



### SHEET SET INDEX

- C1.0 AREA PLAN
- C1.1 TOPOGRAPHIC SURVEY
- C1.2 SITE PLAN
- C1.3 GRADING PLAN
- C1.4 DRAINAGE & UTILITY PLAN
- C1.5 EROSION CONTROL PLAN
- C1.6(a-e) SITE CONSTRUCTION DETAILS



C1.0

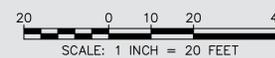
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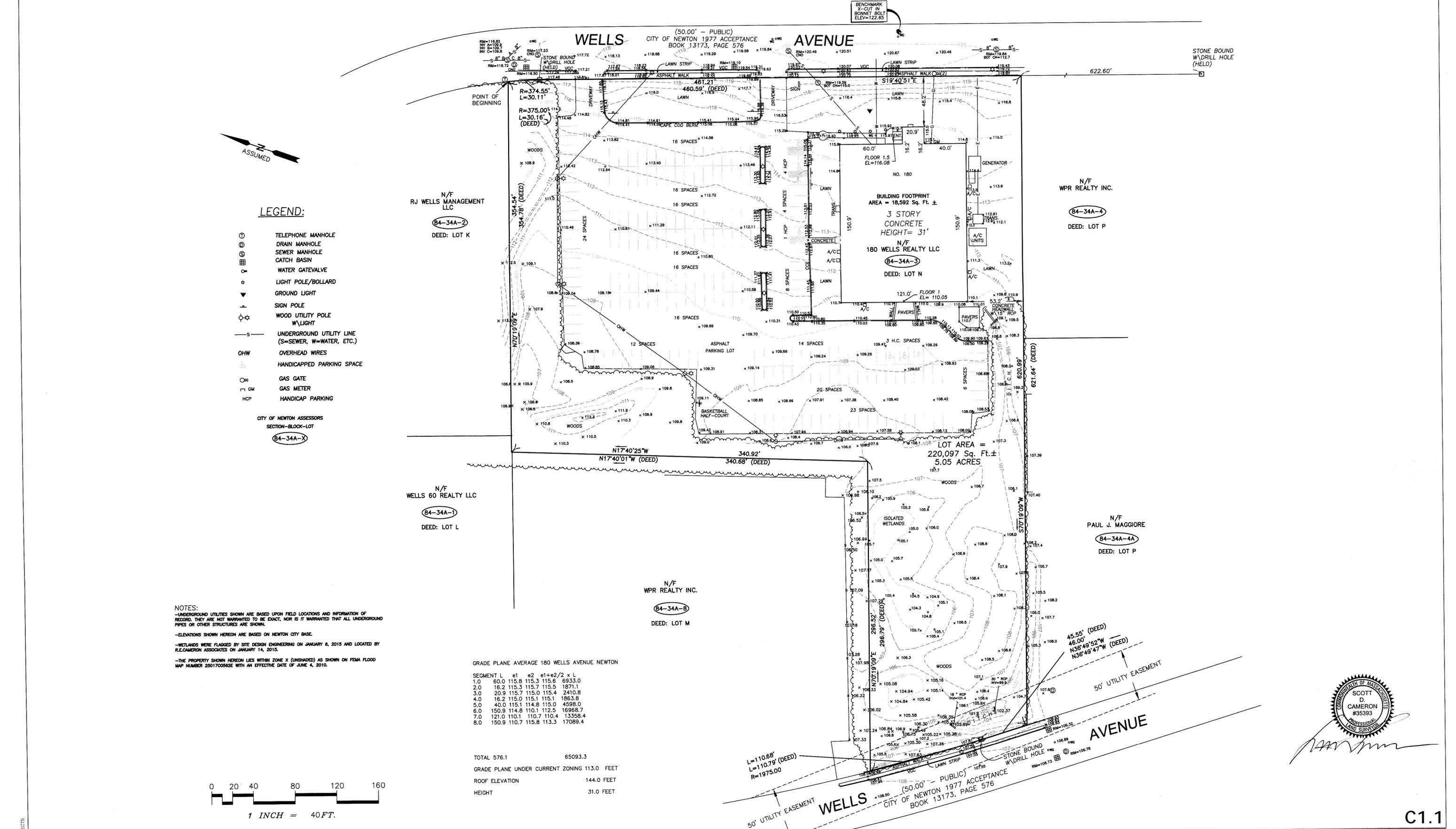
180 WELLS AVENUE  
Newton, MA



## AREA PLAN

FEBRUARY 18, 2020





**LEGEND:**

- ⊙ TELEPHONE MANHOLE
- ⊕ DRAIN MANHOLE
- ⊗ SEWER MANHOLE
- ⊞ CATCH BASIN
- ⊕ WATER GATEVALVE
- ⊙ LIGHT POLE/BOLLARD
- ▽ GROUND LIGHT
- ▲ SIGN POLE
- ⊙ WOOD UTILITY POLE
- ⊞ W LIGHT
- UNDERGROUND UTILITY LINE (S=SEWER, W=WATER, ETC.)
- OHW OVERHEAD WIRES
- ⊞ HANDICAPPED PARKING SPACE
- ⊙ GAS GATE
- ⊞ GM GAS METER
- HCP HANDICAP PARKING

CITY OF NEWTON ASSESSORS  
SECTION-BLOCK-LOT  
**(84-34A-X)**

N/F  
RJ WELLS MANAGEMENT LLC  
**(84-34A-2)**  
DEED: LOT K

N/F  
WELLS 60 REALTY LLC  
**(84-34A-1)**  
DEED: LOT L

N/F  
WPR REALTY INC.  
**(84-34A-B)**  
DEED: LOT M

N/F  
WPR REALTY INC.  
**(84-34A-4)**  
DEED: LOT P

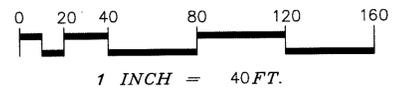
N/F  
PAUL J. MAGGIORE  
**(84-34A-4A)**  
DEED: LOT P

**NOTES:**  
-UNDERGROUND UTILITIES SHOWN ARE BASED UPON FIELD LOCATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR OTHER STRUCTURES ARE SHOWN.  
-ELEVATIONS SHOWN HEREIN ARE BASED ON NEWTON CITY BASE.  
-WETLANDS WERE FLAGGED BY SITE DESIGN ENGINEERING ON JANUARY 6, 2015 AND LOCATED BY R.E. CAMERON ASSOCIATES ON JANUARY 14, 2015.  
-THE PROPERTY SHOWN HEREON LIES WITHIN ZONE X (UNSHADED) AS SHOWN ON FEMA FLOOD MAP NUMBER 25017C0562E WITH AN EFFECTIVE DATE OF JUNE 4, 2010.

GRADE PLANE AVERAGE 180 WELLS AVENUE NEWTON

SEGMENT	L	e1	e2	e1+e2/2	x L
1.0	60.0	115.8	115.3	115.6	6933.0
2.0	16.2	115.3	115.7	115.5	1871.1
3.0	20.9	115.7	115.0	115.4	2410.8
4.0	16.2	115.0	115.1	115.1	1863.8
5.0	40.0	115.1	114.8	115.0	4598.0
6.0	150.9	114.8	110.1	112.5	16968.7
7.0	121.0	110.1	110.7	110.4	13358.4
8.0	150.9	110.7	115.8	113.3	17089.4

TOTAL 576.1      65093.3  
GRADE PLANE UNDER CURRENT ZONING 113.0 FEET  
ROOF ELEVATION      144.0 FEET  
HEIGHT      31.0 FEET



*Scott D. Cameron*

C1.1

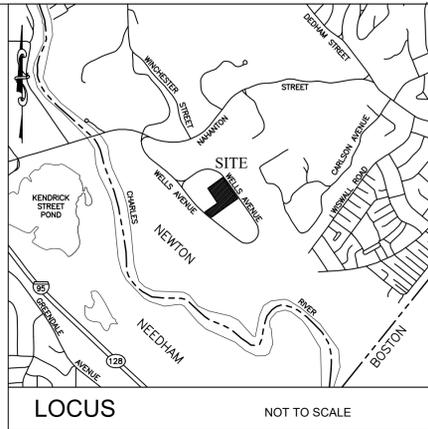
180 WELLS AVENUE  
NEWTON, MA

R.E. CAMERON & ASSOCIATES

TOPOGRAPHIC SURVEY  
6/3/2015



ELKUS MANFREDI  
ARCHITECTS



ZONED: LIMITED MANUFACTURING

ITEM	REQUIRED	APPROVED 10/19/15	PROPOSED 1/16/19	PROPOSED 10/10/19	PROPOSED 2/18/20
LOT AREA, SF	0	220,097	N/C	N/C	N/C
FRONTAGE, FT	0	490.70	N/C	N/C	N/C
FRONT SETBACK, FT	25	40.0	32.6	31.3	N/C
SIDE SETBACK, FT	20	20.0	N/C	N/C	N/C
REAR SETBACK, FT	20	136.1	135.9	139.5	N/C
MAX # STORIES*	3*	3	4	3	N/C
BLDG HEIGHT*, FT	36*	35.8	48.5	35.8	N/C
TOTAL FLOOR AREA RATIO	0	0.53	0.64	0.53	N/C
LOT COVERAGE	0.25	0.18	0.192	0.18	N/C

\* AS TO BUILDING HEIGHT & STORIES REFER TO MAY 22, 1969 DEED RESTRICTION GOVERNING SAME.

GROSS FLOOR AREA

EXISTING BUILDING FLOOR AREA	55,776 SF
PROPOSED ADDITION FLOOR AREA	60,601 SF
TOTAL FLOOR AREA	116,377 SF

PARKING REQUIREMENTS

ITEM	REQUIRED
1 SPACE / 250 SF 1ST 20,000 SF FLOOR AREA	80
1 SPACE / 333 SF OVER 20,000 SF FLOOR AREA	290
TOTAL REQUIRED	370
SPACES PROVIDED - GRADE LEVEL	281
SPACES PROVIDED - DECK LEVEL	89
TOTAL SPACES PROVIDED	370

BICYCLES: 1 / 10 PARKING SPACES TO MAX OF 30  
30 BICYCLE RACK SPACES REQUIRED & PROVIDED

LOADING BAYS, 1 REQUIRED

PARKING AREA INTERIOR LANDSCAPE ISLANDS, 5% REQUIRED  
PARKING AREA INTERIOR LANDSCAPE ISLANDS, 5.2% PROVIDED

DEED RESTRICTION

ITEM	REQUIRED	APPROVED 10/19/15	PROPOSED 1/16/19	PROPOSED 10/10/19	REVISED 2/18/20
OPEN SPACE, %	40	40.0	34.4	34.0	35
FLOOR AREA RATIO**	.25	0.53	0.64	0.53	0.53

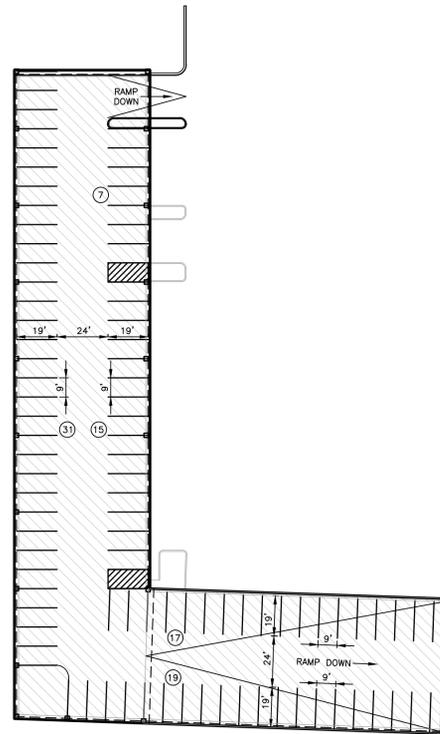
\*\* FLOOR AREA RATIO DOES NOT INCLUDE PARKING GARAGE  
N/C = NO CHANGE  
MAAB = MASSACHUSETTS ARCHITECTURAL ACCESS BOARD

**GENERAL NOTES:**

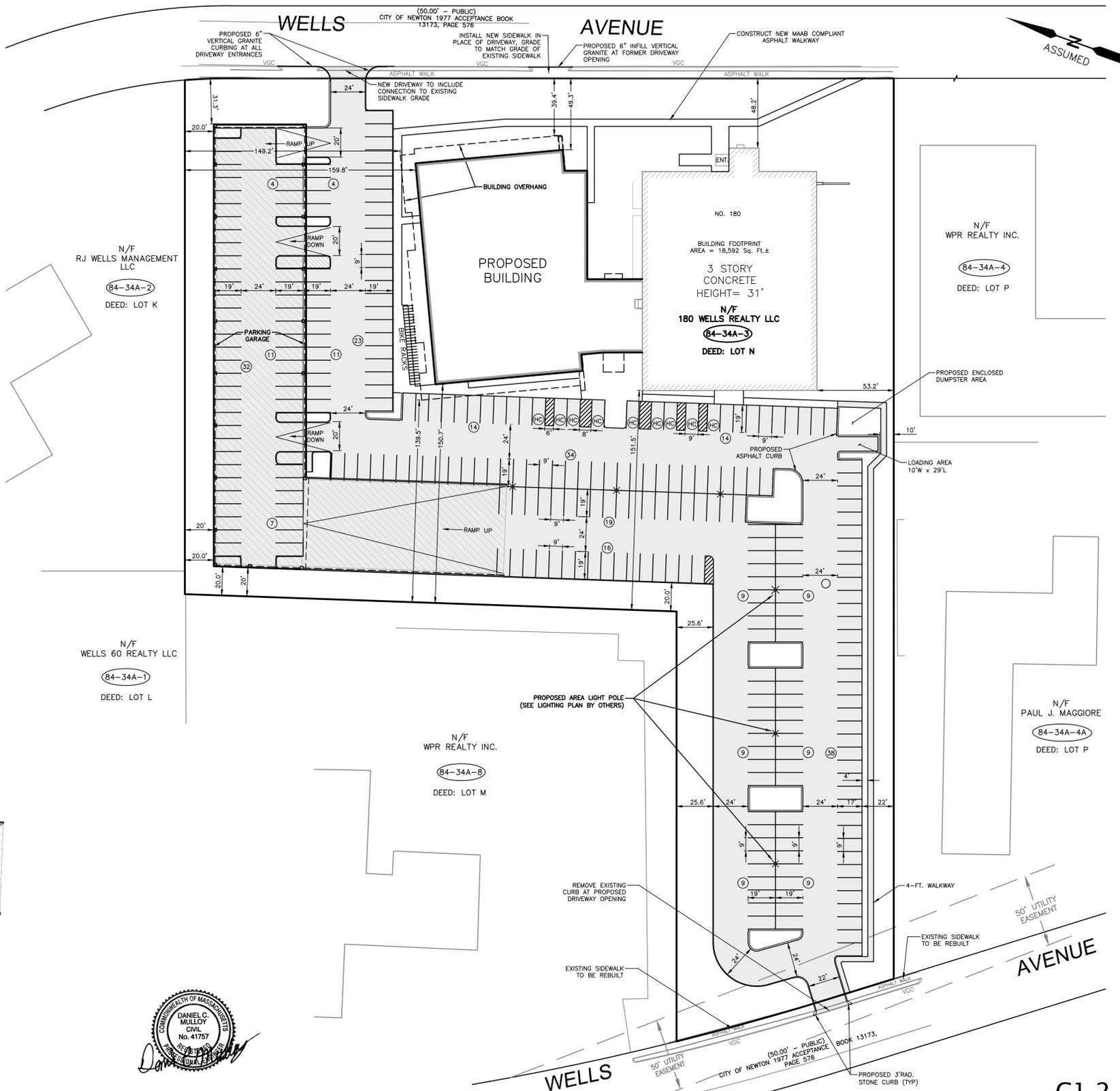
- EXISTING CONDITIONS INFORMATION WAS COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY R. E. CAMERON AND ASSOCIATES, INC. AND SUPPLEMENTED WITH RECORD PLAN INFORMATION.
- ELEVATIONS ARE REFERENCED TO AN ASSUMED DATUM.
- THIS PLAN AND ANY ACCOMPANYING CERTIFICATIONS DO NOT CONSTITUTE A CERTIFICATION OF TITLE TO THE PROPERTY DISPLAYED HEREON. THE OWNER OF LOCUS AND ADJUTING PROPERTIES ARE SHOWN ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.
- EXISTING UTILITY LINES SHOWN ON THIS PLAN ARE FROM AVAILABLE INFORMATION AND ARE APPROXIMATE LOCATIONS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. SITE DESIGN ENGINEERING, LLC, ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCUATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER PUBLIC UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED.

**NOTES:**

- ALL TRENCH EXCAVATION SHALL COMPLY WITH MASSACHUSETTS GENERAL LAW CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, AND OSHA STANDARDS TO PROTECT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES OR EXCAVATIONS. TRENCH EXCAVATION PERMIT IS REQUIRED PRIOR TO ANY CONSTRUCTION. THIS APPLIES TO ALL TRENCHES ON PUBLIC AND PRIVATE PROPERTY.
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- ALL MATERIALS AND CONSTRUCTION PRACTICES SHALL BE IN CONFORMANCE WITH THE MOST CURRENT EDITIONS OF THE CITY OF NEWTON STANDARD SPECIFICATIONS, PLANNING BOARD RULES AND REGULATIONS, THE LATEST EDITION OF THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS (MDPW) CONSTRUCTION STANDARDS, AND THE MDPW STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, UNLESS OTHERWISE SPECIFIED BY LOCAL AUTHORITY OR THE ENGINEER. ALL MATERIALS AND WORK NOT MEETING THESE SPECIFICATIONS SHALL BE IMMEDIATELY REMOVED FROM THE SITE AT THE FULL EXPENSE OF THE CONTRACTOR.
- BEFORE REQUESTING A CERTIFICATE OF OCCUPANCY, AN AS-BUILT PLAN SHALL BE SUBMITTED TO THE ENGINEERING DIVISION IN BOTH DIGITAL AND PAPER FORMAT. THE PLAN SHALL SHOW ALL UTILITIES AND FINAL GRADES, ANY EASEMENTS AND IMPROVEMENTS AND LIMITS OF RESTORATION. THE PLAN SHALL INCLUDE PROFILES OF THE VARIOUS NEW UTILITIES INCLUDING BUT NOT LIMITED TO RIM & INVERT ELEVATIONS (CITY OF NEWTON DATUM), SLOPES OF PIPES, PIPE MATERIALS, AND SWING TIES FROM PERMANENT BUILDING CORNERS. THE AS-BUILT SHALL BE STAMPED BY BOTH A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER AND REGISTERED PROFESSIONAL LAND SURVEYOR. ONCE THE AS-BUILT PLAN IS RECEIVED THE ENGINEERING DIVISION SHALL PERFORM A FINAL SITE INSPECTION AND THEN MAKE A DETERMINATION TO ISSUE A CERTIFICATE OF OCCUPANCY.
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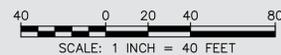


PARKING DECK



SITE PLAN

FEBRUARY 18, 2020



ELKUS | MANFREDI ARCHITECTS

C1.2

180 WELLS AVENUE  
Newton, MA

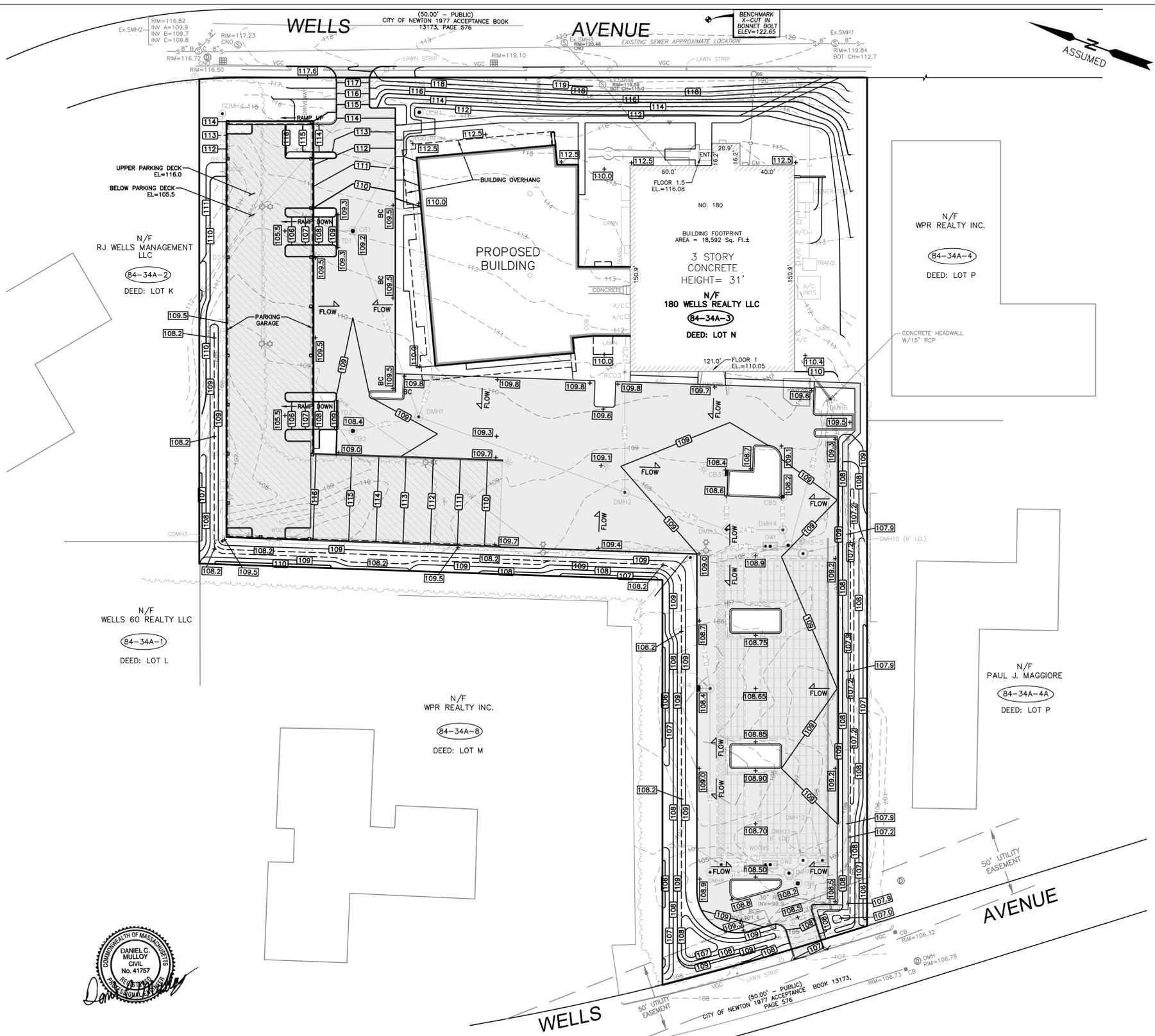


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**CONSTRUCTION NOTES:**

- THE LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES ARE APPROXIMATE ONLY. THE ENGINEER DOES NOT GUARANTEE THEIR ACCURACY OR THAT ALL UTILITIES AND SUBSURFACE STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL VERIFY SIZE, LOCATION AND INVERT ELEVATIONS OF THE UTILITIES AND STRUCTURES, AS REQUIRED PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES WITH RECORD DATA SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY. THE CONTRACTOR IS CAUTIONED TO CONTACT DIG SAFE (1-888-344-7233) 72 HOURS BEFORE DIGGING.
- ALL TRENCH EXCAVATION SHALL COMPLY WITH MASSACHUSETTS GENERAL LAW CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, AND OSHA STANDARDS TO PROTECT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES OR EXCAVATIONS. TRENCH EXCAVATION PERMIT IS REQUIRED PRIOR TO ANY CONSTRUCTION. THIS APPLIES TO ALL TRENCHES ON PUBLIC AND PRIVATE PROPERTY.
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- ALL MATERIALS AND CONSTRUCTION PRACTICES SHALL BE IN CONFORMANCE WITH THE MOST CURRENT EDITIONS OF THE CITY OF NEWTON STANDARD SPECIFICATIONS, PLANNING BOARD RULES AND REGULATIONS, THE LATEST EDITION OF THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS (MDPW) CONSTRUCTION STANDARDS, AND THE MDPW STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, UNLESS OTHERWISE SPECIFIED BY LOCAL AUTHORITY OR THE ENGINEER. ALL MATERIALS AND WORK NOT MEETING THESE SPECIFICATIONS SHALL BE IMMEDIATELY REMOVED FROM THE SITE AT THE FULL EXPENSE OF THE CONTRACTOR.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE HIS WORK WITH THE APPROPRIATE CITY OF NEWTON HIGHWAY & UTILITY DEPARTMENTS.
- THE APPLICANT WILL HAVE TO APPLY FOR STREET OPENING, SIDEWALK CROSSING, AND UTILITIES CONNECTING PERMITS WITH THE DEPARTMENT OF PUBLIC WORKS PRIOR TO ANY CONSTRUCTION.
- WITH THE EXCEPTION OF NATURAL GAS SERVICE(S), ALL UTILITY TRENCHES WITHIN THE RIGHT OF WAY SHALL BE BACKFILLED WITH CONTROL DENSITY FILL (CDF) EXCAVATABLE TYPE I-E UP TO WITHIN 18-INCHES OF THE ASPHALT BINDER LEVEL, AFTER WHICH DENSE GRADE GRAVEL COMPACTED TO 95% PROCTOR TESTING SHALL BE PLACED OVER THE CDF. DETAILS OF THIS REQUIREMENT IS IN THE ENGINEERING DIVISION WEBSITE "STANDARD CONSTRUCTION DETAILS".
- CONNECTION TO THE MUNICIPAL DRAINAGE SYSTEM REQUIRES A CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION AND WITNESSED BY THE ENGINEERING DIVISION PRIOR TO APPROVAL OF THE BUILDING PERMIT. POST-CONSTRUCTION CCTV INSPECTION SHALL ALSO BE PERFORMED AND WITNESSED.
- CONTRACTOR SHALL MAINTAIN ALL EXISTING AND NEWLY INSTALLED UTILITIES IN GOOD WORKING ORDER AND SHALL PROTECT THEM FROM DAMAGE AT ALL TIMES UNTIL THE WORK IS COMPLETED AND ACCEPTED BY THE OWNER.
- THE WATER SUPPLY SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE CITY OF NEWTON WATER DEPARTMENT. CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH APPLICABLE PERMITS (TO BE OBTAINED BY THE CONTRACTOR). UNLESS DIRECTED OTHERWISE, ALL WATER PIPES SHALL BE INSTALLED 5" - 0" BELOW GRADE. APPROPRIATE THRUST BLOCKING SHALL BE INSTALLED.
- ALL WATER SERVICES AND CONNECTIONS SHALL BE CHLORINATED AND PRESSURE TESTED IN ACCORDANCE TO AWWA AND THE CITY OF NEWTON CONSTRUCTION STANDARDS AND SPECIFICATIONS PRIOR TO COMING ON LINE. THESE TESTS MUST BE WITNESSED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION.
- THE SANITARY SEWER SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE CITY OF NEWTON SEWER DEPARTMENT. CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH APPLICABLE PERMITS (TO BE OBTAINED BY THE CONTRACTOR).
- ALL NEW SEWER SERVICE AND/OR STRUCTURES SHALL BE PRESSURE TESTED IN ACCORDANCE TO THE CITY CONSTRUCTION SPECIFICATIONS & STANDARDS AND INSPECTED VIA CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION AFTER INSTALLATION IS COMPLETED. A COPY OF THE VIDEO INSPECTION AND WRITTEN REPORT SHALL BE SUBMITTED TO THE CITY ENGINEER OR HIS REPRESENTATIVE. THE SEWER SERVICE WILL NOT BE ACCEPTED UNTIL THE TWO METHODS OF INSPECTION ARE COMPLETED AND WITNESSED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION. A CERTIFICATE OF OCCUPANCY WILL NOT BE RECOMMENDED UNTIL THESE TESTS ARE COMPLETED TO THE SATISFACTION OF THE CITY ENGINEER.
- ALL SANITARY SEWER MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE TO THE CITY'S CONSTRUCTION STANDARDS & SPECIFICATIONS, THE SEWER SERVICE AND MANHOLE WILL NOT BE ACCEPTED UNTIL THE MANHOLES PASS THE TESTING REQUIREMENTS. ALL TESTING MUST BE WITNESSED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION. A CERTIFICATE OF OCCUPANCY WILL NOT BE RECOMMENDED UNTIL THIS TEST IS COMPLETED TO THE SATISFACTION OF THE CITY ENGINEER AND A WRITTEN REPORT OF THE TEST RESULT IS SUBMITTED TO THE CITY ENGINEER.
- ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION UTILITY CONNECTIONS AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY.
- THE CONTRACTOR SHALL CONTACT THE LOCAL ELECTRIC COMPANY FOR CONSTRUCTION SPECIFICATIONS, STANDARDS AND RESPONSIBILITIES.
- IF ANY CHANGES FROM THE FINAL APPROVED DESIGN PLAN THAT ARE REQUIRED DUE TO UNFORSEEN SITE CONDITIONS, THE CONTRACTOR OF RECORD SHALL CONTACT THE DESIGN ENGINEER OF RECORD AND SUBMIT REVISED DESIGN AND STAMPED FULL SCALE PLANS FOR REVIEW AND APPROVAL PRIOR TO CONTINUING WITH CONSTRUCTION.
- THE CONTRACTOR SHALL UTILIZE ALL MEASURES AND MATERIALS NECESSARY TO ENSURE THE SAFETY OF ALL PERSONS AND PROPERTIES AT THE SITE DURING CONSTRUCTION. ALL EXCAVATIONS SHALL CONFORM TO CURRENT OSHA STANDARDS.
- DEWATERING OPERATIONS SHALL BE PROVIDED, IF REQUIRED; ALL DISCHARGE SHALL PASS THROUGH SEDIMENTATION CONTROL DEVICES TO PREVENT IMPACTS UPON WATER BODIES, BORDERING VEGETATED WETLANDS, DRAINAGE SYSTEMS AND ADJUTING PROPERTIES.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR(S) TO RECORD IN NOTE FORM (PREFERABLY IN A SURVEY FIELD NOTEBOOK) THE LOCATION OF ALL UTILITIES INSTALLED WHEN SURVEYORS ARE NOT AT JOB SITE. THESE NOTES WILL BE UTILIZED FOR THE PREPARATION OF REQUIRED AS-BUILT PLANS.
- THE CONTRACTOR(S) SHALL NOTIFY THE DESIGN ENGINEER AND OR SURVEYOR FOR PROPER LOCATION OF PROPOSED UTILITIES AND IMPROVEMENTS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR MUST PRESERVE ALL GRADE STAKES SET BY SURVEYORS. GRADE STAKES WILL BE USED BY SURVEYORS AND CITY OF NEWTON ROADWAY ENGINEERS FOR FINAL GRADE INSPECTIONS.
- ALL TREE REMOVAL SHALL COMPLY WITH THE CITY OF NEWTON TREE ORDINANCE.
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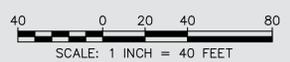


180 WELLS AVENUE  
Newton, MA



GRADING PLAN

FEBRUARY 18, 2020



C1.3

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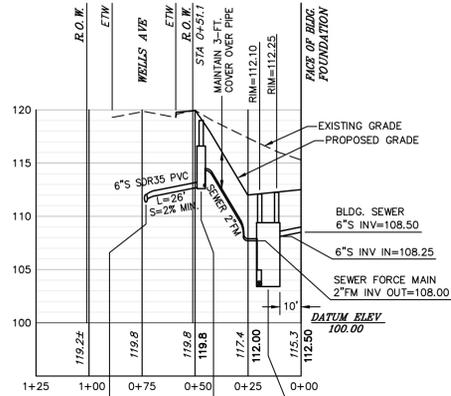
**DRAINAGE NOTES:**

1. ALL DRAIN PIPING 10" DIA. AND GREATER TO BE HDPE SMOOTH WALL INTERIOR. ALL DRAIN PIPING UNDER 10" DIA. TO BE SDR-35.

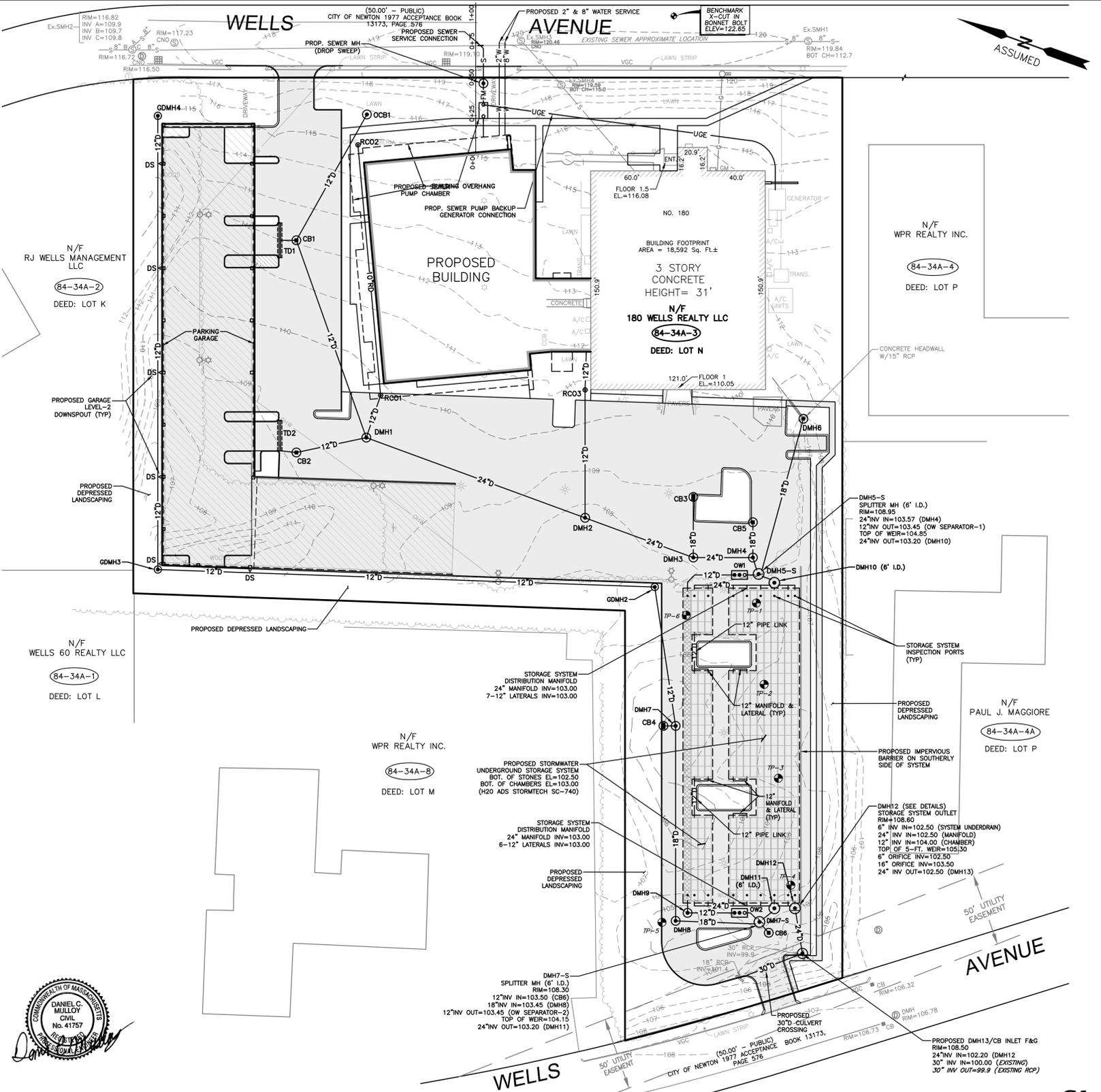
PROPOSED DRAINAGE STRUCTURES PIPE & ELEVATION SCHEDULE										
FROM STRUCTURE	RIM ELEV.	INVERT IN	INVERT OUT	TO STRUCTURE	PIPE SIZE IN & OUT (INCH.)	LENGTH (FT.)	SLOPE (FT./FT.)	CLASS		
OCB1	111.50	107.50	106.45	CB1	12	95.6	0.0110	HDPE		
TD1	109.30	106.65	106.55	CB1	8	9.0	0.0111	HDPE		
CB1	109.20	106.20	105.25	DMH1	12	140.5	0.0068	HDPE		
TD2	109.00	106.00	105.88	CB2	12	9.0	0.0133	HDPE		
CB2	108.40	105.38	105.15	DMH1	18	45.5	0.0051	HDPE		
CB3	108.40	104.55	104.36	DMH3	18	78.3	0.0050	HDPE		
CB4	108.40	104.90	104.70	DMH7	15	4.5	0.0444	HDPE		
CB5	108.20	104.39	104.17	DMH4	18	20.4	0.0108	HDPE		
CB6	108.20	103.60	103.50	DMH7-S	12	5.7	0.0175	HDPE		
RCO2	112.50	108.75	106.10	RCO1	10	172.0	0.0154	HDPE		
RCO1	109.75	106.00	105.25	DMH1	12	28.8	0.0260	HDPE		
DMH1	109.10	105.05	104.25	DMH2	24	157.3	0.0051	HDPE		
BUILDING	-	106.00	105.60	RCO3	12	26.0	0.0154	HDPE		
RCO3	109.75	105.60	104.50	DMH2	12	108.8	0.0100	HDPE		
DMH2	109.00	104.25	103.86	DMH3	24	75.8	0.0051	HDPE		
DMH3	108.75	103.86	103.67	DMH4	24	37.3	0.0051	HDPE		
DMH4	108.67	103.67	103.57	DMH5-S	24	7.0	0.0142	HDPE		
DMH6	110.00	105.00	103.90	DMH5-S	18	107.0	0.0103	HDPE		
DMH7	108.45	104.38	103.72	DMH8	18	130.7	0.0050	HDPE		
DMH8	108.80	103.72	103.45	DMH7-S	18	53.1	0.0051	HDPE		
GDMH-4	115.00	108.60	107.00	GDMH-3	12	315.0	0.0051	HDPE		
GDMH-3	109.50	106.95	105.00	GDMH-2	12	340.5	0.0057	HDPE		
GDMH-2	109.00	105.00	104.53	DMH7	12	93.0	0.0051	HDPE		
DMH5-S	108.95	103.45	103.37	OW1	12	5.3	0.0151	HDPE		
	103.20	103.10	103.10	DMH10	24	7.0	0.0142	HDPE		
OW1	108.80	103.20	103.00	CHAMBERS	12	39.0	0.0051	HDPE		
DMH7-S	108.30	103.45	103.37	OW2	12	5.2	0.0154	HDPE		
	103.20	103.10	103.10	DMH11	18	7.0	0.0142	HDPE		
OW2	108.45	103.20	103.05	DMH9	12	29	0.0051	HDPE		
DMH9	108.75	103.05	103.00	CHAMBERS	12	6.0	0.0050	HDPE		
DMH10	109.06	103.00	103.00	MANIFOLD (2)24	VAR	0.0000	HDPE			
	103.00	103.00	103.00	CHAMBERS	12	3.0	0.0000	HDPE		
DMH11	108.45	103.00	103.00	MANIFOLD	24	53.0	0.0000	HDPE		
	103.00	103.00	103.00	CHAMBERS	12	3.0	0.0000	HDPE		
	103.00	102.50	102.50	DMH12	24	10.0	0.0500	HDPE		
DMH12	108.60	102.50	102.50	SYSTEM UNDERDRAIN	6	3.0	0.0000	HDPE		
	102.50	102.20	102.20	DMH13	24	30.0	0.0100	HDPE		
DMH13	108.50	99.90	-	EXISTING	30	-	-	RCP		

**DRAINAGE NOTES:**

ALL DRAIN PIPING 10" DIA. AND GREATER TO BE HDPE SMOOTH WALL INTERIOR. ALL DRAIN PIPING UNDER 10" DIA. TO BE SDR-35.



**SEWER PROFILE:**  
SCALE: 1"=40' HOR.  
1"=8' VER.



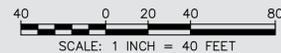
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180 WELLS AVENUE  
Newton, MA



**DRAINAGE & UTILITY PLAN**

FEBRUARY 18, 2020



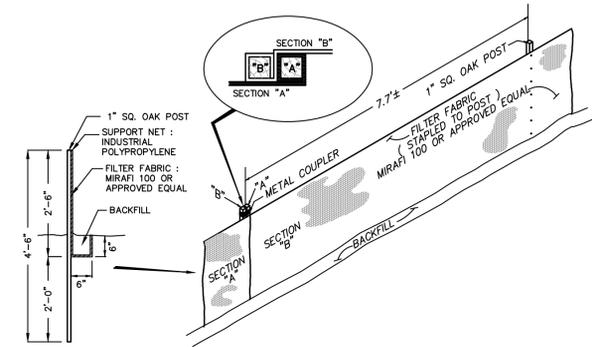
C1.4

**SOIL EROSION AND SEDIMENTATION CONTROL NOTES**

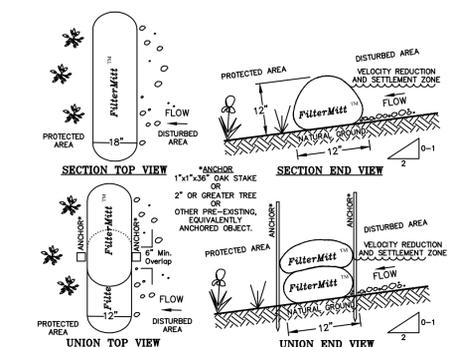
- PRIOR TO INITIATING CONSTRUCTION, ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS, AS DIRECTED BY THE ENGINEER AND/OR AS NECESSITATED BY FIELD CONDITIONS. THE CONTRACTOR SHALL MAINTAIN THESE MEASURES UNTIL ALL WORK IS COMPLETED AND ALL AREAS HAVE BEEN STABILIZED.
 

**INSTALLATION SEQUENCE**

  - INSTALL SILT FENCE AND HAYBALES AS SHOWN ON PLAN.
  - CLEAR AND GRUB SITE.
  - CONSTRUCT SITE INFRASTRUCTURE AS SHOWN ON PLANS.
  - THE FOLLOWING ACTIVITIES SHALL TAKE PLACE IMMEDIATELY FOLLOWING CONSTRUCTION OF EMBANKMENTS AND FILL SLOPES: PLACEMENT OF LOAM AND GRASS SEED, INSTALLATION OF GEOWEB SLOPE STABILIZATION.
  - THE CONTRACTOR SHALL INSPECT ALL FILL SLOPES AND EMBANKMENTS ON A WEEKLY BASIS AND FOLLOWING ALL RAINFALL EVENTS UNTIL A MINIMUM 75% GRASS COVER IS ESTABLISHED SUFFICIENT TO PREVENT EROSION FROM OCCURRING.
- ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR OR AS DIRECTED BY THE ENGINEER.
- AFTER THE INSTALLATION OF DRAINAGE STRUCTURES, HAYBALES OR OTHER APPROVED MATERIALS SHALL BE PLACED TO PROTECT THE INTEGRITY OF THE STRUCTURES.
- DISTURBED AREAS SHALL BE STABILIZED WITH THE APPLICATION OF A MINIMUM OF FOUR INCHES (4) OF LOAM AND SHALL BE SEEDED WITH AN APPROVED GRASS MIX OR SHALL BE RIPRAPPED AS SOON AS POSSIBLE AFTER THE FINISHED GRADE HAS BEEN MET. IF FINAL GRADING DOES NOT OCCUR DURING THE GROWING SEASON, THESE AREAS SHALL BE MULCHED WITH HAY AND SECURED BY JUTE NETTING WITH STAPLES. SLOPES EXCEEDING 2:1 SHALL BE LOAMED AND STABILIZED WITH PEGGED SOD OR APPROVED EROSION CONTROL BLANKETS UNLESS OTHERWISE NOTED.
- THE MOUTHS OF ALL CATCH BASINS SHALL BE FITTED WITH FILTER FABRIC DURING THE ENTIRE CONSTRUCTION PROCESS TO RETARD SILTATION.
- WHERE APPLICABLE, PROPER DUST CONTROL MEASURES SHALL APPLY TO REDUCE THE SURFACE AND AIR TRANSPORT OF DUST GENERATED DURING CONSTRUCTION. THE FOLLOWING METHODS SHALL BE USED:
  - WET SUPPRESSION WITHOUT METING AGENT SHALL BE APPLIED DURING LOAD IN / LOAD OUT AND EARTH MOVING CONSTRUCTION ACTIVITIES, SPECIALLY ON STOCKPILES.
  - INACTIVE STOCKPILES SHALL BE STABILIZED THROUGH APPLICATION OF SOIL STABILIZERS OR SEEDING.
  - WIND SCREENS OR BARRIERS AND PLASTIC TARP COVERS SHALL BE SECURED TO PREVENT WIND DISLODGE AND DAMAGE. ANY DAMAGES SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
- TEMPORARY SWALES, STRUCTURES AND SEDIMENTATION BASINS CONSTRUCTED, AS NECESSITATED BY FIELD CONDITIONS, SHALL BE SIZED UTILIZING SOIL CONSERVATION SERVICE GUIDELINES TO ACCOMMODATE RUNOFF FROM DISTURBED AREAS. THESE FACILITIES SHALL BE LEFT IN PLACE UNTIL THE AREA HAS BEEN STABILIZED.
- THE FUNCTIONING OF TEMPORARY CULVERTS, DITCHES, SWALES OR CONSTRUCTION OPERATIONS SHALL NOT CAUSE NOTICEABLE SEDIMENTATION PLUMES. IF PLUMES OCCUR, THE CONTRACTOR SHALL STOP WORK AND INSTALL ADDITIONAL SEDIMENTATION CONTROL DEVICES IMMEDIATELY TO PREVENT FURTHER SEDIMENTATION.
- DEWATERING OPERATIONS SHALL BE PROVIDED, IF REQUIRED; ALL DISCHARGE SHALL PASS THROUGH SEDIMENTATION CONTROL DEVICES TO PREVENT IMPACTS UPON WATER BODIES, BORDERING VEGETATED WETLANDS, DRAINAGE SYSTEMS AND ADJUTING PROPERTIES.



**SEDIMENTATION CONTROL FENCE DETAIL**  
NOT TO SCALE



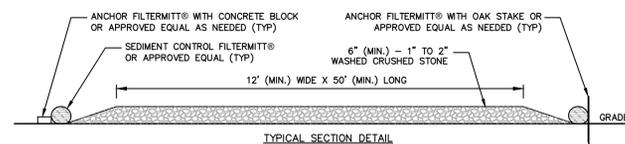
**FilterMitt™ INSTALLATION:**  
With the newest technology and equipment, sections can be constructed on site in lengths from 1' to 100'.  
Sections can also be delivered to the site in lengths from 1' to 8'.  
The flexibility of FilterMitt™ allows it to conform to any contour or terrain.  
Where section ends meet, there shall be an overlap of 6" or greater. Both sides shall be anchored (oak stakes, trees, etc.) to stabilize the union.

**FilterMitt™ COMPONENTS:**  
OUTSIDE CASING: 100% organic hection.  
FILLER INGREDIENT: FiberRoot Mulch™  
\*A blend of coarse and fine compost and shredded wood.  
\*Particle sizes: 100% passing a 3" screen; 90-100% passing a 1" screen; 70-100% passing a 0.75" screen; 30-75% passing a 0.25" screen.  
\*Weight: Approx. 850 lbs./cu.yd. (Ave. 25 lbs./ft.)

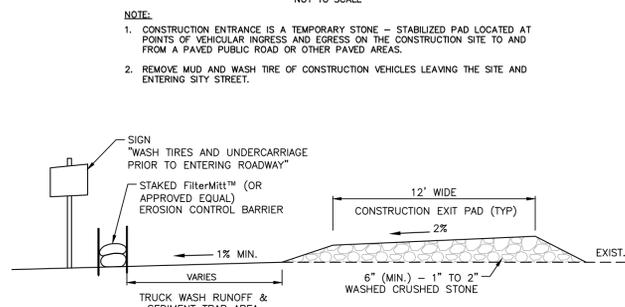
For more information visit:  
[www.groundscapesexpress.com](http://www.groundscapesexpress.com)  
or contact us at:  
**Groundscapes Express, Inc.**  
P.O. Box 737  
Wrentham, MA 02593  
(508) 384-7140



**INLET SEDIMENTATION CONTROL DETAIL**  
NOT TO SCALE

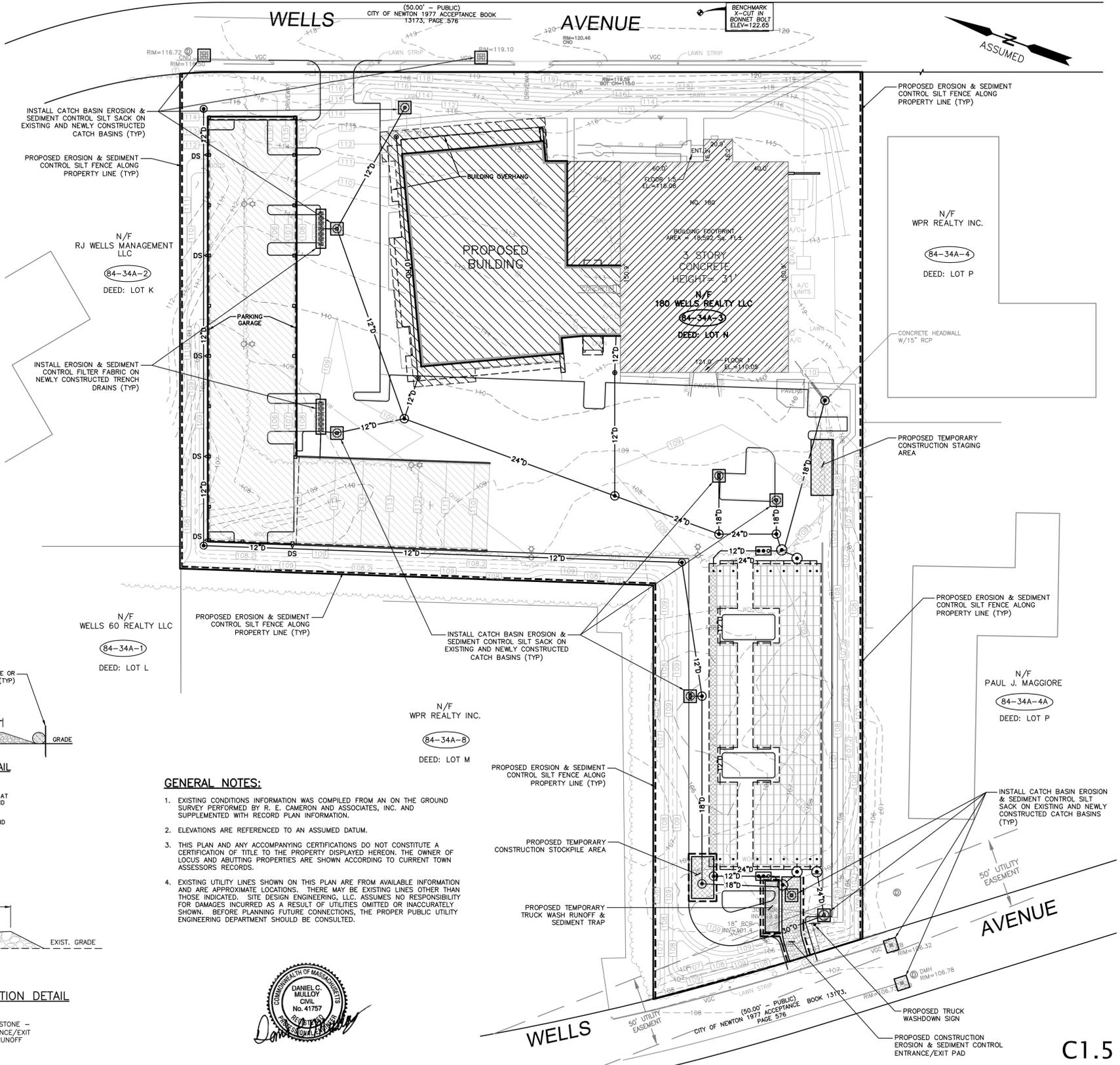


**STABILIZED CONSTRUCTION ENTRANCE & EXIT DETAIL**  
NOT TO SCALE



**CONSTRUCTION VEHICLE WASHDOWN STATION DETAIL**  
NOT TO SCALE

**NOTE:**  
CONSTRUCTION VEHICLE WASHDOWN STATION IS A TEMPORARY STONE - STABILIZED PAD LOCATED PRIOR TO THE CONSTRUCTION ENTRANCE/EXIT PAD ON THE CONSTRUCTION SITE AND IS SLOPED TO ALLOW RUNOFF FROM VEHICLE WASHING TO A SEDIMENT COLLECTION AREA

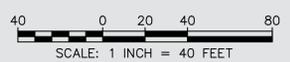


**GENERAL NOTES:**

- EXISTING CONDITIONS INFORMATION WAS COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY R. E. CAMERON AND ASSOCIATES, INC. AND SUPPLEMENTED WITH RECORD PLAN INFORMATION.
- ELEVATIONS ARE REFERENCED TO AN ASSUMED DATUM.
- THIS PLAN AND ANY ACCOMPANYING CERTIFICATIONS DO NOT CONSTITUTE A CERTIFICATION OF TITLE TO THE PROPERTY DISPLAYED HEREON. THE OWNER OF LOCUS AND ADJUTING PROPERTIES ARE SHOWN ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.
- EXISTING UTILITY LINES SHOWN ON THIS PLAN ARE FROM AVAILABLE INFORMATION AND ARE APPROXIMATE LOCATIONS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. SITE DESIGN ENGINEERING, LLC, ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER PUBLIC UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED.



FEBRUARY 18, 2020



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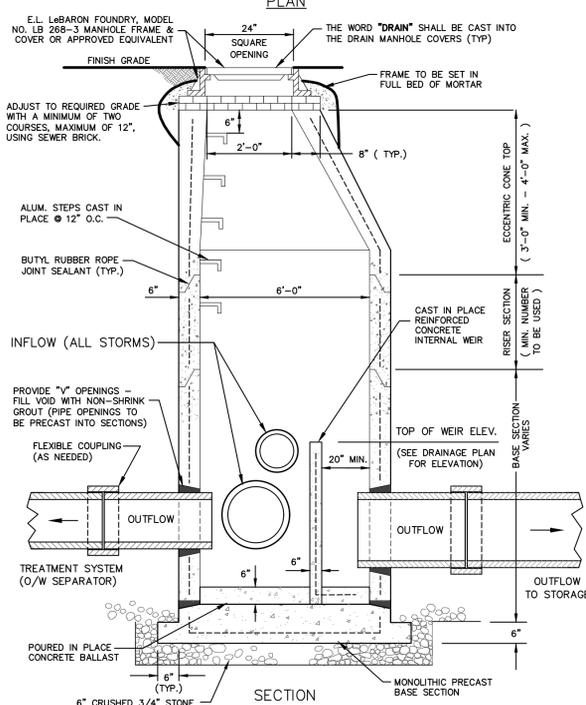
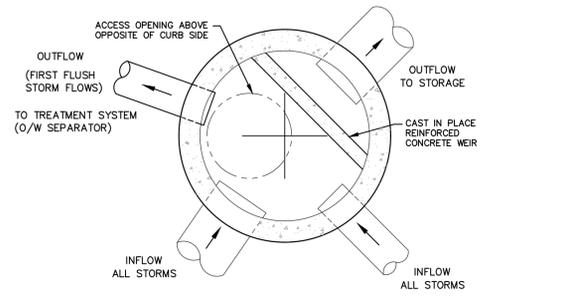


**EROSION CONTROL PLAN**



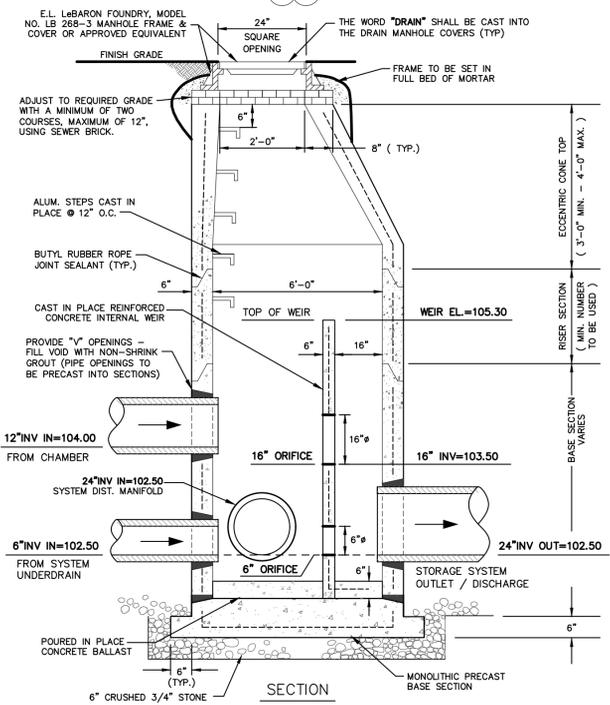
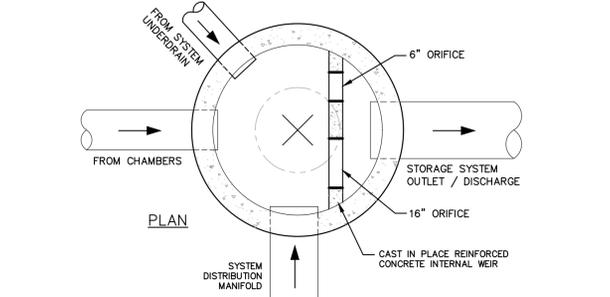
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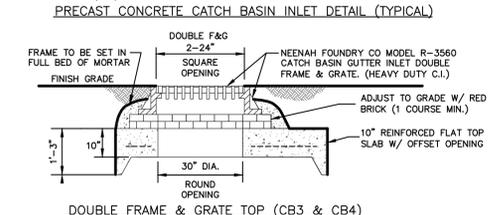
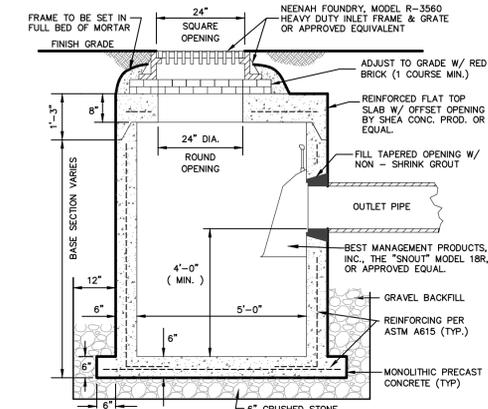
**TYPICAL DMH - FLOW SPLITTER DETAIL**  
NOT TO SCALE

NOTES:  
1. PRECAST REINFORCED CONCRETE DESIGN SHALL BE CERTIFIED FOR H-20 LOADING.  
2. USE FLAT TOP H20 LOADING SLAB WHEN HEIGHT OF CONE SECTION IS LESS THAN 2'-0".  
3. FILL OUTSIDE FACE OF ALL MANHOLE JOINTS WITH NON-SHRINK MORTAR.  
4. ALL JOINTS TO HAVE "KENT SEAL" OR EQUAL.



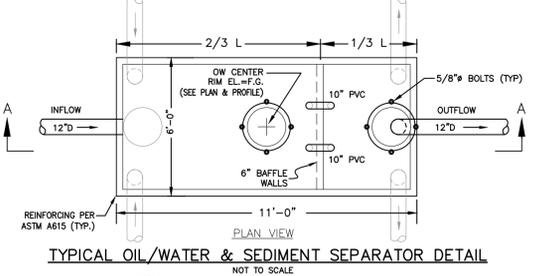
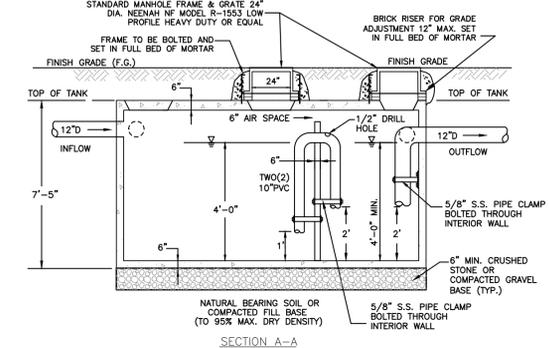
**UNDERGROUND STORAGE SYSTEM OUTLET DETAIL**  
NOT TO SCALE

NOTES:  
1. PRECAST REINFORCED CONCRETE DESIGN SHALL BE CERTIFIED FOR H-20 LOADING.  
2. USE FLAT TOP H20 LOADING SLAB WHEN HEIGHT OF CONE SECTION IS LESS THAN 2'-0".  
3. FILL OUTSIDE FACE OF ALL MANHOLE JOINTS WITH NON-SHRINK MORTAR.  
4. ALL JOINTS TO HAVE "KENT SEAL" OR EQUAL.



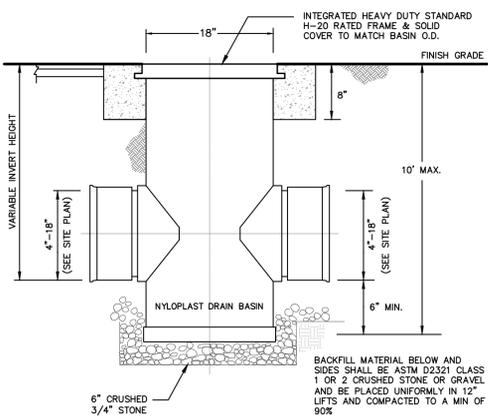
**PRECAST CONCRETE CATCH BASIN DETAIL**  
NOT TO SCALE

NOTES:  
1. PRECAST REINFORCED CONCRETE DESIGN SHALL BE CERTIFIED FOR H-20 LOADING.  
2. FILL OUTSIDE FACE OF ALL MANHOLE JOINTS WITH NON-SHRINK MORTAR.  
3. ALL JOINTS TO HAVE "KENT SEAL" OR EQUAL.  
4. MANHOLES SHALL BE AS MANUFACTURED BY SHEA CONCRETE PRODUCTS OR APPROVED EQUIVALENT.



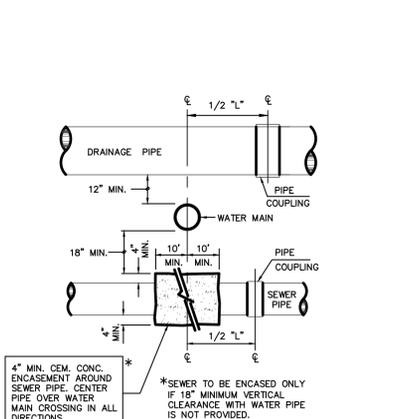
**TYPICAL OIL/WATER & SEDIMENT SEPARATOR DETAIL**  
NOT TO SCALE

NOTES:  
1. USE 2,000 GAL. COMMERCIAL H-20 TWO COMPARTMENT TANK AS MANUFACTURED BY SHEA CONCRETE PRODUCTS OR APPROVED EQUIVALENT.



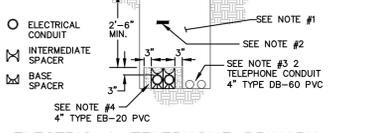
**TYPICAL ROOF DRAIN JUNCTION CLEANOUT(CO) DETAIL**  
NOT TO SCALE

NOTES:  
1. ALL MATERIALS AND CONSTRUCTION OF PLASTIC DRAIN MANHOLE SHALL CONFORM TO THE STANDARDS, REQUIREMENTS AND SPECIFICATIONS ESTABLISHED BY ADVANCED DRAINAGE SYSTEMS (ADS) INC. NYLOPLAST, ASTM, AND AASHTO.  
2. FINAL MATERIAL SELECTION SHALL BE REVIEWED BY THE DESIGN ENGINEER, TOWN REPRESENTATIVE, AND PROJECT OWNER.  
3. CERTIFIED MANUFACTURERS REFERENCE/CONTACT : WWW.ADS-PIPE.COM



**SEWER, WATER & DRAIN CROSSING DETAIL**  
NOT TO SCALE

NOTES:  
1. ALL MATERIALS AND CONSTRUCTION OF PLASTIC DRAIN MANHOLE SHALL CONFORM TO THE STANDARDS, REQUIREMENTS AND SPECIFICATIONS ESTABLISHED BY ADVANCED DRAINAGE SYSTEMS (ADS) INC. NYLOPLAST, ASTM, AND AASHTO.  
2. FINAL MATERIAL SELECTION SHALL BE REVIEWED BY THE DESIGN ENGINEER, TOWN REPRESENTATIVE, AND PROJECT OWNER.  
3. CERTIFIED MANUFACTURERS REFERENCE/CONTACT : WWW.ADS-PIPE.COM



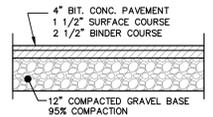
**ELECTRIC & TELEPHONE PRIMARY SERVICE DETAIL**  
NOT TO SCALE

NOTES:  
(1) BACKFILL TO BE FREE OF STONES GREATER THAN ONE INCH AND SHALL NOT CONTAIN ASHES, CINDERS, SHELL, OR FROZEN MATERIAL.  
(2) WITH THE EXCEPTION OF NATURAL GAS SERVICES, ALL UTILITY TRENCHES WITHIN THE RIGHT OF WAY SHALL BE BACKFILLED WITH CONTROL DENSITY FILL (CDF) EXCAVATABLE TYPE I-E, PER CITY OF NEWTON CONSTRUCTION STANDARDS.  
(3) WARNING TAPE TO BE PLACED 12" BELOW FINISH GRADE AND DIRECTLY ABOVE POWER CONDUIT.  
(4) MINIMUM SEPARATION BETWEEN ELECTRICAL CONDUIT AND FOREIGN CONDUIT OR PIPES IS AS FOLLOWS:  
COMMUNICATION - 3" OF CONCRETE ENCASEMENT  
WATER, GAS, SEWER - 12" WHERE THE PATH OF THESE UTILITIES INTERSECT AT APPROXIMATELY RIGHT ANGLES WITH ELECTRICAL CONDUIT.  
24" SEPARATION SHALL BE MAINTAINED BETWEEN PARALLEL PLACEMENT OF THESE UTILITIES AND ELECTRICAL CONDUIT.  
(5) CONCRETE THICKNESS AROUND THE OUTSIDE DUCTS SHALL BE 3 TO 6 INCHES. CONCRETE SHALL BE IN ACCORDANCE WITH STANDARD 0211.

- NOTES:**
- ALL TRENCH EXCAVATION SHALL COMPLY WITH MASSACHUSETTS GENERAL LAW CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, AND OSHA STANDARDS TO PROTECT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES OR EXCAVATIONS. TRENCH EXCAVATION PERMIT IS REQUIRED PRIOR TO ANY CONSTRUCTION. THIS APPLIES TO ALL TRENCHES ON PUBLIC AND PRIVATE PROPERTY.
  - THE CONTRACTOR OF RECORD IS RESPONSIBLE FOR CONTACTING THE ENGINEERING DIVISION AND SCHEDULING AN APPOINTMENT 48-HOURS PRIOR TO DATE WHEN UTILITIES WILL BE MADE AVAILABLE FOR AN INSPECTION OF WATER SERVICES, SEWER SERVICES AND DRAINAGE SYSTEM INSTALLATION. THE UTILITY IN QUESTION SHALL BE FULLY EXPOSED FOR THE INSPECTOR TO VIEW, BACKFILLING SHALL ONLY TAKE PLACE WHEN THE CITY ENGINEER'S INSPECTOR HAS GIVEN THEIR APPROVAL.
  - ALL MATERIALS AND CONSTRUCTION PRACTICES SHALL BE IN CONFORMANCE WITH THE MOST CURRENT EDITIONS OF THE CITY OF NEWTON STANDARD SPECIFICATIONS, PLANNING BOARD RULES AND REGULATIONS, THE LATEST EDITION OF THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS (MDPW) CONSTRUCTION STANDARDS, AND THE MDPW STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, UNLESS OTHERWISE SPECIFIED BY LOCAL AUTHORITY OR THE ENGINEER. ALL MATERIALS AND WORK NOT MEETING THESE SPECIFICATIONS SHALL BE IMMEDIATELY REMOVED FROM THE SITE AT THE FULL EXPENSE OF THE CONTRACTOR.
  - BEFORE REQUESTING A CERTIFICATE OF OCCUPANCY, AN AS-BUILT PLAN SHALL BE SUBMITTED TO THE ENGINEERING DIVISION IN BOTH DIGITAL AND PAPER FORMAT. THE PLAN SHALL SHOW ALL UTILITIES AND FINAL GRADES, ANY EASEMENTS AND IMPROVEMENTS AND LIMITS OF RESTORATION. THE PLAN SHALL INCLUDE PROFILES OF THE VARIOUS NEW UTILITIES INCLUDING BUT NOT LIMITED TO RIM & INVERT ELEVATIONS (CITY OF NEWTON DATUM), SLOPES OF PIPES, PIPE MATERIALS, AND SWING TIES FROM PERMANENT BUILDING CORNERS. THE AS-BUILT SHALL BE STAMPED BY BOTH A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER AND REGISTERED PROFESSIONAL LAND SURVEYOR. ONCE THE AS-BUILT PLAN IS RECEIVED THE ENGINEERING DIVISION SHALL PERFORM A FINAL SITE INSPECTION AND THEN MAKE A DETERMINATION TO ISSUE A CERTIFICATE OF OCCUPANCY.
  - ALL SITE WORK INCLUDING TRENCH RESTORATION, SIDEWALK, CURB, APRON AND LOAM BORDER (WHERE APPLICABLE) SHALL BE COMPLETED BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED.



C1.6b



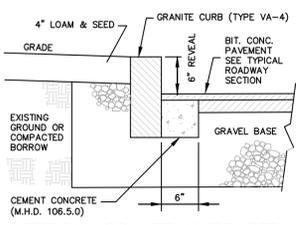
**TYPICAL BITUMINOUS CONCRETE PAVEMENT**  
NOT TO SCALE

**TYPICAL ROADWAY CONSTRUCTION MATERIAL NOTES**

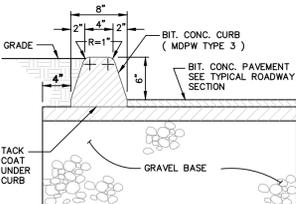
1. BITUMINOUS CONCRETE SHALL CONFORM TO MASSACHUSETTS HIGHWAY DEPARTMENT SPECIFICATION M3.11.00.
2. GRAVEL BORROW TYPE C SHALL CONFORM TO MASSACHUSETTS HIGHWAY DEPARTMENT SPECIFICATION M1.03.00 AS LISTED BELOW:

GRAVEL BORROW SHALL CONSIST OF INERT MATERIAL THAT IS HARD, DURABLE STONE AND COARSE SAND, FREE FROM LOAM AND CLAY, SURFACE COATINGS AND DELETERIOUS MATERIALS. GRADATION REQUIREMENTS FOR GRAVEL SHALL BE DETERMINED BY ASHTO-T11 AND T27 AND SHALL CONFORM TO THE FOLLOWING:

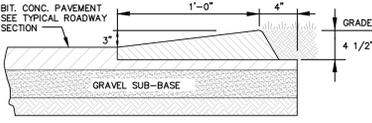
SIEVE DESIGNATION	PERCENT PASSING	MAXIMUM SIZE OF STONE IN GRAVEL SHALL BE 2 INCHES
1/2 IN.	50-85	
NO. 4	40-75	
NO. 50	8-28	LARGEST DIMENSION
NO. 200	0-10	



**VERTICAL GRANITE CURB DETAIL**  
NOT TO SCALE



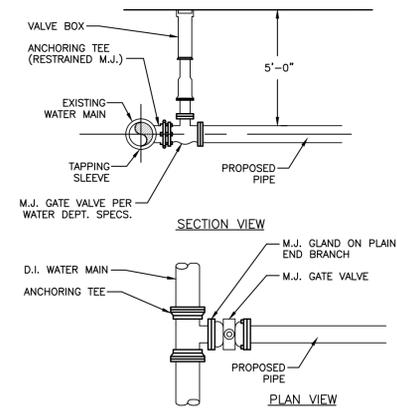
**CURB DETAIL - MDPW TYPE 3**  
NOT TO SCALE



**BITUMINOUS CONCRETE BERM DETAIL**  
NOT TO SCALE

**WATER CONNECTION CONSTRUCTION NOTES**

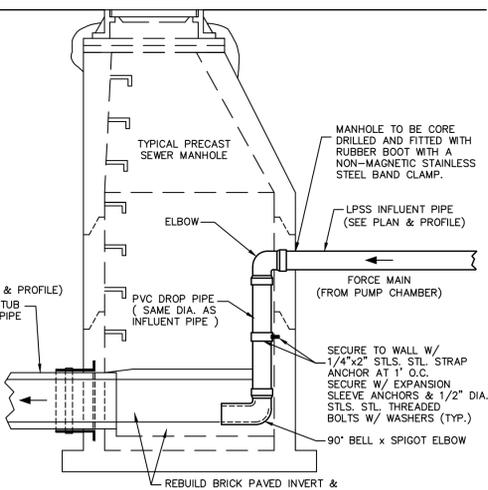
1. THE WATER SUPPLY SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE CITY OF NEWTON WATER DEPARTMENT. CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH APPLICABLE PERMITS (TO BE OBTAINED BY THE CONTRACTOR). UNLESS OTHERWISE DIRECTED, ALL WATER PIPES SHALL BE INSTALLED 5'-0" BELOW GRADE. APPROPRIATE THRUST BLOCKING SHALL BE INSTALLED.
2. THE CONTRACTOR SHALL MAINTAIN CLEARANCE BETWEEN THE NEW WATER MAIN AND OTHER EXISTING UTILITIES OF AT LEAST (12) TWELVE INCHES OR AS DETERMINED BY THE CITY'S WATER DEPARTMENT IN THE FIELD.
3. ALL CONSTRUCTION METHODS AND MATERIALS, AS WELL AS ALL MATERIAL SHOP DRAWINGS AND MANUFACTURERS DATA SHALL RECEIVE THE WRITTEN APPROVAL OF THE CITY OF NEWTON WATER DEPARTMENT AND THE PROJECT ENGINEER PRIOR TO FABRICATION AND INSTALLATION.
4. ALL COMPLETED SECTIONS OF THE PROPOSED SYSTEM SHALL BE PRESSURE TESTED AND DISINFECTED IN ACCORDANCE WITH THE CITY OF NEWTON WATER DEPARTMENT SPECIFICATIONS. ANY PORTION OF THE WORK NOT MEETING THE REQUIRED TESTING STANDARDS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE.
5. FIRE FLOW TESTING IS REQUIRED FOR THE PROPOSED FIRE SUPPRESSION SYSTEM. TEST MUST BE COORDINATED WITH THE CITY OF NEWTON FIRE DEPARTMENT AND UTILITIES DIVISION. REPRESENTATIVES OF EACH DEPARTMENT SHALL WITNESS AND TEST RESULTS AND A WRITTEN REPORT SHALL BE SUBMITTED. HYDRAULIC CALCULATION SHALL BE PROVIDED TO THE CITY'S FIRE DEPARTMENT FOR APPROVAL.
6. ALL WATER SERVICES AND CONNECTIONS SHALL BE CHLORINATED AND PRESSURE TESTED IN ACCORDANCE TO AWWA AND THE CITY OF NEWTON CONSTRUCTION STANDARDS AND SPECIFICATIONS PRIOR TO COMING ON LINE. THESE TESTS MUST BE WITNESSED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION.
7. APPROVAL OF THE FINAL CONFIGURATION OF THE WATER SERVICES SHALL BE DETERMINED BY THE UTILITIES DIVISION AND AN ENGINEER PREPARED FINAL PLAN APPROVED BY THE DIRECTOR OF UTILITIES.
8. THE CITY'S WATER SUPERINTENDENT AND THE PROJECT ENGINEER SHALL APPROVE ALL FIELD CHANGES IN THE WORK PRIOR TO IMPLEMENTATION. NO FIELD CHANGES SHALL BE MADE IN ANY SPECIFIED SITE WORK OR ANY MATERIALS FOR WHICH SHOP DRAWINGS HAVE BEEN SUBMITTED AND APPROVED WITHOUT PRIOR CONSULTATION OF THE WATER SUPERINTENDENT AND THE PROJECT ENGINEER. ANY CHANGES SO MADE WITHOUT THE CONSENT OF THE WATER SUPERINTENDENT AND THE PROJECT ENGINEER SHALL, IF DEEMED UNACCEPTABLE BY EITHER PARTY, BE PROMPTLY REMOVED FROM THE WORK AT NO EXPENSE TO THE OWNER OF THE PROJECT.
9. THE CONTRACTOR SHALL INTERRUPT WATER SERVICE AND DISRUPT THE NORMAL FUNCTIONING OF THE DISTRIBUTION SYSTEM AS LITTLE AS POSSIBLE. THE CONTRACTOR SHALL NOTIFY THE CITY'S WATER DEPARTMENT 72 HOURS IN ADVANCE OF ANY REQUIREMENT FOR UNWATERING OF ISOLATING A SECTION OF THE MAIN.
10. IN THE EVENT THAT NORMAL WATER SERVICE WILL BE INTERRUPTED FOR AN EXTENDED PERIOD, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICE LINES.
11. THE CONTRACTOR SHALL NOT OPERATE WATER DISTRIBUTION SYSTEM VALVES WITHOUT THE SUPERVISION OF THE WATER DEPARTMENT. IF SUCH SUPERVISION IS PROVIDED BY THE OWNER, AT TIMES OTHER THAN DURING REGULAR WORKING HOURS OF THE WATER DEPARTMENT, THE CONTRACTOR SHALL REIMBURSE THE WATER DEPARTMENT FOR ALL SALARY EXPENSES INCURRED BY THE WATER DEPARTMENT IN PROVIDING SUCH SUPERVISION.



**WATER SERVICE CONNECTION**  
NOT TO SCALE

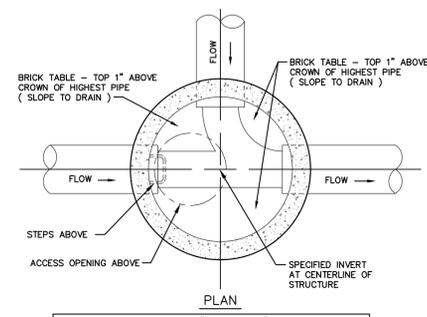
**SEWER CONNECTION CONSTRUCTION NOTES**

1. THE SEWER SERVICE SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE CITY OF NEWTON SEWER DEPARTMENT. CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH APPLICABLE PERMITS (TO BE OBTAINED BY THE CONTRACTOR). UNLESS OTHERWISE DIRECTED, ALL SEWER PIPES SHALL BE INSTALLED 3'-0" BELOW GRADE.
2. THE CONTRACTOR SHALL MAINTAIN CLEARANCE BETWEEN THE NEW SEWER LINE AND OTHER EXISTING UTILITIES OF AT LEAST (12) TWELVE INCHES OR AS DETERMINED BY THE CITY'S SEWER DEPARTMENT IN THE FIELD.
3. ALL CONSTRUCTION METHODS AND MATERIALS, AS WELL AS ALL MATERIAL SHOP DRAWINGS AND MANUFACTURERS DATA SHALL RECEIVE THE WRITTEN APPROVAL OF THE CITY OF NEWTON SEWER DEPARTMENT AND THE PROJECT ENGINEER PRIOR TO FABRICATION AND INSTALLATION.
4. ALL COMPLETED SECTIONS OF THE PROPOSED SYSTEM SHALL BE TESTED IN ACCORDANCE WITH THE CITY OF NEWTON SEWER DEPARTMENT SPECIFICATIONS. ANY PORTION OF THE WORK NOT MEETING THE REQUIRED TESTING STANDARDS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE. TEST MUST BE COORDINATED WITH THE CITY OF NEWTON UTILITIES DIVISION.
5. APPROVAL OF THE FINAL CONFIGURATION OF THE SEWER SERVICES SHALL BE DETERMINED BY THE UTILITIES DIVISION AND AN ENGINEER PREPARED FINAL PLAN APPROVED BY THE DIRECTOR OF UTILITIES.
6. THE CITY'S SEWER SUPERINTENDENT AND THE PROJECT ENGINEER SHALL APPROVE ALL FIELD CHANGES IN THE WORK PRIOR TO IMPLEMENTATION. NO FIELD CHANGES SHALL BE MADE IN ANY SPECIFIED SITE WORK OR ANY MATERIALS FOR WHICH SHOP DRAWINGS HAVE BEEN SUBMITTED AND APPROVED WITHOUT PRIOR CONSULTATION OF THE WATER SUPERINTENDENT AND THE PROJECT ENGINEER. ANY CHANGES SO MADE WITHOUT THE CONSENT OF THE SEWER SUPERINTENDENT AND THE PROJECT ENGINEER SHALL, IF DEEMED UNACCEPTABLE BY EITHER PARTY, BE PROMPTLY REMOVED FROM THE WORK AT NO EXPENSE TO THE OWNER OF THE PROJECT.
7. THE CONTRACTOR SHALL INTERRUPT SEWER SERVICE AND DISRUPT THE NORMAL FUNCTIONING OF THE DISTRIBUTION SYSTEM AS LITTLE AS POSSIBLE. THE CONTRACTOR SHALL NOTIFY THE CITY'S SEWER DEPARTMENT 72 HOURS IN ADVANCE OF ANY REQUIREMENT FOR UNWATERING OF ISOLATING A SECTION OF THE MAIN.
8. IN THE EVENT THAT NORMAL SEWER SERVICE WILL BE INTERRUPTED FOR AN EXTENDED PERIOD, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICE LINES.
9. ALL NEW SEWER SERVICE AND/OR STRUCTURES SHALL BE PRESSURE TESTED IN ACCORDANCE TO THE CITY CONSTRUCTION STANDARDS & STANDARDS AND INSPECTED VIA CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION AFTER INSTALLATION IS COMPLETED. A COPY OF THE VIDEO INSPECTION AND WRITTEN REPORT SHALL BE SUBMITTED TO THE CITY ENGINEER OR HIS REPRESENTATIVE. THE SEWER SERVICE WILL NOT BE ACCEPTED UNTIL THE TWO METHODS OF INSPECTION ARE COMPLETED AND WITNESSED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION. STATE ABOVE IS COMPLETED. A CERTIFICATE OF OCCUPANCY WILL NOT BE RECOMMENDED UNTIL THESE TESTS ARE COMPLETED TO THE SATISFACTION OF THE CITY ENGINEER.
10. ALL SANITARY SEWER MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE TO THE CITY'S CONSTRUCTION STANDARDS & SPECIFICATIONS. THE SEWER SERVICE AND MANHOLE WILL NOT BE ACCEPTED UNTIL THE MANHOLES PASS THE TESTING REQUIREMENTS. ALL TESTING MUST BE WITNESSED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION. A CERTIFICATE OF OCCUPANCY WILL NOT BE RECOMMENDED UNTIL THIS TEST IS COMPLETED TO THE SATISFACTION OF THE CITY ENGINEER AND A WRITTEN REPORT OF THE TEST RESULT IS SUBMITTED TO THE CITY ENGINEER.

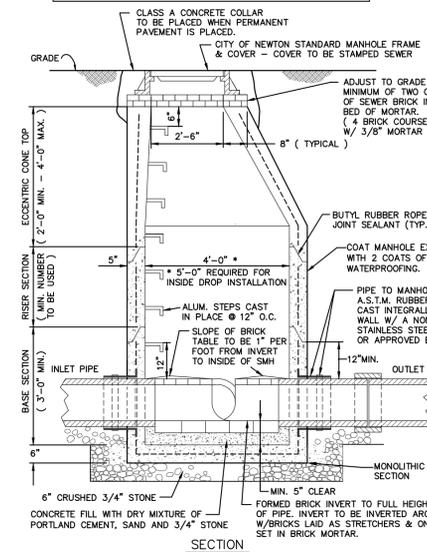


**SEWER MANHOLE - FORCE MAIN CONNECTION DETAIL**  
NOT TO SCALE

NOTE: PRECAST CONCRETE SEWER MH CONSTRUCTION IN ACCORDANCE TO CITY OF NEWTON CONSTRUCTION STANDARDS & SPECIFICATIONS.



**PLAN**

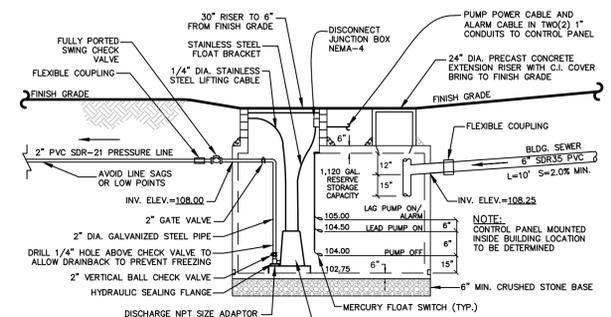


**PRECAST CONCRETE SMH DETAIL**  
NOT TO SCALE

- NOTES:
1. PRECAST REINFORCED CONCRETE DESIGN SHALL BE CERTIFIED FOR H-20 LOADING.
  2. USE FLAT TOP H20 LOADING SLAB WHEN HEIGHT OF CONE SECTION IS LESS THAN 2'-0".
  3. FILL OUTSIDE FACE OF ALL MANHOLE JOINTS WITH NON-SHRINK MORTAR.
  4. ALL JOINTS TO HAVE "KENT SEAL" OR EQUAL.

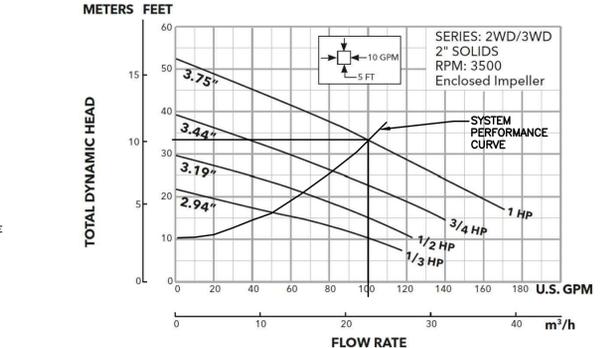
**NOTES:**

1. ALL TRENCH EXCAVATION SHALL COMPLY WITH MASSACHUSETTS GENERAL LAW CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, AND OSHA STANDARDS TO PROTECT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES OR EXCAVATIONS. TRENCH EXCAVATION PERMIT IS REQUIRED PRIOR TO ANY CONSTRUCTION. THIS APPLIES TO ALL TRENCHES ON PUBLIC AND PRIVATE PROPERTY.
2. THE CONTRACTOR OF RECORD IS RESPONSIBLE FOR CONTACTING THE ENGINEERING DIVISION AND SCHEDULING AN APPOINTMENT 48-HOURS PRIOR TO DATE WHEN UTILITIES WILL BE MADE AVAILABLE FOR AN INSPECTION OF WATER SERVICES, SEWER SERVICES AND DRAINAGE SYSTEM INSTALLATION. THE UTILITY IN QUESTION SHALL BE FULLY EXPOSED FOR THE INSPECTOR TO VIEW, BACKFILLING SHALL ONLY TAKE PLACE WHEN THE CITY ENGINEER'S INSPECTOR HAS GIVEN THEIR APPROVAL.
3. ALL MATERIALS AND CONSTRUCTION PRACTICES SHALL BE IN CONFORMANCE WITH THE MOST CURRENT EDITIONS OF THE CITY OF NEWTON STANDARD SPECIFICATIONS, PLANNING BOARD RULES AND REGULATIONS, THE LATEST EDITION OF THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS (MDPW) CONSTRUCTION STANDARDS, AND THE MDPW STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, UNLESS OTHERWISE SPECIFIED BY LOCAL AUTHORITY OR THE ENGINEER. ALL MATERIALS AND WORK NOT MEETING THESE SPECIFICATIONS SHALL BE IMMEDIATELY REMOVED FROM THE SITE AT THE FULL EXPENSE OF THE CONTRACTOR.
4. BEFORE REQUESTING A CERTIFICATE OF OCCUPANCY, AN AS-BUILT PLAN SHALL BE SUBMITTED TO THE ENGINEERING DIVISION IN BOTH DIGITAL AND PAPER FORMAT. THE PLAN SHALL SHOW ALL UTILITIES AND FINAL GRADES, ANY EASEMENTS AND IMPROVEMENTS AND LIMITS OF RESTORATION. THE PLAN SHALL INCLUDE PROFILES OF THE VARIOUS NEW UTILITIES INCLUDING BUT NOT LIMITED TO RIM & INVERT ELEVATIONS (CITY OF NEWTON DATUM), SLOPES OF PIPES, PIPE MATERIALS, AND SWING TIES FROM PERMANENT BUILDING CORNERS. THE AS-BUILT SHALL BE STAMPED BY BOTH A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER AND REGISTERED PROFESSIONAL LAND SURVEYOR. ONCE THE AS-BUILT PLAN IS RECEIVED THE ENGINEERING DIVISION SHALL PERFORM A FINAL SITE INSPECTION AND THEN MAKE A DETERMINATION TO ISSUE A CERTIFICATE OF OCCUPANCY.
5. ALL SITE WORK INCLUDING TRENCH RESTORATION, SIDEWALK, CURB, APRON AND LOAM BORDER (WHERE APPLICABLE) SHALL BE COMPLETED BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED.



**1,500 GALLON PRECAST CONCRETE WATERTIGHT PUMP CHAMBER**  
NOT TO SCALE

- NOTES:
1. CONCRETE IS 4,000 PSI MINIMUM AFTER 28 DAYS.
  2. H20 LOADING REINFORCED PRECAST CONCRETE.
  3. ALL CONSTRUCTION JOINTS SEALED WITH BUTYL RESIN OR NEOPRENE SEAL.
  4. ALL COMPONENTS & INSTALLATION SUBJECT TO THE APPROVAL OF THE CITY OF NEWTON.



Total Dynamic Head (Ft.)	Discharge (GPM)										
	0	1	5	10	20	30	40	50	65	80	95
Applied Equation:	Hazen-Williams: 10.3   10.3   10.4   10.8   11.5   12.7   14.5   16.6   20.5   25.3   30.9   37.3										

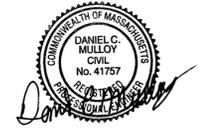
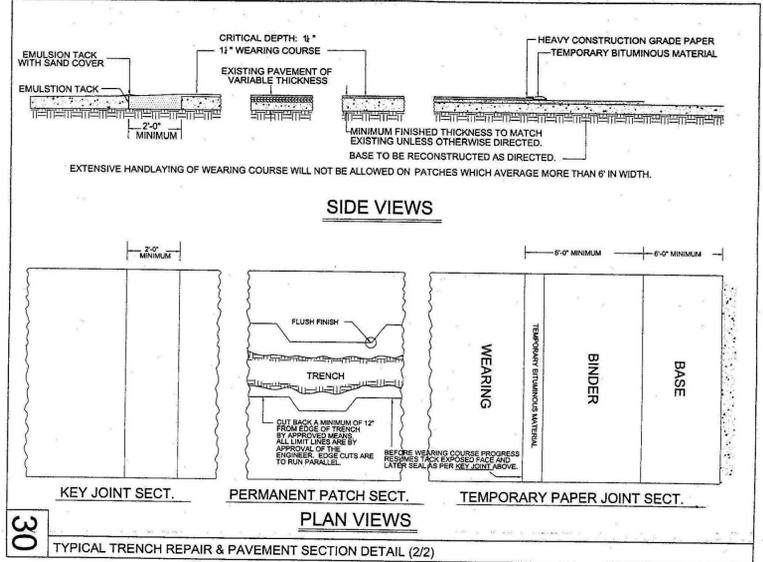
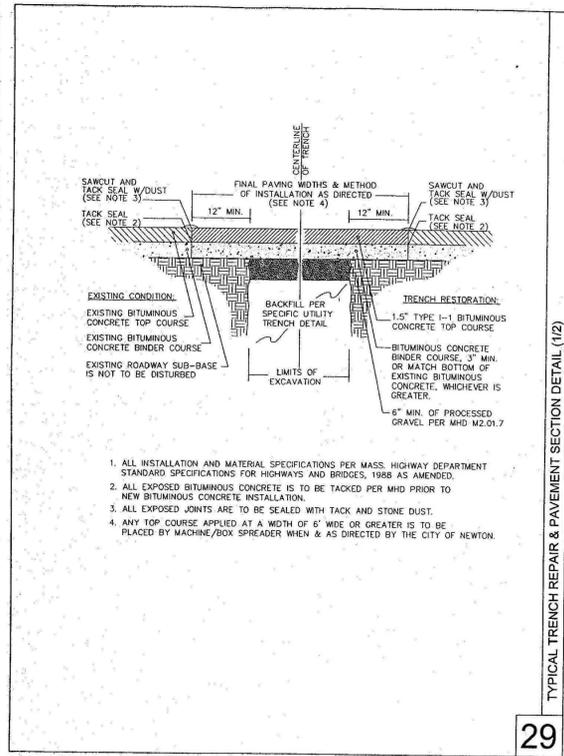
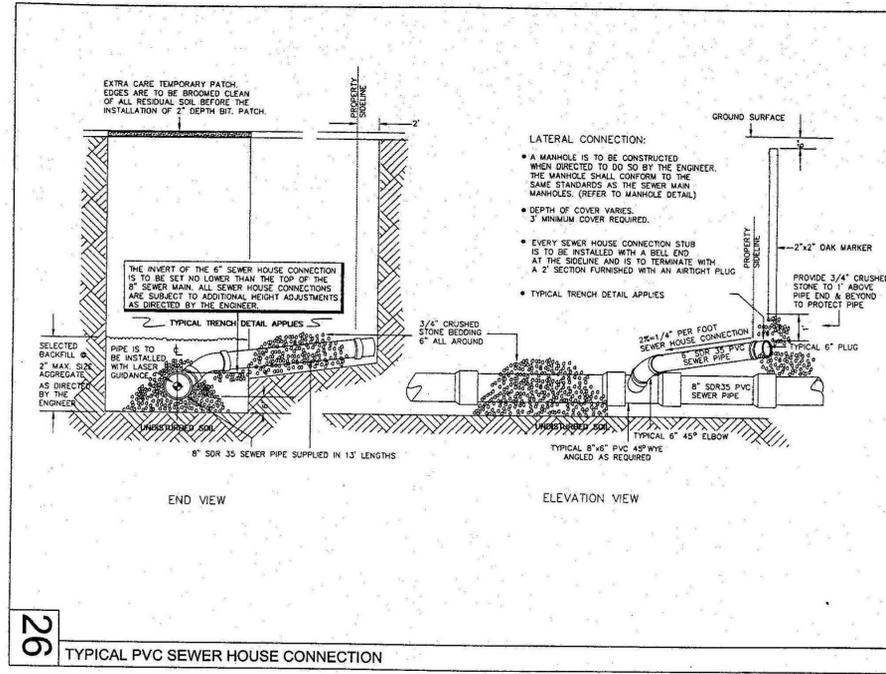
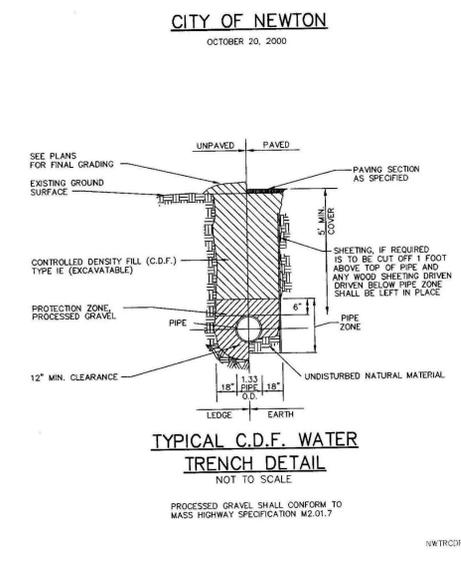
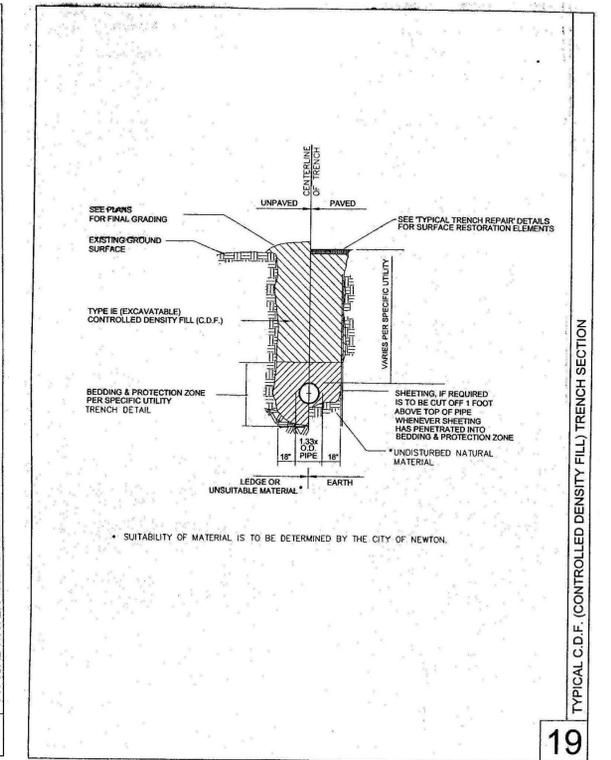
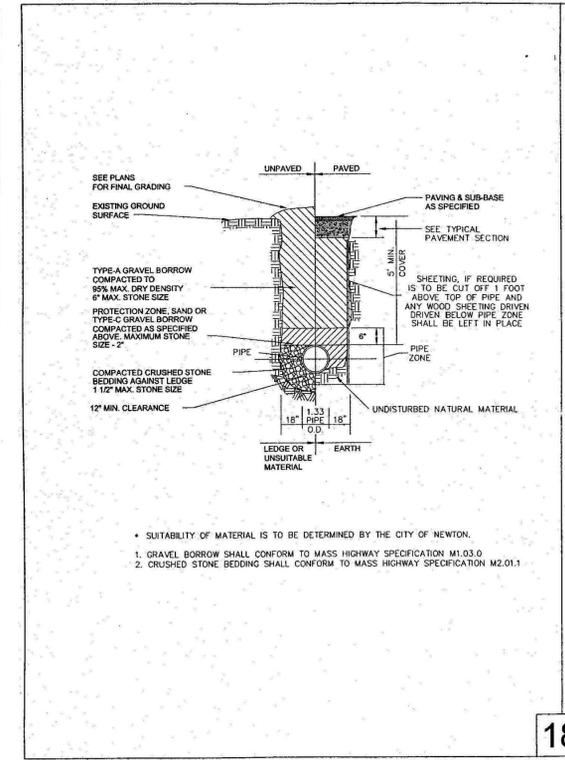
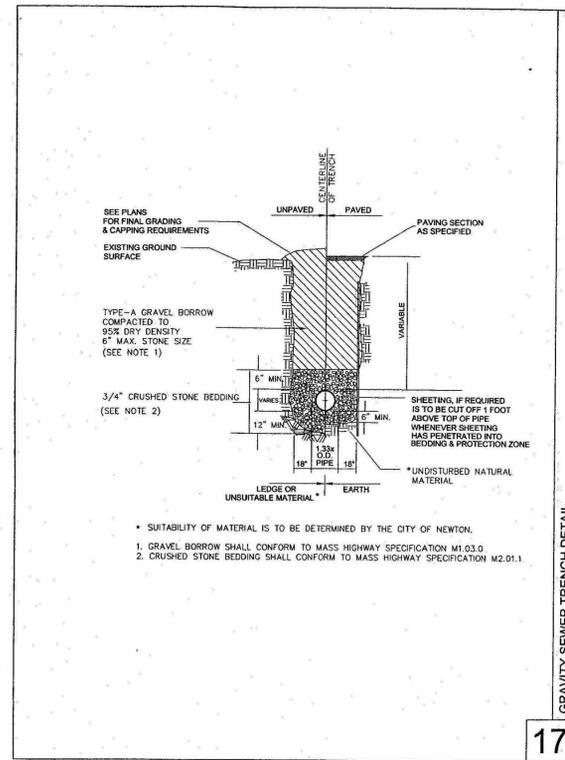
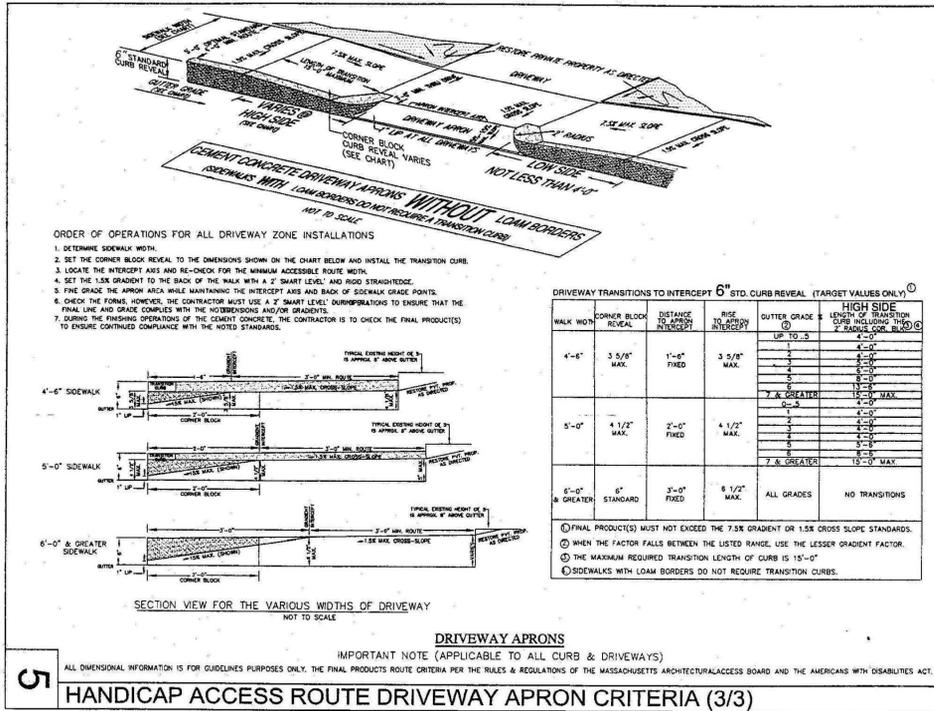
**SEWAGE PUMP AND VALVE**

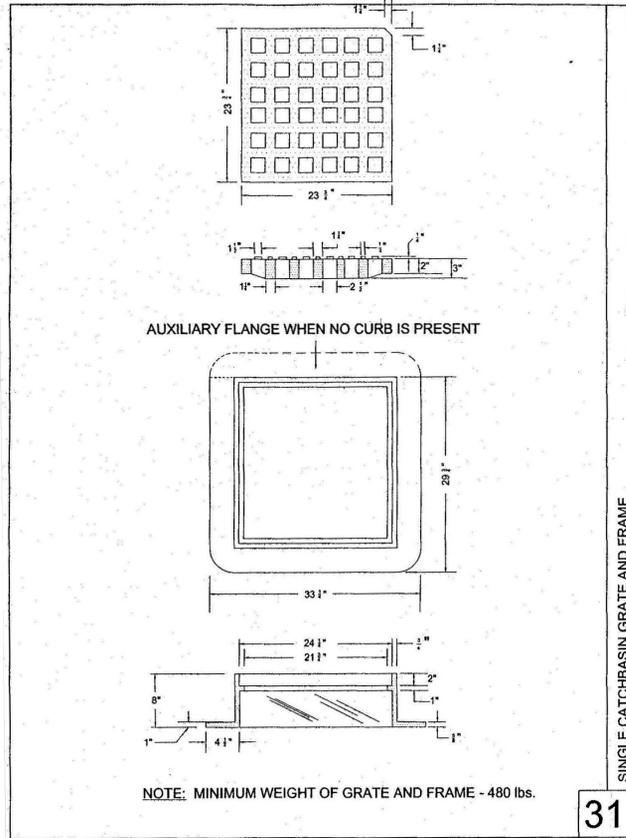
1. THE SEWAGE PUMP SYSTEM SHALL BE EQUIPPED WITH TWO PUMPS, THE DISCHARGE LINES OF WHICH SHALL BE VALVED ALLOW OPERATION BY EITHER PUMP.
2. PUMP OPERATION MUST ALTERNATE.
3. EACH PUMP SHALL BE A GOULDS 2WD SUBMERSIBLE NON-CLOG SEWAGE PUMP MODEL SERIES 2WD51E1AA, CAPABLE OF DELIVERING 100 GPM @ 33'-FT T.D.H.. THE PUMP MOTOR SHALL BE 1 HP, 230 V, SINGLE PHASE SERVICE AND CAPABLE OF PASSING 2" SPHERICAL SOLIDS, OR APPROVED EQUAL.
4. THE PUMP MANUFACTURER SHALL SUPPLY EACH PUMP WITH GUIDE RAILS, BALL VALVES, FLOAT SWITCHES, LIFTING CHAINS, AND ALL NECESSARY MOUNTING HARDWARE FOR COMPLETE INSTALLATION INSIDE THE WET WELL. INSTALLATION OF THE PUMP AND CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.

**PUMP CONTROL PANEL**

1. SIMPLEX CONTROL PANEL SHALL BE PANEL QC-II WITH STANDARD OPTIONS MOUNTED IN NEMA 1R ENCLOSURE WITH THE FOLLOWING OPTIONAL COMPONENTS:
  - A.) PUMP RUN INDICATOR AND RUNNING TIME METER FOR THE PUMP.
  - B.) PANEL MOUNTED ALARM LIGHT.
  - C.) ALARM TEST SWITCH (TEST - OFF - AUTO).
2. ALL CONTROL PANEL EQUIPMENT AND OPTIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION AND SHIPMENT.
3. ALARM CIRCUIT SHALL BE INDEPENDENT OF THE PUMP POWER CIRCUIT AND SHALL BE ACTIVATED BY HIGH WATER LEVEL IN WET WELL.

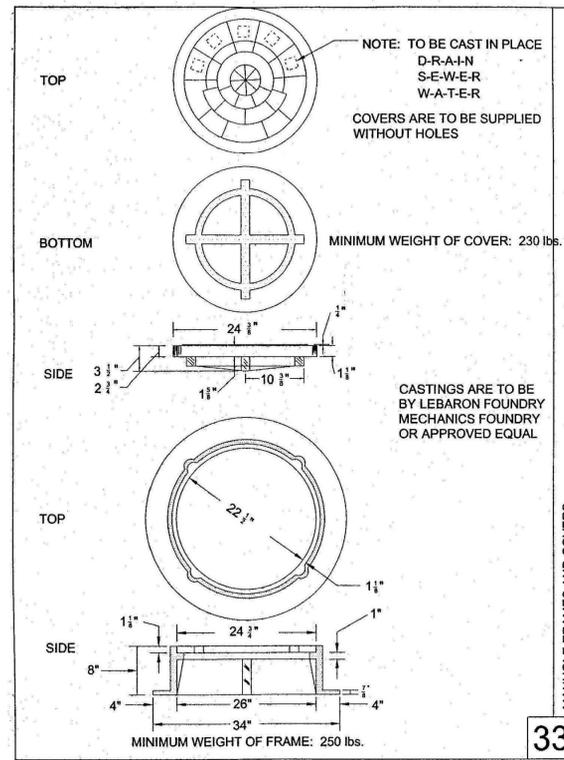






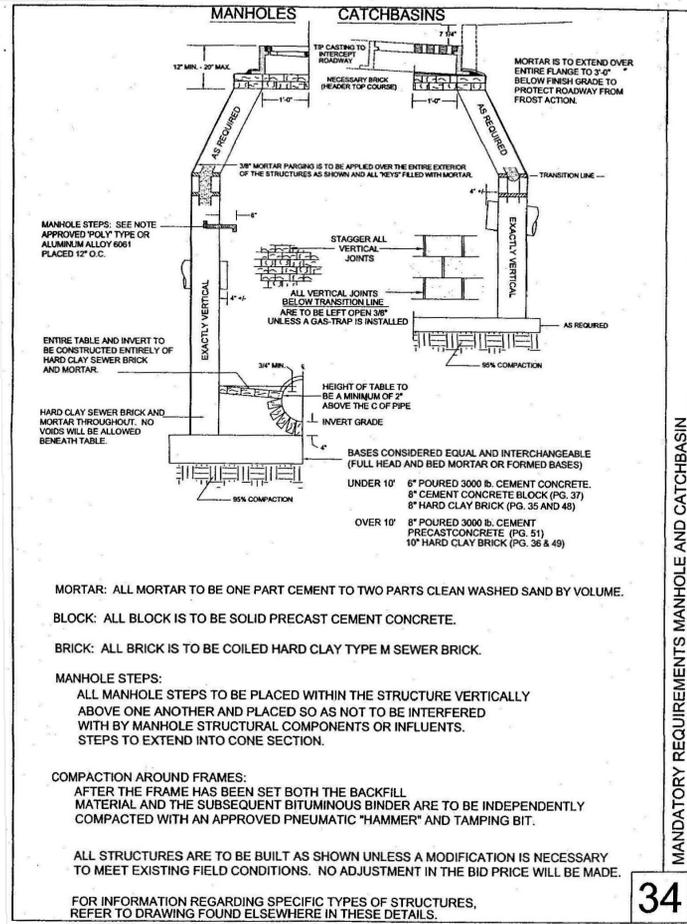
SINGLE CATCHBASIN GRATE AND FRAME

31



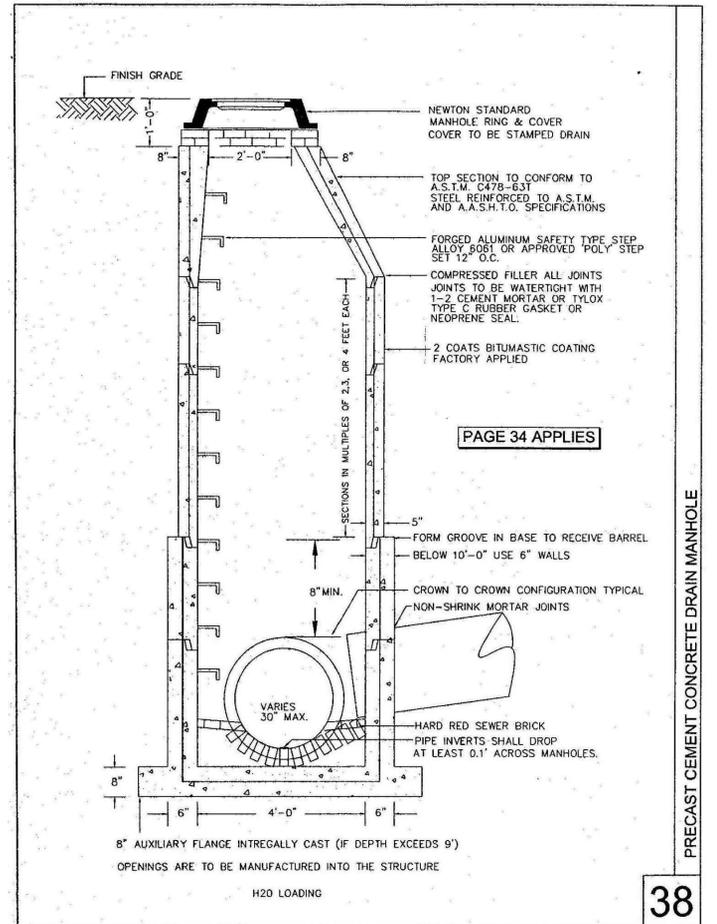
MANHOLE FRAMES AND COVERS

33



MANDATORY REQUIREMENTS MANHOLE AND CATCHBASIN

34

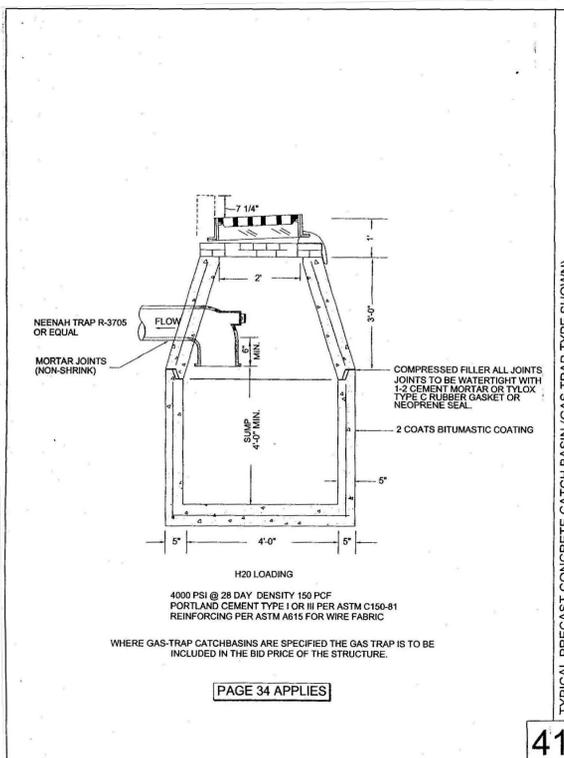


PRECAST CONCRETE DRAIN MANHOLE

38

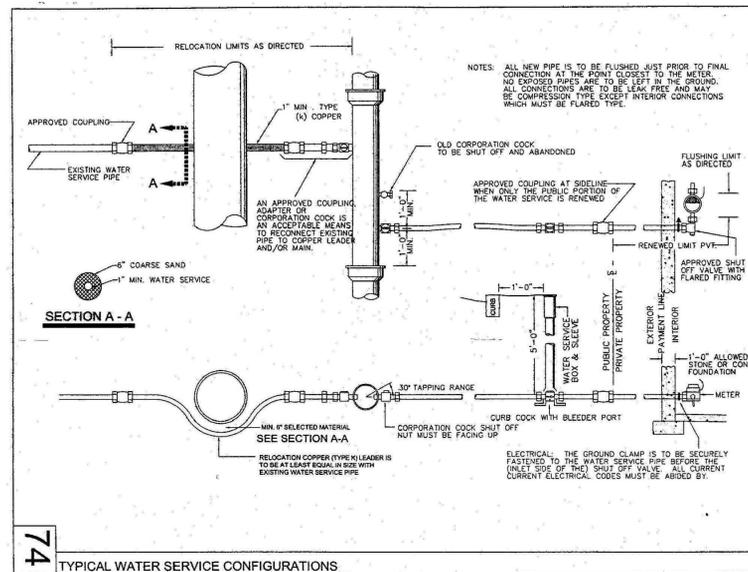
**NOTES:**

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- BEFORE REQUESTING A CERTIFICATE OF OCCUPANCY, AN AS-BUILT PLAN SHALL BE SUBMITTED TO THE ENGINEERING DIVISION IN BOTH DIGITAL AND PAPER FORMAT. THE PLAN SHALL SHOW ALL UTILITIES AND FINAL GRADES, ANY EASEMENTS AND IMPROVEMENTS AND LIMITS OF RESTORATION. THE PLAN SHALL INCLUDE PROFILES OF THE VARIOUS NEW UTILITIES INCLUDING BUT NOT LIMITED TO RIM & INVERT ELEVATIONS (CITY OF NEWTON DATUM), SLOPES OF PIPES, PIPE MATERIALS, AND SWING TIES FROM PERMANENT BUILDING CORNERS. THE AS-BUILT SHALL BE STAMPED BY BOTH A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER AND REGISTERED PROFESSIONAL LAND SURVEYOR. ONCE THE AS-BUILT PLAN IS RECEIVED THE ENGINEERING DIVISION SHALL PERFORM A FINAL SITE INSPECTION AND THEN MAKE A DETERMINATION TO ISSUE A CERTIFICATE OF OCCUPANCY.
- ALL SITE WORK INCLUDING TRENCH RESTORATION, SIDEWALK, CURB, APRON AND LOAM BORDER (WHERE APPLICABLE) SHALL BE COMPLETED BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED.



TYPICAL PRECAST CONCRETE CATCH BASIN (GAS TRAP TYPE SHOWN)

41



74

