

FILENAME:P:\Projects\5293\SITE PLANS\C1.0 5293-TITLE.dwg PLOT DATE=3/11/2020 5:53:23 PM USER=JAMES P. LAUGHLIN

# COMPREHENSIVE PERMIT PLAN

## BOLTON, MA

### MALLARD LANE

#### SHEET INDEX

SHEET NUMBER	SHEET TITLE	LAST REVISED
SHEET C1.0	TITLE SHEET	3/11/2020
SHEET C1.1	EXISTING CONDITIONS PLAN	3/11/2020
SHEET C2.0	LAYOUT PLAN	3/11/2020
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SHEET C3.1	GRADING & DRAINAGE DETAILS 1	3/11/2020
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SHEET C4.0	EROSION CONTROL PLAN	3/11/2020
SHEET C4.1	EROSION CONTROL DETAILS	3/11/2020
SHEET C5.0	UTILITIES PLAN	3/11/2020
SHEET C5.1	UTILITIES DETAILS	3/11/2020

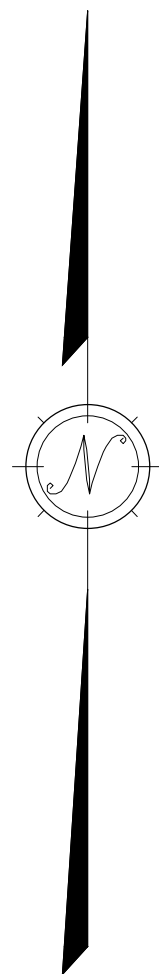
#### RECORD INFORMATION

**RECORD OWNER:**  
JAMES MORIN & KATHRYN LUM  
307 CENTRAL ST, APT 331  
HUDSON, MA

**DEED REFERENCE:**  
BOOK 58115 PAGE 346

**PARCEL NUMBER:**  
002.C-0015.1

**ZONING DISTRICT:**  
RESIDENTIAL



LOCUS MAP

SCALE: 1"=1,100'±

#### LEGEND

EXIST. FEATURE	DESCRIPTION	EXIST. SYM.	DESCRIPTION
---	STREAMS/RIVERS	☆	LIGHT POLE
---	WETLANDS	⊙	TELEPHONE POLE
---	LIMIT OF BUFFER ZONE	↓	GUY WIRE
⊗	STONE WALL	⊗	HYDRANT
W	WATER LINE	⊙	SEWER MANHOLE
OW	EXISTING OVER-HEAD WIRES	⊗	WETLAND FLAG
400	EXISTING CONTOUR (INDEX)	⊗	CATCH BASIN
401	EXISTING CONTOUR (INTERMEDIATE)	⊗	WATER GATE VALVE
---	EXISTING BUILDING/HOUSE	⊗	FLAG POLE
---	TREE LINE	⊗	SHRUB

PROP. FEATURE	DESCRIPTION	PROP. SYM.	DESCRIPTION
---	PROPERTY LINE	⊗	PROPOSED STORM WATER MANHOLE
---	HAYBALES	⊗	PROPOSED CATCH BASIN
W	PROPOSED WATER LINE	⊗	PROPOSED FLARED END SECTION
S	PROPOSED SANITARY SEWER	⊗	PROPOSED RIPRAP
D	PROPOSED STORM DRAIN	⊗	STANDARD TREE
BCCB	PROPOSED BACK CAPE COD BERM	⊗	PINE TREE
EOP	PROPOSED EDGE OF PAVEMENT	⊗	SHRUB
---	PROPOSED UNPAVED ROAD		
---	PROPOSED CONTOUR (INDEX)		
---	PROPOSED CONTOUR (INTERMEDIATE)		
---	PROPOSED SPOT ELEVATION		
---	TREE LINE		

**PRELIMINARY**

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1092 MAIN STREET, P.O. BOX 428  
BOLTON, MASSACHUSETTS 01740

PHONE: (978) 779-6091 FAX: (978) 779-0260  
www.DucharmeandDillis.com

OWNER:

JAMES MORIN & KATHRYN LUM  
307 CENTRAL STREET, APT 331  
HUDSON, MASSACHUSETTS

APPLICANT:

JAMES MORIN  
307 CENTRAL STREET, APT 331  
HUDSON, MASSACHUSETTS

SCALE:

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DESIGN BY: JPL

DRAWN BY: JPL

CHECKED BY: FMM

TITLE SHEET

MALLARD LANE

BOLTON, MASSACHUSETTS

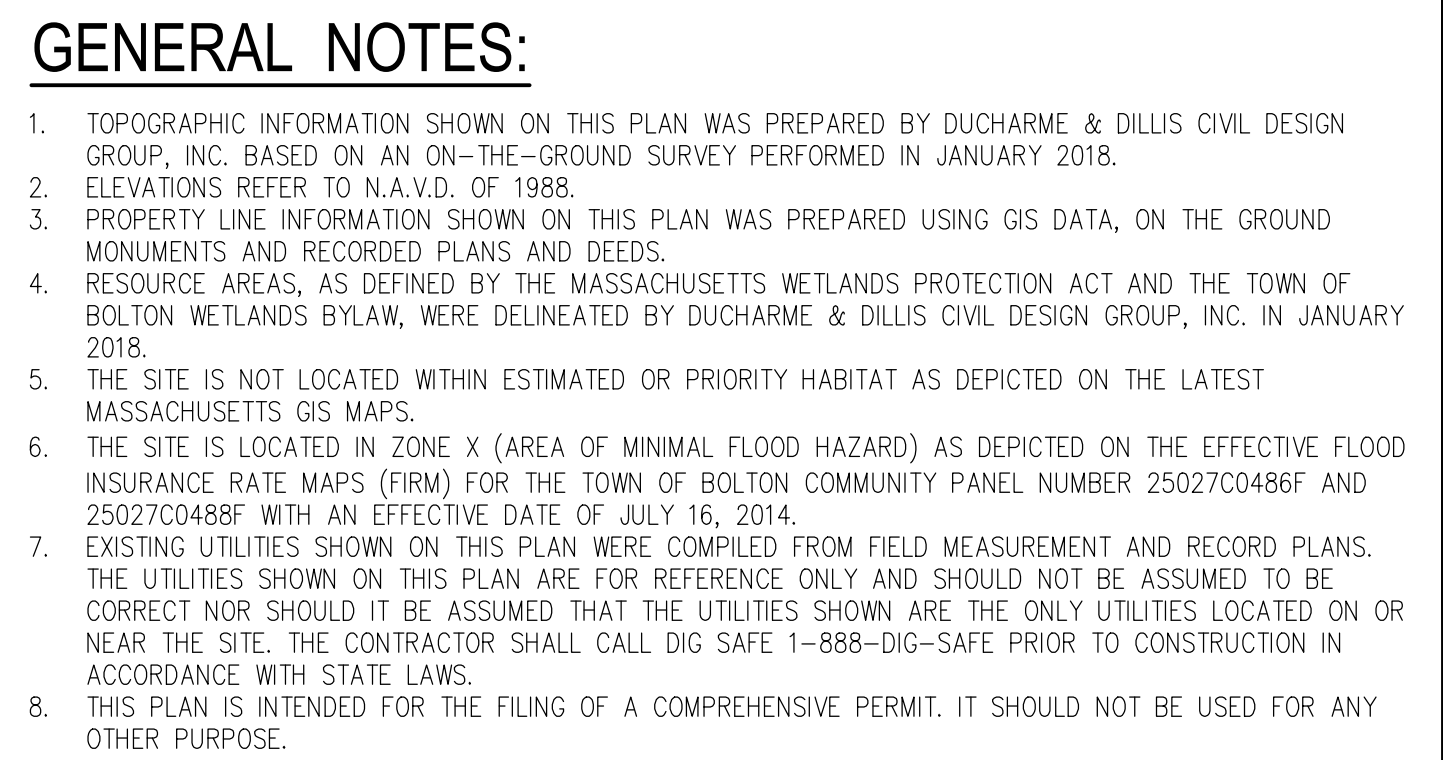
NO.	DATE	DESCRIPTION	BY

JOB NO. 5293

DRAWING NO. 5293-TITLE

SHEET NO. C1.0



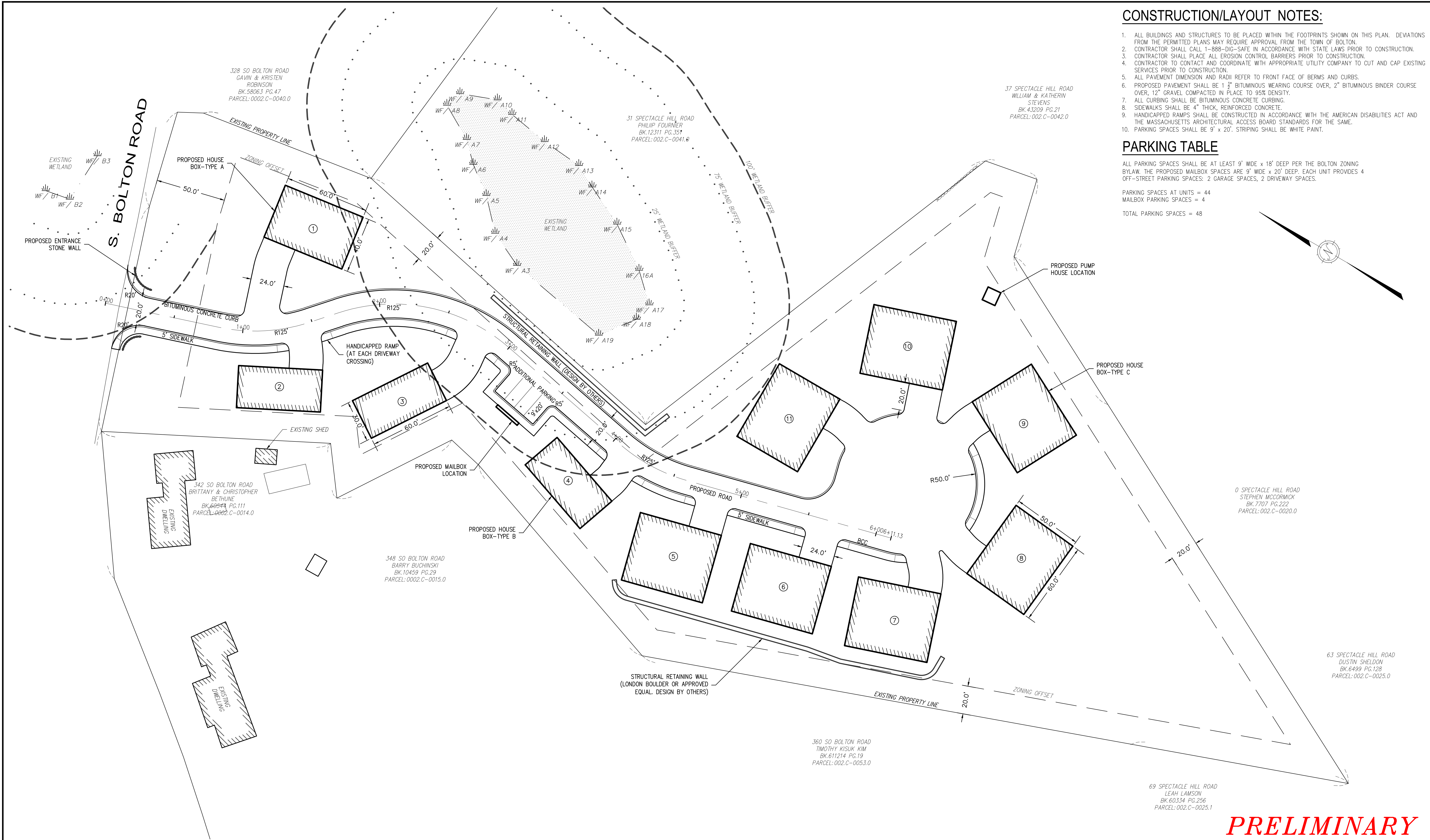


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<b>CHECKED BY:</b> FMM	<b>SHEET NO.</b> C2.0																						



1. GRADES SHOWN ON THIS PLAN REFER TO FINAL FINISHED GRADES.
2. STORM DRAIN PIPE TO BE SMOOTH LINED HDPE PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC. OR APPROVED EQUAL. PROVIDED CUT SHEETS TO ENGINEER FOR APPROVAL.
3. MANHOLES SHALL BE 4-FOOT DIAMETER PRECAST CONCRETE STRUCTURES.
4. UNDERGROUND STORMWATER MANAGEMENT AREAS SHALL BE CULTEC RECHARGER 360HD AND 902HD, OR APPROVED EQUAL.
5. ISOLATOR ROW MANHOLES SHALL BE 4-FOOT DIAMETER STRUCTURES WITH A CONCRETE WEIR.
6. ALL CATCH BASINS GRATES SHALL BE SET AT BINDER ASPHALT GRADES AND RAISED TO FINAL FINISHED GRADES JUST PRIOR TO TOP COAT PAVEMENT PLACEMENT.
7. THE CONTRACTOR SHALL USE ALL MEANS NECESSARY TO MINIMIZE COMPACTION OF SOILS IN RECHARGE AREAS BOTH DURING AND AFTER CONSTRUCTION.



 **DUCHARME & DILLIS**  
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092 MAIN STREET, P.O. BOX 428  
OLTON, MASSACHUSETTS 01740

PHONE: (978) 779-6091 FAX: (978) 779-0260  
[www.DucharmeandDillis.com](http://www.DucharmeandDillis.com)

JAMES MORIN  
307 CENTRAL STREET, APT 331  
HUDSON, MASSACHUSETTS

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DATE:	3/11/20	<h1 style="text-align: center;">GRADING &amp; DRAINAGE PLAN</h1> <h2 style="text-align: center;">MALLARD LANE</h2> <h3 style="text-align: center;">BOLTON, MASSACHUSETTS</h3>				JOB NO.	5293
DESIGN BY:	JPL					DRAWING NO.	5293-GRADE
DRAWN BY:	JPL	NO.	DATE	DESCRIPTION	BY	SHEET NO. <h1 style="font-size: 48px; margin: 0;">C3.0</h1>	
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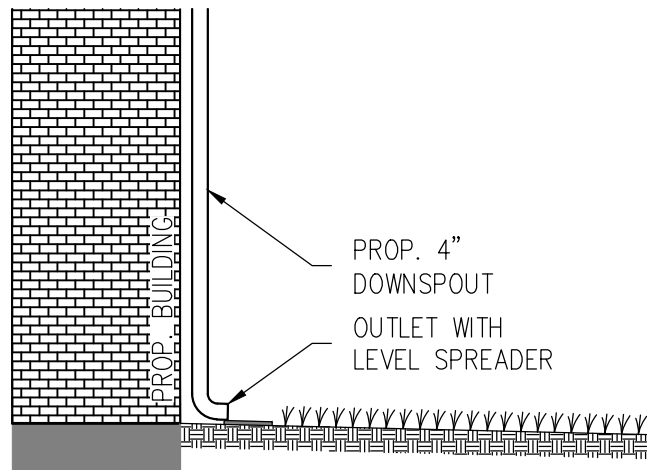
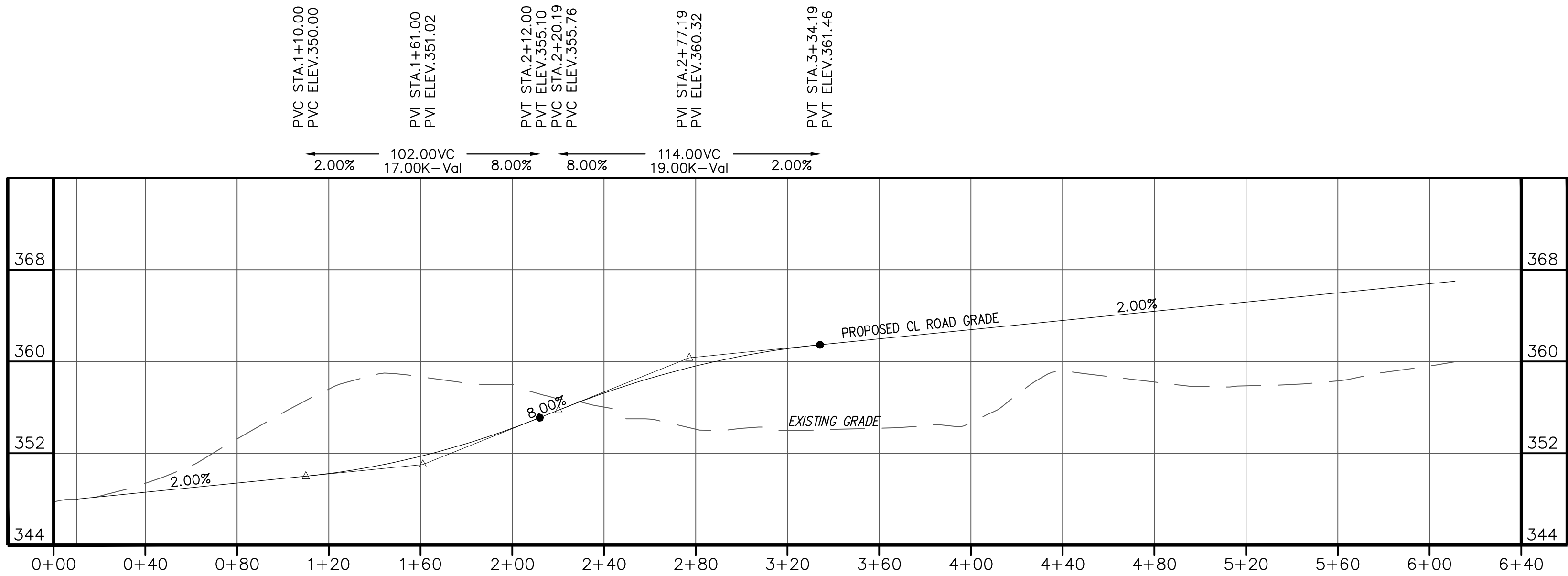
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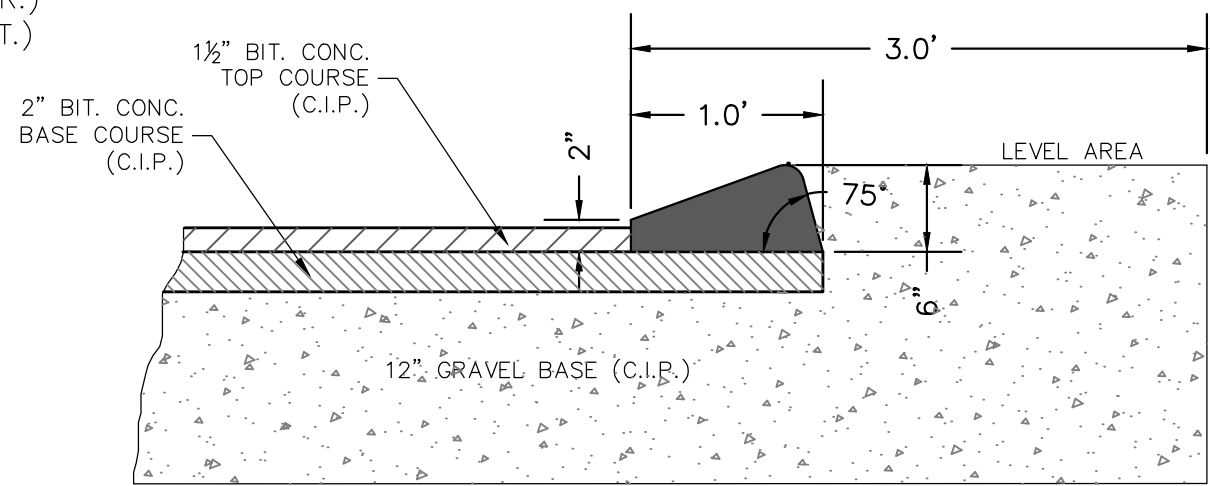
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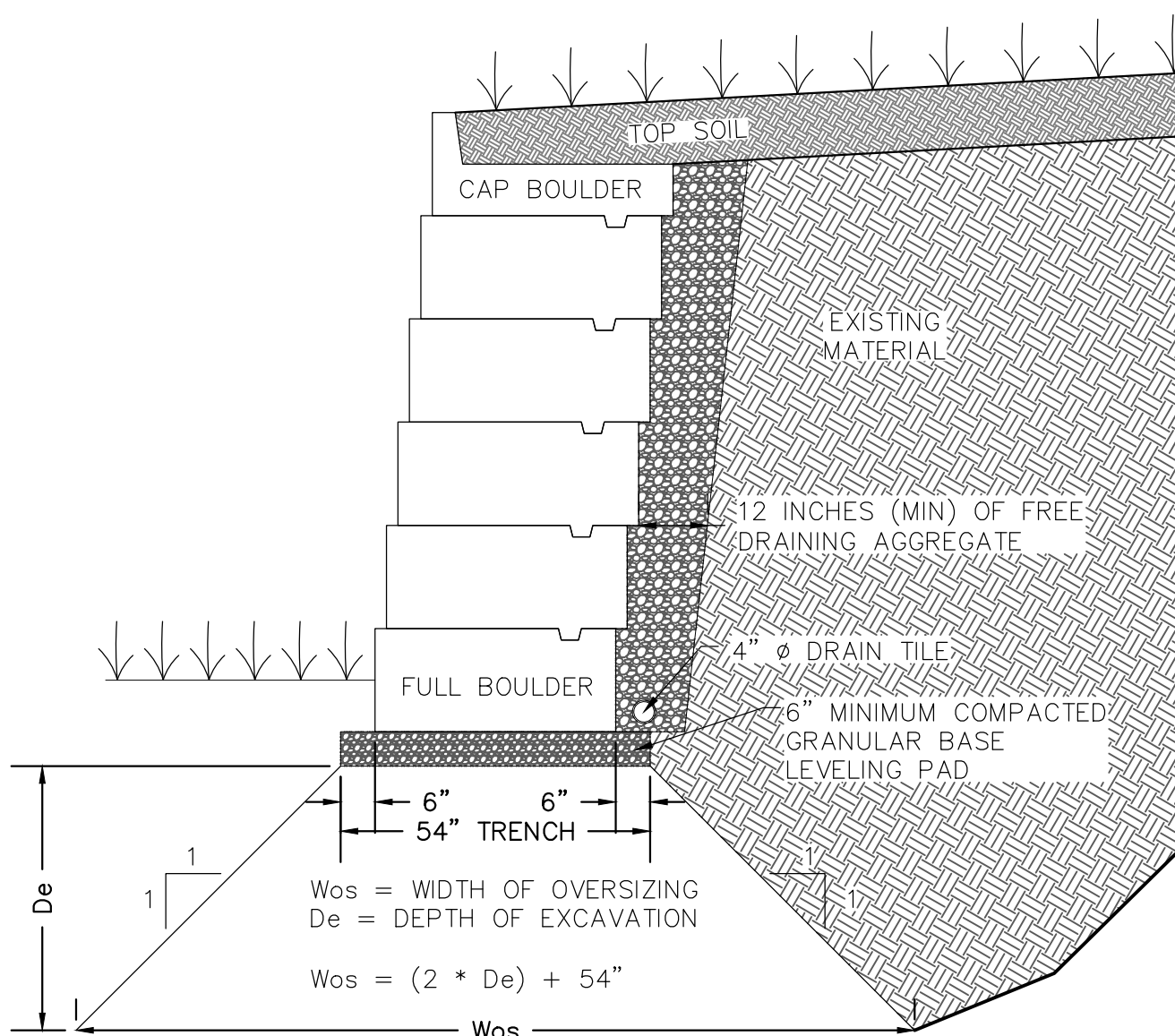
ROOF DRAIN DETAIL

NOT TO SCALE



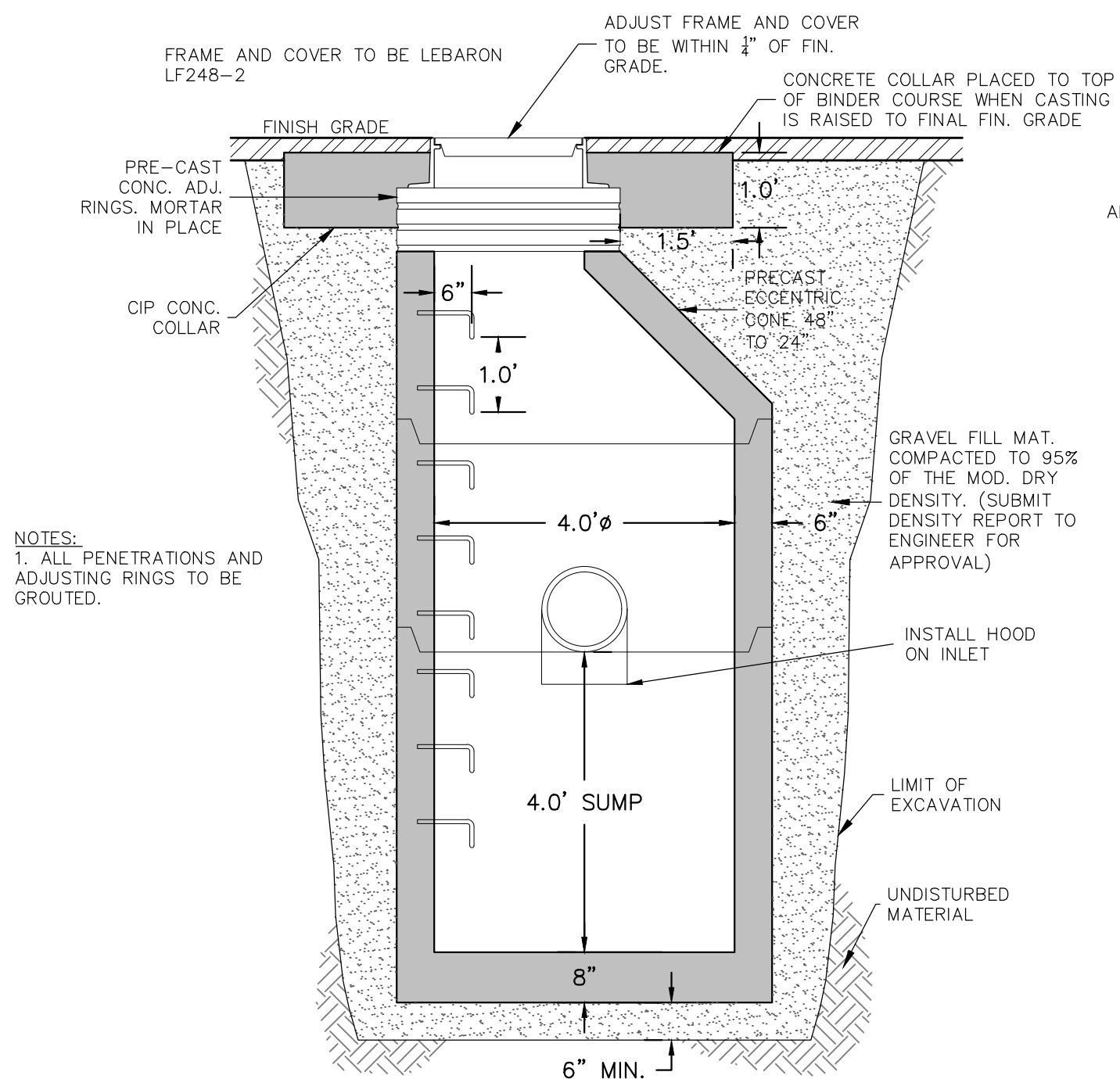
BITUMINOUS CONCRETE CURB DETAIL

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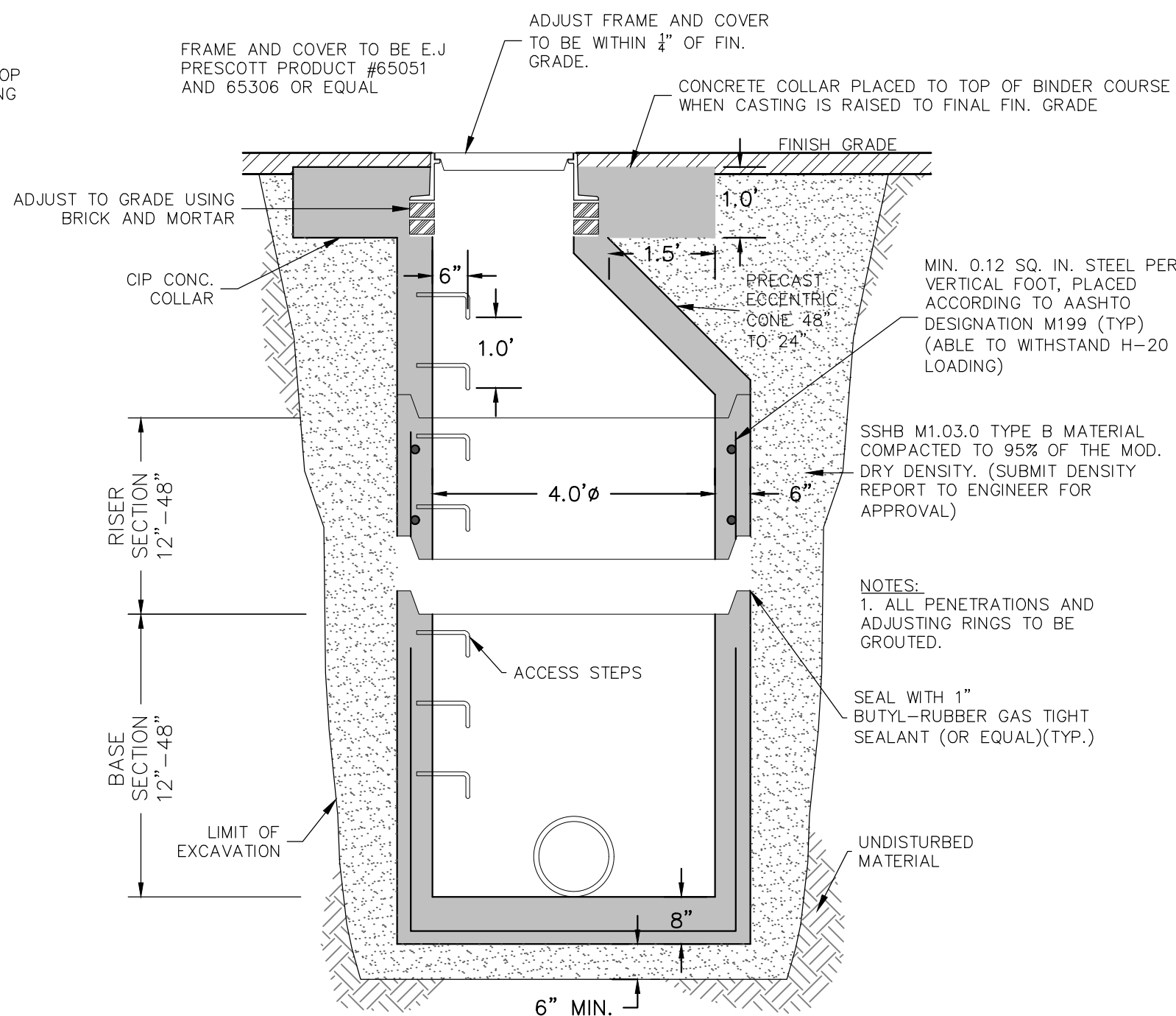
RETAINING WALL DETAIL

NOT TO SCALE



CATCH BASIN DETAIL

NOT TO SCALE



DRAIN MANHOLE DETAIL

NOT TO SCALE

DRAINAGE STRUCTURE SCHEDULE:

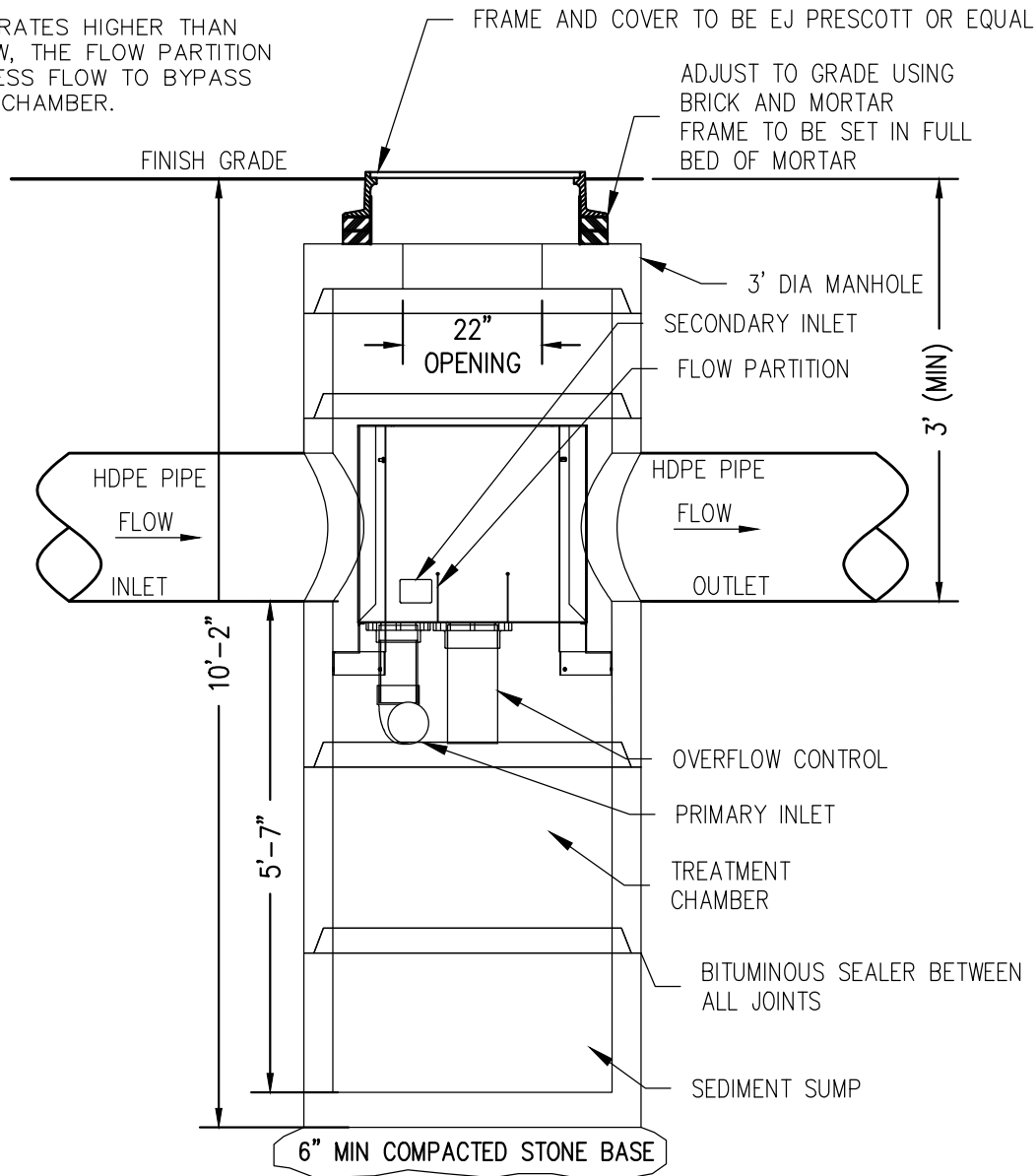
CB-1 PRECAST RC RIM = 349.50 12" HDPE INV. OUT=347.00	4' Ø	DMH-1 PRECAST RC RIM = 349.3 12" HDPE INV. IN=346.93 12" HDPE INV. OUT=346.83	4' Ø
CB-2 PRECAST RC RIM = 349.5 12" HDPE INV. OUT=347.00	4' Ø	DMH-2 PRECAST RC RIM = 220.24 12" HDPE INV. IN=346.48 12" HDPE INV. OUT=346.38	4' Ø
CB-3 PRECAST RC RIM = 360.10 12" HDPE INV. OUT=356.60	4' Ø	DMH-3 PRECAST RC RIM = 350.75 12" HDPE INV. IN=347.48 12" HDPE INV. OUT=347.38	4' Ø
CB-4 PRECAST RC RIM = 360.10 12" HDPE INV. OUT=356.60	4' Ø	DMH-4 PRECAST RC RIM = 354.50 12" HDPE INV. IN=351.00 12" HDPE INV. OUT=350.90	4' Ø
CB-5 PRECAST RC RIM = 364.70 12" HDPE INV. OUT=362.2	4' Ø	DMH-5 PRECAST RC RIM = 359.80 12" HDPE INV. IN=356.29 12" HDPE INV. OUT=356.19	4' Ø
CB-6 PRECAST RC RIM = 364.70 12" HDPE INV. OUT=362.2	4' Ø	DMH-6 PRECAST RC RIM = 364.85 12" HDPE INV. IN=362.06 12" HDPE INV. OUT=361.96	4' Ø
		DMH-7 PRECAST RC RIM = 366.25 12" HDPE INV. IN=361.29 12" HDPE INV. OUT=361.19	4' Ø
		DMH-8 VORTSENTRY HS36 RIM = 352.4 12" HDPE INV. IN=346.57 12" HDPE INV. OUT=346.57	3' Ø
		DMH-9 VORTSENTRY HS36 RIM = 366.10 12" HDPE INV. IN=361.39 12" HDPE INV. OUT=361.39	3' Ø

DRAINAGE PIPE SCHEDULE:

DP-1 ADS N-12 SLOPE = 1.0% LENGTH = 7'± INLET INV.=347.00 (CB-1) OUTLET INV.=346.93 (DMH-1)	12" Ø	DP-2 ADS N-12 SLOPE = 1.0% LENGTH = 7'± INLET INV.=347.00 (CB-2) OUTLET INV.=346.93 (DMH-1)	12" Ø	DP-3 ADS N-12 SLOPE = 1.0% LENGTH = 26'± INLET INV.=346.83 (DMH-1) OUTLET INV.=346.57 (DMH-8)	12" Ø
DP-4 ADS N-12 SLOPE = 6.2% LENGTH = 5'± INLET INV.=356.60 (CB-3) OUTLET INV.=356.29 (DMH-5)	12" Ø	DP-5 ADS N-12 SLOPE = 2.1% LENGTH = 15'± INLET INV.=356.60 (CB-5) OUTLET INV.=356.29 (DMH-4)	12" Ø	DP-6 ADS N-12 SLOPE = 6.8% LENGTH = 76'± INLET INV.=356.19 (DMH-5) OUTLET INV.=351.00 (DMH-4)	12" Ø
DP-7 ADS N-12 SLOPE = 5.2% LENGTH = 66'± INLET INV.=350.90 (DMH-4) OUTLET INV.=347.48 (DMH-3)	12" Ø	DP-8 ADS N-12 SLOPE = 1.0% LENGTH = 45'± INLET INV.=347.38 (DMH-3) OUTLET INV.=346.93 (DMH-1)	12" Ø	DP-9 ADS N-12 SLOPE = 1.0% LENGTH = 14'± INLET INV.=362.20 (CB-5) OUTLET INV.=362.06 (DMH-6)	12" Ø
DP-10 ADS N-12 SLOPE = 6'± LENGTH = 57'± INLET INV.=362.20 (CB-6) OUTLET INV.=362.06 (DMH-6)	12" Ø	DP-11 ADS N-12 SLOPE = 1.0% LENGTH = 57'± INLET INV.=361.96 (DMH-6) OUTLET INV.=361.39 (DMH-9)	12" Ø	DP-12 ADS N-12 SLOPE = 1.5% LENGTH = 6'± INLET INV.=346.57 (DMH-8) OUTLET INV.=346.48 (DMH-2)	12" Ø
DP-13 ADS N-12 SLOPE = 1.7% LENGTH = 6'± INLET INV.=361.39 (DMH-9) OUTLET INV.=361.29 (DMH-7)	12" Ø				

VORTSENTRY NOTES:

1. THE VORTSENTRY PROPOSED IS A MODEL HS36
2. AT INFLUENT RATES HIGHER THAN THE DESIGN FLOW, THE FLOW PARTITION WILL ALLOW EXCESS FLOW TO BYPASS THE TREATMENT CHAMBER.



CONTECH VORTSENTRY HS36 DETAIL

NOT TO SCALE

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DATE:

3/11/20

DESIGN BY:

JPL

DRAWN BY:

JPL

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FMM

GRADING & DRAINAGE DETAILS 2

MALLARD LANE

BOLTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

JOB NO.

5293

DRAWING NO.

5293-GRADE

SHEET NO.

C3.2







EROSION CONTROL NOTES:

A. MANAGEMENT STRATEGIES:

- CONSTRUCTION SHALL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY DISTURBANCE ON SITE.
- AREAS WHICH ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC. RETAIN EXISTING VEGETATION WHERE FEASIBLE.
- THERE SHALL BE NO STORAGE OF ANY KIND OF ANY CHEMICALS, PESTICIDES, FUELS AND OTHER POTENTIALLY TOXIC OR HAZARDOUS MATERIALS ON SITE.
- NO DEBRIS, JUNK, RUBBISH OR OTHER WASTE MATERIALS SHALL BE BURIED ON THE SITE.
- STUMPS AND OTHER WOOD DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE "POLICY ON THE DISPOSAL OF WOODWASTES" PUBLISHED BY THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS, DATED AUGUST 14, 1987.
- THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

B. MAINTENANCE/ PERFORMANCE STANDARDS:

ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL WITH AN ACCUMULATION OF 1/2" OR MORE. THE FOLLOWING ITEMS SHALL BE CHECKED IN PARTICULAR:

- THE SILT FENCE BARRIERS SHALL BE CHECKED REGULARLY FOR TEARS, DETERIORATION, AND UNDERMINING.
- ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE RESEEDD AS NEEDED.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO THE PUBLIC ROAD. THIS MAY REQUIRE PERIOD TOP DRESSING WITH 2 INCH STONE, AS CONDITIONS DEMAND AND OR CLEANOUT/REPLACEMENT OF STONE IF CLOSING OR SEDIMENTATION OCCURS. ALL MATERIALS SPILLED DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO THE TOWN ROAD MUST BE REMOVED DAILY BY SWEEPING OR OTHER SUITABLE MEANS.
- ALL AREAS ON SITE SUBJECT TO EROSION/SEDIMENTATION SHALL BE INSPECTED ON A REGULAR BASIS. ALL ITEMS SPECIFIED ON THIS AND OTHER PLANS SHALL BE INSPECTED TO VERIFY THAT THEY ARE OPERATING AS DESIGNED AND INTENDED. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO MAINTAIN AND REPAIR ALL STRUCTURES.
- THE ENTIRE DRAINAGE SYSTEM SHALL BE INSPECTED ON A REGULAR BASIS AND PRIOR TO AND IMMEDIATELY AFTER ANY RAINFALL EVENT WHILE THE SITE IS DISTURBED.
  - CATCH BASINS SHALL BE INSPECTED WEEKLY TO ENSURE THAT THEY ARE WATER TIGHT, HAVE ADEQUATE SUMP CAPACITY, THAT OIL AND GAS TRAPS ARE IN PLACE. THEY SHALL ALSO BE INSPECTED AFTER EVERY SIGNIFICANT RAINFALL EVENT (I.E. A TWO-YEAR STORM EVENT OR GREATER) DURING THE FIRST THREE (3) MONTHS OF BEING PLACED IN SERVICE TO ENSURE THAT THEY ARE FUNCTIONING IN AN ADEQUATE FASHION. THE BASINS SHALL BE CLEANED WITH A VACUUM TRUCK WHEN 1/3 OF THE SUMP IS FILLED WITH SEDIMENT BUT NOT LESS THAN TWO (2) TIMES PER YEAR. AFTER THE FIRST THREE (3) MONTHS OF SERVICE THE BASINS SHALL BE INSPECTED NOT LESS THAN ONE (1) TIME PER YEAR TO ENSURE ADEQUATE FUNCTIONALITY. OIL/GAS TRAPS SHALL BE CLEANED WITH A VACUUM TRUCK AND MONITORED FOR HYDROCARBON BUILD UP SEMIANNUALLY.
  - DEWATERING OF EXCAVATIONS DURING CONSTRUCTION SHALL BE ADDRESSED ON AN INDIVIDUAL BASIS AS NEEDED. IF TEMPORARY DEWATERING IS REQUIRED ON THE SITE OR IN CLOSE PROXIMITY TO THE 100 FT BUFFER ZONE, SEDIMENT BASINS SHALL BE CONSTRUCTED OR SILT TRAPS SHALL BE UTILIZED. SILT TRAPS AND SEDIMENT BASINS SHALL BE MAINTAINED DURING THE DEWATERING OPERATION.

C. TEMPORARY MEASURES:

- PLACE EROSION CONTROL BARRIERS WITH STRAW WATTLES AS SHOWN ON THE EROSION CONTROL PLAN.
- IF LOAM IS PLACED OUTSIDE OF THE NORMAL GROWING SEASON, SILT FENCE OR STRAW WADDLES SHALL BE PLACED BETWEEN THE LAWN AREA AND PAVEMENT.
- CONSTRUCT TEMPORARY STONE PAD AT EXIT TO THE SITE AS SHOWN ON THE EROSION CONTROL PAN.
- DURING DRY PERIODS, PROVIDE MEANS FOR MITIGATION OF DUST, SUCH AS WATERING OF EXPOSED AREAS.
- STOCKPILE LOCATIONS SHALL BE WITHIN THE PROPOSED LIMIT OF WORK. PLACE SILT FENCE AROUND ALL STOCK PILED AREAS. PILES LEFT FOR 21 DAYS OR MORE SHALL BE SEEDED OR COVERED WITH PLASTIC SHEETING.
- WASTE DISPOSAL RECEPTACLES AND TRAILERS WILL BE USED FOR THE DISPOSAL OF CONSTRUCTION DEBRIS, WHICH WILL BE REMOVED FROM THE SITE ACCORDING TO STATE, LOCAL, AND FEDERAL GUIDELINES. CONSTRUCTION DEBRIS WILL INCLUDE PAVEMENT, UTILITY, EARTH AND BUILDING MATERIALS THAT CANNOT BE REUSED. THE RECEPTACLES WILL BE LOCATED ON-SITE AND COVERED.
- PLACE SILT SACK INSERTS IN ALL PROPOSED CATCH BASINS AFTER CONSTRUCTED AND IN THE EXISTING LEACHING CATCH BASIN.
- IN ADDITION TO WHAT IS DEPICTED ON THE PLANS, SILT FENCE SHALL BE PLACED DOWN GRADIENT (UP-GRADIENT OF ANY STORMWATER APPURTENANCES, WETLAND BUFFER ZONES AND AREAS TO BE LEFT UNDISTURBED) TO EACH STRUCTURE DURING THE CONSTRUCTION PROCESS UNTIL THE DISTURBED AREA IS RESTORED.
- THE DEVELOPER SHALL MAINTAIN ANY STORMWATER TREATMENT SYSTEMS USED TO TRAP SEDIMENT DURING CONSTRUCTION TO PREVENT SEDIMENT FROM LEAVING THE SITE AND SHALL REMOVE ALL SEDIMENT FROM ALL SYSTEMS WHEN CONSTRUCTION IS FINISHED AND THE SITE IS STABILIZED.
- ADDITION EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE CONSTRUCTION PROCESS AS DEEMED NECESSARY BY THE TOWN OF BOLTON.

D. PERMANENT STABILIZATION:

- SLOPES IN EXCESS OF 3 TO 1 SHALL BE HYDRO-MULCHED. LOAMED (4" MIN.) AND SEEDED SLOPES WILL BE PROTECTED FROM WASHOUT BY MULCHING OR OTHER ACCEPTABLE SLOPE PROTECTION UNTIL VEGETATION IS ESTABLISHED.
- UNLESS OTHERWISE INDICATED HEREON ALL DISTURBED AREAS SHALL BE LOAMED (6" MIN.) AND SEEDED WITH AN APPROPRIATE MIXTURE OF GRASSES SUITABLE FOR THE AREA. AREAS NOT STABILIZED BEFORE THE END OF THE FALL PLANTING SEASON SHALL BE HYDRO-MULCHED AND SEEDED IN THE SPRING.
- SLOPES STEEPER THAN 3 TO 1 SHALL BE RESTORED WITH 4" OF LOAM (MIN.), SEED, FERTILIZER AND STAKED DOWN EROSION CONTROL BLANKET SIMILAR TO NORTH AMERICAN GREEN SC 150 BN. INSTALL IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
- THE TEMPORARY MEASURES WILL NOT BE REMOVED UNTIL PERMANENT STABILIZATION HAS OCCURRED.
- 4" OF MULCH SHALL BE APPLIED IN ALL LANDSCAPED AREAS SHOWN.

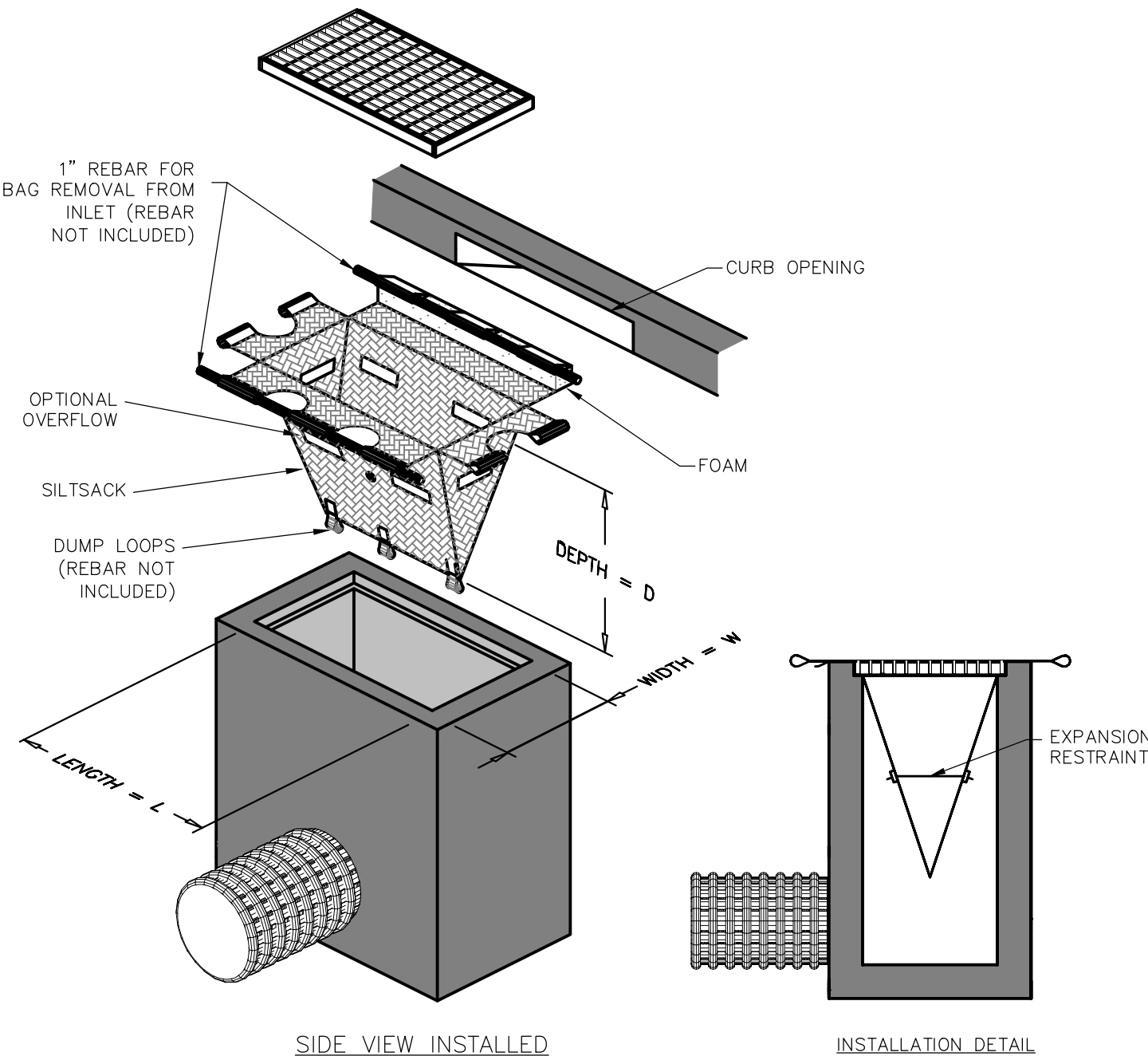
F. CONSTRUCTION SEQUENCE:

DURING THIS SEQUENCE ALL EROSION CONTROLS SHALL BE INSPECTED AND MAINTAINED. ALL DISTURBED AREAS SHALL BE STABILIZED BY SEEDING OR SODDING AS SOON AS POSSIBLE AFTER GRADING IS COMPLETE. EROSION BARRIERS SHALL BE REMOVED AFTER SLOPE STABILIZATION IS COMPLETE.

- INSTALL EROSION AND SEDIMENT CONTROL MEASURES.
- DELINEATE AND FENCE UNDERGROUND INFILTRATION AREAS.
- EXCAVATED TO SUBGRADE IN CUT SECTIONS; BRING FILL SECTIONS TO SUBGRADE USING EXCAVATED SOIL.
- EXCAVATE UNDERGROUND INFILTRATION AREAS TO SUBGRADE USING LIGHT EARTH MOVING EQUIPMENT TO LIMIT SOIL COMPACTION. PREVENT STORMWATER FROM UN-STABILIZED AREAS FROM ENTERING UNDERGROUND INFILTRATION AREAS.
- INSTALL PROPOSED RETAINING WALLS.
- INSTALL BUILDING FOUNDATION, UNDERGROUND UTILITIES, AND BUILDING PADS. UTILITIES INCLUDE DRAINAGE SYSTEM, WATER AND ELECTRICAL.
- INSTALL UNDERGROUND INFILTRATION AREAS. EXCAVATE AND REPLACE ANY IMPERVIOUS SOILS TO A DEPTH OF TWO (2) FEET BELOW THE INVERT OF THE SYSTEM AND REPLACE WITH PERVIOUS SOILS. SCARIFY SYSTEM INVERT WITH ROTARY TILLER OR DISC HARRROWER AND SMOOTH WITH LEVELING DRAG, OR EQUIVALENT GRADING EQUIPMENT, PRIOR TO PLACEMENT OF UNDERGROUND INFILTRATION AREA PER CONSTRUCTION DETAILS.
- PLACE COMPACTED BASE GRAVEL FOR THE PAVED AREAS; ROUGH GRADE AREAS TO BE LOAMED AND SEEDED.
- BRING ALL GRADES AND COVER TO FINAL GRADE. INSTALL PAVEMENT, CURBING AND SIDEWALKS.
- FINALIZE GRADING, LOAM, SEED AND MULCH DISTURBED AREAS.
- PLANT TREES, SHRUBS AND GROUND COVER AS INDICATED ON PLANS.

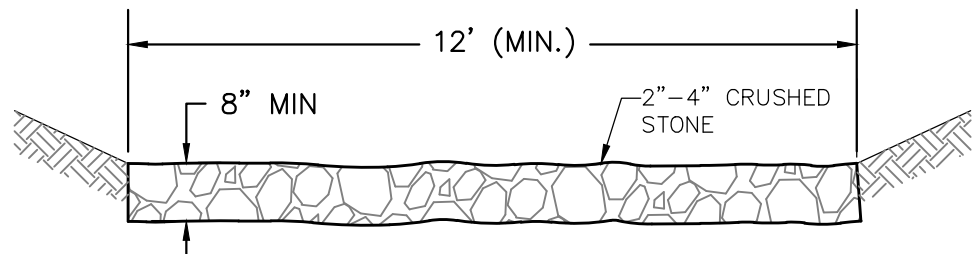
G. DEWATERING:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING DURING CONSTRUCTION.
- DEWATERING SHALL BE PERFORMED TO ACHIEVE CONSTRUCTION OF FOOTINGS, FOUNDATIONS, PAVEMENTS, AND OTHER SUBSURFACE UTILITIES AND APPURTENANCES IN DRY CONDITIONS.
- DEWATERING SHALL BE PERFORMED THROUGH THE USE OF IN TRENCH SUP PUMPS, WELLS, DRAINS AND OTHER ITEMS NECESSARY FOR CONSTRUCTION. CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN OPERATE AND REMOVE ALL DEWATERING DEVICES AND APPURTENANCES AS REQUIRED FOR CONSTRUCTION. SUCH ACTIVITIES SHALL BE INCLUDED IN THE CONTRACTOR BID.
- THE FLOW FROM DEWATERING PUMPS SHALL BE DISCHARGED TO A SEDIMENTATION TRAP OR DEVICE PRIOR TO DISCHARGE TO A RESOURCE AREA. REFER TO THE DETAILS ON THIS PLAN.
- THE CONTRACTOR SHALL NOTIFY THE TOWN OF ALL DEWATERING ACTIVITIES AND COORDINATE THE LOCATION OF ALL DISCHARGE POINTS WITH THE TOWN PRIOR TO COMMENCING DEWATERING ACTIVITIES.

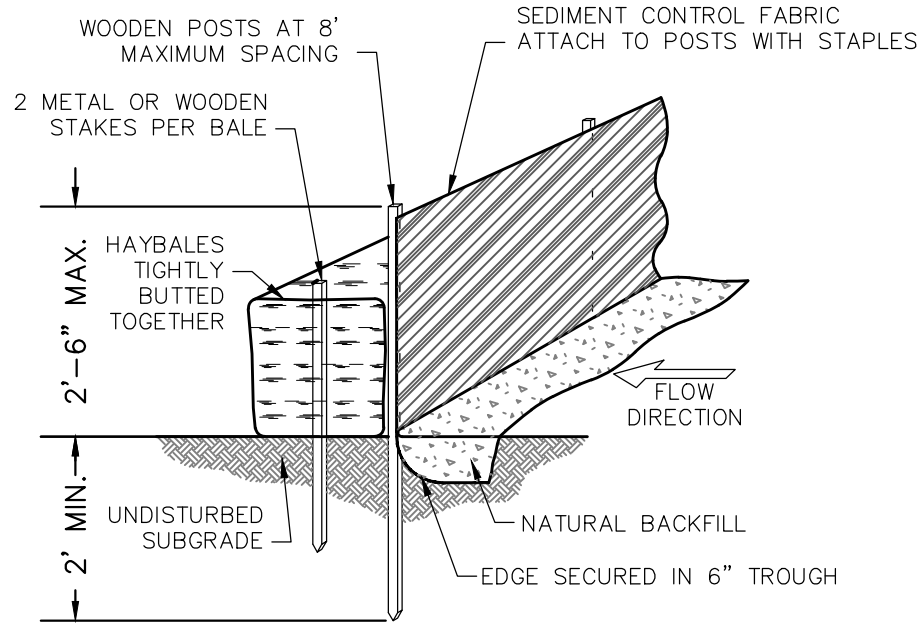


SILT SACK  
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NOTES:  
1. LENGTH = 50' (SEE PLAN FOR LOCATION)



TEMP. CONSTRUCTION ENTRANCE DETAIL  
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SILTATION BARRIER  
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PREPARED BY:



DUCHARME & DILLIS

Civil Design Group, Inc.

CIVIL ENGINEERS • LAND SURVEYORS • WETLAND CONSULTANTS

1092 MAIN STREET, P.O. BOX 428

PHONE: (978) 779-6091 FAX: (978) 779-0260

BOLTON, MASSACHUSETTS 01740

www.DucharmeandDillis.com

OWNER:

JAMES MORIN & KATHRYN LUM  
307 CENTRAL STREET, APT 331  
HUDSON, MASSACHUSETTS

APPLICANT:

JAMES MORIN  
307 CENTRAL STREET, APT 331  
HUDSON, MASSACHUSETTS

SCALE:

DATE:  
3/11/20

DESIGN BY:  
JPL

DRAWN BY:  
JPL

CHECKED BY:  
FMM

EROSION CONTROL DETAILS

MALLARD LANE

BOLTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

JOB NO.  
5293


DRAWING NO.  
5293-EROSION

SHEET NO.  
C4.1



1. CONTRACTOR SHALL PLACE ALL EROSION CONTROL MEASURES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO COORDINATE ALL UTILITY WORK WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO CONSTRUCTION.
3. FINAL LOCATION OF ELECTRICAL SERVICE TO BE DETERMINED BY POWER COMPANY.
4. ALL DRAINAGE PIPE TO BE ADS N-12 OR EQUIVALENT.
5. ALL IRRIGATION SYSTEMS TO BE CULTEC MODEL R589HD AND 902HD OR APPROVED EQUAL.
6. CATCH BASINS TO BE PRECAST CONCRETE STRUCTURES FOR H+20 LOADING. CONTRACTOR TO SUBMIT MANUFACTURER'S CUT-SHEETS FOR APPROVAL PRIOR TO CONSTRUCTION.
7. ALL CATCH BASIN CASTING TO BE ADJUSTED TO FINAL GRADE PRIOR TO PLACING THE WEARING COURSE.
8. WATER SERVICE SHALL BE A MIN. 1" COPPER TUBING AND CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF BOLTON WATER SERVICE STANDARDS.


1. SITE IS TO BE SERVICED BY AN INDIVIDUAL PRIVATE WATER SUPPLY.
2. WATER SUPPLY IS NOT TO BE CONSIDERED A PUBLIC WATER SUPPLY DUE TO SERVING 24 OR LESS NON-TRANSIENT RESIDENTS BASED ON APPLICANTS DISCUSSION WITH MASSDEP.  
11 UNITS = 22 NON-TRANSIENT RESIDENTS < 24 NON-TRANSIENT RESIDENTS



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FMM

# UTILITIES PLAN

## MALLARD LANE

### LTON, MASSACHUSE

293

DRAWING NO.  
5293-UTILITIES

SHEET NO.

C5.0





**HYDRAULIC LOADING:**  
THE SYSTEM HAS BEEN DESIGNED FOR TWELVE (12) BEDROOMS AT 150 GALLONS PER DAY PER BEDROOM = 1,650 GALLONS PER DAY.  
(AGE RESTRICTED UNITS)

**SEPTIC TANK SIZE:**  
AVERAGE DAILY FLOW 12 BEDROOMS = 1,650 G.P.D.  
SEPTIC TANKS PROVIDED: 3,000 G.P.D. ON TANK (200% DAILY FLOW) FOLLOWED BY 2,000 GALLON TANK (100% DAILY FLOW).  
PUMP CHAMBER PROVIDED: 2,000 GALLON TANK

1. NITROGEN TREATMENT IS NOT REQUIRED SINCE THE UNITS ARE AGE RESTRICTED. SEE CALCULATIONS BELOW.

NITROGEN LOADING:  
LOT AREA / 40,000 SF X 440 GPD

$$184,472 \text{ SF} / 40,000 \text{ SF} \times 440 \text{ GPD} = 2,029 \text{ GPD}$$

OK 2,029 GPD > 1,650 GPD

Diagram illustrating the minimum clearance between a water pipe and a sewer line. The water pipe is shown with a minimum clearance of 18" MIN. from the finished grade. The sewer line is shown with a minimum clearance of 18" MIN. from the water pipe. The total minimum clearance from the finished grade to the sewer line is 5.0' MIN.



**NOTES:**

1. INSTALL STRAIGHT RUNS COMPLETELY THROUGH MH AND REMOVE PIPE CROWN TO SPRING LINE.
2. ALL PENETRATIONS AND ADJUSTING RINGS TO BE GROUTED.
3. ALL MANHOLE SECTIONS TO BE FITTING WITH RUBBER O-RINGS.

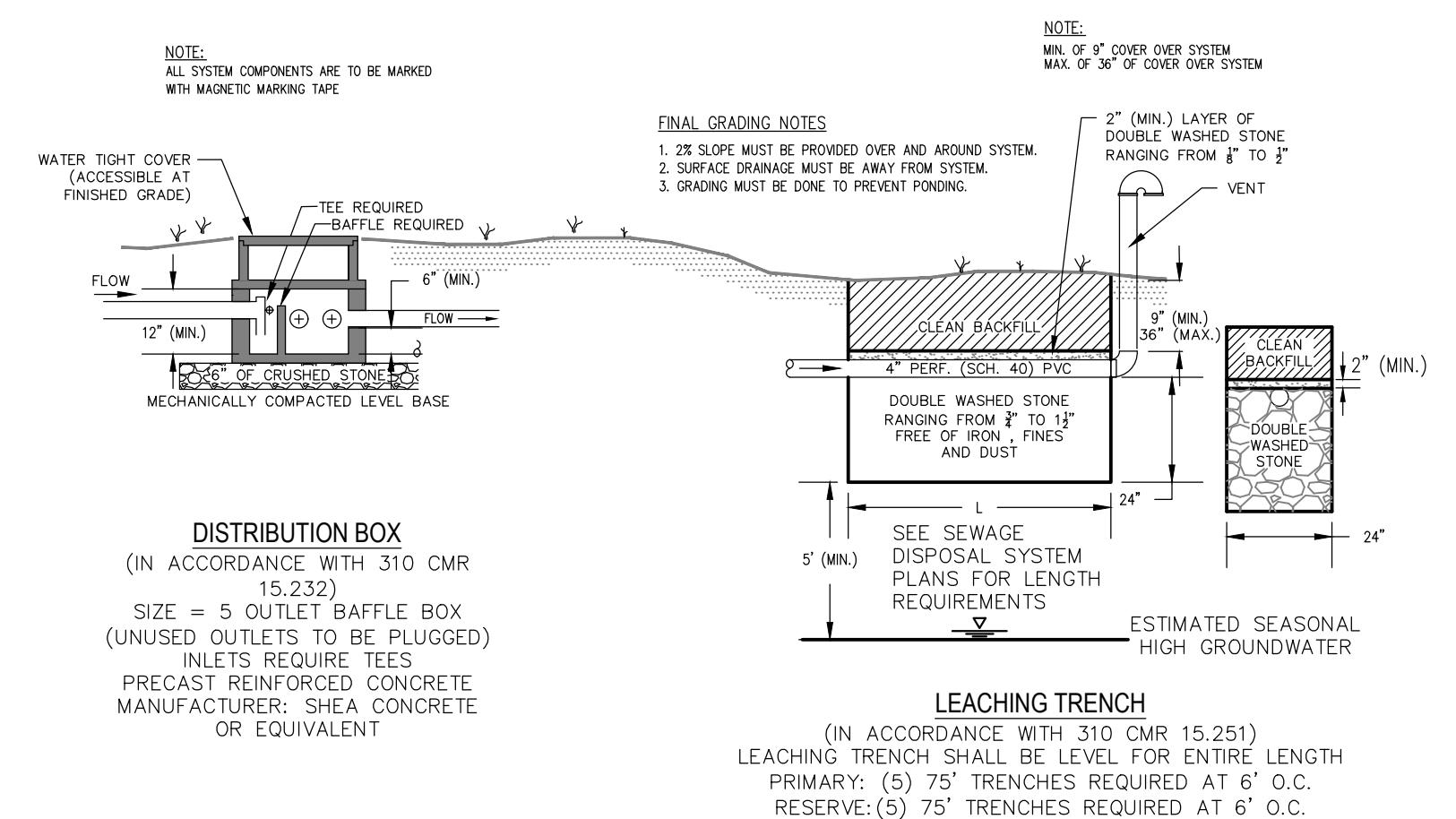
OF THE MOD. DRY  
DENSITY. (SUBMIT  
DENSITY REPORT TO  
ENGINEER FOR  
APPROVAL)

UNIT OF  
EXCAVATION

UNDISTURBED  
MATERIAL



NOTES:  
1. SAND BACKFILL COMPACTED TO 95% DENSITY IS REQUIRED AROUND ALL WATER SERVICES.



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PREPARED BY:



1092 MAIN STREET, P.O. BOX 428  
BOLTON, MASSACHUSETTS 01740

PHONE: (978) 779-6091 FAX: (978) 779-0260  
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SCALE:

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### UTILITIES DETAILS

# UTILITIES DETAILS

## MALLARD LANE

### BOLTON, MASSACHUSETTS

NO.	DATE
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JOB NO.

5293

DRAWING NO.

5293-U

SHEET NO. 05

(5)

# PRELIMINARY