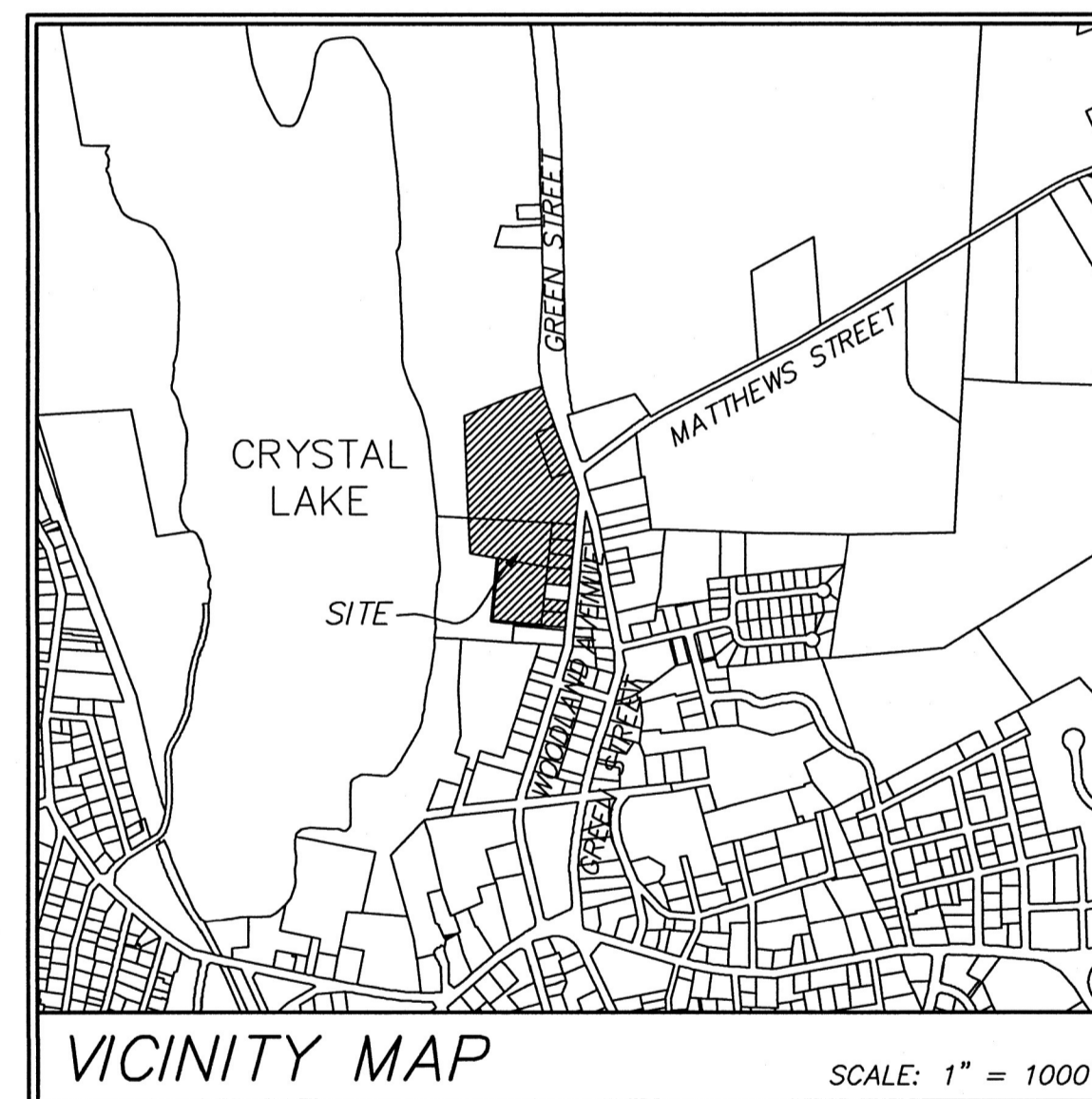


# ***SITE DEVELOPMENT PLAN ADDITIONS AND SITE RECONSTRUCTION 242 GREEN STREET IN GARDNER, MASSACHUSETTS MAY 17, 2021***



**APPLICANT:**

WATERSTONE PROPERTIES, INC,  
NICO RECINE  
117 KENDRICK STREET - SUITE 325  
NEDHAM, MASSACHUSETTS 02494  
TEL: (781) 675-2063

**OWNER:**

HENRY HEYWOOD MEMORIAL HOSPITAL  
WINFIELD BROWN, CEO  
242 GREEN STREET  
GARDNER, MASSACHUSETTS 01440  
TEL: (978) 630-6225

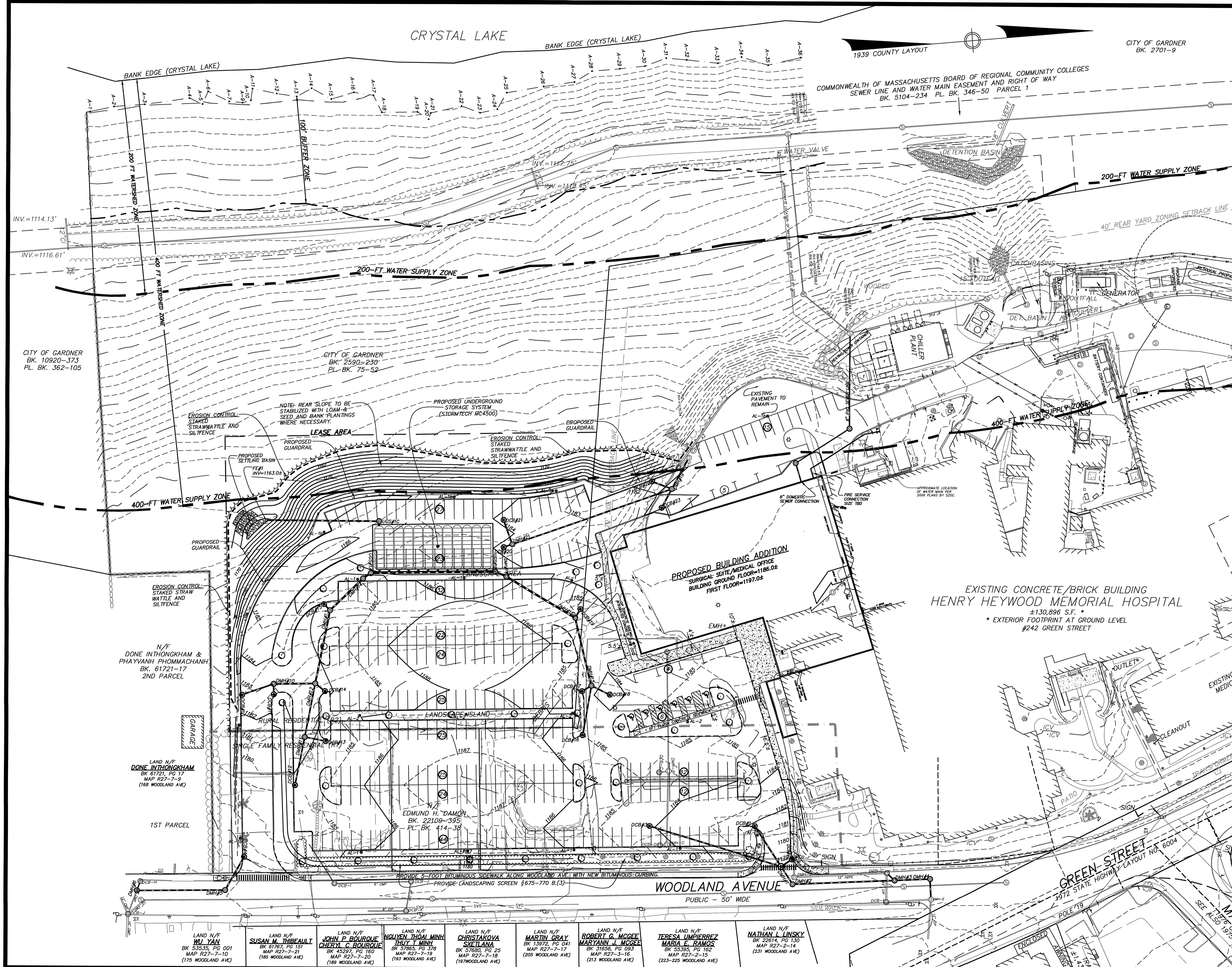
**CIVIL ENGINEER & LAND SURVEYOR:**

HANNIGAN ENGINEERING, INC.  
8 MONUMENT SQUARE  
LEOMINSTER, MASSACHUSETTS 01453  
TEL: (978) 534-1234

**PLAN INDEX**

SHEET 1	EXISTING CONDITIONS PLAN
SHEET 2	SITE DEVELOPMENT PLAN
SHEET 3	SITE LAYOUT PLAN
SHEET 4	SITE GRADING PLAN
SHEET 5	SITE UTILITY PLAN
SHEET 6-9	CONSTRUCTION DETAILS
SHEET 10	SITE LANDSCAPE PLAN
SHEET 11	SITE LIGHTING PLAN





**PROJECT INFORMATION**

**LAND INFORMATION**

MAP/PARCEL:	AS NOTED
BOOK/PAGE:	AS NOTED
EXISTING FRONTAGE:	1,290 FT
EXISTING AREA:	12.1 ACRES±

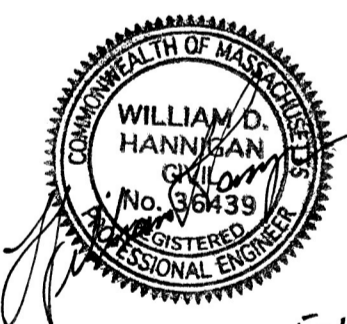
**ZONING INFORMATION**

ZONING DISTRICT:	RURAL RESIDENTIAL (R2)
SINGLE FAMILY RESIDENTIAL (R1)	

**DIMENSIONAL REQUIREMENTS:**

(R2)	(R1)
MINIMUM AREA:	60,000 S.F. 12,500 S.F.
MINIMUM FRONTAGE:	150' 100'
MAXIMUM HEIGHT:	3 STORIES (36')
MINIMUM SETBACKS:	
FRONT YARD:	30' 30'
SIDE YARD:	20' 15'
REAR YARD:	40' 20'

- GENERAL NOTES:**
- PROPERTY LINE INFORMATION BASED DEEDS AND PLANS OF RECORD. NO CERTIFICATION OF PROPERTY LINES SHOWN ON THIS PLAN IS INTENDED OR IMPLIED BY HANNIGAN ENGINEERING, INC. TOPOGRAPHIC INFORMATION IS THE RESULT OF AN ON-THE-GROUND TOPOGRAPHIC SURVEY BY HANNIGAN ENGINEERING, INC. IN JULY OF 2020.
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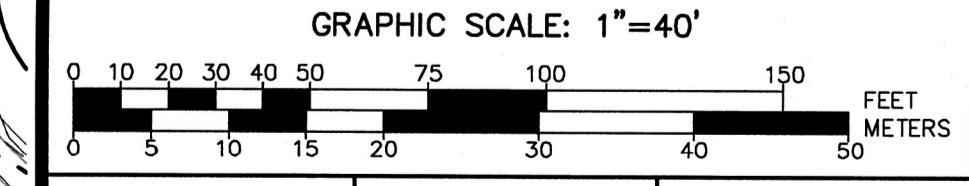
5-17-21

**HANNIGAN ENGINEERING, INC.**  
CIVIL ENGINEERS & LAND SURVEYORS

8 MONUMENT SQUARE (978) 534-1234 (T)  
LEOMINSTER, MASSACHUSETTS 01453 (978) 534-6060 (F)  
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**SITE DEVELOPMENT PLAN**  
IN  
**GARDNER, MASSACHUSETTS**

PREPARED FOR:  
**WATERSTONE PROPERTIES, INC.**  
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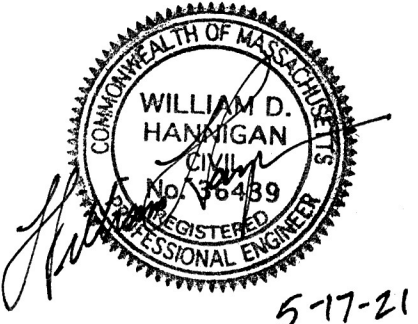
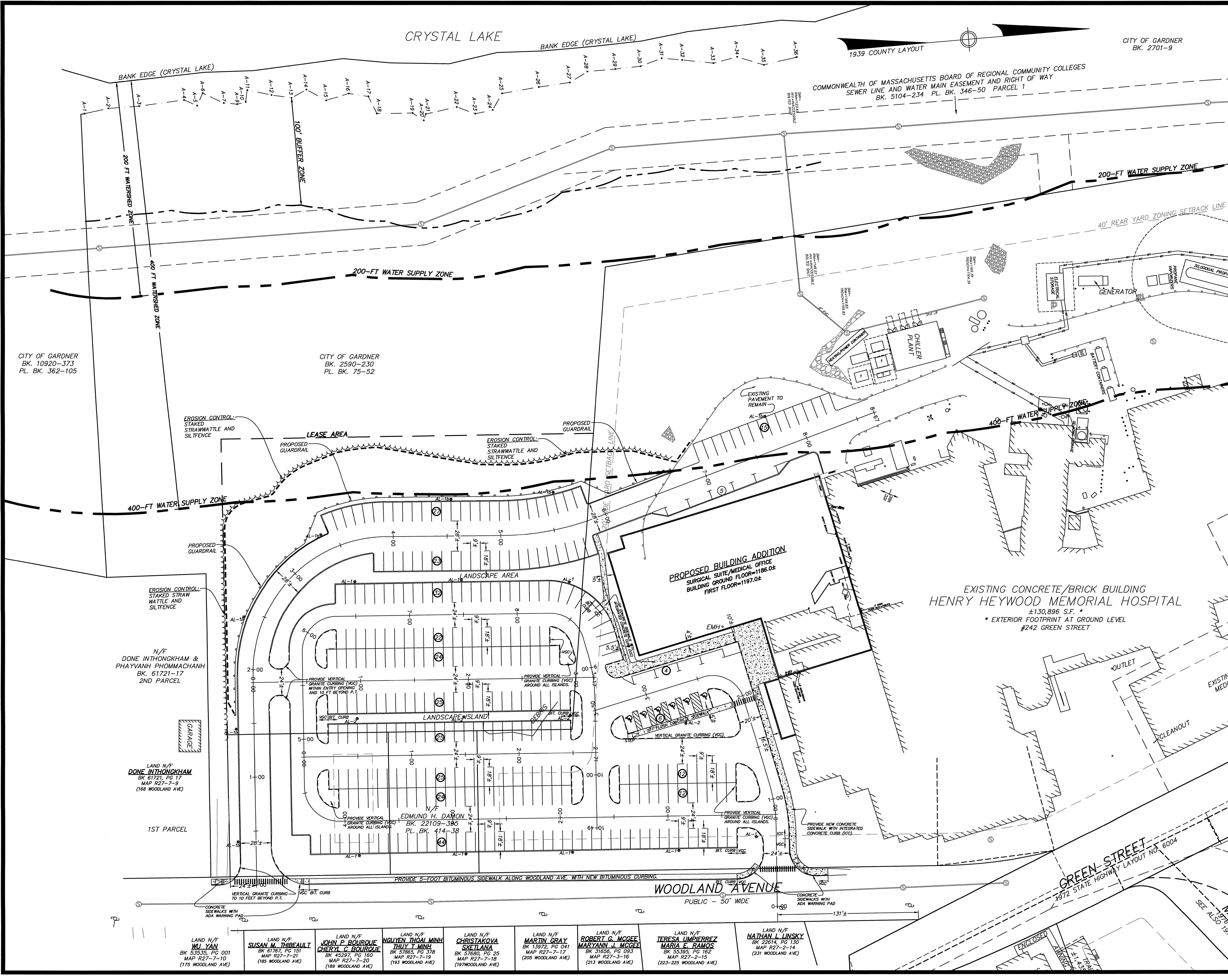
CALC: DJL	DRWN: CMA/WDH	SCALE: 1"=40'
CHKD: WDH	APPD: DJL	DATE: MAY 17, 2021
SRV: JHG	FB:	JOB NO: 2670
TAB: (2) SITE	SHEET 2 OF 11	PLAN NO: C-13-22

- |   |  |  |  |   |  |   |  |   |
|---|--|--|--|---|--|---|--|---|
| LAND N/F<br><b>WU YAN</b><br>BK 53535, PG 001<br>MAP R27-7-10<br>(175 WOODLAND AVE) | LAND N/F<br><b>SUSAN M. THIBEAULT</b><br>BK 51767, PG 19<br>MAP R27-7-21<br>(185 WOODLAND AVE) | LAND N/F<br><b>JOHN P. BOURQUE<br/>CHERYL C. BOURQUE</b><br>BK 45287, PG 160<br>MAP R27-7-20<br>(189 WOODLAND AVE) | LAND N/F<br><b>NGUYEN THAO MINH<br/>THUY T. MINH</b><br>BK 57865, PG 378<br>MAP R27-7-19<br>(193 WOODLAND AVE) | LAND N/F<br><b>CHRISTAKOVA<br/>SKEITLANA</b><br>BK 57680, PG 25<br>MAP R27-7-18<br>(197 WOODLAND AVE) | LAND N/F<br><b>MARTIN GRAY</b><br>BK 13972, PG 041<br>MAP R27-7-17<br>(205 WOODLAND AVE) | LAND N/F<br><b>ROBERT G. MCGEE<br/>MARYANN J. MCGEE</b><br>BK 31636, PG 093<br>MAP R27-3-16<br>(213 WOODLAND AVE) | LAND N/F<br><b>TERESA UMPIERREZ<br/>MARIA E. RAMOS</b><br>BK 55395, PG 162<br>MAP R27-2-19<br>(223-225 WOODLAND AVE) | LAND N/F<br><b>NATHAN I. LINSKY</b><br>BK 22614, PG 130<br>MAP R27-2-14<br>(231 WOODLAND AVE) |
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BOOK-PAGE:	AS NOTED
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**SITE LAYOUT PLAN**  
IN  
**GARDNER, MASSACHUSETTS**

PREPARED FOR:  
**WATERSTONE PROPERTIES, INC.**  
NICO REGINE  
117 KENDRICK STREET - SUITE 325  
NEEDHAM, MASSACHUSETTS 02494  
TEL: (781) 675-2063

GRAPHIC SCALE: 1"=40'  
0 10 20 30 40 50 75 100 150 FEET  
0 5 10 15 20 30 40 50 METERS

CALC: DJL	DRWN: CMA/WDH	SCALE: 1"=40'
CHKD: WDH	APPD: DJL	DATE: MAY 17, 2021
SRV: JHG	FB:	JOB NO: 2670
TAB: (3) LAYOUT	SHEET 3 OF 11	PLAN NO: C-13-22

- |   |  |  |  |  |  |   |  |   |
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|---|--|--|--|--|--|---|--|---|

CRYSTAL LAKE

BANK EDGE (CRYSTAL LAKE)

1939 COUNTY LAYOUT

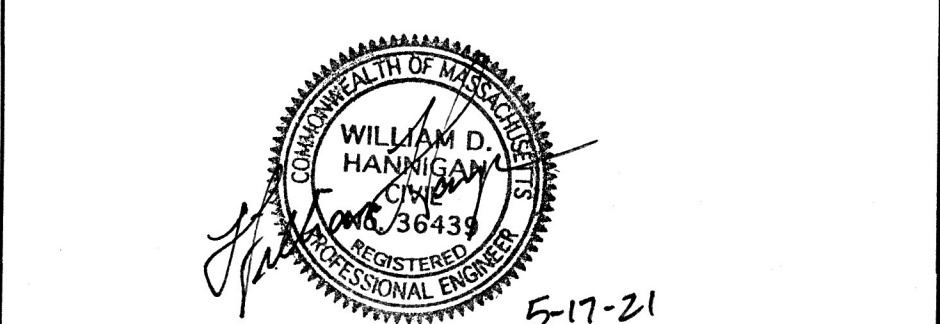
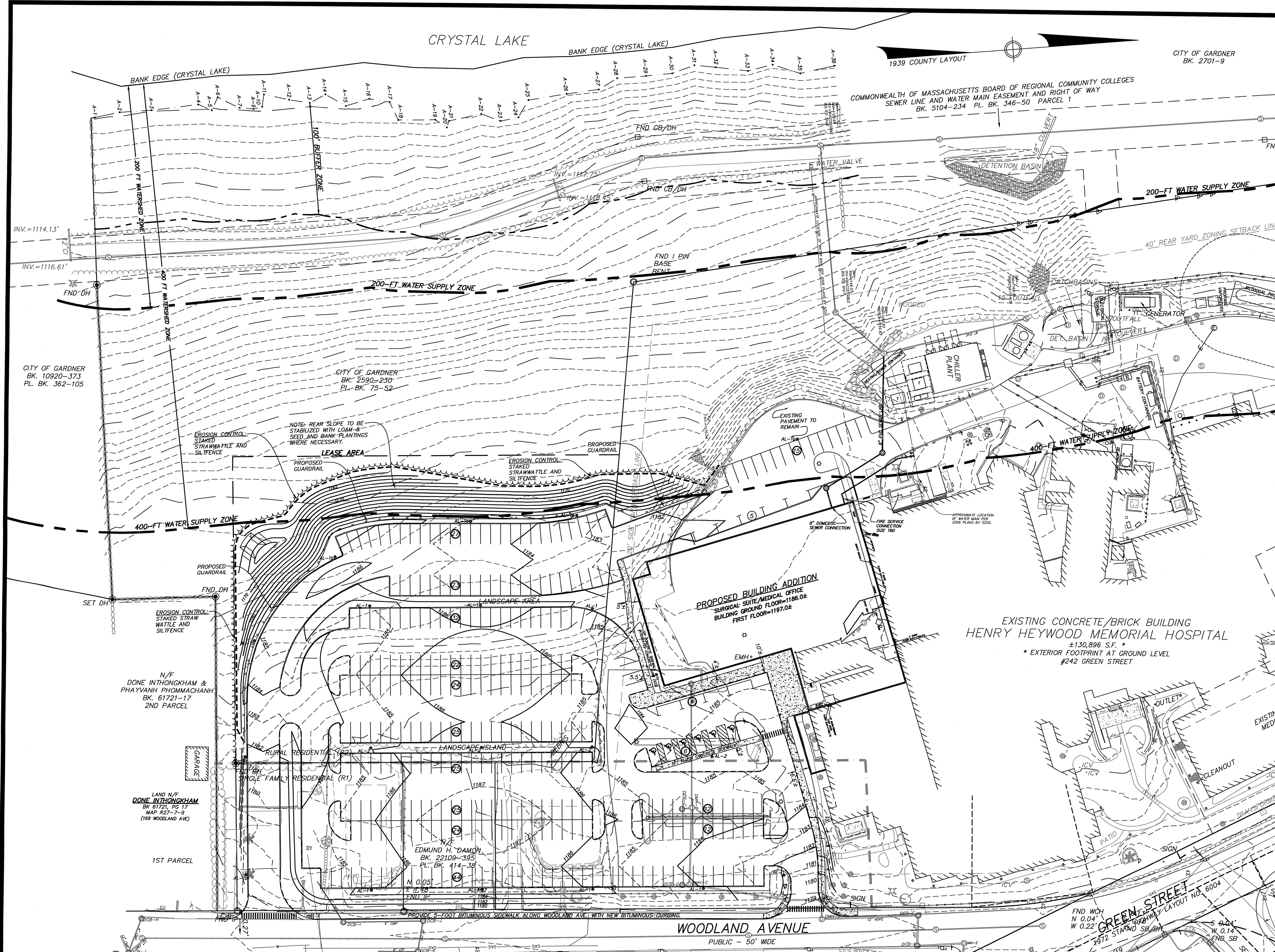
CITY OF GARDNER  
BK. 2701-9

PROJECT INFORMATION

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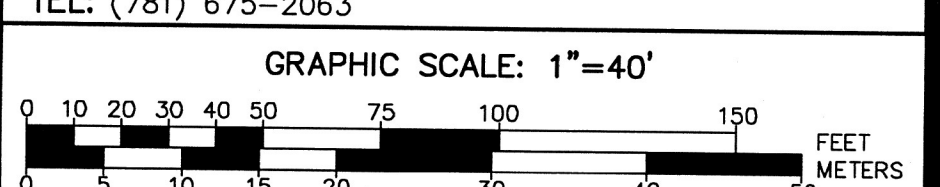
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**SITE GRADING PLAN**  
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TAB: (4) GRADING	SHEET 4 OF 11	PLAN NO: C-13-22

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- LAND N/F NGUYEN THAO MINH LUY T. MINH BK 91863, PG 478 MAP R27-7-19 (193 WOODLAND AVE)
- FND IP N/F CHRISTAKOVA SKETLANA BK 57680, PG 25 MAP R27-7-18 (197 WOODLAND AVE)
- LAND N/F MARTIN GRAY BK 13972, PG 041 MAP R27-7-17 (205 WOODLAND AVE)
- LAND N/F ROBERT G. MCGEE MARYANN J. MCGEE BK 37676, PG 063 MAP R27-3-16 (213 WOODLAND AVE)
- FND IP N/F TERESA UMPIERREZ MARIA E. RAMOS BK 53398, PG 162 MAP R27-2-15 (223-225 WOODLAND AVE)
- FND IP N/F NATHAN L. LINSKY BK 22614, PG 130 MAP R27-2-14 (231 WOODLAND AVE)
- HELD FND WCH



**EROSION & SEDIMENTATION CONTROL PLAN**

**GENERAL:**

1. THE PURPOSE OF THIS PLAN IS TO PRESENT A PREVENTIVE METHOD OF CONSTRUCTION TO MINIMIZE THE IMPACT OF THE CONSTRUCTION ACTIVITIES UPON WETLAND AND OTHER SENSITIVE AREAS. THE DATA CONTAINED ON THIS PLAN IS INTENDED TO SUPPLEMENT THE DEVELOPER OR CONTRACTOR'S EXPERTISE AND IS NOT MEANT TO CIRCUMVENT LOGICAL DECISIONS REQUIRED BY A VARIETY OF FIELD CONDITIONS INCLUDING WEATHER AND THE TYPE OF EQUIPMENT AVAILABLE TO THE CONTRACTOR.
2. THE CONTRACTOR IS TO BE AWARE OF THE REQUIREMENTS AND OBLIGATIONS TO COMPLY WITH CHAPTER 31, SECTION 40 OF THE MASSACHUSETTS GENERAL LAWS, OTHERWISE KNOWN AS THE WETLANDS PROTECTION ACT, AND ITS ASSOCIATED REGULATIONS (310 CMR 10.00). CERTAIN PERMITS IN THE FORM OF AN ORDER OF CONDITIONS, OR OTHER FORMAT, MAY BE REQUIRED FOR THE CONSTRUCTION AS DEPICTED ON THIS PLAN. THESE PERMITS SHALL BE REVIEWED AND ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL ALSO MAINTAIN COPIES OF ALL PERMITS ON SITE AT ALL TIMES.
3. IF CHANGES IN THE PROJECT ARE REQUIRED DUE TO FIELD CONDITIONS THE DEVELOPER/CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER FOR REVIEW OF THESE CONDITIONS. UPON REVIEW AND PRIOR TO THE IMPLEMENTATION OF ANY CHANGE, THE CONTRACTOR AND THE ENGINEER SHALL MEET WITH THE APPROPRIATE LOCAL AND/OR STATE OFFICIAL, OR ITS AGENT, TO DETERMINE IF THE CHANGE REQUIRES MODIFICATION TO EXISTING APPROVED PERMITS.
4. ALTERATION AND/OR DESTRUCTION OF WETLAND AREAS WITHOUT PRIOR CONSENT OF THE CONSERVATION COMMISSION IS PROHIBITED. SILTATION PLUMES, OR INADVERTENT ALTERATION SHALL BE CONSIDERED AS ACTIVITIES NOT PERMITTED BY THE ORDER AND SHALL BE REPORTED TO THE CONSERVATION COMMISSION ALONG WITH THE PROPOSED MITIGATIVE MEASURES.
5. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE INSTALLED AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN THE EROSION CONTROL BARRIER UNTIL ALL WORK IS COMPLETE AND ALL AREAS HAVE BEEN STABILIZED. THE REMOVAL OF SEDIMENT CONTROL DEVICES SHALL BE ONLY UPON THE ORDER OF THE CONSERVATION COMMISSION.
6. EROSION AND SEDIMENTATION CONTROL DEVICES, SUCH AS CHECK DAMS, SEDIMENT BASINS, ETC. ARE TO BE INSTALLED AS SHOWN ON THE SITE DEVELOPMENT PLANS WITH ASSOCIATED DETAILS, AS APPROPRIATE.
7. CONSTRUCTION OPERATIONS SHALL NOT CAUSE NOTICEABLE SEDIMENTATION PLUMES TO OCCUR ON OR SURROUNDING THE PROJECT. SHOULD SEDIMENT EXTEND BEYOND THE EROSION CONTROL BARRIERS, THE CONTRACTOR SHALL STOP WORK AND INSTALL ADDITIONAL MITIGATIVE MEASURES TO PREVENT FURTHER SEDIMENTATION.
8. NO MATERIAL SUBJECT TO EROSION SHALL BE STOCKPILED OVERNIGHT WITHIN 100 FEET OF ANY WETLAND AREAS WITHOUT PROPER EROSION AND SEDIMENTATION DEVICES IN PLACE.
9. EQUIPMENT SHALL NOT BE PARKED WITHIN WETLAND OR BUFFER AREAS EXCEPT DURING ACTUAL OPERATIONS REQUIRING SAID EQUIPMENT.
10. ACCUMULATED SEDIMENT ALONG EROSION CONTROL BARRIERS SHALL BE PERIODICALLY REMOVED AND DISPOSED OF BY THE CONTRACTOR AS REQUIRED BY THE CONSERVATION COMMISSION OR AS DIRECTED BY THE ENGINEER.

1. THE ROUGH GRADING OF THE ROADWAY SHALL FOLLOW THE FILL AND EXCAVATION SEQUENCES, RESULTING IN SLOPES BEING MAINTAINED AWAY FROM WETLANDS AND SENSITIVE AREAS AS MUCH IS PRACTICAL.
2. DURING THIS PROCESS THE EROSION POTENTIAL IS HIGH. SUFFICIENT EROSION CONTROL BARRIERS SHOULD BE KEPT IN PROXIMITY TO THE WORK AREA TO ALLOW QUICK ACTION SHOULD EROSION BECOME AN ISSUE AND TO INSURE THAT NO SEDIMENT REACHES WETLANDS OR OTHER SENSITIVE AREAS.
3. IN AREAS OF CUT AND/OR FILL WHERE SLOPES COULD DIVERT WATER TOWARD WETLAND AREAS, DIVERSION TRENCHES AND/OR SWALES SHOULD BE CONSIDERED AND IMPLEMENTED TO DIVERT WATER AWAY FROM THESE AREAS.
4. STEEP SIDE SLOPES IN EXCAVATION OR FILL SHOULD BE AVOIDED.
5. DISTURBED AREAS SHALL BE STABILIZED BY LOAMING AND SEEDING OR RIPRAPPED IMMEDIATELY AFTER THE FINISH GRADE HAS BEEN MET. IF FINAL GRADING DOES NOT OCCUR DURING THE GROWING SEASON, THESE AREAS SHALL BE MULCHED BY HAY SECURED BY WEIGHTED SNOW FENCE, CHICKEN WIRE MESH OR JUTE NETTING WITH APPROPRIATE SECURING DEVICES.
6. A GROUND COVER SUFFICIENT TO RETAIN SOILS IN A STABILIZED CONDITION MUST BE PROVIDED WITHIN 14 WORKING DAYS, SEASON PERMITTING, ON ANY PORTION OF THE TRACT UPON WHICH FURTHER ACTIVE CONSTRUCTION IS NOT BEING UNDERTAKEN.

**ROUGH GRADING:**

1. IF DRAINAGE PIPES OR SWALES ARE TO BE INSTALLED, THEY SHALL BE CONSTRUCTED FROM DOWNSTREAM UP AND CONSTRUCTION SHALL INCLUDE THE PLACEMENT OF OUTFALL RIPRAP AND OTHER MITIGATIVE MEASURES SHOWN ON THE PLAN.
2. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, HAY BALES OR OTHER SUITABLE METHODS TO ENTRAP SEDIMENT SHALL BE PLACED DOWNSTREAM.
3. THE TOE OF EMBANKMENTS SHALL BE STABILIZED IMMEDIATELY, MULCHED AND TACKED DOWN BY SUITABLE MEANS.
4. IF THE PROPOSED ROADWAY IS NOT PAVED IMMEDIATELY AFTER THE INSTALLATION OF DRAINAGE STRUCTURES, HAY BALES SHALL BE PLACED TO PROTECT THE INTEGRITY OF THE STRUCTURES.

**DRAINAGE:**

1. DURING THE CONSTRUCTION OF BUILDINGS, MATERIALS SHALL BE STOCKPILED IN A MANNER AS NOT TO DIVERT OR CONCENTRATE RUNOFF IN ORDER TO PREVENT THE TRANSPORT OF SEDIMENT.
2. THE LOT SHOULD BE KEPT LITTER FREE.
3. NO FUELS, SOLVENTS, PAINTS, ETC. SHALL BE STORED ON SITE. THESE PRODUCTS SHALL BE REMOVED FROM THE SITE EACH EVENING AND RETURNED THE FOLLOWING DAY.
4. BURIAL OF MATERIALS OR CONSTRUCTION DEBRIS IS PROHIBITED.
5. PLASTERERS AND PAINTERS SHALL BE INFORMED THAT DISCHARGE OF LIQUIDS INTO A WETLAND OR RESOURCE AREA IS PROHIBITED.

**WATER SUPPLY:**

1. IF MUNICIPAL WATER SUPPLY IS TO BE UTILIZED, CARE SHOULD BE TAKEN TO INSURE THAT THE TRENCH DOES NOT DIVERT RUNOFF WATER TO A WETLAND AREA OR ONTO A ROAD WHERE IT WILL BE CARRIED INTO A WETLAND OR SENSITIVE AREA.
2. IF PRIVATE ON-SITE WELLS ARE PROPOSED, CARE SHOULD BE TAKEN IN THE CONSTRUCTION OF THE WELL TO INSURE THAT DRILLING FLUID DOES NOT DISCHARGE TO A STREAM, WETLAND OR SENSITIVE AREA.
3. WELL DRILLING OPERATIONS SHALL BE SUCH THAT WETLANDS ARE NOT DISTURBED AND THE INSTALLATION OF THE WATER LINE WILL NOT DIRECT WATER TOWARDS A WETLAND AREA.

**BUILDING CONSTRUCTION:**

1. IT IS OF GREAT IMPORTANCE THAT CONCENTRATION OF RUNOFF BE AVOIDED IN ORDER TO PREVENT THE TRANSPORT OF SEDIMENT.
2. THE PRIMARY EROSION CONTROL METHOD TO BE UTILIZED IS TO LIMIT THE AREA OF DISTURBANCE DURING CONSTRUCTION ACTIVITIES. THIS IS ACCOMPLISHED BY PROMPT STABILIZATION OF DISTURBED AREAS UPON COMPLETION OF SEQUENCES OF CONSTRUCTION.
3. EROSION AND SEDIMENT CONTROL DEVICES SUCH AS HAY BALES, SILT FENCES, DIVERSION BERMS, ETC. SHALL BE UTILIZED FOR THE PROTECTION OF THE AREAS BEYOND THE LIMIT OF CONSTRUCTION.

**EROSION CONTROL METHODS:**

1. IT IS RECOMMENDED THAT BARRIERS BE PLACED ON THE SITE TO CONTROL THE LIMITS OF THE DISTURBANCE. AS AN EXAMPLE, HAY BALE BARRIERS PROVIDE SUCH DEMARCATION AND OTHER METHODS SUCH AS LOG BARRIERS, ROPE WITH FLAGGING, ETC. MAY BE UTILIZED.
2. CARE SHOULD BE TAKEN IN THE OPERATION OF EQUIPMENT, SUCH THAT ONLY THE MINIMUM AREA NEEDED TO BE ALTERED IS DISTURBED.

**DEMARCATION OF SENSITIVE AREAS:**

1. IT IS RECOMMENDED THAT BARRIERS BE PLACED ON THE SITE TO CONTROL THE LIMITS OF THE DISTURBANCE. AS AN EXAMPLE, HAY BALE BARRIERS PROVIDE SUCH DEMARCATION AND OTHER METHODS SUCH AS LOG BARRIERS, ROPE WITH FLAGGING, ETC. MAY BE UTILIZED.
2. CARE SHOULD BE TAKEN IN THE OPERATION OF EQUIPMENT, SUCH THAT ONLY THE MINIMUM AREA NEEDED TO BE ALTERED IS DISTURBED.

**CLEARING:**

1. ACCESS TO THE SITE SHALL BE MADE IN THE AREA OF A PERMANENT DRIVEWAY OR ROADWAY UNLESS DOING SO WOULD RESULT IN A TRAFFIC HAZARD.
2. AN AREA OF CRUSHED STONE SHALL BE PLACED AT THE DRIVEWAY ENTRANCE TO INSURE THAT MUD IS NOT TRACKED ONTO THE EXISTING ROAD (SEE CONSTRUCTION ENTRANCE DETAIL). IF MUD IS INADVERTENTLY TRACKED ONTO THE ROAD, IT SHOULD BE PROMPTLY REMOVED.
3. LABORERS VEHICLES SHALL BE PARKED IN A DESIGNATED AREA AS TO MINIMIZE DISTURBED SURFACES AND TO INSURE THAT RUTS ARE NOT CREATED AND WHICH COULD CARRY WATER TO A WETLAND OR OTHER SENSITIVE AREA.
4. SUITABLE MEASURES SHALL BE TAKEN TO INSURE THAT LARGE DELIVERY TRUCKS SERVING THE SITE DO NOT DAMAGE TO AREAS OF EXISTING VEGETATION OR CAUSE DISTURBANCE TO STABILIZED AREAS.

**ORDERLY CONSTRUCTION PROCEDURES:**

1. THE CONTRACTOR SHALL PERFORM SITE CONSTRUCTION IN A MANNER WHICH WILL INSURE THE STABILIZATION OF AREAS IN PROXIMITY OF OR TRIBUTARY TO WETLAND AREAS AS SOON AS POSSIBLE.
2. EROSION CONTROL DEVICES SUCH AS HAY BALE BARRIERS, SILT FENCES AND MULCH SHALL BE BROUGHT TO THE SITE AND STOCKPILED PRIOR TO INITIATING CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE AREAS FOR THE TEMPORARY STORAGE OF CONSTRUCTION DEBRIS. CONSTRUCTION DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE FOR AN EXTENDED PERIOD OF TIME.

**ACCESS:**

1. LAND CLEARING SHALL BE PERFORMED IN PHASES CONSISTENT WITH ACTUAL CONSTRUCTION REQUIREMENTS. FINAL LAND CLEARING SHALL BE LIMITED TO RETURN TO GRADE SLOPES.
2. TREES SHALL BE CUT AND STUMPS GROUND IN PLACE TO EXISTING GRADE TO MAINTAIN SOIL STABILIZATION.
3. BRUSH AND BRANCHES SHOULD BE CHIPPED AND UTILIZED FOR WOOD MULCH IF PRACTICAL.
4. VEHICLES UTILIZED IN THE CLEARING OPERATION SHOULD NOT TRAVERSE WETLANDS OR FLOWING BROOKS OR STREAMS WITHOUT PRIOR APPROVAL FROM THE LOCAL CONSERVATION COMMISSION OR AGENT.

**GRUBBING AND STRIPPING:**

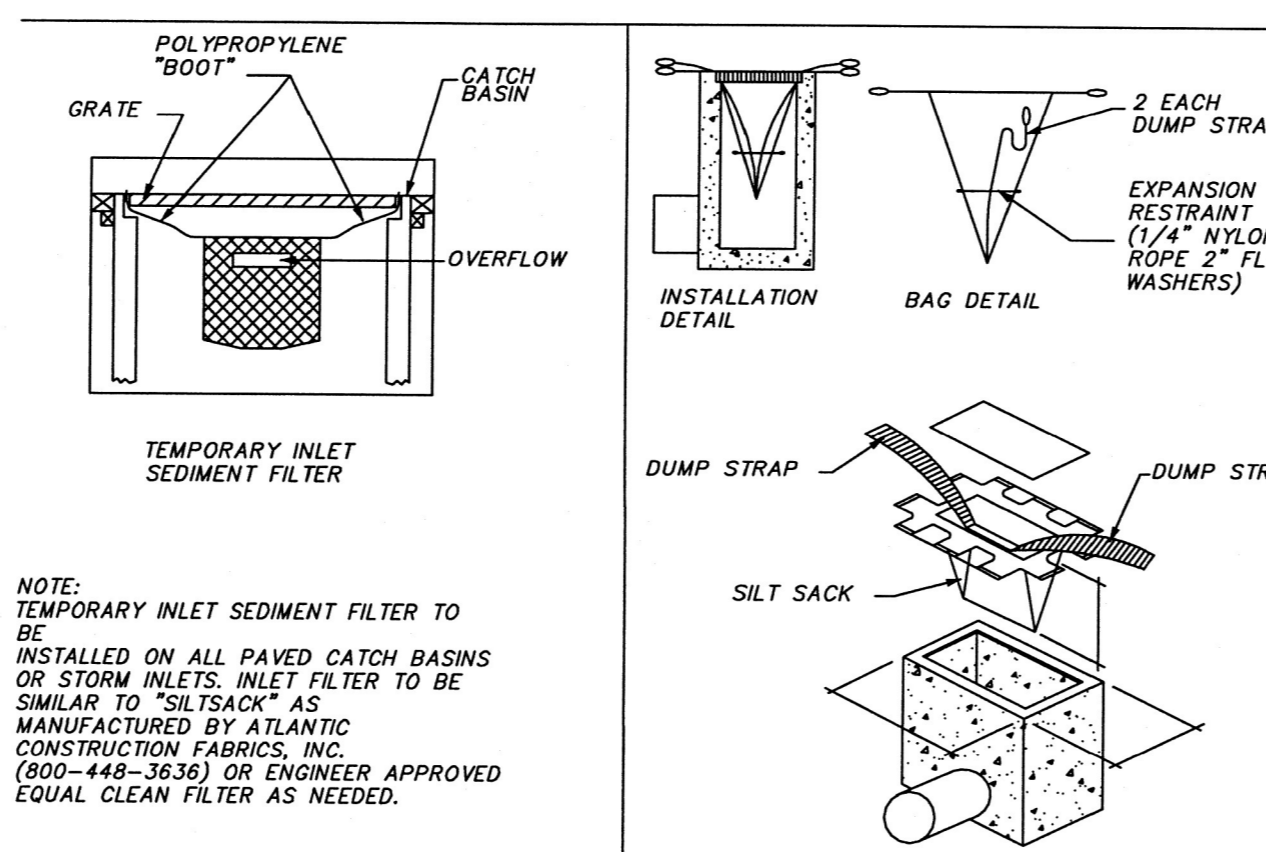
1. TOP SOIL SHALL BE RETAINED FOR LANDSCAPING PURPOSES.
2. GRUBBING AND STRIPPING OF SLOPES LEADING TO WETLAND AREAS SHOULD NOT BE UNDERTAKEN DURING PERIODS OF INTENSE RAINFALL.
3. TOP SOIL STOCKPILE LOCATIONS ARE DEPICTED ON THE SITE DEVELOPMENT PLAN, THE EROSION CONTROL PLAN, AND/OR THE CONSTRUCTION PHASING PLAN AND SHALL BE ADHERED TO.
4. WHEN WORKING IN THE VICINITY OF WETLANDS, TOP SOIL SATURATED WITH WATER SHALL BE REMOVED, AND CONTAINED PRIOR TO BEING USED.
5. AREAS LEADING TO WETLANDS SHALL HAVE HAY BALE BARRIERS INSTALLED ACROSS THEM IN ARCS POINTING DOWN THE HILL AT INTERVALS SUFFICIENT TO MITIGATE RUNOFF CARRYING SEDIMENT.
6. DURING PERIODS OF INTENSE RAINFALL, OR IF THE PROJECT IS TO BE LEFT FOR A PERIOD OF TIME, CONSIDERATION SHOULD BE GIVEN TO SUPPLEMENT HAY BALE BARRIERS WITH OTHER CRUSHED STONE OR ARMORED BARRIERS. CONSIDERATION MAY ALSO BE GIVEN TO DIVERTING RUNOFF INTO TEMPORARY SEDIMENTATION CONTROL AREAS.
7. WHENEVER PRACTICAL, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.

**LANDSCAPING:**

1. LANDSCAPING OF AREAS SHOULD OCCUR AS SOON AS POSSIBLE.
2. IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT PERMIT THE ESTABLISHMENT OF VEGETATION, TEMPORARY HAY MULCH, OR OTHER MEANS OF STABILIZATION SHALL BE PERFORMED.
3. USE OF HERBICIDES MAY BE SUBJECT TO OTHER REGULATIONS.
4. CARE SHOULD BE TAKEN WITH FERTILIZERS SUCH THAT THEY ARE NOT CARRIED TO A WETLAND OR SENSITIVE AREA.
5. TRUNKS OF TREES SHOULD NOT BE COVERED WITH MORE THAN TWO (2) INCHES OF SOIL.
6. STUMPS SHALL BE GROUND DOWN INTO A WOOD MULCH AND UTILIZED OR REMOVED FROM THE SITE.

**DEWATERING:**

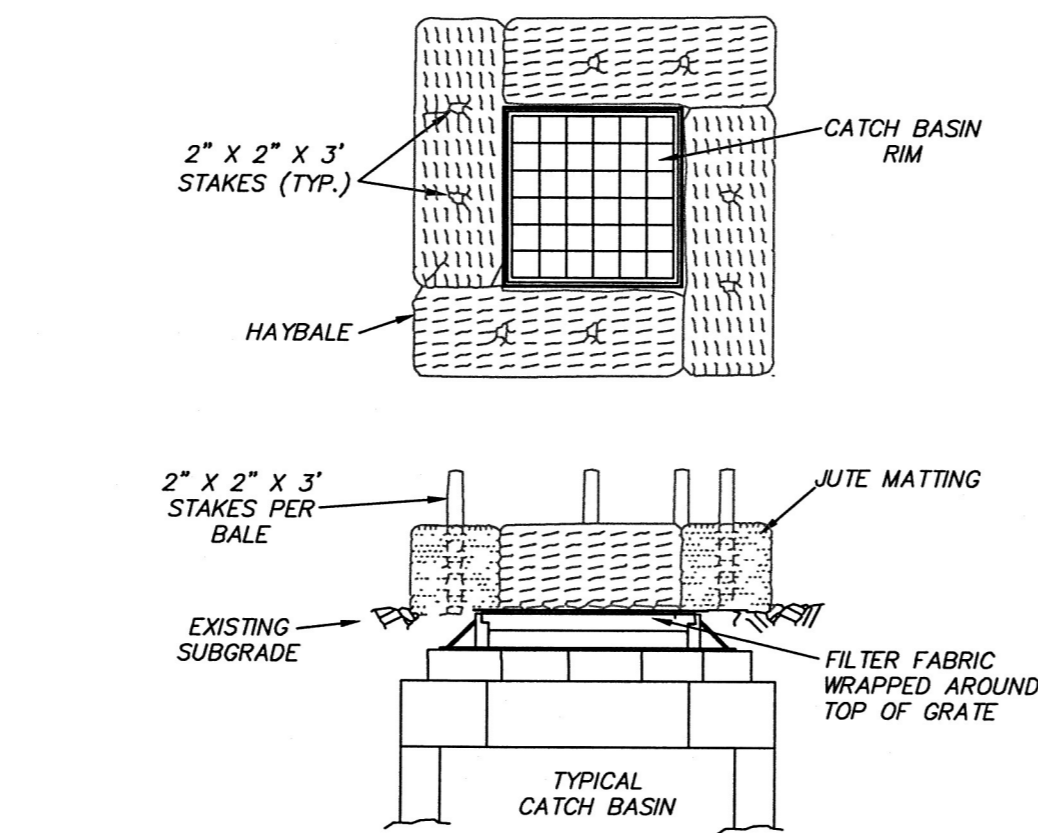
1. NO DEWATERING ACTIVITIES PERFORMED WITHIN THE EXISTING AREA UNDER LIMITED USE SHALL BE ALLOWED TO DISCHARGE IN STORMWATER MANAGEMENT SYSTEM OR WETLAND AREAS
2. ALL DEWATERING ACTIVITIES SHALL BE COMPLIANT WITH ENVIROTRAC NO. 1 FILING DATED MAY 18, 2016.



**SILT SACK DETAIL**

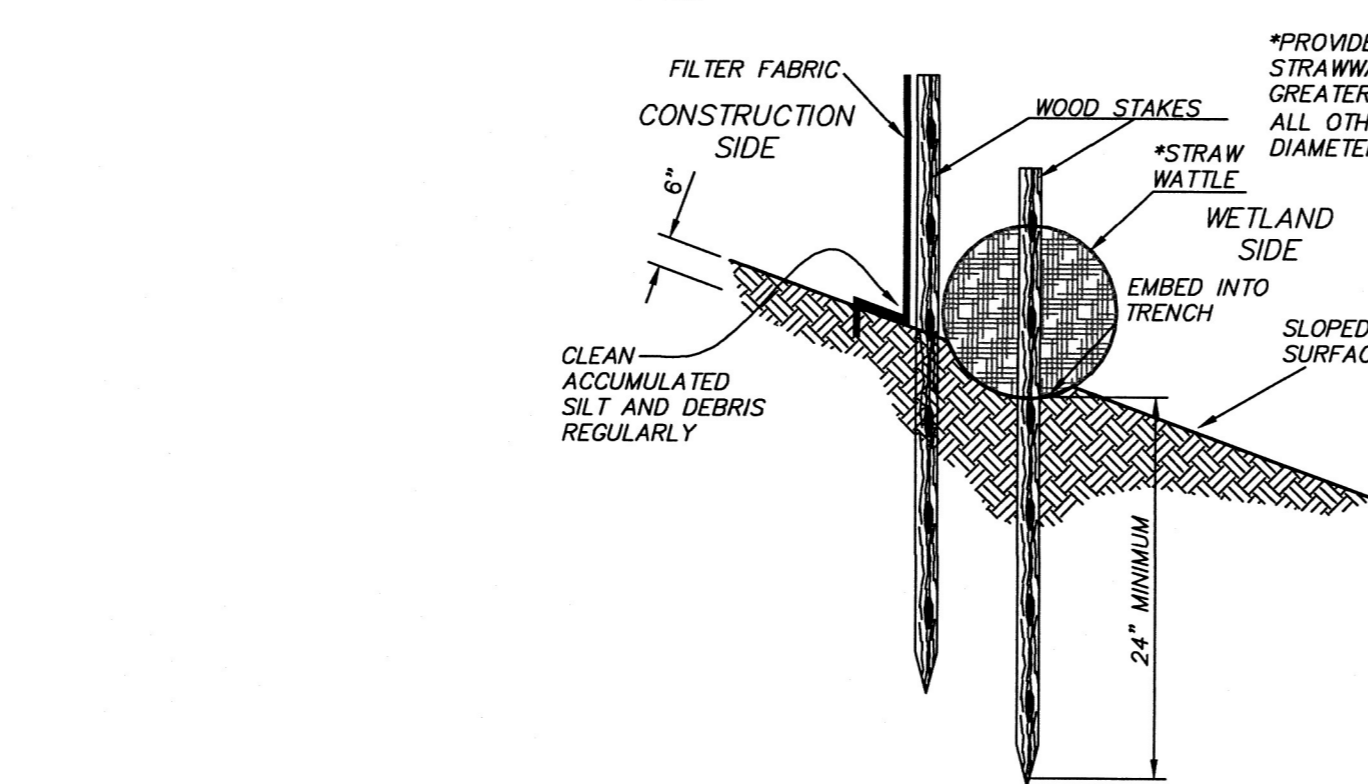
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- NOTE: TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "SILT SACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. (800-448-3636) OR ENGINEER APPROVED EQUAL CLEAN FILTER AS NEEDED.
1. INSTALL HAY BALES FOR TEMPORARY SEDIMENTATION CONTROL.
  2. PERFORM BUILDING AND SITE CONSTRUCTION.
  3. CLEAN OUT CATCH BASINS AND DRAINAGE.
  4. RESTORE ALL DISTURBED AREAS.
  5. LOAM AND SEED ALL DISTURBED AREAS.
  6. REMOVE TEMPORARY EROSION CONTROL AFTER VEGETATION IS ESTABLISHED.



**TEMPORARY ROADWAY SEDIMENT CONTROL**

NO SCALE



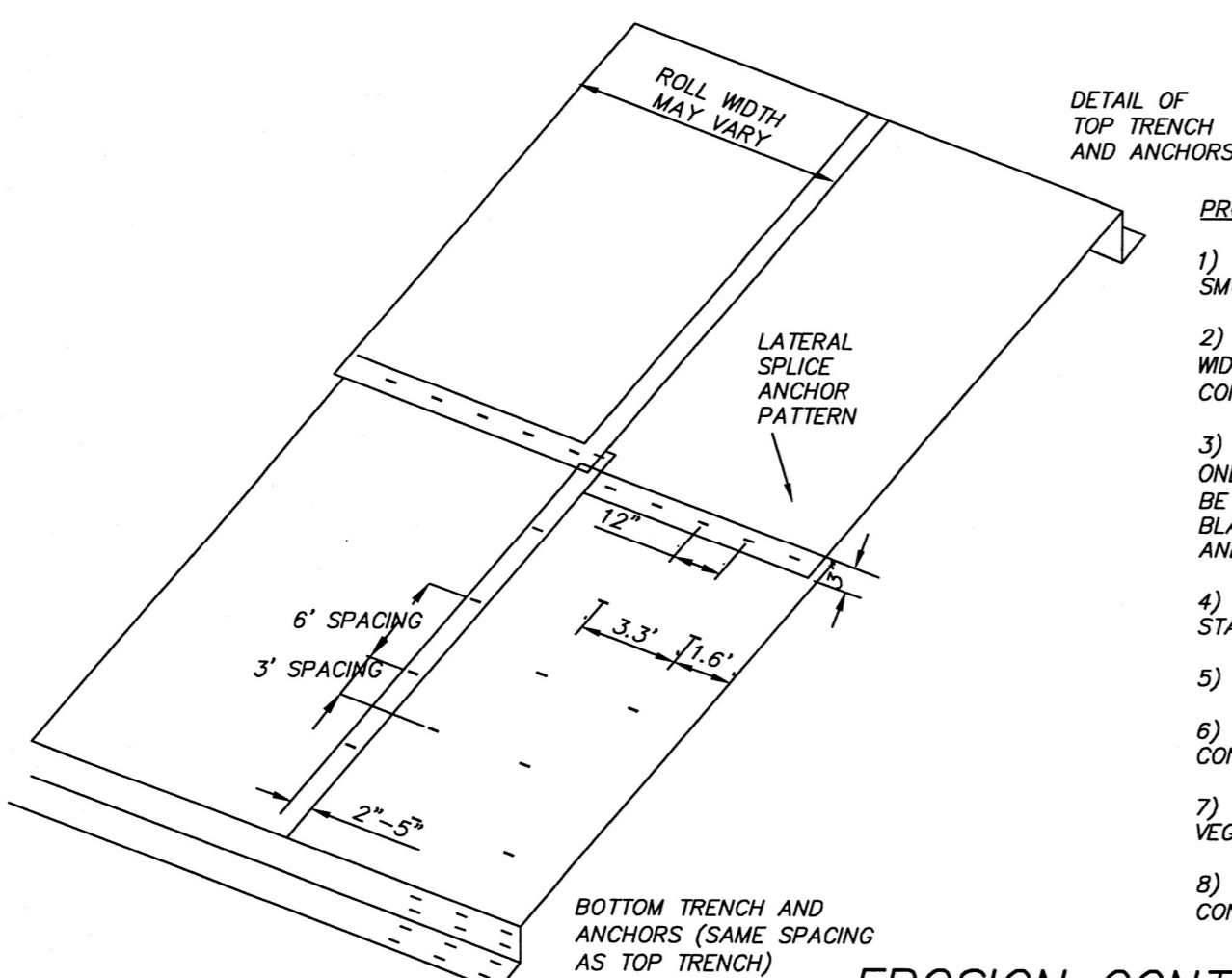
**STRAW WATTLE DETAIL**

NO SCALE

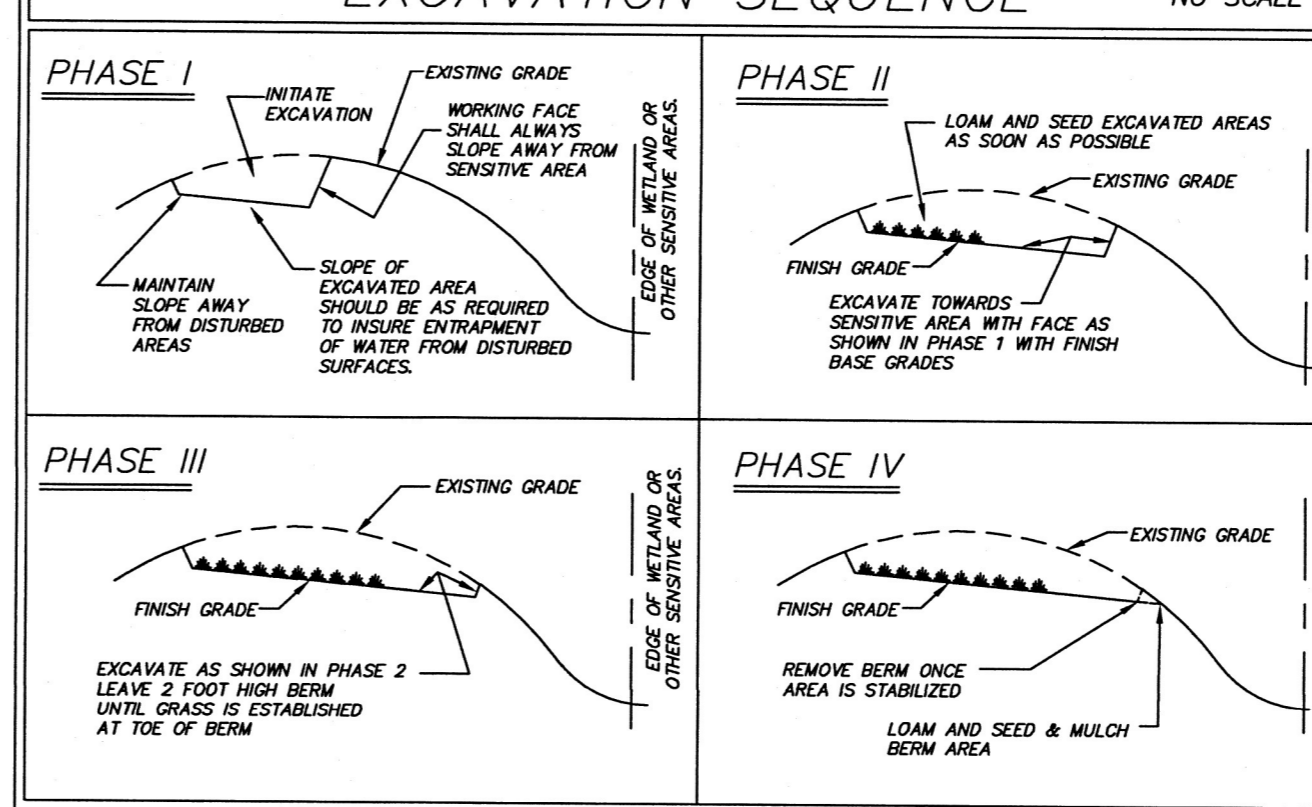
- PROCEDURES FOR INSTALLATION OF EROSION CONTROL BLANKET:
- 1) PREPARE SLOPES WITH FINAL GRADING AND LOAM PLACEMENT. RAKE AND SMOOTH FINAL SURFACE, APPLY APPLICABLE SEED MIX.
  - 2) START AT THE TOP OF SLOPE BY ANCHORING BLANKETS IN A 6" DEEP x 6" WIDE ANCHOR TRENCH. PLACE BLANKETS, STAPLE (8" STAPLES), BACKFILL AND COMPACT WITH FABRIC OVERLAP OF 12".
  - 3) ROLL BLANKETS DOWN THE SLOPE. STAPLE THE OPEN BLANKET EDGE USING ONE ROW OF STAPLES AT 2' INTERVALS. THE INTERIOR OF THE BLANKET SHOULD BE STAPLED USING A 2" WIDE x 3" HIGH STAPLE PATTERN. BE SURE TO LAY BLANKETS LOOSLY ON THE GROUND ALLOWING A GOOD CONTACT BETWEEN SOIL AND BLANKETS.
  - 4) USE AN 6" OVERLAP BETWEEN BLANKET SPICES. USE A SINGLE ROW OF STAPLES TO ANCHOR BLANKETS TOGETHER.
  - 5) PROVIDE 6"x 6" ANCHOR TRENCH AT TOE OF SLOPE.
  - 6) EROSION CONTROL BLANKET TYPE SHALL BE PROPERLY SELECTED FOR SOIL CONDITIONS AND MAXIMUM ALLOWABLE SLOPE.
  - 7) ANY/ALL METALLIC ANCHORS SHALL BE PROMPTLY REMOVED ONCE THE VEGETATIVE COVER HAS BEEN ESTABLISHED.
  - 8) GRASS SEED VARIETY SHALL BE PROPERLY CHOSEN FOR SPECIFIC SITE CONDITIONS (SHADE OR SUN, ETC.)

**EROSION CONTROL BANKET PLACEMENT**

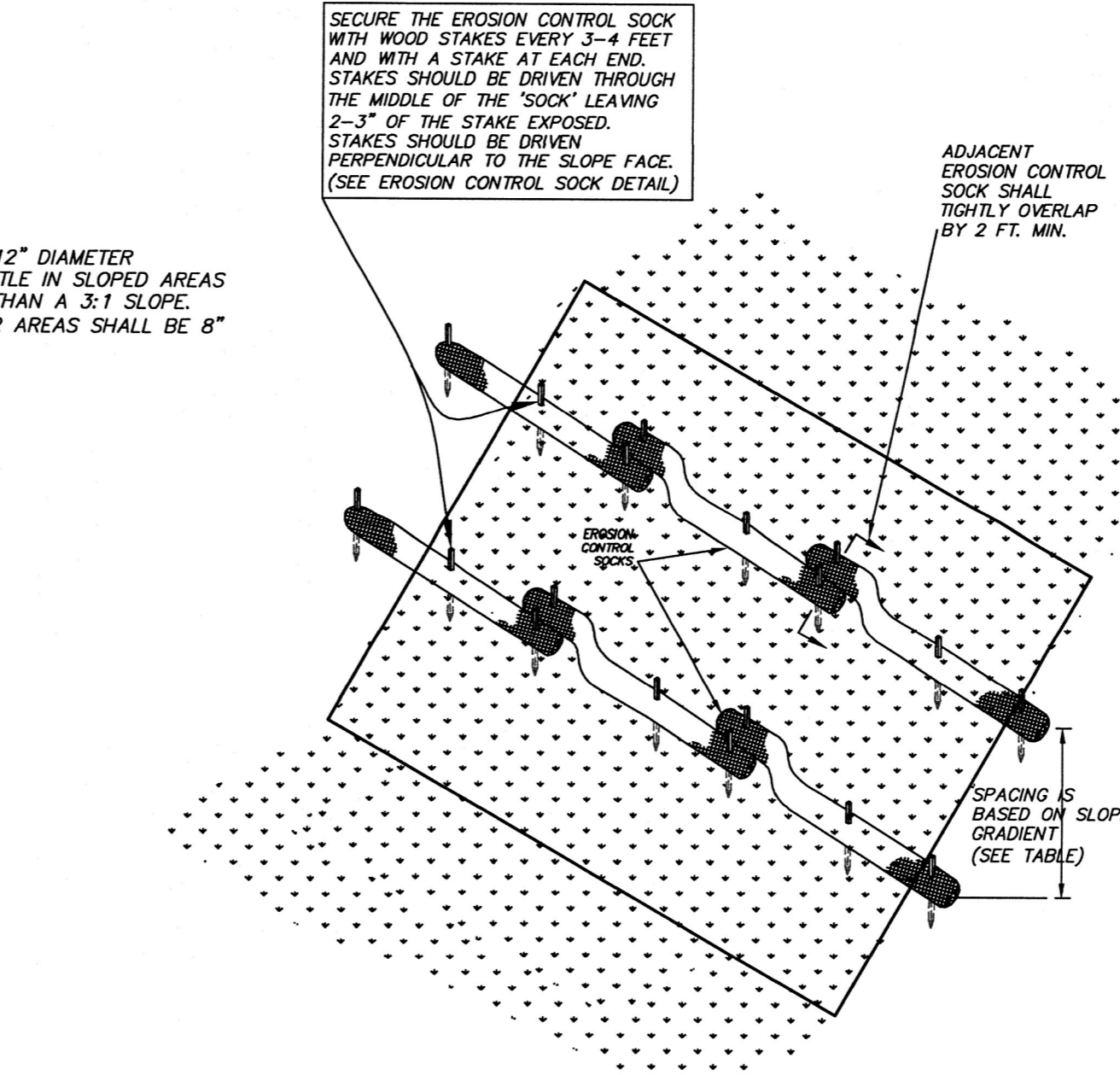
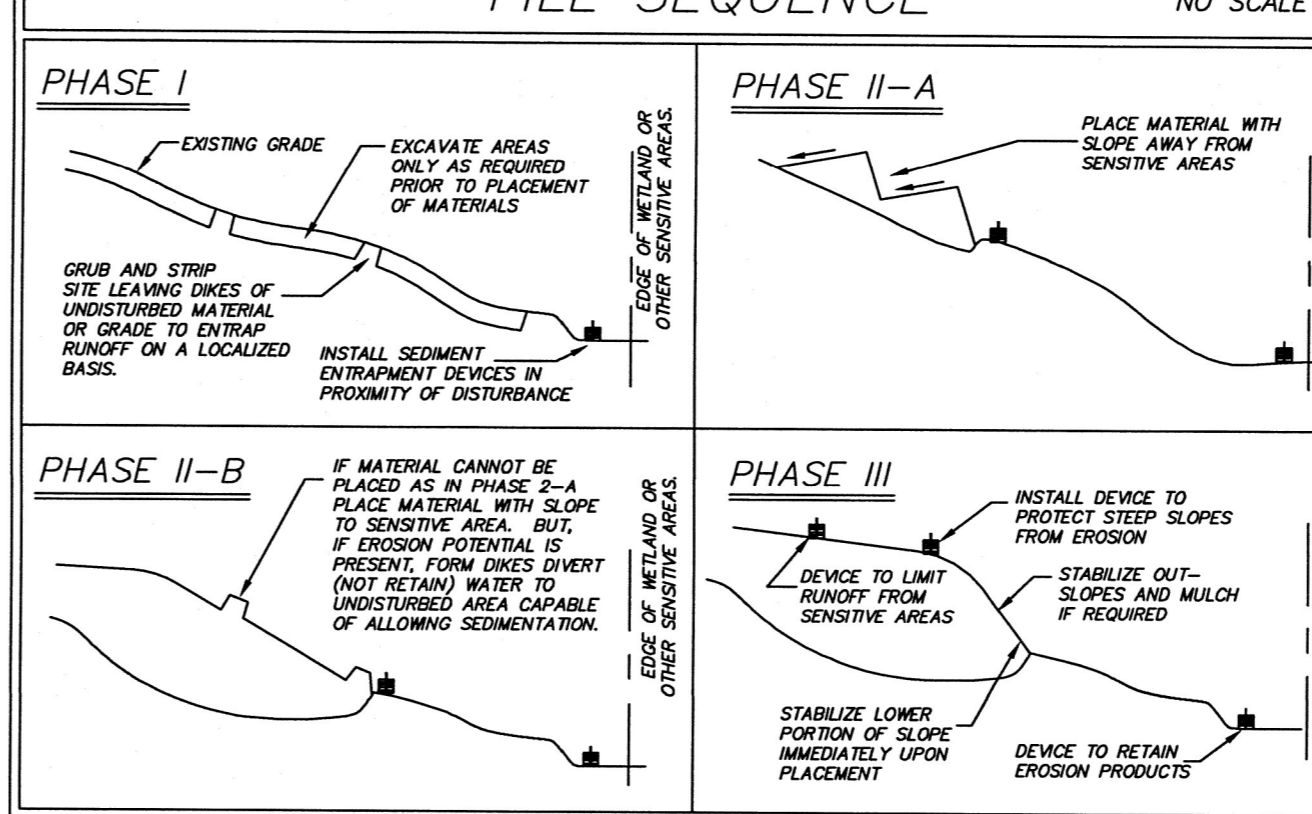
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**EXCAVATION SEQUENCE**



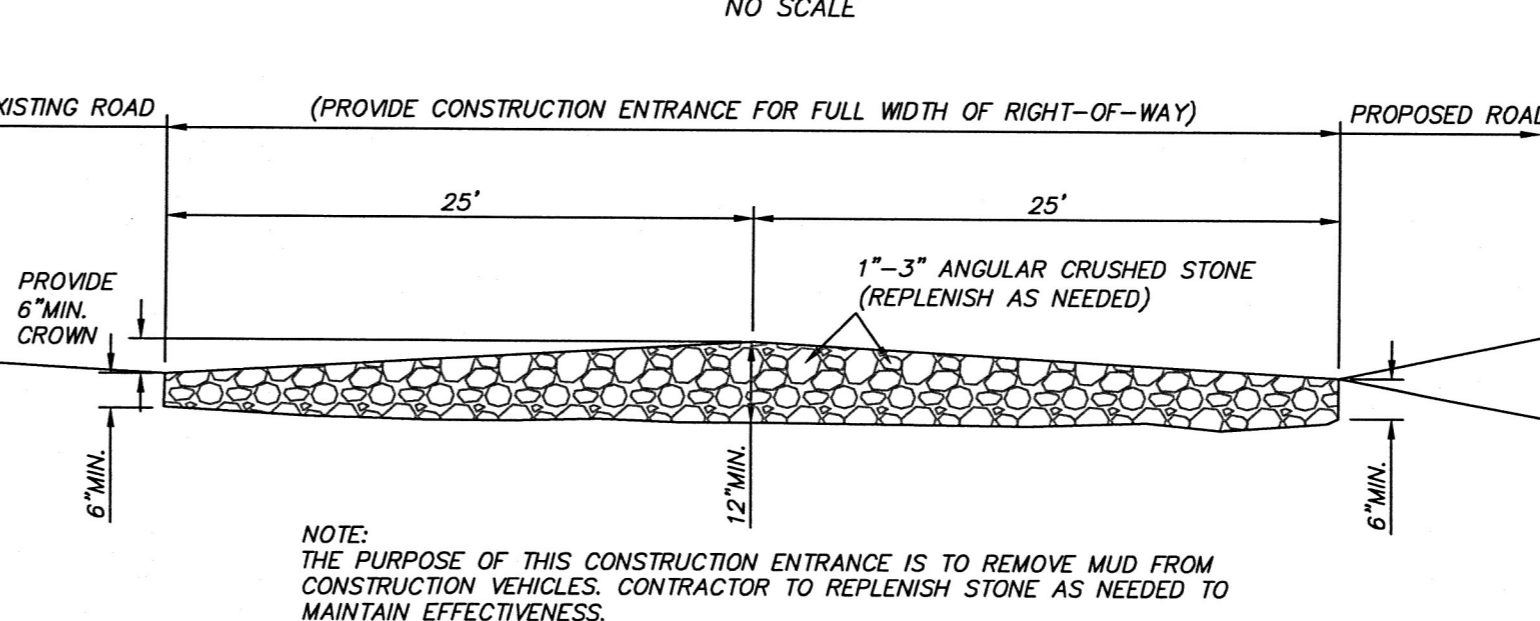
**FILL SEQUENCE**



SLOPE	SPACING
1%	180 FEET
4%	100 FEET
9%	60 FEET
14%	40 FEET
18%	30 FEET
30%	20 FEET

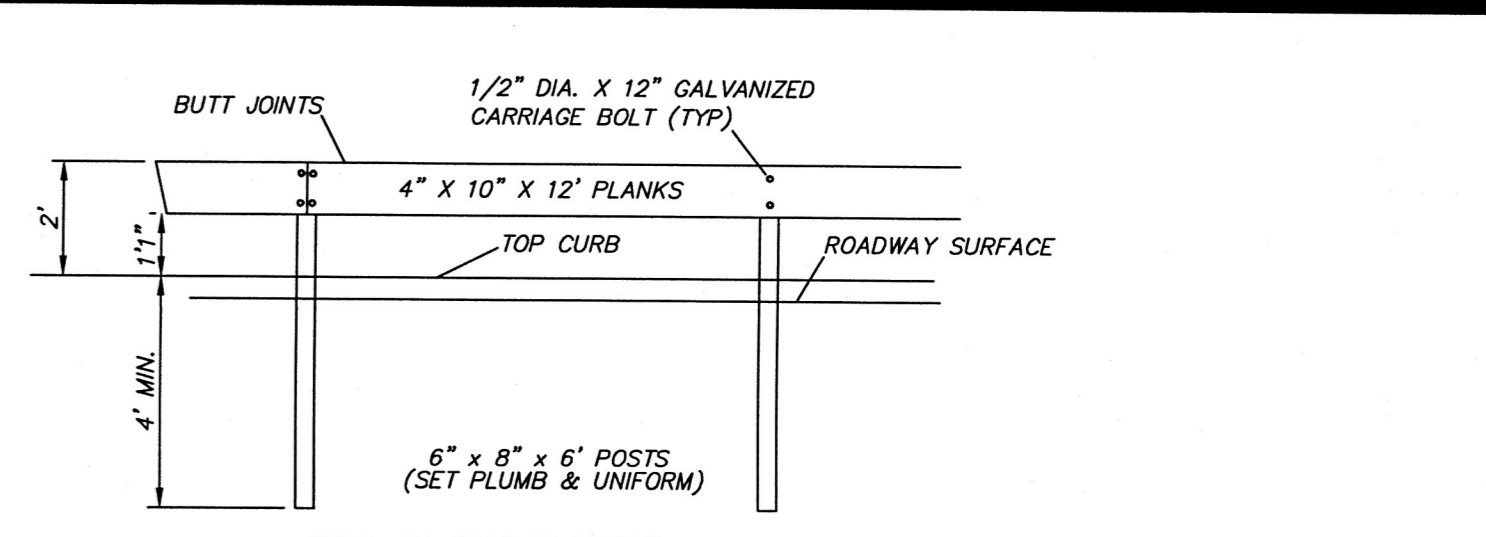
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NO SCALE



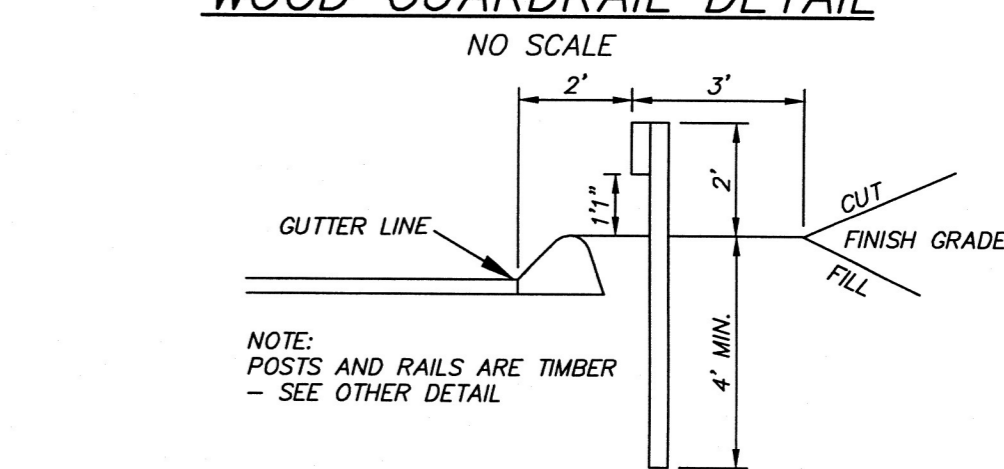
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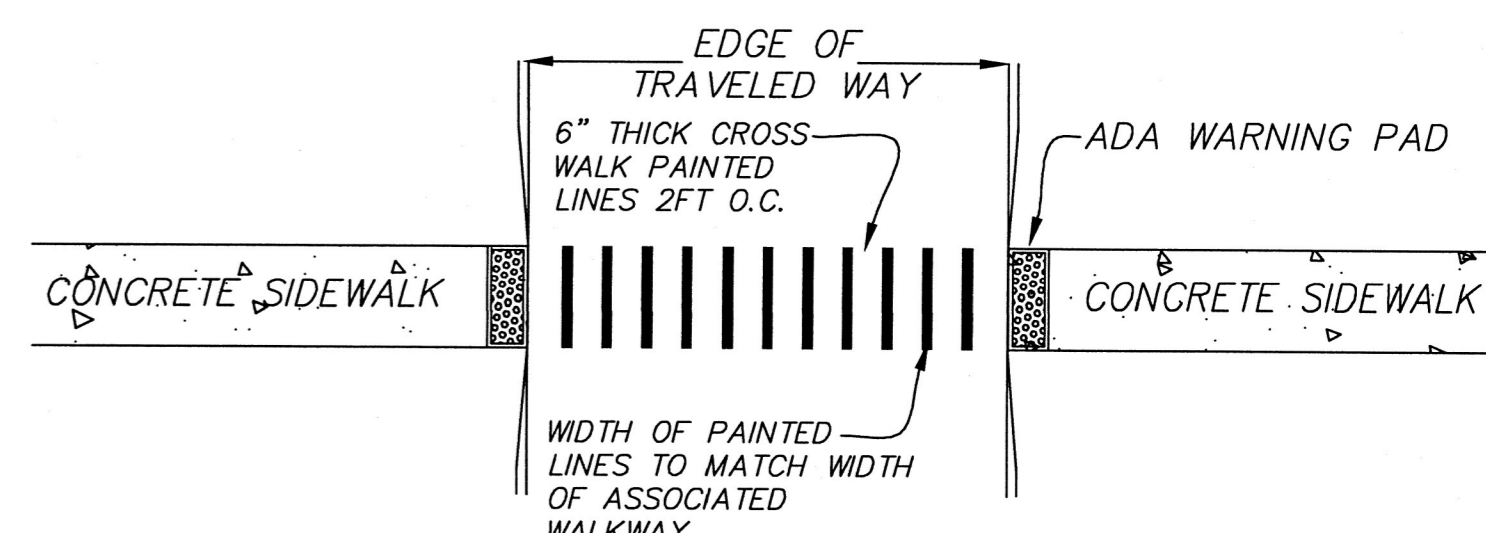
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NO SCALE



**GUARDRAIL LOCATION DETAIL**

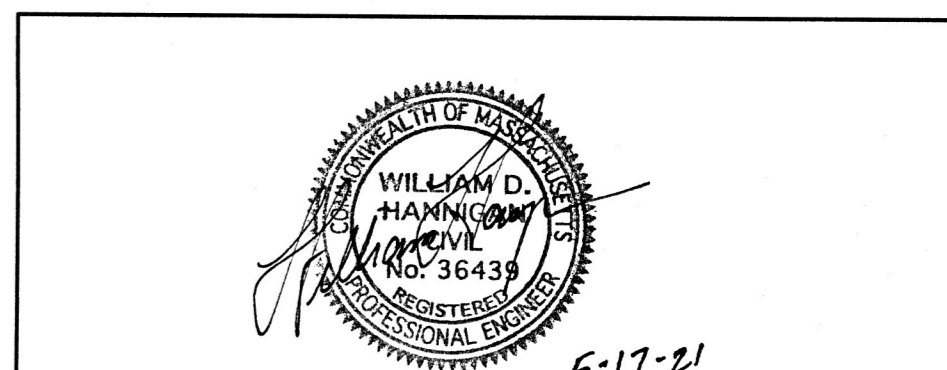
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**PAINTED PEDESTRIAN CROSS WALK**

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(DIMENSIONS VARY - SEE SITE PLAN)



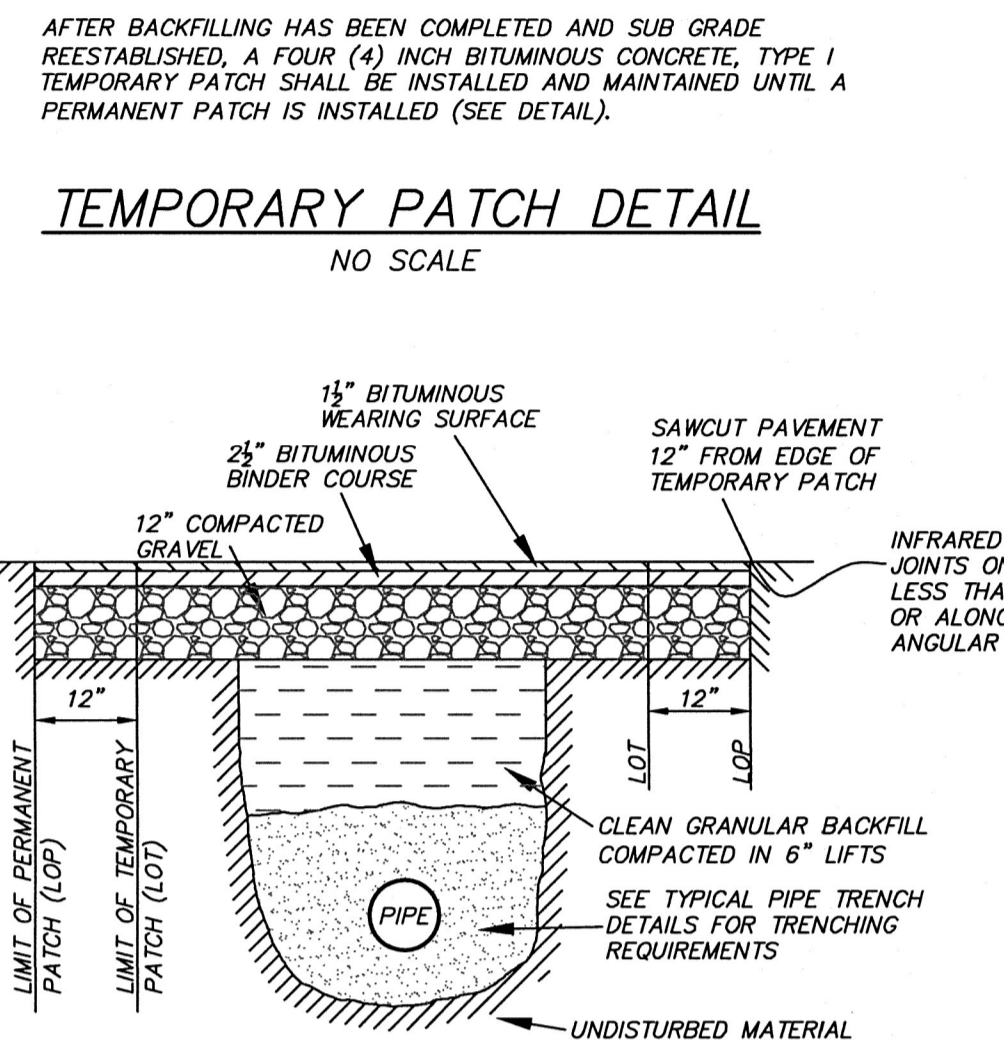
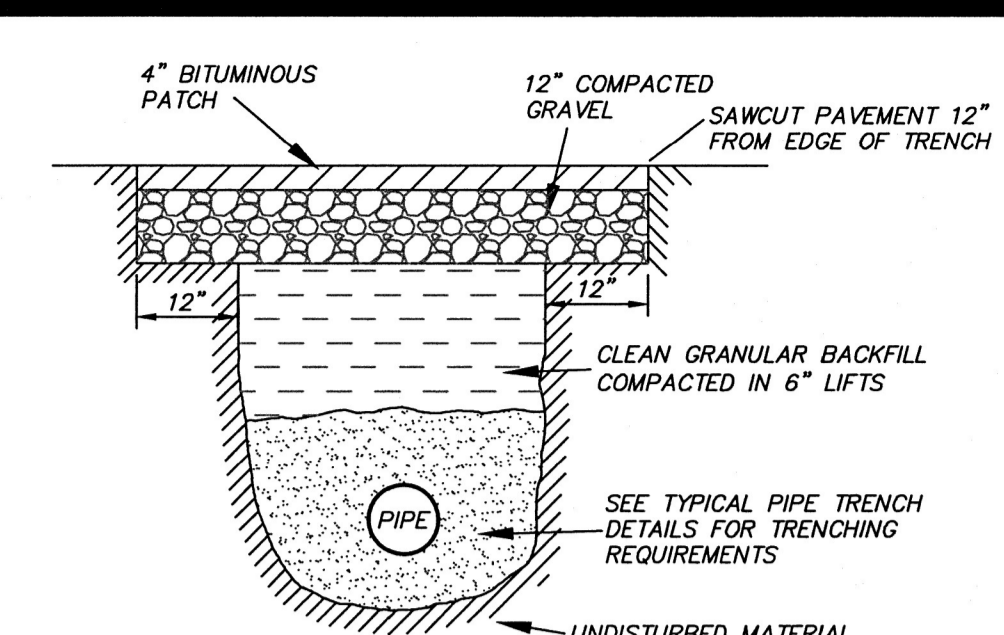
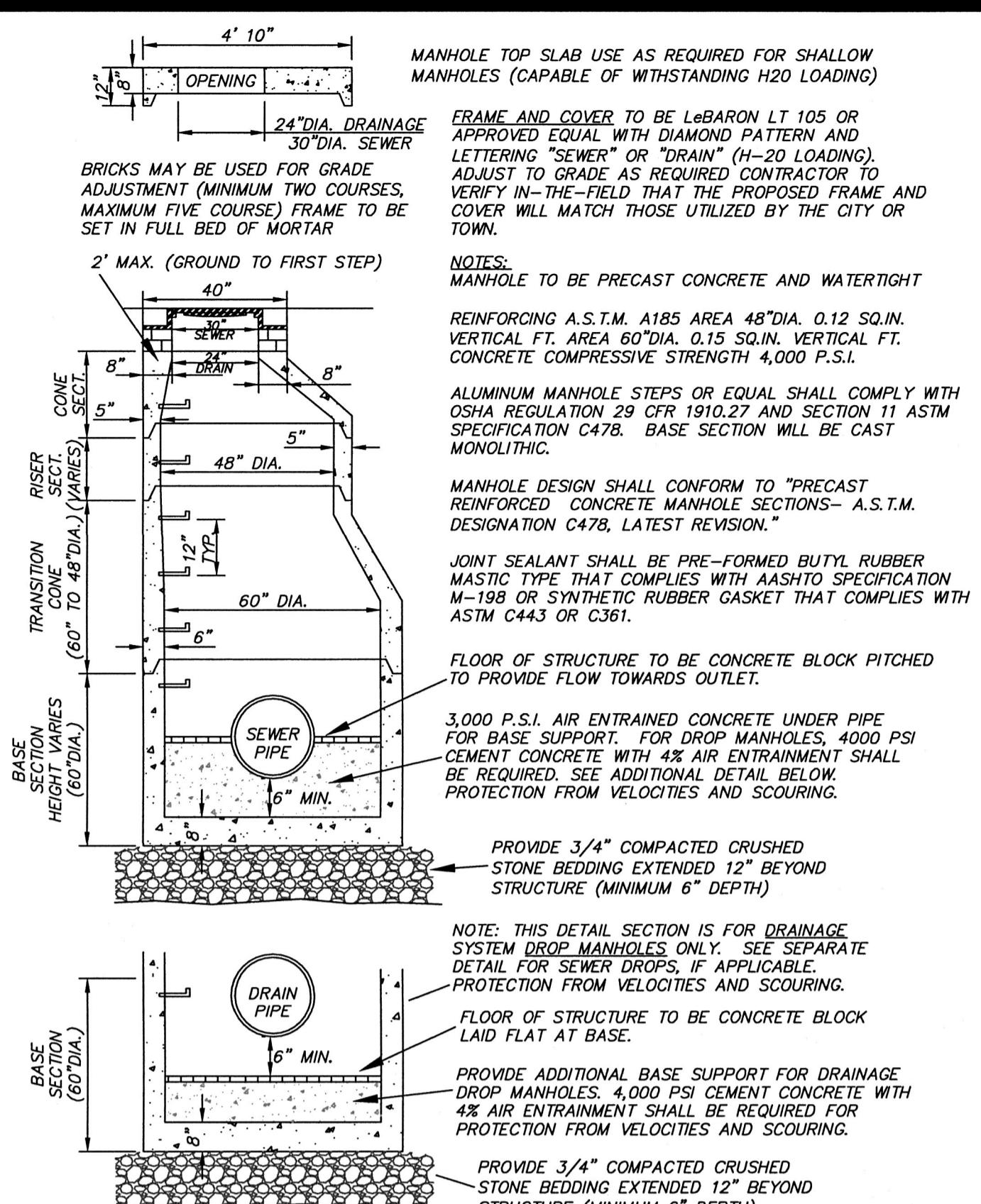
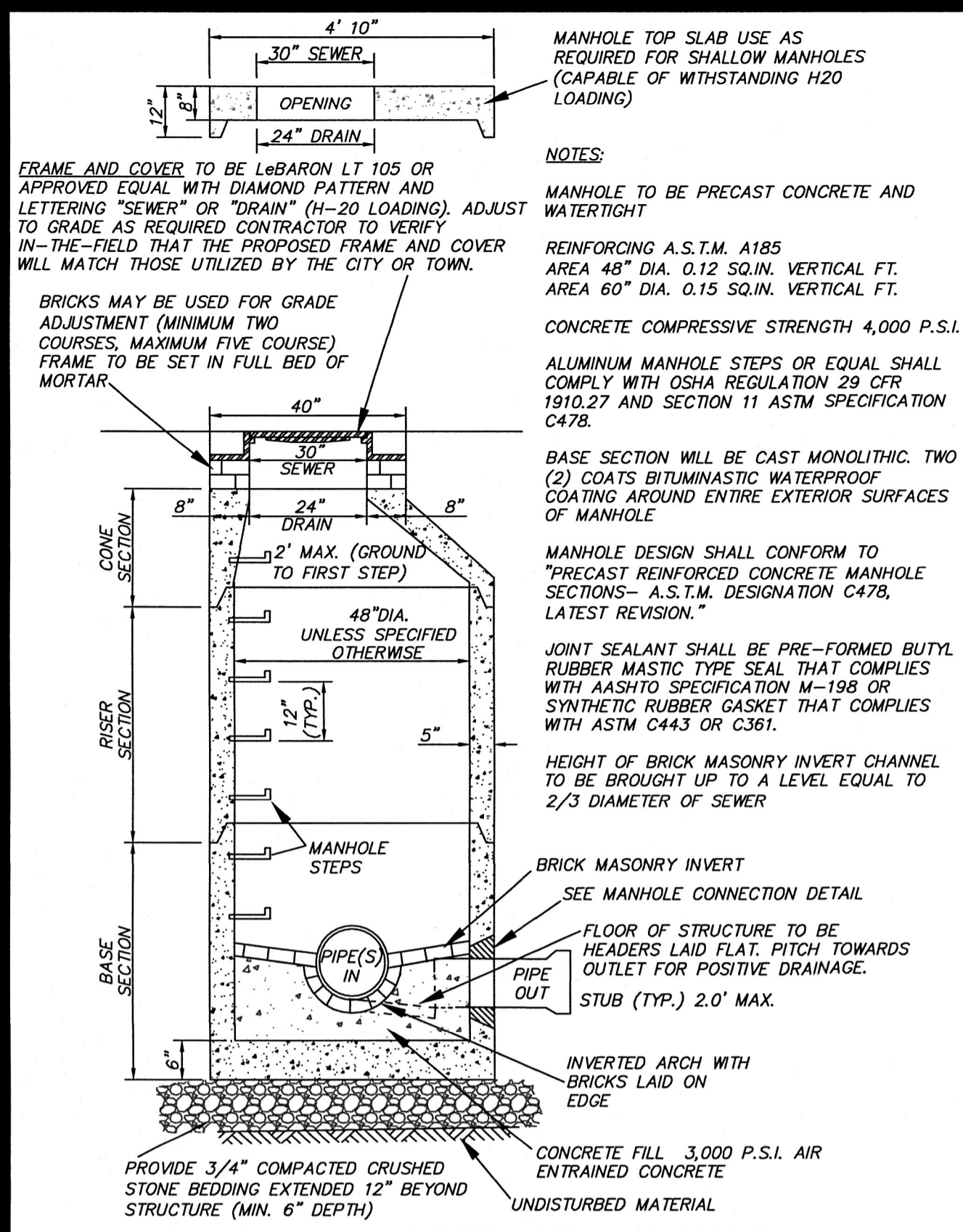
**HANNIGAN ENGINEERING, INC.**  
CIVIL ENGINEERS & LAND SURVEYORS

8 MONUMENT SQUARE (978) 534-1234 (T)  
LEOMINSTER, MASSACHUSETTS 01453 (978) 534-6060 (F)  
WWW.HANNIGANENGINEERING.COM

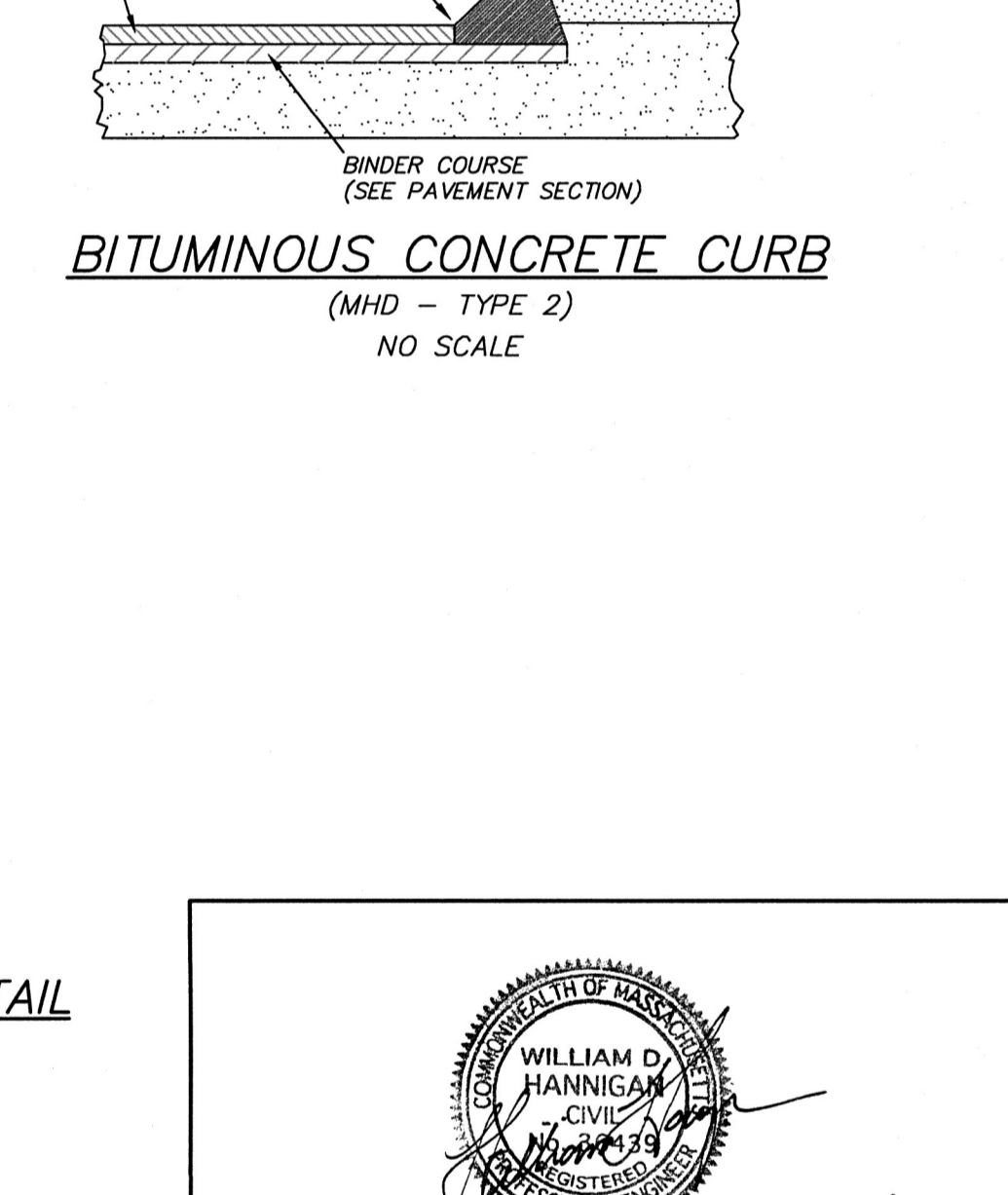
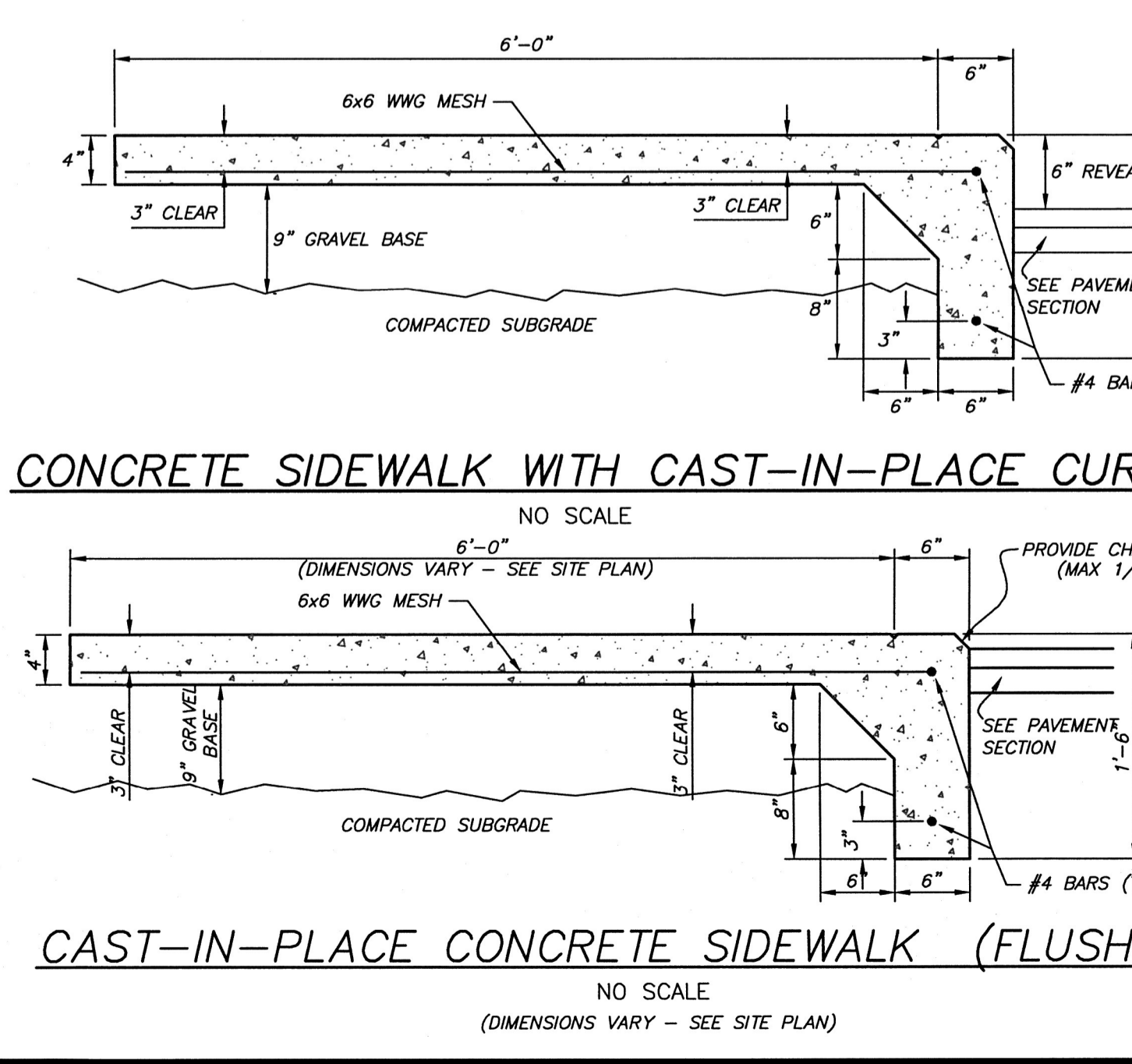
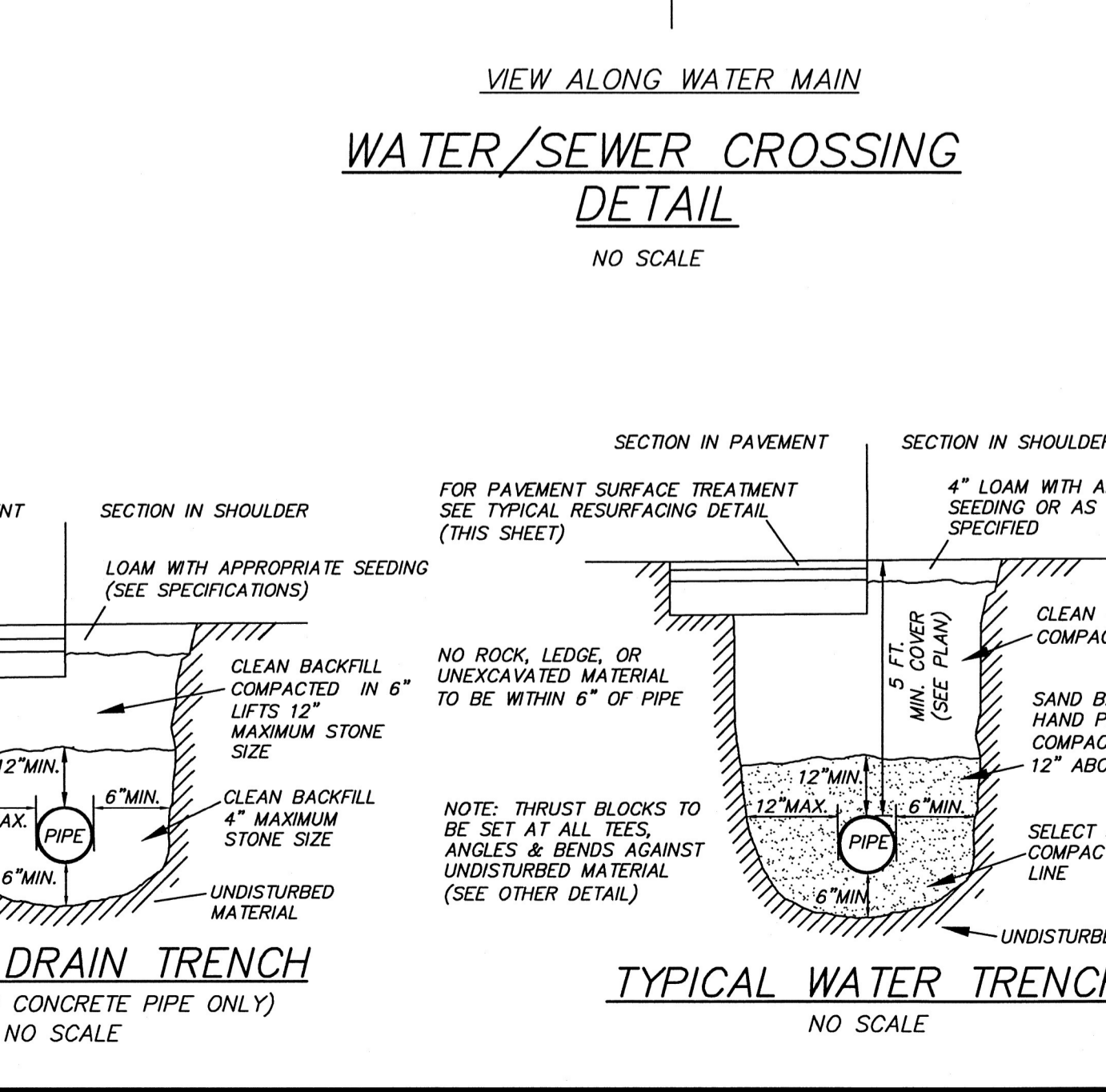
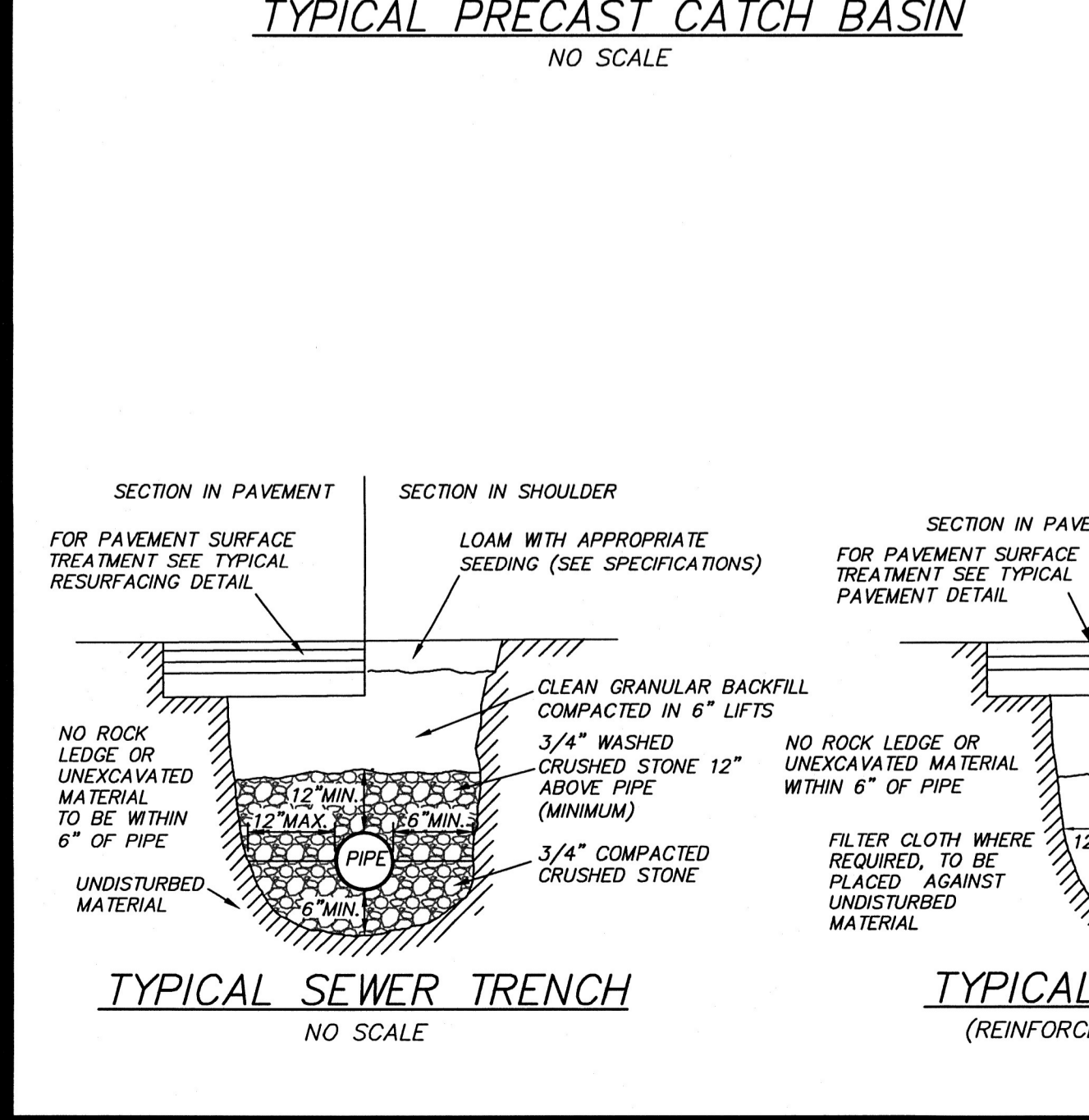
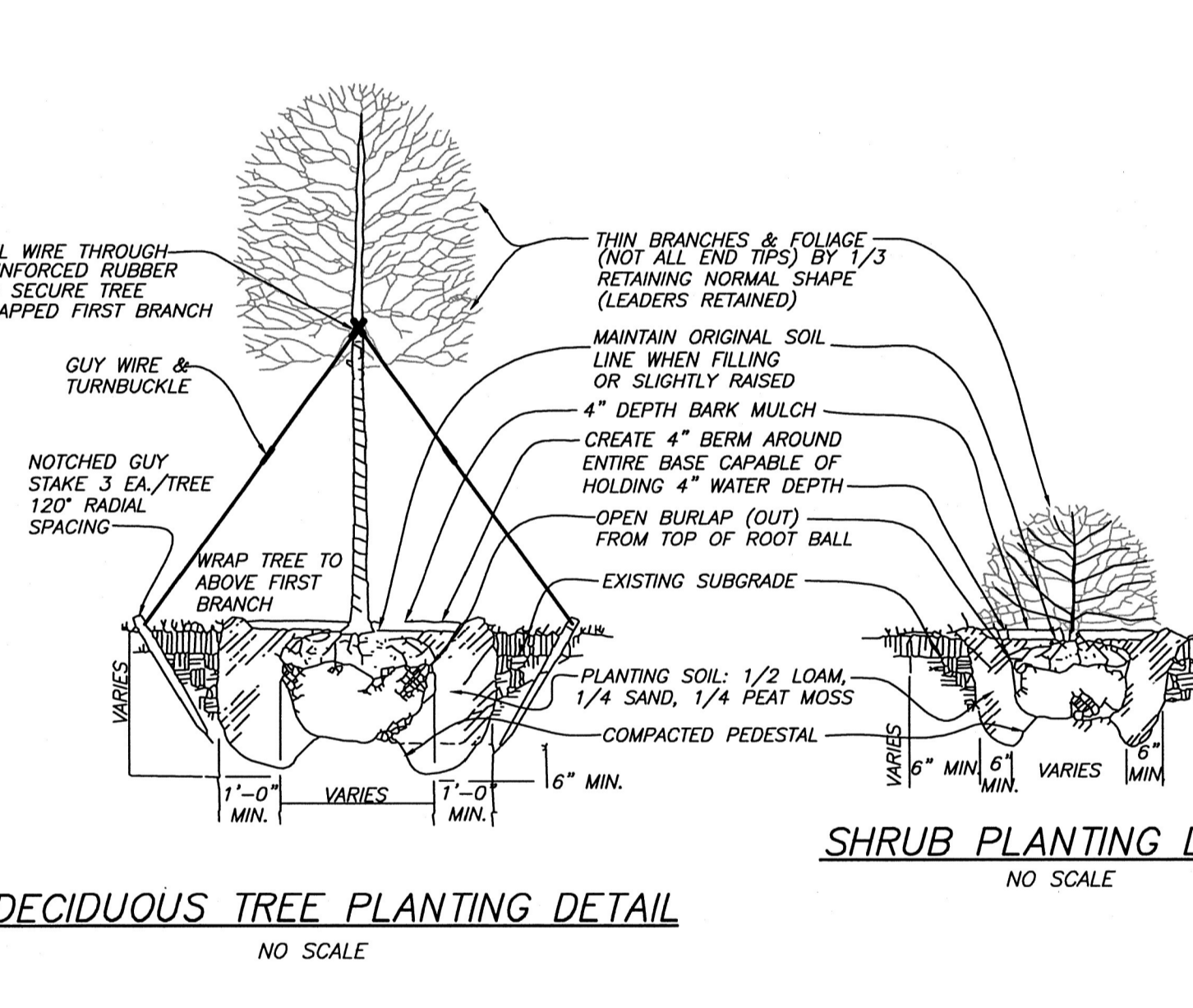
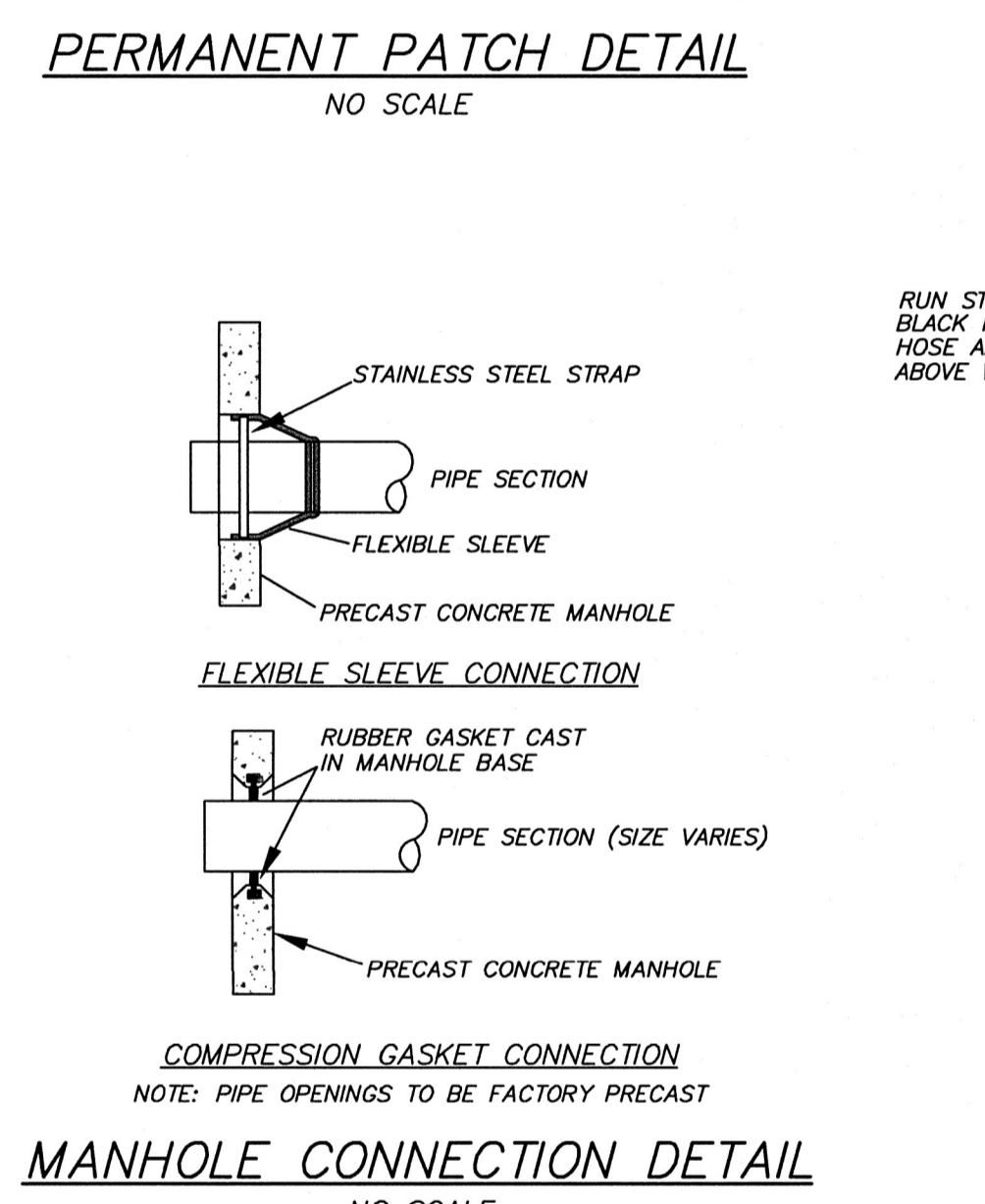
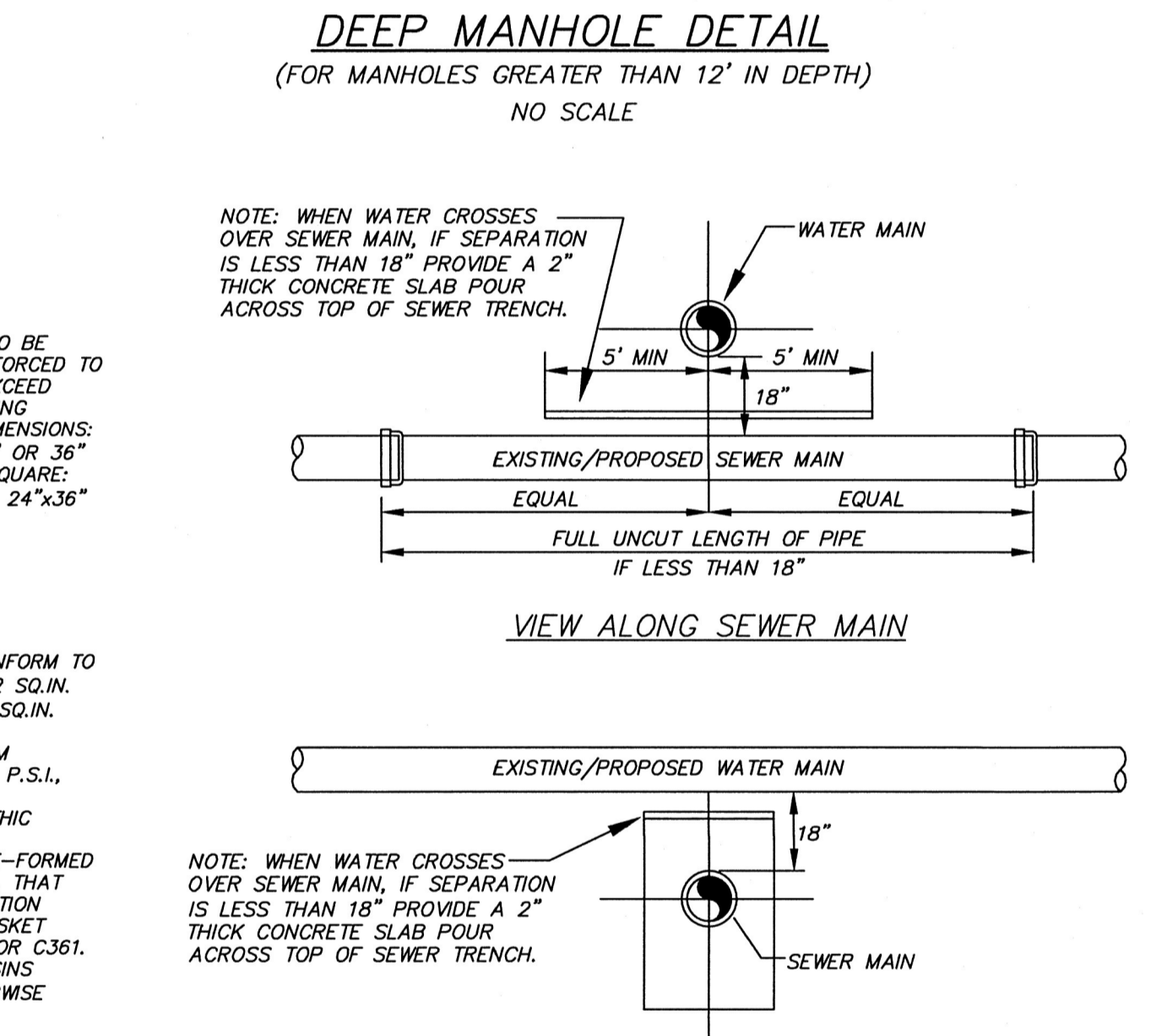
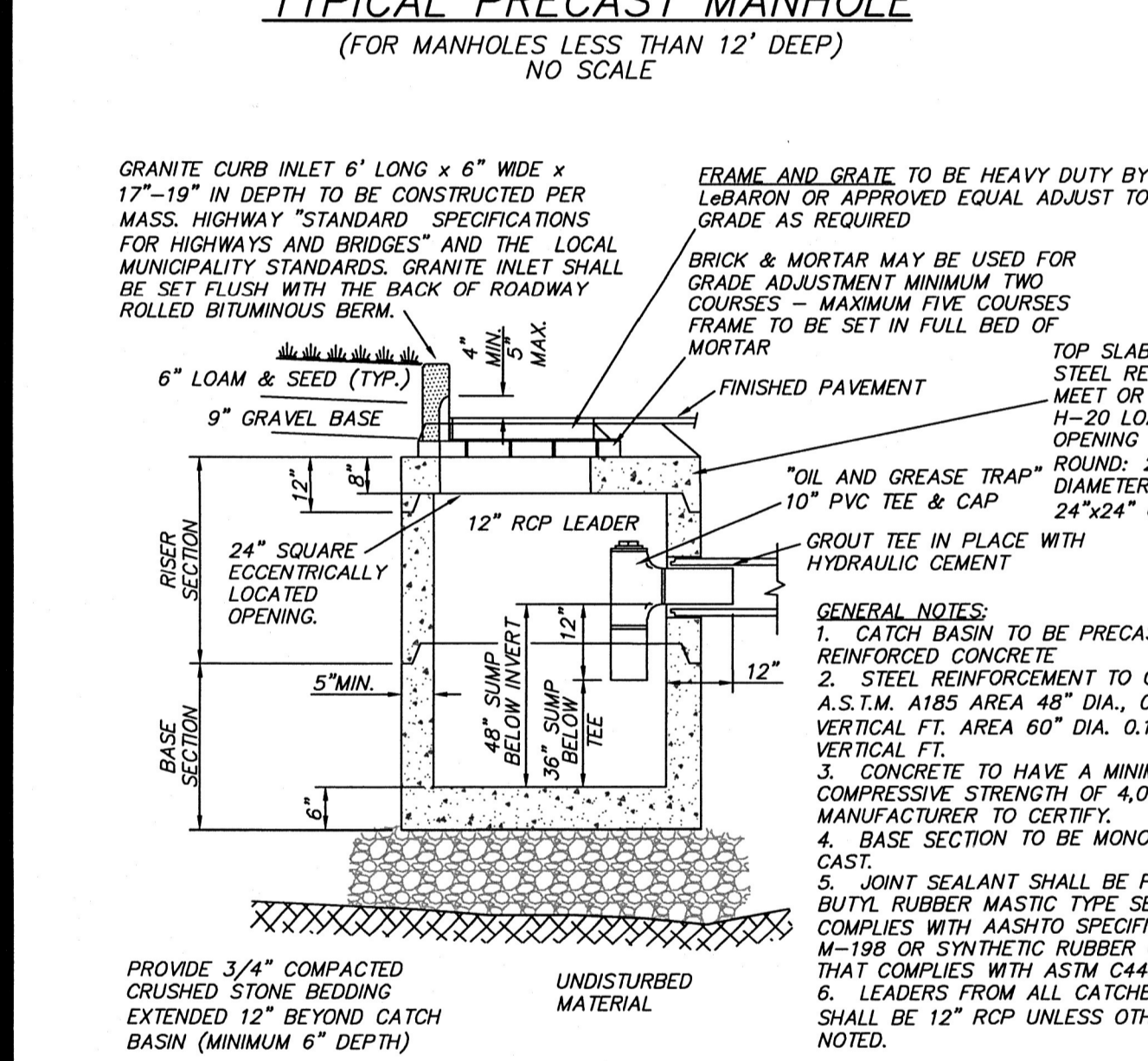
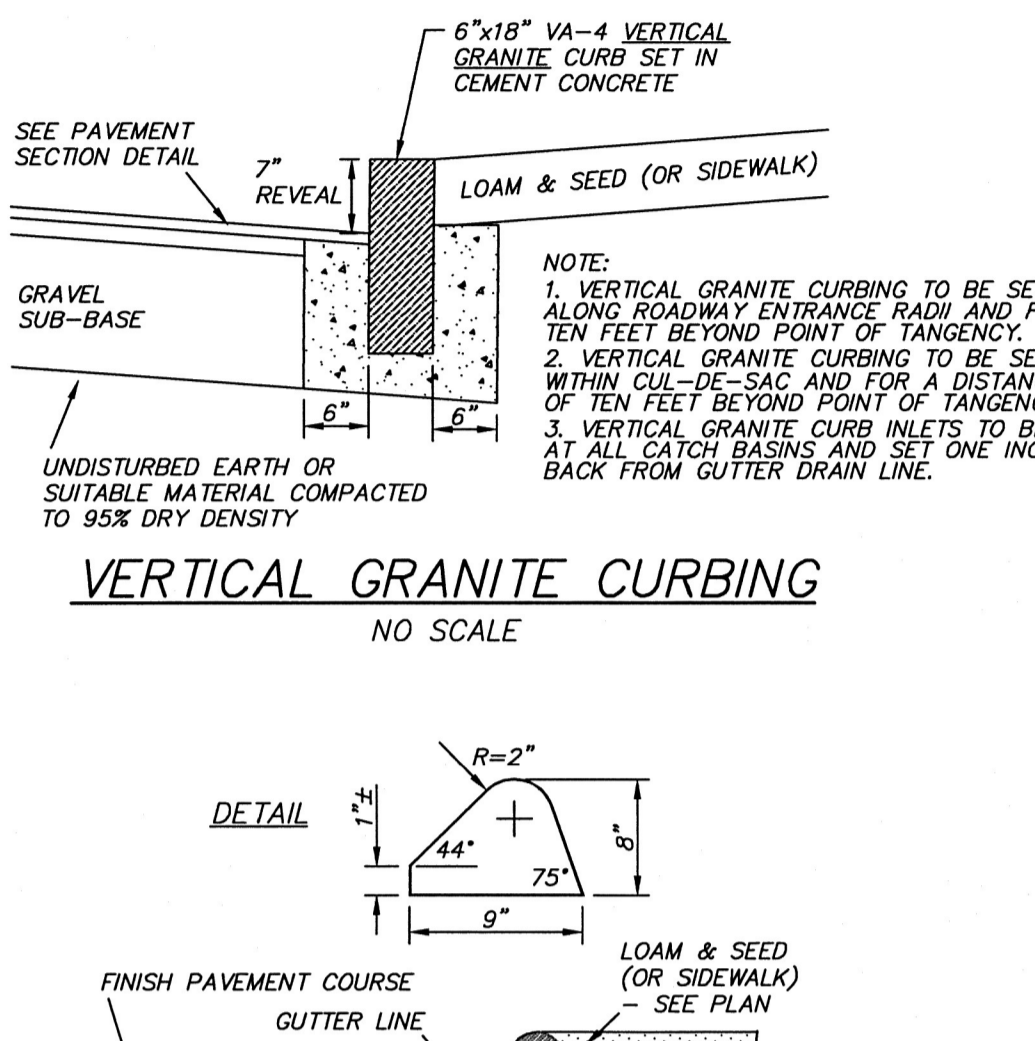
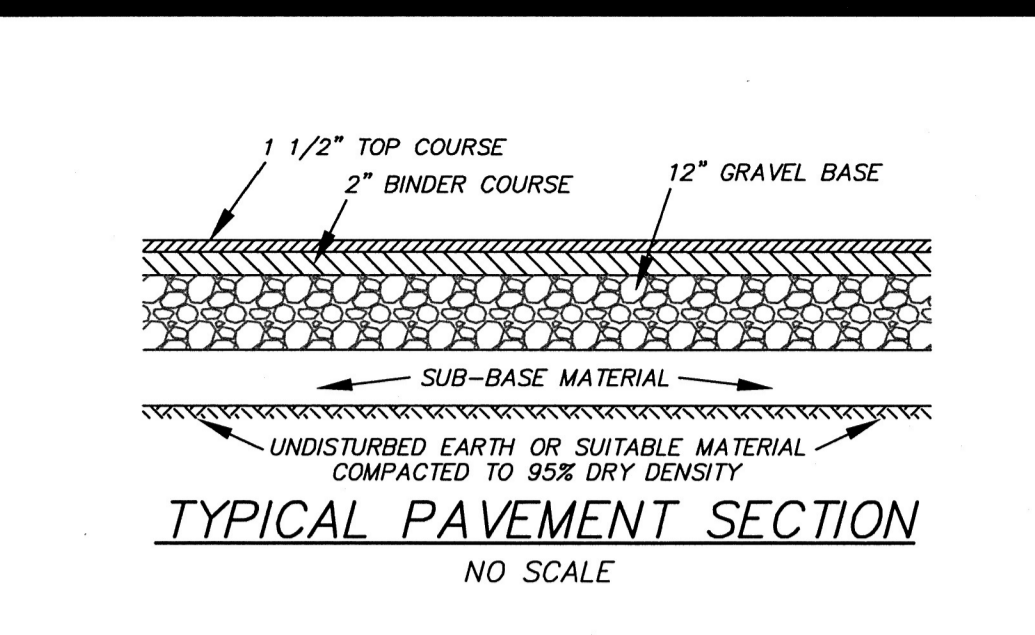
**CONSTRUCTION DETAILS**  
IN  
**GARDNER, MASSACHUSETTS**

PREPARED FOR:  
**WATERSTONE PROPERTIES, INC.**  
NICO RECINE  
117 KENDRICK STREET - SUITE 325  
NEEDHAM, MASSACHUSETTS 02494  
TEL: (781) 675-2063

CALC: CMA	DRWN: CMA/WDH	SCALE: NA
CHKD: WDH	APPD: WDH	DATE: MAY 17, 2021
SRV: JHG	FB: 65-138	JOB NO: 2670
TAB: DET	SHEET 6 OF 11	PLAN NO: C-13-22



- TRENCH PATCHING NOTES:**
- UPON COMPLETION OF THE TRENCH/UTILITY INSTALLATION WORK, AND ONLY AFTER REQUIRED BACKFILLING AND COMPACTION HAS BEEN ACHIEVED, SHALL ROAD PATCHING OPERATIONS BEGIN. IN NO EVENT SHALL OPENINGS BE ALLOWED TO BE LEFT UN-PATCHED FOR MORE THAN FORTY-EIGHT (48) HOURS WITHOUT WRITTEN APPROVAL OF THE DEPARTMENT OF PUBLIC WORKS (DPW).
  - ALL ROAD PATCHES SHALL BE PLACED PERPENDICULAR OR PARALLEL TO TRAFFIC FLOW. ANGULAR PATCHES ACROSS THE ROADWAY SHALL NOT BE PERMITTED WITHOUT DPW APPROVAL. ALL TRENCHES SHALL BE SAW-CUT TO PROVIDE A VERTICAL JOINT FOR PATCHING.
  - HOT PATCH SHALL BE USED AT ALL TIMES EXCEPT WHEN SEASONAL CONDITIONS WARRANT THE USE OF A TEMPORARY COLD PATCH.
  - IF A TEMPORARY PATCH IS USED, THE DPW SHALL BE NOTIFIED AS TO WHEN A PERMANENT PATCH IS TO BE PLACED. THE CONTRACTOR IS RESPONSIBLE UNTIL THE PERMANENT PATCH IS IN PLACE.
  - TEMPORARY PATCHES SHALL BE MAINTAINED BY THE CONTRACTOR THROUGH ONE WINTER-SPRING SEASON. PERMANENT PATCH WILL BE REQUIRED ON ALL TRENCHES AND SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR.
  - PERMANENT PATCHES IN A HEAVILY TRAVELED AREA, AS DETERMINED BY THE DPW, SHALL BE REINFORCED WITH A CONCRETE SLAB NO LESS THAN FIVE (5) INCHES THICK. CONSTRUCTION SHALL COMPLY WITH SECTION 430 OF THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
  - TEMPORARY AND PERMANENT PATCHES SHALL BE NO LESS THAN FOUR (4) INCHES THICK OR THE THICKNESS OF THE EXISTING PAVEMENT, WHICHEVER IS GREATER.
  - TEMPORARY AND PERMANENT PATCHES SHALL BE ROLLED AND COMPACTION TO MATCH THE EXISTING SURFACE IN A GOOD WORKMANLIKE MANNER AND ALL ABUTTING SURFACES SEALED.
  - PERMANENT PATCHES WILL BE MAINTAINED BY THE CONTRACTOR FOR A PERIOD OF NINETY (90) DAYS AT WHICH TIME THE PATCH WILL BE FINALIZED BY THE INFRARED METHOD OF PATCHING. NO INFRARED PATCHING WILL BE REQUIRED ON ANY PAVEMENT THAT IS FIVE (5) YEARS OLD OR GREATER.
  - ALL MATERIALS AND CONSTRUCTION METHODS MUST MEET THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
  - THE REPAINTING OF TRAFFIC LINES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE TOWN SHALL BE NOTIFIED PRIOR TO THE PAINTING OF ANY NEW TRAFFIC MARKINGS.
  - THE CONTRACTOR SHOULD EXERCISE EXTREME CARE TO PREVENT THE DAMAGE TO MAJOR ROOT SYSTEMS OF TREES.
  - WHERE MANHOLES ARE TO BE PLACED IN THE HARDENED SURFACE, ALL MANHOLE COVERS SHALL BE SET IN CONCRETE COLLARS TO WITHIN FOUR (4) INCHES OF THE EXISTING SURFACE. A PATCH OF CLASS I BITUMINOUS PAVEMENT TYPE I SHALL BE PLACED OVER THE CONCRETE COLLAR TO A LEVEL WITH THE PAVEMENT GRADE WHEN SATISFACTORILY COMPACTIONED.
  - WITH THE EXCEPTION OF EMERGENCY WORK, NO EXCAVATION SHALL BE PERMITTED FROM DECEMBER 1 TO APRIL 1. WORK WITHIN THIS PERIOD MAY BE ALLOWED AT THE DISCRETION OF THE TOWN.



WILLIAM D. HANNIGAN  
 CIVIL ENGINEER  
 REGISTERED PROFESSIONAL ENGINEER  
 5-17-24

**HANNIGAN ENGINEERING, INC.**  
 CIVIL ENGINEERS & LAND SURVEYORS

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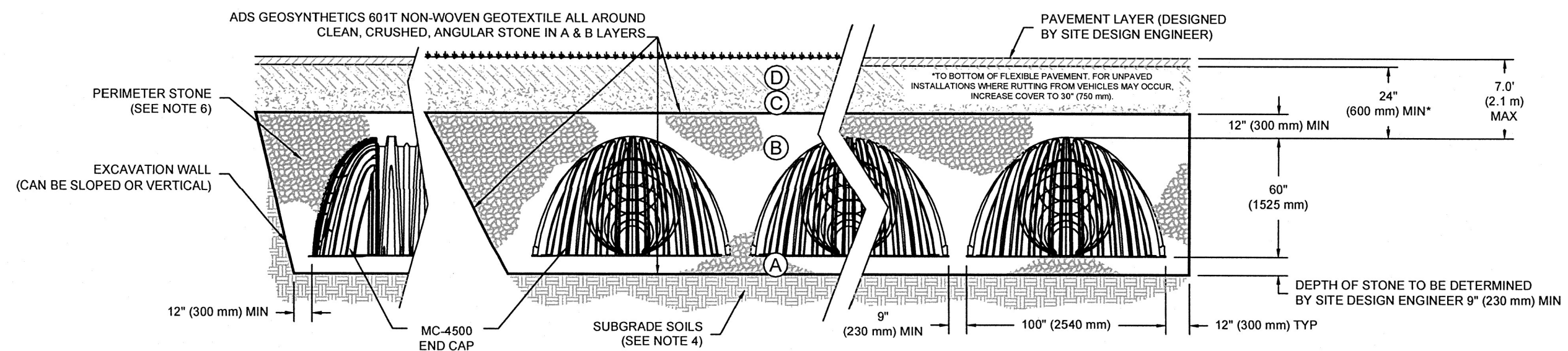
**CONSTRUCTION DETAILS**  
 IN  
**GARDNER, MASSACHUSETTS**

PREPARED FOR:  
 WATERSTONE PROPERTIES, INC.  
 NICO RECINE  
 117 KENDRICK STREET - SUITE 325  
 NEEDHAM, MASSACHUSETTS 02494  
 TEL: (781) 675-2063

CALC: CMA	DRWN: CMA/WDH	SCALE: NA
CHKD: WDH	APPD: WDH	DATE: MAY 17, 2021
SRV: JHG	FB: 65-138	JOB NO: 2670
TAB: DET	SHEET 7 OF 11	PLAN NO: C-13-22

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3 OR AASHTO M43 <sup>2</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 <sup>3</sup> 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 <sup>3</sup> 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>1, 2</sup>

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
  - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

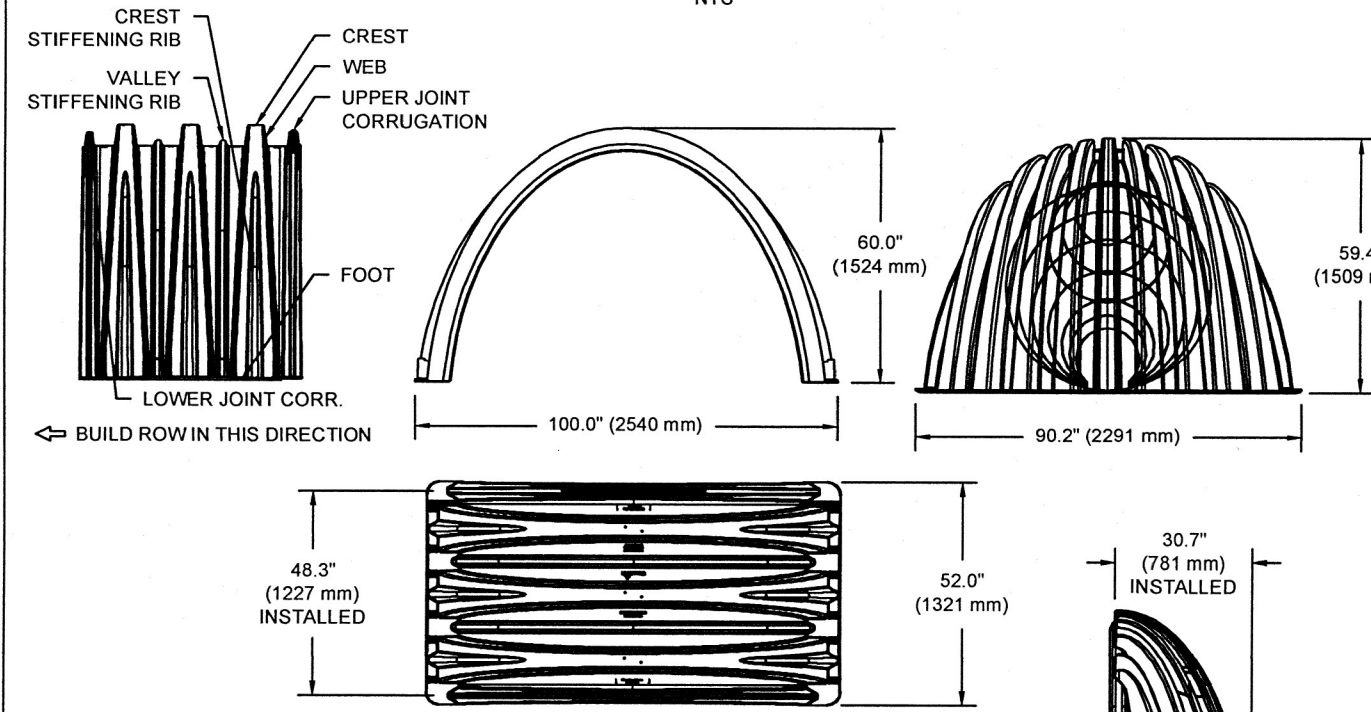


\*FOR COVER DEPTHS GREATER THAN 7.0' (2.1 m) PLEASE CONTACT STORMTECH

**NOTES:**

- MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

**MC-4500 TECHNICAL SPECIFICATION**



**NOMINAL CHAMBER SPECIFICATIONS**

SIZE (W X H X INSTALLED LENGTH)	CHAMBER STORAGE	MINIMUM INSTALLED STORAGE <sup>1</sup>	WEIGHT
100.0" X 60.0" X 48.3" (2540 mm X 1524 mm X 1227 mm)	108.5 CUBIC FEET (3.01 m <sup>3</sup> )	162.6 CUBIC FEET (4.60 m <sup>3</sup> )	130.0 lbs. (59.0 kg)

**NOMINAL END CAP SPECIFICATIONS**

SIZE (W X H X INSTALLED LENGTH)	END CAP STORAGE	MINIMUM INSTALLED STORAGE <sup>1</sup>	WEIGHT
90.2" X 59.4" X 30.7" (2291 mm X 1509 mm X 781 mm)	35.7 CUBIC FEET (1.01 m <sup>3</sup> )	108.7 CUBIC FEET (3.08 m <sup>3</sup> )	135.0 lbs. (61.2 kg)

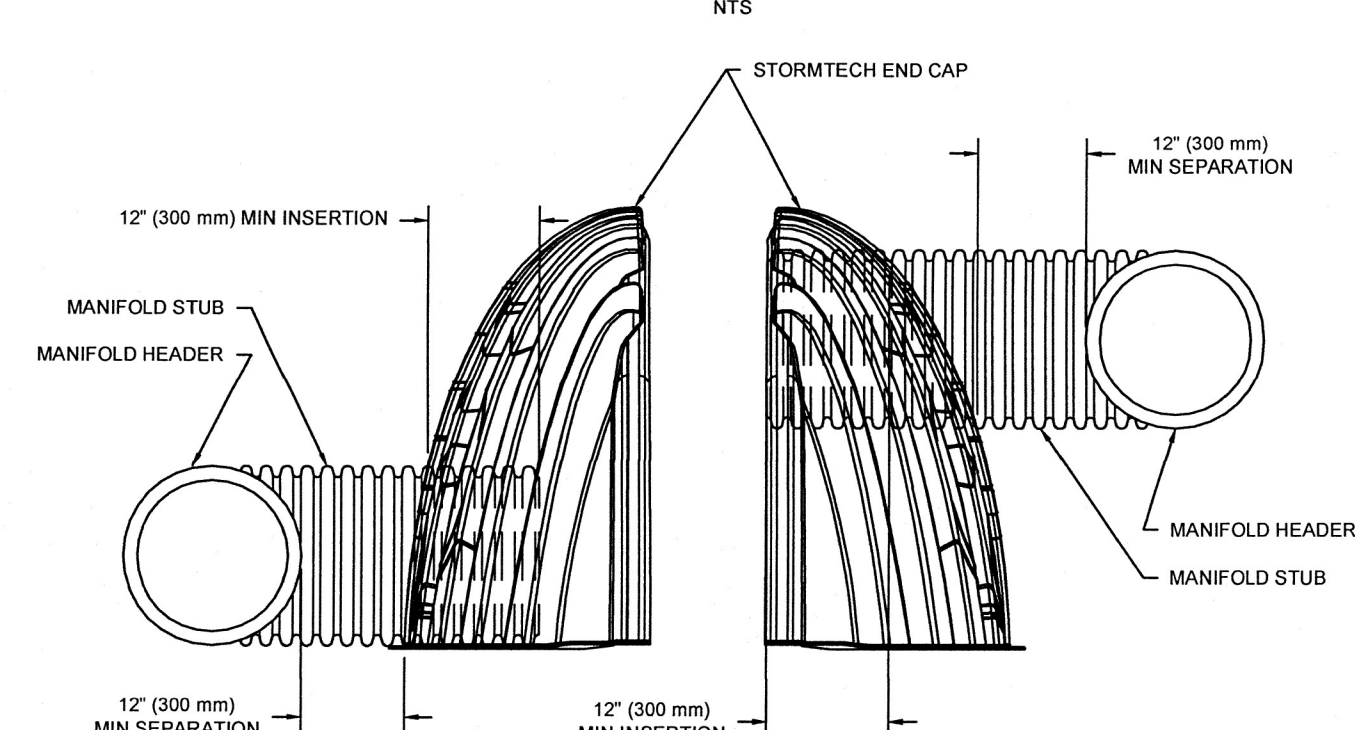
<sup>1</sup>ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"  
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"  
END CAPS WITH A WELDED CROWN PLATE END WITH "C"  
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

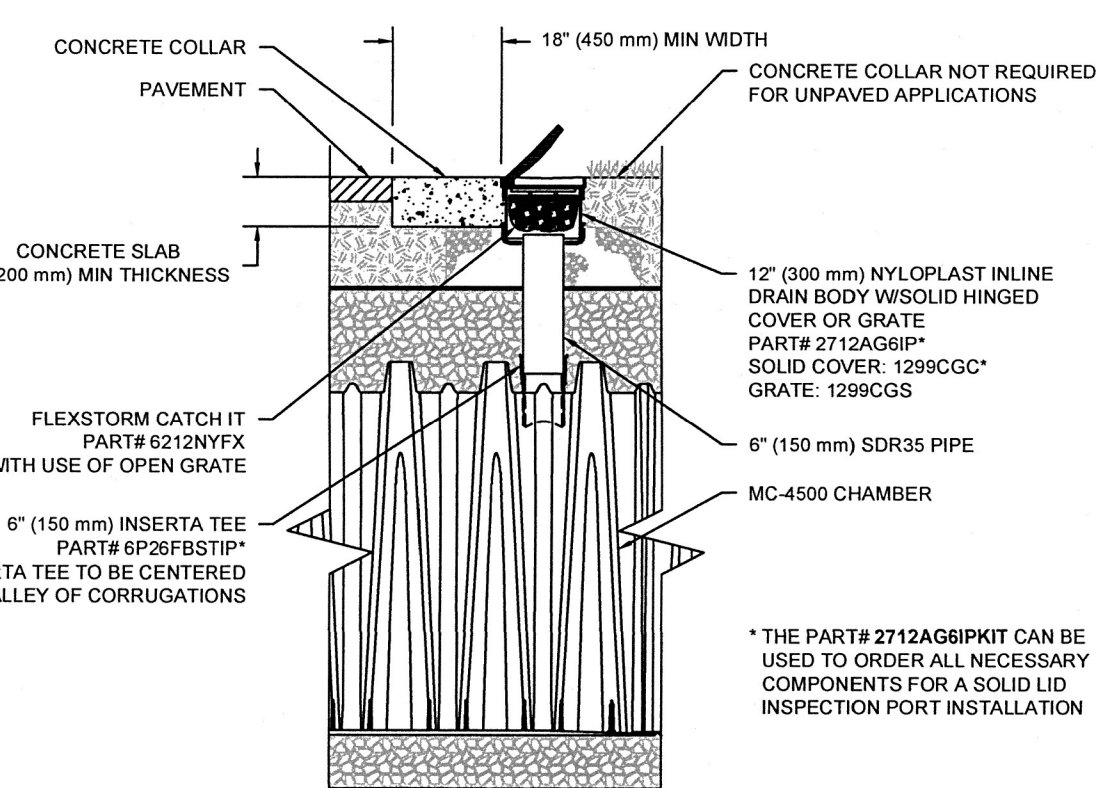
PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1081 mm)	---
MC4500REPE06B	---	---	0.86" (22 mm)
MC4500REPE06T	8" (200 mm)	40.50" (1029 mm)	---
MC4500REPE06B	---	---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B	---	---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B	---	---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B	---	---	1.70" (43 mm)
MC4500REPE18TC	---	29.36" (746 mm)	---
MC4500REPE18TW	18" (450 mm)	---	---
MC4500REPE18BC	---	---	1.97" (50 mm)
MC4500REPE18BW	---	---	---
MC4500REPE24TC	---	23.05" (585 mm)	---
MC4500REPE24TW	24" (600 mm)	---	---
MC4500REPE24BC	---	---	2.26" (57 mm)
MC4500REPE24BW	---	---	---
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

**MC-SERIES END CAP INSERTION DETAIL**



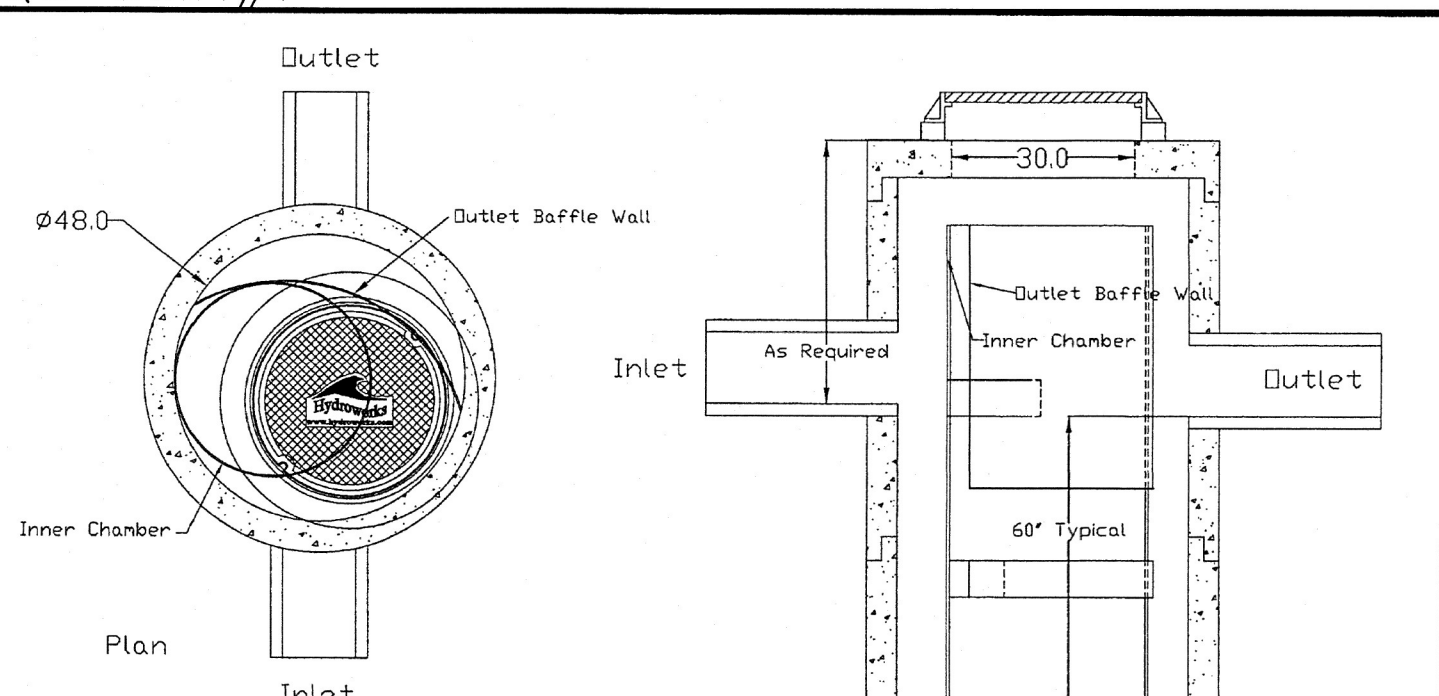
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.



**MC-4500 6" INSPECTION PORT DETAIL**

NTS

**WQU DMH#1**



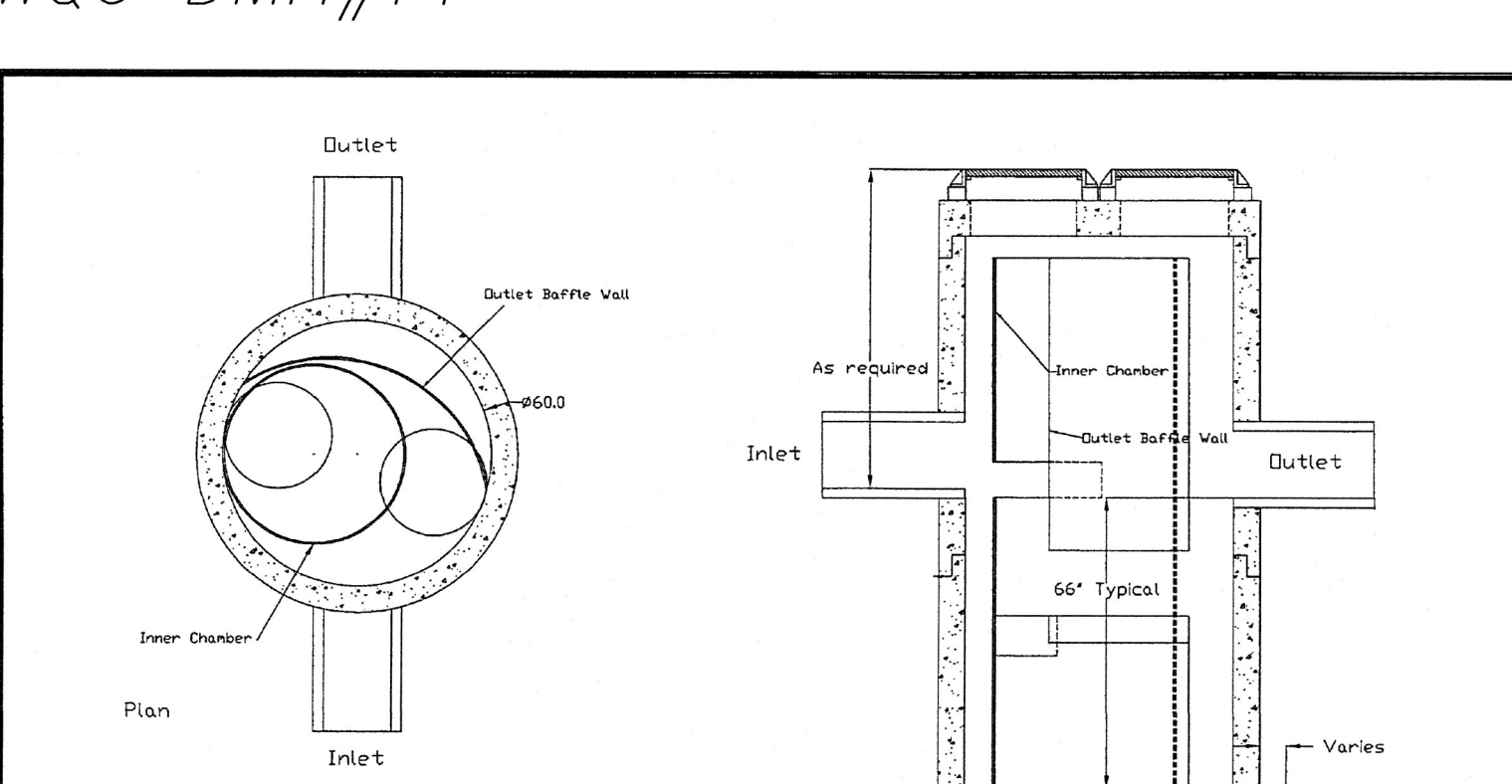
U.S. Patent No. 6,951,619

Dimensions in inches  
Permanent Pool Volume = 450 US gallons  
The Hydroguard must be cleaned after the construction period if it is used as a sediment and erosion control measure.  
The Hydroguard should be inspected once per year for stabilized sites.  
Inspection will determine the maintenance frequency (annual maintenance or once every two years typical for stabilized sites).  
Sites with unstable conditions (exposed soil or materials storage) will require more frequent inspection and maintenance.

PROJECT:	Hydroworks HG4 (48"Ø)
LOCATION:	
REVISION DATE:	6/16/2017



**WQU DMH#14**



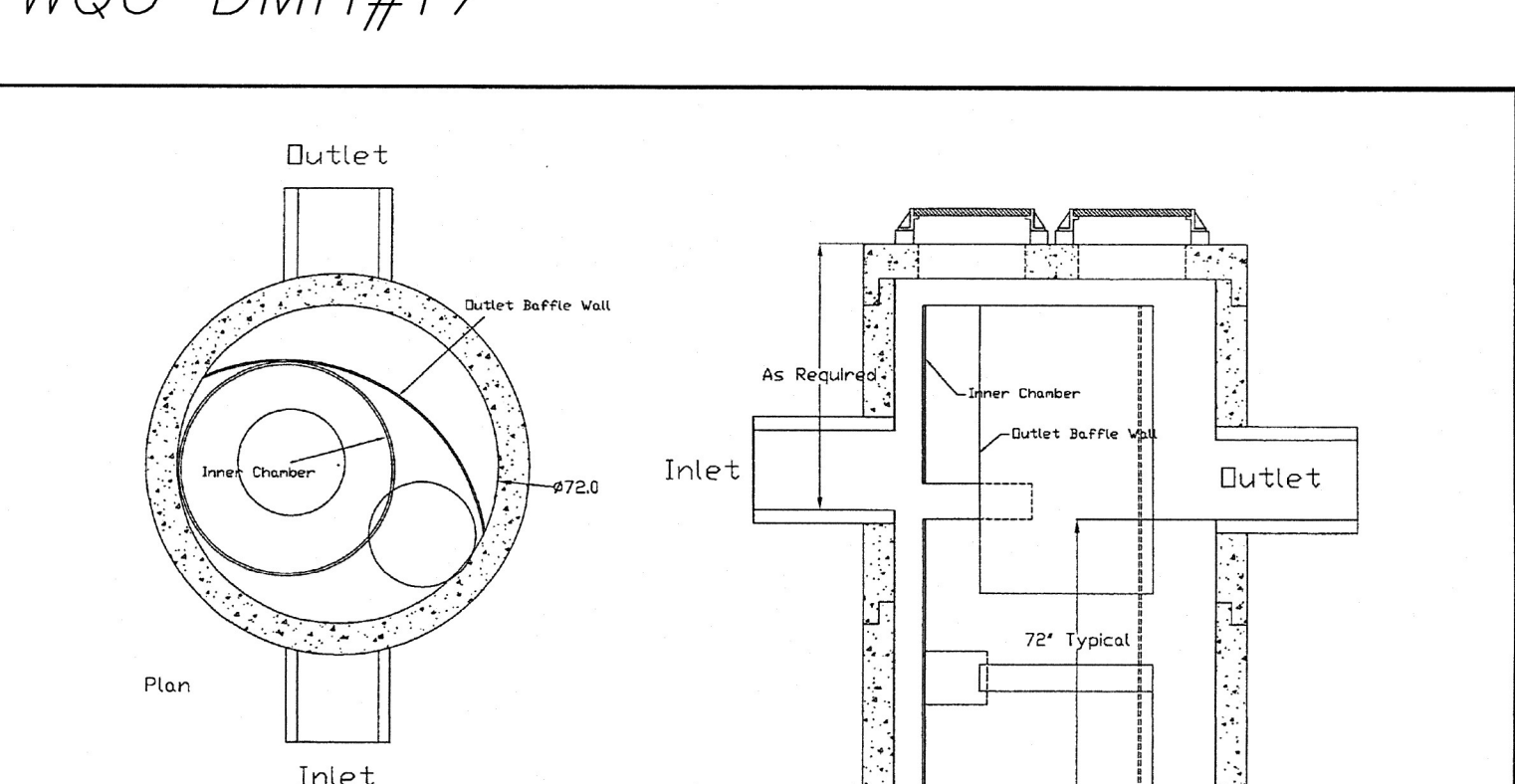
U.S. Patent No. 6,951,619

Dimensions in inches  
Permanent Pool Volume = 800 US gallons  
The Hydroguard must be cleaned after the construction period if it is used as a sediment and erosion control measure.  
The Hydroguard should be inspected once per year for stabilized sites.  
Inspection will determine the maintenance frequency (annual maintenance or once every two years typical for stabilized sites).  
Sites with unstable conditions (exposed soil or materials storage) will require more frequent inspection and maintenance.

PROJECT:	Hydroworks HG5 (60"Ø)
LOCATION:	
REVISION DATE:	6/16/2017



**WQU DMH#17**



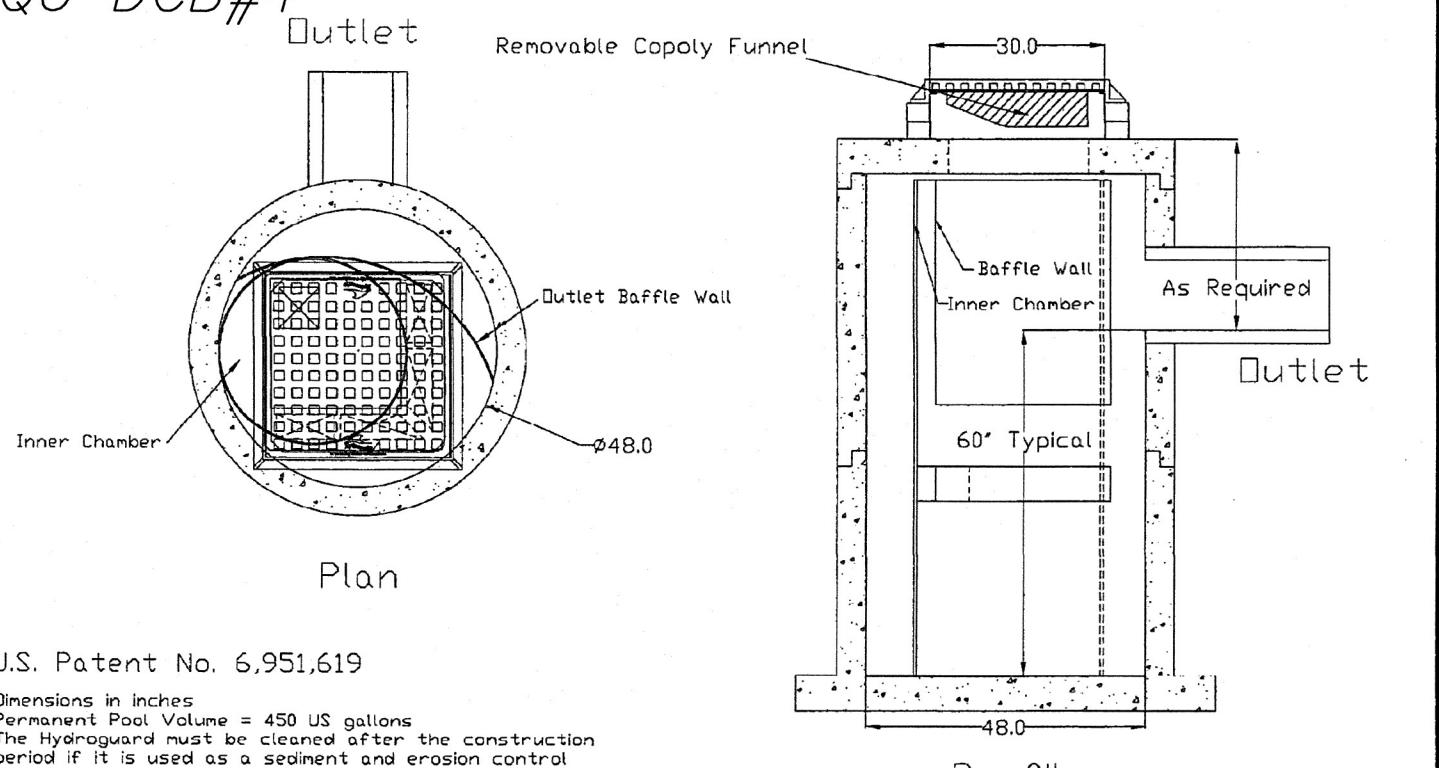
U.S. Patent No. 6,951,619

Dimensions in inches  
Permanent Pool Volume = 1200 US gallons  
The Hydroguard must be cleaned after the construction period if it is used as a sediment and erosion control measure.  
The Hydroguard should be inspected once per year for stabilized sites.  
Inspection will determine the maintenance frequency (annual maintenance or once every two years typical for stabilized sites).  
Sites with unstable conditions (exposed soil or materials storage) will require more frequent inspection and maintenance.

PROJECT:	Hydroworks HG6 (72"Ø)
LOCATION:	
REVISION DATE:	6/16/2017



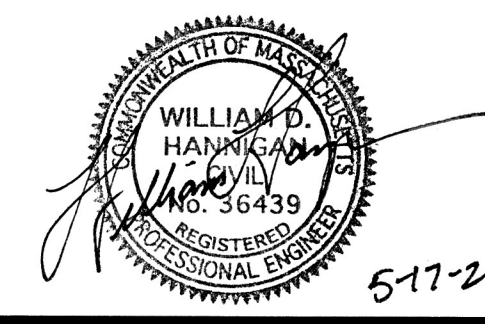
**WQU DCB#4**



U.S. Patent No. 6,951,619

Dimensions in inches  
Permanent Pool Volume = 450 US gallons  
The Hydroguard must be cleaned after the construction period if it is used as a sediment and erosion control measure.  
The Hydroguard should be inspected once per year for stabilized sites.  
Inspection will determine the maintenance frequency (annual maintenance or once every two years typical for stabilized sites).  
Sites with unstable conditions (exposed soil or materials storage) will require more frequent inspection and maintenance.

PROJECT:	Hydroworks HG4 (48"Ø) Inlet
LOCATION:	
REVISION DATE:	6/16/2017

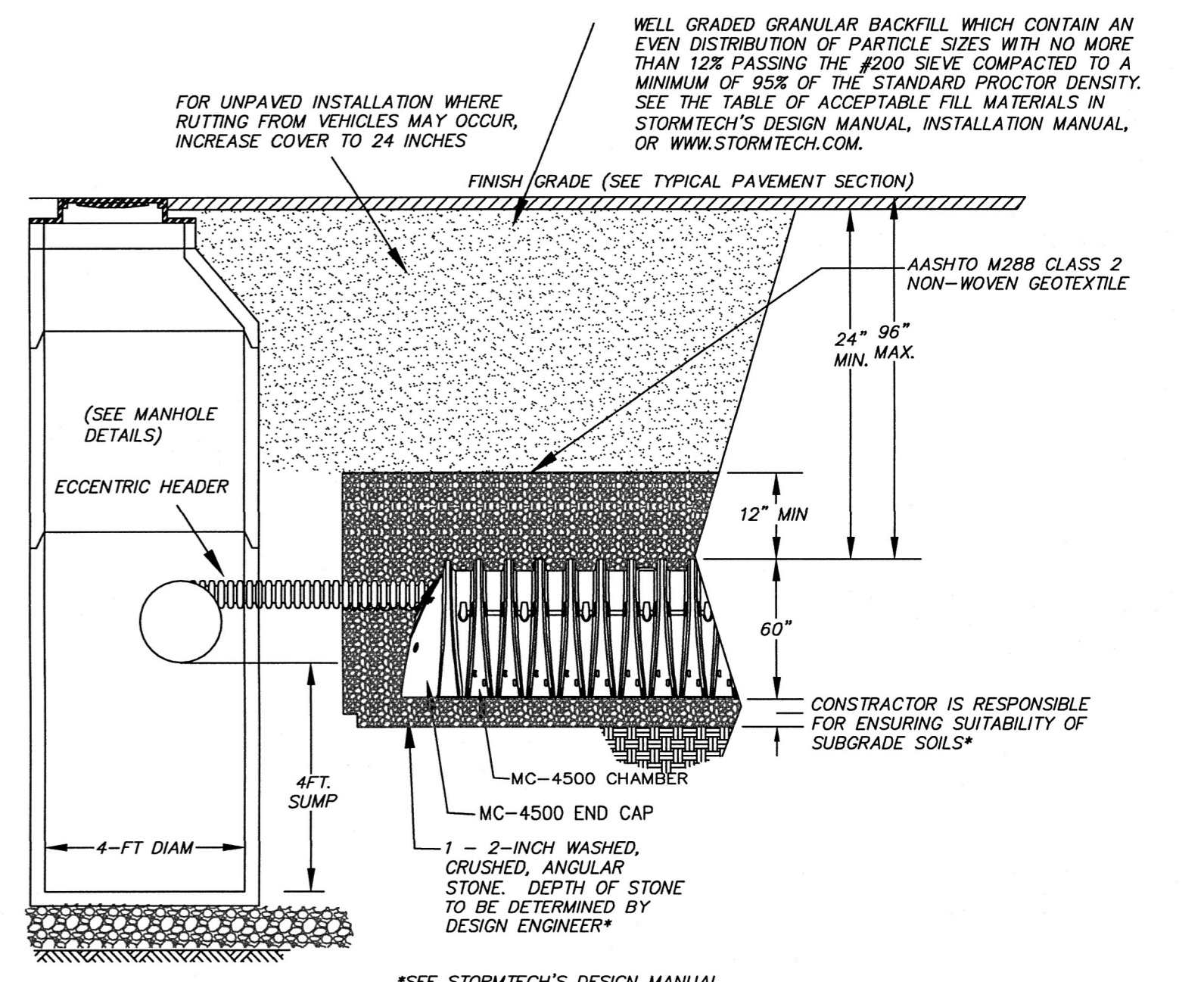
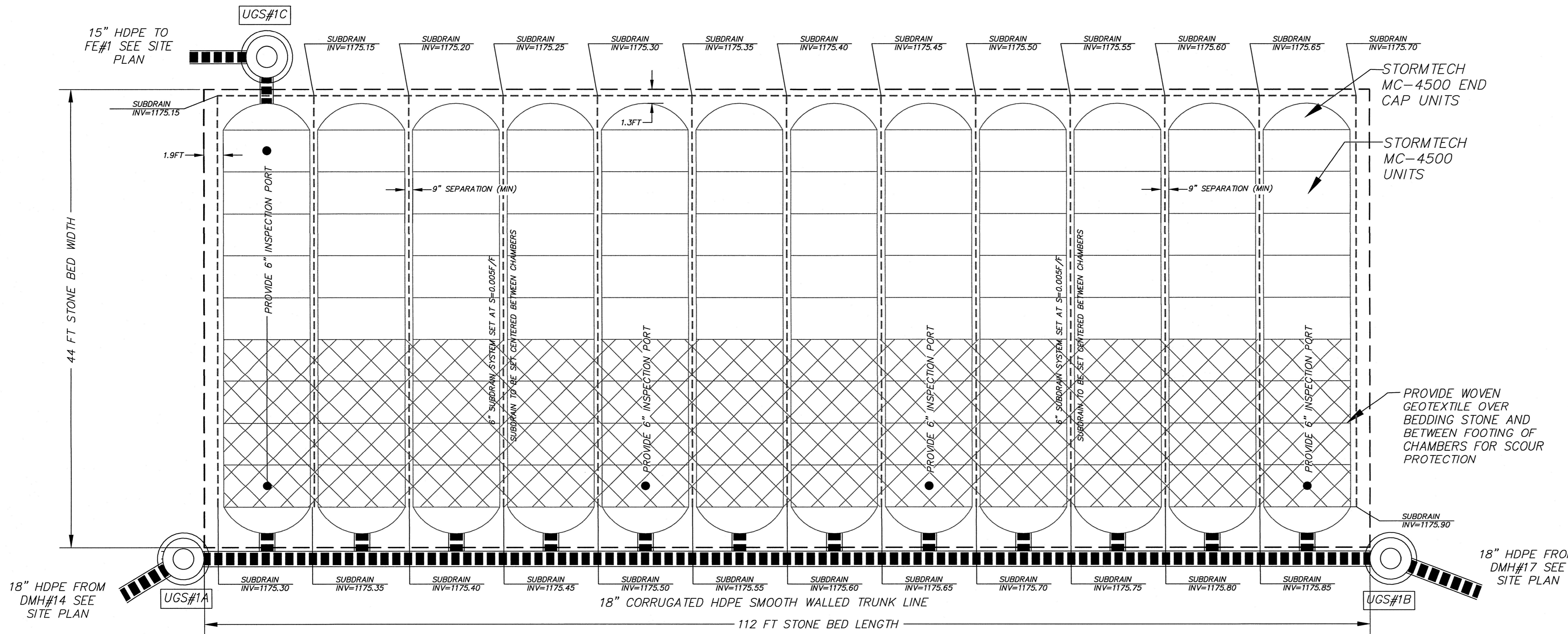


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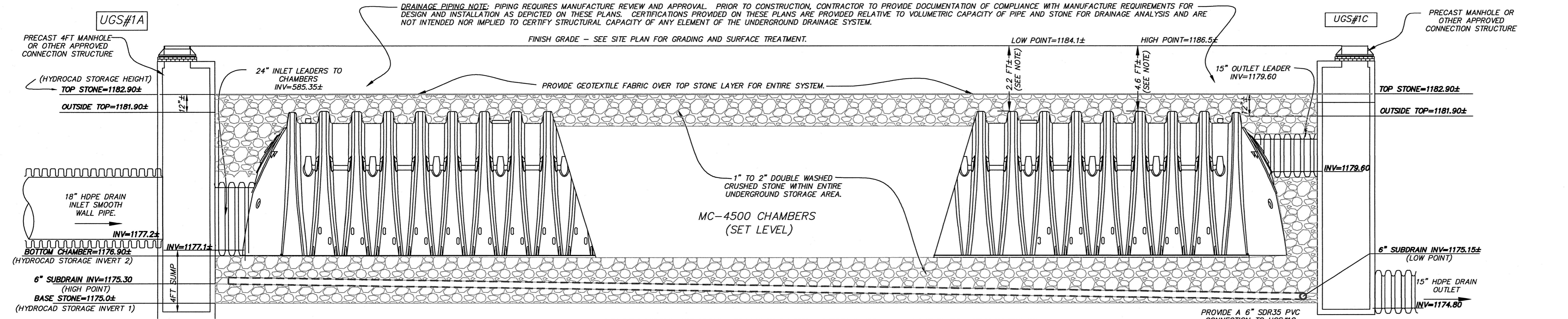
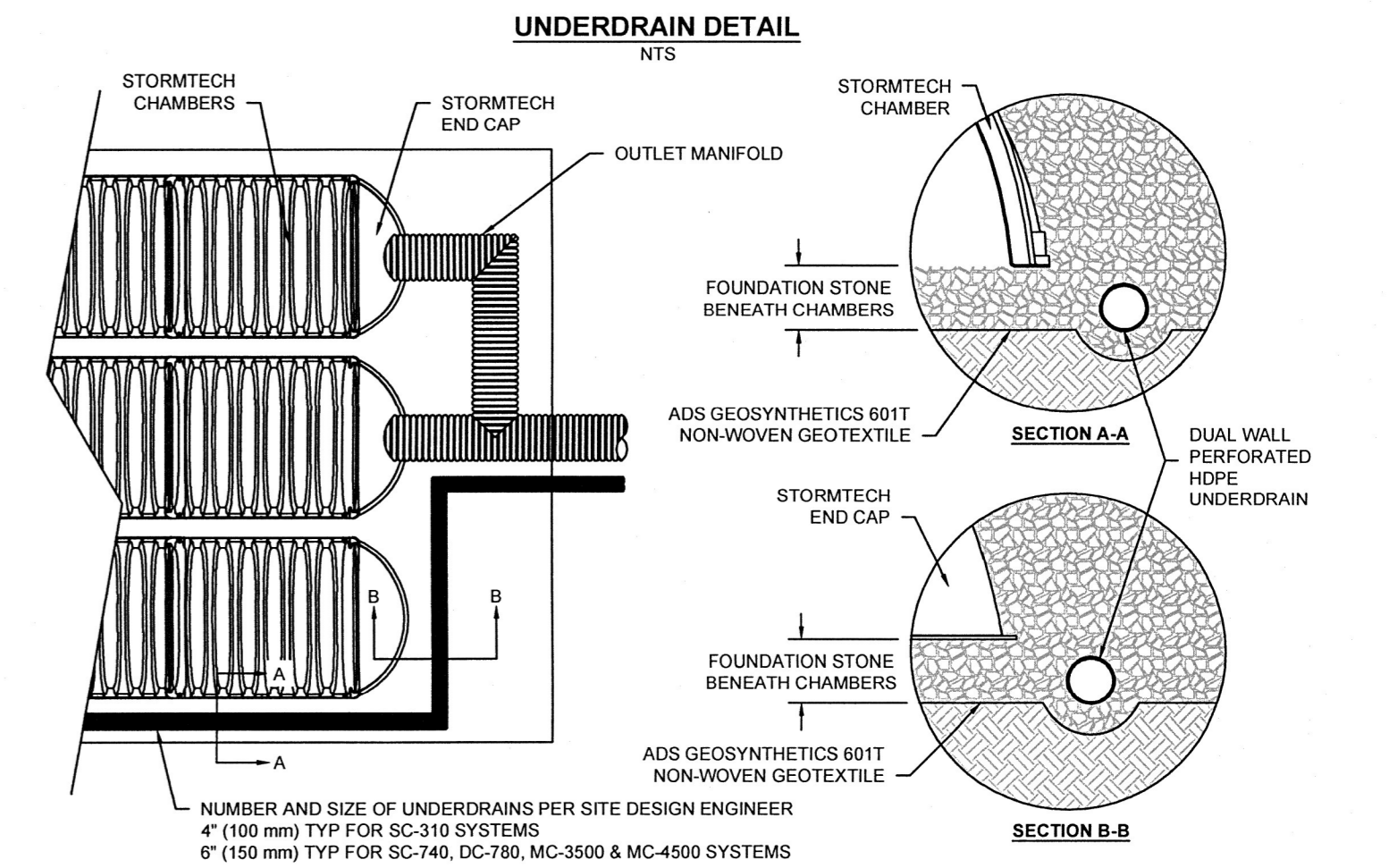
**CONSTRUCTION DETAILS IN GARDNER, MASSACHUSETTS**

PREPARED FOR:  
WATERSTONE PROPERTIES, INC.  
NICO RECINE  
117 KENDRICK STREET - SUITE 325  
NEEDHAM, MASSACHUSETTS 02494  
TEL: (781) 675-2063

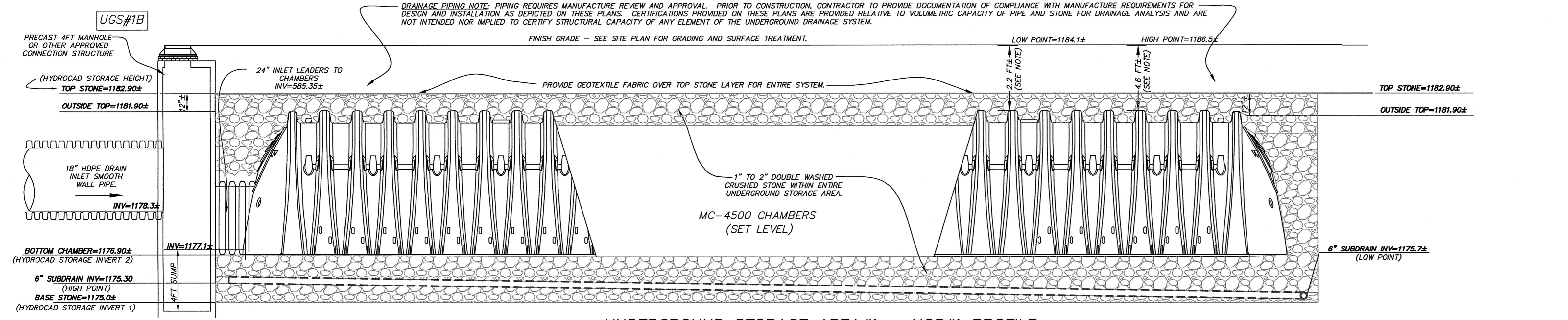
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CHKD:	WDH	APPD:	WDH	DATE:	MAY 17, 2021
SRV:	JHG	FB:	65-138	JOB NO:	2670
TAB:	DET	SHEET:	8 OF 11	PLAN NO:	C-13-22



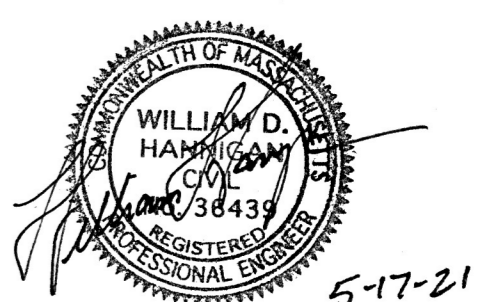
**STORMTECH MC-4500 CHAMBER SYSTEM**  
**MAN HOLE DETAIL**  
 (NOT TO SCALE)



**UNDERGROUND STORAGE AREA#1 - UGS#1 PROFILE**  
 CROSS SECTION - SEE SITE PLAN  
 NO SCALE



**UNDERGROUND STORAGE AREA#1 - UGS#1 PROFILE**  
 CROSS SECTION - SEE SITE PLAN  
 NO SCALE



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**CONSTRUCTION DETAILS**  
 IN  
**GARDNER, MASSACHUSETTS**

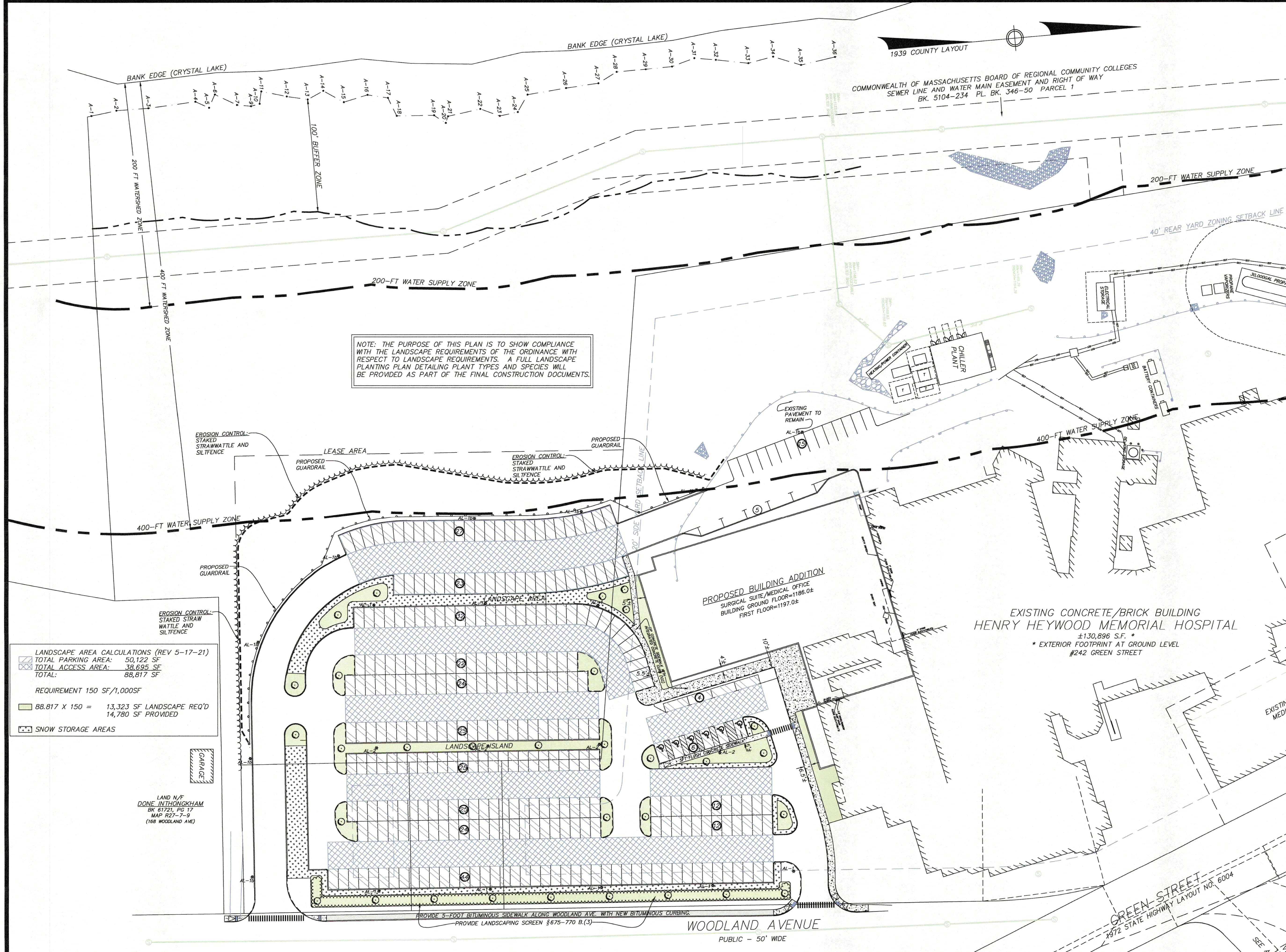
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CALC: CMA	DRWN: CMA/WDH	SCALE: NA
CHKD: WDH	APPD: WDH	DATE: MAY 17, 2021
SRV: JHG	FB: 65-138	JOB NO: 2670
TAB: DET	SHEET 9 OF 11	PLAN NO: C-13-22

**PROJECT INFORMATION**

<b>LAND INFORMATION</b>		
MAP PARCEL:	AS NOTED	
BOOK-PAGE:	AS NOTED	
EXISTING FRONTAGE:	1,290 FT±	
EXISTING AREA:	12.1 ACRES±	
<b>ZONING INFORMATION</b>		
ZONING DISTRICT:	RURAL RESIDENTIAL (R2)	
	SINGLE FAMILY RESIDENTIAL (R1)	
<b>DIMENSIONAL REQUIREMENTS:</b>		
MINIMUM AREA:	(R2) 60,500 S.F.	(R1) 12,500 S.F.
MINIMUM FRONTAGE:	150'	100'
MAXIMUM HEIGHT:	3 STORIES (36')	
<b>MINIMUM SETBACKS:</b>		
FRONT YARD:	30'	30'
SIDE YARD:	20'	15'
REAR YARD:	40'	20'

- GENERAL NOTES:**
- PROPERTY LINE INFORMATION BASED DEEDS AND PLANS OF RECORD. NO CERTIFICATION OF PROPERTY LINES SHOWN ON THIS PLAN IS INTENDED OR IMPLIED BY HANNIGAN ENGINEERING, INC. TOPOGRAPHIC INFORMATION IS THE RESULT OF AN ON-THE-GROUND TOPOGRAPHIC SURVEY BY HANNIGAN ENGINEERING, INC. IN JULY OF 2020.
  - AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT HAVE BEEN DELINEATED BY CARON ENVIRONMENTAL CONSULTING, LLC ON JULY 2, 2020. THESE AREAS ARE DEPICTED ON THE PLANS BASED ON THE FIELD SURVEY LOCATION DURING THE TOPOGRAPHIC SURVEY. LOCATION OF BANK OF CRYSTAL LAKE WAS FIELD LOCATED BY THIS OFFICE AND DEFINES WETLANDS PROTECTION DISTRICT LIMITS.
  - LOCATION OF ALL UTILITIES ARE APPROXIMATE AS SHOWN AND BASED UPON VISIBLE STRUCTURES AT THE TIME OF THE FIELD SURVEY. LOCATION OF EXISTING UTILITIES AND SUBSURFACE STRUCTURES, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE DETERMINED BY THE CONTRACTOR, MARKED IN THE FIELD, AND REVIEWED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL BE AWARE OF THE OBLIGATION TO ALL UTILITY COMPANIES AND AGENCY AS WELL AS DIS-SAFE PRIOR TO EXCAVATION. (SEE NOTE)
  - NOTIFICATION REQUIREMENTS SHOWN ON THIS PLAN SHALL NOT RELIEVE THE CONTRACTOR OF ANY OTHER REQUIREMENTS WHICH MAY EXIST UNDER LOCAL, STATE, OR FEDERAL JURISDICTION TO WHICH THE CONTRACTOR IS OBLIGATED.
  - RELOCATION OF AND/OR CONNECTION TO EXISTING UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH PROVISIONS OF THE APPROPRIATE UTILITY COMPANY AND/OR REGULATORY AGENCY.
  - UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF THE CITY OF GARDNER AND THE MASS DOT SPECIFICATIONS OF HIGHWAYS AND BRIDGES.
  - ALL SLOPES UNLESS OTHERWISE SPECIFIED, SHALL BE LOAMED AND SEEDED FOR STABILIZATION.
  - ANY DEVIATIONS IN DESIGN AS SHOWN SHALL REQUIRE A REVIEW AND APPROVAL OF THE DESIGN ENGINEER OR FIRM. CHANGES MADE IN THE FIELD MADE WITHOUT AUTHORIZATION SHALL BE SUBJECT TO REVIEW BY THE ENGINEER AND APPROPRIATE APPROVING AUTHORITY. EXPENSES INCURRED TO BRING THE UNAUTHORIZED CHANGES TO ACCEPTABLE CONFORMANCE SHALL BE BORNE BY THE COMPANY OR CONTRACTOR MAKING THE UNAUTHORIZED CHANGE.
  - ANY MATERIALS DISCOVERED ON-SITE WHICH ARE NOT SUITABLE FOR USE IN THE PROJECT AS SHOWN ON THIS PLAN SHALL BE REMOVED AND HAULED OFF-SITE TO AN APPROPRIATELY LICENSED FACILITY.
  - PLANS TO BE REVIEWED BY APPLICABLE UTILITY AGENCIES FOR COMPLIANCE WITH REGULATIONS. FINAL LOCATION IS SUBJECT TO CHANGE.
  - APPLICANT SHOULD BE AWARE OF OBLIGATIONS TO COMPLY WITH CHAPTER 131, SECTION 40 OF THE MASSACHUSETTS GENERAL LAWS, OTHERWISE KNOWN AS THE WETLANDS PROTECTION ACT, AND THE ASSOCIATED REGULATIONS (310 CMR 10.00)
  - STOCKPILING OF MATERIAL SHALL NOT BE PERMITTED WITHIN ANY AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT WITHOUT PRIOR APPROVAL BY THE LOCAL CONSERVATION COMMISSION. STOCKPILES SHALL BE PLACED IN A SUITABLE LOCATION AND SURROUNDED BY A ROW OF STAKED HAY BALES FOR EROSION CONTROL.
  - AREAS OF FILL TO BE COMPACTED TO A MINIMUM 95% DRY DENSITY IN AREAS WITHIN ROADWAYS AND UTILITY EASEMENTS. OTHER AREAS OF FILL TO BE COMPACTED TO A MINIMUM 90% DRY DENSITY. ALL FILL MATERIALS ARE TO BE CLEAN FILL FREE OF DELETERIOUS MATERIALS AND DEBRIS.
  - ALL SIDEWALKS AND RAMPS TO CONFORM TO REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA), AS REQUIRED. SEE ARCHITECTURAL PLANS FOR CONFORMANCE REQUIREMENTS FOR PROPOSED BUILDINGS.
  - THE AREA PROPOSED FOR DEVELOPMENT IS NOT WITHIN A 100 YEAR FLOOD PLAIN PER F.E.M.A. FIRM PANEL #250305 0005 B, DATED: JULY 2, 1981. COMPLIANCE WITH APPLICABLE REGULATIONS IS REQUIRED.
  - ALL REINFORCED CONCRETE PIPE TO BE CLASS III UNLESS OTHERWISE NOTED.
  - PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
  - ALL UTILITIES ARE TO BE INSTALLED BY A LICENSED UTILITY CONTRACTOR LICENSED BY THE CITY OF GARDNER.



NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW COMPLIANCE WITH THE LANDSCAPE REQUIREMENTS OF THE ORDINANCE WITH RESPECT TO LANDSCAPE REQUIREMENTS. A FULL LANDSCAPE PLANTING PLAN DETAILING PLANT TYPES AND SPECIES WILL BE PROVIDED AS PART OF THE FINAL CONSTRUCTION DOCUMENTS.

**LANDSCAPE AREA CALCULATIONS (REV 5-17-21)**

TOTAL PARKING AREA:	50,122 SF
TOTAL ACCESS AREA:	38,695 SF
TOTAL:	88,817 SF

REQUIREMENT 150 SF/1,000SF

88,817 X 150 = 13,323 SF LANDSCAPE REQ'D  
14,780 SF PROVIDED

SNOW STORAGE AREAS

LAND N/F  
DONG INTHONGKHAM  
BK 61721, PG 17  
MAP R27-7-9  
(168 WOODLAND AVE)

- LAND N/F WU YAN BK 53535, PG 001 MAP R27-7-10 (175 WOODLAND AVE)
- LAND N/F SUSAN M. THIBEAULT BK 61787, PG 151 MAP R27-7-21 (185 WOODLAND AVE)
- LAND N/F JOHN P. BOURQUE BK 45297, PG 160 MAP R27-7-20 (188 WOODLAND AVE)
- LAND N/F NGUYEN THOAI MINH THUY T. MINH BK 57885, PG 378 MAP R27-7-19 (193 WOODLAND AVE)
- LAND N/F CHRISTAKOVA SKETLANA BK 57885, PG 25 MAP R27-7-18 (197 WOODLAND AVE)
- LAND N/F MARTIN GRAY BK 13972, PG 041 MAP R27-7-17 (202 WOODLAND AVE)
- LAND N/F ROBERT G. MCGEE MARYANN J. MCGEE BK 31656, PG 083 MAP R27-3-16 (213 WOODLAND AVE)
- LAND N/F TERESA UMPIERREZ MARIA E. RAMOS BK 55355, PG 162 MAP R27-2-15 (223-225 WOODLAND AVE)
- LAND N/F NATHAN L. LINSKY BK 22614, PG 130 MAP R27-2-14 (231 WOODLAND AVE)

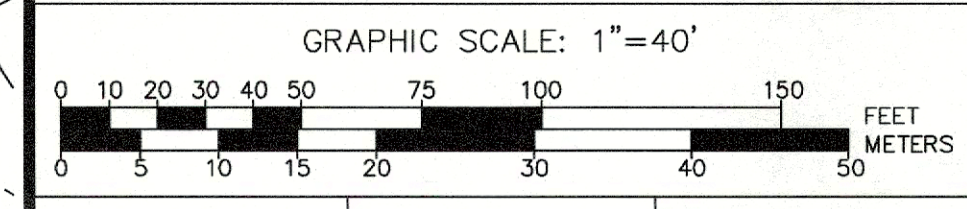


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**LANDSCAPE SITE PLAN**  
IN  
**GARDNER, MASSACHUSETTS**

PREPARED FOR:  
WATERSTONE PROPERTIES, INC.  
NICO RECINE  
117 KENDRICK STREET - SUITE 325  
NEEDHAM, MASSACHUSETTS 02494  
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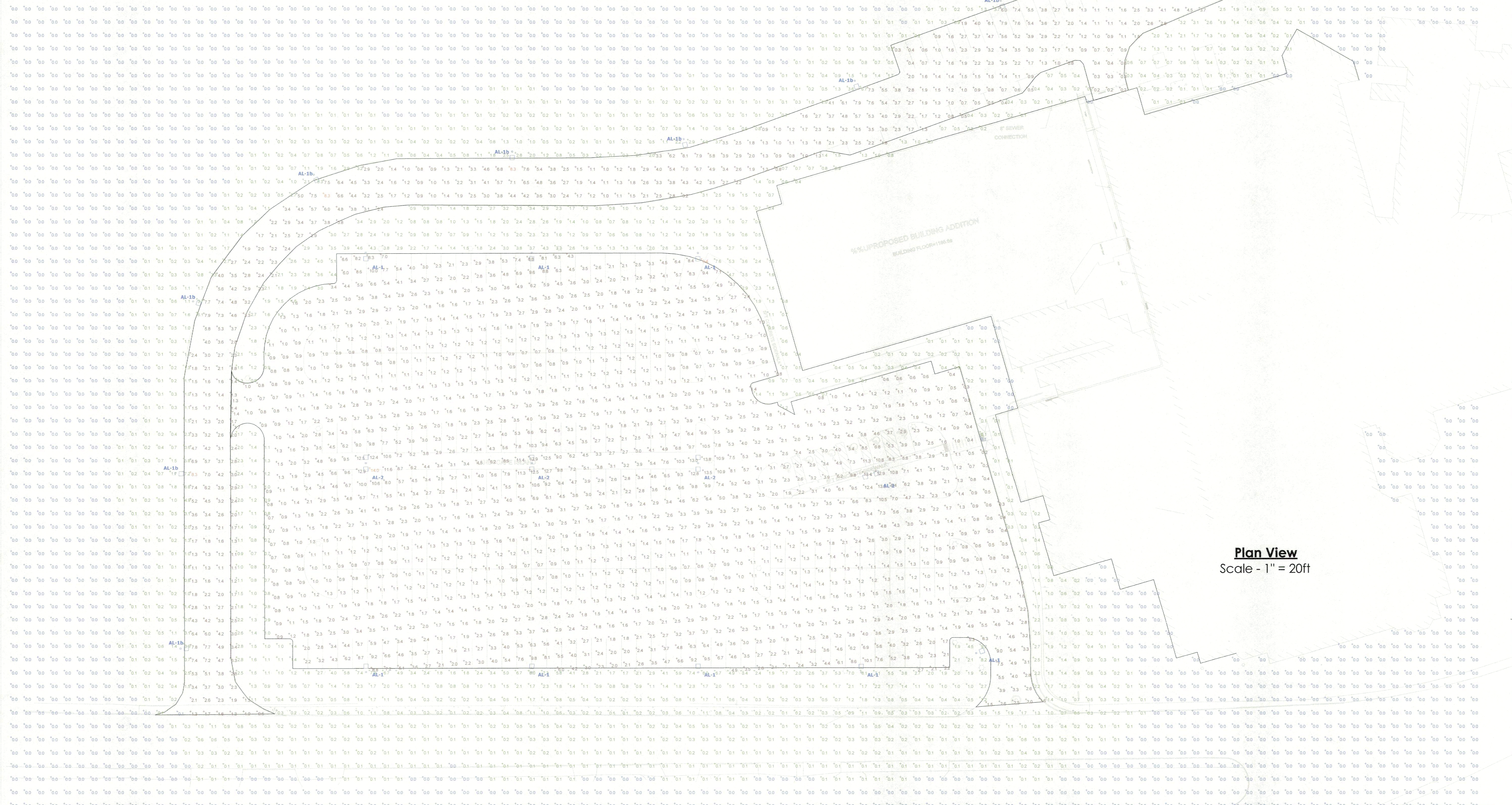


CALC: DJL	DRWN: CMA/WDH	SCALE: 1"=40'
CHKD: WDH	APPD: DJL	DATE: MAY 17, 2021
SRV: JHG	FB:	JOB NO: 2670
TAB: (10) LAND	SHEET 10 OF 11	PLAN NO: C-13-22



- NOTES:
- REFLECTANCES ASSUMED: SURFACE: 50
  - MOUNTING HEIGHTS: 20'-0" ABOVE GRADE
  - TASK HEIGHT: AT GRADE
  - CALCULATION POINT SPACING: 8'X8' OC

**DISCLAIMER:**  
 -THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES ONLY AND ARE NOT INTENDED FOR CONSTRUCTION. VALUES REPRESENTED ARE AN APPROXIMATION GENERATED FROM MANUFACTURERS PHOTOMETRIC IN-HOUSE OR INDEPENDANT LAB TEST WITH DATA SUPPLIED BY LAMP MANUFACTURERS.



Plan View  
Scale - 1" = 20ft

Heywood Hospital  
 Gardner MA  
 05-11-2021

**SCHEDULE**

SYMBOL	LABEL	QUANTITY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LLF	WATTAGE
	AL-1	8	Lithonia Lighting	RSX2 LED P3 40K R4	RSX Area Fixture Size 2 P3 Lumen Package 4000K CCT Type R4 Distribution	0.9	149.98
	AL-1b	9	Lithonia Lighting	RSX2 LED P3 40K R4 HS	RSX Area Fixture Size 2 P3 Lumen Package 4000K CCT Type R4 Distribution with HS Shield	0.9	149.9762
	AL-2	4	Lithonia Lighting	RSX2 LED P3 40K R4	RSX Area Fixture Size 2 P3 Lumen Package 4000K CCT Type R4 Distribution	0.9	299.96

**STATISTICS**

DESCRIPTION	SYMBOL	AVG.	MAX	MIN.	MAX/MIN	AVG/MIN
Access Road	+	2.9 fc	8.3 fc	0.1 fc	83.0:1	29.0:1
Outer Perimeter	+	0.3 fc	9.4 fc	0.0 fc	N/A	N/A
Parking Lot	+	2.7 fc	14.0 fc	0.1 fc	140.0:1	27.0:1

Designer: Richard H. Urchdom  
 Date: 05/11/2021  
 Scale: Not to Scale  
 Drawing No.:  
 Summary: