# BURRILL STREET PEDESTRIAN & BICYCLE IMPROVEMENTS

## BURRILL STREET AT COLUMBIA STREET

## BURRILL STREET AT RAILROAD AVENUE AND MIDDLESEX AVENUE

*IN THE TOWN OF*

SWAMPSCOTT

ESSEX COUNTY

INDEX


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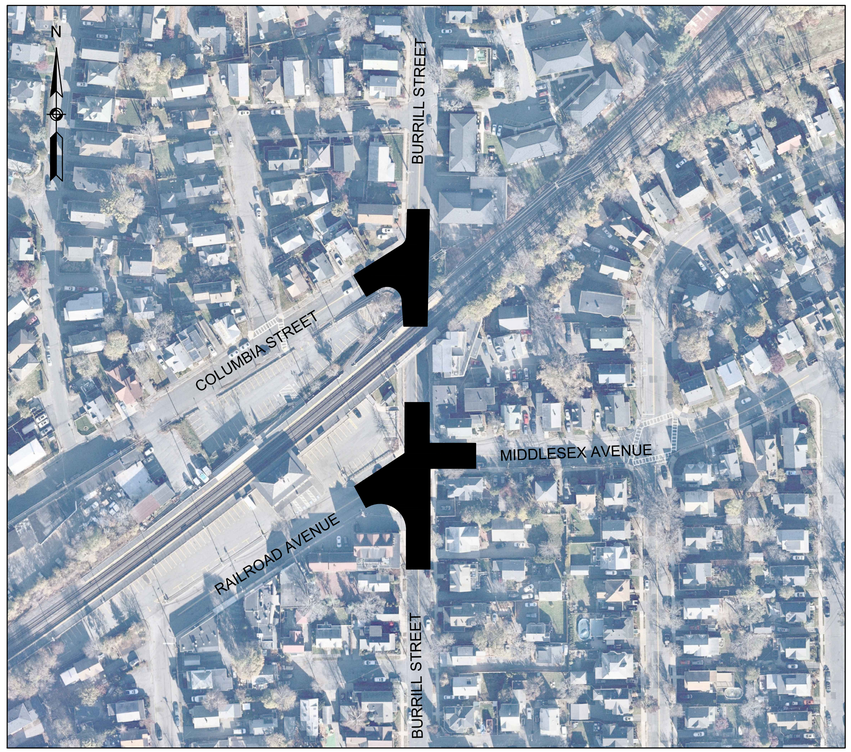


0 100 200 300 400

SCALE: 1" = 100'

LENGTH OF PROJECT = 530 FEET = 0.1 MILES

THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

SUBMISSION: 100% SUBMISSION

DATE: 04/2023


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| REV # | DATE |
|---|---|
| | |
| SHEET # | TOTAL SHEETS |
| 1 | 18 |


Y21919.21 - TITLE_INDEX_LEGEND_ABBR_NOTES.DWG Plotted on ----- -----

## GENERAL SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| JB | JB | JERSEY BARRIER |
| CB | CB | CATCH BASIN |
| | | CATCH BASIN CURB INLET |
| FP | FP | FLAG POLE |
| GP | GP | GAS PUMP |
| MB | MB | MAIL BOX |
| | | POST SQUARE |
| | | POST CIRCULAR |
| WELL | WELL | WELL |
| EHH | EHH | ELECTRIC HANDHOLE |
| | | FENCE GATE POST |
| GG | GG | GAS GATE |
| BHL # | BHL # | BORING HOLE |
| MW # | MW # | MONITORING WELL |
| TP # | TP # | TEST PIT |
| | | HYDRANT |
| | | LIGHT POLE |
| CO.BD. | | COUNTY BOUND |
| | | GPS POINT |
| Ⓒ | Ⓒ | CABLE MANHOLE |
| Ⓓ | Ⓓ | DRAINAGE MANHOLE |
| Ⓔ | Ⓔ | ELECTRIC MANHOLE |
| Ⓖ | Ⓖ | GAS MANHOLE |
| Ⓜ | Ⓜ | MISC MANHOLE |
| Ⓢ | Ⓢ | SEWER MANHOLE |
| Ⓣ | Ⓣ | TELEPHONE MANHOLE |
| Ⓦ | Ⓦ | WATER MANHOLE |
| MHB | MHB | MASSACHUSETTS HIGHWAY BOUND |
| MON | | MONUMENT |
| SB | | STONE BOUND |
| TB | | TOWN OR CITY BOUND |
| | | TRAVERSE OR TRIANGULATION STATION |
| TPL or GUY | TPL or GUY | TROLLEY POLE OR GUY POLE |
| HTP | | TRANSMISSION POLE |
| UFB | UFB | UTILITY POLE W/ FIREBOX |
| UPDL | UPDL | UTILITY POLE WITH DOUBLE LIGHT |
| ULT | ULT | UTILITY POLE W / 1 LIGHT |
| UPL | UPL | UTILITY POLE |
| | | BUSH |
| SIZE & TYPE | | TREE |
| | | STUMP |
| | | SWAMP / MARSH |
| WG | WG | WATER GATE |
| PM | PM | PARKING METER |
| | | OVERHEAD CABLE/WIRE |
| | | CURBING |
| 100 99 | | CONTOURS (ON-THE-GROUND SURVEY DATA) |
| 100 99 | | CONTOURS (PHOTOGRAMMETRIC DATA) |
| | | UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | BALANCED STONE WALL |
| | | GUARD RAIL - STEEL POSTS |
| | | GUARD RAIL - WOOD POSTS |
| | | GUARD RAIL - DOUBLE FACE - STEEL POSTS |
| | | GUARD RAIL - DOUBLE FACE - WOOD POSTS |
| x | x | CHAIN LINK OR METAL FENCE |
| | | WOOD FENCE |
| | | HAY BALES/SILT FENCE |
| | | TREE LINE |
| | | SAWCUT LINE |
| | | TOP OR BOTTOM OF SLOPE |
| | | LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY |
| | | BANK OF RIVER OR STREAM |
| | | BORDER OF WETLAND |
| | | 100 FT WETLAND BUFFER |
| | | 200 FT RIVERFRONT BUFFER |
| | | STATE HIGHWAY LAYOUT |
| | | TOWN OR CITY LAYOUT |
| | | COUNTY LAYOUT |
| | | RAILROAD SIDELINE |
| | | TOWN OR CITY BOUNDARY LINE |
| | | PROPERTY LINE OR APPROXIMATE PROPERTY LINE |
| | | EASEMENT |

## TRAFFIC SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| 1 | 1 | CONTROLLER PHASE ACTUATED |
| | | TRAFFIC SIGNAL HEAD (SIZE AS NOTED) |
| | | WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED) |
| | | VIDEO DETECTION CAMERA |
| | | MICROWAVE DETECTOR |
| | | PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE |
| | * | EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT |
| | | VEHICULAR SIGNAL HEAD |
| | | VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED |
| | | FLASHING BEACON |
| | | PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED) |
| RRSG | RRSG | RAILROAD SIGNAL |
| OR | | SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED) |
| | 20' | MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED) |
| | | HIGH MAST POLE OR TOWER |
| | | SIGN AND POST |
| | | SIGN AND POST (2 POSTS) |
| | 20' | MAST ARM WITH LUMINAIRE |
| | | OPTICAL PRE-EMPTION DETECTOR |
| | | CONTROL CABINET, GROUND MOUNTED |
| | | CONTROL CABINET, POLE MOUNTED |
| | | FLASHING BEACON CONTROL AND METER PEDESTAL |
| | | LOAD CENTER ASSEMBLY |
| | | PULL BOX 12"x12" (OR AS NOTED) |
| | | ELECTRIC HANDHOLE 12"x24" (OR AS NOTED) |
| | | TRAFFIC SIGNAL CONDUIT |

## PAVEMENT MARKINGS SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| | | PAVEMENT ARROW - WHITE |
| ONLY | ONLY | LEGEND "ONLY" - WHITE |
| | SL | STOP LINE |
| | CW | CROSSWALK |
| | SWL | SOLID WHITE LINE |
| | SYL | SOLID YELLOW LINE |
| | BWL | BROKEN WHITE LINE |
| | BYL | BROKEN YELLOW LINE |
| | DWL | DOTTED WHITE LINE |
| | DYL | DOTTED YELLOW LINE |
| | DWLEx | DOTTED WHITE LINE EXTENSION |
| | DYLEx | DOTTED YELLOW LINE EXTENSION |
| | DBWL | DOUBLE WHITE LINE |
| | DBYL | DOUBLE YELLOW LINE |

## ABBREVIATIONS

### GENERAL

| | |
|---|---|
| AADT | ANNUAL AVERAGE DAILY TRAFFIC |
| ABAN | ABANDON |
| ADJ | ADJUST |
| APPROX. | APPROXIMATE |
| A.C. | ASPHALT CONCRETE |
| ACCM PIPE | ASPHALT COATED CORRUGATED METAL PIPE |
| BIT. | BITUMINOUS |
| BC | BOTTOM OF CURB |
| BD. | BOUND |
| BL | BASELINE |
| BLDG | BUILDING |
| BM | BENCHMARK |
| BO | BY OTHERS |
| BOS | BOTTOM OF SLOPE |
| BR. | BRIDGE |
| CB | CATCH BASIN |
| CBCI | CATCH BASIN WITH CURB INLET |
| CC | CEMENT CONCRETE |
| CCM | CEMENT CONCRETE MASONRY |
| CEM | CEMENT |
| CI | CURB INLET |
| CIP | CAST IRON PIPE |
| CLF | CHAIN LINK FENCE |
| CL | CENTERLINE |
| CMP | CORRUGATED METAL PIPE |
| CSP | CORRUGATED STEEL PIPE |
| CO. | COUNTY |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| CONST | CONSTRUCTION |
| CR GR | CROWN GRADE |
| DHV | DESIGN HOURLY VOLUME |
| DI | DROP INLET |
| DIA | DIAMETER |
| DIP | DUCTILE IRON PIPE |
| DW | STEADY DON'T WALK - PORTLAND ORANGE |
| DWY | DRIVEWAY |
| ELEV (or EL.) | ELEVATION |
| EMB | EMBANKMENT |
| EOP | EDGE OF PAVEMENT |
| EXIST (or EX) | EXISTING |
| EXC | EXCAVATION |
| F&C | FRAME AND COVER |
| F&G | FRAME AND GRATE |
| FDN. | FOUNDATION |
| FLDSTN | FIELDSTONE |
| GAR | GARAGE |
| GD | GROUND |
| GG | GAS GATE |
| GI | GUTTER INLET |
| GIP | GALVANIZED IRON PIPE |
| GRAN | GRANITE |
| GRAV | GRAVEL |
| GRD | GUARD |
| HDW | HEADWALL |
| HMA | HOT MIX ASPHALT |
| HOR | HORIZONTAL |
| HYD | HYDRANT |
| INV | INVERT |
| JCT | JUNCTION |
| L | LENGTH OF CURVE |
| LB | LEACH BASIN |
| LP | LIGHT POLE |
| LT | LEFT |
| MAX | MAXIMUM |
| MB | MAILBOX |
| MH | MANHOLE |
| MHB | MASSACHUSETTS HIGHWAY BOUND |
| MIN | MINIMUM |
| NIC | NOT IN CONTRACT |
| NO. | NUMBER |
| PC | POINT OF CURVATURE |
| PCC | POINT OF COMPOUND CURVATURE |
| P.G.L. | PROFILE GRADE LINE |

## ABBREVIATIONS (cont.)

### GENERAL

| | |
|---|---|
| PI | POINT OF INTERSECTION |
| POC | POINT ON CURVE |
| POT | POINT ON TANGENT |
| PRC | POINT OF REVERSE CURVATURE |
| PROJ | PROJECT |
| PROP | PROPOSED |
| PSB | PLANTABLE SOIL BORROW |
| PT | POINT OF TANGENCY |
| PVC | POINT OF VERTICAL CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENCY |
| PVMT | PAVEMENT |
| PWW | PAVED WATER WAY |
| R | RADIUS OF CURVATURE |
| R&D | REMOVE AND DISPOSE |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROAD |
| RDWY | ROADWAY |
| REM | REMOVE |
| RET | RETAIN |
| RET WALL | RETAINING WALL |
| ROW | RIGHT OF WAY |
| RR | RAILROAD |
| R&R | REMOVE AND RESET |
| R&S | REMOVE AND STACK |
| RT | RIGHT |
| SB | STONE BOUND |
| SHLD | SHOULDER |
| SMH | SEWER MANHOLE |
| ST | STREET |
| STA | STATION |
| SSD | STOPPING SIGHT DISTANCE |
| SHLO | STATE HIGHWAY LAYOUT LINE |
| SW | SIDEWALK |
| T | TANGENT DISTANCE OF CURVE/TRUCK % |
| TAN | TANGENT |
| TEMP | TEMPORARY |
| TC | TOP OF CURB |
| TOS | TOP OF SLOPE |
| TYP | TYPICAL |
| UP | UTILITY POLE |
| VAR | VARIES |
| VERT | VERTICAL |
| VC | VERTICAL CURVE |
| WCR | WHEEL CHAIR RAMP |
| WG | WATER GATE |
| WIP | WROUGHT IRON PIPE |
| WM | WATER METER/WATER MAIN |
| X-SECT | CROSS SECTION |

| | |
|---|---|
| PROJECT #: | Y21919.21 |
| DATE: | 4/7/2023 |
| DESIGNER: | ALT |
| DRAFTER: | ALT |
| REVIEWER: | RS |


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| REVISIONS | REV # | DATE |
|---|---|---|
| | | |
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| | | |
| | | |
| | | |

# LEGEND & ABBREVIATIONS
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 2 | 18 |

## GENERAL NOTES

1. PER MASSACHUSETTS LAW, CONTRACTOR SHALL CALL 1-888-DIG-SAFE, (1-888-344-7233) AND TOWN OF SWAMPSCOTT UTILITY DEPARTMENTS PRIOR TO ANY UNDERGROUND EXCAVATION ON SITE. THE DIG-SAFE VERIFICATION NUMBER SHALL BE SUBMITTED TO THE TOWN OF SWAMPSCOTT AND MASSDOT PRIOR TO ANY CONSTRUCTION WORK.
2. ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
3. BOLD TEXT AND LINES INDICATE PROPOSED WORK. LIGHT TEXT AND LINES INDICATE APPROXIMATE EXISTING CONDITIONS.
4. IF FIELD CONDITIONS ARE OBSERVED THAT VARY SIGNIFICANTLY FROM THOSE SHOWN ON THESE PLANS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING FOR RESOLUTION OF THE CONFLICTING INFORMATION.
5. CONTRACTOR SHALL CAREFULLY COORDINATE ALL WORK WITH THAT OF ALL SUBCONTRACTORS, THE CITY, UTILITY COMPANIES AND OTHER CONTRACTORS WORKING WITHIN THE PROJECT LIMITS.
6. CONSTRUCTION ACTIVITIES SHALL NOT PREVENT EMERGENCY VEHICLES TO PASS THROUGH AT ANY TIME.
7. THE CONSTRUCTION SITE MUST BE ACCESSIBLE TO EMERGENCY VEHICLES AT ALL TIMES.
8. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AT LEAST ONE ACCESS POINT TO ALL BUILDINGS DURING CONSTRUCTION
9. PROVIDE A SMOOTH, FLUSH TRANSITION BETWEEN ALL NEW AND EXISTING PAVEMENTS.
10. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ALL MANHOLES, CATCH BASINS, WATER SHUT-OFFS, VALVES AND ANY OTHER STRUCTURES, TO BE FLUSH WITH PROPOSED GRADE.
11. CONTRACTOR SHALL ADJUST CURB REVEAL AND SIDEWALK CROSS SLOPE NO GREATER THAN THE MAXIMUM SLOPE OF 1.5% (TOLERANCE FOR CONSTRUCTION = 0.5%)
12. CONTRACTOR SHALL GROUP OLD CURBING TO BE RE-SET TOGETHER IN ORDER TO ACHIEVE A MORE COHESIVE APPEARANCE.
13. CONTRACTOR IS RESPONSIBLE TO REMOVE AND PROPERLY DISPOSE OF ALL EXCESS CONSTRUCTION OR REMOVED MATERIALS.
14. PROPOSED SIDEWALKS AND WALKS/LAWNS ON ABUTTING PROPERTIES SHALL BE CONSTRUCTED TO DRAIN TO ROAD TO MAXIMUM EXTENT POSSIBLE.
15. CONTRACTOR SHALL OBTAIN AND COMPLY WITH ALL TOWN OF SWAMPSCOTT PERMIT REQUIREMENTS AS APPLICABLE.
16. THE CONTRACTOR SHALL COMPLY WITH TOWN OF SWAMPSCOTT AND MASSDOT STANDARDS AND REQUIREMENTS.

## DRAINAGE/STORMWATER MANAGEMENT NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING DRAINAGE PIPES AND/OR STRUCTURES THAT ARE TO BE MODIFIED, AND ANY VARIATIONS FROM THE PLANS DISCOVERED BY THE CONTRACTOR MUST BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER OR ITS DESIGNATED AGENT PRIOR TO DRAINAGE AND UTILITY CONSTRUCTION. WORK CAN COMMENCE ONLY WITH THE CITY'S AUTHORIZATION.

2. ALL DRAINAGE AND UTILITY STRUCTURES WITHIN THE PAVED ROADWAY SHALL BE ADJUSTED TO GRADE WITH THE SURROUNDING PAVEMENT PRIOR TO THE WINTER SHUTDOWN.

3. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PIPED DRAINAGE AND SURFACE RUNOFF FLOWS DURING STORMS AND PERIODS OF RAINFALL THROUGHOUT THE WORK AREA INCLUDING PROVIDING ADEQUATE FLOW DIVERSION OR BYPASS MEASURES FOR PIPED DRAINAGE AND RUNOFF, IF REQUIRED.

4. NO NEW POINT SOURCE DISCHARGES OR UNTREATED STORMWATER SHALL BE DISCHARGED DIRECTLY INTO ADJACENT WATERBODIES AND WETLANDS.

5. AN ORDER OF CONDITIONS HAS BEEN ISSUED FOR THIS PROJECT AND SHALL BE FOLLOWED IN ITS ENTIRETY.

6. CATCH BASIN RIM GRADES NOTED ON PLANS ARE TYPICALLY DEPRESSED 0.1' LOWER THAN THE GUTTER GRADE. RIM ELEVATIONS SHOWN ARE PROPOSED FINAL GRADES. THE CONTRACTOR SHALL PLACE FRAMES AND GRATES 0.1' BELOW THE GRADE CONSTRUCTED IN THE CONTRACT, OR AS DIRECTED BY THE CITY OR ITS DESIGNATED AGENT.

7. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATION OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE SHALL BE INCLUDED IN THE COST OF THE PIPE.

## SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ITS WORK AND MAINTAINING PROJECT AREAS IN A MANNER THAT MINIMIZES THE POTENTIAL FOR ON OR OFF-SITE SEDIMENTATION AND/OR EROSION TO OCCUR DURING THE COURSE OF THE PROJECT WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, MONITORING, AND REPAIRING SOIL EROSION AND SEDIMENT CONTROLS AS INDICATED ON THE PLANS AS WELL AS DETERMINING AND IMPLEMENTING ADDITIONAL APPROPRIATE MEASURES TO BE USED IN THE PROJECT AREA AS NEEDED.

2. THE CITY OR ITS DESIGNATED AGENT SHALL RESERVE THE RIGHT TO REQUIRE THE CONTRACTOR TO SUPPLEMENT OR MODIFY ITS SEDIMENTATION AND EROSION CONTROL MEASURES, IF THE MEASURES ARE DEEMED TO BE INADEQUATE OR INAPPROPRIATE TO THE PROJECT AREA OR WORK CONDITIONS. THIS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF ITS SOLE RESPONSIBILITY FOR THE PREVENTION OF SEDIMENTATION AND EROSION IN OR FROM PROJECT AREAS.

3. STORMWATER INLET PROTECTION AND ANY OTHER APPROVED INLET PROTECTION SHALL BE INSTALLED AT ALL CATCH BASINS AND INLETS WHENEVER SUBBASE IS EXPOSED, AND SHALL REMAIN IN PLACE UNTIL THE ABUTTING GROUND SURFACES ARE STABILIZED.

4. ALL INLET PROTECTION DEVICES SHALL BE CLEANED OR REPLACED REGULARLY UNTIL THE CONTRIBUTING AREA HAS BEEN STABILIZED, THE INLET PROTECTION DEVICES ARE TO BE REMOVED AT THE END OF THE PROJECT OR AS DIRECTED BY THE ENGINEER.

5. CONCRETE WASHOUT DISCHARGED INTO DRAINAGE SYSTEMS IS PROHIBITED. THE CONTRACTOR MUST PROVIDE A CONCRETE WASHOUT AREA.

6. SEDIMENTS REMOVED FROM THE CATCH BASINS SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR.

7. THE CONTRACTOR SHALL PERFORM THE WORK IN STRICT CONFORMANCE WITH ANY AND ALL CONDITIONS AND REQUIREMENTS OF THE ISSUED ORDER OF CONDITIONS AND REQUIREMENTS OF SAID PERMITS, AND IN ACCORDANCE WITH THE SEDIMENTATION AND EROSION CONTROL MEASURES CALLED FOR ON THE PLANS IN THE PROJECT AREA.

8. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES, SEDIMENTATION AND EROSION CONTROLS SHALL BE INSTALLED AT AREAS INDICATED ON THE PLANS. NO GRUBBING, GRADING, FILLING, OR OTHER SOIL DISTURBANCE SHALL OCCUR PRIOR TO INSTALLATION. THE LIMITS OF CLEARING AND SURFACE DISTURBANCE SHALL BE STRICTLY ADHERED TO IN ALL AREAS.

9. THE TOE OF ANY FILL SLOPE IS TO REMAIN AT LEAST 1' INSIDE OF ALL EROSION CONTROLS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR COVER ANY PORTION OF THE EROSION CONTROL MEASURES WITH MATERIAL. MATERIAL THAT IS PLACED ON EROSION CONTROLS BY THE CONTRACTOR, OR ANY AGENT OF THE CONTRACTORS, SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR AND NECESSARY REPAIRS TO THE EROSION CONTROLS ACCOMPLISHED.

10. NO UNDISTURBED AREAS SHALL BE CLEARED OF EXISTING VEGETATION AFTER OCTOBER 15 OF ANY CALENDAR YEAR OR DURING ANY PERIOD, FULL OR LIMITED, WINTER SHUTDOWN. ALL DISTURBED SOILS EXPOSED PRIOR TO OCTOBER 15 OF ANY CALENDAR YEAR SHALL BE SEEDED OR PROTECTED BY THAT DATE. AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION (AS DETERMINED BY THE STATE, CITY OR ITS DESIGNATED AGENT) BY NOVEMBER 15 OF THAT CALENDAR YEAR MUST BE STABILIZED THROUGH THE USE OF EROSION CONTROL MATTING OR STRAW MULCH, IN ACCORDANCE WITH THE SPECIFICATIONS CONTAINED WITHIN THE MASSDOT SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.

11. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE REMOVED AT THE END OF THE PROJECT OR AS DIRECTED BY THE STATE, CITY OR ITS DESIGNATED AGENT, AND LEGALLY DISPOSED OF AT AN OFF-SITE LOCATION BY THE CONTRACTOR.

12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL SOIL EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE FOR THE ENTIRE DURATION OF THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL FOLLOW THE DIRECTION OF THE DETAILS, SPECIFICATIONS, SHOP DRAWINGS, AND NOTICE OF INTENT WITH REGARD TO INSTALLATION, MAINTENANCE, AND REPAIR OF ALL SOIL EROSION AND SEDIMENTATION CONTROLS ON THE PROJECT SITE. TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROLS (STORMWATER INLET PROTECTION, AND SEDIMENT BARRIERS) SHALL BE MAINTAINED UNTIL ALL EXPOSED SOIL ARE SATISFACTORILY STABILIZED AS DIRECTED BY THE STATE, CITY OR ENGINEER.

13. UNVEGETATED AREAS SHALL NOT BE UNATTENDED OR EXPOSED FOR PERIODS IN EXCESS OF TWO (2) WEEKS, OR THROUGH THE WINTER SEASON. SUCH AREAS SHALL BE SEEDED, UNLESS ACTIVITY IS TO RESUME WITHIN 21 DAYS.

14. JUTE MESH OR APPROVED EQUAL SLOPE STABILIZATION MATERIAL SHALL BE USED TO STABILIZE PLANTABLE SOIL AND/OR LOAM IN ALL DITCHES, ON ALL SLOPES ADJACENT TO WETLANDS AND WETLAND PERIMETERS, ON ALL SLOPES WITHIN THE WATER QUALITY BASINS, AND ON SLOPES GREATER THAN 3:1. JUTE MESH IN DITCHES SHALL EXTEND TO AN ELEVATION 2 FEET ABOVE THE BOTTOM OF THE DITCH.

## UTILITY NOTES

1. EXISTING UTILITIES HAVE BEEN SHOWN ON THE PLANS USING THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. BUILDING SERVICE CONNECTIONS (ELECTRIC,GAS. TELEPHONE, WATER, SANITARY, CABLE TELEVISION, ETC.) ARE SHOWN. CONTRACTOR IS TO ASSUME THAT OTHER SERVICES ARE PRESENT TO ALL BUILDINGS. LOCATIONS OF THE SERVICES WILL BE CHECKED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANIES.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING, BYPASSING, AND SUPPORTING ALL EXISTING UTILITIES FOR THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY UTILITIES DAMAGED DURING CONSTRUCTION. ANY DEFICIENCIES DURING THE PRE AND POST INSPECTION SHALL BE REPORTED TO THE ENGINEER.

3. ALL EXISTING MANHOLES, CATCH BASINS, ROADWAY BOXES, AND SIDEWALK CURB STOPS FOR ALL UTILITIES WITHIN THE PROJECT WORK LIMITS SHALL BE ADJUSTED TO GRADE AS REQUIRED EXCEPT WHERE REPLACEMENT OR RECONSTRUCTION IS CALLED FOR ON THE PLANS, IN THE CONTRACT DOCUMENTS, OR DIRECTED BY THE ENGINEER.

4. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY APPLICABLE CITY, CITY, STATE OR FEDERAL AGENCY.

5. ALL EXISTING UTILITIES DESIGNATED TO BE ABANDONED SHALL BE PROPERLY CAPPED OR PLUGGED; NO ABANDONED PIPES OR CONDUITS (WHETHER ABOVE OR UNDERGROUND) SHALL BE LEFT WITH OPEN ENDS.

6. INSTALL STORMWATER INLET PROTECTION AT ALL EXISTING AND PROPOSED CATCH BASINS DURING CONSTRUCTION. SEE SOIL EROSION AND SEDIMENT CONTROL NOTES.

7. FIRE HYDRANTS SHALL NOT BE REMOVED FROM SERVICE AT ANY TIME WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE SWAMPSCOTT FIRE DEPARTMENT.

8. THE CONTRACTOR IS APPRISED THAT NOT ALL UTILITIES SUBSCRIBE TO THE DIG SAFE PROGRAM. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO CONTACT ANY AND ALL UTILITY PROVIDERS WITH INFRASTRUCTURE IN A PARTICULAR PROJECT AREA, AND ENSURE THAT ALL EXISTING UTILITIES WITHIN THE PROJECT AREA HAVE BEEN MARKED PRIOR TO COMMENCING THE WORK.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING UTILITY MARKINGS FOR THE DURATION OF THE WORK, OR FOR INSTALLING ADEQUATE OFFSET MARKINGS OR INDICATORS IN AREAS WHERE THE WORK WILL REMOVE THE ORIGINAL UTILITY MARK UPS.

10. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANY, SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE CITY.

11. IN SOME CASES, UTILITY WORK BY OTHERS WITHIN THE PROJECT AREAS MAY TAKE PLACE CONCURRENTLY WITH ROAD WORK; THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND COOPERATING WITH THE UTILITY PROVIDER(S) AND/OR THEIR CONTRACTOR(S) DURING THE PERFORMANCE OF SUCH WORK.

## TREE PRESERVATION NOTES

1. TREES WITHIN THE LIMITS OF GRADING SHALL NOT BE REMOVED UNLESS APPROVED BY THE ENGINEER.

2. PRIOR TO CONSTRUCTION PROTECT TREES WITHIN THE LIMITS OF WORK IN ACCORDANCE WITH DETAIL.

3. PRIOR TO CONSTRUCTION DETERMINE REQUIRED CLEARANCES AND PRUNE TREES.

4. BRANCHES OR LIMBS DAMAGED DURING CONSTRUCTION SHALL BE CUT BACK TO THE TRUNK OF A LATERAL BRANCH.

5. ROOTS LARGER THAN 15" IN DIAMETER ENCOUNTERED IN EXCAVATIONS SHALL BE CUT OFF SQUARELY USING A SHARP ARBORIST SAW.

6. MAINTAIN STORAGE OF EQUIPMENT AND MATERIALS A DISTANCE AT LEAST TWO (2) TIMES THE DISTANCE OF THE RADIUS OF THE TREE CANOPY.

7. STRIP AND SEGREGATE TOPSOIL PRIOR TO EXCAVATING IN UNPAVED AREAS. FOLLOWING BACKFILL OPERATIONS PLACE TOPSOIL BACK IN THE APPROPRIATE PLACE WITHOUT COMPACTION AND VERTICALLY MULCH ROOT SYSTEM. NO AMENDMENTS SHALL BE ADDED.

8. IMMEDIATELY FOLLOWING BACKFILL OPERATIONS PROVIDE DEEP WATERING OF THE ROOT SYSTEM, APPLICATION OF FERTILIZER, AND VERTICAL MULCHING.

## EXISTING CONDITIONS NOTES

1. THE EXISTING CONDITIONS SHOWN ON THE PLANS ARE BASED UPON MULTIPLE SOURCES, AS NOTED:
   1.1. SURVEY WAS CONDUCTED THROUGH DECEMBER OF 2021 BY HANCOCK ASSOCIATES, LOCATED AT 34 CHELMSFORD STREET, CHELMSFORD, MA 01824.

2. THIS PLAN IS BASED UPON AN ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY HANCOCK ASSOCIATES THROUGH DECEMBER 2021.

3. THE HORIZONTAL DATUM FOR THIS SURVEY IS THE MASSACHUSETTS COORDINATE SYSTEM, NAD 1983, MAINLAND ZONE. THE VERTICAL DATUM FOR THIS SURVEY US THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). SAID DATUMS WERE ESTABLISHED VIA GPS OBSERVATIONS UTILIXING NAD83 (NA2011) EPOCH 2010.00 (MYCS2) AND GEOID 18.

4. ALL UNITS FOR MASSDOT PROJECTS ARE COLLECTED AND SHOWN IN U.S. SURVEY FEET.

5. CONTOUR INTERVAL: 1 FOOT

6. OWNERSHIP AND DEED INFORMATION WAS OBTAINED FROM THE TOWN OF SWAMPSCOTT ASSESSORS OFFICE AND THE MIDDLESEX SOUTH COUNTY REGISTRY OF DEEDS. ALL INFORMATION WAS CURRENT AS OF THE DATE OF THIS SURVEY.

7. PROPERTY LINES SHOWN HEREON ARE APPROXIMATE ONLY AND ARE BASED UPON RECORD DEEDS, PLANS, AND ASSESSORS INFORMATION.

8. SUBSURFACE UTILITY LINES, AS SHOWN HEREON, ARE APPROXIMATE AND WERE COMPILED FROM SURFACE EVIDENCE. HANCOCK ASSOCIATES ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE DESIGNING FUTURE CONNECTIONS, THE APPROPRIATE UTILITIES MUST BE CONSULTED. BEFORE CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE MUST BE NOTIFIED (SEE MASSACHUSETTS GENERAL LAWS, CHAPTER 82 SECTION 40.) CALL "DIG SAFE" 1 (888) 344-7233.

## PAVEMENT NOTES

PROPOSED MICROMILL AND OVERLAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION TACK COAT (RS-1) OVER 1.5" PAVEMENT MICROMILLING

PROPOSED CEMENT CONCRETE SIDEWALK

SURFACE: 4" CEMENT CONCRETE AIR ENTRAINED 4000 PSI, $\frac{3}{4}$ INCH, 610

FOUNDATION: 8" GRAVEL BORROW (TYPE b)

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| DRAFTER: | ALT |
| REVIEWER: | RS |


McMAHON a Bowman company

350 MYLES STANDISH BLVD
SUITE 103
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TELE: (508) 823 - 2245
FAX: (508) 823 - 2246

120 WATER ST
4TH FLOOR
BOSTON, MA 02109
TELE: (617) 556 - 0020
FAX: (617) 556 - 0025

14 BREAKNECK HILL RD
SUITE 201
LINCOLN, RI 02865
TELE: (401) 648 - 7200

94 NORTH ELM STREET
SUITE 210
WESTFIELD, MA
TELE: (413) 875 - 8855


| REVISIONS | REV # | DATE |
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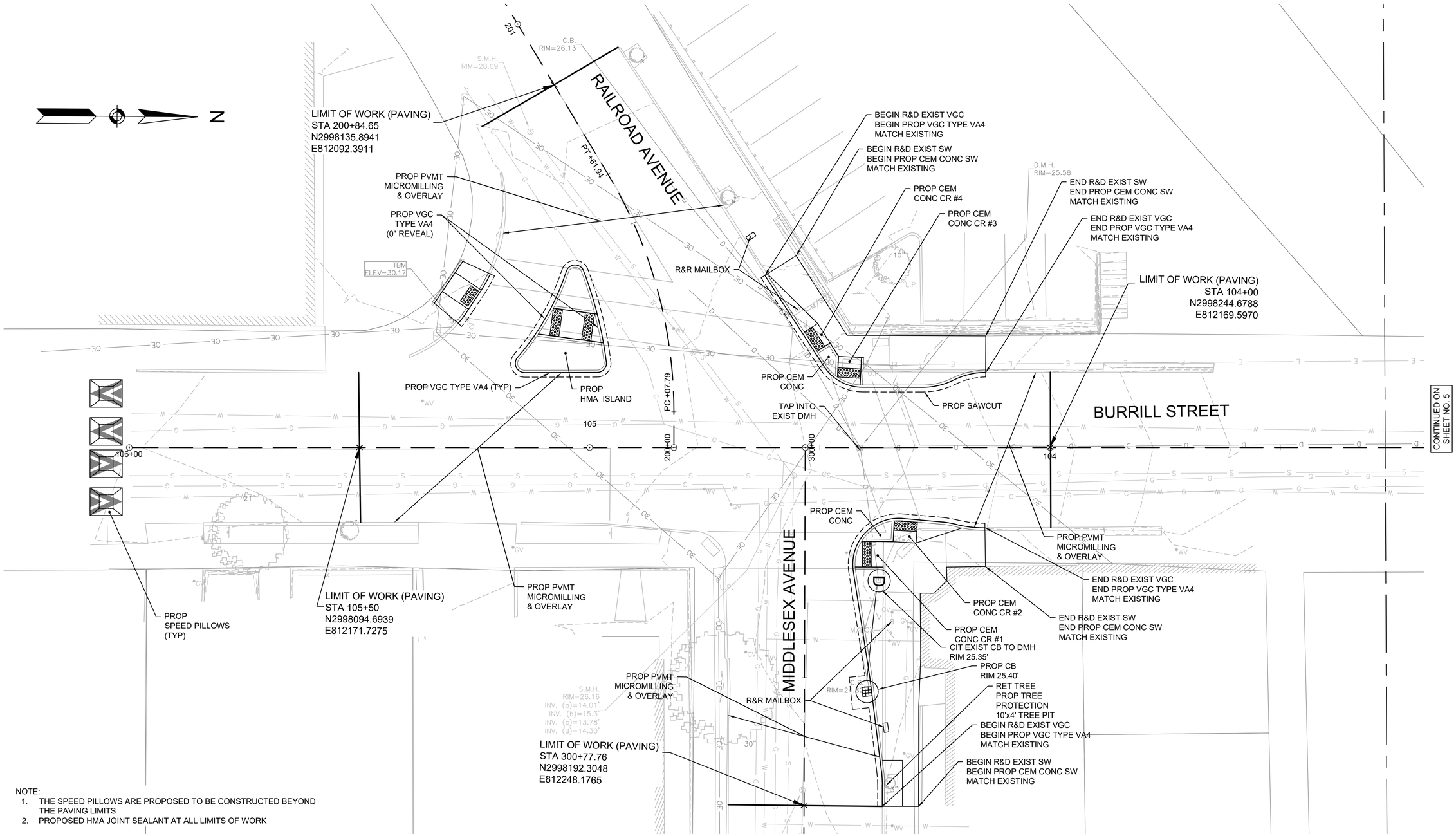
GENERAL NOTES
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 3 | 18 |




NOTE:
1. THE SPEED PILLOWS ARE PROPOSED TO BE CONSTRUCTED BEYOND THE PAVING LIMITS
2. PROPOSED HMA JOINT SEALANT AT ALL LIMITS OF WORK

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| PROJECT #: | Y21919.21 |
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CONSTRUCTION PLAN NO. 1
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
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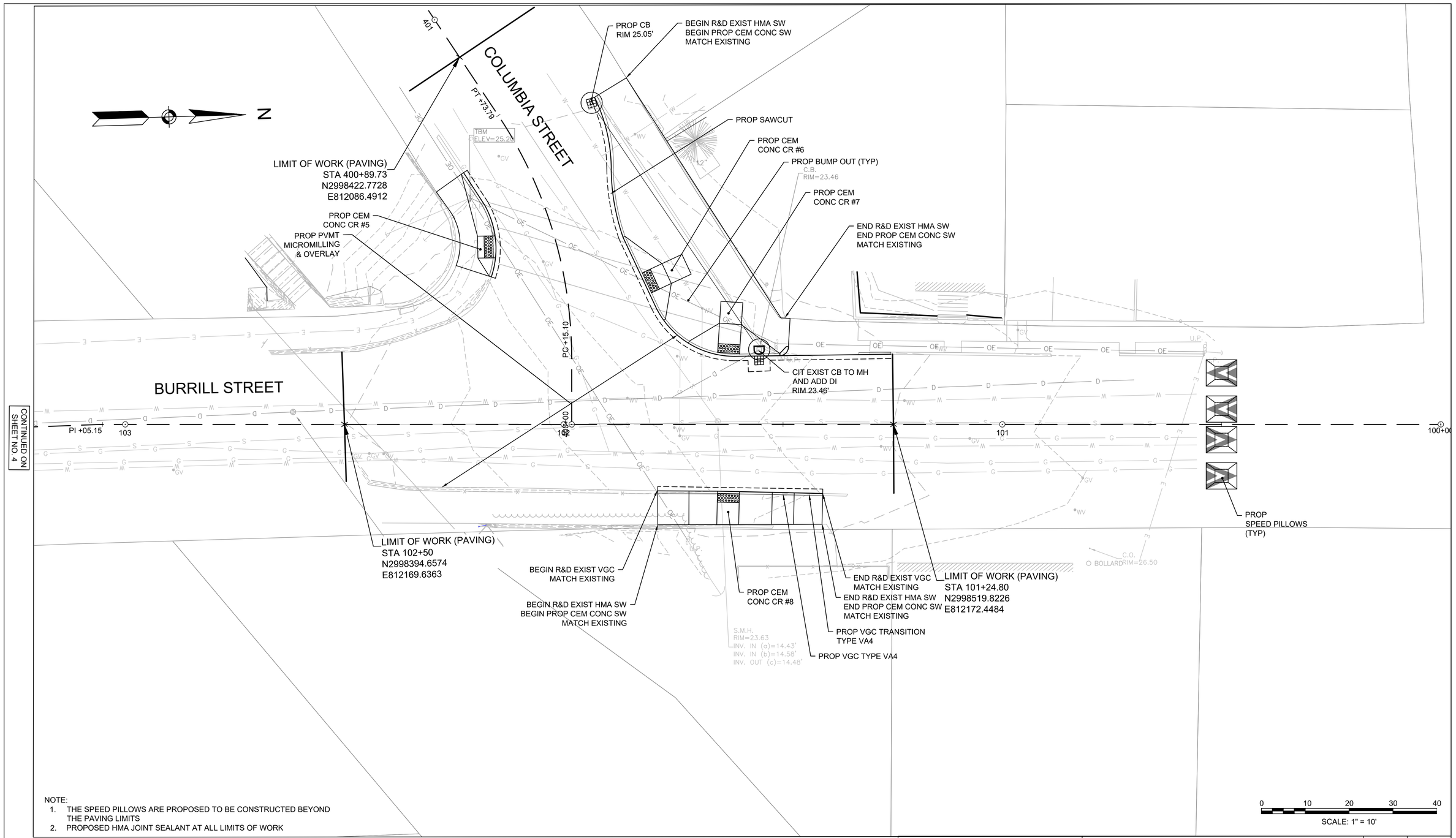
| 4 | 18 |




CONTINUED ON SHEET NO. 4

NOTE:
1. THE SPEED PILLOWS ARE PROPOSED TO BE CONSTRUCTED BEYOND THE PAVING LIMITS
2. PROPOSED HMA JOINT SEALANT AT ALL LIMITS OF WORK

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CONSTRUCTION PLAN NO. 2
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
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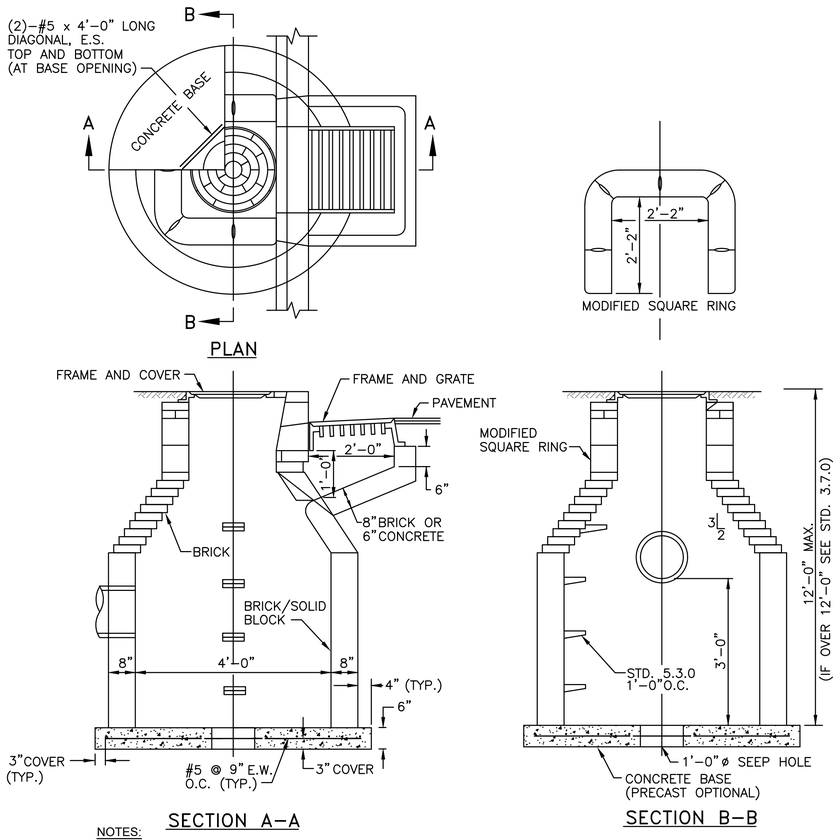
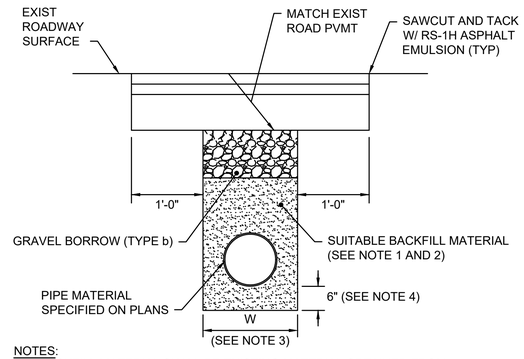


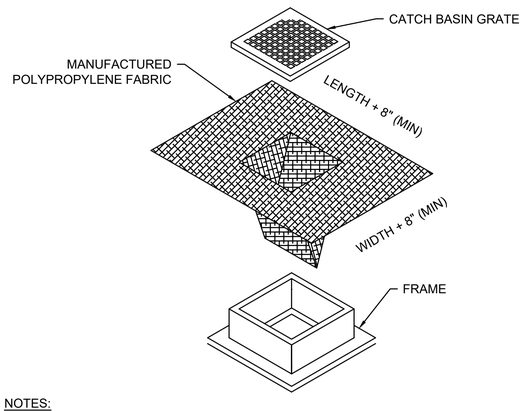

NOTES:
1. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.

## CATCH BASIN WITH GUTTER INLET
NOT TO SCALE




NOTES:
1. BACKFILL MATERIAL SHALL BE EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE AND APPROVED BY THE ENGINEER. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6 INCHES IN DEPTH AND THOROUGHLY COMPACTED. BACKFILL TO A POINT 12 INCHES OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3 INCHES.
2. IN CASE WHERE FILLING MATERIAL CAN NOT BE THOROUGHLY COMPACTED DUE TO OTHER UTILITY CONDUIT OR PIPES IN THE TRENCH, OR OTHER REASONS AS DETERMINED BY THE ENGINEER, CONTROLLED DENSITY FILL MAY BE USED.
3. TRENCHES FOR PIPES SHALL BE EXCAVATED A WIDTH OF 3' GREATER THAN THE INSIDE DIAMETER PIPE PER SECTION 140.80 OF THE STANDARD SPECIFICATIONS.
4. SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, OR OTHER SUITABLE MATERIAL THOROUGHLY COMPACTED.

## DRAINAGE TRENCH DETAIL
NOT TO SCALE




NOTES:
1. LENGTH AND WIDTH OF POLYPROPYLENE FABRIC MUST EXCEED EXISTING CATCH BASIN DIMENSIONS BY A MINIMUM OF 8".
2. REMOVE CATCH BASIN GRATE AND INSTALL POLYPROPYLENE FABRIC IN PLACE.

## SILT SACK
NOT TO SCALE

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CONSTRUCTION DETAILS PLAN NO. 1
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
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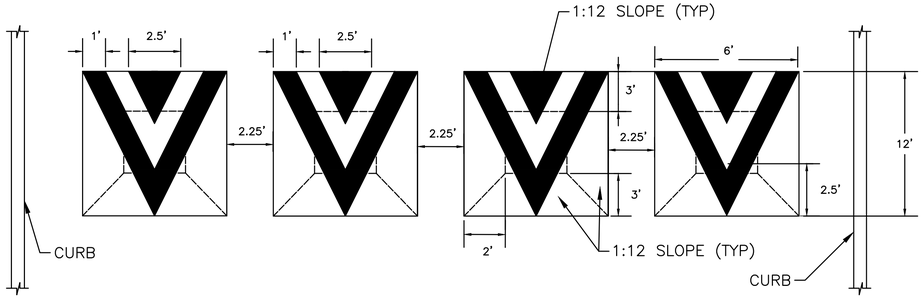
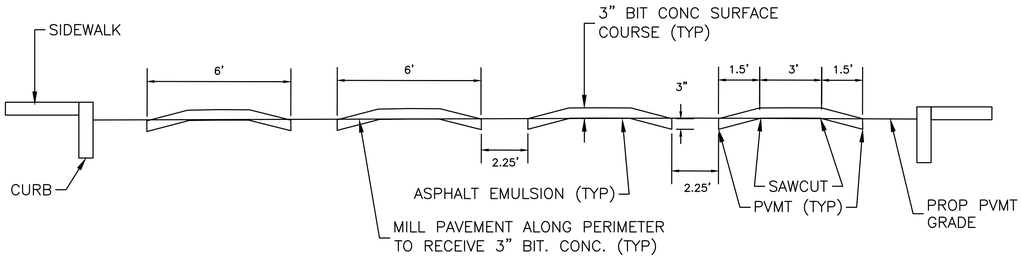



PLAN VIEW

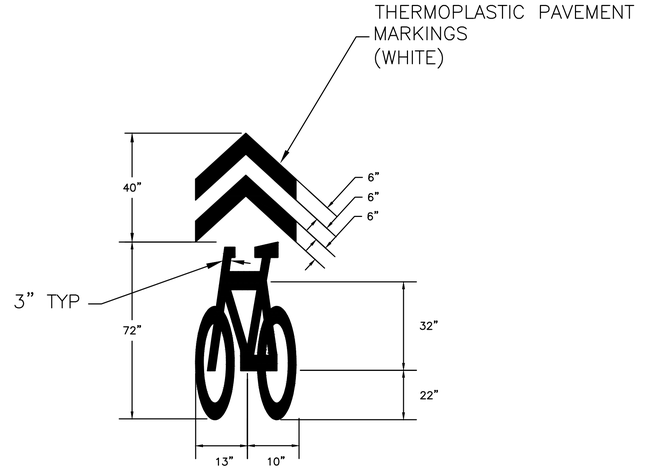



CROSS SECTION

NOTE:
1. 12" WHITE THERMOPLASTIC ADVANCE WARNING PAVEMENT MARKINGS SHALL BE INSTALLED AND CONFORM TO SECTION 3B.26 OF THE MUTCD.

## SPEED PILLOW DETAIL

NOT TO SCALE




## SHARED LANE PAVEMENT MARKING DETAIL

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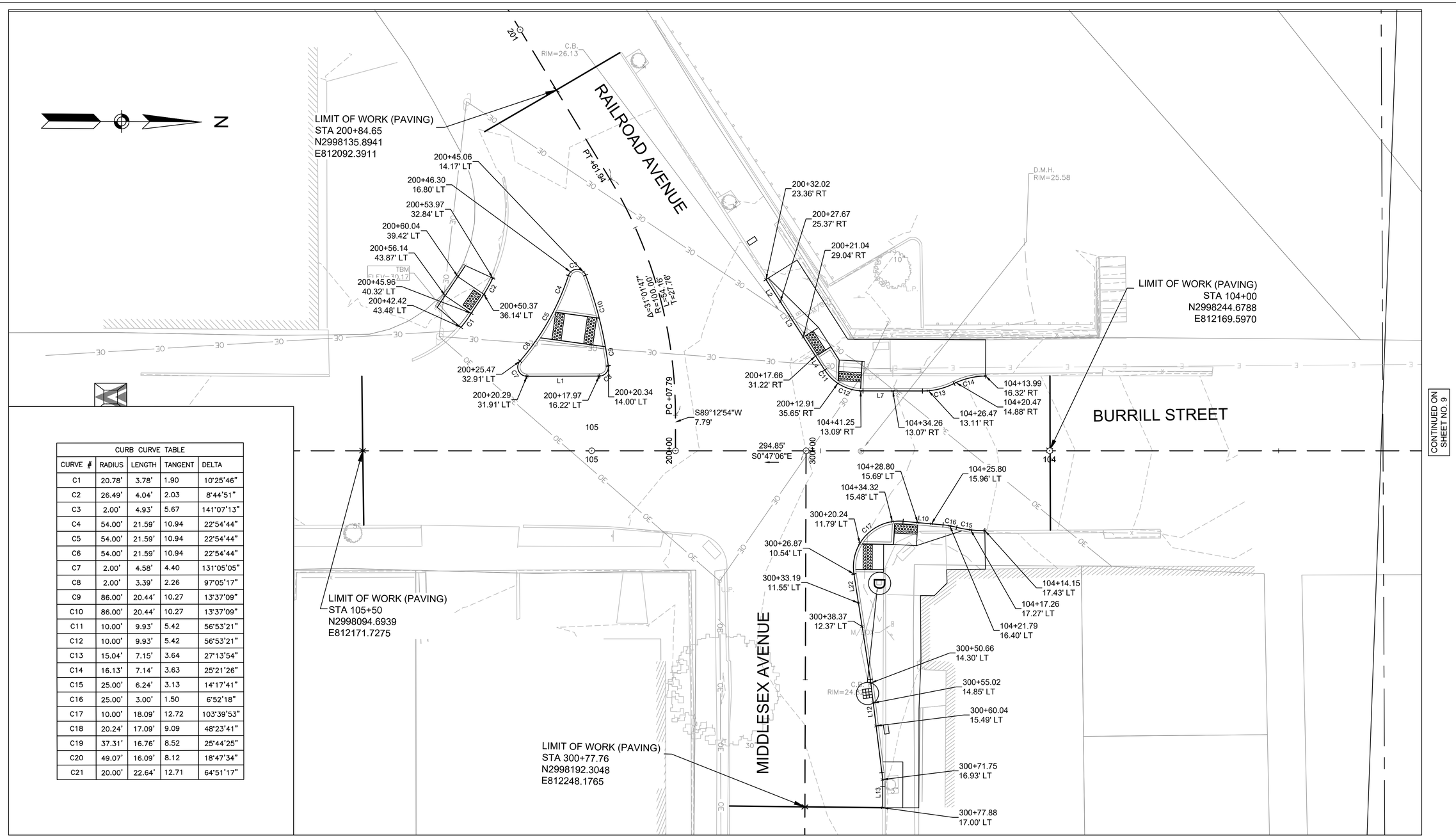
CONSTRUCTION DETAILS PLAN NO. 2

BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 7 | 18 |




| CURB CURVE TABLE | | | | |
|---|---|---|---|---|
| CURVE # | RADIUS | LENGTH | TANGENT | DELTA |
| C1 | 20.78' | 3.78' | 1.90 | 10°25'46" |
| C2 | 26.49' | 4.04' | 2.03 | 8°44'51" |
| C3 | 2.00' | 4.93' | 5.67 | 141°07'13" |
| C4 | 54.00' | 21.59' | 10.94 | 22°54'44" |
| C5 | 54.00' | 21.59' | 10.94 | 22°54'44" |
| C6 | 54.00' | 21.59' | 10.94 | 22°54'44" |
| C7 | 2.00' | 4.58' | 4.40 | 131°05'05" |
| C8 | 2.00' | 3.39' | 2.26 | 97°05'17" |
| C9 | 86.00' | 20.44' | 10.27 | 13°37'09" |
| C10 | 86.00' | 20.44' | 10.27 | 13°37'09" |
| C11 | 10.00' | 9.93' | 5.42 | 56°53'21" |
| C12 | 10.00' | 9.93' | 5.42 | 56°53'21" |
| C13 | 15.04' | 7.15' | 3.64 | 27°13'54" |
| C14 | 16.13' | 7.14' | 3.63 | 25°21'26" |
| C15 | 25.00' | 6.24' | 3.13 | 14°17'41" |
| C16 | 25.00' | 3.00' | 1.50 | 6°52'18" |
| C17 | 10.00' | 18.09' | 12.72 | 103°39'53" |
| C18 | 20.24' | 17.09' | 9.09 | 48°23'41" |
| C19 | 37.31' | 16.76' | 8.52 | 25°44'25" |
| C20 | 49.07' | 16.09' | 8.12 | 18°47'34" |
| C21 | 20.00' | 22.64' | 12.71 | 64°51'17" |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# CURB TIE PLAN NO. 1
# BURRILL STREET
# PEDESTRIAN & BICYCLE IMPROVEMENTS
# SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
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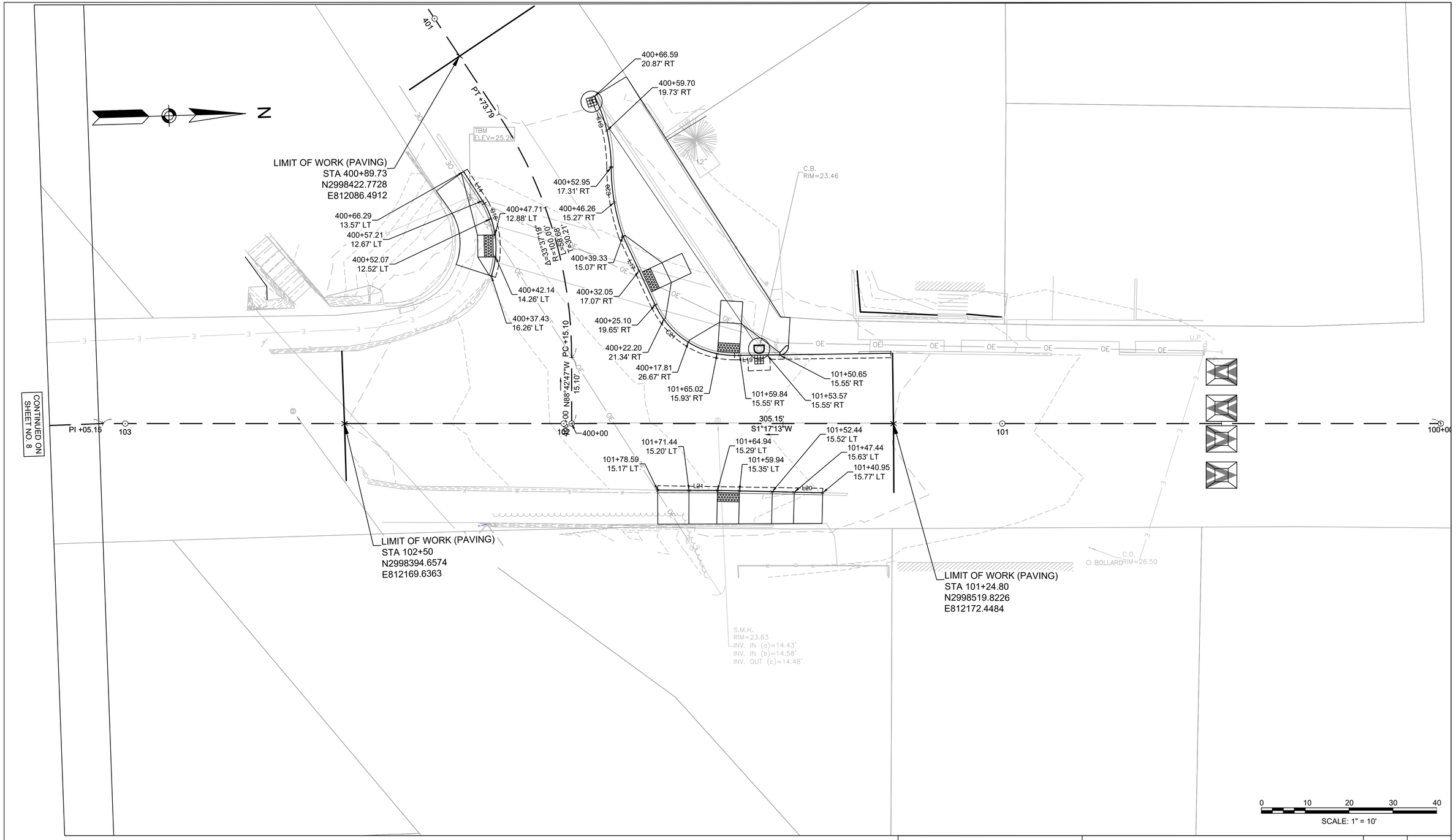


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# CURB TIE PLAN NO. 2
# BURRILL STREET
# PEDESTRIAN & BICYCLE IMPROVEMENTS
# SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
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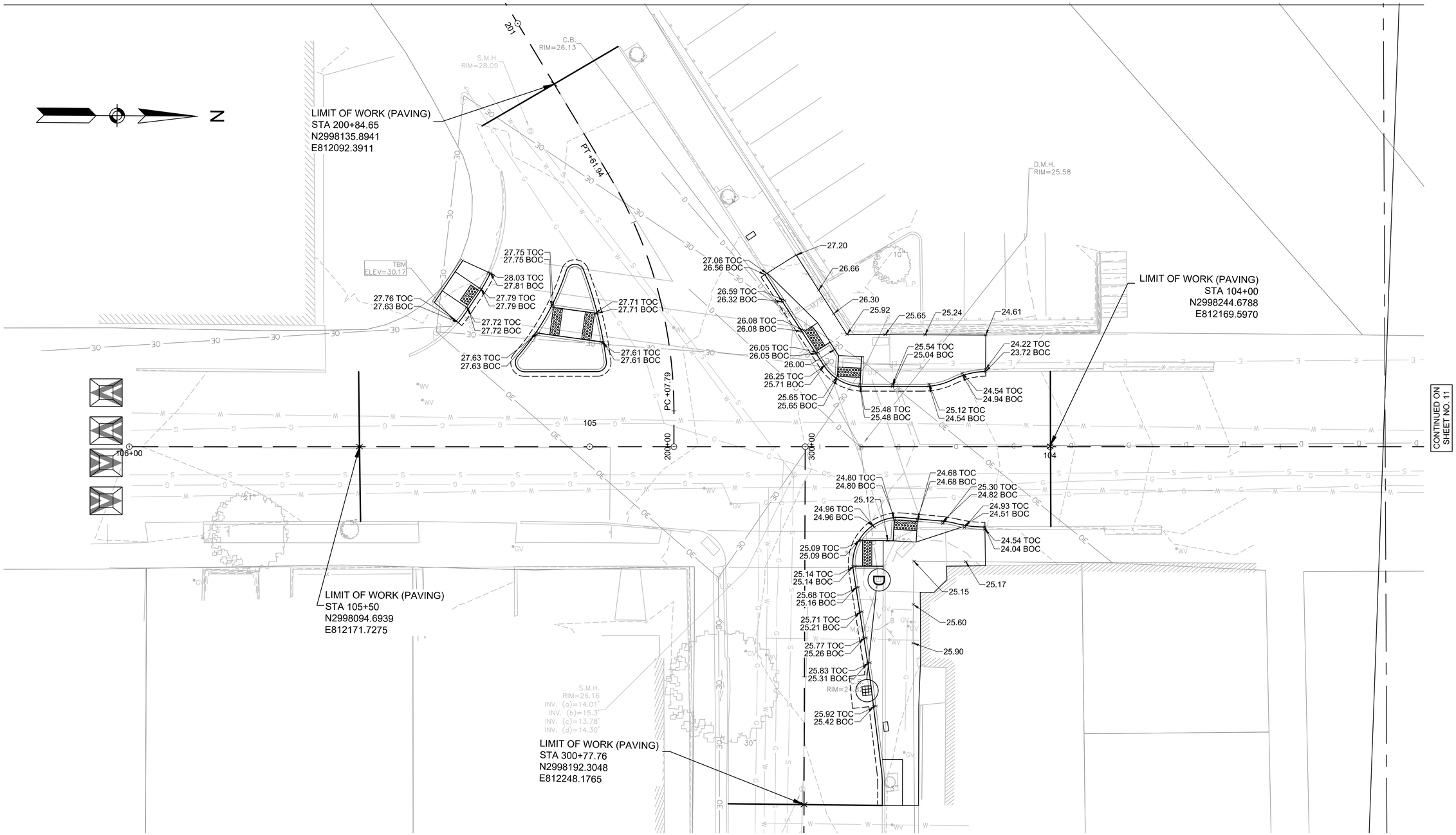
| 9 | 18 |

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| REVISIONS | REV # | DATE |
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# GRADING PLAN NO. 1
# BURRILL STREET
# PEDESTRIAN & BICYCLE IMPROVEMENTS
# SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
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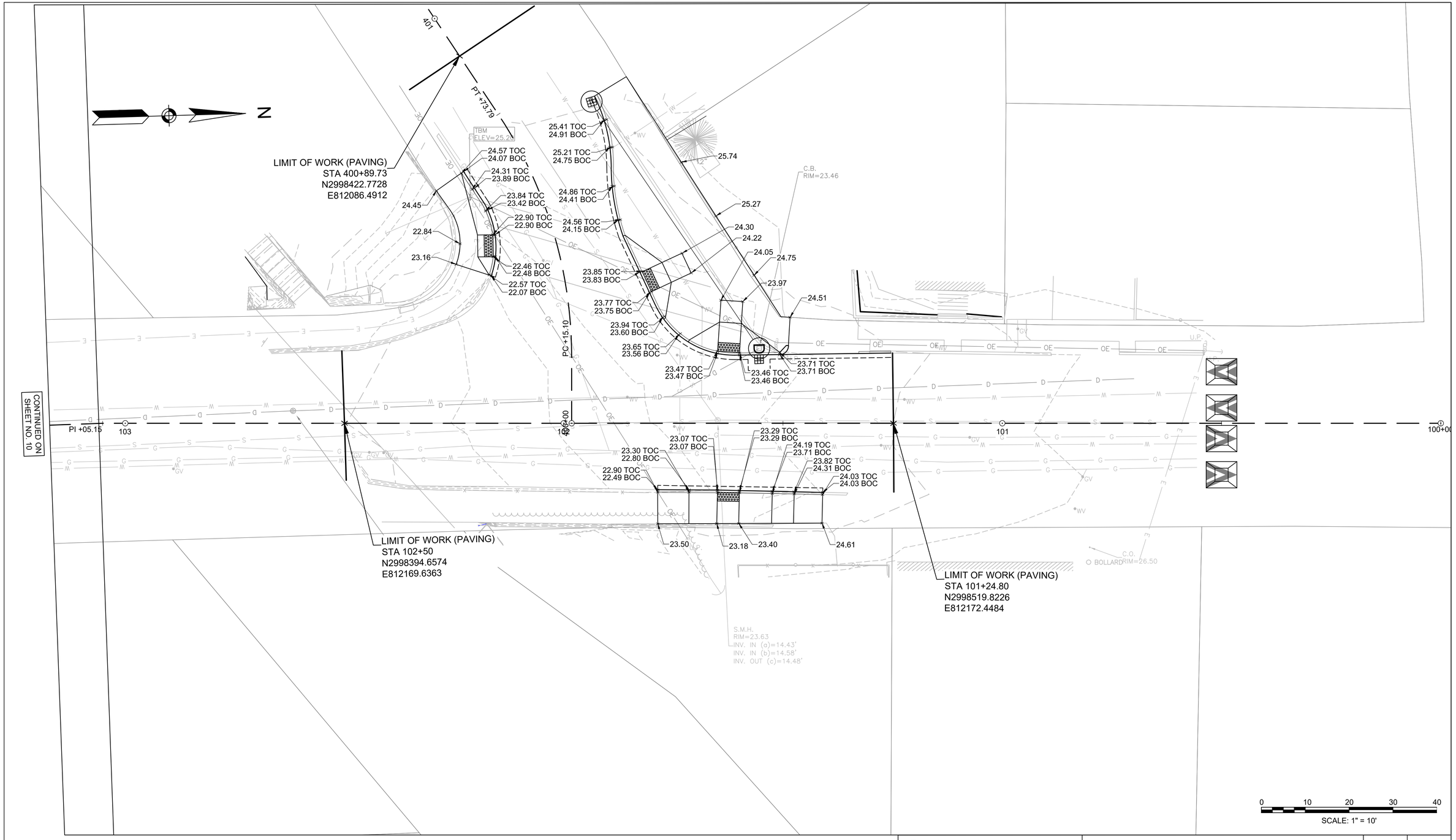
| 10 | 18 |

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# GRADING PLAN NO. 2
# BURRILL STREET
# PEDESTRIAN & BICYCLE IMPROVEMENTS
# SWAMPSCOTT, MA

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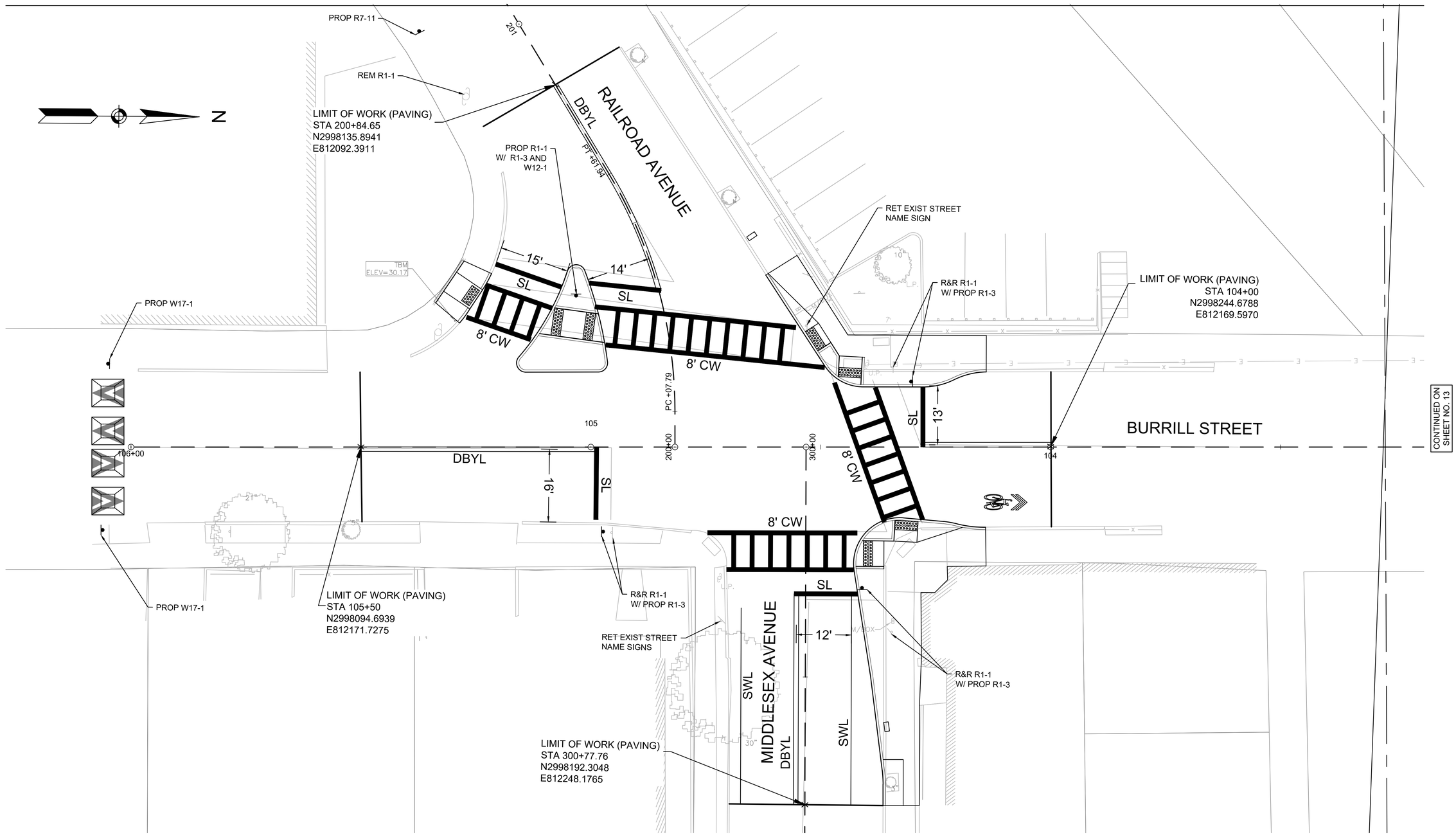


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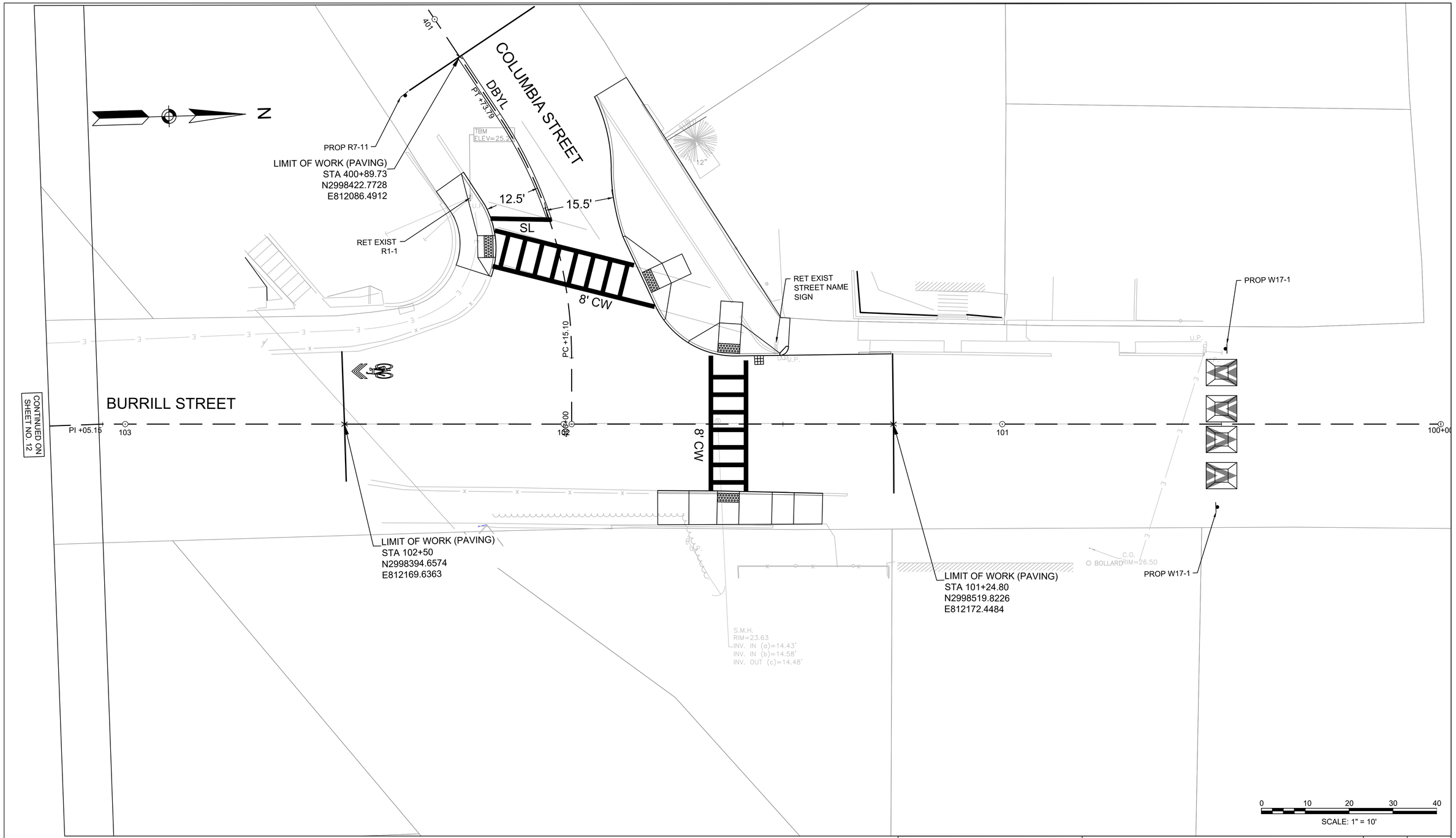
# SIGN & PVMT MARKINGS PLAN NO. 1
# BURRILL STREET
# PEDESTRIAN & BICYCLE IMPROVEMENTS
# SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 12 | 18 |

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a Bowman company

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FAX: (508) 823 - 2246

120 WATER ST
4TH FLOOR
BOSTON, MA 02109
TELE: (617) 556 - 0020
FAX: (617) 556 - 0025

14 BREAKNECK HILL RD
SUITE 201
LINCOLN, RI 02865
TELE: (401) 648 - 7200

94 NORTH ELM STREET
SUITE 210
WESTFIELD, MA
TELE: (413) 875 - 8855


| REVISIONS | REV # | DATE |
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SIGN & PVMT MARKINGS PLAN NO. 2
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 13 | 18 |

| IDENTIFICATION NUMBER | SIZE OF SIGN(in.) | | TEXT | TEXT DIMENSIONS (in) | | | NUMBER OF SIGNS REQUIRED | COLOR | | | POST SIZE AND NUMBER REQUIRED | UNIT AREA (S.F.) | AREA IN SQUARE FEET |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WIDTH | HEIGHT | | LETTER HEIGHT | VERTICAL SPACING | ARROW RTE. MKR. | | BACK-GROUND | LEGEND | BORDER | | | |
| R1-1 | 36 | 36 |  | SEE MUTCD STANDARDS | | | 4 | SEE MUTCD STANDARDS | | | P5-1 4-REQ | 6.00 | 24.00 |
| R1-3P | 18 | 6 |  | | | | 4 | | | | 4 - MOUNT W/ R1-1 | 2.00 | 8.00 |
| R7-11a | 12 | 18 |  | | | | 2 | | | | P5-1 2-REQ | 2.50 | 5.00 |
| W12-1 | 36 | 36 |  | | | | 1 | | | | 1 - MOUNT W/ R1-1 AND R1-3P | 6.00 | 6.00 |
| W17-1 | 36 | 36 |  | | | | 4 | | | | P5-1 4-REQ | 6.00 | 24.00 |
| | | | | | | | | | | | TOTAL: | | 67.00 |

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94 NORTH ELM STREET, SUITE 210, WESTFIELD, MA, TELE: (413) 875 - 8855


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| REVIEWER: | RS |

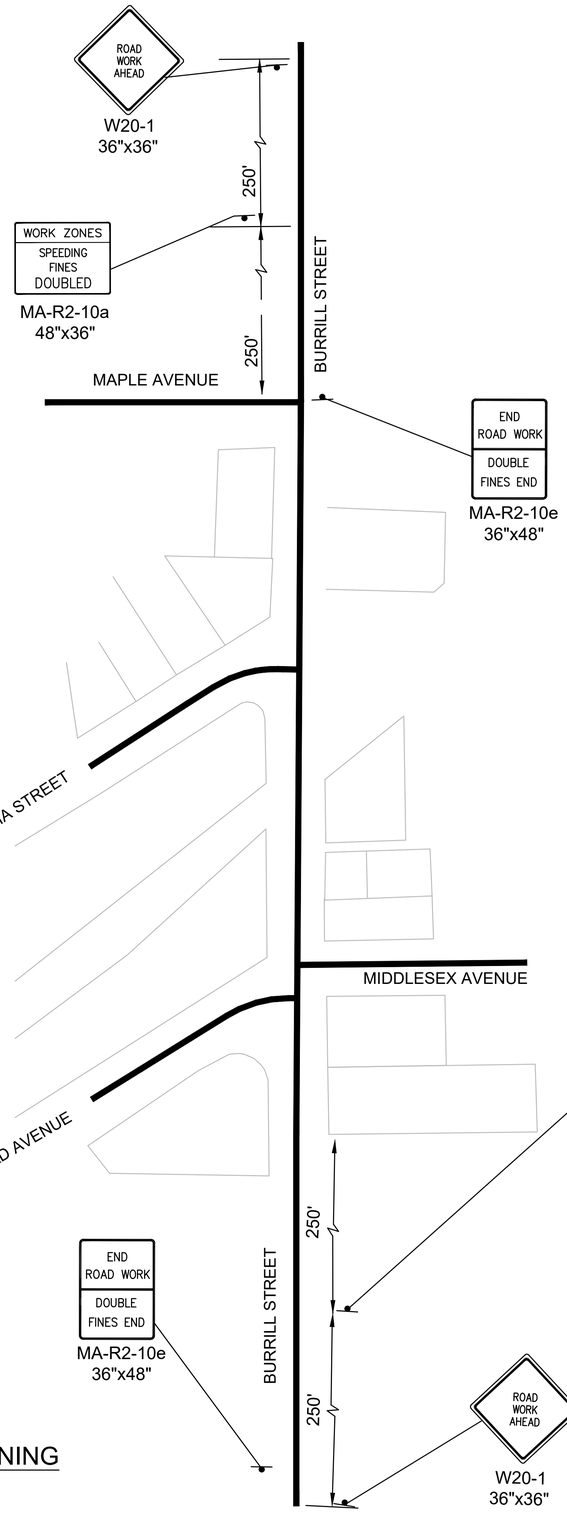
| REVISIONS | REV # | DATE |
|---|---|---|
| | | |

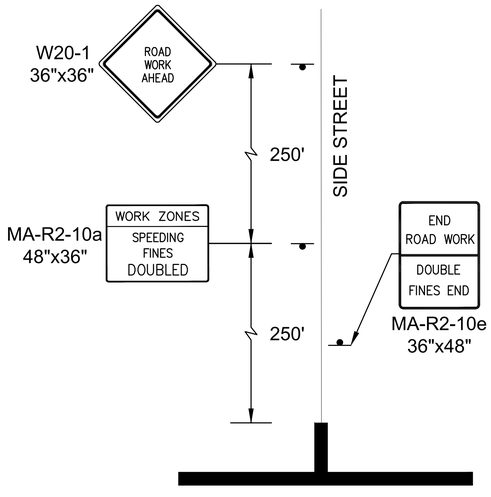
TRAFFIC SIGN SUMMARY
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 14 | 18 |

**NOTES:**

1. ALL TRAFFIC CONTROL DEVICES AND WORK ZONE SET-UPS ARE TO BE IN ACCORDANCE WITH MASSDOT AND MUTCD STANDARDS.
2. DRUM SPACING SHALL BE 30 FEET ON ALL STREETS.
3. MINIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS AND CONES) IS EQUAL IN FEET TO THE POSTED SPEED LIMIT IN MILES PER HOUR.
4. ALL SIGNS SHOWN SHALL BE MOUNTED ON SUITABLE TEMPORARY SUPPORTS SUCH THAT SIGNS ARE CLEARLY VISIBLE APPROACHING TRAFFIC.
5. MAINTAIN ACCESS TO ALL DRIVEWAYS AND PEDESTRIAN SIDEWALKS AT ALL TIMES, UNLESS OTHERWISE NOTED.
6. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
7. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
8. MINIMUM LANE WIDTH IS 10 FEET, MEASURED FRON THE EDGE OF DRUMS OR MEDIAN BARRIER.
9. ADA COMPLIANT PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES, INCLUDING PROPER BARRICADES, RAILING RAMPS, AND SIGNAGE FOR PEDESTRIAN DETOURS OR BYPASSES.
10. ALL TEMPORARY PEDESTRIAN RAMPS SHALL CONFORM TO ADA/AAB REGULATIONS.




PROJECT LIMIT SIGNING
NOT TO SCALE

**NOTES:**

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
7. THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3m) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

**LEGEND:**

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- P/F POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN

THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL). IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED:

**MEASURED AVERAGE WORK ZONE CAPACITIES**

| NUMBER OF LANES | | NUMBER OF STUDIES | AVERAGE CAPACITY | |
|---|---|---|---|---|
| NORMAL (EXISTING) | OPEN (TO TRAFFIC) | | VPH | VPHPL |
| 3 | 1 | 7 | 1,170 | 1,170 |
| 2 | 1 | 8 | 1,340 | 1,340 |
| 5 | 2 | 8 | 2,740 | 1,370 |
| 4 | 2 | 4 | 2,960 | 1,480 |
| 3 | 2 | 9 | 2,980 | 1,490 |
| 4 | 3 | 4 | 4,560 | 1,520 |

Source: Dudek, C., Notes on Work Zone Capacity and Level of Service. Texas Transportation Institute, Texas A&M University, College Station, Texas (1984)

BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED.

FIGURE GEN-1
GENERAL GUIDELINES
NOT TO SCALE

| | |
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| REVISIONS | REV # | DATE |
|---|---|---|
| | | |

TEMPORARY TRAFFIC CONTROL PLAN NO. 1
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 15 | 18 |

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## SUGGESTED WORK ZONE WARNING SIGN SPACING

| ROAD TYPE | DISTANCE BETWEEN SIGNS ** | | |
|---|---|---|---|
| | A | B | C |
| LOCAL OR LOW VOLUME ROADWAYS* | 350 (100) | 350 (100) | 350 (100) |
| MOST OTHER ROADWAYS* | 500 (150) | 500 (150) | 500 (150) |
| FREEWAYS AND EXPRESSWAYS* | 1,000 (300) | 1,500 (450) | 2,640 (800) |

* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

** DISTANCES ARE SHOWN IN FEET (METERS). THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/ TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTCP SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (i.e. THE W20–1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (i.e. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY–TO–DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

R2–10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

R2–10a, R2–10e, AND W20–1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C–1 MUTCD LATEST EDITION

### STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

| SPEED* (km/h) | DISTANCE (m) |
|---|---|
| 30 | 35 |
| 40 | 50 |
| 50 | 65 |
| 60 | 85 |
| 70 | 105 |
| 80 | 130 |
| 90 | 160 |
| 100 | 185 |
| 110 | 220 |
| 120 | 250 |

| SPEED* (mph) | DISTANCE (ft) |
|---|---|
| 20 | 115 |
| 25 | 155 |
| 30 | 200 |
| 35 | 250 |
| 40 | 305 |
| 45 | 360 |
| 50 | 425 |
| 55 | 495 |
| 60 | 570 |
| 65 | 645 |
| 70 | 730 |
| 75 | 820 |

*POSTED SPEED, OFF–PEAK 85TH–PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C–2 MUTCD LATEST EDITION

## FIGURE GEN-2
## NOTES ON WORK ZONE DISTANCES
NOT TO SCALE

CONVENTIONAL ROADWAY– A STREET OR HIGHWAY OTHER THAN A LOW–VOLUME ROAD, EXPRESSWAY, OR FREEWAY.

EXPRESSWAY– A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

FREEWAY– A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

LOW–VOLUME ROAD– A FACILITY LYING OUTSIDE OF BUILT–UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 AADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM.

Source: MUTCD LATEST EDITION

### TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

| TYPE OF TAPER | TAPER LENGTH (L)* |
|---|---|
| MERGING TAPER | AT LEAST L |
| SHIFTING TAPER | AT LEAST 0.5L |
| SHOULDER TAPER | AT LEAST 0.33L |
| ONE–LANE, TWO–WAY TRAFFIC TAPER | 50 FT MIN.(15 m) 100 FT(30 m) MAX. |
| DOWNSTREAM TAPER | 50 FT MIN.(15 m) 100 FT MAX.(30 m) PER LANE |

Source: Table 6C–3 MUTCD LATEST EDITION

### FORMULAS FOR DETERMINING TAPER LENGTHS

| SPEED LIMIT (S) | TAPER LENGTH (L) FEET |
|---|---|
| 40 MPH OR LESS | $L = \frac{WS^2}{60}$ |
| 45 MPH OR MORE | $L = WS$ |

| SPEED LIMIT (S) | TAPER LENGTH (L) Meters |
|---|---|
| 60 KM/H OR LESS | $L = \frac{WS^2}{155}$ |
| 70 KM/H OR MORE | $L = \frac{WS}{1.6}$ |

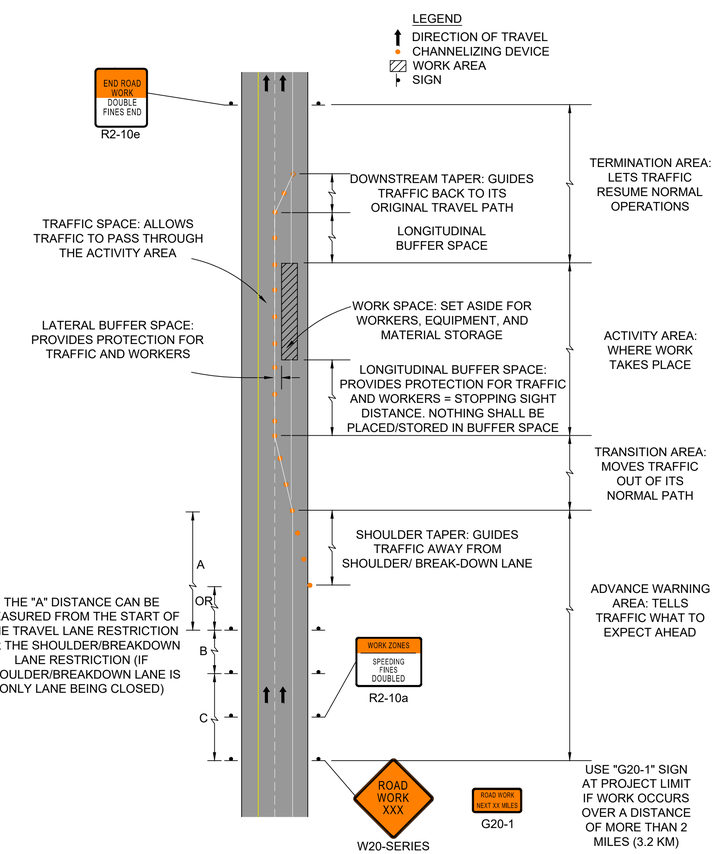
WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

S = POSTED SPEED LIMIT, OR OFF–PEAK 85TH–PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICAPATED OPERATING SPEED IN MPH (KM/H)

Source: Table 6C–4 MUTCD LATEST EDITION

## FIGURE GEN-3
## NOTES ON WORK ZONE DISTANCES
NOT TO SCALE




## FIGURE GEN-4
## COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE
NOT TO SCALE

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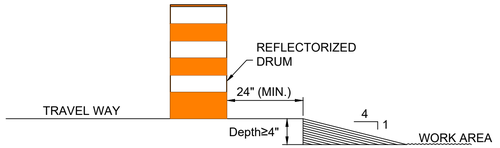
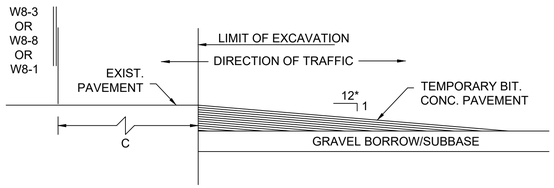
TEMPORARY TRAFFIC CONTROL PLAN NO. 2
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 16 | 18 |



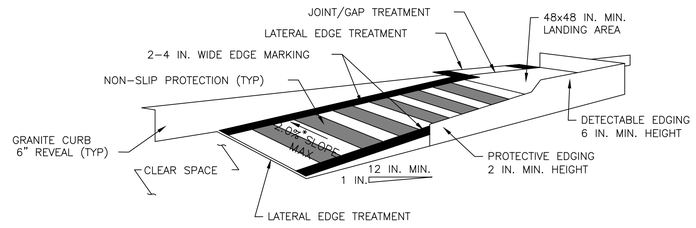



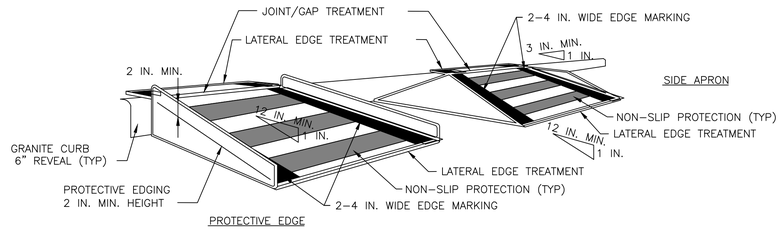

* - INCREASE SLOPE RATIO
FOR HIGHER SPEEDS

## FIGURE GEN-6
## LATERAL AND LONGITUDINAL DROP-OFF DETAILS
NOT TO SCALE

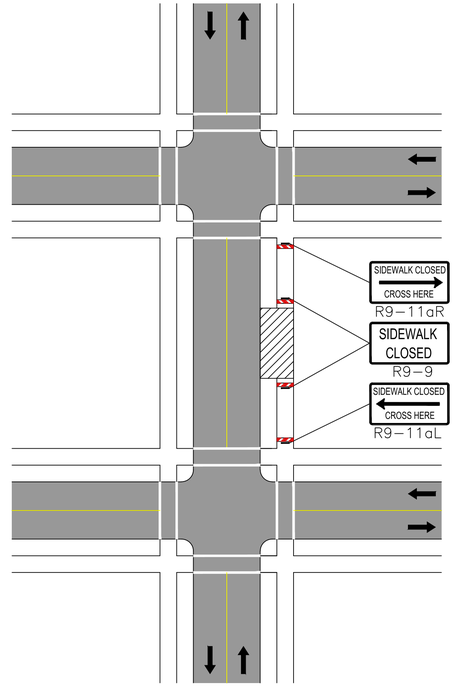
NOTES:

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
5. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
6. THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR 2 TO 4 IN. WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.




## FIGURE PED-1
## PEDESTRIAN DETAILS
NOT TO SCALE




NOTE: IF A MINIMUM WIDTH OF 48" OF SOLID SMOOTH UNOBSTRUCTED SURFACE REMAINS ALONG THE WORK AREA THEN THE DETAIL CAN BE DISREGARDED. DELINEATION OF THE WORK AREA WILL STILL BE REQUIRED. All PEDESTRIAN DETOUR ROUTES SHALL BE ADA/MAAB COMPLIANT IN THEIR ENTIRETY.

## FIGURE PED-5
## SIDEWALK CLOSED WITHOUT DETOUR
NOT TO SCALE

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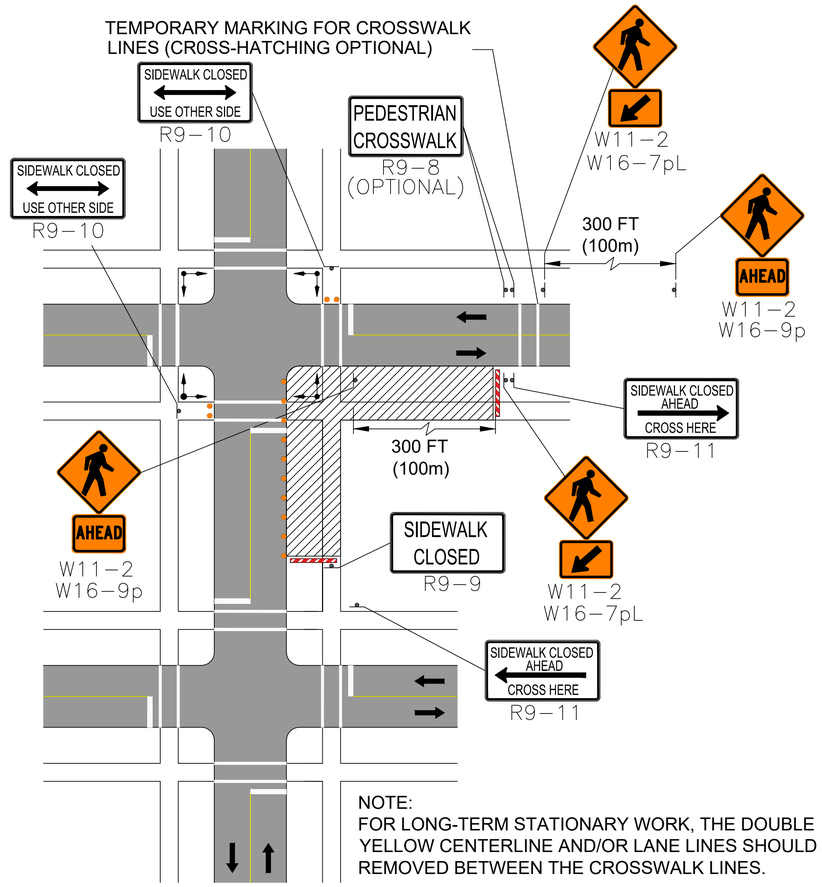
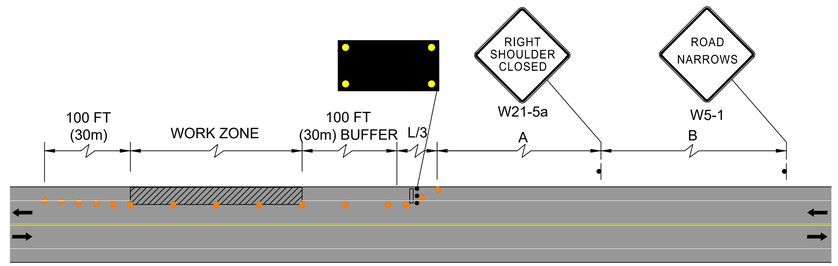
TEMPORARY TRAFFIC CONTROL PLAN NO. 3
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 17 | 18 |

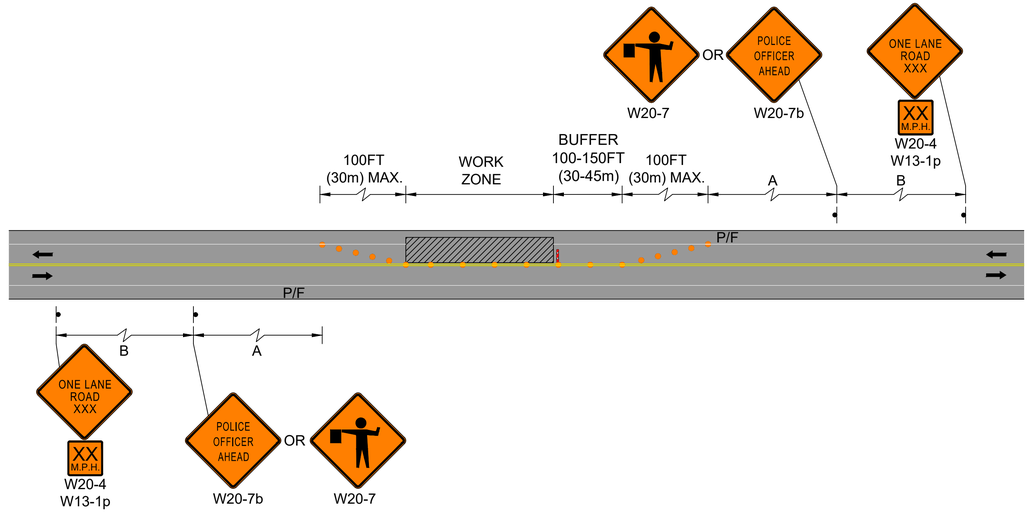



NOTE:
FOR LONG-TERM STATIONARY WORK, THE DOUBLE YELLOW CENTERLINE AND/OR LANE LINES SHOULD BE REMOVED BETWEEN THE CROSSWALK LINES.

## FIGURE PED-6
## SIDEWALK CORNER CLOSURE
## PEDESTRIAN DETOUR
NOT TO SCALE




## FIGURE TLR-1
## TWO LANE ROAD, SHOULDER CLOSURE
NOT TO SCALE




## FIGURE TLR-5
## TWO LANE ROAD, ONE LANE ALTERNATING TRAFFIC
NOT TO SCALE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TELE: (401) 648 - 7200

94 NORTH ELM STREET
SUITE 210
WESTFIELD, MA
TELE: (413) 875 - 8855


| | |
|---|---|
| PROJECT #: | Y21919.21 |
| DATE: | 4/7/2023 |
| DESIGNER: | ALT |
| DRAFTER: | ALT |
| REVIEWER: | RS |

| REVISIONS | REV # | DATE |
|---|---|---|
| | | |
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TEMPORARY TRAFFIC CONTROL PLAN NO. 4
BURRILL STREET
PEDESTRIAN & BICYCLE IMPROVEMENTS
SWAMPSCOTT, MA

| SHEET # | TOTAL SHEETS |
|---|---|
| 18 | 18 |

J:\Analysis\Town of Swampscott\Commuter Rail Station Ped-Bike Improvements\CAD\DWG\PLOT\Y21919.21 - TEMPORARY TRAFFIC CONTROL.dwg