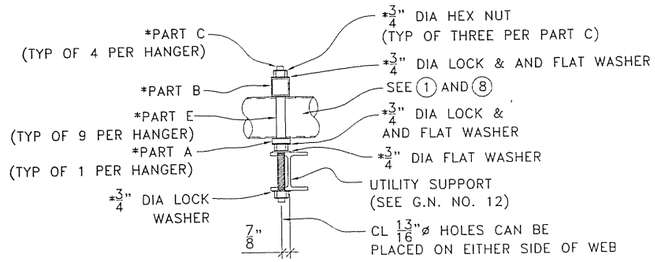
CHECKED BY: AE DATE: 7-12-10
DRAWN BY: WS DATE: 7-10-10
DRAWING NO: 16-10-01 SH. 1 OF 3



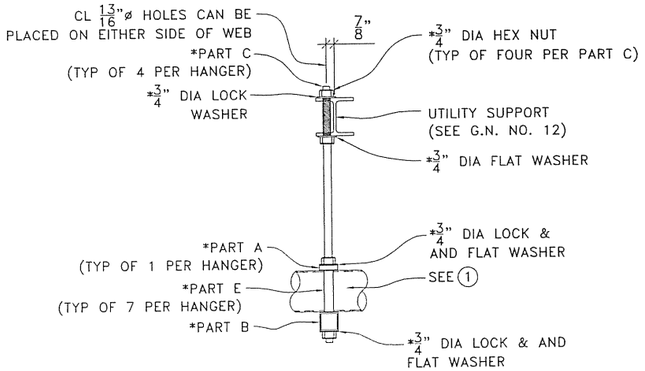
SECTION (A) 01 — 1"=1'-0
HANGER DETAIL AT UTILITY SUPPORT TYP OF 10 TOTAL SUPPORTS.



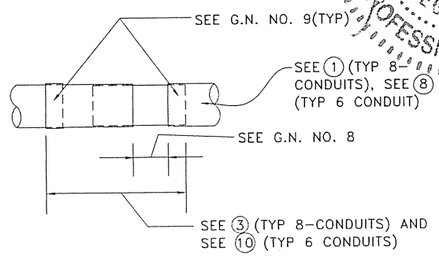
SECTION (B) 01 — 1"=1'-0
LOCATION OF CONDUIT RELATIVE TO BRIDGE DRAIN DOWNSPOUT NEAR ABUTMENT NO. 2



SECTION (C) — 1 1/2"=1'-0
*INDICATES PARTS OF AMERICAN U-TEL HANGER PACKAGE FOR MATERIAL ITEM NO. (2) SEE G.N. #11



SECTION (D) — 1 1/2"=1'-0
*INDICATES PARTS OF AMERICAN U-TEL HANGER PACKAGE FOR MATERIAL ITEM NO. (9) SEE G.N. #11



DETAIL (1) 01 — 1 1/2"=1'-0
ITEM (3) AND (10)

APPENDIX B

STATE OF MAINE
ANDREW J. ELD
No. 10262
REGISTERED
PROFESSIONAL ENGINEER

REV	COMMENTS	BY	DATE
1	ADD ADDITIONAL CONDUIT	AE	8/09/10
0	FOR APPROVAL	AE	7/12/10

KENNEBUNK BRIDGE OVER MOUSAM RIVER IN KENNEBUNK, MAINE

MISCELLANEOUS DETAILS 1

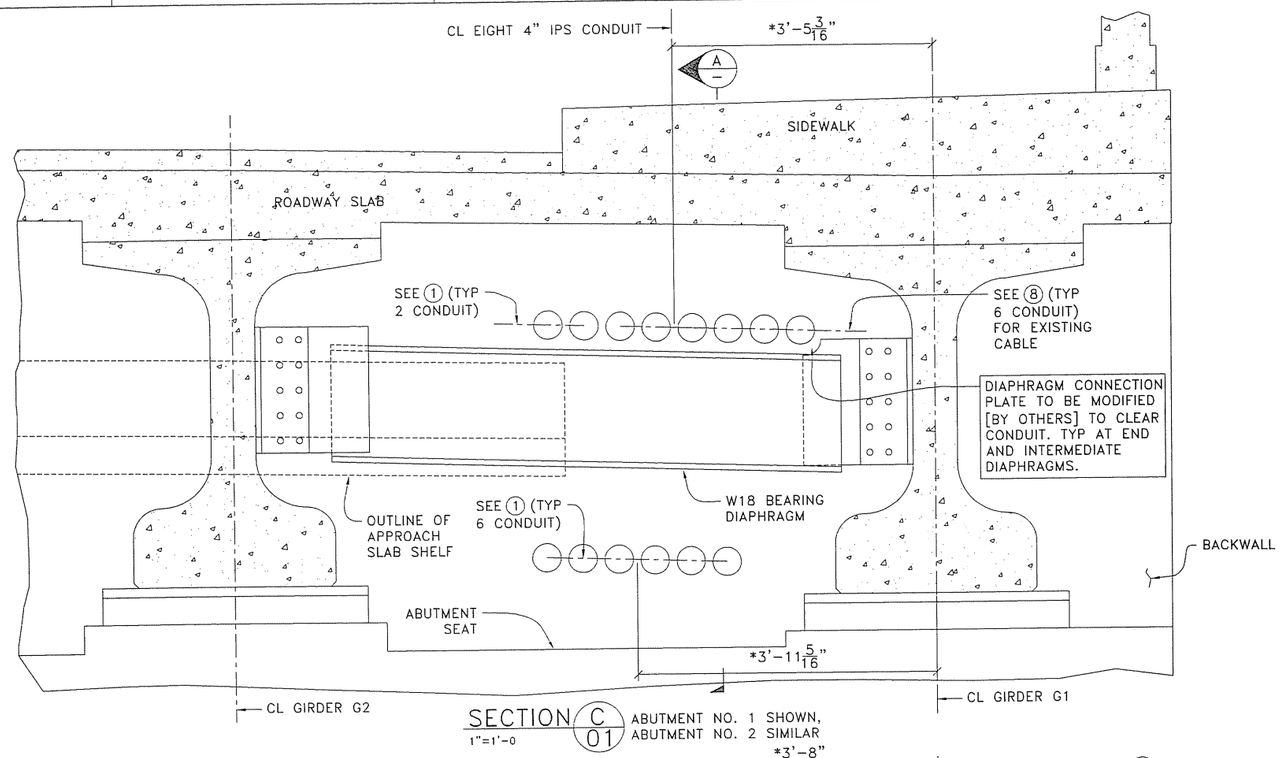
ANDREW J. ELD, P.E.

JOB NO. 16-10

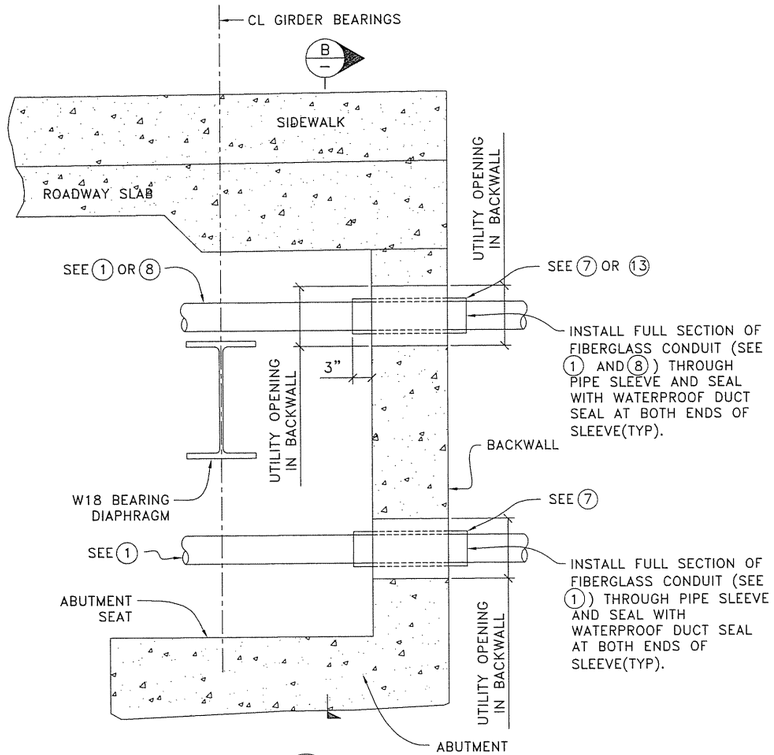
OWNER: FAIRPOINT

FURNISHED BY: AMERICAN U-TEL
9760 SMITH ROAD
WILLOUHGBY, OHIO 44094
(440)946-6027 FAX:(440)946-7285

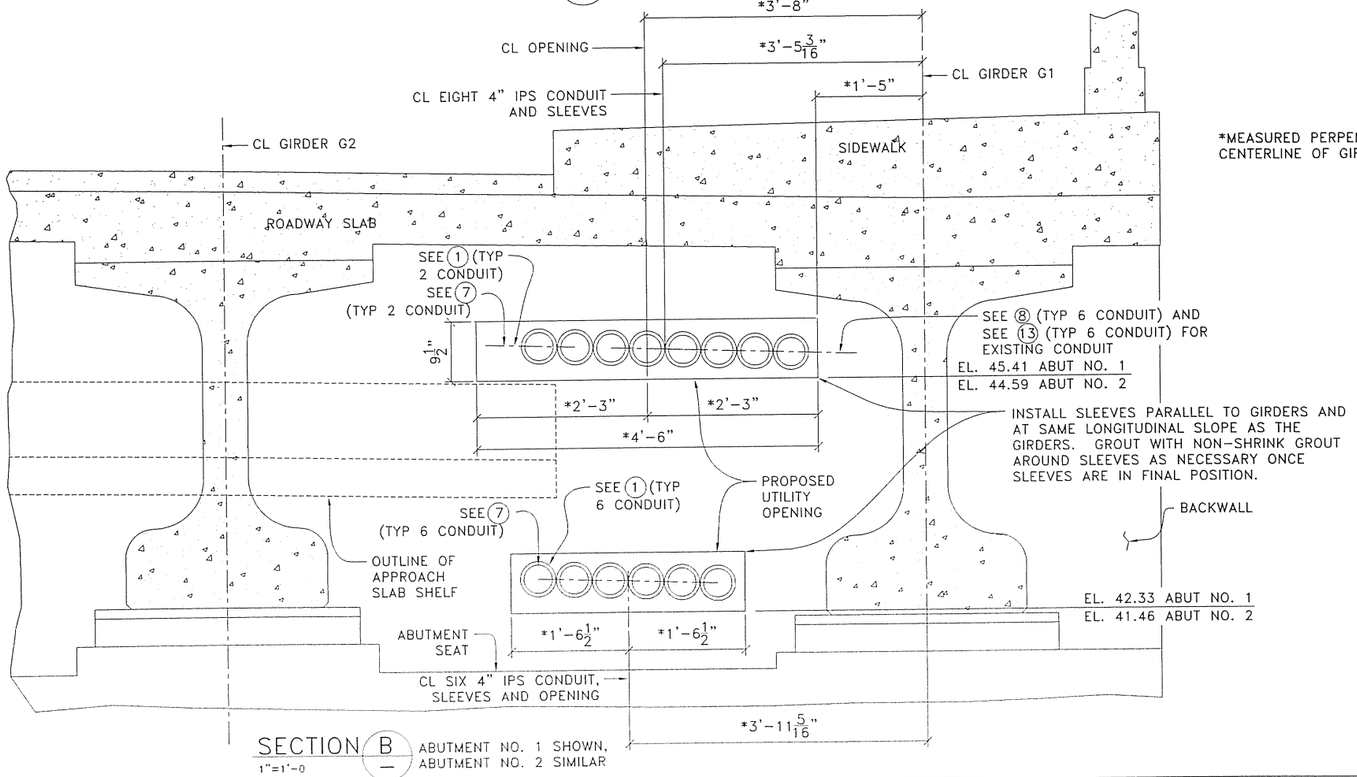
CHECKED BY: AE DATE: 7-12-10
DRAWN BY: WS DATE: 7-10-10
DRAWING NO: 16-10-02 SH. 2 OF 3



SECTION C 01 — 1"=1'-0
ABUTMENT NO. 1 SHOWN, ABUTMENT NO. 2 SIMILAR



SECTION A — —
1"=1'-0



SECTION B — —
1"=1'-0
ABUTMENT NO. 1 SHOWN, ABUTMENT NO. 2 SIMILAR

*MEASURED PERPENDICULAR TO CENTERLINE OF GIRDER

STATE OF MAINE
ANDREW J. ELD
No. 10262
REGISTERED
PROFESSIONAL ENGINEER

REV	COMMENTS	BY	DATE
1	ADD ADDITIONAL CONDUIT	AE	8/09/10
0	FOR APPROVAL	AE	7/12/10

KENNEBUNK BRIDGE OVER
MOUSAM RIVER
IN KENNEBUNK, MAINE

MISCELLANEOUS DETAILS 2

ANDREW J. ELD, P.E.

JOB NO. 16-10

OWNER: FAIRPOINT

FURNISHED BY: AMERICAN U-TEL
9760 SMITH ROAD
WILLOUHGBY, OHIO 44094
(440)946-6027 FAX:(440)946-7285

CHECKED BY: AE DATE: 7-12-10
DRAWN BY: WS DATE: 7-10-10
DRAWING NO: 16-10-03 SH. 3 OF 3

APPENDIX B