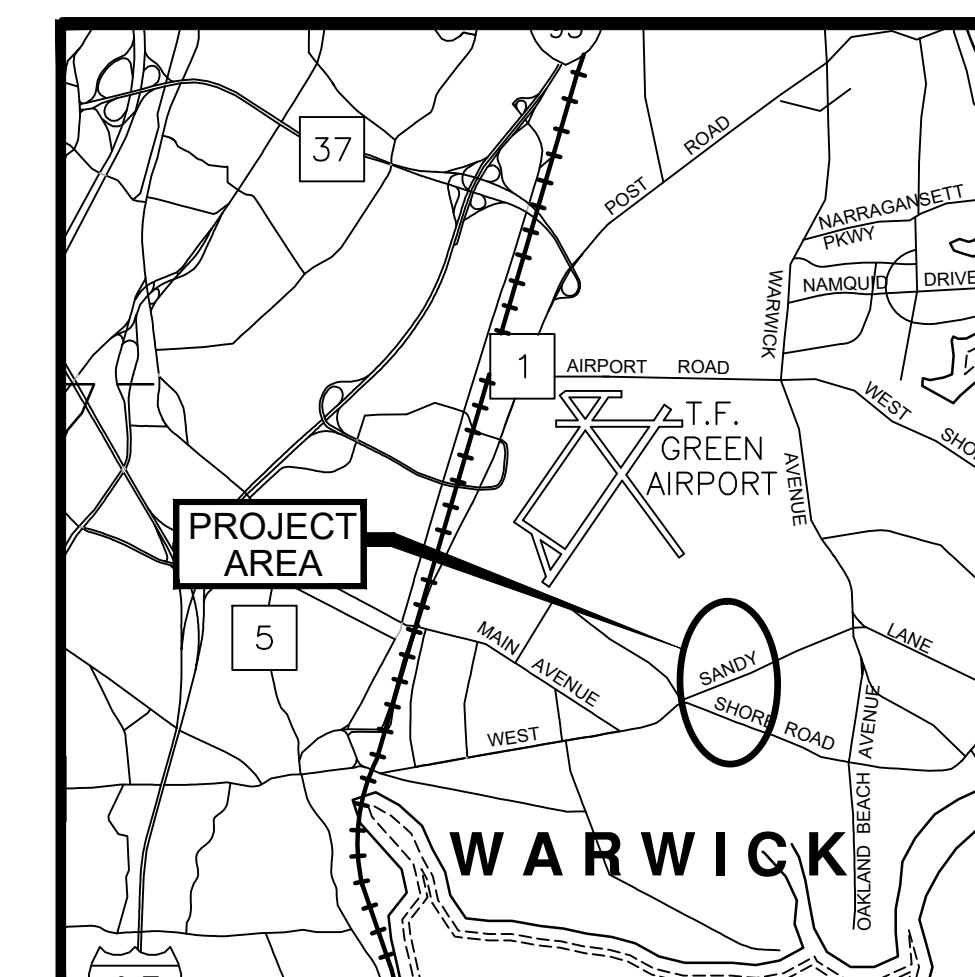


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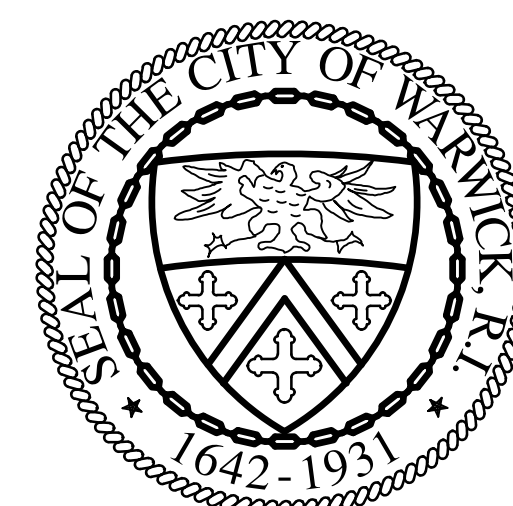
# CITY OF WARWICK, RHODE ISLAND SYSTEM OF SEWERS

CONTRACT NO. 101

## OAKLAND BEACH INTERCEPTOR REHABILITATION



LOCATION PLAN



HONORABLE FRANK J. PICOZZI, MAYOR

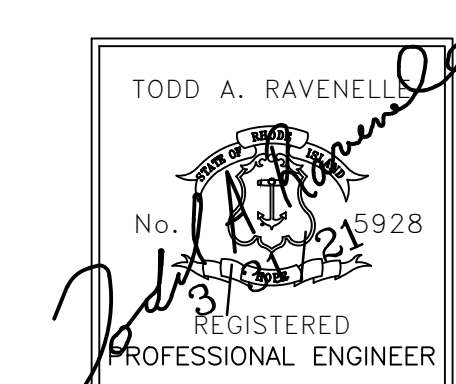
### WARWICK SEWER AUTHORITY

GARY C. JARVIS

THOMAS H. CHADRONET  
CARLO E. PISATURO, JR

JOHN S. JUSTO  
GARY P. MARINO

APRIL 2021



**GENERAL NOTES**

- SPECIFICATIONS GOVERNING THIS PROJECT SHALL BE THE RIDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (AMENDED AUGUST 2013, INCLUDING ALL REVISIONS, ADDENDA AND SUPPLEMENTAL SPECIFICATIONS, AND THE "RHODE ISLAND STANDARD DETAILS" (1998, INCLUDING ALL REVISIONS. ALL PROJECT SITE IMPROVEMENTS SHALL CONFORM TO THE APPLICABLE STANDARDS SET FORTH IN THESE DOCUMENTS (AND THE SUB-REFERENCES INCORPORATED THEREIN) UNLESS OTHERWISE INDICATED IN THE CONTRACT DOCUMENTS.
- THE PROJECT LIMITS OF CLEARING AND SURFACE DISTURBANCE SHALL BE LIMITED TO EXISTING CITY EASEMENTS AND TEMPORARY CONSTRUCTION AGREEMENT. THE CONTRACTOR WILL BE RESPONSIBLE FOR RESTORING (THROUGH PROVISION AND PLACEMENT OF LOAM AND SEED) ANY UNPAVED AREAS OUTSIDE OF THE PROJECT LIMITS OF DISTURBANCE IMPACTED BY CONSTRUCTION OPERATIONS. ANY REQUIRED RESTORATION OUTSIDE THE PROJECT LIMITS OF DISTURBANCE SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.
- ANY DAMAGE CAUSED BY THE CONTRACTOR TO EXISTING CURBING, SIDEWALKS, PAVEMENTS, FENCES, OR OTHER SITE FEATURES TO REMAIN IN PLACE SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL EXCESS EXCAVATED PAVEMENTS, CURBING, SIDEWALKS, CURB STOPS, AND OTHER CONSTRUCTION WASTE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS.
- THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATION IN A DRY CONDITION. NO SEPARATE PAYMENT OR ALLOWANCE SHALL BE MADE FOR DEWATERING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SEDIMENTS FROM DEWATERING OPERATION DISCHARGES THROUGH THE USE OF STILLING BASINS, FILTER FABRIC DEVICES, AND/OR OTHER SUITABLE MEANS AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE CONTINUOUS DUST CONTROL (USING WATER AND/OR CALCIUM CHLORIDE OR OTHER APPROVED METHODS) FOR ALL EARTH STOCKPILES, EARTH PILED ALONG EXCAVATIONS AND SURFACES OF BACK FILLED TRENCHES, IN ACCORDANCE WITH THE RIDOT STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE ALL REQUIRED NOTICES AND COMPLY WITH ALL PERMITS, LAWS, ORDINANCES, RULES AND REGULATIONS BEARING ON THE CONDUCT OF THE WORK AS DRAWN AND SPECIFIED IN THE CONTRACT DOCUMENTS.
- IN ACCORDANCE WITH CURRENT STATE "DIG SAFE" LAWS AND RULES, THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE SYSTEM ELEMENTS AND UTILITIES (BOTH UNDERGROUND AND OVERHEAD) BEFORE ANY EXCAVATION MAY COMMENCE. THE CONTRACTOR IS ADVISED THAT (A) NOT ALL UTILITY PROVIDERS SUBSCRIBE TO THE DIGSAFE PROGRAM, AND (B) IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL POTENTIALLY AFFECTED UTILITY COMPANIES AND ENSURE THAT ALL UTILITIES HAVE BEEN MARKED PRIOR TO THE COMMENCEMENT OF WORK. EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY MUNICIPAL, STATE OR FEDERAL AGENCY OR AUTHORITY HAVING JURISDICTION OVER THE WORK. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD OR UNMARKED UTILITIES (AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANY) SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
- THE CONTRACTOR IS ADVISED THAT WORK UNDER EXISTING OVERHEAD UTILITIES IS REQUIRED, AND THAT MINIMUM CLEARANCES SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS. THIS MAY REQUIRE SPECIAL MEANS AND METHODS IN ORDER TO PROPERLY COMPLETE THE WORK. SHOULD THE CONTRACTOR ELECT TO RELOCATE EXISTING OVERHEAD UTILITIES, THEN THE CONTRACTOR SHALL CONDUCT ALL COORDINATION WITH THE AFFECTED UTILITY COMPANIES AND BEAR ALL COSTS ASSOCIATED WITH UTILITY RELOCATIONS NOT INCLUDED IN THE CONTRACT.
- PRIOR TO WORK, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION (HORIZONTAL AND VERTICAL) OF ALL EXISTING PIPES AND/OR STRUCTURES WHICH ARE TO BE CONNECTED OR REMOVED. ANY VARIATION FROM THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO DRAINAGE AND UTILITY CONSTRUCTION, WHEREUPON WORK CAN COMMENCE ONLY UPON THE ENGINEER'S AUTHORIZATION.
- ALL EXISTING PIPE, SUBSURFACE STRUCTURES, PAVEMENTS, EXCESS EXCAVATED MATERIALS AND MISCELLANEOUS MATERIALS REMOVED IN THE COURSE OF WORK SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR AT AN OFFSITE LOCATION.
- SEWER SERVICES TO EXISTING BUILDINGS AND FACILITIES SHALL BE MAINTAINED TO THE MAXIMUM EXTENT POSSIBLE. SERVICE SHALL NOT BE SHUT-DOWN WITHOUT NOTIFICATION AND APPROVAL OF THE WARWICK SEWER AUTHORITY.
- THE CONTRACTOR SHALL CALL DIGSAFE AT 811 AT LEAST 72 HOURS, SATURDAYS, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER BY THE CONTRACTOR PRIOR TO EXCAVATION.
- ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED.
- THE CONTRACTOR SHALL MAINTAIN SIDE SLOPES AND DRAINAGE SWALES DURING CONSTRUCTION TO PREVENT PONDING AND EROSION.
- THE CONTRACTOR SHALL NOT STORE ANY APPARATUS, MATERIALS, SUPPLIES, AND EQUIPMENT ON DRAINAGE STRUCTURES OR WITHIN 100 FEET OF WETLANDS.
- THE CONTRACTOR SHALL GRADE TO MEET EXISTING CONDITIONS.
- THE CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS, OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN UP.
- ALL CATCH BASINS, MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS AND EXCESS EXCAVATED MATERIAL FROM WITHIN THE CONSTRUCTION LIMIT OF WORK TO A SUITABLE SITE PROVIDED BY THE CONTRACTOR IN COMPLIANCE WITH ALL STATE AND LOCAL REGULATIONS.
- WHERE EXISTING MATERIAL IS REMOVED AND REPLACED, MATCH EXISTING GRADES TO THE EXTENT POSSIBLE. COORDINATED FINE GRADING WITH THE ENGINEER.
- ALL PIPE LINES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS OR SAGS IN PIPING WILL BE PERMITTED. OPENINGS FOR PIPE IN PRECAST STRUCTURES SHALL BE CAST IN THE REQUIRED LOCATIONS DURING MANHOLE MANUFACTURE. FIELD CUT OPENINGS WILL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
- ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF FINAL COMPLETION OF THE WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND ALL OTHER OVERSIGHT AGENCIES.
- ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO ANY TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE OWNER.
- UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE EITHER: NOT DISTURBED, PROTECTED IN PLACE OR RELOCATED.

- ALL EXISTING UTILITIES REPLACED OR RELOCATED SHALL BE CONSTRUCTED OF NEW MATERIALS APPROVED BY THE ENGINEER AND SIMILAR TO THOSE OF THE EXISTING UTILITY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
- THE LOCATION AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEW /COORDINATED WITH, AND ACCEPTABLE TO, THE OWNER AND ENGINEER.
- WRITTEN DIMENSIONS SHALL PREVAIL OVER SCALE DISTANCES FROM THE DRAWINGS, REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

**EROSION AND SEDIMENT CONTROL NOTES**

- THE CONTRACTOR SHALL SUBMIT A SOIL EROSION AND SEDIMENTATION CONTROL PLAN FOR APPROVAL BY THE OWNER TO BE EMPLOYED ON THE PROJECT. CONTROL MEASURES SHALL BE FURNISHED, INSTALLED, MAINTAINED FOR THE DURATION OF CONSTRUCTION, AND SUBSEQUENTLY REMOVED, ALL IN ACCORDANCE WITH THE RIDOT STANDARD SPECIFICATIONS, THE LATEST EDITION OF THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" (REVISED 2014), AND ANY SITE-SPECIFIC EROSION AND SEDIMENT CONTROL / POLLUTION PREVENTION PLAN INCLUDED IN THE CONTRACT DOCUMENTS.
  - ALL CLEARING, GRADING AND EARTHWORK ACTIVITIES SHALL BE MINIMIZED.
  - ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE ROUTINELY INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE RIDOT STANDARD SPECIFICATIONS, THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, AND THE APPLICABLE CONDITIONS OF ANY REGULATORY/ENVIRONMENTAL PERMITS ISSUED FOR THE PROJECT.
  - PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES, EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED. CLEARING MAY OCCUR PRIOR TO INSTALLATION OF SUCH CONTROLS; HOWEVER NO GRUBBING, GRADING, FILLING, OR OTHER SOIL DISTURBANCE SHALL OCCUR PRIOR TO INSTALLATION.
  - PERIMETER EROSION CONTROL BARRIERS (STAKED COMPOST FILTER SOCK, SILT FENCE, OR OTHER DEVICES AS INDICATED) SHALL BE INSTALLED IN CONTINUOUS UNINTERRUPTED RUNS AND MAINTAINED IN EFFECTIVE CONDITION UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED WITH VEGETATION. FOLLOWING SUCCESSFUL STABILIZATION OF DISTURBED AREAS, ALL PERIMETER EROSION CONTROL BARRIERS SHALL BE REMOVED. PRIOR TO REMOVAL OF THE DEVICES, ALL ACCUMULATED SEDIMENT AND DEBRIS TRAPPED BY THE BARRIERS SHALL BE REMOVED AND DISPOSED OF LEGALLY AT A SUITABLE OFFSITE LOCATION.
  - UNTIL VEGETATIVE COVER IS ESTABLISHED AND DISTURBED AREAS ARE FULLY STABILIZED, TRAPPED SEDIMENTS SHALL BE PERIODICALLY REMOVED FROM PERIMETER EROSION CONTROL BARRIERS. AT A MINIMUM, MATERIAL SHALL BE REMOVED ONCE THE DEPTH OF ACCUMULATED SEDIMENT REACHES SIX (6) INCHES OR ONE-HALF THE BARRIER HEIGHT, WHICHEVER IS LESS. ALL REMOVED MATERIAL SHALL BE DISPOSED OF LEGALLY AT A SUITABLE OFFSITE LOCATION.
  - ALL MATERIAL STOCKPILES SHALL BE SURROUNDED BY A SECURED PERIMETER OF COMPOST FILTER SOCK.
  - ALL EXISTING AND CONSTRUCTED DRAINAGE SYSTEM INLETS SHALL BE PROVIDED WITH INLET PROTECTION DEVICES (FILTER BAGS/SILT SACKS, SANDBAGS, WATTLES, ETC.). ALL INLET PROTECTION DEVICES SHALL BE INSTALLED, MAINTAINED, AND CLEANED FOR THE DURATION OF CONSTRUCTION AND UNTIL ALL STORMWATER CONTROLS ARE FULLY STABILIZED AND ONLINE, AT WHICH TIME THEY SHALL BE REMOVED.
  - DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING STORMS AND PERIODS OF RAINFALL.
  - EROSION CONTROL DEVICES SHOULD BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS EXCEEDING ONE HALF INCH (1/2") IN ANY 24-HOUR PERIOD. MAINTENANCE AND REPAIRS SHALL BE COMPLETED WITH 24 HOURS OF THE INSPECTION.
  - TEMPORARY SURFACE STABILIZATION TREATMENTS SHALL CONSIST OF A HAY, STRAW, OR FIBER MULCH OR PROTECTIVE COVERS SUCH AS FIBER MESH, EROSION CONTROL BLANKETS, OR OTHER MATTING. THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS DIRECTED BY THE ENGINEER. HAY OR STRAW APPLICATIONS SHOULD BE IN THE AMOUNT OF 3,000-4,000 POUNDS PER ACRE (1.9-2.5 POUNDS PER SQUARE YARD). IF NEEDED, TEMPORARY SEEDING (PROVIDED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS AND EROSION AND SEDIMENT CONTROL GUIDANCE) MAY BE EMPLOYED TO FURTHER MINIMIZE EROSION.
  - TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE, FREE OF SUBSOIL, STONES, ROCKS, ROOTS, BRUSH, REFUSE, CONSTRUCTION DEBRIS AND OTHER DELETERIOUS MATERIALS AND SHALL CONFORM TO SUBSECTION M.18.01 OF THE RIDOT STANDARD SPECIFICATIONS.
  - THE SEEDED MIX SHALL BE INOCULATED WITHIN 24 HOURS, BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUM FOR EACH VARIETY.
  - THE DESIGN MIX SHALL BE COMPRISED OF THE FOLLOWING AND BE APPLIED AT A SEEDING RATE OF 100 POUNDS PER ACRE:
- | COMPONENT          | % BY WEIGHT |
|--------------------|-------------|
| RED FESCUE         | 70          |
| KENTUCKY BLUEGRASS | 15          |
| COLONIAL BENTGRASS | 5           |
| PERENNIAL RYEGRASS | 10          |
- THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE APRIL 1 - JUNE 1 AND AUGUST 15 - OCTOBER 15.
  - STABILIZATION OF ONE FORM OR ANOTHER AS DESCRIBED ABOVE SHALL BE ACHIEVED WITHIN 14 DAYS OF FINAL RESTORATION. PLANTING OF GRASS SHALL BE ACCOMPLISHED BY THE CONTRACTOR AS EARLY AS POSSIBLE UPON COMPLETION OF GRADING AND CONSTRUCTION.
  - THE CONTRACTOR MUST REPAIR AND OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE (1) CALENDAR YEAR AND SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE OWNER.

**BYPASS PUMPING NOTES**

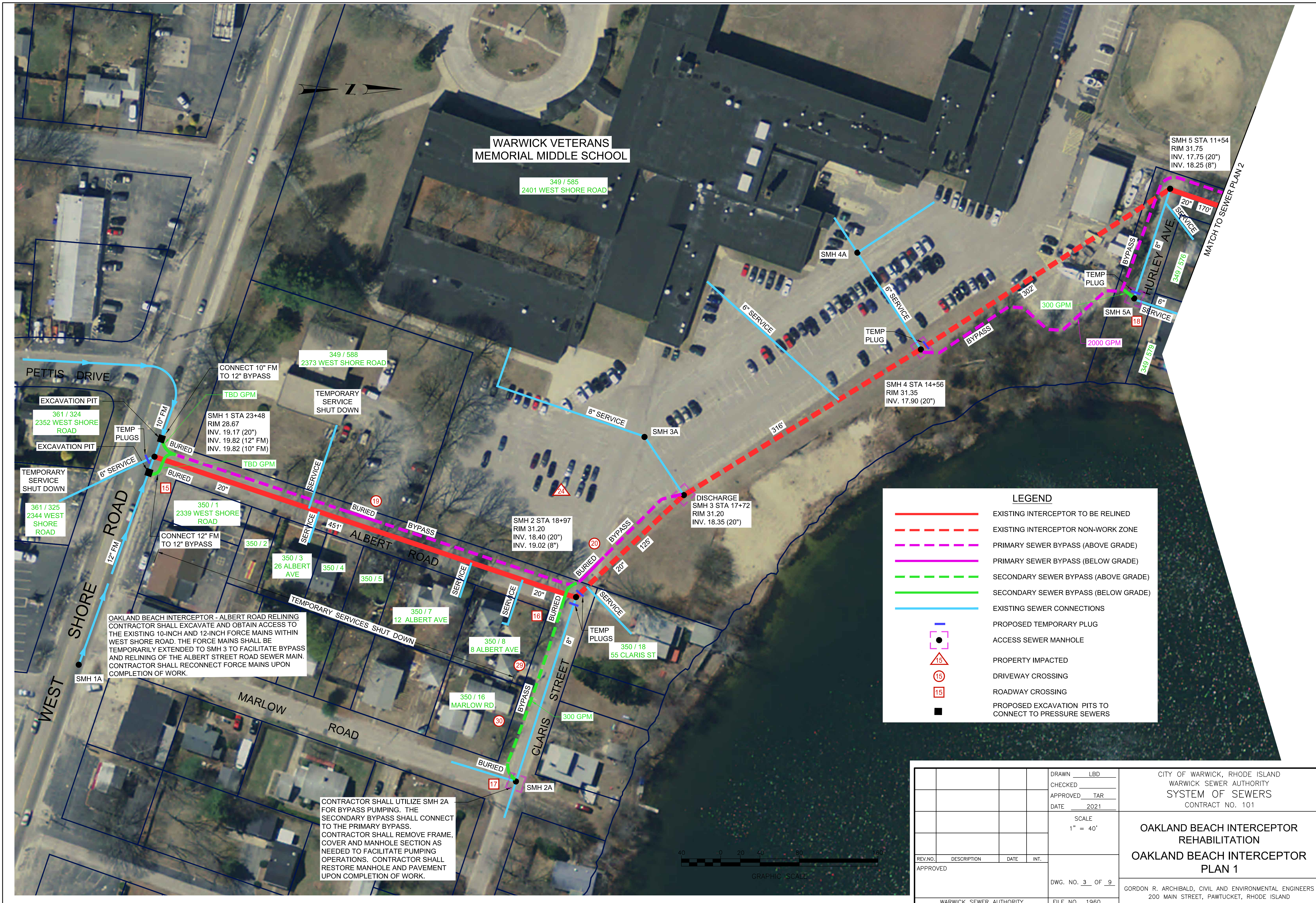
- THE PLANS PROVIDE SUGGESTED PIPE ROUTES TO FACILITATE BYPASS PUMPING. THE CONTRACTOR MAY MODIFY THE ROUTES TO FACILITATE THEIR MEANS AND METHODS, AND SEQUENCE OF CONSTRUCTION.
- CONTRACTOR SHALL PREPARE PUMP AND BYPASS PLAN AND SCHEDULE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE FLOW RATES INDICATED ON THE PLANS ARE APPROXIMATE AND MAY VARY DEPENDENT ON RAINFALL EVENTS, SEASONAL VARIATIONS, AND TIME OF DAY.



**KEY PLAN OAKLAND BEACH INTERCEPTOR**

SCALE: 1" = 500'

				DRAWN <u>  LBD  </u>	CITY OF WARWICK, RHODE ISLAND WARWICK SEWER AUTHORITY SYSTEM OF SEWERS CONTRACT NO. 101
				CHECKED <u>          </u>	
				APPROVED <u>  TAR  </u> DATE <u>  2021  </u>	
				SCALE AS NOTED	<b>OAKLAND BEACH INTERCEPTOR REHABILITATION</b>  <b>NOTES AND KEY PLANS</b>
REV. NO.	DESCRIPTION	DATE	INT.	DWG. NO. <u>  2  </u> OF <u>  9  </u>	
APPROVED				WARWICK SEWER AUTHORITY	GORDON R. ARCHIBALD, CIVIL AND ENVIRONMENTAL ENGINEERS 200 MAIN STREET, PAWTUCKET, RHODE ISLAND
				FILE NO. 1960	



WARWICK VETERANS  
MEMORIAL MIDDLE SCHOOL

349 / 585  
2401 WEST SHORE ROAD

349 / 588  
2373 WEST SHORE ROAD

350 / 1  
2339 WEST SHORE ROAD

350 / 3  
26 ALBERT AVE

350 / 7  
12 ALBERT AVE

350 / 16  
MARLOW RD

350 / 18  
55 CLARIS ST

SMH 5 STA 11+54  
RIM 31.75  
INV. 17.75 (20")  
INV. 18.25 (8")

SMH 4 STA 14+56  
RIM 31.35  
INV. 17.90 (20")

DISCHARGE  
SMH 3 STA 17+72  
RIM 31.20  
INV. 18.35 (20")

SMH 2 STA 18+97  
RIM 31.20  
INV. 18.40 (20")  
INV. 19.02 (8")

SMH 1 STA 23+48  
RIM 28.67  
INV. 19.17 (20")  
INV. 19.82 (12" FM)  
INV. 19.82 (10" FM)

SMH 1A

SMH 2A

CONTRACTOR SHALL UTILIZE SMH 2A FOR BYPASS PUMPING. THE SECONDARY BYPASS SHALL CONNECT TO THE PRIMARY BYPASS. CONTRACTOR SHALL REMOVE FRAME, COVER AND MANHOLE SECTION AS NEEDED TO FACILITATE PUMPING OPERATIONS. CONTRACTOR SHALL RESTORE MANHOLE AND PAVEMENT UPON COMPLETION OF WORK.

OAKLAND BEACH INTERCEPTOR - ALBERT ROAD RELINING CONTRACTOR SHALL EXCAVATE AND OBTAIN ACCESS TO THE EXISTING 10-INCH AND 12-INCH FORCE MAINS WITHIN WEST SHORE ROAD. THE FORCE MAINS SHALL BE TEMPORARILY EXTENDED TO SMH 3 TO FACILITATE BYPASS AND RELINING OF THE ALBERT STREET ROAD SEWER MAIN. CONTRACTOR SHALL RECONNECT FORCE MAINS UPON COMPLETION OF WORK.

**LEGEND**

- EXISTING INTERCEPTOR TO BE RELINED
- - - - - EXISTING INTERCEPTOR NON-WORK ZONE
- - - - - PRIMARY SEWER BYPASS (ABOVE GRADE)
- PRIMARY SEWER BYPASS (BELOW GRADE)
- - - - - SECONDARY SEWER BYPASS (ABOVE GRADE)
- SECONDARY SEWER BYPASS (BELOW GRADE)
- EXISTING SEWER CONNECTIONS
- PROPOSED TEMPORARY PLUG
- ACCESS SEWER MANHOLE
- 15 PROPERTY IMPACTED
- 15 DRIVEWAY CROSSING
- 15 ROADWAY CROSSING
- PROPOSED EXCAVATION PITS TO CONNECT TO PRESSURE SEWERS

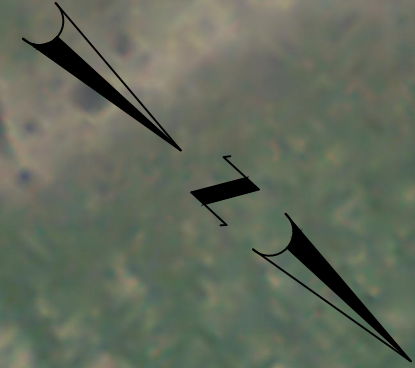


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DATE	2021		
SCALE 1" = 40'			
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APPROVED			
DWG. NO. 3 OF 9		FILE NO. 1960	
WARWICK SEWER AUTHORITY			

CITY OF WARWICK, RHODE ISLAND  
WARWICK SEWER AUTHORITY  
SYSTEM OF SEWERS  
CONTRACT NO. 101

**OAKLAND BEACH INTERCEPTOR  
REHABILITATION  
OAKLAND BEACH INTERCEPTOR  
PLAN 1**

GORDON R. ARCHIBALD, CIVIL AND ENVIRONMENTAL ENGINEERS  
200 MAIN STREET, PAWTUCKET, RHODE ISLAND



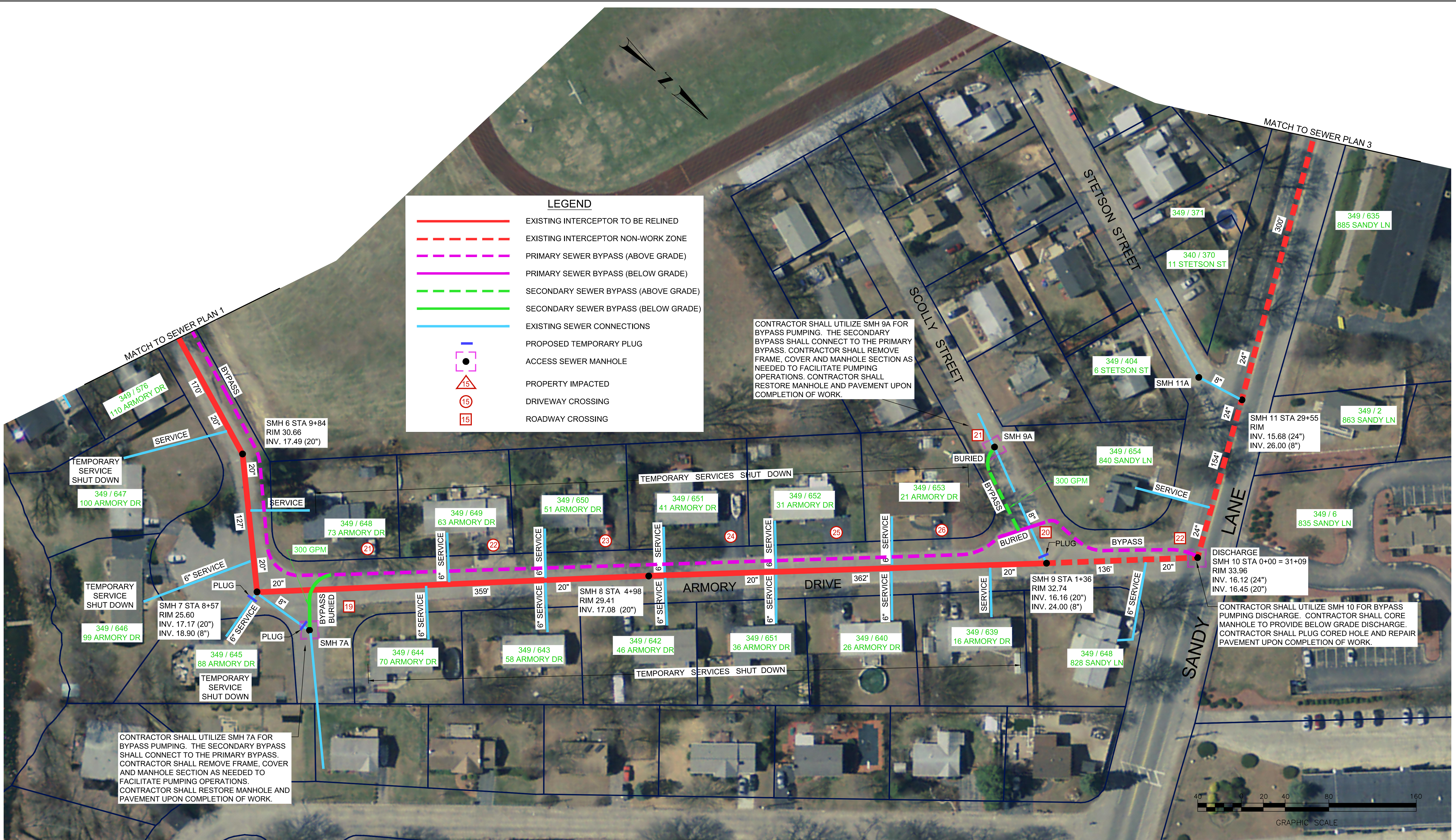
**LEGEND**

- EXISTING INTERCEPTOR TO BE RELINED
- - - EXISTING INTERCEPTOR NON-WORK ZONE
- - - PRIMARY SEWER BYPASS (ABOVE GRADE)
- PRIMARY SEWER BYPASS (BELOW GRADE)
- - - SECONDARY SEWER BYPASS (ABOVE GRADE)
- SECONDARY SEWER BYPASS (BELOW GRADE)
- EXISTING SEWER CONNECTIONS
- + PROPOSED TEMPORARY PLUG
- ACCESS SEWER MANHOLE
- ▲ PROPERTY IMPACTED
- 15 DRIVEWAY CROSSING
- 15 ROADWAY CROSSING

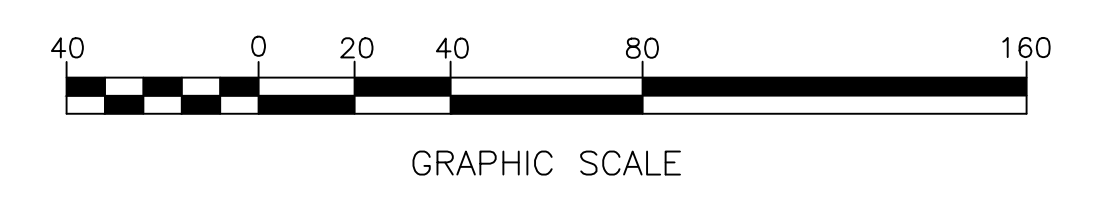
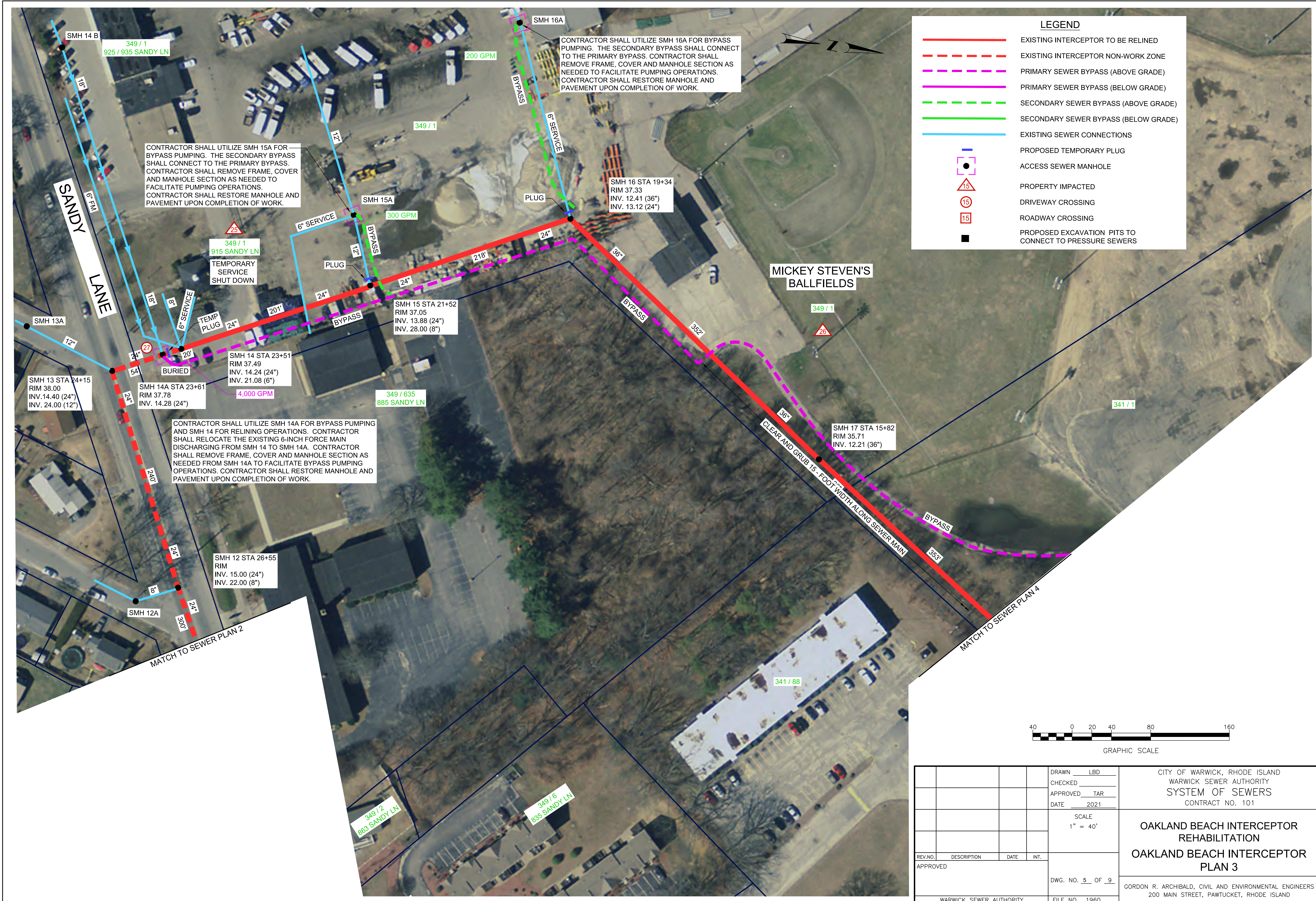
CONTRACTOR SHALL UTILIZE SMH 9A FOR BYPASS PUMPING. THE SECONDARY BYPASS SHALL CONNECT TO THE PRIMARY BYPASS. CONTRACTOR SHALL REMOVE FRAME, COVER AND MANHOLE SECTION AS NEEDED TO FACILITATE PUMPING OPERATIONS. CONTRACTOR SHALL RESTORE MANHOLE AND PAVEMENT UPON COMPLETION OF WORK.

CONTRACTOR SHALL UTILIZE SMH 7A FOR BYPASS PUMPING. THE SECONDARY BYPASS SHALL CONNECT TO THE PRIMARY BYPASS. CONTRACTOR SHALL REMOVE FRAME, COVER AND MANHOLE SECTION AS NEEDED TO FACILITATE PUMPING OPERATIONS. CONTRACTOR SHALL RESTORE MANHOLE AND PAVEMENT UPON COMPLETION OF WORK.

CONTRACTOR SHALL UTILIZE SMH 10 FOR BYPASS PUMPING DISCHARGE. CONTRACTOR SHALL CORE MANHOLE TO PROVIDE BELOW GRADE DISCHARGE. CONTRACTOR SHALL PLUG CORED HOLE AND REPAIR PAVEMENT UPON COMPLETION OF WORK.



	DRAWN LBD	CITY OF WARWICK, RHODE ISLAND WARWICK SEWER AUTHORITY SYSTEM OF SEWERS CONTRACT NO. 101		
	CHECKED			
	APPROVED TAR			
	DATE 2021			
	SCALE 1" = 40'	<b>OAKLAND BEACH INTERCEPTOR          REHABILITATION</b> <b>OAKLAND BEACH INTERCEPTOR          PLAN 2</b>		
REV. NO.	DESCRIPTION		DATE	INT.
APPROVED				
		DWG. NO. 4 OF 9		
WARWICK SEWER AUTHORITY		FILE NO. 1960	GORDON R. ARCHIBALD, CIVIL AND ENVIRONMENTAL ENGINEERS 200 MAIN STREET, PAWTUCKET, RHODE ISLAND	



REV. NO.	DESCRIPTION	DATE	INT.	DRAWN LBD CHECKED APPROVED TAR DATE 2021	CITY OF WARWICK, RHODE ISLAND WARWICK SEWER AUTHORITY SYSTEM OF SEWERS CONTRACT NO. 101
SCALE 1" = 40'				OAKLAND BEACH INTERCEPTOR REHABILITATION OAKLAND BEACH INTERCEPTOR PLAN 3	
APPROVED					DWG. NO. 5 OF 9 FILE NO. 1960

MICKEY STEVEN'S BALLFIELDS



**LEGEND**

- EXISTING INTERCEPTOR TO BE RELINED
- - - EXISTING INTERCEPTOR NON-WORK ZONE
- - - PRIMARY SEWER BYPASS (ABOVE GRADE)
- PRIMARY SEWER BYPASS (BELOW GRADE)
- - - SECONDARY SEWER BYPASS (ABOVE GRADE)
- SECONDARY SEWER BYPASS (BELOW GRADE)
- EXISTING SEWER CONNECTIONS
- PROPOSED TEMPORARY PLUG
- ACCESS SEWER MANHOLE
- ▲ PROPERTY IMPACTED
- DRIVEWAY CROSSING
- ROADWAY CROSSING

CLEAR AND GRUB 15 - FOOT WIDTH ALONG SEWER MAIN

CEDAR SWAMP PUMPING STATION

CEDAR SWAMP ROAD

MATCH TO SEWER PLAN 3

SMH 18A

SMH 18 STA 12+29  
RIM 35.30  
INV. 12.30 (36")  
INV. 15.04 (8")

CONTRACTOR SHALL UTILIZE SMH 18A FOR BYPASS PUMPING. CONTRACTOR SHALL REMOVE FRAME, COVER, AND MANHOLE SECTION AS NEEDED TO FACILITATE BYPASS PUMPING

341 / 88  
815 SANDY LANE

SMH 19 STA 5+83  
RIM 35.12  
INV. 11.12 (36")

SMH 20 STA 2+90  
RIM 31.37  
INV. 8.96 (36")  
INV. 18.00 (21")

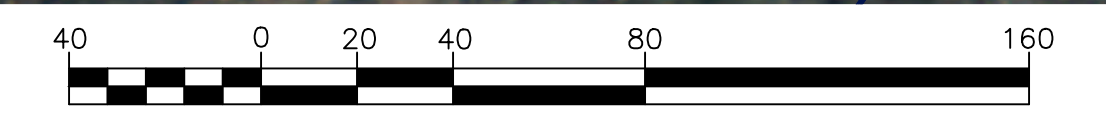
TEMP PLUG

SMH 20A  
RIM 25.78  
INV. 18.11

2000 GPM

SMH 21 STA 2+18  
RIM 31.83  
INV. 7.75 (36")

CONTRACTOR SHALL UTILIZE SMH 20A FOR BYPASS PUMPING. CONTRACTOR SHALL REMOVE FRAME, COVER, AND MANHOLE SECTION AS NEEDED TO FACILITATE BYPASS PUMPING



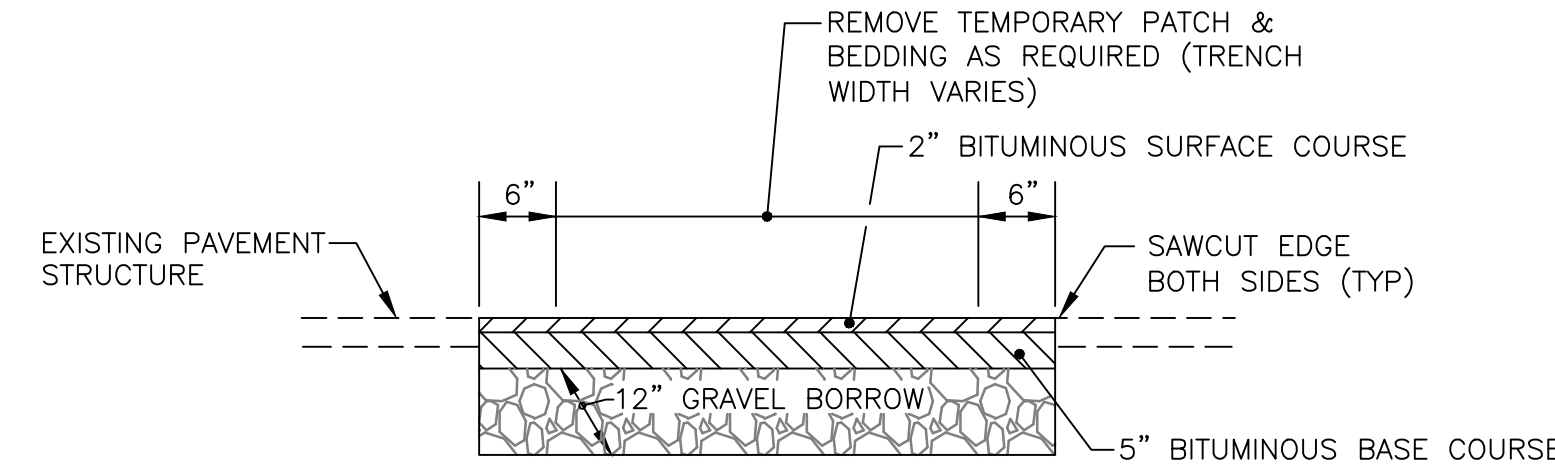
GRAPHIC SCALE

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DATE	2021		
SCALE 1" = 40'			
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DWG. NO. 6 OF 9		FILE NO. 1960	

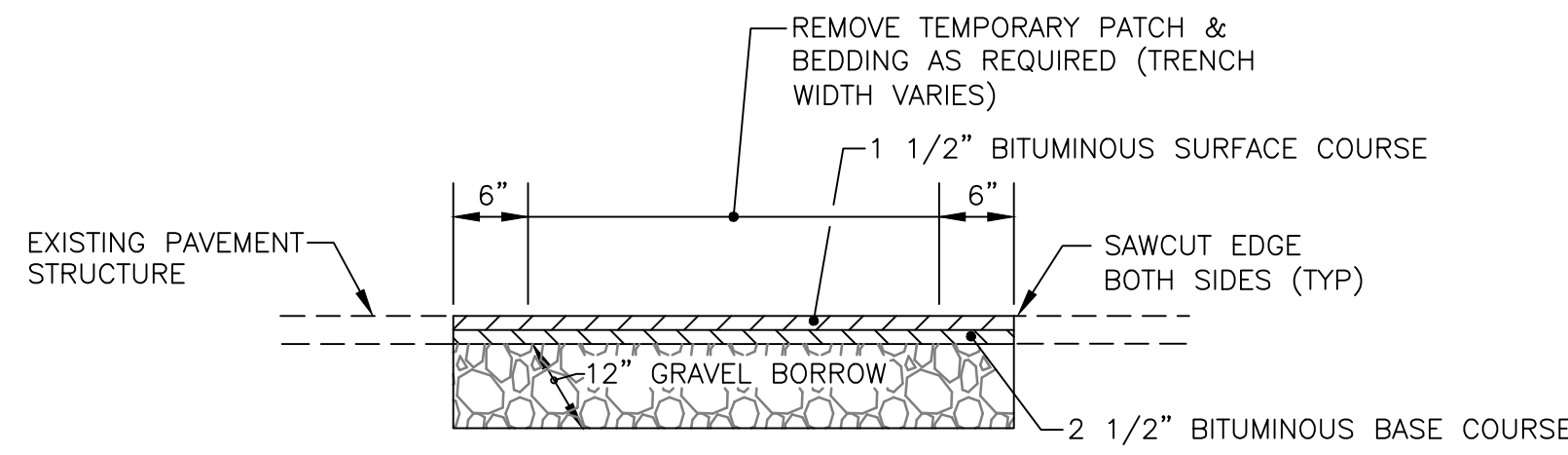
CITY OF WARWICK, RHODE ISLAND  
WARWICK SEWER AUTHORITY  
SYSTEM OF SEWERS  
CONTRACT NO. 101

**OAKLAND BEACH INTERCEPTOR REHABILITATION**  
**OAKLAND BEACH INTERCEPTOR PLAN 4**

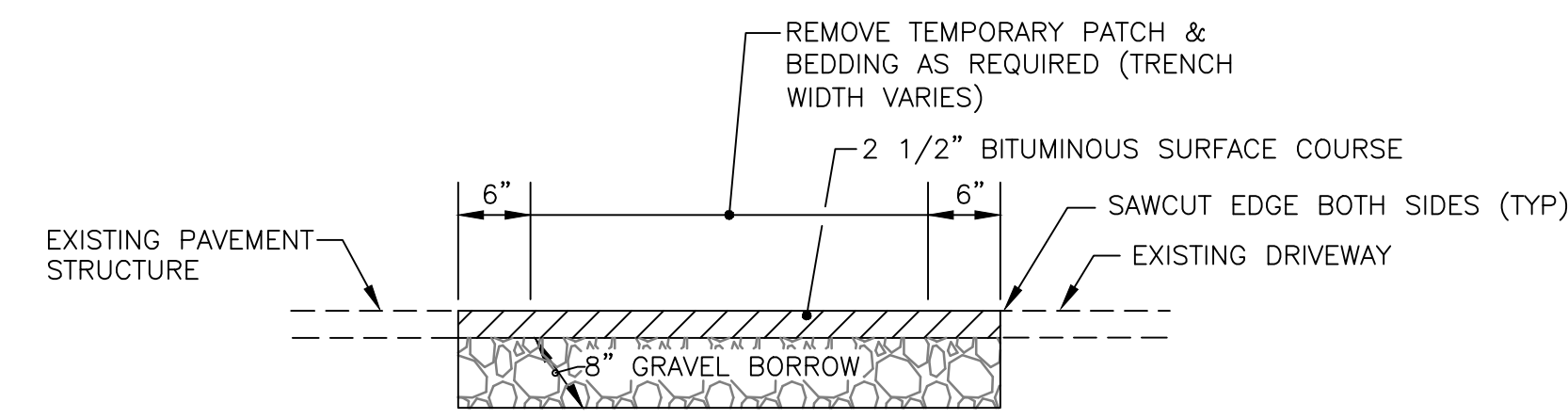
GORDON R. ARCHIBALD, CIVIL AND ENVIRONMENTAL ENGINEERS  
200 MAIN STREET, PAWTUCKET, RHODE ISLAND



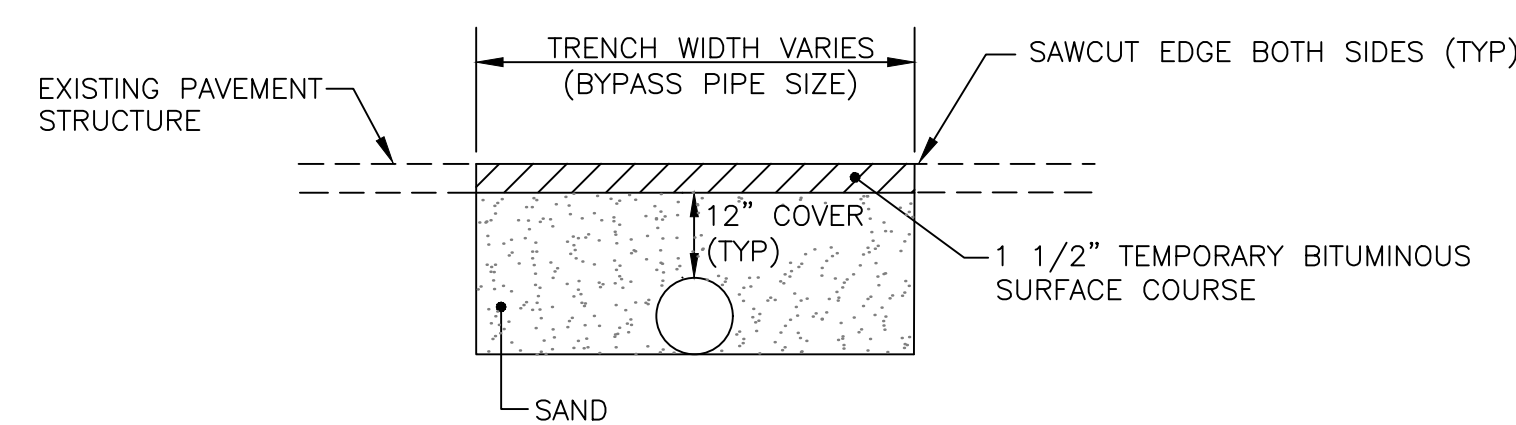
**PERMANENT PAVEMENT RESTORATION  
(STATE ROADS)**  
NOT TO SCALE



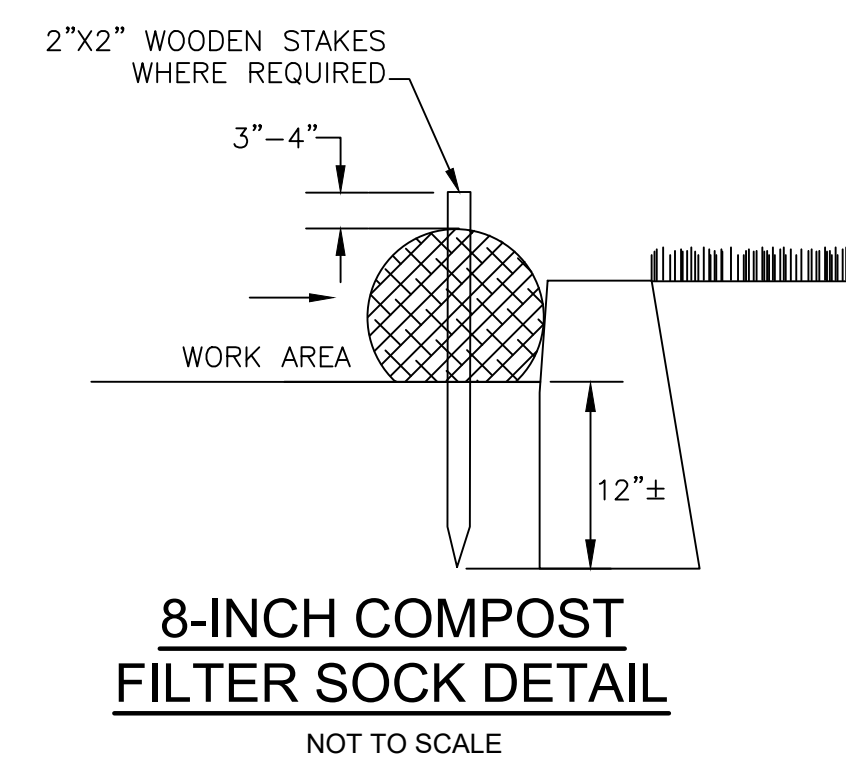
**PERMANENT PAVEMENT RESTORATION  
(CITY STREETS)**  
NOT TO SCALE



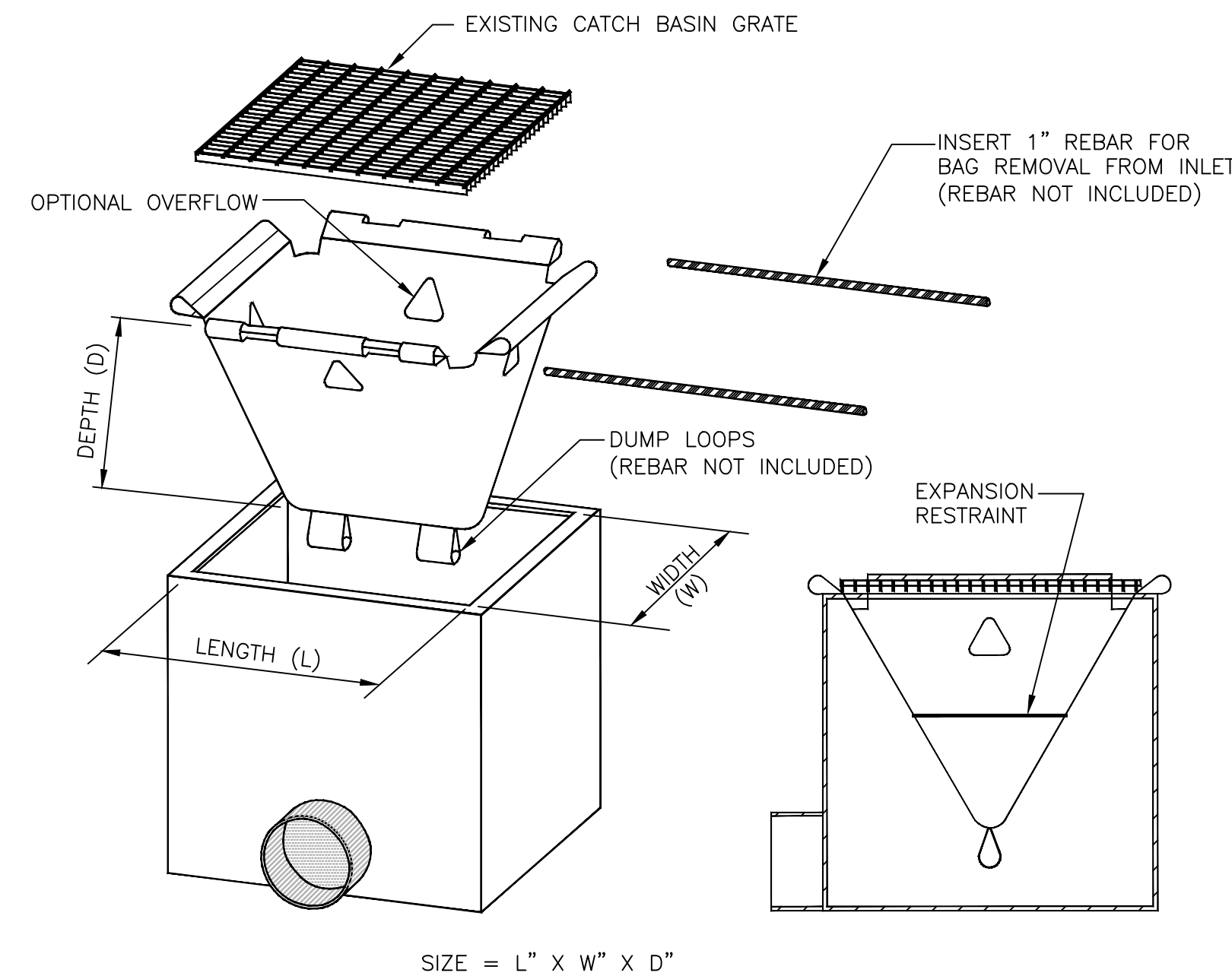
**PERMANENT PAVEMENT RESTORATION  
(DRIVEWAYS)**  
NOT TO SCALE



**BYPASS PIPE TRENCH DETAIL**  
NOT TO SCALE



**8-INCH COMPOST  
FILTER SOCK DETAIL**  
NOT TO SCALE



**CATCH BASIN PROTECTION DETAIL**  
NOT TO SCALE

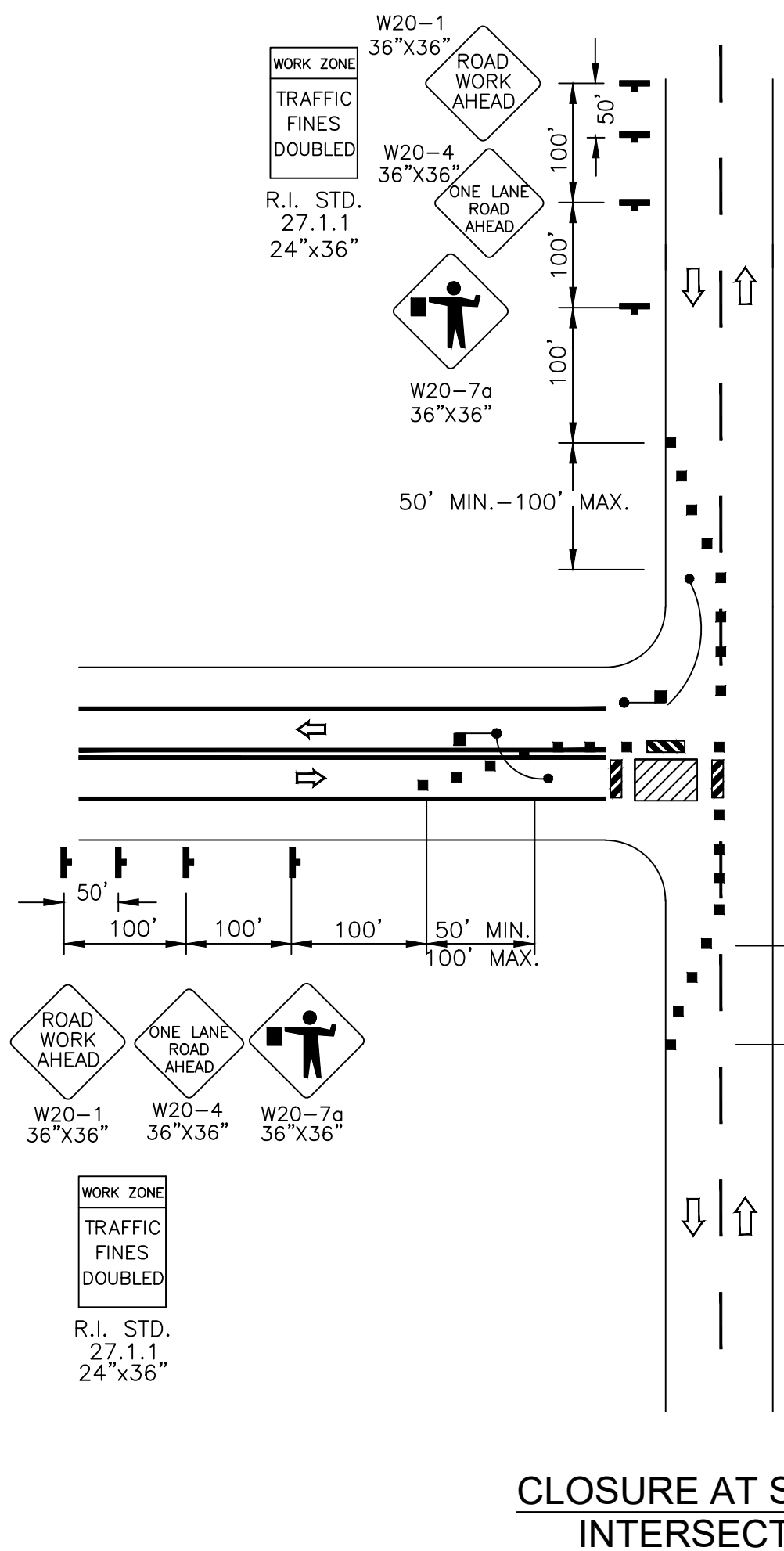
BYPASS FLOW SUMMARY CHART										
PUMP BYPASS	BYPASS LOCATION	BYPASS START AND END	PLAN SHEET	INFLOW PIPE DIAMETER (INCH)	APPROXIMATE INFLOW PIPE ELEVATION (FEET)	LENGTH (FEET)	SLOPE	ESTIMATED MAXIMUM FLOW RATE 3/4 FULL (GPM)	APPROXIMATE SURFACE ELEVATION AT DISCHARGE (FEET)	APPROXIMATE BYPASS LENGTH (FEET)
<b>OAKLAND BEACH INTERCEPTOR</b>										
PRIMARY	SMH NO. 1 / EXCAVATION PIT	SMH NO. 3 / DISCHARGE	12	10 FORCE MAIN	20	NA	NA	TBD	31	600
SECONDARY	SMH NO. 1 / EXCAVATION PIT	SMH NO. 1 / PRIMARY BYPASS	12	12 FORCE MAIN	20	NA	NA	TBD	29	30
SECONDARY	SMH NO. 2A	SMH NO. 2 / PRIMARY BYPASS	12	8	19	196	0.004	280	31	210
PRIMARY	SMH NO. 4	SMH NO. 10 / DISCHARGE	12	20	18	316	0.0014	1,850	34	1510
SECONDARY	SMH NO. 5A	SMH NO. 5A / PRIMARY BYPASS	12	8	18	117	0.004	280	32	10
SECONDARY	SMH NO. 7A	SMH NO. 7 / PRIMARY BYPASS	13	8	19	49	0.004	280	26	50
SECONDARY	SMH NO. 9A	SMH9 / PRIMARY BYPASS	13	8	24	116	0.004	280	33	100
PRIMARY	SMH NO. 14A	SMH NO. 21 / DISCHARGE	14	24	14	54	0.0022	3,770	32	2130
SECONDARY	SMH NO. 14	SMH NO. 14 / PRIMARY BYPASS	14	6 FORCE MAIN	30	NA	NA	TBD	37	10
SECONDARY	SMH NO. 14B	SMH NO. 14A / PRIMARY BYPASS	14	18	22	329	0.0012	1,300	37	160
SECONDARY	SMH NO. 15A	SMH NO. 15 / PRIMARY BYPASS	14	8	28	74	0.004	280	37	70
SECONDARY	SMH NO. 16A	SMH NO. 16 / PRIMARY BYPASS	14	6	29	206	0.01	200	37	200
SECONDARY	SMH NO. 20A	SMH NO. 20 / PRIMARY BYPASS	15	21	18	58	0.001	1,780	31	80

PROPERTIES IMPACTED BY OAKLAND BEACH INTERCEPTOR REHABILITATIONS				
24	2401 WEST SHORE ROAD	349/585	BYPASS/ACCESS SEWER MANHOLE	WARWICK VETS. MIDDLE SCHOOL
25	SANDY LANE	349/001	BYPASS/ACCESS SEWER MANHOLE	CITY OF WARWICK, FIRE STATION, DPW, BALLFIELD
26	CEDAR SWAMP ROAD	341/001	BYPASS	CITY OF WARWICK, BALLFIELD/PARK
27	CEDAR SWAMP ROAD	341/149	BYPASS	CITY OF WARWICK, PARK
28	815 SANDY LANE	341/88	BYPASS	BENDETSON RICHARD K TRUSTEE

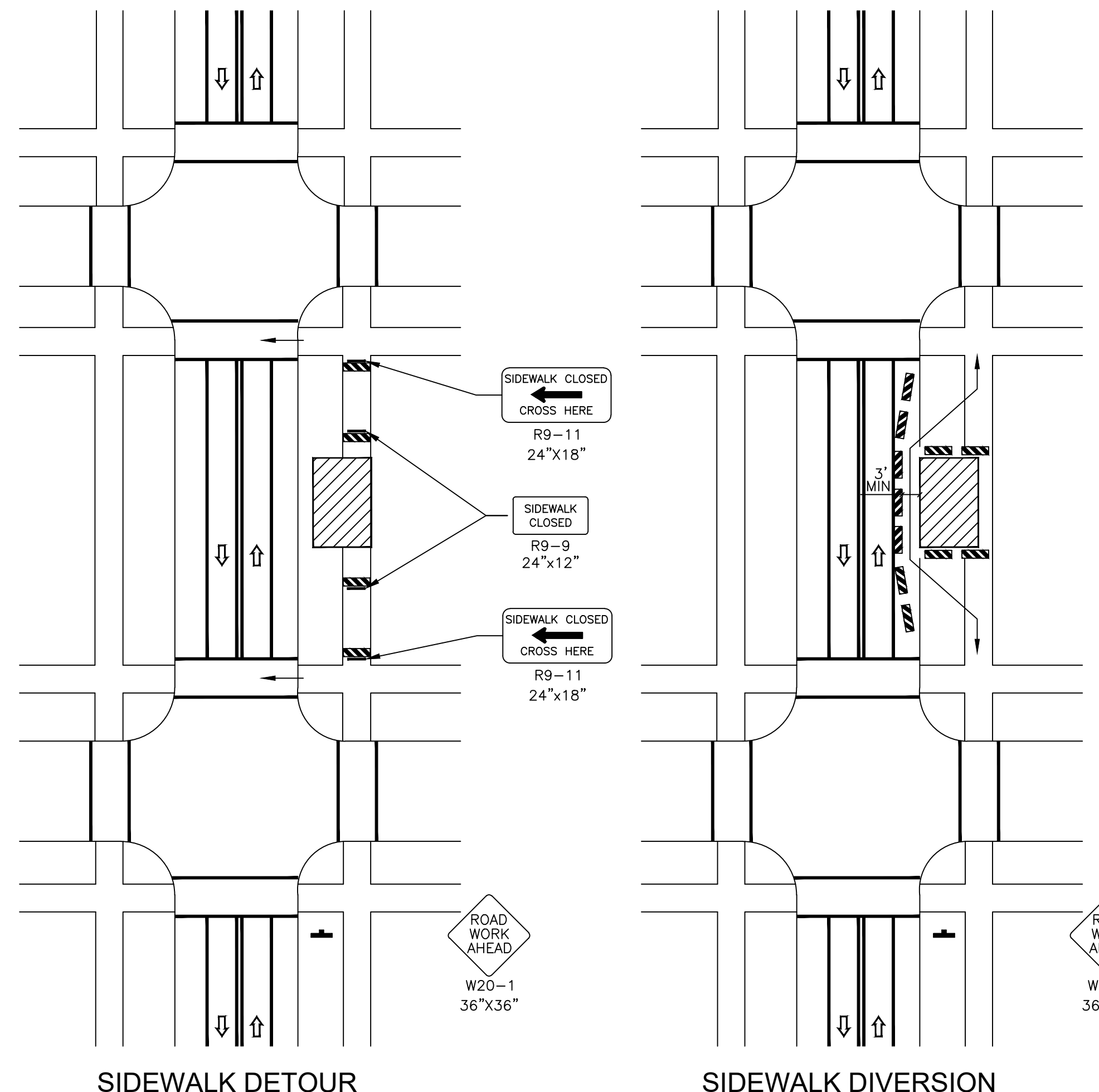
OAKLAND BEACH INTERCEPTOR - DRIVEWAY CROSSINGS IMPACTS						
NO.	PROPERTY ADDRESS	PROP. ID	TYPE	OWNER	TREATMENT	REASON
19	2373 WEST SHORE ROAD	349/588	DRIVEWAY	CITY OF WARWICK	BURIED	FIRE TRUCKS
20	2401 WEST SHORE ROAD	349/585	DRIVEWAY	WARWICK VETS. MIDDLE SCHOOL	BURIED	SCHOOL BUSES
21	73 ARMORY DR.	349/648	DRIVEWAY	MOODY, CLAIRE L	NONE	CLOSED DRIVEWAY
22	63 ARMORY DR.	349/649	DRIVEWAY	BEDARD, TIMOTHY	NONE	CLOSED DRIVEWAY
23	51 ARMORY DR.	349/650	DRIVEWAY	IOVINO, ROBERT J	NONE	CLOSED DRIVEWAY
24	41 ARMORY DR.	349/651	DRIVEWAY	DELUCA, BRIAN M	NONE	CLOSED DRIVEWAY
25	31 ARMORY DR.	349/652	DRIVEWAY	JONES, NOELIA M	NONE	CLOSED DRIVEWAY
26	21 ARMORY DR.	349/653	DRIVEWAY	DUNCAN, FREDERICK W III	NONE	CLOSED DRIVEWAY
27	SANDY LN	349/001	DRIVEWAY -1	CITY OF WARWICK, FIRE STATION	BURIED	FIRE TRUCKS
29	8 ALBERT AVENUE	350/008	DRIVEWAY	CAROLAN, JAMES A JR	RAMPED	RES. DR./BYPASS SMALL
30	1 MARLOW ROAD	350/016	DRIVEWAY	GILBERT, LEONA B	RAMPED	RES. DR./BYPASS SMALL

OAKLAND BEACH INTERCEPTOR - ROADWAY CROSSINGS				
NO.	LOCATION	REFERENCE	TREATMENT	REASON
15	ALBERT ROAD.	SMH No. 1	BURIED	FIRE TRUCKS/SCHOOL BUSES
16	CLARIS STREET	SMH No. 2	BURIED	FIRE TRUCKS/SCHOOL BUSES
17	CLARIS STREET	SMH No. 2A	BURIED	CITY STREET
18	HURLEY AVENUE	SMH No. 5A	BURIED	CITY STREET
19	ARMORY DR.	SMH No. 7A	BURIED	CITY STREET
20	SCOLLY ST	ARMORY DRIVE	BURIED	CITY STREET
21	SCOLLY ST	SMH No. 9A	BURIED	CITY STREET
22	SANDY LANE	SMH No. 10	BURIED	CITY STREET
23	CEDAR SWAMP ROAD	SMH No. 20A	BURIED	CITY STREET

DRAWN	LBD	CITY OF WARWICK, RHODE ISLAND WARWICK SEWER AUTHORITY SYSTEM OF SEWERS CONTRACT NO. 101		
CHECKED				
APPROVED	TAR			
DATE	2021			
SCALE AS NOTED		OAKLAND BEACH INTERCEPTOR REHABILITATION DETAILS - 1		
DWG. NO. 7 OF 9				
REV. NO.	DESCRIPTION	DATE	INT.	GORDON R. ARCHIBALD, CIVIL AND ENVIRONMENTAL ENGINEERS 200 MAIN STREET, PAWTUCKET, RHODE ISLAND
APPROVED				
WARWICK SEWER AUTHORITY		FILE NO.	1960	



- NOTES:
1. THE SITUATION DEPICTED CAN BE SIMPLIFIED BY CLOSING ONE OR MORE OF THE INTERSECTION APPROACHES. IF THIS CANNOT BE DONE, AND/OR WHEN CAPACITY IS A PROBLEM, THROUGH VEHICULAR TRAFFIC SHOULD BE DIRECTED TO OTHER ROADS OR STREETS.
  2. ONE LANE ROAD AHEAD SIGNS MAY ALSO BE USED TO PROVIDE ADEQUATE ADVANCE WARNING.
  3. FLASHING WARNING LIGHTS AND/OR FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE WARNING SIGNS.
  4. A BE PREPARED TO STOP SIGN MAY BE ADDED TO THE SIGN SERIES.
  5. WHEN USED, THE BE PREPARED TO STOP SIGN SHOULD BE LOCATED BEFORE THE FLAGGER SYMBOL SIGN.
  6. TURNS CAN BE PROHIBITED AS REQUIRED BY VEHICULAR TRAFFIC CONDITIONS. UNLESS THE STREETS ARE WIDE, IT MIGHT BE PHYSICALLY IMPOSSIBLE TO MAKE CERTAIN TURNS, ESPECIALLY FOR LARGE VEHICLES.



- NOTES:
1. WHEN CROSSWALKS OR OTHER PEDESTRIAN FACILITIES ARE CLOSED OR RELOCATED, TEMPORARY FACILITIES SHALL BE DETECTABLE AND SHALL INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
  2. WHERE HIGH SPEEDS ARE ANTICIPATED, A TEMPORARY TRAFFIC BARRIER AND, IF NECESSARY, A CRASH CUSHION SHOULD BE USED TO SEPARATE THE TEMPORARY SIDEWALKS FROM VEHICULAR TRAFFIC.
  3. AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MID BLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.
  4. ONLY THE TTC DEVICES RELATED TO PEDESTRIANS ARE SHOWN. OTHER DEVICES, SUCH AS LANE CLOSURE SIGNING OR ROAD NARROWS SIGNS, SHALL BE USED TO CONTROL VEHICULAR TRAFFIC.
  5. FOR NIGHTTIME CLOSURES, TYPE A FLASHING WARNING LIGHTS MAY BE USED ON BARRICADES THAT SUPPORT SIGNS AND CLOSE SIDEWALKS.
  6. SIGNS, SUCH AS KEEP RIGHT(LEFT), MAY BE PLACED ALONG A TEMPORARY SIDEWALK TO GUIDE OR DIRECT PEDESTRIANS.

- NOTES:
1. ALL TEMPORARY TRAFFIC CONTROL SET-UPS AND DEVICES AND THEIR INSTALLATION, MAINTENANCE, AND REMOVAL SHALL CONFORM TO THE LATEST EDITION OF "THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) WITH ALL REVISIONS, AND THE LATEST EDITION OF THE "RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" WITH ALL REVISIONS.
  2. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF WORK.
  3. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER NEEDED. WHEN WORK IS SUSPENDED FOR SHORT PERIODS OF TIME, TEMPORARY TRAFFIC CONTROL DEVICES THAT ARE NO LONGER APPROPRIATE SHALL BE REMOVED OR COVERED.
  4. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
  5. WHERE A SIDE STREET OR RAMP INTERSECTS THE WORK ZONE, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH PART 6 OF THE MUTCD.
  6. THE CONTRACTOR SHALL INSTALL AND MAINTAIN A RHODE ISLAND STANDARD 26.2.0 BARRICADE WITH APPROPRIATE MARKINGS AT EACH LOCATION WHERE ADJUSTMENT TO UTILITY STRUCTURES HAVE BEEN MADE UNTIL RESURFACING WORK HAS BEEN PERFORMED. OTHER TYPES OF PROTECTIVE DEVICES MAY BE USED IF APPROVED BY THE ENGINEER.
  7. R.I. STD. 26.1.0 CONES SHALL BE USED WHEN TRAFFIC CONTROL SET-UP IS UTILIZED ONLY DURING WORKING HOURS AND IS SUBSEQUENTLY REMOVED AT THE END OF THE WORKDAY. R.I. STD. 26.2.0 SHALL BE USED WHEN A TRAFFIC CONTROL SET-UP WILL REMAIN BEYOND WORKING HOURS WHEN NO WORKERS ARE PRESENT..
  8. THE SIZES OF ALL DIAMOND SHAPED ADVANCE WARNING SIGNS SHALL BE 36"x36", UNLESS OTHERWISE NOTED.
  9. MAXIMUM SPACING OF THE CHANNELIZATION DEVICES IN A TAPER IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH. MAXIMUM SPACING OF CHANNELIZATION DEVICES IN A TANGENT SECTION IS EQUAL IN FEET TO TWO TIMES THE SPEED LIMIT IN MPH.
  10. IF THE WORK SPACE EXTENDS ACROSS A CROSSWALK, THE CROSSWALK SHOULD BE CLOSED USING THE INFORMATION AND DEVICES SHOWN IN SIDEWALK DETOUR.

**LEGEND**

- CHANNELIZING DEVICE
- TRAFFIC CONE (R.I. STD. 26.1.0)
- DRUM BARRICADE (R.I. STD. 26.2.0)
- SIGN ON PORTABLE SIGN SUPPORT
- ▩ TYPE III BARRICADE
- ⚡ FLASHING ARROW BOARD
- ♠ TRAFFIC PERSON
- ▨ WORK SPACE
- ➡ DIRECTION OF TRAVEL
- 🚚 WORK VEHICLE
- ⚠ TRUCK-MOUNTED ATTENUATOR
- ➡ ARROW PANEL

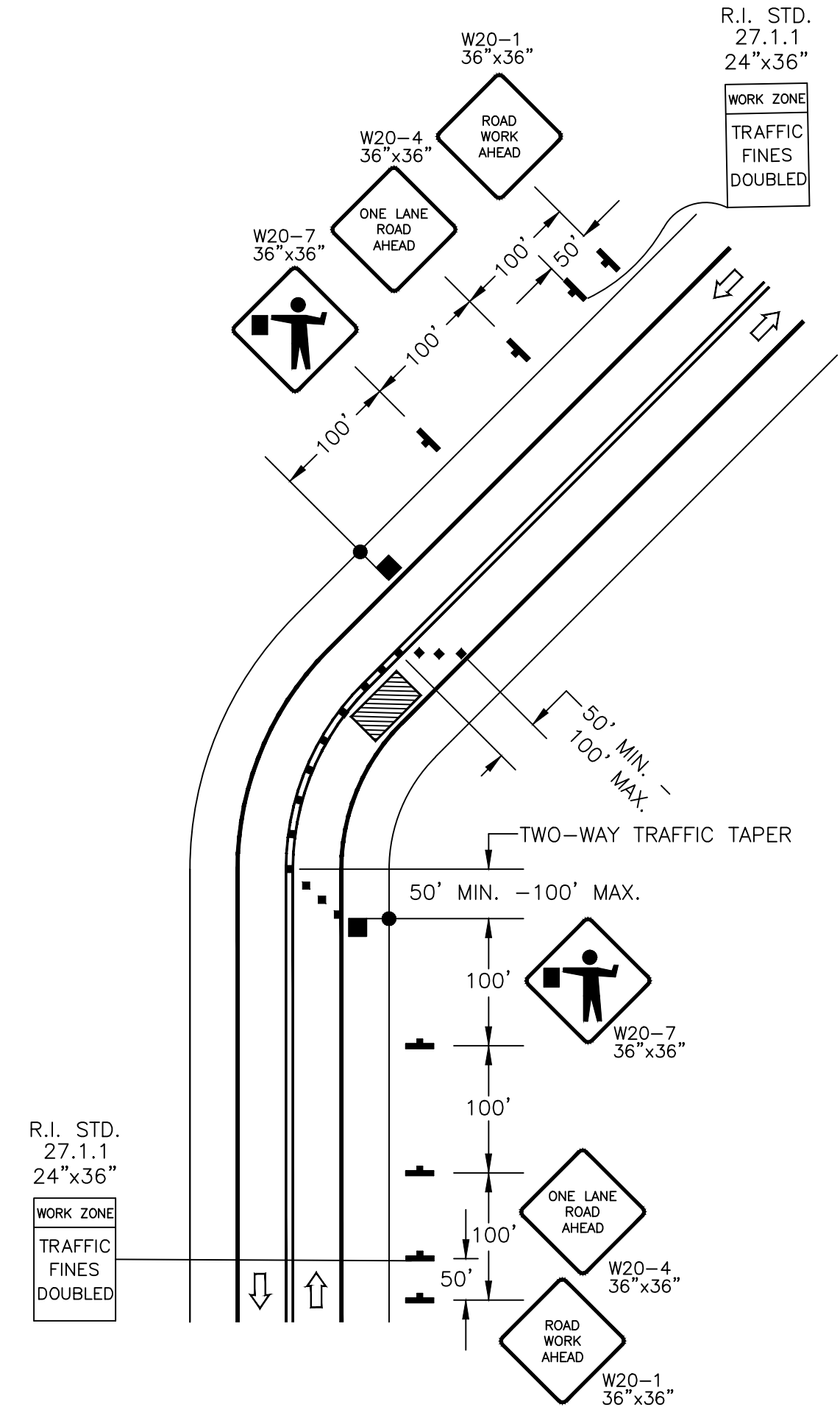
CONE SPACING	
TAPER	TANGENT
25'	50'

**CLOSURE AT SIDE OF INTERSECTION**

**SIDEWALK DETOUR**

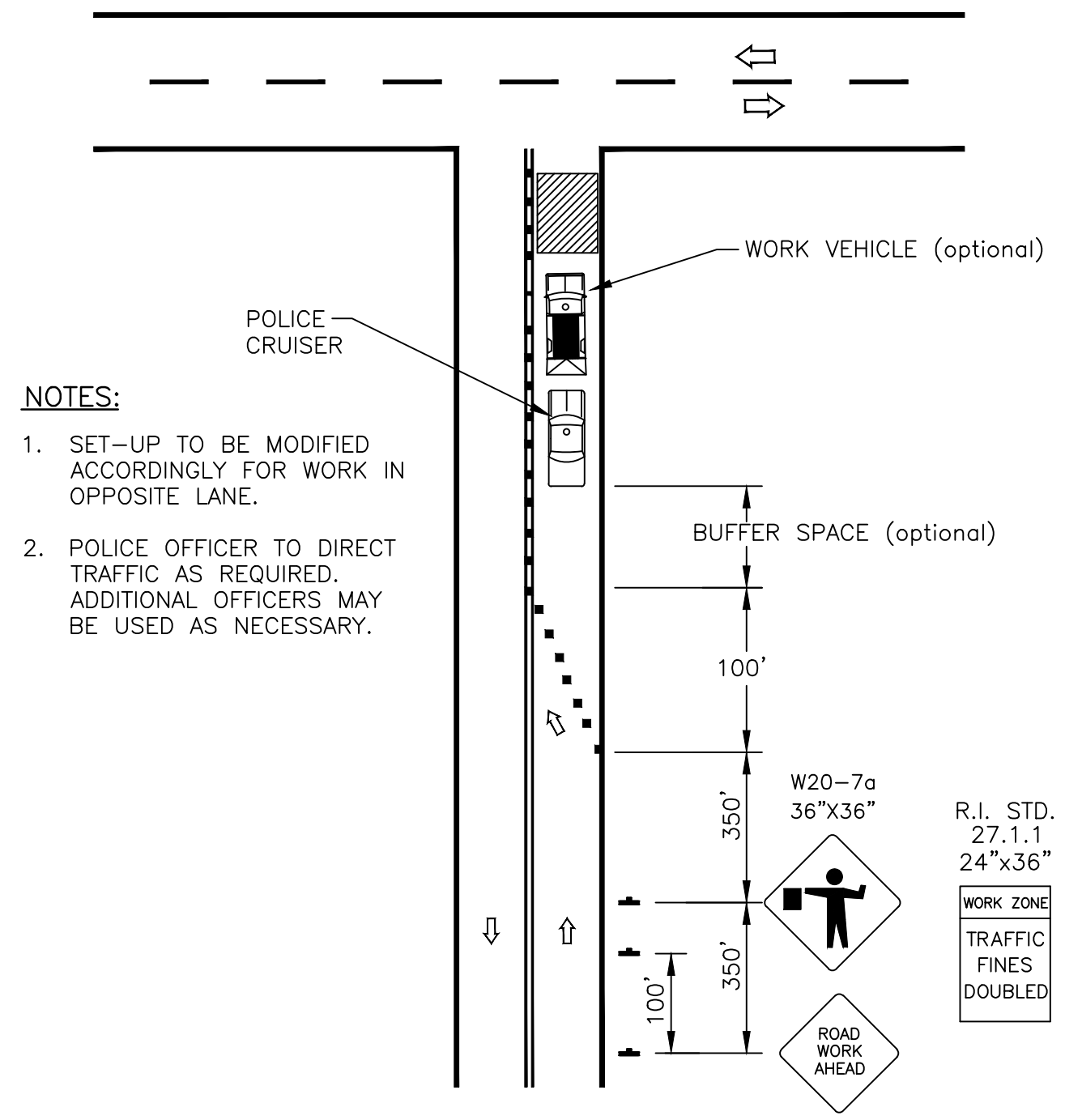
**SIDEWALK DIVERSION**

**MOBILE OPERATIONS ON**



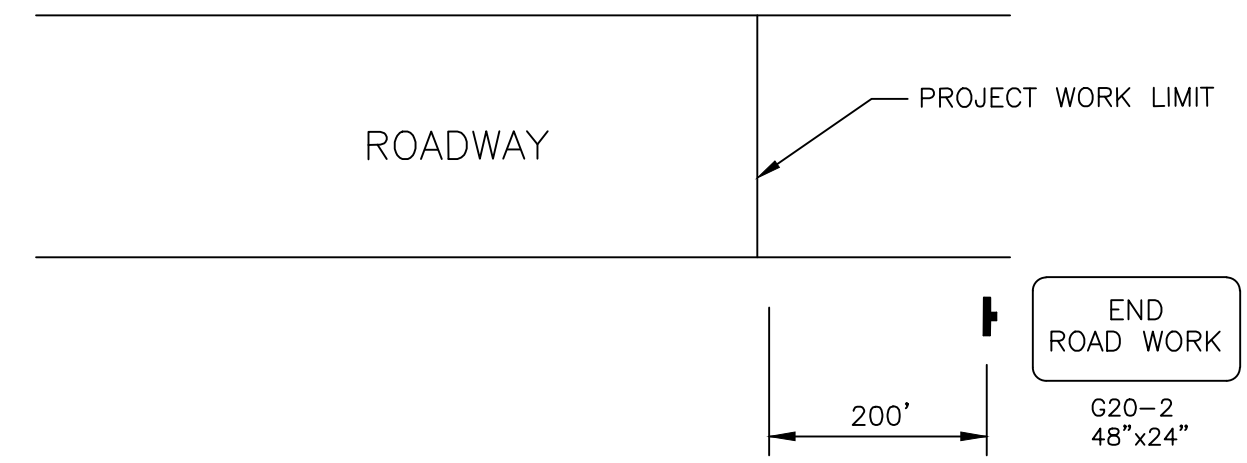
- NOTES:
1. FOR LOW-VOLUME APPLICATIONS, WITH SHORT WORK ZONES ON STRAIGHT ROADWAYS WHERE THE FLAGGER IS VISIBLE TO ROAD USERS FROM BOTH DIRECTIONS, A SINGLE FLAGGER, POSITIONED TO BE VISIBLE TO ROAD USERS APPROACHING FROM BOTH DIRECTIONS MAY BE USED.
  2. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
  3. THE BUFFER SPACE SHOULD BE EXTENDED IF NECESSARY SO THAT THE 100' MAX. TWO-WAY TRAFFIC TAPER IS PLACED BEFORE A HORIZONTAL (OR CREST VERTICAL) CURVE TO PROVIDE ADEQUATE SIGHT DISTANCE FOR THE FLAGGER AND A QUEUE OF STOPPED VEHICLES.
  4. MAXIMUM SPACING OF CHANNELIZATION DEVICES IN THE 100' MAX. TWO-WAY TRAFFIC TAPERS IS 25 FEET. MAXIMUM SPACING OF CHANNELIZATION DEVICES IN A TANGENT SECTION IS EQUAL IN FEET TO TWO TIMES THE SPEED LIMIT IN MPH.
  5. MINIMUM LANE WIDTH IS TO BE 10 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF CHANNELIZATION DEVICES OR TEMPORARY BARRIER.

**LANE CLOSURE ON TWO LANE ROAD USING FLAGGERS**



- NOTES:
1. SET-UP TO BE MODIFIED ACCORDINGLY FOR WORK IN OPPOSITE LANE.
  2. POLICE OFFICER TO DIRECT TRAFFIC AS REQUIRED. ADDITIONAL OFFICERS MAY BE USED AS NECESSARY.

**LANE CLOSURE ON A SIDE STREET**

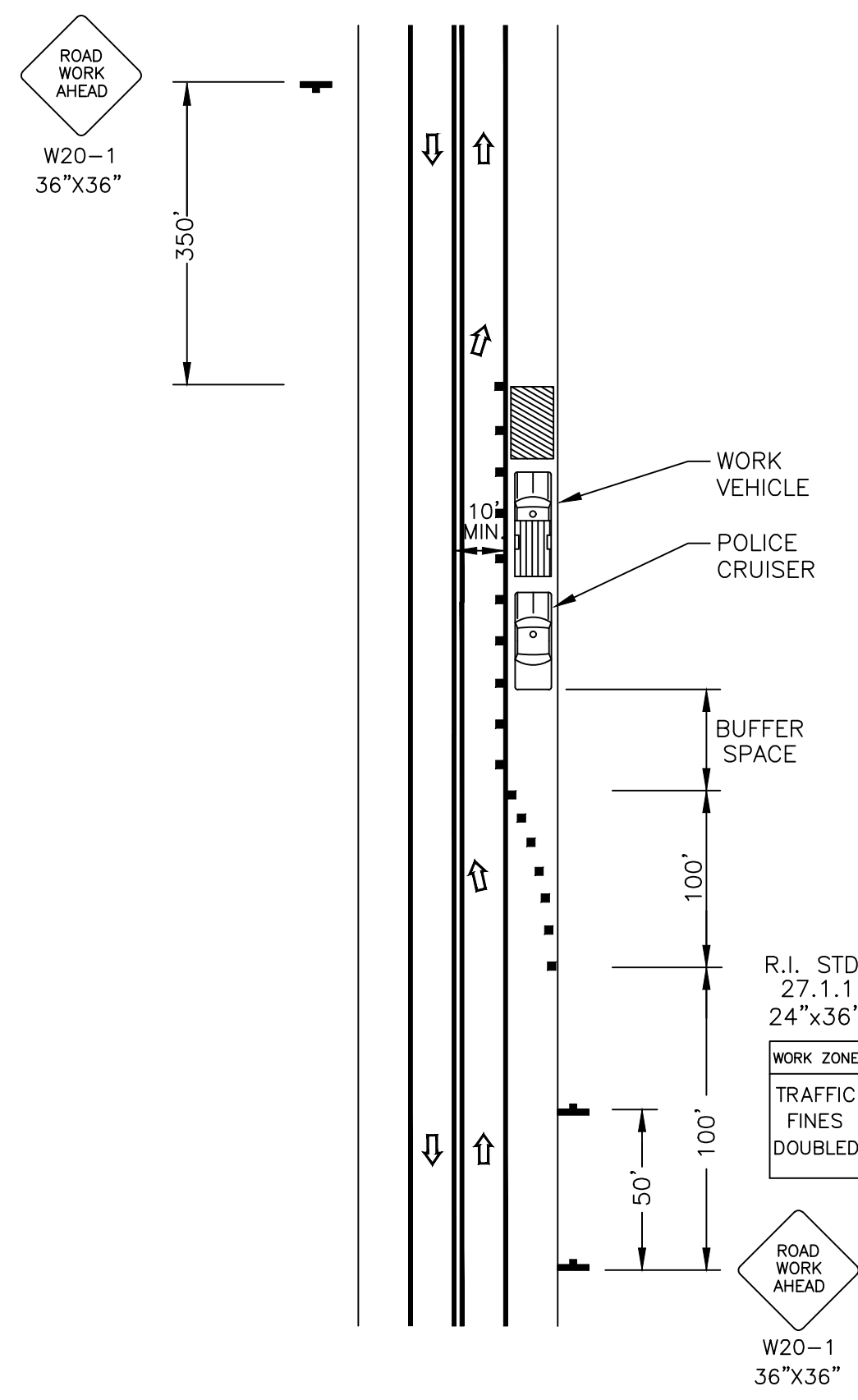


**TYPICAL PROJECT LIMIT DETAIL**

**MISCELLANEOUS USE SIGNS**

DRAWN	LBD	CITY OF WARWICK, RHODE ISLAND WARWICK SEWER AUTHORITY SYSTEM OF SEWERS CONTRACT NO. 101	
CHECKED		OAKLAND BEACH INTERCEPTOR REHABILITATION MAINTANANCE AND PROTECTION OF TRAFFIC PLAN 1	
APPROVED	TAR		
DATE	2021	GORDON R. ARCHIBALD, CIVIL AND ENVIRONMENTAL ENGINEERS 200 MAIN STREET, PAWTUCKET, RHODE ISLAND	
SCALE AS NOTED		DWG. NO. 8 OF 9	
REV. NO.	DESCRIPTION	DATE	INT.
APPROVED		FILE NO. 1960	
WARWICK SEWER AUTHORITY			

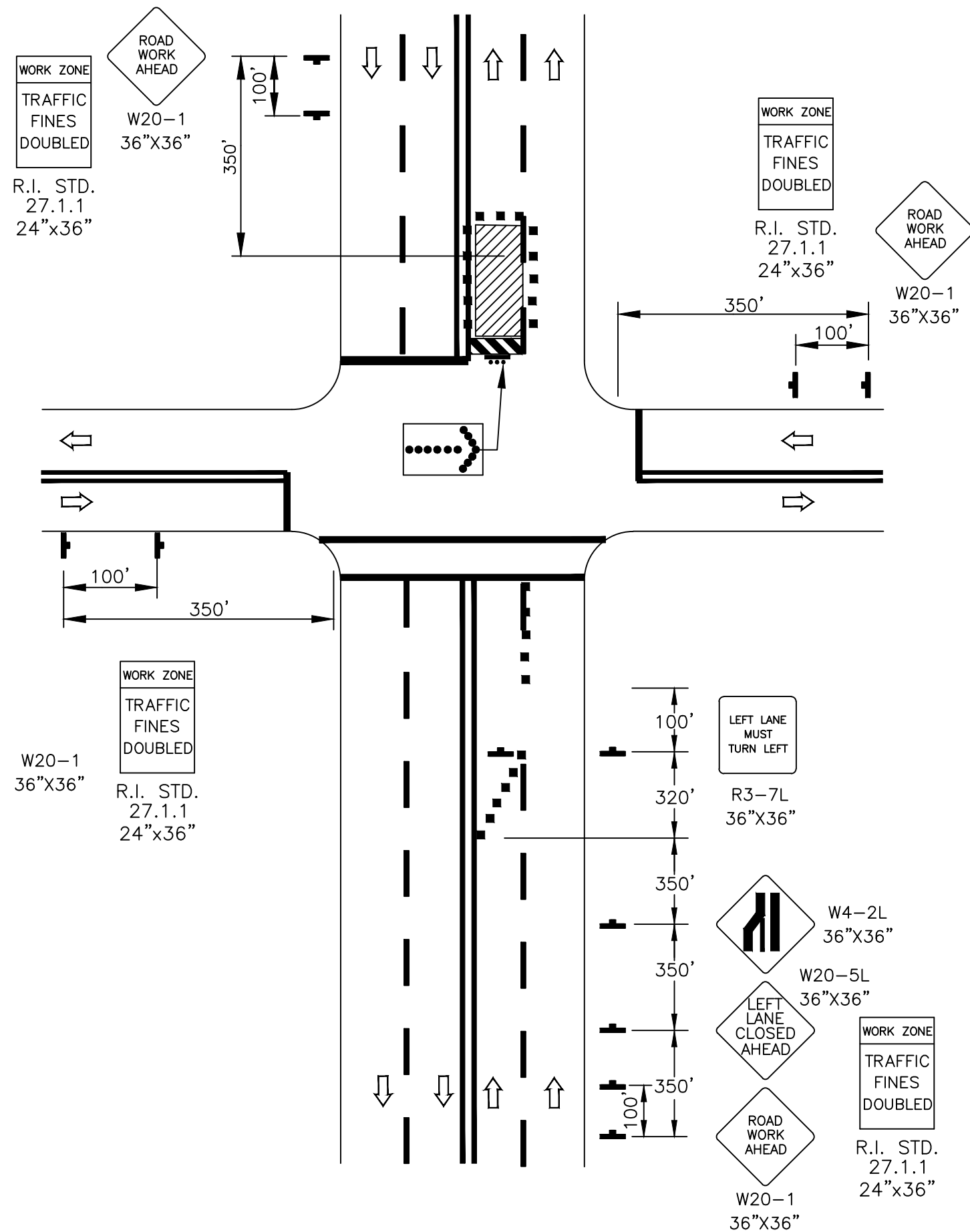




**SHOULDER WORK WITH MINOR ENCROACHMENT**

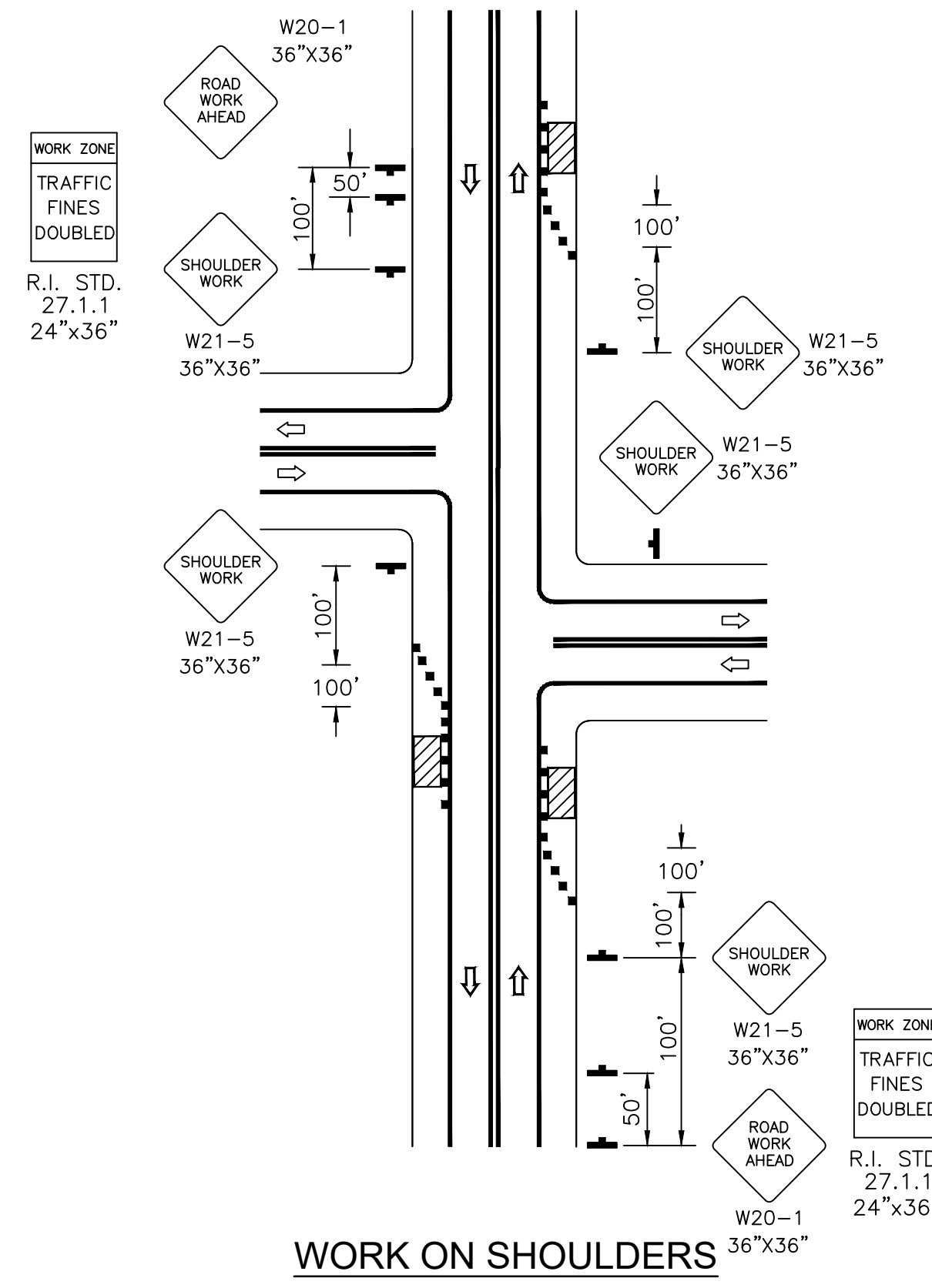
**NOTES:**

1. ALL LANES SHOULD BE A MINIMUM OF 10 FT. IN WIDTH AS MEASURED TO THE NEAR FACE OF THE CHANNELIZING DEVICES.
2. THE TREATMENT SHOWN SHOULD BE USED ON A MINOR ROAD HAVING LOW SPEEDS. FOR HIGHER-SPEED TRAFFIC CONDITIONS, A LANE CLOSURE SHOULD BE USED.
3. WHERE THE OPPOSITE SHOULDER IS SUITABLE FOR CARRYING VEHICULAR TRAFFIC AND OF ADEQUATE WIDTH, LANES MAY BE SHIFTED BY USE OF CLOSELY SPACED CHANNELIZING DEVICES, PROVIDED THAT THE MINIMUM LANE WIDTH OF 10 FT. IS MAINTAINED.
4. MAXIMUM SPACING OF THE CHANNELIZATION DEVICES IN A TAPER IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH. MAXIMUM SPACING OF CHANNELIZATION DEVICES IN A TANGENT SECTION IS EQUAL IN FEET TO TWO TIMES THE SPEED LIMIT IN MPH.



**LEFT LANE CLOSURE ON FAR SIDE OF INTERSECTION**

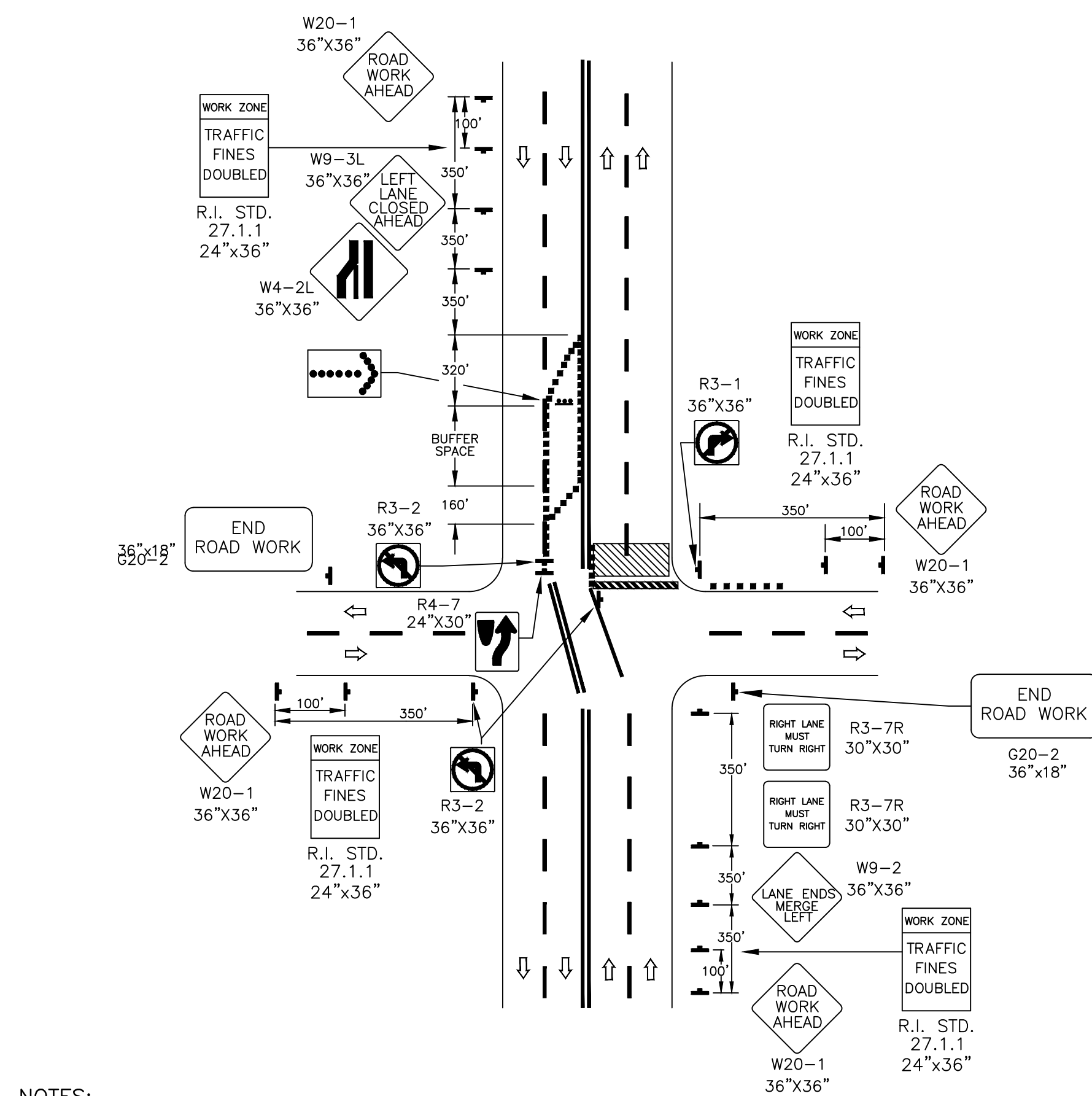
- NOTES:**
1. IF THE WORK SPACE EXTENDS ACROSS A CROSSWALK, THE CROSSWALK SHOULD BE CLOSED USING THE INFORMATION AND DEVICES SHOWN IN SIDEWALK DETOUR.
  2. FLASHING WARNING LIGHTS AND/OR FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE WARNING SIGNS.
  3. THE NORMAL PROCEDURE IS TO CLOSE ON THE NEAR SIDE OF THE INTERSECTION ANY LANE THAT IS NOT CARRIED THROUGH THE INTERSECTION. HOWEVER, WHEN THIS RESULTS IN THE CLOSURE OF A LEFT LANE HAVING SIGNIFICANT LEFT-TURNING MOVEMENTS, THEN THE LEFT LANE MAY BE REOPENED AS A TURN BAY FOR LEFT TURNS ONLY, AS SHOWN.
  4. BY FIRST CLOSING OFF THE LEFT LANE AND THEN REOPENING IT AS A TURN BAY, AN ISLAND IS CREATED WITH CHANNELIZING DEVICES THAT ALLOWS THE LEFT LANE MUST TURN LEFT SIGN TO BE REPEATED ON THE LEFT ADJACENT TO THE LANE THAT IT CONTROLS.



**WORK ON SHOULDERS**

**NOTES:**

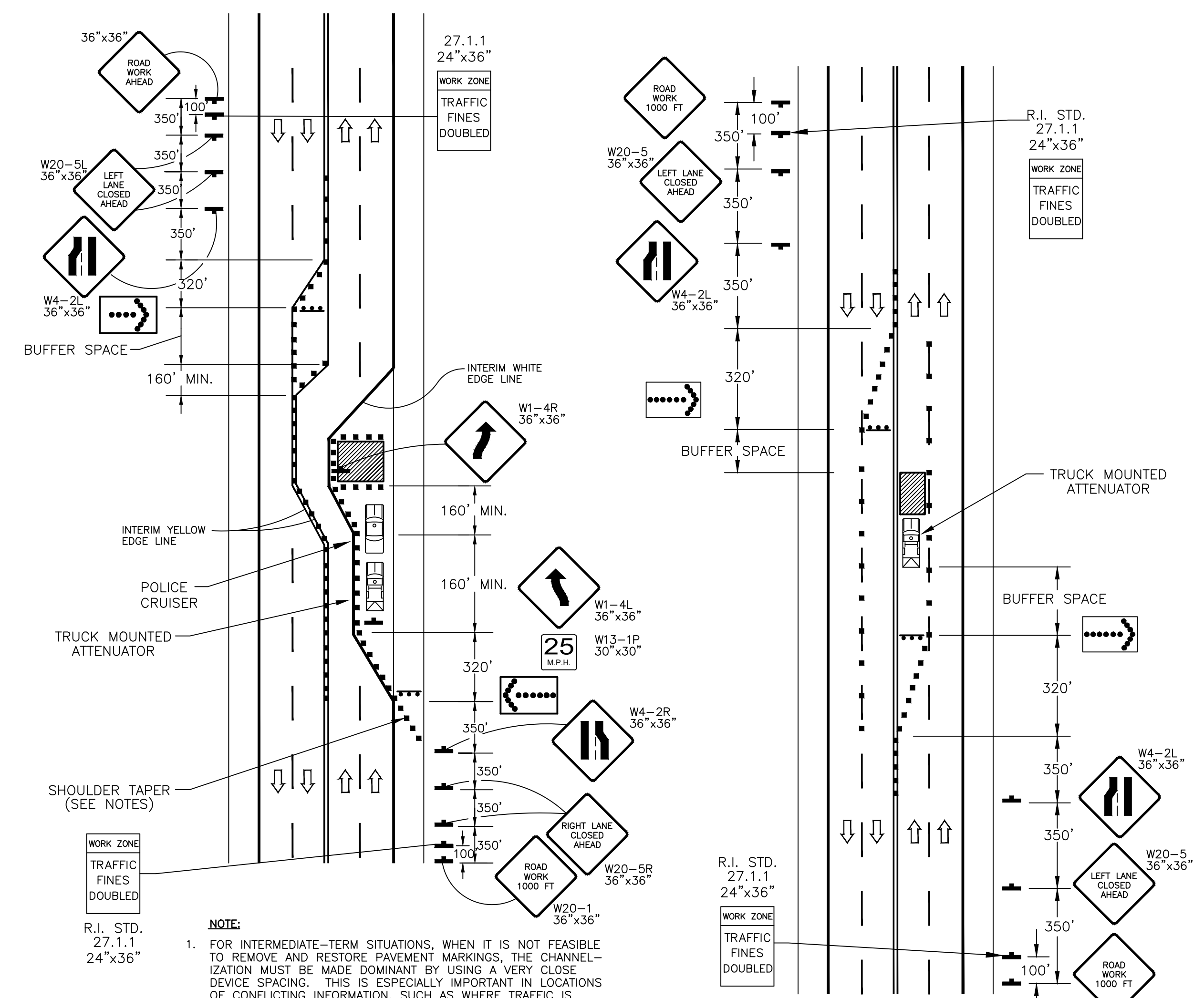
1. A SHOULDER WORK SIGN SHOULD BE PLACED ON THE LEFT SIDE OF THE ROADWAY FOR A DIVIDED OR ONE-WAY STREET ONLY IF THE LEFT SHOULDER IS AFFECTED.
2. THE SHOULDER WORK AHEAD SIGN ON AN INTERSECTING ROADWAY MAY BE OMITTED WHERE DRIVERS EMERGING FROM THAT ROADWAY WILL ENCOUNTER ANOTHER ADVANCE WARNING SIGN PRIOR TO THIS ACTIVITY AREA.
3. FOR SHORT-DURATION OPERATIONS OF 60 MINUTES OR LESS, ALL SIGNS AND CHANNELIZING DEVICES MAY BE ELIMINATED IF A VEHICLE WITH ACTIVATED HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS IS USED.
4. VEHICLE HAZARD WARNING SIGNALS MAY BE USED TO SUPPLEMENT HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.
5. VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.
6. WHEN PAVED SHOULDERS HAVING A WIDTH OF 8 FT. OR MORE ARE CLOSED, AT LEAST ONE ADVANCE WARNING SIGN SHALL BE USED. IN ADDITION, CHANNELIZING DEVICES SHALL BE USED TO CLOSE THE SHOULDER IN ADVANCE TO DELINEATE THE BEGINNING OF THE WORK SPACE AND DIRECT VEHICULAR TRAFFIC TO REMAIN WITHIN THE TRAVELED WAY.



**NOTES:**

1. IF THE WORK SPACE EXTENDS ACROSS THE CROSSWALK, THE CROSSWALK SHOULD BE CLOSED USING THE INFORMATION AND DEVICES SHOWN IN CROSSWALK CLOSURES AND PEDESTRIAN DETOURS.
2. WHEN TURN PROHIBITIONS ARE IMPLEMENTED, TWO TURN PROHIBITION SIGNS SHOULD BE USED, ONE ON THE NEAR SIDE AND, SPACE PERMITTING, ONE ON THE FAR SIDE OF THE INTERSECTION.
3. A BUFFER SPACE MAY BE USED BETWEEN OPPOSING DIRECTIONS OF VEHICULAR TRAFFIC AS SHOWN IN THIS APPLICATION.
4. THE NORMAL PROCEDURE IS TO CLOSE ON THE NEAR SIDE OF THE INTERSECTION ANY LANE THAT IS NOT CARRIED THROUGH THE INTERSECTION. HOWEVER, IF THERE IS A SIGNIFICANT RIGHT-TURNING MOVEMENT, THEN THE RIGHT LANE MAY BE RESTRICTED TO RIGHT TURNS ONLY, AS SHOWN.
5. WHERE THE TURNING RADIUS IS LARGE, A RIGHT-TURN ISLAND USING CHANNELIZING DEVICES OR PAVEMENT MARKINGS MAY BE USED.
6. THERE MAY BE INSUFFICIENT SPACE TO PLACE THE BACK-TO-BACK KEEP RIGHT SIGN AND NO LEFT TURN SYMBOL SIGNS AT THE END OF THE ROW OF CHANNELIZING DEVICES SEPARATING OPPOSING VEHICULAR TRAFFIC FLOWS. IN THIS SITUATION, THE NO LEFT TURN SYMBOL SIGN MAY BE PLACED ON THE RIGHT AND THE KEEP RIGHT SIGN MAY BE OMITTED.
7. FOR INTERSECTION APPROACHES REDUCED TO A SINGLE LANE, LEFT-TURNING MOVEMENTS MAY BE PROHIBITED TO MAINTAIN CAPACITY FOR THROUGH VEHICULAR TRAFFIC.

**HALF ROAD CLOSURE ON FAR SIDE OF INTERSECTION**



**NOTES:**

1. THE CLOSURE OF THE ADJACENT INTERIOR LANE IN THE OPPOSING DIRECTION MAY NOT BE NECESSARY, DEPENDING UPON THE ACTIVITY BEING PERFORMED AND THE WORK SPACE NEEDED FOR THE OPERATION.
2. SHADOW VEHICLES WITH A TRUCK-MOUNTED ATTENUATOR SHALL ONLY BE USED WHEN DIRECTED BY THE ENGINEER.

**INTERIOR LANE CLOSURE**

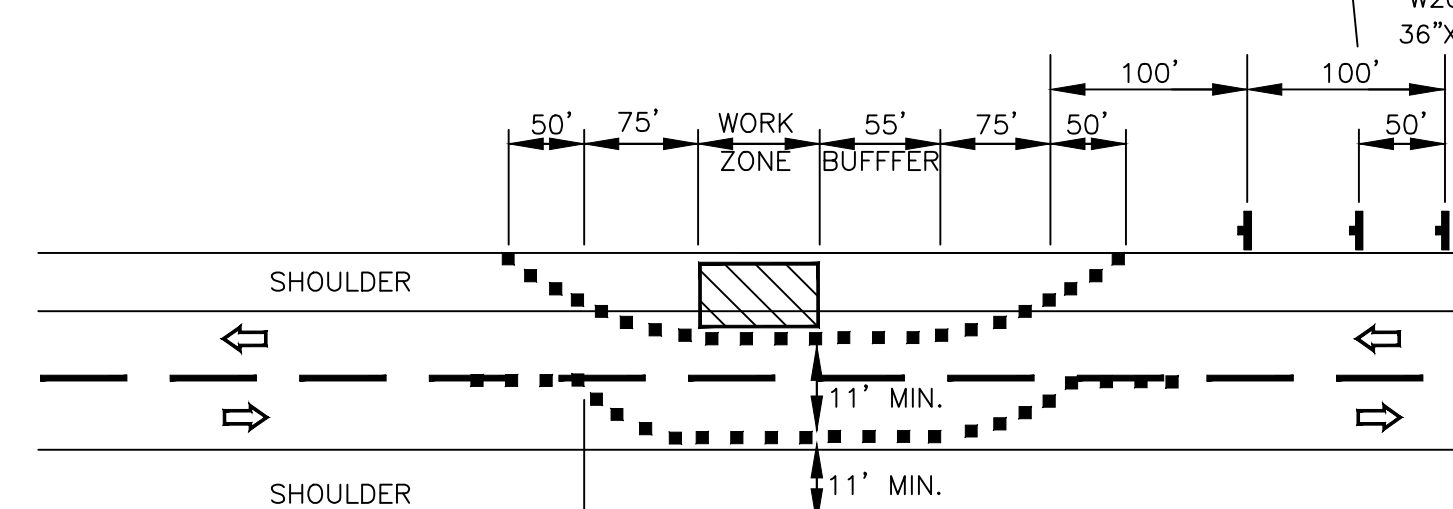
**NOTES:**

1. THE MAXIMUM ALLOWABLE LENGTH OF THE SHIFTED TANGENT SECTION FOR THE TEMPORARY TRAFFIC CONTROL SET-UP SHOWN IS 600 FEET.
2. MAXIMUM SPACING OF CHANNELIZATION DEVICES IN A TAPER IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH. MAXIMUM SPACING OF CHANNELIZATION DEVICES IN A TANGENT SECTION IS EQUAL IN FEET TO TWO TIMES THE SPEED LIMIT IN MPH. SHORTER SPACINGS SHOULD BE USED FOR CHANNELIZATION DEVICES INSTALLED BETWEEN TRAFFIC TRAVELING IN OPPOSITE DIRECTION WHERE ADDITIONAL EMPHASIS IS NEEDED TO CLEARLY DEFINE THE DESIRED TRAVEL PATHS.
3. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF CHANNELIZATION DEVICES.

**HALF ROAD CLOSURE**

**NOTE:**

1. FOR INTERMEDIATE-TERM SITUATIONS, WHEN IT IS NOT FEASIBLE TO REMOVE AND RESTORE PAVEMENT MARKINGS, THE CHANNELIZATION MUST BE MADE DOMINANT BY USING A VERY CLOSE DEVICE SPACING. THIS IS ESPECIALLY IMPORTANT IN LOCATIONS OF CONFLICTING INFORMATION, SUCH AS WHERE TRAFFIC IS DIRECTED OVER A DOUBLE YELLOW CENTERLINE. IN SUCH LOCATIONS A MAXIMUM CHANNELIZING DEVICE SPACING SHOULD BE 0.5 S, WHERE S = SPEED IN M.P.H.
2. SHADOW VEHICLES WITH A TRUCK-MOUNTED ATTENUATOR SHALL ONLY BE USED WHEN DIRECTED BY THE ENGINEER.
3. IF THE SHOULDER WIDTH IS GREATER THAN 8', CHANNELIZING DEVICES SHALL BE USED.



**TYPICAL LANE SHIFT ON TWO-LANE ROAD**

DRAWN	LBD		
CHECKED			
APPROVED	TAR		
DATE	2021		
SCALE	NONE		
REV. NO.	DESCRIPTION	DATE	INT.
APPROVED			
DWG. NO. 9 OF 9		FILE NO. 1960	
WARWICK SEWER AUTHORITY			

CITY OF WARWICK, RHODE ISLAND  
WARWICK SEWER AUTHORITY  
SYSTEM OF SEWERS  
CONTRACT NO. 101

**OAKLAND BEACH INTERCEPTOR REHABILITATION MAINTANANCE AND PROTECTION OF TRAFFIC PLAN 2**

GORDON R. ARCHIBALD, CIVIL AND ENVIRONMENTAL ENGINEERS  
200 MAIN STREET, PAWTUCKET, RHODE ISLAND