

# TOWN OF STOW, MASSACHUSETTS

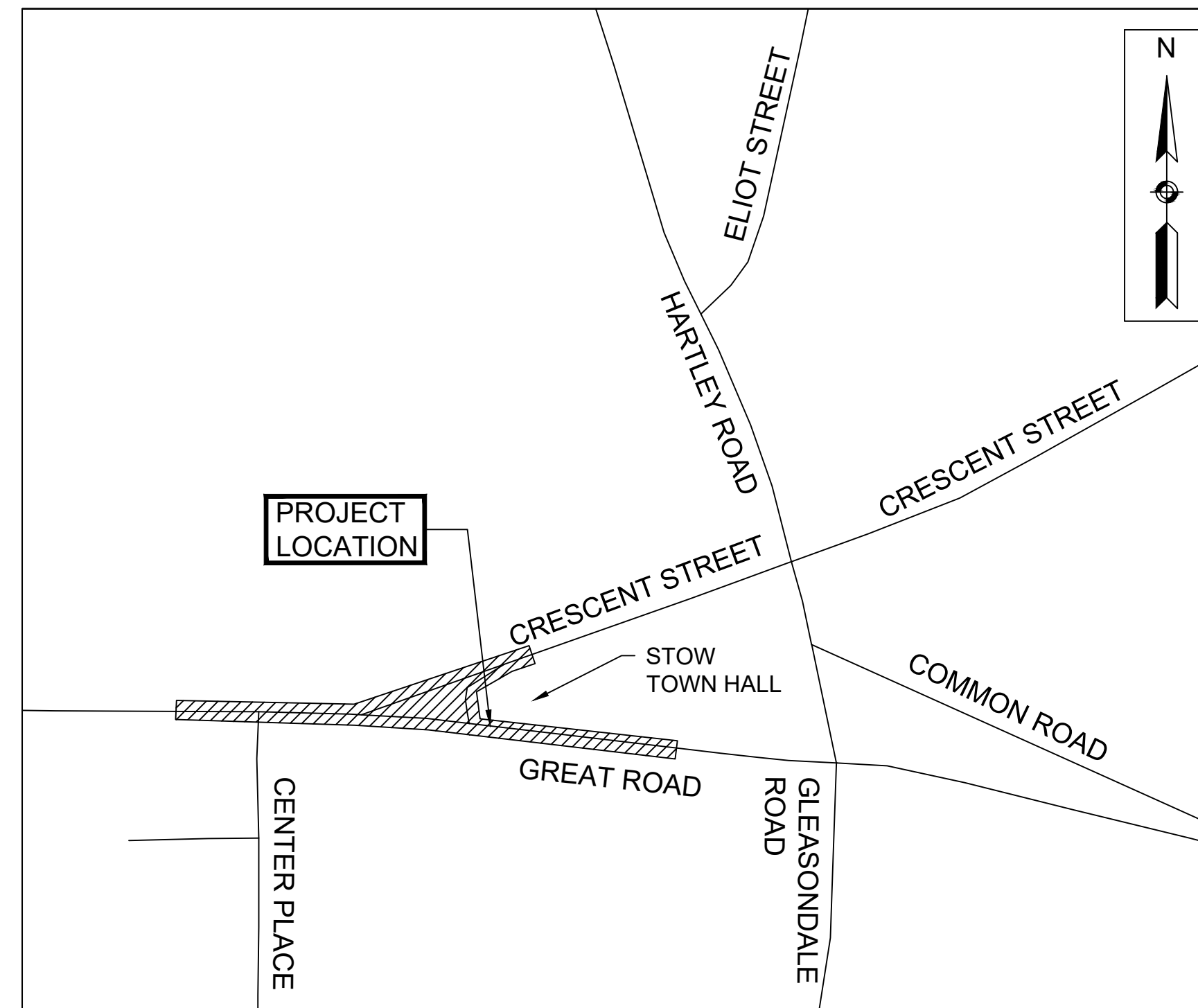
## PROPOSED PEDESTRIAN IMPROVEMENTS

AT

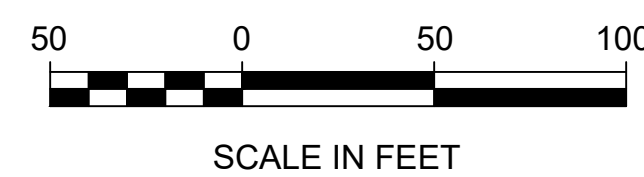
## GREAT ROAD AND CRESCENT STREET

DECEMBER 13, 2021

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LOCATION PLAN



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 1988 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.



**BOARD OF SELECTMEN**

ELLEN S. STURGIS, CHAIR  
 MEGAN BIRCH-MC-MICHAEL, CLERK  
 ZACK BURNS  
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**PLANNING DEPARTMENT**

JESSE STEADMAN, TOWN PLANNER  
 MALCOLM RAGAN, ASSISTANT PLANNER/ GIS ADMINISTRATOR  
 JULIE WINDZIO, DEPARTMENT ASSISTANT

PROJECT: PROPOSED PEDESTRIAN IMPROVEMENTS GREAT ROAD AND CRESCENT STREET	
DESIGN SUBMISSION: CONCEPT DESIGN	
DRAWING TITLE: TITLE	
PREPARED FOR: TOWN OF STOW PLANNING DEPARTMENT 380 GREAT ROAD STOW, MASSACHUSETTS	
PREPARED BY: <b>GREEN INTERNATIONAL AFFILIATES, INC.</b> TRANSPORTATION   STRUCTURAL   WATER RESOURCES   CIVIL/SITE 239 LITTLETON ROAD, SUITE 3 WESTFORD, MA 01886 978.923.0400   www.greenintl.com	
SCALE: AS NOTED	DESIGNED BY: HG
DATE: 12/13/2021	DRAWN BY: HG
PROJECT NO. 21082.	CHECKED BY: CT
SHEET NO. 1 OF 8	

NO.	DATE	REVISIONS

**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
LTP	LIGHT POLE
LP	LIGHTING LOAD CENTER
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
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
P&R	PROTECT AND RETAIN

**ABBREVIATIONS (cont.)**

GENERAL	
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET TREE	RETAIN TREE WITH TREE PROTECTION - ARMORING & PRUNING
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

**TRAFFIC SIGNAL**

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

**GENERAL SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W/ 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS
		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)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		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
		SEDIMENT CONTROL BARRIER

**PAVEMENT MARKINGS SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND \"ONLY\" - WHITE
		STOP LINE
		CROSSWALK
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE

**TRAFFIC SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		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)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		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

PROJECT: PROPOSED PEDESTRIAN IMPROVEMENTS  
GREAT ROAD AND CRESCENT STREET

DESIGN SUBMISSION:  
**CONCEPT DESIGN**

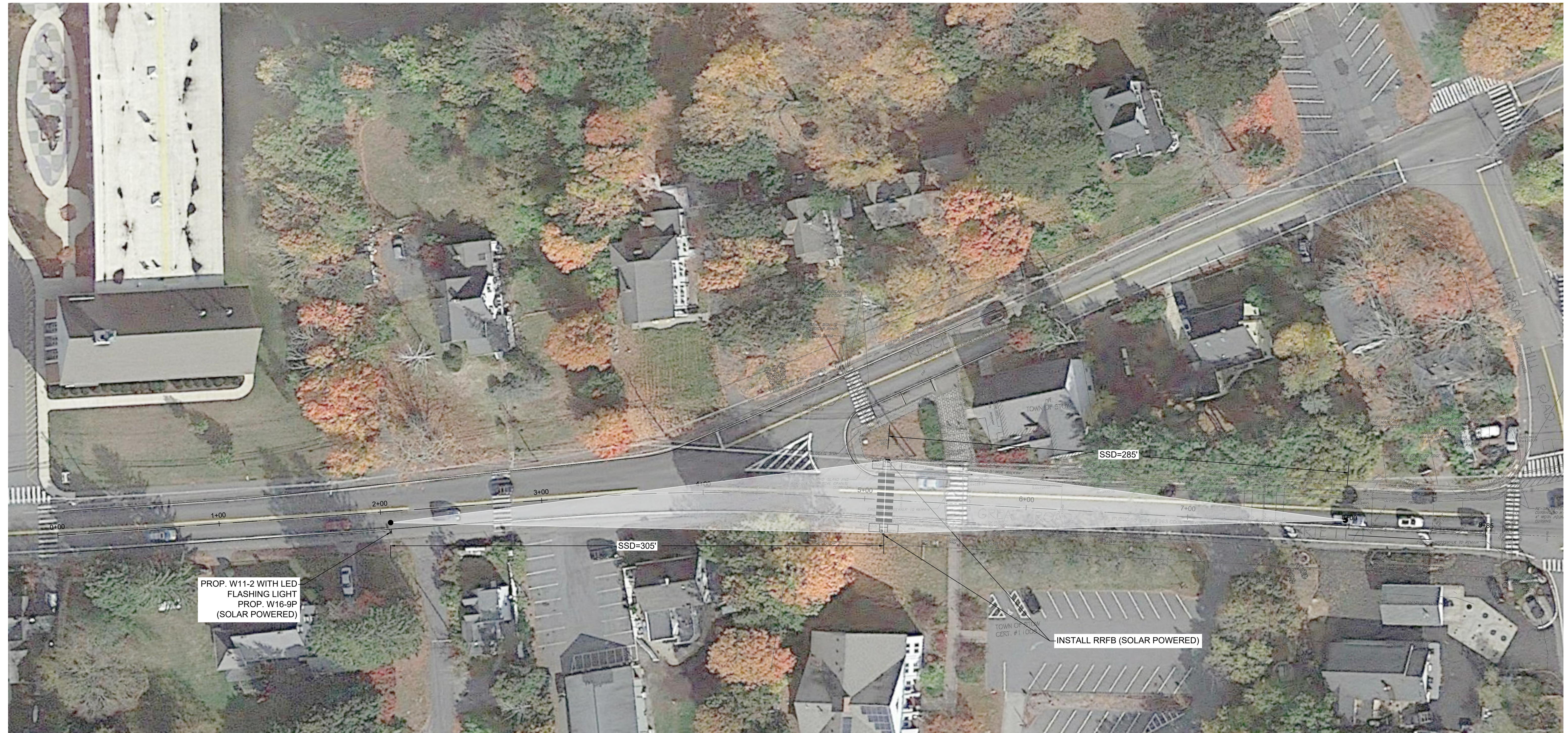
DRAWING TITLE:  
**LEGEND**

PREPARED FOR:  
TOWN OF STOW  
PLANNING DEPARTMENT  
380 GREAT ROAD  
STOW, MASSACHUSETTS

PREPARED BY:  
**GREEN INTERNATIONAL AFFILIATES, INC.**  
TRANSPORTATION | STRUCTURAL | WATER RESOURCES | CIVIL/SITE  
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SCALE: AS NOTED	DESIGNED BY: HG	SHEET NO. <b>2</b> OF <b>8</b>
DATE: 12/13/2021	DRAWN BY: HG	
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SSD ADJUSTED ON SLOPES=(1.47 * V * T) + (V <sup>2</sup> / (30 * ((A / 32.2) + G)))						
	SPEED	t	a	G	SSD adj	ROUNDUP
GREAT RD EB	40*	2.5	11.2	-0.25%	301.443	305
GREAT RD WB	40**	2.5	11.2	5.00%	281.062	285

NOTES:  
 \* THE DAILY AVERAGE 85TH SPEED OF GREAT ROAD EASTBOUND IS 32 MPH BASED ON 2021 ATR DATA. USE 40 MPH TO BE CONSERVATIVE.  
 \*\* THE DAILY AVERAGE 85TH SPEED OF GREAT ROAD WESTBOUND IS 36 MPH BASED ON 2021 ATR DATA. USE 40 MPH TO BE CONSERVATIVE.

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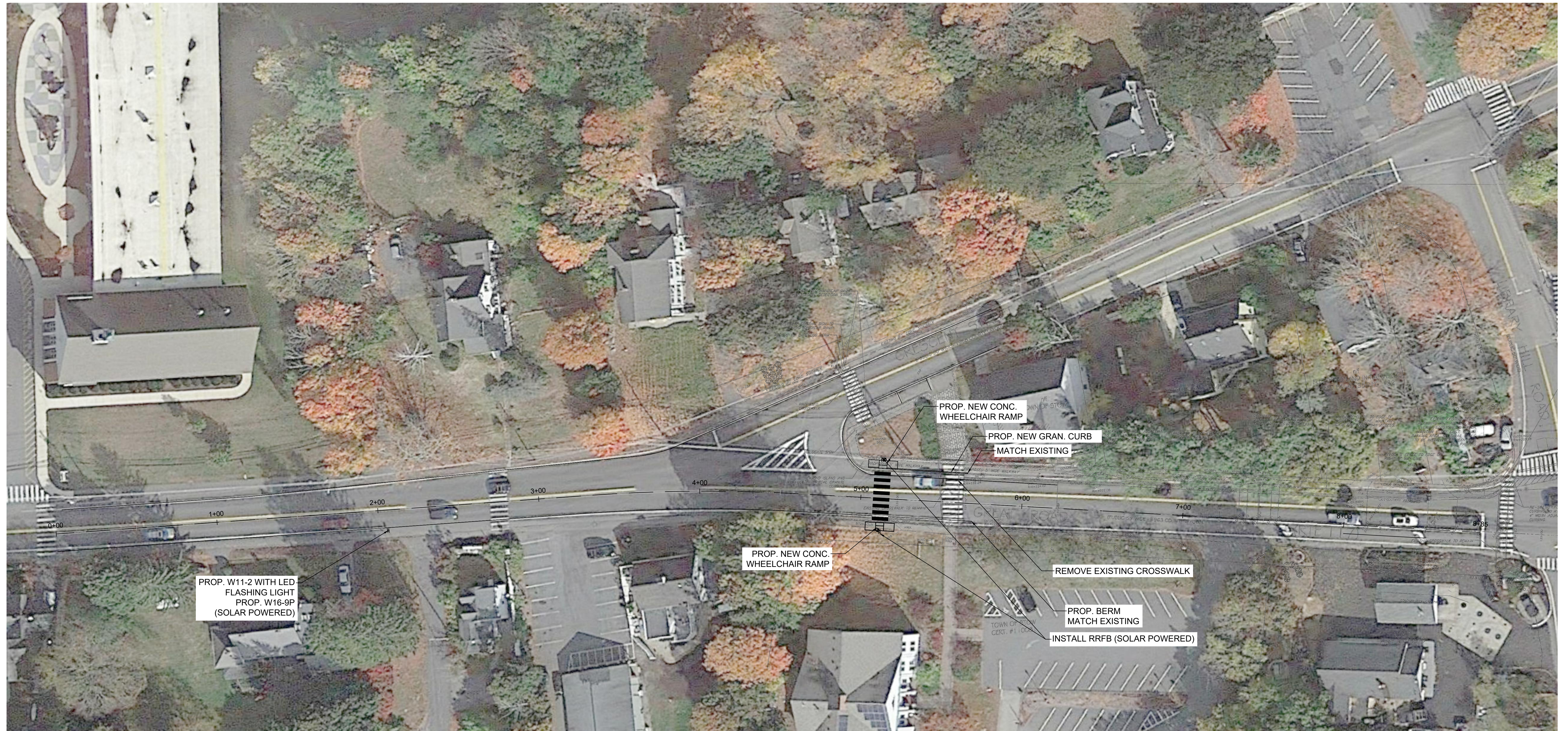
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**DESIGN PLAN**

PREPARED FOR:  
 TOWN OF STOW  
 PLANNING DEPARTMENT  
 380 GREAT ROAD  
 STOW, MASSACHUSETTS

PREPARED BY:  
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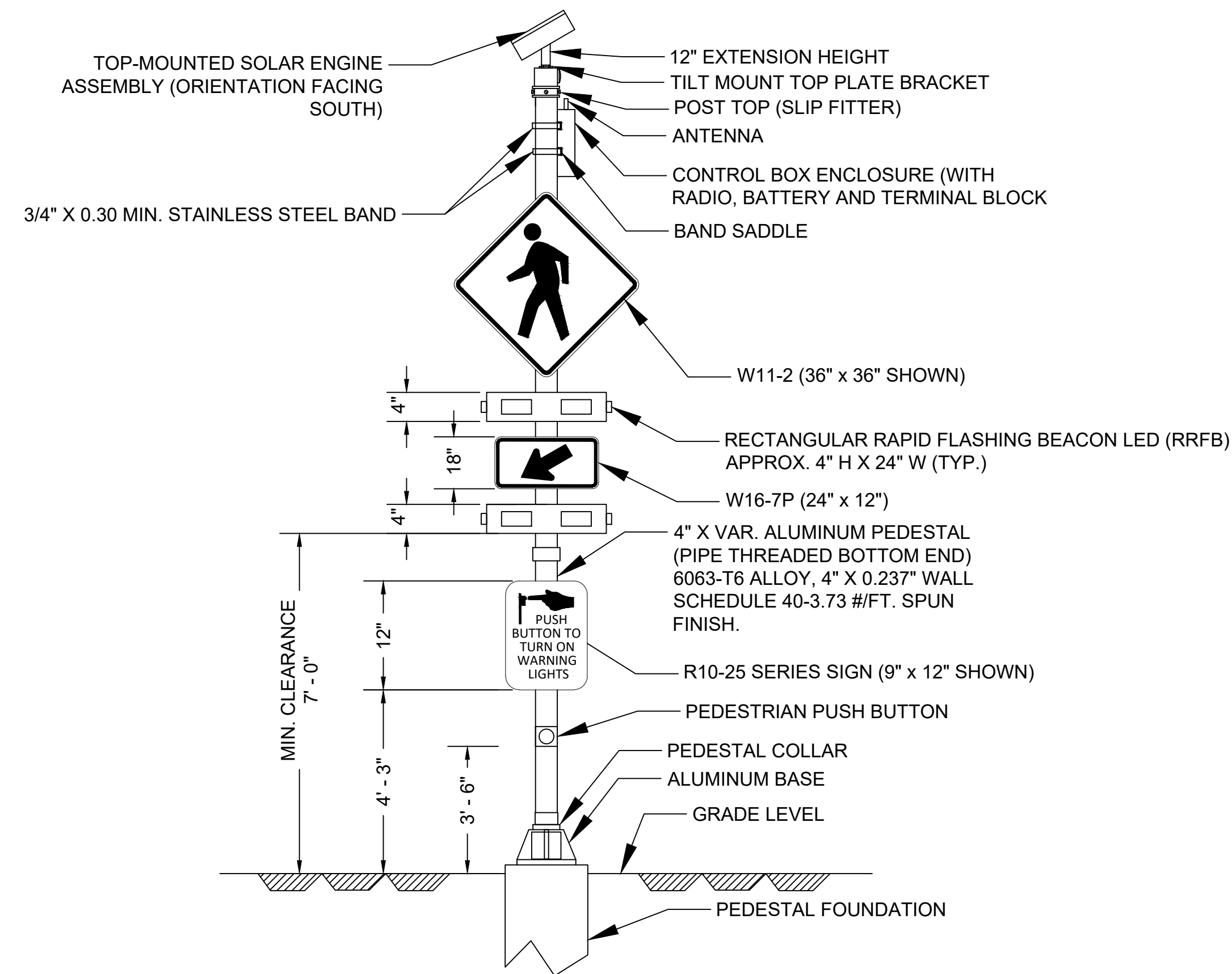
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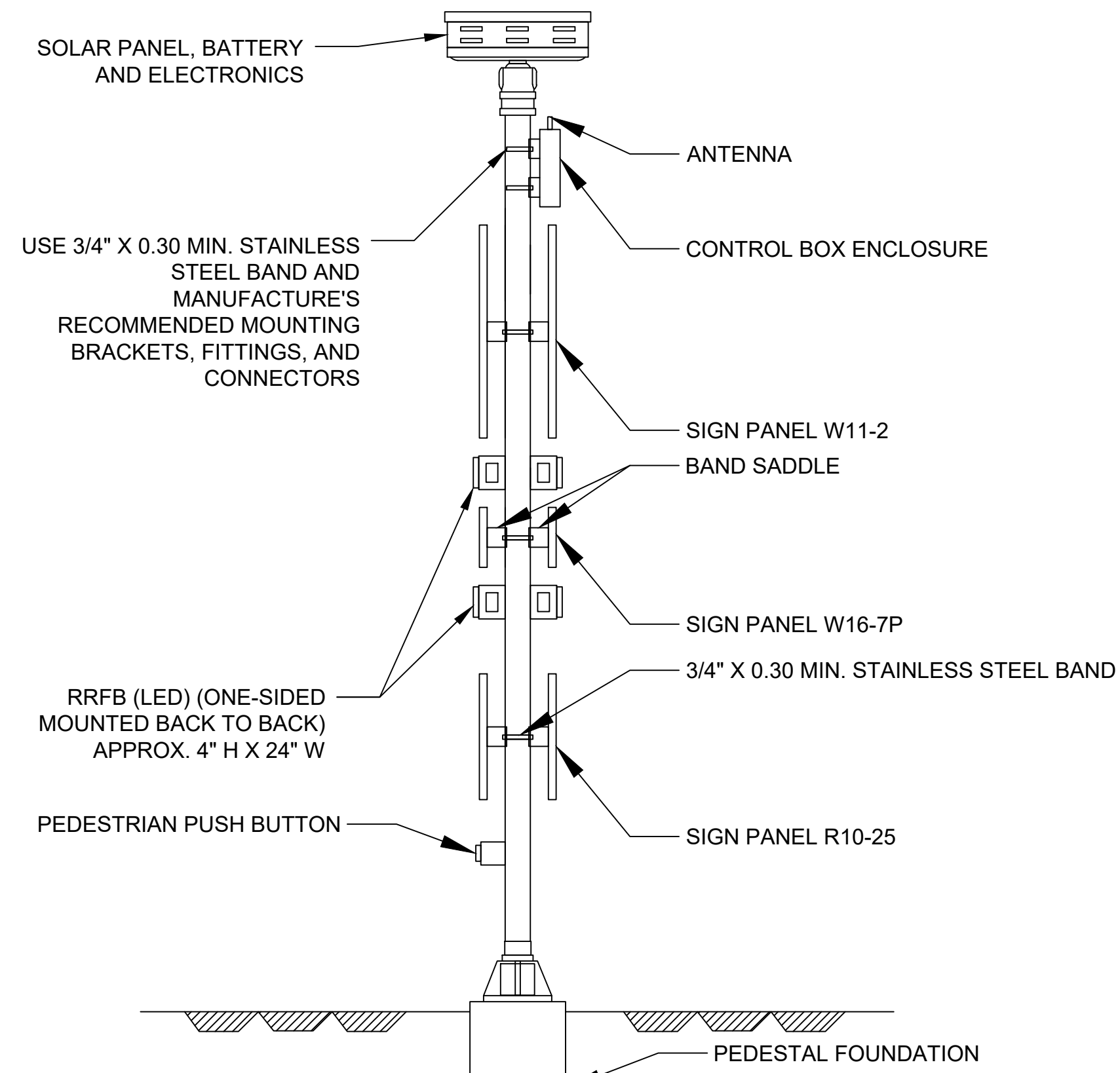
PROJECT: PROPOSED PEDESTRIAN IMPROVEMENTS GREAT ROAD AND CRESCENT STREET	
DESIGN SUBMISSION: CONCEPT DESIGN	
DRAWING TITLE: DESIGN PLAN	
PREPARED FOR: TOWN OF STOW PLANNING DEPARTMENT 380 GREAT ROAD STOW, MASSACHUSETTS	
PREPARED BY: GREEN INTERNATIONAL AFFILIATES, INC. TRANSPORTATION   STRUCTURAL   WATER RESOURCES   CIVIL/SITE 239 LITTLETON ROAD, SUITE 3 WESTFORD, MA 01886 978.923.0400   www.greenintl.com	
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**SOLAR POWERED LED BORDER SIGN - FRONT VIEW**

NOT TO SCALE



**SOLAR POWERED LED BORDER SIGN - SIDE VIEW**

NOT TO SCALE

**PEDESTAL FOUNDATION DETAILS**

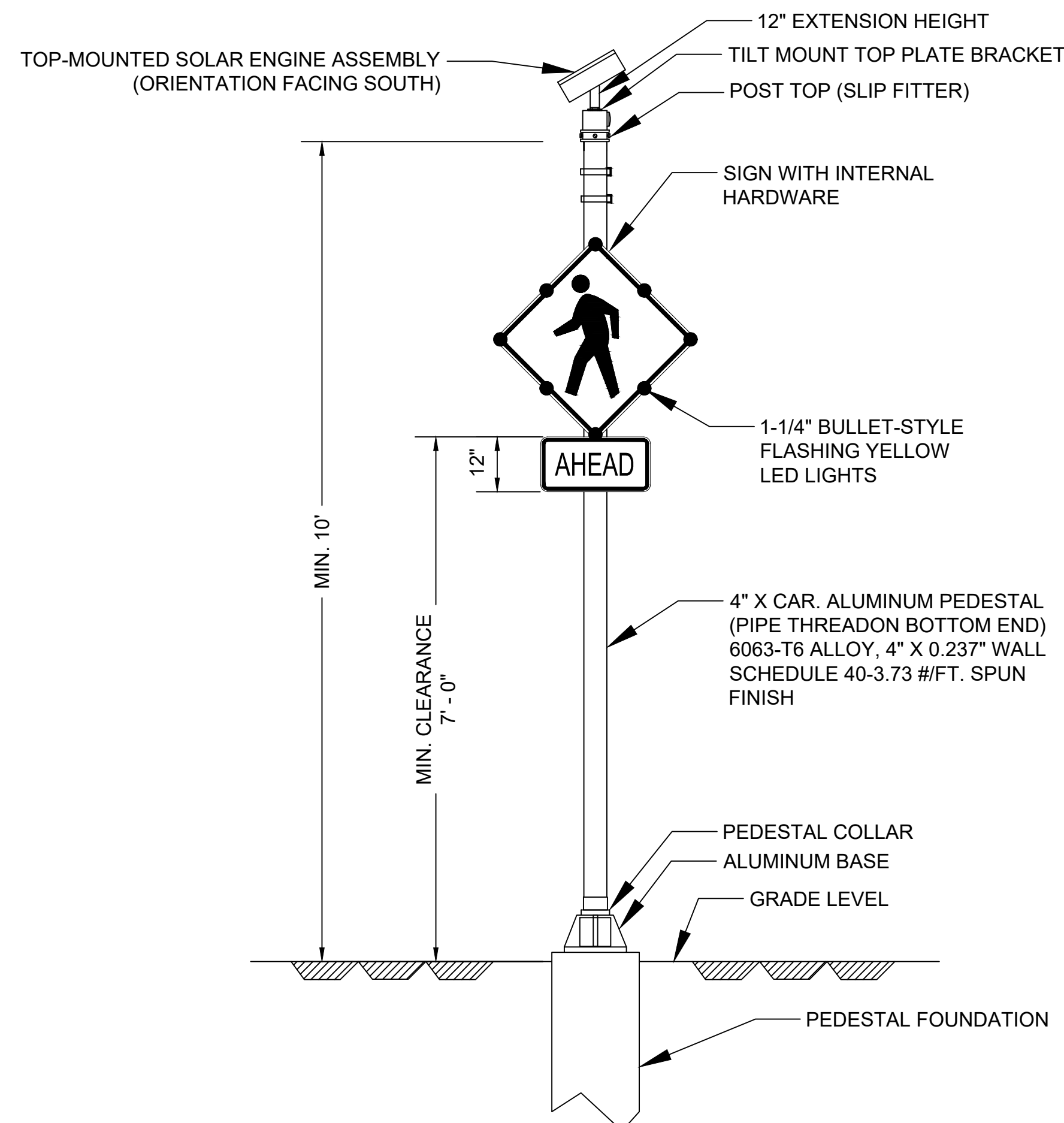
NOT TO SCALE

**NOTES :**

1. DETAIL ALSO APPLICABLE FOR THE PEDESTAL FOUNDATIONS FOR THE SOLAR POWERED LED BORDER SIGN ASSEMBLY, FLASHING BEACON SCHOOL ZONE SIGN ASSEMBLY, AND RADAR SPEED FEEDBACK ASSEMBLY

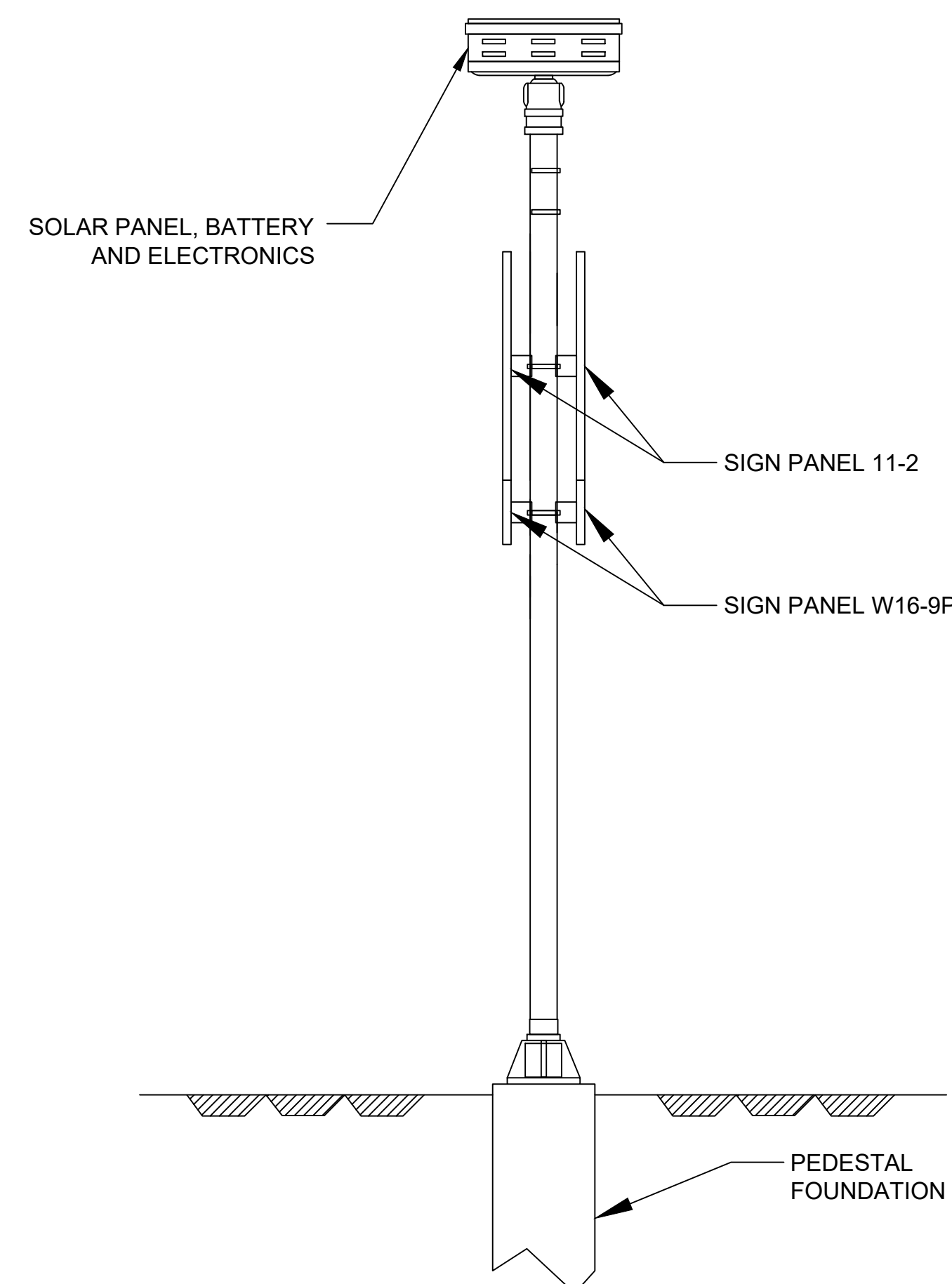
**NOTES :**

1. MATERIAL TO BE ALUMINUM
2. ALL SURFACES TO BE PAINTED WITH AT LEAST TWO COATS OF EXTERIOR GRADE POWDER COAT PAINT SUITABLE FOR A LOW SPEED TRAFFIC ENVIRONMENT SUBJECT TO HIGH LEVELS OF SALT
3. DETAIL ALSO APPLICABLE FOR THE ALUMINUM BASES FOR THE SOLAR POWERED LED BORDER SIGN ASSEMBLY, FLASHING BEACON SCHOOL ZONE SIGN ASSEMBLY, AND RADAR SPEED FEEDBACK ASSEMBLY



**SOLAR POWERED LED BORDER SIGN - FRONT VIEW**

NOT TO SCALE



**SOLAR POWERED LED BORDER SIGN - SIDE VIEW**

NOT TO SCALE

**NOTES :**

1. LEDS TO HAVE FLASH RATE BETWEEN 50-60 TIMES PER MINUTE
2. LEDS SHALL BE FIELD ADJUSTABLE
3. MATERIAL TO BE ALUMINUM
4. ALL SURFACES TO BE PAINTED WITH AT LEAST TWO COATS OF EXTERIOR GRADE POWDER COAT PAINT SUITABLE FOR A LOW SPEED TRAFFIC ENVIRONMENT SUBJECT TO HIGH LEVELS OF SALT

PROJECT: PROPOSED PEDESTRIAN IMPROVEMENTS  
GREAT ROAD AND CRESCENT STREET

DESIGN SUBMISSION: CONCEPT DESIGN

DRAWING TITLE: TRAFFIC DETAILS

PREPARED FOR:  
TOWN OF STOW  
PLANNING DEPARTMENT  
380 GREAT ROAD  
STOW, MASSACHUSETTS

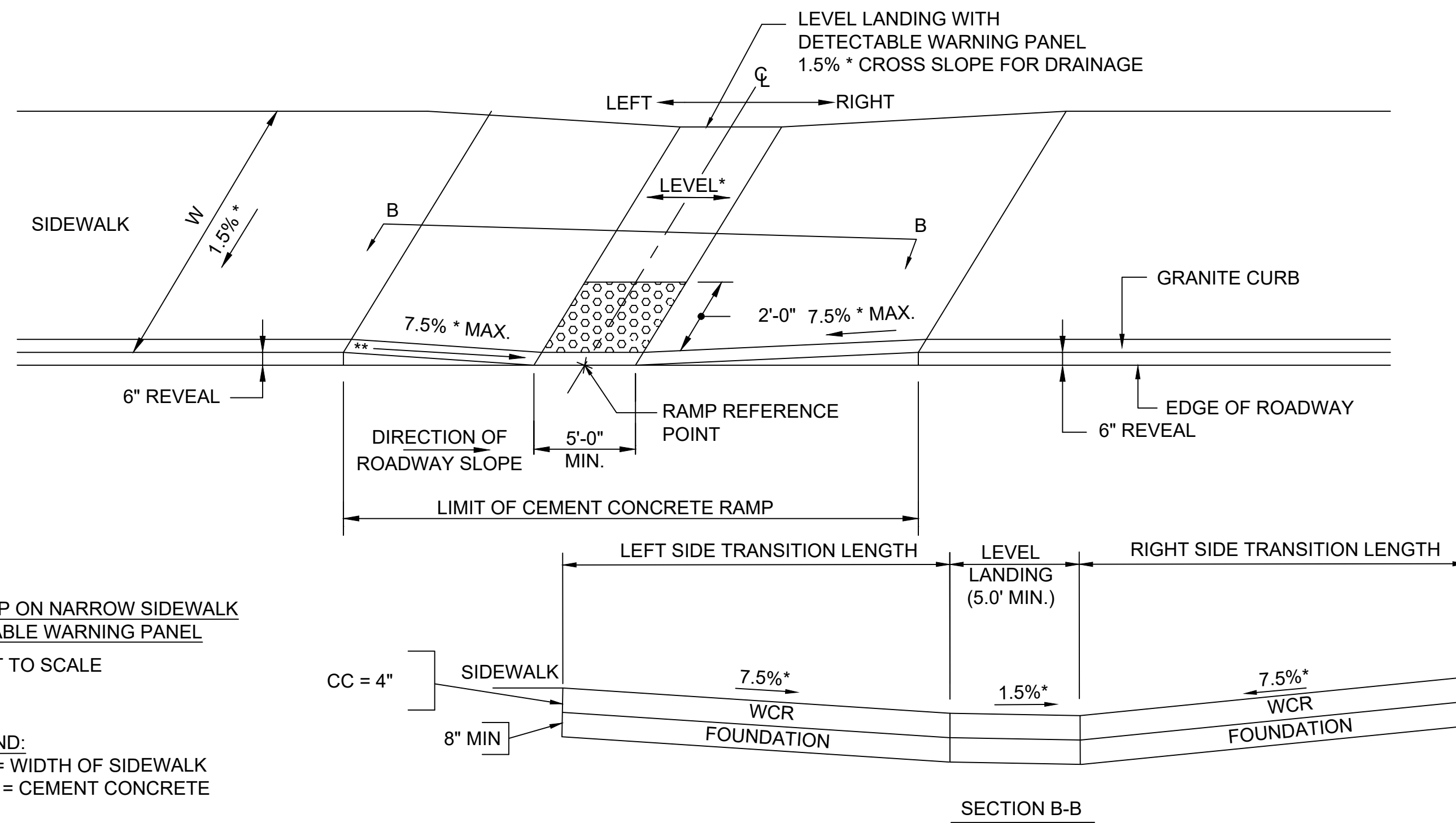
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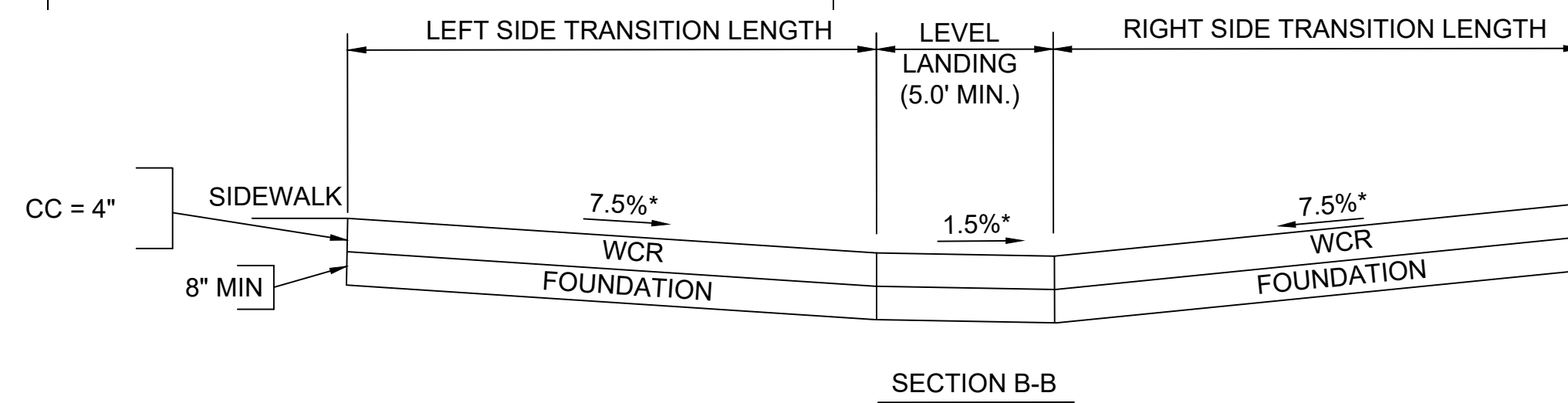
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**5** OF **8**

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WHEELCHAIR RAMP ON NARROW SIDEWALK  
WITH DETECTABLE WARNING PANEL  
NOT TO SCALE

LEGEND:  
W = WIDTH OF SIDEWALK  
CC = CEMENT CONCRETE



WHEELCHAIR RAMPS LESS THAN 12'-4" SIDEWALK  
NOT TO SCALE

NOTES:

- \* CONSTRUCTION TOLERANCE  $\pm 0.5\%$   
SEE CONSTRUCTION STANDARD E 107.2.1
- \*\* SEE CONSTRUCTION STANDARD E 107.9.0 - DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5  
CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR CONSTRUCTING RAMPS COMPLIANT WITH ADA/AAB RULES, REGULATIONS AND STANDARDS.  
CONTRACTOR SHALL VERIFY RAMPS ARE ADA/AAB COMPLIANT BEFORE POURING CEMENT CONCRETE.

NOTES:

PAVEMENT MARKINGS:

- THE WORK FOR INSTALLING PAVEMENT MARKINGS AND PERFORMING PAVEMENT MARKING REMOVAL SHALL CONFORM TO THE RELEVANT PROVISIONS OF SECTION 850 AND 860 OF THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
- ALL PAVEMENT MARKING SHALL BE THERMOPLASTIC AND CONFORM TO THE MASSDOT MATERIAL SPECIFICATION M7.01.03 AND M7.01.04.
- CROSSWALKS WILL BE SHOWN ON CURB CUT WHEEL CHAIR RAMP SKETCHES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REFERENCE AND RECORD ALL EXISTING CROSSWALK PAVEMENT MARKINGS, THEIR LOCATIONS AND DIMENSIONS FOR REPRODUCTION AFTER REMOVAL, IF REQUIRED BY THE ENGINEER. THE RECORDING SHALL BE DONE PRIOR TO ANY OTHER WORK ON THE PROJECT AND COPIES SHALL BE GIVEN TO THE ENGINEER.
- ALL PERMANENT CROSSWALK PAVEMENT MARKINGS MUST BE APPLIED WITHIN ONE (1) WEEK OF COMPLETION OF THE WHEELCHAIR RAMP. ALL CROSSWALKS SHALL BE TEN FEET WIDE, BE PERPENDICULAR TO THE ROADWAY, AND CONSIST OF TWO PARALLEL "RAIL" MARKINGS WITH "LADDER" STRIPING BETWEEN THE "RAIL" MARKINGS. THE ENGINEER MAY DIRECT THE CONTRACTOR TO APPLY ADDITIONAL PAVEMENT MARKINGS.
- PAVEMENT MARKING REMOVAL SHALL BE PERFORMED BY GRINDING THE PAVEMENT MARKING FROM THE PAVEMENT OR OTHER METHOD OF PHYSICAL REMOVAL APPROVED BY THE ENGINEER. PAINTING OVER EXISTING MARKINGS WILL NOT BE ALLOWED.

RAMPS:

- THE WORK FOR REMOVING AND DISCARDING THE EXISTING CURB ALONG THE LIMITS OF THE PROPOSED WHEELCHAIR RAMP AND INSTALLING GRANITE TRANSITION CURB FOR THE WHEELCHAIR RAMP TRANSITIONS SHALL CONFORM TO THE RELEVANT PROVISIONS OF SECTION 500 OF THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
- WHERE THERE IS AN EXISTING GRASS SURFACE ADJACENT TO THE BACK OF THE PROPOSED CEMENT CONCRETE SIDEWALK SURFACE, BACK OF THE PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP, AND/OR WHERE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL PLACE LOAM AND SEED AT THE BACK OF THE CEMENT CONCRETE SIDEWALK SURFACE.
- ALL WHEELCHAIR RAMP JOINTS AND TRANSITION SECTIONS WHICH DEFINE GRADE CHANGES SHALL BE FORMED, STAKED AND CHECKED PRIOR TO PLACING CEMENT CONCRETE. ALL GRADE CHANGES ARE TO BE MADE AT JOINTS WHICH ARE TO BE TRANSVERSE TO THE PEDESTRIAN PATH OF TRAVEL, EXCLUDING THE JOINTS FORMING THE WHEELCHAIR RAMP FLARE SECTIONS.
- THE PEDESTRIAN RAMP, INCLUDING THE DETECTABLE WARNING PANEL SHALL BE PROTECTED FROM ALL TRAFFIC, VEHICULAR OR PEDESTRIAN, DURING THE CURING PROCESS. PRIOR TO COMPLETION ALL DEBRIS MUST BE CLEANED FROM THE DETECTABLE WARNING PANEL.

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DESIGN SUBMISSION:	CONCEPT DESIGN
DRAWING TITLE:	TRAFFIC DETAILS
PREPARED FOR:	TOWN OF STOW PLANNING DEPARTMENT 380 GREAT ROAD STOW, MASSACHUSETTS

PREPARED BY:	GREEN INTERNATIONAL AFFILIATES, INC. TRANSPORTATION   STRUCTURAL   WATER RESOURCES   CIVIL/SITE 239 LITTLETON ROAD, SUITE 3 WESTFORD, MA 01886 978.923.0400   www.greenintl.com
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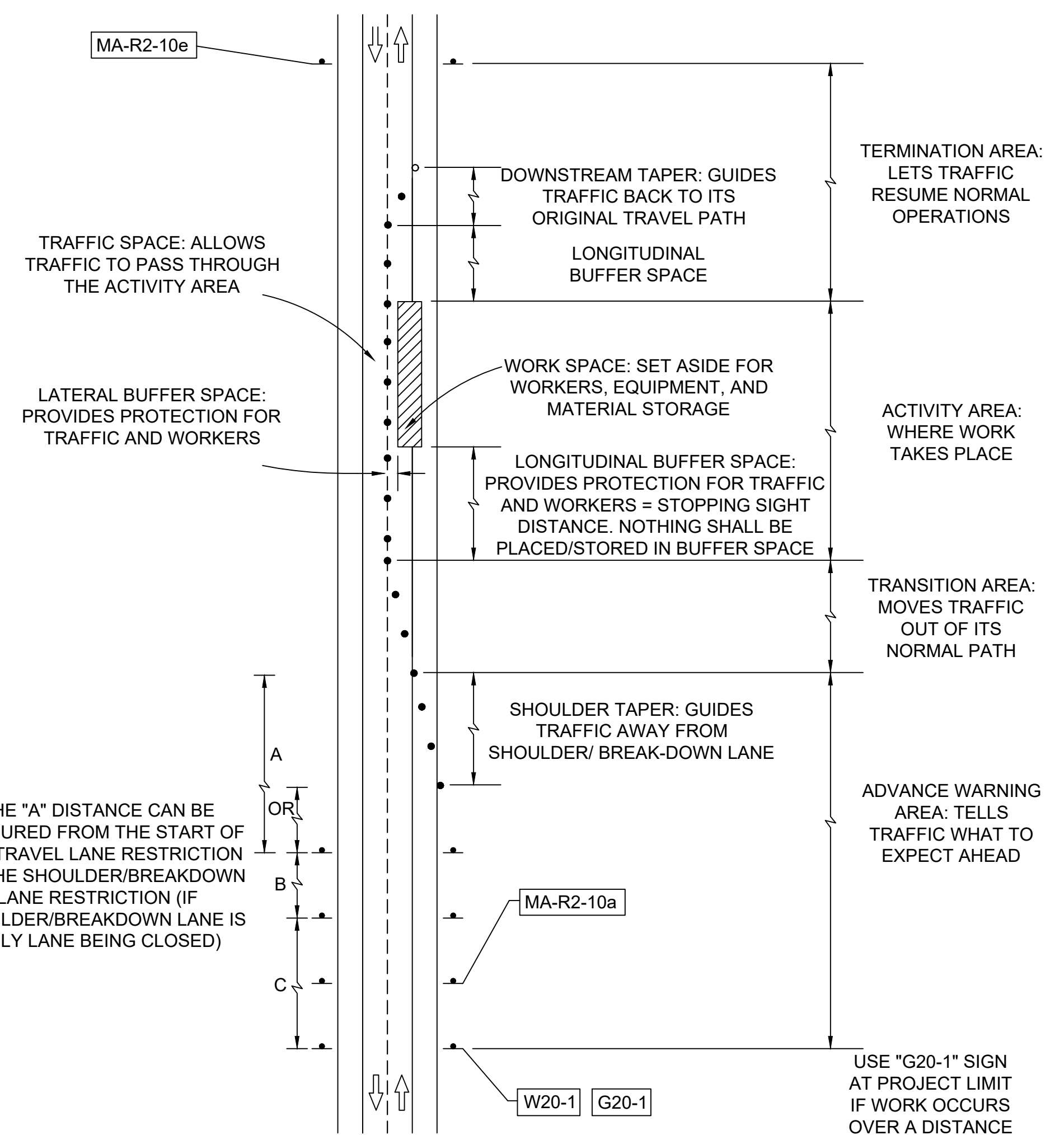
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**TEMPORARY TRAFFIC CONTROL NOTES:**

- MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED UNLESS OTHERWISE NOTED. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF THE DRUMS OR CONES (IF USED).
- THE CONTRACTOR MAY ELECT TO PROVIDE ALTERNATE METHODS TO MAINTAIN TRAFFIC. ALTERNATE METHODS PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED TO TOWN OF STOW FOR REVIEW AND APPROVAL.
- THE CONTRACTOR SHALL COORDINATE APPROVAL OF ANY CHANGES TO THE TEMPORARY TRAFFIC CONTROL PLAN WITH TOWN OF STOW PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL ALSO NOTIFY TOWN OF STOW TWO (2) WEEKS IN ADVANCE OF PLACING TEMPORARY TRAFFIC CONTROL SIGNS.
- THESE PLANS ARE NOT INTENDED TO LIMIT THE CONTRACTOR'S APPROACH TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACTOR IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT AND SAFE MANNER IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- PLACE ALL SAFETY DEVICES AND CONSTRUCTION SIGNING BEFORE ACTUAL CONSTRUCTION WORK BEGINS.
- DISTANCES ARE A GUIDE AND MAY BE ADJUSTED BASED ON FIELD CONDITIONS WITH THE APPROVAL OF THE ENGINEER.
- WHEN EXISTING SIGNS ARE NO LONGER APPLICABLE THEY SHALL BE TEMPORARILY COVERED DURING CONSTRUCTION OR REMOVED AND RESET UPON COMPLETION OF CONSTRUCTION. THE COST SHALL BE INCIDENTAL TO THE CONTRACT.
- ALL SIGNS SHALL BE REFLECTORIZED, WITH REFLECTIVE SHEETING CONFORMING TO M9.30.0. ALL SIGN COLORS SHALL BE PER THE CONSTRUCTION SIGN SUMMARY TABLE AND CURRENT MUTCD.
- 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).
- CONTRACTOR SHALL RECORD EXISTING PAVEMENT MARKINGS AND RESTORE ALL MARKINGS TO EXISTING CONDITIONS AT THE CONCLUSION OF CONSTRUCTION AT EACH LOCATION.
- CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES IMMEDIATELY WHEN NO LONGER NEEDED.
- UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL INSTALL, RENEW, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- ACCESS/EGRESS TO ALL ABUTTERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN EMERGENCY PASSAGE AT ALL TIMES TO BUILDINGS WITHIN AND ADJACENT TO THE PROJECT LIMITS AS WELL AS A LARGER AREA IF AFFECTED BY CONSTRUCTION CONDITIONS. CONTRACTOR SHALL MAINTAIN 24 HOUR EMERGENCY VEHICLE ACCESS TO CONSTRUCTION AREAS.
- CONTRACTOR SHALL COORDINATE WITH ABUTTERS FOR THE PROPOSED WORK AND SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF THE WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS TO THEIR PROPERTY.
- THE CONTRACTOR SHALL COORDINATE THE WORK WITH ALL ABUTTING PROJECTS.
- 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.
- CONSTRUCTION WORK WITHIN SCHOOL ZONE WILL OCCUR OUTSIDE OF SCHOOL SEASON, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL COORDINATE WITH TOWN OF SHERBORN AND ENGINEER IF THE CONSTRUCTION OCCUR IN SCHOOL SEASON. PEDESTRIAN DETOUR AND DETAILS OF ADA COMPLIANT RAMPS SHALL BE PROVIDED BY ENGINEER AS NEEDED.
- ALL DETOURS AND LANE CLOSURES SHALL BE COORDINATED WITH TOWN OF STOW AT LEAST TWO WEEKS IN ADVANCE.
- THE FIRST FIVE (5) PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
- MINIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.



**ADVANCE SIGNAGE AND COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE**  
NOT TO SCALE

**FORMULAS FOR DETERMINING TAPER LENGTH**

SPEED (S)	TAPER LENGTH (L) IN FEET
40 MPH OR LESS	$L = WS^2/60$
45 MPH OR MORE	$L = WS$

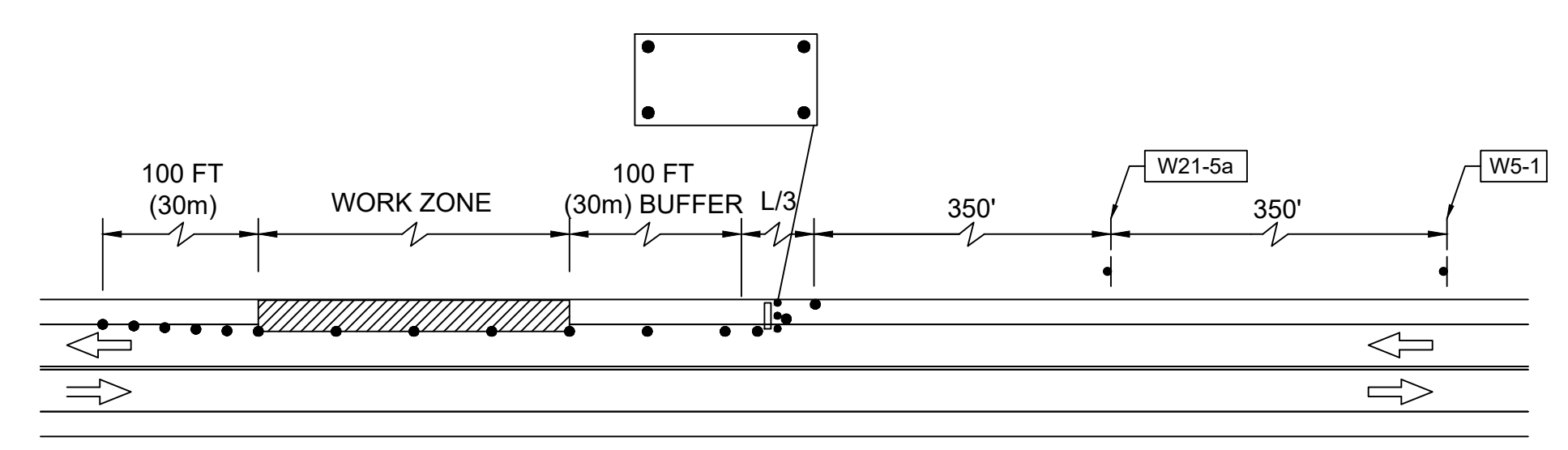
WHERE:  
 L = TAPER LENGTH IN FEET  
 W = WIDTH OF OFFSET IN FEET  
 S = POSTED SPEED LIMIT, OR OFF-PEAK 85<sup>TH</sup> PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH.

**TRAFFIC DEVICE LEGEND**

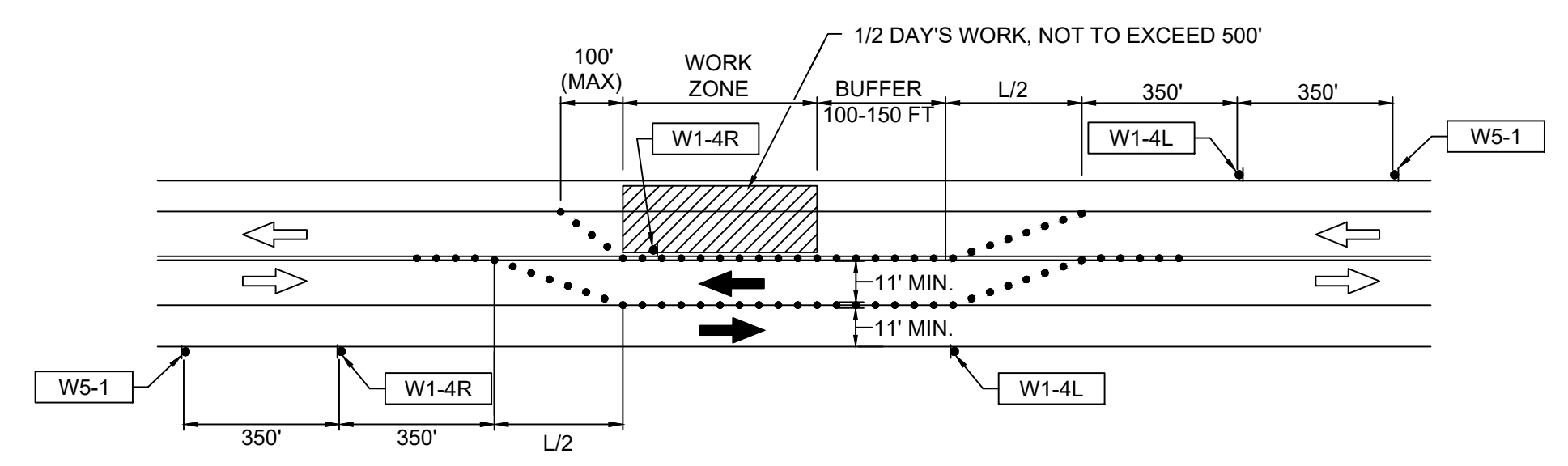
- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF PROPOSED VEHICULAR TRAFFIC SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- POLICE OFFICER
- ARROW/CAUTION BOARD

**STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED**

SPEED (MPH)	DISTANCE (FEET)
25	155
30	200
35	250
50	425



**TYPICAL APPLICATION - TWO LANE ROAD SHOULDER CLOSURE**  
NOT TO SCALE

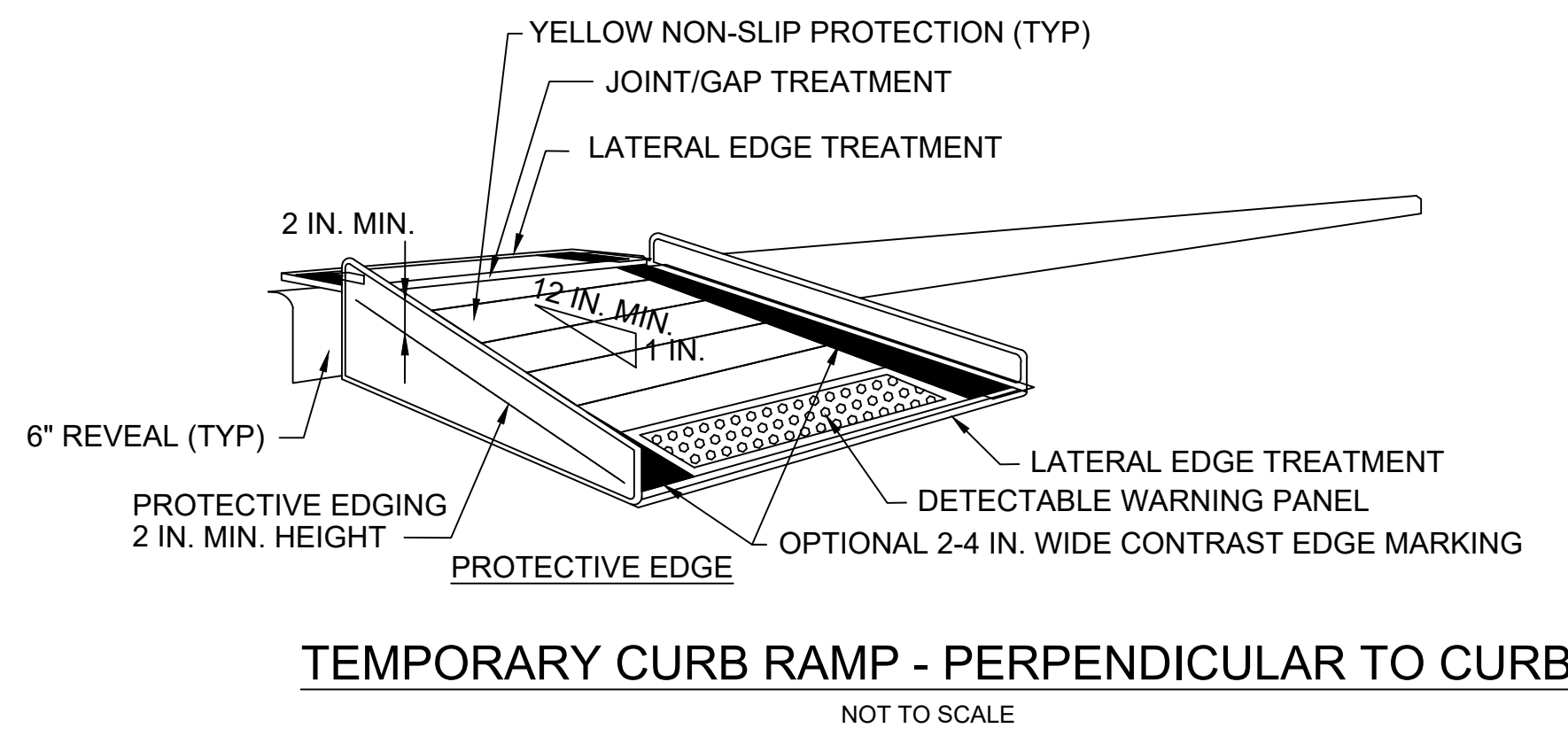
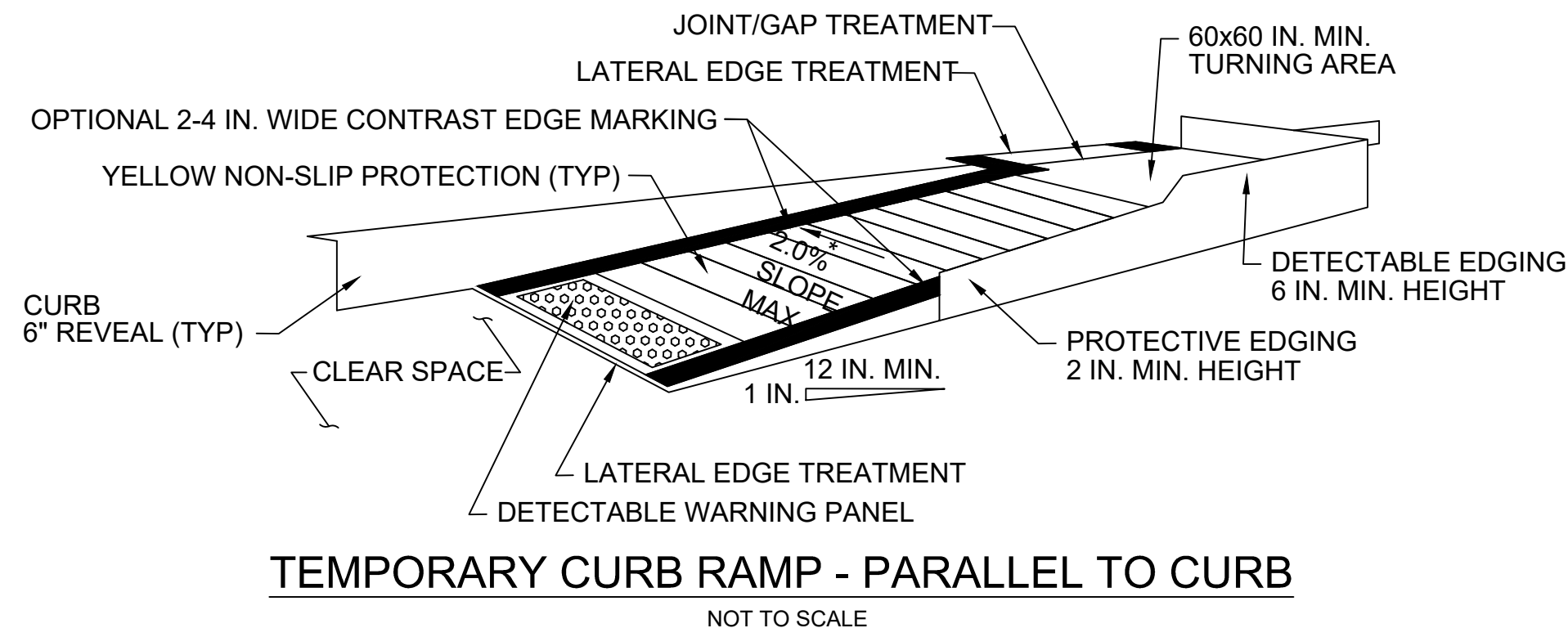


**TYPICAL APPLICATION - TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSURE**  
NOT TO SCALE

PROJECT: PROPOSED PEDESTRIAN IMPROVEMENTS GREAT ROAD AND CRESCENT STREET		
DESIGN SUBMISSION: CONCEPT DESIGN		
DRAWING TITLE: TTCP PLAN		
PREPARED FOR: TOWN OF STOW PLANNING DEPARTMENT 380 GREAT ROAD STOW, MASSACHUSETTS		
PREPARED BY: GREEN INTERNATIONAL AFFILIATES, INC. TRANSPORTATION   STRUCTURAL   WATER RESOURCES   CIVIL/SITE 239 LITTLETON ROAD, SUITE 3 WESTFORD, MA 01886 978.923.0400   www.greenintl.com		
SCALE: AS NOTED	DESIGNED BY: HG	SHEET NO. <b>7</b> OF <b>8</b>
DATE: 12/13/2021	DRAWN BY: HG	
PROJECT NO. 21082.	CHECKED BY: CT	

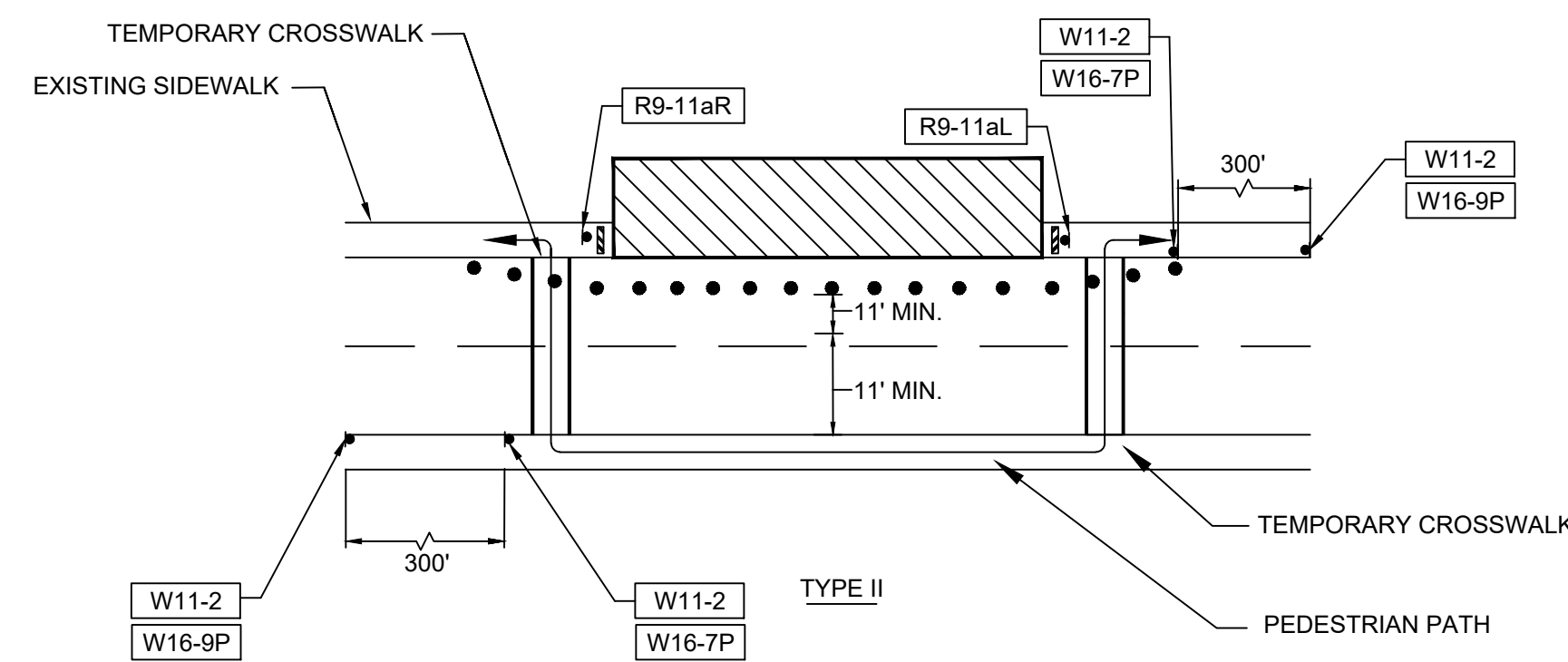
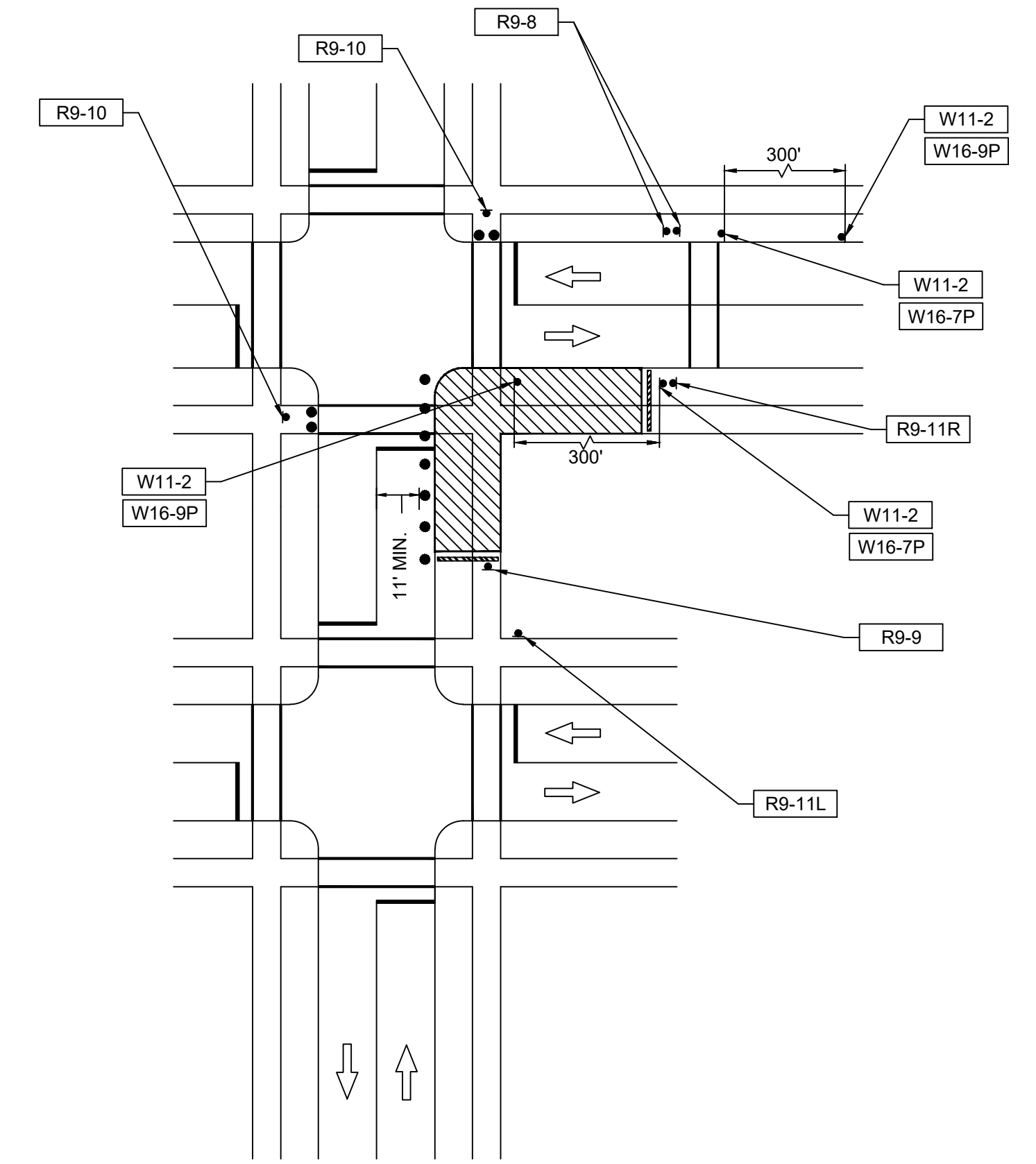
NO.	DATE	REVISIONS

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**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 SLOPE 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. PROTECTABLE 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 ABUTTING UP TO THE EXISTING SIDEWALK.
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.
10. TYPICAL DETAILS ON THIS SHEET MAY NOT BE NEEDED AND ARE PROVIDED FOR REFERENCE PURPOSES.
11. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



**NOTE:**

ADA COMPLIANT ACCESS TO BE MAINTAINED AT ALL TIMES, INCLUDING PEDESTRIAN GUIDANCE SYSTEMS AT WORK ZONES. ANY PEDESTRIAN DETOURS OR BYPASSES SHALL INCLUDE AN ADA COMPLIANT ROUTE WITH PROPER BARRICADES, RAILING, RAMPS, AND SIGNAGE, ETC.

**TYPICAL APPLICATION - SIDEWALK WORK MIDBLOCK WITH TEMPORARY PEDESTRIAN PATH**

NOT TO SCALE

PROJECT: PROPOSED PEDESTRIAN IMPROVEMENTS GREAT ROAD AND CRESCENT STREET	
DESIGN SUBMISSION: CONCEPT DESIGN	
DRAWING TITLE: TTCP PLAN	
PREPARED FOR: TOWN OF STOW PLANNING DEPARTMENT 380 GREAT ROAD STOW, MASSACHUSETTS	
PREPARED BY: <b>GREEN INTERNATIONAL AFFILIATES, INC.</b> TRANSPORTATION   STRUCTURAL   WATER RESOURCES   CIVIL/SITE 239 LITTLETON ROAD, SUITE 3 WESTFORD, MA 01886 978.923.0400   www.greenintl.com	
SCALE: AS NOTED	DESIGNED BY: HG
DATE: 12/13/2021	DRAWN BY: HG
PROJECT NO. 21082.	CHECKED BY: CT
SHEET NO. <b>8</b> OF <b>8</b>	

NO.	DATE	REVISIONS