

CONTRACT 5

WATER MAINS - ROUTE 6 NORTH

WATER SYSTEM CONSTRUCTION

EASTHAM, MASSACHUSETTS

NOVEMBER 2014



VICINITY MAP
1" = 2,000'

LIST OF DRAWINGS

G-1	GENERAL NOTES AND LEGEND	C-12	ROUTE 6 X AND EXTENDED SERVICE I
G-2	PAVEMENT SCHEDULE AND SHEET LOCUS	C-13	EXTENDED SERVICE II AND III
C-1	ROUTE 6 I	CD-1	CONSTRUCTION DETAILS I
C-2	ROUTE 6 II	CD-2	CONSTRUCTION DETAILS II
C-3	ROUTE 6 III	CD-3	CONSTRUCTION DETAILS III
C-4	ROUTE 6 IV AND BRACKETT ROAD	CD-4	CONSTRUCTION DETAILS IV
C-5	OLD COUNTY ROAD AND MASSASOIT ROAD	CD-5	CONSTRUCTION DETAILS V
C-6	MASSASOIT ROAD AND ROUTE 6 V		
C-7	GREAT POND ROAD AND KINGSBURY BEACH ROAD		
C-8	KINGSBURY BEACH ROAD AND ROUTE 6 VI		
C-9	ROUTE 6 VII		
C-10	ROUTE 6 VIII		
C-11	ROUTE 6 IX AND SAMOSET ROAD		

TOWN ADMINISTRATOR

SHEILA VANDERHOEF

BOARD OF SELECTMEN

LINDA BURT
JOHN KNIGHT
MARTIN McDONALD
WALLACE ADAMS, II
ELIZABETH GAWRON

PUBLIC WORKS SUPERINTENDENT

NEIL ANDRES, P.E.



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NOVEMBER 2014

GENERAL NOTES:

- BASE MAP INFORMATION FOUND ON THE DESIGN SHEETS ARE TAKEN FROM A GIS FLYOVER CONDUCTED IN 3/20/2012. PROPERTY LINE INFORMATION AND WETLAND LIMITS ARE TAKEN FROM MASSGIS AND IT IS APPROXIMATE ONLY. GAS INFORMATION IS TAKEN FROM NATIONAL GRID. COMMUNICATION UTILITY INFORMATION IS TAKEN FROM VERIZON. IT IS NOTED THAT ADDITIONAL UTILITY PIPES AND STRUCTURES MAY EXIST.
- IN AREAS WHERE CONSTRUCTION ACTIVITIES ARE ANTICIPATED TO OCCUR WITHIN PRIVATE PROPERTY, PROPERTY LINE LOCATIONS ARE TO BE REVIEWED WITH THE TOWN PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL NOT STORE ANY APPARATUS, MATERIALS, SUPPLIES, OR EQUIPMENT ON DRAINAGE STRUCTURES, PRIVATE PROPERTY OR WITHIN 100 FEET OF WETLANDS, UNLESS DIRECTED TO DO SO BY THE CONTRACT DOCUMENTS.
- NORTH DIRECTION SHOWN IS APPROXIMATE.
- ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS IN ADVANCE, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO ANY EXCAVATION.
- DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSION AND STATIONING SHALL PREVAIL. REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- THE CONTRACTOR SHALL RESTORE ALL PUBLIC AND PRIVATE PROPERTY TO ITS PRE-CONSTRUCTION CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- ALL EXISTING UTILITIES LINES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE. THE CONTRACTOR, AT NO ADDITIONAL COST TO THE TOWN, SHALL REPAIR ANY EXISTING SEWERS, STORM DRAIN LINES OR CULVERTS DAMAGED DURING CONSTRUCTION.
- IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO THE RESPECTIVE UTILITY COMPANY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.
- ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURE CAUSED BY, OR RESULTING FROM, THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY AND THE TOWN.
- THE CONTRACTOR IS TO TAKE SPECIAL CARE NOT TO DAMAGE TREES, BUSHES, PLANTS, FLOWERS, STONEWALLS, FENCES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED. CONTRACTOR SHALL REPLACE AT NO COST TO OWNER, ALL DAMAGED ITEMS.
- CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDEWALKS, BERMS, PAVEMENT AND OTHER ITEMS DAMAGED BY HIS CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, AND TO THE SATISFACTION OF THE TOWN AND ENGINEER.
- ANY TRAFFIC SIGNAL EQUIPMENT (LIGHTS, CONDUITS, LOOP DETECTORS) DISTURBED SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AS DIRECTED BY THE TOWN AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS NECESSARY AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR SHALL BE REQUIRED TO FURNISH AND MAINTAIN A TELEPHONE NUMBER WHERE THE CONTRACTOR CAN BE REACHED 24 HOURS A DAY, 7 DAYS A WEEK.
- THE LOCATION AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE TOWN. THE CONTRACTOR SHALL LIMIT HIS ACTIVITIES TO THESE AREA.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR WORK IN ROADWAYS AND FOR BLASTING. THE CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO ALL PERMITS AS AN INTEGRAL PART OF HIS WORK.
- THE CONTRACTOR SHALL HANDLE GROUNDWATER, WHERE ENCOUNTERED, IN AN APPROVED MANNER. DURING ANY DEWATERING, THE CONTRACTOR SHALL USE STONE AROUND THE SUCTION END TO MINIMIZE DISCHARGE OF TRENCH MATERIALS. THE DISCHARGED WATER SHALL PASS THROUGH FILTER FABRIC.
- IF ENCOUNTERED, THE CONTRACTOR SHALL HANDLE, STORE, REMOVE, TRANSPORT AND LEGALLY DISPOSE OF ANY ASBESTOS-CEMENT IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS. ASBESTOS NOTIFICATION FORMS SHALL BE COMPLETED AND SUBMITTED TO THE APPROPRIATE AGENCY/AGENCIES.

WATER MAIN NOTES:

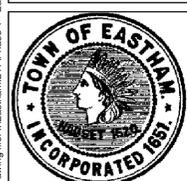
- NEW WATER MAINS AND SERVICES SHALL BE INSTALLED AT THE MINIMUM DEPTH FROM FINISH GRADE TO TOP OF PIPE AS SHOWN ON THE DRAWINGS. WHERE NECESSARY, NEW WATER MAINS SHALL BE INSTALLED AT A GREATER DEPTH TO CLEAR OBSTACLES SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. MINIMUM CLEARANCES TO UTILITIES, AS SHOWN ON THE DRAWINGS SHALL BE MAINTAINED.
- MINIMUM COVER OVER THE PROPOSED WATER MAIN AND APPURTENANCES SHALL BE 5'-0" UNLESS OTHERWISE NOTED OR DIRECTED BY ENGINEER. ANY PIPE WITHOUT 4'-0" COVER REQUIRES INSULATION.
- TEST PITS TO LOCATE EXISTING UTILITIES MAY BE ORDERED BY THE ENGINEER TO DETERMINE WHETHER TO RAISE OR LOWER THE PROPOSED WATER MAIN TO CLEAR EXISTING UTILITIES OR MEET EXISTING WATER MAINS.
- THE CONTRACTOR SHALL STAKE OUT ALL HYDRANT LOCATIONS AT LEAST 3 DAYS IN ADVANCE OF INSTALLATION. LOCATION OF ALL HYDRANTS SHALL BE VERIFIED BY THE FIRE DEPARTMENT, ENGINEER AND TOWN PRIOR TO DIGGING FOR INSTALLATION.
- ALL HYDRANT BRANCHES SHALL HAVE VALVES AS SHOWN ON THE HYDRANT DETAIL.
- ANY HYDRANT WHICH IS NOT IN SERVICE SHALL BE COVERED WITH A SECURELY FASTENED BURLAP BAG (OR EQUAL).
- ALL WATER MAIN CAPS WHICH WILL BE REMOVED IN SUBSEQUENT CONTRACTS SHALL BE MARKED WITH A VERTICAL OAK POST (OR EQUAL) APPROXIMATELY 18" BELOW FINISHED GRADE (EXCEPT WHERE WITHIN STATE HIGHWAY LAYOUT) AND MARKED WITH BLUE SPRAY PAINT.
- SERVICE TUBING SHALL NOT BE CONNECTED TO THE PROPOSED WATER MAIN UNTIL SATISFACTORY PRESSURE TEST AND DISINFECTION RESULTS.
- WATER SERVICE SHALL NOT BE INTERRUPTED MORE THAN 4 HOURS WITHOUT PRIOR APPROVAL OF THE OWNER.
- THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES OR HYDRANTS WHICH HOLD WATER IN THE SYSTEM. THE OWNER WILL, ON 24 HOURS NOTICE FROM THE CONTRACTOR, OPEN AND/OR CLOSE ANY VALVES OR HYDRANTS REQUIRED FOR DRAINING OR ADMITTING WATER TO THE VARIOUS SECTIONS OF THE WATER MAINS.
- SOME WATER SERVICE CURB BOXES MAY NOT BE SHOWN ON THE DRAWINGS. THE ENGINEER WILL MARK THE LOCATION OF SUCH CURB BOXES, PROVIDED THE CONTRACTOR GIVES THE ENGINEER AT LEAST ONE WEEK ADVANCE NOTICE.
- OPEN TRENCHES MUST BE BACKFILLED AT THE END OF THE WORKDAY OR COVERED AND SECURED WITH STEEL PLATES, RAMPED AS APPROVED BY THE TOWN.
- THE CONTRACTOR IS REQUIRED TO NOTIFY AND COORDINATE WITH THE RESIDENTS ALL WATER MAIN SHUT DOWNS 24 HOURS IN ADVANCE.
- CURB BOXES SHALL BE LOCATED AT THE PROPERTY LINE AND CONNECTED TO THE PROPOSED WATER MAIN AS SHOWN ON THE DRAWINGS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WATER SERVICE TUBING ON THE PRIVATE PROPERTY SIDE SHALL BE CAPPED AND STAKED 5'-0" FROM THE CURB BOX.
- CONCRETE THRUST BLOCKS AND "MEGA-LUG" (OR APPROVED EQUAL) MECHANICAL RESTRAINTS ARE REQUIRED AT ALL TEES, BENDS, PLUGS AND HYDRANTS.
- SLEEVES, NIPPLES, AND ACCESSORIES NECESSARY FOR CONNECTIONS BETWEEN EXISTING AND NEW PIPES MAY NOT BE SHOWN IN DETAIL. FURNISH AND INSTALL ITEMS NECESSARY FOR CONNECTING TO EXISTING MAINS AND AS INDICATED ON THE CONTRACT DOCUMENTS.
- EXCEPT WHERE OTHERWISE DIRECTED, 12" MINIMUM CLEARANCE SHALL BE PROVIDED BETWEEN THE NEW MAIN AND OTHER UTILITIES WHERE THEY CROSS. WHERE NEW MAIN PASSES UNDER UTILITIES, IT SHALL CROSS WITHOUT THE USE OF BENDS UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL HYDRANT LATERALS SHALL CROSS UNDER EXISTING UTILITIES AND WATER MAINS. HYDRANT EXTENSIONS SHALL BE INSTALLED, AS NECESSARY, AT NO ADDITIONAL COST TO THE OWNER.

LEGEND:

EXISTING		PROPOSED	
	HYDRANT		WATER MAIN
	DI CAP		HYDRANT
	REDUCER		GATE VALVE
	WATER VALVE		DI CAP
	WATER SHUTOFF		COUPLING/SOLID SLEEVE
	CATCH BASIN (CB)		REDUCER
	DRAIN MANHOLE (DMH)		CURB STOP
	GAS GATE / GAS SHUTOFF		FILTER SOCK
	EDGE OF STONE / SHELLS		TEST PIT
	CAPE COD BERM (CCB)		DIRECTIONAL DRILL STAGING
	EDGE OF PAVEMENT (EP)		DIRECTIONAL DRILL STAGING
	PROPERTY LINE		
	FENCE		
	ASBESTOS CEMENT		
	CAST IRON		
	CORRUGATED METAL		
	CORRUGATED PLASTIC		
	COATED STEEL		
	COPPER		
	DUCTILE IRON		
	GALVANIZED IRON		
	PLASTIC		
	POLYVINYL CHLORIDE		
	REINFORCED CONCRETE		
	STEEL		
	HAND HOLE		
	CAPE COD BERM		
	BITUMINOUS CONCRETE CURB		
	DRAIN		
	GAS		
	WATER		
	DEPTH TO INVERT		
	UTILITY POLE (UP#)		
	GUY WIRE / GUY POLE		
	TELECOMMUNICATION MANHOLE		
	ELECTRIC TRANSFORMER		
	SEWER MANHOLE COVER		
	DRAIN LINE		
	ELECTRIC LINE		
	GAS LINE		
	COMMUNICATIONS LINE		
	WATER MAIN		
	STONEWALL		
	RIVERFRONT AREA		
	WETLANDS BUFFER ZONE		
	FEMA 100-YEAR FLOOD LINE		
	ESTIMATED/PRIORITY HABITAT LIMIT		
	OVERHEAD WIRE		
	EVERGREEN TREE		
	DECIDUOUS TREE		
	MAILBOX (MB)		
	SIGN		
	DENSE VEGETATION		
	LIGHT VEGETATION		
	PROPERTY CORNER		
	LIGHT POLE		
	LANDSCAPED AREA		
	GUARD RAIL		
	GRANITE BLOCK		
	RIPRAP		
	WETLAND		
	WETLAND FLAG		
	CONCRETE BOLLARD		
	TELEPHONE PEDESTAL		
	SIGN		
	BUSH		
	BOUND		

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Scale	1"=40'
Date	NOVEMBER 2014
Job No.	217-1401.05
Designed by	GCS
Drawn by	CSC
Checked by	RJT
Approved by	PCM

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

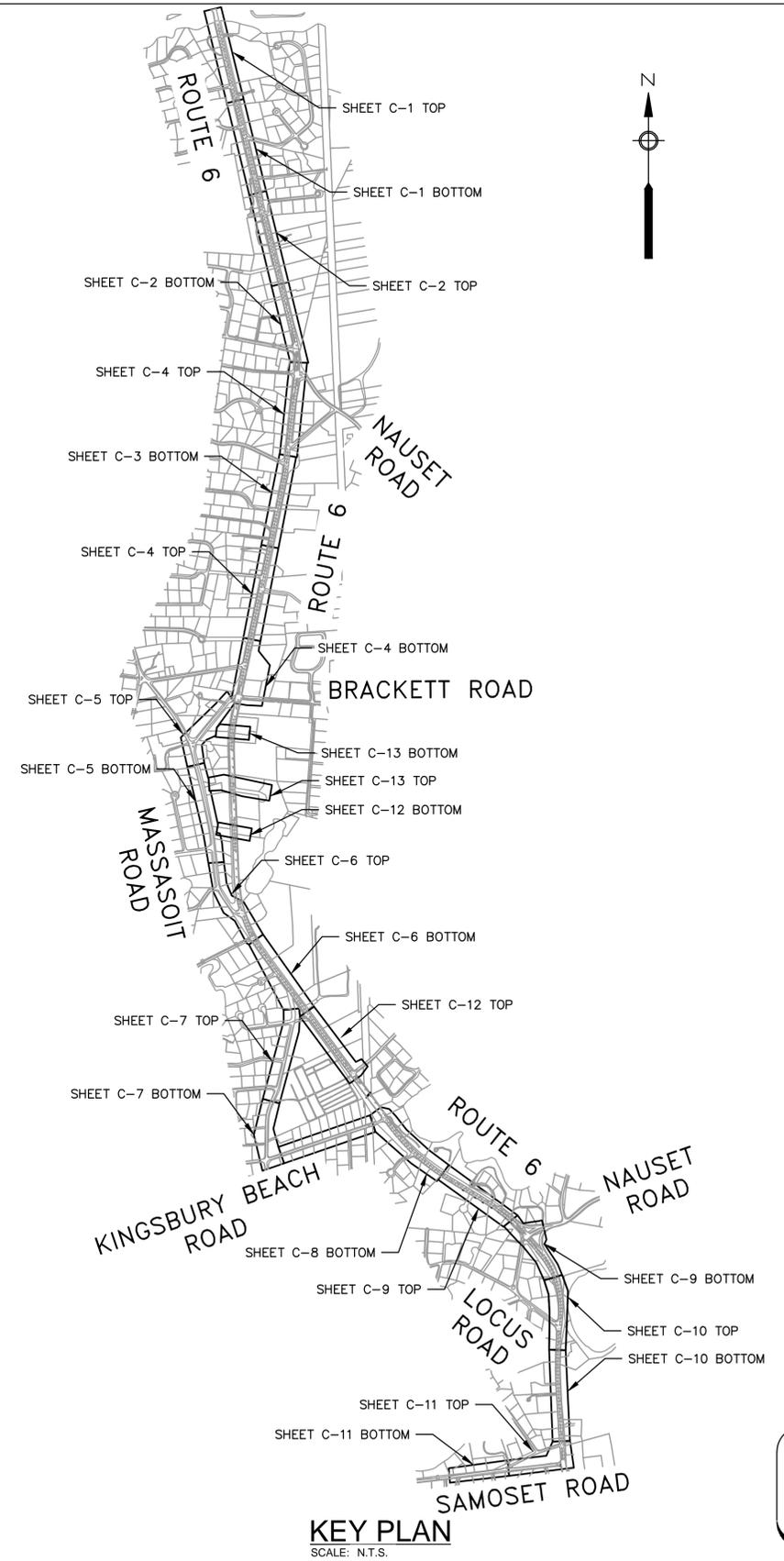
GENERAL NOTES AND LEGEND

FOR REVIEW

Sheet No.

G-1

TEMPORARY AND PERMANENT PAVEMENT SCHEDULE			
SHEET	STREET	TEMPORARY PAVEMENT	PERMANENT PAVEMENT
C-1 TOP	ROUTE 6 I	3-INCH TEMPORARY TRENCH PAVEMENT	
C-1 BOTTOM	ROUTE 6 II	3-INCH TEMPORARY TRENCH PAVEMENT	
C-2 TOP	ROUTE 6 III	3-INCH TEMPORARY TRENCH PAVEMENT	
C-2 BOTTOM	ROUTE 6 IV	3-INCH TEMPORARY TRENCH PAVEMENT	
C-3 TOP	ROUTE 6 V	3-INCH TEMPORARY TRENCH PAVEMENT	
C-3 BOTTOM	ROUTE 6 VI	3-INCH TEMPORARY TRENCH PAVEMENT	
C-4 TOP	ROUTE 6 VII	3-INCH TEMPORARY TRENCH PAVEMENT	
C-4 BOTTOM	ROUTE 6 VIII	3-INCH TEMPORARY TRENCH PAVEMENT	
C-5 TOP	OLD COUNTY ROAD	NO PAVEMENT, ONLY PROCESSED GRAVEL	
C-5 BOTTOM	MASSASOIT ROAD	NO PAVEMENT, ONLY PROCESSED GRAVEL	
C-6 TOP	MASSASOIT ROAD	NO PAVEMENT, ONLY PROCESSED GRAVEL	
C-6 BOTTOM	ROUTE 6 IX	3-INCH TEMPORARY TRENCH PAVEMENT	
C-7 TOP	GREAT POND ROAD	NO PAVEMENT, ONLY PROCESSED GRAVEL	
C-7 BOTTOM	KINGSBURY BEACH ROAD	NO PAVEMENT, ONLY PROCESSED GRAVEL	
C-8 TOP	KINGSBURY BEACH ROAD	NO PAVEMENT, ONLY PROCESSED GRAVEL	
C-8 BOTTOM	ROUTE 6 X	3-INCH TEMPORARY TRENCH PAVEMENT	
C-9 TOP	ROUTE 6 XI	3-INCH TEMPORARY TRENCH PAVEMENT	
C-9 BOTTOM	OLD STATE ROAD	OLD STATE ROAD	
C-10 TOP	LOCUS ROAD	LOCUS ROAD	
C-10 BOTTOM	ROUTE 6 XII	ROUTE 6 XII	
C-11 TOP	ROUTE 6 XIII	ROUTE 6 XIII	
C-11 BOTTOM	SAMOSSET ROAD	SAMOSSET ROAD	
C-12 TOP	ROUTE 6 X	ROUTE 6 X	
C-12 BOTTOM	EXTENDED SERVICE I	EXTENDED SERVICE I	
C-13 TOP	EXTENDED SERVICE II	EXTENDED SERVICE II	
C-13 BOTTOM	EXTENDED SERVICE III	EXTENDED SERVICE III	



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			Job No.	217-1401.05
			Designed by	GCS
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			Approved by	PCM

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CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

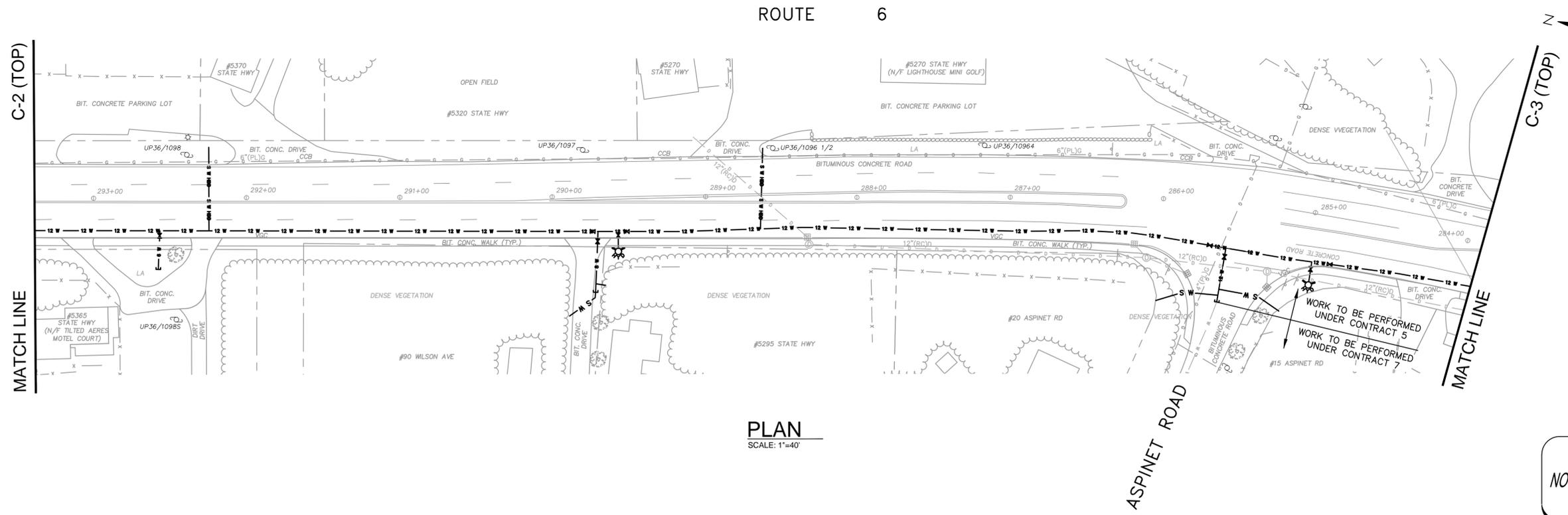
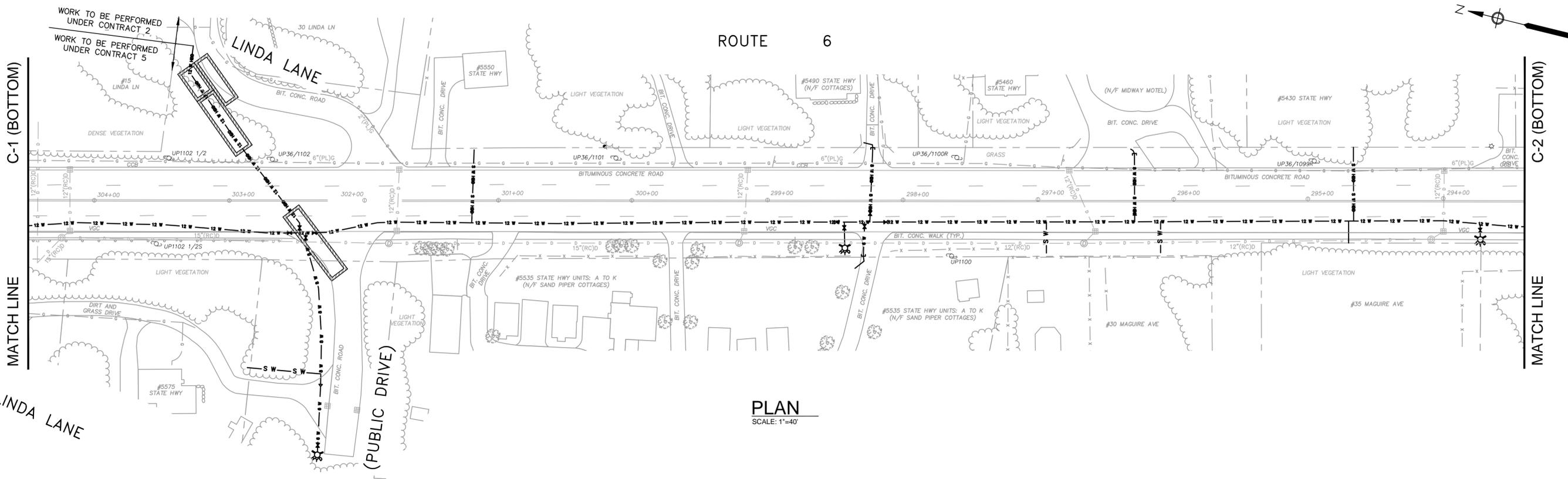
PAVEMENT SCHEDULE AND SHEET LOCUS

FOR REVIEW

Sheet No.

G-2

Drawing file: I:\Eastham\217\1401_05 Contract 5 Phase 1\MM01 CAD\05 CONTRACT WATER DESIGN\DWG Plot Date: Dec 06, 2014 8:14am



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Scale	1"=40'
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EASTHAM, MASSACHUSETTS

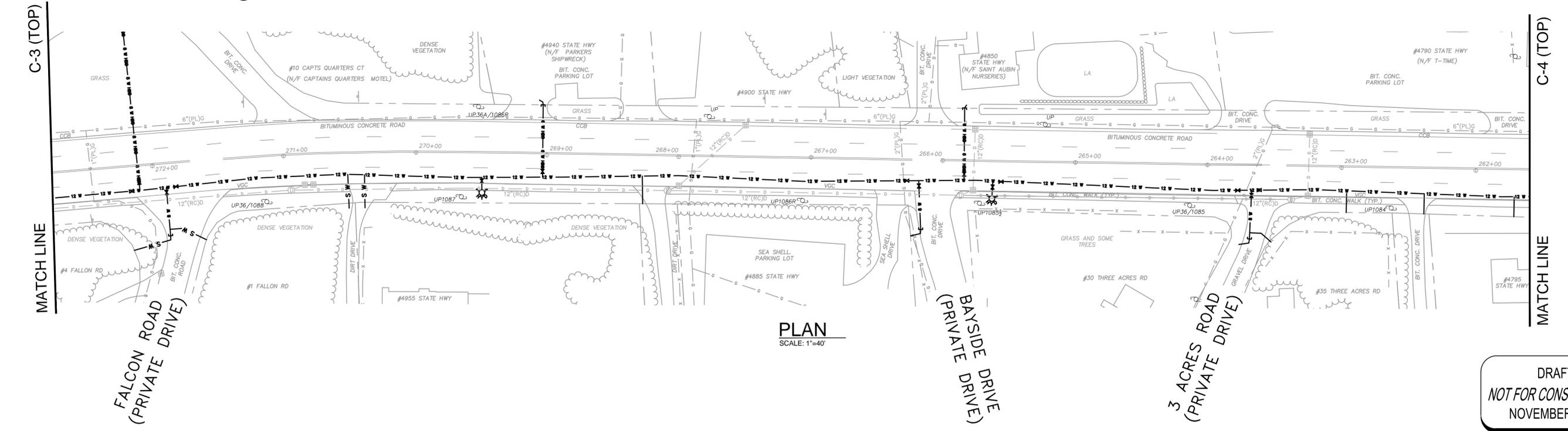
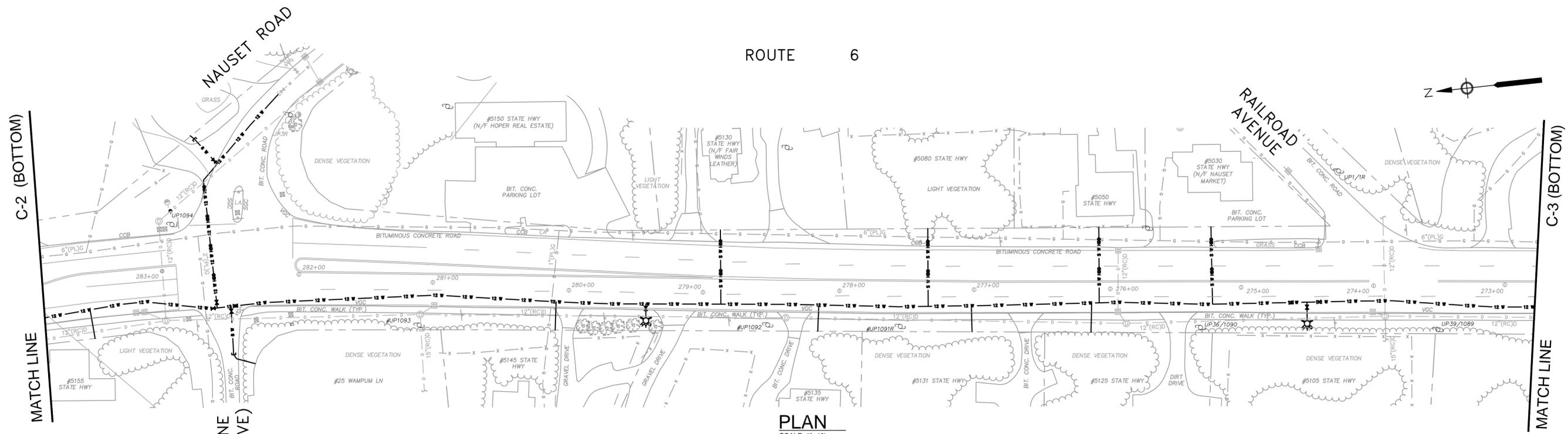
ROUTE 6 II

FOR REVIEW

Sheet No.

C-2

Drawing file: I:\Eastham 217\Phase 1 - Eastham Water System\217-1401.05 Contract 5 Phase 1\MM01 CAD\05 CONTRACT WATER DESIGN\DWG Plot Date: Dec 06, 2014 8:15am



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CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

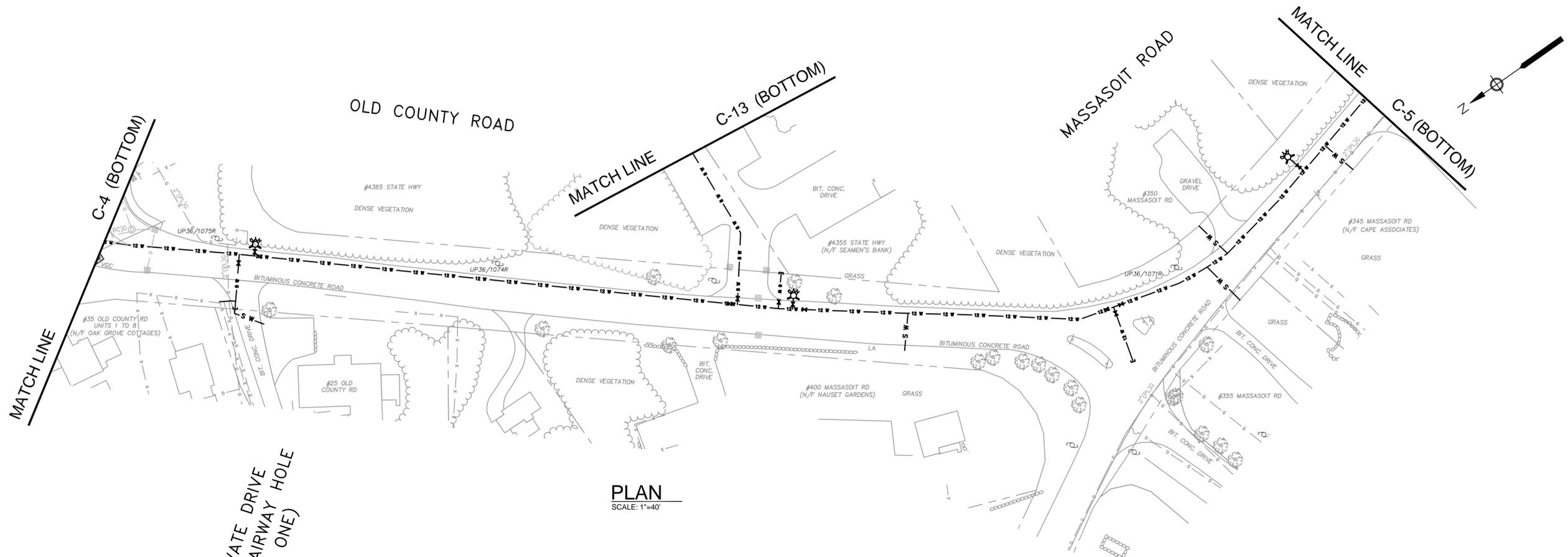
ROUTE 6 III

FOR REVIEW

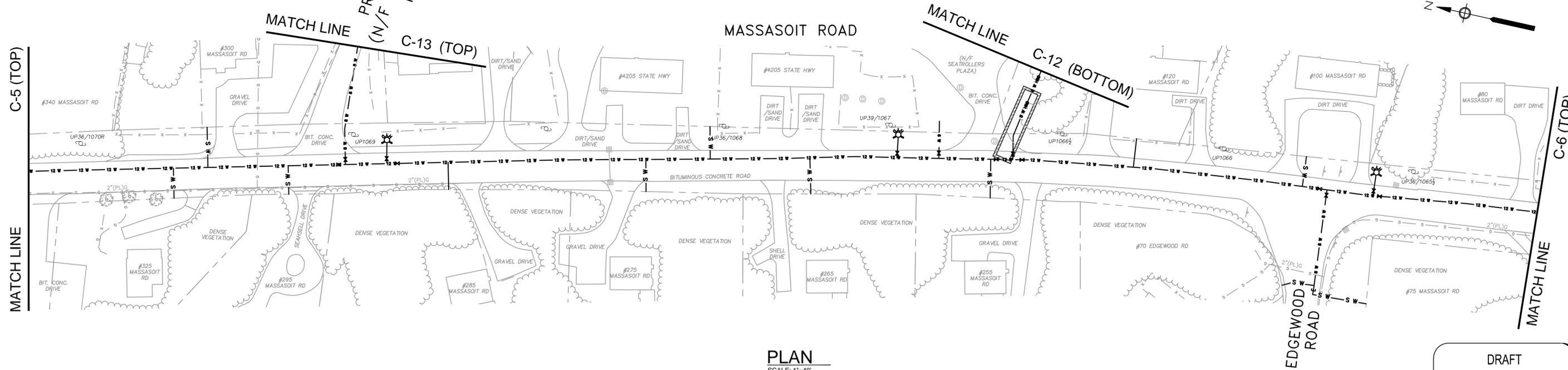
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C-3

MARK	DATE	DESCRIPTION



PLAN
SCALE: 1"=40'



PLAN
SCALE: 1"=40'

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MARK	DATE	DESCRIPTION

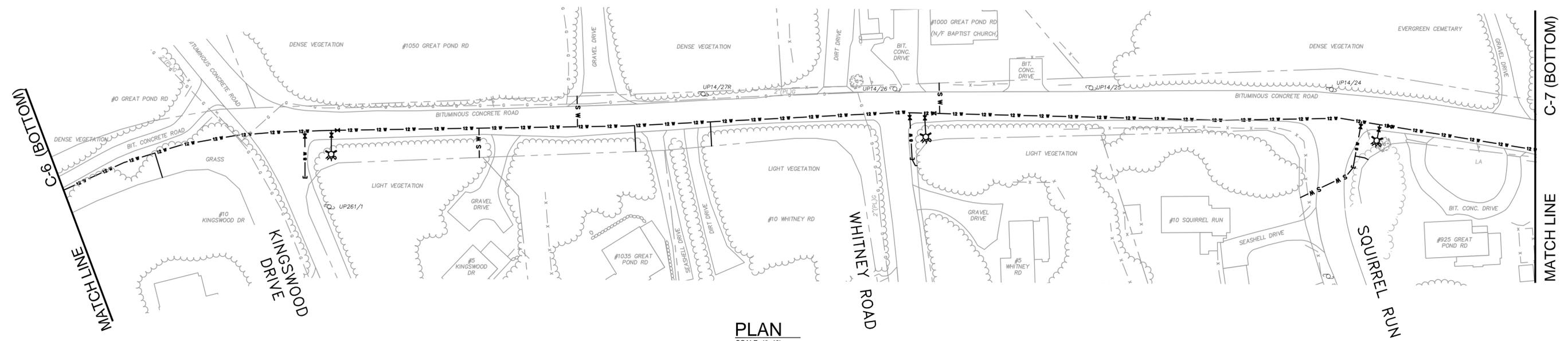
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CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

OLD COUNTY ROAD AND MASSASOIT ROAD

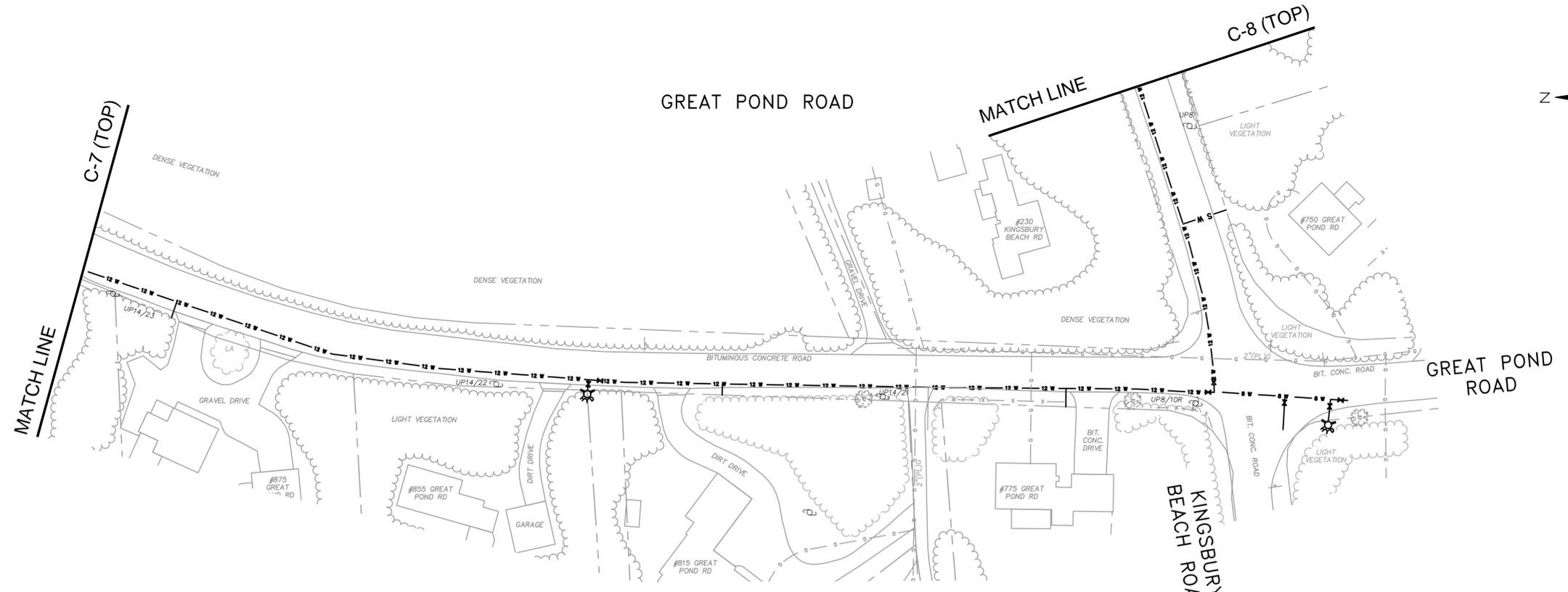
FOR REVIEW
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C-5

GREAT POND ROAD



PLAN
SCALE: 1"=40'

GREAT POND ROAD



PLAN
SCALE: 1"=40'

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CONTRACT 5
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EASTHAM, MASSACHUSETTS

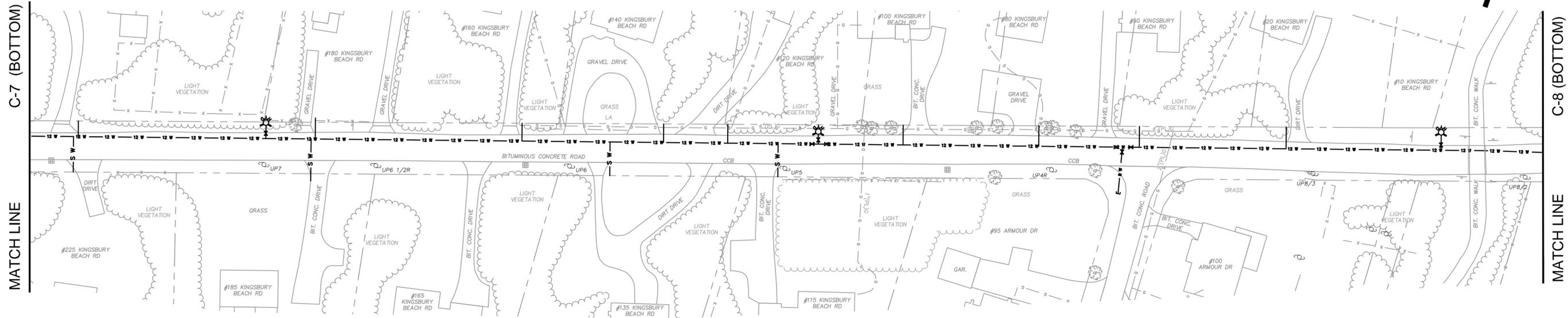
GREAT POND ROAD AND
KINGSBURY BEACH ROAD

FOR REVIEW

Sheet No.

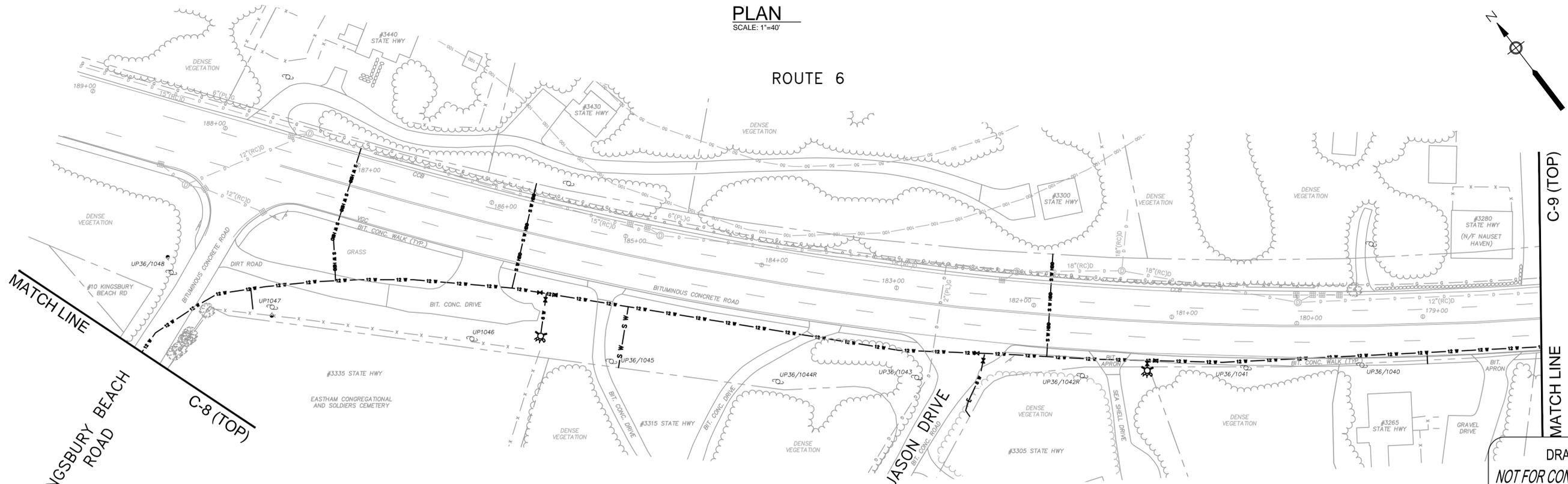
C-7

KINGSBURY BEACH ROAD



PLAN
SCALE: 1"=40'

ROUTE 6



PLAN
SCALE: 1"=40'

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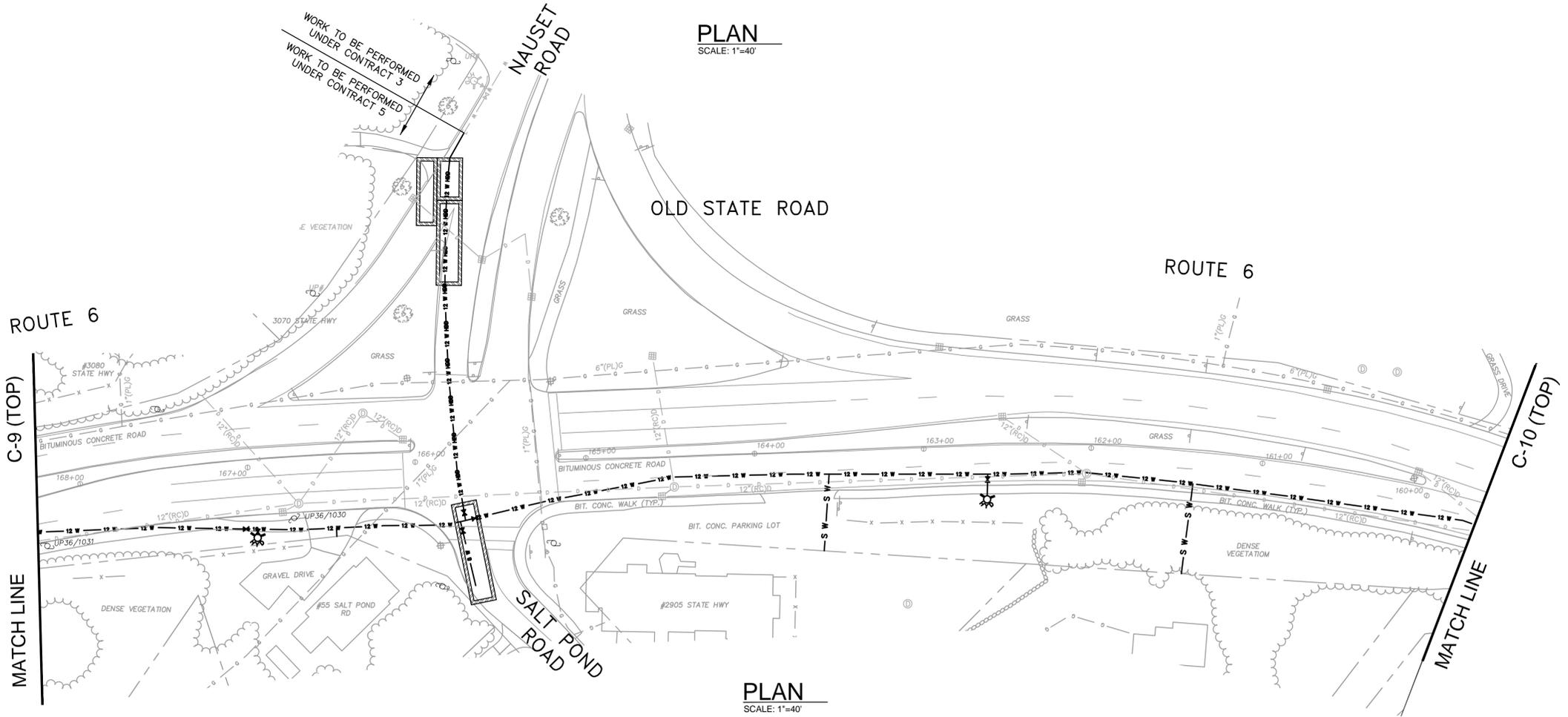
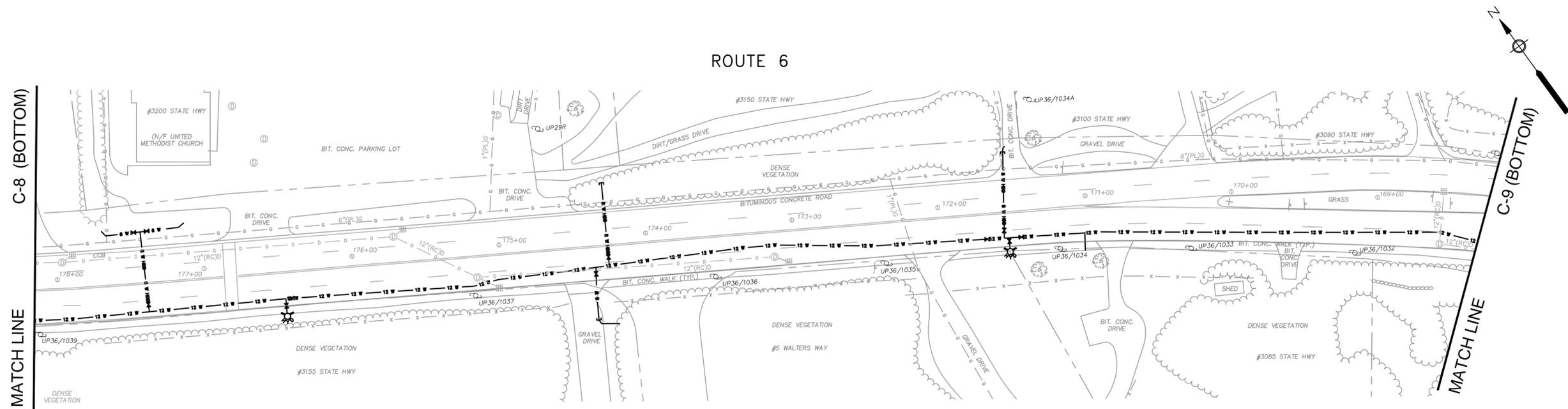


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CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS
KINGSBURY BEACH ROAD
AND ROUTE 6 VI

FOR REVIEW
Sheet No.
C-8



PLAN
SCALE: 1"=40'

PLAN
SCALE: 1"=40'

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NOVEMBER 2014

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MARK	DATE	DESCRIPTION

Scale	1"=40'
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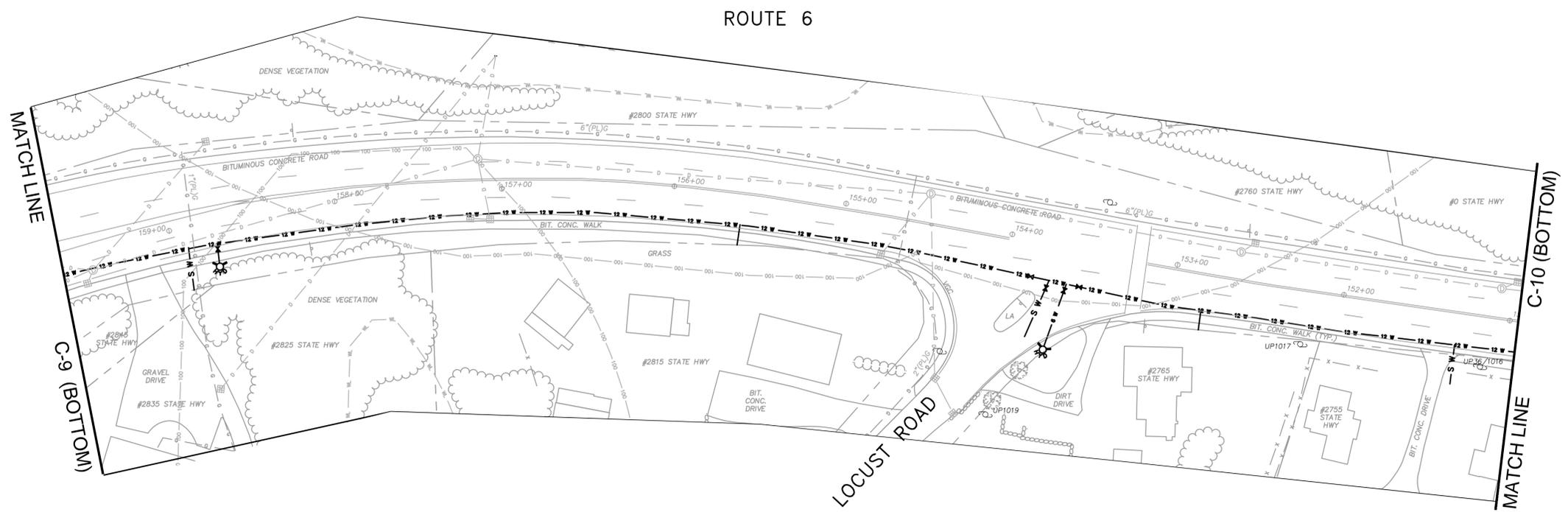
CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

ROUTE 6 VII

FOR REVIEW

Sheet No.

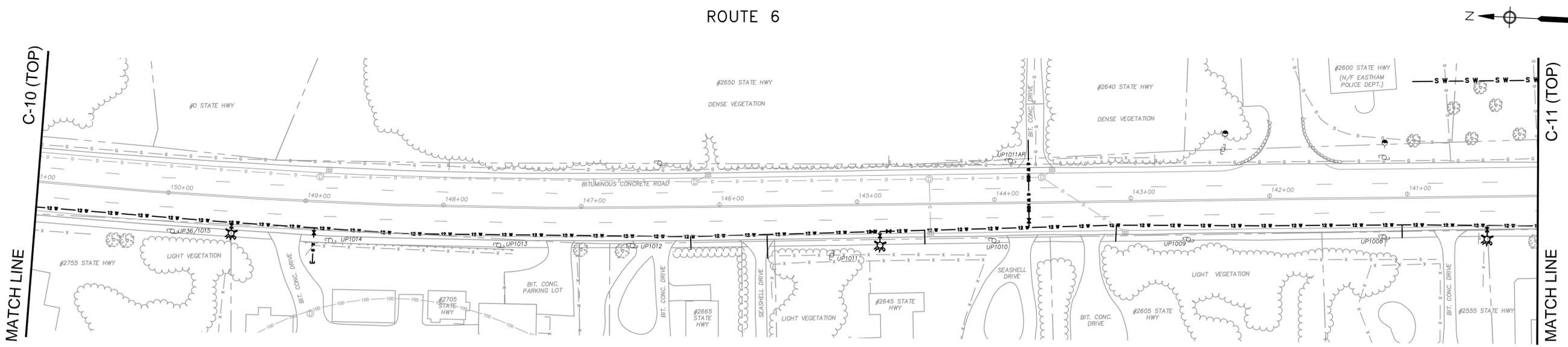
C-9



ROUTE 6



PLAN
SCALE: 1"=40'



ROUTE 6



PLAN
SCALE: 1"=40'

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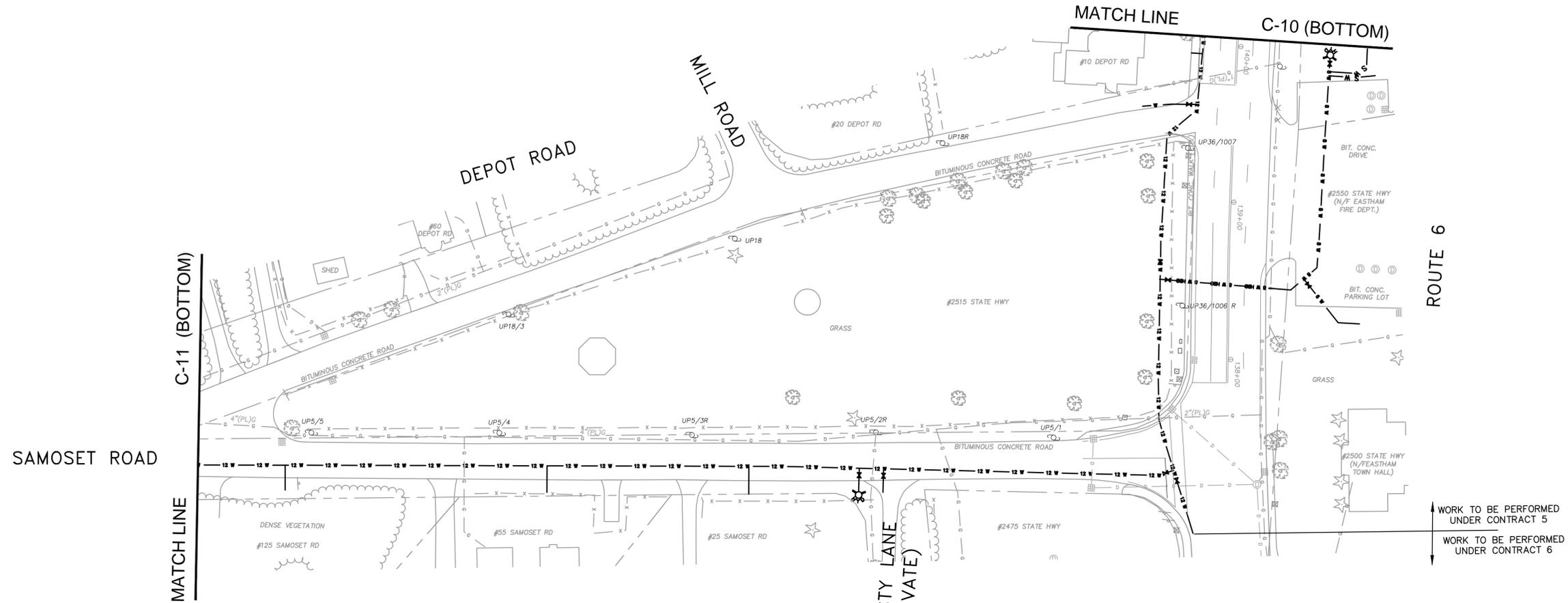
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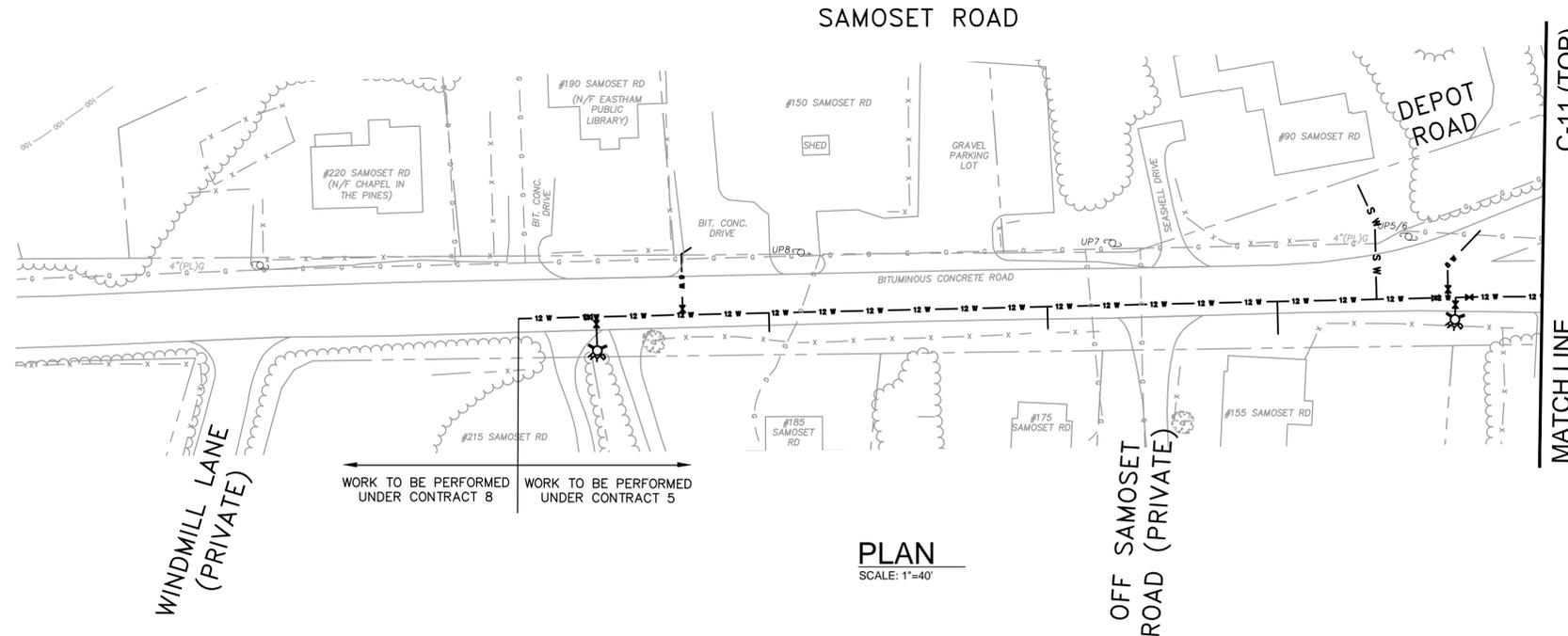
CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

ROUTE 6 VIII

FOR REVIEW
Sheet No.
C-10



PLAN
SCALE: 1"=40'



PLAN
SCALE: 1"=40'

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NOVEMBER 2014

Drawing file: I:\Eastham Water System\217-1401.05 Contract 5 Phase 1\MM01 CAD\05 CONTRACT WATER DESIGN I.dwg Plot Date: Dec 06, 2014 8:24am



MARK	DATE	DESCRIPTION

Scale	1"=40'
Date	NOVEMBER 2014
Job No.	217-1401.05
Designed by	GCS
Drawn by	GCS
Checked by	RJT
Approved by	PCM

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

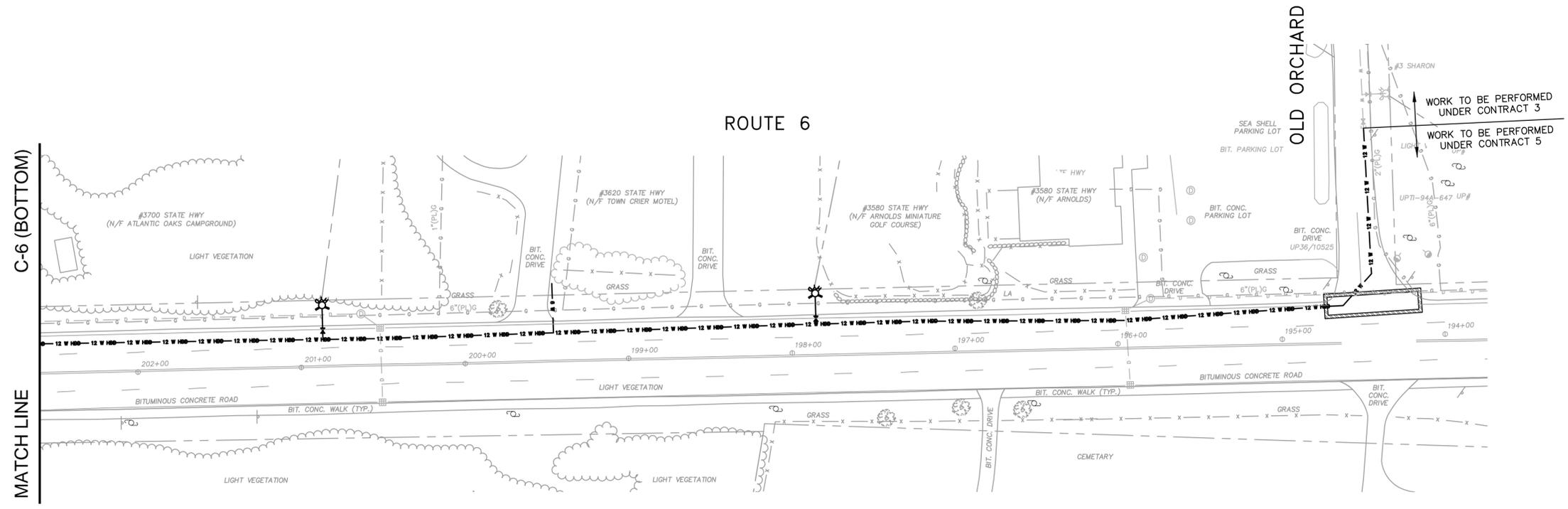
CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

ROUTE 6 IX AND SAMOSET ROAD

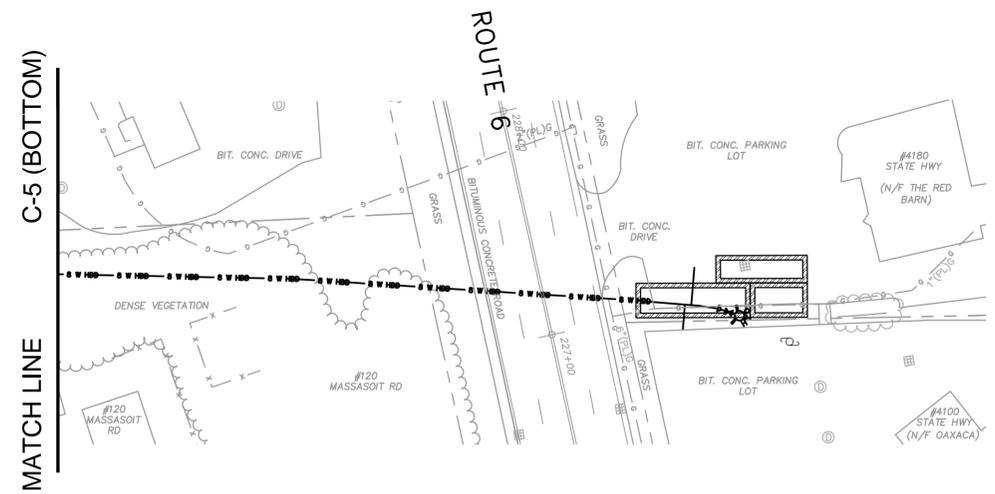
FOR REVIEW

Sheet No.

C-11



PLAN
SCALE: 1"=40'



PLAN
SCALE: 1"=40'

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NOVEMBER 2014

Drawing file: I:\Eastham Water System\217-1401.05 Contract 5 Phase 1\MM01 CAD\05 CONTRACT WATER DESIGN I.dwg Plot Date: Dec 06, 2014 8:26am



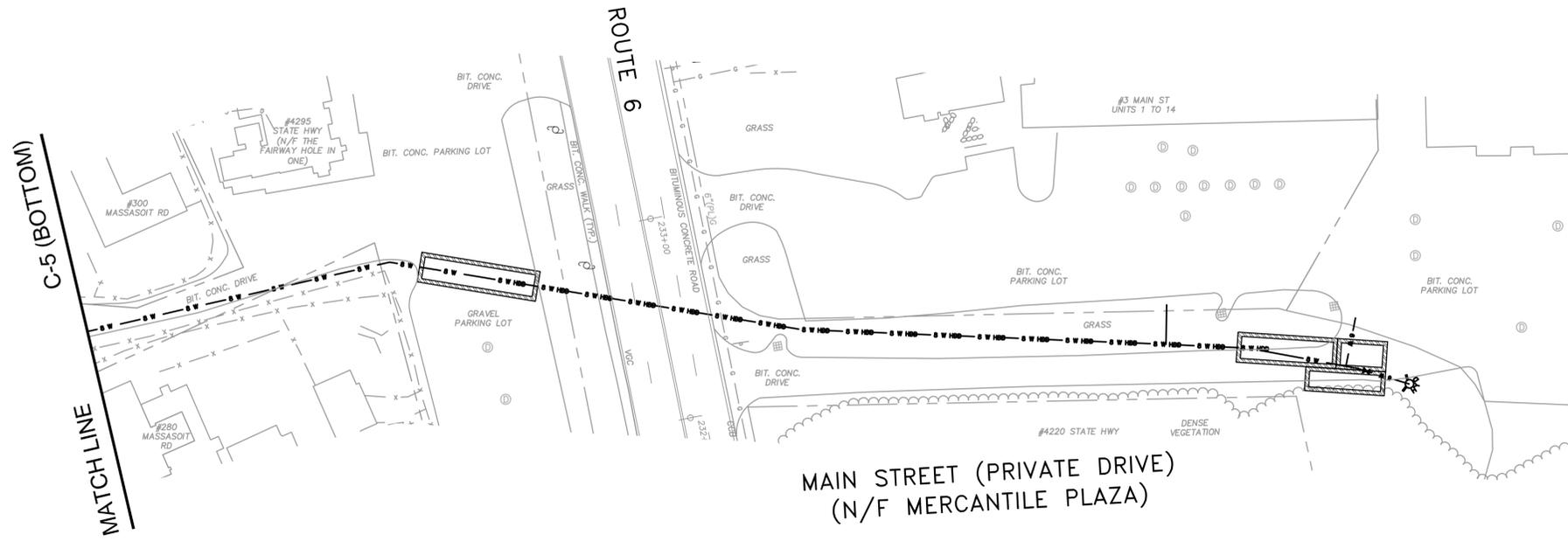
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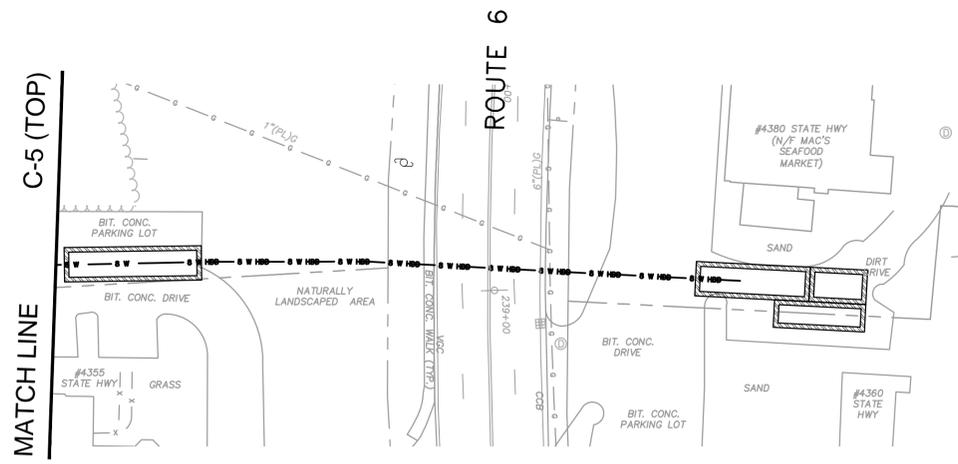
CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

ROUTE 6 X AND EXTENDED SERVICES I

FOR REVIEW
Sheet No.
C-12



PLAN
SCALE: 1"=40'



PLAN
SCALE: 1"=40'

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NOVEMBER 2014

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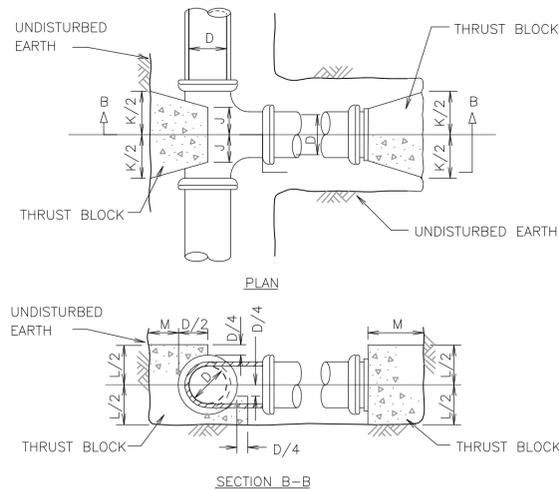
Scale	1"=40'	
Date	NOVEMBER 2014	
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Drawn by	GCS	
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Approved by	PCM	
MARK	DATE	DESCRIPTION

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CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

EXTENDED SERVICES II AND III

FOR REVIEW
Sheet No.
C-13

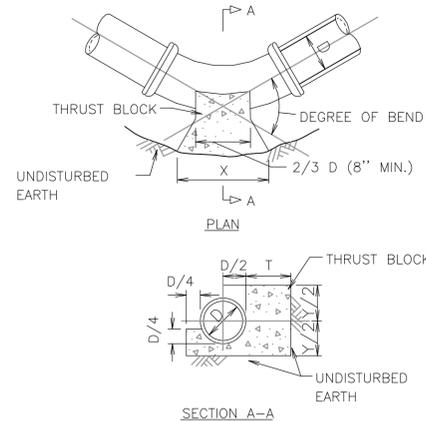


- NOTES:**
1. ALL CONCRETE SHALL BE 3000 PSI @ 28 DAYS (CLASS 'A' CONCRETE).
 2. DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 1500 PSF AND TOTAL PRESSURE OF 250 PSI. TOTAL PRESSURE IS WORKING PRESSURE PLUS SURGE PRESSURE.
 3. THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

TABLE OF DIMENSIONS							
D (in.)	4	6	8	10	12	14	16
J (in.)	6	6	7	9	10	12	22
K (in.)	16	16	20	26	32	36	64
L (in.)	16	16	21	24	29	34	61
M (in.)	11	11	14	16	19	22	39

CONCRETE THRUST BLOCK DETAIL AT TEE / PLUG

SCALE: N.T.S.

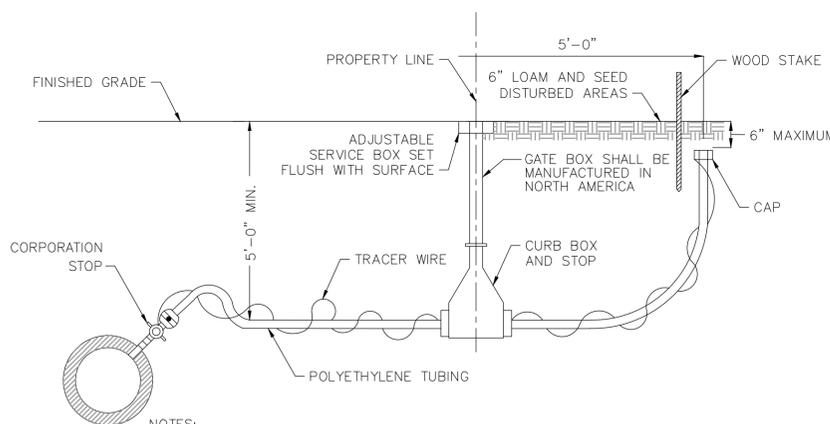


- NOTES:**
1. ALL CONCRETE SHALL BE 3000 P.S.I. @ 28 DAYS (CLASS "A" CONCRETE).
 2. DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 1500 P.S.F. AND TOTAL PRESSURE OF 250 P.S.I. TOTAL PRESSURE IS WORKING PRESSURE PLUS SURGE PRESSURE.
 3. THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

TABLE OF DIMENSIONS																												
DIMENSION	90° BEND				45° BEND				22 1/2° BEND				11 1/4° BEND															
D (in.)	4	6	8	10	12	14	16	4	6	8	10	12	14	16	4	6	8	10	12	14	16	4	6	8	10	12	14	16
X (in.)	35	35	50	56	72	80	142	24	35	45	51	60	107	28	28	30	32	37	42	74	12	12	19	21	27	33	59	
Y (in.)	20	20	24	32	35	40	71	16	16	19	21	27	33	59	13	13	13	16	19	22	39	8	8	9	12	13	16	28
T (in.)	11	11	14	16	19	22	39	11	11	14	16	19	22	39	11	11	13	16	19	22	39	11	11	13	16	19	22	39

CONCRETE THRUST BLOCK DETAIL AT BEND

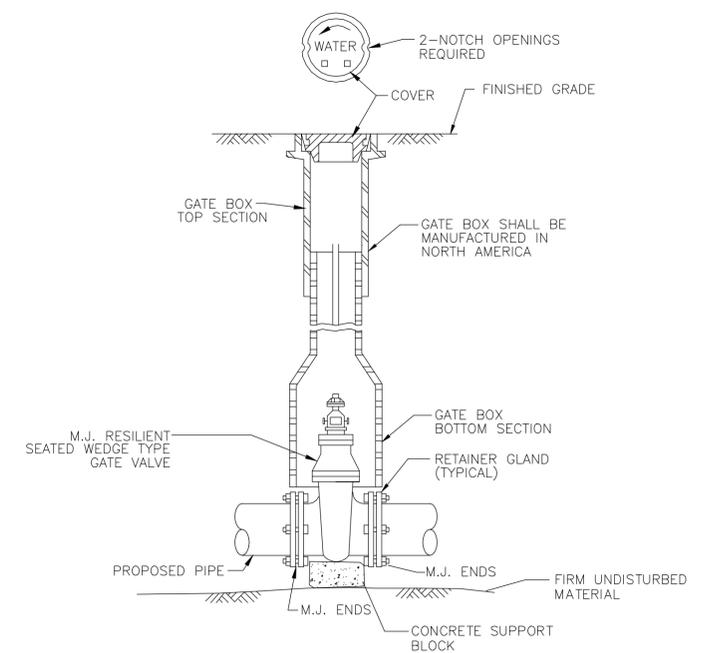
SCALE: N.T.S.



- NOTES:**
1. ALL JOINTS SHALL BE COMPRESSION TYPE.
 2. POLYETHYLENE TUBING SHALL BE BACKFILLED WITH SAND BY HAND TO 1-FOOT ABOVE TUBING.
 3. CORPORATION STOPS LARGER THAN ONE INCH SHALL HAVE A SADDLE.
 4. WATER SERVICES SHALL BE INSULATED IN AREAS WHERE CONNECTION TO EXISTING WATER SERVICE IS LESS THAN 4 FEET.
 5. ALL WATER SERVICE PLUMBING MATERIALS SHALL BE "LEAD FREE" IN ACCORDANCE WITH SECTION 1417 OF THE SAFE DRINKING WATER ACT AND SECTION 9 OF NSF STANDARD 61.

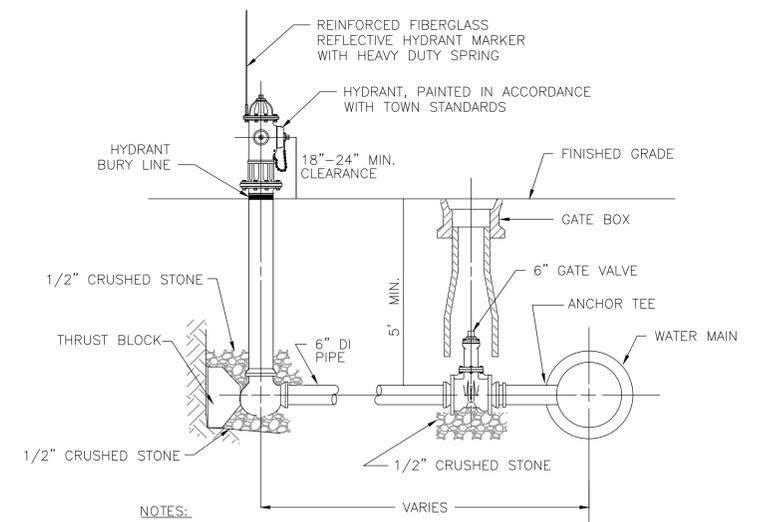
TYPICAL SERVICE CONNECTION DUCTILE IRON WATER MAINS

SCALE: N.T.S.



GATE VALVE AND VALVE BOX DETAIL

SCALE: N.T.S.



- NOTES:**
1. ALL HYDRANT, VALVE AND TEE JOINTS TO BE RESTRAINED MECHANICAL JOINTS.
 2. DEPTH OF HYDRANT BURY SHALL SUIT INSTALLED DEPTH OF COVER OVER WATER MAIN. INSTALL RISERS AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.

FIRE HYDRANT ASSEMBLY DETAIL

SCALE: N.T.S.

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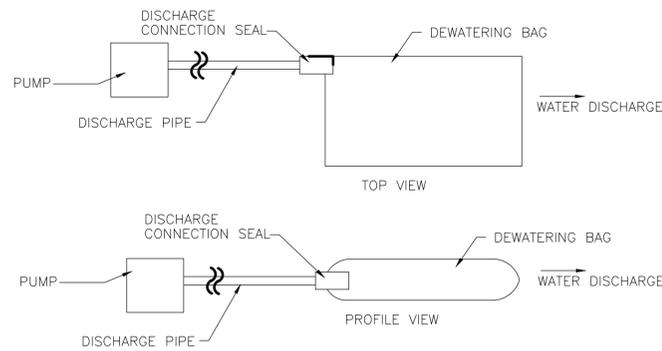
CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

CONSTRUCTION DETAILS I

FOR REVIEW

Sheet No.

CD-1

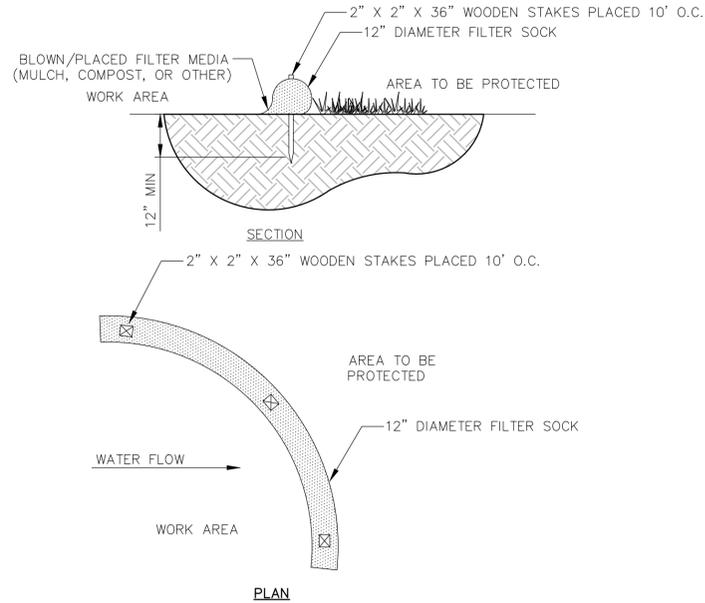


NOTES:

1. DEWATERING BAG SIZE AND QUANTITY SHALL BE AS NEEDED TO ADEQUATELY FILTER ALL PUMP EFFLUENT FROM DEWATERING ACTIVITIES. CONTRACTOR SHALL PROVIDE A REDUNDANT BAG ON SITE AT ALL TIMES.
2. EACH BAG SHALL HANDLE A 2", 3", OR 4" DISCHARGE HOSE.
3. DISCHARGE HOSES CAN BE PLACED ALONG ANY EDGE BY MAKING A SMALL INCISION INTO THE FABRIC, INSERTING THE HOSE, AND THEN CLAMPING THE FABRIC TO THE HOSE VIA WIRE, TIES, CLAMP, ROPE OR SIMILAR TO CREATE A GOOD SEAL.
4. CONTRACTOR SHALL AVOID DISCHARGING MULTIPLE PIPES INTO ONE BAG.

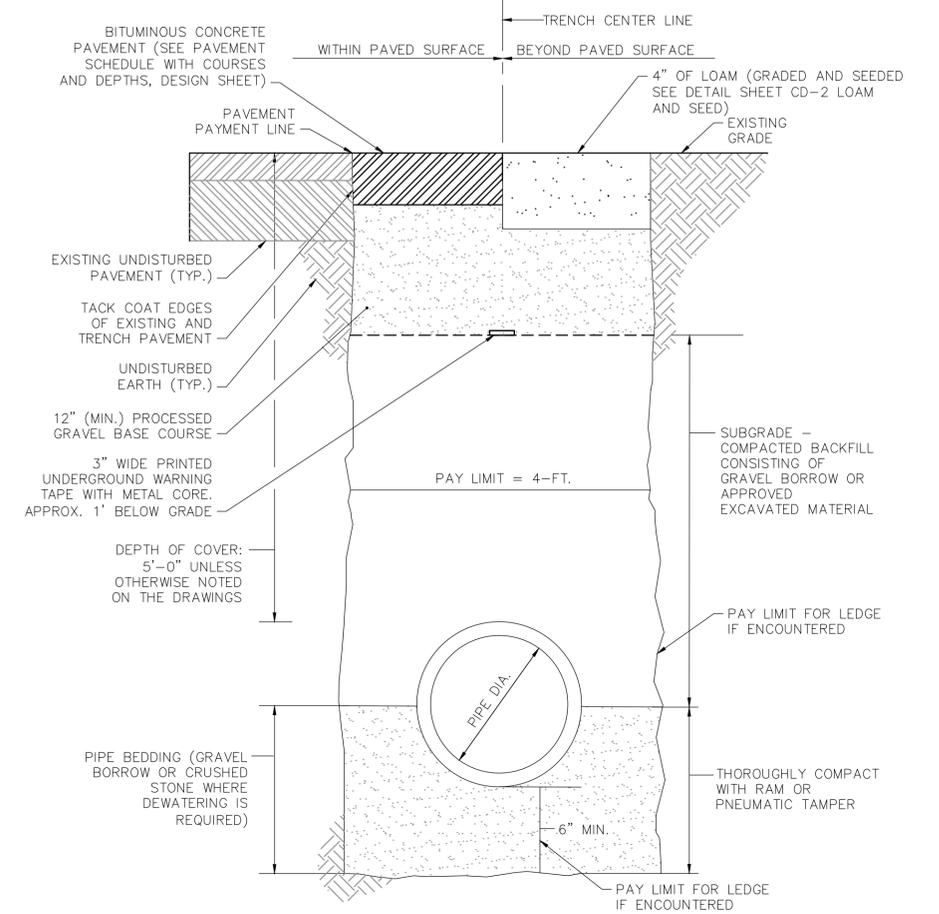
DEWATERING BAGS

SCALE: N.T.S.



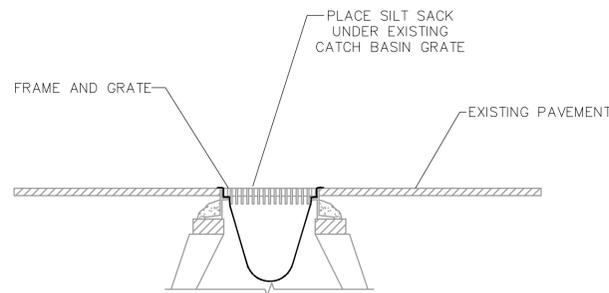
12" DIAMETER FILTER SOCK

SCALE: N.T.S.



TRENCH DETAIL 1 - TOWN RIGHT-OF-WAY AND PRIVATE WAYS

SCALE: N.T.S.

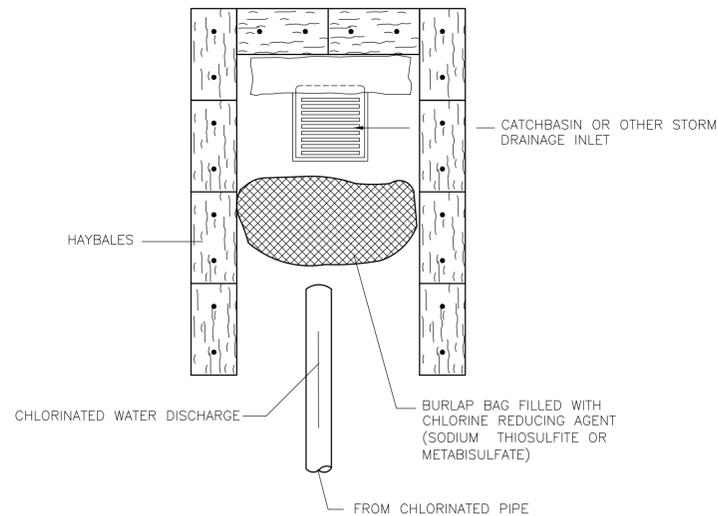


NOTES:

1. SILT SACKS SHALL BE INSPECTED WEEKLY AND ACCUMULATED SILT REMOVED TO ALLOW CATCH BASIN TO FUNCTION PROPERLY.
2. SILT SACK AS MANUFACTURED BY ACF ENVIRONMENTAL (800-448-3636) OR APPROVED EQUAL.

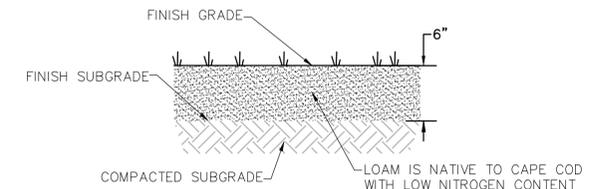
SEDIMENTATION CONTROL AT CATCH BASINS SILT SACKS

SCALE: N.T.S.



DECHLORINATION DETAIL

SCALE: N.T.S.



NOTE:

1. SEED MIX TO BE NEW ENGLAND CONSERVATION SEED MIX, FREE OF FERTILIZERS.
2. INSTALL CURLEX CL EROSION CONTROL BLANKET AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY (OR APPROVED EQUAL) ON ALL LOAM AND SEEDING SLOPES 3:1 OR STEEPER.

LOAM AND SEED (DISTURBED AREAS)

SCALE: N.T.S.

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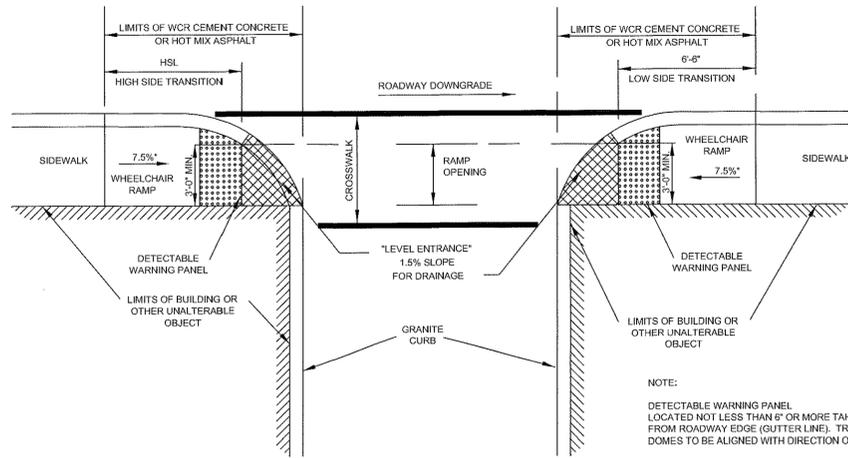
CONTRACT 5
WATER SYSTEM CONSTRUCTION
EASTHAM, MASSACHUSETTS

CONSTRUCTION DETAILS II

FOR REVIEW

Sheet No.

CD-2

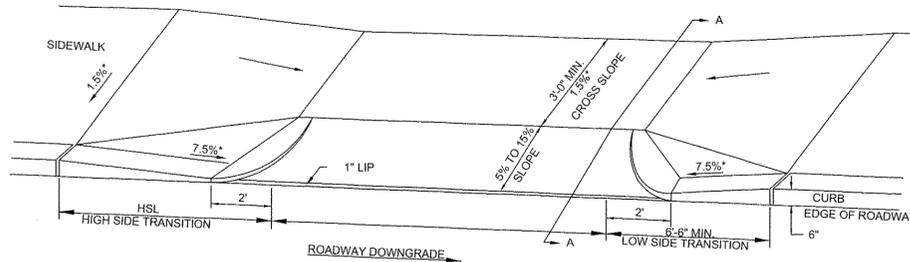


LEGEND
 HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
 * = TOLERANCE FOR CONSTRUCTION ±0.5

NOTE:
 ROADWAY, GUTTER, AND FIRST 6\"/>

WHEELCHAIR RAMP FOR ONE CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL

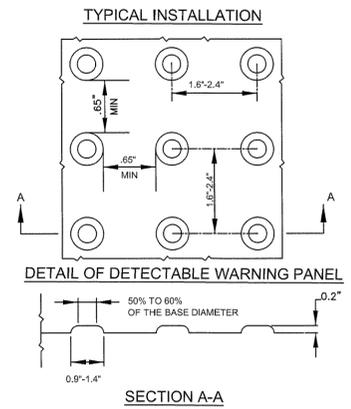
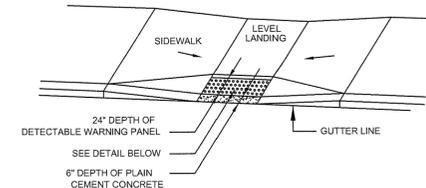
SCALE: NTS



LEGEND
 HSL = HIGH SIDE TRANSITION LENGTH
 W = SIDEWALK WIDTH
 * = TOLERANCE FOR CONSTRUCTION ±0.5
 CC = CEMENT CONCRETE
 HMA = HOT MIX ASPHALT

SIDEWALK THROUGH DRIVEWAYS WITH CURB RETURNS - 2' CURB CORNERS

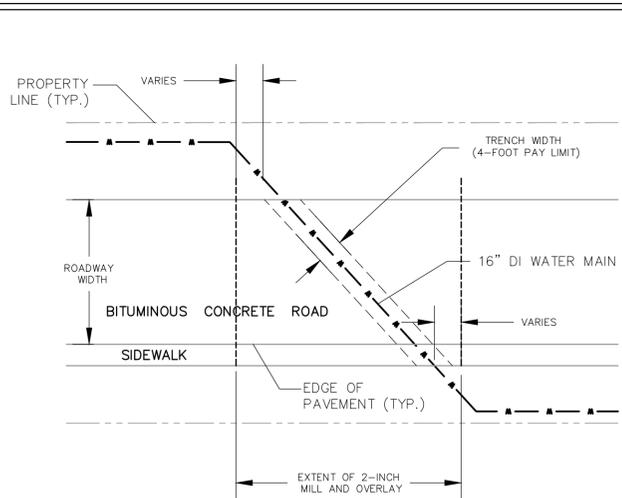
SCALE: NTS



NOTE:
 PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTHER SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT.

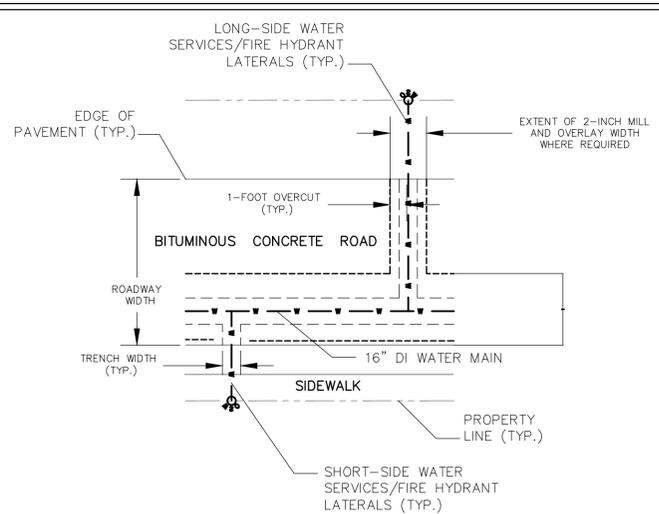
DETECTABLE WARNING PANEL FOR WHEELCHAIR RAMPS

SCALE: NTS



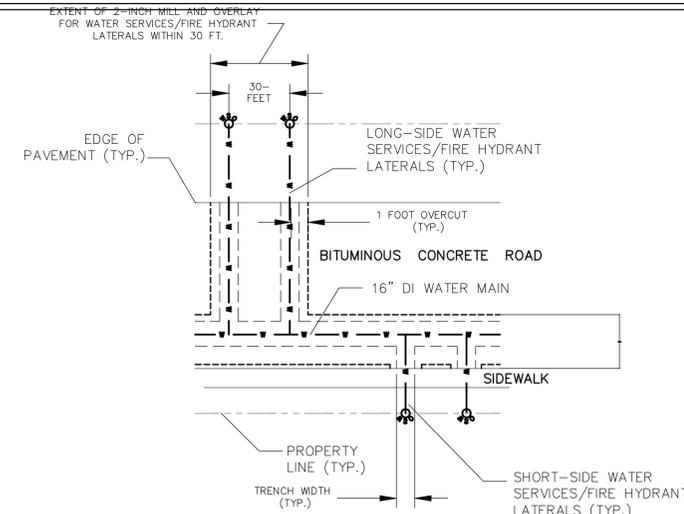
WATER MAIN CROSSING STATE HIGHWAY TRAVEL LANE

SCALE: NTS



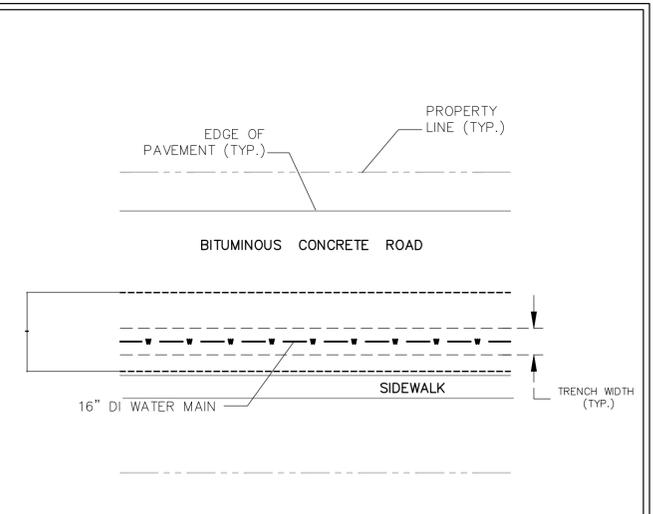
SINGLE SHORT- AND LONG-SIDE WATER SERVICES AND HYDRANT LATERALS

SCALE: NTS



MULTIPLE SHORT- AND LONG-SIDE WATER SERVICES AND HYDRANT LATERALS WITHIN 30 FT

SCALE: NTS



WATER MAIN ALONG STATE HIGHWAY TRAVEL LANE

SCALE: NTS

PERMANENT PAVEMENT RESTORATION DETAILS WORK WITHIN STATE HIGHWAY LAYOUT TRAVEL LANES

PERMANENT PAVEMENT OVERLAY IN STATE HIGHWAY TRAVEL LANES NOTES:
 1. REFER TO TRENCH DETAILS, SHEET G-2, FOR TRENCH DETAILS.
 2. LIMITS OF MILL & OVERLAY SHALL BE AT THE DISCRETION OF THE ENGINEER OR DOT INSPECTOR.
 3. MILL & OVERLAY 2\"/>

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 NOVEMBER 2014

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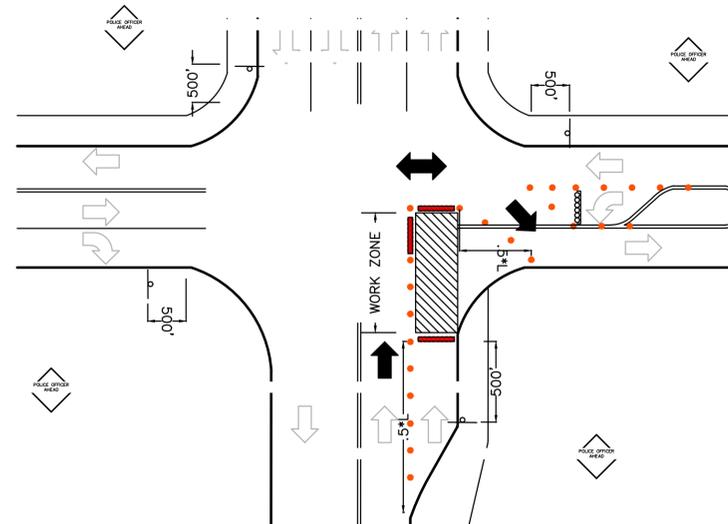
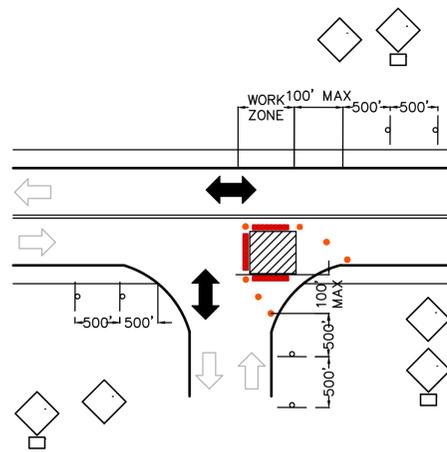
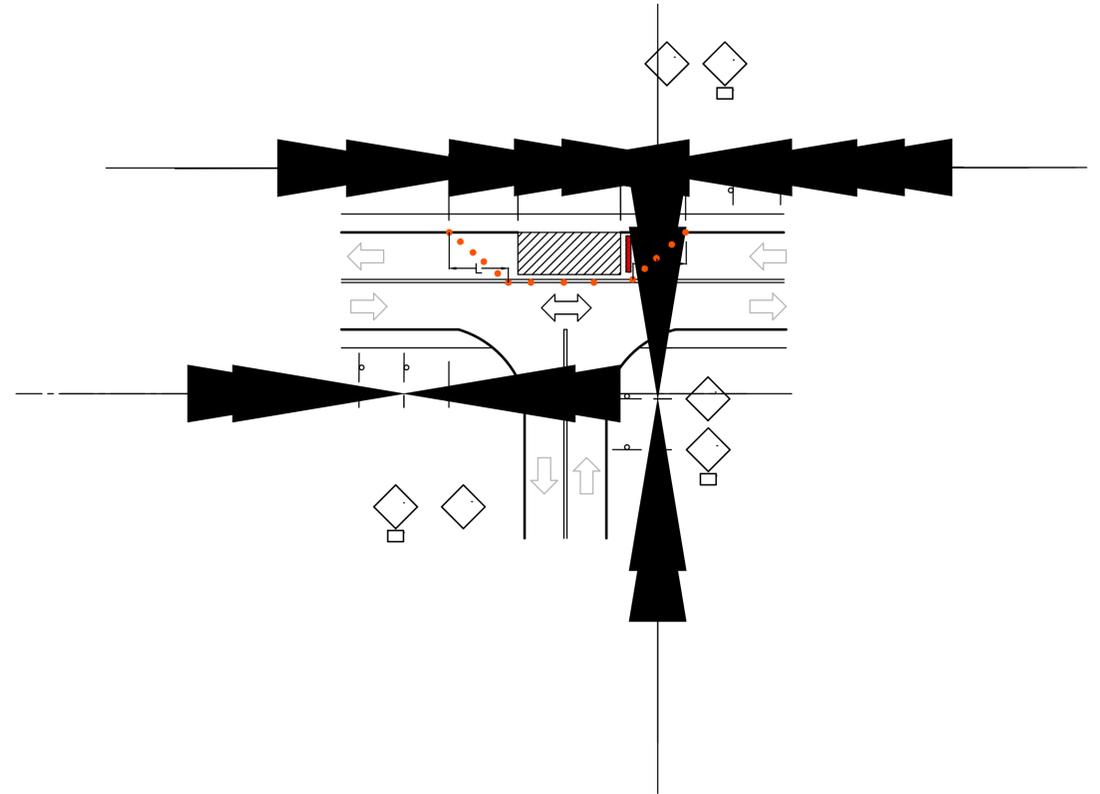
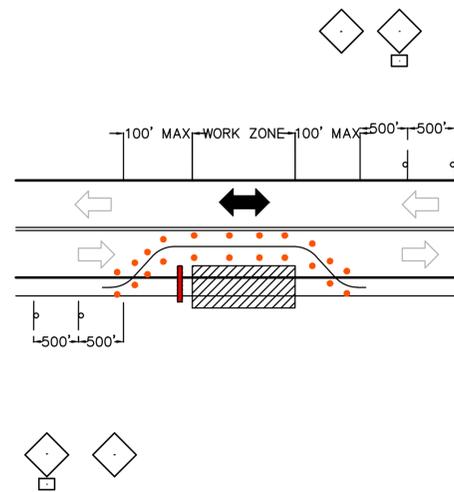
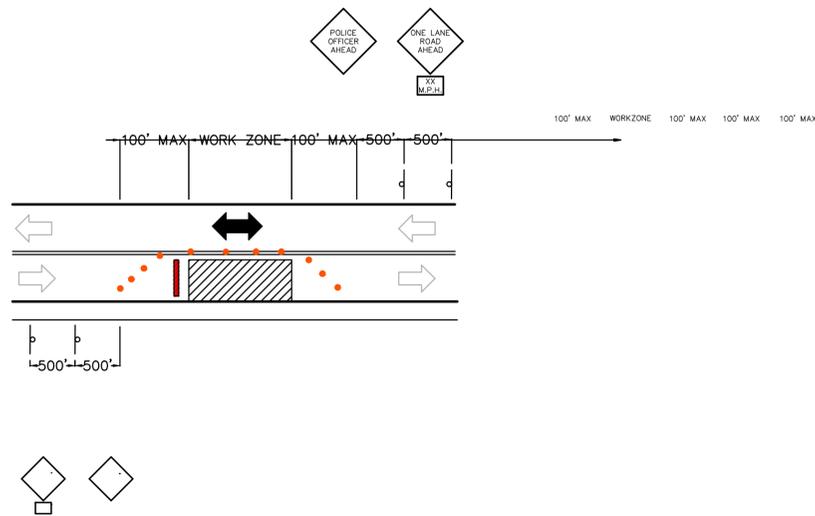
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CONTRACT 5
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 EASTHAM, MASSACHUSETTS

CONSTRUCTION DETAILS IV

FOR REVIEW
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CD-4

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CONTRACT 5
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EASTHAM, MASSACHUSETTS

CONSTRUCTION DETAILS V

FOR REVIEW
Sheet No.
CD-5