

ROADWAY CONSTRUCTION PLANS

CITY OF SOMERSWORTH COMMERCIAL DRIVE

SOMERSWORTH, NEW HAMPSHIRE

LIST OF PLANS

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PREPARED FOR

THE CITY OF SOMERSWORTH

ONE GOVERNMENT WAY
SOMERSWORTH, NEW HAMPSHIRE 03878

PREPARED BY

TRITECH

ENGINEERING CORPORATION

TRITECH
ENGINEERING CORPORATION

48N COVER POINT OFFICE PARK
COVER NEW HAMPSHIRE 03880
TELEPHONE 603 746-8107
FAX 603 746-8650

REVISIONS	DATE	DESCRIPTION

TRITECH
MAR 12 2004
33 U E

TITLE SHEET

THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE
SOMERSWORTH, NEW HAMPSHIRE
MARCH 12, 2004

JOB No. 04/10

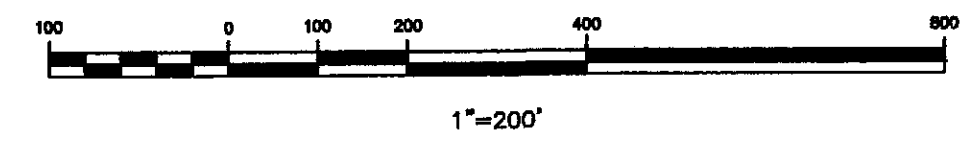
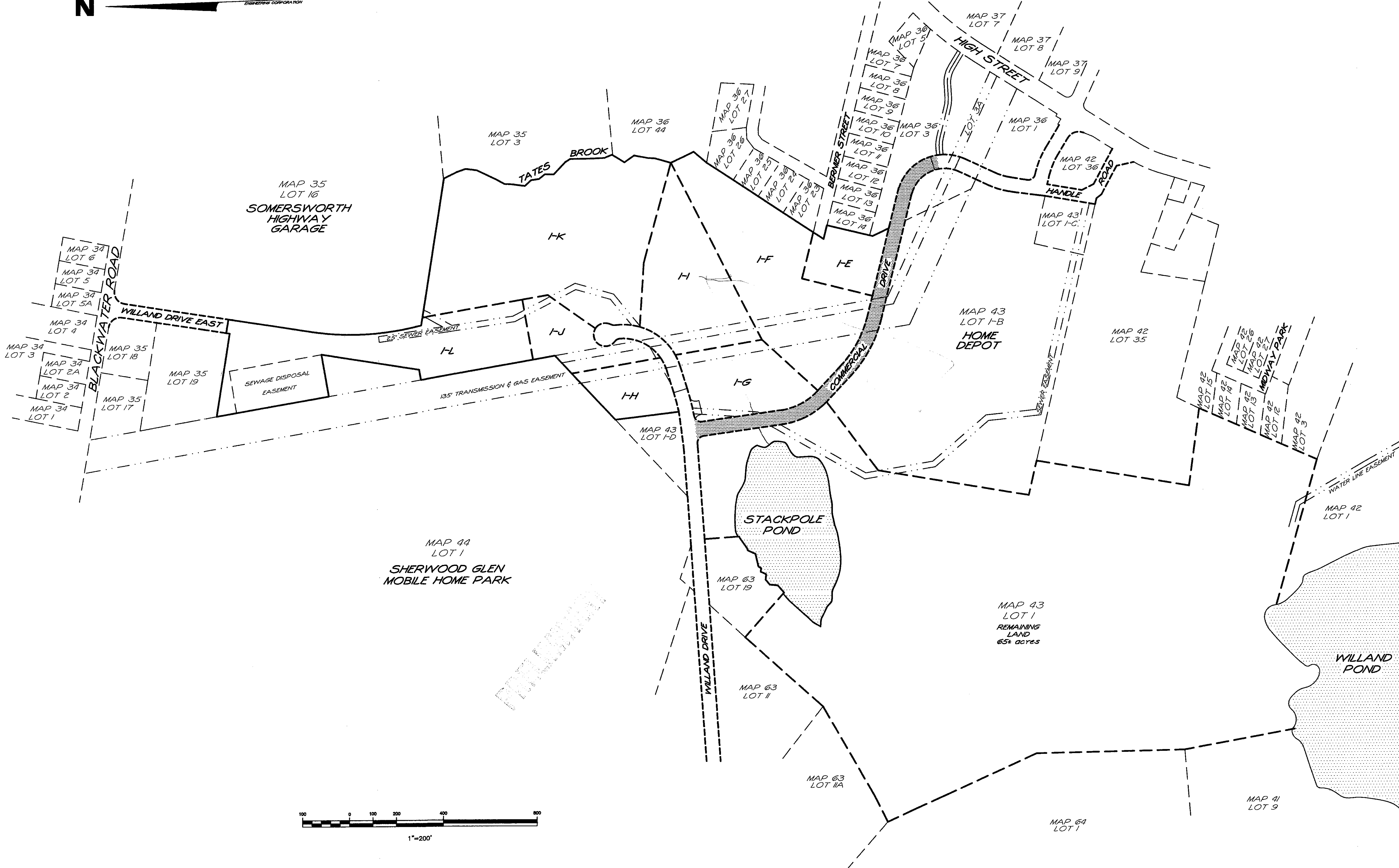
SHEET NO.

T-1

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TRITECH
ENGINEERING CORPORATION

WAL-MART

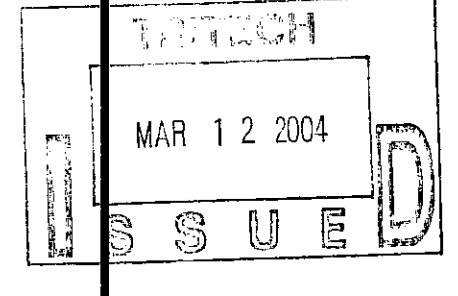


TRITECH
ENGINEERING CORPORATION

65A DEVINE POINT OFFICE PARK
DEVEN, NEW HAMPSHIRE 03830
TELEPHONE 603-742-8707
FAX 603-742-5850

REVISIONS

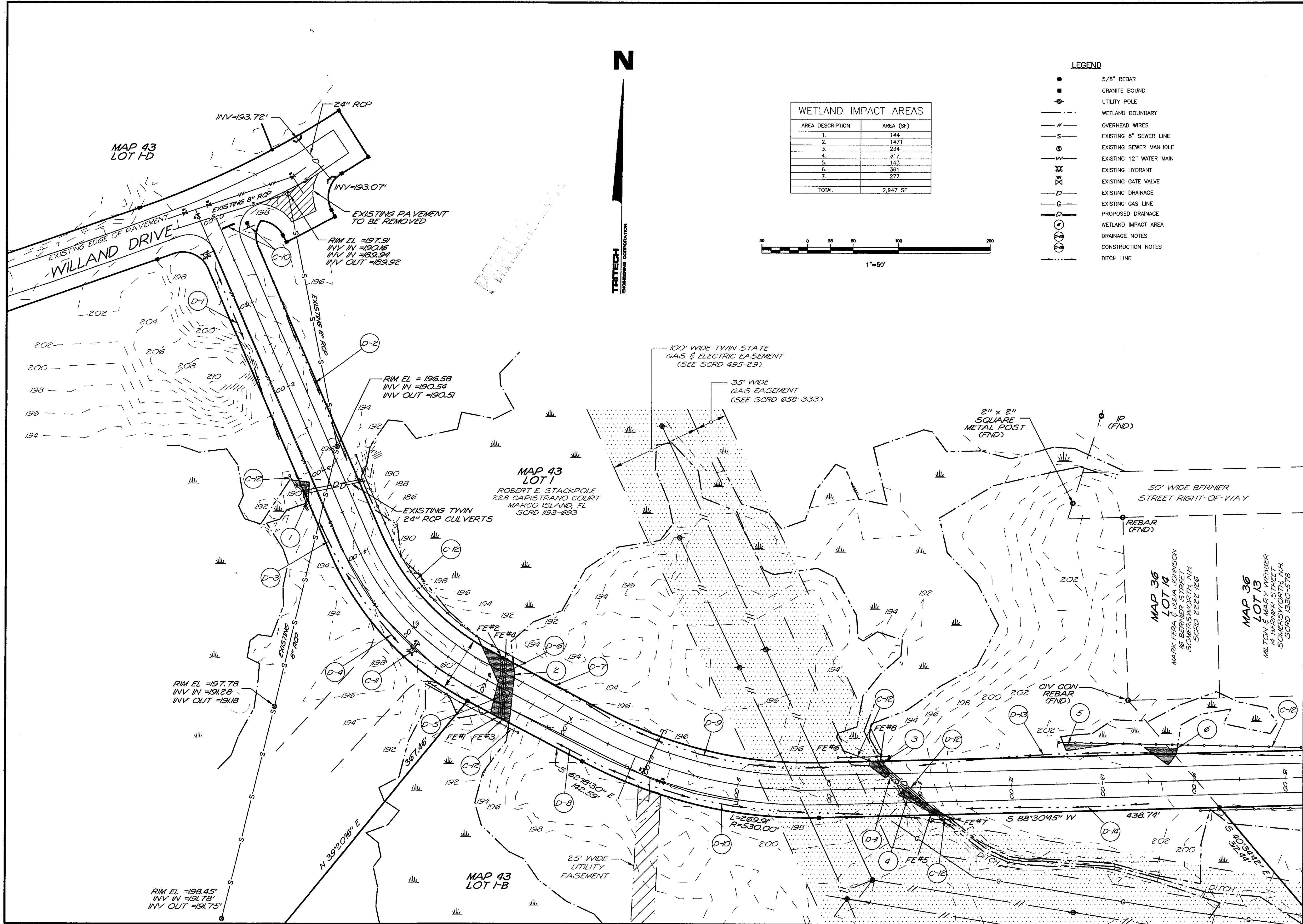
NO.	DATE	DESCRIPTION



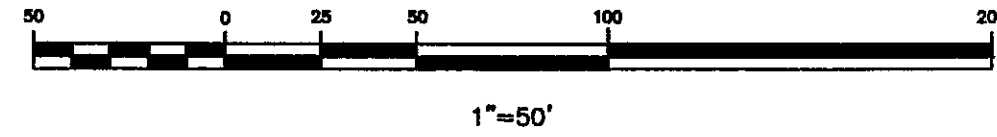
OVERALL PLAN
THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE
 SOMERSWORTH, NEW HAMPSHIRE
 MARCH 12, 2004
 JOB No. 0410
 SCALE: 1" = 200'

SHEET NO.

T-2



WETLAND IMPACT AREAS	
AREA DESCRIPTION	AREA (SF)
1.	144
2.	1471
3.	234
4.	317
5.	143
6.	361
7.	277
TOTAL	2,947 SF



- LEGEND**
- 5/8" REBAR
 - GRANITE BOUND
 - ⊕ UTILITY POLE
 - - - WETLAND BOUNDARY
 - OVERHEAD WIRES
 - EXISTING 8" SEWER LINE
 - ⊙ EXISTING SEWER MANHOLE
 - EXISTING 12" WATER MAIN
 - ⊕ EXISTING HYDRANT
 - ⊕ EXISTING GATE VALVE
 - EXISTING DRAINAGE
 - EXISTING GAS LINE
 - PROPOSED DRAINAGE
 - ⊕ WETLAND IMPACT AREA
 - ⊕ DRAINAGE NOTES
 - ⊕ CONSTRUCTION NOTES
 - - - DITCH LINE

TRITECH
ENGINEERING CORPORATION

48N DOVER POINT OFFICE PARK
DOVER, NEW HAMPSHIRE 03880
TELEPHONE 603 748 8007
FAX 603 748 9890

PRELIMINARY

REVISIONS	DATE	DESCRIPTION

MAR 12 2004

CONSTRUCTION PLAN

THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE

SOMERSWORTH, NEW HAMPSHIRE

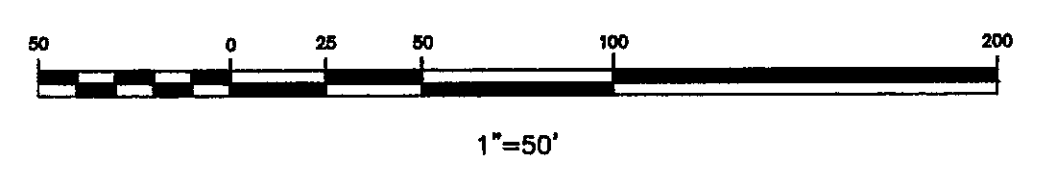
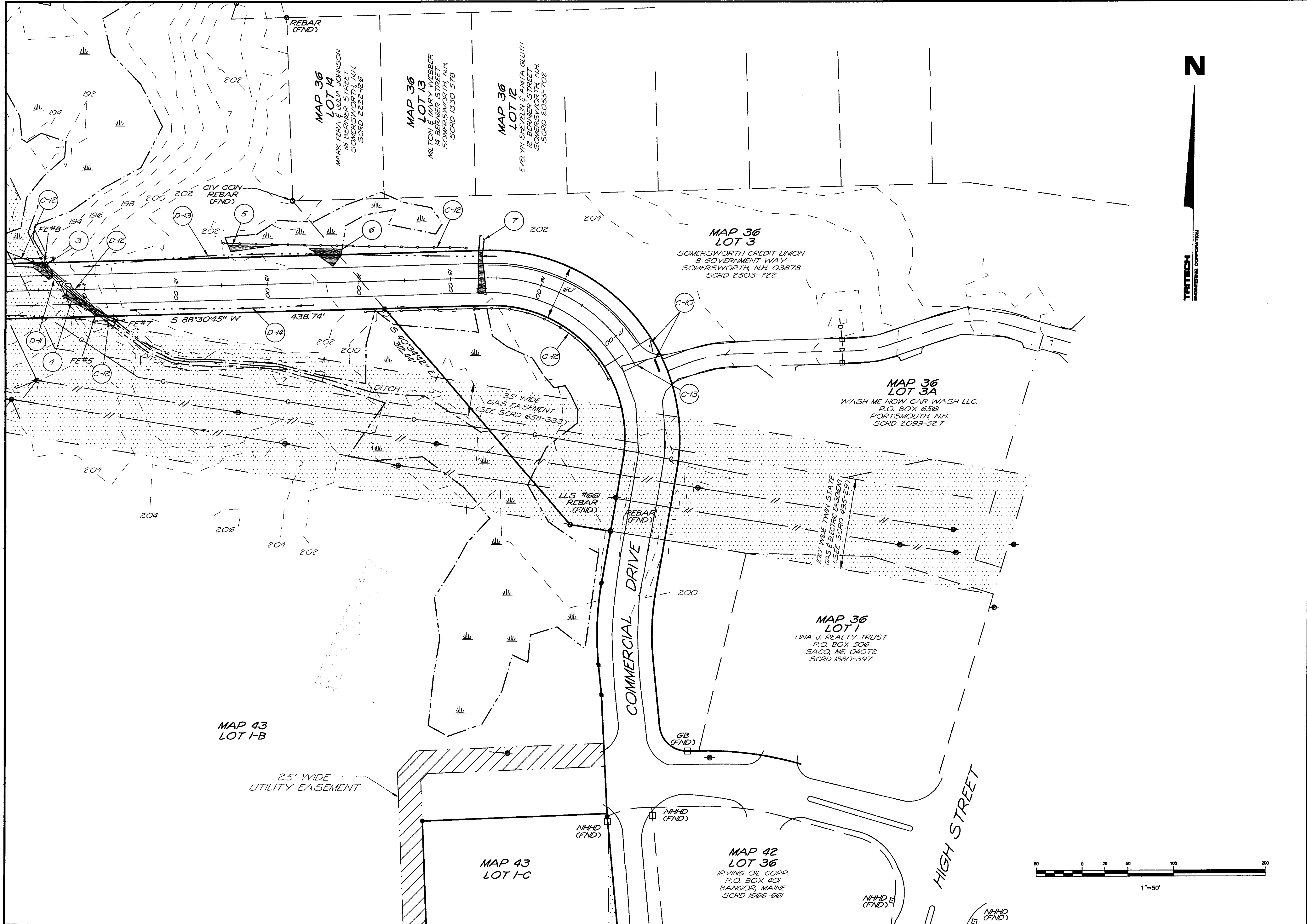
MARCH 12, 2004

JOB No. 04110

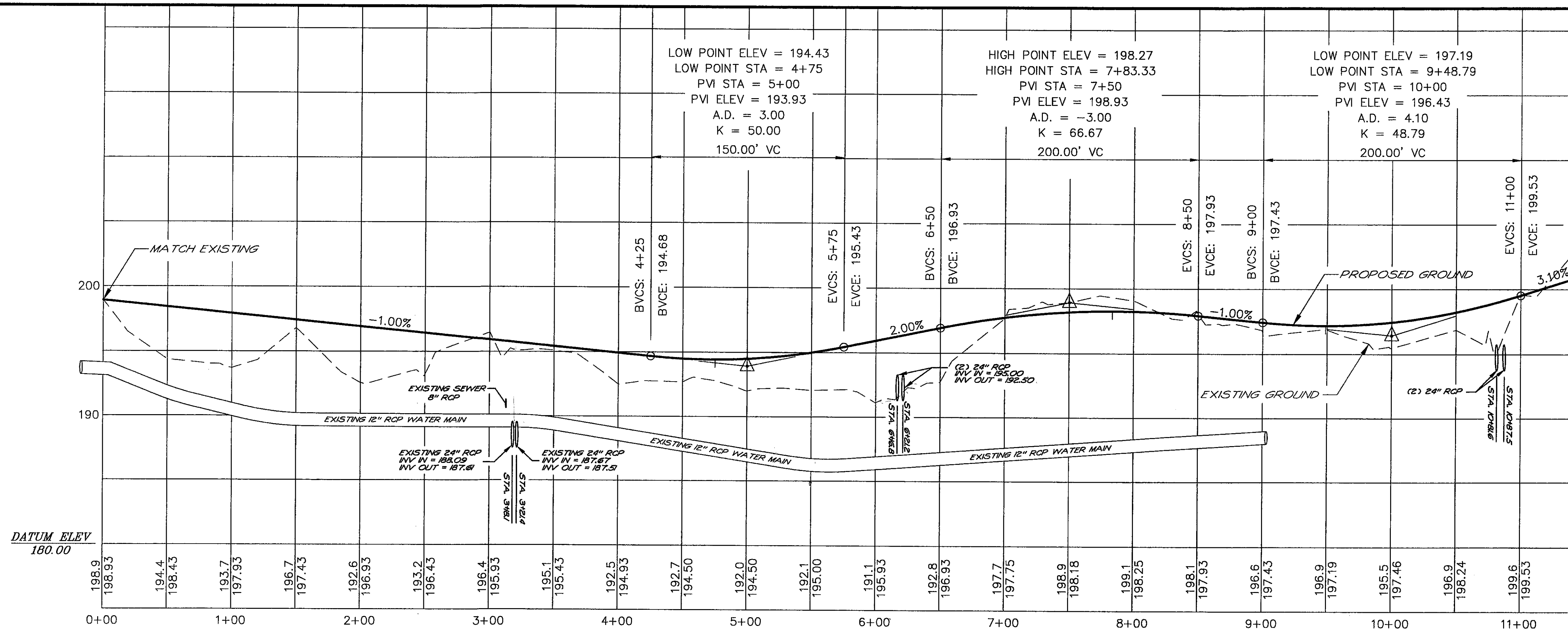
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SHEET NO.

0-1

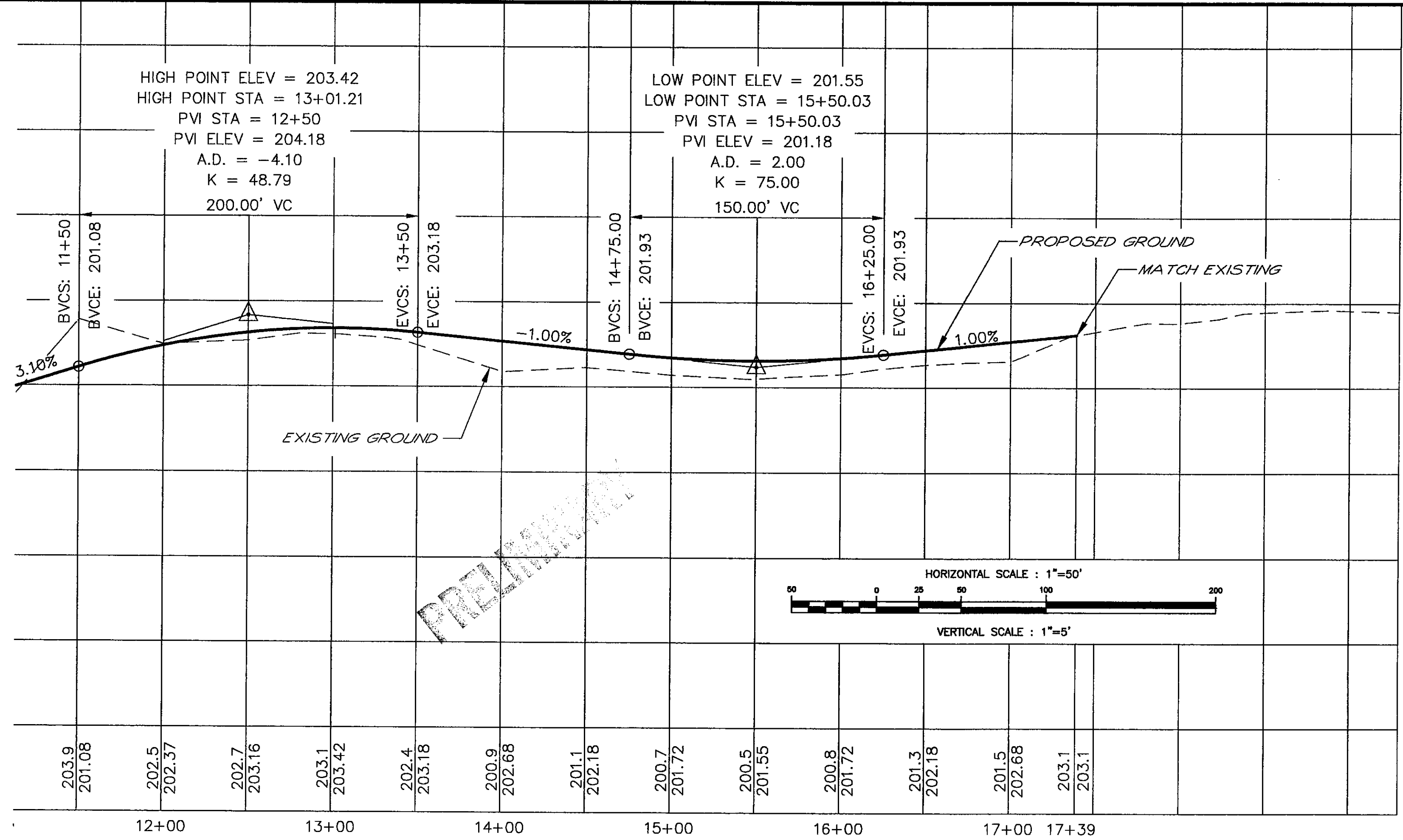


TRITECH ENGINEERING CORPORATION	PRELIMINARY	REVISIONS DATE: DESCRIPTION:	48N DOVER POINT OFFICE PARK DOVER, NEW HAMPSHIRE 03860 TELEPHONE 603 742 8107 FAX 603 742 9890
CONSTRUCTION PLAN THE CITY OF SOMERSWORTH COMMERCIAL DRIVE SOMERSWORTH, NEW HAMPSHIRE MARCH 12, 2004		JOB No. 04110 SCALE: 1" = 50'	SHEET NO. <div style="font-size: 2em; font-weight: bold; letter-spacing: 0.5em;">C-2</div>



FLARED END SECTION SCHEDULE

FE #	INV EL.
1	191.60
2	191.00
3	191.60
4	191.00
5	194.20
6	193.00
7	194.20
8	193.00

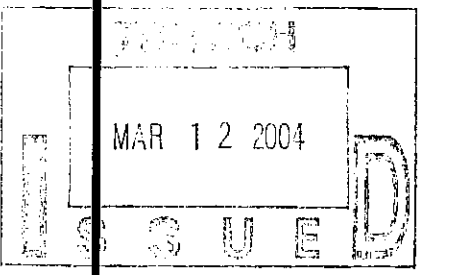


TRITECH
ENGINEERING CORPORATION

48N DOVER POINT OFFICE PARK
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8007
FAX 603 742 9630

PRELIMINARY

REVISIONS
DATE: DESCRIPTION:



CONSTRUCTION PROFILE

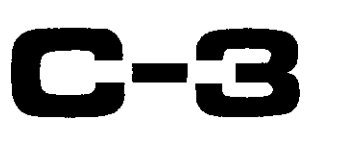
THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE

SOMERSWORTH, NEW HAMPSHIRE

MARCH 12, 2004 JOB No. 04110

SCALE: 1" = 50'

SHEET NO.

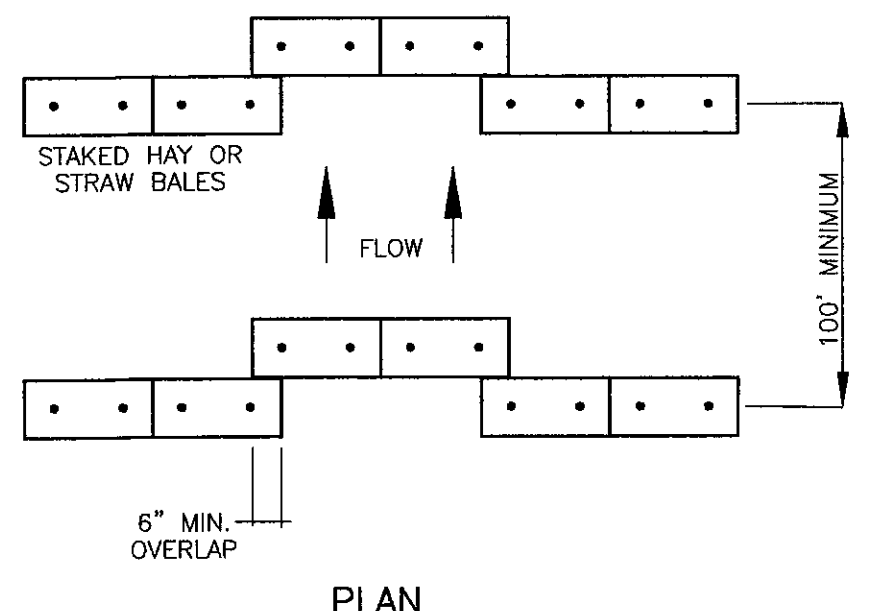
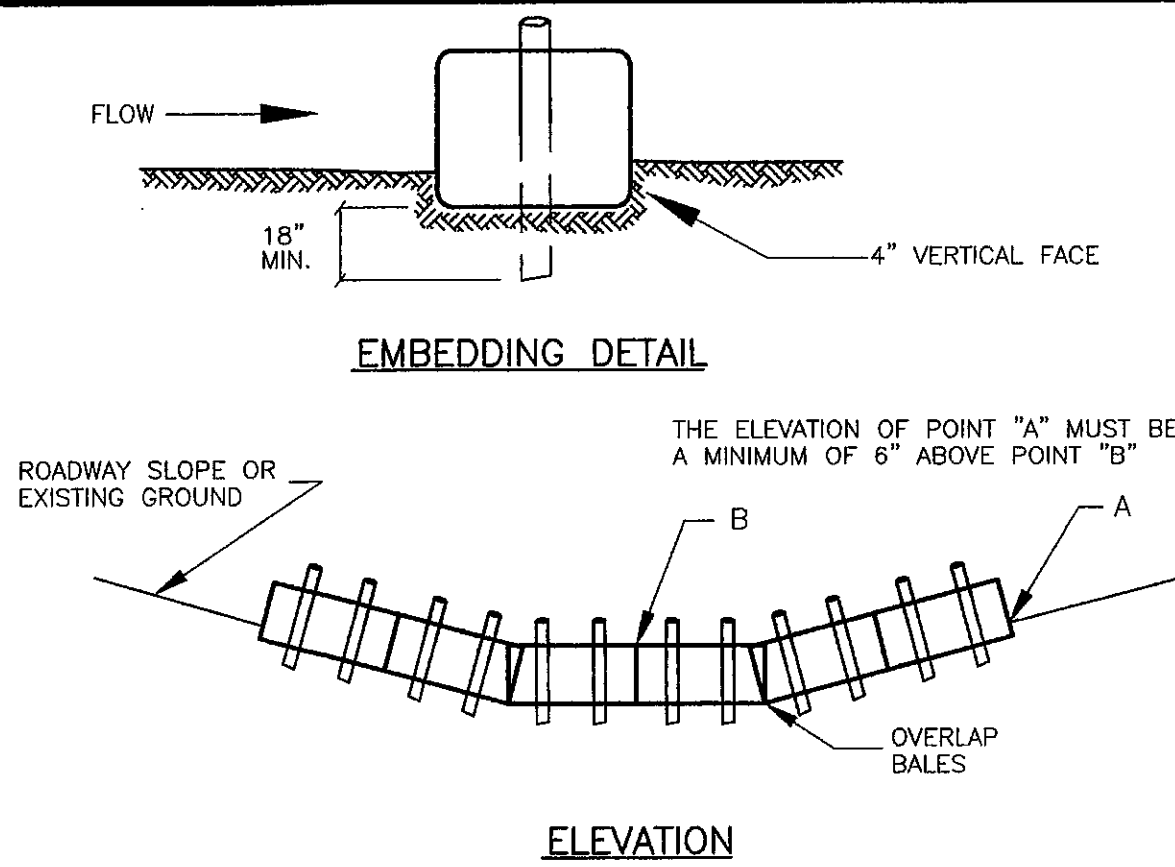


C-1 CONSTRUCTION NOTES:

- THE CONTRACTOR IS REQUIRED UNDER NEW HAMPSHIRE LAW TO CONTACT "DIG SAFE" AT 1-888-344-7233, 72 HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN THE "DIG SAFE" LOCATIONS THROUGHOUT THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL BEAR THE COST TO REPAIR ANY UTILITIES DAMAGED DURING THE COURSE OF THE WORK.
- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH THE APPLICABLE CITY AND STATE CODES.
- EXISTING UTILITIES - ALL INFORMATION ON, AND LOCATION OF, EXISTING UTILITIES ARE APPROXIMATE AND BASED ON FIELD INFORMATION AND AVAILABLE PLANS. EXACT LOCATIONS AND DEPTHS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT), "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", HEREINAFTER REFERRED TO AS THE "STANDARD SPECIFICATIONS" AND ALSO WITH THE "CITY OF SOMERSWORTH SPECIFICATIONS".
- A PRE CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE EARTHWORK CONTRACTOR, TRITECH ENGINEERING CORPORATION AND THE CITY ENGINEER SHALL OCCUR PRIOR TO THE START OF ANY EARTHWORK.
- ALL BACKFILL IN TRENCHES AND FILL FOR ROADBEDS SHALL BE THOROUGHLY COMPACTED TO 95% OF OPTIMUM DENSITY.
- THERE SHALL BE NO ROADWAY CONSTRUCTION ON WET OR FROZEN SUBGRADE.
- LAND CLEARING SHALL BE LIMITED TO THE MINIMAL AMOUNTS NECESSARY TO ALLOW CONSTRUCTION OF THE SHOWN PROPOSED IMPROVEMENTS (ROADS, DRIVES, HOUSES, UTILITIES, ETC.) ALL REMAINING LAND AND VEGETATION SHALL REMAIN AS IS.
- INSTALL STOP SIGN AND STOP BAR WHERE SHOWN.
- RESET HYDRANT AS REQUIRED.
- INSTALL SILT FENCE IN ACCORDANCE WITH DETAIL 7.
- SAWCUT EXISTING PAVEMENT AS SHOWN.

D-1 DRAINAGE NOTES:

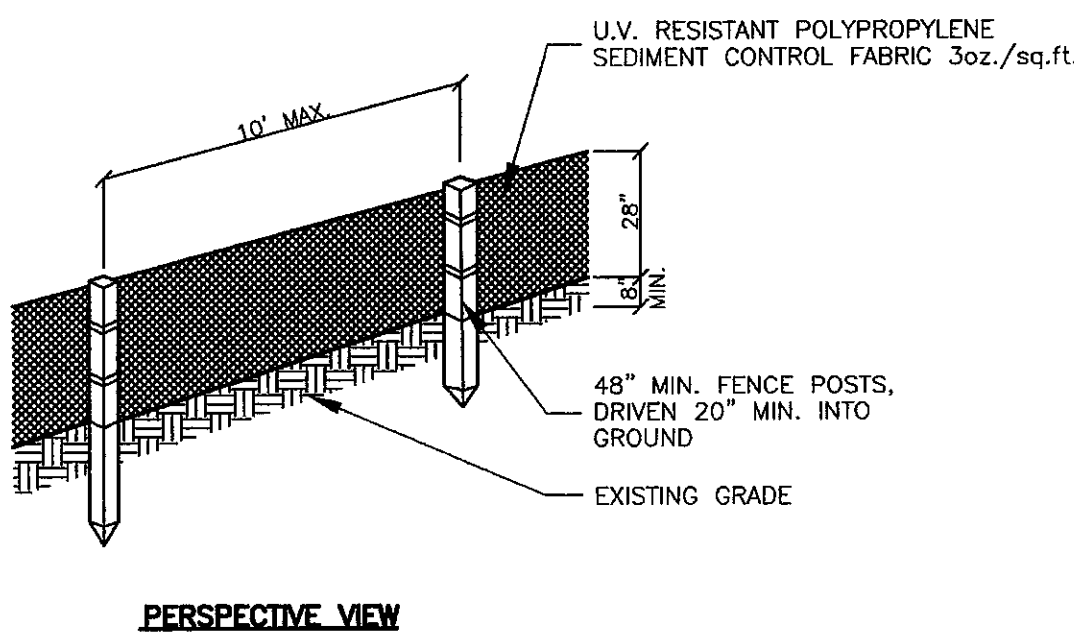
- CONSTRUCT 3' SWALE. LENGTH = 200'±. SEE DETAIL 11.
- CONSTRUCT 3' SWALE. LENGTH = 250'±. SEE DETAIL 11.
- CONSTRUCT 3' SWALE. LENGTH = 132'±. SEE DETAIL 11.
- CONSTRUCT 3' SWALE. LENGTH = 27'±. SEE DETAIL 11.
- INSTALL 55± FEET OF 24" RCP CLASS III PIPE FROM FE#1 TO FE#2. INV ST. = 191.60', INV END = 191.00', S = 0.011 FT/FT.
- INSTALL 55± FEET OF 24" RCP CLASS III PIPE FROM FE#3 TO FE#4. INV ST. = 191.60', INV END = 191.00', S = 0.011 FT/FT.
- CONSTRUCT 3' SWALE. LENGTH = 130'±. SEE DETAIL 11.
- CONSTRUCT 3' SWALE. LENGTH = 84'±. SEE DETAIL 11.
- CONSTRUCT 3' SWALE. LENGTH = 208'±. SEE DETAIL 11.
- CONSTRUCT 3' SWALE. LENGTH = 329'±. SEE DETAIL 11.
- INSTALL 74± FEET OF 24" RCP CLASS III PIPE FROM FE#5 TO FE#6. INV ST. = 194.20', INV END = 193.00', S = 0.023 FT/FT.
- INSTALL 74± FEET OF 24" RCP CLASS III PIPE FROM FE#7 TO FE#8. INV ST. = 194.20', INV END = 193.00', S = 0.023 FT/FT.
- CONSTRUCT 3' SWALE. LENGTH = 452±. SEE DETAIL 11.
- CONSTRUCT 3' SWALE. LENGTH = 200'±. SEE DETAIL 11.



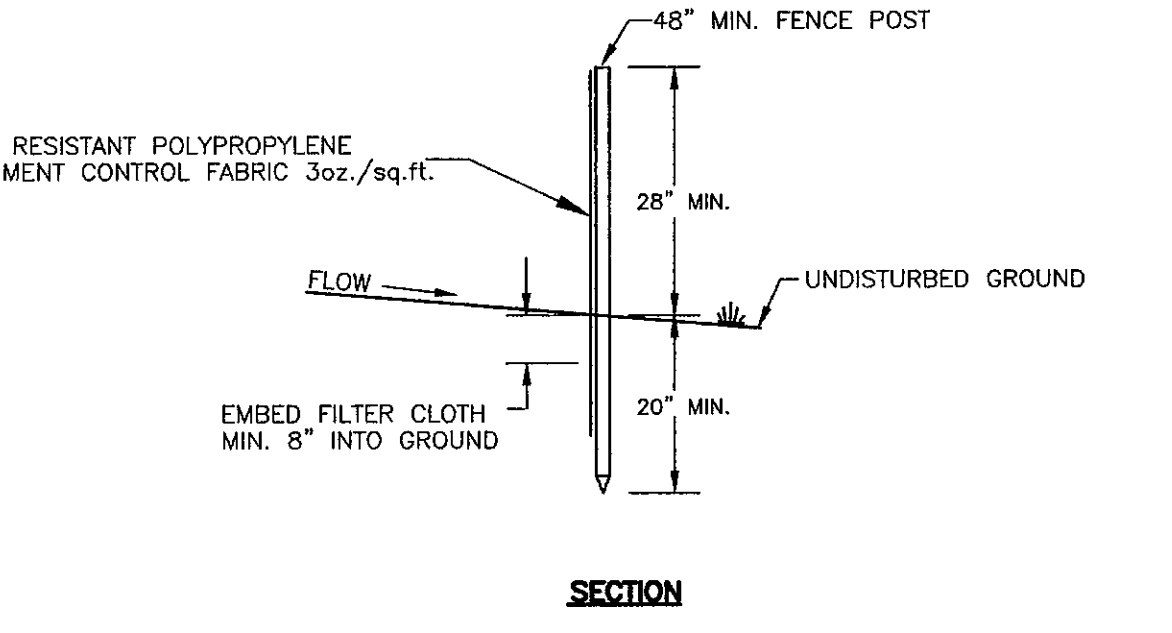
CONSTRUCTION SPECIFICATIONS

- BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
- EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
- BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
- INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED (AFTER EACH RAIN).
- BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
- REMOVE AND PROPERLY DISPOSE OF ALL SEDIMENT PRIOR TO REMOVING HAYBALES.

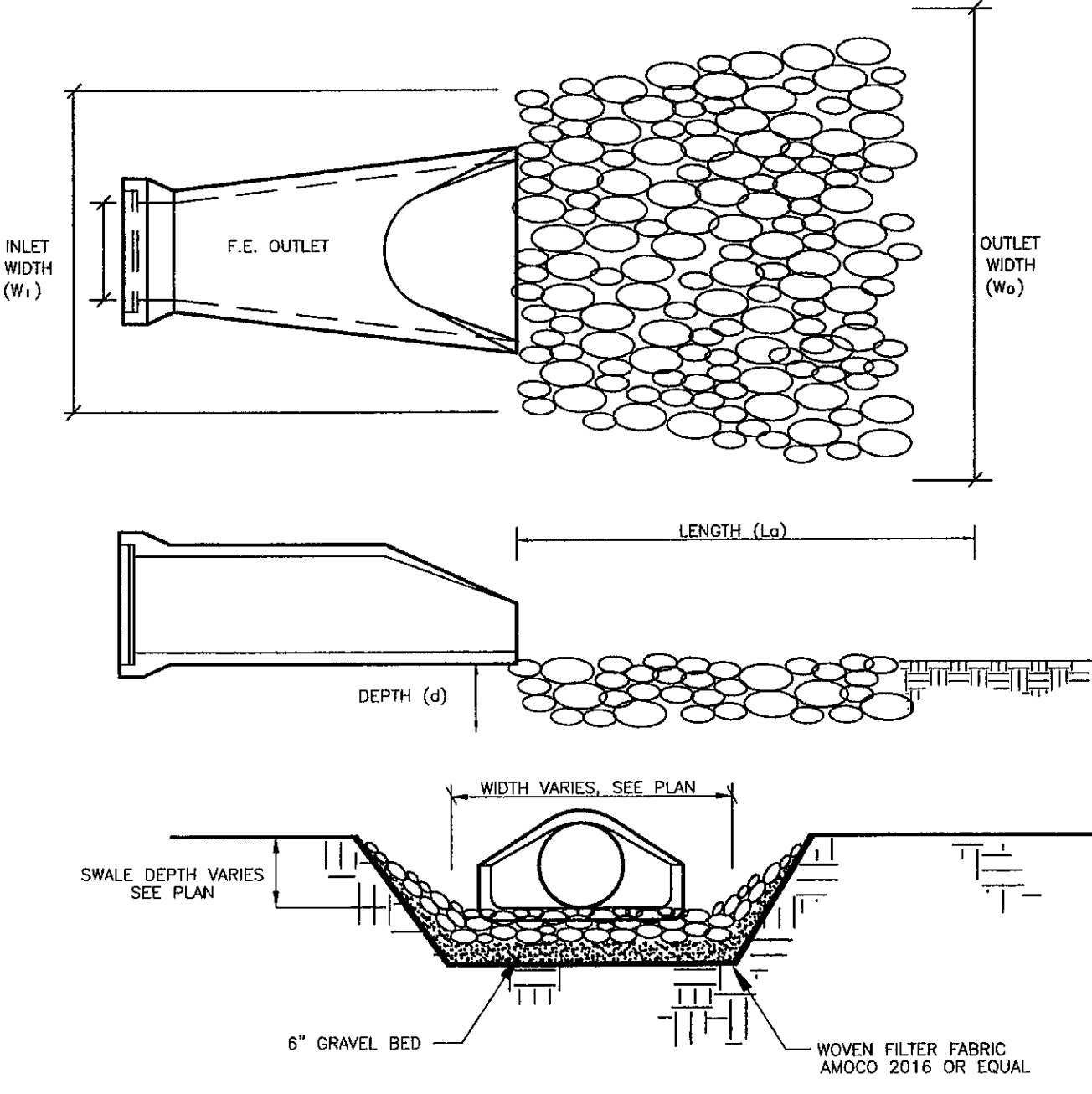
6 HAYBALE BARRIER - TREATMENT SWALE
NOT TO SCALE



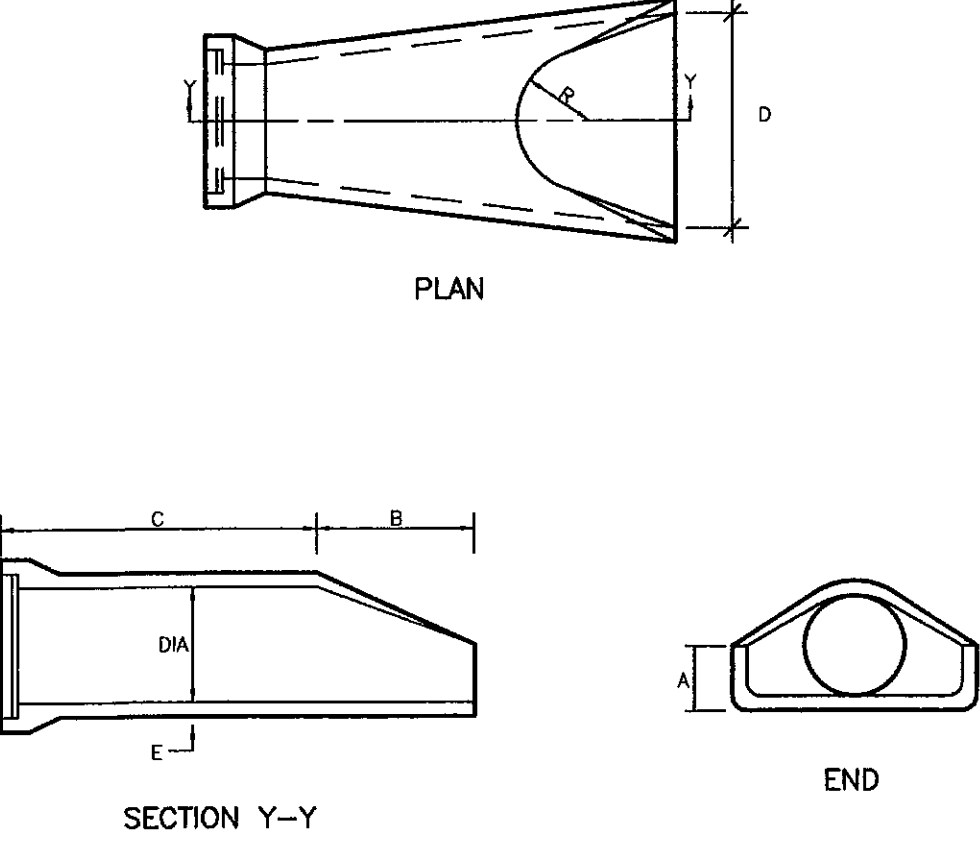
- NOTES**
- THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR BEST MANAGEMENT PRACTICE FOR SILT FENCES, OF THE "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE" PREPARED BY ROCKINGHAM COUNTY CONSERVATION DISTRICT, DATED AUGUST 1992.
 - THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
 - FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 20 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQ.IN.
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BULGES IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.
 - REMOVE BY HAND AND PROPERLY DISPOSE OF ALL SEDIMENT PRIOR TO REMOVING FENCE.



7 SILT FENCE
NOT TO SCALE

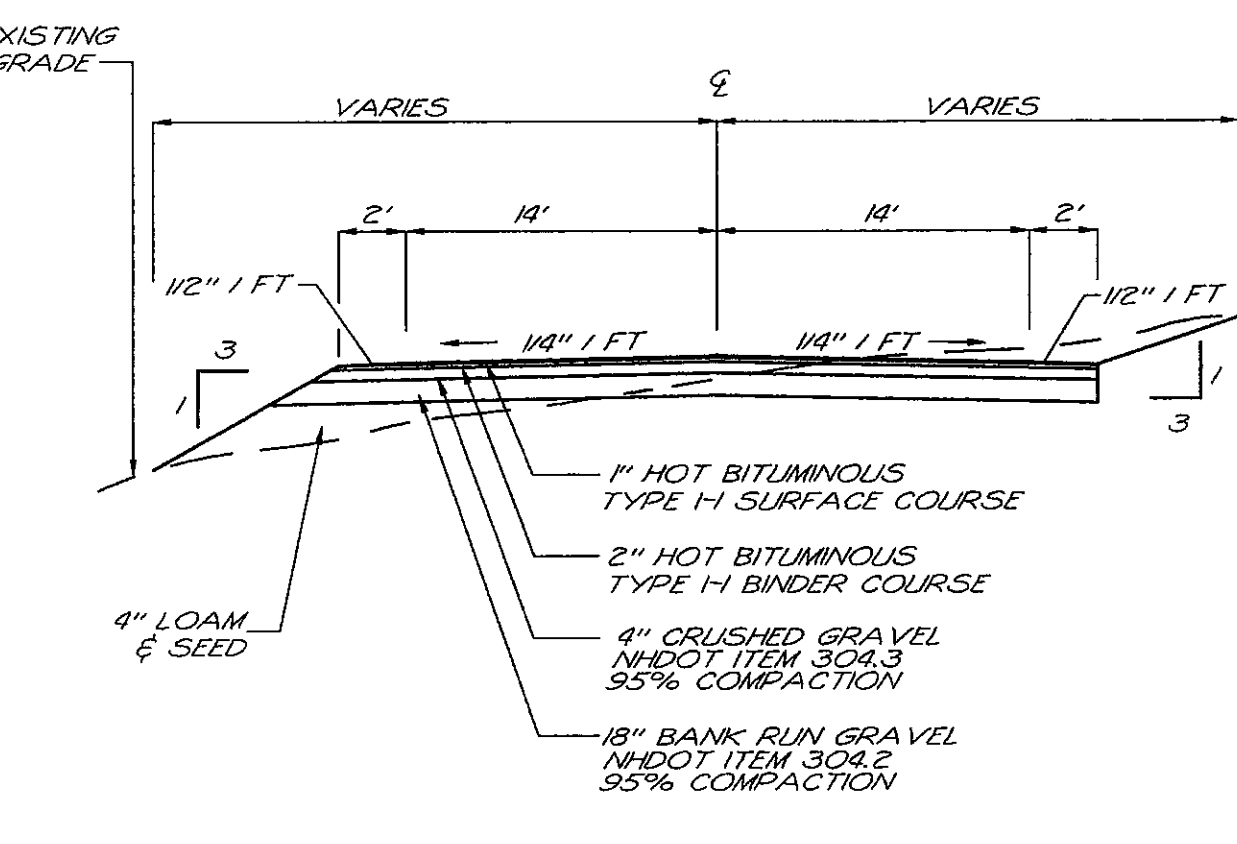


9 OUTFALL RIP RAP
NOT TO SCALE



10 R.C.P. FLARED END SECTION
NOT TO SCALE

DIA	A	B	C	D	E	R
12"	4"	2'-0"	4'-7/8"	2'-0"	2"	9"
15"	6"	2'-3"	3'-10"	2'-6"	2 1/4"	11"
24"	9 1/2"	3' 7 1/2"	2' 6"	4' 0"	3"	14"



11 TYPICAL ROAD CROSS SECTION
NOT TO SCALE

- CRITICAL AREAS**
- Anywhere on the site that existing vegetation is to be removed will require immediate erosion control treatment. Special care should be taken where runoff enters the Heritage Avenue drainage system and enters the existing pond.
- EROSION AND SEDIMENT CONTROL PRACTICES**
- Erosion and sediment control practices will include the use of permanent grass ditches, drainage ditches, detention/retention pond & silt fence. All erosion control practices will be constructed and maintained according to the minimum standards and specifications contained in the "Erosion and Sediment Control Design Handbook for Developing Areas of New Hampshire".
- A. Erosion and Sediment Control Measures**
- The erosion control procedures shall conform to Section 645 of the "Standard Specifications for Road and Bridge Construction" of the NH DOT, and the "Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire".
 - During construction and thereafter, erosion control measures are to be implemented as noted. The smallest practical area of land should be exposed at any one time during development.
 - During grading operations, install hay bale barriers at 50 foot intervals in drainage swales and at drain inlets where shown. Barriers are to be maintained and cleaned until disturbed areas are stabilized.
 - Any disturbed areas which are to be left temporarily, and which will be regraded later during construction shall be machine hay mulched and seeded with rye grass to prevent erosion.
 - Silt fences shall be periodically inspected during the life of the project and after each storm. All damaged silt fences shall be repaired. Sediment deposits shall periodically be removed.
 - Avoid the use of future open spaces (loom and seed areas) wherever possible during the construction. Construction traffic shall use the roadbeds of future roads and parking areas.
 - Topsoil required for the establishment of vegetation shall be stock piled in amounts necessary to complete finished grading of all exposed areas.
 - Areas to be filled shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. Stumps shall be disposed by grinding or fill in an approved facility.
 - All fills shall be placed and compacted to reduce erosion, slippage, settlement, subsidence or other related problems.
 - All fill shall be placed and compacted in layers not to exceed 8 inches in thickness.
 - Frozen material or soft, mucky or highly compressible material shall not be incorporated into fills.
 - Fill material shall not be placed on a frozen foundation subgrade.
 - Disturbed areas shall be seeded immediately following finished grading.
- B. Vegetative Practice**
- All ground areas opened up for construction will be regraded, loamed, seeded and mulched in the shortest practical time. All Temporary and Permanent Seeding must be applied prior to September 15th. Employ temporary erosion and sedimentation control devices as detailed on this plan as necessary until adequate stabilization has been assured.
- A. Temporary Seeding & Hay Mulching**
- All no time shall any disturbed area remain unestablished for longer than 60 days. All areas where construction is not completed within 60 days of the initial disturbance shall receive temporary seeding measures.
 - Fertilizer shall be spread on the top layer of loam and worked into the surface. Fertilizer application rate shall be 300 pounds per acre of 10-10-10 fertilizer.
 - Seed shall be Winter Rye, 112 LBS. per acre.
 - Remove stones and trash that will interfere with seeding the area. Where feasible, till the soil to a depth of about 3 inches to prepare a seedbed and mix fertilizer into the soil. The seedbed should be left in a firm and smooth condition. The last tillage operation should be performed across the slope whenever practical.
 - If seeding between May 15th and August 15th, hay mulch shall be applied immediately after seeding at a rate of 1.5 to 2 tons per acre and shall be held in place using appropriate techniques from the Erosion and Sediment Control Handbook.
 - The surface shall be watered and kept moist with a fine spray as required without washing away the soil, until the grass is well established. Any areas which are not satisfactorily covered with grass shall be reseeded, and all noxious weeds removed.
- B. Permanent Seeding & Hay Mulching**
- All disturbed areas shall be loamed (4") and limed. Lime shall be thoroughly incorporated into the loam layer at a rate of 2 tons per acre.
 - Fertilizer shall be spread on the top layer of loam and worked into the surface. Fertilizer application rate shall be 500 pounds per acre of 10-20-20 fertilizer.
 - Seed shall be 96 lbs. per acre, SCS mixture "c" (40 lbs tall fescue, 40 lbs creeping red fescue and 16 lbs birds foot trefoil = 96 lbs total) immediately before seeding, the soil shall be lightly raked. One half the seed shall be sown in one direction and the other half at right angles to the original direction. It shall be lightly raked in to the soil to a depth not over 1/4 inch and rolled with hand roller weighing not over 100 pounds per linear foot to width.
 - Hay mulch shall be applied immediately after seeding at a rate of 1.5 to 2 tons per acre and shall be held in place using appropriate techniques from the Erosion and Sediment Control Handbook. The surface shall be watered and kept moist with a fine spray as required, without washing away the soil, until the grass is well established. Any areas which are not satisfactorily covered with grass shall be reseeded, and all noxious weeds removed.

- CONSTRUCTION SEQUENCE**
- Do not begin construction until all local, state and federal permits have been applied for and received.
 - Install silt fences and hay bale barriers necessary to control erosion and prevent sediment contamination of wetlands prior to any earth moving activities.
 - Cut and remove trees, shrubs, saplings, brush, vines and other debris and rubbish as required for swale construction.
 - Construct swales.
 - Cut and remove trees, shrubs, saplings, brush, vines and other debris and rubbish as required for remaining site.
 - Loam and seed disturbed areas in accordance with vegetative practice and general construction notes. Cut and fill slopes shall be seeded immediately after their construction.
 - Drainage ditches and swales shall be stabilized prior to directing runoff to them.
 - All soils finish graded must be stabilized within 72 hours of disturbance.
 - Maintain disturbed areas as necessary.
- MAINTENANCE**
- During the period of construction and/or until long term vegetation is established:
- Seeded areas will be fertilized and reseeded as necessary to insure vegetative establishment.
 - The ditches will be checked after each significant rainfall and cleaned of sediment as needed to retain flow capacity.
 - The ditches will be checked weekly and repaired when necessary until adequate vegetation is established.
 - The silt fence barriers will be checked regularly. Necessary repairs will be made to correct undermining or deterioration of the structures.

12 EROSION AND SEDIMENT CONTROL NOTES

TRITECH
ENGINEERING CORPORATION

PROFESSIONAL ENGINEER

48N DOWER POINT OFFICE PARK
DOWER NEW HAMPSHIRE 03880
TELEPHONE 603-742-1807
FAX 603-742-1850

REVISIONS

NO.	DATE	DESCRIPTION

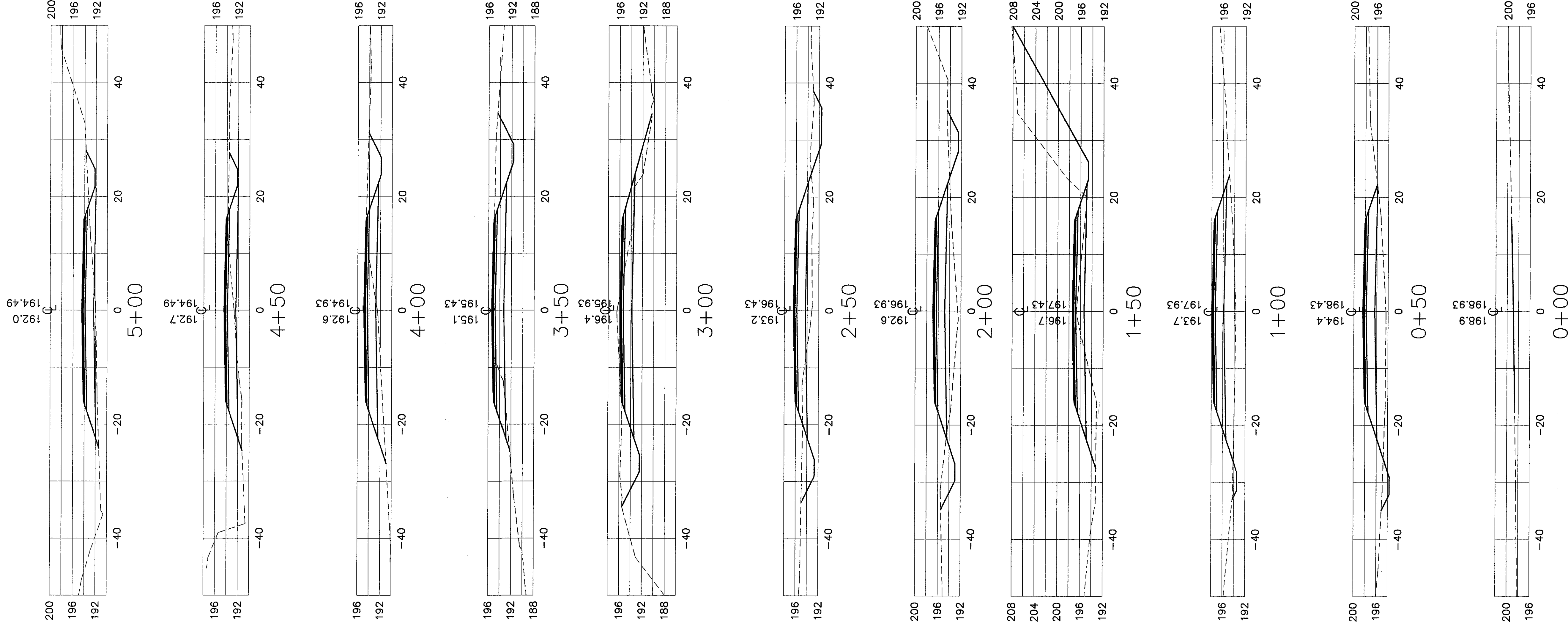
MARCH 12 2004

CONSTRUCTION DETAILS

THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE
SOMERSWORTH, NEW HAMPSHIRE

MARCH 12, 2004
JOB No. 04110

SHEET NO. **C-4**

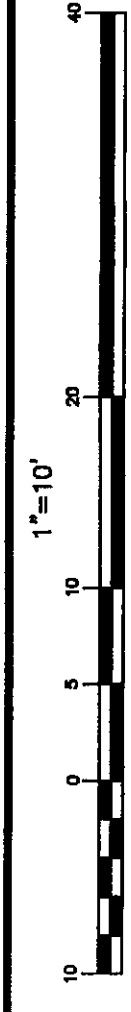


PRELIMINARY

SHEET NO.

XS-1

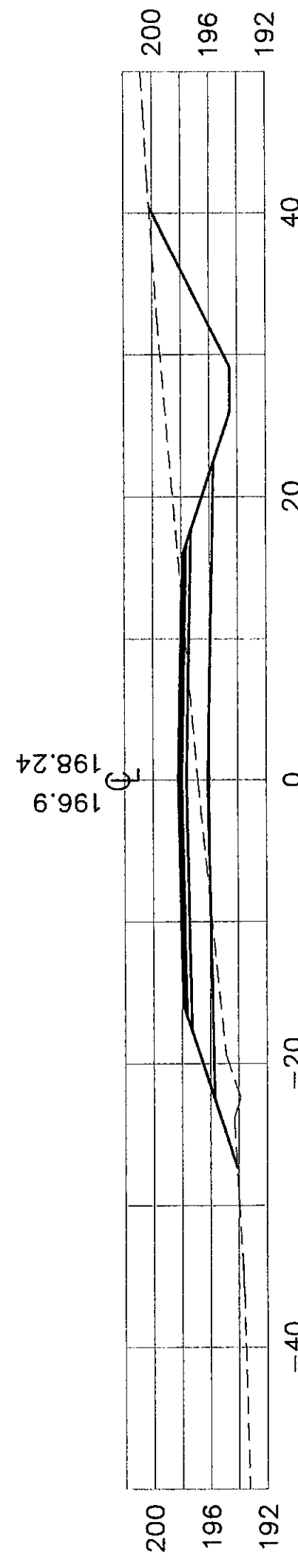
CROSS SECTIONS
THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE
 SOMERSWORTH, NEW HAMPSHIRE
 MARCH 12, 2004 JOB No. 04110
 SCALE: 1" = 10'



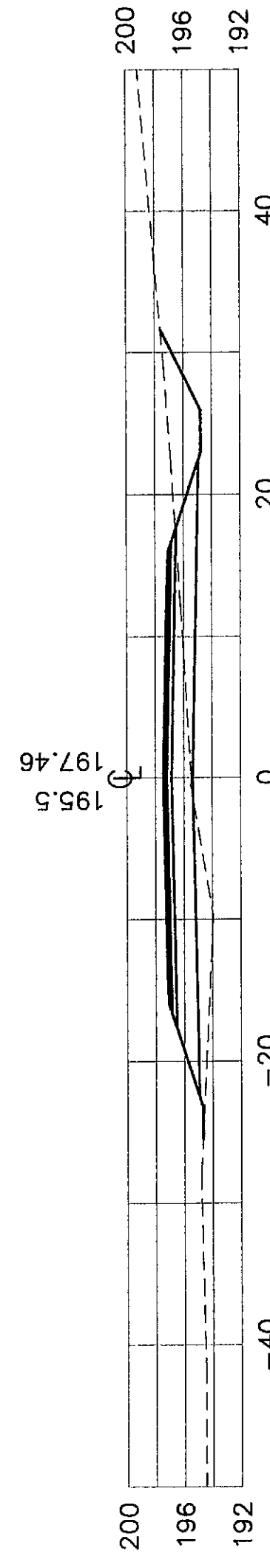
REVISIONS	DESCRIPTION:
DATE:	

TRITECH
ENGINEERING CORPORATION

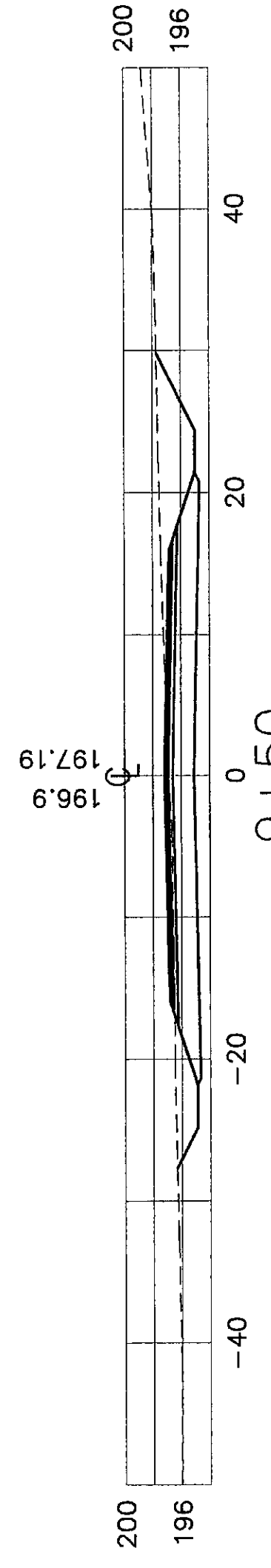
48N DOVER POINT OFFICE PARK
 DOVER NEW HAMPSHIRE 03800
 TEL: 603 609 7416 8407
 FAX: 603 742 1580



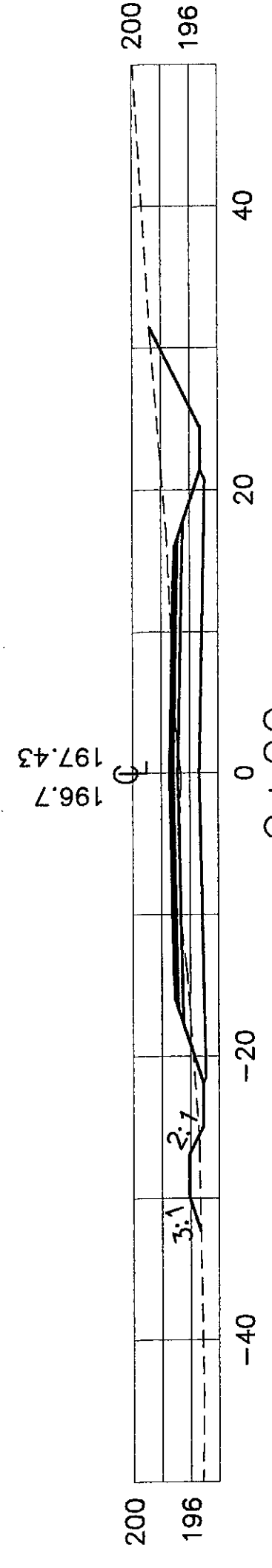
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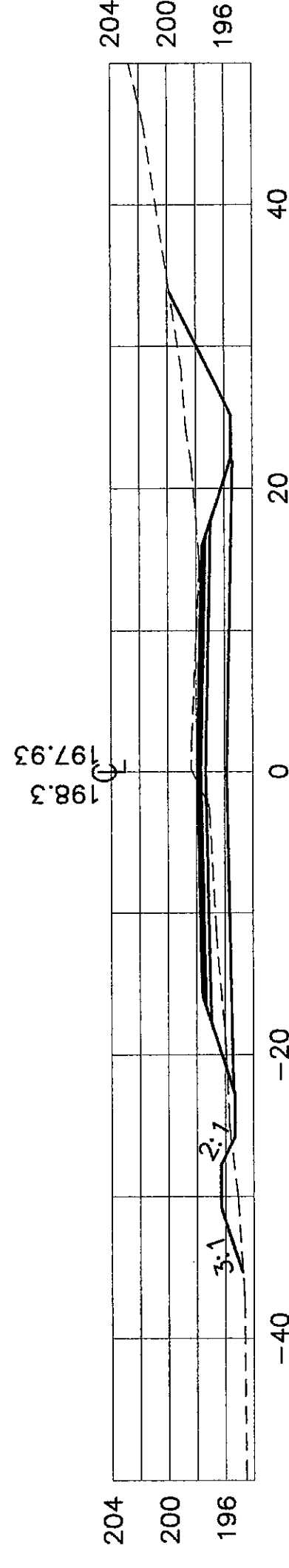
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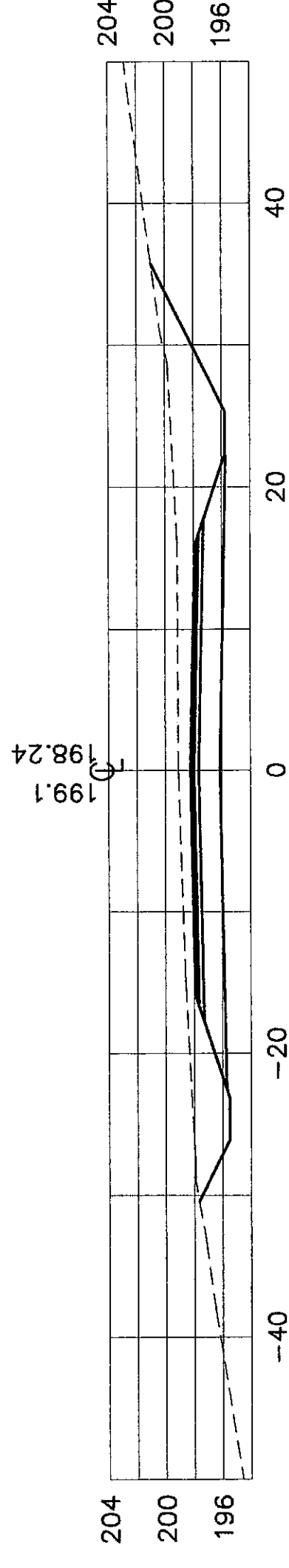
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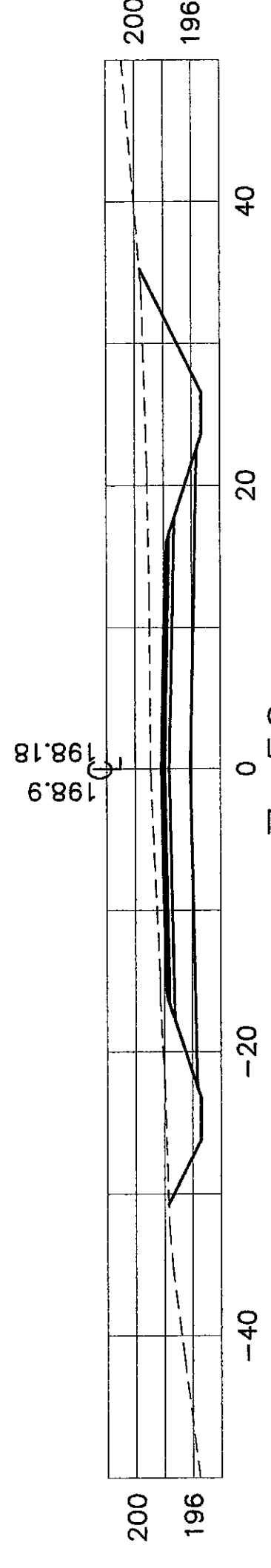
9+00



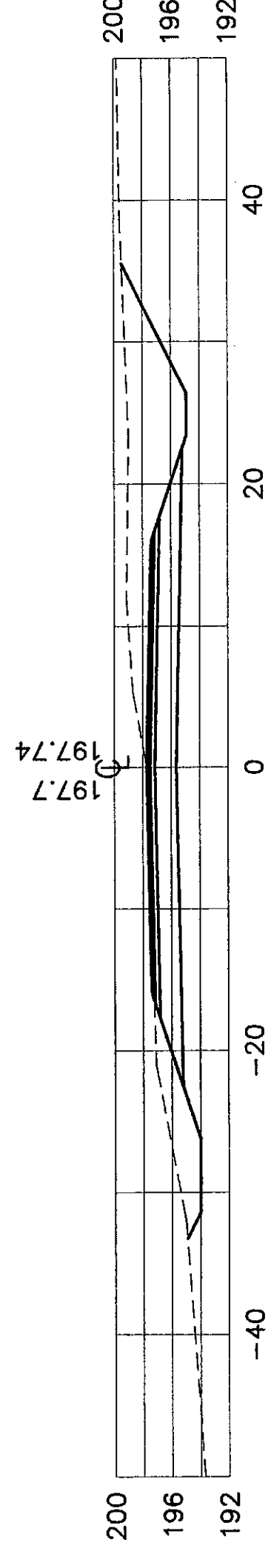
8+50



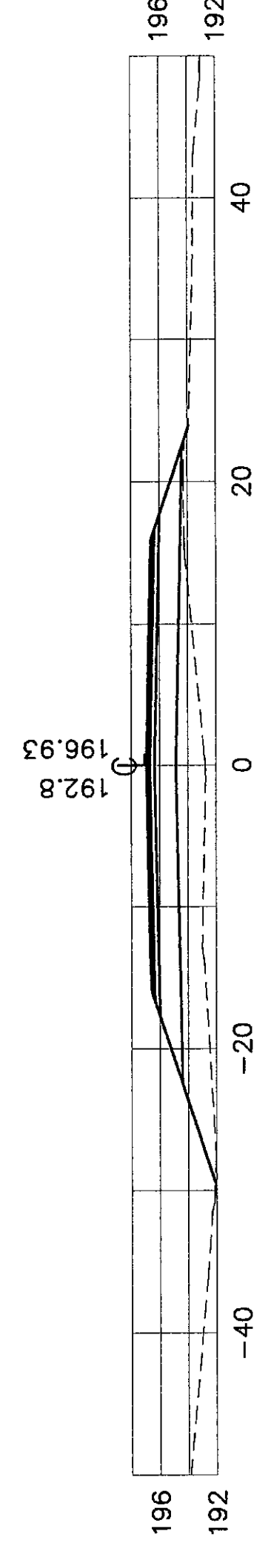
8+00



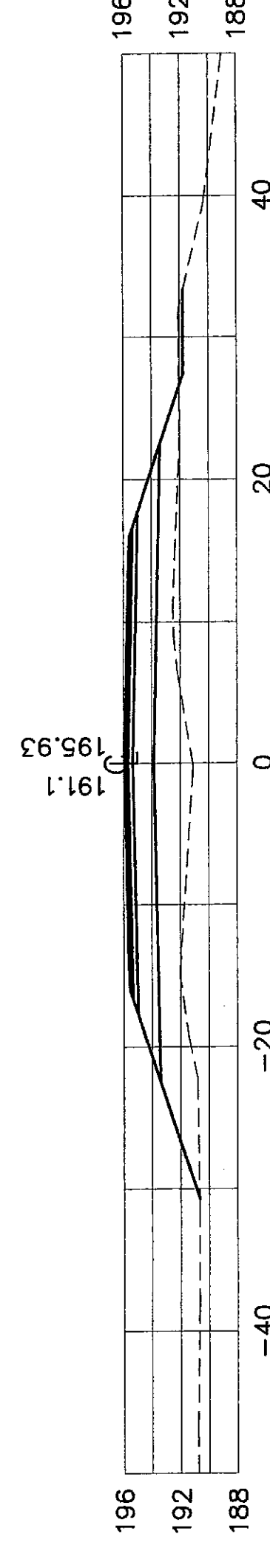
7+50



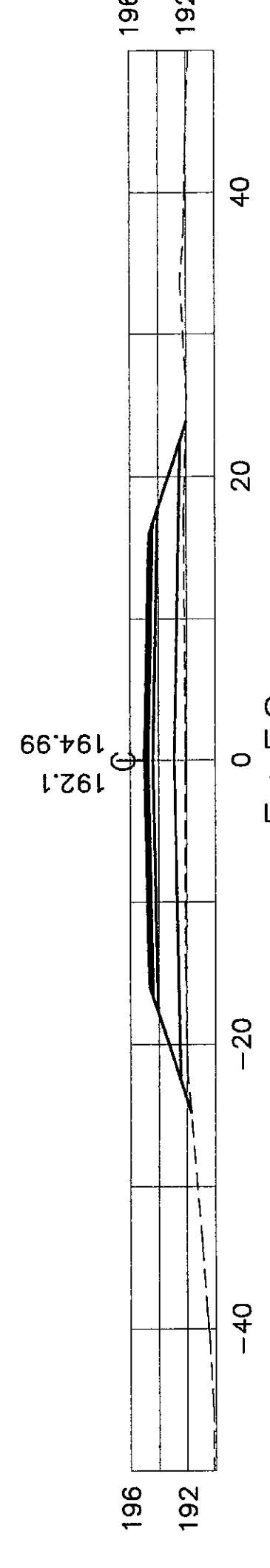
7+00



6+50



6+00



5+50

PRELIMINARY

SHEET NO.

X-6-2

CROSS SECTIONS
THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE
 SOMERSWORTH, NEW HAMPSHIRE
 MARCH 12, 2004
 JOB No. 04110
 SCALE: 1" = 10'



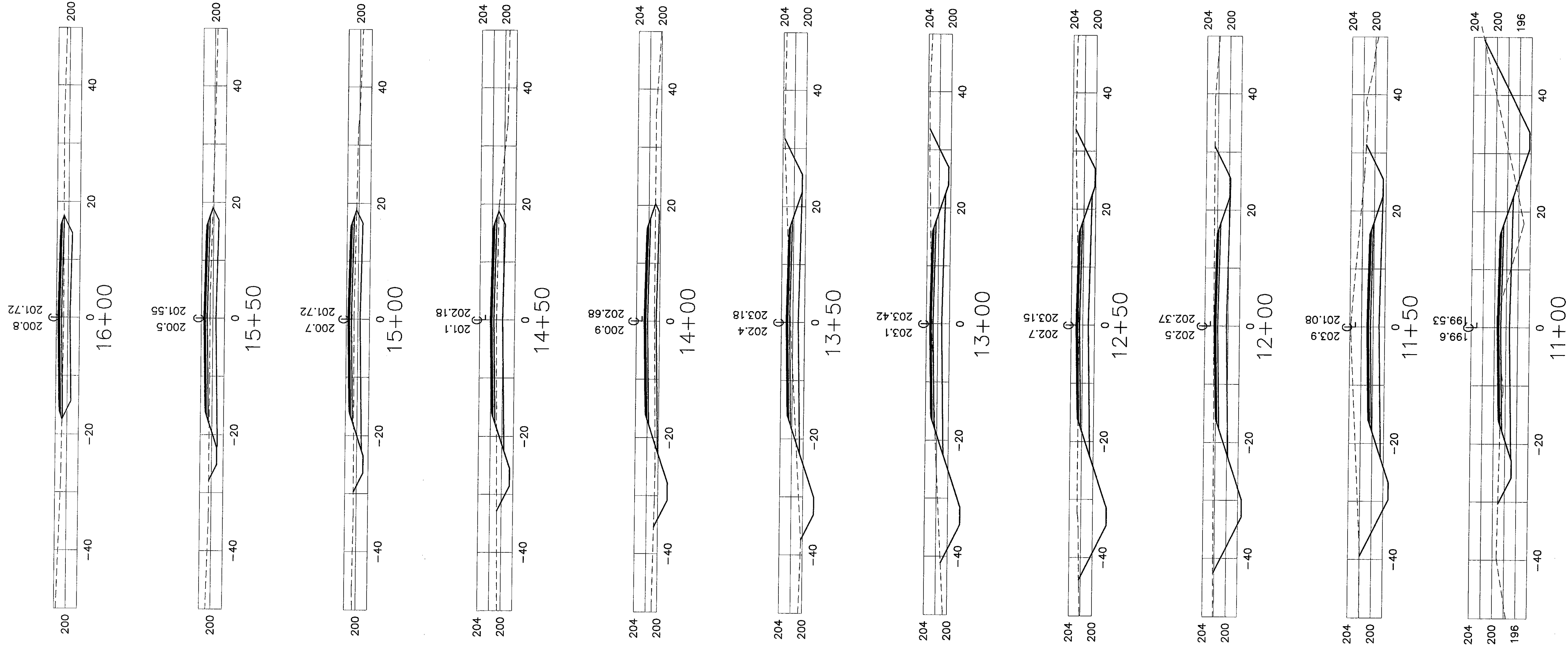
REVISIONS
 DATE: DESCRIPTION:

REVISIONS	DATE	DESCRIPTION

TRITECH

ENGINEERING CORPORATION

46N DOVER POINT OFFICE PARK
 DOVER NEW HAMPSHIRE 03801
 TELEPHONE 603 742 8107
 FAX 603 742 8130



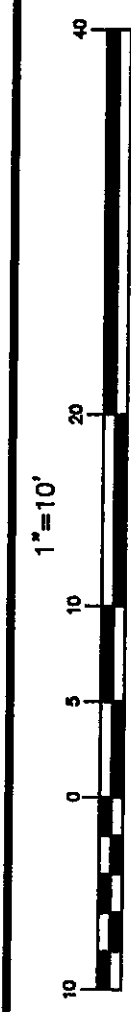
PRELIMINARY

SHEET NO.

X6-3

CROSS SECTIONS
THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE
 SOMERSWORTH, NEW HAMPSHIRE

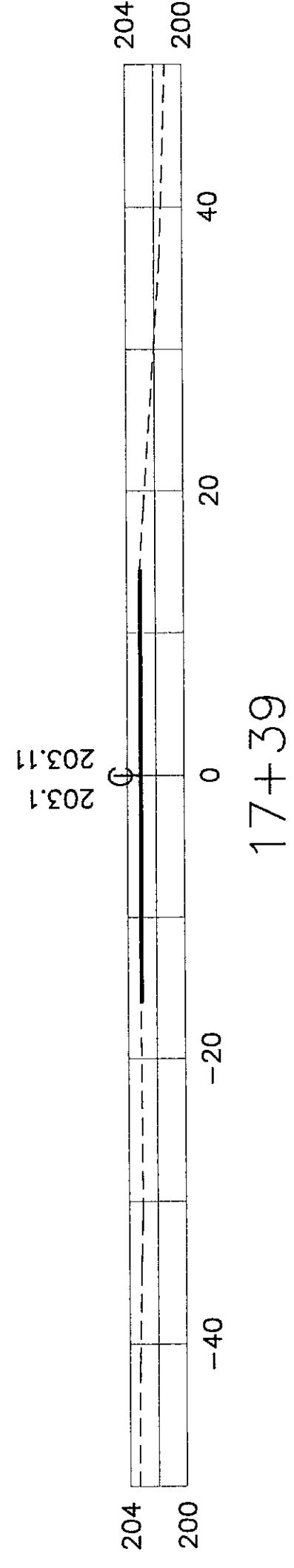
MARCH 12, 2004
 JOB No. 04110
 SCALE: 1" = 10'



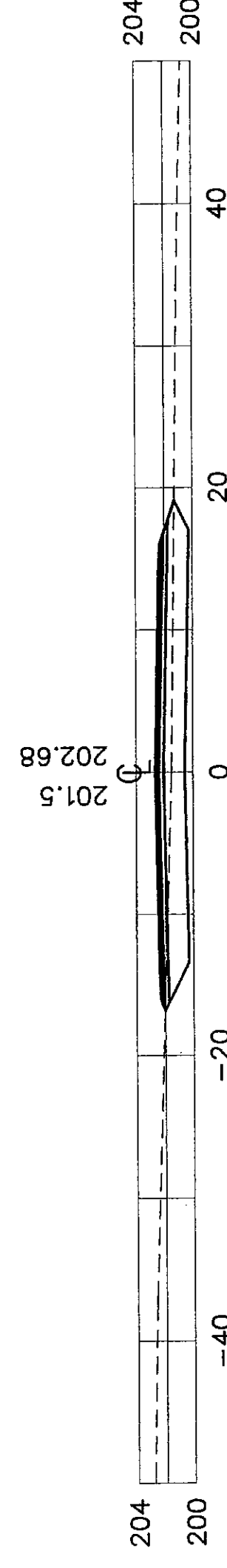
REVISIONS DATE:	DESCRIPTION:

TRITECH
 ENGINEERING CORPORATION

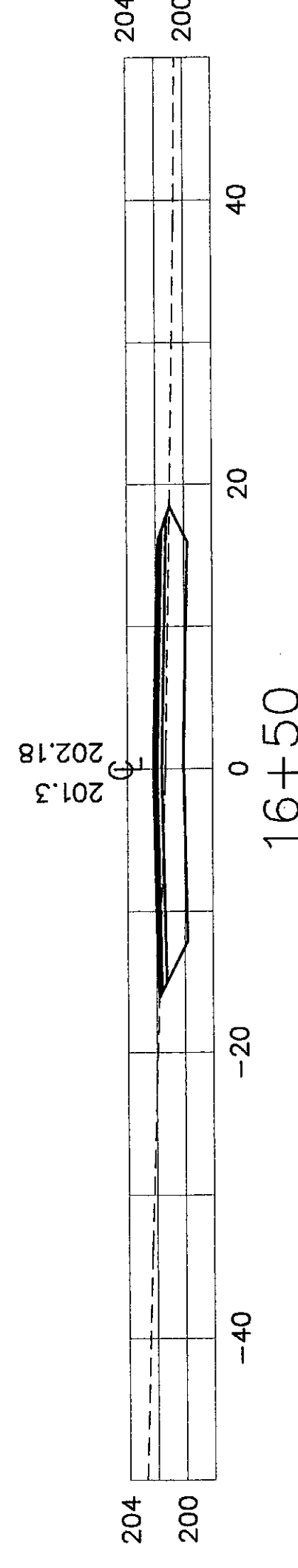
48N DOVER POINT OFFICE PARK
 DOVER, NEW HAMPSHIRE 03820
 TELEPHONE 603 742 8107
 FAX 603 742 8630



17+39



17+00



16+50

PRELIMINARY

SHEET NO.

XS-4

CROSS SECTIONS
THE CITY OF SOMERSWORTH
COMMERCIAL DRIVE

SOMERSWORTH, NEW HAMPSHIRE

MARCH 12, 2004

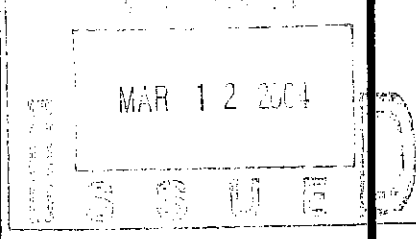
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