TOWN OF WEST SPRINGFIELD DEPARTMENT OF PUBLIC WORKS BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT

CONTRACT No. 1 **CWSRF-4513** TOWN BID NO.20-0013 WEST SPRINGFIELD, MASSACHUSETTS



LOCATION PLAN

MAYOR :

TOWN CO



DPW DIRECTOR :





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- **ROBERT J. COLSON**
- TOWN ENGINEER : JIM CZACH, P.E.



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BREVIATIONS

SANITARY FORCE MAIN SANITARY SEWER GAS MAIN WATER MAIN OVERHEAD WIRE TELEPHONE LINES

- ELECTRIC LINES
- GAS SERVICE
- WATER SERVICE
- STORM SEWER
- SANITARY LATERAL
- SANITARY LATERAL
- SANITARY CLEANOUT
- WATER METER SERVICE
- WATER/GAS SERVICE VALVE
- CABLE TELEVISION
- DRAIN INLET
- CULVERT
- REINFORCED CONCRETE PIPE
- CORRUGATED METAL PIPE DUCTILE IRON PIPE
- ASBESTOS CEMENT
- VITRIFIED CLAY PIPE
- CAST IRON
- TRAFFIC CONTROL
- ELECTRICAL PULL BOX
- FIRE HYDRANT
- TRAFFIC LIGHT
- TREE
- TREELINE
- FENCE
- UTILITY POLE
- EDGE OF ROADWAY
- EDGE OF PAVEMENT
- SIGNS
- MANHOLE ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- LINEAR FEET
- BENCH MARK
- BITUMINOUS PAVEMENT
- MONUMENT
- GATE VALVE
- GUARD RAIL
- MECHANICAL JOINT
- SWAMP
- GAS TEST STATION
- LAMP POST
- WATER METER WATER VALVE
- INVERT
- GAS VALVE
- INLET PROTECTION
- SILT FENCE OR STRAW WATTLE
- MAIL BOX
- CATCH BASIN
- WETLAND
- WETLAND
- TEST PIT
- SOIL BORING
- PROPOSED SANITARY GRAVITY SEWER
- PROPOSED SANITARY PRESSURE SEWER PROPOSED CONTROL DENSITY FILL
- (CDF) ENCASEMENT
- PROPOSED SANITARY MANHOLE
- PROPOSED WATER MAIN
- PROPOSED FIRE HYDRANT
- PROPOSED STORM SEWER
- GROUND PENETRATING RADAR

GENERAL NOTES SHALL APPLY TO ALL SHEETS

GENERAL NOTES:

- 2. ALL ELEVATIONS BASED ON NAVD 88 VERTICAL DATUM. THE HORIZONTAL COORDINATE SYSTEM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD 83) MAINLAND ZONE.
- 3. AVAILABLE INFORMATION AS TO THE LOCATION OF EXISTING SUBSTRUCTURES, UTILITIES AND OTHER UNDERGROUND OBJECTS HAS BEEN COLLECTED FROM VARIOUS SOURCES. THE RESULTS OF SUCH INVESTIGATIONS, AS MAY BE SHOWN ON THE CONTRACT DRAWINGS, ARE NOT GUARANTEED AS TO ACCURACY. ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE AND FOR INFORMATION ONLY. CONTRACTOR SHALL HAVE NO CLAIM SHOULD THEY BE OTHER THAN SHOWN. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE INVERTS OF ALL EXISTING MANHOLES AND DETERMINE THE EXACT LOCATION OF UTILITIES AND SERVICES BY GPR, TEST PIT, OR OTHER METHODS WHERE REQUIRED, WHEN AUTHORIZED BY THE ENGINEER. GPR AND TEST PIT WORK IS REQUIRED WHERE EXISTING PIPES MAY POSE INTERFERENCE WITH NEW PIPES BEFORE COMMENCEMENT OF THE WORK.
- 4. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO MAINTAIN EXISTING WATER, GAS, AND SEWER SERVICES TO RESIDENTS ALONG THE PROJECT ROUTE. DAMAGED SERVICES SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR IS REQUIRED TO CONFIRM LOCATION OF IRRIGATION SYSTEMS WITH ALL HOMEOWNERS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- 6. PROPERTY LINE INFORMATION AS SHOWN ON THE PLANS WAS OBTAINED FROM VARIOUS SOURCES. LOCATIONS ARE APPROXIMATE AND ARE SHOWN FOR REFERENCE PURPOSES ONLY. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN RIGHT-OF-WAY, EXISTING PERMANENT EASEMENTS, AND PROPOSED TEMPORARY AND PERMANENT EASEMENTS, AS SHOWN ON THE DRAWINGS.
- 7. BORING LOCATIONS SHOWN ARE APPROXIMATE ONLY AND BORINGS ARE NOT WARRANTED OR GUARANTEED TO REPRESENT THE EXISTING CONDITIONS. BORING LOGS ARE INCLUDED IN SECTION 00300 OF THE SPECIFICATIONS.
- 8. ALL EXISTING CONTOUR LINES AND SPOT ELEVATIONS ARE APPROXIMATE. ALL PROPOSED CONTOURS SHALL BE GRADED TO BLEND EVENLY WITH EXISTING CONTOURS.
- 9. ALL RIM AND GRATE ELEVATIONS SHOWN AND INDICATED ARE APPROXIMATE AND SHALL BE ADJUSTED AS NECESSARY TO MEET ACTUAL FIELD CONDITIONS.
- 10. ALL STATIONING SHOWN ON PLANS IS APPROXIMATE.
- 11. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS, SATURDAYS, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATION, AND SHALL COMPLY WITH ALL CURRENT MARKOUT REQUIREMENTS OF THE MASSACHUSETTS DIG SAFE SYSTEM. THE CONTRACTOR SHALL NOTIFY THE OWNER A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE THE EXACT LOCATION AND DEPTH OF TOWN UTILITIES.
- 12. THE CONTRACTOR SHALL GIVE THE OWNER AND ENGINEER AT LEAST 10 DAYS' NOTICE PRIOR TO PERFORMING ANY WORK IN WETLANDS OR WETLANDS BUFFER.
- 13. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE TOWN POLICE DEPARTMENT WITH REGARDS TO ANY ROAD CLOSING AND/OR TRAFFIC DETOURS AND SHALL COMPLY WITH ALL REQUIREMENTS OF THE TOWN.
- 14. THE CONTRACTOR SHALL COMPLY WITH ALL ROAD OPENING REQUIREMENTS AND ORDINANCES OF THE TOWN.
- 15. UNLESS OTHERWISE SPECIFICALLY PERMITTED, NO WORK SHALL BE DONE BETWEEN THE HOURS OF 5:00 P.M. AND 7:00 A.M. IF IT SHALL BECOME ABSOLUTELY NECESSARY TO PERFORM WORK AT OTHER TIMES, OR IF REQUIRED BY SPECIAL CONDITIONS, THE DEPARTMENT OF PUBLIC WORKS SHALL APPROVE SAID HOURS IN ADVANCE. GOOD LIGHTING, TRAFFIC CONTROL, AND ALL OTHER NECESSARY FACILITIES FOR PROPER EXECUTION AND INSPECTION OF THE WORK SHALL BE PROVIDED. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL STATE, COUNTY, AND LOCAL LAWS GOVERNING HOURS DURING WHICH CONSTRUCTION EQUIPMENT MAY BE OPERATED. WORK MAY BE PERFORMED ON WEEKDAYS ONLY, EXCLUDING HOLIDAYS.
- 16. ON SITE SPACE FOR EQUIPMENT STORAGE, STOCKPILING, AND OTHER TEMPORARY CONSTRUCTION ACTIVITIES IS LIMITED. ADDITIONAL SPACE REQUIRED SHALL BE PROCURED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL SUBMIT A PLAN FOR TEMPORARY STORAGE AREAS TO THE OWNER FOR APPROVAL. WRITTEN PERMISSION FROM PRIVATE PROPERTY OWNERS SHALL BE SUBMITTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION AND USE OF THE PROPERTY AS APPLICABLE. THE OWNER WILL NOT PAY FOR ANY DAMAGES OR RESURFACING OF THESE AREAS AS A RESULT OF THE USE OF PROPERTY. THE RESTORATION OF THESE AREAS SHALL BE TO THE SATISFACTION OF THE PROPERTY OWNER.
- 17. MAINTAIN EMERGENCY ACCESS TO ALL PROPERTIES WITHIN THE PROJECT AREA AT ALL TIMES.
- 18. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFE WORK CONDITIONS. THESE CONDITIONS INCLUDE BUT ARE NOT LIMITED TO TRENCH SAFETY AND CONFINED SPACE ENTRY. THE CONTRACTOR SHALL COMPLY WITH O.S.H.A. REQUIREMENTS FOR SLOPING AND/OR SHORING OF TRENCHES AND EXCAVATIONS FOR ENTRY BY CONSTRUCTION. EXCAVATIONS SHALL BE SHEETED AND BRACED AS NECESSARY TO COMPLY WITH ALL APPLICABLE LABOR REGULATIONS AND TO PROTECT EXISTING UTILITIES.
- 19. SILTATION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED AT ALL CATCH BASINS WITHIN THE PROJECT AREA TO PREVENT SILTATION OF THE TOWN'S STORM DRAINAGE SYSTEM.
- 20. THE CONTRACTOR SHALL PROTECT ALL STRUCTURES, ROADS, PIPELINES, TREES, SHRUBBERY, GRASS AREAS, ETC. DURING THE PROGRESS OF THE WORK AND SHALL REMOVE DAILY FROM THE SITE ALL DEBRIS AND UNUSED MATERIALS. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL RESTORE THE SITES AS NEATLY AS POSSIBLE TO THEIR ORIGINAL CONDITION.
- 21. EXCAVATIONS OR TRENCHING WITHIN CLOSE PROXIMITY TO UNDERGROUND FACILITIES OR UTILITY POLES WILL REQUIRE PROTECTION TO PREVENT DAMAGE OR INTERRUPTION OF SERVICE TO UNDERGROUND FACILITIES. THE COST TO PROVIDE THIS PROTECTION WILL BE BORNE BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY. ANY DAMAGE TO AN EXISTING UTILITY SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- 22. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT EXISTING THRUST BLOCKS WHICH ARE RESTRAINING EXISTING UTILITIES. EXISTING THRUST BLOCKS SHALL NOT BE UNDERMINED.
- 23. CONTRACTOR SHALL TAKE STEPS NECESSARY TO PRESERVE EXISTING CURB AND MINIMIZE THE LENGTH OF CURBING THAT MUST BE REPLACED.
- 24. CONTRACTOR SHALL PROVIDE A SMOOTH, FLUSH TRANSITION BETWEEN ALL NEW AND EXISTING PAVEMENTS.
- 25. ALL TRENCHES SHALL BE BACKFILLED WITHOUT DELAY. TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT. UPON BACKFILLING THE CONTRACTOR SHALL BROOM SWEEP STREETS AND USE APPROPRIATE METHODS TO CONTROL DUST. COVERING OPEN TRENCHES IS NOT PERMITTED, UNLESS APPROVED BY THE OWNER.
- 26. ALL PAVEMENT DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE SPECIFICATIONS.
- 27. ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
- 28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL EXCESS EXCAVATED MATERIAL TO AN APPROVED OFF-SITE LOCATION, IN ACCORDANCE WITH ALL APPLICABLE RULES & REGULATIONS, AT NO ADDITIONAL COST TO THE OWNER.
- 29. GUIDERAILS, FENCES, DRAINAGE PIPES, MAILBOXES, HEADWALLS AND OTHER FEATURES WHICH REQUIRE REINSTALLATION BUT ARE FOUND NOT TO BE REUSABLE, OR WHICH ARE DAMAGED DURING REMOVAL, SHALL BE REPLACED WITH NEW MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

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30. ALL TREES IN THE LINE OF AND ADJACENT TO NEW CONSTRUCTION SHALL BE PROTECTED UNLESS OTHERWISE NOTED.

31. THE CONTRACTOR SHALL NOT STORE ANY APPARATUS, MATERIALS, SUPPLIES, OR EQUIPMENT ON DRAINAGE STRUCTURES OR WITHIN 100 FEET OF WETLANDS.

32. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE SYSTEM FOR DEWATERING THE CONSTRUCTION SITE AS REQUIRED TO PROPERLY CONSTRUCT ALL STRUCTURES IN THE DRY. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN SAFE, ADEQUATE TEMPORARY RELIEF MEASURES AGAINST HYDROSTATIC UPLIFT DUE TO A HIGH-WATER LEVEL, IF ENCOUNTERED, FOR THE DURATION OF THE WORK UNTIL THE NECESSARY CONSTRUCTION IS COMPLETED.

33. ANY DISCHARGE OF WATER RESULTING FROM DEWATERING ACTIVITIES SHALL BE DIRECTED TO APPROVED SEDIMENTATION BASINS OR SPECIALTY CONTROL PRODUCTS OR SYSTEMS.

34. ALL PIPE LENGTHS SHOWN AND INDICATED ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE PIPING AS REQUIRED.

 WHEREVER POSSIBLE, THE SEWER PIPE SHALL BE INSTALLED NOT LESS THAN 10 FEET HORIZONTALLY AND 18 INCHES VERTICALLY FROM ANY EXISTING WATER MAIN. THE SEWER PIPE SHALL CROSS BELOW THE WATER MAIN. AT CROSSINGS, ONE FULL LENGTH OF PIPE SHALL BE INSTALLED SO BOTH JOINTS WILL BE AS FAR FROM THE WATER MAIN AS POSSIBLE. CONTROLLED DENSITY FILL (CDF) WILL BE USED IN LOCATIONS WHERE THE SEPARATION SPECIFIED CANNOT BE MET, IN ACCORDANCE WITH THE UTILITY CROSSING DETAIL ON SHEET C505.
 GRAVITY SANITARY SEWER PIPE SHALL BE LAID OUT IN A STRAIGHT LINE. GRAVITY SANITARY SEWER JOINTS SHALL

NOT BE DEFLECTED. 37. TO MAINTAIN THE HORIZONTAL AND VERTICAL ALIGNMENT SHOWN ON THE PLANS, LOW PRESSURE SEWER AND FORCE MAIN PIPE JOINTS MUST BE DEFLECTED IN ACCORDANCE WITH THE SPECIFICATIONS. IF NECESSARY, EITHER TO MAINTAIN THE ALIGNMENT SHOWN OR TO ADJUST THE ALIGNMENT TO MEET ACTUAL FIELD CONDITIONS, ADDITIONAL FITTINGS SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.

38. APPROVED JOINT RESTRAINT METHODS SHALL BE PROVIDED FOR FORCE MAINS WHERE ANY BENDS, TEES, PLUGS, OR WYES ARE INSTALLED. CONCRETE THRUST BLOCKS, ANCHOR BLOCKS AND TIE RODS MAY BE USED WHERE JOINT RESTRAINT IS NOT FEASIBLE. FOR THRUST BLOCK DETAILS AND MINIMUM BLOCK BEARING AREAS, SEE DETAILS AND SPECIFICATIONS.

39. INSULATION SHALL BE PROVIDED FOR SEWER MAINS WITH LESS THAN 4 FEET OF COVER. THE INSULATION SHALL BE AS SPECIFIED.

40. PLUGS SHALL BE INSTALLED IN THE DOWNSTREAM ENDS OF THE SEWER LINES UNDER THIS CONTRACT. PLUGS SHALL BE REMOVED ONLY ON THE ORDER OF THE OWNER OR THE ENGINEER.

41. OPENINGS FOR PIPE IN PRECAST MANHOLE BASES SHALL BE CAST IN THE REQUIRED LOCATIONS DURING MANHOLE MANUFACTURE. FIELD CUT OPENINGS WILL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

42. ALL MANHOLES SHALL BE INSTALLED FLUSH WITH EXISTING GROUND, EXCEPT AS NOTED OTHERWISE.

43. CONTRACTOR TO CONSTRUCT HOUSE SERVICE CONNECTIONS TO PROPERTY LINE FOR EACH LOT SHOWN TO BE SEWERED UNDER THIS CONTRACT AND AS DIRECTED BY THE ENGINEER.

44. ALL SANITARY SEWER LATERALS SHALL BE 6-INCH DIAMETER SDR-35 PVC PIPE FOR GRAVITY CONNECTIONS AND 1-1/2-INCH DIAMETER SDR-21 PVC PIPE FOR LOW-PRESSURE SEWER CONNECTIONS. CONTRACTOR SHALL CONFIRM LATERAL LOCATIONS IN THE FIELD WITH HOME OWNER AND ENGINEER.

45. SEWER CHIMNEY AND HOUSE CONNECTION LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

46. THE CONTRACTOR SHALL CONNECT EXISTING SEWER SERVICES TO THE NEW SEWER ONLY AFTER THE NEW SEWER HAS BEEN PRESSURE TESTED, FLUSHED, AND ACCEPTED BY THE OWNER.

47. FOR LATERAL INSTALLATION WORK, ALL DISTURBED SIDEWALKS, APRONS, AND CURBS SHALL BE RESTORED IN KIND. ALL DISTURBED GRASS AREAS SHALL BE RESTORED WITH 4 INCHES OF TOPSOIL AND SEED.

48. REPAIR WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE OWNER.49. TRAFFIC STRIPING AND MARKINGS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN-KIND AND TO THEIR

ORIGINAL LAYOUT.

50. ALL NON-PAVED DISTURBED AREAS SHALL BE LOAMED AND SEEDED, UNLESS OTHERWISE SPECIFIED.

51. THE CONTRACTOR SHALL MAINTAIN A SET OF PLANS AND SPECIFICATIONS IN GOOD LEGIBLE CONDITION ON THE IMMEDIATE JOB SITE AT ALL TIMES. SUCH PLANS SHALL SHOW AS-BUILT CONDITIONS & DIMENSIONS.

52. THE CORPORATIONS, COMPANIES, AGENCIES, OR MUNICIPALITIES OWNING OR CONTROLLING THE UTILITIES, AND THE NAME, TITLE, AND TELEPHONE NUMBERS OF THEIR LOCAL REPRESENTATIVE ARE AS LISTED BELOW:

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BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

LEGEND, ABBREVIATIONS, INDEX OF DRAWINGS AND GENERAL NOTES





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OVERALL SITE LOCATION PLAN

Title [®] BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS



NOTES:

1. REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.



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BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

PLAN AND PROFILE BRUSH HILL AVENUE (1 OF 2)



NOTES:

1. REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.

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		4' 2' 0 SCALE: 1" = 4'	4'	PROFILE 30' 15' 0 SCALE: 1" = 30' SCALE: 1" = 30' SCALE: 1" = 30'	30'						
)2/2020	KAM	ISSUED FOR BID	ТВ	MDN HORIZONTAL	MA CONTRACTOR		Designed	MV	Eng check	MV	
				DAVID GONCAL	G. VES		Drawn	BZ	Coordination	КАМ	SEWER EXPANSION PROJECT
				No. 51	580 3		Dwg check	DGG	Approved	cw	WEST SPRINGFIELD, MASSACHUSETTS
				Tautot	2/4/2020	2	Scale at ANSI	D Status	Rev	Security	
				Project Number	B/O	Total	Drawing Num	ber			PLAN AND PROFILE
ate	Drawn	Description	Ch'k'd	507408636-002	5	64		C10	01B		BRUSH HILL AVENUE (2 OF 2)

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5	/	

HFET	C112A



228
224
220
216
212
208
204
200



PIPER ROAD (1 OF 6)



1. REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.

236	C102	-EXISTING GRADE	≥ 236	256	
	SHEET		12" RCP STOR INV: 231.89		
232			232	252	
228		ri of 10" SDR-35 PVC	@ 4.70%		
220		275.01	228	248	
224	-				
227			224	244	
220			220	240	
216			216	236	= 50R-35 PVC @ 4.70%
212	LINE		212	232	275' of 10" SL
208	MATCH		208	228	
		50	200		
	7+	-50 8+	•00 8+	-50 9+	00

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				Project Number	B/O	7	Total	Drawing Number	<u> </u>
Drawn	Description	Ch'k'd	App'd	507408636-002		1	64		C

PLAN AND PROFILE PIPER ROAD (2 OF 6)

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272 SHEET C103	PROPOSED SMH 159	RIM 267.17
268		
264		
260		
256		
252	295.08' of 10" SDR-26 PVC @ 0.76%	110.34' of 10" SDR-26 PVC @ 0.40%
U Z	INV 250.81	INV 250.91
244 IO		
15+	-00 16+00	17+00 17+
	16-	+07

Client

REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND. INSULTATION SHALL BE PROVIDED FOR SEWER MAINS WITH LESS THAN 4 FEET OF COVER

C103 STATION PROPOSED SMH 159 RIM: 267.17 INV IN: 250.91 INV OUT: 250.81 BLOCK PAV 10" SDR-26 PVC PIPE-LUCCUL BRUSHLIN 6+00-LINE MACADAM — DRIVEWAY MATCH 10" SDR-26 PVC PIPE-BENCHMARK 12-N: 2880520.56 - MACADAM DRIVEWAY E: 345190.28 EL. 266.38 MACADAM — DRIVEWAY TO HOUSE NO. 1424

NOTES:





		4' 2' 0 SCALE: 1" = 4' VERTICAL	4'	<u>PROFILI</u>	E 30' 15' 0 SCALE: 1" = 30' HORIZONTAL	30'								
02/2020	KAM	ISSUED FOR BID	ТВ	MDN	Junior HITH OF MA	1999		Designed	MV		Eng check	MV		Tit
					DAVID G GONCALVE	is STREET		Drawn	BZ		Coordination	KAM		
					No. 5158	80 5		Dwg check	DGG		Approved	cw		
					Lautor	2/4/2020		Scale at ANS As Sho	own	Status	Rev		Security	
				F	Project Number	B/O	Total	Drawing Num	ıber		0404			
ate	Drawn	Description	Ch'k'd	App'd	507408636-002	8	64				C104			

BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

PLAN AND PROFILE PIPER ROAD (3 OF 6)



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Eng check	MV		
Coordination	KAM		
Approved	CW		
Rev		Security	

- 6		
RIM 276	SMH 156	
	PROPOSED RIM 273.80	
		CH LINE
		MATG
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276	105		
272	SHEET C	12" RCP S INV: 263.3	
268			-EXISTING GRADE
264			
260	DPOSED SMH 15	-INV 263.55	
256	Ka		
252	Ш И И И И И И И И И И И И И И И И И И		287' of 8" SDR-35 PVC @ 4.75%
248	MATCH		
244	100+00	101+00	102+(
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M MOTT MACDONALD	134 Capital Drive - Suite D West Springfield, MA 01089 United States of America T +1 (413) 535 0135 F +1 (413) 535 0136 www.mottmacamericas.com	Client TOWN OF WEST SPRINGFIELD DEPARTMENT OF PUBLIC WORKS 26 CENTRAL STREET WEST SPRINGFIELD, MA (413) 263-3242	0 02/2
USERS\WAT73657\APPDATA\LOCAL\PROJECT	WISE\WORKDIR\MOTT-USE-PW-14\D0461318\C106	DWG	II

1. REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.

NOTES:

PIPER ROAD -w----w-----) UP #118 _ W — --W-FM MIL QUP #118 MATCH ON BAF - MACADAM FOUND DRIVEWAY STRUCTURE 156 HOUSE NO. 1556 −RIM: 273.80 INV OUT: 263.55

PVC PIPE







Ch'k'd App'd

Drawn Description

C106

Eng check	MV		
Coordination	KAM		
Approved	CW		
Rev		Security	

└NV 259.11

└─INV 259.01

276 272 268 264 260 " SDR-35 PVC @ 3.75% 256 LINE MATCH 252 LINV 254.78 248 -INV 245.76 10" SDR-35 INV 245.86-/1 (PIPER ROAD PUMP STATION) 244 -108' of 8" SDR-35 PVC @ 0.40%-106+50 107+00 107+19 108+00

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LINE

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	Eng check	M∨			BIRNIF AVFNUE/PIPER ROAD AREA	
	Coordination	KAM			SEWER EXPANSION PROJECT	
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C107

PIPER ROAD (6 OF 6)

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AND PROFILE BIRNIE AVENUE NORTH (2 OF 2)

	260
SEWER EXPANSION PROJECT	
WEST SPRINGFIELD, MASSACHUSETT	-S

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NOTES:

1. REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.

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Image: state stat						DAVID GONCALV	G. FERNER		Drawn	KAM		
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ate Drawn Description Ch'k'd App'd 507408636-002 14 64						Project Number	B/O	Total	Drawing Num	ber		
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BENCHMARK 20	
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	Coordination	ΒZ		SEWER EXPANSION PROJECT
	Approved	cw		WEST SPRINGFIELD, MASSACHUSETTS
	Rev		Security	
				PLAN AND PROFILE
C1	10			BIRNIE AVENUE SOUTH

				MACADA	SMX M		
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240		22 - 22				RIM: 239.27 INV OUT: 230.27	
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		SM			<u> </u>	WS MACAL	
	DRIVEVVAY			239	-7 020		
					X	MACADAM	
						DRIVEWAY	
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	Approved	cw		W	ES	T SPRINGFIELD, MASSACHUSETTS	
	Rev	Secur	ity				
				- PL	-AN	I AND PROFILE	

TO HOUSE NO. 71

JENNIFER DRIVE

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PIPER ROAD SOUTH OF JENNIFER DRIVE (1 OF 2)

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Eng check	MV		
Coordination	-		
Approved	CW		
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BIRNIE AVENUE/PIPER ROAD AREA WEST SPRINGFIELD, MASSACHUSETTS

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	LLAND CONTRACT		
	181-8 UP #935 (S 181-8 UP #935 (S 181-8 UP #935 (S (N) (N) (N) (S) (S) (S) (S) (S) (S) (S) (S) (S) (S	S)INV. 175:34 2'22 INLET S)INV. 175:34 2'22 INLET VE)INV. 173:60 GR. 185:89	SEDIMENT
	GR. 180.78 GR. 175.08 181 V 181 V E: 345760.93	G CONTROL DEVIC SEE DETAIL ON C506	SHEET
	EL. 180.87	ST TREWAY	HOUSE NO. 1150
		ST TO G - T G	
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	INV. 171.78	STORM MH	
	GR. 180.65 FILLED W DEBRIS	RIM 185.77 (S)INV. 177.83 (N)INV. 177.81	March
		(E)INV. 179.97 LOW PRESSURE SEWER CLEANOUT MANHOLE	OHW GUIDE RAIL
		RIM: 192.31 INV OUT: 187.00	UP #98M
		HOUSE NO. 1155	
			7
NOTEO			
NOTES: 1. REFER TO SHE	ET G002 FOR GENERAL NOTES AND LEGEND.		
BID ALTER	NATE NO. 1		
ALL WORK ASSOC SHEET IS PART OF	ATED WITH THIS BID ALTERNATE NO. 1		
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by any other party or used or being used for any othe	for any other purpose. We accept no responsibility for the consequences of this d r purpose, or containing any error or omission which is due to an error or omission	locument being relied upon by any other party, in data supplied to us by other parties.	
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	F +1 (413) 535 0136 www.mottmacamericas.com	(710) 200-02 7 2	CHORNER POR
			Rev Date

Ch'k'd App'd

Drawn Description

64

`	1	1	2B	

Eng check MV

CW

Security

Coordination

Approved

Rev

PLAN AND PROFILE PIPER ROAD SOUTH OF JENNIFER DRIVE (2 OF 2)

l Title
BIRNIE AVENUE/PIPER ROAD AREA
SEWER EXPANSION PROJECT
WEST SPRINGFIELD, MASSACHUSETTS

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MACADA		(SE)INV. 212.75		
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Rev

02/2020	KAM	ISSUED FOR BID	ТВ	MDN	Shill OF MA	122		Designed	MV		
					DAVID G. GONCALVE CTVIL	Drawn	ΒZ		3		
					Ho. 51580				DGG		us
					Scale at ANSI D Status					Status	
					Project Number	B/O	Total	Drawing Num	ber		
Date	Drawn	Description	Ch'k'd	App'd	507408636-002	81	64				

PROPOSED 20 WI EASEMENT	DE HOUSE NO. 71 BENCHMARK 25 N. 2800430.56 E: 43508.93 E: 252.87	
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		204

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267' of 8" SDR-35 P	VC @ 0.40%		
∽INV 245.73		2	44
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Eng check | MV Coordination KAM Approved Security Rev C113

BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

PLAN AND PROFILE APRICOT HILL LANE (1 OF 2)

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STORM MH RIM 276.55	
BENCHMARK 23	
MACADAM DRIVEWAY EL. 276.63	
90 1000 CURB	
MACADAM CURB	
	HOUSE NO. 573
280 /	
SAN	
	ORM MH
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	Eng check MV Coordination KAM			BIRNIE AVENUE/PIPER ROAD AREA	
				SEWER EXPANSION PROJECT	
	Approved CW			WEST SPRINGFIELD, MASSACHUSETTS	
	Rev Se		Security		
			PLAN AND PROFILE		
C114					APRICOT HILL LANE (2 OF 2)

<form></form>		ADAMAGINA CONTRACTOR OF CONTRA	SVEET INSTALL INLE CONTROL D SEE DETAIL ON 24"x"24 GR. 22"x"24 GR. 30 G G CO MB S" CIP W 30 G CO MB S" CIP W 30	HOUSE NO. 119 T SEDIMENT DEVICE (TYP) SHEET C506 INLET 222.28 224.17 ECTRIC MARKOUT C G G G G G G G G G G G G G G G G G G G	HOUSE NO. 129 TO VIEW CIRCLE
20 20 20 20 20 20 20 20 20 20	NOTES: 1. REFER TO SHEET G002 FOR GENE	ERAL NOTES AND LEGEND.			
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200 200 196 e Mot MacDonald e Mot MacDonald e Mot MacDonald MacDonalD T+1 (413) 535 0136 www.motmacamericas.com	208	PROPOSED SMH 218 RIM 226.29			
200 196 196 190 100 100 100 100 100 100 100	204	U Z J			
196 1+00 2+00 C Mott MacDonald 1+00 2+00 C Mott MacDonald The party which commissioned It and for specific purposes connected project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party. 0 0/2/2/2 Mott MacDonald 134 Capital Drive - Suite D Vest Springfield, MA 01089 ToWN OF WEST SPRINGFIELD 0 0/2/2/2 MacDonald 134 Capital Drive - Suite D Vest Springfield, MA 01089 ToWN OF WEST SPRINGFIELD 0 0/2/2 ToWN OF WEST SPRINGFIELD, Display to the party of the purpose. www.nottmacamericas.com 0 0/2/2 0 0 0/2/2 MacDonald 1+1 (413) 535 0135 T+1 (413) 535 0135 T+1 (413) 535 0135 T+1 (413) 535 0136 0/2/2 </th <th>200</th> <th>ATCH</th> <th></th> <th></th> <th></th>	200	ATCH			
Orbit O	196			1+00	2+00
Montt Macconald 134 Capital Drive - Suite D West Springfield, MA 01089 United States of America T+1 (413) 535 0135 T+1 (413) 535 0135 F+1 (413) 535 0136 Www.mottmacamericas.com	© Mott MacDonald This document is issued for the party which by any other party or used for any other purp or being used for any other purpose, or conta	0+00 commissioned it and for specific purposes connected wi ose. We accept no responsibility for the consequences aining any error or omission which is due to an error or o	th the captioned project only. It should not of this document being relied upon by an mission in data supplied to us by other pa	t be relied upon y other party, arties.	
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Eng check	ΜV		
Coordination	-		
Approved	CW		
Rev		Security	

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TEST PIT R-11 HDPE FM SED SEWER FORCE LAN & PROFILE ON PLAN SHEET	A) INV. 212.13 B) INV. 212.34 C) INV. 213.11 FM C) INV. 213.00 FM C) INV. 213.00 FM	The second secon	SMH 207 54 0.44 3" SDR-11 HD PROPOSED SEWER MAIN PLAN & P SHOWN ON PLAN 10USE NO. 224	VALLEY NEW CIRCLE TELEPHONE MARKOUT PRIVENAN TELEPHONE MARKOUT PRIVENAN 12700 8" SDB 35 PVC 00 8"	10. 231
LINV 208.67	30 30 30 30 30 30 30 30 40 40 40 40 40 40 40 40 40 4	PLAN 2 15 0 30' SCALE: 1" = 30' COB 000 COB 0000 COB 000 COB 0000 COB 0000 COB 0000 COB 0000 COB 0000 COB 0000 COB 000000 COB		270.46' of 8" SDR-35 PVC @ 1.00%	
0 02/2020 H 9+01 0 02/2020 H 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10+00 4' 2' 0 SCALE: 1" = 4' SCALE: 1" = 4' VERTICAL SUED FOR BID Image: Comparison of the second seco	4' PROFILE 30' 15' 0 4' PROFILE 30' 15' 0 SCALE: 7 HORIZO TB MDN SCALE: 7 TB MDN Image: Scale of the state of t	30' 1" = 30' NTAL	12+00 12+00 Designed MV Drawn BS Dwg check DGG Scale at ANSI D AS SHOWN tal Drawing Number	tatus

TEST PIT

STORM MH RIM 219.34

A) INV. 213.47 3) INV. 213.47

HOUSE NO. 221

	1	1	C
J	I		O

Eng check	ΜV		
Coordination	-		
Approved	CW		
Rev		Security	

Title

PROPOSED SMH 266

RIM: 222.78

INV IN: 214.30 INV OUT: 214.20

SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

VALLEY VIEW CIRCLE (2 OF 3)

PLAN AND PROFILE

BIRNIE AVENUE/PIPER ROAD AREA

S	- BOD	
2" G/	215.7	5
	.32 .15.71	
	" DIA 18" L 18" L	З С
5		
		216
	SDR-35 PVC @ 1,00%	
	INV 213 24 INV 213.34	212
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	O P O P O P O P O P O P O P O P O P O P	
	٩	
		204
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		H C
		S 196
13+	-00 14- 13+49	+00

HOUSE NO. 241 TEST PIT	S F A) II B) II	TORM MH RIM 222.37 NV. 216.34 NV. 216.44 NV. 216.44 A)	B B
PROPOSED SMH 208 RIM: 221.84 INV IN: 213.34 INV OUT: 213.24		E 134.00	S S S S S S S S S S S S S S S S S S S
		MACADAM DRIVEWAY	GR. 221.
NOTES: 1. REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.	1		
224	C116		
220	SHEET		
216		86.01' of 8" SDR-35 PVC @ 1.00%	
212		INV 214.20	-INV 214.30
208		PROPOSED	
204	Ш		
200	ATCH LIN		
96	Σ	+00	

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Client

Drawn Description

Ch'k'd App'd

Rev Security	-
Approved CW SEVER EAFANSION PROJECT WEST SPRINGFIFI D. MASSACHUSET	ГS
Ling Grook MV BIRNIE AVENUE/PIPER ROAD AREA Coordination - SEW/ED EXDANSION DDO JECT	
Eng check MV	
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	224
MAGADAM MAGADAM CIRP	
G SAN U A	
A) B) E MACADAM CURB SAN <u>8" ACP</u>	
S A STAINLESS STEEL SHEAR RING TO MAKE A NNECTION TO EXISTING SANITARY SEWER	
LF OF 4"Ø PVC W/ APPROVED COUPLING THAT	
24"x"24 INLET GR. 236.13 12" RCP INV. 231.78	
B) INV. 227.22 C) INV. 226.86 D) INV. 227.16	
SAN. MH RIM 235.67 A) INV, 226.78	
-5 LF OF 8"Ø PVC W/ APPROVED COUPLING THAT HAS A STAINLESS STEEL SHEAR RING TO MAKE A CONNECTION TO EXISTING SANITARY SEWER	

PLAN AND PROFILE VALLEY VIEW CIRCLE (3 OF 3)

236				217A
	2	218	9:50 00 00	D SMH
	33	D SMH	RIM 22	OPOSE IM 232.
232) T	DPOSE		
	Ψ	PR(CIP ATERM BERGI PROXI	
	S		AF	
228				
224				
220				
016				
	-Ľ			
			169.29' of 8" SDR-26 PVC @ 0.40%	%
212	TC			
	- AN		INV 212.57	
	~			
208				
		0+	00 1+00	
		0+0	JU	1+69

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~	1	1	ο	
	I		Ο	

+50 HOUSE NO. 21 C119 N 7+5(SHEET C' STATION 24"x"24 INLET GR. 229.85 12" CIP INV. 224.57 HOUSE NO. 7 с, 8" SDR-26 PVC E MAT HOUSE NO. 20

	SHEET C118	НОUSE	NO. 33 STORM MH RIM 229.44 A) INV. 224.22 B) INV. 224.15 C) INV. 224.25	HOUSE NO. 45
		0 12" CIP INV. 224.57		SWEETFERN DRIVE
		ADAM CURB8+00	$ \begin{array}{c} $	ALK ALK ALK DRIVEWAY GAS GAS GAS GAS GAS MACADAM DRIVEWAY GAS GAS GAS GAS GAS GAS GAS GAS
	<u>12</u> w	w		8" SDR 35 PVC 229 W W W W W W W W W W W W W W W W W W W
	<u>E</u>			
		HOUSE NO. 32	4 INLET 29.90 P INV. 224.55 PROPOSED SMH 215 RIM:229.86 INV IN:216.22 INV OUT:216.12	MACADAM DRIVEWAY PROPOSED SMH 214 RIM:228.06 INV IN:217.07 INV OUT:216.97 HOUSE NO. 44
 NOTES: 1. REFER TO SHEET G002 FOR GENERAL NOT 2. INSULATION SHALL BE PROVIDED FOR SEWE 4 FEET OF COVER 	'ES AN ER MAI	ID LEGEND. INS WITH LESS THAN		
	ω	0		
236	3	7+5		
232	SHEET	TATION	PROPOSED SMH 21 RIM 229.8 12" DIAM RCP INV 224.4	
	ŀ			
228				

田 232 エ		224.4	
O			
228			
224		l ċ	
220			
		187.93' of 8" S	DR-35 PVC @ 0.40%
216	INV 216 12	INV 216.22	INV 216.97-
208 DIA			
	8+00	9+	+00
	8-	+12	
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by any other party or used for any other purpose. We accept	ot no responsibility for the consequences of this docu	iment being relied upon by any other party,	

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Coordination	-		
Approved	CW		
Rev		Security	

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15+00

19

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Rev Date

16+00

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	U U U U U U U U U U U U U U U U U U U
	227.25' of 8" C-900 PVC @ 0.40%
	()
Ш Ц	
LCH TCH 	
A A A	

2. INSULATION SHALL BE PROVIDED FOR SEWER MAINS WITH LESS THAN 4 FEET OF COVER

REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.

NOTES:

236

232

224

220

216

212

208

Μ

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				208
	Eng check	MV		BIRNIE AVENUE/PIPER ROAD AREA
	Coordination	-		SEWER EXPANSION PROJECT
	Approved CW		WEST SPRINGFIELD, MASSACHUSETTS	
	Rev	•	Security	
				PLAN AND PROFILE
C120		SWEETFERN DRIVE (3 OF 3)		

236
232
228
224
220
216
212
208

NOTES:

- 1. REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.
- 2. INSULATION SHALL BE PROVIDED FOR SEWER MAINS WITH LESS THAN 4 FEET OF COVER

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PLAN AND PROFILE
HEMLOCK HILL ROAD

240 240	RIM 232.16			DPOSED SMH 227
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236				
0.70			2ª GAS	
	h -			
228				
224		245 8	1) 1' of 8" ODD es :	
			018 SDR-35 PVC @ 0.81%	
220		-INV 224.04		INV 222.05
216				
-17	-17 -17 7+06	+00 -16	-1	5+00 -14

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Ch'k'd App'd

Coordination	-		
Approved	CW		
Rev		Security	

Eng check MV

-10+00

Title BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

	T C123 N -9+50	240
	STATIO	236
12" RCP		232
		228
		224
	C H	220
	MATCI	216

HOUSE NO. 197

IO. 214	HOUSE NO. 204 24"x"24 INLET GR. 226.69 12" RCP INV. 222.05 12" RCP INV. 222.05
- W	$w - \underbrace{EDGE}_{SB,B,25} OF PAVEMENT}_{C} OF$
ST 18" RCP ST DGE OF HAVEMENT MACADAM MB MB DRIVEWAY CONCRET	ST S
TORM MH M 228.81 DULD NOT OPEN	24"x"24 INLET GR. 226.75 12" RCP INV. 221.60

C122

PLAN AND PROFILE WOODBROOK TERRACE (1 OF 3)

West Springfield, MA 01089 United States of America

-9+00

-8+80

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-8+00

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-9+50

22 SI 8 $\overline{}$ \mathbf{O} 240 -Ш SHE 236 232 228 224 ШNП. 220 250.48' of 8" C-900 PVC @ 0.40% MATCH INV 219.53-LINV 219.43 216 291.51' of 8" SDR-26 PVC @ 0.40%

2. INSULATION SHALL BE PROVIDED FOR SEWER MAINS WITH LESS THAN 4 FEET OF COVER

REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND.

NOTES:

		PLOSEU SMH 246 RIM 223.19			POSED SMH 230 RIM 224.91					
		Y L			PRO					
						Щ	[
						ECTRIC & TELEPHO	GAS			
						() ()	 ()			
,	INV 218.43	-INV 218.33	122.96' of 8" SDR-	-26 PVC @ 0.40%	V 217.84	-INV 217.74		223.60' of 8" SDR	8-35 PVC @ 0.40%	
-7+	00	-6+	00			5+00		-4+00		
	4' 2' 0 SCALE: 1" VERTICA	6+29 	<u>PROFILE</u>	30' 15' SCAL HOR	-5+06 0 E: 1" = 30' IZONTAL	30'				
)2/2020 k	AM ISSUED FOR BID	Т	B MDN		WWWWWWWWWWWWWW	22		Designed	MV	
					DAVID G. GONCALVE	SCHUSETT		Drawn	BS	
					No. 51580			Dwg check	DGG	
					Dautor	2/4/2	020	Scale at ANS	ID Status	

					Landerse	10	2/4/2020		AS SHOWN	
					Project Number	B/O	20	Total	Drawing Number	
ate [Drawn	Description	Ch'k'd	App'd	507408636-002		28	64		

PLAN AND PROFILE WOODBROOK TERRACE (2 OF 3)

C123

C124

USE NO. 56	CONCRET DRIVEWA MB CONCRET DRIVEWA MB CONCRET DRIVEWA MB CONCRET DRIVEWA MB CONCRET CONCRET CONCRET CONCRET CONCRET CONCRET CONCRET DRIVEWA MB CONCRET CONCRET DRIVEWA MB CONCRET CONCRET DRIVEWA MB CONCRET CONCRET DRIVEWA MB CONCRET CONCRET DRIVEWA MB CONCRET CONCRET DRIVEWA MB CONCRET CONCRET DRIVEWA MB CONCRET CONCRET CONCRET DRIVEWA MB CONCRET CONCRET CONCRET DRIVEWA MB CONCRET	HOUSE NO. 40 HOUSE NO. 40 MARKOUT ONT #12 ONT
O. 59		
		240
		236
) @ 1.00%		
		INV 231 8
		228 88 37 14 88
		224
		220
		244
	5+00	5+88
Eng check MV		BIRNIE AVENUE/PIPER ROAD AREA
Coordination -	,	SEWER EXPANSION PROJECT
Rev	Security	
I	I	PLAN AND PROFILE

WOODBROOK TERRACE (3 OF 3)

AeccDbFace (AeccLand120)

			4	PROF		30					
		SCALE: 1" = 4' VERTICAL			SCALE: 1" = 30' HORIZONTAL						
2/2020	KAM	ISSUED FOR BID	ТВ	MDN	WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	4555		Designed	MV		
					DAVID C GONCALV CIVIL	ES CHUSETT		Drawn	KAM		
					No. 515	80 5		Dwg check	DGG		
					Laudes	2/4/2020	2	Scale at ANS	id)WN	Status	
					Project Number	B/O	Total	Drawing Num	ber		
ate	Drawn	Description	Ch'k'd	App'd	507408636-002	30	64				(

4 (S My)	
CHER COLOR	
DANC. NEWAY	
PROPOSED SMH 282 RIM:253.24 INV IN:243.21 INV OUT:243.11 HOUSE NO. 267	
TEST PIT	
DIAM	
	256
	252
	248
	210
	244
	240
	236

	Eng check	MV			BIRNIE AVENUE/PIPER ROAD AREA
	Coordination	-			SEWER EXPANSION PROJECT
	Approved	cw			WEST SPRINGFIELD, MASSACHUSETTS
	Rev	1	Security		
					PLAN AND PROFILE
C1	25				JEFFREY LANE

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		VERTICAL			HORIZONTAL						
2/2020	KAM	ISSUED FOR BID	ТВ	MDN	WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	ASSA		Designed	MV		
					DAVID GONCALV	ES CHUSET		Drawn	KAM		
					No. 515	80 5		Dwg check	DGG		
					Taudes	Joncalus 2/4/2020	2	Scale at ANSI	id)WN	Status	
					Project Number	B/O	Total	Drawing Num	ber		
ite	Drawn	Description	Ch'k'd	App'd	507408636-002	31	64				(

EET C127	
HOUSE NO. 48 POSED SMH 182 251.18 N: 244.52 N: 244.52 DUT: 244.42 (SOUTH)	
ET C127	
	256_
	252
	248
	244
	240
	236
Eng check MV Coordination - Approved CW Rev Security	Title BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS
	PLAN AND PROFILE

С	1	26
_	_	

AL'S WAY

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- NOTES:

HOUSE NO. 8

- LANDSCAPED

AREA

-LOW PRESSURE

SEWER

LATERAL

DRIVEWAY

SAW CUT -

STORM MH -

RIM 248.91

_ _

MACADAM.

DRIVEWAY

SURCHARGED

CL INV. 240,83

ST S"PVC

STORM MH -

FO# 104-0316

JRCHARGED

V)INV. 245.28

L INV. 238,23

MACADAM -

SIDEWALK

2'x2' INLET ·

GR, 248.62

INV. 244.71

RIM 249.79

– ASSUMED CONNECTION

(PIPES NOT VISIBLE)

-TEST PIT

TEST PIT

- STORM MH

- CONC.

RIM 249.57

SURCHARGED

CL INV. 241,62

MONUMENT

FOUND

PHOTO# 104-0315

MACADAM

CONC PAD

MACADAM GUTTE

- IRON PI

FOUND

INV IN: 245.41

INV OUT: 245.31

			4'	PROF		30'					
		SCALE: 1" = 4' VERTICAL			SCALE: 1" = 30' HORIZONTAL						
2/2020	KAM	ISSUED FOR BID	TB	MDN	LUHOF	MISSIN		Designed	MV		
					DAVID GONCAL	G. VES		Drawn	KAM		
					No. 51	580		Dwg check	DGC		
					Laut	2/4/2020		Scale at ANS	DWN	Status	
					Project Number	B/O	Total	Drawing Num	ber		
ate	Drawn	Description	Ch'k'd	App'd	507408636-002	32	64				(

C127

CATAUMET LANE (1 OF 2)

NOTES:				
 REFER TO SHEET G002 FOR GENERAL NOT INSULATION SHALL BE PROVIDED FOR SEV LESS THAN 4 FEET OF COVER. 	TES AND LEGEND. WER MAINS WITH			
256				
252				
248				
244				
240				
236				
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				Rev [

		4' 2' 0 SCALE: 1" = 4' VERTICAL	4' 9	<u>PROF</u>	30' 15' 0 SCALE: 1" = 30' HORIZONTAL	30'					
2/2020	KAM	ISSUED FOR BID	ТВ	MDN	ALTHOF M	155		Designed	MV		Eng cl
					DAVID G GONCALVI CIVIL	STATES STATES		Drawn	KAM		Coord
					No. 5158			Dwg check	DGG		Appro
					Laudit	2/4/2020	2	Scale at ANS	id)WN	Status	Rev
					Project Number	B/O	Total	Drawing Num	ber		2400
ite	Drawn	Description	Ch'k'd	App'd	507408636-002	33	64			(28 ر

HOUSE NO. 103	
	256
	252
	248
	244
	240
	070
	236
Eng check MV	BIRNIE AVENUE/PIPER ROAD AREA
Approved CW	SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS
Rev Security	
128	PLAN AND PROFILE CATAUMET LANE (2 OF 2)

256	IOUT MANHOLE RIM 246.03
252	2" GAS
232	SURE SEWER TI
248	
244	
240	240.30
232	
230	0+00

C:\PWWORKING\HMM\WATER_WASTEWATER\MCC63488\D0461318\C129.DWG AeccDbFace (AeccLand120)

THAT HAS A AR RING TO EXISTING	FOUND		
SAN SAN-	SAN BENCHMARK 10001 N: 2878495.67 E: 342604.54 EL. 251.61	SAN	
E AND ANHOLE TE			
USE NO. 65		HOUSE NO. 51	
	I	1 1	
			256
			252
			248
			244
			240
			236
			232 230

	Eng check	MV		BIRNIE AVENUE/PIPER ROAD AREA
	Coordination	-		SEWER EXPANSION PROJECT
	Approved	pproved CW		WEST SPRINGFIELD, MASSACHUSETTS
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				PLAN AND PROFILE
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PLAN AND PROFILE **CYNTHIA DRIVE**

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PIPER ROAD PUMP STATION SITE

GRADING PLAN

BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

$1 \frac{1}{2}^{"} - 2 \frac{1}{2}^{"}$ CLEAN CRUSHED STONE			₽U	BLIC RIGHT OF WAY
EXISTING GROUND			12" MIN.	
GEOTEXTILE F BE INSTALLED OR POORLY [ABRIC TO IN SOFT DRAINED		PROVIDE APF BETWEEN ST ENTRANCE A	PROPRIATE TRANSITION ABILIZED CONSTRUCTION ND PUBLIC R.O.W.
AREAS	SE	E TABLE BELOW		
EXISTING GROUND				PUBLIC RIGHT OF WAY
DIVIDUAL LOT ACCESS F	POINTS MAY RE	EQUIRE STABILIZAT	TION	

STABILIZED CONSTRUCTION ENTRANCE DETAIL NOT TO SCALE

PERCENT SLOPE	LENGTH OF STONE REQUIRED					
OF ROADWAY	COARSE GRAINED SOILS	FINE GRAINED SOILS				
0 TO 2%	50 FT.	100 FT.				
2 to 5%	100 FT.	200 FT.				
>5%	ENTIRE SURFACE STABILIZED WITH FABC BASE CO					

NOTES:

IN

- 1. CLEAR AND GRUB ALL EXISTING VEGETATION WITHIN LIMITS OF LAYDOWN AREA.
- 2. PROVIDE GEOTEXTILE FABRIC ON ENTIRE LAYDOWN AREA PRIOR TO DELIVERING RECLAIMED GRAVEL TO THE SITE.
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERING 1,300 CUBIC YARDS OF TOWN-OWNED RECLAIMED GRAVEL FROM 287 PIPER ROAD TO THE LAYDOWN AREA & ACCESS ROAD.
- 4. CONTRACTOR SHALL SPREAD RECLAIMED GRAVEL ACROSS ENTIRE LIMITS OF LAYDOWN AREA & ACCESS ROAD WITH A MINIMUM OF 12 INCHES ACROSS THE AREA TO REMAIN ON SITE POST CONSTRUCTION.
- 5. CONTRACTOR IS PROHIBITED FROM USING THE EASEMENT ON 65 APRICOT HILL LANE FOR THE PURPOSES OF ACCESSING THE LAYDOWN AREA. EASEMENT SHALL ONLY BE USED WHILE INSTALLING THE SEWER ALONG THE EASEMENT.

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[®] BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

PIPER ROAD PUMP STATION SITE LAYDOWN AREA

NOTES:

REFER TO SHEET G002 FOR GENERAL NOTES AND LEGEND. 2. FORCE MAIN WILL REQUIRE A MINIMUM OF 5.5 FEET OF COVER.-

Ch'k'd App'd

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WEST SPRINGFIELD, MASSACHUSETTS

PIPER ROAD FORCE MAIN FROM PUMP STATION

PUMP STATION FORCE MAIN

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	30"	36"
	36"	48"
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ADDRESS	SEWER CONNECTION INVERT EL. @ PROPERTY LINE
1392 PIPER ROAD	254
1393 PIPER ROAD	251.3
1404 PIPER ROAD	256.7
1407 PIPER ROAD	252.1
1414 PIPER ROAD	261
1421 PIPER ROAD	257.5
1424 PIPER ROAD	260
111 WOODBROOK	226
112 WOODBROOK	227.5
132 WOOBROOK	223.5
133 WOODBROOK	223
7 SWEETFERN DRIVE	228
10 SWEETFERN DRIVE	224
20 SWEETFERN DRIVE	226.5
21 SWEETFERN DRIVE	225
32 SWEETFERN DRIVE	223
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44 SWEETFERN DRIVE	223
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STABILIZED.

DEWATERING DISCHARGE FILTER

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– 2 EACH DUMP STRAPS

EXPANSION RESTRAINT (1/4" NYLON ROPE, 2" FLAT WASHERS)

THE FOLLOWING APPLIES TO ALL METHODS OF STORM SEWER INLET PROTECTION:

MUST SLOW THE STORM WATER, PROVIDE THE COARSE SEDIMENT PARTICLES A CHANCE TO SETTLE, AND PROVIDE AN AREA TO RETAIN THE PARTICLES THAT

IN ALL CASES, INLET PROTECTION SHOULD NOT COMPLETELY CLOSE OFF THE INLET. PROVISION MUST BE MADE TO ALLOW STORM WATER TO OVERFLOW OR

THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FROM THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

OTHER METHODS THAT ACCOMPLISH THE PURPOSE OF STORM SEWER INLET PROTECTION MAY BE USED IF APPROVED BY THE OWNER.

• INSPECTIONS SHALL BE FREQUENT. MAINTENANCE, REPAIR, AND REPLACEMENT SHALL BE MADE PROMPTLY, AS NEEDED. THE BARRIER SHALL BE REMOVED WHEN THE AREA DRAINING TOWARD THE INLET HAS BEEN

INLET SEDIMENT CONTROL DEVICE DETAIL NTS

- BALING TWINE FLOW ------ 4" VERTICAL FACE EMBEDDING DETAIL 3 ANGLE FIRST STAKE TOWARD -PREVIOUSLY LAID BALE (TYP.) — SECURELY TIED BALES PLACED ON THE CONTOUR (TYP.) 2 REBARS, STEEL PICKETS, OR 2" X 2" STAKES 1-1/2' TO 2' IN GROUND (TYP.)

PLACEMENT AND ANCHORING DETAIL **BALE SEDIMENT BARRIERS** NTS

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BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

EROSION AND SEDIMENT CONTROL DETAILS

SOIL EROSION AND SEDIMENT CONTROL NOTES

- THE OWNER AND THE CONSERVATION COMMISSION SHALL BE NOTIFIED BY E-MAIL OR OTHER WRITTEN FORM AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF THE WORK. PRIOR TO THIS NOTICE, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AS DEPICTED ON DRAWINGS C506 AND C507. ANY ALTERNATIVE MEASURES SUGGESTED BY THE CONTRACTOR SHALL BE APPROVED BY THE CONSERVATION AGENT PRIOR TO THEIR USE.
- 2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- 3. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE OWNER FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
- 4. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO $2\frac{1}{2}$ TONS PER ACRE, ACCORDING TO STATE STANDARD FOR STABILIZATION WITH MULCH ONLY.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E SOIL STOCKPILES, STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
- 6. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS, IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF PRELIMINARY GRADING.
- 7. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF ONE INCH TO TWO INCH (1"-2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.
- 8. ALL SOIL WASHED, DROPPED, SPILLED OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC ROGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.
- 9. PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
- 10. AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT IT WILL PERMANENTLY ADJUST TO THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
- 11. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- 12. UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.
- 13. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.
- 14. STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY ME REQUIRED FOR THESE ACTIVITIES IF AN AREA OF GREATER THAN 5,000 FEET IS DISTURBED.
- 15. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.

STABILIZATION WITH MULCH ONLY (NON-GROWING SEASON)

1. SITE PREPARATION

- Α.
- STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
- 2. PROTECTIVE MATERIALS
 - APPROVED BY THE SOIL CONSERVATION DISTRICT.
 - B **ENGINEER**
 - D

 - RECOMMENDED.
- DEPENDING UPON THE SIZE OF THE AREA AND STEEPNESS OF SLOPES.
- WIDE AND UP TO 300 FEET LONG. С
- OPERATION SHOULD BE ON THE CONTOUR.
- LIQUID MULCH-BINDERS D. USE ONE OF THE FOLLOWING
 - CONDITIONS RECOMMENDED BY THE MANUFACTURER.

PERMANENT STABILIZATION WITH VEGETATIVE COVER:

- AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.
- APPLICATION OF THE SAME FERTILIZER 3 TO 5 WEEKS AFTER SEEDING.
- FOR MANAGEMENT OF HIGH ACID-PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.
- SHALL BE BY CONVENTIONAL SEEDING OR HYDROSEEDING METHODS.
- BE ACCOMPLISHED BY LIQUID MULCH BINDER.
- SPECIES) AND MOWED ONCE.

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GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE

A. UNROTTED SMALL-GRAIN STRAW. OR SALT HAY AT 2.0 TO 2.5 TONS PER ACRE IS SPREAD UNIFORMLY AT 90 TO 115 POUNDS PER 1,000 SQUARE FEET AND ANCHORED WITH A MULCH ANCHORING TOOL. LIQUID MULCH BINDERS, OR NETTING TIE DOWN. OTHER SUITABLE MATERIALS MAY BE USED IF

SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN QUANTITIES AS RECOMMENDED BY THE MANUFACTURER AND WHERE APPROVED BY THE OWNER OR

WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE (OR ACCORDING TO THE MANUFACTURER'S REQUIREMENTS) MAY BE APPLIED BY A HYDROSEEDER.

MULCH NETTING, SUCH AS PAPER JUTE, EXCELSIOR, COTTON, OR PLASTIC, MAY BE USED. WOODCHIPS APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 2 INCHES MAY BE USED. WOODCHIPS WILL NOT BE USED ON AREAS WHERE FLOWING WATER COULD WASH THEM INTO AN INLET AND PLUG IT. GRAVEL, CRUSHED STONE, OR SLAG AT THE RATE OF 9 CUBIC YARDS PER 1,000 SQ. FT. APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 3 INCHES MAY BE USED. SIZE 2 OR 3 (ASTM C-33) IS

3. MULCH ANCHORING - SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS,

A. PEG AND TWINE - DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISSCROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS. MULCH NETTINGS - STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET

CRIMPER MULCH ANCHORING COULTER TOOL - A TRACTOR-DRAWN IMPLEMENT ESPECIALLY DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE. THIS PRACTICE AFFORDS MAXIMUM EROSION CONTROL, BUT ITS USE IS LIMITED TO THOSE SLOPES UPON WHICH THE TRACTOR CAN OPERATE SAFELY. SOIL PENETRATION SHOULD BE ABOUT 3 TO 4 INCHES. ON SLOPING LAND, THE

APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.

a. ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS THAT MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. VEGETABLE BASED GELS SHALL BE APPLIED AT RATES AND WEATHER

b. SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

1. APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED). TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER,

2. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL THAT HAS BEEN SPREAD AND FIRMED. FERTILIZER SHALL BE APPLIED AT A RATE OF 500 LBS/ACREW OR 11 LB/1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE-HALF THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ONE-HALF RATE

3. SOILS HAVING A pH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A pH OF 5 OR MORE BEFORE INITIATING SEEDBED PREPARATION. SEE STANDARD

4. APPLY SEED MIXTURE AS SHOWN IN THE PERMANENT SEEDING SCHEDULE ON THIS SHEET. APPLICATION

6. APPLY MULCH TO ALL SEEDING. MULCHING SHALL USE STRAW OR HAY AT A RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER, THE RATE SHALL BE 3 TONS PER ACRE. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE IS COVERED. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING SHALL

7. THE QUALITY OF PERMANENT VEGETATION SHALL BE THE RESPONSIBLITY OF THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING SEEDBEDS, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. ESTABLISHING PERMANENT VEGETATION MEANS 90% VEGETATIVE COVER (OF THE SEEDED

STANDARDS FOR DUST CONTROL

DEFINITION - THE CONTROL OF DUST ON CONSTRUCTION SITES AND ROADS

PURPOSE - TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES. REDUCE ON- AND OFF-SITE DAMAGE AND HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY

WHERE APPLICABLE - THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON- AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT. CONSULT WITH LOCAL MUNICIPAL ORDINANCES ON ANY RESTRICTIONS.

	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM)-SPRAY ON POLYACRYLAMIDE (PAM)-DRY SPREAD	APPLY ACC MAY ALSO E BASINS TO COLLOIDS.	ORDING TO MANUF BE USED AS AN ADE FLOCCULATE AND F	ACTURER'S INSTRUCTIONS. DITIVE TO SEDIMENT PRECIPITATE SUSPENDED
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1,200

TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET. BARRIERS - SOLID BOARDS FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE - SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES. THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS OR ACCUMULATION AROUND PLANTS. STONE -COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

SEED BED PREPARATION

UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED. APPLY FERTILIZER AT A RATE OF 500 LBS/ACRE OR 11 LBS PER 1,000 SF OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AT A RATE OF 2 TONS/ACRE, LIME & FERTILIZER SHALL BE WORKED INTO THE TOPSOIL TO A DEPTH OF 4".

TEMPORARY SEEDING SCHEDULE

SEED SELECTION	SEEDIN (POU	IG RATE ¹ INDS)		OPTIMUM SEEDING DEPTH ³	
	PER ACRE PER 1,000 S.F.		SEEDING DATE ²	(INCHES)	
COOL SEASON GRASSES					
1. PERENNIAL RYEGRASS	100	1.0	3/1-5/15 8/15-10/1	0.5	
2. SPRING OATS	86	2.0	3/1-5/15 8/15-10/1	1.0	
3. WINTER BARLEY	96	2.2	8/15-10/1	1.0	
4. WINTER CEREAL RYE	112	2.8	8/1-11/15	1.0	
WARM SEASON GRASSES					
5. PEARL MILLET	20	0.5	5/15-8/15	1.0	
6. MILLET (GERMAN OR HUNGARIAN)	30	0.7	5/15-8/15	1.0	
7. WEEPING LOVEGRASS	5	0.2	5/15-8/15	0.25	

SEEDING RATE FOR WARM SEASON GRASS, SHALL BE ADJUSTED TO REFLECT THE AMOUNT OF PURE LINE SEED (PLS) AS DETERMINED BY A GERMINATION TEST RESULT. NO ADJUSTMENTS REQUIRED FOR COOL SEASON GRASSES.

2. MAY BE PLANTED THROUGHOUT SUMMER IF SOIL MOISTURE IS ADEQUATE OR SEEDED AREA CAN BE IRRIGATED.

3. TWICE THE DEPTH FOR SANDY SOIL.

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TEMPORARY SEEDING NOTES

RESTORATION OF GRASSED AND CULTIVATED AREAS: BEFORE REPLACING TOPSOIL, THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF THREE (3) INCHES, ALL LUMPS, STONES, AND FOREIGN MATERIALS REMOVED, AND THE SURFACE RAKED TO A UNIFORM GRADE. TOPSOIL SHALL THEN BE SPREAD, RAKED, AND ROLLED TO FORM AN EVEN SURFACE WITH EXISTING GRADE. IF SUFFICIENT TOPSOIL IS NOT OBTAINED FROM STRIPPING THE ORIGINAL AREAS DISTURBED, THE CONTRACTOR SHALL FURNISH ADDITIONAL MATERIAL AT NO ADDITIONAL COST.

THE GRASSED AREAS SHALL THEN BE LIMED, FERTILIZED AND SEEDED. LIME SHALL BE GROUND AGRICULTURAL LIMESTONE, 50% CALCIUM CARBONATE EQUIVALENT AND SHALL BE SPREAD AT THE RATE OF 90 LBS PER 1000 SQUARE FEET. FERTILIZER SHALL BE APPROVED 10-20-10 COMMERCIAL FERTILIZER, SPREAD AT THE RATE OF 11 LBS PER SQUARE FEET. TEMPORARY SEED SHALL BE OATS APPLIED AT THE RATE OF 2 LBS PER 1000 SQUARE FEET OR PEARL MILLET APPLIED AT THE RATE OF 0.5 LBS PER 1000 SQUARE FEET AND THE FINISHED SURFACE LIGHTLY RAKED AND ROLLED SMOOTH.

THE CONTRACTOR SHALL PROTECT ALL SEEDED SURFACES BY MULCHING WITH SMALL GRAIN STRAW, OR HAY WITH A LIQUID MULCH BINDER APPLIED AT A RATE OF 70-90 LBS PER 1000 SQUARE FEET AND SHALL TEND AND WATER ALL SEEDED AREAS UNTIL A SATISFACTORY GROWTH HAS BEEN ESTABLISHED. AREAS WHICH FAIL TO SHOW A SATISFACTORY GROWTH SHALL BE RESEEDED. FERTILIZED AND MULCHED UNTIL FULLY SATISFACTORY GROWTH IS ACHIEVED.

PERMANENT SEEDING SCHEDULE

	PLANTIN (POU	IG RATE NDS)				
SELD SELECTION	PER ACRE	PER 1,000 S.F.	PERIOD	PERIOD		
COOL SEASON MIX No. 8						
1. STRONG CREEPING	30	0.7	2/4 4/20	5/1 9/14		
2. FLATPEA	25	0.6	3/1-4/30	5/1 - 6/14		

LIMITS OF DISTURBANCE WITHIN PAVED AREAS SHALL BE THE TRENCH WIDTH IN ACCORDANCE WITH SPECIFICATIONS AND PIPE INSTALLATION DETAILS.

GENERAL NOTES:

IN ALL AREAS WHERE THE WORK IS OUTSIDE OF PAVED ROADS, THE CONTRACTOR SHALL INSTALL AND MAINTAIN APPROPRIATE SOIL EROSION CONTROL MEASURES IN ACCORDANCE WITH THE DETAILS ON THE DRAWINGS, REGARDLESS OF WHETHER OR NOT THE LOCATION OF SUCH MEASURES ARE SPECIFICALLY SHOWN ON THE PLANS. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SILT FENCES ALONG THE PERIMETER OF DISTURBED AREAS AND AROUND MATERIAL STOCKPILES, AND STONE CONSTRUCTION ENTRANCE PADS AT POINTS OF MAJOR INGRESS AND EGRESS FROM PAVED ROADS TO UNPAVED AREAS.

WHERE WORK IS IN PAVED ROADS, EROSION CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO STORM DRAIN INLET PROTECTION, KEEPING ROADS CLEAN, AND CONTROLLING DUST.

> **BIRNIE AVENUE/PIPER ROAD AREA** SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

EROSION AND SEDIMENT CONTROL NOTES

SUGGEST		REFLECTORIZED PLASTIC DRUM	•
ROAD TYPE		OR 36" CONE POLICE/FLAGGER DETAIL	P/F
LOCAL OR LOW VOLUME	TRAFFIC OR PEDESTRIAN SIGNAL	TYPE III BARRICADE	
MOST OTHER ROADWAYS*	SIGN	CHANGEABLE MESSAGE SIGN	
FREEWAYS AND EXPRESSWAY		ARROW BOARD	
		WORK ZONE	
 * ROAD TYPE TO BE DETERMI ** DISTANCES ARE SHOWN IN DIMENSIONS SHOWN IN THE FROM THE TRANSITION OR I DISTANCE BETWEEN THE FI BETWEEN THE SECOND AND ENCOUNTERED BY A DRIVE 	MEDIAN BARRIER WITH WARNING LIGHTS	DIRECTION OF TRAFFIC	GENER
THE "THIRD" SIGN ABOVE IS TTCP SETUPS. THESE ADVA ALL APPROACHES (i.e. THE THE DURATION OF THE PRO LANE CLOSED 1 MILE") HAVE	HALL CONFORM TO THE LATEST EDITION TROL DEVICES" (MUTCD) AND ALL PLANS. NG SHALL BE IN ACCORDANCE WITH THE	L TEMPORARY TRAFFIC CONTROL WORK THE "MANUAL ON UNIFORM TRAFFIC COI EVISIONS, UNLESS SUPERCEDED BY THES LL SIGN LEGENDS, BORDERS, AND MOUNT	I. ALI OF RE` 2. ALI
SIGN PLACEMENT BUT ARE		JTCD.	MU
THE FIRST AND SECOND WA (DAY-TO-DAY) WORK ZONE : ROADWAY WORK FOR THAT	ALL OTHER TRAFFIC CONTROL DEVICES ANY WORK.	EMPORARY CONSTRUCTION SIGNING AND HALL BE IN PLACE PRIOR TO THE START O	o. ⊺EI SH
R2-10a SIGNS SHALL BE PLA	CADES, AND ALL OTHER NECESSARY ALL BE REMOVED FROM OR COVERED	EMPORARY CONSTRUCTION SIGNING, BAR ORK ZONE TRAFFIC CONTROL DEVICES SI	4. TEI WC
R2-10a, R2-10e, AND W20-1 S	R NEAR THE TRAVELED WAY, ASH ATTENUATORS MUST PASS THE "RECOMMENDED PROCEDURES FOR THE HWAY FEATURES" AND/OR "MANUAL FOR	GNS AND SIGN SUPPORTS LOCATED ON C HANNELIZING DEVICES, BARRIERS, AND CI RITERIA SET FORTH IN NCHRP REPORT 350 AFETY PERFORMANCE EVALUATION OF HIG SSESSING SAFETY HARDWARE" (MASH).	5. SIG CH CR SAI AS
	R AT LEAST 24 HOURS IN ADVANCE OF RE THE TEMPORARY CLOSURE OF ACCESS, PAVEMENT EXCAVATION, TEMPORARY LAR OPERATIONS.	ONTRACTORS SHALL NOTIFY EACH ABUTT HE START OF ANY WORK THAT WILL REQU JCH AS CONDUIT INSTALLATION, EXISTING RIVEWAY PAVEMENT PLACEMENT, AND SIM	6. CO THI SU DR
	SHALL BE MOUNTED WITH TYPE A LIGHTS.	IE FIRST FIVE PLASTIC DRUMS OF A TAPE	7. TH
	HALL BE DETERMINED BY THE ENGINEER.	IE ADVISORY SPEED LIMIT, IF REQUIRED,	3. TH
	TED IN THE FIELD BY THE ENGINEER. A TAPER (DRUMS OR CONES) IS EQUAL IN	STANCES ARE A GUIDE AND MAY BE ADJU AXIMUM SPACING OF TRAFFIC DEVICES IN EET TO THE SPEED LIMIT IN MPH.	9. DIS 10. MA FEE
) UNLESS OTHERWISE SHOWN. MINIMUM IGE OF DRUMS OR MEDIAN BARRIER.	NIMUM LANE WIDTH IS TO BE 11 FEET (3.3 NE WIDTH TO BE MEASURED FROM THE E	I1. MIN LAN
	/N STANDARD SIGN SUPPORTS.	L SIGNS SHALL BE MOUNTED ON THEIR O	12. ALI
	FFIC SETUPS SHALL BE IN CONFORMANCE JNIFORM TRAFFIC CONTROL DEVICES NDMENTS TO THE MANUAL ON UNIFORM	L MAINTENANCE AND PROTECTION OF TR ITH THE 2009 EDITION OF THE MANUAL ON I.U.T.C.D.), AND THE MASSACHUSETTS AM RAFFIC CONTROL DEVICES.	I3. ALI WI⁻ (M. TR/
	MAXIMUM OF 20' CENTER TO CENTER. IANNELIZING DEVICES, EQUALLY SPACED, ER.	HANNELIZING DEVICE SPACING SHALL BE . LL TAPERS SHALL HAVE A MINIMUM OF 6 C T NO GREATER THAN 25' CENTER TO CENT	I4. CH ALI AT
	LL BE 36"x36" UNLESS OTHERWISE	L TEMPORARY CONSTRUCTION SIGNS SH DTED ON PLANS.	I5. ALI NO
	QUIRE 60" MINIMUM MOUNTING HE BOTTOM OF SIGN.	GNS INSTALLED ON PORTABLE STANDS RE EIGHT FROM THE ROADWAY SURFACE TO	I6. SIG HEI
	MUM 84" MOUNTING HEIGHT FROM OTTOM OF SIGN.	GNS MOUNTED ON POSTS REQUIRE A MIN HE ROADWAY OR SIDEWALK SURFACE TO	I7. SIG TH
	HERWISE NOTED, SHALL CONFORM I.T.C.D. PART 6, AND STANDARD GNS AND CHANNELIZING DEVICES	L TRAFFIC CONTROL DEVICES, UNLESS O D APPLICABLE SPECIFICATIONS OF THE M IGHWAY SIGNS, CURRENT EDITIONS. ALL S HALL BE RETRO-REFLECTORIZED.	18. ALI TO HIC SH
	IN CONFLICT WITH DAILY OVERED. IMMEDIATELY PRIOR OVER SIGNS, AS DIRECTED	KISTING OR TEMPORARY SIGNS WHICH AR RAFFIC MANAGEMENT SETUPS SHALL BE (O COMPLETION, CONTRACTOR SHALL UNC Y THE ENGINEER.	I9. EXI TR TO BY
	IENTS FOR MAINTENANCE OF TRAFFIC. PROVIDE TRAFFIC MANAGEMENT ENTED AT THE DISCRETION OF	L DETAILS DEPICT THE MINIMAL REQUIRE HE DETAILS SHALL BE USED AS A GUIDE T OR DAILY OPERATIONS AND MAY BE AUGM HE GOVERNING TRAFFIC AUTHORITY.	20. ALI TH FO TH
	TIVE EQUIPMENT IN ACCORDANCE TIMES.	ORKERS SHALL WEAR PERSONAL PROTEC ITH MUTCD AND OSHA STANDARDS AT AL	21. WC WI

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ORK ZONE WARNING SIGN SPACING

DISTANCE BETWEEN SIGNS **									
А	В	С							
350 (100)	350 (100)	350 (100)							
500 (150)	500 (150)	500 (150)							
1,000 (300)	1,500 (450)	2,640 (800)							

MASSDOT OFFICE OF TRANSPORTATION PLANNING.

ETERS). THE COLUMN HEADINGS A, B, AND C ARE THE / TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE SECOND SIGNS. THE C DIMENSION IS THE DISTANCE SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY DACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

LLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE RNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON RIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR DDITIONAL SIGNS (i.e. "RIGHT LANE CLOSED 1 MILE" AND "LEFT SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT RARE OCCASIONS.

SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC LOCATED.

TWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

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AND GENERAL NOTES

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LONGITUDINAL DROP-OFF DETAIL

A - RURAL AREA

NOTES: STANDARD:

FACILITIES (ADAAG)" (SEE SECTION 1A.11).

GUIDANCE:

EXCEPT AS PROVIDED IN PARAGRAPH 12, SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS THAT DO NOT MEET THE MINIMUM MOUNTING HEIGHTS PROVIDED IN PARAGRAPHS 4 THROUGH 6 SHOULD NOT BE USED FOR A DURATION OF MORE THAN 3 DAYS.

OPTION: THE R9-8 THROUGH R9-11A SERIES, R11 SERIES, W1-6 THROUGH W1-8 SERIES, M4-10, E5-1, OR OTHER SIMILAR TYPE SIGNS (SEE FIGURES 6F-3, 6F-4, AND 6F-5) MAY BE USED ON PORTABLE SIGN SUPPORTS THAT DO NOT MEET THE MINIMUM MOUNTING HEIGHTS PROVIDED IN PARAGRAPHS 4 THROUGH 6 FOR LONGER THAN 3 DAYS. SUPPORT: 13 METHODS OF MOUNTING SIGNS OTHER THAN ON POSTS ARE ILLUSTRATED IN FIGURE 6F-2.

GUIDANCE: SIGNS MOUNTED ON TYPE 3 BARRICADES SHOULD NOT COVER MORE THAN 50 PERCENT OF THE TOP TWO RAILS OR 33 PERCENT OF THE TOTAL AREA OF THE THREE RAILS.

STANDARD: SIGN SUPPORTS SHALL BE CRASHWORTHY. WHERE LARGE SIGNS HAVING AN AREA EXCEEDING 50 SQUARE FEET ARE INSTALLED ON MULTIPLE BREAKAWAY POSTS, THE CLEARANCE FROM THE GROUND TO THE BOTTOM OF THE SIGN SHALL BE AT LEAST 7 FEET.

F	FORMULAS FOR DETERMINING							
	SPEED (S)	TAPER L						
	40 MPH OR LESS	I						
	45 MPH OR MORE							

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

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OAD ORK HEAD	\geq
	5 FT. MIN.

B - RURAL AREA WITH ADVISORY SPEED PLAQUE

D - BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA (WITHOUT CURB)

HEIGHT AND LATERAL LOCATION **OF SIGNS - TYPICAL INSTALLATIONS** NTS

WHERE IT HAS BEEN DETERMINED THAT THE ACCOMMODATION OF PEDESTRIANS WITH DISABILITIES IS NECESSARY, SIGNS SHALL BE MOUNTED AND PLACED IN ACCORDANCE WITH SECTION 4.4 OF THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND

SIGNS MOUNTED ON BARRICADES AND BARRICADE/SIGN COMBINATIONS SHALL BE CRASHWORTHY.

TAPER LENGTH

ENGTH (L) IN FEET $L = \frac{WS2}{60}$

L = WS

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Approved	CW		
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Title **BIRNIE AVENUE/PIPER ROAD AREA** SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

TRAFFIC CONTROL DETAILS (1 OF 2)

SINGLE LINE APPROACH ONE QUADRANT CLOSURE NTS

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TWO LANE ROAD SHOULDER CLOSURE NTS

TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC NTS

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Title [®] BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

TRAFFIC CONTROL DETAILS

(2 OF 2)

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BIRNIE A	
	WOODBROOK TERRACE
VALLEY VIEV CIRCLE	BTOUR PLAN NO. 4 WCIRCLE CLOSED SECTION
	IEGEND
1 ROAD CLOSED R11-2	$(4) \qquad \boxed{\begin{array}{c} DETOUR \\ \blacksquare \\ M4-9AR \end{array}} \qquad (7) \qquad \boxed{\begin{array}{c} DETOUR \\ \blacksquare \\ M4-9R \end{array}} \\ \qquad M4-9R \end{array}}$
2 DETOUR M4-9	END DETOUR8ROAD CLOSED TO THRU TRAFFICM4-8aR11-4
3 DETOUR M4-9L	6 DETOUR M4-9AL
Eng check DH	BIRNIE AVENUE/PIPER ROAD AREA
Coordination DGG	SEWER EXPANSION PROJECT
Approved Cvv Rev Security	
T104	TRAFFIC CONTROL ROAD CLOSURE DETAILS

HEMLOCK HILL ROAD

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GENERAL STRUCTURAL NOTES

- 1. THE STRUCTURAL DESIGN OF THIS PROJECT IS BASED UPON APPROPRIATE PORTIONS OF THE FOLLOWING:
- A. INTERNATIONAL BUILDING CODE, 2015.
- B. AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" ACI 318-14.
- AMERICAN CONCRETE INSTITUTE "CODE REQUIREMENTS FOR ENVIRONMENTAL
- ENGINEERING CONCRETE STRUCTURES AND COMMENTARY" ACI 350-06. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-10.
- AISC "STEEL CONSTRUCTION MANUAL" FOURTEENTH EDITION, 2013.
- F. AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS. LUMINARIES, AND TRAFFIC SIGNALS, 6TH EDITION, 2013.

2. DETAILS SHOWN IN ANY SECTION APPLY TO ALL SIMILAR SECTIONS, UNLESS OTHERWISE NOTED.

- 3. PRIOR TO MOBILIZATION AND ANY FABRICATION, THE CONTRACTOR SHALL CONDUCT EXPLORATORY EXCAVATION TESTS AT PROPOSED FOUNDATION LOCATIONS TO ENSURE THERE ARE NO CONFLICTS WITH ANY EXISTING UNDERGROUND UTILITIES OR ELECTRICAL DUCTBANKS. IF UNKNOWN UNDER-GROUND UTILITIES OR ELECTRICAL DUCTBANKS ARE FOUND, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY.
- 4. THE CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL FIELD CONDITIONS, DIMENSIONS, LOCATIONS, ELEVATIONS, AND DETAILS SHOWN ON THE CONTRACT DRAWINGS BEFORE PROCEEDING. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF THE EXISTING STRUCTURES AND CLEARANCES TO NEW CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
- 5. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL FLOOR DEPRESSIONS, DOORS, AND OPENINGS WITH THE PROCESS, MECHANICAL, AND ELECTRICAL DRAWINGS PRIOR TO PROCEEDING WITH FABRICATION AND CONSTRUCTION. IN CASE OF ANY DISCREPANCIES, NOTIFY THE ENGINEER IMMEDIATELY.
- 6. EQUIPMENT FOUNDATIONS AND PLATFORMS SHOWN ON THE STRUCTURAL DRAWINGS HAVE BEEN SIZED AND DESIGNED BASED ON THE EQUIPMENT LISTED, OR EQUAL. THE CONTRACTOR SHALL VERIFY THIS INFORMATION WITH CERTIFIED EQUIPMENT DRAWINGS, ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. IF ANY EQUIPMENT DIFFERENT FROM THE LIST IS CHOSEN, CONTRACTOR SHALL PROVIDE DESIGN DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF MASSACHUSETTS FOR THE PROPOSED EQUIPMENT. THE DESIGN FOR THE PROPOSED EQUIPMENT SHALL BE IN ACCORDANCE WITH THE CURRENT CODES AND PROJECT SPECIFICATIONS. THE PROPOSED MATERIALS SHALL MEET OR EXCEED THE ONES USED IN THE ORIGINAL DESIGN IN TERMS OF STRENGTH, SERVICEABILITY, AND DURABILITY.
- 7. CONTRACTOR SHALL VERIFY ACTUAL EQUIPMENT WEIGHTS WITH CERTIFIED VENDOR DRAWINGS. IF CERTIFIED EQUIPMENT WEIGHTS INCREASE MORE THAN 10% OF EQUIPMENT WEIGHTS SHOWN IN THE STRUCTURAL DRAWINGS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY FOR VERIFICATION OF THE DESIGN PRIOR TO CONSTRUCTION.
- STRUCTURAL DRAWINGS MAY NOT SHOW ALL EQUIPMENT PADS AND OTHER EQUIPMENT SUPPORTS REQUIRED. REFER TO ELECTRICAL, PROCESS, AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 9. FOR DESIGN PURPOSES, A FULLY SUBMERGED CHAMBER WITH WATER AT FINISHED GRADE ELEVATION SHALL BE ASSUMED, AND THEREFORE STRUCTURES MAY BE BUOYANT.
- 10. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN A COMPLETE SYSTEM FOR DEWATERING THE CONSTRUCTION SITE TO PROPERLY CONSTRUCT ALL STRUCTURES IN THE DRY. SUCH PROCEDURES SHALL AVOID DISTURBANCE OF THE SOIL STRUCTURE.
- 11. THE CONTRACTOR SHALL FULLY BRACE AND OTHERWISE PROTECT THE WORK IN PROGRESS UNTIL THE BUILDING AND/OR STRUCTURE IS COMPLETED AND SAFE TO REMOVE BRACING.
- 12. REFER TO THE PROJECT SPECIFICATIONS FOR COMPLETE INFORMATION. WHERE ANY DISCREPANCY IS DETERMINED BETWEEN THESE NOTES AND THE SPECIFICATIONS, THE MORE STRINGENT SHALL APPLY.

FOUNDATION NOTES

- FOUNDATIONS HAVE BEEN DESIGNED AND PROPORTIONED BASED ON THE ALLOWABLE BEARING PRESSURE OF 2,000 PSF. CONTRACTOR SHALL VERIFY THIS REQUIRED VALUE WITH GEOTECHNICAL ENGINEER DURING EXCAVATION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER FOR A FOUNDATION RE-EVALUATION.
- 2. THE ACTUAL FIELD CONDITIONS AS FOUND DURING THE CONSTRUCTION PERIOD SHALL GOVERN THE FOUNDATION REQUIREMENTS.
- 3. WHERE SOIL OF THE REQUIRED BEARING CAPACITY IS FOUND AT A LOWER ELEVATION, THE BOTTOM OF FOUNDATION SHALL BE LOWERED IF SO REQUIRED TO CONFORM TO THE ACTUAL SOIL BEARING STRATA ELEVATION. AS DETERMINED BY THE ENGINEER, THE BOTTOM ELEVATION OF THE FOUNDATION ELEMENT MAY BE LOWERED, THE TOTAL THICKNESS OF THE FOUNDATION ELEMENT MAY BE VARIED TO SUIT THE FIELD CONDITIONS OR REPLACE WITH COMPACTED FILL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OBTAIN SUCH INSTRUCTIONS BEFORE PROCEEDING WITH CONSTRUCTION OF THE FOUNDATIONS.
- 4. ALL BEARING STRATA UNDER FOUNDATION ELEMENTS SHALL BE PROTECTED FROM FREEZING. UNDER NO CIRCUMSTANCES SHALL ANY FOOTING, FOUNDATION ELEMENT, OR SLAB ON GRADE SHALL BE PLACED ON FROZEN MATERIAL.
- UNLESS OTHERWISE SHOWN ON THE DRAWINGS. ALL FOUNDATIONS FOR PROPOSED STRUCTURES SHALL HAVE A LAYER OF CRUSHED STONE NO LESS THAN 12-INCHES THICK PLACED DIRECTLY BENEATH THE PROPOSED FOUNDATION. THE STONE LAYER SHALL EXTEND A MINIMUM OF 12 INCHES BEYOND THE EXTREMITIES OF THE FOUNDATION. CRUSHED STONE SHALL MEET THE REQUIREMENTS OF AGGREGATE STANDARD SIZE NO. 57 AS DEFINED BY STATE DOT STANDARD SPECIFICATIONS.

SEALANT NOTES

- HORIZONTAL JOINT SEALANT SHALL BE A TRAFFIC BEARING, TWO COMPONENT, POLYURETHANE BASED, SELF LEVELING ELASTOMERIC SEALANT SUCH AS SIKAFLEX-2C SL OR APPROVED EQUIVALENT. SEALANT SHALL BE GRAY IN COLOR TO MATCH TOPPING UNLESS OTHERWISE NOTED.
- 2. VERTICAL JOINT SEALANT SHALL BE A TWO COMPONENT, POLYURETHANE BASED, NON-SAGGING ELASTOMERIC SEALANT SUCH AS SIKAFLEX-2C NS OR APPROVED EQUIVALENT.

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Client

TOWN OF WEST SPRINGFIELD DEPARTMENT OF PUBLIC WORKS **26 CENTRAL STREET** WEST SPRINGFIELD, MA (413) 263-3242

CAST-IN-PLACE CONCRETE NOTES

- 1. REINFORCED CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
- A. PRECAST STRUCTURES SHALL CONFORM TO ACI STANDARD 350-06,"CODE ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"
- B. ALL OTHER STRUCTURES SHALL CONFORM TO ACI 318-14, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
- C. ALL STRUCTURES SHALL CONFORM TO ACI PUBLICATION SP 66-(04),"ACI DETAILING MANUAL," EXCEPT AS SPECIFICALLY MODIFIED BY THE CONTRACT DRAWINGS AND THE SPECIFICATIONS
- 2. ALL CONCRETE USED ON THE PROJECT SHALL HAVE A SPECIFIED 28-DAY COMPRESSIVE STRENGTH OF f'c = 4,500 PSI. SUCH STRENGTHS SHALL BE DETERMINED BY A TESTING LABORATORY. FOR FURTHER REQUIREMENTS, SEE THE SPECIFICATIONS.
- 3. ALL CONCRETE, REGARDLESS OF SPECIFIED DESIGN STRENGTH, SHALL CONTAIN STONE OR GRAVEL AGGREGATE SUCH THAT THE WEIGHT OF THE HARDENED CONCRETE IS 145 POUNDS PER CUBIC FOOT (+3%) WITH THE INCLUSION OF AIR ENTRAINMENT
- 4. FOR AIR ENTRAINMENT REQUIREMENTS SEE SPECIFICATION.
- 5. ALL REINFORCEMENT STEEL SHALL HAVE A MINIMUM YIELD STRENGTH, fy = 60 KSI AND SHALL BE NEW DOMESTIC DEFORMED BILLET- STEEL CONFORMING TO ASTM A615, GRADE 60, EXCEPT WHERE WELDING IS INDICATED. REINFORCEMENT SHALL CONFORM TO ASTM A706 UNLESS NOTED OTHERWISE
- 6. ALL DETAILING, BENDING, PLACEMENT, AND SUPPORT OF REINFORCEMENT SHALL CONFORM TO THE STANDARDS CITED IN NOTE 1, EXCEPT AS MODIFIED BY THE CONTRACT DRAWING.
- 7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL OF THE STANDARD AND SPECIAL ACCESSORIES FOR SUPPORTING, HOLDING AND TYING REINFORCEMENT ADEQUATELY IN ITS PROPER POSITION. THIS WILL INCLUDE SUPPORT BARS OR INDIVIDUAL HIGH CHAIRS FOR TOP REINFORCEMENT AND BOLSTERS FOR BOTTOM REINFORCEMENT AND WIRING ALL REINFORCEMENT IN PLACE. THE CONTRACTOR SHALL DESIGN AND DETAIL SPECIAL SUPPORTS AS REQUIRED AND SUBMIT DETAILS AND LAYOUTS FOR REVIEW BY THE ENGINEER.
- 8. ALL REINFORCEMENT STEEL BARS SHALL BE SPLICED AT ALL LAP POINTS, BENT AS REQUIRED, AND DEVELOPED AS PER THE TYPICAL DETAILS AND SCHEDULES. CONTINUOUS TOP REINFORCEMENT SHALL BE SPLICED MIDWAY BETWEEN SUPPORTS AND CONTINUOUS BOTTOM REINFORCEMENT AT THE SUPPORTS, UNLESS OTHERWISE SHOWN ON DRAWINGS.
- 9. CLEAR CONCRETE COVER OVER PRINCIPLE REINFORCEMENT SHALL BE AS CALLED FOR IN THE TYPICAL DETAILS AND OTHERWISE SHOWN ON THE CONTRACT DRAWINGS.
- 10. ALL EXPOSED CONCRETE EDGES SHALL BE GROUND TO A 3/4" RADIUS OR CHAMFERED AS PER THE CONTRACT DRAWINGS.
- 11. THE SPACING OF REINFORCEMENT SHOWN ON THE CONTRACT DRAWINGS IS THE MAXIMUM PERMITTED. IT MAY BE REDUCED FOR CONSTRUCTION CONSIDERATIONS BUT IS NOT TO BE EXCEEDED.
- 12. THE CONTRACTOR SHALL COORDINATE PLACEMENT OF ALL PIPE SLEEVES OR BOX OUT FOR ALL OPENINGS, ETC., REQUIRED FOR VARIOUS TRADES AS SHOWN ON THE STRUCTURAL, PROCESS, MECHANICAL, AND ELECTRICAL CONTRACT DRAWINGS.
- 13. ALL WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A1064 AND MUST BE PREFABRICATED AS SHEETS, NOT ROLLS. PROVIDE MINIMUM 6 INCH LAPS, TYPICAL. PROVIDE ADEQUATE SUPPORTS AND BOLSTERING TO PRESERVE THE SPECIFIED POSITION OF THE MESH DURING CONCRETE PLACEMENT AND FINISHING.
- 14. PROVIDE AND MAINTAIN ADEQUATE SHORING UNTIL THE STRUCTURE HAS BEEN COMPLETED AND CONCRETE HAS ACHIEVED FINAL STRENGTH.
- 15. ALL CONCRETE SURFACES TO BE ROUGHENED SHALL BE PREPARED TO PROVIDE A CONCRETE SURFACE PROFILE (CSP 6) IN ACCORDANCE WITH THE INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI) UNLESS NOTED OTHERWISE. SURFACE MUST BE STRUCTURALLY SOUND AND FREE OF OIL, GREASE, DUST, COATINGS, ETCETERA, CONTRACTOR SHALL REPAIR EXISTING CRACKS IN ACCORDANCE TO THE ACI 224.1R-07 RECOMMENDATIONS. APPLY SIKA ARMATEC 110 EPOCEM BONDING AGENT OR APPROVED EQUAL, UNLESS NOTED OTHERWISE.
- 16 ALL ELECTRICAL PROCESS AND MECHANICAL CONCRETE FOUIPMENT PAD ELEVATIONS SHALL BE IN COMPLIANCE WITH ASTM E1155 FLOOR SURFACE CLASSIFICATION - "FLAT" FF = 35, FL = 25.
- 17. BEFORE CONCRETE IS PLACED, CARE SHALL BE TAKEN TO ASSURE THAT ALL EMBEDDED ITEMS ARE FIRMLY AND SECURELY FASTENED IN PLACE TO PREVENT DISPLACEMENT.

ANCHORAGE NOTES

- CONTRACTOR SHALL REFER TO THE APPLICABLE DIVISIONS OF THE SPECIFICATIONS FOR SUPPORTS, BLOCKING, ANCHORAGE AND RESTRAINING OF ALL PIPING, VALVES AND PIPING APPURTENANCES.
- 2. CONTRACTOR SHALL REVIEW WITH THE ENGINEER ALL LOCATION AND ARRANGEMENT OF PIPING OPENINGS, PIPE SLEEVES, TRENCHES, AND ENCASEMENTS, AS REQUIRED TO COMPLETE WORK AND SHALL NOT PROCEED WITH INSTALLATION OF SAME UNTIL SUCH HAS BEEN REVIEWED AND WILL NOT IMPAIR THE STRUCTURAL INTEGRITY OF THE CONCRETE MEMBERS.
- CONTRACTOR SHALL PROVIDE AND COORDINATE THE INSTALLATION OF ALL ITEMS TO BE EMBEDDED IN THE CONCRETE SYSTEM. SUCH ITEMS SHALL INCLUDE BUT NOT LIMITED TO, PIPES, SLEEVES, BOLTS, STRUTS, HANGERS AND FITTINGS, ETCETERA.
- 4. ALL STAINLESS STEEL TO BE TYPE 316.

PRECAST NOTES

- 1. CONCRETE TO HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS
- 2. ALL CHAMBER SECTIONS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-913 FOR RECTANGULAR STRUCTURES.
- 3. ALL JOINTS SHALL HAVE WATERTIGHT NEOPRENE GASKETS

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T +1 (413) 535 0135 F +1 (413) 535 0136 www.mottmacamericas.com PIPING, PIPELINE APPURTENANCES, VALVES, SUPPORTS, HANGERS, STRUTS, BLOCKING AND

EXCAVATION, FILL AND COMPACTION NOTES

- 1. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION WORK WITH CAUTION SO AS NOT TO DAMAGE OR DISRUPT SERVICE OF EXISTING SEWERS, DUCTBANKS, WATER MAINS OR OTHER SUBSURFACE UTILITIES OR APPURTENANCES. ANY INTERFERENCE SHALL BE REPORTED TO THE ENGINEER.
- 2. EXISTING UNDERGROUND DUCTBANKS AND UTILITIES MAY OR MAY NOT BE SHOWN ON THE CONTRACT DRAWINGS. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE CONTRACT DRAWINGS ARE NOT GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING DUCTBANKS AND UTILITIES. THE CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICES IN OPERATION AND SHALL PROTECT THEM FROM DAMAGE DURING CONSTRUCTION.
- 3. WHEN EXCAVATING IN THE VICINITY OF EXISTING WATER MAINS, SANITARY SEWERS AND OTHER UNDERGROUND UTILITIES, THE CONTRACTOR SHALL EXPOSE THOSE LINES BY HAND EXCAVATION ONLY AND EXERCISE EXTREME CAUTION FOR PROTECTION OF THE EXISTING UTILITIES DURING CONSTRUCTION. "IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUIDES, OR TIE-DOWNS MAY BE NECESSARY."
- 4. UNLESS OTHERWISE NOTED PLACE STRUCTURAL BACKFILL IN MAXIMUM 12" LIFTS AND COMPACT TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY OBTAINABLE PER ASTM D1557. BACKFILLING AGAINST FOUNDATION WALLS SHALL BE DONE CAREFULLY USING SMALL COMPACTION EQUIPMENT.

DESIGN LOADS CRITERIA

1. GENERAL INFORMATION

- ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES RISK CATEGORY: III
- 2. <u>DEAD LOADS</u>

STRUCTURES - ACTUAL WEIGHT WEIGHT OF SOIL - 115 PCF FOR RESISTING UPLIFT

- 3. LIVE LOADS PLATFORMS = 100 PSF SNOW: GROUND: 35 PSF SNOW IMPORTANCE: 1.10 4. WIND LOADS
- BASIC WIND SPEED: 127 MPH WIND EXPOSURE: GUST FACTOR: 1.14
- 5. FLOATATION FACTOR OF SAFETY FOR FLOATATION = 1.20
- 6. GEOTECHNICAL INFORMATION

ALLOWABLE BEARING PRESSURE UP TO 10 FEET BELOW GRADE:	2,000 PSF
ALLOWABLE BEARING PRESSURE ELSEWHERE:	3.000 PSF

		TENSIC	ON LAP SPL	ICE & DEVE	ELOPMENT	(§d)BAR LE	ENGTHS - W	ALLS & SLA	BS			CC	OMPRESSION I	LAP SPLICE & DOWEL EN	MBEDMENT
BAR SIZE CONCRETE COVER TO BAR										BAR SIZE		DOWEL	COMPRESSION		
INCH	SOFT	0.75	IN.	1.00	IN.	1.50) IN.	2.0 1	N.	3.0 I	N.	INCH SOFT		EMBEDMENT	LAP
POUND	METRIC	ТОР	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	POUND	METRIC		
#3	#10	16	16	16	16	16	16	16	16	16	16	#3	#10	8	12
#4	#13	24	19	20	16	20	16	20	16	20	16	#4	#13	10	15
#5	#16	36	28	29	22	24	19	24	19	24	19	#5	#16	12	19
#6	#19	48	37	40	31	29	22	29	22	29	22	#6	#19	15	23
#7	#22	78	60	64	50	48	37	42	33	33	23	#7	#22	17	27
#8	#25	96	74	80	62	60	47	48	37	42	29	#8	#25	19	30
#9	#29	117	90	98	76	74	57	60	46	42	32	#9	#29	22	34
#10	#32	140	108	119	92	91	79	74	57	47	36	#10	#32	24	38
#11	#36	166	127	141	108	109	84	89	68	51	40	#11	#36	27	42

- CONCRETE TO BE NORMAL WEIGHT CONCRETE WITH A 28 DAY ULTIMATE COMPRESSIVE STRENGTH fc = 4,500 PSI. REINFORCEMENT TO BE UNCOATED BARS CONFORMING TO ASTM A615, GRADE 60.
- LENGTHS SHOWN IN TABLE HAVE BEEN CALCULATED AS PER SECTIONS 25.4.2.2 AND 25.5.2.1 OF THE ACI CODE. LENGTHS SHOWN ARE TYPE "B" CLASS LAPS. WHERE LESS THAN 1/2 OF THE REINFORCING IS LAPPED AT ANY ONE LAP LOCATION.
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BAR. LENGTHS SHOWN IN TABLE ARE BASED UPON A MINIMUM CENTER-TO-CENTER BAR SPACING OF TWICE THE CONCRETE COVER
- PLUS ONE BAR DIAMETER.
- CLEAR COVER TO REINFORCEMENT TO BE NOT LESS THAN THE NOMINAL BAR DIAMETER.

REINFORCEMENT LAP SPLICE, DEVELOPMENT & EMBEDMENT SCHEDULES 4,500 PSI

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THE MINIMUM CLEAR COVER FOR REINFORCEMENT - BARS SHALL B DIAMETER OR THE VALUES TABULATED BELOW, WHICHEVER IS THE	E ONE BAR GREATER
SLABS (EXTERIOR)	2"
SLABS EXPOSED TO LIQUIDS	2"
GIRDERS & BEAMS (EXTERIOR)	2"
SLABS (INTERIOR)	3/4"
GIRDERS & BEAMS (TO STIRRUPS) INTERIOR	1 1/2"
TIED COLUMNS & PIERS (TO TIES)	
SURFACES EXPOSED TO EARTH & WEATHER	2"
OTHER SURFACES	1 1/2"
FOUNDATION ELEMENTS	
FORMED SURFACES	2"
SURFACES PLACED AGAINST EARTH	3"
WALLS	
SURFACES EXPOSED TO EARTH & LIQUID	2"
SURFACES EXPOSED TO WEATHER	2"
OTHER SURFACES	1"

CONCRETE COVER FOR REINFORCEMENT SCHEDULE

1. CONCRETE TO HAVE A MINIMUM 28 DAY ULTIMATE COMPRESSIVE STRENGTH f'c = 4,500 PSI.

2. REINFORCEMENT TO CONFORM TO ASTM A615 - GRADE 60.

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BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

STRUCTURAL **GENERAL NOTES**

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STRUCTURAL - VALLEY VIEW CIRCLE PUMP STATION PLANS AND SECTIONS

NOTES:

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MECHANICAL - VALLEY VIEW CIRCLE PUMP STATION PLANS AND SECTIONS

BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

DGG Eng check Coordination DGG CW Approved Security

4" CLASS 53 D.I.P. FL x PE SPOOL

PIPE SUPPORT SCHEDULE

BASE ELBOW AND BASE TEE

PIPE SUPPORT DETAIL

NTS

FITTING SIZE

3" OR LESS

4"

6"

8"-10"

12"-16"

18"-24"

PIPE SUPPORT SIZE

1 1/2"

2"

2 1/2"

4"

6"

8"

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 NOTES: 1. WET WELL IS CLASS 1, DIV. 1, PER NFPA 820. 2. VALVE CHAMBER IS CLASS 1, DIV. 2, PER NFPA 820. 3. PRE-CAST CHAMBER WIDTHS TO BE CONFIRMED BY PRE-CAST MANUFACTURER.
ADJUSTABLE HEIGHT ADDLESTEL PIPE 4"Ø MIN. AJHESIVE ANCHOR (TP. 2 REQT)SADDLE TYPE PIPE SUPPORT DETAIL NTS
BASE ELBOW OR PIPE SUPPORT BASE TEE PIPE SUPPORT EXPANSION BOLT GROUT GROUT GROUT VIENTING SIZE PIPE SUPPORT SCHEDULE 10" 11/2" 4" 2" 6" 2 1/2" 8"-10" 4" 12"-16" 6" 18"-24" 8"
BASE ELBOW AND BASE TEE PIPE SUPPORT DETAIL NTS

Eng check	DGG		BIRNIE AVENUE/PIPER ROAD AREA
Coordination DGG		SEWER EXPANSION PROJECT	
Approved CW		WEST SPRINGFIELD, MASSACHUSETTS	
Rev		Security	
			 MECHANICAL - PIPER ROAD PUMP

Title

M402

DGG

Eng check

STATION PLANS AND SECTIONS

ELEMENTA	RY WIRING DIAGRAM SYMBOLS (AS APPLICABLE)		LAYOUT DRAWING SYMBOLS (AS APPLICAE
_	MOMENTARY CONTACT PUSH BUTTON NORMALLY OPEN	ı	CONDUIT EXPOSED (INTERIOR)
<u> o o</u>	MOMENTARY CONTACT PUSH BUTTON NORMALLY CLOS	ED	TYPICAL HOMERUN TO PANELBOARD
	MAINTAINED CONTACT PUSH BUTTON WITH	1, 3, 4	
			POURED CONCRETE, BLOCK WALLS, OR FLOOR SL
<u>o o</u>	TWO POSITION MAINTAINED CONTACT SELECTOR SWITCH		CONDUIT IN PLENUM ABOVE FINISHED CEILING
ō±ō		G	GROUND CABLE, COPPER UNLESS NOTED OTHERV AS SHOWN ON PLANS
<u></u>	THREE POSITION MAINTAINED CONTACT		FLEXIBLE CONDUIT
	SELECTOR SWITCH	•	CONDUIT TURNING DOWN
			CONDUIT TURNING UP
	NORMALLY CLOSED		
~~~~~	NORMALLY OPEN		
↓ [*]	NORMALLY CLOSED		CONDUIT EXPANSION FITTING
	NORMALLY OPEN CONTACT		NEMA 12 JUNCTION OR PULL BOX WITH BREATHER TERMINAL STRIP FOR WIRING TERMINATIONS. BOX DETERMINED BY ELECTRICAL CONTRACTOR. SEE ( FOR OTHER NEMA TYPES.
N	NORMALLY CLOSED CONTACT	۵ ( )	SPECIAL PURPOSE GROUNDING TYPE RECEPTACLI UNLESS NOTED OTHERWISE CONTRACTOR TO VER
-oto-	LEVEL SWITCH, LIQUID		AMPERAGE BASED ON EQUIPMENT BEING FURNISH
	PRESSURE OR VACUUM SWITCH	$\otimes$	GROUND ROD
		+	
	TEMPERATURE SWITCH		CONTACT, NEMA 12 ENCLOSURE UNLESS NOTED O RATING AS INDICATED OR REQUIRED.
	FLOW SWITCH, AIR OR WATER		LOCAL DISCONNECT SWITCH, FUSED WITH AUXILIA NEMA 12 ENCLOSURE UNLESS NOTED OTHERWISE INDICATED OR REQUIRED.
<u> </u>	SOLENOID VALVE COIL	Sa(W)	LIGHTING SWITCH SINGLE POLE SURFACE MOUNTE NOTED OTHERWISE
$\sim$			a - INDICATES SWITCHED LIGHTING FIXTURES
(R)	W - WHITE B - BLUE		3P - THREE POSITION HAND-OFF-AUTO
	R - RED A - AMBER G - GREEN C - CLEAR	s ³	LIGHT SWITCH - 3 WAY
ЕТМ	ELAPSED TIME METER	ST ST	
MS	MOTOR STARTER CONTACTOR COIL	$\rightarrow$	
	S - SLOW F - FORWARD L - LOW	LPX-Y(F)	
	O - OPEN C - CLOSE	LPX-Y(W)	DUPLEX GROUNDING TYPE CONVENIENCE RECEPTACLE, SURFACE MOUNTED
CR	CONTROL RELAY COIL		() SEE IDENTIFICATION BELOW X - INDICATES PANELBOARD NO. (WHEN MORE THA CIRCUIT IS SHOWN ON ANY PLAN)
TR	TIME DELAY RELAY COIL		Y - INDICATES CIRCUIT NO. GF OR G - GROUND FAULT INTERRUPTING TYPE
A	WALL MOUNTED LIGHTING FIXTURE	(w)	JUNCTION BOX, SIZE TO BE DETERMINED BY ELECT CONTRACTOR () SEE IDENTIFICATION BELOW
В	WALL MOUNTED LIGHTING FIXTURE	() WP	IDENTIFICATION
		W C	- WATERTIGHT-NEMA 4 - CORROSION RESISTANT-NEMA 4X
Ģ	ALARM BEACON	F S X	- FLUSH MOUNTED - SURFACE MOUNTED - EXPLOSION PROOF
		<b>PP-2</b> 1" RGS	CABLE REFERENCE NUMBER, LISTED IN CABLE SC
			AND TYPE AS SHOWN EXCEPT USE 3/4" CONDUIT W
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or being used for any other purp	pose, or containing any error or omission which is due to an error or omission in d	lata supplied to us by other parties. lient	0 02
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BLE)	ONE	LINE DIAG	RAM SYMBOLS (AS APPLICABLE)		ABBF	REVIATIONS	(AS APPLICABLE)		
		CURRENT LIM	IITING FUSE	AD	AUTO DIA	LER			
				AFF AFG	ABOVE FI ABOVE FI	NISHED FLOOR NISHED GROUNI	C		
	L L	CURRENT TR	ANSFORMER, RATIO AS SHOWN	AHB AFD	AMP - HO ADJUSTAI	RIZONTAL BUS BLE FREQUENCY	/ DRIVE		
Ν	PT⊃C			AIC	AMPERE AMPER	NTERRUPTING (	CAPACITY		
ABS		POTENTIAL TI	RANSFORMER, RATIO AS SHOWN	AT ATS	AMP TRIP AUTOMAT	IC TRANSFER S	WITCH		
			WER TRANSFORMER RATIO AS SHOWN	AVB AWG	AMP - VEF AMERICA	RTICAL BUS N WIRE GAGE			
		CONTROLLO		BFP DPD	BELT FILT T DOUBLE F	ER PRESS POLE DOUBLE TH	ROW		
WISE SIZE				DS DWG	DOOR SW	ITCH			
	$\sim$	ADJUSTABLE	FREQUENCY DRIVE	E EC	EXISTING EMPTY CO	ONDUIT			
				EG FMH		NT GROUNDING	CONDUCTOR		
				EMT		AL METALLIC TU	JBING		
	$\overline{\chi}$	SOLID STATE	SOFT START CONTROLLER	EWD	ELECTRIC		GRAM		
				F3 FVNF	R FULL VOL	TAGE NON REVE	RSIBLE		
				GEC	GROUND	NG ELECTRODE	CONDUCTOR		
		CIRCUIT BRE	AKER		INPUT/OU				
		"L" - LONG TIN "S" - SHORT T	1E IME	IG IGB	ISOLATED	GROUNDING CO	UNDUCTOR		
/DRAIN FITTING AND	LSIG	"I" - INSTANTA "G" - GROUND	NEOUS	IS JB	INTRINSIC JUNCTION	ALLY SAFE NBOX			
( SIZE TO BE ( ) IDENTIFICATION				LCP LED	LOCAL CO LIGHT EM	NTROL PANEL			
.,	(A)	AMMETER		LIC LP	LEVEL INE LIGHTING	DICATING CONTF PANELBOARD	ROLLER		
E SURFACE MOUNTED	AS	AMMETER SV	VITCH, THREE PHASE TYPE	LS MCC	LEVEL SE MOTOR C	NSOR (ULTRASC	NIC LEVEL DETEC	TOR)	
RIFY VOLTAGE, HED.		VOLTMETER		MCP MEC	MAIN CON R MANUEAC				
	<u>ب</u>		SWITCH THREE PHASE TVDE		MANUFAC MANHOLE		=		
	<u>د م</u> ۲۵۸		SED DISCONNECT SMITCH MUTHALIS		U MISSION I		- IAL UNIT		
		CONTACT, R	ATING AS REQUIRED	N.I.S NB	NOTIOS NEUTRAL	BUS			
	$\sim$			NEM NEU	A NATIONAL NEUTRAL	LELECTRICAL M	ANUFACTURER AS	SOCIATIO	۶N
THERWISE.	HP	MOTOR (HOF	SEPOWER AS INDICATED)	NFP/ No.	A NATIONAL NUMBER	FIRE PROTECT	ION ASSOCIATION		
ARY CONTACT,	)			PLC PMR	PROGRAM POWER M	MABLE LOGIC C	ONTROLLER		
. RATING AS	▼	TELEPHONE	OUTLET	PP PS	POWER P PRESSUR	ANELBOARD E SWITCH			
ED UNLESS	·			PSH PSI	PRESSUR PER SQU/	E SWITCH HIGH			
				PSR PVC	PUMP STO POLYVINY	OP RELAY ′L CHLORIDE CO	NDUIT (SCHEDULE	E 80)	
	<u> </u>	EARTH GRO	JND	PVC/	RA PVC COA	TED RA	ит	,	
				RA	RIGID ALL	IMINUM			
		BOND TO GF	OUND BUS	RSP	RAW SEW	AGE PUMP	T. CONDON		
				RTU RVA	REMUTE REDUCED		TRANSFORMER		
				RVS: SCAI	S REDUCED	OVOLTAGE SOFT	STARTER AND DATA ACGUIS	SITION	
				SPD SS	SURGE PI STAINLES	ROTECTIVE DEV	ICE		
AOLE				TBA TBD	TO BE AB TO BE DIS	ANDONED SCONNECTED			
				TBM TBR	TO BE MC TO BE RE	DIFIED MOVED			
				TBRI	TO BE RE TO BE RE	LOCATED PLACED			
AN ONE PANELBOARD				TC TRIS	TRAY CAE TO REMA	BLE IN IN SERVICE			
				TS TWA	TEMPERA X TWINAXIA	TURE SWITCH			
				TWS	C TWISTED	SHIELDED CONE	DUCTOR CABLE		
IRICAL				WP	WEATHER	R PROOF	JORICEINT		
					EXFLOSIC				
HEDULE. CONDUIT SIZE VHEN SIZE NOT INDICATED.									
2/2020 HP ISSUED FC	R BID	PW WN	and the second s	*		Designed	PW		F
			STATEALTH OF M	Sectore Sectore				+	+
			WOZNIA	AL DEL		Drawn	HP	<b>_</b>	
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			A. C. Survey			NON	IE		
			Project Number	B/O	Total	Drawing Num	iber		10
te Drawn Description		Ch'k'd App'd	ju/400030-002	ວ/	04				١U

Ch'k'd App'd

			GENEF	RAL NOTES (AS APPLICABLE)							
	1. E	EQUIPMENT ARRANO	GEMENT AND ACTUAL FIEL	CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY AND MAY DIFFER IN D CONDITIONS.							
	2. /	ALL ELECTRICAL DR	AWINGS ARE	DIAGRAMMATIC AND ARE FOR BIDDING PURPOSES ONLY.							
	3 [ F	THE NUMBER, SIZE A DESIGN CRITERIA. T REQUIREMENTS OF	AND TYPE OF HE CONTRAC ⁻ THE ACTUAL E	CONDUCTORS AND CONDUITS SHOWN IN THESE DRAWINGS ARE BASED ON TOR SHALL MAKE ADJUSTMENTS WHERE NECESSARY TO REFLECT THE EQUIPMENT TO BE INSTALLED PER APPROVED SHOP DRAWINGS.							
	4. / F F	ALL CONDUIT SHALL FINISHED CEILING EX PARALLEL TO BUILD	BE CONCEAL XCEPT WHERI	ED IN POURED CONCRETE, BLOCK WALLS OR ROUTED ABOVE THE E APPROVED BY THE ENGINEER. EXPOSED CONDUIT SHALL BE RUN ND BEAMS.							
	5. F F	POWER OR CONTRO POWER AND INSTRU	L CONDUCTO	RS SHALL NOT BE IN THE SAME CONDUIT AS INSTRUMENTATION WIRES. CONDUITS SHALL BE PLACED A MINIMUM DISTANCE OF 12 INCHES APART.							
	6. E S	EXPOSED CONDUIT A SUPPORTED FROM N CHANNEL CONSTRU	AND SURFACE WALLS AND/OI CTION.	E MOUNTED EQUIPMENT NOT OTHERWISE SHOWN OR DETAILED SHALL BE R CEILINGS BY APPROVED STAINLESS STEEL HANGERS OF ANGLE OR							
	7. E F	EXPANSION FITTING	S SHALL BE F	URNISHED AND INSTALLED WHERE CONDUITS PASS STRUCTURAL JOINTS. YPE "DXX" OR EQUAL.							
	8. E - I	EXACT CONDUIT STU THE CERTIFIED MAN NSTALLED TO AGRE	JB-UP LOCATI UFACTURER'S E WITH THE E	DCATIONS ARE TO BE DETERMINED BY THE ELECTRICAL CONTRACTOR BASED ON IRER'S DRAWINGS OF THE RESPECTIVE EQUIPMENT. CONDUITS SHALL BE THE EQUIPMENT FURNISHED.							
	9. / N E	ALL CONDUITS SHAL NATIONAL ELECTRIC EQUIPMENT GROUN	l be provide Al code. The Ding lugs at	ED WITH AN EQUIPMENT GROUNDING CONDUCTOR SIZED PER THE E GROUNDING CONDUCTOR SHALL BE BONDED TO METALLIC CONDUIT AND FEACH END PER SPECIFICATIONS.							
	10. /	ALL ALARM AND COM	NTROL CONDU	JITS SHALL BE PROVIDED WITH 20% SPARE CONDUCTORS (MINIMUM 2).							
	11. (	CONDUIT NOT OTHE	RWISE INDICA	ATED SHALL BE 3/4" RGS WITH 2#12 AND 1#12 GND CONDUCTORS, MINIMUM.							
	12. <i>/</i>	ALL CONDUITS PASS APPROVED CONDUI	SING THROUG T SEAL.	H CONCRETE FLOORS OR WALLS BELOW GRADE SHALL BE INSTALLED WITH							
	13. L I [	LIGHT LINE WEIGHT S NOT REQUIRED. B DEVICES WHERE MC	INDICATES EX OLD LINE WEI DIFICATION V	XISTING EQUIPMENT, FEEDERS AND DEVICES WHERE MODIFICATION WORK IGHT INDICATES EXISTING AND/OR NEW EQUIPMENT, FEEDERS AND VORK IS REQUIRED.							
	14. \$	SOME CONDUIT AND	FEEDERS MA	AY NOT BE SHOWN ON THE PLANS FOR CLARITY.							
	15. /	ALL ELECTRICAL WO		RFORMED IN COMPLIANCE TO NFPA 70 NATIONAL ELECTRICAL CODE 2017.							
	16. ( 17 F	CONDUIT WALL PEN	ETRATIONS SI	HALL BE WATERTIGHT.							
	17.1	NOT BE LESS THAN ( CONDUITS.	(6) SIX TIMES	THE INTERNAL DIAMETER OF THE CONDUIT FOR ALL ABOVE GROUND							
	18. <i>/</i>	ALL EXPOSED COND APPROVED CLAMPS	, FITTINGS & F	TINGS SHALL BE SECURELY FASTENED TO SUITABLE SUPPORTS USING TANGERS.							
	19. E I	ELECTRICAL CONDU NSTRUMENTS OR A	ITS INSTALLE NY DEVICES V	D SHALL NOT INTERFERE WITH THE REMOVAL OF ANY PIPES, VALVES, VHICH ARE SUBJECT TO REMOVAL FOR SERVICING.							
	20. <i>/</i>	ALL CABLES AND WI CONDUCTORS SHAL	RES SHALL BE L BE XHHW-2	E SUPPLIED BY CONTRACTOR EXCEPT THE FACTORY WIRED ITEMS. THE TYPE.							
	21. <i>/</i>	ALL SPARE WIRES S WIRES WITH PROPE	HALL BE OF A R IDENTIFICA ⁻	DEQUATE LENGTHS TO REACH THE TERMINAL BLOCKS. TAG ALL SPARE TION.							
	22. / E	ALL METAL RACEWA BE PROPERLY GROU	YS, ENCLOSU JNDED IN AN A	IRES FOR ELECTRICAL EQUIPMENT, PANELS (ALL TYPES), VESSELS SHALL APPROVED MANNER.							
	23. / F	ALL BURIED GROUN PROCESS AND INSU	D TAPS FROM LATED WITH S	MAIN GROUND SHALL BE MADE BY BRAZING OR THERMITE WELDING SCOTCH-CAST SPLICING KIT OR EQUAL.							
	24. <i>I</i>	ALL GROUND LUGS S APPLICATION.	SHALL BE OF (	CORROSION RESISTANT MATERIAL AND DESIGNED SPECIFICALLY FOR THE							
	25. \ l	WHERE GROUND CC USED.	NDUCTORS E	MERGE FROM GROUND, CONCRETE ENCASED LONG RADIUS RGS SHALL BE							
	26. ( (	GROUNDING SHALL CONSIDERED ACCEF	BE TESTED US PTABLE.	SING FALL OF POTENTIAL METHOD AND READINGS OF 3 OHMS OR LESS ARE							
	27.	PERFORM ALL WOR	K SHOWN ON	OTHER DRAWINGS.							
		ELEI	MENTARY	WIRING DIAGRAM NOTES (AS APPLICABLE)							
	1 - N	THE ELEMENTARY W TO DESCRIBE THE F MAY VARY BASED OI	/IRING DIAGR/ UNCTIONAL O N THE ACTUAI	AMS DEVELOPED FOR THESE CONTRACT DRAWINGS ARE INTENDED IPERATION ONLY. THE NUMBER AND LOCATION OF CONTROL DEVICES L COMPONENTS PROVIDED.							
	2. ⁻	THE FUNCTIONAL OF BASED ON THE ACTU	PERATION IND JAL EQUIPMEI	NICATED BY THESE ELEMENTARY WIRING DIAGRAMS MAY VARY NT PROVIDED.							
	3. \ 	WIRING INDICATED E TERMINAL BLOCK. E THE CONTRACTOR A	BY DASHED LI EXTERNAL DEV AS REQUIRED.	NES IS EXTERNAL TO THE MCC OR PANELS AND IS CONNECTED TO A VICES SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER OR							
	4. (	CONTROL POWER TI	RANSFORMER	RS SHALL BE PROVIDED WITH PRIMARY AND SECONDARY FUSING.							
	5. ( [ \ \	CONTROL INDICATO DOOR. OTHER CONT WITHIN THE MCC UN SEPARATE RELAY C	RS AND SWIT( ROL DEVICES IIT COMPARTM OMPARTMENT	CHES SHALL BE MOUNTED THROUGH THE RESPECTIVE MCC UNIT S SUCH AS RELAYS, TIMERS AND ALTERNATORS SHALL BE LOCATED MENT WHERE POSSIBLE. THESE DEVICES MAY BE LOCATED IN A T ONLY WHEN UNIT MOUNTING IS NOT PRACTICAL.							
	6. [ I	DOOR MOUNTED CO NDICATOR LIGHTS S	NTROL AND IN SHALL BE PUS	NDICATING DEVICES SHALL BE HEAVY DUTY, INDUSTRIAL, OIL-TIGHT. H-TO-TEST, LED TYPE. SEE SPECIFICATIONS.							
	<ol> <li>CONTROL RELAYS SHALL BE GENERAL PURPOSE INDUSTRIAL GRADE, SHALL BE SEALED WITH A CLEAR POLYCARBONATE COVER, SHALL HAVE A NEON COIL ENERGIZED LAMP, AND SHALL BE PLUG IN TYPE WITH RETENTION LATCHES AND 10 AMP CONTACTS.</li> </ol>										
	8 ( L	TIMING RELAYS SHA (2) LED INDICATOR L LATCHES. (DIGI-SET	LL BE SOLID S AMPS, DPDT ( SERIES AS M/	STATE HYBRID TYPE WITH CALIBRATED BINARY DIP SWITCHES, TWO CONTACTS RATED 10 AMP/120VAC, PLUG-IN BASES AND RETENTION ANUFACTURED BY SSAC OR EQUAL).							
Eng	check	WN	Title								
Coc	ordination	ТВ		DIRINIE AVENUE/PIPER RUAU AREA SEW/ER EXDANSION DRO IECT							
Арр	proved	cw		WEST SPRINGFIELD, MASSACHUSETTS							

ELECTRICAL -	NOTES,	SYMBOLS
AND ABBREVI	ATIONS	

Rev

Security

![](_page_57_Figure_0.jpeg)

SAVE DATE/TIME: 2/5/2020 11:36:05 AM

![](_page_58_Figure_0.jpeg)

![](_page_58_Figure_3.jpeg)

## PUMP STATION CONTROL PANEL - LEFT VIEW SIDE ELEVATION

![](_page_58_Figure_5.jpeg)

## ALARM BEACON WIRING DIAGRAM

02/2020	HP	ISSUED FOR BID	PW	WN	THOFA	11		Designed	PW		
					PETER WOZNIA	Drawn	НР				
					No. 3281	JAL-WLD		Dwg check	DGG		
					J-O-ESIONAL E		Scale at ANS	E	Status		
					Project Number	B/O	Total	Drawing Num	ber		
ate	Drawn	Description	Ch'k'd	App'd	50/408636-002	59	64				

E103

![](_page_59_Figure_0.jpeg)

SAVE DATE/TIME: 2/4/2020 9:52:55 AM

![](_page_59_Figure_2.jpeg)

#### PUMP STATION CONTROL PANEL - LEFT VIEW SIDE ELEVATION NTS

![](_page_59_Figure_4.jpeg)

3#3/0, 1#12G IN 2" RGS CONDUIT TO GENERATOR 3#4/0,1#12G,10#14 IN 1" RGS CONDUIT

REFER TO S101 FOR -

CONCRETE PAD DETAIL

UTILITY METER

MAIN

CIRCUIT

BREAKER

#### ALARM BEACON WIRING DIAGRAM NTS

2/2020	HP	ISSUED FOR BID	PW	WN	NTH OF M	ASSO		Designed	PW			Eng check	WN		
					PETER	A Call		Drawn	HP			Coordination	ТВ		
					No. 3081	ALLA		Dwg check	DGG			Approved	CW		
					J-O-ESIONAL E	ZAPO		Scale at ANSI	D	Status	•	Rev		Security	
							1								
					Project Number	B/O	Total	Drawing Num	ber		⊏1	04			
e	Drawn	Description	Ch'k'd	App'd	507408636-002	60	04				EI	04			

## **ELECTRICAL - PIPER ROAD** PUMP STATION DETAILS

BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

#### **PUMP STATION CONTROL PANEL - SIDE 'B'** NTS

![](_page_59_Figure_13.jpeg)

![](_page_60_Figure_0.jpeg)

![](_page_60_Figure_3.jpeg)

ELECTRICAL -

CONTROL WIRING DIAGRAMS

E105

Rev

Security

![](_page_61_Figure_0.jpeg)

0	02/2020	HP	ISSUED FOR BID	PW	WN	TH OF M			Designed	PW			Eng check	WN	
						PETER A WOZNIA			Drawn	HP			Coordination	ТВ	
						No. 3081	VAL-WLD		Dwg check	DGG			Approved	CW	
						J-ORESTONAL P	2 ZAGO		Scale at ANSI		Status		Rev	Security	
						Project Number	B/O	Total	Drawing Num	ber		<b>L</b> 1	06		
Rev	Date	Drawn	Description	Ch'k'd	App'd	507408636-002	02	04					00		

Е	1	0	6

ELECTRICAL - VALLEY VIEW CIRCLE PUMP STATION PLANS AND SECTIONS

Title BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

![](_page_62_Figure_0.jpeg)

SAVE DATE/TIME: 2/4/2020 10:39:38 AM

					J-O-ESTIMAL E	2 ZAQO		Scale at ANSI D AS SHOWN	Status
						В/О	Total	Drawing Number	
Date	Drawn	Description	Ch'k'd	App'd	507408636-002	63	64		

Е	1	0	7

Eng check	WN		Title
Coordination	ТВ		
Approved	CW		
Rev		Security	

## **ELECTRICAL - PIPER ROAD** PUMP STATION PLANS AND SECTIONS

BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

PANEL:			P-1	LOCATION	۱:	VALLEY VIEW CIRCLE PUMP STATION						
CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	VA	DESCRIPTION	POLE	BKR.	CKT#	
1	20	1	CONTROL PANEL/PLC	200	300		100	LIGHTING PANEL ENCLOSURE	1	20	2	
3	20	1	RECEPTACLE	360		1360	1000	CONTROL PANEL HEATERS	2	20	4	
5	20	1	RECEPTACLE 360		1360		1000				6	
7	20	1	SUMP PUMP 1127			1187	60	AUTO DIALER	1	20	8	
9	20	1	VALVE CHAMBER LIGHTING	100	200		100	CAMERA SYSTEM	1	20	10	
11	20	1	VALVE CHAMBER ELECT. HEAT	500		500		SURGE PROTECTION DEVICE	2	20	12	
13	30	2	PUMP #1	2440	2440						14	
15				2440		4395	1955	PUMP #2	2	30	16	
17	20	1	SPARE		1955		1955				18	
19	20	1	SPARE			0		SPARE	1	20	20	
21	20	1	SPARE		0			SPARE	1	20	20	
23	20	1	SPARE			0		SPARE	1	20	22	
25	20	1	SPARE		0			SPARE	1	20	26	
27	20	1	SPARE			0		SPARE	1	20	28	
29	20	1	SPARE		0			SPARE	1	20	30	
			TOTAL CONNECTED LOAD (VA)	6255	7442							
			CONNECTED LOAD (AMPS)	52	62							
			TOTAL CONNECTE	D LOAD (VA):	13697			TOTAL DEMAND LOAD (VA):				
			TOTAL CONNECTED L	OAD (AMPS):	57			TOTAL DEMAND LOAD (AMPS):				
OPTIONS	6	1	1					11				
VOLTS L	-L:	240	MAIN OVERCURRENT:	NC	DNE	BUS MATERIAL:	Cu	MOUNTING:				
VOLTS L	-N:	120	MAIN BUS RATING:	20	00A	NEUTRAL SIZE:	100%	100% ENCLOSURE TYPE:				
PHASE:		1	MINIMUM A.I.C.:	22	2kA	GROUND:						
WIRE:		3										
NOTES:												
1.												
2.												

		LIGHTING FIXTURE SCHEDULE							
TYPE	DESCRIPTION	MANUFACTURER AND CATALOG NUMBER (OR APPROVED EQUAL)	VOLTS	LUMEN	TEMP.	CRI			
А	WET LOCATION LED FIXTURE	LITHONIA DMU2-L24-2000LM-PCL-MP-120-6Z-30K-80CRI OR EQUAL	120	3000	3000K	80			
В	ALARM BEACON FLASHING STROBE TYPE CAST STEEL, POLY CARBONATE LENSE, WEATHER PROOF	KILLARK 92R-N5 OR EQUAL	120	1,400,000 CANDELLA	N/A	-			
С	EXPLOSION PROOF LIGHT FIXTURE PENDANT MOUNT, CLASS1, DIV 2, C.D., UL LISTED	CROUSE HINDS EVLED-201 SERIES OR EQUAL	120	1670	4000	COOL COLOR			

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![](_page_63_Picture_4.jpeg)

![](_page_63_Picture_5.jpeg)

134 Capital Drive - Suite D West Springfield, MA 01089 United States of America

Client

TOWN OF WEST SPRINGFIELD DEPARTMENT OF PUBLIC WORKS 26 CENTRAL STREET WEST SPRINGFIELD, MA (413) 263-3242

![](_page_63_Picture_9.jpeg)

T +1 (413) 535 0135 F +1 (413) 535 0136 www.mottmacamericas.com

PANEL:			P-1		LOCATION:		PIPER ROAD PUMP STATION						
CKT#	BKR.	POLE	DESCRIPTION	VA	PHASE A	PHASE B	VA	DESCRIPTION	POLE	BKR.	CKT#		
1	20	1	CONTROL PANEL/PLC	200	300		100	LIGHTING PANEL ENCLOSURE	1	20	2		
3	20	1	RECEPTACLE	360		1360	1000	CONTROL PANEL HEATERS	2	20	4		
5	20	1	RECEPTACLE	360	1360		1000				6		
7	20	1	SUMP PUMP	PUMP 1127		1187	60	AUTO DIALER	1	20	8		
9	20	1	VALVE CHAMBER LIGHTING	100	200		100	CAMERA SYSTEM	1	20	10		
11	20	1	VALVE CHAMBER ELECT. HEAT	500		500		SURGE PROTECTION DEVICE	2	20	12		
13	20	2	BLOCK HEATER	600	600						14		
15				600		700	100	BATERY CHARGER GFI	1	20	16		
17	30	2	PUMP #1	2440	2540		100	GENERATOR CONTROL	1	20	18		
19				2440		4395	1955	PUMP #2	2	30	20		
21	20	1	SPARE		1955		1955				22		
23	20	1	SPARE			0		SPARE	1	20	24		
25	20	1	SPARE					SPARE	1	20	26		
27	20	1	SPARE			0		SPARE	1	20	28		
29	20	1	SPARE		0			SPARE	1	20	30		
TOTAL CONNECTED		TOTAL CONNECTED LOAD (VA)	PER PHASE:	6955	8142								
		•	CONNECTED LOAD (AMPS)	PER PHASE	58	68							
			TOTAL CONNECTED	D LOAD (VA):	15097			TOTAL DEMAND LOAD (VA):					
			TOTAL CONNECTED LO	DAD (AMPS):	63			TOTAL DEMAND LOAD (AMPS):					
OPTIONS	6					1							
VOLTS L	-L:	240	MAIN OVERCURRENT:		NONE	BUS MATERIAL:	Cu	MOUNTING:					
VOLTS L	-N:	120	MAIN BUS RATING:		200A	NEUTRAL SIZE:	100%	ENCLOSURE TYPE:					
PHASE:		1	MINIMUM A.I.C.:		22kA	GROUND:							
WIRE:		3											
NOTES:													
1.													
2.													

02/2020	HP	ISSUED FOR BID	PW	WN	NITH OF M	ALC: A	Designed	gned PW			Eng check		WN		
					PETER / WOZNIA	PETER A WOZNIAK			Coordination TB		ГВ				
					No. 3081	ALLA		Dwg check	DGG			Approved	CW		
					J-O-ESIONAL E	Scale at ANSI	SID Status			Rev		Security			
						D/O	Tatal								
						B/O		Drawing Num	ber			~~			
ate	Drawn	Description	Ch'k'd	App'd	507408636-002	64	64				E1	80			

Title BIRNIE AVENUE/PIPER ROAD AREA SEWER EXPANSION PROJECT WEST SPRINGFIELD, MASSACHUSETTS

ELECTRICAL - SCHEDULES