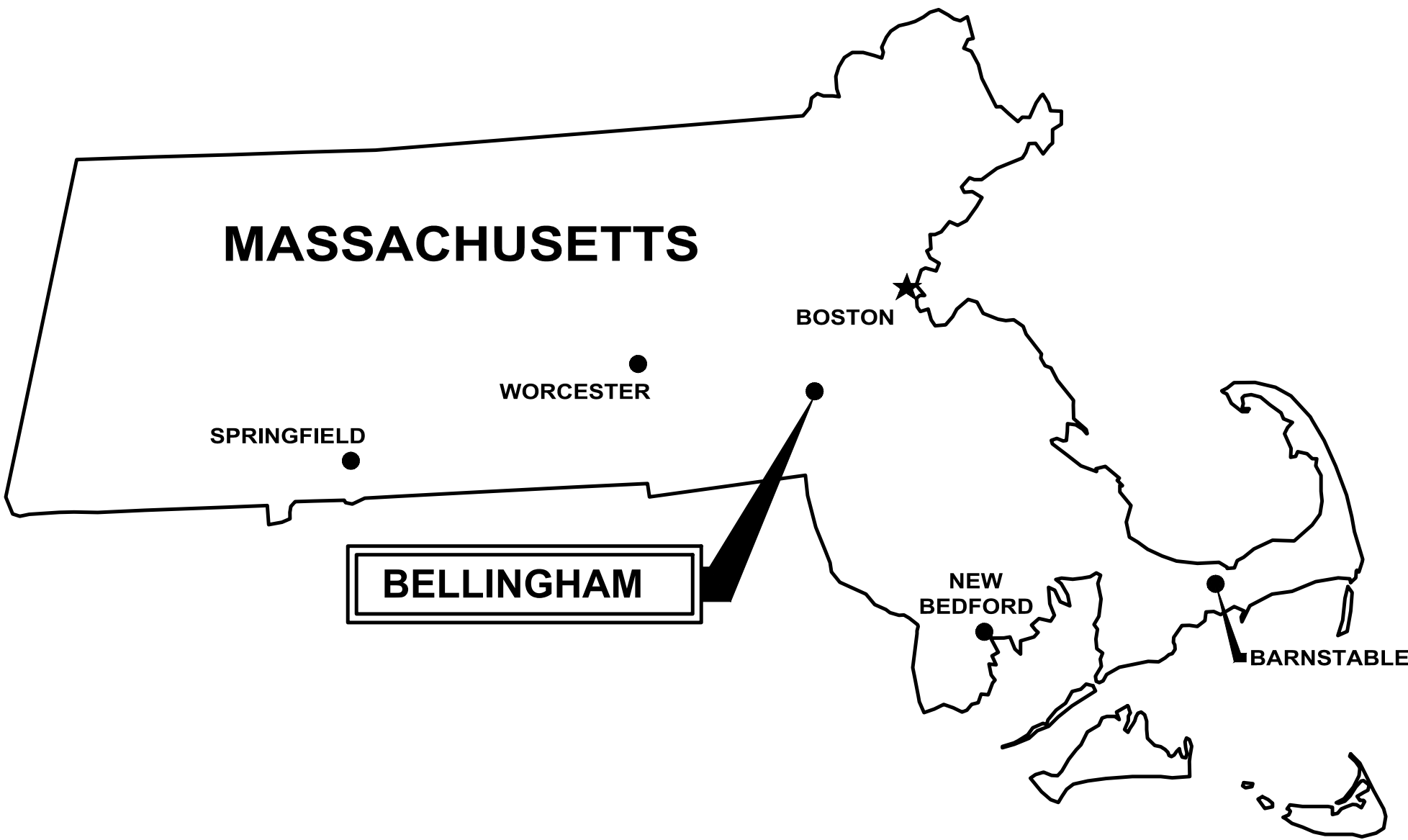


TOWN OF BELLINGHAM, MASSACHUSETTS

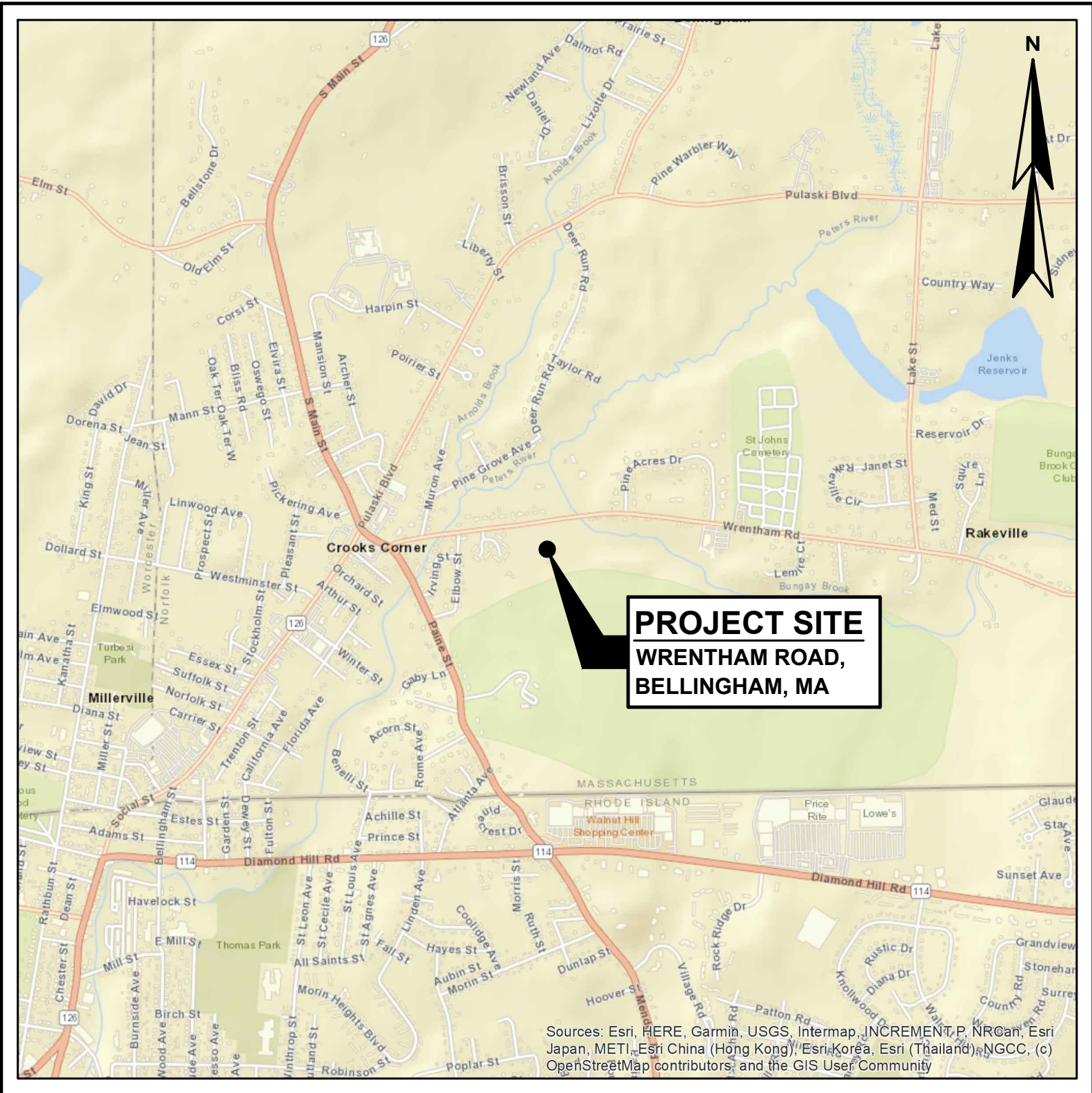
CONTRACT DRAWINGS FOR WELL NO.11 REPLACEMENT PROCESS UPGRADES

MAY 2025
PERMITTING SUBMITTAL



DRAWING INDEX

<u>GENERAL</u>	
---	COVER SHEET
<u>CIVIL</u>	
C-001	CIVIL GENERAL NOTES, LEGEND, AND ABBREVIATIONS
C-101	OVERALL SITE PLAN
C-102	DEMOLITION AND MODIFICATIONS SITE PLAN
C-501	CIVIL DETAILS I
C-502	CIVIL DETAILS II
C-503	EROSION CONTROL AND SEDIMENTATION NOTES & DETAILS
<u>PROCESS</u>	
PR-001	PROCESS GENERAL NOTES AND DETAILS
PR-101	PROCESS BUILDING DEMOLITION AND MODIFICATIONS PLAN



LOCATION PLAN
SCALE: 1"=2,000'

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GENERAL NOTES

1. THE OWNER WILL BE RESPONSIBLE FOR OBTAINING THE PERMITS LISTED IN THE SUPPLEMENTARY OR SPECIAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION . COPIES OF ALL OBTAINED PERMITS ARE AVAILABLE FOR REVIEW FROM THE OWNER. ALL OTHER PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT . AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION . COPIES OF ALL RIGHTS_OF_WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW FROM THE OWNER.
3. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
4. CONTRACTOR SHALL COMPLY WITH THE COORDINATION REQUIREMENTS AND RELATED COSTS, IF ANY, AS SPECIFIED IN SPECIFICATION SECTION 01050.
5. CONTRACTOR SHALL NOTE THAT, IN GENERAL, ALL EXISTING CONDITION INFORMATION ON THE DRAWINGS ARE SHOWN WITH A LIGHTER LINE WEIGHT AND WITH A SLANTED TYPE TEXT.
6. ALL EXISTING SEWER AND STORM DRAIN LINES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE. ANY EXISTING SEWERS, STORM DRAIN LINES OR CULVERTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER, EXCEPT WHEN IN DIRECT CONFLICT WITH THE NEW SEWER OR WHEN NOT SHOWN OR INDICATED.
7. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE . ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY.
8. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTICE TO THE RESPECTIVE UTILITY POLE OWNER. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.

EXISTING SITE CONDITIONS

1. THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. NO GUARANTEE IS MADE THAT UTILITIES OR STRUCTURES WILL BE ENCOUNTERED WHERE SHOWN, OR THAT ALL UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN. ALL LOCATIONS AND SIZES OF EXISTING UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD WITH TEST PITS AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES OR PIPING THAT MAY BE AFFECTED. THE CONTRACTOR WILL REALIGN NEW PIPE LOCATIONS AS REQUIRED TO CONFORM TO EXISTING LINES AND AS APPROVED BY THE ENGINEER.
2. BELOW GRADE UTILITY INFORMATION IS BASED ON INFORMATION PROVIDED BY EACH UTILITY. LOCATION OF PUBLIC UTILITIES SHOWN IS ONLY APPROXIMATE AND MAY NOT BE COMPLETE. PRIVATE UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO, SEWER LINES, WATER LINES AND BURIED ELECTRICAL SERVICE ENTRANCES ARE NOT SHOWN. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE PRIOR TO COMMENCING WORK. REFER TO SPECIFICATION SECTION 01050. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

ELECTRIC:
NATIONAL GRID
(800) 642-4274

WATER/SEWER/DRAIN:
BELLINGHAM DEPARTMENT OF PUBLIC WORKS
26 BLACKSTONE STREET
BELLINGHAM, MA 02019
(508) 966-5813

TELEPHONE/CABLE:
VERIZON
(800) 922-0204

DIG SAFE:
(888) 344-7233

3. THERE ARE NO KNOWN HAZARDOUS ENVIRONMENTAL CONDITIONS WITHIN THE AREA OF WORK. REFER TO SPECIFICATION SECTION 00800-SC-5.06. IF THE PRESENCE OF HAZARDOUS ENVIRONMENTAL CONDITIONS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER IMMEDIATELY. ALL ACTIVITIES, HANDLING AND DISPOSAL OF HAZARDOUS ENVIRONMENTAL CONDITIONS AND MATERIALS SHALL BE IN ACCORDANCE WITH OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS.
- SITE DEMOLITION
1. A SOLID GREY HATCH HIGHLIGHTS AND REPRESENTS THE DEMOLITION OF ANY ITEM(S) IN THE AREA ASSOCIATED WITH THE HATCH.

2. REFER TO THE EXISTING SITE PLAN, FOR ADDITIONAL INFORMATION REGARDING EXISTING FACILITIES. REFER TO THE LAYOUT DRAWING FOR LIMITS OF WORK.

3. REFER TO PROCESS, INSTRUMENTATION AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION REGARDING DEMOLITION AND REMOVAL.

4. REFER TO SPECIFICATION SECTION 01010A, WHICH CONTAINS INFORMATION ON CONSTRAINTS OF CONSTRUCTION SEQUENCING.

5. DEMOLISH/REMOVE EXISTING PIPING AS REQUIRED FOR CONSTRUCTION OF NEW FACILITIES. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE SHALL BE COORDINATED WITH THE OWNER AND ENGINEER BEFORE COMMENCING THAT WORK. EXISTING PIPING THAT NEEDS TO BE REMOVED TO CONSTRUCT THE NEW FACILITIES, BUT IS TO REMAIN, SHALL BE REINSTALLED/REPLACED AS NEEDED. EXISTING PIPES AND CONDUIT DESIGNATED AS "ABANDONED" MAY BE REMOVED IF THE CONTRACTOR SO CHOOSES. IF ABANDONED PIPE CONFLICTS WITH NEW SITE PIPING OR FACILITIES, THEN A PORTION OF THE ABANDONED PIPE SHALL BE REMOVED, AND THE NEW ENDS OF ABANDONED PIPE CAPPED OR PLUGGED WITH CONCRETE.

6. ALL EXISTING PIPING AND UTILITIES WHICH ARE BENEATH PROPOSED STRUCTURES, AND ARE TO BE ABANDONED, SHALL BE REMOVED TO A MINIMUM OF 5-FEET OUTSIDE OF THE STRUCTURE. PIPE AND UTILITIES BENEATH PROPOSED STRUCTURES THAT ARE TO REMAIN SHALL BE CONCRETE ENCASED, UNLESS OTHERWISE INDICATED. REFER TO THE STRUCTURAL DRAWINGS FOR DETAILS.

7. SEVERING OF EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTINGS, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. PLUG ENDS OF ABANDONED PIPE SEGMENTS WITH CONCRETE UNLESS SPECIAL CIRCUMSTANCES DICTATE PLUGGING ABANDONED PIPES WITH BLIND FLANGES, RESTRAINED MECHANICAL JOINT PLUGS, ETC. AS APPROPRIATE.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND MATERIALS DESIGNATED FOR DEMOLITION. SUCH MATERIALS TO BE RETAINED SHALL BE PROPERLY STORED IN AN ON-SITE LOCATION. COORDINATE LOCATION AND MATERIALS TO BE SALVAGED WITH THE OWNER/ENGINEER. REFER TO SPECIFICATION SECTION 02050A.

9. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01720.

10. THE CONTRACTOR SHALL TAKE ALL THE NECESSARY STEPS TO ENSURE THAT ALL PROCESS FLOWS ARE MAINTAINED DURING CONSTRUCTION. GRAVITY OF PUMPED BYPASSES AND OTHER MEANS OF MAINTAINING FLOW SHALL BE SUBJECT TO THE REVIEW AND ACCEPTANCE OF THE ENGINEER. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY STOPPAGES OR BYPASSES WITH THE OWNER AND ENGINEER. REFER TO SPECIFICATION SECTION 01010A.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF FLOWS RESULTING FROM PRECIPITATION AND GROUNDWATER DEWATERING OPERATIONS.
- SITE CLEARING, GRUBBING AND GRADING
1. STRIPPING OF TOPSOIL (LOAM) SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02115. REFER TO THE LAYOUT AND GRADING DRAWINGS FOR LIMIT OF WORK AND STRIPPING.

2. CONTRACTOR SHALL MINIMIZE CLEARING OPERATIONS. CLEARING AND GRUBBING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110. CLEARING LIMITS SHALL BE AS INDICATED ON THE DRAWINGS, BUT AT ALL TIMES WITHIN EXISTING ROAD RIGHTS_OF_WAY AND PROPERTY LINES ON STATE OR COUNTY OWNED PROPERTY OR EASEMENTS. ALL CLEARING AND GRUBBING MATERIAL SHALL BE THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AT A SITE PROVIDED BY THE CONTRACTOR IN COMPLIANCE WITH ALL STATE AND LOCAL LAWS.
3. CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND DRAINAGE MEASURES IN ALL AREAS OF WORK, AND CONFINES SOIL SEDIMENT TO WITHIN THE LIMITS OF EXCAVATION AND GRADING. PRIOR TO BEGINNING EXCAVATION WORK, EROSION CONTROL FENCE SHALL BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE ACTUAL LIMITS OF GRUBBING AND/OR GRADING, AND AS SHOWN ON THE DRAWINGS. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE A MINIMUM, CONTRACTOR SHALL TAKE ALL OTHER NECESSARY MEASURES. EROSION CONTROL FENCE SHALL ALSO BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE TOPSOIL STOCKPILES. ALL DISTURBED EARTH SURFACES SHALL BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION. ALL INSTALLED EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE END OF THE PROJECT. REFER TO SPECIFICATION SECTION 02270.

4. ALL STORM DRAINAGE INLETS SHALL BE PROTECTED BY HAY BALE FILTERS TO PREVENT ENTRY OF SEDIMENT FROM RUNOFF WATERS DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL COLLECTED SEDIMENT, AND THAT WHICH COLLECTS IN THE STORM DRAIN SYSTEM. REFER TO THE CIVIL DETAIL DRAWINGS.

5. CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, AS DETERMINED BY THE ENGINEER, AND AS OUTLINED IN SPECIFICATION SECTION 01562.

6. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS AND PLANT DRIVES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN UP.

7. ALL CATCH BASINS, MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.

8. THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL MAY BE INCORPORATED IN THE PROJECT, WITH EXCESS MATERIAL DISPOSED OF AT A LOCATION PROVIDED BY THE CONTRACTOR. THESE PROVISIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF OBLIGATIONS TO PROPERLY DISPOSE OF AND REPLACE ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS.

9. CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDEWALKS, PAVEMENT AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND ENGINEER.

10. ALL NON-ROADWAY AREAS THAT ARE EXCAVATED, FILLED, OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE LOAMED, GRADED AND SEEDED, UNLESS OTHERWISE NOTED. THE TOP 4-INCHES OF SOIL SHALL BE LOAM . REFER TO SPECIFICATION SECTION 02485, LANDSCAPING/LOAM AND SEED.
- CIVIL SITE LAYOUT
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THIS PROVIDED LAYOUT INFORMATION THROUGHOUT THE COURSE OF CONSTRUCTION. REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

2. REFER TO THE SITE PIPING AND SITE GRADING DRAWINGS FOR ADDITIONAL LAYOUT INFORMATION.

3. IN GENERAL, THE GIVEN STRUCTURE LOCATIONS ARE TO THE OUTSIDE FACE OF THE STRUCTURE FOUNDATION WALL, NOT FOOTINGS. RADI SHOWN FOR ROADS ARE TO EDGE OF PAVEMENT.

4. THE LOCATIONS AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE OWNER AND ENGINEER. THE CONTRACTOR SHALL LIMIT ACTIVITIES TO THESE AREAS.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING AND RESETTNG ALL EXISTING PROPERTY MONUMENTATION DISTURBED BY CONSTRUCTION. THIS WORK SHALL BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF MASSACHUSETTS, AT NO ADDITIONAL COST TO THE OWNER.

6. WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE DISTANCES FROM THE DRAWINGS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

7. BOLLARD LOCATIONS SHOWN ARE APPROXIMATE. COORDINATE BOLLARD LOCATIONS WITH THE ENGINEER. REFER TO THE CIVIL DETAIL DRAWINGS.

8. ALL ELEVATIONS REFER TO THE NAD 1988 DATUM. ORIENTATION IS GRID NORTH ON THE MA STATE PLANE COORDINATE SYSTEM. PROJECT BENCH MARK IS SHOWN ON THE DRAWINGS AND IS DERIVED FROM NAD 1983. CONTRACTOR SHALL VERIFY BENCHMARK ELEVATIONS PRIOR TO USING IN CONSTRUCTION.

9. EXISTING CONDITIONS SITE PLAN DEVELOPED FROM SURVEY DRAWING PREPARED BY ARMORY ENGINEERS, P.C.,, DATED 1989, AND EXISTING RECORD DRAWING INFORMATION.

10. WETLAND BOUNDARIES DELINEATED BY CARON ENVIRONMENTAL CONSULTING, LLC., IN 2024.
- WATER MAIN GENERAL NOTES
1. SITE PIPING REQUIREMENTS ARE SHOWN ON THE PIPE SCHEDULE ON THE DRAWINGS, IN SPECIFICATION SECTION 15050 AND AS REFERENCED. PROCESS ABBREVIATIONS AND PROCESS FLOW SCHEMATICS ARE SHOWN ON THE PROCESS DRAWINGS.

2. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.

3. ANY UNDERGROUND STRUCTURES, CABLES, AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATIONS SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES, CABLES, AND PIPELINES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNERS OF THE STRUCTURES, CABLES, AND PIPELINES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF THE NEW WATER MAIN. LAYOUT SHALL BE REVIEWED AND ACCEPTED BY THE OWNER AND ENGINEER. THE NEW WATER MAIN MUST BE LOCATED WITHIN THE RIGHTS-OF-WAY SHOWN ON THE DRAWINGS.

5. MINIMUM DEPTH OF COVER SHALL BE 5'-0" AND MAXIMUM DEPTH OF COVER SHALL BE 7'-0" UNLESS SHOWN OTHERWISE ON THE DRAWINGS. THE NEW MAIN SHALL GENERALLY FOLLOW THE GROUND CONTOUR, HOWEVER, ABRUPT CHANGES IN GRADE SHALL BE AVOIDED. AT LOCAL HIGH POINTS OR WHERE AIR RELEASE VALVES ARE SHOWN, THE CONTRACTOR SHALL SLOPE NEW MAIN AS NEEDED TO MAINTAIN HIGH POINT AT AIR RELEASE VALVE. IF LEDGE IS ENCOUNTERED THE MINIMUM DEPTH OF COVER SHALL BE 5'-0".

6. IF MINIMUM COVER CANNOT BE ATTAINED DUE TO UTILITY CONFLICTS THE DEPTH OF COVER SHALL NOT BE LESS THAN 4'-0" AND 2" RIGID BOARD INSULATION SHALL BE USED AS DETAILED. RIGID BOARD INSULATION SHALL BE 40 PSI COMPRESSIVE STRENGTH, DOW STYROFOAM HIGHLOAD 40, CERTIFOAM 40 OR EQUAL.

7. NEW HYDRANTS SHALL BE FIELD LOCATED AND APPROVED BY THE OWNER AND FIRE DEPARTMENT.

8. ALL BENDS, TEES, REDUCERS, HYDRANTS AND PLUGS SHALL BE RESTRAINED BY USING CONCRETE THRUST BLOCKS AND GRIP-RINGS OR OTHER METHOD AS SHOWN ON THE DRAWINGS. ANCHOR TEES SHALL BE USED FOR ALL HYDRANT BRANCHES.

9. TEST PRESSURES FOR THE COMBINATION PRESSURE AND LEAKAGE TESTS SHALL BE 150 PSI. TEST DURATION SHALL BE TWO HOURS.

10. CONNECTIONS TO EXISTING WATER MAIN SHALL BE COORDINATED WITH THE OWNER.

11. ALL WATER MAINS THAT ARE DISCONNECTED FROM THE WATER SYSTEM AND ARE TO BE LEFT IN PLACE SHALL BE CAPPED WITH A M.J. CAP OR PLUG.

12. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED. AT NO ADDITIONAL COST TO THE OWNER THE CONTRACTOR SHALL REPAIR OR COORDINATE WITH THE RESPECTIVE UTILITY ON DAMAGE TO EXISTING UTILITIES.

13. EXISTING HYDRANTS TO BE REMOVED SHALL BE STORED AT AN OWNER APPROVED LOCATION AND REMAIN PROPERTY OF THE OWNER UNLESS OTHERWISE NOTED.

14. EXISTING VALVES AND FITTINGS SALVAGED FOR REUSE SHALL BE STORED AT AN OWNER APPROVED LOCATION AND REMAIN PROPERTY OF THE OWNER.

15. ALL VALVES SHALL OPEN OR LEFT.
- CIVIL ABBREVIATIONS
- | | |
|---------|----------------------------------|
| & | AND |
| Ø, DIA | DIAMETER |
| #, NO | NUMBER |
| AC | ASBESTOS CEMENT |
| APP'D | APPROVED |
| BR | BRICK |
| BLDG | BUILDING |
| CB | CATCH BASIN |
| CEN | CENTER |
| CFS | CUBIC FEET PER SECOND |
| CI | CAST IRON |
| CIPP | CURED-IN-PLACE-PIPE |
| CL | CENTERLINE |
| CMP | CORRUGATED METAL PIPE |
| CO | CLEANOUT |
| CONC | CONCRETE |
| COR | CORNER |
| CPE | CORRUGATED POLYETHYLENE PIPE |
| CY | CUBIC YARD |
| DEMO | DEMOLITION |
| DMH | DRAIN MANHOLE |
| DI | DUCTILE IRON |
| DR | DRAIN |
| DWVG | DRAWING |
| EL | ELEVATION |
| EHH | ELECTRIC HANDHOLE |
| EMH | ELECTRIC MANHOLE |
| FM | FORCE MAIN |
| FT | FEET |
| G | GAS |
| HDPE | HIGH DENSITY POLYETHYLENE |
| HYD | HYDRANT |
| IN | INCH |
| INF | INFLUENT |
| INV | INVERT |
| LB | POUNDS |
| LF | LINEAR FOOT |
| MAX | MAXIMUM |
| MH | MANHOLE |
| MIN | MINIMUM |
| MW | MONITORING WELL |
| N | NORTH |
| NGVD | NATIONAL GEODETIC VERTICAL DATUM |
| N/A | NOT AVAILABLE/APPLICABLE |
| NTS | NOT TO SCALE |
| OD | OUTSIDE DIAMETER |
| OUT | OUTFALL |
| PC | PERFORATED CLAY |
| PSF | POUNDS PER SQUARE FOOT |
| PSI | POUNDS PER SQUARE INCH |
| PS | PRIMARY SLUDGE |
| PT | POINT OF TANGENCY |
| PVC | POLYVINYL CHLORIDE |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROOF DRAIN |
| REQ'D | REQUIRED |
| S | SLOPE, SEWER |
| SD | STORM DRAIN |
| SF | SQUARE FEET |
| SMH | SANITARY SEWER MANHOLE |
| SQ | SQUARE |
| STA | STATION |
| T, XFMR | TRANSFORMER |
| TBM | TEMPORARY BENCH MARK |
| THK | THICKNESS |
| TOS | TOP OF STRUCTURE |
| TYP | TYPICAL |
| UD | UNDERDRAIN |
| UG | UNDERGROUND |
| UGE | UNDERGROUND ELECTRIC |
| VC | VITRIFIED CLAY |
| VF | VERTICAL FOOT |
| W/ | WITH |
| W | POTABLE WATER |
- EXISTING
-
- LEGEND
- PROPOSED
-
- PROJECT NO: 21934
DESIGNED: A.MCDONALD
CAD COORD: A.PHANILOM
CAD: A.PHANILOM
CHECKED: _____
DATE: _____
APPROVED: _____
DATE: _____
SUBMISSION: 90% DESIGN REVIEW

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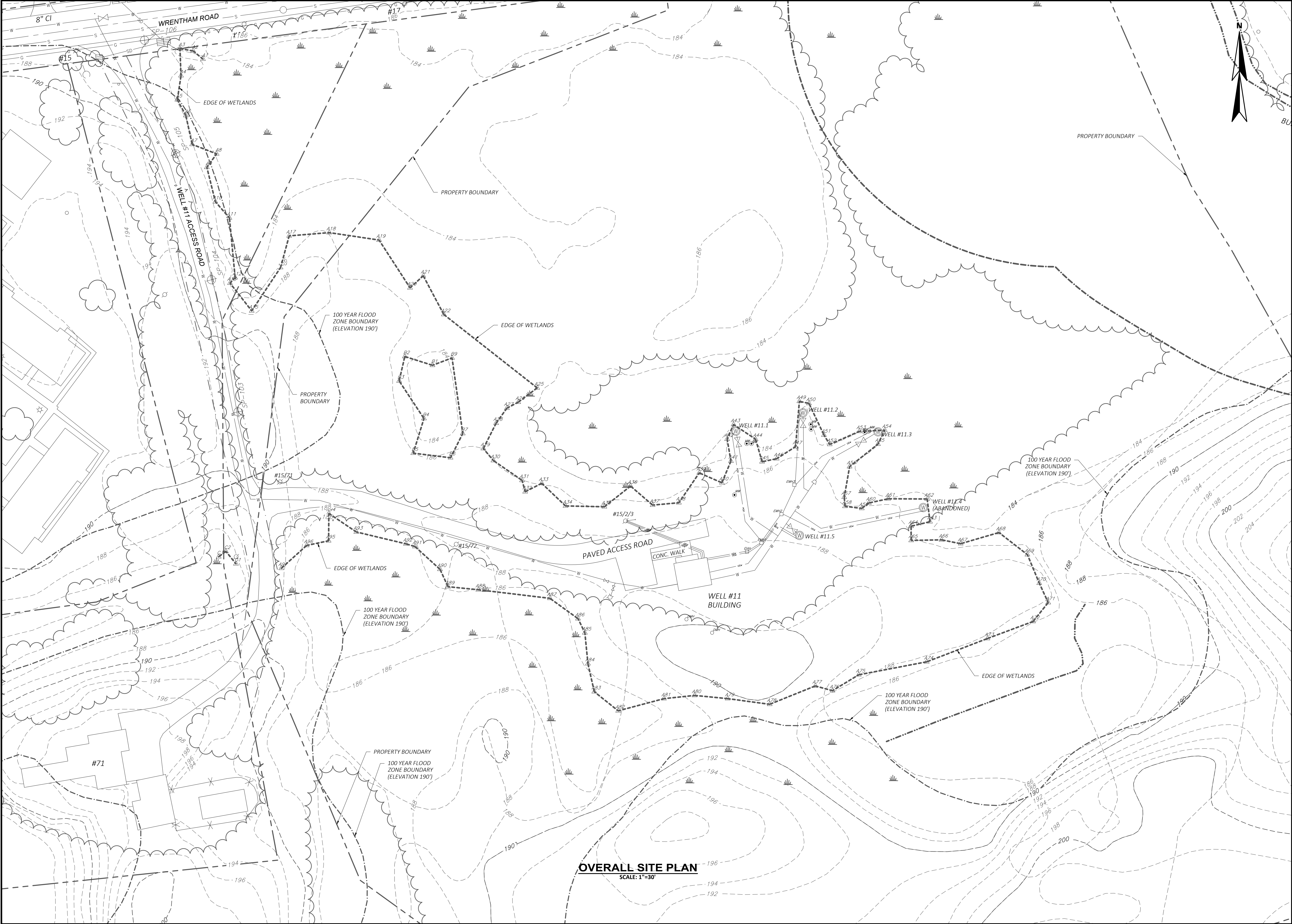
78 BLANCHARD ROAD, SUITE 404, BURLINGTON, MA 01803

TOWN OF BELLINGHAM, MASSACHUSETTS
WELL NO. 11 REPLACEMENT
PROCESS UPGRADES

CIVIL GENERAL NOTES, LEGEND, AND ABBREVIATIONS

DRAWING
C-001

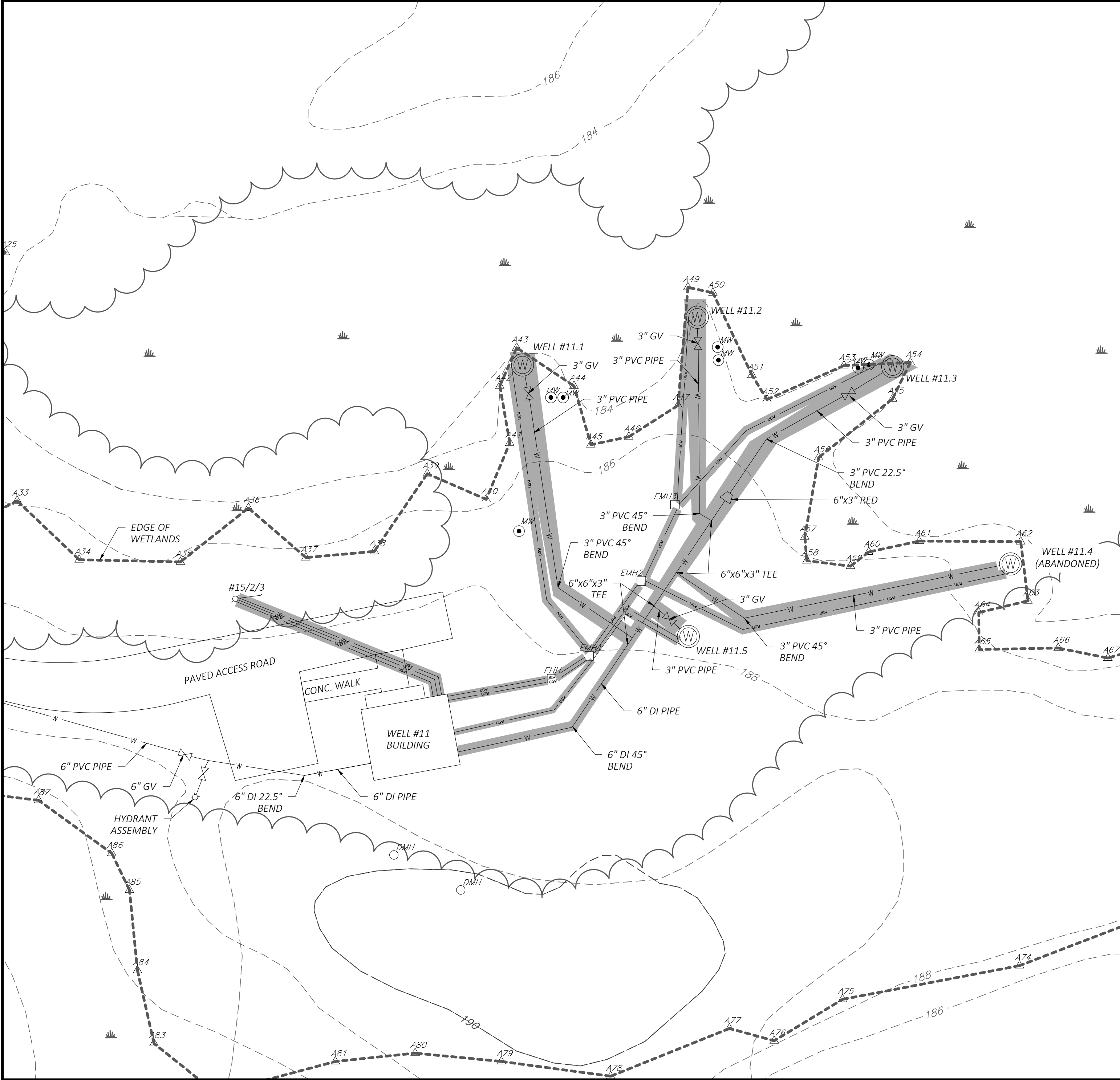
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LAST SAVED BY: ANDY PHAPHILOM 5/29/2025 8:19 AM



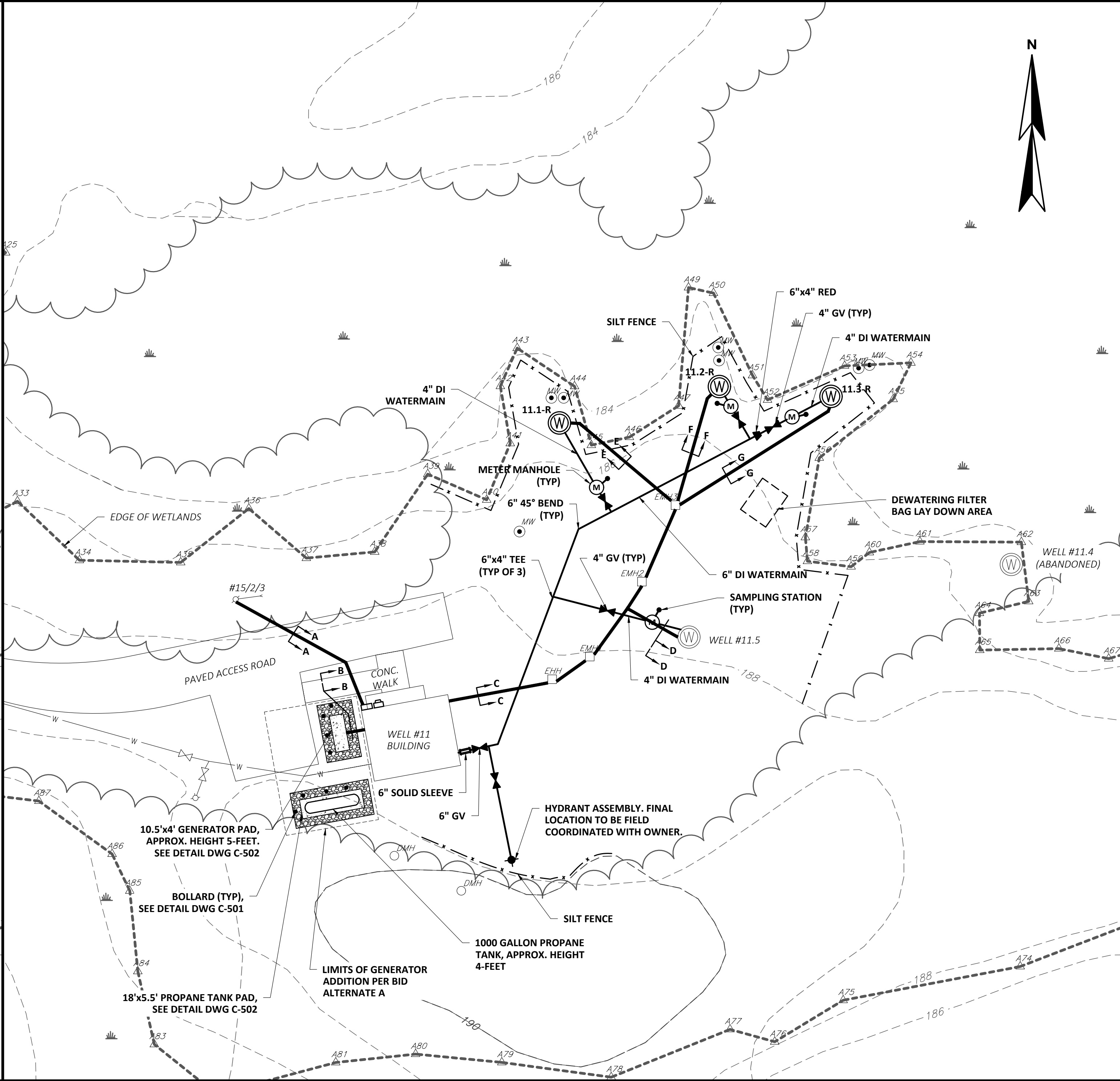
DRAWING		OVERALL SITE PLAN	
TOWN OF BELINGHAM, MASSACHUSETTS WELL NO. 11 REPLACEMENT PROCESS UPGRADES		WRIGHT-PIERCE 978.416.8000 www.wright-pierce.com 78 BLANCHARD ROAD, SUITE 404, BURLINGTON, MA 01803	
PROJECT NO: 21934		DESIGNED: A.MCDONALD	
CAD COORD: A.PHAPHILOM		CHECKED: A.PHAPHILOM	
DATE:		APPROVED: DATE:	
SUBMISSION: 90% DESIGN REVIEW		NO	
REVISIONS		APPD DATE	

LAST SAVED BY: ANDY PHAPHILOM 5/29/2025 8:19 AM

A:\ENG\MA\BELLINGHAM\21934-WELL\REPLACEMENT\PROCESS\UPGRADES\DRAWINGS\CIV\21934-C5-SITEPLAN.DWG | Site Plan DEVDWG.MXD | 1:25849 | 5/29/2025 8:35:33 AM | ANDY PHAPHILOM



EXISTING CONDITIONS AND DEMOLITION PLAN
SCALE: 1"=20'



MODIFICATIONS PLAN
SCALE: 1"=20'

- NOTES:**
- FOR GENERAL NOTES AND LEGEND REFER TO DWG C-001.
 - FOR MISCELLANEOUS CIVIL DETAILS REFER TO DWGS C-501, 502,503, AND 504.
 - EXISTING ITEMS TO BE DEMOLISHED AS PART OF THIS PROJECT INCLUDE, BUT ARE NOT LIMITED TO: 3" PVC PIPE, 6" DUCTILE IRON PIPE, TEES, GATE VALVES, VALVE BOXES, AND COUPLING.
 - EXISTING WELLS NO. 11.1, 11.2, AND 11.3 TO BE TAKEN OUT OF SERVICE AND DECOMMISSIONED IN ACCORDANCE WITH MASSDEP REQUIREMENTS BY A MASSDEP REGISTERED WELL DRILLER FOLLOWING COMPLETION OF THE PROLONGED PUMPING TEST FOR WELLS NO. 11.1-R, 11.2-R, AND 11.3-R.
 - EXISTING WELLS NO. 11.1, 11.2, AND 11.3 PUMPS, MOTORS, AND LEVEL TRANSDUCERS TO BE REMOVED AND FURNISHED TO THE OWNER FOLLOWING COMPLETION OF THE PROLONGED PUMPING TEST FOR WELLS NO. 11.1-R, 11.2-R, AND 11.3-R.
 - THE EXISTING WELL SCREENS SHALL BE FILLED WITH WASHED GRAVEL OR PEA-STONE TO A MINIMUM OF TWO FEET ABOVE THE WELL SCREEN. THE FILL OVERLYING THE GRAVEL/PEA-STONE SHALL BE GRADED TO A FINER GRAIN-SIZE TO MITIGATE GROUT MIGRATION TO THE SCREEN PORTION OF THE DECOMMISSIONED WELL. A CEMENT-BENTONITE GROUT OR APPROVED EQUAL SHALL BE PLACED WITHIN THE WELL CASING TO A DEPTH OF TWO-FEET BELOW GROUND ELEVATION.

REVISIONS		APPD	DATE
NO			
1	DESIGNED: A.MCDONALD		
2	CAD COORD: A.PHAPHILOM		
3	CAD: A.PHAPHILOM		
4	CHECKED: DATE:		
5	APPROVED: DATE:		
6	SUBMISSION: 90% DESIGN REVIEW		

PROJECT NO: 21934 DESIGNED: A.MCDONALD CAD COORD: A.PHAPHILOM CAD: A.PHAPHILOM CHECKED: DATE: APPROVED: DATE: SUBMISSION: 90% DESIGN REVIEW	 978.416.8000 www.wright-pierce.com 78 BLANCHARD ROAD, SUITE 404, BURLINGTON, MA 01803

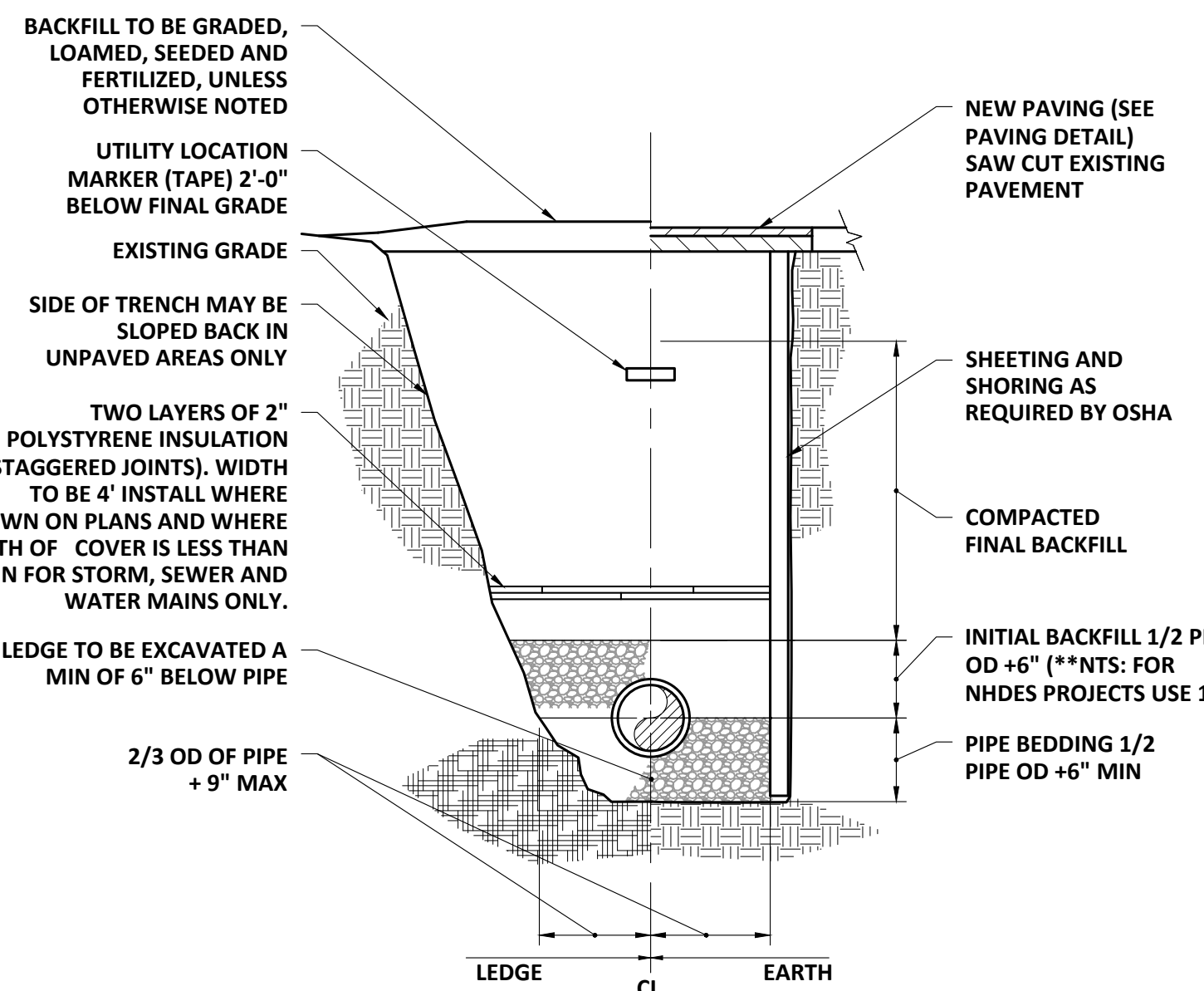
TOWN OF BELLINGHAM, MASSACHUSETTS WELL NO. 11 REPLACEMENT PROCESS UPGRADES	DEMOLITION AND MODIFICATIONS SITE PLAN
--	--

DRAWING	C-102
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PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		VERTICAL BEND (DOWN)		PLUG		REDUCER	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
4"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	12"	12"	12"	12"
6"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	12"	12"	12"	12"
8"	20"	15"	14"	12"	9"	9"	9"	6"	18"	12"	33"	24"	14"	14"	18"	12"
10"	21"	21"	18"	15"	15"	9"	9"	9"	20"	18"	40"	27"	16"	16"	20"	18"
12"	27"	24"	23"	15"	15"	12"	12"	9"	25"	18"	48"	30"	18"	18"	25"	18"
16"	37"	30"	30"	21"	21"	15"	13"	12"	32"	24"	57"	36"	22"	22"	32"	24"

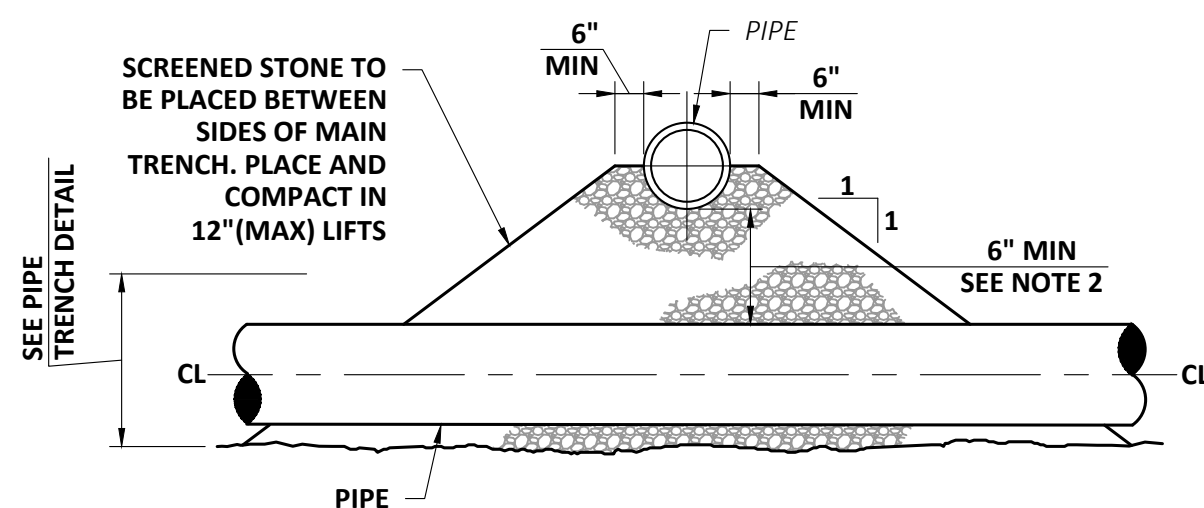
NTS



- NOTES:**
- 1. ALL EXCAVATION MUST MEET OSHA STANDARDS.**
 - 2. INSTALL 3 FOOT LONG IMPERVIOUS MATERIAL DAM IN BEDDING/INITIAL BACKFILL MATERIAL EVERY 100' AND WHERE SHOWN ON PLANS TO PREVENT TRENCH GROUNDWATER FROM BEING CHANNLELED ALONG BEDDING/INITIAL BACKFILL.**
 - 3. SEE SPECIFICATIONS FOR BEDDING AND BACKFILL REQUIREMENTS.**

SCALE: "NTS"

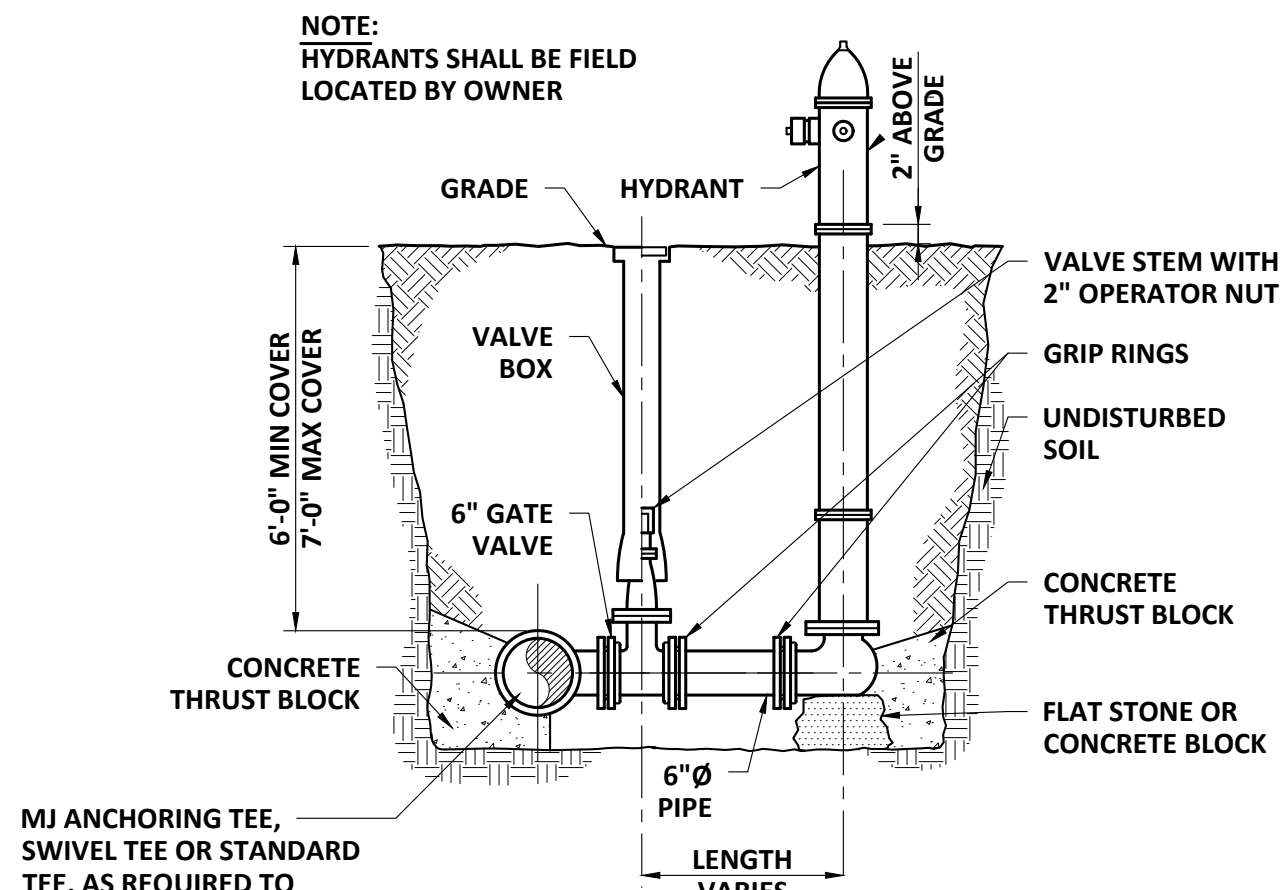
SCALE: "NTS"



- NOTES:**
- 1. JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE.**
 - 2. IF LESS THAN 12", FLOWABLE FILL MAY BE REQUIRED RATHER THAN SCREENED STONE TO FACILITATE PROPER PIPE BEDDING AND COMPACT AT ENGINEER'S DISCRETION. REFER TO SPECIFICATIONS SECTION 02225 ADDITIONAL INFORMATION.**

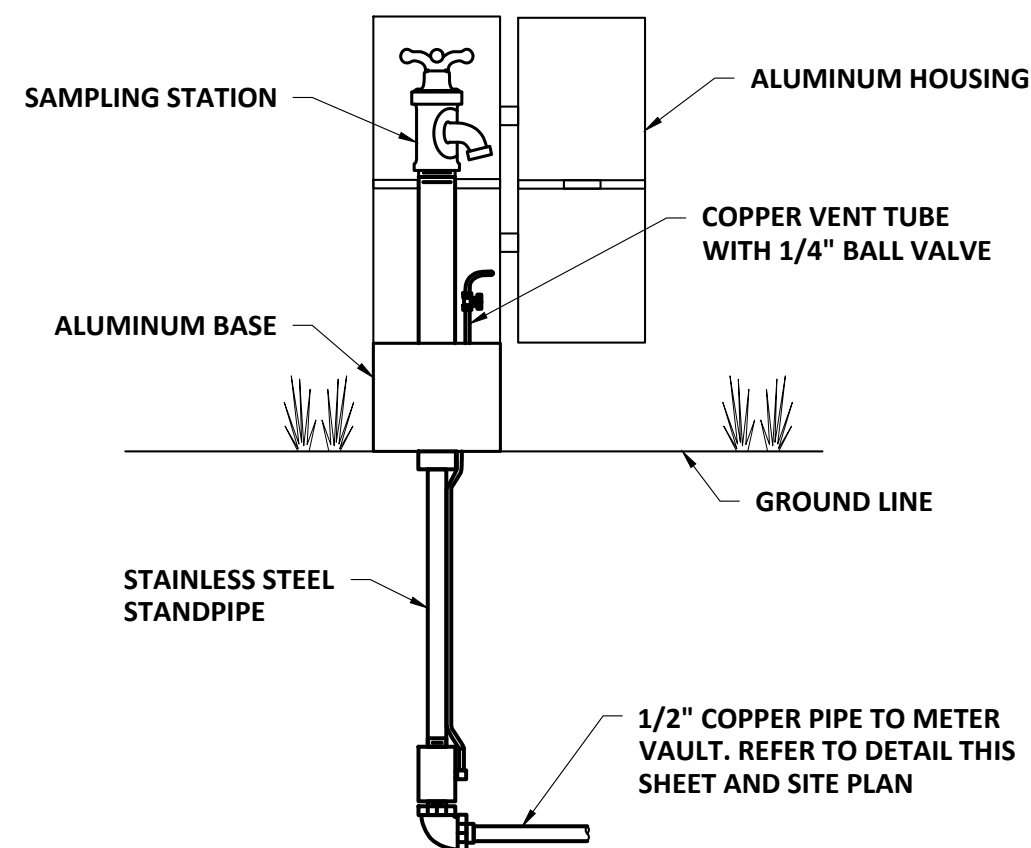
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SCALE: NTS

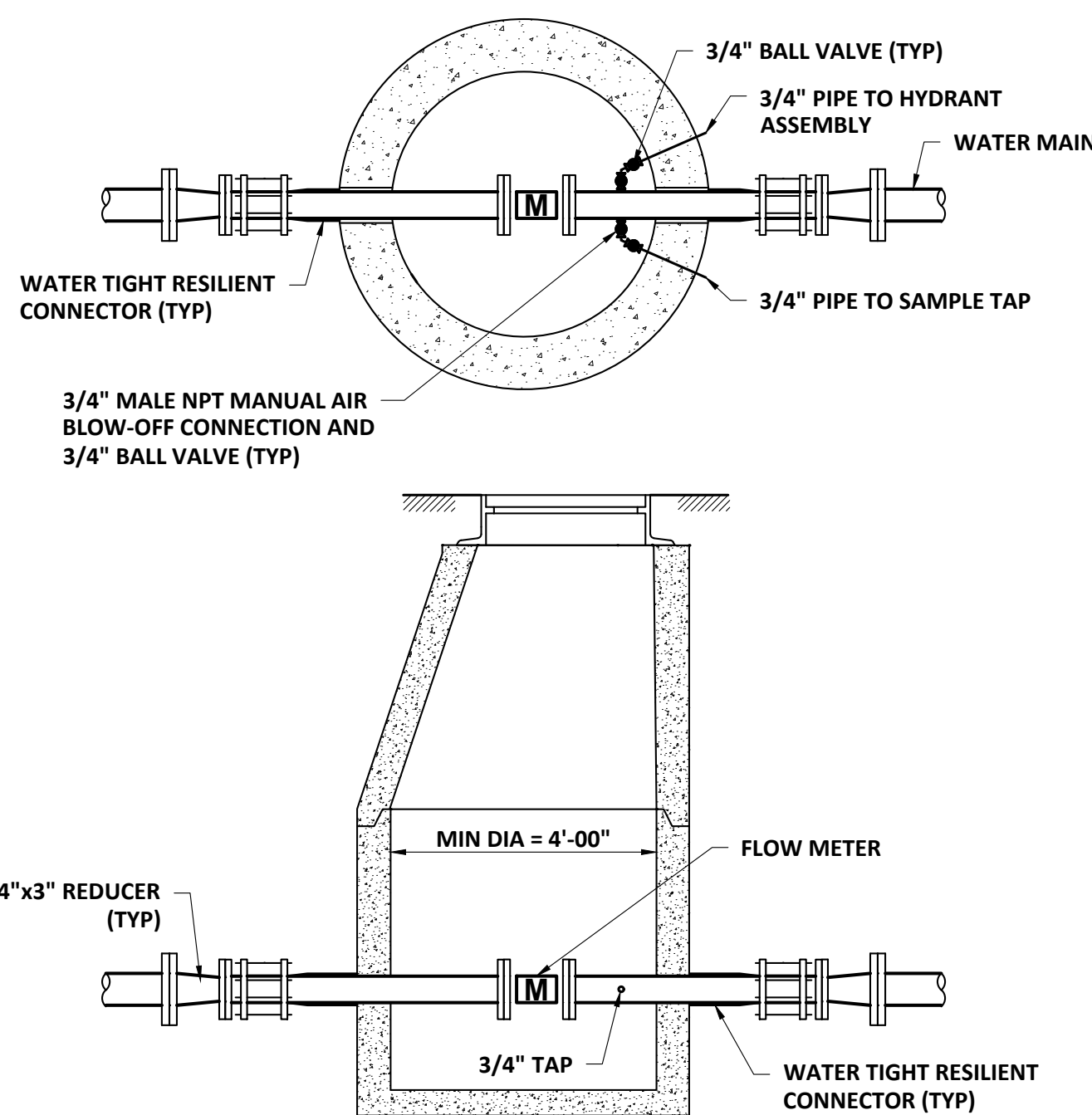
SCALE: NTS



- NOTES:**
1. SUBGRADE SHALL BE COMPACTED BACKFILL CONSISTING OF EXCAVATED MATERIAL, GRAVEL BORROW.
 2. PIPE SHALL BE INSTALLED WITH A MINIMUM OF 6" SAND BEDDING AND 12" OF SAND COVER.
 3. SHALL BE ECLIPSE #88-SS AS MANUFACTURED BY KUPFERLE FOUNDRY COMPANY, OR APPROVED EQUAL.

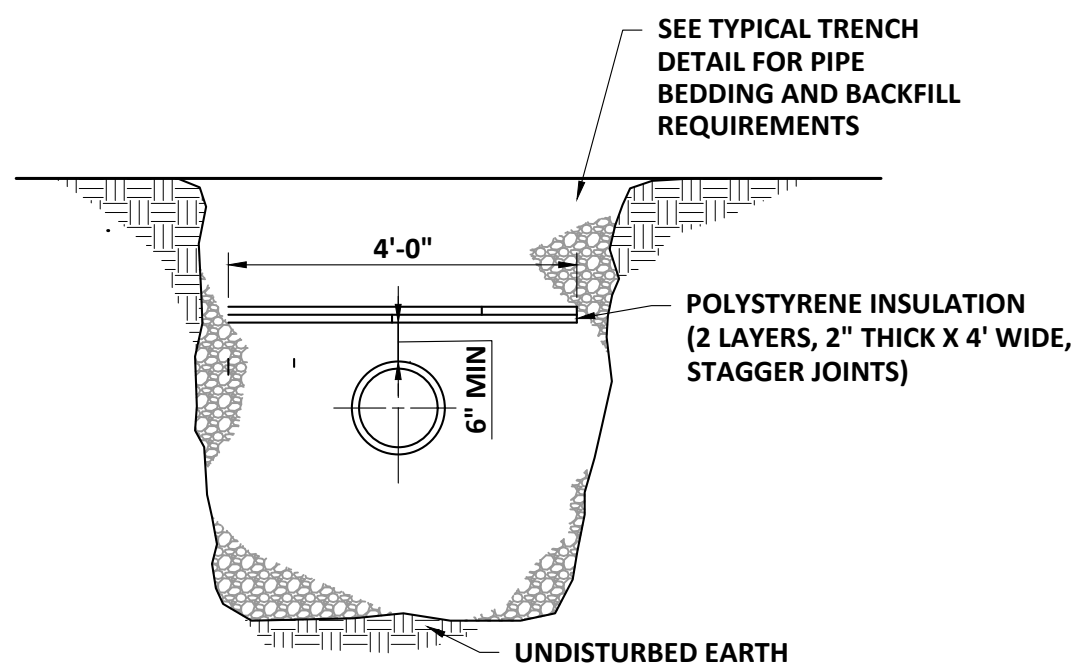
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SCALE: NTS

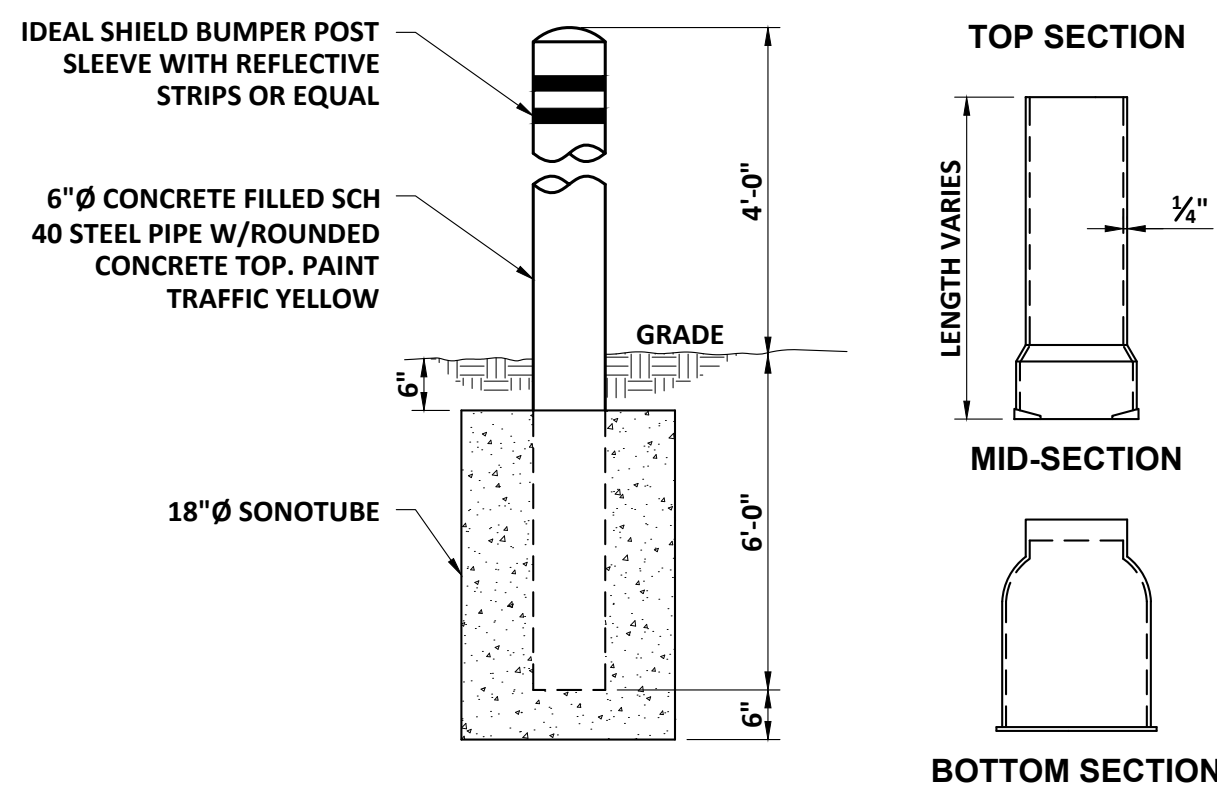
SCALE: NTS



- NOTE:**
TRENCH PIPE INSULATION TO BE USED WHERE DEPTH OF
COVER IS LESS THAN ** FEET OR AS DIRECTED BY THE
ENGINEER

SCALE: NTS

SCALE: NTS



SCALE: NTS

SCALE: NTS

SCALE: NTS

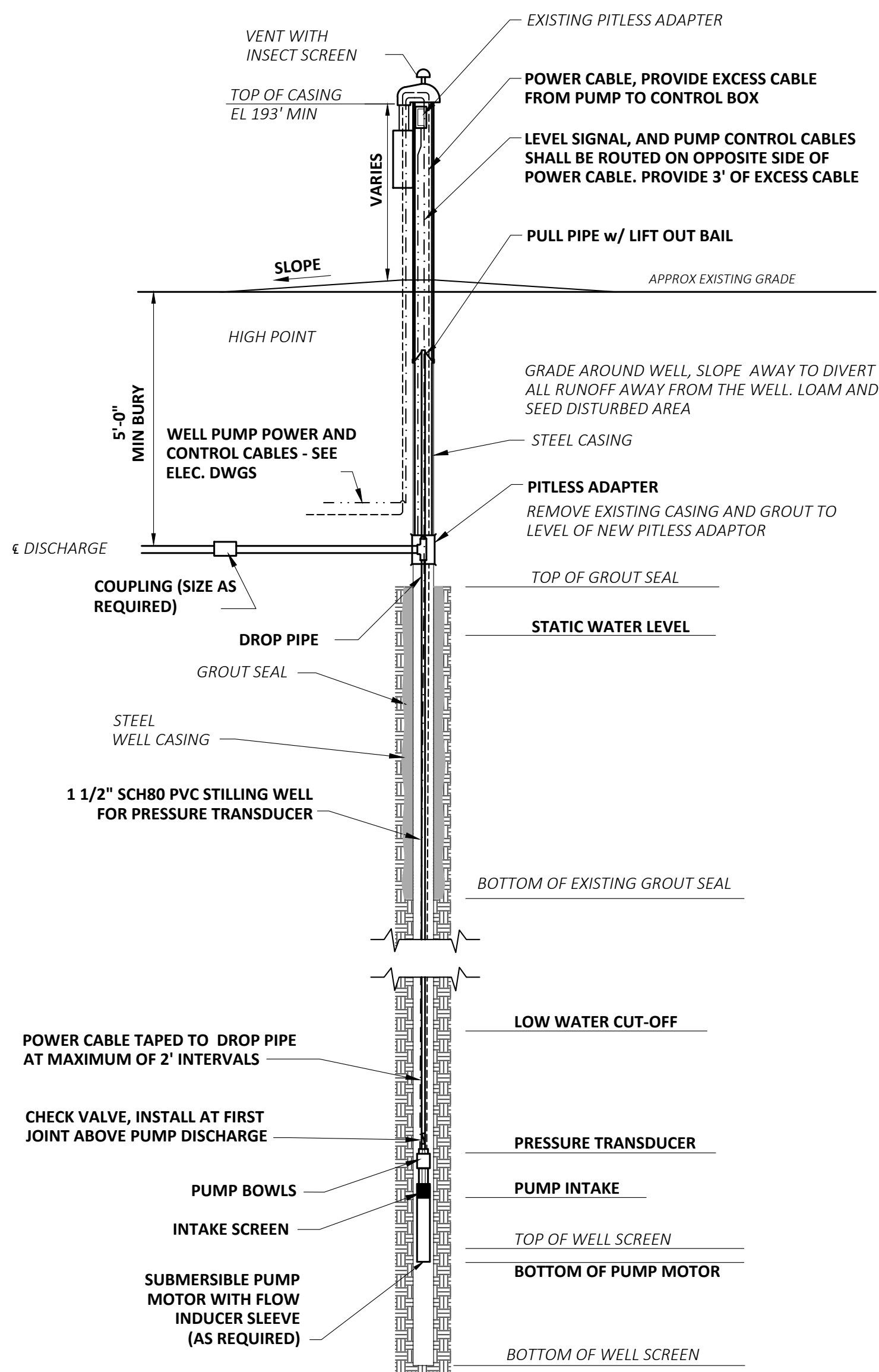
SCALE: NTS

EXISTING WELL NO. 11 ELEVATIONS			
(FEET BELOW TOP OF WELL CASING)			
WMA PERMITTED CAPACITY: 250 GPM (TOTAL)			
DESCRIPTION	WELL 11.1	WELL 11.2	WELL 11.3
WELL CASING DIAMETER (INCH)	8	8	8
TOP OF WELL CASING/COVER	0	0	0
PRESSURE/LEVEL TRANSDUCER	28.2	29.4	28.4
PUMP INTAKE	31.5	32.5	31.5
TOP OF WELL SCREEN	32.6	31.8	32.5
BOTTOM OF WELL SCREEN	38.6	37.8	38.5
WELL SCREEN LENGTH (FEET)	6	6	6
PUMP COLUMN DIAMETER (INCH)	2" HOSE	2" HOSE	2" HOSE
DISCHARGE/PITLESS DISCHARGE DIAMETER (INCH)	3	3	3
PITLESS ADAPTER (Y/N)	Y	Y	Y
INSTALLED WITH FLOW INDUCER (Y/N)	N	N	N

ALL DEPTHS EXPRESSED IN FEET BELOW TOP OF CASING.

1. F

1. FOR DEMOLITION OF EXISTING WELL, THE CONTRACTOR SHALL REMOVE AND SALVAGE THE FOLLOWING: SUBMERSIBLE PUMP, MOTOR, CHECK VALVE, SIGNAL/POWER/CONTROL CABLES, STILL WELL, PRESSURE TRANSDUCER, PITLESS ADAPTER, VERTICAL EFFLUENT PIPING, VENT WITH INSECT SCREEN, APPURTENANCES AND ALL OTHER EXISTING WELL IN ITS ENTIRETY.
2. SEE NOTE 6 ON DWG C-102 FOR DECOMMISSIONING EXISTING WELL.



- NOTES**
1. REMOVE EXISTING WELL PUMP, PIPING, CHECK VALVE, AND APPURTENANCES AT WELL.
 2. REFER TO TABLES FOR WELL ELEVATIONS AND SIZING FOR TYPICAL EXISTING WELL AND REPLACEMENT WELLS.

SCALE: NTS

SCALE: NTS

WELL NO. 11.1-R ELEVATIONS	
(BELOW GROUND SURFACE)	
WMA PERMITTED CAPACITY: 250 GPM	
DESCRIPTION	ELEVATION
TOP OF PITLESS WELL CASING	-4.0
GROUND ELEVATION	0.0
DISCHARGE	5.0
STATIC WATER LEVEL*	6.8
TOP OF GROUT SEAL	7.0
BOTTOM OF GROUT SEAL	20.0
LOW WATER CUT OFF	24.0
LEVEL TRANSDUCER	26.0
PUMP INTAKE	29.0
TOP OF WELL SCREEN	30.0
BOTTOM OF WELL SCREEN	35.0

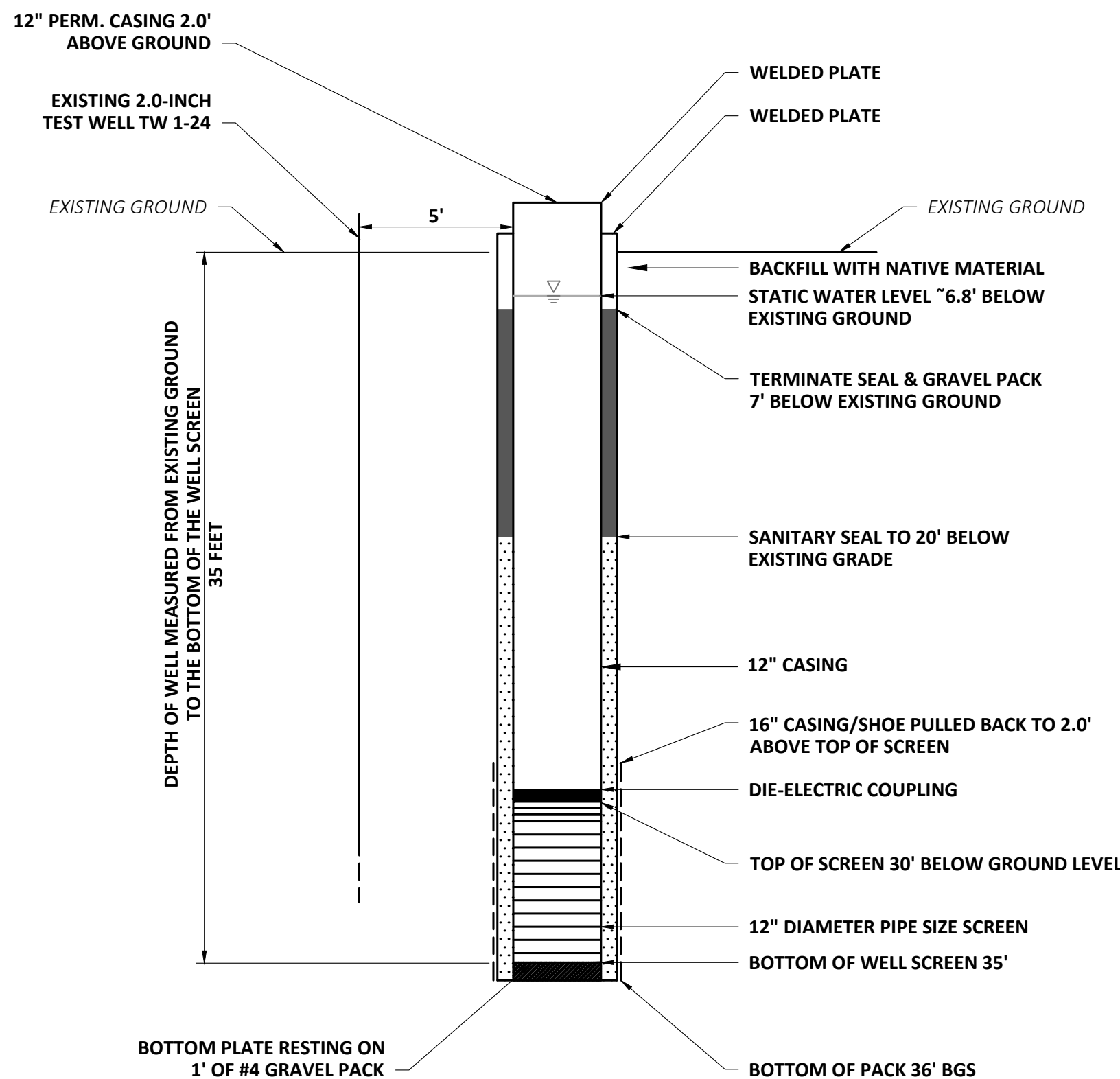
STATIC WATER LEVEL, MEASURED DURING PUMP TESTING.

WELL NO. 11.2-R ELEVATIONS	
(BELOW GROUND SURFACE)	
WMA PERMITTED CAPACITY: 250 GPM	
DESCRIPTION	ELEVATION
TOP OF PITLESS WELL CASING	-4.5
GROUND ELEVATION	0.0
DISCHARGE	5.0
STATIC WATER LEVEL*	6.2
TOP OF GROUT SEAL	7.0
BOTTOM OF GROUT SEAL	20.0
LOW WATER CUT OFF	28.0
LEVEL TRANSDUCER	30.0
PUMP INTAKE	33.0
TOP OF WELL SCREEN	34.0
BOTTOM OF WELL SCREEN	39.0

STATIC WATER LEVEL, MEASURED DURING PUMP TESTING.

WELL NO. 11.2-R ELEVATIONS	
(BELOW GROUND SURFACE)	
WMA PERMITTED CAPACITY: 250 GPM	
DESCRIPTION	ELEVATION
TOP OF PITLESS WELL CASING	-4.5
GROUND ELEVATION	0.0
DISCHARGE	5.0
STATIC WATER LEVEL*	5.3
TOP OF GROUT SEAL	7.0
BOTTOM OF GROUT SEAL	20.0
LOW WATER CUT OFF	26.0
LEVEL TRANSDUCER	28.0
PUMP INTAKE	31.0
TOP OF WELL SCREEN	32.0
BOTTOM OF WELL SCREEN	37.0

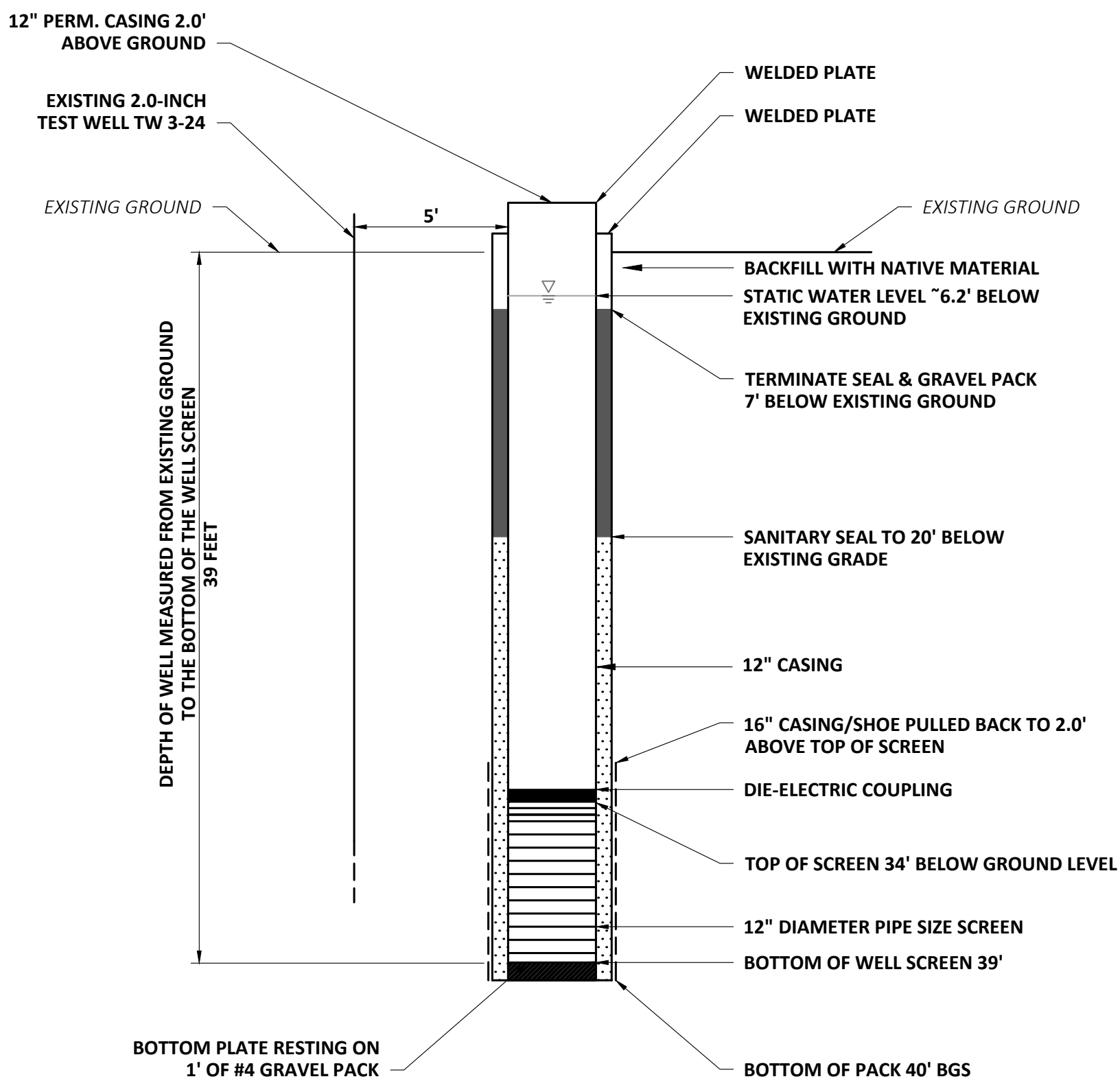
STATIC WATER LEVEL, MEASURED DURING PUMP TESTING.



PROPOSED REPLACEMENT WELL NO. 11.1-R
SCALE: NTS

NOTES

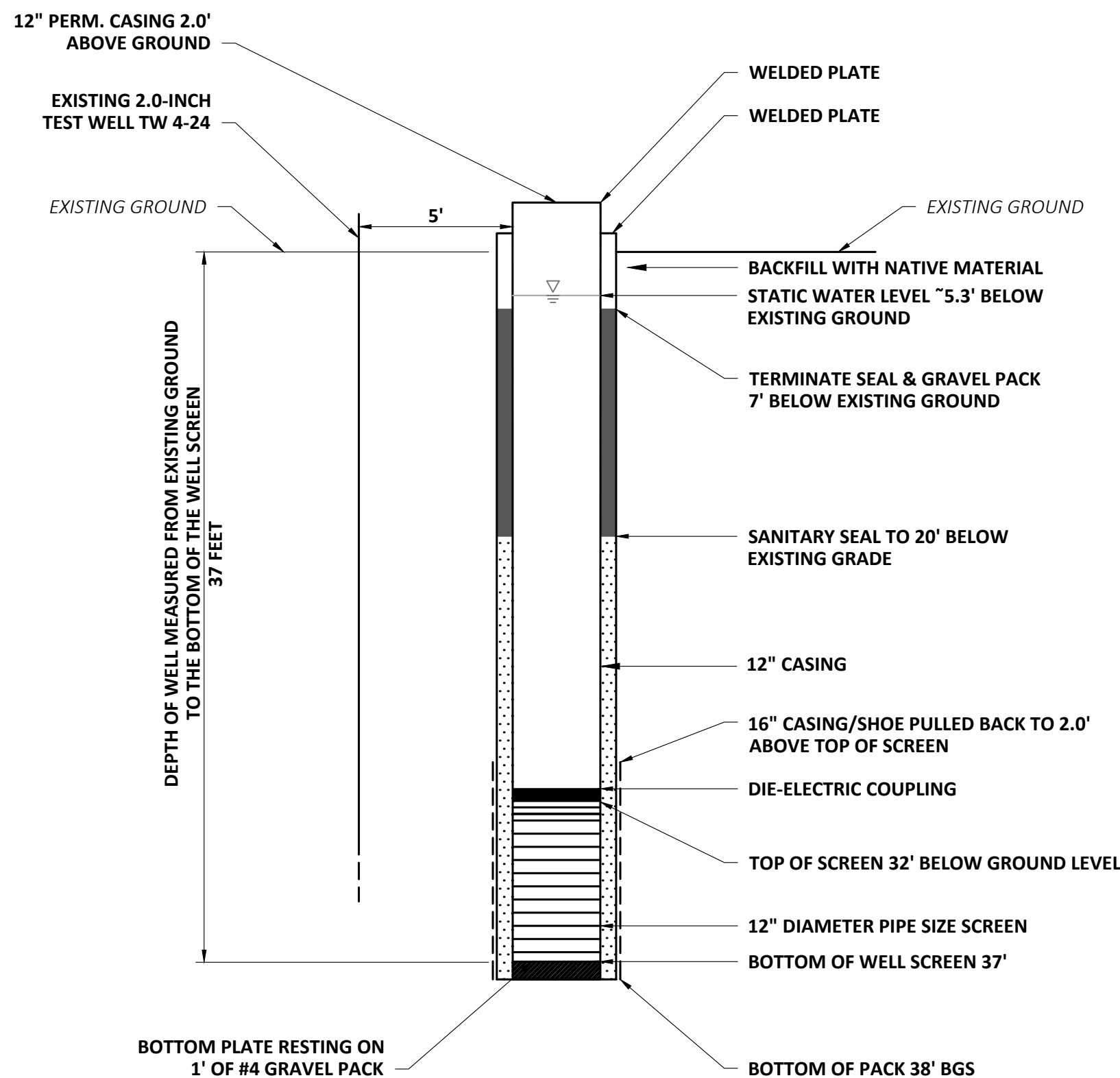
1. SEE LOG OF TEST WELL FOR FORMATION DESCRIPTION IN APPENDIX OF PROJECT SPECIFICATIONS.



PROPOSED REPLACEMENT WELL NO. 11.2-R
SCALE: NTS

NOTES

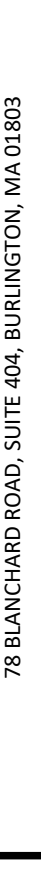
1. SEE LOG OF TEST WELL FOR FORMATION DESCRIPTION IN APPENDIX OF PROJECT SPECIFICATIONS.



PROPOSED REPLACEMENT WELL NO. 11.3-R
SCALE: NTS

NOTES

1. SEE LOG OF TEST WELL FOR FORMATION DESCRIPTION IN APPENDIX OF PROJECT SPECIFICATIONS.

DRAWING	TOWN OF BELLINGHAM, MASSACHUSETTS WELL NO. 11 REPLACEMENT PROCESS UPGRADES	<div><p>WRIGHT-PIERCE</p><p>978.416.8000 www.wright-pierce.com</p><p>78 BLANCHARD ROAD, SUITE 404, BURLINGTON, MA 01803</p></div>			PROJECT NO: 21594 DESIGNED: A.MCDONALD CAD COORD: A.PHAPHLOM CAD: CHECKED: DATE: APPROVED: DATE: SUBMISSION: 90% DESIGN REVIEW	NO	REV/SIONS	APPD. DATE
	CIVIL DETAILS III					△	△	△

EROSION AND SEDIMENTATION CONTROL NOTES

THIS PLAN HAS BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION IN URBAN AND SUBURBAN AREAS AS CONTAINED IN THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS", FRANKLIN, HAMPDEN, HAMPSHIRE CONSERVATION DISTRICTS, DATED MARCH, 1997.

THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL STRUCTURES REQUIRED FOR THE PUMP STATION AND WATER METERING STATION ARE SHOWN ON THE GRADING/EROSION CONTROL PLANS. PROVIDE SILT FENCE, STONE CHECK DAMS AND OTHER EROSION CONTROL MEASURES AS REQUIRED TO ADEQUATELY PREVENT SEDIMENT TRANSPORT AS NOTED IN THE BMP.

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE IN ACCORDANCE WITH THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS", FRANKLIN, HAMPDEN, HAMPSHIRE CONSERVATION DISTRICTS, DATED MARCH, 1997.
2. THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE MAINTAINED IN AN UNTREATED OR UNVEGETATED CONDITION FOR THE MINIMUM TIME REQUIRED. IN GENERAL, AREAS TO BE VEGETATED SHALL BE PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL.
3. SEDIMENT BARRIERS (SILT FENCE, STONE CHECK DAMS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF UPGRADIENT DRAINAGE AREAS.
4. INSTALL SILT FENCE AT TOE OF SLOPES TO FILTER SILT FROM RUNOFF. SEE SILT FENCE DETAIL FOR PROPER INSTALLATION. SILT FENCE WILL REMAIN IN PLACE PER NOTE #5.
5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSURE. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.
6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2 TO 1) UNLESS STABILIZED WITH PERMANENT EROSION CONTROL MEASURES.
7. IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT TO BE COMPLETED 30 DAYS PRIOR TO THE ANTICIPATED DATE OF THE FIRST KILLING FROST, USE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY PERMANENT SEEDING, UNTIL UPGRADIENT AREAS ARE STABILIZED.
8. WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISH GRADED SHALL BE COMPLETED 30 DAYS PRIOR TO THE FIRST KILLING FROST.
9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADED ONTO OPEN AREAS. POST SEEDING SEDIMENT, IF ANY, WILL BE DISPOSED OF IN AN ACCEPTABLE MANNER.
10. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND REVEGETATED AS FOLLOWS:

A. A MINIMUM OF FOUR (4) INCHES OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.

B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT DEEMED FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 POUNDS PER ACRE OR 18.4 POUNDS PER 1,000 SQUARE FEET USING 10-20-20 (N-P205-K20) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB PER 1,000 SQ. FT.).

C. FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED WITH A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED WITH A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYE GRASS. SEEDING RATE IS 3.0 LB PER 1000 SQ. FT. LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED.

D. STRAW MULCH AT THE RATE OF 70-90 LB PER 1000 SQUARE FEET OR A HYDRO-APPLICATION OF CELLULOSE FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER WILL BE USED ON HAY MULCH FOR WIND CONTROL.
11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE WORK AREA IS STABILIZED.
12. WETLANDS (EXCEPTING THOSE WHICH ARE TO BE FILLED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS) WILL BE PROTECTED WITH SILT FENCE INSTALLED AT THE EDGE OF THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE.
13. IN GENERAL, AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS SHALL HAVE A MAXIMUM PERIOD OF EXPOSURE OF NOT MORE THAN 15 DAYS.
14. FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IN ALL AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS.

EROSION CONTROL DURING WINTER CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD DEFINED: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHOULD BE LIMITED TO THAT WHICH CAN BE MULCHED IN ONE DAY PRIOR TO ANY PRECIPITATION EVENT.
4. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN MULCHED WITH STRAW AT A RATE OF 100 POUNDS PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED, AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.
5. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE-FREEZING TEMPERATURES, THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED, AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE 200%-300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT EXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS PERMIT, ALL DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF STRAW WATTLES OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
6.

A) BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE EITHER WOOD CELLULOSE FIBER OR BE ANCHORED WITH MULCH NETTING OR CHEMICAL TACK.

B) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3%, FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.

C) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1, THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
7. AFTER NOVEMBER 1, THE CONTRACTOR SHALL APPLY DORMANT SEEDING OR MULCH AND ANCHORING ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.
8. DURING WINTER CONSTRUCTION PERIODS, ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

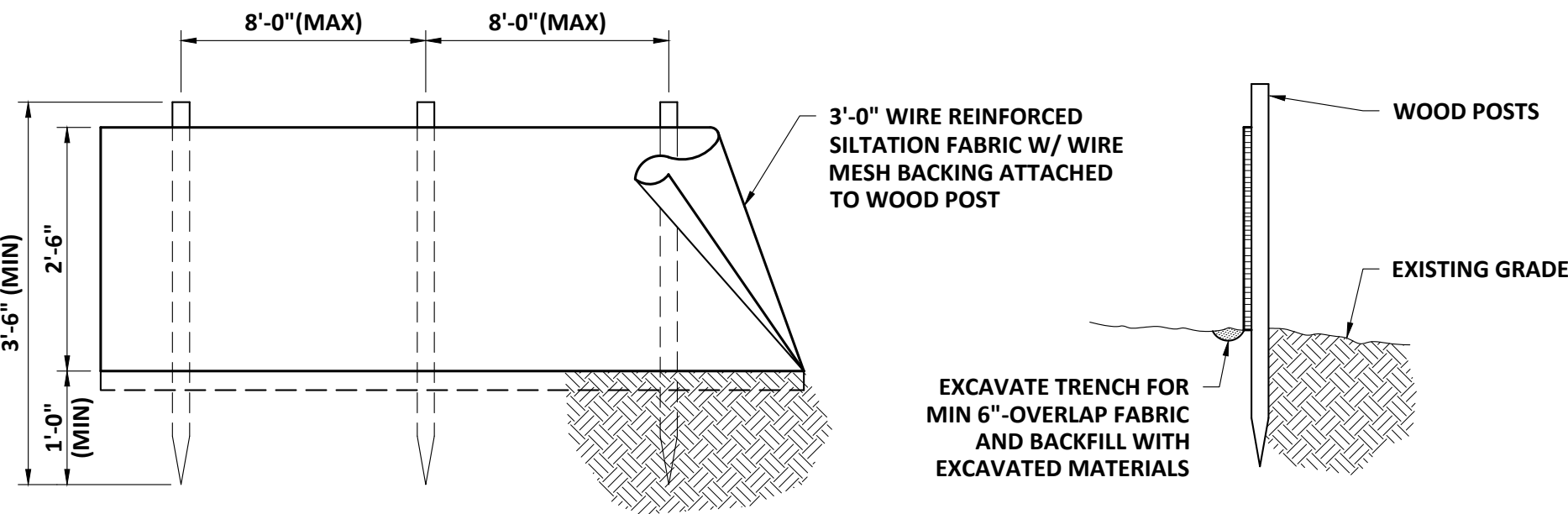
MULCH ANCHORING

ANCHOR MULCH WITH: MULCH NETTING (AS PER MANUFACTURER); ASPHALT EMULSION (0.05 GALLONS PER SQ. YD.); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); OR BE WOOD CELLULOSE FIBER (2000 LB/ACRE). WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

ADDITIONAL TEMPORARY SEED MIXTURE (OR PERIODS LESS THAN 12 MONTHS)		
DATES	SEED	RATE
4/1 - 7/1 8/15 - 9/15	OATS	80 LB/ACRE
4/1 - 6/1 (8/15 - 9/15)	ANNUAL RYE GRASS	40 LB/ACRE
(8/15 - 10/15)	WINTER RYE	120 LB/ACRE
(11/1 - 4/1)	MULCH W/ DORMANT SEED	80 LB/ACRE*
(5/1 - 6/30)	FOXTAIL MILLET	30 LB/ACRE
*SEED RATE ONLY		

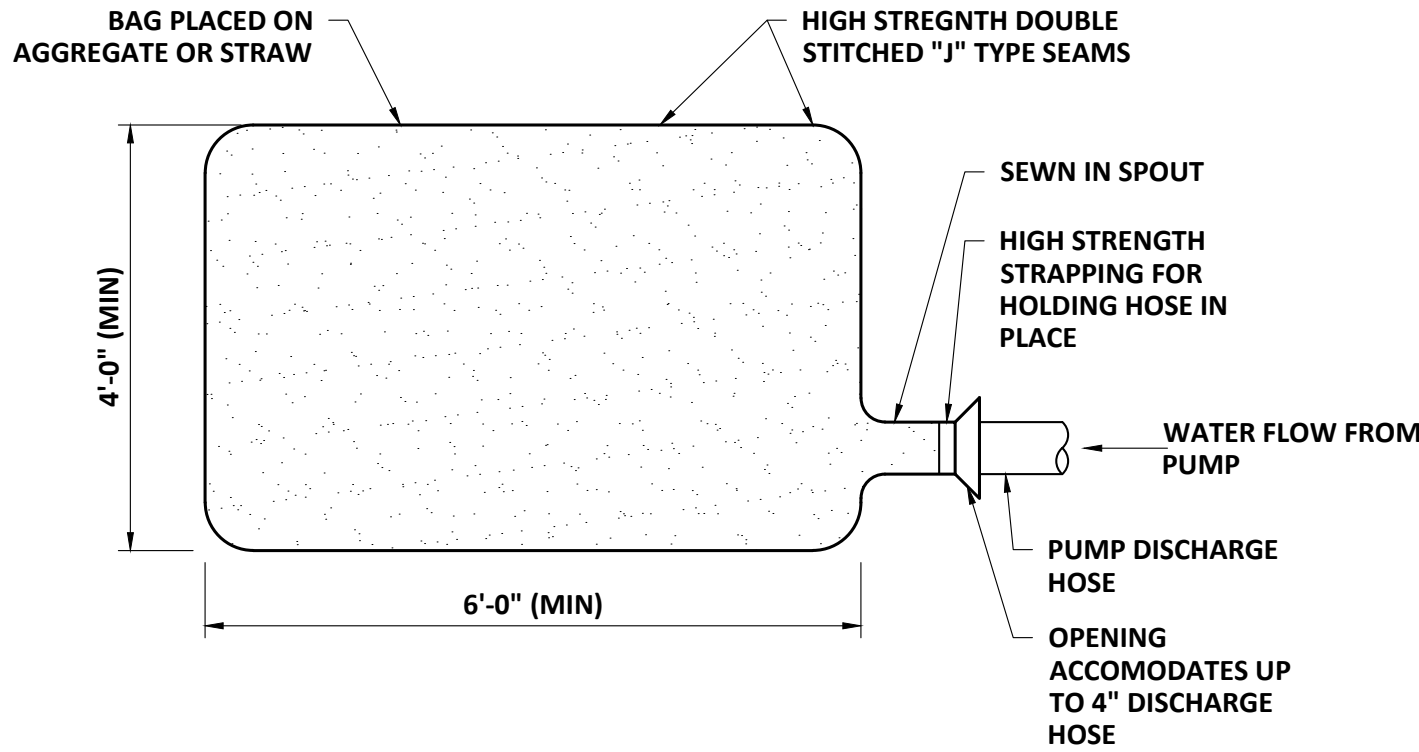
MULCH AND MULCH ANCHORING

MULCH		
LOCATION	MULCH	RATE (1000 S.F.)
PROTECTED AREA	STRAW OR HAY *	100 POUNDS
WINDY AREAS	STRAW OR HAY (ANCHORED) *	100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES (GREATER THAN 3:1)	JUTE MESH, EXCELSIOR MAT OR EQUIV.	AS REQUIRED AS REQUIRED
* A HYDRO-APPLICATION OF CELLULOSE FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SHALL BE USED ON HAY MULCH FOR WIND CONTROL.		



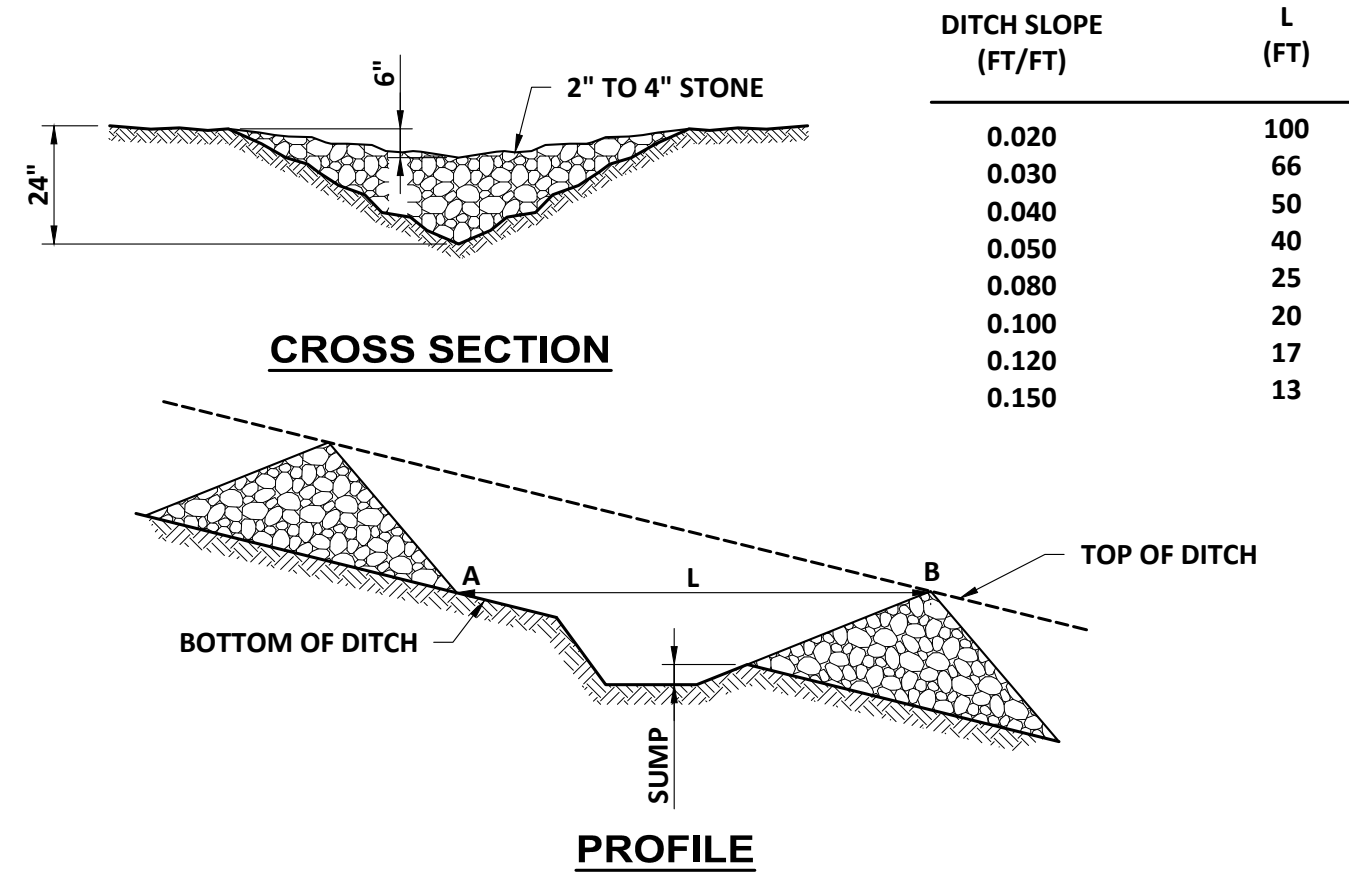
SILT FENCE INSTALLATION DETAIL

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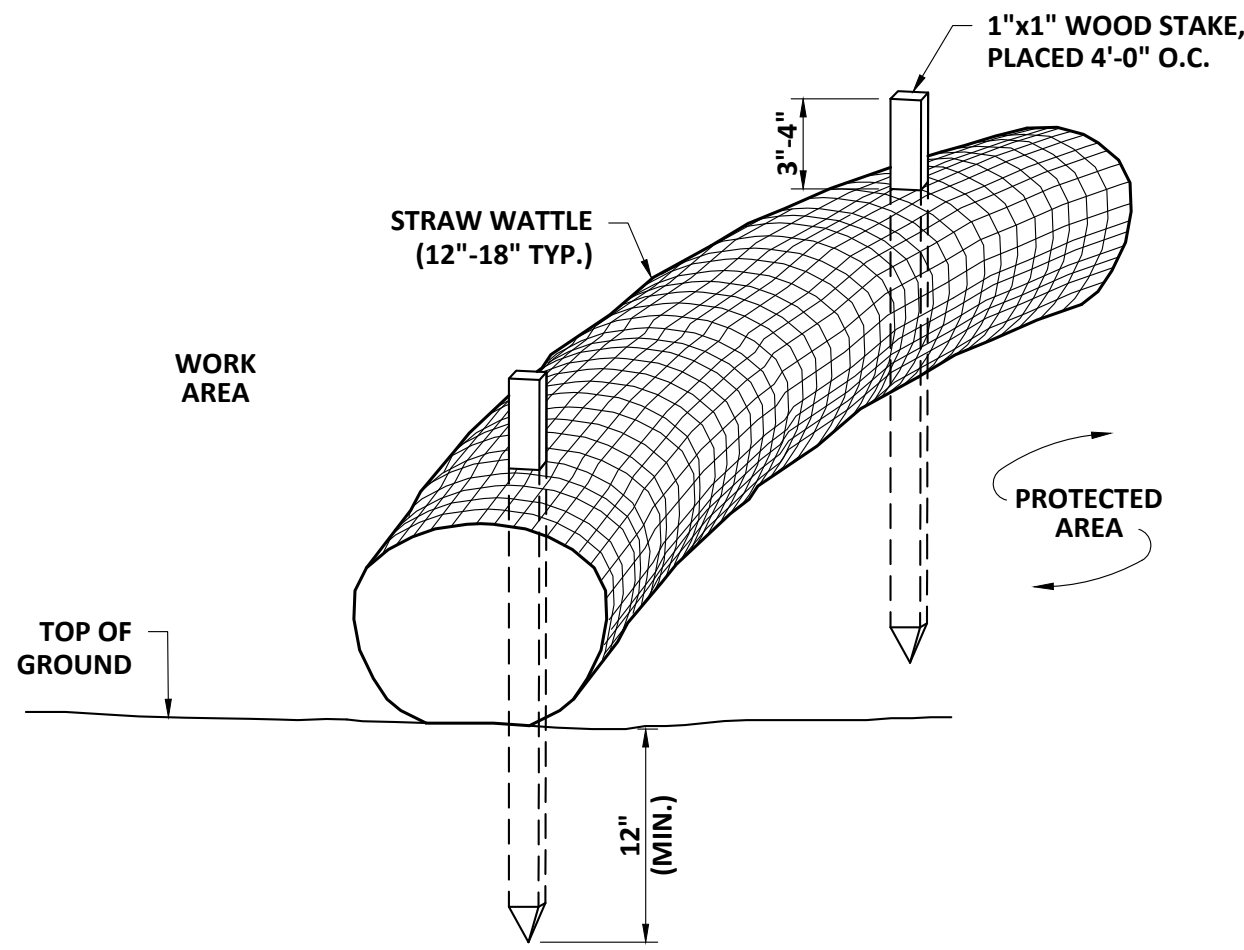
DEWATERING FILTER BAG

SCALE: NTS



STONE CHECK DAM DETAIL

SCALE: "NTS"



STRAW WATTLE DETAIL

NTS

PROJECT NO: 21934
DESIGNED: A.MCDONALD
CAD COORD: A.PHAPHILOM
CAD: A.PHAPHILOM
CHECKED:
DATE:
APPROVED:
DATE:
SUBMISSION: 90% DESIGN REVIEW

TOWN OF BELINGHAM, MASSACHUSETTS
WELL NO. 11 REPLACEMENT
PROCESS UPGRADES

EROSION CONTROL AND SEDIMENTATION NOTES & DETAILS

DRAWING
C-504