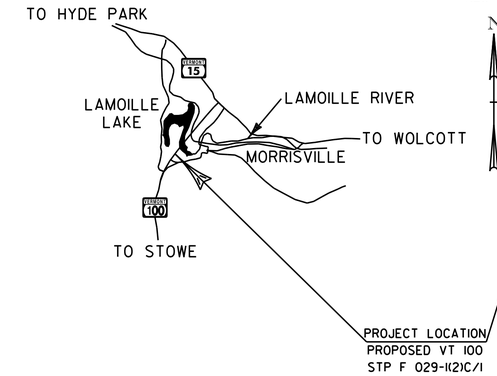
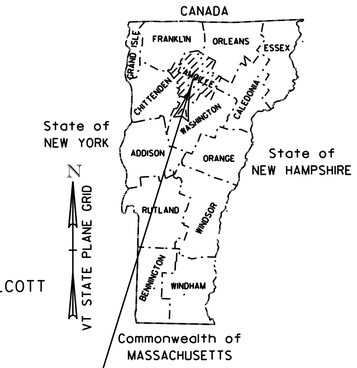
STATE OF VERMONT
AGENCY OF TRANSPORTATION





PROPOSED IMPROVEMENT
TOWN OF MORRISTOWN
COUNTY OF LAMOILLE

PROPOSED VERMONT 100

MINOR ARTERIAL

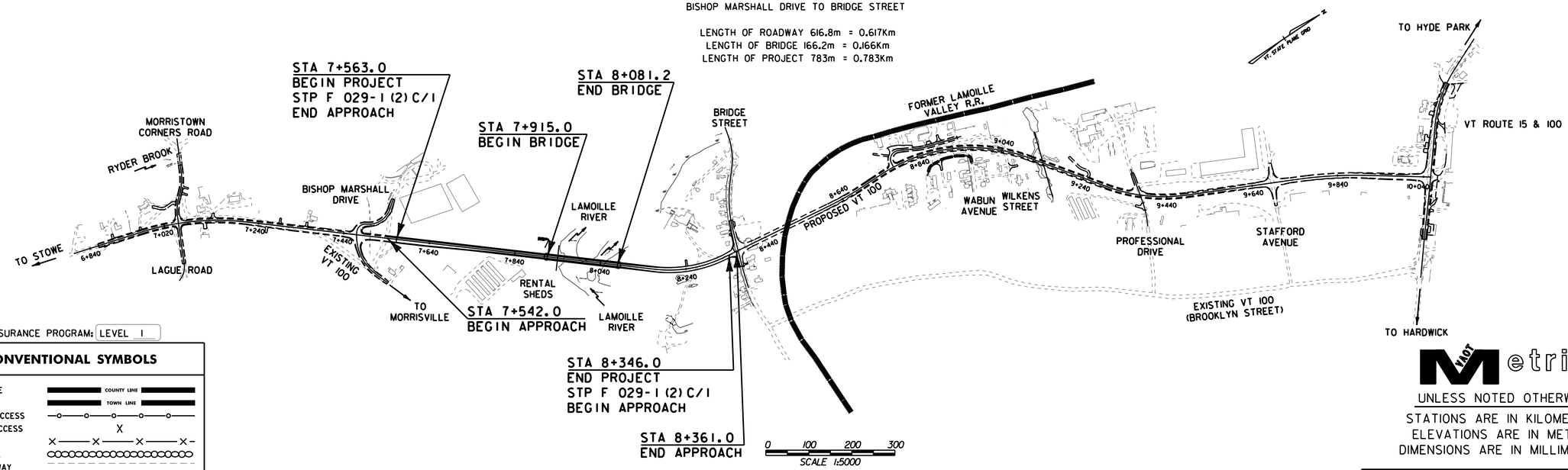
STP F 029-1(2)C/1

BITUMINOUS CONCRETE PAVEMENT SUPERPAVE MIXTURE DESIGN CRITERIA	
DESIGN LIFE ESALS (DESIGN LANE) (20 YR)	3,868,000
DESIGN NUMBER OF GYRATIONS	75
PERFORMANCE GRADED ASPHALT BINDER	SEE SECTION 490 OF THE GENERAL SPECIAL PROVISIONS AND SPECIAL PROVISIONS

PROJECT LOCATION: BEGINNING AT A POINT, IN THE TOWN OF MORRISTOWN, ON NEW ALIGNMENT, APPROXIMATELY 7.542 Km FROM THE STOWE-MORRISTOWN TOWN LINE, AND EXTENDING NORTHERLY APPROXIMATELY 0.783 Km TO A POINT JUST SOUTHERLY OF THE NEW BRIDGE STREET INTERSECTION AND PROPOSED VT 100.

PROJECT DESCRIPTION: PROJECT CONSISTS OF CONSTRUCTING A BRIDGE OVER LAMOILLE RIVER ALONG WITH APPROACH WORK FROM THE EXISTING BISHOP MARSHALL DRIVE TO BRIDGE STREET

LENGTH OF ROADWAY 616.8m = 0.617Km
LENGTH OF BRIDGE 166.2m = 0.166Km
LENGTH OF PROJECT 783m = 0.783Km



QUALITY ASSURANCE PROGRAM: LEVEL 1

CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : V.A.O.T.
SURVEYED DATE : VARIES

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD83 (92)

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NH 03301-5022
PHONE (603) 225-2978
FAX (603) 225-0095

ROADWAY DESIGN
STATE OF VERMONT DARREN M. BENOIT No. 7524 REGISTERED PROFESSIONAL ENGINEER
MARCH 30, 2012

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NH 03301-5022
PHONE (603) 225-2978
FAX (603) 225-0095

BRIDGE DESIGN
STATE OF VERMONT RONALD L. JOY NO. 46225 Civil LICENSED PROFESSIONAL ENGINEER
MARCH 30, 2012

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

VAOT Metric

UNLESS NOTED OTHERWISE
STATIONS ARE IN KILOMETERS
ELEVATIONS ARE IN METERS
DIMENSIONS ARE IN MILLIMETERS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATOR
APPROVED _____ DATE _____

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE _____

PROJECT MANAGER : J. HARRIS

PROJECT NAME : MORRISTOWN
PROJECT NUMBER : STP F 029-1(2)C/1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

Metric

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FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: April 2009

DRAINAGE AREA : Approx. 620 km2
CHARACTER OF TERRAIN : Upstream=Narrow rock gorge/Downstream=wide flood plain
STREAM CHARACTERISTICS : Mountainous to Rolling

NATURE OF STREAMBED : Sandy/Gravel with grass covered, low shrub overbanks

PEAK FLOW DATA

Q 2.33 =	154 cms	Q 50 =	406 cms
Q 10 =	273 cms	Q 100 =	479 cms
Q 25 =	342 cms	Q 500 =	690 cms

DATE OF FLOOD OF RECORD: November, 1927
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY: Q100 = 1.3 mps
ICE CONDITIONS : Light
DEBRIS: Light
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: Morrisville Dam approx. 0.48 km Upstream
Cadys Falls Dam approx. 2.01 km Downstream

WATERSHED STORAGE: < 2% HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: No exist. structure at this location
YEAR BUILT:
CLEAR SPAN(NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY OF FULL OPENING:
DISPOSITION OF STRUCTURE:
TYPE OF MATERIAL UNDER SUBSTRUCTURE:

WATER SURFACE ELEVATIONS AT:

Q2.33 =		VELOCITY =	
Q10 =		"	
Q25 =		"	
Q50 =		"	
Q100 =		"	

LONG TERM STREAMBED CHANGES:

IS THE ROADWAY OVERTOPPED BELOW Q100:
FREQUENCY:
RELIEF ELEVATION:
DISCHARGE OVER ROAD @Q100:

UPSTREAM STRUCTURE

TOWN:	Morrisville	DISTANCE:	376 m
HIGHWAY #	"B" Street	STRUCTURE #:	B53
CLEAR SPAN:	29.6 m	CLEAR HEIGHT:	8.5 m
YEAR BUILT:	2006	FULL WATERWAY:	165.4 m2
STRUCTURE TYPE:	Single Span Plate Girder		

DOWNSTREAM STRUCTURE

TOWN:	Morristown	DISTANCE:	503 m
HIGHWAY # :	TH3MHS	STRUCTURE #:	B9
CLEAR SPAN:	82.3 m	CLEAR HEIGHT:	6.5 m
YEAR BUILT:	1981	FULL WATERWAY:	294 m2
STRUCTURE TYPE:	Two Span Continuous Plate Girder		

LOAD FACTOR LOAD RATING (METRIC TONS)

LOADING LEVELS	TRUCK						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	26	48					
POSTED	37	68	117		106	107	117
OPERATING		81	139	166	127	127	

COMMENTS: Lane Load on Frame Leg Controls Design. Inventory (A=2.17) Posted (A=1.55) Operating (A=1.3)

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2014	9200	1000	58	9.1	930
2034	11300	1300	58	13.7	1700

20 year ESAL for flexible pavement from 2014 to 2034 : 6,668,000
40 year ESAL for flexible pavement from 2014 to 2054 : 16,136,000
Design Speed : 80 km/h

PROPOSED STRUCTURE

STRUCTURE TYPE: Continuous Steel Plate Girder Slant Legged Frame

CLEAR SPAN(NORMAL TO STREAM): 163.0 m

VERTICAL CLEARANCE ABOVE STREAMBED: 16.0 m @ center
WATERWAY OF FULL OPENING: 2149 m2

WATER SURFACE ELEVATIONS AT:

Q2.33 =	178.15 m	VELOCITY=	0.6 mps
Q10 =	178.40 m	"	1.0 mps
Q25 =	178.64 m	"	1.1 mps
Q50 =	178.96 m	"	1.2 mps
Q100 =	179.24 m	"	1.3 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY:
RELIEF ELEVATION:
DISCHARGE OVER ROAD @Q100:

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 192.0 m
VERTICAL CLEARANCI @ Q100 12.9 m

SCOUR: to ledge at approx. 4.3 m

REQUIRED CHANNEL PROTECTION: Stone Fill Type II around slant leg foundations

PERMIT INFORMATION

AVERAGE DAILY FLOW:	15.0 cms	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	6.0 cms	Elev. 175.9 m
ORDINARY HIGH WATER:	61.0 cms	Elev. 177.1 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

1.Peak discharges for 10 - year, 100 - year and 500 - year events were obtained from 1987 FIS and Cadys Falls Dam

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO MS 22.5
2. DESIGN SPAN 42.900 - 78.000 - 42.900 (meters)
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A
   ON LEDGE 950 KPa
4. ULTIMATE PILE CAPACITY 1400 kN
   TYPE HP 310x79
   ESTIMATED LENGTH Abut. No. 1 Avg. = 11M Abut. No. 2 Avg. = 12M
5. STRUCTURAL STEEL AASHTO M270M/M270 GRADE 345W & HPS 485W
6. REINFORCING STEEL GRADE 420
7. CONCRETE, HIGH PERFORMANCE CLASS A f'c: 30 MPa
   CONCRETE, HIGH PERFORMANCE CLASS B f'c: 25 MPa
   CONCRETE, CLASS C f'c: 20 Mpa
8. DESIGN SOIL UNIT WEIGHT 22 Kn/m3
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL

TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? N/A
   IF YES, ON EXISTING STRUCTURE? N/A
   OR ON TEMPORARY BRIDGE? N/A
   ONE OR TWO-WAY TRAVEL? N/A
2. TRAFFIC CONTROL SIGNALS REQUIRED? N/A
3. ARE SIDEWALKS REQUIRED? N/A
   IF SO, ON WHAT SIDE? N/A

PROJECT NAME: **MORRISTOWN**
PROJECT NUMBER: **STP F 029-1(2)C/1**

FILE NAME: **z10b194api.xls**
PROJECT MANAGER: **DMB**
DESIGNED BY: **D. Kull/B.Bennett**
PRELIMINARY INFORMATION SHEET

PLOT DATE: **1/8/2010**
DRAWN BY: **S. Merkwan**
CHECKED BY: **R. Joy**
SHEET **2** OF **123**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROJECT NOTES

GENERAL NOTES

1. THE INTENT OF THIS CONTRACT IS TO CONSTRUCT THE PROPOSED BRIDGE STRUCTURE AND THE ROADWAY SUBGRADE TO THE LIMITS SHOWN ON THE TYPICAL SECTIONS, PROFILES AND CROSS SECTIONS. SOME SELECT MATERIALS WILL BE INSTALLED ON THE BRIDGE APPROACHES TO THE LIMITS SHOWN ON THE PLANS AND DETAILS.

2. ALL STATIONS ARE IN KILOMETERS, ALL ELEVATIONS ARE IN METERS, AND ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE NOTED.

3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 20 DEGREES CELSIUS, UNLESS NOTED OTHERWISE.

4. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION,DATED 2002, AND ITS LATEST REVISIONS.

5. DESIGN CRITERIA:
   DESIGN LIVE LOAD FOR NEW SUPERSTRUCTURE: MS22.5
   SEISMIC PERFORMANCE CATEGORY: A
   INCLUDES 1.82 KN/M LOAD FOR FUTURE UTILITIES

6. THE FOLLOWING MATERIAL CRITERIA, DESIGNATIONS AND UNIT WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES:

STRUCTURAL STEEL:	AASHTO M 270M GRADE 345W
	AASHTO M 270M GRADE HPS 485W
REINFORCING STEEL:	AASHTO M 31M GRADE 420 (PLAIN AND EPOXY COATED)
	ASTM A955M GRADE 420 (SOLID STAINLESS)
UNIT WEIGHT OF SOIL:	2243 kg/m3

7. STANDARD DRAWINGS ARE IN ENGLISH UNITS.

GENERAL TRAFFIC CONTROL NOTES

1. TRAFFIC ON BRIDGE STREET SHALL BE MAINTAINED ON THE EXISTING ROADWAY DURING THE PROPOSED WATERLINE AND SANITARY SEWER CONSTRUCTION. ALTERNATING ONE WAY TRAFFIC WITH FLAGGER CONTROL SHALL BE UTILIZED DURING CONSTRUCTION. TRAFFIC MUST BE RETURNED TO TWO LANE TWO WAY OPERATION AT THE CLOSE OF DAILY CONSTRUCTION ACTIVITIES.

2. ALL TEMPORARY TRAFFIC LANES SHALL BE A MINIMUM OF 3.6M IN WIDTH.

3. ACCESS TO EXISTING DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES. SEE LAYOUT SHEETS FOR EXISTING DRIVEWAY LOCATIONS. NOTE THAT THE SEWER PLANT AND POWER PLANT DRIVEWAYS HAVE BEEN ABANDONED.

4. FLAGGERS SHALL BE UTILIZED AT THE CONSTRUCTION ENTRANCE ON BISHOP MARSHALL DRIVE TO ASSIST CONSTRUCTION VEHICLES ACCESSING THE SCHOOL DRIVEWAY DURING SCHOOL HOURS OR AS DIRECTED BY THE RESIDENT ENGINEER.

5. FLAGGERS SHALL BE UTILIZED AT THE CONSTRUCTION ENTRANCE ON BRIDGE STREET TO ASSIST CONSTRUCTION VEHICLES ACCESSING THE ROADWAY DURING PEAK TRAFFIC HOURS AS DIRECTED BY THE RESIDENT ENGINEER.

6. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL PRIOR TO THE START OF CONSTRUCTION.

7. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, A SITE SPECIFIC TRAFFIC CONTROL PLAN AT LEAST 30 DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION. THE TRAFFIC CONTROL PLAN SHALL INCLUDE ALL PROPOSED SIGNAGE AND SHALL COMPLY WITH THE LATEST VERSION OF THE MUTCD.

8. IT IS NOT THE INTENTION OF THIS PHASE OF THE CONSTRUCTION TO ALLOW THE VEHICLE TRAFFIC TO UTILIZE THE ROADWAY OR BRIDGE STRUCTURE. THEREFORE IF THE NEXT PHASE OF CONSTRUCTION HAS NOT STARTED PRIOR TO THE END OF THE CONSTRUCTION ON THIS PHASE, THE CONTRACTOR SHALL MAKE THE PROVISIONS TO PREVENT THE TRAVELING PUBLIC FROM UTILIZING THE ROADWAY OR BRIDGE STRUCTURE. AT A MINIMUM THIS SHALL INCLUDE POSTING "BRIDGE CLOSED" SIGNS AND PROVIDE IMMOVABLE BARRIERS AT THE PROJECT LIMITS.

9. THE CONTRACTOR SHALL BE AWARE THAT THE USE OF THE BISHOP MARSHALL SCHOOL DRIVEWAY FOR CONSTRUCTION ACCESS MAY BE RESTRICTED DURING THE MORNING STUDENT DROP-OFFS AND AFTERNOON STUDENT PICK-UP TIMES AND DURING SPECIAL EVENTS AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL COORDINATE THE USE OF BISHOP MARSHALL SCHOOL DRIVEWAY WITH THE ENGINEER. IN ADDITION, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE SAFE ACCESS TO PEDESTRIAN TRAFFIC ALONG THE BISHOP MARSHALL SCHOOL DRIVEWAY ADJACENT TO THE PROJECT AREA.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL CALL "DIG-SAFE" (1-888-344-7233) PRIOR TO PERFORMING ANY EXCAVATION, IN ACCORDANCE WITH "DIG-SAFE'S" RULES OF NOTIFICATION. LOCAL UTILITY OWNERS NOT SUBSCRIBED TO DIG SAFE SHALL ALSO BE MADE AWARE.

2. ITEM 204.25, STRUCTURE EXCAVATION SHALL BE USED TO EXCAVATE TO THE LIMITS SHOWN ON THE PLANS UNLESS NOTED OTHERWISE. SEE EARTHWORK TYPICALS ON SHEETS 6 & 7 AND RETAINING WALL SHEETS 56 - 63.

3. THE BRIDGE PLAQUE SHALL BE FURNISHED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AS SHOWN ON SHEET 91, ALL COSTS SHALL BE INCLUDED IN ITEM 501.34, CONCRETE HIGH PERFORMANCE CLASS B.

4. GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE.

5. STAY-IN-PLACE CORRUGATED METAL FORMS (SIPCMF) FOR SUPERSTRUCTURE DECK SLAB MAY BE USED ON THIS PROJECT.

6. FOR PROJECT PERMITTING PURPOSES, WATERWAY IMPACT AREAS TO FACILITATE TEMPORARY ACCESS ROAD AND TEMPORARY SHORING FOR BRIDGE CONSTRUCTION HAVE BEEN ESTIMATED AND ARE SHOWN ON LAYOUT SHEET-2, SHEET 20. SHORING COST SHALL BE INCLUDED IN ITEM 506.55, STRUCTURAL STEEL (PLATE GIRDER).

7. MARKER POSTS SHALL BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.

8. SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD DRAWING B-5.

9. PAY LIMITS OF SAND BORROW: WHEN USED IN CONJUNCTION WITH UNDERDRAIN, SEE STANDARD DRAWING D-30.

10. IT IS NOT THE INTENT OF THIS PHASE OF THE CONSTRUCTION TO INSTALL THE TOP LAYER OF PAVEMENT AND ALLOW VEHICLES TO USE THE COMPLETED BRIDGE STRUCTURE.

11. ALL COMPONENTS FOR ITEM 620.12 CHAIN-LINK FENCE, 1.8m VINYL COATED AND ITEM 620.21 BRACING ASSEMBLY FOR CHAIN-LINK FENCE, 1.8m VINYL COATED NEED TO BE COLORED GREEN.

STRUCTURAL STEEL NOTES (SEE SHEETS 73 - 80)

1. NEW STRUCTURAL STEEL SHALL BE AASHTO M 270M, GRADE 345W AND AASHTO M 270M, GRADE HPS 485W AS NOTED.

2. ITEM 506.55, STRUCTURAL STEEL (PLATE GIRDER), SHALL INCLUDE ALL FABRICATED STRUCTURAL STEEL NOT LISTED IN ITEM 900.635, SPECIAL PROVISION (HIGH PERFORMANCE STEEL, GRADE 485W).

3. ITEM 900.635, SPECIAL PROVISION (HIGH PERFORMANCE STEEL, GRADE 485W), SHALL INCLUDE WEB PLATES, TOP AND BOTTOM FLANGE PLATES DESIGNATED AASHTO M270M, GRADE HPS 485W, ALL INTERMEDIATE STIFFENERS AND WELD TESTING AS SPECIFIED ON SHEETS 74 AND 75.

4. ALL BOLTED FIELD CONNECTIONS SHALL BE MADE WITH 22 MILLIMETER DIAMETER A325 HIGH STRENGTH BOLTS IN 24 MILLIMETER DIAMETER HOLES UNLESS OTHERWISE NOTED.

5. SHEAR STUD CONNECTORS SHALL BE FIELD WELDED IN ACCORDANCE WITH THE LATEST EDITION OF AWS D1.5 AND SHALL BE PAID UNDER ITEM 508.15, SHEAR CONNECTORS.

6. IF FRAMES CANNOT BE SHIPPED IN THE LENGTHS SHOWN ON THE PLANS, FIELD SPLICE(S) WILL BE PERMITTED AT THE REQUEST OF THE CONTRACTOR. REQUESTS FOR ALTERNATE SPLICE LOCATIONS SHOULD BE FORWARDED TO THE STRUCTURES ENGINEER FOR REVIEW. ALTERNATE FIELD SPLICE DESIGN LOADS TO BE PROVIDED TO THE CONTRACTOR. ALTERNATE FIELD SPLICES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VERMONT AND DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL. NO COMPENSATION WILL BE ALLOWED FOR SPLICES.

7. THE STABILITY OF PARTIAL FRAMES AND COMPLETE FRAMES SHALL BE MAINTAINED BY THE CONTRACTOR DURING ERECTION, UNTIL ALL FRAMES AND DIAPHRAGMS ARE IN PLACE AND ALL BOLTS ARE PROPERLY INSTALLED. A DETAILED ERECTION PLAN SHALL BE SUBMITTED TO THE STRUCTURES ENGINEER FOR REVIEW. THE PLAN SHALL DETAIL THE ERECTION LOADS INCLUDING, BUT NOT LIMITED TO, SELF WEIGHT OF THE STEEL MEMBERS, WIND LOADING AND CONSTRUCTION LIVE LOAD. LOADS ARE TO BE EVALUATED BY THE CONTRACTOR FOR STABILITY, STRESSES AND DEFLECTION ON THE STEEL MEMBERS DURING ALL STAGES OF ERECTION. SLANT LEG FOUNDATION ANCHOR BOLTS SHALL NOT BE ALLOWED TO GO INTO TENSION DURING ANY STAGE OF ERECTION.

8. AFTER THE SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE FRAME SHALL BE TAKEN, AS DIRECTED BY THE ENGINEER, FOR USE IN DETERMINING THE FINAL GRADE AND HAUNCH DEPTHS. COST SHALL BE INCLUDED IN ITEM 506.55.

9. PROVIDE CHARPY V-NOTCH TESTING CONFORMING TO SECTION 714.

10. THE ENDS OF FRAMES AT THE ABUTMENTS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.

11. A CLASS B CONTACT SURFACE IS REQUIRED AT ALL BOLTED FIELD SPLICE CONNECTIONS.

12. ALL STRUCTURAL STEEL WITHIN 3050 MILLIMETERS OF THE END OF FRAMES AT BOTH ABUTMENTS AND 1850 mm WITHIN THE ENDS OF THE LEGS AT BOTH FOUNDATIONS ALONG WITH TOP SURFACE OF STEEL BEARING ASSEMBLIES SHALL BE PAINTED BROWN, COLOR CHIP 20059. ALL COSTS WILL BE INCLUDED IN THE SECTION 513 CONTRACT ITEMS.

13. IF 7/8" DIA. BOLTS ARE ALLOWED BY THE AGENCY IN LIEU OF 22 MILLIMETER DIA. THEN THE HOLES SHALL BE 15/16" DIA.

14. WELDING OF SHEAR CONNECTORS TO FLANGE SPLICE PLATES IS NOT PERMITTED.

REINFORCING STEEL NOTES

1. REINFORCING STEEL IN THE DECK, BACKWALL, APPROACH SLABS, AND BRUSH CURBS SHALL BE EPOXY COATED AND PAID AS ITEM 507.17, EPOXY COATED REINFORCING STEEL. REINFORCING STEEL DOWELS INTO LEDGE AT SLANT LEG FOUNDATIONS SHALL BE STAINLESS STEEL AND PAID AS ITEM 900.635 SPECIAL PROVISION (STAINLESS STEEL REINFORCING). ALL OTHER REINFORCING STEEL SHALL BE PAID AS ITEM 507.15, REINFORCING STEEL.

2. DRILLING AND GROUTING DOWELS SHALL BE PAID AS ITEM 507.16, DRILLING AND GROUTING DOWELS. ALL DRILLED HOLES SHALL HAVE A MINIMUM OF 150 MILLIMETERS CLEAR COVER.

3. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

   ALONG BACK FACES OF WALLS AGAINST EARTH: FIFTY (50) MILLIMETERS
   ALONG TOP SURFACE OF DECK SLAB: SIXTY-FIVE (65) MILLIMETERS
   ALONG BOTTOM SURFACE OF DECK SLAB: FORTY (40) MILLIMETERS
   ELSEWHERE UNLESS OTHERWISE INDICATED: EIGHTY (80) MILLIMETERS

4. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

   SPACING: +/- 25 MILLIMETERS
   CLEARANCE: +/- 5 MILLIMETERS

5. WELDING OF REINFORCEMENT BARS DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.

CONCRETE NOTES

1. CONCRETE PAYMENT AND CLASSIFICATION SHALL BE AS FOLLOWS:

ITEM 900.608, SPECIAL PROVISION:	DECK, CURBS AND WINGWALL CURBS
ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B:	ABUTMENTS AND SLANTLEG FOUNDATIONS
ITEM 541.30, CONCRETE, CLASS C:	NORTH SLANT LEG FOOTING

2. ITEM 514.10, WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BRIDGE SUPERSTRUCTURE EXCEPT THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES. WATER REPELLENT SHALL ALSO BE APPLIED TO THE EXPOSED CONCRETE ON SUBSTRUCTURES.

3. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25 MILLIMETERS BY 25 MILLIMETERS, UNLESS OTHERWISE NOTED. A 15 MILLIMETER RADIUS SHALL BE USED ON THE TOP INSIDE CORNER OF CURBS.

4. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

5. PAYMENT FOR WATERSTOPS SHALL BE INCLUDED IN ITEM 501.34, CONCRETE HIGH PERFORMANCE CLASS B. OTHER CONFIGURATIONS THAN THOSE SHOWN MAY BE USED UPON APPROVAL OF THE ENGINEER.

6. SEE SHEET 71 FOR DECK PLACEMENT SEQUENCE AND NOTES.

FOUNDATION NOTES (SEE SHEETS 88 TO 93)

1. THE SOILS AND FOUNDATIONS ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO DRILLING AND GROUTING AND PLACEMENT OF CONCRETE TO VERIFY COMPETENT BEDROCK HAS BEEN REACHED.

2. SLANT LEG FOUNDATION PEDESTAL DETAILS SHOWN ON THE PLANS REPRESENT THE FINAL MINIMUM DIMENSIONS PERMITTED AFTER ALL DEAD LOAD HAS BEEN APPLIED. THE CONTRACTOR IS PERMITTED TO DEVELOP AN ALTERNATIVE PEDESTAL SCHEME THAT SATISFIES THESE DIMENSION REQUIREMENTS IN ORDER TO FACILITATE HIS/HER ERECTION PLAN.

3. THE CONTRACTOR'S PLAN TO CONSTRUCT PEDESTALS AND PLACE STEEL BEARING ASSEMBLIES SHALL BE SUBMITTED IN CONJUNCTION WITH THE ERECTION PLAN FOR REVIEW CONFORMING TO SECTION 506.

4. FIELD VERIFICATION OF APPROVED PEDESTAL ELEVATIONS BY THE RESIDENT ENGINEER IS REQUIRED PRIOR TO ERECTION OF THE STEEL.

5. THE HP 310x79 SHALL BE DRIVEN TO LEDGE AND SHALL ATTAIN AN ULTIMATE PILE CAPACITY OF 1400 KN. A MINIMUM OF ONE DYNAMIC PILE LOADING TEST SHALL BE CONDUCTED FOR EACH ABUTMENT.

6. SEE SPECIAL PROVISIONS FOR BLASTING AND ROCK EXCAVATION REQUIREMENTS.

7. ALL PILES SHALL HAVE PILE POINTS. THE PILE SHOES SHALL BE CAST STEEL POINTS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROJECT NOTES

PREFORMED FABRIC BEARING NOTES (SEE SHEET 81)

1. PREFORMED FABRIC PAD BEARINGS SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.

2. BEARINGS SHALL BE PAID FOR UNDER THE ITEM 531.10, BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD.

3. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL AND CLEAR OF DIRT AND DEBRIS. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 6 MILLIMETERS PER 300 MILLIMETERS TOWARD CENTER SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTHED WITH A FLOAT FINISH.

4. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATE CONFIGURATION.

5. ALL THE ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND CONFORM TO THE REQUIREMENTS OF SUBSECTION 714.08. ANCHOR BOLTS SHALL HAVE A MINIMUM OF 380 mm EMBEDMENT INTO THE CONCRETE. ALL WASHERS SHALL BE 10 mm PLATE (MINIMUM). PAYMENT FOR ANCHOR BOLTS, NUTS AND WASHERS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 531.10, BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD.

6. DRILL AND SET ANCHOR BOLTS WITH A MINIMUM OF 380 MILLIMETERS EMBEDMENT INTO CONCRETE.HOLES SHALL BE AS SHOWN ON THE PLANS AND BOLTS SHALL BE SET IN A TYPE IV MORTAR.ALL COSTS TO BE INCLUDED UNDER ITEM 531.10, BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD.

7. ANCHOR BOLTS SHALL BE SWEDGED WITH 300 MILLIMETERS OF THREAD. NUTS ARE TO BE DRAWN UP FINGER TIGHT AND THEN BACKED OFF FIVE (5) MILLIMETERS. THREADS SHALL BE BURRED ABOVE NUT TO PREVENT NUT REMOVAL.

8. FABRICATION DRAWINGS CONFORMING TO APPLICABLE SUBSECTIONS OF SECTION 531 SHALL BE SUBMITTED AND INCLUDE ANY NECESSARY WELDING PROCEDURES.

STEEL BEARING NOTES (SEE SHEET 82)

1. STEEL BEARING DEVICE ASSEMBLY SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.

2. BEARINGS SHALL BE PAID FOR UNDER THE ITEM 531.13 BEARING DEVICE ASSEMBLY, STEEL.

3. FABRICATION DRAWINGS CONFORMING TO SECTION 531 SHALL BE SUBMITTED TO INCLUDE WELDING AND BONDING PROCEDURES.

4. NO FIELD WELDING OF STEEL BEARING ASSEMBLIES WILL BE PERMITTED.

5. SETTING OF BEARING DEVICES IS NOT PERMITTED PRIOR TO VERIFICATION AND WRITTEN APPROVAL OF FOUNDATION PEDESTAL ELEVATIONS BY THE ENGINEER.

6. ALL BEARING DEVICES SHALL BE GALVANIZED OR METALIZED AS PER SUBSECTION 531.04(B) AND 506.15(A) &(B), EXCEPT TOP SURFACE WHICH IS WELDED TO STEEL FRAME. METALIZED SURFACES ARE TO BE COATED WITH AN APPROVED SEALANT PER SUBSECTION 531.04(B). AREAS OF DAMAGED METALLIZING ORGALVANIZING SHOULD BE REPAIRED PER SECTION 513. SEE STRUCTURAL STEEL NOTE 12 FOR PAINTING REQUIREMENTS.

7. ALL STEEL IN BEARING DEVICES (EXCEPT STAINLESS), SHALL BE AASHTO M270M GRADE 345, EXCEPT ANCHOR BOLTS WHICH SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 164M.

8. ALL PINS SHALL BE ASTM 276 2205 STAINLESS STEEL WITH POLISHED FINISH.

9. PROVIDE 2 ADDITIONAL PINS TO THE RESIDENT ENGINEER. COST SHALL BE INCLUDED IN ITEM 513.13. THE SLANT LEG BEARINGSHALL HAVE A FINE MACHINE FINISH FOR FUTURE USE.

10. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA, AND SHALL MAINTAIN THE ANCHORAGE SYSTEM SHOWN.

11. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATE CONFIGURATION.

12. ALL THE ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND CONFORM TO THE REQUIREMENTS OF SUBSECTION 714.08. ANCHOR BOLTS SHALL HAVE A MINIMUM OF 380 EMBEDMENT INTO THE CONCRETE. ALL WASHERS SHALL BE 10 MILLIMETER PLATE (MINIMUM). PAYMENT FOR ANCHOR BOLTS, NUTS AND WASHERS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 531.13, "BEARING DEVICE ASSEMBLY, STEEL".

13. DRILL AND SET ANCHOR BOLTS WITH A MINIMUM OF 380 MILLIMETER EMBEDMENT INTO CONCRETE.HOLES SHALL BE 60 MILLIMETERS IN DIAMETER AND BOLTS SHALL BE SET IN A TYPE IV MORTAR. ALL COSTS TO BE INCLUDED UNDER ITEM 531.13, BEARING DEVICE ASSEMBLY, STEEL.

14. ANCHOR BOLTS SHALL BE SWEDGED WITH 100 MILLIMETERS OF THREAD. EXPANSION BEARING NUTS ARE TO BE DRAWN UP FINGER TIGHT AND THEN BACKED OFF 5 MILLIMETERS. THREADS SHALL BE BURRED ABOVE NUT TO PREVENT NUT REMOVAL.

DOWNSPOUT NOTES (SEE SHEET 86)

1. PAYMENT FOR ALL MATERIALS AND LABOR RELATED TO THE HOPPER AND DOWNSPOUT ASSEMBLY SHALL BE INCLUDED IN ITEM 506.55, STRUCTURAL STEEL PLATE GIRDER.

2. ALL PLATES, BARS AND ANGLES SHALL CONFORM TO AASHTO M270M, GRADE 250.

3. BOLTS AND RELATED HARDWARE SHALL CONFORM TO ASTM A 307 GRADE A.

4. THE HOPPER AND DOWNSPOUT ASSEMBLY SHALL BE INSTALLED AFTER THE BRIDGE EXPANSION JOINT IS IN PLACE.

5. ALL HOPPER AND DOWNSPOUT COMPONENTS AND HARDWARE SHALL BE GALVANIZED UNLESS OTHERWISE NOTED.

EXPANSION JOINT NOTES (SEE SHEETS 83 - 85)

1. BRIDGE EXPANSION JOINT SHALL BE PAID AS ITEM 516.12, BRIDGE EXPANSION JOINT, FINGER PLATE. THIS ITEM SHALL INCLUDE, BUT NOT LIMITED TO, THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL, PLATES, BRACKETS, ANGLES, WELDED STUDS OR RODS, PREFORMED FABRIC DRAIN TROUGH MATERIAL AND PLASTIC DRAIN TUBES, BUTYL RUBBER TAPE AND ANY OTHER MISCELLANEOUS MATERIAL.

2. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M 198, TYPE B. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07. ALL STEEL COMPONENTS SHALL BE AASHTO M 270M GRADE 250 GALVANIZED OR METALIZED AS PER SUBSECTION 506.12 (a) OR (b) UNLESS OTHERWISE NOTED.

3. CONSTRUCT EXPANSION JOINT TO MATCH ROADWAY GRADE AND CROSS SLOPE

4. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED AND PROTECTED DURING THE PLACING OF CONCRETE.

5. EXPANSION JOINTS SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT FOR EACH BRIDGE.

6. THE ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE FINGER PLATES ON EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO EQUAL LENGTHS, EACH SIDE (4 TOTAL).

7. FILL COUNTER BORED HOLES WITH HOT POURED JOINT SEALER AFTER BOLT INSTALLATION. ALL COSTS SHALL BE INCLUDED IN ITEM 516.12, BRIDGE EXPANSION JOINT, - FINGER PLATE. COAT CONCRETE SURFACES WITH EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719.02 . PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516.12, "BRIDGE EXPANSION JOINT, FINGER PLATE".

8. FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATIONS.

9. GRIND ALL EDGES EXPOSED TO TRAFFIC OR PEDESTRIANS TO 5 MILLIMETERS RADIUS

10. A DRIP BEAD OF 8 MILLIMETERS BY 150 MILLIMETERS OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE 25 MILLIMETERS WIDE STARTING FROM THE DOWNSPOUT END OF THE TROUGH. ALL COSTS SHALL BE INCLUDED IN ITEM 516.12, BRIDGE EXPANSION JOINT - FINGER PLATE.

11. THE DRAIN TUBES SHALL BE EXTENDED BELOW THE BOTTOM OF THE ADJACENT FRAME AND FASTENED TO THE FRAMES USING A METHOD APPROVED BY THE ENGINEER AND SHALL BE INCLUDED IN ITEM 506.55, STRUCTURAL STEEL PLATE GIRDER.

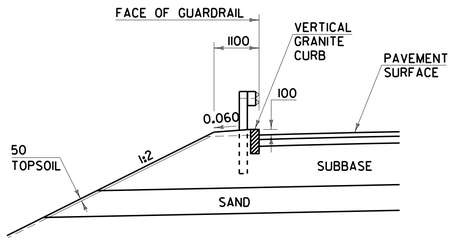
12. FINAL JOINT PROFILE SHALL MATCH THE DECK AND CURB PROFILE.

PROPOSED VT 100: 110 BITUMINOUS CONCRETE PAVEMENT (40 TYPE IIIS, OVER 70 TYPE IIS) (TWO LIFTS)
95 BITUMINOUS CONCRETE PAVEMENT, (95 TYPE IS)
600 SUBBASE OF DENSE GRADED CRUSHED STONE
450 SAND BORROW

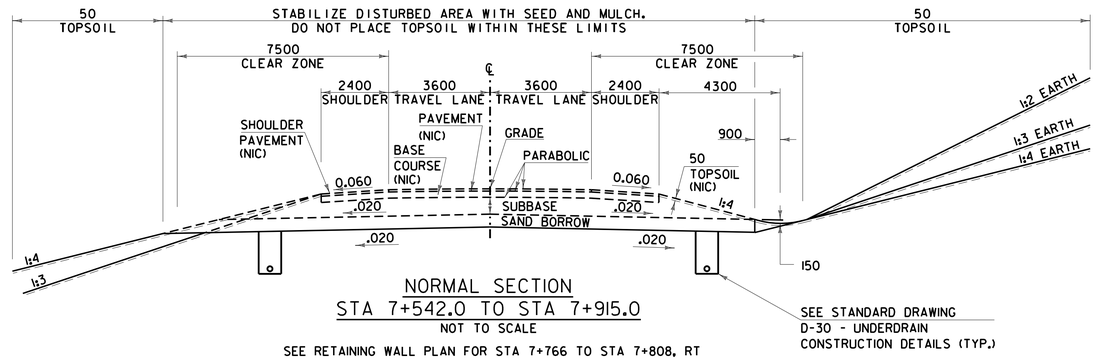
SHOULDERS: 110 BITUMINOUS CONCRETE PAVEMENT (40 TYPE IIIS, OVER 70 TYPE IIS) (TWO LIFTS)
600 SUBBASE OF DENSE GRADED CRUSHED STONE
450 SAND BORROW
(AS INDICATED ON PLANS OR BY THE ENGINEER)

SELECT MATERIALS AND PAVEMENT SHOWN FOR REFERENCE ONLY. NO SELECT MATERIALS OR PAVEMENT WILL BE PLACED FOR THIS CONTRACT, OTHER THAN ON BRIDGE DECK AS NOTED ON THE TYPICAL BRIDGE SECTION ON SHEET 7. SEE PROFILES, DETAILS, AND CROSS SECTIONS FOR LIMITS OF CONSTRUCTION. TYPICAL SECTION REFLECTS ULTIMATE CONSTRUCTION BY OTHERS.

AREA BELOW FUTURE SELECT MATERIAL SHALL BE STABILIZED WITH ITEM 651.17 - SEED, WINTER RYE APPLIED AT A RATE OF 68 KG/HA.

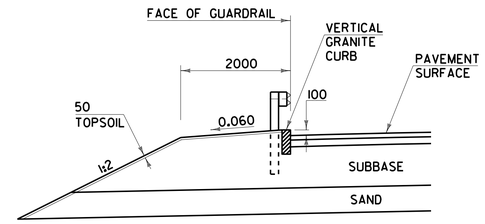


GUARDRAIL DETAIL WITH VERTICAL GRANITE CURB
STA 8+100 TO STA 8+200
NOT TO SCALE
(NIC)

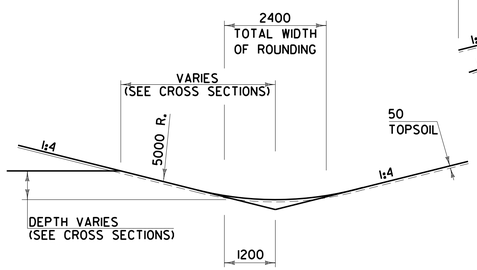


NORMAL SECTION
STA 7+542.0 TO STA 7+915.0
NOT TO SCALE
SEE RETAINING WALL PLAN FOR STA 7+766 TO STA 7+808, RT
SEE NOTE 1

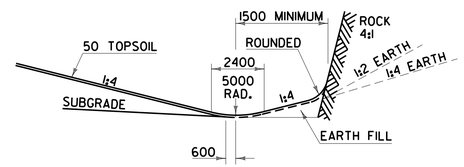
SEE STANDARD DRAWING D-30 - UNDERDRAIN CONSTRUCTION DETAILS (TYP.)



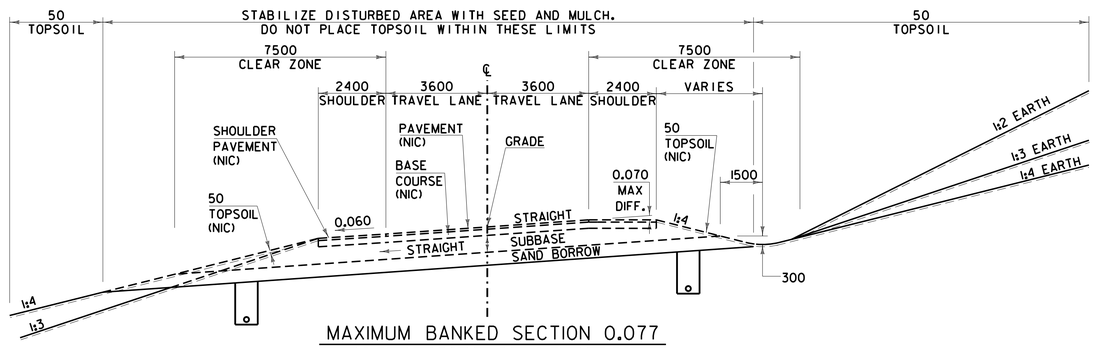
PLANTING SHELF DETAIL IN GUARDRAIL SECTION
STA 8+220 TO STA 8+260, LT & RT
STA 8+260 TO STA 8+340, RT
NOT TO SCALE
(NIC)



TYPICAL DITCH DETAILS
NOT TO SCALE

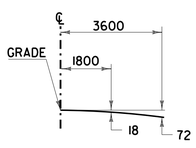


DETAILS OF DITCH AND BACKSLOPE FOR LOW SIDE 4.0% BANK OR MORE.
NOT TO SCALE



MAXIMUM BANKED SECTION 0.077
STA 8+081.2 TO STA 8+361
NOT TO SCALE
SEE CROSS SECTIONS FOR LIMITS OF DRILLING AND BLASTING OF SOLID ROCK.
SEE NOTE 1

DETAILS OF DITCH AND BACKSLOPE FOR LOW SIDE OF BANK LESS THAN 4.0%.
NOT TO SCALE



PARABOLIC DETAIL
NOT TO SCALE

LEGEND

- - - - DASHED LINES INDICATE WORK NOT INCLUDED IN THIS CONTRACT

——— SOLID LINES REPRESENT WORK INCLUDED IN THIS CONTRACT UNLESS OTHERWISE NOTED

NOTES

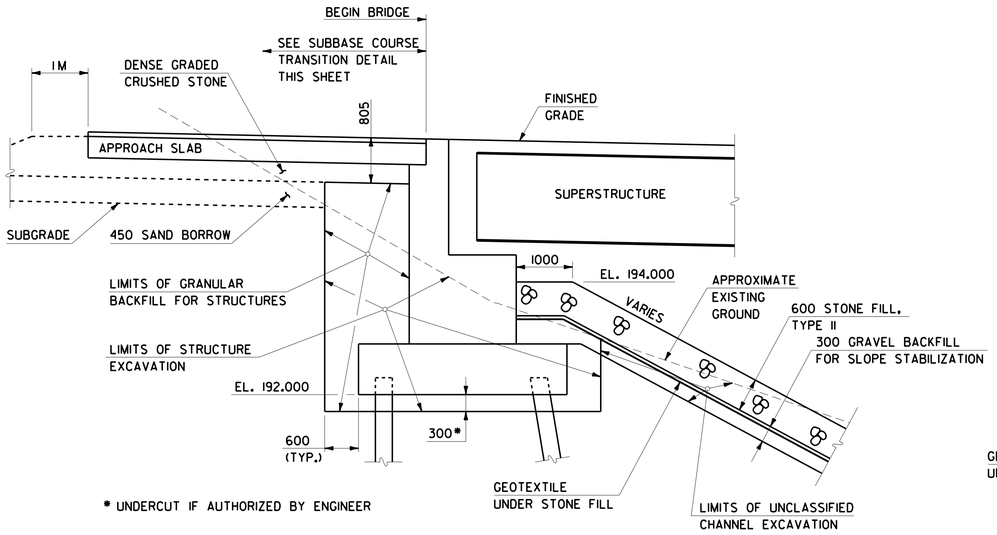
1. SEE DETAIL ON SHEET 6 FOR LIMITS OF SUBBASE COURSE CONSTRUCTION AS PART OF THIS PROJECT.
2. WORK NOT INCLUDED IN THIS CONTRACT IS LABELED (NIC).

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

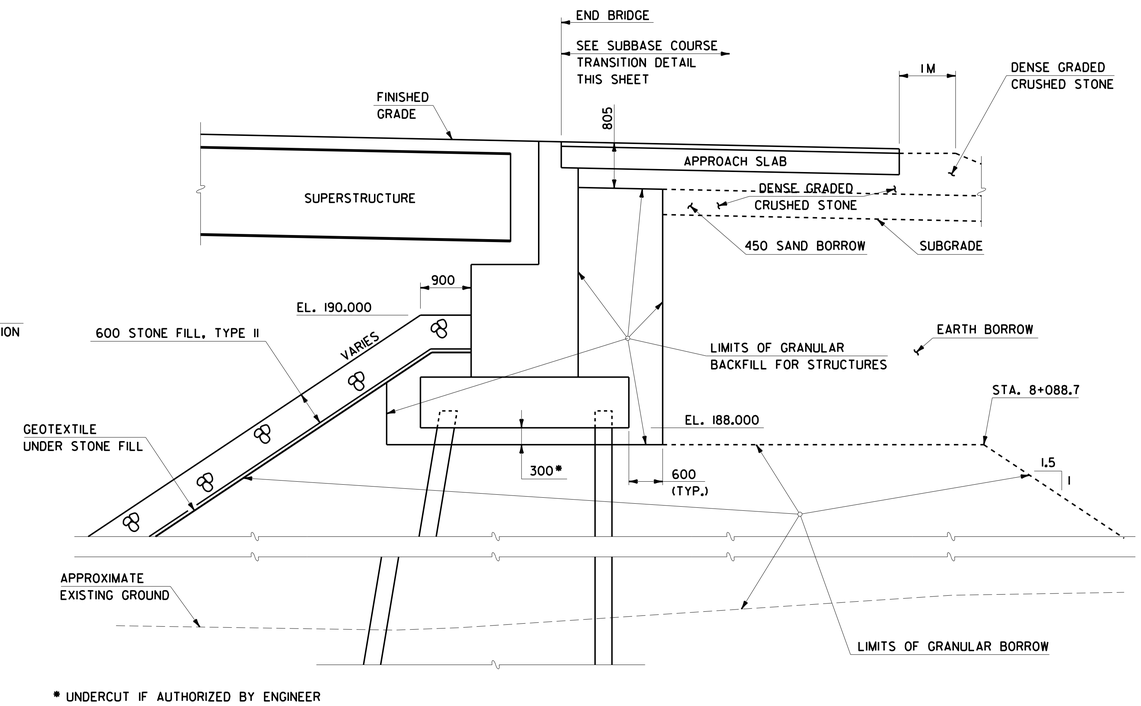
FILE NAME: z10b194typ1.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
TYPICAL SECTIONS - 1
PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 5 OF 123

McFarland Johnson



ABUTMENT NO. 1 EARTHWORK SECTION

SCALE: 1:50



ABUTMENT NO. 2 EARTHWORK SECTION

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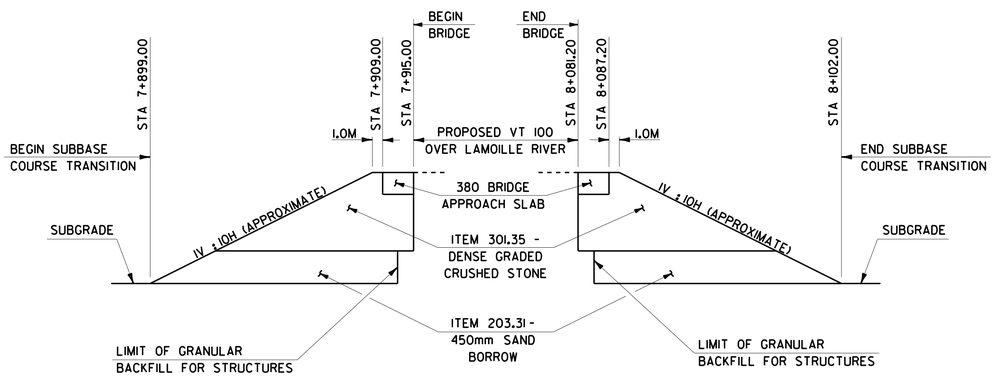
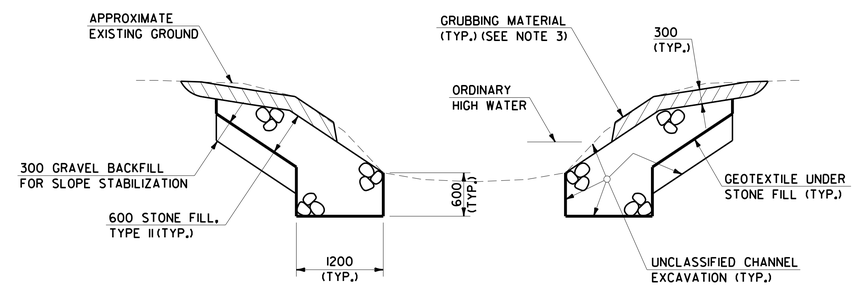


SUBBASE COURSE TRANSITION DETAIL

NOT TO SCALE



TYPICAL CHANNEL SECTION

NOT TO SCALE

NOTES

1. FOR EARTHWORK SLOPE LIMITS AROUND THE BRIDGE, SEE GRADING PLAN ON SHEET 70.
2. FOR ADDITIONAL TYPICAL SECTIONS, SEE SHEETS 5 AND 7.
3. GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE, EXCEPT WHERE DESIGNATED ON THE PLANS. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

0 1 2 3 4 5

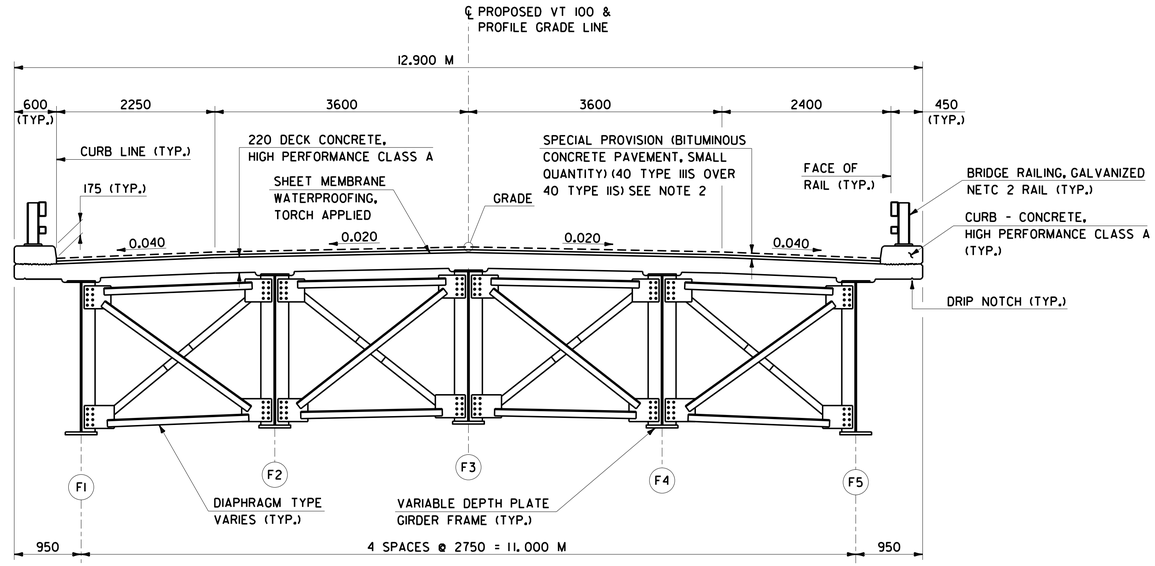
SCALE = 1:50

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

McFarland Johnson

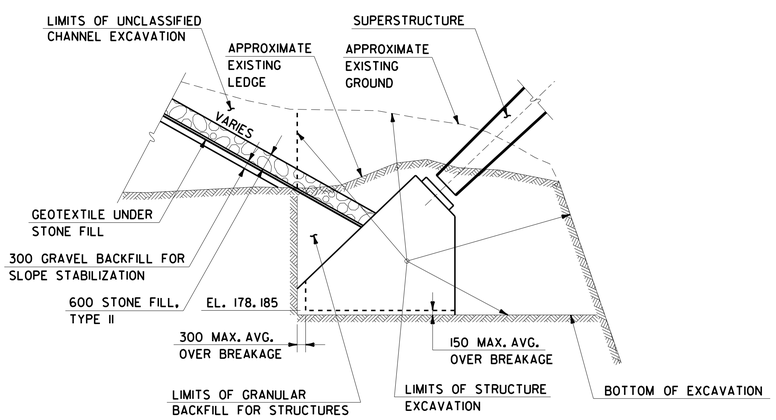
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194ats.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: S. Merkwan
DESIGNED BY: D. Kull / B. Colburn	CHECKED BY: R. Joy
TYPICAL SECTIONS - 2	SHEET 6 OF 123

Metric



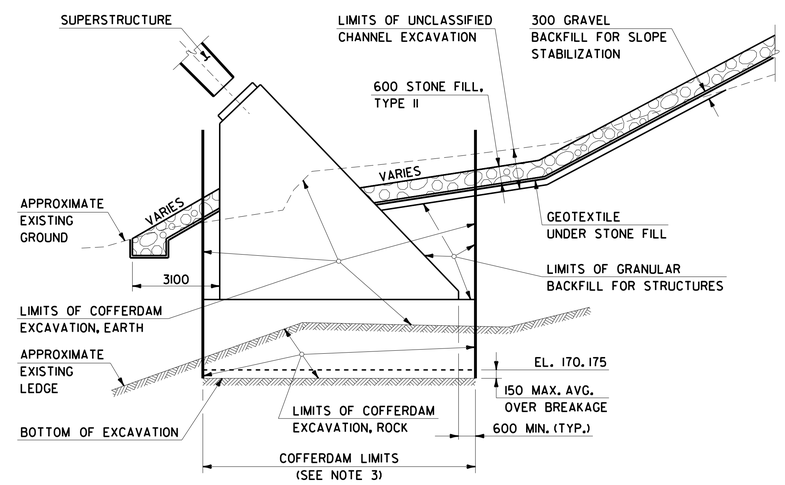
TYPICAL BRIDGE SECTION

SCALE: 1:40



SOUTH SLANT LEG FOOTING EARTHWORK SECTION

SCALE: 1:100



NORTH SLANT LEG FOOTING EARTHWORK SECTION

SCALE: 1:100

0 1 2 3 4

SCALE = 1:40

0 1 2 4 6 8 10

SCALE = 1:100

NOTES

1. FOR ADDITIONAL TYPICAL SECTIONS, SEE SHEETS 5 & 6.
2. SECOND LIFT OF BITUMINOUS CONCRETE PAVEMENT TYPE IIIS NOT INCLUDED IN THIS CONTRACT.
3. THE CONTRACTOR MAY CUT OFF TOPS OF COFFERDAM AND LEAVE IN PLACE TO THE SATISFACTION OF THE RESIDENT ENGINEER.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194ats.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: S. Merkwan
DESIGNED BY: D. Kull	CHECKED BY: R. Joy
TYPICAL SECTIONS - 3	SHEET 7 OF 123

Metric

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS			
ROADWAY	TRAINING	EROSION CONTROL	UTILITIES BID ITEMS	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
1						1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	-
34000						34000		CM	COMMON EXCAVATION	203.15	221
700						700		CM	SOLID ROCK EXCAVATION	203.16	EST
1350				2580		3930		CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27	41
12						12		CM	EXCAVATION OF SURFACES AND PAVEMENTS	203.28	-
30959						30959		CM	EARTH BORROW	203.30	37
280						280		CM	SAND BORROW	203.31	10.8
4654						4654		CM	GRANULAR BORROW	203.32	-
				620		620		CM	GRAVEL BACKFILL FOR SLOPE STABILIZATION	203.35	-
3600						3600		CM	TRENCH EXCAVATION OF EARTH	204.20	3.7
20						20		CM	TRENCH EXCAVATION OF ROCK	204.21	
1						1		CM	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	EST
240				920		1160		CM	STRUCTURE EXCAVATION	204.25	11.8
				510		510		CM	GRANULAR BACKFILL FOR STRUCTURES	204.30	5
940						940		SM	DRILLING AND BLASTING OF SOLID ROCK SUBGRADE	205.20	-
				780		780		CM	COFFERDAM EXCAVATION, EARTH	208.30	6
				260		260		CM	COFFERDAM EXCAVATION, ROCK	208.35	4
				1		1		LS	COFFERDAM (NORTH SLANT LEG FOOTING)	208.40	
45						45		CM	SUBBASE OF GRAVEL	301.15	3
167						167		CM	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	-
11						11		CM	AGGREGATE SURFACE COURSE	401.10	0.5
1						1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	-
				1099		1099		CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34	1
				1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10	-
				648		648		M	STEEL PILING, HP 310 X 79	505.15	-
				2		2		EACH	DYNAMIC PILE LOADING TEST	505.45	-
				482880		482880		KG	STRUCTURAL STEEL, PLATE GIRDER	506.55	-
				20260		20260		KG	REINFORCING STEEL	507.15	-
				319		319		M	DRILLING AND GROUTING DOWELS	507.16	-
				115855		115855		KG	EPOXY COATED REINFORCING STEEL	507.17	-
				1		1		LS	SHEAR CONNECTORS (6,520 - 22MM X 175MM)	508.15	-
				1		1		LS	STRUCTURAL PAINTING, SHOP APPLIED	513.25	-
				1		1		LS	CONTAINMENT & ENVIRONMENTAL PROTECTION, SHOP	513.35	-
				1		1		LS	SURFACE PREPARATION, SHOP	513.40	-
				290		290		L	WATER REPELLENT, SILANE	514.10	-
				24		24		M	BRIDGE EXPANSION JOINT, FINGER PLATE	516.12	-
				1912		1912		SM	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20	-
				350		350		M	BRIDGE RAILING, GALVANIZED NETC 2 RAIL	525.33	-
				10		10		EACH	BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD	531.10	-
				12		12		EACH	BEARING DEVICE ASSEMBLY, STEEL	531.13	-

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS
		SEE SHEET 15 FOR EARTHWORK SUMMARY
		ITEM 204.20 - TRENCH EXCAVATION OF EARTH
1731	CM	DRAINAGE DETAIL SHEET
607	CM	ITEM DETAIL SHEET(UNDERDRAIN SUMMARY)
1253	CM	UTILITY CALCULATION
9	CM	ROUNDING
3600	CM	TOTAL

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b1940TY01.dgn
PROJECT LEADER: DMB
DESIGNED BY: JWS
QUANTITY SHEET - 1

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 8 OF 123

Metric

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES									TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
	ROADWAY	TRAINING	EROSION CONTROL	UTILITIES BID ITEMS	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
					383		383		CM	CONCRETE, CLASS C	541.30	1			
										BEGIN OPTION AA					
	23						23		M	375 CAAP 1.52 (68 X 12)	601.0210	-			
	23						23		M	375 PCCSP 1.63 (68 X 12)	601.0410	-			
										END OPTION AA					
										BEGIN OPTION BB					
	38.2						38.2		M	450 CAAP 1.52 (68 X 12)	601.0215	-			
	38.2						38.2		M	450 PCCSP 1.63 (68 X 12)	601.0415	-			
	38.2						38.2		M	450 PCCSP(PI) 1.63 (68 X 12)	601.0615	-			
										END OPTION BB					
										BEGIN OPTION CC					
	381.2						381.2		M	450 RCP CLASS III	601.0815	-			
	381.2						381.2		M	450 CPEP(SL)	601.2615	-			
										END OPTION CC					
										BEGIN OPTION DD					
	48						48		M	750 RCP CLASS III	601.0835	-			
	48						48		M	750 CPEP(SL)	601.2625	-			
										END OPTION DD					
										BEGIN OPTION EE					
	14.5						14.5		M	900 RCP CLASS III	601.0845	-			
	14.5						14.5		M	900 CPEP(SL)	601.2630	-			
										END OPTION EE					
	15.7						15.7		M	450 CPEP(SL)	601.2615	-			
	18						18		M	750 CPEP(SL)	601.2625	-			
										BEGIN OPTION FF					
	2						2		EACH	450 CAAP ELBOW 1.52 (68 X 12)	601.5215	-			
	2						2		EACH	450 PCCSP ELBOW 1.63 (68 X 12)	601.5415	-			
										END OPTION FF					
	2						2		EACH	450 CPEP ELBOW (SL)	601.5814	-			
										BEGIN OPTION GG					
	1						1		EACH	375 CSPES 1.63 (68 X 12)	601.6010	-			
	1						1		EACH	375 CAAPES 1.52 (68 X 12)	601.6210	-			
										END OPTION GG					
										BEGIN OPTION HH					
	2						2		EACH	450 CSPES 1.63 (68 X 12)	601.6015	-			
	2						2		EACH	450 CAAPES 1.52 (68 X 12)	601.6215	-			
	2						2		EACH	450 RCPES CLASS III	601.6815	-			
	2						2		EACH	450 CPEPES	601.7015	-			
										END OPTION HH					
	13						13		EACH	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	604.18	-			

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b1940TY02.dgn
PROJECT LEADER: DMB
DESIGNED BY: JWS
QUANTITY SHEET - 2

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 9 OF 123

Metric

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
	ROADWAY	TRAINING	EROSION CONTROL	UTILITIES BID ITEMS	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
				2			2		EACH	SANITARY SEWER MANHOLE	604.22	-			
				1			1		EACH	CHANGING ELEVATION OF SEWER MANHOLES	604.42	-			
	500						500		M	200 MM UNDERDRAIN PIPE	605.11	5			
	15						15		M	200 MM UNDERDRAIN CARRIER PIPE	605.21	3			
	6						6		EACH	UNDERDRAIN FLUSHING BASIN	605.95	-			
	50						50		HR	POWER GRADER RENTAL	608.15	EST			
	100						100		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25	EST			
	200						200		HR	POWER BROOM RENTAL, TYPE I	608.30	EST			
	100						100		HR	TRUCK RENTAL	608.37	EST			
	1200						1200		CM	DUST CONTROL WITH WATER	609.10	116.9			
	35						35		CM	STONE FILL, TYPE I	613.10	0.8			ITEM 619.17 - YIELDING MARKER POST
	24				1970		1994		CM	STONE FILL, TYPE II	613.11	0.4	17	EA	DRAINAGE DETAIL SHEET
													6	EA	ITEM DETAIL SHEET (UNDERDRAIN SUMMARY)
	29						29		EACH	YIELDING MARKER POSTS	619.17	-	6	EA	UTILITY SLEEVE CALCULATION
													0	EA	ROUNDING
	245						245		M	CHAIN-LINK FENCE, 1.8 M (VINYL COATED)	620.12	1.1			
													29	EA	TOTAL
	3						3		EACH	BRACING ASSEMBLY FOR CHAIN-LINK FENCE, 1.8 M	620.21	-			
	30						30		M	STEEL BEAM GUARDRAIL, GALVANIZED	621.20	1			
	2						2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	-			
	130						130		M	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	3.5			
				1			1		CM	INSULATION BOARD	622.10	EST			
				25			25		M	SLEEVES FOR UTILITIES (1 X 300MM)(C900)	625.10	0.8			
				66			66		M	SLEEVES FOR UTILITIES (1 X 450MM)(C905)	625.10	0.2			
				18			18		M	SLEEVES FOR UTILITIES (1 X 600MM)(C905)	625.10	-			
				85			85		M	PVC SEWER PIPE (375MM)	628.35	-			
				1			1		LS	TRANSFER TO NEW SYSTEM, SANITARY SEWER	628.42	-			
				16			16		M	SEAMLESS COPPER WATER TUBE (25MM)	629.23	0.8			
				4			4		M	DUCTILE IRON PIPE, CEMENT-LINED (100MM)	629.24	-			
				90			90		M	DUCTILE IRON PIPE, CEMENT-LINED (200MM)	629.24	1			
				2			2		EACH	GATE VALVE WITH VALVE BOX (100MM)	629.27	-			
				2			2		EACH	GATE VALVE WITH VALVE BOX (200MM)	629.27	-			
				2			2		EACH	TAPPING SLEEVE AND VALVE WITH VALVE BOX (100MM)	629.35	-			
				1			1		EACH	CORPORATION STOP (25MM)	629.39	-			
				1			1		LS	TRANSFER TO NEW SYSTEM, WATER SYSTEM	629.42	-			
	2100						2100		HR	FLAGGERS	630.15	21.6			
						1	1		LS	FIELD OFFICE, ENGINEERS	631.10	-			
						1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16	-			
						3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26	-			
		1040					1040		HR	EMPLOYEE TRAINEESHIP	634.10	-			
	1						1		LS	MOBILIZATION/DEMOBILIZATION	635.11	-			
	1						1		LS	TRAFFIC CONTROL	641.10	-			
	75				3280		3355		SM	GEOTEXTILE UNDER STONE FILL	649.31	7			

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b1940TY03.dgn
PROJECT LEADER: DMB
DESIGNED BY: JWS
QUANTITY SHEET - 3

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 10 OF 123

Metric

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 4

SUMMARY OF ESTIMATED QUANTITIES									TOTALS		DESCRIPTIONS			
				ROADWAY	TRAINING	EROSION CONTROL	UTILITIES BID ITEMS	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
						555				555		SM	GEOTEXTILE FOR SILT FENCE	649.51	-
						230				230		SM	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515	2.8
						290				290		SM	GEOTEXTILE FOR FILTER CURTAIN	649.61	2.5
						195				195		KG	SEED	651.15	0.4
						63				63		KG	SEED, WINTER RYE	651.17	0.6
						1250				1250		KG	FERTILIZER	651.18	39.5
						10				10		T	AGRICULTURAL LIMESTONE	651.20	0.3
						14				14		T	HAY MULCH	651.25	0.1
						1100				1100		CM	TOPSOIL	651.35	19.2
								1300		1300		SM	GRUBBING MATERIAL	651.40	79
						1				1		LS	EPSC PLAN	652.10	-
						675				675		HR	MONITORING EPSC PLAN	652.20	4
						1				1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	-
						9450				9450		SM	TEMPORARY EROSION MATTING	653.20	14.1
						49				49		CM	TEMPORARY STONE CHECK DAM, TYPE I	653.25	0.3
						26				26		CM	VEHICLE TRACKING PAD	653.35	0.8
						7				7		EACH	INLET PROTECTION DEVICE, TYPE I	653.40	-
						420				420		M	BARRIER FENCE	653.50	2.5
						1250				1250		M	PROJECT DEMARCATION FENCE	653.55	48.7
				1						1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50	-
				280						280		CM	SPECIAL PROVISION (CLAY BORROW)	900.608	9.6
				10						10		CM	SPECIAL PROVISION (CONTROLLED DENSITY (FLOWABLE) FILL)	900.608	0.5
								564		564		CM	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS AA LOW CEMENT)	900.608	1
								265730		265730		KG	SPECIAL PROVISION (HIGH PERFORMANCE STEEL, GRADE HPS 485W)	900.635	4
								2525		2525		KG	SPECIAL PROVISION (STAINLESS STEEL REINFORCING)	900.635	-
				1						1		LS	SPECIAL PROVISION (TEMPORARY ACCESS ROAD AND STAGING AREAS, BRIDGE)	900.645	-
				1						1		LU	SPECIAL PROVISION (MATERIAL DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650	-
				1						1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650	-
				140						140		SM	SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL RECON)	900.675	-
				26				200		226		T	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680	-

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b1940TY04.dgn
PROJECT LEADER: DMB
DESIGNED BY: JWS
QUANTITY SHEET - 4

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 11 OF 123

Metric

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES							TOTALS	DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
SUPER STRUCTURE	CHANNEL	APPROACH SLAB 1	APPROACH SLAB 2	ABUTMENT 1	ABUTMENT 2	S. LEG FOUNDATION	N. LEG FOUNDATION	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
	2580							2580	CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27			
				410	210			620	CM	GRAVEL BACKFILL FOR SLOPE STABILIZATION	203.35			
				365		555		920	CM	STRUCTURE EXCAVATION	204.25			
				150	185	10	165	510	CM	GRANULAR BACKFILL FOR STRUCTURES	204.30			
							780	780	CM	COFFERDAM EXCAVATION, EARTH	208.30			
							260	260	CM	COFFERDAM EXCAVATION, ROCK	208.35			
							1	1	LS	COFFERDAM (NORTH SLANT LEG FOOTING)	208.40			
		27	27	138	154	242	511	1099	CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34			
					0.5	0.5		1	LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10			
					318	330		648	M	STEEL PILING, HP 310 X 79	505.15			
					1	1		2	EACH	DYNAMIC PILE LOADING TEST	505.45			
482880								482880	KG	STRUCTURAL STEEL, PLATE GIRDER	506.55			
				3105	3505	5420	8230	20260	KG	REINFORCING STEEL	507.15			
						76	243	319	M	DRILLING AND GROUTING DOWELS	507.16			
108775		1875	1920	1601	1684			115855	KG	EPOXY COATED REINFORCING STEEL	507.17			
1								1	LS	SHEAR CONNECTORS (6,520 - 22MM X 175MM)	508.15			
1								1	LS	STRUCTURAL PAINTING, SHOP APPLIED	513.25			
1								1	LS	CONTAINMENT & ENVIRONMENTAL PROTECTION, SHOP	513.35			
1								1	LS	SURFACE PREPARATION, SHOP	513.40			
167				20	22	38	43	290	L	WATER REPELLENT, SILANE	514.10			
24								24	M	BRIDGE EXPANSION JOINT, FINGER PLATE	516.12			
1912								1912	SM	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20			
350								350	M	BRIDGE RAILING, GALVANIZED NETC 2 RAIL	525.33			
				5	5			10	EACH	BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD	531.10			
						6	6	12	EACH	BEARING DEVICE ASSEMBLY, STEEL	531.13			
							383	383	CM	CONCRETE, CLASS C	541.30			
				910	1060			1970	CM	STONE FILL, TYPE II	613.11			
				1500	1780			3280	SM	GEOTEXTILE UNDER STONE FILL	649.31			
	1300							1300	SM	GRUBBING MATERIAL	651.40			
560				2	2			564	CM	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS AA LOW CEMENT)	900.608			
265730								265730	KG	SPECIAL PROVISION (HIGH PERFORMANCE STEEL, GRADE HPS 485W)	900.635			
						600	1925	2525	KG	SPECIAL PROVISION (STAINLESS STEEL REINFORCING)	900.635			
200								200	T	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680			

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194B0TY01.dgn
PROJECT LEADER: DMB
DESIGNED BY: JWS
BRIDGE QUANTITY SHEET

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 12 OF 123

STATE OF VERMONT
AGENCY OF TRANSPORTATION

ITEM DETAIL SHEET

Metric

CURB

BEGIN STATION km + m	END STATION km + m	POSITION LEFT m	POSITION RIGHT m	REMARKS

SIDEWALK

BEGIN STATION km + m	END STATION km + m	POSITION LEFT m^2	POSITION RIGHT m^2	REMARKS

GUARD RAIL

BEGIN STATION km + m	END STATION km + m	POSITION LEFT m	POSITION RIGHT m	END TREATMENT BEGIN ea	END TREATMENT END ea
	STEEL BEAM GUARDRAIL, GALVANIZED				
VT 100					
7+774.5	7+800.3		29.0	ANCHOR	ANCHOR
	GUARDRAIL APPROACH SECTION, GALVANIZED NETC 2 RAIL				
7+915.0	7+922.6	1 ea			
7+915.0	7+922.6		1 ea		
8+082.4	8+090.0	1 ea			
8+082.4	8+090.0		1 ea		
	REMOVAL AND DISPOSAL OF GUARDRAIL				
VT 100					
8+290.0	8+345.0	66.5			
8+290.0	8+340.0		60.0		
	ITEM 621.20 STEEL BEAM GUARDRAIL , GALVANIZED				
	SUB-TOTAL=	29	m		
	ROUNDING=	1	m		
	ITEM TOTAL=	30	m		
	ITEM 621.60 ANCHOR FOR STEEL BEAM RAIL				
	SUB-TOTAL=	2	ea		
	ROUNDING=	0	ea		
	ITEM TOTAL=	2	ea		
	ITEM 621.72 GUARDRAIL APPROACH SECTION, GALVANIZED NETC 2 RAIL				
	SUB-TOTAL=	4	ea		
	ROUNDING=	0	ea		
	ITEM TOTAL=	4	ea		
	ITEM 621.80 REMOVAL AND DISPOSAL OF GUARDRAIL				
	SUB-TOTAL=	126.5	m		
	ROUNDING=	3.5	m		
	ITEM TOTAL=	130	m		

UNDERDRAIN

BEGIN STATION km + m	END STATION km + m	TYPE	POSITION	DIA. mm	LENGTH m	TRENCH EARTH m^3	TRENCH ROCK m^3	GRAN BKFILL m^3	FB ea	MKR PST ea
7+662	7+750	U1	RT	200	89	109.8		2	1	1
7+662	7+750	U2	LT	200	89	109.8		2	1	1
7+752	7+840	U3	LT	200	89	109.8		2	1	1
7+752	7+840	U4	RT	200	89	109.8		2	1	1
7+842	7+905	U5	LT	200	63	77.7		2	1	1
7+842	7+905	U6	RT	200	63	77.7		2	1	1
8+282	8+285	U	LT	200	13	12.5				
TOTALS					495	607.1		12	6	6
		ITEM 605.11 - 200mm UNDERDRAIN PIPE								
			SUB-TOTAL=			495	m			
			ROUNDING=			5	m			
			ITEM TOTAL=			500	m			
		ITEM 204.20 - TRENCH EXCAVATION OF EARTH								
			SUB-TOTAL=			607.1	m3			
			ROUNDING=			*	m3			
			ITEM TOTAL=			*	m3			
			* SEE QUANTITY SUMMARY SHEET 1							
		ITEM 605.21 - 200mm UNDERDRAIN CARRIER PIPE								
			SUB-TOTAL=			12	m			
			ROUNDING=			3	m			
			ITEM TOTAL=			15	m			
		ITEM 605.95 - UNDERDRAIN FLUSHING BASIN								
			SUB-TOTAL=			6	ea			
			ROUNDING=			0	ea			
			ITEM TOTAL=			6	ea			
		ITEM 619.17 - YIELDING MARKER POSTS								
			SUB-TOTAL=			6	ea			
			ROUNDING=			*	ea			
			ITEM TOTAL=			*	ea			
			* SEE QUANTITY SUMMARY SHEET 3							

PROJECT NAME: **MORRISTOWN**
PROJECT NUMBER: **STP F029 - 1(2) C/1**

FILE NAME: **z10b194ids.xls**
PROJECT LEADER: **DMB**
DESIGNED BY: **JWS**
ITEM DETAIL SHEET

PLOT DATE: **3/29/2012**
DRAWN BY: **MJF**
CHECKED BY: **BRC**
SHEET **13** OF **123**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE DETAIL SHEET

Metric

STATION km + m	STATION km + m	POS.	NOTE #	INLET/OUTLET TYPE INLET	INLET/OUTLET TYPE OUTLET	DITCH IN	DITCH OUT	PIPE ARCH SPAN mm	PIPE ARCH RISE mm	PIPE ARCH L m	PIPE D mm	PIPE L m	ALLOWABLE OPTIONS PCCSP mm	ALLOWABLE OPTIONS CAAP mm	ALLOWABLE OPTIONS RCP CL	ALLOWABLE OPTIONS CSP mm	ALLOWABLE OPTIONS CPEP SL mm	ALLOWABLE OPTIONS PCCSP PI mm	PIPE ELBOW no. deg.	ES ea	CB ea	PRCDDI	DEPTH DI m	CONC CLASS B m^3	REINF STEEL kg	DI GRATE type	CHAN ELEV ea	CRM m^3	TRENCH EXCAVATION EARTH m^3	TRENCH EXCAVATION ROCK m^3	COMM EXC m^3	UNC CHAN EXC m^3	STRUCT EXCAV m^3	GRAN BKFILL STRUCT m^3	GRAN BORR m^3	EROS MATT m^2	STONE FILL m^3	STONE FILL type	MARKER POSTS LT ea	MARKER POSTS RT ea	GEOT. UNDER STONE FILL m^2		REMARKS
7+560	7+660	LT/LT	DN 1	PRCDI-A							450	99.0			III		X					1	1.75			B			259.2											1				
7+660	7+660	RT/LT	DN 3	PRCDI-A							450	22.0			III		X					1	1.83			B			64.2												1			
7+660	7+750	LT/LT	DN 2	PCCDI-A							450	89.0			III		X					1	1.92			B			252.9											1				
7+750	7+750	RT/LT	DN 4	PRCDI-A							450	20.0			III		X					1	1.84			B			60.3												1			
7+750	7+840	LT/LT	DN 5	PRCDI-A							450	89.0			III		X					1	2.03			B			268.1											1				
7+840	7+840	RT/LT	DN 6	PRCDI-A							450	21.0			III		X					1	1.74			B			63.1												1			
7+840	7+860	LT/LT	DN 7	PRCDI-A	E.S.						450	21.0			III		X			1		1	1.97			B			58.2		1.0						1.0	II	2		4.9		
7+905	7+944	LT/LT	DN 8	E.S.	E.S.						450	38.2	1.63	1.52				X	2-45	2									113.6											2				
7+905	7+905	LT/RT	DN 9	PRCDI-A							450	10.2			III		X					1	2.30			E			53.6															
7+905	7+915	RT/RT	DN 10	PRCDI-A	E.S.						450	10			III		X			1		1	2.40			E			51.4												1			SPECIAL DITCH 7+915 TO 7+939 (SEE BRIDGE PLAN)
8+270	8+277.8	LT/LT	DN 11	PRCDI-A							450	15.7					X		2-45			1	2.17			D					2.9						2.9	II	1		10.8		PROVIDE 1m STUBS FOR FUTURE CONNECTIONS
8+290		LT	DN 17																																								PLUG AND ABANDON EXISTING 600 mm RCP WITH CONTROLLED DENSITY (FLOWABLE) FILL
8+284.9	8+300.5	LT/LT	DN 14	PRCDI-B							900	14.5			III		X					1	2.90			STEEL X2			78.8		11.6						11.6	II	2		31.3		SEE DETENTION BASIN GRADING PLANS
8+349	8+300	LT/LT	DN 13	PRCDI-C							750	48			III		X					1	3.80			E			405.3															PROVIDE 1m STUBS FOR FUTURE CONNECTIONS
8+300	8+289.3	LT/LT	DN 12	PRCDI-B							750	18					X					1	4.23			E			7.0		8.1						8.1	II	1		23.4		SEE DETENTION BASIN GRADING PLANS
8+232.5	8+256.0	LT/LT	DN 16	E.S.							375	23	1.63	1.52						1																				2				
SHEET TOTALS											375	23	1.63	1.52					4-45	5		13				7	TYPE B		1735.7		23.6						23.6	II	13	4	70.4		
											450	381.2			III		X									1	TYPE D																
											450	15.7					X																											
											450	38.2	1.63	1.52				X								4	TYPE E																
											750	18					X																											
											750	48			III		X			1	375mm																						
											900	14.5			III		X			4	450mm																						

PROJECT NAME: **MORRISTOWN**

PROJECT NUMBER: **STP F 029-1(2)C/1**

FILE NAME: **z10b194dds.xls**
PROJECT LEADER: **DMB**
DESIGNED BY: **RPH**
DRAINAGE DETAIL SHEET

PLOT DATE: **11/2/2011**
DRAWN BY: **MJF**
CHECKED BY: **JWS**
SHEET **14** OF **123**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EARTHWORKS

Metric

STATION km + m	DIST m	TOTAL EXCAVATION EARTH AND ROCK AREA m²	TOTAL EXCAVATION EARTH AND ROCK VOLUME m³	ROCK EXCAVATION AREA m²	ROCK EXCAVATION VOLUME m³	EMBANKMENT AREA m²	EMBANKMENT VOLUME m³	AREA m²	VOLUME m³
VT 100								CUT	72
7+540								R.CUT	0
7+560		0.3	3.0			5.4	54.0	FILL	190
7+580	20	1.7	20.0			3.8	92.0	FAC	1.15
7+600	20	3.2	49.0			0.6	44.0	EXF	147
7+620	20	9.2	124.0				6.0		
7+640	20	27.6	368.0						
7+660	20	42.5	701.0					CUT	13306
7+680	20	54.4	969.0					R.CUT	0
7+700	20	66.8	1212.0					FILL	6
7+720	20	83.0	1498.0					FAC	1.15
7+740	20	97.7	1807.0					EXC	13299
7+760	20	112.5	2102.0						
7+780	20	112.1	1569.0						
7+800	20	116.1	2282.0						
7+820	20	91.5	1246.0						
7+840	20	103.8	1953.0					CUT	19779
7+860	20	243.8	3476.0					R.CUT	0
7+880	20	289.6	5334.0					FILL	138
7+900	20	218.2	5078.0					FAC	1.15
7+912	12	75.6	1763.0			1.5	11.0	EXC	19620
8+081			BRIDGE			186.7			
8+084	3					186.7	560.0		
8+084		38.4				309.0		CUT	320
8+100	16		307.0			381.4	5523.0	R.CUT	0
8+120	20					251.8	6332.0	FILL	27351
8+140	20					180.3	4321.0	FAC	1.15
8+160	20					129.2	3095.0	EXF	31134
8+180	20					192.2	3214.0		
8+200	20	1.3	13.0			238.4	4306.0		
8+220	20		13.0			283.9	5223.0		
8+240	20					266.8	5507.0		
8+260	20					200.1	4669.0	CUT	221
8+280	20					335.6	5357.0	R.CUT	0
8+300	20					263.8	5994.0	FILL	31723
8+320	20					107.2	3710.0	FAC	1.15
8+340	20	8.3	83.0			8.3	1155.0	EXF	36260
8+346	6	8.3	50.0			8.3	50.0		
8+360	14	2.3	74.0			0.0	58.0		
8+361	1		1.0						

SUMMARY AND BALANCES

STATION TO STATION km + m	km + m	TOT EXC. EARTH & ROCK m³	ROCK EXCAV m³	EMBANK m³	EXCESSES CUT	EXCESSES FILL	ACUMULATIVE EXCESSES CUT	ACUMULATIVE EXCESSES FILL
7+540	7+600	72	0	190	0	147		147
7+620	7+800	13306	0	6	13299	0	13153	
7+808	7+912	19779	0	138	19620	0	32773	
8+081	8+200	320	0	27351	0	31134	1639	
8+220	8+361	221	0	31723	0	36260		34621
DRIVEWAY								
8+243				57		66		34687
DET. BASIN								
8+288		291	0	256		3		34691
STONE PADS		24	0		24			34667
DITCH BERM				4		4		34671
CLAY BORROW		280	0		280			34391
CUT/FILL TRANSITION		175	0	175		26		34417

REMARKS

EARTH AND ROCK EXCAVATION	34468
SOLID ROCK EXCAVATION (ASSUME 2% OF EARTH EXC	689
EARTH EXCAVATION	33779
PLANIMETERED FILL	59900
LESS FACTORED SOLID ROCK	896
LESS DISPLACEMENT OF ANY LARGE STRUCTURES	0
NET PLANIMETERED FILL	59004
FACTOR QUANT X (0.15) =	8851
PLANIMETERED FILL INCLUDING FACTOR	67855
MATERIALS AVAILABLE FOR FILLS	
EARTH EXCAVATION	33779
UNCLASSIFIED CHANNEL EXCAVATION	1350
UNDERDRAIN EXCAVATION	607
STRUCTURE EXCAVATION	1160
TOTAL MATERIAL AVAILABLE FOR FILL	36896
TOTAL FILL INCLUDING FACTOR	67855
TOTAL MATERIAL FOR FILL	36896
BORROW	30959
EXCESS EXCAVATION	

PROJECT NAME: **MORRISTOWN**
PROJECT NUMBER: **STP F-029-1(2) C/1**

FILE NAME: **z10b194ew3.xls**
PROJECT LEADER: **DMB**
DESIGNED BY: **JWS**
EARTHWORK DETAIL SHEET

PLOT DATE: **3/29/2012**
DRAWN BY: **MJF**
CHECKED BY: **BRC**
SHEET **15** OF **123**

GPS CONTROL POINTS

HVCTRL 16

Standard Disk Stamped

Langdell
NORTH = 230524.176
EAST = 492970.012
ELEV. = 240.692

TO REACH FROM THE INTERSECTION OF ROUTES 15 AND 100 IN MORRISVILLE GO EAST ALONG ROUTE 15 FOR 0.1 MI (0.2 KM) TO OLD FARM BUILDINGS ON THE LEFT, TURN LEFT INTO FARM YARD AND PARK VEHICLE, WALK NORTHEAST THROUGH BARNYARD AND PASTURE FOR ABOUT 170 M (557.7 FT) TO THE SITE OF THE MARK IN A LANE BETWEEN 2.5 M (8.2 FT) HIGH WOVEN WIRE FENCES FOR FALLOW DEER, IN THE TOP OF A 0.15 M (0.49 FT) SQUARE CONCRETE MONUMENT WHICH PROJECTS 0.1 M (0.3 FT) ABOVE THE GROUND, 19.2 M (63.0 FT) NORTH OF THE CENTER OF A STEEL GATE AT THE SOUTH END OF THE LANE, 34.5 M (113.2 FT) SOUTH OF THE SOUTHEAST CORNER OF A PATCH OF WOODS, 1.9 M (6.2 FT) WEST OF THE FENCE ON THE EAST SIDE OF THE LANE, 2.3 M (7.5 FT) EAST OF THE FENCE ON THE WEST SIDE OF THE LANE.

HVCTRL 10812

Standard Disk Stamped

A94020
NORTH = 229452.595
EAST = 491506.585
ELEV. = 182.680

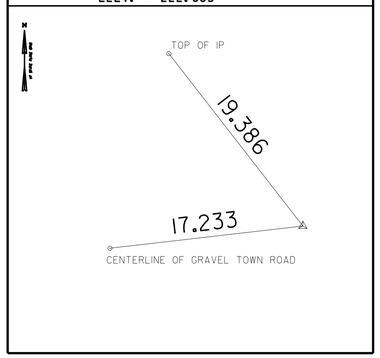
GENERAL LOCATION, MORRISTOWN, VT. TO REACH FROM THE CIVIL WAR MONUMENT AT THE INTERSECTION OF MAIN ST, ROUTE 12 AND 15A GO WEST ALONG MAIN ST FOR 0.15 MI (0.24 KM) TO THE TRAFFIC LIGHT AT THE INTERSECTION OF ROUTE 100, TURN RIGHT AND GO NORTH ALONG ROUTE 100 FOR 0.3 MI (0.5 KM) TO THE INTERSECTION OF BRIDGE ST CONTINUE STRAIGHT AHEAD AND GO WEST ALONG BRIDGE ST FOR 0.25 MI (0.40 KM) TO THE EAST END OF THE BRIDGE ST BRIDGE OVER THE LAMOILLE RIVER AND THE MARK ON THE RIGHT IN THE TOP OF THE WINGWALL AT THE NORTHEAST CORNER OF THE BRIDGE. THE MARK IS 5.2 M (17.1 FT) NORTH OF AND ABOUT LEVEL WITH THE CENTERLINE OF BRIDGE STREET.

• Description provided by Vermont Agency of Transportation Geodetic Survey Unit

TRAVERSE TIES

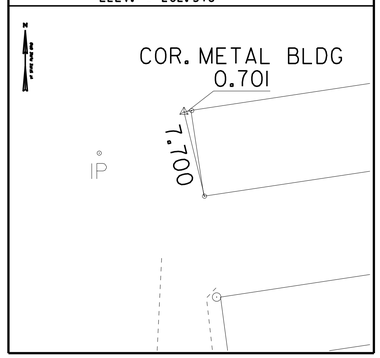
HVCTRL 30

NORTH = 228337.8183
EAST = 490528.2694
ELEV. = 222.085



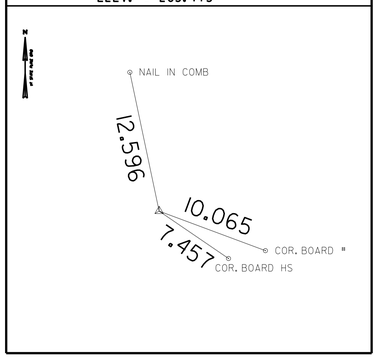
HVCTRL 31

NORTH = 228823.9222
EAST = 491426.9866
ELEV. = 202.518



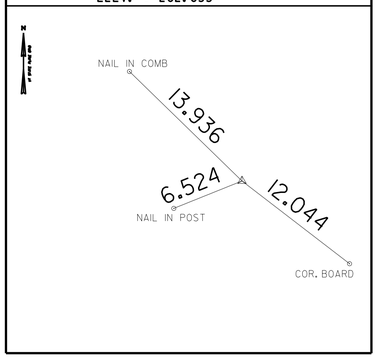
HVCTRL 32

NORTH = 228627.7495
EAST = 491453.0774
ELEV. = 203.173



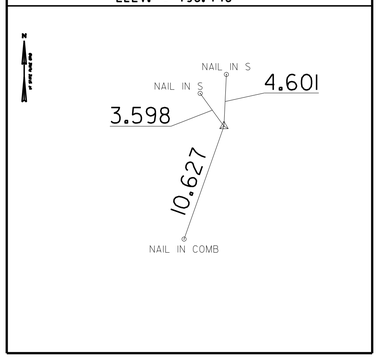
HVCTRL 33

NORTH = 228669.6604
EAST = 491628.6888
ELEV. = 202.033



HVCTRL 34

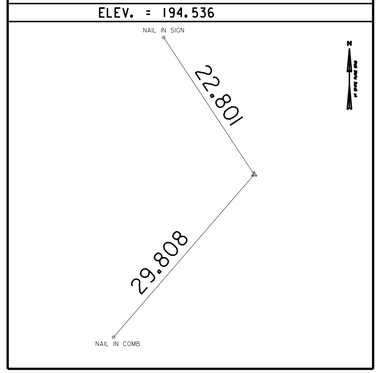
NORTH = 228733.0271
EAST = 491756.4678
ELEV. = 196.146



TRAVERSE TIES

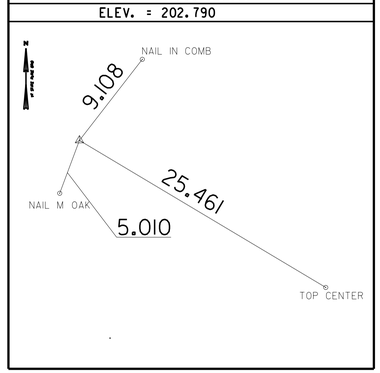
HVCTRL 35

NORTH = 228863.5664
EAST = 491976.4461
ELEV. = 194.536



HVCTRL 36

NORTH = 229035.9460
EAST = 492007.8454
ELEV. = 202.790



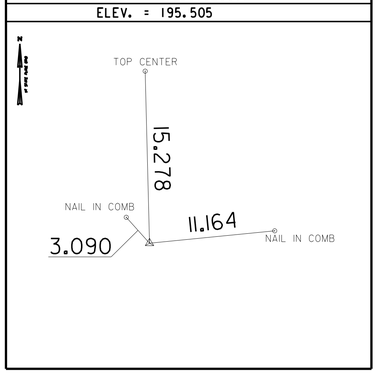
HVCTRL 37

NORTH = 229043.4144
EAST = 491875.8192
ELEV. = 190.483

NOT TIED

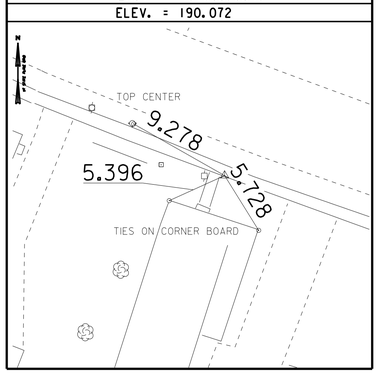
HVCTRL 38

NORTH = 229271.5712
EAST = 491905.6603
ELEV. = 195.505



HVCTRL 39

NORTH = 229329.4201
EAST = 491683.9349
ELEV. = 190.072



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)
ADJUSTMENT	Least Squares

NOTE: TRAVERSE TIES 31 & 39 ARE WITHIN THE LIMITS OF THIS PROJECT. OTHER TRAVERSE TIES ARE SHOWN FOR REFERENCE ONLY.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194tie01.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
TIE INFORMATION SHEET - 1

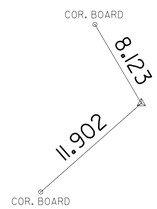
PLOT DATE: 29-MAR-2012
DRAWN BY: C. CYR
CHECKED BY: DMB
SHEET 16 OF 123

Metric

TRAVERSE TIES

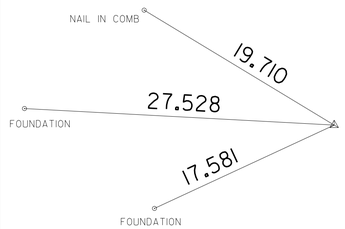
HVCTRL 50

NORTH = 229502.9708
EAST = 491954.8185
ELEV. = 205.165



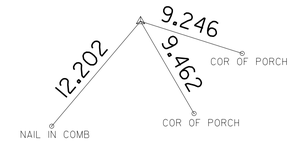
HVCTRL 51

NORTH = 229771.1344
EAST = 492083.4966
ELEV. = 206.337



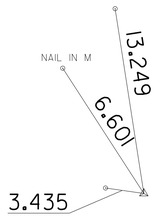
HVCTRL 52

NORTH = 229844.5142
EAST = 492191.7505
ELEV. = 205.739



HVCTRL 53

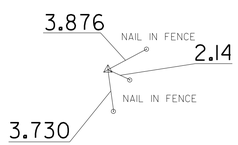
NORTH = 230071.0947
EAST = 492352.4538
ELEV. = 207.347



TRAVERSE TIES

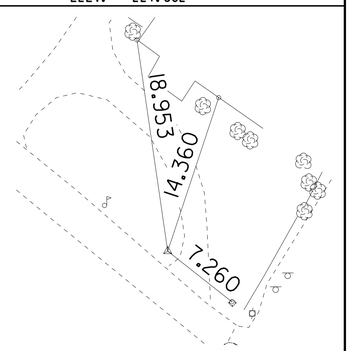
HVCTRL 54

NORTH = 230337.9111
EAST = 492524.4426
ELEV. = 212.613



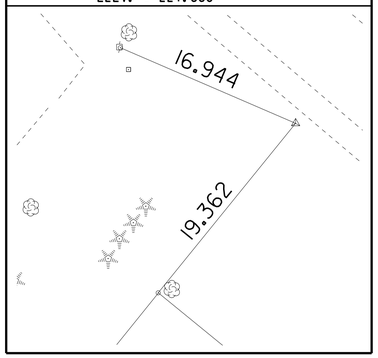
HVCTRL 55

NORTH = 230626.3780
EAST = 492649.6447
ELEV. = 221.602



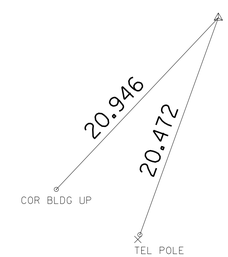
HVCTRL 56

NORTH = 230815.6126
EAST = 492394.8515
ELEV. = 221.660



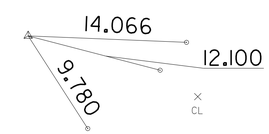
HVCTRL 57

NORTH = 230443.8052
EAST = 492263.5615
ELEV. = 209.593



HVCTRL 58

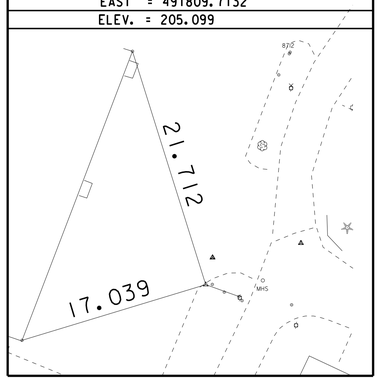
NORTH = 230156.0285
EAST = 492141.9354
ELEV. = 205.630



TRAVERSE TIES

HVCTRL 59

NORTH = 229902.7429
EAST = 491809.7132
ELEV. = 205.099



NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)
ADJUSTMENT	Least Squares

NOTE: TRAVERSE TIES 31 & 39 ARE WITHIN THE LIMITS OF THIS PROJECT. OTHER TRAVERSE TIES ARE SHOWN FOR REFERENCE ONLY.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

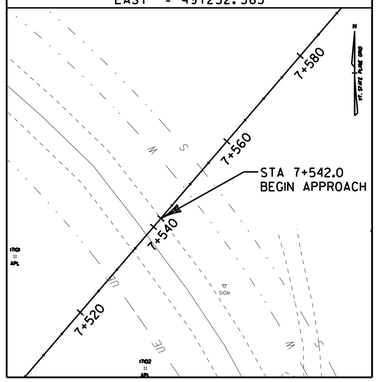
FILE NAME: z10b194tie02.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
TIE INFORMATION SHEET - 2

PLOT DATE: 29-MAR-2012
DRAWN BY: C.CYR
CHECKED BY: DMB
SHEET 17 OF 123

ALIGNMENT TIES

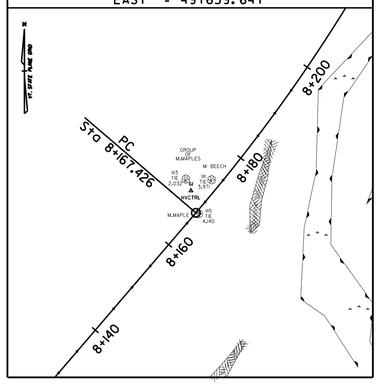
BEGIN APPROACH

NORTH = 228659.382
EAST = 491252.563



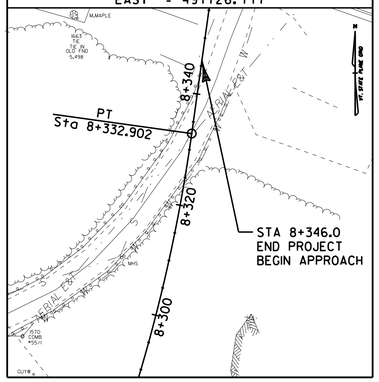
PC 8+167.426

NORTH = 229134.193
EAST = 491659.641



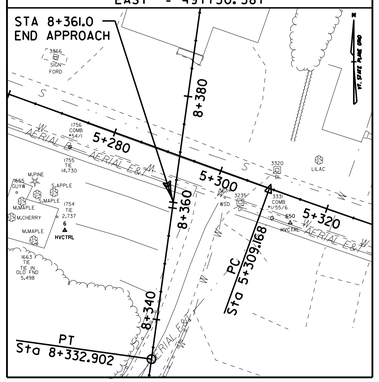
PT 8+332.902

NORTH = 229283.016
EAST = 491726.717



END APPROACH

NORTH = 229310.846
EAST = 491730.587



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)
ADJUSTMENT	Least Squares

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

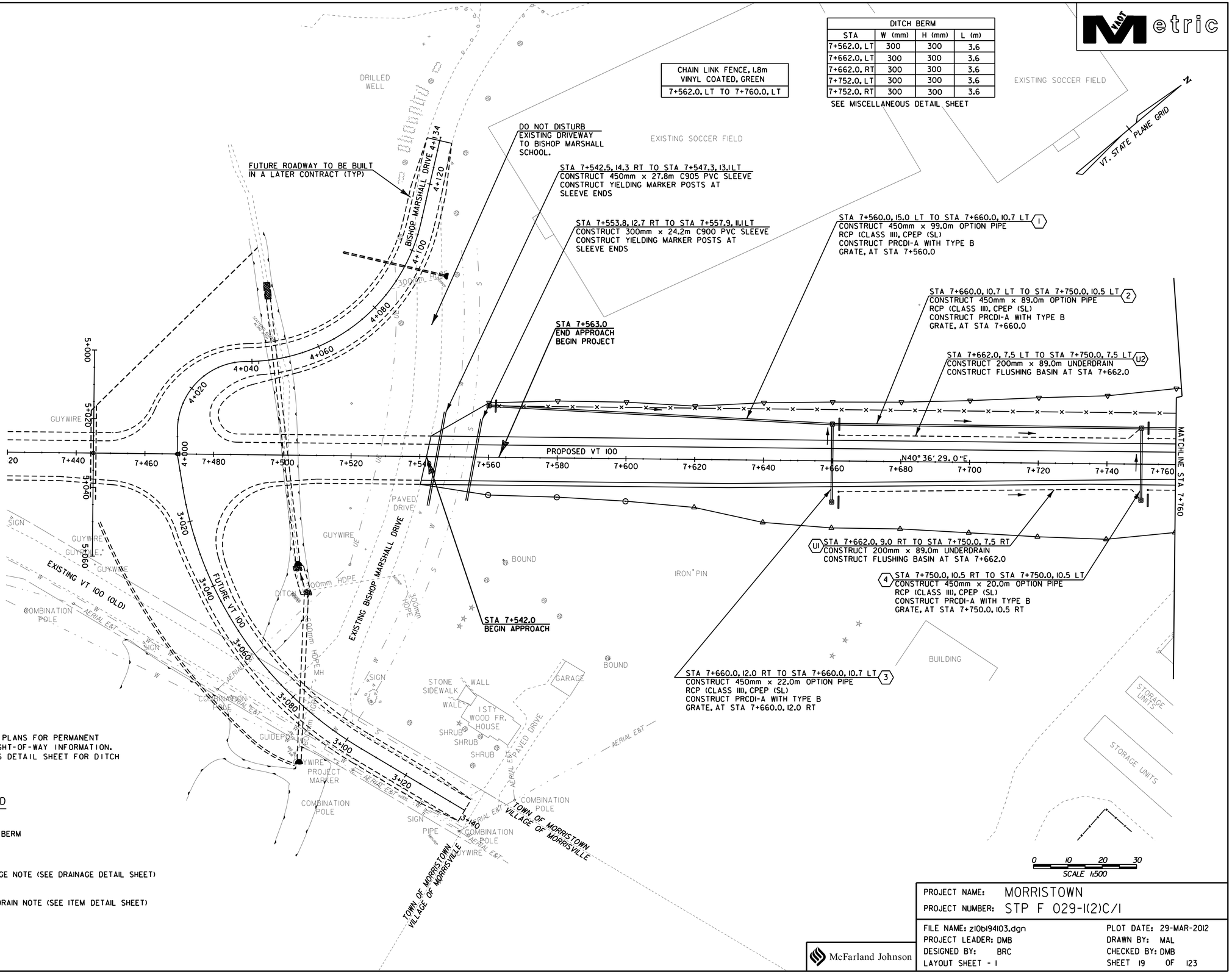
FILE NAME: z10b194tie03.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
TIE INFORMATION SHEET - 3

PLOT DATE: 29-MAR-2012
DRAWN BY: MJF
CHECKED BY: DMB
SHEET 18 OF 123

DITCH BERM			
STA	W (mm)	H (mm)	L (m)
7+562.0, LT	300	300	3.6
7+662.0, LT	300	300	3.6
7+662.0, RT	300	300	3.6
7+752.0, LT	300	300	3.6
7+752.0, RT	300	300	3.6

SEE MISCELLANEOUS DETAIL SHEET

CHAIN LINK FENCE, 1.8m VINYL COATED, GREEN
7+562.0, LT TO 7+760.0, LT



NOTES:

1. SEE RIGHT-OF-WAY PLANS FOR PERMANENT AND TEMPORARY RIGHT-OF-WAY INFORMATION.
2. SEE MISCELLANEOUS DETAIL SHEET FOR DITCH BERM DETAILS.

LEGEND

DITCH BERM

(3) DRAINAGE NOTE (SEE DRAINAGE DETAIL SHEET)

(UI) UNDERDRAIN NOTE (SEE ITEM DETAIL SHEET)

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

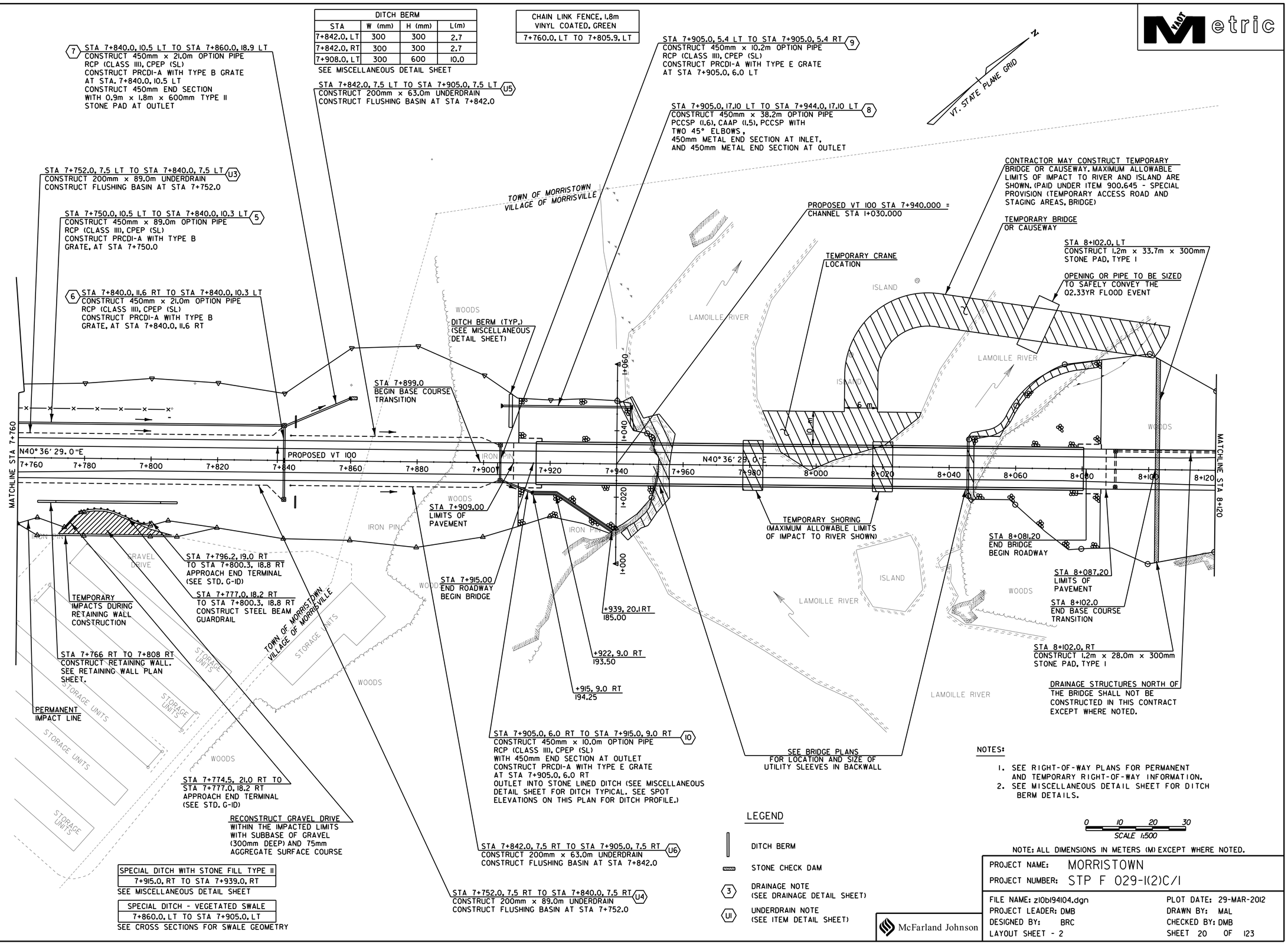
FILE NAME: z10b194103.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
LAYOUT SHEET - 1

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 19 OF 123

DITCH BERM			
STA	W (mm)	H (mm)	L(m)
7+842.0, LT	300	300	2.7
7+842.0, RT	300	300	2.7
7+908.0, LT	300	600	10.0

SEE MISCELLANEOUS DETAIL SHEET

CHAIN LINK FENCE, 1.8m VINYL COATED, GREEN
7+760.0, LT TO 7+805.9, LT



SPECIAL DITCH WITH STONE FILL TYPE II
7+915.0, RT TO STA 7+939.0, RT

SEE MISCELLANEOUS DETAIL SHEET

SPECIAL DITCH - VEGETATED SWALE
7+860.0, LT TO STA 7+905.0, LT

SEE CROSS SECTIONS FOR SWALE GEOMETRY

LEGEND

- DITCH BERM
- STONE CHECK DAM
- (3) DRAINAGE NOTE (SEE DRAINAGE DETAIL SHEET)
- (U1) UNDERDRAIN NOTE (SEE ITEM DETAIL SHEET)

NOTES:

1. SEE RIGHT-OF-WAY PLANS FOR PERMANENT AND TEMPORARY RIGHT-OF-WAY INFORMATION.
2. SEE MISCELLANEOUS DETAIL SHEET FOR DITCH BERM DETAILS.

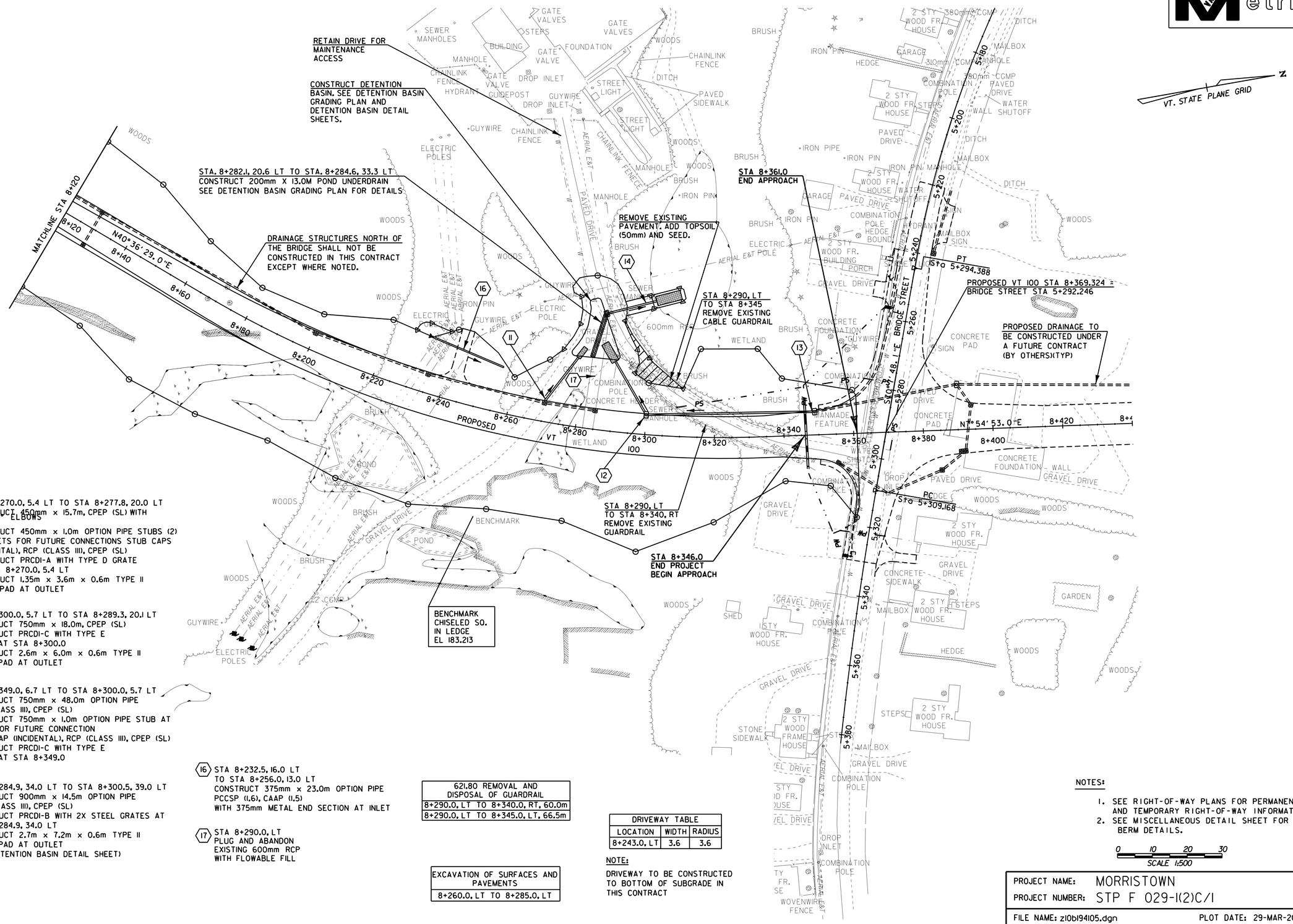
0 10 20 30
SCALE 1:500

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194104.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
LAYOUT SHEET - 2	SHEET 20 OF 123

VAOT Metric



(11) STA 8+270.0, 5.4 LT TO STA 8+277.8, 20.0 LT
CONSTRUCT 450mm x 15.7m, CPEP (SL) WITH TWO 45° ELBOWS
CONSTRUCT 450mm x 1.0m OPTION PIPE STUBS (2) AT INLETS FOR FUTURE CONNECTIONS STUB CAPS (INCIDENTAL), RCP (CLASS III), CPEP (SL)
CONSTRUCT PRCDI-A WITH TYPE D GRATE AT STA 8+270.0, 5.4 LT
CONSTRUCT 1.35m x 3.6m x 0.6m TYPE II STONE PAD AT OUTLET

(12) STA 8+300.0, 5.7 LT TO STA 8+289.3, 20.1 LT
CONSTRUCT 750mm x 18.0m, CPEP (SL)
CONSTRUCT PRCDI-C WITH TYPE E GRATE AT STA 8+300.0
CONSTRUCT 2.6m x 6.0m x 0.6m TYPE II STONE PAD AT OUTLET

(13) STA 8+349.0, 6.7 LT TO STA 8+300.0, 5.7 LT
CONSTRUCT 750mm x 48.0m OPTION PIPE RCP (CLASS III), CPEP (SL)
CONSTRUCT 750mm x 1.0m OPTION PIPE STUB AT INLET FOR FUTURE CONNECTION
STUB CAP (INCIDENTAL), RCP (CLASS III), CPEP (SL)
CONSTRUCT PRCDI-C WITH TYPE E GRATE AT STA 8+349.0

(14) STA 8+284.9, 34.0 LT TO STA 8+300.5, 39.0 LT
CONSTRUCT 900mm x 14.5m OPTION PIPE RCP (CLASS III), CPEP (SL)
CONSTRUCT PRCDI-B WITH 2X STEEL GRATES AT STA 8+284.9, 34.0 LT
CONSTRUCT 2.7m x 7.2m x 0.6m TYPE II STONE PAD AT OUTLET
(SEE DETENTION BASIN DETAIL SHEET)

(16) STA 8+232.5, 16.0 LT
TO STA 8+256.0, 13.0 LT
CONSTRUCT 375mm x 23.0m OPTION PIPE PCCSP (1.6), CAAP (1.5)
WITH 375mm METAL END SECTION AT INLET

(17) STA 8+290.0, LT
PLUG AND ABANDON EXISTING 600mm RCP WITH FLOWABLE FILL

621.80 REMOVAL AND DISPOSAL OF GUARDRAIL
8+290.0, LT TO 8+340.0, RT, 60.0m
8+290.0, LT TO 8+345.0, LT, 66.5m

EXCAVATION OF SURFACES AND PAVEMENTS
8+260.0, LT TO 8+285.0, LT

DRIVEWAY TABLE		
LOCATION	WIDTH	RADIUS
8+243.0, LT	3.6	3.6

NOTE:
DRIVEWAY TO BE CONSTRUCTED TO BOTTOM OF SUBGRADE IN THIS CONTRACT

NOTES:
1. SEE RIGHT-OF-WAY PLANS FOR PERMANENT AND TEMPORARY RIGHT-OF-WAY INFORMATION.
2. SEE MISCELLANEOUS DETAIL SHEET FOR DITCH BERM DETAILS.

0 10 20 30
SCALE 1:500

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

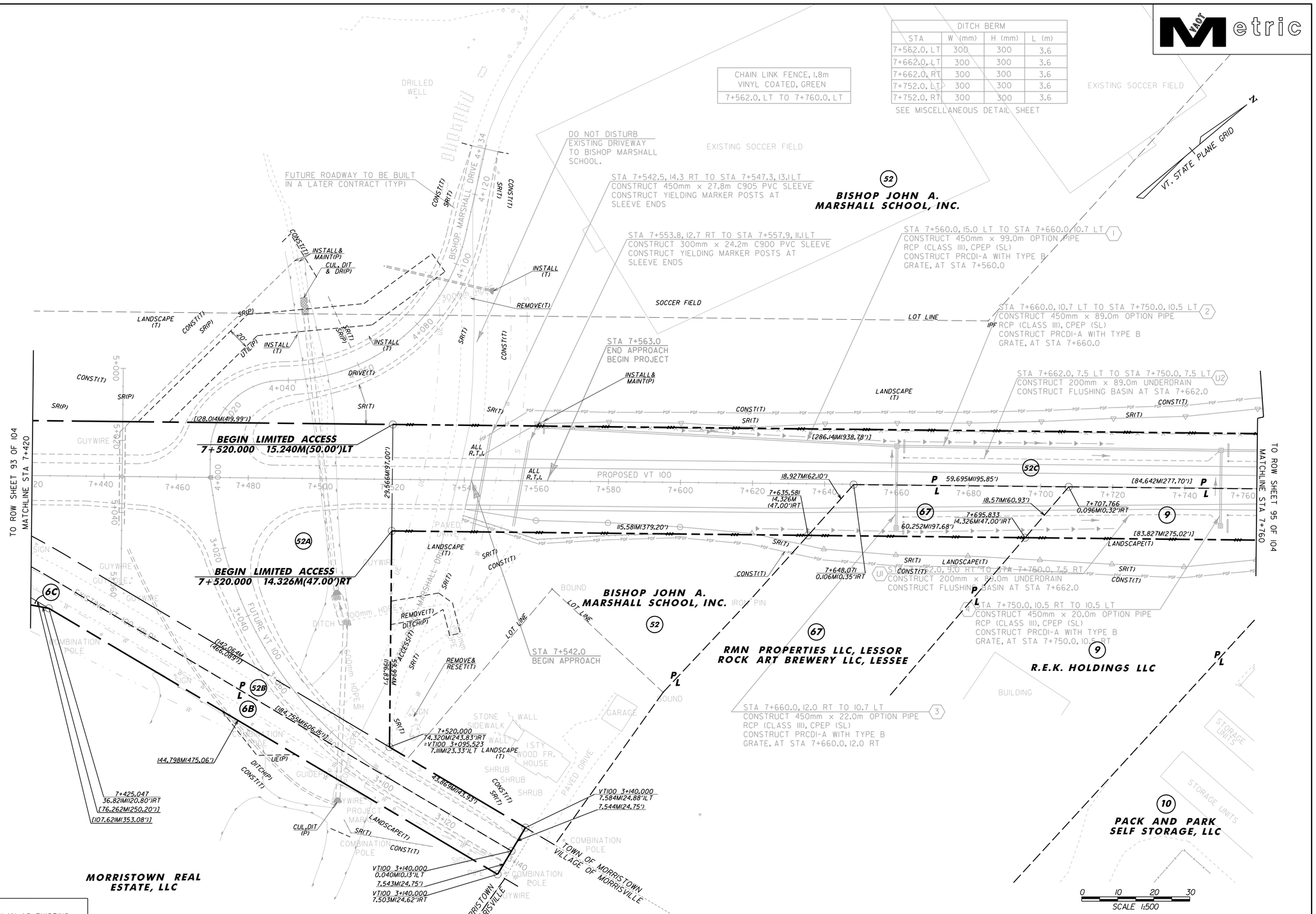
FILE NAME: z10b194105.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
LAYOUT SHEET - 3
PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 21 OF 123

VAOT Metric

DITCH BERM			
STA	W (mm)	H (mm)	L (m)
7+562.0, LT	300	300	3.6
7+662.0, LT	300	300	3.6
7+662.0, RT	300	300	3.6
7+752.0, LT	300	300	3.6
7+752.0, RT	300	300	3.6

SEE MISCELLANEOUS DETAIL SHEET

CHAIN LINK FENCE, 1.8m VINYL COATED, GREEN
7+562.0, LT TO 7+760.0, LT



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

FOR R.O.W. USE ONLY

NOTE: ACQUISITIONS SHOWN ON THIS SHEET PERTAIN TO BRIDGE CONSTRUCTION (CONTRACT 1) AND ASSOCIATED HIGHWAY CONSTRUCTION; SEE ACCOMPANYING SHEET FOR ADDITIONAL INFORMATION.

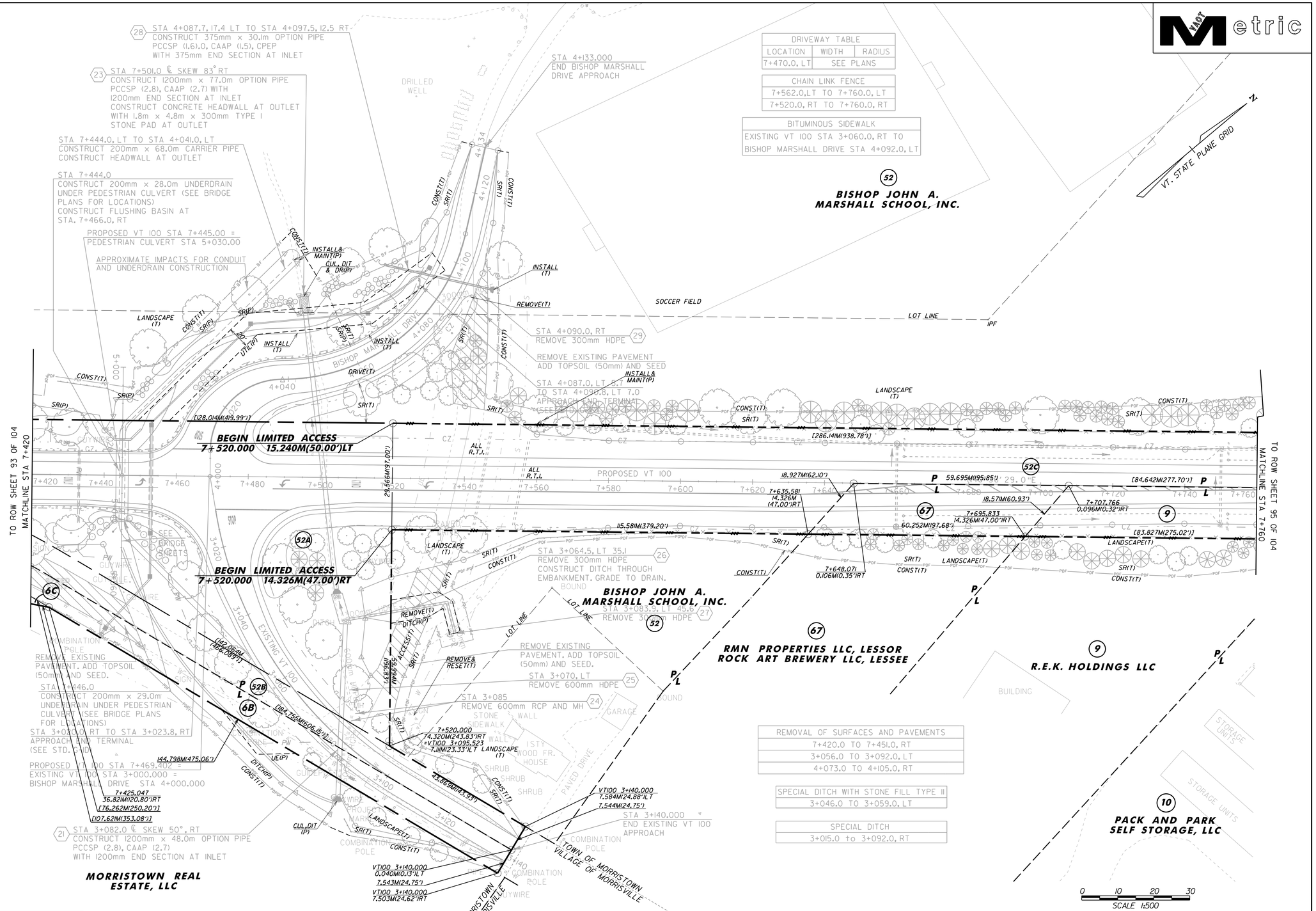
ROW LAYOUT PLAN #3

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: 78d082L03.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
ROW SHEET 94 OF 104

PLOT DATE: 12-MAR-2012
DRAWN BY: E. PIERCE
CHECKED BY: E. PIERCE
SHEET 22 OF 123

VAOT Metric



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

FOR R.O.W. USE ONLY

NOTE: ACQUISITIONS SHOWN ON THIS SHEET PERTAIN TO BRIDGE CONSTRUCTION (CONTRACT 1) AND ASSOCIATED HIGHWAY CONSTRUCTION; SEE ACCOMPANYING SHEET FOR ADDITIONAL INFORMATION.

ROW LAYOUT PLAN #3A

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: 78d082L03A.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
ROW SHEET 94A OF 104

PLOT DATE: 12-MAR-2012
DRAWN BY: E. PIERCE
CHECKED BY: E. PIERCE
SHEET 23 OF 123

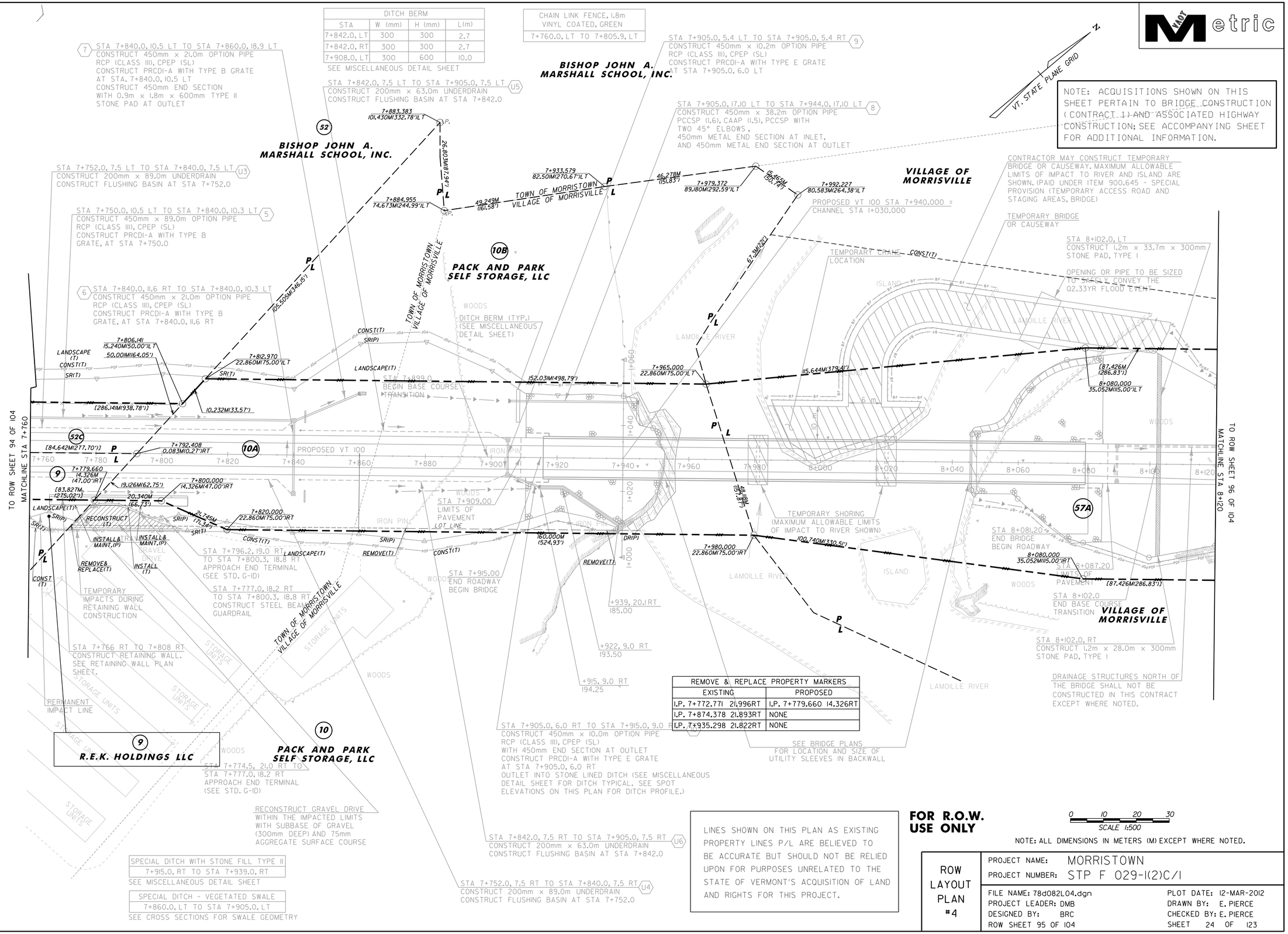
VAOT Metric

DITCH BERM			
STA	W (mm)	H (mm)	L(m)
7+842.0, LT	300	300	2.7
7+842.0, RT	300	300	2.7
7+908.0, LT	300	600	10.0

SEE MISCELLANEOUS DETAIL SHEET

CHAIN LINK FENCE, 1.8m VINYL COATED, GREEN
7+760.0, LT TO 7+805.9, LT

NOTE: ACQUISITIONS SHOWN ON THIS SHEET PERTAIN TO BRIDGE CONSTRUCTION (CONTRACT 1) AND ASSOCIATED HIGHWAY CONSTRUCTION; SEE ACCOMPANYING SHEET FOR ADDITIONAL INFORMATION.



REMOVE & REPLACE PROPERTY MARKERS	
EXISTING	PROPOSED
I.P. 7+772.771 21.996RT	I.P. 7+779.660 14.326RT
I.P. 7+874.378 21.893RT	NONE
I.P. 7+935.298 21.822RT	NONE

SPECIAL DITCH WITH STONE FILL TYPE II
7+915.0, RT TO STA 7+939.0, RT

SEE MISCELLANEOUS DETAIL SHEET

SPECIAL DITCH - VEGETATED SWALE
7+860.0, LT TO STA 7+905.0, LT

SEE CROSS SECTIONS FOR SWALE GEOMETRY

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

FOR R.O.W. USE ONLY

0 10 20 30
SCALE 1:500

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

ROW LAYOUT PLAN #4

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: 78d082L04.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
ROW SHEET 95 OF 104

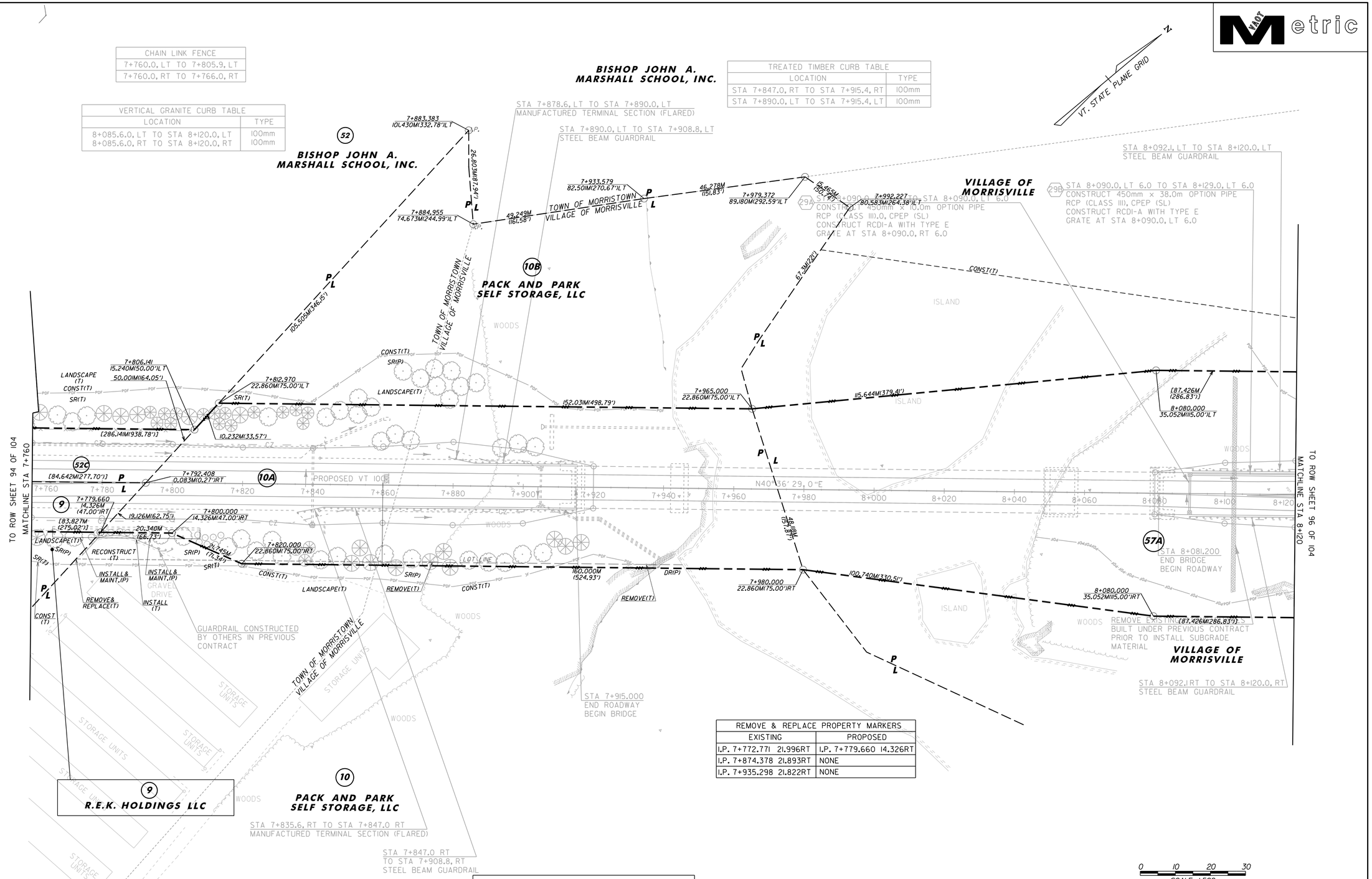
PLOT DATE: 12-MAR-2012
DRAWN BY: E. PIERCE
CHECKED BY: E. PIERCE
SHEET 24 OF 123

VAOT Metric

CHAIN LINK FENCE
7+760.0, LT TO 7+805.9, LT
7+760.0, RT TO 7+766.0, RT

VERTICAL GRANITE CURB TABLE	
LOCATION	TYPE
8+085.6.0, LT TO STA 8+120.0, LT	100mm
8+085.6.0, RT TO STA 8+120.0, RT	100mm

TREATED TIMBER CURB TABLE	
LOCATION	TYPE
STA 7+847.0, RT TO STA 7+915.4, RT	100mm
STA 7+890.0, LT TO STA 7+915.4, LT	100mm



REMOVE & REPLACE PROPERTY MARKERS	
EXISTING	PROPOSED
I.P. 7+772.771 21.996RT	I.P. 7+779.660 14.326RT
I.P. 7+874.378 21.893RT	NONE
I.P. 7+935.298 21.822RT	NONE

0 10 20 30
SCALE 1:500

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

NOTE: ACQUISITIONS SHOWN ON THIS SHEET PERTAIN TO BRIDGE CONSTRUCTION (CONTRACT 1) AND ASSOCIATED HIGHWAY CONSTRUCTION; SEE ACCOMPANYING SHEET FOR ADDITIONAL INFORMATION.

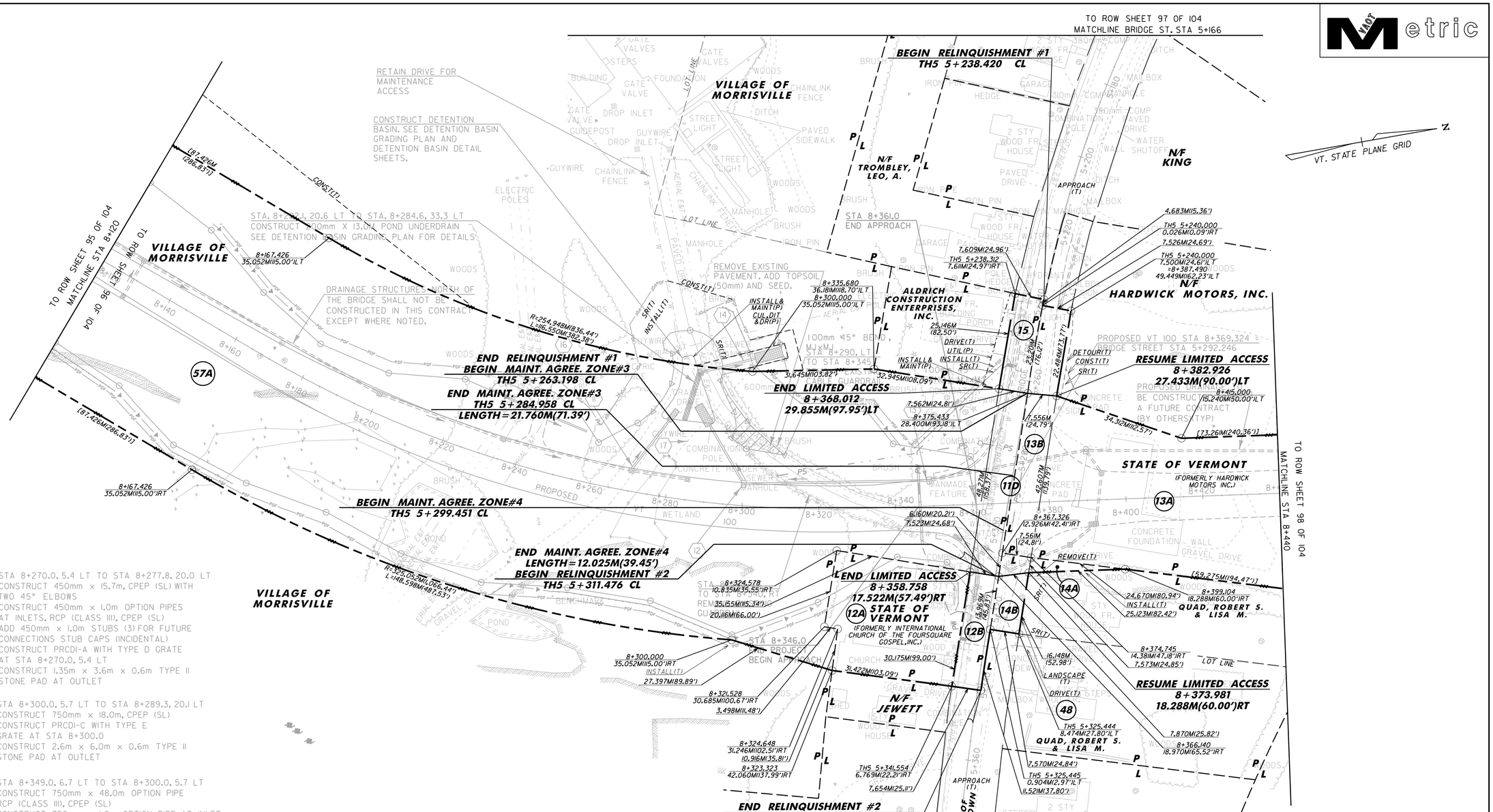
FOR R.O.W. USE ONLY

ROW LAYOUT PLAN #4A

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: 78d082L04A.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
ROW SHEET 95A OF 104

PLOT DATE: 12-MAR-2012
DRAWN BY: E. PIERCE
CHECKED BY: E. PIERCE
SHEET 25 OF 123



11 STA 8+270.0, 5.4 LT TO STA 8+277.8, 20.0 LT
CONSTRUCT 450mm x 15.7m, CPEP (SL) WITH TWO 45° ELBOWS
CONSTRUCT 450mm x 1.0m OPTION PIPES AT INLETS, RCP (CLASS III), CPEP (SL)
ADD 450mm x 1.0m STUBS (3) FOR FUTURE CONNECTIONS STUB CAPS (INCIDENTAL)
CONSTRUCT PRCDI-A WITH TYPE D GRATE AT STA 8+270.0, 5.4 LT
CONSTRUCT 1.35m x 3.6m x 0.6m TYPE II STONE PAD AT OUTLET

12 STA 8+300.0, 5.7 LT TO STA 8+289.3, 20.1 LT
CONSTRUCT 750mm x 18.0m, CPEP (SL)
CONSTRUCT PRCDI-C WITH TYPE E GRATE AT STA 8+300.0
CONSTRUCT 2.6m x 6.0m x 0.6m TYPE II STONE PAD AT OUTLET

13 STA 8+349.0, 6.7 LT TO STA 8+300.0, 5.7 LT
CONSTRUCT 750mm x 48.0m OPTION PIPE RCP (CLASS III), CPEP (SL)
CONSTRUCT 750mm x 1.0m OPTION PIPE AT INLET RCP (CLASS III), CPEP (SL)
750mm x 1.0m STUBS FOR FUTURE CONNECTION STUB CAP (INCIDENTAL)
CONSTRUCT PRCDI-C WITH TYPE E GRATE AT STA 8+349.0

14 STA 8+284.9, 34.0 LT TO STA 8+300.5, 39.0 LT
CONSTRUCT 900mm x 14.5m OPTION PIPE RCP (CLASS III), CPEP (SL)
CONSTRUCT PRCDI-B WITH 2X STEEL GRATES AT STA 8+284.9, 34.0 LT
CONSTRUCT 2.7m x 7.2m x 0.6m TYPE II STONE PAD AT OUTLET
(SEE DETENTION BASIN DETAIL SHEET)

16 STA 8+232.5, 16.0 LT
TO STA 8+256.0, 13.0 LT
CONSTRUCT 375mm x 23.0m OPTION PIPE PCCSP (1.6), CAAP (1.5), PCCSP WITH 375mm METAL END SECTION AT INLET

17 STA 8+290.0, LT
PLUG AND ABANDON EXISTING 600mm RCP WITH FLOWABLE FILL

621.80 REMOVAL AND DISPOSAL OF GUARDRAIL
8+290.0, LT TO 8+340.0, RT, 60.0m
8+290.0, LT TO 8+345.0, LT, 66.5m

EXCAVATION OF SURFACES AND PAVEMENTS
8+260.0, LT TO 8+285.0, LT

DRIVEWAY TABLE		
LOCATION	WIDTH	RADIUS
8+243.0, LT	3.6	3.6

NOTE:
DRIVEWAY TO BE CONSTRUCTED TO BOTTOM OF SUBGRADE IN THIS CONTRACT

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

0 10 20 30
SCALE 1:500

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

NOTE: ACQUISITIONS SHOWN ON THIS SHEET PERTAIN TO BRIDGE CONSTRUCTION (CONTRACT 1) AND ASSOCIATED HIGHWAY CONSTRUCTION; SEE ACCOMPANYING SHEET FOR ADDITIONAL INFORMATION.

FOR R.O.W. USE ONLY

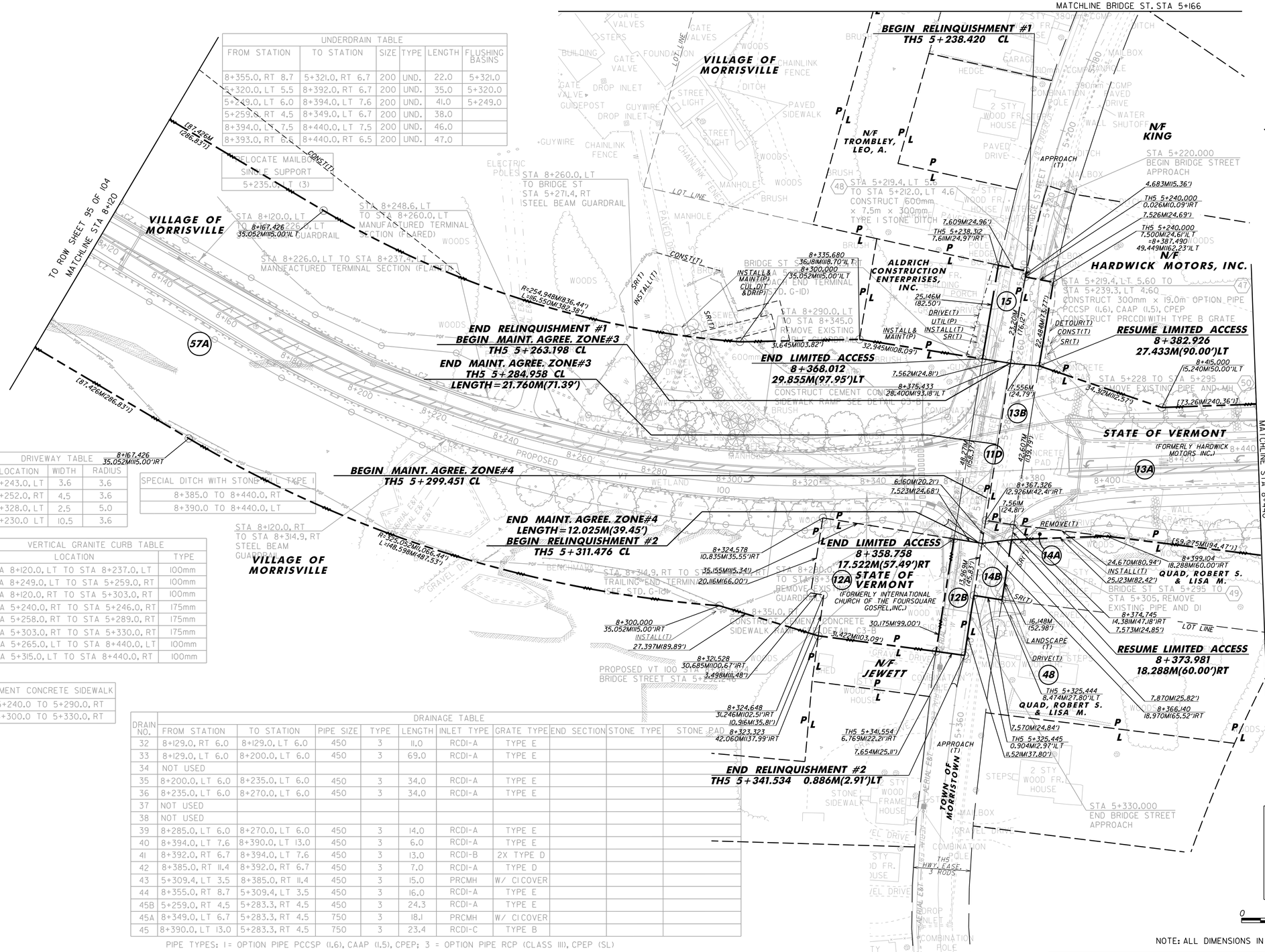
ROW LAYOUT PLAN #5

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2) C/1

FILE NAME: 78d082L05.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
ROW SHEET 96 OF 104

PLOT DATE: 28-MAR-2012
DRAWN BY: E. PIERCE
CHECKED BY: E. PIERCE
SHEET 26 OF 123

VAOT Metric



UNDERDRAIN TABLE						
FROM STATION	TO STATION	SIZE	TYPE	LENGTH	FLUSHING BASINS
8+355.0, RT 8.7	5+321.0, RT 6.7	200	UND.	22.0	5+321.0
5+320.0, LT 5.5	8+392.0, RT 6.7	200	UND.	35.0	5+320.0
5+249.0, LT 6.0	8+394.0, LT 7.6	200	UND.	41.0	5+249.0
5+259.0, RT 4.5	8+349.0, LT 6.7	200	UND.	38.0	
8+394.0, LT 7.5	8+440.0, LT 7.5	200	UND.	46.0	
8+393.0, RT 6.5	8+440.0, RT 6.5	200	UND.	47.0	

RELOCATE MAILBOX
SINGLE SUPPORT
5+235.0, LT (3)

DRIVEWAY TABLE		
LOCATION	WIDTH	RADIUS
8+243.0, LT	3.6	3.6
5+252.0, RT	4.5	3.6
5+328.0, LT	2.5	5.0
5+230.0 LT	10.5	3.6

SPECIAL DITCH WITH STONE WALL TYPE I
8+385.0 TO 8+440.0, RT
8+390.0 TO 8+440.0, LT

VERTICAL GRANITE CURB TABLE	
LOCATION	TYPE
STA 8+120.0, LT TO STA 8+237.0, LT	100mm
STA 8+249.0, LT TO STA 5+259.0, RT	100mm
STA 8+120.0, RT TO STA 5+303.0, RT	100mm
STA 5+240.0, RT TO STA 5+246.0, RT	175mm
STA 5+258.0, RT TO STA 5+289.0, RT	175mm
STA 5+303.0, RT TO STA 5+330.0, RT	175mm
STA 5+265.0, LT TO STA 8+440.0, LT	100mm
STA 5+315.0, LT TO STA 8+440.0, RT	100mm

CEMENT CONCRETE SIDEWALK
5+240.0 TO 5+290.0, RT
5+300.0 TO 5+330.0, RT

DRAINAGE TABLE										
DRAIN NO.	FROM STATION	TO STATION	PIPE SIZE	TYPE	LENGTH	INLET TYPE	GRATE TYPE	END SECTION	STONE TYPE	STONE PAD
32	8+129.0, RT 6.0	8+129.0, LT 6.0	450	3	11.0	RCDI-A	TYPE E			
33	8+129.0, LT 6.0	8+200.0, LT 6.0	450	3	69.0	RCDI-A	TYPE E			
34	NOT USED									
35	8+200.0, LT 6.0	8+235.0, LT 6.0	450	3	34.0	RCDI-A	TYPE E			
36	8+235.0, LT 6.0	8+270.0, LT 6.0	450	3	34.0	RCDI-A	TYPE E			
37	NOT USED									
38	NOT USED									
39	8+285.0, LT 6.0	8+270.0, LT 6.0	450	3	14.0	RCDI-A	TYPE E			
40	8+394.0, LT 7.6	8+390.0, LT 13.0	450	3	6.0	RCDI-A	TYPE E			
41	8+392.0, RT 6.7	8+394.0, LT 7.6	450	3	13.0	RCDI-B	2X TYPE D			
42	8+385.0, RT 11.4	8+392.0, RT 6.7	450	3	7.0	RCDI-A	TYPE D			
43	5+309.4, LT 3.5	8+385.0, RT 11.4	450	3	15.0	PRCMH	W/ CICOVER			
44	8+355.0, RT 8.7	5+309.4, LT 3.5	450	3	16.0	RCDI-A	TYPE E			
45B	5+259.0, RT 4.5	5+283.3, RT 4.5	450	3	24.3	RCDI-A	TYPE E			
45A	8+349.0, LT 6.7	5+283.3, RT 4.5	750	3	18.1	PRCMH	W/ CICOVER			
45	8+390.0, LT 13.0	5+283.3, RT 4.5	750	3	23.4	RCDI-C	TYPE B			

PIPE TYPES: 1= OPTION PIPE PCCSP (1.6), CAAP (1.5), CPEP; 3 = OPTION PIPE RCP (CLASS III), CPEP (SL)

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

0 10 20 30
SCALE 1:500

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

NOTE: ACQUISITIONS SHOWN ON THIS SHEET PERTAIN TO BRIDGE CONSTRUCTION (CONTRACT 1) AND ASSOCIATED HIGHWAY CONSTRUCTION; SEE ACCOMPANYING SHEET FOR ADDITIONAL INFORMATION.

FOR R.O.W. USE ONLY

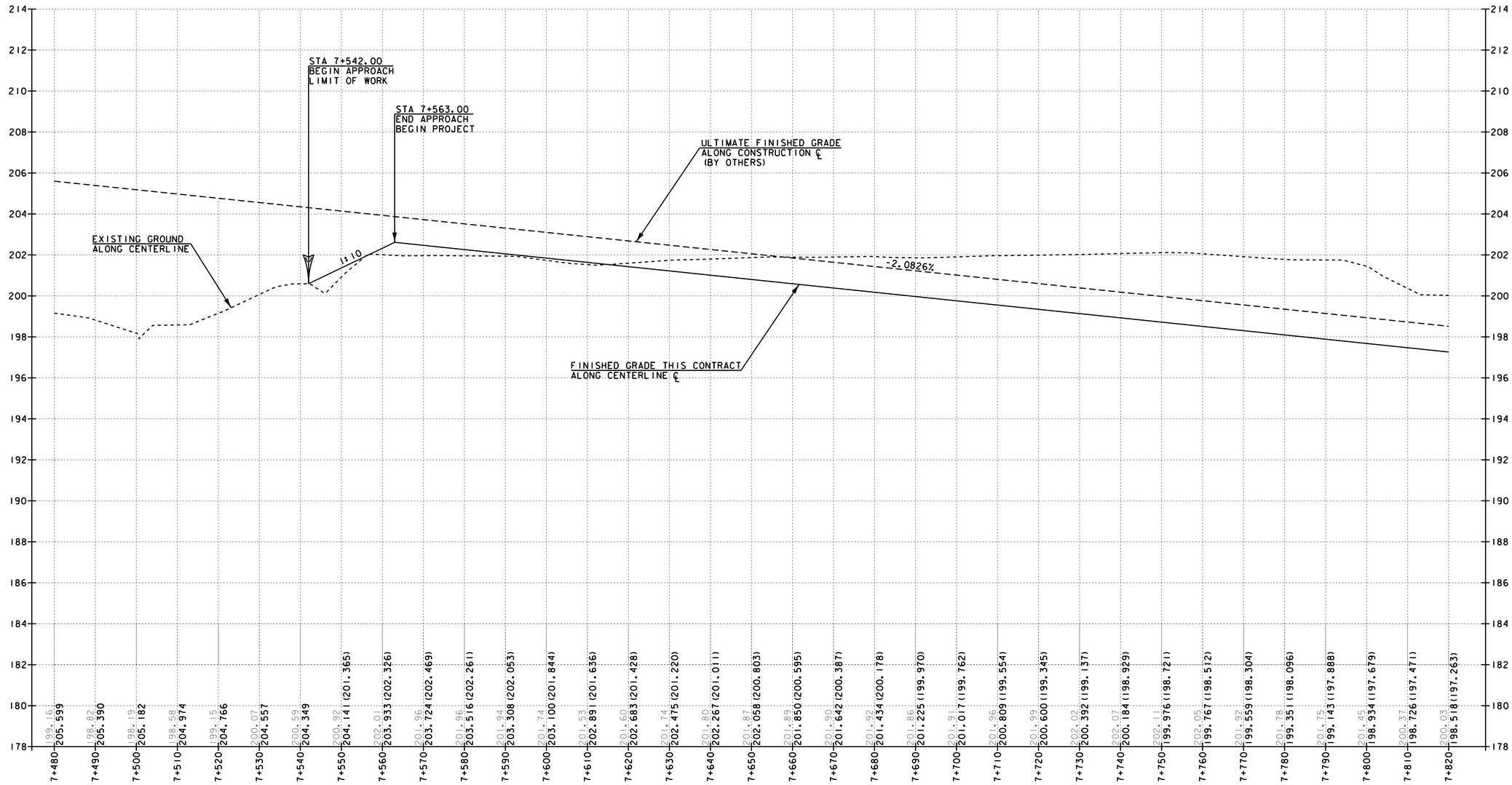
ROW LAYOUT PLAN #5A

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

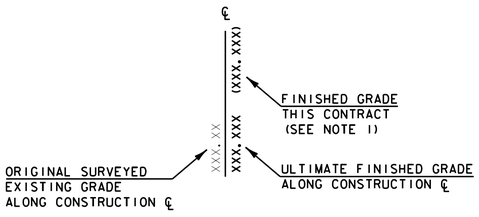
FILE NAME: 78d082L05A.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
ROW SHEET 96A OF 104

PLOT DATE: 28-MAR-2012
DRAWN BY: E. PIERCE
CHECKED BY: E. PIERCE
SHEET 27 OF 123

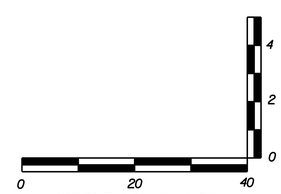
Metric



LEGEND



PROPOSED VT 100



HORIZONTAL SCALE - 1:500
VERTICAL SCALE - 1:100

NOTE:

1. NO SELECT MATERIALS OR PAVEMENT WILL BE PLACED FOR THIS CONTRACT. SEE DETAILS AND CROSS SECTIONS FOR LIMITS OF CONSTRUCTION.
2. GRADES SHOWN ARE FOR FINAL GRADE AT THE END OF THE CONTRACT. INTERIM GRADING REQUIRED FOR DELIVERY OF STEEL OR OTHER PURPOSES ARE AT THE DISCRETION OF THE CONTRACTOR WITH APPROVAL BY THE ENGINEER.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194prosht08.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
PROFILE SHEET - 1	SHEET 28 OF 123

Metric

SEE BASE COURSE TRANSITION DETAIL ON SHEET 6 FOR SELECT MATERIAL TRANSITIONS

EXISTING GROUND ALONG CENTERLINE

ULTIMATE FINISHED GRADE ALONG CONSTRUCTION ℄ (BY OTHERS)

PROPOSED VT 100 STA 7+940.000 = CHANNEL STA 1+030.000

STA 7+915.000
BEGIN BRIDGE
F.G. ELEV. 196.540

-2.0826%

SEE BASE COURSE TRANSITION DETAIL ON SHEET 6 FOR SELECT MATERIAL TRANSITIONS

STA 8+081.200
END BRIDGE
F.G. ELEV. 193.091

ULTIMATE FINISHED GRADE ALONG CONSTRUCTION ℄ (BY OTHERS)

FINISHED GRADE THIS CONTRACT ALONG CENTERLINE ℄

SEE SHEETS 6 & 7 FOR EARTHWORK GRADING AND DETAILS NEAR ABUTMENT AND PIER (TYP.)

APPROXIMATE EXISTING LEDGE (TYP.)

Station	Offset	Elevation
7+820	200.03	198.518 (197.263)
7+830	199.87	198.310 (197.055)
7+840	199.82	198.101 (196.846)
7+850	200.04	197.893 (196.638)
7+860	200.55	197.685 (196.430)
7+870	201.86	197.477 (196.222)
7+880	201.80	197.268 (196.013)
7+890	202.07	197.060 (195.805)
7+900	201.61	196.852 (195.914)
7+910	197.23	196.644
7+920	192.35	196.435
7+930	189.03	196.227
7+940	185.29	196.019
7+950	183.08	195.811
7+960	73.41	195.602
7+970	74.81	195.394
7+980	75.38	195.186
7+990	75.96	194.977
8+000	76.65	194.769
8+010	75.92	194.561
8+020	76.06	194.353
8+030	74.91	194.144
8+040	74.68	193.936
8+050	76.08	193.728
8+060	78.51	193.520
8+070	80.82	193.311
8+080	80.85	193.103
8+090	181.42	192.895 (192.792)
8+100	181.72	192.687 (191.790)
8+110	182.58	192.478 (191.223)
8+120	183.47	192.270 (191.015)
8+130	184.26	192.062 (190.807)
8+140	184.76	191.854 (190.599)
8+150	185.18	191.645 (190.390)
8+160	186.45	191.437 (190.182)

LEGEND

℄

XXX.XXX (XXX.XXX)

FINISHED GRADE THIS CONTRACT (SEE NOTE 1)

XXX.XX

XXX.XXX

ORIGINAL SURVEYED EXISTING GRADE ALONG CONSTRUCTION ℄

ULTIMATE FINISHED GRADE ALONG CONSTRUCTION ℄

PROPOSED VT 100

0 20 40
0 2 4
HORIZONTAL SCALE • 1:500
VERTICAL SCALE • 1:100

NOTE:

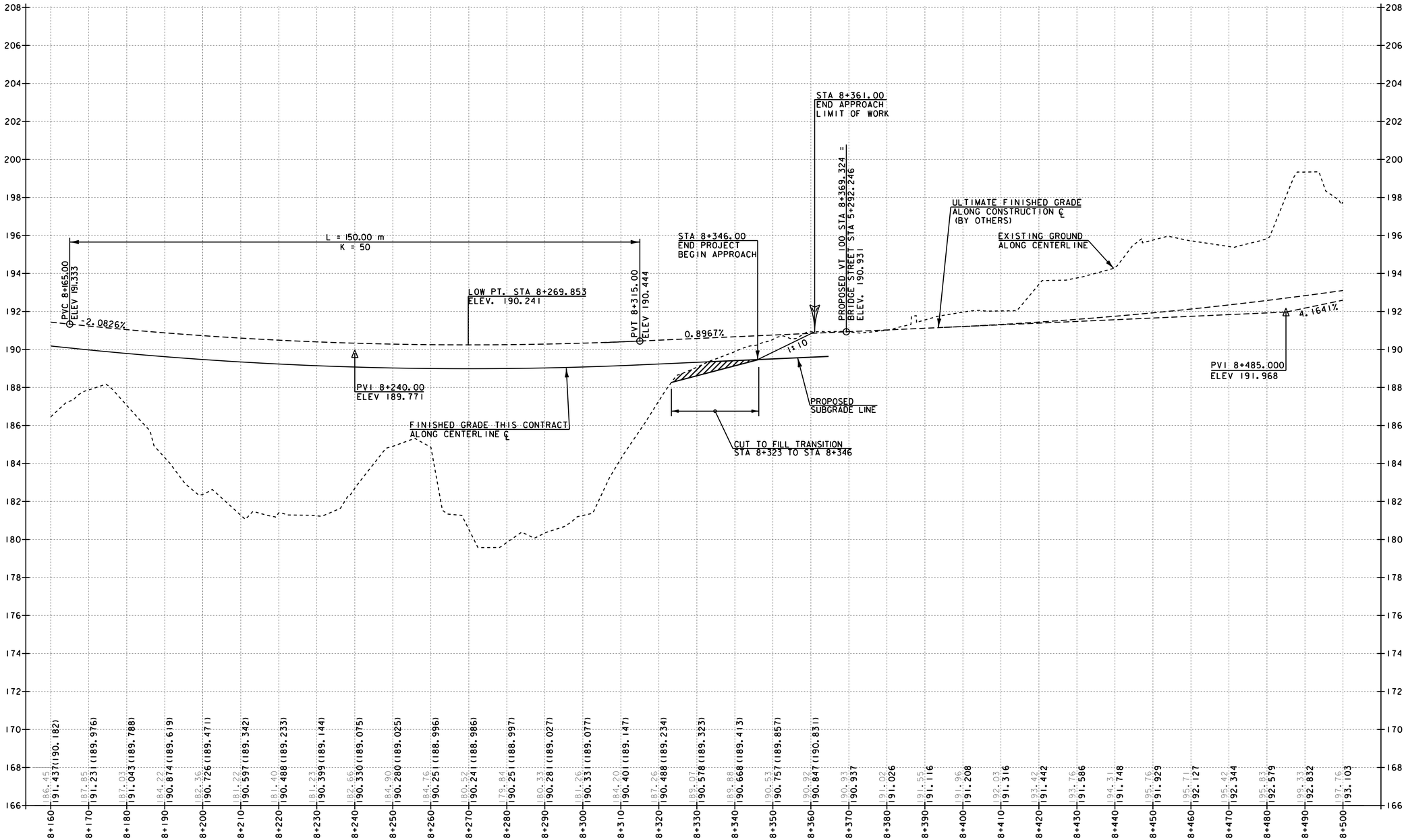
1. NO SELECT MATERIALS OR PAVEMENT WILL BE PLACED FOR THIS CONTRACT OUTSIDE THE LIMITS OF THE BRIDGE AS NOTED. SEE DETAILS AND CROSS SECTIONS FOR LIMITS OF CONSTRUCTION.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

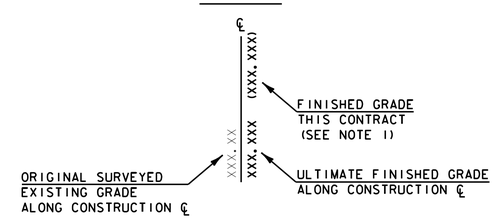
FILE NAME: z10b194prosht09.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
PROFILE SHEET - 2

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 29 OF 123



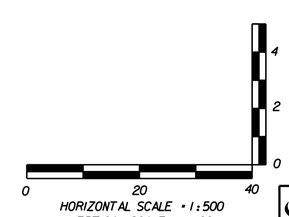
PROPOSED VT 100

LEGEND



NOTE:

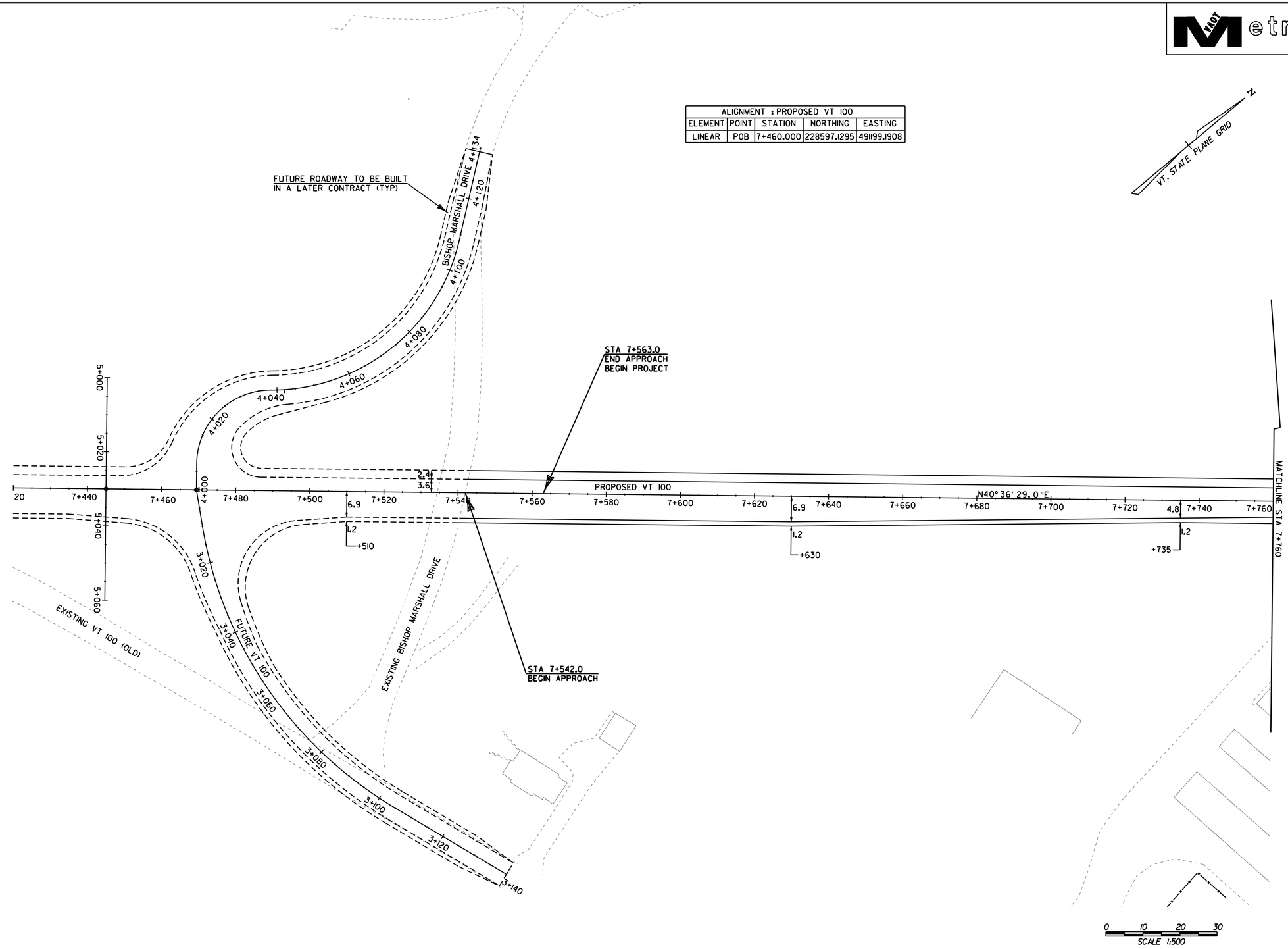
1. NO SELECT MATERIALS OR PAVEMENT WILL BE PLACED FOR THIS CONTRACT OUTSIDE THE LIMITS OF THE BRIDGE AS NOTED. SEE DETAILS AND CROSS SECTIONS FOR LIMITS OF CONSTRUCTION.
2. GRADES SHOWN ARE FOR FINAL GRADE AT THE END OF THE CONTRACT. INTERIM GRADING REQUIRED FOR DELIVERY OF STEEL OR OTHER PURPOSES ARE AT THE DISCRETION OF THE CONTRACTOR WITH APPROVAL BY THE ENGINEER.



McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194proshtl0.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
PROFILE SHEET - 3	SHEET 30 OF 123

ALIGNMENT : PROPOSED VT 100				
ELEMENT	POINT	STATION	NORTHING	EASTING
LINEAR	POB	7+460.000	228597.1295	491199.1908



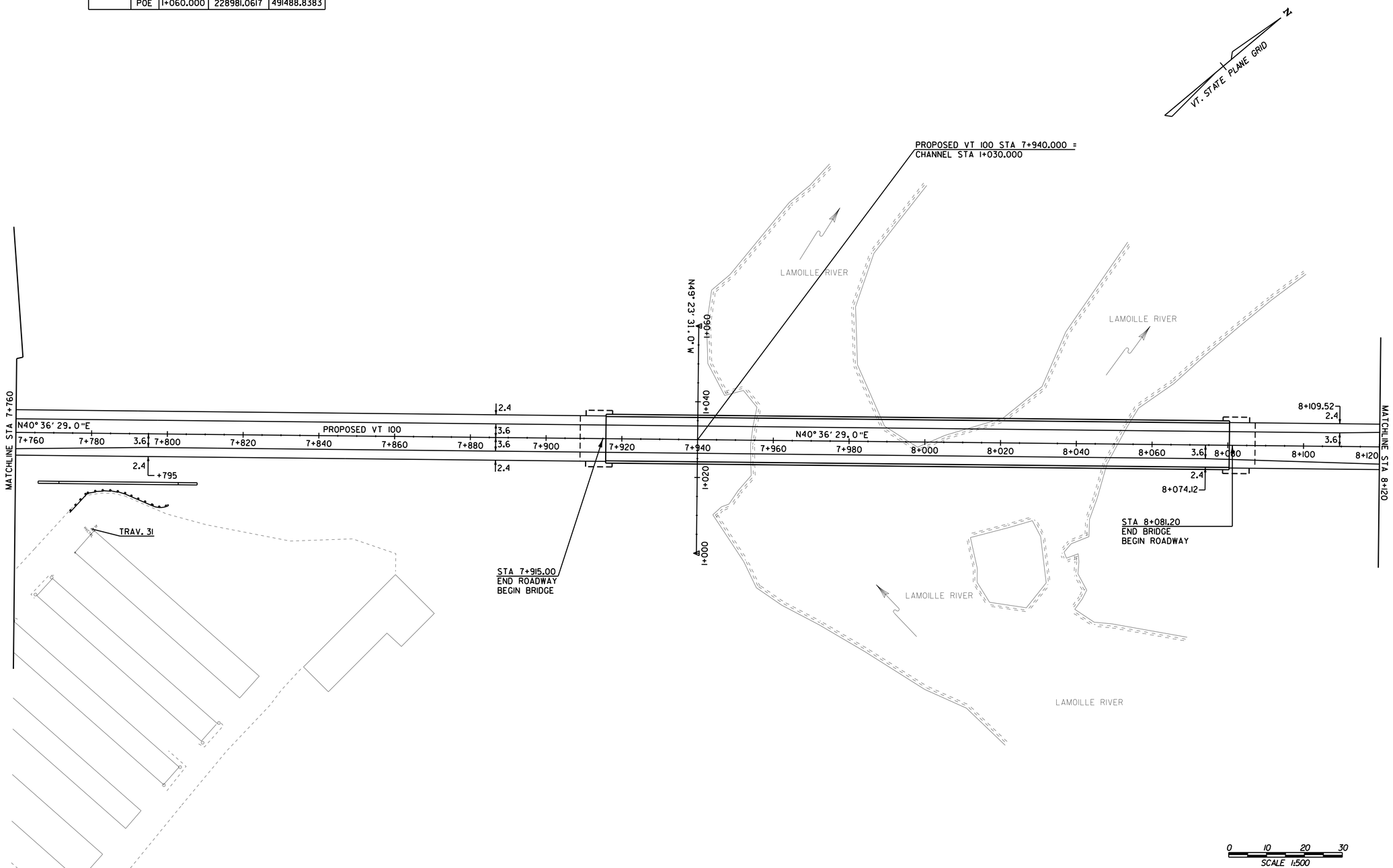
NOTES:

1. THE EXISTING DRIVEWAY TO BISHOP MARSHALL SCHOOL SHALL REMAIN ACCESSIBLE DURING CONSTRUCTION.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194pa03.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ALIGNMENT SHEET - 1	SHEET 31 OF 123

ALIGNMENT : CHANNEL				
ELEMENT	POINT	STATION	NORTHING	EASTING
LINEAR	POB	1+000.000	228942.0089	491534.3891
	POE	1+060.000	228981.0617	491488.8383

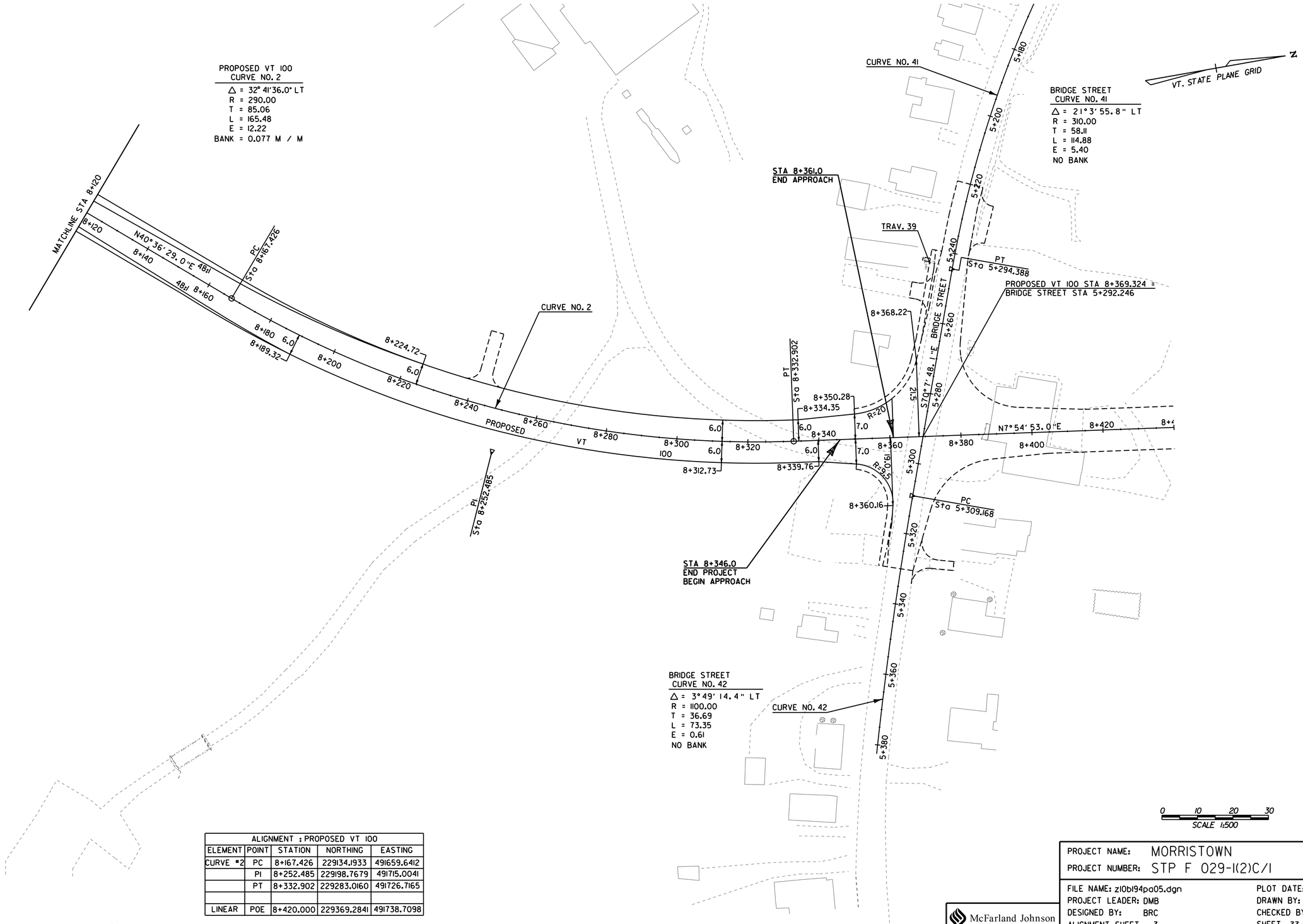


PROJECT NAME:	MORRISTOWN
PROJECT NUMBER:	STP F 029-1(2)C/1

FILE NAME: z10b194pa04.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ALIGNMENT SHEET - 2	SHEET 32 OF 123

McFarland Johnson

VAOT Metric



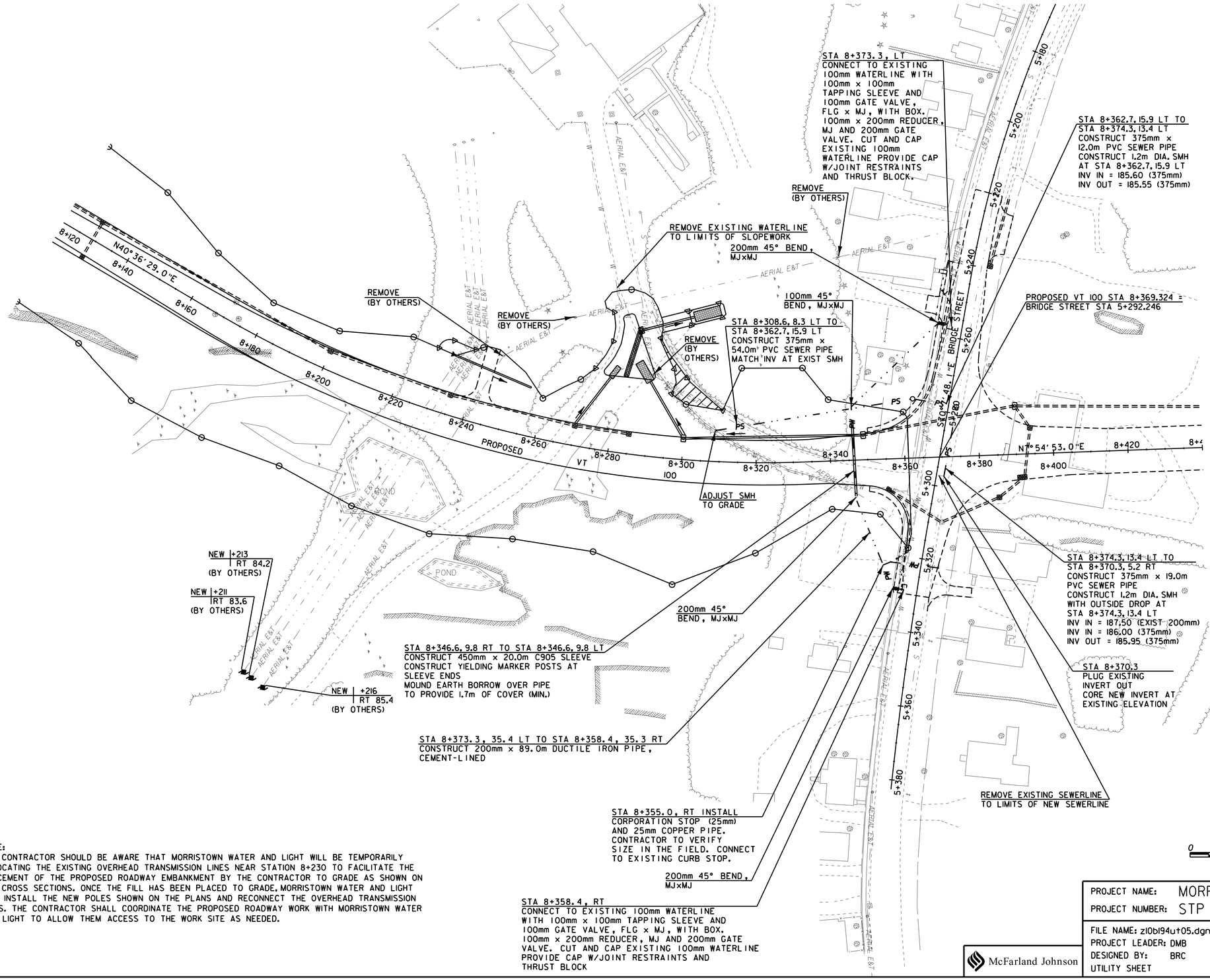
ALIGNMENT : PROPOSED VT 100				
ELEMENT	POINT	STATION	NORTHING	EASTING
CURVE #2	PC	8+167.426	229134.1933	491659.6412
	PI	8+252.485	229198.7679	491715.0041
	PT	8+332.902	229283.0160	491726.7165
LINEAR	POE	8+420.000	229369.2841	491738.7098

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194pa05.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
ALIGNMENT SHEET - 3

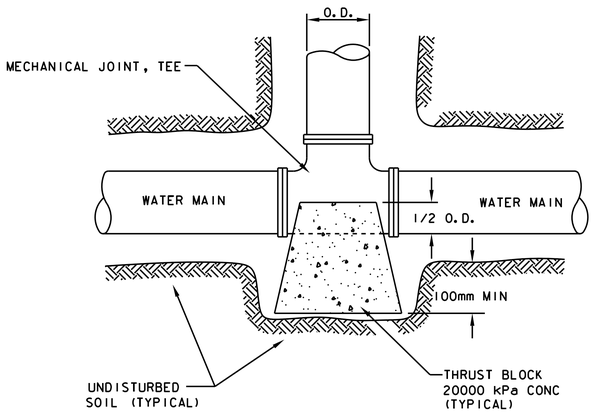
PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 33 OF 123



NOTE:
THE CONTRACTOR SHOULD BE AWARE THAT MORRISTOWN WATER AND LIGHT WILL BE TEMPORARILY RELOCATING THE EXISTING OVERHEAD TRANSMISSION LINES NEAR STATION 8+230 TO FACILITATE THE PLACEMENT OF THE PROPOSED ROADWAY EMBANKMENT BY THE CONTRACTOR TO GRADE AS SHOWN ON THE CROSS SECTIONS. ONCE THE FILL HAS BEEN PLACED TO GRADE, MORRISTOWN WATER AND LIGHT WILL INSTALL THE NEW POLES SHOWN ON THE PLANS AND RECONNECT THE OVERHEAD TRANSMISSION LINES. THE CONTRACTOR SHALL COORDINATE THE PROPOSED ROADWAY WORK WITH MORRISTOWN WATER AND LIGHT TO ALLOW THEM ACCESS TO THE WORK SITE AS NEEDED.

McFarland Johnson

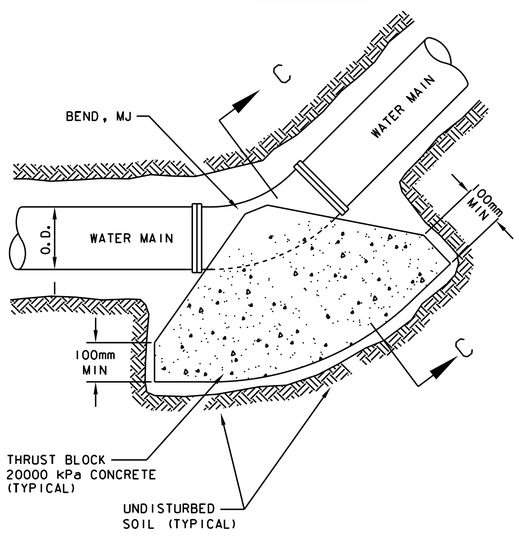
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194ut05.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
UTILITY SHEET	SHEET 34 OF 123



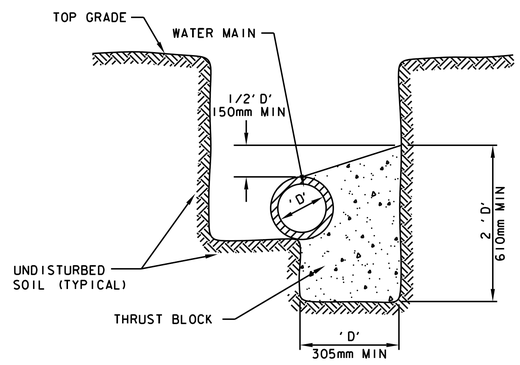
WATER MAIN TEE

BEARING AREA OF BLOCK IN SQ. m.					
FITTING SIZES	TEE & END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
150	0.21	0.31	0.17	0.08	0.05
200	0.37	0.53	0.29	0.14	0.07
250	0.56	0.80	0.42	0.22	0.11
300	0.80	1.12	0.60	0.31	0.16
350	0.80	1.12	0.60	0.31	0.16
400	1.01	1.43	0.77	0.40	0.20
450	1.29	1.67	0.90	0.46	0.23

* RESTRAINED JOINT FITTINGS MAY BE USED IN LIEU OF THRUST BLOCKS



HORIZONTAL BEND

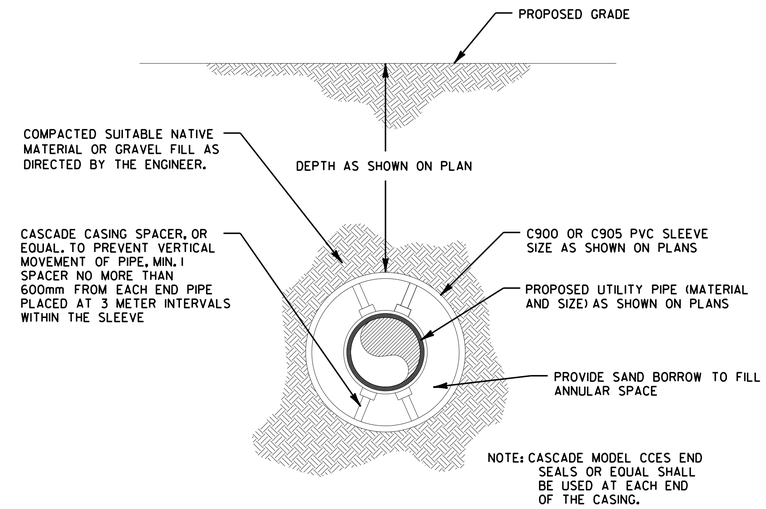


SECTION 'C-C'

THRUST BLOCK DETAILS

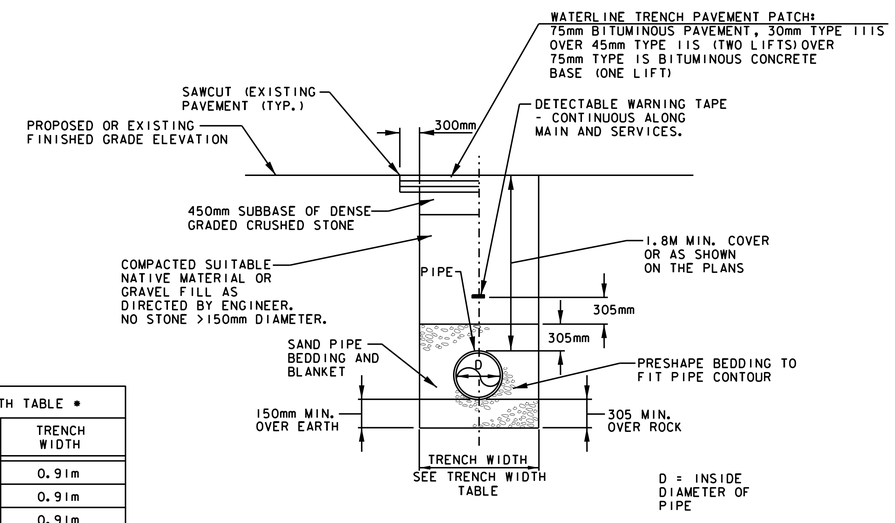
NOT TO SCALE

- TYPICAL FOR WATER MAIN, FIRE PROTECTION MAIN, AND SANITARY FORCE MAIN PIPING



UTILITY SLEEVE DETAIL

NOT TO SCALE



WATER LINE TRENCH DETAIL

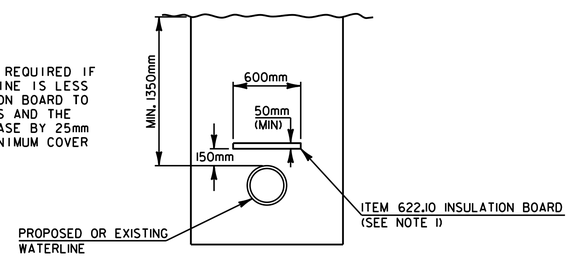
NOT TO SCALE

TRENCH WIDTH TABLE *	
PIPE DIAMETER (mm)	TRENCH WIDTH
<100	0.91m
100 - 150	0.91m
203	0.91m
254	0.91m
305	0.91m
375	1.2m
406	1.2m
457	1.2m
533	1.2m
610	1.4m

* USE WIDTHS PROVIDED IN STANDARD SPECIFCAIONS WHEN ROCK, LEDGE, HARDPAN, OR OTHER UNYEILDING MATERIAL IS ENCOUNTERED, AS DIRECTED BY ENGINEER.

NOTE:

1. INSULATION BOARD ONLY REQUIRED IF COVER OVER THE WATERLINE IS LESS THAN 1800mm. INSULATION BOARD TO BE 50mm MIN. THICKNESS AND THE THICKNESS SHALL INCREASE BY 25mm FOR EVERY 300mm OF MINIMUM COVER NOT PROVIDED.

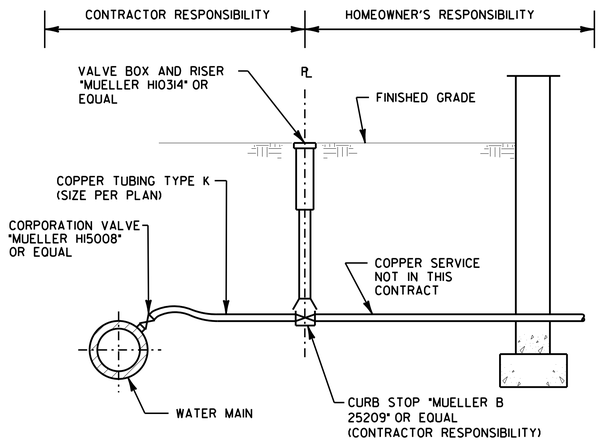


WATERLINE INSULATION DETAIL

NOT TO SCALE

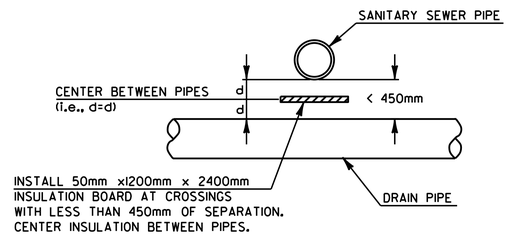
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194utildet1.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
UTILITY DETAIL SHEET - 1	SHEET 35 OF 123



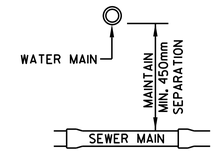
SERVICE INSTALLATION

NOT TO SCALE



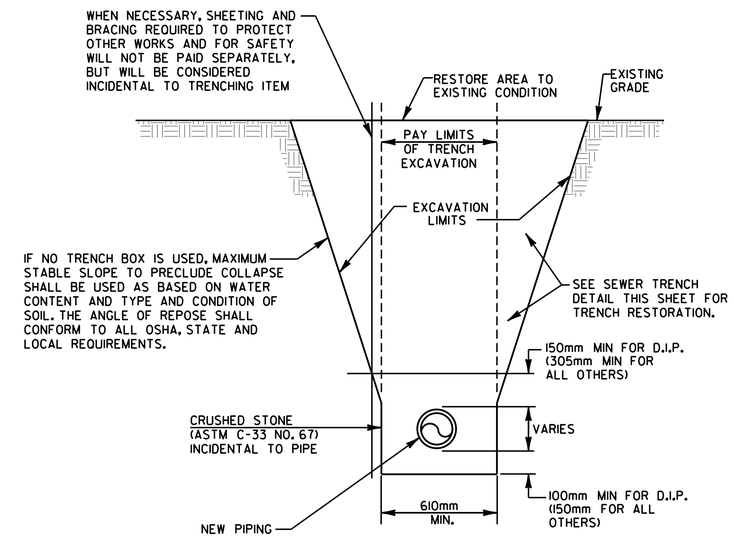
DRAIN / SANITARY SEWER CROSSING

NOT TO SCALE



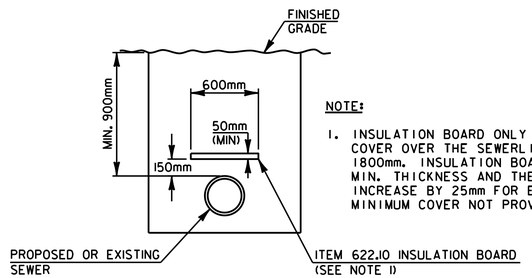
WATER/SANITARY CROSSING

NOT TO SCALE



SEWER PIPE TRENCH

NOT TO SCALE

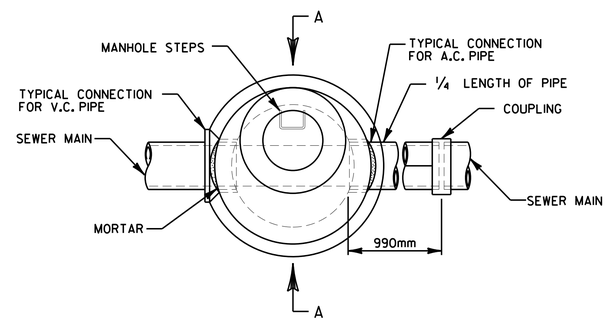


NOTE:

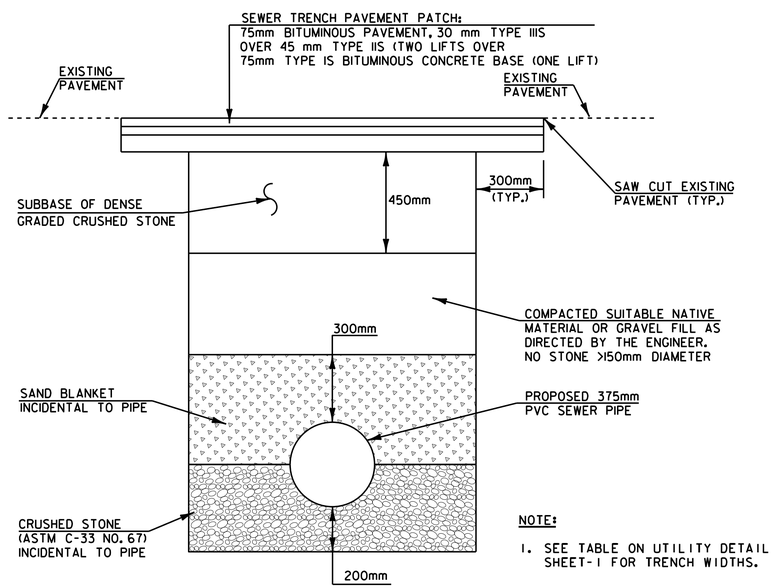
1. INSULATION BOARD ONLY REQUIRED IF COVER OVER THE SEWERLINE IS LESS THAN 1800mm. INSULATION BOARD TO BE 50mm MIN. THICKNESS AND THE THICKNESS SHALL INCREASE BY 25mm FOR EVERY 300mm OF MINIMUM COVER NOT PROVIDED.

SANITARY SEWER LINE INSULATION DETAIL

NOT TO SCALE



PLAN

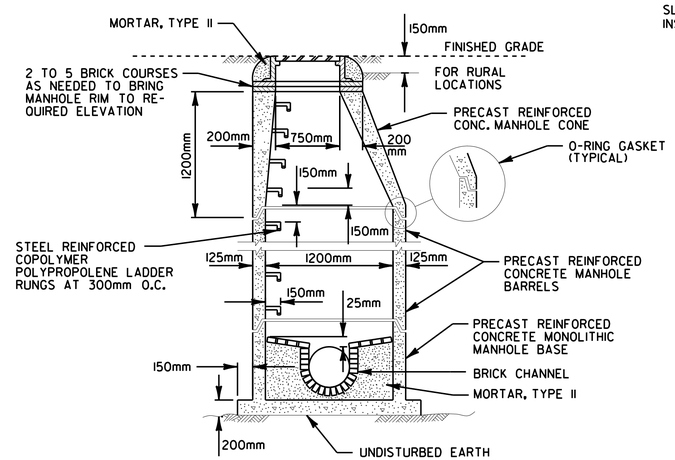


NOTE:

1. SEE TABLE ON UTILITY DETAIL SHEET-1 FOR TRENCH WIDTHS.

SEWER TRENCH DETAIL

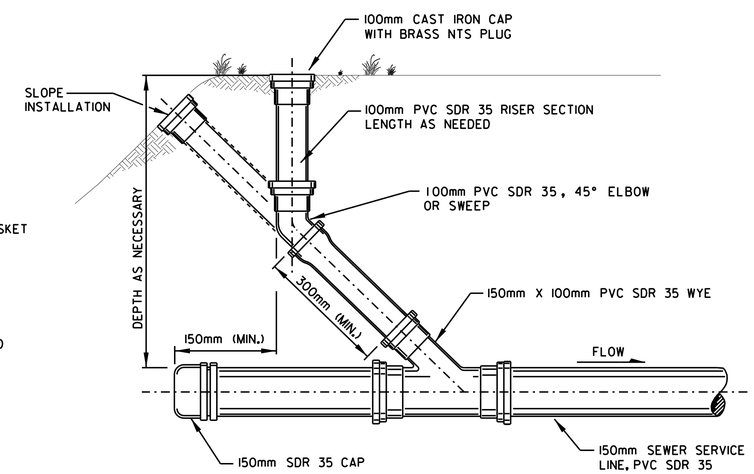
NOT TO SCALE



SECTION A-A

PRECAST REINFORCED CONCRETE SANITARY SEWER MANHOLE

NOT TO SCALE

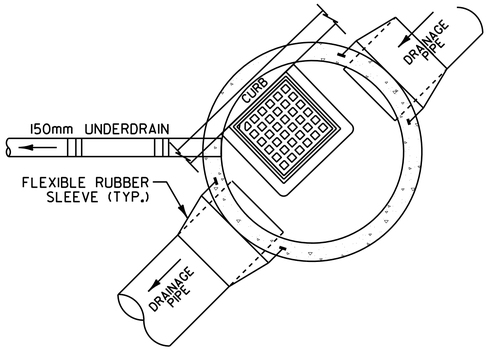


PVC SEWER SERVICE CLEANOUT

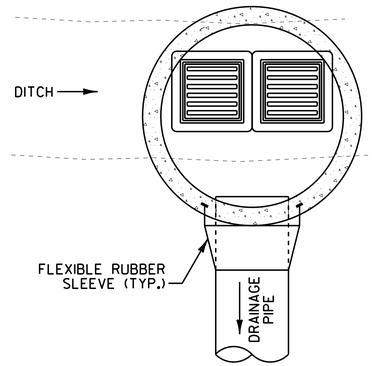
NOT TO SCALE

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10bl94utildet2.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
UTILITY DETAIL SHEET - 2	SHEET 36 OF 123

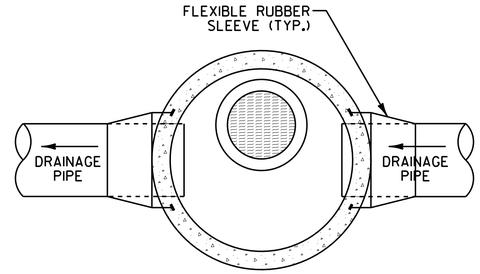
McFarland Johnson



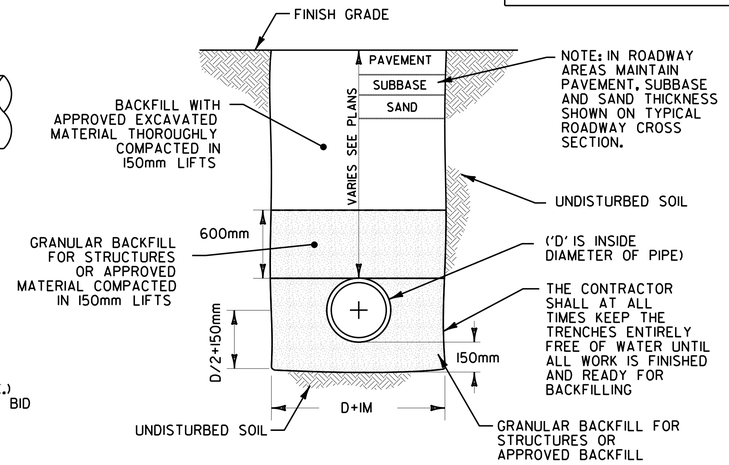
CATCH BASIN (PLAN) WITH UNDERDRAIN
NOT TO SCALE



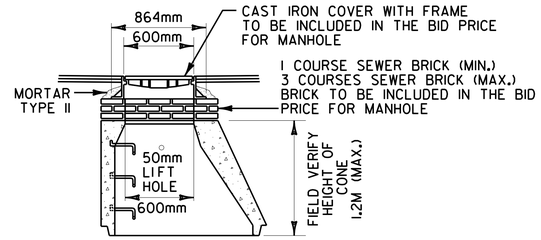
DOUBLE GRATE CATCH BASIN (PLAN)
NOT TO SCALE



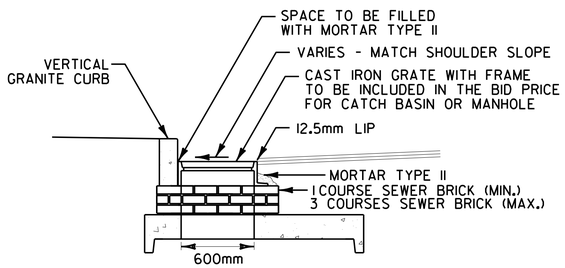
MANHOLE (PLAN)
NOT TO SCALE



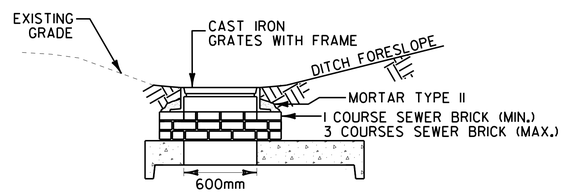
TYPICAL STORM DRAIN AND PIPE SLEEVE TRENCH
NOT TO SCALE



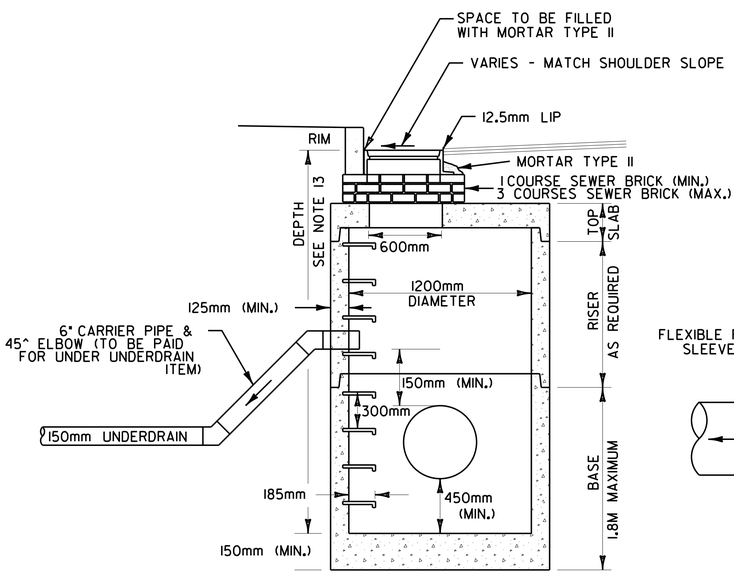
MANHOLE CONE SECTION
NOT TO SCALE



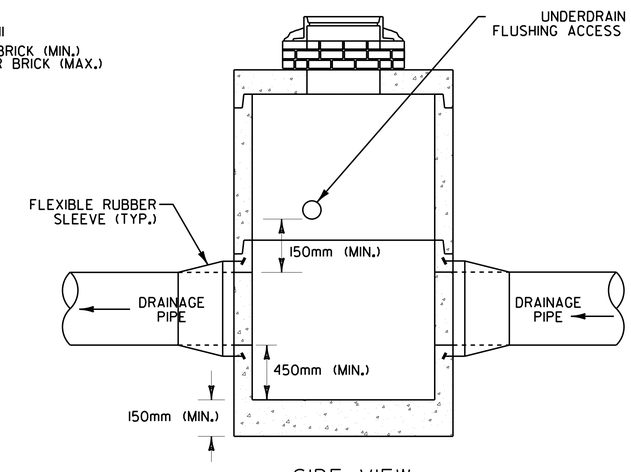
TYPICAL GRATE INSTALLATION WITH VERTICAL GRANITE CURB (ELEVATION)
NOT TO SCALE



TYPICAL GRATE INSTALLATION IN DITCH (ELEVATION)
NOT TO SCALE



ELEVATION VIEW



SIDE VIEW

TYPICAL PRECAST CATCH BASIN OR MANHOLE WITH UNDERDRAIN FLUSHING ACCESS
NOT TO SCALE

GENERAL NOTES: PRECAST REINFORCED CONCRETE CATCH BASINS

1. PRECAST CONCRETE SECTIONS SHALL CONFORM TO SUBSECTION 705.04 OF THE STANDARD SPECIFICATIONS.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH: 5,000 PSI AT 28-DAYS.
3. STEEL REINFORCING SHALL CONFORM TO ASTM A185 OR A82 FOR HS-25 LOADING.
4. MANHOLE STEPS SHALL BE 360mm WIDE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC AND SHALL BE CAST INTO MANHOLE SECTIONS BY THE PRECAST CONCRETE MANUFACTURER. MANHOLE STEPS IN THE RISER SHALL ALIGN WITH THE MANHOLE STEPS IN BASE OF THE STRUCTURE.
5. FACE OF PIPE SHALL NOT PROJECT MORE THAN 50mm OR LESS THAN 25mm FROM INSIDE WALL OF STRUCTURE.
6. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 300mm OF OUTSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 75mm TO JOINTS.
7. FITTING FRAME TO FINAL GRADE MAY BE DONE WITH BRICK OR PRECAST CONCRETE GRADE RINGS OF APPROPRIATE THICKNESS (3 COURSES MAX).
8. FLAT SLAB TOPS SHALL BE USED FOR ALL CATCH BASINS UNLESS OTHERWISE PERMITTED BY THE ENGINEER.
9. ALL PIPE INVERTS AND PENETRATION ANGLES SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
10. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT AND BE ASSEMBLED USING A BUTYL RUBBER OR APPROVED EQUAL SEALANT.
11. PROVIDE FLEXIBLE RUBBER SLEEVES CONFORMING TO ASTM C-923, RESILIENT, OF SIZE REQUIRED, FOR EACH PIPE CONNECTING TO STRUCTURE. SLEEVES SHALL BE CAST INTO PRECAST STRUCTURE BY THE MANUFACTURER FOR ALL PIPE PENETRATIONS.
12. PAYMENT FOR INSTALLATION OF THE CATCH BASINS SHALL BE MADE UNDER THE PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE ITEM (604.20).
13. DEPTH AS SHOWN ON THE DRAINAGE DETAIL SHEET AND DRAINAGE PROFILE SHEETS IS DEFINED AS THE VERTICAL DISTANCE BETWEEN RIM ELEVATION AND THE BOTTOM OF SUMP.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194drainagedet.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
DRAINAGE DETAILS	SHEET 37 OF 123

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION

THE PURPOSE OF THE OVERALL MORRISTOWN PROPOSED VT 100 PROJECT IS TO RELIEVE CONGESTION AND IMPROVE SAFETY AND TRAFFIC FLOW IN AND AROUND MORRISVILLE. THIS PROJECT IS BEING CONSTRUCTED AS A CONTROLLED ACCESS HIGHWAY FOR TRUCKS AND THROUGH TRAFFIC AROUND THE VILLAGE.

THE OVERALL PROJECT BEGINS AT A POINT 6.918 KM (4.30 MILES) NORTH OF THE STOWE-MORRISTOWN TOWN LINE (APPROXIMATELY 0.10 MILES SOUTH OF MORRISTOWN CORNERS ROAD), AND EXTENDS NORTH 3.191 KM (1.98 MILES) TO TERMINATE ACROSS FROM THE SUNSET MOTEL AND STONE GRILL ON VERMONT ROUTE 15. SEE THE TITLE SHEET FOR LOCUS MAP.

THIS CONTRACT WILL CONSTRUCT A BRIDGE OVER THE LAMOILLE RIVER ALONG WITH APPROACH WORK FROM THE EXISTING BISHOP MARSHALL DRIVE TO BRIDGE STREET.

TOTAL DISTURBED AREA (EXCLUDING WASTE AND BORROW AREAS):33,500 SM (3.35 HA)(8.28 ACRES)

THIS PROJECT FALLS UNDER THE JURISDICTION OF AN INDIVIDUAL CONSTRUCTION DISCHARGE PERMIT #3444-INDC. THE MAXIMUM AREA OF EARTH DISTURBANCE AT ANY ONE TIME UNDER THIS PERMIT IS 2.02 HA (5 AC).

ALL ON-SITE AND OFF-SITE WASTE AND BORROW AREAS AND HAUL ROADS TO BE USED BY THE CONTRACTOR NOT SHOWN ON THE PLANS NEED PRIOR WRITTEN CLEARANCE BY VTRANS ENVIRONMENTAL SECTION PRIOR TO THE BEGINNING OF CONSTRUCTION, PER SECTION 105 OF THE STANDARD SPECIFICATIONS.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST THREE CONSTRUCTION SEASONS.

SITE DRAINAGE AND TOPOGRAPHY:

THE EXISTING SITE CURRENTLY DRAINS TO VARIOUS TRIBUTARIES OF RYDER BROOK AND THE LAMOILLE RIVER. THE SITE IS MADE UP OF GENTLY ROLLING HILLS WITH SOME STEEP AREAS NEAR THE LAMOILLE RIVER . THE PROJECT CAN BE BROKEN DOWN INTO THREE MAIN WATERSHEDS. THE FIRST WATERSHED IS A WATERCOURSE BY THE BISHOP MARSHALL CATHOLIC SCHOOL. THIS WATERCOURSE FLOWS TO THE RYDER BROOK. THE SECOND WATERSHED DRAINS TO THE LAMOILLE RIVER WHERE THE PROPOSED SLANT LEG BRIDGE WILL BE LOCATED. IN THIS AREA, THERE ARE SOME ADJACENT WETLANDS THAT ALSO DRAIN TO THE RIVER. THE LAST WATERSHED IS A WETLAND/POND LOCATED NEAR THE INTERSECTION OF BRIDGE STREET AND THE EXISTING SEWER PLANT ROAD. THE WETLAND/POND OUTLETS TO THE LAMOILLE RIVER AS WELL. SEE THE CROSS SECTIONS FOR ADDITIONAL INFORMATION ON EXISTING AND PROPOSED GRADES AND ELEVATIONS.

VEGETATION:

THE EXISTING VEGETATION ON THE PROJECT SITE VARIES ALONG THE PROPOSED ROADWAY. STARTING AT THE SOUTHERN END OF THE PROJECT, THE FIRST 500 METERS OF ROADWAY UNDER THIS PROJECT WILL BE BUILT IN AN EXISTING FIELD CONSISTING OF SHORT GRASS. NORTH OF THIS FIELD IS A STEEP SLOPE DOWN TO THE LAMOILLE RIVER THAT IS FORESTED. ON THE OTHER SIDE OF THE RIVER, THERE IS 150 METERS OF FOREST FOLLOWED BY A MARSH AREA TO THE NORTH. BETWEEN THIS MARSH AND BRIDGE STREET IS 80 METERS OF WOODS.

SOILS:

THE PROJECT AREA CONSISTS OF DIFFERENT TYPES OF SOIL. A TABLE OF ALL OF THE SOILS TYPES AS CLASSIFIED BY THE U.S. SOIL CONSERVATION SERVICE IS SHOWN. ALSO, CONTAINED IN THIS TABLE ARE THE SOIL ERODIBILITY COEFFICIENTS AS GIVEN IN TABLE 1 IN THE VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES.

AS SEEN IN THE TABLE, THE SOILS ALONG THE PROJECT AS A WHOLE CAN BE CLASSIFIED AS HAVING LOW ERODIBILITY.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

SOIL MAP ABBREV-IATION	SOIL NAME	K-VALUE	EROSION POTENTIAL	PERCENT OF PROJECT AREA
A_D	ADAMS	0.17	LOW	55%
C_O	COLTON	0.17	LOW	25%
L_Y	LYMAN	0.28	MODERATE	15%
C_R	CROGHAN	0.17	LOW	5%

AS SEEN IN THE TABLE ABOVE, THE SOILS ALONG THE PROJECT AS A WHOLE CAN BE CLASSIFIED AS HAVING LOW ERODIBILITY.

TOTAL RATING NUMBER (TRN):

THE TOTAL RATING NUMBER (TRN) IS A GAUGE FOR DETERMINING THE ERODIBILITY OF THE PROJECT SITE. THERE ARE FOUR MAIN COMPONENTS TO THE TRN. THEY ARE SITE AREA, SITE SLOPE, DURATION OF TIME OF SOIL DISTURBANCE, AND PROXIMITY TO CRITICAL FEATURES. ALTHOUGH THE SITE AREA, SLOPE, AND DURATION OF CONSTRUCTION SUGGEST THAT THIS SITE HAS A LOW ERODIBILITY POTENTIAL, DUE TO THE CLOSE PROXIMITY OF THIS PROJECT TO CRITICAL NATURAL AND MAN-MADE FEATURES, EROSION AND SEDIMENT CONTROL HAS BEEN DESIGNED ASSUMING MEDIUM EROSION POTENTIAL. MORE SUBSTANTIAL EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN SPECIFIED TO PROTECT THE AFFECTED CRITICAL FEATURES.

PROXIMITY TO CRITICAL FEATURES:

THIS PROJECT WILL DIRECTLY IMPACT THREE DIFFERENT WETLANDS THAT ARE ADJACENT TO VARIOUS WATERCOURSES. ALSO, THE PROJECT CROSSES THE LAMOILLE RIVER. AT THESE AREAS OF WETLAND IMPACT AND AT THE WATERCOURSE CROSSING, IT WILL NOT BE POSSIBLE TO AVOID IMPACTS TO THE 50 FOOT VEGETATION BUFFER TO THESE CRITICAL NATURAL FEATURES.

THIS PROJECT IS UNDER JURISDICTION OF AGENCY OF NATURAL RESOURCES CONDITIONAL USE PERMIT #1992-211 AND CORP OF ENGINEERS PERMIT #NAE-1999-568-MI.

SOIL EROSION AND SEDIMENT CONTROL PLAN

PROPOSED GRADING:

A MAJORITY OF THE PROJECT IS IN CUT SECTION MAKING THE COLLECTION OF CONSTRUCTION RUNOFF IN THE FUTURE ROADSIDE DITCHES A REASONABLE ALTERNATIVE (SEE LAYOUT PLANS AND CROSS SECTIONS FOR IMPACT LINES AND PROPOSED GRADE INFORMATION, RESPECTIVELY). DURING CONSTRUCTION OF THE ROADWAY, PERIMETER DITCHES SHALL BE IN PLACE AT ALL TIMES TO ENCAPSULATE THE PROJECT AND TO COLLECT SEDIMENT LADEN STORMWATER. THE DITCHES WILL DIRECT RUNOFF TO A TREATMENT PRACTICE SUCH AS A TEMPORARY SEDIMENTATION BASIN. FOR THIS PROJECT, THE PROPOSED DETENTION BASIN SHOULD BE USED AS SEDIMENT BASIN. THE BASIN AT STATION 8+280, LEFT HAS ENOUGH STORAGE TO TREAT UP TO 3.5 ACRES OF CONTRIBUTING AREA DURING CONSTRUCTION. SINCE NO MORE THAN FIVE ACRES WILL BE DISTURBED AT ONE TIME, THIS BASIN SHOULD BE SUFFICIENT DURING THE CONSTRUCTION PHASE. HOWEVER, IF THE CONTRACTOR REQUIRES ADDITIONAL SEDIMENT BASINS, THE CONTRACTOR MAY SUBMIT THE LOCATION, SIZE, AND CALCULATIONS TO THE ENGINEER FOR APPROVAL. AS THE CONSTRUCTION PROGRESSES, THE PERMANENT ROADSIDE DRAINAGE DITCHES CAN BE USED AS THE PERIMETER DITCHES. WHENEVER POSSIBLE, STORMWATER SHOULD BE DIRECTED TO A SEDIMENT BASIN BY USING DIVERSION AND COLLECTION. THE PROJECT AS A WHOLE WILL HAVE EXCESS MATERIAL AMOUNTING TO 27,714 CUBIC METERS. THE CONTRACTOR SHALL SUBMIT THE LOCATION OF THIS WASTE AREA TO THE RESIDENT ENGINEER FOR APPROVAL.

LIMITS OF DISTURBANCE:

THE LIMIT OF DISTURBANCE FOR THIS PROJECT WILL TYPICALLY BE 3.0 M (10 FEET) BEYOND THE SLOPE LIMITS SHOWN UNLESS OTHERWISE SHOWN ON THE CONTRACT PLANS. THIS SHALL BE MARKED IN THE FIELD USING PROJECT DEMARCATION FENCING.

ALSO, THE PROJECT IS ADJACENT TO SOME MAN-MADE CRITICAL FEATURES, SUCH AS HOMES, BUSINESSES, AND SOME UTILITIES.

TIMETABLE FOR CONSTRUCTION:

SINCE THE PROJECT AREA IS GREATER THAN FIVE ACRES, CONSTRUCTION WILL NEED TO BE PHASED SUCH THAT NO MORE THAN FIVE ACRES OF SOIL IS UNSTABILIZED AT ANYTIME. BELOW IS AN ASSUMED CONSTRUCTION PHASING SEQUENCE FOR THE PROJECT. IT WAS ASSUMED THAT THE CONSTRUCTION SEASON IS FROM MAY 1 TO OCTOBER 15 TO COINCIDE WITH THE PLANTING SEASON. ALSO, ANY WORK PERFORMED IN A STREAM CHANNEL WILL NEED TO BE COMPLETED BETWEEN THE DATES OF JUNE 1 TO OCTOBER 1. IF THE CONTRACTOR IS TO PERFORM EARTHWORK OPERATIONS BEFORE MAY 1 OR AFTER OCTOBER 15, THE CONTRACTOR SHALL SUBMIT A WINTER EROSION AND SEDIMENT CONTROL PLAN PRIOR TO AUGUST 15 TO THE RESIDENT ENGINEER FOR APPROVAL (SUCH THAT VTRANS CAN REVIEW AND SUBMIT THE PLAN TO VANR PRIOR TO SEPTEMBER 15). TO ESTIMATE THE LENGTH OF EACH PHASE, A RATE OF 1500 CUBIC METERS PER DAY WAS USED FOR EARTHWORK. THIS TIME WAS THEN INCREASED BY 20 PERCENT TO ACCOUNT FOR OTHER CONSTRUCTION ACTIVITIES SUCH AS DRAINAGE AND GRUBBING. A SLOWER RATE WAS USED TO ESTIMATE ROCK EXCAVATION. THE ASSUMED PHASING DIAGRAM AND SCHEDULE FOR PROPOSED PHASING IS INCLUDED IN THE PERMIT SECTION OF THE PROSECUTION OF WORK. PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD BETWEEN THE CONTRACTOR AND ALL APPLICABLE RESOURCE AGENCIES. IF THE CONTRACTOR WISHES TO CHANGE THE PROPOSED SCHEDULE, THE CONTRACTOR MUST SUBMIT THE CHANGES TO THE ENGINEER FOR APPROVAL PRIOR TO THE PRE-CONSTRUCTION MEETING. THESE CHANGES COULD INCLUDE PROPOSED WORK DURING THE WINTER MONTHS.

PHASE 1
CONSTRUCT PROPOSED VT 100 SUBGRADE AND DRAINAGE FROM STA 8+081 TO STA 8+361
CONSTRUCT TEMPORARY BRIDGE/CAUSEWAY AND STAGING AREA STA 8+000 TO STA 8+102

PHASE 2
CONSTRUCT PROPOSED VT 100 SUBGRADE AND DRAINAGE FROM STA 7+542 TO STA 7+915
CONSTRUCT PROPOSED LAMOILLE RIVER BRIDGE STA 7+915 TO STA 8+081

EROSION CONTROL NARRATIVE

TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL

TEMPORARY EROSION PREVENTION MEASURES TO BE UTILIZED INCLUDE THE FOLLOWING. REFER TO THE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS FOR LOCATIONS.

THE AREA OF DISTURBED SOIL SHALL BE LESS THAN FIVE ACRES AT ALL TIMES. THIS WILL BE ACHIEVED BY THE CONSTRUCTION PHASING DISCUSSED EARLIER. THE LENGTH OF TIME THAT SOIL IS LEFT DISTURBED WILL ALSO BE MINIMIZED

MULCHING WILL BE UTILIZED ON A REGULAR BASIS. ANY SOIL EXPOSED FOR SEVEN DAYS PRIOR TO FINAL GRADING SHALL BE MULCHED. SOIL SHALL BE STABILIZED WITHIN 48 HOURS OF FORECASTED RAIN.

SEEDING AND MULCHING SHALL BE UTILIZED TO STABILIZE SOIL. SOIL SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE AND/OR DURING INTERMITTENT PHASES OF CONSTRUCTION. SEE THE EROSION CONTROL DETAILS FOR SEED TYPES AND ASSOCIATED APPLICATION RATES.

SILT FENCE WILL BE INSTALLED NEAR THE TOE OF THE FILL SLOPES TO PREVENT SEDIMENT TRANSPORT TO DOWN GRADIENT AREAS. EACH LINE OF SILT FENCE WILL BE PLACED ALONG THE CONTOUR WITH THE LOWER EDGE BURIED 150mm TO PREVENT UNDERFLOW AND ENDS TURNED SLIGHTLY UPGRADE TO CREATE A PONDING EFFECT. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY UPSLOPE EARTHWORK. SILT FENCE SHALL BE PLACED AS SHOWN ON THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS.

PROJECT DEMARCATION FENCING, DENOTED -PDF-PDF- ON THE PLANS, SHALL DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS MEASURE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION. PDF MAY BE LOCATED IN CLOSE PROXIMITY TO THE PROPOSED SLOPE LINE IN ORDER TO KEEP CONSTRUCTION ACTIVITY OUT OF SENSITIVE AREAS. PDF SHALL BE INSTALLED PRIOR TO THE BEGINNING OF ANY EARTHWORK IN EACH PHASE. PDF SHALL BE PLACED AS SHOWN ON THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS.

INLETS SHALL BE SURROUNDED BY STONE CHECK DAMS OR SILT FENCE TO LIMIT THE AMOUNT OF SEDIMENT THAT ENTERS THE INLET. INLET PROTECTION SHALL BE PLACED AS SHOWN ON THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS AND PER THE EROSION CONTROL DETAILS. THIS MEASURE SHALL BE INSTALLED ONCE THE GRADE ADJACENT TO THE INLET IS WITHIN 150mm OF FINAL GRADE. INLETS SHALL BE CLEANED WHEN THE SUMP BECOMES FILLED WITH SEDIMENT AND AT THE COMPLETION OF CONSTRUCTION.

STONE CHECK DAMS WILL BE INSTALLED IN DITCH LINES TO FORCE STORMWATER TO POND AND LIMIT SEDIMENT TRANSPORT. STONE CHECK DAMS SHALL BE PLACED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS AND PER THE EROSION CONTROL DETAILS. PERMANENT DITCH BERMS ARE EARTHEN CHECK DAMS THAT WILL REMAIN AFTER CONSTRUCTION IS COMPLETED. THESE BERMS WILL ALSO CONTROL EROSION DURING CONSTRUCTION.

AT THE LOCATIONS WHERE CONSTRUCTION VEHICLES WILL BE ENTERING OR LEAVING THE CONSTRUCTION SITE/STAGING AREAS, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED TO LIMIT THE AMOUNT OF SEDIMENT THAT IS TRANSPORTED OFF OF THE SITE BY CONSTRUCTION VEHICLES. STONE SHALL BE USED TO REMOVE SEDIMENT FROM THE TIRES OF CONSTRUCTION VEHICLES. IF SEDIMENT IS STILL BEING TRACKED ONTO PUBLIC ROADS, THE LENGTH OF THE PAD SHALL BE EXTENDED OR VEHICLES SHALL BE RINSED WITH A HOSE PRIOR TO LEAVING THE SITE. SINCE THE PROJECT CROSSES DIFFERENT ROADWAYS AND IS BEING PHASED, THESE LOCATIONS MAY MOVE DURING CONSTRUCTION AND THERE MAY BE MORE THAN ONE CONSTRUCTION ENTRANCE PRESENT ALONG THE PROJECT.

EROSION CONTROL MATTING SHALL BE PLACED ON ANY SLOPES STEEPER THAN 1:3 (V:H). EROSION CONTROL MATTING SHALL BE PLACED WITHIN 48 HOURS OF ATTAINING FINAL GRADE. EROSION CONTROL MATTING SHALL BE PLACED AS SHOWN ON THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS. SEE THE EROSION CONTROL DETAILS FOR DETAILS ON EROSION MATTING FOR DITCHES AND EROSION MATTING FOR SLOPES STEEPER THAN 1:3.

THE PROPOSED DETENTION BASIN MAY BE USED AS SEDIMENT TRAP DURING THE CONSTRUCTION PHASE OF THE PROJECT. THIS TRAP WILL HELP RETAIN SEDIMENT ON THE PROJECT SITE. IN ACCORDANCE WITH THE VERMONT STORMWATER MANAGEMENT MANUAL, IF THE PROPOSED INFILTRATION BASIN SOUTH OF BRIDGE STREET IS TO BE USED AS SEDIMENT TRAPS, IT MUST FIRST BE LINED WITH GEOTEXTILE FABRIC DURING CONSTRUCTION TO PREVENT THE BOTTOM OF THE BASINS FROM CLOGGING WITH FINE SEDIMENTS. THE BASIN SHALL BE EMPTIED AND RE-VEGETATED AT THE END OF CONSTRUCTION. IF THE CONTRACTOR REQUIRES ADDITIONAL SEDIMENT TRAPS/BASINS, THE CONTRACTOR SHALL SUBMIT THE LOCATION, SIZE, AND CALCULATIONS TO THE RESIDENT ENGINEER FOR APPROVAL. TEMPORARY SEDIMENT TRAPS/BASINS SHALL BE SIZED TO PROVIDE A MINIMUM OF 3600 CF PER ACRE ACCORDING TO THE VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES.

AT LOCATIONS WHERE CONSTRUCTION IS IN OR NEAR WATERCOURSES OF THE STATE OF VERMONT, GEOTEXTILE FOR FILTER CURTAIN SHALL BE USED TO MINIMIZE SEDIMENT FROM ENTERING THESE WATERCOURSES. THE FILTER CURTAIN SHALL EXTEND FROM THE BOTTOM OF THE WATERCOURSE TO THE TOP OF THE WATER SURFACE. GEOTEXTILE SHALL ALSO BE PLACED ALONG THE BOTTOM OF THE WATERCOURSE WITHIN THE LIMITS OF THE FILTER CURTAIN TO FACILITATE THE REMOVAL OF SEDIMENT AND PROTECT THE EXISTING WATERCOURSE BOTTOM. IF THE CONTRACTOR WISHES TO USE A DIFFERENT METHOD FOR CONTAINING SEDIMENT IN THESE WATERCOURSES, THE CONTRACTOR MUST SUBMIT THE ALTERNATE METHOD TO THE RESIDENT ENGINEER PRIOR TO THE PRE-CONSTRUCTION MEETING FOR APPROVAL. FILTER CURTAIN SHALL BE INSTALLED AS SHOWN ON THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS PRIOR TO ANY CONSTRUCTION WITHIN 15 METERS (50 FEET) OF WATERS OF THE STATE.

TEMPORARY EROSION CONTROL MEASURES SHALL BE REGULARLY INSPECTED AND MAINTAINED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE CONTROL MEASURE. SEDIMENT SHALL BE DISPOSED OF AT A SITE APPROVED BY THE ENGINEER. THE SITE SHALL BE LEVEL AND BE AT LEAST 30 METERS (100 FT) FROM WETLANDS OR WATERS OF THE STATE.

POTENTIAL STAGING AREA LOCATIONS ARE SHOWN ON THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS. THE STAGING AREAS HAVE BEEN LOCATED IN RELATIVELY FLAT AREAS WITHIN THE PROJECT LIMITS OF DISTURBANCE. ANY CHANGES TO THESE LOCATIONS MUST BE APPROVED BY THE ENGINEER.

THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROCURING SITES FOR THE DEPOSITION OF WASTE MATERIAL FROM THE PROJECT. A PROPERTY OWNED BY ERNEST KROSCH ON NORTH CAMBRIDGE ROAD IN CAMBRIDGE, VT HAS BEEN IDENTIFIED AS A REASONABLE LOCATION FOR THE DEPOSITION OF THIS MATERIAL.

PERMANENT EROSION CONTROL MEASURES

PERMANENT EROSION CONTROL MEASURES TO BE UTILIZED INCLUDE:

ALL DISTURBED SOIL SHALL BE PERMANENTLY STABILIZED WITH SEED AND MULCH. STEEPER SLOPES WITH A HIGHER EROSION POTENTIAL SHALL BE STABILIZED WITH STONE. SEE LAYOUT PLANS AND CROSS SECTIONS FOR LOCATIONS OF STONE ON SIDE SLOPES.

GENERAL EROSION AND SEDIMENT CONTROL GUIDELINES

THE CONSTRUCTION SEASON SHALL BE FROM APRIL 15 TO OCTOBER 15. IF ANY EARTHWORK IS TO BE PERFORMED OUTSIDE THE CONSTRUCTION SEASON, A STAND-ALONE WINTER EROSION AND SEDIMENT CONTROL PLAN AND A NARRATIVE DESCRIBING ALTERNATIVE STABILIZATION METHODS SHALL BE SUBMITTED THROUGH THE ENGINEER TO THE VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION FOR APPROVAL. THE STAND-ALONE EROSION AND SEDIMENT CONTROL PLANS SHALL BE DESIGNED ACCORDING TO THE VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL.

THE CONTRACTOR SHALL STOCKPILE MATERIAL WITHIN THE STAGING AREAS ONLY. STOCKPILES SHALL BE STABILIZED WITHIN 48 HOURS PRIOR TO FORECASTED RAIN.

FUELING AND MAINTENANCE OF CONSTRUCTION VEHICLES SHALL BE LIMITED TO THE STAGING AREAS AND SHALL BE DONE BY QUALIFIED PERSONNEL.

THE EROSION CONTROL PLANS ARE MEANT TO BE A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE WORK OUTLINED IN THIS NARRATIVE CONSISTS OF APPLYING MEASURES THROUGHOUT THE LIFE OF THE PROJECT TO CONTROL EROSION AND MINIMIZE THE IMPACTS TO RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORMWATER CONTROLS, AND OTHER POLLUTION PREVENTION CONTROLS.

COORDINATE THE INSTALLATION, USE, AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES WITH CONSTRUCTION ACTIVITIES TO ENSURE, EFFECTIVE, AND CONTINUOUS EROSION AND SEDIMENT CONTROL. EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS. THE CONTRACTOR SHALL USE ADDITIONAL EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION, FIELD CONDITIONS, AND AS DIRECTED BY THE ENGINEER OR ON-SITE COORDINATOR. SEE SECTION 105.23 OF THE VERMONT AOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006.

INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN IN THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS OR AS DIRECTED BY THE ENGINEER OR ON-SITE COORDINATOR. DO NOT MODIFY THE TYPE, SIZE, OR LOCATION OF ANY CONTROL OR PRACTICE WITHOUT THE APPROVAL OF THE ENGINEER OR ON-SITE COORDINATOR. ANY CHANGES SHOULD BE NOTED ON THE PLANS, IN THE WEEKLY INSPECTION REPORT, AND REPORTED TO THE APPROPRIATE AUTHORITY IN A TIMELY MANNER. INSPECT ALL CONTROL MEASURES WEEKLY AND AFTER EACH RAINFALL EVENT THAT PRODUCES RUNOFF FROM THE PROJECT SITE. REPAIR MEASURES PROMPTLY ONCE DAMAGE IS DISCOVERED.

PREVENTING SOIL EROSION IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. THEREFORE, STABILIZE ALL DISTURBED AREAS PROMPTLY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY VEGETATION SHALL BE ESTABLISHED IF THE AREA IS TO BE WITHOUT CONSTRUCTION ACTIVITY FOR A PERIOD OF 7 DAYS. PERIMETER CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY. INSTALL OTHER TEMPORARY CONTROLS IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS. CONSTRUCT SEDIMENTATION BASINS AS SOON AS PRACTICAL WITHIN EACH PHASE OF CONSTRUCTION.

MAINTAINING VEGETATED BUFFERS ALONG THE STREAM BANKS AND OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE EMPLOYED WHENEVER POSSIBLE.

CONTROL ONLY SEDIMENT LADEN STORMWATER RUNOFF GENERATED BY THE PROJECT SITE. COLLECT AND ROUTE CLEAN STORMWATER AROUND THE PROJECT SITE WHENEVER POSSIBLE USING DIVERSION BERMS, CHANNELS, CULVERTS, OR TEMPORARY PIPES.

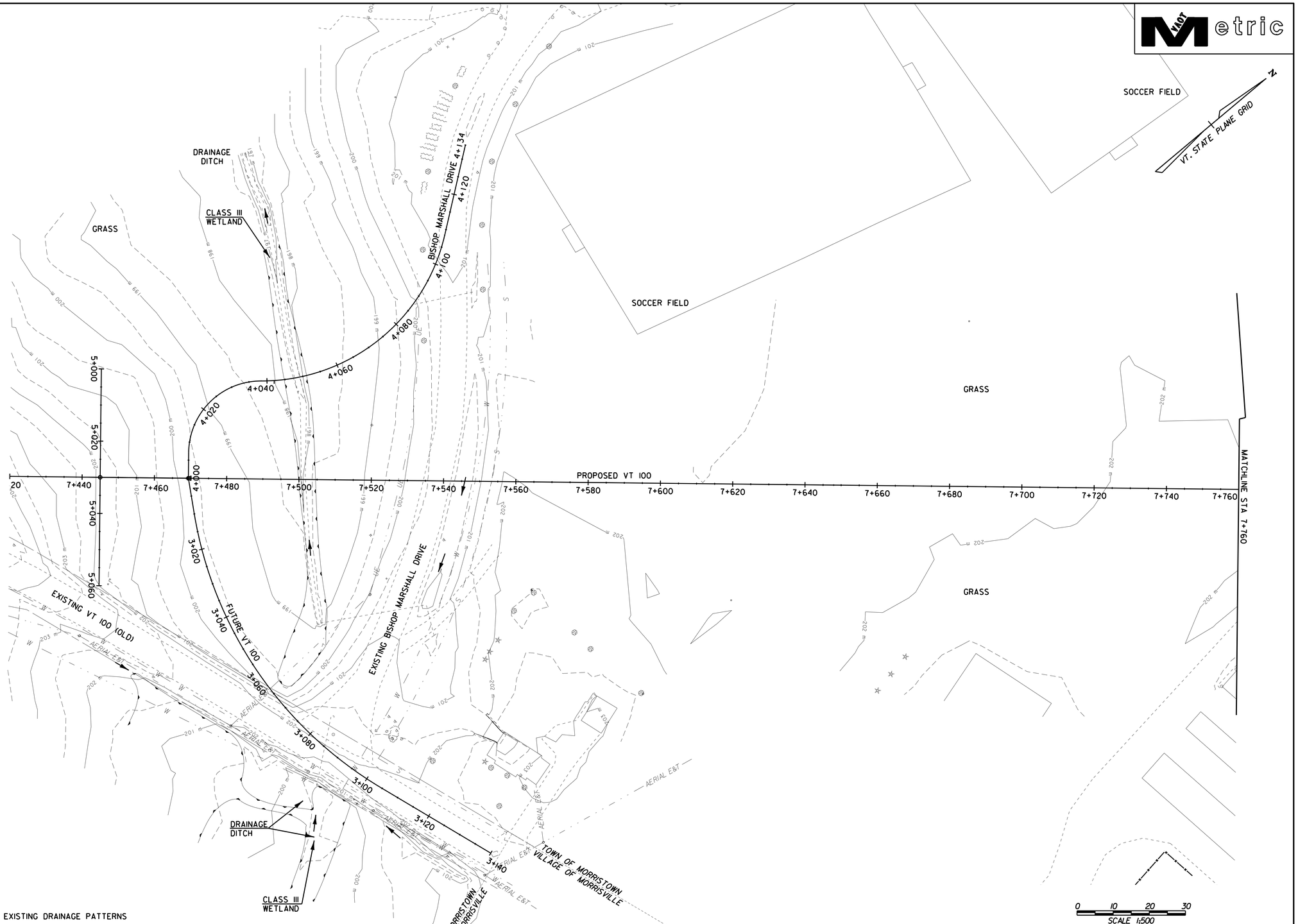
DO NOT ALLOW CONSTRUCTION EQUIPMENT TO OPERATE OUTSIDE OF PERIMETER CONTROL MEASURES.

THIS PROJECT CROSSES A WATERCOURSE OF THE STATE OF VERMONT, THE LAMOILLE RIVER. ANY CONSTRUCTION IN OR NEAR THIS WATERCOURSE WILL BE REQUIRED TO CONFORM TO THE VERMONT WATER QUALITY STANDARDS. THESE STANDARDS REQUIRE THAT A CRITICAL LEVEL OF TURBIDITY IN THE WATER NOT BE EXCEEDED. THE CONTRACTOR WILL NEED TO TEST FOR TURBIDITY LEVELS AT THIS CROSSING TO ENSURE THAT IT IS IN COMPLIANCE WITH THE STANDARDS. IT IS EXPECTED THAT THE EROSION AND SEDIMENT CONTROL MEASURES PROPOSED IN THIS PLAN WILL BE SUFFICIENT. HOWEVER, IF THE AMOUNT OF TURBIDITY BECOMES OUT OF COMPLIANCE WITH THE STANDARDS,
THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES AS DIRECTED BY THE ENGINEER.

PRE-CONSTRUCTION MEETING REQUIREMENTS

AFTER THE CONTRACT HAS BEEN AWARDED, THE CONTRACTOR SHALL SUBMIT INFORMATION TO THE ENGINEER PRIOR TO THE PRE-CONSTRUCTION MEETING AS PER SPECIFICATION 652.10 - EROSION AND SEDIMENT CONTROL PLAN. THIS INFORMATION MAY INCLUDE BUT IS NOT LIMITED TO THE FOLLOWING.

1. THE NAME AND CONTACT INFORMATION OF THE ON-SITE COORDINATOR AND ANY OTHER CO-PERMITEES.
2. A DESCRIPTION OF THE INSPECTION, MAINTENANCE, AND RECORDS PROGRAM FOR ALL OF THE EROSION CONTROL MEASURES.
3. THE LOCATION OF TOPSOIL STOCKPILES, STAGING AREAS, EQUIPMENT STORAGE, REFUELING/MAINTENANCE AREAS, AND STUMP DISPOSAL AREAS IF DIFFERENT THAN SHOWN IN THIS PLAN.
4. LOCATION OF WASTE/BORROW AREAS FOR EXCESS SOIL, INCLUDING MAP IF OFF-SITE IF DIFFERENT THAN THE LOCATION SPECIFIED IN THIS PLAN. THIS PLAN SHALL INCLUDE ANY EROSION CONTROL MEASURES NECESSARY TO STABILIZE THESE AREAS TO PREVENT EROSION.
5. ANY OTHER INFORMATION THAT DIFFERS FROM THIS APPROVED EROSION PREVENTION AND SEDIMENT CONTROL PLAN.
6. SPECIFIC DEWATERING PLANS AT ANY LOCATION WHERE DEWATERING WILL OCCUR.



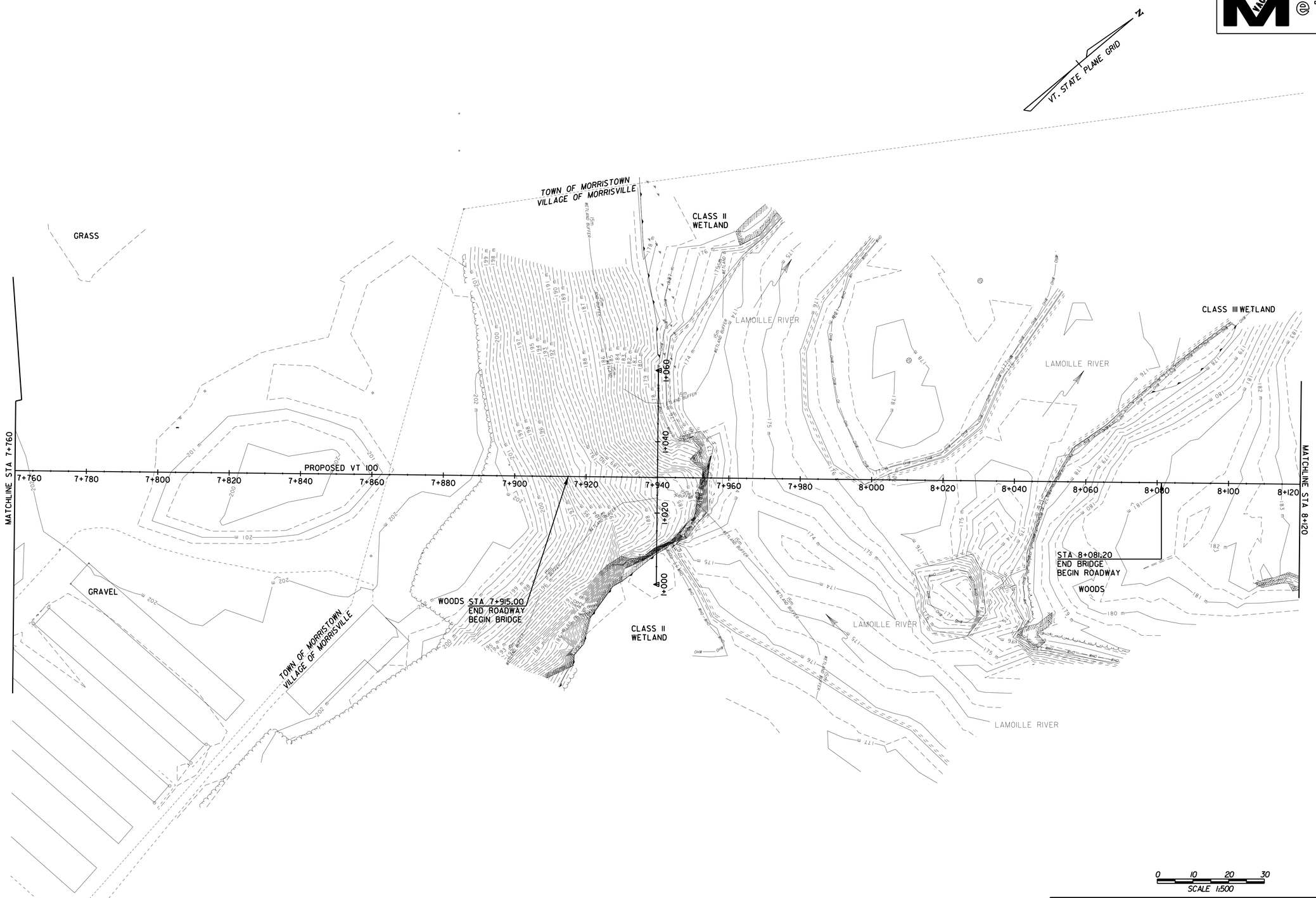
LEGEND

EXISTING DRAINAGE PATTERNS

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194ec03.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
EXISTING CONDITIONS SITE PLAN - 1	SHEET 40 OF 123

VAOT Metric



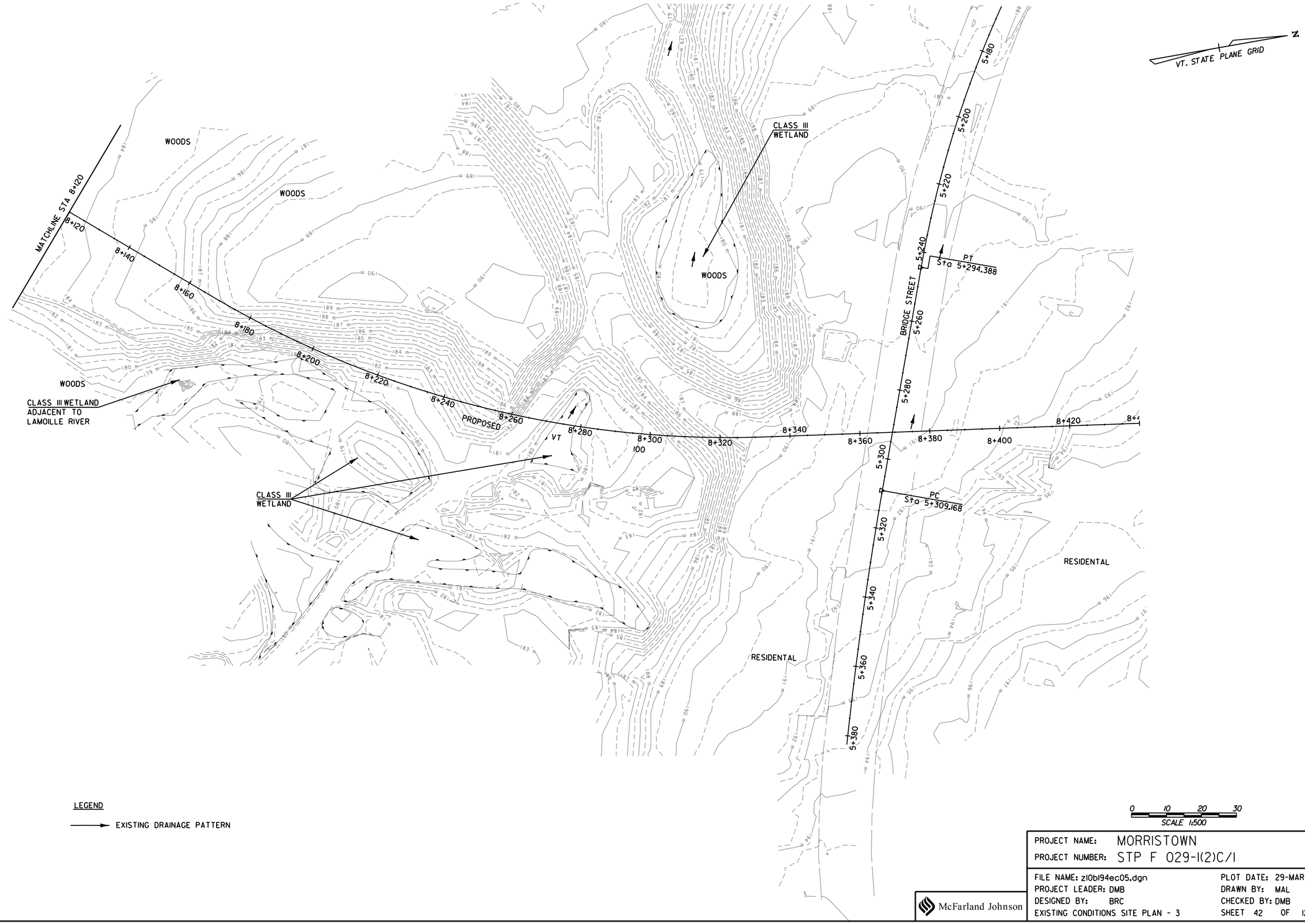
LEGEND

EXISTING DRAINAGE PATTERN

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194ec04.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
EXISTING CONDITIONS SITE PLAN - 2	SHEET 41 OF 123

VAOT Metric



PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194ec05.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
EXISTING CONDITIONS SITE PLAN - 3	SHEET 42 OF 123

McFarland Johnson

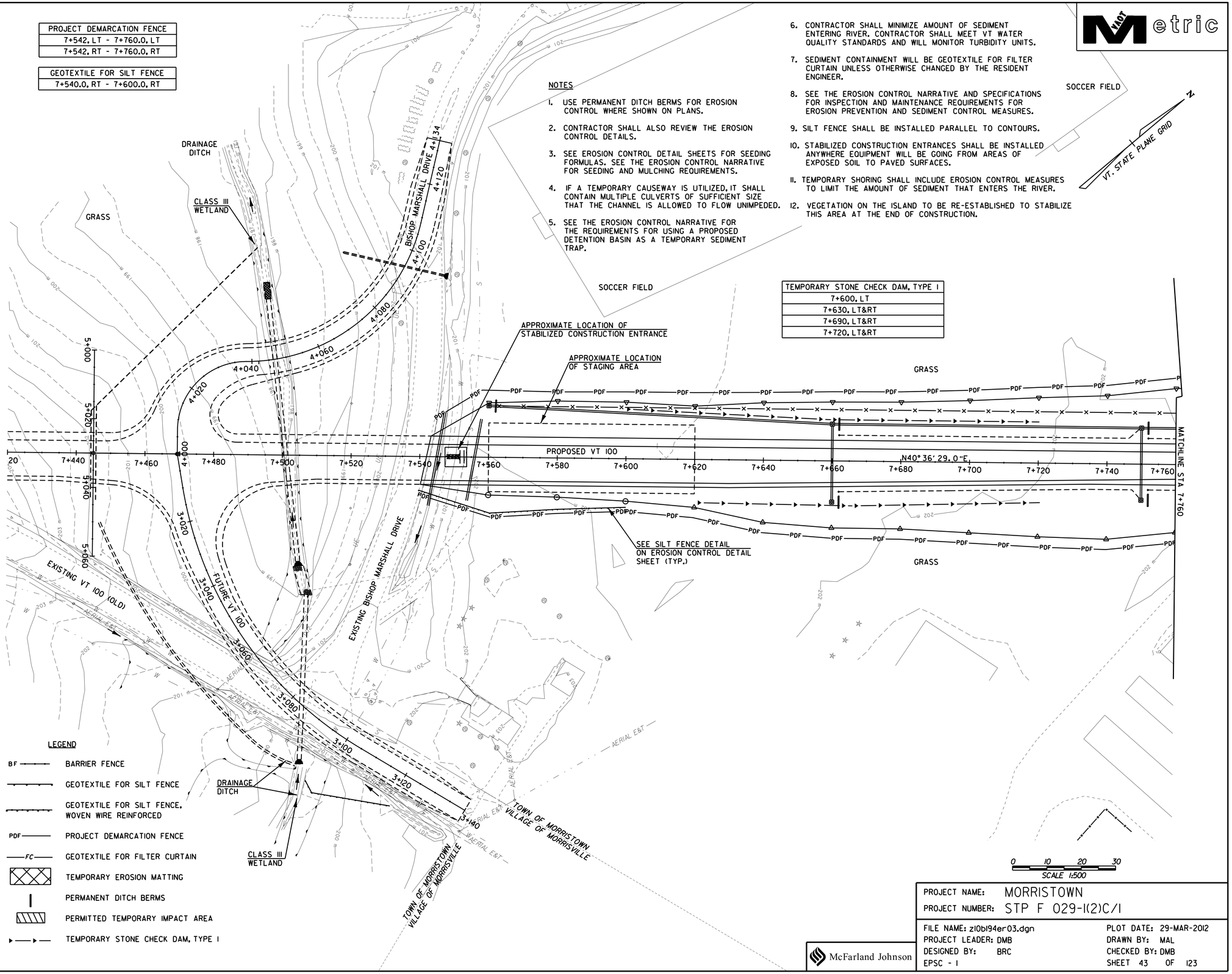
PROJECT DEMARCATION FENCE
7+542, LT - 7+760.0, LT
7+542, RT - 7+760.0, RT

GEOTEXTILE FOR SILT FENCE
7+540.0, RT - 7+600.0, RT

NOTES

1. USE PERMANENT DITCH BERMS FOR EROSION CONTROL WHERE SHOWN ON PLANS.
2. CONTRACTOR SHALL ALSO REVIEW THE EROSION CONTROL DETAILS.
3. SEE EROSION CONTROL DETAIL SHEETS FOR SEEDING FORMULAS. SEE THE EROSION CONTROL NARRATIVE FOR SEEDING AND MULCHING REQUIREMENTS.
4. IF A TEMPORARY CAUSEWAY IS UTILIZED, IT SHALL CONTAIN MULTIPLE CULVERTS OF SUFFICIENT SIZE THAT THE CHANNEL IS ALLOWED TO FLOW UNIMPEDED.
5. SEE THE EROSION CONTROL NARRATIVE FOR THE REQUIREMENTS FOR USING A PROPOSED DETENTION BASIN AS A TEMPORARY SEDIMENT TRAP.
6. CONTRACTOR SHALL MINIMIZE AMOUNT OF SEDIMENT ENTERING RIVER. CONTRACTOR SHALL MEET VT WATER QUALITY STANDARDS AND WILL MONITOR TURBIDITY UNITS.
7. SEDIMENT CONTAINMENT WILL BE GEOTEXTILE FOR FILTER CURTAIN UNLESS OTHERWISE CHANGED BY THE RESIDENT ENGINEER.
8. SEE THE EROSION CONTROL NARRATIVE AND SPECIFICATIONS FOR INSPECTION AND MAINTENANCE REQUIREMENTS FOR EROSION PREVENTION AND SEDIMENT CONTROL MEASURES.
9. SILT FENCE SHALL BE INSTALLED PARALLEL TO CONTOURS.
10. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOIL TO PAVED SURFACES.
11. TEMPORARY SHORING SHALL INCLUDE EROSION CONTROL MEASURES TO LIMIT THE AMOUNT OF SEDIMENT THAT ENTERS THE RIVER.
12. VEGETATION ON THE ISLAND TO BE RE-ESTABLISHED TO STABILIZE THIS AREA AT THE END OF CONSTRUCTION.

TEMPORARY STONE CHECK DAM, TYPE I
7+600, LT
7+630, LT&RT
7+690, LT&RT
7+720, LT&RT



McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194er03.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
EPSC - 1	SHEET 43 OF 123

GEOTEXTILE FOR SILT FENCE
ISLAND
8+075.0, RT - 8+120.0, RT

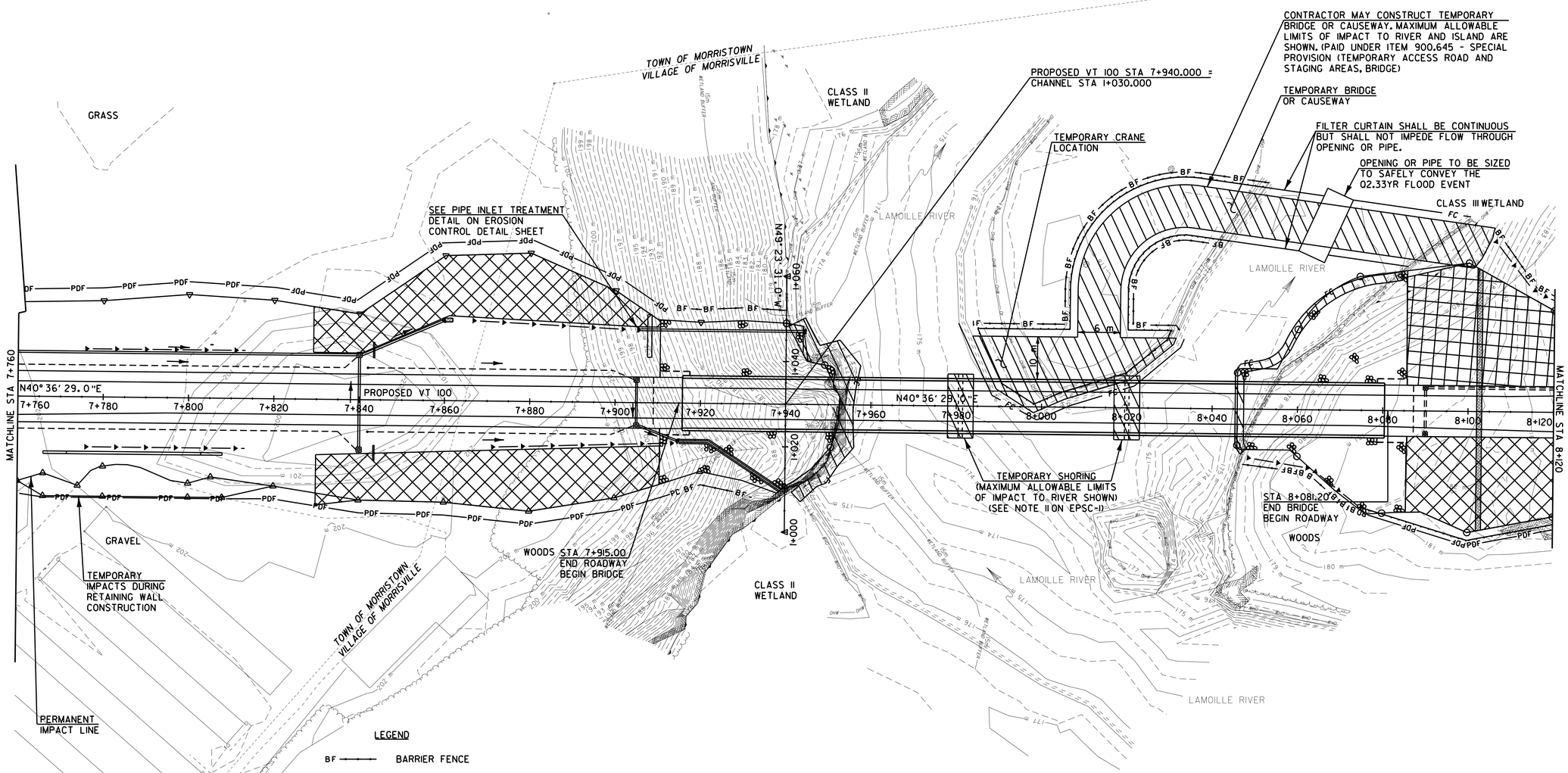
GEOTEXTILE FILTER CURTAIN
7+943.6, RT - 7+944.5, LT
7+980.4, LT - 8+033.3, LT
8+046.7, RT - 8+084.1, LT
8+043.6, LT - 8+085.6, LT
8+052.1, LT - 8+098.7, LT

TEMPORARY EROSION MATTING	
7+830, LT - 7+910.5, LT	
7+830, RT - 7+910.5, RT	
8+085.6, LT	8+120, LT
8+085.6, RT	8+120, RT

PROJECT DEMARCATION FENCE
7+760.0, LT - 7+910.1, LT
7+760.0, RT - 7+902.3, RT
8+076.1, RT - 8+120.0, RT
8+125.1, LT - 8+120.0, LT

TEMPORARY STONE CHECK DAM, TYPE I
7+780, LT&RT
7+810, LT&RT
7+880, LT&RT
8+055, RT
8+065, RT
8+075, RT
8+105, LT
8+115, LT

BARRIER FENCE
7+910.1, LT - 7+940.1, LT
7+902.3, RT - 7+932.3, RT
8+046.1, RT - 8+076.1, RT
8+095.1, LT - 8+125.1, LT
ISLAND



LEGEND

- BF — BARRIER FENCE
- GEOTEXTILE FOR SILT FENCE
- GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED
- PDF — PROJECT DEMARCATION FENCE
- FC — GEOTEXTILE FOR FILTER CURTAIN
- TEMPORARY EROSION MATTING
- PERMANENT DITCH BERMS
- PERMITTED TEMPORARY IMPACT AREA
- TEMPORARY STONE CHECK DAM, TYPE I

NOTES

1. SEE EROSION CONTROL NOTES ON SHEET 43

0 10 20 30
SCALE 1:500

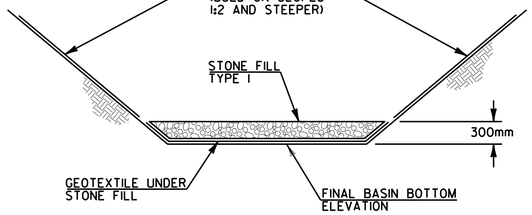
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194er04.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
EPSC - 2	SHEET 44 OF 123

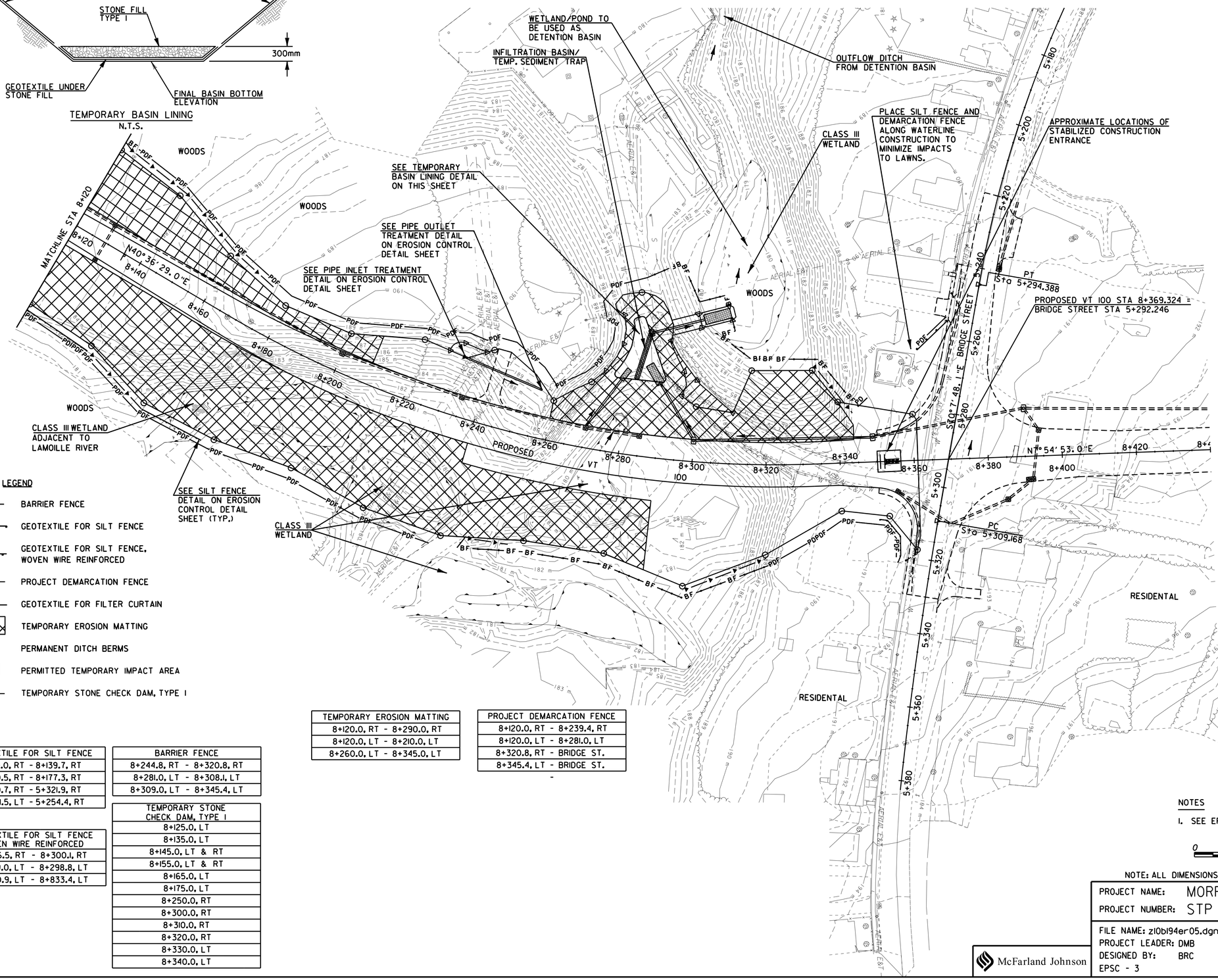
NOTES:

1. SEDIMENT, STONE FILL, AND GEOTEXTILE FABRIC TO BE REMOVED AT END OF CONSTRUCTION. FINAL LANDSCAPING IS THEN TO BE COMPLETED.

2. CONTRACTOR SHALL DEVELOP FINAL TEMPORARY BASIN DETAILS FOR REVIEW AND APPROVAL BY THE RESIDENT ENGINEER.



TEMPORARY BASIN LINING
N.T.S.



LEGEND

- BF — BARRIER FENCE
- GEOTEXTILE FOR SILT FENCE
- GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED
- PDF — PROJECT DEMARCATION FENCE
- FC — GEOTEXTILE FOR FILTER CURTAIN
- TEMPORARY EROSION MATTING
- PERMANENT DITCH BERMS
- PERMITTED TEMPORARY IMPACT AREA
- TEMPORARY STONE CHECK DAM, TYPE I

TEMPORARY EROSION MATTING
8+120.0, RT - 8+290.0, RT
8+120.0, LT - 8+210.0, LT
8+260.0, LT - 8+345.0, LT

PROJECT DEMARCATION FENCE
8+120.0, RT - 8+239.4, RT
8+120.0, LT - 8+281.0, LT
8+320.8, RT - BRIDGE ST.
8+345.4, LT - BRIDGE ST.

GEOTEXTILE FOR SILT FENCE
8+120.0, RT - 8+139.7, RT
8+160.5, RT - 8+177.3, RT
8+350.7, RT - 5+321.9, RT
8+351.5, LT - 5+254.4, RT

BARRIER FENCE
8+244.8, RT - 8+320.8, RT
8+281.0, LT - 8+308.1, LT
8+309.0, LT - 8+345.4, LT

GEOTEXTILE FOR SILT FENCE WOVEN WIRE REINFORCED
8+256.5, RT - 8+300.1, RT
8+289.0, LT - 8+298.8, LT
8+300.9, LT - 8+833.4, LT

TEMPORARY STONE CHECK DAM, TYPE I
8+125.0, LT
8+135.0, LT
8+145.0, LT & RT
8+155.0, LT & RT
8+165.0, LT
8+175.0, LT
8+250.0, RT
8+300.0, RT
8+310.0, RT
8+320.0, RT
8+330.0, LT
8+340.0, LT

NOTES

1. SEE EROSION CONTROL NOTES ON SHEET 43

0 10 20 30
SCALE 1:500

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194er05.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
EPSC - 3

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 45 OF 123

VAOT Metric

SOCCER FIELD

SOCCER FIELD

VT. STATE PLANE GRID

N

DRAINAGE DITCH

CLASS III WETLAND

GRASS

BISHOP MARSHALL DRIVE

4+100

4+120

4+134

4+080

4+060

4+040

4+020

4+000

5+000

5+020

5+040

5+060

7+440

7+460

7+480

7+500

7+520

7+540

7+560

7+580

7+600

7+620

7+640

7+660

7+680

7+700

7+720

7+740

7+760

PROPOSED VT 100

N40° 36' 29.0"E

MATCHLINE STA 7+760

GRASS

GRASS

EXISTING VT 100 (OLD)

AERIAL E&T

FUTURE VT 100

3+020

3+040

3+060

3+080

3+100

3+120

3+140

EXISTING BISHOP MARSHALL DRIVE

DRAINAGE DITCH

CLASS III WETLAND

TOWN OF MORRISTOWN
VILLAGE OF MORRISVILLE

TOWN OF MORRISTOWN
VILLAGE OF MORRISVILLE

AERIAL E&T

0 10 20 30
SCALE 1:500

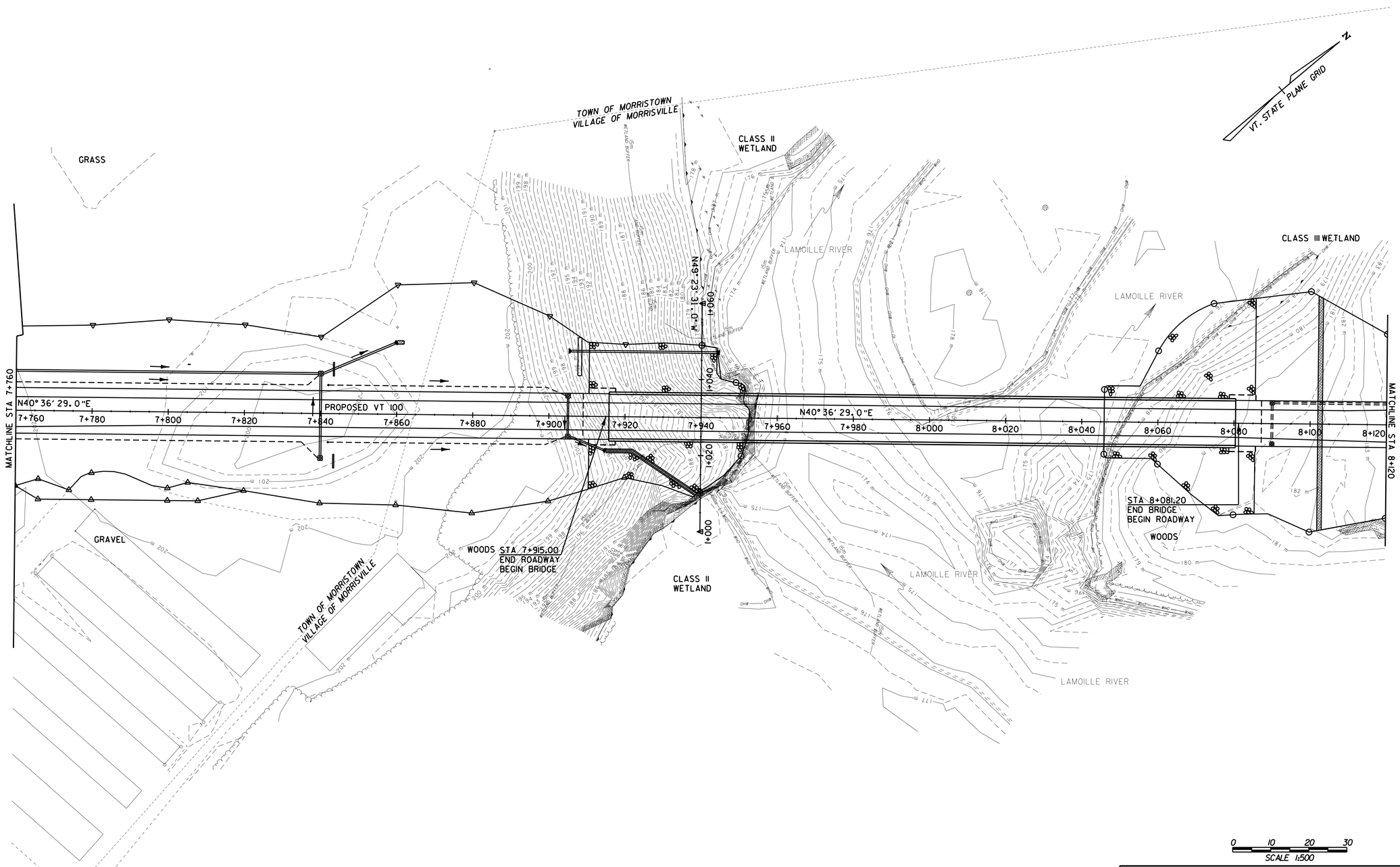
NOTE :

1. SEE ROADWAY CROSS SECTIONS FOR FINAL GRADING.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194fc03.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
FINAL CONDITIONS SITE PLAN - 1	SHEET 46 OF 123

VAOT Metric



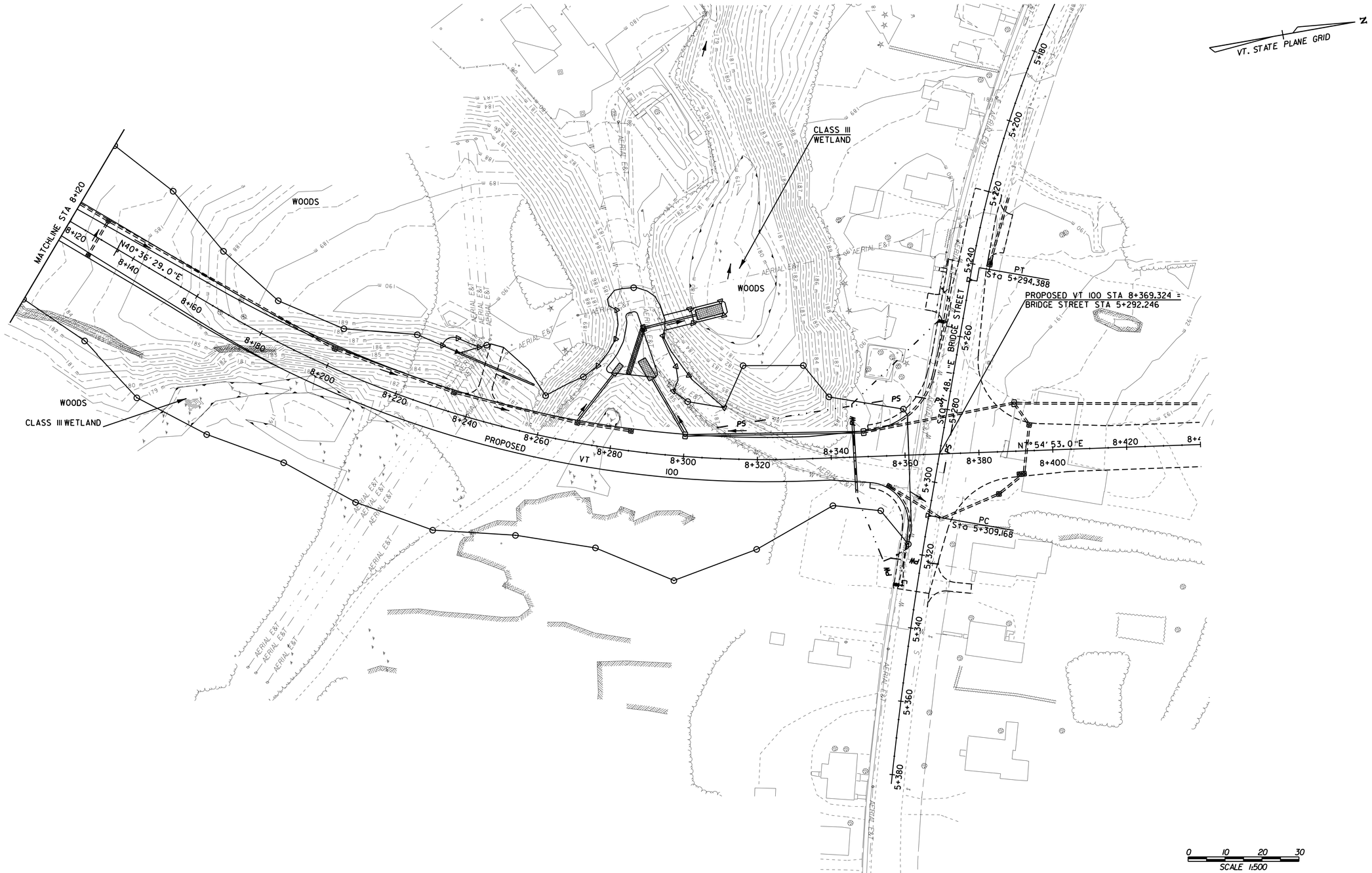
NOTE :

1. SEE ROADWAY CROSS SECTIONS FOR FINAL GRADING.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194fc04.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
FINAL CONDITIONS SITE PLAN - 2	SHEET 47 OF 123

VAOT Metric



NOTE :

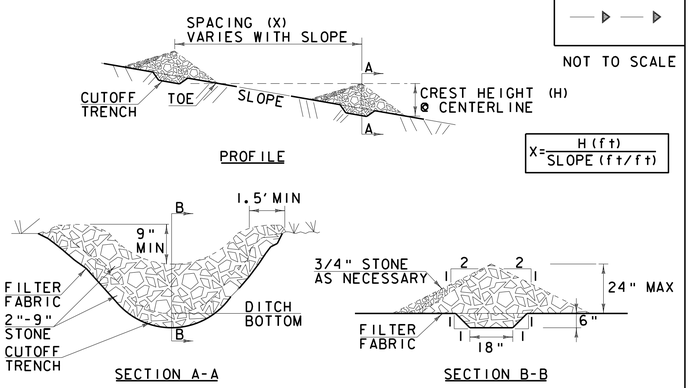
1. SEE ROADWAY CROSS SECTIONS FOR FINAL GRADING.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194fc05.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
FINAL CONDITIONS SITE PLAN - 3	SHEET 48 OF 123

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

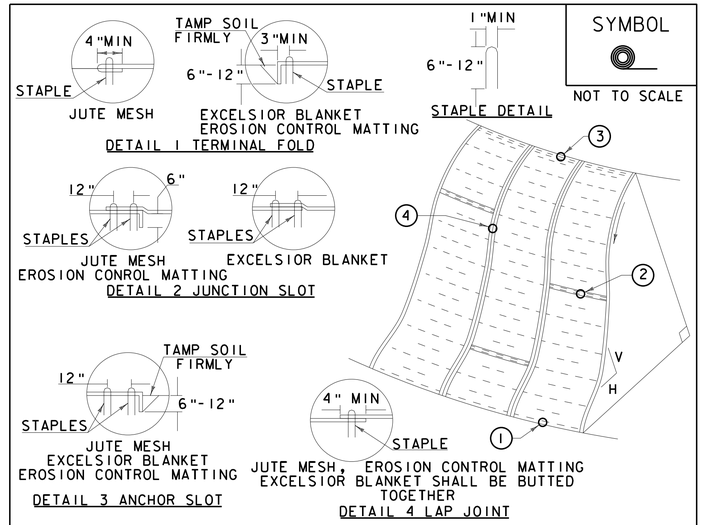
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 2009	WHF

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H: 1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

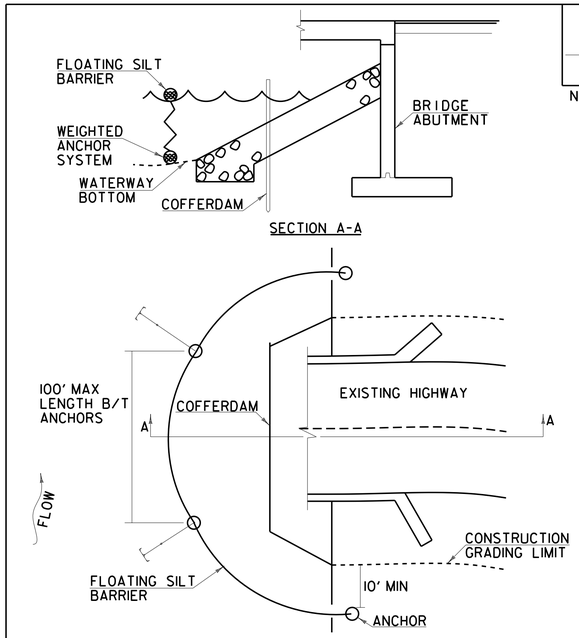
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) ~~OR PERMANENT EROSION MATTING (PAY ITEM 653.21).~~

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

SYMBOL

FC

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH ALLOWS THE CURTAIN TO CONFORM TO THE BOTTOM OF THE WATERWAY.
5. THE CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE MINIMIZING THE ESCAPE OF SEDIMENTS INTO WATERWAY.

FILTER CURTAIN

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

NOTE THAT THE ABOVE DETAILS ARE IN ENGLISH UNITS

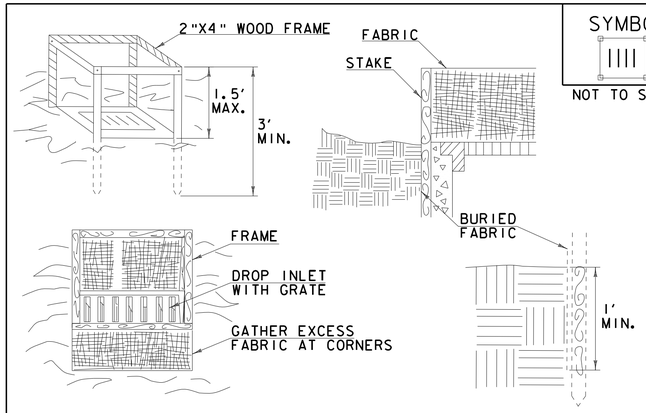
McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194ecdet01.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
EPSC DETAILS - 1

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 49 OF 123

Metric



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3'.
4. SPACE STAKES EVENLY AROUND INLET 3' APART AND DRIVE A MINIMUM 18" DEEP. SPANS GREATER THAN 3' MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1' MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE

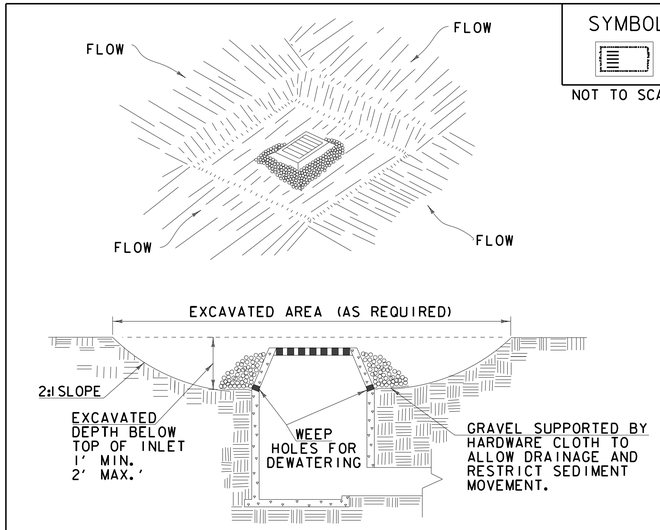
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FILTER FABRIC DROP INLET PROTECTION

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

REVISIONS	
MARCH 7, 2008	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.
5. MAXIMUM DRAINAGE AREA 1 ACRE

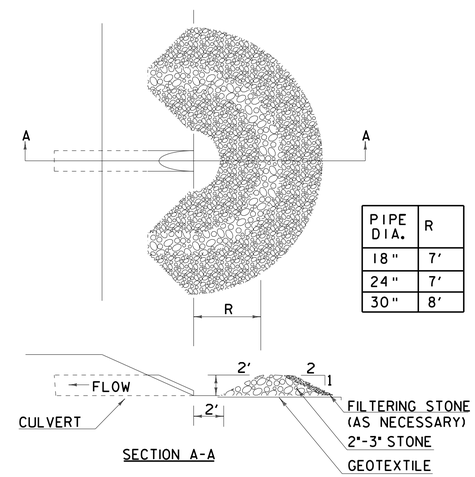
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

EXCAVATED DROP INLET PROTECTION

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 2009	WHF



PIPE DIA.	R
18"	7'
24"	7'
30"	8'

SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. USE 2" TO 3" STONE. FILTERING STONE SHALL BE 3/4".
2. PLACE STONE OVER GEOTEXTILE.
3. ONCE THE AREAS UPSTREAM FROM THE CHECK DAM ARE STABILIZED WITH VEGETATION, THE SEDIMENT TRAPPED BEHIND THE DAM SHAL BE DISPOSED OF IN AN APPROVED WASTE AREA.
4. THE CHECK DAM(S) SHALL BE FLATTENED AND GRADED IN A MANNER WHICH PROTECTS THE AREA FROM EROSION AND CHANNEL BLOCKAGE . (GEOTEXTILE MUST BE REMOVED).
5. THE GEOTEXTILE MUST BE DISPOSED OF APPROPRIATELY.
6. THE AREA CONTRIBUTING TO THE CHECK DAM SHALL NOT EXCEED 4 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: ILLINOIS USDA-NRCS
ORIGINALLY DEVELOPED BY USDA-NRCS

PIPE INLET PROTECTION

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 2009	WHF

NOTE THAT THE ABOVE DETAILS ARE IN ENGLISH UNITS

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

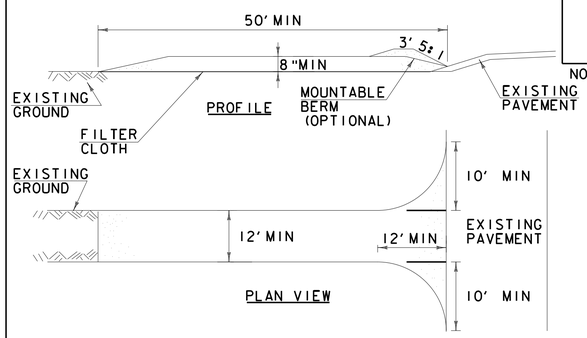
FILE NAME: z10b194ecdet02.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
EPSC DETAILS - 2

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 50 OF 123

Metric

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

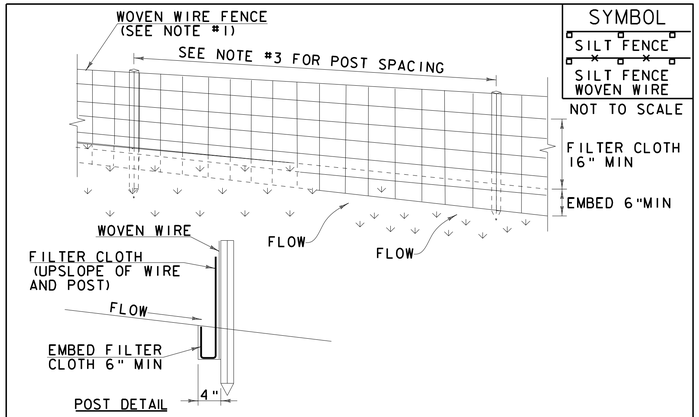
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

SYMBOL
SILT FENCE
SILT FENCE WOVEN WIRE

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF

VAOT RURAL AREA MIX

	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX

	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

GENERAL GUIDANCE

FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10/20/2010	19-19-19	PELLETIZED	LIQUID
500 LBS/AC		2 TONS/AC	4.4 GAL/AC

CONSTRUCTION GUIDANCE

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

SEED

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)

NOTE THAT THE ABOVE DETAILS ARE IN ENGLISH UNITS

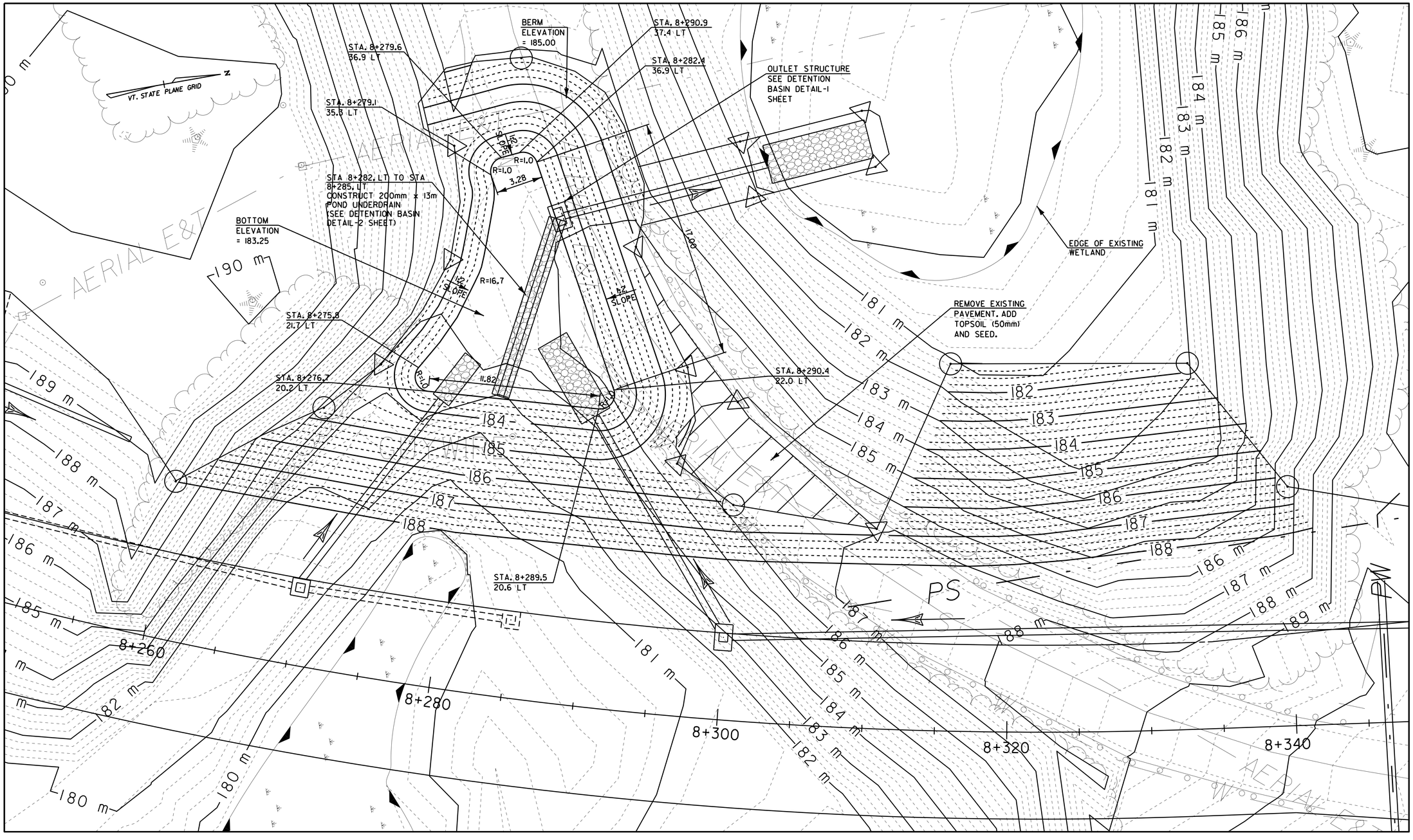
McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194ecdet03.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
EPSC DETAILS - 3

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 51 OF 123

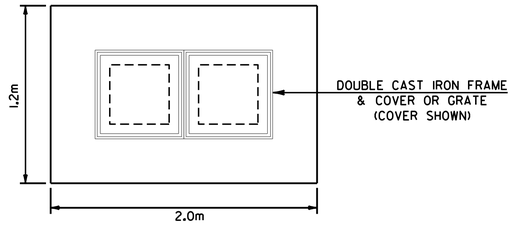
VAOT Metric



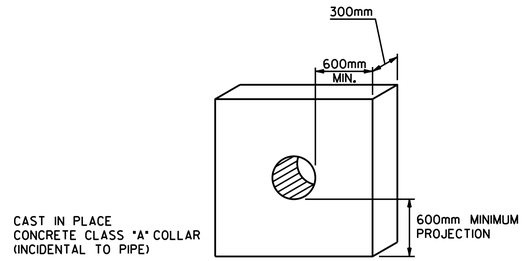
0 5 10
SCALE 1:125

McFarland Johnson

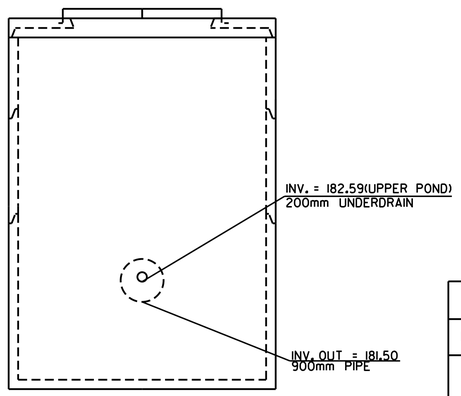
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194basin2.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
DETENTION BASIN GRADING PLAN	SHEET 52 OF 123



TOP VIEW



ANTI-SEEP COLLAR
NOT TO SCALE



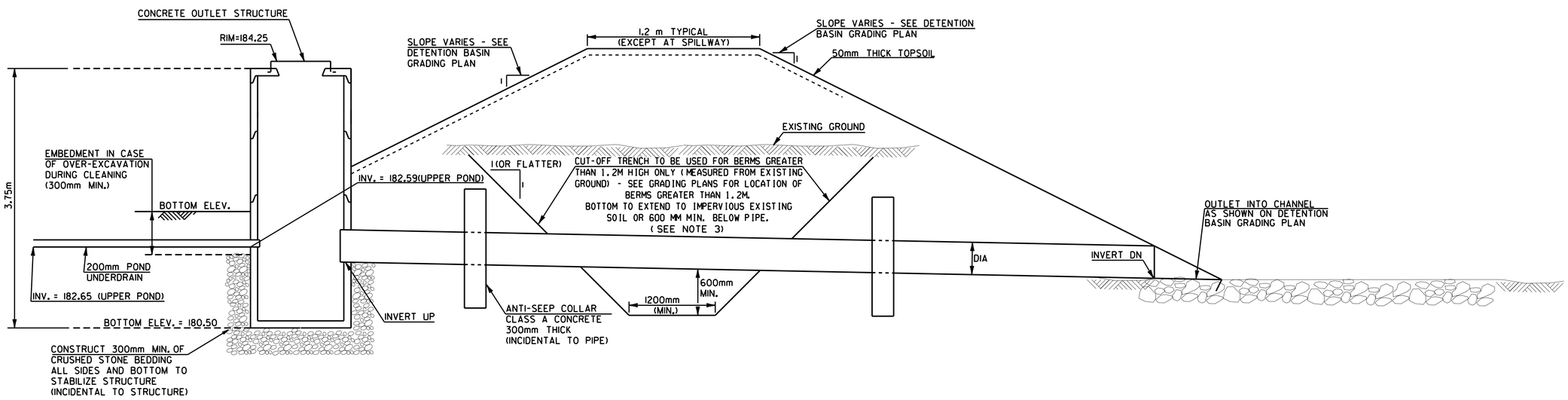
CONCRETE OUTLET STRUCTURE
(FRONT VIEW)
NOT TO SCALE

CONSTRUCTION DATA

POND NO.	OUTLET PIPE				D_1	INVERT D_1	D_2	INVERT D_2	BOTT. ELEV.	H	OUTLET		REMARKS
	L	DIA	INV UP	INV DN							TYPE	ELEV.	
	m	mm	m	m	mm	m	mm	m	m	m		m	
1	14.5	900	181.50	179.55	-	-	-	-	183.25	3.75	2 x STEEL GRATE	184.25	SED. FOREBAY OUTLET

GENERAL NOTES:

1. THE DETENTION BASIN AREA SHALL BE CLEARED OF ALL TREES, ROOTS, STUMPS, BOULDERS AND SOD TO A DEPTH OF 600mm BELOW FINAL GRADE.
2. CONSTRUCT BERM USING EARTH BORROW MATERIAL FREE OF SOD, ROOTS, FROZEN MATERIAL, LARGE ROCKS, OR OTHER OBJECTIONABLE MATERIAL. COMPACT AS PER SPECIFICATIONS.
3. CONSTRUCT CUT OFF TRENCH AT CENTERLINE OF BERM OR SLIGHTLY UPSTREAM. FILL WITH ITEM 900.608 SPECIAL PROVISION (CLAY BORROW) TO REDUCE SEEPAGE AND STABILIZE THE BERM. COMPACT MATERIAL AS PER SPECIFICATIONS. CUT OFF TRENCH SHALL NOT BE CONSTRUCTED WITHIN THE LIMITS OF THE ROADWAY EMBANKMENT.
4. CONCRETE OUTLET STRUCTURE TO BE PRE-CAST WITH HOLE SIZES AND SPACING AS SHOWN WITH ANY ADJUSTMENTS APPROVED BY THE RESIDENT ENGINEER. HOLES SHALL BE CAST WITH THE SECTION TO AVOID POSSIBLE RUST STAINS FROM EXPOSED REINFORCEMENT. REFER TO SHEET 37 FOR DRAINAGE STRUCTURE DETAILS.
5. TOPSOIL AND SEED ALL EARTH SLOPES AS SOON AS POSSIBLE. STABILIZE THE INLET AREA WITH REQUIRED EROSION CONTROL.
6. REMOVE ACCUMULATED SEDIMENT FROM DETENTION POND AT COMPLETION OF PROJECT.
7. ANTI-SEEP COLLARS (INCIDENTAL TO PIPE) SHALL BE INSTALLED AS SHOWN TO RESIST FLOW ALONG THE OUTSIDE OF THE PIPE. COLLARS SHOULD PROJECT A MINIMUM OF 600mm FROM THE PIPE. MAXIMUM SPACING OF COLLARS IS 6.0m. COST OF THE CONCRETE ANTI-SEEP COLLARS WILL BE INCLUDED WITHTHE ITEM FOR THE OUTLET PIPE.



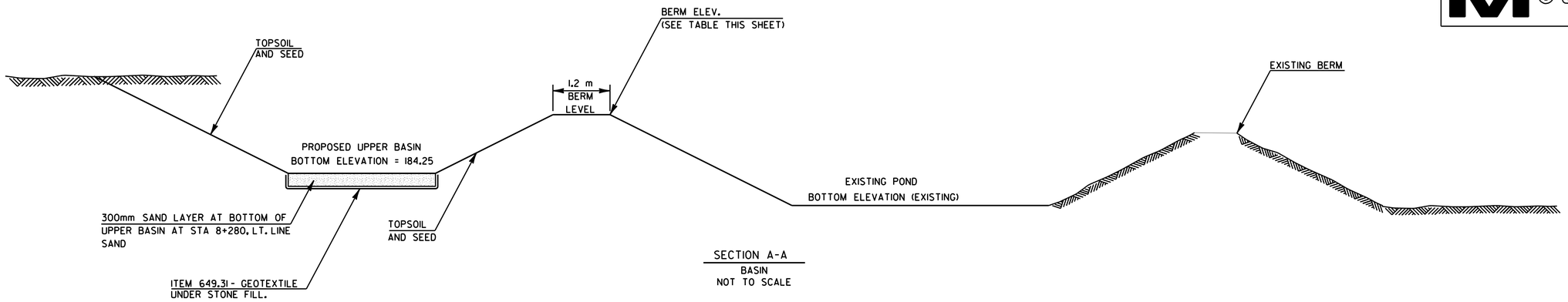
EXTENDED DETENTION BASIN SECTION
NOT TO SCALE

McFarland Johnson

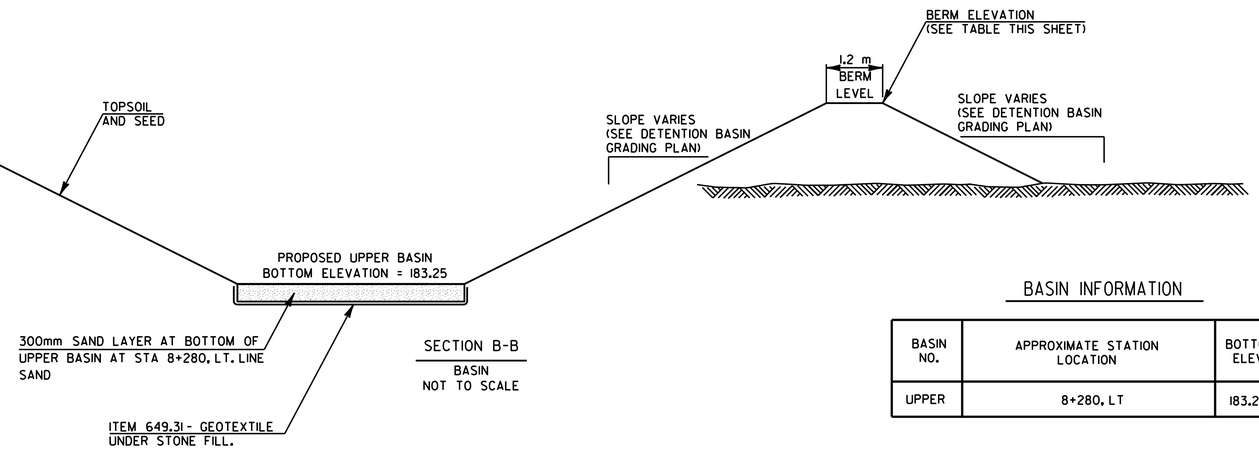
PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194draindet1.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
DETENTION BASIN DETAILS - 1

PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 53 OF 123



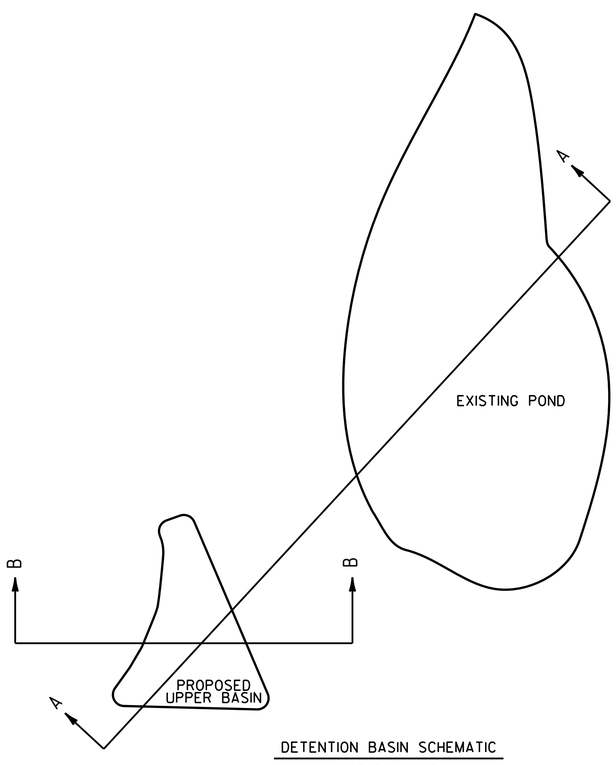
SECTION A-A
BASIN
NOT TO SCALE



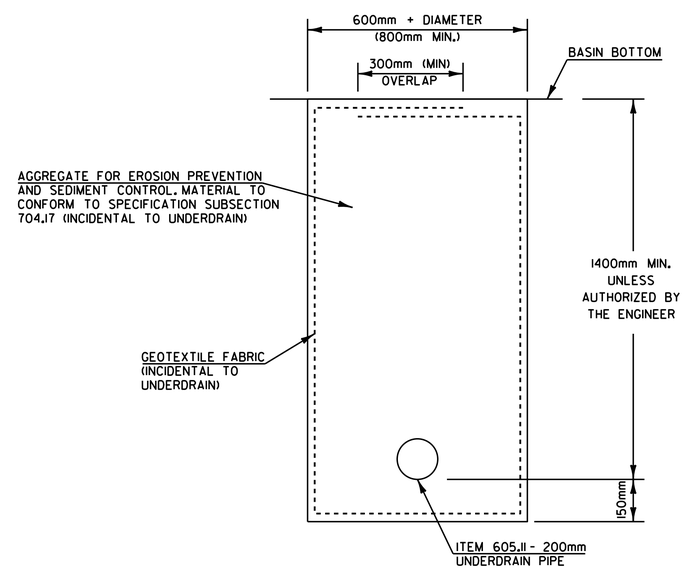
SECTION B-B
BASIN
NOT TO SCALE

BASIN INFORMATION

BASIN NO.	APPROXIMATE STATION LOCATION	BOTTOM ELEV.	BERM ELEV.
UPPER	8+280, LT	183.25	185.00



DETENTION BASIN SCHEMATIC
NOT TO SCALE



DETENTION BASIN UNDERDRAIN DETAIL
NOT TO SCALE

NOTES :

1. BERM SHOWN ON SECTION A-A AND B-B IS TO BE APPLIED WHERE REQUIRED - SEE BASIN GRADING PLAN.
2. ALL SLOPES ARE TO BE SEEDED TO THE ELEVATION SHOWN IN THE TABLE.
3. DURING CONSTRUCTION OF THE DETENTION BASIN GROUNDWATER MAY BE ENCOUNTERED. ITEM 613.10 - STONE FILL, TYPE I SHALL BE PLACED IN AREAS OF GROUNDWATER SEEPAGE INSTEAD OF SEED TO AN ELEVATION 600mm ABOVE THE OBSERVED GROUNDWATER ELEVATION PER ORDER OF THE ENGINEER.
4. SEE DETENTION BASIN GRADING PLAN FOR BASIN LAYOUT DETAILS.

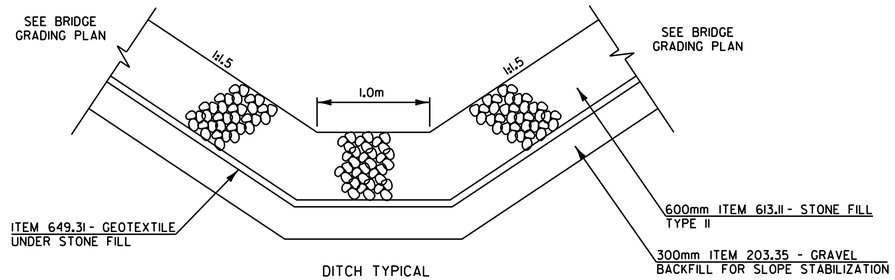
PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194drainde+2.dgn
PROJECT LEADER: DMB
DESIGNED BY: BRC
DETENTION BASIN DETAILS - 2

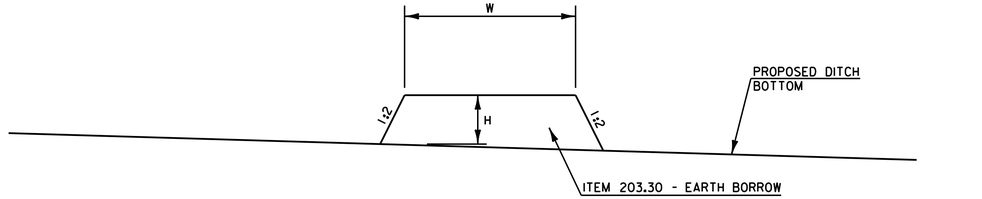
PLOT DATE: 29-MAR-2012
DRAWN BY: MAL
CHECKED BY: DMB
SHEET 54 OF 123

McFarland Johnson

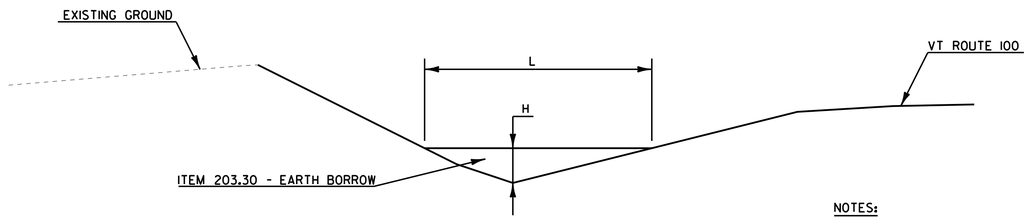
Metric



DITCH TYPICAL
STA 7+915 TO 7+939, RT
NOT TO SCALE



PROFILE



CROSS SECTION

DITCH BERM DETAIL
NOT TO SCALE

NOTES:

1. SEE BRIDGE GRADING PLANS FOR BACKSLOPE OF BERM AT STA. 7+908 LT.

2. SEE TABLE ON LAYOUT SHEETS FOR "W", "L", AND "H" DIMENSIONS.

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194det3.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
MISCELLANEOUS DETAILS	SHEET 55 OF 123

McFarland Johnson

METRIC TYP.

MORRISTOWN (PROJECT #F029-1(2) C/1)
MORRISTOWN, VERMONT

GENERAL NOTES:

DESIGN PROVISIONS:

1. THE FOLLOWING EFFECTIVE STRENGTH PARAMETERS WERE ASSUMED IN THE PREPARATION OF THE STRUCTURAL CALCULATIONS FOR THE RETAINING WALL SYSTEM:

	ϕ	c	γ	SOIL TYPE
REINFORCED SOIL	34°	0 kPa	19 KN/M³	SELECT GRANULAR
RETAINED SOIL	32°	0 kPa	19 KN/M³	SANDY SILT
FOUNDATION SOIL	32°	0 kPa	19 KN/M³	SANDY SILT

SOIL TYPES AND DESIGN PROPERTIES SHALL BE CONFIRMED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO WALL CONSTRUCTION.

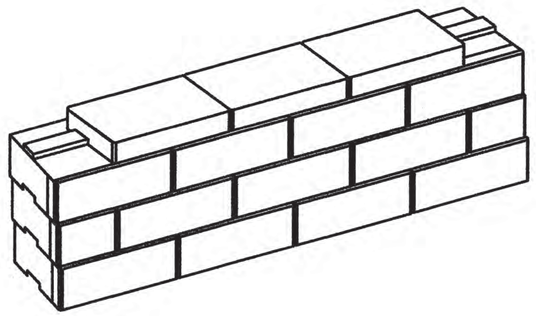
2. THE WALL IS DESIGNED TO SUPPORT THE FOLLOWING MAXIMUM SURCHARGE LOADINGS:

LIVE LOAD: 13.4 kPa
DEAD LOAD: NONE
BACK SLOPE: NONE
SEISMIC: NOT APPLICABLE
HYDROSTATIC: NOT APPLICABLE

3. THE FOUNDATION SOILS AT THE WALL LOCATIONS SHALL BE CAPABLE OF SAFELY SUPPORTING 175 kPa WITHOUT FAILURE OR EXCESSIVE SETTLEMENT. LOCAL BEARING CAPACITY SHALL BE CONFIRMED BY THE SITE GEOTECHNICAL ENGINEER AFTER FOUNDATION EXCAVATION AND PRIOR TO WALL CONSTRUCTION.

SUGGESTED QUALITY ASSURANCE PROVISIONS:

1. WALL CONSTRUCTION SHALL BE SUPERVISED BY A QUALIFIED ENGINEER OR TECHNICIAN TO VERIFY FIELD AND SITE SOIL CONDITIONS. IF THIS WORK IS NOT PERFORMED BY THE SITE GEOTECHNICAL ENGINEER, A QUALIFIED GEOTECHNICAL ENGINEER/TECHNICIAN SHALL BE CONSULTED IN THOSE MATTERS PERTAINING TO THE SOIL CONDITIONS AND WALL PERFORMANCE.



SHEET INDEX

SHEET	DESCRIPTION
55.	TITLE SHEET
56.	SITE PLAN
57.	WALL 1 ELEVATION
58.	WALL 1 ELEVATION
59.	TYPICAL WALL SECTION
60.	TYPICAL UNIT DETAILS
61.	SPECIFICATIONS
62.	BORING LOGS

GENERAL NOTES:

SUGGESTED QUALITY ASSURANCE PROVISIONS:

2. THE FOUNDATION SOILS AT THE BASE OF THE WALL SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER. ANY UNSUITABLE SOILS OR IMPROPERLY COMPACTED EMBANKMENT MATERIAL SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER PRIOR TO WALL CONSTRUCTION TO PROVIDE ADEQUATE BEARING CAPACITY AND MINIMIZE SETTLEMENT.

3. ALL WALL EXCAVATION AND RETAINED SOILS SHALL BE INSPECTED FOR GROUNDWATER CONDITIONS. ANY ADDITIONAL DRAINAGE PROVISIONS REQUIRED IN THE FIELD SHALL BE INCORPORATED INTO THE WALL CONSTRUCTION AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

4. WALL BACKFILL MATERIAL SHALL BE TESTED AND APPROVED BY THE ENGINEER, MEETING THE MINIMUM REQUIREMENTS OF THE APPROVED DESIGN PLANS OR SPECIFICATIONS.

5. ALL SOIL BACKFILL SHALL BE TESTED BY THE GEOTECHNICAL ENGINEER FOR MOISTURE, DENSITY, AND COMPACTION PERIODICALLY (EVERY 610 mm VERTICALLY, 30 m-60 m C/C) MEETING THE MINIMUM REQUIREMENTS OF THE APPROVED DESIGN PLANS OR SPECIFICATIONS.

6. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN QUALITY CONTROL FOR THE CONSTRUCTION OF THE WALL TO ASSURE COMPLIANCE WITH CONTRACT REQUIREMENTS AND MAINTAIN RECORDS OF ITS QUALITY CONTROL.

7. ALL WALL ELEVATIONS, GRADES, AND BACK SLOPE CONDITIONS SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD FOR CONFORMANCE WITH APPROVED DESIGN PLANS. ANY REVISIONS TO THE STRUCTURE GEOMETRY OR DESIGN CRITERIA SHALL REQUIRE DESIGN MODIFICATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.

MANUFACTURING PROVISIONS:

1. THE BLOCK SHALL RECON 50 SERIES BE AS MANUFACTURED BY S.D. IRELAND COMPANIES.

2. COLORING SHALL BE NATURAL CONCRETE WITH NORTH SHORE GRANITE TEXTURE.

STATE OF VERMONT
CURTIS J. DERICHS
NO. 018.0074668
CIVIL
LICENSED
PROFESSIONAL ENGINEER

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CIVIL DESIGN PROFESSIONALS
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BLOOMINGTON, MN 55420
PHONE: (952) 303-5312 | FAX: (763) 392-1989
WEBSITE: WWW.CDP-US.COM

No.	Date	Revision	By
1	8/20/10	REVISIONS PER REVIEW COMMENTS	ACM
2	1/30/12	REVISIONS PER REVIEW COMMENTS	CJD
3	3/15/12	REVISIONS PER REVIEW COMMENTS	CJD
4			
5			
6			

Designed By: CJD
Scale: N/A
Date: MAY 19, 2010

Project: MORRISTOWN (PROJECT #F029-1(2) C/1) MORRISTOWN, VERMONT

Title: TITLE SHEET

Registration No: 74668
Project No: 12-016
Sheet No: 56 OF 123

Curtis J. Derichs, P.E.
Date: 3/15/12

METRIC TYP.

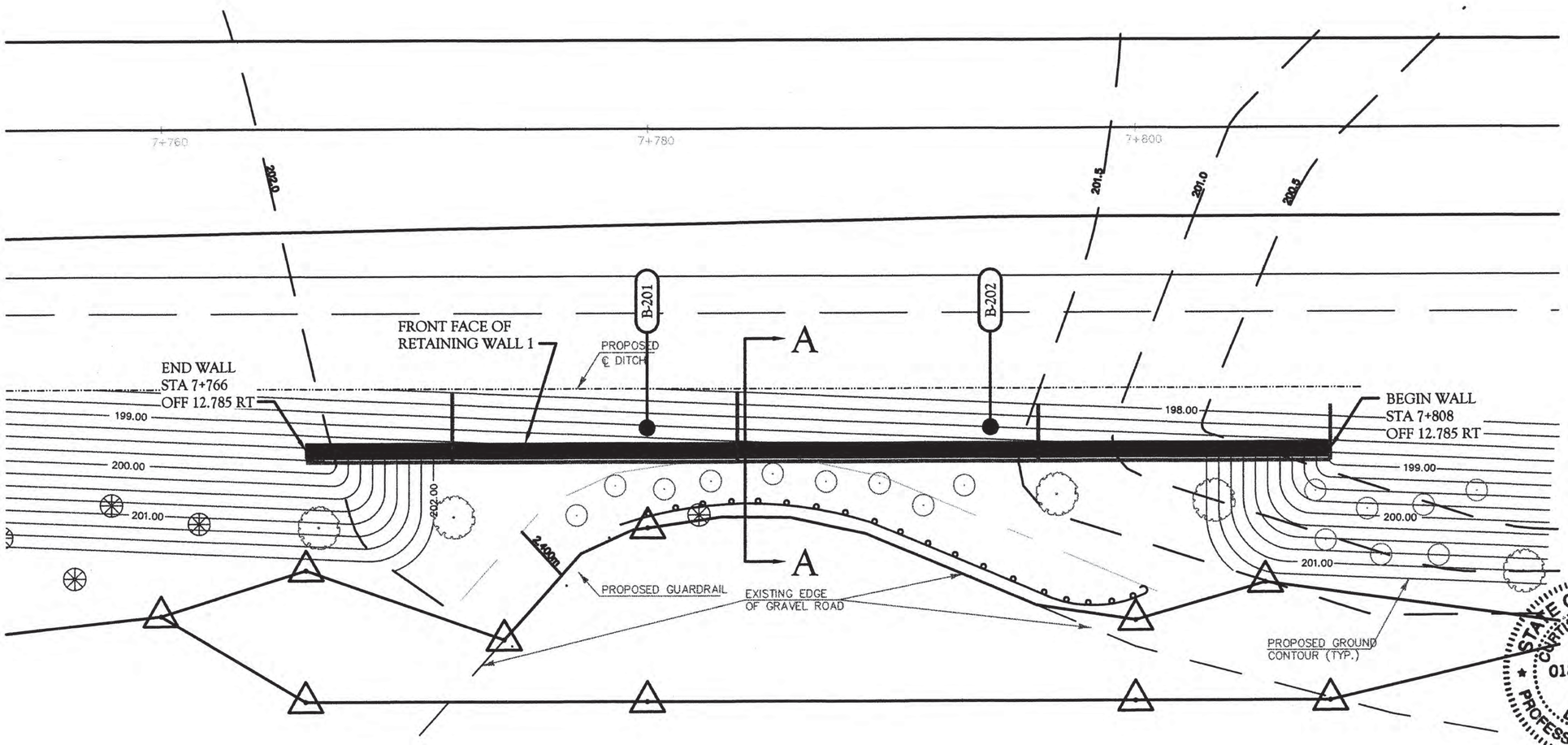
NOTES:

1. THE SITE PLAN SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY. IT WAS REPRODUCED FROM MCFARLAND JOHNSON PLANS DATED JAN 8, 2010 [PROJECT #STP F 029-1(2)].
2. THE CONTRACTOR SHALL VERIFY INVERTS OF PROPOSED AND EXISTING UTILITIES TO ENSURE THERE ARE NO CONFLICTS. THE ENGINEER SHALL BE CONTACTED IF CONFLICTS ARISE AND AN ALTERNATIVE DESIGN MAY BE REQUIRED.
3. APPROXIMATE LOCATION OF BORINGS ACCORDING TO THE BORING LOG AND THE GEOTECHNICAL REPORT FROM THE STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS AND RESEARCH SECTION. DATE STARTED 3-24-2010 AND ENDED 3-25-2010.

0 2 4 6 8 10

GRAPHIC SCALE IN METERS

PROPOSED DRAINPIPE



STATE OF VERMONT
CURTIS J. DERICHS
NO. 018.0074668 CIVIL
LICENSED PROFESSIONAL ENGINEER

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WEBSITE: WWW.CDP-US.COM

No.	Date	Revision	By
1	8/20/10	REVISIONS PER REVIEW COMMENTS	ACM
2	1/30/12	REVISIONS PER REVIEW COMMENTS	CJD
3	3/15/12	REVISIONS PER REVIEW COMMENTS	CJD
4			
5			
6			

Designed By: CJD
Scale: 1:200
Date: MAY 19, 2010

Project: MORRISTOWN (PROJECT #F029-1(2) C/1) MORRISTOWN, VERMONT

Title: SITE PLAN

Registration No: 74668
Project No: 12-016
Sheet No: 57 OF 123

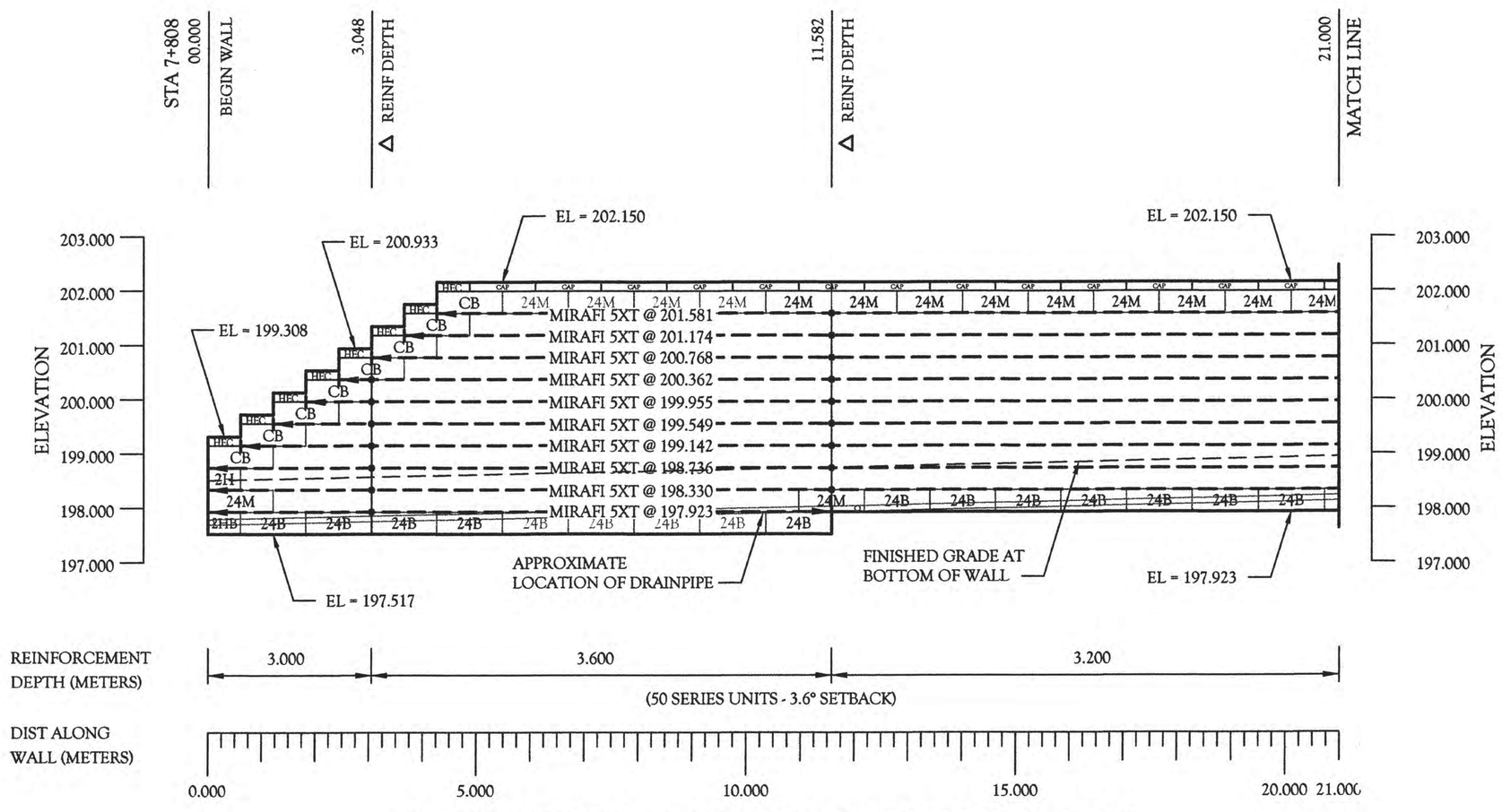
Curtis J. Derichs, P.E. Date: 3/15/12

METRIC TYP.

GENERAL NOTES:

1. WALL SHALL BE CONSTRUCTED WITH RECON 50 SERIES 610mm DEEP UNITS AND 165mm CAPSTONES PRODUCED BY S.D. IRELAND COMPANIES. SEE SPECIFICATION 2.02 (SHEET 61) FOR COLOR AND TEXTURE.
2. THE DESIGN REQUIRES MIRAFI 5XT SOIL REINFORCEMENT AT THE ELEVATIONS SHOWN.
3. ALL UNITS NOT SHOWN ARE 610mm DEEP FULL MIDDLE UNITS.
4. ALL DIMENSIONS ARE IN METERS UNLESS STATED OTHERWISE.
5. SEE MANUFACTURER INFORMATION FOR ADDITIONAL CONSTRUCTION DETAILS FOR THE RECON RETAINING WALL SYSTEM. THE MANUFACTURER INFORMATION SHALL ACCOMPANY THE CONSTRUCTION PLANS.

RECON BLOCK KEY:	
CB =	610mm DEEP CORNER BLOCK
24M =	610mm DEEP MIDDLE BLOCK
2H =	610mm DEEP HALF MIDDLE BLOCK
24B =	610mm DEEP BOTTOM BLOCK
2HB =	610mm DEEP HALF BOTTOM BLOCK
CAP =	165mm CAPSTONE
HEC =	HALF END CAPSTONE (FIELD CUT)



RECON WALL 1 - FRONT FACE ELEVATION

STATE OF VERMONT
CURTIS J. DERICHS
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LICENSED PROFESSIONAL ENGINEER

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No.	Date	Revision	By
1	8/20/10	REVISIONS PER REVIEW COMMENTS	ACM
2	1/30/12	REVISIONS PER REVIEW COMMENTS	CJD
3	3/15/12	REVISIONS PER REVIEW COMMENTS	CJD
4			
5			
6			

Designed By: CJD
Scale: 1:100
Date: MAY 19, 2010

Project: MORRISTOWN (PROJECT #F029-1(2) C/1) MORRISTOWN, VERMONT
Title: WALL 1 ELEVATION

Registration No: 74668
Project No: 12-016
Sheet No: 58 OF 123

Curtis J. Derichs, P.E.
Date: 3/15/12

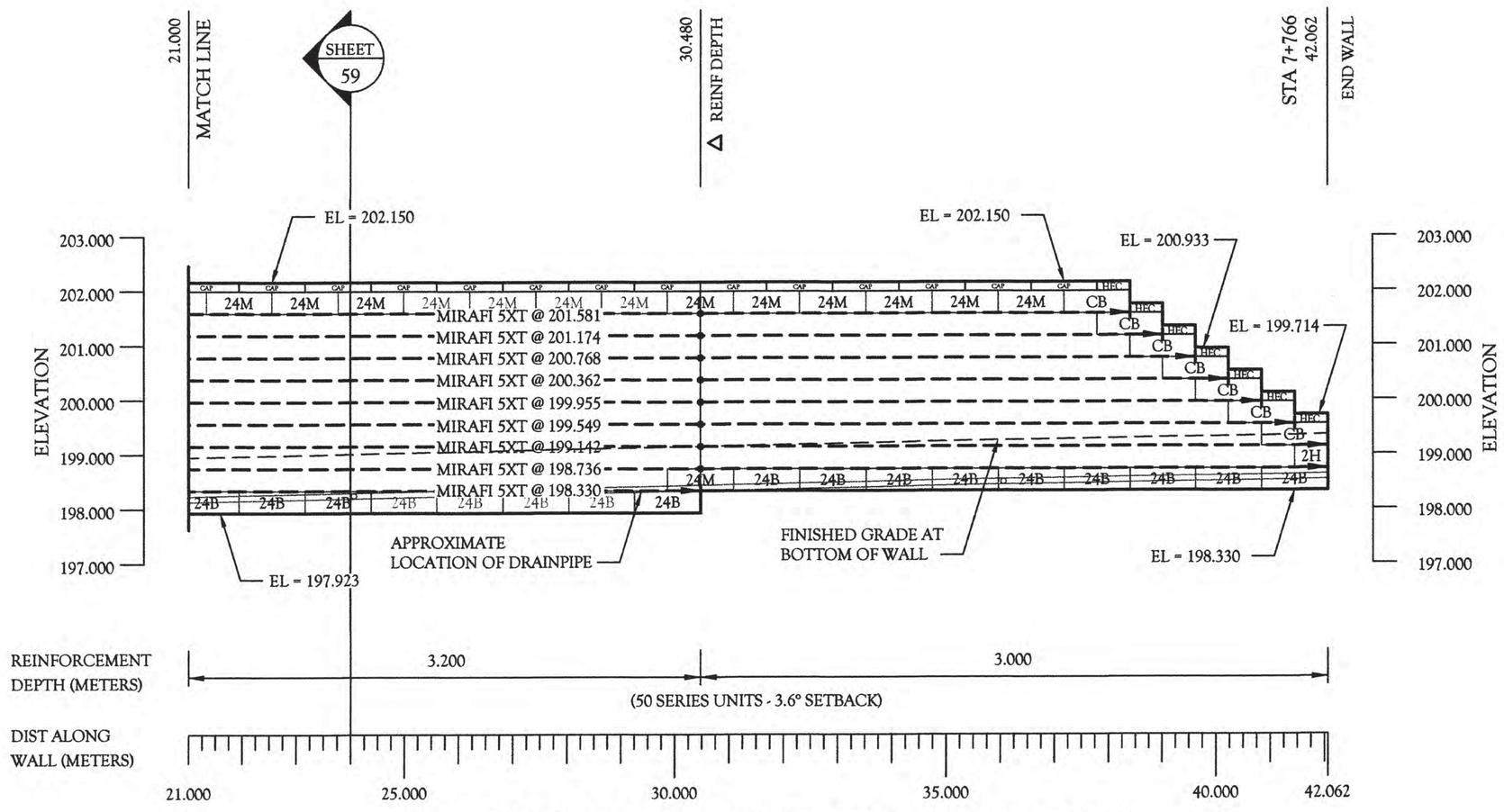
METRIC TYP.

GENERAL NOTES:

1. WALL SHALL BE CONSTRUCTED WITH RECON 50 SERIES 610mm DEEP UNITS AND 165mm CAPSTONES PRODUCED BY S.D. IRELAND COMPANIES. SEE SPECIFICATION 2.02 (SHEET 61) FOR COLOR AND TEXTURE.
2. THE DESIGN REQUIRES MIRAFI 5XT SOIL REINFORCEMENT AT THE ELEVATIONS SHOWN.
3. ALL UNITS NOT SHOWN ARE 610mm DEEP FULL MIDDLE UNITS.
4. ALL DIMENSIONS ARE IN METERS UNLESS STATED OTHERWISE.
5. SEE MANUFACTURER INFORMATION FOR ADDITIONAL CONSTRUCTION DETAILS FOR THE RECON RETAINING WALL SYSTEM. THE MANUFACTURER INFORMATION SHALL ACCOMPANY THE CONSTRUCTION PLANS.

RECON BLOCK KEY:

CB =	610mm DEEP CORNER BLOCK
24M =	610mm DEEP MIDDLE BLOCK
2H =	610mm DEEP HALF MIDDLE BLOCK
24B =	610mm DEEP BOTTOM BLOCK
2HB =	610mm DEEP HALF BOTTOM BLOCK
CAP =	165mm CAPSTONE
HEC =	HALF END CAPSTONE (FIELD CUT)



RECON WALL 1 - FRONT FACE ELEVATION

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No.	Date	Revision	By
1	8/20/10	REVISIONS PER REVIEW COMMENTS	ACM
2	1/30/12	REVISIONS PER REVIEW COMMENTS	CJD
3	3/15/12	REVISIONS PER REVIEW COMMENTS	CJD
4			
5			
6			

Designed By: CJD
Scale: 1:100
Date: MAY 19, 2010

Project: MORRISTOWN (PROJECT #F029-1(2) C/1) MORRISTOWN, VERMONT

Title: WALL 1 ELEVATION

Registration No: 74668
Project No: 12-016
Sheet No: 59 OF 123

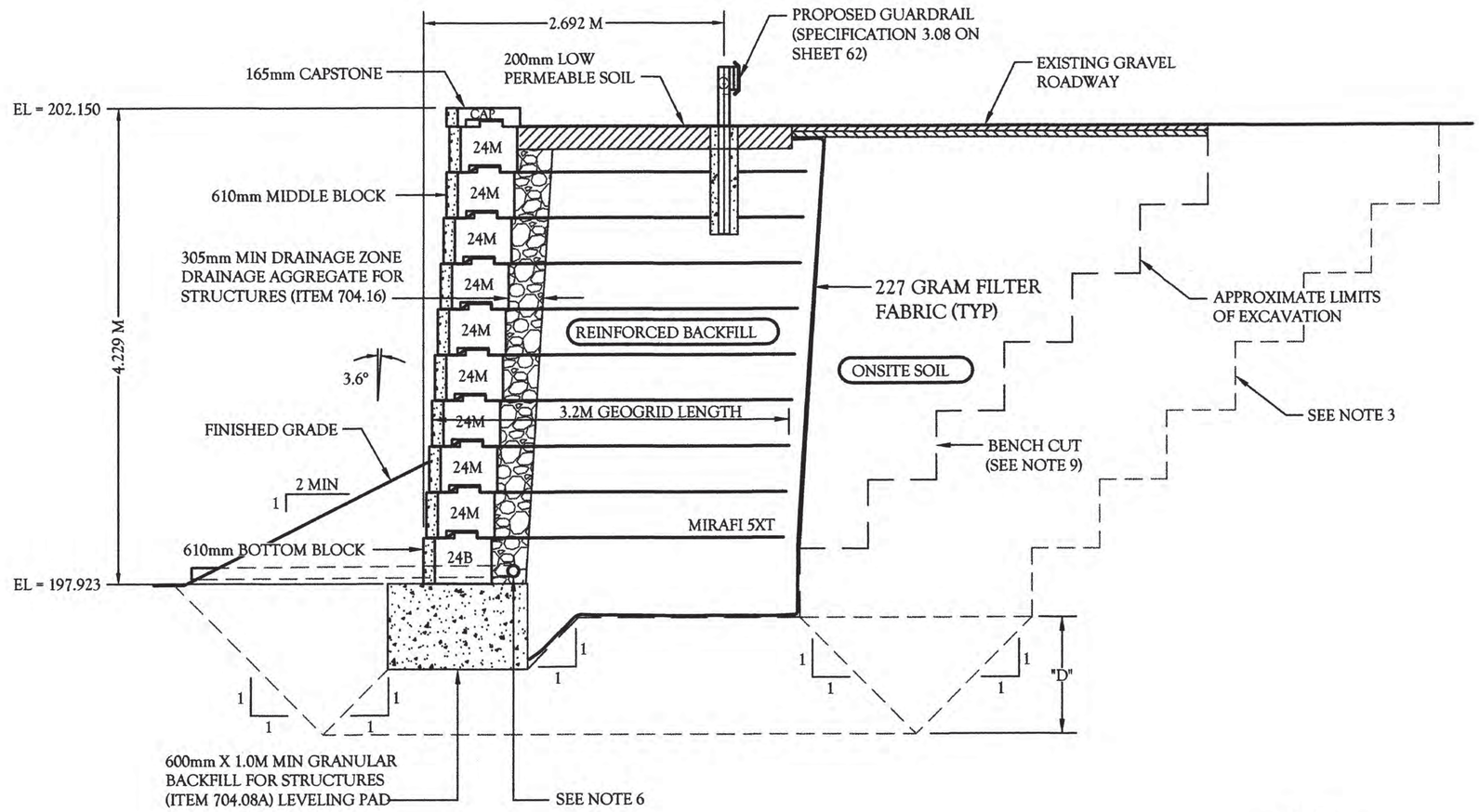
STATE OF VERMONT
CURTIS J. DERICHS
NO. 018.0074668
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Curtis J. Derichs, P.E.
Date: 3/15/12

METRIC TYP.

GENERAL NOTES:

1. THE SECTION SHOWN IS A REPRESENTATIVE WALL SECTION. THE WALL HEIGHTS, ELEVATIONS, TOE SLOPES, AND BACK SLOPES VARY ACCORDING TO THE ELEVATION PLAN AND SITE PLAN RESPECTIVELY.
2. UPON EXCAVATION, WHERE UNSUITABLE SOILS ARE FOUND, SUBCUT TO DEPTH "D" AS REQUIRED BY THE ONSITE GEOTECHNICAL ENGINEER AND REPLACE WITH SUITABLE COMPACTED STRUCTURAL FILL TO ACHIEVE THE REQUIRED BEARING CAPACITY. THE STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY.
3. APPROXIMATE LIMITS OF EXCAVATION VARIES WHERE SUBCUT IS REQUIRED. ACTUAL LIMITS AND SIDE SLOPES TO BE DETERMINED BY CONTRACTOR AND MATCH FIELD CONDITIONS AND OSHA REGULATIONS.
4. THE WALL SHALL BE CONSTRUCTED WITH RECON 610mm (24") DEEP UNITS USING THE 3.6° BATTER WITH 165mm (6") CAPS.
5. THE DESIGN REQUIRES MIRAFI 5XT SOIL REINFORCEMENT AT THE ELEVATIONS SHOWN.
6. A 100mm THERMOPLASTIC PERFORATED DRAINPIPE WRAPPED WITH GEOTEXTILE. OUTLET DRAINPIPE AT 12.000M O.C. AND LOW ENDS OF WALL OR INTO ONSITE DRAINAGE.
7. TO PREVENT PONDING OF WATER, POSITIVE DRAINAGE SHALL BE PROVIDED AT THE TOP AND BOTTOM OF WALL. INSPECT EXCAVATION SLOPES FOR ACTIVE SEEPAGE AND PLACE ADDITIONS DRAINS WHERE SEEPAGE OCCURS.
8. DO NOT BRING HEAVY COMPACTION OR PAVING EQUIPMENT WITHIN 1.0M OF THE BACK OF THE RECON RETAINING WALL (HAND OPERATED EQUIPMENT SHALL BE USED IN THIS ZONE).
9. BENCH CUT SHALL SHALL COMPLY WITH ALL STATE, COUNTY, AND CITY REGULATIONS AND CODES AND OSHA STANDARDS.
10. SEE MANUFACTURER INFORMATION FOR ADDITIONAL DETAILS ON THE RECON RETAINING WALL SYSTEM. A COPY OF S.D. IRELAND COMPANIES CONSTRUCTION MANUAL SHALL ACCOMPANY THE CONSTRUCTION PLANS.
11. CIVIL DESIGN PROFESSIONALS SHALL NOT BE LIABLE FOR CONTRACTOR NEGLIGENCE.



TYPICAL REINFORCED WALL SECTION (A - A)

(WALL 1 SECTION SHOWN @ 24.0M)

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3	3/15/12	REVISIONS PER REVIEW COMMENTS	CJD
4			
5			
6			

Designed By: CJD
Scale: 1/4" = 1'-0"
Date: MAY 19, 2010

Project: MORRISTOWN (PROJECT #F029-1(2) C/1) MORRISTOWN, VERMONT

Title: TYPICAL WALL SECTION

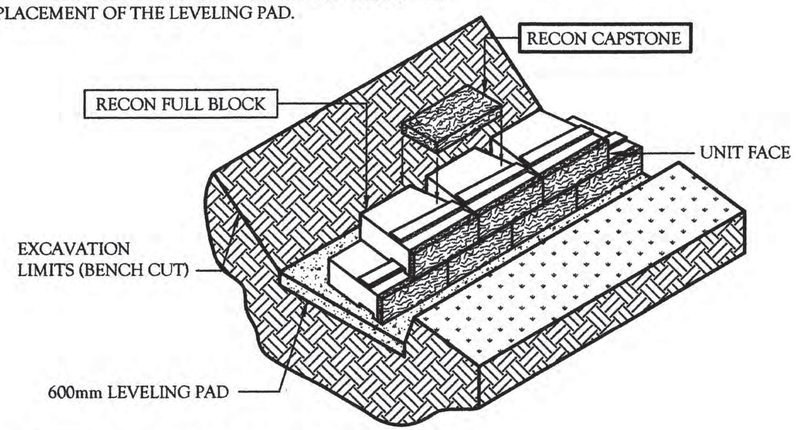
Registration No: 74668
Project No: 12-016
Sheet No: 60 OF 123

Curtis J. Derichs, P.E. Date: 3/15/12

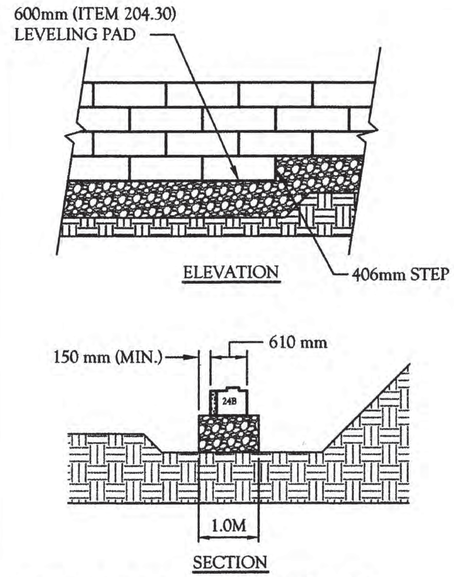
METRIC TYP.

LEVELING PAD NOTES:

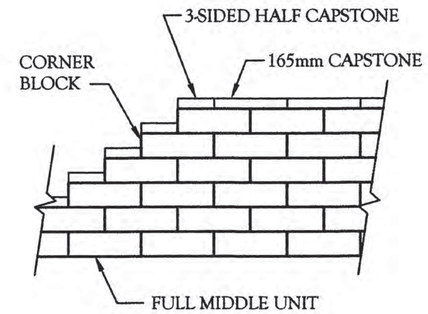
1. THE LEVELING PAD SHALL BE CONSTRUCTED WITH GRANULAR BACKFILL FOR STRUCTURES (ITEM 204.30)
2. THE BASE FOUNDATION SHALL BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE LEVELING PAD.



1/61 RECON/BASE PAD ISOMETRIC VIEW
SCALE: N.T.S.



2/61 LEVELING PAD DETAIL
SCALE: N.T.S.



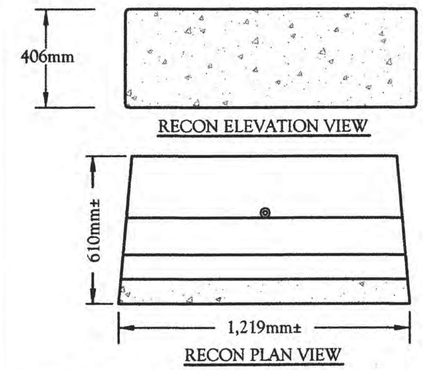
3/61 TOP OF WALL STEPS
SCALE: N.T.S.

NOTE:

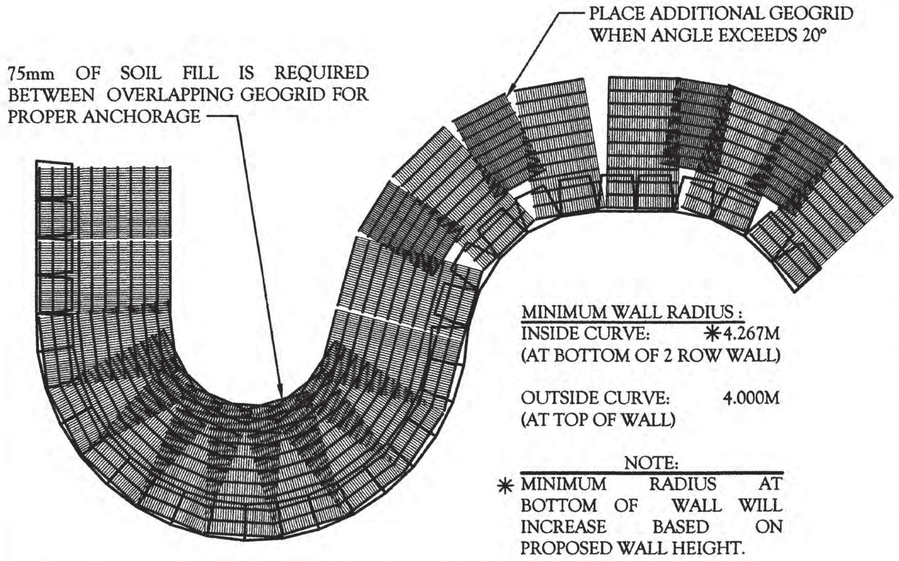
1. SEE SPECIFICATION 2.02 (SHEET 61) FOR COLOR AND TEXTURE.

RECON 610mm UNIT	
WIDTH:	1,219mm
DEPTH:	610mm
HEIGHT:	406mm
WEIGHT:	±640kg

RECON CAPSTONE	
WIDTH:	1,219mm
DEPTH:	610mm
HEIGHT:	165mm
WEIGHT:	±272kg



4/61 RECON UNIT
SCALE: N.T.S.

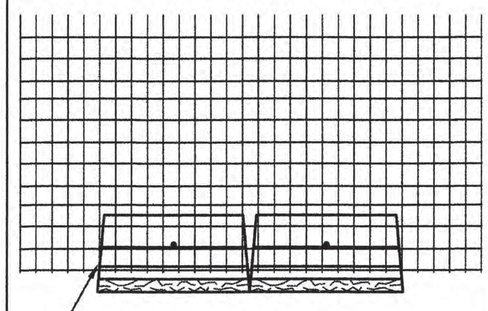


MINIMUM WALL RADIUS :
INSIDE CURVE: ✳4.267M
(AT BOTTOM OF 2 ROW WALL)

OUTSIDE CURVE: 4.000M
(AT TOP OF WALL)

NOTE:
✳ MINIMUM RADIUS AT BOTTOM OF WALL WILL INCREASE BASED ON PROPOSED WALL HEIGHT.

5/61 GEOGRID INSTALLATION ON CURVES
SCALE: N.T.S.

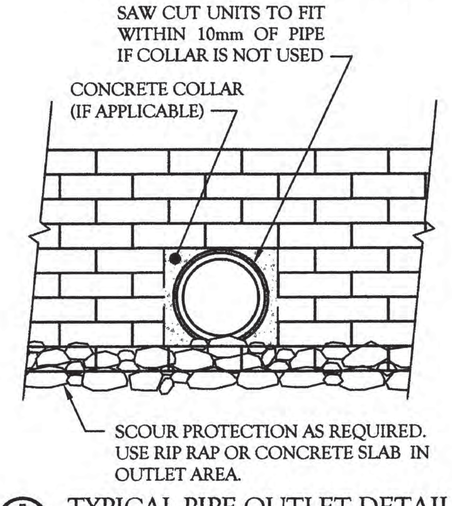


GEOGRID SHALL BE PLACED ON LEVEL BACKFILL AND EXTENDED UP TO THE FACE OF UNIT. PLACE NEXT UNIT. PULL GRID TAUT AND BACKFILL. STAKE AS REQUIRED.

6/61 GEOGRID DETAIL
SCALE: N.T.S.

NOTE:

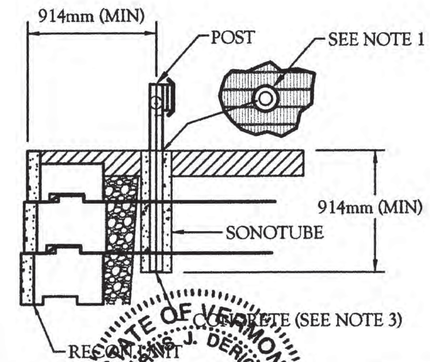
1. FOR PIPES LARGER THAN 610mm, A CONCRETE COLLAR MAY BE CAST AROUND PIPE FOR EASE OF CONSTRUCTION AND APPEARANCE.



7/61 TYPICAL PIPE OUTLET DETAIL
SCALE: N.T.S.

NOTE:

1. SEE SPECIFICATION 3.08 ON SHEET 62
2. VTRANS STANDARD GUIDERAIL DESIGN



8/61 TYPICAL GUIDERAIL POST DETAIL
SCALE: N.T.S.

STATE OF VERMONT
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Curtis J. Derichs, P.E. Date: 3/15/12

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6			

Designed By: CJD
Scale: N/A
Date: MAY 19, 2010

Project: MORRISTOWN (PROJECT #F029-1(2) C/1) MORRISTOWN, VERMONT

Title: TYPICAL UNIT DETAILS

Registration No: 74668
Project No: 12-016
Sheet No: 61 OF 123

METRIC TYP.

PART 1: GENERAL

1.01 Description

A. The work to be performed includes sourcing, providing and installing concrete retaining wall blocks to the lines and grades as specified on the project construction drawings and as may be further specified herein.

B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit fill and backfill to the lines and grades shown on the construction drawings.

C. Work includes furnishing and installing all related materials required for construction of the retaining wall as shown on the construction shop drawings.

1.02 Reference Standards

A. ASTM D448 Sizes of Aggregate for Road and Bridge Construction.

B. AASHTO T 27 Sizes of Aggregate.

C. ASTM D698 Laboratory Compaction Characteristics using Standard Effort.

D. AASHTO T 96 Aggregate percent of wear.

1.03 Quality Assurance

A. Owner shall be responsible for soil testing, compaction testing and inspection quality control during earthwork operations.

PART 2: MATERIALS

2.01 Definitions

A. ReCon Retaining Wall Unit - A precast concrete, segmental facing block provided by an authorized manufacturer under license to ReCon Retaining Wall Systems, Inc.

B. Base Leveling Pad - An unreinforced cast-in-place or compacted crushed stone pad which serves as a flat surface for placing the initial course of precast units.

C. Drainage Aggregate - Clean 25.4mm minus crushed angular rock located immediately behind the retaining wall units to facilitate drainage and help compaction in close proximity to the retaining wall units.

D. Foundation Soil - Soil zone immediately beneath the retaining wall facing units and the wall leveling pad.

E. Retained Soil - Soil immediately behind the retaining wall facing drainage aggregate or reinforced backfill if present.

F. Subsurface Drainage System - A system for removing water from behind the wall and channeling it to a point of positive drainage.

2.02 ReCon Retaining Wall Units

A. ReCon wall units shall have a minimum 28-day compressive strength of 35 MPa. Standard weight concrete shall have a 5-9% air entrainment by volume. Weight of concrete shall be 21kN/m^3.

B. Texture on the face of the block shall be North Shote Granite.

C. Color of block shall be Natural Concrete.

D. Block shall be fabricated in accordance to S.D. Ireland Companies standard drawings.

2.03 Geogrid

A. Geogrid shall be the type as shown on the drawings having the proerty requirements described within the manufacturer's specifications and required by the design.

2.04 Base Leveling Pad Material

A. As shown on the construction drawings, material shall consist of compacted granular backfill for structures (Item 704.08A) meeting the sieve criteria shown.

Sieve Size	% Passing
25mm	100
19mm	75-100
4.75mm	0-10
0.075mm	0-5

2.05 Drainage Aggregate

A. Drainage Stone shall consist of granular backfill for structures (Requirements 704.16) meeting the sieve criteria shown:

Sieve Size	% Passing
25mm	100
19mm	90-100
9.5mm	20-55
4.75mm	0-10
2.36mm	0-10

2.06 Reinforced Backfill (Select Granular)

A. Reinforced backfill shall be free of debris or organic material meeting the following gradation:

Sieve Size	% Passing
50mm	100
19mm	75-100
4.75mm	20-100
0.07mm	0-12

Plasticity Index (PI)<6

B. The maximum aggregate size shall be limited to 200mm unless field tests have been performed to evaluate potential strength reduction to installation.

C. Material can be site excavated material when the above requirements are met. Unsuitable soils for backfill (high plastic clays or organic materials) shall not be used in the reinforced soil mass.

D. Contractor shall submit reinforced fill sample and test results to the Architect/Engineer for approval prior to construction.

2.07 Low Permeable Soil

A. Low permeable soil shall have an infiltration rate less than 10mm/hour, such as those classified in Hydrologic Soil Groups (HSG) C and D.

PART 3: EXECUTION

3.01 Excavation

A. Contractor shall excavate to the lines and grades shown on the construction drawings. Contractor shall be careful not to disturb embankment and foundation materials beyond lines shown.

3.02 Foundation Soil Preparation

A. Foundation soil shall be excavated as required for leveling pad dimensions shown on the construction drawings, or as directed by the Geotechnical Engineer. Unsuitable soils shall be removed and replaced with acceptable material.

B. Over-excavated areas shall be backfilled with approved compacted backfill material.

3.03 Base Leveling Pad

A. Leveling pad materials shall be placed upon approved foundation as shown on the construction drawings to a minimum thickness of 600mm.

B. Aggregate material shall be compacted to provide a dense, level surface on which to place the first course of modular units. Compaction shall be to 95% of Standard Proctor Density as determined in accordance with ASTM D698. For crushed rock, material shall be densely compacted as determined by visual observation.

3.04 Unit Installation

A. The first course of concrete modular wall units shall be carefully placed on the base leveling pad. Each unit shall be checked for level and alignment.

B. Units are placed side by side for full length of wall alignment. Alignment may be done by means of a string line or offset from a base line.

C. Sweep excess material from top of units and install next course. Ensure that each course is completely backfilled and compacted prior to proceeding to next course.

3.05 Geogrid Installation

A. Geogrid shall be laid at the proper elevations and orientation as shown on the construction drawings or as directed by the Engineer. embed grid over the tongue and groove and up the unexposed front edge of the block.

B. The geogrid shall be pulled taut (75 kg/m) to eliminate loose folds and pretension the reinforcement. Stake or secure back edge of geogrid prior to and during backfill and compaction.

C. Correct orientation (roll direction) of the geogrid shall be verified by the contractor.

3.06 Fill Placement

A. Backfill material shall be placed with a maximum of 203mm lifts and compacted to 95% of Standard Proctor Density. As determined in accordance with ASTM D698. The in place moisture content shall not exceed the optimum moisture content as determined in accordance with ASTM D698 and be no lower than 2% below optimum moisture content.

B. Backfill shall be placed, spread and compacted in such a manner that minimizes the development of slack or loss of pretension of the geogrid.

C. Backfill shall be placed from the wall back towards the embankment to ensure that the geogrid reamins taut.

D. Only hand-operated compaction equipment shall be allowed within 1.000m of the back surface of the concrete units.

E. Tracked construction equipment shall not be operated directyl on the geogrid. A minimum backfill thickness of 150mm is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles shall be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

F. Rubber-tired equipment may pass over the geogrid reinforcement at slow speeds, (less than 16 kmph). Avoid sudden braking and sharp turning.

3.07 Capstone Installation

A. Clean and apply adhesive to top course of ReCon wall units prior to placing capstone.

B. Capstones shall be set in a bed of adhesive designed to withstand moisture and temperature extremes, remain flexible, and shall be specifically formulated for bonding masonry to masonry.

C. Trim sides of interior capstones to insure proper fit of wall cap. Do not leave cut surfaces exposed to view in the finished wall.

3.08 Guard Rail Installation

A. At each proposed guard rail post location, the Contractor shall install a one-foot diameter Sono-Tube or approved equal.

B. Sono-Tubes shall be installed to a depth equal to the maximum depth of each individual guard rail post and shall be centered to each individual guard rail post. Provision for the installation of these Sono-Tubes shall be made in each layer of geogrid by the Contractor.

C. Once all of the layers of geogrid and backfill material have been installed, the Contractor shall install the guard rail post in each Sono-tube and backfill with Class B concrete meeting the requirements of Section 501.

D. Sono-tubes shall be cut, as necessary, to an elevation flush with the finished grade.

E. Furnishing and installing the Sono-tubes and Class B concrete backfill shall be considered incidental to Item 621.20 Steel Beam Guardrail.

STATE OF VERMONT
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Curtis J. Derichs, P.E. Date: 3/15/12

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Designed By: CJD
Scale: N/A
Date: MAY 19, 2010

Project: MORRISTOWN (PROJECT #F029-1(2) C/1) MORRISTOWN, VERMONT

Title: SPECIFICATIONS

Registration No: 74668
Project No: 12-016
Sheet No: 62 OF 123

METRIC TYP.

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING NUMBER: B-201
SHEET 1 of 1
DATE STARTED: 3/24/10
DATE COMPLETED: 3/25/10

PROJECT NAME: MORRISTOWN
SITE NAME: VT-100
STATION: 7+780
OFFSET: 12.79
VTSPG NAD83: N 228831.57 m E 491418.62 m

PROJECT NUMBER: STP F 029-1(2)
SITE NUMBER: BYPASS
GROUND ELEVATION: 200.70 m
GROUNDWATER DEPTH: NO WATER TO DEPTH
PROJECT PIN NUMBER: 78D082

BORING CREW
CREW CHIEF: PORTER
DRILLER: PORTER
LOGGER: WERNER

BORING RIG: CME 55 TRACK AUTO
BORING TYPE: HOLLOW STEM AUGER
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: NSM

DEPTH (m)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 300mm	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		A-3, Sa, brn, Moist, Rec. = 0.45 m	10	7.5	17.9	75.4	6.7
2		A-3, Sa, brn, Moist, Rec. = 0.44 m	4	13.4	2.5	90.5	7.0
		A-2-4, Sa, brn, Moist, Rec. = 0.54 m	16	12.3	3.4	83.8	12.8
4		A-4, SaSi, brn, Moist, Rec. = 0.41 m	12	24.9	0.1	20.6	79.3
6		A-1-a, SaGr, brn, Moist, Rec. = 0.34 m	56	6.6	52.3	35.6	12.1
8		A-1-b, GrSa, brn, Moist, Rec. = 0.33 m	18	4.1	38.6	54.0	7.4
10		A-1-a, SaGr, brn, Moist, Rec. = 0.34 m	36	3.0	49.9	42.5	7.6
		A-1-b, GrSa, brn, Moist, Rec. = 0.51 m	31	3.2	42.3	50.2	7.5
12		A-1-a, SaGr, brn, Moist, Rec. = 0.34 m	43	3.2	62.0	30.1	7.9
14		A-1-b, GrSa, brn, Moist, Rec. = 0.56 m	30	5.2	42.1	43.9	14.0
		Hole stopped @ 14.10 m					
16							
18							

DRILLER'S NOTES:
1. No Ledge to Depth.
2. The hammer energy correction factor, C_E for the CME 55 Track Rig used in this investigation is 1.46. The N values provided on the boring logs are raw values and have not been corrected.

LOG OF BORING MORRISTOWN STP F 029-1(2).GPJ VT AOT.GDT 5/3/10

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING NUMBER: B-202
SHEET 1 of 1
DATE STARTED: 3/25/10
DATE COMPLETED: 3/25/10

PROJECT NAME: MORRISTOWN
SITE NAME: VT-100
STATION: 7+794
OFFSET: 12.79
VTSPG NAD83: N 228842.97 m E 491427.48 m

PROJECT NUMBER: STP F 029-1(2)
SITE NUMBER: BYPASS
GROUND ELEVATION: 200.30 m
GROUNDWATER DEPTH: NO WATER TO DEPTH
PROJECT PIN NUMBER: 78D082

BORING CREW
CREW CHIEF: PORTER
DRILLER: PORTER
LOGGER: WERNER

BORING RIG: CME 55 TRACK AUTO
BORING TYPE: HOLLOW STEM AUGER
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: NSM

DEPTH (m)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 300mm	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		A-2-4, Sa, brn, Moist, Rec. = 0.39 m	11	11.0	8.3	80.2	11.5
2		A-3, Sa, brn, Moist, Rec. = 0.51 m	11	10.2	1.2	89.8	9.0
		A-2-4, SiSa, brn, Moist, Rec. = 0.48 m	11	11.4	1.7	75.2	23.1
4		A-4, SiSa, brn, Moist, Rec. = 0.33 m	10	18.7	0.4	51.2	48.4
6		A-4, Si, brn, Moist, Rec. = 0.49 m	14	23.6	0.0	19.3	80.7
8		A-1-a, SaGr, brn, Moist, Rec. = 0.42 m	42	2.3	53.7	36.1	10.2
10		A-1-a, SaGr, brn, Moist, Rec. = 0.31 m	27	2.0	61.5	31.9	6.6
		A-1-b, GrSa, brn, Moist, Rec. = 0.48 m	9	1.8	27.8	64.9	7.3
12		A-1-a, SaGr, brn, Moist, Rec. = 0.21 m	23	1.3	52.0	38.7	9.3
14		A-1-a, SaGr, brn, Moist, Rec. = 0.36 m	40	1.0	65.0	26.7	8.3
		Hole stopped @ 14.10 m					
16							
18							

DRILLER'S NOTES:
1. No Ledge to Depth.
2. The hammer energy correction factor, C_E for the CME 55 Track Rig used in this investigation is 1.46. The N values provided on the boring logs are raw values and have not been corrected.

LOG OF BORING MORRISTOWN STP F 029-1(2).GPJ VT AOT.GDT 5/3/10

STATE OF VERMONT
CURTIS J. DERICHS
NO. 018.0074668
CIVIL
LICENSED
PROFESSIONAL ENGINEER

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No.	Date	Revision	By
1	8/20/10	REVISIONS PER REVIEW COMMENTS	ACM
2	1/30/12	REVISIONS PER REVIEW COMMENTS	CJD
3	3/15/12	REVISIONS PER REVIEW COMMENTS	CJD
4			
5			
6			

Designed By: CJD
Scale: N/A
Date: MAY 19, 2010

Project: MORRISTOWN (PROJECT #F029-1(2) C/1)
MORRISTOWN, VERMONT

Title: BORING LOGS

Registration No: 74668
Project No: 12-016
Sheet No: 63 OF 123

Curtis J. Derichs, P.E.
Date: 3/15/12

SOIL CLASSIFICATION

AASHTO

A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN kPa	CONSISTENCY
<12	Very Soft
12-24	Soft
24-48	Med. Stiff
48-96	Stiff
96-192	Very Stiff
>192	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)

N	DESCRIPTIVE TERM
<5	Very Loose
5-10	Loose
11-24	Med. Dense
25-50	Dense
>50	Very Dense

CONSISTENCY (COHESIVE SOILS)

N	DESCRIPTIVE TERM
<2	Very Soft
2-4	Soft
5-8	Med. Stiff
9-15	Stiff
16-30	Very Stiff
31-60	Hard
>60	Very Hard

COMMONLY USED SYMBOLS

▼	Water Elevation
⊗	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per 300 mm For: 50.8 mm O.D. Sampler 35.0 mm I.D. Sampler Hammer Weight Of 63.5 kg. Hammer Fall Of 762 mm
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 30.1mm
BX	Core Size 42.0 mm
NX	Core Size 54.7 mm
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	To Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)

COLOR

blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 304.8 mm.

COBBLE - Rock fragments with an average dimension between 76.2 and 304.8 mm.

GRAVEL - Rounded particles of rock < 76.2 mm and > 2 mm (#10 sieve).

SAND - Particles of rock < 2 mm (#10 sieve) and > 75 μm (#200 sieve).

SILT - Soil < 75 μm (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

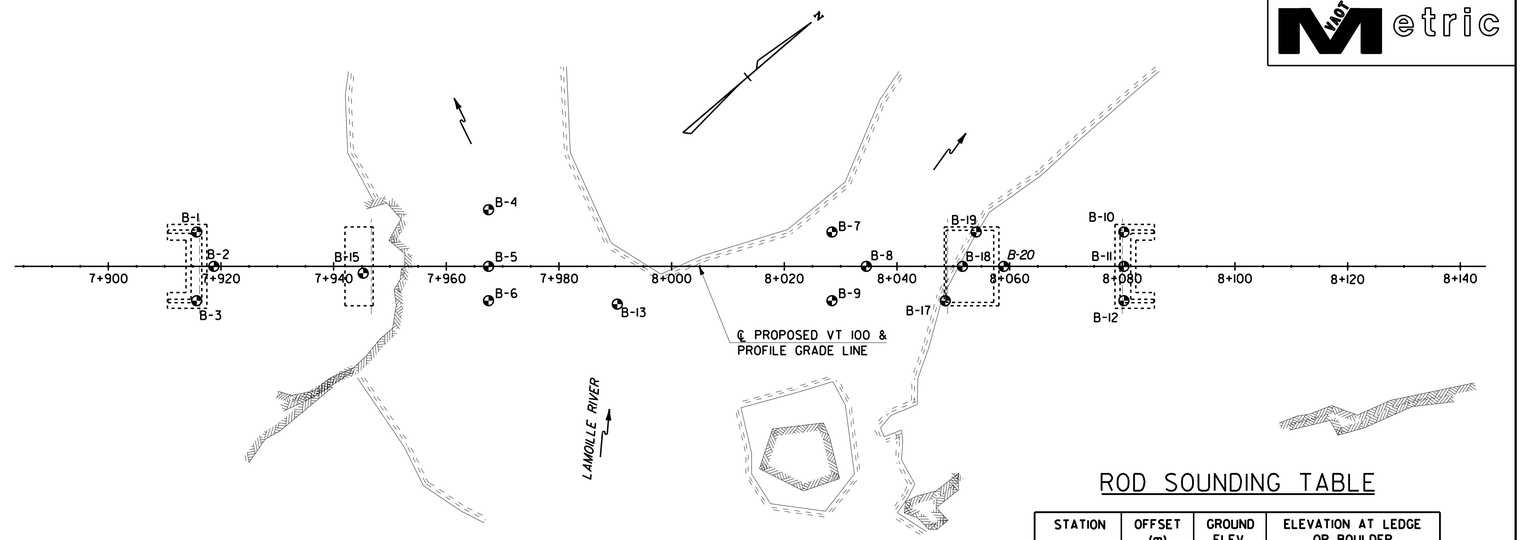
MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.



BORING LAYOUT

SCALE: 1:500

0 10 20 30

SCALE IN METERS

BORING CHART

HOLE NO.	STATION	OFFSET (m)	GROUND ELEV.	BEDROCK ELEV.
B1	7+915.683	6.10 LT	192.36	177.12
B2	7+918.731	℄	192.88	180.99
B3	7+915.683	6.10 RT	194.68	186.29
B4	7+967.499	10.06 LT	177.15●	164.96
B5	7+967.499	℄	177.15●	163.01
B6	7+967.499	6.10 RT	177.15●	164.23
B7	8+028.459	6.10 LT	177.76	165.57
B8	8+034.555	℄	177.15●	166.18
B9	8+028.459	6.10 RT	177.15●	168.01
B10	8+080.275	6.10 LT	180.72	176.05
B11	8+080.275	℄	180.78	177.27
B12	8+080.275	6.10 RT	181.11	178.52
B13	7+990.359	6.71 RT	177.15●	162.06
B15	7+945.249	1.22 RT	184.41	182.40
B17	8+048.576	6.10 RT	177.69	170.53
B18	8+051.624	℄	177.27	172.24
B19	8+054.063	6.10 LT	176.56	172.45
B20	8+058.939	℄	178.64	172.08

NOTE: ● = RAFT DECK ELEVATION

ROD SOUNDING TABLE

STATION	OFFSET (m)	GROUND ELEV.	ELEVATION AT LEDGE OR BOULDER
7+940.067	9.14 LT	179.35	176.91
	6.10 LT	180.35	177.61
	3.05 LT	182.09	180.72
	℄	183.40	181.87
	3.05 RT	184.80	182.36
	6.10 RT	185.66	182.61
	9.14 RT	186.33	183.58
7+943.115	9.14 LT	178.74	177.67
	6.10 LT	180.02	178.95
	3.05 LT	181.48	180.56
	℄	183.19	180.38
	3.05 RT	184.44	182.67
	6.10 RT	185.23	182.54
	9.14 RT	185.66	183.82
7+946.163	9.14 LT	178.68	178.40
	6.10 LT	180.54	179.47
	3.05 LT	181.76	180.08
	℄	182.97	181.90
	3.05 RT	183.95	183.03
	6.10 RT	184.68	183.76
	9.14 RT	184.83	183.86
7+949.211	9.14 LT	178.52	178.37
	6.10 LT	179.96	179.19
	3.05 LT	INACCESSIBLE	
	℄	182.67	181.81
	3.05 RT	183.28	182.21
	6.10 RT	INACCESSIBLE	
	9.14 RT	INACCESSIBLE	

GENERAL NOTES

1. The subsurface explorations shown herein were made between Dec 1986 and July 1988 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

BORING LOGS ARE IN ENGLISH UNITS. A METRIC ELEVATION COLUMN HAS BEEN ADDED TO EACH BORING LOG FOR REFERENCE.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194abi.dgn
PROJECT LEADER: DMB
DESIGNED BY: VTrans / S. Della
BORING INFORMATION SHEET

PLOT DATE: 29-MAR-2012
DRAWN BY: P. Dustin
CHECKED BY: R. Joy
SHEET 64 OF 123

VAOT Metric

MORRISTOWN F 029-1(2)

* HOLE NO. B-1 STA. 259+70 OFFSET 1.20
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 12-10-86 FINISH
SURFACE ELEVATION 192.359

BOTTOM OF ABUT. NO. 1
FOOTING ELEV. 192.000

ESTIMATED PILE TIP
ELEVATION 177.12

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
192.359								
			21			M	BR	A-1-a GRAVEL W=8.8%
190	10		-					NO SAMPLE GR. STONE IN CASING
			-					NO SAMPLE BO.
	20		47			M	BR	A-4 SILT
185			59			M	BR	A-4 SILT W=21.5%
	30		71			M	BR	A-2-4 SILTY SAND W=25.8%
			58			M	BR	A-2-4 SILTY SAND W=19.5%
180	40		74			M	BR	A-2-4 SILTY SAND W=21.2%
			65			M	BR	A-4 SANDY SILT W=21.5%
								TOP OF BEDROCK @ 50.0'
175	50							RUN* 1 DEPTH 50.0-54.0 %REC 75% RQD 37.5%; 2 54.0-59.0 98% 100%; 3 59.0-60.0 90% 44%. ROCK TYPE - SEE BELOW
	60							HOLE STOPPED @ 60.0' IN BEDROCK. RUN* 1 DEPTH 50.0-54.0 %REC ROD: CORE CONSISTS OF BLACK CARBONACEOUS, QUARTZ-SERICITE SCHST. CORE IS MODERATELY HARD AND UNWEATHERED. RUN* 2 INCREASE IN QUARTZ CONTENT RESULTS IN MORE COMPETENT CORE. RUN* 3 SAME ROCK TYPE AS RUNS *1 AND *2.
170	70							
	80							

MORRISTOWN F 029-1(2)

* HOLE NO. B-2 STA. 259+80 OFFSET ℄
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 12-19-86 FINISH
SURFACE ELEVATION 192.877

BOTTOM OF ABUT. NO. 1
FOOTING ELEV. 192.000

ESTIMATED PILE TIP
ELEVATION 180.99

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
192.877								
			10					A-2-4 SILTY SAND W=24.5%
190	10		38					A-1-b GRAVEL W=8.2%
			-					NO SAMPLE BO.
	20		-					NO SAMPLE BO.
185			28			M	BR	A-4 SANDY SILT W=25.9%
	30		109					A-2-4 SAND W=26.7%
			102					A-4 SANDY SILT W=19.4%
								TOP OF BEDROCK @ 39.0'
180	40							RUN* 1 DEPTH 39.0-44 %REC 60% RQD 0%; 2 44.0-47.5 71% 0%; 3 47.5-50.0 100% 54%. ROCK TYPE - SEE BELOW.
	50							HOLE STOPPED @ 50.0 IN BEDROCK. RUN* 1 ROCK IS QUARTZ SERICITE SCHST. THE ROCK APPEARS TO BE UNWEATHERED AND MODERATELY HARD. RUN* 2 VERY SOFT BLACK GRAPHITIC PHYLLITE. INCOMPETENT ROCK.
175	60							RUN* 3 QUARTZOSE PHYLLITE & QUARTZ SERICITE SCHST ROCK IS UNWEATHERED.

MORRISTOWN F 029-1(2)

* HOLE NO. B-3 STA. 259+70 OFFSET RT 20'
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 12-17-86 FINISH
SURFACE ELEVATION 194.676

BOTTOM OF ABUT. NO. 1
FOOTING ELEV. 192.000

ESTIMATED PILE TIP
ELEVATION 186.29

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
194.676								
			46			M	BR	A-2-4 SILTY SAND W=20.8%
	10		-					NO SAMPLE GR & BO.
190			-					CORED BO 14.5-15.5' NO SAMPLE
	20							NO SAMPLE
			39					NO SAMPLE
								TOP OF BEDROCK @ 27.5'
185	30							RUN* 1 LENGTH 27.5-32.5 %REC 72 RQD 46%; RUN* 2 32.5-37.5 90 41%
								HOLE STOPPED @ 37.5' IN BEDROCK
	40							RUN* 1 QUARTZOSE PHYLLITE AND GRAPHITIC PHYLLITE. CORE IS UNWEATHERED AND SOFT.
180								RUN* 2 QUARTZ-SERICITE SCHST AND QUARTZOSE PHYLLITE. THE ROCK IS UNWEATHERED. MODERATELY HARD AND COMPETENT.
	50							
	60							
175								

MORRISTOWN F 029-1(2)

* HOLE NO. B-4 STA. 261+40 OFFSET LT 33'
DRILLER McGLYNN
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 6-8-87 FINISH
SURFACE ELEVATION 177.150 (RAFT DECK ELEVATION)

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK RAFT DECK @ 0.0'
177.150								WATER LEVEL @ 4.3'
175								RIVER BED @ 6.5'
	10		...					NO SAMPLE
			6					NO SAMPLE
170	20		...					BXDC 19.0-23.0 BOULDER
			...					BXDC 23.0-27.0 BOULDER
165	30		...					BXDC 29.0-33.0 BOULDER
			R					NO SAMPLE BOULDER
	40							TOP OF BEDROCK @ 40.0'
160								SEE GEOLOGISTS REPORT BELOW
	50							HOLE STOPPED @ 48.0' IN BEDROCK. RUN 1 LENGTH 40.0-45.0 %REC 96 RQD 42%; 2 45.0-48.0 43 15%. ROCK CONSISTS OF DARK GRAY CARBONACEOUS PHYLLITE WITH QUARTZ VEINS ALONG AND CROSS CUTTING THE FOLIATION. THE PHYLLITE IS SOFT TO MODERATELY HARD IN AREAS WHERE QUARTZ IS MORE ABUNDANT. THE ROCK IS COMPETENT IN-PLACE BUT BRITTLE IN CORES.
155								
	60							
150	70							

* FOR METRIC STATION AND OFFSET, SEE BORING CHART ON BORING INFORMATION SHEET

BORING LOGS ARE IN ENGLISH UNITS. A METRIC ELEVATION COLUMN HAS BEEN ADDED TO EACH BORING LOG FOR REFERENCE.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: zd082all.dgn
PROJECT LEADER: DMB
DESIGNED BY: VTrans / S. Delia
BORING LOG SHEET - 1

PLOT DATE: 29-MAR-2012
DRAWN BY:
CHECKED BY: R. Joy
SHEET 65 OF 123

VDOT Metric

MORRISTOWN F 029-1(2)

* HOLE NO. B-5 STA. 264+40 OFFSET C/L
DRILLER McGLYNN
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 6-18-87 FINISH
SURFACE ELEVATION 177.150 (RAFT DECK ELEVATION)

METRIC ELEVATION METERS	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK RAFT DECK @ 0.0'
177.150								WATER LEVEL @ 1.3'
175								RIVER BED @ 8.5'
	10		2			W		NO SAMPLE SILT
			33					NO SAMPLE BOULDER
	20		---					NO SAMPLE BOULDER 19'-39'
170			---					BXDC 23.2'-26.5' BOULDER
	30		---					BXDC 28.0'-31.0' BOULDER
			R					NO SAMPLE BOULDER
165	40		---					NO SAMPLE FLOWING SAND
								TOP OF BEDROCK @ 46.4'
	50							SEE GEOLOGISTS REPORT BELOW
160								HOLE STOPPED @ 55.4' IN BEDROCK
	60	AXXXDC						RUN 1 LENGTH 46.4'-50.4' 75 %REC 0 RQD
		AXXXDC						RUN 2 LENGTH 50.4'-55.4' 82 %REC 40% RQD
								CORE CONSISTS OF BLACK QUARTZOSE PHYLLITE WITH SMALL 1/8"-1/4" CUBES OF PYRITE. CORE IS MODERATELY COMPETENT BUT SOFT. POOR R.Q.D. DUE TO STEEP DIP AND THIN LAMINATIONS.
	70							
155								

MORRISTOWN F 029-1(2)

* HOLE NO. B-6 STA. 264+40 OFFSET RT 20'
DRILLER McGLYNN
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 6-16-87 FINISH
SURFACE ELEVATION 177.150 (RAFT DECK ELEVATION)

METRIC ELEVATION METERS	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK RAFT DECK @ 0.0'
177.150								WATER LEVEL @ 1.3'
175								RIVER BED @ 7.0'
	10		3			W		NO SAMPLE SILT
			16					NO SAMPLE GRAVEL
	20		---					BXDC 17.0'-28.0' BOULDERS 17.0'-42.0'
170			---					NO SAMPLE BOULDER
	30		---					BXDC 30.0'-33.0' BOULDER
			R					NO SAMPLE BOULDER
165	40		---					NO SAMPLE BOULDER TOP OF BEDROCK @ 42.4'
								SEE GEOLOGISTS REPORT BELOW
	50							HOLE STOPPED @ 52.4' IN BEDROCK
160								RUN 1 LENGTH 42.4-47.4 36 %REC 0 RQD
	60							RUN 2 LENGTH 47.4-52.4 88 %REC 30% RQD
								CORE CONSISTS OF DARK GRAY, CARBONACEOUS PHYLLITE AND PHYLLITIC QUARTZITE. PYRITE IS ABUNDANT THROUGHOUT THE CORE AND IS UNWEATHERED. ROCK IS SOFT TO MODERATELY HARD AND IS GENERALLY COMPETENT.
	70							
155								

MORRISTOWN F 029-1(2)

* HOLE NO. B-7 STA. 263+40 OFFSET LT 20'
DRILLER McGLYNN
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 6-10-87 FINISH
SURFACE ELEVATION 177.760 (RAFT DECK ELEVATION)

METRIC ELEVATION METERS	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK RAFT DECK @ 0.0'
177.760								WATER LEVEL @ 1.3'
175								RIVER BED @ 10.5'
	10		---					NO SAMPLE GRAVEL
	20		52					NO SAMPLE GRAVEL
170			R					NO SAMPLE BOULDER AND GRAVEL
	30		---					BXDC 29.0'-33.0' BOULDER
			---					BXDC 33.0'-38.0' BOULDER
165	40		---					TOP OF BEDROCK @ 40.0'
								SEE GEOLOGISTS REPORT BELOW
	50							HOLE STOPPED @ 46.0' IN BEDROCK
		BXDC						RUN 1 LENGTH 40.0-42.0 70 %REC 45% RQD
160		BXXXDC						RUN 2 LENGTH 42.0-46.0 98 %REC 54% RQD
	60							RUN 1 CORE CONSISTS OF BLACK CARBONACEOUS PHYLLITE WITH 1/8" CUBES OF PYRITE. FRACTURE FACES SHOW SLICKEN SIDES. CORE IS VERY SOFT BUT UNWEATHERED.
								RUN 2 BLACK CARBONACEOUS PHYLLITE IN CONTACT WITH A QUARTZ CHLORITE SCHIST WITH MINOR PYRITE AND ABUNDANT QUARTZ LAMINATIONS. THE QUARTZ CHLORITE SCHIST FORMS BOTTOM 2 FEET OF CORE AND IS MODERATELY HARD AND COMPETENT.
	70							
150								

MORRISTOWN F 029-1(2)

* HOLE NO. B-8 STA. 263+40 OFFSET C/L
DRILLER McGLYNN
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 6-5-87 FINISH
SURFACE ELEVATION 177.150 (RAFT DECK ELEVATION)

METRIC ELEVATION METERS	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK RAFT DECK @ 0.0'
177.150								WATER LEVEL @ 1.3'
175								RIVER BED @ 8.0'
	10		---					NO SAMPLE
			R					NO SAMPLE STONE CAUGHT IN SAMPLER
	20		---					BXDC 19.0'-21.0' BOULDER
170			R					NO SAMPLE
	30		R					NO SAMPLE BOULDER
			R					NO SAMPLE TOP OF BEDROCK @ 36.0'
165	40		---					SEE GEOLOGISTS REPORT BELOW
								HOLE STOPPED @ 46.0' IN BEDROCK
	50							RUN 1 LENGTH 36.0-41.0 36 %REC 0 RQD
								RUN 2 LENGTH 41.0-46.0 50 %REC 7% RQD
								CORE CONSISTS OF DARK GRAY, CARBONACEOUS PHYLLITE AND PHYLLITIC QUARTZITE. ROCK IS MODERATE TO VERY HARD. CORE IS BRITTLE RESULTING IN THE LOW R.Q.D. OVERALL ROCK IS COMPETENT IN PLACE.
160	60							
	70							
155								

MORRISTOWN F 029-1(2)

* HOLE NO. B-9 STA. 263+40 OFFSET RT 20'
DRILLER McGLYNN
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 6-2-87 FINISH
SURFACE ELEVATION 177.150 (RAFT DECK ELEVATION)

METRIC ELEVATION METERS	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK RAFT DECK @ 0.0'
177.150								WATER LEVEL @ 1.3'
175								RIVER BED @ 10.5'
	10		---					NO SAMPLE STONE CAUGHT IN CASING
	20		---					NO SAMPLE STONE CAUGHT IN CASING
170			R			MTW	GR	A-2-4 SAND W=14.9%
	30							TOP OF BEDROCK @ 30.0'
								SEE GEOLOGISTS REPORT BELOW
165	40							HOLE STOPPED @ 40.0' IN BEDROCK
								RUN 1 LENGTH 30.0-35.0 90 %REC 100% RQD
								RUN 2 LENGTH 35.0-40.0 100 %REC 80% RQD
								CORE INTERVAL 30.0' - 35.0' CORE CONSISTS OF QUARTZOSE PHYLLITE. THE FRACTURE SURFACES ARE NOT COATED, SHOWING NO SIGNS OF WEATHERING. PYRITE IS ABUNDANT AND UNWEATHERED. THIS SECTION OF CORE IS MODERATELY HARD AND COMPETENT.
								CORE INTERVALE: 35.0'-40.0'. CORE CONSISTS OF BLACK CARBONACEOUS PHYLLITE WITH MINOR QUARTZOSE PHYLLITE LAYERS. THE LOWER 4½ FT OF THIS CORE IS SOFT BUT COMPETENT AT THE OUTCROP SCALE.
160	50							
	60							
	70							
155								

* FOR METRIC STATION AND OFFSET, SEE BORING CHART ON BORING INFORMATION SHEET

BORING LOGS ARE IN ENGLISH UNITS. A METRIC ELEVATION COLUMN HAS BEEN ADDED TO EACH BORING LOG FOR REFERENCE.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194al2.dgn
PROJECT LEADER: DMB
DESIGNED BY: VTrans / S. Delia
BORING LOG SHEET - 2

PLOT DATE: 29-MAR-2012
DRAWN BY:
CHECKED BY: R. Joy
SHEET 66 OF 123

VDOT Metric

BOTTOM OF ABUT. NO. 2
ELEVATION 188.000

ESTIMATED PILE TIP
ELEVATION 176.05

MORRISTOWN F 029-1(2)

* HOLE NO. B-10 STA. 265+10 OFFSET LT 20'
DRILLER SAFFORD
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 11-25-86 FINISH
SURFACE ELEVATION 180.716

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LOOD WATER	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
180.716								
180						M	BR	NO SAMPLE GR.
	10							NO SAMPLE BO.
								A-3 SAND W=20.7% TOP OF BEDROCK @ 15.3'
								DEPTH %REC ROD
						RUN*	1	15.3-20.3 100% 50%
						RUN*	2	20.3-25.3 100% 76%
175	20							
								HOLE STOPPED @ 25.3' IN BEDROCK
						RUN*	1	DOMINENTLY A CARBONACEOUS PHYLLITE. THIS CORE IS SOFT AND OF POOR QUALITY. (15.3-19.3') THE ROCK IS UNWEATHERED.
170	30							
	40					RUN*	2	MICACEOUS QUARTZITE CROSSCUT BY NUMEROUS QUARTZ VEINS. CORE IS VERY COMPETENT, HARD AND UNWEATHERED.
165	50							
	60							

BOTTOM OF ABUT. NO. 2
ELEVATION 188.000

ESTIMATED PILE TIP
ELEVATION 177.27

MORRISTOWN F 029-1(2)

* HOLE NO. B-11 STA. 265+10 OFFSET ℄
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 11-26-86 FINISH
SURFACE ELEVATION 180.777

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LOOD WATER	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
180.777								
180						M	BR	NO SAMPLE SAGR & BO.
	10							TOP OF BEDROCK @ 11.5'
								DEPTH %REC ROD
						RUN*	1	11.5-16.5 94% 70.2%
						RUN*	2	16.5-21.5 100% 72.0%
175	20							
								HOLE STOPPED @ 21.5' IN BEDROCK
								CORE IS DOMINATED BY CARBONACEOUS PHYLLITE. CORE IS SOFT WHERE PHYLLITE IS ABUNDANT AND MODERATELY HARD IN THE QUARTZ-RICH ZONES. THE CORE IS UNWEATHERED.
170	30							
	40							
165	50							

BOTTOM OF ABUT. NO. 2
ELEVATION 188.000

ESTIMATED PILE TIP
ELEVATION 178.52

MORRISTOWN F 029-1(2)

* HOLE NO. B-12 STA. 265+10 OFFSET RT 20'
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 12-4-86 FINISH
SURFACE ELEVATION 181.112

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LOOD WATER	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
181.112								
180								NO SAMPLE BO. TOP OF BEDROCK @ 8.5'
	10							DEPTH %REC ROD
						RUN*	1	10.5-16.5 98% 100%
						RUN*	2	16.5-20.5 100% 98%
								CORE CONSISTS OF QUARTZ-ALBITE-CHLORITE SCHIST. THE ROCK IS MODERATELY HARD TO HARD. CORE IS VERY COMPETENT AND UNWEATHERED.
175	20							HOLE STOPPED @ 20.5' IN BEDROCK.
170	30		R					
	40		---					
165	50							

MORRISTOWN F 029-1(2)

* HOLE NO. B-13 STA. 262+5 OFFSET RT 22'
DRILLER MCGLYNN
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 6-23-87 FINISH
SURFACE ELEVATION 177.150 (RAFT DECK ELEVATION)

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LOOD WATER	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
177.150								RAFT DECK @ 0.0'
								WATER LEVEL @ 1.3'
								RIVERBED @ 4.5'
		---						NO SAMPLE
175	10	35						NO SAMPLE GRAVEL
		---						NO SAMPLE BOULDERS 14.0'-40.0'
	20	R						NO SAMPLE BOULDER
170		---						NO SAMPLE BOULDER
								BXOC 23.0-31.0 BOULDER
	30	---						NO SAMPLE BOULDER
		R						NO SAMPLE BOULDER
165	40	43						NO SAMPLE SAND AND BOULDER
		---						NO SAMPLE FLOWING SAND
								TOP OF BEDROCK @ 49.5'
	50							SEE GEOLOGISTS REPORT BELOW
160								HOLE STOPPED @ 57.5' IN BEDROCK
	60							RUN LENGTH %REC ROD
			AXWDC					1 49.5-52.5 67 27%
			AXWDC					2 52.5-57.5 8 0
								CORE CONSISTS OF BLACK QUARTZOSE PHYLLITE WITH SMALL 1/8" - 1/4" PYRITE CUBES.
								CORE IS MODERATELY COMPETENT BUT VERY BRITTLE. LOW ROD DUE TO VERTICAL DIP AND DIFFICULT CONDITIONS.
155	70							

* FOR METRIC STATION AND OFFSET, SEE BORING CHART ON BORING INFORMATION SHEET

BORING LOGS ARE IN ENGLISH UNITS. A METRIC ELEVATION COLUMN HAS BEEN ADDED TO EACH BORING LOG FOR REFERENCE.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194al3.dgn
PROJECT LEADER: DMB
DESIGNED BY: VTrans / S. Delia
BORING LOG SHEET - 3

PLOT DATE: 29-MAR-2012
DRAWN BY:
CHECKED BY: R. Joy
SHEET 67 OF 123

VDOT Metric

MORRISTOWN F 029-1(2)

* HOLE NO. B-16 STA. 260+67 OFFSET 4' RT
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 7-19-88 FINISH
SURFACE ELEVATION 184.407

BOTTOM OF SOUTH SLANT LEG FOOTING ELEVATION 178.185

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
184.407								
			3			M	brn	A-2-4 SiSa w=36.5% TOP OF BEDROCK @ 6.6'
						RUN		INT. %REC RQD
						*1 NXMDC		6.6-11.6 32 0%
	10					2 NXMDC		11.6-16.6 100 50%
						3 NXMDC		16.6-21.6 100 100%
						4 NXMDC		21.6-26.6 100 95%
180								
								SEE GEOLOGIST'S REPORT BELOW
	20							
								HOLE STOPPED @ 26.6' IN BEDROCK
175	30							INTERVAL 6.6-11.6: CORE CONSISTS OF A QUARTZ-RICH GRAPHITIC PHYLLITE. THIS RUN IS MODERATELY WEATHERED AND SOFT. ROCK FRACTURES ALONG VERTICAL FOLIATIONS AND LOW ANGLE CROSS-FRACTURES. THIS RUN IS IN COMPETENT ROCK.
								INTERVAL 11.6-16.6: CORE CONSISTS OF THE SAME ROCK TYPE AS RUN *1, THE ROCK IS MODERATELY COMPETENT TO COMPETENT.
	40							INTERVAL 16.6-21.6: SAME ROCK TYPE AS RUN *1 BUT ROCK IS FRESH, MODERATELY HARD TO HARD AND COMPETENT. CORE RECOVERED IN ONE PIECE.
170								INTERVAL 21.6-26.6: SAME ROCK TYPE AS RUN *1. CORE IS FRACTURED ALONG FOLIATION INTO LARGE PIECES. CORE IS COMPETENT OVERALL.
	50							

MORRISTOWN F 029-1(2)

* HOLE NO. B-17 STA. 264+06 OFFSET 20' RT
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 7-13-88 FINISH
SURFACE ELEVATION 177.692

BOTTOM OF NORTH SLANT LEG FOOTING ELEVATION 170.175

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
177.692								SANDY SILT WASH NO SAMPLE TAKEN
			22			-	-	NO RECOVERY SANDY GRAVEL
175	10		32			-	-	NO RECOVERY SANDY GRAVEL
			37			M	brn	A-1-b SILTY GRAVEL w=12.7%
	20		13			M	brn	A-2-4 SILTY SAND w=21.7% TOP OF BEDROCK @ 23.5'
170						RUN		INT. %REC RQD
						1 AXMDC		23.5-28.7 100 64%
	30					2 AXMDC		28.7-33.7 62 28%
						SEE GEOLOGIST'S REPORT BELOW		
						HOLE STOPPED @ 33.7' IN BEDROCK		
165	40							CORE CONSISTS OF QUARTZITE AND A QUARTZ-RICH PHYLLITE. CORE IS BRITTLE DUE TO HIGH QUARTZ CONTENT RESULTING IN LOW RQD. ROCK IS A COMPETENT BEARING SURFACE.
	50							

MORRISTOWN F 029-1(2)

* HOLE NO. B-18 STA. 264+16 OFFSET C/L
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 7-12-88 FINISH
SURFACE ELEVATION 177.266

BOTTOM OF NORTH SLANT LEG FOOTING ELEVATION 170.175

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
177.266								
			13			M	brn	A-4 SILT w=25.1%
175	10		69			M	brn	A-2-4 SILTY SAND w=21.4%
			59			M	brn	A-4 SaSI w=18.7 TOP OF BEDROCK @ 16.5'
						RUN		INT. %REC RQD
						*1 AXMDC		16.5-21.5 100 12%
	20					2 AXMDC		21.5-26.5 98 7%
170						SEE GEOLOGIST'S REPORT BELOW		
						HOLE STOPPED @ 26.5' IN BEDROCK		
	30							CORE CONSISTS OF QUARTZITE AND A QUARTZ-RICH PHYLLITE. CORE IS BRITTLE DUE TO HIGH QUARTZ CONTENT RESULTING IN LOW RQD. OVERALL THE ROCK IS MODERATELY HARD AND COMPETENT.
165	40							

MORRISTOWN F 029-1(2)

* HOLE NO. B-19 STA. 264+24 OFFSET 20' LT
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 7-11-88 FINISH
SURFACE ELEVATION 176.565

BOTTOM OF NORTH SLANT LEG FOOTING ELEVATION 170.175

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
176.565								
175			27			M	brn	A-4 SANDY SILT w=17.9%
	10		52			M	brn	A-2-4 SILTY SAND w=16.0% TOP OF BEDROCK @ 13.5'
						PENETRATED SOFT BEDROCK WITH CASING TO 14.5'		
						RUN		INT. %REC RQD
						*1 AXMDC		14.5-19.5 98 14%
	20					2 AXMDC		19.5-24.5 100 26%
170						SEE GEOLOGIST'S REPORT BELOW		
						HOLE STOPPED @ 24.5' IN BEDROCK		
	30							CORE CONSISTS OF PHYLLITIC QUARTZITE AND PHYLLITE. THE CORE IS ONLY SLIGHTLY WEATHERED ALONG FOLIATION SURFACES, IS MODERATELY HARD AND COMPETENT OVERALL. LOW RQD IS DUE TO BRITTLE NATURE OF CORE AND IS NOT INDICATIVE OF OVERALL ROCK QUALITY. THIS CORE HAS A HIGHER PERCENTAGE OF MODERATELY SOFT PHYLLITE THAN HOLE *B-17, B-18 AND B-20.
165	40							
	50							
160								

MORRISTOWN F 029-1(2)

* HOLE NO. B-20 STA. 264+40 OFFSET C/L
DRILLER WILLIS
LOG APPROVED BY G. BATCHELDER-ADAMS
DATE: START 7-7-88 FINISH
SURFACE ELEVATION 178.637

METRIC ELEVATION (METERS)	DEPTH (FT)	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTIC INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
178.637								Sa SI IN WASH NO SAMPLE TAKEN
			31			-	-	NO RECOVERY Sa Gr
	10		8			M	brn	A-4 SANDY SILT w=14.6%
175			62			M	brn	A-2-4 SILTY SAND w=12.8% ENCOUNTERED SOME BOULDERS/ COBBLES 8'-19'
	20		71			M	brn	A-4 SaSI w=19.3% TOP OF BEDROCK @ 21.5'
						RUN		INT. %REC RQD
						*1 AXMDC		21.5-26.5 94 32%
						2 AXMDC		26.5-31.5 80 28%
170						SEE GEOLOGIST'S REPORT BELOW		
	30							HOLE STOPPED @ 31.5' IN BEDROCK
								CORE CONSISTS OF PHYLLITIC QUARTZITE AND PHYLLITE. THE CORE IS MODERATELY HARD AND BRITTLE DUE TO HIGH QUARTZ CONTENT. THIS RESULTS IN LOW RQD VALUES. THE ROCK IS COMPETENT OVERALL.
165	40							
	50							

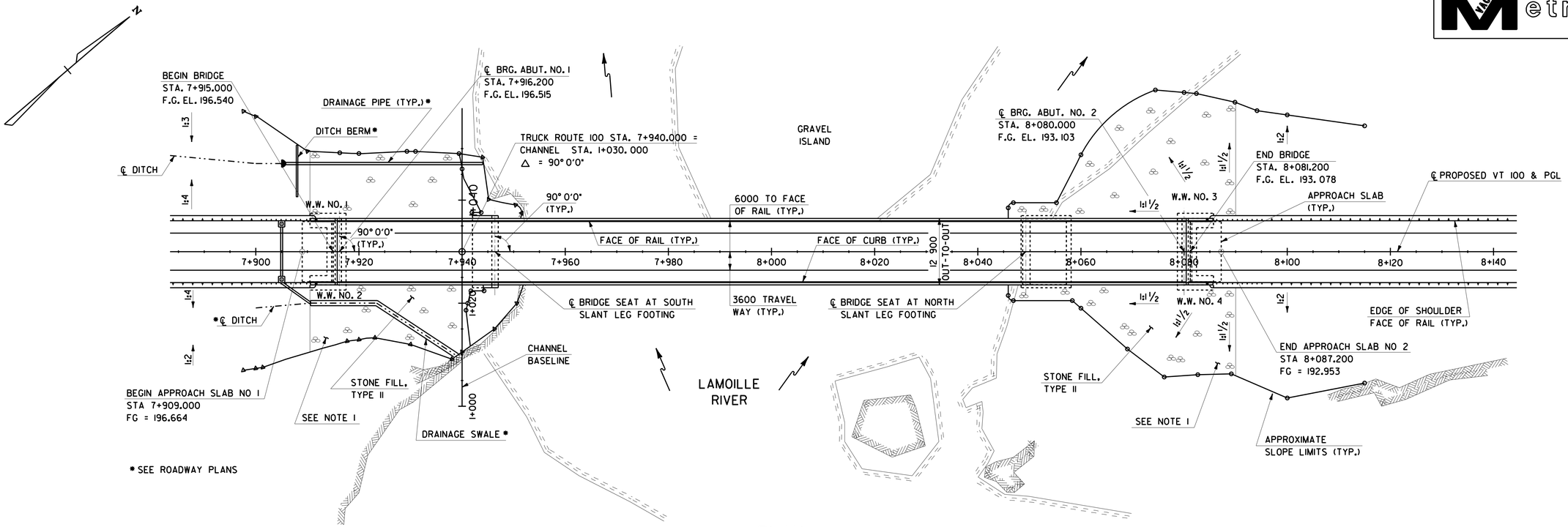
* FOR METRIC STATION AND OFFSET, SEE BORING CHART ON BORING INFORMATION SHEET

BORING LOGS ARE IN ENGLISH UNITS. A METRIC ELEVATION COLUMN HAS BEEN ADDED TO EACH BORING LOG FOR REFERENCE.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10bl94al4.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY:
DESIGNED BY: VTrans / S. Delia	CHECKED BY: R. Joy
BORING LOG SHEET - 4	SHEET 68 OF 123

Metric



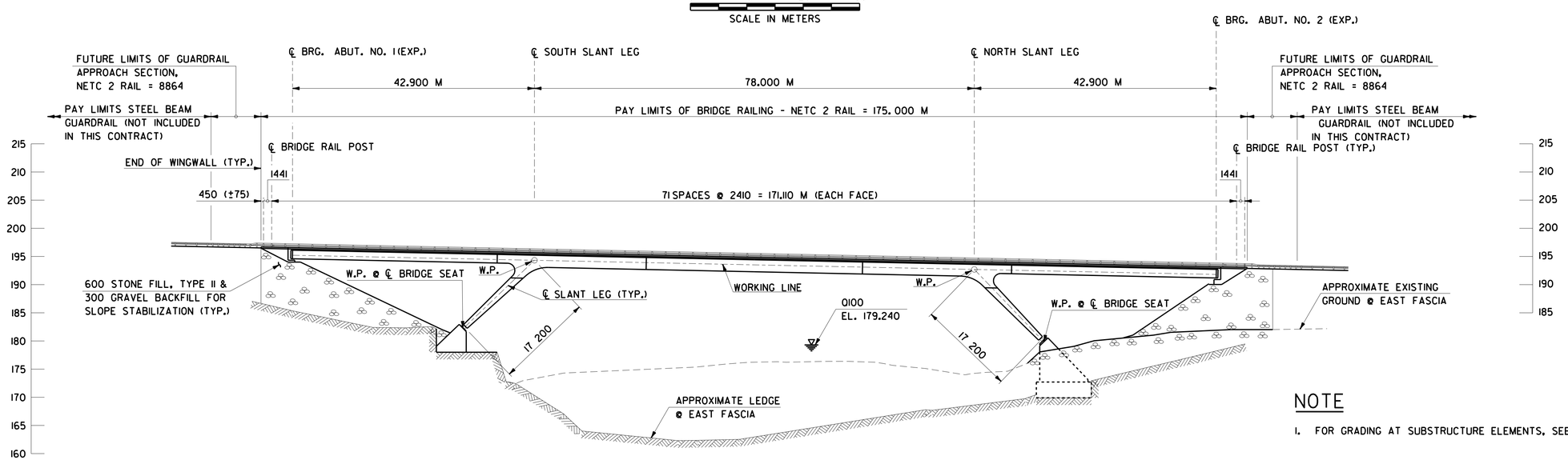
* SEE ROADWAY PLANS

PLAN

SCALE: 1:400

0 10 20 30

SCALE IN METERS



ELEVATION

SCALE: 1:400

0 10 20 30

SCALE IN METERS

NOTE

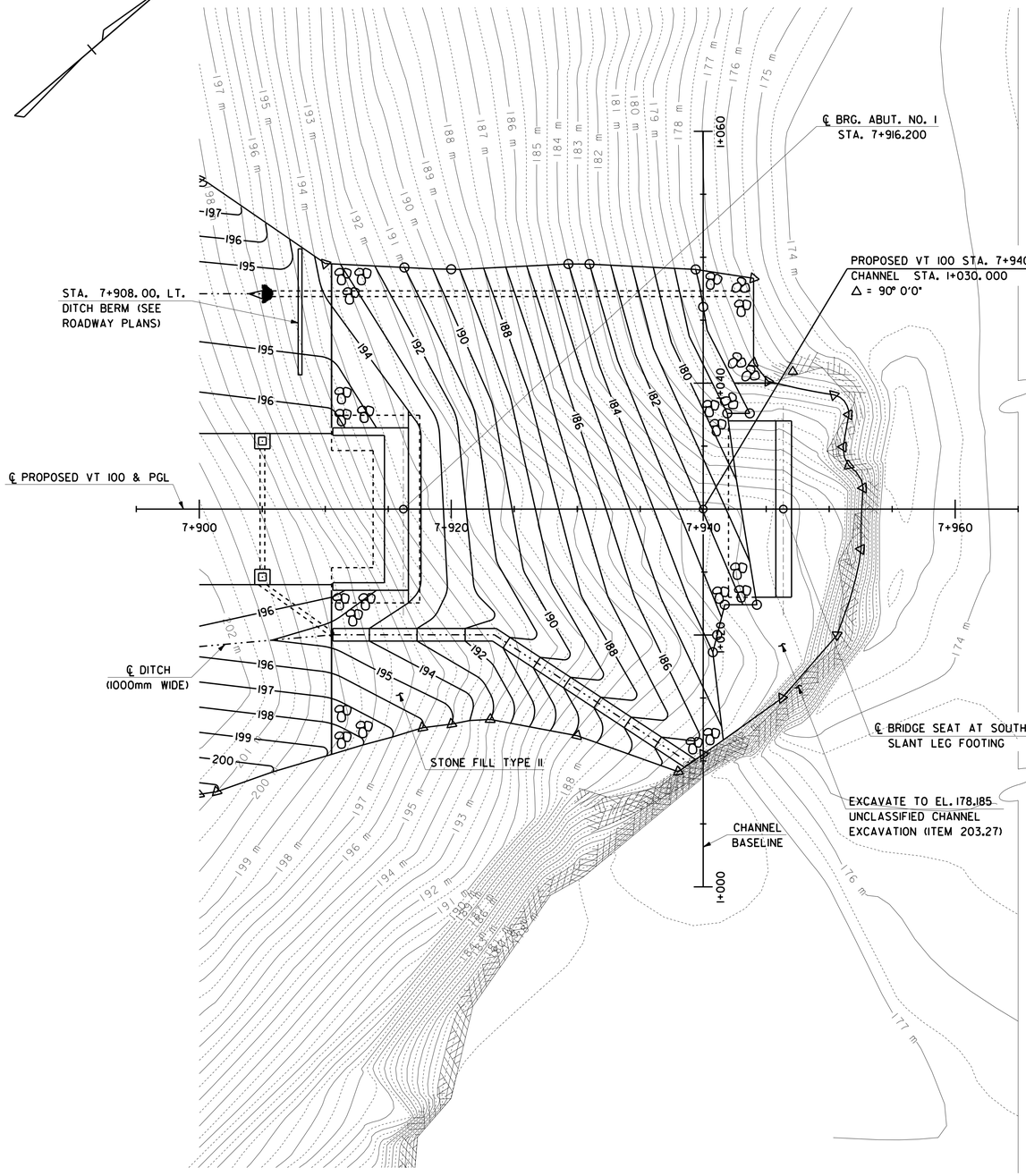
1. FOR GRADING AT SUBSTRUCTURE ELEMENTS, SEE SHEET 70.

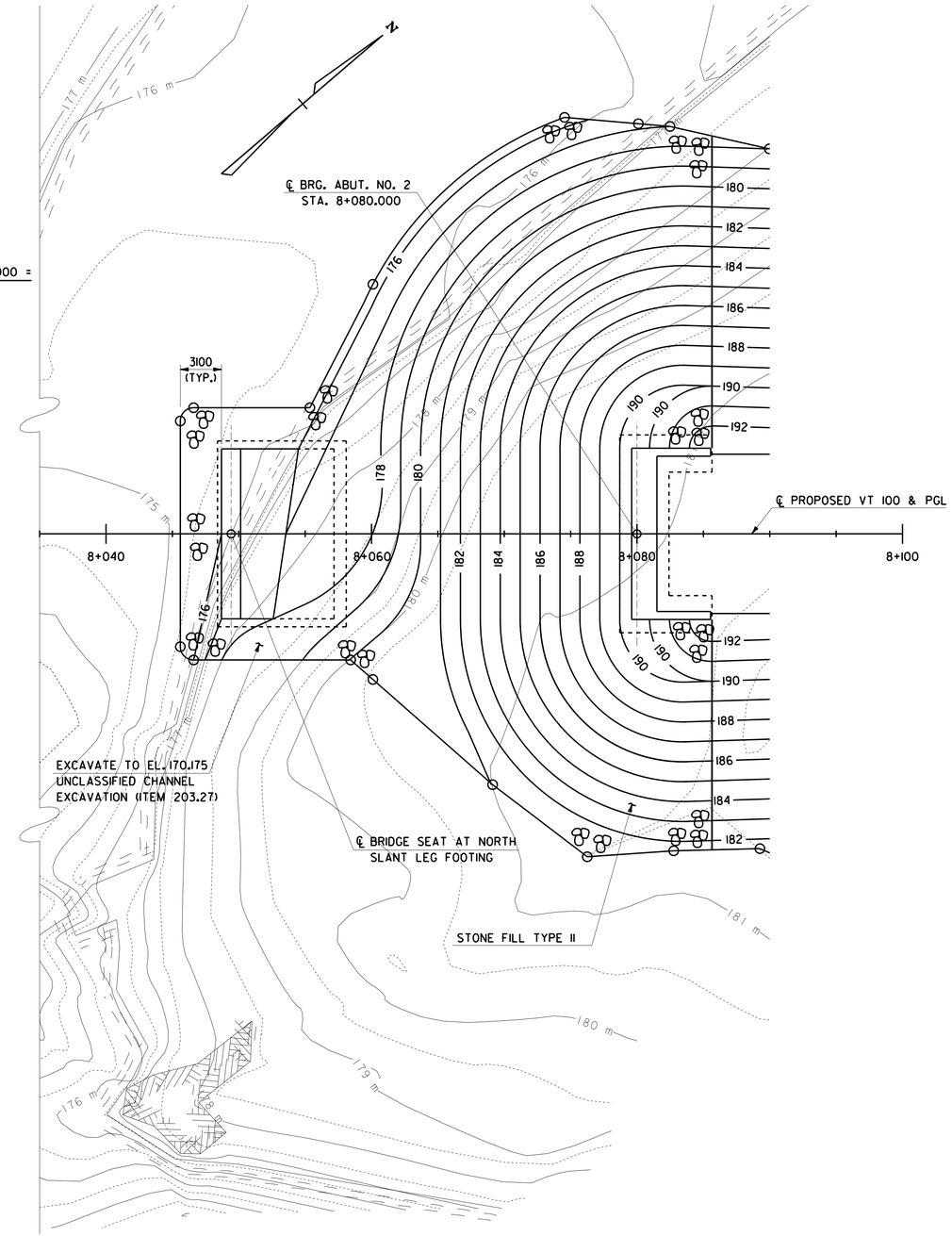
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.
ALL ELEVATIONS SHOWN IN METERS (M).

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194ape.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: D. Kull	CHECKED BY: R. Joy
PLAN AND ELEVATION	SHEET 69 OF 123

McFarland Johnson

VLOT Metric





LEGEND

- STONE FILL, TYPE II
- FILL LIMITS
- CUT LIMITS
- 196 m — EXISTING CONTOURS
- 196 — PROPOSED CONTOURS

GRADING PLAN

SCALE: 1:200

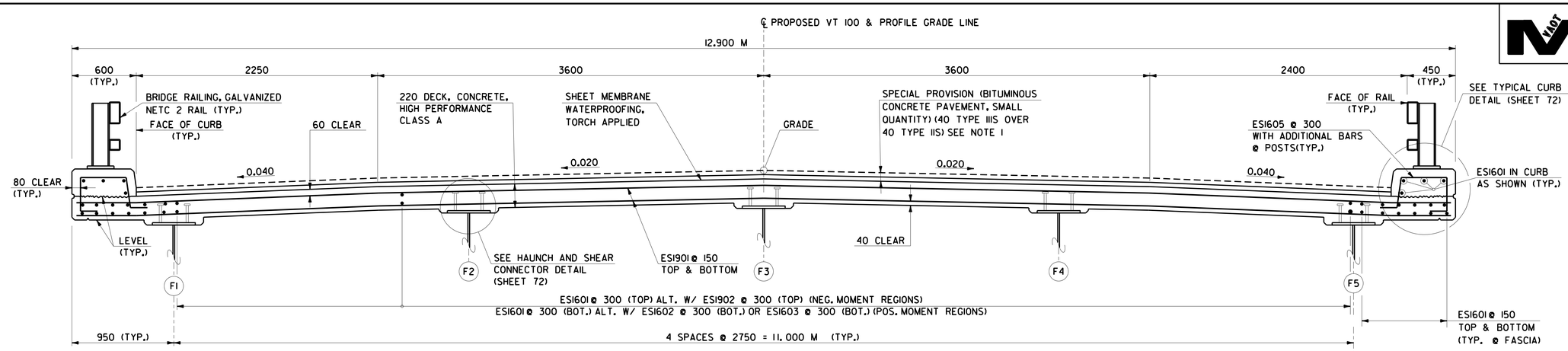
0 2 4 8 12 16 20

SCALE = 1:200

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

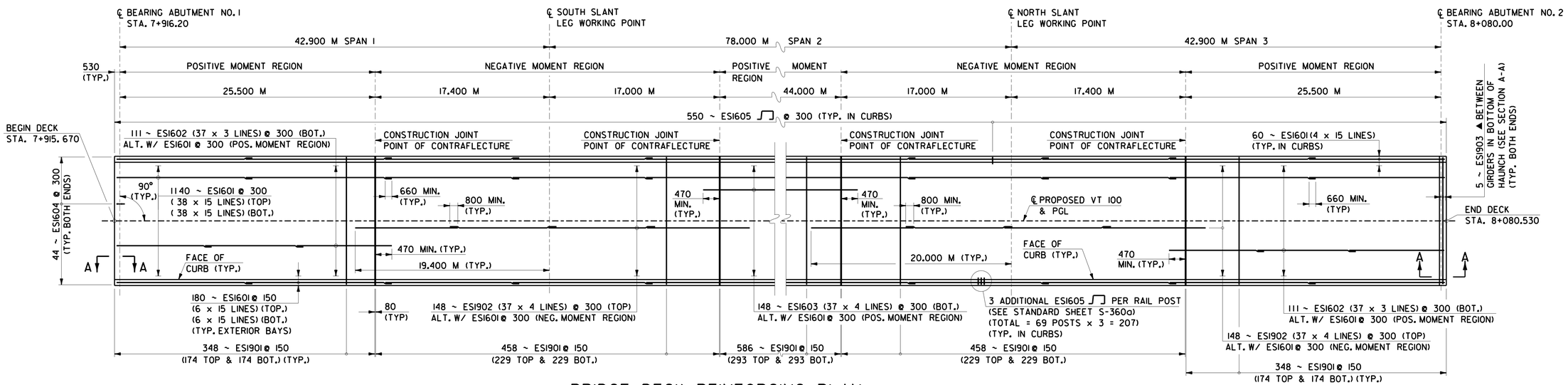
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194agp.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: S. Delia	CHECKED BY: R. Joy
GRADING PLAN	SHEET 70 OF 123



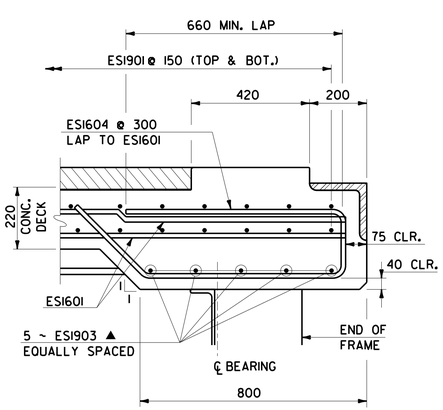
TYPICAL BRIDGE SECTION

SCALE: 1:20



BRIDGE DECK REINFORCING PLAN

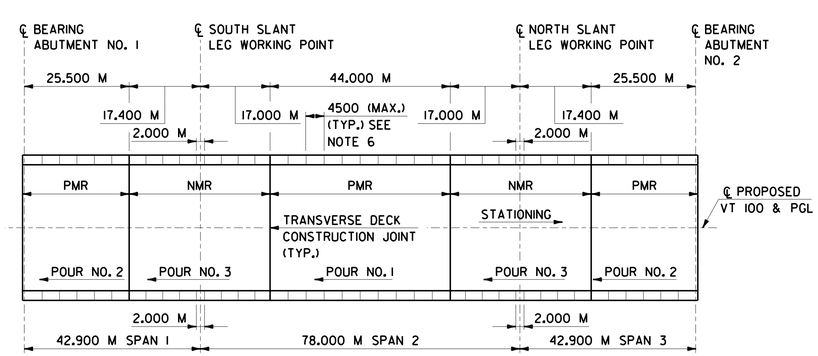
SCALE: 1:200



SECTION A-A

SCALE: 1:10

(ABUTMENT NO. 2 SHOWN, ABUTMENT NO. 1 SIMILAR)



DECK POUR SEQUENCE

NOT TO SCALE

DECK POUR SEQUENCE NOTES

1. THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS AFTER COMPLETION OF EACH POUR BEFORE BEGINNING ANOTHER POUR.
2. IF APPROVED BY THE ENGINEER, INDIVIDUAL POUR NUMBERS AS SHOWN MAY BE POURED THE SAME DAY PROVIDED THE MAXIMUM TIME OF POUR IS 8 HOURS AND INDICATED POURING SEQUENCE IS FOLLOWED AND A RETARDING ADMIXTURE IS USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL ALL THE POUR HAS BEEN MADE.
3. THE RETARDING ADMIXTURE SHALL BE INCIDENTAL TO THE ITEM 501.33, CONCRETE, HIGH PERFORMANCE CLASS A.
4. ALL POURS SHALL START FROM THE LOW END (ELEVATION WISE).
5. IF ALL SECTIONS ARE NOT POURED IN THE SAME DAY, USE TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINTS. (SEE DETAIL, SHEET 72). BRIDGE DECK CONCRETE SHALL BE DEPOSITED PARALLEL TO THE CENTERLINE BEARING.
6. CAST CURB IN POSITIVE MOMENT REGIONS, THEN NEGATIVE MOMENT REGIONS. THE CURB POURING SEQUENCE WILL BE IN ALTERNATING SECTIONS.

NOTE

1. SECOND LIFT OF BITUMINOUS CONCRETE PAVEMENT TYPE IIIS IS NOT INCLUDED IN THIS CONTRACT.

LEGEND

▲ = CUT TO FIT IN FIELD
PMR = POSITIVE MOMENT REGION
NMR = NEGATIVE MOMENT REGION

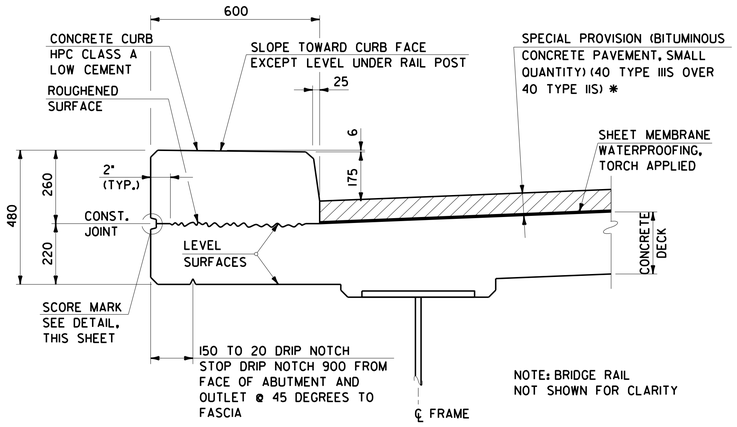
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

0 0.5 1
SCALE = 1:10

0 1 2
SCALE = 1:20

McFarland Johnson

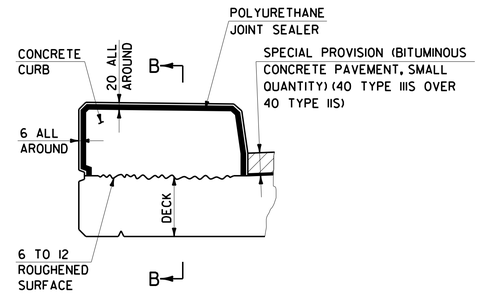
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194adl.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: S. Merkwan
DESIGNED BY: S. Della	CHECKED BY: R. Joy
DECK REINFORCEMENT	SHEET 71 OF 123



TYPICAL CURB SECTION

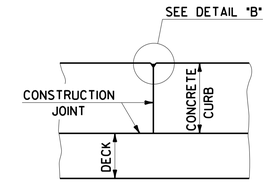
SCALE: 1:10

* SECOND LIFT OF BITUMINOUS CONCRETE PAVEMENT TYPE IIIS IS NOT INCLUDED IN THIS CONTRACT

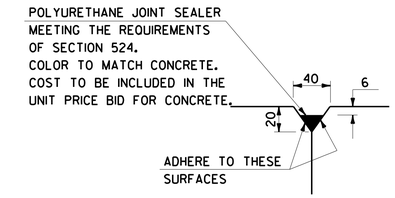


CONCRETE CURB JOINT SECTION

NOT TO SCALE



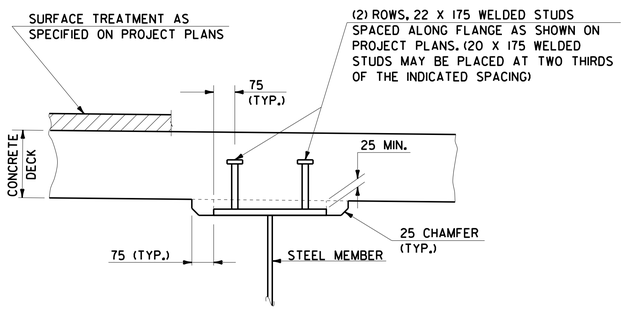
SECTION B-B



DETAIL B

CONCRETE CURB JOINT NOTES

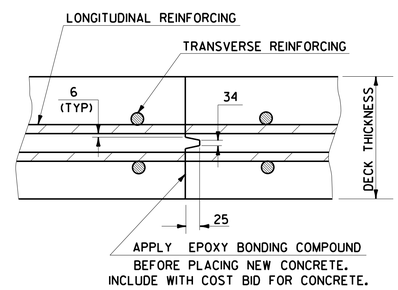
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 4.5 METERS CENTER TO CENTER AND 600 MILLIMETERS MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.
3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 2 METERS EACH SIDE OF THE CENTERLINE OF EACH PIER.
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.
5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS.
6. SEE DECK POUR SEQUENCE NOTES ON SHEET 71.



HAUNCH AND SHEAR CONNECTOR DETAIL

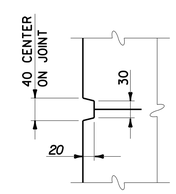
NOT TO SCALE

NOTE:
THE 75 mm HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.



TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

NOT TO SCALE



SCORE MARK DETAIL

SCALE: 1:5

0 0.25 0.5

SCALE = 1:5

0 0.5 1

SCALE = 1:10

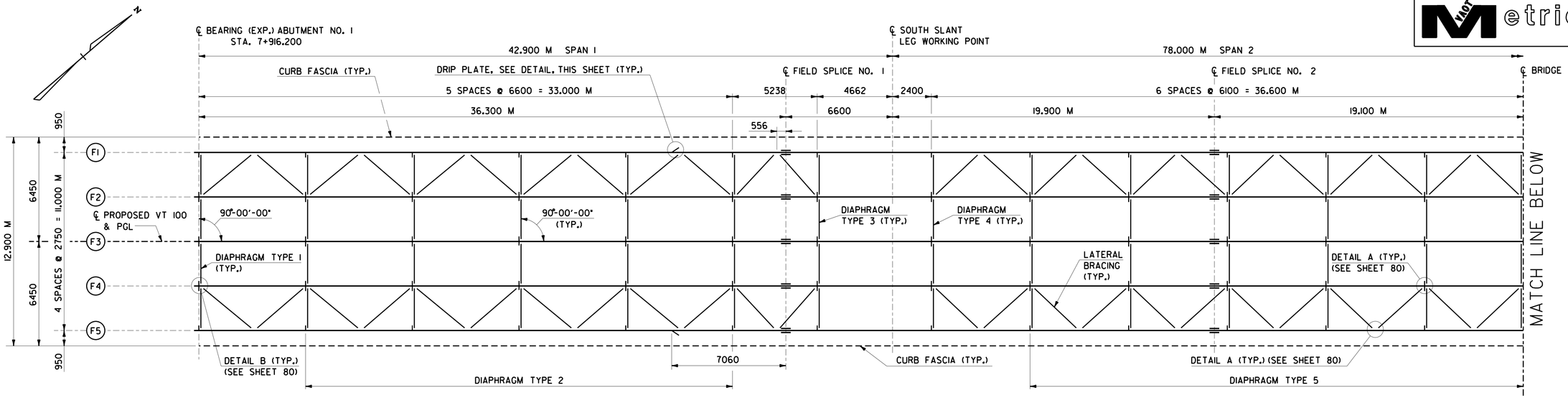
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

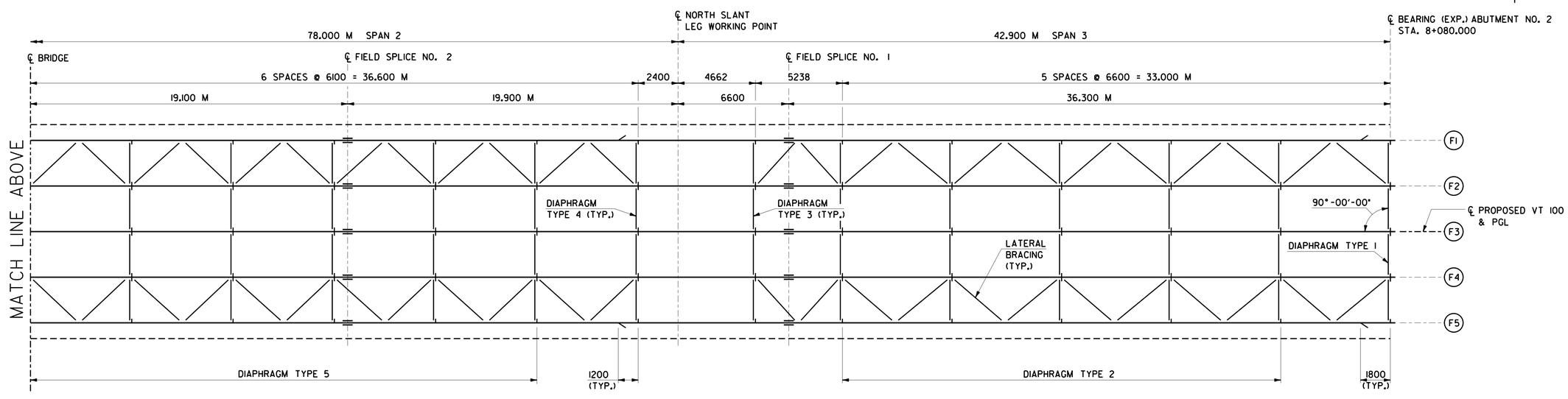
PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194ad2.dgn
PROJECT LEADER: DMB
DESIGNED BY: D. Kull
SUPERSTRUCTURE DETAILS

PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 72 OF 123

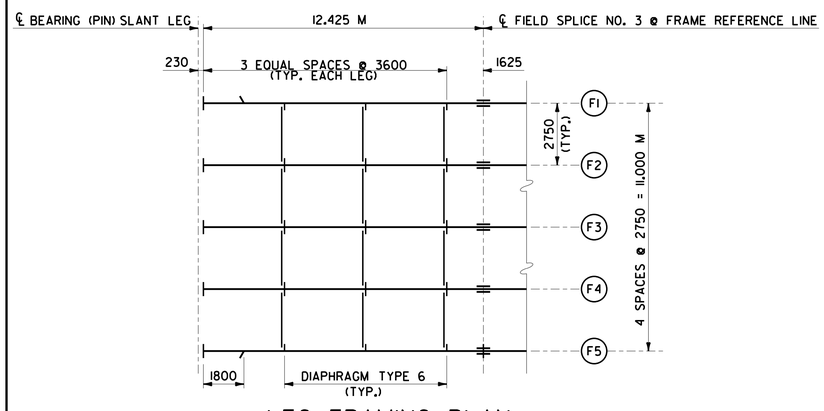
McFarland Johnson





FRAMING PLAN

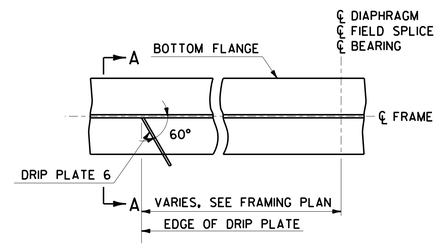
SCALE: 1:125



LEG FRAMING PLAN

SCALE: 1:125

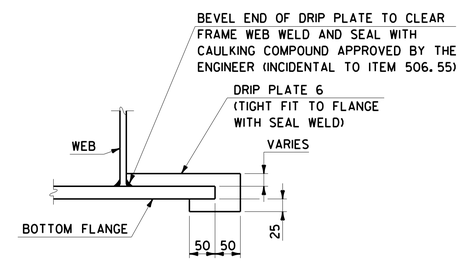
NOTE:
LEG FRAMING PLAN VIEW SHOWN NORMAL TO THE WORKING LINE OF THE LEG.
SOUTH SLANT LEG SHOWN. NORTH SLANT LEG OPPOSITE HAND.



DRIP PLATE PLAN

NOT TO SCALE

NOTE:
DRIP PLATES SHALL BE PLACED AS INDICATED ON THE FRAMING PLAN AND GIRDER ELEVATION.



SECTION A-A

NOT TO SCALE

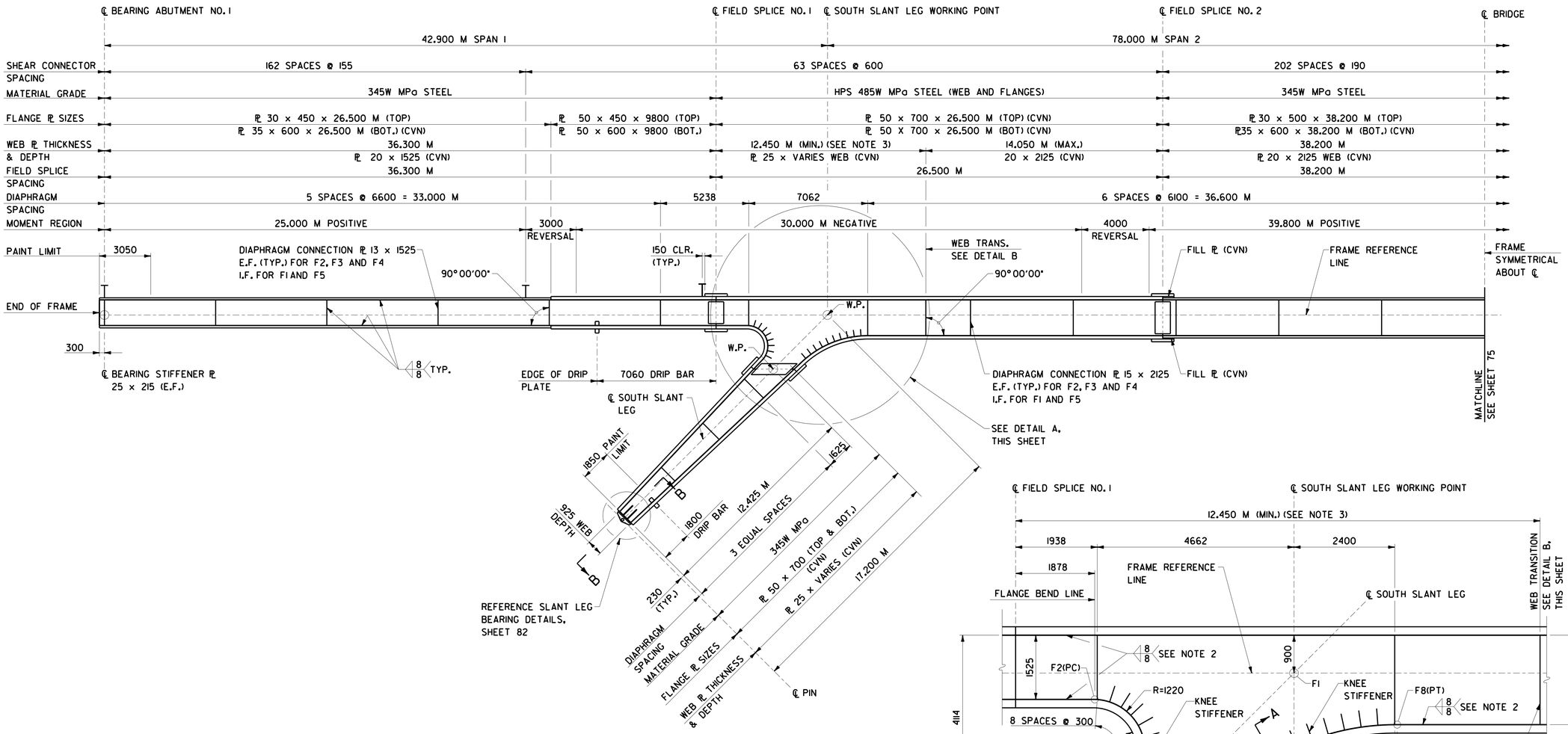
0 6.25 12.5

SCALE = 1:125

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

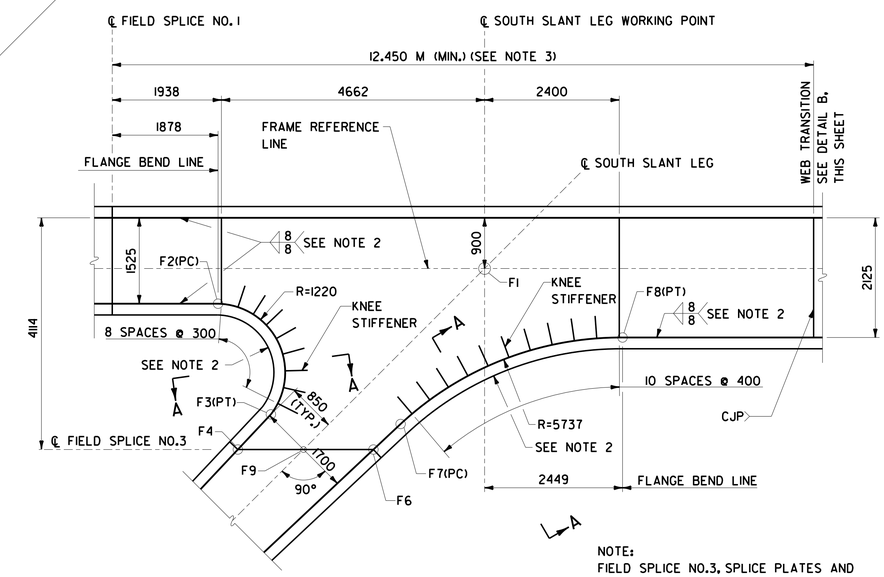
PROJECT NAME:	MORRISTOWN		
PROJECT NUMBER:	STP F 029-1(2)C/1		
FILE NAME:	z10bl94afp.dgn	PLOT DATE:	29-MAR-2012
PROJECT LEADER:	DMB	DRAWN BY:	P. Dustin
DESIGNED BY:	D. Kull	CHECKED BY:	R. Joy
FRAMING PLAN		SHEET	73 OF 123

McFarland Johnson



FRAME ELEVATION

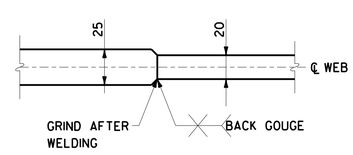
SCALE: 1:125



NOTE:
FIELD SPLICE NO.3, SPLICE PLATES AND DRIP BAR NOT SHOW FOR CLARITY

DETAIL A

SOUTH SLANT LEG SHOWN, NORTH SLANT LEG OPPOSITE HAND
SCALE: NOT TO SCALE



DETAIL B

NOT TO SCALE
WEB SPLICE DETAIL. LIMITS OF WEB PLATE SIZES INDICATED ON FRAME ELEVATION.

NOTES

1. ALL FRAME DIMENSIONS ARE HORIZONTAL AND ARE MEASURED ALONG FRAME REFERENCE LINE OR CENTERLINE SLANT LEG. ALL RADII ARE MEASURED ALONG OUTSIDE FACE OF FLANGE.
2. ULTRASONIC TESTING (UT) SHALL BE CONDUCTED ON ALL CURVED FLANGE ELEMENTS IN THE KNEE AREA. COST SHALL BE INCLUDED IN ITEM 900.635, SPECIAL PROVISION (HIGH PERFORMANCE STEEL, GRADE 485W).
3. COMPLETE JOINT PENETRATION (CJP) WEB WELDS NOT PERMITTED IN THIS LENGTH.
4. FOR SECTIONS A-A AND B-B, SEE SHEET 75.

0 6.25 12.5
SCALE = 1:125

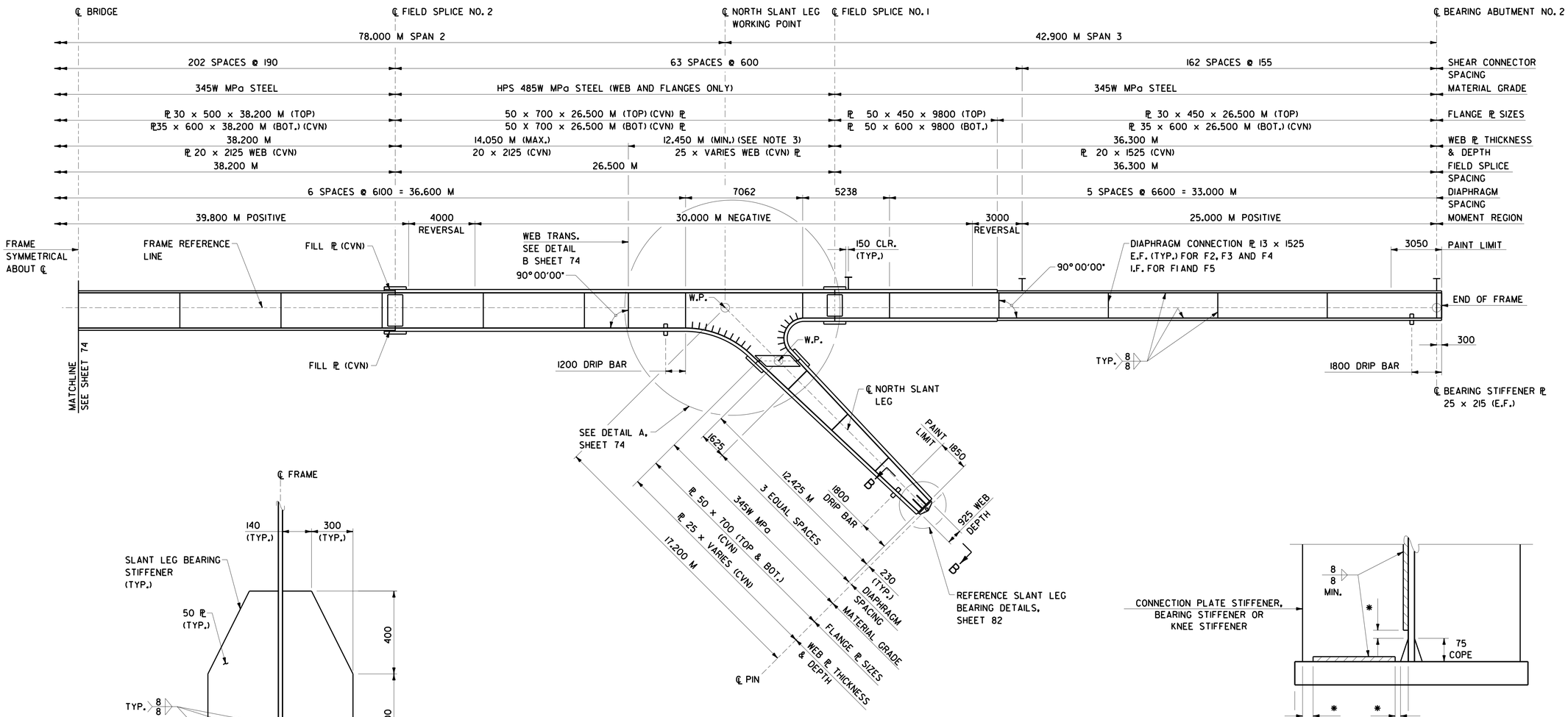
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: zd082afe.dgn
PROJECT LEADER: DMB
DESIGNED BY: D. Kull
SLANT LEG FRAME ELEVATION (1 OF 2)
PLOT DATE: 29-MAR-2012
DRAWN BY: P. Dustin
CHECKED BY: R. Joy
SHEET 74 OF 123

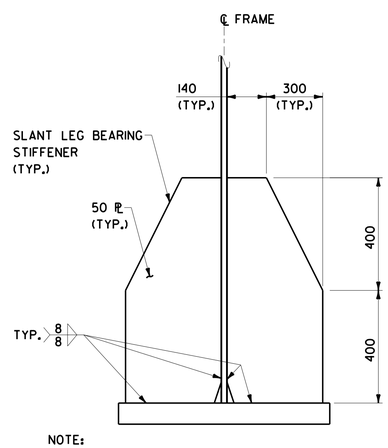
McFarland Johnson

Metric



FRAME ELEVATION

SCALE: 1:125

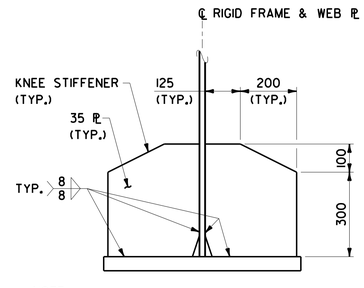


NOTE:
STIFFENER MATERIAL TO BE AASHTO M270M GRADE 345W STEEL.

SECTION B-B

SLANT LEG BEARING STIFFENER

SCALE: 1:10

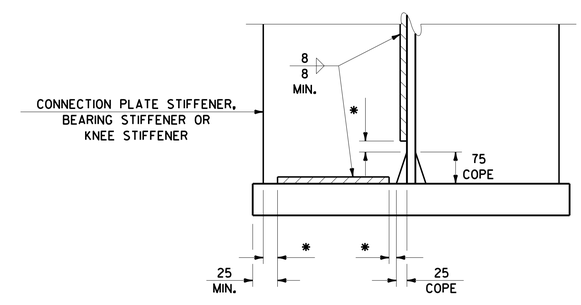


NOTE:
STIFFENER MATERIAL TO BE AASHTO M270M HPS 485W STEEL.

SECTION A-A

KNEE STIFFENER

SCALE: 1:10



WELD TERMINATION AND COPING DETAIL FOR STEEL MEMBERS

NOT TO SCALE

* NO WELD FOR 10 MIN., 22 MAX. (EXCEPT MUST MAINTAIN 25 MIN. FROM EDGE OF FLANGE)

0 0.5 1

SCALE = 1:10

0 6.25 12.5

SCALE = 1:125

NOTES

1. FOR LOCATIONS OF SECTIONS A-A AND B-B, SEE SHEET 74.
2. COMPLETE JOINT PENETRATION (CJP) WEB WELDS NOT PERMITTED IN THIS LENGTH.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

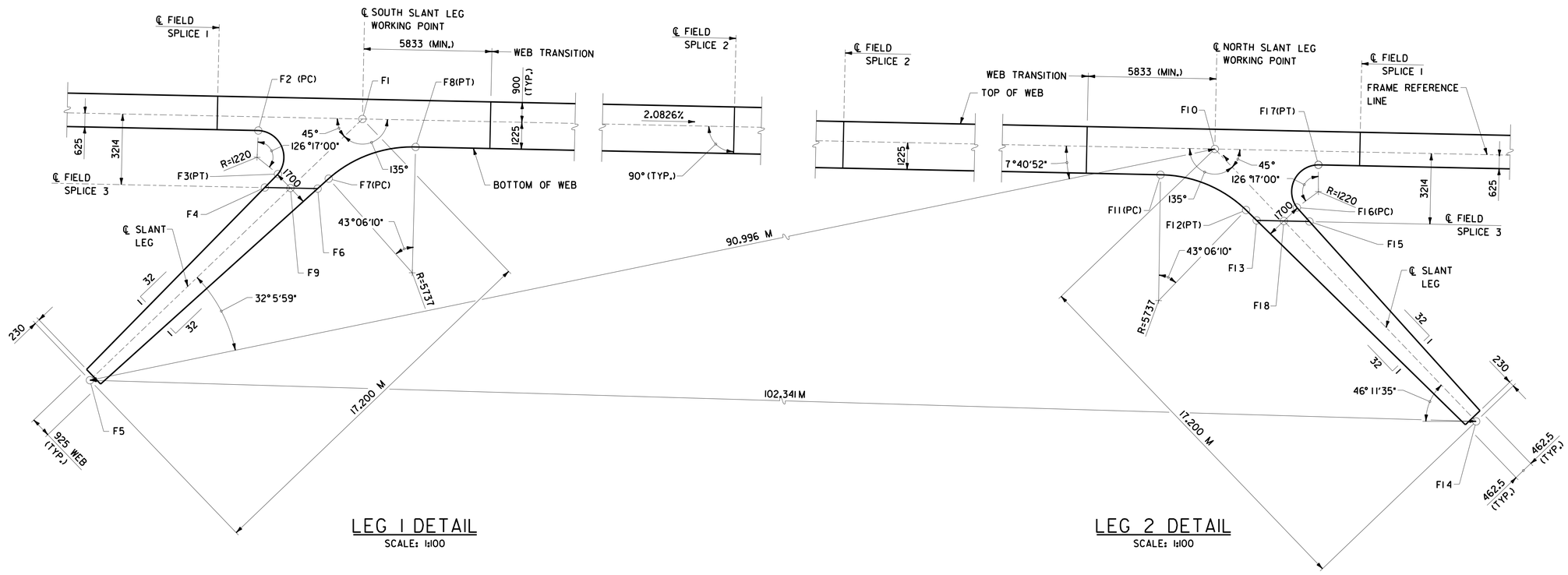
PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194afe.dgn
PROJECT LEADER: DMB
DESIGNED BY: D. Kull
SLANT LEG FRAME ELEVATION (2 OF2)

PLOT DATE: 29-MAR-2012
DRAWN BY: P. Dustin
CHECKED BY: R. Joy
SHEET 75 OF 123

McFarland Johnson

Metric



LEG 1 DETAIL
SCALE: 1:100

LEG 2 DETAIL
SCALE: 1:100

NOTES

1. ALL DIMENSIONS MEASURED ALONG FRAME REFERENCE LINE UNLESS OTHERWISE NOTED.

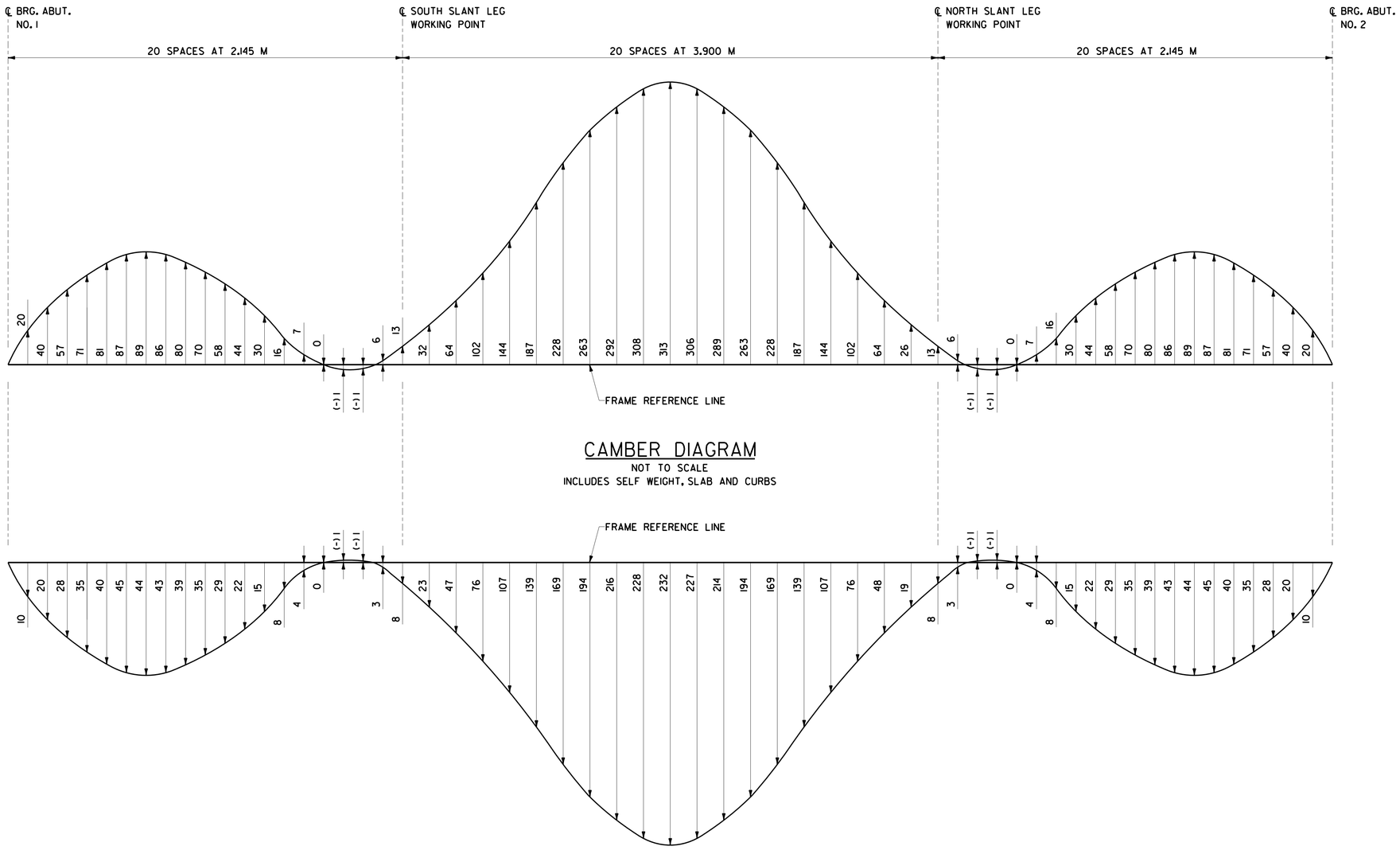
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

0 1 2 4 6 8 10
SCALE = 1:100

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194afg.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: D. Kull	CHECKED BY: R. Joy
SLANT LEG FRAME DETAILS	SHEET 76 OF 123

Metric

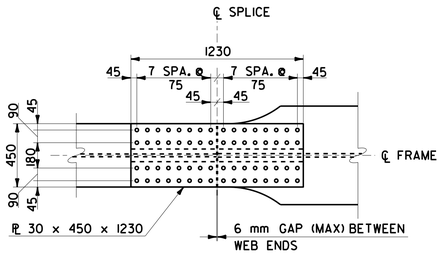


NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

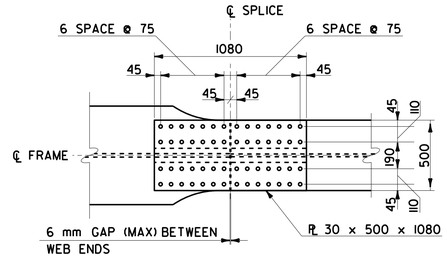
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194afg.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: D. Kull	CHECKED BY: R. Joy
CAMBER DIAGRAM	SHEET 77 OF 123

McFarland Johnson

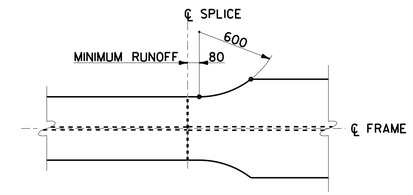
Metric



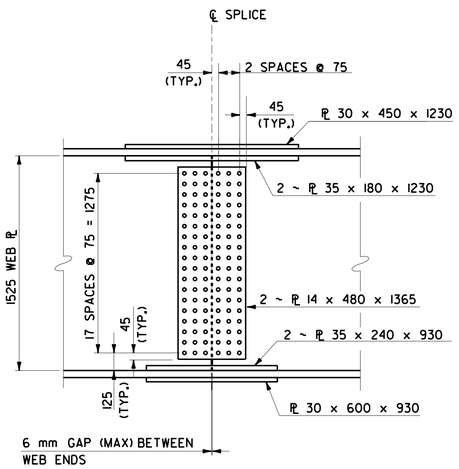
TOP FLANGE PLAN
SCALE: 1:20



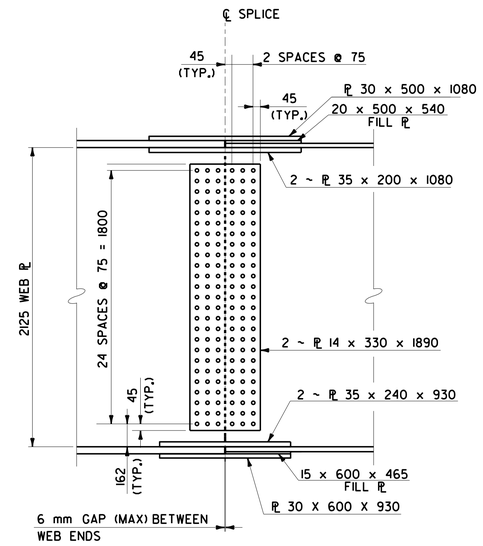
TOP FLANGE PLAN
SCALE: 1:20



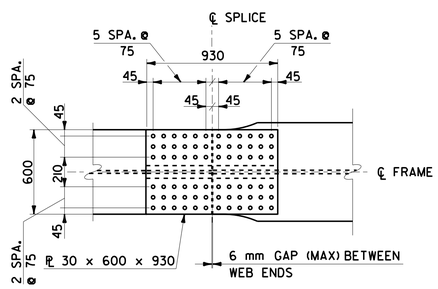
FLANGE PLATE WIDTH TRANSITION
SCALE: 1:20



WEB ELEVATION
SCALE: 1:20

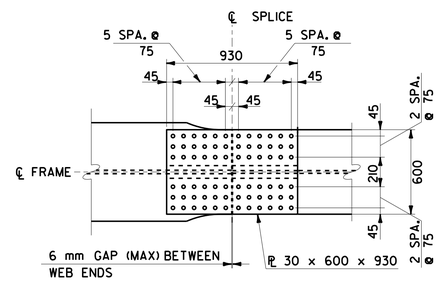


WEB ELEVATION
SCALE: 1:20



BOTTOM FLANGE PLAN
SCALE: 1:20

FIELD SPLICE NO. 1



BOTTOM FLANGE PLAN
SCALE: 1:20

FIELD SPLICE NO. 2

NOTES

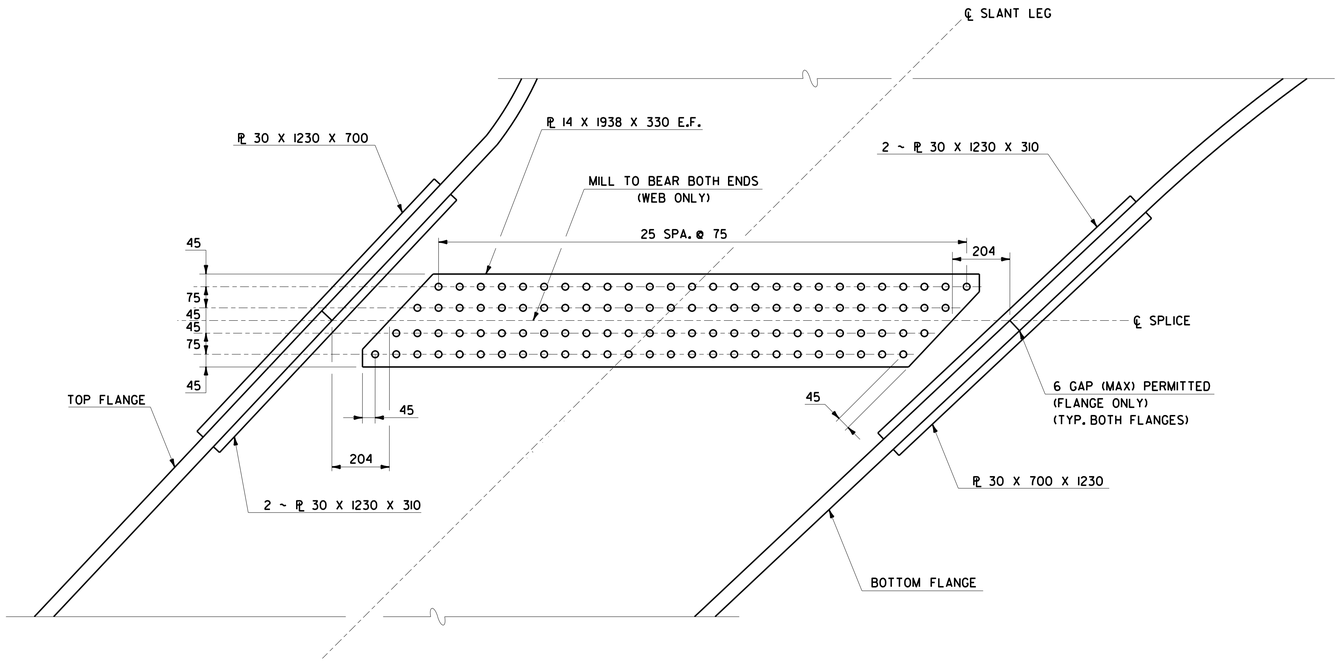
1. ALL SPLICE PLATES AND FILL PLATES TO BE AASHTO M270M GRADE 345W STEEL. ALL COSTS SHALL BE INCLUDED IN ITEM 506.55 STRUCTURAL STEEL - PLATE GIRDER.
2. ALL SPLICE AND FILL PLATES TO CONFORM TO THE CHARPY V NOTCH REQUIREMENTS.
3. ALL SPLICE CONNECTIONS SHALL BE MADE USING M22 DIAMETER, AASHTO M 164M, BOLTS IN 24 DIAMETER HOLES.
4. EXCLUDE BOLT THREADS FROM SHEAR PLANES.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

0 1 2
SCALE = 1:20

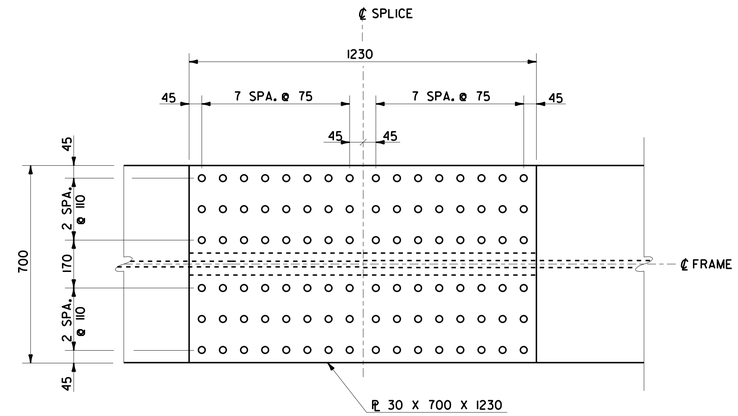
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194afs.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: D. Kull
DESIGNED BY: D. Kull	CHECKED BY: R. Joy
FIELD SPLICE DETAILS - 1	SHEET 78 OF 123



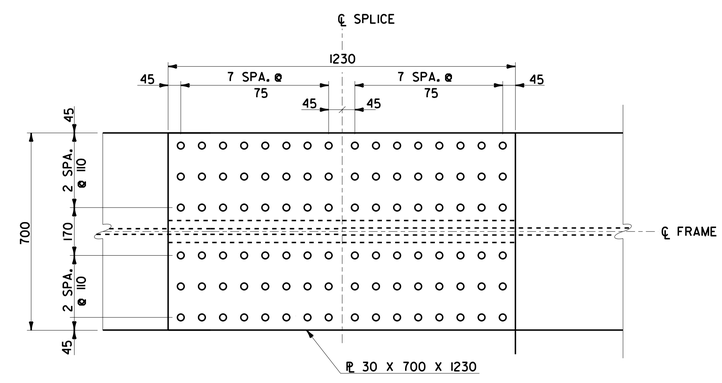
WEB ELEVATION

SCALE: 1:10



TOP FLANGE

SCALE: 1:10



BOTTOM FLANGE PLAN

SCALE: 1:10

FIELD SPLICE NO. 3

NOTE

1. FOR FIELD SPLICE NOTES, SEE SHEET 78.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

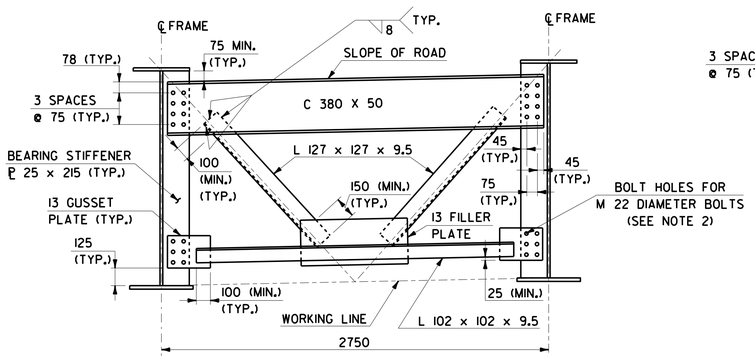
0 0.5 1

SCALE = 1:10

McFarland Johnson

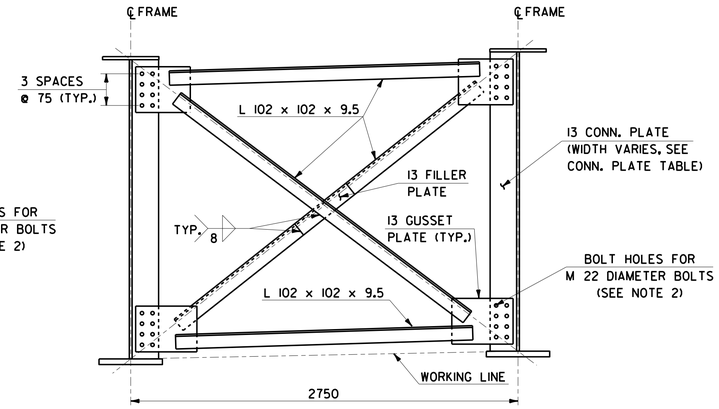
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194afs.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: D. Kull
DESIGNED BY: D. Kull	CHECKED BY: R. Joy
FIELD SPLICE DETAILS - 2	SHEET 79 OF 123

Metric



DIAPHRAGM TYPE 1

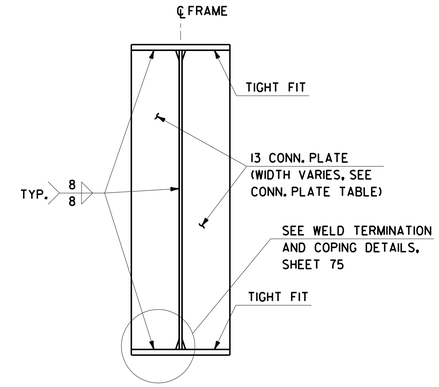
SCALE: 1:20



DIAPHRAGM TYPE 5

SCALE: 1:20

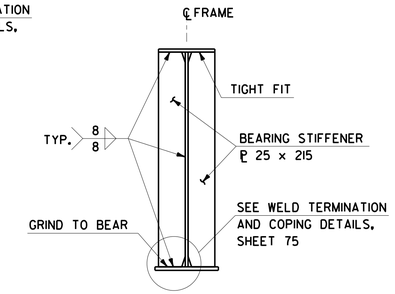
(FOR GUSSET PLATE DETAILS NOT SHOWN, SEE DETAIL C)



INTERMEDIATE CONNECTION PLATE DETAIL

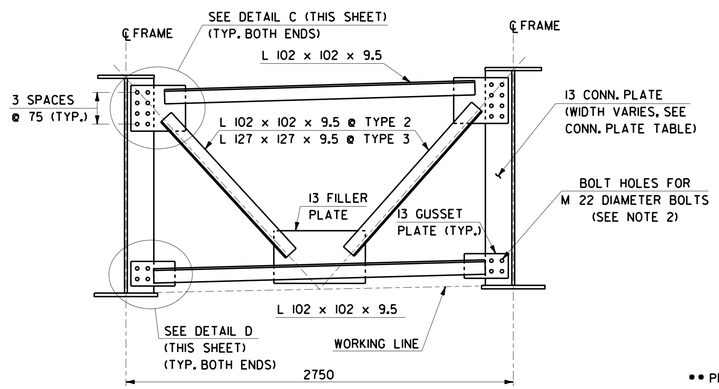
SCALE: 1:20

CONNECTION PLATE TABLE	
TOP FLANGE WIDTH	MIN. CONN. PLATE WIDTH
450	215
500	330
700	240



ABUTMENT BEARING STIFFENER DETAIL

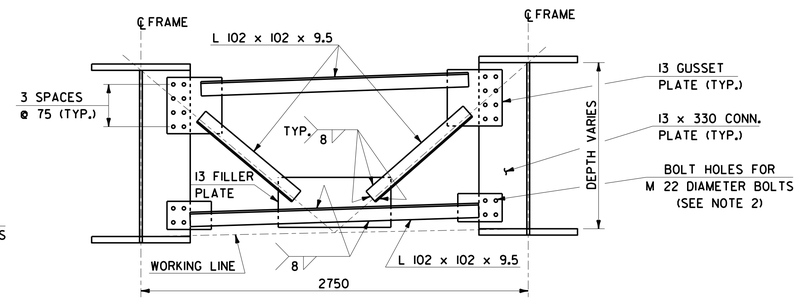
SCALE: 1:20



DIAPHRAGM TYPE 2 & 3

SCALE: 1:20

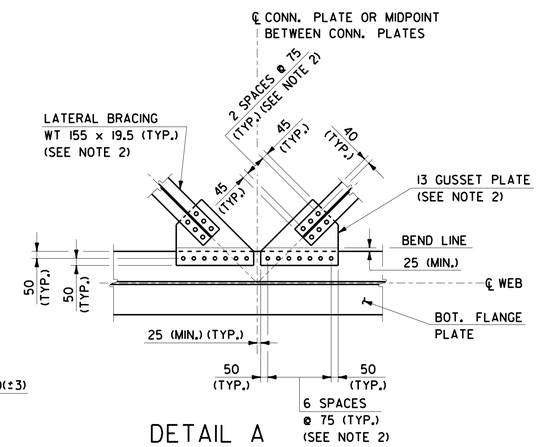
(TYPE 2 SHOWN, TYPE 3 SIMILAR UNLESS NOTED)



DIAPHRAGM TYPE 6

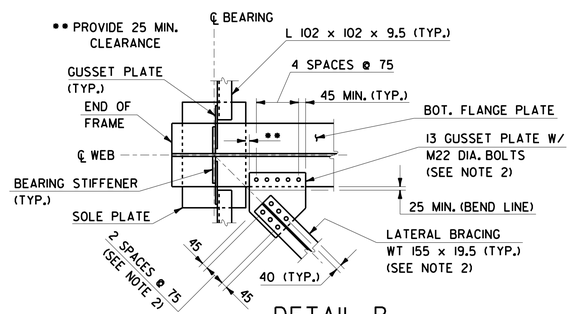
SCALE: 1:20

(FOR GUSSET PLATE DETAILS NOT SHOWN, SEE DETAILS C & D)



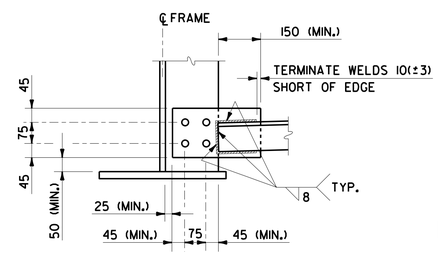
DETAIL A

SCALE: 1:20



DETAIL B

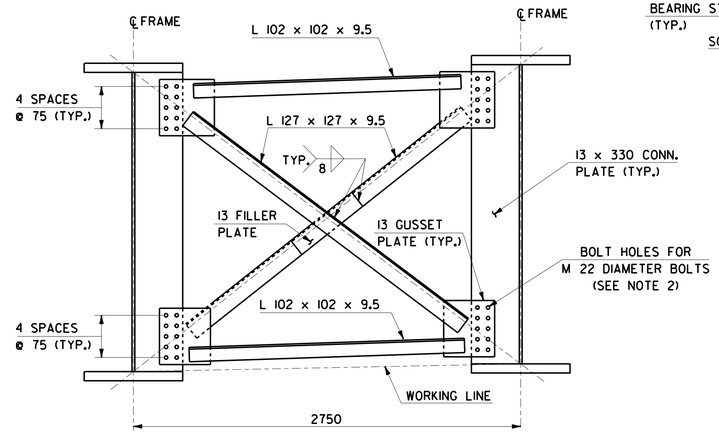
SCALE: 1:20



DETAIL D

SCALE: 1:10

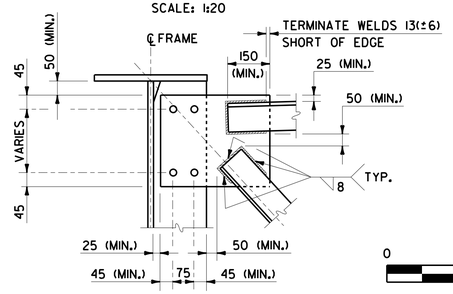
(TYPICAL TOP AND BOTTOM STRUT CONNECTIONS)



DIAPHRAGM TYPE 4

SCALE: 1:20

(FOR GUSSET PLATE DETAILS NOT SHOWN, SEE DETAIL C)



DETAIL C

SCALE: 1:10

(TYPICAL TOP AND BOTTOM STRUT CONNECTIONS)

NOTES

1. ALL DIAPHRAGMS, CONNECTION PLATES, LATERAL BRACING AND GUSSET PLATES SHALL BE AASHTO M270 M, GRADE 345W.
2. ALL BOLTS TO BE 22mm DIAMETER ASTM A 325 BOLTS CONFORMING TO THE REQUIREMENTS OF SUBSECTION 714.05.
3. PROVIDE 24mm DIAMETER HOLES IN ALL DIAPHRAGM MEMBERS.
4. USE 27mm DIAMETER OVERSIZE HOLES IN LATERAL BRACING MEMBERS AND STANDARD 24mm DIAMETER HOLES IN GUSSET PLATES AND FLANGES. WASHERS SHALL BE PLACED ON BOTH SIDES OF MEMBER WITH OVERSIZED HOLES
5. ALL DIAPHRAGM FILLER PLATES AND GUSSET PLATES TO BE RECTANGULAR.
6. FOR LOCATIONS OF DETAIL A AND DETAIL B, SEE SHEET 73.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

0 0.5 1

SCALE = 1:10

0 1 2

SCALE = 1:20

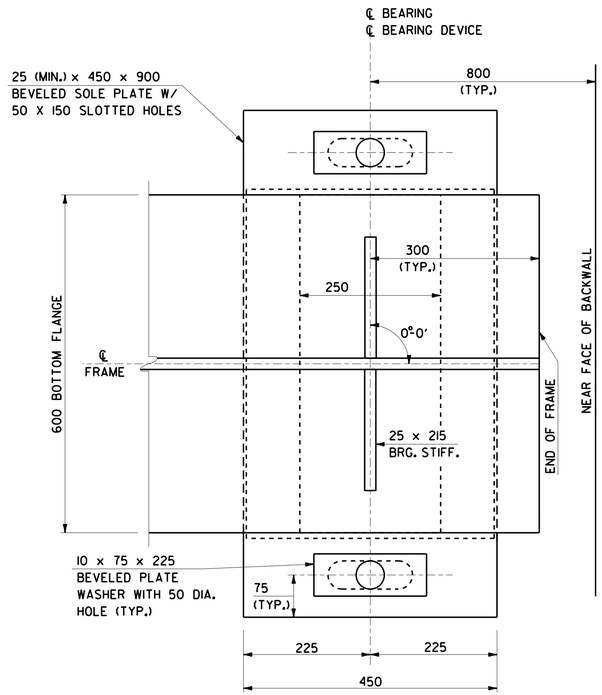
McFarland Johnson

PROJECT NAME: MORRISTOWN

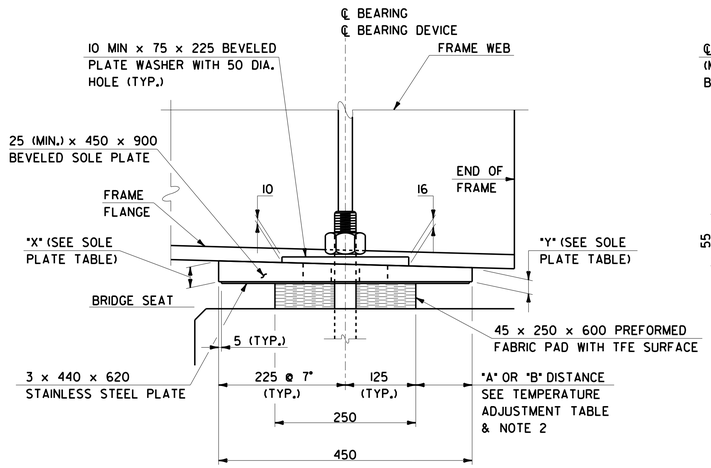
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME:	z10b194acf.dgn	PLOT DATE:	29-MAR-2012
PROJECT LEADER:	DMB	DRAWN BY:	S. Merkwan
DESIGNED BY:	D. Kull	CHECKED BY:	R. Joy
DIAPHRAGM DETAILS		SHEET	80 OF 123

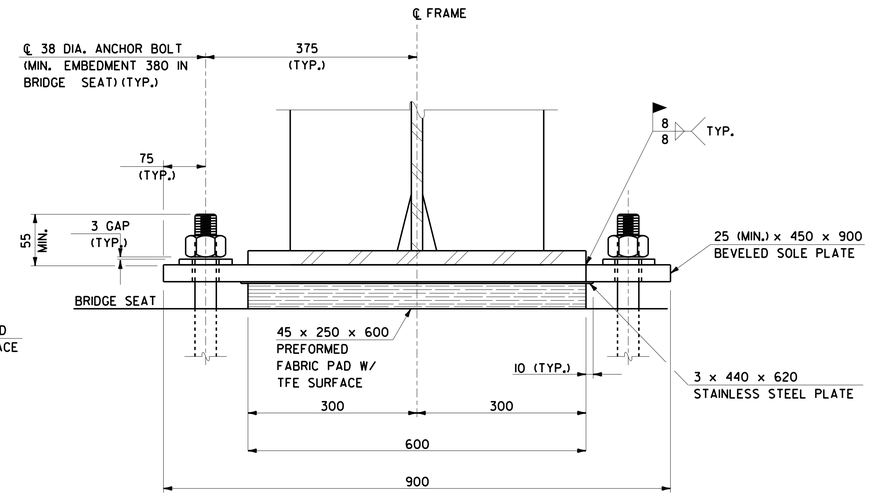
Metric



PLAN



ELEVATION



FRONT VIEW

EXPANSION BEARING DETAIL
ITEM 531.10 BEARING DEVICE ASSEMBLY

SCALE: 1:5
(ABUTMENT NO. 2 SHOWN, ABUTMENT NO. 1 SIMILAR)

SOLE PLATE TABLE

	"X"	"Y"
ABUTMENT NO. 1	25	32
ABUTMENT NO. 2	37	25

TEMPERATURE ADJUSTMENT TABLE

ABUTMENTS			
TEMP		"A" DIST.	"B" DEIST
-18°C	0°F	130	124
-9°C	15°F	121	115
-1°C	30°F	113	108
7°C	45°F	105	97
16°C	60°F	97	91
24°C	75°F	88	82
32°C	90°F	80	74
41°C	105°F	72	66

BEARING NOTES

1. FOR ADDITIONAL PREFORMED FABRIC BEARING NOTES, SEE SHEETS 3 AND 4.
2. THE "A" DISTANCE IS THE FINAL SETTING FOR THE BEARING PAD AFTER ALL DEAD LOAD HAS BEEN APPLIED. THE "B" DISTANCE IS LISTED FOR SETTING THE BEARING AFTER THE STRUCTURAL STEEL IS ERECTED AND BEFORE THE CONCRETE DECK IS POURED. THE DIFFERENCE IS THE THEORETICAL ELONGATION OF THE BOTTOM FLANGE DUE TO DEAD LOAD DEFLECTION OF THE CONCRETE SLAB, CURB, PAVEMENT AND BRIDGE RAIL. THE FINAL "A" DISTANCE AS SHOWN IN THE TABLE, MUST BE ATTAINED WITHIN 3 MILLIMETERS.
3. DESIGN CRITERIA:
   (A) BASE PLATE TO CONCRETE DESIGN PRESSURE = 7.0 MPa MAXIMUM.
   (B) MINIMUM ALLOWABLE DESIGN ROTATION = 0.015 RADIANS.
   (C) HORIZONTAL CAPACITY SHALL BE A MINIMUM 10% OF VERTICAL LOAD.
   (D) DESIGN LOAD PER BEARING = 776 kN.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

0 0.25 0.5
SCALE = 1:5

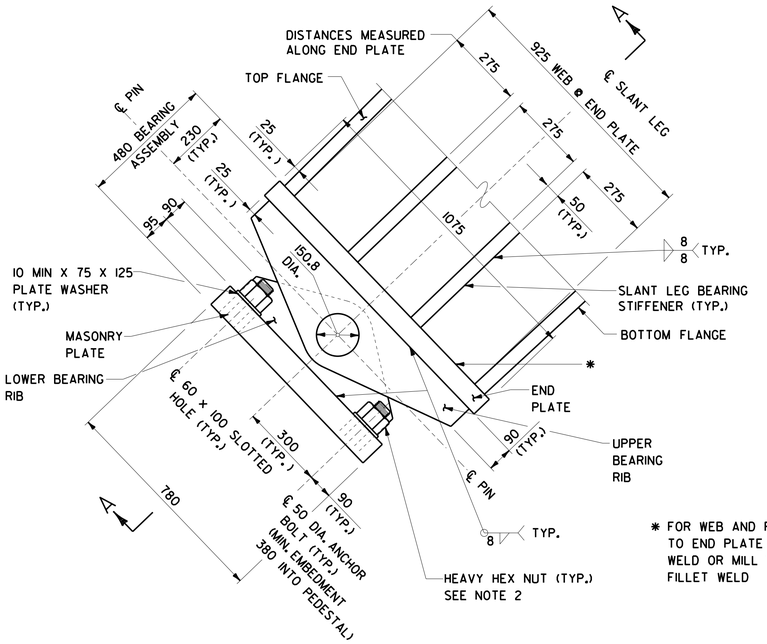
McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

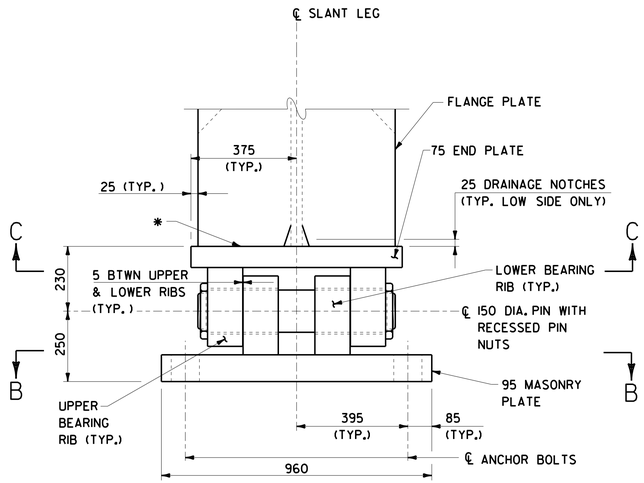
FILE NAME: z10b194abl.dgn
PROJECT LEADER: DMB
DESIGNED BY: S. Delia / D. Kull
ABUTMENT BEARING DETAILS

PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 81 OF 123

Metric

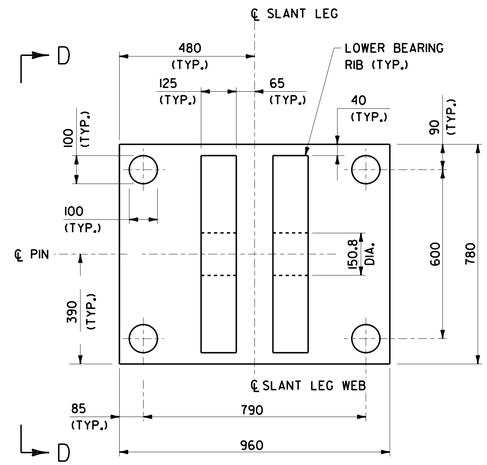


ELEVATION

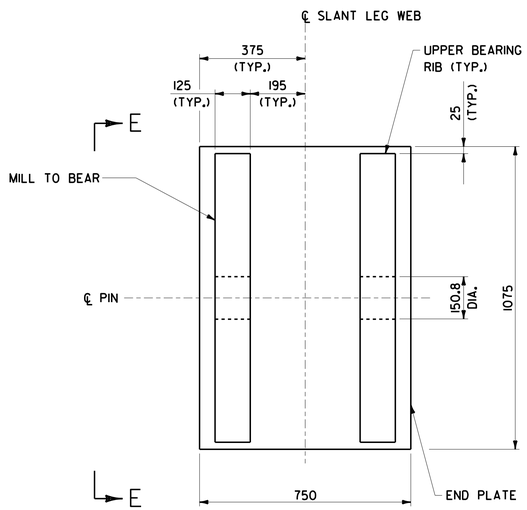


* FOR WEB AND FLANGE CONNECTION TO END PLATE USE FULL PENETRATION WELD OR MILL TO BEAR WITH 8 FILLET WELD

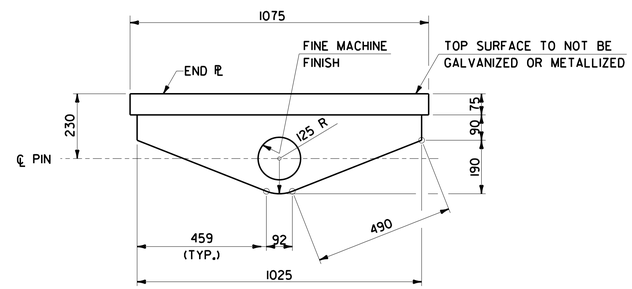
SECTION A-A



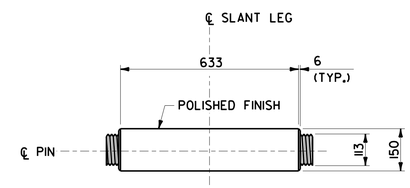
SECTION B-B
LOWER BEARING ASSEMBLY



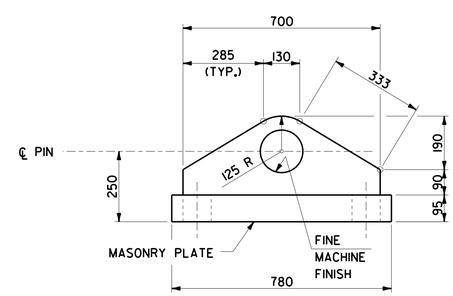
SECTION C-C
UPPER BEARING ASSEMBLY
SECTION C-C SHOWN FROM UNDERSIDE OF BEARING



VIEW E-E
UPPER BEARING ASSEMBLY



PIN DETAIL



VIEW D-D
LOWER BEARING ASSEMBLY

DESIGN LOADS

DESCRIPTION	LOAD
DEAD LOAD 1 (STEEL FRAMES, DECK)	2905 KN
DEAD LOAD 2 (CONCRETE CURB, RAIL)	650 KN
TEMPERATURE	80 KN
LIVE LOAD (+ IMPACT)	1380 KN
TOTAL	5015 KN

BEARING NOTES

1. FOR ADDITIONAL STEEL BEARING NOTES, SEE SHEET 4.
2. DRAW NUTS FINGER TIGHT DURING CONSTRUCTION. AFTER PLACEMENT OF CONCRETE, RE-ADJUST NUTS AND BURR THREADS ABOVE NUT.

SLANT LEG BEARING DETAILS
ITEM 531.13 BEARING DEVICE ASSEMBLY, STEEL

SCALE: 1:10

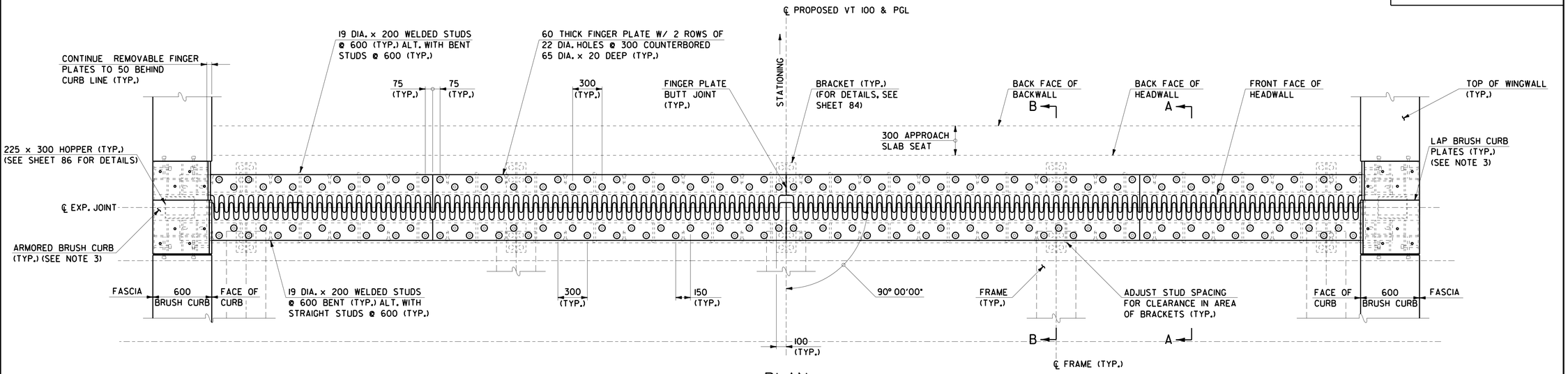
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

0 0.5 1
SCALE = 1:10

McFarland Johnson

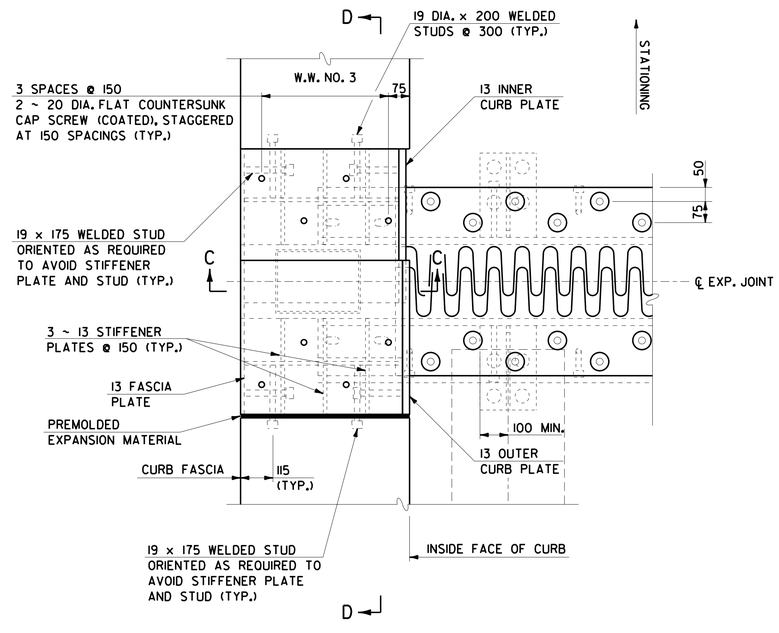
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194ab2.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: D. Kull	CHECKED BY: R. Joy
SLANT LEG BEARING DETAILS	SHEET 82 OF 123

Metric



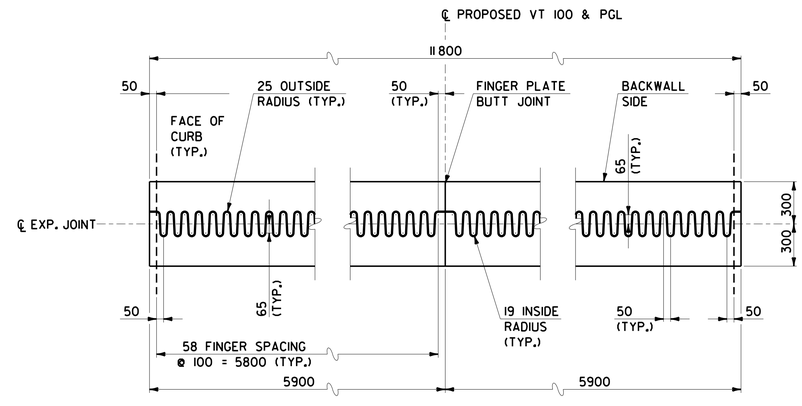
PLAN

SCALE: 1:20
(ABUTMENT NO. 2 SHOWN, ABUTMENT NO. 1 SIMILAR)



ARMORED BRUSH CURB PLAN DETAIL

SCALE: 1:10



CUTTING DETAIL

SCALE: 1:20

0 1 2
SCALE = 1:20

0 0.5 1
SCALE = 1:10

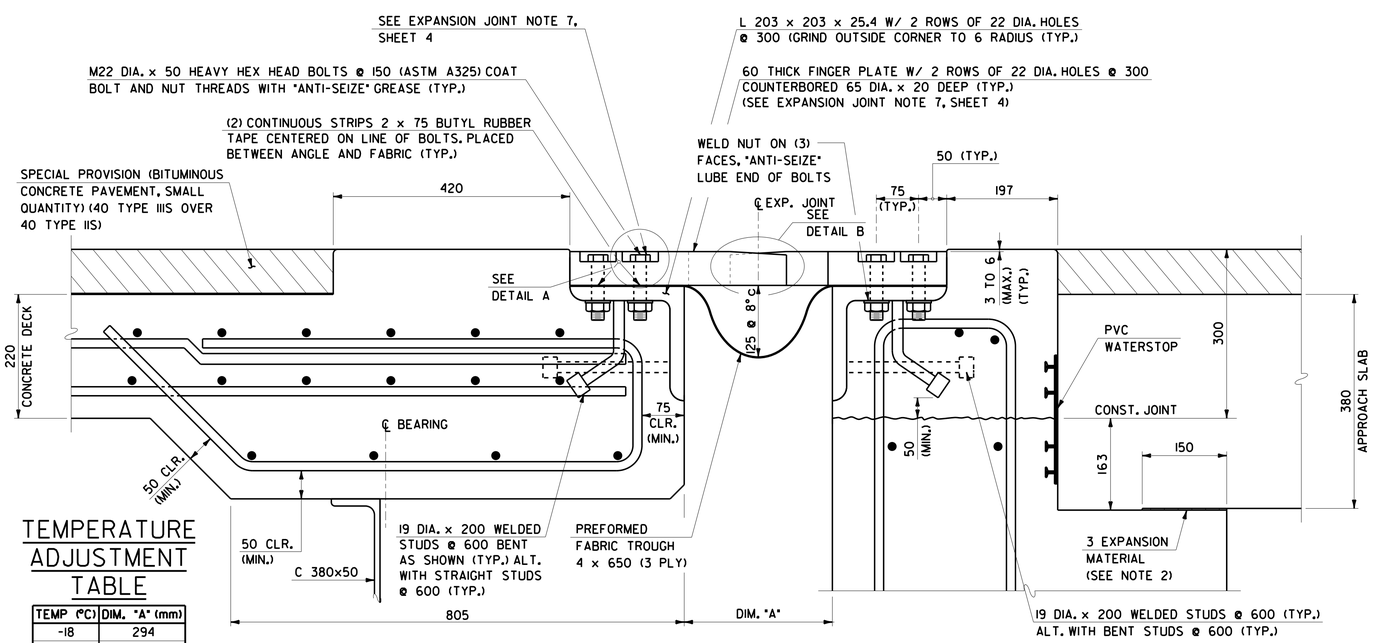
NOTES

1. FOR ADDITIONAL EXPANSION JOINT NOTES, SEE SHEET 4.
2. FINGER PLATES IN ROADWAY ARE REMOVABLE TO ALLOW FOR CLEANING AND/OR REPLACEMENT OF FABRIC TROUGH.
3. LAP BRUSH CURB PLATES IN DIRECTION OF TRAFFIC.
4. FOR SECTIONS A-A, B-B, C-C AND D-D, SEE SHEETS 84 AND 85.
5. FOR TEMPERATURE ADJUSTMENT TABLE, SEE SHEET 84.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME:	MORRISTOWN		
PROJECT NUMBER:	STP F 029-1(2)C/1		
FILE NAME:	z10b194aji.dgn	PLOT DATE:	29-MAR-2012
PROJECT LEADER:	DMB	DRAWN BY:	P. Dustin
DESIGNED BY:	S. Delia	CHECKED BY:	R. Joy
FINGER JOINT DETAILS - 1		SHEET	83 OF 123

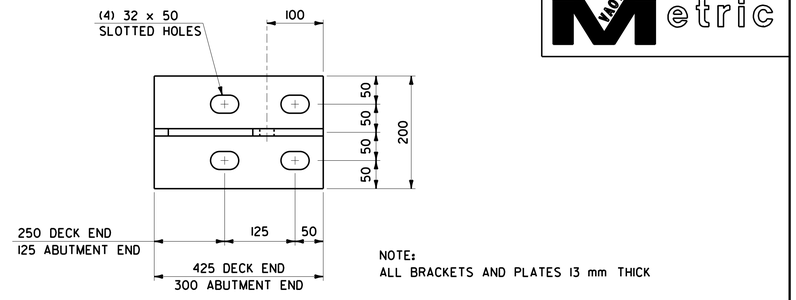


TEMPERATURE ADJUSTMENT TABLE

TEMP (°C)	DIM. "A" (mm)
-18	294
-9	286
-1	278
7	270
16	262
24	254
32	246
41	238

SECTION A-A (TYPICAL SECTION BETWEEN GIRDERS)

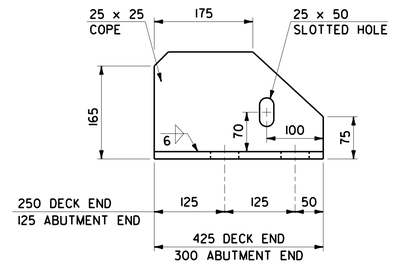
SCALE: 1:5
(ABUTMENT NO. 2 SHOWN, ABUTMENT NO. 1 SIMILAR)



NOTE:
ALL BRACKETS AND PLATES 13 mm THICK

BRACKET PLAN

SCALE: 1:5



BRACKET ELEVATION

SCALE: 1:5

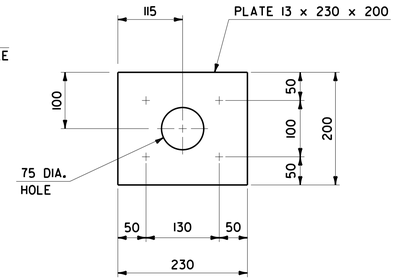
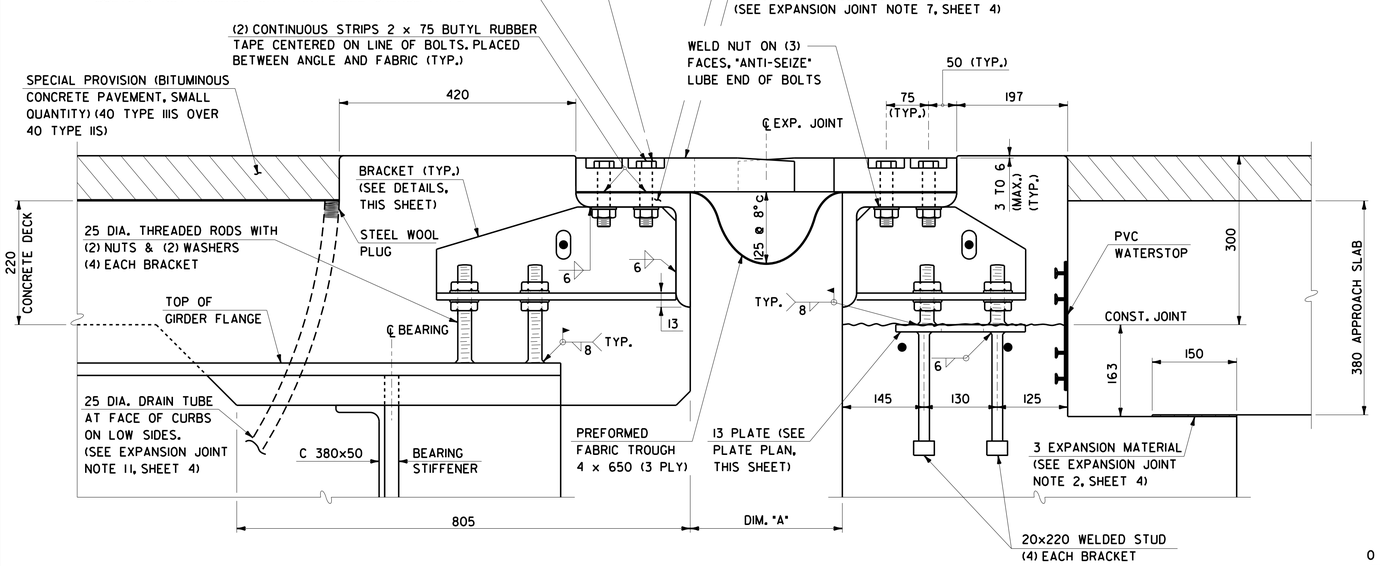


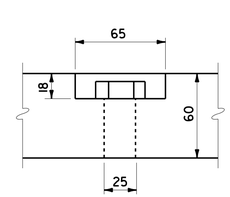
PLATE PLAN

SCALE: 1:5



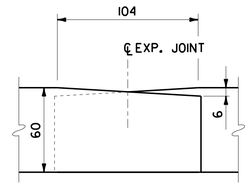
SECTION B-B (TYPICAL SECTION AT GIRDERS)

SCALE: 1:5
(ABUTMENT NO. 2 SHOWN, ABUTMENT NO. 1 SIMILAR)



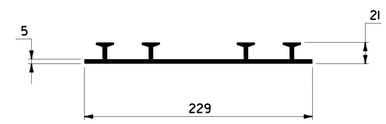
DETAIL A

SCALE: 1:2



DETAIL B

SCALE: 1:2



NOTE:
THE COSTS FOR P. V. C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.

P. V. C. WATERSTOP FOR CONSTRUCTION JOINTS

NOT TO SCALE

0 0.25 0.5
SCALE = 1:5

0 .1 .2
SCALE = 1:2

NOTES

1. FOR GENERAL NOTES AND EXPANSION JOINT NOTES, SEE SHEETS 3 AND 4.
2. EXPANSION MATERIAL INCIDENTAL TO ITEM 501.34.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

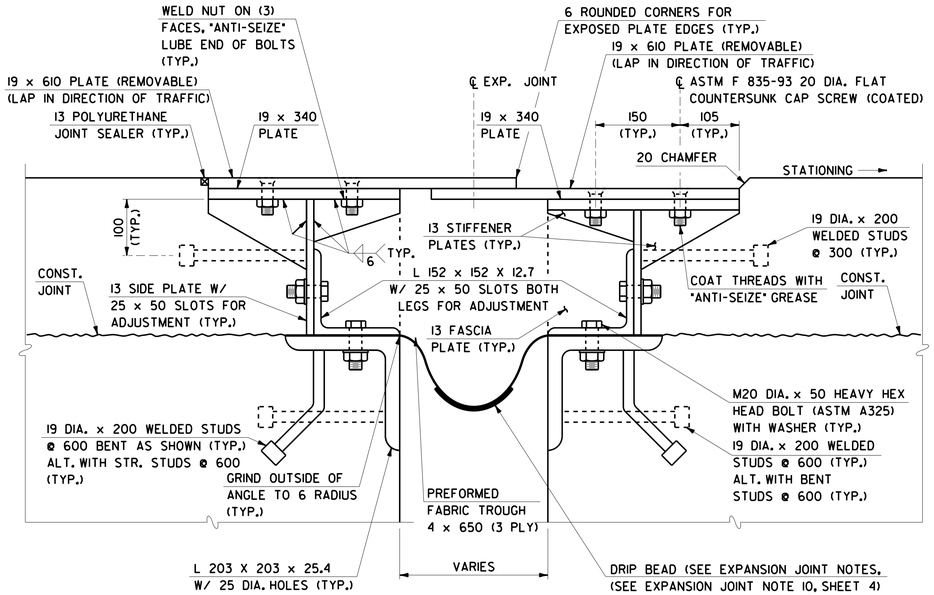
PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194aj2.dgn
PROJECT LEADER: DMB
DESIGNED BY: S. Delia
FINGER JOINT DETAILS - 2

PLOT DATE: 29-MAR-2012
DRAWN BY: P. Dustin
CHECKED BY: R. Joy
SHEET 84 OF 123

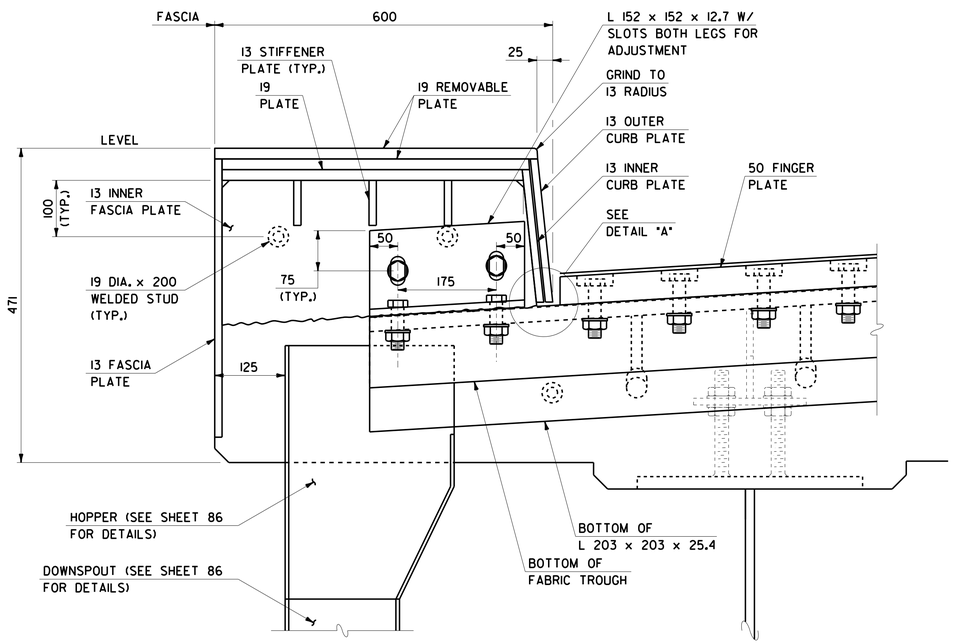
McFarland Johnson

Metric



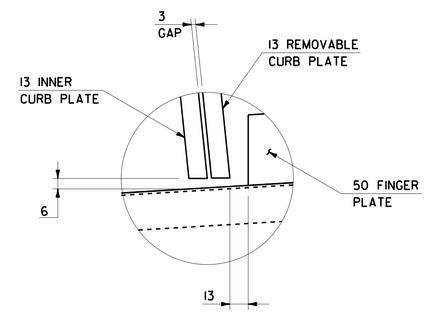
SECTION D-D (TYPICAL SECTION AT ARMORED BRUSH CURB)

SCALE: 1:5



SECTION C-C

SCALE: 1:5



DETAIL "A"

SCALE: 1:2

NOTE

1. FOR ADDITIONAL EXPANSION JOINT NOTES, SEE SHEET 4.

0 0.25 0.5

SCALE = 1:5

0 .1 .2

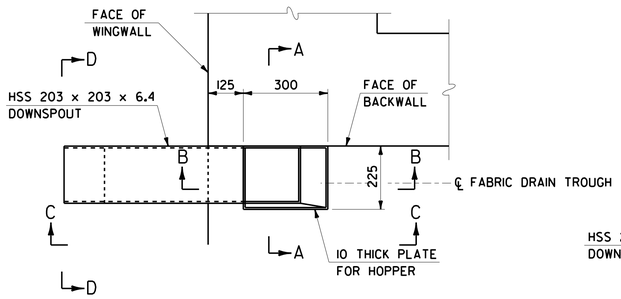
SCALE = 1:2

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

McFarland Johnson

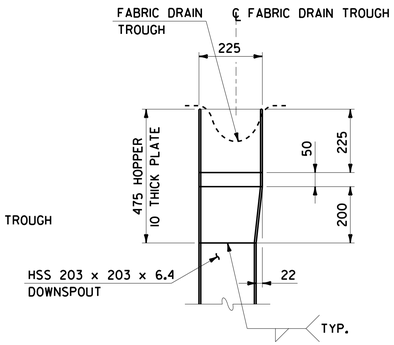
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194aj3.DGN	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: S. Delia	CHECKED BY: R. Joy
FINGER JOINT DETAILS - 3	SHEET 85 OF 123

Metric



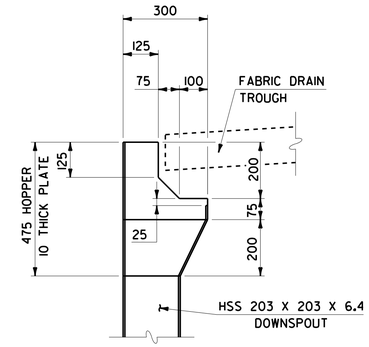
TYPICAL HOPPER PLAN

SCALE: 1:10



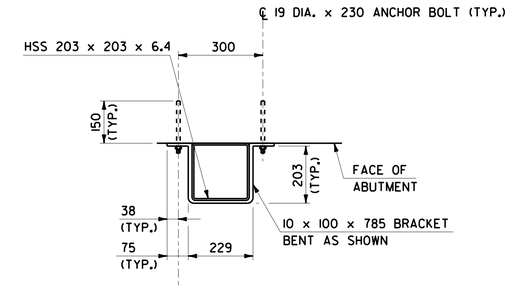
SECTION A-A

SCALE: 1:10



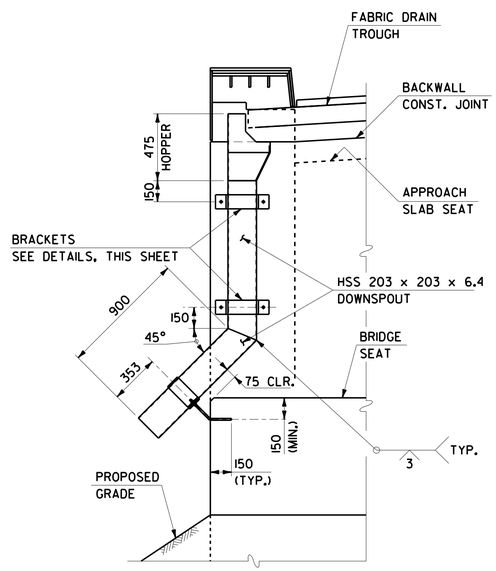
SECTION B-B

SCALE: 1:10



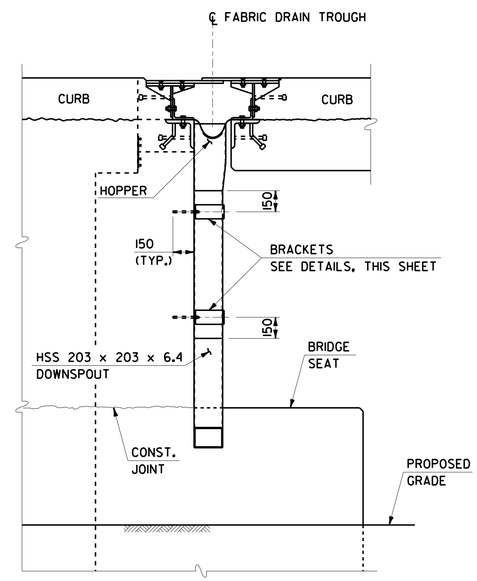
DETAIL FOR ATTACHING DOWNSPOUT TO BACKWALL

SCALE: 1:10



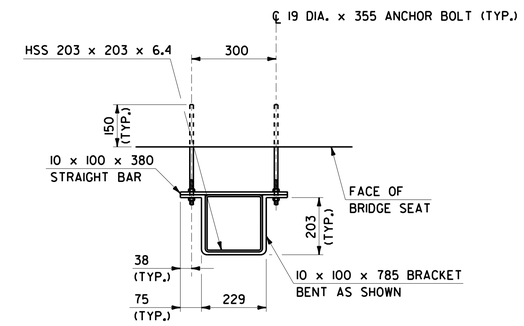
ELEVATION C-C

SCALE: 1:20



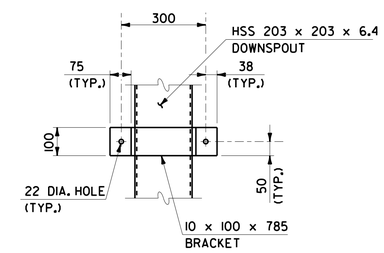
ELEVATION D-D

SCALE: 1:20



DETAIL FOR ATTACHING DOWNSPOUT TO BRIDGE SEAT

SCALE: 1:10



BRACKET ELEVATION

SCALE: 1:10

BRACKETS SHALL NOT BE BENT IN THE FIELD

NOTES

1. FOR ADDITIONAL DOWNSPOUT NOTES, SEE SHEET 4.
2. PAYMENT FOR ALL MATERIALS AND LABOR RELATED TO THE HOPPER AND DOWNSPOUT ASSEMBLY SHALL BE INCLUDED IN ITEM 506.55, STRUCTURAL STEEL (PLATE GIRDER).
3. THE HOPPER AND DOWNSPOUT ASSEMBLY SHALL BE INSTALLED AFTER THE BRIDGE EXPANSION JOINT IS IN PLACE.
7. ALL HOPPER AND DOWNSPOUT COMPONENTS AND HARDWARE SHALL BE GALVANIZED UNLESS OTHERWISE NOTED.
8. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500M OR A-501M.
9. ANY PLACE WHERE THE GALVANIZING HAS BEEN REMOVED FROM THE DOWNSPOUT EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, IT SHALL BE PREPARED BY THOROUGHLY CLEANING THE DAMAGED AREAS WITH A WIRE BRUSH AND PAINTING THE DAMAGED AREAS WITH AN APPROVED SEALANT AS DETERMINED BY THE ENGINEER AT NO ADDITIONAL COST.

0 1 2

SCALE = 1:20

0 0.5 1

SCALE = 1:10

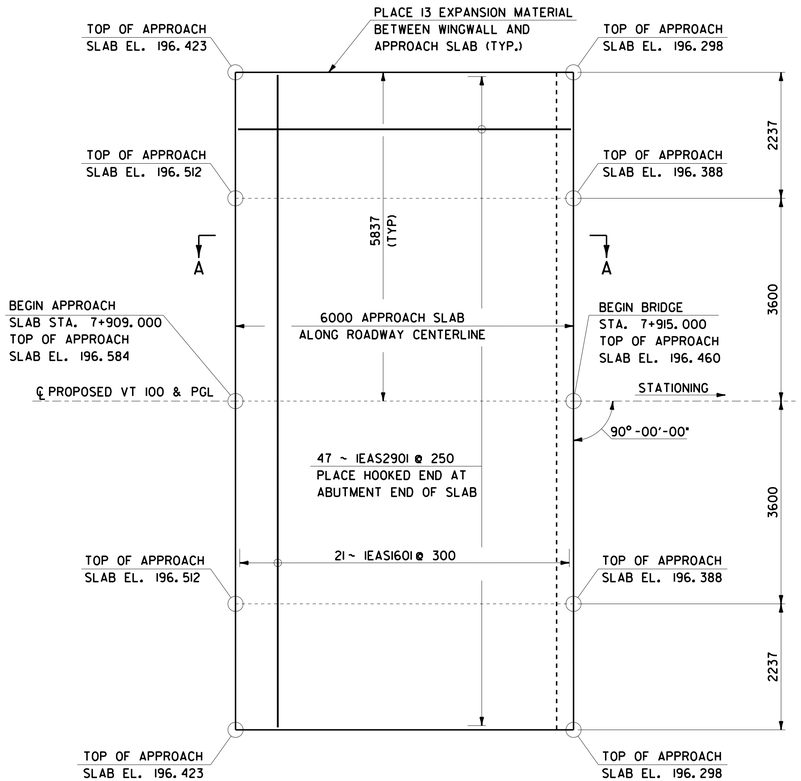
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194add.dgn
PROJECT LEADER: DMB
DESIGNED BY: D. Kull / P. Dustin
DOWNSPOUT AND HOPPER DETAILS

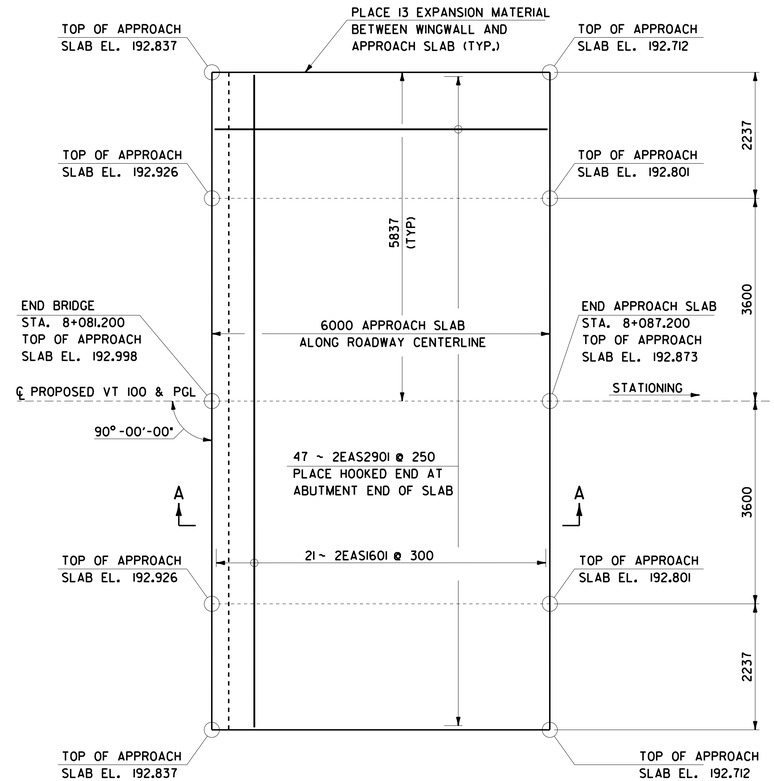
PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 86 OF 123

McFarland Johnson



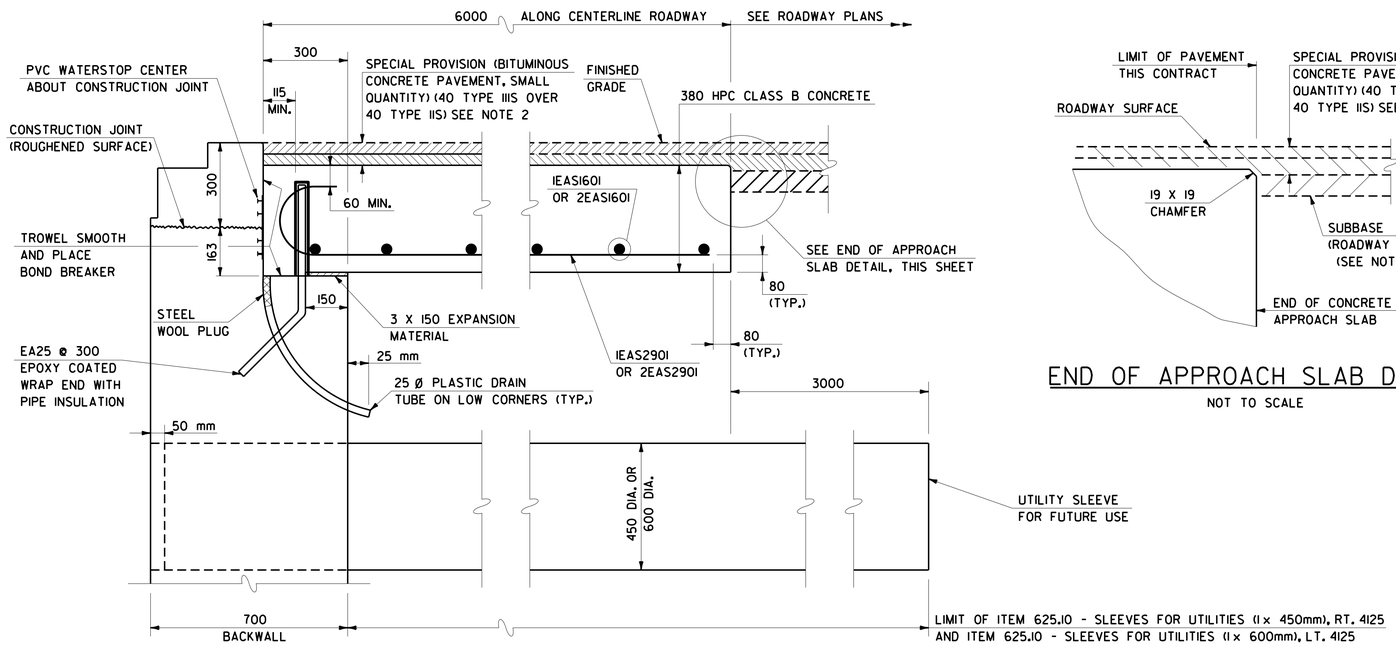
APPROACH SLAB NO. 1 PLAN

SCALE: 1:50



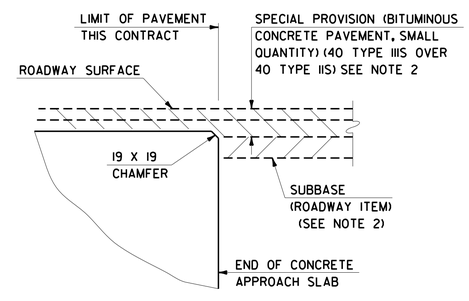
APPROACH SLAB NO. 2 PLAN

SCALE: 1:50



SECTION A-A

SCALE: 1:10



END OF APPROACH SLAB DETAIL

NOT TO SCALE

NOTES

1. REINFORCING STEEL COVER SHALL BE 80 CLR. UNLESS OTHERWISE SPECIFIED.
2. SECOND LIFT OF BITUMINOUS CONCRETE PAVEMENT TYPE IIIS, SUBBASE AND ROADWAY BITUMINOUS PAVEMENT IS NOT INCLUDED IN THIS CONTRACT.

0 0.5 1

SCALE = 1:10

0 1 2 3 4 5

SCALE = 1:50

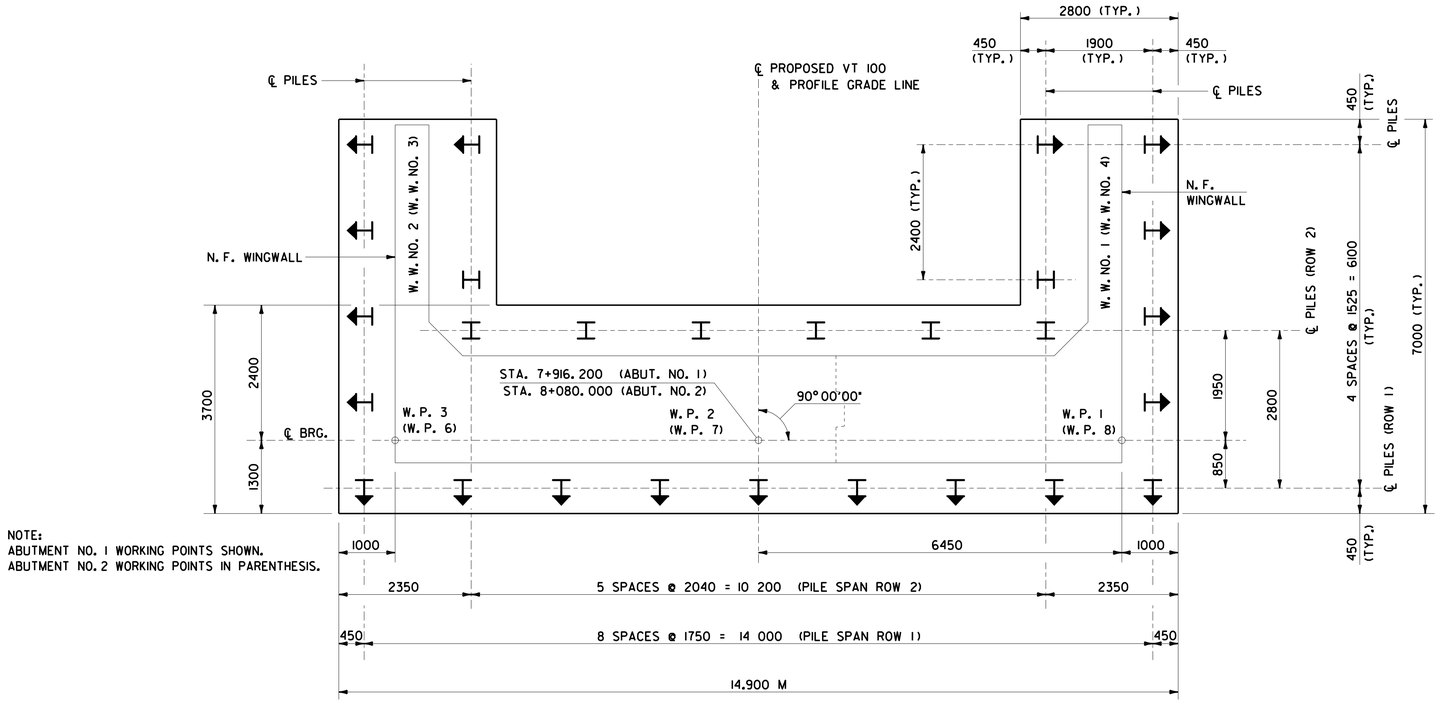
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194aas.dgn
PROJECT LEADER: DMB
DESIGNED BY: D. Kull
APPROACH SLAB DETAILS

PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 87 OF 123

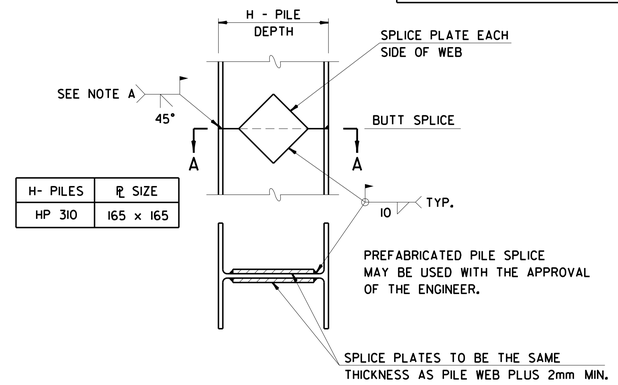
McFarland Johnson



NOTE:
ABUTMENT NO. 1 WORKING POINTS SHOWN.
ABUTMENT NO. 2 WORKING POINTS IN PARENTHESIS.

ABUTMENT FOOTING PILE LAYOUT

SCALE: 1:50
ABUTMENT NO. 1 SHOWN (ABUTMENT NO. 2 SIMILAR)



H- PILES	℞ SIZE
HP 310	165 x 165

SECTION A-A

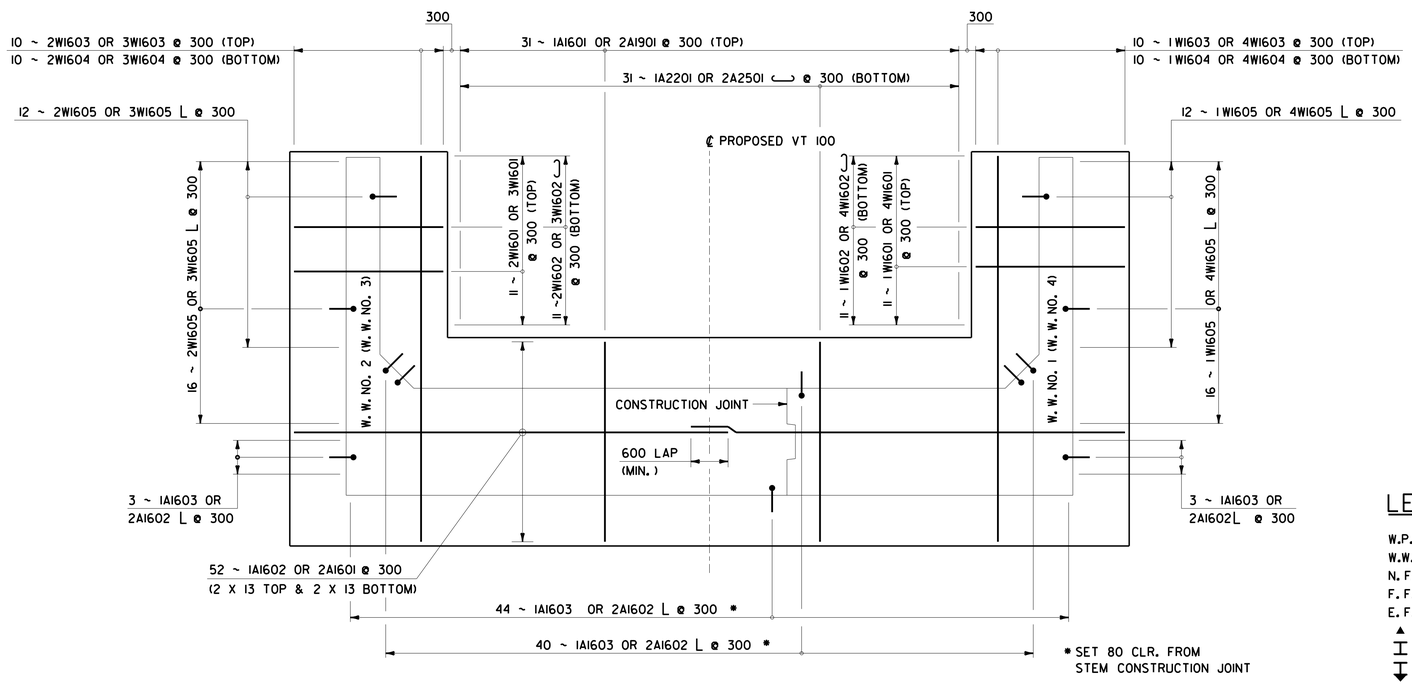
NOTE A:
FULL PENETRATION FLANGE ONLY
(TYP.)

DETAIL OF PILE SPLICE

NOT TO SCALE

PILE SPLICE NOTES

1. DO NOT ALLOW PILE SPLICING ON ANY PORTION OF PILE THAT IS TO REMAIN EXPOSED OR BE ABOVE FINISHED GROUND LINE IN COMPLETED STRUCTURE.
2. PROVIDE SPLICED SLEEVE MATERIAL SAME AS PILE MATERIAL.
3. LET WELDS COOL TO AIR TEMPERATURE BEFORE DRIVING PILES.
4. SPLICE MUST DEVELOP THE YIELD STRENGTH OF THE PILE IN BEARING AND BENDING.
5. REFER TO SUBSECTION 506.10 (d) FOR FIELD WELDING REQUIREMENTS.



* SET 80 CLR. FROM
STEM CONSTRUCTION JOINT

ABUTMENT FOOTING REINFORCING STEEL LAYOUT

SCALE: 1:50
ABUTMENT NO. 1 SHOWN (ABUTMENT NO. 2 SIMILAR)

WORKING POINTS

LOCATION	NORTHING	EASTING
W. P. 1	228947.6657	491491.2252
W. P. 2	228943.4670	491496.1225
W. P. 3	228939.2693	491501.0186
W. P. 6	229072.0191	491597.8392
W. P. 7	229067.8204	491602.7365
W. P. 8	229063.6228	491607.6326

LEGEND

W.P. = WORKING POINT
W.W. = WINGWALL
N. F. = NEAR FACE
F. F. = FAR FACE
E. F. = EACH FACE
▲ = CUT TO FIT IN FIELD
I = HP 310x79 BEARING PILE
I = HP 310x79 BATTERED PILE AT 3 TO 12 BATTER

NOTE

1. REINFORCING STEEL COVER SHALL BE 80 CLR. UNLESS OTHERWISE SPECIFIED.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

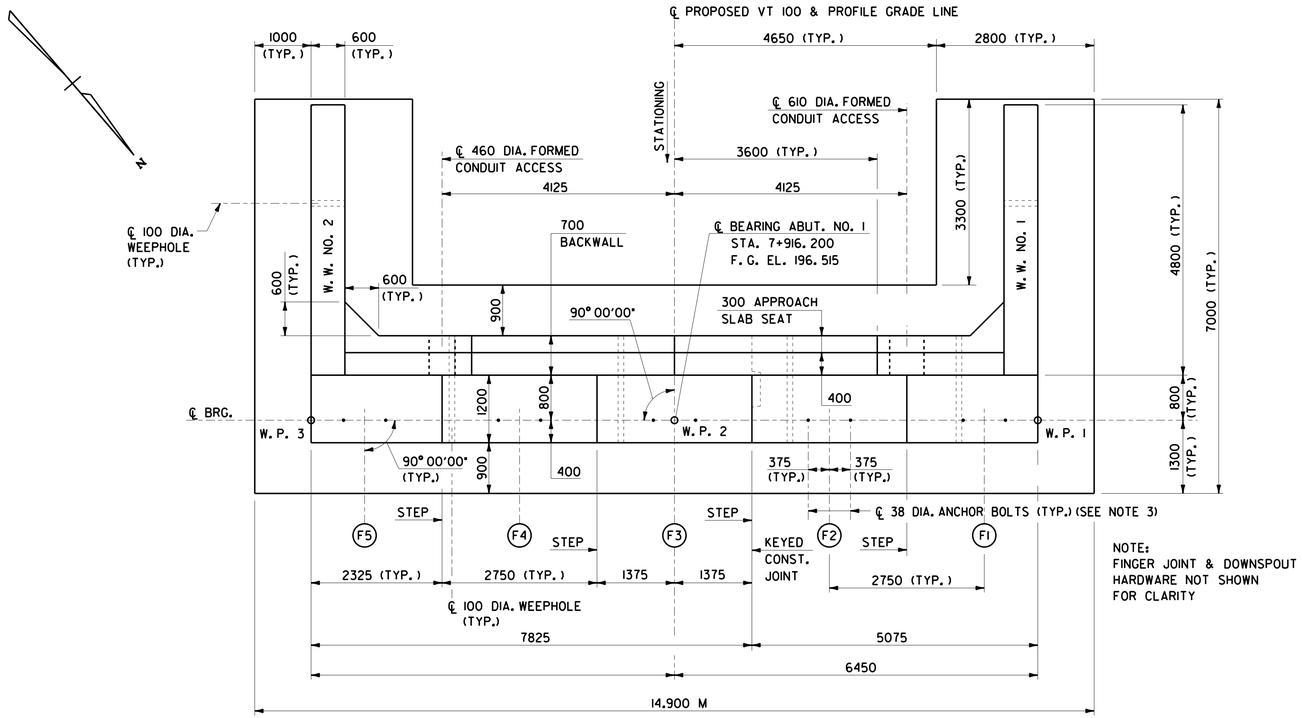
0 1 2 3 4 5
SCALE = 1:50

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194aaf.dgn
PROJECT LEADER: DMB
DESIGNED BY: S. Delia / D. Kull
ABUTMENT FOOTINGS AND DETAILS

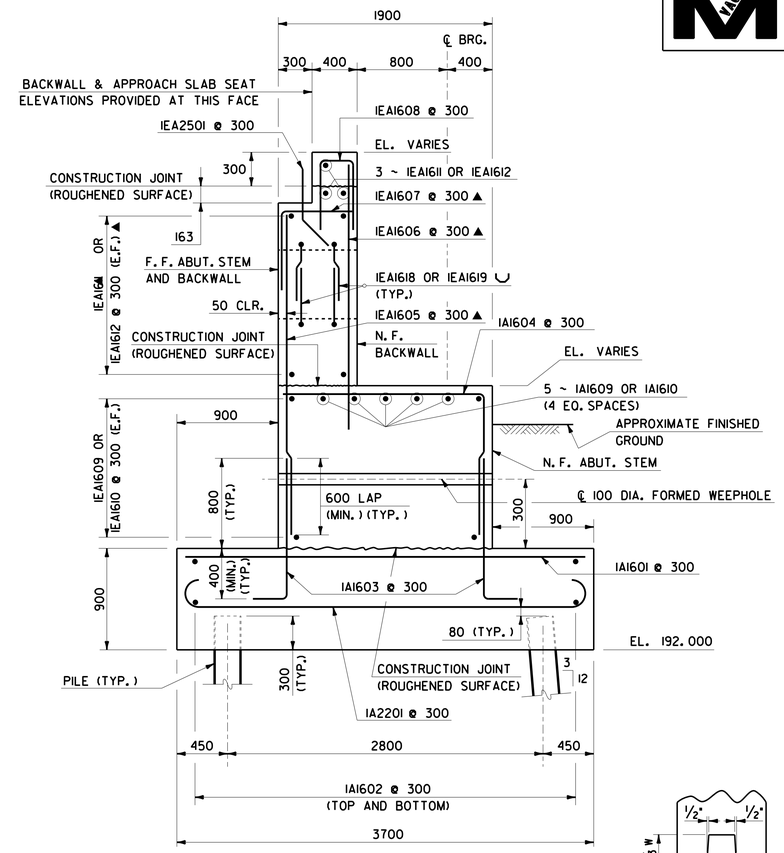
PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 88 OF 123



NOTE:
FINGER JOINT & DOWNSPOUT HARDWARE NOT SHOWN FOR CLARITY

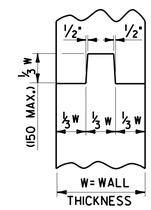
ABUTMENT NO. 1 PLAN

SCALE: 1:50



ABUTMENT NO. 1 SECTION

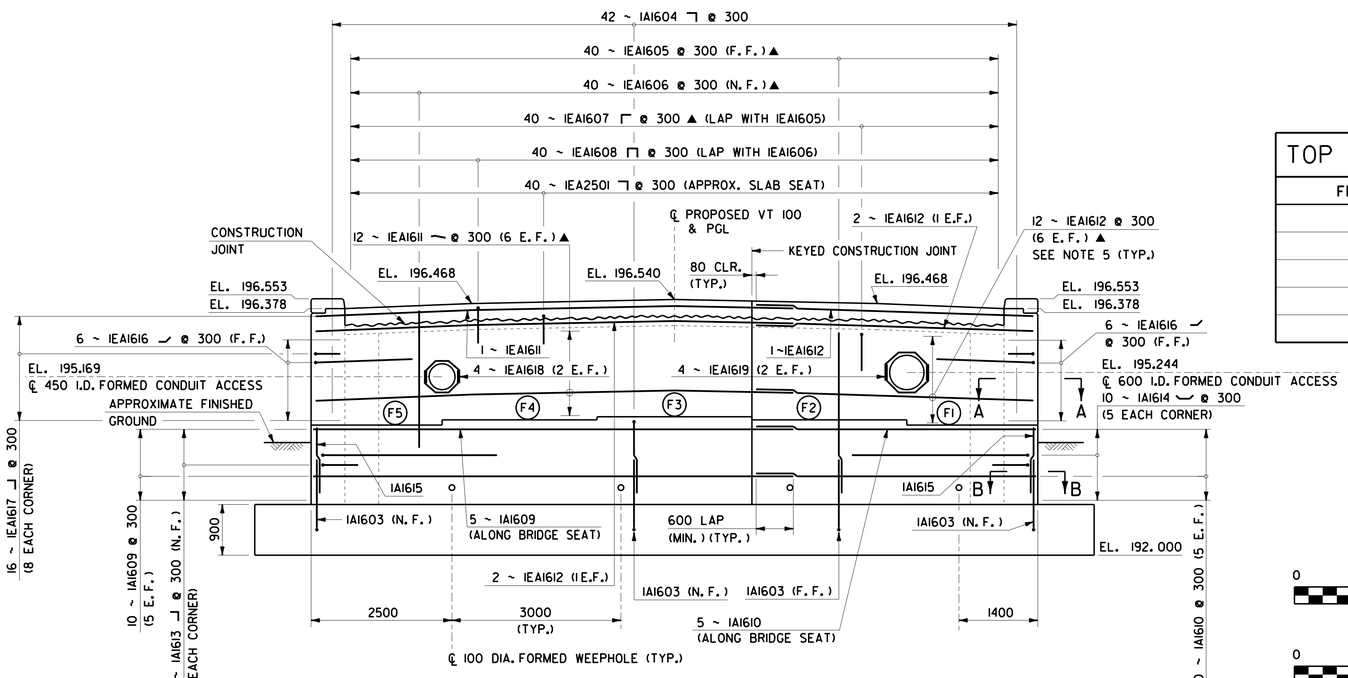
SCALE: 1:25



KEYED CONSTRUCTION JOINT DETAIL

NOT TO SCALE

TOP OF PEDESTAL ELEVATIONS	
FRAME NO.	ELEVATION
F1	194.310
F2	194.403
F3	194.458
F4	194.403
F5	194.310



ABUTMENT NO. 1 ELEVATION

SCALE: 1:50
NOTE: PILES NOT SHOWN FOR CLARITY

LEGEND

N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
I.D. = INSIDE DIAMETER
▲ = CUT TO FIT IN FIELD
(F1) FRAME NUMBER

NOTES

1. FOR SECTIONS A-A AND B-B, SEE SHEET 91.
2. FOR WORKING POINT COORDINATES, SEE SHEET 88.
3. FIELD DRILL 60 DIA. X 380 MIN DEEP HOLES FOR NO. 38 ANCHOR BOLTS.
4. FOR BRIDGE RAIL LAYOUT ON WINGWALLS, SEE SHEET 69.
5. HORIZONTAL BARS SHALL BE SPACED TO FOLLOW GEOMETRY OF THE BRIDGE CROWN.

0 1 2
SCALE = 1:25

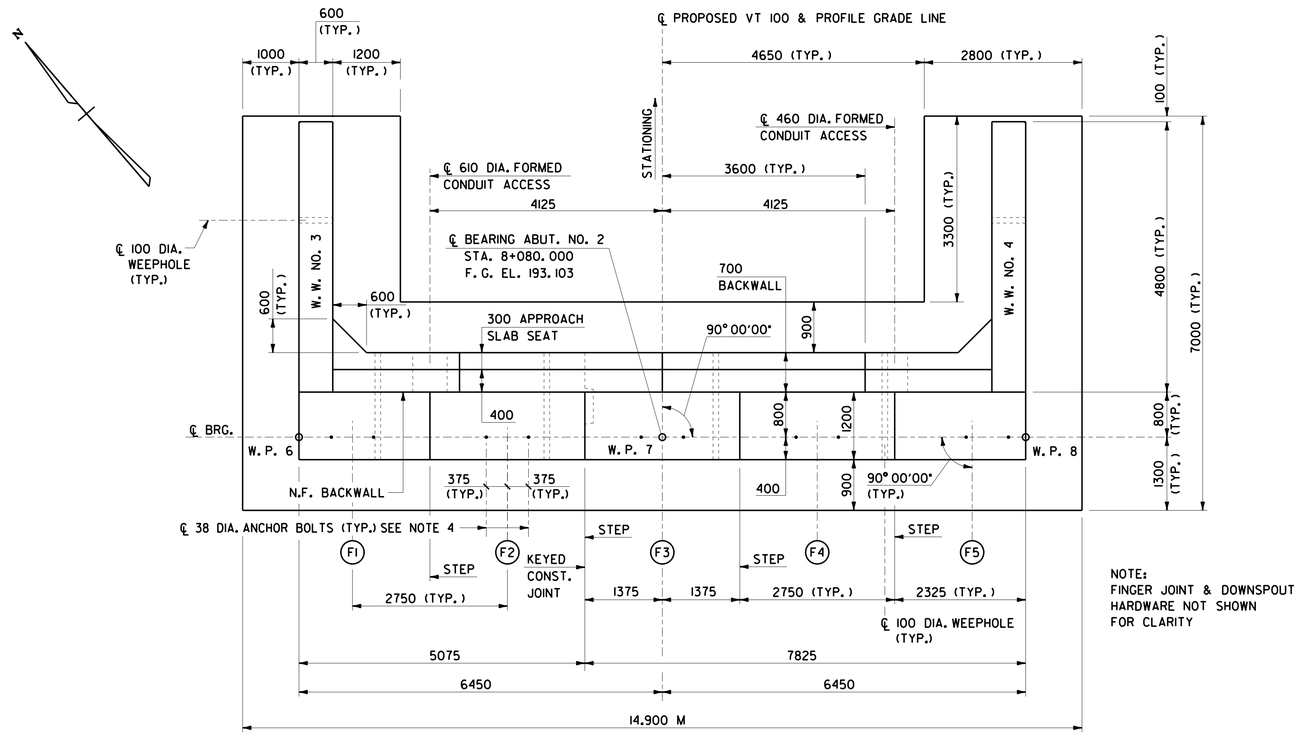
0 1 2 3 4 5
SCALE = 1:50

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.
ALL ELEVATIONS IN METERS (M)

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

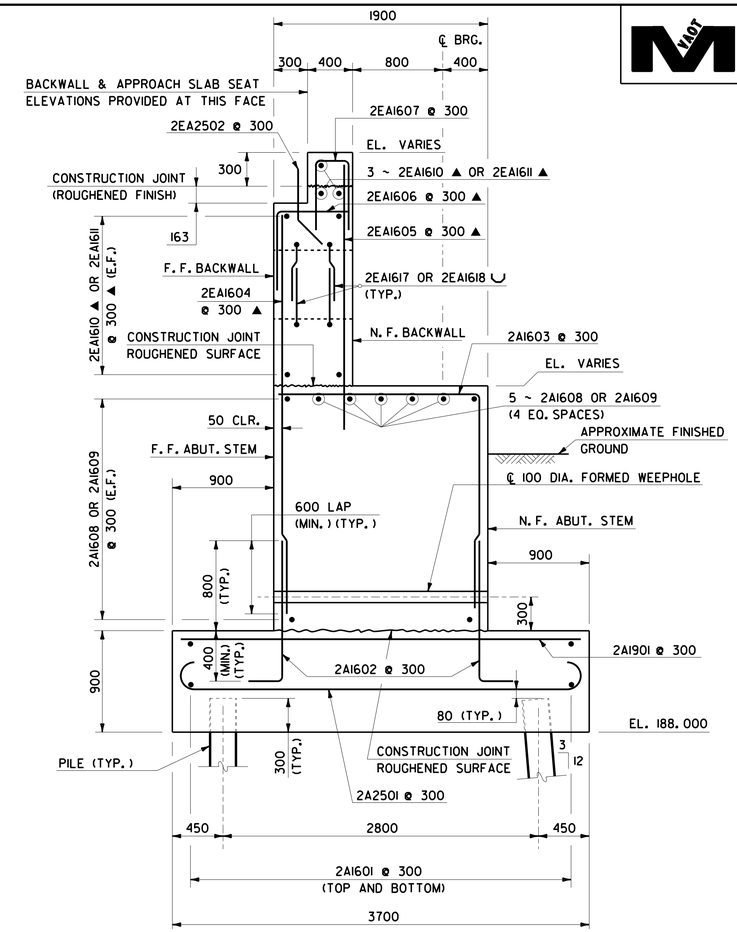
FILE NAME: z10b194asa.dgn
PROJECT LEADER: DMB
DESIGNED BY: S. Delia / D. Kull
ABUTMENT NO. 1
PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 89 OF 123



NOTE:
FINGER JOINT & DOWNSPOUT HARDWARE NOT SHOWN FOR CLARITY

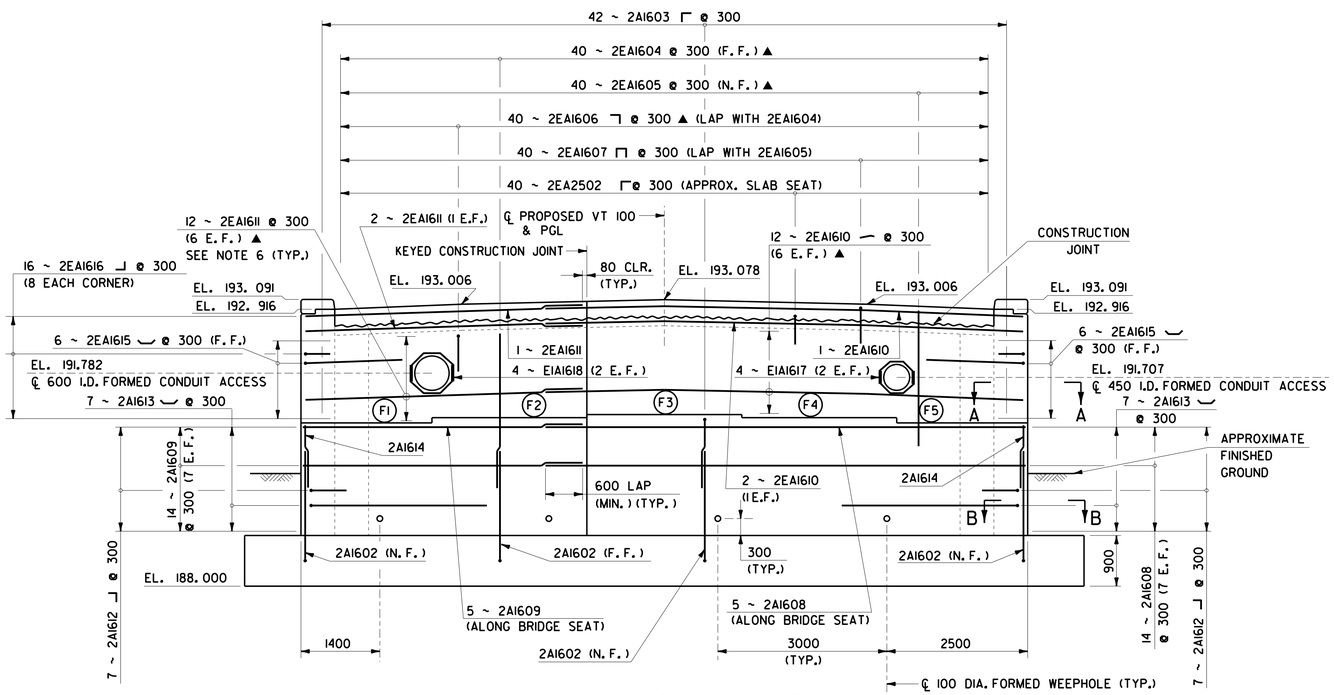
ABUTMENT NO. 2 PLAN

SCALE: 1:50



ABUTMENT NO. 2 SECTION

SCALE: 1:25



ABUTMENT NO. 2 ELEVATION

SCALE: 1:50
NOTE: PILES NOT SHOWN FOR CLARITY

TOP OF PEDESTAL ELEVATIONS

FRAME NO.	ELEVATION
F1	190.899
F2	190.992
F3	191.047
F4	190.992
F5	190.899

LEGEND

N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
I.D. = INSIDE DIAMETER
▲ = CUT TO FIT IN FIELD
(F1) FRAME NUMBER

0 1 2
SCALE = 1:25

0 1 2 3 4 5
SCALE = 1:50

NOTES

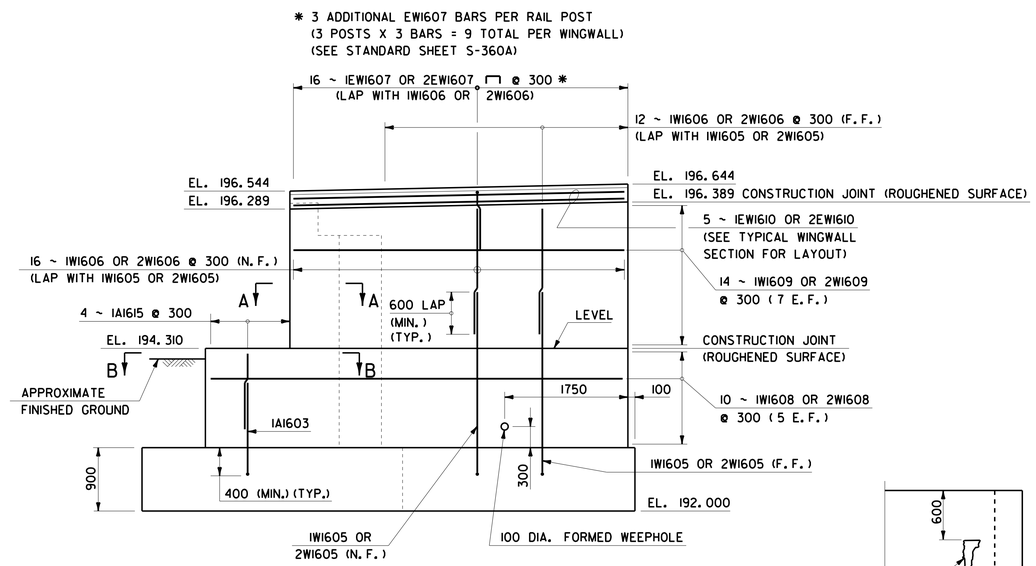
1. FOR KEYED CONSTRUCTION JOINT DETAIL, SEE SHEET 89.
2. FOR SECTIONS A-A AND B-B, SEE SHEET 91.
2. FOR WORKING POINT COORDINATES, SEE SHEET 88.
3. FIELD DRILL 60 DIA. X 380 MIN DEEP HOLES FOR NO. 38 ANCHOR BOLTS.
4. FOR BRIDGE RAIL LAYOUT ON WINGWALLS, SEE SHEET 69.
5. HORIZONTAL BARS SHALL BE SPACED TO FOLLOW GEOMETRY OF THE BRIDGE CROWN.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.
ALL ELEVATIONS IN METERS (M)

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

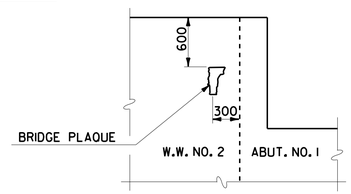
FILE NAME: z10b194ana.dgn
PROJECT LEADER: DMB
DESIGNED BY: S. Della / D. Kull
ABUTMENT NO. 2
PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 90 OF 123



WINGWALL NOS. 1 & 2 ELEVATION

SCALE: 1:40

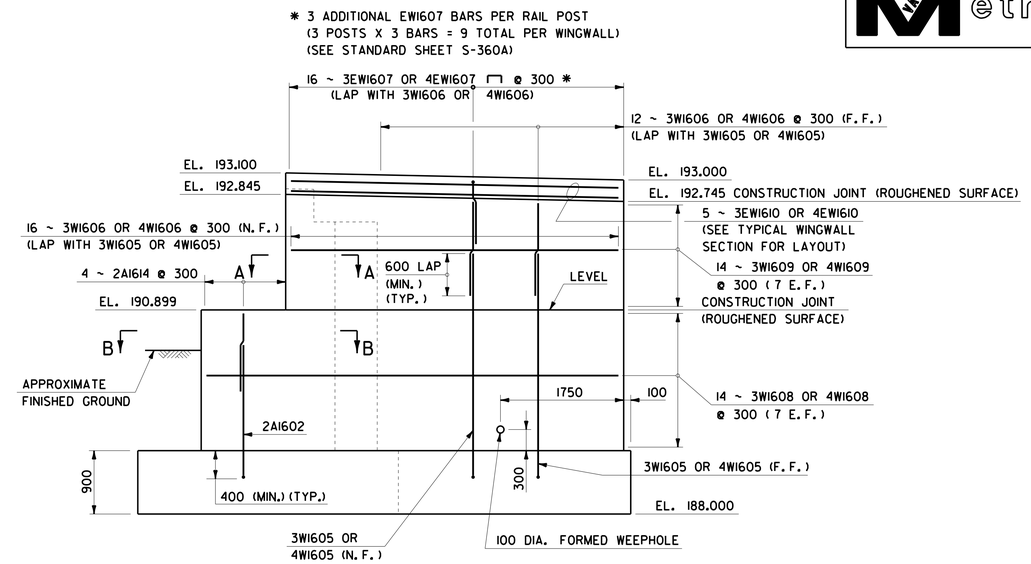
NOTE: OUTSIDE (NEAR) FACE OF WINGWALL SHOWN. APPROACH SLAB RAIL NOT SHOWN FOR CLARITY. PILES NOT SHOWN FOR CLARITY.



BRIDGE PLAQUE LOCATION DETAIL

NOT TO SCALE

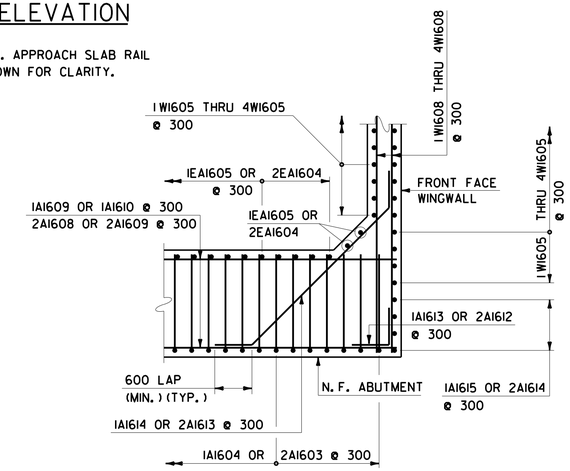
THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT NO.1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.



WINGWALL NOS. 3 & 4 ELEVATION

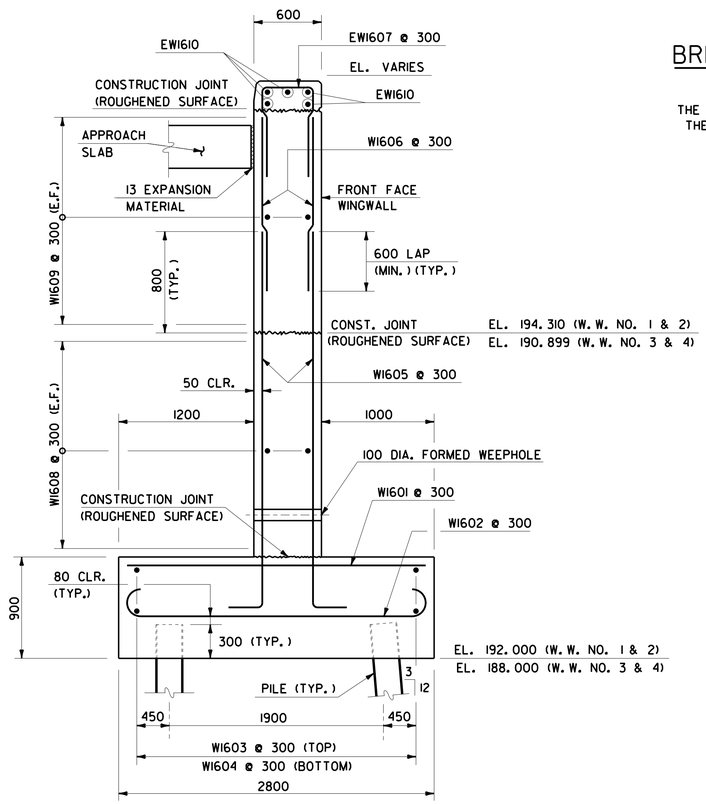
SCALE: 1:40

NOTE: OUTSIDE (NEAR) FACE OF WINGWALL SHOWN. APPROACH SLAB RAIL NOT SHOWN FOR CLARITY. PILES NOT SHOWN FOR CLARITY.



SECTION B-B
(CORNER DETAIL BELOW BRIDGE SEAT)

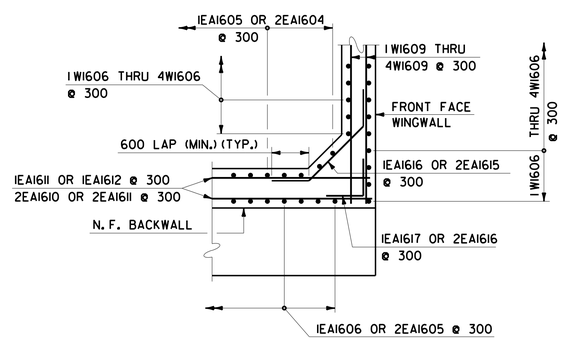
SCALE: 1:50



TYPICAL WINGWALL SECTION

SCALE: 1:25

NOTE: APPROACH SLAB RAIL NOT SHOWN FOR CLARITY.



SECTION A-A
(CORNER DETAIL ABOVE BRIDGE SEAT)

SCALE: 1:50

LEGEND

N.F. : NEAR FACE
F.F. : FAR FACE
E.F. : EACH FACE
▲ : CUT TO FIT IN FIELD

0 1 2
SCALE = 1:25

0 1 2 3 4
SCALE = 1:40

0 1 2 3 4 5
SCALE = 1:50

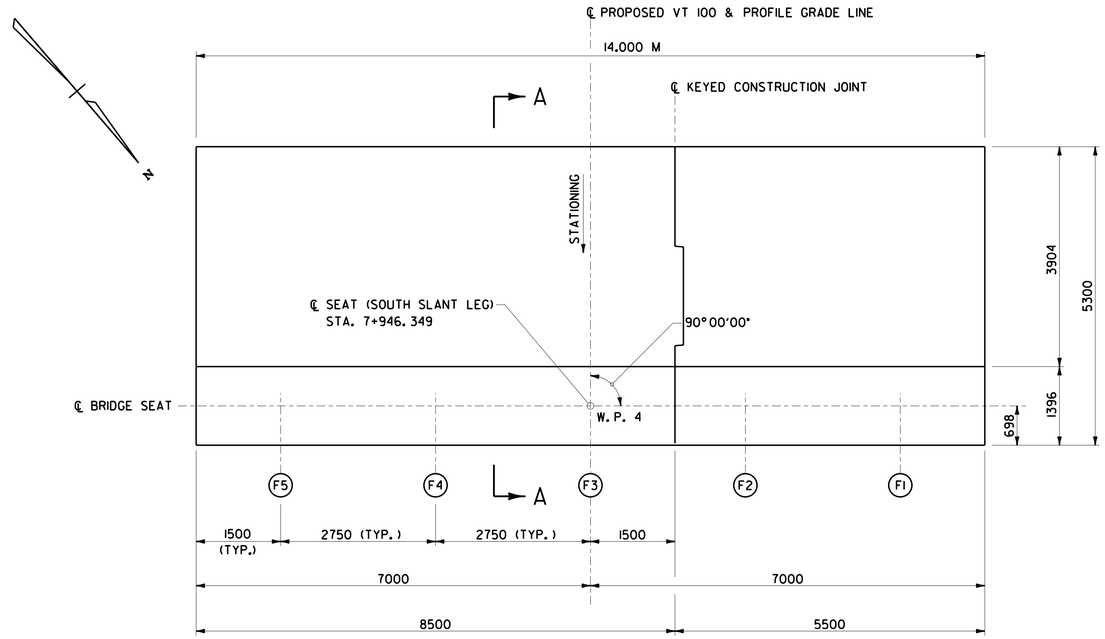
NOTES

1. REINFORCING STEEL COVER SHALL BE 80 CLR. UNLESS OTHERWISE SPECIFIED.
2. FOR BRIDGE RAIL LAYOUT ON WINGWALLS, SEE SHEET 69.

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194awd.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: S. Merkwan
DESIGNED BY: S. Delia / D. Kull	CHECKED BY: R. Joy
SUBSTRUCTURE DETAILS	SHEET 91 OF 123

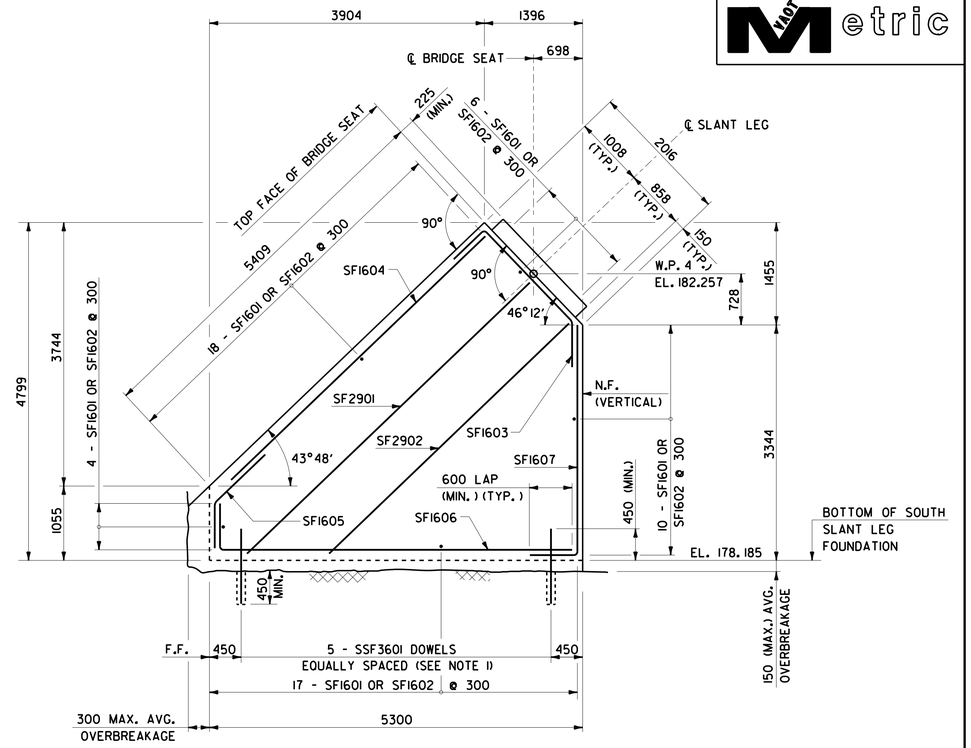


NOTE:
PEDESTAL NOT SHOWN FOR CLARITY.

SOUTH SLANT LEG PLAN

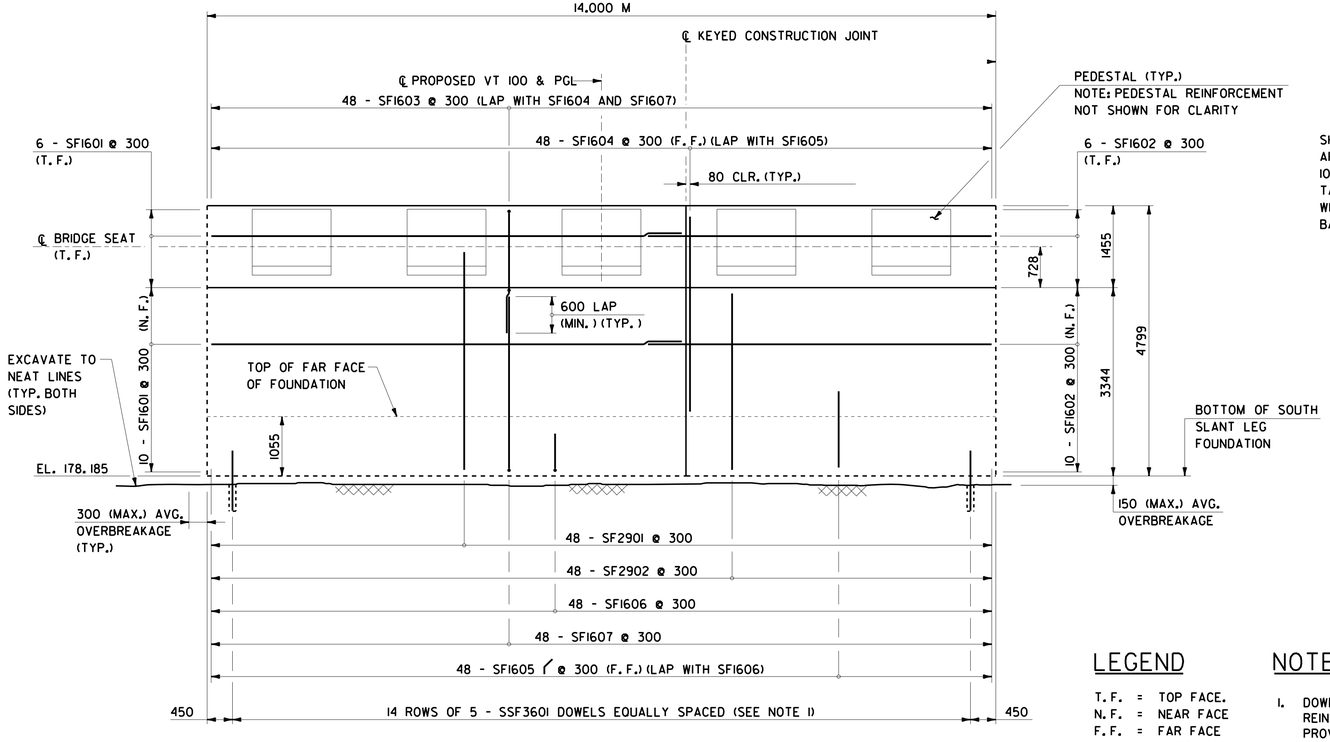
SCALE: 1:50

WORKING POINTS		
LOCATION	NORTHING	EASTING
W.P. 4	228966.3630	491515.7525



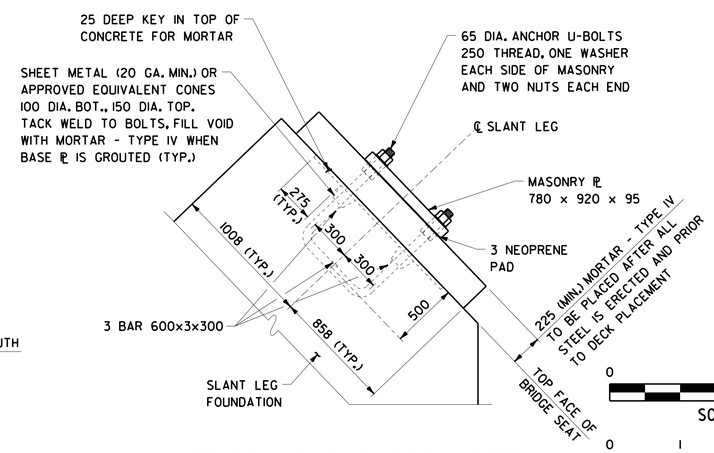
SECTION A-A

SCALE: 1:40



SOUTH SLANT LEG ELEVATION

SCALE: 1:50



ANCHOR BOLT SYSTEM DETAIL

SCALE: 1:20
NOTE: PEDESTAL REINFORCEMENT NOT SHOWN FOR CLARITY

0 1 2
SCALE = 1:20

0 1 2 3 4
SCALE = 1:40

0 1 2 3 4 5
SCALE = 1:50

LEGEND

T.F. = TOP FACE.
N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
▲ = CUT TO FIT IN FIELD

NOTE

1. DOWELS SET INTO LEDGE SHALL BE STAINLESS STEEL REINFORCING AND PAID AS ITEM 900.635 SPECIAL PROVISION (STAINLESS STEEL REINFORCING).

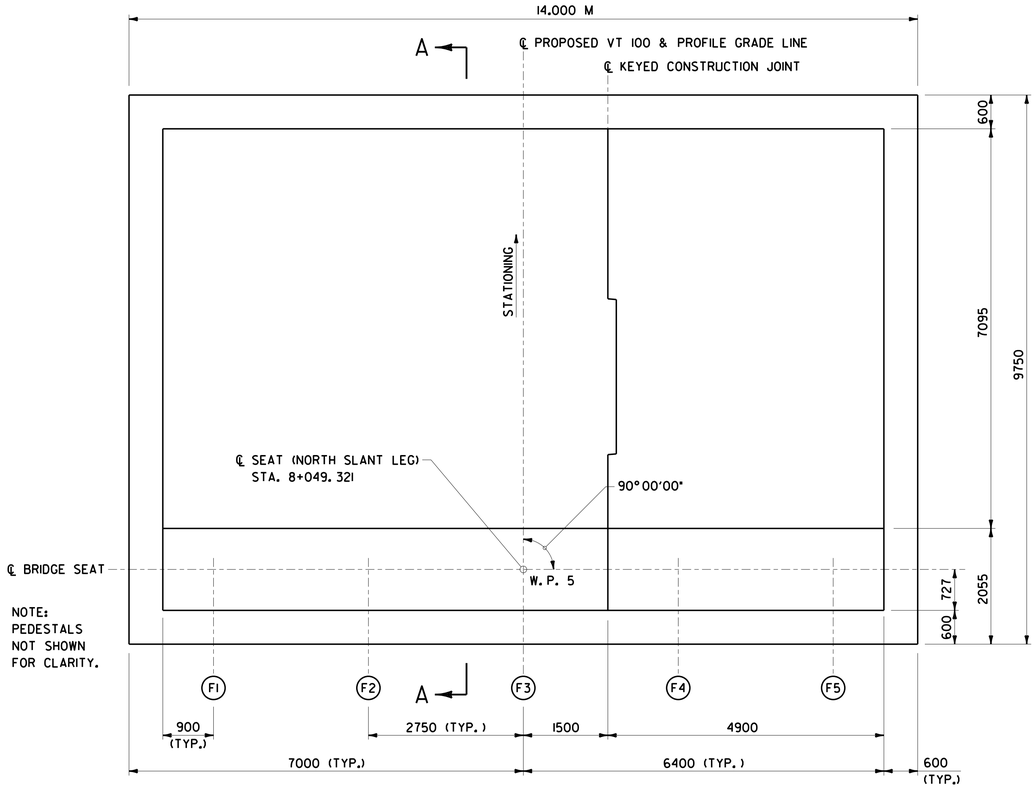
NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

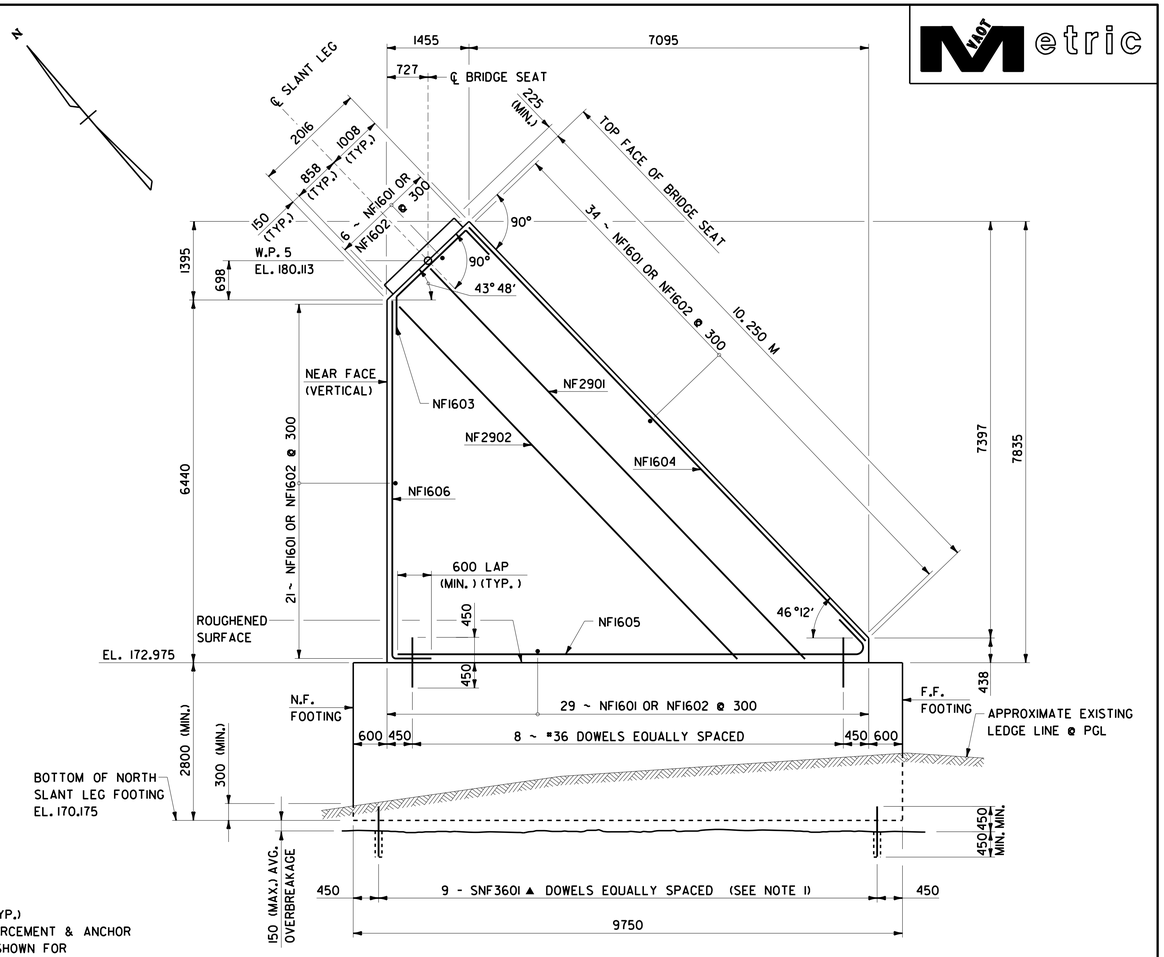
FILE NAME: z10b194asf.dgn
PROJECT LEADER: DMB
DESIGNED BY: D. Kull/S. Della
SOUTH SLANT LEG FOUNDATION

PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 92 OF 123



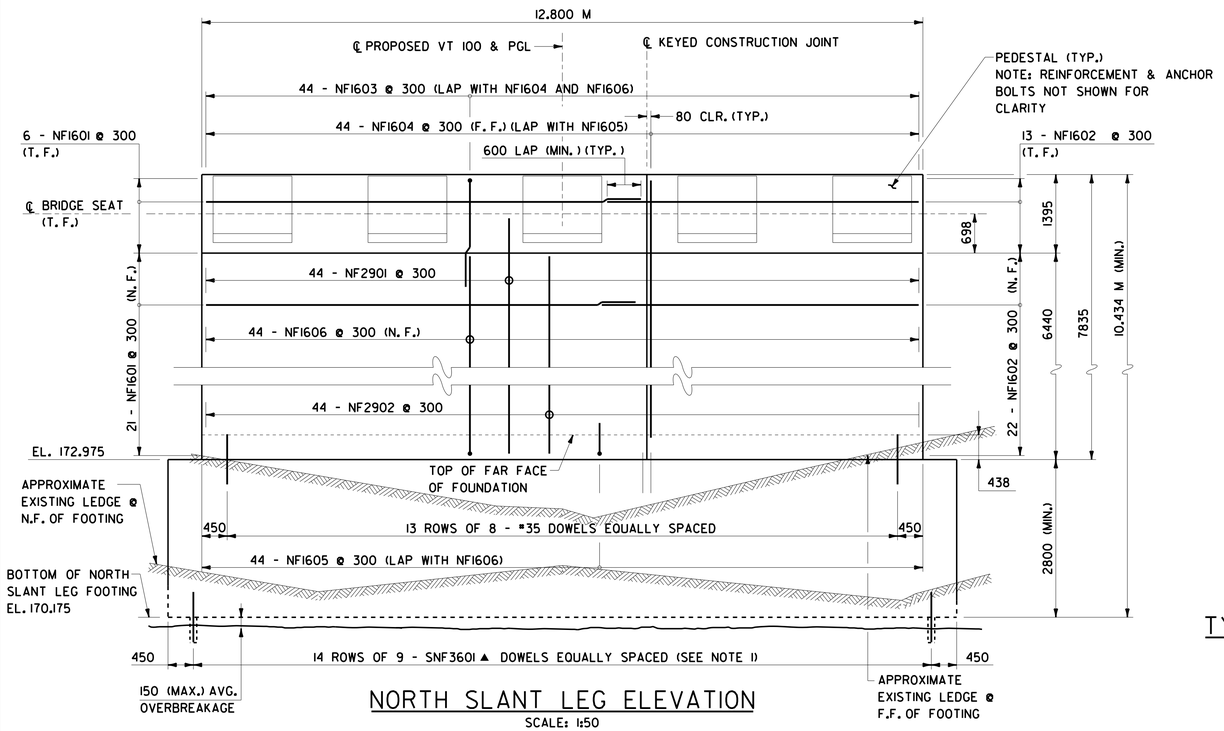
NORTH SLANT LEG PLAN

SCALE: 1:50



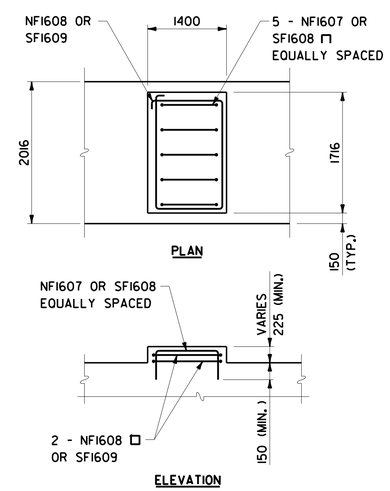
SECTION A-A

SCALE: 1:50



NORTH SLANT LEG ELEVATION

SCALE: 1:50



TYPICAL PEDESTAL REINFORCING

SCALE: 1:40

NOTE: ANCHOR BOLTS NOT SHOWN FOR CLARITY

WORKING POINTS		
LOCATION	NORTHING	EASTING
W.P. 5	229044.5301	491582.7686

NOTE

1. DOWELS SET INTO LEDGE SHALL BE STAINLESS STEEL REINFORCING AND PAID AS ITEM 900.635 SPECIAL PROVISION (STAINLESS STEEL REINFORCING).

LEGEND

T.F. = TOP FACE.
N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
▲ = CUT TO FIT IN FIELD

0 1 2 3 4
SCALE = 1:40

0 1 2 3 4 5
SCALE = 1:50

NOTE: ALL DIMENSIONS IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

PROJECT NAME: MORRISTOWN
PROJECT NUMBER: STP F 029-1(2)C/1

FILE NAME: z10b194anf.dgn
PROJECT LEADER: DMB
DESIGNED BY: D. Kull /S. Delia
NORTH SLANT LEG FOUNDATION

PLOT DATE: 29-MAR-2012
DRAWN BY: S. Merkwan
CHECKED BY: R. Joy
SHEET 93 OF 123

McFarland Johnson

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

Metric

ABUTMENT NO. 1

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	30	16	3540	1A1601	STR												
	52	16	7670	1A1602	STR												
	88	16	1450	1A1603	17		1200	250	0								
	42	16	3100	1A1604	17		1770	1330	0								
▲	40	16	2930	E1A1605	STR												
▲	40	16	2390	E1A1606	STR												
▲	40	16	1170	E1A1607	17		570	600	0								
	40	16	1510	E1A1608	17		620	270	620								
	15	16	8345	E1A1609	STR												
	15	16	4995	E1A1610	STR												
▲	15	16	8345	E1A1611	STR												
▲	15	16	4995	E1A1612	STR												
	10	16	1200	1A1613	17		600	600	0								
	10	16	5135	1A1614	22		600	3935	600				424	424	424	424	
✳	3	16	1150	1A1615	STR												
✳	13	16	2765	E1A1616	22		600	1565	600				424	424	424	424	
	16	16	1200	E1A1617	17		600	600	0								
	4	16	1125	E1A1618	14	225	225	225	225	225			160		160		
	4	16	1500	E1A1619	14	300	300	300	300	300			215		215		
△	32	22	4040	1A2201	1	250	3540					250		180			
△	42	25	900	E1A2501	12	0	0	450	450					0			

ABUTMENT NO. 2

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	52	16	7670	2A1601	STR												
✳	89	16	1450	2A1602	17		1200	250	0								
	42	16	3635	2A1603	17		1770	1865	0								
▲	40	16	3435	E2A1604	STR												
▲	40	16	2350	E2A1605	STR												
▲	40	16	1170	E2A1606	17		570	600	0								
	40	16	1510	E2A1607	17		620	270	620								
	19	16	8345	E2A1608	STR												
	19	16	4995	E2A1609	STR												
▲	15	16	7745	E2A1610	STR												
▲	15	16	4395	E2A1611	STR												
	14	16	1200	2A1612	17		600	600	0								
	14	16	5135	2A1613	22		600	3935	600				424	424	424	424	
	2	16	1720	2A1614	STR												
✳	13	16	2765	E2A1615	22		600	1565	600				424	424	424	424	
	16	16	1200	E2A1616	17		600	600	0								
	4	16	1125	E2A1617	14	225	225	225	225	225			160		160		
	4	16	1500	E2A1618	14	300	300	300	300	300			215		215		
△	32	19	3540	2A1901	STR												
△	32	25	4090	2A2501	1	275	3540					275		205			
△	42	25	900	E2A2502	12			450	450				318		318		

WINGWALL 1

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
✳	12	16	2640	1W1601	STR												
	11	16	2990	1W1602	1	175	2640					175		130			
	10	16	6840	1W1603	STR												
	10	16	6840	1W1604	STR												
	28	16	2860	1W1605	17		2610	250	0								
	28	16	1930	1W1606	STR												
	25	16	1960	E1W1607	17		745	470	745								
	10	16	5840	1W1608	STR												
	14	16	4640	1W1609	STR												
	5	16	4640	E1W1610	STR												

WINGWALL 2

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	11	16	2640	2W1601	STR												
	11	16	2990	2W1602	1	175	2640					175		130			
	10	16	6840	2W1603	STR												
	10	16	6840	2W1604	STR												
	28	16	2860	2W1605	17		2610	250	0								
	28	16	1930	2W1606	STR												
	25	16	1960	E2W1607	17		745	470	745								
	10	16	5840	2W1608	STR												
	14	16	4640	2W1609	STR												
✳	6	16	4640	E2W1610	STR												

WINGWALL 3

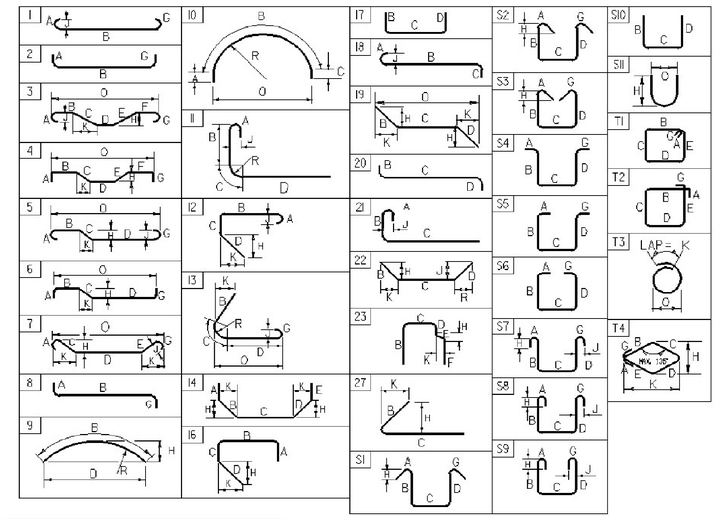
ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	11	16	2640	3W1601	STR												
	11	16	2990	3W1602	1	175	2640					175		130			
	10	16	6840	3W1603	STR												
	10	16	6840	3W1604	STR												
	28	16	3450	3W1605	17		3200	250	0								
	28	16	1800	3W1606	STR												
	25	16	1960	E3W1607	17		745	470	745								
	14	16	5840	3W1608	STR												
	14	16	4640	3W1609	STR												
✳	6	16	4640	E3W1610	STR												

WINGWALL 4

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
✳	12	16	2640	4W1601	STR												
	11	16	2990	4W1602	1	175	2640					175		130			
	10	16	6840	4W1603	STR												
	10	16	6840	4W1604	STR												
	28	16	3450	4W1605	17		3200	250	0								
	28	16	1800	4W1606	STR												
	25	16	1960	E4W1607	17		745	470	745								
	14	16	5840	4W1608	STR												
	14	16	4640	4W1609	STR												
	5	16	4640	E4W1610	STR												

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING 55M SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31M (ASTM A 615M-SI). ALL BARS SHALL BE GRADE 420, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.
12. S IN BAR MARK PREFIX DENOTES STAINLESS STEEL REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE	NOMINAL MASS (Kg/m)	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER (mm)	CROSS SECTIONAL AREA (mm^2)	PERIMETER (mm)
#10	0.560	9.5	71	29.84
#13	0.994	12.7	129	39.90
#16	1.552	15.9	199	49.95
#19	2.235	19.1	284	60.00
#22	3.042	22.2	387	69.74
#25	3.973	25.4	510	79.80
#29	5.060	28.7	645	90.16
#32	6.404	32.3	819	101.47
#36	7.907	35.8	1006	112.47
#43	11.380	43.0	1452	135.09
#57	20.240	57.3	2581	180.01

McFarland Johnson

PROJECT NAME: **MORRISTOWN**
PROJECT NUMBER: **STP F 029-1(2)C/1**

FILE NAME: **z10b194ars.xls**
PROJECT MANAGER: **DMB**
DESIGNED BY: **S. MERKWAN**
REINFORCING STEEL SCHEDULE SHEET #1

PLOT DATE: **3/29/2012**
DRAWN BY: **S. MERKWAN**
CHECKED BY: **S. DELIA**
SHEET **94** OF **123**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

Metric

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
APPROACH SLAB NO. 1																	
✳	22	16	11524	E1AS1601	STR												
	47	29	6225	E1AS2901	1	375	5850					0		300			
APPROACH SLAB NO. 2																	
	21	16	11524	E2AS1601	STR												
△	49	29	6225	E2AS2901	1	375	5850					0		300			
SUPERSTRUCTURE																	
	1620	16	11600	ES1601	STR												
✳	223	16	9250	ES1602	STR												
	148	16	11730	ES1603	STR												
	88	16	1935	ES1604	16	660	265	655	355				250		250		
	1514	16	1540	ES1605	S5	250	360	440	240			250					
	2198	19	12740	ES1901	STR												
△	298	19	10450	ES1902	STR												
▲	10	19	12740	ES1903	STR												
SOUTH SLANT LEG FOUNDATION																	
	55	16	8340	SF1601	STR												
	55	16	6100	SF1602	STR												
	48	16	3060	SF1603	22		600	1860	600				600	415	0	433	
	48	16	5250	SF1604	STR												
✳	49	16	1200	SF1605	22		600	600	0				433	0	415	0	
	48	16	6035	SF1606	17		895	5140	0								
	48	16	3785	SF1607	17		600	3184	0								
✳	26	16	2180	SF1608	17		470	1240	470								
	10	16	6695	SF1609	T2	250	1856	1240	1856	1240		250					
	48	29	5685	SF2901	STR												
△	50	29	4635	SF2902	STR												
△	72	36	1050	SSF3601	STR												
NORTH SLANT LEG FOUNDATION																	
	90	16	7740	NF1601	STR												
	90	16	5500	NF1602	STR												
✳	45	16	3060	NF1603	22		600	1860	600				600	415	0	433	
	44	16	10090	NF1604	STR												
	44	16	8990	NF1605	27		600	8390					433		415		
	44	16	6880	NF1606	17		600	6280	0								
	25	16	2180	NF1607	17		470	1240	470								
✳	11	16	6695	NF1608	T2	250	1856	1240	1856	1240		250					
	44	29	9700	NF2901	STR												
△	46	29	8735	NF2902	STR												
△	232	36	1050	SNF3601	STR												

~ NOTES ~

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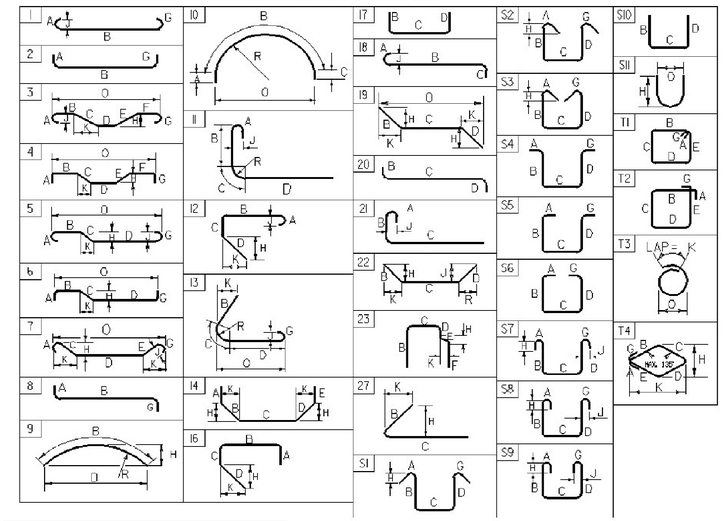

ASTM STANDARD REINFORCING BARS				
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		DIAMETER (mm)	CROSS SECTIONAL AREA (mm^2)	PERIMETER (mm)
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#43	11.380	43.0	1452	135.09
#57	20.240	57.3	2581	180.01

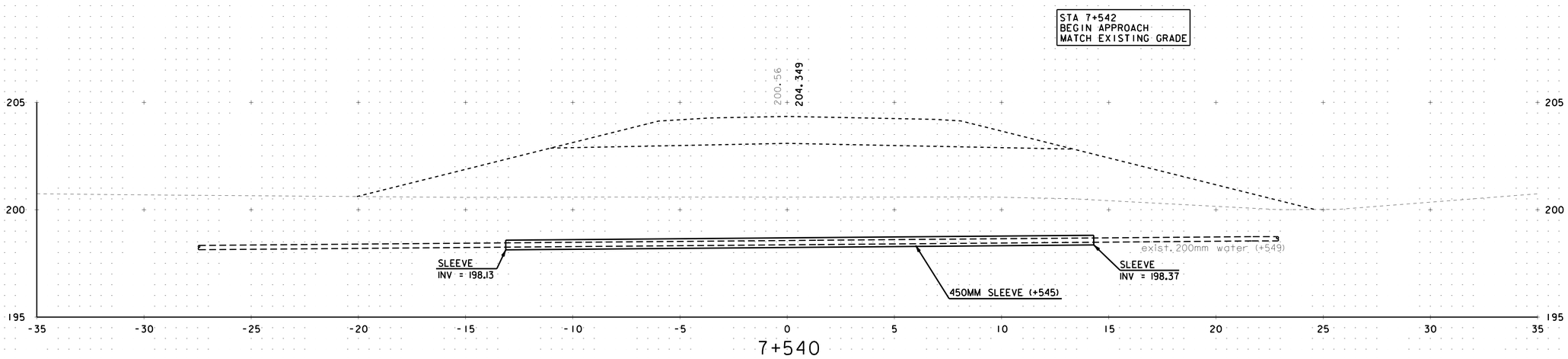
McFarland Johnson

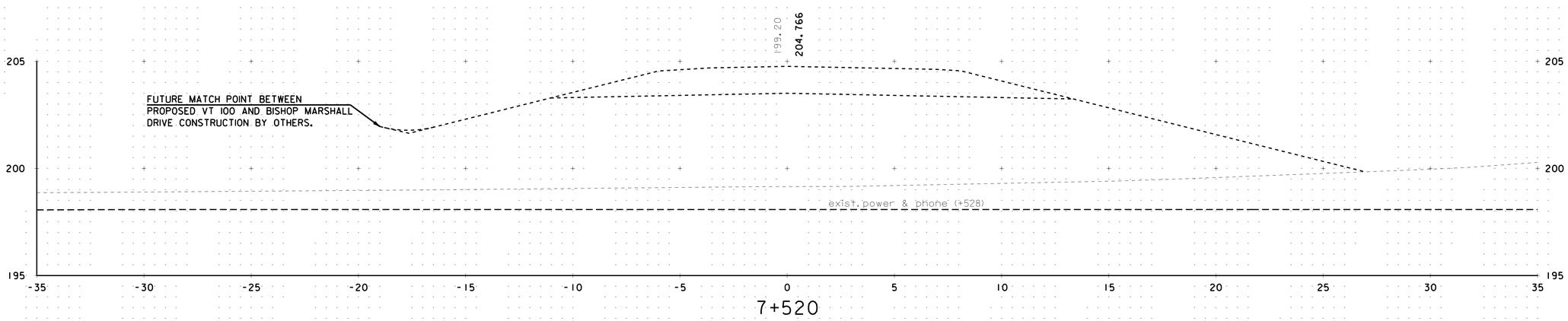
PROJECT NAME: **MORRISTOWN**
PROJECT NUMBER: **STP F 029-1(2)C/1**

FILE NAME: **z10b194ars.xls**
PROJECT MANAGER: **DMB**
DESIGNED BY: **S. MERKWAN**
REINFORCING STEEL SCHEDULE SHEET #2

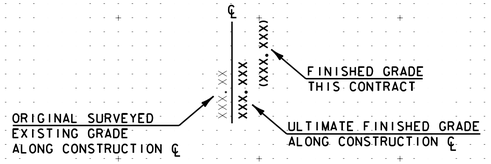
PLOT DATE: **7/25/00**
DRAWN BY: **S. MERKWAN**
CHECKED BY: **S. DELIA**
SHEET **95** OF **123**

Metric





LEGEND

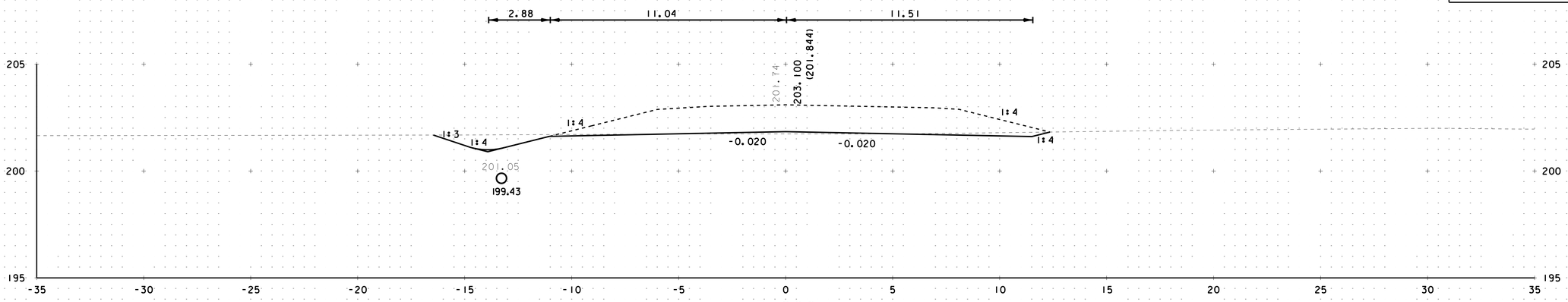


NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

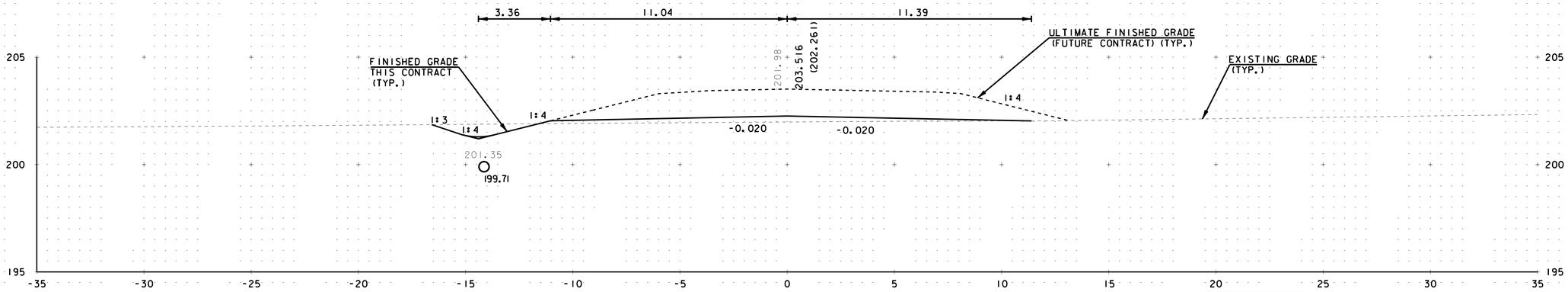
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+520 TO 7+540	SHEET 96 OF 123

Metric

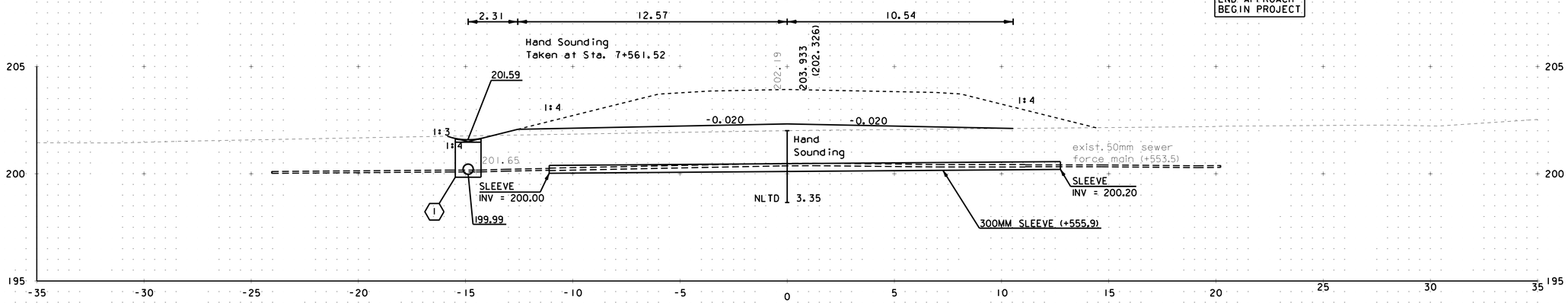


7+600



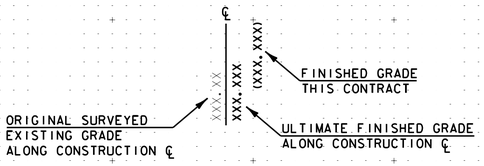
7+580

STA 7+563
END APPROACH
BEGIN PROJECT



7+560

LEGEND

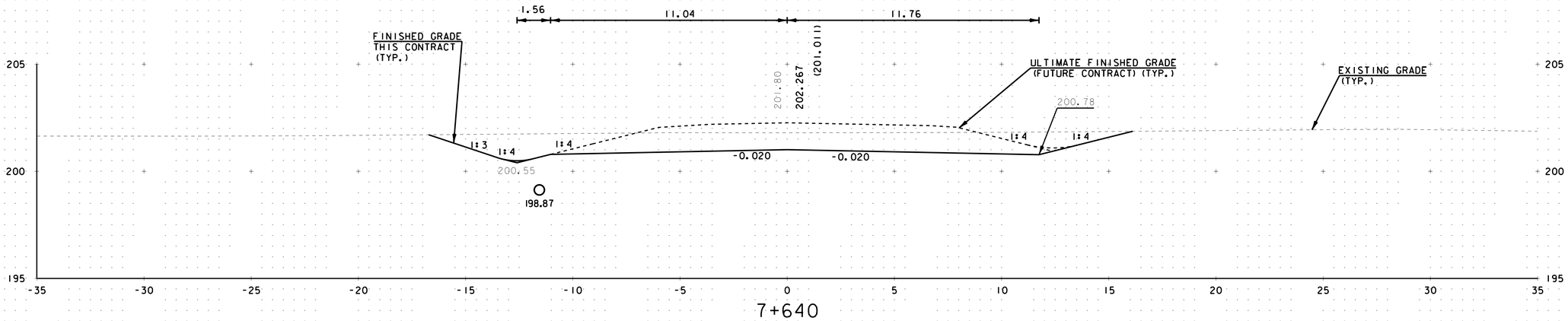


NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

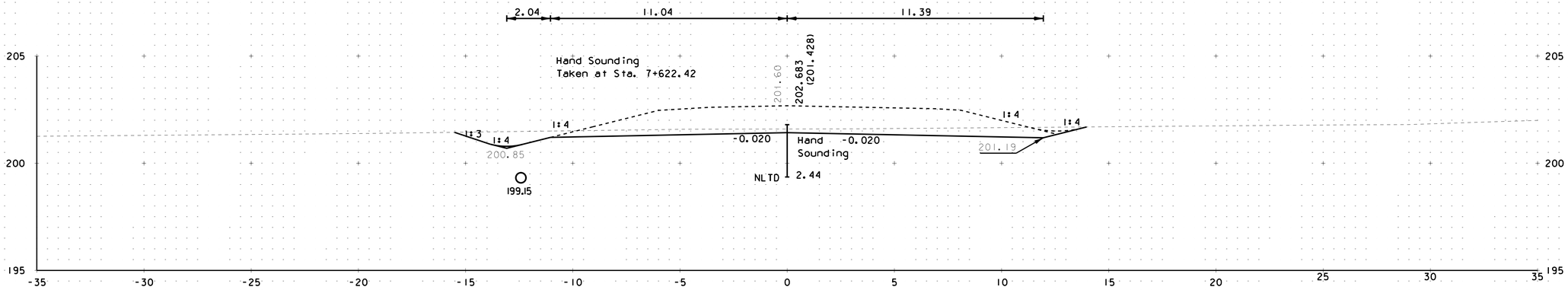
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10bl94xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+560 TO 7+600	SHEET 97 OF 123

Metric



7+640



7+620

LEGEND

℄

XXX.XXX

(XXX.XXX)

FINISHED GRADE
THIS CONTRACT

ORIGINAL SURVEYED
EXISTING GRADE
ALONG CONSTRUCTION ℄

ULTIMATE FINISHED GRADE
ALONG CONSTRUCTION ℄

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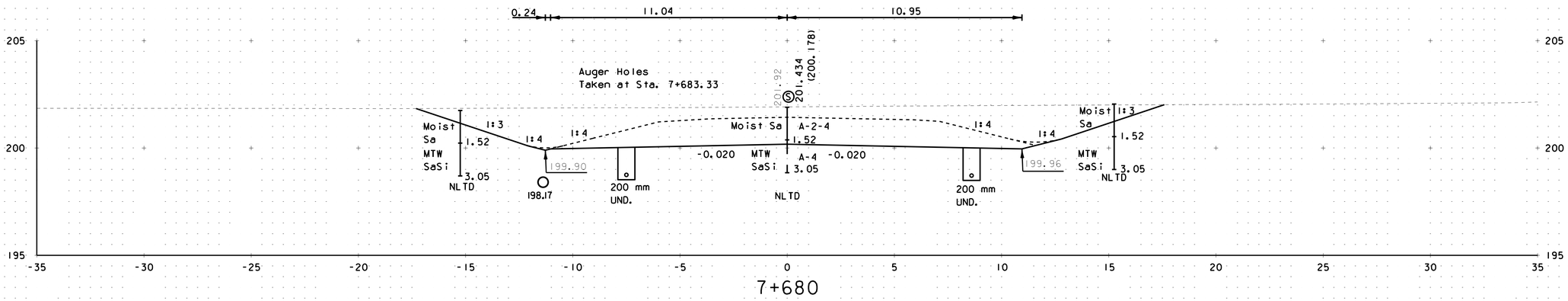
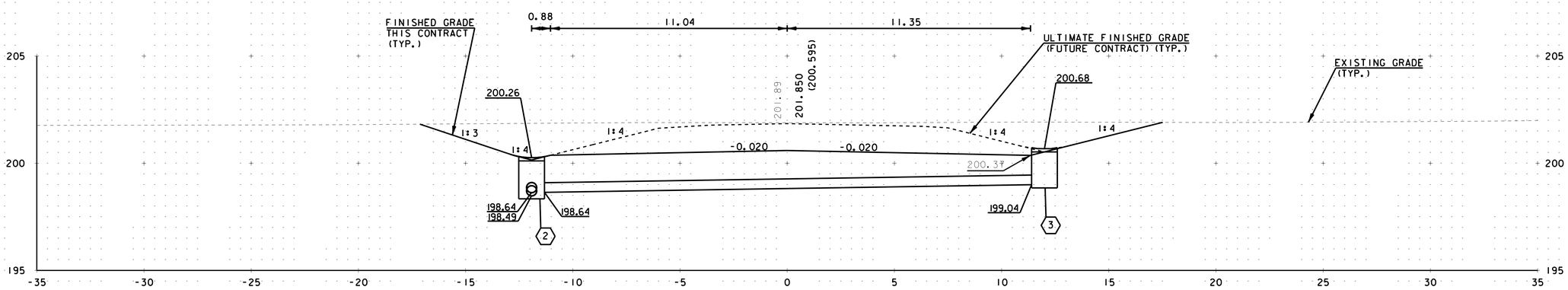
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+620 TO 7+640	SHEET 98 OF 123

Metric

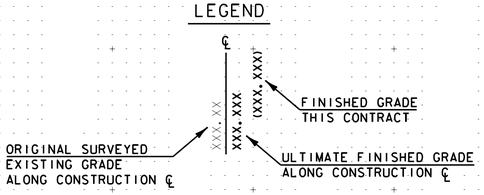


7+680



7+660

LEGEND

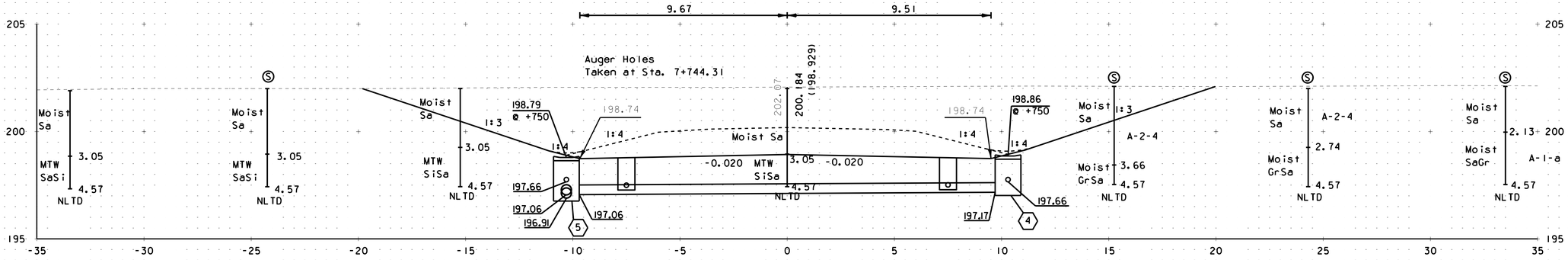


NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

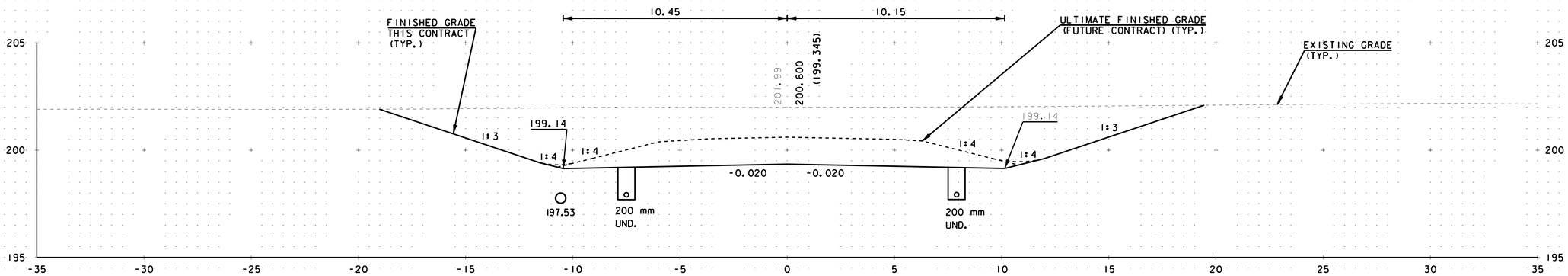
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+660 TO 7+680	SHEET 99 OF 123

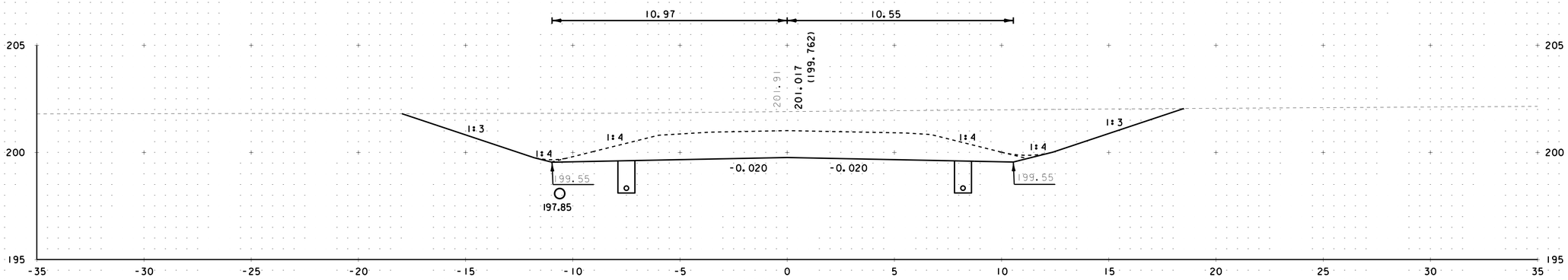
Metric



7+740

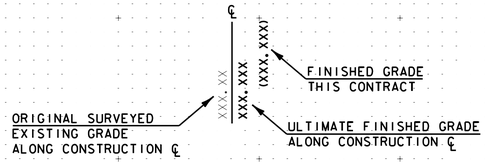


7+720



7+700

LEGEND



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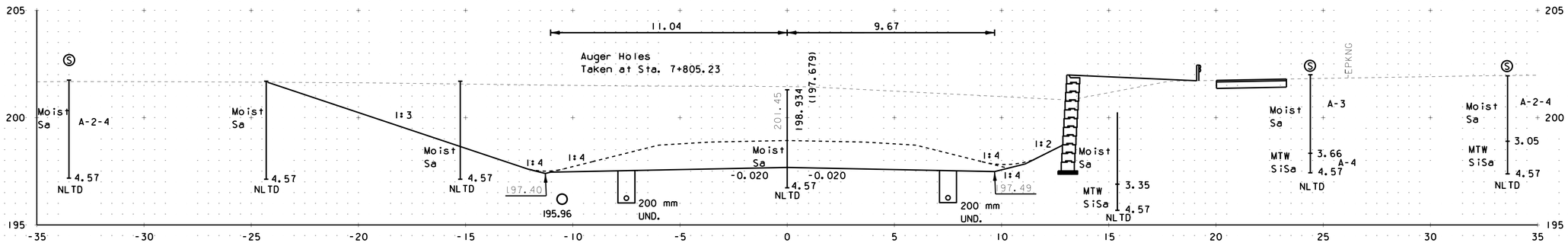
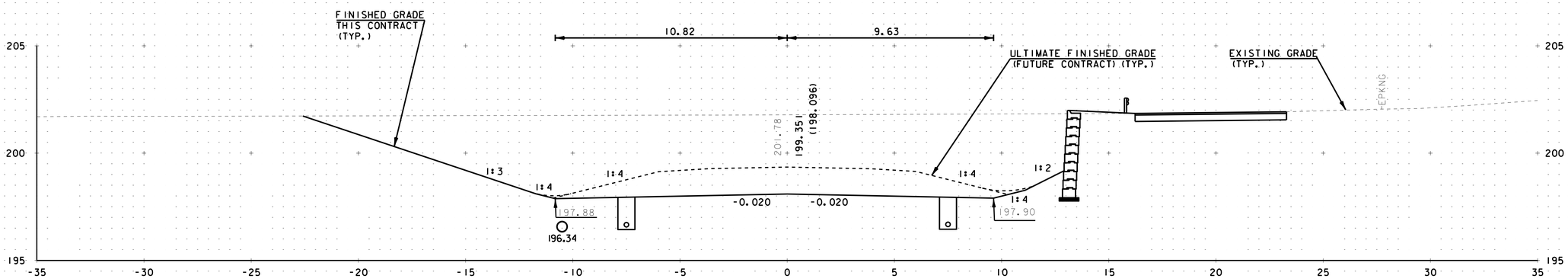
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+700 TO 7+740	SHEET 100 OF 123

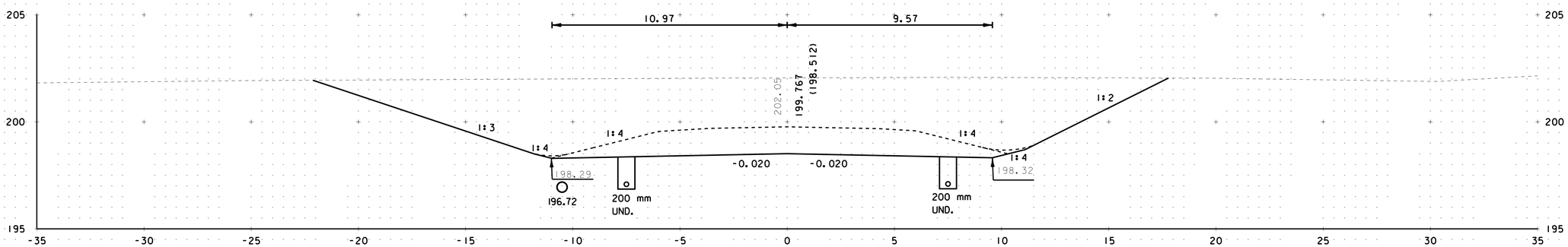
Metric



7+800



7+780



7+760

LEGEND

℄

XXX.XXX

(XXX.XXX)

FINISHED GRADE
THIS CONTRACT

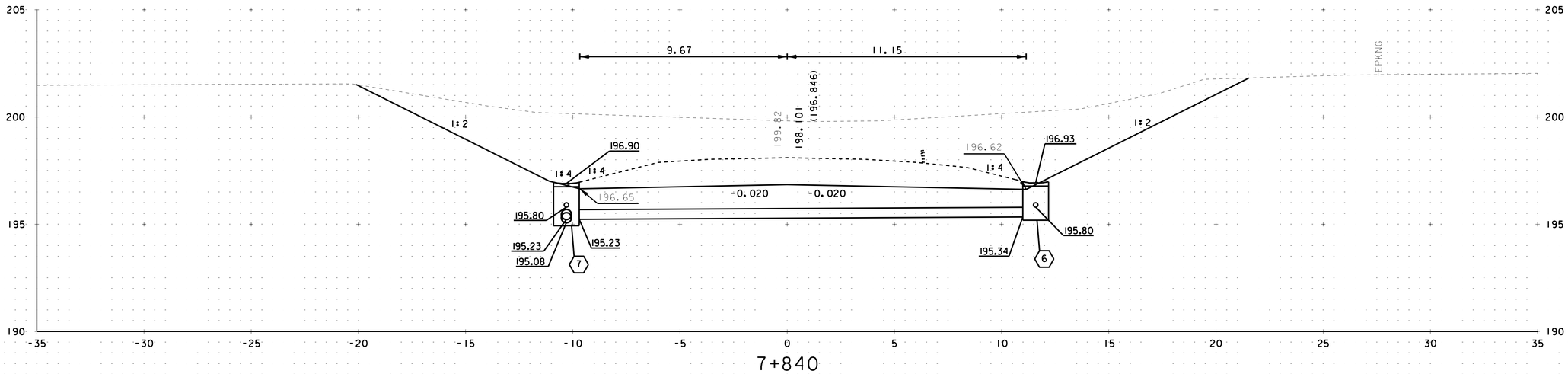
ORIGINAL SURVEYED
EXISTING GRADE
ALONG CONSTRUCTION ℄

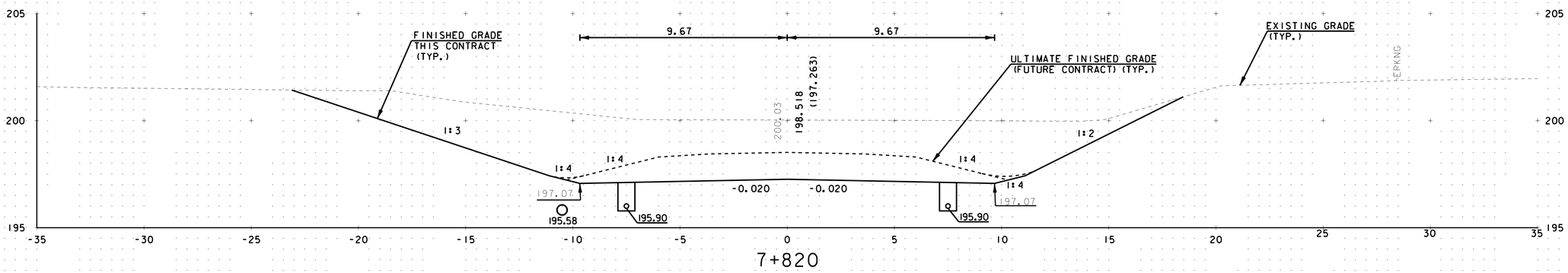
ULTIMATE FINISHED GRADE
ALONG CONSTRUCTION ℄

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

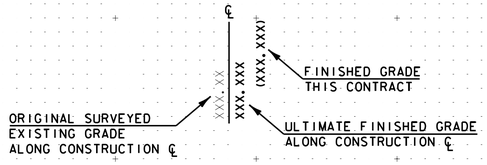
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+760 TO 7+800	SHEET 101 OF 123





LEGEND

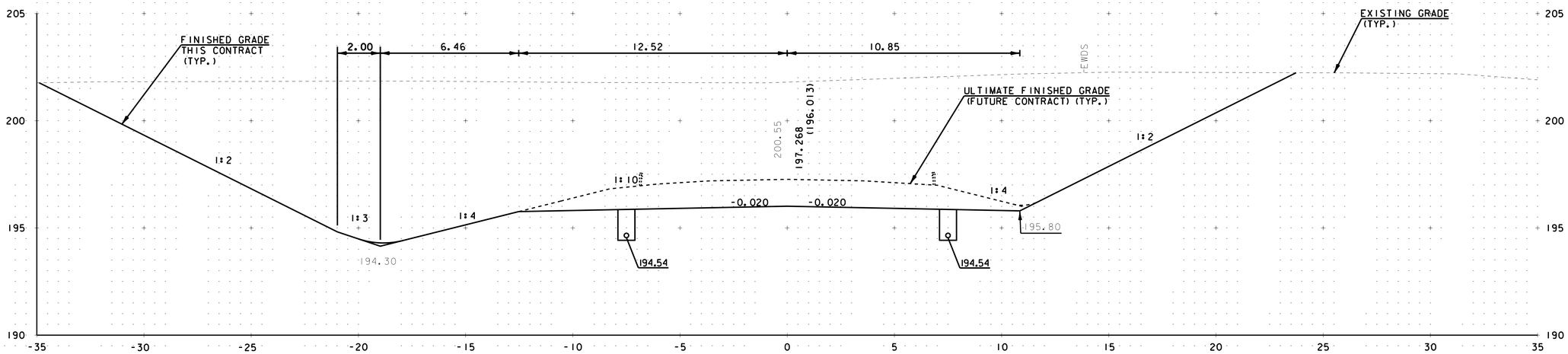


NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

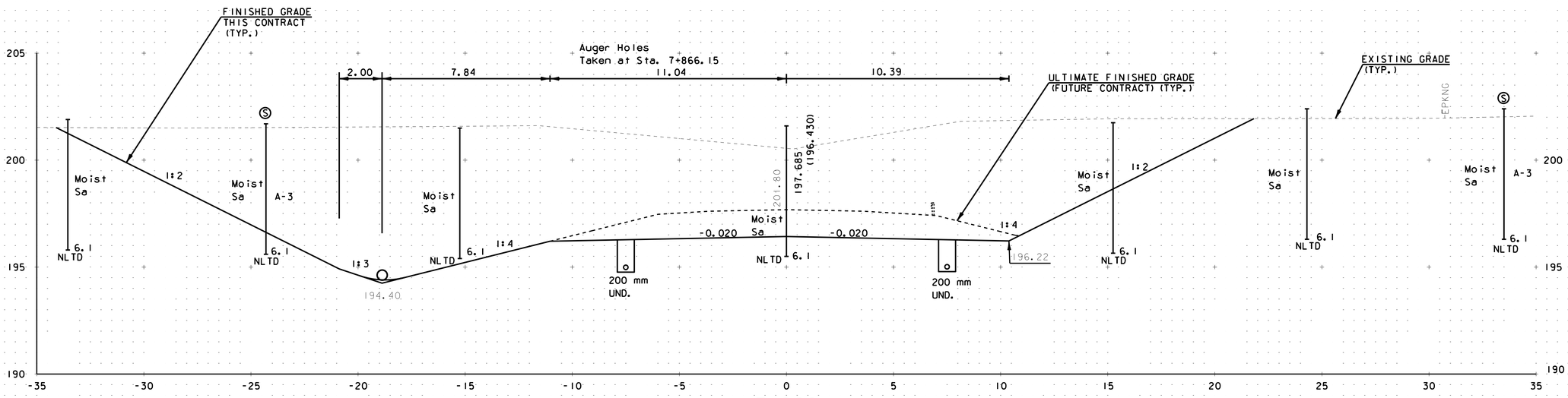
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+820 TO 7+840	SHEET 102 OF 123

Metric



7+880



7+860

LEGEND

℄

XXX.XXX

(XXX.XXX)

FINISHED GRADE
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ALONG CONSTRUCTION ℄

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ALONG CONSTRUCTION ℄

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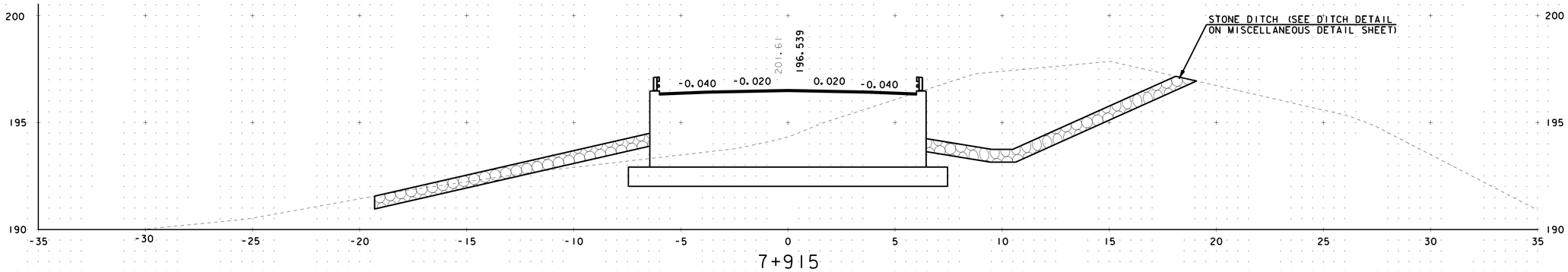
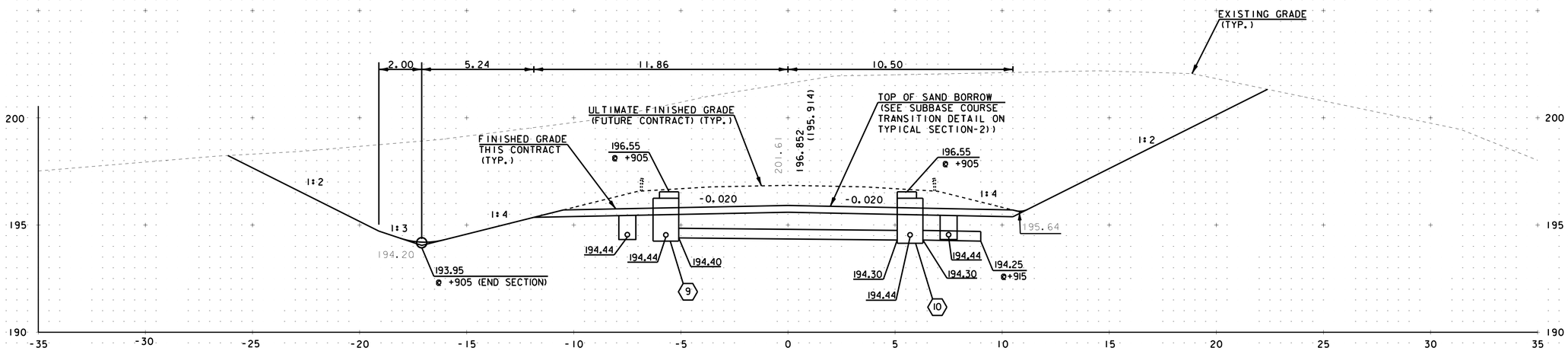
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+860 TO 7+880	SHEET 103 OF 123

Metric

STA 7+915
BEGIN BRIDGE



7+915



7+900

LEGEND

℄

XXX.XXX

(XXX.XXX)

FINISHED GRADE THIS CONTRACT

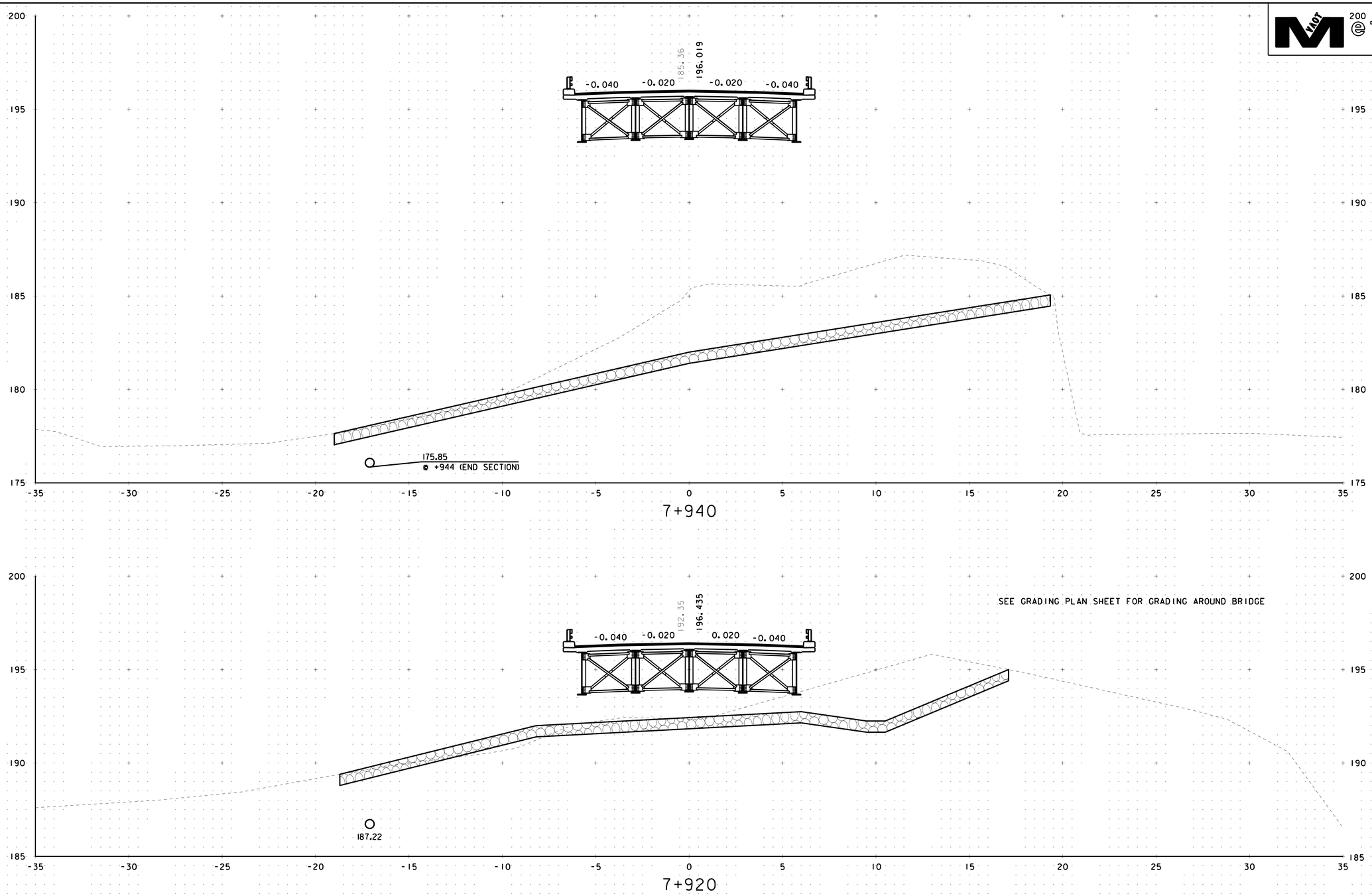
ORIGINAL SURVEYED EXISTING GRADE ALONG CONSTRUCTION ℄

ULTIMATE FINISHED GRADE ALONG CONSTRUCTION ℄

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

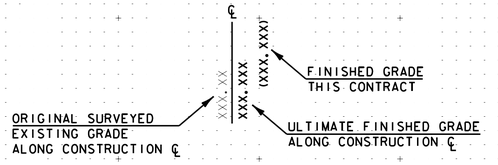
McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+900 TO 7+915	SHEET 104 OF 123



SEE GRADING PLAN SHEET FOR GRADING AROUND BRIDGE

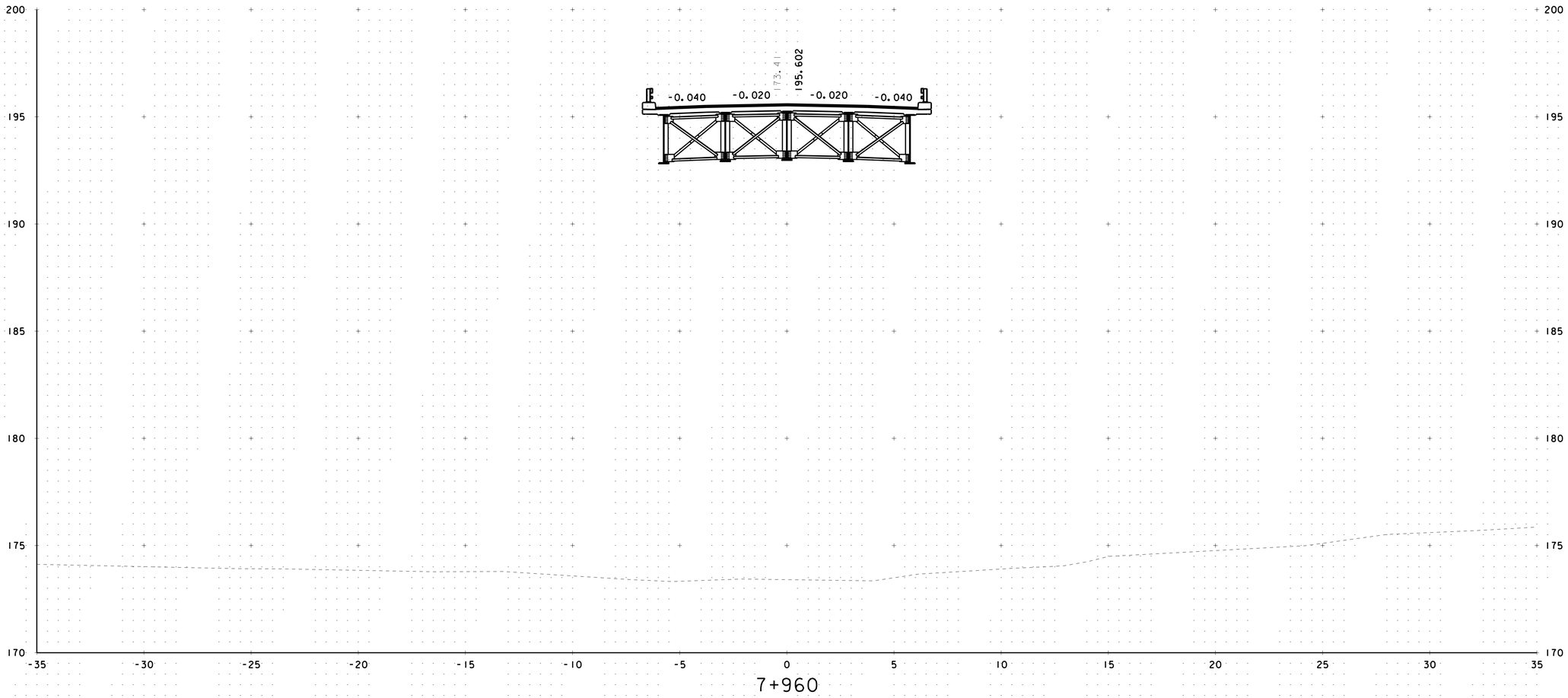
LEGEND



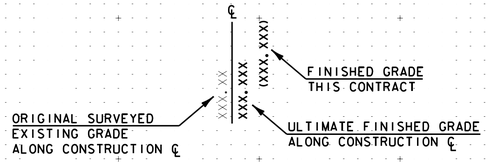
NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 7+920 TO 7+940	SHEET 105 OF 123



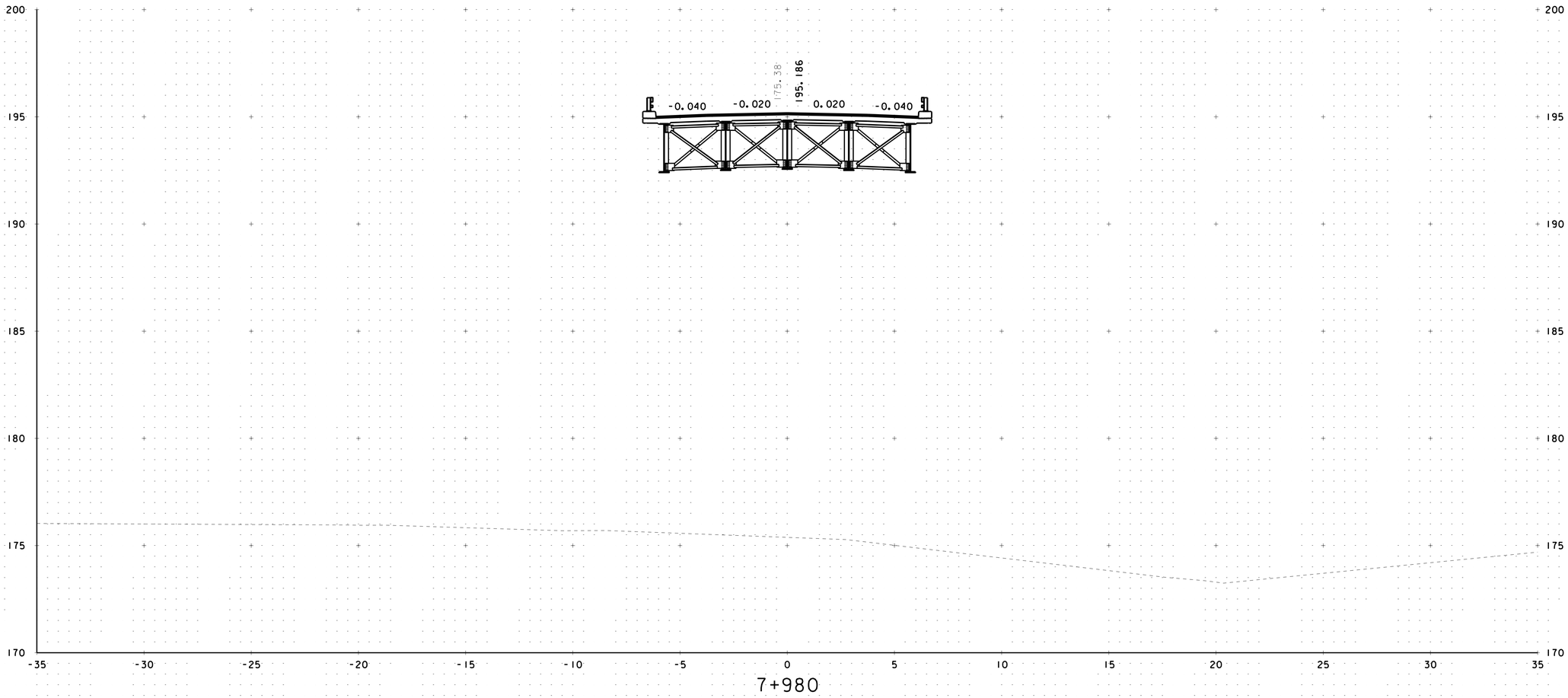
LEGEND



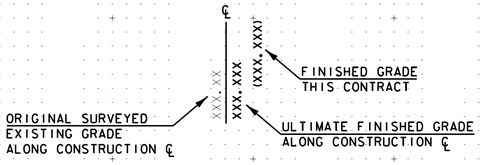
NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTION: 7+960	SHEET 106 OF 123



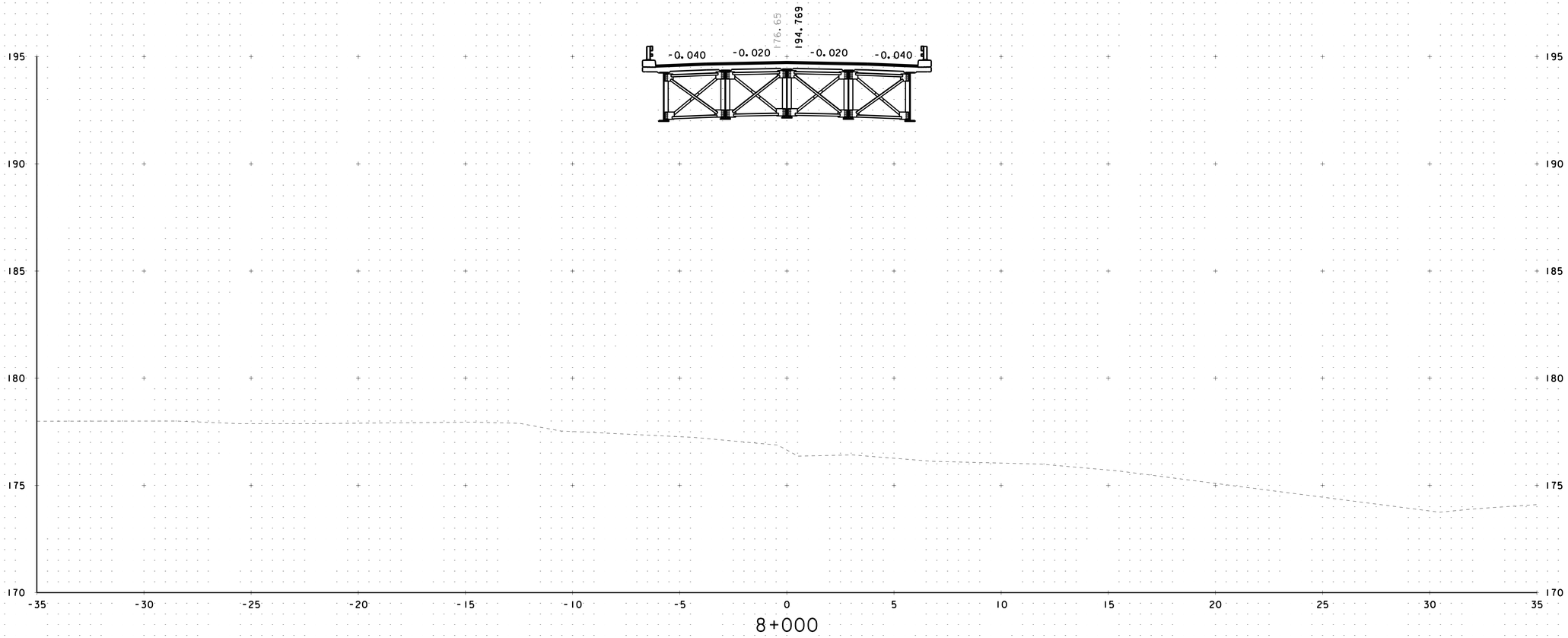
LEGEND



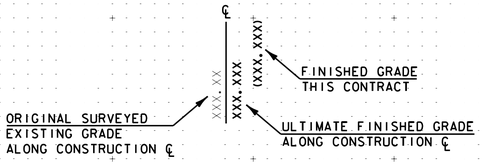
NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTION: 7+980	SHEET 107 OF 123



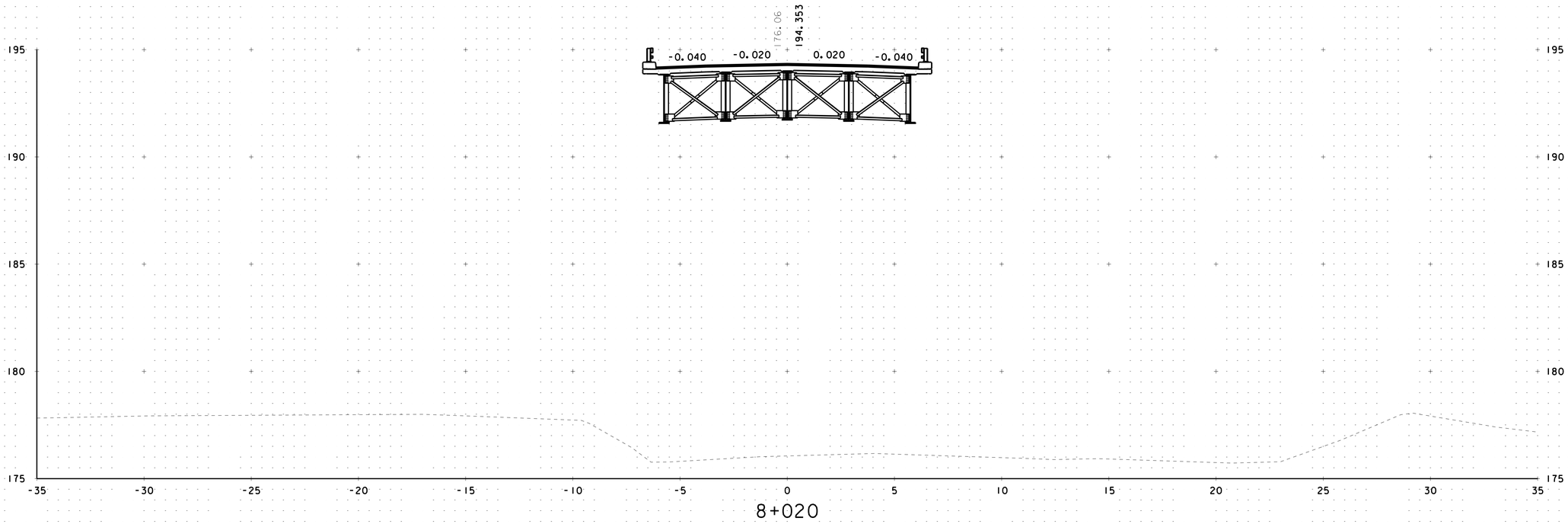
LEGEND



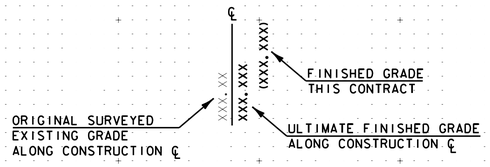
NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTION: 8+000	SHEET 108 OF 123



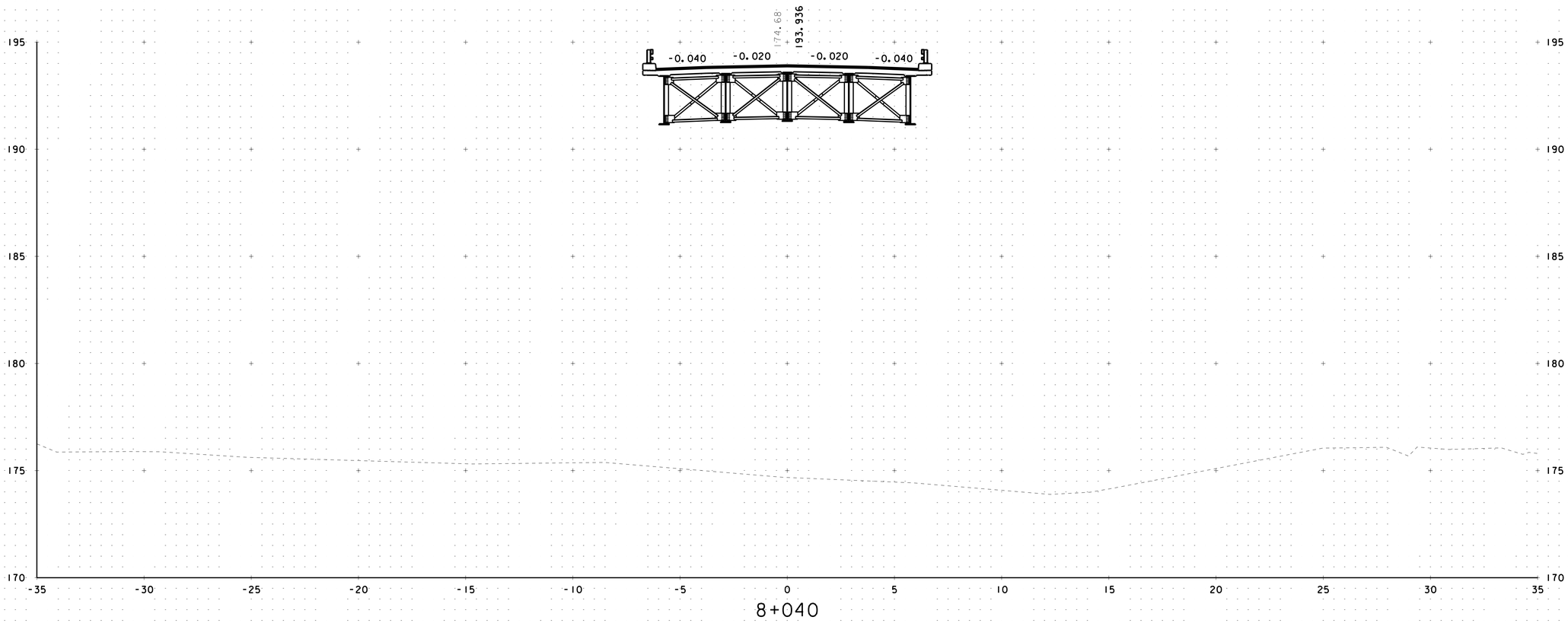
LEGEND



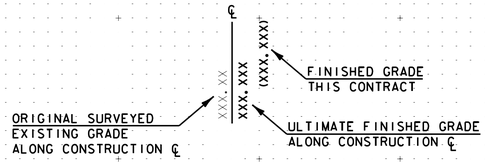
NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTION: 8+020	SHEET 109 OF 123



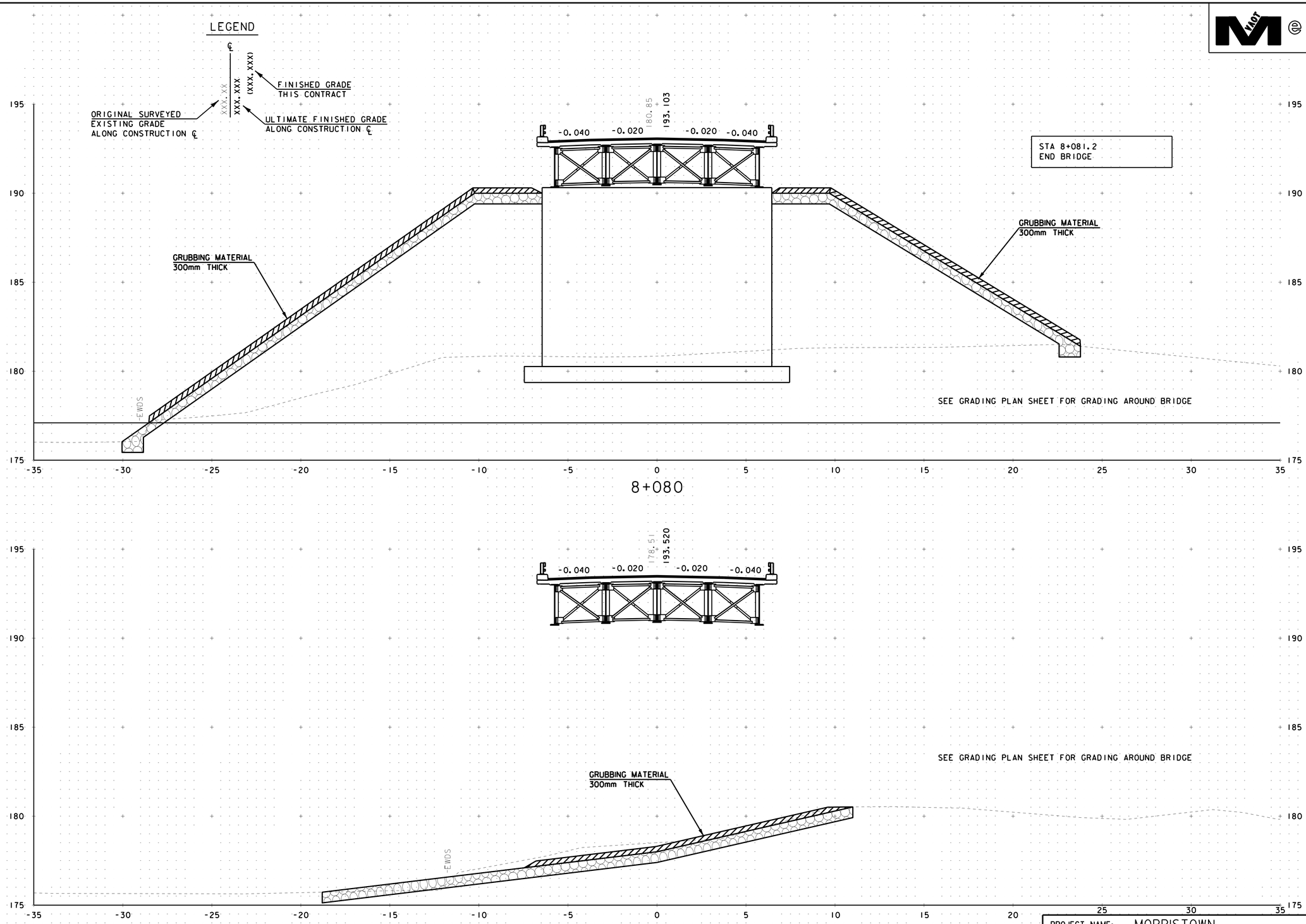
LEGEND



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

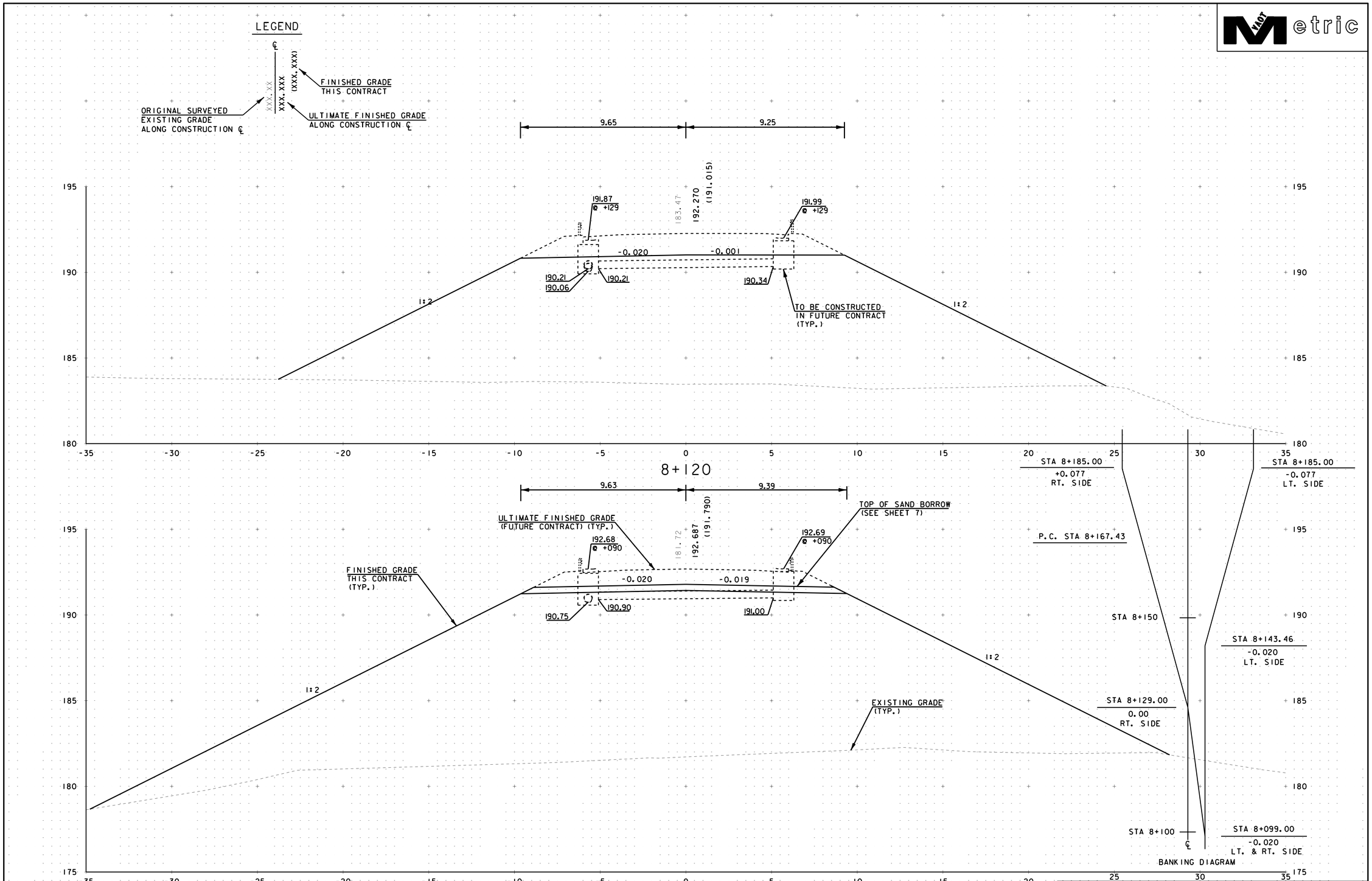
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTION: 8+040	SHEET 110 OF 123



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

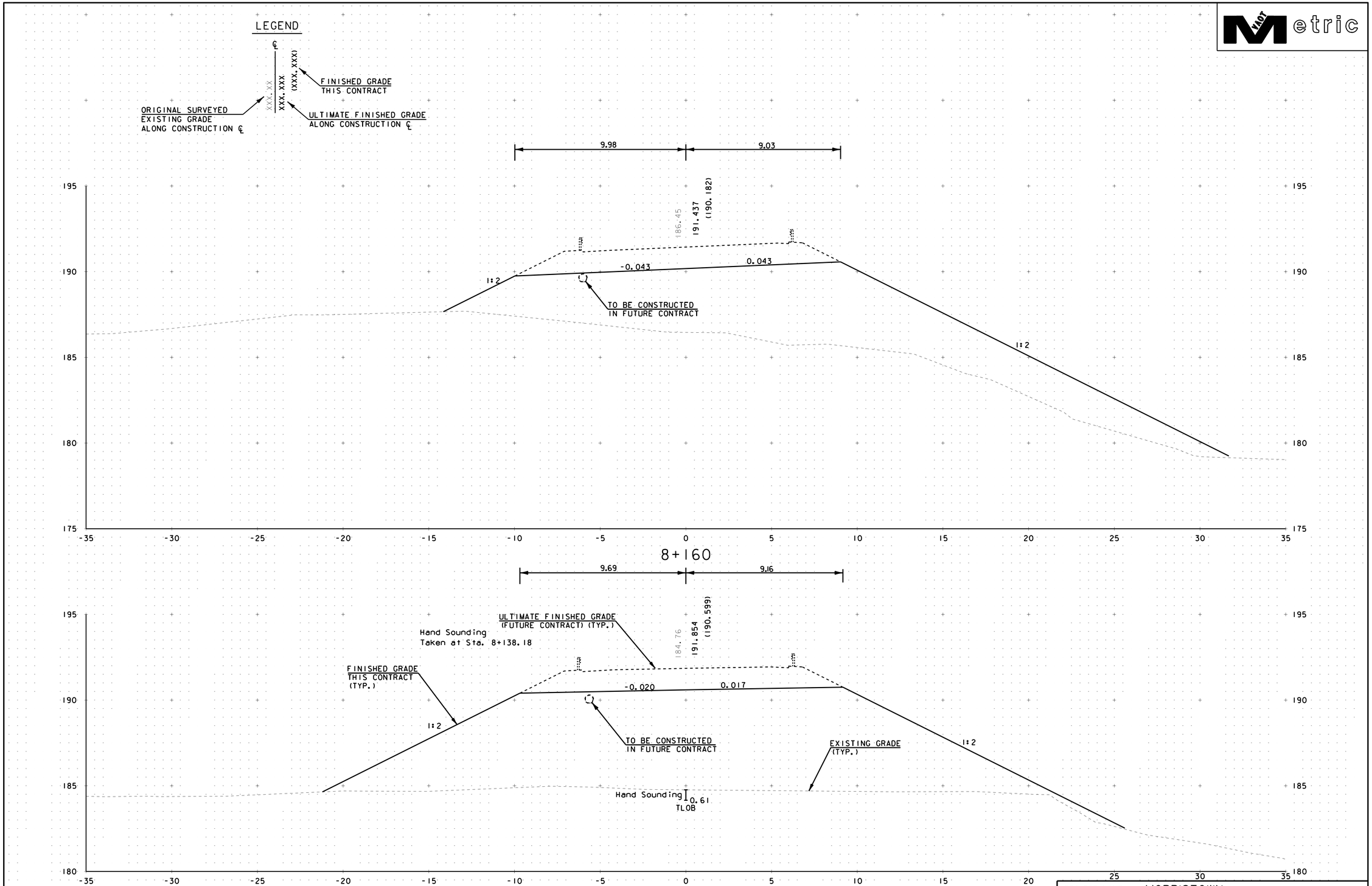
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 8+060 TO 8+080	SHEET 111 OF 123



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

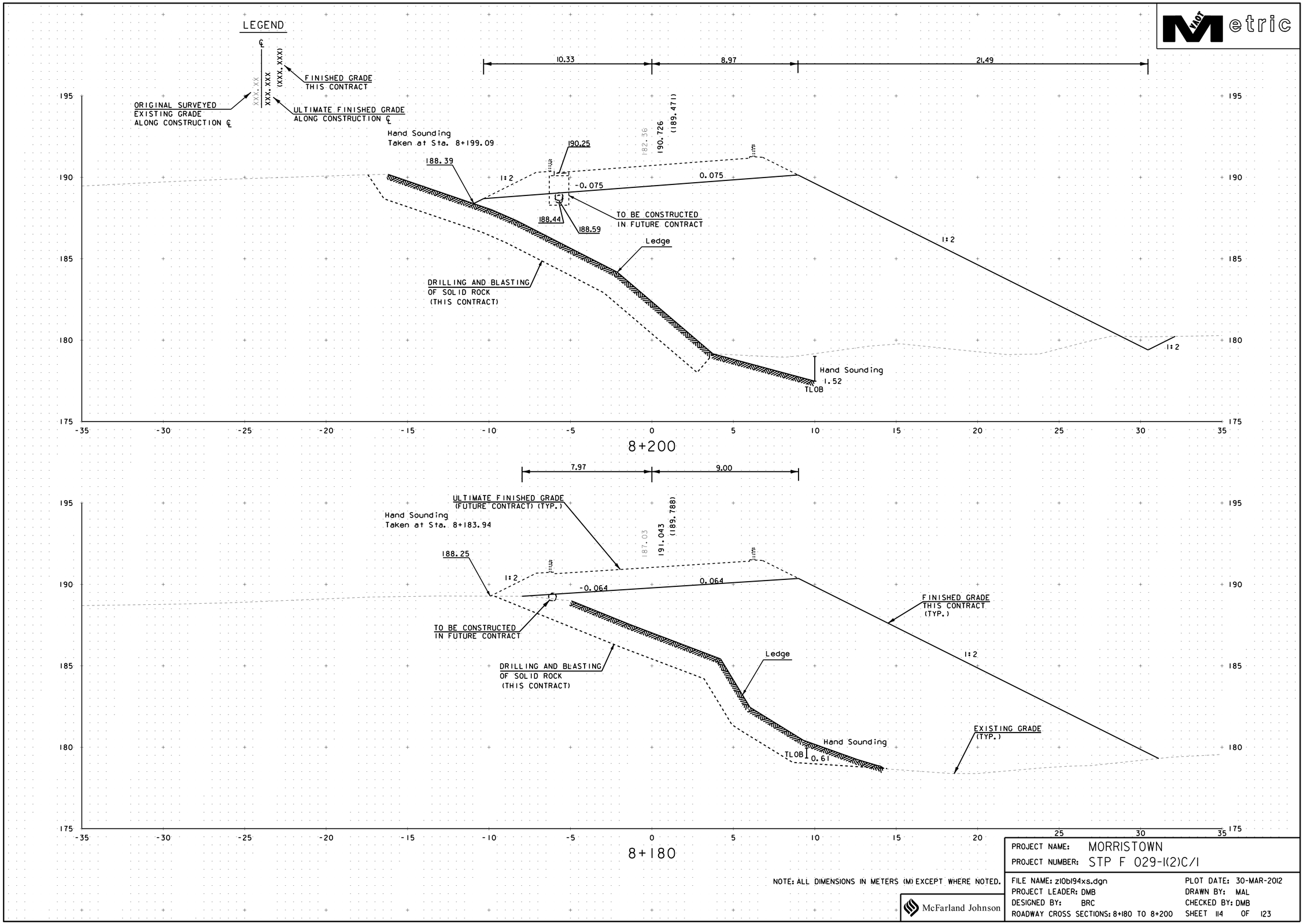
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 8+100 TO 8+120	SHEET 112 OF 123



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

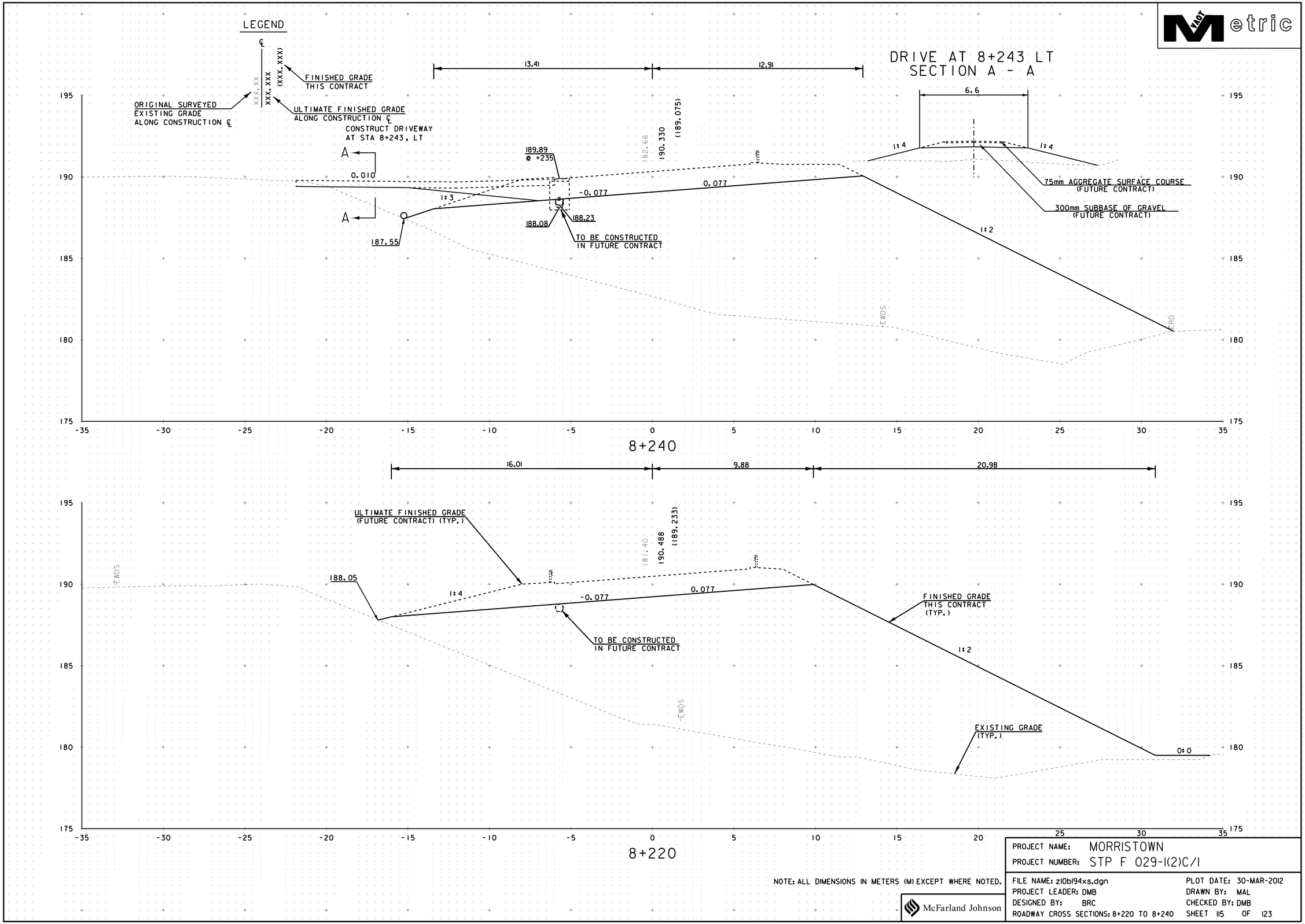
PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 8+140 TO 8+160	SHEET 113 OF 123



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 8+180 TO 8+200	SHEET 114 OF 123



NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 8+220 TO 8+240	SHEET 115 OF 123

Metric

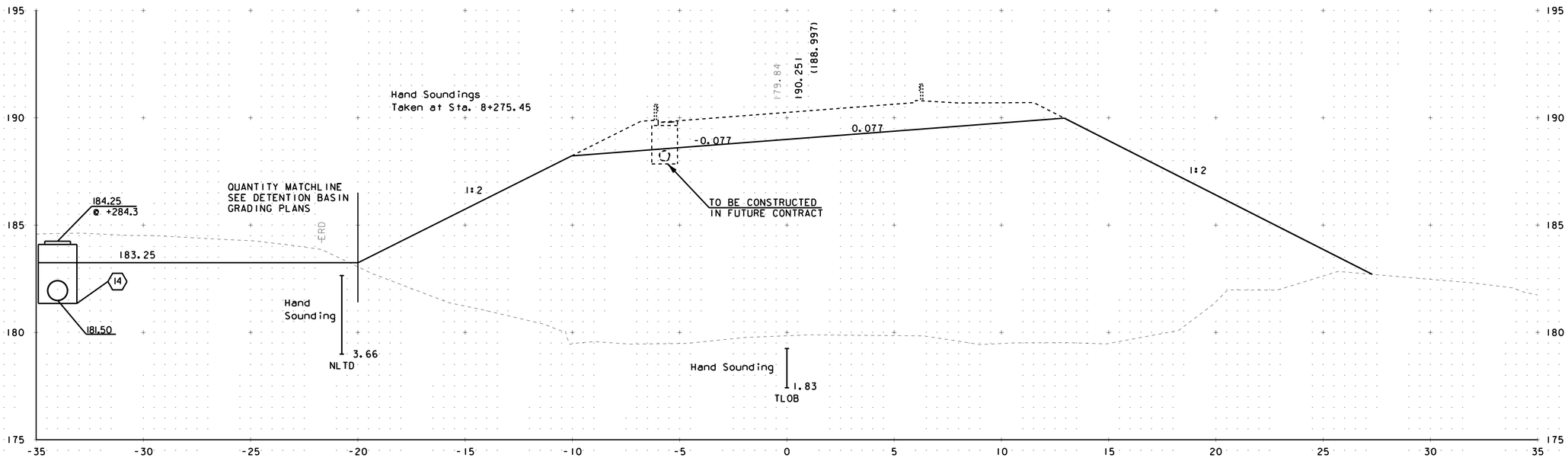
LEGEND

℄

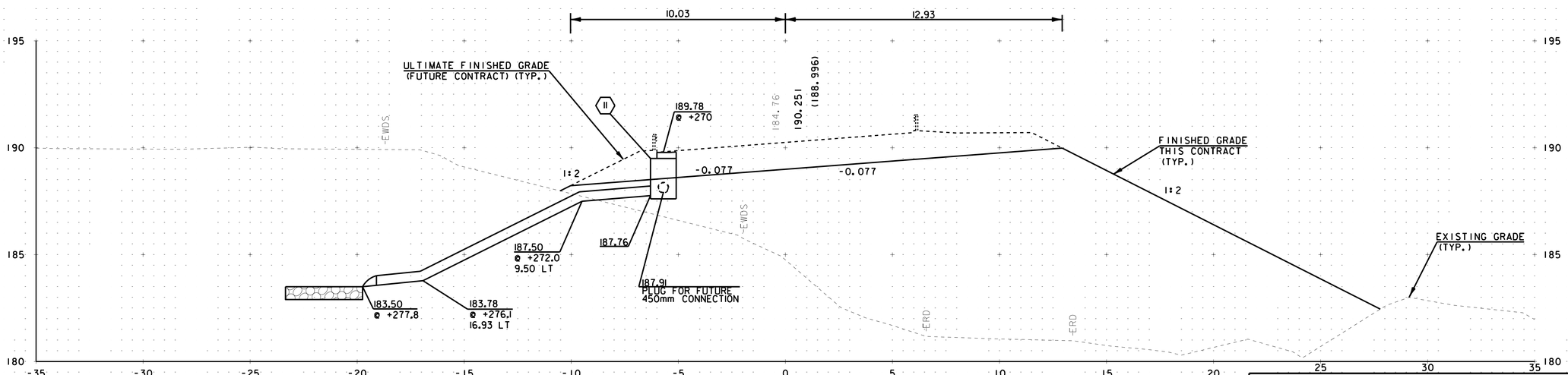
XXX.XX — ORIGINAL SURVEYED EXISTING GRADE ALONG CONSTRUCTION ℄

XXX.XXX — ULTIMATE FINISHED GRADE ALONG CONSTRUCTION ℄

(XXX.XXX) — FINISHED GRADE THIS CONTRACT



8+280

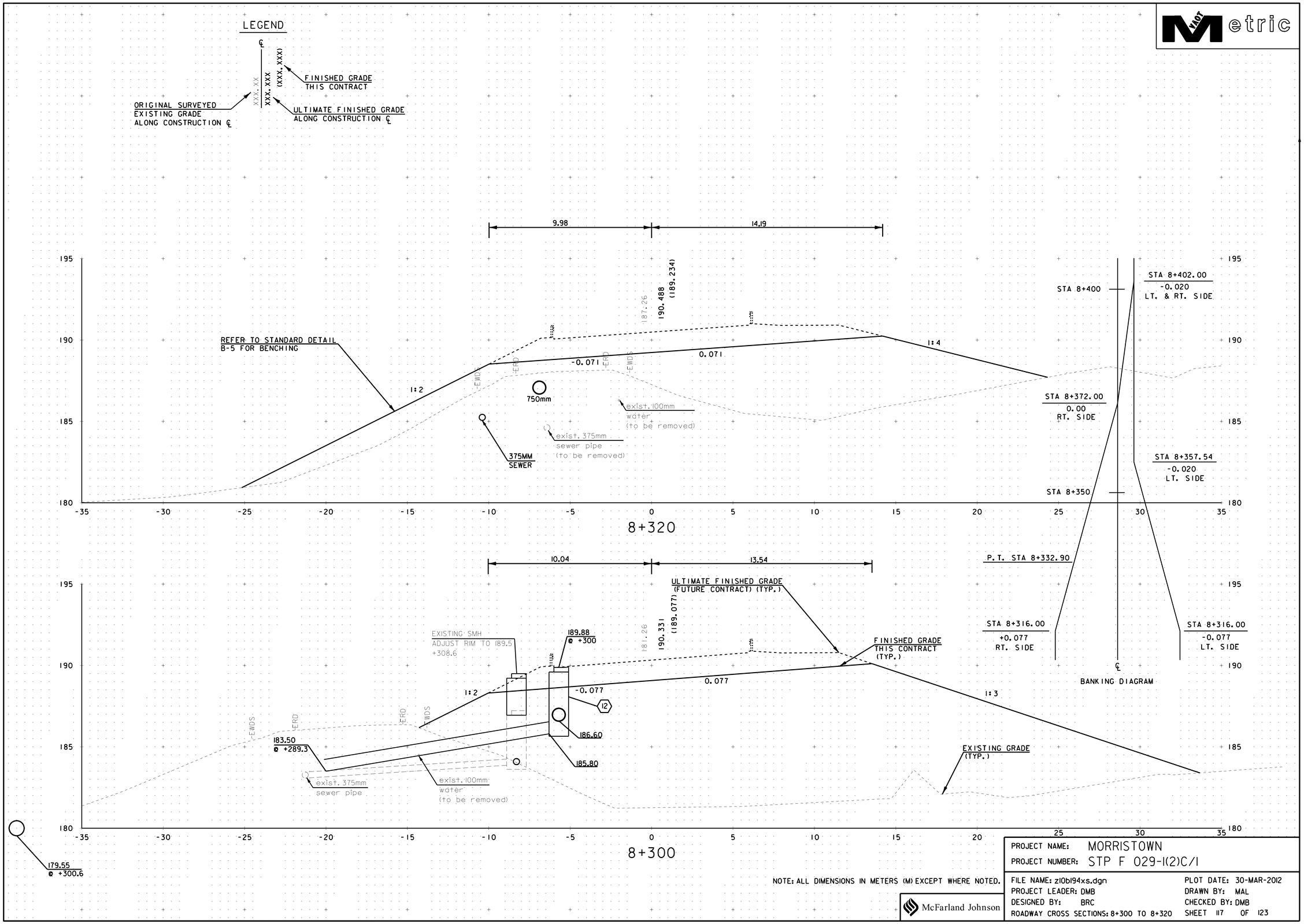


8+260

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 8+260 TO 8+280	SHEET 116 OF 123

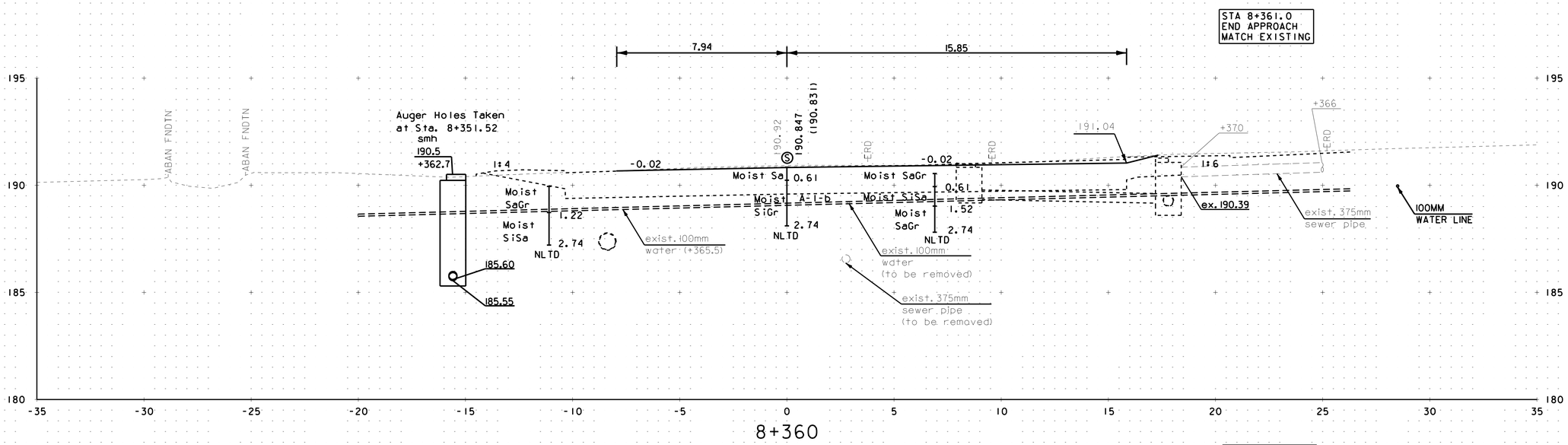


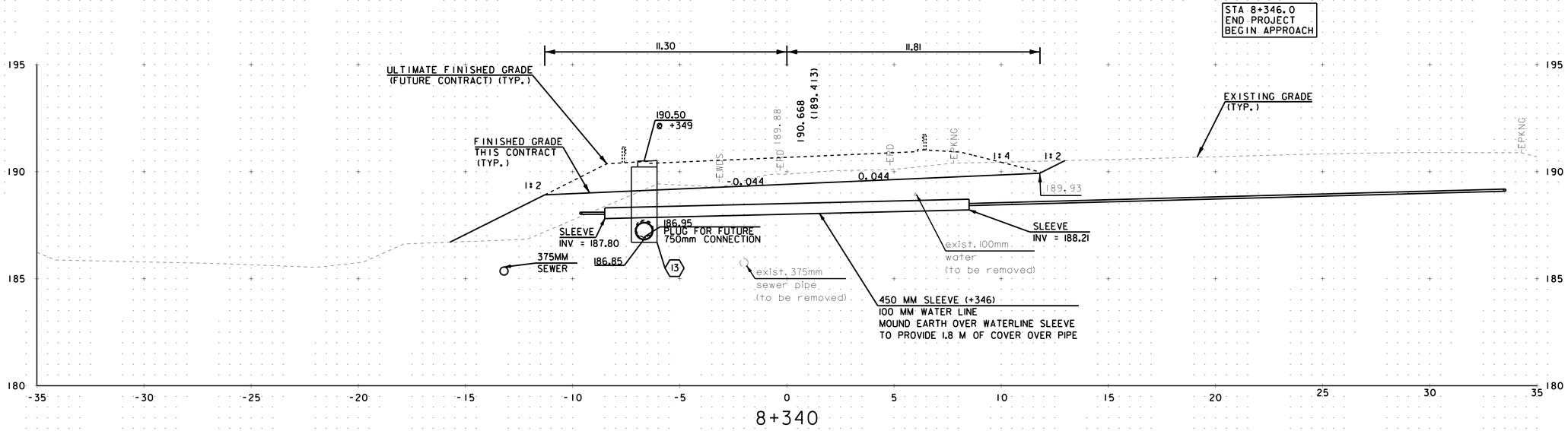
NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 8+300 TO 8+320	SHEET 117 OF 123

Metric





LEGEND

℄

XXX.XXX (XXX.XXX)

FINISHED GRADE
THIS CONTRACT

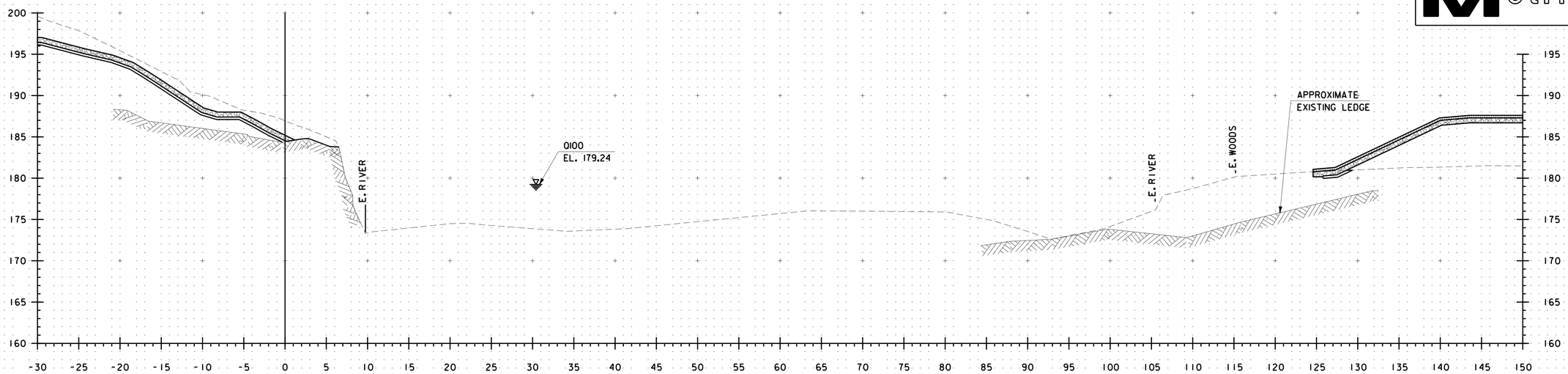
ORIGINAL SURVEYED
EXISTING GRADE
ALONG CONSTRUCTION ℄

ULTIMATE FINISHED GRADE
ALONG CONSTRUCTION ℄

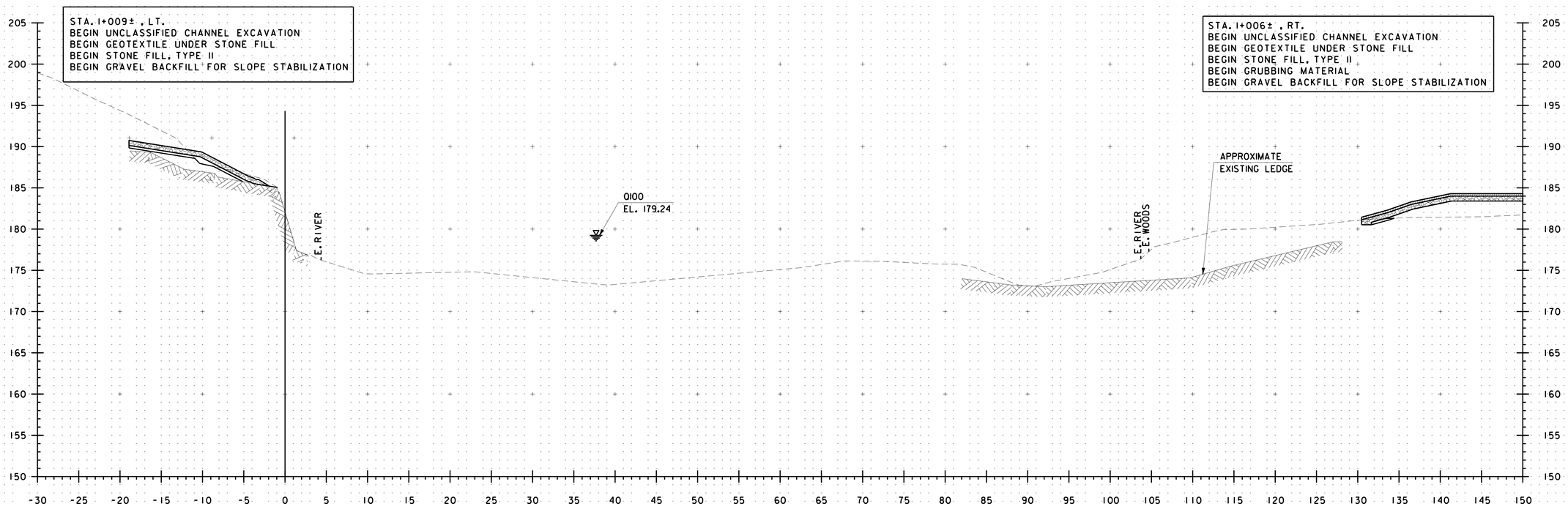
NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194xs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: MAL
DESIGNED BY: BRC	CHECKED BY: DMB
ROADWAY CROSS SECTIONS: 8+340 TO 8+360	SHEET 118 OF 123



1+015



1+010

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

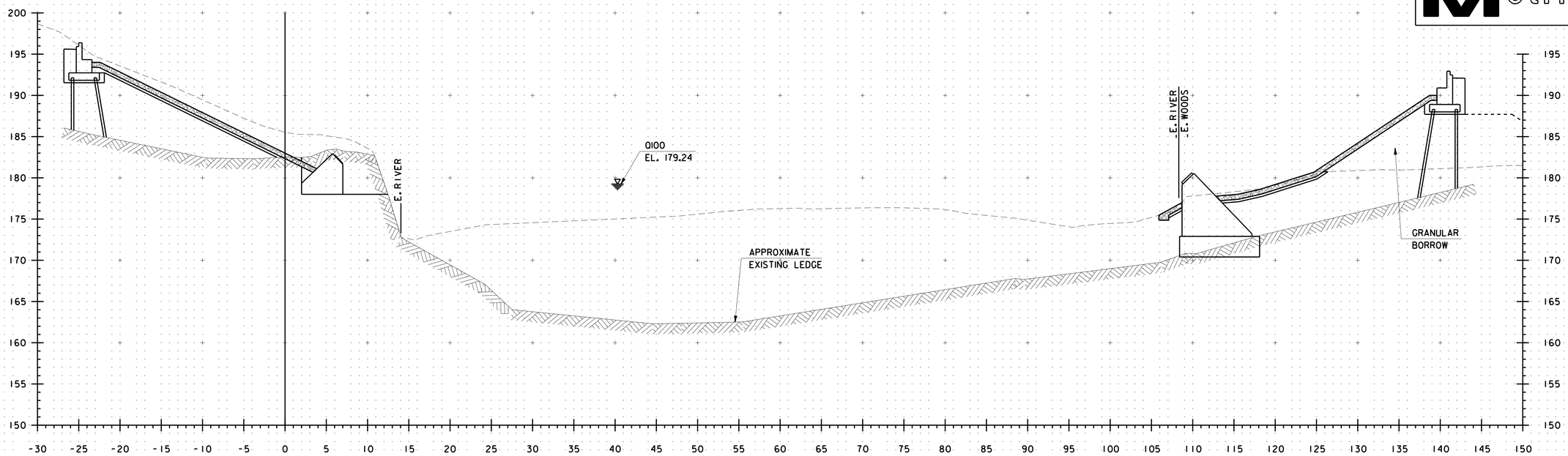
NOTES

1. FOR GRADING AROUND BRIDGE, SEE GRADING PLAN, SHEET 70.

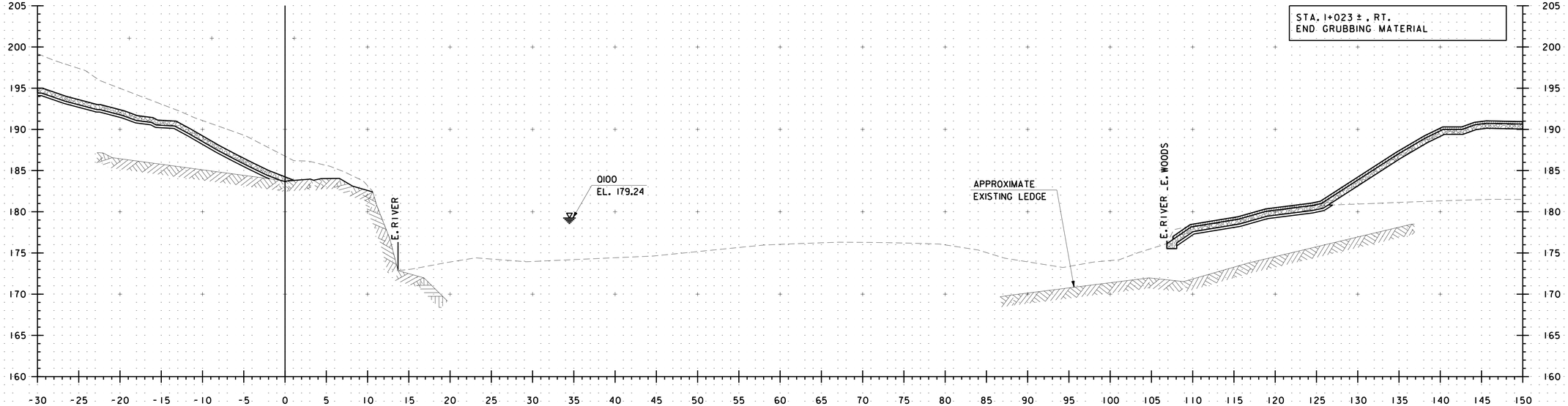
0. 10. 20
SCALE IN METERS

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194acs.dgn	PLOT DATE: 30-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: S. Della/B. Colburn	CHECKED BY: R. Joy
CHANNEL CROSS SECTIONS: 1+010 TO 1+015	SHEET 119 OF 123



1+025



1+020

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

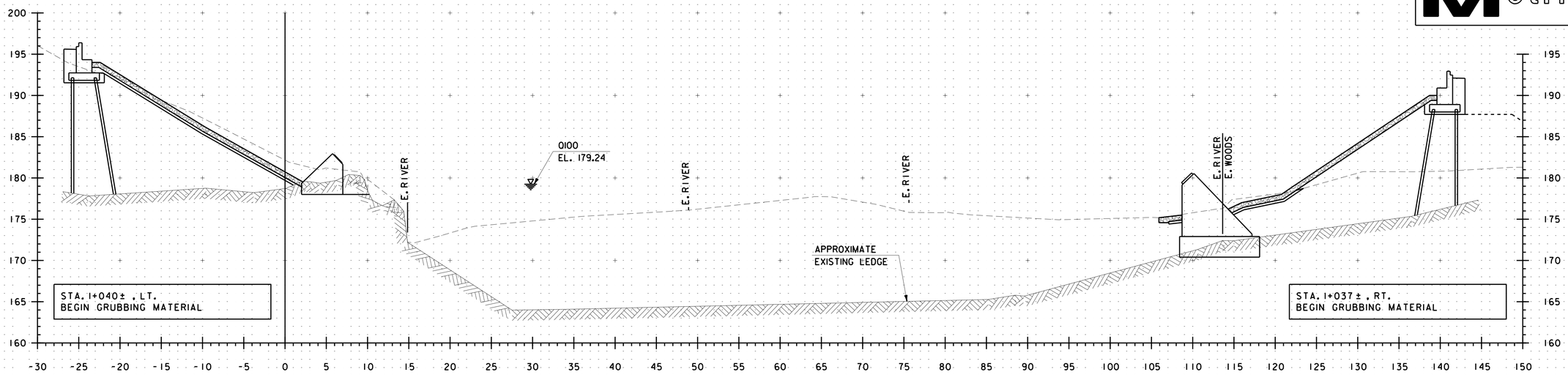
NOTES

1. FOR GRADING AROUND BRIDGE, SEE GRADING PLAN, SHEET 70.

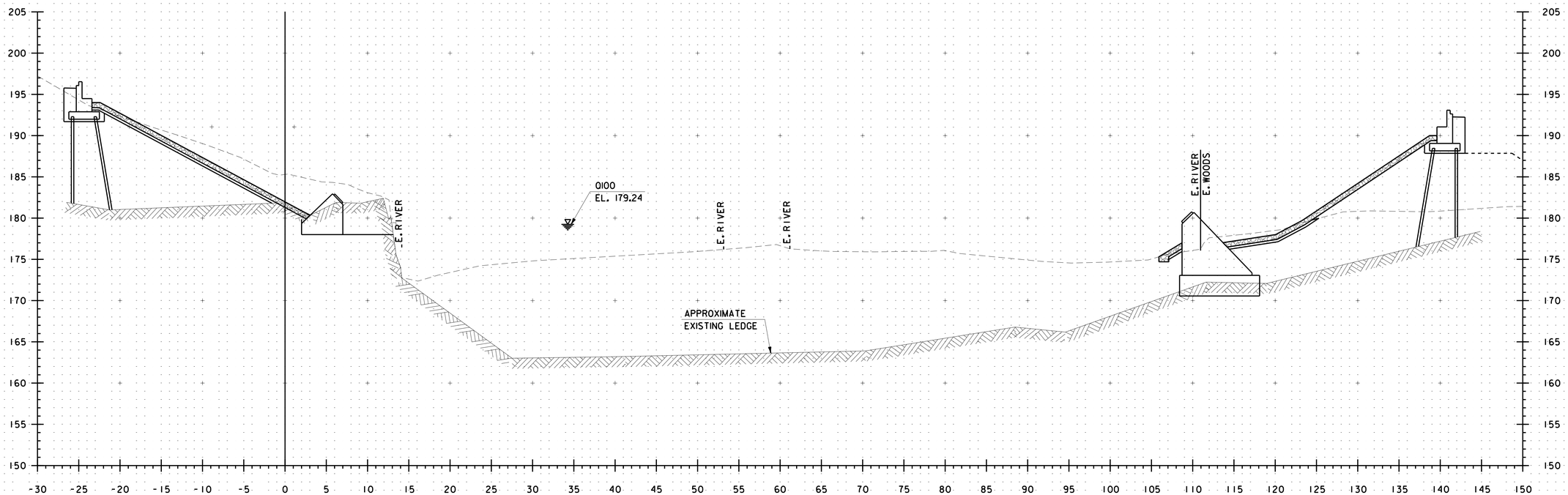
0 10 20
SCALE IN METERS

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194acs.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: S. Delia/B. Colburn	CHECKED BY: R. Joy
CHANNEL CROSS SECTIONS: 1+020 TO 1+025	SHEET 120 OF 123



1+035



1+030

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

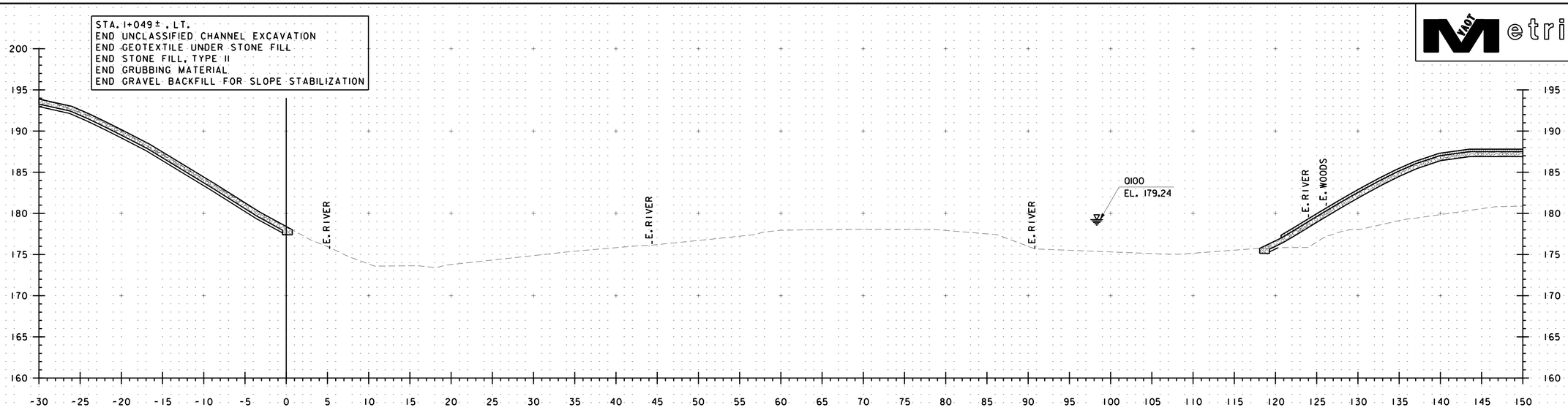
NOTES

1. FOR GRADING AROUND BRIDGE, SEE GRADING PLAN, SHEET 70.

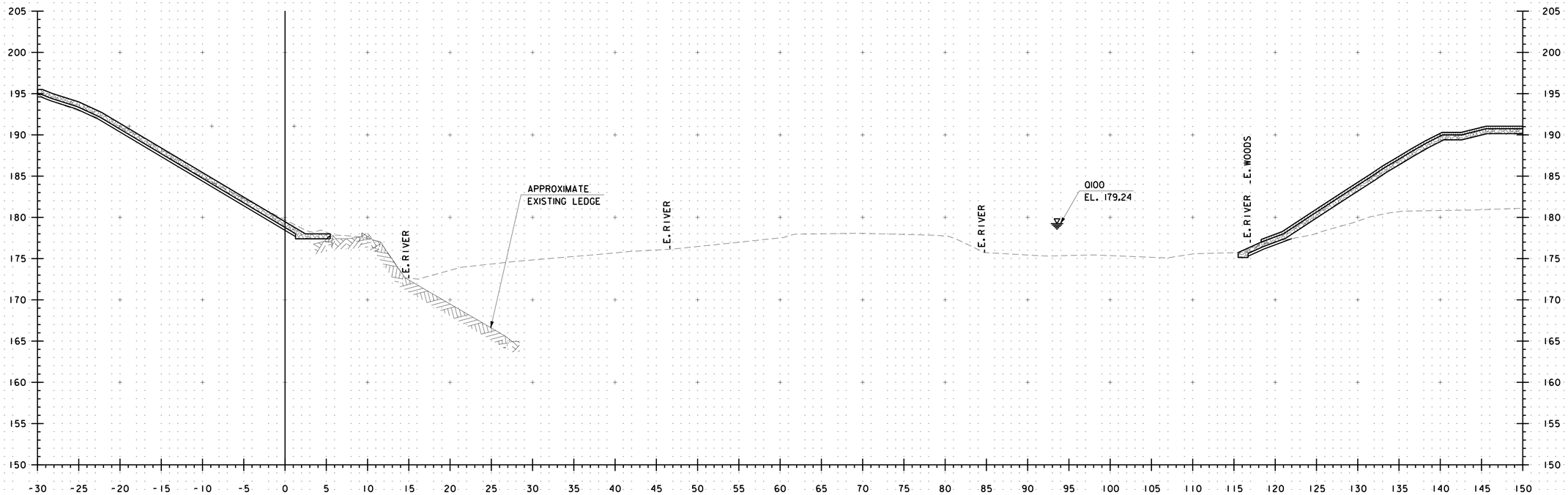
0 10 20
SCALE IN METERS

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194acs.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: S. Delia/B. Colburn	CHECKED BY: R. Joy
CHANNEL CROSS SECTIONS: 1+030 TO 1+035	SHEET 121 OF 123



1+045



1+040

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

NOTES

1. FOR GRADING AROUND BRIDGE, SEE GRADING PLAN, SHEET 70.

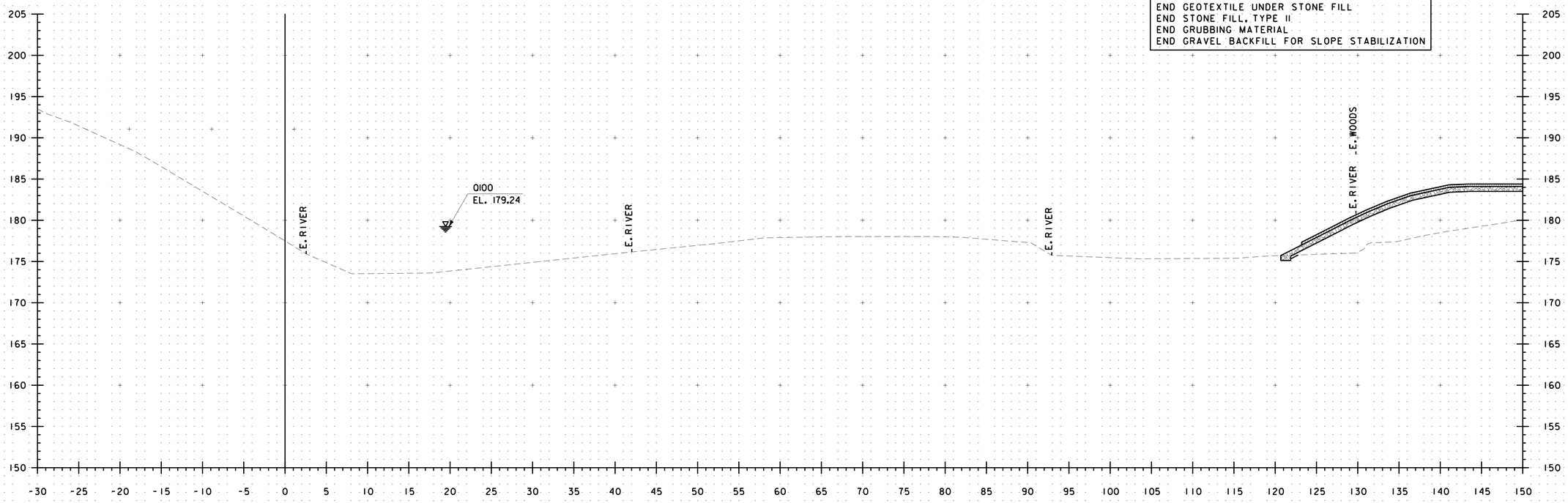
0. 10. 20
SCALE IN METERS

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194acs.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: S. Della/B. Colburn	CHECKED BY: R. Joy
CHANNEL CROSS SECTIONS: 1+040 TO 1+045	SHEET 122 OF 123

Metric

STA. 1+062 ± , RT.
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE II
END GRUBBING MATERIAL
END GRAVEL BACKFILL FOR SLOPE STABILIZATION



1+050

NOTE: ALL DIMENSIONS IN METERS (M) EXCEPT WHERE NOTED.

NOTES

1. FOR GRADING AROUND BRIDGE, SEE GRADING PLAN, SHEET 70.

0 10 20
SCALE IN METERS

McFarland Johnson

PROJECT NAME: MORRISTOWN	
PROJECT NUMBER: STP F 029-1(2)C/1	
FILE NAME: z10b194acs.dgn	PLOT DATE: 29-MAR-2012
PROJECT LEADER: DMB	DRAWN BY: P. Dustin
DESIGNED BY: S. Delia/B. Colburn	CHECKED BY: R. Joy
CHANNEL CROSS SECTIONS: 1+050	SHEET 123 OF 123