Purchase College

STATE UNIVERSITY OF NEW YORK

735 Anderson Hill Road, Purchase NY 10577

PROJECT:

REHAB HTHW SYSTEM
NATURAL GAS LINE TO PHYSICAL EDUCATION BLDG.

SUCF Project – 291014-03

O'BRIEN & GERE ENGINEERS, INC.

163 North Wellwood Avenue

Lindenhurst, New York 11757

REVISIONS

REV	DESCRIPTION	DATE	APPVD
A	CLIENT REVIEW – 100% SUBMISSION	09/13/2018	KMD

GENERAL NOTES

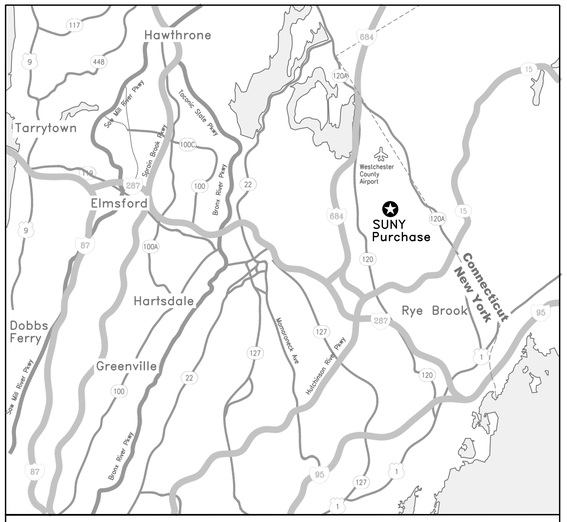
1. THE CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS BEFORE STARTING WORK.
2. EQUIPMENT DIMENSIONAL INFORMATION IS PRESENTED FOR REFERENCE ONLY. DIMENSIONS MAY VARY ACCORDING TO THE EQUIPMENT MANUFACTURER SELECTED AND FIELD VARIATIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ANY DIMENSIONAL VARIATIONS BETWEEN THESE CONSTRUCTION DOCUMENTS AND THE AS-DELIVERED EQUIPMENT.
4. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM AND COORDINATE JOBSITE DIMENSIONS THAT AFFECT THE ERECTION OR OPERATION OF SYSTEMS, AS INTENDED BY THESE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL ENSURE INSTALLED EQUIPMENT MAINTAINS ADEQUATE CLEARANCES FOR OPERATIONAL ACCESS AND SERVICE, AND SHALL MAINTAIN ANY CLEARANCES REQUIRED BY ALL APPLICABLE CODES.
5. THE CONTRACTOR SHALL INFORM THE OWNER/ENGINEER OF ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND FIELD CONDITIONS THAT AFFECT THE WORK DESCRIBED HEREIN.
6. IF, DURING THE COURSE OF CONSTRUCTION, A CONDITION EXISTS WHICH DISAGREES OR CONFLICTS WITH THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. IF THE CONTRACTOR FAILS TO FOLLOW THIS PROCEDURE, HE SHALL ASSUME ALL RESPONSIBILITY AND LIABILITY ARISING THEREOF.
7. THESE CONTRACT DOCUMENTS ARE INTENDED TO INDICATE THE WORK NEEDED TO PROVIDE A COMPLETE AND READY-FOR-OPERATION INSTALLATION. THESE DOCUMENTS ARE INTENDED TO GUIDE THE CONTRACTOR. THESE DOCUMENTS ARE NOT INTENDED TO SHOW EVERY DETAIL OF THE EXISTING CONDITIONS OR NEW INSTALLATIONS, NOR DO THEY DESCRIBE EVERY FITTING REQUIRED FOR THE INSTALLATION OF THE WORK.
8. "PROVIDE" SHALL MEAN "FURNISH AND INSTALL" AND SHALL INCLUDE ALL EQUIPMENT, DEVICES, HARDWARE, MOUNTS, LABOR, RIGGING, SUBCONTRACTS, ETC., THAT RESULT IN A COMPLETE AND FUNCTIONAL JOB.
9. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT, ACCESSORIES, SUPPORTS, FITTINGS, AND ALL OTHER INCIDENTAL MATERIAL NEEDED FOR THE COMPLETE AND OPERATING INSTALLATION. MINOR ITEMS TO FINISH THE WORK SUCH AS PATCHING, BLOCKING, TRIM, TOUCH-UP PAINT, ETC., SHALL BE PROVIDED WHETHER OR NOT INDICATED IN THE CONTRACT DOCUMENTS.
10. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED TO ASSEMBLE LOOSE EQUIPMENT AND PARTS AS SHIPPED BY THE EQUIPMENT MANUFACTURERS FOR ALL OWNER-FURNISHED EQUIPMENT.
11. THE CONTRACTOR'S BID SHALL BE BASED ON THE EQUIPMENT LISTED IN THESE CONTRACT DOCUMENTS. SHOULD THE CONTRACTOR WISH TO SUBSTITUTE ALTERNATE EQUIPMENT, HE SHALL LIST SUCH ALTERNATES DURING THE BIDDING PROCESS AND HE SHALL LIST THE AMOUNT OF MONEY TO BE ADDED OR DEDUCTED FROM HIS PRICE. FINAL APPROVAL FOR SUBSTITUTES SHALL BE OBTAINED FROM THE CONSTRUCTION MANAGER PRIOR TO PROCURING THE EQUIPMENT. IF THE CONTRACTOR NAMES NO SUBSTITUTES WITH HIS BID, THE EQUIPMENT INDICATED IN THESE DRAWINGS OR SPECIFICATIONS SHALL BE USED.
12. THE CONTRACTOR SHALL ASSUME ALL COSTS ASSOCIATED WITH PROVIDING SUBSTITUTES. "SUBSTITUTES" SHALL INCLUDE ACCEPTABLE ALTERNATES, ALTERNATES TO THE SCOPE OF WORK, OR ANY MODIFICATIONS THAT DEVIATE FROM THE BASE-BID DESIGN. THE ASSOCIATED COSTS SHALL INCLUDE, BUT ARE NOT LIMITED TO REDESIGN & ENGINEERING COSTS, CHANGES CAUSED TO INTERRELATED SYSTEMS SUCH AS ELECTRICAL COMPONENTS, WIRING, AND CONNECTIONS, CHANGES TO MOUNTING SYSTEMS OR STRUCTURES, REROUTING OF INTERFERENCES, ETC.
13. SIGNIFICANT SUBSTITUTIONS PROPOSED BY THE CONTRACTOR MAY REQUIRE SUBMISSIONS OF STRESS OR SAFETY ANALYSES SEALED BY A REGISTERED PROFESSIONAL ENGINEER AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE AND AT NO COST TO THE OWNER.
14. THE CONTRACTOR SHALL GIVE NOTICES, OBTAIN ALL PERMITS, PAY ALL FEES AND COMPLY WITH ALL LAWS, RULES AND REGULATIONS APPLICABLE TO THE WORK.
15. THE CONTRACTOR SHALL USE SHOP SUBMITTALS FOR FINAL COORDINATION OF HIS WORK.
16. THE CONTRACTOR SHALL SUBMIT EQUIPMENT INFORMATION, SHOP DRAWINGS AND A CONSTRUCTION SCHEDULE TO THE OWNER FOR APPROVAL BEFORE STARTING ANY WORK OR PURCHASING ANY EQUIPMENT.
17. ALL MATERIALS PROVIDED SHALL BE NEW AND FREE FROM ANY DEFECT. SALVAGED OR REBUILT EQUIPMENT SHALL NOT BE PERMITTED.
18. ALL MATERIALS, PIPING, ETC., SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, AND ALL LOCAL AND NATIONALLY RECOGNIZED STANDARDS, SUCH AS NFPA, NEC., ASTM, UL, ETC., AS EXAMPLES.
19. THE CONTRACTOR SHALL ENSURE COORDINATION SO THAT ONCE THE PROJECT IS STARTED, IT SHALL CONTINUE WITHOUT DELAY UNTIL COMPLETION.
20. THE CONTRACTOR IS RESPONSIBLE FOR THE WORK OF ALL HIS SUBCONTRACTORS, AND THEIR CONFORMANCE TO THESE CONTRACT DOCUMENTS.
21. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHER CONTRACTORS AND THE OWNER'S REPRESENTATIVE.
22. THE CONTRACTOR SHALL PROVIDE NOTIFICATION AND OPPORTUNITY FOR INSPECTION TO THE OWNER BEFORE CLOSING UP ANY WORK, EQUIPMENT, OR PIPING SYSTEM.
23. THE CONTRACTOR SHALL PROVIDE ALL BUILDING MODIFICATIONS AND CONSEQUENTIAL REPAIRS TO THE BUILDING FOR RIGGING, INSTALLATION OF EGRESSES, INSTALLATION OF VENTS, ETC., AS REQUIRED TO PERFORM THIS WORK.
24. THE CONTRACTOR SHALL PERFORM ALL ACCEPTANCE TESTS IN THE PRESENCE OF THE OWNER OR OWNER'S REPRESENTATIVE.
25. THE CONTRACTOR SHALL MAINTAIN THE WORK AREA IN A STATE FREE FROM HAZARDS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, FOLLOW SAFE WORKING PRACTICES, AND MAINTAIN THE SITE AND ADJACENT AREAS SAFE FOR WORKERS, INSPECTORS, AND FACILITY EMPLOYEES.
26. SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
27. THE OWNER'S REPRESENTATIVE DOES NOT PROFESS TO BE FAMILIAR WITH CONSTRUCTION SITE SAFETY REQUIREMENTS. MEETING SITE SAFETY AND OSHA REQUIREMENTS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO RETAIN A THIRD PARTY CONSULTANT IF HE OBSERVES PRACTICES THAT APPEAR UNSAFE.
28. IF THE OWNER'S REPRESENTATIVE DEEMS THAT ANY UNSAFE CONDITION APPEARS TO EXIST, THE OWNER HAS THE RIGHT TO STOP ALL WORK. ANY STOP-WORK ORDERS BY THE OWNER BECAUSE OF POTENTIALLY UNSAFE CONDITIONS SHALL NOT BE USED BY THE CONTRACTOR TO DELAY THE WORK SCHEDULE, INCREASE THE CONTRACT VALUE, OR AVOID ANY LIQUIDATED-DAMAGE PENALTIES ASSOCIATED WITH THE WORK OR TO MAKE A CLAIM AGAINST THE OWNER OR CONSTRUCTION MANAGER.
29. THE OWNER REQUIRES ACCESS TO AND AROUND AREAS OF THE BUILDING IMMEDIATELY ADJACENT TO AREAS OF THE WORK. ALL WORK MUST BE CONDUCTED IN A MANNER TO MINIMIZE DISRUPTION OF NORMAL FACILITY OPERATIONS.
30. SAFE AND DIRECT ENTRANCE TO AND FROM THE EXISTING BUILDING SHALL BE MAINTAINED AT ALL TIMES WHILE CONSTRUCTION IS IN PROGRESS.
31. ALL CONSTRUCTION MATERIALS AND TOOLS SHALL BE STORED IN AREAS DESIGNATED BY THE OWNER. THE OWNER SHALL NOT BE RESPONSIBLE FOR ANY OF THE CONTRACTOR'S SHIPPING, DELIVERY OR SECURITY ISSUES RELATED TO MATERIALS, EQUIPMENT, OR TOOL STORAGE.
32. THE CONTRACTOR SHALL LEAVE THE SITE IN A NEAT, ORDERLY AND SAFE CONDITION AT THE END OF EACH WORK DAY. THE SITE AND BUILDING SHALL BE MADE AS SECURE AS POSSIBLE SO AS TO PREVENT UNAUTHORIZED ENTRY AND ACTIVITY. ATTENTION SHALL BE GIVEN TO WEATHER PROTECTION, INCLUDING UNCONDITIONED AIR INFILTRATION DURING THE CONSTRUCTION PERIOD.
33. ALL DEMOLISHED MATERIALS, UNLESS OTHERWISE NOTED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
34. DISPOSAL OF ALL MATERIALS SHALL BE DONE BY THE CONTRACTOR IN ACCORDANCE WITH STATE & LOCAL REQUIREMENTS. THE CONTRACTOR SHALL MAINTAIN THE RECORDS OF PROPER DISPOSAL, WHICH SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE UPON HIS REQUEST.
35. THE OWNER SHALL HAVE THE RIGHT AT ALL TIMES TO EXAMINE THE WORK AND DETERMINE THE CONFORMANCE WITH THE REQUIREMENTS AND INTENT OF THE CONTRACT DOCUMENTS.
36. THE CONTRACTOR SHALL COMPLETE ALL WORK WITH MINIMAL DISRUPTION OF THE FACILITY'S UTILITIES AND OPERATIONS. ANY WORK REQUIRING A SHUTDOWN OF ANY UTILITIES SHALL BE SCHEDULED 3 DAYS IN ADVANCE. ALL OUTAGES SHALL BE COORDINATED WITH THE FACILITY.
37. THE FACILITY OPERATES THROUGHOUT THE ENTIRE YEAR. ALL SHUTDOWNS THAT REQUIRE THE LOSS OF UTILITIES TO THE FACILITY SHALL BE LIMITED TO PERIODS & DURATIONS AS SPECIFIED BY THE FACILITY. THE CONTRACTOR'S BID SHALL ANTICIPATE AND INCLUDE THE NECESSARY WEEKEND/MIDNIGHT PREMIUM TIME TO ACCOMPLISH ALL SHUTDOWN WORK WITHIN THE LIMITATIONS OF MAINTAINING CONTINUOUS SERVICE TO THE FACILITY.
38. THE CONTRACTOR SHALL MAINTAIN AWARENESS OF THE FACILITY'S SHUTDOWN RESTRICTIONS AND LIMITATIONS. ANY WORK-SCHEDULING PROBLEMS CAUSED BY SHUTDOWN RESTRICTIONS BY THE FACILITY SHALL NOT BE CAUSE FOR CLAIM OR DELAY BY THE CONTRACTOR.
39. THE CONTRACTOR SHALL PROVIDE THE NECESSARY LABOR INCLUDING ANY PREMIUM-TIME AND OVERTIME LABOR REQUIRED TO MAINTAIN THE CONSTRUCTION SCHEDULE.
40. ALL WIRE, CABLE, TRANSFORMER WINDINGS, ETC. SHALL BE COPPER.
41. ALL STRUCTURAL STEEL, PIPING, REINFORCING STEEL, OR OTHER MAJOR STEEL ITEMS TO BE INCORPORATED IN THE WORK SHALL BE PRODUCED OR MADE IN WHOLE OR SUBSTANTIAL PART IN THE UNITED STATES, ITS TERRITORIES OR POSSESSIONS.
42. ALL WORK AND EQUIPMENT SHALL BE FULLY GUARANTEED FOR ONE (1) YEAR FROM DATE OF FINAL PAYMENT AND ACCEPTANCE UNLESS OTHERWISE STATED IN THE SPECIFICATIONS.
43. ALL WORK SHALL CONFORM TO NEW YORK STATE BUILDING CONSTRUCTION CODE, THE N.Y.S. ENERGY CONSERVATION CONSTRUCTION CODE AND ALL LOCAL CODES, RULES, REGULATIONS AND ZONING LAWS.
44. IT IS A VIOLATION OF NEW YORK STATE LAW FOR ANY PERSON, UNLESS ACTING UNDER DIRECTION OF THE LICENSED ENGINEER, TO ALTER THESE PLANS IN ANY WAY.
45. THESE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED BY THE ENGINEER AND TO THE BEST OF HIS KNOWLEDGE AND BELIEF MEET THE REQUIREMENTS OF THE N.Y.S. ENERGY CONSERVATION CONSTRUCTION CODE.

SPECIAL CONDITIONS

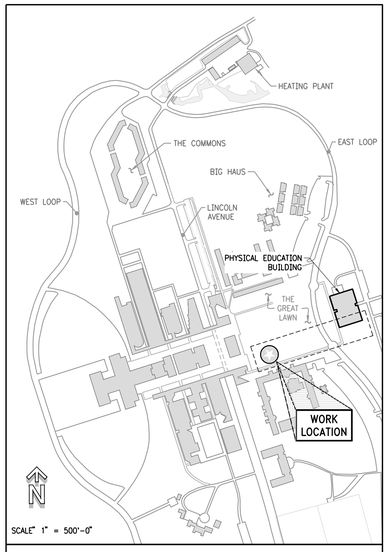
1. NO WORK SHALL BEGIN BEFORE MAY 20, 2019. ALL WORK SHALL BE COMPLETED BY AUGUST 1, 2019.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND MARK-OUT OF ALL UNDERGROUND UTILITIES. NO EXCAVATION WORK SHALL BE STARTED UNTIL A UTILITY MARK-OUT TAKES PLACE.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL TEMPORARY SUPPORTS THAT ARE REQUIRED FOR THE EXISTING UNDERGROUND UTILITIES THAT ARE UNCOVERED DURING THE EXCAVATION.
4. ALL EXPOSED PIPING SHALL HAVE PROTECTIVE END CAPS INSTALLED TO PREVENT WEATHER FROM ENTERING THE PIPE DURING PERIODS WHEN WORK IS NOT BEING PERFORMED.
5. ALL EXCAVATED TRENCHES SHALL NOT EXCEED A WIDTH OF 20 FEET. THE CONTRACTOR SHALL PROVIDE SHORING, SHEETING, OR OTHER MEANS AS REQUIRED TO MAINTAIN A SAFE WORKING AREA. ALL EXCAVATION WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA AND 29 CFR 1926.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING REQUIRED TO COMPLETE THE WORK.
7. THE CONTRACTOR SHALL PROVIDE ALL SIGNAGE, FENCING, SHORING, ETC., AS REQUIRED TO MAINTAIN THE SITE SAFE FOR WORKERS AND PEDESTRIANS IN THE AREAS AFFECTED BY THE WORK.

SCOPE OF WORK

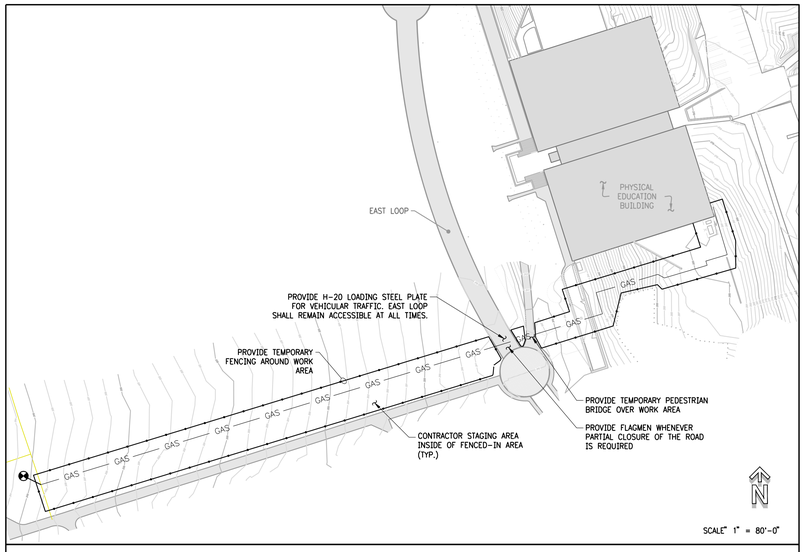
1. PROVIDE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON DRAWING ESC-1.
2. FULLY EXPOSE A 5-FOOT SECTION OF AN EXISTING 16-INCH NATURAL GAS MAIN, ALL EXCAVATION IN THE GAS MAIN AREA SHALL BE PERFORMED BY HAND.
3. RETAIN THE SERVICES OF CON EDISON FOR HOT TAPPING OF THE NATURAL GAS MAIN.
4. EXCAVATE TRENCH FOR NATURAL GAS LINE BETWEEN THE GAS MAIN AND THE PHYSICAL EDUCATION BUILDING. PROVIDE SAND BEDDING AS PER CON EDISON'S REQUIREMENTS FOR GAS SERVICE INSTALLATION BOOK (YELLOW BOOK).
5. FURNISH AND INSTALL A DIRECT-BURIED NATURAL GAS SERVICE BETWEEN THE GAS MAIN AND THE PHYSICAL EDUCATION BUILDING. ALL GAS PIPING WORK SHALL BE PERFORMED BY A CONTRACTOR THAT IS CERTIFIED BY THE NORTHEAST GAS ASSOCIATION (NGA). ALL GAS WORK SHALL CONFORM TO CON EDISON'S REQUIREMENTS FOR GAS SERVICE INSTALLATION BOOK (YELLOW BOOK).
6. FURNISH AND INSTALL A GAS PRESSURE REGULATING STATION AT THE PHYSICAL EDUCATION BUILDING. PROVIDE PERMANENT 6'-0" HIGH CHAIN-LINK FENCE AROUND THE GAS REGULATOR. GAS REGULATOR VALVES SHALL BE LOCKED CLOSE.
7. PERFORM PRESSURE TEST OF NATURAL GAS SERVICE AS REQUIRED BY CON EDISON PRIOR TO CONNECTION TO THE GAS MAIN.
8. BACKFILL TRENCH AND RESTORE ALL AREAS TO ORIGINAL CONDITIONS.



AREA MAP



SITE PLAN



WORK AREA

LINE TYPES

NEW		FENCE	
EXISTING		HIDDEN	
ST	STORM	W	CITY WATER
CW	CONDENSER WATER	TEL	TELEPHONE
HTHW	HIGH-TEMP HOT WATER	FO	FIBER OPTICS
UNK	UNKNOWN	E	ELECTRIC
GAS	NAT. GAS	SA	SANITARY

GENERAL SYMBOLS

CONTRACT BREAK POINT OR CUT LINE

DRAWING LIST

1 INCH WHEN PLOTTED TO SCALE

DO NOT SCALE DRAWING

Purchase College
STATE UNIVERSITY OF NEW YORK
735 Anderson Hill Rd
Purchase, NY 10577

O'BRIEN & GERE ENGINEERS, INC.
163 North Wellwood Avenue
Lindenhurst, New York 11757

REHAB HTHW SYSTEM
NATURAL GAS LINE TO PHYSICAL EDUCATION BLDG.

TITLE SHEET, GENERAL NOTES, SPECIAL CONDITIONS & SCOPE OF WORK

SCALE	PROJECT NO.	DRAWING NUMBER	REVISION
As Noted	291014-03	T-001	A
DRAWN: D. Sondon	OBG JOB NO. 65274		
CHECKED: K. Duffy	DATE: September 13, 2018		

REVISIONS			
REV	DESCRIPTION	DATE	APPVD
A	CLIENT REVIEW - 100% SUBMISSION	09/13/2018	KMD

EROSION AND SEDIMENT CONTROL:

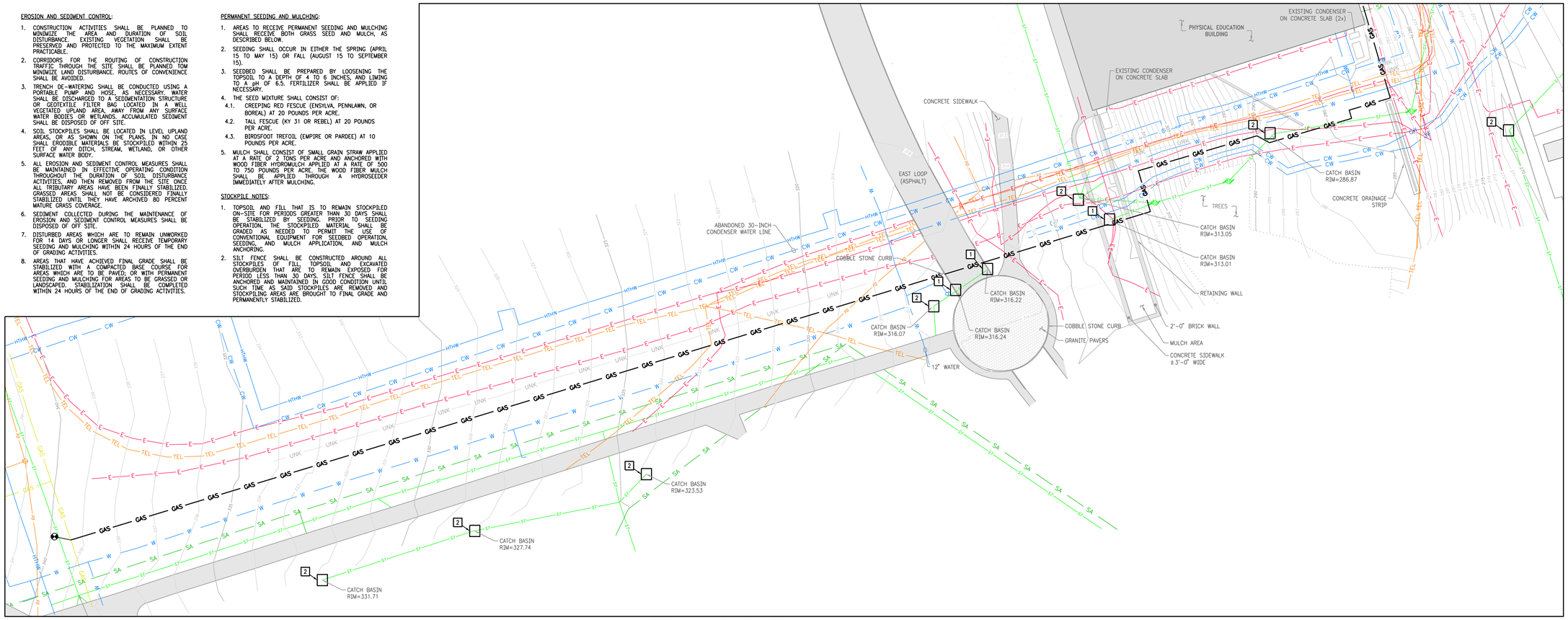
1. CONSTRUCTION ACTIVITIES SHALL BE PLANNED TO MINIMIZE THE AREA AND DURATION OF SOIL DISTURBANCE. EXISTING VEGETATION SHALL BE PRESERVED AND PROTECTED TO THE MAXIMUM EXTENT PRACTICABLE.
2. CORRIDORS FOR THE ROUTING OF CONSTRUCTION TRAFFIC THROUGH THE SITE SHALL BE PLANNED TOM MINIMIZE LAND DISTURBANCE. ROUTES OF CONVENIENCE SHALL BE AVOIDED.
3. TRENCH DE-WATERING SHALL BE CONDUCTED USING A PORTABLE PUMP AND HOSE, AS NECESSARY. WATER SHALL BE DISCHARGED TO A SEDIMENTATION STRUCTURE OR GEOTEXTILE FILTER BAG LOCATED IN A WELL VEGETATED UPLAND AREA, AWAY FROM ANY SURFACE WATER BODIES OR WETLANDS. ACCUMULATED SEDIMENT SHALL BE DISPOSED OF OFF SITE.
4. SOIL STOCKPILES SHALL BE LOCATED IN LEVEL UPLAND AREAS, OR AS SHOWN ON THE PLANS. IN NO CASE SHALL ERODIBLE MATERIALS BE STOCKPILED WITHIN 25 FEET OF ANY DITCH, STREAM, WETLAND, OR OTHER SURFACE WATER BODY.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE OPERATING CONDITION THROUGHOUT THE DURATION OF SOIL DISTURBANCE ACTIVITIES, AND THEN REMOVED FROM THE SITE ONCE ALL TRIBUTARY AREAS HAVE BEEN FINALLY STABILIZED. GRASSED AREAS SHALL NOT BE CONSIDERED FINALLY STABILIZED UNITL THEY HAVE ARCHIVED 80 PERCENT MATURE GRASS COVERAGE.
6. SEDIMENT COLLECTED DURING THE MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF OFF SITE.
7. DISTURBED AREAS WHICH ARE TO REMAIN UNWORKED FOR 14 DAYS OR LONGER SHALL RECEIVE TEMPORARY SEEDING AND MULCHING WITHIN 24 HOURS OF THE END OF GRADING ACTIVITIES.
8. AREAS THAT HAVE ACHIEVED FINAL GRADE SHALL BE STABILIZED WITH A COMPACTED BASE COURSE FOR AREAS WHICH ARE TO BE PAVED; OR WITH PERMANENT SEEDING AND MULCHING FOR AREAS TO BE GRASSED OR LANDSCAPED. STABILIZATION SHALL BE COMPLETED WITHIN 24 HOURS OF THE END OF GRADING ACTIVITIES.

PERMANENT SEEDING AND MULCHING:

1. AREAS TO RECEIVE PERMANENT SEEDING AND MULCHING SHALL RECEIVE BOTH GRASS SEED AND MULCH, AS DESCRIBED BELOW.
2. SEEDING SHALL OCCUR IN EITHER THE SPRING (APRIL 15 TO MAY 15) OR FALL (AUGUST 15 TO SEPTEMBER 15).
3. SEEDBED SHALL BE PREPARED BY LOOSENING THE TOPSOIL TO A DEPTH OF 4 TO 6 INCHES, AND LIMING TO A pH OF 6.5. FERTILIZER SHALL BE APPLIED IF NECESSARY.
4. THE SEED MIXTURE SHALL CONSIST OF:
   - 4.1. CREEPING RED FESCUE (ENSYLVA, PENNLAWN, OR BOREAL) AT 20 POUNDS PER ACRE.
   - 4.2. TALL FESCUE (KY 31 OR REBEL) AT 20 POUNDS PER ACRE.
   - 4.3. BIRDSFOOT TREFOIL (EMPIRE OR PARDEE) AT 10 POUNDS PER ACRE.
5. MULCH SHALL CONSIST OF SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE AND ANCHORED WITH WOOD FIBER HYDROMULCH APPLIED AT A RATE OF 500 TO 750 POUNDS PER ACRE. THE WOOD FIBER MULCH SHALL BE APPLIED THROUGH A HYDROSEEDER IMMEDIATELY AFTER MULCHING.

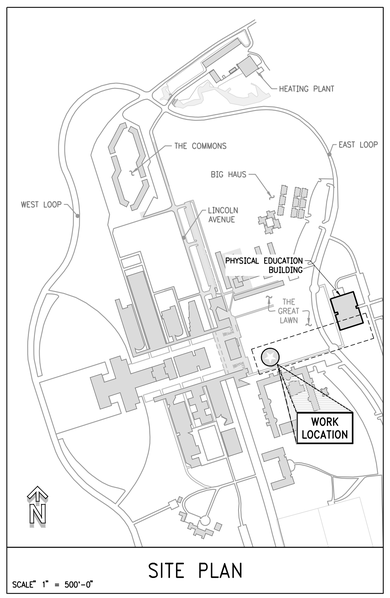
STOCKPILE NOTES:

1. TOPSOIL AND FILL THAT IS TO REMAIN STOCKPILED ON-SITE FOR PERIODS GREATER THAN 30 DAYS SHALL BE STABILIZED BY SEEDING. PRIOR TO SEEDING OPERATION, THE STOCKPILED MATERIAL SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED OPERATION, SEEDING, AND MULCH APPLICATION, AND MULCH ANCHORING.
2. SILT FENCE SHALL BE CONSTRUCTED AROUND ALL STOCKPILES OF FILL, TOPSOIL AND EXCAVATED OVERBURDEN THAT ARE TO REMAIN EXPOSED FOR PERIOD LESS THAN 30 DAYS. SILT FENCE SHALL BE ANCHORED AND MAINTAINED IN GOOD CONDITION UNTIL SUCH TIME AS SAID STOCKPILES ARE REMOVED AND STOCKPILING AREAS ARE BROUGHT TO FINAL GRADE AND PERMANENTLY STABILIZED.



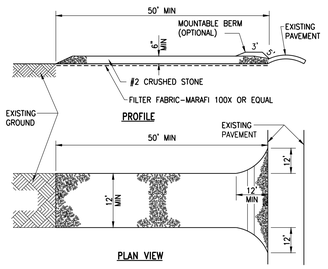
NATURAL GAS LINE INSTALLATION

PLAN 1 — 1"=30'-0"



SITE PLAN

SCALE: 1" = 500'-0"



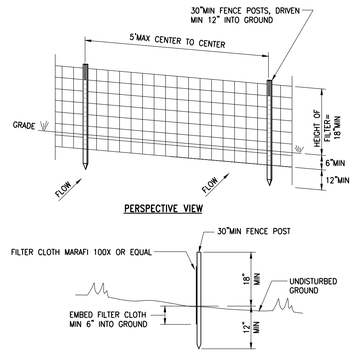
PLAN VIEW

NOTES:

1. USE 1"-4" STONE, OR RECLAIMED OR RECYCLED CONCRETE OR APPROVED EQUAL.
2. THE LENGTH SHALL NOT BE LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. CRUSHED STONE SHALL BE MAINTAINED AT A MINIMUM OF 6" IN DEPTH.
4. ENTRANCE SHALL HAVE A 12 FOOT MINIMUM WIDTH, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. ENTRANCE SHALL BE AT LEAST 24 FEET WIDE IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO THE PLACING OF STONE.
6. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS NOT PRACTICAL, A MOUNTABLE BERM WITH 1:5 SLOPES WILL BE PERMITTED.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE

DETAIL 20 — N.T.S.



PERSPECTIVE VIEW

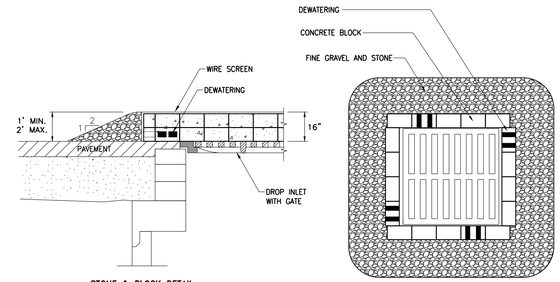
SECTION

NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO WOODEN STAKES
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIALS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE

DETAIL 21 — N.T.S.



STONE & BLOCK DETAIL

STONE & BLOCK PLAN VIEW

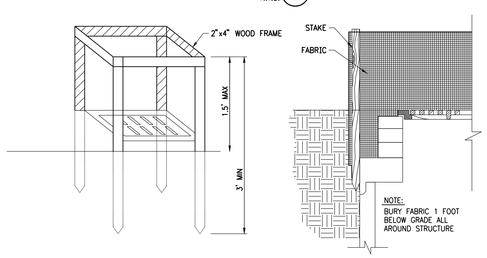
DRAWING NOTES:

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, 1' THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

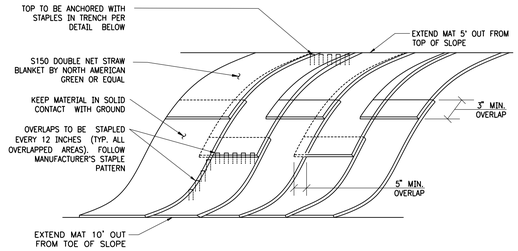
STONE AND BLOCK INLET PROTECTION FOR STRUCTURES IN PAVED AREAS [1]

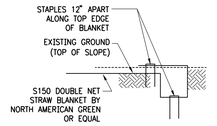
DETAIL 22 — N.T.S.



INLET PROTECTION FOR STRUCTURES IN UNPAVED AREAS [2]

DETAIL 23 — N.T.S.





TOP OF SLOPE ANCHORING SECTION

NOTES:

1) APPLY APPLICATION OF ANY LIME, FERTILIZER, AND SEED BEFORE INSTALLING TURF REINFORCEMENT MAT.

2) INSTALL USING ALL MANUFACTURERS INSTALLATION RECOMMENDATIONS AND GUIDELINES.

EROSION CONTROL BLANKET

DETAIL 24 — N.T.S.

Purchase College
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163 North Wellwood Avenue
Lindenhurst, New York 11757

REHAB HTHW SYSTEM
NATURAL GAS LINE TO PHYSICAL EDUCATION BLDG.

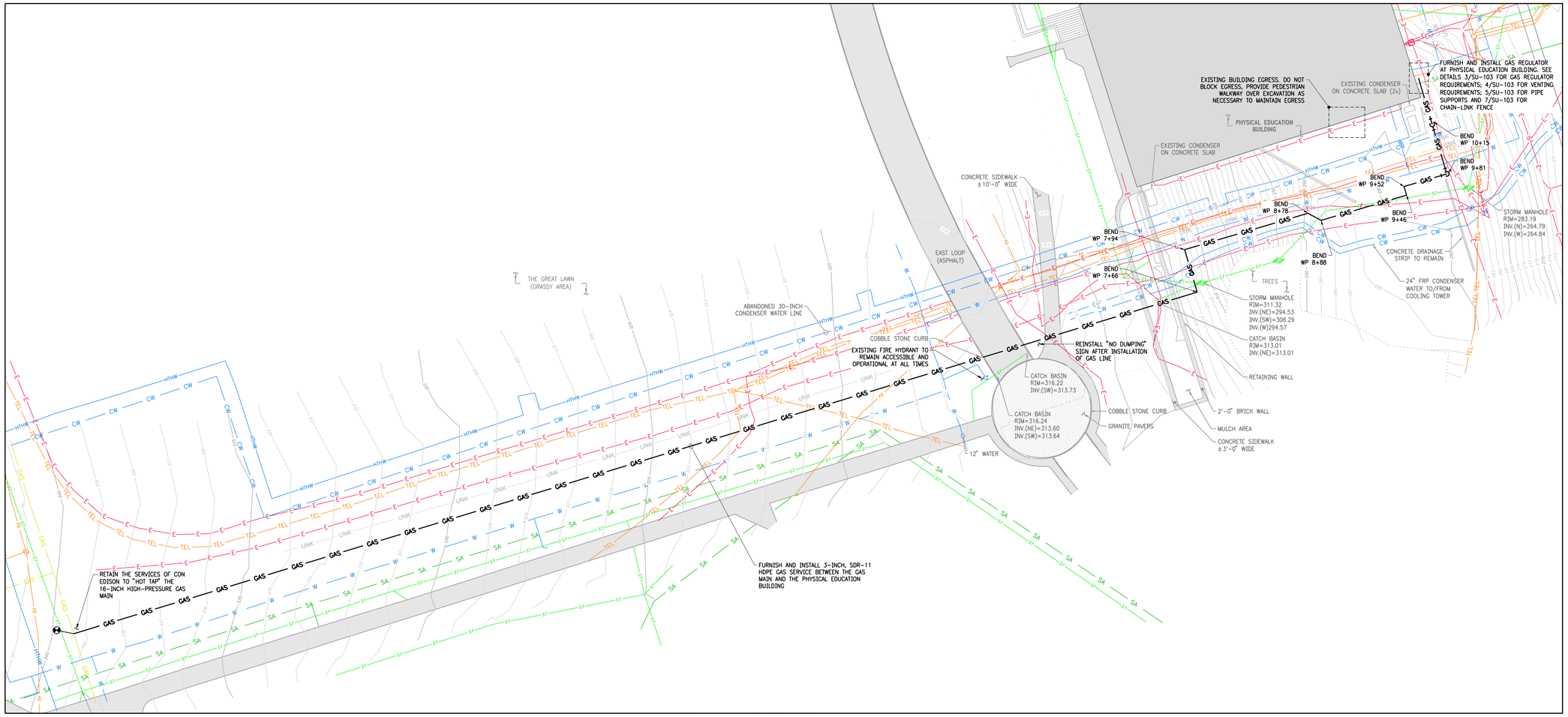
EROSION AND SEDIMENT CONTROL PLAN & DETAILS

1 INCH WHEN PLOTTED TO SCALE

SCALE	PROJECT NO.	DRAWING NUMBER	REVISION
As Noted	291014-03	ESC-1	A
DRAWN: D. Gordon	OBG JOB NO. 65274		
CHECKED: K. Duffy	DATE: September 13, 2018		

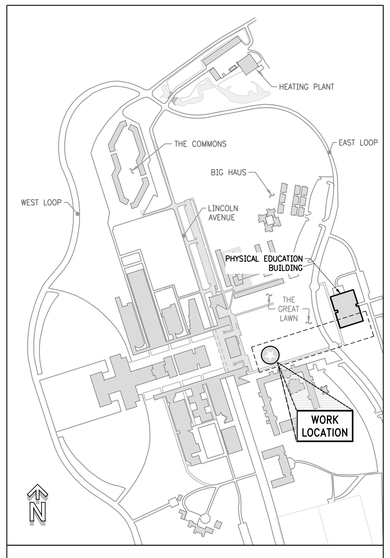
DO NOT SCALE DRAWING

REVISIONS			
REV	DESCRIPTION	DATE	APPVD
A	CLIENT REVIEW – 100% SUBMISSION	09/13/2018	KMD



NATURAL GAS LINE INSTALLATION

PLAN 1 — 1"=30'-0"



SITE PLAN

SCALE: 1" = 500'-0"

NATURAL GAS MAIN "HOT TAP" NOTES:

1. THE CONTRACTOR SHALL RETAIN THE SERVICES OF CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. (CON EDISON) TO "HOT TAP" THE 16-INCH NATURAL GAS MAIN IN THE GREAT LAWN.
2. THE CONTRACTOR SHALL EXPOSE THE ENTIRE CIRCUMFERENCE OF THE NATURAL GAS MAIN. THE CONTRACTOR SHALL HAND-EXCAVATE A WORK AREA OF 5 FEET IN BOTH SIDES OF THE GAS MAIN. PROVIDE SLOPING AND/OR SHORING FOR AN OSHA-COMPLIANT EXCAVATION.
3. CON EDISON WILL FURNISH AND INSTALL A CURB VALVE. THE CONTRACTOR SHALL FURNISH AND INSTALL THE FOLLOWING: A PLASTIC CURB VALVE BOX, A VALVE COVER, A CONCRETE BASE FOR THE VALVE, AND A CONCRETE PAD FOR THE COVER. SEE DETAIL 15/SU-104 FOR ADDITIONAL INFORMATION.

NATURAL GAS LINE INSTALLATION NOTES:

1. ALL WORK SHALL CONFORM TO CON EDISON'S "REQUIREMENTS FOR GAS SERVICE INSTALLATIONS" BOOK (YELLOW BOOK).
2. ALL WORK SHALL BE PERFORMED BY WORKERS WHO ARE CERTIFIED BY THE NORTHEAST GAS ASSOCIATION (NGA) AS REQUIRED BY CON EDISON.
3. ALL GAS SERVICE EQUIPMENT SHALL IN ACCORDANCE WITH THE PREVIOUSLY APPROVED EQUIPMENT LISTED IN CON EDISON'S YELLOW BOOK. THIS INCLUDES HDPE PIPE, STEEL PIPE, VALVES, FITTINGS, ETC..
4. TRENCH WIDTH AND DEPTH SHALL BE AS PER DETAIL 1/SU-103. $\frac{3}{8}$" SAND SHALL BE USED FROM THE BOTTOM OF THE TRENCH UP TO 6" ABOVE THE NATURAL GAS PIPING.
5. NATURAL GAS PIPING SHALL HAVE A MINIMUM OF 2'-0" COVER. WHEREVER 2'-0" COVER IS NOT POSSIBLE, THE GAS PIPING SHALL BE PROTECTED AS SHOWN ON DETAIL 2/SU-103. MINIMUM COVER WITH PROTECTION IS 1'-6".
6. THE CONTRACTOR SHALL INSTALL A DETECTABLE MARKING TAPE INDICATING "WARNING BURIED GAS LINES BELOW" AT A MINIMUM OF 12" ABOVE THE TOP OF THE DIRECT-BURIED GAS LINE. IN ADDITION, ELECTRONIC MARKER BALLS SHALL BE INSTALLED AS SHOWN ON DETAIL 6/SU-103.
7. THE CONTRACTOR SHALL CONTACT THE CON EDISON ENERGY SERVICES REPRESENTATIVE (STEVEN BELL – 914-925-6157) TO REQUEST A SECOND INSPECTION PRIOR TO BACKFILL. THE COST OF THE INSPECTION WILL BE BORNE BY CON EDISON AND WILL INVOLVE VERIFICATION OF THE QUALIFICATIONS OF THE JOINER, VERIFICATION THAT THE FUSION EQUIPMENT IS IN COMPLIANCE AND INSPECT THE FUSION WELDS.

PRESSURE TEST, PURGING AND GAS-IN NOTES:

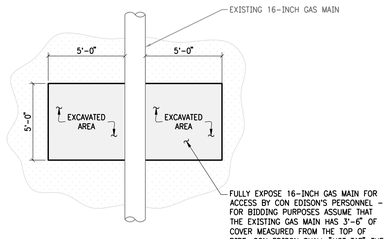
1. PRESSURE TEST THE GAS SERVICE AS PER CON EDISON'S SPECIFICATION G-8200 "PRESSURE TESTING REQUIREMENTS FOR GAS MAINS AND SERVICES." REFER TO THE PROJECT MANUAL FOR THE COMPLETE REFERENCE SPECIFICATION, IN GENERAL THE CONTRACTOR SHALL:
   - 1.1. TEST TO A MINIMUM OF 90 PSIG FOR AT LEAST 2 HOURS.
   - 1.2. THE TEST MEDIUM SHALL BE AIR OR AN INERT GAS. WATER SHALL NOT BE USED.
   - 1.3. DURING THE TESTING OF PE PLASTIC PIPE, THE TEMPERATURE OF THE PE MATERIAL MAY NOT EXCEED 100°F.
   - 1.4. PRESSURE TEST SHALL BE WITNESSED AND DOCUMENTED BY A CON EDISON REPRESENTATIVE.
2. FOLLOWING SUCCESSFUL COMPLETION OF THE SERVICE PRESSURE TEST, PURGE THE SERVICE PIPE AS PER CON EDISON'S SPECIFICATION G-8129 "PURGING GAS MAINS, SERVICES AND REGULATOR STATIONS."

GAS REGULATOR NOTES:

1. THE CONTRACTOR SHALL INSTALL A GAS REGULATING STATION. GAS REGULATOR SHOWN ON DETAIL 3/SU-103 IS FOR REFERENCE ONLY TO SHOW THE COMPLEXITY OF THE REGULATOR. FINAL REGULATOR ARRANGEMENT WILL BE SELECTED BY CON EDISON. THE GAS REGULATOR STATION SHALL BE SIZED FOR 8,500 CFH, INLET PRESSURE OF 10 PSIG AND OUTLET PRESSURE OF 14" W.C. FURNISH ALL MATERIALS NOT INDICATED TO BE PROVIDED BY CON EDISON.
2. THE CONTRACTOR SHALL PROVIDE A 6'-0" LOCKABLE CHAIN-LINK FENCE AROUND THE REGULATOR STATION. SEE DETAILS 8/SU-104 AND 9/SU-104 FOR ADDITIONAL INFORMATION.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL 2" REGULATOR VENT PIPING AS PER DETAIL 4/SU-103.
4. ALL ABOVEGROUND PIPING SHALL BE STEEL PIPING, FITTINGS AND VALVES SHALL CONFORM TO CON EDISON'S "REQUIREMENT FOR GAS SERVICE INSTALLATION" BOOK (YELLOW BOOK).
5. ALL GAS REGULATOR PIPING SHALL BE PROPERLY SUPPORTED w/SADDLE SUPPORTS, SEE DETAIL 5/SU-103.

RESTORATION NOTES:

1. ALL AREAS DISTURBED BY THE WORK SHALL BE RESTORE TO THE ORIGINAL CONDITIONS; ALL GRASSY AREAS SHALL BE RE-SEEDED AS PER SPECIFICATION 32 92 19.
2. ALL EXCAVATED AREAS SHALL BE BACKFILLED TO MATCH ORIGINAL GRADE.
3. RESTORE EAST LOOP ROAD AS PER DETAIL 16/SU-104 AND 17/SU-104. PROVIDE STRIPPING TO MATCH EXISTING.
4. SALVAGE COBBLE STONE CURBS. RESTORE COBBLE STONE CURB ADJACENT TO EAST LOOP ROAD AS PER DETAIL 18/SU-104.
5. RESTORE CONCRETE SIDEWALKS AS PER DETAIL 19/SU-104.



EXCAVATION FOR GAS MAIN HOT TAP

DETAIL 25 — N.T.S.

PIPING SCHEDULE

SYSTEM DESIGNATION	SYSTEM TAG	ASTM	CONSTRUCTION MATERIAL	SDR / SCHEDULE	MANUFACTURER / MODEL NO.
NATURAL GAS (UNDERGROUND)	G	D2513	POLYETHYLENE	SDR 11	PERFORMANCE PIPE / YELLOWSTRIPE 8300
NATURAL GAS (ABOVEGROUND)	G	(NOTE 2)	STEEL	(NOTE 2)	(NOTE 2)

NOTES:
1. REFER TO CON EDISON'S G-8104 "POLYETHYLENE PIPE, TUBING AND FITTINGS FOR GAS MAINS AND SERVICES" FOR PE PIPE AND FITTINGS REQUIREMENTS.
2. REFER TO CON EDISON'S G-8107 "STEEL PIPE FOR GAS MAINS AND SERVICES" FOR STEEL PIPE AND FITTINGS REQUIREMENTS.

NATURAL GAS PIPE INSTALLATION CLEARANCES

SUBSURFACE FACILITY	GAS SERVICE	MIN. CLEARANCE w/PROTECTION
ELECTRIC CONDUIT OR STRUCTURE	4 INCHES	2 INCHES
ELECTRIC DIRECT-BURIED CABLE	12 INCHES	2 INCHES
WATER & SEWER	6 INCHES	2 INCHES
OTHER (E.G., TELEPHONE, FIBER, ETC.)	4 INCHES	2 INCHES

NOTES

1. WHERE POSSIBLE, THE DIRECT BURIAL OF NEW SERVICES SHALL BE INSTALLED WITH THESE MINIMUM CLEARANCES BETWEEN GAS FACILITIES AND OTHER SUBSURFACE FACILITIES.
2. TABLE ABOVE IS BASED ON CON EDISON'S "GENERAL SPECIFICATION FOR THE INSTALLATION OF GAS DISTRIBUTION SERVICES" NUMBER G-8100-13B.
3. REFER TO CON EDISON'S G-8100-13B FOR PROTECTION REQUIREMENTS WHEN THE CLEARANCES SHOWN CANNOT BE ATTAINED.

1 INCH WHEN PLOTTED TO SCALE

DO NOT SCALE DRAWING

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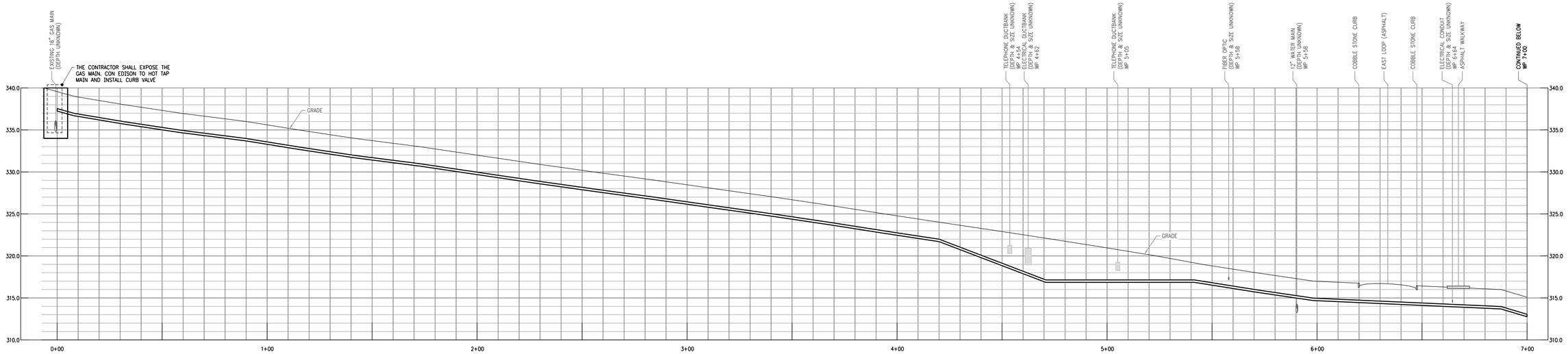
NATURAL GAS LINE TO PHYSICAL EDUCATION BLDG.

NATURAL GAS LINE INSTALLATION – PLAN

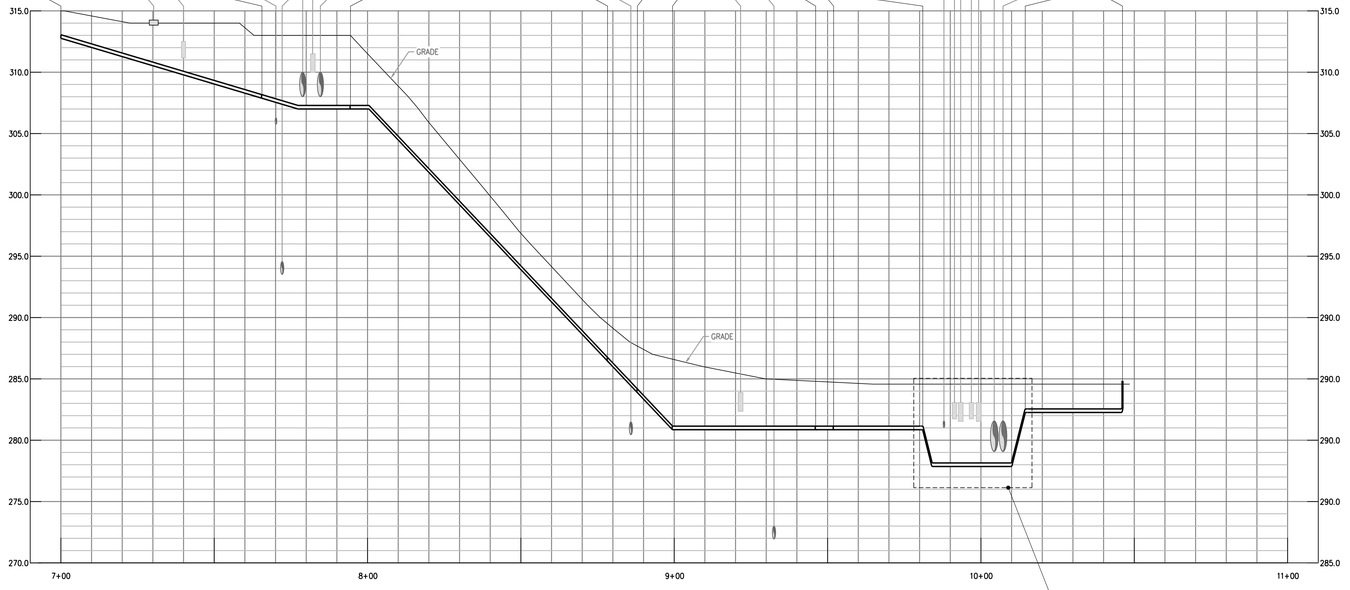
SCALE	PROJECT NO.	DRAWING NUMBER	REVISION
As Noted	291014-03	SU-101	A
DRAWN: D. Gordon	OBG JOB NO. 65274		
CHECKED: K. Duffy	DATE: September 13, 2018		

REVISIONS			
REV	DESCRIPTION	DATE	APPVD
A	CLIENT REVIEW – 100% SUBMISSION	09/13/2018	KMD



PIPING PROFILE

SCALE: 1"=5' VERTICAL
SCALE: 1"=20' HORIZONTAL



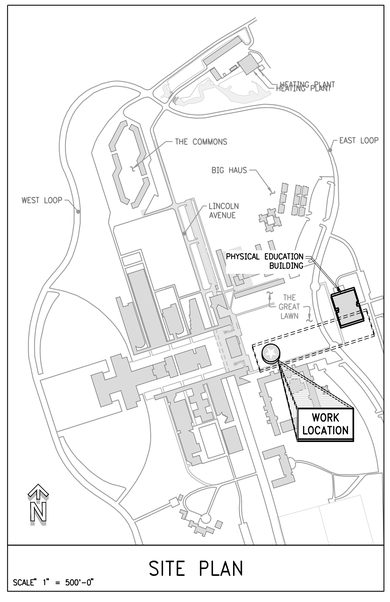
PIPING PROFILE

SCALE: 1"=5' VERTICAL
SCALE: 1"=20' HORIZONTAL

EXACT DEPTH AND SIZE OF UTILITIES ARE UNKNOWN. ROUTE PIPING MAINTAINING THE MINIMUM COVER AND CLEARANCE FROM UTILITIES INDICATED ON DWG. SU-101. AVOID LOW-POINT WHEREVER POSSIBLE.

DRAWING NOTES:

1. REFER TO DRAWING SU-101 FOR NATURAL GAS PIPING INSTALLATION NOTES AND INSTALLATION CLEARANCES.
2. THE CONTRACTOR SHALL PERFORM TEST PITS TO DETERMINE THE DEPTH OF THE FOLLOWING UTILITIES:
   - 2.1. CONDENSER WATER WP 7+79
   - 2.2. CONDENSER WATER WP 7+85
   - 2.3. UTILITIES BETWEEN WP 9+88 AND 10+07
3. ALL EXCAVATION WITHIN TEN FEET OF EQUIPMENT AND UTILITIES SHALL BE PERFORMED BY HAND UNLESS OTHERWISE INDICATED.



SITE PLAN

SCALE: 1" = 500'-0"

1 INCH WHEN PLOTTED TO SCALE

DO NOT SCALE DRAWING

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REHAB HTHW SYSTEM
NATURAL GAS LINE TO PHYSICAL EDUCATION BLDG.

NATURAL GAS LINE INSTALLATION – PROFILES

SCALE	PROJECT NO.	DRAWING NUMBER	REVISION
As Noted	291014-03	SU-102	A
DRAWN: D. Gordon	OBG JOB NO. 65274		
CHECKED: K. Duffy	DATE September 13, 2018		

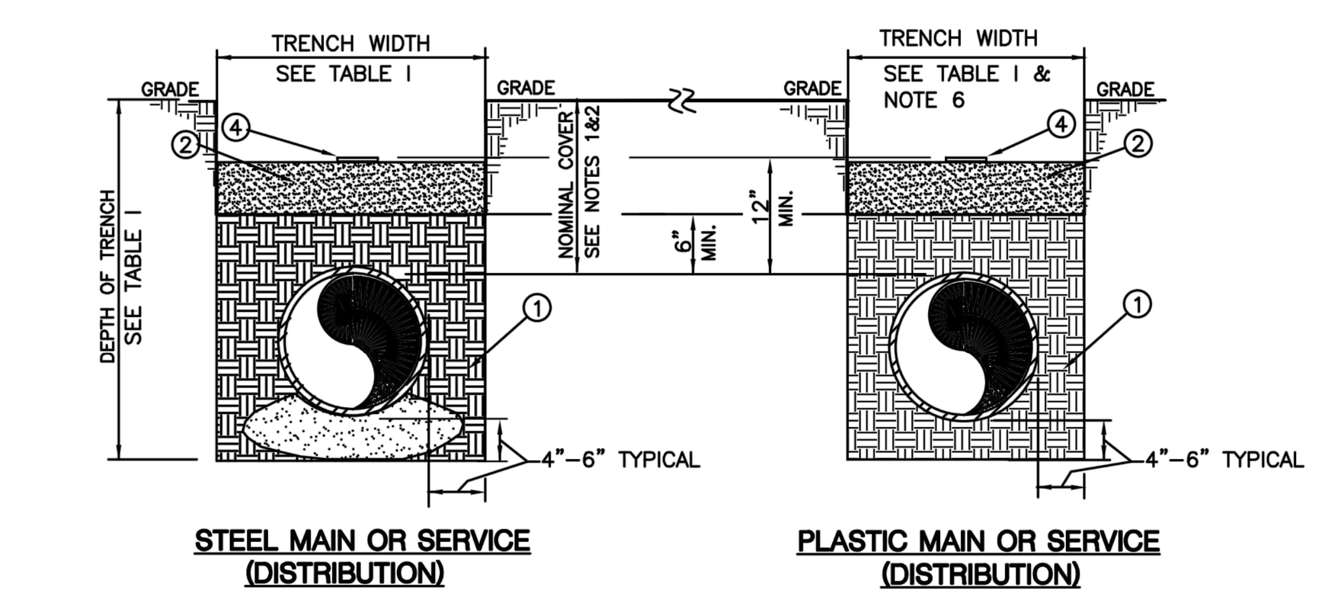
REVISIONS			
REV	DESCRIPTION	DATE	APPVD
A	CLIENT REVIEW – 100% SUBMISSION	09/13/2018	KMD

TRENCH EXCAVATION FOR GAS MAINS & SERVICES — DETAIL 1 (N.T.S.)

309495

REVISIONS

R.GROGAN 7/21/98	0
M. BALDOVIN 2/02/06 — REVISED TRENCH WIDTH FOR 4" THRU 12" MAINS IN TABLE 1. REMOVED REQUIREMENT FOR SANDBAGS FOR STEEL DISTRIBUTION MAIN. RAJ. 2/1//06	1
M. BALDOVIN 4/04/06 — ADDED REQUIREMENTS OF SAND BAGS FOR STEEL DISTRIBUTION MAIN. RAJ. 4/4//06	2
M. BALDOVIN 3/12/08 — REVISED TRENCH WIDTH OF 16" AND GREATER SIZE MAINS IN TABLE I. P.L.S. 1/28/08	3
M. BALDOVIN 04/29/13 — REVISED TITLE. REVISED DRAWING IN ITS ENTIRETY. HT 04/24/13	4



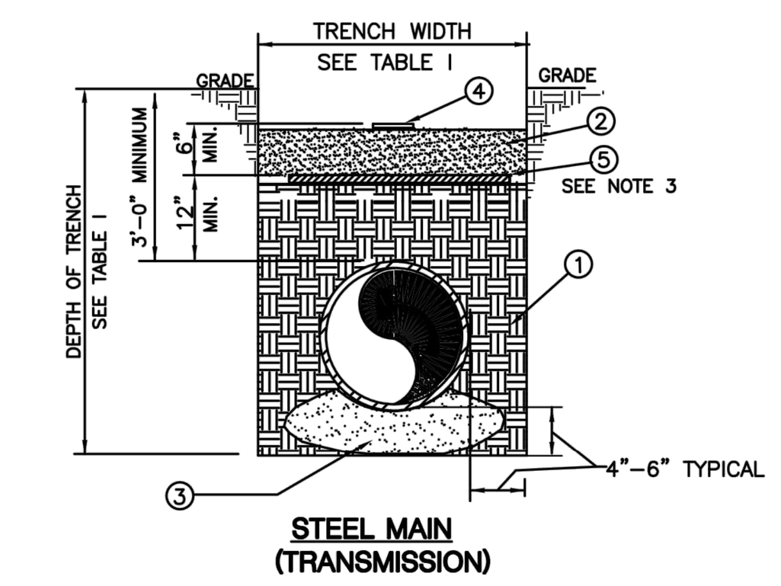


TABLE 1

SIZE OF MAIN/ SERVICE	TRENCH WIDTH	TRENCH DEPTH (MAIN)	TRENCH DEPTH (SERVICE)
1"	0'-10"	3'-6"	2'-6"
1 ¼"	0'-10"	3'-6"	2'-6"
1 ½"	0'-10"	3'-6"	2'-6"
2"	1'-0"	3'-8"	2'-8"
3"	1'-0"	3'-8"	2'-8"
4"	1'-2"	3'-10"	2"-10"
6"	1'-4"	4'-0"	3'-0"
8"	1'-6"	4'-2"	3'-2"
10"	1'-8"	4'-4"	3'-4"
12"	1'-10"	4'-6"	3'-6"
16"	4'-4"	4'-10"	3'-10"
20"	4'-8"	5'-2"	4'-2"
24"	5'-0"	5'-6"	4'-6"
30"	5'-6"	6'-0"	
36"	6'-0"	6'-6"	

BILL OF MATERIAL

ITEM NO.	DESCRIPTION	SPEC. OR DWG. NO.	CLASS & STOCK NO.
1	3/8" SAND/ CLEAN FILL/ RECYCLED BACKFILL	EO-8085	-
2	SUITABLE BACKFILL	EO-1181	
3	SANDBAG	ASTM C-33	000-0075
4	"WARNING BURIED GAS LINES BELOW" TAPE	G-8005/ G-8100	024-6660
5	STEEL PROTECTIVE COVER	EO-6799-C	-

NOTES:

1. DISTRIBUTION MAINS SHOULD BE INSTALLED WITH A MINIMUM 3'-0" COVER SO AS TO ALLOW A MINIMUM COVER OF 2'-0" ON THE SERVICE PIPING.
2. FOR DISTRIBUTION MAINS OR SERVICES, STEEL PROTECTIVE PLATES ARE REQUIRED WHEN THE COVER IS LESS THAN 2'-0". (SEE SPECS. G-8005, G-8100, AND DWG. EO-6799-C).
3. FOR TRANSMISSION MAINS, STEEL PROTECTIVE PLATES ARE REQUIRED FOR ALL NEW INSTALLATIONS REGARDLESS OF COVER AND IF FEASIBLE, WHENEVER AN EXISITING TRANSMISSION MAIN IS EXPOSED. (SEE SPECS. G-8051, G-11863, AND DWG. EO-6799-C).
4. ENSURE PROPER CLEARANCES ARE MAINTAINED BETWEEN GAS FACILITIES AND OTHER FACILITIES OR STRUCTURES. (SEE CI-920-1 AND DWG. EO-5570-C)
5. WHEN SHEETING IS USED, THE "TRENCH WIDTH" DIMENSION IN TABLE 1 SHALL BE MEASURED FROM THE INSIDE OF THE SHEETING.
6. WHEN INSTALLING COILED PLASTIC PIPE, THE TRENCH WIDTH MAY BE LESS THAN SHOWN ON TABLE 1.
7. FOR STEEL MAINS AND SERVICES, INSTALL SANDBAGS AT 10' INTERVALS.
8. ALL REPLACEMENT DIRECT BURIED COPPER TUBING AND PLASTIC TUBING SERVICES IN 1" OR 1 ¼" CTS SIZES SHALL HAVE A PROTECTIVE SLEEVE INSTALLED. (SEE G-8100)
9. SEE G-8200 FOR MINIMUM SIZES OF NEW DIRECT BURIED PLASTIC, STEEL, AND COPPER SERVICES OF VARIOUS PRESSURES.

REFERENCE SPECS & DWGS:

GAS MAIN INSTALLATION	G-8005
GAS SERVICE INSTALLATION	G-8100
GAS SERVICE SIZING	G-8200
STEEL PROTECTION PLATES	EO-6799-C; G-8051; G-11863
PROPER CLEARANCES	CI-920-1; EO-5570-C
SHEETING	EO-16954-B; EO-16965-B
BACKFILLING	EO-1181; EO-8085

GAS OPERATIONS CONSTRUCTION STDS. VOLUME 2 SECTION 5

THIS DWG. SUPERSEDES _ _ _ _ EO–7922

TRENCH EXCAVATION FOR GAS MAINS & SERVICES UP TO 350 PSIG

CONSOLIDATED EDISON COMPANY OF N.Y., INC. GAS OPERATIONS DEPT.

DATE 7/21/98 LAST REV. 04/29/13 | DWG. NO. 309495 REV. 4

TRENCH EXCAVATION FOR GAS MAINS & SERVICES

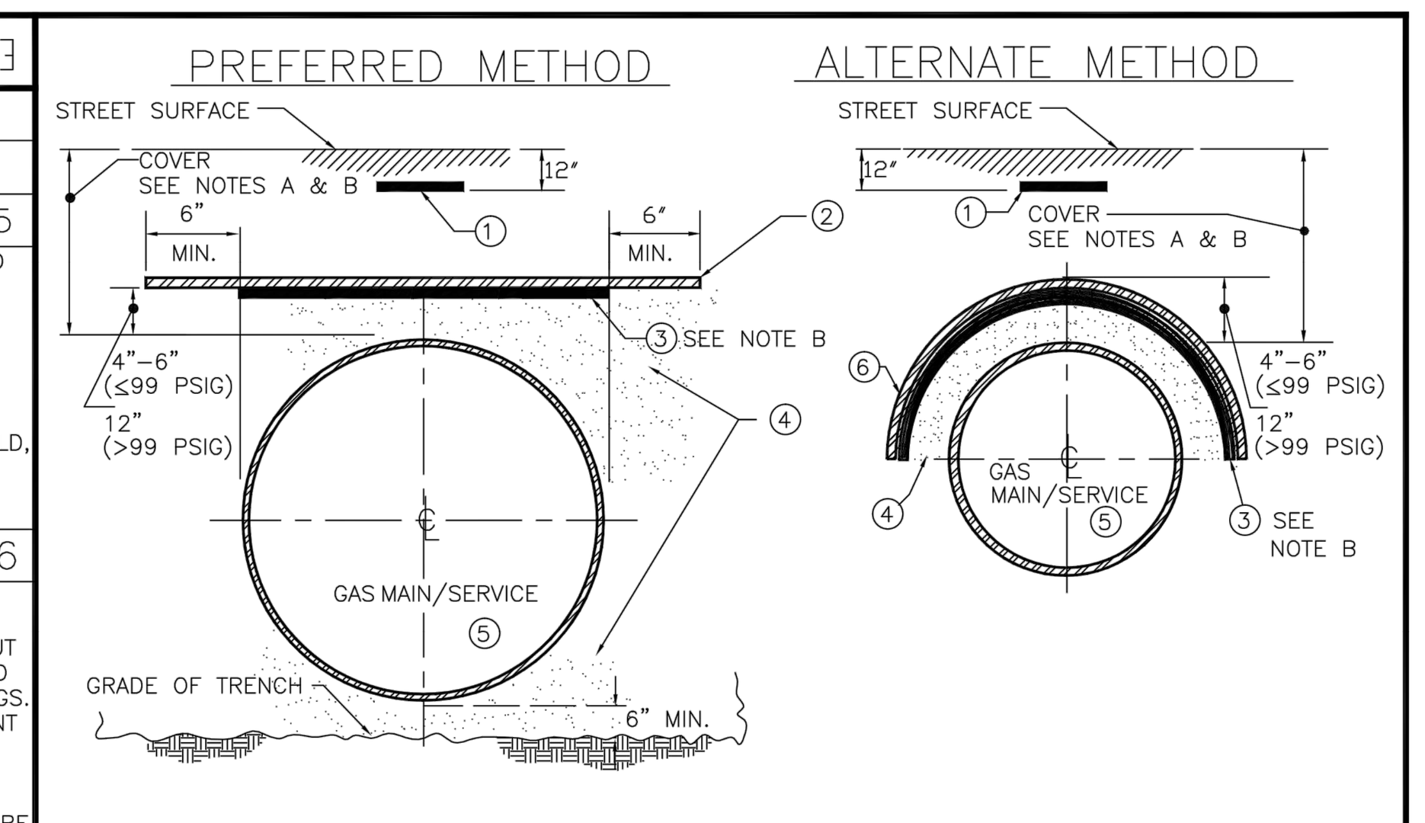
DETAIL 1 N.T.S.

PROTECTIVE COVERS FOR GAS MAIN AND SERVICE INSTALLATIONS — DETAIL 2 (N.T.S.)

EO-6799-C

REVISIONS

D. DAVIDOWITZ — REDRAWN.REVERSED ALT.& PREFERRED METHODS ADDED NOTE 4, CHG'D. PRESS. IN NOTES 2&3. DELETED 3/4" THK. PL., REF. TO ROCKSHIELD, & MIN. WIDTH PL.. R.M. 8/2/82	5
J.V. BRITO — REVISED TO AUTOCAD FORMAT/ REARRANGED LAYOUT OF PREFERRED AND ALTERNATE DRAWINGS. ADDED REQUIREMENT OF WARNING TAPE UPDATED BILL OF MATERIAL CHANGED OPERATING PRESSURE FROM 96 TO 99 P.S.I.G. M.C. (RCMT) 5/23/03	6
M. BALDOVIN 6/30/08 — UPDATED NOTES REORDERED BILL OF MATERIALS D.R.J. 6/30/08	7
M. BALDOVIN 11-19-2012 — NEW TITLE, ADDED SERVICES, DELETED NOTE A, REVISED REQUIREMENTS FOR MAINS > 99 PSIG, ADDED REFERENCE SPECS. TO NOTES A & B, ADDED NOTE D, REORDERED ITEM NUMBERS, ADDED G-8100 TO ITEM 1, REVISED DESCRIPTION & DELETED C/S # OF ITEM 2, NEW ITEM 3, ADDED MAIN/SERVICE, SIZE ≤ 2" TO ITEM 5. H. D. 11/16/2012	8



NOTES:

A. FOR OPERATING PRESSURES UP TO 99 P.S.I.G., STEEL PROTECTIVE PLATES OR COVER PIPES ARE REQUIRED WHEN THE COVER ON THE MAIN OR SERVICE IS LESS THAN 2'-0". WHERE THE COVER IS LESS THAN 1'-6" CONSULT THE GAS ENGINEERING DEPARTMENT. STEEL PLATES SHALL BE A MINIMUM 1/4" THICK. (SEE SPECS. G-8005 AND G-8100)

B. FOR OPERATING PRESSURES GREATER THAN 99 P.S.I.G., STEEL PROTECTIVE PLATES OR COVER PIPES ARE REQUIRED FOR ALL NEW INSTALLATIONS AND IF FEASIBLE, WHENEVER AN EXISTING MAIN IS EXPOSED. WHEN THE COVER ON THE MAIN IS LESS THAN 3'-0", INSTALL RUBBER MATTING BELOW PROTECTIVE PLATE OR COVER PIPE. ENSURE RUBBER MATTING DOES NOT COME IN CONTACT WITH GAS MAIN. STEEL PLATES SHALL BE A MINIMUM 1/2" THICK. (SEE SPECS. G-8051 AND G-11863)

C. ALL PROTECTIVE PLATES AND COVER PIPES SHALL BE TACK WELDED TOGETHER OR OVERLAPPED A MINIMUM OF 3".

D. LOCATIONS OF PROTECTIVE PLATES AND COVER PIPES SHALL BE IDENTIFIED ON AS-CONSTRUCTED DRAWINGS AND GAS MAPS.

BILL OF MATERIAL

ITEM NO.	DESCRIPTION	CLASS & STOCK NO.	SPEC./STANDARD
1	"WARNING GAS LINES BELOW" TAPE	024-6660	G-8005/G-8100
2	STEEL PLATE (MAINS > 99 P.S.I.G.): 1/2"X4'X8' OR 1/2"X17"X48" (CUT TO SUIT) STEEL PLATE (MAINS/SERVICES ≤ 99 P.S.I.G.): 1/4"X4'X8' OR 1/4"X12"X36" (CUT TO SUIT)	—— ——	ASTM A36
3	RUBBER MATTING ½" X 2' X 2' (ONLY FOR MAINS > 99 P.S.I.G. WITH INSUFFICIENT COVER)	059-5306	
4	SUITABLE BACKFILL, FREE FROM STONE OR OTHER DEBRIS	—— ——	EO-1181

5/6 MAIN/SERVICE DIAMETER (5)	DIAMETER OF PROTECTIVE STEEL COVER (6)*
≤ 2"	8"
4"	10"
6"	12"
8"	16"
10"	16"
12"	20"
16"	24"
20"	30"
24"	30"
30"	42"

* PROTECTIVE COVERS ARE TO BE HALF-SECTIONS CUT FROM RANDOM LENGTHS OF STANDARD WEIGHT STEEL PIPE CONFORMING TO CON EDISON SPEC. G-8107

GAS OPERATIONS CONSTRUCTION STD. VOLUME 2 SECTION 5

PROTECTIVE COVERS FOR GAS MAIN AND SERVICE INSTALLATIONS

CONSOLIDATED EDISON COMPANY OF N.Y., INC. GAS ENGINEERING DEPT

DATE 9-3-54 LAST REV. 11-19-12 | DWG. NO. E0-6799-C REV. 8

PROTECTIVE COVERS FOR GAS MAIN AND SERVICE INSTALLATIONS

DETAIL 2 N.T.S.

GAS REGULATOR INSTALLATION — DETAIL 3 (N.T.S.)

361693

REVISIONS

K. LOOK 5/23/07 — NEW ISSUE P.L.S. 5/23/07	0
G. LUDWIG 3/31/11 — ADDED AAT-57 175# TO TABLE 2. REVISED ITEM 4 DESCRIPTION. D.R.J. 3/30/11	1
G. LUDWIG 5/22/12 — ADDED NOTE 20. H. D. 4-23-12	2
G. LUDWIG 7/15/14 — REVISED NOTES 10,11 & 13. REVISED ITEM 3 DESCRIPTION. ADDED REFERENCE TO YELLOW BOOK. D.J. 6/27/14	3
G. LUDWIG 4/14/15 — REVISED NOTE 10. ADDED NOTES 21 & 22. B.E. 3/30/15	4

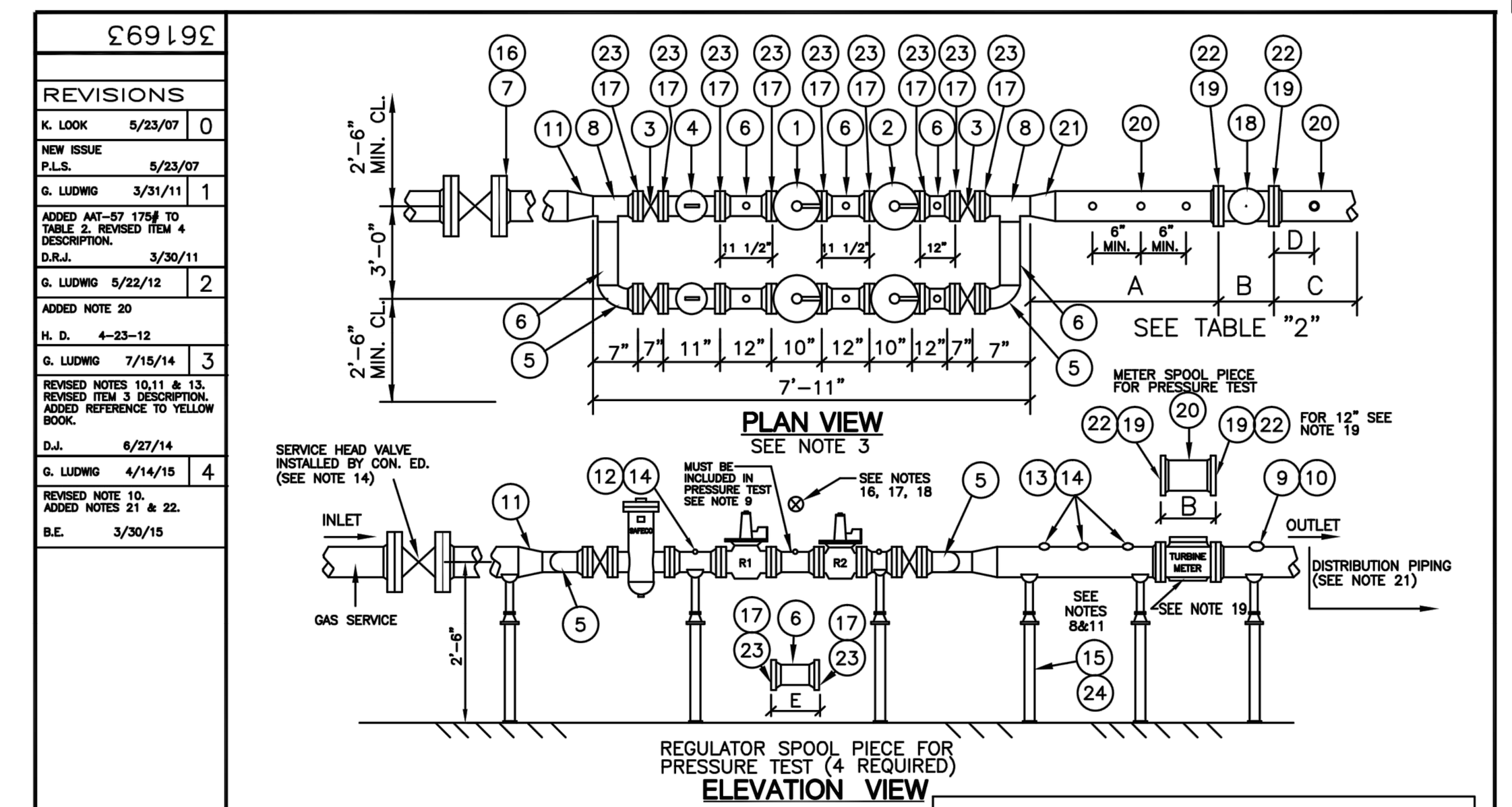


TABLE 1 - DIMENSION "V", "M", "B" (SEE NOTES 6 & 7)

SIZE OF HEAD OF SERVICE VALVE	V	
SIZE OF METER FLANGE/PIPING	M	
SIZE OF METER FLANGE TO FLANGE	B	

TABLE 2 - DIMENSION "A", "B", "C", "D", "M"

METER	AAT-18 175# 4GTS 175#	AAT-35 175# AAT-57 175# 6GTS 175#	AAT-60 175# 8GTS 175#
M	4"	6"	8"
A	40"	60"	80"
B	14"	16"	21"
C	20"	30"	40"
D	6"	12"	18"

TABLE 3 - REGULATOR CONFIGURATIONS

SPECIFIED REGULATORS	APPLICABLE PRESSURE SYSTEM	R1	R2
2"-133HP	MEDIUM/HIGH	2"-133HP	2"-133HP
2"-99 / 2"-133HP	MEDIUM/HIGH	2"-133HP	2"-99
2"-133L	MEDIUM	2"-133L	2"-133L
2" MOONEY FLOWGRID	HIGH	2" FLOWGRID	2" FLOWGRID

BILL OF MATERIALS

ITEM	DESCRIPTION	SPEC. OR STD.	QUANTITY
1	2" REGULATOR (R1), 150 LB. SUPPLIED BY CON ED (TABLE 3)	———	4
2	2" REGULATOR (R2), 150 LB. SUPPLIED BY CON ED (TABLE 3)	———	
3	2" 150 LB. BALL VALVE (SEE TABLE 2, YELLOW BOOK)	———	4
4	2" GAS FILTER, SUPPLIED BY CON ED	———	2
5	2" SHORT RADIUS 90° ELBOW, SCH. 40	ASME B16.9	2
6	2" STEEL PIPE, SCH. 40	ASTM – A106 GRADE "B"	AS REQ'D.
7	V" STEEL FLANGE, 150 LB., FLAT OR RAISED FACE (TO MATCH VALVE FLANGE) (SEE NOTE 6)	ASME B16.5	1
8	2" x 2" x 2" STEEL TEE, SCH. 40	ASME B16.9	2
9	M" x 1" THREADOLET (SEE NOTE 5)	ASME B16.9	1
10	1" STEEL SQUARE HEAD PLUG	ASME B16.14	1
11	V" x 2" CONCENTRIC STD. STEEL REDUCER, IF REQUIRED	ASME B16.9	1
12	2" x 1/2" THREADOLET	———	6
13	M" x 1/2" THREADOLET	———	3
14	1/2" STEEL SQUARE HEAD PLUG	ASME B16.14	9
15	PIPE SUPPORT	EO-7043	AS REQ'D.
16	FLANGE INSULATING KIT (TO MATCH VALVE FLANGE)	———	1
17	2" STEEL FLANGE, RAISED FACE, 150 LB.	———	24
18	M" TURBINE METER 4", 6", OR 8" SUPPLIED BY CON ED (TABLE 2)	———	1
19	M" STEEL FLANGE, FLAT FACE 150 LB.	ASME B16.5	4
20	M" STEEL PIPE, SCH. 40	ASTM – A106 GRADE "B"	AS REQ'D.
21	M" x 2" STEEL REDUCER	ASME B16.9	1
22	M" x 1/16" 150 LB. FULL FACE GASKET (SEE NOTE 4)	———	2
23	2" x 1/16" 150 LB. RING GASKET (SEE NOTE 4)	———	26
24	BAKELITE, NEOPRENE, OR EQUIV. INSULATING MAT'L (SEE NOTE 8)	———	AS REQ'D.

NOTES:

1 – ALL MATERIAL SHALL BE FURNISHED AND INSTALLED BY THE CUSTOMER EXCEPT FOR THE FILTERS AND REGULATORS WHICH ARE FURNISHED BY THE COMPANY AND INSTALLED BY THE CUSTOMER, AND THE METER WHICH IS FURNISHED AND INSTALLED BY THE COMPANY.
2 – DO NOT INCLUDE REGULATORS OR METER IN PRESSURE TEST. USE SPOOL PIECES SHOWN ON DRAWING.
3 – IF THE INSTALLATION CANNOT BE MADE AS SHOWN, CONTACT GAS MEASUREMENT.
4 – ALL GASKET MATERIAL SHALL BE GARLOCK 3000 (1/16" THICK).
5 – ALL THREADOLETS MUST BE FULL BORE, FILLET WELDED AND PLUGGED. DO NOT WELD WITH METERS INSTALLED.
6 – THE LETTER V REPRESENTS THE SERVICE HEAD VALVE FLANGE SIZE, THE LETTER M REPRESENTS THE METER TO FLANGE SIZE, AND THE LETTER B REPRESENTS THE METER FLANGE TO FLANGE DIMENSION. SEE TABLE 1 FOR EXACT SIZES. IF TABLE 1 IS NOT COMPLETED, CONTACT THE ASSIGNED ENERGY SERVICE REPRESENTATIVE.
7 – TABLE 1 MUST BE COMPLETED BY ASSIGNED ENERGY SERVICE REPRESENTATIVE BEFORE PROVIDING TO CONTRACTOR.
8 – INSULATING MATERIAL MUST BE INSTALLED BETWEEN THE PIPE SUPPORTS AND THE PIPE, SO THAT THE PIPE NEVER MAKES CONTACT WITH THE PIPE SUPPORT.
9 – A PRESSURE TEST MUST BE CONDUCTED AT 200 PSIG.
10 – EXCEPT FOR WHERE FLANGED COMPONENTS ARE CALLED FOR, ALL METER PIPING (PIPING FROM THE HEAD OF SERVICE VALVE TO METER OUTLET) SHALL BE BUTT WELDED. ALL BUTT WELDS FROM THE HEAD OF SERVICE VALVE TO REGULATOR CLOSEST TO THE METER SHALL BE RADIOGRAPHED. FOR CUSTOMER DELIVERY PRESSURES EXCEEDING 5 PSIG, ALL BUTT WELDS ON METER PIPING SHALL BE RADIOGRAPHED.
11 – PIPE SUPPORT OR ANY BRACING SHALL NOT BE WELDED TO METER/DISTRIBUTION PIPING AND SHALL BE INSTALLED PER G-695.
12 – IF A DOMESTIC REGULATOR METER SET IS REQUIRED, IT SHALL BE INSTALLED IMMEDIATELY AFTER SERVICE HEAD VALVE WITH AN ISOLATION VALVE.
13 – REFER TO YELLOW BOOK FOR FURTHER INFORMATION
14 – FOR WESTCHESTER, CUSTOMER'S CONTRACTOR SHALL INSTALL SERVICE HEAD VALVE WHERE APPLICABLE.
15 – ALL OUTDOOR PIPING SHALL BE PAINTED WITH SUITABLE NON-LEAD OUTDOOR PAINT FOR USE ON METAL SURFACES.
16 – REFER TO EO-17118 – "REGULATOR VENT INSTALLATION" FOR VENT PIPE INSTALLATION, CAPS AND TERMINUS LOCATION REQUIREMENTS. SINCE THESE REGULATORS DO NOT UTILIZE FULL CAPACITY RELIEF, VENT PIPING SHALL BE 2" IN DIAMETER.
17 – EACH REGULATOR SHALL BE SEPARATELY VENTED.
18 – FOR INSIDE REGULATOR INSTALLATIONS, THE CUSTOMER SHALL INSTALL 2" VENT PIPE FROM OUTDOOR VENT CAP ALONG INSIDE WALL TO A POINT WITHIN 2' OF EACH REGULATOR RUN. COMPANY TO MAKE FINAL CONNECTION TO VENT LINE.
19 – FOR ANY DOWNSTREAM PIPING BELOW GRADE REFER TO SPEC G-8205.
20 – OUTDOOR METER SETS SHALL BE PROTECTED BY A 6 FOOT HIGH LOCKABLE FENCE, CHAIN-LINK OR EQUIVALENT. THE FENCE SHALL BE EQUIPPED WITH A DOUBLE HASP LOCK TO ALLOW ACCESS BY CON-EDISON AND THE CUSTOMER.
21 – DISTRIBUTION PIPING EXCLUDING METER PIPING MUST MEET ALL WELDING, SPECIAL INSPECTION, AND RADIOGRAPHY REQUIREMENTS OF THE NYC BUILDING CODE OR OTHER AUTHORITY HAVING JURISDICTION.
22 – FOR INSTALLATIONS HAVING BRANCH LINES THAT ARE SEPARATELY METERED AND/OR SEPARATELY REGULATED, REFER TO SPEC G-703 FOR PIPE SIZING REQUIREMENTS.

METERING SPECIFICATIONS AND PROCEDURES VOLUME #3 YELLOW BOOK

INSTALLATION OF PARALLEL 2" REGULATORS WITH TURBINE METER INDOORS AND OUTDOORS 10,000 CFH TO 60,000 CFH

CONSOLIDATED EDISON COMPANY OF N.Y., INC. GAS ENGINEERING DEPT.

DATE 5/16/07 LAST REV. 4/14/15 | DWG. NO. 361693 REV. 4

GAS REGULATOR INSTALLATION

DETAIL 3 N.T.S.

GAS REGULATOR VENT INSTALLATION — DETAIL 4 (N.T.S.)

EO-17118

REVISIONS

DRAWING ISSUED ON 4/06/06 RAJ 4/06/06	0
G. LUDWIG 6/6/11 — ADDED EQUIV. LENGTH FOR 4" 90° ELBOW. D.J. 6/6/11	1
G. LUDWIG 3/19/12 — ADDED DETAIL FOR OUTDOOR REGULATOR H.D. 2/24/12	2
G. LUDWIG 10/3/12 — ADDED B838 TO TABLE 1. D.J. 10/3/12	3
G. LUDWIG 02/13/15 — REVISED NOTE 2. ADDED NOTES 5 & 6. ADDED TABLE 2. B.E. 1/22/15	4

BILL OF MATERIAL

ITEM NO.	DESCRIPTION	1"x1"x¾"	1"x1¼"x1"	2"x2"x2½"	SPEC / DWG.NO. G-48
5	CURB VALVE LOCATION TAG				
4	NON-SHRINK GROUT				
3	ELBOW 90°,BLACK MALLEABLE IRON,150 LB.	¾"	1"	3"	ASME B16.3
2	NIPPLE, STD, BLACK STEEL, THREADED.	¾"	1"	3"	ASTM A-53 GRADE B
1	PECK VENT CAP OR 90° ELBOW WITH SCREEN	¾"	1"	3"	ANSI B2

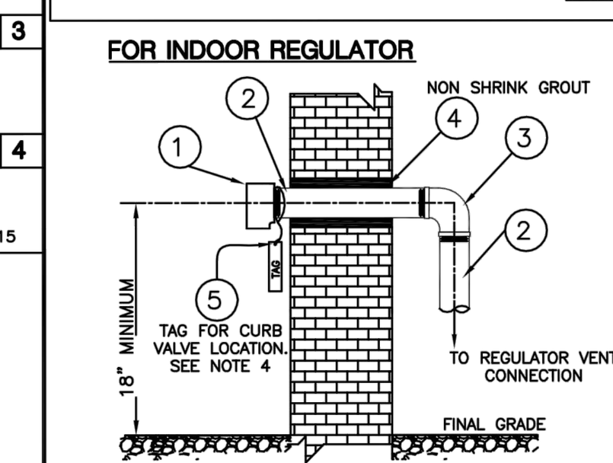
GAS REGULATOR SIZES – INLET X OUTLET X VENT

TABLE 1

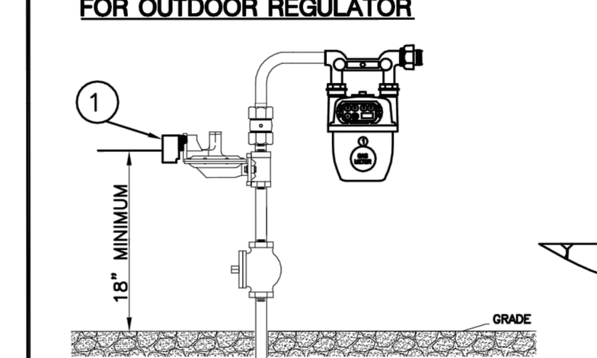
	1"x1"x¾"	1"x1¼"x1"	2"x2"x2½" B838 / 2"x4"x2½" B838	99, 133, 1098 EZR
**UP TO 20'	¾"	1"	3"	2"
**21' TO 40'	1"	1½"	4"	2"
OVER 40'	CONTACT GAS MEASUREMENT			2"

GAS REGULATOR SIZES – INLET X OUTLET X VENT; FISHER GAS REGULATOR*

FOR INDOOR REGULATOR



FOR OUTDOOR REGULATOR



REGULATOR VENT LOCATION DIAGRAM

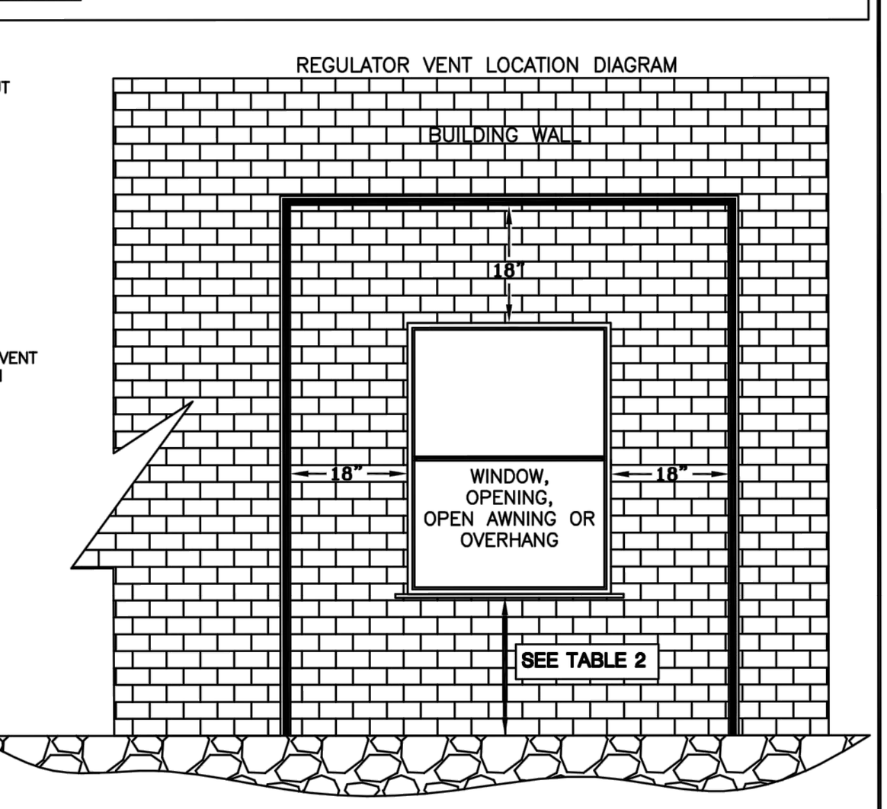


TABLE 2

TYPE OF OPENING	GROUP 1 REGULATORS	GROUP 2 REGULATORS
WINDOW	6 FT	25 FT
OVERHANG (24" OR LESS)	6 FT	25 FT
NORMALLY CLOSED OPENING	6 FT	25 FT
OPEN OR VENTED AWNING	6 FT	25 FT

GROUP 1 REGULATORS: 1" X 1" X ¾"; 1" X 1-1/4" X 1"; FISHER (OR EQUIVALENT): 99, 133, 1098, EZR

GROUP 2 REGULATORS: 2" X 2" X 2"; 2" X 2" X 2-1/2"; 2" x 4" x 2-1/2"

VENT REQUIREMENT NOTES

1) VENT PIPE MUST:
* BE GAS TIGHT.
* BE PROPERLY SUPPORTED.
* TERMINATE OUTDOORS WITH A VENT CAP FACING DOWNWARD.
* BE SIZED ACCORDING TO TABLE 1. FOR VENTS LONGER THAN 20 EQUIVALENT FEET, THE ENTIRE LENGTH OF VENT PIPE SHALL BE THE LARGER PIPE SIZE.

2) VENT OUTLET (SEE REGULATOR VENT LOCATION DIAGRAM):
* VENT OUTLETS DIRECTLY UNDER A WINDOW, OVERHANG, OPENING, OR OPEN AWNING SHALL MEET THE MINIMUM DISTANCES IN TABLE 2.
* VENTS SHALL NOT BE INSTALLED UNDER AIR INTAKES AND/OR CLOSED/UNVENTED AWNINGS.
* IF THE VENT OULET IS LOWER THAN OR ADJACENT TO ANY OPENING, IT MUST BE LATERALLY OFFSET BY A MINIMUM OF 18" FROM THE NEAREST VERTICAL LINE OF ANY OPENING, OR PROJECTION THAT COULD ALLOW VENTED GAS TO ENTER THE BUILDING OR ACCUMULATE.
* IF THE VENT OUTLET CANNOT BE LATERALLY OFFSET BY AT LEAST OF 18", IT MUST DISCHARGE ABOVE AND AWAY FROM ANY BUILDING OPENING, OVERHANG, PROJECTION OR POWERED INTAKE BY AT LEAST 18".

3) VENT CAP SHALL:
* BE A WEATHER AND INSECT RESISTANT FITTING, E.G., A PECK VENT.
* NOT BE COVERED IN ANY WAY THAT WOULD PREVENT THE FREE FLOW TO THE OUTSIDE.

4) INSTALL TAG (PER G–8028) TO IDENTIFY THE CURB VALVE LOCATION. IN NYC IF THE VENT CAP USED IS NOT WORDED " GAS" OR " GAS VENT", THEN THIS WORDING MUST BE INCLUDED ON THE CURB VALVE LOCATION TAG, ANOTHER TAG, OR A SIGN ON THE BUILDING (SEE G–11838).

5) FOR RUNS OF VENT PIPING EXCEEDING 10 LINEAR FEET, A COMPRESSION COUPLING OR 150 LB BLACK IRON UNION THE SIZE OF THE VENT PIPE SHALL BE INSTALLED WITHIN 2 FEET OF THE REGULATOR.

6) IF A SUITABLE VENT OUTLET LOCATION MEETING THE REQUIREMENTS OF THIS DRAWING CANNOT BE FOUND, CONTACT THE MANAGER OF GAS MEASUREMENT FOR DETERMINATION OF A COMPLIANT LOCATION WHERE THERE IS NO RISK TO PUBLIC SAFETY.

** CONSIDER EACH 90° ELBOW TO BE EQUIVALENT TO STRAIGHT PIPE LENGTHS AS FOLLOWS:
¾" = 2', 1" = 2', 3" = 7', 4" = 10'

*CUSTOMER TO INSTALL 2" VENT PIPING FROM OUTDOOR VENT CAP ALONG INSIDE WALL TO A POINT WITHIN 2 FEET OF EACH REGULATOR RUN. COMPANY TO MAKE FINAL CONNECTION TO VENT LINE.

METERING SPECIFICATIONS AND PROCEDURES VOLUME #3 YELLOW BOOK

REGULATOR VENT INSTALLATION

CONSOLIDATED EDISON COMPANY OF N.Y., INC. GAS ENGINEERING DEPT

DATE 2/8/05 LAST REV. 2/13/15 | DWG. NO. EO- 17118 REV. 4

GAS REGULATOR VENT INSTALLATION

DETAIL 4 N.T.S.

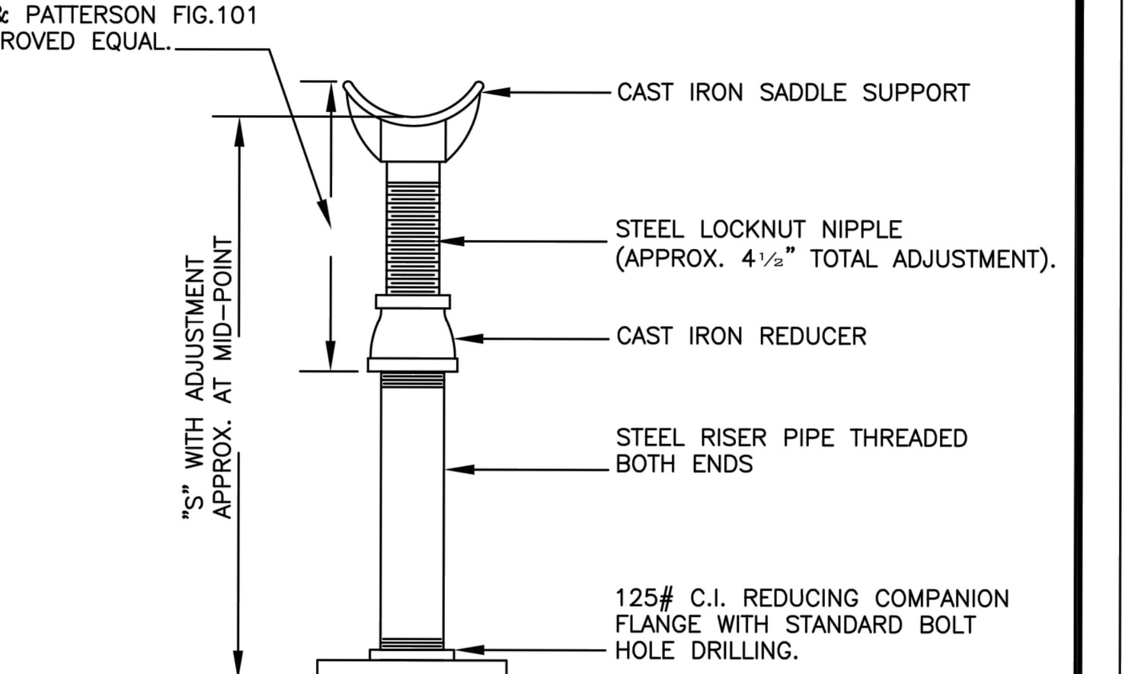
PIPE TYPE SADDLE SUPPORT FOR GAS REGULATOR INSTALLATIONS — DETAIL 5 (N.T.S.)

EO-7043-0-3

REVISIONS

P. BERNASCONI 1/13/06 — REDRAWN TO CAD. ADDED ANVIL INT'L FIG. 264. REVISED NOTES, DESCRIPTION AND SPECIFICATION VOLUME. RAJ. 11/01/05	3

ADJUSTABLE PIPE SADDLE SUPPORT; ANVIL INT'L. FIG 264(FORMERLY ITT GRINNEL FIG.264) OR CARPENTER & PATTERSON FIG.101 OR GAS ENGINEERING APPROVED EQUAL.



PIPE SUPPORT DATA (INCHES)

SADDLE SUPPORT SIZE	FOR NOMINAL PIPE SIZE	FOR NOMINAL FLANGE SIZE	S	RISER PIPE (SEE NOTE #3) DIA x LENGTH	REDUCING COMPANION FLANGE SIZE	STOCK NUMBER
2 ½	1–2 ½	–	26 ½	2 ½ x 18	2 ½ x 9	–
3	3	–	26	2 ½ x 18	2 ½ x 9	–
4	4	1	26	3 x 17	3 x 9	–
6	6	2	24 ½	3 x 16	3 x 9	003 – 3845
8	8	3	23 ½	3 x 15	3 x 9	003 – 3837
10	10	4	23	3 x 13	3 x 9	003 – 3829
12	12	6	22	3 x 12	3 x 9	003 – 4157
14	14	8	21	4 x 10 ½	4 x 11	003 – 3803
16	16	10	20	4 x 9	4 x 11	003 – 3746
20	20	12	18	6 x 6	6 x 13½	003 – 3886
24	24	16	16	6 x 6	6 x 13½	–
30	30	20	13	6 x 6	6 x 13½	–

NOTES:

1. THE MANUFACTURER'S NAME AND PIPE SIZE SHALL BE PERMANENTLY MARKED ON THE PIPE SUPPORT.
2. ALL PIECES TO BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. STANDARD A 153/A 153M–05
3. FOR GR–11 REGULATOR MANHOLES, THE STEEL RISER PIPE LENGTH SHOULD BE 20" FOR SADDLE SUPPORT SIZES 2½" THROUGH 8" AND 18" FOR SADDLE SUPPORT SIZES 10" THROUGH 16".

GAS OPERATIONS VOL. 6. PURCHASE AND TEST

PIPE TYPE SADDLE SUPPORT FOR GAS REGULATOR INSTALLATIONS

CONSOLIDATED EDISON COMPANY OF N.Y., INC. GAS ENGINEERING DEPT

DATE 2-10-55 LAST REV. 1-13-06 | DWG. NO. EO-7043 REV. 03

PIPE TYPE SADDLE SUPPORT FOR GAS REGULATOR INSTALLATIONS

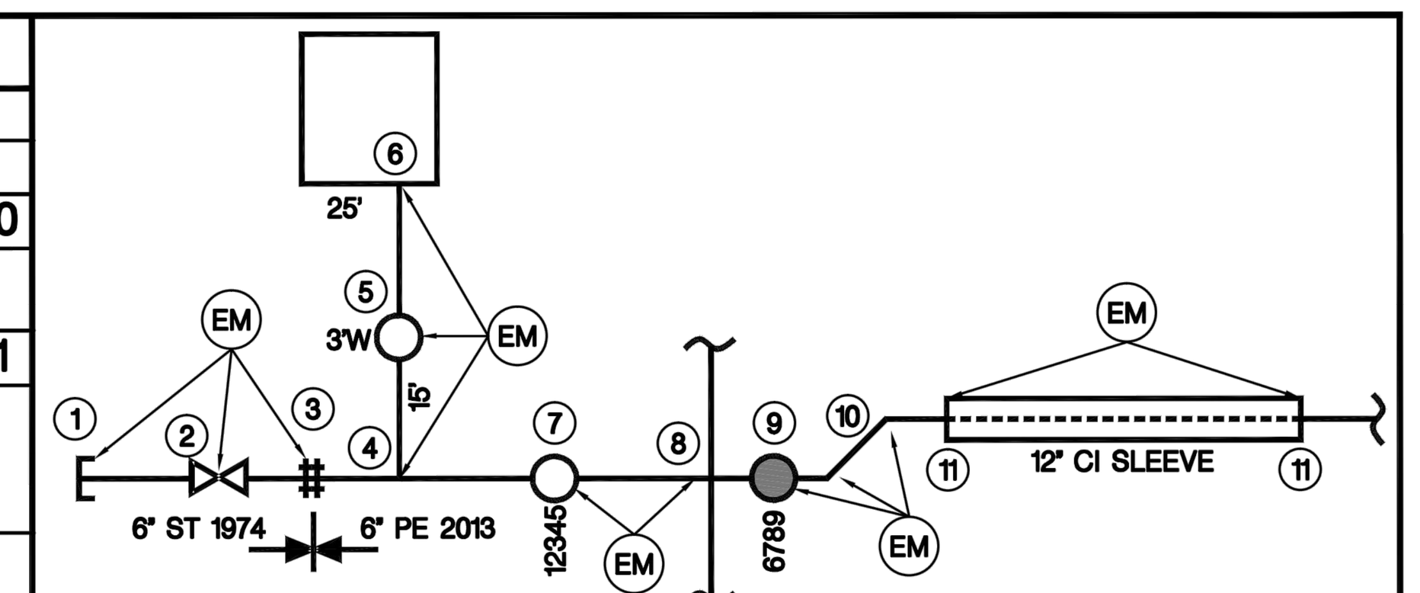
DETAIL 5 N.T.S.

INSTALLATION OF ELECTRONIC MARKERS ON GAS MAINS & SERVICES — DETAIL 6 (N.T.S.)

502664

REVISIONS

M. BALDOVIN 1/6/14 — D.J. 01/3/14	0
M.BALDOVIN 10/6/14 — NOTE D: ADDED 5' MIN. DISTANCE BETWEEN EM'S. H.T 10/6/14	1



NOTES

A. NATURAL GAS ELECTRONIC MARKERS (EM) ARE RADIO FREQUENCY IDENTIFICATION (RFID) TAGS WITH THE INDUSTRY STANDARD 83 kHZ SIGNAL FOR LOCATING BURIED GAS FACILITIES. ELECTRONIC MARKERS (EM) SHALL BE INSTALLED IN ADDITION TO GAS WARNING TAPE AND TRACER WIRE WHEN REQUIRED FOR PE PLASTIC PIPE.

B. FOR GAS FACILITIES INSTALLED LESS THAN (<) 5 FEET DEEP, EM MARKER BALLS SHALL BE ATTACHED TO THE TOP OF STEEL (ST), WROUGHT IRON (WI), CAST IRON (CI), AND POLYETHYLENE (PE) PLASTIC BURIED GAS PIPE AND FITTINGS WITH NYLON/PLASTIC CABLE TIES. ENSURE EM MARKER BALL INSTALLATION DOES NOT INTERFERE WITH OPERATION OF VALVES.

C. FOR GAS FACILITIES INSTALLED GREATER THAN OR EQUAL (≥) 5 FEET AND LESS THAN (<) 8 FEET DEEP, EM FULL-RANGE MARKERS SHALL BE INSTALLED ADJACENT TO ST, WI, CI, AND PE PLASTIC GAS PIPE AND FITTINGS. ENSURE EM FULL-RANGE MARKER INSTALLATION DOES NOT INTERFERE WITH OPERATION OF VALVES.

D. EM MARKER BALLS AND FULL-RANGE MARKERS SHALL BE INSTALLED AT THE FOLLOWING GAS DISTRIBUTION MAIN AND SERVICE LOCATIONS (REFER TO SKETCH ABOVE) AND SHALL NOT BE INSTALLED CLOSER THAN 5' TO ANOTHER EM FOR CLEAR IDENTIFICATION BY EM LOCATOR EQUIPMENT:
1. MAIN OR SERVICE STUB ENDS
2. MAIN OR SERVICE REPAIR LOCATIONS
3. MAIN OR SERVICE CHANGE IN MATERIAL
4. MAIN-TO-SERVICE CONNECTIONS
5. SERVICE CURB VALVES
6. SERVICE POINT OF ENTRY AT OUTSIDE FOUNDATION WALL (DIRECT BURIED SERVICES)
7. MAIN VALVES
8. MAIN TIES OR CROSSES
9. DRIP POT STANDPIPES
10. MAIN OR SERVICE VERTICAL AND HORIZONTAL OFFSETS (GREATER THAN 2 FEET)
11. MAIN OR SERVICE CASING ENDS (INSTALL ON CARRIER PIPE NOT INSERTED PIPE)
12. MAIN OR SERVICE INSTALLATIONS: EVERY 25 LINEAR FEET
13. TEST PITS (EXPOSED LIVE GAS PIPE ONLY)

E. EM MARKER BALL AND EM FULL-RANGE MARKER INSTALLATION LOCATIONS SHALL BE IDENTIFIED ON AS-CONSTRUCTED DRAWINGS, EMERGENCY SKETCHES, AND CORRECTION-TO-DETAIL DRAWINGS WITH THE SYMBOLOGY (EM).
THE LOCATIONS SHALL BE IDENTIFIED ON THE GAS MAPS WITH THE SAME SYMBOLOGY.

MATERIAL

EM	CLASS & STOCK#
GAS MARKER BALL (PASSIVE)	456-0481
GAS FULL-RANGE MARKER (PASSIVE)	456-0482
30" CABLE TIES	007-6273

GAS OPERATIONS CONSTRUCTION STDS. VOLUME 2 SECTION 4

INSTALLATION OF ELECTRONIC MARKERS ON GAS MAINS & SERVICES

CONSOLIDATED EDISON COMPANY OF N.Y., INC. GAS OPERATIONS DEPT.

DATE 10/06/2014 | DWG. NO. 502664 REV. 1

INSTALLATION OF ELECTRONIC MARKERS ON GAS MAINS & SERVICES

DETAIL 6 N.T.S.

1 INCH WHEN PLOTTED TO SCALE

DO NOT SCALE DRAWING

Purchase College
STATE UNIVERSITY OF NEW YORK
735 Anderson Hill Rd
Purchase, NY 10577

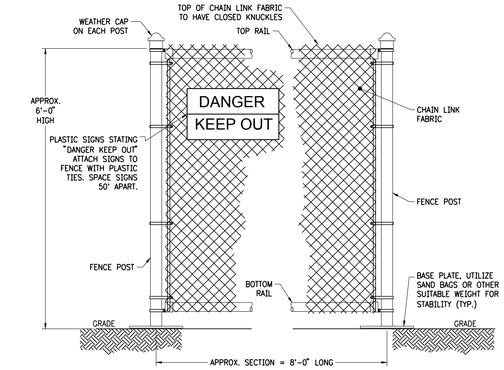
O'BRIEN & GERE ENGINEERS, INC.
163 North Wellwood Avenue
Lindenhurst, New York 11757

REHAB HTHW SYSTEM
NATURAL GAS LINE TO PHYSICAL EDUCATION BLDG.

DETAILS – SHEET 1 OF 2

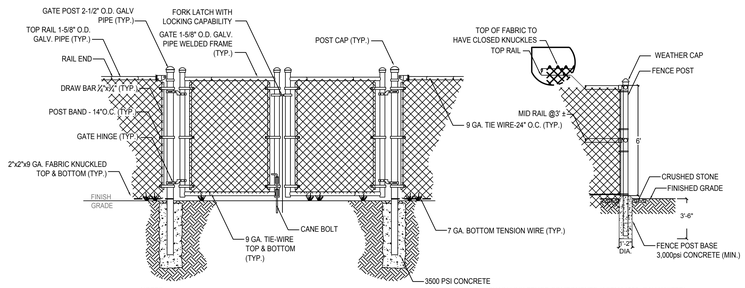
SCALE	PROJECT NO.	DRAWING NUMBER	REVISION
As Noted	291014–03	SU–103	A
DRAWN D. Gordon	OBG JOB NO. 65274		
CHECKED K. Duffy	DATE September 13, 2018		

REVISIONS			
REV	DESCRIPTION	DATE	APPVD
A	CLIENT REVIEW – 100% SUBMISSION	09/13/2018	KMD



CONSTRUCTION FENCE – RELOCATABLE CHAIN LINK FENCE SECTION

DETAIL 7 N.T.S.



NOTES:

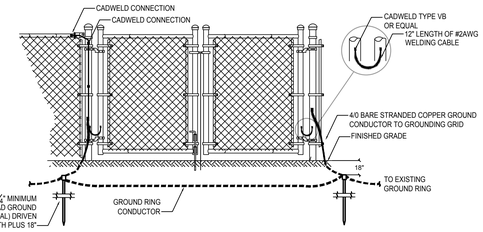
1. ALL WIRE FABRIC AND FENCE HARDWARE SHALL BE GALVANIZED.
2. GATE SHALL BE COMPLETED WITH BALL AND SOCKET HINGES OR APPROVED EQUAL.
3. COORDINATE FINAL LOCATION OF DOUBLE GATE TO CORRESPOND TO THE ACCESS REQUIRED BY UTILITY.
4. PROVIDE WEED BARRIER AND GRAVEL INSIDE THE FENCE AREA TO 12" OUTSIDE FENCE.
5. FENCE SHALL BE 8 FEET HIGH.
6. REFER TO DRAWING E-009 FOR FENCE DIMENSION DETAIL.

CHAIN LINK FENCE COMPONENTS (ASTMA1083, GALVANIZED)

1. LINE POSTS: 2.38 INCH DIAMETER
2. CORNER AND TERMINAL POSTS: 3.5 INCH DIAMETER
3. GATE POSTS: 2.38 INC DIAMETER
4. TOP AND MID RAIL: 1.66 INC DIAMETER
5. GATE FRAME: 1.66 INC DIAMETER
6. FABRIC: 2 INCH DIAMOND MESH 9ga.
7. MAXIMUM POST SPACING @ 8FT.
8. PROVIDE MIDSPAN BRACE

PERMANENT FENCE – DOUBLE SWING GATE AND FENCE POST DETAIL

DETAIL 8 N.T.S.

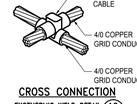


NOTES:

1. ALL GROUNDING AND BONDING SHALL BE DONE IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.

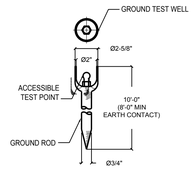
FENCE GROUND CONNECTION (PERMANENT FENCE ONLY)

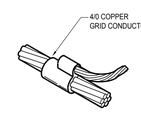
DETAIL 9 N.T.S.



CROSS CONNECTION

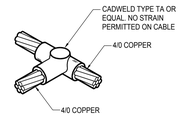
EXOTHERMIC WELD DETAIL 10 N.T.S.





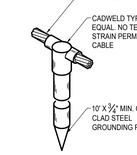
TAP CONNECTION

EXOTHERMIC WELD DETAIL 11 N.T.S.



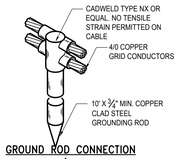
TEE CONNECTION

EXOTHERMIC WELD DETAILS 12 N.T.S.



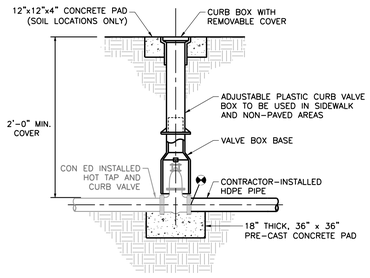
GROUND ROD CONNECTION

EXOTHERMIC WELD DETAILS 13 N.T.S.



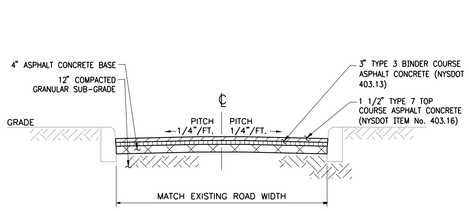
GROUND ROD CONNECTION W/TAPS

EXOTHERMIC WELD DETAILS 14 N.T.S.



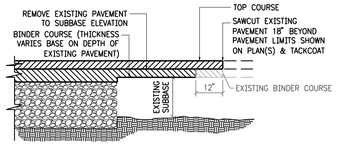
CURB VALVE INSTALLATION

DETAIL 15 N.T.S.



TYPICAL ASPHALT ROAD AND PAVEMENT

DETAIL 16 N.T.S.

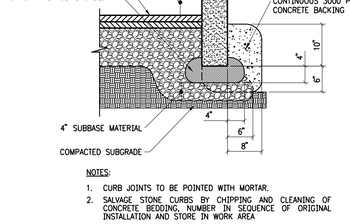


NOTES:

1. REFER TO PAVEMENT DETAIL THIS DWG. FOR DIMENSION OF LAYERS OF NEW PAVEMENT.

PAVEMENT TRANSITION

PLAN 17 N.T.S.

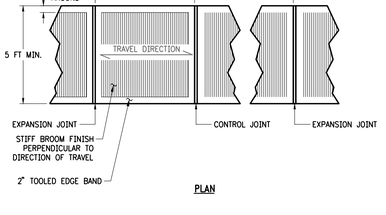


NOTES:

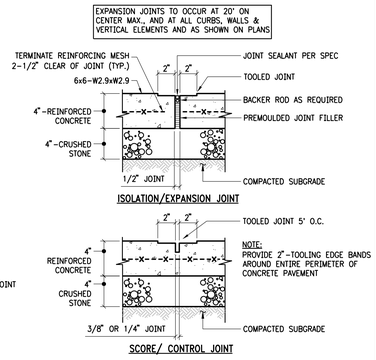
1. CURB JOINTS TO BE POINTED WITH MORTAR.
2. SALVAGE STONE CURBS BY CHIPPING AND CLEANING OF CONCRETE BEDDING, NUMBER IN SEQUENCE OF ORIGINAL INSTALLATION AND STORE IN WORK AREA

STONE CURB

DETAIL 18 N.T.S.



PLAN



CONCRETE SIDEWALK, FINISHING & JOINTS

DETAIL 19 N.T.S.

1 INCH WHEN PLOTTED TO SCALE

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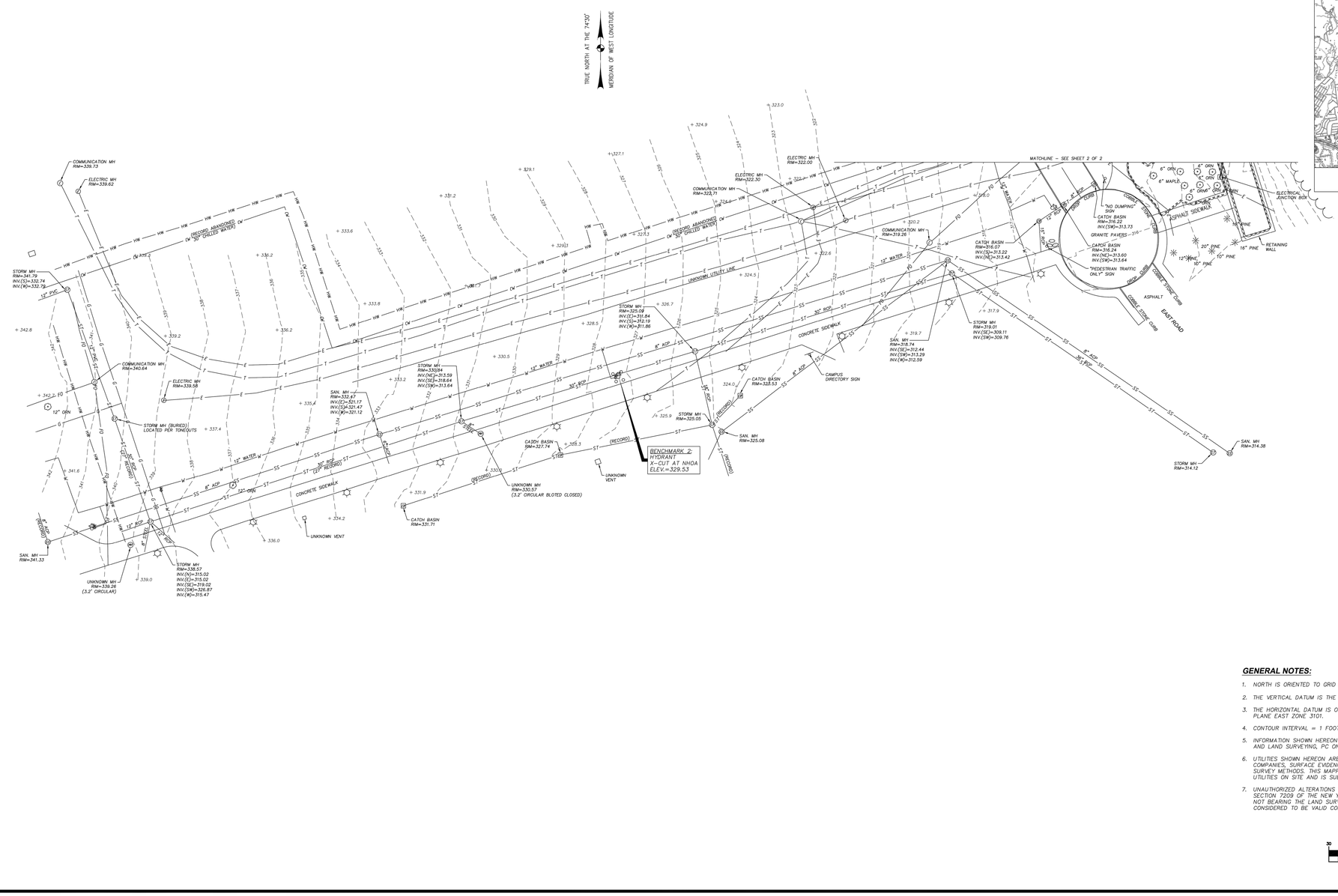
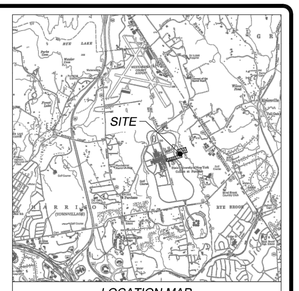
REHAB HTHW SYSTEM
NATURAL GAS LINE TO PHYSICAL EDUCATION BLDG.

DETAILS – SHEET 2 OF 2

SCALE	PROJECT NO.	DRAWING NUMBER	REVISION
As Noted	291014-03	SU-104	A
DRAWN: D. Gordon	OBG JOB NO. 65274		
CHECKED: K. Duffy	DATE September 13, 2018		

REVISIONS			
REV	DESCRIPTION	DATE	APPVD
A	CLIENT REVIEW – 100% SUBMISSION	09/13/2018	KMD





LOCATION MAP
SCALE: N.T.S.

LEGEND

- BENCHMARK
- CATCH BASIN
- SANITARY SEWER MANHOLE
- STORM MANHOLE
- MANHOLE
- COMMUNICATION MANHOLE
- ELECTRIC MANHOLE
- ELECTRIC JUNCTION BOX
- LIGHT POST
- FIRE HYDRANT
- WATER VALVE–GATE VALVE
- SINGLE POST SIGN
- BOULDER
- DECIDUOUS TREE
- CONIFEROUS TREE
- E — ELECTRIC LINE
- HW — HOT WATER LINE
- W — WATER LINE
- CW — CHILLED WATER LINE
- COM — COMMUNICATION LINE
- ST — STORM SEWER LINE
- FO — FIBER OPTIC
- T — TELEPHONE LINE
- CATV — CABLE TV
- UNKNOWN UTILITY LINE
- HANDRAIL
- CHAIN LINK FENCE
- STONE WALL
- WOODS LINE
- PLANTING BED
- BUILDING LINE

GENERAL NOTES:

1. NORTH IS ORIENTED TO GRID NORTH FROM GPS OBSERVATION.
2. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. THE HORIZONTAL DATUM IS ON NORTH AMERICAN DATUM OF 1983, NEW YORK STATE PLANE EAST ZONE 3101.
4. CONTOUR INTERVAL = 1 FOOT.
5. INFORMATION SHOWN HEREON IS FROM A FIELD SURVEY COMPLETED BY MJ ENGINEERING AND LAND SURVEYING, PC ON DECEMBER 18, 2017.
6. UTILITIES SHOWN HEREON ARE BASED ON SURFACE MARKINGS PROVIDED BY BL COMPANIES, SURFACE EVIDENCE AND INFORMATION RECORDED DURING CONVENTIONAL SURVEY METHODS. THIS MAPPING DOES NOT PURPORT TO SHOW ALL UNDERGROUND UTILITIES ON SITE AND IS SUBJECT TO FIELD VERIFICATION.
7. UNAUTHORIZED ALTERATIONS OR ADDITION TO THIS SURVEY MAP IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW. COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYOR'S SEAL AND SIGNED WITH RED INK SHALL NOT BE CONSIDERED TO BE VALID COPIES.

30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

SUBMITTAL / REVISIONS					
No.	DATE	DESCRIPTION	BY	REVIEWED BY:	DATE

PROJ. MANAGER:	GMR
CHIEF DESIGNER:	
DESIGNED BY:	
DRAWN BY:	PEM
CHECKED BY:	GMR

DATE DATE

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1533 Crescent Road - Clifton Park, NY 12065

SUNY PURCHASE

PARITAL TOPOGRAPHIC SURVEY

735 ANDERSON HILL RD., PURCHASE
WESTCHESTER COUNTY NEW YORK

SCALE: 1"=30'
CONTRACT No.:
MJ PROJ. No.: MJ1248
DATE: JAN. 4, 2018

1 OF 2

File Name: G:\MJ1248 OBG-SUNY Purchase Gas Line\Cad\MJ1248_XSRVY.dwg (Layout: GAS LINE PROJECT - 1 OF 2)
Date: Tue, Jan 23, 2018 - 1:57 PM (Name: pmiller)

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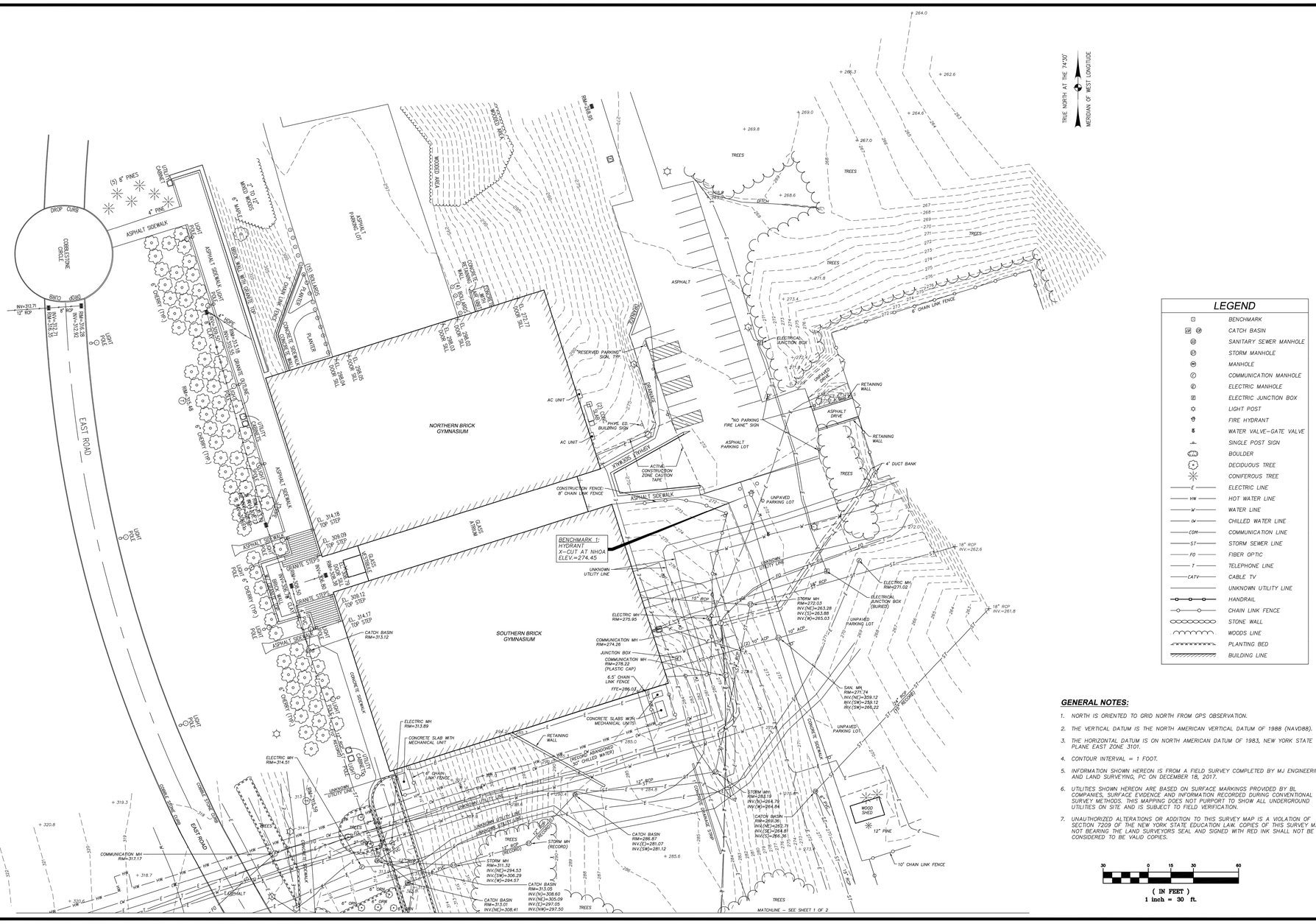
TOPOGRAPHIC & UTILITY SURVEY SHEET 1 OF 2 (REFERENCE ONLY)

SCALE	PROJECT NO.	DRAWING NUMBER	REVISION
As Noted	291014-03	SU-105	A
DRAWN: D. Gordon	OBG JOB NO. 65274		
CHECKED: K. Duffy	DATE September 13, 2018		

REVISIONS			
REV	DESCRIPTION	DATE	APPVD
A	CLIENT REVIEW – 100% SUBMISSION	09/13/2018	KMD



LEGEND

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- CATCH BASIN
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- COMMUNICATION MANHOLE
- ELECTRIC MANHOLE
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CHIEF DESIGNER:	
DESIGNED BY:	
DRAWN BY:	PEM
CHECKED BY:	GMR

DATE

DATE

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SCALE: 1"=30'
CONTRACT No.:
MJ PROJ. No.: MJ1248
DATE: JAN. 4, 2018

2 OF 2

File Name: G:\MJ1248 OBG-SUNY Purchase Gas Line\Cad\MJ1248_XSRVY.dwg (Layout: GAS LINE PROJECT - 2 OF 2)
Date: Tue, Jan 23, 2018 - 2:00 PM (Name: pmiller)

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TOPOGRAPHIC & UTILITY SURVEY SHEET 2 OF 2 (REFERENCE ONLY)

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As Noted	291014-03	SU-106	A
DRAWN: D. Gordon	OBG JOB NO. 65274		
CHECKED: K. Duffy	DATE September 13, 2018		