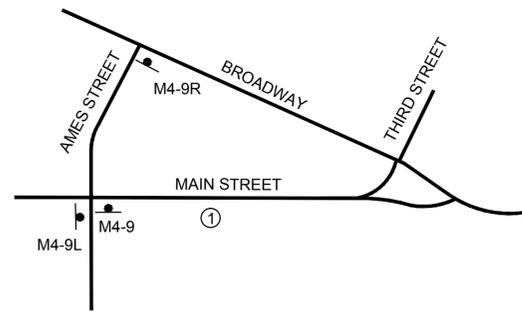
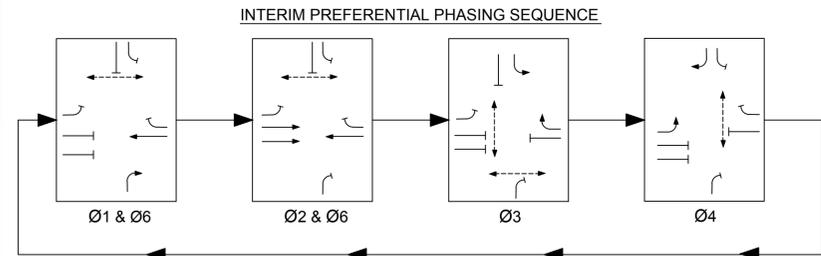


INTERIM SEQUENCE AND TIMING																		
STREET	DIRECTION	HOUSINGS	ø1			ø2			ø3			ø4			ø6			FLASH OPER.
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
BROADWAY	W.B.	A,B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
BROADWAY	W.B.	C	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	F
BROADWAY	E.B.	D	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
BROADWAY	E.B.	E	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
BROADWAY	E.B.	F1	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
THIRD STREET	S.B.	G,H	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
THIRD STREET	S.B.	J	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
THIRD STREET CONNECTOR	N.B.	K1,L1	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
PEDESTRIANS	N.B./S.B.	P1-P2	DW	OUT														
PEDESTRIANS	E.B./W.B.	P3-P4	DW	OUT														
PEDESTRIANS	N.B./S.B.	P5-P6	DW	OUT														
PEDESTRIANS	E.B./W.B.	P7-P8	DW	OUT														

TIMING IN SECONDS																		
MINIMUM INTERVAL			7			15				7				7			15	
VEHICLE EXTENSION			3			3				3				3			3	
MAXIMUM I	(M-F 0600-1000)		15			15				23				21			38	
MAXIMUM II	(ALL OTHER TIMES)		11			19				23				21			38	
MAXIMUM III																		
YELLOW AND RED CLEARANCE			3	1		3	1			3	1			3	1		3	1
WALK									5*				5*			7*		
PEDESTRIAN CLEARANCE									18	3	1		16	3	1	13	3	1
RECALL			MAX			MAX			MAX			MAX			MAX			MAX
MEMORY			-			-			-			-			-			-

* REST IN WALK NOTE: FLASHING OPERATION PER MUTCD SECTIONS 4D.28-4D.31.



DETOUR SIGNING - LOCATION PLAN

NOTE:

THIS PLAN ILLUSTRATES ONE POTENTIAL PLAN FOR SEQUENCING THE WORK. THE CITY MAY CONSIDER ALTERNATIVE SEQUENCING PROVIDED THAT THE CONTRACTOR SUBMITS COMPLETE REVISED SEQUENCE PLANS AND CORRESPONDING SCHEDULES AND TRAFFIC MANAGEMENT PLANS, SUBJECT TO CITY APPROVAL.

STAGE 3 - BUS STOPS & OPERATIONS

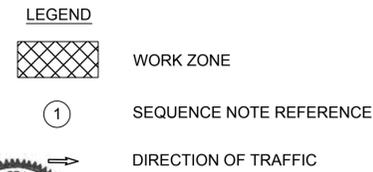
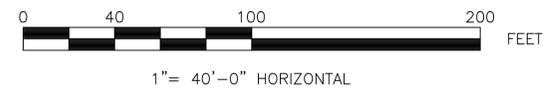
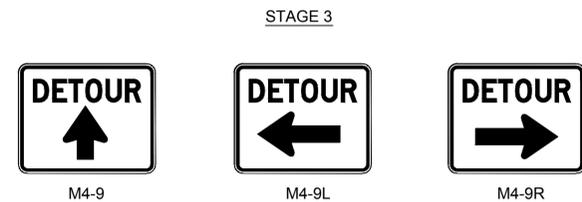
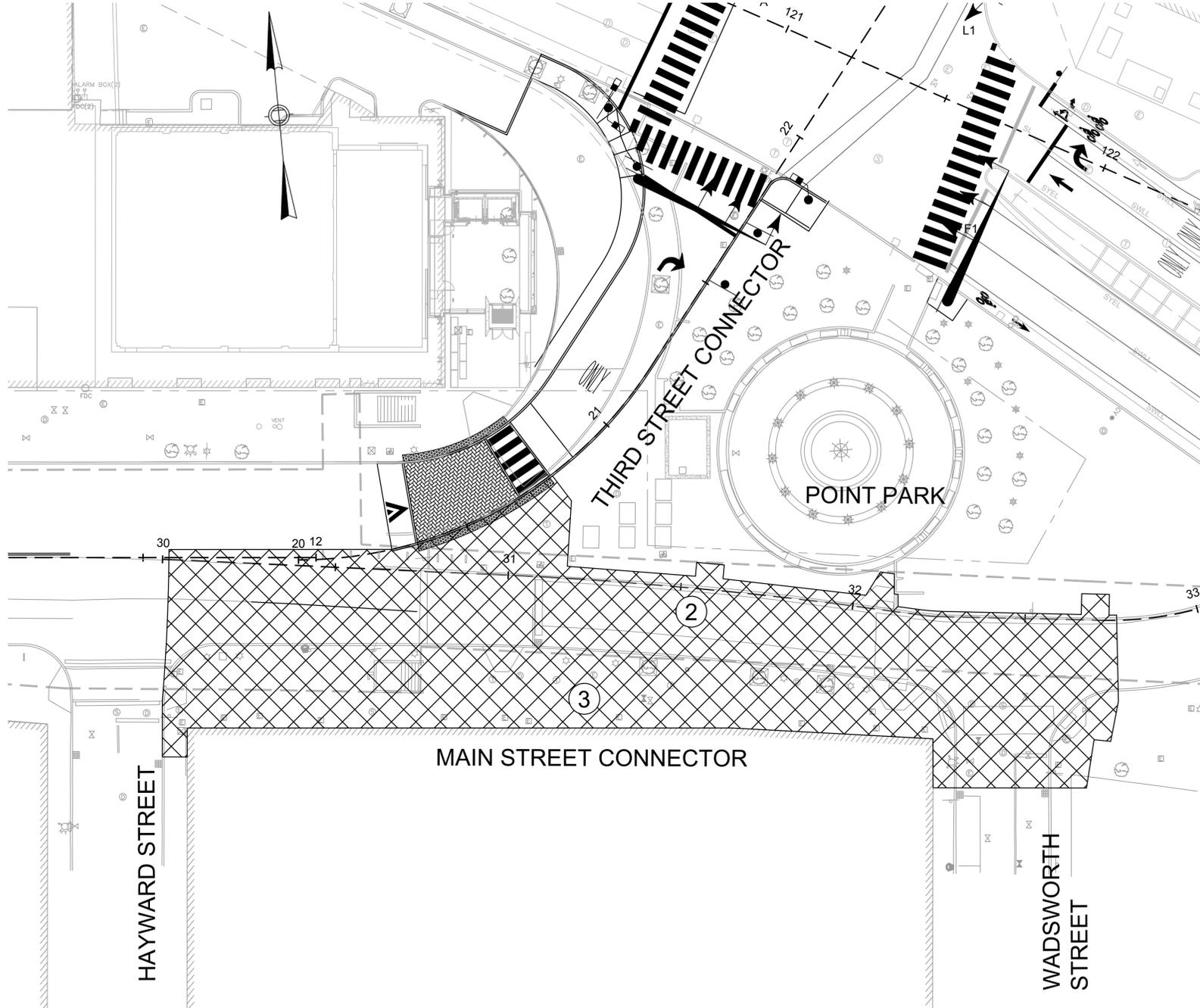
1. DETOUR ARRIVING BUSES FROM BROADWAY ONTO AMES STREET THEN MAIN STREET EASTBOUND TO RELOCATED BUS STOPS ON SOUTH SIDEWALK.
2. DETOUR DEPARTING BUSES FROM MAIN STREET EASTBOUND TO HAYWARD STREET TO AMHERST STREET TO AMES STREET. COORDINATE BUS DETOUR WITH M.I.T.

STAGE 3 - CONSTRUCT MAIN STREET CONNECTOR GENERAL NOTES:

1. CONTRACTOR SHALL MAINTAIN ABUTTER ACCESS AT ALL TIMES.
2. CONTRACTOR SHALL MAINTAIN AN ACCESSIBLE PEDESTRIAN ROUTE BETWEEN THE SOUTHERLY MAIN STREET SIDEWALK AND POINT PARK.

STAGE 3 - CONSTRUCT MAIN STREET CONNECTOR SEQUENCE NOTES:

- ① PROVIDE DETOUR SIGNING.
- ② REROUTE MAIN STREET EASTBOUND TRAFFIC TO AMES STREET & BROADWAY.
- ③ CONSTRUCT MAIN STREET CONNECTOR ROADWAY.
4. CONSTRUCT MAIN STREET SOUTHERLY SIDEWALK.
5. OPEN MAIN STREET CONNECTOR TO EASTBOUND TRAFFIC. CLOSE THIRD STREET CONNECTOR TO ALL TRAFFIC.



CONFORMED



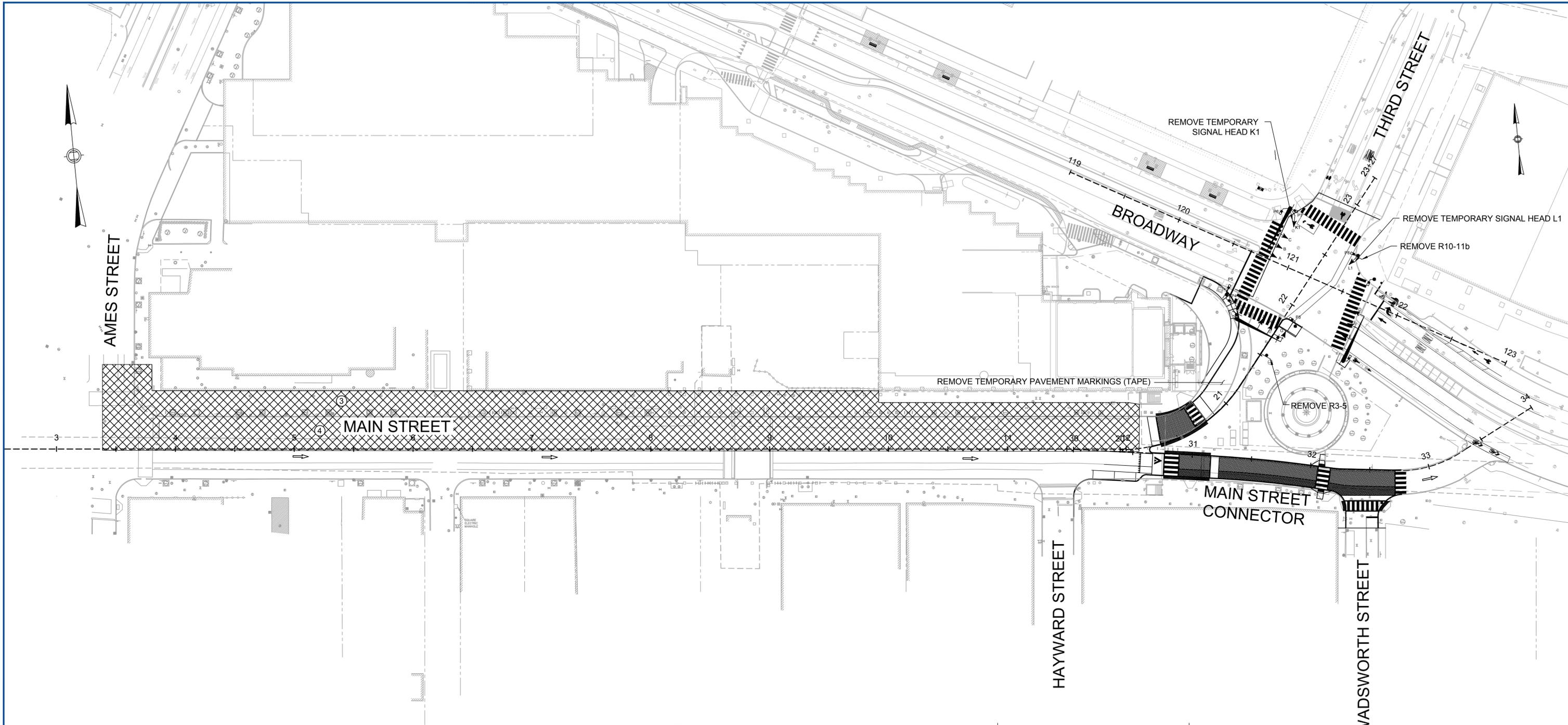
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Date	MAY 2014			
Job No.				
Designed by	PFB			
Drawn by	PFB			
Checked by	GMF	No.	Description	Date
Approved by	GMF		REVISIONS	



Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	SEQUENCE PLAN STAGE 3

Sheet	P-3
File No.	

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STAGE 4A - CONSTRUCT MAIN STREET NORTH SIDE
GENERAL NOTES:

1. CONTRACTOR SHALL MAINTAIN ABUTTER ACCESS AT ALL TIMES.
2. CONTRACTOR SHALL MAINTAIN ONE 12 FOOT-MINIMUM TRAVEL LANE, ONE 5 FOOT BICYCLE LANE IN THE EASTBOUND DIRECTION. SEE WORK ZONE DETAIL.
3. CONTRACTOR SHALL PROVIDE "BIKE MAY USE FULL LANE" SIGNS AT LIMITS OF DAILY WORK ZONE SETUP.
4. CONTRACTOR SHALL LIMIT PARKING AND LOADING ZONE RESTRICTIONS TO THE IMMEDIATE WORK AREA.
5. SEE SECTION 825 OF THE SPECIFICATIONS.

STAGE 4A - CONSTRUCT MAIN STREET NORTH SIDE
SEQUENCE NOTES:

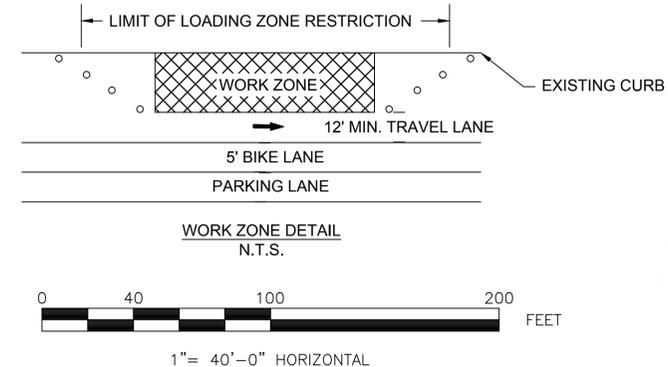
1. CLOSE THIRD STREET CONNECTOR TO ALL TRAFFIC.
2. REMOVE TEMPORARY TRAFFIC SIGNAL, PAVEMENT MARKINGS AT BROADWAY/THIRD STREET INTERSECTION. ACTIVATE PROPOSED TIMING. SEE TRAFFIC SIGNAL PLAN.
- ③ CONSTRUCT MAIN STREET NORTH SIDEWALK.
- ④ CONSTRUCT MAIN STREET NORTH ROADWAY.

NOTE:

THIS PLAN ILLUSTRATES ONE POTENTIAL PLAN FOR SEQUENCING THE WORK. THE CITY MAY CONSIDER ALTERNATIVE SEQUENCING PROVIDED THAT THE CONTRACTOR SUBMITS COMPLETE REVISED SEQUENCE PLANS AND CORRESPONDING SCHEDULES AND TRAFFIC MANAGEMENT PLANS, SUBJECT TO CITY APPROVAL.

STAGE 4A - BUS STOPS & OPERATIONS

1. DETOUR ARRIVING BUSES FROM BROADWAY ONTO AMES STREET SOUTHBOUND THEN MAIN STREET EASTBOUND TO RELOCATED BUS STOPS ON SOUTH SIDEWALK.
2. DETOUR DEPARTING BUSES FROM MAIN STREET EASTBOUND TO WADSWORTH STREET TO AMHERST STREET TO AMES STREET.



LEGEND

- WORK ZONE
- ① SEQUENCE NOTE REFERENCE
- ➔ DIRECTION OF TRAFFIC



CONFORMED



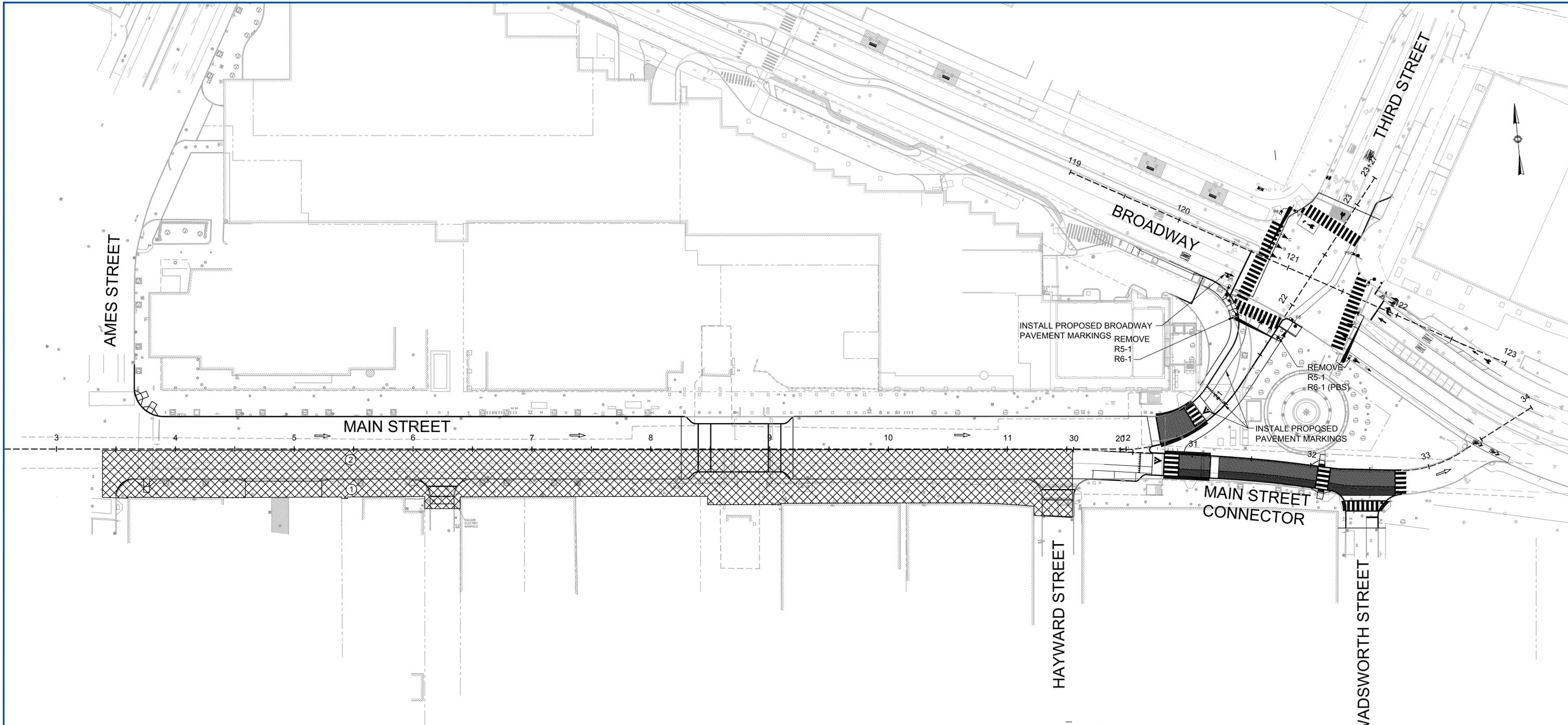
HDR ENGINEERING, INC.
695 ATLANTIC AVENUE, 2FL
BOSTON, MASSACHUSETTS 02111-2626
(617) 357-7700



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Date	MAY 2014			
Job No.				
Designed by	PFB			
Drawn by	PFB			
Checked by	GMF	No.	Description	Date
Approved by	GMF		REVISIONS	



Client	CITY OF CAMBRIDGE, MA	Sheet	P-4
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	SEQUENCE PLAN STAGE 4A		



STAGE 4B - CONSTRUCT MAIN STREET SOUTH SIDE
GENERAL NOTES:

- CONTRACTOR SHALL MAINTAIN ABUTTER ACCESS AT ALL TIMES.
- CONTRACTOR SHALL MAINTAIN ONE 12 FOOT-MINIMUM TRAVEL LANE, ONE 5 FOOT BICYCLE LANE IN THE EASTBOUND DIRECTION. SEE WORK ZONE DETAIL.
- CONTRACTOR SHALL PROVIDED "BIKE MAY USE FULL LANE" SIGNS AT LIMITS OF DAILY WORK ZONE SETUP.
- CONTRACTOR SHALL LIMIT PARKING AND LOADING ZONE RESTRICTIONS TO THE IMMEDIATE WORK AREA.
- SEE SECTION 825 OF THE SPECIFICATIONS.

STAGE 4B - CONSTRUCT MAIN STREET SOUTH SIDE
SEQUENCE NOTES:

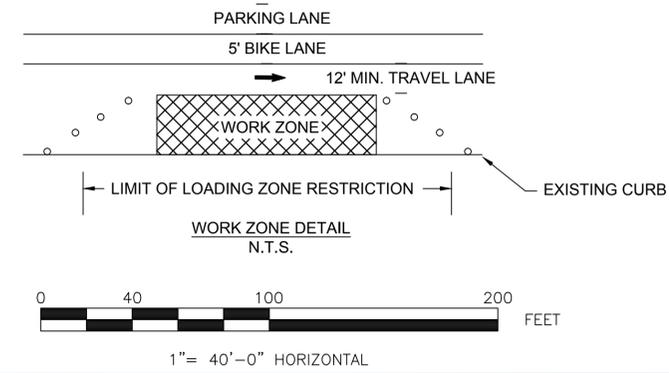
- CONSTRUCT MAIN STREET SOUTH SIDEWALK.
- CONSTRUCT MAIN STREET SOUTH ROADWAY.
- INSTALL BROADWAY PAVEMENT MARKINGS. INSTALL ALL REMAINING PROPOSED TRAFFIC SIGNAL EQUIPMENT. SEE TRAFFIC SIGNAL PLANS.
- OPEN THIRD STREET CONNECTOR TO WESTBOUND TRAFFIC.

NOTE:

THIS PLAN ILLUSTRATES ONE POTENTIAL PLAN FOR SEQUENCING THE WORK. THE CITY MAY CONSIDER ALTERNATIVE SEQUENCING PROVIDED THAT THE CONTRACTOR SUBMITS COMPLETE REVISED SEQUENCE PLANS AND CORRESPONDING SCHEDULES AND TRAFFIC MANAGEMENT PLANS, SUBJECT TO CITY APPROVAL.

STAGE 4B - BUS STOPS & OPERATIONS

- BUSES USE THE THIRD STREET CONNECTOR TO ACCESS MAIN STREET WESTBOUND. BUS STOPS ALONG THE NORTH SIDEWALK WOULD BE RELOCATED AS THE WORK ZONE IS MOVED ALONG MAIN STREET. SEE SECTION 825 OF THE SPECIFICATIONS.



LEGEND

- WORK ZONE
- SEQUENCE NOTE REFERENCE
- DIRECTION OF TRAFFIC



CONFORMED



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Client	CITY OF CAMBRIDGE, MA	Sheet	P-5
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	SEQUENCE PLAN STAGE 4B		

TRAFFIC MANAGEMENT NOTES

GENERAL:

- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), ITS REVISIONS, AND THE CITY OF CAMBRIDGE STANDARDS.
- THE TRAFFIC MANAGEMENT PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS IF APPLICABLE SHALL BE IN ACCORDANCE WITH THE MUTCD AND AS APPROVED OR REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT ALTERNATE TRAFFIC CONTROL PLANS FOR APPROVAL WHEN NECESSARY.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- ALL TEMPORARY SIGNAGE AND TRAFFIC CONTROL DEVICES SHALL BE PROPERLY SECURED.
- 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.
- SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM, MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
- CONTRACTOR SHALL MAINTAIN ABUTTER ACCESS AT ALL TIMES EXCEPT FOR VERY SHORT PERIODS APPROVED BY THE ENGINEER. EACH ABUTTER SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS.
- ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNAGE AND OTHER TRAFFIC CONTROL DEVICES, GRADING, AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR, AND EMERGENCY TRAFFIC THROUGH WORK AREAS BOTH DURING AND AFTER WORK HOURS.
- ALL TRAVEL WAYS SHALL BE PROTECTED FROM DUST AND CONSTRUCTION DEBRIS AT ALL TIMES.
- TRAFFIC CONTROL INCLUDES NECESSARY STREET SWEEPING AND SNOW REMOVAL WITHIN THE WORK ZONE.
- THE FIRST THREE PLASTIC DRUMS OF A TAPER MAY BE MOUNTED WITH TYPE A LIGHTS.
- ADVISORY SPEED LIMITS SHALL BE POSTED AS DIRECTED BY THE CITY.
- ALL DRUMS NOT OTHERWISE SPECIFIED SHALL BE EQUIPPED WITH TYPE "C" - STEADY BURN WARNING LIGHTS.
- MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- VEHICULAR AND PEDESTRIAN SHALL BE ALLOWED ACCESS TO PRIVATE PROPERTY AT ALL TIMES DURING CONSTRUCTION.
- CONSTRUCTION WORK ZONE SHALL BE STAGED AS TO ALLOW FOR CONTINUOUS ACCESS AT DRIVE ENTRANCES AND TO MINIMIZE DETOURS TO CAMBRIDGE ROADS.
- SAFE PEDESTRIAN WALKWAYS SHALL BE PROVIDED AND ACCESS TO LOCAL BUSINESSES AND RESIDENCES. PUBLIC WALKWAYS SHALL REMAIN OPEN AND ACCESSIBLE ACCORDANCE WITH AAB REGULATIONS UNLESS OTHERWISE DIRECTED BY THE CITY.
- ALL EXISTING PEDESTRIAN CROSSING SHALL BE MAINTAINED. ALTERNATIVE CROSSING SHALL BE PROVIDED WHEN EXISTING CROSSINGS ARE DISRUPTED BY CONSTRUCTION ACTIVITY. TEMPORARY LOCATIONS, SAFETY SIGNAGE, AND SAFETY CONTROLS SHALL BE APPROVED BY THE CITY PRIOR TO IMPLEMENTATION.
- ROADWAY FLAGGERS SHALL NOT BE USED ON THIS PROJECT. POLICE OFFICER DETAILS SHALL BE USED ACCORDINGLY IN CONFORMANCE WITH THE MUTCD. POLICE DETAILS SHALL BE SCHEDULED AND COORDINATED BY THE CONTRACTOR TO MAINTAIN THE SAFETY OF PEDESTRIAN VEHICULAR TRAFFIC.

- DETOURS SHALL ONLY BE ALLOWED AS INDICATED OR AS APPROVED BY THE CITY OF CAMBRIDGE TRAFFIC AND PARKING DEPARTMENT.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
- NIGHT WORK OPERATIONS SHALL INCLUDE PROPERLY LIT & PLACED LUMINAIRES MEETING THE REQUIREMENTS OF THE MUTCD AND THE CITY OF CAMBRIDGE.
- FLASHING ARROW PANEL SHALL BE SET IN "ARROW MODE" WHEN USED FOR ACTUAL LANE OR PARTIAL LANE CLOSURES ONLY. FOR THE SHOULDER CLOSURES, BULBS TO BE ILLUMINATED IN A NON-DIRECTIONAL CAUTION CONFIGURATION TO AVOID UNNECESSARY LANE SHIFTS.
- FLASHING ARROW BOARDS SHALL BE UTILIZED FOR LANE SHIFTS WHERE THE EXISTING SPEED IS 35 MPH OR GREATER.
- ALL WORK ZONE AREAS SHOULD BE PROTECTED APPROPRIATELY. ALL EXPOSED TRENCHES SHOULD BE STEEL PLATED OR BACK FILLED WHEN NO WORK IS UNDERWAY/PERFORMED AND APPROPRIATELY SIGNED.
- ADDITIONAL TRAFFIC CONTROL DEVICES SHALL BE PROVIDED UPON THE CITY'S REQUEST.
- ALL SIGN LOCATIONS ON DETAILS ARE SHOWN SCHEMATICALLY. FINAL LOCATIONS SHALL BE DETERMINED BASED ON ACTUAL FIELD CONDITIONS AND CITY APPROVAL.
- ALL TEMPORARY SETUPS SHALL BE ADA/AAB COMPLIANT AND SHALL ACCOMMODATE PEDESTRIAN AND BICYCLISTS.

GRADE DIFFERENCES:

- WHERE THERE IS A LONGITUDINAL DIFFERENCE IN ELEVATION BETWEEN THE EXISTING PAVEMENT AND COLD PLANED OR NEW PAVEMENT, THE CONTRACTOR SHALL PATCH A TEMPORARY HOT MIX ASPHALT WEDGE WITH A 12:1 (OR FLATTER) SLOPE FOR SMOOTH TRANSITION. SEE TRAFFIC MANAGEMENT PLAN 2.
- GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF REFLECTORIZED DRUMS.
- EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF GRAVEL COMPACTED TO A 4:1 SLOPE.
- A MINIMUM SLOPE OF 4:1 MUST BE MAINTAINED AFTER WORKING HOURS DURING SUBBASE AND BASE COURSE INSTALLATION ALONG THE EDGE OF THE TRAVELWAY (SEE DETAIL, THIS SHEET). A MINIMUM SLOPE OF 8:1 MUST BE MAINTAINED ON ALL ABUTTED ACCESS DRIVES AND A MINIMUM SLOPE OF 12:1 MUST BE MAINTAINED ON ALL SIDEWALKS.

CONSTRUCTION SIGNING:

- THE FIRST CONSTRUCTION SIGN IN A SERIES ON EACH APPROACH TO THE PROJECT SHALL BE FLUORESCENT ORANGE, HIGH PERFORMANCE (OR DENSITY) SHEETING. FLAGS MAY BE MOUNTED WITH THE FIRST SIGN.
- ALL CONSTRUCTION SIGNS SHALL BE BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND UNLESS OTHERWISE NOTED AND SHALL CONFORM TO THE MUTCD.
- EXISTING GUIDE SIGNS SHALL BE TEMPORARILY RESET AS REQUIRED BY THE ENGINEER.
- ALL SIGNS, INCLUDING EXISTING, THAT ARE NOT REPRESENTATIVE OF ACTUAL WORK CONDITIONS SHALL BE EITHER COVERED OR REMOVED WHEN NOT APPLICABLE.
- IF USED, W20-4 AND W20-5 SIGNS SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH WORK DAY.
- USE W20-8 SIGNS ONLY WHILE POLICE ARE DIRECTING TRAFFIC. THEY SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH WORK DAY.
- SIGNS MUST BE PROFESSIONALLY LETTERED. NO HANDWRITTEN/PAINTED SIGNS SHALL BE ALLOWED.
- WHERE LANE SHIFTS, WORK ZONES, OR OTHER CONSTRUCTION ACTIVITIES INFRINGE UPON ON-STREET PARKING AREAS, THE CONTRACTOR SHALL INSTALL TEMPORARY 'NO PARKING/TOW AWAY ZONE' SIGNS (R8-3/R7-201a) AS APPROPRIATE AT LEAST 48 HOURS IN ADVANCE (LOG POSTING DATE AND TIME). THE R8-3/R7-201a SIGNS SHALL BE TAKEN

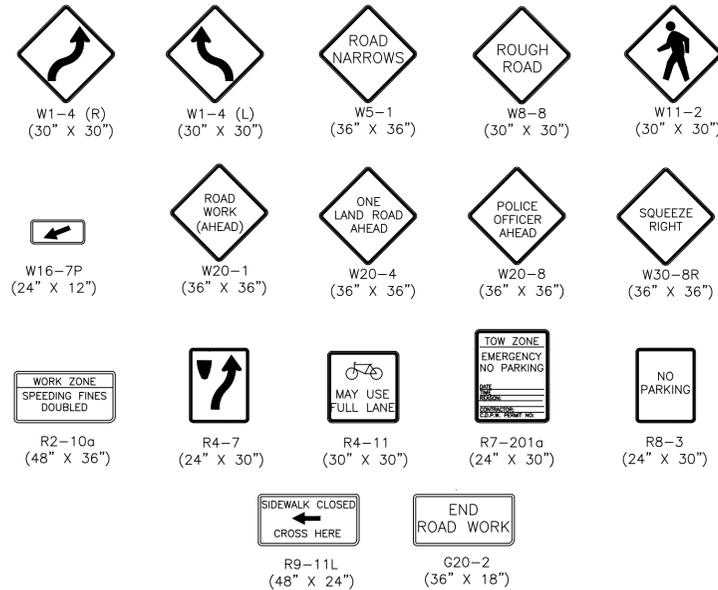
DOWN OR COVERED AT THE CLOSE OF EACH DAY UNLESS PARKING RESTRICTIONS ARE PERMITTED TO REMAIN OVERNIGHT AS REQUIRED BY THE ENGINEER.

- IF USED, PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL CONFORM TO THE LATEST MUTCD AS AMENDED AND SHOULD BE PLACED ON THE SHOULDER OF THE ROADWAY OR IF PRACTICAL SET WELL AWAY FROM THE TRAVEL LANE. MESSAGE SIGNS SHOULD BE PROTECTED WITH RETROREFLECTIVE TEMPORARY TRAFFIC CONTROL DEVICES WHEN PLACED WITHIN THE AVAILABLE CLEAR ZONE OR ELSE SHIELDED WITH A BARRIER OR CRASH CUSHION. THE LOCATION AND USE OF THE PCMS SHALL BE DETERMINED DURING THE PRE-CONSTRUCTION MEETING OR AS DIRECTED BY THE ENGINEER IN THE FIELD.

PAVEMENT MARKINGS:

- PAVEMENT MARKINGS WHICH ARE NO LONGER APPLICABLE SHALL BE REMOVED. APPLY TEMPORARY MARKINGS WHERE SHOWN ON THE TRAFFIC MANAGEMENT PLANS AS AS REQUIRED BY THE ENGINEER.
- ON PROJECTS WHERE PAVEMENT OVERLAY IS NOT DESIGNED, EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROLS SHOULD BE COVERED TEMPORARILY WITH BLACKOUT TAPE, AS REQUIRED BY THE ENGINEER. FOR THE FULL DURATION OF THE PHASE IN PROGRESS, TEMPORARY PAINTED OR REMOVABLE TAPE MARKINGS SHALL BE USED AS NECESSARY FOR ALL PHASES OF CONSTRUCTION.

SIGN LEGEND



LEGEND

- REFLECTORIZED PLASTIC DRUM
- POLICE DETAIL
- TYPE III BARRICADE
- FLASHING ARROW PANEL
- FLASHING ARROW PANEL
- PORTABLE CHANGEABLE MESSAGE SIGN
- LUMINARE
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN



PORTABLE CHANGEABLE MESSAGE SIGN LEGEND

THE SUGGESTED MESSAGE 2 WEEKS IN ADVANCE:

- ① AVENUE ROAD WORK
- ② BEGINS xx/xx/xx

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	$L = WS$

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

SOURCE: TABLE 6C-4 2003 MUTCD

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	100 FT MAXIMUM
DOWNSTREAM TAPER	100 FT PER LANE

SOURCE: TABLE 6C-3 2003 MUTCD

STOPPING SIGN DISTANCE AS A FUNCTION OF SPEED

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 2003 MUTCD

SUGGESTED WORK ZONE WARNING SIGN SPACING

Road Type	Distance Between Signs**		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350	350	350
MOST OTHER ROADWAYS*	500	500	500
FREEWAYS AND EXPRESSWAYS*	1,000	1,500	2,640

* SPEED CATEGORY TO BE DETERMINED BY MASSHIGHWAY.

** DISTANCES ARE SHOWN IN FEET. 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.)

R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS. FOR R2-10a, W20-1 AND G20-2 SERIES SIGNS SEE ADVANCE WARNING SIGN SETUP.

SOURCE: TABLE 5C-1 2003 MUTCD

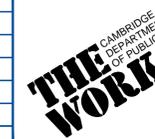
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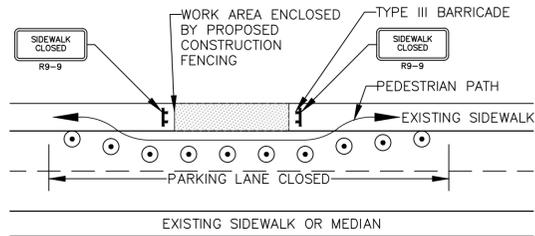
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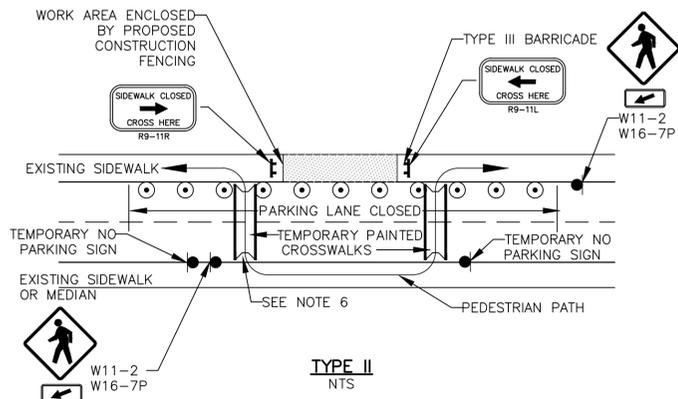
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Client	CITY OF CAMBRIDGE, MA	Sheet	TMP-1
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	TRAFFIC MANAGEMENT PLAN - 1		



TYPE I
NTS



TYPE II
NTS

NOTES:

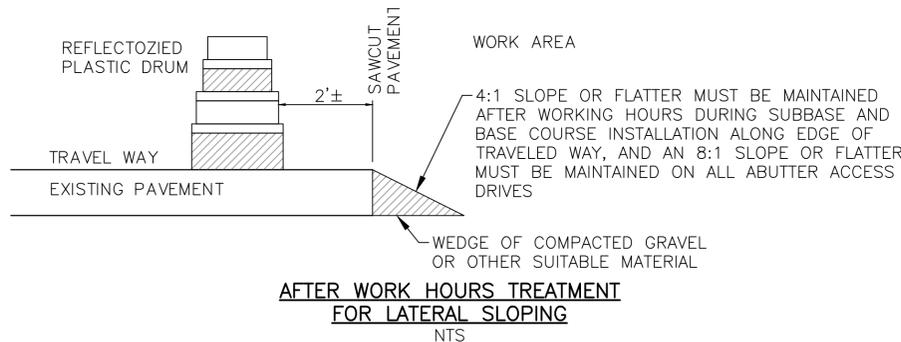
1. ADDITIONAL ADVANCE WARNING MAY BE REQUIRED BY THE CITY.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS DETAILED ELSEWHERE.
3. STREET LIGHTING SHALL BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHALL BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER.
5. BYPASS IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
6. CONTRACTOR SHALL PROVIDE TEMPORARY ASPHALT PEDESTRIAN RAMPS FOR THE TRANSITION BETWEEN THE SIDEWALK AND THE ROADWAY. THESE RAMPS SHALL BE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT BUT SHALL NOT INTRUDE INTO TRAVEL WAY AND ARE TO BE APPROVED BY THE ENGINEER.
7. EXISTING WHEELCHAIR RAMPS SHALL BE CONSIDERED WHEN LOCATING TEMPORARY PAINTED CROSSWALKS.
8. DIRECTION OF PEDESTRIAN TRAVEL.

PEDESTRIAN BYPASS
NTS

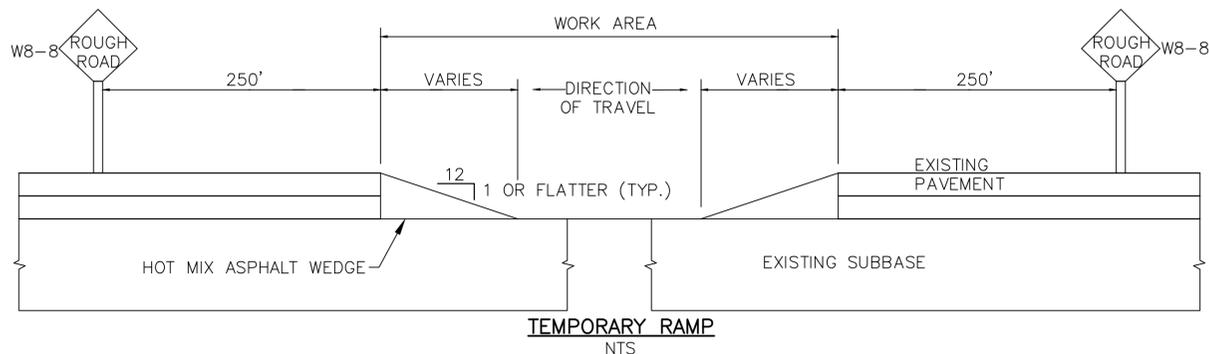
GUIDELINE FOR CHANNELIZATION

LENGTH TAPER (FT.)	20 MPH			35 MPH			45 MPH		
	TAPER	BUFFER AREA	WORK AREA	TAPER	BUFFER AREA	WORK AREA	TAPER	BUFFER AREA	WORK AREA
100	5	3	ONE DRUM EVERY 20' (MAX.)	5	3	ONE DRUM EVERY 35' (MAX.)	5	3	ONE DRUM EVERY 45' (MAX.)
150	8	4		6	3		6	3	
200	10	5		7	4		6	4	
250	12	6		9	5		7	4	
300	15	7		10	5		8	4	
350	18	9		11	6		9	5	
400	20	10		13	7		10	6	
450	22	11		14	7		11	6	
500	25	12		16	8		13	7	
550	27	13		17	8		14	7	
600	30	15	19	10	15	9			
650	32	16	20	10	16	9			

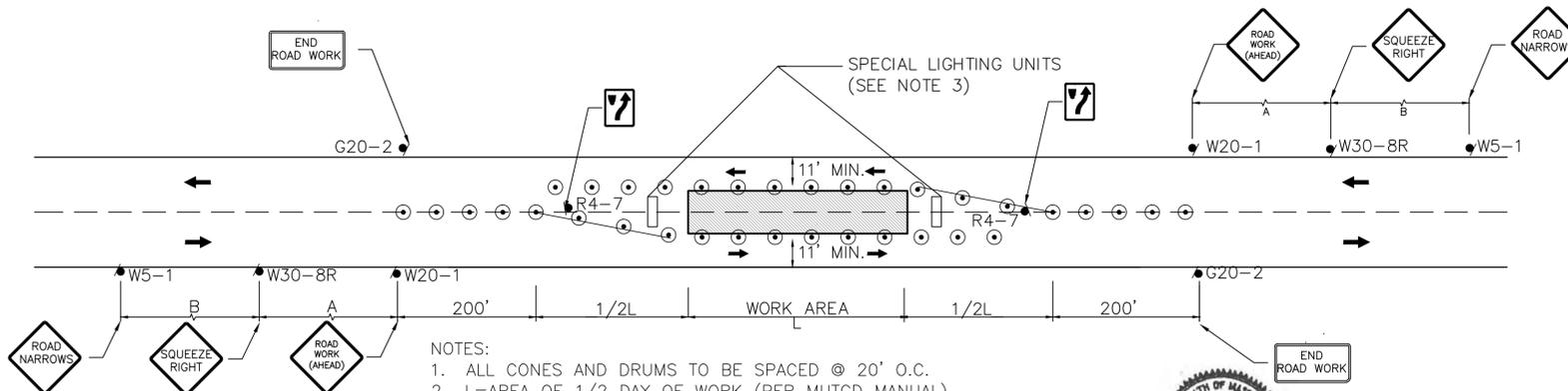
NOTE: MINIMUM SPACING OF DRUMS MAY VARY AND SHALL BE DETERMINED IN THE FIELD



AFTER WORK HOURS TREATMENT FOR LATERAL SLOPING
NTS



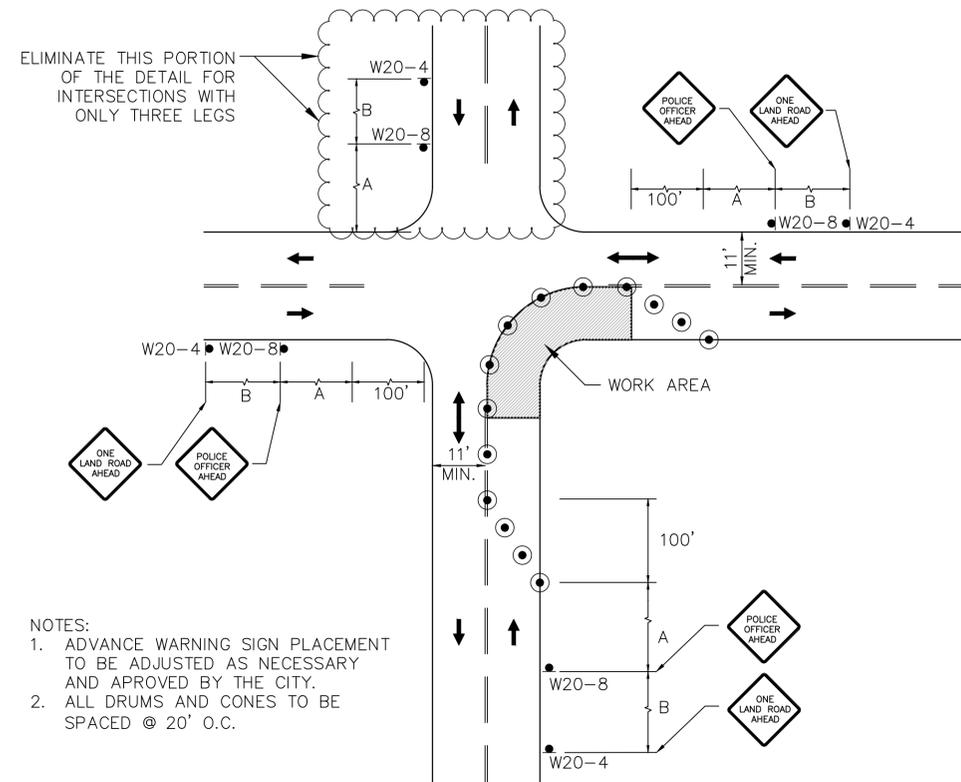
TEMPORARY RAMP
NTS



NOTES:

1. ALL CONES AND DRUMS TO BE SPACED @ 20' O.C.
2. L=AREA OF 1/2 DAY OF WORK (PER MUTCD MANUAL)
3. SPECIAL LIGHTING UNITS (ARROW BOARDS) TO BE ADDED ON BOTH SIDES OF WORKZONE WHERE SPEED LIMIT MEETS OR EXCEEDS 35 M.P.H.

TWO LANE ROAD CENTER OF ROAD CLOSURE
NTS



NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY AND APPROVED BY THE CITY.
2. ALL DRUMS AND CONES TO BE SPACED @ 20' O.C.

SINGLE LANE APPROACH ONE QUADRANT CLOSURE
NTS



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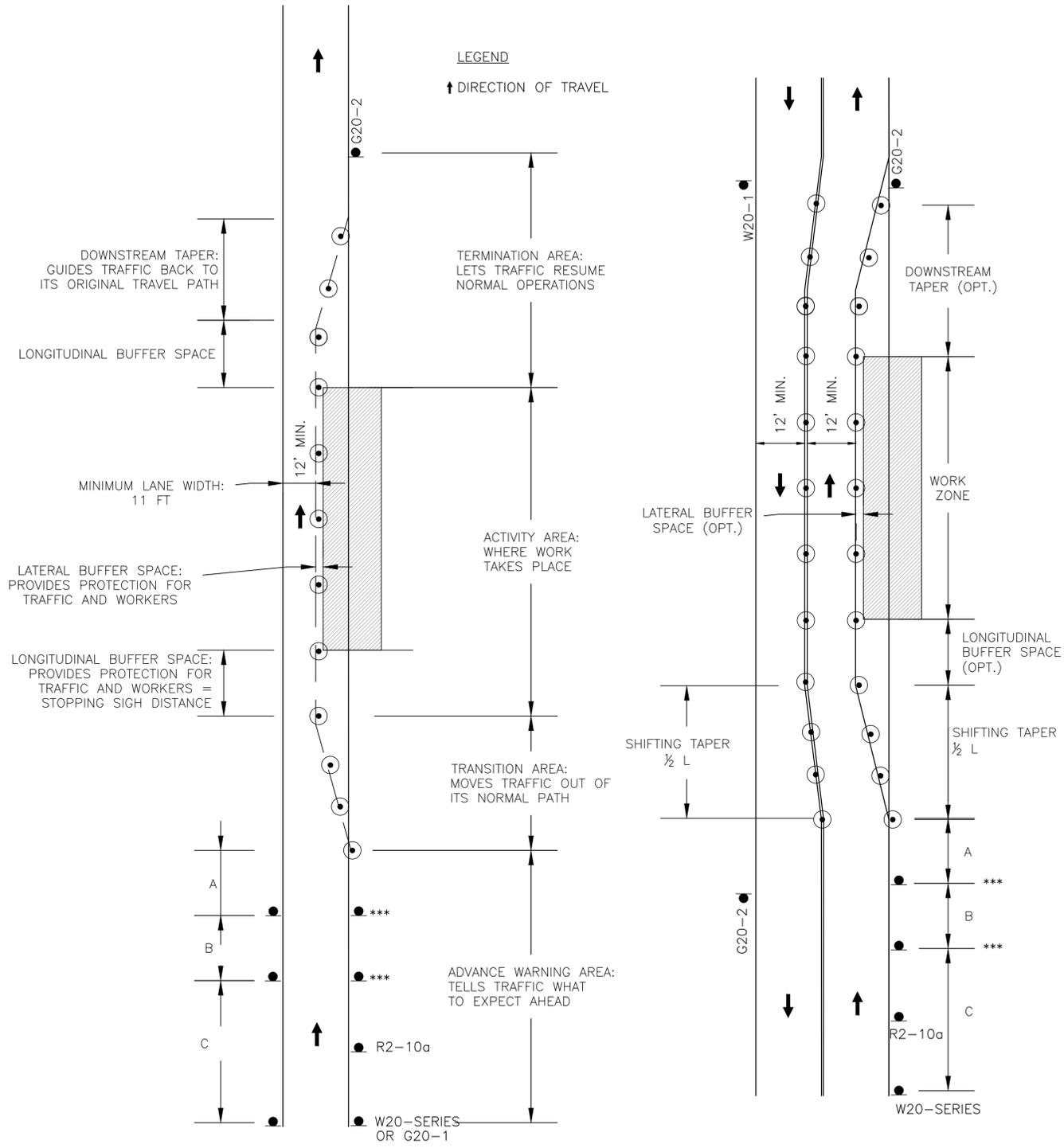
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Date	MAY 2014		
Job No.			
Designed by	YM		
Drawn by	YM		
Checked by	PFB	No.	Description
Approved by	GMF		REVISIONS



Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	TRAFFIC MANAGEMENT PLAN - 2

Sheet	TMP-2
File No.	

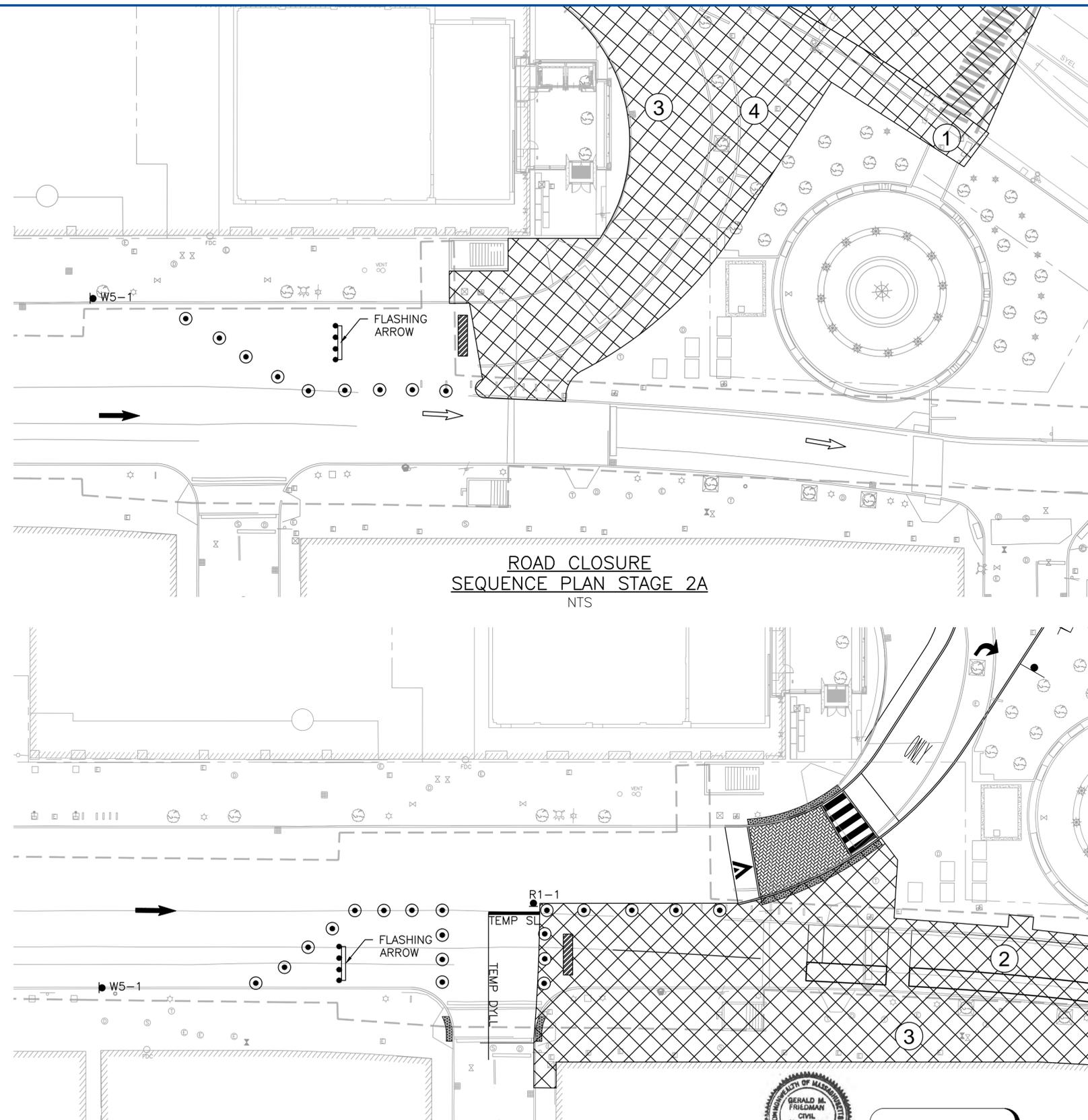
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PARTIAL CLOSURE ONE LAND ROAD
NTS

PARTIAL CLOSURE TWO WAY STREET
NTS

*** 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. REFER TO DETAILS SHOWN ON TRAFFIC MANAGEMENT PLANS I AND II AND TO THE ADVANCE WARNING PLAN ON TRAFFIC MANAGEMENT PLAN III.



ROAD CLOSURE SEQUENCE PLAN STAGE 2A
NTS

ROAD CLOSURE SEQUENCE PLAN STAGE 3
NTS



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KLOPFER MARTIN DESIGN GROUP

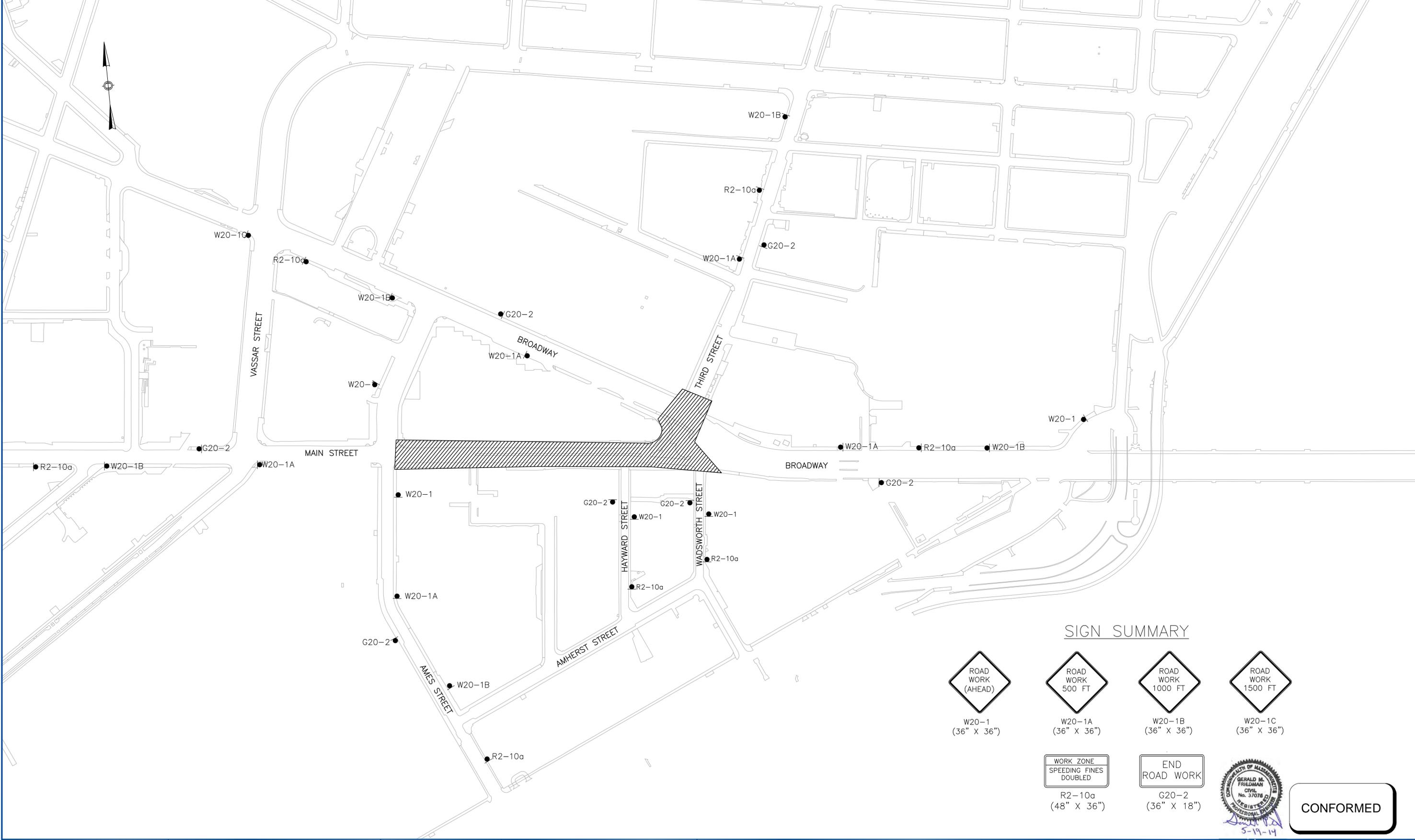
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Date	MAY 2014		
Job No.			
Designed by	YM		
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Checked by	PFB	No.	Description
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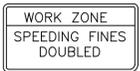


Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	TRAFFIC MANGEMENT PLAN - 3

Sheet	TMP-3
File No.	



SIGN SUMMARY

 W20-1 (36" X 36")	 W20-1A (36" X 36")	 W20-1B (36" X 36")	 W20-1C (36" X 36")
	 R2-10a (48" X 36")	 G20-2 (36" X 18")	



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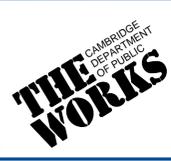
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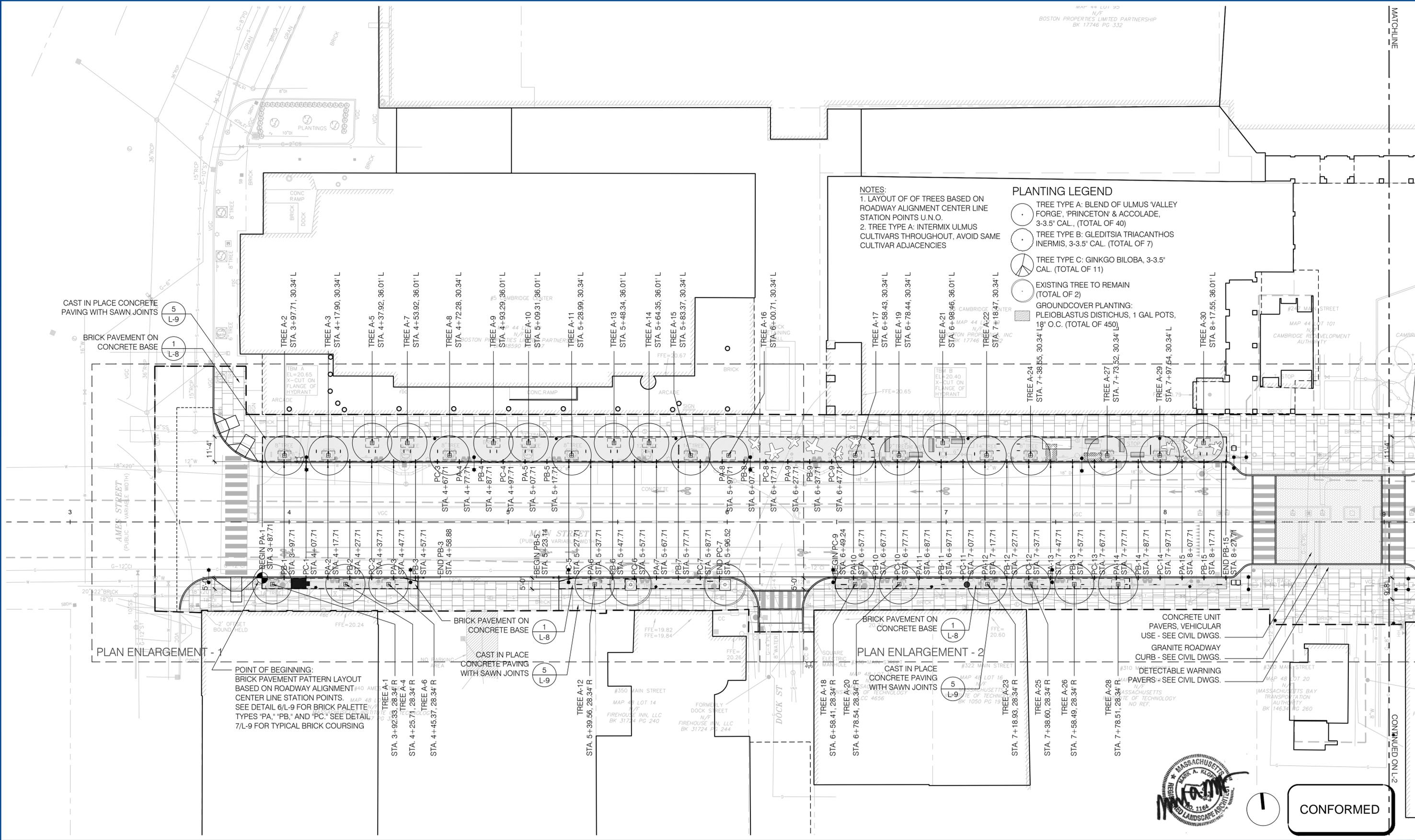
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Scale	AS NOTED			
Date	MAY 2014			
Job No.				
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Drawn by	YM			
Checked by	PFB	No.	Description	Date
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Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	TRAFFIC MANAGEMENT PLAN - 4

Sheet	TMP-4
File No.	



NOTES:
1. LAYOUT OF OF TREES BASED ON ROADWAY ALIGNMENT CENTER LINE STATION POINTS U.N.O.
2. TREE TYPE A: INTERMIX ULMUS CULTIVARS THROUGHOUT, AVOID SAME CULTIVAR ADJACENCIES

PLANTING LEGEND
 TREE TYPE A: BLEND OF ULMUS VALLEY FORGE, 'PRINCETON' & ACCOLADE, 3-3.5" CAL., (TOTAL OF 40)
 TREE TYPE B: GLEDITSIA TRIACANTHOS INERMIS, 3-3.5" CAL. (TOTAL OF 7)
 TREE TYPE C: GINKGO BILOBA, 3-3.5" CAL. (TOTAL OF 11)
 EXISTING TREE TO REMAIN (TOTAL OF 2)
 GROUND COVER PLANTING: PLEIOBLASTUS DISTICHUS, 1 GAL POTS, 16" O.C. (TOTAL OF 450)

POINT OF BEGINNING: BRICK PAVEMENT PATTERN LAYOUT BASED ON ROADWAY ALIGNMENT CENTER LINE STATION POINTS. SEE DETAIL 6/L-9 FOR BRICK PALETTE TYPES "PA," "PB," AND "PC." SEE DETAIL 7/L-9 FOR TYPICAL BRICK COURSING

CAST IN PLACE CONCRETE PAVING WITH SAWN JOINTS

CAST IN PLACE CONCRETE PAVING WITH SAWN JOINTS



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Date	MAY 2014
Job No.	KMDG 1009
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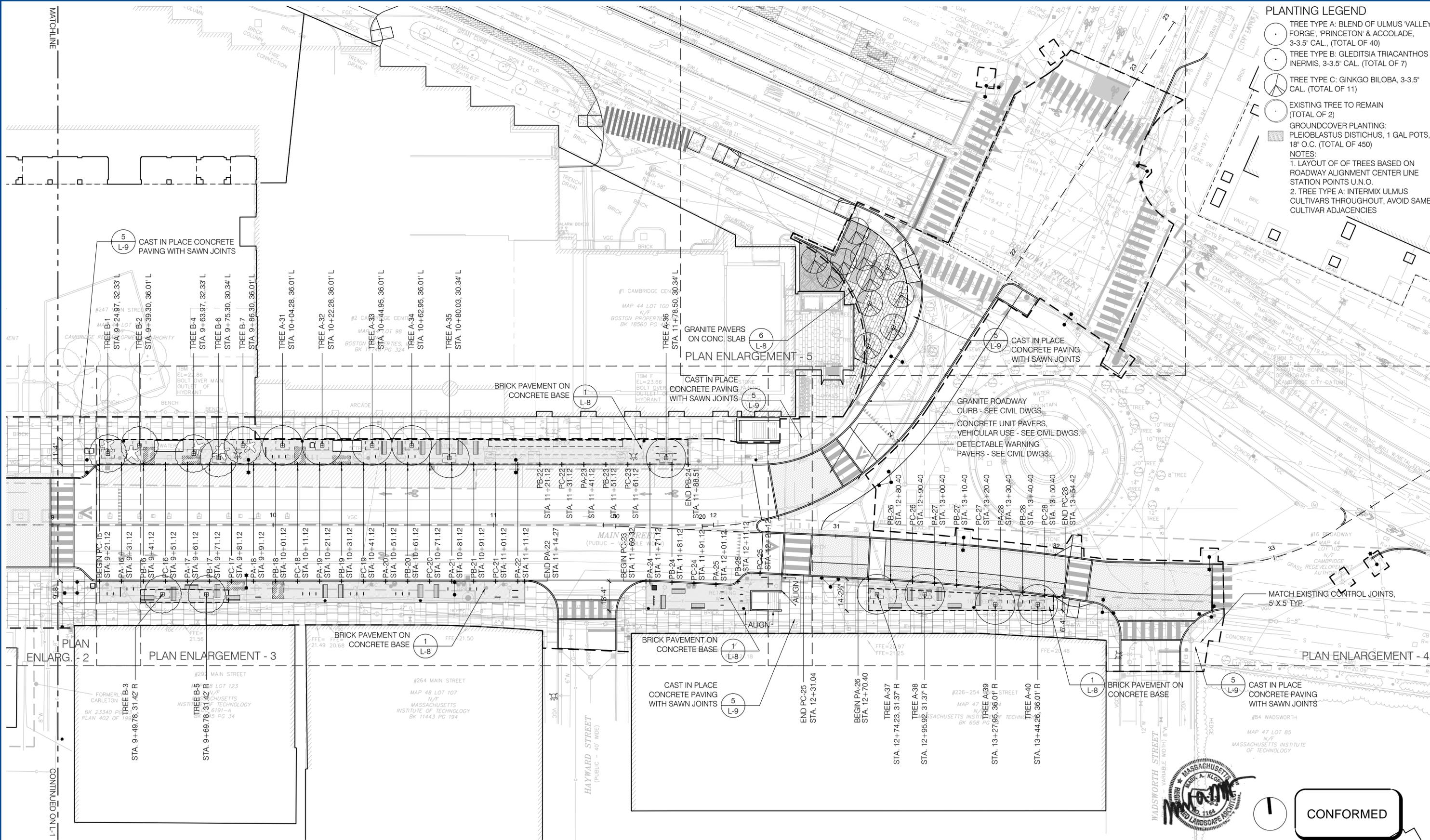


Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	LANDSCAPE PLAN - 1

Sheet	L-1
File No.	

PLANTING LEGEND

-  TREE TYPE A: BLEND OF ULMUS 'VALLEY FORGE', 'PRINCETON' & ACCOLADE, 3-3.5" CAL., (TOTAL OF 40)
 -  TREE TYPE B: GLEDITSIA TRIACANTHOS INERMIS, 3-3.5" CAL. (TOTAL OF 7)
 -  TREE TYPE C: GINKGO BILOBA, 3-3.5" CAL. (TOTAL OF 11)
 -  EXISTING TREE TO REMAIN (TOTAL OF 2)
 -  GROUND COVER PLANTING: PLEIOBLASTUS DISTICHUS, 1 GAL POTS, 18" O.C. (TOTAL OF 450)
- NOTES:
 1. LAYOUT OF TREES BASED ON ROADWAY ALIGNMENT CENTER LINE STATION POINTS U.N.O.
 2. TREE TYPE A: INTERMIX ULMUS CULTIVARS THROUGHOUT, AVOID SAME CULTIVAR ADJACENCIES



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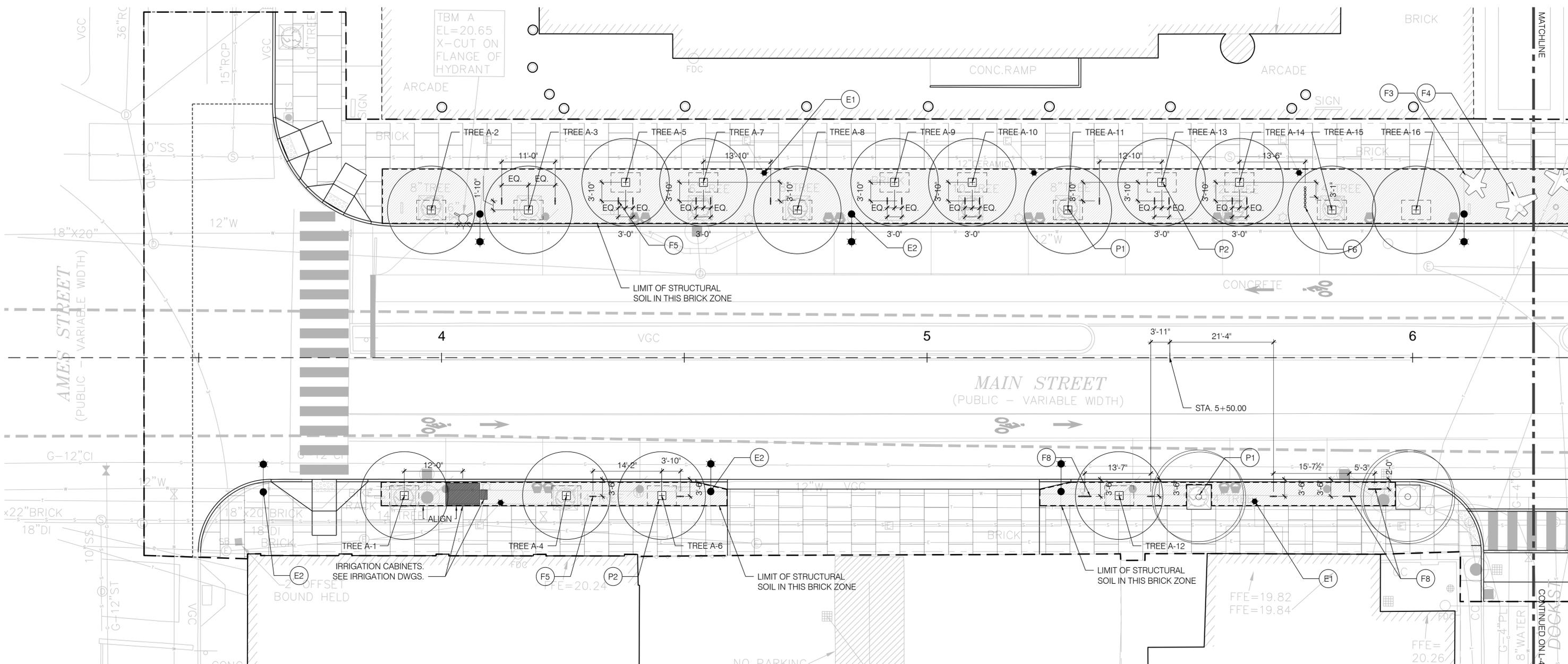
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Date	MAY 2014
Job No.	KMDG 1009
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Drawn by	SK, KP
Checked by	KM
Approved by	KM



Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	LANDSCAPE PLAN - 2

Sheet	L-2
File No.	

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PLANTING LEGEND

- TREE TYPE A: BLEND OF ULMUS VALLEY FORGE, 'PRINCETON' & ACCOLADE, 3-3.5" CAL., (TOTAL OF 40)
- TREE TYPE B: GLEDITSIA TRIACANTHOS INERMIS, 3-3.5" CAL. (TOTAL OF 7)
- TREE TYPE C: GINKGO BILOBA, 3-3.5" CAL. (TOTAL OF 11)
- EXISTING TREE TO REMAIN (TOTAL OF 2)
- GROUNDCOVER PLANTING: PLEIOBLASTUS DISTICHUS, 1 GAL POTS, 18" O.C. (TOTAL OF 450)

NOTES:
 1. LAYOUT OF OF TREES BASED ON ROADWAY ALIGNMENT CE STATION POINTS U.N.O.
 2. TREE TYPE A: INTERMIX ULMUS CULTIVARS THROUGHOUT, , CULTIVAR ADJACENCIES

MATERIALS LEGEND

- | SYM. | DESCRIPTION |
|------|---|
| F1 | TRASH AND RECYCLING RECEPTACLE OR TRASH ONLY RECEPTACLE |
| F2 | BENCH TYPE A |
| F3 | BENCH TYPE B - CAST STONE, SMALL TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT |
| F4 | BENCH TYPE C - CAST STONE, LARGE TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT |
| F5 | BIKE RACK TYPE A - CITY STANDARD (TOTAL OF 83) |
| F6 | BIKE RACK TYPE B - ARTIST CAFFEINE MOLECULE (TOTAL OF 3) |

- | | |
|-----|--|
| F8 | BIKE RACK TYPE D - ARTIST SINGLE SINE WAVE (TOTAL OF 11) |
| F9 | BIKE RACK TYPE E - ARTIST SINGLE LIQUID (TOTAL OF 2) |
| F10 | BUS SHELTER - NEW (TOTAL OF 1) |
| F11 | BUS SHELTER - RELOCATED BY OTHERS (TOTAL OF 2) |
| E1 | PEDESTRIAN LIGHT - SEE ELECTRICAL DWGS. |
| E2 | ROADWAY LIGHT - SEE ELECTRICAL DWGS. |

- | | |
|----|--------------------------------|
| P1 | EXISTING TREE PLANTING |
| P2 | TREE PLANTING WITH PAVER GRATE |
| P3 | TREE PLANTING IN PLANTING BED |
| P4 | GROUNDCOVER PLANTING |



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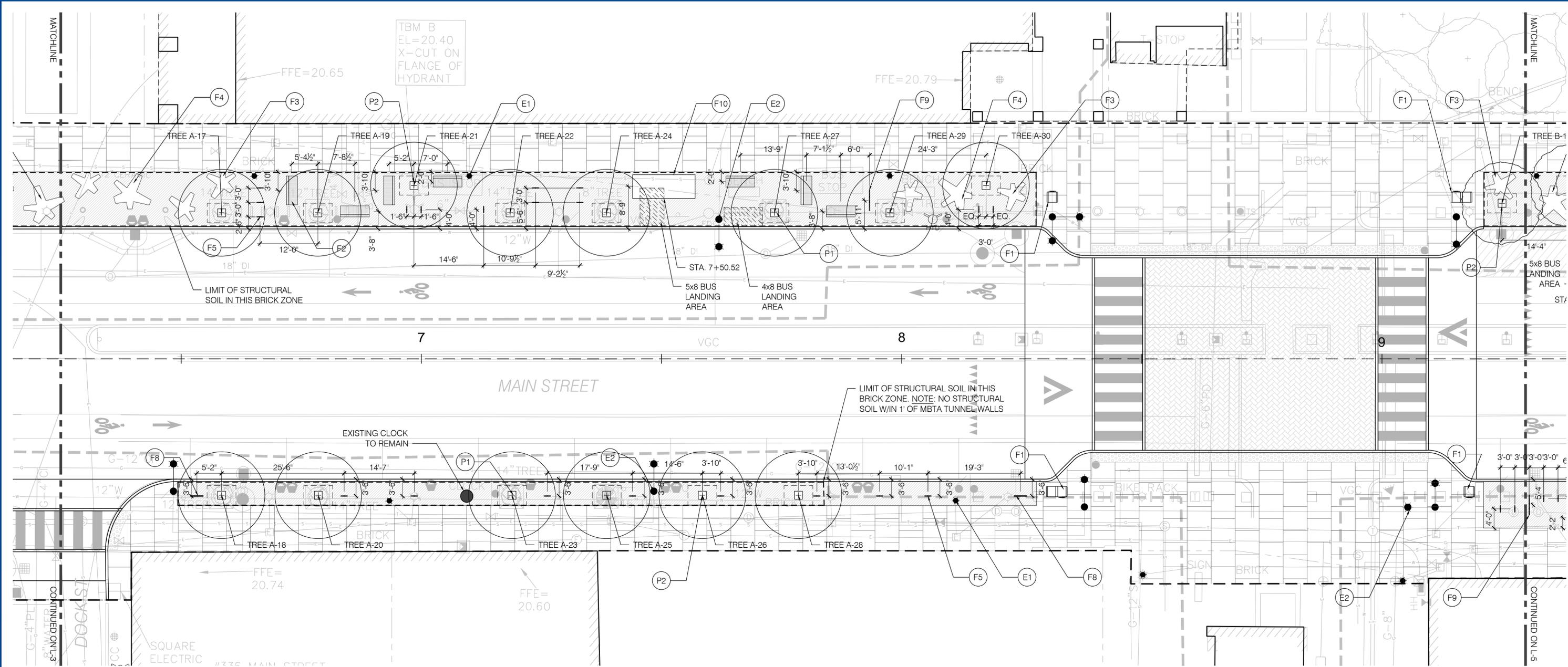
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Date	MAY 2014
Job No.	KMDG 1009
Designed by	SK, KP
Drawn by	SK, KP
Checked by	KM
Approved by	KM



Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	LANDSCAPE PLAN ENLARGEMENT - 1

Sheet	L-3
File No.	



PLANTING LEGEND

- TREE TYPE A: BLEND OF ULMUS VALLEY FORGE, 'PRINCETON' & ACCOLADE, 3-3.5' CAL., (TOTAL OF 40)
- TREE TYPE B: GLEDITSIA TRIACANTHOS INERMIS, 3-3.5' CAL. (TOTAL OF 7)
- TREE TYPE C: GINKGO BILOBA, 3-3.5' CAL. (TOTAL OF 11)
- EXISTING TREE TO REMAIN (TOTAL OF 2)
- GROUNDCOVER PLANTING: PLEIOBLASTUS DISTICHUS, 1 GAL POTS, 18' O.C. (TOTAL OF 450)

NOTES:
 1. LAYOUT OF OF TREES BASED ON ROADWAY ALIGNMENT CE STATION POINTS U.N.O.
 2. TREE TYPE A: INTERMIX ULMUS CULTIVARS THROUGHOUT, , CULTIVAR ADJACENCIES

MATERIALS LEGEND

- | SYM. | DESCRIPTION |
|------|---|
| F1 | TRASH AND RECYCLING RECEPTACLE OR TRASH ONLY RECEPTACLE |
| F2 | BENCH TYPE A |
| F3 | BENCH TYPE B - CAST STONE, SMALL TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT |
| F4 | BENCH TYPE C - CAST STONE, LARGE TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT |
| F5 | BIKE RACK TYPE A - CITY STANDARD (TOTAL OF 83) |
| F6 | BIKE RACK TYPE B - ARTIST CAFFEINE MOLECULE (TOTAL OF 3) |

- | | |
|-----|--|
| F8 | BIKE RACK TYPE D - ARTIST SINGLE SINE WAVE (TOTAL OF 11) |
| F9 | BIKE RACK TYPE E - ARTIST SINGLE LIQUID (TOTAL OF 2) |
| F10 | BUS SHELTER - NEW (TOTAL OF 1) |
| F11 | BUS SHELTER - RELOCATED BY OTHERS (TOTAL OF 2) |
| E1 | PEDESTRIAN LIGHT - SEE ELECTRICAL DWGS. |
| E2 | ROADWAY LIGHT - SEE ELECTRICAL DWGS. |

- | | |
|----|--------------------------------|
| P1 | EXISTING TREE PLANTING |
| P2 | TREE PLANTING WITH PAVER GRATE |
| P3 | TREE PLANTING IN PLANTING BED |
| P4 | GROUNDCOVER PLANTING |



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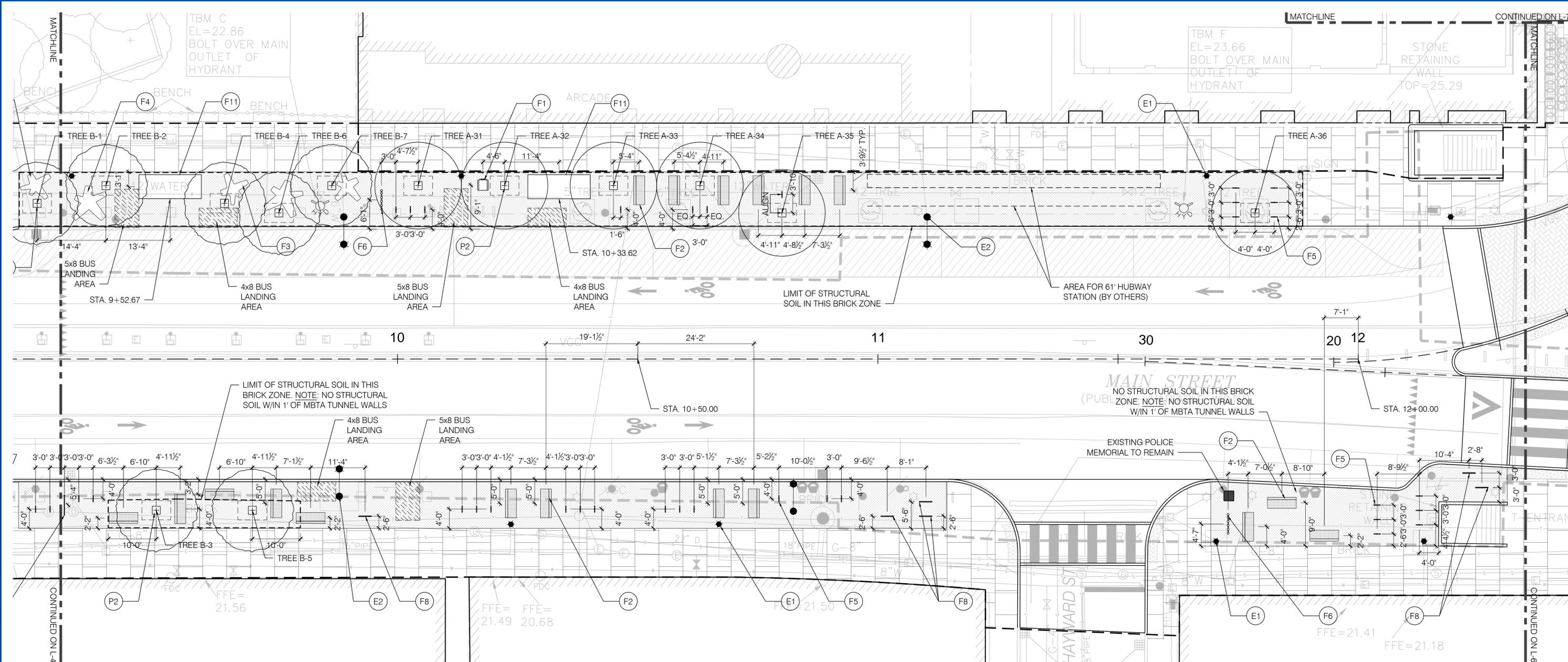
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Date	MAY 2014
Job No.	KMDG 1009
Designed by	SK, KP
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Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	LANDSCAPE PLAN ENLARGEMENT - 2

Sheet	L-4
File No.	



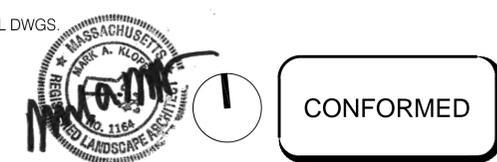
PLANTING LEGEND

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- EXISTING TREE TO REMAIN (TOTAL OF 2)
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NOTES:
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 2. TREE TYPE A: INTERMIX ULMUS CULTIVARS THROUGHOUT, , CULTIVAR ADJACENCIES

MATERIALS LEGEND

- | | | | | | |
|-----------------|---|-----------------|--|-----------------|--------------------------------|
| SYM. | DESCRIPTION | 3
L-9 | BIKE RACK TYPE D - ARTIST SINGLE SINE WAVE (TOTAL OF 11) | 8
L-8 | EXISTING TREE PLANTING |
| 2
L-8 | TRASH AND RECYCLING RECEPTACLE OR TRASH ONLY RECEPTACLE | 4
L-9 | BIKE RACK TYPE E - ARTIST SINGLE LIQUID (TOTAL OF 2) | 7
L-8 | TREE PLANTING WITH PAVER GRATE |
| 3
L-8 | BENCH TYPE A | 1 | BUS SHELTER - NEW (TOTAL OF 1) | 9
L-9 | TREE PLANTING IN PLANTING BED |
| 4
L-8 | BENCH TYPE B - CAST STONE, SMALL TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT | 1 | BUS SHELTER - RELOCATED BY OTHERS (TOTAL OF 2) | 8
L-9 | GROUNDCOVER PLANTING |
| 5
L-8 | BENCH TYPE C - CAST STONE, LARGE TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT | 1 | PEDESTRIAN LIGHT - SEE ELECTRICAL DWGS. | | |
| 1
L-9 | BIKE RACK TYPE A - CITY STANDARD (TOTAL OF 83) | 1 | ROADWAY LIGHT - SEE ELECTRICAL DWGS. | | |
| 2
L-9 | BIKE RACK TYPE B - ARTIST CAFFEINE MOLECULE (TOTAL OF 3) | | | | |



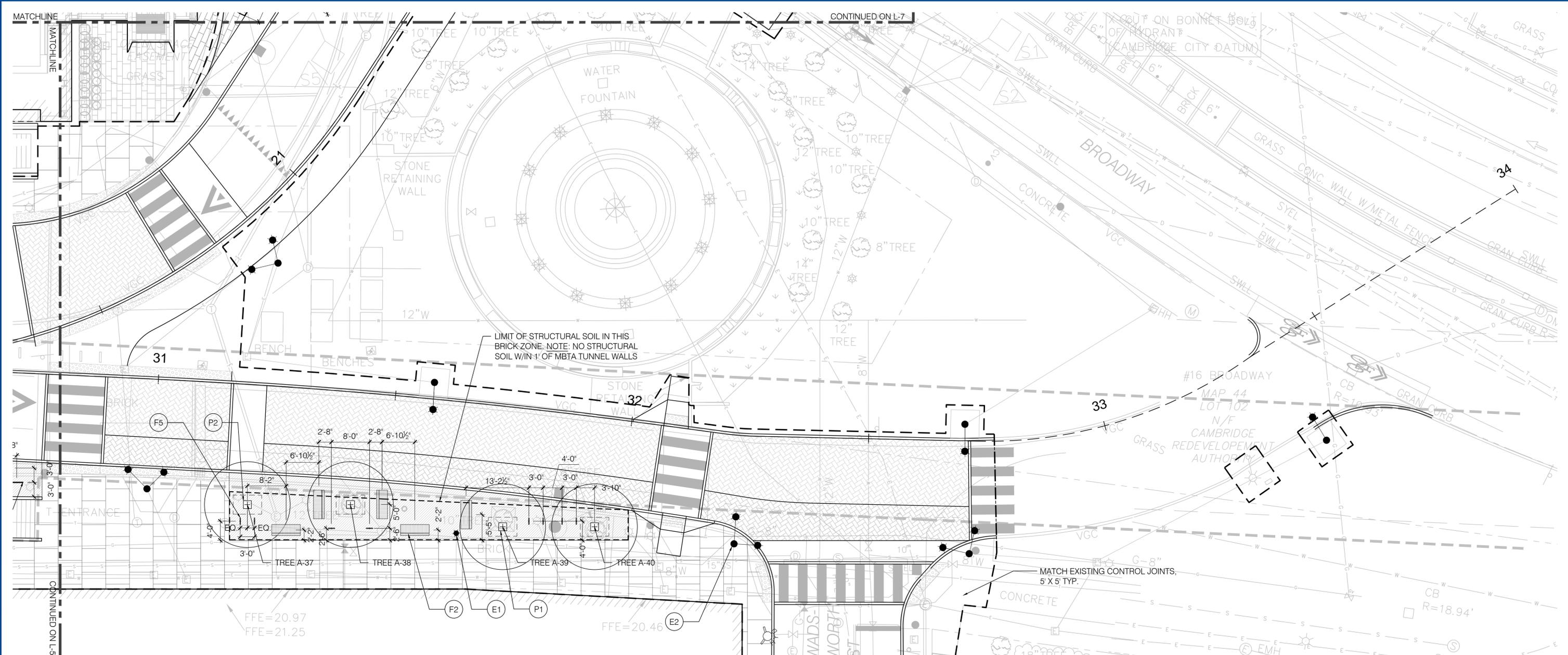
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Date	MAY 2014
Job No.	KMDG 1009
Designed by	SK, KP
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Checked by	KM
Approved by	KM



Client	CITY OF CAMBRIDGE, MA	Sheet	L-5
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	LANDSCAPE PLAN ENLARGEMENT - 3		



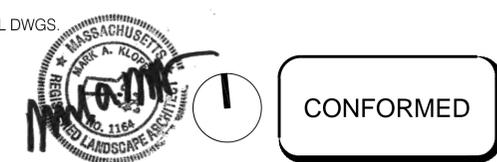
PLANTING LEGEND

-  TREE TYPE A: BLEND OF ULMUS VALLEY FORGE, PRINCETON & ACCOLADE, 3-3.5' CAL., (TOTAL OF 40)
-  TREE TYPE B: GLEDITSIA TRIACANTHOS INERMIS, 3-3.5' CAL. (TOTAL OF 7)
-  TREE TYPE C: GINKGO BILOBA, 3-3.5' CAL. (TOTAL OF 11)
-  EXISTING TREE TO REMAIN (TOTAL OF 2)
-  GROUNDCOVER PLANTING: PLEIOBLASTUS DISTICHUS, 1 GAL POTS, 18" O.C. (TOTAL OF 450)

NOTES:
 1. LAYOUT OF OF TREES BASED ON ROADWAY ALIGNMENT CE STATION POINTS U.N.O.
 2. TREE TYPE A: INTERMIX ULMUS CULTIVARS THROUGHOUT, & CULTIVAR ADJACENCIES

MATERIALS LEGEND

- | SYM. | DESCRIPTION | F8 | 3 | BIKE RACK TYPE D - ARTIST SINGLE SINE WAVE (TOTAL OF 11) | P1 | 8 | EXISTING TREE PLANTING |
|------|-------------|-----|-----|--|----|---|--------------------------------|
| F1 | 2 | L-8 | 4 | BIKE RACK TYPE E - ARTIST SINGLE LIQUID (TOTAL OF 2) | P2 | 7 | TREE PLANTING WITH PAVER GRATE |
| F2 | 3 | L-8 | F10 | BUS SHELTER - NEW (TOTAL OF 1) | P3 | 9 | TREE PLANTING IN PLANTING BED |
| F3 | 4 | L-8 | F11 | BUS SHELTER - RELOCATED BY OTHERS (TOTAL OF 2) | P4 | 8 | GROUNDCOVER PLANTING |
| F4 | 5 | L-8 | E1 | PEDESTRIAN LIGHT - SEE ELECTRICAL DWGS. | | | |
| F5 | 1 | L-9 | E2 | ROADWAY LIGHT - SEE ELECTRICAL DWGS. | | | |
| F6 | 2 | L-9 | | | | | |



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Approved by	KM		REVISIONS

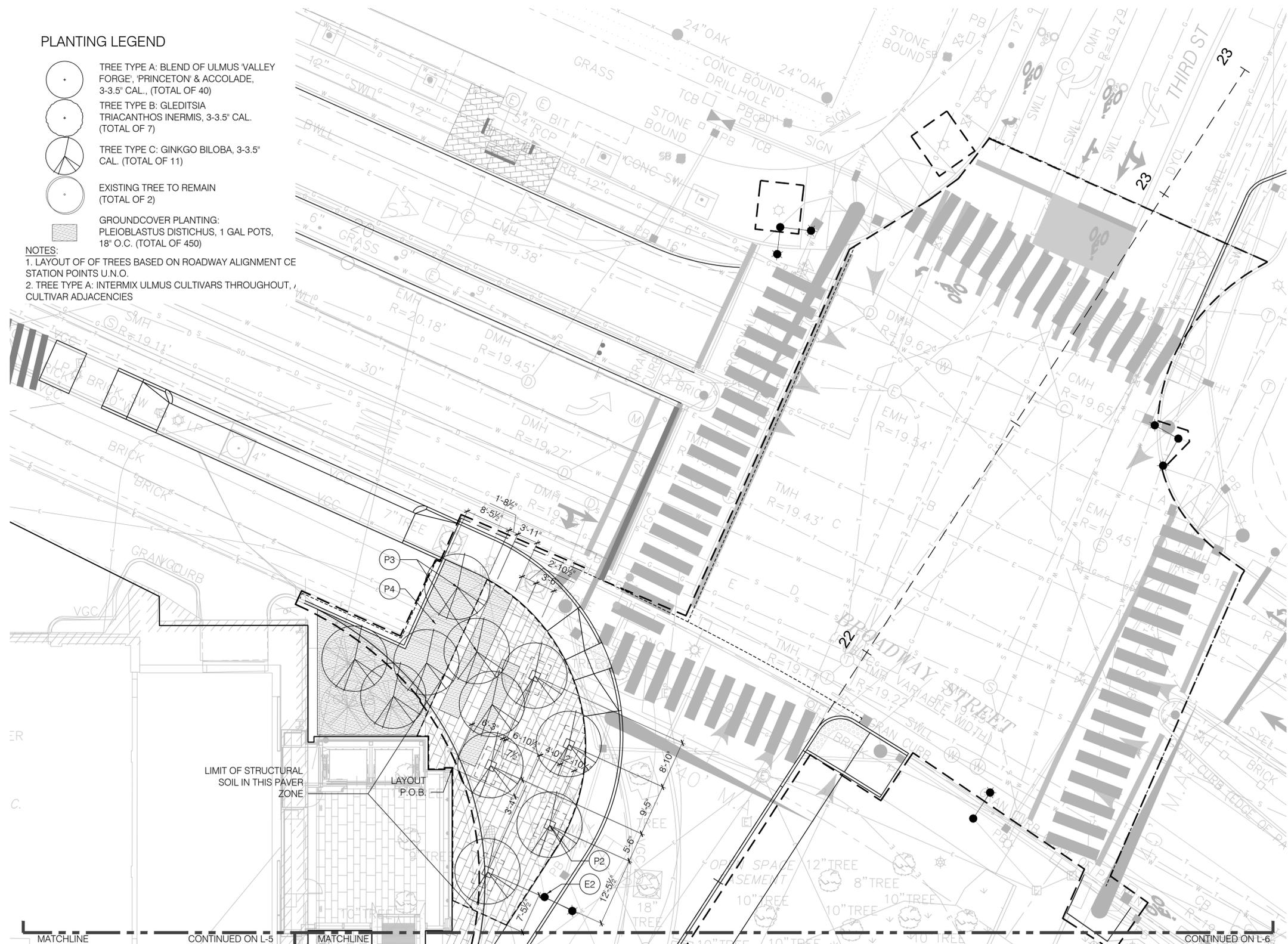


Client	CITY OF CAMBRIDGE, MA	Sheet	L-6
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	LANDSCAPE PLAN ENLARGEMENT - 4		

PLANTING LEGEND

-  TREE TYPE A: BLEND OF ULMUS VALLEY FORGE, PRINCETON & ACCOLADE, 3-3.5" CAL., (TOTAL OF 40)
-  TREE TYPE B: GLEDITSIA TRIACANTHOS INERMIS, 3-3.5" CAL. (TOTAL OF 7)
-  TREE TYPE C: GINKGO BILOBA, 3-3.5" CAL. (TOTAL OF 11)
-  EXISTING TREE TO REMAIN (TOTAL OF 2)
-  GROUNDCOVER PLANTING: PLEIOBLASTUS DISTICHUS, 1 GAL POTS, 18" O.C. (TOTAL OF 450)

NOTES:
 1. LAYOUT OF OF TREES BASED ON ROADWAY ALIGNMENT CE STATION POINTS U.N.O.
 2. TREE TYPE A: INTERMIX ULMUS CULTIVARS THROUGHOUT, CULTIVAR ADJACENCIES



MATERIALS LEGEND

- | SYM. | DESCRIPTION |
|------|---|
| F1 | TRASH AND RECYCLING RECEPTACLE OR TRASH ONLY RECEPTACLE |
| F2 | BENCH TYPE A |
| F3 | BENCH TYPE B - CAST STONE, SMALL TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT |
| F4 | BENCH TYPE C - CAST STONE, LARGE TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT |
| F5 | BIKE RACK TYPE A - CITY STANDARD (TOTAL OF 83) |
| F6 | BIKE RACK TYPE B - ARTIST CAFFEINE MOLECULE (TOTAL OF 3) |
| F8 | BIKE RACK TYPE D - ARTIST SINGLE SINE WAVE (TOTAL OF 11) |
| F9 | BIKE RACK TYPE E - ARTIST SINGLE LIQUID (TOTAL OF 2) |
| F10 | BUS SHELTER - NEW (TOTAL OF 1) |
| F11 | BUS SHELTER - RELOCATED BY OTHERS (TOTAL OF 2) |
| E1 | PEDESTRIAN LIGHT - SEE ELECTRICAL DWGS. |
| E2 | ROADWAY LIGHT - SEE ELECTRICAL DWGS. |
| P1 | EXISTING TREE PLANTING |
| P2 | TREE PLANTING WITH PAVER GRATE |
| P3 | TREE PLANTING IN PLANTING BED |
| P4 | GROUNDCOVER PLANTING |



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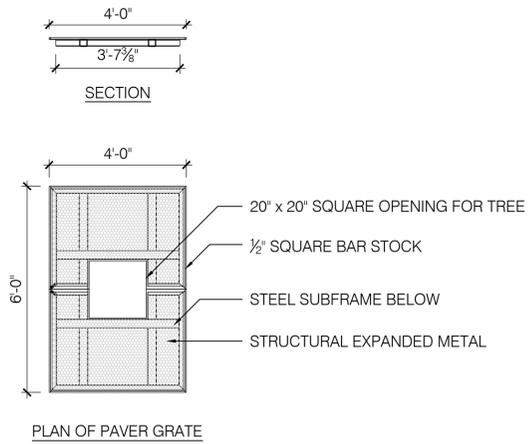


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Job No.	KMDG 1009
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Checked by	KM
Approved by	KM

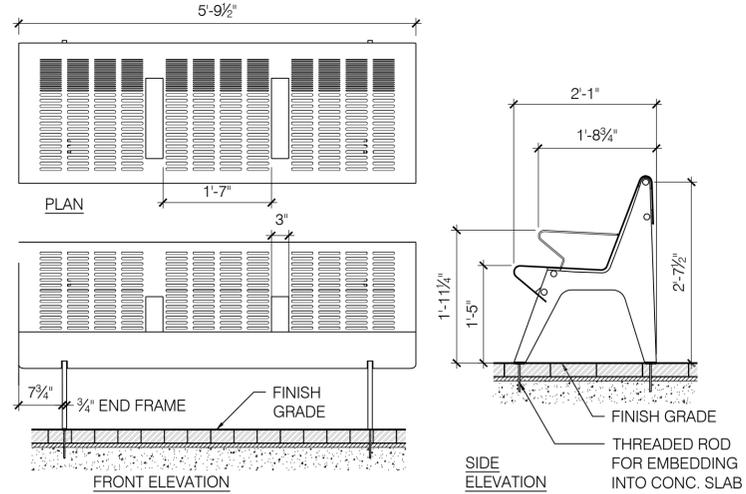
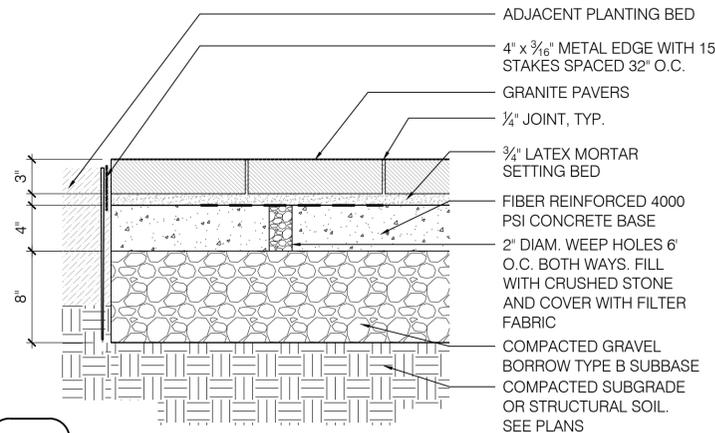


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Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	LANDSCAPE PLAN ENLARGEMENT - 5

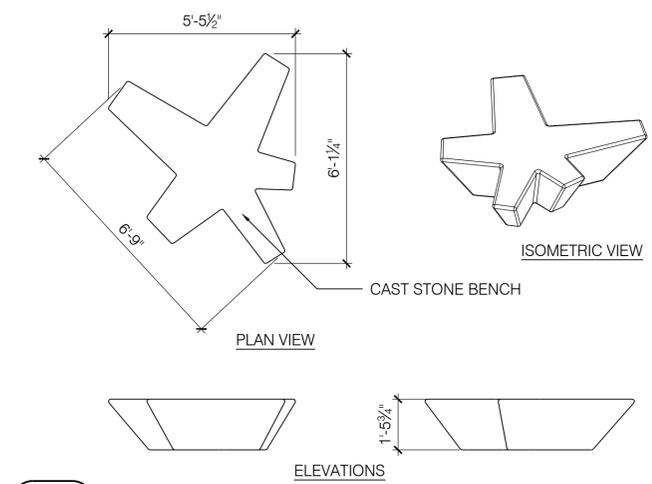
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File No.	



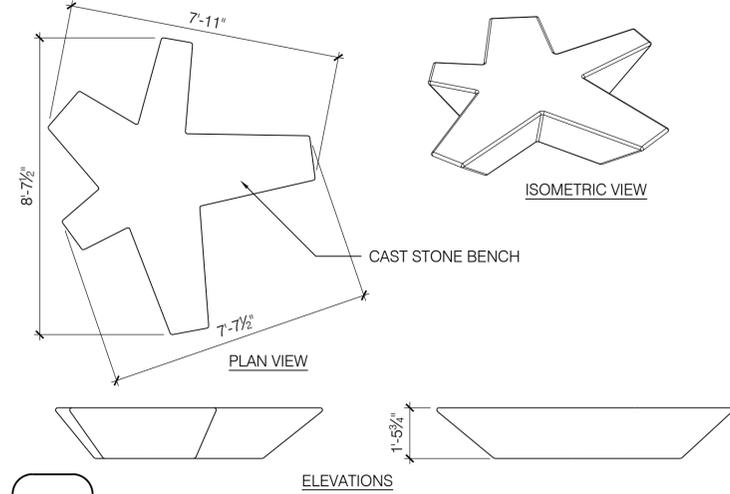
6 GRANITE PAVERS ON CONCRETE SLAB
SCALE: 1 1/2" = 1'-0"



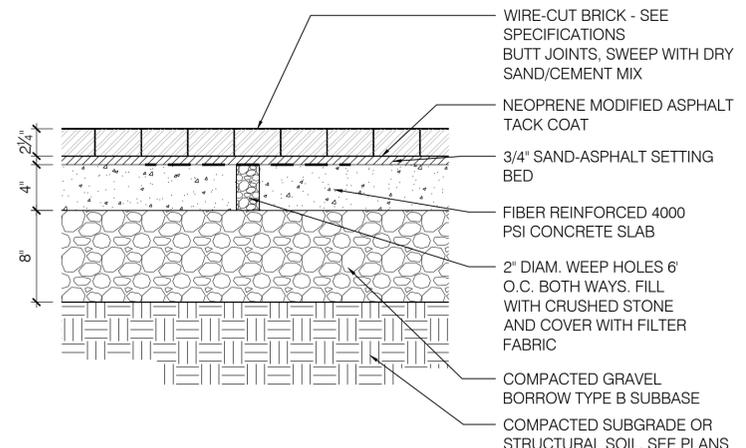
3 BENCH TYPE A
SCALE: 3/4" = 1'-0"



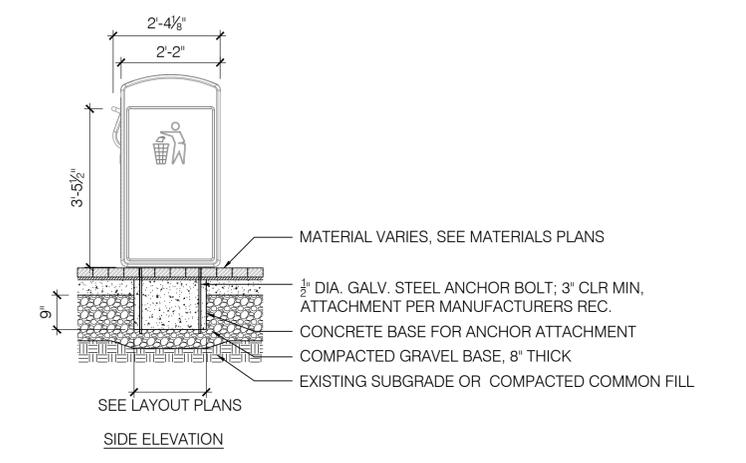
4 BENCH TYPE B - CAST STONE SMALL
SCALE: 3/8" = 1'-0"



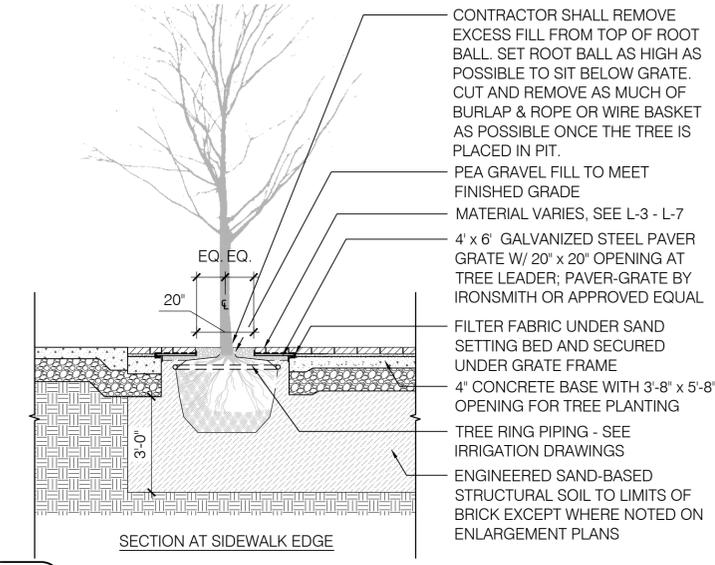
5 BENCH TYPE C - CAST STONE LARGE
SCALE: 3/8" = 1'-0"



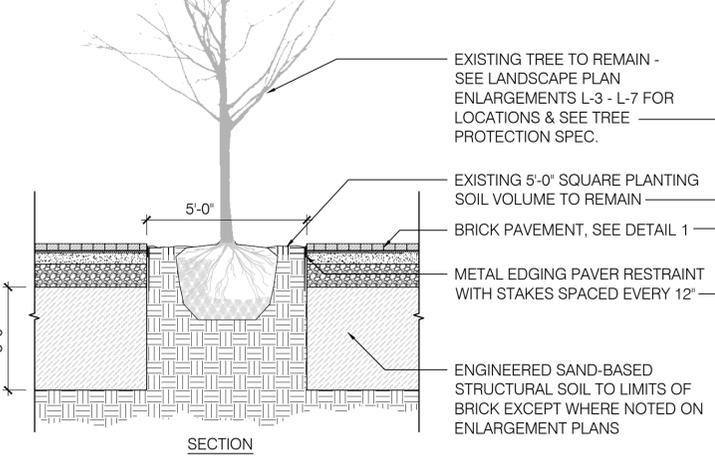
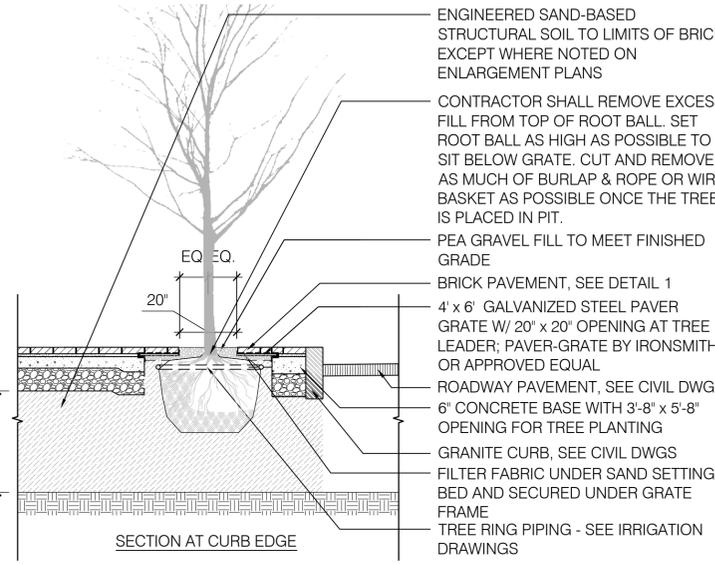
1 BRICK PAVEMENT ON CONCRETE SLAB
SCALE: 1 1/2" = 1'-0"



2 TRASH AND RECYCLING RECEPTACLES
SCALE: 1/2" = 1'-0"



7 TREE PLANTING WITH PAVER GRATE AND STRUCTURAL SOIL
SCALE: 3/8" = 1'-0"



8 EXISTING TREE PLANTING
SCALE: 3/8" = 1'-0"



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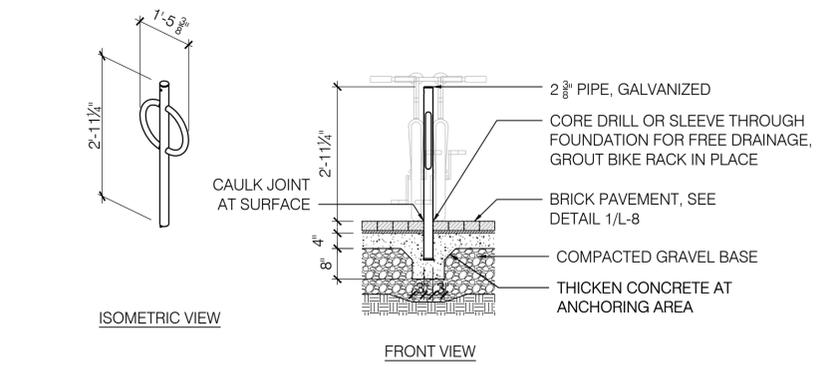
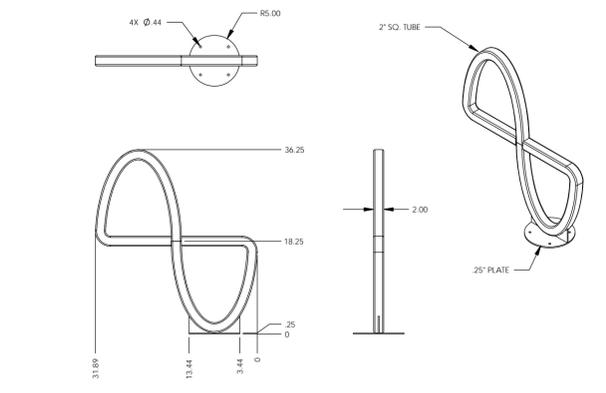
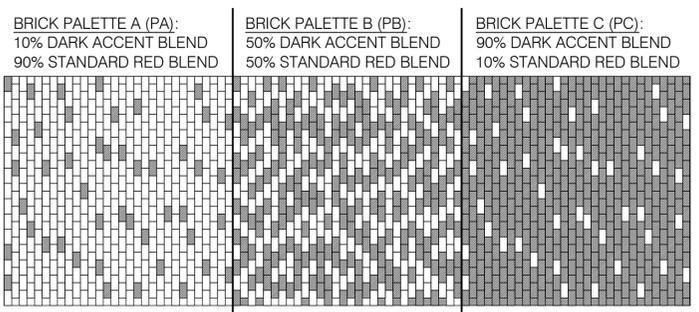
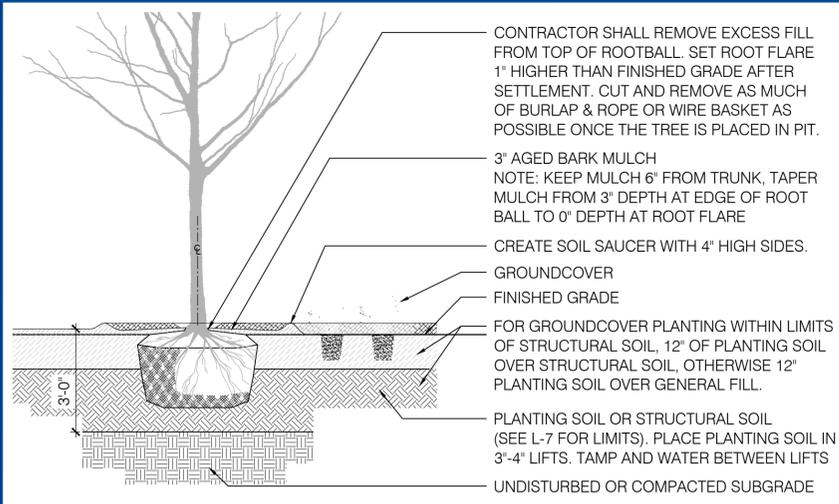
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Client	CITY OF CAMBRIDGE, MA	Sheet	L-8
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	LANDSCAPE DETAILS - 1		

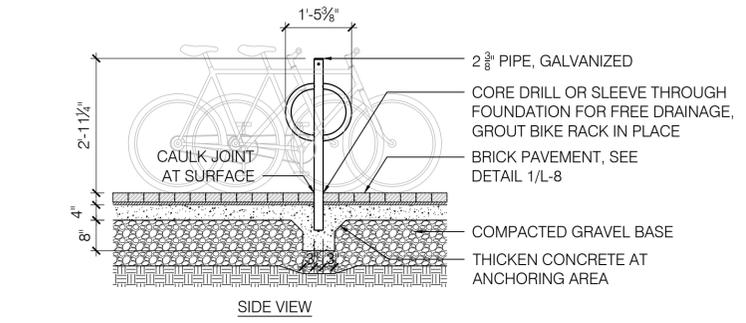
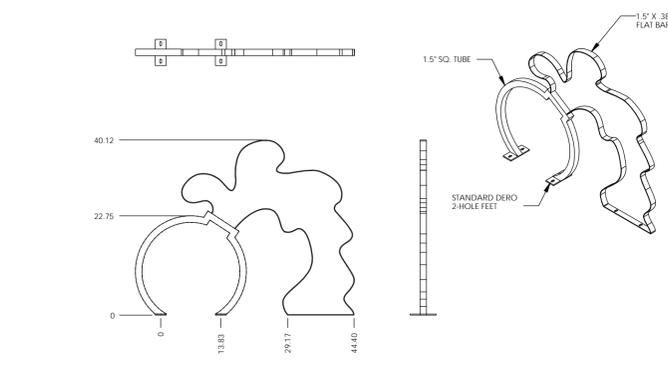
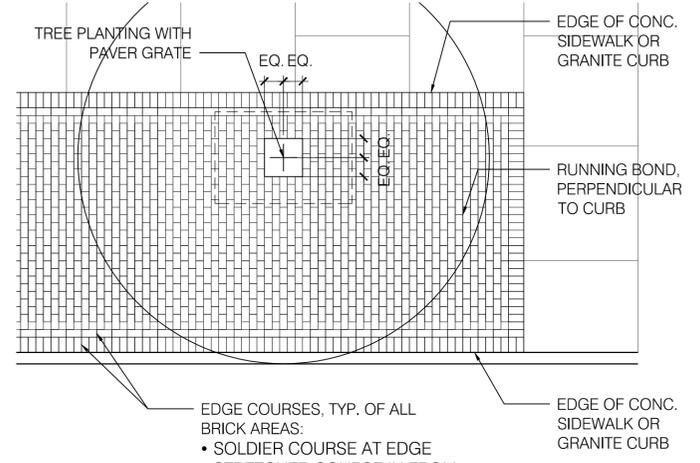
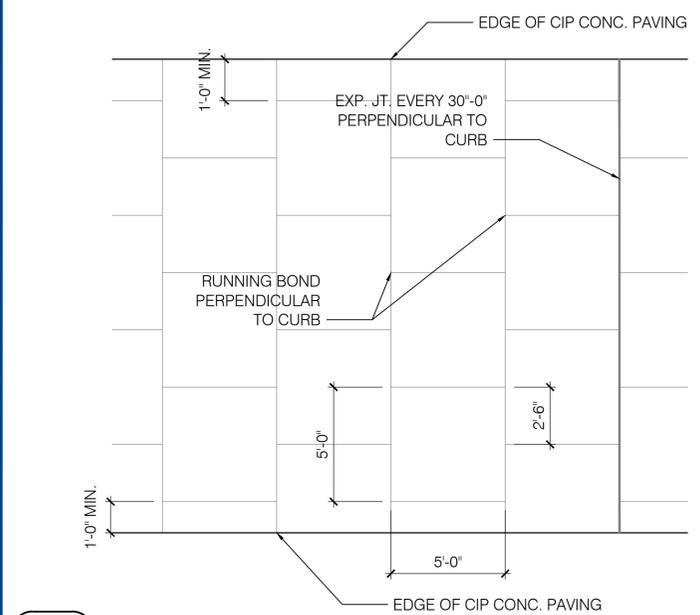


9 TREE PLANTING IN PLANTING BED
SCALE: 3/8" = 1'-0"

6 BRICK PALETTE KEY
SCALE: 1/4" = 1'-0"

3 BIKE RACK TYPE D - ARTIST SINGLE SINE WAVE
SCALE: N.T.S.

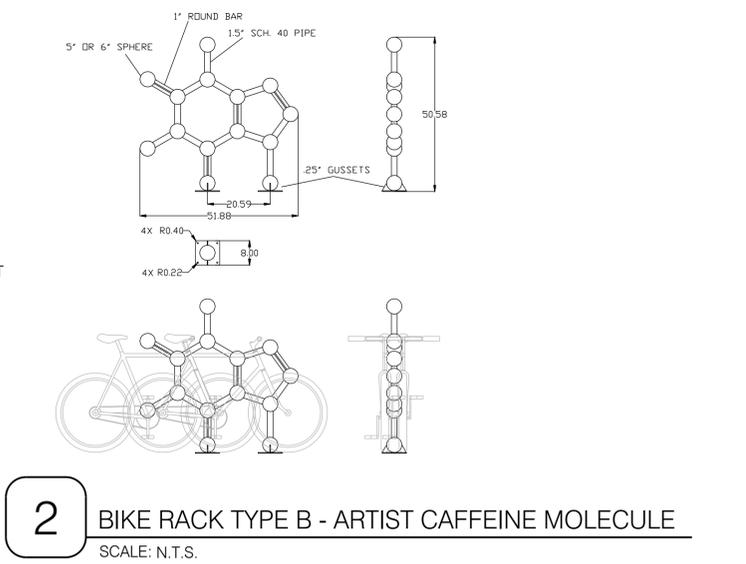
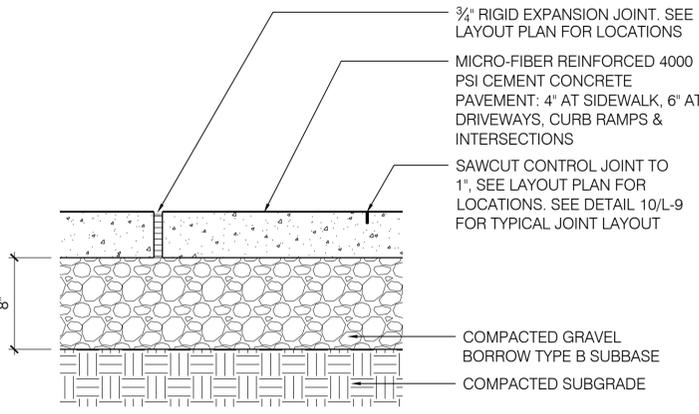
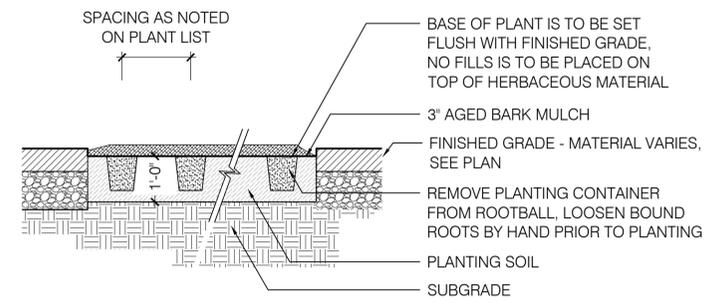
1 BIKE RACK TYPE A - CITY STANDARD
SCALE: 1/2" = 1'-0"



7 TYPICAL BRICK COURSING
SCALE: 1/4" = 1'-0"

4 BIKE RACK TYPE E - ARTIST SINGLE LIQUID
SCALE: N.T.S.

10 TYP. CONC. PAVING JOINTING LAYOUT
SCALE: 1/4" = 1'-0"



8 GROUNDCOVER PLANTING
SCALE: 1/2" = 1'-0"

5 CAST IN PLACE CONC. PAVING W. SAWN JOINTS
SCALE: 1 1/2" = 1'-0"

2 BIKE RACK TYPE B - ARTIST CAFFEINE MOLECULE
SCALE: N.T.S.



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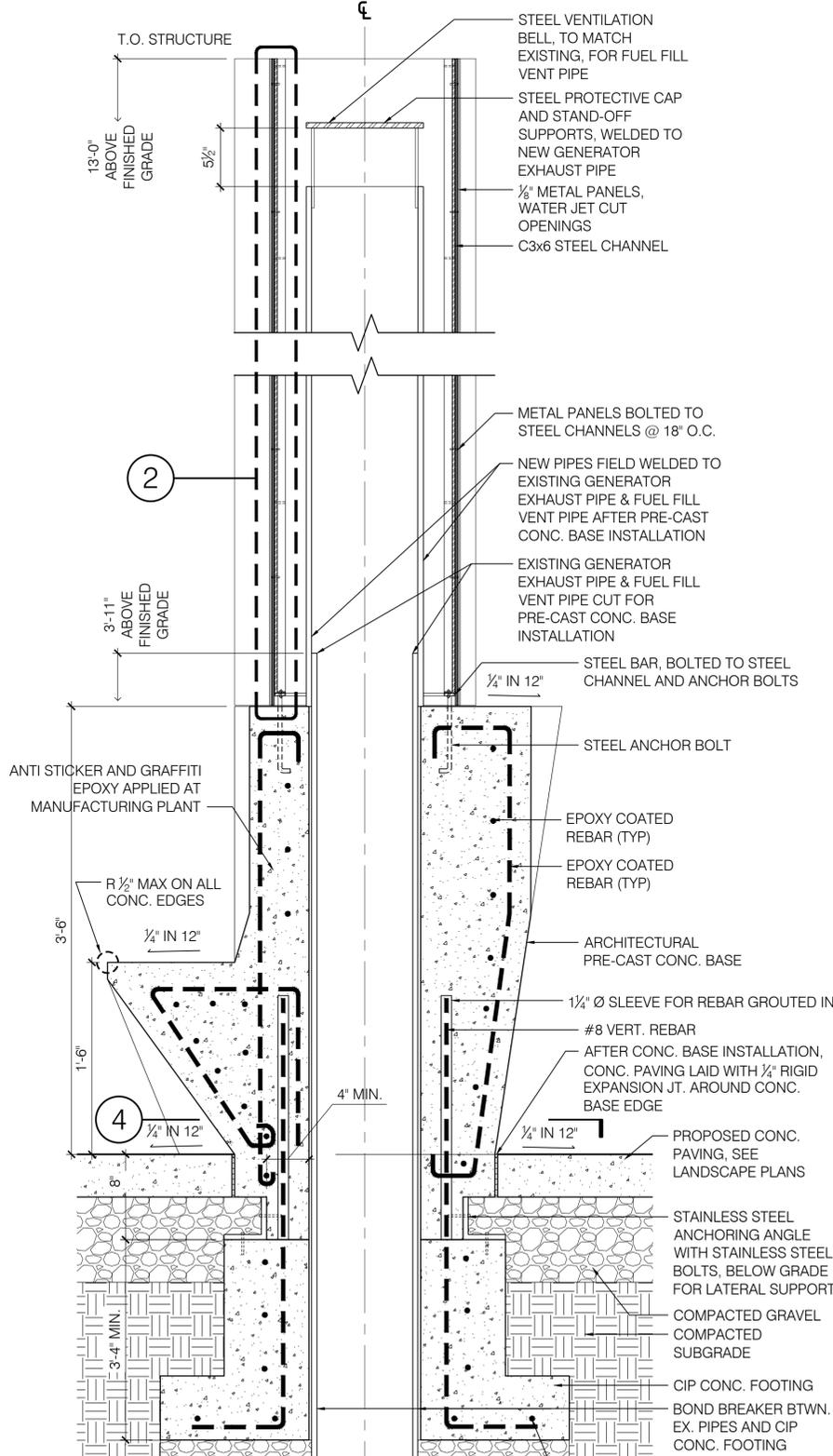
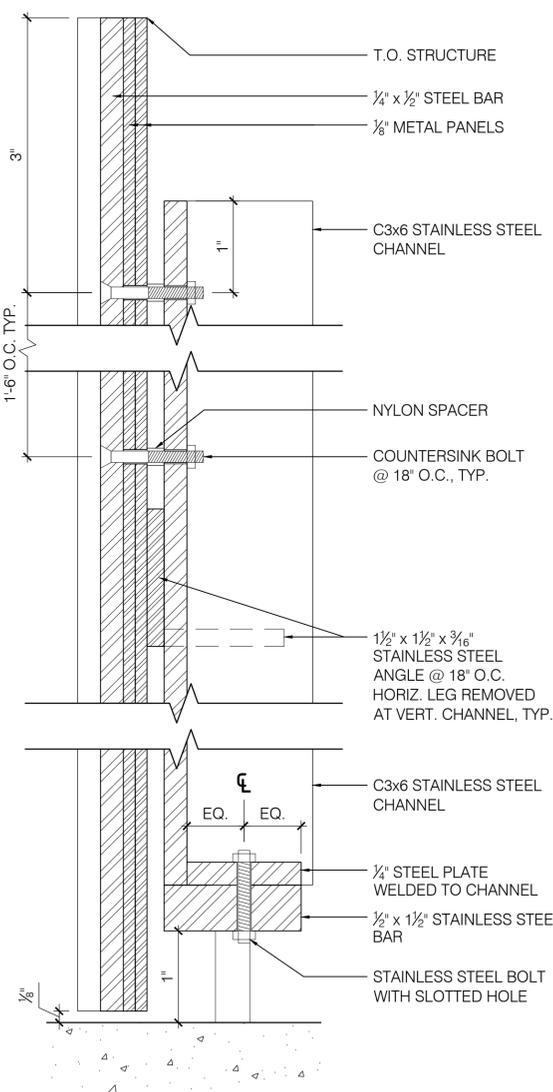
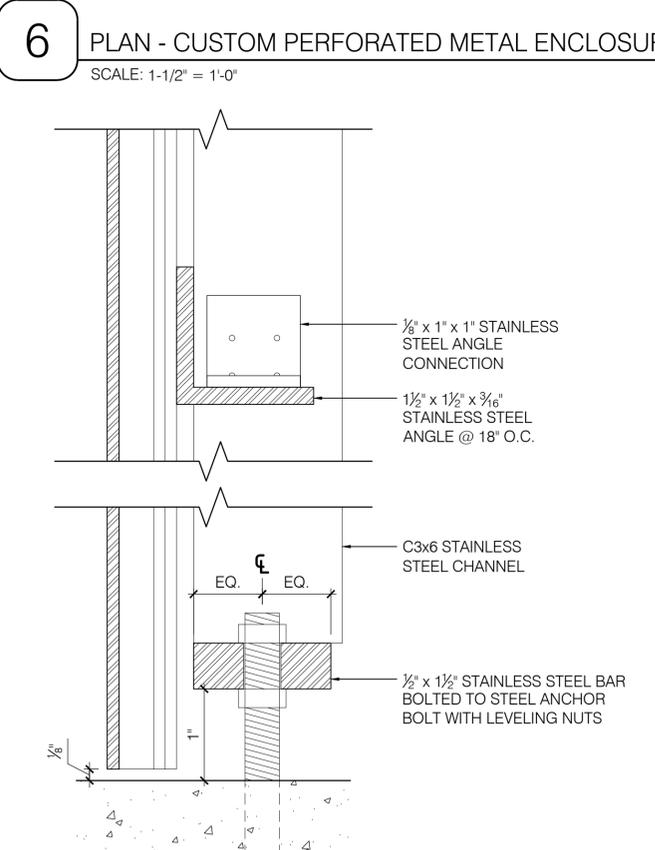
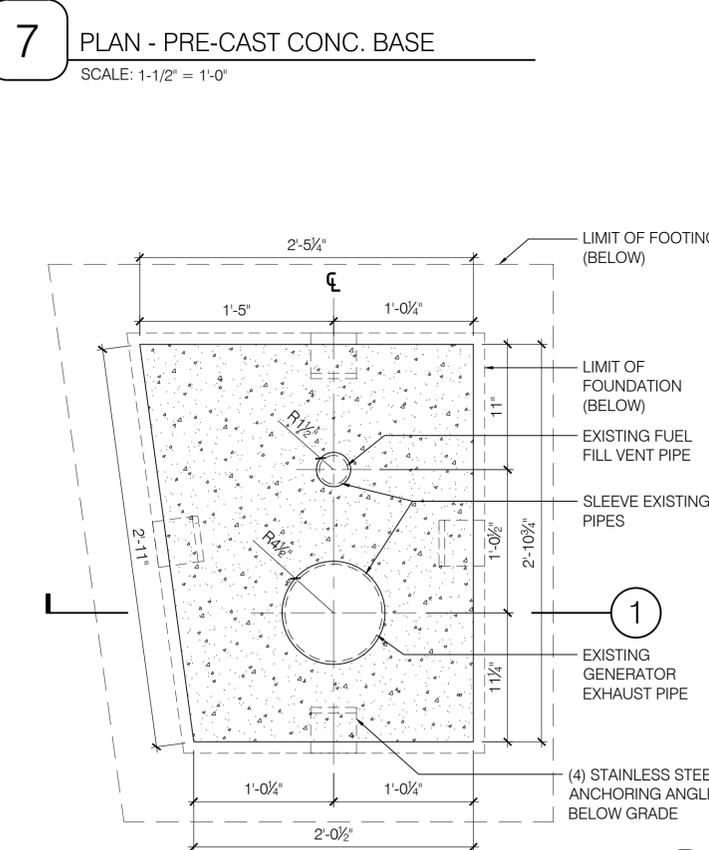
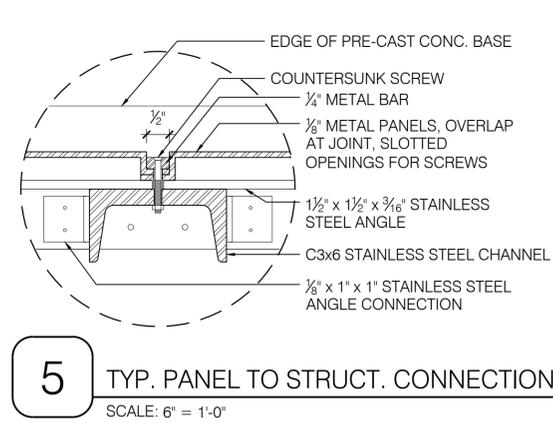
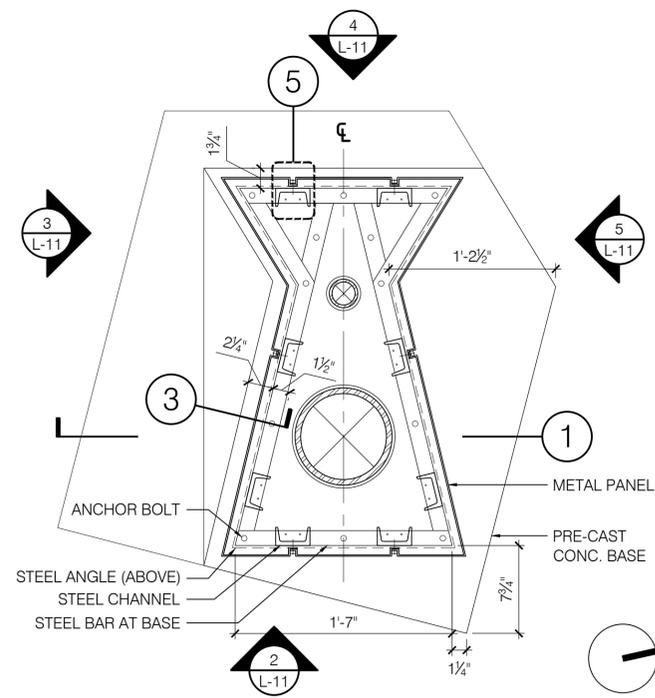
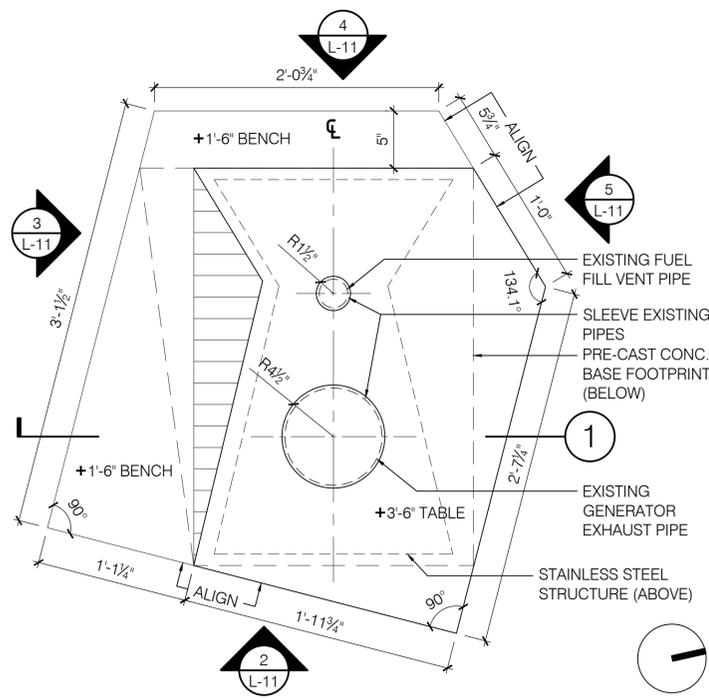
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Client	CITY OF CAMBRIDGE, MA	Sheet	L-9
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	LANDSCAPE DETAILS - 2		



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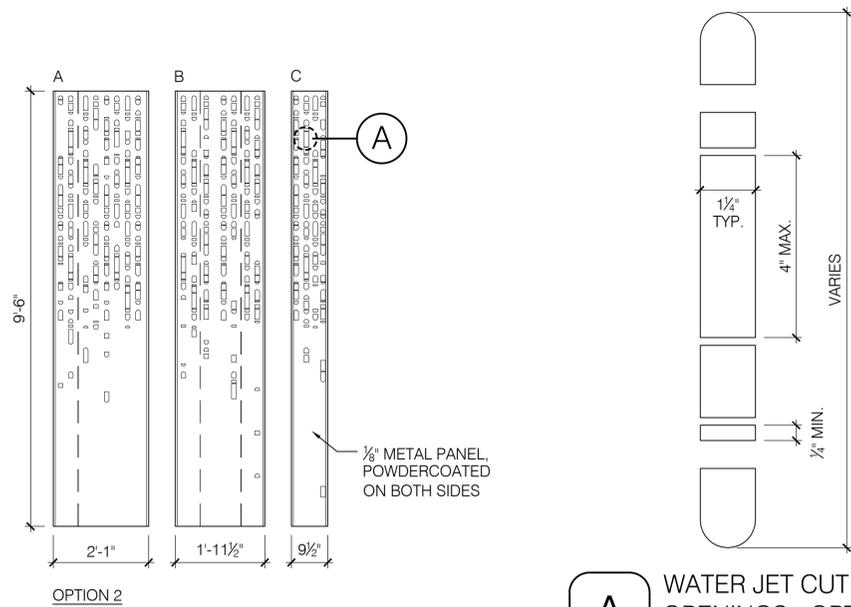
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Client: CITY OF CAMBRIDGE, MA
Project: RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing: VENT STRUCTURE - 1

Sheet	L-10
File No.	



OPTION 2

A WATER JET CUT OPENINGS - OPTION 2
SCALE: 6" = 1'-0"



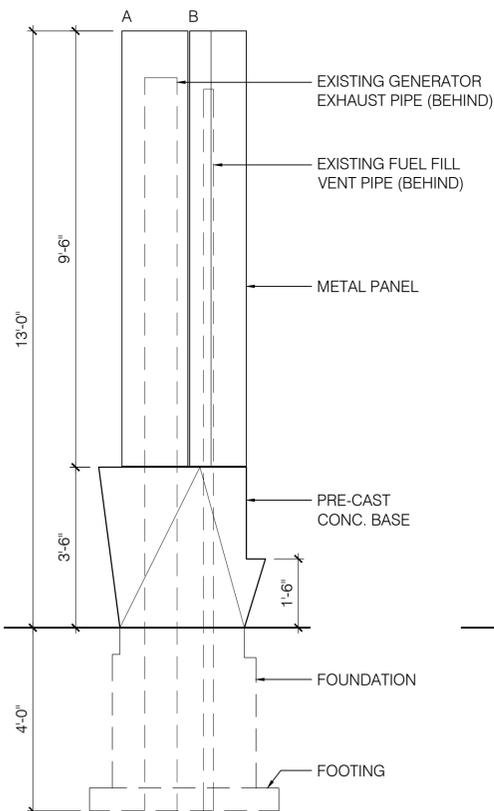
LOOKING WEST DOWN MAIN STREET



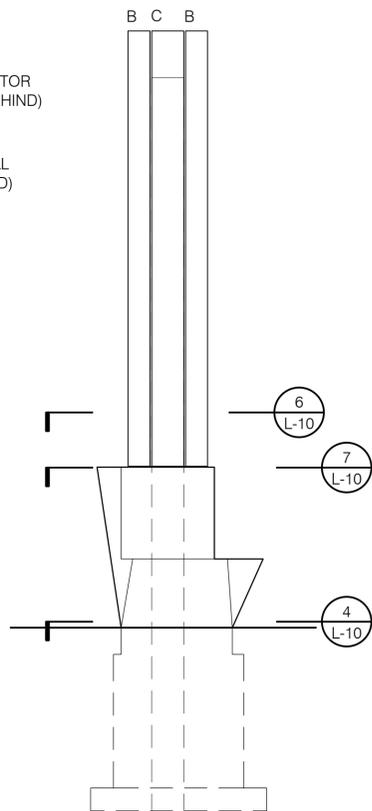
LOOKING EAST DOWN MAIN STREET

7 CUSTOM PERFORATED METAL ENCLOSURE - UNFOLDED PANEL ELEVATIONS
SCALE: 1/2" = 1'-0"

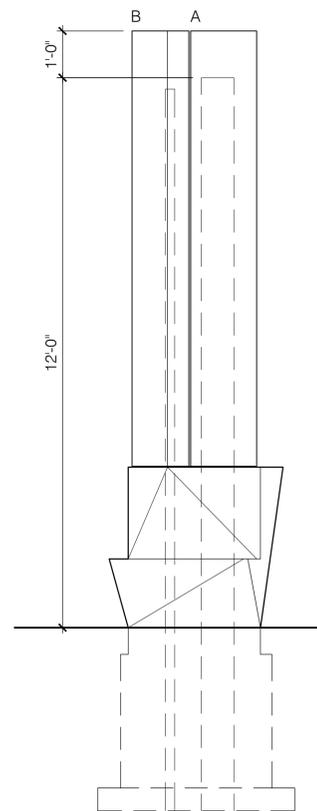
6 PERSPECTIVES
SCALE: NTS



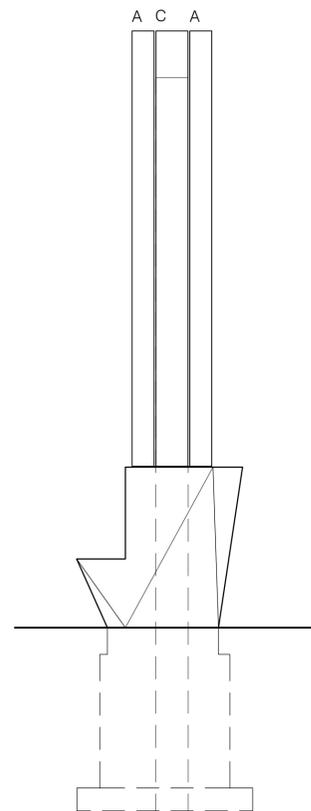
5 NORTH ELEVATION
SCALE: 1/2" = 1'-0"



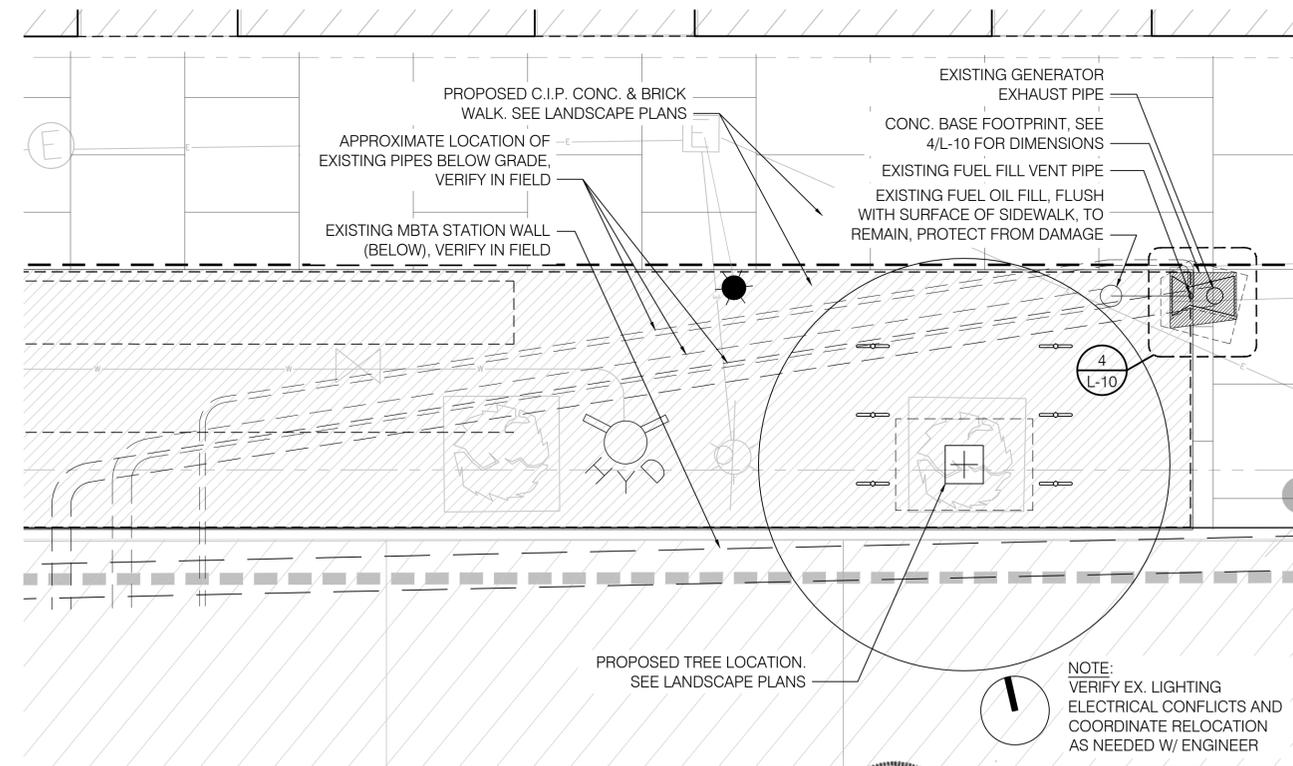
4 WEST ELEVATION
SCALE: 1/2" = 1'-0"



3 SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



2 EAST ELEVATION
SCALE: 1/2" = 1'-0"



1 SITE PLAN
SCALE: 1/4" = 1'-0"



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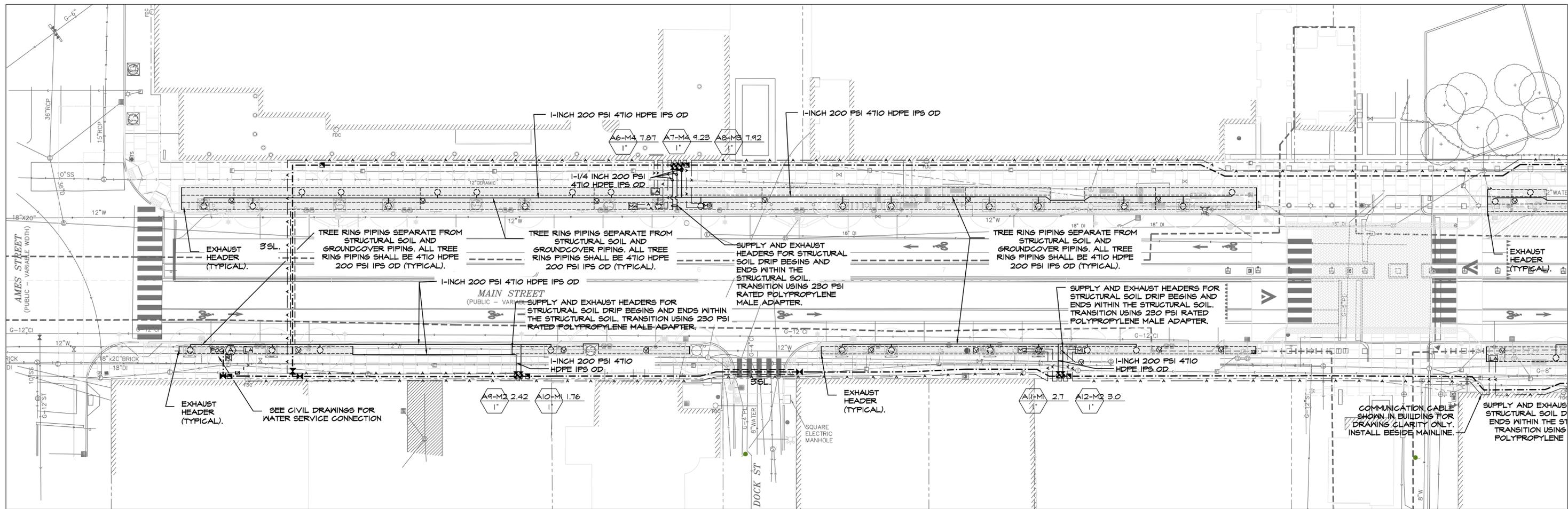


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Drawn by	SK, KP	ADDENDUM 2 - VENT ENCLOSURE SHEETS	
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Client	CITY OF CAMBRIDGE, MA	Sheet	L-11
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	VENT STRUCTURE - 2		

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- IRRIGATION NOTES**
- COORDINATE FINAL LOCATION OF ALL DRIP TUBING SELECTION W/ FINAL APPROVED LANDSCAPE.
 - ALL PIPE AND VALVE LOCATIONS ARE DIAGRAMMATIC, CONTRACTOR SHALL FIELD VERIFY.
 - ALL VALVES AND VALVE BOXES SHALL BE PLACED, WHERE POSSIBLE, IN PLANTED AREAS UNDER MULCH OR AGAINST SIDEWALK EDGES.
 - INSTALL ALL PIPING AS FAR FROM TREES AND ROOT BALLS AS POSSIBLE WHILE MAINTAINING DRIP TUBE SPACING.
 - TWO-WIRE COMMUNICATION CABLE FROM CONTROLLER TO DECODERS SHALL BE POLYETHYLENE DOUBLE JACKETED OR UF-B UL PVC DOUBLE JACKETED TWO CONDUCTOR SOLID CORE DESIGNED FOR DIRECT BURIAL. SUFFICIENT SLACK SHOULD BE LEFT IN COMMUNICATION CABLE AT ALL DECODER LOCATIONS TO BRING DECODERS ABOVE GRADE. ALL TWO-WIRE COMMUNICATION CABLE SHALL BE INSTALLED IN 1-1/2 INCH ELECTRICAL CONDUITS. NO SPLICES SHALL BE MADE OUTSIDE OF VALVE BOXES. ELECTRICAL CONDUIT SHALL BE INSTALLED FROM VALVE BOX TO VALVE BOX. RAIN SENSOR WIRES SHALL BE #14 GAUGE SINGLE STRAND BLUE FROM RAIN SENSOR TO CONTROLLER.
 - QUICK COUPLING VALVES SHALL BE INSTALLED ON 1 INCH PVC SWING JOINTS WITH BRASS INSERTS AND STABILIZERS. (SEE DETAIL)
 - IRRIGATION SYSTEM IS DESIGNED FOR SEPARATE WATER SUPPLY TO PROVIDE 17 GPM MAX FROM NEW 1 INCH SERVICE. SYSTEM TO PRODUCE 65-PSI DYNAMIC PRESSURE AT IRRIGATION CONTRACTOR'S POINT OF CONNECTION.
 - CONTRACTOR SHALL TEST DYNAMIC PRESSURE BEFORE STARTING WORK, REPORT ANY DEVIATION FROM PRESSURE REQUIRED TO OWNER'S REP. BEFORE CONTINUING.
 - INSTALL CONTROLLER IN ENCLOSURE, GENERALLY WHERE SHOWN ON THE DRAWINGS, HARD WIRE TO 120 VOLT, DEDICATED 20 AMP CIRCUIT, POWER SUPPLY USING LICENSED ELECTRICIAN. ROUTE ALL WIRES TO CONTROLLER VIA CONDUIT THROUGH ENCLOSURE BASE.
 - INSTALL RAIN SENSOR ON OUTSIDE OF CONTROLLER ENCLOSURE. ROUTE RAIN SENSOR WIRING TO CONTROLLER THROUGH ENCLOSURE WALL.
 - ALL ABOVE GROUND WIRING SHALL BE INSTALLED IN RIGID, METALLIC CONDUIT FOR VANDALISM PROTECTION.
 - COORDINATE LOCATION OF ALL EXISTING AND FUTURE UTILITIES ON SITE AND CONTACT PROPER AUTHORITIES AND UTILITY COMPANIES BEFORE THE START OF WORK.
 - IN-LINE DRIP TUBING TO BE INSTALLED 6" FROM ALL MASONRY WALLS, AND CURBING, ON AN 18" CENTER TO CENTER ROW SPACING IN GROUND COVER AREAS AND ON A 36" CENTER TO CENTER ROW SPACING IN ALL STRUCTURAL SOIL AREAS..
 - FLUSH ALL LATERAL LINES BEFORE INSTALLING IN-LINE DRIP TUBING.
 - STAKE IN-LINE DRIP TUBING AT MINIMUM 5 FOOT INTERVALS TO PREVENT MOVEMENT FOR TREE DRIP RINGS AND DRIP TUBING WITH GROUND COVER AREAS..
 - IN-LINE DRIP TUBING TO BE INSTALLED 4" BELOW GRADE IN GROUND COVER AREAS AND TOP OF ROOT BALL FOR TREE RINGS. NO DRIPPER LINE TUBING SHALL BE VISIBLE TO THE NAKED EYE. IN STRUCTURAL SOIL AREA DRIP TUBING SHALL BE INSTALLED IN PERFORATED PIPE AT BASE OF GRAVEL LAYER.
 - CONTRACTOR MUST SUBMIT SPECIFICATION SHEETS AS PER THE WRITTEN SPECIFICATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIAL AND BEGINNING WORK.
 - ANY AND ALL MATERIAL SUBSTITUTIONS WHICH VARY FROM THE SPECIFIED PRODUCTS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL AS PART OF THE SUBMITTAL PROCESS.
 - SEE IRRIGATION DETAILS AND SPECIFICATIONS FOR ADDITIONAL NECESSARY INFORMATION.

IRRIGATION LEGEND

SYMBOL	PSI	SPACING	DESCRIPTION
	40	12"	IN-LINE EMITTER DRIP TUBING TREE RING
	40	12"x18"	IN-LINE EMITTER DRIP TUBING GROUND COVER AREAS
	40	12"x36"	IN-LINE EMITTER DRIP TUBING STRUCTURED SOIL AREAS
			ISOLATION GATE VALVE (2- INCH AND SMALLER)
			1" QUICK COUPLING VALVE
			24 VOLT ELECTRIC ZONE VALVE W/ DISK FILTER (DRIP) (SEE VALVE DESIGNATOR FOR FLOW AND SIZES)
			HDPE 4710 DR11 200 PSI RATED IPS OUTSIDE DIAMETER (SIZE AS INDICATED, ALL UNLABELED PIPE TO BE 1 INCH)
			2-INCH HDPE 4710 DR11 200 PSI RATED IPS OUTSIDE DIAMETER
			160 PSI HDPE 4710 IPS OD PIPE SLEEVE (SIZE AS INDICATED) INSTALL SCH-40 PVC WIRE CONDUIT ADJACENT TO ALL MAINLINE PIPE SLEEVES. MINIMUM WIRE CONDUIT SIZE TO BE 1-1/2-INCH, UNLESS OTHERWISE NOTED. SEE SLEEVING DETAIL.
			AUTOMATIC RAIN SENSOR
			MOISTURE SENSOR
			AUTOMATIC MOISTURE SENSOR CONTROLLER

IRRIGATION LEGEND CONTINUED

	POINT OF CONNECTION
	AIR VENT ON PERFORATED PVC PIPE
	LIGHTNING SURGE ARRESTOR WITH GROUNDING SYSTEM
	LIGHTNING SURGE ARRESTOR WITH GROUNDING SYSTEM
VALVE DESIGNATION:	
	STATION NO.
	FLOW
	VALVE SIZE

DRIP SUPPLY AND EXHAUST HEADER PIPE SCHEDULE

FLOW	PIPE SIZE / TYPE
0-7 GPM	1 INCH 100 PSI POLYETHYLENE ID CONTROLLED
8-15 GPM	1-1/4 INCH 100 PSI POLYETHYLENE ID CONTROLLED



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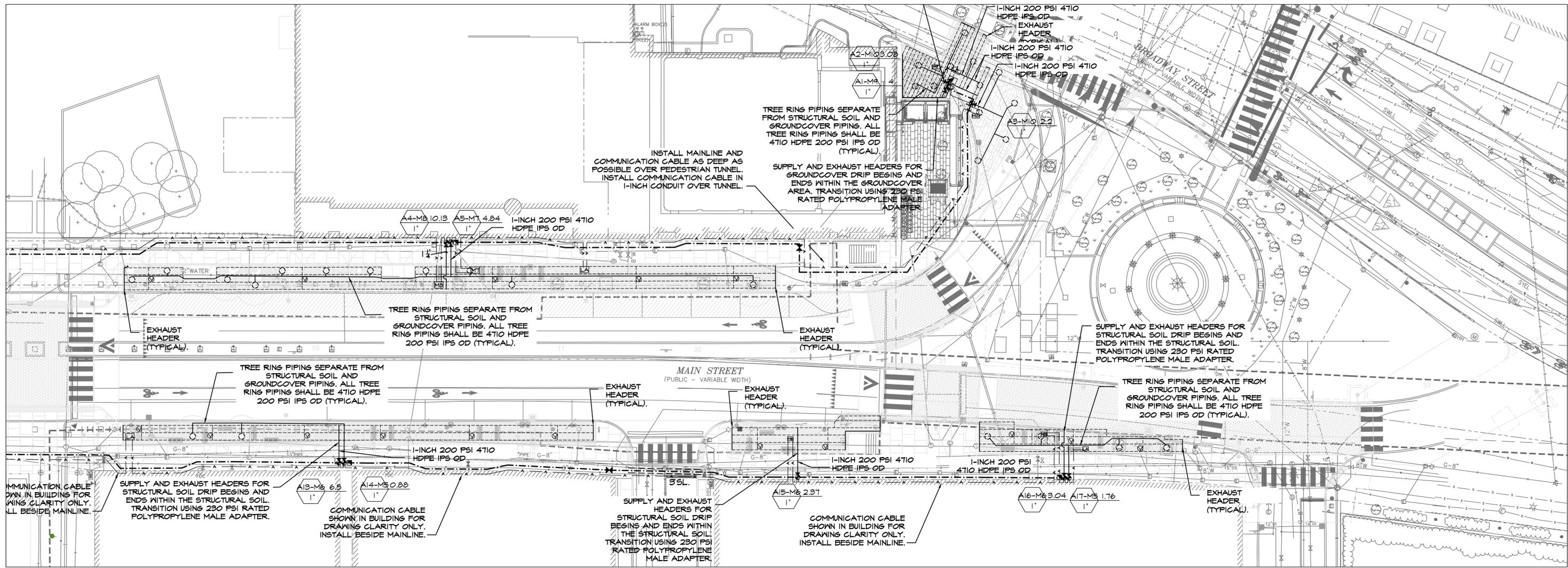
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Drawn by			
Checked by	No.	Description	Date
Approved by		REVISIONS	



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Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	IRRIGATION PLAN - 1

Sheet	I-1
File No.	

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IRRIGATION LEGEND			
SYMBOL	PSI	SPACING	DESCRIPTION
	40	12"	IN-LINE EMITTER DRIP TUBING TREE RING
	40	12"x18"	IN-LINE EMITTER DRIP TUBING GROUND COVER AREAS
	40	12"x36"	IN-LINE EMITTER DRIP TUBING STRUCTURED SOIL AREAS
	ISOLATION GATE VALVE (2- INCH AND SMALLER)		
	1" QUICK COUPLING VALVE		
	24 VOLT ELECTRIC ZONE VALVE W/ DISK FILTER (DRIP) (SEE VALVE DESIGNATOR FOR FLOW AND SIZES)		
	HDPE 4710 DR11 200 PSI RATED IPS OUTSIDE DIAMETER (SIZE AS INDICATED, ALL UNLABELED PIPE TO BE 1 INCH)		
	2-INCH HDPE 4710 DR11 200 PSI RATED IPS OUTSIDE DIAMETER		
	160 PSI HDPE 4710 IPS OD PIPE SLEEVE (SIZE AS INDICATED) INSTALL SCH-40 PVC WIRE CONDUIT ADJACENT TO ALL MAINLINE PIPE SLEEVES, MINIMUM WIRE CONDUIT SIZE TO BE 1-1/2-INCH, UNLESS OTHERWISE NOTED. SEE SLEEVING DETAIL.		
	AUTOMATIC RAIN SENSOR		
	MOISTURE SENSOR		
	AUTOMATIC MOISTURE SENSOR CONTROLLER		

IRRIGATION LEGEND CONTINUED	
	POINT OF CONNECTION
	AIR VENT ON PERFORATED PVC PIPE
	LIGHTNING SURGE ARRESTOR WITH GROUNDING SYSTEM
	LIGHTNING SURGE ARRESTOR WITH GROUNDING SYSTEM
VALVE DESIGNATION:	
	STATION NO.
	FLOW
	VALVE SIZE

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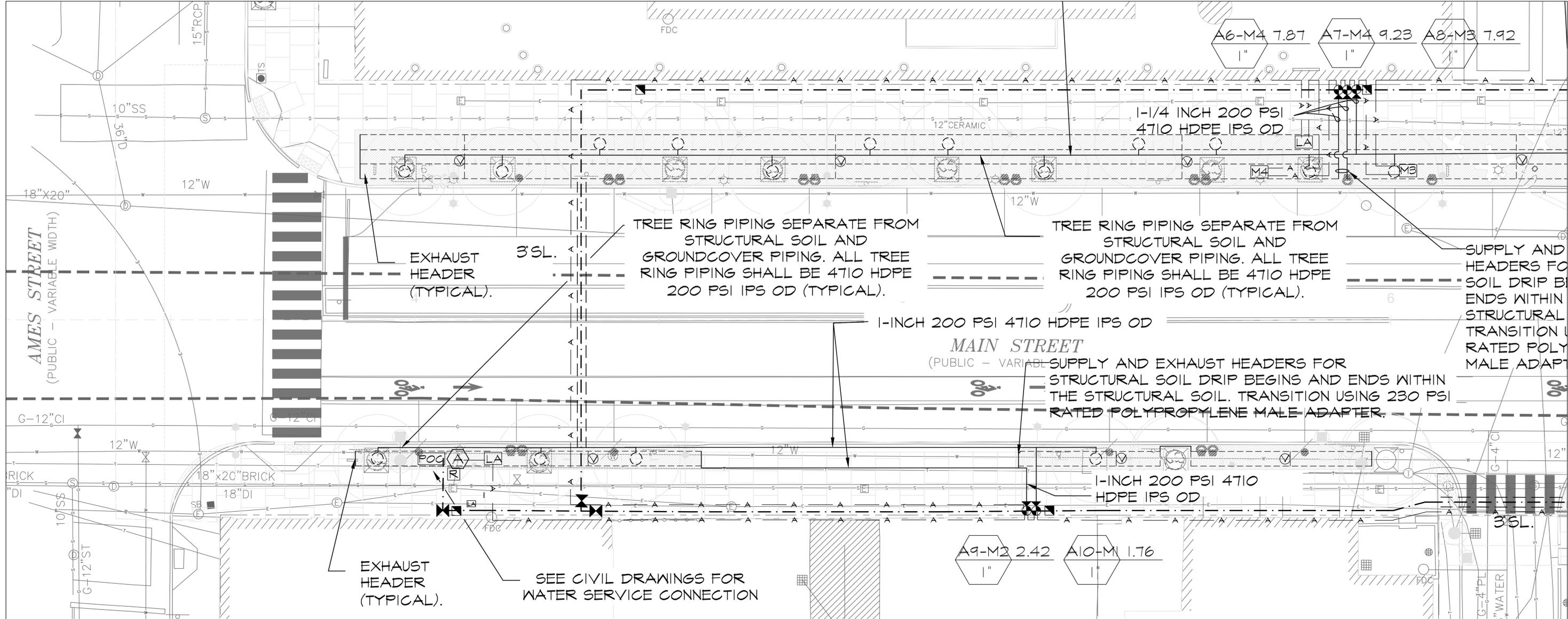
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Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	IRRIGATION PLAN - 2

Sheet	1-2
File No.	

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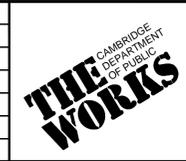
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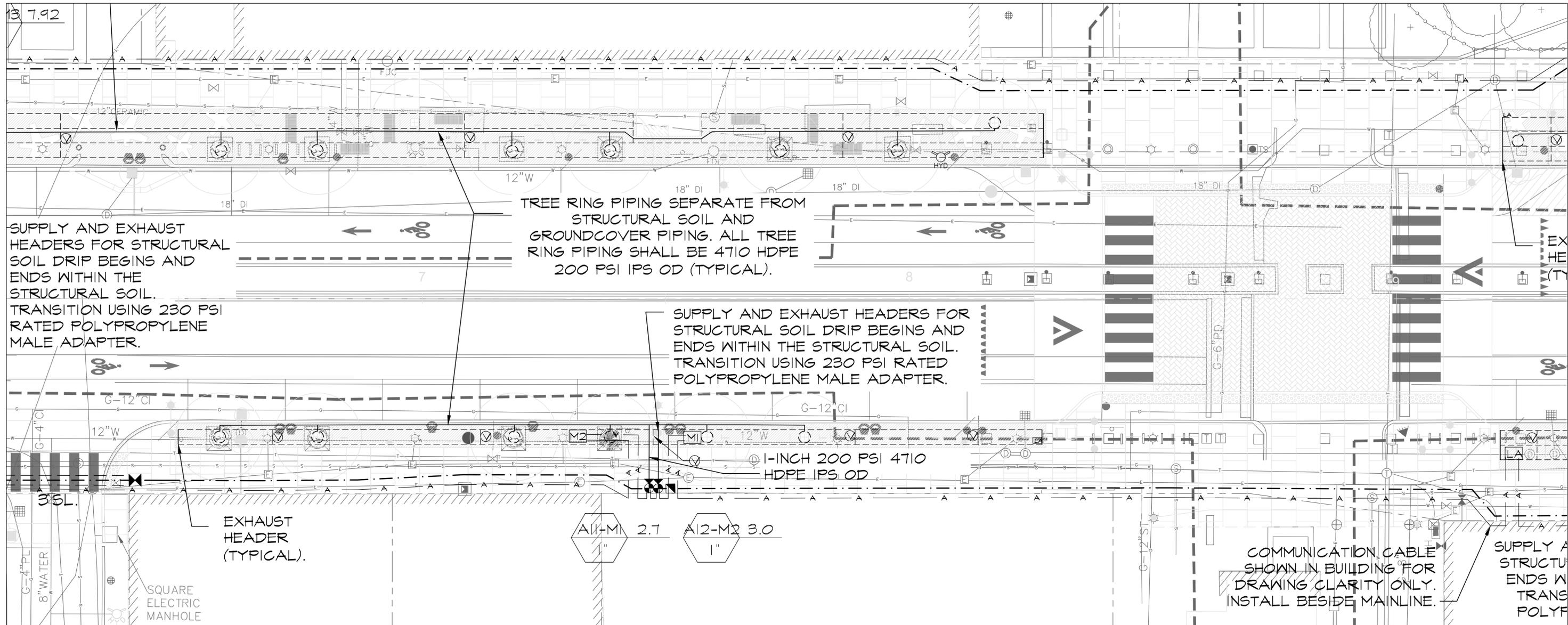
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Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	IRRIGATION PLAN - ENLARGEMENT 1

Sheet	I-3
File No.	



SUPPLY AND EXHAUST HEADERS FOR STRUCTURAL SOIL DRIP BEGINS AND ENDS WITHIN THE STRUCTURAL SOIL. TRANSITION USING 230 PSI RATED POLYPROPYLENE MALE ADAPTER.

TREE RING PIPING SEPARATE FROM STRUCTURAL SOIL AND GROUNDCOVER PIPING. ALL TREE RING PIPING SHALL BE 4710 HDPE 200 PSI IPS OD (TYPICAL).

SUPPLY AND EXHAUST HEADERS FOR STRUCTURAL SOIL DRIP BEGINS AND ENDS WITHIN THE STRUCTURAL SOIL. TRANSITION USING 230 PSI RATED POLYPROPYLENE MALE ADAPTER.

1-INCH 200 PSI 4710 HDPE IPS OD

EXHAUST HEADER (TYPICAL).

COMMUNICATION CABLE SHOWN IN BUILDING FOR DRAWING CLARITY ONLY. INSTALL BESIDE MAINLINE.

SUPPLY AND EXHAUST HEADERS FOR STRUCTURAL SOIL DRIP BEGINS AND ENDS WITHIN THE STRUCTURAL SOIL. TRANSITION USING 230 PSI RATED POLYPROPYLENE MALE ADAPTER.

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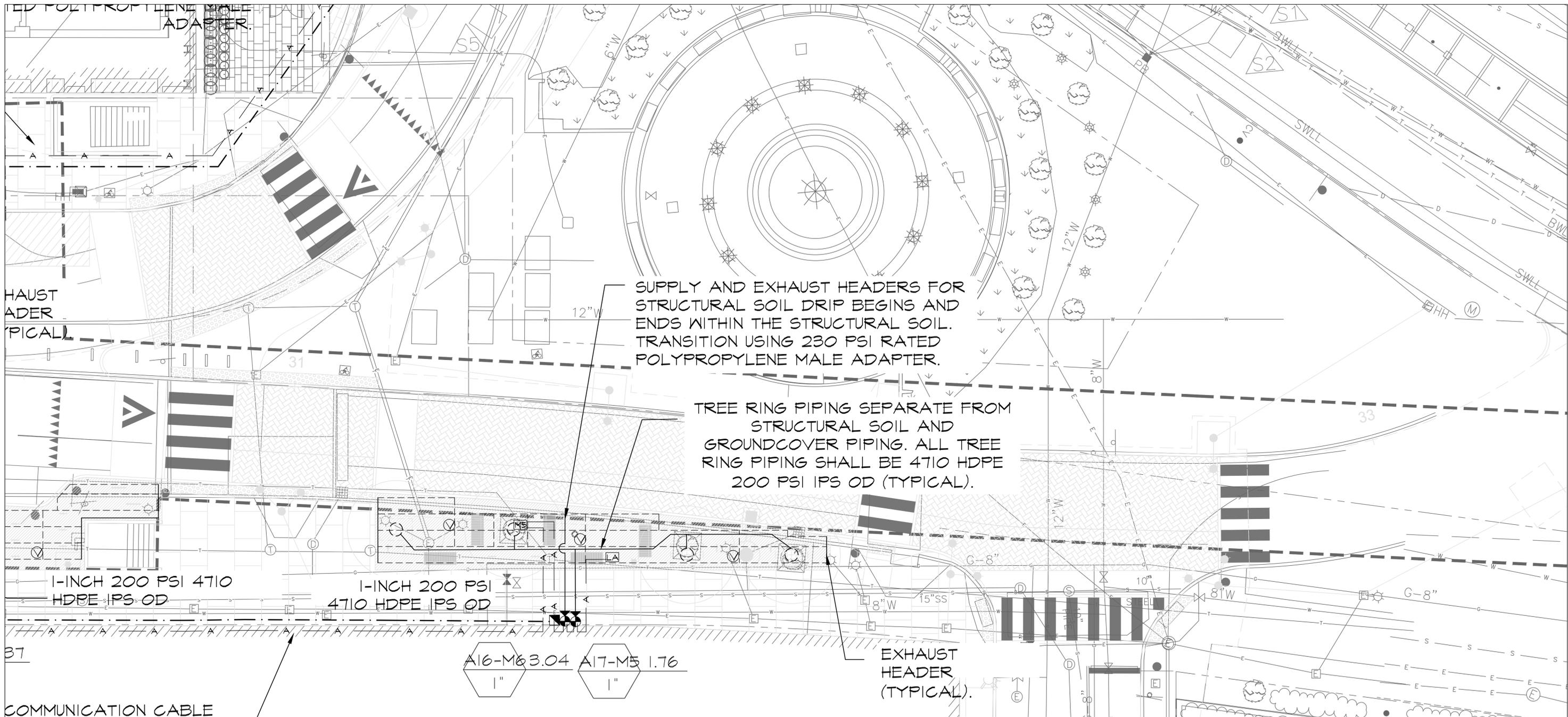
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Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	IRRIGATION PLAN - ENLARGEMENT 2

Sheet	I-4
File No.	



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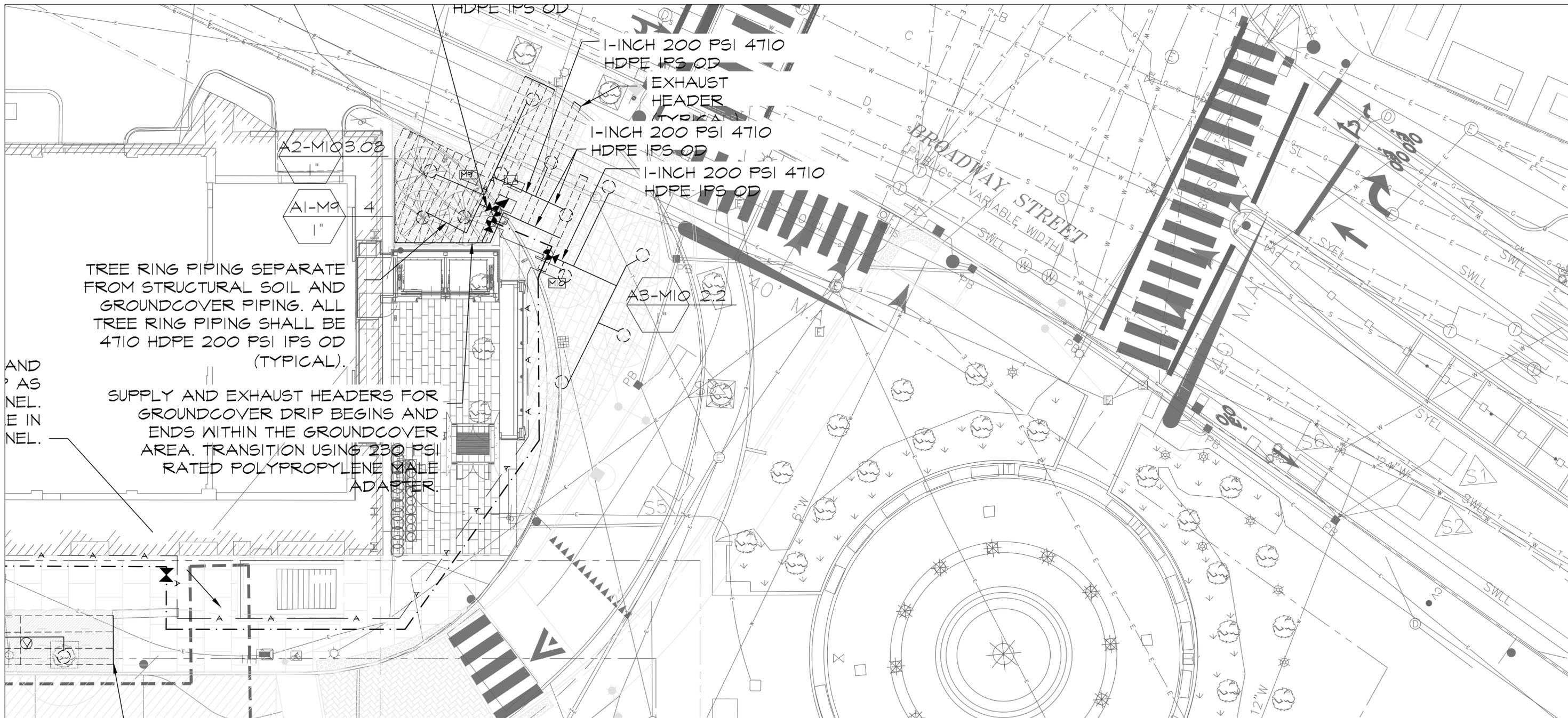
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Client	CITY OF CAMBRIDGE, MA
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
Drawing	IRRIGATION PLAN - ENLARGEMENT 4

Sheet	1-6
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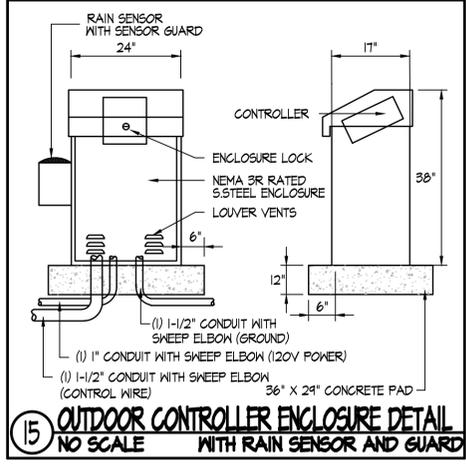
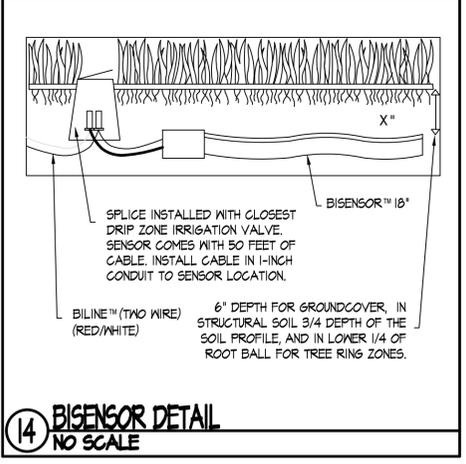
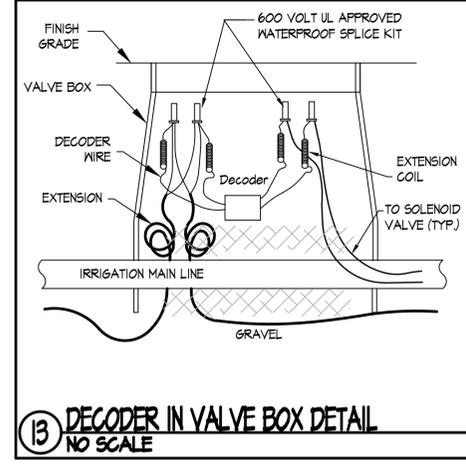
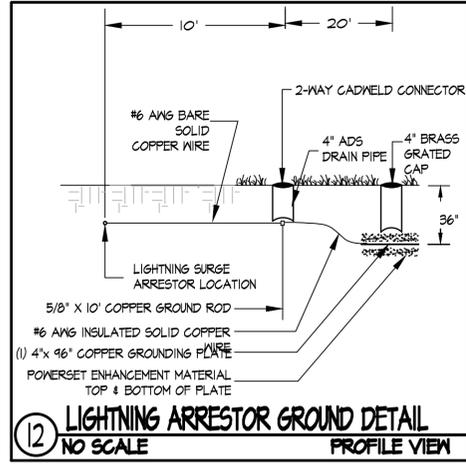
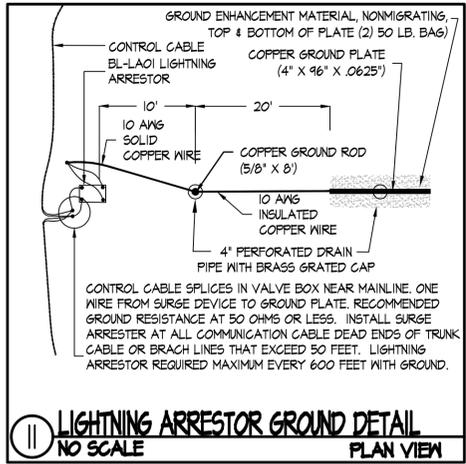
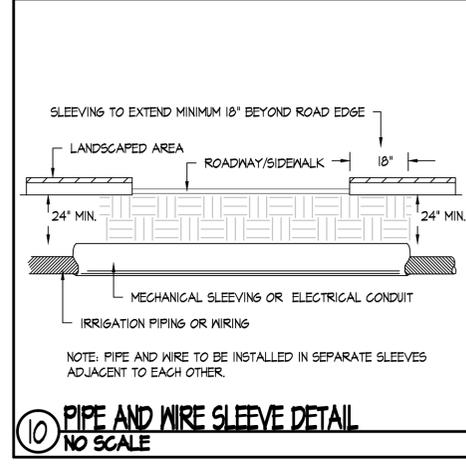
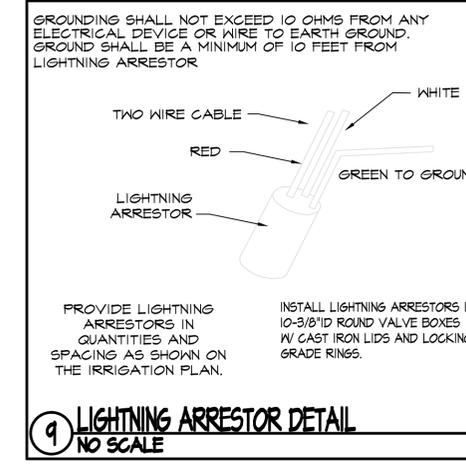
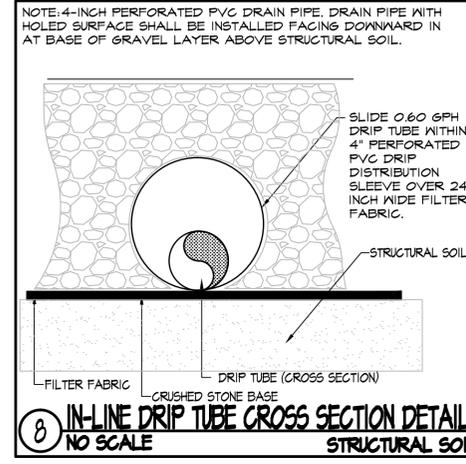
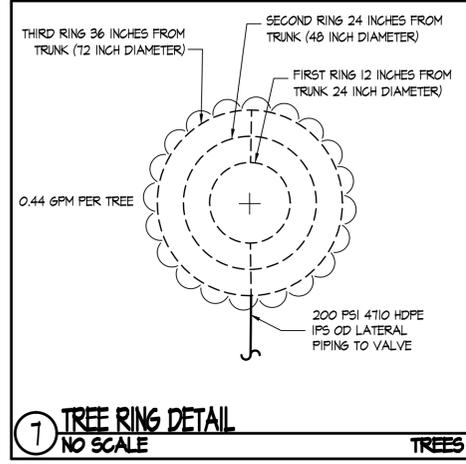
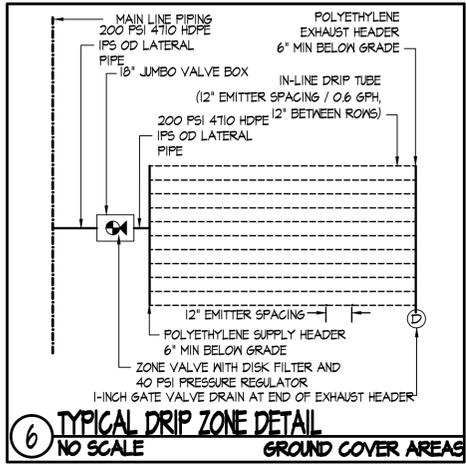
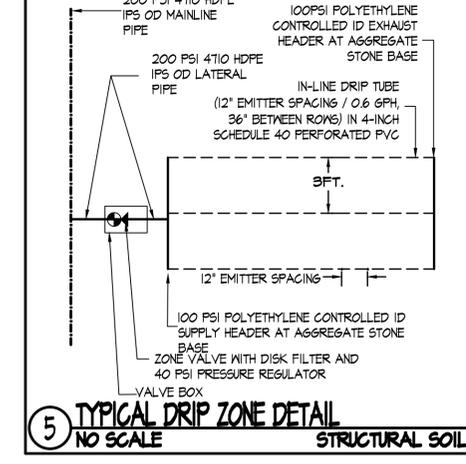
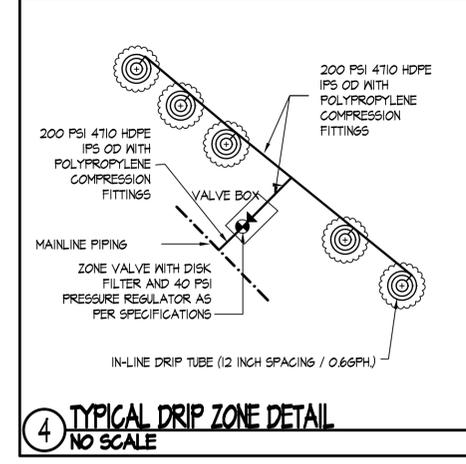
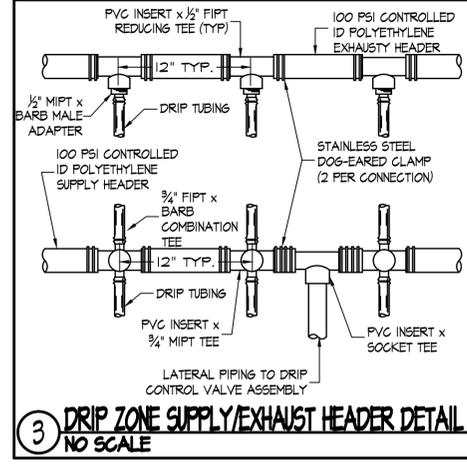
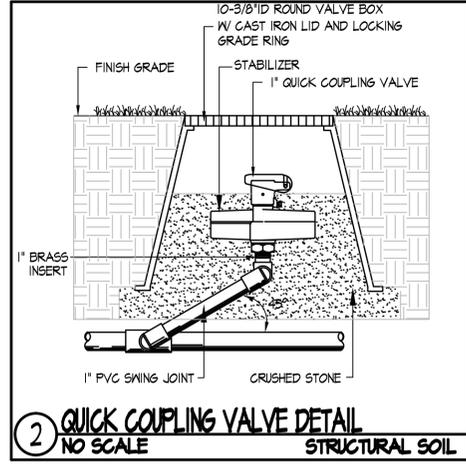
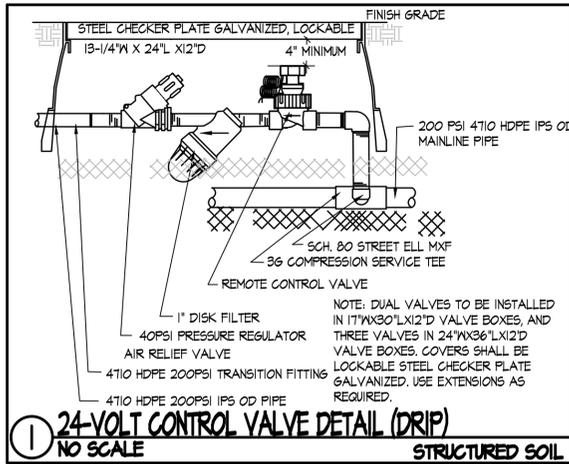
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Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE
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Drawing	IRRIGATION DETAILS-1

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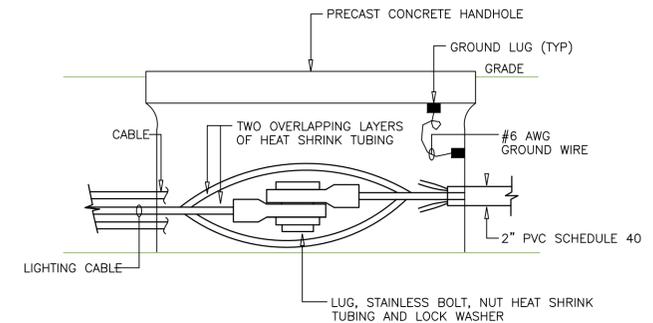
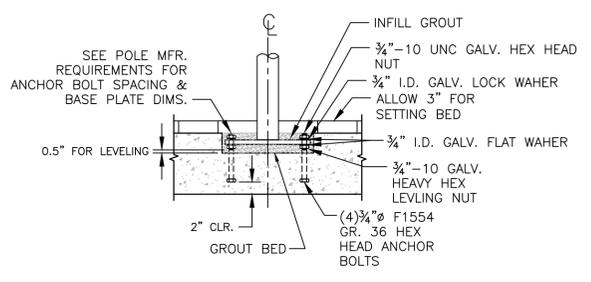
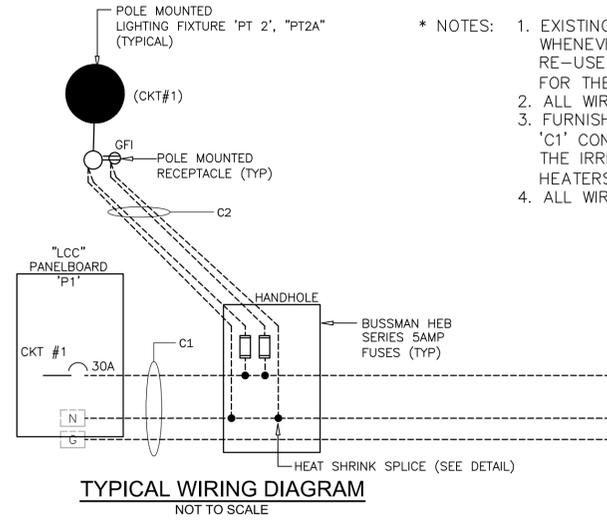
LEGEND	
	POLE MOUNTED LIGHTING FIXTURE 'PT2', CKT#1
	POLE MOUNTED LIGHTING FIXTURE 'PT1', CKT#1
	LIGHTING HANDHOLE PRECAST 12"Wx24"Lx20"D W/ 3/4"x8" GROUND ROD & #4AWG GROUND WIRE
	LIGHTING CONTROL CABINET 'LCC'
	EXISTING UNDERGROUND CONDUIT NO. XX
	PROPOSED UNDERGROUND CONDUIT NO. XX
	120 VAC, LOCKABLE, GFI, DUPLEX RECEPTACLE WP - WEATHERPROOF (90) - CIRCUIT NUMBER MANUFACTURER - LEVITON, BRYANT, ARROW HART OR EQUAL
	4"x4" WEATHERPROOF JUNCTION BOX (11) - CIRCUIT NUMBER

CABLE AND CONDUIT SCHEDULE							
CONDUIT NO.	CONDUIT SIZE	SIZE WIRE	NO. WIRES	GROUND WIRE	FROM	TO	PURPOSE
C1**	EXIST 2"	#4	4	2#6	LCC NO.1	HANDHOLE	EXISTING STREET LIGHTING/RECEPTACLES CIRCUIT (SEE NOTE 3)
C2	2"	#10 #10	2 2	#4 #10	HANDHOLE HANDHOLE	LIGHT POLE BASE	STREET LIGHTING RECEPTACLE
C3	2"	#4	1	#6	LCC NO.2	HANDHOLE	EXISTING STREET LIGHTING/RECEPTACLES CIRCUIT
C4	2"	#4 #4	2 2	#6 #6	HANDHOLE 1 HANDHOLE 1	IRRIGATION CONTROLLER BACKFLOW ELEC HEATER	IRRIGATION CONTROLLER BACKFLOW HEATER

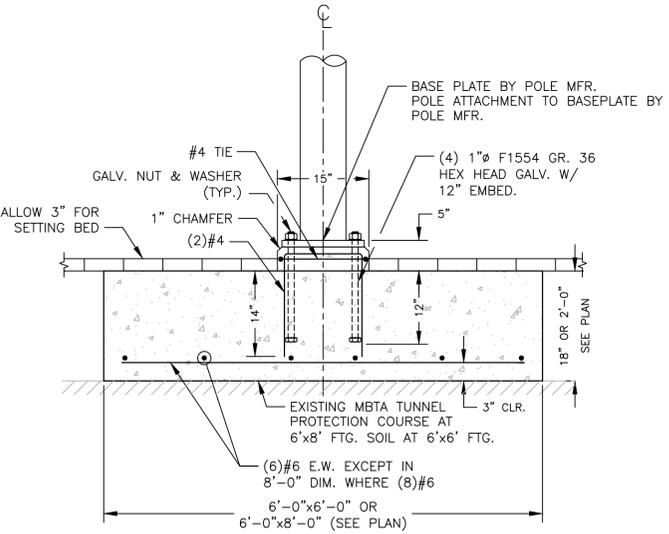
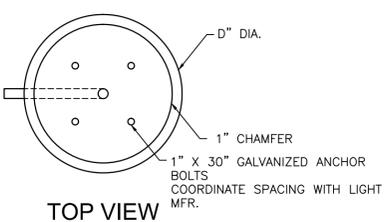
LUMINAIRE SCHEDULE				
	PT1	-	SELUX CAT. # SACL-1-LG3700-R3-50-18-BK-120 POLE#S35-14-BK-BC1REC1131	CAST ALUMINUM HOUSING BLACK FINISH, FORMED SPECULAR ALUMINUM REFLECTOR, LAMINATED GLASS ENCLOSURE WITH CLEAR SECTION BELOW LEDS. LED SINGLE MOUNTED LG3700 700MA@65W TYPE III DISTRIBUTION 5000K 0-10V DIMMING DRIVER. STEEL POLE 14' HIGH W/DUPLEX GFI RECEPTACLE MTD@13'AFG
	PT2	-	NILAND CAT. # CB-17-TSS-28-CB-1-BC-17-LEX -LED-GFI-3MED	CAMBRIDGE 17 SERIES CAST IRON CLAM SHELL-TAPERED SMOOTH STEEL SHAFT-28" 8" POLE HEIGHT-SINGLE 6' CAMBRIDGE ARM WITH SCROLL-BC LED PENDENT FIXTURE-NILAND OSRAM SYLVANIA LED UNIT-4000 KELVIN-125 ACTUAL WATTS-250 WATT 0-10V DIMMING DRIVER EQUIVALENT-VOLTAGE RANGE-TYPE III REFRACTOR-GFI RECEPTACLE WITH WEATHERPROOF COVER-GLOSS BLACK NEMA TWIST LOCK PHOTOCELL - GLOSS BLACK
	PT2PA	-	NILAND CAT. # CB-27-TSS-28-CB-2-BC-17-LEX -LED-GFI	CAMBRIDGE 17 SERIES CAST IRON CLAM SHELL-TAPERED SMOOTH STEEL SHAFT-28" 8" POLE HEIGHT-DOUBLE 6' CAMBRIDGE ARM WITH SCROLL-BC LED PENDENT FIXTURE-NILAND OSRAM SYLVANIA LED UNIT-4000 KELVIN-125 ACTUAL WATTS-250 WATT 0-10V DIMMING DRIVER EQUIVALENT-VOLTAGE RANGE-TYPE III REFRACTOR-GFI RECEPTACLE WITH WEATHERPROOF COVER-NEMA TWIST LOCK PHOTO CELL-GLOSS BLACK

- * NOTES:
- EXISTING METERED CONDUITS SHALL BE RE-USED WHENEVER POSSIBLE. THE CONTRACTOR SHALL NOT RE-USE THE EXISTING CONDUIT SYSTEM PRESENTLY USED FOR THE 'COBRA HEAD LIGHTING FIXTURES.
 - ALL WIRE SHALL BE FURNISHED AND INSTALLED NEW.
 - FURNISH AND INSTALL 4 #4, 2 #6 GROUND IN EXISTING 'C1' CONDUIT FROM LCC #1 TO HANDHOLE 'HH1' TO POWER THE IRRIGATION CONTROLLER AND BACKFLOW ELECTRIC HEATERS (2@1500 WATTS).
 - ALL WIRE SHALL BE TYPE THHN COPPER.

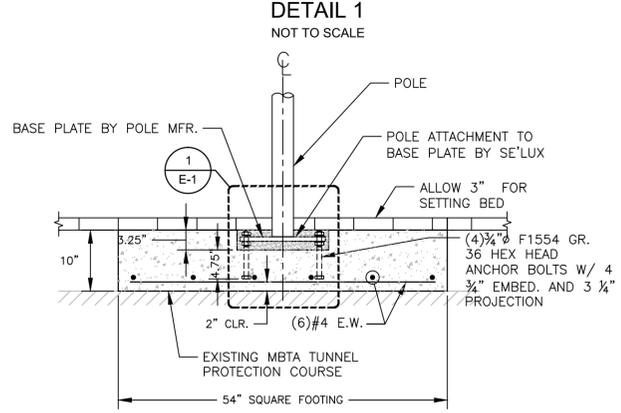
- * NOTES:
- FINAL SELECTION OF DIMMING DRIVER SHALL BE COORDINATED WITH THE CITY OF CAMBRIDGE STREETLIGHTING DEPARTMENT'S DIMMING SYSTEM PRIOR TO PURCHASING LIGHTING FIXTURES



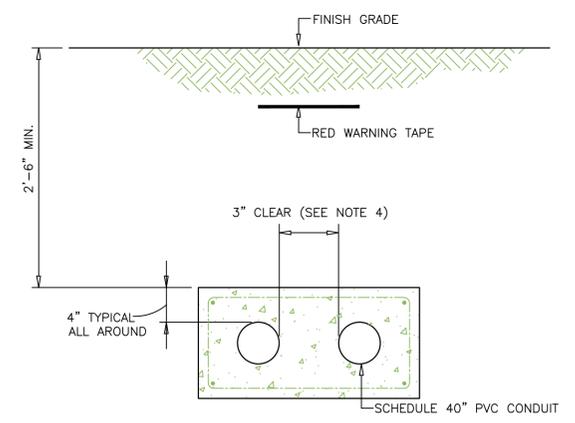
- NOTES:
- FURNISH AND INSTALL GROUND LUGS AND #6 GROUND WIRE IN ALL EXISTING HANDHOLES



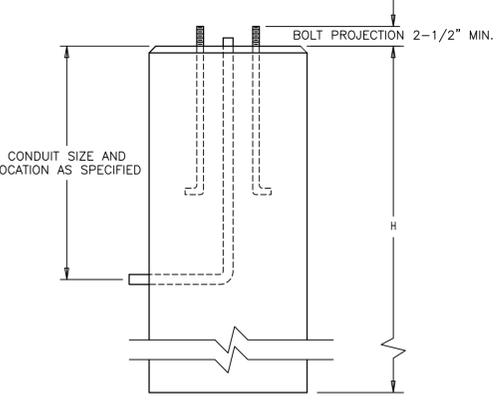
- NOTES:
- STRUCTURAL FASTENERS SHALL BE HOT DIPPED GALVANIZED AND CONFORM TO THE REQUIREMENTS OF AASHTO M232 (ASTM A153).
 - 6'-0"x6'-0" FOOTING LOCATED AT STA. 31+58, STA. 32+70 AND STA. 33+38.
 - 6'-0"x8'-0" FOOTING LOCATED AT STA. 9+88.



- NOTES:
- STRUCTURAL FASTENERS SHALL BE HOT DIPPED GALVANIZED AND CONFORM TO THE REQUIREMENTS OF AASHTO M232 (ASTM A153).
 - 4'-6" SQUARE FOOTING LOCATED AT STA. 30+16 AND STA. 30+60



- NOTE:
- ALL CONDUITS FROM THE LIGHTING CONTROL CABINET 'LCC' AND CONDUIT FROM HANDHOLE TO HANDHOLE SHALL BE ENCASED IN CONCRETE



PRECAST LIGHT STANDARD FOUNDATION
NOT TO SCALE

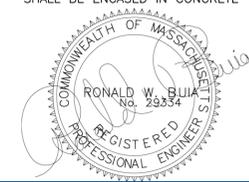
- NOTES:
- FOR LIGHT TYPE PT-1: D=12-INCHES; H=36-INCHES
 - FOR LIGHT TYPES PT-2, PT-2A: D=20-INCHES; H=48-INCHES
 - CONCRETE 4000 PSI AT 28 DAYS
 - REINFORCING: 4 - #4 VERTICALLY AND #3 STIRRUPS 12" O.C. HORIZONTALLY (NOT SHOWN)

*** NOTE: USE EXTREME CAUTION WHEN EXCAVATING NEAR MBTA TUNNEL TO AVOID DAMAGE TO TUNNEL STRUCTURE, WATERPROOFING OR PROTECTION COURSE. REPORT SUSPECTED EXPOSURE OF TUNNEL STRUCTURE TO ENGINEER IMMEDIATELY.

PT2 SHALLOW FOUNDATION AND ANCHORAGE
NOT TO SCALE

PT1 SHALLOW FOUNDATION AND ANCHORAGE
NOT TO SCALE

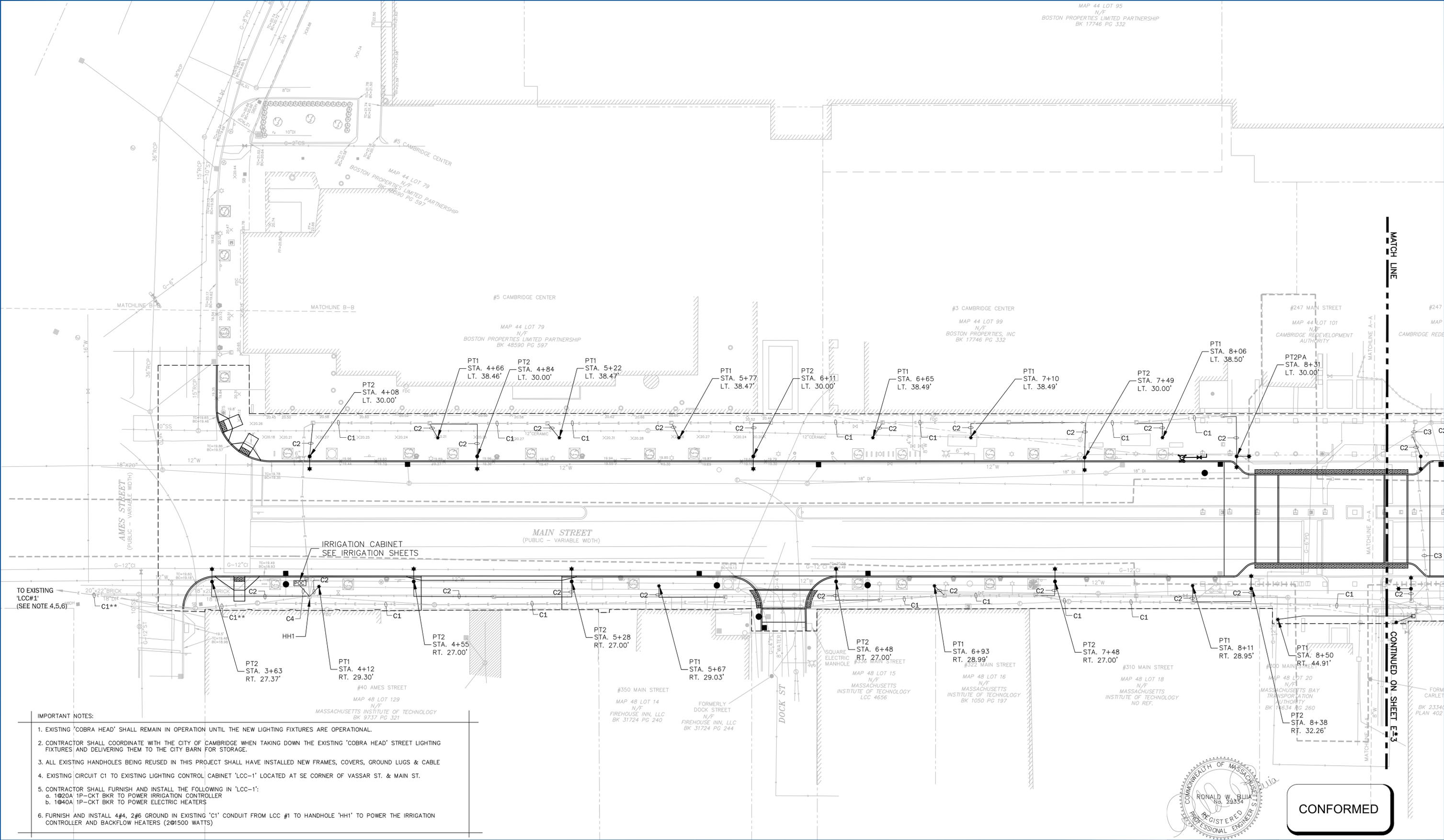
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 HDR ENGINEERING, INC. 695 ATLANTIC AVENUE, 2FL BOSTON, MASSACHUSETTS 02111-2626 (617) 357-7700	 TRANSPORTATION ENGINEERS & PLANNERS	 KLOPFER MARTIN DESIGN GROUP	 BRIGHT PEOPLE. RIGHT SOLUTIONS.	Scale	AS NOTED				 THE WORKS CAMBRIDGE DEPARTMENT OF PUBLIC WORKS	Client	CITY OF CAMBRIDGE, MA	Sheet	E-1
				Date	MAY 2014					Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
				Job No.						Drawing	LIGHTING LEGEND, SCHEDULE AND DETAILS		
				Designed by	RWB								
				Drawn by	GCB								
				Checked by	RWB	No.	Description	Date					
				Approved by	RWB		REVISIONS						



- IMPORTANT NOTES:**
- EXISTING 'COBRA HEAD' SHALL REMAIN IN OPERATION UNTIL THE NEW LIGHTING FIXTURES ARE OPERATIONAL.
 - CONTRACTOR SHALL COORDINATE WITH THE CITY OF CAMBRIDGE WHEN TAKING DOWN THE EXISTING 'COBRA HEAD' STREET LIGHTING FIXTURES AND DELIVERING THEM TO THE CITY BARN FOR STORAGE.
 - ALL EXISTING HANDHOLES BEING REUSED IN THIS PROJECT SHALL HAVE INSTALLED NEW FRAMES, COVERS, GROUND LUGS & CABLE
 - EXISTING CIRCUIT C1 TO EXISTING LIGHTING CONTROL CABINET 'LCC-1' LOCATED AT SE CORNER OF VASSAR ST. & MAIN ST.
 - CONTRACTOR SHALL FURNISH AND INSTALL THE FOLLOWING IN 'LCC-1':
 - a. 1Ø20A 1P-CKT BKR TO POWER IRRIGATION CONTROLLER
 - b. 1Ø40A 1P-CKT BKR TO POWER ELECTRIC HEATERS
 - FURNISH AND INSTALL 4#4, 2#6 GROUND IN EXISTING 'C1' CONDUIT FROM LCC #1 TO HANDHOLE 'HH1' TO POWER THE IRRIGATION CONTROLLER AND BACKFLOW HEATERS (2Ø1500 WATTS)

COMMONWEALTH OF MASSACHUSETTS
 REGISTERED PROFESSIONAL ENGINEER
 RONALD W. BUJA
 No. 29334

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HDR
 HDR ENGINEERING, INC.
 695 ATLANTIC AVENUE, 2FL
 BOSTON, MASSACHUSETTS 02111-2626
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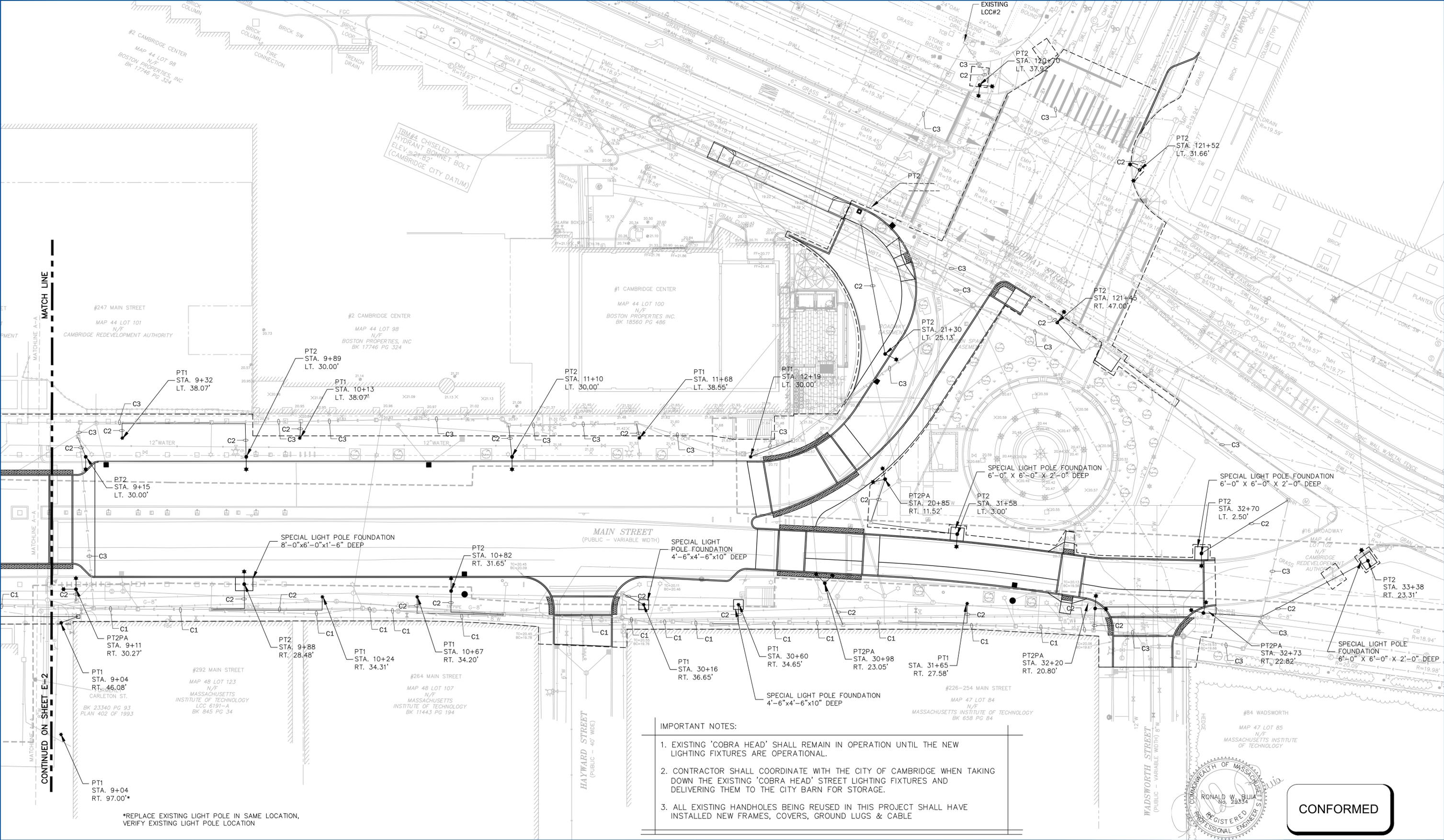
Scale	AS NOTED		
Date	MAY 2014		
Job No.			
Designed by	RWB		
Drawn by	GCB		
Checked by	RWB	No.	Description
Approved by	XXX		REVISIONS



Client	CITY OF CAMBRIDGE, MA	Sheet	E-2
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	LIGHTING PLAN - 1		

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- IMPORTANT NOTES:
1. EXISTING 'COBRA HEAD' SHALL REMAIN IN OPERATION UNTIL THE NEW LIGHTING FIXTURES ARE OPERATIONAL.
 2. CONTRACTOR SHALL COORDINATE WITH THE CITY OF CAMBRIDGE WHEN TAKING DOWN THE EXISTING 'COBRA HEAD' STREET LIGHTING FIXTURES AND DELIVERING THEM TO THE CITY BARN FOR STORAGE.
 3. ALL EXISTING HANDHOLES BEING REUSED IN THIS PROJECT SHALL HAVE INSTALLED NEW FRAMES, COVERS, GROUND LUGS & CABLE



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Scale	AS NOTED			
Date	MAY 2014			
Job No.				
Designed by	RWB			
Drawn by	GCB			
Checked by	RWB	No.	Description	Date
Approved by	XXX		REVISIONS	



Client	CITY OF CAMBRIDGE, MA	Sheet	E-3
Project	RECONSTRUCTION OF MAIN STREET KENDALL SQUARE	File No.	
Drawing	LIGHTING PLAN - 2		