

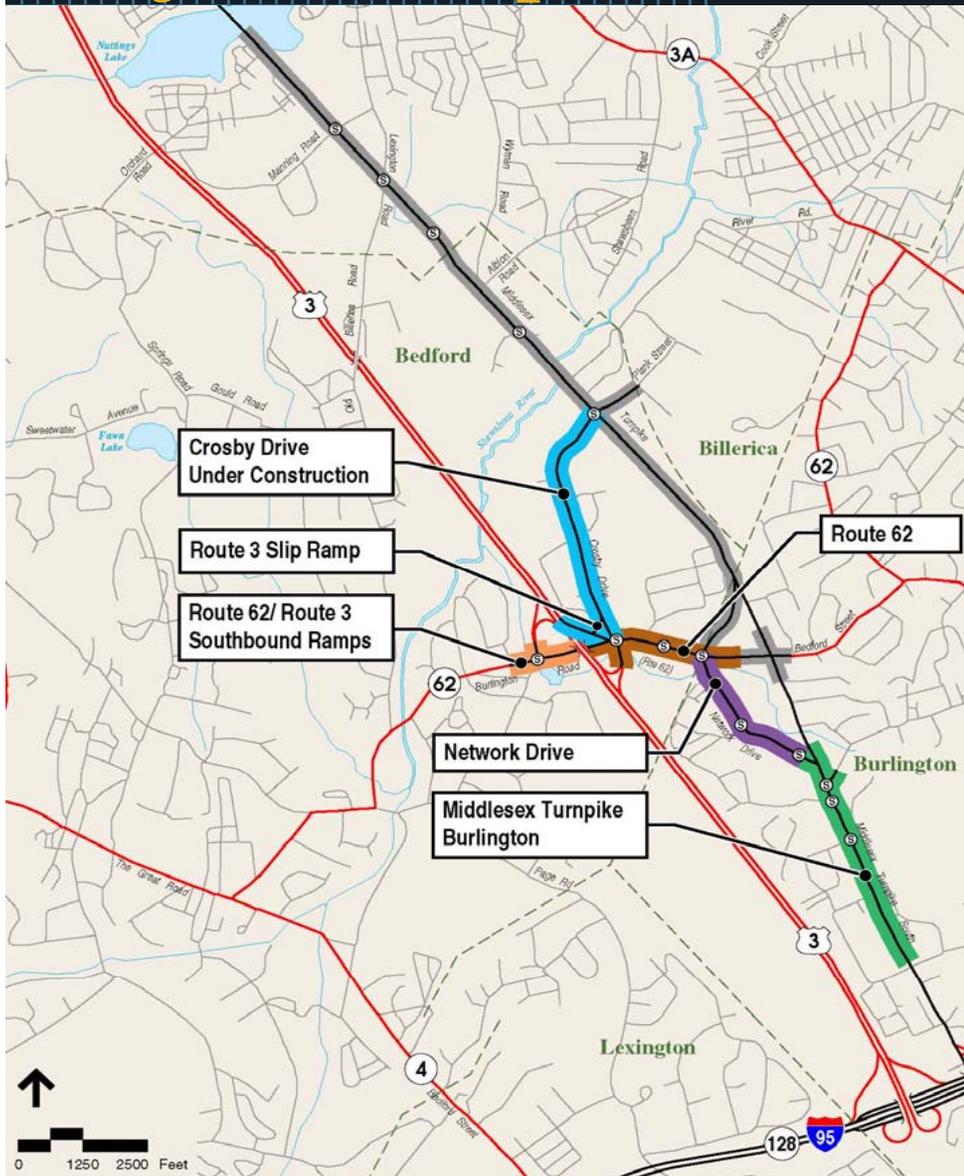
Middlesex Turnpike Improvement Project

Project History

- **In 1980's Billerica, Burlington and Bedford formed Tritown Committee**
- **Committee focused on attracting business to area**
- **Stimulate economic growth in existing business area**
- **Improve access to Rte 3 and Rte 128**
- **Improve capacity of regional roadways**

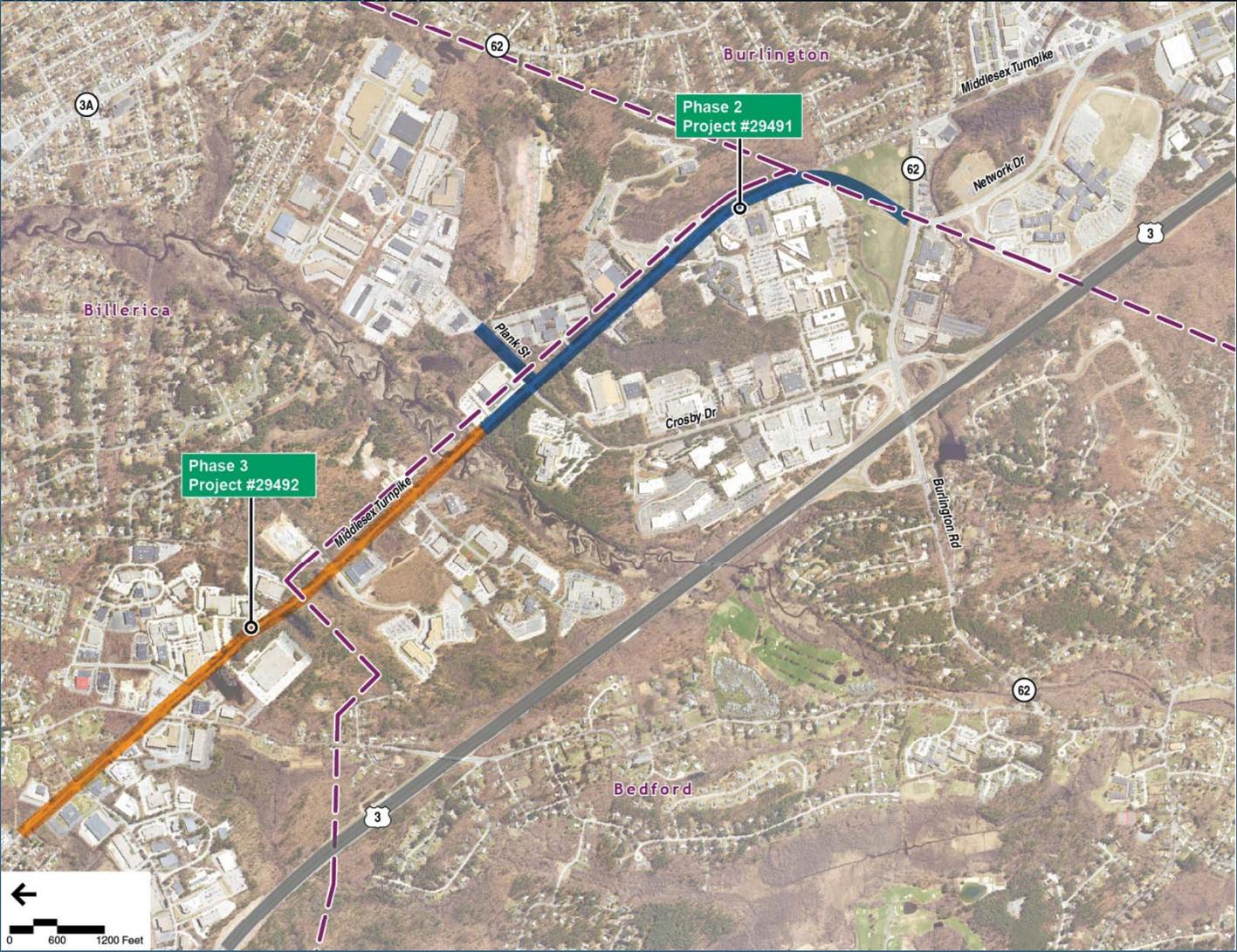
Middlesex Turnpike Improvement Project

Projects Completed



- Middlesex Turnpike, Burlington
- Network Drive
- Route 62
- Route 3 Northbound Slip Ramp
- Route 3 Southbound Ramps
- Crosby Drive

Project Limits



Middlesex Turnpike Improvement Project

Middlesex Turnpike Phase 2

- Extends from Route 62 to the Shawsheen River, for a total length of 1.4 miles
- Construction cost for project Phase 2:
\$ 11,744,277.60
- State and Federal Monies used for construction funding

Middlesex Turnpike Improvement Project

Current Roadway Description

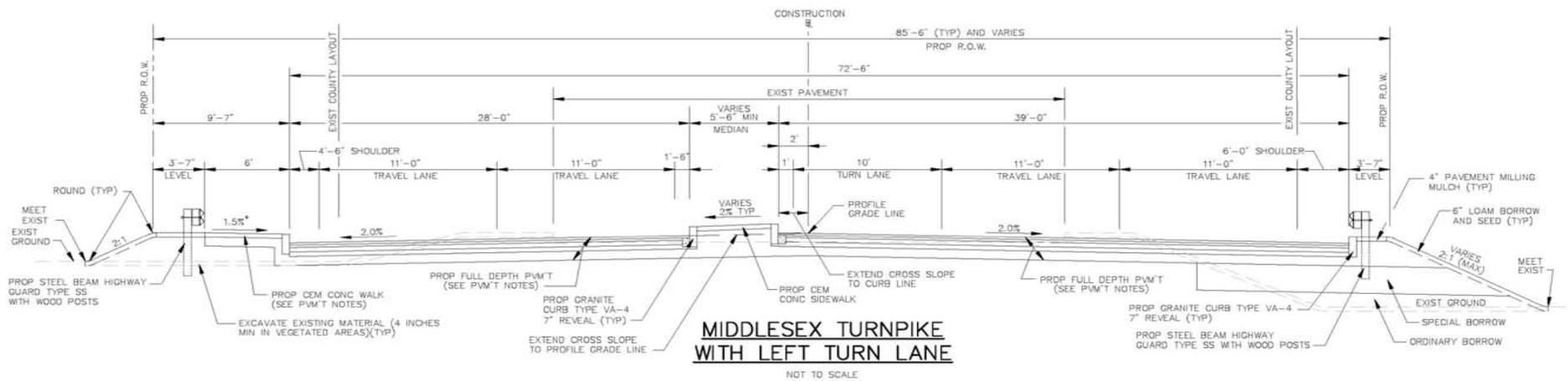
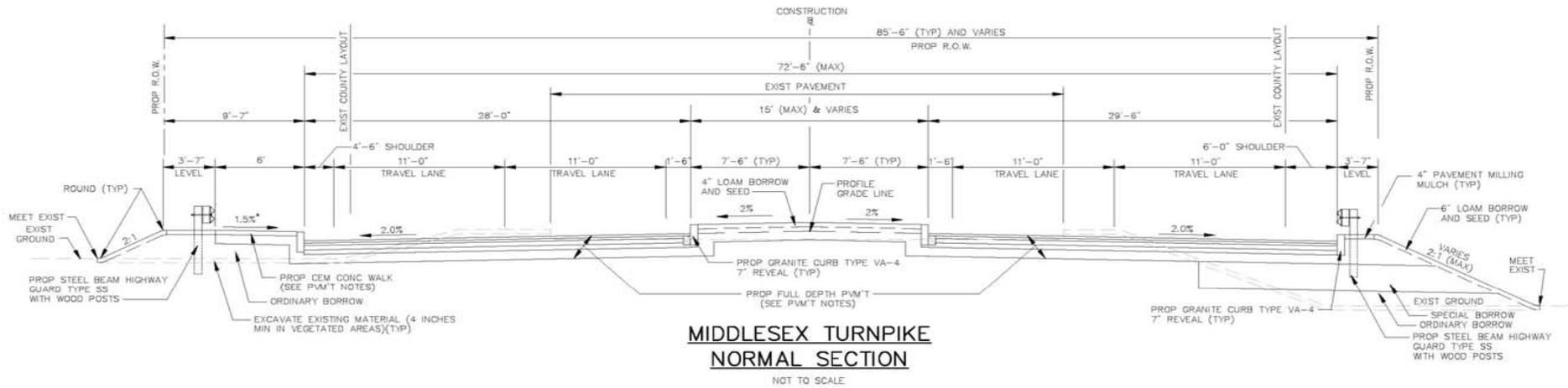
- Existing two lane roadway
- No sidewalks or bike accommodations
- Drainage system includes paved waterways and catchbasins along the edge of pavement
- Pavement has deteriorated
- In 2005 the Town of Bedford put a pavement patch on the roadway to extend current surface life
- 2 intersections - Rte 62 and Crosby Dr/Plank St
- Currently bisects wetlands
- Current land use includes residential, industrial, office, and commercial

Middlesex Turnpike Improvement Project

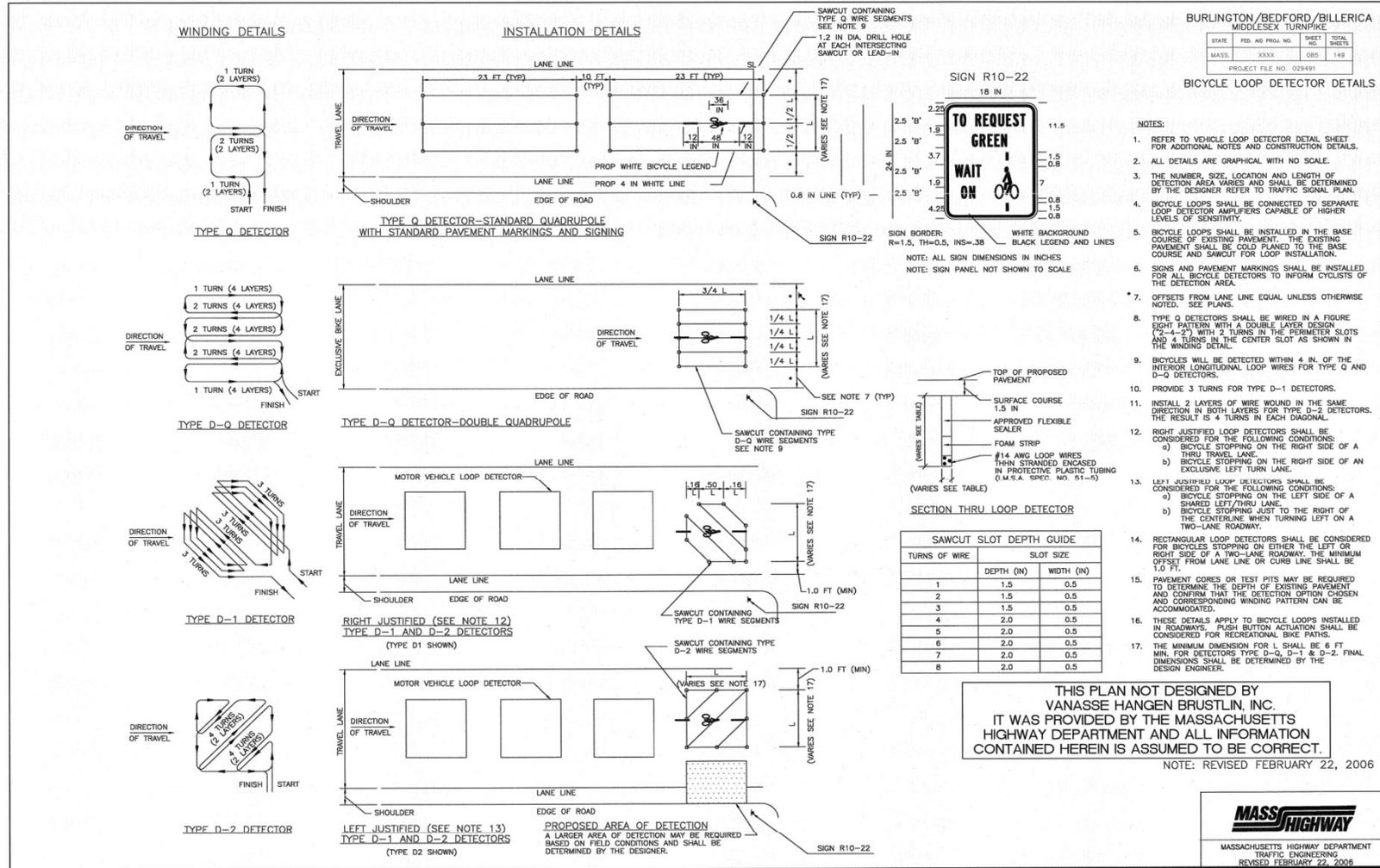
Proposed Design Components

- Widening the Middlesex Turnpike roadway cross section to four lanes with landscaped median (or turning lanes)
- 6 foot sidewalk along one side
- 5 foot shoulders that accommodate bike use
- Mitre Link at southern end is a new four-lane, median-divided roadway with sidewalk on west side
- End existing Middlesex Turnpike at Crowley Road
- Construction of traffic signals at 3 intersections (Rte 62, Hotel Entrance, and Crosby Drive)
- New stormwater management system
- Wetland mitigation and floodplain mitigation
- Trees added along the roadway edges

Roadway Typical Section



Bike Accommodations along Corridor



BURLINGTON/BEDFORD/BILLERICA
MIDDLESEX TURNPIKE

STATE	FED. AID PROJ. NO.	SHEET	TOTAL SHEETS
MASS.	XXXX	085	149

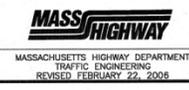
PROJECT FILE NO. 029491

BICYCLE LOOP DETECTOR DETAILS

- NOTES:**
- REFER TO VEHICLE LOOP DETECTOR DETAIL SHEET FOR ADDITIONAL NOTES AND CONSTRUCTION DETAILS.
 - ALL DETAILS ARE GRAPHICAL WITH NO SCALE.
 - THE NUMBER, SIZE, LOCATION AND LENGTH OF DETECTION AREA WIRES AND SHALL BE DETERMINED BY THE DESIGNER REFER TO TRAFFIC SIGNAL PLAN.
 - BICYCLE LOOPS SHALL BE CONNECTED TO SEPARATE LOOP DETECTOR AMPLIFIERS CAPABLE OF HIGHER LEVELS OF SENSITIVITY.
 - BICYCLE LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF EXISTING PAVEMENT. THE EXISTING PAVEMENT SHALL BE COLD PLANNED TO THE BASE COURSE AND SAWCUT FOR LOOP INSTALLATION.
 - SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED FOR ALL BICYCLE DETECTORS TO INFORM CYCLISTS OF THE DETECTION AREA.
 - OFFSETS FROM LANE LINE EQUAL UNLESS OTHERWISE NOTED. SEE PLANS.
 - TYPE Q DETECTORS SHALL BE WIRED IN A FIGURE EIGHT PATTERN WITH A DOUBLE LAYER DESIGN (2-4-2) WITH 4 TURNS IN THE PERMETER SLOTS AND 4 TURNS IN THE CENTER SLOT AS SHOWN IN THE WINDING DETAIL.
 - BICYCLES WILL BE DETECTED WITHIN 4 IN. OF THE INTERIOR LONGITUDINAL LOOP WIRES FOR TYPE Q AND D-Q DETECTORS.
 - PROVIDE 3 TURNS FOR TYPE D-1 DETECTORS.
 - INSTALL 2 LAYERS OF WIRE WOUND IN THE SAME DIRECTION IN BOTH LAYERS FOR TYPE D-2 DETECTORS. THE RESULT IS 4 TURNS IN EACH DIAGONAL.
 - RIGHT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
 - BICYCLE STOPPING ON THE RIGHT SIDE OF A THRU TRAVEL LANE.
 - BICYCLE STOPPING ON THE RIGHT SIDE OF AN EXCLUSIVE LEFT TURN LANE.
 - LEFT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
 - BICYCLE STOPPING ON EITHER THE LEFT OR RIGHT SIDE OF A TWO-LANE ROADWAY. THE MINIMUM OFFSET FROM LANE LINE OR CURB LINE SHALL BE 1.0 FT.
 - BICYCLE STOPPING JUST TO THE RIGHT OF THE CENTERLINE WHEN TURNING LEFT ON A TWO-LANE ROADWAY.
 - RECTANGULAR LOOP DETECTORS SHALL BE CONSIDERED FOR BICYCLES STOPPING ON EITHER THE LEFT OR RIGHT SIDE OF A TWO-LANE ROADWAY. THE MINIMUM OFFSET FROM LANE LINE OR CURB LINE SHALL BE 1.0 FT.
 - PAVEMENT CORES OR TEST PITS MAY BE REQUIRED TO DETERMINE THE DEPTH OF EXISTING PAVEMENT AND CONFIRM THAT THE DETECTION OPTION CHOSEN AND CORRESPONDING WINDING PATTERN CAN BE ACCOMMODATED.
 - THESE DETAILS APPLY TO BICYCLE LOOPS INSTALLED IN ROADWAYS. PUSH BUTTON ACTUATION SHALL BE CONSIDERED FOR RECREATIONAL BIKE PATHS.
 - THE MINIMUM DIMENSION FOR L SHALL BE 6 FT MIN. FOR DETECTORS TYPE D-Q, D-1 & D-2. FINAL DIMENSIONS SHALL BE DETERMINED BY THE DESIGN ENGINEER.

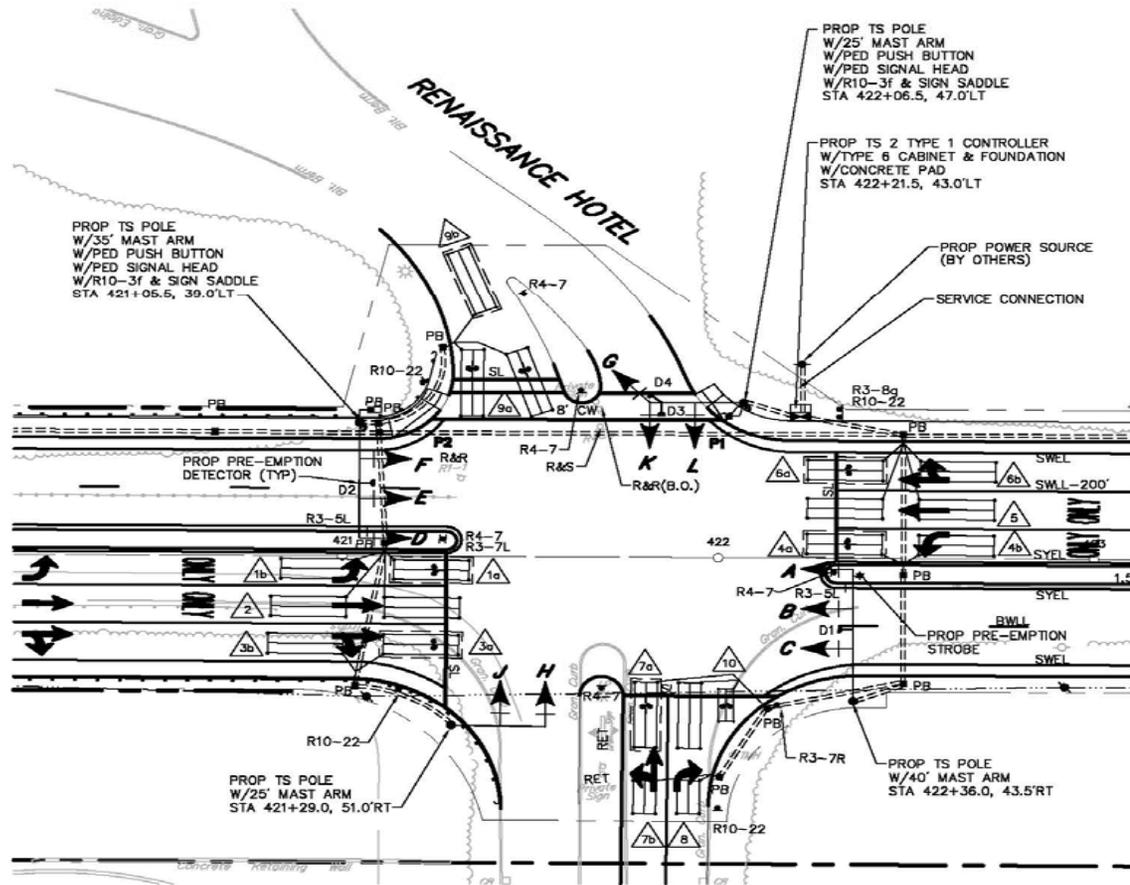
THIS PLAN NOT DESIGNED BY
VANASSE HANGEN BRUSTLIN, INC.
IT WAS PROVIDED BY THE MASSACHUSETTS
HIGHWAY DEPARTMENT AND ALL INFORMATION
CONTAINED HEREIN IS ASSUMED TO BE CORRECT.

NOTE: REVISED FEBRUARY 22, 2006



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Bike Loop Detectors at Intersections



Middlesex Turnpike Improvement Project

Current Status

- Project Awarded to Newport Construction in Summer 2010
- 36 month Construction Schedule
- Permitting completed through Fall 2010
- Contractor mobilization completed
- Stage 2 work zones being established

Middlesex Turnpike Improvement Project

Construction Staging Major Work Items

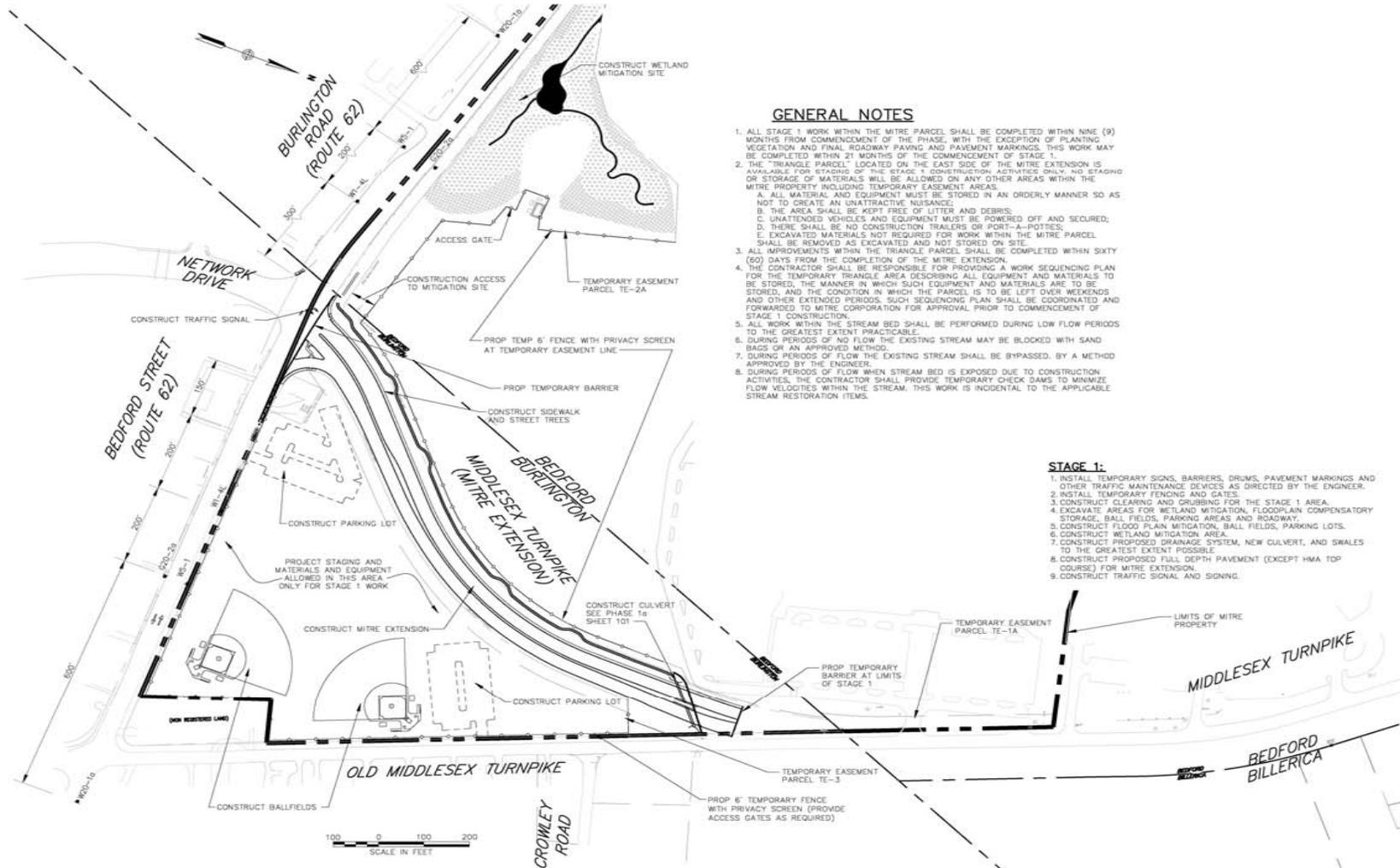
- **Stage 1**- Middlesex Turnpike Extension, Wetland Mitigation and Recreation Fields
- **Stage 2** – Shift Tpk travel lanes to the west, roadway widening to the east, utility pole relocation (by others), construct Plank Street/ Crosby Drive intersection
- **Stage 3** – Shift travel lanes to the east, roadway widening to the west, install median
- **Stage 4**- Stream restoration

Middlesex Turnpike Improvement Project

Construction Staging Major Work Items

Stages 1 and 2 were switched due to environmental 'Time of Year' restrictions

Stage 1 – Middlesex Turnpike Extension



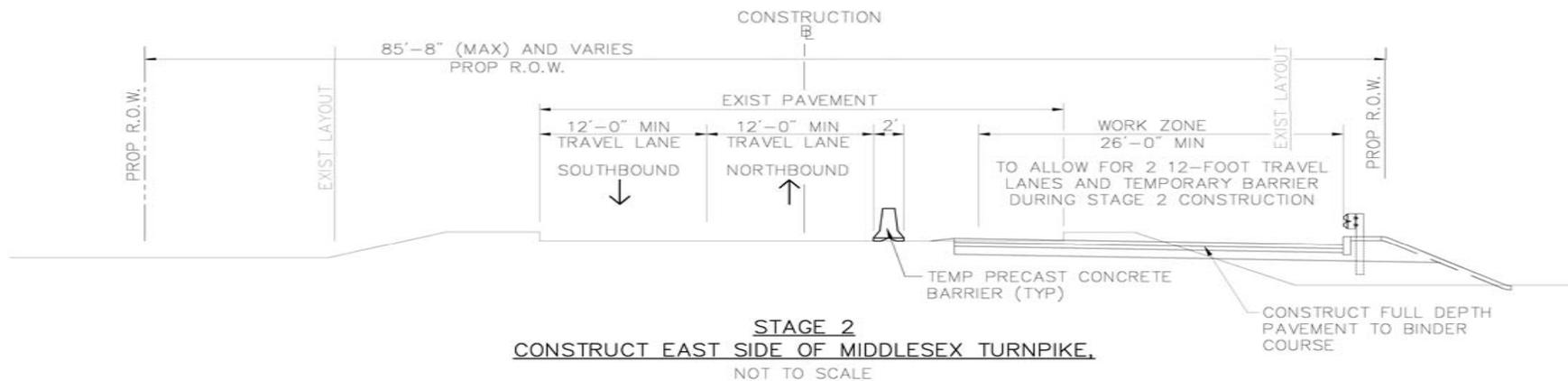
GENERAL NOTES

- ALL STAGE 1 WORK WITHIN THE MITRE PARCEL SHALL BE COMPLETED WITHIN NINE (9) MONTHS FROM COMMENCEMENT OF THE PHASE, WITH THE EXCEPTION OF PLANTING VEGETATION AND FINAL ROADWAY PAVING AND PAVEMENT MARKINGS. THIS WORK MAY BE COMPLETED WITHIN 21 MONTHS OF THE COMMENCEMENT OF STAGE 1.
- THE TRIANGLE PARCEL LOCATED ON THE EAST SIDE OF THE MITRE EXTENSION IS AVAILABLE FOR STAGING OF THIS STAGE 1 CONSTRUCTION ACTIVITIES ONLY. NO STAGING OR STORAGE OF MATERIALS WILL BE ALLOWED ON ANY OTHER AREAS WITHIN THE MITRE PROPERTY INCLUDING TEMPORARY EASEMENT AREAS.
 - ALL MATERIAL AND EQUIPMENT MUST BE STORED IN AN ORDERLY MANNER SO AS NOT TO CREATE AN UNATTRACTIVE NUISANCE.
 - THE AREA SHALL BE KEPT FREE OF LITTER AND DEBRIS.
 - UNATTENDED VEHICLES AND EQUIPMENT MUST BE POWERED OFF AND SECURED.
 - THERE SHALL BE NO CONSTRUCTION TRAILERS OR PORT-A-POTIES.
 - EXCAVATED MATERIALS NOT REQUIRED FOR WORK WITHIN THE MITRE PARCEL SHALL BE REMOVED AS EXCAVATED AND NOT STORED ON SITE.
- ALL IMPROVEMENTS WITHIN THE TRIANGLE PARCEL SHALL BE COMPLETED WITHIN SIXTY (60) DAYS FROM THE COMPLETION OF THE MITRE EXTENSION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A WORK SEQUENCING PLAN FOR THE TEMPORARY TRIANGLE AREA DESCRIBING ALL EQUIPMENT AND MATERIALS TO BE STORED, THE MANNER IN WHICH SUCH EQUIPMENT AND MATERIALS ARE TO BE STORED, AND THE CONDITION IN WHICH THE PARCEL IS TO BE LEFT OVER WEEKENDS AND OTHER EXTENDED PERIODS. SUCH SEQUENCING PLAN SHALL BE COORDINATED AND FORWARDED TO MITRE CORPORATION FOR APPROVAL PRIOR TO COMMENCEMENT OF STAGE 1 CONSTRUCTION.
- ALL WORK WITHIN THE STREAM BED SHALL BE PERFORMED DURING LOW FLOW PERIODS TO THE GREATEST EXTENT PRACTICABLE.
- DURING PERIODS OF NO FLOW THE EXISTING STREAM MAY BE BLOCKED WITH SAND BAGS OR AN APPROVED METHOD.
- DURING PERIODS OF FLOW WHEN THE EXISTING STREAM SHALL BE BYPASSED, BY A METHOD APPROVED BY THE ENGINEERS.
- DURING PERIODS OF FLOW WHEN STREAM BED IS EXPOSED DUE TO CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL PROVIDE TEMPORARY CHECK DAMS TO MINIMIZE FLOW VELOCITIES WITHIN THE STREAM. THIS WORK IS INCIDENTAL TO THE APPLICABLE STREAM RESTORATION ITEMS.

STAGE 1:

- INSTALL TEMPORARY SIGNS, BARRIERS, DRUMS, PAVEMENT MARKINGS AND OTHER TRAFFIC MAINTENANCE DEVICES AS DIRECTED BY THE ENGINEER.
- INSTALL TEMPORARY FENCING AND GATES.
- CONSTRUCT CLEARING AND GRUBBING FOR THE STAGE 1 AREA.
- EXCAVATE AREAS FOR WETLAND MITIGATION, FLOODPLAIN COMPENSATORY STORAGE, BALL FIELDS, PARKING AREAS AND ROADWAY.
- CONSTRUCT FLOOD PLAIN MITIGATION, BALL FIELDS, PARKING LOTS.
- CONSTRUCT WETLAND MITIGATION AREA.
- CONSTRUCT PROPOSED DRAINAGE SYSTEM, NEW CULVERT, AND SWALES TO THE GREATEST EXTENT POSSIBLE.
- CONSTRUCT PROPOSED FULL DEPTH PAVEMENT (EXCEPT HMA TOP COURSE) FOR MITRE EXTENSION.
- CONSTRUCT TRAFFIC SIGNAL AND SIGNING.

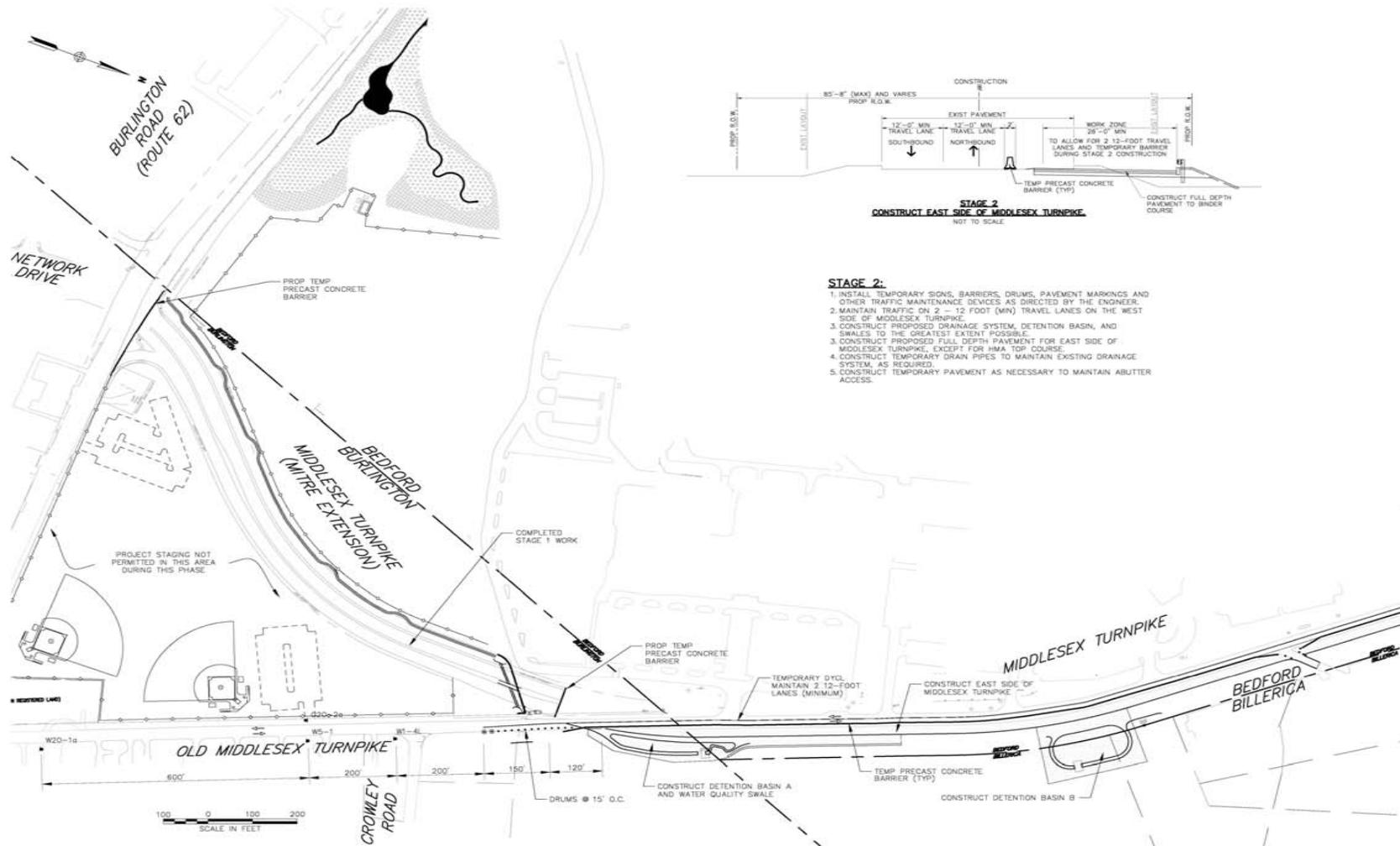
Stage 2 – Middlesex Turnpike construction



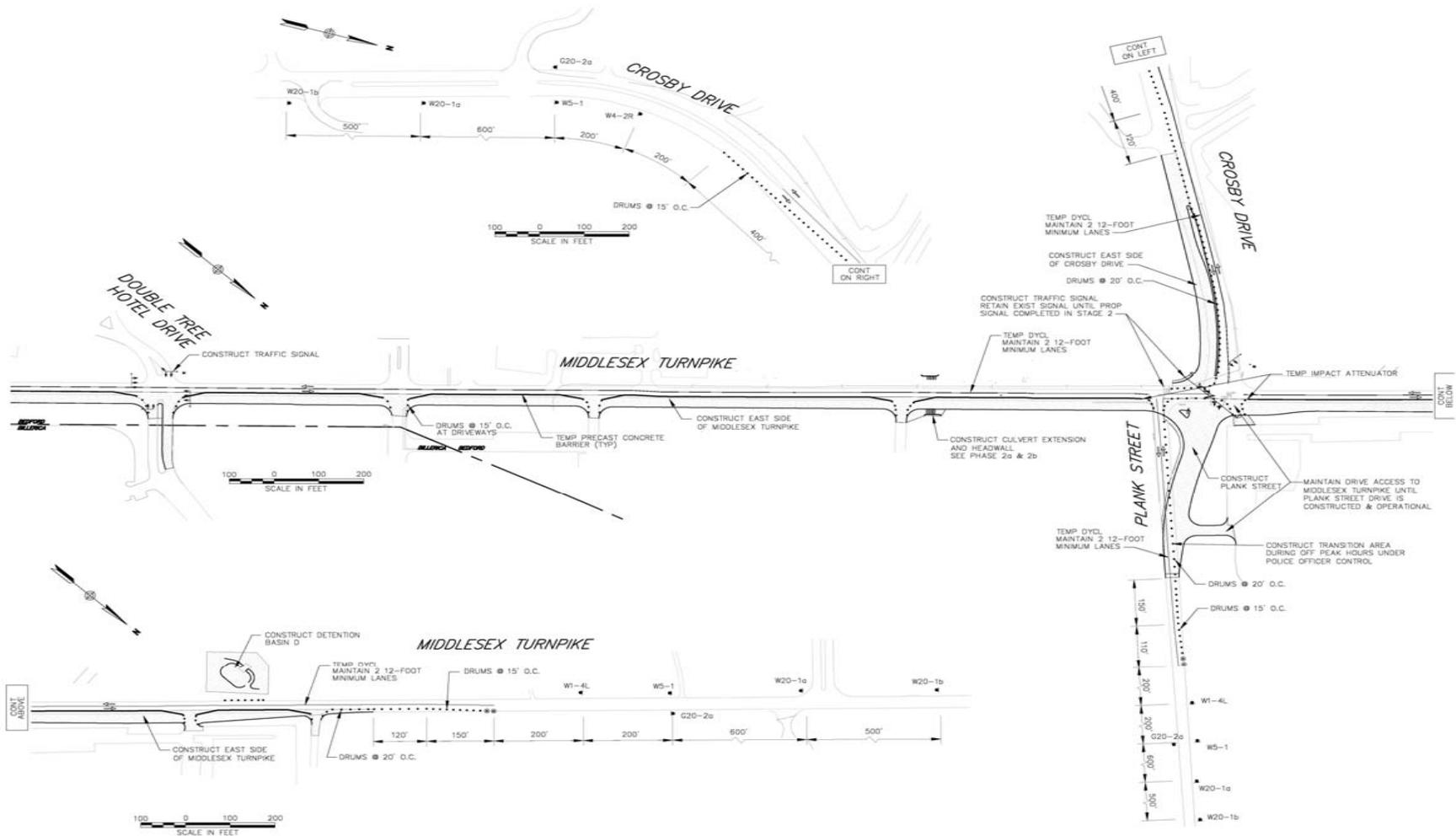
STAGE 2:

1. INSTALL TEMPORARY SIGNS, BARRIERS, DRUMS, PAVEMENT MARKINGS AND OTHER TRAFFIC MAINTENANCE DEVICES AS DIRECTED BY THE ENGINEER.
2. MAINTAIN TRAFFIC ON 2 – 12 FOOT (MIN) TRAVEL LANES ON THE WEST SIDE OF MIDDLESEX TURNPIKE.
3. CONSTRUCT PROPOSED DRAINAGE SYSTEM, DETENTION BASIN, AND SWALES TO THE GREATEST EXTENT POSSIBLE.
3. CONSTRUCT PROPOSED FULL DEPTH PAVEMENT FOR EAST SIDE OF MIDDLESEX TURNPIKE, EXCEPT FOR HMA TOP COURSE.
4. CONSTRUCT TEMPORARY DRAIN PIPES TO MAINTAIN EXISTING DRAINAGE SYSTEM, AS REQUIRED.
5. CONSTRUCT TEMPORARY PAVEMENT AS NECESSARY TO MAINTAIN ABUTTER ACCESS.

Stage 2 – Middlesex Turnpike construction



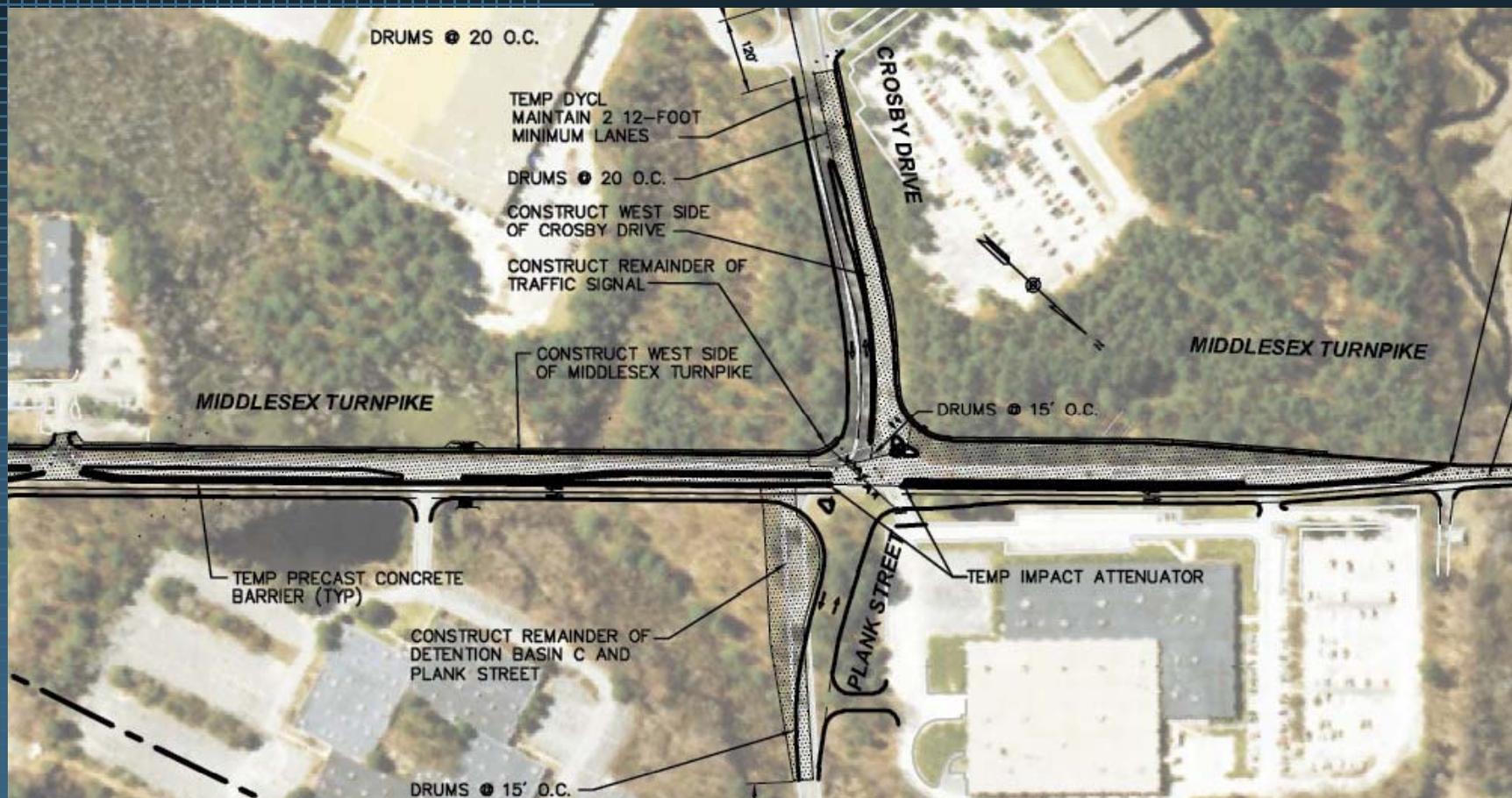
Stage 2 – Middlesex Turnpike construction



Plank Street Intersection – final design



Stage 2 – Plank Street Intersection



Middlesex Turnpike Improvement Project

Access to Corridor Businesses

- Strive to minimize disruptions and property impacts
- Notification for construction activities
- Access to driveways
- Waterline work

Middlesex Turnpike Improvement Project

Project Information

- <http://www.bedfordma.gov>
 - Key Information Section – Middlesex Turnpike Project - updated bi-weekly with construction schedule
- Comments and questions sent to:
Jay Patel, MassDOT Resident Engineer
781 272 1426

Bi-weekly construction schedule

Page 1 of 1

NEWPORT CONSTRUCTION SCHEDULE - MIDDLESEX TRNPK PHASE II BEDFORD, MA						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
12/13/10	12/14/10	12/15/10	12/16/10	12/17/10	12/18/10	12/19/10
Pavement Markings - Crowley Rd. to 125 Middlesex Trnpk						
Relocate Traffic to Westerly Side of Existing Middlesex Turnpike (Crowley Rd. to 125 Middlesex Trnpk)						
Traffic Control, Support Subcontractors, Layout, Install CB Silt Saks, Maintain Erosion Control, etc.						
12/20/10	12/21/10	12/22/10	12/23/10	12/24/10	12/25/10	12/26/10
Clearing & Grubbing - (Crowley Rd. to past 125 Middlesex Trnpk)						
Install Temporary Barrier for Phase II Work (Crowley Rd. to 125 Middlesex Trnpk)						
Traffic Control, Support Subcontractors, Layout, Install CB Silt Saks, Maintain Erosion Control, etc.						
HOLIDAY						
12/27/10	12/28/10	12/29/10	12/30/10	12/31/10	01/01/11	01/02/11
Clearing & Grubbing - (Crowley Rd. to 125 Middlesex Trnpk)						
Install Temporary Barrier for Phase II Work (Crowley Rd. to 125 Middlesex Trnpk)						
Traffic Control, Support Subcontractors, Layout, Install CB Silt Saks, Maintain Erosion Control, etc.						
HOLIDAY						
01/03/11	01/04/11	01/05/11	01/06/11	01/07/11	01/08/11	01/09/11
Clearing & Grubbing - (Crowley Rd. to 125 Middlesex Trnpk)						
Traffic Control, Support Subcontractors, Layout, Install CB Silt Saks, Maintain Erosion Control, etc.						
Install Temporary Barrier for Phase II Work (Crowley Rd. to 125 Middlesex Trnpk)						
Construct Detention Basin B (Crowley Rd.)						
01/10/11	01/11/11	01/12/11	01/13/11	01/14/11	01/15/11	01/16/11
Construct Detention Basin B (Crowley Rd.)						
Construct Detention Basin D (opposite 125 Middlesex Trnpk)						
Excavate/Strip Topsoil - Plank St. Relocation						
Traffic Control, Layout, Maintain Erosion Control, etc.						
01/17/11	01/18/11	01/19/11	01/20/11	01/21/11	01/22/11	01/23/11
Construct Detention Basin D (opposite 125 Middlesex Trnpk)						
Drainage - Detention Basin B (Crowley Rd.)						
Traffic Control, Layout, Maintain Erosion Control, etc.						

Middlesex Turnpike Improvement Project

Questions/ Comments?