CITY OF DOVER, NEW HAMPSHIRE
Tolend Road Reconstruction

Project Length = 3.11 mi(Base Bid)
0.62 mi (Bid Alt A)
3.73 mi (Total)

Construction Plans
September 2012
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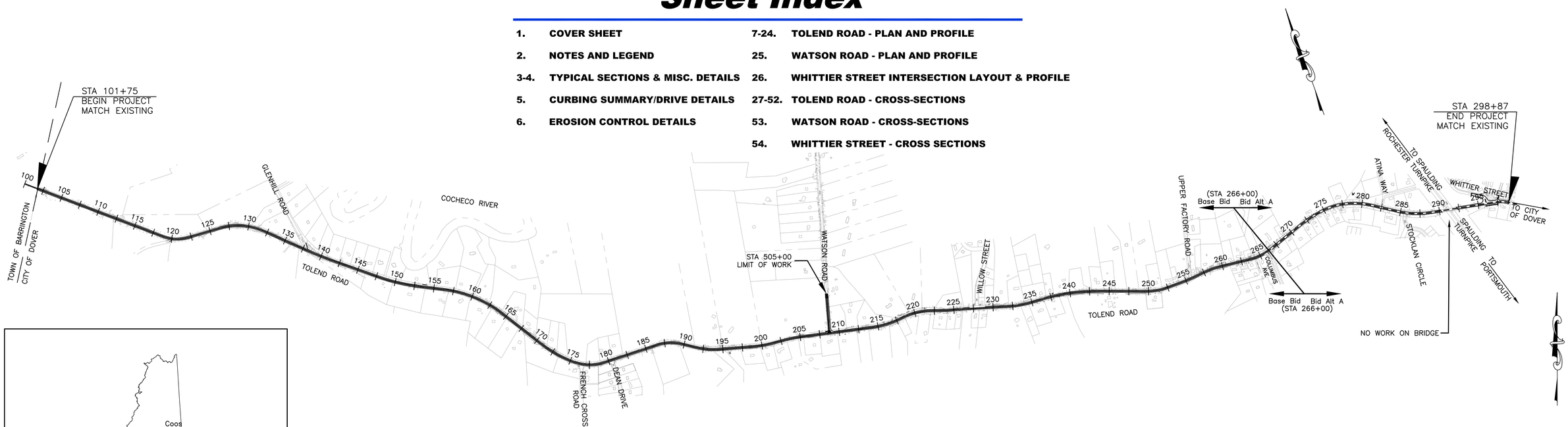

GRAPHIC SCALE
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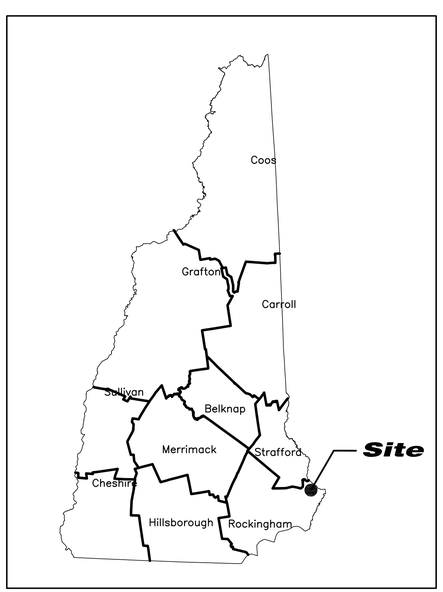
(in feet)
1" = 600'



Locus Plan

STATE OF NEW HAMPSHIRE
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9-18-12

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Project Location

NOTES:

1) TOPOGRAPHIC SURVEY COMPLETED BY DOUCET SURVEY, INC. OF NEWMARKET, NH IN FEBRUARY 2010. HORIZONTAL DATUM BASED ON NAD27 NH STATE PLANE COORDINATES. VERTICAL DATUM BASED ON NGVD29.

2) PROPERTY BOUNDARIES SHOWN ARE APPROXIMATE AND BASED ON DOVER TAX MAPS AND FIELD LOCATED BOUNDS.

3) JURISDICTIONAL WETLANDS WERE DELINEATED BY NHSC, INC., A GZA COMPANY, OF NEWMARKET, NH IN JANUARY 2010 IN ACCORDANCE WITH 1987 CORP OF ENGINEERS WETLAND DELINEATION MANUAL, TECHNICAL REPORT Y-87-1. FLAGS WERE SURVEY LOCATED BY DOUCET SURVEY.

4) UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON SURFACE EVIDENCE AND PAINT MARKS FOUND.

5) CONTRACTOR SHALL PROTECT PRIVATE PROPERTY AND SHALL TAKE ALL NECESSARY MEASURES AND PRECAUTIONS TO AVOID DAMAGE TO EXISTING TREES, SHRUBS, LAWNS, PLANTINGS, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS/REPLACEMENT OF ALL DAMAGED ITEMS.

6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL METHODS AND MATERIALS FOR CONSTRUCTION OF THIS PROJECT, INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA REGULATIONS. THE OWNER AND ENGINEER WILL PERIODICALLY REVIEW CONSTRUCTION FOR COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. SUCH REVIEW DOES NOT IMPLY APPROVAL OF METHODS OF CONSTRUCTION.

7) THE CONTRACTOR SHALL NOTIFY DIG-SAFE AT 1-800-225-4977 AT LEAST 72 HOURS PRIOR TO BEGINNING WORK TO CONFIRM THE LOCATION OF ALL UNDERGROUND UTILITIES.

8) THE CONTRACTOR SHALL EXERCISE CAUTION AND COMPLY WITH ALL APPLICABLE TRAFFIC LAWS AND REGULATIONS IN THE EXECUTION OF WORK. THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH THE TOWN'S POLICE AND FIRE DEPARTMENTS TO ENSURE ACCESS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL DRIVEWAYS WITHIN THE PROJECT AREA THROUGHOUT CONSTRUCTION AND ENSURE EMERGENCY EQUIPMENT HAS ACCESS TO ALL RESIDENCES DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN BARRICADES, WARNING SIGNS, DELINEATORS, STRIPING, FLAGGERS, AND PILOT CARS IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE SPECIFICATIONS. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF MAINTAINING THE SECTION OF ROAD UNDERGOING IMPROVEMENT INCLUDING ALL TEMPORARY APPROACHES OR CROSSINGS AND INTERSECTIONS WITH TRAILS, ROADS, STREETS, BUSINESSES, PARKING LOTS, RESIDENCES, GARAGES, FARMS, AND OTHER FEATURES AS MAY BE NECESSARY. THE CONTRACTOR SHALL USE ALL NECESSARY MEANS TO CONTROL DUST DURING THE CONSTRUCTION PERIOD INCLUDING THE USE OF CALCIUM CHLORIDE.

9) CONTRACTOR TO PERFORM ALL WORK WITHIN THE RIGHT-OF-WAY, UNLESS OTHERWISE SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER.

10) CONTRACTOR SHALL NOT DISTURB EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.

11) CLEARING LIMIT SET AT FIVE FEET BEYOND SLOPE LIMIT EXCEPT IN WETLAND AREAS WHERE THE CLEARING LIMIT SHALL BE SET AT THE SLOPE LIMIT OR AS OTHERWISE NOTED ON THE PLANS. IF NO CLEARING LIMITS ARE INDICATED, THE LIMITS SHALL BE SET AT THE SLOPE LIMIT.

12) PAVED DRIVEWAYS SHALL BE CONSTRUCTED WITH 2.5" (NOMINAL DEPTH) HBP AND 9" CRUSHED GRAVEL (NHDOT 304.3). GRAVEL DRIVES SHALL BE CONSTRUCTED WITH 12" CRUSHED GRAVEL (NHDOT 304.3) TO THE PROPOSED GRADE. DRIVEWAYS MAY BE SHIMMED TO THE PROPOSED GRADE SHOWN ON THE PLANS AS APPROVED BY THE ENGINEER.

EROSION CONTROL NOTES:

1) PRIOR TO CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NECESSARY. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION. WHEN LAND IS EXPOSED DURING CONSTRUCTION, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. ANY DISTURBED AREAS WHICH ARE TO BE LEFT UN-STABILIZED LONGER THAN TWO WEEKS SHALL BE TEMPORARILY SEEDED AND MULCHED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL REMEDIAL WORK REQUIRED TO REPAIR AREAS WHICH ARE DAMAGED BY EROSION.

2) HAY BALE BARRIERS SHALL BE INSTALLED AND MAINTAINED AT DRAIN INLETS AND OUTLETS AND ALONG LIMITS OF WORK WHERE NECESSARY. HAYBALE BARRIERS SHALL NOT BE PLACED CLOSER THAN 25-FEET TO DRAIN INLETS AND OUTLETS. ADDITIONAL HAYBALES SHALL BE ADDED AS REQUIRED BY THE ENGINEER. HAY BALES WILL BE STAKED AND MAINTAINED PRIOR TO AND DURING CONSTRUCTION UNTIL DISTURBED AREAS HAVE A HEALTHY STAND OF GRASS.

3) ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TO TAKE PLACE SHALL BE TRACKED, SEEDED AND MULCHED. ALL SEED, LIME AND FERTILIZER PROGRAMS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS.

4) ANY DISTURBED AREAS WHICH ARE TO BE LEFT LONGER THAN TWO WEEKS DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED AT THE RATE OF 2 TONS PER ACRE.

5) CONSTRUCTION TRAFFIC SHALL TRAVEL THE ROADBEDS OF EXISTING ROADS.

6) SILT FENCE SHALL BE INSTALLED AND MAINTAINED WHERE NECESSARY AND ADDITIONAL SILT FENCE ADDED AS REQUIRED BY THE ENGINEER PRIOR TO ANY ON-SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. GENERALLY, SILT FENCE SHALL BE INSTALLED TO PREVENT MIGRATION OF THE SEDIMENT FROM THE WORK AREA. IT SHOULD BE MAINTAINED DURING AND AFTER CONSTRUCTION TO REMOVE SEDIMENT FROM NATURAL DRAINAGE WAYS. THE SILT FENCE IS TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.

7) EROSION CONTROL DEVICES DESCRIBED REPRESENT MINIMUM MEASURES. THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PREVENT TRANSPORT OF SEDIMENT BEYOND THE WORK AREA.

8) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND ACCUMULATED SEDIMENT DISPOSED OF IN A LOCATION DESIGNATED BY THE OWNER.

9) BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS AND SHALL BE DRY.

10) SILT FENCES SHALL BE MINIMUM OF 36 INCHES HIGH WITH THE BOTTOM OF THE CLOTH KEYING INTO THE GROUND. POSTS SHALL BE OF WOOD OR STEEL.

11) THE EROSION CONTROL DEVICES DESCRIBED AND AS SPECIFIED IN THE SPECIFICATIONS REPRESENT THE MINIMUM REQUIRED FOR EROSION CONTROL. THE CONTRACTOR SHALL ADD TO THESE DEVICES ANY OTHER MEASURES AS REQUIRED OR AS DIRECTED BY THE ENGINEER TO EFFECTIVELY PREVENT MIGRATION OF SEDIMENT FROM THE WORK AREA AND PROTECT WETLAND AREAS, WATERWAYS, EXISTING AND PROPOSED DRAINAGE FEATURES, SLOPES, LAWNS, AND PLANTS ADJACENT TO THE WORK AREA.

12) SEEDING OF ALL SLOPES AND DISTURBED AREAS TO BE CONDUCTED IN ACCORDANCE WITH THE SPECIFICATIONS.

13) LIME TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

14) FERTILIZER TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

15) ALL DRAINAGE SWALES AND PONDS SHALL BE STABILIZED WITH VEGETATION OR STONE FILL AS SPECIFIED PRIOR TO DIRECTING RUNOFF TO THEM.

SIGNAGE NOTES:

1) REFER TO THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT-FHWA FOR EXACT DETAILS OF BORDERS, ETC.

2) REFER TO THE STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AS PUBLISHED BY THE NHDOT FOR EXACT DETAILS OF PERMANENT SIGNING STANDARDS.

3) THE MINIMUM SIGN HEIGHTS SHALL BE SEVEN FEET MINIMUM AND IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD.

4) ALL EXISTING SINGS THAT ARE REMOVED ARE TO BE STORED BY THE CONTRACTOR AND RESET AS DIRECTED. ANY EXISTING SIGNS TO BE RESET THAT ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS ARE TO BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.

5) ALL TYPE C TRAFFIC SIGNS SHALL INCLUDE STEEL 2" SQUARE POST MOUNTS UNLESS OTHERWISE NOTED ON PLANS.

6) SIGNS SHALL NOT BE MOUNTED ON LIGHT POLES.

PAVEMENT MARKING NOTES:

PLACEMENT AND COLOR OF PAVEMENT MARKING LINES, SYMBOLS AND WORDS SHALL CONFORM TO THE LATEST EDITION OF MUTCD, SECTION 632 OF NHDOT STANDARD SPECIFICATION BOOK CONTRACT SUPPLEMENTAL SPECIFICATIONS, THE STATE OF NEW HAMPSHIRE PAVEMENT MARKING STANDARD DETAIL SHEETS, AND STANDARD PLAN SHEETS.

RETROREFLECTIVE PAINT PAVEMENT MARKING KEY:

{{SSL()={SIZE IN INCHES} SINGLE SOLID LINE (COLOR)
{{DSL()={SIZE IN INCHES} DOUBLE SOLID LINE (COLOR)
{{SSBL()={SIZE IN INCHES} SINGLE SOLID W/BROKEN LINE (COLOR)
{{SBL()={SIZE IN INCHES} SINGLE BROKEN LINE (COLOR)
{{DBL()={SIZE IN INCHES} DOUBLE BROKEN LINE (COLOR)
(W) = WHITE
(Y) = YELLOW

RETROREFLECTIVE PAINT PAVEMENT MARKING KEY:

THE FOLLOWING FINAL PAVEMENT MARKINGS SHALL BE RETROFLECTIVE PAINT UNLESS OTHERWISE DIRECTED.

STANDARD SYMBOLS AND WORDS
1. - SYMBOLS ONLY - WORDS
2. STOP BARS = 12" SSL(W)
3. CROSSWALKS = 12" SSL(W)

LEGEND:

- UTILITY POLE & GUY WIRE
- UTILITY POLE W/ LIGHT
- GUY POLE
- LIGHT POLE
- MAILBOX
- GRANITE POST
- SIGN (TWO POSTS)
- SIGN
- BARBED WIRE FOUND ON GROUND/IN TREE
- METAL FENCE POST
- FIRE HYDRANT
- WATER GATE VALVE
- WATER SHUTOFF VALVE
- CATCH BASIN (ROUND)
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- BOULDER
- JURISDICTIONAL WETLAND SYMBOL
- TREE STUMP
- SHRUB/BUSH
- CONIFEROUS TREE
- DECIDUOUS TREE
- CONCRETE
- RIP RAP
- VERNAL POOL
- LANDSCAPED AREA
- LANDSCAPED AREA
- LEDGE OUTCROP
- x117.3' SPOT GRADE
- DRAINAGE FLOW DIRECTION ARROW

- B-6 BORING
- W WELL
- MW MONITORING WELL
- TYP. TYPICAL
- RET. RETAINING
- FF FINISHED FLOOR
- EP EDGE OF PAVEMENT
- SWL SINGLE WHITE LINE
- DYL DOUBLE YELLOW LINE
- CONC. CONCRETE
- VCC VERTICAL CONCRETE CURB
- VGC VERTICAL GRANITE CURB
- SGC SLOPED GRANITE CURB
- CC CONCRETE CURB
- BB BITUMINOUS BERM
- OHW OVERHEAD WIRES
- S SEWER LINE
- D DRAIN LINE
- G GAS LINE
- W WATER LINE
- U UNDERGROUND UTILITY LINE
- EDGE OF GRAVEL
- TREE LINE
- STONE WALL
- GUARDRAIL
- 100 CONTOUR LINE
- EDGE OF JURISDICTIONAL WETLAND (SEE NOTE #2)
- STOCKADE FENCE
- WIRE FENCE (AS NOTED)
- CHAINLINK FENCE
- SPLIT RAIL FENCE
- PICKET FENCE
- TBM "A" TEMPORARY BENCHMARK IDENTIFIER (SEE TABLE)

CONTROL POINT TABLE			
NUMBER	NORTHING	EASTING	DESCRIPTION
1	260923.75	691212.71	5/8" RE-BAR W/ CONTROL CAP
2	260659.45	691156.60	MAG NAIL SET IN PAVEMENT
3	257280.73	697220.73	5/8" RE-BAR W/ CONTROL CAP
4	257571.57	697284.30	1/2" RE-BAR UP 3" W/ CAP, LLS #661
5	256075.17	705582.98	5/8" RE-BAR W/ CONTROL CAP
6	255957.27	705674.82	5/8" RE-BAR W/ CONTROL CAP
7	262045.91	699373.25	5/8" RE-BAR W/ CONTROL CAP
8	262366.30	699125.27	5/8" RE-BAR W/ CONTROL CAP

CONSTRUCTION SEQUENCE:

1) ESTABLISH HORIZONTAL AND VERTICAL CONTROL.
2) INSTALL PERMANENT TRAFFIC CONTROL SIGNS.
3) INSTALL EROSION AND SEDIMENTATION CONTROL DEVICES.
4) CLEAR AND GRUB.
5) REMOVE EXISTING PAVEMENT AS NECESSARY.
6) RAISE AND/OR RECONSTRUCT THE ROAD.
7) INSTALL CULVERTS AND CLOSED DRAINAGE SYSTEM.
8) INSTALL ROAD BASE MATERIALS.
9) INSTALL CURBING.
10) CONSTRUCT SIDEWALK.
11) CONSTRUCT SLOPES AND DRAINAGE SWALES.
12) INSTALL PAVEMENT.
13) INSTALL PAVEMENT MARKINGS.
14) REMOVE EROSION AND SEDIMENT CONTROL DEVICES.

DRAINAGE STRUCTURE TABLE

CB #1067
RIM ELEV.=146.7'
(1) INV. 12" PVC=144.6'
(2) INV. 12" PVC=144.6'

DMH #2562
RIM ELEV.=153.3'
(1) INV. 12" PVC=149.1'
(2) INV. 12" PVC=148.9'

DMH #2588
RIM ELEV.=153.5'
(1) INV. 12" PVC=148.2'
(2) INV. 12" PVC=148.2'

DMH #2709
RIM ELEV.=151.8'
(1) INV. 12" PVC=146.9'
(2) INV. 12" PVC 146.8'

CB #2797
RIM ELEV.=147.3'
(1) INV. 12" PVC=144.0'
(2) PIPE NOT VISIBLE

DMH #2907
RIM ELEV.=149.6'
(1) INV. 12" PVC=144.8'
(2) INV. 12" PVC=144.7'

CB #2966
RIM ELEV.=144.7'
(1) INV. 12" CMP=140.1'
(2) INV. 12" CMP=141.0'
(3) INV. 24" CMP=140.9'

CB #5911
RIM ELEV.=118.8'
INV. 12" CMP=114.8'

DMH #5948
RIM ELEV.=116.2'
(1) INV. 12" PVC=108.8'
(2) INV. 24" RCP=109.1'
(3) INV. 15" CMP=109.0'

CB #11500
RIM ELEV.=96.9'
(1) INV. 12" CPP=91.2'
(2) INV. 12" CPP=91.0'

CB #15546
RIM ELEV.=97.3'
INV. 12" CPP=92.4'

CB #15812
RIM ELEV.=117.3'
INV. 15" RCP=112.0'

CB #15816
RIM ELEV.=117.7'
(1) INV. 15" RCP=111.3'
(2) INV. 15" RCP=111.2'

SEWER STRUCTURE TABLE

SMH #1003
RIM ELEV.=121.8'
(1) INV. 18" PVC=107.9'
(2) INV. 18" PVC=107.8'

SMH #5691
RIM ELEV.=126.2'
(1) INV. 18" PVC=108.1'
(2) 6" CIP=120.9' (TOP OF COVERED PIPE
(3) INV. 18" PVC=108.1'

SMH #5712
RIM ELEV.=5712
VALVES FOUND
UNDER WATER

SMH #6062
RIM ELEV.=114.7'
INV. 10" PVC=107.2' (CC)

SMH #6067
RIM ELEV.=116.1'
(1) INV. 8" PVC=106.5'
(2) INV. CHANNEL=106.4'
(3) INV. 8" PVC=106.4'

SMH #6142
RIM ELEV.=116.5'
INV. 10" PVC=109.2' (CC)

SMH #6230
RIM ELEV.=128.3'
INV. 10" PVC=117.8' (CC)

SMH #6232
RIM ELEV.=134.3'
INV. 10" PVC=119.4' (CC)

SMH #11499
RIM ELEV.=96.5'
(1) INV. 10"=90.6' RECESSED
(2) INV. 10" CLAY=91.2'

SMH #11501
RIM ELEV.=98.7'
INV. 8" PVC=91.6'

SMH #15547
RIM ELEV.=97.4'
(1) INV. 10"=87.9' RECESSED (CC)
(2) INV. 12" RCP=91.2'
(3) INV. 8" PVC=88.3'
(4) INV. 10"=87.9 RECESSED (CC)

SMH #16007
RIM ELEV.=118.9'
8" INV. PVC=110.9'

CC=CENTER CHANNEL

BENCHMARK TABLE		
TBM#	DESCRIPTION	ELEV.
"A"	MAG NAIL SET UP 6" IN UP "PSNH/409/23/6M/3/NETTCO"	143.55'
"B"	X-CUT IN BONNET BOLT OF HYDRANT	116.81'
"C"	X-CUT IN BONNET BOLT OF HYDRANT	160.84'
"D"	MAG NAIL SET UP 6" IN UP "PSNH/409/ 14/NETTCO	163.52'
"E"	MAG NAIL SET UP 6" IN UP "PSNH/409/1 1/11VZ"	167.38'
"F"	MAG NAIL SET UP 6" IN UP "PSNH/409/ 9/VZ9"	171.15'
"G"	MAG NAIL SET UP 6" IN UP "PSNH/409/ 7/NETTCO"	169.82'
"H"	X-CUT IN BONNET BOLT OF HYDRANT	170.87'
"I"	X-CUT IN BONNET BOLT OF HYDRANT	175.84'
"J"	X-CUT IN BONNET BOLT OF HYDRANT	175.22'
"K"	X-CUT IN BONNET BOLT OF HYDRANT	162.97'
"L"	X-CUT IN BONNET BOLT OF HYDRANT	168.86'
"M"	MAG NAIL SET UP 6" IN UP " 127/95/PSNH/4/121"	171.47'
"N"	X-CUT IN BONNET BOLT OF HYDRANT	190.63'
"O"	MAG NAIL SET UP 6" IN UP " 88/NETT/PSNH/4/114"	173.17'
"P"	MAG NAIL SET UP 6" IN UP "PSNH/4 /111/127/85/NETT"	169.31'
"Q"	MAG NAIL SET UP 6" IN UP "PSNH/4 /106/127VZ80"	154.65'
"R"	MAG NAIL SET UP 6" IN UP "PSNH/4/1 03/77/NETT"	136.77'
"S"	MAG NAIL SET UP 6" IN UP "PSNH/4/1 01/127/75/NETT"	142.67'
"T"	X-CUT IN BONNET BOLT OF HYDRANT	148.89'
"U"	MAG NAIL SET UP 6" IN UP "PSNH/4/ 96/127/70/NETT"	147.29'
"V"	MAG NAIL SET UP 6" IN UP "PSNH/5/90/6VZ104"	175.64'
"AA"	MAG NAIL SET UP 1' IN UP "PSNH/4B/16	174.46'
"AB"	MAG NAIL SET UP 1 ' IN UP "PSNH/4B/14"	159.26'
"AC"	MAG NAIL SET UP 1 ' IN UP "PSNH/4B/12"	156.60'
"AD"	MAG NAIL SET UP 1 ' IN UP "PSNH/4B/9"	154.86'
"AE"	MAG NAIL SET UP 1 ' IN UP "PSNH/4B/7"	154.26'
"AF"	MAG NAIL SET UP 1 ' IN UP "PSNH/4B/3"	152.25'
"AG"	MAG NAIL SET UP 1 ' IN UP "PSNH/4B/Y"	147.54'
"AH"	MAG NAIL SET UP 1' IN UP "4/175"	144.85'
"AI"	MAG NAIL SET UP 1' IN UP "NETT 146-1/2"	143.04'
"AJ"	MAG NAIL SET UP 1 ' IN UP "PSNH/4/170"	142.74'
"AK"	MAG NAIL SET UP 1 ' IN UP "PSNH/4/168"	142.67'
"AL"	MAG NAIL SET UP 1 ' IN UP "PSNH/4/165"	145.28'
"AM"	MAG NAIL SET UP 1' IN UP "PSNH/4/162"	144.26'
"AN"	MAG NAIL SET UP 1' IN UP WITH NO NUMBER	144.73'
"AO"	MAG NAIL SET UP 1' IN UP "4/156"	145.50'
"AP"	MAG NAIL SET UP 1 ' IN UP "4/154/PSNH"	145.21'
"AQ"	MAG NAIL SET UP 1' IN UP "PSNH/4/150"	147.25'
"AR"	MAG NAIL SET UP 1 ' IN UP "PSNH/4/148"	150.09'
"AS"	MAG NAIL SET UP 1 ' IN UP "PSNH/144"	153.72'
"AT"	MAG NAIL SET UP 1 ' IN UP "PSNH/4/140Y"	169.61'
"AU"	MAG NAIL SET UP 1' IN UP "PSNH/4/80A"	100.02'
"AV"	MAG NAIL SET UP 1 ' IN UP "PSNH/4/80"	101.09'
"AW"	MAG NAIL SET UP 1' IN UP "PSNH/4/89E"	116.82'
"AX"	MAG NAIL SET UP 1 ' IN UP "PSNH/4/91"	136.52'
"AY"	X-CUT IN BONNET BOLT OF HYDRANT	142.15'
"AZ"	MAG NAIL SET UP 6" IN UP "PSNH/4/94/68/NETT"	142.43'

no.	revision	date	by

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designed by: JWB/RDL
drawn by: CPD
approved by: RDL
date: September 2012
project no: 745
file name: 7450-Notes.dwg
scale:

City of Dover, New Hampshire
Community Services Division
Tolend Road Rehabilitation
Notes and Legend

drawing no. 2

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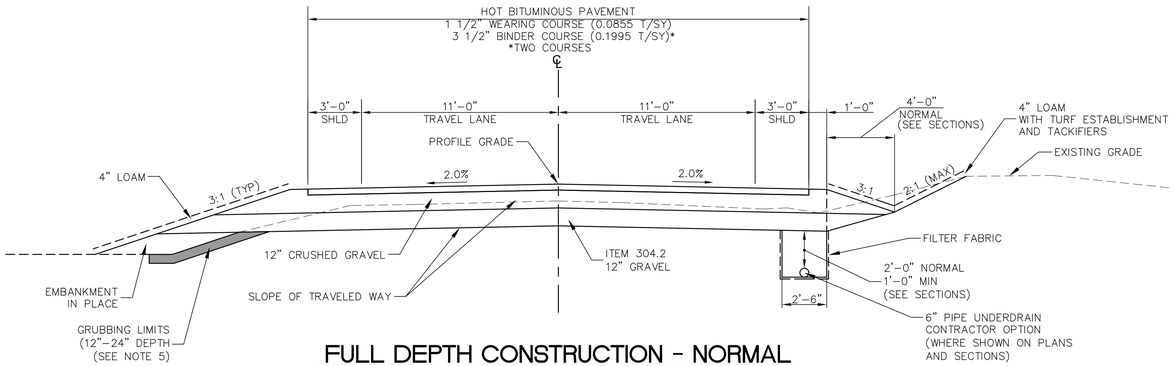
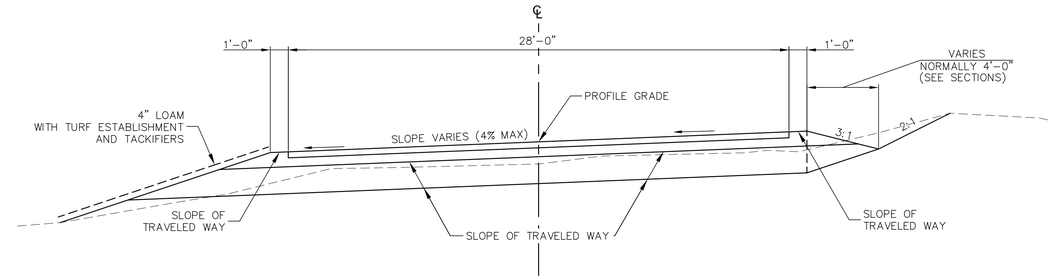


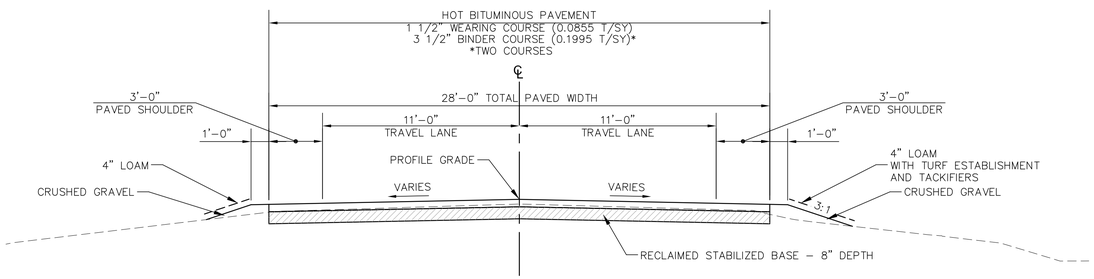
FULL DEPTH CONSTRUCTION - NORMAL

Not To Scale
STA 101+75 TO 248+00 (TOLEND RD)
STA 266+50 TO 268+50 (WITH SIDEWALK- SEE DETAIL)
STA 274+00 TO 276+00 (TOLEND RD)
STA 500+15 TO 505+00 (WATSON RD)



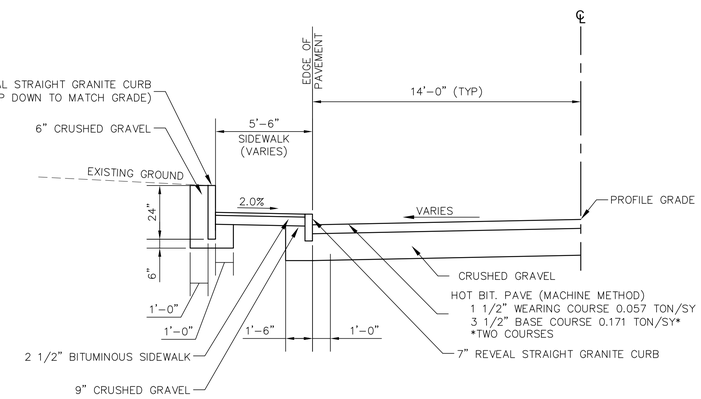
SUPERELEVATED SECTION

Not to Scale



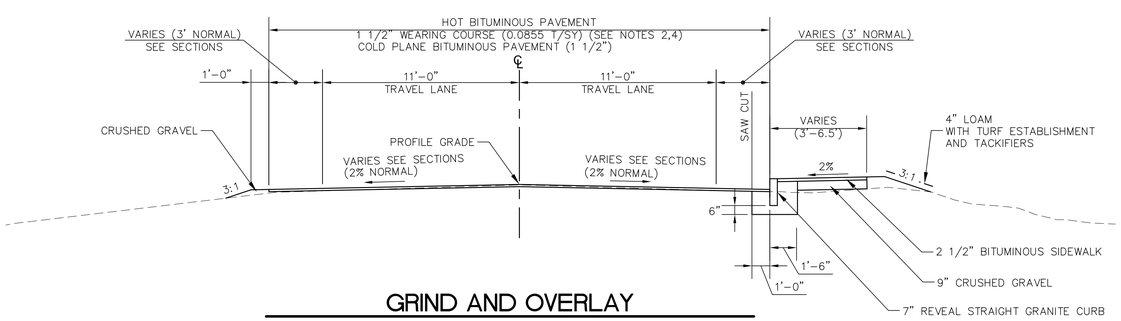
8" RECLAIM - NORMAL

Not to Scale
STATION 248+00 TO 262+00



BACKCURB/SIDWALK DETAIL

Not to Scale
STA 267+13.5 TO 268+40.0, RT
STA 271+49.7 TO 272+40.2, RT



GRIND AND OVERLAY

Not to Scale
STA 272+50 TO 274+00
STA 276+25 TO 290+18
STA 292+28 TO 298+87

NOTES:

1) LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER (PAID UNDER ITEM 203.2 - ROCK EXCAVATION)

2) HOT BITUMINOUS PAVEMENT LEVELING (ITEM 411.1) SHALL BE APPLIED TO EXISTING PAVEMENT AS NEEDED OR ORDERED PRIOR TO OVERLAY TO OBTAIN DESIRED PAVEMENT CROSS-SLOPE

3) ALL SAWCUTS PAID UNDER ITEM 628.2 - SAWED BITUMINOUS PAVEMENT

4) TACK COAT SHALL BE APPLIED BETWEEN ALL SUCCESSIVE PAVEMENT COURSES AND ON EXISTING PAVED SURFACES FOR OVERLAY SECTIONS

5) NORMAL GRUBBING LIMITS SHALL BE AT THE SIDE SLOPE/GRAVEL INTERCEPT. THE NORMAL DEPTH OF GRUBBING SHALL BE AS FOLLOWS:
   12" - NON WOODED/LAWN AREAS
   24" - WOODED AREAS
   GRUBBING SHALL BE PAID AS COMMON EXCAVATION. REPLACEMENT MATERIALS SHALL BE EMBANKMENT IN PLACE, OR GRANULAR BACKFILL OR AS ORDERED.

no.	revision	date	by

CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS
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55 So. Commercial Street Manchester, NH 603/627-0708
Lafayette Center Stone Street Building, Suite 208 Kennebunk, ME 207/985-8717
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designed by: CPD/RDL
drawn by: CPD
approved by: -
date: September 2012
project no: 745
file name: 745-Details.dwg
scale: Not to Scale

City of Dover, New Hampshire
Community Services Division
Watson Road Rehabilitation
Typical Sections

drawing no. 3

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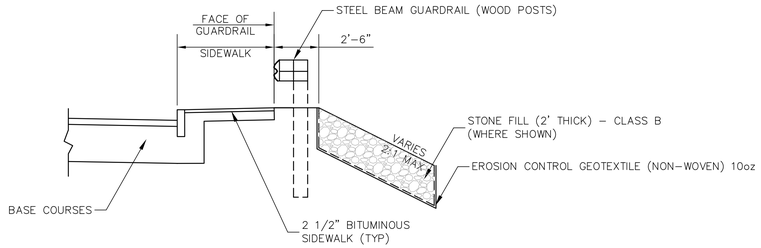
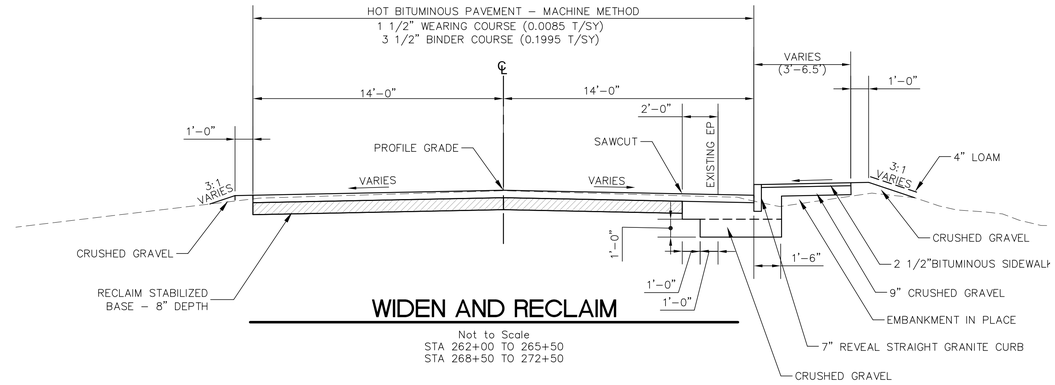


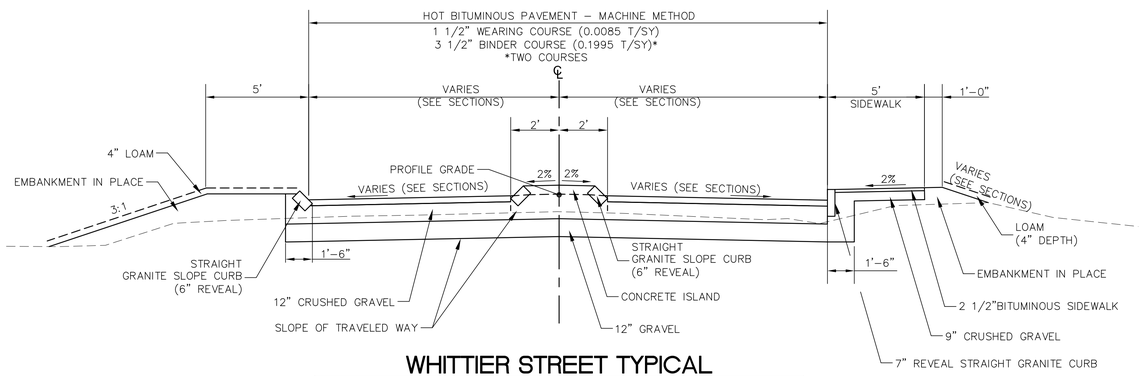
GUARDRAIL/SIDEWALK PANEL (TYP)

Not to Scale
STA 280+40 TO 283+00, RT
STA 285+80 TO 290+18, RT
STA 292+35 TO 295+75, RT



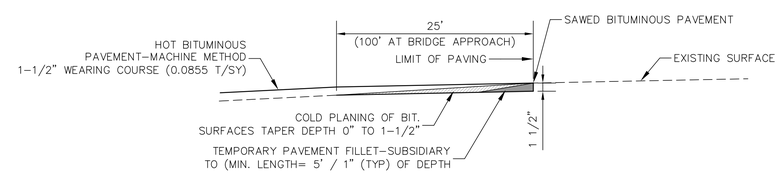
WIDEN AND RECLAIM

Not to Scale
STA 262+00 TO 265+50
STA 268+50 TO 272+50



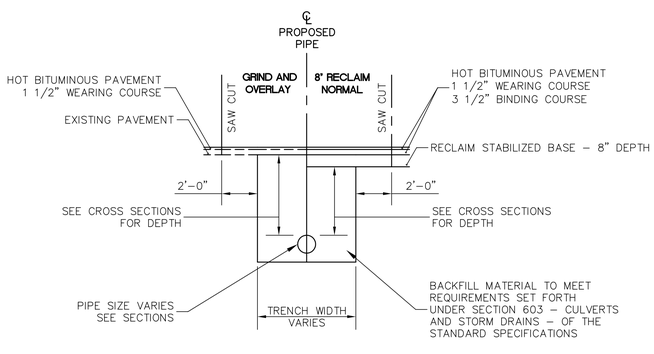
WHITTIER STREET TYPICAL

Not To Scale
STA 600+15 TO 602+00 (WHITTIER ST)



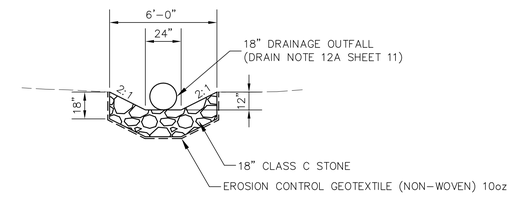
OVERLAY PAVEMENT MATCH DETAIL

Not to Scale



TRENCH DETAIL

Not to Scale



RIPRAPPED SLUICE DETAIL

Not to Scale
STA 154+00

no.	revision	date	by

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designed by: CPD/RDL
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scale: Not to Scale

City of Dover, New Hampshire
Community Services Division
Watson Road Rehabilitation
Typical Sections & Miscellaneous Details

drawing no. 4

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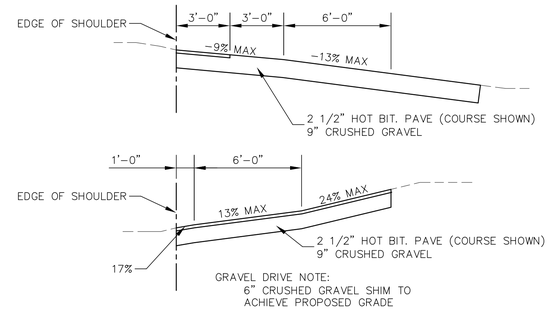
Curbing Summary

ITEM	MARK NUMBER	RADIUS	STRAIGHT GRANITE CURB (7" REVEAL)	STRAIGHT GRANITE SLOPED CURB 6" HIGH	STRAIGHT GRANITE SLOPED CURB WITH RADIAL JOINTS	STRAIGHT GRANITE CURB (12" REVEAL)	CURVED GRANITE CURB (<21'R)	BITUMINOUS CURB (TYPE A)
UNIT		ft	lf			lf	lf	lf
LOCATION STATION TO STATION								
236+98.0, LT 14.0' TO 237+72.4, LT 14.0'	A-1	2496.0	80.8	–	–	–	–	–
237+44.2, RT 14.0' TO 239+25.3, RT 14.0'	A-2	2524.0	180.0	–	–	–	–	–
243+41.7, LT 20.8' TO 244+63.5. LT 14.0'	B-1	–	127.4	–	–	–	–	–
245+00.6, LT 14.0' TO 245+70.0, LT 14.0'	B-2	–	70.6	–	–	–	–	–
256+05.4, LT 14.0' TO 256+58.7, LT 14.0'	B-3	–	53.2					
262+14.1, RT 14.0' TO 262+83.9, LT 14.0'	C-1	–	69.8	–	–	–	–	–
263+10.3, RT 14.0' TO 263+48.5, LT 14.0'	C-2	–	38.2	–	–	–	–	–
263+48.5, RT 14.0' TO 266+90.2, RT 14.0'	C-3	764.0	10.4	–	–	–	–	–
266+00.0, LT 14.0' TO 266+90.0, LT 14.0'	C-4	–	–	–	–	–	–	90.0
266+42.2, RT 28.3' TO 266+71.5, RT 14.0'	C-5	45.0	35.1	–	–	–	–	–
266+71.5, RT 14.0' TO 266+84.2, RT 14.0'	C-6	764.0	13.3	–	–	–	–	–
266+84.2, RT 14.0' TO 266+94.4, RT 14.0'	C-7	–	10.2	–	–	–	–	–
267+14.3, RT 14.0' TO 269+21.8, RT 14.0'	C-8	–	207.7	–	–	–	–	–
267+13.5, RT 20.5' TO 268+40.0, RT 14.0'	C-9	–	–	–	–	126.5	–	–
269+41.8, RT 14.0' TO 269+99.8, RT 14.0'	C-10	–	58.1	–	–	–	–	–
270+19.8, RT 14.0' TO 271+23.0, RT 14.0'	C-11	–	103.5	–	–	–	–	–
271+23.0, RT 14.0' TO 272+40.2, RT 14.0'	C-12	1686.0	116.6	–	–	–	–	–
271+49.7, RT 20.5' TO 271+74.4, RT 18.5'	C-13	–	–	–	–	24.8	–	–
271+74.4, RT 18.5' TO 272+40.2, RT 18.5'	C-14	1681.5	–	–	–	64.9	–	–
272+60.0, RT 14.0' TO 272+74.1, LT 14.0'	D-1	1686.0	14.4	–	–	–	–	–
272+94.0, RT 14.0' TO 273+40.6, RT 14.0'	D-2	1686.0	45.7	–	–	–	–	–
273+12.2, RT 14.0' TO 274+12.0, RT 14.0'	D-3	1686.0	49.5	–	–	–	–	–
274+32.5, RT 14.0' TO 274+99.3, RT 14.0'	D-3a	1686.0	66.1	–	–	–	–	–
274+99.3, RT 14.0' TO 275+37.6, RT 14.0'	D-4	776.0	38.4	–	–	–	–	–
275+58.5, RT 14.0' TO 276+27.6, RT 14.0'	D-5	776.0	68.3	–	–	–	–	–
276+58.3, RT 14.0' TO 277+53.8, RT 14.0'	D-6	776.0	93.4	–	–	–	–	–
277+53.8, RT 14.0' TO 277+68.4, RT 14.0'	D-7	986.0	14.7	–	–	–	–	–
278+04.4, RT 14.0' TO 278+82.8, RT 14.0'	D-8	986.0	39.9	–	–	–	–	–
279+8.7, RT 14.0' TO 280+00.0, RT 14.0'	D-9	986.0	61.4	–	–	–	–	–
280+00.0, RT 14.0' TO 280+10.1, RT 13.8'	D-10	–	10.2	–	–	–	–	–
280+30.3, RT 13.0' TO 281+24.4, RT 13.0'	D-11	987.0	92.5	–	–	–	–	–
281+24.4, RT 13.0' TO 283+41.4, RT 13.0'	D-12	–	217.0	–	–	–	–	–
283+63.4, RT 13.0' TO 284+64.5, RT 13.0'	D-13	–	101.2	–	–	–	–	–
284+64.5, RT 13.0' TO 284+81.2, RT 13.0'	E-1	1113.0	16.7	–	–	–	–	–
285+01.8, RT 13.0' TO 285+25.5, RT 13.0'	E-2	1113.0	23.9	–	–	–	–	–
285+25.5, RT 13.0' TO 285+46.3, RT 27.0'	E-3	22.0	26.2	–	–	–	–	–
285+46.3, RT 27.0' TO 285+51.3, RT 39.1'	E-4	–	12.9	–	–	–	–	–
285+76.2, RT 38.7' TO 285+76.2, RT 37.8'	E-5	–	0.9	–	–	–	–	–
285+76.2, RT 37.8' TO 285+99.5, RT 13.0'	E-6	25.0	38.8	–	–	–	–	–
285+99.5, RT 13.0' TO 288+92.4, RT 13.0'	E-7	1113.0	296.4	–	–	–	–	–
288+92.4, RT 13.0' TO 289+00.0, RT 13.0'	E-8	–	7.7	–	–	–	–	–
289+00.0, RT 13.0' TO 290+28.8, RT 14.2'	E-9	–	128.8	–	–	–	–	–
285+59.0, LT 14.0' TO 289+75.0, LT 14.0'	E-10	–	–	–	–	–	–	416.0
289+75.0, LT 14.0' TO 290+14.1, LT 13.7'	E-11	–	–	–	–	–	–	39.1
292+35.7, RT 13.0' TO 296+07.2, RT 13.0'	F-1	–	371.2	–	–	–	–	–
296+07.2, RT 13.0' TO 296+07.2, RT 28.0'	F-2	7.5	11.7	–	–	–	21.1	–
295+95.5, RT 28.0' TO 296+07.2, RT 28.0'	F-3	–	–	–	–	–	–	–
295+33.9, LT 94.0' TO 295+45.6, LT 89.5'	F-4	–	12.6	–	–	–	–	–
295+32.0, LT 15.0' TO 295+45.6, LT 89.5'	F-5	38.5	107.0	–	–	–	–	–
295+95.8, LT 57.0' TO 295+99.7, LT 57.7'	F-6	–	–	–	6.3	–	–	–
295+95.8, LT 57.0' TO 296+02.7, LT 16.6'	F-7	–	–	41.0	–	–	–	–
295+99.7, LT 57.7' TO 296+06.7, RT 17.3'	F-8	–	–	41.0	–	–	–	–
296+02.7, LT 16.6' TO 296+06.7, RT 17.3'	F-9	–	–	–	6.3	–	–	–
296+42.3, RT 13.0' TO 296+42.3, RT 28.0'	F-10	7.5	–	–	–	–	22.6	–
296+42.3, RT 13.0' TO 297+12.9, RT 13.0'	F-11	–	67.9	–	–	–	–	–
297+12.9, RT 13.0' TO 297+12.9, RT 28.0'	F-12	7.5	–	–	–	–	22.6	–
296+42.3, RT 28.0' TO 297+12.9, RT 28.0'	F-13	–	67.9	–	–	–	–	–
297+47.5, RT 13.0' TO 297+48.6, RT 28.0'	F-14	7.5	–	–	–	–	22.6	–
297+48.6, RT 28.0' TO 297+53.6, RT 28.0'	F-15	–	5.0	–	–	–	–	–
297+47.5, RT 13.0' TO 297+94.4, RT 13.0'	F-16	–	44.5	–	–	–	–	–
297+94.4, RT 13.0' TO 298+44.2, RT 15.3'	F-17	–	48.5	–	–	–	–	–
298+70.9, RT 16.8' TO 298+91.0, RT 17.1'	F-18	–	20.1	–	–	–	–	–
296+11.1, LT 106.2' TO 296+25.2, LT 133.3'	F-19	–	30.6	–	–	–	–	–
296+09.3, LT 89.4' TO 296+11.1, LT 106.2'	F-20	25.0	17.0	–	–	–	–	–
296+23.5, LT 57.8' TO 296+24.3, LT 54.6'	F-21	–	DELETED	–	–	–	–	–
296+24.3, LT 54.6' TO 296+62.4, LT 25.0'	F-22	40.0	52.3	–	–	–	–	–
296+24.3, LT 54.6' TO 297+10.2, LT 25.0'	F-23	–	47.8	–	–	–	–	–
297+10.2, LT 25.0' TO 297+27.8, LT 25.0'	F-24	525.0	17.6	–	–	–	–	–
297+27.8, LT 25.0' TO 297+42.3, LT 36.9'	F-25	–	15.0	–	–	–	20.2	–
297+41.4, LT 25.5' TO 297+50.9, LT 33.8'	F-26	12.0	13.4	–	–	–	–	–
297+50.9, LT 33.8' TO 297+57.6, LT 52.7'	F-27	–	20.5	–	–	–	–	–
297+63.9, LT 47.5' TO 297+85.3, LT 15.0'	F-28	25.0	45.6	–	–	–	–	–
297+85.3, LT 15.0' TO 298+70.7, LT 15.0'	F-29	520.0	68.5	–	–	–	–	–
298+70.7, LT 15.0' TO 298+90.4, LT 24.3'	F-30	20.0	38.8	–	–	–	–	–
Total		27599.0	3763.4	82.0	12.6	216.2	109.1	545.1

BASE BID

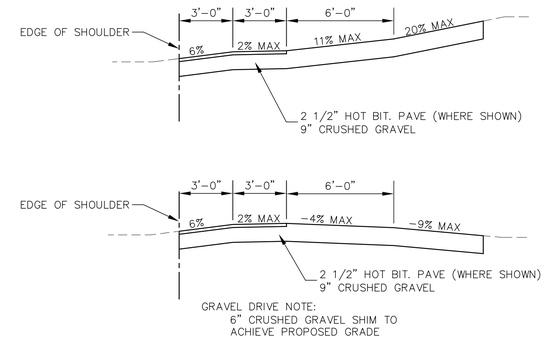
ALTERNATE A

* PROVIDE 7' TIP DOWN TO MATCH GRADE



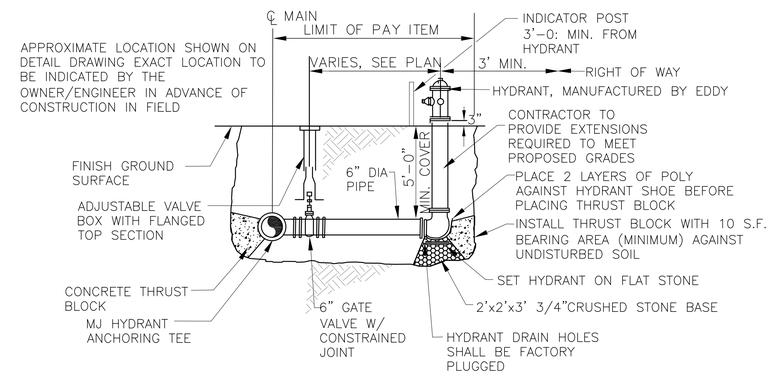
DRIVEWAY DETAILS (NO SIDEWALK)

Not to Scale



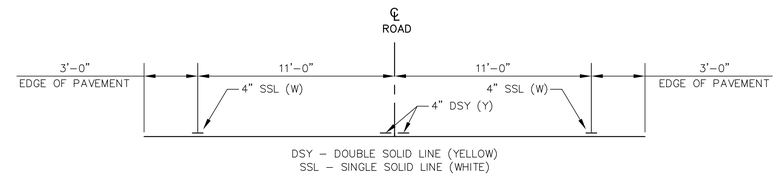
DRIVEWAY DETAILS (SIDEWALK)

Not to Scale



HYDRANT DETAIL

Not to Scale



PAVEMENT MARKING LAYOUT DETAIL

Not to Scale

NOTE:

1) ALL PAVEMENT MARKINGS TO BE RETROFLECTIVE PAINT.
2) SEE PLANS FOR WHITTER STREET INTERSECTION LAYOUT

no.	revision	date	by

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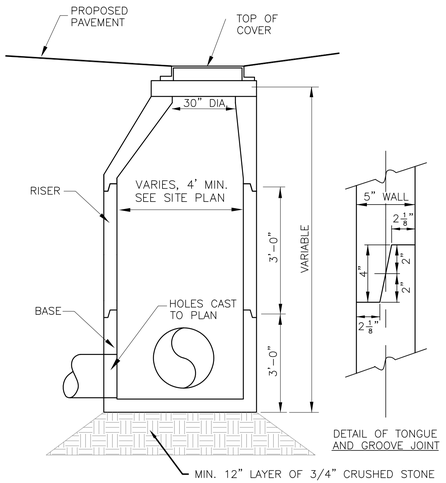
designed by: JWB/RDL
drawn by: CPD
approved by: RDL
date: September 2012
project no: 745
file name: 7450-Notes.dwg
scale: Not to Scale

City of Dover, New Hampshire
Community Services Division
Tolend Road Rehabilitation
Curbing Summary & Drive Details

drawing no. 5

F:\CADD\PROJECTS\745\dwg\Construction\7450-Notes.dwg Date Plotted: Sep 19, 2012 – 9:56am Plotted By: CDETRICH



NOTES:

1. Horizontal joints between sections of precast concrete barrels shall be of a type approved by the Engineer, which shall, in general, depend for watertightness upon an elastomeric or mastic-like gasket.

2. Pipe-to-manhole joints shall be only as approved by the Engineer and in general will depend for watertightness upon either an approved non-shrinking mortar or elastomeric sealant.

3. For bitumastic type joints, the amount of sealant shall be sufficient to fill at least 75% of the joint cavity. Approved bitumastic sealants include RAM-NEK, Kent seal No. 2, EZ or equal.

4. All structures shall meet H-20 Loading.

5. The tongue or the groove of the joint of the wall. shall contain one line of circumferential reinforcement equal to 0.12 sq.in. per linear foot.

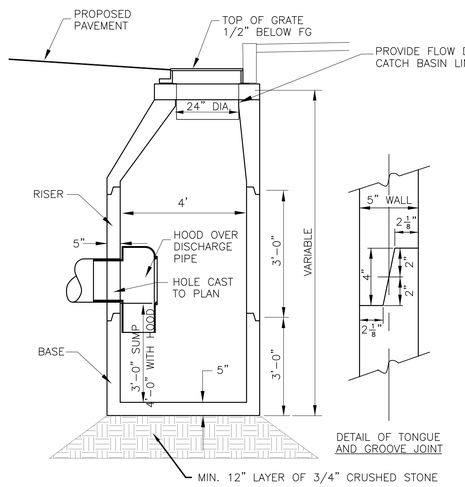
6. Eccentric cones shall be used when depth to crown of shallowest pipe exceeds 30". Risers of 12", 36" and 48" can be used to reach the desired depth.

7. Frames and Covers: Manhole frames and covers shall be of heavy duty design and provide a 30-inch clear opening. A 3-inch (minimum height) "DRAIN" shall be plainly cast into the center of each cover.

8. All structures with multiple pipes shall have a minimum of 12" of inside surface between holes.

DRAIN MANHOLE DETAIIL

Not to Scale



NOTES:

1. Horizontal joints between sections of precast concrete barrels shall be of a type approved by the Engineer, which shall, in general, depend for watertightness upon an elastomeric or mastic-like gasket.

2. Pipe-to-manhole joints shall be only as approved by the Engineer and in general will depend for watertightness upon either an approved non-shrinking mortar or elastomeric sealant.

3. For bitumastic type joints, the amount of sealant shall be sufficient to fill at least 75% of the joint cavity. Approved bitumastic sealants include RAM-NEK, Kent seal No. 2, EZ or equal.

4. All structures shall meet H-20 Loading.

5. The tongue or the groove of the joint of the wall. shall contain one line of circumferential reinforcement equal to 0.12 sq.in. per linear foot.

6. Cone sections may be either concentric or eccentric, or flat slab tops may be used where pipe would otherwise enter into the cone section.

7. Catch basin grates to be NHDOT Type B or Type E gray iron. For Type B frame shall be 3 flange type.

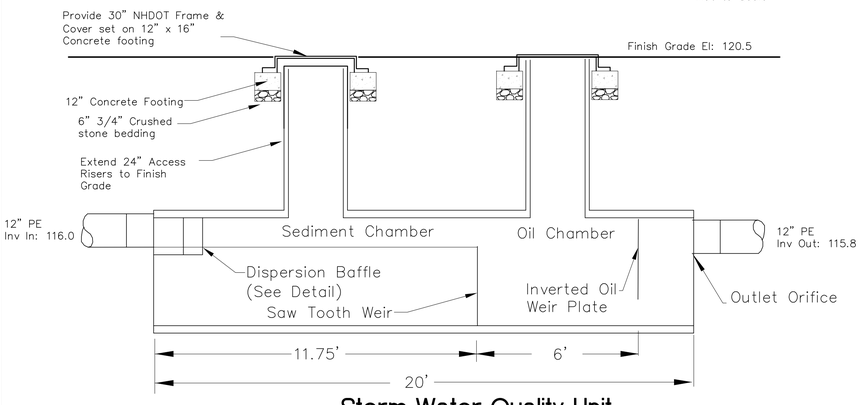
8. Hood on catch basins shall be "The Eliminator" oil and floating debris trap as manufactured by Groundwater Rescue, Inc of Quincy, MA or approved equal. Contractor shall drill ¼" vertical hole at top of hood.

9. All structures with multiple pipes shall have a minimum of 12" of inside surface between holes.

10. Eccentric cones shall be used when depth to crown of shallowest pipe exceeds 30". Risers of 12", 36" and 48" can be used to reach the desired depth.

CATCH BASIN DETAIIL

Not to Scale



Storm Water Quality Unit

Not to Scale

NOTES:

1. Stormwater Quality Unit shall be 4820WQA18 by Hancor or approved equal.

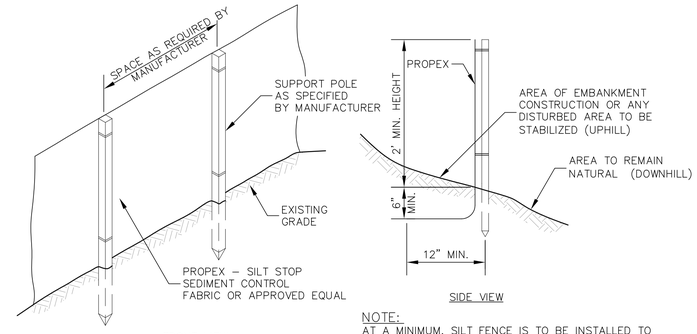
2. The unit shall be 48" nominal diameter and constructed with virgin HDPE material conforming with the minimum requirements of cell classification 435400C as defined and described in the latest version of ASTM D3350. The unit shall have a smooth interior and annular exterior corrugations and include at least three containment zones, each zone separated from the next by use of a weir or baffle plate. Weir and baffle plates shall be welded at all interfaces between the plate and water quality unit. First weir plate shall incorporate a saw tooth design and shall be reinforced with stiffeners positioned horizontally on the downstream side of the plate to be retained. The unit shall provide adequate clean-out and inspection access.

3. The unit shall provide for 80% removal of total suspended solids from a treatment flow of 2.26 cfs.

4. Unit shall be set on a bed of 3/4"compacted crushed stone and installed in accordance with the Manufacturer's recommendations. Excavation trench width shall be a minimum of 8'-6".

5. Backfill around and above unit shall be completed with common borrow fill compacted to 95% MDD in accordance with the specifications.

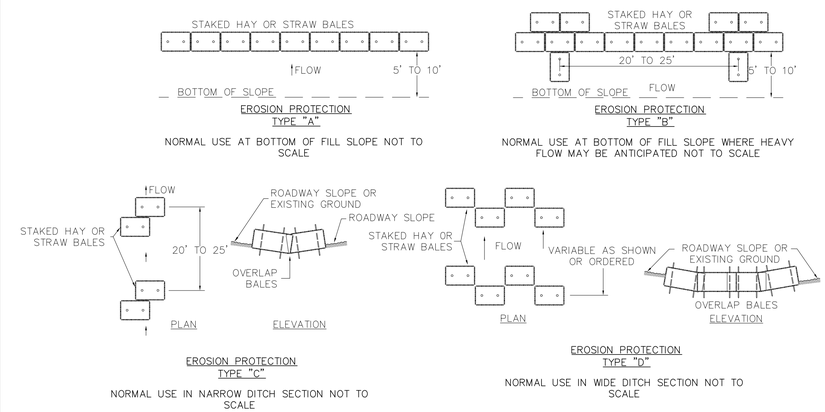
6. 24" access risers shall be extended to final graded and protected with a frame and grate set on concrete as indicated on the Drawings.



NOTE:
AT A MINIMUM, SILT FENCE IS TO BE INSTALLED TO PROTECT WETLAND AREAS, WATERWAYS, EXISTING AND PROPOSED DRAINAGE FEATURES, SLOPES, LAWNS AND PLANTINGS ADJACENT TO THE WORK.

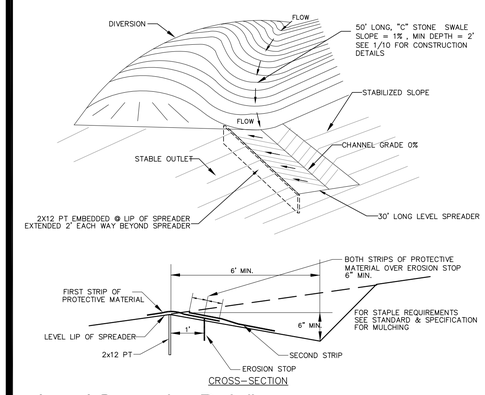
Silt Fence Detail

Not to Scale



Hay Bale Detail

Not to Scale



CONSTRUCTION SPECIFICATIONS

1. Construct the level spreader lip on a zero percent grade to insure uniform spreading of runoff.
2. Level spreader shall be constructed on undisturbed soil and not on fill.
3. An erosion stop shall be placed vertically a minimum of six inches deep in a slit trench one foot back of the level lip and parallel to the lip. The erosion stop shall extend the entire length of the level lip.
4. The entire level lip area shall be protected by placing two strips of curley II along the lip. Each strip shall overlap the erosion stop by at least six inches.
5. The entrance channel to the level spreader shall not exceed a 1 percent grade for at least 50 feet before entering into the spreader.
6. The flow from the level spreader shall outlet onto stabilized areas. Water should not reconcentrate immediately below the spreader.
7. Periodic inspection and required maintenance shall be performed.

Level Spreader Detail

Not to Scale

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			drawn by: CPD
			approved by: -
			scale: Not to Scale

City of Dover, New Hampshire
Community Services Division

Watson Road Rehabilitation

Erosion Control Details

drawing no. 6

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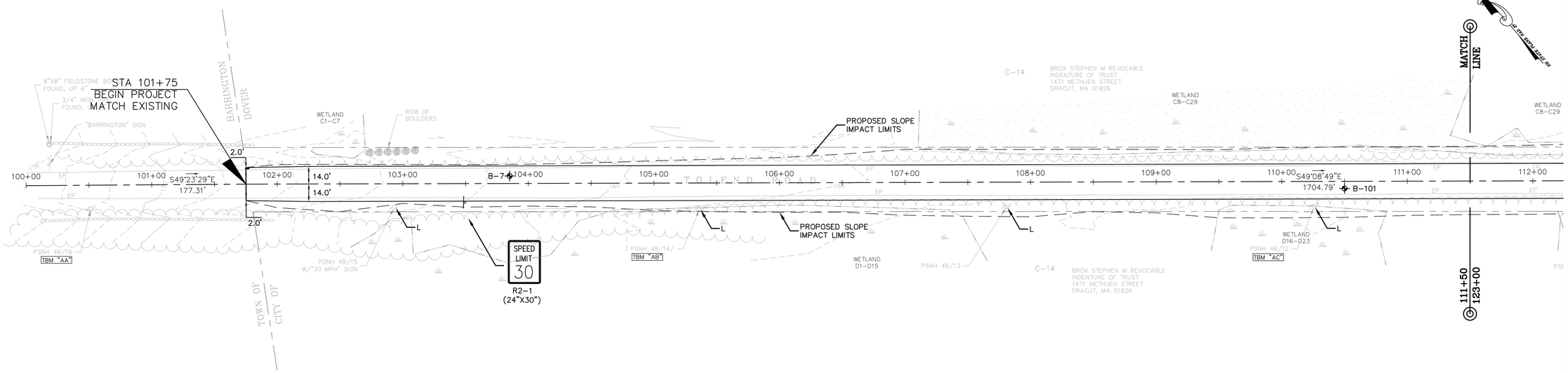

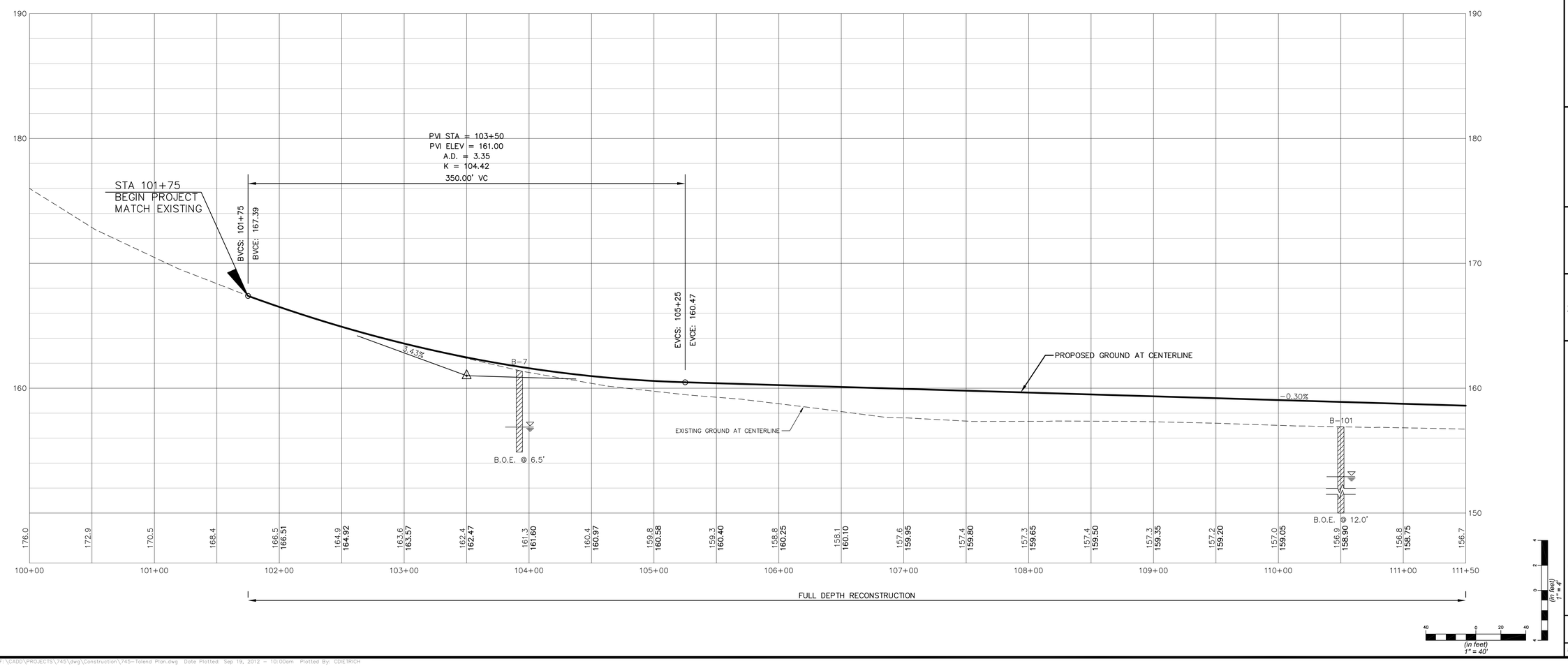

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scale: (in feet) 1" = 40'

City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 100+00 to STA 111+50

drawing no. 7

sheet: 7 of 54

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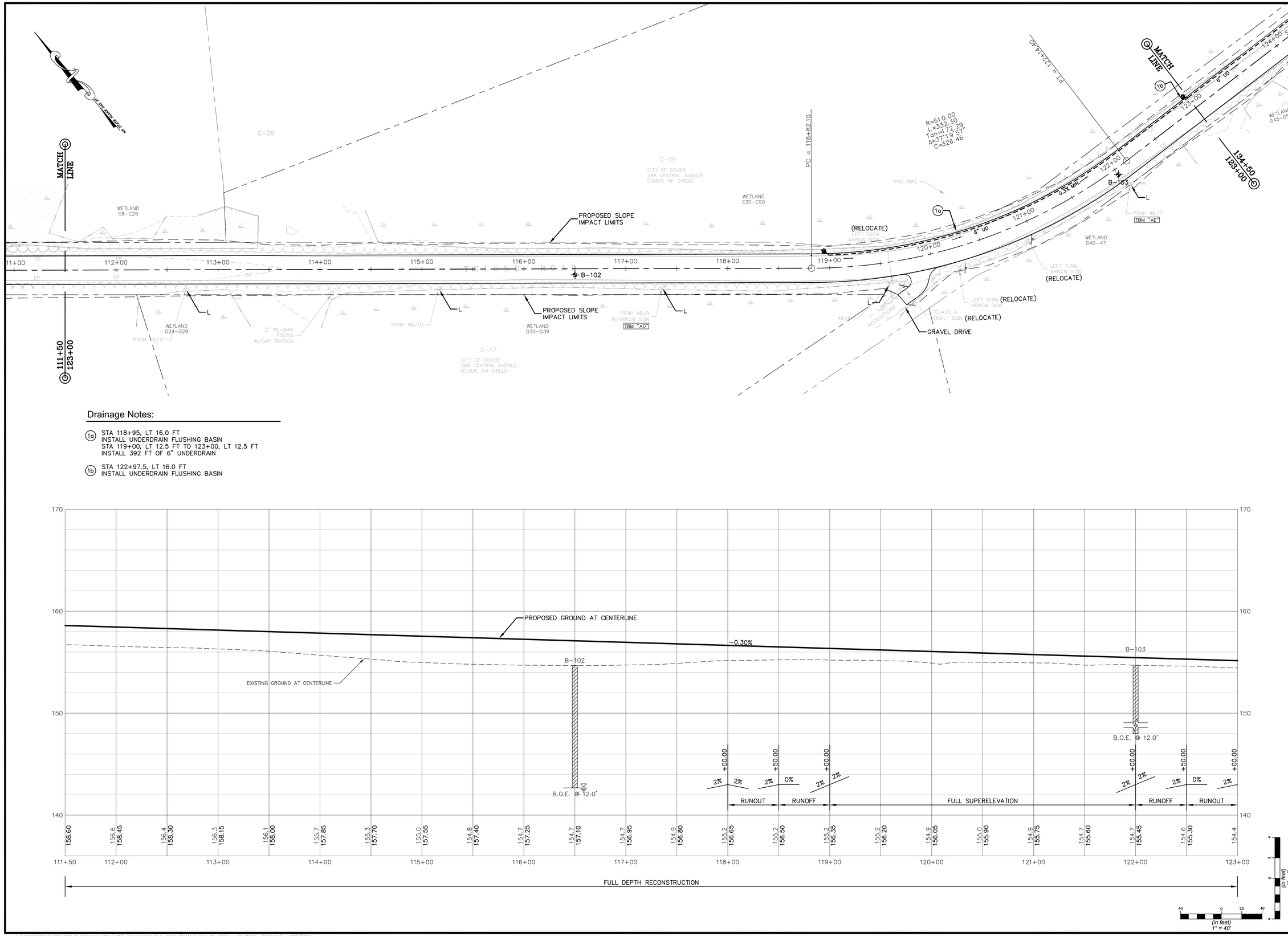

Drainage Notes:

(1a) STA 118+95, LT 16.0 FT
INSTALL UNDERDRAIN FLUSHING BASIN
STA 119+00, LT 12.5 FT TO 123+00, LT 12.5 FT
INSTALL 392 FT OF 6" UNDERDRAIN

(1b) STA 122+97.5, LT 16.0 FT
INSTALL UNDERDRAIN FLUSHING BASIN

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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 111+50 to STA 123+00

drawing no. 8

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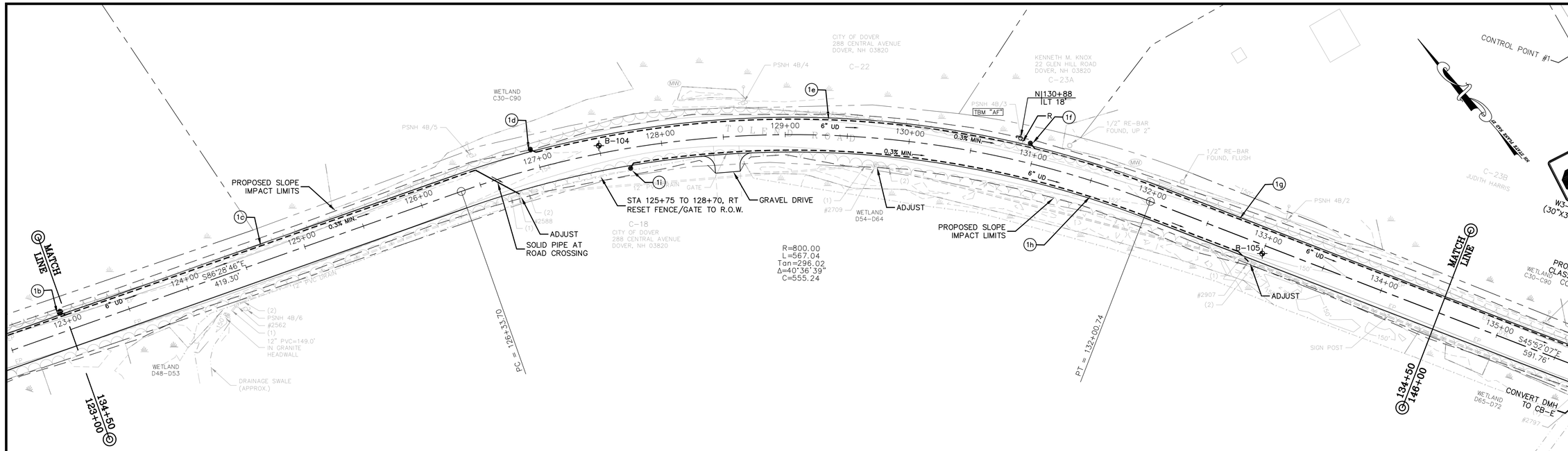


Drainage Notes:

(1c) STA 123+00, LT 12.5 FT TO STA 126+71, RT 16.0 FT
INSTALL 391 FT OF 6" UNDERDRAIN
CONNECT TO EXISTING DMH (INCIDENTAL)
INV. OUT = 149.2'

(1d) STA 126+97.5, LT 16.0 FT
INSTALL UNDERDRAIN FLUSHING BASIN

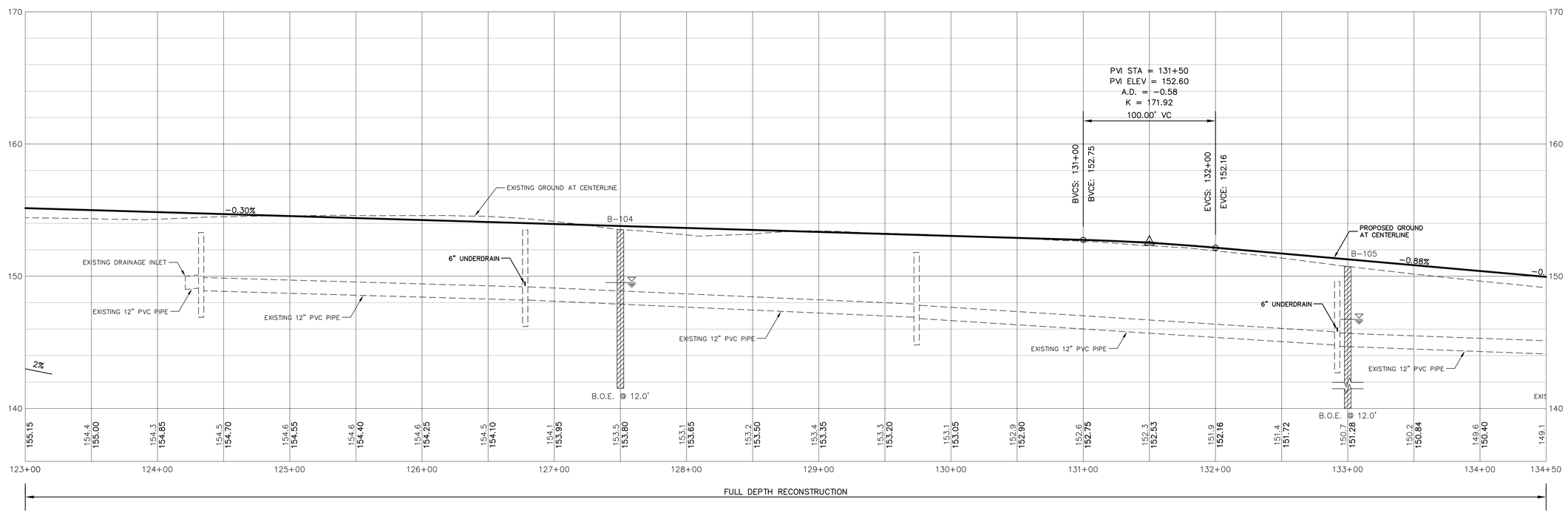
(1e) STA 127+00, LT 12.5 FT TO STA 131+00, LT 12.5 FT
INSTALL 406 FT OF 6" UNDERDRAIN

(1f) STA 130+97.5, LT 16.0 FT
INSTALL UNDERDRAIN FLUSHING BASIN

(1g) STA 131+00, LT 12.5 FT TO STA 136+75, LT 26.3 FT
INSTALL 577 FT OF 6" UNDERDRAIN
INV. OUT = 144.0

(1h) STA 127+75, RT 12.5 FT TO 132+98, RT 16.7 FT
INSTALL 511.2 FT OF 6" UNDERDRAIN
CONNECT TO EXISTING DMH (INCIDENTAL)
INV. OUT = 145.7

(1i) STA 127+77, RT 16.0 FT
INSTALL UNDERDRAIN FLUSHING BASIN



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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 123+00 to STA 134+50

drawing no. 9

sheet: 9 of 54

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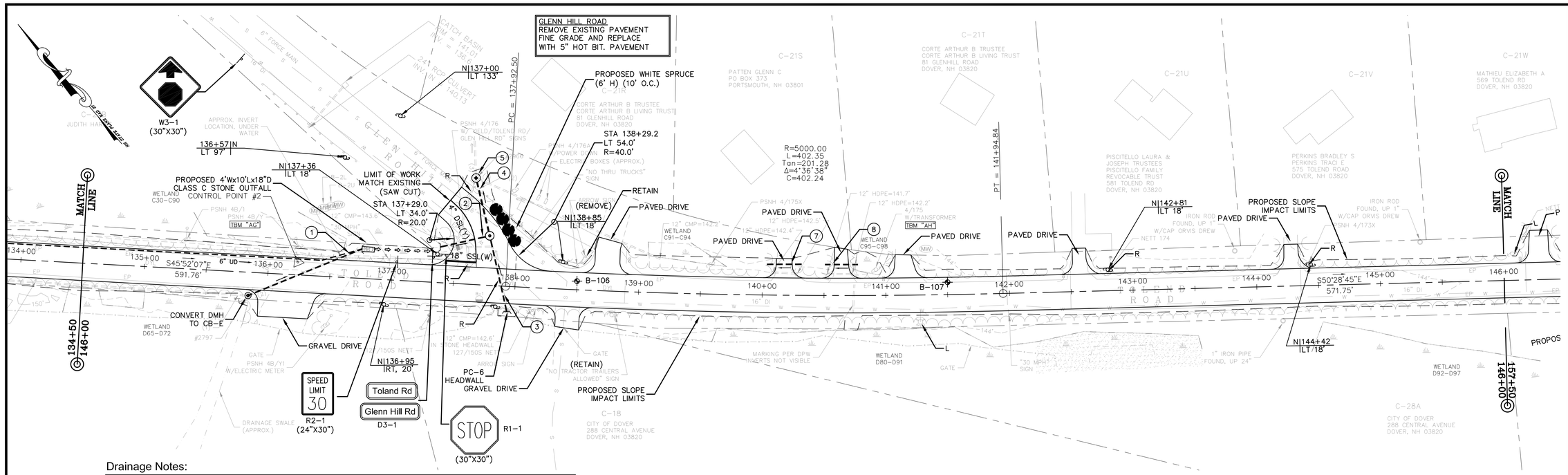


Drainage Notes:

1. STA 135+85, RT 18.9 FT TO STA 136+75, LT 24.6 FT
   INSTALL 100 FT OF 15" PE PIPE
   INV. OUT: 143.5
   CONSTRUCT NHDOT PC-5 HEADWALL
   INSTALL CB-E (SLAB TOP), +85, RT 18.9 FT AT OUTLET
   12" INV. IN: 144.0 (EXISTING)
   15" INV. OUT: 143.75
   RIM: 147.3

2. STA 137+38, LT 28.8 FT TO STA 137+77, LT 41.0 FT
   INSTALL 38 FT OF 15" PE PIPE
   INV. IN: 143.0
   CONSTRUCT NHDOT PC-5 HEADWALL AT INLET

3. STA 137+94, RT 20.5 FT TO STA 137+77, LT 41.0 FT
   INSTALL 60 FT OF 15" PE PIPE
   INV. IN: 142.6
   CONSTRUCT NHDOT PC-5 HEADWALL AT INLET

4. STA 137+77, LT 41.0 FT TO STA 137+64, LT 86.0 FT
   INSTALL 41 FT OF 18" PE PIPE
   INSTALL 6' DIA. DMH (SLAB TOP), +77, LT 41.0 FT
   15" INV. IN: 141.75 (W)
   15" INV. IN: 141.75 (S)
   18" INV. OUT: 141.5 (N)
   RIM: 146.0 ±
   INSTALL OIL-WATER SEPARATOR AT OUTLET

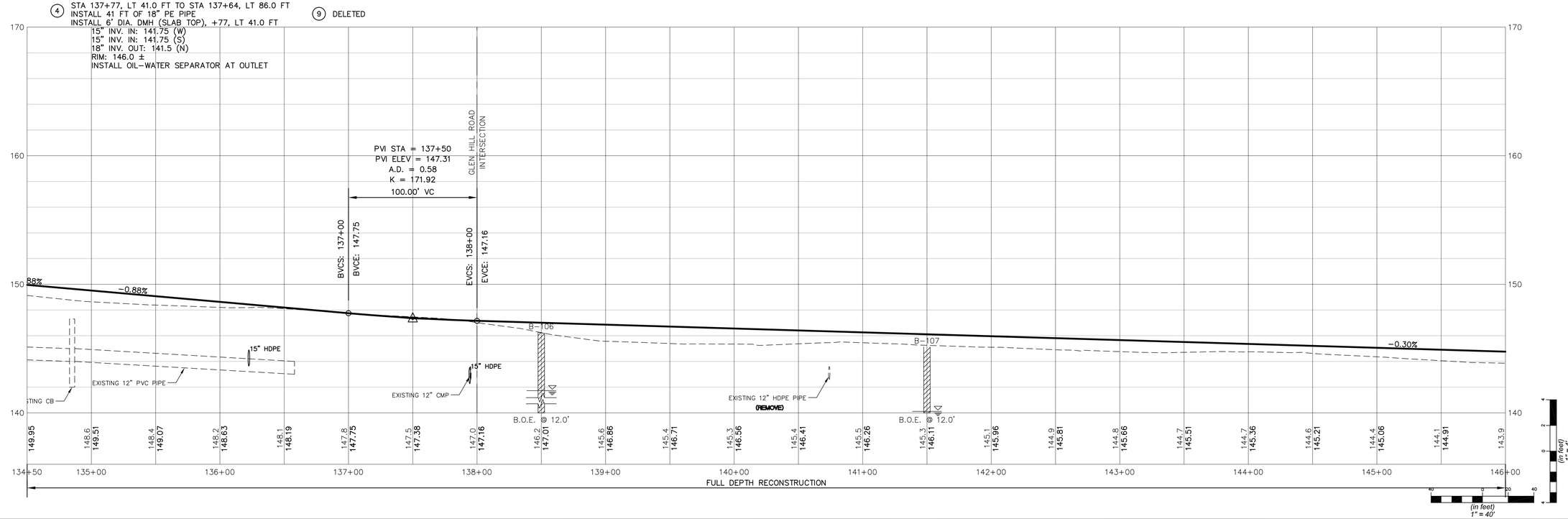
5. INSTALL 6' DIA. CB-E (SLAB TOP), +64, LT 86.0 FT
   12" INV. IN: 141.1 (E) (EXISTING)
   18" INV. IN: 141.0 (S)
   24" INV. OUT: 140.9 (N)
   RIM: 144.7

6. DELETED

7. STA 140+03, LT 25.0 FT TO STA 140+31, LT 25.0 FT
   INSTALL 28 FT OF 15" RCP
   INV. IN: 142.8
   INV. OUT: 142.6

8. STA 140+50, LT 25.0 FT TO STA 140+77, LT 25.0 FT
   INSTALL 27 FT OF 15" RCP
   INV. IN: 143.1
   INV. OUT: 142.9

9. DELETED



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approved by: RDL
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scale: (in feet) 1" = 40'

City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 134+50 to STA 146+00

drawing no. 10

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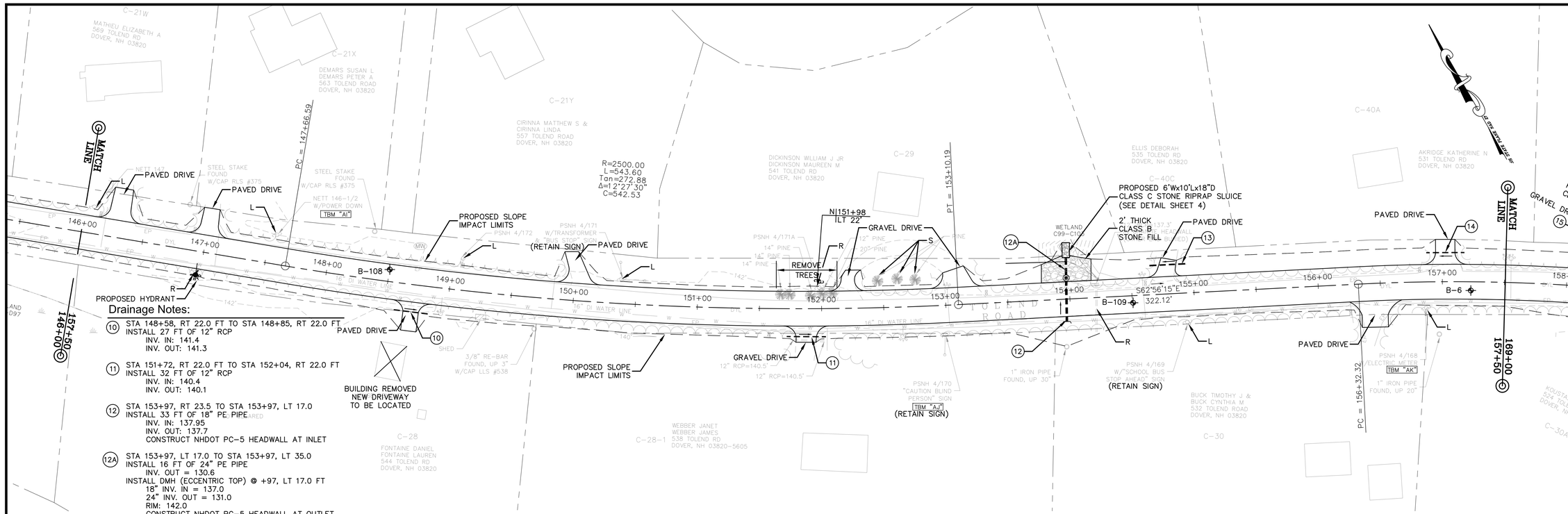


Drainage Notes:

(10) STA 148+58, RT 22.0 FT TO STA 148+85, RT 22.0 FT
INSTALL 27 FT OF 12" RCP
INV. IN: 141.4
INV. OUT: 141.3

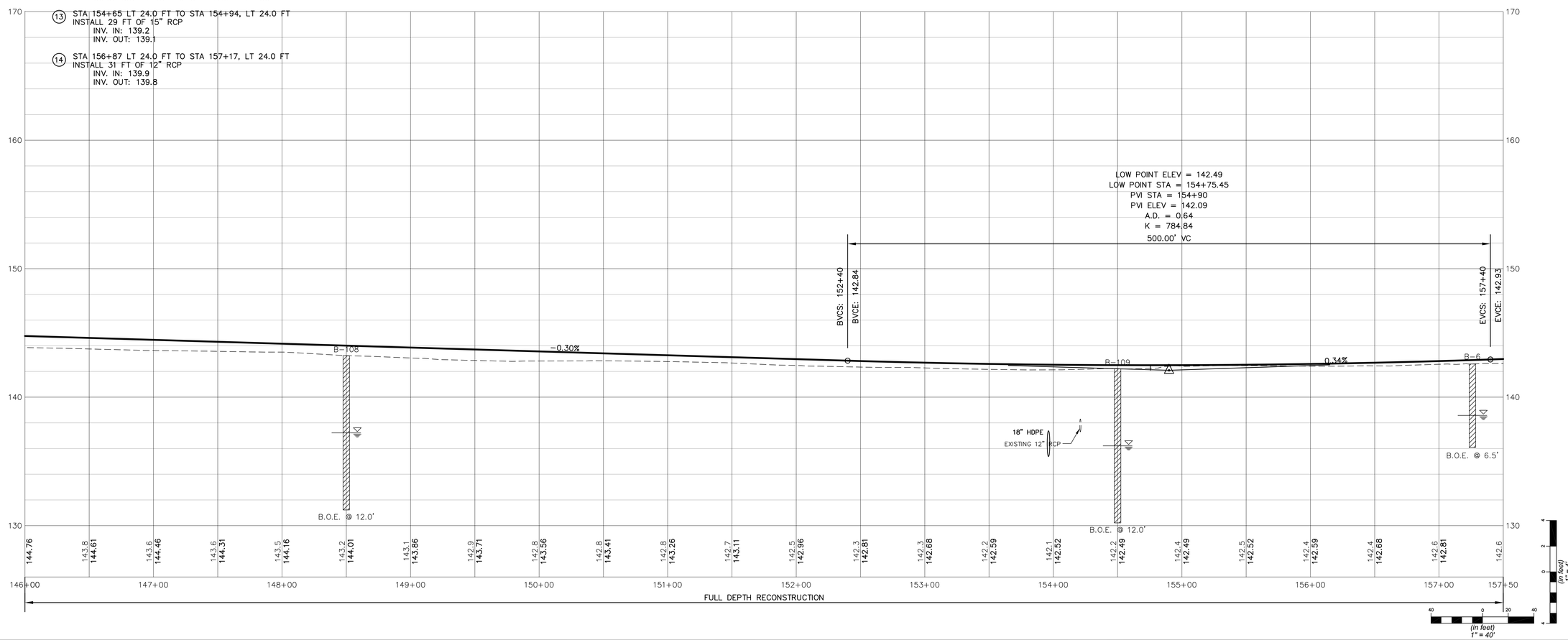
(11) STA 151+72, RT 22.0 FT TO STA 152+04, RT 22.0 FT
INSTALL 32 FT OF 12" RCP
INV. IN: 140.4
INV. OUT: 140.1

(12) STA 153+97, RT 23.5 TO STA 153+97, LT 17.0
INSTALL 33 FT OF 18" PE PIPE
INV. IN: 137.95
INV. OUT: 137.7
CONSTRUCT NHDOT PC-5 HEADWALL AT INLET

(12A) STA 153+97, LT 17.0 TO STA 153+97, LT 35.0
INSTALL 16 FT OF 24" PE PIPE
INV. OUT = 130.6
INSTALL DMH (ECCENTRIC TOP) @ +97, LT 17.0 FT
18" INV. IN = 137.0
24" INV. OUT = 131.0
RIM: 142.0
CONSTRUCT NHDOT PC-5 HEADWALL AT OUTLET

(13) STA 154+65 LT 24.0 FT TO STA 154+94, LT 24.0 FT
INSTALL 29 FT OF 15" RCP
INV. IN: 139.2
INV. OUT: 139.1

(14) STA 156+87 LT 24.0 FT TO STA 157+17, LT 24.0 FT
INSTALL 31 FT OF 12" RCP
INV. IN: 139.9
INV. OUT: 139.8



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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 146+00 to STA 157+50

drawing no. 11

sheet: 11 of 54

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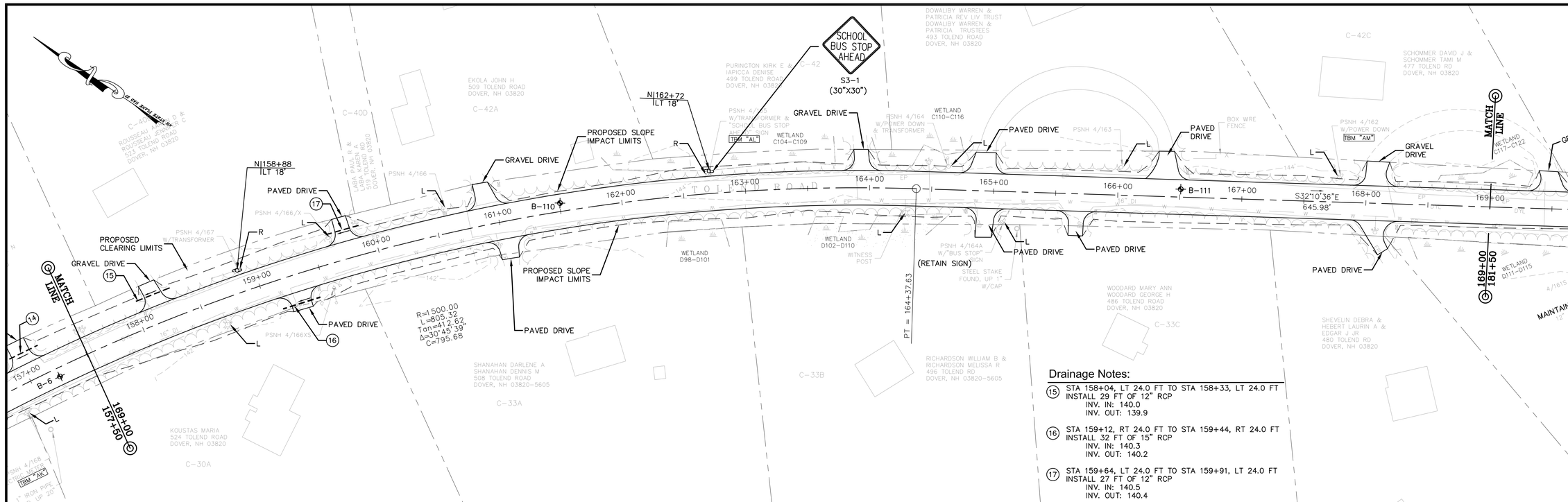
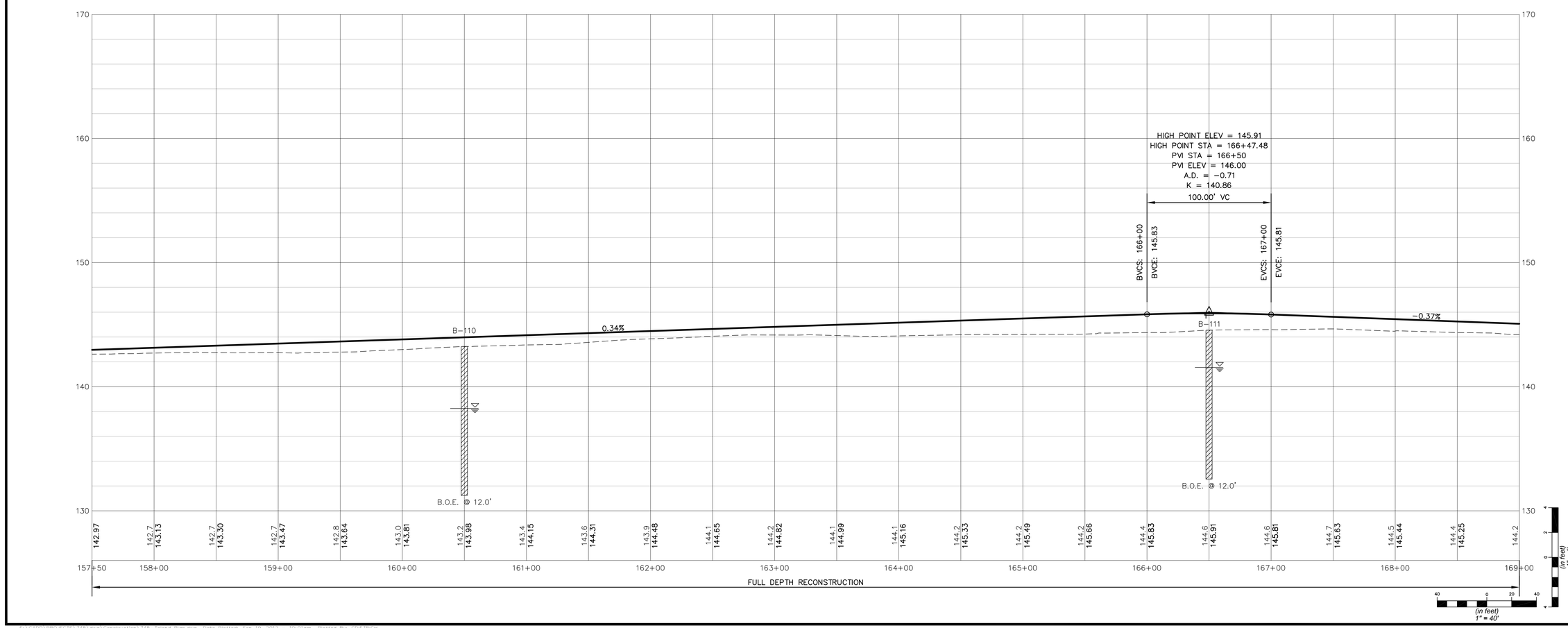


Drainage Notes:

(15) STA 158+04, LT 24.0 FT TO STA 158+33, LT 24.0 FT
INSTALL 29 FT OF 12" RCP
INV. IN: 140.0
INV. OUT: 139.9

(16) STA 159+12, RT 24.0 FT TO STA 159+44, RT 24.0 FT
INSTALL 32 FT OF 15" RCP
INV. IN: 140.3
INV. OUT: 140.2

(17) STA 159+64, LT 24.0 FT TO STA 159+91, LT 24.0 FT
INSTALL 27 FT OF 12" RCP
INV. IN: 140.5
INV. OUT: 140.4



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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 157+50 to STA 169+00

drawing no. 12

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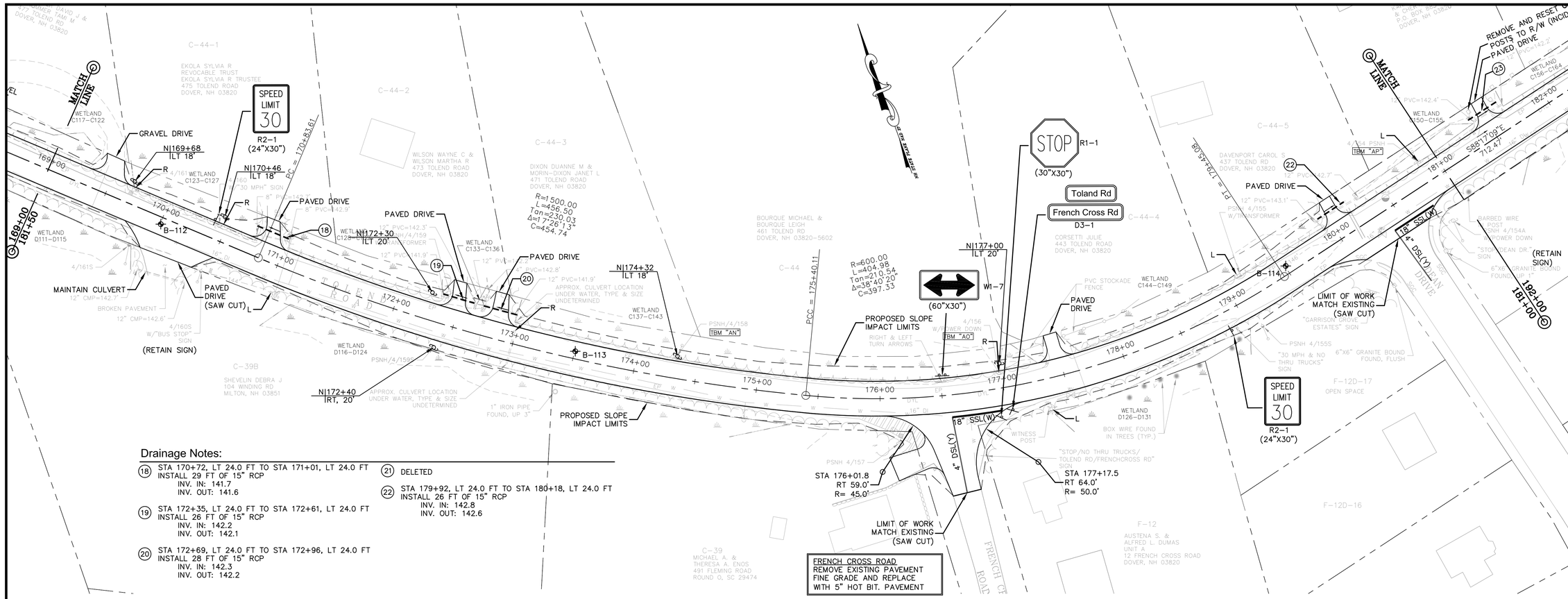


Drainage Notes:

(18) STA 170+72, LT 24.0 FT TO STA 171+01, LT 24.0 FT
INSTALL 29 FT OF 15" RCP
INV. IN: 141.7
INV. OUT: 141.6

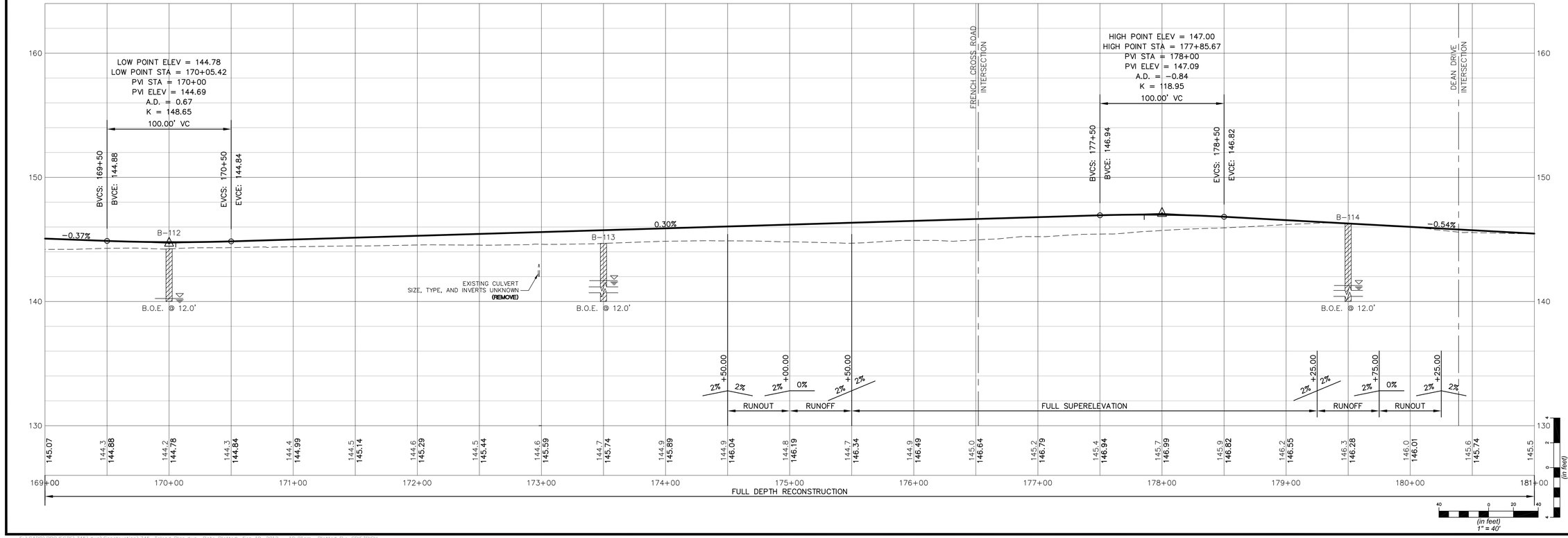
(19) STA 172+35, LT 24.0 FT TO STA 172+61, LT 24.0 FT
INSTALL 26 FT OF 15" RCP
INV. IN: 142.2
INV. OUT: 142.1

(20) STA 172+69, LT 24.0 FT TO STA 172+96, LT 24.0 FT
INSTALL 28 FT OF 15" RCP
INV. IN: 142.3
INV. OUT: 142.2

(21) DELETED

(22) STA 179+92, LT 24.0 FT TO STA 180+18, LT 24.0 FT
INSTALL 26 FT OF 15" RCP
INV. IN: 142.8
INV. OUT: 142.6

FRENCH CROSS ROAD
REMOVE EXISTING PAVEMENT
FINE GRADE AND REPLACE
WITH 5" HOT BIT. PAVEMENT



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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 169+00 to STA 181+00

drawing no. 13

sheet: 13 of 54

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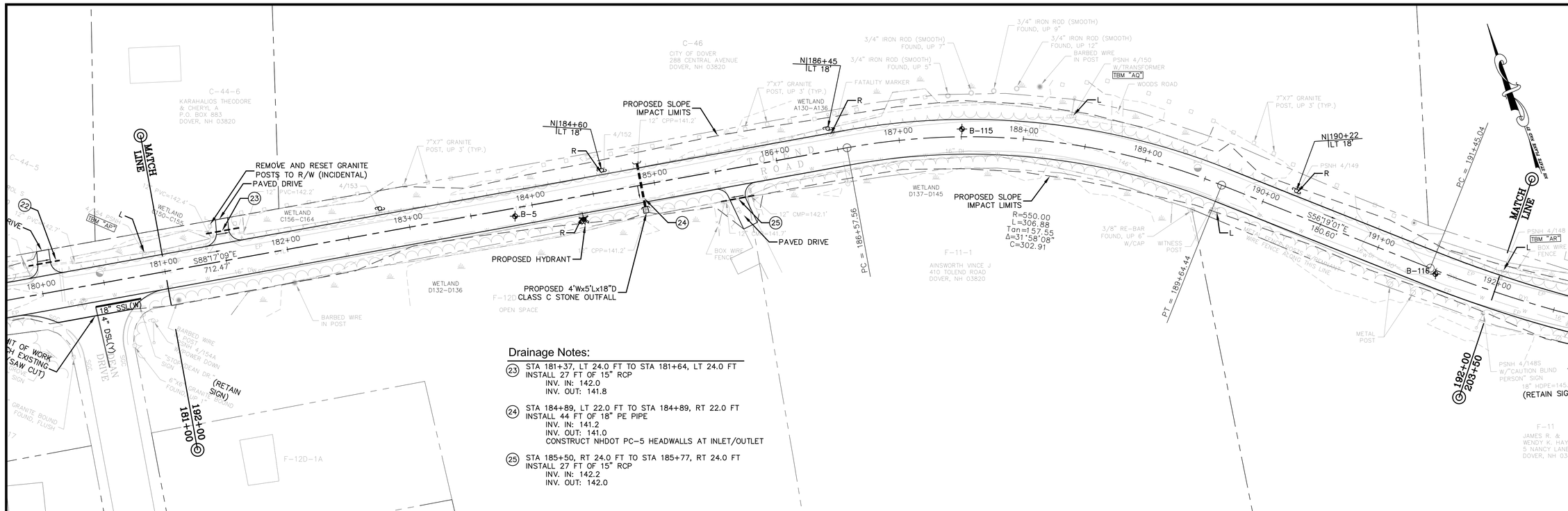
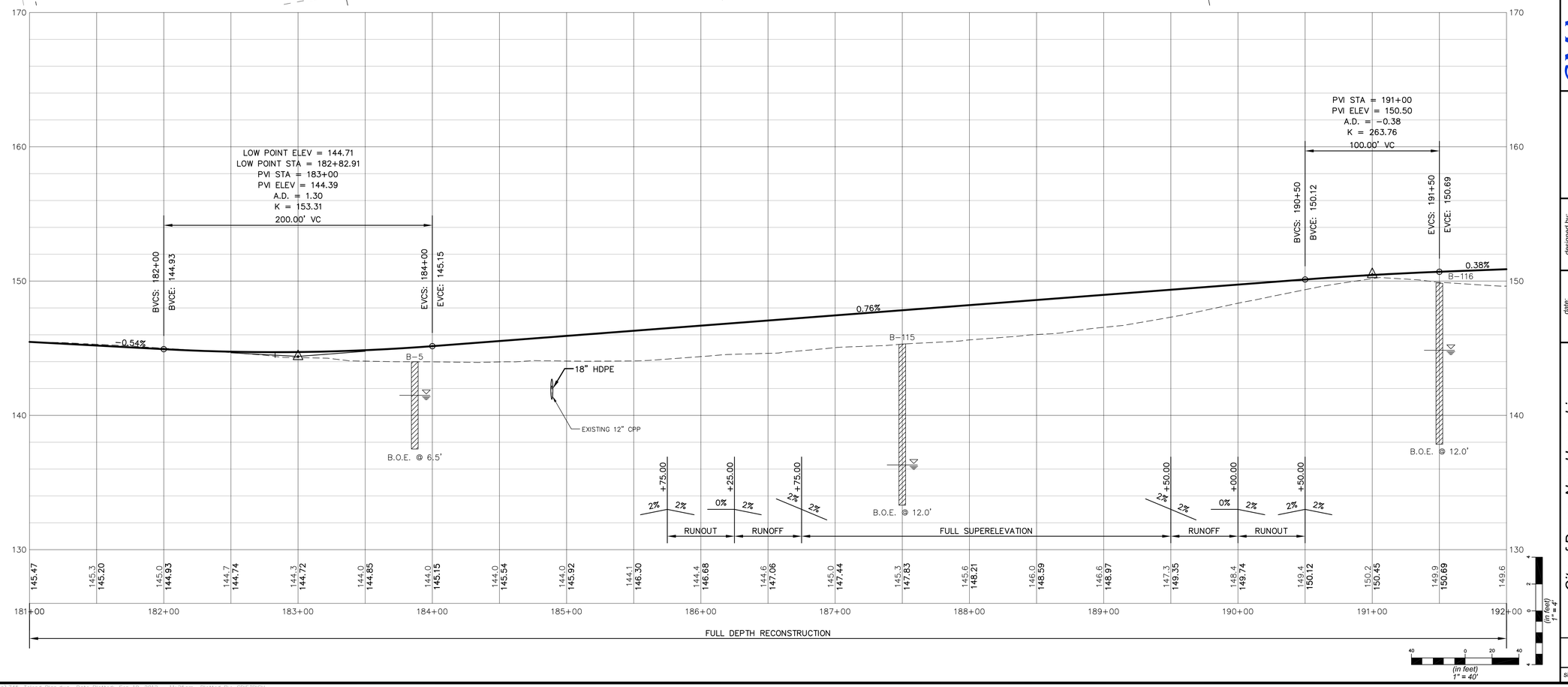


Drainage Notes:

(23) STA 181+37, LT 24.0 FT TO STA 181+64, LT 24.0 FT
INSTALL 27 FT OF 15" RCP
INV. IN: 142.0
INV. OUT: 141.8

(24) STA 184+89, LT 22.0 FT TO STA 184+89, RT 22.0 FT
INSTALL 44 FT OF 18" PE PIPE
INV. IN: 141.2
INV. OUT: 141.0
CONSTRUCT NHDOT PC-5 HEADWALLS AT INLET/OUTLET

(25) STA 185+50, RT 24.0 FT TO STA 185+77, RT 24.0 FT
INSTALL 27 FT OF 15" RCP
INV. IN: 142.2
INV. OUT: 142.0



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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 181+00 to STA 192+00

drawing no. 14

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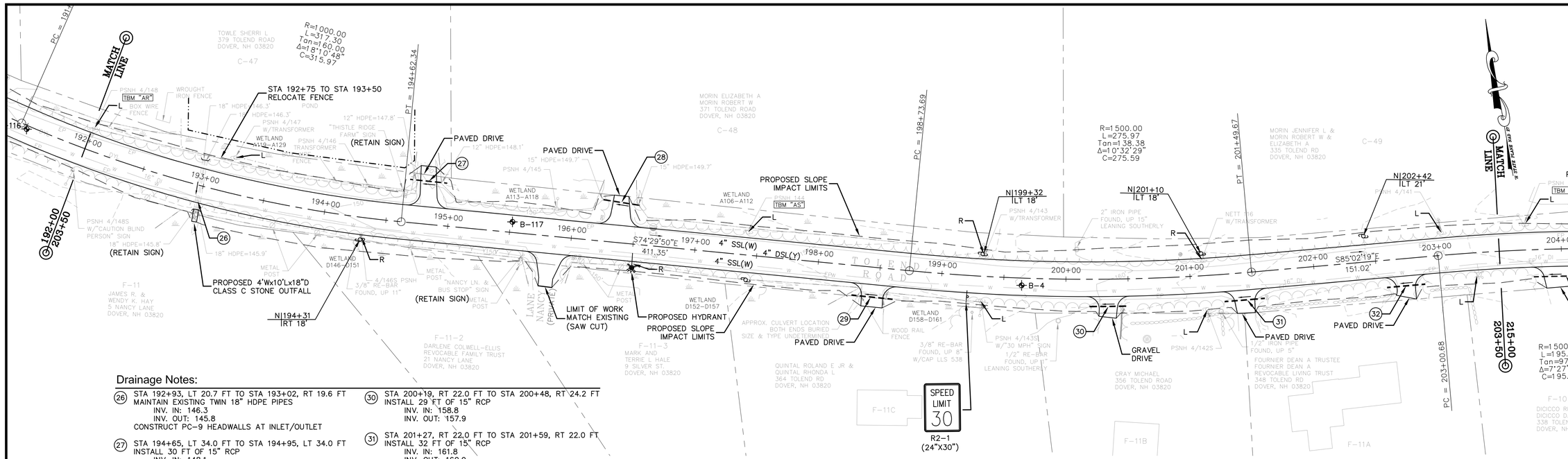


Drainage Notes:

(26) STA 192+93, LT 20.7 FT TO STA 193+02, RT 19.6 FT
MAINTAIN EXISTING TWIN 18" HDPE PIPES
INV. IN: 146.3
INV. OUT: 145.8
CONSTRUCT PC-9 HEADWALLS AT INLET/OUTLET

(27) STA 194+65, LT 34.0 FT TO STA 194+95, LT 34.0 FT
INSTALL 30 FT OF 15" RCP
INV. IN: 148.1
INV. OUT: 147.9

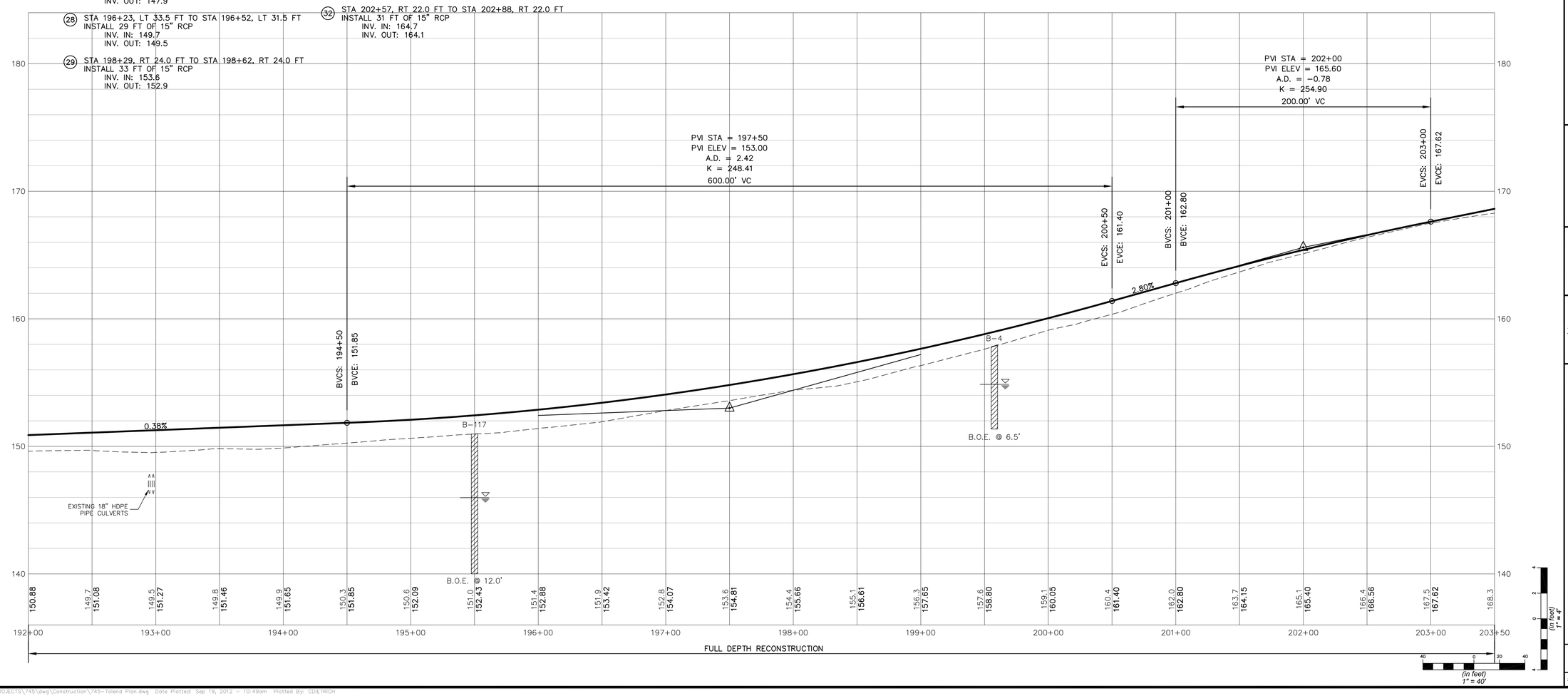
(28) STA 196+23, LT 33.5 FT TO STA 196+52, LT 31.5 FT
INSTALL 29 FT OF 15" RCP
INV. IN: 149.7
INV. OUT: 149.5

(29) STA 198+29, RT 24.0 FT TO STA 198+62, RT 24.0 FT
INSTALL 33 FT OF 15" RCP
INV. IN: 153.6
INV. OUT: 152.9

(30) STA 200+19, RT 22.0 FT TO STA 200+48, RT 24.2 FT
INSTALL 29 FT OF 15" RCP
INV. IN: 158.8
INV. OUT: 157.9

(31) STA 201+27, RT 22.0 FT TO STA 201+59, RT 22.0 FT
INSTALL 32 FT OF 15" RCP
INV. IN: 161.8
INV. OUT: 160.9

(32) STA 202+57, RT 22.0 FT TO STA 202+88, RT 22.0 FT
INSTALL 31 FT OF 15" RCP
INV. IN: 164.7
INV. OUT: 164.1



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designed by: JWB/RDL
drawn by: CPD
approved by: RDL
date: September 2012
project no: 745
file name: 745-Tolend Plan.dwg
scale: (in feet) 1" = 40'

City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 192+00 to STA 203+50

drawing no. 15

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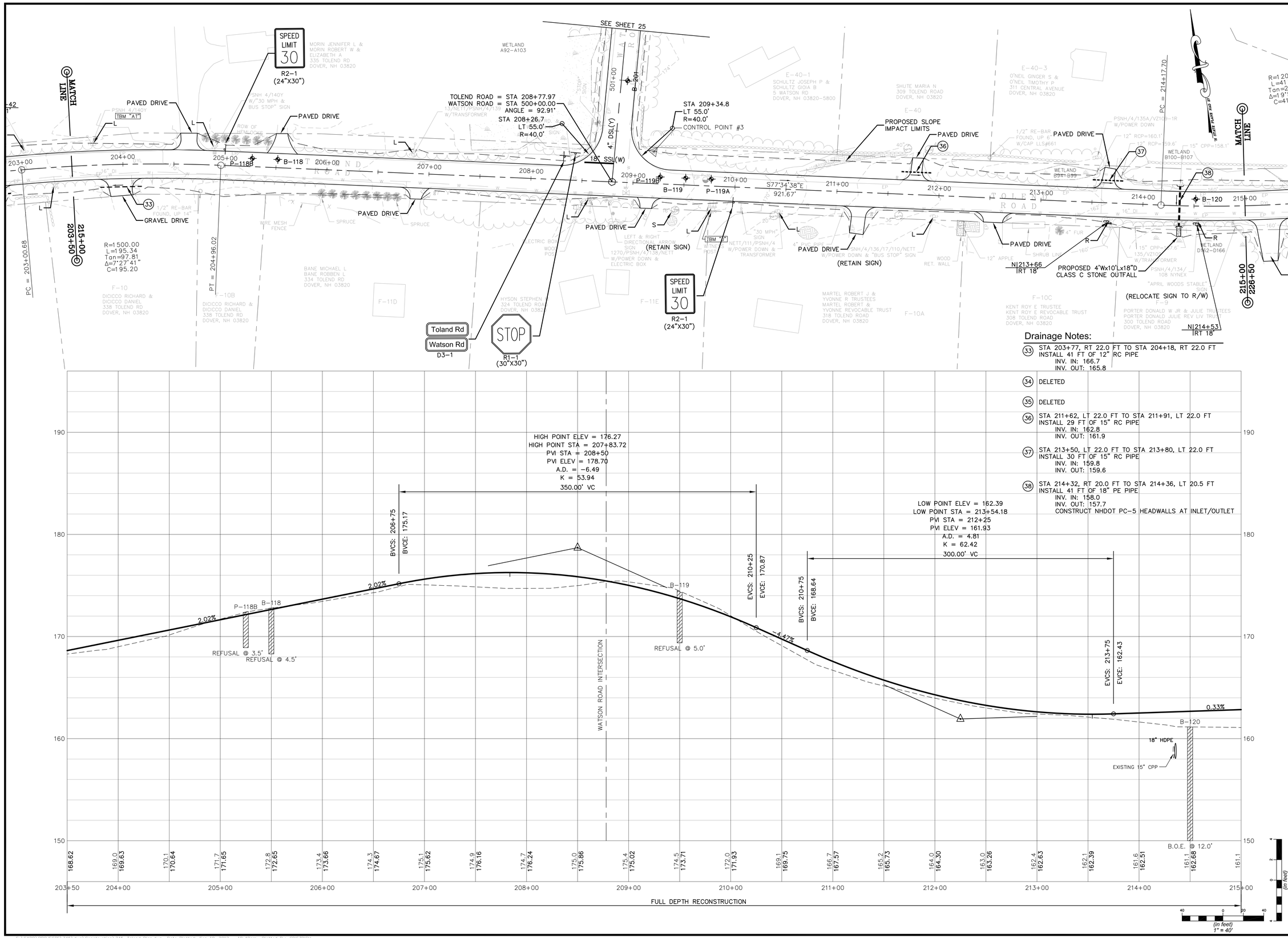

Drainage Notes:

(33) STA 203+77, RT 22.0 FT TO STA 204+18, RT 22.0 FT
INSTALL 41 FT OF 12" RC PIPE
INV. IN: 166.7
INV. OUT: 165.8

(34) DELETED

(35) DELETED

(36) STA 211+62, LT 22.0 FT TO STA 211+91, LT 22.0 FT
INSTALL 29 FT OF 15" RC PIPE
INV. IN: 162.8
INV. OUT: 161.9

(37) STA 213+50, LT 22.0 FT TO STA 213+80, LT 22.0 FT
INSTALL 30 FT OF 15" RC PIPE
INV. IN: 159.8
INV. OUT: 159.6

(38) STA 214+32, RT 20.0 FT TO STA 214+36, LT 20.5 FT
INSTALL 41 FT OF 18" PE PIPE
INV. IN: 158.0
INV. OUT: 157.7
CONSTRUCT NHDOT PC-5 HEADWALLS AT INLET/OUTLET

no.	revision	date	by

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scale: (in feet) 1" = 40'

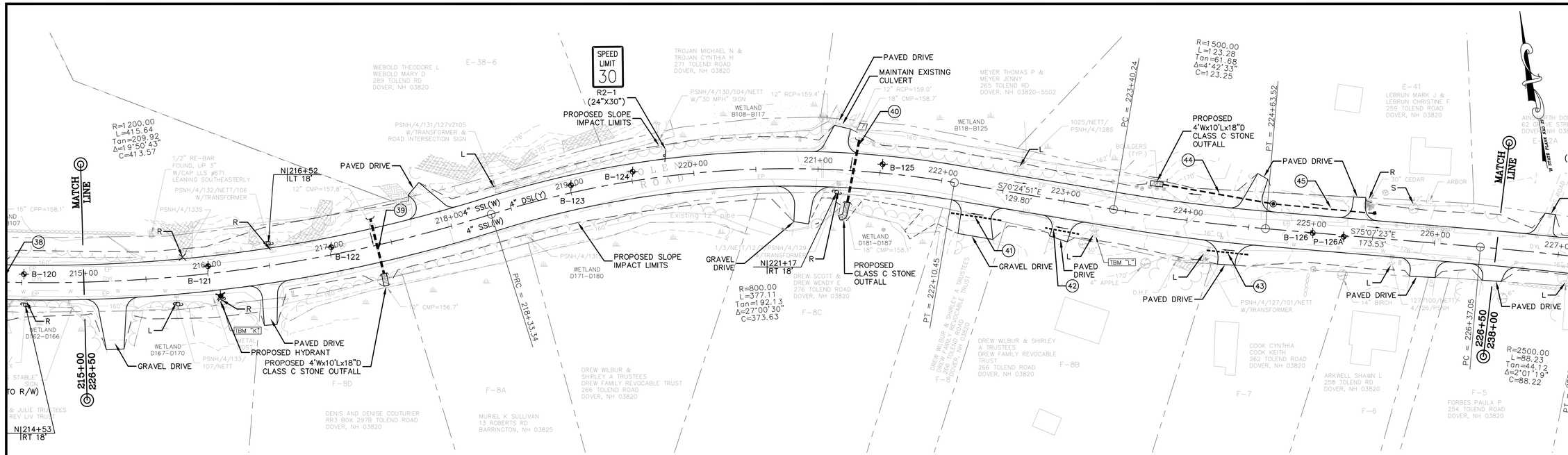
City of Dover, New Hampshire
Community Services Division

Toland Road Rehabilitation

Toland Road
Plan and Profile
STA 203+50 to STA 215+00

drawing no. 16

sheet: 16 of 54



Drainage Notes:

(39) STA 217+37, LT 22.0 FT TO STA 217+40, RT 24.5 FT
INSTALL 47 FT OF 24" PE PIPE
INV. IN: 158.0
INV. OUT: 157.4
CONSTRUCT NHDOT PC-5 HEADWALLS AT INLET/OUTLET

(40) STA 221+34, LT 25.0 FT TO STA 221+24, RT 26.5 FT
INSTALL 64 FT OF 18" PE PIPE
INV. IN: 158.7
INV. OUT: 158.1
CONSTRUCT NHDOT PC-5 HEADWALLS AT INLET/OUTLET

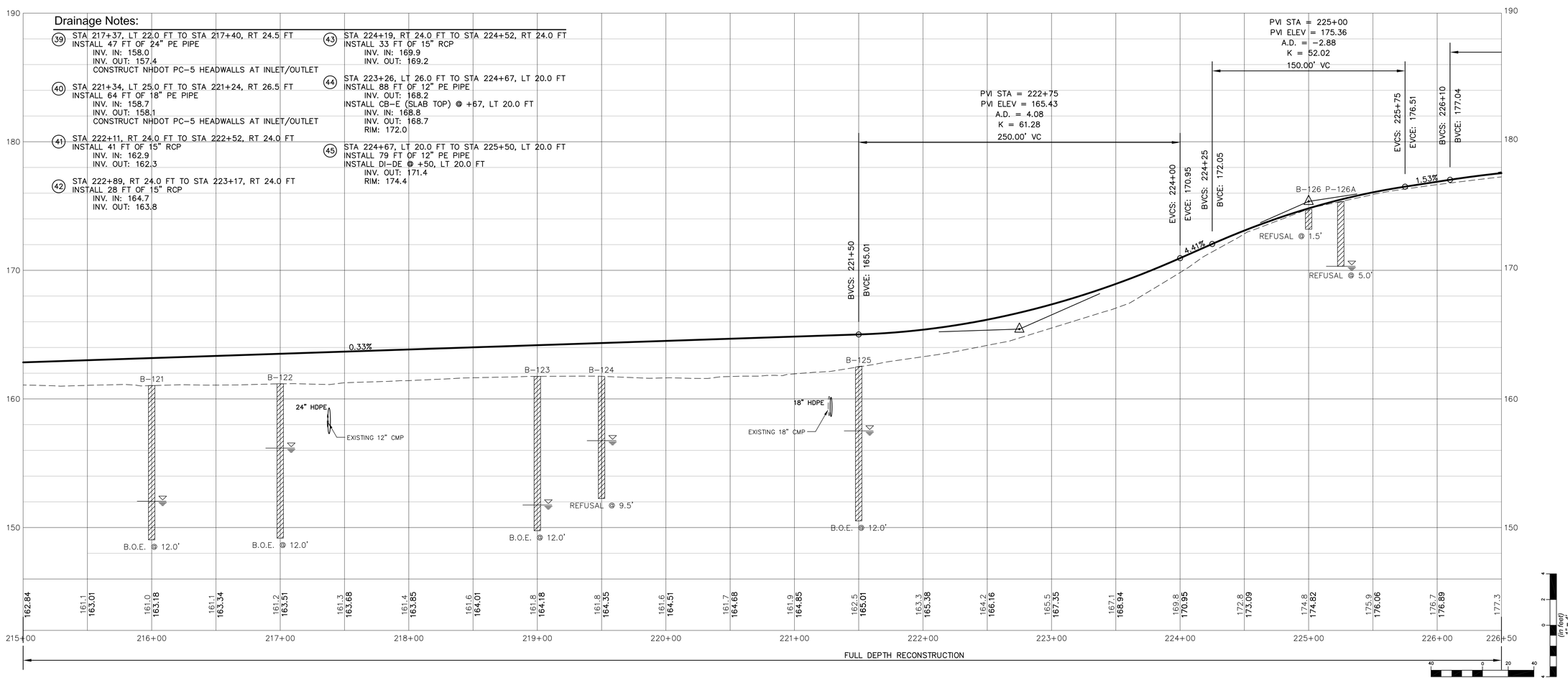
(41) STA 222+11, RT 24.0 FT TO STA 222+52, RT 24.0 FT
INSTALL 41 FT OF 15" RCP
INV. IN: 162.9
INV. OUT: 162.3

(42) STA 222+89, RT 24.0 FT TO STA 223+17, RT 24.0 FT
INSTALL 28 FT OF 15" RCP
INV. IN: 164.7
INV. OUT: 163.8

(43) STA 224+19, RT 24.0 FT TO STA 224+52, RT 24.0 FT
INSTALL 33 FT OF 15" RCP
INV. IN: 169.9
INV. OUT: 169.2

(44) STA 223+26, LT 26.0 FT TO STA 224+67, LT 20.0 FT
INSTALL 88 FT OF 12" PE PIPE
INV. OUT: 168.2
INSTALL CB-E (SLAB TOP) @ +67, LT 20.0 FT
INV. IN: 168.8
INV. OUT: 168.7
RIM: 172.0

(45) STA 224+67, LT 20.0 FT TO STA 225+50, LT 20.0 FT
INSTALL 79 FT OF 12" PE PIPE
INSTALL DI-DE @ +50, LT 20.0 FT
INV. OUT: 171.4
RIM: 174.4



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scale: (in feet) 1" = 40'

City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 215+00 to STA 226+50

drawing no. 17

sheet: 17 of 54

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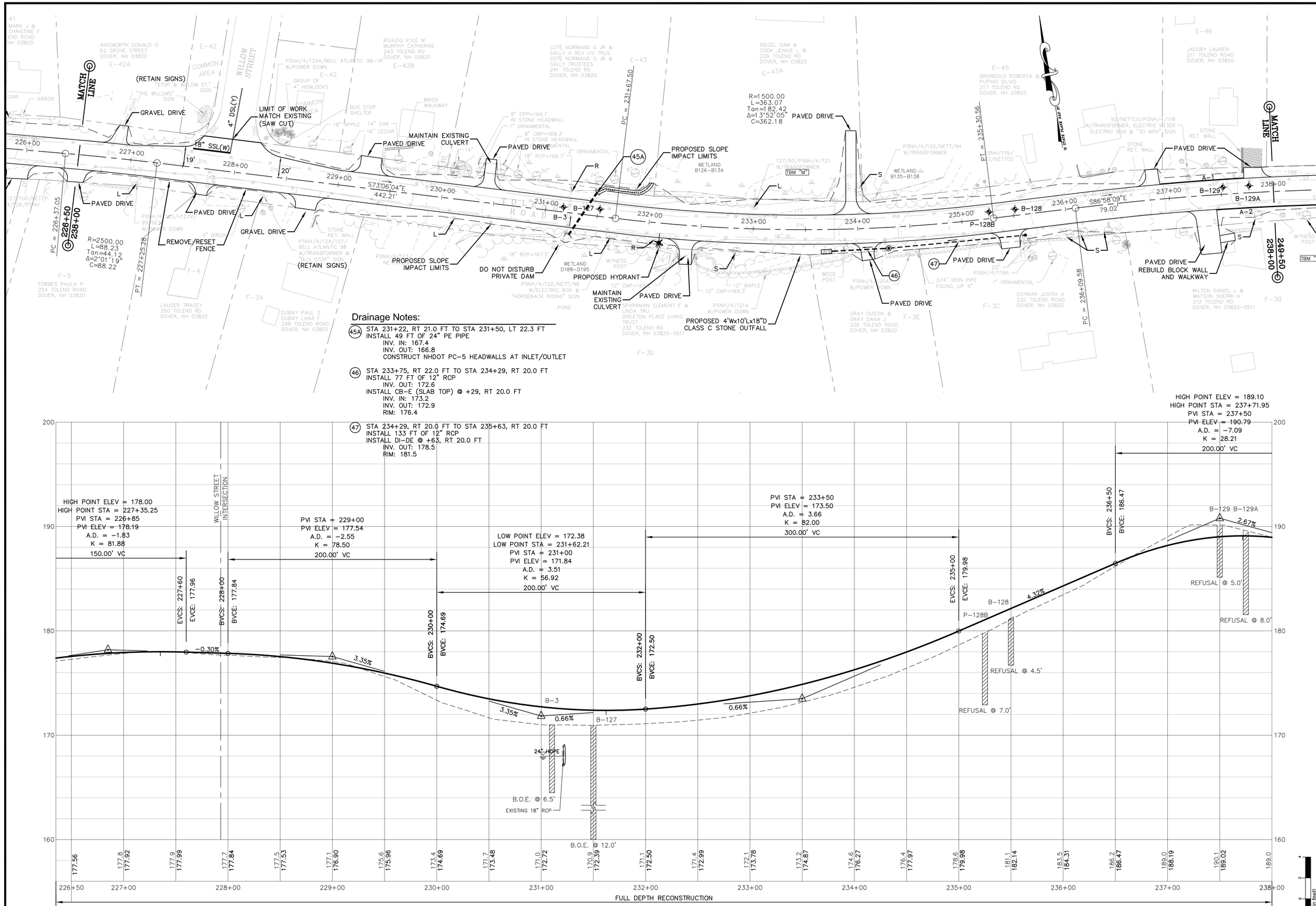

Drainage Notes:

(45A) STA 231+22, RT 21.0 FT TO STA 231+50, LT 22.3 FT
INSTALL 49 FT OF 24" PE PIPE
INV. IN: 167.4
INV. OUT: 166.8
CONSTRUCT NHDOT PC-5 HEADWALLS AT INLET/OUTLET

(46) STA 233+75, RT 22.0 FT TO STA 234+29, RT 20.0 FT
INSTALL 77 FT OF 12" RCP
INV. OUT: 172.6
INSTALL CB-E (SLAB TOP) @ +29, RT 20.0 FT
INV. IN: 173.2
INV. OUT: 172.9
RIM: 176.4

(47) STA 234+29, RT 20.0 FT TO STA 235+63, RT 20.0 FT
INSTALL 133 FT OF 12" RCP
INSTALL DI-DE @ +63, RT 20.0 FT
INV. OUT: 178.5
RIM: 181.5

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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 226+50 to STA 238+00

drawing no. 18

sheet: 18 of 54

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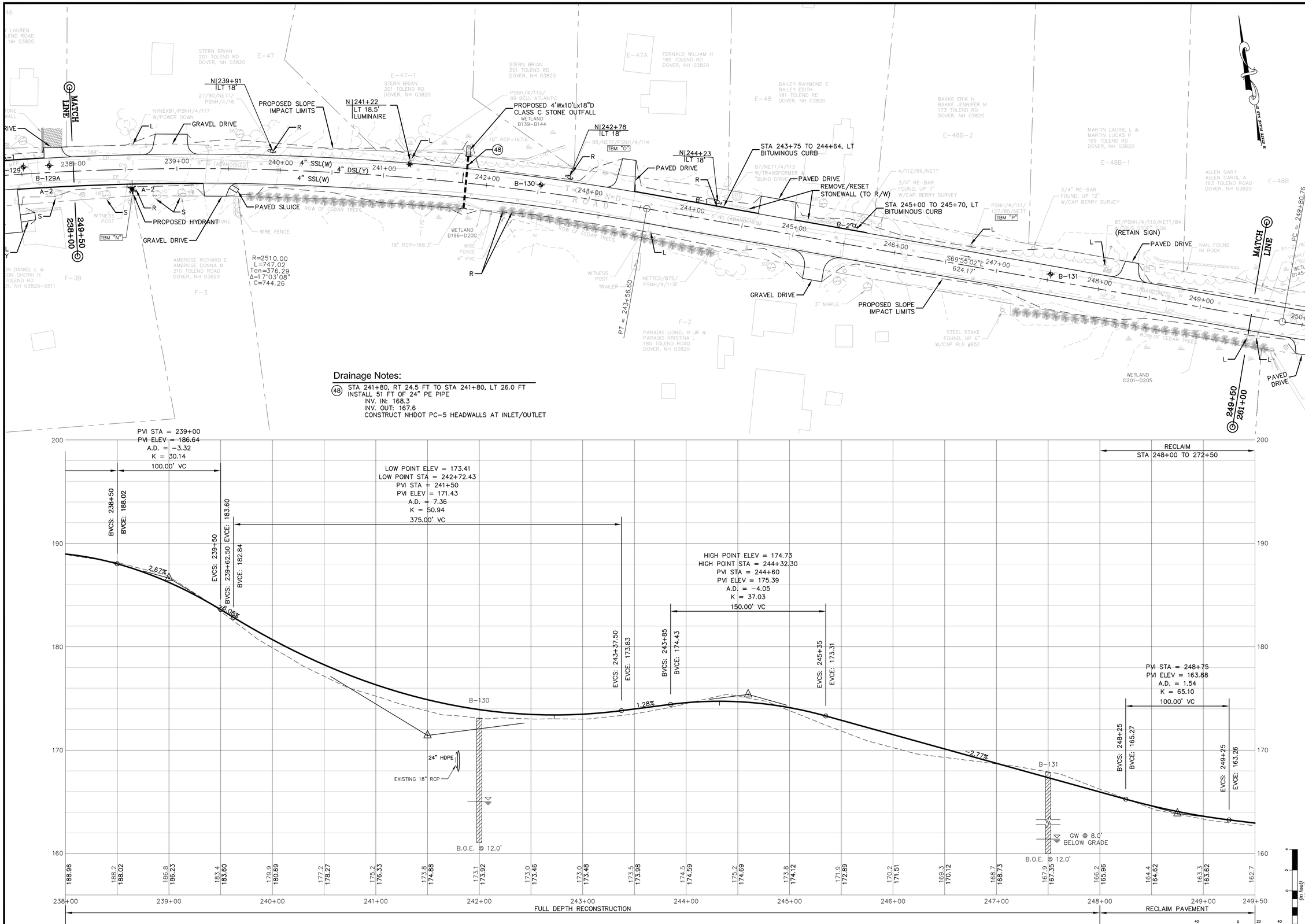

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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 238+00 to STA 249+50

drawing no. 19

sheet: 19 of 54

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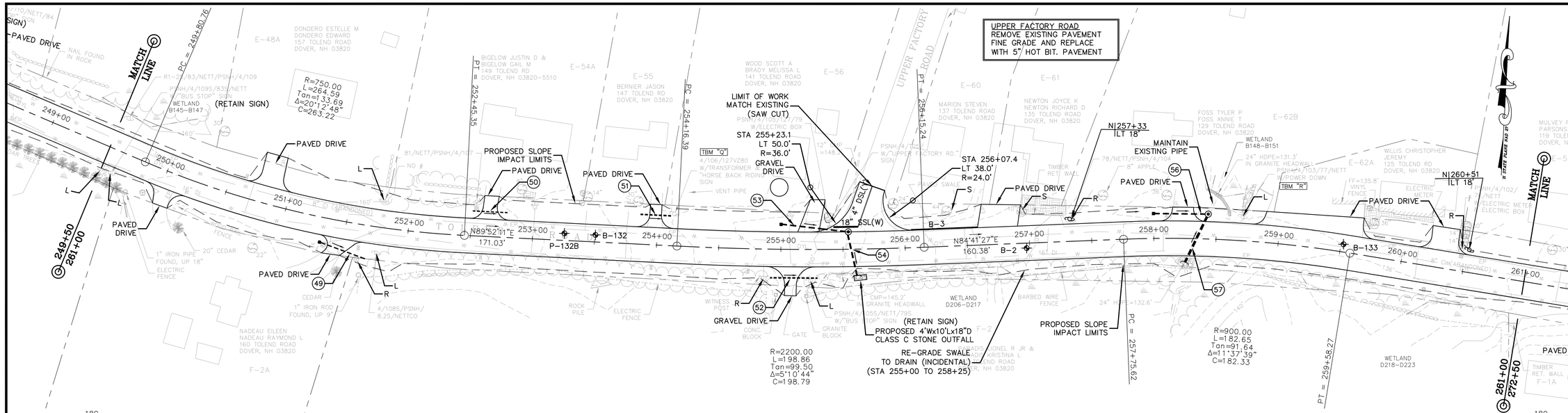

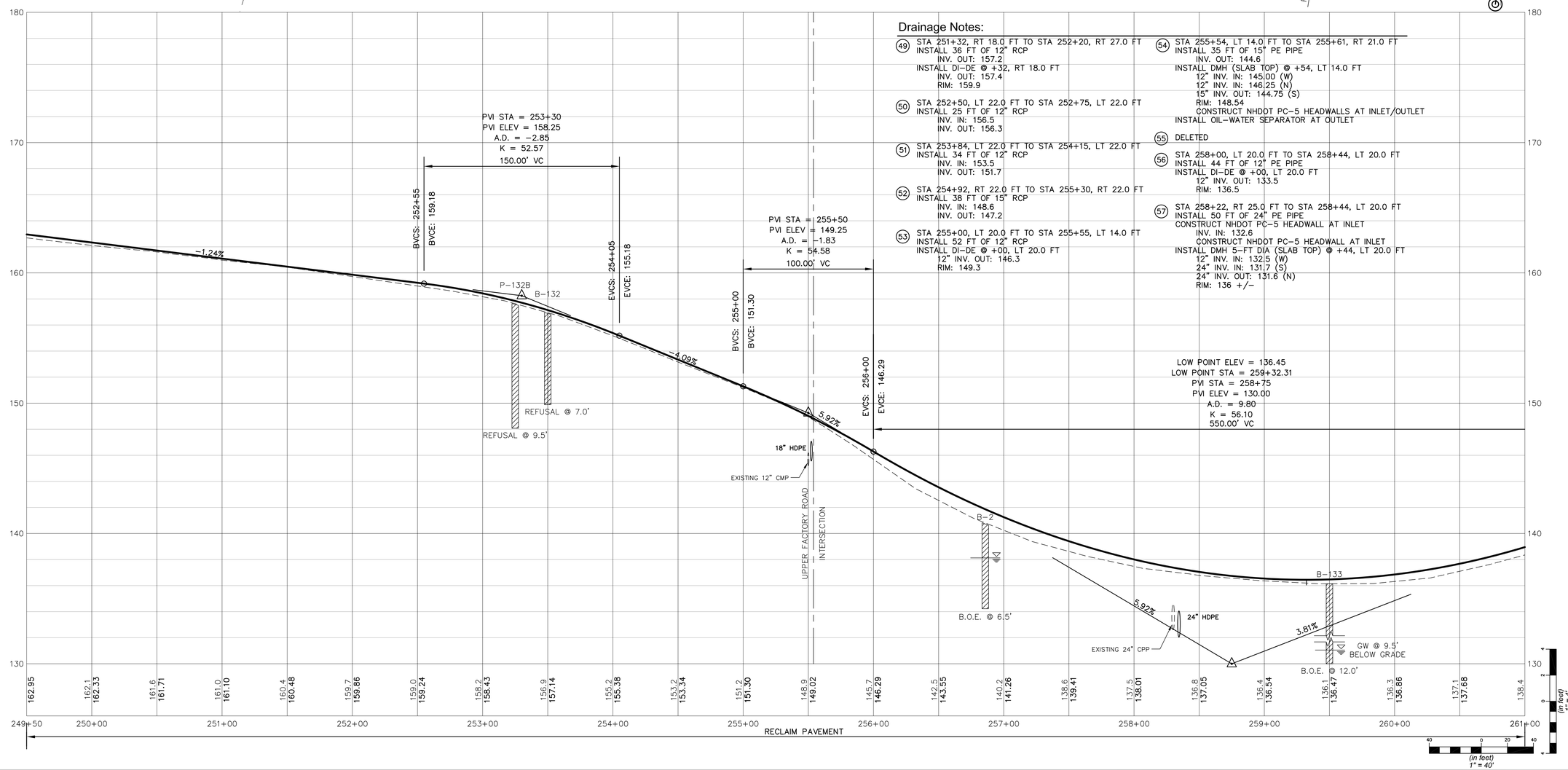

Drainage Notes:

(49) STA 251+32, RT 18.0 FT TO STA 252+20, RT 27.0 FT
INSTALL 36 FT OF 12" RCP
INV. OUT: 157.2
INSTALL DI-DE @ +32, RT 18.0 FT
INV. OUT: 157.4
RIM: 159.9

(50) STA 252+50, LT 22.0 FT TO STA 252+75, LT 22.0 FT
INSTALL 25 FT OF 12" RCP
INV. IN: 156.5
INV. OUT: 156.3

(51) STA 253+84, LT 22.0 FT TO STA 254+15, LT 22.0 FT
INSTALL 34 FT OF 12" RCP
INV. IN: 153.5
INV. OUT: 151.7

(52) STA 254+92, RT 22.0 FT TO STA 255+30, RT 22.0 FT
INSTALL 38 FT OF 15" RCP
INV. IN: 148.6
INV. OUT: 147.2

(53) STA 255+00, LT 20.0 FT TO STA 255+55, LT 14.0 FT
INSTALL 52 FT OF 12" RCP
INSTALL DI-DE @ +00, LT 20.0 FT
12" INV. OUT: 146.3
RIM: 149.3

(54) STA 255+54, LT 14.0 FT TO STA 255+61, RT 21.0 FT
INSTALL 35 FT OF 15" PE PIPE
INV. OUT: 144.6
INSTALL DMH (SLAB TOP) @ +54, LT 14.0 FT
12" INV. IN: 145.00 (W)
12" INV. IN: 146.25 (N)
15" INV. OUT: 144.75 (S)
RIM: 148.54
CONSTRUCT NHDOT PC-5 HEADWALLS AT INLET/OUTLET
INSTALL OIL-WATER SEPARATOR AT OUTLET

(55) DELETED

(56) STA 258+00, LT 20.0 FT TO STA 258+44, LT 20.0 FT
INSTALL 44 FT OF 12" PE PIPE
INSTALL DI-DE @ +00, LT 20.0 FT
12" INV. OUT: 133.5
RIM: 136.5

(57) STA 258+22, RT 25.0 FT TO STA 258+44, LT 20.0 FT
INSTALL 50 FT OF 24" PE PIPE
CONSTRUCT NHDOT PC-5 HEADWALL AT INLET
INV. IN: 132.6
CONSTRUCT NHDOT PC-5 HEADWALL AT INLET
INSTALL DMH 5-FT DIA (SLAB TOP) @ +44, LT 20.0 FT
12" INV. IN: 132.5 (W)
24" INV. IN: 131.7 (S)
24" INV. OUT: 131.6 (N)
RIM: 136 +/-

no.	revision	date	by

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scale: (in feet) 1" = 40'

City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 249+50 to STA 261+00

drawing no. 20

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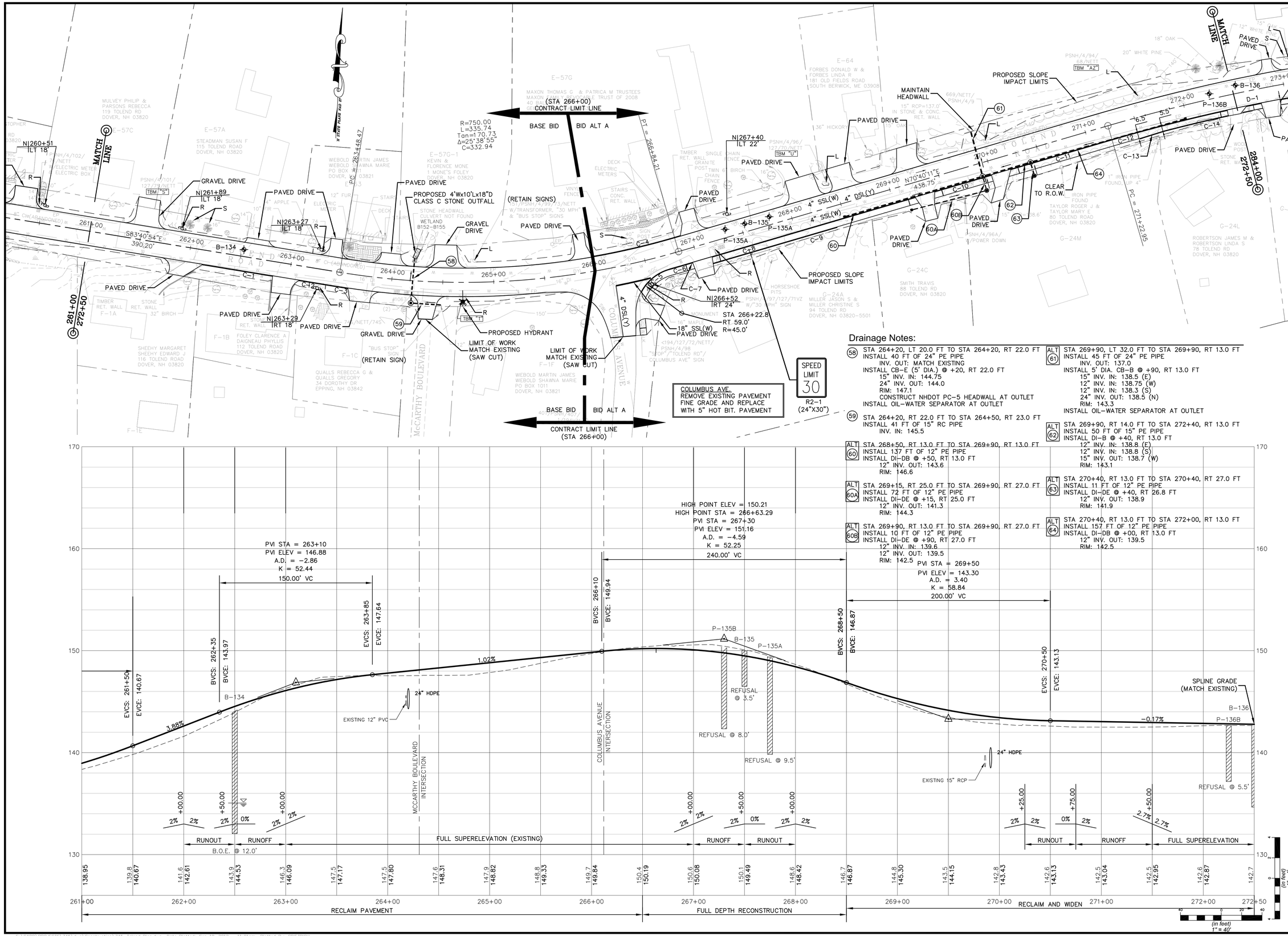

Drainage Notes:

(58) STA 264+20, LT 20.0 FT TO STA 264+20, RT 22.0 FT
INSTALL 40 FT OF 24" PE PIPE
INV. OUT: MATCH EXISTING
INSTALL CB-E (5' DIA.) @ +20, RT 22.0 FT
15" INV. IN: 144.75
24" INV. OUT: 144.0
RIM: 147.1
CONSTRUCT NHDOT PC-5 HEADWALL AT OUTLET
INSTALL OIL-WATER SEPARATOR AT OUTLET

(59) STA 264+20, RT 22.0 FT TO STA 264+50, RT 23.0 FT
INSTALL 41 FT OF 15" RC PIPE
INV. IN: 145.5

ALT (60) STA 268+50, RT 13.0 FT TO STA 269+90, RT 13.0 FT
INSTALL 137 FT OF 12" PE PIPE
INSTALL DI-DB @ +50, RT 13.0 FT
12" INV. OUT: 143.6
RIM: 146.6

ALT (60A) STA 269+15, RT 25.0 FT TO STA 269+90, RT 27.0 FT
INSTALL 72 FT OF 12" PE PIPE
INSTALL DI-DE @ +15, RT 25.0 FT
12" INV. OUT: 141.3
RIM: 144.3

ALT (60B) STA 269+90, RT 13.0 FT TO STA 269+90, RT 27.0 FT
INSTALL 10 FT OF 12" PE PIPE
INSTALL DI-DE @ +90, RT 27.0 FT
12" INV. IN: 139.6
12" INV. OUT: 139.5
RIM: 142.5

ALT (61) STA 269+90, LT 32.0 FT TO STA 269+90, RT 13.0 FT
INSTALL 45 FT OF 24" PE PIPE
INV. OUT: 137.0
INSTALL 5' DIA. CB-B @ +90, RT 13.0 FT
15" INV. IN: 138.5 (E)
12" INV. IN: 138.75 (W)
12" INV. IN: 138.3 (S)
24" INV. OUT: 138.5 (N)
RIM: 143.3
INSTALL OIL-WATER SEPARATOR AT OUTLET

ALT (62) STA 269+90, RT 14.0 FT TO STA 272+40, RT 13.0 FT
INSTALL 50 FT OF 15" PE PIPE
INSTALL DI-B @ +40, RT 13.0 FT
12" INV. IN: 138.8 (E)
12" INV. IN: 138.8 (S)
15" INV. OUT: 138.7 (W)
RIM: 143.1

ALT (63) STA 270+40, RT 13.0 FT TO STA 270+40, RT 27.0 FT
INSTALL 11 FT OF 12" PE PIPE
INSTALL DI-DE @ +40, RT 26.8 FT
12" INV. OUT: 138.9
RIM: 141.9

ALT (64) STA 270+40, RT 13.0 FT TO STA 272+00, RT 13.0 FT
INSTALL 157 FT OF 12" PE PIPE
INSTALL DI-DB @ +00, RT 13.0 FT
12" INV. OUT: 139.5
RIM: 142.5

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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 261+00 to STA 272+50

drawing no. 21

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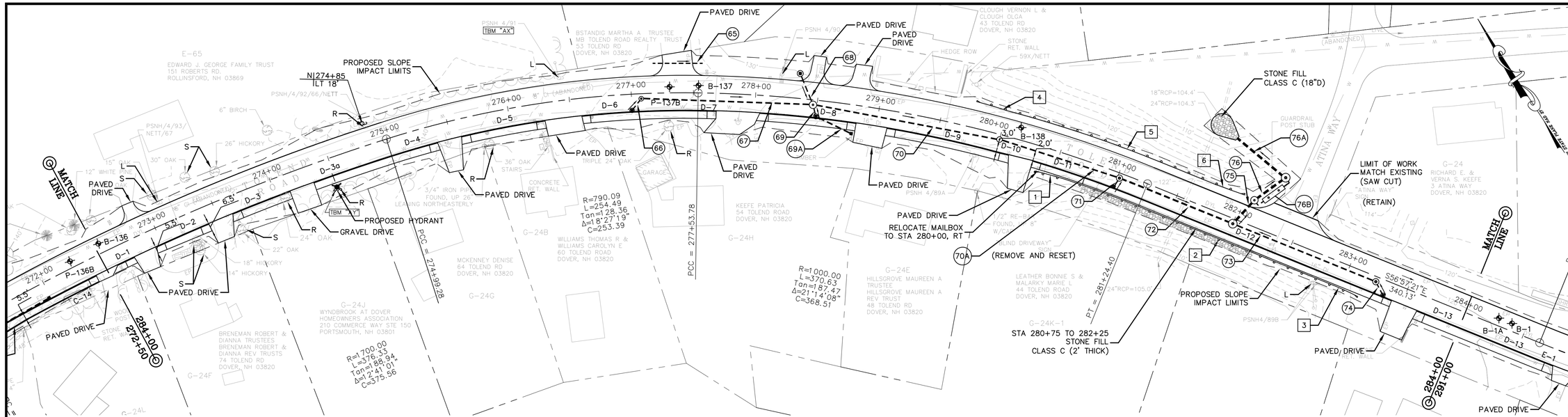

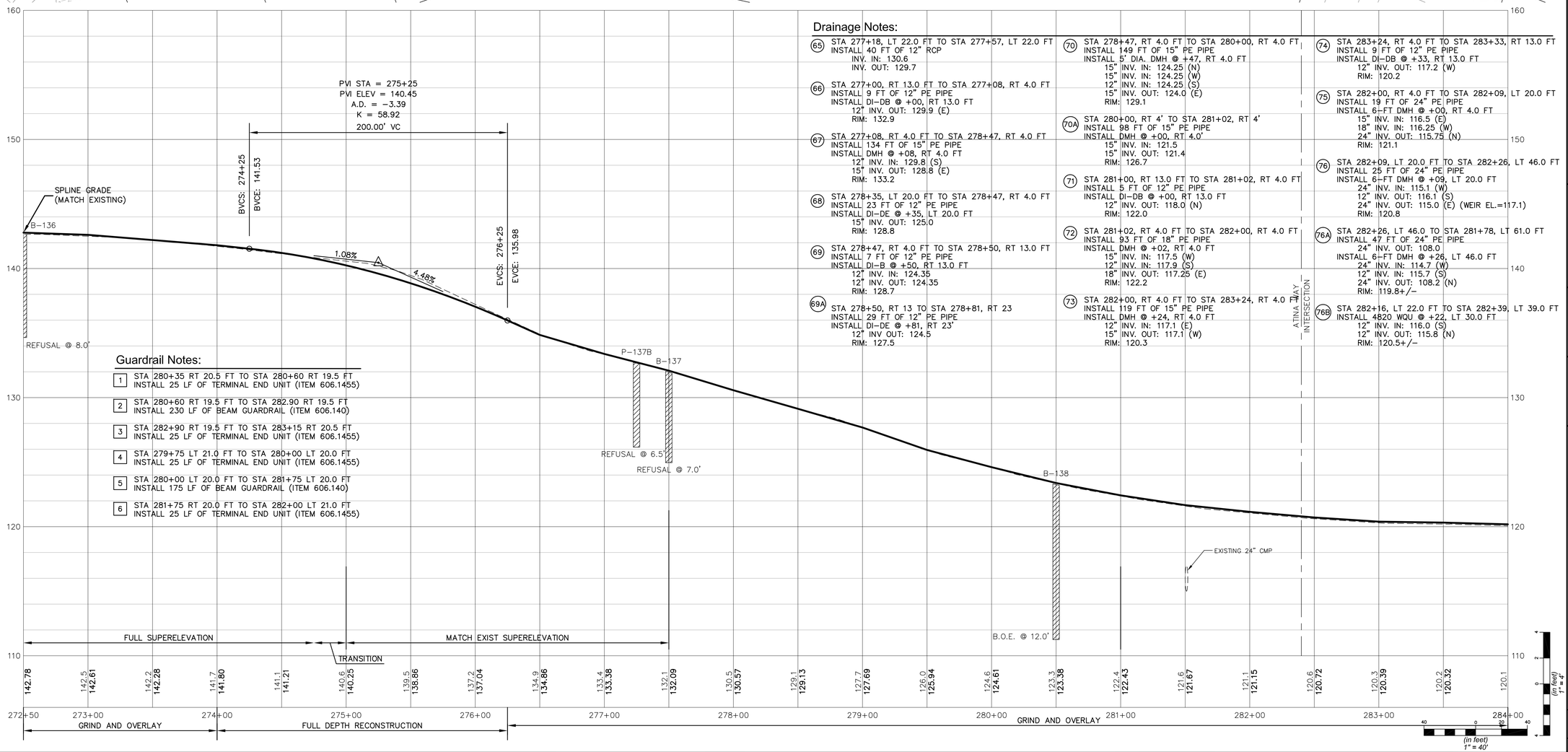

Guardrail Notes:

1. STA 280+35 RT 20.5 FT TO STA 280+60 RT 19.5 FT
   INSTALL 25 LF OF TERMINAL END UNIT (ITEM 606.1455)
2. STA 280+60 RT 19.5 FT TO STA 282.90 RT 19.5 FT
   INSTALL 230 LF OF BEAM GUARDRAIL (ITEM 606.140)
3. STA 282+90 RT 19.5 FT TO STA 283+15 RT 20.5 FT
   INSTALL 25 LF OF TERMINAL END UNIT (ITEM 606.1455)
4. STA 279+75 LT 21.0 FT TO STA 280+00 LT 20.0 FT
   INSTALL 25 LF OF TERMINAL END UNIT (ITEM 606.1455)
5. STA 280+00 LT 20.0 FT TO STA 281+75 LT 20.0 FT
   INSTALL 175 LF OF BEAM GUARDRAIL (ITEM 606.140)
6. STA 281+75 RT 20.0 FT TO STA 282+00 LT 21.0 FT
   INSTALL 25 LF OF TERMINAL END UNIT (ITEM 606.1455)

Drainage Notes:

65. STA 277+18, LT 22.0 FT TO STA 277+57, LT 22.0 FT
    INSTALL 40 FT OF 12" RCP
    INV. IN: 130.6
    INV. OUT: 129.7

66. STA 277+00, RT 13.0 FT TO STA 277+08, RT 4.0 FT
    INSTALL 9 FT OF 12" PE PIPE
    INSTALL DI-DB @ +00, RT 13.0 FT
    12" INV. OUT: 129.9 (E)
    RIM: 132.9

67. STA 277+08, RT 4.0 FT TO STA 278+47, RT 4.0 FT
    INSTALL 134 FT OF 15" PE PIPE
    INSTALL DMH @ +08, RT 4.0 FT
    12" INV. IN: 129.8 (S)
    15" INV. OUT: 128.8 (E)
    RIM: 133.2

68. STA 278+35, LT 20.0 FT TO STA 278+47, RT 4.0 FT
    INSTALL 23 FT OF 12" PE PIPE
    INSTALL DI-DE @ +35, LT 20.0 FT
    15" INV. OUT: 125.0
    RIM: 128.8

69. STA 278+47, RT 4.0 FT TO STA 278+50, RT 13.0 FT
    INSTALL 7 FT OF 12" PE PIPE
    INSTALL DI-B @ +50, RT 13.0 FT
    12" INV. IN: 124.35
    12" INV. OUT: 124.35
    RIM: 128.7

69A. STA 278+50, RT 13 TO STA 278+81, RT 23
     INSTALL 29 FT OF 12" PE PIPE
     INSTALL DI-DE @ +81, RT 23'
     12" INV OUT: 124.5
     RIM: 127.5

70. STA 278+47, RT 4.0 FT TO STA 280+00, RT 4.0 FT
    INSTALL 149 FT OF 15" PE PIPE
    INSTALL 5' DIA. DMH @ +47, RT 4.0 FT
    15" INV. IN: 124.25 (N)
    15" INV. IN: 124.25 (W)
    12" INV. IN: 124.25 (S)
    15" INV. OUT: 124.0 (E)
    RIM: 129.1

70A. STA 280+00, RT 4' TO STA 281+02, RT 4'
     INSTALL 98 FT OF 15" PE PIPE
     INSTALL DMH @ +00, RT 4.0'
     15" INV. IN: 121.5
     15" INV. OUT: 121.4
     RIM: 126.7

71. STA 281+00, RT 13.0 FT TO STA 281+02, RT 4.0 FT
    INSTALL 5 FT OF 12" PE PIPE
    INSTALL DI-DB @ +00, RT 13.0 FT
    12" INV. OUT: 118.0 (N)
    RIM: 122.0

72. STA 281+02, RT 4.0 FT TO STA 282+00, RT 4.0 FT
    INSTALL 93 FT OF 18" PE PIPE
    INSTALL DMH @ +02, RT 4.0 FT
    15" INV. IN: 117.5 (W)
    12" INV. IN: 117.9 (S)
    18" INV. OUT: 117.25 (E)
    RIM: 122.2

73. STA 282+00, RT 4.0 FT TO STA 283+24, RT 4.0 FT
    INSTALL 119 FT OF 15" PE PIPE
    INSTALL DMH @ +24, RT 4.0 FT
    12" INV. IN: 117.1 (E)
    15" INV. OUT: 117.1 (W)
    RIM: 120.3

74. STA 283+24, RT 4.0 FT TO STA 283+33, RT 13.0 FT
    INSTALL 9 FT OF 12" PE PIPE
    INSTALL DI-DB @ +33, RT 13.0 FT
    12" INV. OUT: 117.2 (W)
    RIM: 120.2

75. STA 282+00, RT 4.0 FT TO STA 282+09, LT 20.0 FT
    INSTALL 19 FT OF 24" PE PIPE
    INSTALL 6-FT DMH @ +00, RT 4.0 FT
    15" INV. IN: 116.5 (E)
    18" INV. IN: 116.25 (W)
    24" INV. OUT: 115.75 (N)
    RIM: 121.1

76. STA 282+09, LT 20.0 FT TO STA 282+26, LT 46.0 FT
    INSTALL 25 FT OF 24" PE PIPE
    INSTALL 6-FT DMH @ +09, LT 20.0 FT
    24" INV. IN: 115.1 (W)
    12" INV. OUT: 116.1 (S)
    24" INV. OUT: 115.0 (E) (WEIR EL.=117.1)
    RIM: 120.8

76A. STA 282+26, LT 46.0 TO STA 281+78, LT 61.0 FT
     INSTALL 47 FT OF 24" PE PIPE
     24" INV. OUT: 108.0
     INSTALL 6-FT DMH @ +26, LT 46.0 FT
     24" INV. IN: 114.7 (W)
     12" INV. IN: 115.7 (S)
     24" INV. OUT: 108.2 (N)
     RIM: 119.8+/-

76B. STA 282+16, LT 22.0 FT TO STA 282+39, LT 39.0 FT
     INSTALL 4820 WQU @ +22, LT 30.0 FT
     12" INV. IN: 116.0 (S)
     12" INV. OUT: 115.8 (N)
     RIM: 120.5+/-

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City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 272+50 to STA 284+00

drawing no. 22

sheet: 22 of 54

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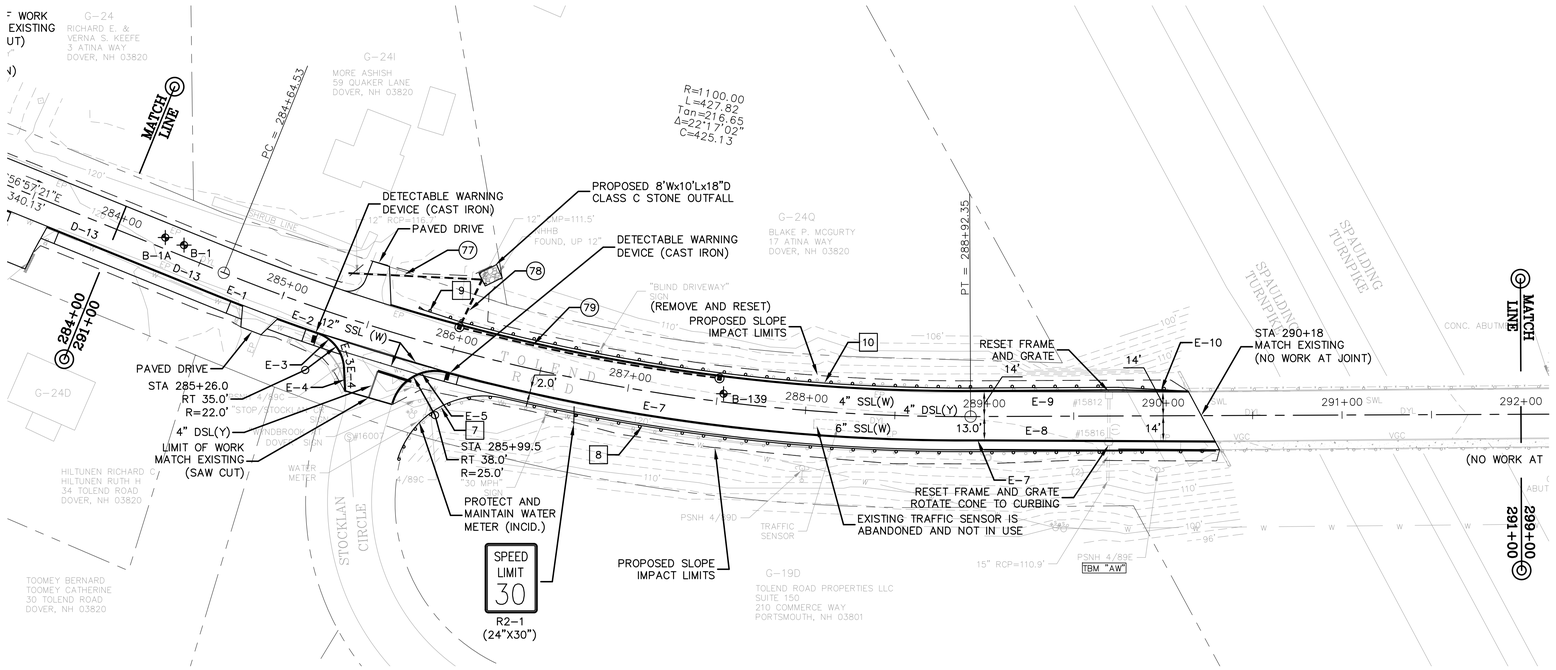

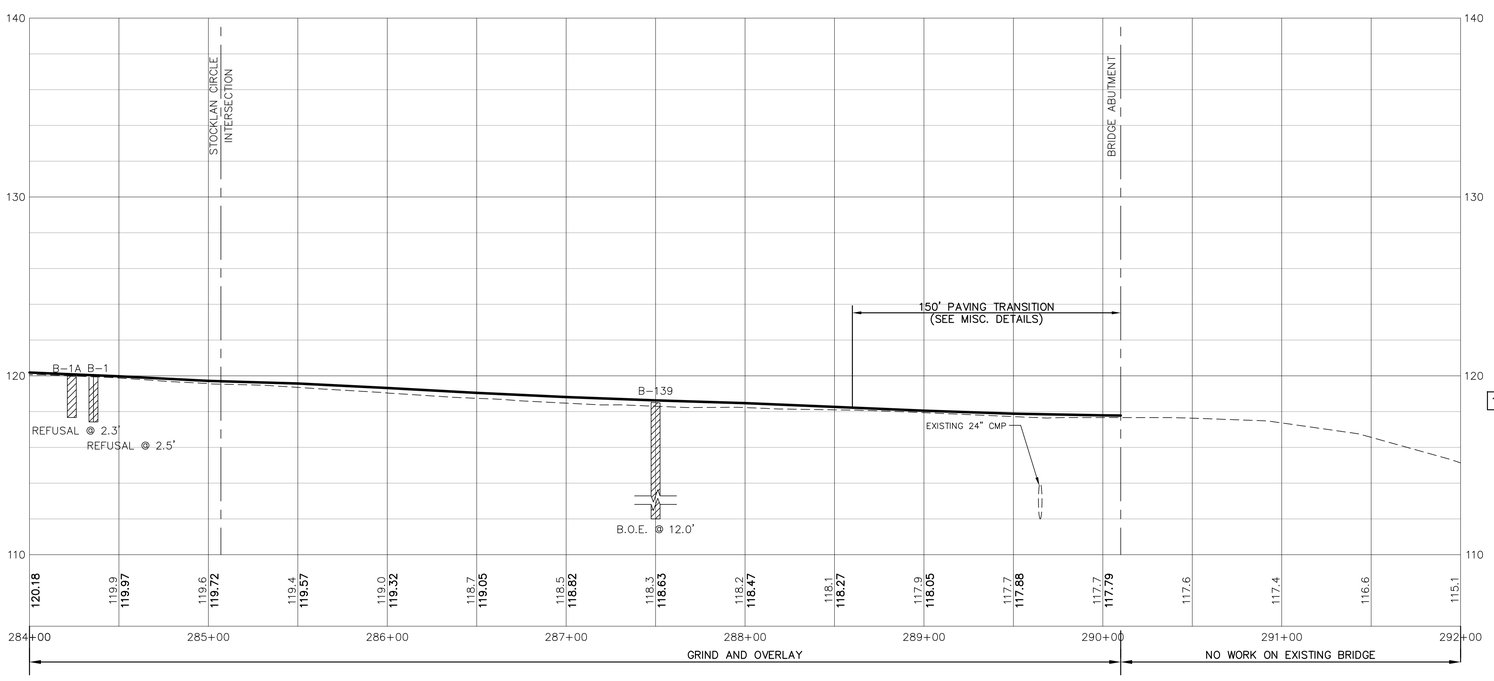

Drainage Notes:

(77) STA 285+30, LT 25 TO STA 286+05, LT 43
INSTALL 73 FT OF 12" RC PIPE
INV. IN: 116.7
INV. OUT: 111.5

(78) STA 286+00, LT 13.0 FT TO STA 286+05, LT 42.0 FT
INSTALL 28 FT OF 15" PE PIPE
INV. OUT: 111.5
CONSTRUCT NHDOT PC-10 HEADWALL AT OUTLET
INSTALL CB-E 5-FT DIA. @ +00, LT 13.0 FT
15" INV. IN: 112.1 (E)
15" INV. OUT: 112.0 (N)
RIM: 118.3
INSTALL OIL-WATER SEPARATOR AT OUTLET

(79) STA 286+00, LT 13.0 FT TO STA 287+50, LT 13.0 FT
INSTALL 146 FT OF 15" PE PIPE
INSTALL CB-B @ +50, LT 13.0 FT
15" INV. OUT: 113.3
RIM: 117.5

Guardrail Notes:

7 STA 285+39 RT. 67.0 FT TO STA 286+34 RT. 19.5 FT
INSTALL 75.0 LF OF CURVED GUARDRAIL. R=50.0 FT

8 STA 286+34 RT 19.5 FT TO STA 290+13 RT 19.5 FT
INSTALL 379 LF OF BEAM GUARDRAIL
(MATCH TO EXISTING BRIDGE APPROACH RAIL-INCIDENTAL)

9 STA 285+75 LT 17.0 FT TO STA 286+00 RT 16.0 FT
INSTALL 25 LF OF TERMINAL END UNIT

10 STA 286+00 RT 16.0 FT TO STA 289+95 LT 16.0 FT
INSTALL 395 LF OF BEAM GUARDRAIL
(MATCH TO EXISTING BRIDGE APPROACH RAIL-INCIDENTAL)

11 → 14 DELETED

(in feet) 1" = 40'

(in feet) 1" = 4'

no.	revision	date	by

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55 So. Commercial Street, Manchester, NH, 603/627-0708
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designed by: JWB/RDL
drawn by: CPD
approved by: RDL
date: September 2012
project no: 745
file name: 745-Tolend Plan.dwg
scale: (in feet) 1" = 40'

City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 284+00 to STA 292+00

drawing no. 23

sheet: 23 of 54

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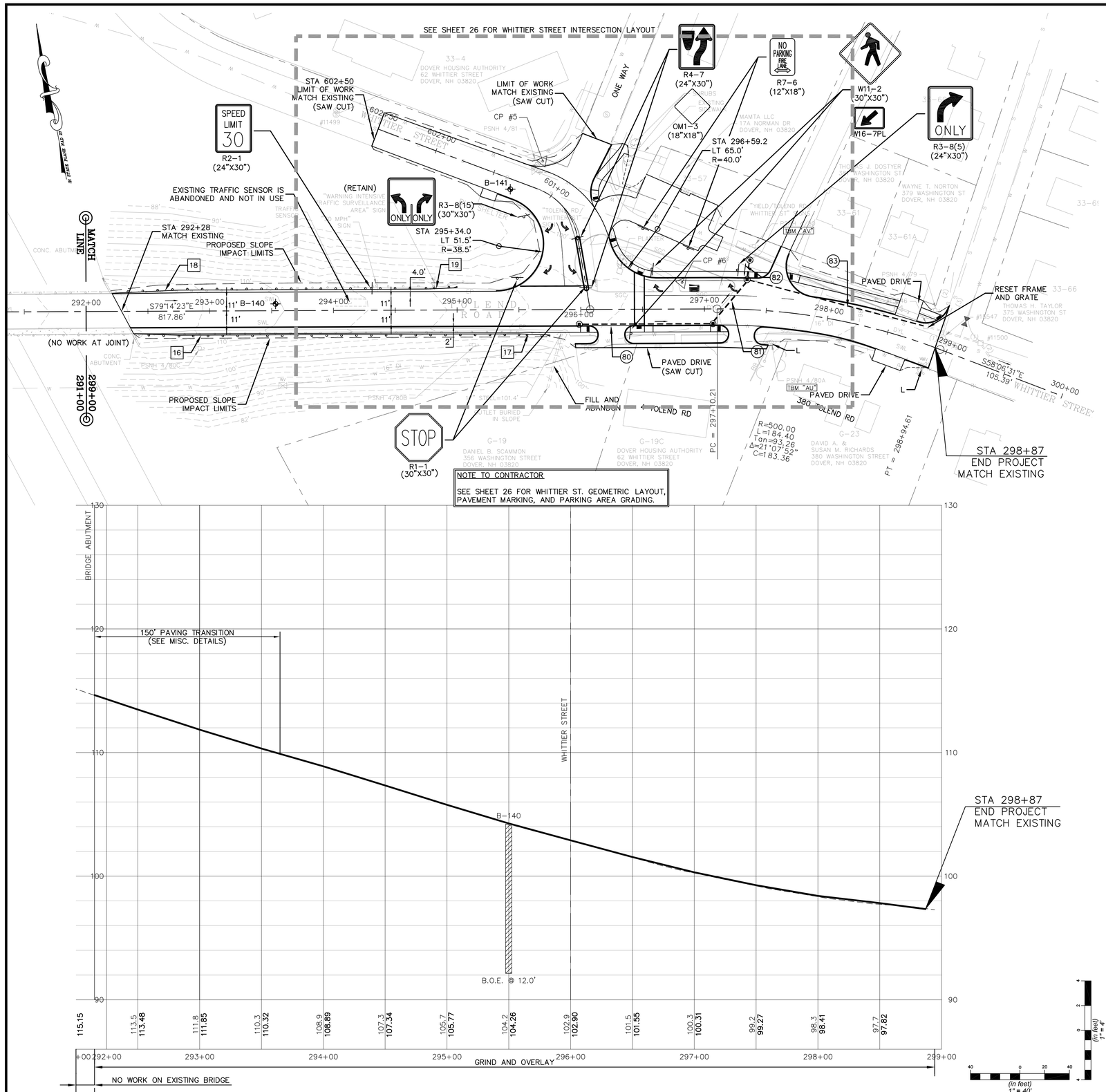

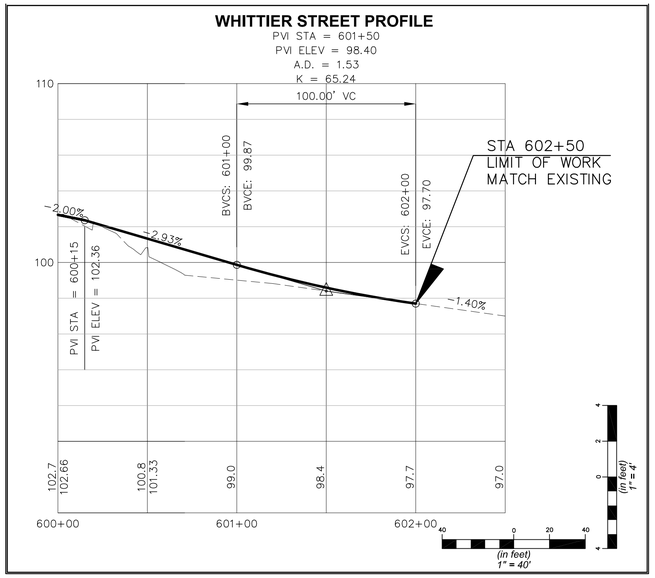

Detectable Warning Devices (Cast Iron):

STA 296+10,	RT 14'
STA 296+50,	RT 14'
STA 297+10,	RT 14'
STA 297+50,	RT 14'
STA 297+80,	LT 25'
STA 297+30,	LT 26'
STA 296+50,	LT 29'
STA 600+60,	RT 26' (WHITTIER ST.)
STA 600+80,	RT 24' (WHITTIER ST.)

Drainage Notes:

(80) STA 295+99, RT 12 FT TO STA 297+07, RT 12.0 FT
INSTALL 104 FT OF 15" PE PIPE
INSTALL CB-B @ +99, RT 12.0 FT
12" INV. OUT: 96.8
RIM: 102.6

(81) STA STA 297+07, RT 12.0 FT TO STA 297+20, RT 24.0 FT
INSTALL 42 FT OF 15" PE PIPE
INSTALL CB-B @ +07, RT 12.0 FT
12" INV. IN: 95.7
12" INV. OUT: 95.6
RIM: 99.9

(82) STA STA 297+20, LT 24.0 FT TO STA 297+35, LT 40.0 FT
INSTALL 7 FT OF 12" PE PIPE
INSTALL CB-E @ +35, LT 40.0 FT
12" INV. OUT: 95.5
RIM: 98.7

(83) STA STA 297+20, RT 12.0 FT TO STA 298+76, LT 24.0 FT
CORE INTO EXISTING CB
12" INV. IN: 92.5
INSTALL 146 FT OF 15" PE PIPE
INSTALL CB-B @ +20, LT 24.0 FT
12" INV. IN: 95.3 (N)
12" INV. IN: 95.2 (S)
12" INV. OUT: 95.0 (E)
RIM: 99.7

Guardrail Notes:

15 DELETED

16 STA 292+57 RT. 18.9 FT TO STA 295+50 RT 19.5 FT
INSTALL 293 LF OF BEAM GUARDRAIL (9' POSTS)
(MATCH TO EXISTING BRIDGE APPROACH RAIL INCIDENTAL)

17 STA 295+50 RT 19.5 FT TO STA 295+75 RT 20.5 FT
INSTALL 25 LF OF TERMINAL END UNIT

18 STA 292+40 LT 15.5 FT TO STA 294+75 LT 17.0 FT
INSTALL 235 LF OF BEAM GUARDRAIL
(MATCH TO EXISTING BRIDGE APPROACH RAIL INCIDENTAL)

19 STA 294+75 LT 17.0 FT TO STA 295+00 LT 18.0 FT
INSTALL 25 LF OF TERMINAL END UNIT

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scale: (in feet) 1" = 40'

City of Dover, New Hampshire
Community Services Division
Tolend Road Rehabilitation
Tolend Road
Plan and Profile
STA 292+00 to STA 299+00

drawing no. 24

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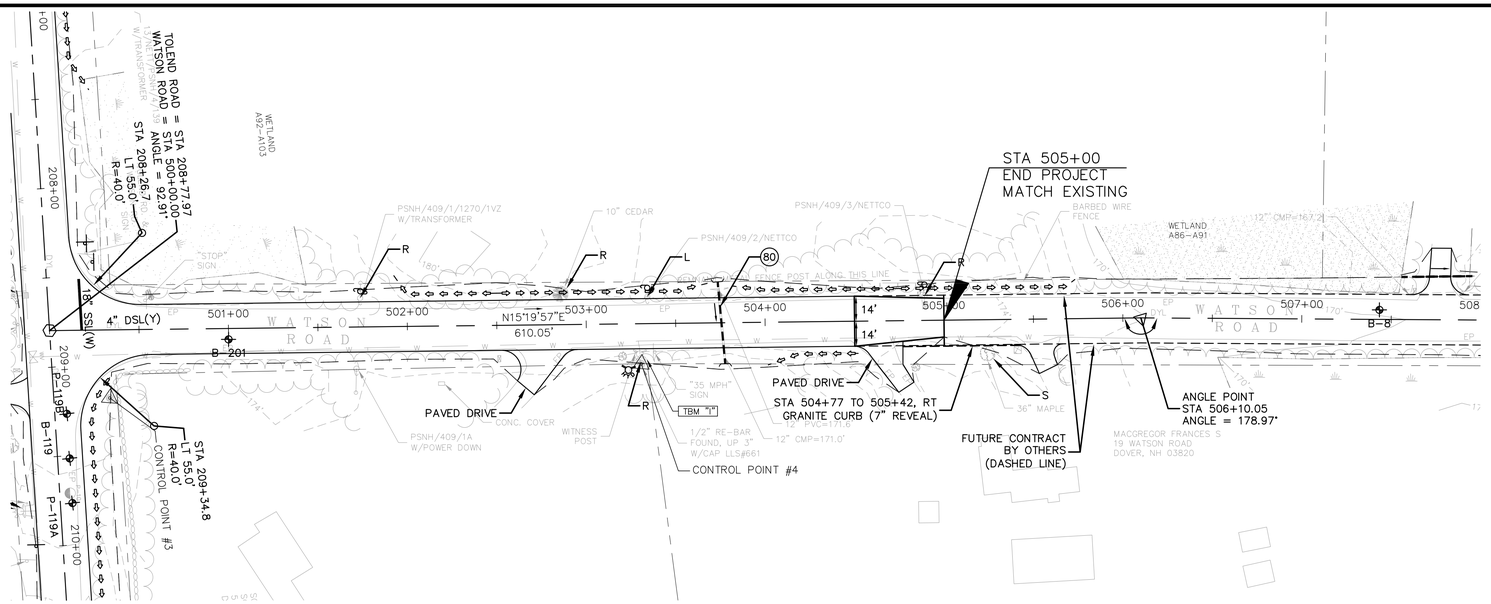
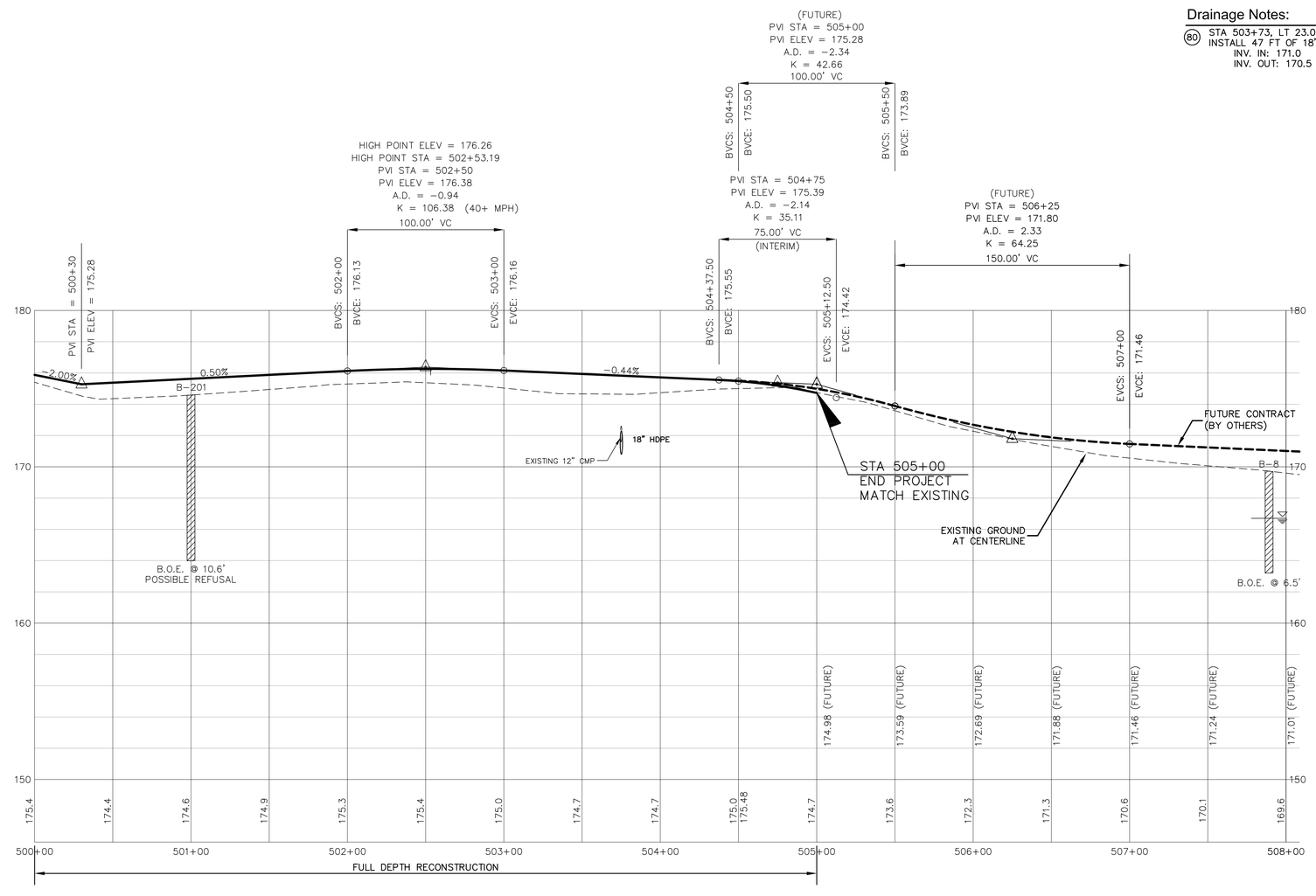


Drainage Notes:

(80) STA 503+73, LT 23.0 FT TO STA 503+78, RT 23.0 FT
INSTALL 47 FT OF 18" PE PIPE
INV. IN: 171.0
INV. OUT: 170.5



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approved by: RDL
date: September 2012
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file name: 745-Tolend Plan.dwg
scale: 40 20 0 20 40 (in feet) 1" = 40'

City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Tolend Road
Plan and Profile
STA 292+00 to STA 299+00

drawing no. 25

sheet: 25 of 54

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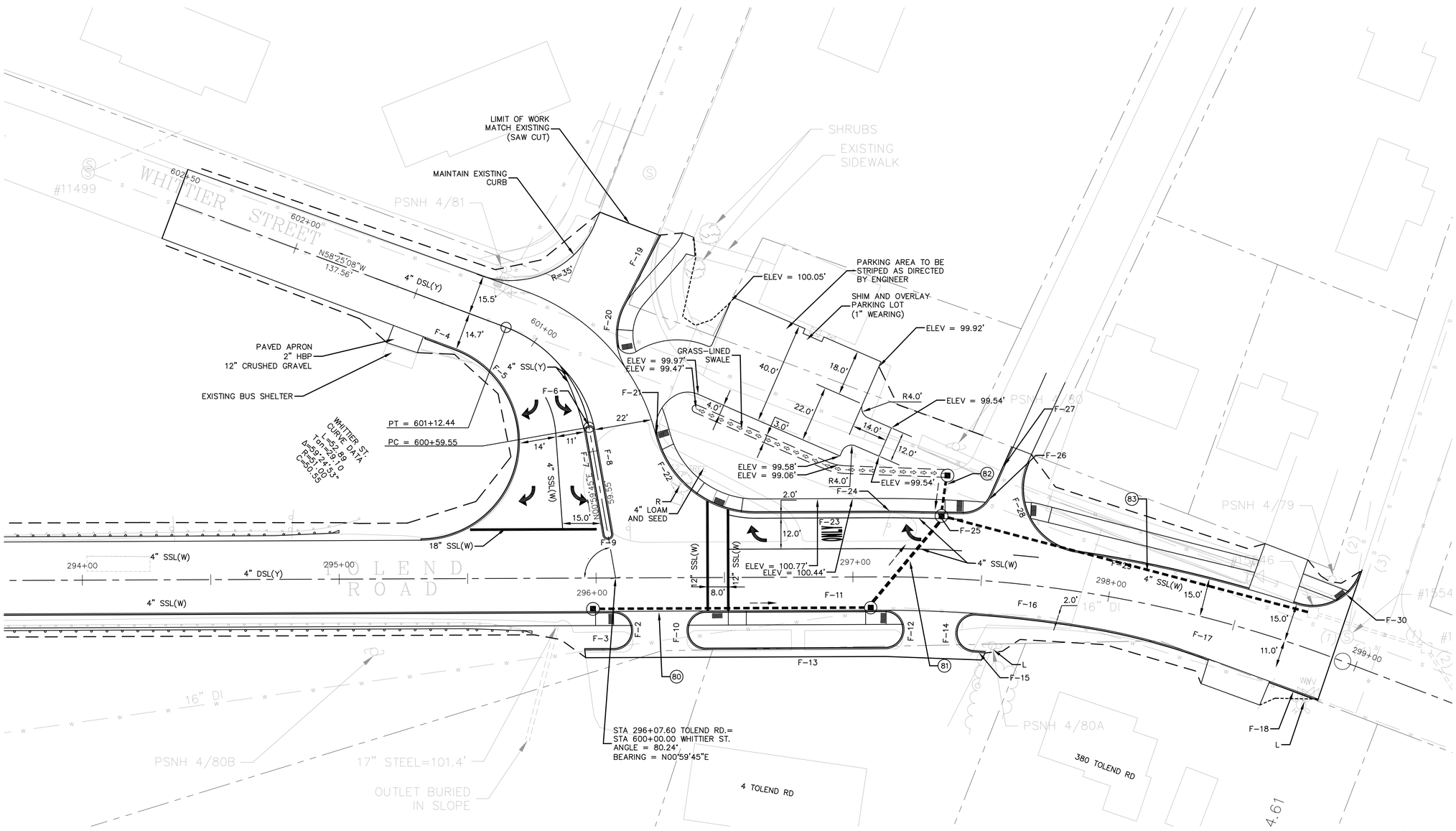

NOTE TO CONTRACTOR

SEE SHEET 24 FOR GENERAL LAYOUT, DRAINAGE NOTES AND WHITTIER ST. PROFILE.

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scale: 1" = 20' (in feet)

City of Dover, New Hampshire
Community Services Division

Tolend Road Rehabilitation

Whittier Street
Parking Area Site Grading
And Intersection Layout

drawing no. 26

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