

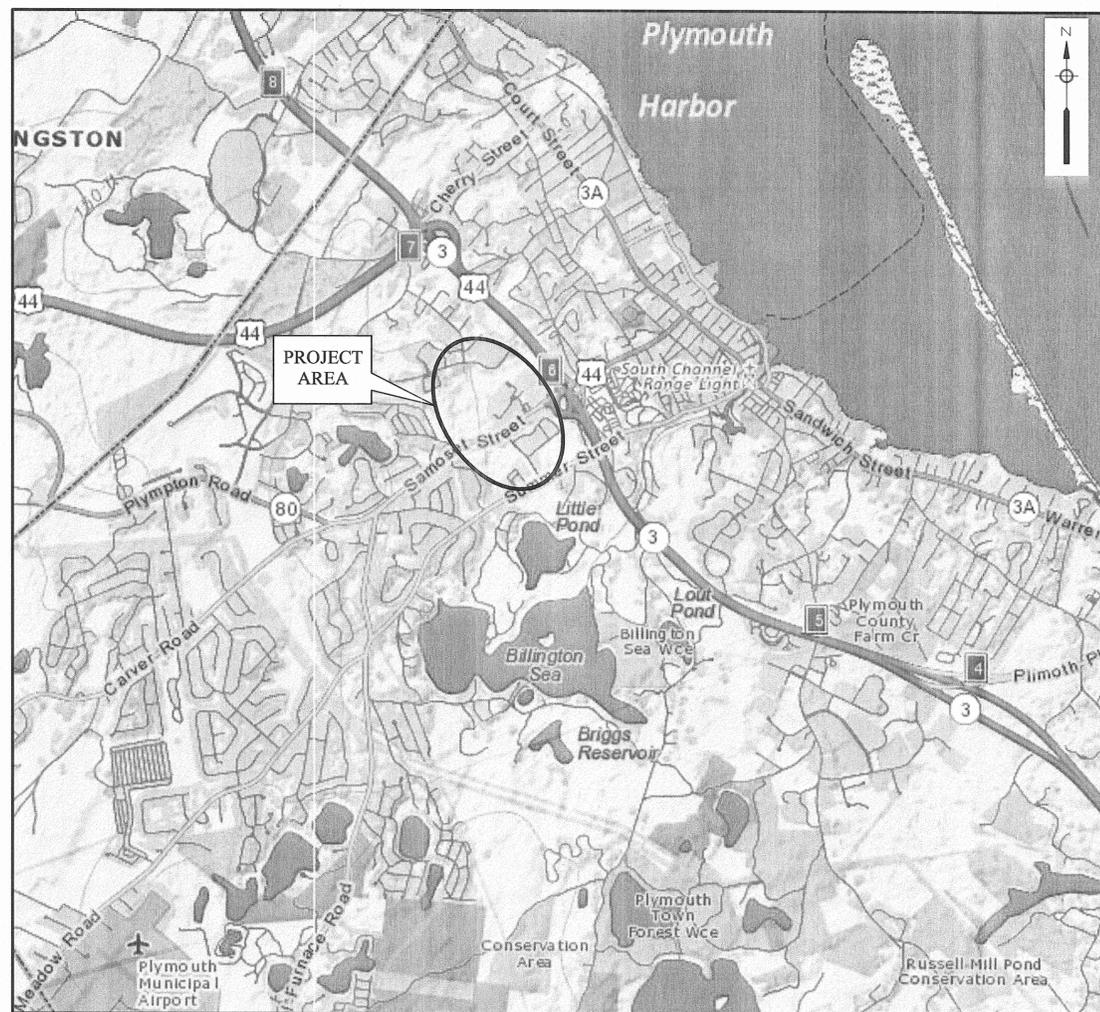
Town of Plymouth, MA

Samoset Street Sewer System Expansion

Invitation for Bid 21515

February 2015

LOCUS MAP



AECOM AECOM TECHNICAL SERVICES, INC.
250 APOLLO DRIVE
CHELMSFORD, MA 01824
PHONE (978) 905-2100



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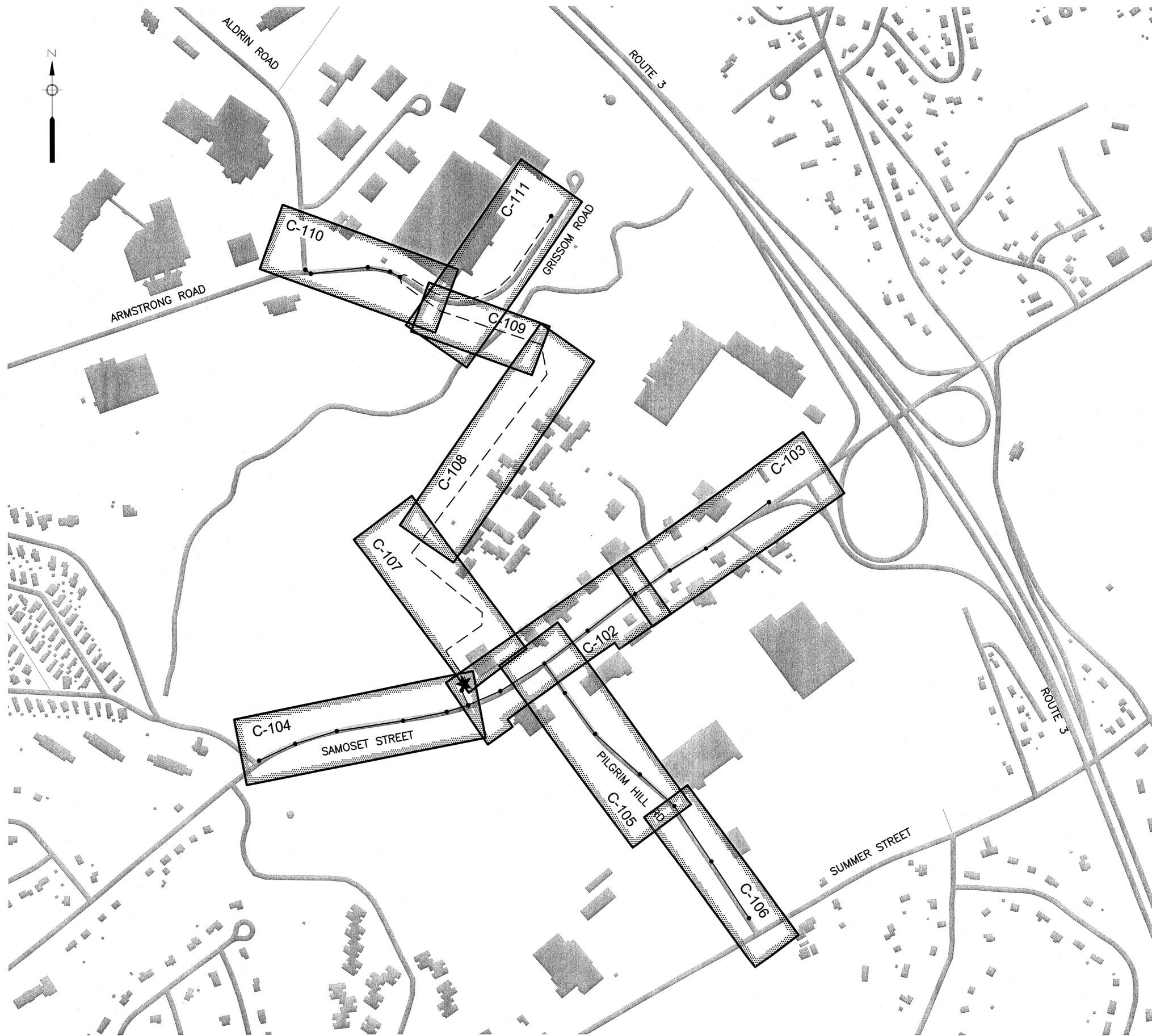
MELISSA ARRIGHI

DIRECTOR OF PUBLIC WORKS

JONATHAN BEDER

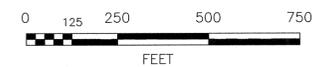
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 LAST UPDATE: Wednesday, February 18, 2015 11:57:11 AM
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ANSI D - 18-Feb-15



PLAN KEY

- PARCEL
- ROADWAY
- PROPOSED FORCEMAIN
- PROPOSED GRAVITY MAIN
- PROPOSED PUMPING STATION
- BUILDING
- SHEET LOCATOR



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TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION

KEY PLAN

GENERAL

PROJECT NO: 60303170
 CAD DWG FILE: G-001
 DESIGNED BY: J. FINNEGAN
 DRAWN BY: M. CURRAN
 DEPT CHECK: M. CANNON
 PROJ CHECK: T. PARECE

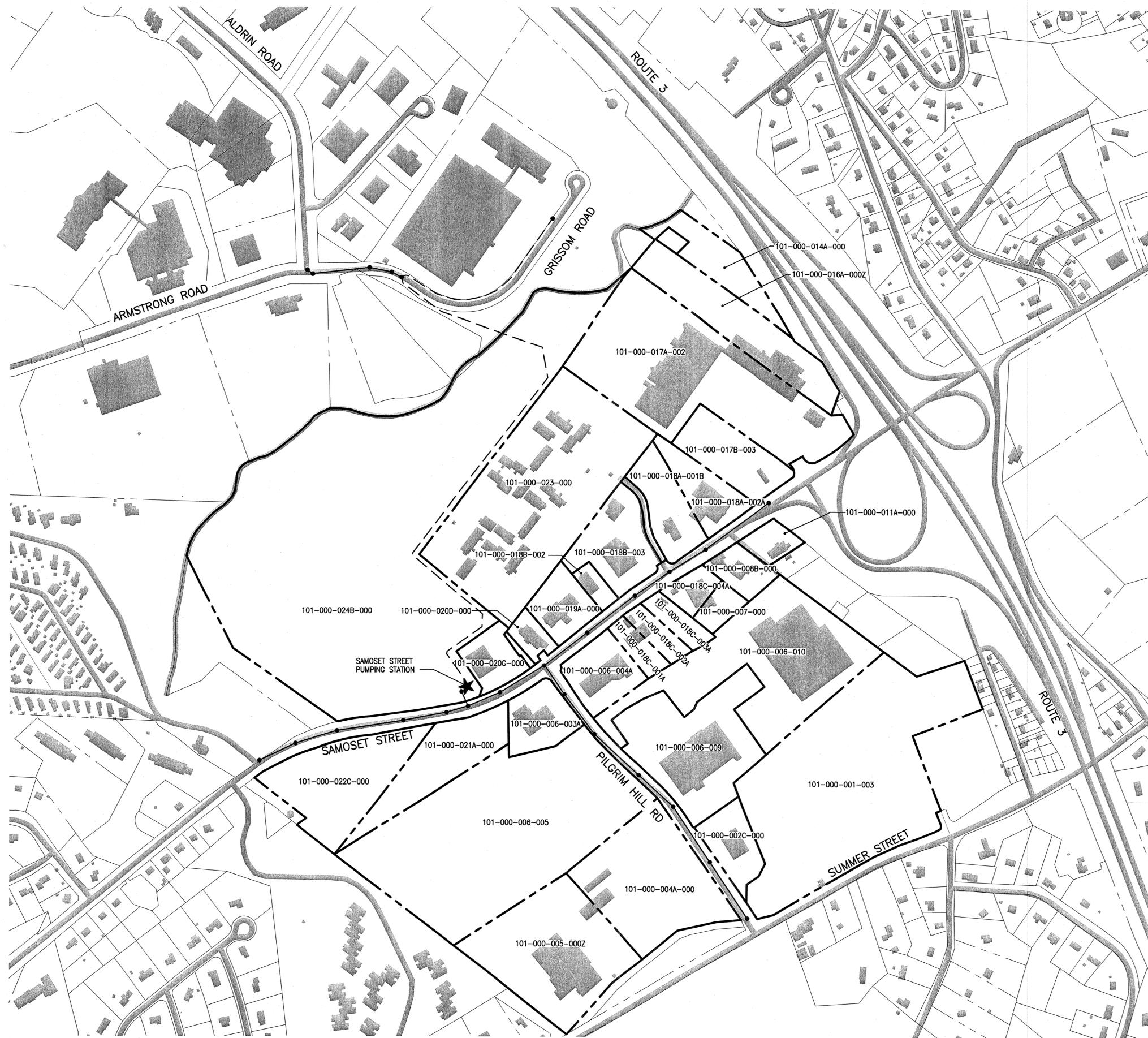
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G-002

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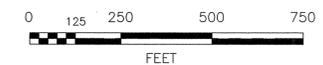
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PLAN KEY

- PARCEL
- PARCEL RECEIVING BETTERMENT
- ROADWAY
- PROPOSED FORCEMAIN
- PROPOSED GRAVITY MAIN
- PROPOSED PUMPING STATION
- BUILDING



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TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
 EXPANSION AREA PLOT PLAN
 GENERAL

PROJECT NO:	60303170
CAD DWG FILE:	G-001
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PAREDE
DATE:	FEB 2015
SCALE:	AS NOTED

G-003

MARK	DATE	MADE BY	CHECKED	DESCRIPTION	REVISIONS

GENERAL NOTES

- THE GROUND SURVEY WAS PERFORMED FROM JANUARY 1, 2014 TO FEBRUARY 19, 2014 BY WSP GROUP, 155 MAIN DUNSTABLE ROAD, NASHUA NH 03060.
- HORIZONTAL COORDINATES ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83), MASSACHUSETTS STATE PLANE COORDINATE SYSTEM.
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). MAPPING UNITS ARE US SURVEY FEET.
- THE LOCATIONS OF UTILITIES AND PROPERTY LINES SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE WITH THE TOWN AND UTILITY COMPANIES INVOLVED AND VERIFY IN THE FIELD THE EXACT LOCATION, SIZE, AND MATERIAL OF CONSTRUCTION OF MAINS AND SERVICES TO PREVENT DAMAGE, LOSS OF SERVICE DURING CONSTRUCTION AND FOR REPLACEMENT OF SERVICES. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" 72-HOURS PRIOR TO ANY EXCAVATION.
- EXISTING UTILITIES IN THE STREETS AND WITHIN THE LIMITS OF THE WORK ARE TO REMAIN IN SERVICE DURING CONSTRUCTION. WATER AND WASTEWATER SERVICES SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE LIFE OF THE PROJECT. ANY INTERRUPTION OF SERVICE SHALL BE COORDINATED WITH THE ENGINEER.
- THE CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN AND SHALL PROVIDE COPIES OF SAME TO THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR MAKING ALL ARRANGEMENTS FOR ANCHORING, SUPPORTING AND/OR RELOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICES BID. IN THE EVENT OF DAMAGE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL REPAIRS.
- EXISTING UTILITIES INTERFERING WITH THE WORK SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO PRECONSTRUCTION GRADES UPON COMPLETION OF STORM DRAIN CONSTRUCTION, EXCEPT WHERE PERMANENT GRADE CHANGES ARE SPECIFICALLY NOTED OR ORDERED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF THE EXISTING FEATURES AND STRUCTURES WITHIN AND ADJACENT TO THE WORK. IN THE EVENT OF DAMAGE, THE REPAIRS OR REPLACEMENT SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR SEQUENCING OF ALL WORK TO AVOID CONFLICTS BETWEEN ALL PROPOSED WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK AS INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER IN CONFORMANCE WITH ALL APPLICABLE CODES AND IN A PROPER AND WORKMANLIKE MANNER.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PROPER AND ADEQUATE TRENCH SHORING AND BRACING AT ALL TIMES IN ACCORDANCE WITH REQUIRED SAFETY STANDARDS.
- THE CONTRACTOR SHALL PREPARE AND SUBMIT A TRAFFIC MANAGEMENT PLAN FOR ALL WORK PRIOR TO THE START OF CONSTRUCTION TO SHOW HOW TRAFFIC FLOW WILL BE MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL FURNISH ALL PROTECTIVE AND/OR WARNING DEVICES AS REQUIRED TO CONTROL TRAFFIC AND PROTECT THE PUBLIC IN ALL WORK AREAS. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY THE WORK AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN EMERGENCY RESPONSE PLAN. THIS PLAN SHALL BE COORDINATED WITH THE ENGINEER, THE TOWN AND ALL EMERGENCY DEPARTMENTS.
- ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LOCAL AND STATE GUIDELINES.
- PRIOR TO CLOSING ANY ROADWAY (PARTIALLY OR COMPLETELY), MUNICIPAL POLICE, THE TOWN AND LOCAL FIRE OFFICIALS SHALL BE NOTIFIED. THE CONTRACTOR SHALL COMPLY WITH ANY CONDITIONS SET BY THE PUBLIC SAFETY OFFICIALS, IN CONJUNCTION WITH THE OWNER AND ENGINEER.
- IN ADDITION TO COMPLIANCE WITH THE GENERAL REQUIREMENTS SECTION OF THE SPECIFICATIONS, THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES AND SHALL PROVIDE ALL NECESSARY CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE AND STRENGTH TO PREVENT ACCESS TO ALL OPEN EXCAVATIONS AT THE COMPLETION OF EACH DAY'S WORK.
- THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL WASTE BUILDING MATERIAL, CONCRETE, MASONRY, TREES, SHRUBS, DEBRIS AND OTHER MATERIALS NECESSARY FOR THE SATISFACTORY COMPLETION OF THE WORK AND AS REQUIRED BY THE OWNER. CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL LAWS.
- THE CONTRACTOR SHALL RESTORE CROSS COUNTRY AREAS, PAVEMENT, PAVEMENT MARKINGS, SIDEWALKS, UTILITIES, FENCES, WALLS, OTHER INFRASTRUCTURE AND APPURTENANCES DISTURBED BY CONSTRUCTION ACTIVITIES TO THEIR PRECONSTRUCTION CONDITIONS. ALL AREAS AND UTILITIES OUTSIDE OF CONTRACT OR PAVEMENT LIMITS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AT NO ADDITIONAL COST TO THE OWNER.
- NO TREES OR TREE LIMBS ALONG THE ENTIRE ROUTE OF CONSTRUCTION ON PUBLIC WAYS SHALL BE CUT UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- ALL EROSION CONTROL MEASURES FOR THE WORK ZONE SHALL BE IN PLACE PRIOR TO THE START OF CONSTRUCTION.
- CONTRACTOR TO PROVIDE AND MAINTAIN SEDIMENTATION AND EROSION CONTROL MEASURES TO PROTECT ALL CATCH BASINS, DRAINAGE INLETS AND SWALES IN THE CONSTRUCTION ZONE.
- IF WATER, STORM OR SEWER LINES NEED TO BE RE-LAYED AS A RESULT OF NEW PIPELINE CONSTRUCTION, THE FOLLOWING GUIDELINES SHALL BE ADHERED TO: WATER MAINS SHALL BE LAID A MINIMUM OF 10- FEET HORIZONTALLY FROM AN EXISTING SEWER OR STORM, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WHENEVER WATER MAINS MUST CROSS ABOVE A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18-INCHES BELOW THE BOTTOM OF THE WATER MAIN. WHERE RE-LAYED WATER MAINS ARE SHOWN TO CROSS SEWERS, THE RE-LAYED WATER MAIN SHALL BE INSTALLED SO THAT A FULL LENGTH OF WATER MAIN CROSSES THE SEWER MIDWAY BETWEEN THE JOINTS OF THE WATER MAIN.
- THE CONTRACTOR IS ADVISED THAT IT MAY BE NECESSARY TO DEWATER, DISINFECT, AND CHLORINATE GREATER LENGTHS OF WATER MAINS THAN WILL BE RE-LAYED.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING FIRE HYDRANTS AT ALL TIMES. SHOULD AN EXISTING HYDRANT NEED TO BE TAKEN OUT OF SERVICE, THE CONTRACTOR SHALL NOTIFY THE LOCAL FIRE DEPARTMENT 24 HOURS PRIOR TO TAKING IT OUT OF SERVICE.
- TRENCHES WILL BE BACKFILLED AT THE END OF EACH DAY. TEMPORARY TRENCH PAVEMENT SHALL BE INSTALLED AT THE END OF EACH WORK WEEK UNLESS OTHERWISE DIRECTED BY THE OWNER.
- ALL EXISTING FRAMES, COVERS, BOXES, ETC. SHALL BE RAISED TO FINISH GRADES PRIOR TO PLACEMENT OF PAVEMENT WEARING COURSE.
- THE CONTRACTOR SHALL EXERCISE CARE TO PREVENT DAMAGE TO ROOT SYSTEMS OF EXISTING TREES OR SHRUBS IN LOCATIONS OF PROPOSED SEWER LINES.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE OWNER'S REPRESENTATIVE FOR RESOLUTION OF THE CONFLICT.
- ALL WORK TO BE DONE SHALL BE WITHIN THE PUBLIC RIGHT OF WAY OR EASEMENT.
- THE CONTRACTOR SHALL COORDINATE ALL WORK AS NECESSARY WITH THE TOWN OF PLYMOUTH DEPARTMENT OF PUBLIC WORKS.
- CONTRACTOR TO SUBMIT WORK SCHEDULE INCLUDING NECESSARY UTILITY RELOCATIONS BASED ON RESULTS OF TEST PITS. NO PIPE INSTALLATION SHALL OCCUR PRIOR TO APPROVAL OF THE SCHEDULE AND COMPLETION OF TEST PITS.
- THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING SEWER SERVICE CONNECTIONS PRIOR TO CONSTRUCTING REPLACEMENT SERVICE CONNECTIONS WHEN REQUIRED.
- ALL PROPOSED SEWER SERVICES SHALL BE 6" DIAMETER PVC UNLESS OTHERWISE NOTED.
- ALL PROPOSED PRECAST SEWER MANHOLE SUMPS SHALL BE A MINIMUM OF 6" DEEPER THAN THE LOWEST INVERT AT THE STRUCTURE. INVERTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH DETAILS.
- ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE STATE STATUTES AND U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (O.S.H.A.). COPIES OF O.S.H.A.'S STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. THE CONTRACTOR ALONE WILL BE RESPONSIBLE FOR THE EXECUTION OF THE WORK IN ACCORDANCE WITH ALL APPLICABLE HEALTH AND SAFETY REQUIREMENTS.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE COMMENCING THE WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPORT ANY DISCREPANCIES TO THE CONTRACTING OFFICER IN A TIMELY MANNER. FAILURE TO PROSPECT IN ADVANCE OF WORK OR VERIFY DIMENSIONS SHALL NOT BE CAUSE FOR ADDITIONAL COSTS TO THE OWNER.

GENERAL NOTES (CONT.)

- SCALES SHOWN HEREIN ARE FOR FULL SIZE PLOTS ON 22x34 INCH SHEETS. THE CONTRACTOR IS RESPONSIBLE FOR CONVERTING SCALES ON REDUCED OR ENLARGED PLOTS.
- CONTRACTOR SHALL SAW-CUT ALL PAVEMENT, ROADS, AND DRIVEWAYS TO BE DISTURBED DURING CONSTRUCTION. ALL ROADS AND DRIVEWAYS SHALL BE REPLACED TO A CONDITION AT LEAST AS GOOD AS THEY WERE BEFORE BEING DISTURBED.
- CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF THE LOCAL MUNICIPALITY AND THE STATE WHEN WORKING IN THEIR RIGHTS OF WAY.
- ALL PAVED GUTTERS (ASPHALT WING), ALL STONE CURBS, AND ALL CONCRETE CURB ALONG ROADWAYS DISTURBED BY CONSTRUCTION SHALL BE REPLACED IN KIND AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE RESTRAINT OF ANY AND ALL UTILITY POLES WITH THE UTILITY OWNER. CONTRACTOR IS RESPONSIBLE FOR PAYMENT TO THE UTILITY OWNER FOR THIS WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, FURNISHING, INSTALLING, AND REMOVING ALL NECESSARY MATERIAL (TAPS, CORPORATIONS, AND SERVICE PIPE) REQUIRED FOR PROPER TESTING AND CHLORINATION OF WATER MAINS.
- AFTER TESTING, ALL CORPORATIONS INSTALLED FOR TESTING AND CHLORINATION SHALL BE REMOVED AND REPLACED WITH BRASS PLUGS. WATER TIGHTNESS OF BRASS PLUGS SHALL BE OBSERVED VISUALLY UNDER PRESSURE.
- ALL UNDERGROUND UTILITIES ARE SHOWN IN THEIR RELATIVE POSITION AND ARE FOR INFORMATION ONLY. THEIR EXACT LOCATION SHALL BE VERIFIED AT THE SITE BEFORE CONSTRUCTION BEGINS. SMALL DIAMETER WATER, SEWER, AND GAS SERVICES TO BUILDINGS ARE ONLY SHOWN IF IDENTIFIED DURING THE GROUND SURVEY.
- THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE DEPTH OF EXISTING UTILITY CROSSINGS EITHER BELOW OR ABOVE THE NEW SANITARY PIPING. METHODS FOR DETERMINING DEPTHS TO UTILITIES WILL BE BY TEST PITS OR BY VACUUM EXCAVATION, WHICHEVER IS DEEMED ACCEPTABLE AT THE SPECIFIC LOCATION.
- CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS TO OBTAIN WATER FOR FLUSHING, CHLORINATION, AND TESTING.
- NO WORK, STORAGE, OR TRESPASS SHALL BE PERMITTED BEYOND THE BOUNDARIES OF ANY EASEMENTS WITHOUT WRITTEN PERMISSION OF THE PROPERTY OWNER.
- EXISTING VALVES OR HYDRANTS SHALL BE OPERATED BY THE MUNICIPAL OWNER. THE CONTRACTOR SHALL COORDINATE WITH THE MUNICIPAL OWNER OF THE WATER SYSTEM.
- ALL ROAD CUTS SHALL BE RESTORED WITH SUB-BASE MATERIAL AT THE END OF EACH WORK DAY. CONTRACTOR SHALL MAINTAIN ROAD CUTS UNTIL THE TEMPORARY/PERMANENT PAVEMENT IS INSTALLED.
- CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, WALKS, CURBS, FENCES, ETC. TO A CONDITION AT LEAST AS GOOD AS THEY WERE BEFORE BEING DISTURBED. MAILBOXES, POSTS, ETC., SHALL BE PROTECTED OR REMOVED AND REPLACED EXACTLY AS THEY WERE BEFORE BEING DISTURBED. DAMAGED ITEMS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- BOX ALL TREES, SHRUBS, FLOWER BOXES, AND HEDGES BEFORE PLACING EARTH AGAINST OR NEAR THEM. ANY DAMAGED TREES, SHRUBS, FLOWER BOXES, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- FOR WORK THAT FALLS WITHIN THE AREA OF A SIGNALIZED INTERSECTION THE CONTRACTOR MUST CONTACT THE PLYMOUTH HIGHWAY DEPARTMENT AT LEAST TWO BUSINESS DAYS PRIOR TO THE COMMENCEMENT OF WORK TO LOCATE THE EXISTING TRAFFIC SIGNAL CONDUIT/DETECTORS AND COORDINATE AS NOT TO DISTURB THE TRAFFIC SIGNALS. THE CONTRACTOR WILL BE RESPONSIBLE TO REPAIR/REPLACE ALL DAMAGED SIGNAL EQUIPMENT ITEMS.

ABBREVIATIONS

BIT. CURB	BITUMINOUS CURB	MB	MAIL BOX
BIT. CONC.	BITUMINOUS CONCRETE	MIN	MINIMUM
BM	BENCH MARK	NTS	NOT TO SCALE
CB	CATCH BASIN	PL	PLASTIC
CI	CAST IRON	PVC	POLYVINYL CHLORIDE
CICL	CEMENT LINED CAST IRON	PVMT	PAVEMENT
CMP	CORRUGATED METAL PIPE	PWW	PAVED WATERWAY
CONC.	CONCRETE	R	RIM
CONN.	CONNECT	RCP	REINFORCED CONCRETE PIPE
CS	CARBON STEEL	S	SLOPE
DI	DUCTILE IRON	SMH	SEWER MANHOLE
DMH	DRAINAGE MANHOLE	SWL	SINGLE WHITE LINE
DOE	DEPTH OF EXPLORATION	SYL	SINGLE YELLOW LINE
DYL	DOUBLE YELLOW LINE	STA	STATION
ELEC	ELECTRICAL	TBM	TEMPORARY BENCHMARK
EL	ELEVATION	TMH	TELEPHONE MANHOLE
EOP	EDGE OF PAVEMENT	T.O.P.	TOP OF PIPE
EP	EXISTING PAVEMENT	TRANS	TRANSFORMER
EXIST.	EXISTING	TYP	TYPICAL
FT	FEET	UE	UNDERGROUND ELECTRIC
FM	FORCE MAIN	UP	UTILITY POLE
G	GAS	VCP	VITRIFIED CLAY PIPE
GAR	GARAGE	W/	WITH
GC	GRANITE CURB	WF	WETLAND FLAG
HDPE	HIGH DENSITY POLYETHYLENE		
INV	INVERT		
LP	LOW PRESSURE		
LSA	LANDSCAPED AREA		

LEGEND

EXISTING	PROPOSED
CONCRETE BOUND WITH DRILL HOLE	SEWER MANHOLE
CONCRETE BOUND	SEWER
MASS HIGHWAY BOUND	SEWER FORCE MAIN
IRON ROD FOUND	EASEMENT BOUNDARY
ROUND CATCH BASIN	EROSION CONTROL BARRIER
CATCH BASIN	CATCH BASIN CONTROL
DOUBLE CATCH BASIN	STATIONING
CULVERT	TEST PIT
DRAIN MANHOLE	
DRAINAGE HEADWALL	
SEWER MANHOLE	
ELECTRIC BOX	
ELECTRIC MANHOLE	
GAS VALVE	
TELEPHONE BOX	
TELEPHONE MANHOLE	
WATER GATE	
IRRIGATION CONTROL VALVE	
FIRE HYDRANT	
UTILITY POLE WITH RISER	
UTILITY POLE	
UTILITY POLE WITH LIGHT	
UTILITY POLE WITH LIGHT AND RISER	
UTILITY POLE WITH TRANSFORMER	
GUY	
DECIDUOUS TREE	
CONIFER TREE	
SHRUB	
SIGN (SINGLE POSTED)	
SIGN (DOUBLE POSTED)	
TRAFFIC SIGNAL	
POST	
MONITORING WELL	
LIGHT POLE	
FLAG POLE	
FIRE DEPARTMENT CONNECTION	
VENT	
SPOT ELEVATION	
WETLAND FLAG	
WETLAND 100' BUFFER	
PROPERTY LINE	
FENCE	
SEWER LINE	
DRAIN LINE	
WATER LINE	
GAS LINE	
UNDERGROUND ELECTRIC	
UNDERGROUND CABLE	
TELEPHONE LINE	
OVERHEAD WIRES	
INTERMEDIATE CONTOURS	
INDEX CONTOURS	

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AECOM



TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION

GENERAL NOTES, LEGEND AND ABBREVIATIONS

CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	C-001
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

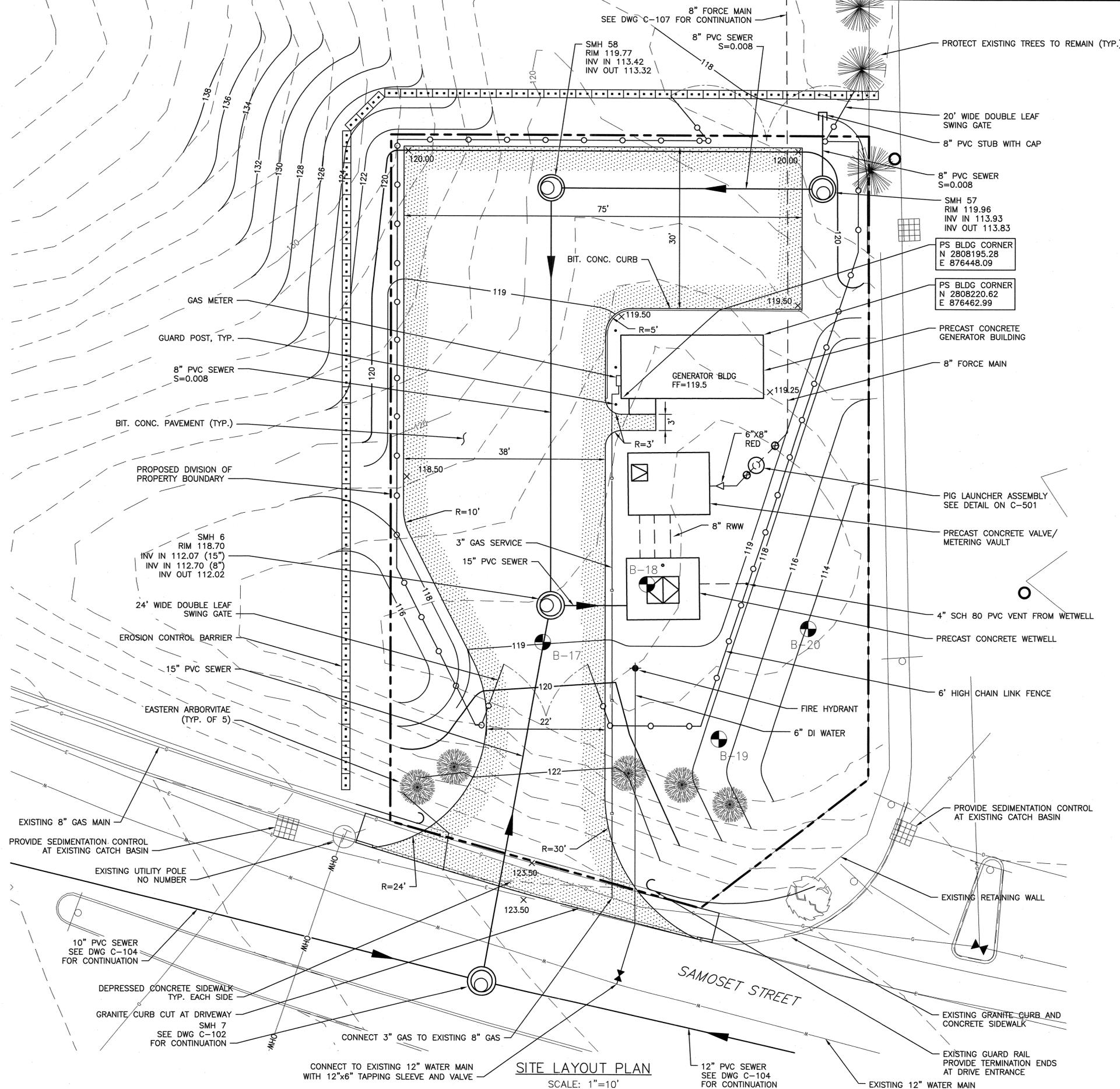
C-001

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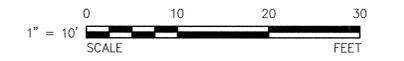
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 LAST UPDATE: Wednesday, February 18, 2015 1:39:01 PM
 PLOT DATE: Wednesday, February 18, 2015 2:06:08 PM

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SITE LAYOUT PLAN
 SCALE: 1"=10'

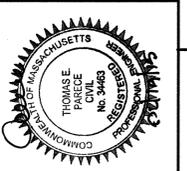
NOTE:
 1. DISTURBED AREAS TO RECEIVE LOAM AND SEED.



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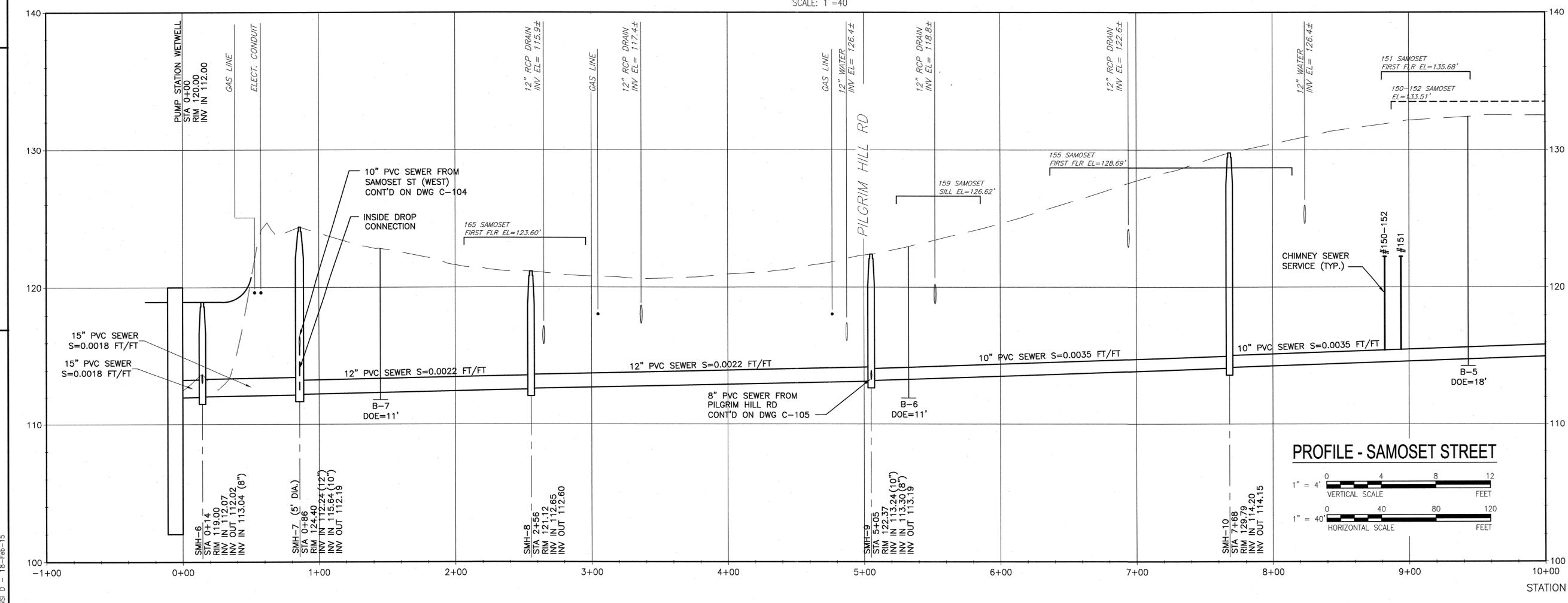
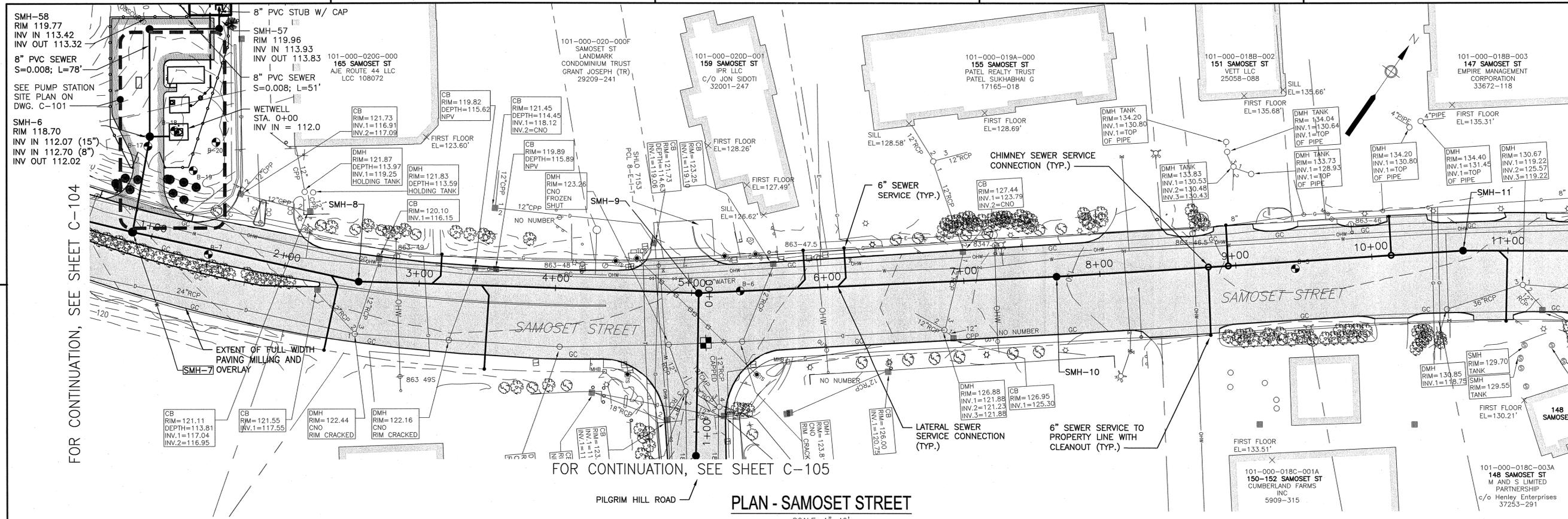
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TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
**SAMOSET STREET PUMPING STATION
 SITE LAYOUT AND UTILITIES PLAN**
 CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	01 C-101
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

C-101



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AECOM

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REGISTERED PROFESSIONAL ENGINEER
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STATE OF MASSACHUSETTS

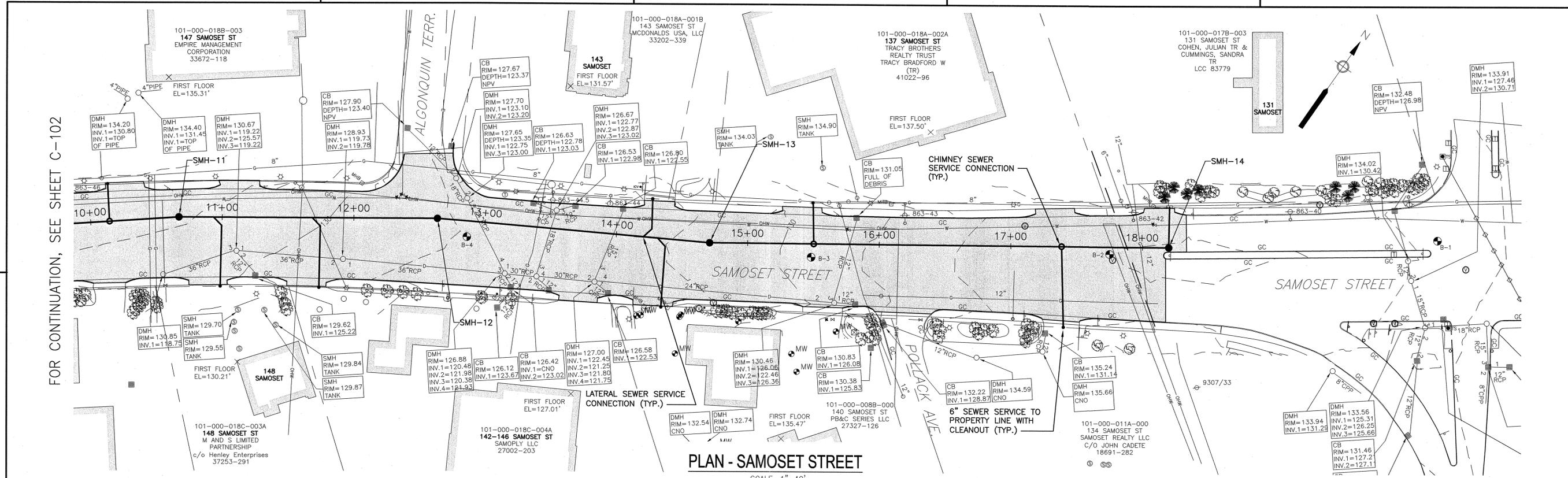
TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION
SAMOSET STREET
PLAN AND PROFILE I
CIVIL

PROJECT NO: 60303170
CAD DWG FILE: C101-C111
DESIGNED BY: J. FINNAGAN
DRAWN BY: M. CURRAN
DEPT CHECK: M. CANNON
PROJ CHECK: T. PARECE
DATE: FEB 2015
SCALE: AS NOTED

C-102

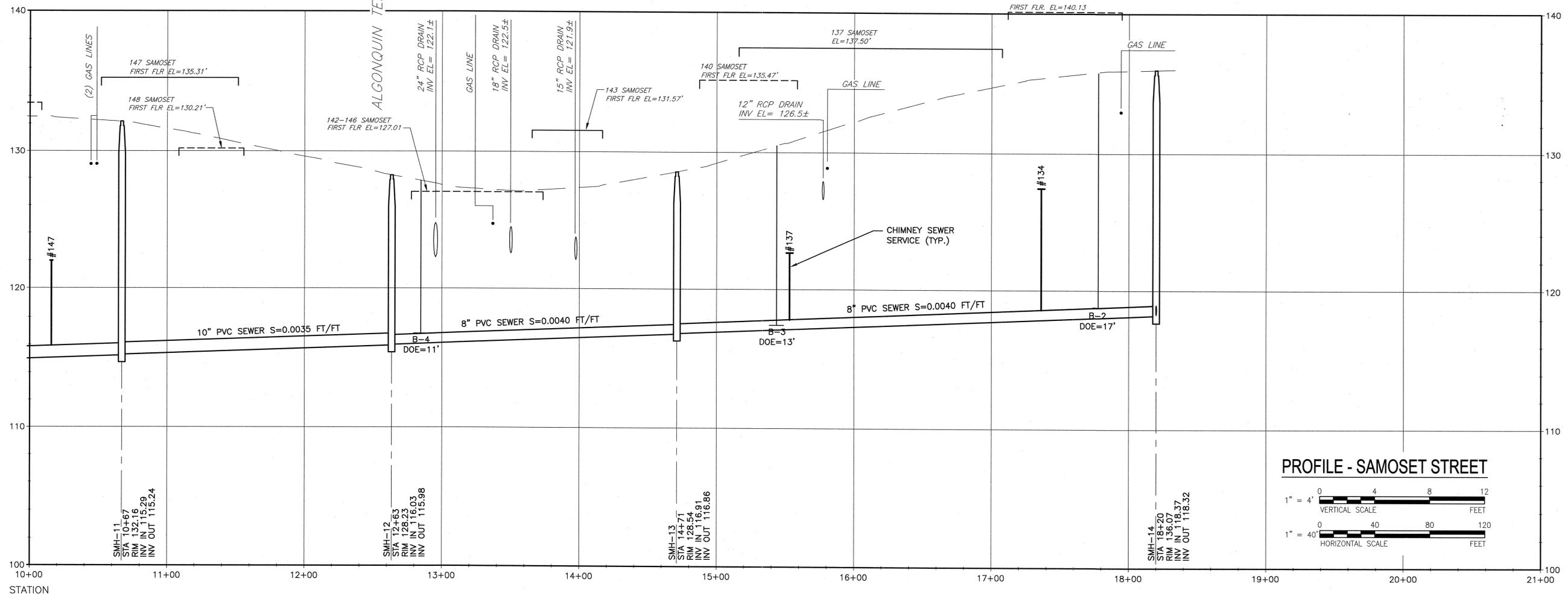
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LAST UPDATE: Wednesday, February 18, 2015 11:55:12 AM
PLOT DATE: Wednesday, February 18, 2015 2:08:41 PM

FOR CONTINUATION, SEE SHEET C-102

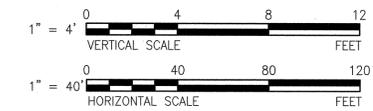


PLAN - SAMOSET STREET

SCALE: 1"=40'



PROFILE - SAMOSET STREET



MARK	DATE	MADE BY	CHECKED	DESCRIPTION

AECOM
 250 WASHINGTON STREET, SUITE 200
 PLYMOUTH, MA 01901
 PHONE (508) 833-1100

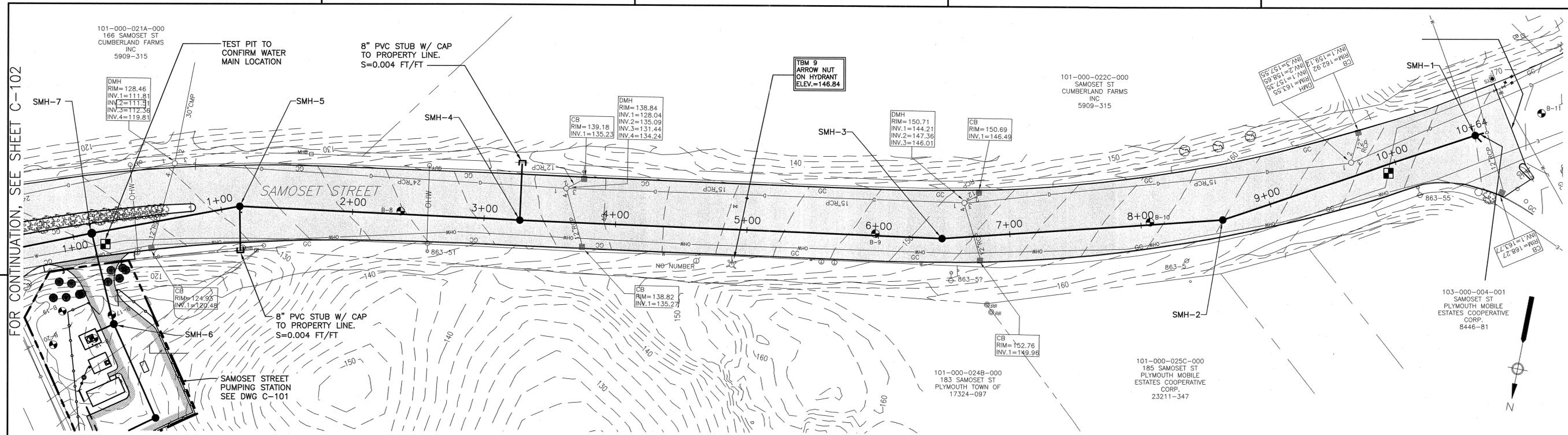
COMMONWEALTH OF MASSACHUSETTS
 REGISTERED PROFESSIONAL ENGINEER
 THOMAS E. PARCE
 LICENSE NO. 34693

TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
SAMOSET STREET
PLAN AND PROFILE II
 CIVIL

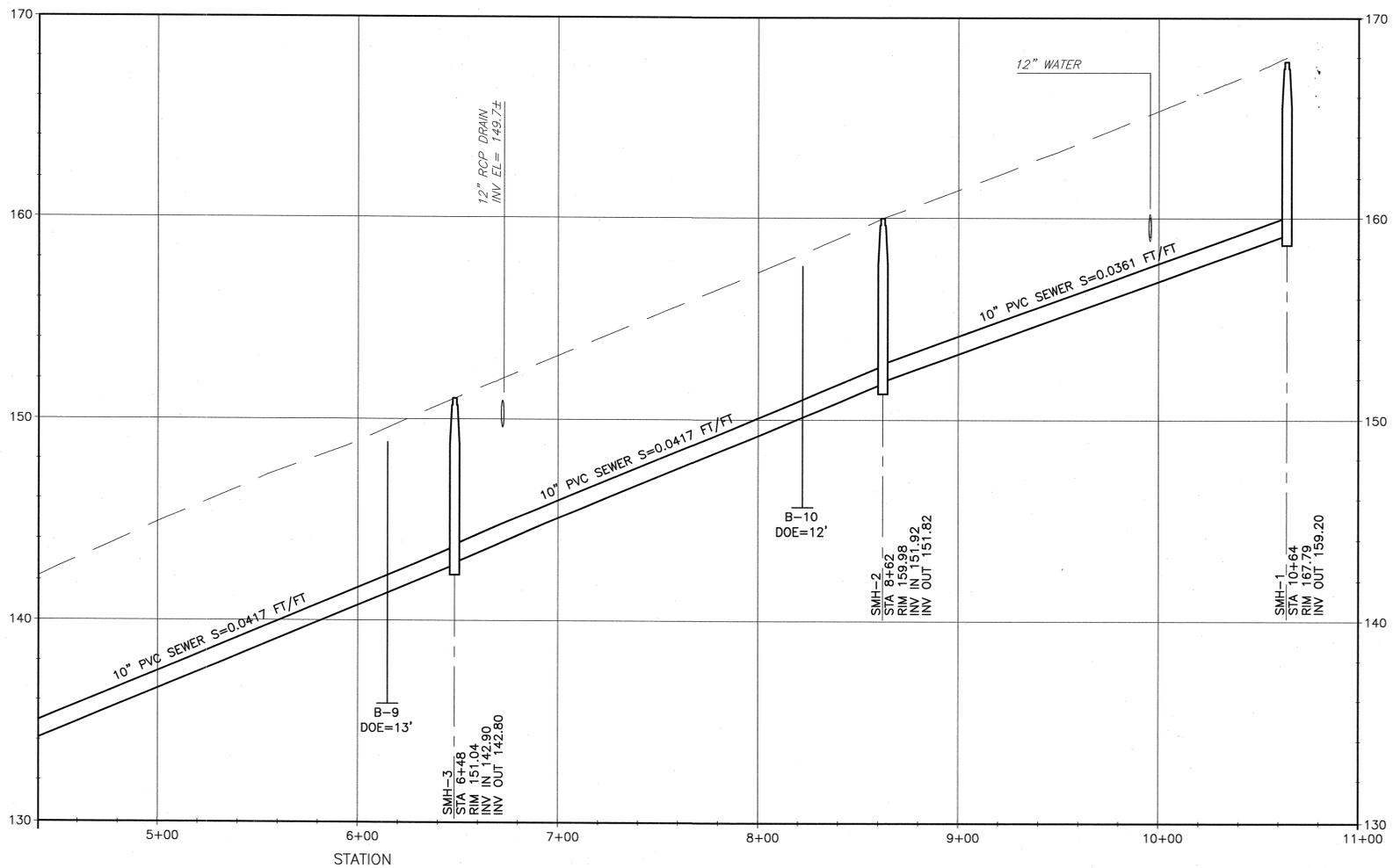
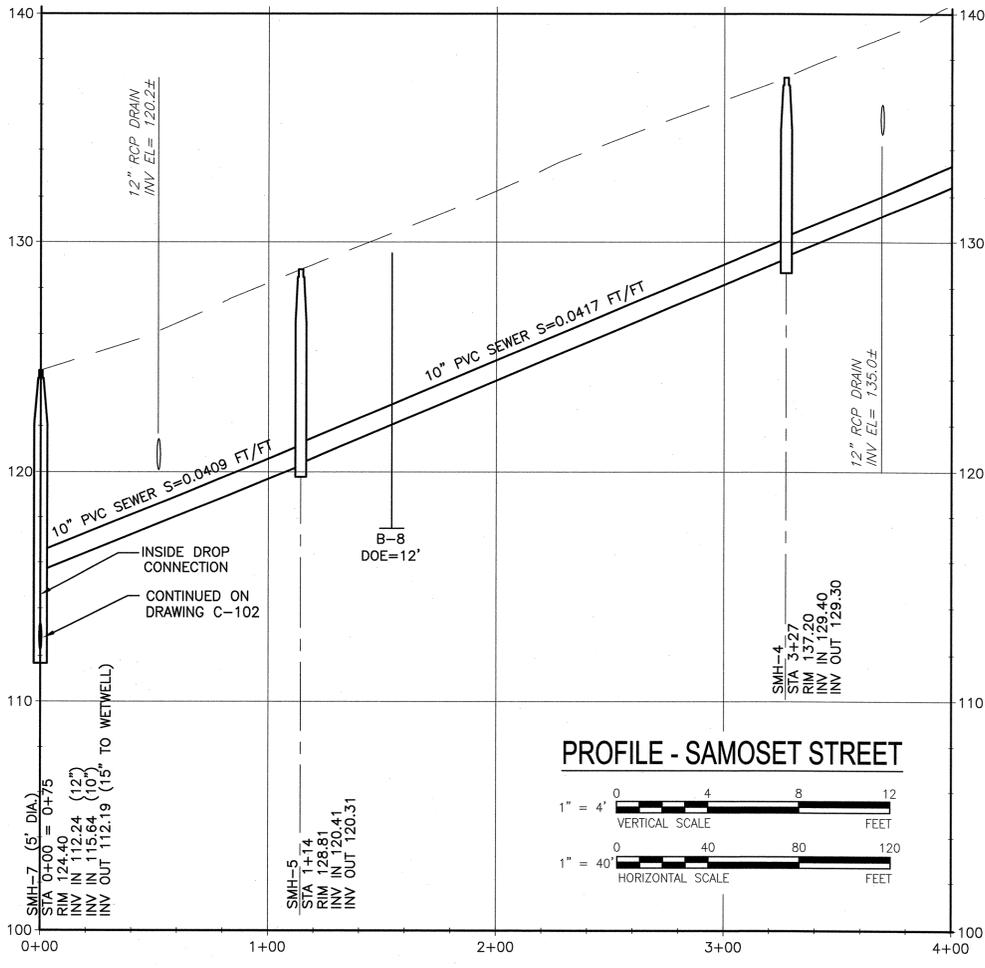
PROJECT NO:	60303170
CAD DWG FILE:	C101-C111
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PARCE
DATE:	FEB 2015
SCALE:	AS NOTED

C-103

P:\PROJECTS\170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\DWG\C101-C111.DWG
 LAST UPDATE: Wednesday, February 18, 2015 11:55:12 AM
 PLOT DATE: Wednesday, February 18, 2015 2:09:45 PM
 ANSI D - 18-F00-15



PLAN - SAMOSET STREET
SCALE: 1"=40'



PROFILE - SAMOSET STREET
VERTICAL SCALE: 1"=4'
HORIZONTAL SCALE: 1"=40'

PLOT DATE: Wednesday, February 18, 2015 2:11:44 PM
 LAST UPDATE: Wednesday, February 18, 2015 11:55:12 AM
 PLOT FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\C101-C111.DWG

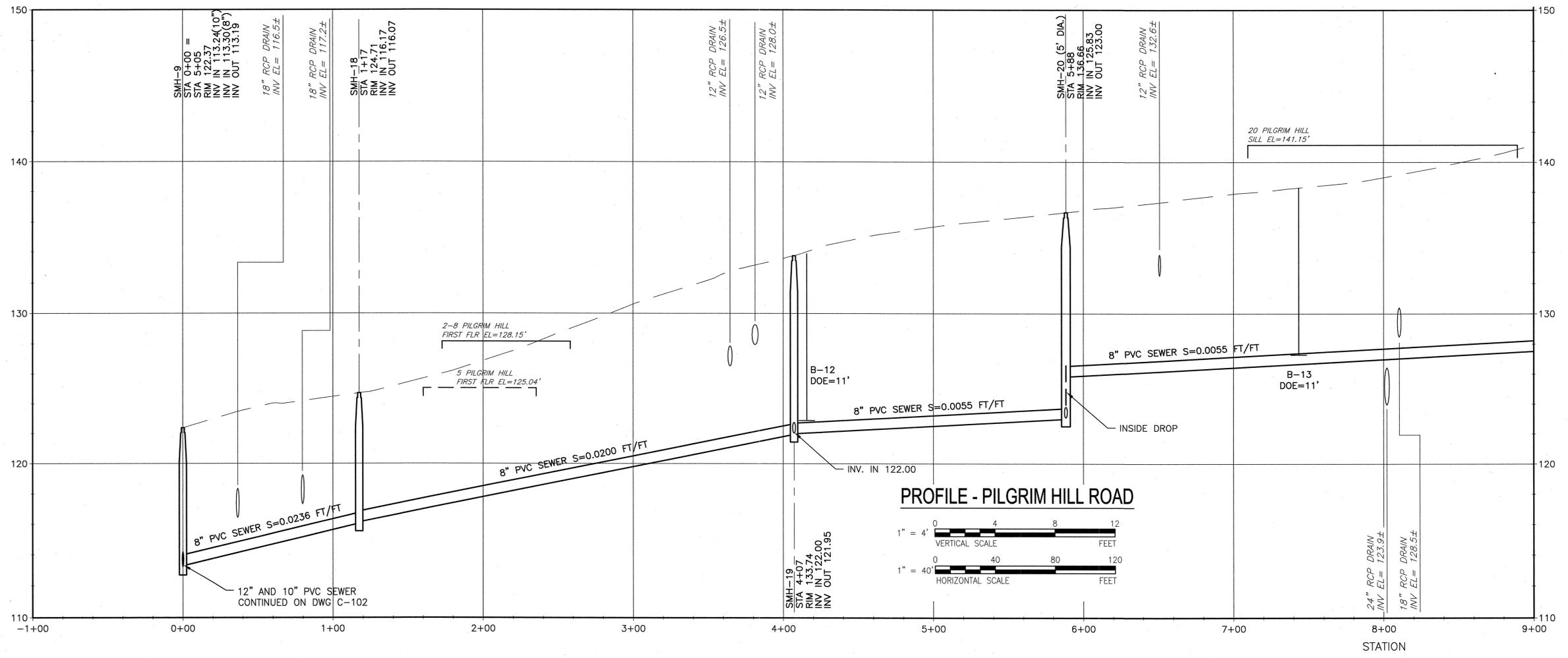
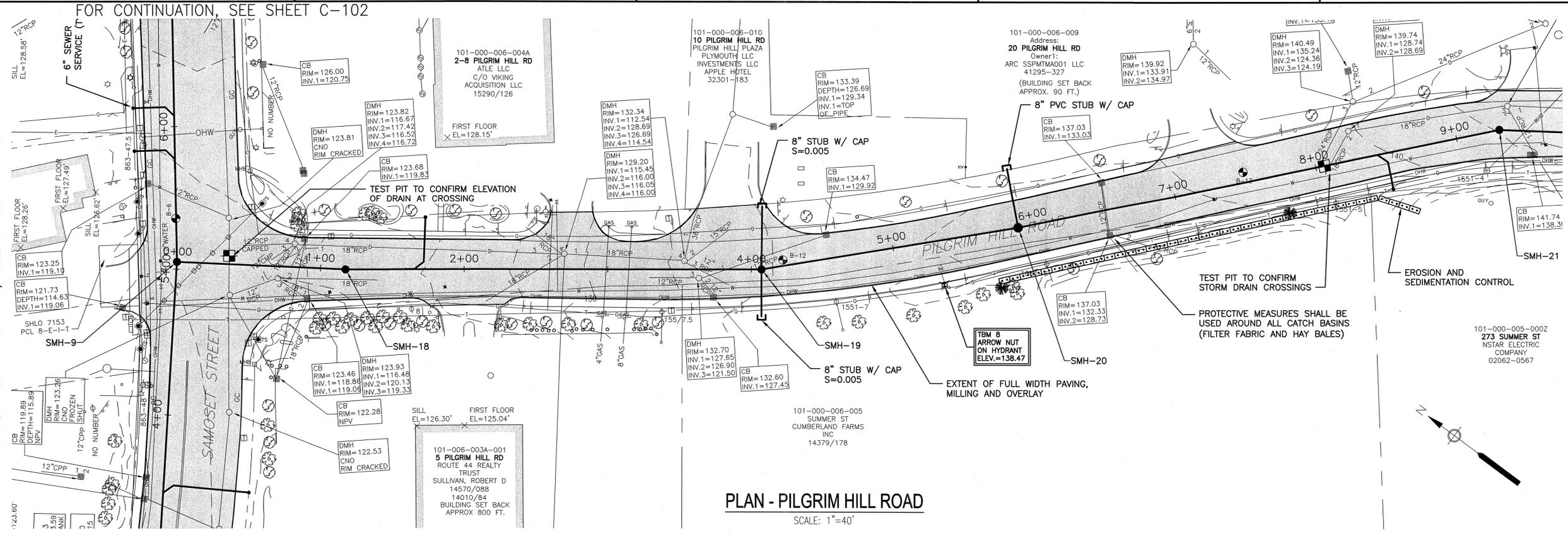
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TOWN OF PLYMOUTH, MA SAMOSET STREET SEWER SYSTEM EXPANSION SAMOSET STREET PLAN AND PROFILE III CIVIL							
PROJECT NO: 60303170 CAD DWG FILE: C101-C111 DESIGNED BY: J. FINNEGAN DRAWN BY: M. CURRAN DEPT CHECK: M. CANNON PROJ CHECK: T. PARECE DATE: FEB 2015 SCALE: AS NOTED							
C-104							

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\C101-C111.DWG
 LAST UPDATE: Wednesday, February 18, 2015 11:55:12 AM
 PLOT DATE: Wednesday, February 18, 2015 2:13:48 PM

ANSI D - 18-Feb-15

FOR CONTINUATION, SEE SHEET C-102

FOR CONTINUATION, SEE SHEET C-106



MARK	DATE	MADE BY	CHECKED	REVISIONS	DESCRIPTION

AECOM

AECON TECHNICAL SERVICES, INC.
 100 WASHINGTON STREET, SUITE 200
 CHILMARK, MA 01924
 PHONE (978) 895-2100

Professional Engineer Seal:
 COMMONWEALTH OF MASSACHUSETTS
 THOMAS E. PARECE
 REG. NO. 5483
 CIVIL ENGINEER

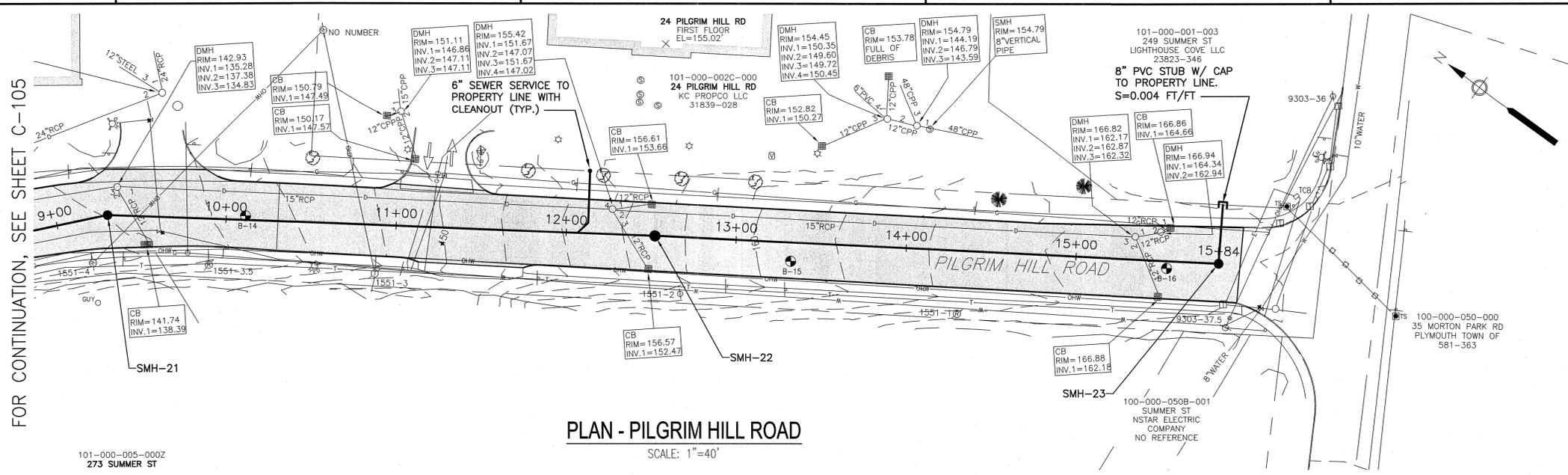
TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
**PILGRIM HILL ROAD
 PLAN AND PROFILE I**
 CIVIL

PROJECT NO: 60303170
 CAD DWG FILE: C101-C111
 DESIGNED BY: J. FINNEGAN
 DRAWN BY: M. CURRAN
 DEPT CHECK: M. CANNON
 PROJ CHECK: T. PARECE
 DATE: FEB 2015
 SCALE: AS NOTED

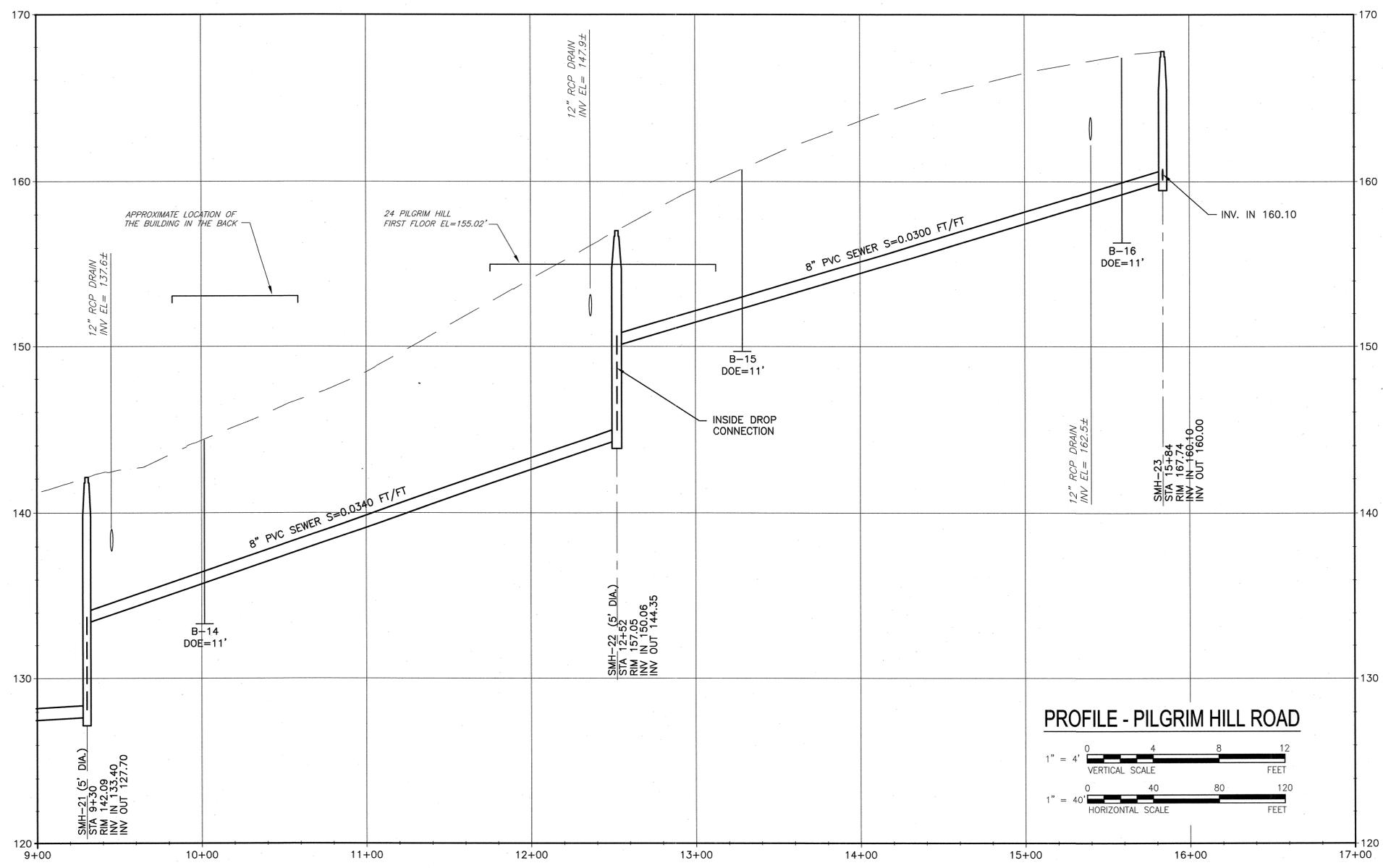
C-105

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 PLOT DATE: Wednesday, February 18, 2015 2:19:17 PM

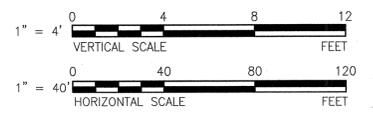
ANSI D - 18 - Feb-15



PLAN - PILGRIM HILL ROAD
 SCALE: 1"=40'

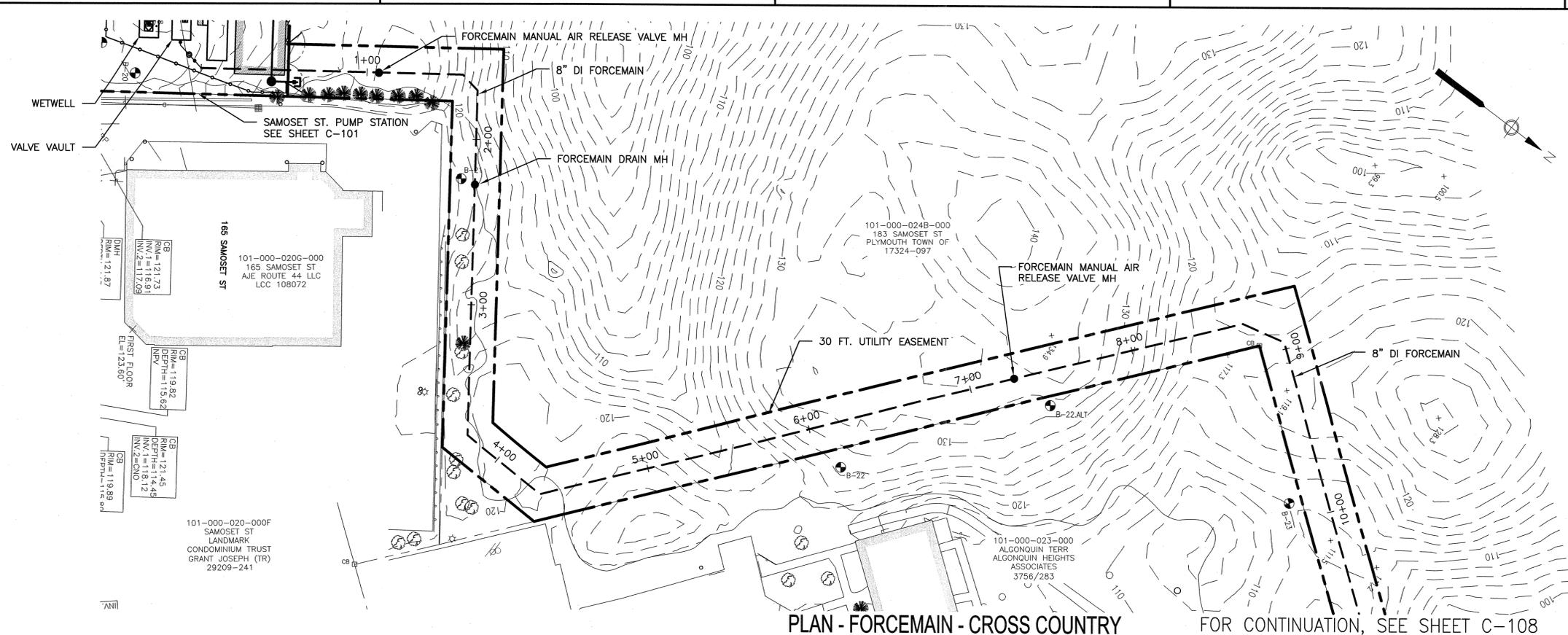


PROFILE - PILGRIM HILL ROAD



FOR CONTINUATION, SEE SHEET C-105

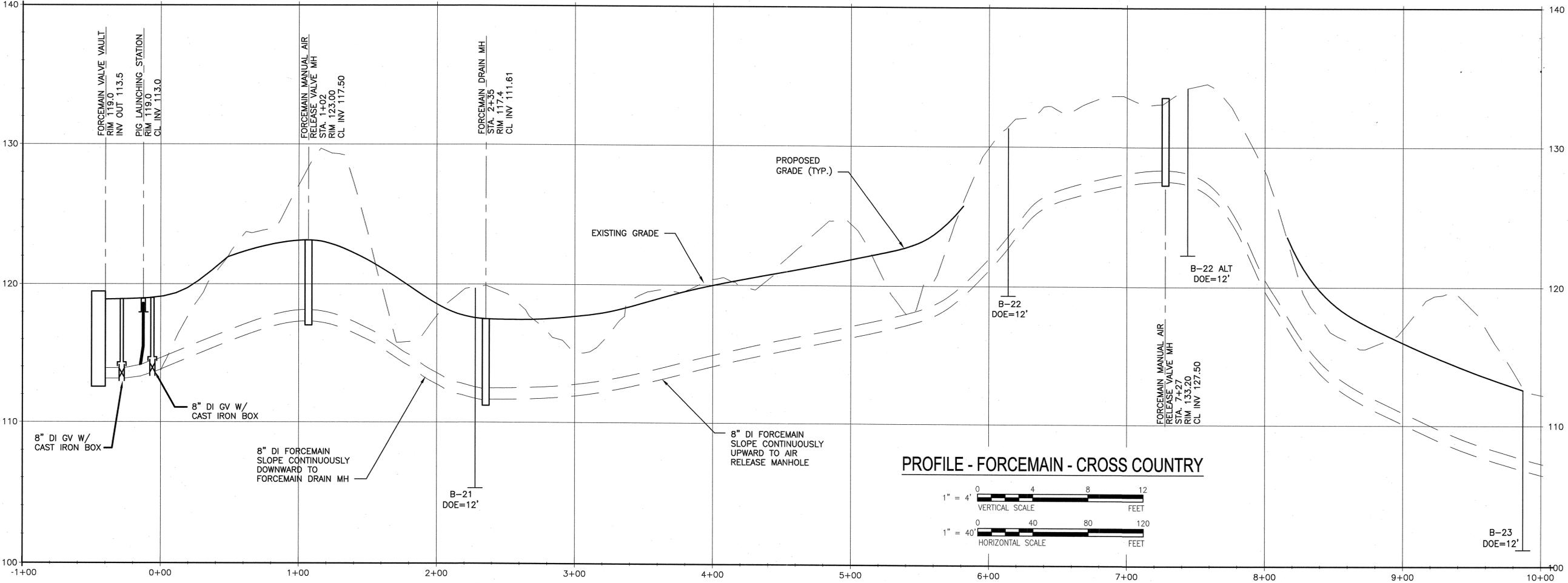
<p>TOWN OF PLYMOUTH, MA SAMOSET STREET SEWER SYSTEM EXPANSION PILGRIM HILL ROAD PLAN AND PROFILE II CIVIL</p>			
PROJECT NO:	60303170	DATE:	FEB 2015
CAD DWG FILE:	C101-C111	SCALE:	AS NOTED
DESIGNED BY:	J. FINNEGAN		
DRAWN BY:	M. CURRAN		
DEPT CHECK:	M. CANNON		
PROJ CHECK:	T. PARECE		
<p>C-106</p>			



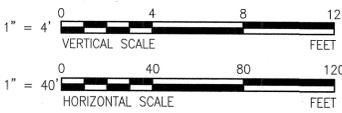
PLAN - FORCEMAIN - CROSS COUNTRY

FOR CONTINUATION, SEE SHEET C-108

SCALE: 1"=40'



PROFILE - FORCEMAIN - CROSS COUNTRY



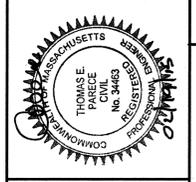
MARK	DATE	MADE BY	CHECKED	DESCRIPTION

AECOM TECHNICAL SERVICES, INC.

 250 WEST MAIN STREET, SUITE 200

 CHESHAMBOUR, MA 01824

 PHONE (978) 305-5100

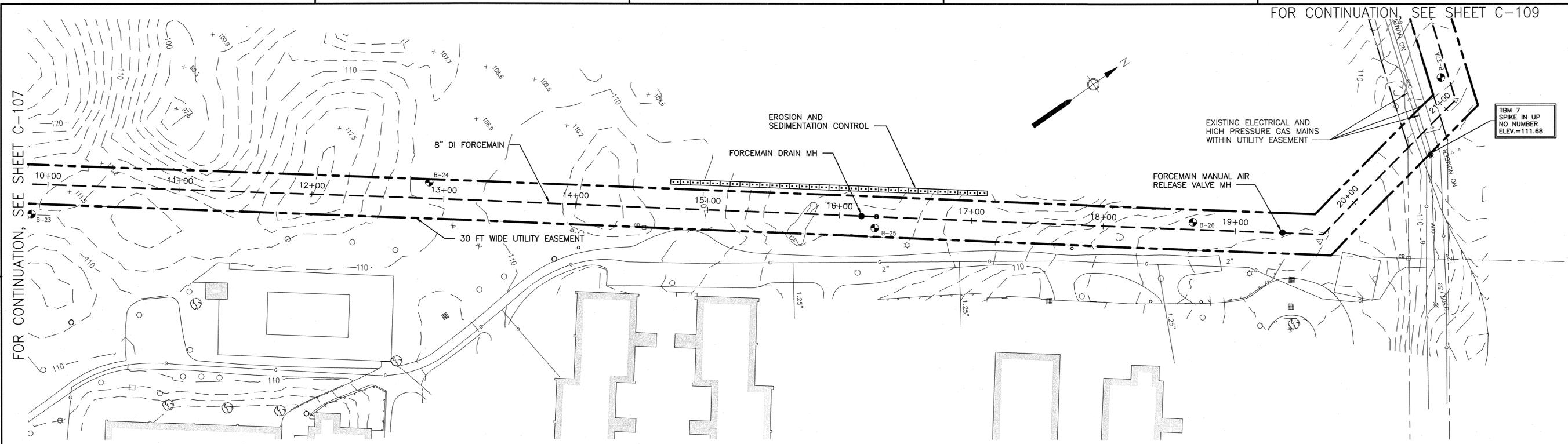


TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
CROSS COUNTRY FORCEMAIN
PLAN AND PROFILE I
 CIVIL

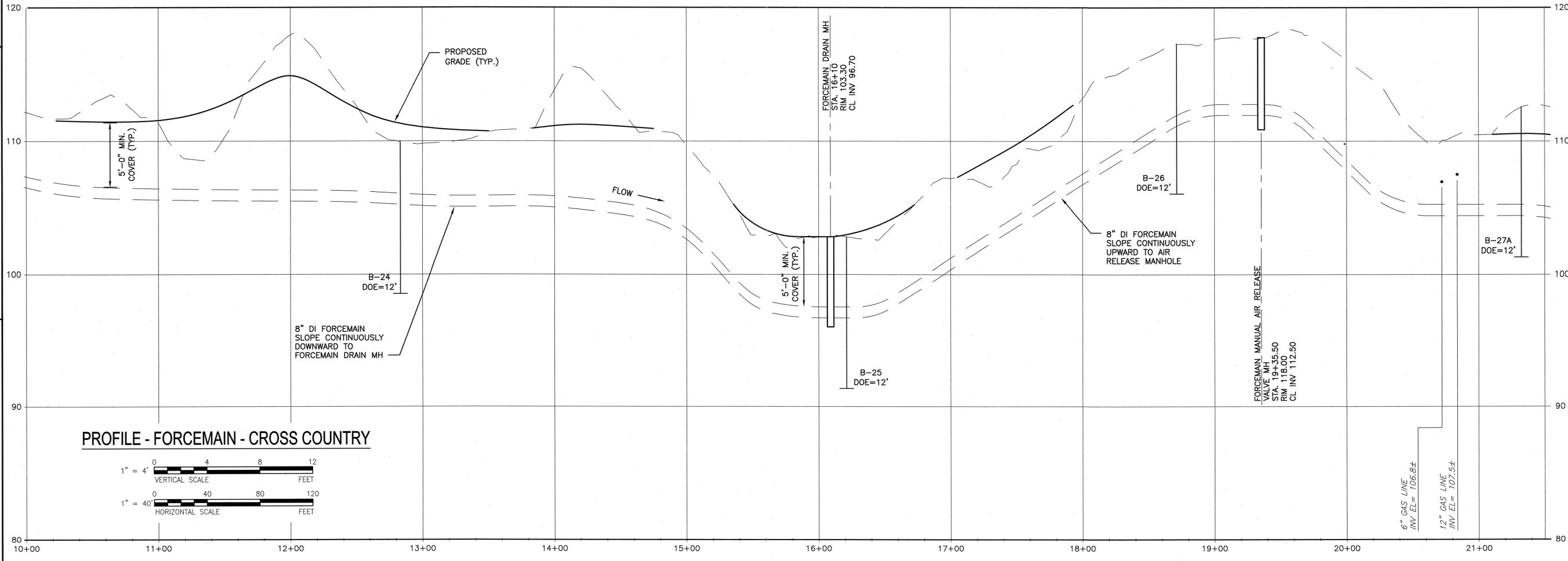
PROJECT NO:	60303170
CAD DWG FILE:	C101-C111
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PAREDE
DATE:	FEB 2015
SCALE:	AS NOTED

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\C101-C111.DWG
 LAST UPDATE: Wednesday, February 18, 2015 11:55:12 AM
 PLOT DATE: Wednesday, February 18, 2015 2:21:18 PM

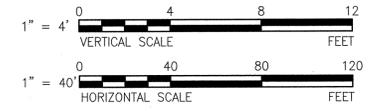
ANSI D - 18-Feb-15



PLAN - FORCEMAIN - CROSS COUNTRY
SCALE: 1"=40'

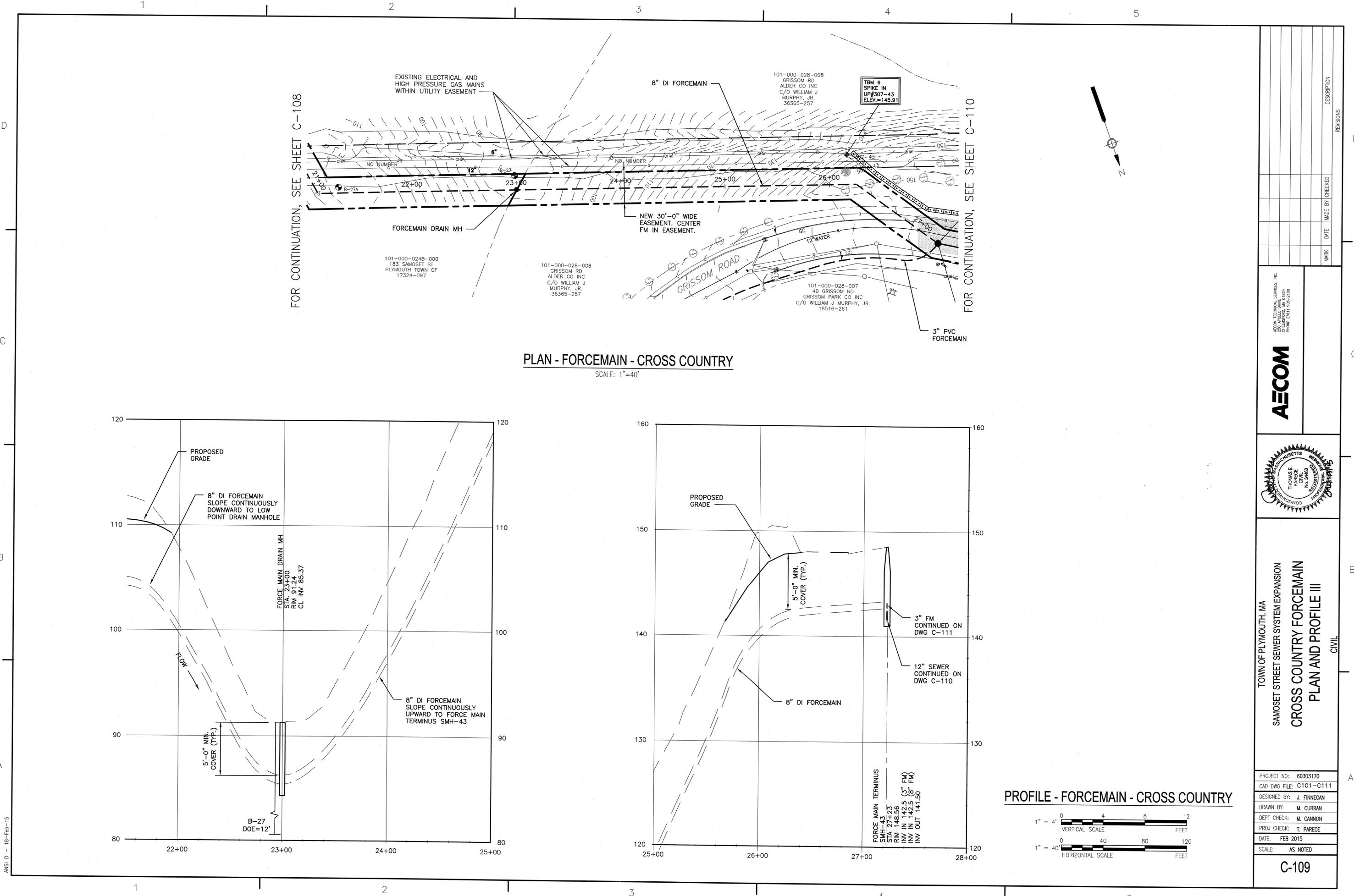


PROFILE - FORCEMAIN - CROSS COUNTRY



<p>FOR CONTINUATION, SEE SHEET C-107</p>	
<p>FOR CONTINUATION, SEE SHEET C-109</p>	
<p>TBM 7 SPIKE IN UP NO NUMBER ELEV.=111.68</p>	
REVISIONS	DESCRIPTION
MARK	DATE
MADE BY	CHECKED
<p>60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1 SHEETS C101-C111.DWG LAST UPDATE: Wednesday, February 18, 2015 11:55:12 AM PLOT DATE: Wednesday, February 18, 2015 2:23:48 PM</p>	
<p>SEWER SERVICES, INC. 255 SULLY DRIVE CHILMARK, MA 01924 PHONE (508) 867-2100</p>	
<p>AECOM</p>	
<p>SEAL: THOMAS E. FINNIGAN, PE, REG. PROFESSIONAL ENGINEER, MASSACHUSETTS, LICENSE NO. 34463</p>	
<p>TOWN OF PLYMOUTH, MA SAMOSET STREET SEWER SYSTEM EXPANSION CROSS COUNTRY FORCEMAIN PLAN AND PROFILE II CIVIL</p>	
<p>PROJECT NO: 60303170 CAD DWG FILE: C101-C111 DESIGNED BY: J. FINNIGAN DRAWN BY: M. CURRAN DEPT CHECK: M. CANNON PROJ CHECK: T. PARECE DATE: FEB 2015 SCALE: AS NOTED</p>	
<p>C-108</p>	

PATH/FILENAME: P:\0303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\0303170-C101-C111.DWG
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 PLOT DATE: Wednesday, February 18, 2015 2:24:57 PM

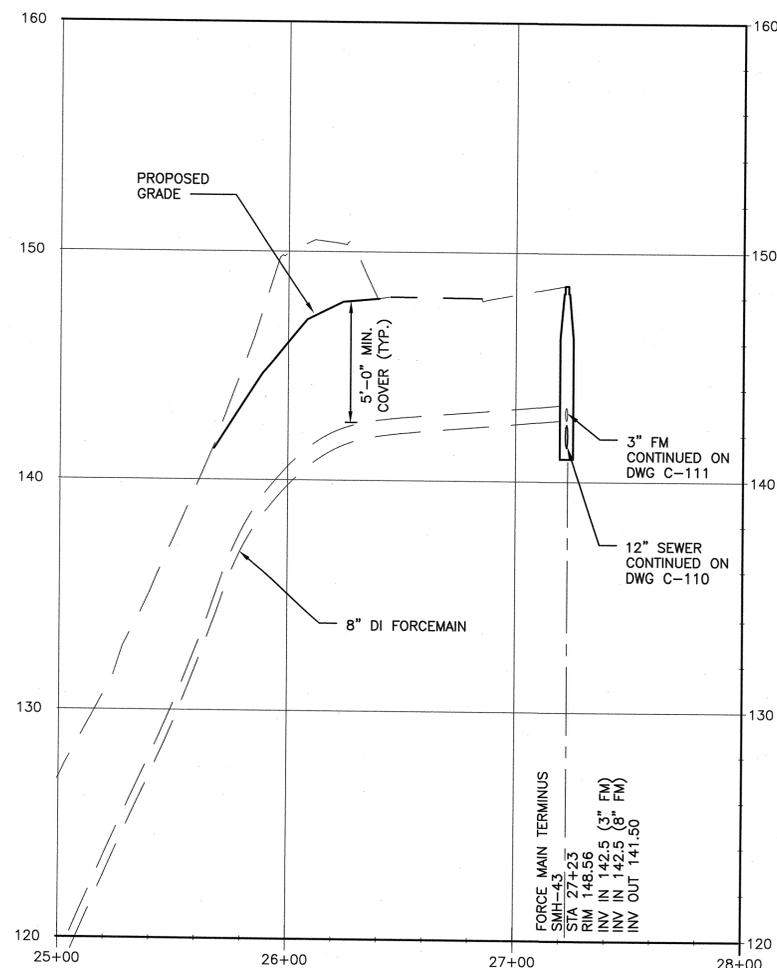
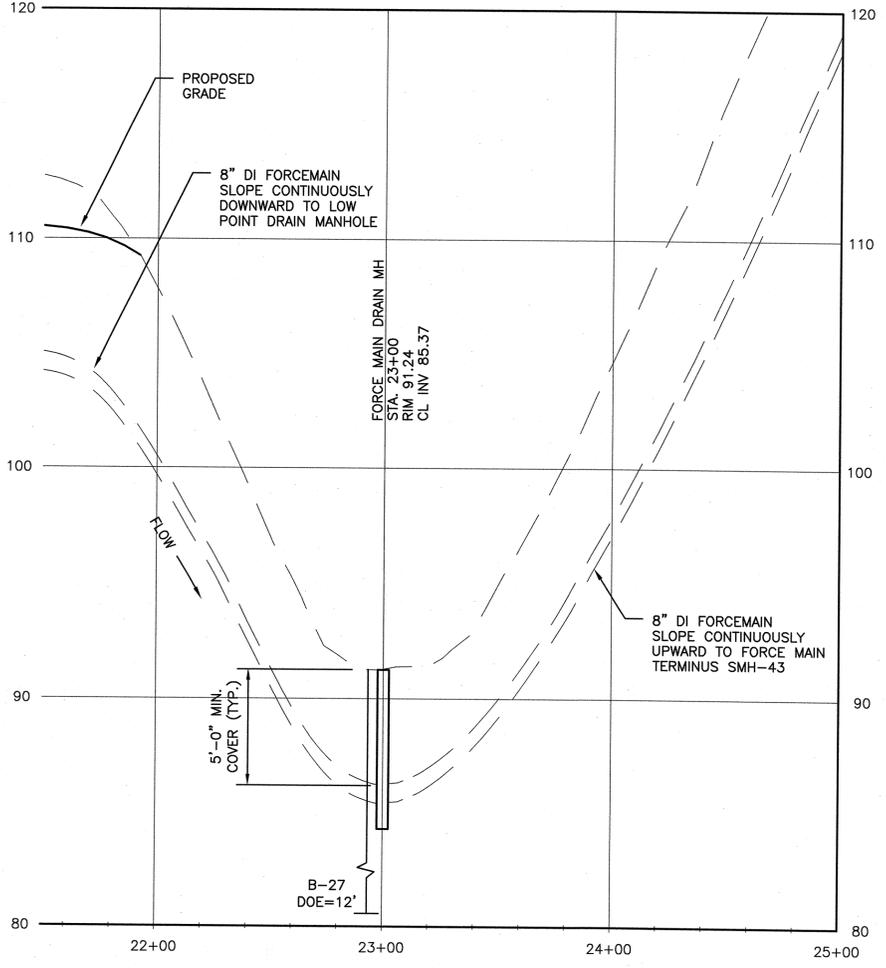


FOR CONTINUATION, SEE SHEET C-108

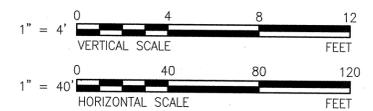
FOR CONTINUATION, SEE SHEET C-110

PLAN - FORCEMAIN - CROSS COUNTRY

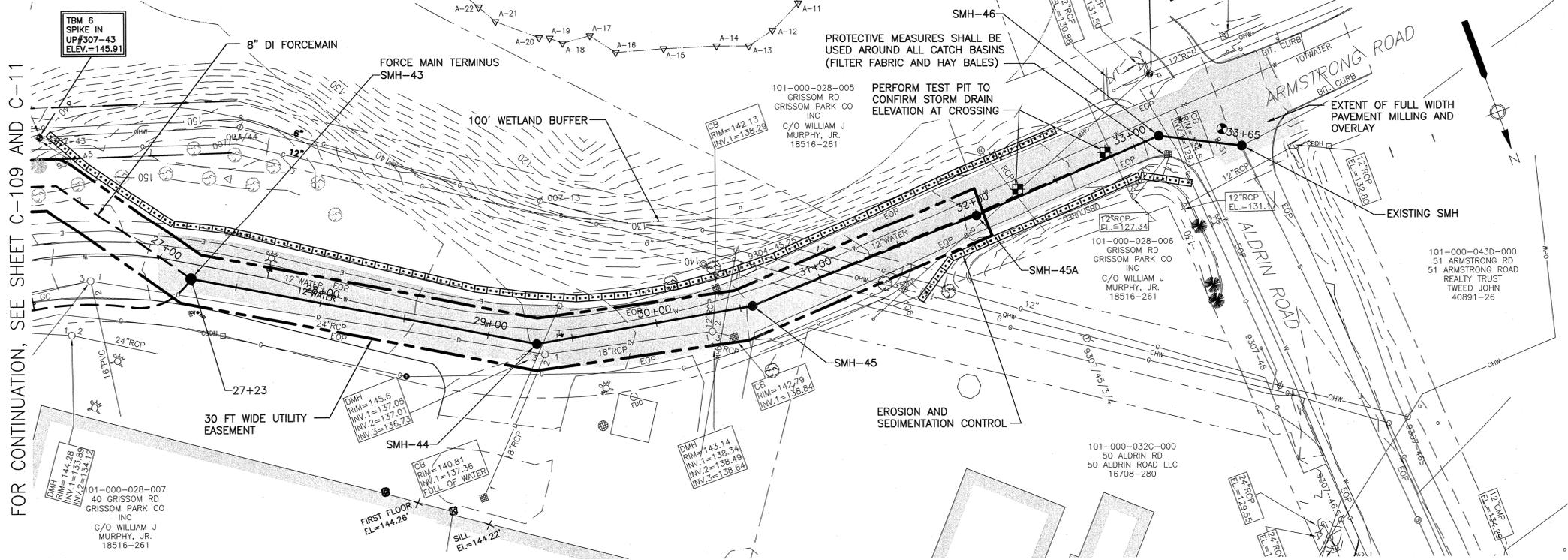
SCALE: 1"=40'



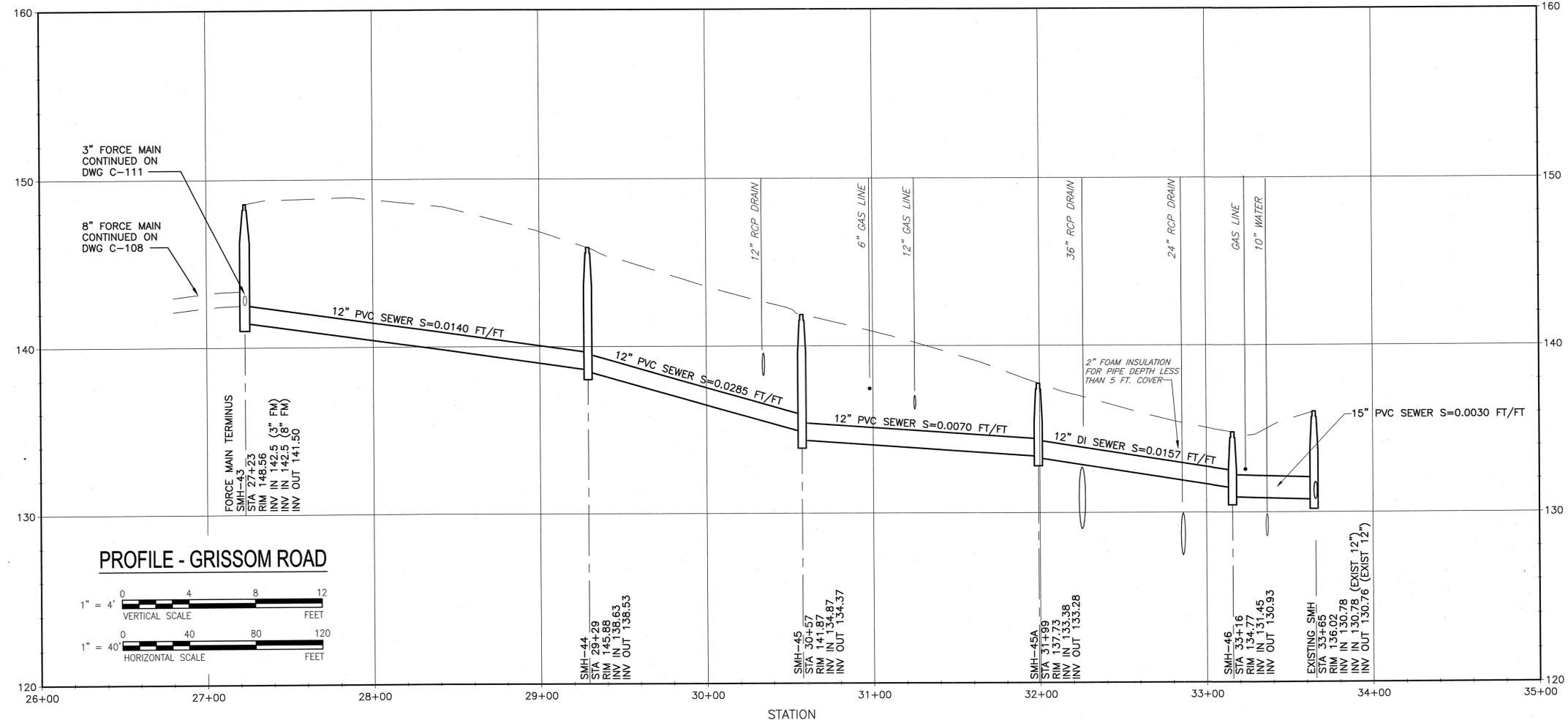
PROFILE - FORCEMAIN - CROSS COUNTRY



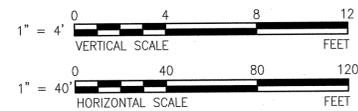
<p>101-000-024B-000 183 SAMOSET ST PLYMOUTH TOWN OF 17324-097</p>		<p>101-000-028-008 GRISSOM RD ALDER CO INC C/O WILLIAM J MURPHY, JR. 36365-257</p>		<p>101-000-028-008 GRISSOM RD ALDER CO INC C/O WILLIAM J MURPHY, JR. 36365-257</p>		<p>101-000-028-007 40 GRISSOM RD GRISSOM PARK CO INC C/O WILLIAM J MURPHY, JR. 18516-261</p>	
<p>FOR CONTINUATION, SEE SHEET C-108</p>		<p>FOR CONTINUATION, SEE SHEET C-110</p>		<p>TM 6 SPIKE IN UP#307-43 ELEV.=145.91</p>			
<p>AECOM</p>							
<p>REG. PROFESSIONAL ENGINEER 200 WEST MAIN STREET CHILMARK, MA 01924 PHONE (978) 965-2100</p>							
<p>TOWN OF PLYMOUTH, MA SAMOSET STREET SEWER SYSTEM EXPANSION CROSS COUNTRY FORCEMAIN PLAN AND PROFILE III CIVIL</p>							
<p>PROJECT NO: 60303170 CAD DWG FILE: C101-C111 DESIGNED BY: J. FINNEGAN DRAWN BY: M. CURRAN DEPT CHECK: M. CANNON PROJ CHECK: T. PARECE DATE: FEB 2015 SCALE: AS NOTED</p>							
<p>C-109</p>							



PLAN - GRISSOM ROAD
SCALE: 1"=40'



PROFILE - GRISSOM ROAD

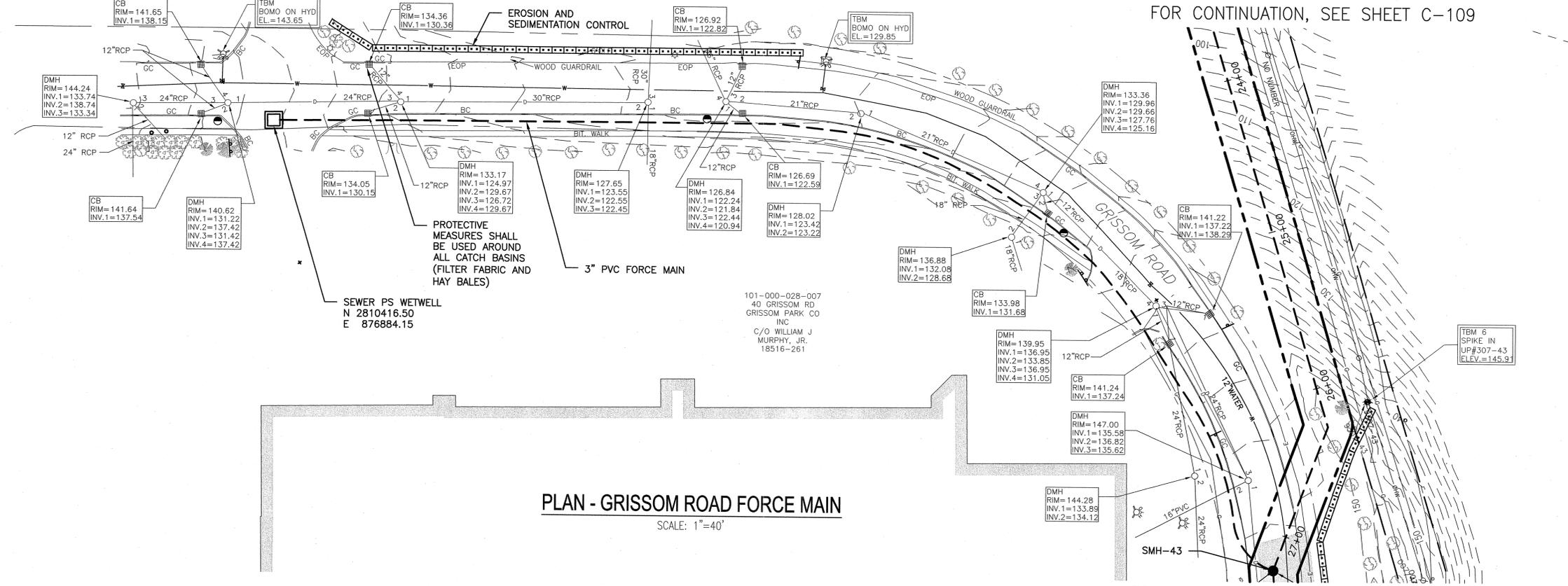


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 PLOT DATE: Wednesday, February 18, 2015 2:26:18 PM
 ANSI D - 18-Feb-15

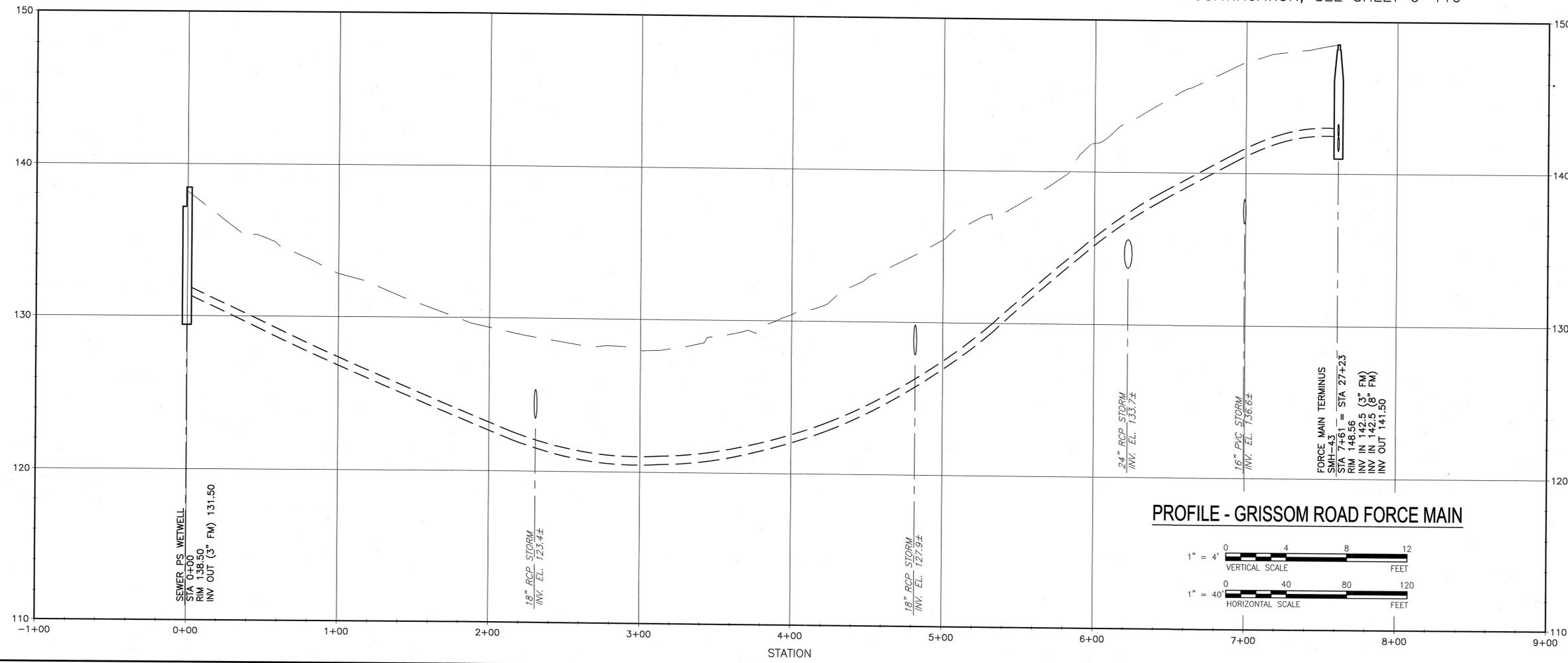
AECOM							
TOWN OF PLYMOUTH, MA SAMOSSET STREET SEWER SYSTEM EXPANSION GRISSOM ROAD PLAN AND PROFILE CIVIL							
PROJECT NO: 60303170 CAD DWG FILE: C101-C111 DESIGNED BY: J. FINNEGAN DRAWN BY: M. CURRAN DEPT CHECK: M. CANNON PROJ CHECK: T. PAREE DATE: FEB 2015 SCALE: AS NOTED							
C-110							

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 PLOT DATE: Wednesday, February 18, 2015 2:27:31 PM
 ANS I D - 18-FEB-15

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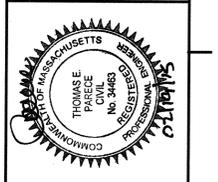


PLAN - GRISSOM ROAD FORCE MAIN
 SCALE: 1"=40'



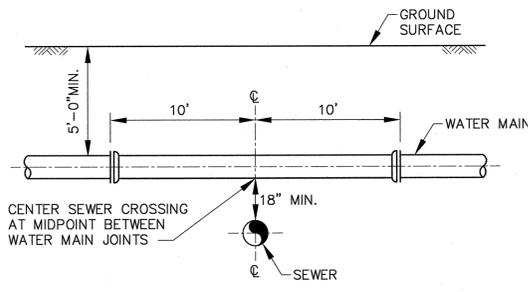
MARK	DATE	MADE BY	CHECKED	DESCRIPTION

AECOM
 AECOM TECHNICAL SERVICES, INC.
 1000 WESTERN AVENUE
 CHILMARK, MA 01924
 PHONE (951) 905-2100



TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
GRISSOM ROAD FORCE MAIN
PLAN AND PROFILE
 CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	C101-C111
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED
C-111	

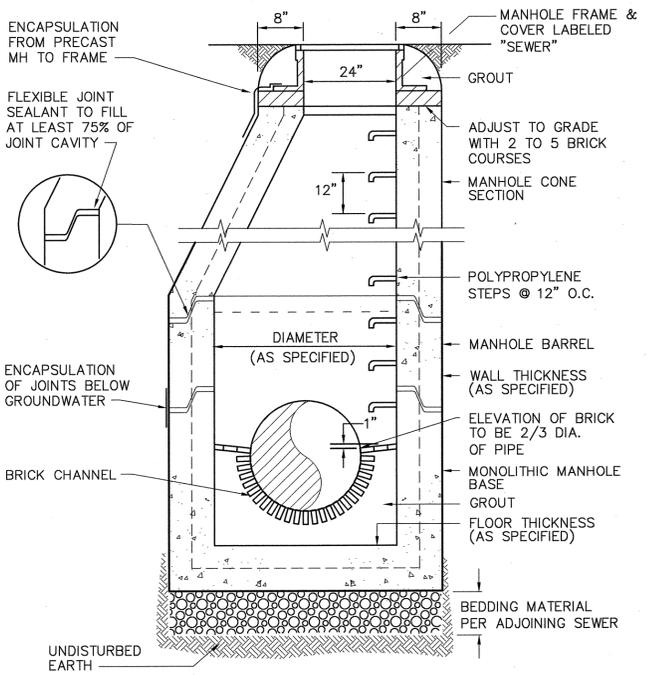


SEWER CROSSING DETAIL
NOT TO SCALE

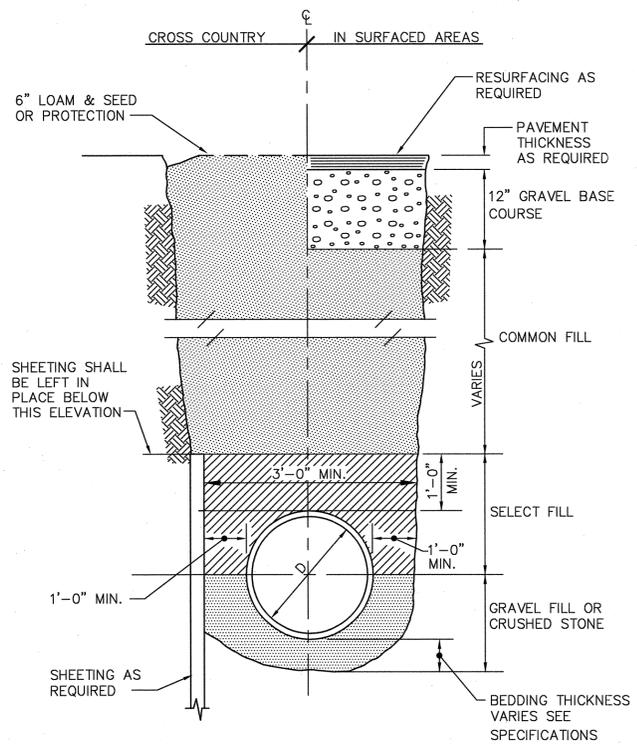
NOTES:
1. IF THE 18-INCH VERTICAL SEPARATION BETWEEN THE SEWER AND WATER MAIN RESULTS IN A DEPTH OF COVER LESS THAN 5- FEET ABOVE THE TOP OF THE WATER MAIN, THE CONTRACTOR SHALL PROVIDE INSULATION IN ACCORDANCE WITH THE TYPICAL TRENCH SECTION FOR WATER MAINS DETAIL.

DIAMETER	WALL THICKNESS	FLOOR THICKNESS
4 FT.	5 IN.	6 IN.
5 FT.	6 IN.	7 IN.
6 FT.	7 IN.	8 IN.

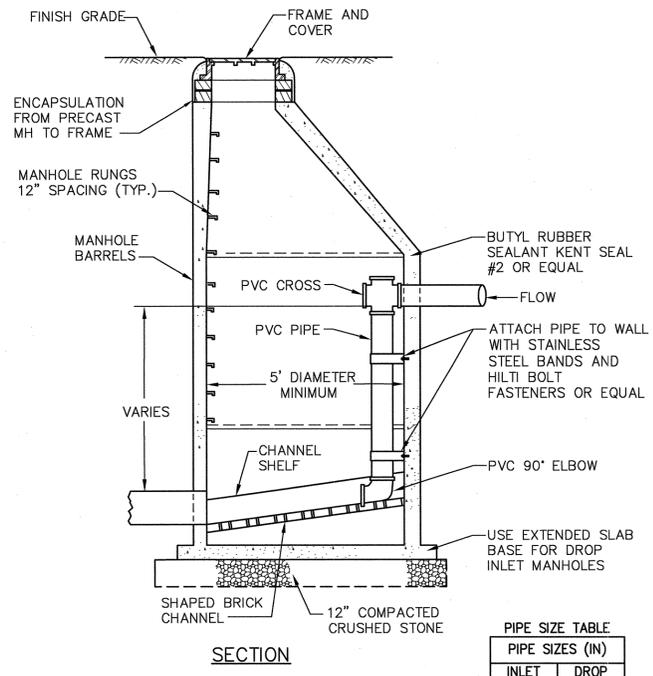
NOTE: ALL MANHOLES 4 FT. DIA. UNLESS OTHERWISE INDICATED.



PRECAST CONCRETE MANHOLE
NOT TO SCALE



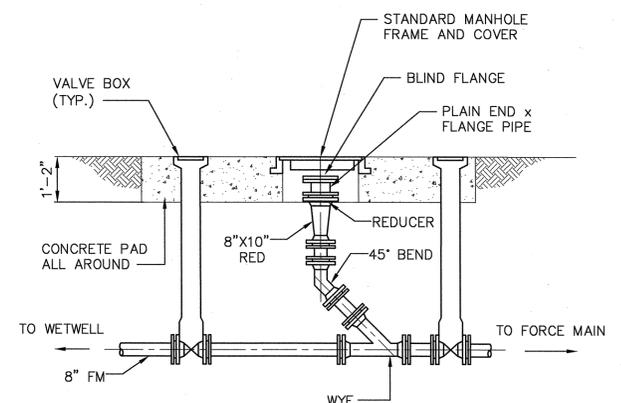
TYPICAL TRENCH SECTION
NOT TO SCALE



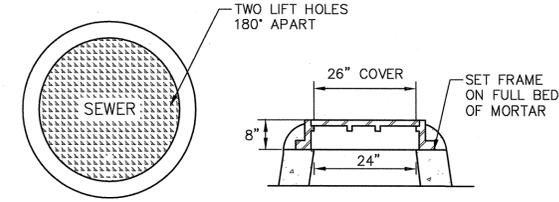
TYPICAL INTERIOR MANHOLE DROP (5\"/>

PIPE SIZE TABLE

PIPE SIZES (IN)	
INLET SEWER	DROP PIPE
12	10
10	8
8	8
6	6

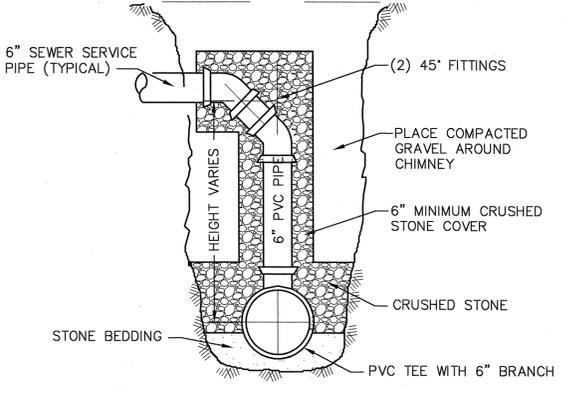
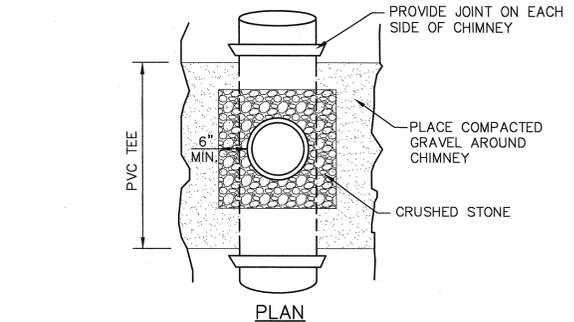


PIG LAUNCHING ASSEMBLY DETAIL
NOT TO SCALE

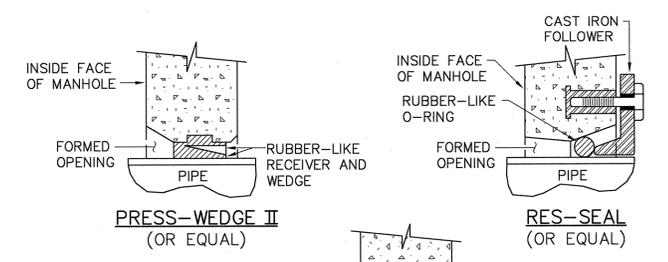


FRAME AND COVER
NOT TO SCALE

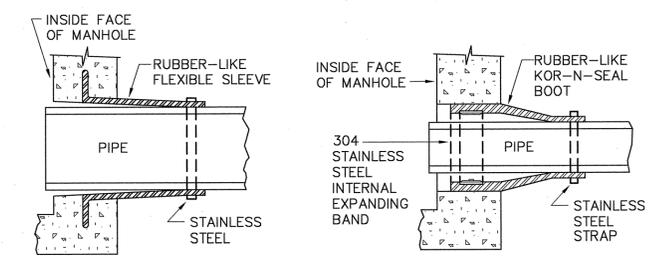
MASS DOT STANDARD CAST IRON FRAME AND COVER MIN. WEIGHT = 475 LBS/SET. EAST JORDAN IRON WORKS OR EQUAL.



CONSTRUCTED IN-PLACE SEWER CHIMNEY
NOT TO SCALE



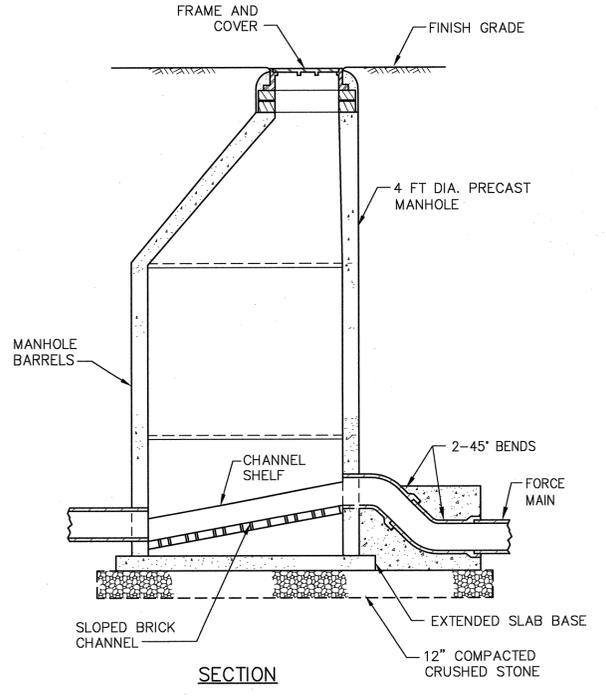
PRESS-WEDGE II (OR EQUAL)
RES-SEAL (OR EQUAL)
A-LOK (OR EQUAL)



LOCK-JOINT FLEXIBLE MANHOLE SLEEVE (OR EQUAL)
KOR-N-SEAL JOINT SLEEVE (OR EQUAL)

NOTE:
ALL GASKETS, SEALANTS, MORTAR ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.

TYPICAL SLEEVE DETAILS
NOT TO SCALE



FORCE MAIN DISCHARGE INTO MANHOLE
NOT TO SCALE

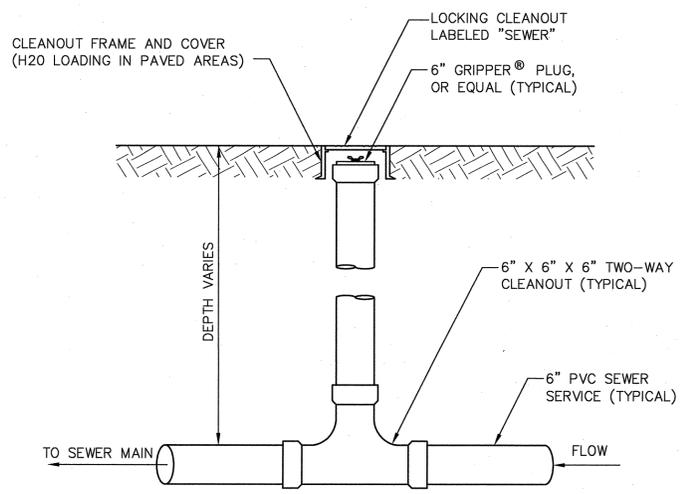
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 LAST UPDATE: Wednesday, February 18, 2015 8:39:26 AM
 PLOT DATE: Wednesday, February 18, 2015 2:34:10 PM
 ANSI D - 18-Feb-15

NO.	DATE	BY	CHECKED	DESCRIPTION

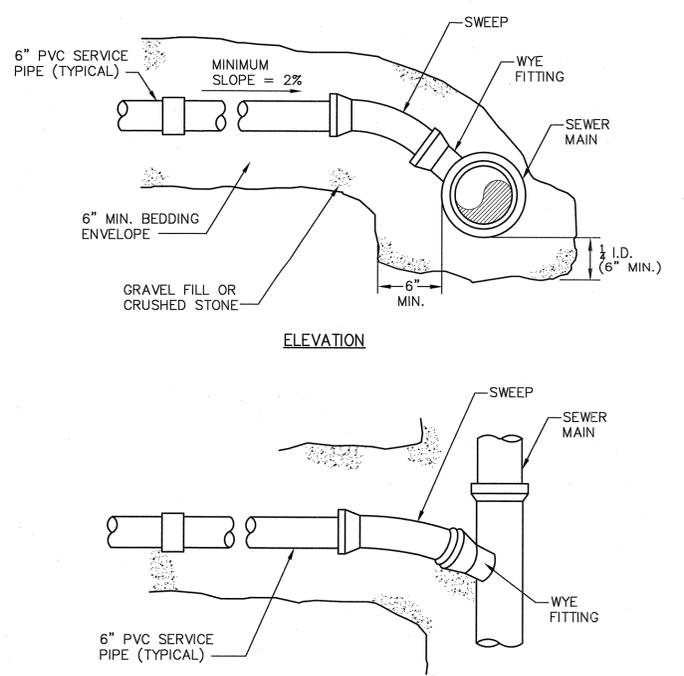
TOWN OF PLYMOUTH, MA
SAMOSSET STREET SEWER SYSTEM EXPANSION
DETAILS I
CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	C-501_505
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PARCE
DATE:	FEB 2015
SCALE:	AS NOTED

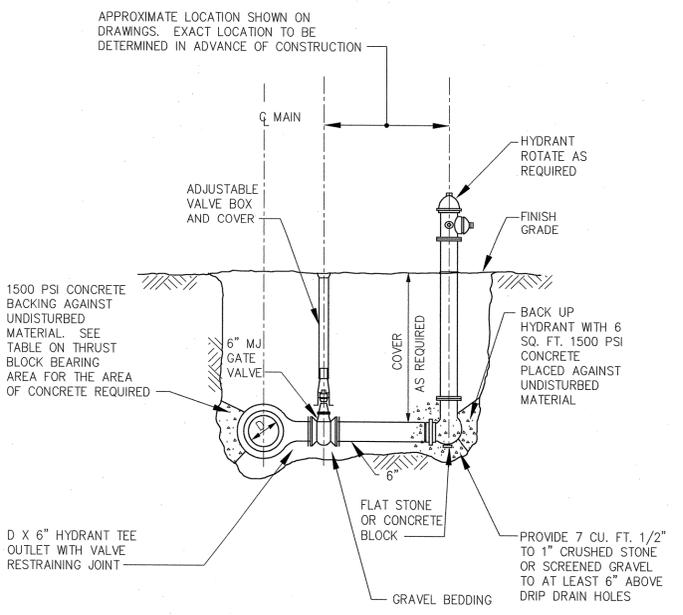
C-501



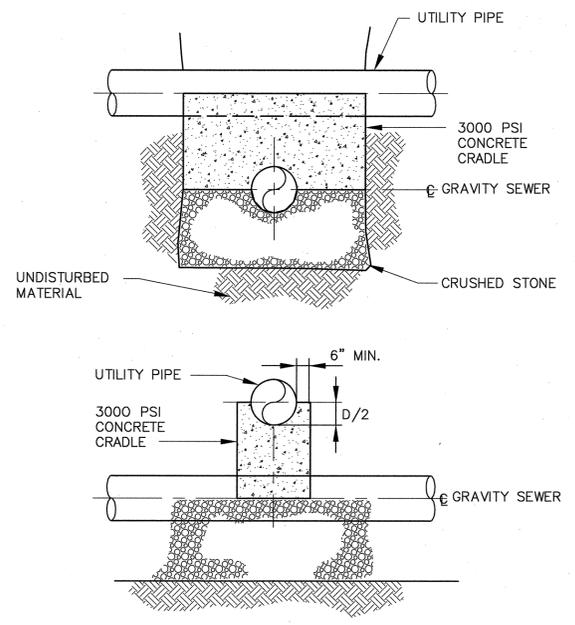
TWO-WAY SEWER LATERAL CLEANOUT
NOT TO SCALE



SERVICE CONNECTION TO NEW MAIN
NOT TO SCALE

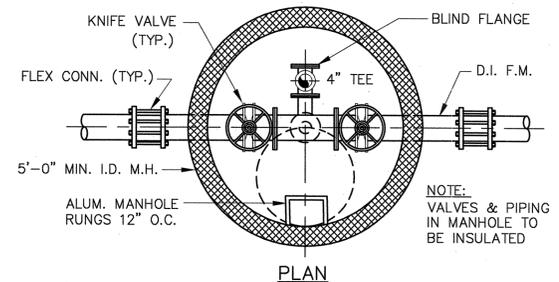


TYPICAL HYDRANT ASSEMBLY WITH DRAIN
NOT TO SCALE

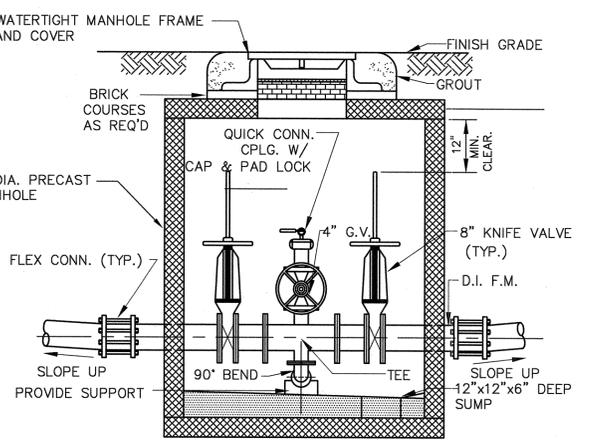


NOTE:
CONCRETE ENCASEMENT OF SEWER WHEN CROSSING A UTILITY WILL BE REQUIRED WHENEVER ADEQUATE COMPACTION CANNOT BE ACHIEVED BETWEEN THE UTILITY AND THE SEWER. CONCRETE TO BE PLACED BETWEEN SEWER AND UTILITY, AT THE DISCRETION OF THE ENGINEER.

TYPICAL CONCRETE UTILITY CRADLE
NOT TO SCALE



FORCE MAIN DRAIN MANHOLE
NOT TO SCALE

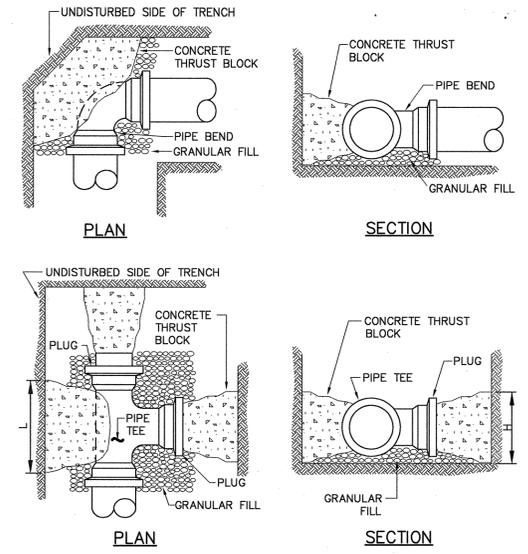


MINIMUM BEARING AREA - FT.²

PIPE DIAMETER (INCHES)	TEES, DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS	11 1/4° BENDS
4	2.0	2.0	2.0	2.0	2.0
6	2.5	3.6	2.0	2.0	2.0
8	4.4	6.2	3.3	2.0	2.0
10	6.5	9.2	5.0	2.6	2.0
12	8.9	12.6	6.8	3.4	2.0
14	12.0	16.9	9.2	4.6	2.3
16	14.8	-	11.4	5.8	2.9
18	-	-	12.8	7.3	3.7
24	-	-	-	12.0	6.0

- NOTES:**
- BEARING AREAS, BASED ON SOIL BEARING CAPACITY OF 4,000 PSF. MINIMUM BEARING AREA IS 2.0 SQUARE FEET.
 - IF SOIL HAS DIFFERENT BEARING CAPACITY THAN NOTED, NEW BEARING CAN BE CALCULATED BY RATIO I.E., IF SOIL HAS BEARING OF 2,000 PSF, MULTIPLY TABULATED VALVE BY 4/2.
 - TABLE IS FOR HORIZONTAL RESTRAINT ONLY.
 - VALUES SHOWN ARE FOR TEST PRESSURE OF 150 PSI WITH A 100 PSI SURGE ALLOWANCE.
 - THRUST BLOCKS SHALL NOT BE PLACED AGAINST THE FOLLOWING SOILS: A) PEAT, ORGANIC SILT AND ORGANIC SOILS; B) SOFT CLAY; C) RUBBISH FILL AND OTHER UNSUITABLE ARTIFICIAL FILL; D) SHATTERED SHALE; E) INORGANIC SILT AND VERY FINE SANDS.
 - WHERE POSSIBLE, POUR CONCRETE ANCHOR BLOCKS AGAINST UNDISTURBED EARTH. OTHERWISE, PLACE COMPACTED BACKFILL USING GRAVEL AND WELL GRADED SAND AFTER REMOVING FORMS.
 - BACKFILL SHOULD BE COMPACTED TO AT LEAST 90 PERCENT OF MAXIMUM DRY UNIT WEIGHT DETERMINED BY ASTM TEST DESIGNATION D-1557.

MINIMUM THRUST BLOCK SIZING

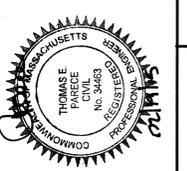


- NOTES:**
- ALL FITTINGS TO BE PLACED ON WELL CONSOLIDATED GRAVEL. BLOCK HEIGHT (H) SHOULD BE APPROXIMATELY 1/2 LENGTH (L) AT SOIL BEARING FACE.
 - CONCRETE THRUST BLOCKS AND RODS SHALL BE USED ON ALL BENDS, TEES, ETC. RODDING SHALL BE TO THE FIRST FULL LENGTH OF PIPE ON EACH SIDE OF THE FITTINGS TO BE RESTRAINED UNLESS CONDITIONS REQUIRED ADDITIONAL RESTRAINT.

TYPICAL THRUST BLOCK PLACEMENT ON BENDS, TEES AND PLUGS
NOT TO SCALE

NO.	DATE	MADE BY	CHECKED	DESCRIPTION

AECOM
AECOM TECHNICAL SERVICES, INC.
1000 WEST 10TH AVENUE
DENVER, CO 80202
PHONE (303) 955-2100



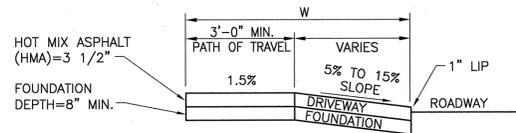
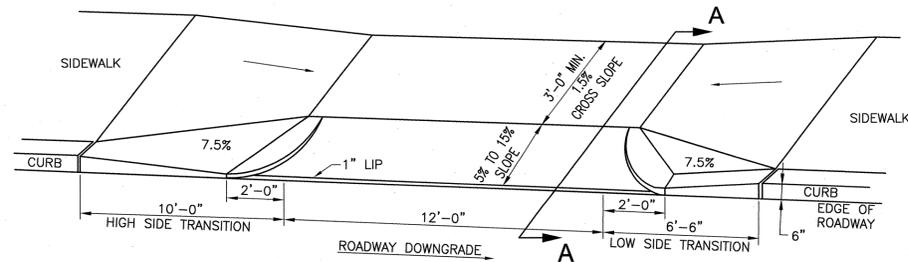
TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION

DETAILS II
CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	C-501_505
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

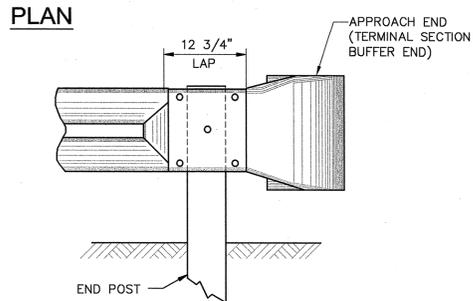
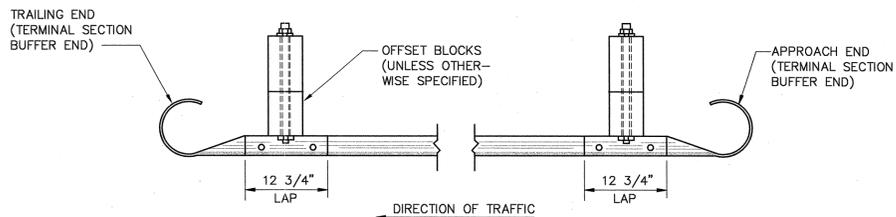
C-502

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\C-C-501_505.DWG
 LAST UPDATE: Wednesday, February 18, 2015 8:39:26 AM
 PLOT DATE: Wednesday, February 18, 2015 2:36:20 PM
 ANSI D - 18-Feb-15



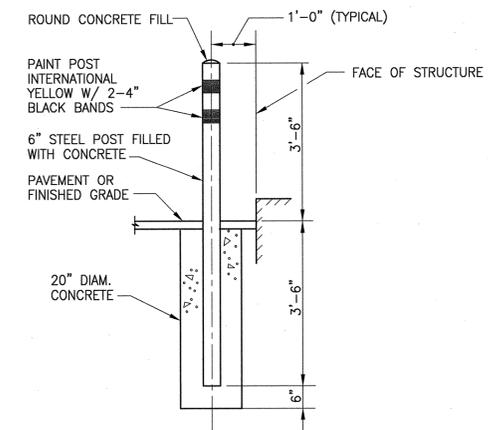
SIDEWALK THROUGH DRIVEWAY

NOT TO SCALE



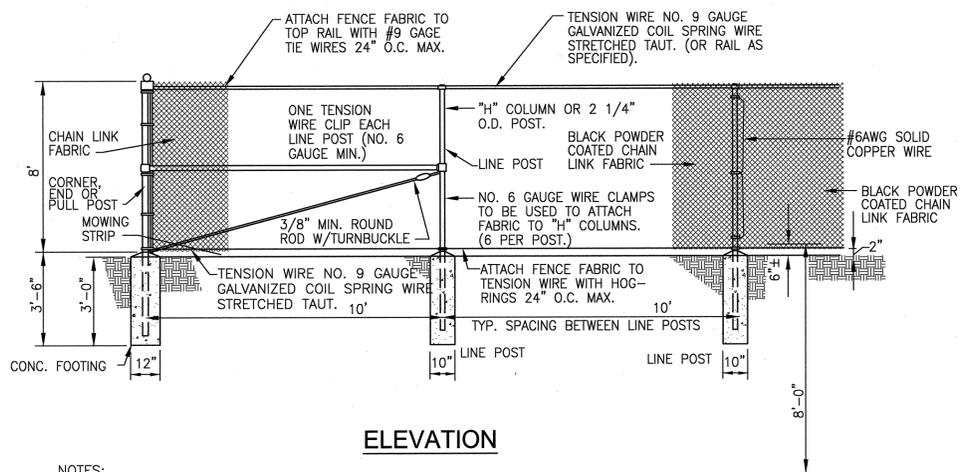
**GUARD RAIL
TERMINAL SECTION END DETAILS**

NOT TO SCALE



GUARD POST

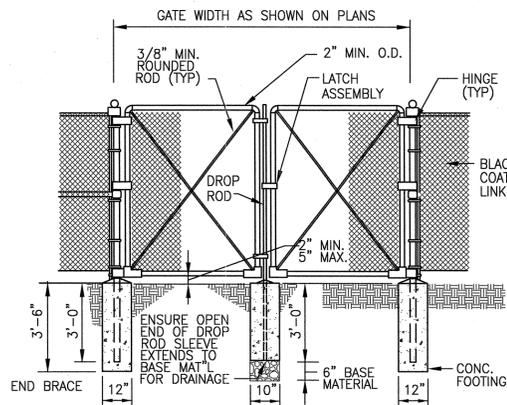
NOT TO SCALE



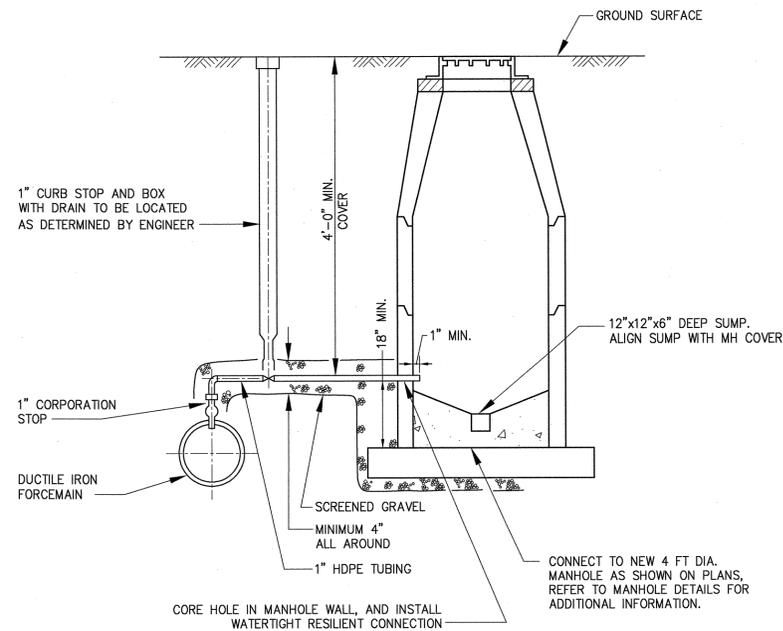
ELEVATION

CHAIN LINK FENCE DETAILS

NOT TO SCALE



DOUBLE SWING GATE



**MANUAL AIR RELEASE
VALVE TO MANHOLE**

NOT TO SCALE

- NOTES:
1. PROVIDE A MOISTURE-EXCLUDING CAP FOR EACH POST.
 2. FOR GATES EXCEEDING 6'-0" WIDTH ROLLED FORMED STEEL POST WILL NOT BE ALLOWED.
 3. CHAIN LINK FENCE TO BE GROUNDED IN ACCORDANCE WITH DETAILS SHOWN WHERE REQUIRED.
 4. WIRE FABRIC SHALL HAVE A 2" MESH.
 5. ALL FENCE COMPONENTS TO BE BLACK POWDER COATED.

REG. TECHNICAL SERVICES, INC.
200 WASHINGTON STREET
CHENNAI, MA 01924
PHONE (978) 365-2100

AECOM



TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION

DETAILS III

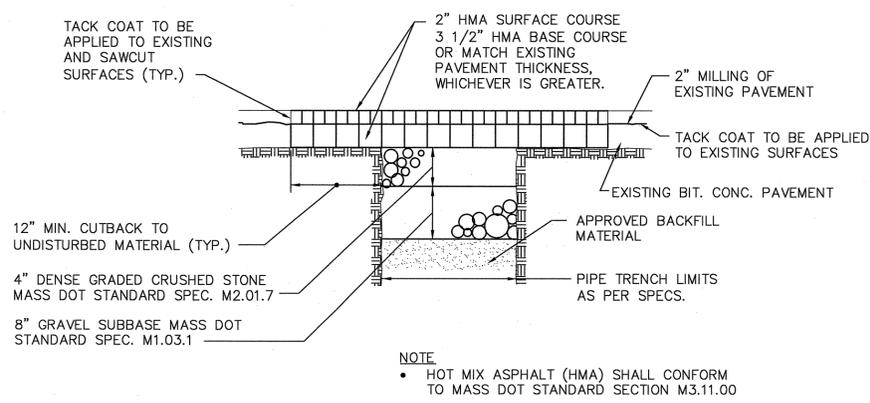
PROJECT NO: 60303170
CAD DWG FILE: C-501_505
DESIGNED BY: J. FINNEGAN
DRAWN BY: M. CURRAN
DEPT CHECK: M. CANNON
PROJ CHECK: T. PARECE
DATE: FEB 2015
SCALE: AS NOTED

C-503

PATH/FILENAME: P:\0303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\C-501_505.DWG
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ANSI D - 18-Feb-15

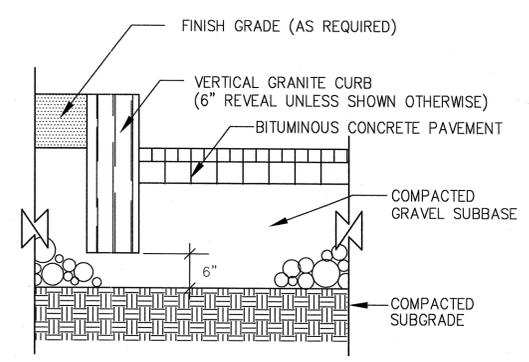
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 LAST UPDATE: Wednesday, February 18, 2015 8:39:26 AM
 PLOT DATE: Wednesday, February 18, 2015 2:40:00 PM

ANSI D - 18-Feb-15

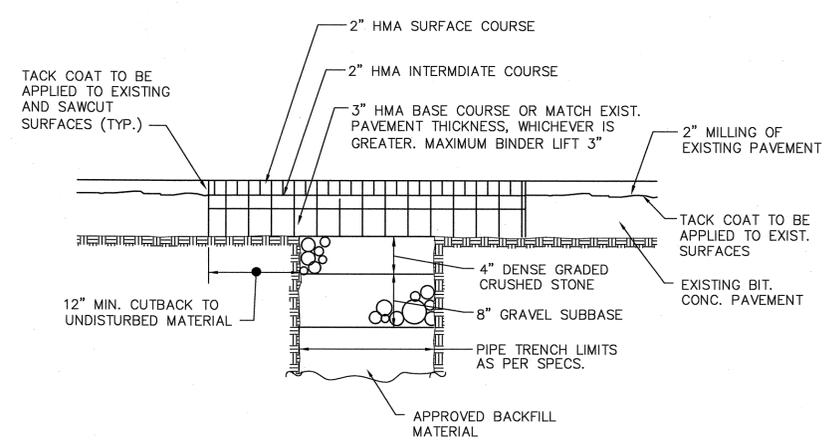


GRISSOM ROAD FULL WIDTH PAVEMENT DETAIL
NOT TO SCALE

NOTE
 • HOT MIX ASPHALT (HMA) SHALL CONFORM TO MASS DOT STANDARD SECTION M3.11.00

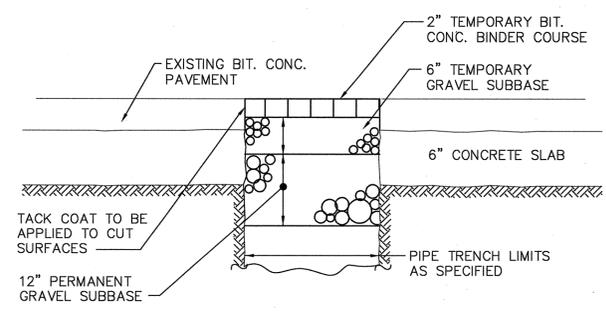


VERTICAL GRANITE CURBING
NOT TO SCALE

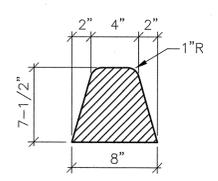


STATE HIGHWAY PERMANENT PAVING DETAIL
NOT TO SCALE

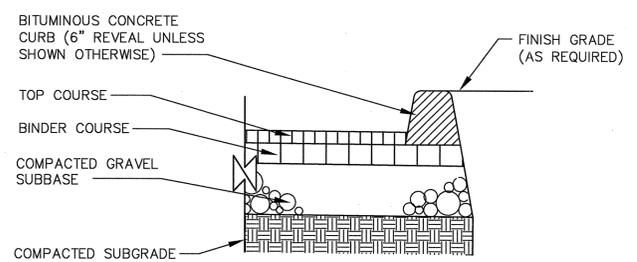
NOTE
 • HOT MIX ASPHALT (HMA) SHALL CONFORM TO MASS DOT STANDARD SECTION M3.11.00



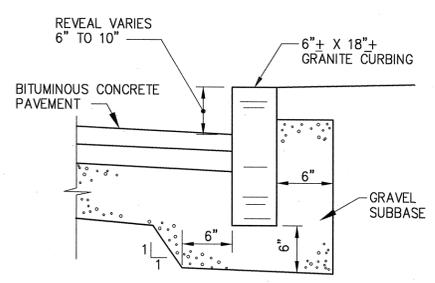
TEMPORARY TRENCH PAVEMENT DETAIL
NOT TO SCALE



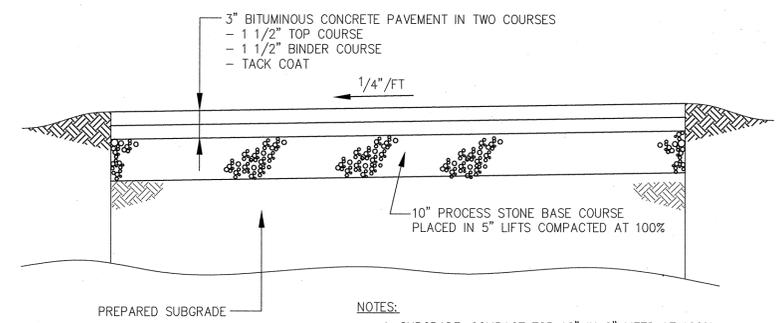
TYPE-3 CURBING



BITUMINOUS CONCRETE CURBING
NOT TO SCALE

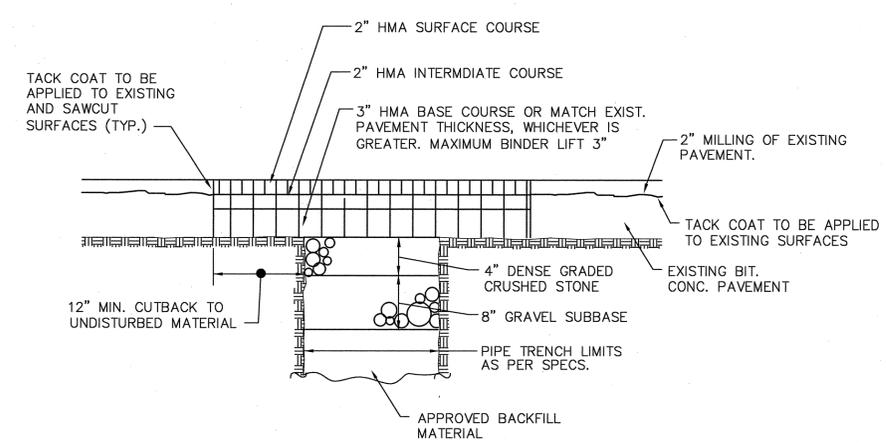


GRANITE CURB
NOT TO SCALE

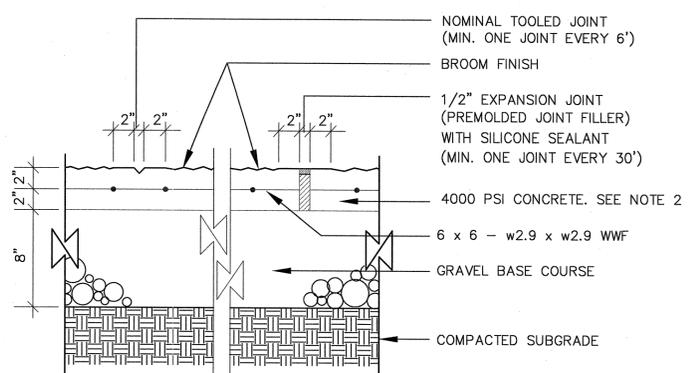


PUMP STATION PAVEMENT SECTION
NOT TO SCALE

NOTES:
 1. SUBGRADE-COMPACT TOP 12" IN 6" LIFTS AT 100%.
 2. SUBGRADE-COMPACT FILL BELOW TOP 12" IN 6" LIFTS AT 95%.

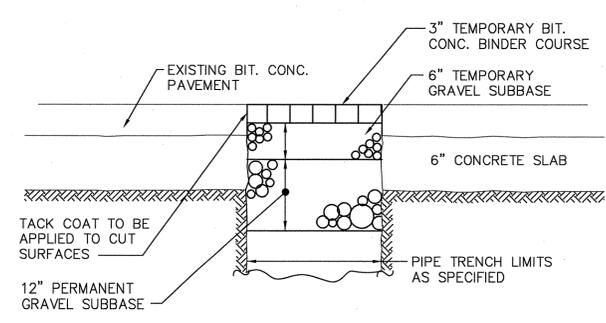


SAMOSET STREET AND PILGRIM HILL ROAD FULL WIDTH PAVEMENT DETAIL
NOT TO SCALE

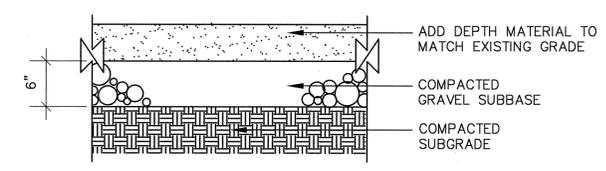


CONCRETE SIDEWALK
NOT TO SCALE

NOTES:
 1. BROOM FINISH TO 2" FROM ANY JOINT OR EDGE. PROVIDE EXPANSION JOINT WHEREVER SIDEWALK ABUTS EXISTING OR PROPOSED STRUCTURES, OR WHERE DIRECTED IN THE FIELD.
 2. CONCRETE WITH FIBERGLASS ADDITIVE MAY BE USED IN LIEU OF WIRE MESH WHEN APPROVED BY THE ENGINEER.



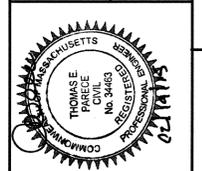
STATE HIGHWAY TEMPORARY PAVING DETAIL
NOT TO SCALE



DRIVEWAY DETAIL
NOT TO SCALE

NO.	DATE	MADE BY	CHECKED	DESCRIPTION

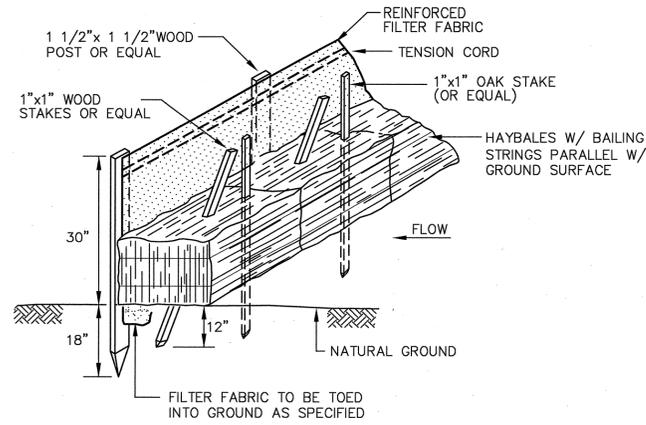
AECOM TECHNICAL SERVICES, INC.
 CHELSEA, MA 01824
 PHONE (981) 905-2100



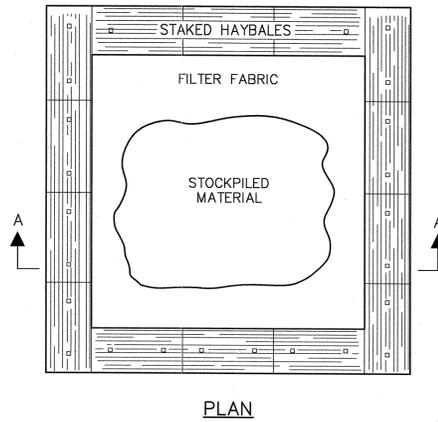
TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
 PAVEMENT DETAILS
 CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	C-501_505
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PAREDO
DATE:	FEB 2015
SCALE:	AS NOTED

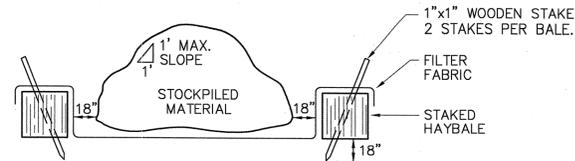
C-504



HAY BALES AND SILT FENCE
NOT TO SCALE



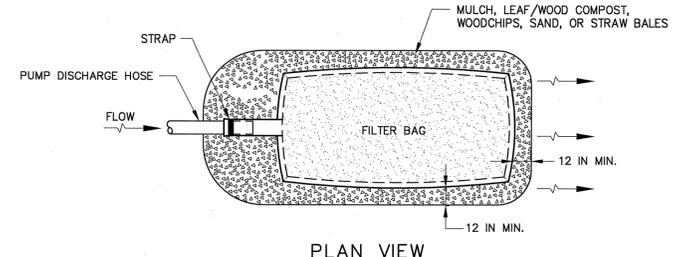
PLAN



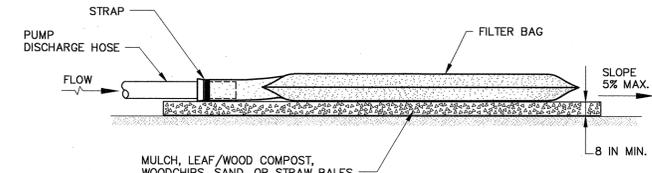
SECTION A-A

NOTE:
DIMENSIONS OF STOCKPILE AREA MAY VARY DEPENDING ON QUANTITY OF EXCAVATION. AVOID OVERTOPPING OR SLOPES IN EXCESS OF 1:1

PLAN OF TEMPORARY STOCKPILE AREA
NOT TO SCALE



PLAN VIEW



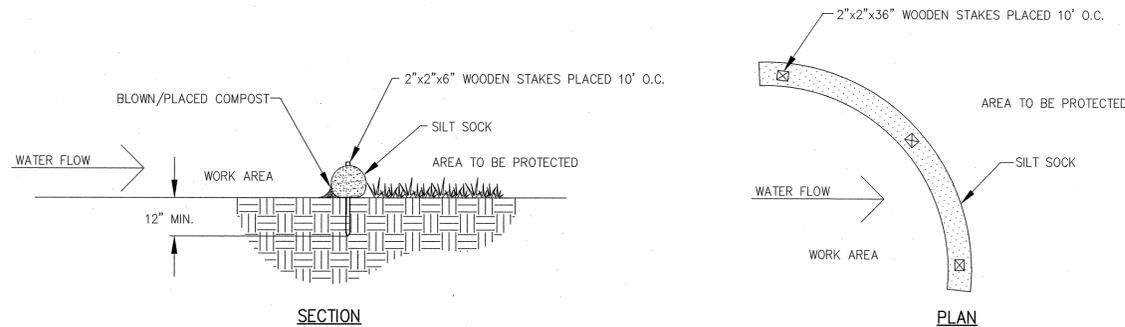
ELEVATION

CONSTRUCTION SPECIFICATIONS

- TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
- PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
- CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
- REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
- USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT ²	ASTM D-4491
PERMITTIVITY (SEC ⁻¹)	1.2 SEC ⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632
- REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

SEDIMENTATION FILTER BAG
NOT TO SCALE



SECTION

PLAN

NOTES:
1. SEE SPECIFICATIONS FOR SILT SOCK AND COMPOST FILL MATERIAL REQUIREMENTS.

COMPOST SILT SOCK
NOT TO SCALE

AECOM TECHNICAL SERVICES, INC.
 1000 WEST 10TH AVENUE
 CHICAGO, ILLINOIS 60604
 PHONE (773) 800-2100



TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
ENVIRONMENTAL DETAILS
 CIVIL

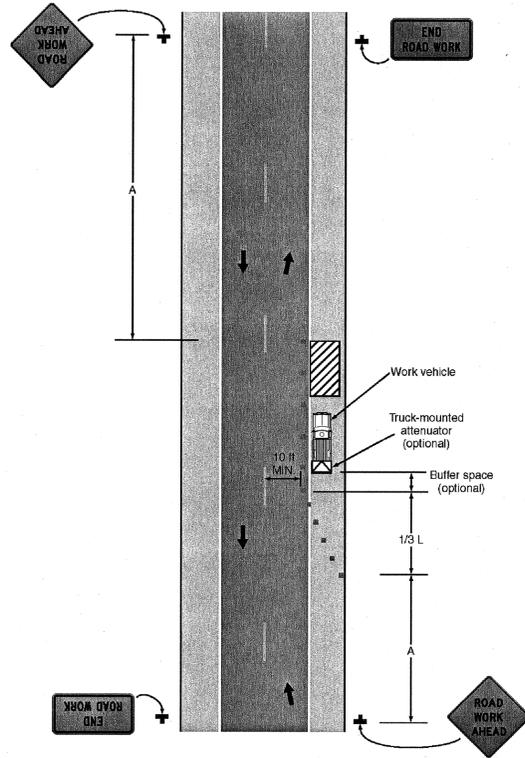
PROJECT NO:	60303170
CAD DWG FILE:	C-501_505
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	M. CANNON
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

C-505

PLOT DATE: Wednesday, February 18, 2015 2:40:55 PM
 LAST UPDATE: Wednesday, February 18, 2015 8:39:26 AM
 PLOT FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\DRAWINGS\C-C-501_505.DWG

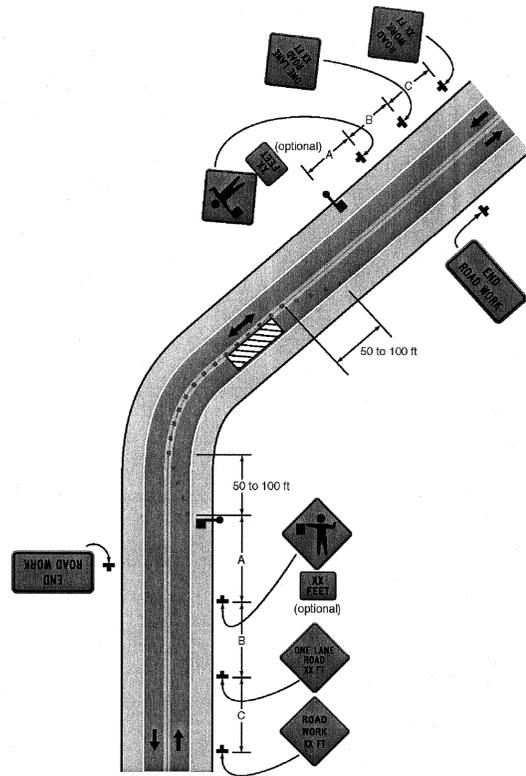
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 LAST UPDATE: Wednesday, February 18, 2015 8:43:01 AM
 PLOT DATE: Wednesday, February 18, 2015 2:42:44 PM

ANSI D - 18-Feb-15



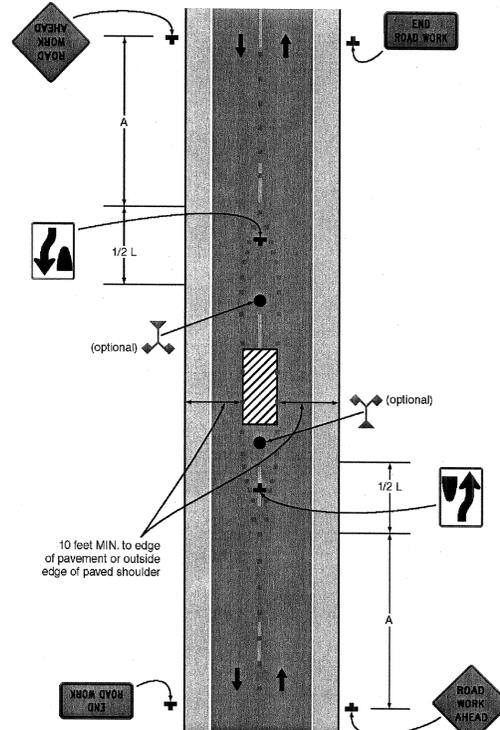
TYPICAL APPLICATION 6

SHOULDER WORK WITH MINOR ENCROACHMENT



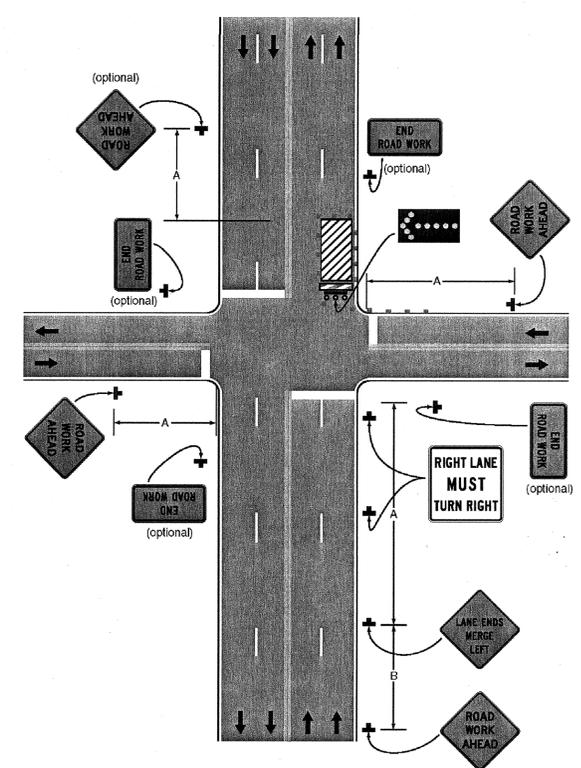
TYPICAL APPLICATION 10

LANE CLOSURE ON A TWO-LANE ROAD USING FLAGGERS



TYPICAL APPLICATION 15

WORK IN THE CENTER OF A ROAD WITH LOW TRAFFIC VOLUMES



TYPICAL APPLICATION 22

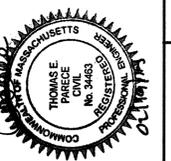
RIGHT-HAND LANE CLOSURE ON THE FAR SIDE OF AN INTERSECTION

NOTES:

1. SEE SHEET C-508 FOR TEMPORARY SIGN SUMMARY AND MEANING OF SYMBOLS AND/OR LETTER CODES.

AECOM TECHNICAL SERVICES, INC.
 200 WEST MAIN STREET
 CHILMARK, MA 01824
 PHONE (978) 805-2100

AECOM



TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
 TRAFFIC MANAGEMENT
 TYPICAL APPLICATIONS I

PROJECT NO: 60303170
 CAD DWG FILE: C-506
 DESIGNED BY: G. SCABA
 DRAWN BY: N. YEE
 DEPT CHECK: C. BENZIGER
 PROJ CHECK: T. PARECE
 DATE: FEB 2015
 SCALE: AS NOTED

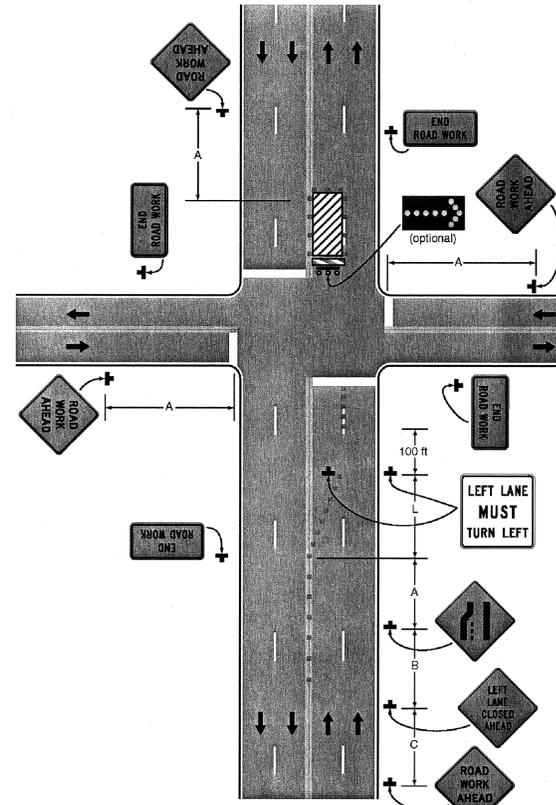
C-506

REVISIONS	DESCRIPTION	DATE	MADE BY	CHECKED

CIVIL

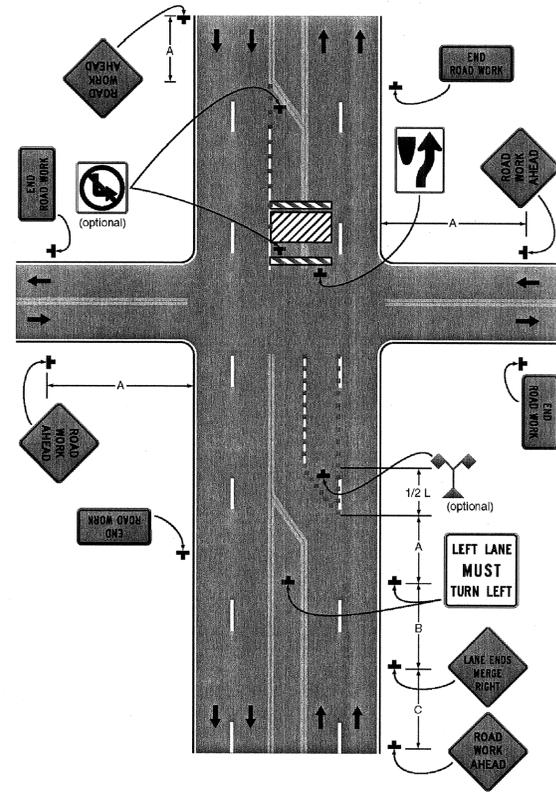
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 PLOT DATE: Wednesday, February 18, 2015 2:44:44 PM

ANSI D - 18-Feb-15



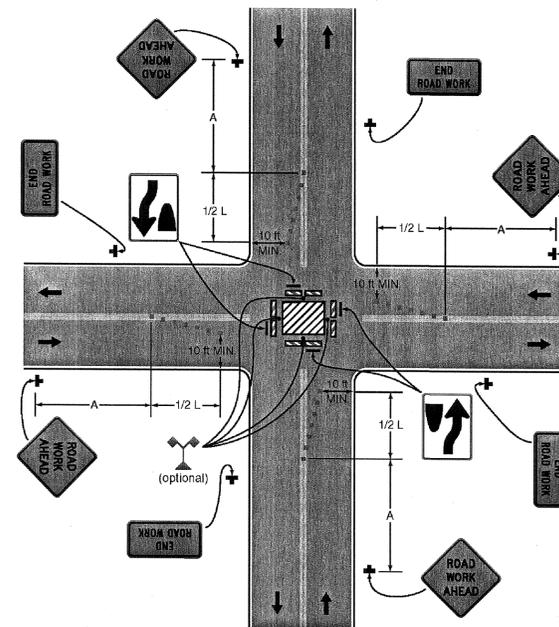
TYPICAL APPLICATION 23

LEFT-HAND LANE CLOSURE ON THE FAR SIDE OF AN INTERSECTION



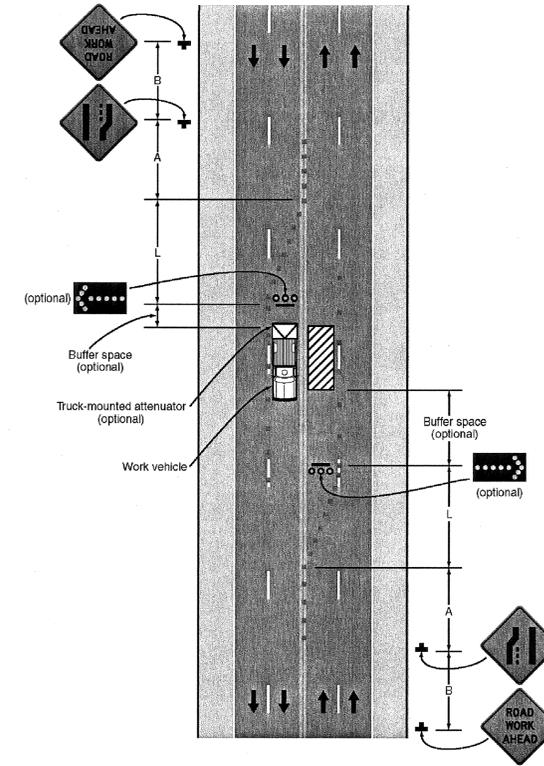
TYPICAL APPLICATION 25

MULTIPLE LANE CLOSURES AT AN INTERSECTION



TYPICAL APPLICATION 26

CLOSURE IN THE CENTER OF AN INTERSECTION



TYPICAL APPLICATION 30

INTERIOR LANE CLOSURE ON A MULTI-LANE STREET

NOTES:

1. SEE SHEET C-508 FOR TEMPORARY SIGN SUMMARY AND MEANING OF SYMBOLS AND/OR LETTER CODES.

AECOM
 AECOM TECHNICAL SERVICES, INC.
 CHILMARK, MA 01924
 PHONE (978) 906-2100



TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
 TRAFFIC MANAGEMENT
 TYPICAL APPLICATIONS II
 CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	C-507
DESIGNED BY:	G. SCIABA
DRAWN BY:	N. YEE
DEPT CHECK:	C. BENZIGER
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

C-507

MARK	DATE	MADE BY	CHECKED	DESCRIPTION

MEANING OF LETTER CODES ON TYPICAL APPLICATION DIAGRAMS			
ROAD TYPE	DISTANCE BETWEEN SIGNS**		
	A	B	C
URBAN (LOW SPEED)*	100 ft	100 ft	100 ft
URBAN (HIGH SPEED)*	350 ft	350 ft	350 ft
RURAL	500 ft	500 ft	500 ft
EXPRESSWAY/FREEWAY	1,000 ft	1,500 ft	2,640 ft

NOTES:

* SPEED CATEGORY TO BE DETERMINED BY HIGHWAY AGENCY.

** DISTANCES ARE SHOWN IN FEET. THE COLUMN HEADINGS A, B AND C ARE THE DIMENSIONS SHOWN ON SHEET C-506 AND C-507. 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 IN A THREE-SIGN SERIES ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL ZONE.)

FORMULAS FOR L ARE AS FOLLOWS:

FOR SPEED LIMITS OF 40 mph OR LESS:

$$L = \frac{WS^2}{60}$$

FOR SPEED LIMITS OF 45 mph OR GREATER:

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 THE ANTICIPATED OPERATING SPEED IN mph

TEMPORARY SIGN SUMMARY						
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS	COLOR/LEGEND	NUMBER OF SIGNS REQUIRED*
	W	H				
G20-2	36"	18"		SEE MUTCD STANDARDS	ORANGE	2
R4-7	24"	30"		SEE MUTCD STANDARDS	WHITE	2
W4-2	36"	36"		SEE MUTCD STANDARDS	ORANGE	1
W9-2	36"	36"		SEE MUTCD STANDARDS	ORANGE	1
W20-5	36"	36"		SEE MUTCD STANDARDS	ORANGE	1
W20-3	36"	36"		SEE MUTCD STANDARDS	ORANGE	2
W20-4	36"	36"		SEE MUTCD STANDARDS	ORANGE	2
W20-7a	36"	36"		SEE MUTCD STANDARDS	ORANGE	2

*-NUMBER OF SIGNS REQUIRED BASED ON ONE CREW WORKING. ADDITIONAL SIGNS MAY BE NECESSARY FOR MULTIPLE CREWS

MEANINGS OF SYMBOLS ON TYPICAL APPLICATION DIAGRAMS

- WORK SPACE
- HIGH-LEVEL WARNING DEVICE (FLAG TREE)
- DIRECTION OF TRAFFIC
- POLICE OFFICER
- TYPE III BARRICADE
- CHANNELIZING DEVICE
- SIGN (SHOWN FACING LEFT)
- ARROW BOARD

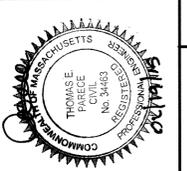
PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\C-508.DWG
LAST UPDATE: Wednesday, February 18, 2015 8:42:49 AM
PLOT DATE: Wednesday, February 18, 2015 2:46:03 PM

ANSI D - 18-Feb-15

MARK	DATE	MADE BY	CHECKED	DESCRIPTION

ACOM TECHNICAL SERVICES, INC.
1100 STATE STREET
CHILMARK, MA 01924
PHONE (978) 909-2100

AECOM



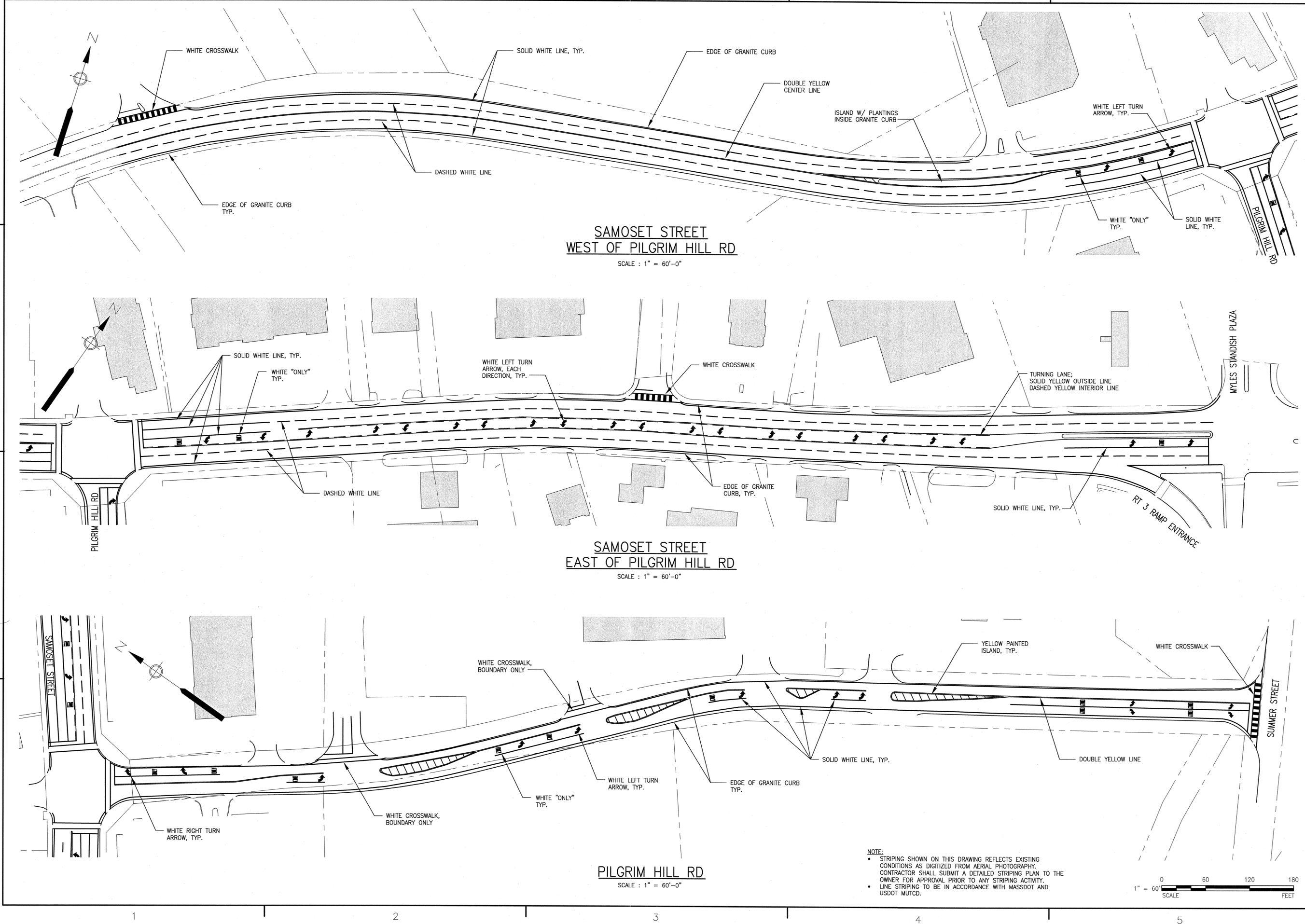
TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION
TRAFFIC MANAGEMENT PLAN
TRAFFIC DETAILS AND TEMPORARY
SIGN SUMMARY
CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	C-508
DESIGNED BY:	G. SCIABA
DRAWN BY:	N. YEE
DEPT CHECK:	C. BENZIGER
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

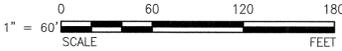
C-508

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\C-C-509.DWG
 LAST UPDATE: Tuesday, February 17, 2015 3:15:36 PM
 PLOT DATE: Wednesday, February 18, 2015 2:47:46 PM

ANSI D - 17-Feb-15



NOTE:
 • STRIPING SHOWN ON THIS DRAWING REFLECTS EXISTING CONDITIONS AS DIGITIZED FROM AERIAL PHOTOGRAPHY. CONTRACTOR SHALL SUBMIT A DETAILED STRIPING PLAN TO THE OWNER FOR APPROVAL PRIOR TO ANY STRIPING ACTIVITY.
 • LINE STRIPING TO BE IN ACCORDANCE WITH MASSDOT AND USDOT MUTCD.



MARK	DATE	MADE BY	CHECKED	DESCRIPTION	REVISIONS

AECOM TECHNICAL SERVICES, INC.
 100 WATER STREET
 CHELSEA, MA 01824
 PHONE (981) 895-2100
AECOM

COMMONWEALTH OF MASSACHUSETTS
 REGISTERED PROFESSIONAL ENGINEER
 THOMAS E. PARCE
 No. 94463
 EXPIRES 12/31/2015

TOWN OF PLYMOUTH, MASSACHUSETTS
 SAMOSET STREET SEWER SYSTEM EXPANSION
ROADWAY STRIPING PLANS
 CIVIL

PROJECT NO:	60303170
CAD DWG FILE:	C-509
DESIGNED BY:	N. YEE
DRAWN BY:	C. BENZIGER
DEPT CHECK:	G. SCIABA
PROJ CHECK:	J. FINNEGAN
DATE:	FEB 2015
SCALE:	AS NOTED

C-509

GENERAL

- ALL WORK SHALL CONFORM TO 780 CMR, 8TH EDITION, MASSACHUSETTS AMENDMENTS TO THE INTERNATIONAL BUILDING CODE 2009, THE INTERNATIONAL BUILDING CODE 2009, AND TO OTHER CODES AND REFERENCES INDICATED OR SPECIFIED. IN CASE OF CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.
- DESIGN LOADS:
 - FLOOR LIVE LOAD: 300 PSF
 - ROOF LIVE LOAD: 35 PSF
 - SNOW LOAD:

GROUND SNOW LOAD (PG): 45 PSF
 FLAT ROOF SNOW LOAD (PF): 38 PSF
 SNOW EXPOSURE FACTOR (CE): 1.00
 SNOW LOAD IMPORTANCE FACTOR (IS): 1.1
 SNOW THERMAL FACTOR (CT): 1.1
 - WIND LOAD:

BASIC WIND SPEED: 110 MPH (3 SECOND GUST PER ASCE/SEI 7-05)
 RISK CATEGORY: III
 BASIC BUILDING SYSTEM: ENCLOSED BUILDING
 EXPOSURE CATEGORY: C
 INTERNAL PRESSURE COEFFICIENT: ±0.18
 COMPONENTS AND CLADDING DESIGN WIND PRESSURE: SEE DIAGRAM

- SEISMIC LOAD:

SEISMIC IMPORTANCE FACTOR (IE): 1.25
 OCCUPANCY CATEGORY: III
 MAPPED SPECTRAL RESPONSE COEFFICIENTS
 S(S): 0.240 S(1): 0.060
 SPECTRAL RESPONSE COEFFICIENTS
 S(DS): 0.256 S(D1): 0.096
 SITE CLASS: CLASS D
 SEISMIC DESIGN CATEGORY: C

GENERATOR BUILDING
 BASIC FORCE, RESISTING SYSTEM: BEARING WALL SYSTEM
 ORDINARY REINFORCED CONCRETE SHEAR WALLS (TYPE A-2)
 DESIGN BASE SHEAR: 5 KIP
 SEISMIC RESPONSE COEFFICIENT, C(S): 0.08
 RESPONSE MODIFICATION FACTOR, R: 4
 ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE ANALYSIS

- DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONAL INFORMATION. MISSING OR CONFLICTING DIMENSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- DIMENSIONS AND ELEVATIONS INDICATED ON EXISTING STRUCTURES HAVE BEEN OBTAINED FROM DRAWINGS OR FIELD SURVEYS. VERIFY ALL DIMENSIONS AND ELEVATIONS THAT ARE REQUIRED FOR FABRICATION AND INSTALLATION OF ADDITIONS TO EXISTING STRUCTURES WITH FIELD MEASUREMENTS.
- REFER TO CIVIL, HVAC, PLUMBING, FIRE PROTECTION AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR LOCATIONS AND DIMENSIONS OF CHASES, SLOTS, INSERTS, CURBS, OPENINGS, SLEEVES, ANCHOR RODS, GUY WIRES, FLOOR PITCHES AND OTHER PROJECT REQUIREMENTS NOT INDICATED ON STRUCTURAL DRAWINGS.
- COORDINATE DIMENSIONS AND VERIFY LOCATION OF STRUCTURAL ELEMENTS WITH PURCHASED EQUIPMENT. ANCHOR BOLTS SHALL BE SIZED AND FURNISHED BY THE EQUIPMENT SUPPLIER UNLESS OTHERWISE INDICATED.
- PROVIDE OPENINGS REQUIRED FOR PURCHASED EQUIPMENT. PROVIDE ANCHOR BOLTS, NUTS, NON-SHRINK NON-METALLIC GROUT, CONCRETE PADS AND REINFORCING STEEL REQUIRED FOR THE INSTALLATION OF EQUIPMENT.
- STANDARD DETAILS AS SHOWN ON THE STRUCTURAL STANDARD DETAIL SHEETS ARE APPLICABLE TO ALL STRUCTURAL WORK EXCEPT WHERE A SPECIFIC SECTION OR DETAIL IS SHOWN OTHERWISE.

CONCRETE ANCHORS

- EXPANSION TYPE ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM E 488, "STANDARD TEST METHODS FOR STRENGTH OF ANCHORS IN CONCRETE AND MASONRY ELEMENTS" AND ICBO ES AC-01, ACCEPTANCE CRITERIA FOR EXPANSION ANCHORS IN CONCRETE AND MASONRY ELEMENTS.
- PROVIDE SIZE, TYPE AND EMBEDMENT OF ANCHOR INDICATED INSTALLED TO DEVELOP THE MAXIMUM CAPACITY FOR THE EMBEDMENT, TYPE AND ANCHOR SIZE WITH A MINIMUM SAFETY FACTOR OF FOUR.
- ANCHORS SHALL HAVE STANDARD UNC THREADS, UNLESS OTHERWISE INDICATED.
- ANCHOR INSTALLATION SHALL CONFORM TO THE MANUFACTURER'S CURRENT PRINTED INSTRUCTIONS.
- REMOVE DUST AND DEBRIS FROM DRILLED HOLES USING COMPRESSED AIR OR VACUUM AT BOTTOM OF HOLE. IMMEDIATELY REMOVE STANDING WATER AND THOROUGHLY DRY HOLES TO RECEIVE ADHESIVE ANCHORS.
- DO NOT HAMMER IN ANCHORS. INSTALL ANCHORS USING A ROTARY HAMMER DRILL AS RECOMMENDED BY ANCHOR MANUFACTURER. THE USE OF HAMMER IN TYPE ADHESIVE CAPSULES IS PROHIBITED.
- PROVIDE EXPANSION TYPE ANCHORS WITH NUT AND WASHER. EXPANSION TYPE ANCHORS SHALL BE:
 - HILTI: KWIK-BOLT 3;
 - ITW REDHEAD/RAMSET: TRUBOLT;
 - POWERS FASTENERS: POWERSTUD+ SD1;
 - SIMPSON: STRONG TIE;
 - OR APPROVED EQUAL.

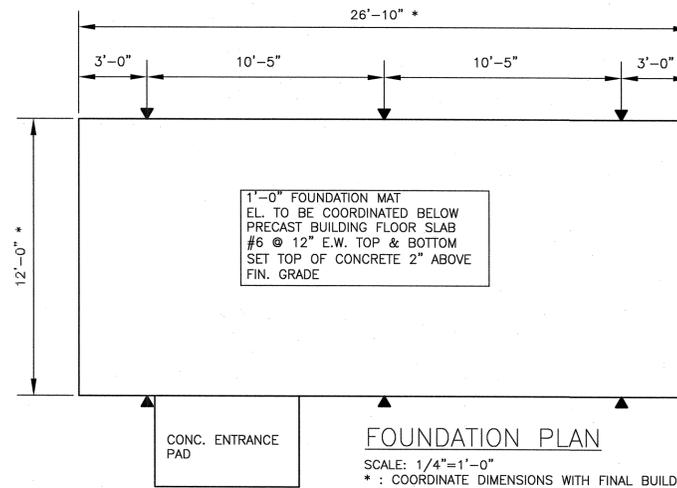
PRECAST CONCRETE BUILDINGS

- THE FACTORY PRECAST BUILDING SHALL HAVE INTERIOR DIMENSIONS OF APPROXIMATELY 26'-0" X 11'-2" IN PLAN BY 9'-0" HIGH (TO BARE CONCRETE). ALL FACTORY-BUILT PRECAST CONCRETE BUILDINGS SHALL BE SUPPLIED IN ACCORDANCE WITH PROJECT PLANS AND SPECIFICATIONS.
- ALL PRECAST CONCRETE BUILDINGS SHALL BE DELIVERED FOB TO THE JOBSITE AND INSTALLED BY THE GENERAL CONTRACTOR.
- THE PRECAST CONCRETE BUILDING MANUFACTURER SHALL PROVIDE ALL LIFTING CABLES AND HARDWARE NEEDED TO OFF-LOAD AND SET THE BUILDING WITHOUT DAMAGE TO THE WALLS OR ROOF.
- THE PRECAST CONCRETE BUILDING MANUFACTURER SHALL WARRANT THE BUILDING AND ITS COMPONENTS FOR ONE YEAR FROM THE DATE OF INSTALLATION.
- THE PRECAST CONCRETE BUILDING MANUFACTURER SHALL SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT SHOWING DIMENSIONS, SIZES, THICKNESS, MATERIALS, FINISHES, AND METHOD OF ASSEMBLY AND SUBMIT TECHNICAL DATA FOR ALL BUILDING HARDWARE AND EQUIPMENT. ALL WORK SHALL BE FABRICATED AND ERRECTED IN ACCORDANCE WITH THE MANUFACTURER'S DRAWINGS.
- THE PRECAST CONCRETE BUILDING MANUFACTURER SHALL HAVE A MINIMUM OF FIVE YEARS EXPERIENCE IN BUILDING FABRICATION. IN ADDITION, THE MANUFACTURER SHALL HAVE NO LESS THAN TEN BUILDING SIMILAR TO THE ONES ON THIS PROJECT. EVIDENCE MUST BE SUBMITTED TO VERIFY THAT THESE REQUIREMENTS ARE MET PRIOR TO BEING DEEMED AN ACCEPTABLE MANUFACTURER.
- THE PRECAST CONCRETE BUILDING SHALL BE MANUFACTURED IN A PCI CERTIFIED PLANT. IN ADDITION, THE BUILDING MANUFACTURER MUST MAINTAIN "CERTIFICATION IN GOOD STANDING" FOR PRODUCT GROUPS B & C, UNDER THE PCI PLANT CERTIFICATION PROGRAM.
- CONCRETE WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 318).
- PROVIDE NORMAL WEIGHT CONCRETE WITH ASTM C 150, TYPE I, II, OR III PORTLAND CEMENT.
- PROVIDE FINAL AGGREGATE CONSISTING OF NATURAL SAND CONFORMING TO ASTM C-33.
- PROVIDE COARSE AGGREGATE CONSISTING OF 1/2" MAXIMUM WELL GRADED CRUSHED STONE CONFORMING TO ASTM C-33.
- AIR ENTRAINMENT ADMIXTURE SHALL CONFORM TO ASTM C260. THE AIR-ENTRAINED CONTENT SHALL NOT BE LESS THAN 4 PERCENT NOR GREATER THAN 7 PERCENT.
- A SUPERPLASTICIZER SHALL BE USED AND SHALL CONFORM TO ASTM C494 TYPE F OR G. CONCRETE SHALL BE PLACED AT A SLUMP OF BETWEEN 5 AND 8 INCHES.
- THE CONCRETE USED FOR THE STRUCTURAL COMPONENTS SHALL ATTAIN A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI.
- PROVIDE WELDED WIRE FABRIC CONFORMING TO ASTM A185.
- ALL REINFORCEMENT SHALL BE FREE FROM LOOSE RUST, OIL, AND CONTAMINATES WHICH REDUCE BOND. ANY FOREIGN MATERIAL SHALL BE REMOVED BY SUITABLE MEANS PRIOR TO INSTALLATION.
- PROVIDE SUPPORTS FOR REINFORCING INCLUDING CHAIRS, BOLSTER BARS, AND OTHER DEVICES FOR SPACING AND SECURING REINFORCING IN ACCORDANCE WITH CRSI REQUIREMENTS. LEGS OF ALL SUPPORTS IN CONTACT WITH EXPOSED-TO-VIEW SURFACES SHALL BE PLASTIC COATED IN ACCORDANCE WITH CRSI, CLASS I.
- THE BUILDING SHALL BE STORED ON DUNNAGE PLACED AT THE PROPER LOCATIONS TO PREVENT CRACKING, DISTORTION, OR ANY OTHER PHYSICAL DAMAGE.
- DOORS AND FRAMES: SHALL COMPLY WITH STEEL DOOR INSTITUTE "RECOMMENDED SPECIFICATIONS FOR STANDARD STEEL DOORS AND FRAMES" (SDI-100). THE BUILDING SHALL BE EQUIPPED WITH DOUBLE 3'-0" X 7'-0" X 1-3/4", 18-GAUGE GALVANIZED/INSULATED LOCKING RIGHT HAND REVERSE METAL DOORS WITH 16-GAUGE GALVANIZED FRAMES. DOORS AND FRAMES SHALL BE BONDERIZED AND PAINTED ONE COAT OF RUST INHIBITIVE PRIMER AND ONE FINISH COAT OF ENAMEL PAINT; COLOR TO BE SELECTED BY OWNER.
- EXTERIOR FINISH SHALL BE FORMED BRICK; COLOR TO BE SELECTED BY OWNER.
- INTERIOR FINISH SHALL BE FRP WITH 2" INSULATION. FLOORING SHALL BE NON SKID EPOXY SLATE GRAY.

CLEAR CONCRETE COVER OVER REINFORCEMENT FOR CAST-IN-PLACE CONCRETE (INCHES)					
MEMBER	EXPOSURE CONDITIONS				
	AIR	WEATHER	AIR OVER LIQUID	EARTH OR STONE	LIQUIDS
FOOTINGS AND FOUNDATION MATS	2*	2*	-	2* 3*	2*

* TOP FACE AND SIDES
 • BOTTOM FACE

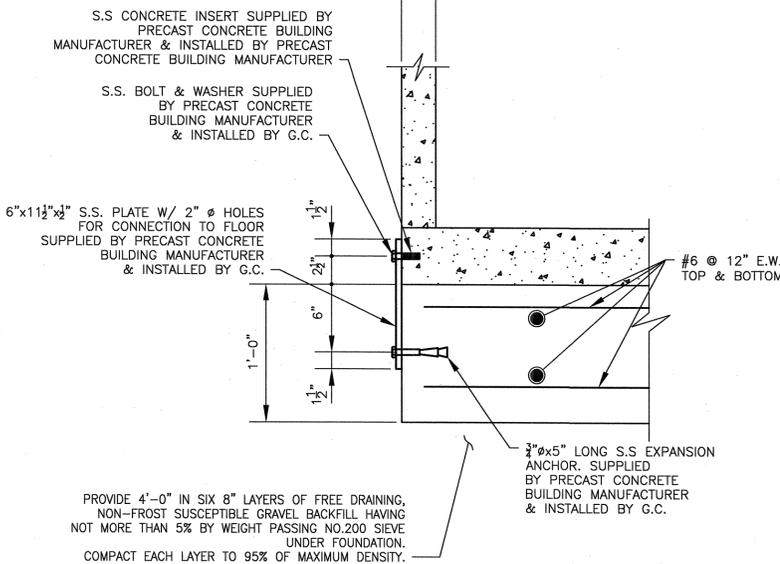
CLEAR CONCRETE COVER OVER REINFORCEMENT FOR CAST-IN-PLACE CONCRETE



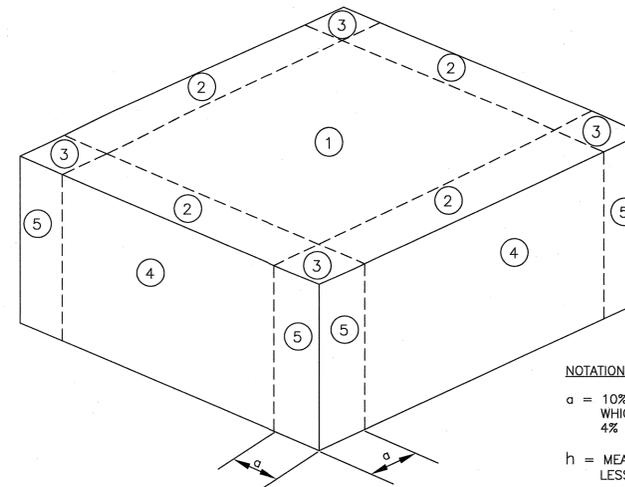
FOUNDATION PLAN

SCALE: 1/4" = 1'-0"
 * * COORDINATE DIMENSIONS WITH FINAL BUILDING DIMENSIONS AND PRECAST CONCRETE BUILDING MANUFACTURER
 FOUNDATION DESIGN BASED UPON NET ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF

▲ ANCHOR LOCATION



CONNECTION DETAIL (3 PER LONG SIDE OF ENCLOSURE, 6 TOTAL PER ENCLOSURE)



COMPONENTS AND CLADDING WIND PRESSURES

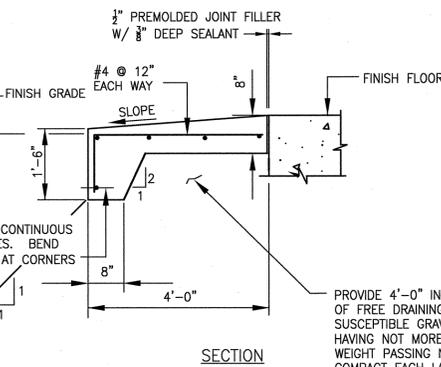
PRESSURES ARE BASED UPON ASCE/SEI 7-05 (UNFACTORED LOADS)

WIND PRESSURES: COMPONENTS & CLADDING

ZONE	POSITIVE PRESSURE	NEGATIVE PRESSURE
1	10	-30
2	10	-51
3	10	-77
4	21	-33
5	21	-41

NOTATION:

- a = 10% OF LEAST HORIZONTAL DIMENSION OR 0.4H WHICHEVER IS SMALLER, BUT NOT LESS THAN EITHER 4% OF LEAST HORIZONTAL DIMENSION OR 3.0 FEET.
- h = MEAN ROOF HEIGHT OR EAVE HEIGHT FOR SLOPES LESS THAN 10 DEGREES.



CONCRETE ENTRANCE PAD

NTS

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\S101 S-101.DWG
 LAST UPDATE: Thursday, February 12, 2015 12:50:14 PM
 PLOT DATE: Tuesday, February 17, 2015 1:46:12 PM
 ANSI D - 12-Feb-15

AECOM

TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
GENERATOR BUILDING
 STRUCTURAL

PROJECT NO: 60303170
 CAD DWG FILE: 01 S-101
 DESIGNED BY: M. MALENFANT
 DRAWN BY: A. CATALANO
 DEPT CHECK: R. FIORE
 PROJ CHECK: T. PARECE
 DATE: FEB 2015
 SCALE: AS NOTED

S-101

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\0-D-001_01 D-101.DETS.DWG
 LAST UPDATE: Wednesday, February 18, 2015 9:10:11 AM
 PLOT DATE: Wednesday, February 18, 2015 2:51:51 PM

ANSI D - 18-Febr-15

DWG. ABBREV.	ITEM	SYMBOL
	GATE VALVE	
	PLUG VALVE	
	BUTTERFLY VALVE	
	BALL VALVE	
	CHECK VALVE	
HG	HOSE GATE	
	GLOBE VALVE	
	PINCH VALVE	
	RELIEF VALVE	
	PRESSURE REGULATING VALVE	
	PRESSURE REDUCING VALVE	
	BACK PRESSURE VALVE	
	DUCK BILL CHECK VALVE	
	UNION	
	INSECT SCREEN	
	QUICK DISCONNECT COUPLING	
	FLEXIBLE HOSE	
	PULSATION DAMPENERS	
VD	VOLUME DAMPER	
	EXISTING PIPE & FACILITIES	
	PROPOSED PIPE & FACILITIES	
	PIPE: 6" & SMALLER	
	PIPE: 8" & LARGER	
	FLANGE	
BF	BLIND FLANGE	
PO	PUSH ON JOINT	
	SLEEVE COUPLING	
	RESTRAINED SLEEVE COUPLING	
	FLANGE ADAPTER	
	RESTRAINED FLANGE ADAPTER	
	EXPANSION JOINT W/CONTROL RODS	

DWG. ABBREV.	ITEM	SYMBOL
	BOLTED SPLIT SLEEVE COUPLING (PIPE 6" & SMALLER)	
	BOLTED SPLIT SLEEVE COUPLING (PIPE 8" & LARGER)	
	EXPANSION JOINT W/CONTROL RODS	
	CONCENTRIC REDUCER	
	ECCENTRIC REDUCER FLAT ON TOP	
	ECCENTRIC REDUCER FLAT ON BOTTOM	
	WYE STRAINER	
	INSULATION (PIPE 6" & SMALLER)	
	INSULATION (PIPE 8" & LARGER)	
	EXISTING PIPE TO BE REMOVED	
FE	MAGNETIC FLOW METER	
G	GAUGE	
	RUPTURE DISC	
WS	WATER SURFACE	
	DIRECTION OF FLOW	
	END CAP	
	PITCH PIPE DOWN IN DIRECTION OF ARROW	
	LIMITS OF WORK (TRADE, CONTRACT, ETC.)	
	POINT OF CONNECTION NEW WORK TO EXISTING WORK	
	LIMITS (MATERIAL, FURNISHED BY, ETC.)	
ACTUATORS		
	MOTOR OPERATED	
	SOLENOID OPERATED	
	DIAPHRAGM	
	CYLINDER - HYDRAULIC	
	CYLINDER - PNEUMATIC	
	ELECTRO - HYDRAULIC	
	EQUIPMENT MOTOR	
WALL / FLOOR CASTINGS		
FLG x PO	FLANGE AND PUSH ON JOINT	
PO x PO	PUSH ON JOINT AND PUSH ON JOINT	
PO x PE	PUSH ON JOINT AND PLAIN END	
FLG x FLG	FLANGE AND FLANGE	
FLG x PE	FLANGE AND PLAIN END	

TAG NO.	NUMBER OF UNITS	NAME	TYPE	RATING POINT				MIN. SUCTION/DISCHARGE SIZE (IN.)	PUMP RPM MAX.	SEAL TYPE	MOTOR DATA			REMARKS	
				CAPACITY (GPM)	HEAD (FEET)	MIN. EFF. %	SHUTOFF HEAD FT.				HP	RPM (MAX.)	ENCL. TYPE		DRIVE TYPE
P-1 & P-2	2	SAMOSET ST. PUMPING STATION	NON-CLOG SUBMERSIBLE	1,000	101	65	153	6/6	1770	TANDEM MECHANICAL	60	1800	EXPLOSION PROOF	DIRECT	SEE PROCESS PUMP NOTES

WET WELL SCHEDULE									
INSIDE L X W	BOTTOM ELEVATION	TOP OF FILL ELEVATION	HATCH DIMENSIONS (L X W)	MAX. W.S. ELEVATION	MIN. W.S. ELEVATION	GRADE ELEVATION	INFLUENT SEWER DIAMETER	INFLUENT SEWER INV. EL.	REMARKS
12' X 10'	102.3	102.46	72" X 60"	111.50	105	119	15"	112.0	

WET WELL OPERATING LEVELS						
HIGH W.L. ALARM EL.	LAG PUMP START EL.	LEAD PUMP START EL.	LAG PUMP STOP EL.	LEAD PUMP STOP EL.	LOW W.L. ALARM EL.	REMARKS
111.50	111	110.50	105.50	105.50	105	

- GENERAL NOTES:**
- EQUIPMENT AND SYSTEMS DIMENSIONS, LOCATIONS AND PIPING SYSTEM LAYOUTS ARE BASED ON EQUIPMENT SELECTED BY THE ENGINEER. IF CONTRACTOR PROPOSES TO PROVIDE EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACING DIFFERING FROM THAT INDICATED OR SPECIFIED, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR REVIEW DETAILED ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, INSTRUMENTATION HVAC AND ELECTRICAL DRAWINGS AND EQUIPMENT LISTS SHOWING ALL NECESSARY CHANGES AND EMBODYING ALL FEATURES OF THE EQUIPMENT AND/OR PROCESS SYSTEMS PROPOSED. THIS INFORMATION SHALL INCLUDE BUT NOT BE LIMITED TO PLANS, SECTIONS DETAILS AND SCHEMATICS OF ALL PIPING SYSTEMS AND APPURTENANCES REQUIRED, ELECTRICAL CONTROLS, CHEMICAL FEED SYSTEMS ETC.. SUCH CHANGES IF APPROVED BY THE ENGINEER SHALL BE AT NO ADDITIONAL COST TO THE OWNER AND NO TIME EXTENSION TO THE CONTRACT TIME TO COMPLETION. THE CONTRACTOR SHALL ASSUME THE COST AND THE RESPONSIBILITY FOR ACCOMPLISHING ALL THE NECESSARY CHANGES CORRESPONDING TO THE DIMENSIONS AND CHARACTERISTICS OF THE EQUIPMENT SUBMITTED AND APPROVED BY THE ENGINEER. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
 - THE CONTRACTOR SHALL MAKE ALL REQUIRED FIELD MEASUREMENTS TO VERIFY EXISTING AND CONTRACT INTERFACE DIMENSIONS, LOCATIONS, AND OTHER CONDITIONS.
 - ALL PIPING UNDER CONCRETE SLABS OR STRUCTURES SHALL BE ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED, REFER TO STRUCTURAL DRAWINGS.
 - ALL DIMENSIONS LOCATING EQUIPMENT ARE FROM FINISHED WALL SURFACES OR COLUMN CENTERLINES.
 - PROVIDE LIFTING HOOKS ABOVE ALL VALVES 8-INCH AND LARGER.
 - INSTRUMENT LOCATIONS ARE INDICATED ON MECHANICAL-PROCESS DRAWINGS IN APPROXIMATE LOCATION ONLY.
 - FOR CONTINUATION OF PIPING OUTSIDE STRUCTURES, SEE CIVIL DRAWINGS.
 - WALL AND FLOOR SLEEVES SHALL BE LARGE ENOUGH TO ACCOMMODATE FLANGES IF REQUIRED. FLOOR SLEEVES SHALL PROJECT AT LEAST 4-IN. ABOVE FINISHED FLOOR UNLESS OTHERWISE SHOWN, REFER TO DETAILS. IF SLEEVES ARE TO BE SEALED, PROVIDE GROOVED COUPLING PIPING CONNECTION TO FACILITATE INSTALLATION AND REMOVAL OF PIPING.
 - PROVIDE WALL CASTINGS WITH WATERSTOP FOR ALL BURIED AND SUBMERGED PIPELINES AND FOR PIPING LOCATED WITHIN 2 FT. OF MAXIMUM WATER SURFACE. WALL CASTINGS 4-IN AND LARGER - DUCTILE IRON, 3-IN AND SMALLER - SCH. 40 316L STAINLESS STEEL.
 - ALL PIPE PENETRATIONS THROUGH INTERIOR AND EXTERIOR WALLS AND FLOORS SHALL BE SEALED WATERTIGHT. ROOF PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH ARCHITECTURAL DETAILS.
 - SLEEVE OR GROOVED COUPLINGS MAY BE USED WHERE NECESSARY, AND AS APPROVED, TO FACILITATE PIPING INSTALLATION.
 - FOR FLANGED SYSTEMS PROVIDE FLEXIBLE CONNECTORS WHERE NECESSARY, AND AS APPROVED TO FACILITATE PIPING INSTALLATION AND VALVE AND EQUIPMENT REMOVAL.
 - ALL FLEXIBLE CONNECTORS, INCLUDING EXPANSION JOINTS AND SLEEVE COUPLINGS SHALL BE RESTRAINED AS INDICATED OR AS REQUIRED FOR EXPANSION AND FOR FLEXIBILITY.
 - ALL HOSE GATES SHALL BE CLEARLY LABELED INDICATING TYPE OF SERVICE (SW, ETC.). SEE SPECIFICATIONS.
 - SMALL PIPING (SAMPLE, SERVICE WATER, ETC.) IS SHOWN DIAGRAMMATICALLY: FIELD-ROUTING SUBJECT TO APPROVAL OF THE ENGINEER. SMALL PIPE ROUTING MUST NOT INTERFERE WITH ACCESS TO OR OPERATION OF ANY OTHER PIPE, VALVE, OR EQUIPMENT.
 - PORTIONS OF NON-PROCESS PIPING (PLUMBING, HVAC, CIVIL) ARE SHOWN FOR CLARITY OF DESIGN ONLY: REFER TO APPROPRIATE DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS.
 - BASE ELBOWS AND PIPE BRACES ARE SHOWN FOR PURPOSES OF ILLUSTRATION ONLY.
 - PROVIDE WALL MOUNTED SIGNS, IN ACCORDANCE WITH SPECIFIED ARCHITECTURAL REQUIREMENTS FOR ALL EXTERIOR WALL PENETRATIONS, INDICATING PIPE ORIGIN OR DESTINATION AND PIPE LABEL.
 - SEE DETAILS FOR PRESSURE GAUGE, VALVING AND OTHER APPURTENANCES.
 - PROVIDE CONCRETE PADS FOR ALL FLOOR MOUNTED PROCESS EQUIPMENT, REFER TO DRAWINGS FOR DETAILS.
 - VENTS AND DRAINS:
 - INSTALL VENT AND DRAIN PIPING AND VALVES SO THERE IS NO INTERFERENCE WITH ACCESS TO OR OPERATION OF ANY EQUIPMENT, VALVES, PIPING OR PANELS.
 - PROVIDE ISOLATION VALVES FOR ALL VENTS AND DRAINS AS SPECIFIED AND INDICATED.
 - LOCATE VALVES SO THAT THEY ARE ACCESSIBLE AND OPERABLE.
 - PIPE ALL VENTS AND DRAINS SLOPED TO DRAIN TO THE NEAREST GUTTER, SUMP, TRENCH OR DRAIN OR AS INDICATED.
 - WHERE PIPING RUNS ACROSS A FLOOR, INSTALL 2 INCHES MAXIMUM ABOVE FLOOR.
 - ALL PIPE PENETRATIONS INTO WETWELLS AND VALVE VAULTS SHALL BE SEALED GAS TIGHT.

- PROCESS PUMP NOTES:**
- VARIABLE FREQUENCY DRIVE
 - BASIS OF DESIGN: FLYGHT FP 3202 HT 3~ 460
 - PUMP DESIGN BASED ON FUTURE PUMP FLOWS
 - INITIAL PUMP CAPACITY SETTINGS TO BE ADJUSTED THROUGH THE VFD.
 - INITIAL PUMP CAPACITY SETTINGS TO BE DETERMINED BASED ON DOWNSTREAM GRAVITY SEWER CAPACITY.
 - MINIMUM SPEED RATING POINT: 450 GPM AT 50 FEET

MECHANICAL PROCESS EQUIPMENT ABBREVIATIONS

- DP DIFFERENTIAL PRESSURE
- LE LEVEL ELEMENT
- F FAN
- FIL FILTER
- FLR FLARE
- OCF ODDOR CONTROL FAN
- P PUMP
- PD PULSATION DAMPENERS
- HST HOIST
- SCR SCREEN
- SIL SILENCER

MECHANICAL PROCESS GENERAL ABBREVIATIONS

- AFF ABOVE FINISHED FLOOR
- ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
- APPROX. APPROXIMATE
- ARCH. ARCHITECTURAL
- ARV AIR RELEASE VALVE
- AV AIR VACUUM VALVE
- B.O.D. BOTTOM OF DUCT
- CFM CUBIC FEET PER MINUTE
- CI CAST IRON
- CL CENTERLINE
- CMU CONCRETE MASONRY UNIT
- C.O. CLEAN OUT
- CONC. CONCRETE
- CONN. CONNECTION
- CONT. CONTINUATION
- CPVC CHLORINATED POLYVINYL CHLORIDE
- CS CARBON STEEL
- DEG. F. DEGREES FAHRENHEIT
- DET. DETAIL
- D.I. DUCTILE IRON
- DIA. DIAMETER
- DISCH. DISCHARGE
- DN DOWN
- DWG'S. DRAWINGS
- ECC. RED. ECCENTRIC REDUCER
- EFF. EFFLUENT
- ELEC. ELECTRICAL
- EL. ELEVATION
- ENCL. ENCLOSURE
- EQUIP. EQUIPMENT
- EXIST. EXISTING
- FxE EXPANSION COUPLING (FIXED x EXPANSION)
- FxF (FIXED x FIXED) FLOW ELEMENT
- FE FLOW ELEMENT
- FHMB FLAT HEAD MACHINE BOLT
- FIN. FL FINISHED FLOOR
- FIN. GR. FINISHED GRADE
- FIT FLOW INDICATING TRANSMITTER
- FLEX. FLEXIBLE
- FLG. FLANGE
- F.O.B. FLAT ON BOTTOM
- F.O.T. FLAT ON TOP
- FS FEET PER SECOND
- FS FLOW SWITCH FT. FEET
- GAL. GALLONS
- GALV. GALVANIZED
- GPM GALLONS PER MINUTE
- HDPE HIGH DENSITY POLYETHYLENE
- H.P. HOSE GATE
- HPT HIGH POINT HP
- HVAC HOSE PIPE THREAD HEATING VENTILATION AIR CONDITIONING
- H.W.L. HIGH WATER LEVEL
- I.D. INSIDE DIAMETER
- IN. INCHES
- INSUL. INSULATION
- INV. INVERT
- IPT IRON PIPE THREAD
- KW KILOWATT
- INSUM. LONG
- L.P. LOW POINT
- L.R. LONG RADIUS
- L.W.L. LOW WATER LEVEL
- MAX. MAXIMUM
- MCC MOTOR CONTROL CENTER
- MECH. MECHANICAL
- MGD MILLION GALLONS PER DAY
- MH MANHOLE
- MIN. MINIMUM
- NAVD NORTH AMERICAN VERTICAL DATUM
- N.C. NORMALLY CLOSED
- N.O. NORMALLY OPEN
- NO. NUMBER
- NPT NATIONAL PIPE THREAD
- NTS NOT TO SCALE
- O.C. ON CENTER
- O.D. OUTSIDE DIAMETER
- OPER. OPERATING
- P PRESSURE GAUGE
- PE PLAIN END
- PI PRESSURE INDICATOR
- PIT PRESSURE INDICATOR TRANSMITTER
- PS PRESSURE SWITCH
- PSI POUNDS PER SQUARE INCH
- PSIG POUNDS PER SQUARE INCH GAGE
- PVC POLYVINYL CHLORIDE
- R RADIUS
- RED. REDUCER / REDUCING
- REF. REFERENCE
- REINF. REINFORCING
- REQ'D. REQUIRED
- RPM REVOLUTIONS PER MINUTE
- SCH. SCHEDULE
- SH. SHEET
- SFD SUMP PUMP DISCHARGE SPECIFICATIONS
- SQ. SQUARE
- S.R. SHORT RADIUS
- S.S. STAINLESS STEEL
- STD. STANDARD
- STR. STRUCTURAL
- TEMP. TEMPERATURE
- THK. THICK
- T.O.C. TOP OF CONCRETE
- T.O.S. TOP OF STEEL
- TYP. TYPICAL
- V/D VOLUME DAMPER
- W/ WITH
- WxH WIDTH x HEIGHT
- WC WATER COLUMN
- XPROOF EXPLOSION PROOF

REVISIONS

NO.	DATE	MADE BY	CHECKED	DESCRIPTION

ACCOM TECHNICAL SERVICES, INC.
 1000 WESTERN AVENUE
 CHELSEA, MA 01824
 PHONE (978) 905-2100

TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION

LEGENDS, NOTES, SCHEDULES AND ABBREVIATIONS

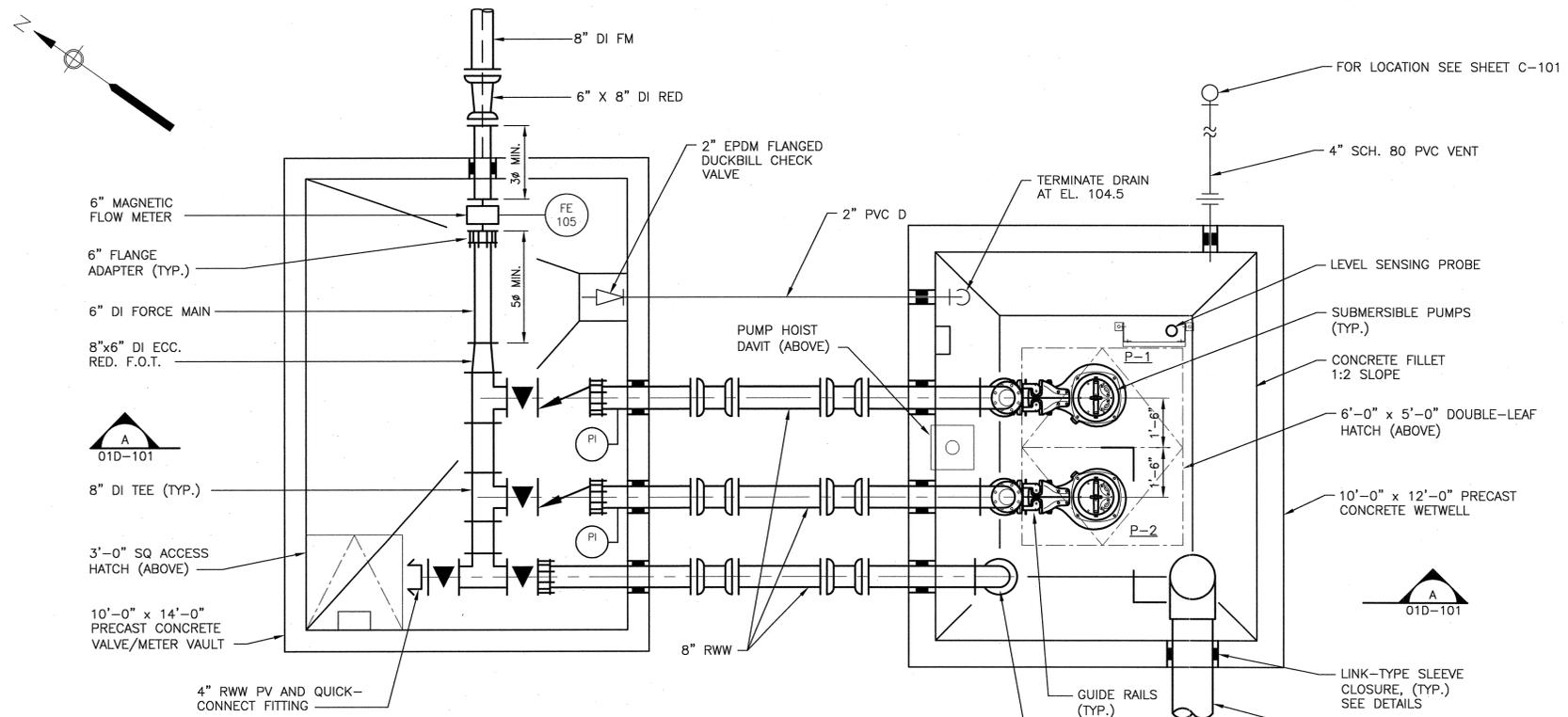
MECHANICAL PROCESS

PROJECT NO: 60303170
 CAD DWG FILE: 01 D-501
 DESIGNED BY: J. FINNEGAN
 DRAWN BY: M. CURRAN
 DEPT CHECK: D. DEANGELIS
 PROJ CHECK: T. PARECE
 DATE: FEB 2015
 SCALE: AS NOTED

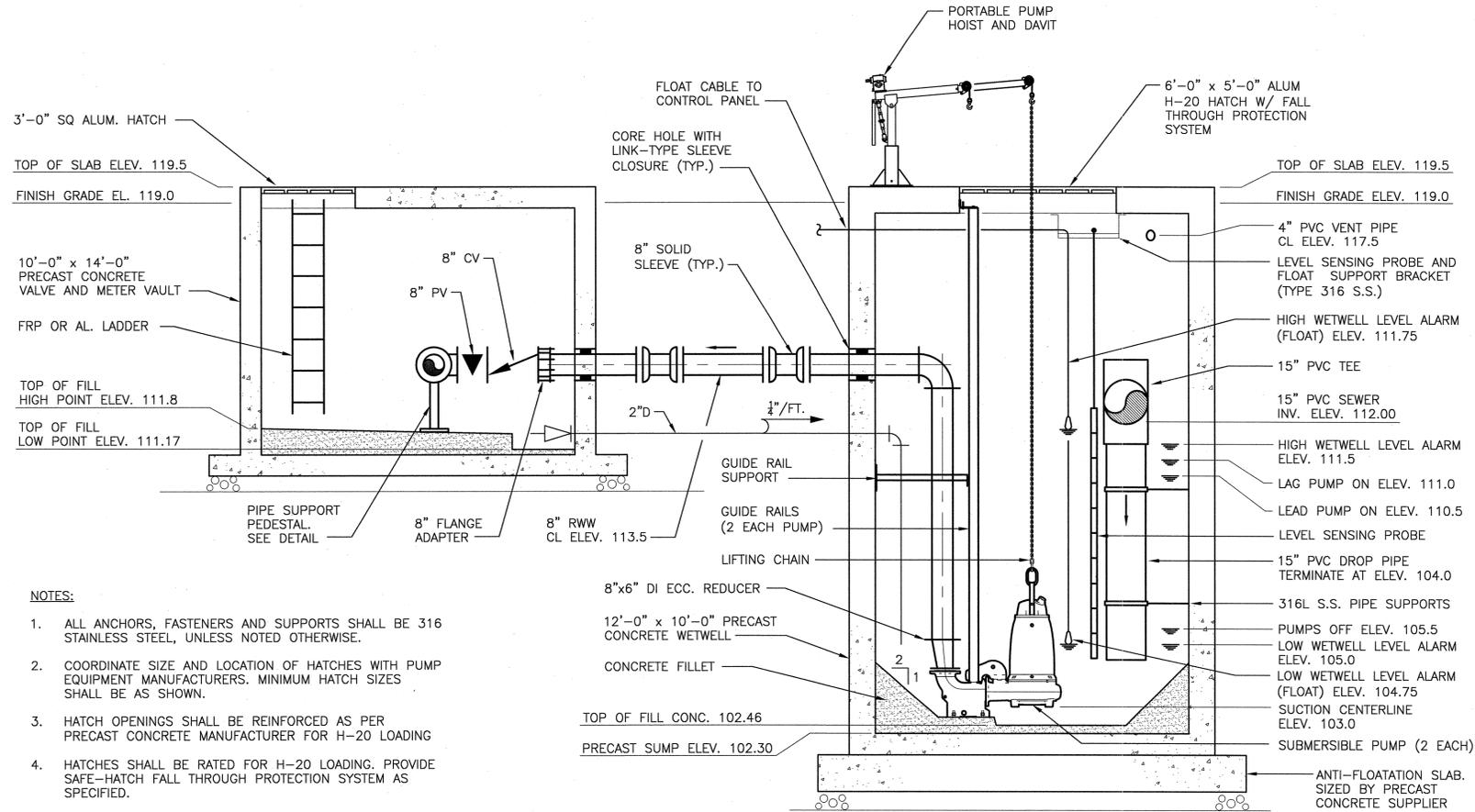
D-001

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 LAST UPDATE: Wednesday, February 18, 2015 9:10:11 AM
 PLOT DATE: Wednesday, February 18, 2015 2:52:48 PM

ANSI D - 18-FEB-15



PLAN
 SCALE: 3/8"=1'-0"



SECTION A
 SCALE: 3/8"=1'-0"

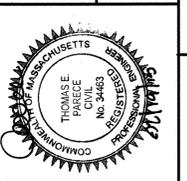
NOTES:

1. ALL ANCHORS, FASTENERS AND SUPPORTS SHALL BE 316 STAINLESS STEEL, UNLESS NOTED OTHERWISE.
2. COORDINATE SIZE AND LOCATION OF HATCHES WITH PUMP EQUIPMENT MANUFACTURERS. MINIMUM HATCH SIZES SHALL BE AS SHOWN.
3. HATCH OPENINGS SHALL BE REINFORCED AS PER PRECAST CONCRETE MANUFACTURER FOR H-20 LOADING
4. HATCHES SHALL BE RATED FOR H-20 LOADING. PROVIDE SAFE-HATCH FALL THROUGH PROTECTION SYSTEM AS SPECIFIED.
5. PIPE WETWELL HATCH DRAIN TO WETWELL.
6. EXTERIOR PIPING CONFIGURATION TYPICAL. REFER TO PUMP STATION SITE PLANS FOR ACTUAL EXTERIOR PIPING CONFIGURATIONS AND PENETRATION LOCATIONS.



MARK	DATE	MADE BY	CHECKED	DESCRIPTION

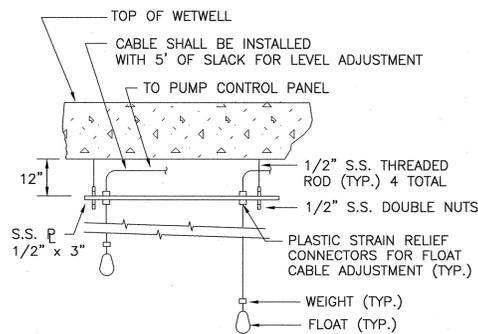
AECOM
 AECOM TECHNICAL SERVICES, INC.
 1000 WEST 10TH AVENUE
 CHICAGO, IL 60604
 PHONE (773) 800-2100



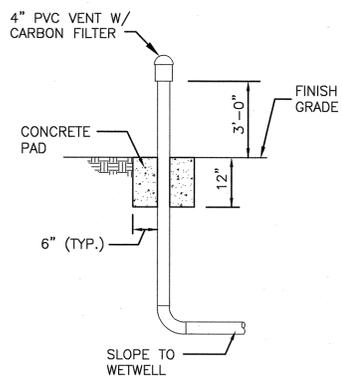
TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION
**SAMOSET STREET PUMPING STATION
 PLANS AND SECTIONS**
 MECHANICAL PROCESS

PROJECT NO: 6030370-01
 CAD DWG FILE: D-101_DET.DWG
 DESIGNED BY: J. FINNEGAN
 DRAWN BY: M. CURRAN
 DEPT CHECK: D. DEANGELIS
 PROJ CHECK: T. PARECE
 DATE: FEB 2015
 SCALE: AS NOTED

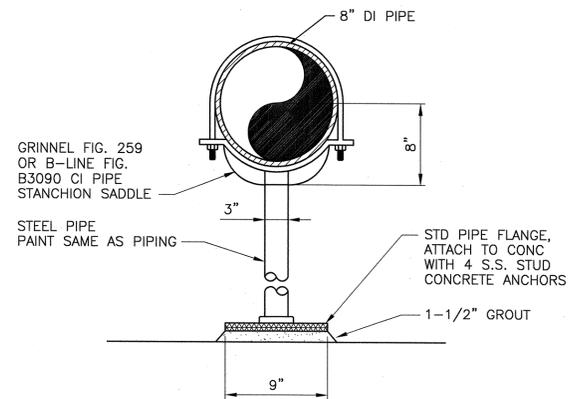
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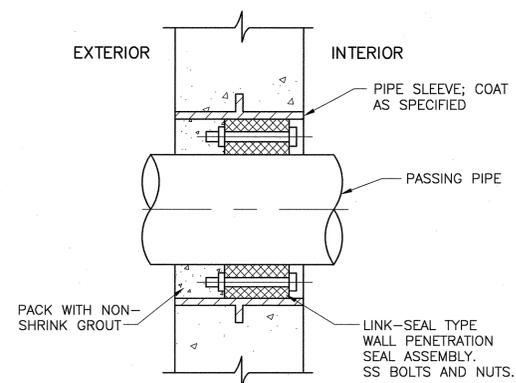
FLOAT SUPPORT DETAIL
NOT TO SCALE



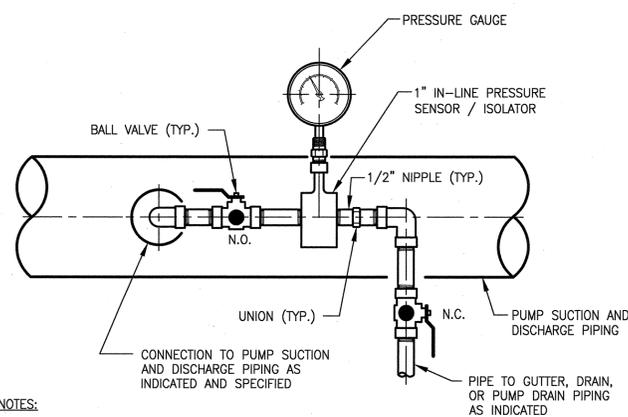
VENT DETAIL
NOT TO SCALE



PIPE SUPPORT PEDESTAL
NOT TO SCALE



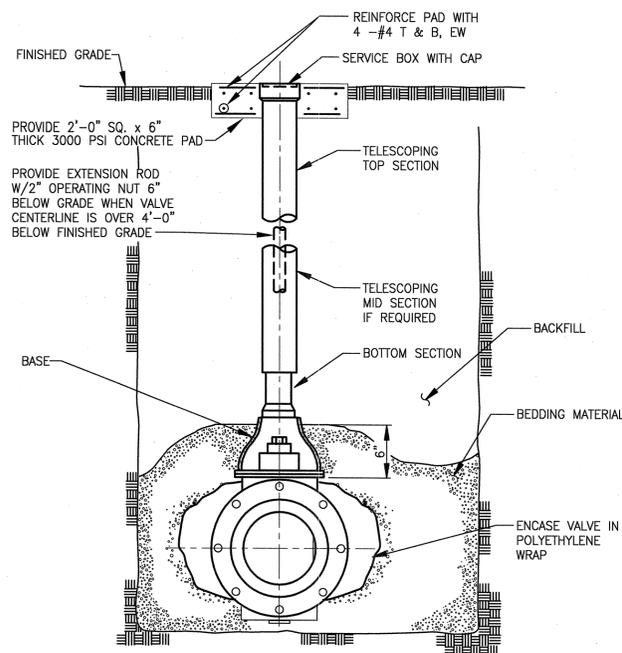
TYPICAL CONCRETE WALL PENETRATION
NOT TO SCALE



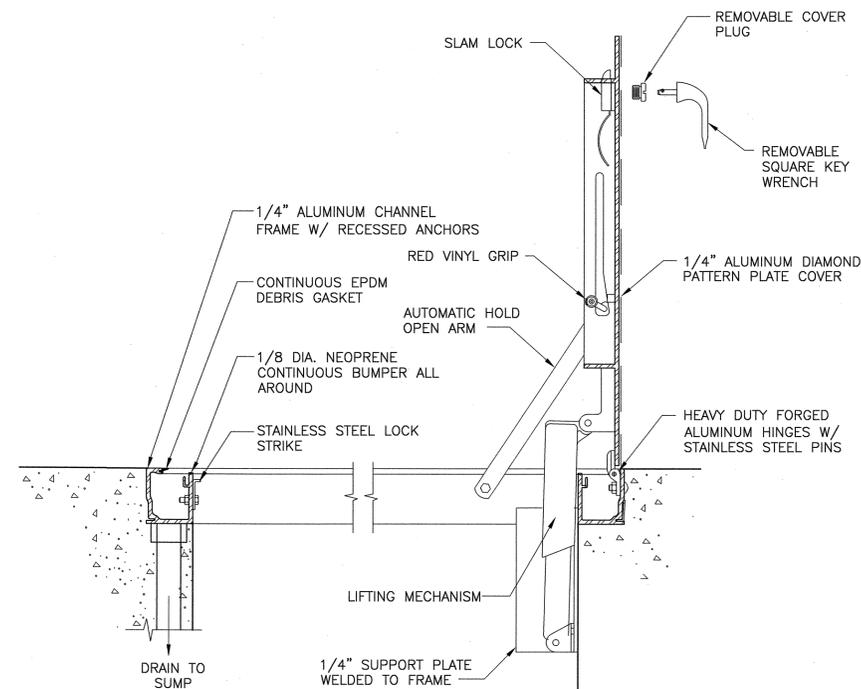
NOTES:

1. PIPING: TYPE 316L S.S.
2. VALVES: TYPE 316 S.S.
3. HARDWARE: TYPE 316 S.S.

PRESSURE GAUGE/ INSTRUMENT ASSEMBLY
NOT TO SCALE



BURIED GATE VALVE
NOT TO SCALE



SECTION
FLUSH MOUNTED ALUMINUM ACCESS HATCH
NOT TO SCALE

NO.	DATE	MADE BY	CHECKED	DESCRIPTION

AECOM
AECOM TECHNICAL SERVICES, INC.
100 WATER STREET
PLYMOUTH, MA 01924
PHONE (781) 906-2100



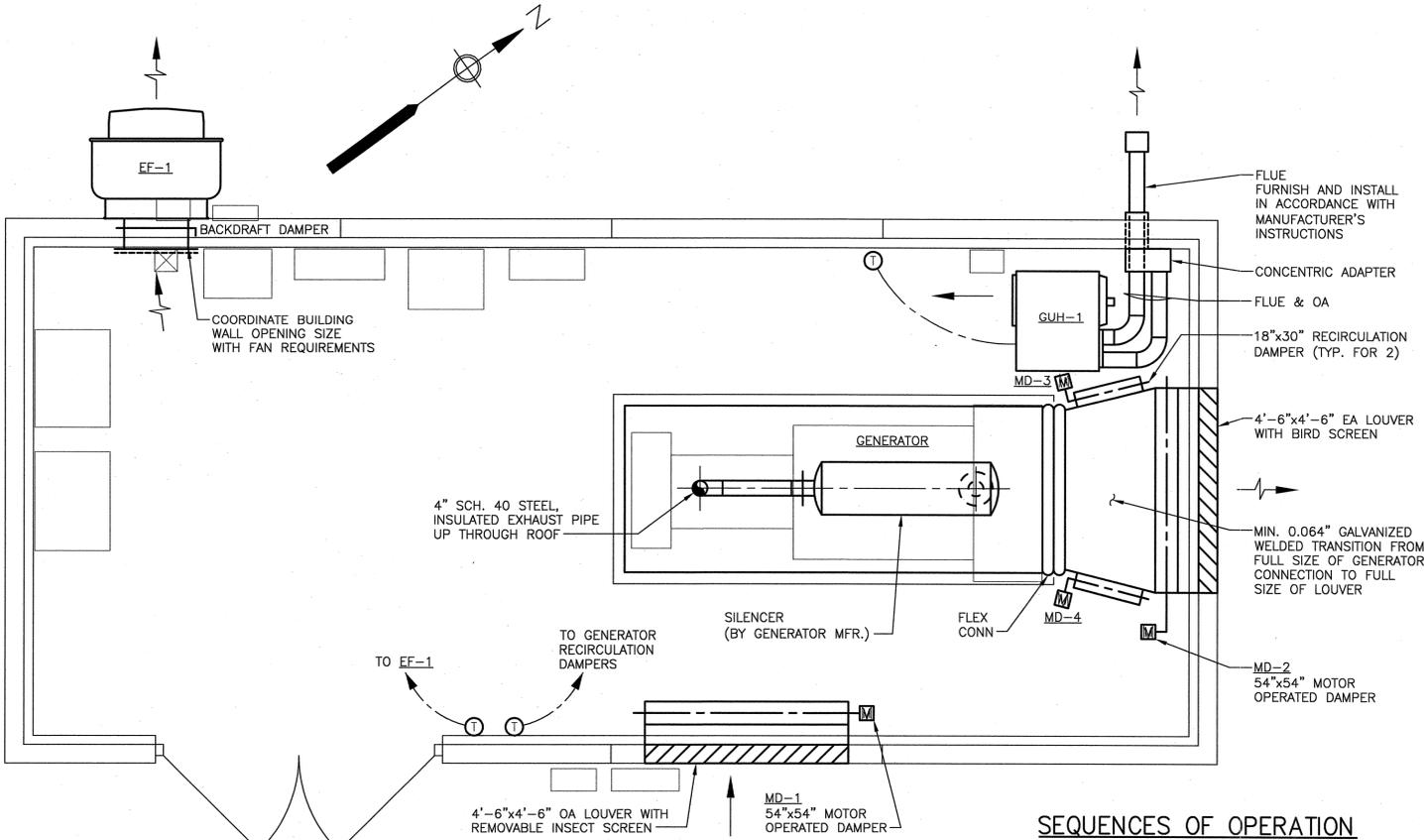
TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION
SAMOSET STREET PUMPING STATION DETAILS
MECHANICAL PROCESS

PROJECT NO:	60303170
CAD DWG FILE:	01_D-501
DESIGNED BY:	J. FINNEGAN
DRAWN BY:	M. CURRAN
DEPT CHECK:	D. DEANGELIS
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

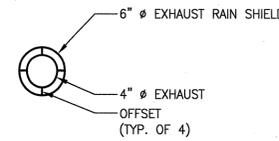
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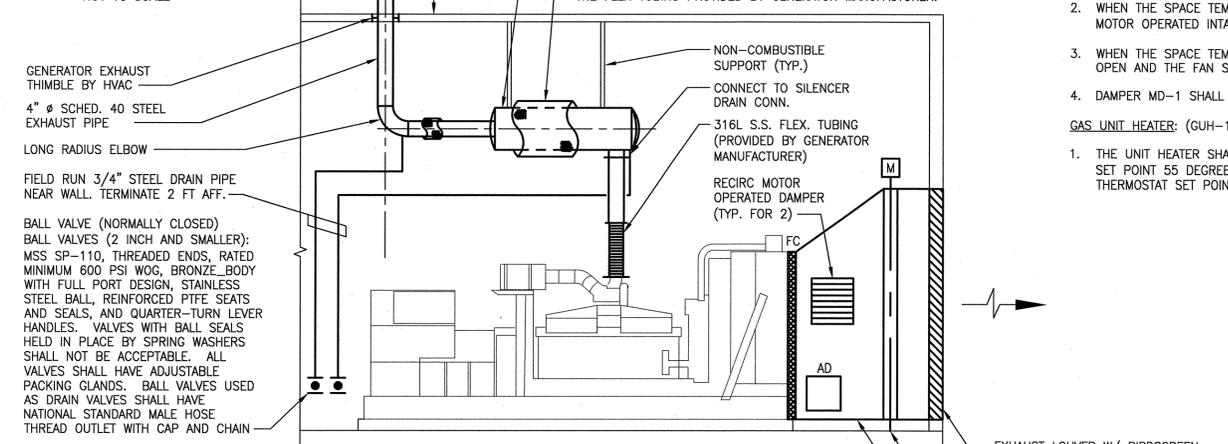
ANSI D - 18 - Feb-15



PLAN
SCALE: 1/2"=1'-0"



RAIN SHIELD PLAN
NOT TO SCALE



- NOTES:**
1. THIS IS A GENERAL ARRANGEMENT DETAIL, FOR PROPER ORIENTATION REFER TO PLAN AND GENERATOR MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL REQUIREMENTS FOR THE EXHAUST SYSTEM.
 2. SELECT AND PROVIDE ROOF THIMBLE TO ACCOMMODATE GENERATOR EXHAUST STACK TEMPERATURE.

GENERATOR EXHAUST PIPE DETAIL
NOT TO SCALE

SEQUENCES OF OPERATION

GENERATOR

1. THE SEQUENCE BELOW IS REVERSIBLE.
2. UPON START UP OF THE GENERATOR, THE OUTSIDE AIR INTAKE DAMPER (MD-1) AND EXHAUST DAMPER (MD-2) SHALL OPEN. DAMPERS MD-1 AND MD-2 SHALL FAIL OPEN ON LOSS OF POWER.
3. WHEN THE GENERATOR IS IN OPERATION, THE RECIRCULATION DAMPERS (MD-3 AND 4) MOUNTED ON THE RADIATOR DISCHARGE AIR PLENUM SHALL MODULATE IN COORDINATION WITH THE MODULATING, GENERATOR RADIATOR EXHAUST DAMPER (MD-2). WHEN THE ROOM TEMPERATURE FALLS BELOW 55 DEGREES F (ADJUSTABLE), THE RECIRCULATION DAMPERS WILL MODULATE OPEN PROGRESSIVELY WHILE THE RADIATOR EXHAUST DAMPER CLOSES ACCORDINGLY. LIMIT THE DEGREE OF CLOSURE OF THE GENERATOR EXHAUST DAMPER TO ENSURE SUFFICIENT AIR FLOW FOR ENGINE COOLING. DAMPERS MD-3 AND MD-4 SHALL FAIL CLOSED ON LOSS OF POWER.
4. WHEN THE GENERATOR IS OFF, DAMPERS MD-1, 2, 3 AND 4 SHALL BE CLOSED. MD-1 SHALL ALSO OPEN WHEN EF-1 OPERATES.

EXHAUST FAN: (EF-1)

1. THE SEQUENCE BELOW IS REVERSIBLE. THE EXHAUST FAN SHALL NOT RUN WHEN THE GENERATOR IS IN OPERATION.
2. WHEN THE SPACE TEMPERATURE IS BELOW 80 DEGREES (ADJUSTABLE) THE EXHAUST FAN SHALL BE OFF AND THE INTERLOCKED MOTOR OPERATED INTAKE AIR DAMPER (MD-1) SHALL BE CLOSED.
3. WHEN THE SPACE TEMPERATURE IS ABOVE 80 DEGREES (ADJUSTABLE) MOTOR OPERATED INTAKE AIR DAMPER (MD-1) SHALL OPEN AND THE FAN SHALL RUN.
4. DAMPER MD-1 SHALL ALSO OPEN WHEN THE GENERATOR OPERATES.

GAS UNIT HEATER: (GUH-1)

1. THE UNIT HEATER SHALL BE CONTROLLED BY A THERMOSTAT, ON A DROP IN SPACE TEMPERATURE BELOW THE THERMOSTAT SET POINT 55 DEGREES F (ADJUSTABLE), THE UNIT HEATER SHALL START. WHEN THE SPACE TEMPERATURE IS ABOVE THE THERMOSTAT SET POINT, THE UNIT SHALL STOP.

NOTES

1. INSTALL ALL WORK IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL CODES.
2. PROVIDE ALL NECESSARY PIPING, EQUIPMENT AND SUPPORTS, ETC. NOT SHOWN ON THE DRAWINGS BUT NECESSARY TO PROVIDE COMPLETE AND WORKABLE SYSTEMS.
3. ALL EQUIPMENT SHALL BE LOCATED TO PROVIDE PROPER ACCESS FOR INSPECTION, MAINTENANCE AND SERVICE.
4. HVAC EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
5. DAMPERS: PROVIDE INSULATED FACTORY-FABRICATED MULTIBLADE CONTROL DAMPERS WITH FACTORY-MOUNTED LINKAGES, MINIMUM 0.080-INCH THICK EXTRUDED ALUMINUM BLADES AND FRAMES, REINFORCED CHANNEL-TYPE FRAMES; MAXIMUM 6-INCH WIDE BLADES WITH INTERLOCKING OR OVERLAPPING EDGES AND COMPRESSIBLE SEALS; MINIMUM 1/2-INCH DIAMETER RODS WITH SELF-LUBRICATING BEARINGS, PARALLEL BLADE.
6. DAMPER ACTUATORS: WHEN OPERATED AT RATED VOLTAGE, EACH MOTOR SHALL BE CAPABLE OF DELIVERING NOT LESS THAN TWICE THE TORQUE REQUIRED BY THE DAMPER, AND TO WITHSTAND, WITHOUT DAMAGE, CONTINUOUS STALLING. MOTOR VOLTAGE: 120/1/60.
 - A. DAMPER ACTUATORS SHALL BE ELECTRONIC DIRECT COUPLED, UNLESS THE CONTROL SHAFT IS NOT ACCESSIBLE. ACTUATOR-DRIVE PINIONS AND HIGH-SPEED GEARS MAY BE MADE OF A SUITABLE NONMETALLIC COMPOSITION TO ENSURE QUIET OPERATION. ALL OTHER GEARS OF STEEL OR BRONZE. ALL GEARS ACCURATELY MACHINE CUT, WITH FACE WIDTHS OF NOT LESS THAN 1/8-IN. SHAFTS OF HARDENED STEEL, RUNNING IN BRONZE, HARDENED STEEL, NYLON OR OTHER SUITABLE SLEEVES OR BALL BEARINGS. LEVER ARMS ATTACHED TO MOTOR SHAFTS WITH SET SCREWS OR OTHER SECURE AND ADJUSTABLE MEANS. ACTUATORS SHALL CONTAIN A "Y" BOLT MOUNTING MECHANISM FOR MOUNTING TO THE CONTROL SHAFT. SET SCREWS WILL NOT BE ACCEPTABLE.
 - B. MOTORS PROVIDED WITH SPRING RETURN SO THEY WILL "FAIL SAFE" IN EITHER NORMALLY OPEN OR NORMALLY CLOSED POSITION, AS INDICATED, IN THE EVENT OF POWER FAILURE.
 - C. WHEN DIRECT COUPLING IS NOT FEASIBLE, DAMPERS TO BE PROVIDED WITH ADJUSTABLE LINKAGES AND CRANK ARMS AS REQUIRED, SUITABLE FOR THE MOTORS HEREIN BEFORE SPECIFIED. LINKAGES AND CRANK ARMS TO BE ZINC OR CADMIUM PLATED.
 - D. DAMPER LINKAGES AND OPERATORS TO BE ARRANGED FOR MOUNTING OUT OF THE AIR STREAM AND TO BE RATED FOR AT LEAST TWICE THE MAXIMUM OPERATING FORCE OF THE DAMPER MOTOR.
7. THERMOSTATS: PROVIDE 120 VOLT TWO-POSITION OR MODULATING THERMOSTATS AS REQUIRED; LOCATE AS INDICATED ON THE DRAWINGS. ROOM THERMOSTATS THAT CONTROL THE RECIRCULATION DAMPERS TO HAVE A MINIMUM RANGE OF 45 TO 75 DEG. F. THERMOSTATS WHICH CONTROL THE COOLING FAN EF-1 TO BE REVERSE-ACTING AND HAVE A MINIMUM RANGE OF 60 TO 100 DEG. F. THERMOSTATS SHALL BE CAPABLE OF CONTROLLING TEMPERATURES WITHIN 2 DEG. F. OF THE SETTING. MOUNT THERMOSTATS 5 FEET ABOVE THE FLOOR.
8. LOUVER CONSTRUCTION: PROVIDE FIXED-BLADE, SIGHT-PROOF, DRAINABLE TYPE LOUVERS WITH EXTRUDED-ALUMINUM FRAMES AND BLADES COMPLYING WITH THE FOLLOWING:
 - A. LOUVER DEPTH: 5 IN. UNLESS OTHERWISE INDICATED.
 - B. FRAME AND BLADE THICKNESS: 0.081-IN. (2.06 MM).
 - C. STANDARD FREE AREA: NOT LESS THAN 56% BASED ON 48-IN. X 48-IN. TESTED UNIT TO AMCA STANDARD.
 - D. FREE AREA VELOCITY AT BEGINNING POINT OF WATER PENETRATION - 0.01 OZ H2O/SQ. FT. FREE AREA: 1,134 FPM (5.76 M/S).
 - E. AIR VOLUME FLOW RATE AT BEGINNING POINT OF WATER PENETRATION - 4 FT. X 4 FT. UNIT: 10,331 CFM (4,896 M3/S).
 - F. PRESSURE DROP AT BEGINNING POINT OF WATER PENETRATION: 0.40 IN. H2O (0.100 PKA)

FAN SCHEDULE

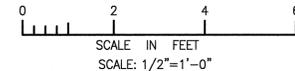
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								HP	MOTOR ENCLOSURE	VOLTS PH		
EF-1	CENTRIFUGAL SIDEWALL EXHAUST	WALL	4,000	0.5	886	BELT	14.1	1	ODP-PE	460	3	GREENHECK/ CWB-200-10

- NOTES:**
1. PROVIDE GRAVITY BACK DRAFT DAMPER & INLET GRILLE
 2. PROVIDE EXTENDED LUBE LINES.
 3. PROVIDE ALUMINUM EXHAUST FAN AND HOUSING

GAS FIRED UNIT HEATER SCHEDULE

TAG NO.	NATURAL GAS		CFM	TEMP RISE	MIN. THERMAL EFF. %	GAS CONN (IN)	VENT DIAM. (IN)	COMB. AIR INLET DIAM (IN)	ELECTRICAL DATA			DESIGN BASED ON MFR/ MODEL
	INPUT (MBH)	OUTPUT (MBH)							HP	VOLTS	PH	
GUH-1	30	24.6	456	50	82	1/2	4	4	1/10	120	1	REZNR/ MODEL UDAS 30

- NOTES:**
1. PROVIDE TOTALLY ENCLOSED FAN MOTOR, FAN GUARD, UNIT HANGER KIT & 120 VOLT WALL MOUNTED THERMOSTAT.
 2. NATURAL GAS FIRED UNIT HEATERS SHALL BE SEPARATED COMBUSTION TYPE WITH 316 STAINLESS STEEL HEAT EXCHANGER.
 3. INCLUDE HORIZONTAL COMBUSTION AIR/VENT KIT INCLUDING CONCENTRIC ADAPTER & VENT CAP.
 4. MOUNTING HEIGHT 7 FT AFF OR IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION
GENERATOR BUILDING - PLAN
DETAIL, SCHEDULES & NOTES
HVAC

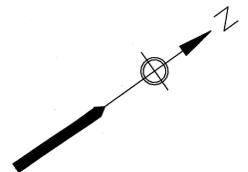
PROJECT NO: 60303170
CAD DWG FILE: 01 M-101
DESIGNED BY: A. CASAVANT
DRAWN BY: M. BENSON
DEPT CHECK: C. GALLIGAN
PROJ CHECK: T. PAREDE
DATE: FEB 2015
SCALE: AS NOTED

M-101

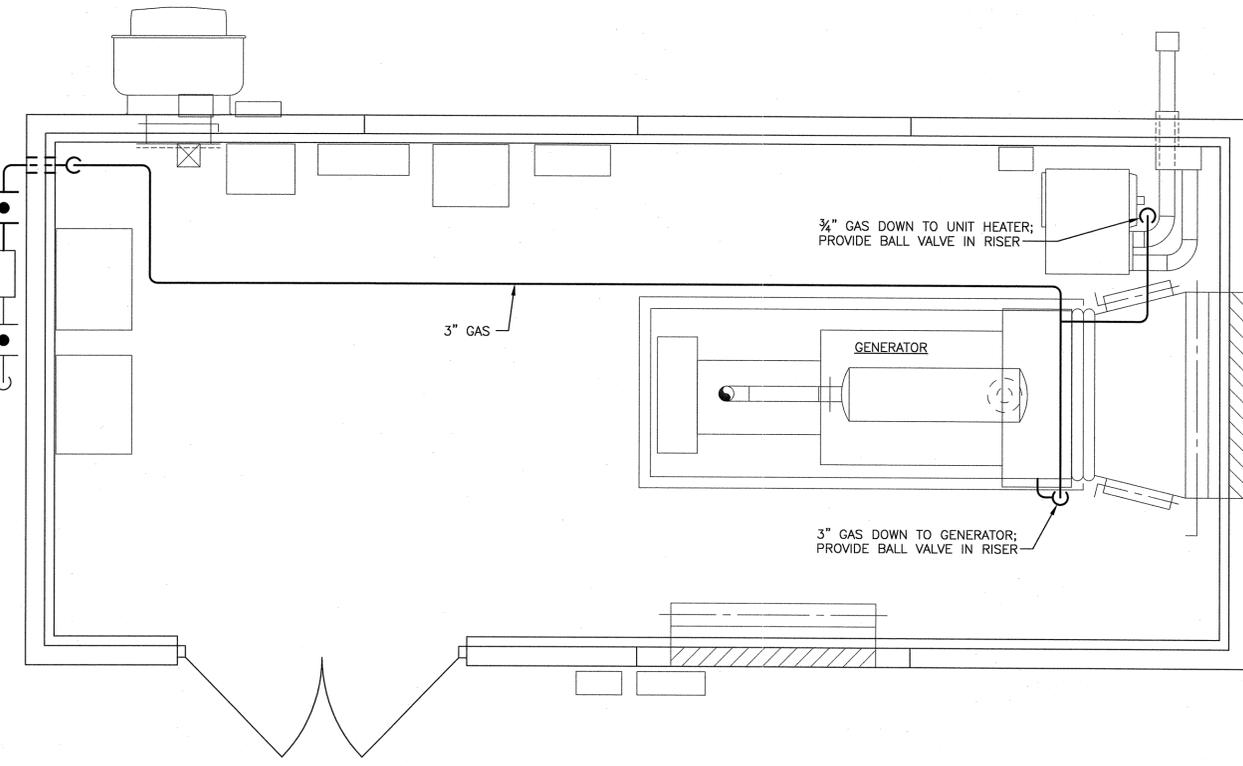
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ANSI D - 17-Feb-15



CONTRACTOR
 GAS UTILITY
 GAS METER/REGULATOR
 BY GAS UTILITY
 1419 CFH
 10 IN. W.C. OUTLET PRESSURE
 SEE CIVIL DRAWINGS
 FOR CONTINUATION



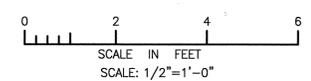
PLAN
 SCALE: 1/2"=1'-0"

NATURAL GAS PIPING SPECIFICATIONS

- ALL MATERIAL, INSTALLATION, INSPECTION, TESTING AND PURGING SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS FUEL GAS CODE AND THE ADDITIONS SPECIFIED HEREINBELOW. SUBMIT MATERIALS PRODUCT DATA FOR APPROVAL PRIOR TO PURCHASING.
- PIPE: ASTM A53, BLACK STEEL, TYPE E, GRADE B, SCHEDULE 40, THREADED ENDS FOR PIPE 2 INCH AND SMALLER, BUTT WELD BEVEL END FOR PIPE 2-1/2 INCH AND LARGER.
- THREADED FITTINGS: ASME B16.3, BLACK MALLEABLE IRON. UNIONS SHALL BE ASME B16.39, BLACK MALLEABLE IRON. PROVIDE ANTI-SEIZE SEALANT PASTE OR TAPE OF POLYTETRAFLUOROETHYLENE (PTFE).
- BUTT-WELDING FITTINGS: ASME B16.9, WITH BACKING RINGS OF COMPATIBLE MATERIAL. WELDING FILLER METAL SHALL COMPLY WITH ASME B31.8.
- FLANGES AND FLANGED FITTINGS: ASME B16.5 STEEL FLANGES OR CONVOLUTED STEEL FLANGES CONFORMING TO ASME BPVC SEC VIII D1. FLANGE FACES SHALL HAVE INTEGRAL GROOVES OF RECTANGULAR CROSS SECTIONS WHICH AFFORD CONTAINMENT FOR SELF-ENERGIZING GASKET MATERIAL. GASKETS SHALL BE FLUORINATED ELASTOMER, COMPATIBLE WITH FLANGE FACES. BOLTS, NUTS AND WASHERS SHALL BE SERIES 300 STAINLESS STEEL.
- SHUTOFF VALVES 2 INCH AND SMALLER: ASME B16.33, STEEL BODY BALL VALVE, FULL PORT PATTERN, REINFORCED PTFE SEALS, THREADED ENDS, AND PTFE SEAT.
- SHUTOFF VALVES 2-1/2 INCH AND LARGER: ASME B16.38, STEEL BODY BALL VALVE, FLANGED ENDS, PTFE SEATS.
- PIPE HANGERS: MSS SP-58, TYPE 1 HANGERS WITH ADJUSTABLE TYPE RODS. ATTACH TO CONCRETE WITH DRILLED EXPANSION ANCHOR. HANGERS, ANCHORS, RODS AND FASTENERS SHALL BE SERIES 300 STAINLESS STEEL.
- PAINT ALL PIPING. COLOR SHALL BE YELLOW. SURFACE PREPARATION: COMPLY WITH SSPC-SP6 COMMERCIAL BLAST CLEANING. FIRST COAT: 4.0 TO 6.0 DRY FILM THICKNESS, "TENEMEC SERIES L69 HI-BUILD EPOXOLINE OR L140 POTA-POX PLUS" POLYAMIDAMINE EPOXY. SECOND COAT: 4.0 TO 6.0 DRY FILM THICKNESS, "TENEMEC SERIES L69 HI-BUILD EPOXOLINE" POLYAMIDAMINE EPOXY. THIRD COAT: 4.0 TO 6.0 DRY FILM THICKNESS, "TENEMEC SERIES L69 HI-BUILD EPOXOLINE" POLYAMIDAMINE EPOXY.

LEGEND

- BALL VALVE
- ELBOW DOWN
- ABOVE GROUND PIPING
- BURIED PIPING
- TRADE LIMIT



MARK	DATE	MADE BY	CHECKED	DESCRIPTION

TOWN OF PLYMOUTH, MA

SAMOSSET STREET SEWER SYSTEM EXPANSION

GENERATOR BUILDING

PLAN AND SPECIFICATIONS

PLUMBING

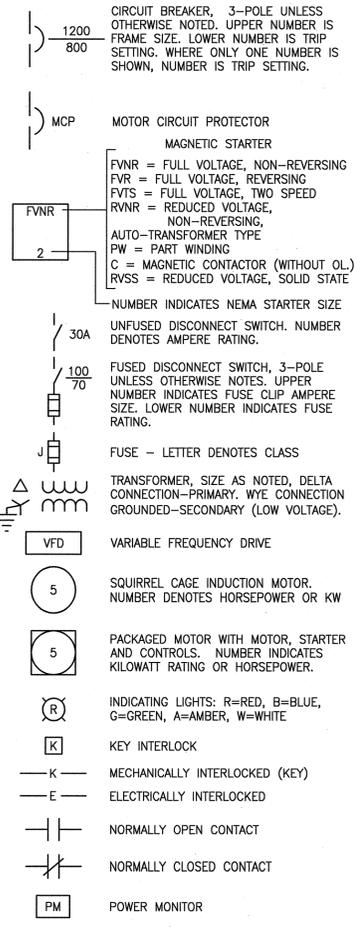
PROJECT NO:	60303170
CAD DWG FILE:	01 P-101
DESIGNED BY:	A. GREEN
DRAWN BY:	M. BENSON
DEPT CHECK:	C. GALLIGAN
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

P-101

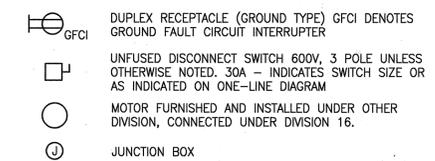
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 PLOT DATE: Wednesday, February 18, 2015 2:41:38 PM

ANSI D - 18-Feb-15

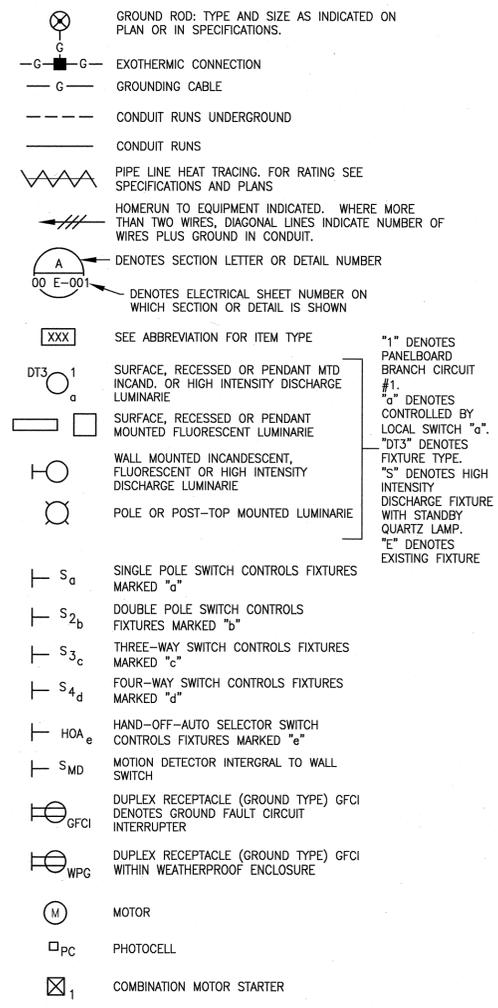
DIAGRAMS



PLANS



PLANS



ABBREVIATIONS

- AFB ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AL ALARM
- CLF CURRENT LIMITING FUSE
- CLS CENTRIFUGAL LIMIT SWITCH
- CPT CONTROL POWER TRANSFORMER
- CR CONTROL RELAY
- CS CONTROL SWITCH
- EHH ELECTRICAL HAND HOLE
- EL ELEVATION
- EMH ELECTRICAL MANHOLE
- ES EMERGENCY STOP SWITCH (MAINTAINED CONTACT) (PROVIDE DEVICE THAT CAN BE LOCKED IN THE OFF POSITION)
- ETM ELAPSE TIME METER
- FE FLOW ELEMENT
- FC FLOW CONTROLLER
- FIT FLOW INDICATING TRANSMITTER
- FOH FAN-OFF-HEATER
- FSR FORWARD-STOP-REVERSE
- FOC FIBER OPTIC CABLE
- GFP GROUND FAULT PROTECTION
- GFCI GROUND FAULT CIRCUIT INTERRUPTER
- G GROUND
- HA HAND-AUTOMATIC
- HH HAND HOLE
- HOA HAND-OFF-AUTOMATIC
- HP HORSEPOWER
- HTR MOTOR HEATER
- ISB INTRINSICALLY SAFE BARRIER
- KP KEY PAD
- KS KEY SWITCH
- KW KILOWATT
- LCS LOCAL CONTROL STATION
- LE LEVEL ELEMENT
- LOR LOCAL-OFF-REMOTE
- LR LOCAL-REMOTE
- LS LIMIT SWITCH, LEVEL SWITCH
- LSLL LEVEL SWITCH LOW LOW
- LSHH LEVEL SWITCH HIGH HIGH
- MB MAIN BREAKER
- MH MANHOLE
- MCP MOTOR CIRCUIT PROTECTOR
- MOV MOTOR OPERATED VALVE
- NIR NOT IN REMOTE

ABBREVIATIONS

- OL'S MOTOR OVERLOADS
- OO ON-OFF
- OSC OPEN-STOP-CLOSE
- PLC PROCESS LOGIC CONTROLLER
- ROA RUN-OFF-AUTOMATIC
- ROR RUN-OFF-REMOTE
- SEL SELECTOR SWITCH
- SF SLOW-FAST
- SFS SLOW-FAST-STOP
- SPD SURGE PROTECTIVE DEVICE
- SS START-STOP
- SV SOLENOID VALVE
- SW SWITCH
- T THERMOSTAT
- TC TIMED CLOSE
- TD TIME DELAY RELAY
- TI TIMER
- TQ TORQUE ALARM SWITCH
- TR TRANSFORMER
- TS TEMPERATURE SENSOR
- TYP TYPICAL
- VFD VARIABLE FREQUENCY DRIVE
- W DENOTES WATERTIGHT EQUIPMENT
- WP DENOTES WEATHERPROOF EQUIPMENT
- WPG WEATHERPROOF GFCI RECEPTACLE
- XFMR TRANSFORMER
- XP DENOTES EXPLOSION PROOF EQUIPMENT
- XST EXISTING
- LIT LEVEL INSTRUMENT TRANSMITTER
- FE FLOW ELEMENT
- FIT FLOW INDICATING TRANSMITTER

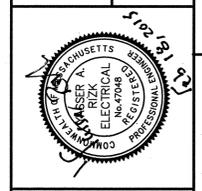
GENERAL NOTES

1. CONDUIT INSTALLATIONS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
2. SWITCHES SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
3. SURFACE MOUNTED PANELS AND PANEL BOARDS, SHALL BE MOUNTED TO MAINTAIN A 1/4" AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
4. FOR EXPLANATION OF INSTRUMENTATION SYMBOLS SHOWN ON ELECTRICAL DRAWINGS, SEE INSTRUMENTATION LEGEND AND NOTES ON SHEET 00 DI-001.
6. ITEMS SHALL BE PROVIDED WITH NEMA ENCLOSURE AS INDICATED ON THE AREA CLASSIFICATION SCHEDULE. SEE SHEET E-102.

NO.	DATE	MARK	MADE BY	CHECKED	DESCRIPTION

AECOM

AECOM TECHNICAL SERVICES, INC.
 100 WATER STREET, SUITE 200
 CHICAGO, MA 01824
 PHONE (978) 906-2100



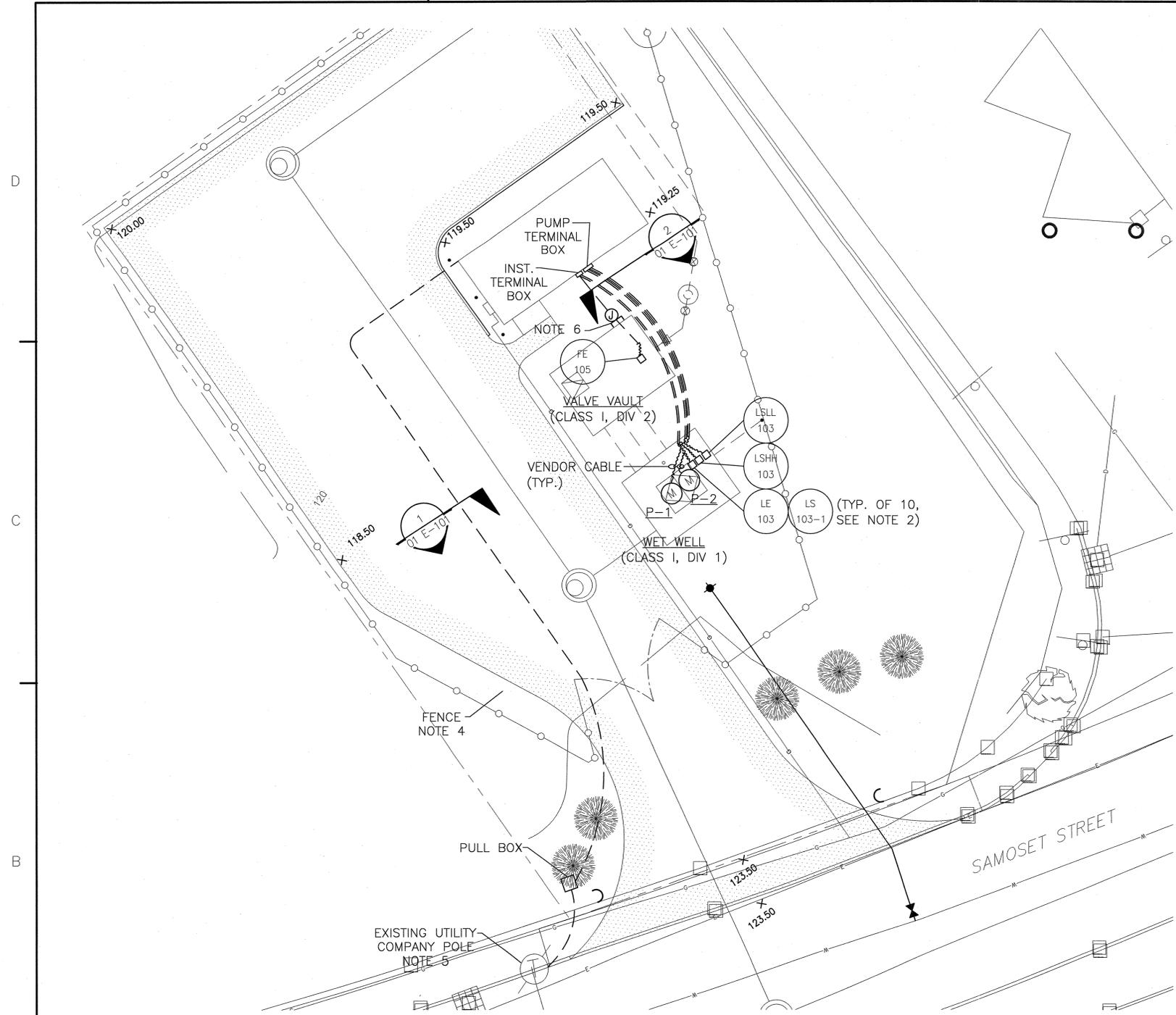
TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION - PHASE I
SAMOSET STREET PUMPING STATION
LEGEND, SYMBOLS & GENERAL NOTES
 ELECTRICAL

PROJECT NO:	60303170
CAD DWG FILE:	00 E-001
DESIGNED BY:	L. BRANDELL
DRAWN BY:	D. KOPPELMANN
DEPT CHECK:	Y. RIZK/P. GUINEY
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

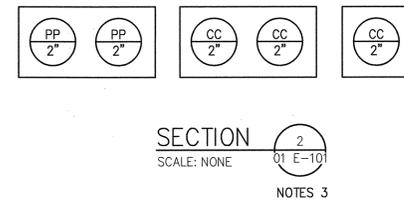
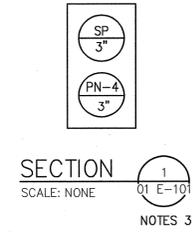
E-001

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\E-01 E-101.DWG
 LAST UPDATE: Wednesday, February 18, 2015 1:49:42 PM
 PLOT DATE: Wednesday, February 18, 2015 2:50:02 PM

ANSI D - 18-Feb-15



ELECTRICAL SITE PLAN
 SCALE: 1"=10'



NOTES:

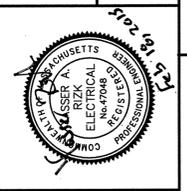
1. FOR CONDUIT AND WIRE SCHEDULE SEE SHEET E-104.
2. MULTITRODE DUOPROBE - LEVEL TRANSDUCER AND 10 SENSORS.
3. SEE DUCT BANK SECTIONS ON SHEET E-501.
4. SEE FENCE GROUNDING DETAIL ON SHEET E-501.
5. SEE SERVICE POLE DETAIL ON SHEET E-501.
6. SEE PEDESTAL MOUNTED DEVICE DETAIL ON SHEET E-501.



MARK	DATE	MADE BY	CHECKED	DESCRIPTION

AECOM TECHNICAL SERVICES, INC.
 1000 WEST 10TH AVENUE
 CHICAGO, IL 60606
 PHONE (773) 906-2100

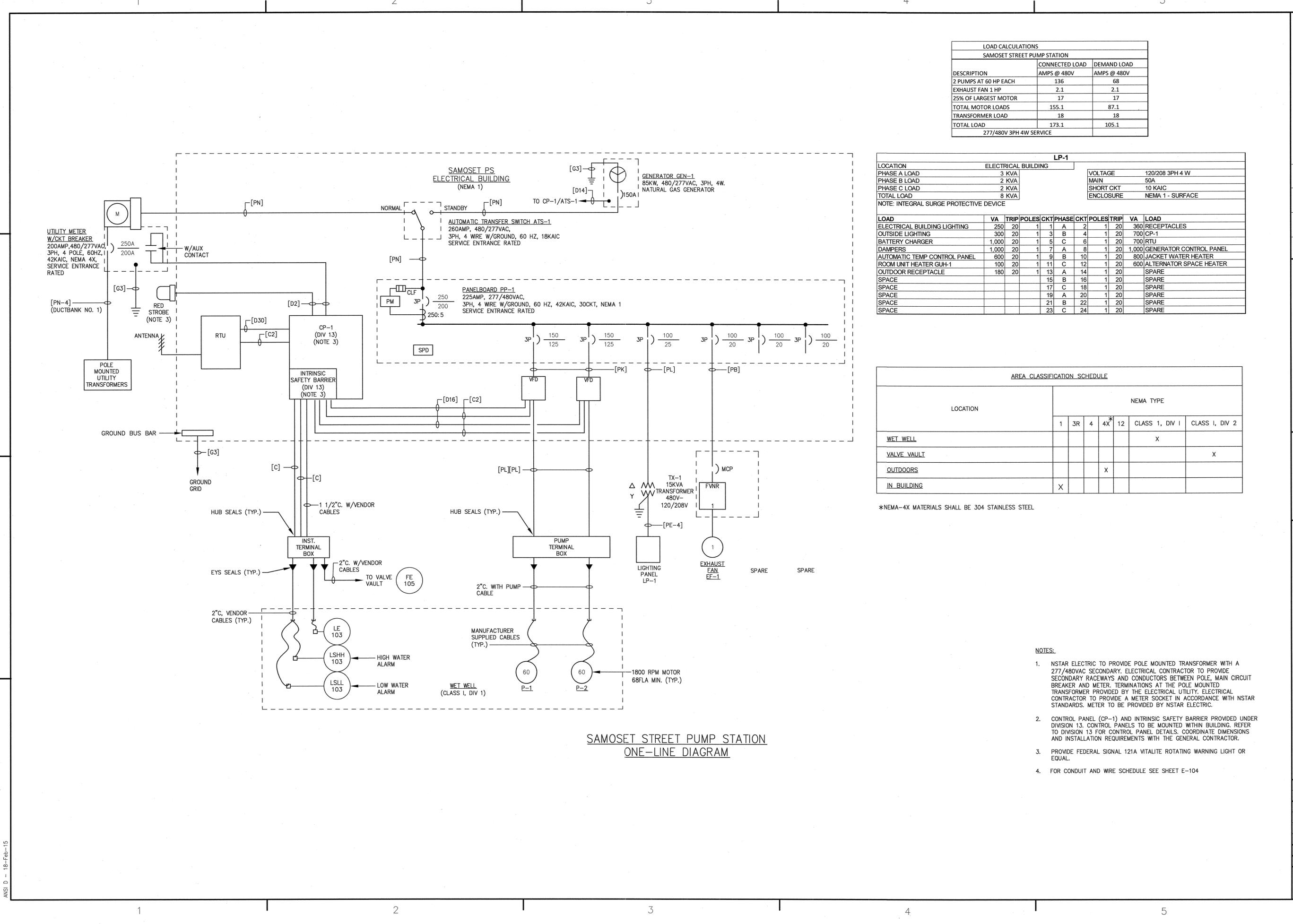
AECOM



TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION - PHASE I
SAMOSET STREET PUMPING STATION
ELECTRICAL SITE PLAN
 ELECTRICAL

PROJECT NO:	60303170
CAD DWG FILE:	01 E-101
DESIGNED BY:	I. BRANDELL
DRAWN BY:	D. KOPPELMANN
DEPT CHECK:	Y. RIZK/P. GUINEY
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED
E-101	

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\01 E-001.DWG
 LAST UPDATE: Wednesday, February 18, 2015 2:42:30 PM
 PLOT DATE: Wednesday, February 18, 2015 2:42:44 PM



**SAMOSET STREET PUMP STATION
ONE-LINE DIAGRAM**

LOAD CALCULATIONS SAMOSET STREET PUMP STATION		
DESCRIPTION	CONNECTED LOAD AMPS @ 480V	DEMAND LOAD AMPS @ 480V
2 PUMPS AT 60 HP EACH	136	68
EXHAUST FAN 1 HP	2.1	2.1
25% OF LARGEST MOTOR	17	17
TOTAL MOTOR LOADS	155.1	87.1
TRANSFORMER LOAD	18	18
TOTAL LOAD	173.1	105.1
277/480V 3PH 4W SERVICE		

LP-1		
LOCATION	ELECTRICAL BUILDING	VOLTAGE
PHASE A LOAD	3 KVA	120/208 3PH 4 W
PHASE B LOAD	2 KVA	MAIN 50A
PHASE C LOAD	2 KVA	SHORT CKT 10 KAIC
TOTAL LOAD	8 KVA	ENCLOSURE NEMA 1 - SURFACE

NOTE: INTEGRAL SURGE PROTECTIVE DEVICE

LOAD	VA	TRIP	POLES	CKT	PHASE	CT	POLES	TRIP	VA	LOAD
ELECTRICAL BUILDING LIGHTING	250	20	1	1	A	2	1	20	360	RECEPTACLES
OUTSIDE LIGHTING	300	20	1	3	B	4	1	20	700	CP-1
BATTERY CHARGER	1,000	20	1	5	C	6	1	20	700	RTU
DAMPERS	1,000	20	1	7	A	8	1	20	1,000	GENERATOR CONTROL PANEL
AUTOMATIC TEMP CONTROL PANEL	600	20	1	9	B	10	1	20	800	JACKET WATER HEATER
ROOM UNIT HEATER GUH-1	100	20	1	11	C	12	1	20	600	ALTERNATOR SPACE HEATER
OUTDOOR RECEPTACLE	180	20	1	13	A	14	1	20		SPARE
SPACE				15	B	16	1	20		SPARE
SPACE				17	C	18	1	20		SPARE
SPACE				19	A	20	1	20		SPARE
SPACE				21	B	22	1	20		SPARE
SPACE				23	C	24	1	20		SPARE

LOCATION	AREA CLASSIFICATION SCHEDULE						CLASS 1, DIV 1	CLASS I, DIV 2
	1	3R	4	4X*	12			
WET WELL							X	
VALVE VAULT								X
OUTDOORS					X			
IN BUILDING	X							

*NEMA-4X MATERIALS SHALL BE 304 STAINLESS STEEL

- NOTES:
1. NSTAR ELECTRIC TO PROVIDE POLE MOUNTED TRANSFORMER WITH A 277/480VAC SECONDARY. ELECTRICAL CONTRACTOR TO PROVIDE SECONDARY RACEWAYS AND CONDUCTORS BETWEEN POLE, MAIN CIRCUIT BREAKER AND METER. TERMINATIONS AT THE POLE MOUNTED TRANSFORMER PROVIDED BY THE ELECTRICAL UTILITY. ELECTRICAL CONTRACTOR TO PROVIDE A METER SOCKET IN ACCORDANCE WITH NSTAR STANDARDS. METER TO BE PROVIDED BY NSTAR ELECTRIC.
 2. CONTROL PANEL (CP-1) AND INTRINSIC SAFETY BARRIER PROVIDED UNDER DIVISION 13. CONTROL PANELS TO BE MOUNTED WITHIN BUILDING. REFER TO DIVISION 13 FOR CONTROL PANEL DETAILS. COORDINATE DIMENSIONS AND INSTALLATION REQUIREMENTS WITH THE GENERAL CONTRACTOR.
 3. PROVIDE FEDERAL SIGNAL 121A VITALITE ROTATING WARNING LIGHT OR EQUAL.
 4. FOR CONDUIT AND WIRE SCHEDULE SEE SHEET E-104

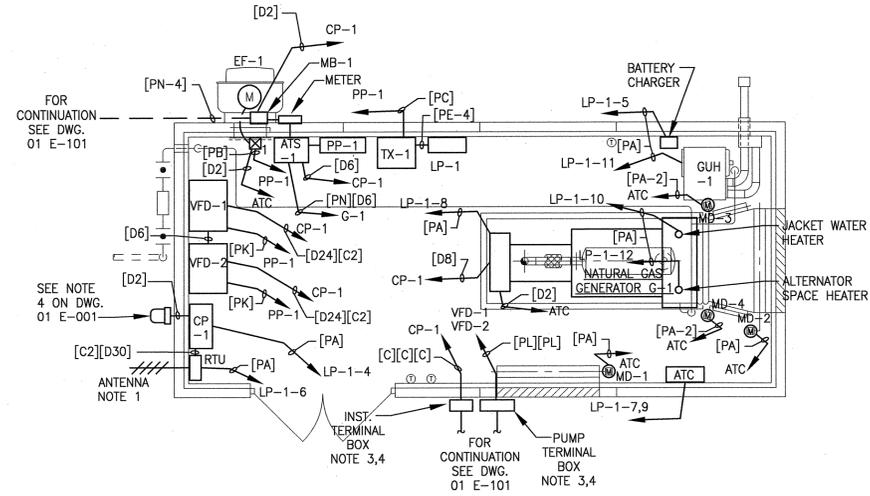
TOWN OF PLYMOUTH, MA
 SAMOSET STREET SEWER SYSTEM EXPANSION - PHASE I
 SAMOSET STREET PUMP STATION
 SINGLE LINE DIAGRAM
 ELECTRICAL

AECOM
 AECOM TECHNICAL SERVICES, INC.
 100 STATE STREET, SUITE 200
 CHILMARK, MA 01924
 PHONE (978) 962-2100

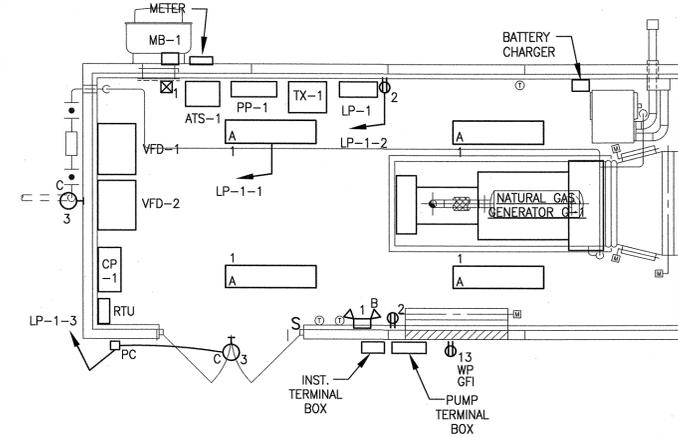
MARK	DATE	MADE BY	CHECKED	DESCRIPTION

PROJECT NO: 60303170
 CAD DWG FILE: 01 E-001
 DESIGNED BY: I. BRANDELL
 DRAWN BY: D. KOPPELMANN
 DEPT CHECK: Y. RIZK/P. GUINEY
 PROJ CHECK: T. PARECE
 DATE: FEB 2015
 SCALE: AS NOTED

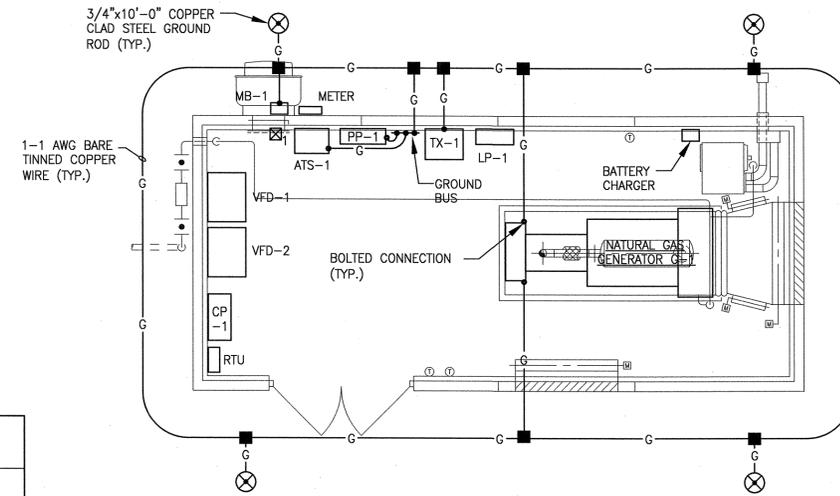
E-102



SAMOSET PUMP STATION - ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"



SAMOSET PUMP STATION - LIGHTING AND RECEPTACLE PLAN
SCALE: 1/4" = 1'-0"



SAMOSET PUMP STATION - GROUNDING PLAN
SCALE: 1/4" = 1'-0"

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER CATALOG NO.	DESCRIPTION	LAMPS			MOUNTING	REMARKS
			VOLTS	NO.	TYPE		
A	COLUMBIA # KL4-232-U-EU-KLW-G4 OR EQUAL	4' PREMIUM INDUSTRIAL FLUORESCENT FIXTURE, 10% UPLIGHT, BAKED WHITE ENAMEL FINISH	120	2	F32T8	SURFACE	(1) ELECTRONIC BALLAST PROVIDE WIRE GUARD
B	DUAL LITE # EZ-2D OR EQUAL	WALL MOUNTED EMERGENCY LIGHT	120	2	5.4W	WALL	
C	HUBBELL WCC100S-120 OR EQUAL	HIGH PRESSURE SODIUM ARCHITECTURAL WALLPAK, FULL CUT OFF, DIE CAST ALUMINUM HOUSING, BRONZE FINISH CLEAR TEMPERED GLASS LENSE	120	1	100HPS	WALL	AS NOTED

NOTES:

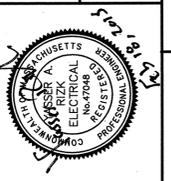
1. TEST RTU WITH ANTENNA MOUNTED INSIDE BUILDING. MOUNT OUTSIDE ONLY IF REQUIRED.
2. FOR CONDUIT AND WIRE SCHEDULE SEE SHEET E-104.
3. PROVIDE TERMINAL BOXES WITH BACK PANEL AND TERMINAL STRIPS. INITIAL INSTALLATION SHALL PROVIDE CABLE DIRECT TO CP-1 AND VFD'S - NO TERMINATIONS IN BOXES.
4. PROVIDE EYS SEALS ON CONDUIT BETWEEN WETWELL/VAULT AND TERMINAL BOXES.



MARK	DATE	MADE BY	CHECKED	DESCRIPTION

AECOM TECHNICAL SERVICES, INC.
CHILMARK, MA 01924
PHONE (978) 905-2100

AECOM

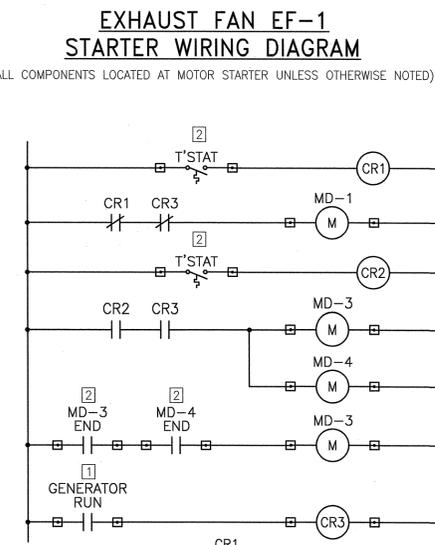
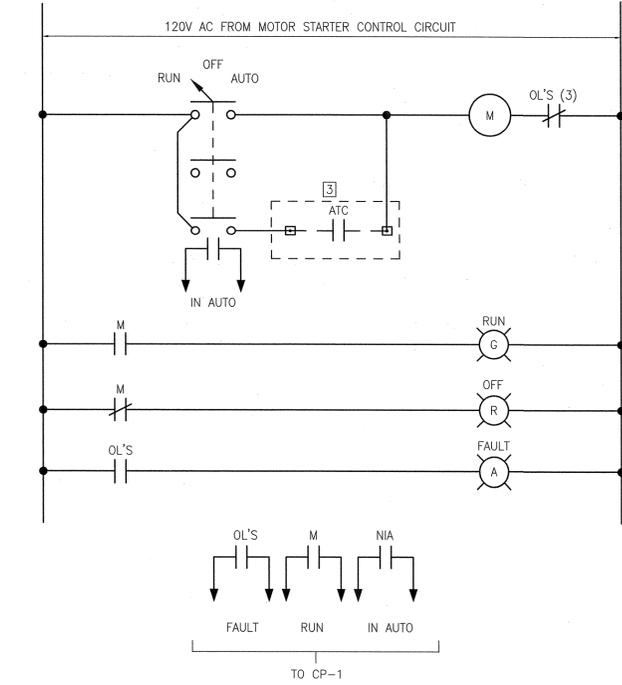
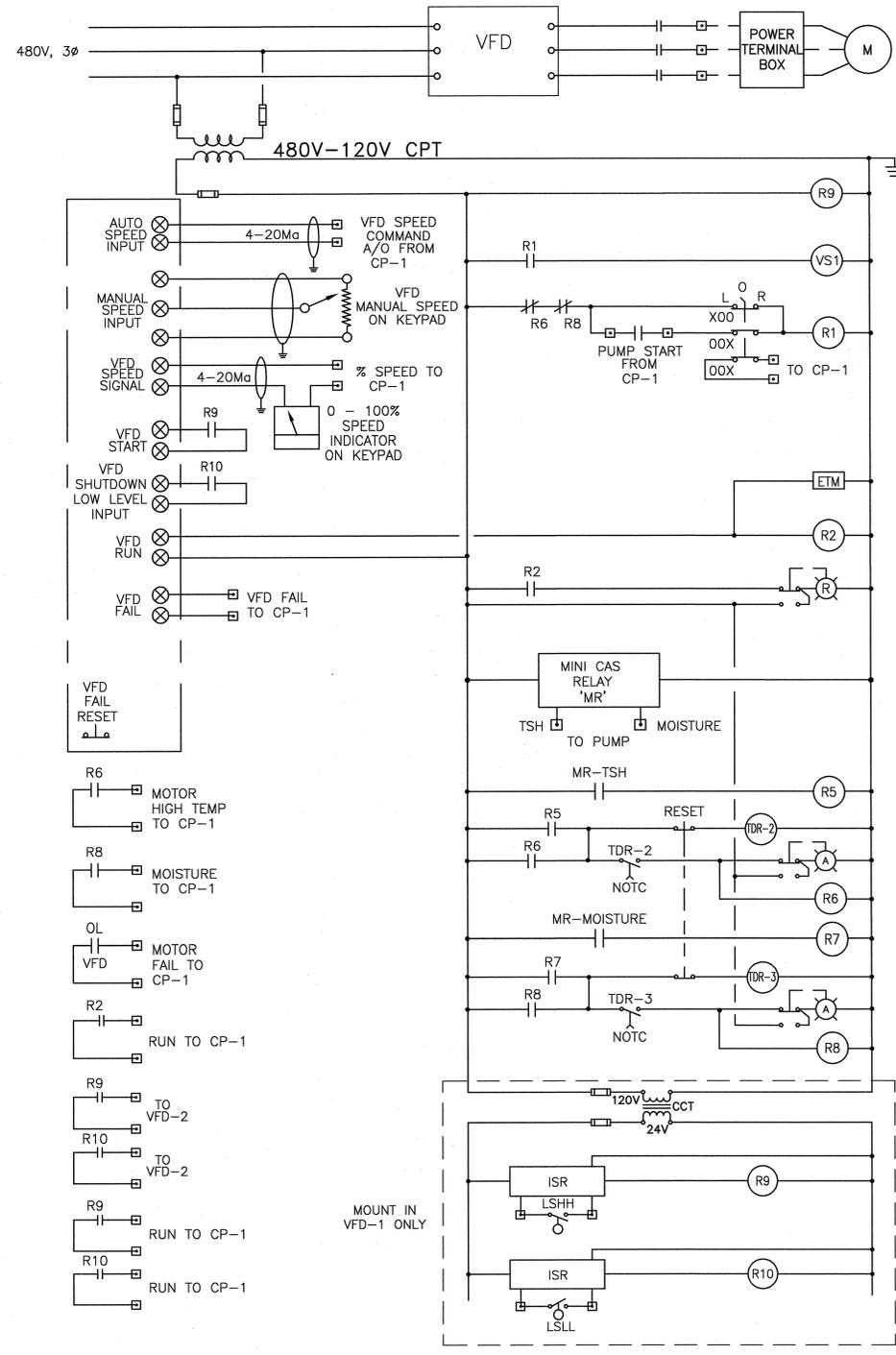


TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION - PHASE I
SAMOSET STREET PUMPING STATION ELECTRICAL PLANS
ELECTRICAL

PROJECT NO: 60303170
CAD DWG FILE: 01 E-102
DESIGNED BY: I BRANDELL
DRAWN BY: D. KOPPELMANN
DEPT CHECK: Y. RIZK/P. GUINEY
PROJ CHECK: T. PARECE
DATE: FEB 2015
SCALE: AS NOTED

E-103
SHEET -- OF --

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE I\SHEETS\E-102.DWG
LAST UPDATE: Wednesday, February 18, 2015 2:40:58 PM
PLOT DATE: Wednesday, February 18, 2015 2:41:12 PM
ANSI D - 18-Feb-15



CONDUIT AND WIRE SCHEDULE

- INSTRUMENTATION WIRING:**
- [C] 1" C, MANUFACTURER PROVIDED CABLE
 - [CC] 2" C, MANUFACTURER PROVIDED CABLE
 - [C1] 3/4" C, STP 16 AWG
 - [C2] 3/4" C, (2) STP 16 AWG

- CONTROL WIRING:**
- [D2] 3/4" C, 2-14 AWG, 1-14 AWG (G)
 - [D4] 3/4" C, 4-14 AWG, 1-14 AWG (G)
 - [D6] 3/4" C, 6-14 AWG, 1-14 AWG (G)
 - [D8] 3/4" C, 8-14 AWG, 1-14 AWG (G)
 - [D10] 3/4" C, 10-14 AWG, 1-14 AWG (G)
 - [D12] 3/4" C, 12-14 AWG, 1-14 AWG (G)
 - [D14] 3/4" C, 14-14 AWG, 1-14 AWG (G)
 - [D16] 3/4" C, 16-14 AWG, 1-14 AWG (G)
 - [D18] 3/4" C, 18-14 AWG, 1-14 AWG (G)
 - [D20] 1" C, 20-14 AWG, 1-14 AWG (G)
 - [D24] 1" C, 24-14 AWG, 1-14 AWG (G)

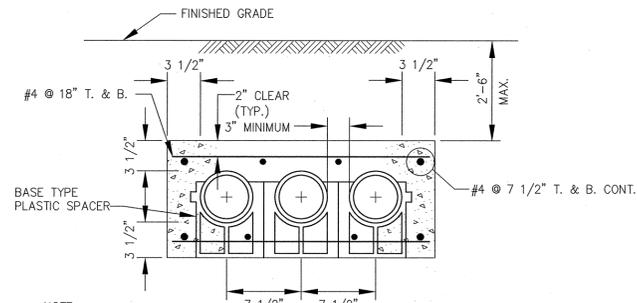
- POWER WIRING:**
- [PP] 2" C, MANUFACTURER PROVIDED CABLE
 - [PA] 3/4" C, 2-12 AWG, 1-12 AWG (G)
 - [PA-2] 3/4" C, 2-12 AWG, 1-12 AWG (G), 2#14 AWG
 - [PA-4] 3/4" C, 4-12 AWG, 1-12 AWG (G)
 - [PB] 3/4" C, 3-12 AWG, 1-12 AWG (G)
 - [PC] 3/4" C, 3-10 AWG, 1-10 AWG (G)
 - [PD] 3/4" C, 3-8 AWG, 1-10 AWG (G)
 - [PE] 3/4" C, 3-6 AWG, 1-10 AWG (G)
 - [PE-4] 1 1/2" C, 4-8 AWG, 1-10 AWG (G)
 - [PJ-4] 1 1/2" C, 3-1 AWG, 1 AWG (N), 1-8 AWG (G)
 - [PK] 1 1/2" C, 3-1 AWG, 1-6 AWG (G)
 - [PL] 1 1/2" C, 3-1/0 AWG, 1-6 AWG (G)
 - [PN] 2" C, 3-3/0 AWG, 1-6 AWG (G)
 - [PN-4] 2" C, 3-3/0 AWG, 1-3/0 AWG (N)

- GROUND WIRING:**
- [G1] 3/4" C, 1-6 AWG (G)
 - [G2] 1" C, 1-1/0 AWG (G)
 - [G3] 1" C, 1-2/0 AWG (G)
 - [G4] 1" C, 1-3/0 AWG (G)

NOTE: ALL G SERIES WIRING SHALL BE CONNECTED TO GROUNDING BUS BAR UNLESS OTHERWISE INDICATED. INSTALL IN PVC CONDUIT.

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\01 E-601.DWG
LAST UPDATE: Wednesday, February 18, 2015 2:39:30 PM
PLOT DATE: Wednesday, February 18, 2015 2:40:39 PM
ANSI D - 18-Feb-15

TOWN OF PLYMOUTH, MA		REVISIONS	
SAMOSET STREET SEWER SYSTEM EXPANSION - PHASE I		DATE	MADE BY
SAMOSET STREET PUMPING STATION		DATE	MADE BY
WIRING DIAGRAMS SCHEDULES		DATE	MADE BY
ELECTRICAL		DATE	MADE BY
PROJECT NO: 60303170		DATE	MADE BY
CAD DWG FILE: 01 E-601		DATE	MADE BY
DESIGNED BY: L. BRANDELL		DATE	MADE BY
DRAWN BY: D. KOPPELMANN		DATE	MADE BY
DEPT CHECK: Y. RIZK/P. GUINEY		DATE	MADE BY
PROJ CHECK: T. PARECE		DATE	MADE BY
DATE: FEB 2015		DATE	MADE BY
SCALE: AS NOTED		DATE	MADE BY
E-104		DATE	MADE BY
SHEET -- OF --		DATE	MADE BY

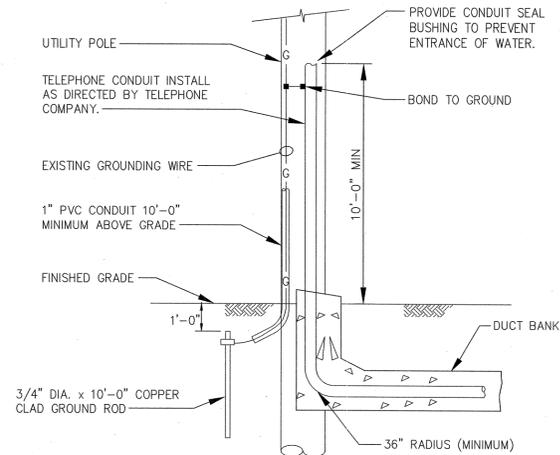


NOTE:

BACKFILL DUCT BANK IN LAYERS AND MANUALLY TAMP OR "PUDDLE" CONCRETE FILL. PROVIDE YELLOW DUCT BANK MARKER TAPES, READING "CAUTION - ELECTRICAL LINES BELOW", OVER ENTIRE LENGTH OF DUCTLINE. LOCATE TAPES 12 INCHES BELOW GRADE. PROVIDE A TAPE FOR EVERY 12 INCHES OF WIDTH OF DUCTLINE.

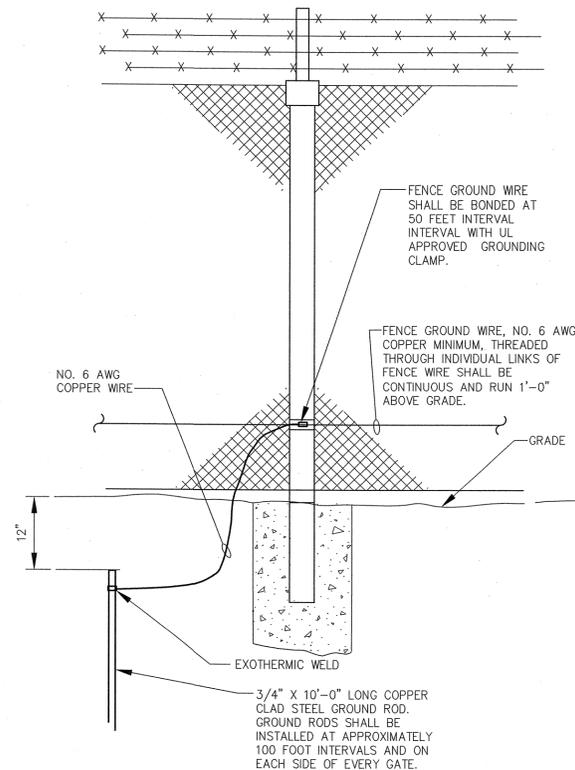
**SINGLE LAYER
DUCT BANK SECTION**

NTS



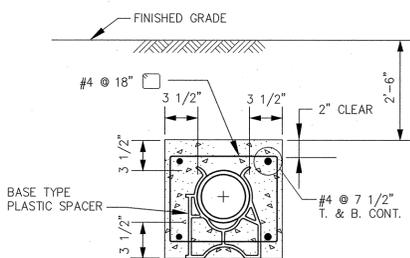
**SERVICE POLE WITH
CONCRETE DUCT BANK**

NTS



GROUNDING FOR CHAIN LINK FENCE

NTS

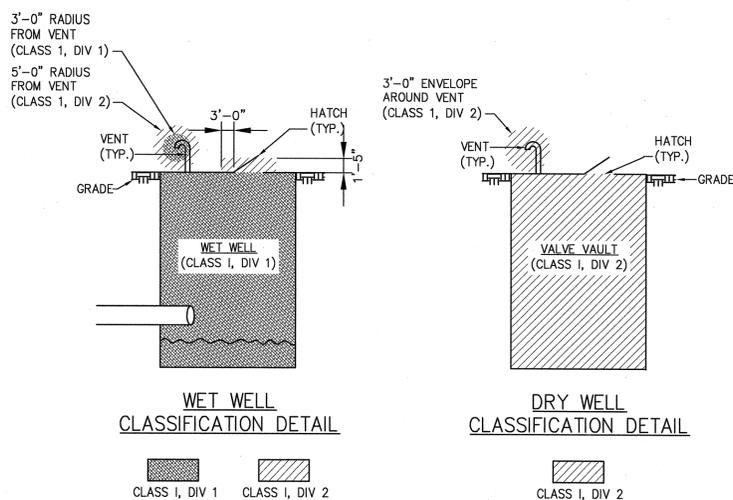


NOTE:

BACKFILL DUCT BANK IN LAYERS AND MANUALLY TAMP OR "PUDDLE" CONCRETE FILL. PROVIDE YELLOW DUCT BANK MARKER TAPES, READING "CAUTION - ELECTRICAL LINES BELOW", OVER ENTIRE LENGTH OF DUCTLINE. LOCATE TAPES 12 INCHES BELOW GRADE. PROVIDE A TAPE FOR EVERY 12 INCHES OF WIDTH OF DUCTLINE.

**SINGLE CONDUIT
DUCTBANK SECTION**

NTS

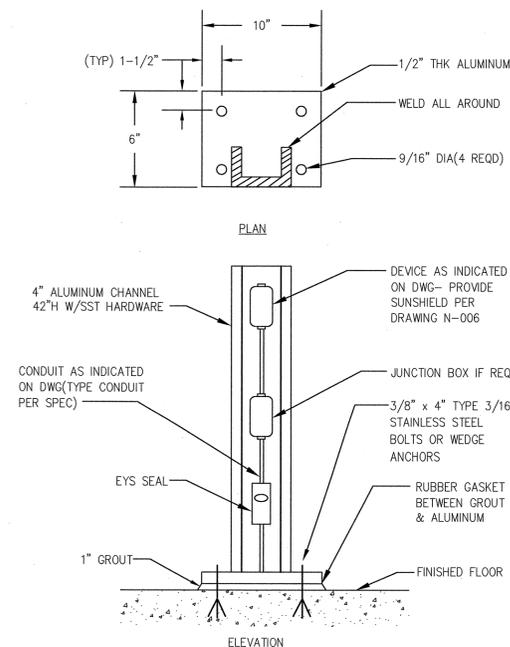


**WET WELL
CLASSIFICATION DETAIL**

CLASS 1, DIV 1 CLASS 1, DIV 2

**DRY WELL
CLASSIFICATION DETAIL**

CLASS 1, DIV 2



NOTES:

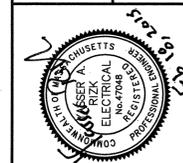
1. USE 316 SST MOUNTING HARDWARE

PEDESTAL MOUNTED DEVICE DETAIL

NTS

AECOM TECHNICAL SERVICES, INC.
CHILMARK, MA 01924
PHONE (978) 906-2100

AECOM



TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION - PHASE I
SAMOSET STREET PUMPING STATION
DETAILS
ELECTRICAL

PROJECT NO: 60303170
CAD DWG FILE: 99 E-001
DESIGNED BY: I. BRANDELL
DRAWN BY: D. KOPPELMANN
DEPT CHECK: Y. RIZK/P. GUINEY
PROJ CHECK: T. PARECE
DATE: FEB 2015
SCALE: AS NOTED

E-501

INSTRUMENT TYPE IDENTIFICATION LETTERS

THIS TABLE APPLIES ONLY TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS	ANALOG	ALARM		
B	BURNER FLAME		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL OR DIGITAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAGING (DIMENSIONAL)		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE OR INPUT		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY				MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY	RELIEF	RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY			SWITCH
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	USER'S CHOICE			RELAY OR COMPUTE	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

MISCELLANEOUS ABBREVIATIONS

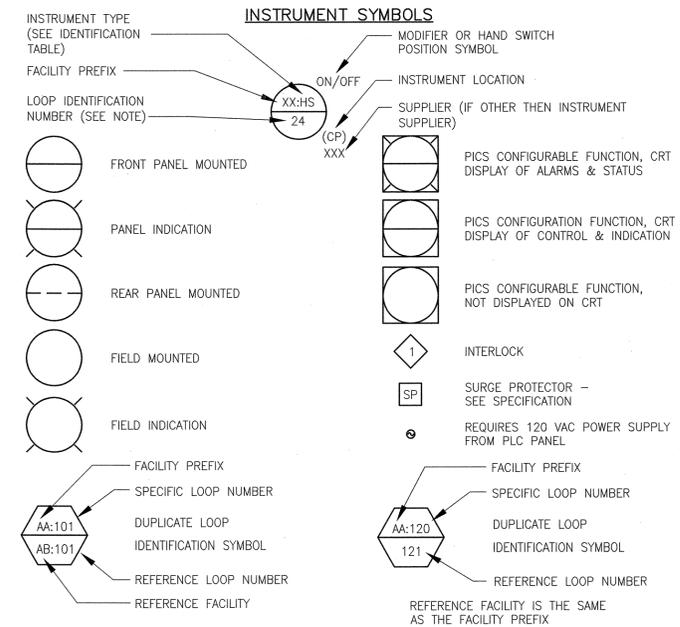
I/P CURRENT TO PNEUMATIC CONVERTER	ATS AUTOMATIC TRANSFER SWITCH
E/I VOLTAGE TO CURRENT CONVERTER	DO DISSOLVED OXYGEN
Σ ADD OR TOTALIZE	H2S HYDROGEN SULFIDE
√ SQUARE ROOT	O2 OXYGEN
X MULTIPLY	pH HYDROGEN ION CONCENTRATION
∅ DIVIDE	LP LOCAL PANEL
> HIGH SELECT	VFD VARIABLE FREQUENCY DRIVE
MV MEASURED VARIABLE	△ DIFFERENCE
< LOW SELECT	I/O INPUT/OUTPUT
S.P. SET POINT	ER ELECTRICAL ROOM
PLC PROGRAMMABLE LOGIC CONTROLLER	LEL LOWER EXPLOSIVE LIMIT
f(x) CHARACTERISTIC	DW DEWATERING
P PROPORTIONAL CONTROL MODE	OC ODOR CONTROL
D DERIVATIVE	RWW RAW WASTE WATER
∫ INTEGRAL CONTROL MODE	HMI HUMAN MACHINE INTERFACE

SYMBOLS

	HYDRAULIC CONTROL LINES		ACCUMULATOR
	ELECTRIC INSTRUMENT LINES		DIFFUSER
	PNEUMATIC SIGNAL		STATIC MIXER
	PROCESS FLOW		TANK VENT
	CAPILLARY TUBING		UNION
	INTERNAL LINK SIGNAL		WEIR
	CONE CHECK VALVE		CYLINDER ACTUATOR
	BALL VALVE		DIAPHRAGM ACTUATOR WITH POSITIONER
	BALL CHECK VALVE		HAND OPERATOR
	SWING CHECK VALVE		HYDRAULIC OPERATOR
	BUTTERFLY VALVE, DAMPER, OR LOUVER		MOTOR OPERATOR
	PLUG VALVE		PNEUMATIC OPERATOR
	GATE VALVE		SOLENOID OPERATOR
	DIAPHRAGM VALVE		TERMINAL STRIP IN LOCAL PANEL FOR INTERFACE WITH COMPUTER/MUX
	GLOBE VALVE		FLOW RATE CONTROLLER
	RESTRAINED FLEXIBLE COUPLING		FLOW ELEMENT (VENTURI)
	FLOAT VALVE		INSERT FLOW ELEMENT (VENTURI)
	3-WAY MIX VALVE		MAGNETIC FLOWMETER
	3-WAY DIVERTER VALVE		ORIFICE PLATE
	3-WAY SOLENOID VALVE		PARSHALL FLUME
	4-WAY MIX VALVE		ROTAMETER
	4-WAY SOLENOID VALVE		ACOUSTIC OR DOPPLER INLINE FLOWMETER
	DUPLEX FILTER		"V" NOTCH WEIR
	ECCENTRIC REDUCER		CENTRIFUGAL PUMP
	FLEXIBLE HOSE		
	GRINDER		
	LOAD CELL		
	MIXER		
	VERTICAL SHAFT MIXER		
	PULSATION DAMPENER		
	QUICK DISCONNECT		
	RADIO, ULTRASONIC, OR ACOUSTIC SIGNAL		
	RUPTURE DISC (PRESSURE RELIEF)		
	RUPTURE DISC (VACUUM RELIEF)		
	STRAINER		
	CONE CHECK VALVE		
	DOUBLE DISC CHECK VALVE		
	HOSE PUMP		

GENERAL NOTES

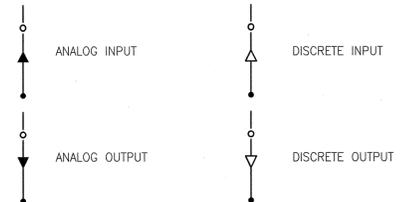
- INSTRUMENT SUFFIX:
NUMERIC SUFFIXES IDENTIFY INSTRUMENTS WITH DIFFERENT FUNCTIONS (E.G., A RUN AND AN OUT OF SERVICE LIGHT) ARE PRECEDED BY A DECIMAL POINT (E.G., AA-MIL-343.1 AND AA-MIL-343.2)
ALPHABETIC SUFFIXES IDENTIFY MULTIPLE OCCURRENCES OF INSTRUMENTS WITH THE SAME FUNCTION (E.G., TWO VALVE INDICATORS IN DIFFERENT PANELS, (E.G. AA-ZIL-161.1A, AND AA-ZIL-161.1B).
- SEE MECHANICAL FOR ISOLATION RING DETAIL



SUPPLIERS

ALL INSTRUMENTS ARE SPECIFIED BY INSTRUMENTS UNLESS INDICATED BY:
(E) SPECIFIED BY ELECTRICAL (X) EXISTING
(M) SPECIFIED BY MECHANICAL (H) SPECIFIED BY HVAC
(F) FURNISHED WITH EQUIPMENT (P) SPECIFIED BY PLUMBING
CONTRACTOR SHALL PROVIDE ALL INSTRUMENTS AS SPECIFIED ON DATA SHEETS ATTACHED TO SPECIFICATION SECTION 13300

PLC OR DCS INPUT/OUTPUT SYMBOLS



HAND SWITCH POSITION SYMBOLS

(UNLABELLED SWITCHES ARE TO BE ON-OFF)

A AUTOMATIC	SBY STANDBY
C CLOSE	F/R FORWARD/REVERSE
F FAST OR FORWARD	L/R LOCAL/REMOTE
H HAND	L/S/R LOCAL/STOP/REMOTE
J JOG	HOR HAND-OFF-REMOTE
L LOCAL	ROA RUN-OFF-AUTO
M MANUAL	OSC OPEN/STOP/CLOSE
O OPEN OR OFF	FSR FORWARD/STOP/REVERSE
R RUN OR REMOTE	TSM THRU/STOP/MIX
S/S START/STOP	OSF OFF/SLOW/FAST
E/S EMERGENCY STOP	OTC OPEN/TRAVEL/CLOSE

AECOM TECHNICAL SERVICES, INC.
1000 STATE STREET, SUITE 200
PLYMOUTH, MA 01924
PHONE (978) 905-2100



TOWN OF PLYMOUTH, MA
SAMOSET STREET SEWER SYSTEM EXPANSION - PHASE I
SAMOSET STREET PUMPING STATION
LEGEND, SYMBOLS & GENERAL NOTES
INSTRUMENTATION

PROJECT NO:	60303170
CAD DWG FILE:	00 DI-001
DESIGNED BY:	I. BRANDELL
DRAWN BY:	D. KOPPELMANN
DEPT CHECK:	Y. RIZK
PROJ CHECK:	T. PARECE
DATE:	FEB 2015
SCALE:	AS NOTED

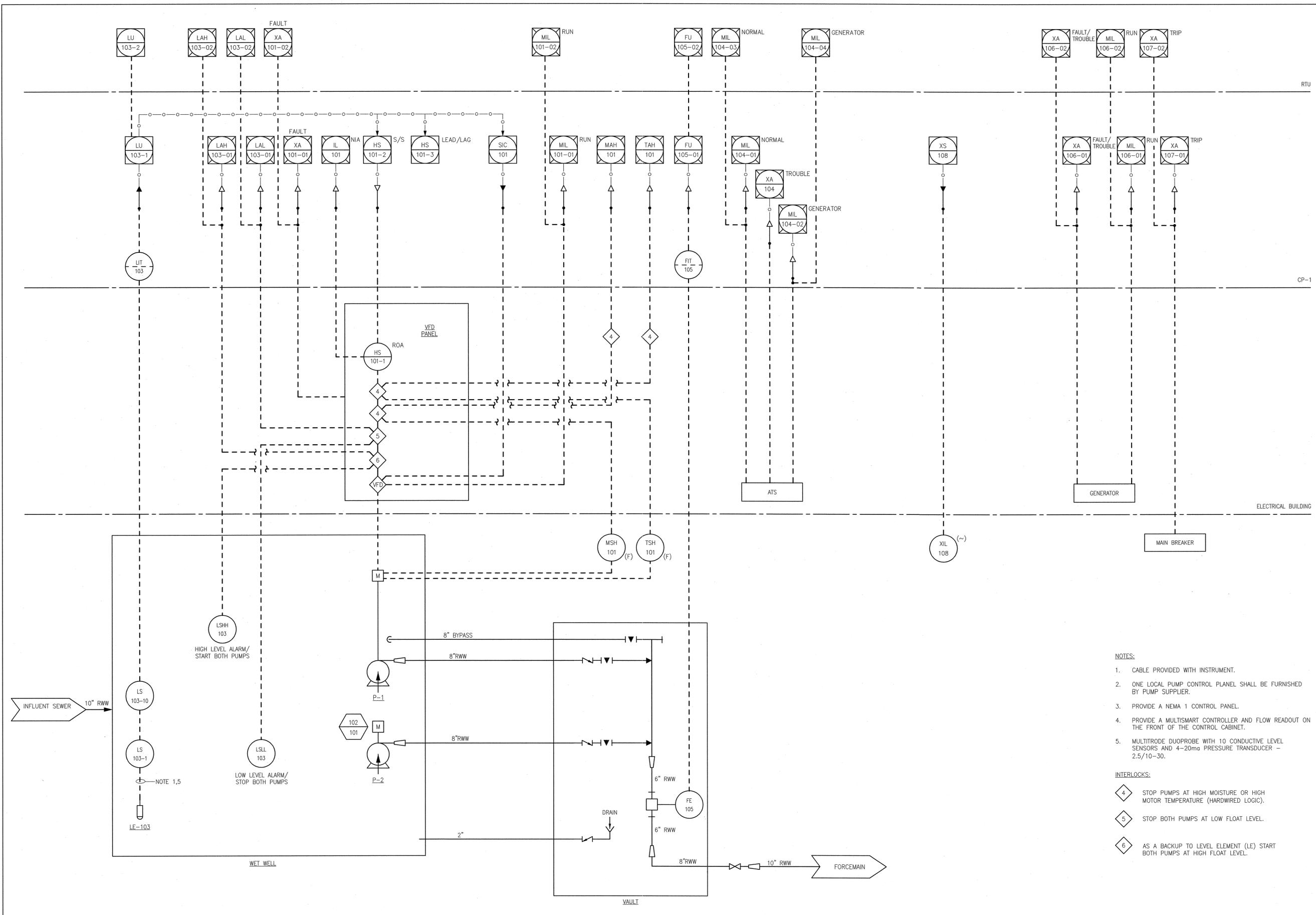
DI-001

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LAST UPDATE: Wednesday, February 18, 2015 2:43:15 PM
PLOT DATE: Wednesday, February 18, 2015 2:43:29 PM

ANSI D - 18-Feb-15

PATH/FILENAME: P:\60303170 - ROUTE 44 SEWER SYSTEM EXPANSION - PHASE 1\SHEETS\DI-01 DI-601.DWG
 LAST UPDATE: Wednesday, February 18, 2015 2:43:46 PM
 PLOT DATE: Wednesday, February 18, 2015 2:44:04 PM

ANSI D - 18-FEB-15



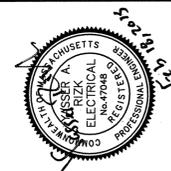
NOTES:

1. CABLE PROVIDED WITH INSTRUMENT.
2. ONE LOCAL PUMP CONTROL PLANET SHALL BE FURNISHED BY PUMP SUPPLIER.
3. PROVIDE A NEMA 1 CONTROL PANEL.
4. PROVIDE A MULTISMART CONTROLLER AND FLOW READOUT ON THE FRONT OF THE CONTROL CABINET.
5. MULTITRODE DUOPROBE WITH 10 CONDUCTIVE LEVEL SENSORS AND 4-20ma PRESSURE TRANSDUCER - 2.5/10-30.

INTERLOCKS:

- 4 STOP PUMPS AT HIGH MOISTURE OR HIGH MOTOR TEMPERATURE (HARDWIRED LOGIC).
- 5 STOP BOTH PUMPS AT LOW FLOAT LEVEL.
- 6 AS A BACKUP TO LEVEL ELEMENT (LE) START BOTH PUMPS AT HIGH FLOAT LEVEL.

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TOWN OF PLYMOUTH, MA
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SAMOSET STREET PUMPING STATION
P & ID
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PROJ CHECK:	T. PARECE
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SCALE:	AS NOTED

DI-101

NO.	DATE	MADE BY	CHECKED	DESCRIPTION