GENERAL CONSTRUCTION NOTES

GC-1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 "DIG SAFELY" (1-800-962-7962) TO HAVE UNDERGROUND UTILITIES LOCATED. EXPLORATORY EXCAVATIONS SHALL COMPLY WITH CODE 753 REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL ALL THE OPERATORS HAVE NOTIFIED THE CONTRACTOR THAT THEIR UTILITIES HAVE BEEN LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION, INSOFAR AS THEY MAY BE ENDANGERED BY THE CONTRACTOR'S OPERATIONS. THIS SHALL HOLD TRUE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, THEIR LOCATIONS ARE NOT GUARANTEED EVEN THOUGH THE INFORMATION WAS OBTAINED FROM THE BEST AVAILABLE SOURCES, AND IN ANY EVENT, OTHER UTILITIES ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, IMMEDIATELY REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES AND SHALL CONSTANTLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION OF UTILITY SERVICE.

GC-2. CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING UTILITIES DEPTHS AND ADVISE OF ANY CONFLICTS WITH PROPOSED UTILITIES. IF CONFLICTS ARE PRESENT, THE OWNER'S FIELD REPRESENTATIVE, JMC, PLLC, AND THE APPLICABLE MUNICIPALITY OR AGENCY REPRESENTATIVE SHALL BE NOTIFIED IN WRITING. IF REQUIRED, THE EXISTING/PROPOSED UTILITIES RELOCATION SHALL BE DESIGNED BY JMC, PLLC.

GC-3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL PERMITS REQUIRED AND POST ALL BONDS AND PAY ALL FEES AND CHARGES IN CONNECTION WITH OBTANING SAME.

GC-4. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL SAFETY CODES. APPLICABLE SAFETY CODES MEAN THE LATEST EDITION, INCLUDING ANY AND ALL AMENDMENTS, REVISIONS, AND ADDITIONS THERETO, TO THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA); AND APPLICABLE SAFETY, HEALTH REGULATIONS AND BUILDING CODES FOR CONSTRUCTION IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GUARDING AND PROTECTING ALL OPEN EXCAVATIONS IN ACCORDANCE WITH THE PROVISION OF SECTION 107-05 (SAFETY AND HEALTH REQUIREMENTS) OF THE NYSDOT STANDARD SPECIFICATIONS. IF THE CONTRACTOR PERFORMS ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THE AFFECTED AREA SHALL BE DISCONTINUED AND IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE APPROVAL AUTHORITY HAVING JURISDICTION.

GC-5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AFFECTED BY THE SCOPE, OF WORK SHOWN HEREON AT ALL TIMES TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE. RAMPING CONSTRUCTION TO PROVIDE ACCESS MAY BE CONSTRUCTED WITH SUBBASE MATERIAL EXCEPT THAT TEMPORARY ASPHALT CONCRETE SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS AT ALL TIMES.

GC-6. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING PAVEMENT TO REMAIN.

GC-7. WHERE AND AS APPLICABLE, CONSTRUCTION OR OTHER LAND DISTURBANCE WITHIN TOWN REGULATED WETLANDS, BUFFER AREAS, STEEP SLOPE AREAS, AND/OR AREAS AFFECTING TOWN REGULATED TREES SHALL BE LIMITED TO AS SHOWN ON THE APPROVED SITE PLANS.

GC-8. ALL IMPROVEMENTS SHOWN ON THE PLANS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND, WHERE APPLICABLE, IN ACCORDANCE WITH CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE TOWN AND/OR NYSDOT. THIS INCLUDES BUT IS NOT LIMITED TO STORM DRAINS, DRAINAGE STRUCTURES, GUTTERS, WATER MAINS, AND ANY OTHER REQUIRED UTILITY APPURTENANCES.

GC-9. IF THE CONTRACTOR, DURING THE COURSE OF CONSTRUCTION, ENCOUNTERS SUCH CONDITIONS AS FLOOD AREAS, UNDERGROUND WATER, SOFT OR SILTY AREAS, IMPROPER DRAINAGE, OR ANY OTHER UNUSUAL CIRCUMSTANCES OR CONDITIONS THAT WERE NOT FORESEEN IN THE ORIGINAL PLANNING, HE/SHE SHALL REPORT SUCH CONDITIONS IMMEDIATELY TO THE OWNER'S FIELD REPRESENTATIVE, DDP, GEI, AND JMC.THE DESIGN TEAM, WITHOUT UNNECESSARY DELAY, SHALL INVESTIGATE THE CONDITION OR CONDITIONS, AND SHALL ISSUE SPECIFICATIONS FOR THE CORRECTION OF THE CONDITIONS TO SECURE ADEQUATE, PERMANENT AND SATISFACTORY CONSTRUCTION.

GC-10. SITE LIGHTING DURING THE CONSTRUCTION PHASE SHALL BE LIMITED TO THE MINIMUM REQUIRED BY APPLICABLE LABOR REGULATIONS.

GC-11. ALL CONTRACTORS SHALL BE REQUIRED TO ENSURE THAT ALL EQUIPMENT IS PROPERLY MAINTAINED TO THE HIGHEST STANDARDS AND THAT ALL EQUIPMENT HAS APPROPRIATE MUFFLER SYSTEMS. ALL CONTRACTORS SHALL SHUT DOWN CONSTRUCTION VEHICLES WHENEVER PRACTICABLE AND SHALL NOT PERMIT THE IDLING OF SUCH VEHICLES. REGULAR SPRAYING OF THE ON-SITE ROADS WITH WATER SHALL BE UNDERTAKEN TO REDUCE AIRBORNE DUST.

GC-12. ALL CONTRACTORS SHALL BE REQUIRED TO COMPLY WITH ALL APPLICABLE CONSTRUCTION NOISE REGULATIONS OF THE VILLAGE OF MONTEBELLO. DURING CONSTRUCTION THE CONTRACTOR SHALL MAINTAIN A STANDARD OF NOISE CONTROL ON THE SITE RESPECTING THE USE OF RADIOS, TAPE PLAYERS AND THE LIKE, SO THAT SUCH DEVICES SHALL BE INAUDIBLE OFF SITE.

GC-13. CONTRACTOR SHALL REFER TO THE EROSION AND SEDIMENT CONTROL NOTES FOR ADDITIONAL NOTES RELATED TO THE DEVELOPMENT REQUIREMENTS FOR THE SITE.

GC-14. THE CONTRACTOR SHALL READ AND ABIDE BY THE REQUIREMENTS OF ALL NOTES ON THIS SHEET AND THE CIVIL SPECIFICATIONS.

EXISTING CONDITIONS NOTES

EC-1. EXISTING CONDITIONS DEPICTED ON ALL PLANS HAVE BEEN TAKEN FROM SURVEY TITLED,"SURVEY OF PROPERTY," PREPARED BY JAY A. GREENWELL, PLS, LLC, LAST REVISED ON 07/27/21 AND FURTHER SUPPLEMENTED WITH INFORMATION PROVIDED ON 08/30/2021. PRIOR TO ISSUANCE OF A BID, THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACCURACY OF THE EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S FIELD DEPARTMENT AND JMC.

EC-2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THE PLANS WERE TAKEN FROM THE GEOTECHNICAL REPORT ENTITLED, "GEOTECHNICAL REPORT", DATED 11/02/2020, PREPARED BY GEI CONSULTING ENGINEERS AND SCIENTISTS.

EC-3. THE MONITORING WELLS SHOWN HEREON WERE DECOMMISSIONED ON DECEMBER 28 AND 29, 2020 AND ABANDONED IN ACCORDANCE WITH NYSDEC POLICY CP-43, AS OUTLINED IN THE "DECOMMISSIONING REPORT", PREPARED BY PARRATT WOLFF INC, AND DATED JANUARY 22, 2021.

EC-4. THE CONTRACTOR SHALL REFER TO THE GENERAL CONSTRUCTION NOTES FOR ADDITIONAL DIRECTION REGARDING THE CONSTRUCTION OF THE PROJECT.

SITE REMOVALS NOTES

R-1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES TO BE DEMOLISHED AND EXISTING UTILITIES TO BE PROTECTED. IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE OWNER'S FIELD REPRESENTATIVE AND JMC PLLC PRIOR TO THE START OF CONSTRUCTION.

R-2. PRIOR TO THE START OF ANY DEMOLITION THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND/OR APPROVALS FROM THE VILLAGE OF MONTEBELLO AND ALL OTHER AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL PAY ALL OUTSTANDING FEES, CHARGES, AND DEPOSITS TO ACQUIRE SAID PERMITS. NO DEMOLITION SHALL COMMENCE UNTIL PERMITS HAVE BEEN OBTAINED

R-3. THE CONTRACTOR SHALL COORDINATE THE DISCONNECTION OF ALL UTILITIES WITH THE UTILITY COMPANY HAVING JURISDICTION PRIOR TO THE START OF DEMOLITION. CONFIRMATION OF DISCONNECTED UTILITIES SHALL BE PROVIDED TO THE VILLAGE OF MONTEBELLO BUILDING DEPARTMENT IN ACCORDANCE WITH THEIR REQUIREMENTS. LETTERS FROM THE APPROPRIATE UTILITIES STATING THAT GAS AND ELECTRIC HAVE BEEN CUT OFF SHALL BE PROVIDED TO THE VILLAGE OF MONTEBELLO.

R-4. AS REQUIRED, THE CONTRACTOR SHALL OBTAIN, AND PROVIDE A COPY TO THE VILLAGE OF MONTEBELLO, A SEWER PLUG PERMIT INDICATING THAT A LICENSED PLUMBER HAS PLUGGED ALL EXISTING SEWER LINES TO THE EXISTING BUILDING. AS ALSO REQUIRED, THE CONTRACTOR SHALL OBTAIN, AND PROVIDE A COPY TO THE VILLAGE OF MONTEBELLO, A WATER USE PERMIT INDICATING THAT A LICENSED PLUMBER HAS CUT AND SEALED ALL EXISTING WATER SERVICE TO THE EXISTING BUILDING.

R-5. ANY UNSUITABLE MATERIAL FOUND ON-SITE DURING CONSTRUCTION SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION AND REPLACED WITH SUITABLE MATERIAL AS REQUIRED. ALL REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL SHALL BE COMPLETED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER.

R-6. ALL DEMOLITION AND/OR CONSTRUCTION WITHIN THE RIGHT-OF-WAY, INCLUDING STREETS AND SIDEWALKS, SHALL BE PERFORMED IN ACCORDANCE WITH VILLAGE OF MONTEBELLO REQUIREMENTS.

R-7. ALL CONSTRUCTION/DEMOLITION DEBRIS NOT PROPOSED TO BE RECYCLED SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH THE REGULATIONS OF ALL LOCAL, STATE AND FEDERAL AGENCIES HAVING JURISDICTION.

R-8. IF ALLOWED, EXISTING CONCRETE MAY BE STORED ON SITE, AND RECYCLED FOR USE AS COMPACTED FILL. ALL MATERIAL TO BE USED AS FILL SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.

R-9. PRIOR TO THE START OF SITE DEMOLITION, EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) "EROSION AND SEDIMENT CONTROL GUIDELINES", AS REQUIRED AND/OR DIRECTED BY THE VILLAGE OF MONTEBELLO OR JMC PLLC.

R-10. EXISTING DRAINAGE PATTERNS ON SITE SHALL BE MAINTAINED TO THE MAXIMUM EXTENT PRACTICABLE.

R-11. ALL EXISTING UTILITY CASTINGS WHICH ARE TO REMAIN SHALL BE REMOVED AND RESET TO THE NEW PROPOSED GRADES IN ACCORDANCE WITH THE DIRECTIONS OF THE OWNER'S FIELD REPRESENTATIVE. EXISTING CASTINGS WHICH ARE DAMAGED OR UNFIT FOR INSTALLATION IN THE NEW CONSTRUCTION, AS DETERMINED BY THE OWNER'S FIELD REPRESENTATIVE, SHALL BE REPLACED.

R-12. ALL EXISTING SIDEWALKS, CURBS, PAVEMENT, ETC. TO REMAIN, WHICH ARE DISTURBED OR DAMAGED DUE TO THE NEW CONSTRUCTION, ARE TO BE REPLACED WITH MATERIALS CONSISTENT WITH EXISTING CONDITIONS.

R-13. THESE PLANS ARE TO BE PROVIDED TO BOTH THE DEMOLITION CONTRACTOR AND THE SITE CONTRACTOR FOR THEIR USE, INFORMATION AND COORDINATION. ANY QUESTIONS OF CONTRACTOR RESPONSIBILITY AND/OR SEPARATION OF WORK SHALL BE DIRECTED TO THE CONSTRUCTION MANAGER IN WRITING PRIOR TO ISSUANCE OF BID.

R-14. THE OWNER SHALL RETAIN A LICENSED AND QUALIFIED PROFESSIONAL, CERTIFIED BY THE STATE OF NEW YORK, TO INSPECT FOR THE PRESENCE OF ASBESTOS AND/OR OTHER HAZARDOUS MATERIALS WITHIN DEMOLITION AREAS PRIOR TO THE COMMENCEMENT OF DEMOLITION. IF REMEDIATION IS REQUIRED, THE OWNER SHALL DO SO IN ACCORDANCE WITH THE STATE OF NEW YORK ASBESTOS RULES AND REGULATIONS AND/OR ANY AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED DOCUMENTATION TO THE VILLAGE OF MONTEBELLO PRIOR TO OBTAINING A DEMOLITION PERMIT.

R-15. THE CONTRACTOR SHALL EXTERMINATE RODENTS AS REQUIRED BY ROCKLAND COUNTY DEPARTMENT OF HEALTH AND MENTAL HYGIENE. A LETTER FROM THE HEALTH DEPARTMENT CERTIFYING THAT A LICENSED EXTERMINATOR HAS TREATED THE EXITING BUILDING SHALL BE PROVIDED TO THE VILLAGE OF MONTEBELLO DEPARTMENT OF BUILDINGS.

R-16. PRIOR TO COMMENCEMENT OF DEMOLITION, THE CONTRACTOR MUST PROVIDE 24-HOUR NOTIFICATION TO THE VILLAGE OF MONTEBELLO.

R-17. THE CONTRACTOR IS INFORMED THAT THE SITE IS TO REMAIN IN OPERATION THROUGHOUT THE COURSE OF CONSTRUCTION. THEREFORE, ALL UTILITY SERVICES SHALL BE MAINTAINED AT ALL TIMES AND TEMPORARY SERVICES SHALL BE PROVIDED AND INSTALLED AS REQUIRED AND/OR DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE, PROJECT ARCHITECT, PROJECT MEP ENGINEER, JMC PLLC, AND/OR THE AUTHORITY HAVING JURISDICTION. TEMPORARY SERVICES SHALL BE MAINTAINED UNTIL SUCH TIME THAT THE PERMANENT SERVICES ARE FULLY INSTALLED AND OPERATIONAL. THE FOLLOWING DIRECTION IS GIVEN FOR EACH UTILITY SERVICE:

A. WATER- THE TEMPORARY FIRE AND DOMESTIC WATER SERVICES FOR 10 AND 20 DUNNIGAN DRIVE SHALL BE PROVIDED THROUGH THE EXISTING METER PIT AT THE SOUTHEAST CORNER OF THE SITE. TEMPORARY SERVICE LINES SHALL BE INSTALLED BELOW GRADE BETWEEN 10 AND 20 DUNNIGAN DRIVE AS DESIGNED BY BURNS ENGINEERING. ALL EXISTING FIRE SERVICES RISERS SHALL BE DISCONNECTED FROM THE SERVICES LINES OUTSIDE THE BUILDING, AND CONNECTED TO THE TEMPORARY SERVICE LINE AS REQUIRED AND DIRECTED BY BURNS ENGINEERING. ALL EXISTING PRIVATE WATER LINES SHALL BE REMOVED OR ABANDONED IN PLACE. IF ABANDONED IN PLACE, ALL VISIBLE SURFACE IMPROVEMENTS (HYDRANTS AND VALVES) SHALL BE FULLY REMOVED AND AT LEAST TWO LENGTHS OF PIPE SHALL BE REMOVED AT ANY CONNECTION TO EXISTING PIPES TO REMAIN.

B. SANITARY- THE EXACT LOCATION AND INVERTS OF THE VARIOUS SERVICE CONNECTIONS ARE UNKNOWN. THE CONTRACTOR SHALL DIG TEST PITS TO FOLLOW/FIND THE SERVICE CONNECTIONS AT THE BUILDING WALLS AND LEAVE THEM EXPOSED FOR SURVEY AND CONFIRMATION OF THE DESIGNS SHOWN ON THE PLANS PREPARED BY BURNS ENGINEERING.

C. GAS- THE NEW GAS SERVICE IS TO BE PROVIDED AT THE SAME LOCATION AS THE EXISTING GAS SERVICE FOR 10 DUNNIGAN DRIVE. BURNS ENGINEERING IS WORKING WITH ORANGE AND ROCKLAND UTILITIES AND WILL PROVIDE DETAILS/ DESIGN DATA UPON RECEIPT.

D. ELECTRIC-THE TEMPORARY AND/OR NEW ELECTRIC SERVICES HAVE NOT BEEN PROVIDED BY ORANGE AND ROCKLAND UTILITIES.

E. TELECOM & SOLAR- THE RELOCATION/INSTALLATION OF THESE UTILITIES IS THE RESPONSIBILITY OF THE OWNER. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S CONTRACTORS AS REQUIRED.

F. ROOF STORM DRAINAGE- ALL ROOF DRAIN LEADERS FOR EXISTING BUILDINGS TO REMAIN ARE TO REMAIN AND BE PROTECTED AT ALL TIMES DURING CONSTRUCTION. SUBSURFACE PIPING THAT IS IMPACTED BY THE CONSTRUCTION SHALL BE RECONNECTED TO THE EXISTING OR PROPOSED DRAINAGE SYSTEM AS REQUIRED, SHOWN, OR DIRECTED BY THE PROJECT ARCHITECT, JMC, OR THE PROJECT MEP ENGINEER. (SEE MEP DRAWINGS AND JMC DRAWINGS C-300 TO C-303).

R-18. EXCEPT AS OTHERWISE NOTED IN THE ARCHITECTURAL, CIVIL ENGINEERING, STRUCTURAL AND/OR MEP ENGINEERING DRAWINGS/SPECIFICATIONS, ALL EXISTING SURFACE AND SUBSURFACE SITE IMPROVEMENTS WITHIN THE BUILDING EXPANSION AREA SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVE JURISDICTION. CONTRACTOR SHALL GIVE SPECIAL ATTENTION TO THE UTILITIES IN THIS AREA AND REFER TO ALL PHASING PLANS, AS WELL AS TEMPORARY AND PERMANENT DESIGN PLANS, PRIOR TO REMOVAL OF ANY UTILITY SERVICE THAT MAY BE REQUIRED TO SERVE THE PROJECT. ANY DISCREPANCIES OR POTENTIAL ISSUES SHOULD BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM IN WRITING FOR RESOLUTION PRIOR TO THE START OF DEMOLITION. ANY BACKFILL REQUIRED AFTER REMOVAL OF SITE FEATURES SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT GEOTECHNICAL ENGINEER.

R-19. SITE FEATURES SHOWN HERE ON TO REMAIN AND BE PROTECTED ARE THOSE THAT MAY REQUIRE SPECIAL ATTENTION OF THE CONTRACTOR(S). THIS DOES NOT IMPLY THAT ALL OTHER FEATURES IN THE DISTURBANCE AREA ARE TO BE REMOVED. SHOULD, AT ANY POINT DURING CONSTRUCTION, A SITE FEATURE BE FOUND WITHIN THE WORK AREA THAT IS NOT SHOWN ON THE PLANS TO REMAIN OR BE REMOVED, THE CONTRACTOR SHALL REQUEST CLARIFICATION OF HOW TO TREAT THIS FEATURE IN WRITING AND SHALL NOT PROCEED WITH WORK IN THE AREA UNTIL DIRECTION IS PROVIDED BY THE DESIGN TEAM, CONSTRUCTION MANAGER, AND/OR OWNER'S FIELD REPRESENTATIVES

R-20. THE CONTRACTOR SHALL REFER TO THE GENERAL CONSTRUCTION NOTES FOR ADDITIONAL DIRECTION REGARDING THE CONSTRUCTION OF THE PROJECT.

LAYOUT NOTES

L-1. PRIOR TO THE START OF THE PROPOSED RAILROAD REALIGNMENT THE OWNER SHALL SHALL MAKE EVERY EFFORT TO CONTACT THE ADJACENT PROPERTY OWNER (RAYMOUR AND FLANAGAN) IN ORDER TO COORDINATE SAID WORK AND MINIMIZE CONFLICTS TO THE MAXIMUM EXTENT PRACTICABLE.

L-2. THIS PLAN INCLUDES THE APPROVAL OF AN EMERGENCY GENERATOR. PRIOR TO INSTALLATION OF THE GENERATOR, SHOP DRAWINGS SHALL BE SUBMITTED TO THE VILLAGE ENGINEER FOR REVIEW AND APPROVAL OF THE NOISE LEVEL TO BE EMITTED DURING OPERATION. THE NOISE LEVEL SHALL NOT EXCEED 70 DBA AT THE PROPERTY LINE, OR SOME OTHER LEVEL ACCEPTABLE TO THE VILLAGE ENGINEER. NOISE ABATEMENT MEASURES SHALL BE IMPLEMENTED AS REQUIRED TO MEET THE MAXIMUM NOISE LEVEL APPROVED BY THE VILLAGE ENGINEER AND SHALL NOT BE LESS THAN PROVIDING A LEVEL 2 SOUND ATTENUATING ENCLOSURE.

L-3. PRIOR TO THE START OF CONSTRUCTION, CONTACTOR SHALL REFER TO DRAWINGS A-110 AND A-111 FOR ADDITIONAL INFORMATION REGARDING WORK WITHIN THE AREA OF THE TRAIN LOADING ZONE. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE DESIGN TEAM AND OWNER IN WRITING. CONSTRUCTION SHALL NOT COMMENCE UNTIL IDENTIFIED ISSUES AREA RESOLVED TO THE SATISFACTION OF THE DESIGN TEAM AND OWNER.

L-4. THE CONTRACTOR SHALL REFER TO THE GENERAL CONSTRUCTION NOTES FOR ADDITIONAL DIRECTION REGARDING THE CONSTRUCTION OF THE PROJECT.

GRADING NOTES

G-1. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.

G-2. ALL FILLS SHALL BE COMPACTED TO PROVIDE STABILITY OF MATERIAL AND TO PREVENT SETTLEMENT.

G-3. EXCAVATIONS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTIES, NOR DIVERT WATER ONTO THE PROPERTY OF OTHERS AT ANY TIME DURING THE COURSE OF CONSTRUCTION.

G-4. CONTRACTOR SHALL REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR FURTHER DIRECTION REGARDING SITE STABILIZATION THROUGHOUT THE COURSE OF CONSTRUCTION.

G-5. ALL RETAINING WALLS OVER 4 FEET IN VERTICAL HEIGHT SHALL BE DESIGNED BY A NYS LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE NYS FIRE PREVENTION AND BUILDING CODE. BUILDING PERMIT DRAWINGS SHALL BE SIGNED AND SEALED BY THE NYS LICENSED PROFESSIONAL ENGINEER.

G-6. THE CONTRACTOR IS INFORMED THAT THE FINAL GRADING FOR THE PROPOSED RAIL TRACKS SHALL BE IN ACCORDANCE WITH THE PLANS AND PROFILES PREPARED BY C2S. THE CONSTRUCTION OF THE PROPOSED RETAINING WALL AROUND THE TRACKS SHALL BE IN ACCORDANCE WITH DESIGN PROVIDED ON THE DRAWINGS PREPARED BY C2S, AND THE FINAL GRADES AT THE TOP OF THE RETAINING WALL SHALL BE SHOWN HERE ON. PRIOR TO THE START OF CONSTRUCTION, THE GENERAL CONTRACTOR SHALL REVIEW ALL PLANS AND COORDINATE THE WORK OF ALL SUBCONTRACTORS TO ENSURE THE DESIGN INTENT IS UNDERSTOOD. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ARCHITECT IN WRITING AND CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL ISSUES ARE RESOLVED TO THE SATISFACTION OF THE PROJECT ARCHITECT AND OWNER.

G-7. THE CONTRACTOR SHALL REFER TO THE GENERAL CONSTRUCTION NOTES FOR ADDITIONAL DIRECTION REGARDING THE CONSTRUCTION OF THE PROJECT.

UTILITIES NOTES

U-1. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.

U-2. UNLESS OTHERWISE SPECIFIED, PIPE FOR STORM DRAINS SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE) WITH A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS IN ACCORDANCE WITH ASTM F-2648. JOINTS SHALL BE WATERTIGHT IN ACCORDANCE WITH ASTM D-3212.

U-3. UNLESS OTHERWISE SPECIFIED, PIPE FOR SANITARY SEWER GRAVITY LINES SHALL BE DUCTILE IRON PIPE (DIP), CLASS 52, WITH PUSH-ON JOINTS IN ACCORDANCE WITH AWWA C-150, C-151 AND C-111.

U-4. UNLESS OTHERWISE SPECIFIED, PIPE FOR WATER LINES SHALL BE DOUBLE CEMENT-LINED DUCTILE IRON PIPE (DIP), CLASS 52, WITH PUSH-ON JOINTS IN ACCORDANCE WITH AWWA C-150, C-151, C-104 AND C-111, WITH PLAIN TIPPED RUBBER GASKETS AND 2 BRASS WEDGES PER JOINT. FITTINGS SHALL BE CEMENT LINED AND MECHANICAL JOINT, AWWA C-153, C-111 AND C-104; PRESSURE RATED 350 PSI.

U-5. THE FINAL LOCATION OF ALL UTILITIES SHALL BE SUBJECT TO THE APPROVAL OF THE UTILITY COMPANY HAVING JURISDICTION AND THE VILLAGE ENGINEER.

U-6. NO PERMANENT STRUCTURES SHALL BE CONSTRUCTED OVER THE SANITARY FORCE MAIN.

U-7. SHOULD ANY PORTION OF THE LAND WITHIN THE RIGHT OF WAY OVER THE SANITARY FORCE MAIN BE MODIFIED, INCLUDING REGRADING AND/OR ADJUSTMENT OF MANHOLE CASTINGS, IT SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE ROCKLAND COUNTY SEWER DISTRICT (RCSD). FURTHER, FOUNDATION WORK AND/OR MAJOR EXCAVATION WITHIN 10 FEET OF THE SANITARY SEWER RIGHT OF WAY, SHALL ALSO BE SUBJECT TO THE REVIEW AND APPROVAL OF THE RCSD. IF REQUIRED, THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE RCSD AND PAY ALL ASSOCIATED FEES. THE RCSD MAY REQUIRE SHORING OR OTHER MEASURES TO PROTECT THE FORCEMAIN. THE CONTRACTOR SHALL NOTIFY THE RCSD AT LEAST 48 HOURS PRIOR TO COMMENCING SAID WORK (845) 365-6111.THE CONTRACTOR MUST ALSO PROVIDE THE RCSD WITH PROOF OF THE REQUIRED INSURANCE AND SIGN A WAIVER TO DEFEND, INDEMNIFY, SAVE AND HOLD HARMLESS BOTH THE COUNTY OF ROCKLAND AND RCSD FROM ANY CLAIMS ARISING FROM WORK PERFORMED WITHIN THE RIGHT OF WAY OVER OR NEAR THE FORCE MAIN.

U-8. THE CONTRACTOR IS INFORMED THAT TEMPORARY UTILITY SERVICED ARE TO BE CONSTRUCTED UNDER THE NEW (ASRS) BUILDING SLAB, BETWEEN 10 AND 20 DUNNIGAN DRIVE, WHICH MAY INCLUDE BUT NOT BE LIMITED TO DOMESTIC WATER, FIRE SPRINKLER, AND NATURAL GAS. THESE SERVICES SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION. (REFER TO MEP DRAWINGS FOR DESIGN OF TEMPORARY SERVICES.)

U-9. CONTRACTOR SHALL REFER TO DRAWINGS PREPARED BY C2S FOR ADDITIONAL DETAILS AND SPECIFICATIONS REGARDING UTILITIES WITHIN THE AREA OR THE TRAIN TRACKS.

U-10 THE CONTRACTOR SHALL REFER TO THE GENERAL CONSTRUCTION NOTES FOR ADDITIONAL DIRECTION REGARDING THE CONSTRUCTION OF THE PROJECT.

EROSION & SEDIMENT CONTROL NOTES

ES-1. PRIOR TO BEGINNING ANY CLEARING, GRUBBING OR EXCAVATION, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL THE PLANS AND SPECIFICATIONS. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED. FINAL STABILIZATION OF LANDSCAPED AREAS SHALL BE IN ACCORDANCE WITH THE LANDSCAPE PLAN.

ES-2. THE CONTRACTOR SHALL INSPECT AND MAINTAIN ON-SITE EROSION AND SEDIMENT CONTROL MEASURES ON A DAILY BASIS. ALL COLLECTED SEDIMENT WITHIN SEDIMENT BARRIERS SHALL BE REMOVED PERIODICALLY AS REQUIRED TO MAINTAIN THE FUNCTION OF THE SEDIMENT BARRIERS. ALL SEDIMENT COLLECTED SHALL BE RESPREAD ON-SITE WITHIN STABILIZED AREAS AS DIRECTED BY THE OWNERS REPRESENTATIVE.

ES-3. THE CONTRACTOR SHALL INSPECT DOWNSTREAM CONDITIONS FOR EVIDENCE OF SEDIMENTATION ON A WEEKLY BASIS, AFTER EACH RAINSTORM, AND AS MAY BE REQUIRED OR DIRECTED BY ALL APPLICABLE APPROVALS AND PERMITS. THE CONTRACTOR SHALL IMMEDIATELY PROVIDE A WRITTEN REPORT ON FINDINGS OF SEDIMENT IN DOWNSTREAM AREAS TO ALL AUTHORITIES HAVING JURISDICTION AND MAKE REPAIRS AS REQUIRED OR DIRECTED.

ES-4. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AS REQUIRED/WARRANTED BY FIELD CONDITIONS AND AS DIRECTED BY THE OWNERS REPRESENTATIVE, JMC, AND/OR ANY AUTHORITY HAVING JURISDICTION. NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR REGARDLESS OF THE NUMBER OF THE TIMES EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED, MOVED, REMOVED, OR REINSTALLED, OR NEW MEASURES ARE REQUIRED FOR THE LIFE OF CONTRACT.

ES-5. STOCKPILING OF CONSTRUCTION MATERIAL SHALL BE PLACED ON-SITE IN THE AREA DESIGNATED ON THIS PLAN OR AS APPROVED BY THE OWNERS REPRESENTATIVE. STOCKPILED EXCAVATED MATERIAL SHALL HAVE TWO ROWS OF SILT FENCE LOCATED AROUND ITS PERIMETER. ALL STOCKPILED MATERIAL SHALL BE MAINTAINED IN AN ORDERLY MANNER SO AS NOT TO IMPEDE ON PEDESTRIAN AND/OR VEHICULAR TRAFFIC CIRCULATION ROUTES.

ES-6. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNERS REPRESENTATIVE.

ES-7. ALL EXPOSED SLOPES AND GRADED/DISTURBED AREAS, THAT WILL NOT BE FURTHER DISTURBED WITHIN 14 CALENDAR DAYS, SOIL STABILIZATION MEASURERS MUST BE INITIATED WITHIN 24 HOURS OF DISTURBANCE, IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) "NEW YORK STATE STANDARD AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL" AND THE ANSI A300 "BEST MANAGEMENT PRACTICES FOR TREE AND SHRUB PLANTING, TRANSPLANTING, MAINTENANCE AND CARE," PREPARED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), LATEST EDITIONS, AS FOLLOWS:

A. SEED MIXTURE AND RATE OF APPLICATION:

A.1. IN SPRING, SUMMER OR EARLY FALL, SEED THE AREA WITH RYEGRASS (ANNUAL OR PERENNIAL) AT 30 POUNDS PER ACRES (APPROXIMATELY 0.7 POUNDS/1000 SQUARE FEET OR USE 1 POUND/1000 SQUARE FEET).

A.2. IN LATE FALL OR EARLY WINTER, SEED THE AREA WITH CERTIFIED 'AROOSTOOK' WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE (2.5 POUNDS/1000 SQUARE FEET).

B. APPLICATION SHALL BE UNIFORM BY MECHANICAL OR HYDROSEED METHODS.

C. MULCH ALL SEEDED AREAS WITH STRAW AT A RATE OF 2 TONS PER ACRE (90 POUNDS PER 1,000 SQUARE FEET) SUCH THAT THE MULCH FORMS A CONTINUOUS BLANKET.

ES-8. ALL SEEDED AREAS SHALL BE FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO MAINTAIN VIGOROUS, DENSE VEGETATIVE COVER.

ES-9. TEMPORARY SEED MIXTURES SHALL NOT BE PLACED ON AREAS WHERE FINAL GRADE HAS BEEN ESTABLISHED AND TOPSOIL HAS BEEN PLACED UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT.

ES-10. THE CONTRACTOR SHALL REFER TO THE GENERAL CONSTRUCTION NOTES FOR ADDITIONAL DIRECTION REGARDING THE CONSTRUCTION OF THE PROJECT.

ORANGE & ROCKLAND COUNTY UTILITILY EASEMENT NOTES

OR-1. ALL WORK AND EQUIPMENT WITHIN THE ORANGE AND ROCKLAND UTILITIES EASEMENT SHALL MAINTAIN THE PROPER CLEARANCE FROM THE HIGH VOLTAGE ENERGIZED FACILITIES IN ACCORDANCE WITH THE NEW YORK STATE HIGH VOLTAGE PROXIMITY ACT, OSHA REGULATIONS AND ORANGE AND ROCKLAND'S FIELD SAFETY GUIDE.

OR-2. THE ORANGE AND ROCKLAND EXTRA HIGH VOLTAGE SUPERVISOR MUST BE NOTIFIED A MINIMUM OF ONE WEEK PRIOR TO ANY CONSTRUCTION ACTIVITY WITHIN THE ORANGE AND ROCKLAND EASEMENT.

OR-3. APPROPRIATE CLEARANCE FROM THE LOWEST CONDUCTOR SHALL BE MAINTAINED AT ALL TIMES. NOTE: CONDUCTOR'S SAG AND SWING CHANGE DUE TO CHANGES IN TEMPERATURE AND WEATHER.

OR-4. SIGNS INDICATING "HIGH VOLTAGE ABOVE" SHALL BE DISPLAYED THROUGHOUT CONSTRUCTION.

OR-5. STOCKPILING OF DEBRIS, SOIL, SNOW OR ANY CONSTRUCTION MATERIALS WITHIN THE ORANGE AND ROCKLAND EASEMENT IS PROHIBITED.

OR-6. NO EXCAVATION SHALL BE MADE WITHIN 50' OF ANY ORANGE AND ROCKLAND TRANSMISSION STRUCTURE WITHOUT PRIOR PERMISSION FROM ORANGE AND ROCKLAND.

OR-7. CONSTRUCTION ACTIVITIES THAT HAVE BEEN CONSENTED TO BY ORANGE AND ROCKLAND WHICH CONSIST OF GRADE INCREASES WITHIN THE EASEMENT SHALL BE CONDUCTED BY PLACEMENT OF FILL OUTSIDE THE EASEMENT AND MOVED INTO THE EASEMENT BY BULLDOZER. CRANES, DUMP TRUCKS, EXCAVATORS AND EQUIPMENT THAT COULD POTENTIALLY COME IN CONTACT WITH ORANGE AND ROCKLAND'S OVERHEAD TRANSMISSION FACILITIES SHALL NOT OPERATE WITHIN THE EASEMENT.

OR-8. ALL EQUIPMENT OPERATING WITHIN ORANGE AND ROCKLAND'S EASEMENT SHALL BE GROUNDED.

OR-9. GROUNDING COMPONENTS, SUCH AS ABOVE AND BELOW GRADE GROUND WIRES AND DRIVEN GROUND RODS ARE LOCATED AT THE BASE OF EACH TRANSMISSION STRUCTURE AND/OR BETWEEN TRANSMISSION STRUCTURES WITHIN THE EASEMENT. EXTREME CARE SHALL BE UNDERTAKEN DURING ALL CONSTRUCTION ACTIVITIES TO AVOID DAMAGING THE GROUNDING COMPONENTS. IF ANY ORANGE AND ROCKLAND FACILITY IS DAMAGED, ORANGE AND ROCKLAND SHALL BE IMMEDIATELY NOTIFIED SO THAT REPAIRS CAN BE IMPLEMENTED. ALL COSTS ASSOCIATED WITH REPAIR OR REPLACEMENT OF DAMAGED FACILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

OR-10. FINAL GRADING WITHIN THE ORANGE AND ROCKLAND EASEMENT SHALL NOT RESULT IN PONDING OF WATER, EROSION OR STORM WATER ROUTING THAT WOULD PREVENT OR IMPEDE ACCESS ALONG THE RIGHT-OF-WAY OR ERODE A STRUCTURE'S FOUNDATION OR POLE'S EMBEDMENT DEPTH.

OR-11. LANDSCAPING WITHIN THE EASEMENT SHALL BE IN ACCORDANCE WITH ORANGE AND ROCKLAND'S LIST OF APPROVED VEGETATIVE PLANTINGS. ORANGE AND ROCKLAND RESERVES THE RIGHT TO TRIM AND/OR CLEAR CUT ALL GROWTH WITHIN THE EASEMENT IN ORDER TO CONDUCT MAINTENANCE ACTIVITIES AND MAINTAIN PROPER ELECTRICAL CLEARANCE.

OR-12. LIGHT POLES ARE NOT PERMITTED WITHIN THE ORANGE AND ROCKLAND EASEMENT.

OR-13. BLASTING IS NOT PERMITTED IN THE ORANGE AND ROCKLAND EASEMENT WITHOUT SUBMISSION OF A DETAILED BLASTING PLAN AND WRITTEN APPROVAL FROM ORANGE AND ROCKLAND.

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PROJECT NOTES

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

DWG NUMBER :
C-001

JMC PROJECT: 19005-1
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I.GENERAL CONSTRUCTION

A. BIDDER TO INVESTIGATE

PRIOR TO SUBMISSION OF HIS BID, THE CONTRACTOR SHALL PERSONALLY EXAMINE THE LOCATION OF THE PROPOSED WORK TO DETERMINE THE NATURE AND DIFFICULTY OF THE WORK AND TO SATISFY HIMSELF AS TO THE ACCURACY OF THE EXISTING CONDITIONS AND TOPOGRAPHY SHOWN ON THE DRAWINGS.

B. COOPERATION AND COORDINATION OF WORK

THE CONTRACTOR SHALL MAKE HIMSELF AWARE OF THE NATURE AND EXTENT OF ANY WORK WHICH IS TO BE PERFORMED BY ANY OTHER CONTRACTORS, SUBCONTRACTORS AND/OR UTILITY OWNERS, AND HOW SUCH WORK WILL AFFECT THE WORK THAT HE WILL BE PERFORMING. IN CASE OF INTERFERENCE BETWEEN THE OPERATIONS OF DIFFERENT CONTRACTORS, SUBCONTRACTORS, AND/OR UTILITY OWNERS, THE OWNER'S FIELD REPRESENTATIVE WILL BE THE SOLE JUDGE OF THE RIGHTS OF EACH AND THE SEQUENCE OF WORK NECESSARY, AND IN ALL CASES HIS DECISION SHALL BE ACCEPTED AS FINAL.

C. SITE ENGINEER'S DUTIES

THE SITE ENGINEER WILL CLARIFY AND EXPLAIN THE INTENT OF THE CONTRACT DOCUMENTS AS REASONABLY REQUIRED. HE WILL BE RESPONSIBLE FOR REVIEW OF SHOP DRAWINGS AS MORE FULLY SET FORTH HEREIN. THE SITE ENGINEER WILL NOT BE CONTINUOUSLY PRESENT IN THE FIELD, THEREFORE IT IS UNDERSTOOD THAT HE DOES NOT UNDERTAKE NOR ASSUME ANY OBLIGATION FOR SUPERVISION OF CONSTRUCTION, SAFETY MEASURES TAKEN DURING THE COURSE OF CONSTRUCTION, RESPONSIBILITY FOR SCHEDULING THE WORK, OR FOR INSURING COMPLETE COMPLIANCE WITH THE CONTRACT DOCUMENTS AND/OR ANY AND ALL CODE REQUIREMENTS, RULES AND REGULATIONS OF ANY PUBLIC OR PRIVATE AUTHORITY HAVING JURISDICTION OVER THE WHOLE OR ANY PART OF THE WORK. THE SITE ENGINEER NEITHER UNDERTAKES, ASSUMES, NOR GUARANTEES THE WORK AND/OR PERFORMANCE OF THE CONTRACTOR.

D. SITE ENGINEER'S STATUS

THE SITE ENGINEER WILL HAVE AUTHORITY TO HAVE SUCH TESTS MADE AS HE DEEMS ADVISABLE TO DETERMINE COMPLIANCE WITH THE CONTRACT DOCUMENTS. ALL DECISIONS OF THE SITE ENGINEER WITH REGARD TO TECHNICAL INTERPRETATION OF THE CONTRACT DOCUMENTS SHALL BE FINAL. ALL OTHER DECISIONS SHALL BE DEEMED TO BE ADVISORY ONLY.

E. LOCATIONS SHOWN ON DRAWINGS NOT GUARANTEED

ALL FEATURES SHOWN ON THE DRAWINGS ARE THOSE KNOWN TO EXIST, BUT THEIR LOCATIONS ARE NOT GUARANTEED TO BE EXACT, NOR IS IT GUARANTEED THAT ALL FEATURES ARE SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL FEATURES TO REMAIN WHETHER SHOWN ON THE DRAWINGS OR NOT.

F. SCHEDULE OF OPERATIONS

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT, IN BAR CHART FORM ACCEPTABLE TO THE OWNER'S REPRESENTATIVE, A DETAILED SCHEDULE OF CONSTRUCTION OPERATIONS AND COMPLETION DATES FOR EACH STAGE OF HIS OPERATIONS FOR REVIEW AND APPROVAL. NO WORK SHALL BE STARTED UNTIL THIS SCHEDULE HAS BEEN REVIEWED AND APPROVED.

G. SAFEGUARDS AND PROTECTION

IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE ALL NECESSARY SAFEGUARDS INCLUDING THE INSTALLATION OF SHORING, STRUCTURAL SUPPORTS, PROTECTIVE FENCING, AND BARRIERS, ETC., AS REQUIRED TO PREVENT DAMAGE TO PROPERTY OR INJURY TO PERSONS, IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL BUILDING CODES AND THE RULES, REGULATIONS AND ORDINANCES OF ALL OTHER GOVERNING BODIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY CLAIM FOR NON-COMPLIANCE OR CARELESSNESS.

CONSTRUCTION FENCING SHALL BE MAINTAINED AT ALL TIMES DURING THE CONSTRUCTION OPERATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF OSHA AND ALL AUTHORITIES HAVING JURISDICTION. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL SECURE THE SITE TO ENSURE THAT ALL SAFETY MEASURES, INCLUDING FENCES, BARRICADES, ETC. ARE IN PLACE AND THERE ARE NO UNPROTECTED HAZARDS ON OR ADJACENT TO THE SITE.

H. REPLACEMENT OF DISTURBED GROUND SURFACES AND DAMAGE

THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE GOOD, REPAIR AND/OR REPLACE ALL AREAS INCLUDING AREAS TO REMAIN, AND WHICH MAY BECOME DISTURBED OR DAMAGED AS A DIRECT OR INDIRECT RESULT OF HIS OPERATIONS. SAID REPAIR OR REPLACEMENT SHALL BE SATISFACTORY TO THE OWNER'S FIELD REPRESENTATIVE AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING BODY HAVING JURISDICTION.

I. CONSTRUCTION LAYOUT

THE CONTRACTOR SHALL PROVIDE ALL WORK REQUIRED TO LAYOUT THE CONSTRUCTION WORK. HE SHALL ESTABLISH PROPERTY LINES, BASE LINES, CONTROL POINTS AND BENCHMARKS WHICH SHALL BE MAINTAINED AND PROTECTED THROUGHOUT THE LIFE OF THE CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEASUREMENTS AND DIMENSIONS NECESSARY FOR CONSTRUCTION, AND THE FINISHED WORK IN CONFORMANCE WITH THE LINES, GRADES AND LOCATIONS CALLED FOR ON THE DRAWINGS. HE SHALL CORRECT ALL ERRORS CAUSED BY IMPROPER LAYOUT OF THE WORK OR DUE TO ERRORS BY HIS PERSONNEL AT NO ADDITIONAL COST TO THE OWNER.

J. TEMPORARY SERVICES

UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL PROVIDE AND PAY FOR ALL MATERIALS, LABOR, TOOLS, EQUIPMENT, WATER, SANITARY FACILITIES, LIGHT, HEAT, POWER, TELEPHONE, TRANSPORTATION AND SUPERINTENDENCE FOR TEMPORARY CONSTRUCTION, SERVICES AND FACILITIES OF EVERY NATURE WHATSOEVER NECESSARY TO EXECUTE, COMPLETE AND DELIVER THE WORK WITHIN THE SPECIFIED TIME.

K. PROTECTION OF EXISTING STRUCTURES AND UTILITIES

THE CONTRACTOR SHALL PROTECT FROM INJURY OR DAMAGE ALL EXISTING STRUCTURES AND UTILITIES WHICH ARE TO REMAIN. ALL EXISTING GAS AND WATER LINES, TELEPHONE AND ELECTRIC POLES, WIRES, CONDUITS, SEWERS, DRAINS, CULVERTS, HYDRANTS, AND OTHER UTILITIES WHICH ARE TO REMAIN SHALL BE CAREFULLY SUPPORTED, MAINTAINED IN OPERATION, AND PROTECTED BY THE CONTRACTOR FROM INJURY OR DAMAGE. THE CONTRACTOR SHALL SLING, SUPPORT, SHORE UP AND SECURE IN PLACE ALL PIPE OR CONDUITS, WITHOUT DAMAGE THERETO. HE SHALL PROVIDE FOR AND MAINTAIN, BY MEANS OF SUITABLE TEMPORARY CHANNELS OR PIPE, THE FLOW OF DRAINAGE AND WATERCOURSES, WHETHER ON THE SURFACE OR UNDERGROUND, WHICH MAY BE INTERRUPTED DURING AND BY THE WORK. ALL WORKS OF DRAINAGE INTERCEPTED OR DISCONNECTED SHALL BE RESTORED AND MADE GOOD OR TAKEN DOWN AND REBUILT TO THE EXTENT MADE NECESSARY BY THE NEW WORK, AND ALL TEMPORARY MATERIAL REQUIRED FOR SUCH CONSTRUCTION SHALL IMMEDIATELY BE REMOVED THEREFROM WHEN NO LONGER REQUIRED.

L. CLEARING AND GRUBBING

EXCEPT FOR EXISTING TREES WHICH HAVE BEEN DESIGNATED TO REMAIN, THE AREA WITHIN THE LIMITS OF WORK SHALL BE CLEARED OF TREES, LOGS, STUMPS, BRUSH, VEGETATION, RUBBISH AND OTHER PERISHABLE OR OBJECTIONABLE MATERIALS, AS DIRECTED, AND LEGALLY DISPOSED OF OFF-SITE BY THE CONTRACTOR.

M. REMOVAL OF STRUCTURES, UTILITIES AND OBSTRUCTIONS

THE CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF OFF-SITE THOSE EXISTING STRUCTURES, UTILITIES AND OBSTRUCTIONS WHICH INTERFERE WITH THE PROPOSED.CONSTRUCTION. THE CONTRACTOR SHALL REMOVE ONLY THOSE ITEMS AND STRUCTURES THAT HE HAS BEEN AUTHORIZED TO REMOVE, EITHER BY SPECIFIC DIRECTIONS GIVEN ON THE DRAWINGS OR BY INSTRUCTIONS GIVEN BEFORE OR DURING THE PROGRESS OF THE WORK. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY CLAIM ARISING FROM HIS REMOVAL OF ANY EXISTING ITEM OR STRUCTURE WITHOUT THE REQUIRED AUTHORIZATION.

N. DISCONTINUANCE OF UTILITIES

BEFORE ANY STRUCTURE WITH UTILITIES THEREON IS DISPOSED OF, THE UTILITIES SHALL BE DISCONNECTED AND REMOVED. THE CONTRACTOR SHALL PERFORM THE WORK OF DISCONTINUING THE UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS AND DIRECTIONS OF THE AUTHORITIES HAVING JURISDICTION OVER THE UTILITIES INVOLVED.

O. EXISTING SERVICES TO BE MAINTAINED

IN REMOVING STORM DRAIN STRUCTURES OR SANITARY SEWER STRUCTURES, ALL EXISTING LIVE STORM DRAINS OR SANITARY SEWERS CONNECTED TO THE STRUCTURES SHALL BE REBUILT AND PROPERLY RECONNECTED, AND SERVICE SHALL BE MAINTAINED DURING SUCH CONSTRUCTION OPERATIONS.

P. DEAD-END PIPE AND/OR CONDUIT TO BE SEALED

WHEN PIPE, CONDUITS, SEWERS OR DRAINS ARE REMOVED FROM TRENCHES, LEAVING DEAD-ENDS IN THE GROUND, THE CONTRACTOR SHALL FULLY PLUG OR BULKHEAD SUCH ENDS IN A MANNER SATISFACTORY TO THE OWNER'S FIELD REPRESENTATIVE AND THE UTILITY OWNER.

Q. PORTIONS OF PAVEMENTS, CURBS, ETC., TO REMAIN

IN REMOVING PORTIONS OF PAVEMENTS, CURBS, SIDEWALKS, DRIVEWAYS AND SIMILAR ITEMS WHERE THE BALANCE OF SUCH ITEMS IS TO REMAIN, REMOVAL SHALL BE TO AN EXISTING JOINT. WHERE THIS IS NOT PRACTICAL, REMOVAL SHALL BE TO A REASONABLY TRUE LINE WITH VERTICAL FACE, WHICH SHALL BE CUT WITH A POWER DRIVEN CONCRETE SAW OR BY OTHER APPROVED MECHANICAL LINE CUTTING METHODS.

R. STORAGE ON-SITE

METHOD AND LOCATIONS OF STORAGE OF PIPE, APPURTENANCES AND OTHER CONSTRUCTION MATERIAL ON-SITE SHALL BE SUBJECT TO THE APPROVAL.

S. MAINTENANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AND PROTECT PEDESTRIANS IN SUCH A MANNER SATISFACTORY TO THE OWNER'S FIELD REPRESENTATIVE AND AUTHORITIES HAVING JURISDICTION. HE SHALL COMPLY WITH RULES AND REGULATIONS OF THOSE GOVERNING BODIES HAVING JURISDICTION ON THE ADJACENT ROADWAYS AND SIDEWALKS, AND SHALL OBTAIN REQUIRED PERMITS AND PAY FEES, DEPOSITS, AND CHARGES. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN CONSTRUCTION SIGNS, BARRICADES, LIGHTS, STEEL PLATES, AND/OR ALL OTHER DEVICES REQUIRED TO MAINTAIN BOTH VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION, INCLUDING PROVIDING PERSONNEL NECESSARY FOR GUIDING TRAFFIC. TRAFFIC ENTERING AND EXITING THE SITE SHALL NOT DISRUPT THE FLOW OF TRAFFIC. EMERGENCY PERSONNEL AND EQUIPMENT SHALL HAVE SAFE AND ADEQUATE ACCESS AT ALL TIMES.

T. CLEAN UP

THE CONTRACTOR SHALL CLEAN UP AND REMOVE REFUSE, RUBBISH, SCRAP MATERIALS, UNSUITABLE MATERIALS, AND DEBRIS SO THAT THE MATERIALS ARE NOT ALLOWED TO ACCUMULATE, AND THE SITE PRESENTS A NON-HAZARDOUS, NEAT AND WORKMANLIKE APPEARANCE.

U. RESTORATION

THE CONTRACTOR SHALL REPLACE ALL SURFACES DISTURBED AS DIRECTED, AND SHALL RESTORE ALL SURFACES TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED BEFORE THE WORK BEGAN, FURNISHING ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY THERETO.

HE SHALL, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER'S FIELD REPRESENTATIVE, CLEAN UP AND CORRECT UNSIGHTLINESS, INCONVENIENCE, HAZARD OR DAMAGE CAUSED BY WATER, MUD, STONES, DUST, RUBBISH, CONSTRUCTION DEBRIS, TRAFFIC, OR HIS OPERATIONS. WHEEL TRACKS, PATHS, PUDDLES, DAMAGED GROWTH, RAGGED EDGES, UNDESIRABLE SPOIL FROM EXCAVATION AND ROUGH SLOPES ARE TO BE REMOVED, CORRECTED, GRADED, LEVELED OR PATCHED, AND ADJACENT AREAS THAT HAVE BEEN DAMAGED OR THAT REQUIRE REGRADING SHALL BE SMOOTHED AND WORKED TO MAKE THE AREA BLEND INTO EXISTING CONDITIONS. UNSIGHTLINESS EXTENDING ONTO ADJACENT PRIVATE OR PUBLIC PROPERTY SHALL BE CORRECTED TO THE SATISFACTION OF BOTH THE OWNER OF THE ADJACENT PROPERTY AND THE OWNER'S FIELD REPRESENTATIVE. NO PRIVATE AGREEMENTS ALLOWING A WAIVER OF CLEAN-UP WILL BE RECOGNIZED.

V. SHOP DRAWINGS

THE CONTRACTOR SHALL SUBMIT TO THE SITE ENGINEER FOR REVIEW, MANUFACTURERS' AND VENDORS' DRAWINGS OF FABRICATED AND ASSEMBLED ITEMS, DESIGNED MECHANICAL AND ELECTRICAL EQUIPMENT INCLUDING DESCRIPTIVE LITERATURE AND TECHNICAL DATA, INSTALLATION DRAWINGS, SETTING DRAWINGS, AND PHOTOGRAPHS OR CUTS OF ITEMS, INCLUDING A DATED LETTER OF TRANSMITTAL.

ANY PROPOSED DEVIATIONS FROM CONTRACT REQUIREMENTS, TOGETHER WITH THE CONTRACTOR'S EXPLANATION, SHALL BE STATED ON THE LETTER OF TRANSMITTAL. SHOULD SUCH DEVIATIONS BE FOUND ACCEPTABLE, ALL ADDITIONAL COSTS RESULTING THEREFROM, INCLUDING ANY COST FOR CHANGES REQUIRED TO ADJACENT WORK OR THE COST OF CHANGES TO ANY OTHER WORK MADE NECESSARY AS A RESULT OF SUCH DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR UNLESS SUCH CLAIM IS MADE IN WRITING WITH THE SHOP DRAWING SUBMISSION AND FOUND ACCEPTABLE BY THE SITE ENGINEER. ANY COST SAVINGS RESULTING FROM THE PROPOSED DEVIATION, SHALL BE INCLUDED ON THE TRANSMITTAL FOR CONSIDERATION BY THE SITE ENGINEER.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND OTHER DATA IN THE REQUIRED SEQUENCE SO THAT EACH ITEM CAN BE DELIVERED AND INSTALLED WHEN NEEDED, TAKING INTO CONSIDERATION THE TIME REQUIRED FOR DELIVERY AFTER FINAL REVIEW OF SUBMITTED MATERIAL, AND ALLOWING THE SITE ENGINEER TEN (10) CALENDAR DAYS FOR CHECKING EACH SUBMISSION. SHOP DRAWINGS SENT VIA FACSIMILE WILL NOT BE ACCEPTED.

SHOP DRAWINGS SHALL BE SUBMITTED ELECTRONICALLY TO THE SITE ENGINEER AND WILL BE RETURNED TO THE CONTRACTOR IN THE SAME MANNER.

THE SITE ENGINEER MAY CHECK THE QUANTITIES INDICATED ON SHOP DRAWINGS. IF HE CHOOSES TO DO SO, IT SHALL BE UNDERSTOOD THAT THE CHECKING IS DONE AS A CONVENIENCE TO THE CONTRACTOR, AND IT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FURNISHING ALL THE ITEMS AND QUANTITIES REQUIRED.

DRAWINGS AND OTHER SUBMITTED DATA THAT ARE RETURNED "NO EXCEPTIONS TAKEN" NEED NOT BE RESUBMITTED. THE SUBMITTAL SHALL BE CONSIDERED AS FINALLY REVIEWED, AND THE CONTRACTOR MAY PROCEED WITH THE WORK SHOWN. IF RETURNED "MAKE CORRECTIONS NOTED", THE CONTRACTOR MAY PROCEED WITH THE WORK SHOWN THEREON AS PER ADDED NOTATIONS AND CORRECTIONS. THE DRAWINGS AND OTHER DATA MUST, HOWEVER, BE CORRECTED AND REISSUED TO THE SITE ENGINEER FOR FINAL REVIEW. DRAWINGS AND DATA THAT ARE STAMPED "REVISE AND RESUBMIT" SHALL BE REVISED AS INDICATED, AND THEN RESUBMITTED TO THE SITE ENGINEER FOR FINAL REVIEW. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK SHOWN AND SUBMITTALS WITH THIS NOTATION ARE NOT TO BE USED IN THE PERFORMANCE OF THE WORK. DRAWINGS AND DATA THAT ARE STAMPED "REJECTED" ARE DISAPPROVED FOR NON-COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK SHOWN, AND HE SHALL PREPARE AND SUBMIT A COMPLETELY NEW SUBMISSION. DRAWINGS AND OTHER SUBMITTED DATA STAMPED "REVISE AND RESUBMIT" OR "REJECTED" SHALL BE RESUBMITTED TO THE SITE ENGINEER UNTIL THERE ARE NO EXCEPTIONS TAKEN TO THE SUBMISSIONS.

IF THE REVIEWED AND/OR CORRECTED DRAWINGS INDICATE THAT THE SITE ENGINEER HAS CHECKED DIMENSIONS, IT SHALL BE UNDERSTOOD THAT THE CHECKED OR CORRECTED DIMENSIONS ARE BASED UPON HIS OWN DESIGN DRAWINGS, AND THE DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR WITH ACTUAL FIELD DIMENSIONS AND CONDITIONS. IF THE CONTRACTOR FEELS THAT THE SITE ENGINEER'S CORRECTIONS TO SHOP DRAWINGS AND OTHER SUBMITTED DATA WILL INCUR HARDSHIP OR ADDITIONAL COSTS THAT THE CONTRACTOR FEELS HE SHOULD NOT BEAR, HE SHALL SO INFORM THE SITE ENGINEER IN WRITING, AND NOT PROCEED WITH THE CHANGES UNTIL THE PROBLEMS ARE SETTLED.

PORTIONS OF THE WORK REQUIRING A SHOP DRAWING OR OTHER SUBMISSION SHALL NOT BEGIN UNTIL THE SHOP DRAWING OR SUBMISSION HAS BEEN CONSIDERED AS FINALLY REVIEWED WITH NO EXCEPTIONS TAKEN BY THE SITE ENGINEER. A COPY OF EACH FINALLY REVIEWED SHOP DRAWING SHALL BE KEPT IN GOOD ORDER BY THE CONTRACTOR AT THE SITE AND SHALL BE AVAILABLE WHEN REQUESTED.

W. RECORD DRAWINGS

AN "AS-BUILT" SET OF RECORD DRAWINGS SHALL CONSIST OF A MARKED SET OF THE SITE ENGINEER'S DRAWINGS WITH ADDITIONAL SKETCHES AS REQUIRED, DENOTING AND DIMENSIONING ACCURATELY AND NEATLY ALL CHANGES AND CONDITIONS THAT ARE VARIATIONS FROM THE SITE ENGINEER'S DRAWINGS, INCLUDING EXISTING SITE ITEMS WHICH ARE REWORKED OR RELOCATED.

OFFSETS, BENDS AND CHANGES IN ALIGNMENT AND GRADE OF UNDERGROUND UTILITIES WHICH ARE NOT MARKED BY A VISIBLE SURFACE STRUCTURE SHALL BE RECORDED. THESE LOCATIONS SHALL BE LOCATED IN REFERENCE TO THREE (3) SEPARATE PERMANENT SURFACE REFERENCE POINTS AND RECORDED ON THE "AS-BUILT" RECORD DRAWINGS. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL DELIVER TO THE OWNER AND THE SITE ENGINEER A REPRODUCIBLE SET OF THE RECORD DRAWINGS AND AN AUTOCAD FILE ON A THUMB DRIVE.

CERTAIN UTILITY AS-BUILTS MAY BE REQUIRED TO BE SENT TO THE HEALTH DEPARTMENT AND/OR OTHER AUTHORITIES FOR APPROVAL, PRIOR TO THE FINAL "AS-BUILT" SET SUBMISSION, IN ORDER TO PLACE THE UTILITY IN SERVICE. THESE AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A SURVEYOR LICENSED IN THE STATE OF NEW YORK AND SHALL BE PROVIDED TO THE SITE ENGINEER IN PDF AND CAD FORMAT.

SUBMISSION OF THE REPRODUCIBLE SETS OF "AS-BUILT" RECORD DRAWINGS IS A PREREQUISITE FOR FINAL PAYMENT.

X. GUARANTEES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE WORK UNTIL ITS COMPLETION AND ACCEPTANCE BY THE OWNER. THE CONTRACTOR GUARANTEES THAT HE SHALL REPLACE AND/OR REPAIR ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT FOR A MINIMUM PERIOD OF ONE (1) YEAR AFTER THE DATE OF ACCEPTANCE OF THE COMPLETED WORK BY THE OWNER AT THE CONTRACTOR'S SOLE EXPENSE. THE CONTRACTOR ALSO GUARANTEES THAT ALL SUCH DEFECTIVE WORK, MATERIAL OR EQUIPMENT SHALL BE REPAIRED PROMPTLY BY THE CONTRACTOR UPON RECEIPT OF WRITTEN NOTIFICATION BY THE OWNER, AND TO THE COMPLETE SATISFACTION OF THE OWNER.

II. EROSION & SEDIMENT CONTROL

A. PROTECTION OF EXISTING TREES, LANDSCAPING AND NATURAL FEATURES

THE CONTRACTOR SHALL PROTECT ALL TREES TO REMAIN. HE SHALL ALSO PROTECT ALL LANDSCAPING, VEGETATION AND NATURAL FEATURES ON PUBLIC AND PRIVATE PROPERTY. THE CONTRACTOR SHALL USE EVERY PRECAUTION TO PREVENT INJURY, DAMAGE, POLLUTION, EROSION OR DESTRUCTION OF EXISTING LANDSCAPING, VEGETATION, AND NATURAL FEATURES. HE SHALL BE RESPONSIBLE FOR REPAIR AND/OR RESTORATION OF ALL DAMAGE CAUSED AS A DIRECT OR INDIRECT RESULT OF HIS OPERATIONS.

B. COMPLIANCE WITH OTHER REGULATIONS

THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE PERMITS AND ALL APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL STATUTES AND ORDINANCES RELATING TO THE PREVENTION AND ABATEMENT OF SOIL EROSION, SEDIMENT, AND DUST. IN THE EVENT OF CONFLICT, THE MORE RESTRICTIVE LAWS, RULES, AND REGULATIONS SHALL GOVERN.

C. POLLUTANTS

POLLUTANTS SUCH AS WASH WATER FROM CONCRETE MIXING OPERATIONS, FUELS, OILS, LUBRICANTS, AND OTHER HARMFUL MATERIALS SHALL NOT BE DISCHARGED INTO RIVERS, STREAMS, PONDS, WATER IMPOUNDMENT AREAS, WATERCOURSES, DRAINAGEWAYS, CHANNELS, DRAINAGE DITCHES, CATCH BASINS OR DRAINAGE OR SEWER SYSTEMS.

D. LIMIT OF AREA OF WORK

THE LIMIT OF THE AREA OF CLEARING AND GRUBBING AND/OR EXCAVATION AND FILL OPERATIONS IN PROGRESS SHALL BE COMMENSURATE WITH THE CONTRACTOR'S CAPABILITY AND PROGRESS IN KEEPING UP WITH THE FINISHED GRADING, MULCHING, SEEDING AND OTHER SUCH CONTROL MEASURES CURRENT AND IN ACCORDANCE WITH THE ACCEPTED SCHEDULE. SHOULD SEASONAL LIMITATIONS MAKE SUCH COORDINATION UNREALISTIC, AS DETERMINED BY THE OWNER'S FIELD REPRESENTATIVE, ADDITIONAL TEMPORARY EROSION CONTROL MEASURES SHALL BE TAKEN IMMEDIATELY BY THE CONTRACTOR.

III.EXCAVATION AND FILL

A. SCOPE

WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, STRIPPING AND STOCKPILING OF TOPSOIL AS APPLICABLE; EXCAVATION AND/OR FILLING, COMPACTION AND GRADING TO SUBGRADE SURFACE ELEVATIONS OF DEVELOPED AREAS ON THE SITE INCLUDING SUBGRADE SURFACE ELEVATIONS OF THE PROPOSED BUILDING; FORMATION AND COMPACTION OF FILL SECTIONS, EMBANKMENTS AND SUBGRADES USING SUITABLE ON-SITE EXCAVATED MATERIAL AND/OR OFF-SITE BORROW MATERIAL; DISPOSAL OF UNSUITABLE AND/OR SURPLUS EXCAVATED MATERIAL; PROOF-ROLLING OF SUBGRADE SURFACES; SHEETING, SHORING AND BRACING; AND DEWATERING OF EXCAVATIONS AS NECESSARY.

WORK SHALL ALSO INCLUDE THE CONSTRUCTION OF INFILTRATION BASINS AS SHOWN AND DETAILED ON THE PLANS. ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'. ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. GENERAL

THE CONTRACTOR SHALL CARRY OUT EXCAVATION, EMBANKMENT AND FILL TO THE SUBGRADE SURFACE ELEVATIONS WHICH CONFORM WITH THE FINISHED GRADES AS DETERMINED BY THE THICKNESS OF PAVEMENTS, DEPTHS OF TOPSOIL REQUIRED, ETC. IN THE BUILDING AREA, WORK SHALL BE CARRIED TO SUBGRADE FLOOR ELEVATIONS AS DETERMINED BY THICKNESS OF FLOOR SLABS AND GRANULAR BASE COURSE (WHERE SPECIFIED).

C. TOPSOIL

TOPSOIL, WHERE PRESENT ON THE SITE, SHALL BE STRIPPED BY THE CONTRACTOR AND A SUFFICIENT QUANTITY STOCKPILED TO INSURE COMPLIANCE WITH THE CONTRACT. TOPSOIL SHALL BE DEFINED AS THE EXISTING SURFACE LAYER OF ORGANIC MATERIAL WHICH IS SUITABLE FOR RE-USE IN SEEDING, SODDING AND PLANTING. TOPSOIL SHALL CONTAIN NO ADMIXTURE OF REFUSE OR SUBSTANCES HARMFUL TO PLANT GROWTH AND SHALL BE FREE FROM SUBSOIL, STUMPS, ROOTS, BRUSH, STONES, CLAY LUMPS OR ANY OTHER UNDESIRABLE MATERIAL. TOPSOIL SHALL NOT BE USED FOR FILL OR EMBANKMENT. IF THERE IS AN EXCESS OF TOPSOIL, THE EXCESS SHALL BE DISPOSED OF OFF-SITE. IF THERE IS A DEFICIENCY OF TOPSOIL TO COMPLETE THE TOPSOIL OPERATIONS, THE CONTRACTOR SHALL FURNISH THE NECESSARY QUANTITY OF TOPSOIL FROM OFF-SITE SOURCE(S); COMPENSATION BEING CONSIDERED AS INCLUDED UNDER THE LUMP SUM BASE BID.

D. EXCAVATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION OF WHATEVER MATERIAL IS ENCOUNTERED, AND THERE WILL BE NO EXTRA COMPENSATION FOR ANY EXCAVATION REGARDLESS OF THE CHARACTER OF THE SOIL. AT THE OWNER'S EXPENSE, A GEOTECHNICAL ENGINEER MAY BE ON-SITE TO EVALUATE AND INSTRUCT THE CONTRACTOR REGARDING ROCK EXCAVATION, THE SUITABILITY OF SOILS, AND BACKFILL AND COMPACTION REQUIREMENTS. EXCAVATION IN "CUT" AREAS - AFTER APPROVAL OF THE STRIPPING OPERATION IN A "CUT" AREA, EXCAVATION SHALL BE MADE OF THE EXISTING MATERIAL TO THE LINES AND GRADES REQUIRED. MATERIAL ENCOUNTERED WHICH IS NOT SUITABLE FOR THE PROPOSED CONSTRUCTION SHALL BE EXCAVATED TO THE DEPTHS SPECIFIED BY THE AUTHORITY. MATERIAL SUITABLE FOR USE IN FILLS OR BACKFILLS, AND IN QUANTITIES SUFFICIENT FOR THOSE PURPOSES SHALL BE STOCKPILED ON-SITE IN APPROVED LOCATIONS.

CLASSIFICATION - ALL MATERIAL EXCAVATED SHALL BE CLASSIFIED AS "UNCLASSIFIED EXCAVATION", AND THIS MATERIAL SHALL BE FURTHER CLASSIFIED AS "SUITABLE MATERIAL" OR "UNSUITABLE MATERIAL" AS FOLLOWS:

1. UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION SHALL BE DEFINED AS REMOVAL OF ALL MATERIAL OF ANY NATURE WHATSOEVER, INCLUDING TOPSOIL, PAVEMENTS, ROCK AND EARTH.

2. SUITABLE MATERIAL - SUITABLE MATERIAL SHALL BE DEFINED AS MATERIAL WHOSE COMPOSITION IS SATISFACTORY FOR USE IN EMBANKMENT AND FILL CONSTRUCTION. IN GENERAL, ANY MINERAL (INORGANIC) SOIL, INCLUDING THEIR MIXTURES WITH BLASTED OR BROKEN ROCK, AS APPROVED BY THE AUTHORITY, AND SIMILAR MATERIALS OF NATURAL OR MAN-MADE ORIGIN, SHALL BE CONSIDERED AS SUITABLE MATERIALS.

3. UNSUITABLE MATERIAL - UNSUITABLE MATERIAL SHALL BE DEFINED AS ANY MATERIAL CONTAINING VEGETATION OR ORGANIC MATTER, SUCH AS MUCK, PEAT, ORGANIC SILT, TOPSOIL OR SOD, THAT IS NOT SATISFACTORY FOR USE IN EMBANKMENT OR FILL CONSTRUCTION OR FOR SUPPORT OF PERMANENT STRUCTURES. CERTAIN MAN-MADE DEPOSITS SUCH AS LANDFILL MAY ALSO BE DETERMINED TO BE UNSUITABLE MATERIAL.

STOCKPILING AND USE OF SUITABLE MATERIAL - THE CONTRACTOR SHALL STOCKPILE SUITABLE EXCAVATED MATERIAL AS REQUIRED FOR USE IN THE EMBANKMENT AND/OR FILL AREAS. MATERIAL WHICH IS STOCKPILED SHALL BE PROTECTED SO THAT ITS USE AS FILL WILL NOT BE IMPAIRED. THE CONTRACTOR SHALL PLACE A DOUBLE ROW OF SILT FENCE AROUND STOCKPILES.

DISPOSAL OF SURPLUS MATERIAL - THE CONTRACTOR SHALL DISPOSE OF SURPLUS EXCAVATED MATERIAL OFF-SITE. IF THE CONTRACTOR DISPOSES OF TOO MUCH EXCAVATED MATERIAL, HE SHALL REPLACE THIS MATERIAL AT HIS OWN COST AND EXPENSE. MATERIAL TO BE REPLACED SHALL MEET THE REQUIREMENTS FOR FILL MATERIAL AS SPECIFIED HEREIN.

DEFICIENCY OF SUITABLE EXCAVATED MATERIAL - SHOULD THERE BE A DEFICIENCY OF SUITABLE MATERIAL OBTAINED FROM EXCAVATION OF THE SITE, ADDITIONAL FILL MATERIAL SHALL BE FURNISHED FROM AN OFF-SITE SOURCE. IF THE DEFICIENCY OF SUITABLE MATERIAL IS THE RESULT OF THE CONTRACTOR'S FAILURE TO PROPERLY SCHEDULE THE WORK, STOCKPILE THE PROPER AMOUNT OF SUITABLE EXCAVATED MATERIAL, PROTECT STOCKPILED MATERIAL, OR IF THE CONTRACTOR CAUSES SUITABLE MATERIAL TO BECOME UNSUITABLE FOR USE AS FILL MATERIAL, THEN SUCH DEFICIENCY SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE.

SLOPES - UNLESS INDICATED OTHERWISE, SLOPES IN EARTH SHALL NOT BE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL IN BOTH CUT AND FILL, AND STORM WATER SHALL NOT BE DRAINED OVER THE SLOPES.

MOISTURE CONTENT OF EXCAVATED SOIL - WHEN THE SOIL BEING EXCAVATED IS SUCH THAT AN INCREASE IN MOISTURE CONTENT WILL HAVE A DETRIMENTAL EFFECT ON ITS USE AS FILL MATERIAL, THE SOIL SHALL BE STOCKPILED, GRADED, AND PROTECTED IN A MANNER WHICH WILL MINIMIZE THE INFILTRATION OF RAINWATER OR SURFACE RUNOFF WATER.

DRAINAGE - SOIL EXCAVATION AREAS ARE TO BE KEPT SLOPED TO DRAIN. THEY ARE TO BE SEALED BY ROLLING EACH NIGHT.

E. ROCK EXCAVATION

GENERAL REQUIREMENTS - IF ROCK IS ENCOUNTERED, THE CONTRACTOR SHALL EXCAVATE, REMOVE, REUSE (IF ALLOWED AND APPLICABLE), AND DISPOSE OF ROCK WITHIN THE LIMITS SPECIFIED. UNLESS OTHERWISE SPECIFIED OR DIRECTED, ROCK EXCAVATION SHALL BE CARRIED TO A LEVEL SIX (6) INCHES BELOW SUBGRADE SURFACE. IN LAWN AND LANDSCAPE AREAS. UNLESS OTHERWISE SPECIFIED OR DIRECTED, ROCK EXCAVATION SHALL BE CARRIED TO EIGHTEEN (18) INCHES BELOW FINISH GRADE. THE SUBGRADE SHALL THEN BE BROUGHT TO A SMOOTH SURFACE WITH SUITABLE, APPROVED MATERIAL AND COMPACTED TO THE SPECIFIED DENSITY.

SHATTERED ROCK - IF, IN THE COURSE OF ROCK EXCAVATION THE ROCK BELOW GRADE IS SHATTERED, AND THE AUTHORITY CONSIDERS SUCH SHATTERED ROCK TO BE UNFIT FOR SUPPORT OF STRUCTURES, THE SHATTERED ROCK SHALL BE REMOVED AND THE EXCAVATION BACKFILLED WITH CONCRETE, SCREENED GRAVEL OR CRUSHED STONE, AS DIRECTED. ALL REMOVAL, BACKFILLING AND CORRECTIVE WORK SHALL BE DONE BY AND AT THE EXPENSE OF THE CONTRACTOR.

SLOPE PRESERVATION - WHERE ROCK CUTS REQUIRING DRILLING AND BLASTING WILL BE EXPOSED AFTER THE PROJECT IS COMPLETED, ALL PRECAUTIONS SHALL BE EXERCISED TO PRESERVE THE ROCK IN THE FINISHED SLOPE IN A NATURAL UNDAMAGED CONDITION, WITH THE SURFACE REMAINING REASONABLY STRAIGHT AND CLEAN. BLAST HOLES SHALL BE DRILLED AT THE INCLINATION OF SLOPE ALONG THE LINE OF THE PROPOSED FINISHED SLOPE. AN APPROVED SYSTEM OF BLASTING SHALL BE EMPLOYED. THE SPACING OF THE BLAST HOLES AND THE METHOD OF BLASTING REQUIRED WILL BE DEPENDENT UPON THE QUALITY AND THE STRUCTURE OF THE ROCK ENCOUNTERED AND THE METHOD OF BLASTING USED IN APPROACHING THE SLOPE. THE CONTRACTOR SHALL ADJUST HIS OPERATIONS TO OBTAIN THE REQUIRED SLOPE CONDITIONS.

BLASTING - WHEN DRILLING AND BLASTING ARE PERMITTED, THE CONTRACTOR MUST EMPLOY LICENSED PERSONNEL, AND ADHERE TO ALL LOCAL, COUNTY, STATE AND OSHA REGULATIONS REGARDING THE USE AND STORAGE OF EXPLOSIVES, AND HE SHALL ACQUIRE ALL NECESSARY INSURANCE, PERMITS AND LICENSES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL DAMAGES DUE EITHER DIRECTLY OR INDIRECTLY TO SUCH OPERATIONS. BLASTING, WHEN PERMITTED, SHALL BE DONE ONLY AT SUCH TIMES AS THE OWNER AND THOSE AUTHORITIES HAVING JURISDICTION SHALL APPROVE AND UNDER SUCH CONDITIONS AND RESTRICTIONS AS THEY IMPOSE. NO ADDITIONAL PAYMENT WILL BE MADE FOR ROCK EXCAVATION; COMPENSATION SHALL BE CONSIDERED AS INCLUDED IN THE LUMP SUM BASE BID.

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ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

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III.EXCAVATION AND FILL(CONTINUED)

F. SUBGRADE UNDERCUTTING

THE AUTHORITY SHALL INSPECT THE SUBGRADE SURFACE IN AREAS OF CUT, AND THE FOUNDATION IN AREAS OF FILL TO DETERMINE IF ANY UNDERCUT EXCAVATION IS REQUIRED AND THE EXTENT OF SUCH UNDERCUTTING. THE CONTRACTOR SHALL, UPON WRITTEN AUTHORIZATION OF THE OWNER'S FIELD REPRESENTATIVE, EXCAVATE, REMOVE, AND DISPOSE OF OFF-SITE ANY SUCH UNSUITABLE MATERIAL AND REPLACE SAME WITH SUITABLE FILL MATERIAL COMPACTED TO PROPER GRADE.

NO ADDITIONAL PAYMENT WILL BE MADE FOR UNDERCUTTING AND REPLACEMENT WITH SUITABLE MATERIAL AS DIRECTED; COMPENSATION SHALL BE CONSIDERED AS INCLUDED IN THE LUMP SUM BASE BID. IN AREAS UNDER THE AS/RS BUILDING THAT ARE CURRENTLY COVERED BY GRASS AND/OR VEGETATION, REMOVE A MINIMUM OF 3 FEET OF SOIL OR, DEEPER IF REQUIRED BY THE AUTHORITY, TO REMOVE ALL TOPSOIL, ROOTS AND ORGANIC MATTER.

G. EMBANKMENT

SUITABLE MATERIAL REMOVED FROM THE EXCAVATION, AS DETERMINED BY THE AUTHORITY, SHALL BE USED AS DIRECTED IN THE FORMATION OF FILL SECTIONS, EMBANKMENTS, SUBGRADE, ETC.

BORROW MATERIAL – IF SUFFICIENT SUITABLE MATERIAL IS NOT AVAILABLE FROM SITE EXCAVATION, THE CONTRACTOR SHALL SUPPLY BORROW MATERIAL FROM OFF-SITE SOURCE(S) UNDER THE LUMP SUM BASE BID.

FILL REQUIREMENTS – FILL SUPPLIED BY THE CONTRACTOR FROM AN OFF-SITE SOURCE SHALL BE COMMON FILL, FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL AND CAPABLE OF SUPPORTING CONSTRUCTION TRAFFIC AND BEING COMPACTED TO THE DENSITIES HEREINAFTER SPECIFIED. NEW FILL MATERIAL SHALL BE A CLEAN, FREE DRAINING, GRANULAR SOIL CONTAINING LESS THAN 15% SILT AND SHALL MEET WITH THE APPROVAL OF THE AUTHORITY. FINAL ACCEPTANCE OF FILL MATERIAL SHALL REST WITH THE AUTHORITY, WHOSE DECISION SHALL BE FINAL AND BINDING UPON THE CONTRACTOR. THE ACCEPTANCE OF ANY SAMPLE MATERIAL SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO HAVE ALL FILL MATERIAL USED CONFORM TO THE APPROVED SAMPLES.

COMPACTION OF EMBANKMENT FOUNDATION – PRIOR TO PLACING FILLS, THE CONTRACTOR SHALL COMPACT TO A DEPTH OF ONE (1) FOOT, THE EXPOSED THE AREAS TO RECEIVE FILL OR THE EMBANKMENT FOUNDATION TO THE DENSITIES HEREINAFTER SPECIFIED, BY PROOF-ROLLING WITH A LARGE SELF-PROPELLED ROLLER SATISFACTORY TO THE AUTHORITY.

PLACING OF FILL – FILL SECTIONS AND EMBANKMENTS SHALL BE CONSTRUCTED OF EARTH OR A MIXTURE OF EARTH AND ROCK, DEPOSITED IN SUCCESSIVE LIFTS, EXCEPT THAT, IN THE BUILDING AREA AND TO POINTS TEN (10) FEET OUTSIDE OF THE PROPOSED BUILDING LINES, ALL FILL REQUIRED TO ACHIEVE THE PLANNED FINISHED FLOOR ELEVATIONS SHALL BE CLEAN, STRUCTURAL FILL AS APPROVED BY THE AUTHORITY. STRUCTURAL FILL MUST CONSIST OF HARD, DURABLE SAND, AND GRAVEL, FREE OF CLAY, ORGANIC MATTER, SURFACE COATINGS, AND OTHER DELETERIOUS MATERIALS. SOIL FINER THAN THE NO. 200 SIEVE(THE "FINES") SHOULD BE NONPLASTIC. STRUCTURAL FILL SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
3 INCHES	100
1-1/2 INCH	55-100
NO.4	35-85
NO.16	20-65
NO.50	5-40
NO.200 (FINES)	0-10

ORDINARY FILL MUST CONSIST OF HARD, DURABLE SAND AND GRAVEL OR CRUSHED CONCRETE, FREE OF CLAY, ORGANIC MATTER , SURFACE COATINGS, AND OTHER DELETERIOUS MATERIALS. SOIL FINER THAN THE NO.200 SIEVE (THE "FINES") SHOULD BE NONPLASTIC. ORDINARY FILL SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
6 INCHES	100
3 INCHES	80-100
NO.4	20-100
NO.200 (FINES)	0-20

GRADATION CURVES FOR ALL PROPOSED BACKFILL AND STRUCTURAL BACKFILL MATERIAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. NO MATERIAL SHALL PLACED ON-SITE WITHOUT APPROVAL OF THE GRADATION CURVES. THE LOOSE THICKNESS OF EACH LIFT SHALL NOT BE MORE THAN NINE (9) INCHES BEFORE COMPACTION. EACH LIFT MATERIAL PLACED SHALL BE TESTED FOR PROPER COMPACTION AND APPROVED BY THE AUTHORITY PRIOR TO PLACEMENT OF THE NEXT LIFT. FILL SHALL BE PLACED AND COMPACTED TO THE REQUIRED ELEVATIONS (ADJUSTED TO SUBGRADE) INDICATED ON THE DRAWINGS. FILL SHALL BE COMPACTED WITH A LARGE SELF-PROPELLED ROLLER, SATISFACTORY TO THE AUTHORITY. WHEN FILL IS TO BE PLACED IN EXISTING PAVED AREAS, THE CONTRACTOR SHALL SCARIFY, BREAK AND REMOVE THE PAVEMENT PRIOR TO PLACING THE FILL. WHEN FILL IS TO BE PLACED ON EXISTING SLOPES STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL THE EXISTING SLOPE SHALL BE BENCHED IN ACCORDANCE WITH THE AUTHORITY. IN ALL SLOPE AREAS FILL MATERIAL SHALL BE BLADED INTO THE ADJACENT EXISTING MATERIAL FOR A HORIZONTAL DISTANCE OF AT LEAST FIVE (5) FEET. ALL METHODS EMPLOYED IN THE PLACING OF FILL ON EXISTING SLOPES SHALL BE SUBJECT TO THE APPROVAL OF THE AUTHORITY. EMBANKMENTS SHALL BE PITCHED TO PROVIDE DRAINAGE AT THE CLOSE OF EACH DAY'S OPERATIONS. UNLESS DIRECTED OTHERWISE, IN NO CASE SHALL THE SLOPE OF FILL CONSTRUCTION EXCEED A RATIO OF 3 HORIZONTAL TO 1 VERTICAL.

COMPACTION OF FILL – PRIOR TO COMPACTION, EACH LAYER SHALL BE LEVELED OFF BY USE OF GRADERS OR BULLDOZERS WITH ADEQUATE POWER FOR THE WORK INVOLVED. THE ENTIRE AREA OF EACH LAYER SHALL BE COMPACTED BY MAKING NO LESS THAN FOUR (4) PASSES OVER THE AREA WITH A LARGE SELF-PROPELLED ROLLER OR OTHER MECHANICAL MEANS SATISFACTORY TO THE AUTHORITY. COMPACTION SHALL BE CONTINUED UNTIL EACH LAYER IS THOROUGHLY CONSOLIDATED TO THE REQUIRED DEGREE OF COMPACTION FOR ITS FULL WIDTH. THE USE OF HAULING EQUIPMENT TO OBTAIN PARTIAL COMPACTION IS ACCEPTABLE, BUT COMPACTION MEETING THE SATISFACTION OF THE AUTHORITY FOR EACH LIFT WILL BE REQUIRED. CONSTRUCTION AND HAULING EQUIPMENT SHALL BE ROUTED EVENLY OVER THE AREA IN ORDER TO AVOID THE CREATION OF RIDGES, HOLLOWS AND ZONES OF NON-UNIFORM DENSITY. IN AREAS WITHIN PROPOSED BUILDINGS AND TO POINTS TEN (10) FEET OUTSIDE THE BUILDING LINES, AND IN PAVEMENT AREAS, THE SOIL SHALL BE COMPACTED TO NOT LESS THAN 95% OF ITS MAXIMUM MODIFIED DENSITY AS DEFINED BY ASTM D-1557. IN ALL OTHER AREAS, UNLESS OTHERWISE NOTED, THE SOIL SHALL BE COMPACTED TO NOT LESS THAN 92% OF ITS MAXIMUM MODIFIED DENSITY AS DEFINED BY ASTM D-1557.

FROST – NO FILL SHALL BE PLACED WHEN THE FILL MATERIAL, THE EMBANKMENT FOUNDATION OR THE PREVIOUS LIFT ON WHICH FILL IS TO BE PLACED IS FROZEN. IN THE EVENT THAT ANY FILL WHICH HAS ALREADY BEEN PLACED OR THE EMBANKMENT FOUNDATION SHALL BECOME FROZEN BEFORE THE NEXT LIFT IS PLACED, IT SHALL BE SCARIFIED AND RECOMPACTED OR REMOVED TO THE APPROVAL OF THE AUTHORITY.

MOISTURE – IF, IN THE OPINION OF THE AUTHORITY, FILL MATERIAL BECOMES TOO WET FOR THE REQUIRED COMPACTION, PRIOR TO COMMENCING OR CONTINUING COMPACTION OPERATIONS, THE FILL SHALL BE DRIED BY A METHOD APPROVED BY THE AUTHORITY. IF THE FILL MATERIAL BECOMES TOO DRY FOR THE REQUIRED COMPACTION, THE FILL SHALL BE MOISTENED PRIOR TO COMMENCING OR CONTINUING COMPACTION OPERATIONS, BY A METHOD APPROVED BY THE AUTHORITY.

PROTECTION OF FILL – PROTECTION OF ALL COMPACTED LIFTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DAMAGE TO ANY COMPACTED LIFT, INCLUDING THOSE LIFTS PREVIOUSLY TESTED AND APPROVED BY THE AUTHORITY, OCCURRING AT ANY TIME DURING THE COURSE OF CONSTRUCTION, CAUSED BY EQUIPMENT, FROM MOISTURE ENTERING THE EMBANKMENT, OR FROM ANY OTHER CAUSE WHATSOEVER, SHALL BE FULLY REPAIRED BY THE CONTRACTOR PRIOR TO PLACEMENT OF OVERLAYING MATERIALS, AT HIS OWN EXPENSE AND TO THE COMPLETE SATISFACTION OF THE AUTHORITY. IN THE EVENT OF HEAVY RAINS, THE CONTRACTOR SHALL SUSPEND FILL OPERATIONS IMMEDIATELY AND SHALL TAKE ALL NECESSARY STEPS TO KEEP THE SITE AS WELL DRAINED AS POSSIBLE. FILL OPERATIONS SHALL NOT BE RESUMED UNTIL THE MOISTURE CONTENT OF THE FILL IS SUCH AS TO PERMIT COMPLIANCE WITH THESE SPECIFICATIONS. ALL CORRECTIVE WORK OR OPERATIONS NECESSARY TO MAINTAIN PROPER MOISTURE CONTROL OF THE FILL MATERIAL SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

H. PROOF-ROLLING OF SUBGRADE SURFACES

ALL SUBGRADE SURFACES SHALL BE PROOF-ROLLED BY MEANS OF A LARGE SELF-PROPELLED ROLLER SATISFACTORY TO THE AUTHORITY MAKING AT LEAST FOUR (4) PASSES COVERING THE ENTIRE GRADED AREA TO LOCATE AND PERMIT TIMELY CORRECTION OF SUBGRADE DEFICIENCIES WHICH COULD ADVERSELY AFFECT THE PERFORMANCE OF THE PAVEMENT OR STRUCTURE. ANY DEFICIENCIES DISCOVERED DURING PROOF-ROLLING OPERATIONS SHALL BE CORRECTED IN A MANNER SATISFACTORY TO THE AUTHORITY. CORRECTIVE WORK SHALL NOT BE CONSIDERED COMPLETE AND ACCEPTABLE UNTIL THE SUBGRADE SHOWS SATISFACTORY AND UNIFORM RESPONSE TO THE PROOF-ROLLING OPERATIONS. ALL WORK OF PROOF-ROLLING AND CORRECTION OF SUBGRADE DEFICIENCIES SHALL BE CONSIDERED AS INCLUDED IN THE LUMP SUM BASE BID.

I. SHEETING, SHORING AND BRACING

AT HIS OWN EXPENSE, THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN SUCH SHEETING, SHORING, BRACING AND COFFERDAMMING, ETC., AS MAY BE NEEDED TO SUPPORT THE SIDES AND ROOFS OF EXCAVATIONS AND TO PREVENT ANY EARTH OR ROCK MOVEMENTS WHICH MIGHT IN ANY WAY DIMINISH OR AFFECT THE NECESSARY WIDTH OF THE EXCAVATION, ENDANGER THE SAFETY OF PERSONS, INJURE OR DELAY THE WORK, OR JEOPARDIZE THE SAFETY OF ADJACENT PAVEMENTS, PROPERTY, BUILDINGS OR OTHER STRUCTURES. THE WORK OF SHEETING, SHORING AND BRACING SHALL, AT ALL TIMES, BE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION, INCLUDING OSHA AND SUBMITTED TO THE ENGINEER FOR REVIEW. THE DESIGN SHALL BE SIGNED AND SEALED BY A LICENSED NYS PROFESSIONAL ENGINEER.

THE CONTRACTOR SHALL BE ENTIRELY AND SOLELY RESPONSIBLE FOR THE ADEQUACY AND SUFFICIENCY OF ALL SUPPORTS AND OF ALL SHEETING, BRACING, SHORING, COFFERDAMMING, ETC. THE CONTRACTOR SHALL ASSUME ENTIRE AND SOLE LIABILITY FOR DAMAGES ON ACCOUNT OF INJURY TO PERSONS, ADJACENT PAVEMENTS, AND PUBLIC AND PRIVATE PROPERTY INCLUDING, BUT NOT LIMITED TO, THE WORK UNDER CONSTRUCTION, BUILDINGS, AND OTHER STRUCTURES, WHICH INJURY SHALL RESULT DIRECTLY OR INDIRECTLY FROM THE CONTRACTOR'S FAILURE TO INSTALL OR TO LEAVE IN PLACE ADEQUATE AND SUFFICIENT SUPPORTS, SHEETING, BRACING, SHORING, COFFERDAMMING, ETC.

J. DEWATERING OF EXCAVATIONS

DEWATERING OF EXCAVATIONS MAY BE REQUIRED TO PREVENT DISTURBANCE TO THE FOOTING AND SUBGRADES. IF WATER IS ENCOUNTERED, THE CONTRACTOR MAY ATTEMPT TO CONTROL GROUNDWATER LEVELS WITH OPEN PUMPING USING A SYSTEM OF DITCHES AND SUMPS. HOWEVER, OPEN PUMPING WITH DITCHES AND SUMPS, IF IT RESULTS BOILS, LOSS OF FINES, SOFTENING OF THE GROUND, OR INSTABILITY OF SLOPES WILL NOT BE PERMITTED. CONTROL OF GROUNDWATER SHALL BE ACCOMPLISHED IN A MANNER THAT WILL PRESERVE THE STRENGTH OF THE FOUNDATION SOILS, WILL NOT CAUSE INSTABILITY OF THE EXCAVATION OR SLOPES, WILL NOT CAUSE EROSION PROBLEMS, AND WILL NOT RESULT IN DAMAGE TO EXISTING STRUCTURES. WHERE NECESSARY TO ACCOMPLISH THESE PURPOSES, THE WATER LEVEL SHALL BE LOWERED IN ADVANCE OF EXCAVATION BY A DEWATERING SYSTEM. WHATEVER METHOD OF GROUNDWATER CONTROL IS USED (E.G., DITCHES, SUMPS, ETC.), THE GROUNDWATER LEVEL SHALL BE MAINTAINED AT LEAST TWO (2) FEET BELOW THE BOTTOM OF THE EXCAVATION.

METHOD OF DISPOSAL – THE WATER FROM THE EXCAVATIONS SHALL BE DISPOSED OF IN SUCH A MANNER AS WILL NOT CAUSE INJURY OR DAMAGE TO THE PUBLIC HEALTH, PUBLIC OR PRIVATE PROPERTY, NEARBY WATERCOURSES, DRAINAGEWAYS, WATER IMPOUNDMENT AREAS, THE WORK CONTEMPLATED OR IN PROGRESS, SURFACES OF THE STREETS, NOR CAUSE ANY INTERFERENCE WITH THE USE OF THE SAME. THE WATER SHALL BE FILTERED, AND THE DISPOSAL OF THIS WATER SHALL BE DONE IN A MANNER SATISFACTORY TO ALL AUTHORITIES HAVING JURISDICTION, COMPLYING WITH LOCAL, STATE AND FEDERAL REGULATIONS.

IV.TRENCH EXCAVATION AND BACKFILL

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL, AND EQUIPMENT NECESSARY AND REQUIRED TO EXCAVATE AND BACKFILL ALL UTILITY SYSTEMS AND SUBSURFACE STRUCTURES TO BE INSTALLED UNDER THIS CONTRACT. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL NECESSARY EXCAVATION, INCLUDING DISPOSAL OF UNSUITABLE AND/OR SURPLUS EXCAVATED MATERIAL; ALL BEDDING, BACKFILL AND COMPACTION, INCLUDING FURNISHING APPROVED BEDDING MATERIAL AND ADDITIONAL SUITABLE BACKFILL MATERIAL AS REQUIRED; SHEETING, SHORING AND BRACING; AND DEWATERING OF TRENCHES AS NECESSARY.

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'.

ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. GENERAL

TRENCH EXCAVATION SHALL BE CARRIED OUT BY THE CONTRACTOR TO CONFORM WITH THE LINE AND GRADE OF THE VARIOUS UTILITIES AND THE BOTTOM OF THE FOUNDATIONS AND/OR FOOTINGS FOR SUBSURFACE STRUCTURES. ALL EXCAVATIONS SHALL BE KEPT FREE FROM WATER, SNOW, AND ICE DURING CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING ALL OPERATIONS IN A SAFE AND PRUDENT MANNER SO THAT ALL WORKMEN AND THE PUBLIC WILL BE PROTECTED FROM HAZARD. THE CONTRACTOR SHALL OBSERVE ALL APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL REQUIREMENTS, AND HE SHALL OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES, DEPOSITS AND CHARGES REQUIRED FOR ACQUIRING SAID PERMITS.

C. TRENCH EXCAVATION

GENERAL REQUIREMENTS – THE CONTRACTOR SHALL EXCAVATE ALL MATERIALS ENCOUNTERED, AND THERE WILL BE NO EXTRA COMPENSATION FOR ANY EXCAVATION, REGARDLESS OF THE CHARACTER OR TYPE OF SOILS OR MATERIALS ENCOUNTERED.

METHOD OF TRENCHING – TRENCH EXCAVATION SHALL BE DONE WITH EXCAVATING MACHINERY, EXCEPT IN SUCH PLACES WHERE WORK PERFORMED IN THIS MANNER WILL INJURE TREES, BUILDINGS OR EXISTING UTILITIES OR STRUCTURES, OR WHERE THE USE OF MACHINERY IS SPECIFICALLY FORBIDDEN, IN WHICH CASE HAND METHODS SHALL BE EMPLOYED.

PREPARATION OF BOTTOM OF TRENCH – THE TRENCH BOTTOMS SHALL BE PREPARED TO CONFORM TO THE DETAILS ON THE DRAWINGS AND AS SPECIFIED HEREIN. SPECIAL PRECAUTIONS SHALL BE EXERCISED TO INSURE THAT PIPE AND CONDUIT WILL NOT REST ON ROCK, MASONRY OR ANY OTHER MATERIALS WHICH WOULD PRESENT A NON-UNIFORM FOUNDATION. FOR BELL AND SPIGOT PIPE, BELL HOLES SHALL BE PROVIDED AT EACH PIPE JOINT TO PREVENT BEARING ON THE BELL OF THE PIPE. WHERE TWO OR MORE PIPES OR CONDUITS ARE TO BE LAID IN THE SAME TRENCH, THE CONTRACTOR SHALL EXCAVATE THE TRENCH SO THAT ALL PIPE AND CONDUIT ARE LAID ON UNDISTURBED OR APPROVED PROPERLY COMPACTED MATERIAL.

UNSUITABLE MATERIAL AT BOTTOM OF TRENCH – WHEN THE MATERIAL AT THE BOTTOM OF A TRENCH IS UNSUITABLE, IT SHALL BE REMOVED TO SUCH DEPTH AS THE AUTHORITY MAY DIRECT, DISPOSED OF OFF-SITE, AND BACKFILLED WITH SUITABLE AND PROPERLY COMPACTED GRANULAR MATERIAL OBTAINED FROM THE PROJECT EXCAVATION, OR FROM BORROW EXCAVATION IF IT IS NOT AVAILABLE WITHIN THE PROJECT. COMPACTION OF THIS REPLACEMENT MATERIAL SHALL BE NOT LESS THAN 95% MAXIMUM MODIFIED DENSITY (ASTM D-1557). PAYMENT FOR REMOVAL OF UNSUITABLE MATERIAL AND REPLACEMENT WITH SUITABLE COMPACTED GRANULAR MATERIAL, AS DIRECTED, SHALL BE CONSIDERED AS INCLUDED UNDER THE LUMP SUM BASE BID.

EXCAVATION IN PAVED AREAS – WHEN EXCAVATIONS ARE TO BE MADE IN PAVED SURFACES, THE PAVED SURFACES SHALL BE LINE CUT ON EACH SIDE OF THE TRENCH AND AHEAD OF THE EXCAVATION BY MEANS OF SAW CUTTING OR OTHER APPROVED TOOLS TO PROVIDE A CLEAN, UNIFORM EDGE, WITH MINIMUM DISTURBANCE OF THE REMAINING PAVEMENT. THE PAVEMENT REMOVED SHALL NOT BE USED FOR TRENCH BACKFILL, BUT SHALL BE DISPOSED OF OFF-SITE.

UNSUITABLE EXCAVATED MATERIAL – UNSUITABLE EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR.

SURPLUS EXCAVATED MATERIAL – EXCAVATED MATERIAL WHICH IS NOT REQUIRED FOR TRENCH BACKFILL SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR. IN GENERAL, SUITABLE SURPLUS EXCAVATED MATERIAL MAY BE USED AS FILL MATERIAL.ROCK EXCAVATION IN TRENCH

IF ROCK IS ENCOUNTERED IN TRENCH, THE CONTRACTOR SHALL EXCAVATE, REMOVE AND DISPOSE OF ROCK WITHIN THE LIMITS SPECIFIED AND IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS AND/OR AS APPROVED BY THE AUTHORITY. ROCK EXCAVATION IN TRENCH SHALL BE DEFINED AS REMOVAL OF BOULDERS LARGER THAN ONE (1) CUBIC YARD IN VOLUME AND REMOVAL OF LEDGE ROCK, CONCRETE OR MASONRY STRUCTURES WHICH CANNOT BE RIPPED WITH A ONE AND ONE-HALF (1-1/2) CUBIC YARD BACKHOE OR EQUIVALENT AND REQUIRES DRILLING, BLASTING, OR OTHER SPECIAL METHODS FOR REMOVAL. REMOVAL OF CONCRETE PAVEMENT OVER TRENCH IS NOT CONSIDERED ROCK EXCAVATION IN TRENCH. FOR PIPE AND CONDUIT INSTALLATION, ROCK EXCAVATION SHALL BE CARRIED TO A LEVEL AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE OR CONDUIT. THE TRENCH SHALL THEN BE BROUGHT TO PROPER GRADE FOR LAYING OF THE PIPE OR CONDUIT BY THE PLACING OF SELECT BEDDING AS DIRECTED BY THE AUTHORITY.

SHATTERED ROCK – IF, IN THE COURSE OF ROCK EXCAVATION, THE ROCK BELOW GRADE IS SHATTERED DUE TO OVER-DRILLING OR OVER-BLASTING, AND THE AUTHORITY CONSIDERS SUCH SHATTERED ROCK TO BE UNFIT FOR SUPPORT OF PIPE, CONDUIT OR STRUCTURES, THE SHATTERED ROCK SHALL BE REMOVED AND THE EXCAVATION BACKFILLED WITH CONCRETE, GRAVEL OR CRUSHED STONE, AS THE AUTHORITY REQUIRES. ALL SUCH REMOVAL, BACKFILLING AND CORRECTIVE WORK SHALL BE DONE BY AND AT THE EXPENSE OF THE CONTRACTOR.

BLASTING – WHEN DRILLING AND BLASTING ARE PERMITTED, THE CONTRACTOR MUST EMPLOY LICENSED PERSONNEL, AND ADHERE TO ALL LOCAL, COUNTY, STATE AND OSHA REGULATIONS REGARDING THE USE AND STORAGE OF EXPLOSIVES, AND HE SHALL ACQUIRE ALL NECESSARY INSURANCE, PERMITS AND LICENSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES DUE EITHER DIRECTLY OR INDIRECTLY TO SUCH OPERATIONS. BLASTING, WHEN PERMITTED, SHALL BE DONE ONLY AT SUCH TIMES AS THE OWNER AND THOSE AUTHORITIES HAVING JURISDICTION SHALL APPROVE AND UNDER SUCH CONDITIONS AND RESTRICTIONS AS THEY MAY IMPOSE.

NO ADDITIONAL PAYMENT WILL BE MADE FOR ROCK EXCAVATION IN TRENCH; COMPENSATION SHALL BE CONSIDERED AS INCLUDED IN THE LUMP SUM BASE BID.

D. BEDDING

BEDDING IN TRENCH FOR PIPE AND CONDUIT SHALL BE AS SHOWN IN DETAIL ON THE DRAWINGS AND AS SPECIFIED HEREIN. REQUIREMENTS FOR BEDDING SHALL BE AS FOLLOWS:

(a) STANDARD BEDDING – SHALL CONSIST OF BEDDING THE PIPE OR CONDUIT ON A PROPERLY PREPARED FOUNDATION OF NATURAL UNDISTURBED EARTH FOR TRENCH EXCAVATION IN CUT AREAS AND PROPERLY COMPACTED EARTH FOR TRENCH EXCAVATION IN FILL AREAS. THE BED SHALL HAVE RECESSES TO RECEIVE THE BELL OF BELL AND SPIGOT PIPE.

(b) SELECT BEDDING – SHALL CONSIST OF A BED OF PROPERLY COMPACTED GRANULAR BEDDING MATERIAL (SAND OR CRUSHED STONE AS SPECIFIED) HAVING A COMPACTED THICKNESS OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE OR CONDUIT AND EXTENDING AROUND THE PIPE OR CONDUIT FOR AT LEAST 30% OF ITS DIAMETER OR RISE. SAND SHALL CONSIST OF CLEAN, WELL GRADED, HARD, DURABLE PARTICLES, FREE OF LUMPS OF CLAY, LOAM, AND ALL OTHER DELETERIOUS SUBSTANCES. CRUSHED STONE SHALL CONSIST OF WELL GRADED CRUSHED STONE CONFORMING TO ASTM DESIGNATION C-33, SIZE NO. 67. WHEN SELECT BEDDING IS SPECIFIED, THE CONTRACTOR SHALL FURNISH, PLACE AND COMPACT ALL NECESSARY AND REQUIRED SELECT BEDDING MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

SELECT BEDDING SHALL BE USED FOR ALL POLYETHYLENE (HDPE) AND POLYVINYL CHLORIDE (PVC) PIPE AND CONDUIT INSTALLATION. EXCEPT FOR HDPE AND PVC PIPE AND CONDUIT INSTALLATION, AND UNLESS OTHERWISE SHOWN ON THE DETAILS OF THE DRAWINGS, SPECIFIED, OR DIRECTED BY THE AUTHORITY, STANDARD BEDDING MAY BE USED.

E. BACKFILLING

UPON APPROVAL BY THE AUTHORITY OF BEDDING AND PIPE INSTALLATION, AND AFTER PROPER INSPECTION AND ANY REQUIRED TESTS HAVE BEEN MADE, EXCAVATIONS SHALL BE BACKFILLED BY THE CONTRACTOR WITH THE TYPE OF BACKFILL MATERIAL SPECIFIED. EXCAVATIONS SHALL BE BACKFILLED AND COMPACTED AS FOLLOWS:

(a) STANDARD BACKFILL – SHALL CONSIST OF ON-SITE MATERIAL (EARTH) APPROVED BY THE AUTHORITY. SHOULD THERE BE A DEFICIENCY OF PROPER ON-SITE MATERIAL FOR BACKFILLING, THE CONTRACTOR SHALL FURNISH, PLACE AND COMPACT ADDITIONAL PROPER BACKFILL MATERIAL, AT NO ADDITIONAL COST TO THE OWNER.

(b) SELECT BACKFILL – SHALL CONSIST OF GRANULAR MATERIAL (SAND OR CRUSHED STONE AS SPECIFIED) AS APPROVED BY THE AUTHORITY. SAND SHALL CONSIST OF CLEAN, WELL GRADED, HARD, DURABLE PARTICLES, FREE OF LUMPS OF CLAY, LOAM, AND ALL OTHER DELETERIOUS SUBSTANCES. CRUSHED STONE SHALL CONSIST OF WELL GRADED CRUSHED STONE CONFORMING TO ASTM DESIGNATION C-33, SIZE NO. 67.

ALL BACKFILL MATERIAL SHALL BE FREE FROM LARGE STONES, CLODS, TOPSOIL, SOD, FROZEN EARTH, WOOD, OR ANY OTHER OBJECTIONABLE MATERIAL AS DETERMINED BY THE AUTHORITY.

FOR ALL HDPE AND PVC PIPE AND CONDUIT INSTALLATION, SELECT BACKFILL SHALL BE USED TO BACKFILL THE TRENCH UNTIL THERE IS A MINIMUM OF SIX (6) INCHES OF COVER OVER THE PIPE OR CONDUIT. ABOVE THIS LEVEL, AND UNLESS SPECIFIED OTHERWISE OR DIRECTED BY THE AUTHORITY, STANDARD BACKFILL MAY BE USED. EXCEPT FOR HDPE AND PVC PIPE AND CONDUIT INSTALLATION AND UNLESS OTHERWISE SHOWN ON THE DETAILS OF THE DRAWINGS, SPECIFIED, OR DIRECTED BY THE AUTHORITY, STANDARD BACKFILL MAY BE USED.

WHERE USE OF STANDARD BACKFILL IS PERMITTED, THE MATERIAL USED TO BACKFILL THE TRENCH UP TO A LEVEL TWO (2) FEET ABOVE THE TOP OF THE PIPE SHALL BE APPROVED CLEAN EARTH AND SHALL CONTAIN NO STONE OR BROKEN ROCK GREATER THAN ONE (1) INCH IN SIZE. ABOVE A LEVEL TWO (2) FEET HIGHER THAN THE TOP OF PIPE, THE MATERIAL USED FOR BACKFILL SHALL BE APPROVED MATERIAL, WHICH MAY CONTAIN NOT MORE THAN FIFTEEN (15) PERCENT STONE OR BROKEN ROCK WITH NO STONE OR PIECE THEREOF EXCEEDING FOUR (4) INCHES IN SIZE. SUCH STONE OR BROKEN ROCK SHALL BE THOROUGHLY MIXED WITH THE EARTH SO THAT THERE WILL BE NO VOIDS IN THE BACKFILL.

PLACEMENT AND COMPACTION – BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN MAXIMUM TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. BACKFILL IN PAVED AREAS SHALL BE COMPACTED TO NOT LESS THAN 95% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM D-1557; BACKFILL IN NON-PAVED AREAS SHALL BE COMPACTED TO NOT LESS THAN 92% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM D-1557. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED BY THE AUTHORITY. BACKFILL AREAS WHICH SETTLE SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE AUTHORITY AT THE CONTRACTOR'S EXPENSE.

REMOVAL OF SHEETING – DURING BACKFILL OPERATIONS, NO SHEETING WHICH IS TO BE REMOVED SHALL EXTEND INTO THE BACKFILL WHICH IS BEING COMPACTED. THE SHEETING SHALL BE WITHDRAWN SO AS TO ALWAYS BE ABOVE THE BACKFILL. ANY VOIDS CREATED WHILE REMOVING SHEETING SHALL BE IMMEDIATELY CORRECTED BY THE CONTRACTOR BY FILLING WITH SELECT BACKFILL MATERIAL AND COMPACTING TO THE REQUIRED DENSITY TO THE SATISFACTION OF THE AUTHORITY AND AT THE CONTRACTOR'S EXPENSE.

PROTECTION – THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING ALL PIPES AND STRUCTURES BEING BACKFILLED, AND ANY DAMAGE OCCURRING TO SAME EITHER DURING THE BACKFILLING OPERATIONS OR AFTER THE BACKFILLING OPERATIONS HAVE BEEN COMPLETED SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE AUTHORITY, AT THE CONTRACTOR'S EXPENSE.

F. SHEETING, SHORING AND BRACING

AT HIS OWN EXPENSE, THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN SUCH SHEETING, SHORING, BRACING AND COFFERDAMMING, ETC., AS NEEDED TO SUPPORT THE SIDES AND ROOFS OF EXCAVATIONS AND TO PREVENT ANY EARTH OR ROCK MOVEMENTS WHICH MIGHT DIMINISH OR AFFECT THE NECESSARY WIDTH OF THE EXCAVATION, ENDANGER THE SAFETY OF PERSONS, INJURE OR DELAY THE WORK, OR JEOPARDIZE THE SAFETY OF ADJACENT PAVEMENTS, PROPERTY, BUILDINGS OR OTHER STRUCTURES. THE WORK OF SHEETING, SHORING AND BRACING SHALL, AT ALL TIMES, BE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION, INCLUDING OSHA IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION, THE DESIGN SHALL BE SIGNED AND SEALED BY A LICENSED NYS PROFESSIONAL ENGINEER.

CONTRACTOR TO BE SOLELY RESPONSIBLE – THE CONTRACTOR SHALL BE ENTIRELY AND SOLELY RESPONSIBLE FOR THE ADEQUACY AND SUFFICIENCY OF ALL SUPPORTS AND OF ALL SHEETING, BRACING, SHORING, COFFERDAMMING, ETC. THE CONTRACTOR SHALL ASSUME ENTIRE AND SOLE LIABILITY FOR DAMAGES ON ACCOUNT OF INJURY TO PERSONS, ADJACENT PAVEMENTS, AND PUBLIC AND PRIVATE PROPERTY INCLUDING, BUT NOT LIMITED TO, THE WORK UNDER CONSTRUCTION, BUILDINGS, AND OTHER STRUCTURES, WHICH INJURY SHALL RESULT DIRECTLY OR INDIRECTLY FROM THE CONTRACTOR'S FAILURE TO INSTALL OR TO LEAVE IN PLACE ADEQUATE AND SUFFICIENT SUPPORTS, SHEETING, BRACING, SHORING, COFFERDAMMING, ETC.

G. DISPOSAL OF WATER

GENERAL REQUIREMENTS – THE CONTRACTOR SHALL REMOVE, BY PUMPING OR OTHER MEANS APPROVED BY THE AUTHORITY, SURFACE OR GROUNDWATER WHICH ACCUMULATE IN EXCAVATIONS, AND HE SHALL AT ALL TIMES KEEP EXCAVATIONS DRY WHILE WORK IS BEING DONE IN THEM. THE WATER TABLE SHALL BE LOWERED BELOW THE BOTTOM OF THE PROPOSED EXCAVATION PRIOR TO MAKING EXCAVATIONS EXTENDING BELOW THE WATER TABLE. ANY SOIL DISTURBED AND WHICH BECOMES UNSTABLE FOR SUPPORT OF PIPES, FOUNDATIONS, STRUCTURES, ETC., SHALL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE AUTHORITY WITH AN APPROVED AGGREGATE AT THE CONTRACTOR'S EXPENSE.

GRADING OF ADJACENT AREAS – AREAS ADJACENT TO ANY EXCAVATION SHALL BE GRADED SO AS TO PREVENT WATER FROM RUNNING INTO THE EXCAVATIONS.

METHOD OF DISPOSAL – THE WATER FROM THE EXCAVATIONS SHALL BE FILTERED, AND SHALL BE DISPOSED OF IN SUCH A MANNER AS WILL NOT CAUSE INJURY OR DAMAGE TO THE PUBLIC HEALTH, PUBLIC OR PRIVATE PROPERTY, NEARBY WATERCOURSES, DRAINAGEWAYS, WATER IMPOUNDMENT AREAS, THE WORK CONTEMPLATED OR IN PROGRESS, SURFACES OF THE STREETS, NOR CAUSE ANY INTERFERENCE WITH THE USE OF THE SAME. THE DISPOSAL OF THIS WATER SHALL BE DONE IN A MANNER SATISFACTORY TO THE AUTHORITIES HAVING JURISDICTION. OFF-SITE DISCHARGE SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

V.STORM DRAINAGE

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL AND EQUIPMENT NECESSARY AND REQUIRED TO INSTALL ALL THE STORM DRAINAGE FACILITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, INSTALLATION OF THE DRAINAGE SYSTEM CONSISTING OF DRAINAGE STRUCTURES, PIPE AND ALL NECESSARY AND REQUIRED ACCESSORY ITEMS AND OPERATIONS, INCLUDING ALL CONNECTIONS AND INSTALLATION OF LEADER DRAINS.

WORK SHALL ALSO INCLUDE THE CONSTRUCTION OF THE DRAINAGE FACILITIES ASSOCIATED WITH THE WORK REQUIRED FOR THE RAILROAD TRACKS.

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'.

ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. GENERAL

PIPE SHALL BE OF THE TYPE AND SIZES SPECIFIED AND SHALL BE LAID ACCURATELY TO LINE AND GRADE. STRUCTURES SHALL BE ACCURATELY LOCATED AND PROPERLY ORIENTED. THE SECTIONS OF THESE SPECIFICATIONS ENTITLED "PIPE AND UTILITY STRUCTURES" AND "TRENCH EXCAVATION AND BACKFILL" SHALL APPLY TO THE WORK OF THIS SECTION. THE REQUIREMENTS OF THE HEALTH DEPARTMENT AND ANY OTHER AUTHORITY HAVING JURISDICTION SHALL GOVERN THE INSTALLATION, AND THE HORIZONTAL AND VERTICAL SEPARATION OF STORM DRAINS FROM WATER LINES.

LEADER DRAINS SHALL BE INSTALLED FROM THE DRAINAGE SYSTEM TO POINTS LOCATED FIVE (5) FEET OUTSIDE THE BUILDING LINES. WORK SHALL ALSO INCLUDE CONNECTIONS TO THE DRAINAGE SYSTEM AND CONNECTIONS TO THE WORK OF THE BUILDING PLUMBING CONTRACTOR. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF THE BUILDING PLUMBING CONTRACTOR TO DETERMINE THE EXACT LOCATION(S) AND ELEVATION(S) OF THE POINT(S) OF ENTRY INTO THE BUILDING.

C. MATERIALS

THE MATERIALS TO BE USED IN THE CONSTRUCTION SHALL BE THOSE INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. THE CONTRACTOR SHALL SUPPLY TO THE OWNER'S FIELD REPRESENTATIVE, PRIOR TO INSTALLATION, CERTIFICATES OF COMPLIANCE FOR THE MATERIALS USED. THE CONTRACTOR SHALL ALSO SUBMIT SHOP DRAWINGS AND CATALOG CUTS OF ALL STORM DRAIN ITEMS AND APPURTENANCES (PIPE, FITTINGS, JOINTS, CASTINGS, STEPS, PRECAST CONCRETE STRUCTURES, ETC.) TO THE SITE ENGINEER FOR REVIEW PRIOR TO ORDERING.

PIPE AND JOINTS SHALL BE AS INDICATED IN THE UTILITY NOTES. STRUCTURES SHALL BE AS SPECIFIED IN THE SECTION OF THESE SPECIFICATIONS ENTITLED "PIPE AND UTILITY STRUCTURES". WHERE MATERIAL REQUIREMENTS SPECIFIED HEREIN CONFLICTS WITH THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION SHALL GOVERN.

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VI.SANITARY SEWERS

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL, AND EQUIPMENT NECESSARY AND REQUIRED TO INSTALL THE SANITARY SEWER FACILITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, INSTALLATION OF THE SANITARY SEWER SYSTEM CONSISTING OF SANITARY SEWER STRUCTURES, PIPE AND ALL NECESSARY AND REQUIRED ACCESSORY ITEMS AND OPERATIONS, INCLUDING CONNECTION(S) AND INSTALLATION OF SANITARY SEWER SERVICE LINE(S).

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'. ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. GENERAL

PIPE SHALL BE OF THE TYPE AND SIZES SPECIFIED AND SHALL BE LAID ACCURATELY TO LINE AND GRADE. STRUCTURES SHALL BE ACCURATELY LOCATED AND PROPERLY ORIENTED. THE SECTIONS OF THESE SPECIFICATIONS ENTITLED "PIPE AND UTILITY STRUCTURES" AND "TRENCH EXCAVATION AND BACKFILL" SHALL APPLY TO THE WORK OF THIS SECTION. THE REQUIREMENTS OF THE HEALTH DEPARTMENT AND ANY OTHER AUTHORITY HAVING JURISDICTION SHALL GOVERN THE INSTALLATION, AND THE HORIZONTAL AND VERTICAL SEPARATION OF SANITARY SEWERS FROM WATER LINES.

SERVICE LINE(S) SHALL BE INSTALLED FROM THE SANITARY SEWER SYSTEM TO POINT(S) LOCATED FIVE (5) FEET OUTSIDE THE BUILDING LINES. WORK SHALL ALSO INCLUDE CONNECTION(S) TO THE SANITARY SEWER SYSTEM AND CONNECTION(S) TO THE WORK OF THE BUILDING PLUMBING CONTRACTOR. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF THE BUILDING PLUMBING CONTRACTOR TO DETERMINE THE EXACT LOCATION(S) AND ELEVATION(S) OF THE POINT(S) OF ENTRY INTO THE BUILDING.

C. TESTS

AS APPLICABLE, THE CONTRACTOR SHALL TEST THE COMPLETED SANITARY SEWERS FOR LEAKAGE AND DEFLECTION AS SPECIFIED HEREIN. THE TESTS SHALL BE CONDUCTED BY THE CONTRACTOR AS DIRECTED, AND THE CONTRACTOR SHALL FURNISH ALL NECESSARY EQUIPMENT, MATERIALS AND LABOR FOR THE TESTS AS SPECIFIED. THE CONTRACTOR SHALL NOTIFY THE OWNER'S FIELD REPRESENTATIVE AND SITE ENGINEER AT LEAST 48 HOURS PRIOR TO THE START OF TESTING, AND TESTING SHALL BE DONE IN THEIR PRESENCE.

ADDITIONAL TEST REQUIREMENTS – RUNS OF PIPE AND/OR MANHOLES TESTED FOR LEAKAGE PRIOR TO COMPLETION OF THE PROJECT SHALL BE SUBJECT TO ADDITIONAL LEAKAGE TESTS, IF WARRANTED.

PROCEDURE AND METHOD OF TESTING – THE TEST LENGTH INTERVALS AND TYPE OF LEAKAGE TEST SHALL BE AS DIRECTED. IN THE CASE OF SEWERS LAID ON STEEP GRADES, THE LENGTH OF LINE TO BE TESTED BY EXFILTRATION AT ANY ONE TIME MAY BE LIMITED BY THE MAXIMUM ALLOWABLE INTERNAL PRESSURE ON THE PIPE AND JOINTS AT THE LOWER END OF THE LINE. DEPENDING ON FIELD CONDITIONS AND/OR DESIRE OF THE CONTRACTOR, THE FOLLOWING HYDROSTATIC OR VACUUM AND AIR TESTS FOR LEAKAGE MAY BE EMPLOYED:

HYDROSTATIC TESTING (INFILTRATION/EXFILTRATION) SHALL BE AS FOLLOWS: –

THE TEST PERIOD, WHEREIN THE MEASUREMENTS ARE TAKEN SHALL NOT BE LESS THAN FOUR (4) HOURS IN EITHER TYPE OF TEST. THE TOTAL LEAKAGE OF ANY SECTION TESTED SHALL NOT EXCEED THE RATE OF 100 GALLONS PER MILE OF PIPE PER 24 HOURS PER INCH OF NOMINAL PIPE DIAMETER. FOR PURPOSES OF DETERMINING THE MAXIMUM ALLOWABLE LEAKAGE, MANHOLES SHALL BE CONSIDERED AS SECTIONS OF PIPE AND SHALL BE TESTED AT A LEVEL ABOVE THE HIGHEST JOINT PRIOR TO THE CONCRETE/RIM CONNECTION.

WHEN A STANDPIPE AND PLUG ARRANGEMENT IS USED IN THE UPPER MANHOLE OF A LINE UNDER TEST, THERE MUST BE SOME POSITIVE METHOD OF RELEASING ENTRAPPED AIR IN THE SEWER PRIOR TO TAKING MEASUREMENTS.

(a) INFILTRATION TEST – THIS TEST MAY BE USED ONLY WHEN GROUND WATER LEVELS ARE AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE FOR THE ENTIRE LENGTH OF THE SECTION TO BE TESTED DURING THE ENTIRE PERIOD OF THE TEST. GROUND WATER LEVELS MAY BE MEASURED IN AN OPEN TRENCH OR IN STANDPIPES PREVIOUSLY PLACED IN BACKFILLED TRENCHES DURING THE BACKFILLING OPERATIONS. WHEN STANDPIPES ARE INSTALLED IN THE BACKFILL FOR GROUND WATER MEASUREMENT, THE LOWER ENDS OF THESE SHALL BE SATISFACTORILY EMBEDDED IN A MASS OF CRUSHED STONE OR GRAVEL TO MAINTAIN FREE PERCOLATION AND DRAINAGE. INFILTRATION THROUGH JOINTS SHALL BE MEASURED BY USING A WATERTIGHT WEIR OR ANY OTHER APPROVED DEVICE FOR VOLUMETRIC MEASUREMENT INSTALLED AT THE LOWER END OF THE SECTION UNDER TEST.

(b) EXFILTRATION TEST – THIS TEST CONSISTS OF FILLING THE PIPE WITH WATER TO PROVIDE A HEAD OF AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE OR TWO (2) FEET ABOVE GROUND WATER, WHICHEVER IS HIGHER, AT THE HIGHEST POINT OF THE PIPELINE UNDER TEST, AND THEN MEASURING THE LOSS OF WATER FROM THE LINE BY THE AMOUNT WHICH MUST BE ADDED TO MAINTAIN THE ORIGINAL LEVEL. IN THIS TEST THE LINE MUST REMAIN FILLED WITH WATER FOR AT LEAST TWENTY–FOUR (24) HOURS PRIOR TO THE TAKING OF MEASUREMENTS. EXFILTRATION SHALL BE MEASURED BY THE DROP OF WATER LEVEL IN A CLOSED–END STANDPIPE OR IN ONE OF THE SEWER MANHOLES AVAILABLE FOR CONVENIENT MEASURING.

VACUUM AND AIR TESTING – SHALL BE AS FOLLOWS:

(a) VACUUM TESTING OF MANHOLES – SHALL CONFORM TO THE REQUIREMENTS OF ASTM C–1244 "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST PRIOR TO BACKFILL".

(b) LOW–PRESSURE AIR TEST OF PLASTIC PIPELINES – SHALL CONFORM TO THE REQUIREMENTS OF ASTM F–1417 "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW–PRESSURE AIR".

DEFLECTION TESTS – IN ADDITION TO THE TEST(S) FOR LEAKAGE, THE CONTRACTOR SHALL TEST ALL THERMOPLASTIC MAIN LINE PIPE BY USE OF A CALIBRATED MANDREL OR OTHER DEVICE APPROVED BY THE OWNER'S FIELD REPRESENTATIVE TO ENSURE THAT NO PIPE DEFLECTION HAS OCCURRED GREATER THAN 5 PERCENT OF THE INSIDE DIAMETER OF THE PIPE. THE CONTRACTOR SHALL TEST THE ENTIRE LENGTH OF THE SEWER INSTALLED. ANY PIPE SECTION EXHIBITING GREATER THAN 5 PERCENT DEFLECTION SHALL BE REPLACED AND RETESTED, AT NO ADDITIONAL COST TO THE OWNER. IF A SECOND DEFLECTION TEST IS REQUIRED, IT WILL BE AT THE CONTRACTOR'S EXPENSE.

CORRECTION OF DEFECTIVE WORK – IF THE TESTS EXCEED THE SPECIFIED AMOUNT, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE THE NECESSARY REPAIRS OR REPLACEMENTS REQUIRED TO PERMANENTLY REDUCE THE LEAKAGE AND/OR DEFLECTION TO WITHIN THE SPECIFIED LIMITS, AND THE TESTS SHALL BE REPEATED UNTIL THE TEST REQUIREMENTS ARE MET. ANY DEFECTS FOUND IN THE SANITARY SEWERS SHALL BE MADE GOOD BY AND AT THE EXPENSE OF THE CONTRACTOR SO AS TO CONFORM STRICTLY TO THE SPECIFICATIONS AND TO THE SATISFACTION OF THE OWNER'S FIELD REPRESENTATIVE. ALL REPAIRS SHOWN NECESSARY BY THE TESTS SHALL BE MADE, BROKEN OR CRACKED PIPE REPLACED, ALL DEPOSITS REMOVED, AND THE SANITARY SEWERS LEFT TRUE TO LINE AND GRADE AND ENTIRELY CLEAN, FREE FROM LUMPS OF CEMENT, PROTRUDING GASKETS, BULKHEADS, ETC., AND READY FOR USE BEFORE FINAL ACCEPTANCE SHALL BE MADE.

REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION – IN THE EVENT OF CONFLICT BETWEEN THE TEST REQUIREMENTS SPECIFIED HEREIN AND THE TEST REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION OVER ALL OR ANY PORTION OF THE SANITARY SEWERS INSTALLED UNDER THE CONTRACT, THE MORE RESTRICTIVE REQUIREMENTS SHALL GOVERN.

D. MATERIALS

THE MATERIALS TO BE USED IN THE CONSTRUCTION SHALL BE THOSE INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. THE CONTRACTOR SHALL SUPPLY TO THE OWNER'S FIELD REPRESENTATIVE, PRIOR TO INSTALLATION, CERTIFICATES OF COMPLIANCE FOR THE MATERIALS USED. THE CONTRACTOR SHALL ALSO SUBMIT SHOP DRAWINGS AND CATALOG CUTS OF ALL SANITARY SEWER ITEMS AND APPURTENANCES (PIPE, FITTINGS, JOINTS, CASTINGS, STEPS, PRECAST CONCRETE STRUCTURES, ETC.) TO THE SITE ENGINEER FOR REVIEW PRIOR TO ORDERING.

PIPE AND JOINTS SHALL BE AS INDICATED IN THE UTILITY NOTES.

STRUCTURES SHALL BE AS SPECIFIED IN THE SECTION OF THESE SPECIFICATIONS ENTITLED "PIPE AND UTILITY STRUCTURES". WHERE MATERIAL REQUIREMENTS SPECIFIED HEREIN CONFLICTS WITH THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION SHALL GOVERN.

VII.WATER LINES

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL, AND EQUIPMENT NECESSARY AND REQUIRED TO INSTALL ALL OF THE WATER LINE FACILITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, INSTALLATION OF THE WATER LINES CONSISTING OF ALL PIPE, FITTINGS, VALVES, VALVE BOXES, HYDRANTS, ANCHOR AND/OR THRUST BLOCKS, AND ALL NECESSARY AND REQUIRED APPURTENANCES, ACCESSORY ITEMS AND OPERATIONS, INCLUDING CONNECTION(S) AND INSTALLATION OF BUILDING SERVICE LINES. WORK SHALL ALSO INCLUDE REMOVAL AND RELOCATING HYDRANTS AND WATER LINES (AS APPLICABLE), INSTALLATION OF POST INDICATOR VALVES, AND TESTING AND DISINFECTION.

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'. ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. GENERAL

THE CONTRACTOR SHALL INSTALL ALL WATER LINES, INCLUDING SERVICE LINES, IN THE LOCATIONS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE. PIPE AND FITTINGS SHALL BE OF THE TYPE AND SIZES SPECIFIED AND SHALL BE LAID ACCURATELY TO LINE AND GRADE. HYDRANTS, VALVES, AND ALL OTHER WATER LINE APPURTENANCES SHALL BE ACCURATELY LOCATED AND PROPERLY ORIENTED. THE SECTIONS OF THESE SPECIFICATIONS ENTITLED "PIPE AND UTILITY STRUCTURES" AND "TRENCH EXCAVATION AND BACKFILL" SHALL APPLY TO THE WORK OF THIS SECTION. THE REQUIREMENTS OF THE HEALTH DEPARTMENT AND ANY OTHER AUTHORITY HAVING JURISDICTION SHALL GOVERN THE INSTALLATION, AND THE HORIZONTAL AND VERTICAL SEPARATION OF WATER LINES FROM SANITARY SEWERS AND STORM DRAINS, AND THE HYDROSTATIC TESTING AND DISINFECTION OF THE WATER LINE.

THE INSTALLATION OF ALL WATER LINES SHALL CONFORM TO THE REQUIREMENTS OF THE WATER AUTHORITY AND ALL OTHER AUTHORITIES HAVING JURISDICTION. THE WATER AUTHORITY AS REFERRED TO HEREIN SHALL BE UNDERSTOOD TO REFER TO SUEZ WATER, AND SHALL BE DESIGNATED AS THE WA.

C. PIPE DEFLECTION AND COVER

PIPE DEFLECTION – MAXIMUM ALLOWABLE DEFLECTION FOR PIPE LAID WITHOUT FITTINGS SHALL NOT EXCEED THE PIPE MANUFACTURER'S REQUIREMENTS AND THE REQUIREMENTS OF THE WA. DEFLECTION WHICH EXCEEDS THE MAXIMUM ALLOWABLE AS ESTABLISHED BY THE PIPE MANUFACTURER AND THE WA OR ANY OTHER AUTHORITY HAVING JURISDICTION SHALL BE GROUNDS FOR REJECTION OF THE LINE OF PIPE.

COVER – THE WATER LINES SHALL BE LAID SO AS TO PROVIDE A MINIMUM COVER BELOW FINISHED GRADE AS REQUIRED BY THE WA.

D. WATER LINE APPURTENANCES

GATE VALVES AND VALVE BOXES – GATE VALVES SHALL BE INSTALLED ON ALL WATER LINES, HYDRANT LATERALS, AND SERVICE LINES. UNLESS OTHERWISE STATED, VALVES SHALL BE OF THE SAME SIZE AS THE LINE. VALVE BOXES SHALL BE PLACED OVER ALL BURIED VALVES AND SHALL BE PLACED SO AS NOT TO TRANSMIT VEHICLE LOADS OR SHOCK TO THE VALVES, CENTERED AND SET PLUMB OVER THE OPERATING NUT OF THE VALVE. THE COVER OF THE BOX SHALL BE SET EVEN WITH FINISHED GRADE. HYDRANTS SHALL BE INSTALLED/RELOCATED VERTICAL AND PLUMB, WITH THE REQUIRED COVER OVER THE HYDRANT LATERAL AND REQUIRED VEHICULAR CLEARANCE FROM CURB LINE AND/OR EDGE OF PAVEMENT. THE INSTALLATION SHALL PROVIDE PROPER ACCESS FOR FIRE DEPARTMENT CONNECTIONS. HYDRANTS AND THEIR INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE WA AND FIRE DEPARTMENT.

RESTRAINING DEVICES – AT HYDRANTS, BENDS, DEAD ENDS, ETC. THE INSTALLATION SHALL BE RODDED AS REQUIRED.

CONCRETE BLOCKING – WHERE PIPES CHANGE HORIZONTAL AND VERTICAL DIRECTION, AT HYDRANTS, TEES AND OTHER FITTINGS, AND WHENEVER ABNORMAL THRUST FORCES ARE DEVELOPED, THE CONTRACTOR SHALL CONSTRUCT THRUST AND/OR ANCHOR BLOCKS CONSISTING OF CLASS "A" CONCRETE, AND OF MINIMUM DIMENSIONS AS DETAILED ON THE DRAWINGS OR OF ADEQUATE SIZE TO SUIT ACTUAL CONDITIONS TO WITHSTAND THE PRESSURES ANTICIPATED, FOUNDED IN VIRGIN SOIL.

E. SERVICE LINES

UNDERGROUND WATER SERVICE LINES TWO (2) INCHES IN DIAMETER OR LESS SHALL BE TYPE K COPPER. JOINTS IN UNDERGROUND COPPER WATER SERVICE LINES SHALL BE MADE WITH FLARED FITTINGS OR WITH COMPRESSION FITTINGS (MUELLER COMPANY OR APPROVED EQUAL); SWEAT JOINTS SHALL NOT BE PERMITTED. UNDERGROUND WATER SERVICE LINES GREATER THAN TWO (2) INCHES IN DIAMETER SHALL BE DUCTILE IRON PIPE.

SERVICE LINE(S) SHALL BE INSTALLED FROM THE WATER DISTRIBUTION SYSTEM TO POINT(S) LOCATED FIVE (5) FEET OUTSIDE THE BUILDING LINE. WORK SHALL ALSO INCLUDE CONNECTION(S) TO THE WATER DISTRIBUTION SYSTEM AND CONNECTION(S) TO THE WORK OF THE BUILDING PLUMBING CONTRACTOR. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF THE BUILDING PLUMBING CONTRACTOR TO DETERMINE THE EXACT LOCATION(S) AND ELEVATION(S) OF THE POINT(S) OF ENTRY INTO THE BUILDING.

F. TESTS

THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT AND SHALL PERFORM ALL WORK REQUIRED IN CONNECTION WITH ALL TESTS AS SPECIFIED HEREIN. ALL PIPE SHALL BE TESTED BY HYDROSTATIC PRESSURE, FIFTY (50) PERCENT IN EXCESS OF THE NORMAL PSI WORKING PRESSURE, BUT NOT LESS THAN 150 PSI OR MORE THAN THE DESIGN RATING OF THE PIPE OR APPURTENANCES IN ACCORDANCE WITH AWWA C–600. THE TEST PRESSURE SHALL BE DETERMINED BY THE WA AND/OR OWNER'S FIELD REPRESENTATIVE.

EACH SECTION TESTED SHALL BE SLOWLY FILLED WITH WATER, CARE BEING TAKEN TO EXPEL ALL AIR FROM THE PIPES. IF NECESSARY, THE PIPES SHALL BE TAPPED AT HIGH POINTS TO VENT THE AIR. REQUIRED PRESSURE, AS MEASURED AT THE POINT OF LOWEST ELEVATION, SHALL BE APPLIED FOR NOT LESS THAN TWO (2) HOURS, AND ALL PIPE, FITTINGS, VALVES, HYDRANTS, AND JOINTS SHALL BE CAREFULLY EXAMINED FOR DEFECTS. LEAKY JOINTS SHALL BE MADE WATERTIGHT.

A LEAKAGE TEST SHALL ALSO BE CONDUCTED IN ACCORDANCE WITH AWWA C–600. PERMISSIBLE LEAKAGE SHALL BE IN ACCORDANCE WITH AWWA C–600. IN THE EVENT OF CONFLICT BETWEEN THE TESTS SPECIFIED HEREIN AND THE TEST REQUIREMENTS OF THE WA, HEALTH DEPARTMENT OR ANY OTHER AUTHORITY HAVING JURISDICTION OVER ALL OR ANY PORTION OF THE WATER LINES INSTALLED UNDER THIS CONTRACT, THE MORE RESTRICTIVE REQUIREMENTS SHALL GOVERN.

G. DISINFECTION OF COMPLETED LINE

AFTER THE WATER LINE HAS PASSED THE REQUIRED PRESSURE AND LEAKAGE TESTS AND BEFORE BEING PLACED IN SERVICE, THE ENTIRE LINE SHALL BE DISINFECTED. ALL DISINFECTING METHODS AND MATERIALS SHALL BE IN ACCORDANCE WITH AWWA C–651. ALL DISINFECTION OPERATIONS AND PROCEDURES SHALL MEET WITH THE APPROVAL OF THE WA AND HEALTH DEPARTMENT.

IF THE INITIAL BACTERIOLOGICAL TESTS ARE NOT SATISFACTORY, THE CONTRACTOR SHALL DO EVERYTHING NECESSARY TO OBTAIN SATISFACTORY BACTERIOLOGICAL TESTS INCLUDING MAKING PROVISIONS TO ISOLATE SHORTER SECTIONS OF THE LINE IF NECESSARY TO LOCATE THE SOURCE OF CONTAMINATION. ALL WORK NECESSARY AND REQUIRED TO OBTAIN SATISFACTORY BACTERIOLOGICAL TESTS SHALL BE AT THE CONTRACTOR'S EXPENSE AND AT NO ADDITIONAL COST TO THE OWNER.

H. MATERIALS

THE MATERIALS TO BE USED IN THE CONSTRUCTION SHALL BE THOSE INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. THE CONTRACTOR SHALL SUPPLY TO THE OWNER'S FIELD REPRESENTATIVE, PRIOR TO INSTALLATION, CERTIFICATES OF COMPLIANCE FOR THE MATERIALS USED. THE CONTRACTOR SHALL ALSO SUBMIT SHOP DRAWINGS AND CATALOG CUTS OF ALL WATER LINE ITEMS AND APPURTENANCES (PIPE, FITTINGS, VALVES, VALVE BOXES, HYDRANTS, ETC.) TO THE SITE ENGINEER FOR REVIEW PRIOR TO ORDERING.

I. WATER SYSTEM PIPE AND APPURTENANCES

ALL MATERIALS FOR WATER LINES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WA. PIPE AND JOINTS SHALL BE AS INDICATED IN THE UTILITY NOTES.

HYDRANTS – NEW HYDRANTS SHALL BE WA STANDARD. HYDRANT MUST BE APPROVED BY THE WA AND FIRE DEPARTMENT.

RESILIENT SEATED GATE VALVES – SHALL BE MADE IN ACCORDANCE WITH AWWA C–509. GATE VALVES SHALL BE IRON BODY, BRONZE MOUNTED, NON–RISING STEM ASSEMBLY, WITH O–RING SEALS AND MECHANICAL JOINT ENDS WITH FITTINGS. THE BODY AND BONNET SHALL BE COATED WITH 8 MILS MINIMUM FUSION BONDED EPOXY COMPLYING WITH AWWA C–550. VALVES ARE TO BE RATED AT 250 PSI FOR AWWA SERVICE AND 200 PSI FOR ULFM SERVICE. ALL VALVES ARE TO BE HYDROSTATICALLY TESTED AT 400 PSI. GATE VALVES SHALL CONFORM TO THE REQUIREMENTS OF THE WA.

GATE VALVE BOXES – SHALL BE SLIDING "BUFFALO" TYPE AND SHALL BE MADE OF CAST IRON (HEAVY PATTERN), HAVING A MINIMUM INTERIOR DIAMETER OF 5 1/4 INCHES, LENGTH AS REQUIRED. IT SHALL HAVE A BASE OF THE PROPER SIZE TO FIT THE VALVE UPON WHICH IT IS INSTALLED AND SHALL HAVE A DROP COVER MARKED "WATER".

SERVICE LINES – ALL SERVICE LINES TWO (2) INCHES OR LESS IN DIAMETER SHALL BE TYPE K COPPER CONFORMING TO THE "SPECIFICATIONS FOR SEAMLESS COPPER WATER TUBE" ASTM B–88 AND AWWA C–800. ALL SERVICE LINES GREATER THAN TWO (2) INCHES IN DIAMETER SHALL BE CONFORM TO THE REQUIREMENTS SPECIFIED ELSEWHERE IN THIS SECTION FOR WATER PIPE.

CORPORATION STOPS – SHALL BE APPROVED EQUAL TO MUELLER ORISEAL H–15000 SERIES WITH MUELLER 110 CONDUCTIVE COMPRESSION CONNECTION AND SHALL CONFORM TO AWWA C–800.

CURB STOPS – SHALL BE APPROVED EQUAL TO MUELLER ORISEAL H–15000 SERIES WITH MUELLER 110 CONDUCTIVE COMPRESSION CONNECTION, COPPER TO COPPER, WITH TEE HEAD, AND SHALL CONFORM TO AWWA C–800.

CURB BOX FOR CURB STOP – SHALL BE CAST IRON, APPROVED EQUAL TO MUELLER H–10350 "BUFFALO" TYPE, ARCH PATTERN, ADJUSTABLE CURB BOX COMPLETE WITH NECESSARY EXTENSION SECTION, LID AND BRASS LOCKING SCREW.

POST INDICATOR VALVE – SHALL BE AS REQUIRED BY THE WA AND/OR THE FIRE DEPARTMENT.

VIII.GAS & ELECTRIC SERVICES

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL, AND EQUIPMENT AS SPECIFIED AND REQUIRED TO INSTALL THE GAS, AND ELECTRIC SERVICES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'.

ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. GENERAL REQUIREMENTS

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR MUST COORDINATE WITH UTILITY COMPANIES AND AUTHORITIES HAVING JURISDICTION TO DEMARCATE WORK TO BE DONE BY THE UTILITY COMPANIES (OR OTHERS), AND WORK TO BE DONE BY THE CONTRACTOR. NO CLAIM OF IGNORANCE WILL BE ACCEPTED.

C. DAMAGE

THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE OCCURRING AS A DIRECT OR INDIRECT RESULT OF HIS WORK. WHERE AN ITEM OF WORK IS TO BE INSTALLED' BY OTHERS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED BY HIS NEGLECT OR DUE TO HIS FAILURE TO PROPERLY PROTECT THE ITEM OF WORK.

D. TRENCH EXCAVATION AND BACKFILL

SHALL BE PERFORMED IN ACCORDANCE WITH THE SECTION OF THESE SPECIFICATIONS ENTITLED "TRENCH EXCAVATION AND BACKFILL."

IX.PIPE AND UTILITY STRUCTURES

A. PIPE INSTALLATION

LAYING PIPE – EACH LENGTH OF PIPE SHALL BE LAID WITH FIRM, FULL AND EVEN BEARING THROUGHOUT ITS ENTIRE LENGTH, IN A TRENCH PREPARED AND MAINTAINED IN ACCORDANCE WITH THE DETAILS AS SHOWN ON THE DRAWINGS AND THE SECTION OF THESE SPECIFICATIONS ENTITLED "TRENCH EXCAVATION AND BACKFILL". PIPE SHALL BE LAID UPGRADE UNLESS OTHERWISE PERMITTED. BELL AND SPIGOT PIPE SHALL BE LAID WITH THE BELL END UPGRADE; TONGUE AND GROOVE PIPE SHALL BE LAID WITH THE GROOVE END UPGRADE. TRIMMING OF THE PIPE WILL NOT BE ALLOWED. EVERY LENGTH OF PIPE SHALL BE INSPECTED AND CLEANED OF ALL DIRT AND DEBRIS BEFORE BEING LAID. PRIOR TO THE PLACING OF A LENGTH OF PIPE, THE END OF THE PREVIOUSLY LAID LENGTH SHALL BE CAREFULLY AND THOROUGHLY WIPED SMOOTH AND CLEANED TO OBTAIN AN EVEN AND CLOSE–FITTING JOINT. NO LENGTH OF PIPE SHALL BE LAID UNTIL THE PRECEDING LENGTHS OF PIPE HAVE BEEN THOROUGHLY EMBEDDED IN PLACE, SO AS TO PREVENT MOVEMENT OR DISTURBANCE OF THE PIPE. SECTIONS OF PIPE SHALL BE JOINED SO THAT THE INTERIOR SURFACES ARE FLUSH AND EVEN.

LINE AND GRADE – PIPE FOR GRAVITY LINES SHALL BE LAID ACCURATELY TO THE LINE AND GRADE. EACH SECTION OF PIPE SHALL BE CHECKED FOR LINE AND GRADE AFTER BEING LAID. A CALIBRATED SURVEY INSTRUMENT SHALL BE USED DURING PIPE LAYING OPERATIONS, AND ALL ADJUSTMENTS WHICH MUST BE MADE SHALL BE MADE BY REMOVING MATERIAL OR FILLING WITH SELECT BEDDING MATERIAL UNDER THE BARREL OF THE PIPE AS NECESSARY AND NOT BY WEDGING OR BLOCKING ANY PORTION OF THE PIPE. DEVIATIONS FROM LINE AND GRADE SHALL BE A BASIS FOR REJECTION OF THE LINE OF PIPE. ANY LINE WHICH HAS BEEN REJECTED SHALL BE REBUILT TO THE CORRECT LINE AND GRADE BY THE CONTRACTOR AT HIS OWN EXPENSE.

FULL LENGTHS OF PIPE – ONLY FULL LENGTHS OF PIPE ARE TO BE USED IN THE INSTALLATION EXCEPT THAT PARTIAL LENGTHS OF PIPE MAY BE USED AT THE ENTRANCE TO STRUCTURES FOR STORM DRAINS AND SANITARY SEWERS WHERE NECESSARY TO OBTAIN PROPER CONNECTIONS TO STRUCTURES AND FOR CLOSURE PIECES IN THE INSTALLATION OF WATER LINES.

PIPE ENTRANCES TO STRUCTURES – PIPE ENTERING STRUCTURES SHALL BE CUT FLUSH WITH THE INSIDE FACE OF THE STRUCTURE, AND THE CUT ENDS OF THE PIPE AND SURFACE OF THE STRUCTURE SHALL BE ROUNDED AND FINISHED SO THAT THERE WILL BE NO PROTRUSION, RAGGED EDGES, OR IMPERFECTIONS THAT WILL IMPEDE THE FLOW OF WATER OR AFFECT THE HYDRAULIC CHARACTERISTICS OF THE INSTALLATION. THE METHOD OF CUTTING AND FINISHING SHALL BE SUBJECT TO THE APPROVAL.

BEDDING AND BACKFILLING – THE TYPE OF MATERIALS TO BE USED AND THE METHOD OF PLACEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE SECTION OF THESE SPECIFICATIONS ENTITLED "TRENCH EXCAVATION AND BACKFILL" AND AS SHOWN ON THE DETAILS OF THE DRAWINGS.

PROTECTION DURING CONSTRUCTION – THE CONTRACTOR SHALL PROTECT THE INSTALLATIONS AT ALL TIMES DURING CONSTRUCTION. MOVEMENT OF CONSTRUCTION EQUIPMENT, VEHICLES AND LOADS OVER AND ADJACENT TO ANY PIPE SHALL BE DONE AT THE CONTRACTOR'S RISK.

B. UTILITY STRUCTURES

LOCATIONS OF STRUCTURES – THE CONTRACTOR SHALL ACCURATELY LOCATE EACH STRUCTURE AND SET ACCURATE TEMPLATES TO CONFORM TO THE REQUIRED LINE AND GRADE. WHERE INLETS OR CATCH BASINS ARE TO BE PLACED ON CURB LINES OR AT EDGE OF PAVEMENTS, SUFFICIENT LENGTH OF PROPOSED CURB OR EDGE OF PAVEMENT ADJACENT TO THE STRUCTURE SHALL BE ESTABLISHED PRIOR TO CONSTRUCTION OF THE INLET OR CATCH BASIN TO INSURE THAT THE STRUCTURE IS CORRECTLY LOCATED AND ORIENTED. ANY STRUCTURE WHICH IS MISLOCATED OR ORIENTED IMPROPERLY SHALL BE REMOVED AND REBUILT IN ITS PROPER LOCATION, ALIGNMENT, AND ORIENTATION AT THE CONTRACTOR'S EXPENSE

PRECAST CONCRETE STRUCTURES – PRECAST CONCRETE STRUCTURES SHALL BE INSTALLED ONLY AFTER SHOP DRAWINGS HAVE BEEN REVIEWED BY THE SITE ENGINEER. PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED AND FABRICATED FOR AN H–20 LOADING. THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE USED SHALL BE 4,000 PSI. PIPE CONNECTIONS IN STRUCTURES SHALL BE MADE WATERTIGHT. PRIOR TO FABRICATION, THE CONTRACTOR SHALL SUBMIT FOUR (4) SETS OF PLANS OF THE PROPOSED STRUCTURES TO THE SITE ENGINEER FOR REVIEW ALONG WITH DESIGN CRITERIA AND CERTIFICATION FROM THE MANUFACTURER BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE WORK IS PERFORMED THAT THE STRUCTURE WILL SUPPORT THE DESIGN LOAD.

PRECAST CONCRETE MANHOLE STRUCTURES SHALL CONFORM TO ASTM DESIGNATION C–478. PRECAST CONCRETE SQUARE OR RECTANGULAR BOX STRUCTURES SHALL CONFORM TO ASTM DESIGNATION C–913.

FOR PRECAST CONCRETE BOX STRUCTURES, THERE SHALL BE A MINIMUM OF SIX (6) INCHES OF PRECAST CONCRETE WALL BETWEEN THE OPENING FOR THE PIPE AND THE INSIDE WALL CORNER, AND A MINIMUM VERTICAL DISTANCE OF SIX (6) INCHES FROM THE OPENING FOR THE PIPE TO THE BOTTOM OF THE TOP SLAB, UNLESS OTHERWISE SHOWN, SPECIFIED OR ORDERED.

JOINTS IN THE STRUCTURES SHALL BE TONGUE AND GROOVE JOINTS, FORMED IN SUCH A MANNER SO THAT A WATERTIGHT RUBBER SEAL CAN BE APPLIED. JOINTS FOR PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C–443 OR ASTM C–990. JOINTS FOR PRECAST CONCRETE BOX SECTIONS SHALL CONFORM TO ASTM C–990. PROVISIONS SHALL BE MADE FOR INSTALLATION OF APPROVED WATERTIGHT CONNECTIONS AT PIPE ENTRANCES TO THE PRECAST CONCRETE STRUCTURES.

WHERE STEPS ARE REQUIRED IN STRUCTURES, STEPS SHALL BE INSTALLED DURING THE CASTING OF THE STRUCTURES. STEPS SHALL BE SPACED 12 INCHES VERTICALLY ON–CENTERS, AND SHALL BE ARRANGED SO THAT THE LOWEST RUNG IS NO MORE THAN 15 INCHES ABOVE THE BENCH IN STRUCTURES WITH AN INVERT, AND ABOVE THE BOTTOM OF THE STRUCTURES WITH NO INVERT. THE TOP RUNG IS TO BE INSTALLED NO MORE THAN 24 INCHES BELOW THE TOP OF THE CASTING. STEPS SHALL BE ARRANGED OUT OF THE ALIGNMENT OF THE PIPES AND/OR FLOOR CHANNEL AND SHALL BE CENTERED IN THE OPENING OF THE COVER.

NO PRECAST CONCRETE STRUCTURE SHALL BE FABRICATED OR DELIVERED TO THE JOB SITE UNTIL IT HAS RECEIVED FINAL REVIEW STATUS BY THE SITE ENGINEER. ALL STRUCTURES SHALL HAVE AN IDENTIFYING NUMBER AND MANUFACTURER'S NAME ON EACH SECTION.

WHEN PRECAST CONCRETE STRUCTURES ARE TO BE USED, THE CONTRACTOR SHALL BEAR ALL RESPONSIBILITY FOR THE PROPER LOCATIONS AND SIZES OF ALL OPENINGS TO RECEIVE THE PIPE. REVIEW OF SHOP DRAWINGS BY THE SITE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY IN THIS MATTER.

KNOCK–OUTS NOT UTILIZED IN CONSTRUCTION SHALL BE MORTARED WITH COMMON BRICK AND HYDRAULIC CEMENT SO THAT THE KNOCK–OUT IS THE SAME THICKNESS AS THE STRUCTURE.

MASONRY STRUCTURES – THE FIRST COURSE OF MASONRY SHALL BE EMBEDDED IN THE CONCRETE FOUNDATION IMMEDIATELY AFTER THE FOUNDATION HAS BEEN POURED. BRICK MASONRY UNITS SHALL BE THOROUGHLY WETTED BEFORE LAYING.

BRICK SHALL CONFORM TO THE "SPECIFICATIONS FOR SEWER AND MANHOLE BRICK (MADE FROM CLAY OR SHALE)", AASHTO M–91, GRADE MS. CONCRETE BLOCK SHALL BE SOLID BLOCK AND SHALL CONFORM TO THE "SPECIFICATIONS FOR CONCRETE MASONRY UNITS FOR CONSTRUCTION OF CATCH BASINS AND MANHOLES," ASTM C–139.

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SCALE : N.T.S
ISSUE :

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

DRAWING TITLE : CIVIL SPECIFICATIONS

DWG NUMBER : C-004

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DWG FILE: 19005-NOTES

IX.PIPE AND UTILITY STRUCTURES (CONTINUED)

ALL MASONRY SHALL BE LAID IN A FULL BED OF MORTAR, AND ALL VERTICAL AND HORIZONTAL JOINTS SHALL BE FILLED SOLID WITH MORTAR. VERTICAL JOINTS ON EACH SUCCEEDING COURSE SHALL BE STAGGERED. JOINTS SHALL BE NOT LESS THAN THREE–EIGHTHS (3/8) INCH OR MORE THAN ONE–HALF (1/2) INCH WIDE. JOINTS ON THE INSIDE OF THE STRUCTURE SHALL BE NEATLY STRUCK AND POINTED.

CORNER UNITS FOR RECTANGULAR CONCRETE BLOCK STRUCTURES MUST BE "L" SHAPED WITH AN INSIDE RETURN SIDE EQUAL TO HALF THE LENGTH OF THE NORMAL UNIT. UNITS SHALL BE DESIGNED SO THAT ONLY FULL LENGTH UNITS ARE REQUIRED TO LAY ANY ONE COURSE. CUT BLOCK WILL NOT BE ALLOWED UNLESS APPROVAL IS OBTAINED.

PIPE CONNECTIONS IN STRUCTURES SHALL BE MADE WATERTIGHT.

UNLESS OTHERWISE SPECIFIED, THE INTERIOR SURFACE OF THE WALLS OF MASONRY STRUCTURES SHALL BE PAINTED UPON COMPLETION WITH THREE (3) COATS OF NEAT CEMENT GROUT WITHOUT SAND, APPLIED WITH AN INTERVAL OF AT LEAST 24 HOURS BETWEEN APPLICATIONS. THE EXTERIOR SURFACE OF THE WALLS OF MASONRY STRUCTURES SHALL BE PLASTERED WITH A ONE–HALF (1/2) INCH COAT OF 1:2 CEMENT MORTAR.

CAST–IN–PLACE CONCRETE STRUCTURES – CAST–IN–PLACE CONCRETE STRUCTURES SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE WITH REINFORCING AS SHOWN IN DETAIL ON THE DRAWINGS AND AS SPECIFIED HEREIN.

MATERIAL AND CONSTRUCTION REQUIREMENTS SHALL BE AS SPECIFIED UNDER THE SECTION OF THESE SPECIFICATIONS ENTITLED "SITE CONCRETE".

INVERTS – SMOOTH INVERT CHANNELS SHALL BE CONSTRUCTED IN ALL MANHOLES AND IN ALL DRAIN INLETS AND CATCH BASINS WHICH DO NOT HAVE SUMPS, TO INSURE A SMOOTH FLOW OF WATER THROUGH THE STRUCTURE. CARE SHALL BE TAKEN BY THE CONTRACTOR TO CONSTRUCT INVERT CHANNELS TO THE SHAPE, ELEVATIONS AND DIMENSIONS SHOWN, SPECIFIED OR ORDERED. WHEN PIPES ENTERING AND LEAVING A MANHOLE ARE OF DIFFERENT DIAMETERS, THE INVERT CHANNEL SHALL BE CONSTRUCTED SO AS TO PROVIDE A SMOOTH TRANSITION FROM THE INFLOW PIPE(S) TO THE OUTFLOW PIPE. THE INVERT CHANNEL SHALL BE CARRIED UP TO THE ELEVATIONS SHOWN OR DIRECTED, AND SHALL BE CONSTRUCTED SO THAT THE GRADES OF THE PIPE SHALL CONTINUE TO THE MANHOLE POINT OF INTERSECTION (PI). UNLESS SPECIFIED OTHERWISE, INVERTS GIVEN ON THE UTILITIES PLANS AND PROFILES REFER TO GRADES AT THE MANHOLE PI.

FRAMES AND COVERS/GRATES – FRAMES AND COVERS/GRATES SHALL BE OF THE TYPES AND SIZES INDICATED. FRAMES SHALL BE WELL BEDDED IN MORTAR AND SHALL BE SET ACCURATELY TO THE CORRECT ALIGNMENT AND GRADE. IN AREAS TO BE PAVED, FRAMES SHALL BE SET BY USING FOUR (4) POINTS OF REFERENCE, SET 90 DEGREES APART, TO INSURE ACCURATE SETTING TO PROPOSED PAVEMENT GRADE.

CAST IRON CASTINGS SHALL BE GRAY CAST IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M–105, MINIMUM CLASS 30B AND SHALL BE TRUE TO PATTERN IN FORM AND DIMENSIONS AS SPECIFIED, FREE FROM POURING FAULTS, SPONGINESS, CRACKS, BLOWHOLES AND OTHER DEFECTS THAT AFFECT THEIR STRENGTH AND OTHER CHARACTERISTICS FOR THE INTENDED USE. ALL SURFACES SHALL HAVE A WORKMANLIKE FINISH. FABRICATED STEEL FRAMES AND GRATES SHALL MEET THE REQUIREMENTS OF AASHTO M–183. UNLESS OTHERWISE SPECIFIED, ALL STEEL FRAMES AND GRATES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M–111.

ALL COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER AND FRAMES AND COVERS SHALL BE OF A DESIGN THAT WILL PREVENT ROCKING OR RATTLING UNDER TRAFFIC. FRAMES AND COVERS THAT ARE WARPED OR ROCKING SHALL BE REJECTED AND SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER. UNLESS OTHERWISE SPECIFIED, THE WORD "DRAIN" SHALL BE INTEGRALLY CAST ON THE MANHOLE COVERS IN RAISED LETTERS FOR STORM DRAIN CASTINGS AND THE WORD "SEWER" SHALL BE INTEGRALLY CAST ON THE MANHOLE COVERS IN RAISED LETTERS FOR SANITARY SEWER CASTINGS. THE LETTER SIZE SHALL BE TWO (2) INCHES AND THE LETTERS SHALL BE CENTERED.

STEPS – STEPS SHALL BE INSTALLED IN MANHOLES. STEPS SHALL ALSO BE INSTALLED IN DRAIN INLETS AND CATCH BASINS GREATER THAN FOUR (4) FEET IN DEPTH UNLESS OTHERWISE SPECIFIED. STEPS SHALL BE SET SECURELY IN PLACE DURING THE CONSTRUCTION OF THE WALL FOR MASONRY STRUCTURES AND DURING FABRICATION OF THE WALL SECTION FOR PRECAST CONCRETE STRUCTURES. SPACING OF STEPS SHALL BE AS SHOWN IN DETAIL ON THE DRAWINGS.

STEPS SHALL BE AS SPECIFIED HEREIN AND ON THE DETAILS OF THE DRAWINGS AND SHALL MEET THE REQUIREMENTS FOR STEPS AND LADDERS AS SPECIFIED UNDER ASTM C–478.

(a) MALLEABLE OR DUCTILE CAST IRON – SHALL BE DESIGNED FOR A MINIMUM DESIGN LIVE LOAD OF A SINGLE CONCENTRATION OF 300 POUNDS. MATERIAL SHALL BE OF IRON, CLASS 25A, IN ACCORDANCE WITH ASTM A–48 OR MALLEABLE IRON, GRADE 35018 IN ACCORDANCE WITH ASTM A–47.

(b) PLASTIC COATED STEEL – SHALL BE NO. 4 DEFORMED REINFORCEMENT BAR MEETING THE REQUIREMENTS OF ASTM A–615, GRADE 60 WHICH SHALL BE COATED WITH POLYPROPYLENE PLASTIC MEETING THE REQUIREMENTS OF ASTM D–2146 FOR TYPE II, GRADE 49108.

ALL STEPS SHALL BE TRUE TO PATTERN, FORM DIMENSIONS, AND FREE FROM DEFECTS WHICH WOULD AFFECT THEIR STRENGTH. STEPS HAVING DEFECTS FILLED WITH PUTTY OR CEMENT OF ANY KIND SHALL BE REJECTED.

C. CONNECTIONS TO EXISTING FACILITIES

CONNECTIONS MADE INTO EXISTING FACILITIES OWNED BY OTHERS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER OF THE FACILITY. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH ALL SUCH REQUIREMENTS, INCLUDING SECURING OF ALL REQUIRED PERMITS AND PAYING THE COSTS THEREOF.

D. ALTERATION, RECONSTRUCTION AND/OR CONVERSION OF EXISTING STRUCTURES

ADJUSTMENT TO NEW GRADE – ALL CASTINGS ON EXISTING STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO NEW GRADE.

STRUCTURES TO BE CONVERTED – STRUCTURES WHICH ARE TO BE CONVERTED SHALL CONFORM AS CLOSELY AS POSSIBLE TO THE DESIGN OF THE PROPOSED STRUCTURE. SUFFICIENT MASONRY SHALL BE REMOVED FROM THE EXISTING STRUCTURE TO INSURE THAT THE WALLS CAN BE REBUILT TO CONFORM TO THE PROPOSED CONSTRUCTION.

REMOVAL OF PORTIONS OF WALLS OF EXISTING STRUCTURES – IN ALL CASES OF ALTERATION, RECONSTRUCTION AND/OR CONVERSIONS OF EXISTING STRUCTURES, EXISTING WALLS SHALL BE REMOVED TO A POINT WHERE THE EXISTING WALLS WILL PROVIDE SOUND AND ADEQUATE FOUNDATION FOR THE CONSTRUCTION OF THE NEW WALLS AS DIRECTED.

RECONSTRUCTION AND/OR REBUILDING OF EXISTING INVERT – WHERE NEW PIPES ARE TO BE INSTALLED INTO AN EXISTING STRUCTURE, THE EXISTING INVERT SHALL BE RECONSTRUCTED AND/OR REBUILT AS DIRECTED TO ACCOMMODATE INSTALLATION OF THE NEW PIPES AND PROVIDE FOR PROPER TRANSITION OF FLOWS INTO AND OUT OF THE STRUCTURE. DAMAGE TO EXISTING STRUCTURE AND/OR PIPE – THE CONTRACTOR SHALL EXERCISE CARE DURING SUCH ALTERATION, RECONSTRUCTION AND/OR CONVERSIONS SO AS NOT TO DAMAGE ANY PORTIONS OF THE STRUCTURE AND/OR PIPE SHOWN TO REMAIN. ANY SUCH DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.

STRUCTURES TO BE CLEANED – UPON COMPLETION OF ALTERATION, RECONSTRUCTION AND/OR CONVERSION OF EXISTING STRUCTURES, THE STRUCTURES SHALL BE CLEANED OF ANY ACCUMULATION OF SILT, DEBRIS OR FOREIGN MATTER OF ANY KIND AND SHALL BE KEPT CLEAN OF SUCH ACCUMULATION UNTIL FINAL ACCEPTANCE OF THE WORK.

E. RELOCATION AND/OR ABANDONMENT OF EXISTING FACILITIES

THE CONTRACTOR SHALL NOT ABANDON, DISCONNECT, OBSTRUCT OR IN ANY OTHER WAY INTERFERE WITH THE OPERATION OF AN EXISTING FACILITY UNTIL SUCH TIME AS ADEQUATE PERMANENT OR TEMPORARY SUBSTITUTE FACILITIES HAVE BEEN CONSTRUCTED AND PLACED IN OPERATION.

F. CLEANING AND REPAIR

THE CONTRACTOR SHALL CLEAN THE ENTIRE SANITARY SEWER AND STORM DRAIN SYSTEM OF ALL DEBRIS AND OBSTRUCTIONS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, REMOVAL OF ALL FORMWORK FROM STRUCTURES, CONCRETE AND MORTAR DROPPINGS, CONSTRUCTION DEBRIS AND DIRT. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED CLEAN AND THE CONTRACTOR SHALL FURNISH ALL NECESSARY HOSE, PUMPS, PIPE AND OTHER EQUIPMENT THAT MAY BE REQUIRED FOR THIS PURPOSE. NO DEBRIS SHALL BE FLUSHED INTO EXISTING SANITARY SEWERS, STORM DRAINS OR STREAMS. ALL DEBRIS SHALL BE REMOVED FROM THE SYSTEMS. AFTER THE SYSTEMS HAVE BEEN CLEANED, THE CONTRACTOR SHALL THOROUGHLY INSPECT THE SYSTEMS, AND ALL REPAIRS SHOWN TO BE NECESSARY SHALL BE PROMPTLY MADE BY THE CONTRACTOR. ALL WORK OF CLEANING AND REPAIR AS SPECIFIED HEREIN SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

G. FINAL TESTS AND INSPECTION

UPON COMPLETION OF THE WORK AND BEFORE FINAL ACCEPTANCE BY THE OWNER, THE ENTIRE SANITARY SEWER AND STORM DRAIN SYSTEM SHALL BE SUBJECTED TO AN INSPECTION IN THE PRESENCE OF THE SITE ENGINEER AND/OR OWNER'S FIELD REPRESENTATIVE. THE WORK SHALL NOT BE CONSIDERED COMPLETE UNTIL ALL REQUIREMENTS FOR LINE, GRADE, CLEANLINESS, AND WORKMANSHIP HAVE BEEN MET.

X.CURBS & SIDEWALKS

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL, AND EQUIPMENT NECESSARY TO INSTALL THE CURBS AND SIDEWALKS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WORK SHALL INCLUDE ALL ASSOCIATED ITEMS AND OPERATIONS REQUIRED TO COMPLETE THE INSTALLATIONS INCLUDING, BUT NOT LIMITED TO, SURFACE PREPARATION, FORMWORK, FINISHING AND CURING.

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'. ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. CURBS AND SIDEWALKS WITHIN PUBLIC RIGHTS–OF–WAY

THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE RULES AND REQUIREMENTS OF THE PUBLIC AGENCY HAVING CONTROL AND OWNERSHIP OF THE RIGHT–OF–WAY AND SHALL INCLUDE ALL OPERATIONS NECESSARY TO COMPLETE THE WORK TO THE SATISFACTION OF THE AUTHORITIES, INCLUDING MAINTENANCE OF TRAFFIC AND PROTECTION OF PEDESTRIANS.

C. GENERAL

THE CONTRACTOR SHALL LAY OUT AND INSTALL CURBS, SIDEWALKS AND RELATED ITEMS SHOWN ON THE DRAWINGS AND/OR IN ACCORDANCE WITH THE DIRECTIONS OF THE AUTHORITY. CURBS, SIDEWALKS, AND RELATED ITEMS WHICH ARE NOT CONSTRUCTED TO THE PROPER SECTION, GRADE OR ALIGNMENT SHALL BE CORRECTED BY REPAIR OR REPLACEMENT BY THE CONTRACTOR AT NO COST TO THE OWNER. IMPROPER FINISHING OR IMPROPER CONSTRUCTION OF JOINTS SHALL ALSO BE CAUSE FOR REJECTING THE CURB OR SIDEWALK.

WHERE NEW CONCRETE CURB IS TO BE INSTALLED ADJACENT TO NEW CONCRETE SIDEWALK ON–SITE, THE CURB AND SIDEWALK SHALL BE POURED MONOLITHICALLY. UNLESS OTHERWISE SPECIFIED, ALL CAST–IN–PLACE CONCRETE ITEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SECTION OF THESE SPECIFICATIONS TITLED "SITE CONCRETE".

D. CURBS & SIDEWALKS

FORMS – FORMS SHALL BE METAL OR ACCEPTABLE PLANED AND MATCHED LUMBER, STRAIGHT AND FREE FROM WARP OR OTHER IRREGULARITIES. FORMS SHALL CONFORM TO THE CURB CROSS–SECTION SHOWN ON THE DRAWINGS AND SHALL BE SET TO LINE AND GRADE AND BRACED AND SECURED IN PLACE SO THAT THERE WILL BE NO DISPLACEMENT DURING PLACING OF THE CONCRETE. ON CURVES, ALL FORMS MUST BE BENT TO MEET THE REQUIRED CURVATURE; THE USE OF SHORT CHORDS WILL NOT BE PERMITTED. ALL FORMS SHALL BE THOROUGHLY CLEANED PRIOR TO REUSE, AND JUST PRIOR TO PLACEMENT OF THE CONCRETE, THE PORTION OF THE FORMS IN CONTACT WITH THE CONCRETE SHALL BE GIVEN A LIGHT COAT OF OIL THAT WILL NOT DISCOLOR THE CONCRETE. FORMS WHICH HAVE BECOME WORN, BENT, OR BROKEN SHALL NOT BE USED.

CURING – AFTER FINISHING, THE CURB OR SIDEWALK SHALL BE CURED IN ACCORDANCE WITH THE REQUIREMENTS AS SPECIFIED UNDER THE SECTION OF THESE SPECIFICATIONS ENTITLED "SITE CONCRETE".

E. CONCRETE CURB (CAST IN PLACE)

GENERAL REQUIREMENTS – CONCRETE CURB SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE AND SHALL BE CAST IN PLACE TO PROPER SIZE AND SHAPE AND TO THE LINE AND GRADE SHOWN ON THE DRAWINGS. THE CURBING SHALL BE CONSTRUCTED USING CONVENTIONAL FORMS AND IN SEGMENTS SEPARATED BY CONSTRUCTION JOINTS AND EXPANSION JOINTS AS SPECIFIED.

PLACING OF CONCRETE – CONCRETE SHALL BE PLACED IN THE FORM AS NEAR TO ITS FINAL POSITION AS PRACTICABLE, STRUCK OFF WITH A TEMPLATE, VIBRATED OR SPADED TO PREVENT "ROCK–POCKETS" OR "HONEY–COMBING" ADJACENT TO THE FORMS AND FINISHED TO A SMOOTH EVEN SURFACE.

EXPANSION JOINTS – VERTICAL EXPANSION JOINTS SHALL BE LOCATED APPROXIMATELY EVERY TWENTY (20) FEET AND SHALL BE SO ARRANGED THAT THEY SHALL MATCH EXPANSION JOINTS IN ADJACENT CONCRETE PAVEMENTS AND SIDEWALKS. EXPANSION JOINTS SHALL ALSO BE INSTALLED AT THE PC AND PT OF ALL RADIUS CURB. EXPANSION JOINTS SHALL BE CONSTRUCTED VERTICAL, PLUMB AND AT RIGHT ANGLES TO THE FACE OF THE CURB. THEY SHALL BE ONE–HALF (1/2) INCH IN WIDTH AND FORMED WITH PREMOLDED BITUMINOUS JOINT FILLER, IN ACCORDANCE WITH ASTM D–1751, AND CUT TO CONFORM TO THE CROSS–SECTION OF THE CURB.

CONSTRUCTION JOINTS – VERTICAL CONSTRUCTION JOINTS SHALL BE LOCATED APPROXIMATELY EVERY TEN (10) FEET BEING EQUALLY SPACED BETWEEN EXPANSION JOINTS. THE LENGTH OF THESE CURB SEGMENTS MAY BE VARIED SLIGHTLY FOR CLOSURES BUT IN NO CASE SHALL THEY BE LESS THAN FOUR (4) FEET. CONSTRUCTION JOINTS SHALL BE VERTICAL, PLUMB, AND RIGHT ANGLES TO THE FACE OF THE CURB AND SHALL BE FORMED BY APPROVED METHOD THAT WILL PROVIDE COMPLETE SEPARATION OF THE CURB SEGMENTS DURING PLACING OF THE CONCRETE.

FINISHING – FORMS SHALL BE LEFT IN PLACE FOR 24 HOURS OR UNTIL THE CONCRETE HAS SUFFICIENTLY HARDENED, SO THAT THEY CAN BE REMOVED WITHOUT INJURY TO THE CURB. UPON REMOVAL OF THE FORMS, THE EXPOSED FACES OF THE CURB SHALL BE IMMEDIATELY RUBBED TO A UNIFORM SURFACE. RUBBING SHALL BE DONE BY EXPERIENCED AND COMPETENT CONCRETE FINISHERS. NO PLASTERING WILL BE PERMITTED.

F. CONCRETE SIDEWALK

GENERAL REQUIREMENTS – CONCRETE SIDEWALKS SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE IN THE LOCATIONS, AND TO THE DIMENSIONS AND CROSS–SECTIONS SHOWN ON THE DRAWINGS. THE SLOPE OF THE SIDEWALKS SHALL BE GENERALLY AS SHOWN, BUT IN THE CASE OF TRANSITIONS OR WARP SECTIONS, THE SIDEWALK SHALL BE CONSTRUCTED TO GIVE AN EFFECTIVE COMBINATION OF PROPER DRAINAGE AND GOOD APPEARANCE. IN THE EVENT OF DOUBT REGARDING THE SLOPE OF ANY SIDEWALK, THE CONTRACTOR SHALL SET APPROPRIATE GRADE STAKES AND VERIFY THE SLOPE WITH THE AUTHORITY BEFORE SIDEWALK IS PLACED.

PREPARATION OF SUBGRADE – THE SUBGRADE FOR SIDEWALKS SHALL BE PREPARED BY REMOVAL OF UNDESIRABLE MATERIAL AND REPLACED WITH SUITABLE COMPACTED GRANULAR MATERIAL. THE SUBGRADE SURFACE SHALL BE FINE GRADED AND COMPACTED PRIOR TO PLACEMENT OF THE AGGREGATE BASE COURSE. AFTER THE SUBGRADE IS PREPARED, A LAYER OF CRUSHED STONE SHALL BE PLACED UPON THE SUBGRADE AND COMPACTED TO THE COMPRESSED THICKNESS SHOWN IN DETAIL ON THE DRAWINGS.

PLACING OF CONCRETE – CONCRETE SHALL BE PLACED IN THE FORMS AS NEAR TO ITS FINAL POSITION AS PRACTICABLE AND SHALL BE VIBRATED OR SPADED JUST ENOUGH TO COMPACT IT FIRMLY . PRECAUTIONS SHALL BE TAKEN NOT TO OVERWORK THE CONCRETE WHILE IT IS STILL PLASTIC. SIDEWALK SHALL NOT BE PLACED ON FROZEN SUBGRADE OR FROZEN BASE COURSE, AND MATERIALS CONTAINING FROST OR ICE SHALL BE REJECTED.

EXPANSION JOINTS – EXPANSION JOINTS, CONSISTING OF PREMOLDED BITUMINOUS JOINT FILLER, IN ACCORDANCE WITH ASTM D–1751, ONE–HALF (1/2) INCH THICK AND AS DEEP AS THE FULL DEPTH OF THE WALK, SHALL BE PLACED AT INTERVALS OF TWENTY (20) FEET LONGITUDINALLY ALONG WALKS OR AS DIRECTED BY THE AUTHORITY. EXPANSION JOINTS SHALL ALSO BE PLACED WHEREVER THE WALK ABUTS A BUILDING, EXISTING CONCRETE CURB, LIGHTING STANDARDS OR ANY OTHER RIGID OBJECT. THE JOINT FILLER SHALL BE SET ONE–QUARTER (1/4) INCH BELOW THE FINISHED SURFACE OF THE CONCRETE.

CONTRACTION JOINTS – CONTRACTION JOINTS SHALL BE PLACED IN ALL WALKS AT FIVE (5) FOOT INTERVALS OR AS DIRECTED BY THE AUTHORITY. THESE JOINTS SHALL BE FORMED BY SCORING A SLOT IN THE SLAB ABOUT ONE (1) INCH DEEP, EDGED WITH A DOUBLE EDGER HELD AGAINST A STRAIGHT EDGE BEFORE THE CONCRETE HAS HARDENED AND DURING THE FINISHING PROCESS.

FINISHING – AFTER THE CONCRETE HAS BEEN STRUCK OFF, IT SHALL BE SMOOTHED WITH A WOOD FLOAT OR DARBY, LEVELING ANY RAISED SPOTS AND FILLING ALL DEPRESSIONS. WALKS SHALL BE FINISHED WITH A WOOD FLOAT AND THEN BY A HAIR BROOM DRAWN LIGHTLY OVER THE CONCRETE. THE METHOD AND TYPE OF FINISH SHALL BE SUBJECT TO THE APPROVAL OF THE AUTHORITY.

XI.PAVEMENTS & PADS

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL, AND EQUIPMENT NECESSARY TO INSTALL THE PAVEMENTS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, LINE CUTTING OF EXISTING PAVEMENTS; PREPARATION OF SUBGRADE TO INCLUDE FINE GRADING, COMPACTION AND PROOF–ROLLING; AND INSTALLATION OF PAVEMENTS INCLUDING ALL ITEMS AND OPERATIONS NECESSARY TO COMPLETE THE PAVEMENT INSTALLATION.

WORK SHALL ALSO INCLUDE THE INSTALLATION OF TEMPORARY ASPHALT CONCRETE PAVEMENTS OVER TRENCHES AND/OR EXCAVATIONS IN EXISTING PAVED AREAS AND THE PERMANENT PAVEMENT REPLACEMENT OVER THESE TRENCHES AND/OR EXCAVATIONS, RESURFACING AND/OR MILLING OF PAVEMENTS, AND THE INSTALLATION OF CONCRETE PADS. ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'. ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. PAVEMENTS WITHIN PUBLIC RIGHTS–OF–WAY

THE INSTALLATION OF ALL PAVEMENTS WITHIN PUBLIC RIGHTS–OF–WAY SHALL BE IN ACCORDANCE WITH THE RULES AND REQUIREMENTS OF THE PUBLIC AGENCY HAVING CONTROL AND OWNERSHIP OF THE RIGHTS–OF–WAY.

C. GENERAL

MATERIALS, METHODS OF CONSTRUCTION, AND TYPE AND THICKNESS OF PAVEMENT COURSES SHALL BE AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN. MATERIALS AND METHODS FOR CONSTRUCTION OF ASPHALT CONCRETE PAVEMENTS, BASES AND SUBBASES SHALL CONFORM TO THE STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A MATERIAL FOR BASE AND SUBBASE COURSES WHICH MEETS THIS SPECIFICATION AND IS WITHIN THE CAPABILITIES TO FINE GRADE TO THE REQUIRED TOLERANCES. SHOULD THE BASE AND/OR SUBBASE COURSE BECOME UNSTABLE AT ANY TIME PRIOR TO PLACEMENT OF THE OVERLYING COURSE DUE TO THE GRADATION OF THE MATERIAL FURNISHED, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, CORRECT THE UNSTABLE CONDITION.

THE CONTRACTOR SHALL LAY OUT AND INSTALL ALL PAVEMENTS IN THE CORRECT LOCATIONS AND TO THE PROPER CROSS SECTIONS AND IN ACCORDANCE WITH THE LINES AND GRADES. PAVEMENTS WHICH ARE NOT CONSTRUCTED TO THE PROPER SECTION, GRADE AND/OR ALIGNMENT SHALL BE CORRECTED BY REPAIR OR REPLACEMENT BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

D. PREPARATION OF SUBGRADE

PRIOR TO THE START OF PAVING OPERATIONS, THE SUBGRADE SURFACE SHALL BE PREPARED BY FILLING IN WHEEL RUTS, EROSIONS AND ALL OTHER GROUND DISTURBANCES, REGARDLESS OF CAUSE, AND THE GROUND SURFACE SHALL BE FINE GRADED SO THAT AFTER COMPACTION THE SUBGRADE SURFACE WILL BE AT THE PROPER ELEVATION TO ACCOMMODATE THE PAVEMENT STRUCTURE.

FINE GRADING – FINE GRADING OF THE SUBGRADE SHALL BE PERFORMED IN SECTIONS, WORKING THE EQUIPMENT PERPENDICULAR TO THE CONTOURS AND CONSTRUCTING THE RESPECTIVE VALLEYS AND RIDGES IN ACCORDANCE WITH THE DRAWINGS. PARTICULAR CARE SHALL BE EXERCISED WITH THE GRADES OF THE VALLEYS WHICH LEAD TO DRAIN INLETS AND CATCH BASINS. FINE GRADING SHALL NOT BE DONE WHEN THE GROUND IS EXCESSIVELY WET OR FROZEN.

COMPACTION – FINE GRADING OF THE SUBGRADE SHALL BE ACCOMPANIED BY PROPER COMPACTION TO THE EXTENT THAT THE UPPER TWELVE (12) INCHES OF SUBGRADE SHALL HAVE A DENSITY NOT LESS THAN 95% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D–1557. COMPACTION SHALL BE DONE BY MEANS OF A ROLLER WEIGHING NOT LESS THAN TEN (10) TONS OR OTHER APPROVED COMPACTION EQUIPMENT.

PROOF–ROLLING – IMMEDIATELY PRIOR TO THE START OF PAVING OPERATIONS, THE CONTRACTOR SHALL PROOF–ROLL THE SUBGRADE IN THE PRESENCE OF THE AUTHORITY. IF THE SUBGRADE IS NOT SUITABLE FOR SUPPORT OF THE PAVEMENT STRUCTURE, MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO CORRECT THE SUBGRADE DEFICIENCIES AT NO ADDITIONAL COST TO THE OWNER.

SUBGRADE APPROVAL – THE AUTHORITY MUST APPROVE THE SUBGRADE PRIOR TO PLACEMENT OF THE INITIAL PAVEMENT COURSE. INSTALLATION OF ALL OR ANY PORTION OF THE PAVEMENT WITHOUT SUBGRADE APPROVAL BY THE AUTHORITY IS DONE AT THE CONTRACTOR'S RISK. APPROVAL OF THE SUBGRADE BY THE AUTHORITY SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PROTECT THE SUBGRADE FROM DAMAGE CAUSED FROM EXCESSIVE MOISTURE, RUTTING FROM TRUCKS OR HEAVY EQUIPMENT OR FROM ANY OTHER CAUSE, AND ANY DAMAGE OCCURRING TO THE SUBGRADE EITHER BEFORE OR DURING THE PAVING OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE.

E. PREPARATION FOR PAVEMENT INSTALLATION

UTILITY STRUCTURES AND APPURTENANCES – AFTER THE SUBGRADE AND/OR EXISTING PAVEMENT SURFACES HAVE BEEN PREPARED, THE CONTRACTOR SHALL CHECK ALL FRAMES, COVERS, GRATES, WATER VALVE BOXES AND ALL OTHER MISCELLANEOUS CASTINGS THAT ARE LOCATED IN THE PROPOSED PAVEMENT AREAS TO ENSURE THAT ALL SUCH ITEMS HAVE BEEN ACCURATELY POSITIONED AND SET TO THE PROPER SLOPE AND ELEVATION. ALL COVERS AND GRATES ARE TO BE SET FLUSH WITH THE REQUIRED FINISHED PAVEMENT SURFACE. NO DEPRESSIONS OR MOUNDS WILL BE PERMITTED IN THE PAVEMENT TO ACCOMMODATE INACCURACIES IN THE SETTING OF THESE APPURTENANCES. ALL CORRECTIVE WORK AS MAY BE NECESSARY SHALL BE DONE BY THE CONTRACTOR AT HIS OWN EXPENSE.

MEETING EXISTING PAVEMENT – WHERE NEW PAVEMENTS ARE TO MEET EXISTING PAVEMENTS, THE CONTRACTOR SHALL LINE CUT THE EXISTING PAVEMENT WITH AN APPROVED SAW CUTTING MACHINE AS DIRECTED SO THAT THERE WILL BE A VERTICAL BUTTING SURFACE BETWEEN THE OLD AND NEW PAVEMENTS.

PAVEMENT REPLACEMENT IN EXISTING ASPHALT CONCRETE PAVEMENTS – LINE CUTTING FOR PAVEMENT REPLACEMENT OVER TRENCHES SHALL BE PARALLEL TO THE CENTERLINE OF THE TRENCH; LINE CUTTING FOR PAVEMENT REPLACEMENT AT MANHOLES, DRAIN INLETS, CATCH BASINS OR OTHER UNDERGROUND STRUCTURES, TEST HOLES, ETC., SHALL BE IN A SQUARE OR RECTANGULAR CONFIGURATION AS DIRECTED. FOR ALL TYPES OF PAVEMENT REPLACEMENT, THE LINE CUTTING SHALL ENCOMPASS THE DISTURBED AREA AND INCLUDE THE REQUIRED UNDISTURBED PAVEMENT SHELF AREA AS SPECIFIED HEREIN OR AS DIRECTED.

VERTICAL SURFACES IN CONTACT WITH ASPHALT CONCRETE MIXTURES – ALL VERTICAL SURFACES OF CURBS, STRUCTURES, GUTTERS AND EXISTING PAVEMENT IN CONTACT WITH NEW ASPHALT CONCRETE MIXTURES SHALL BE PAINTED WITH A UNIFORM COATING OF AN APPROVED ASPHALT EMULSION OR PRIMING MATERIAL. CARE SHALL BE EXERCISED IN THE APPLICATION OF THIS MATERIAL TO PREVENT SPLATTERING OR STAINING OF SURFACES THAT ARE TO BE EXPOSED. SURFACES THAT ARE STAINED AS A RESULT OF THE CONTRACTOR'S OPERATION SHALL BE REPAIRED AND/OR REPLACED AT THE CONTRACTOR'S EXPENSE.

F. ASPHALT CONCRETE OVERLAYS

CLEANING EXISTING PAVEMENT – THE EXISTING PAVEMENT SHALL BE CLEANED BY THE USE OF HAND BROOMS OR MECHANICAL SWEEPERS IN A MANNER SATISFACTORY TO THE AUTHORITY UNTIL THE SURFACE IS FREE OF ALL MATERIAL WHICH MIGHT INTERFERE WITH THE BOND BETWEEN THE OLD AND NEW SURFACES. ALL LOOSE MATERIAL REMOVED FROM THE PAVEMENT SURFACE SHALL BE DISPOSED OF OFF–SITE.

CRACKS IN EXISTING PAVEMENT – CRACKS (1/4" WIDE OR LARGER) SHALL BE THOROUGHLY CLEANED OF ALL DIRT AND LOOSE MATERIAL BY MEANS OF A JET OF COMPRESSED AIR. CRACKS FROM 1/4" TO 1" WIDE SHALL BE SEALED WITH A HOT ASPHALT JOINT FILLER; CRACKS GREATER THAN 1" WIDE SHALL BE FILLED WITH A SHEET ASPHALT OR SAND ASPHALT GROUT, AS DIRECTED. CRACKS LESS THAN 1/4" WIDE NEED NOT BE CLEANED OR SEALED.

CASTINGS – CASTINGS LOCATED WITHIN THE AREA TO BE RESURFACED SHALL BE SET TO PROPER GRADE TO ACCOMMODATE THE NEW PAVEMENT INSTALLATION AS PREPARATION FOR PAVEMENT INSTALLATION. WHERE CASTINGS ON INLETS AND CATCH BASINS CANNOT BE RESET BECAUSE OF GRADE CONSIDERATIONS, AS DETERMINED BY THE AUTHORITY, THE EXISTING PAVEMENT SURFACE ADJACENT TO THE CASTING SHALL BE CUT BACK AND REMOVED ALL AROUND THE CASTING FOR A MINIMUM WIDTH OF TWO (2) FEET AND TO A DEPTH OF ONE AND ONE HALF (1–1/2) INCHES SO AS TO PROVIDE A SMOOTH TRANSITION OF THE NEW PAVEMENT SURFACE AT THE DRAIN INLETS AND CATCH BASINS.

TACK COAT – THE EXISTING PAVEMENT SURFACE SHALL BE TREATED WITH AN APPLICATION OF ASPHALT MATERIAL TO SATISFACTORILY BOND THE OLD AND NEW SURFACES. WHEN FEATHERED EDGES ARE PERMITTED, AT THE DISCRETION OF THE AUTHORITY, CARE SHALL BE EXERCISED TO ASSURE THAT THE TACK COAT, IN THE AREAS WHERE THE NEW ASPHALT CONCRETE SURFACE IS BEING FEATHERED TO MEET THE ADJOINING SURFACE, HAS BEEN COATED EVENLY AND UNIFORMLY. MATERIAL AND METHOD OF APPLICATION SHALL BE IN ACCORDANCE WITH THE APPLICABLE STATE SPECIFICATIONS.

THE EXISTING PAVEMENT SURFACE SHALL BE SAW CUT ALONG BOTH SIDES OF THE CUT BACK AREA WHERE THE NEW PAVEMENT IS TO MEET THE EXISTING PAVEMENT. MINIMUM WIDTH OF CUT BACK AREA SHALL BE THREE (3) FEET. THE EXISTING ASPHALT CONCRETE SURFACE SHALL BE CUT TO A DEPTH EQUAL TO THE THICKNESS OF THE OVERLAY COURSE WITH 1½" MINIMUM, TO PROVIDE NEAT TRUE LINES WITH STRAIGHT VERTICAL EDGES FREE OF IRREGULARITIES. THE PAVEMENT SURFACE SHALL BE REMOVED FROM THE CUT BACK AREA BY MILLING OR OTHER APPROVED METHOD TO PROVIDE A MINIMUM OF ONE AND ONE–HALF (1–1/2) INCH THICKNESS OF ASPHALT CONCRETE OVERLAY IN THE CUT BACK AREA WHERE THE ASPHALT CONCRETE OVERLAY IS TO ABUT THE EXISTING PAVEMENT. IMMEDIATELY PRIOR TO PLACEMENT OF THE ASPHALT CONCRETE OVERLAY THE TRIMMED EDGES OF THE EXISTING PAVEMENT SHALL BE TREATED WITH A LIGHT COATING OF ASPHALT CEMENT OR ASPHALT EMULSION TO BOND THE NEW PAVEMENT TO THE OLD PAVEMENT. THE NEW PAVEMENT SURFACE SHALL BE FINISHED FLUSH WITH THE ADJACENT PAVEMENT.

G. DELAY IN ASPHALT CONCRETE SURFACE COURSE INSTALLATION

WHEN THERE IS A DELAY IN THE INSTALLATION OF THE ASPHALT CONCRETE SURFACE COURSE AFTER THE BINDER AND/OR INTERMEDIATE COURSE IS PLACED, WHICH REQUIRES THAT TRAFFIC BE MAINTAINED OR PARKING PROVIDED ON THE BINDER AND/OR INTERMEDIATE COURSE FOR A PERIOD IN EXCESS OF FOUR (4) WEEKS, JUST PRIOR TO PLACEMENT OF THE SURFACE COURSE THE CONTRACTOR WILL BE REQUIRED TO THOROUGHLY CLEAN, REPAIR AND TACK COAT THE BINDER AND/OR INTERMEDIATE SURFACE. COMPENSATION FOR THIS WORK SHALL BE CONSIDERED AS INCLUDED IN THE CONTRACT SUM.

H. TEMPORARY PAVEMENT

UNLESS DIRECTED OTHERWISE, THE CONTRACTOR SHALL INSTALL TEMPORARY PAVEMENT IN AREAS WHERE EXISTING PAVEMENT HAS BEEN DISTURBED DUE TO HIS OPERATIONS. THIS PAVEMENT SHALL BE CONSTRUCTED AFTER THE EXCAVATION HAS BEEN BACKFILLED AND PROPERLY COMPACTED. UNLESS OTHERWISE REQUIRED, THE CONSTRUCTION OF THE TEMPORARY PAVEMENT SHALL CONSIST OF TWO (2) INCHES COMPACTED MEASURE HOT–MIX ASPHALT CONCRETE ON FOUR (4) INCHES COMPACTED MEASURE AGGREGATE BASE OR APPROVED EQUAL.

ROLLING – AFTER SPREADING, THE MATERIAL SHALL BE ROLLED BY MEANS OF A ROLLER WEIGHING NOT LESS THAN TEN (10) TONS. IN ALL PLACES NOT ACCESSIBLE TO THE ROLLER, THE MATERIAL SHALL BE COMPACTED THOROUGHLY BY APPROVED MECHANICAL TAMPERS. THE FINISHED SURFACE OF THE TEMPORARY PAVEMENT SHALL BE FLUSH WITH THE ADJACENT PAVEMENT SURFACE.

MAINTENANCE – THE TEMPORARY PAVEMENT SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL SUCH TIME THAT THE FINAL SETTLEMENT OF THE TRENCH SHALL HAVE TAKEN PLACE IN THE OPINION OF THE AUTHORITY. ANY SETTLEMENT TAKING PLACE SHALL BE MAINTAINED BY THE CONTRACTOR AT HIS EXPENSE BY FURNISHING, SPREADING, AND ROLLING ADDITIONAL MATERIAL OVER THAT PREVIOUSLY LAID. THE CONTRACTOR SHALL CONTINUE THIS MAINTENANCE UNTIL SUCH TIME THAT THE AUTHORITY CONSIDERS THAT FINAL SETTLEMENT OF THE TRENCH HAS OCCURRED AND THAT THE TRENCH IS IN READINESS FOR THE REPLACEMENT OF THE PERMANENT SURFACE.

PUBLIC RIGHTS–OF–WAY – IN PUBLIC RIGHTS–OF–WAY THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

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XI.PAVEMENT & PADS (CONTINUED)

I. PERMANENT PAVEMENT REPLACEMENT

THE CONTRACTOR SHALL SAW CUT AND REPLACE DISTURBED PAVEMENT TO THE LINES AND GRADES AS DIRECTED.

REPLACEMENT OF TEMPORARY PAVEMENTS – IN AREAS WHERE A TEMPORARY PAVEMENT HAS BEEN PLACED, THE CONTRACTOR SHALL REMOVE THE TEMPORARY PAVEMENT TO THE SUBGRADE LINE, FINE GRADE THE SUBGRADE TO THE PROPER ELEVATION, AND COMPACT IT AS DESCRIBED UNDER "PREPARATION OF SUBGRADE".THE CONTRACTOR SHALL EXCAVATE A SHELF TO PROVIDE A BEARING AREA ON ALL SIDES FOR THE NEW PAVEMENT. THE WIDTH OF SAID SHELF SHALL BE AS SHOWN OR DIRECTED.

PUBLIC RIGHTS–OF–WAY – IN PUBLIC RIGHTS–OF–WAY THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

J. CONCRETE PADS

THE CONTRACTOR SHALL INSTALL REINFORCED CONCRETE PADS AS NEEDED FOR TRASH ENCLOSURES AND UTILITY SUPPORT, I.E. GENERATOR ENCLOSURE, TRANSFORMER SWITCH, ELECTRICAL BOX, ETC. AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION. REFER TO THE APPROPRIATE DRAWINGS FOR DETAILED INFORMATION. CONCRETE, REINFORCING, AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE SECTION OF THESE SPECIFICATIONS TITLED "SITE CONCRETE."

XII.SITE CONCRETE

A. SCOPE

WORK UNDER THIS SECTION SHALL APPLY TO ITEMS OF CAST–IN–PLACE CONCRETE TO BE INSTALLED UNDER THE SITE WORK AND SHALL, UNLESS INDICATED OTHERWISE, INCLUDE, BUT NOT BE LIMITED TO, UTILITY STRUCTURES, FOOTINGS, FOUNDATIONS, ENCASEMENTS, THRUST AND ANCHOR BLOCKS, PADS, SIDEWALKS AND CURBS. IF ANY REQUIREMENTS SPECIFIED HEREIN FOR CONCRETE CONSTRUCTION CONFLICTS WITH THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION SHALL APPLY.

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'.

ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. INSTALLATION

SITE CONCRETE SHALL BE CLASS "A" CONCRETE HAVING A TWENTY–EIGHT (28) DAY COMPRESSIVE STRENGTH OF 4,000 PSI. WHERE CONCRETE SURFACES ARE EXPOSED AND VISIBLE IN THE FINISHED WORK, SUCH AS IN THE CONSTRUCTION OF CURBS AND SIDEWALKS THE CEMENT USED SHALL BE OF THE SAME BRAND AND FROM A SINGLE SOURCE, SO THAT THE ITEM OF CONSTRUCTION WILL BE UNIFORM IN COLOR.

FORMS – SHALL BE ACCEPTABLE STEEL OR LUMBER, STRAIGHT AND FREE FROM WARP OR OTHER IRREGULARITIES THAT WILL ADVERSELY AFFECT THE INSTALLATION. FORMS SHALL BE SET TO THE PROPER SHAPE, LINES AND DIMENSIONS AS SHOWN ON THE DRAWINGS AND SHALL BE SUFFICIENTLY TIGHT, BRACED AND SECURED IN PLACE SO THAT THERE WILL BE NO LEAKAGE OF MORTAR OR DISPLACEMENT OF FORMS DURING PLACING OF THE CONCRETE. PRIOR TO PLACING THE CONCRETE, THE CONTACT SURFACES OF THE FORMS SHALL BE GIVEN A LIGHT COATING OF OIL THAT WILL NOT DISCOLOR THE CONCRETE.

FORMS SHALL REMAIN IN PLACE UNTIL CONCRETE HAS HARDENED AND ACQUIRED SUFFICIENT STRENGTH TO SAFELY SUPPORT DEAD AND LIVE LOADS. FORM REMOVAL SHALL BE CARRIED OUT IN SUCH A MANNER TO ENSURE COMPLETE SAFETY AND INTEGRITY OF THE STRUCTURE.

REINFORCEMENT – SHALL BE ACCURATELY CUT, PLACED AND RIGIDLY HELD IN POSITION BY MEANS OF BAR SUPPORTS, SPACERS, TIES OR OTHER ACCEPTABLE MEANS IN SUCH MANNER THAT THE REINFORCING WILL NOT DISPLACE WHEN THE CONCRETE IS POURED. WHEN REINFORCING BARS MUST BE SPLICED, THERE SHALL BE SUFFICIENT LAP TO DEVELOP THE STRENGTH OF THE BAR BY BOND.

CONCRETE PROTECTION FOR REINFORCEMENT – THE STEEL REINFORCEMENT SHALL BE PROTECTED BY THE THICKNESS OF CONCRETE AS INDICATED ON THE DETAILS OF THE DRAWINGS. WHERE NOT OTHERWISE SPECIFIED OR DIRECTED, THE THICKNESS OF CONCRETE OVER THE REINFORCEMENT (CLEAR DIMENSIONS) SHALL BE AS FOLLOWS:

(a) FOR CONCRETE DEPOSITED AGAINST GROUND WITHOUT THE USE OF FORMS – NOT LESS THAN THREE (3) INCHES.

(b) FOR CONCRETE EXPOSED TO THE WEATHER OR EXPOSED TO THE GROUND BUT PLACED IN FORMS – NOT LESS THAN TWO (2) INCHES.

(c)FOR CONCRETE PLACED IN SLABS AND WALLS NOT EXPOSED TO THE GROUND OR TO THE WEATHER – NOT LESS THAN ONE AND ONE HALF (1–1/2) INCHES.

(d) IN ALL CASES, THE THICKNESS OF CONCRETE OVER REINFORCEMENT SHALL BE AT LEAST EQUAL TO THE DIAMETER OF THE REINFORCING BARS.

KEYWAYS AND JOINTS – SHALL BE PROVIDED WHERE AND AS SHOWN IN DETAIL ON THE DRAWINGS. KEYWAYS AND JOINTS NOT INDICATED ON THE DRAWINGS SHALL BE AS APPROVED BY THE AUTHORITY.

PLACEMENT – UNLESS SPECIFIED OTHERWISE, CONCRETE THREE (3) OR MORE INCHES THICK SHALL BE PLACED AND CONSOLIDATED WITH MECHANICAL VIBRATORS USED IN THE CONCRETE BY SKILLED WORKMAN, PROPERLY SUPERVISED. VIBRATORS SHALL NOT BE MOVED LATERALLY OR USED TO TRANSPORT CONCRETE. VIBRATORS SHALL BE USED TO MERGE SUCCESSIVE LAYERS AND PREVENT COLD JOINTS. CONCRETE SHALL BE CONSOLIDATED TO MAXIMUM DENSITY, FREE OF HONEYCOMBING AND TRAPPED AIR. HAND SPADING SHALL BE USED IN CORNERS AND ANGLES OF FORMS WHILE CONCRETE IS PLASTIC. DURING PLACEMENT OPERATIONS, CONCRETE SHALL BE THOROUGHLY CONSOLIDATED AND WORKED WELL AROUND AND INTO THOROUGH CONTACT WITH THE STEEL BEING CAREFUL NOT TO DISTURB THE LOCATION OF THE REINFORCING. OVER–WORKING AND OVER–VIBRATION WHICH MAY CAUSE SEGREGATION SHALL BE AVOIDED.

WHEN CONCRETE IS PLACED ON THE GROUND SURFACE, THE SUBGRADE SHALL BE MOISTENED PRIOR TO PLACING THE CONCRETE, EXCEPT DURING COLD WEATHER PERIODS WHEN FREEZING IS LIKELY TO OCCUR. CONCRETE SHALL BE PLACED IN THE FORM AS NEAR TO ITS FINAL POSITION AS PRACTICABLE. CONCRETE SHALL BE PLACED IN LAYERS TO PREVENT HONEYCOMBING. PROPER CHUTES, TROUGHS AND OTHER APPROVED DEVICES SHALL BE USED TO MINIMIZE FREE FALL OF CONCRETE AND TO CONVEY CONCRETE TO THE PROPER LOCATIONS. IN NO CASE SHALL CONCRETE BE DEPOSITED FROM A HEIGHT THAT WILL SEPARATE THE AGGREGATES. CONCRETE SHALL BE DEPOSITED WITHIN THIRTY (30) MINUTES AFTER MIXING, AS NEARLY AS PRACTICABLE, IN ITS FINAL POSITION TO AVOID SEGREGATION DUE TO REHANDLING OR FLOWING.

COLD WEATHER REQUIREMENTS – ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING THE CONCRETE MATERIALS AND PROTECTING THE CONCRETE DURING FREEZING AND NEAR–FREEZING WEATHER. NO FROZEN MATERIALS OR MATERIALS CONTAINING ICE SHALL BE USED.

ALL CONCRETE MATERIALS AND ALL REINFORCEMENT, FORMS, FILLERS, AND GROUND IN WHICH THE CONCRETE IS TO COME IN CONTACT, SHALL BE FREE FROM FROST. WHENEVER THE TEMPERATURE OF THE SURROUNDING AIR IS BELOW 40 DEGREES F. ALL CONCRETE PLACED IN THE FORMS SHALL HAVE A TEMPERATURE BETWEEN 70 DEGREES F. AND 80 DEGREES F., AND ADEQUATE MEANS SHALL BE PROVIDED FOR MAINTAINING A TEMPERATURE OF NOT LESS THAN 70 DEGREES F. FOR THREE (3) DAYS OR 50 DEGREES F. FOR FIVE (5) DAYS EXCEPT WHEN HIGH EARLY STRENGTH CONCRETE IS AUTHORIZED FOR USE, IN WHICH CASE, THE TEMPERATURE SHALL BE MAINTAINED AT NOT LESS THAN 70 DEGREES F. FOR TWO (2) DAYS OR 50 DEGREES F. FOR THREE (3) DAYS OR FOR AS MUCH MORE TIME AS IS NECESSARY TO INSURE PROPER CURING OF THE CONCRETE. THE HOUSING, COVERING OR OTHER PROTECTION USED IN CONNECTION WITH CURING SHALL REMAIN IN PLACE AND INTACT AT LEAST 24 HOURS AFTER THE ARTIFICIAL HEATING IS DISCONTINUED. NO DEPENDENCE SHALL BE PLACED ON SALT OR OTHER CHEMICALS FOR THE PREVENTION OF FREEZING.

FINISHING – AS SOON AS THE FACE FORMS ARE REMOVED, ALL FINS AND OTHER PROJECTIONS SHALL BE REMOVED CAREFULLY, AND OFFSETS LEVELED AND RUBBED WITH CARBORUNDUM WHERE NECESSARY. POINTING AND FILLING VOIDS SHALL BE DONE ONLY UNDER THE DIRECTION OF THE AUTHORITY. FINISHED CONCRETE SHALL BE DONE BY EXPERIENCED CONCRETE FINISHERS, AND SURFACES SHALL BE CLEAN, SMOOTH, FREE OF HONEYCOMBING, SPAULING, RAGGED EDGES AND LAITANCE.

CURING – CONCRETE SHALL BE PROTECTED FROM THE SUN AND KEPT MOIST FOR AT LEAST SEVEN (7) DAYS. DURING THIS PERIOD, CONCRETE SHALL BE MAINTAINED ABOVE 70 DEGREES F. FOR AT LEAST THREE (3) DAYS OR ABOVE 50 DEGREES F. FOR AT LEAST FIVE (5) DAYS. EXPOSED CONCRETE SHALL BE KEPT THOROUGHLY WETTED DURING THE FIRST WEEK, AND COVERED WITH POLYETHYLENE OR HEAVY PAPER. LIQUID MEMBRANE CURING MEETING THE REQUIREMENTS OF AASHTO DESIGNATION M–148 MAY BE USED UPON APPROVAL OF THE AUTHORITY.

PROTECTION – EVERY PRECAUTION SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT FINISHED SURFACES FROM STAINS, ABRASIONS, OR DAMAGE OF ANY KIND. ADEQUATE PROTECTION SHALL BE PROVIDED AGAINST INJURIOUS ACTION BY SUN, WIND OR FREEZING TEMPERATURES. FRESH CONCRETE SHALL BE THOROUGHLY PROTECTED FROM DAMAGE DUE TO HEAVY RAIN, FLOWING WATER, FREEZING TEMPERATURES AND MECHANICAL INJURY.

C. DEFECTIVE CONCRETE

CONCRETE WORK THAT IS NOT FORMED AS INDICATED OR IS NOT TRUE TO ALIGNMENT, OR IS NOT PLUMB OR LEVEL, OR IS NOT TRUE TO GRADES OR LEVELS, IS FROZEN, OR HAS VOIDS OR ROCK POCKETS, OR HAS SAW DUST, WOOD OR DEBRIS EMBEDDED IN IT, OR DOES NOT FULLY CONFORM TO THE CONTRACT DOCUMENTS, SHALL BE CONSIDERED AS DEFECTIVE AND SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER WITH WORK THAT CONFORMS TO THE CONTRACT DOCUMENTS.

D. CONCRETE COMPOSITION

CLASS "A" CONCRETE SHALL BE AIR–ENTRAINED, READY–MIXED CONCRETE, 4,000 PSI TWENTY–EIGHT (28) DAY COMPRESSIVE STRENGTH AND SHALL CONFORM TO AASHTO DESIGNATION M–85.

(a) CEMENT – SHALL BE PORTLAND CEMENT, TYPE I OR II, CONFORMING TO AASHTO DESIGNATION M–85. CEMENT SHALL BE BY AN AMERICAN MANUFACTURER.

(b) FINE AGGREGATE (SAND) – SHALL CONFORM TO AASHTO M–6 HAVING CLEAR, HARD, DURABLE, UNCOATED GRAINS, FREE FROM DELETERIOUS SUBSTANCES AND SHALL RANGE IN SIZE FROM FINE TO COARSE WITHIN THE FOLLOWING PERCENTAGES BY WEIGHT:

PASSING 3/8" SIEVE	100%
PASSING NO. 4 SIEVE	95 – 100%
PASSING NO. 16 SIEVE	45 – 85%
PASSING NO. 50 SIEVE	10 – 30%
PASSING NO. 100 SIEVE	2 – 10%

(c)COARSE AGGREGATE – SHALL CONFORM TO AASHTO M–80 AND SHALL BE FREE OF DELETERIOUS MATTER OR COATINGS. GRADATION MUST BE WITHIN THE FOLLOWING PERCENTAGES BY WEIGHT:

PASSING 1–1/2" SIEVE	100%
PASSING 1" SIEVE	95 – 100%
PASSING 1/2" SIEVE	25 – 60%
PASSING NO. 4 SIEVE	0 – 10%

(d) WATER – SHALL BE CLEAN AND FRESH, FREE FROM SALT, GREASE, ACIDS, ALKALIS, ORGANIC MATERIALS, OR OTHER DELETERIOUS MATERIALS. WHEN POSSIBLE, WATER SHALL BE FROM A MUNICIPAL SYSTEM.

(e)REINFORCEMENT – SHALL BE NEW DEFORMED BILLET STEEL BARS FREE OF LOOSE RUST, CONFORMING TO ASTM A–615, GRADE 60, WITH MINIMUM YIELD OF 60,000 PSI. WIRE FABRIC SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT" ASTM A–185.

(f) THERE SHALL BE NO LESS THAN SIX (6) SACKS OF CEMENT PER CUBIC YARD. THE CONCRETE SHALL CONTAIN NO MORE THAN SIX (6) GALLONS OF WATER PER SACK OF CEMENT, AND SHALL PRODUCE A SLUMP OF NOT MORE THAN FOUR (4) INCHES. AIR CONTENT SHALL BE 7% (+1%).

(g) THE USE OF ACCELERATORS SHALL NOT BE USED UNLESS PRIOR APPROVAL IS RECEIVED FROM THE AUTHORITY.

XIII.PAVEMENT STRIPING, MARKINGS & SIGNS

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL, AND EQUIPMENT NECESSARY AND REQUIRED TO INSTALL PAVEMENT STRIPING, MARKINGS AND SIGNS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, CLEANING OF PAVEMENT, LAYOUT AND PROTECTION OF STRIPING AND MARKINGS.

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'.

ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. PAVEMENT STRIPING AND MARKINGS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING TEMPORARY STRIPING AND MARKINGS AND ALL TRACKING MARKS, SPILLED PAINT OR PAINT APPLIED IN UNAUTHORIZED AREAS. THE CONTRACTOR SHALL CLEAN THE PAVEMENT OF DUST, DIRT, OLD PAVEMENT STRIPING AND MARKINGS, CONCRETE CURING COMPOUNDS AND OTHER FOREIGN MATERIAL WHICH MAY BE DETRIMENTAL TO THE ADHESION OF THE PAINT FILM.

THE PAINT SHALL BE APPLIED ONLY ON THOROUGHLY DRY PAVEMENT SURFACES WHEN THE ATMOSPHERIC TEMPERATURE IS AT OR ABOVE 40 DEGREES F. AND WHEN THE WEATHER CONDITIONS ARE FAVORABLE. AFTER STRIPING AND/OR MARKINGS HAVE BEEN INSTALLED, THEY SHALL BE PROTECTED TO PREVENT TRACKING AND MARRING OF THE STRIPING AND MARKINGS.

PAINTED PAVEMENT STRIPING AND MARKINGS SHALL, UNLESS OTHERWISE NOTED HEREIN, BE APPLIED WITH ATOMIZING SPRAY TYPE STRIPING MACHINES. THE EQUIPMENT SHALL BE COMPATIBLE WITH AND SUITABLE FOR THE APPLICATION OF THE TYPE OF PAINT BEING USED. APPLIED MARKINGS SHALL HAVE CLEAN–CUT EDGES, TRUE AND SMOOTH ALIGNMENT, AND UNIFORM FILM THICKNESS OF 15 +1 MILS. PAINT SHALL BE SHERWIN–WILLIAMS PRO–PARK WATERBORNE TRAFFIC MARKING PAINT OR EQUAL AS APPROVED BY THE AUTHORITY. APPROVED EQUAL SHALL BE BASED ON NYSDOT TECHNICAL SERVICES APPROVED LIST OF PAVEMENT MARKING MATERIALS, TRAFFIC PAINT (727–09) (WATERBORNE).

THE CONTRACTOR MAY APPLY WHITE AND YELLOW PAINT, UTILIZING ROLLERS AND/OR BRUSHES FOR MARKING GORE AREAS, TURN ARROWS, LETTERS, STOP BARS, SHORT TEMPORARY DETOURS OR OTHER SUCH AREAS. NORMAL SPREADING RATES FOR PAVEMENT MARKING PAINTS SHALL BE FROM 100 TO 115 SQUARE FEET PER GALLON SO AS TO OBTAIN A WET FILM THICKNESS OF 15 +1 MILS.

C. STRIPING SCHEDULE

UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE AUTHORITY, THE CONTRACTOR SHALL PROVIDE STRIPING AND MARKING AS FOLLOWS:

WHITE

1. STOP LINES
2. SOLID EDGE LINES
3. PEDESTRIAN CROSSWALKS
4. WORDS AND ARROWS
5. SOLID LANE LINES
6. BROKEN LANE LINES IN PARKING AREAS
7. PARKING STALLS (EXCEPT ACCESSIBLE STALLS)
8. HATCHED ISLANDS IN PARKING AREAS

BLUE

1. ACCESSIBLE PARKING STALLS
2. ACCESSIBLE SYMBOLS

CHROME YELLOW

1. SOLID DOUBLE LINES
2. SOLID SINGLE LINES
3. FIRE LANES
4. PROHIBITED PARKING AREAS
5. HATCHED CENTER ISLANDS
6. PROHIBITED DRIVING AREAS
7. HATCHED ISLANDS IN PARKING AREAS

D. SIGNS

SIGNS – SHALL BE AS INDICATED IN THE SIGN TABLE ON THE DRAWINGS AND SHALL BE FABRICATED IN ACCORDANCE WITH THE DETAILS OF THE DRAWINGS AND AS SPECIFIED HEREIN. FABRICATION OF METAL PARTS SHALL BE ACCOMPLISHED IN UNIFORM AND WORKMANLIKE MANNER. ALL FABRICATION, INCLUDING SHEARING, CUTTING, AND PUNCHING OF HOLES SHALL BE COMPLETED PRIOR TO METAL DEGREASING AND APPLICATION OF REFLECTIVE SHEETING. METAL PANELS SHALL BE CUT TO SIZE AND SHAPE AND SHALL BE FREE OF BUCKLES, WARP, DENTS, COCKLES, BURRS, AND DEFECTS RESULTING FROM FABRICATION. THE SURFACE OF ALL SIGN PANELS SHALL BE FLAT. ALL HOLES SHALL BE 3/8" DIAMETER DRILLED OR PUNCHED, AND ALL HOLE LOCATIONS SHALL BE CENTERED AND SHALL NOT CRUSH, CHIP, BURN OR OTHERWISE MAR THE SIGN FACE.

SIGNS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE DEPARTMENT OF TRANSPORTATION.

STEEL CHANNEL POSTS – STEEL CHANNEL POSTS SHALL BE SET VERTICAL AND PLUMB IN THE LOCATIONS SHOWN AND/OR ORDERED BY THE AUTHORITY. POSTS SHALL BE DRIVEN A MINIMUM OF THREE (3) FEET INTO FIRM GROUND AND/OR INSTALLED IN CONCRETE–FILLED STEEL PIPE PROTECTION POSTS WHERE SO SPECIFIED ON THE DRAWINGS. SIGNS SHALL BE SECURELY FASTENED TO THE POSTS AT THE CORRECT HEIGHT BY MEANS OF NON–CORROSIVE HARDWARE.

POSTS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR COLD ROLLED CARBON SHEET STEEL, COMMERCIAL QUALITY ASTM A–366. POSTS SHALL BE MINIMUM 11 GAUGE STEEL WEIGHING NO LESS THAN THREE (3) LBS./FT. WITH 3/8" HOLES ON ONE (1) INCH CENTERS TO RECEIVE SIGN FACES. POSTS SHALL BE GALVANIZED FOR THE FULL LENGTH BY THE HOT DIP METHOD AND SHALL HAVE A CONTINUOUS COATING OF PURE ZINC OF A UNIFORM THICKNESS. ALL HOLES IN THE STEEL POSTS SHALL BE PIERCED BEFORE GALVANIZING.

XIV.MISCELLANEOUS CONSTRUCTION

A. SCOPE

THE CONTRACTOR SHALL PROVIDE ALL LABOR, PLANT, MATERIAL, AND EQUIPMENT NECESSARY AND REQUIRED TO FURNISH AND INSTALL MISCELLANEOUS ITEMS OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO:

(a) RIP–RAP APRONS AND/OR ENERGY DISSIPATORS
(b) OVERFLOW SPILLWAY
(c)CHAIN LINK FENCE (VINYL COATED)
(d) CHAIN LINK HINGED GATES (VINYL COATED)
(e)CORRUGATED STEEL GUIDE RAIL
(f) CONCRETE HEADWALL
(g) STEEL PIPE PROTECTION POSTS
(h) TRASH ENCLOSURE WITH CONCRETE PAD

ALL SECTIONS OF THIS SPECIFICATION BELOW, SHALL HAVE METHODS AND MATERIALS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE OR GEOTECHNICAL ENGINEER, HEREIN REFERRED TO AS THE 'AUTHORITY'.

ALL WORK SHALL BE AS APPROVED, AND PERFORMED TO THE SATISFACTION OF THE OWNER, OWNER'S FIELD REPRESENTATIVE, GEOTECHNICAL ENGINEER, OR THE AUTHORITY HAVING JURISDICTION.

B. RIP–RAP APRONS AND/OR ENERGY DISSIPATORS

THE CONTRACTOR SHALL FURNISH AND INSTALL RIP–RAP APRONS AND/OR ENERGY DISSIPATORS WHERE AND AS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED BY THE AUTHORITY.

CONSTRUCTION DETAILS – THE GROUND SURFACE ON WHICH THE RIP–RAP IS TO BE PLACED SHALL BE DRESSED AND GRADED TO A SMOOTH SURFACE. ALL SOFT AND SPONGY MATERIALS SHALL BE REMOVED TO THE DEPTHS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE AUTHORITY AND REPLACED WITH APPROVED MATERIAL. RIP–RAP APRONS AND/OR ENERGY DISSIPATORS SHALL BE PLACED ON A BEDDING OF COMPACTED SAND OR GRAVEL AS MAY BE SHOWN IN DETAIL ON THE DRAWINGS. FILLED AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THESE SPECIFICATIONS. THE STONES SHALL BE PLACED ON THE BEDDING MATERIAL SO THAT THE DIMENSION APPROXIMATELY EQUAL TO THE LAYER THICKNESS IS PERPENDICULAR TO THE GROUND SURFACE AND THE WEIGHT OF THE STONE IS CARRIED BY THE UNDERLYING MATERIAL. THE RIP–RAP SHALL BE PROPERLY ALIGNED AND PLACED SO AS TO ELIMINATE VOID SPACES BETWEEN THE ADJACENT STONES.

MATERIALS – THE STONES FOR THE RIP–RAP SHALL BE HARD AND ANGULAR IN SHAPE, RESISTANT TO WEATHERING AND REASONABLY FREE FROM SOIL, SHALE, AND ORGANIC MATERIALS. UNLESS DIRECTED OTHERWISE, FIFTY (50) PERCENT OF THE MATERIAL USED SHALL WEIGH MORE THAN 200 LBS.; THE REMAINDER OF THE STONE SHALL WEIGH FROM 50 LBS. TO 200 LBS. EACH. THE TYPE AND GRADATION OF THE MATERIALS FURNISHED FOR USE IN RIP–RAP APRONS AND/OR ENERGY DISSIPATORS SHALL BE APPROVED BY THE AUTHORITY.

C. OVERFLOW SPILLWAY

THE CONTRACTOR SHALL FURNISH AND INSTALL AN OVERFLOW SPILLWAY WHERE AND AS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED BY THE AUTHORITY.

CONSTRUCTION DETAILS – THE GROUND SURFACE ON WHICH THE SPILLWAY IS TO BE PLACED SHALL BE STRIPPED OF TOPSOIL, BRUSH, ETC., DRESSED AND GRADED TO A SMOOTH SURFACE. ALL SOFT AND SPONGY MATERIALS SHALL BE REMOVED AS DIRECTED AND REPLACED WITH APPROVED MATERIAL. THE SPILLWAY SHALL BE CONSTRUCTED AS DETAILED ON THE PLANS WITH APPROVED COMPACTED EMBANKMENT FILL, PERMANENT TURF REINFORCEMENT MAT, FILTER FABRIC, RIP–RAP SLOPE PAVING ON SLOPE, AND A BROAD–CRESTED WEIR/EMERGENCY SPILLWAY AS SHOWN.

FILL CONSTRUCTION SHALL BE DONE UNDER THE INSPECTION OF A QUALIFIED SOILS ENGINEER. IN–PLACE FIELD DENSITY TESTS MUST BE DONE ON EACH LIFT TO ENSURE SPECIFICATIONS OF THE SOILS ENGINEER ARE BEING MET.

D. CHAIN LINK FENCE (VINYL COATED)

THE CONTRACTOR SHALL FURNISH AND INSTALL VINYL COATED CHAIN LINK FENCE OF THE HEIGHT INDICATED AND WHERE SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE AUTHORITY.

PRIOR TO INSTALLATION OF THE FENCE, THE CONTRACTOR SHALL CHECK THE FENCE LAYOUT WITH THE AUTHORITY WHO MUST APPROVE THE LAYOUT BEFORE ANY OF THE WORK IS DONE.

CONSTRUCTION DETAILS – ALL POSTS SHALL BE SET VERTICAL AND PLUMB IN CONCRETE FOUNDATIONS OF THE DEPTH AND DIAMETER SHOWN IN DETAIL ON THE DRAWINGS. POSTS SHALL BE SET TO THE REQUIRED GRADE AND ALIGNMENT AND SHALL BE EQUALLY SPACED ALONG EACH SIDE. POST SPACING SHALL BE NOT GREATER THAN EIGHT (8) FEET.

FABRIC SHALL BE SECURELY FASTENED TO POSTS, RAILS, BRACES AND TENSION WIRE (OR BOTTOM RAIL WHEN SPECIFIED) BY APPROVED METHOD. THE FABRIC SHALL BE SECURED TO ALL END, CORNER AND GATE POSTS WITH STRETCHER BARS FASTENED TO THE POSTS AND STRETCHER BANDS SPACED AT A MAXIMUM OF 14 INCHES IN A MANNER PERMITTING ADJUSTMENT OF FABRIC TENSION. FABRIC SHALL BE CONTINUOUS ALONG EACH STRETCH OF FENCE. BOTTOM OF FABRIC SHALL BE INSTALLED WITH A MAXIMUM OF ONE AND ONE–HALF (1–1/2) INCH CLEARANCE FROM GROUND SURFACE.

ALL TOP RAILS SHALL PASS THROUGH THE BASE OF THE POST CAPS AND SHALL FORM A CONTINUOUS BRACE FROM END TO END OF EACH STRETCH OF FENCE. TOP RAIL LENGTHS SHALL BE JOINED WITH SLEEVE COUPLINGS WITH EXPANSION SLEEVES PROVIDED AT 100 FOOT INTERVALS. TOP RAILS SHALL BE SECURELY FASTENED TO END POSTS BY APPROVED RAIL END CONNECTORS. HORIZONTAL BRACES SHALL BE PROVIDED AT END AND CORNER PANELS BETWEEN LINE POST AND EACH ADJACENT END, CORNER, AND GATE POST MIDWAY BETWEEN THE TOP RAIL AND GROUND AS SHOWN IN DETAIL ON THE DRAWINGS. DIAGONAL TRUSS ROD WITH TURN BUCKLE SHALL ALSO BE PROVIDED AT THESE LOCATIONS.

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MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
2	ISSUED FOR BID	10.15.21

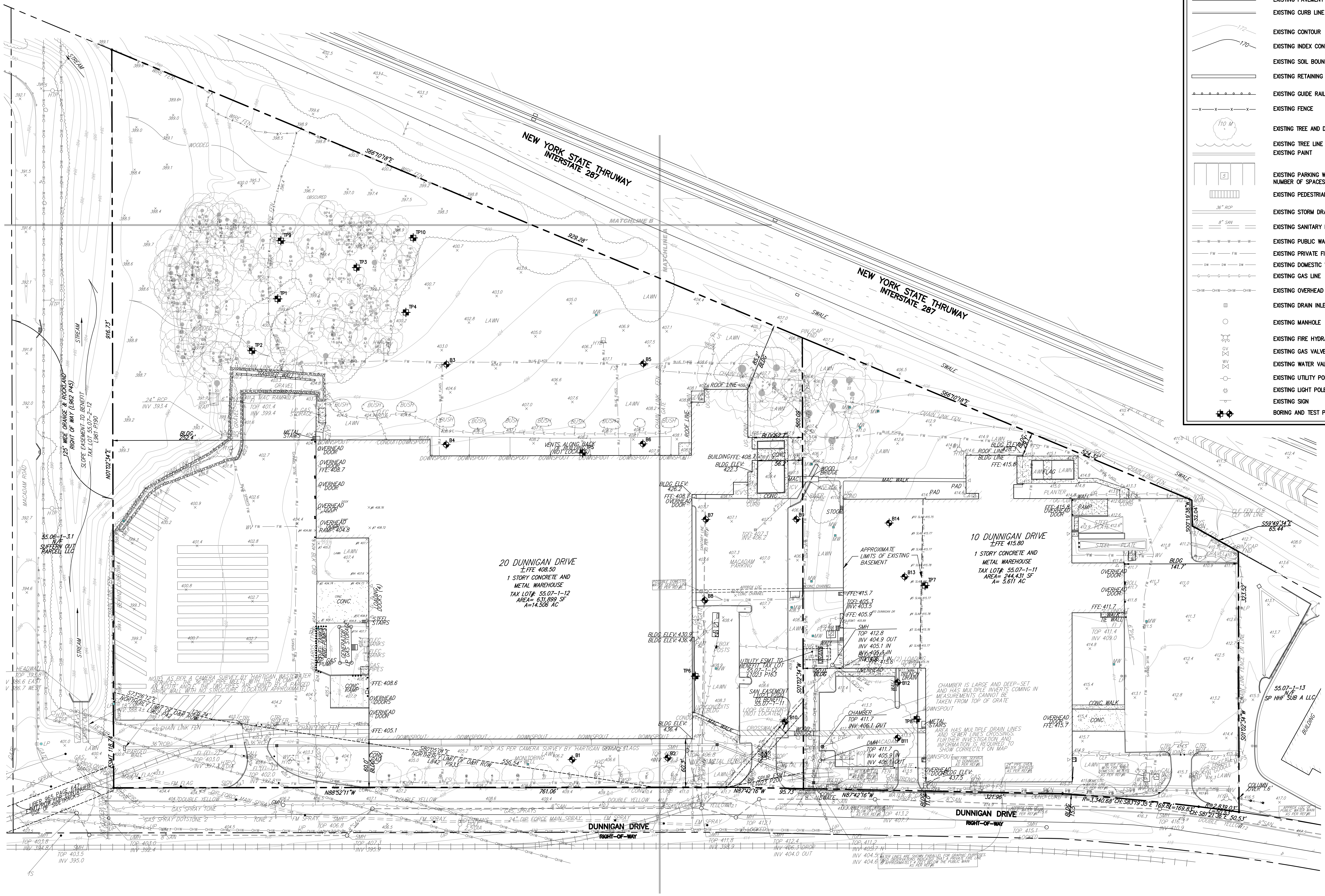
DRAWN BY : DC
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 09.10.2021
SCALE : N.T.S
ISSUE :

DRAWING TITLE : CIVIL SPECIFICATIONS

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

DWG NUMBER : C-006

JMC PROJECT: 19005-1
SCR: EXISTING.SCR
DWG FILE: 19005-NOTES


NEW YORK STATE THRUWAY
INTERSTATE 287
20 DUNNIGAN DRIVE
±FFE 408.50
1 STORY CONCRETE AND
METAL WAREHOUSE
TAX LOT# 55.07-1-12
AREA= 631,899 SF
A=14.506 AC
10 DUNNIGAN DRIVE
±FFE 415.80
1 STORY CONCRETE AND
METAL WAREHOUSE
TAX LOT# 55.07-1-11
AREA= 244,431 SF
A= 5.611 AC
DUNNIGAN DRIVE
RIGHT-OF-WAY
MACADAM ROAD
STREAM
125' WIDE ORANGE & ROCKLAND
RIGHT OF WAY (L962 P45)
SLOPE EASEMENT TO BENEFIT
TAX LOT 55.07-2-12
L961 P190
55.06-1-3.1
N/F
SUFFERN OUT
PARCEL LLC
55.07-1-13
N/F
SP HHF SUB A LLC
MATCHLINE A
MATCHLINE B
SWALE
S66°10'18"E
929.28'
N01°02'34"E
916.73'
N88°52'11"W
761.06'
S01°02'34"W
560.09'
N87°42'16"W
S01°02'34"W
323.52'
S59°49'34"E
65.44'
APPROXIMATE LIMITS OF EXISTING BASEMENT
CHAMBER IS LARGE AND DEEP-SET AND HAS MULTIPLE INVERTS COMING IN MEASUREMENTS CANNOT BE TAKEN FROM TOP OF GRATE
AREA HAS MULTIPLE DRAIN LINES AND SEWER LINES CROSSING. FURTHER INVESTIGATION AND INFORMATION IS REQUIRED TO SHOW CORRECTLY ON MAP
WATER LINES ARE SHOWN PARALLEL FOR GRAPHIC PURPOSES. FIELD OBSERVATIONS INDICATED THAT A PRIVATE FIRE LINE IS APPROXIMATELY 4 FEET BELOW THE PUBLIC MAIN AS PER REF#6
BUILDING

TREE LEGEND

12 / K2 — SIZE IN INCHES (LARGEST DIA SHOWN IN TWIN/TRIPLE)
LETTER INDICATES TREE TYPE (SEE BELOW)
SECOND NUMBER (2), (3) INDICATES TWIN/TRIPLE

A = ASH
B = BIRCH
BP = BRADFORD PEAR
C = CHERRY
E = ELM
K = OAK
L = LOCUST
M = MAPLE
P = PINE
PL = POPLAR
S = SUMAC
SY = SYCAMORE
T = TULIP

MANY BRADFORD PEARS ARE CLUMPED TOGETHER. SHOWN AS BP4, BP5 (TYP)

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- WLF-63 WLF-64 WLF-65 EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- 172 EXISTING CONTOUR
- 170 EXISTING INDEX CONTOUR
- EXISTING SOIL BOUNDARY
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- —x—x—x—x— EXISTING FENCE
- T10 M EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING PAINT
- 5 EXISTING PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- 36" RCP EXISTING STORM DRAIN LINE AND SIZE
- 8" SAN EXISTING SANITARY LINE AND SIZE
- —W—W—W—W—W—W— EXISTING PUBLIC WATER LINE
- —FW—FW— EXISTING PRIVATE FIRE LINE
- —DW—DW—DW— EXISTING DOMESTIC WATER LINE
- —G—G—G—G—G—G— EXISTING GAS LINE
- —OHW—OHW—OHW—OHW— EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- ○ EXISTING MANHOLE
- HYD EXISTING FIRE HYDRANT
- GV EXISTING GAS VALVE
- WV EXISTING WATER VALVE
- EXISTING UTILITY POLE
- ☼ EXISTING LIGHT POLE
- EXISTING SIGN
- BORING AND TEST PIT LOCATIONS

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REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	07.16.20
2	REISSUED PER PB COMMENTS	08.21.20
3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	FOR PLANNING BOARD APPROVAL	04.09.21
6	REISSUED PER ENGINEER COMMENTS	05.10.21
7	ISSUED FOR DOB SUBMISSION	09.10.21
8	ISSUED FOR BID	10.15.21

DRAWN BY : DC
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 1.16.2020
SCALE : 1" = 60'
ISSUE :

DRAWING TITLE :

OVERALL EXISTING CONDITIONS MAP

DWG NUMBER :

C-010

JMC PROJECT: 19005-1
SCR: EXISTING.SCR
DWG FILE: 19005-BASE

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REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

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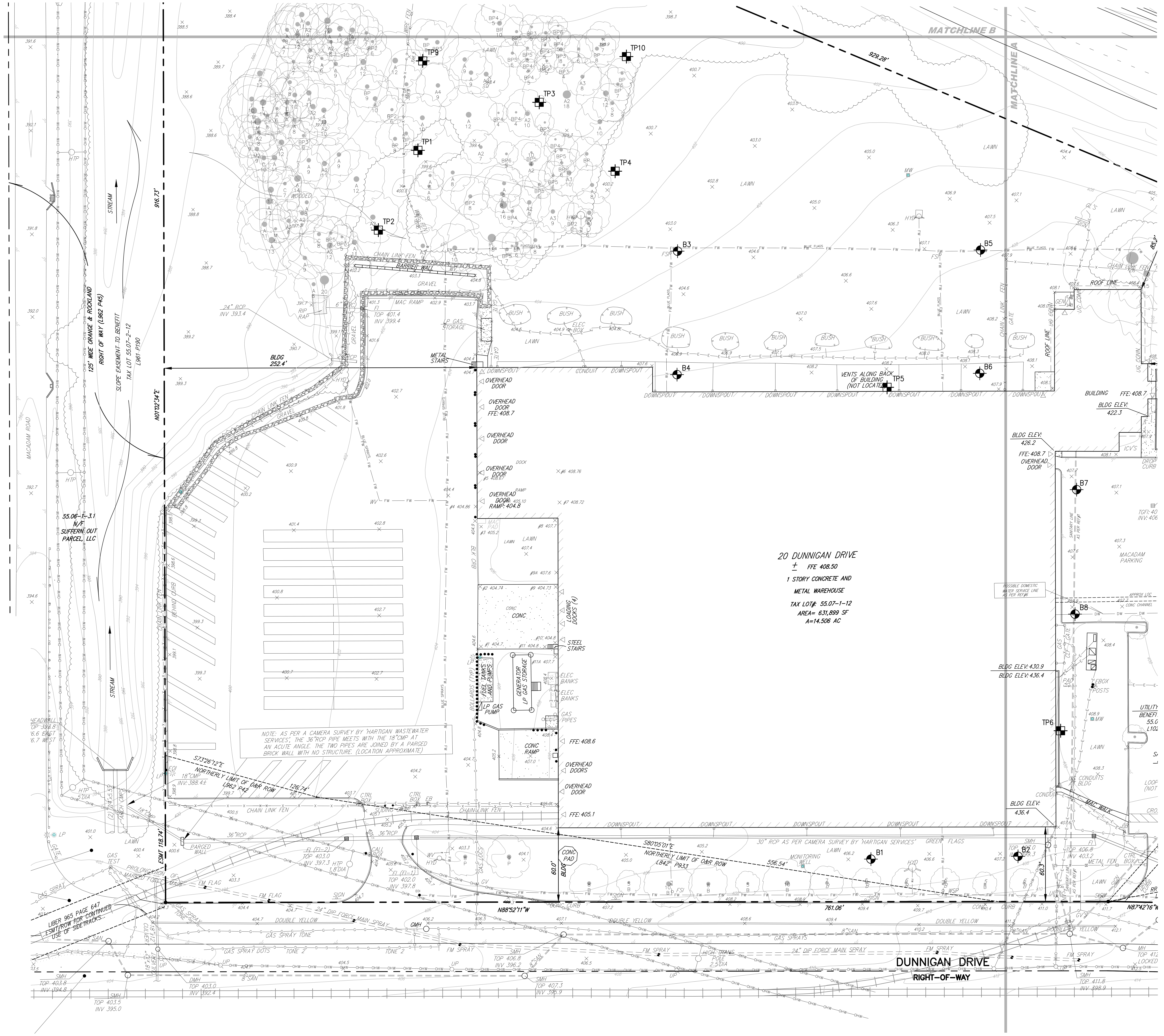
MATCHLINE B
MATCHLINE A
929.28'
TP1
TP2
TP3
TP4
TP5
TP6
TP9
TP10
B1
B2
B3
B4
B5
B6
B7
B8
LAWN
BUSH
WOODED
CHAIN LINK FEN
BARRIER WALL
GRAVEL
MAC RAMP
LP GAS STORAGE
METAL STAIRS
BLDG 252.4'
125' WIDE ORANGE & ROCKLAND RIGHT OF WAY (L.962 P45)
SLOPE EASEMENT TO BENEFIT TAX LOT 55.07-2-12 L961 P190
STREAM
MACADAM ROAD
916.73'
N01°02'34"E
55.06-1-3.1
N/F
SUFFERN OUT PARCEL, LLC
OVERHEAD DOOR
OVERHEAD DOOR FFE: 408.7
RAMP
LOADING DOCKS (4)
STEEL STAIRS
FUEL TANKS AND PUMPS
GENERATOR LP GAS STORAGE
LP GAS PUMP
BOLLARDS (TYP)
ELEC BANKS
GAS PIPES
CONC
CONC RAMP
FFE: 408.6
FFE: 405.1
20 DUNNIGAN DRIVE
FFE 408.50
1 STORY CONCRETE AND METAL WAREHOUSE
TAX LOT# 55.07-1-12
AREA= 631,899 SF
A=14.506 AC
VENTS ALONG BACK OF BUILDING (NOT LOCATED)
DOWNSPOUT
BUILDING FFE: 408.7
BLDG ELEV: 422.3
BLDG ELEV: 426.2
BLDG ELEV: 430.9
BLDG ELEV: 436.4
ROOF LINE
MACADAM PARKING
S73°26'12"E
NORTHERLY LIMIT OF O&R ROW
L962 P42
126.74'
S80°05'01"E
NORTHERLY LIMIT OF O&R ROW
L842 P933
556.54'
N88°52'11"W
761.06'
N87°42'16"W
30" RCP AS PER CAMERA SURVEY BY 'HARTIGAN SERVICES'
LIBER 965 PAGE 647
ESMT/ROW FOR CONTINUED USE OF SIDETRACKS
ESMT 118.74'
DOUBLE YELLOW
24" DIP FORCE MAIN SPRAY
GAS SPRAY
DUNNIGAN DRIVE
RIGHT-OF-WAY

NOTE: AS PER A CAMERA SURVEY BY 'HARTIGAN WASTEWATER SERVICES', THE 36"RCP PIPE MEETS WITH THE 18"CMP AT AN ACUTE ANGLE. THE TWO PIPES ARE JOINED BY A PARGED BRICK WALL WITH NO STRUCTURE. (LOCATION APPROXIMATE)

LEGEND

— — —	EXISTING PROPERTY LINE
— — —	ADJACENT PROPERTY LINE
- - - -	EXISTING EASEMENT LINE
WLF-63 WLF-64 WLF-65	EXISTING WETLAND LINE AND DELINEATION
- - - -	EXISTING BUILDING OVERHANG
//////	EXISTING BUILDING LINE
——	EXISTING PAVEMENT EDGE
═══	EXISTING CURB LINE
172	EXISTING CONTOUR
170	EXISTING INDEX CONTOUR
	EXISTING SOIL BOUNDARY
▭	EXISTING RETAINING WALL
o o o o	EXISTING GUIDE RAIL
—x—x—x—	EXISTING FENCE
T10 M	EXISTING TREE AND DESIGNATION
	EXISTING TREE LINE
═══	EXISTING PAINT
5	EXISTING PARKING WITH NUMBER OF SPACES
▥	EXISTING PEDESTRIAN CROSSING
36" RCP	EXISTING STORM DRAIN LINE AND SIZE
8" SAN	EXISTING SANITARY LINE AND SIZE
—W—W—W—	EXISTING PUBLIC WATER LINE
— FW — FW —	EXISTING PRIVATE FIRE LINE
— DW — DW — DW —	EXISTING DOMESTIC WATER LINE
—G—G—G—	EXISTING GAS LINE
—OHW—OHW—OHW—	EXISTING OVERHEAD WIRES
▥	EXISTING DRAIN INLET
○	EXISTING MANHOLE
	EXISTING FIRE HYDRANT
GV ⋈	EXISTING GAS VALVE
WV ⋈	EXISTING WATER VALVE
—○—	EXISTING UTILITY POLE
☼	EXISTING LIGHT POLE
—o—	EXISTING SIGN
	BORING AND TEST PIT LOCATIONS

TREE LEGEND

12 SIZE IN INCHES (LARGEST DIA SHOWN IN TWIN/TRIPLE)
K2 LETTER INDICATES TREE TYPE (SEE BELOW)
SECOND NUMBER (2), (3) INDICATES TWIN/TRIPLE

A	ASH	M	MAPLE
B	BIRCH	P	PINE
BP	BRADFORD PEAR	PL	POPLAR
C	CHERRY	S	SUMAC
E	ELM	SY	SYCAMORE
K	OAK	T	TULIP
L	LOCUST		

MANY BRADFORD PEARS ARE CLUMPED TOGETHER. SHOWN AS BP4, BP5 (TYP)

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	1.16.2020
SCALE :	1" = 40'
ISSUE :	

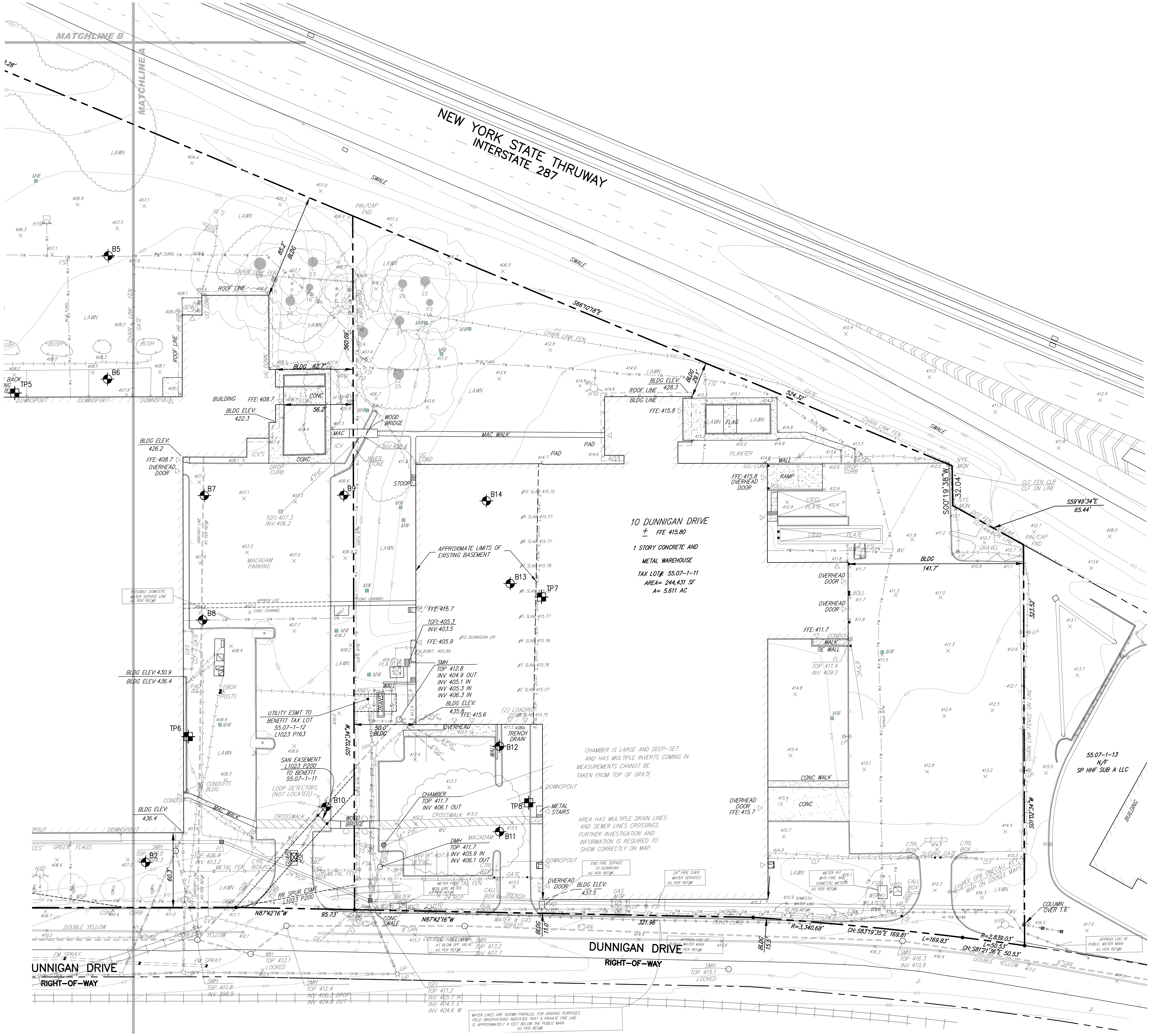
DRAWING TITLE :

EXISTING CONDITIONS MAP

DWG NUMBER :

C-011

JMC PROJECT: 19005-1
SCR: EXISTING.SCR
DWG FILE: 19005-BASE


MATCHLINE B
MATCHLINE A
NEW YORK STATE THRUWAY
INTERSTATE 287
SWALE
LAWN
PIN/CAP FND
S66°10'18"E
S24°15'...E
CHAIN LINK FEN
10 DUNNIGAN DRIVE
± FFE 415.80
1 STORY CONCRETE AND METAL WAREHOUSE
TAX LOT# 55.07-1-11
AREA= 244,431 SF
A= 5.611 AC
APPROXIMATE LIMITS OF EXISTING BASEMENT
S00°19'38"W 32.04'
S59°49'34"E 65.44'
BLDG 141.7'
S01°02'34"W
N/F 55.07-1-13 SP HHF SUB A LLC
BUILDING
MACADAM PARKING
UTILITY ESMT TO BENEFIT TAX LOT 55.07-1-12 L1023 P163
SAN EASEMENT L1023 P200 TO BENEFIT 55.07-1-11
LOOP DETECTORS (NOT LOCATED)
CHAMBER IS LARGE AND DEEP-SET AND HAS MULTIPLE INVERTS COMING IN MEASUREMENTS CANNOT BE TAKEN FROM TOP OF GRATE
AREA HAS MULTIPLE DRAIN LINES AND SEWER LINES CROSSINGS. FURTHER INVESTIGATION AND INFORMATION IS REQUIRED TO SHOW CORRECTLY ON MAP
N87°42'16"W
N87°42'16"W 321.98'
R=3,340.68'
CH:S83°19'35"E 169.81'
L=169.83'
R=2,839.03'
L=50.53'
CH:S81°21'36"E 50.53'
DUNNIGAN DRIVE
RIGHT-OF-WAY
B2
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
TP5
TP6
TP7
TP8
WATER LINES ARE SHOWN PARALLEL FOR GRAPHIC PURPOSES. FIELD OBSERVATIONS INDICATED THAT A PRIVATE FIRE LINE IS APPROXIMATELY 4 FEET BELOW THE PUBLIC MAIN AS PER REF#

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION (WLF-63, WLF-64, WLF-65)
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR (172)
- EXISTING INDEX CONTOUR (170)
- EXISTING SOIL BOUNDARY
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION (T10 M)
- EXISTING TREE LINE
- EXISTING PAINT
- EXISTING PARKING WITH NUMBER OF SPACES (5)
- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE (36" RCP)
- EXISTING SANITARY LINE AND SIZE (8" SAN)
- EXISTING PUBLIC WATER LINE (W)
- EXISTING PRIVATE FIRE LINE (FW)
- EXISTING DOMESTIC WATER LINE (DW)
- EXISTING GAS LINE (G)
- EXISTING OVERHEAD WIRES (OHW)
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE (GV)
- EXISTING WATER VALVE (WV)
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- BORING AND TEST PIT LOCATIONS

TREE LEGEND

12 SIZE IN INCHES (LARGEST DIA SHOWN IN TWIN/TRIPLE)
K2 LETTER INDICATES TREE TYPE (SEE BELOW)
SECOND NUMBER (2), (3) INDICATES TWIN/TRIPLE

A	= ASH	M	= MAPLE
B	= BIRCH	P	= PINE
BP	= BRADFORD PEAR	PL	= POPLAR
C	= CHERRY	S	= SUMAC
E	= ELM	SY	= SYCAMORE
K	= OAK	T	= TULIP
L	= LOCUST		

MANY BRADFORD PEARS ARE CLUMPED TOGETHER. SHOWN AS BP4, BP5 (TYP)

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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2	REISSUED PER PB COMMENTS	08.21.20
3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	FOR PLANNING BOARD APPROVAL	04.09.21
6	REISSUED PER ENGINEER COMMENTS	05.10.21
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DRAWING TITLE :
EXISTING CONDITIONS MAP

DWG NUMBER :
C-012

JMC PROJECT: 19005-1
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DWG FILE: 19005-BASE

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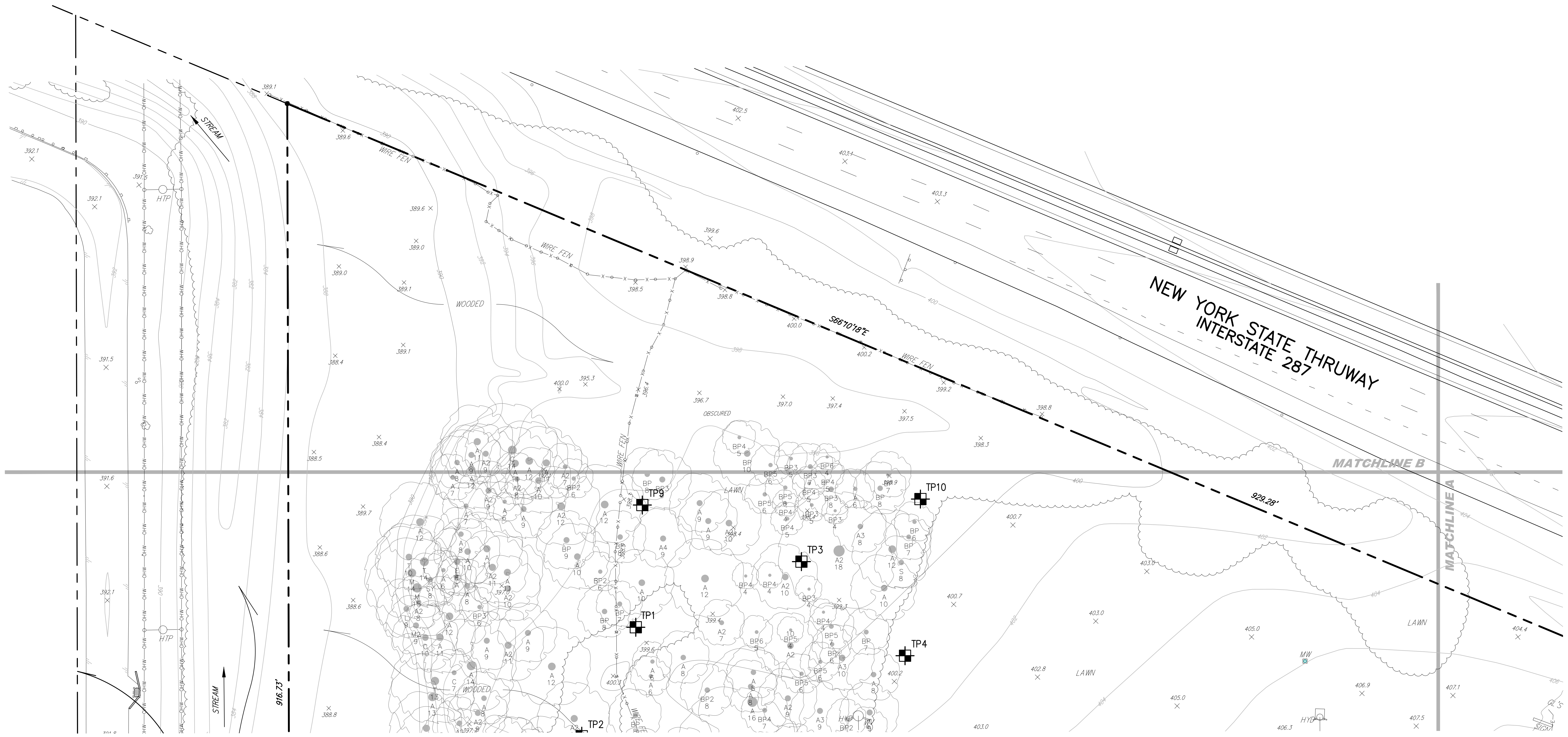

LEGEND

EXISTING PROPERTY LINE
ADJACENT PROPERTY LINE
EXISTING EASEMENT LINE
WLF-63 WLF-64 WLF-65
EXISTING WETLAND LINE AND DELINEATION
EXISTING BUILDING OVERHANG
EXISTING BUILDING LINE
EXISTING PAVEMENT EDGE
EXISTING CURB LINE
172
EXISTING CONTOUR
170
EXISTING INDEX CONTOUR
EXISTING SOIL BOUNDARY
EXISTING RETAINING WALL
EXISTING GUIDE RAIL
—x——x——x——x—
EXISTING FENCE
T10 M
EXISTING TREE AND DESIGNATION
EXISTING TREE LINE
EXISTING PAINT
5
EXISTING PARKING WITH
NUMBER OF SPACES
EXISTING PEDESTRIAN CROSSING
36" RCP
EXISTING STORM DRAIN LINE AND SIZE
8" SAN
EXISTING SANITARY LINE AND SIZE
—W—W—W—W—W—W—
EXISTING PUBLIC WATER LINE
—FW—FW—
EXISTING PRIVATE FIRE LINE
—DW—DW—DW—
EXISTING DOMESTIC WATER LINE
—G—G—G—G—G—G—
EXISTING GAS LINE
—OHW—OHW—OHW—OHW—
EXISTING OVERHEAD WIRES
EXISTING DRAIN INLET
EXISTING MANHOLE
EXISTING FIRE HYDRANT
GV
EXISTING GAS VALVE
WV
EXISTING WATER VALVE
EXISTING UTILITY POLE
EXISTING LIGHT POLE
EXISTING SIGN
BORING AND TEST PIT LOCATIONS

TREE LEGEND

12 — SIZE IN INCHES (LARGEST DIA SHOWN IN TWIN/TRIPLE)
K2 — LETTER INDICATES TREE TYPE (SEE BELOW)
SECOND NUMBER (2), (3) INDICATES TWIN/TRIPLE

A = ASH
B = BIRCH
BP = BRADFORD PEAR
C = CHERRY
E = ELM
K = OAK
L = LOCUST

M = MAPLE
P = PINE
PL = POPLAR
S = SUMAC
SY = SYCAMORE
T = TULIP

MANY BRADFORD PEARS ARE CLUMPED TOGETHER. SHOWN AS BP4, BP5 (TYP)

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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SCALE :	1" = 40'
ISSUE :	

DRAWING TITLE :

EXISTING CONDITIONS MAP

DWG NUMBER :

C-013

JMC PROJECT: 19005-1
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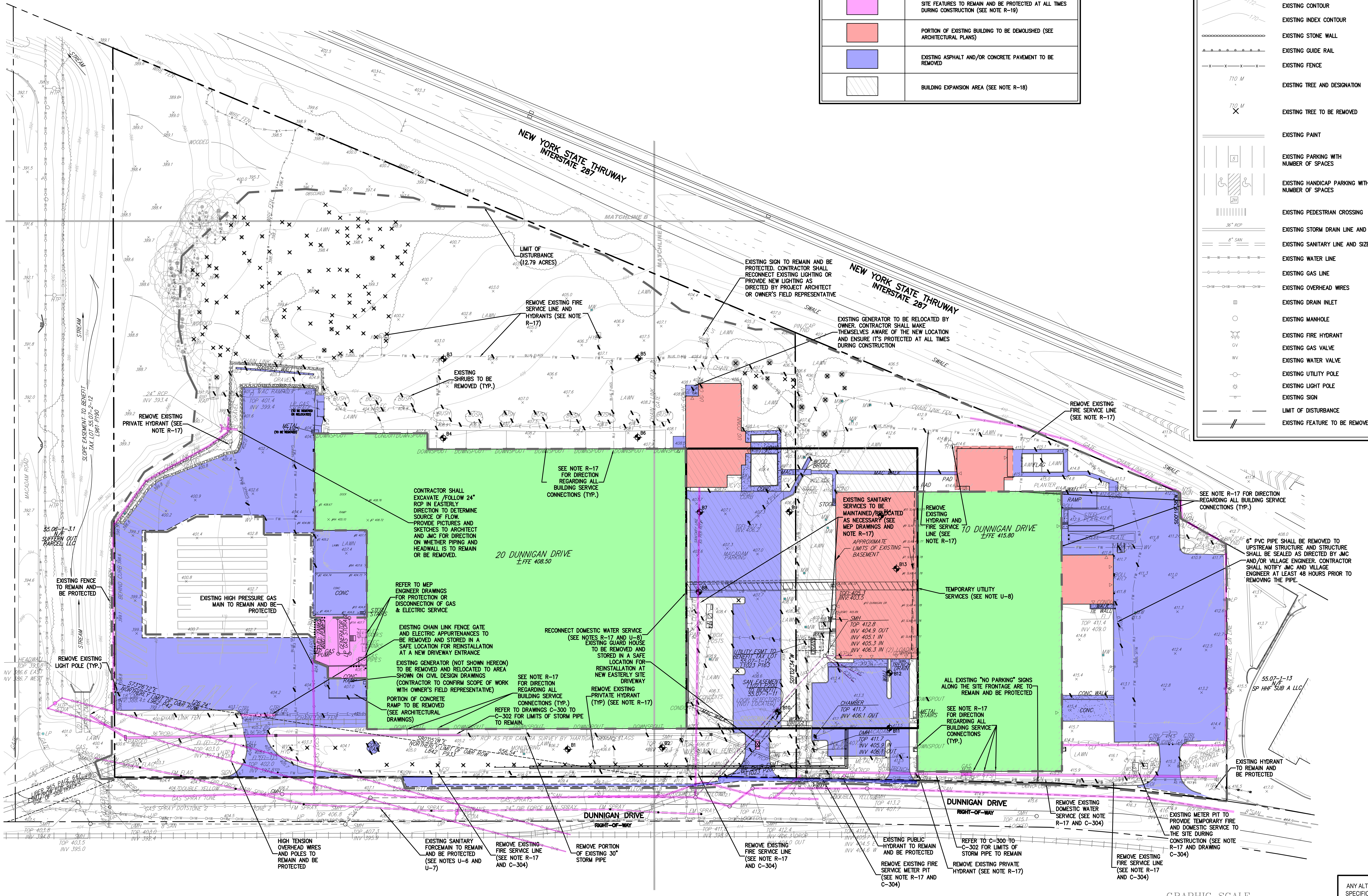
DWG FILE: 19005-BASE


NEW YORK STATE THRUWAY INTERSTATE 287
LIMIT OF DISTURBANCE (12.79 ACRES)
MATCHLINE B
EXISTING SIGN TO REMAIN AND BE PROTECTED. CONTRACTOR SHALL RECONNECT EXISTING LIGHTING OR PROVIDE NEW LIGHTING AS DIRECTED BY PROJECT ARCHITECT OR OWNER'S FIELD REPRESENTATIVE
EXISTING GENERATOR TO BE RELOCATED BY OWNER. CONTRACTOR SHALL MAKE THEMSELVES AWARE OF THE NEW LOCATION AND ENSURE IT'S PROTECTED AT ALL TIMES DURING CONSTRUCTION
REMOVE EXISTING FIRE SERVICE LINE AND HYDRANTS (SEE NOTE R-17)
EXISTING SHRUBS TO BE REMOVED (TYP.)
REMOVE EXISTING FIRE SERVICE LINE (SEE NOTE R-17)
REMOVE EXISTING PRIVATE HYDRANT (SEE NOTE R-17)
SEE NOTE R-17 FOR DIRECTION REGARDING ALL BUILDING SERVICE CONNECTIONS (TYP.)
CONTRACTOR SHALL EXCAVATE /FOLLOW 24" RCP IN EASTERLY DIRECTION TO DETERMINE SOURCE OF FLOW. PROVIDE PICTURES AND SKETCHES TO ARCHITECT AND JMC FOR DIRECTION ON WHETHER PIPING AND HEADWALL IS TO REMAIN OR BE REMOVED.
20 DUNNIGAN DRIVE ±FFE 408.50
EXISTING FENCE TO REMAIN AND BE PROTECTED
EXISTING HIGH PRESSURE GAS MAIN TO REMAIN AND BE PROTECTED
REFER TO MEP ENGINEER DRAWINGS FOR PROTECTION OR DISCONNECTION OF GAS & ELECTRIC SERVICE
EXISTING CHAIN LINK FENCE GATE AND ELECTRIC APPURTENANCES TO BE REMOVED AND STORED IN A SAFE LOCATION FOR REINSTALLATION AT A NEW DRIVEWAY ENTRANCE
EXISTING GENERATOR (NOT SHOWN HEREON) TO BE REMOVED AND RELOCATED TO AREA SHOWN ON CIVIL DESIGN DRAWINGS (CONTRACTOR TO CONFIRM SCOPE OF WORK WITH OWNER'S FIELD REPRESENTATIVE)
REMOVE EXISTING LIGHT POLE (TYP.)
PORTION OF CONCRETE RAMP TO BE REMOVED (SEE ARCHITECTURAL DRAWINGS)
RECONNECT DOMESTIC WATER SERVICE (SEE NOTES R-17 AND U-8)
EXISTING GUARD HOUSE TO BE REMOVED AND STORED IN A SAFE LOCATION FOR REINSTALLATION AT NEW EASTERLY SITE DRIVEWAY
REMOVE EXISTING PRIVTATE HYDRANT (TYP) (SEE NOTE R-17)
REFER TO DRAWINGS C-300 TO C-302 FOR LIMITS OF STORM PIPE TO REMAIN.
EXISTING SANITARY SERVICES TO BE MAINTAINED/RELOCATED AS NECESSARY (SEE MEP DRAWINGS AND NOTE R-17)
APPROXIMATE LIMITS OF EXISTING BASEMENT
REMOVE EXISTING HYDRANT AND FIRE SERVICE LINE (SEE NOTE R-17)
10 DUNNIGAN DRIVE ±FFE 415.80
TEMPORARY UTILITY SERVICES (SEE NOTE U-8)
ALL EXISTING "NO PARKING" SIGNS ALONG THE SITE FRONTAGE ARE TO REMAIN AND BE PROTECTED
SEE NOTE R-17 FOR DIRECTION REGARDING ALL BUILDING SERVICE CONNECTIONS (TYP.)
SEE NOTE R-17 FOR DIRECTION REGARDING ALL BUILDING SERVICE CONNECTIONS (TYP.)
6" PVC PIPE SHALL BE REMOVED TO UPSTREAM STRUCTURE AND STRUCTURE SHALL BE SEALED AS DIRECTED BY JMC AND/OR VILLAGE ENGINEER. CONTRACTOR SHALL NOTIFY JMC AND VILLAGE ENGINEER AT LEAST 48 HOURS PRIOR TO REMOVING THE PIPE.
55.07-1-13 SP HHF SUB A LLC
55.06-1-3.1 N/F SUFFERN OUT PARCEL LLC
EXISTING HYDRANT TO REMAIN AND BE PROTECTED
DUNNIGAN DRIVE RIGHT-OF-WAY
HIGH TENSION OVERHEAD WIRES AND POLES TO REMAIN AND BE PROTECTED
EXISTING SANITARY FORCEMAIN TO REMAIN AND BE PROTECTED (SEE NOTES U-6 AND U-7)
REMOVE EXISTING FIRE SERVICE LINE (SEE NOTE R-17 AND C-304)
REMOVE PORTION OF EXISTING 30" STORM PIPE
REMOVE EXISTING FIRE SERVICE LINE (SEE NOTE R-17 AND C-304)
EXISTING PUBLIC HYDRANT TO REMAIN AND BE PROTECTED
REMOVE EXISTING FIRE SERVICE METER PIT (SEE NOTE R-17 AND C-304)
REFER TO C-300 TO C-302 FOR LIMITS OF STORM PIPE TO REMAIN
REMOVE EXISTING PRIVATE HYDRANT (SEE NOTE R-17)
REMOVE EXISTING DOMESTIC WATER SERVICE (SEE NOTE R-17 AND C-304)
REMOVE EXISTING FIRE SERVICE LINE (SEE NOTE R-17 AND C-304)
EXISTING METER PIT TO PROVIDE TEMPORARY FIRE AND DOMESTIC SERVICE TO THE SITE DURING CONSTRUCTION (SEE NOTE R-17 AND DRAWING C-304)
GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

SITE REMOVALS TABLE

🟩	PORTION OF EXISTING BUILDING TO REMAIN AND BE PROTECTED AT ALL TIMES DURING CONSTRUCTION (SEE ARCHEITECTURAL DRAWINGS)
🟪	SITE FEATURES TO REMAIN AND BE PROTECTED AT ALL TIMES DURING CONSTRUCTION (SEE NOTE R-19)
🟥	PORTION OF EXISTING BUILDING TO BE DEMOLISHED (SEE ARCHITECTURAL PLANS)
🟦	EXISTING ASPHALT AND/OR CONCRETE PAVEMENT TO BE REMOVED
▨	BUILDING EXPANSION AREA (SEE NOTE R-18)

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- T10 M — EXISTING TREE AND DESIGNATION
- T10 M ✕ — EXISTING TREE TO BE REMOVED
- EXISTING PAINT
- 5 — EXISTING PARKING WITH NUMBER OF SPACES
- 2H — EXISTING HANDICAP PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- 36" RCP — EXISTING STORM DRAIN LINE AND SIZE
- 8" SAN — EXISTING SANITARY LINE AND SIZE
- W — EXISTING WATER LINE
- G — EXISTING GAS LINE
- OHW — EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- ○ EXISTING MANHOLE
- HYD — EXISTING FIRE HYDRANT
- GV — EXISTING GAS VALVE
- WV — EXISTING WATER VALVE
- EXISTING UTILITY POLE
- ☼ EXISTING LIGHT POLE
- EXISTING SIGN
- LIMIT OF DISTURBANCE
- // EXISTING FEATURE TO BE REMOVED

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

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ISSUE :

DRAWING TITLE :
OVERALL SITE REMOVALS PLAN

DWG NUMBER :
C-050

JMC PROJECT: 19005-1
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DWG FILE: 19005-BASE

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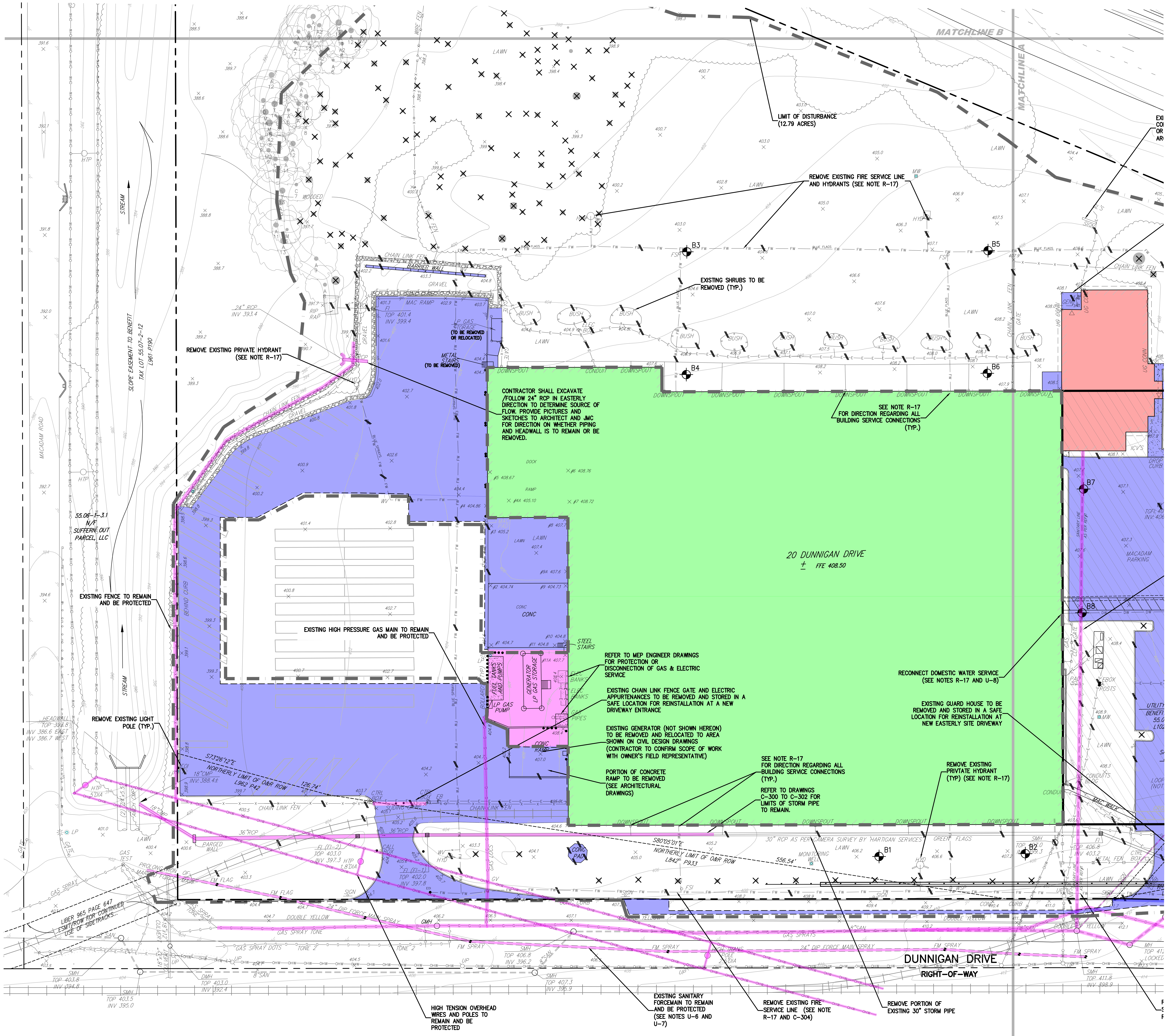
MATCHLINE B
MATCHLINE A
LAWN
LIMIT OF DISTURBANCE
(12.79 ACRES)
REMOVE EXISTING FIRE SERVICE LINE
AND HYDRANTS (SEE NOTE R-17)
EXISTING SHRUBS TO BE
REMOVED (TYP.)
B3
B4
B5
B6
B7
B8
B1
B2
BUSH
BLUE FLAGS
CHAIN LINK FEN
GATE
DOWNSPOUT
CONDUIT
SEE NOTE R-17
FOR DIRECTION REGARDING ALL
BUILDING SERVICE CONNECTIONS
(TYP.)
REMOVE EXISTING PRIVATE HYDRANT
(SEE NOTE R-17)
24" RCP
INV 393.4
RIP
RAP
MAC RAMP
TOP 401.4
INV 399.4
LP GAS
STORAGE
(TO BE REMOVED
OR RELOCATED)
METAL
STAIRS
(TO BE REMOVED)
GRAVEL
CONTRACTOR SHALL EXCAVATE
/FOLLOW 24" RCP IN EASTERLY
DIRECTION TO DETERMINE SOURCE OF
FLOW. PROVIDE PICTURES AND
SKETCHES TO ARCHITECT AND JMC
FOR DIRECTION ON WHETHER PIPING
AND HEADWALL IS TO REMAIN OR BE
REMOVED.
DOCK
RAMP
20 DUNNIGAN DRIVE
± FFE 408.50
SLOPE EASEMENT TO BENEFIT
TAX LOT 55.07-2-12
L961 P190
STREAM
MACADAM ROAD
55.06-1-3.1
N/F
SUFFERN OUT
PARCEL, LLC
EXISTING FENCE TO REMAIN
AND BE PROTECTED
BEHIND CURB
EXISTING HIGH PRESSURE GAS MAIN TO REMAIN
AND BE PROTECTED
CONC
STEEL
STAIRS
FUEL TANKS
AND PUMPS
GENERATOR
LP GAS STORAGE
LP GAS
PUMP
BOLLARDS (TYP)
ELEC
BANKS
GAS
PIPES
CONC
RAMP
REFER TO MEP ENGINEER DRAWINGS
FOR PROTECTION OR
DISCONNECTION OF GAS & ELECTRIC
SERVICE
EXISTING CHAIN LINK FENCE GATE AND ELECTRIC
APPURTENANCES TO BE REMOVED AND STORED IN A
SAFE LOCATION FOR REINSTALLATION AT A NEW
DRIVEWAY ENTRANCE
EXISTING GENERATOR (NOT SHOWN HEREON)
TO BE REMOVED AND RELOCATED TO AREA
SHOWN ON CIVIL DESIGN DRAWINGS
(CONTRACTOR TO CONFIRM SCOPE OF WORK
WITH OWNER'S FIELD REPRESENTATIVE)
PORTION OF CONCRETE
RAMP TO BE REMOVED
(SEE ARCHITECTURAL
DRAWINGS)
REMOVE EXISTING LIGHT
POLE (TYP.)
HEADWALL
TOP 398.8
INV 386.6 EAST
INV 386.7 WEST
S73°26'12"E
NORTHERLY LIMIT OF O&R ROW
L962 P42
126.74'
18"CMP
INV. 388.4±
CHAIN LINK FEN
SLIDING GATE
36"RCP
PARGED
WALL
CALL
BOX
CONC
PAD
S80°05'01"E
NORTHERLY LIMIT OF O&R ROW
L842 P933
556.54'
30" RCP AS PER CAMERA SURVEY BY 'HARTIGAN SERVICES'
GREEN FLAGS
MONITORING
WELL
HYD
SEE NOTE R-17
FOR DIRECTION REGARDING ALL
BUILDING SERVICE CONNECTIONS
(TYP.)
REFER TO DRAWINGS
C-300 TO C-302 FOR
LIMITS OF STORM PIPE
TO REMAIN.
REMOVE EXISTING
PRIVTATE HYDRANT
(TYP) (SEE NOTE R-17)
RECONNECT DOMESTIC WATER SERVICE
(SEE NOTES R-17 AND U-8)
EXISTING GUARD HOUSE TO BE
REMOVED AND STORED IN A SAFE
LOCATION FOR REINSTALLATION AT
NEW EASTERLY SITE DRIVEWAY
MACADAM
PARKING
UTILITY
BENEFI
LIBER 965 PAGE 647
ESMT/ROW FOR CONTINUED
USE OF SIDETRACKS
GAS SPRAY
DOUBLE YELLOW
FM SPRAY
SMH
TOP 406.8
INV 396.2
SMH
TOP 407.3
INV 395.9
8"SAN
24" DIP FORCE MAIN SPRAY
HIGH TRANS
POLE
2.5'DIA
DUNNIGAN DRIVE
RIGHT-OF-WAY
MH
TOP 412
LOCKED
SMH
TOP 411.8
INV 398.9
HIGH TENSION OVERHEAD
WIRES AND POLES TO
REMAIN AND BE
PROTECTED
EXISTING SANITARY
FORCEMAIN TO REMAIN
AND BE PROTECTED
(SEE NOTES U-6 AND
U-7)
REMOVE EXISTING FIRE
SERVICE LINE (SEE NOTE
R-17 AND C-304)
REMOVE PORTION OF
EXISTING 30" STORM PIPE

LEGEND

— — — —	EXISTING PROPERTY LINE
—— — — ——	ADJACENT PROPERTY LINE
- - - - - - - -	EXISTING EASEMENT LINE
- - - - - - - - - - -	EXISTING BUILDING OVERHANG
//////////	EXISTING BUILDING LINE
———————	EXISTING PAVEMENT EDGE
═══════	EXISTING CURB LINE
172	EXISTING CONTOUR
170	EXISTING INDEX CONTOUR
○○○○○○○○	EXISTING STONE WALL
o o o o o o o	EXISTING GUIDE RAIL
—x——x——x——x—	EXISTING FENCE
T10 M	EXISTING TREE AND DESIGNATION
T10 M ✕	EXISTING TREE TO BE REMOVED
═══════	EXISTING PAINT
5	EXISTING PARKING WITH NUMBER OF SPACES
♿ 2H	EXISTING HANDICAP PARKING WITH NUMBER OF SPACES
‖‖‖‖‖‖‖‖	EXISTING PEDESTRIAN CROSSING
36" RCP	EXISTING STORM DRAIN LINE AND SIZE
8" SAN	EXISTING SANITARY LINE AND SIZE
—W——W——W——W—	EXISTING WATER LINE
—G——G——G——G—	EXISTING GAS LINE
—OHW——OHW——OHW—	EXISTING OVERHEAD WIRES
▥	EXISTING DRAIN INLET
○	EXISTING MANHOLE
☼	EXISTING FIRE HYDRANT
GV	EXISTING GAS VALVE
WV	EXISTING WATER VALVE
—○—	EXISTING UTILITY POLE
☼	EXISTING LIGHT POLE
—o—	EXISTING SIGN
—— · —— · ——	LIMIT OF DISTURBANCE
═══//═══	EXISTING FEATURE TO BE REMOVED

SITE REMOVALS TABLE

🟩	PORTION OF EXISTING BUILDING TO REMAIN AND BE PROTECTED AT ALL TIMES DURING CONSTRUCTION (SEE ARCHEITECTURAL DRAWINGS)
🟪	SITE FEATURES TO REMAIN AND BE PROTECTED AT ALL TIMES DURING CONSTRUCTION (SEE NOTE R-19)
🟥	PORTION OF EXISTING BUILDING TO BE DEMOLISHED (SEE ARCHITECTURAL PLANS)
🟦	EXISTING ASPHALT AND/OR CONCRETE PAVEMENT TO BE REMOVED
▨	BUILDING EXPANSION AREA (SEE NOTE R-18)

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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SITE REMOVALS PLAN

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C-051

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SCR: EXISTING.SCR
DWG FILE: 19005-BASE

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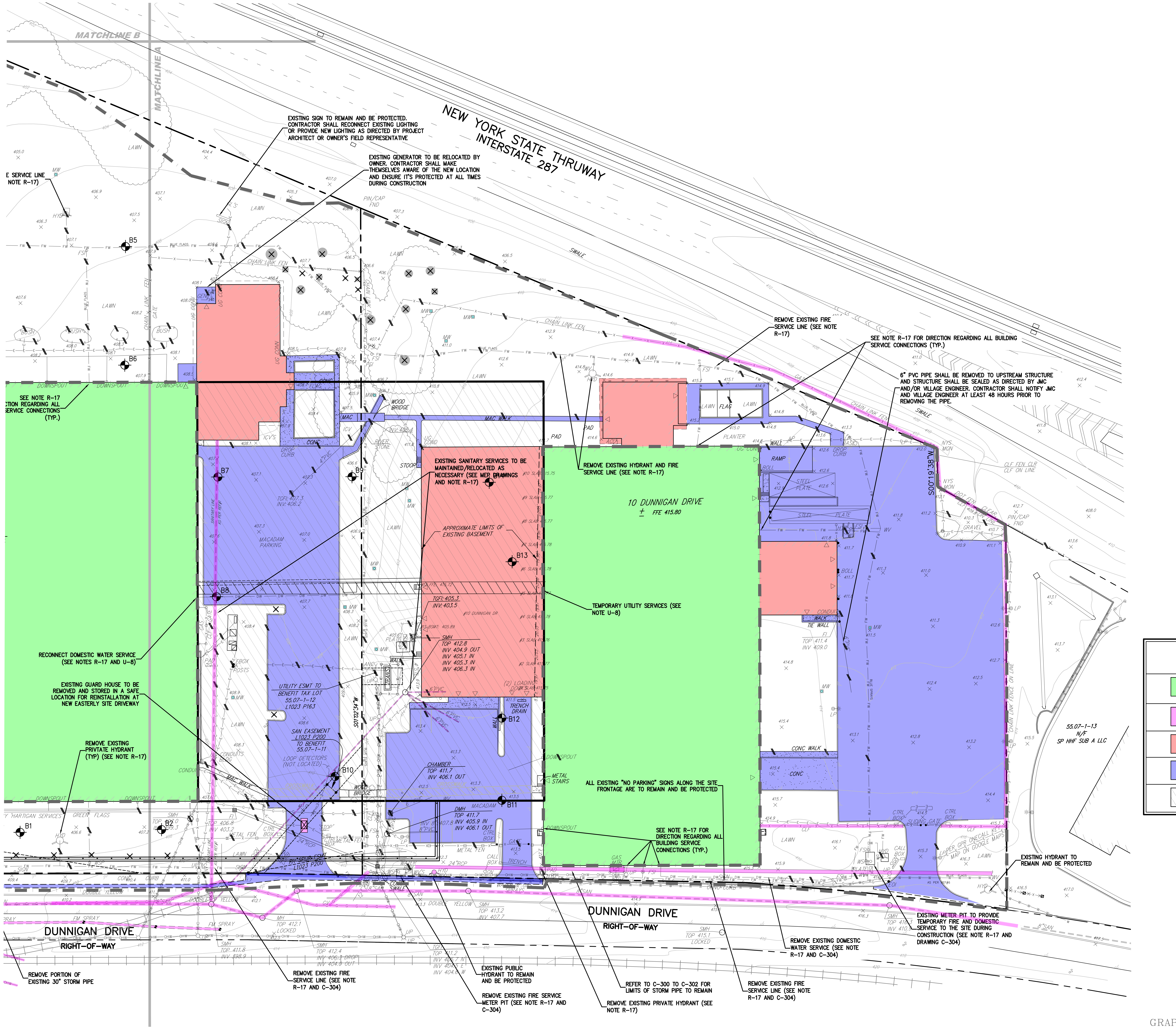
MATCHLINE B
MATCHLINE A
NEW YORK STATE THRUWAY
INTERSTATE 287
EXISTING SIGN TO REMAIN AND BE PROTECTED. CONTRACTOR SHALL RECONNECT EXISTING LIGHTING OR PROVIDE NEW LIGHTING AS DIRECTED BY PROJECT ARCHITECT OR OWNER'S FIELD REPRESENTATIVE
EXISTING GENERATOR TO BE RELOCATED BY OWNER. CONTRACTOR SHALL MAKE THEMSELVES AWARE OF THE NEW LOCATION AND ENSURE IT'S PROTECTED AT ALL TIMES DURING CONSTRUCTION
E SERVICE LINE NOTE R-17)
SEE NOTE R-17 CTION REGARDING ALL SERVICE CONNECTIONS (TYP.)
REMOVE EXISTING FIRE SERVICE LINE (SEE NOTE R-17)
SEE NOTE R-17 FOR DIRECTION REGARDING ALL BUILDING SERVICE CONNECTIONS (TYP.)
6" PVC PIPE SHALL BE REMOVED TO UPSTREAM STRUCTURE AND STRUCTURE SHALL BE SEALED AS DIRECTED BY JMC AND/OR VILLAGE ENGINEER. CONTRACTOR SHALL NOTIFY JMC AND VILLAGE ENGINEER AT LEAST 48 HOURS PRIOR TO REMOVING THE PIPE.
EXISTING SANITARY SERVICES TO BE MAINTAINED/RELOCATED AS NECESSARY (SEE MEP DRAWINGS AND NOTE R-17)
REMOVE EXISTING HYDRANT AND FIRE SERVICE LINE (SEE NOTE R-17)
10 DUNNIGAN DRIVE
± FFE 415.80
APPROXIMATE LIMITS OF EXISTING BASEMENT
TEMPORARY UTILITY SERVICES (SEE NOTE U-8)
S00°19'38"W
RECONNECT DOMESTIC WATER SERVICE (SEE NOTES R-17 AND U-8)
EXISTING GUARD HOUSE TO BE REMOVED AND STORED IN A SAFE LOCATION FOR REINSTALLATION AT NEW EASTERLY SITE DRIVEWAY
REMOVE EXISTING PRIVATE HYDRANT (TYP) (SEE NOTE R-17)
UTILITY ESMT TO BENEFIT TAX LOT 55.07-1-12 L1023 P163
SAN EASEMENT L1023 P200 TO BENEFIT 55.07-1-11
S01°02'34"W
55.07-1-13 N/F SP HHF SUB A LLC
ALL EXISTING "NO PARKING" SIGNS ALONG THE SITE FRONTAGE ARE TO REMAIN AND BE PROTECTED
SEE NOTE R-17 FOR DIRECTION REGARDING ALL BUILDING SERVICE CONNECTIONS (TYP.)
EXISTING HYDRANT TO REMAIN AND BE PROTECTED
DUNNIGAN DRIVE
RIGHT-OF-WAY
REMOVE PORTION OF EXISTING 30" STORM PIPE
REMOVE EXISTING FIRE SERVICE LINE (SEE NOTE R-17 AND C-304)
EXISTING PUBLIC HYDRANT TO REMAIN AND BE PROTECTED
REMOVE EXISTING FIRE SERVICE METER PIT (SEE NOTE R-17 AND C-304)
REFER TO C-300 TO C-302 FOR LIMITS OF STORM PIPE TO REMAIN
REMOVE EXISTING PRIVATE HYDRANT (SEE NOTE R-17)
REMOVE EXISTING FIRE SERVICE LINE (SEE NOTE R-17 AND C-304)
REMOVE EXISTING DOMESTIC WATER SERVICE (SEE NOTE R-17 AND C-304)
EXISTING METER PIT TO PROVIDE TEMPORARY FIRE AND DOMESTIC SERVICE TO THE SITE DURING CONSTRUCTION (SEE NOTE R-17 AND DRAWING C-304)

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE TO BE REMOVED
- EXISTING PAINT
- EXISTING PARKING WITH NUMBER OF SPACES
- EXISTING HANDICAP PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- LIMIT OF DISTURBANCE
- EXISTING FEATURE TO BE REMOVED

SITE REMOVALS TABLE

🟩	PORTION OF EXISTING BUILDING TO REMAIN AND BE PROTECTED AT ALL TIMES DURING CONSTRUCTION (SEE ARCHEITECTURAL DRAWINGS)
🟪	SITE FEATURES TO REMAIN AND BE PROTECTED AT ALL TIMES DURING CONSTRUCTION (SEE NOTE R-19)
🟥	PORTION OF EXISTING BUILDING TO BE DEMOLISHED (SEE ARCHITECTURAL PLANS)
🟦	EXISTING ASPHALT AND/OR CONCRETE PAVEMENT TO BE REMOVED
▨	BUILDING EXPANSION AREA (SEE NOTE R-18)

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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Tel 212-687-8282

MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
2	ISSUED FOR BID	10.15.21

DRAWN BY : DC
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 09.10.2021
SCALE : 1" = 40'
ISSUE :

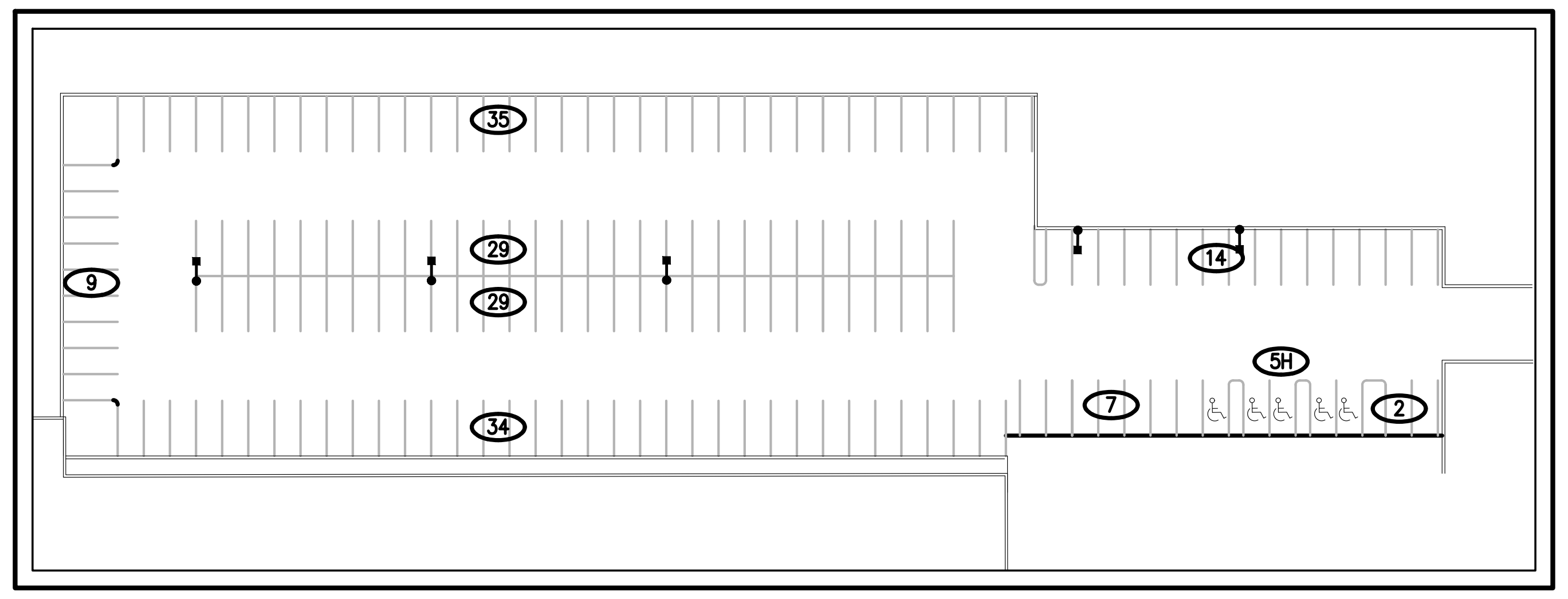
DRAWING TITLE :

SITE REMOVALS PLAN

DWG NUMBER :

C-052

JMC PROJECT: 19005-1
SCR: EXISTING.SCR
DWG FILE: 19005-BASE


35
29
29
14
9
5H
7
2
34

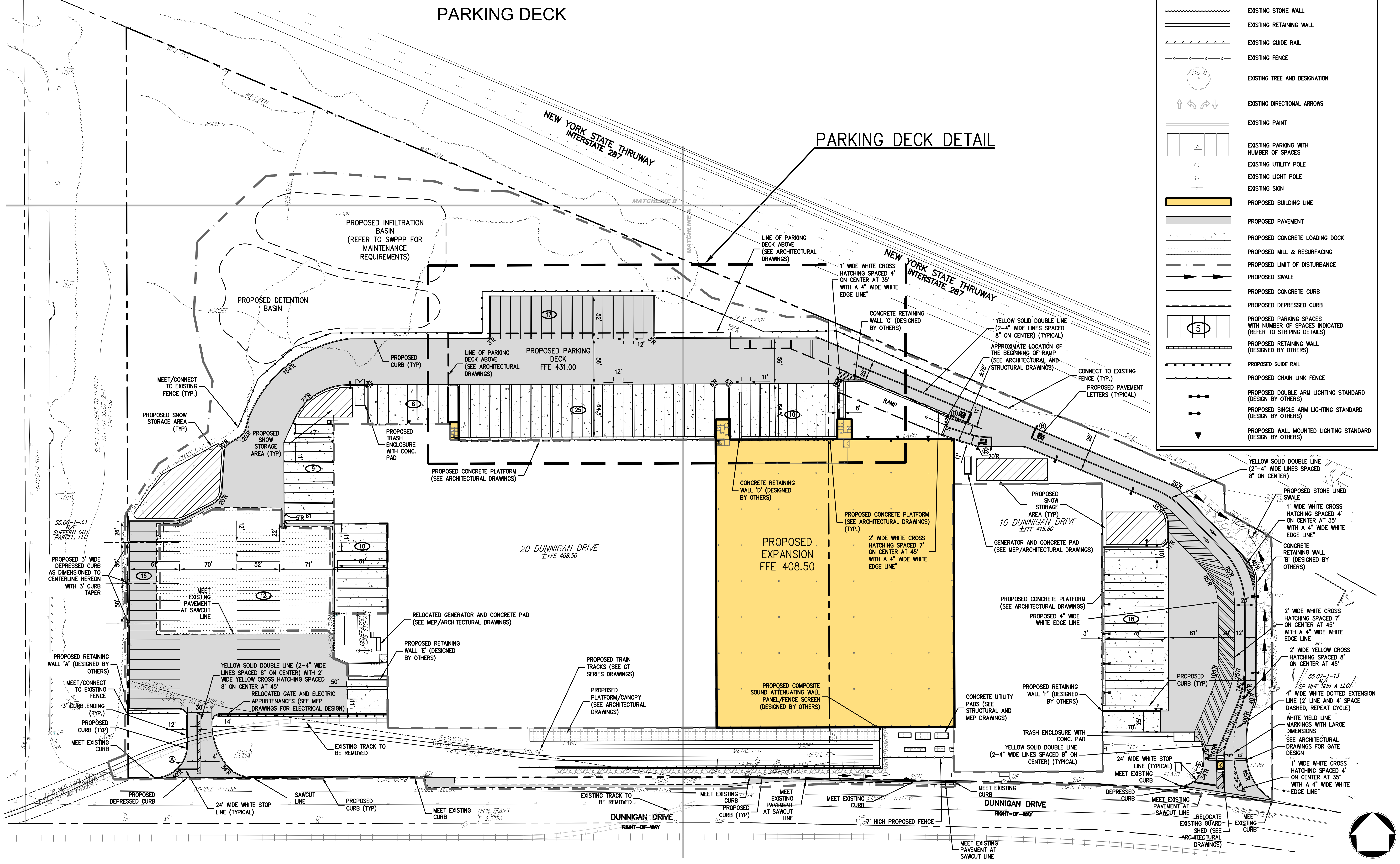
PARKING DECK

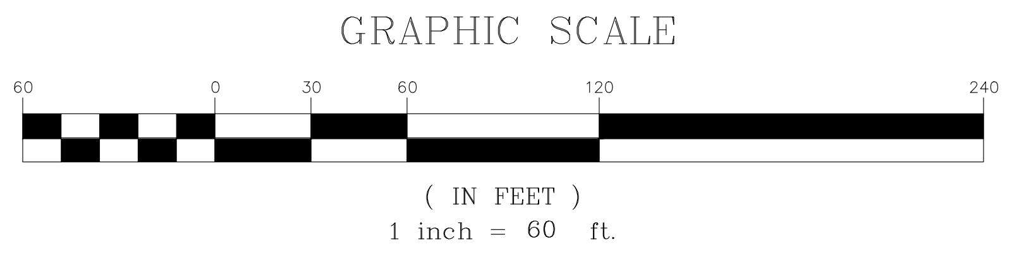
SIGN TABLE

DESIGNATION NUMBER	SIGN	SIZE	DESCRIPTION	MOUNTING TYPE	MOUNTING HEIGHT	REGULATORY	REFLECTORIZED
A	STOP	30"X30"	WHITE ON RED	STEEL CHANNEL	7'–0"	R1–1	X
B	STOP ALL WAY	30"X30" 18"X6"	WHITE ON RED	STEEL CHANNEL	7'–0"	R1–1 R1–3P	X

LEGEND

▬ ─ ─ ▬	EXISTING PROPERTY LINE
── ─ ─ ──	ADJACENT PROPERTY LINE
– – – – –	EXISTING SETBACK LINE
— — — —	EXISTING EASEMENT LINE
── – ──	EXISTING ROADWAY CENTER LINE
WLF–63 WLF–64 WLF–65	EXISTING WETLAND LINE AND DELINEATION
- - - - - - -	EXISTING BUILDING OVERHANG
▨	EXISTING BUILDING LINE
──	EXISTING PAVEMENT EDGE
═	EXISTING CURB LINE
∞∞∞∞	EXISTING STONE WALL
▭	EXISTING RETAINING WALL
─○─○─○─	EXISTING GUIDE RAIL
─x─x─x─	EXISTING FENCE
T10 M	EXISTING TREE AND DESIGNATION
⇧ ↶ ↷ ⇩	EXISTING DIRECTIONAL ARROWS
═	EXISTING PAINT
5	EXISTING PARKING WITH NUMBER OF SPACES
─○─	EXISTING UTILITY POLE
☼	EXISTING LIGHT POLE
─o─	EXISTING SIGN
🟨	PROPOSED BUILDING LINE
▭	PROPOSED PAVEMENT
▭	PROPOSED CONCRETE LOADING DOCK
▭	PROPOSED MILL & RESURFACING
▬ ▬ ▬	PROPOSED LIMIT OF DISTURBANCE
─► ─►	PROPOSED SWALE
═	PROPOSED CONCRETE CURB
▬▬▬	PROPOSED DEPRESSED CURB
⑤	PROPOSED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
▥	PROPOSED RETAINING WALL (DESIGNED BY OTHERS)
■─■─■─■	PROPOSED GUIDE RAIL
─o─o─o─	PROPOSED CHAIN LINK FENCE
■─●─■	PROPOSED DOUBLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
■─●	PROPOSED SINGLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
▼	PROPOSED WALL MOUNTED LIGHTING STANDARD (DESIGN BY OTHERS)


PARKING DECK DETAIL
NEW YORK STATE THRUWAY
INTERSTATE 287
NEW YORK STATE THRUWAY
INTERSTATE 287
MATCHLINE B
MATCHLINE A
WOODED
WIRE FEN
LAWN
HTP
MACADAM ROAD
SLOPE EASEMENT TO BENEFIT
TAX LOT 55.07–2–12
L961 P190
55.06–1–3.1
N/F
SUFFERN OUT
PARCEL, LLC
PROPOSED INFILTRATION BASIN (REFER TO SWPPP FOR MAINTENANCE REQUIREMENTS)
PROPOSED DETENTION BASIN
LINE OF PARKING DECK ABOVE (SEE ARCHITECTURAL DRAWINGS)
1' WIDE WHITE CROSS HATCHING SPACED 4' ON CENTER AT 35° WITH A 4" WIDE WHITE EDGE LINE"
CONCRETE RETAINING WALL 'C' (DESIGNED BY OTHERS)
YELLOW SOLID DOUBLE LINE (2–4" WIDE LINES SPACED 8" ON CENTER) (TYPICAL)
APPROXIMATE LOCATION OF THE BEGINNING OF RAMP (SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS)
CONNECT TO EXISTING FENCE (TYP.)
PROPOSED PAVEMENT LETTERS (TYPICAL)
GL'S LAWN
SIGN
RAMP
±75'
STOP
MEET/CONNECT TO EXISTING FENCE (TYP.)
PROPOSED SNOW STORAGE AREA (TYP)
PROPOSED SNOW STORAGE AREA (TYP)
CHAIN LINK FEN
154'R
72'R
20'R
10'R
4'R
3'R
6'R
PROPOSED CURB (TYP)
LINE OF PARKING DECK ABOVE (SEE ARCHITECTURAL DRAWINGS)
PROPOSED PARKING DECK
FFE 431.00
17
52'
56'
12'
11'
25'
8'
64.5'
8
25
10
47'
9
5'R
61'
PROPOSED TRASH ENCLOSURE WITH CONC. PAD
PROPOSED CONCRETE PLATFORM (SEE ARCHITECTURAL DRAWINGS)
CONCRETE RETAINING WALL 'D' (DESIGNED BY OTHERS)
PROPOSED CONCRETE PLATFORM (SEE ARCHITECTURAL DRAWINGS) (TYP.)
2' WIDE WHITE CROSS HATCHING SPACED 7' ON CENTER AT 45° WITH A 4" WIDE WHITE EDGE LINE"
PROPOSED EXPANSION
FFE 408.50
20 DUNNIGAN DRIVE
±FFE 408.50
10 DUNNIGAN DRIVE
±FFE 415.80
PROPOSED SNOW STORAGE AREA (TYP)
GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
PROPOSED 3' WIDE DEPRESSED CURB AS DIMENSIONED TO CENTERLINE HEREON WITH 3' CURB TAPER
26'
50'
50'
12'
22'
61'
70'
52'
71'
16
12
MEET EXISTING PAVEMENT AT SAWCUT LINE
RELOCATED GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
GENERATOR
LP GAS STORAGE
BOLLARD (TYP.)
PROPOSED RETAINING WALL 'E' (DESIGNED BY OTHERS)
PROPOSED RETAINING WALL 'A' (DESIGNED BY OTHERS)
MEET/CONNECT TO EXISTING FENCE
3' CURB ENDING (TYP.)
PROPOSED CURB (TYP)
MEET EXISTING CURB
YELLOW SOLID DOUBLE LINE (2–4" WIDE LINES SPACED 8" ON CENTER) WITH 2' WIDE YELLOW CROSS HATCHING SPACED 8' ON CENTER AT 45°
RELOCATED GATE AND ELECTRIC APPURTENANCES (SEE MEP DRAWINGS FOR ELECTRICAL DESIGN)
S73°26'12"E
NORTHERLY LIMIT OF O&R ROW
L962 P42
126.74'
30'
12'
14'
4'
40'R
34'R
A
HTP 1.8' DIA
LIBER 965 PAGE 647 ESMT/ROW FOR CONTINUED USE OF SIDETRACKS
EXISTING TRACK TO BE REMOVED
S80°05'01"E
NORTHERLY LIMIT OF O&R ROW
L842 P933
556.54'
PROPOSED TRAIN TRACKS (SEE CT SERIES DRAWINGS)
PROPOSED PLATFORM/CANOPY (SEE ARCHITECTURAL DRAWINGS)
PROPOSED COMPOSITE SOUND ATTENUATING WALL PANEL/FENCE SCREEN (DESIGNED BY OTHERS)
CONCRETE UTILITY PADS (SEE STRUCTURAL AND MEP DRAWINGS)
METAL FEN
'STOP'
CONC CURB
DOUBLE YELLOW
PROPOSED DEPRESSED CURB
24' WIDE WHITE STOP LINE (TYPICAL)
SAWCUT LINE
PROPOSED CURB (TYP)
MEET EXISTING CURB
HIGH TRANS POLE 2.5' DIA
UP
EXISTING TRACK TO BE REMOVED
DUNNIGAN DRIVE
RIGHT–OF–WAY
MEET EXISTING CURB
PROPOSED CURB (TYP)
MEET EXISTING PAVEMENT AT SAWCUT LINE
MEET EXISTING CURB
7' HIGH PROPOSED FENCE
MEET EXISTING PAVEMENT AT SAWCUT LINE
DUNNIGAN DRIVE
RIGHT–OF–WAY
PROPOSED CONCRETE PLATFORM (SEE ARCHITECTURAL DRAWINGS)
PROPOSED 4" WIDE WHITE EDGE LINE
18
3'
78'
61'
20'
12'
25'
70'
10'
PROPOSED RETAINING WALL 'F' (DESIGNED BY OTHERS)
PROPOSED CURB (TYP)
TRASH ENCLOSURE WITH CONC. PAD
YELLOW SOLID DOUBLE LINE (2–4" WIDE LINES SPACED 8" ON CENTER) (TYPICAL)
24' WIDE WHITE STOP LINE (TYPICAL)
MEET EXISTING CURB
DEPRESSED CURB
MEET EXISTING PAVEMENT AT SAWCUT LINE
RELOCATE EXISTING GUARD SHED (SEE ARCHITECTURAL DRAWINGS)
MEET EXISTING CURB
YELLOW SOLID DOUBLE LINE (2"–4" WIDE LINES SPACED 8" ON CENTER)
PROPOSED STONE LINED SWALE
1' WIDE WHITE CROSS HATCHING SPACED 4' ON CENTER AT 35° WITH A 4" WIDE WHITE EDGE LINE"
CONCRETE RETAINING WALL 'B' (DESIGNED BY OTHERS)
2' WIDE WHITE CROSS HATCHING SPACED 7' ON CENTER AT 45° WITH A 4" WIDE WHITE EDGE LINE
2' WIDE YELLOW CROSS HATCHING SPACED 8' ON CENTER AT 45°
55.07–1–13
N/F
SP HHF SUB A LLC
4" WIDE WHITE DOTTED EXTENSION LINE (2' LINE AND 4' SPACE DASHED, REPEAT CYCLE)
WHITE YIELD LINE MARKINGS WITH LARGE DIMENSIONS
SEE ARCHITECTURAL DRAWINGS FOR GATE DESIGN
1' WIDE WHITE CROSS HATCHING SPACED 4' ON CENTER AT 35° WITH A 4" WIDE WHITE EDGE LINE"
CHAIN LINK FENCE ON LINE
GATE
CHAIN LINK FEN
DOT FEN
20'R
35'R
11'R
85'R
65'R
40'R
105'R
125'R
140'R
76'R
100'R
62'R
16'R
15'
11'
34'R
65'R
LAWN
B


GRAPHIC SCALE
60
0
30
60
120
240
(IN FEET)
1 inch = 60 ft.

REFER TO DRAWINGS C–001 THROUGH C–006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

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SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	09.17.20
2	REISSUED PER PB COMMENTS	10.20.20
3	FOR PLANNING BOARD APPROVAL	04.09.21
4	REISSUED PER ENGINEER COMMENTS	05.10.21
5	ISSUED FOR DOB SUBMISSION	09.10.21
6	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JAR/JPM
APPROVED BY :	DL
DATE :	8.21.2020
SCALE :	1" = 60'
ISSUE :	

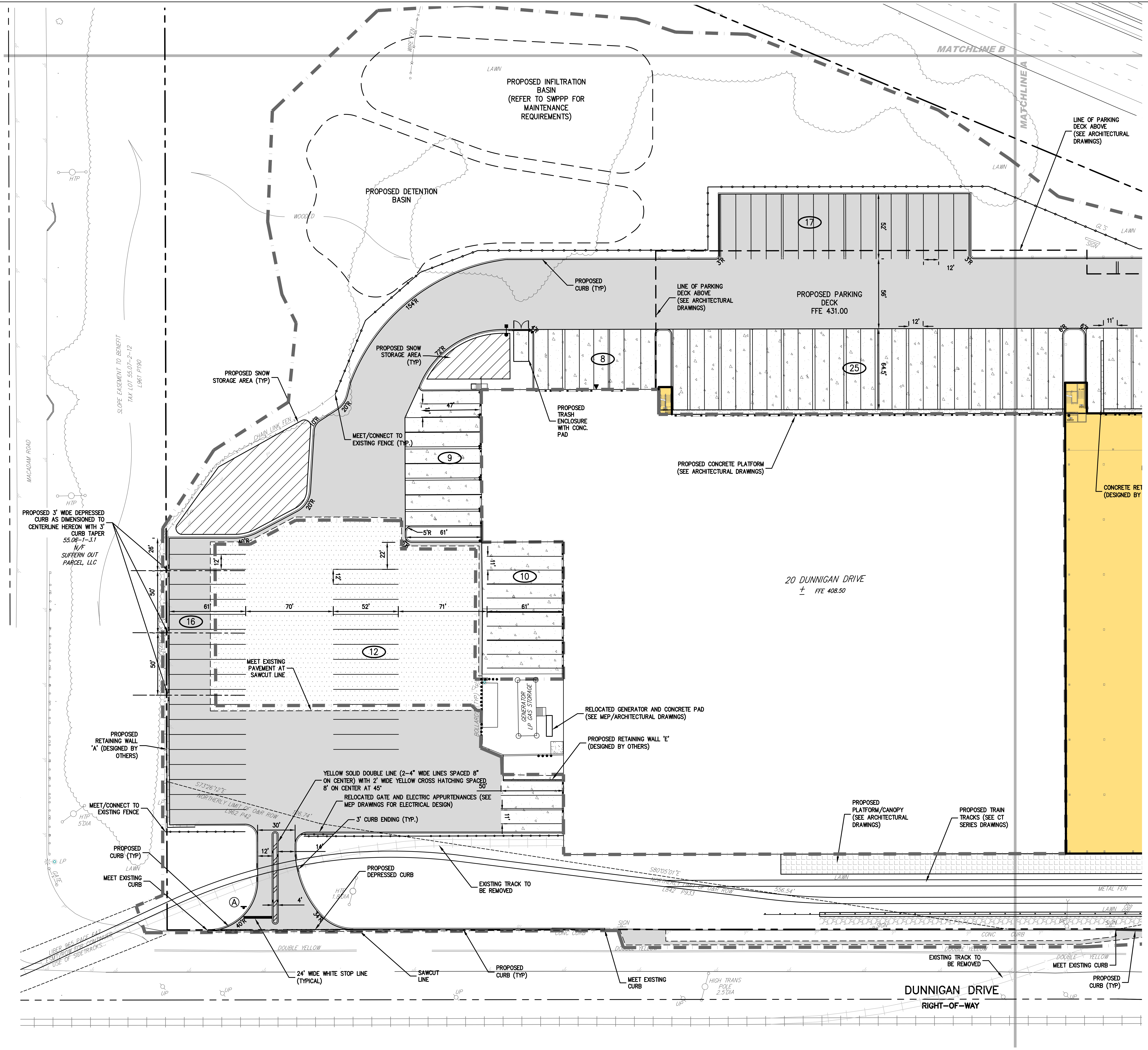
DRAWING TITLE :

OVERALL LAYOUT PLAN

DWG NUMBER :

C-100

DWG FILE: 19005-LAYOUT
JMC PROJECT: 19005-1
SCR: LAYOUT.SCR


MATCHLINE B
MATCHLINE A
LAWN
WOODED
PROPOSED INFILTRATION BASIN (REFER TO SWPPP FOR MAINTENANCE REQUIREMENTS)
PROPOSED DETENTION BASIN
LINE OF PARKING DECK ABOVE (SEE ARCHITECTURAL DRAWINGS)
PROPOSED CURB (TYP)
154'R
3'R
12'
52'
56'
17
LINE OF PARKING DECK ABOVE (SEE ARCHITECTURAL DRAWINGS)
PROPOSED PARKING DECK FFE 431.00
GL'S
SIGN
PROPOSED SNOW STORAGE AREA (TYP)
72'R
4'R
8
25
64.5'
12'
11'
6'R
PROPOSED TRASH ENCLOSURE WITH CONC. PAD
PROPOSED CONCRETE PLATFORM (SEE ARCHITECTURAL DRAWINGS)
CONCRETE RET (DESIGNED BY
PROPOSED SNOW STORAGE AREA (TYP)
CHAIN LINK FEN
10'R
20'R
MEET/CONNECT TO EXISTING FENCE (TYP.)
47'
9
5'R
61'
SLOPE EASEMENT TO BENEFIT TAX LOT 55.07-2-12 L961 P190
MACADAM ROAD
HTP
PROPOSED 3' WIDE DEPRESSED CURB AS DIMENSIONED TO CENTERLINE HEREON WITH 3' CURB TAPER
55.06-1-3.1 N/F SUFFERN OUT PARCEL, LLC
40'R
26'
50'
50'
12'
22'
61'
70'
52'
71'
61'
16
12
10
11'
MEET EXISTING PAVEMENT AT SAWCUT LINE
20 DUNNIGAN DRIVE
FFE 408.50
BOLLARDS (TYP)
LP
GENERATOR LP GAS STORAGE
RELOCATED GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
PROPOSED RETAINING WALL 'E' (DESIGNED BY OTHERS)
PROPOSED RETAINING WALL 'A' (DESIGNED BY OTHERS)
YELLOW SOLID DOUBLE LINE (2-4" WIDE LINES SPACED 8" ON CENTER) WITH 2' WIDE YELLOW CROSS HATCHING SPACED 8' ON CENTER AT 45°
50'
RELOCATED GATE AND ELECTRIC APPURTENANCES (SEE MEP DRAWINGS FOR ELECTRICAL DESIGN)
3' CURB ENDING (TYP.)
S73°26'12"E
NORTHERLY LIMIT OF O&R ROW
L962 P42
126.74'
MEET/CONNECT TO EXISTING FENCE
HTP 5'DIA
30'
12'
14'
4'
34'R
A
PROPOSED CURB (TYP)
LAWN
GATE
MEET EXISTING CURB
PROPOSED DEPRESSED CURB
HTP 1.8'DIA
EXISTING TRACK TO BE REMOVED
S80°05'01"E
NORTHERLY LIMIT OF O&R ROW
L842 P933
556.54'
PROPOSED PLATFORM/CANOPY (SEE ARCHITECTURAL DRAWINGS)
PROPOSED TRAIN TRACKS (SEE CT SERIES DRAWINGS)
LAWN
METAL FEN
SIGN
UP
CONC CURB
DOUBLE YELLOW
LIBER 965 PAGE 647 ... ROW FOR CONTINUED USE OF SIDETRACKS...
24' WIDE WHITE STOP LINE (TYPICAL)
SAWCUT LINE
PROPOSED CURB (TYP)
MEET EXISTING CURB
HIGH TRANS POLE 2.5'DIA
EXISTING TRACK TO BE REMOVED
MEET EXISTING CURB
PROPOSED CURB (TYP)
DUNNIGAN DRIVE
RIGHT-OF-WAY

LEGEND

EXISTING PROPERTY LINE
ADJACENT PROPERTY LINE
EXISTING SETBACK LINE
EXISTING EASEMENT LINE
EXISTING ROADWAY CENTER LINE
WLF-63 WLF-64 WLF-65 EXISTING WETLAND LINE AND DELINEATION
EXISTING BUILDING OVERHANG
EXISTING BUILDING LINE
EXISTING PAVEMENT EDGE
EXISTING CURB LINE
EXISTING STONE WALL
EXISTING RETAINING WALL
EXISTING GUIDE RAIL
EXISTING FENCE
T10 M EXISTING TREE AND DESIGNATION
EXISTING DIRECTIONAL ARROWS
EXISTING PAINT
5 EXISTING PARKING WITH NUMBER OF SPACES
EXISTING UTILITY POLE
EXISTING LIGHT POLE
EXISTING SIGN
🟨 PROPOSED BUILDING LINE
PROPOSED PAVEMENT
PROPOSED CONCRETE LOADING DOCK
PROPOSED MILL & RESURFACING
PROPOSED LIMIT OF DISTURBANCE
PROPOSED SWALE
PROPOSED CONCRETE CURB
PROPOSED DEPRESSED CURB
5 PROPOSED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
PROPOSED RETAINING WALL (DESIGNED BY OTHERS)
PROPOSED GUIDE RAIL
PROPOSED CHAIN LINK FENCE
PROPOSED DOUBLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
PROPOSED SINGLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
▼ PROPOSED WALL MOUNTED LIGHTING STANDARD (DESIGN BY OTHERS)

NOTES:

1. SEE DRAWING C-100 FOR SIGN TABLE.

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
2	ISSUED FOR BID	10.15.21

DRAWN BY : DC
CHECKED BY : JAR/JPM
APPROVED BY : DL
DATE : 09.10.2021
SCALE : 1" = 40'
ISSUE :

DRAWING TITLE :

LAYOUT PLAN

DWG NUMBER :
C-101

DWG FILE: 19005-LAYOUT
JMC PROJECT: 19005-1
SCR: LAYOUT.SCR

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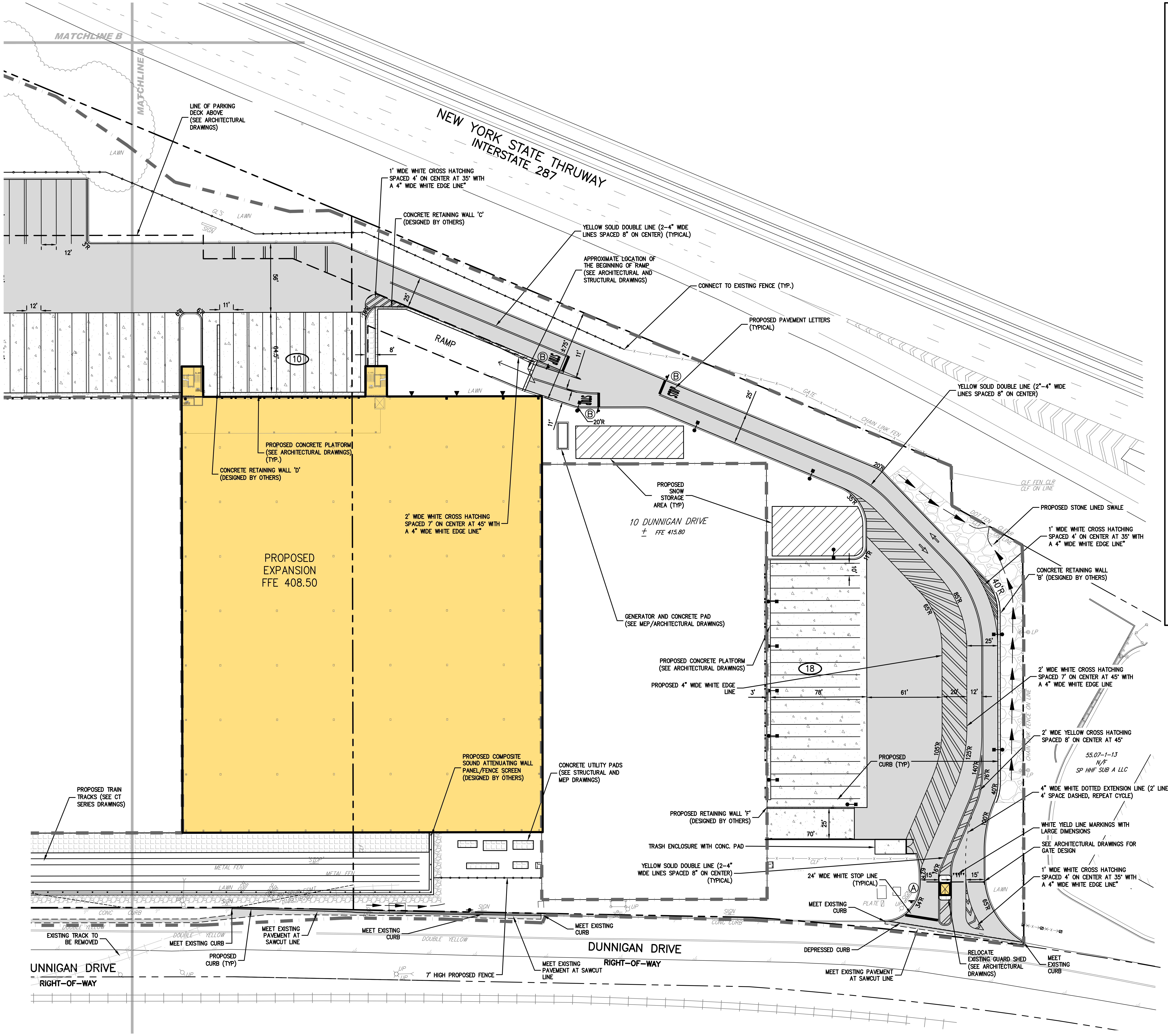
MATCHLINE B
MATCHLINE A
NEW YORK STATE THRUWAY
INTERSTATE 287
LINE OF PARKING DECK ABOVE (SEE ARCHITECTURAL DRAWINGS)
1' WIDE WHITE CROSS HATCHING SPACED 4' ON CENTER AT 35° WITH A 4" WIDE WHITE EDGE LINE"
CONCRETE RETAINING WALL 'C' (DESIGNED BY OTHERS)
YELLOW SOLID DOUBLE LINE (2-4" WIDE LINES SPACED 8" ON CENTER) (TYPICAL)
APPROXIMATE LOCATION OF THE BEGINNING OF RAMP (SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS)
CONNECT TO EXISTING FENCE (TYP.)
PROPOSED PAVEMENT LETTERS (TYPICAL)
RAMP
LAWN
12'
56'
64.5'
10
8'
25'
±75'
11'
20'R
B
STOP
PROPOSED CONCRETE PLATFORM (SEE ARCHITECTURAL DRAWINGS) (TYP.)
CONCRETE RETAINING WALL 'D' (DESIGNED BY OTHERS)
2' WIDE WHITE CROSS HATCHING SPACED 7' ON CENTER AT 45° WITH A 4" WIDE WHITE EDGE LINE"
PROPOSED EXPANSION FFE 408.50
PROPOSED SNOW STORAGE AREA (TYP)
10 DUNNIGAN DRIVE ± FFE 415.80
GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
YELLOW SOLID DOUBLE LINE (2"-4" WIDE LINES SPACED 8" ON CENTER)
CHAIN LINK FEN
GATE
CLF FEN CLR
CLF ON LINE
DOT FEN CLEAR ON LINE
PROPOSED STONE LINED SWALE
1' WIDE WHITE CROSS HATCHING SPACED 4' ON CENTER AT 35° WITH A 4" WIDE WHITE EDGE LINE"
CONCRETE RETAINING WALL 'B' (DESIGNED BY OTHERS)
40'R
85'R
65'R
25'
LP
PROPOSED CONCRETE PLATFORM (SEE ARCHITECTURAL DRAWINGS)
PROPOSED 4" WIDE WHITE EDGE LINE
18
3'
78'
61'
20'
12'
2' WIDE WHITE CROSS HATCHING SPACED 7' ON CENTER AT 45° WITH A 4" WIDE WHITE EDGE LINE
2' WIDE YELLOW CROSS HATCHING SPACED 8' ON CENTER AT 45°
55.07-1-13
N/F
SP HHF SUB A LLC
CHAIN LINK FENCE ON LINE
PROPOSED CURB (TYP)
105'R
125'R
140'R
76'R
100'R
4" WIDE WHITE DOTTED EXTENSION LINE (2' LINE AND 4' SPACE DASHED, REPEAT CYCLE)
WHITE YIELD LINE MARKINGS WITH LARGE DIMENSIONS
SEE ARCHITECTURAL DRAWINGS FOR GATE DESIGN
1' WIDE WHITE CROSS HATCHING SPACED 4' ON CENTER AT 35° WITH A 4" WIDE WHITE EDGE LINE"
PROPOSED COMPOSITE SOUND ATTENUATING WALL PANEL/FENCE SCREEN (DESIGNED BY OTHERS)
CONCRETE UTILITY PADS (SEE STRUCTURAL AND MEP DRAWINGS)
PROPOSED RETAINING WALL 'F' (DESIGNED BY OTHERS)
25'
70'
TRASH ENCLOSURE WITH CONC. PAD
YELLOW SOLID DOUBLE LINE (2-4" WIDE LINES SPACED 8" ON CENTER) (TYPICAL)
24' WIDE WHITE STOP LINE (TYPICAL)
CLF
A
62'R
16'R
15'
11'
15'
34'R
65'R
LAWN
PLATE
SIGN
UP
MEET EXISTING CURB
DEPRESSED CURB
MEET EXISTING PAVEMENT AT SAWCUT LINE
RELOCATE EXISTING GUARD SHED (SEE ARCHITECTURAL DRAWINGS)
MEET EXISTING CURB
PROPOSED TRAIN TRACKS (SEE CT SERIES DRAWINGS)
METAL FEN
'STOP'
CONC CURB
DOUBLE YELLOW
EXISTING TRACK TO BE REMOVED
MEET EXISTING CURB
PROPOSED CURB (TYP)
MEET EXISTING PAVEMENT AT SAWCUT LINE
MEET EXISTING CURB
7' HIGH PROPOSED FENCE
MEET EXISTING PAVEMENT AT SAWCUT LINE
MEET EXISTING CURB
UNNIGAN DRIVE
RIGHT-OF-WAY
DUNNIGAN DRIVE
RIGHT-OF-WAY

LEGEND

EXISTING PROPERTY LINE
ADJACENT PROPERTY LINE
EXISTING SETBACK LINE
EXISTING EASEMENT LINE
EXISTING ROADWAY CENTER LINE
WLF-63 WLF-64 WLF-65 EXISTING WETLAND LINE AND DELINEATION
EXISTING BUILDING OVERHANG
EXISTING BUILDING LINE
EXISTING PAVEMENT EDGE
EXISTING CURB LINE
EXISTING STONE WALL
EXISTING RETAINING WALL
EXISTING GUIDE RAIL
EXISTING FENCE
T10 M EXISTING TREE AND DESIGNATION
EXISTING DIRECTIONAL ARROWS
EXISTING PAINT
5 EXISTING PARKING WITH NUMBER OF SPACES
EXISTING UTILITY POLE
EXISTING LIGHT POLE
EXISTING SIGN
PROPOSED BUILDING LINE
PROPOSED PAVEMENT
PROPOSED CONCRETE LOADING DOCK
PROPOSED MILL & RESURFACING
PROPOSED LIMIT OF DISTURBANCE
PROPOSED SWALE
PROPOSED CONCRETE CURB
PROPOSED DEPRESSED CURB
5 PROPOSED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
PROPOSED RETAINING WALL (DESIGNED BY OTHERS)
PROPOSED GUIDE RAIL
PROPOSED CHAIN LINK FENCE
PROPOSED DOUBLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
PROPOSED SINGLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
▼ PROPOSED WALL MOUNTED LIGHTING STANDARD (DESIGN BY OTHERS)

NOTES:

1. SEE DRAWING C-100 FOR SIGN TABLE.

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

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SCALE :	1" = 40'
ISSUE :	

DRAWING TITLE :

LAYOUT PLAN

DWG NUMBER :

C-102

DWG FILE: 19005-LAYOUT
JMC PROJECT: 19005-1
SCR: LAYOUT.SCR

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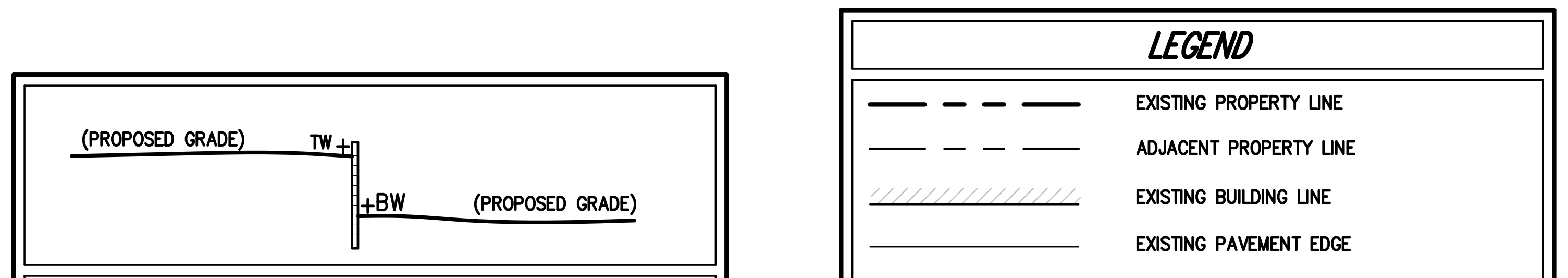
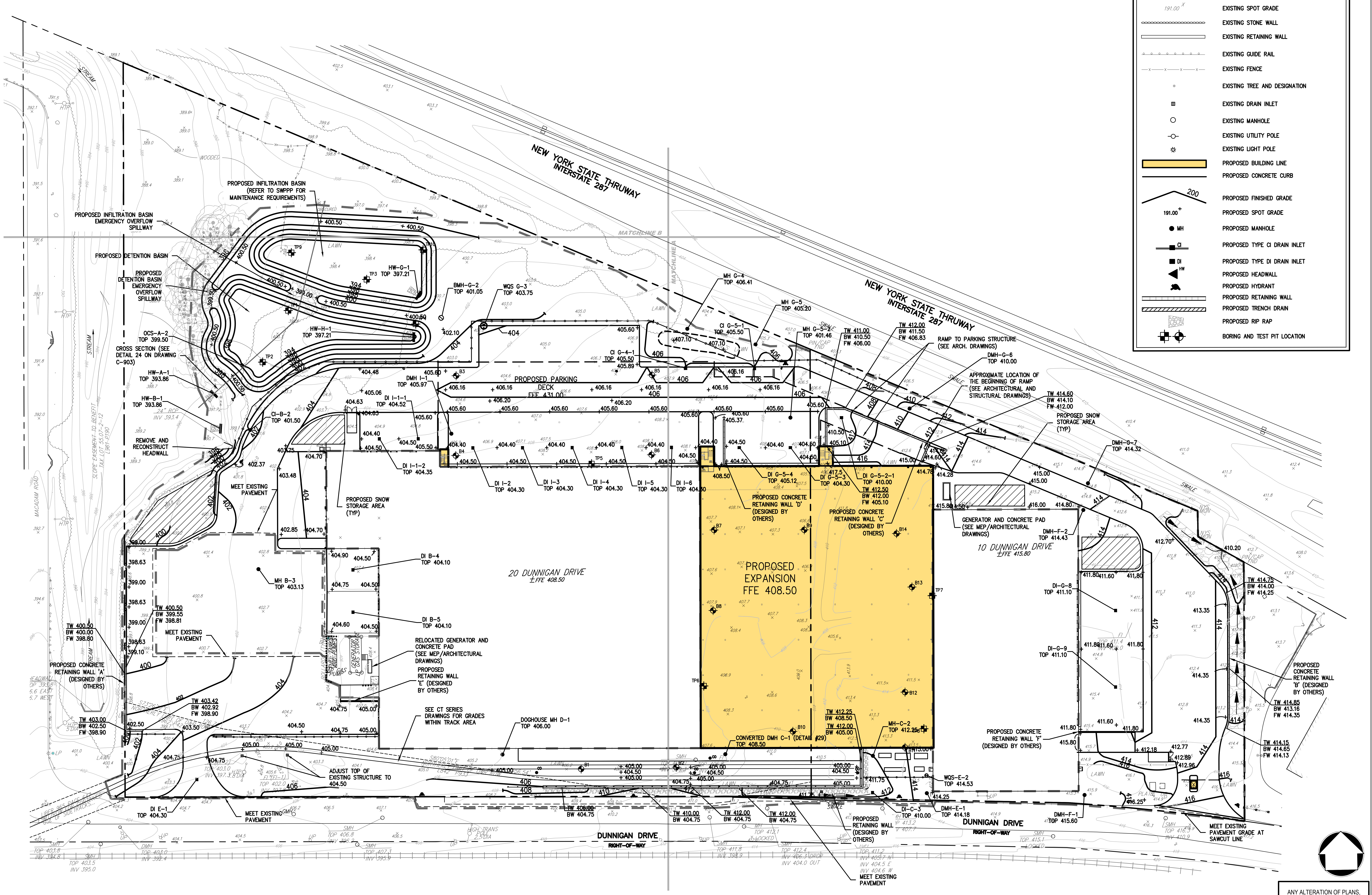

(PROPOSED GRADE)
TW
BW
(PROPOSED GRADE)

RETAINING WALL SPOT GRADE LEGEND

LEGEND

— — — —	EXISTING PROPERTY LINE
— — — —	ADJACENT PROPERTY LINE
▨	EXISTING BUILDING LINE
——	EXISTING PAVEMENT EDGE
——	EXISTING CURB LINE
172	EXISTING CONTOUR
170	EXISTING INDEX CONTOUR
191.00 ×	EXISTING SPOT GRADE
	EXISTING STONE WALL
▭	EXISTING RETAINING WALL
	EXISTING GUIDE RAIL
—x—x—x—	EXISTING FENCE
•	EXISTING TREE AND DESIGNATION
▥	EXISTING DRAIN INLET
○	EXISTING MANHOLE
-○-	EXISTING UTILITY POLE
☼	EXISTING LIGHT POLE
🟨	PROPOSED BUILDING LINE
——	PROPOSED CONCRETE CURB
200	PROPOSED FINISHED GRADE
191.00+	PROPOSED SPOT GRADE
● MH	PROPOSED MANHOLE
■ CI	PROPOSED TYPE CI DRAIN INLET
■ DI	PROPOSED TYPE DI DRAIN INLET
◀ HW	PROPOSED HEADWALL
	PROPOSED HYDRANT
	PROPOSED RETAINING WALL
▨	PROPOSED TRENCH DRAIN
	PROPOSED RIP RAP
⊕	BORING AND TEST PIT LOCATION


NEW YORK STATE THRUWAY
INTERSTATE 287
MATCHLINE B
MATCHLINE A
PROPOSED INFILTRATION BASIN (REFER TO SWPPP FOR MAINTENANCE REQUIREMENTS)
PROPOSED INFILTRATION BASIN EMERGENCY OVERFLOW SPILLWAY
PROPOSED DETENTION BASIN
PROPOSED DETENTION BASIN EMERGENCY OVERFLOW SPILLWAY
OCS-A-2 TOP 399.50
CROSS SECTION (SEE DETAIL 24 ON DRAWING C-903)
HW-A-1 TOP 393.86
HW-B-1 TOP 393.86
24" RCP INV 393.4
REMOVE AND RECONSTRUCT HEADWALL
HW-G-1 TOP 397.21
HW-H-1 TOP 397.21
BMH-G-2 TOP 401.05
WQS G-3 TOP 403.75
CI-B-2 TOP 401.50
DMH I-1 TOP 405.97
DI I-1-1 TOP 404.52
DI I-1-2 TOP 404.35
DI I-2 TOP 404.30
DI I-3 TOP 404.30
DI I-4 TOP 404.30
DI I-5 TOP 404.30
DI I-6 TOP 404.30
CI G-4-1 TOP 405.50
MH G-4 TOP 406.41
CI G-5-1 TOP 405.50
MH G-5 TOP 405.20
MH G-5-2 TOP 401.46
TW 411.00 BW 410.50 FW 406.00
TW 412.00 BW 411.50 FW 406.83
RAMP TO PARKING STRUCTURE (SEE ARCH. DRAWINGS)
DMH-G-6 TOP 410.00
APPROXIMATE LOCATION OF THE BEGINNING OF RAMP (SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS)
TW 414.60 BW 414.10 FW 412.00
PROPOSED SNOW STORAGE AREA (TYP)
DMH-G-7 TOP 414.32
PROPOSED PARKING DECK FFE 431.00
MEET EXISTING PAVEMENT
PROPOSED SNOW STORAGE AREA (TYP)
DI G-5-4 TOP 405.12
DI G-5-3 TOP 404.30
DI G-5-2-1 TOP 410.00
TW 412.50 BW 412.00 FW 405.10
PROPOSED CONCRETE RETAINING WALL 'D' (DESIGNED BY OTHERS)
PROPOSED CONCRETE RETAINING WALL 'C' (DESIGNED BY OTHERS)
GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
DMH-F-2 TOP 414.43
10 DUNNIGAN DRIVE ±FFE 415.80
DI-G-8 TOP 411.10
DI-G-9 TOP 411.10
PROPOSED CONCRETE RETAINING WALL 'B' (DESIGNED BY OTHERS)
TW 414.75 BW 414.00 FW 414.25
TW 414.85 BW 413.16 FW 414.35
TW 414.15 BW 414.65 FW 414.13
PROPOSED CONCRETE RETAINING WALL 'F' (DESIGNED BY OTHERS)
MH B-3 TOP 403.13
DI B-4 TOP 404.10
DI B-5 TOP 404.10
20 DUNNIGAN DRIVE ±FFE 408.50
PROPOSED EXPANSION FFE 408.50
TW 400.50 BW 399.55 FW 398.81
TW 400.50 BW 400.00 FW 398.80
MEET EXISTING PAVEMENT
PROPOSED CONCRETE RETAINING WALL 'A' (DESIGNED BY OTHERS)
TW 403.42 BW 402.92 FW 398.90
TW 403.00 BW 402.50 FW 398.90
RELOCATED GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
PROPOSED RETAINING WALL 'E' (DESIGNED BY OTHERS)
SEE CT SERIES DRAWINGS FOR GRADES WITHIN TRACK AREA
DOGHOUSE MH D-1 TOP 406.00
TW 412.25 BW 408.50
TW 412.00 BW 405.00
MH-C-2 TOP 412.25
CONVERTED DMH C-1 (DETAIL #29) TOP 408.50
ADJUST TOP OF EXISTING STRUCTURE TO 404.50
DI E-1 TOP 404.30
MEET EXISTING PAVEMENT
TW 406.00 BW 404.75
TW 410.00 BW 404.75
TW 412.00 BW 404.75
TW 412.00 BW 404.75
PROPOSED RETAINING WALL (DESIGNED BY OTHERS)
MEET EXISTING PAVEMENT
WQS-E-2 TOP 414.53
DI-C-3 TOP 410.00
DMH-E-1 TOP 414.18
DMH-F-1 TOP 415.60
MEET EXISTING PAVEMENT GRADE AT SAWCUT LINE
DUNNIGAN DRIVE RIGHT-OF-WAY
DUNNIGAN DRIVE RIGHT-OF-WAY
MACADAM ROAD
STREAM
SLOPE EASEMENT TO BENEFIT TAX LOT 55.07-2-12 L961 P190
WOODED
LAWN
SWALE

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE

60
0
30
60
120
240

(IN FEET)
1 inch = 60 ft.

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REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	07.16.20
2	REISSUED PER PB COMMENTS	08.21.20
3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	REISSUED PER PB COMMENTS	10.27.20
6	FOR PLANNING BOARD APPROVAL	04.09.21
7	REISSUED PER ENGINEER COMMENTS	05.10.21
8	REISSUED PER ENGINEER COMMENTS	05.17.21
9	ISSUED FOR DOB SUBMISSION	09.10.21
10	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	1.16.2020
SCALE :	1" = 60'
ISSUE :	

DRAWING TITLE :

OVERALL GRADING PLAN

DWG NUMBER :

C-200

JMC PROJECT: 19005-1
SCR: GRAD.SCR
DWG FILE: 19005-GRAD

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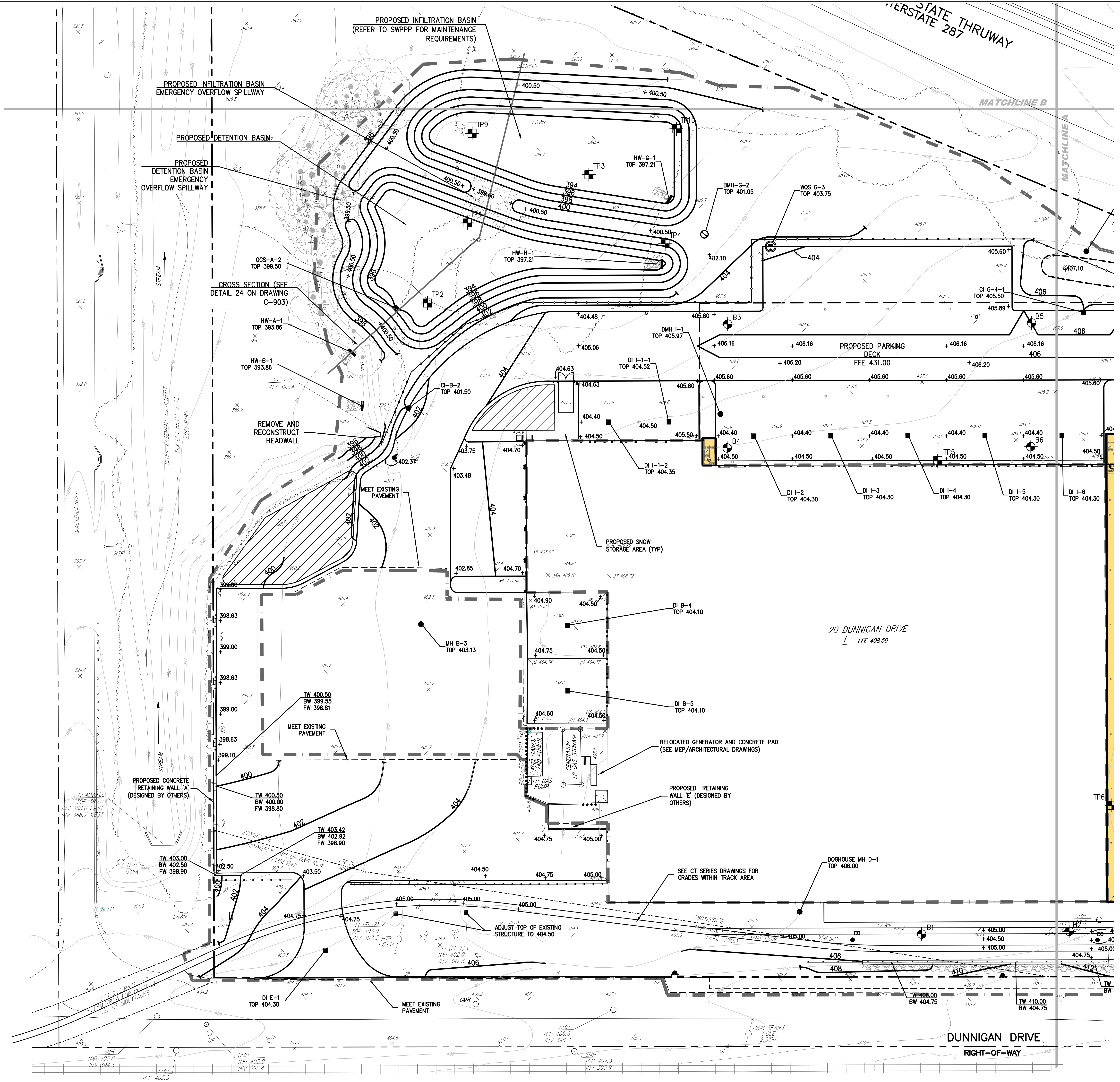
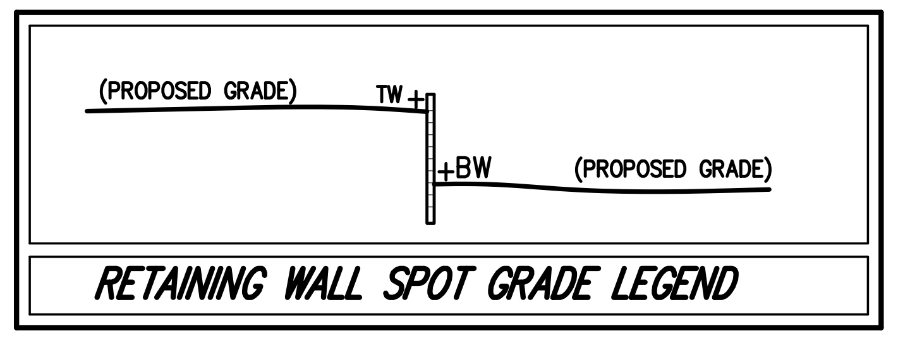

STATE THRUWAY
INTERSTATE 287
MATCHLINE B
MATCHLINE A
PROPOSED INFILTRATION BASIN (REFER TO SWPPP FOR MAINTENANCE REQUIREMENTS)
PROPOSED INFILTRATION BASIN EMERGENCY OVERFLOW SPILLWAY
PROPOSED DETENTION BASIN
PROPOSED DETENTION BASIN EMERGENCY OVERFLOW SPILLWAY
OCS-A-2 TOP 399.50
CROSS SECTION (SEE DETAIL 24 ON DRAWING C-903)
HW-A-1 TOP 393.86
HW-B-1 TOP 393.86
24" RCP INV 393.4
REMOVE AND RECONSTRUCT HEADWALL
TP9
TP3
TP1
TP2
TP4
TP10
HW-G-1 TOP 397.21
HW-H-1 TOP 397.21
BMH-G-2 TOP 401.05
WQS G-3 TOP 403.75
CI-B-2 TOP 401.50
MEET EXISTING PAVEMENT
DMH I-1 TOP 405.97
DI I-1-1 TOP 404.52
DI I-1-2 TOP 404.35
PROPOSED PARKING DECK FFE 431.00
PROPOSED SNOW STORAGE AREA (TYP)
CI G-4-1 TOP 405.50
B3
B4
B5
B6
TP5
DI I-2 TOP 404.30
DI I-3 TOP 404.30
DI I-4 TOP 404.30
DI I-5 TOP 404.30
DI I-6 TOP 404.30
MH B-3 TOP 403.13
DI B-4 TOP 404.10
DI B-5 TOP 404.10
20 DUNNIGAN DRIVE ± FFE 408.50
TW 400.50 BW 399.55 FW 398.81
MEET EXISTING PAVEMENT
RELOCATED GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
GENERATOR LP GAS STORAGE
FUEL TANKS AND PUMPS
LP GAS PUMP
PROPOSED RETAINING WALL 'E' (DESIGNED BY OTHERS)
PROPOSED CONCRETE RETAINING WALL 'A' (DESIGNED BY OTHERS)
TW 400.50 BW 400.00 FW 398.80
TW 403.42 BW 402.92 FW 398.90
TW 403.00 BW 402.50 FW 398.90
TP6
SEE CT SERIES DRAWINGS FOR GRADES WITHIN TRACK AREA
DOGHOUSE MH D-1 TOP 406.00
ADJUST TOP OF EXISTING STRUCTURE TO 404.50
DI E-1 TOP 404.30
MEET EXISTING PAVEMENT
B1
B7
TW 406.00 BW 404.75
TW 410.00 BW 404.75
STREAM
MACADAM ROAD
SLOPE EASEMENT TO BENEFIT TAX LOT 55.07-2-12 L961-P190
DUNNIGAN DRIVE
RIGHT-OF-WAY

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING SPOT GRADE
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED FINISHED GRADE
- PROPOSED SPOT GRADE
- PROPOSED MANHOLE
- PROPOSED TYPE CI DRAIN INLET
- PROPOSED TYPE DI DRAIN INLET
- PROPOSED HEADWALL
- PROPOSED HYDRANT
- PROPOSED RETAINING WALL
- PROPOSED TRENCH DRAIN
- PROPOSED RIP RAP
- BORING AND TEST PIT LOCATION


(PROPOSED GRADE)
TW
BW
(PROPOSED GRADE)

RETAINING WALL SPOT GRADE LEGEND

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DATE : 1.16.2020
SCALE : 1" = 40'
ISSUE :

DRAWING TITLE :

GRADING PLAN

DWG NUMBER :

C-201

JMC PROJECT: 19005-1
SCR: GRAD.SCR
DWG FILE: 19005-GRAD

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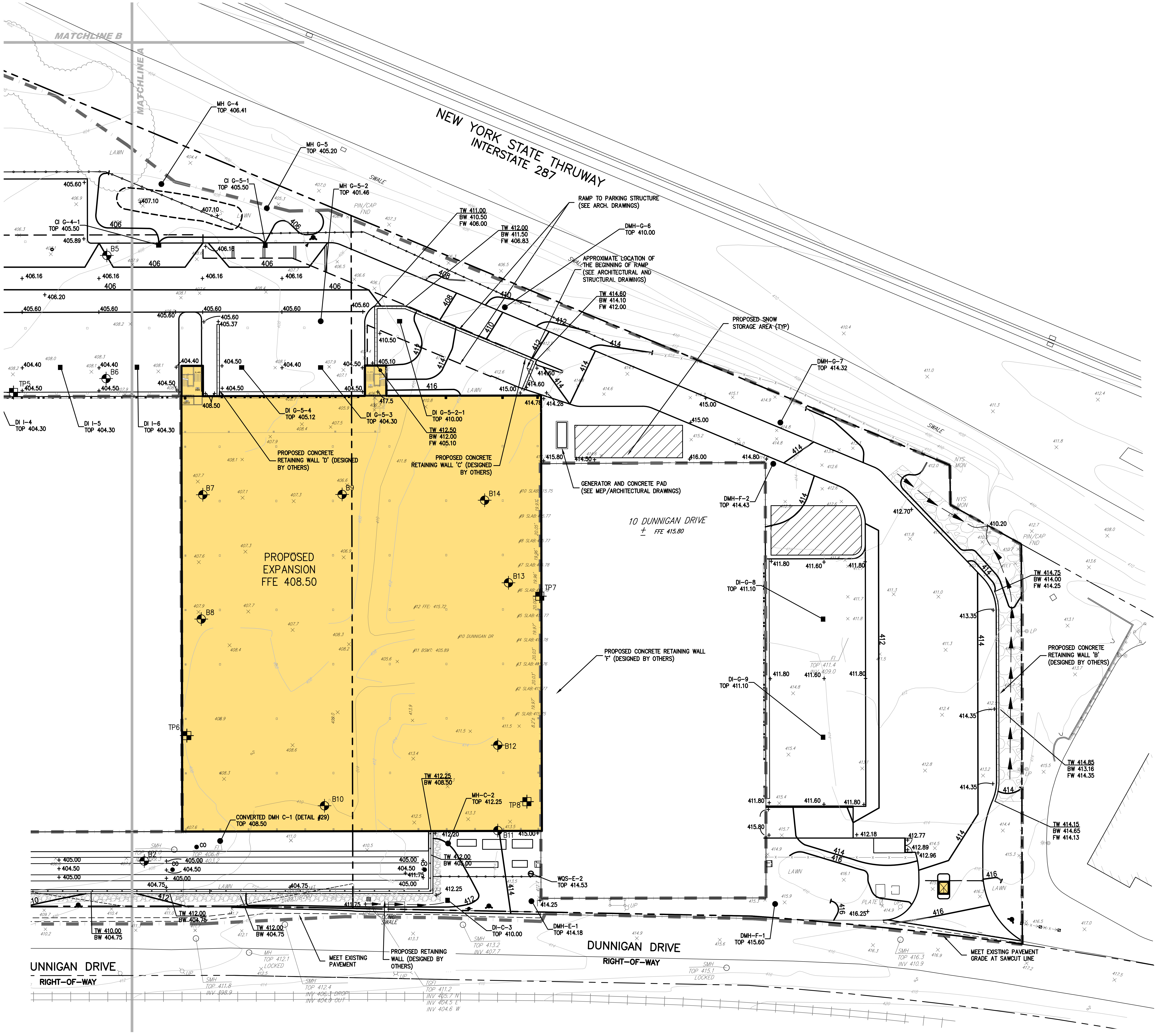
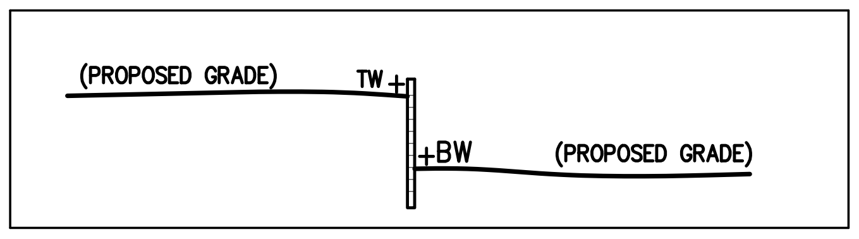

MATCHLINE B
MATCHLINE A
NEW YORK STATE THRUWAY
INTERSTATE 287
MH G-4 TOP 406.41
MH G-5 TOP 405.20
CI G-5-1 TOP 405.50
MH G-5-2 TOP 401.46
CI G-4-1 TOP 405.50
RAMP TO PARKING STRUCTURE (SEE ARCH. DRAWINGS)
DMH-G-6 TOP 410.00
APPROXIMATE LOCATION OF THE BEGINNING OF RAMP (SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS)
TW 411.00 BW 410.50 FW 406.00
TW 412.00 BW 411.50 FW 406.83
TW 414.60 BW 414.10 FW 412.00
PROPOSED SNOW STORAGE AREA (TYP)
DMH-G-7 TOP 414.32
SWALE
LAWN
DI I-4 TOP 404.30
DI I-5 TOP 404.30
DI I-6 TOP 404.30
DI G-5-4 TOP 405.12
DI G-5-3 TOP 404.30
DI G-5-2-1 TOP 410.00
TW 412.50 BW 412.00 FW 405.10
PROPOSED CONCRETE RETAINING WALL 'D' (DESIGNED BY OTHERS)
PROPOSED CONCRETE RETAINING WALL 'C' (DESIGNED BY OTHERS)
GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
DMH-F-2 TOP 414.43
10 DUNNIGAN DRIVE ± FFE 415.80
PROPOSED EXPANSION FFE 408.50
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
TP5
TP6
TP7
TP8
DI-G-8 TOP 411.10
DI-G-9 TOP 411.10
PROPOSED CONCRETE RETAINING WALL 'F' (DESIGNED BY OTHERS)
PROPOSED CONCRETE RETAINING WALL 'B' (DESIGNED BY OTHERS)
TW 414.75 BW 414.00 FW 414.25
TW 414.85 BW 413.16 FW 414.35
TW 414.15 BW 414.65 FW 414.13
TW 412.25 BW 408.50
MH-C-2 TOP 412.25
CONVERTED DMH C-1 (DETAIL #29) TOP 408.50
TW 412.00 BW 405.00
WQS-E-2 TOP 414.53
DMH-E-1 TOP 414.18
DI-C-3 TOP 410.00
DMH-F-1 TOP 415.60
TW 410.00 BW 404.75
TW 412.00 BW 404.75
MEET EXISTING PAVEMENT
PROPOSED RETAINING WALL (DESIGNED BY OTHERS)
MEET EXISTING PAVEMENT GRADE AT SAWCUT LINE
DUNNIGAN DRIVE
RIGHT-OF-WAY
UNNIGAN DRIVE
RIGHT-OF-WAY

LEGEND

— — —	EXISTING PROPERTY LINE
— – – —	ADJACENT PROPERTY LINE
▨	EXISTING BUILDING LINE
—	EXISTING PAVEMENT EDGE
—	EXISTING CURB LINE
172	EXISTING CONTOUR
170	EXISTING INDEX CONTOUR
191.00 ×	EXISTING SPOT GRADE
∞∞∞	EXISTING STONE WALL
▭	EXISTING RETAINING WALL
∘–∘–∘	EXISTING GUIDE RAIL
–x–x–	EXISTING FENCE
●	EXISTING TREE AND DESIGNATION
▥	EXISTING DRAIN INLET
○	EXISTING MANHOLE
–○–	EXISTING UTILITY POLE
☼	EXISTING LIGHT POLE
🟨	PROPOSED BUILDING LINE
—	PROPOSED CONCRETE CURB
200	PROPOSED FINISHED GRADE
191.00 +	PROPOSED SPOT GRADE
● MH	PROPOSED MANHOLE
■ CI	PROPOSED TYPE CI DRAIN INLET
■ DI	PROPOSED TYPE DI DRAIN INLET
◀ HW	PROPOSED HEADWALL
▲	PROPOSED HYDRANT
▭	PROPOSED RETAINING WALL
▨	PROPOSED TRENCH DRAIN
▩	PROPOSED RIP RAP
⊕	BORING AND TEST PIT LOCATION


(PROPOSED GRADE)
TW
BW
(PROPOSED GRADE)

RETAINING WALL SPOT GRADE LEGEND

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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New York, New York 10018
Tel 212-687-8282

MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	07.16.20
2	REISSUED PER PB COMMENTS	08.21.20
3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	REISSUED PER PB COMMENTS	10.27.20
6	FOR PLANNING BOARD APPROVAL	04.09.21
7	REISSUED PER ENGINEER COMMENTS	05.10.21
8	REISSUED PER ENGINEER COMMENTS	05.17.21
9	ISSUED FOR DOB SUBMISSION	09.10.21
10	ISSUED FOR BID	10.15.21

DRAWN BY : DC
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 1.16.2020
SCALE : 1" = 40'
ISSUE :

DRAWING TITLE :

GRADING PLAN

DWG NUMBER :

C-202

JMC PROJECT: 19005-1
SCR: GRAD.SCR
DWG FILE: 19005-GRAD

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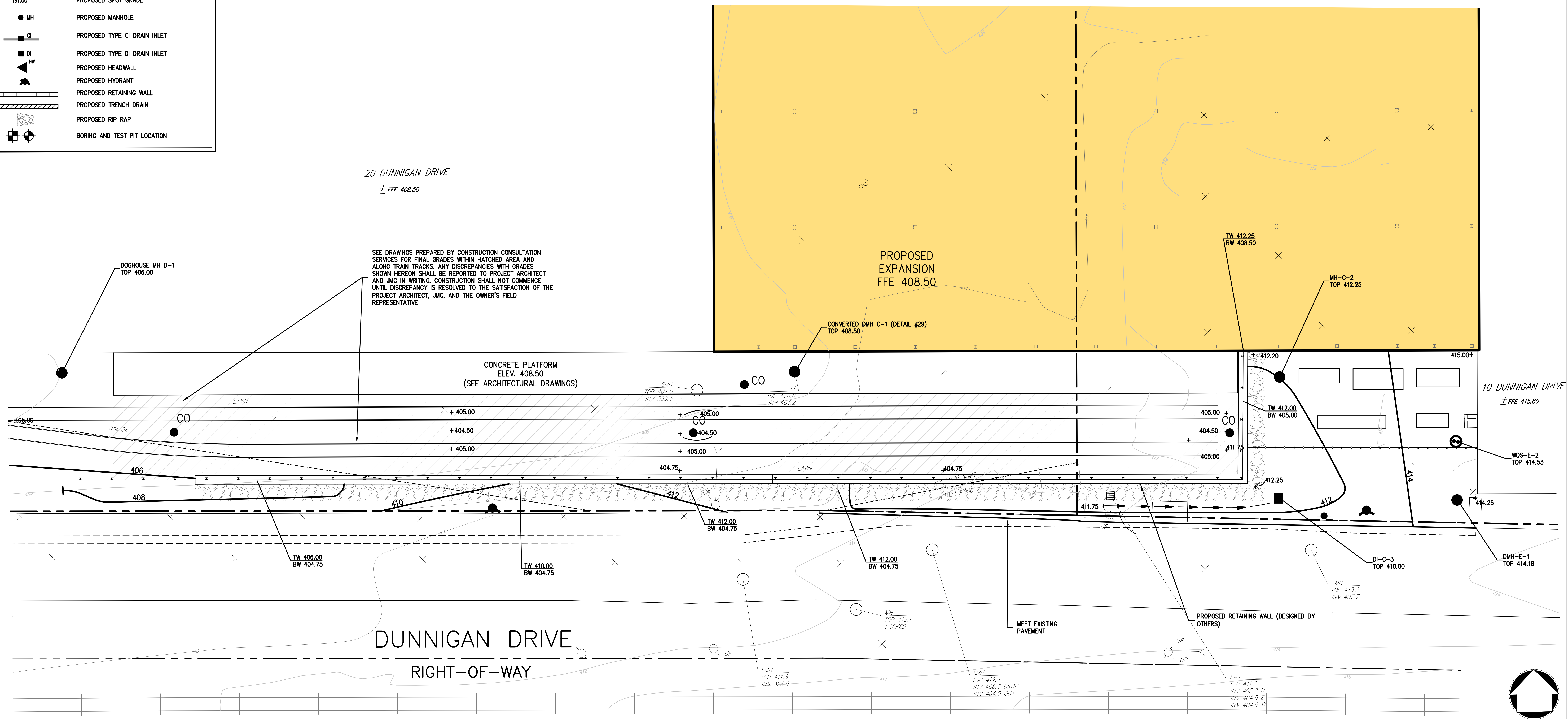
LEGEND

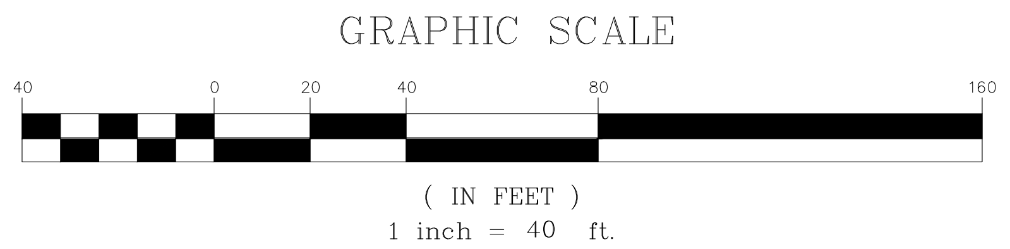
— — — —	EXISTING PROPERTY LINE
— — — —	ADJACENT PROPERTY LINE
▨	EXISTING BUILDING LINE
—	EXISTING PAVEMENT EDGE
—	EXISTING CURB LINE
172	EXISTING CONTOUR
170	EXISTING INDEX CONTOUR
191.00 X	EXISTING SPOT GRADE
○○○○○○	EXISTING STONE WALL
▭	EXISTING RETAINING WALL
○—○—○	EXISTING GUIDE RAIL
—x—x—x—	EXISTING FENCE
•	EXISTING TREE AND DESIGNATION
▥	EXISTING DRAIN INLET
○	EXISTING MANHOLE
-○-	EXISTING UTILITY POLE
☼	EXISTING LIGHT POLE
🟨	PROPOSED BUILDING LINE
—	PROPOSED CONCRETE CURB
200	PROPOSED FINISHED GRADE
191.00 +	PROPOSED SPOT GRADE
● MH	PROPOSED MANHOLE
■ CI	PROPOSED TYPE CI DRAIN INLET
■ DI	PROPOSED TYPE DI DRAIN INLET
◀ HW	PROPOSED HEADWALL
	PROPOSED HYDRANT
	PROPOSED RETAINING WALL
▨	PROPOSED TRENCH DRAIN
	PROPOSED RIP RAP
⊕	BORING AND TEST PIT LOCATION



20 DUNNIGAN DRIVE
± FFE 408.50
PROPOSED EXPANSION
FFE 408.50
DOGHOUSE MH D-1
TOP 406.00
CONCRETE PLATFORM
ELEV. 408.50
(SEE ARCHITECTURAL DRAWINGS)
CONVERTED DMH C-1 (DETAIL #29)
TOP 408.50
CO
SMH
TOP 407.0
INV 399.3
FI
TOP 406.8
INV 403.2
LAWN
405.00
404.50
405.00
404.75
404.75
406
408
410
412
414
RR SPUR ESMT
L1023 P200
TW 406.00
BW 404.75
TW 410.00
BW 404.75
TW 412.00
BW 404.75
TW 412.00
BW 404.75
TW 412.25
BW 408.50
MH-C-2
TOP 412.25
412.20
415.00
TW 412.00
BW 405.00
411.75
412.25
10 DUNNIGAN DRIVE
± FFE 415.80
WQS-E-2
TOP 414.53
414.25
DI-C-3
TOP 410.00
DMH-E-1
TOP 414.18
SMH
TOP 413.2
INV 407.7
MH
TOP 412.1
LOCKED
MEET EXISTING
PAVEMENT
PROPOSED RETAINING WALL (DESIGNED BY OTHERS)
UP
SMH
TOP 411.8
INV 398.9
SMH
TOP 412.4
INV 406.3 DROP
INV 404.0 OUT
TGFI
TOP 411.2
INV 405.7 N
INV 404.5 E
INV 404.6 W
DUNNIGAN DRIVE
RIGHT-OF-WAY

SEE DRAWINGS PREPARED BY CONSTRUCTION CONSULTATION SERVICES FOR FINAL GRADES WITHIN HATCHED AREA AND ALONG TRAIN TRACKS. ANY DISCREPANCIES WITH GRADES SHOWN HEREON SHALL BE REPORTED TO PROJECT ARCHITECT AND JMC IN WRITING. CONSTRUCTION SHALL NOT COMMENCE UNTIL DISCREPANCY IS RESOLVED TO THE SATISFACTION OF THE PROJECT ARCHITECT, JMC, AND THE OWNER'S FIELD REPRESENTATIVE

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.



GRAPHIC SCALE
40
0
20
40
80
160
(IN FEET)
1 inch = 40 ft.

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SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
2	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	1.16.2020
SCALE :	1" = 20'
ISSUE :	

DRAWING TITLE :

ASRS TRACK GRADING PLAN

DWG NUMBER :

C-203

JMC PROJECT: 19005-1
SCR: GRAD.SCR
DWG FILE: 19005-GRAD

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LEGEND

EXISTING PROPERTY LINE		○	EXISTING MANHOLE
ADJACENT PROPERTY LINE			EXISTING FIRE HYDRANT
EXISTING EASEMENT LINE		GV	EXISTING GAS VALVE
WLF-63 WLF-64 WLF-65	EXISTING WETLAND LINE AND DELINEATION	WV	EXISTING WATER VALVE
EXISTING BUILDING OVERHANG			EXISTING UTILITY POLE
EXISTING BUILDING LINE		☼	EXISTING LIGHT POLE
EXISTING PAVEMENT EDGE			EXISTING SIGN
EXISTING CURB LINE			PROPOSED BUILDING LINE
172	EXISTING CONTOUR		PROPOSED CONCRETE CURB
170	EXISTING INDEX CONTOUR		PROPOSED EASEMENT LINE
EXISTING STONE WALL		▭	PROPOSED CONCRETE SIDEWALK
EXISTING RETAINING WALL			PROPOSED DROP CURB AND RAMP
EXISTING GUIDE RAIL		● SMH	PROPOSED SANITARY SEWER MANHOLE
—x—x—x—x—	EXISTING FENCE	● MH	PROPOSED STORM DRAIN MANHOLE
36" RCP	EXISTING STORM DRAIN LINE AND SIZE	● CO	PROPOSED CLEAN OUT
8" SAN	EXISTING SANITARY LINE AND SIZE	■ DI	PROPOSED TYPE DI DRAIN INLET
—W—W—W—W—W—W—	EXISTING WATER LINE	15" HDPE	PROPOSED STORM DRAIN LINE & SIZE
—G—G—G—G—G—G—	EXISTING GAS LINE	6" PVC	PROPOSED SANITARY LINE & SIZE
—OHW—OHW—OHW—OHW—	EXISTING OVERHEAD WIRES		PROPOSED WATER VALVE
▥	EXISTING DRAIN INLET		PROPOSED GAS VALVE
			PROPOSED RIP-RAP APRON
			PROPOSED RETAINING WALL (DESIGN BY OTHERS)

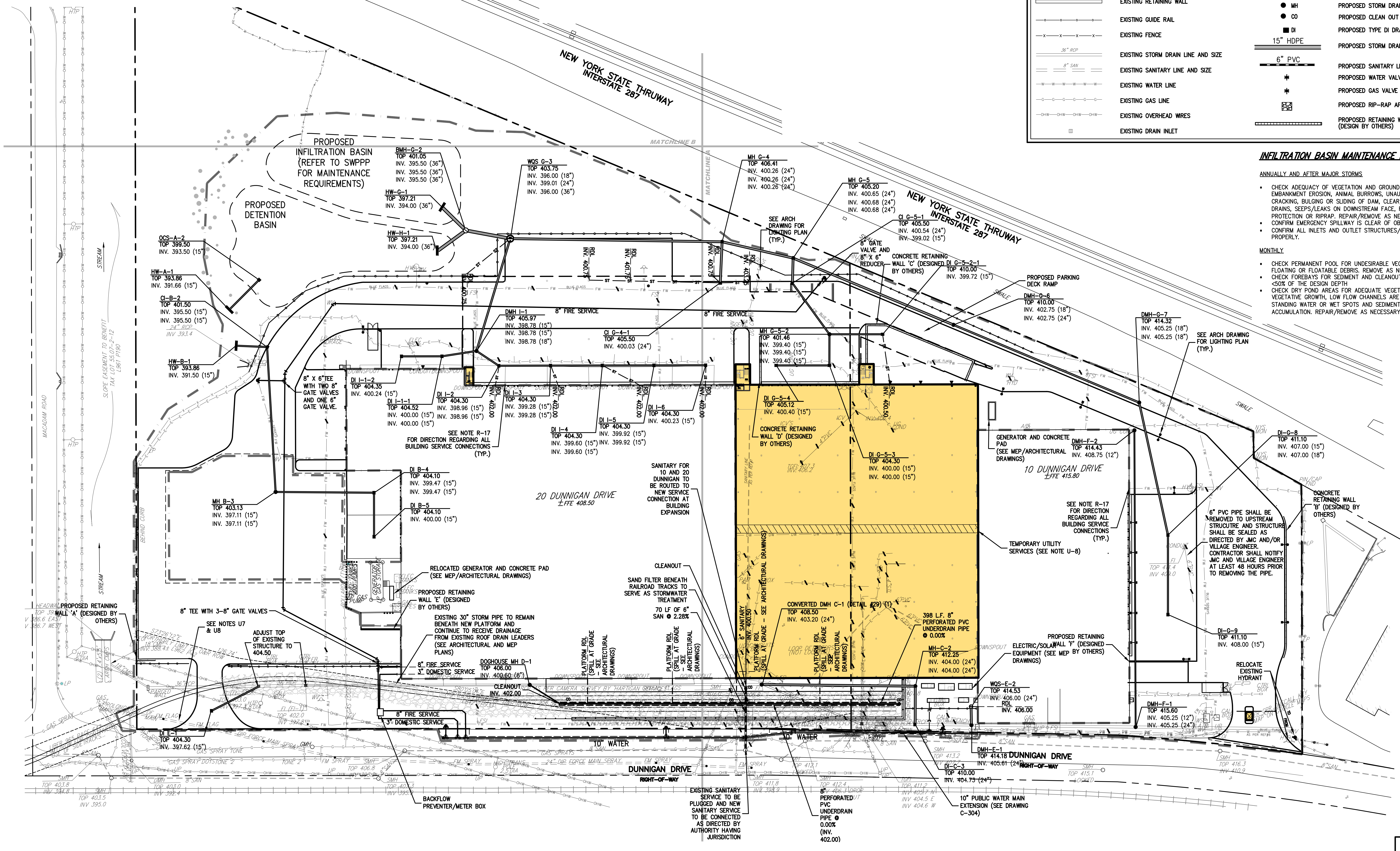
INFILTRATION BASIN MAINTENANCE NOTES:

ANNUALLY AND AFTER MAJOR STORMS

- CHECK ADEQUACY OF VEGETATION AND GROUND COVER; FOR EVIDENCE OF EMBANKMENT EROSION, ANIMAL BURROWS, UNAUTHORIZED PLANTINGS AND CRACKING, BULGING OR SLIDING OF DAM, CLEAR/PROPERLY FUNCTIONING DRAINS, SEEPS/LEAKS ON DOWNSTREAM FACE, FAILURE OF SLOPE PROTECTION OR RIPRAP. REPAIR/REMOVE AS NECESSARY.
- CONFIRM EMERGENCY SPILLWAY IS CLEAR OF OBSTRUCTIONS AND DEBRIS.
- CONFIRM ALL INLETS AND OUTLET STRUCTURES/PIPES ARE OPERATING PROPERLY.

MONTHLY

- CHECK PERMANENT POOL FOR UNDESIRABLE VEGETATIVE GROWTH AND FLOATING OR FLOATABLE DEBRIS. REMOVE AS NEEDED.
- CHECK FOREBAYS FOR SEDIMENT AND CLEANOUT WHEN THE DEPTH IS <50% OF THE DESIGN DEPTH
- CHECK DRY POND AREAS FOR ADEQUATE VEGETATION, UNDESIRABLE VEGETATIVE GROWTH, LOW FLOW CHANNELS ARE CLEAR OF OBSTRUCTIONS, STANDING WATER OR WET SPOTS AND SEDIMENT AND/OR TRASH ACCUMULATION. REPAIR/REMOVE AS NECESSARY.


NEW YORK STATE THRUWAY
INTERSTATE 287
MATCHLINE B
MATCHLINE A
PROPOSED INFILTRATION BASIN (REFER TO SWPPP FOR MAINTENANCE REQUIREMENTS)
PROPOSED DETENTION BASIN
BMH-G-2 TOP 401.05 INV. 395.50 (36") INV. 395.50 (36") INV. 395.50 (36")
WQS G-3 TOP 403.75 INV. 396.00 (18") INV. 399.01 (24") INV. 396.00 (36")
HW-G-1 TOP 397.21 INV. 394.00 (36")
HW-H-1 TOP 397.21 INV. 394.00 (36")
OCS-A-2 TOP 399.50 INV. 393.50 (15")
HW-A-1 TOP 393.86 INV. 391.66 (15")
CI-B-2 TOP 401.50 INV. 395.50 (15") INV. 395.50 (15")
24" RCP INV 393.4
HW-B-1 TOP 393.86 INV. 391.50 (15")
TAX LOT 55.07-2-12 L961 P190
SLOPE EASEMENT TO BENEFIT
MACADAM ROAD
STREAM
BEHIND CURB
8" X 6" TEE WITH TWO 8" GATE VALVES AND ONE 6" GATE VALVE.
RDL INV. 400.75
RDL INV. 401.75
RDL INV. 400.75
RDL INV. 403.25
RDL INV. 402.00
RDL INV. 400.50
8" FIRE SERVICE
DMH I-1 TOP 405.97 INV. 398.78 (15") INV. 398.78 (15") INV. 398.78 (18")
CI G-4-1 TOP 405.50 INV. 400.03 (24")
DI I-1-2 TOP 404.35 INV. 400.24 (15")
DI I-1-1 TOP 404.52 INV. 400.00 (15") INV. 400.00 (15")
DI I-2 TOP 404.30 INV. 398.96 (15") INV. 398.96 (15")
DI I-3 TOP 404.30 INV. 399.28 (15") INV. 399.28 (15")
DI I-4 TOP 404.30 INV. 399.60 (15") INV. 399.60 (15")
DI I-5 TOP 404.30 INV. 399.92 (15") INV. 399.92 (15")
DI I-6 TOP 404.30 INV. 400.23 (15")
SEE NOTE R-17 FOR DIRECTION REGARDING ALL BUILDING SERVICE CONNECTIONS (TYP.)
MH G-4 TOP 406.41 INV. 400.26 (24") INV. 400.26 (24") INV. 400.26 (24")
MH G-5 TOP 405.20 INV. 400.65 (24") INV. 400.68 (24") INV. 400.68 (24")
SEE ARCH DRAWING FOR LIGHTING PLAN (TYP.)
CI G-5-1 TOP 405.50 INV. 400.54 (24") INV. 399.02 (15")
8" GATE VALVE AND 8" X 6" REDUCER
CONCRETE RETAINING WALL 'C' (DESIGNED BY OTHERS)
DI G-5-2-1 TOP 410.00 INV. 399.72 (15")
PROPOSED PARKING DECK RAMP
DMH-G-6 TOP 410.00 INV. 402.75 (18") INV. 402.75 (24")
DMH-G-7 TOP 414.32 INV. 405.25 (18") INV. 405.25 (18")
SWALE
MH G-5-2 TOP 401.46 INV. 399.40 (15") INV. 399.40 (15") INV. 399.40 (15")
DI G-5-4 TOP 405.12 INV. 400.40 (15")
CONCRETE RETAINING WALL 'D' (DESIGNED BY OTHERS)
DI G-5-3 TOP 404.30 INV. 400.00 (15") INV. 400.00 (15")
GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
DMH-F-2 TOP 414.43 INV. 408.75 (12")
10 DUNNIGAN DRIVE ±FFE 415.80
DI-G-8 TOP 411.10 INV. 407.00 (15") INV. 407.00 (18")
CONCRETE RETAINING WALL 'B' (DESIGNED BY OTHERS)
20 DUNNIGAN DRIVE ±FFE 408.50
SANITARY FOR 10 AND 20 DUNNIGAN TO BE ROUTED TO NEW SERVICE CONNECTION AT BUILDING EXPANSION
DI B-4 TOP 404.10 INV. 399.47 (15") INV. 399.47 (15")
DI B-5 TOP 404.10 INV. 400.00 (15")
MH B-3 TOP 403.13 INV. 397.11 (15") INV. 397.11 (15")
TEMPORARY UTILITY SERVICES (SEE NOTE U-8)
6" PVC PIPE SHALL BE REMOVED TO UPSTREAM STRUCUTRE AND STRUCTURE SHALL BE SEALED AS DIRECTED BY JMC AND/OR VILLAGE ENGINEER. CONTRACTOR SHALL NOTIFY JMC AND VILLAGE ENGINEER AT LEAST 48 HOURS PRIOR TO REMOVING THE PIPE.
RELOCATED GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
PROPOSED RETAINING WALL 'E' (DESIGNED BY OTHERS)
EXISTING 30" STORM PIPE TO REMAIN BENEATH NEW PLATFORM AND CONTINUE TO RECEIVE DRAINAGE FROM EXISTING ROOF DRAIN LEADERS (SEE ARCHITECTURAL AND MEP PLANS)
CLEANOUT
SAND FILTER BENEATH RAILROAD TRACKS TO SERVE AS STORMWATER TREATMENT
70 LF OF 6" SAN @ 2.28%
PROPOSED RETAINING WALL 'A' (DESIGNED BY OTHERS)
8" TEE WITH 3-8" GATE VALVES
SEE NOTES U7 & U8
ADJUST TOP OF EXISTING STRUCTURE TO 404.50
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
6" SANITARY INV. 400.50
CONVERTED DMH C-1 (DETAIL #29) (1) TOP 408.50 INV. 403.20 (24")
398 L.F. 8" PERFORATED PVC UNDERDRAIN PIPE @ 0.00%
MH-C-2 TOP 412.25 INV. 404.00 (24") INV. 404.00 (24")
PROPOSED RETAINING WALL 'F' (DESIGNED BY OTHERS)
ELECTRIC/SOLAR EQUIPMENT (SEE MEP DRAWINGS)
DI-G-9 TOP 411.10 INV. 408.00 (15")
RELOCATE EXISTING HYDRANT
8" FIRE SERVICE
3" DOMESTIC SERVICE
DOGHOUSE MH D-1 TOP 406.00 INV. 400.60 (8")
CLEANOUT INV. 402.00
DI E-1 TOP 404.30 INV. 397.62 (15")
10" WATER
WQS-E-2 TOP 414.53 INV. 406.00 (24")
RDL INV. 406.00
DMH-F-1 TOP 415.60 INV. 405.25 (12") INV. 405.25 (24")
DMH-E-1 TOP 414.18 INV. 405.61 (24")
DI-C-3 TOP 410.00 INV. 404.73 (24")
DUNNIGAN DRIVE RIGHT-OF-WAY
BACKFLOW PREVENTER/METER BOX
EXISTING SANITARY SERVICE TO BE PLUGGED AND NEW SANITARY SERVICE TO BE CONNECTED AS DIRECTED BY AUTHORITY HAVING JURISDICTION
8" PERFORATED PVC UNDERDRAIN PIPE @ 0.00% (INV. 402.00)
10" PUBLIC WATER MAIN EXTENSION (SEE DRAWING C-304)

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

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Tel 212-687-8282

MANHATTAN BEER DISTRIBUTORS

MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	07.16.20
2	REISSUED PER PB COMMENTS	08.21.20
3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	REISSUED PER PB COMMENTS	10.27.20
6	REVISED PER DPW COMMENTS	10.28.20
7	FOR PLANNING BOARD APPROVAL	04.09.21
8	REISSUED PER ENGINEER COMMENTS	05.10.21
9	REISSUED PER ENGINEER COMMENTS	05.17.21
10	ISSUED FOR DOB SUBMISSION	09.10.21
11	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	1.16.2020
SCALE :	1" = 60'
ISSUE :	

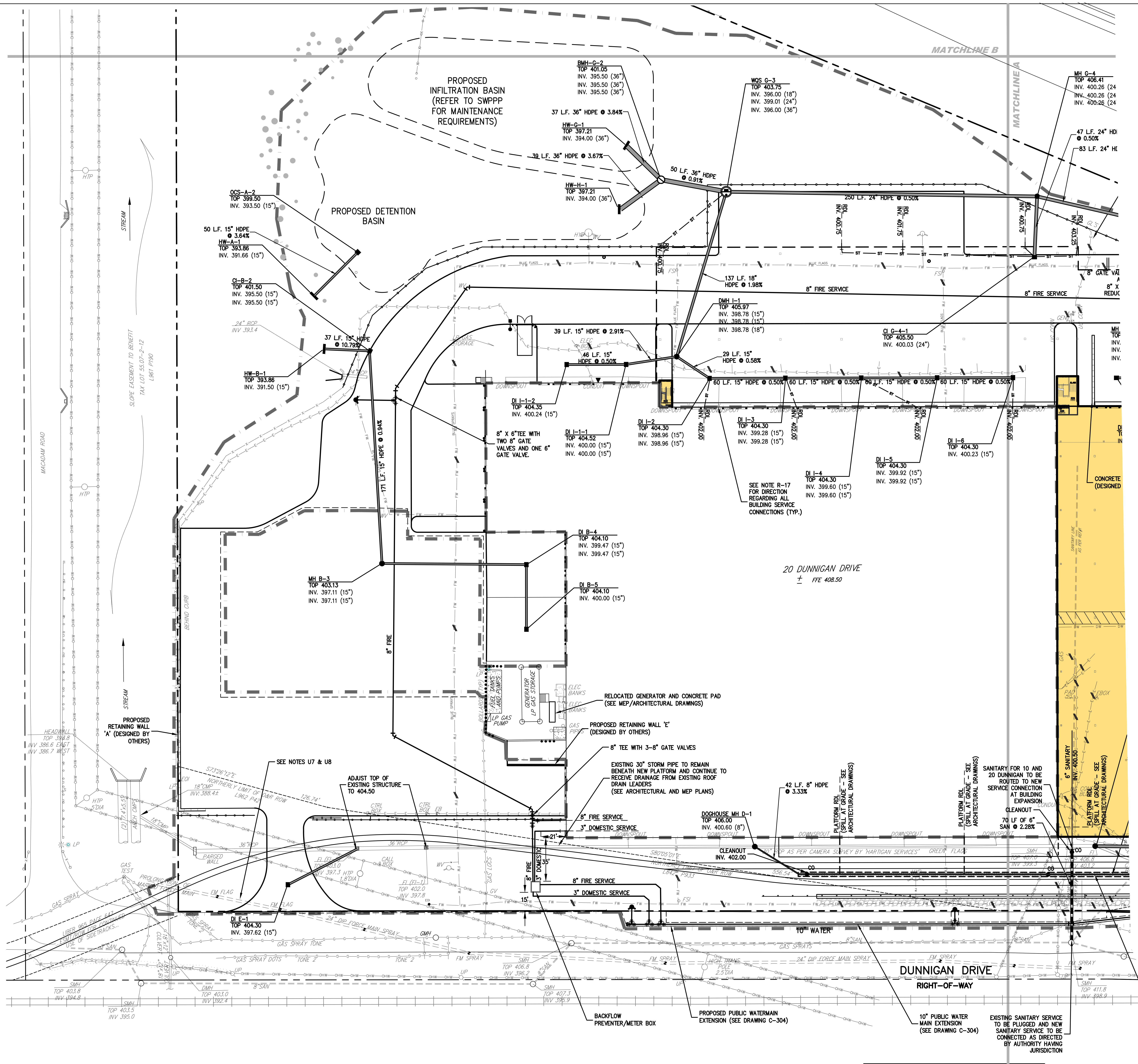
DRAWING TITLE :

OVERALL UTILITIES PLAN

DWG NUMBER :

C-300

JMC PROJECT: 19005-1
SCR: UTIL.SCR
DWG FILE: 19005-UTIL


MATCHLINE B
MATCHLINE A
PROPOSED INFILTRATION BASIN (REFER TO SWPPP FOR MAINTENANCE REQUIREMENTS)
PROPOSED DETENTION BASIN
BMH-G-2
TOP 401.05
INV. 395.50 (36")
INV. 395.50 (36")
INV. 395.50 (36")
37 L.F. 36" HDPE @ 3.84%
HW-G-1
TOP 397.21
INV. 394.00 (36")
39 L.F. 36" HDPE @ 3.67%
HW-H-1
TOP 397.21
INV. 394.00 (36")
50 L.F. 36" HDPE @ 0.91%
WQS G-3
TOP 403.75
INV. 396.00 (18")
INV. 399.01 (24")
INV. 396.00 (36")
250 L.F. 24" HDPE @ 0.50%
MH G-4
TOP 406.41
INV. 400.26 (24
INV. 400.26 (24
INV. 400.26 (24
47 L.F. 24" HD
@ 0.50%
83 L.F. 24" HD
RDL INV. 400.75
RDL INV. 401.75
RDL INV. 400.75
RDL INV. 403.25
8" GATE VA
8" X
REDUC
OCS-A-2
TOP 399.50
INV. 393.50 (15")
50 L.F. 15" HDPE @ 3.64%
HW-A-1
TOP 393.86
INV. 391.66 (15")
CI-B-2
TOP 401.50
INV. 395.50 (15")
INV. 395.50 (15")
24" RCP
INV 393.4
37 L.F. 15" HDPE @ 10.79%
HW-B-1
TOP 393.86
INV. 391.50 (15")
137 L.F. 18" HDPE @ 1.98%
8" FIRE SERVICE
8" FIRE SERVICE
DMH I-1
TOP 405.97
INV. 398.78 (15")
INV. 398.78 (15")
INV. 398.78 (18")
CI G-4-1
TOP 405.50
INV. 400.03 (24")
39 L.F. 15" HDPE @ 2.91%
46 L.F. 15" HDPE @ 0.50%
29 L.F. 15" HDPE @ 0.58%
60 L.F. 15" HDPE @ 0.50%
60 L.F. 15" HDPE @ 0.50%
60 L.F. 15" HDPE @ 0.50%
60 L.F. 15" HDPE @ 0.50%
LP GAS STORAGE
ELEC BOX
DOWNSPOUT
CONDUIT
DI I-1-2
TOP 404.35
INV. 400.24 (15")
DI I-1-1
TOP 404.52
INV. 400.00 (15")
INV. 400.00 (15")
DI I-2
TOP 404.30
INV. 398.96 (15")
INV. 398.96 (15")
DI I-3
TOP 404.30
INV. 399.28 (15")
INV. 399.28 (15")
DI I-4
TOP 404.30
INV. 399.60 (15")
INV. 399.60 (15")
DI I-5
TOP 404.30
INV. 399.92 (15")
INV. 399.92 (15")
DI I-6
TOP 404.30
INV. 400.23 (15")
RDL INV. 402.00
RDL INV. 402.00
RDL INV. 402.00
RDL INV. 402.00
8" X 6"TEE WITH TWO 8" GATE VALVES AND ONE 6" GATE VALVE.
SEE NOTE R-17 FOR DIRECTION REGARDING ALL BUILDING SERVICE CONNECTIONS (TYP.)
171 L.F. 15" HDPE @ 0.94%
CONCRETE (DESIGNED
SANITARY LINE AS PER REF#1
DI B-4
TOP 404.10
INV. 399.47 (15")
INV. 399.47 (15")
DI B-5
TOP 404.10
INV. 400.00 (15")
MH B-3
TOP 403.13
INV. 397.11 (15")
INV. 397.11 (15")
20 DUNNIGAN DRIVE
± FFE 408.50
8" FIRE
STREAM
STREAM
MACADAM ROAD
SLOPE EASEMENT TO BENEFIT TAX LOT 55.07-2-12 L961 P190
BEHIND CURB
FUEL TANKS AND PUMPS
GENERATOR LP GAS STORAGE
LP GAS PUMP
BOLLARDS (TYP.)
ELEC BANKS
GAS PIPES
RELOCATED GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
PROPOSED RETAINING WALL 'E' (DESIGNED BY OTHERS)
8" TEE WITH 3-8" GATE VALVES
EXISTING 30" STORM PIPE TO REMAIN BENEATH NEW PLATFORM AND CONTINUE TO RECEIVE DRAINAGE FROM EXISTING ROOF DRAIN LEADERS (SEE ARCHITECTURAL AND MEP PLANS)
PROPOSED RETAINING WALL 'A' (DESIGNED BY OTHERS)
HEADWALL
TOP 393.8
INV 386.6 EAST
INV 386.7 WEST
SEE NOTES U7 & U8
ADJUST TOP OF EXISTING STRUCTURE TO 404.50
S73°26'12"E
NORTHERLY LIMIT OF O&R ROW
L962 P42
126.74'
18"CMP
INV: 388.4±
(2) 7.4'x5.5' ARCH CMPS
HTP 5'DIA
PARGED WALL
36"RCP
CTRL BOX
CTRL BOX
EB
CALL BOX
FI (FI-2)
TOP 403.0
INV 397.3
HTP 1.8'DIA
FI (FI-1)
TOP 402.0
INV 397.8
GAS TEST
PROLONGATION OF MARKED FORCE MAIN
FM FLAG
DI E-1
TOP 404.30
INV. 397.62 (15")
LIBER 965 PAGE 647 ...ESMT/ROW FOR CONTINUED USE OF SIDETRACKS...
18"x12" CULVERT
GAS SPRAY
GAS SPRAY TONE
GAS SPRAY DOTS
TONE 2
24" DIP FORCE MAIN SPRAY
FM SPRAY
GMH
SMH
TOP 403.8
INV 394.8
SMH
TOP 403.5
INV 395.0
DMH
TOP 403.0
INV 392.4
SMH
TOP 406.8
INV 396.2
SMH
TOP 407.3
INV 395.9
8"SAN
42 L.F. 8" HDPE @ 3.33%
8" FIRE SERVICE
3" DOMESTIC SERVICE
21'
35'
15'
8" FIRE
3" DOMESTIC
DOGHOUSE MH D-1
TOP 406.00
INV. 400.60 (8")
CLEANOUT
INV. 402.00
30" RCP AS PER CAMERA SURVEY BY 'HARTIGAN SERVICES'
GREEN FLAGS
S80°05'01"E
556.54'
L842 P933
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
SANITARY FOR 10 AND 20 DUNNIGAN TO BE ROUTED TO NEW SERVICE CONNECTION AT BUILDING EXPANSION
CLEANOUT
70 LF OF 6" SAN @ 2.28%
6" SANITARY INV. 400.50
CO
SMH
TOP 407.0
INV 399.3
TOP 406.8
INV 403.2
SMH
TOP 411.8
INV 398.9
8" FIRE SERVICE
3" DOMESTIC SERVICE
10" WATER
HIGH TRANS POLE 2.5'DIA
DUNNIGAN DRIVE
RIGHT-OF-WAY
BACKFLOW PREVENTER/METER BOX
PROPOSED PUBLIC WATERMAIN EXTENSION (SEE DRAWING C-304)
10" PUBLIC WATER MAIN EXTENSION (SEE DRAWING C-304)
EXISTING SANITARY SERVICE TO BE PLUGGED AND NEW SANITARY SERVICE TO BE CONNECTED AS DIRECTED BY AUTHORITY HAVING JURISDICTION
SAND FILTER BENEATH RAILROAD TRACKS TO SERVE AS STORMWATER TREATMENT

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

	EXISTING PROPERTY LINE
	ADJACENT PROPERTY LINE
	EXISTING EASEMENT LINE
WLF-63 WLF-64 WLF-65	EXISTING WETLAND LINE AND DELINEATION
	EXISTING BUILDING OVERHANG
	EXISTING BUILDING LINE
	EXISTING PAVEMENT EDGE
	EXISTING CURB LINE
172	EXISTING CONTOUR
170	EXISTING INDEX CONTOUR
	EXISTING STONE WALL
	EXISTING RETAINING WALL
—o—o—o—o—	EXISTING GUIDE RAIL
—x—x—x—x—	EXISTING FENCE
36" RCP	EXISTING STORM DRAIN LINE AND SIZE
8" SAN	EXISTING SANITARY LINE AND SIZE
—W—W—W—W—W—W—	EXISTING WATER LINE
—G—G—G—G—G—G—	EXISTING GAS LINE
—OHW—OHW—OHW—OHW—	EXISTING OVERHEAD WIRES
▥	EXISTING DRAIN INLET
○	EXISTING MANHOLE
HYD	EXISTING FIRE HYDRANT
GV ⋈	EXISTING GAS VALVE
WV ⋈	EXISTING WATER VALVE
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING SIGN
	PROPOSED BUILDING LINE
	PROPOSED CONCRETE CURB
	PROPOSED EASEMENT LINE
	PROPOSED CONCRETE SIDEWALK
	PROPOSED DROP CURB AND RAMP
● SMH	PROPOSED SANITARY SEWER MANHOLE
● MH	PROPOSED STORM DRAIN MANHOLE
● CO	PROPOSED CLEAN OUT
■ DI	PROPOSED TYPE DI DRAIN INLET
15" HDPE	PROPOSED STORM DRAIN LINE & SIZE
6" PVC	PROPOSED SANITARY LINE & SIZE
	PROPOSED WATER VALVE
	PROPOSED GAS VALVE
	PROPOSED RIP-RAP APRON
	PROPOSED RETAINING WALL (DESIGN BY OTHERS)

ARCHITECT

di Domenico + Partners LLP
Architecture
Landscape Architecture
Planning

212-337-0400
212-337-3567

CIVIL PLANNING ENGINEER

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MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
2	ISSUED FOR BID	10.15.21

DRAWN BY : DC
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 09.10.2021
SCALE : 1" = 40'
ISSUE :

DRAWING TITLE :

UTILITIES PLAN

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

DWG NUMBER :

C-301

JMC PROJECT: 19005-1
SCR: UTIL.SCR
DWG FILE: 19005-UTIL

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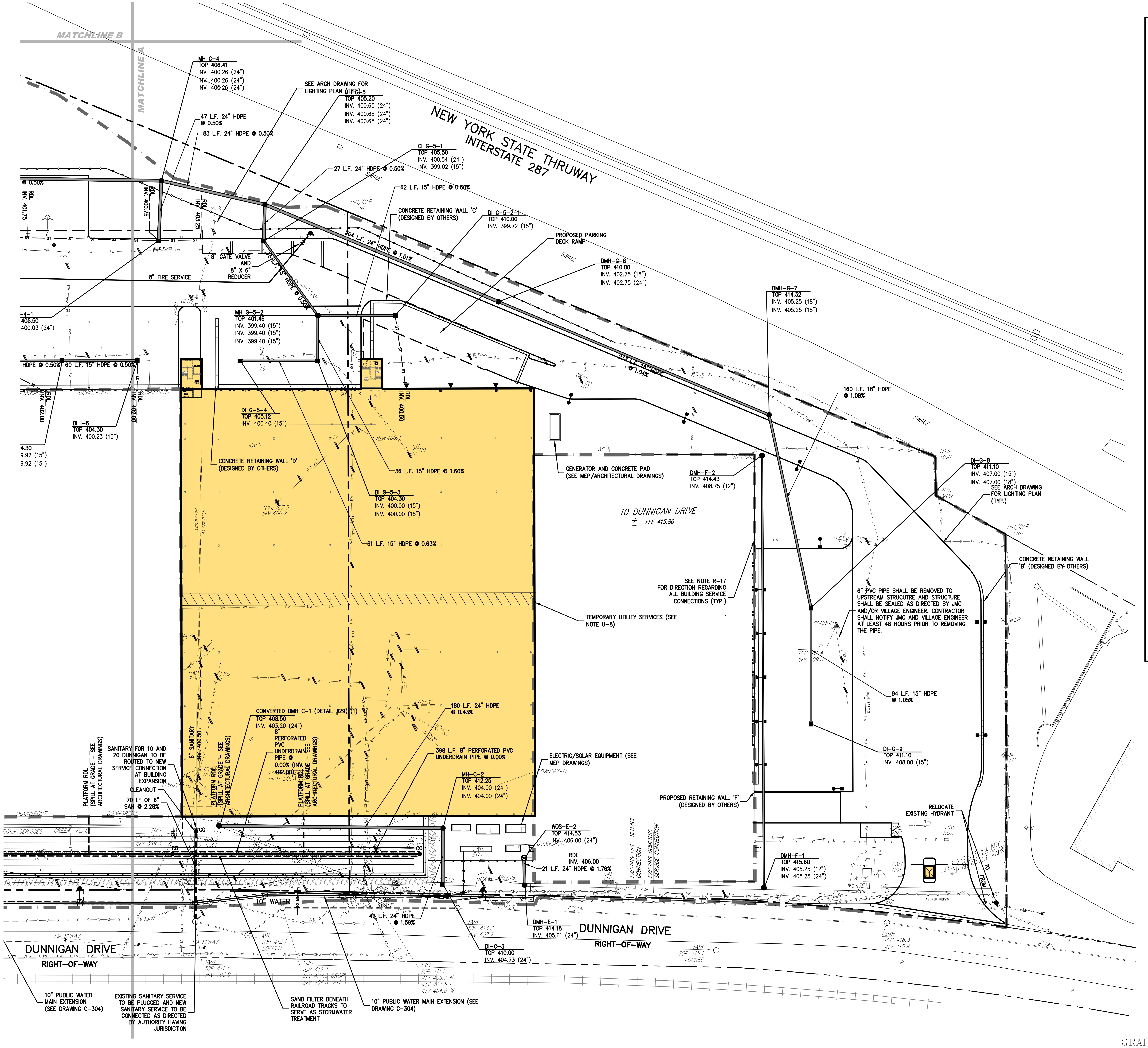
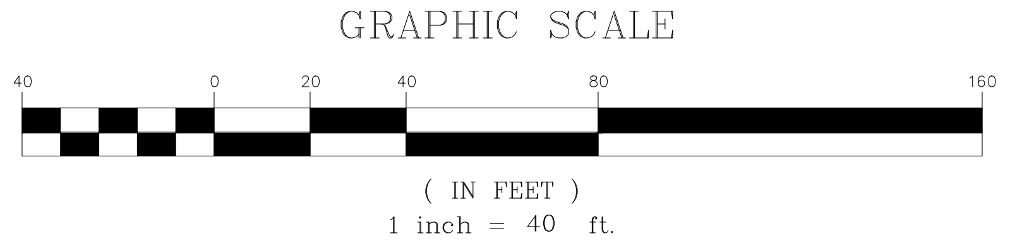

MATCHLINE B
MATCHLINE A
NEW YORK STATE THRUWAY
INTERSTATE 287
MH G-4
TOP 406.41
INV. 400.26 (24")
INV. 400.26 (24")
INV. 400.26 (24")
47 L.F. 24" HDPE @ 0.50%
83 L.F. 24" HDPE @ 0.50%
SEE ARCH DRAWING FOR LIGHTING PLAN
MH G-5
TOP 405.20
INV. 400.65 (24")
INV. 400.68 (24")
INV. 400.68 (24")
CI G-5-1
TOP 405.50
INV. 400.54 (24")
INV. 399.02 (15")
27 L.F. 24" HDPE @ 0.50%
62 L.F. 15" HDPE @ 0.50%
CONCRETE RETAINING WALL 'C' (DESIGNED BY OTHERS)
DI G-5-2-1
TOP 410.00
INV. 399.72 (15")
PROPOSED PARKING DECK RAMP
204 L.F. 24" HDPE @ 1.01%
DMH-G-6
TOP 410.00
INV. 402.75 (18")
INV. 402.75 (24")
DMH-G-7
TOP 414.32
INV. 405.25 (18")
INV. 405.25 (18")
237 L.F. 18" HDPE @ 1.04%
160 L.F. 18" HDPE @ 1.08%
RDL INV. 401.75
RDL INV. 400.75
RDL INV. 403.25
8" GATE VALVE AND 8" X 6" REDUCER
8" FIRE SERVICE
-4-1
405.50
400.03 (24")
MH G-5-2
TOP 401.46
INV. 399.40 (15")
INV. 399.40 (15")
INV. 399.40 (15")
HDPE @ 0.50%
60 L.F. 15" HDPE @ 0.50%
RDL INV. 402.00
RDL INV. 402.00
DI I-6
TOP 404.30
INV. 400.23 (15")
4.30
9.92 (15")
9.92 (15")
DI G-5-4
TOP 405.12
INV. 400.40 (15")
RDL INV. 400.50
CONCRETE RETAINING WALL 'D' (DESIGNED BY OTHERS)
36 L.F. 15" HDPE @ 1.60%
DI G-5-3
TOP 404.30
INV. 400.00 (15")
INV. 400.00 (15")
61 L.F. 15" HDPE @ 0.63%
GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
DMH-F-2
TOP 414.43
INV. 408.75 (12")
10 DUNNIGAN DRIVE
FFE 415.80
SEE NOTE R-17 FOR DIRECTION REGARDING ALL BUILDING SERVICE CONNECTIONS (TYP.)
TEMPORARY UTILITY SERVICES (SEE NOTE U-8)
6" PVC PIPE SHALL BE REMOVED TO UPSTREAM STRUCUTRE AND STRUCTURE SHALL BE SEALED AS DIRECTED BY JMC AND/OR VILLAGE ENGINEER. CONTRACTOR SHALL NOTIFY JMC AND VILLAGE ENGINEER AT LEAST 48 HOURS PRIOR TO REMOVING THE PIPE.
DI-G-8
TOP 411.10
INV. 407.00 (15")
INV. 407.00 (18")
SEE ARCH DRAWING FOR LIGHTING PLAN (TYP.)
CONCRETE RETAINING WALL 'B' (DESIGNED BY OTHERS)
94 L.F. 15" HDPE @ 1.05%
DI-G-9
TOP 411.10
INV. 408.00 (15")
CONVERTED DMH C-1 (DETAIL #29)(1)
TOP 408.50
INV. 403.20 (24")
8" PERFORATED PVC UNDERDRAIN PIPE @ 0.00% (INV. 402.00)
180 L.F. 24" HDPE @ 0.43%
398 L.F. 8" PERFORATED PVC UNDERDRAIN PIPE @ 0.00%
MH-C-2
TOP 412.25
INV. 404.00 (24")
INV. 404.00 (24")
ELECTRIC/SOLAR EQUIPMENT (SEE MEP DRAWINGS)
PROPOSED RETAINING WALL 'F' (DESIGNED BY OTHERS)
RELOCATE EXISTING HYDRANT
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
6" SANITARY INV. 400.50
SANITARY FOR 10 AND 20 DUNNIGAN TO BE ROUTED TO NEW SERVICE CONNECTION AT BUILDING EXPANSION
CLEANOUT
70 LF OF 6" SAN @ 2.28%
WQS-E-2
TOP 414.53
INV. 406.00 (24")
RDL INV. 406.00
21 L.F. 24" HDPE @ 1.76%
EXISTING FIRE SERVICE CONNECTION
EXISTING DOMESTIC SERVICE CONNECTION
DMH-F-1
TOP 415.60
INV. 405.25 (12")
INV. 405.25 (24")
10" WATER
42 L.F. 24" HDPE @ 1.59%
DMH-E-1
TOP 414.18
INV. 405.61 (24")
DI-C-3
TOP 410.00
INV. 404.73 (24")
DUNNIGAN DRIVE
RIGHT-OF-WAY
DUNNIGAN DRIVE
RIGHT-OF-WAY
10" PUBLIC WATER MAIN EXTENSION (SEE DRAWING C-304)
EXISTING SANITARY SERVICE TO BE PLUGGED AND NEW SANITARY SERVICE TO BE CONNECTED AS DIRECTED BY AUTHORITY HAVING JURISDICTION
SAND FILTER BENEATH RAILROAD TRACKS TO SERVE AS STORMWATER TREATMENT
10" PUBLIC WATER MAIN EXTENSION (SEE DRAWING C-304)
SWALE
NYS MON
PIN/CAP FND
FROM
TO

LEGEND

	EXISTING PROPERTY LINE
	ADJACENT PROPERTY LINE
	EXISTING EASEMENT LINE
WLF-63 WLF-64 WLF-65	EXISTING WETLAND LINE AND DELINEATION
	EXISTING BUILDING OVERHANG
	EXISTING BUILDING LINE
	EXISTING PAVEMENT EDGE
	EXISTING CURB LINE
172	EXISTING CONTOUR
170	EXISTING INDEX CONTOUR
	EXISTING STONE WALL
	EXISTING RETAINING WALL
	EXISTING GUIDE RAIL
—x——x——x——x—	EXISTING FENCE
36" RCP	EXISTING STORM DRAIN LINE AND SIZE
8" SAN	EXISTING SANITARY LINE AND SIZE
—W——W——W——W——W——W—	EXISTING WATER LINE
—G——G——G——G——G——G—	EXISTING GAS LINE
—OHW——OHW——OHW——OHW—	EXISTING OVERHEAD WIRES
▥	EXISTING DRAIN INLET
○	EXISTING MANHOLE
	EXISTING FIRE HYDRANT
GV ⋈	EXISTING GAS VALVE
WV ⋈	EXISTING WATER VALVE
	EXISTING UTILITY POLE
☼	EXISTING LIGHT POLE
	EXISTING SIGN
	PROPOSED BUILDING LINE
	PROPOSED CONCRETE CURB
	PROPOSED EASEMENT LINE
	PROPOSED CONCRETE SIDEWALK
	PROPOSED DROP CURB AND RAMP
● SMH	PROPOSED SANITARY SEWER MANHOLE
● MH	PROPOSED STORM DRAIN MANHOLE
● CO	PROPOSED CLEAN OUT
■ DI	PROPOSED TYPE DI DRAIN INLET
15" HDPE	PROPOSED STORM DRAIN LINE & SIZE
6" PVC	PROPOSED SANITARY LINE & SIZE
	PROPOSED WATER VALVE
	PROPOSED GAS VALVE
	PROPOSED RIP-RAP APRON
	PROPOSED RETAINING WALL (DESIGN BY OTHERS)

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.


GRAPHIC SCALE
40
0
20
40
80
160
(IN FEET)
1 inch = 40 ft.

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MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
2	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	09.10.2021
SCALE :	1" = 40'
ISSUE :	

DRAWING TITLE :

UTILITIES PLAN

DWG NUMBER :

C-302

JMC PROJECT: 19005-1
SCR: UTIL.SCR
DWG FILE: 19005-UTIL

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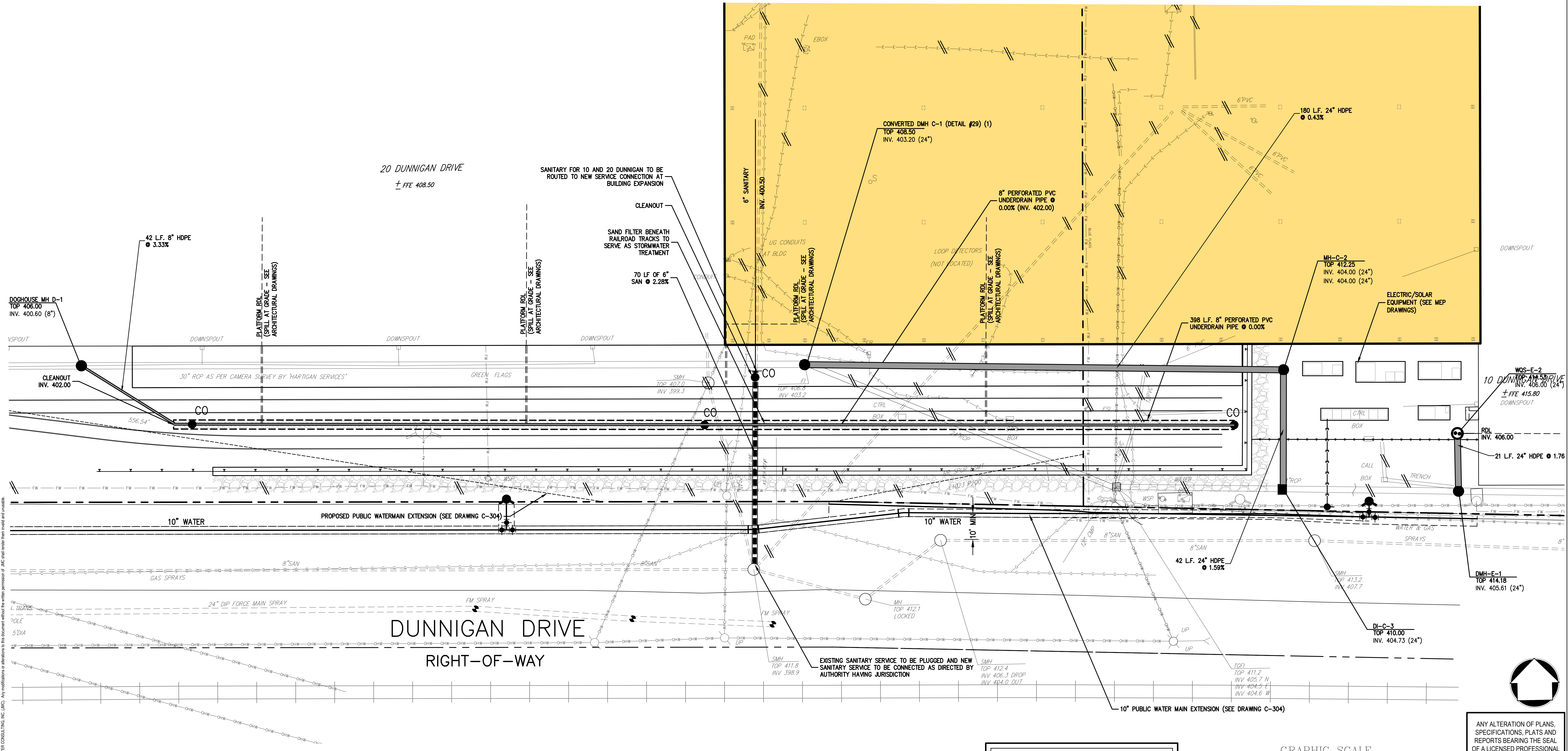
LEGEND

▬ ▬ ▬ ▬	EXISTING PROPERTY LINE	○	EXISTING MANHOLE
— — — —	ADJACENT PROPERTY LINE		EXISTING FIRE HYDRANT
- - - - - -	EXISTING EASEMENT LINE	GV	EXISTING GAS VALVE
WLF-63 WLF-64 WLF-65	EXISTING WETLAND LINE AND DELINEATION	WV	EXISTING WATER VALVE
- - - - - - - -	EXISTING BUILDING OVERHANG		EXISTING UTILITY POLE
▨	EXISTING BUILDING LINE		EXISTING LIGHT POLE
——	EXISTING PAVEMENT EDGE		EXISTING SIGN
——	EXISTING CURB LINE	——	PROPOSED BUILDING LINE
172	EXISTING CONTOUR	——	PROPOSED CONCRETE CURB
170	EXISTING INDEX CONTOUR	- - - -	PROPOSED EASEMENT LINE
	EXISTING STONE WALL		PROPOSED CONCRETE SIDEWALK
	EXISTING RETAINING WALL		PROPOSED DROP CURB AND RAMP
—o—o—o—o—	EXISTING GUIDE RAIL	● SMH	PROPOSED SANITARY SEWER MANHOLE
—x—x—x—x—	EXISTING FENCE	● MH	PROPOSED STORM DRAIN MANHOLE
36" RCP	EXISTING STORM DRAIN LINE AND SIZE	● CO	PROPOSED CLEAN OUT
8" SAN	EXISTING SANITARY LINE AND SIZE	■ DI	PROPOSED TYPE DI DRAIN INLET
—W—W—W—W—W—W—	EXISTING WATER LINE	15" HDPE	PROPOSED STORM DRAIN LINE & SIZE
—G—G—G—G—G—G—	EXISTING GAS LINE	6" PVC	PROPOSED SANITARY LINE & SIZE
—OHW—OHW—OHW—OHW—	EXISTING OVERHEAD WIRES		PROPOSED WATER VALVE
	EXISTING DRAIN INLET		PROPOSED GAS VALVE
			PROPOSED RIP-RAP APRON
			PROPOSED RETAINING WALL (DESIGN BY OTHERS)


20 DUNNIGAN DRIVE
± FFE 408.50
SANITARY FOR 10 AND 20 DUNNIGAN TO BE ROUTED TO NEW SERVICE CONNECTION AT BUILDING EXPANSION
CLEANOUT
SAND FILTER BENEATH RAILROAD TRACKS TO SERVE AS STORMWATER TREATMENT
70 LF OF 6" SAN @ 2.28%
42 L.F. 8" HDPE @ 3.33%
DOGHOUSE MH D-1
TOP 406.00
INV. 400.60 (8")
CLEANOUT
INV. 402.00
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
PLATFORM RDL (SPILL AT GRADE - SEE ARCHITECTURAL DRAWINGS)
6" SANITARY
INV. 400.50
UG CONDUITS
AT BLDG
CONVERTED DMH C-1 (DETAIL #29) (1)
TOP 408.50
INV. 403.20 (24")
8" PERFORATED PVC UNDERDRAIN PIPE @ 0.00% (INV. 402.00)
LOOP DETECTORS (NOT LOCATED)
180 L.F. 24" HDPE @ 0.43%
6"PVC
6"PVC
MH-C-2
TOP 412.25
INV. 404.00 (24")
INV. 404.00 (24")
ELECTRIC/SOLAR EQUIPMENT (SEE MEP DRAWINGS)
398 L.F. 8" PERFORATED PVC UNDERDRAIN PIPE @ 0.00%
DOWNSPOUT
10 DUNNIGAN DRIVE
± FFE 415.80
WQS-E-2
TOP 414.53
INV. 406.00 (24")
RDL
INV. 406.00
21 L.F. 24" HDPE @ 1.76
CO
CO
CO
CO
30" RCP AS PER CAMERA SURVEY BY 'HARTIGAN SERVICES'
GREEN FLAGS
556.54'
SMH
TOP 402.0
INV 399.3
CTRL BOX
CALL BOX
TRENCH
WATER & GAS SPRAYS
10" WATER
PROPOSED PUBLIC WATERMAIN EXTENSION (SEE DRAWING C-304)
10" WATER
10' MIN
8"SAN
8"SAN
GAS SPRAYS
24" DIP FORCE MAIN SPRAY
FM SPRAY
FM SPRAY
42 L.F. 24" HDPE @ 1.59%
MH
TOP 412.1
LOCKED
SMH
TOP 413.2
INV 407.7
DI-C-3
TOP 410.00
INV. 404.73 (24")
DMH-E-1
TOP 414.18
INV. 405.61 (24")
DUNNIGAN DRIVE
RIGHT-OF-WAY
SMH
TOP 411.8
INV 398.9
EXISTING SANITARY SERVICE TO BE PLUGGED AND NEW SANITARY SERVICE TO BE CONNECTED AS DIRECTED BY AUTHORITY HAVING JURISDICTION
SMH
TOP 412.4
INV 406.3 DROP
INV 404.0 OUT
TGFI
TOP 411.2
INV 405.7 N
INV 404.5 E
INV 404.6 W
10" PUBLIC WATER MAIN EXTENSION (SEE DRAWING C-304)
12" CMP
WSP
UP
UP

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
2	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	09.10.2021
SCALE :	1" = 20'
ISSUE :	

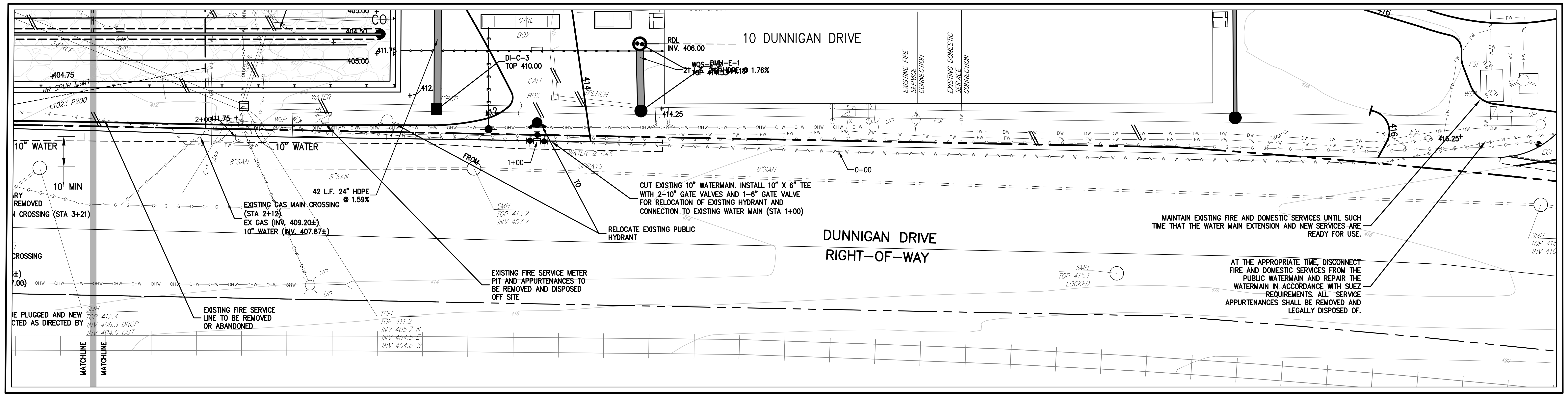
DRAWING TITLE :

ASRS/ TRACK UTILITIES PLAN

DWG NUMBER :

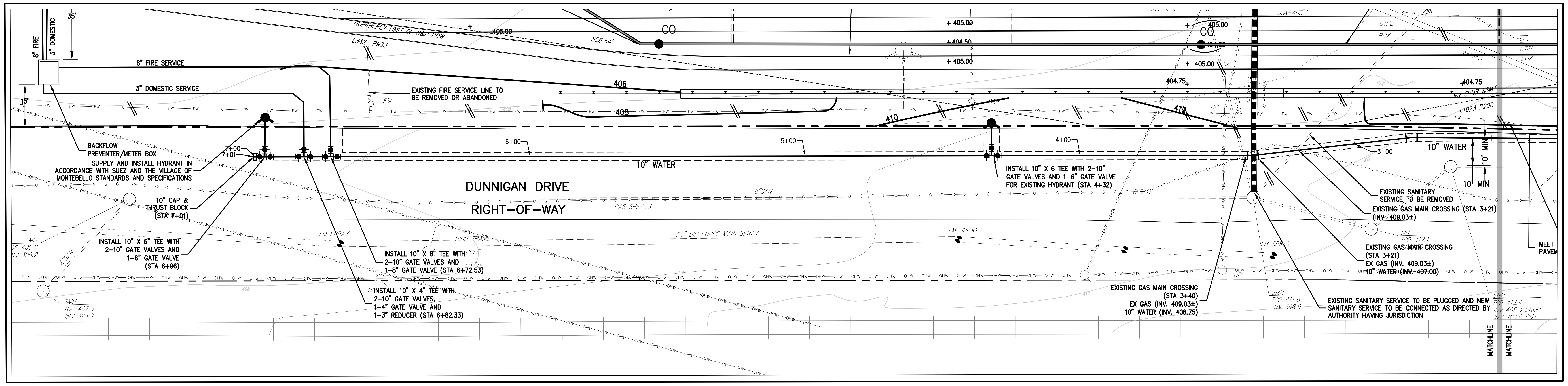
C-303

JMC PROJECT: 19005-1
SCR: UTIL.SCR
DWG FILE: 19005-UTIL


10 DUNNIGAN DRIVE
CO
404.50
405.00
411.75
404.75
RR SPUR ESMT
L1023 P200
CTRL BOX
24"RCP
DI-C-3
TOP 410.00
RDL
INV. 406.00
WQS-DMH-E-1
TOP 414.53
21 L.F. 24" HDPE @ 1.76%
414.25
CALL BOX
TRENCH
EXISTING FIRE SERVICE CONNECTION
EXISTING DOMESTIC SERVICE CONNECTION
2+00
10" WATER
10" WATER
10' MIN
8"SAN
12" CMP
WSP
WATER BOX
WATER & GAS SPRAYS
1+00
0+00
FROM
TO
42 L.F. 24" HDPE @ 1.59%
EXISTING GAS MAIN CROSSING (STA 2+12)
EX GAS (INV. 409.20±)
10" WATER (INV. 407.87±)
CUT EXISTING 10" WATERMAIN. INSTALL 10" X 6" TEE WITH 2–10" GATE VALVES AND 1–6" GATE VALVE FOR RELOCATION OF EXISTING HYDRANT AND CONNECTION TO EXISTING WATER MAIN (STA 1+00)
RELOCATE EXISTING PUBLIC HYDRANT
SMH
TOP 413.2
INV 407.7
EXISTING FIRE SERVICE METER PIT AND APPURTENANCES TO BE REMOVED AND DISPOSED OFF SITE
EXISTING FIRE SERVICE LINE TO BE REMOVED OR ABANDONED
TGFI
TOP 411.2
INV 405.7 N
INV 404.5 E
INV 404.6 W
SMH
TOP 412.4
INV 406.3 DROP
INV 404.0 OUT
MATCHLINE
MATCHLINE
DUNNIGAN DRIVE
RIGHT–OF–WAY
SMH
TOP 415.1
LOCKED
FSI
416.25
EOI
MAINTAIN EXISTING FIRE AND DOMESTIC SERVICES UNTIL SUCH TIME THAT THE WATER MAIN EXTENSION AND NEW SERVICES ARE READY FOR USE.
AT THE APPROPRIATE TIME, DISCONNECT FIRE AND DOMESTIC SERVICES FROM THE PUBLIC WATERMAIN AND REPAIR THE WATERMAIN IN ACCORDANCE WITH SUEZ REQUIREMENTS. ALL SERVICE APPURTENANCES SHALL BE REMOVED AND LEGALLY DISPOSED OF.

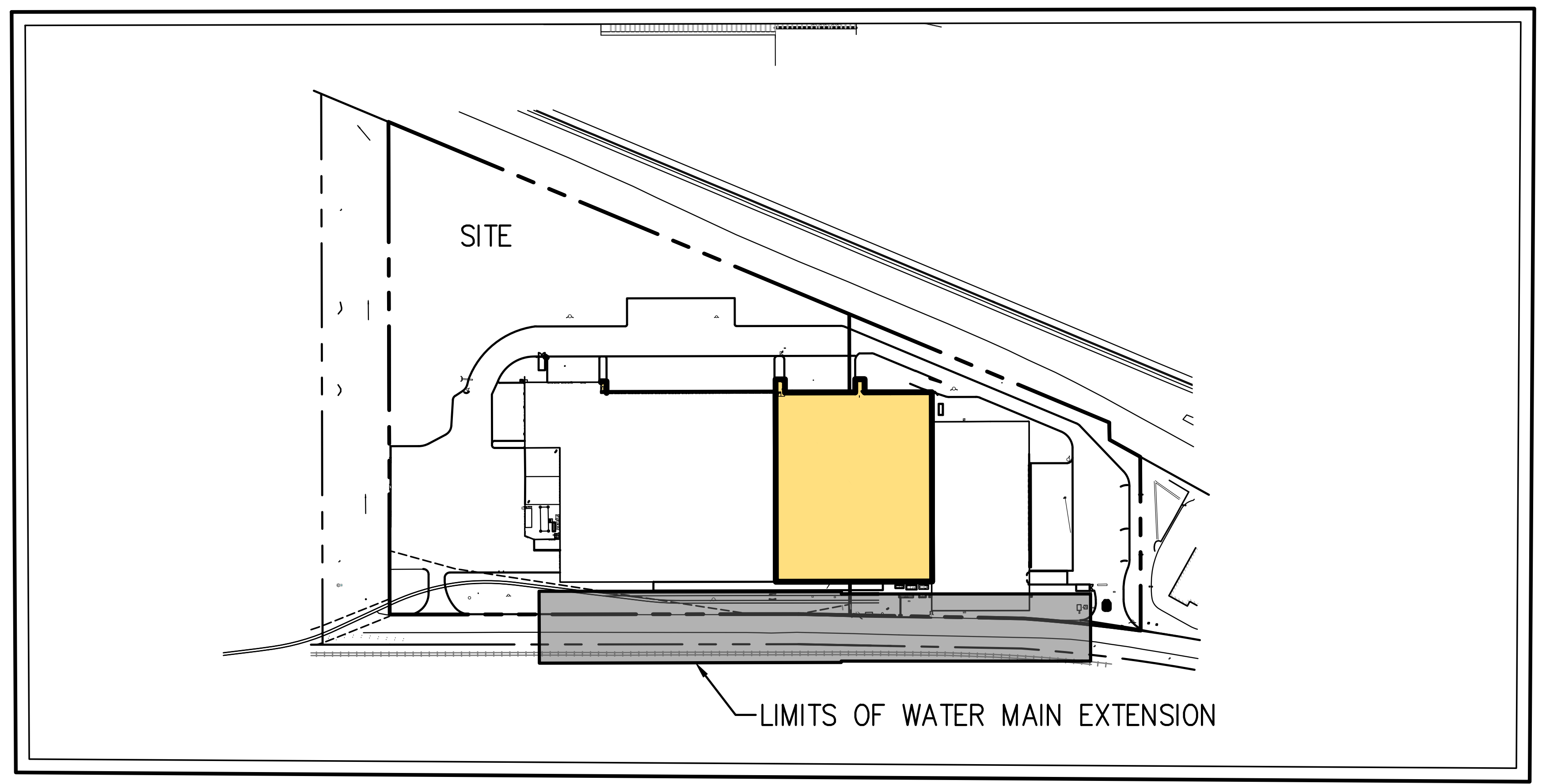
WATERMAIN EXTENSION PLAN STATION - 0+00-2+83

SCALE: 1"=20'


8" FIRE
3" DOMESTIC
35'
15'
8" FIRE SERVICE
3" DOMESTIC SERVICE
NORTHERLY LIMIT OF O&R ROW
L842 P933
405.00
556.54'
CO
406
408
410
412
EXISTING FIRE SERVICE LINE TO BE REMOVED OR ABANDONED
FSI
BACKFLOW PREVENTER/METER BOX
SUPPLY AND INSTALL HYDRANT IN ACCORDANCE WITH SUEZ AND THE VILLAGE OF MONTEBELLO STANDARDS AND SPECIFICATIONS
7+00
7+01
6+00
5+00
4+00
3+00
10" WATER
DUNNIGAN DRIVE
RIGHT–OF–WAY
8"SAN
GAS SPRAYS
24" DIP FORCE MAIN SPRAY
FM SPRAY
HIGH TRANS POLE
2.5'DIA
10" CAP & THRUST BLOCK (STA 7+01)
INSTALL 10" X 6" TEE WITH 2–10" GATE VALVES AND 1–6" GATE VALVE (STA 6+96)
INSTALL 10" X 8" TEE WITH 2–10" GATE VALVES AND 1–8" GATE VALVE (STA 6+72.53)
INSTALL 10" X 4" TEE WITH 2–10" GATE VALVES, 1–4" GATE VALVE AND 1–3" REDUCER (STA 6+82.33)
SMH
TOP 406.8
INV 396.2
SMH
TOP 407.3
INV 395.9
INSTALL 10" X 6 TEE WITH 2–10" GATE VALVES AND 1–6" GATE VALVE FOR EXISTING HYDRANT (STA 4+32)
405.00
404.50
404.75
INV 403.2
CTRL BOX
24"RCP
RR SPUR ESMT
L1023 P200
SANITARY LINE AS PER REF#1
10" WATER
10' MIN
10' MIN
EXISTING SANITARY SERVICE TO BE REMOVED
EXISTING GAS MAIN CROSSING (STA 3+21) (INV. 409.03±)
MH
TOP 412.1
EXISTING GAS MAIN CROSSING (STA 3+21)
EX GAS (INV. 409.03±)
10" WATER (INV. 407.00)
EXISTING GAS MAIN CROSSING (STA 3+40)
EX GAS (INV. 409.03±)
10" WATER (INV. 406.75)
SMH
TOP 411.8
INV 398.9
EXISTING SANITARY SERVICE TO BE PLUGGED AND NEW SANITARY SERVICE TO BE CONNECTED AS DIRECTED BY AUTHORITY HAVING JURISDICTION
SMH
TOP 412.4
INV 406.3 DROP
INV 404.0 OUT
MEET PAVEM
MATCHLINE
MATCHLINE

WATERMAIN EXTENSION PLAN STATION - 2+83-7+01

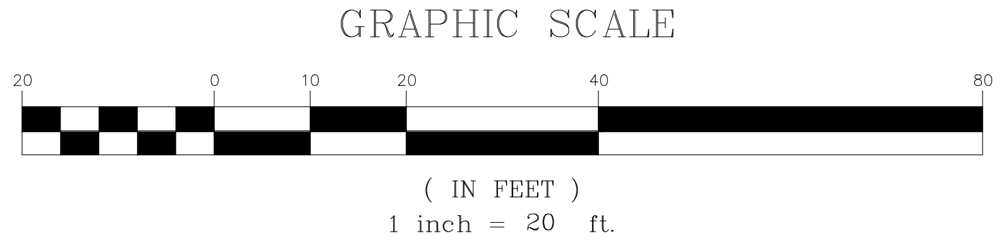
SCALE: 1"=20'


SITE
LIMITS OF WATER MAIN EXTENSION

KEY MAP

SCALE: 1" = 250'

REFER TO DRAWINGS C–001 THROUGH C–006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.


GRAPHIC SCALE
20
0
10
20
40
80
(IN FEET)
1 inch = 20 ft.

LEGEND

	EXISTING PROPERTY LINE
	ADJACENT PROPERTY LINE
	EXISTING EASEMENT LINE
	EXISTING BUILDING OVERHANG
	EXISTING BUILDING LINE
	EXISTING PAVEMENT EDGE
	EXISTING CURB LINE
172	EXISTING CONTOUR
170	EXISTING INDEX CONTOUR
	EXISTING RETAINING WALL
—x—x—x—x—	EXISTING FENCE
36" RCP	EXISTING STORM DRAIN LINE AND SIZE
8" SAN	EXISTING SANITARY LINE AND SIZE
—W—W—W—W—W—W—	EXISTING WATER LINE
—G—G—G—G—G—G—	EXISTING GAS LINE
—OHW—OHW—OHW—OHW—	EXISTING OVERHEAD WIRES
	EXISTING DRAIN INLET
○	EXISTING MANHOLE
HYD	EXISTING FIRE HYDRANT
GV	EXISTING GAS VALVE
WV	EXISTING WATER VALVE
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING SIGN
	PROPOSED BUILDING LINE
	PROPOSED CONCRETE CURB
● SMH	PROPOSED SANITARY SEWER MANHOLE
● MH	PROPOSED STORM DRAIN MANHOLE
● CO	PROPOSED CLEAN OUT
■ DI	PROPOSED TYPE DI DRAIN INLET
15" HDPE	PROPOSED STORM DRAIN LINE & SIZE
6" PVC	PROPOSED SANITARY LINE & SIZE
	PROPOSED WATER VALVE
	PROPOSED GAS VALVE
	PROPOSED RIP–RAP APRON
	PROPOSED RETAINING WALL (DESIGN BY OTHERS)

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2	ISSUED FOR BID	10.15.21

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CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	09.10.2021
SCALE :	1" = 20'
ISSUE :	

DRAWING TITLE :
WATER MAIN EXTENSION PLAN

DWG NUMBER :
C-304

JMC PROJECT: 19005-1
SCR: WATER MAIN.LS
DWG FILE: 19005-UTIL

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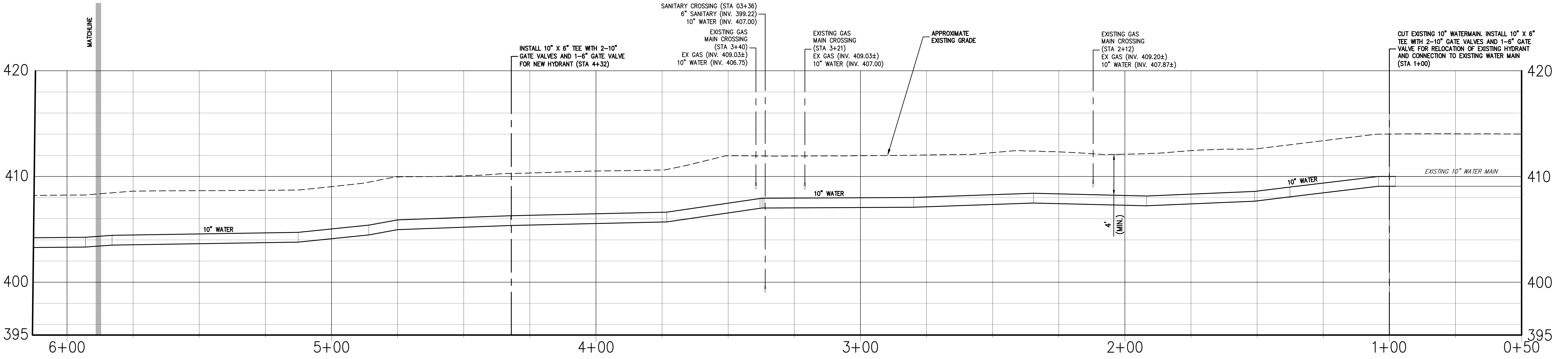
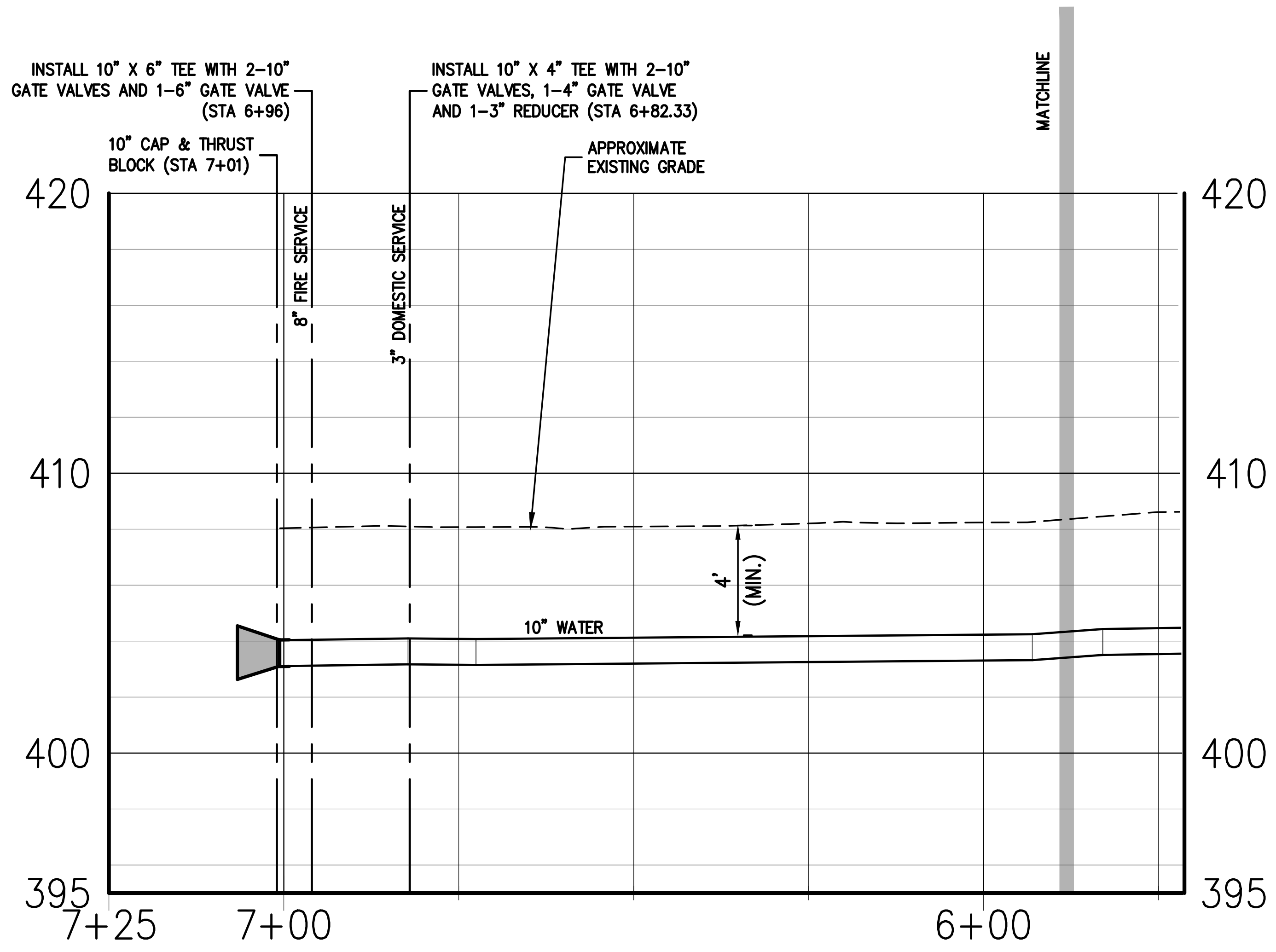

MATCHLINE
INSTALL 10" X 6" TEE WITH 2–10" GATE VALVES AND 1–6" GATE VALVE FOR NEW HYDRANT (STA 4+32)
SANITARY CROSSING (STA 03+36)
6" SANITARY (INV. 399.22)
10" WATER (INV. 407.00)
EXISTING GAS MAIN CROSSING (STA 3+40)
EX GAS (INV. 409.03±)
10" WATER (INV. 406.75)
EXISTING GAS MAIN CROSSING (STA 3+21)
EX GAS (INV. 409.03±)
10" WATER (INV. 407.00)
APPROXIMATE EXISTING GRADE
EXISTING GAS MAIN CROSSING (STA 2+12)
EX GAS (INV. 409.20±)
10" WATER (INV. 407.87±)
CUT EXISTING 10" WATERMAIN. INSTALL 10" X 6" TEE WITH 2–10" GATE VALVES AND 1–6" GATE VALVE FOR RELOCATION OF EXISTING HYDRANT AND CONNECTION TO EXISTING WATER MAIN (STA 1+00)
EXISTING 10" WATER MAIN
10" WATER
10" WATER
10" WATER
4' (MIN.)
420
410
400
395
6+00
5+00
4+00
3+00
2+00
1+00
0+50

WATERMAIN EXTENSION

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


INSTALL 10" X 6" TEE WITH 2–10" GATE VALVES AND 1–6" GATE VALVE (STA 6+96)
10" CAP & THRUST BLOCK (STA 7+01)
INSTALL 10" X 4" TEE WITH 2–10" GATE VALVES, 1–4" GATE VALVE AND 1–3" REDUCER (STA 6+82.33)
APPROXIMATE EXISTING GRADE
MATCHLINE
8" FIRE SERVICE
3" DOMESTIC SERVICE
10" WATER
4' (MIN.)
420
410
400
395
7+25
7+00
6+00

WATERMAIN EXTENSION

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

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APPROVED BY :	DL
DATE :	09.10.2021
SCALE :	AS NOTED
ISSUE :	

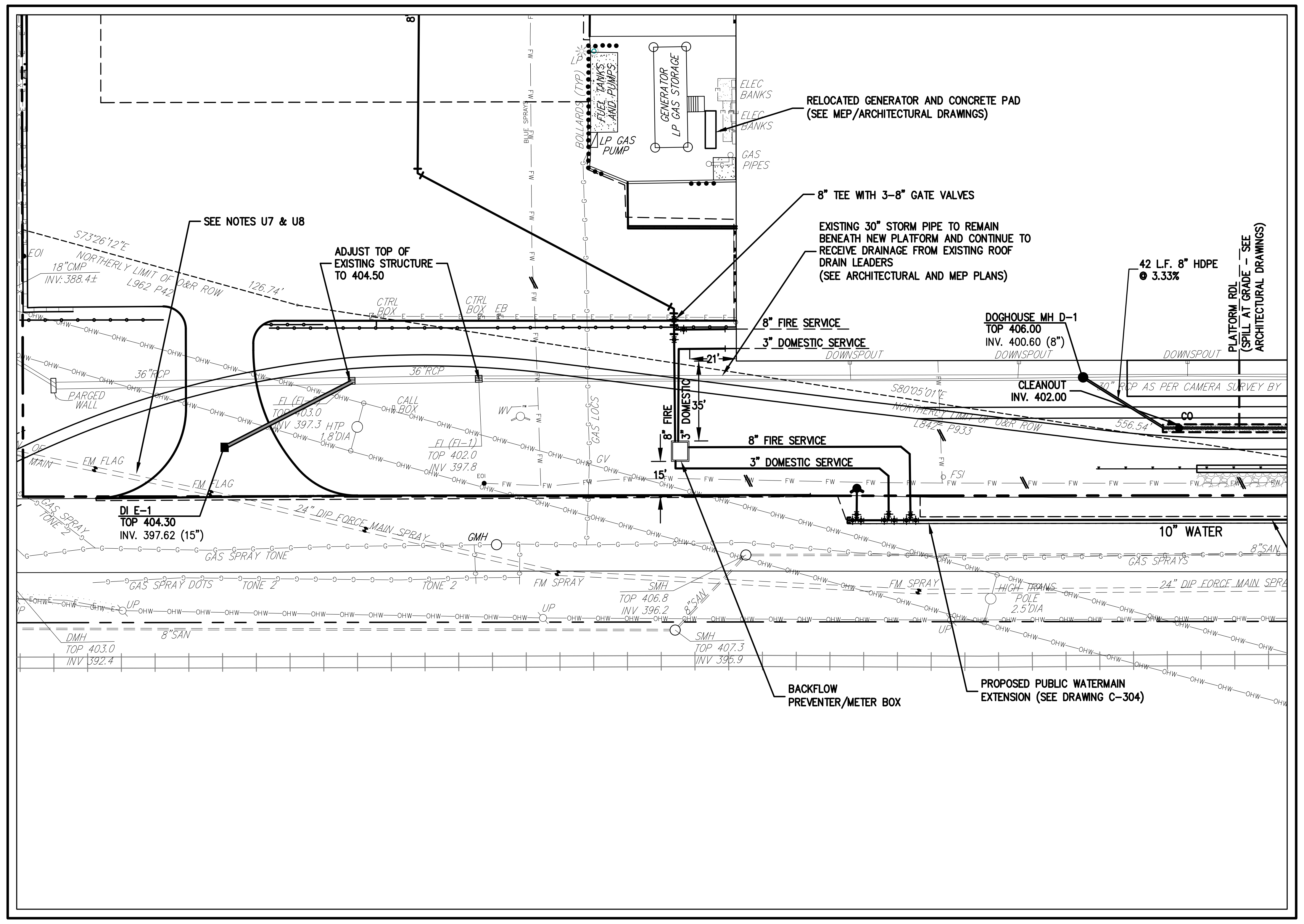
DRAWING TITLE :

WATERMAIN EXTENSION PROFILE

DWG NUMBER :

C-305

JMC PROJECT: 19005-1
SCR: WATER MAIN.LS
DWG FILE: 19005-UTIL


SEE NOTES U7 & U8
ADJUST TOP OF EXISTING STRUCTURE TO 404.50
RELOCATED GENERATOR AND CONCRETE PAD (SEE MEP/ARCHITECTURAL DRAWINGS)
8" TEE WITH 3-8" GATE VALVES
EXISTING 30" STORM PIPE TO REMAIN BENEATH NEW PLATFORM AND CONTINUE TO RECEIVE DRAINAGE FROM EXISTING ROOF DRAIN LEADERS (SEE ARCHITECTURAL AND MEP PLANS)
42 L.F. 8" HDPE @ 3.33%
PLATFORM RDL (SPILL AT GRADE – SEE ARCHITECTURAL DRAWINGS)
DOGHOUSE MH D-1
TOP 406.00
INV. 400.60 (8")
CLEANOUT
INV. 402.00
CO
8" FIRE SERVICE
3" DOMESTIC SERVICE
21'
35'
15'
8" FIRE
3" DOMESTIC
10" WATER
DI E-1
TOP 404.30
INV. 397.62 (15")
BACKFLOW PREVENTER/METER BOX
PROPOSED PUBLIC WATERMAIN EXTENSION (SEE DRAWING C-304)
FUEL TANKS AND PUMPS
GENERATOR LP GAS STORAGE
LP GAS PUMP
BOLLARDS (TYP)
ELEC BANKS
GAS PIPES
S73°26'12"E
NORTHERLY LIMIT OF O&R ROW
L962 P42
126.74'
S80°05'01"E
L842 P933
556.54'
36"RCP
PARGED WALL
18"CMP
INV: 388.4±
CTRL BOX
EB
CALL BOX
FI (FI-1)
TOP 402.0
INV 397.8
TOP 403.0
INV 397.3
HTP 1.8'DIA
GAS LOCS
GV
FSI
FM FLAG
24" DIP FORCE MAIN SPRAY
GAS SPRAY TONE
GAS SPRAY DOTS
TONE 2
FM SPRAY
GAS SPRAYS
GMH
SMH
TOP 406.8
INV 396.2
SMH
TOP 407.3
INV 395.9
DMH
TOP 403.0
INV 392.4
8"SAN
HIGH TRANS POLE 2.5'DIA
UP
DOWNSPOUT
30" RCP AS PER CAMERA SURVEY BY

BACKFLOW PREVENTER | METER ENCLOSURE LOCATION PLAN

SCALE: 1"=40'

1. BACKFLOW PREVENTION DEVICES SHALL BE TESTED UPON INSTALLATION, ANNUALLY AND AFTER REPAIR OR BEING REBUILT BY A NEW YORK STATE CERTIFIED TESTER.
2. CONTRACTOR SHALL PURCHASE NEW WATER METER FROM SUEZ WATER WEST NYACK NEW YORK INC.
3. THE BACKFLOW PREVENTION DEVICE SHALL BE REBUILT EVERY FIVE YEARS IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
4. INSTALLATION OF BACKFLOW PREVENTION DEVICES SHALL MEET SUEZ WATER WEST NYACK NEW YORK INC., ROCKLAND COUNTY DEPARTMENT OF HEALTH AND THE NEW YORK STATE DEPT. OF HEALTH REQUIREMENTS.
5. THE NEW YORK STATE EDUCATION LAW PERTAINING TO PROFESSIONAL ENGINEERS AND LAND SURVEYORS, ARTICLE 145ff, SECTION 7200 REQUIRES THAT A PROJECT INVOLVING THE SAFEGUARD OF LIFE, HEALTH AND PROPERTY MUST BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER (P.E.) OF THE STATE OF NEW YORK. THE DESIGN OF THE BACKFLOW PREVENTION DEVICE INSTALLATIONS IS SUCH A PROJECT, THERE IS AN EXCEPTION TO THE REQUIREMENTS FOR DESIGN: AN ARCHITECT LICENSED IN THIS STATE MAY DESIGN THE INSTALLATION. THE INSTALLATION OF THE DEVICE MUST BE MADE BY A LICENSED PLUMBER. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO OBTAIN ALL NECESSARY PLUMBING PERMITS.
6. THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR CHECKING THE INSTALLATION OF THE BACKFLOW PREVENTION DEVICE AND CERTIFY THAT THE DEVICE INSTALLATION CONFORMS TO THE APPROVED PLANS BY SUBMITTING THE D.O.H. FORM 1013.
7. ANY UNAUTHORIZED ALTERATION OR ADDITION TO A MAP BEARING THE SEAL OF A PROFESSIONAL ENGINEER OR A LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PER SECTION 7209, SUB-DIVISION 2.
8. ALL WATER SERVICES PIPES SHALL BE DUCTILE IRON CLASS 52 INSTALLED IN ACCORDANCE WITH AWWA C-600.
9. ALL WORK SHALL BE IN ACCORDANCE WITH THE VILLAGE OF MONTEBELLO STANDARDS AND REQUIREMENTS. THIS SHALL INCLUDE BUT NOT BE LIMITED TO RETAINING A LICENSED PLUMBER TO PERFORM ALL WORK WITHIN THE BUILDING WALLS, WHICH SHALL BEGIN AT FIVE FEET FROM THE POINT OF ENTRY.
10. ALL DISCHARGE PIPING SHALL BE SIZED ADEQUATELY FOR CATASTROPHIC FAILURE.
11. THE HOT BOX SHALL BE ILLUMINATED SUFFICIENTLY WITH FLUORESCENT BULBS TEMPERATURE SHALL BE MAINTAINED AT A MINIMUM OF 50° F, AND SHALL BE KEPT NEAT SO AS TO PROVIDE A CONVENIENT ACCESS TO DEVICES.

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

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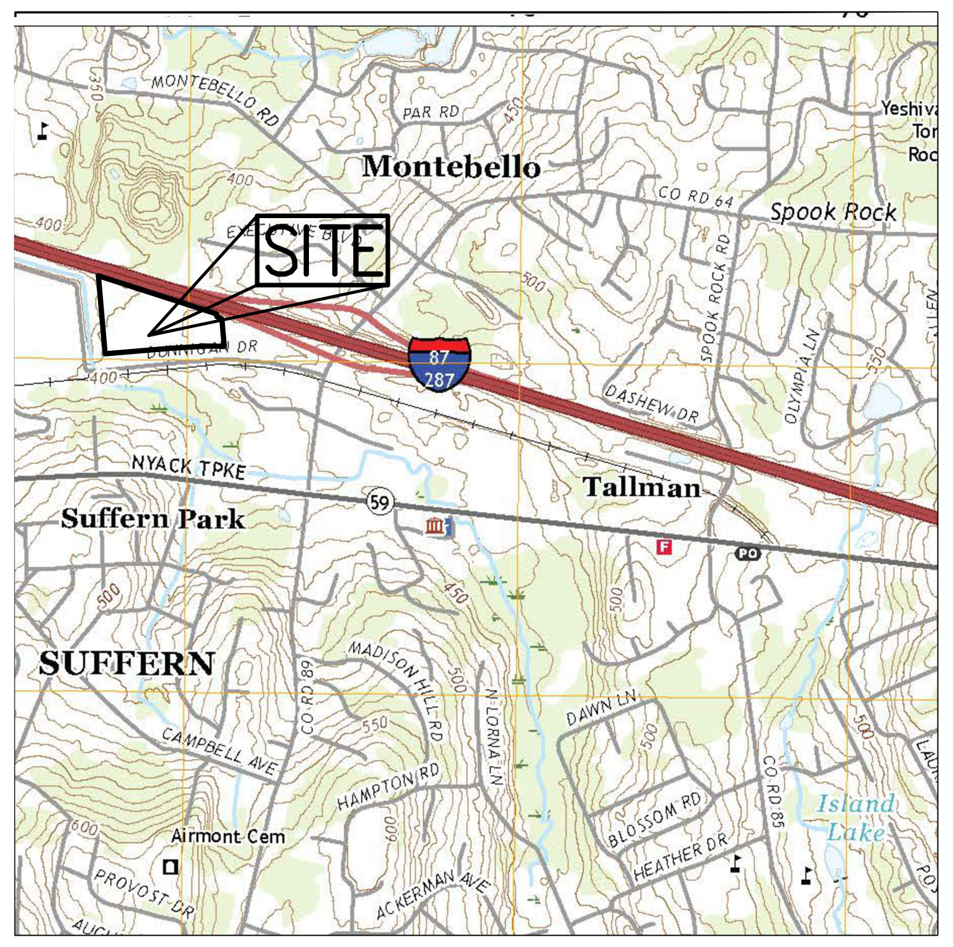
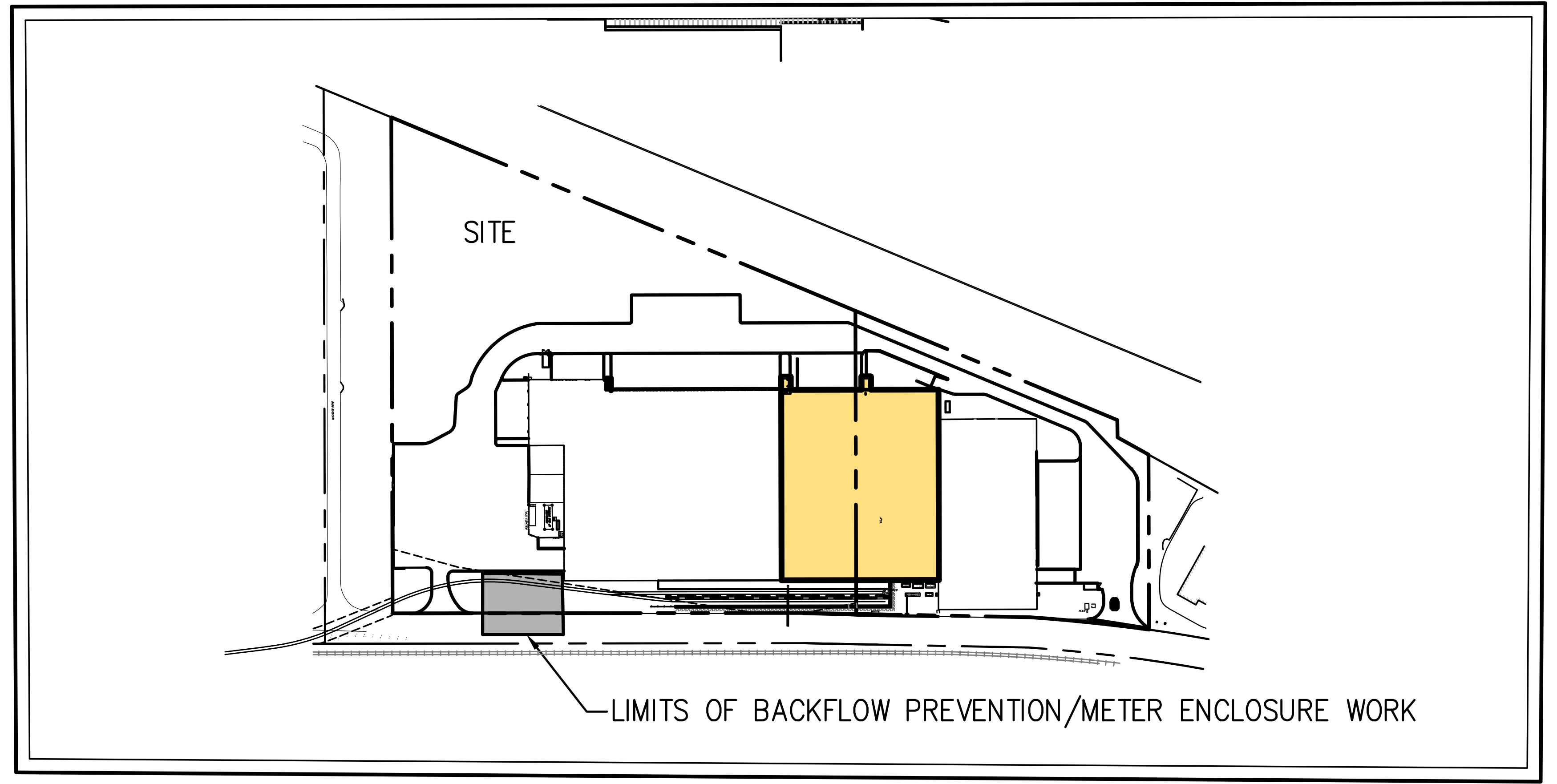

SITE
Montebello
Spook Rock
Suffern Park
Tallman
SUFFERN
NYACK TPKE
Airmont Cem
Island Lake

SITE LOCATION MAP

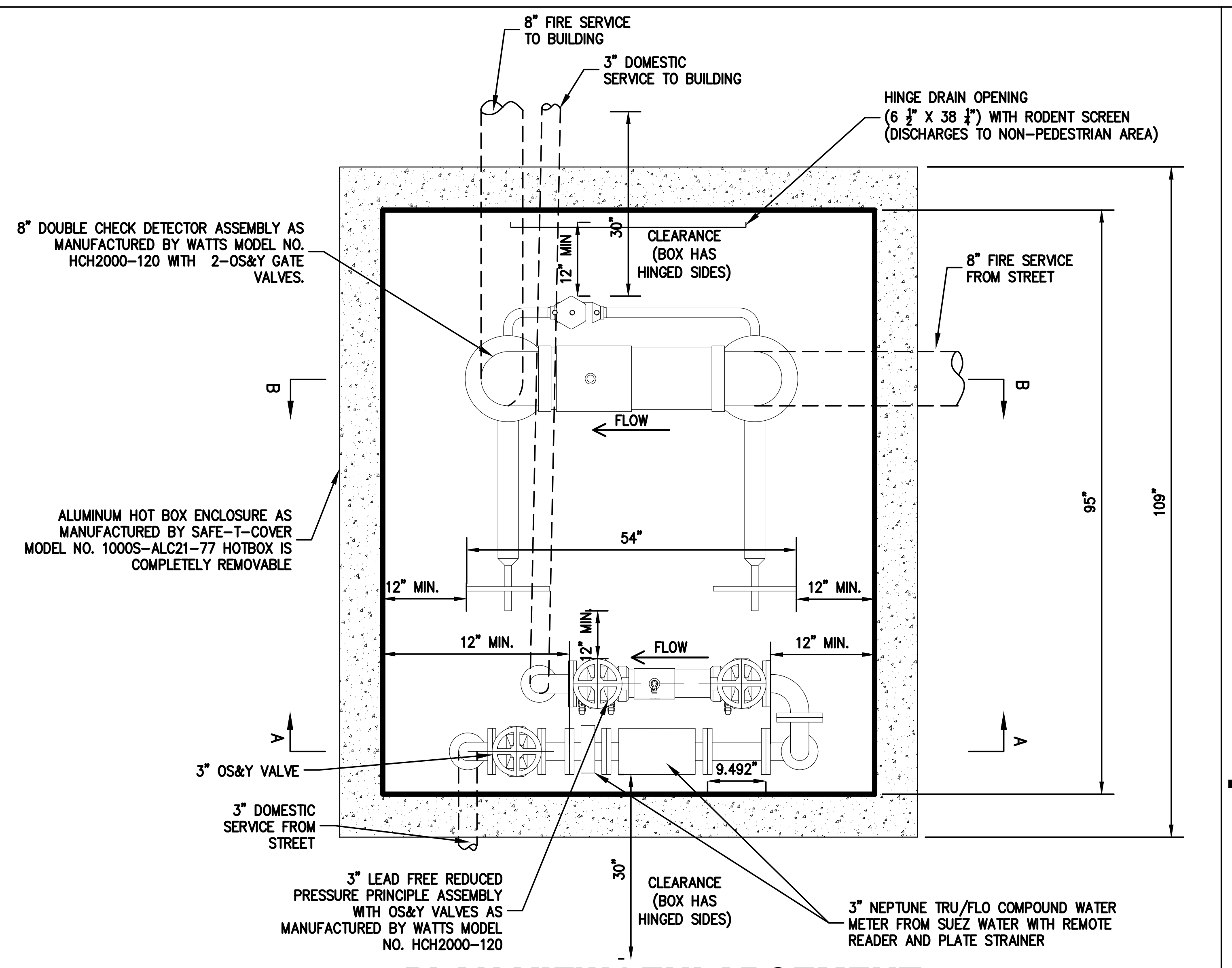
SCALE: 1" = 30'


SITE
LIMITS OF BACKFLOW PREVENTION/METER ENCLOSURE WORK

KEY MAP

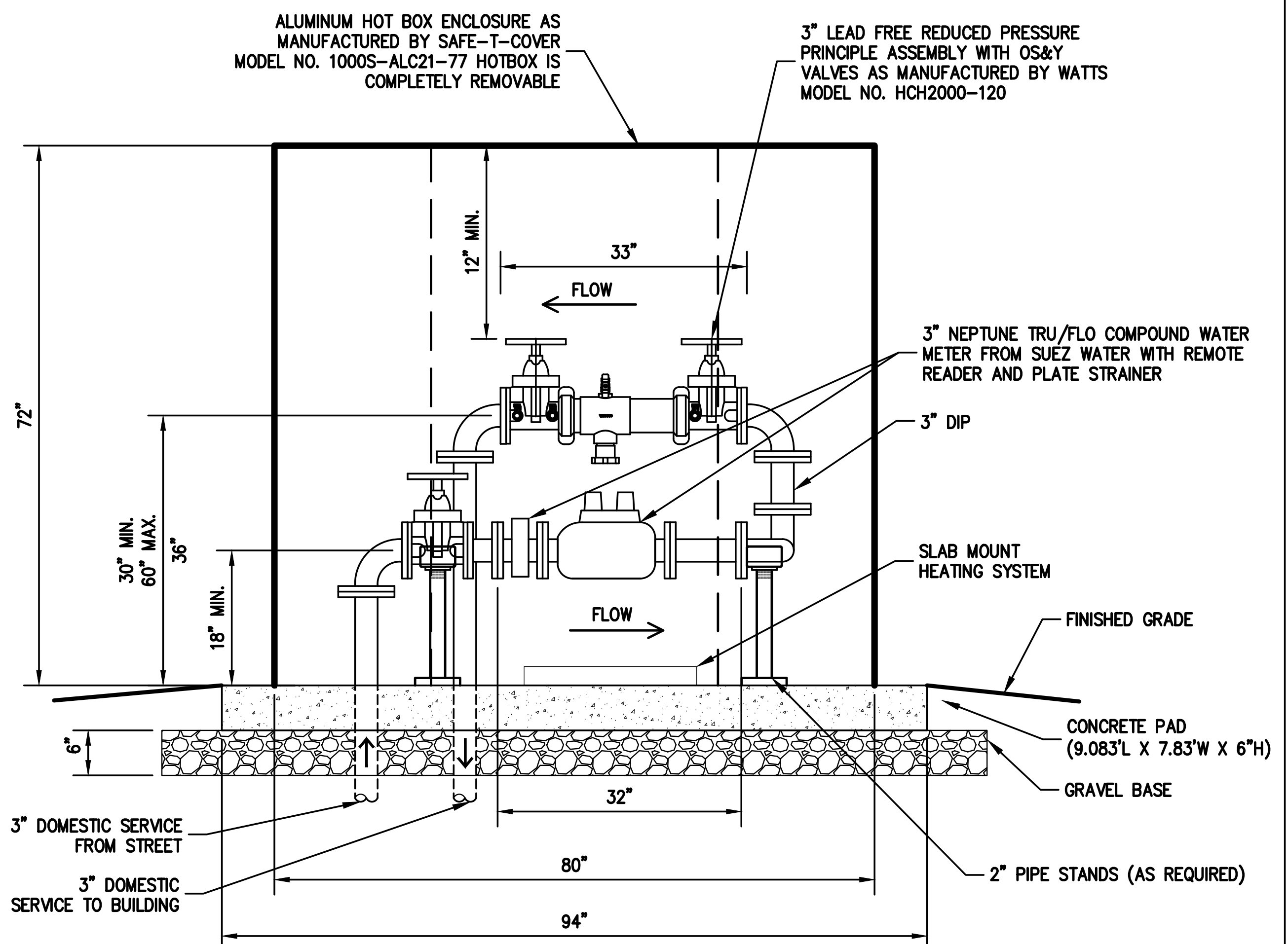
SCALE: 1" = 250'

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.


8" FIRE SERVICE TO BUILDING
3" DOMESTIC SERVICE TO BUILDING
HINGE DRAIN OPENING (6 1/2" X 38 1/4") WITH RODENT SCREEN (DISCHARGES TO NON-PEDESTRIAN AREA)
8" DOUBLE CHECK DETECTOR ASSEMBLY AS MANUFACTURED BY WATTS MODEL NO. HCH2000-120 WITH 2-OS&Y GATE VALVES.
12" MIN
30"
CLEARANCE (BOX HAS HINGED SIDES)
8" FIRE SERVICE FROM STREET
B
B
FLOW
ALUMINUM HOT BOX ENCLOSURE AS MANUFACTURED BY SAFE-T-COVER MODEL NO. 1000S-ALC21-77 HOTBOX IS COMPLETELY REMOVABLE
54"
12" MIN.
12" MIN.
12" MIN.
12" MIN.
12" MIN.
FLOW
95"
109"
A
A
3" OS&Y VALVE
9.492"
3" DOMESTIC SERVICE FROM STREET
3" LEAD FREE REDUCED PRESSURE PRINCIPLE ASSEMBLY WITH OS&Y VALVES AS MANUFACTURED BY WATTS MODEL NO. HCH2000-120
30"
CLEARANCE (BOX HAS HINGED SIDES)
3" NEPTUNE TRU/FLO COMPOUND WATER METER FROM SUEZ WATER WITH REMOTE READER AND PLATE STRAINER

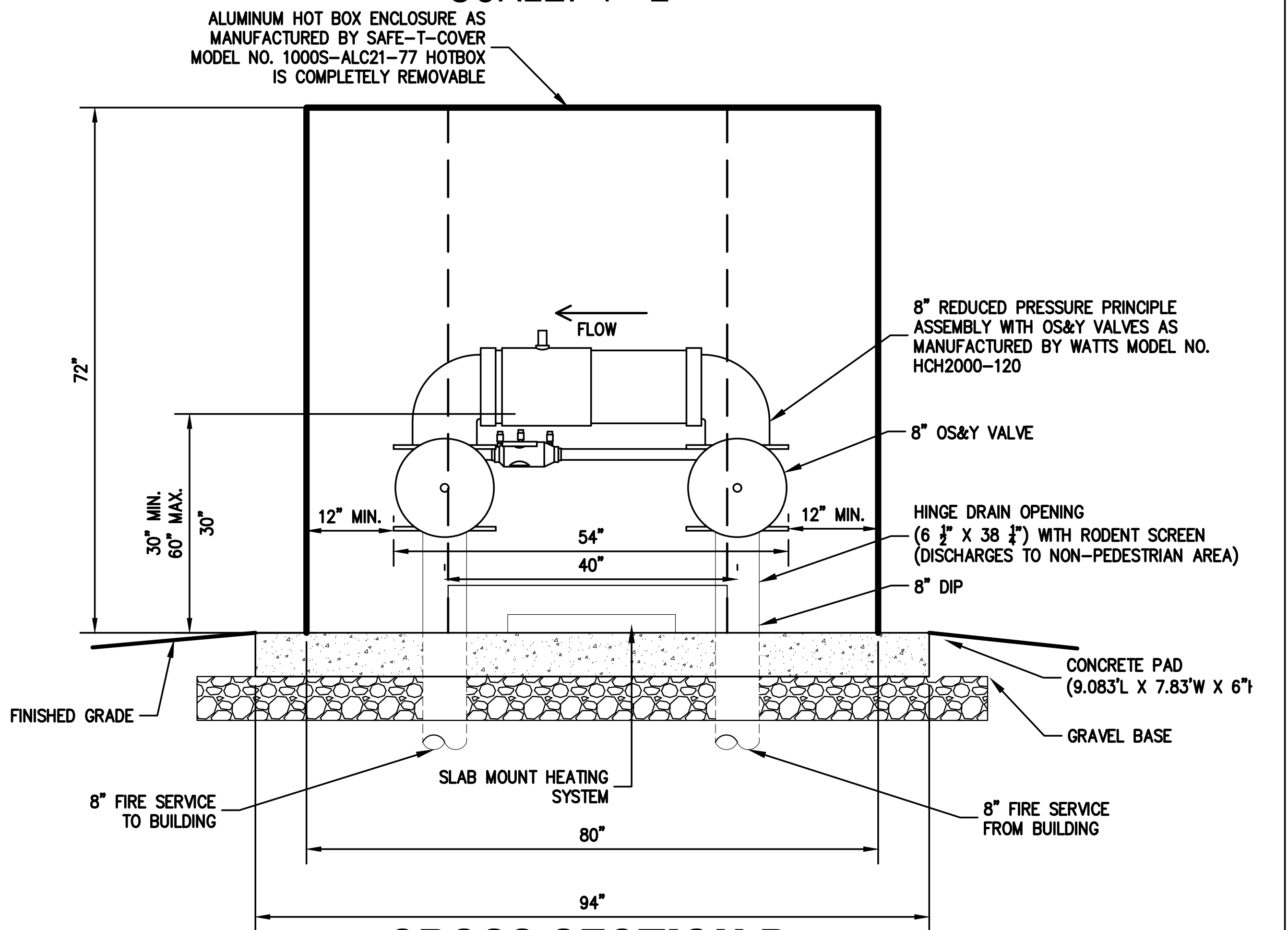
PLAN VIEW | ENLARGEMENT

SCALE: 1"=2'


ALUMINUM HOT BOX ENCLOSURE AS MANUFACTURED BY SAFE-T-COVER MODEL NO. 1000S-ALC21-77 HOTBOX IS COMPLETELY REMOVABLE
3" LEAD FREE REDUCED PRESSURE PRINCIPLE ASSEMBLY WITH OS&Y VALVES AS MANUFACTURED BY WATTS MODEL NO. HCH2000-120
12" MIN.
33"
FLOW
3" NEPTUNE TRU/FLO COMPOUND WATER METER FROM SUEZ WATER WITH REMOTE READER AND PLATE STRAINER
3" DIP
72"
30" MIN. 60" MAX.
36"
18" MIN.
SLAB MOUNT HEATING SYSTEM
FLOW
FINISHED GRADE
6"
CONCRETE PAD (9.083'L X 7.83'W X 6"H)
GRAVEL BASE
32"
3" DOMESTIC SERVICE FROM STREET
3" DOMESTIC SERVICE TO BUILDING
80"
94"
2" PIPE STANDS (AS REQUIRED)

CROSS SECTION A

SCALE: 1"=2'


ALUMINUM HOT BOX ENCLOSURE AS MANUFACTURED BY SAFE-T-COVER MODEL NO. 1000S-ALC21-77 HOTBOX IS COMPLETELY REMOVABLE
FLOW
8" REDUCED PRESSURE PRINCIPLE ASSEMBLY WITH OS&Y VALVES AS MANUFACTURED BY WATTS MODEL NO. HCH2000-120
8" OS&Y VALVE
72"
30" MIN. 60" MAX.
30"
12" MIN.
12" MIN.
54"
40"
HINGE DRAIN OPENING (6 1/2" X 38 1/4") WITH RODENT SCREEN (DISCHARGES TO NON-PEDESTRIAN AREA)
8" DIP
FINISHED GRADE
CONCRETE PAD (9.083'L X 7.83'W X 6"H)
GRAVEL BASE
SLAB MOUNT HEATING SYSTEM
8" FIRE SERVICE TO BUILDING
8" FIRE SERVICE FROM BUILDING
80"
94"

CROSS SECTION B

SCALE: 1"=2'

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MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
2	ISSUED FOR BID	10.15.21

DRAWN BY : DC
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 09.10.2021
SCALE : AS SHOWN
ISSUE :

DRAWING TITLE :
BACKFLOW PREVENTION PLAN

DWG NUMBER :
C-306

JMC PROJECT: 19005-1
SCR: UTIL.SCR
DWG FILE: 19005-UTIL

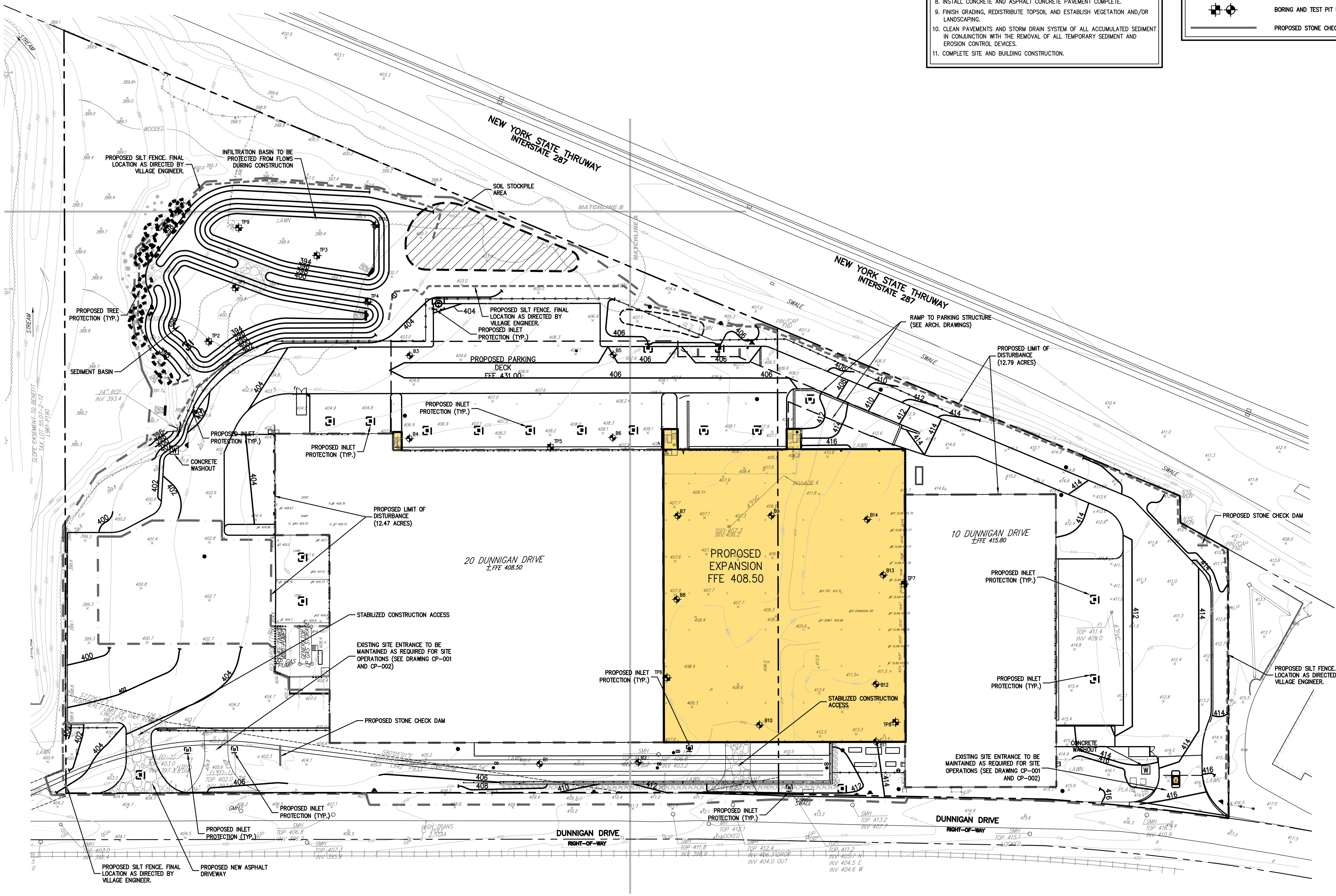
SEQUENCE OF CONSTRUCTION

CONSTRUCTION SHALL BE SEQUENCED IN SUCH A MANNER THAT ANY AREA WHICH IS DISTURBED SHALL FIRST BE PROTECTED WITH SEDIMENT EROSION CONTROLS AS INDICATED ON THIS PLAN. PARTICULAR REQUIREMENTS ARE GIVEN AS FOLLOWS:

1. DEMOLITION OF EXISTING BUILDINGS AS REQUIRED.
2. INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES AS INDICATED ON THIS PLAN.
3. CLEAR UNDEVELOPED PORTION OF PROPERTY WHICH IS TO BE DEVELOPED.
4. STRIP AND STOCKPILE TOPSOIL.
5. BEGIN BUILDING AND PARKING LOT CONSTRUCTION, ROUGH GRADING.
6. INSTALL STORM DRAIN SYSTEM COMPLETE (IMMEDIATELY INSTALL HAYBALE FILTERS ON ALL INLETS).
7. INSTALL PUBLIC UTILITIES (GAS, ELECTRIC AND TELEPHONE) AS REQUIRED.
8. INSTALL CONCRETE AND ASPHALT CONCRETE PAVEMENT COMPLETE.
9. FINISH GRADING, REDISTRIBUTE TOPSOIL AND ESTABLISH VEGETATION AND/OR LANDSCAPING.
10. CLEAN PAVEMENTS AND STORM DRAIN SYSTEM OF ALL ACCUMULATED SEDIMENT IN CONJUNCTION WITH THE REMOVAL OF ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES.
11. COMPLETE SITE AND BUILDING CONSTRUCTION.

LEGEND

PROPOSED INLET PROTECTION
PROPOSED SILT FENCE
PROPOSED LIMIT OF DISTURBANCE
PROPOSED STABILIZED CONSTRUCTION ENTRANCE
PROPOSED STOCKPILE AREA
PROPOSED TREE PROTECTION
BORING AND TEST PIT LOCATIONS
PROPOSED STONE CHECK DAM


PROPOSED SILT FENCE. FINAL LOCATION AS DIRECTED BY VILLAGE ENGINEER.
INFILTRATION BASIN TO BE PROTECTED FROM FLOWS DURING CONSTRUCTION
NEW YORK STATE THRUWAY INTERSTATE 287
SOIL STOCKPILE AREA
MATCHLINE B
MATCHLINE A
STREAM
WOODED
LAWN
PROPOSED TREE PROTECTION (TYP.)
SEDIMENT BASIN
24" RCP INV 393.4
SLOPE EASEMENT TO BENEFIT TAX LOT 55.07-2-12 L961 P190
PROPOSED SILT FENCE. FINAL LOCATION AS DIRECTED BY VILLAGE ENGINEER. PROPOSED INLET PROTECTION (TYP.)
PROPOSED PARKING DECK FFE 431.00
PROPOSED INLET PROTECTION (TYP.)
RAMP TO PARKING STRUCTURE (SEE ARCH. DRAWINGS)
PROPOSED LIMIT OF DISTURBANCE (12.79 ACRES)
SWALE
PIN/CAP FND
CONCRETE WASHOUT
PROPOSED LIMIT OF DISTURBANCE (12.47 ACRES)
20 DUNNIGAN DRIVE ±FFE 408.50
PROPOSED EXPANSION FFE 408.50
10 DUNNIGAN DRIVE ±FFE 415.80
PROPOSED STONE CHECK DAM
STABILIZED CONSTRUCTION ACCESS
EXISTING SITE ENTRANCE TO BE MAINTAINED AS REQUIRED FOR SITE OPERATIONS (SEE DRAWING CP-001 AND CP-002)
PROPOSED NEW ASPHALT DRIVEWAY
PROPOSED SILT FENCE. FINAL LOCATION AS DIRECTED BY VILLAGE ENGINEER.
DUNNIGAN DRIVE RIGHT-OF-WAY
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14
SMH
HIGH TRANS
GAS
W

REFER TO DRAWINGS C-001 THROUGH C-006 FOR ALL CIVIL ENGINEERING/SITE DEVELOPMENT NOTES AND SPECIFICATIONS PERTAINING TO THIS PROJECT.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

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REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	07.16.20
2	REISSUED PER PB COMMENTS	08.21.20
3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	FOR PLANNING BOARD APPROVAL	04.09.21
6	REISSUED PER ENGINEER COMMENTS	05.10.21
7	REISSUED PER ENGINEER COMMENTS	05.17.21
8	ISSUED FOR DOB SUBMISSION	09.10.21
9	ISSUED FOR BID	10.15.21

DRAWN BY : DC
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 1.16.2020
SCALE : 1" = 60'
ISSUE :

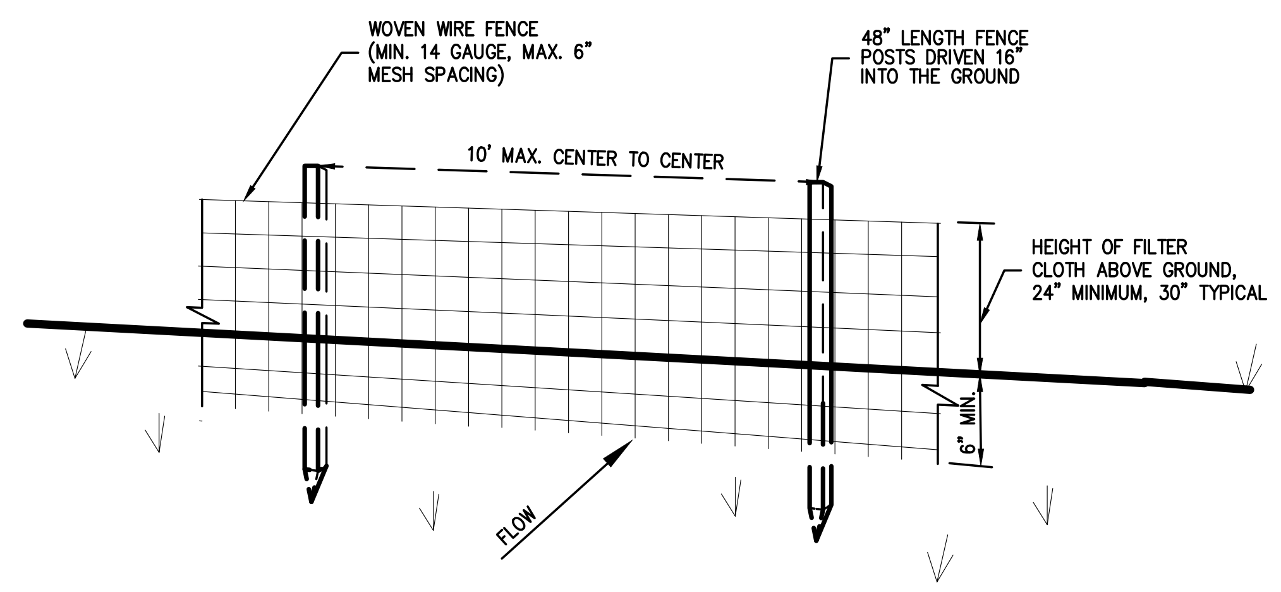
DRAWING TITLE :

EROSION AND SEDIMENT CONTROL PLAN

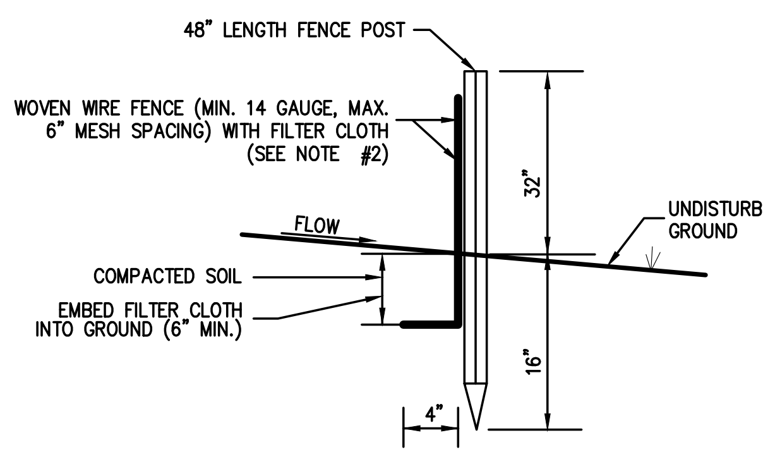
DWG NUMBER :

C-400

JMC PROJECT: 19005-1
SCR: UTIL.SCR
DWG FILE: 19005-UTIL


WOVEN WIRE FENCE (MIN. 14 GAUGE, MAX. 6" MESH SPACING)
48" LENGTH FENCE POSTS DRIVEN 16" INTO THE GROUND
10' MAX. CENTER TO CENTER
HEIGHT OF FILTER CLOTH ABOVE GROUND, 24" MINIMUM, 30" TYPICAL
6" MIN.
FLOW

PERSPECTIVE VIEW


48" LENGTH FENCE POST
WOVEN WIRE FENCE (MIN. 14 GAUGE, MAX. 6" MESH SPACING) WITH FILTER CLOTH (SEE NOTE #2)
FLOW
UNDISTURBED GROUND
COMPACTED SOIL
EMBED FILTER CLOTH INTO GROUND (6" MIN.)
32"
16"
4"

SLOPE	STEEPNESS	SLOPE LENGTH/FENCE LENGTH (FT.)
2–10%	50:1 TO 10:1	250/2000
10–20%	10:1 TO 5:1	150/1000
20–33%	5:1 TO 3:1	80/750
33–50%	3:1 TO 2:1	70/350
>50%	>2:1	30/175

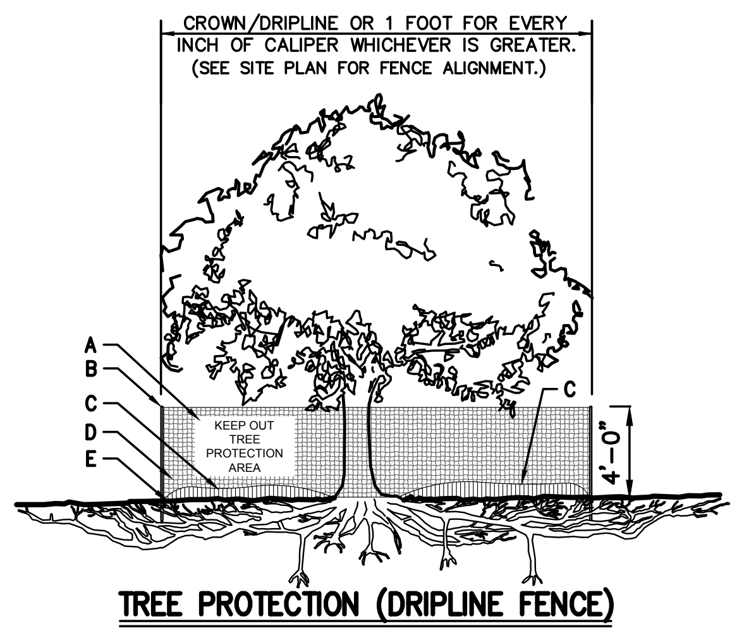
*ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE, BUT AT LEAST 10 FEET FROM THE TOE OF A SLOPE STEEPER THAN 3H:1V, TO ALLOW FOR MAINTENANCE AND ROLL DOWN. THE AREA BEYOND THE FENCE MUST BE UNDISTURBED OR STABILIZED.

SECTION

NOTES:

1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
2. FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

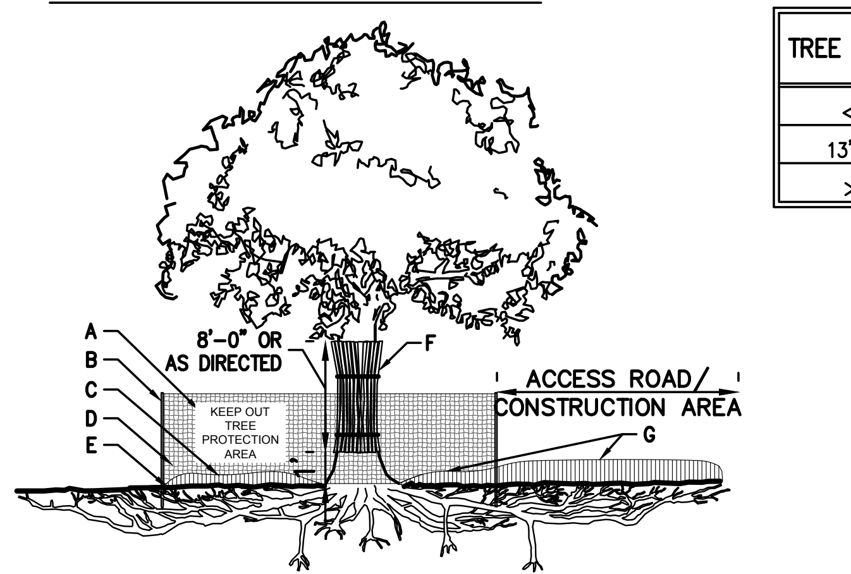
SILT FENCE
1


CROWN/DRIPLINE OR 1 FOOT FOR EVERY INCH OF CALIPER WHICHEVER IS GREATER. (SEE SITE PLAN FOR FENCE ALIGNMENT.)
A
B
C
D
E
C
KEEP OUT TREE PROTECTION AREA
4'-0"

TREE PROTECTION (DRIPLINE FENCE)

A	8.5"X11" SIGN LAMINATED IN PLASTIC SPACED EVERY 50' ALONG FENCE
B	2"X6' STEEL POSTS OR APPROVED EQUAL.
C	5" THICK LAYER OF MULCH.
D	TREE PROTECTION FENCE: HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS; COLOR ORANGE. STEEL POSTS INSTALLED AT 8' O.C.
E	MAINTAIN EXISTING GRADE WITHIN THE TREE PROTECTION FENCE UNLESS OTHERWISE INDICATED ON THE PLANS.
F	INSTALL ROUGH SAWN WOOD WHERE AND AS DIRECTED BY PROJECT LANDSCAPE ARCHITECT OR PROFESSIONAL ARBORIST. SEE CHART FOR WOOD SIZE BOUND WITH 9 GAUGE WIRE.
G	8"–12" THICK LAYER OF MULCH ON MAINTENANCE ROAD. 5" THICK LAYER INSIDE TREE PROTECTION AREA.

TREE DIAMETER	ROUGH SAWN WOOD SIZE
<12"	2"X2"
13"–24"	2"X4"
>25"	2"X6"

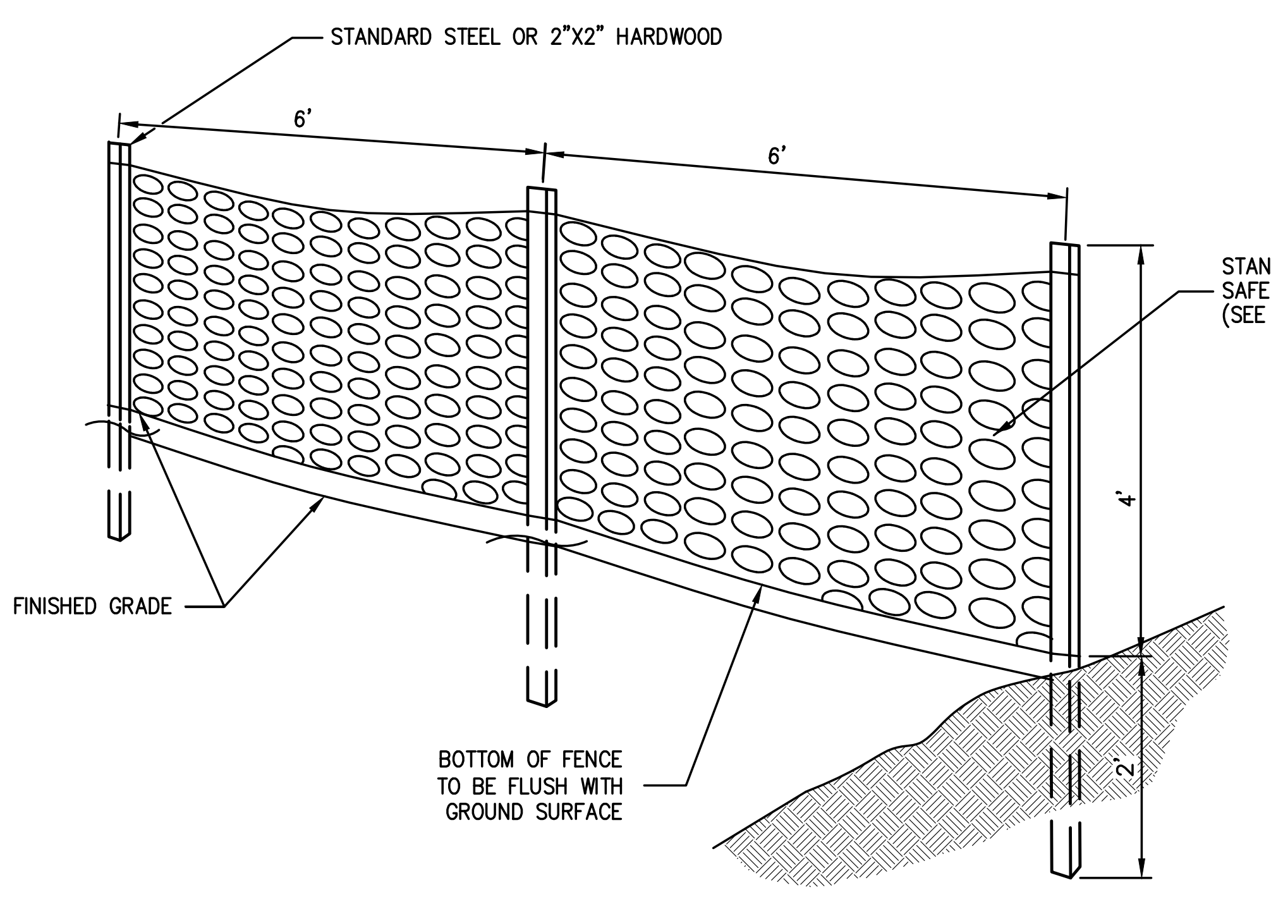

A
B
C
D
E
8'-0" OR AS DIRECTED
F
ACCESS ROAD/ CONSTRUCTION AREA
G
KEEP OUT TREE PROTECTION AREA

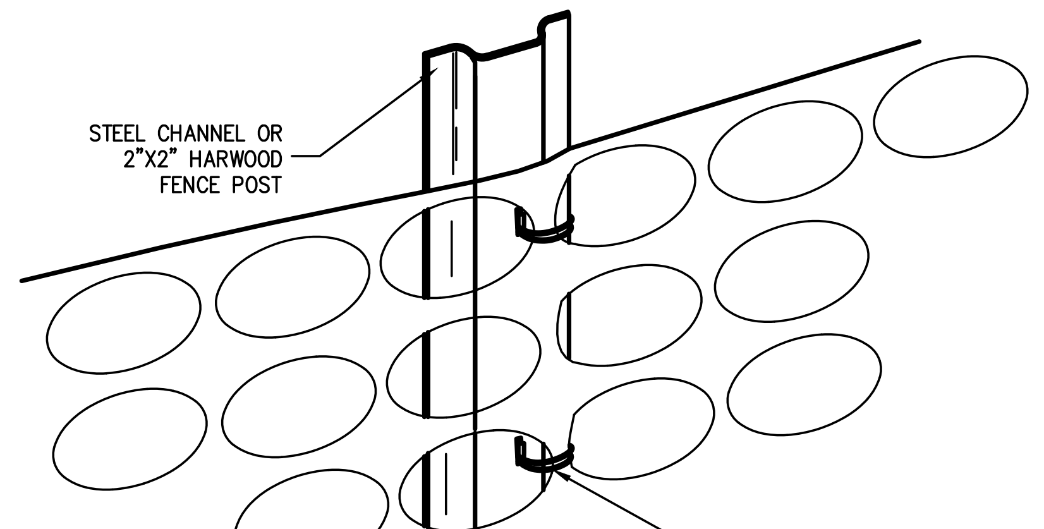
TREE PROTECTION W/ ACCESS ROAD/CONSTRUCTION AREA (DRIPLINE FENCE)

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
5. SEE SITE PLANS FOR IDENTIFICATIONS/LOCATIONS OF INDIVIDUAL TREES TO BE PROTECTED.
6. ALL EXCAVATION WITHIN THE CROWN/DRIPLINE OF ANY TREE SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE PROJECT LANDSCAPE ARCHITECT OR PROFESSIONAL ARBORIST. SPECIAL MEASURES, SUCH AS THE USE OF AN AIR SPADE MAY BE REQUIRED.
7. THE CONTRACTOR MAY PROPOSE THE USE OF ENGINEERED MATTING OR OTHER ENGINEERED PRODUCTS IN LIEU OF MULCH, WHICH SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION.

TREE PROTECTION
2

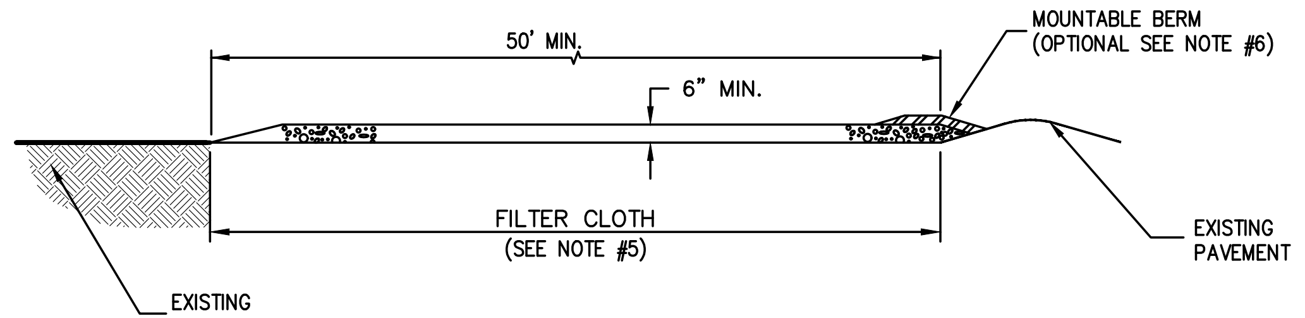

STANDARD STEEL OR 2"X2" HARDWOOD
6'
6'
STANDARD 48" SAFETY FENCE (SEE NOTE 5)
4'
2'
FINISHED GRADE
BOTTOM OF FENCE TO BE FLUSH WITH GROUND SURFACE


STEEL CHANNEL OR 2"X2" HARWOOD FENCE POST
(SEE NOTE 3)

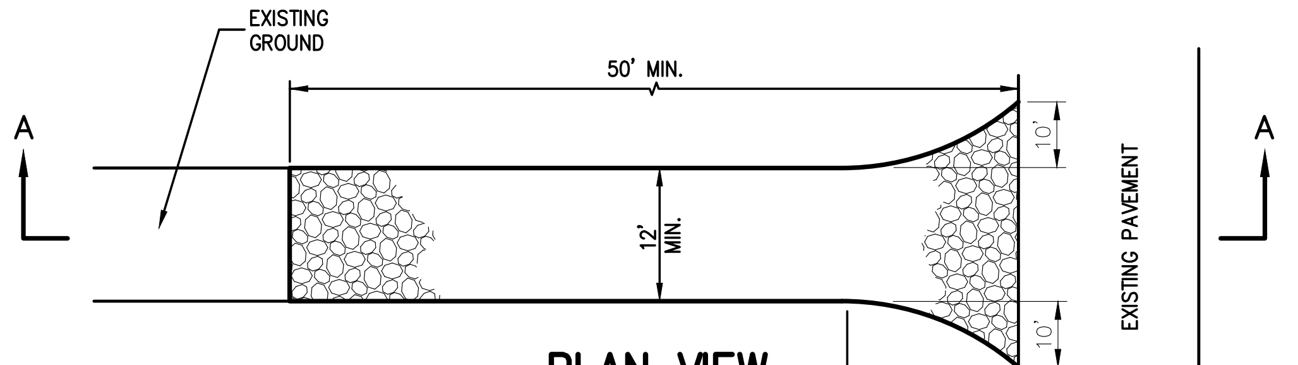
NOTES:

1. SPACE SUPPORT FENCE POSTS AT 6 FOOT INTERVALS.
2. DRIVE SUPPORT POSTS 2 FEET INTO GROUND.
3. FIRMLY FASTEN FENCE MATERIAL IN PLACE BY WIRING TO FENCE POST WHILE MAINTAINING TENSION ACROSS FULL HEIGHT OF FENCE. WIRING SHALL BE DONE IN A MANNER THAT WILL PREVENT SAGGING OF FENCE MATERIAL.
4. PROVIDE PERIODIC INSPECTION AND MAINTENANCE OF FENCE INCLUDING REPAIRS AS NECESSARY AND REQUIRED.
5. PLASTIC FENCE SHALL BE INTERNATIONAL ORANGE COLOR, AS MANUFACTURED BY ADPI ENTERPRISES, INC. OR APPROVED EQUAL.
6. REMOVE CONSTRUCTION FENCE AS DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE.

CONSTRUCTION FENCE
3


50' MIN.
6" MIN.
MOUNTABLE BERM (OPTIONAL SEE NOTE #6)
FILTER CLOTH (SEE NOTE #5)
EXISTING PAVEMENT
EXISTING GROUND

SECTION A–A

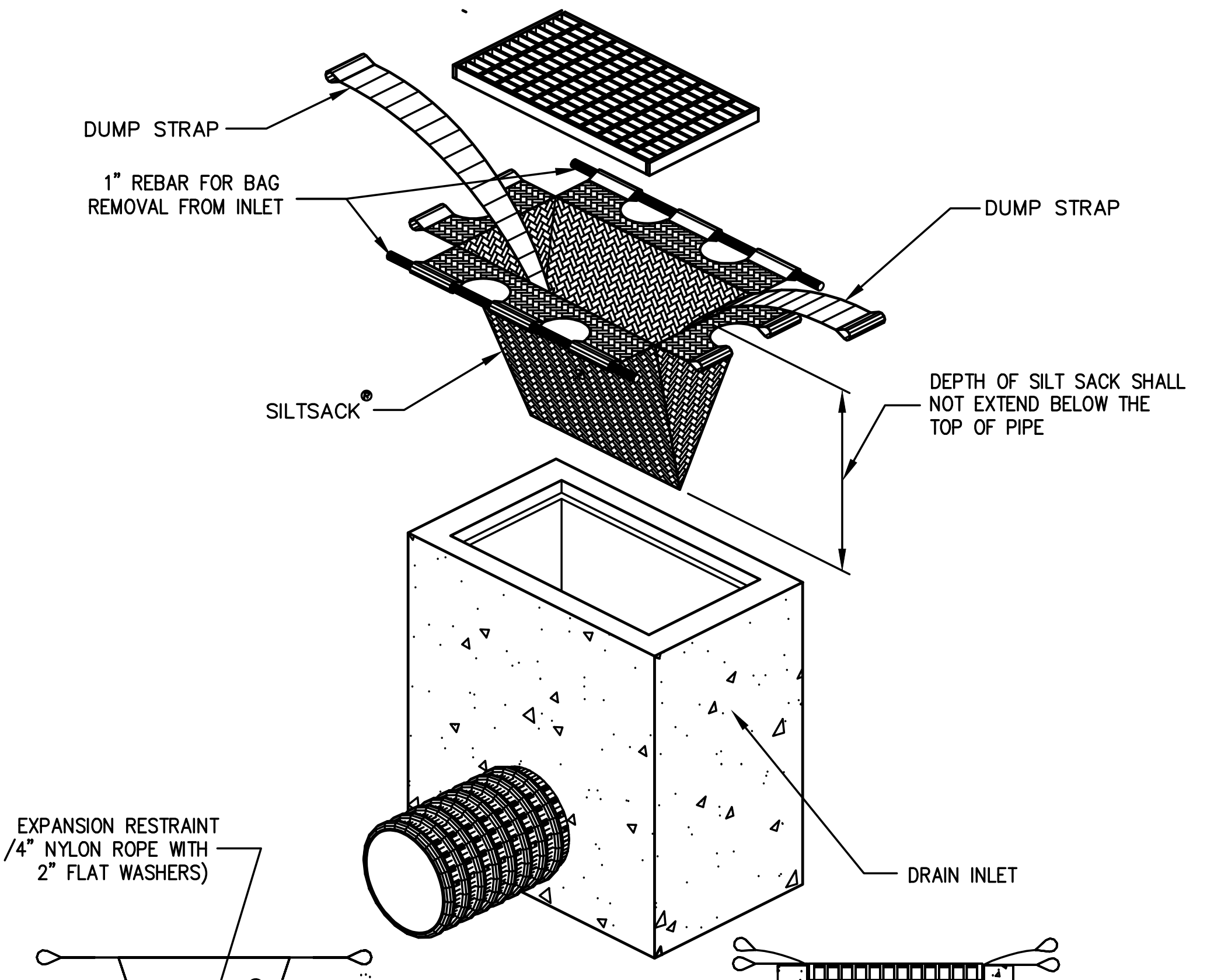

EXISTING GROUND
50' MIN.
A
A
12' MIN.
10'
10'
EXISTING PAVEMENT
12' MIN.

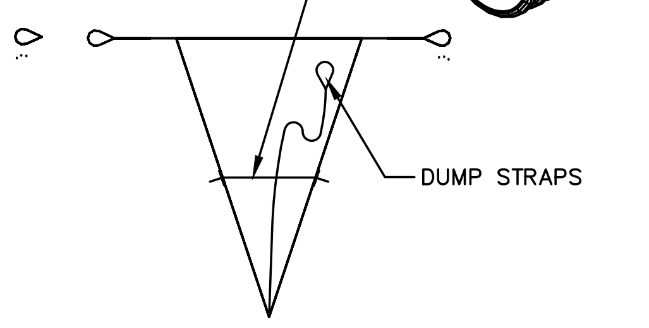
PLAN VIEW

NOTES

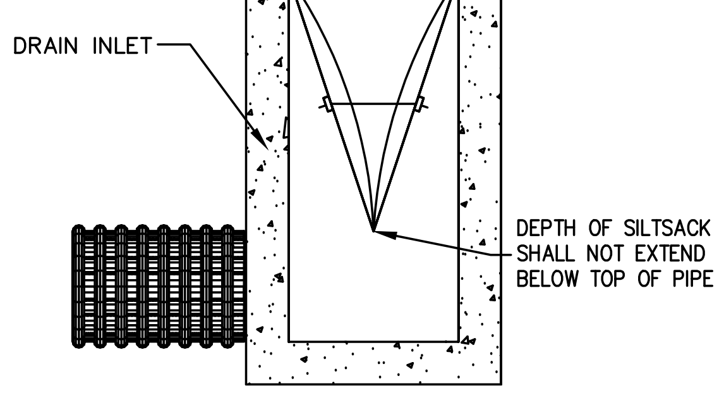
1. STONE SIZE – USE 1" TO 4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH TO BE PLACED OVER THE ENTIRE WIDTH AND LENGTH OF AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. 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 ACCESS
4


DUMP STRAP
1" REBAR FOR BAG REMOVAL FROM INLET
DUMP STRAP
SILTSACK®
DEPTH OF SILT SACK SHALL NOT EXTEND BELOW THE TOP OF PIPE
EXPANSION RESTRAINT (1/4" NYLON ROPE WITH 2" FLAT WASHERS)
DRAIN INLET


DUMP STRAPS

BAG DETAIL


DRAIN INLET
DEPTH OF SILTSACK SHALL NOT EXTEND BELOW TOP OF PIPE

INSTALLATION DETAIL

HI–FLOW SILT SACK AS MANUFACTURED BY ACF ENVIRONMENTAL OR APPROVED EQUAL®

(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN–OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D–4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D–4632	20 %
PUNCTURE	ASTM D–4833	135 LBS
MULLEN BURST	ASTM D–3786	420 PSI
TRAPEZOID TEAR	ASTM D–4533	45 LBS
UV RESISTANCE	ASTM D–4355	90 %
APPARENT OPENING SIZE	ASTM D–4751	20 US SIEVE
FLOW RATE	ASTM D–4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D–4491	1.5 SEC –1

NOTE:
CURB INLETS SHALL BE TYPE B WITH CURB DEFLECTOR.

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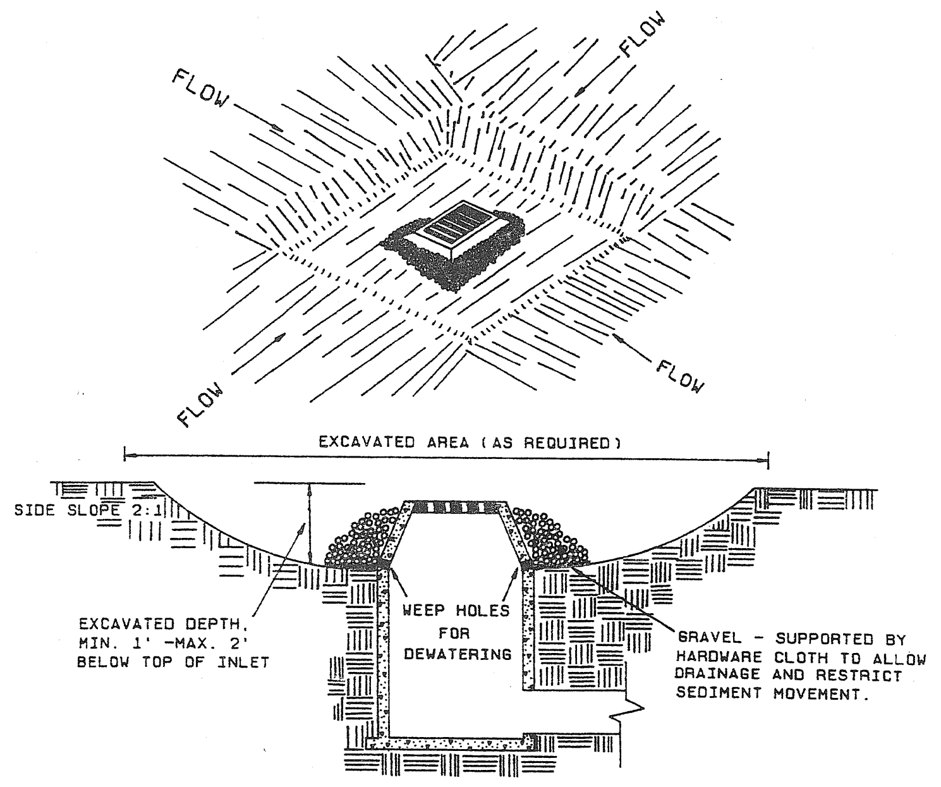
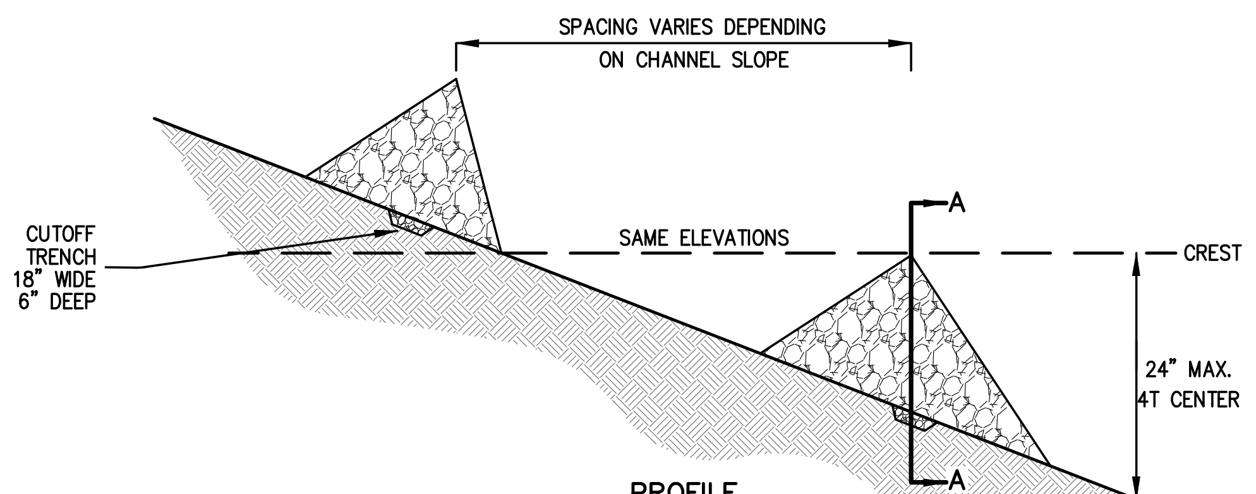
MANUFACTURED INSERT INLET PROTECTION
5

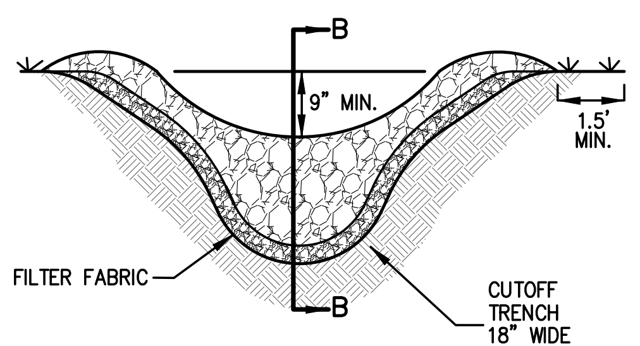

FLOW
FLOW
FLOW
EXCAVATED AREA (AS REQUIRED)
SIDE SLOPE 2:1
EXCAVATED DEPTH, MIN. 1' –MAX. 2' BELOW TOP OF INLET
WEEP HOLES FOR DEWATERING
GRAVEL – SUPPORTED BY HARDWARE CLOTH TO ALLOW DRAINAGE AND RESTRICT SEDIMENT MOVEMENT.

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROCTECTED BY/STONE.
4. PROVIDE FREQUENT INSPECTION AND MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AND REPAIR OR REPLACE INLET PROTECTION TO MAINTAIN EFFECTIVENESS OF THE INSTALLATION.
5. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA. SEAL WEEP HOLES FILL BASIN WITH STABLE SOIL TO FINAL GRADE. COMPACT IT PROPERLY AND STABILIZE WITH PERMANET SEEDING.

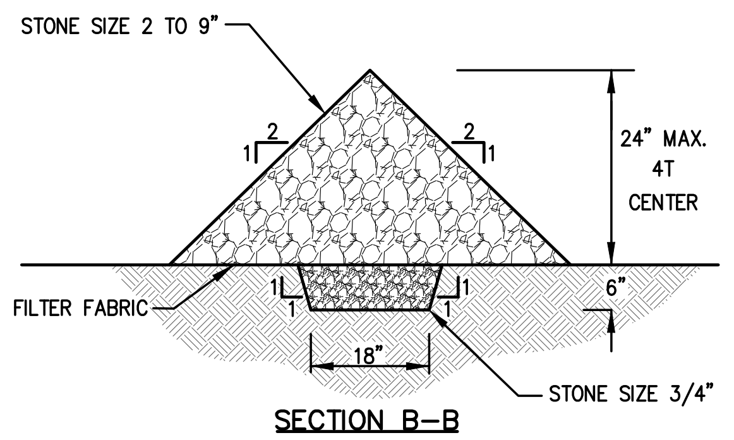
EXCAVATED DROP INLET PROTECTION
6


SPACING VARIES DEPENDING ON CHANNEL SLOPE
CUTOFF TRENCH 18" WIDE 6" DEEP
SAME ELEVATIONS
A
A
CREST
24" MAX. 4T CENTER

PROFILE
NOT TO SCALE


B
B
9" MIN.
1.5' MIN.
FILTER FABRIC
CUTOFF TRENCH 18" WIDE 6" DEEP

SECTION A–A
NOT TO SCALE


STONE SIZE 2 TO 9"
2
1
2
1
24" MAX. 4T CENTER
FILTER FABRIC
1
1
1
1
6"
18"
STONE SIZE 3/4"

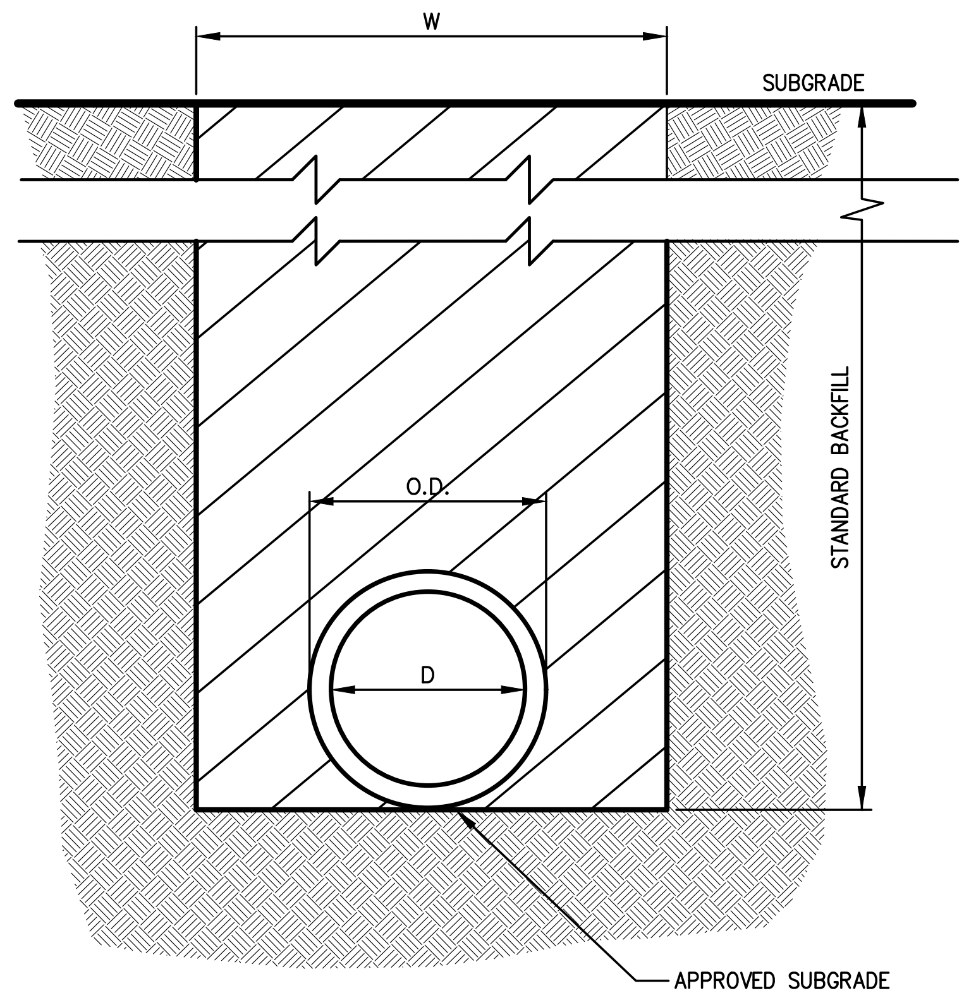
SECTION B–B
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS:

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSURE THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANK TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

MAXIMUM DRAINAGE AREA 2 ACRES.

STONE CHECK DAM
7


W
SUBGRADE
STANDARD BACKFILL
O.D.
D
APPROVED SUBGRADE

D=INSIDE DIAMETER, SPAN, OR RISE
O.D.=OUTSIDE BARREL DIAMETER, SPAN OR RISE
H.D.=OUTSIDE DIAMETER, SPAN, OR RISE @ BELL OR BAND
W=H.D. + 2.0' – FOR 48" OR SMALLER DIAMETER, SPAN, OR RISE
W=H.D. + 2.5' – FOR GREATER THAN 48" DIAMETER, SPAN, OR RISE

NOTES:

1. IN FILL AREAS, EMBANKMENTS SHALL BE CONSTRUCTED TO A MAXIMUM OF 2 FEET ABOVE TOP OF PIPE BEFORE EXCAVATING TRENCH.
2. FOR CORRUGATED POLYETHYLENE DRAIN PIPE (CPDP) INSTALLATION AND POLYVINYL CHLORIDE (PVC) PIPE AND CONDUIT INSTALLATION, USE TYPE II TRENCH.
3. BACKFILL FOR PIPE SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 92% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D–1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.

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TYPE I TRENCH
(FLAT BOTTOM)
8

ARCHITECT

di Domenico + Partners LLP
Architecture
Landscape Architecture
Planning
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Tel 212-337-0400
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CIVIL PLANNING ENGINEER

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MEP ENGINEER

BURNS ENGINEERING, PC.
1261 Broadway, Suite 708
New York, New York 10001
Tel 212-962-3503

STRUCTURAL ENGINEER

GEI50
1385 Broadway, 20th FL
New York, New York 10018
Tel 212-687-8282

MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

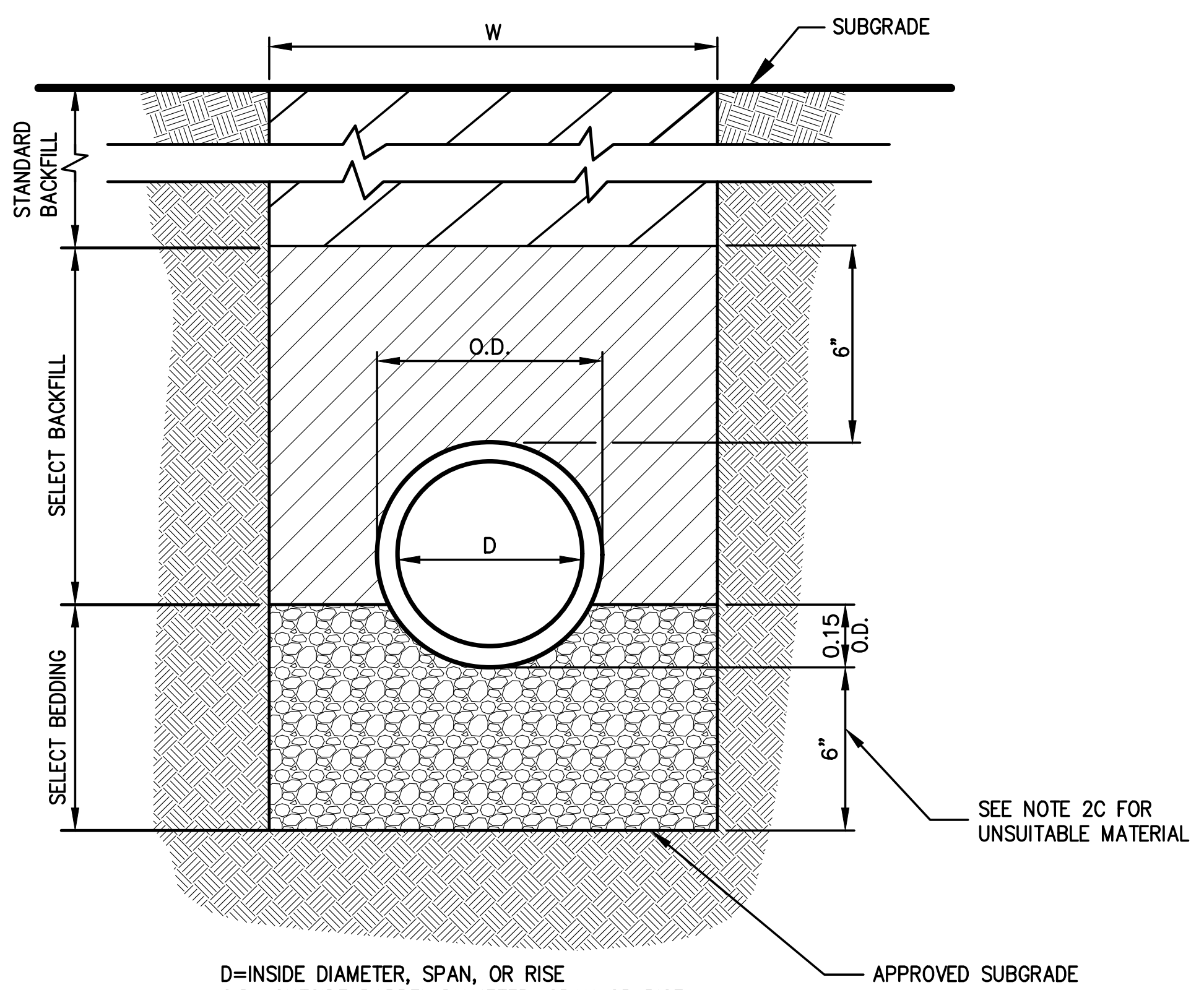
REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	07.16.20
2	REISSUED PER PB COMMENTS	08.21.20
3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	FOR PLANNING BOARD APPROVAL	04.09.21
6	REISSUED PER ENGINEER COMMENTS	05.10.21
7	ISSUED FOR DOB SUBMISSION	09.10.21
8	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	1.16.2020
SCALE :	N.T.S
ISSUE :	

DRAWING TITLE :
CONSTRUCTION DETAILS

DWG NUMBER :
C-900

JMC PROJECT: 19005-1
SCR: NA
DWG FILE: 19005-DETAILS-CD


W
SUBGRADE
STANDARD BACKFILL
SELECT BACKFILL
O.D.
6"
D
0.15 O.D.
SELECT BEDDING
6"
SEE NOTE 2C FOR UNSUITABLE MATERIAL
APPROVED SUBGRADE

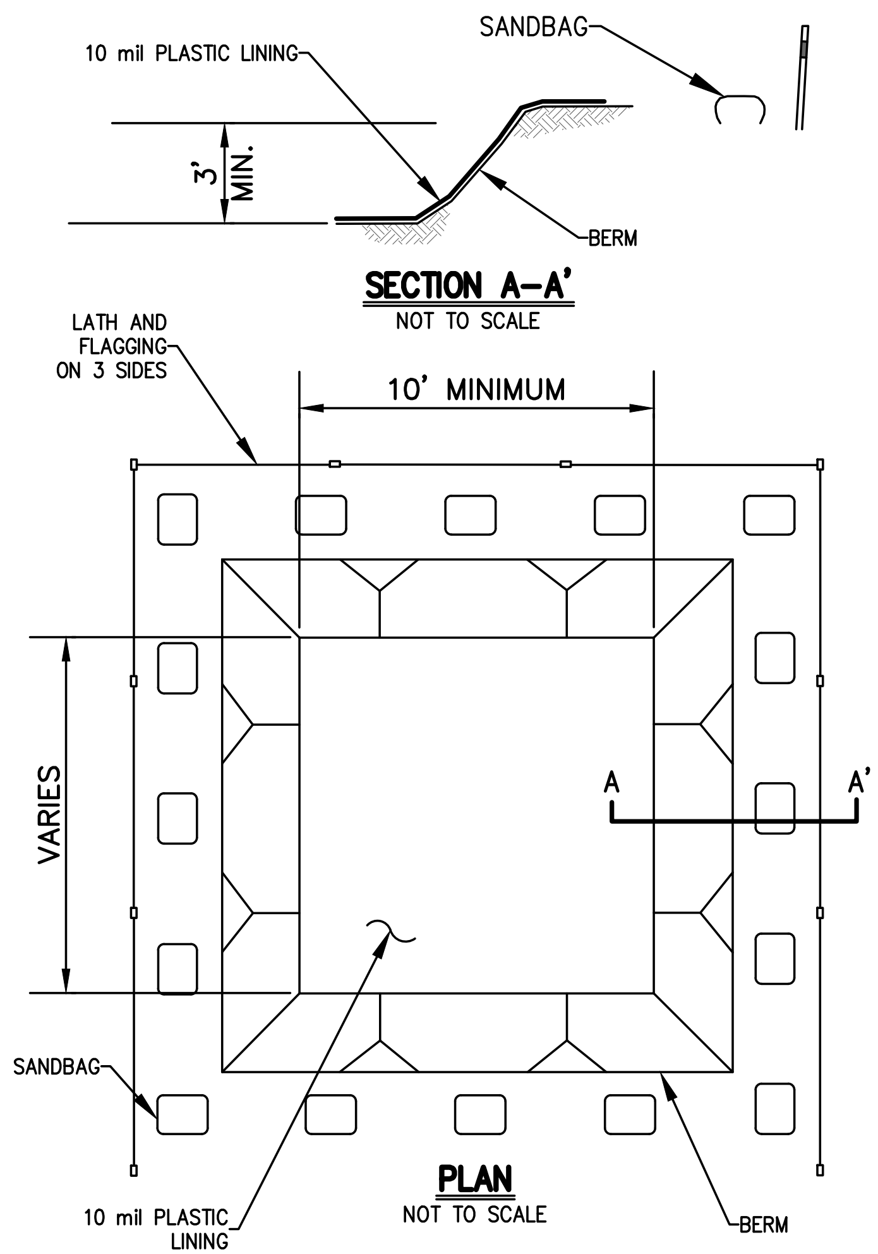
D=INSIDE DIAMETER, SPAN, OR RISE
O.D.=OUTSIDE BARREL DIAMETER, SPAN OR RISE
H.D.=OUTSIDE DIAMETER, SPAN, OR RISE @ BELL OR BAND
W=H.D. + 2.0' – FOR 48" OR SMALLER DIAMETER, SPAN, OR RISE
W=H.D. + 2.5' – FOR GREATER THAN 48" DIAMETER, SPAN, OR RISE

NOTES:

1. FOR TYPE II TRENCH, MATERIAL FOR SELECT BEDDING AND SELECT BACKFILL SHALL BE:
   A. EITHER SAND OR CRUSHED STONE IF NO WATER IS ENCOUNTERED IN TRENCH.
   B. 3/4"CRUSHED STONE IF WATER IS ENCOUNTERED IN TRENCH.
2. TYPE II TRENCH SHALL BE USED IN ALL OF THE FOLLOWING CASES:
   A. FOR ALL CORRUGATED POLYETHYLENE DRAIN PIPE (CPDP) AND PVC PIPE AND CONDUIT INSTALLATION.
   B. WHEN ROCK OR HARDPAN IS ENCOUNTERED IN BOTTOM OF TRENCH.
   C. WHEN UNSUITABLE MATERIAL IS ENCOUNTERED IN BOTTOM OF TRENCH. IN SUCH CASE DEPTH OF UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER WITH 6" MINIMUM.
3. FOR ALL TRENCH EXCAVATION IN FILL AREAS, ALL EMBANKMENTS SHALL BE CONSTRUCTED TO A MINIMUM OF 2 FEET ABOVE THE OUTSIDE TOP (AT THE BELL) OF THE PIPE PRIOR TO BEGINNING ANY TRENCH EXCAVATION.
4. BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 92% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D–1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.

TYPE II TRENCH

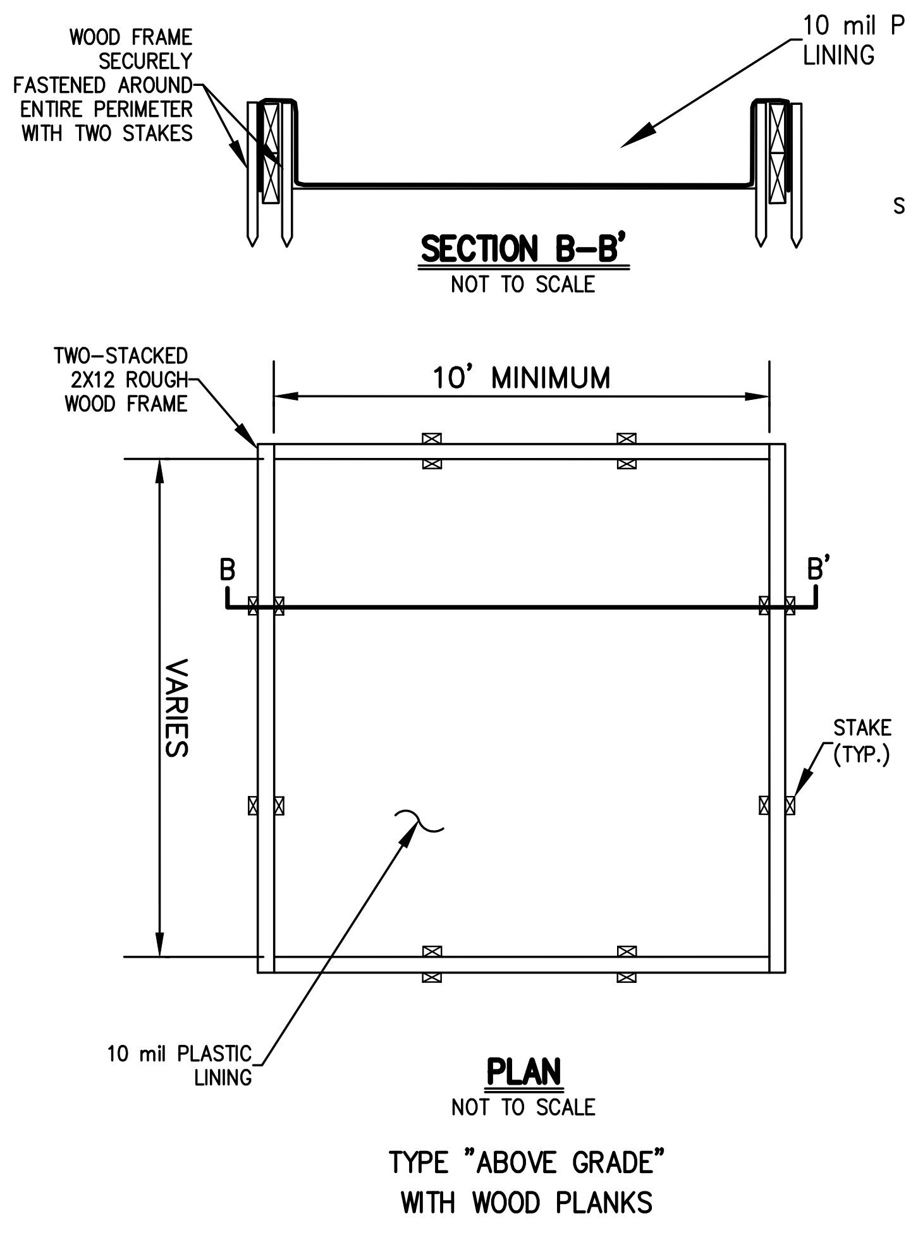
9


10 mil PLASTIC LINING
SANDBAG
3' MIN.
BERM
LATH AND FLAGGING ON 3 SIDES
10' MINIMUM
VARIES
A
A'
SANDBAG
10 mil PLASTIC LINING
BERM

SECTION A–A'
NOT TO SCALE

PLAN
NOT TO SCALE

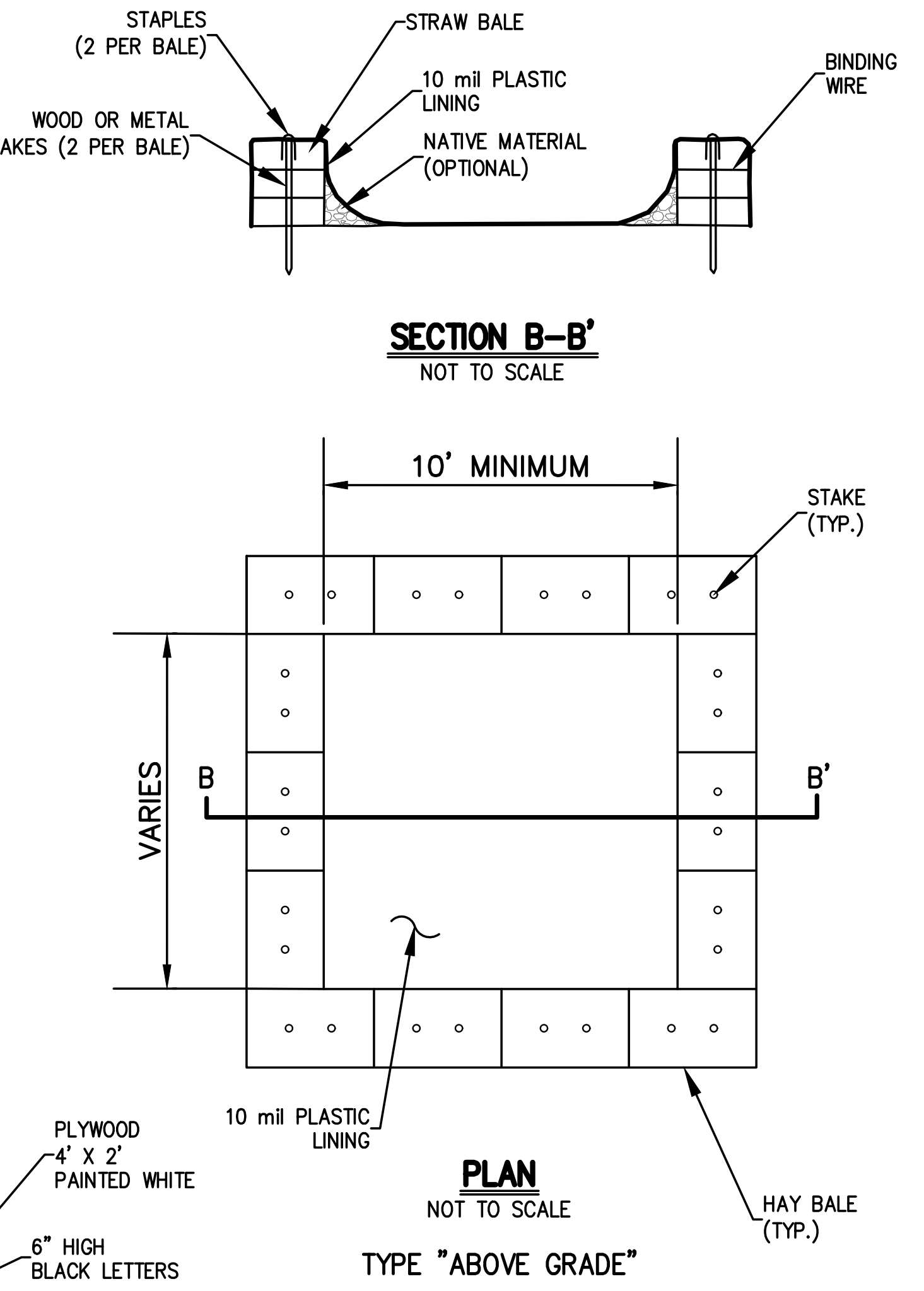
TYPE "BELOW GRADE"


WOOD FRAME SECURELY FASTENED AROUND ENTIRE PERIMETER WITH TWO STAKES
10 mil PLASTIC LINING
TWO-STACKED 2X12 ROUGH WOOD FRAME
10' MINIMUM
B
B'
VARIES
STAKE (TYP.)
10 mil PLASTIC LINING

SECTION B–B'
NOT TO SCALE

PLAN
NOT TO SCALE

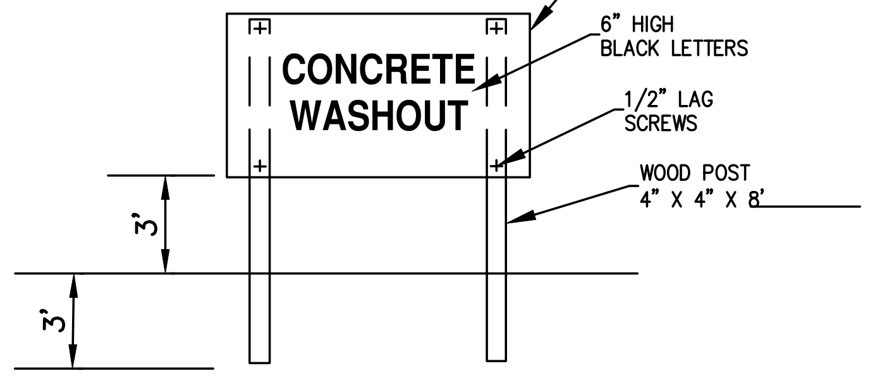
TYPE "ABOVE GRADE"
WITH WOOD PLANKS


STAPLES (2 PER BALE)
STRAW BALE
10 mil PLASTIC LINING
NATIVE MATERIAL (OPTIONAL)
WOOD OR METAL STAKES (2 PER BALE)
BINDING WIRE
10' MINIMUM
STAKE (TYP.)
VARIES
B
B'
10 mil PLASTIC LINING
HAY BALE (TYP.)

SECTION B–B'
NOT TO SCALE

PLAN
NOT TO SCALE

TYPE "ABOVE GRADE"
WITH HAY BALES


PLYWOOD 4' X 2' PAINTED WHITE
6" HIGH BLACK LETTERS
CONCRETE WASHOUT
1/2" LAG SCREWS
WOOD POST 4" X 4" X 8'
3'
3'

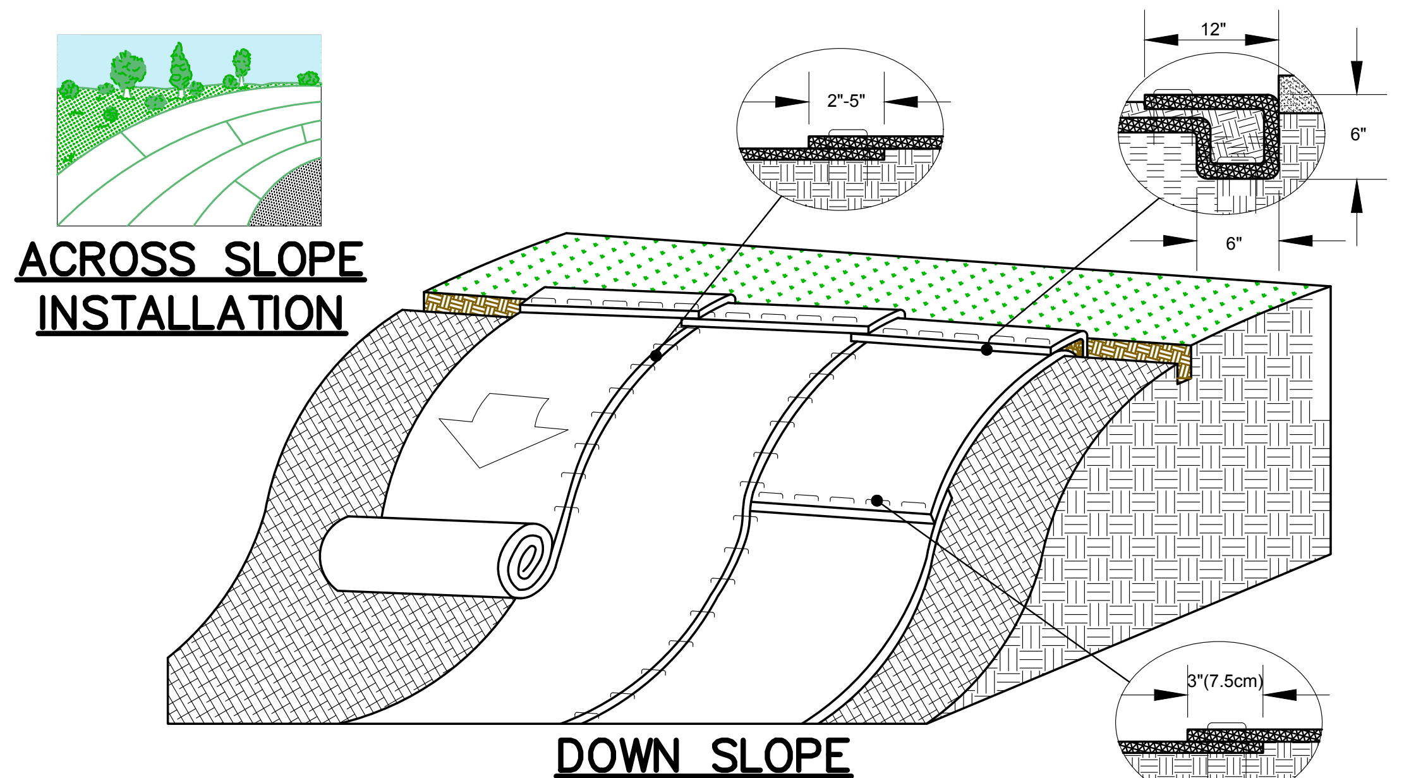
CONCRETE WASHOUT
SIGN DETAIL
(OR EQUIVALENT)

NOTES:

1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. LOCATE WASHOUT AREA AT LEAST 100 FEET FROM SENSITIVE AREAS SUCH AS STORM DRAINS, OPEN DITCHES, OR WATER BODIES, INCLUDING WETLANDS.
3. THE CONSTRUCTION STORMWATER GENERAL PERMIT DOES NOT ALLOW OPERATORS TO DISCHARGE CONCRETE WASH WATER TO WATERWAYS, STORM DRAINS OR GROUNDWATER. OPERATORS MUST MANAGE AND CONTAIN THIS WATER TO PREVENT SPILLS, LEAKS OR DISCHARGES. DO NOT USE SANITARY SEWER WITHOUT LOCAL APPROVAL.
4. WASHOUT FACILITIES SHALL BE SIZED TO CONTAIN ALL LIQUIDS AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. APPROXIMATELY 7 GALLONS OF WASH WATER ARE USED TO WASH ONE TRUCK CHUTE AND APPROXIMATELY 50 GALLONS OF WASH WATER ARE USED TO WASH OUT THE HOPPER OF A CONCRETE PUMP TRUCK.
5. WASHOUT FACILITIES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 12 INCHES.
6. THE CONCRETE WASHOUT SIGN (SEE PAGE 6) SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY. A SIGN SHOULD BE INSTALLED ADJACENT TO EACH CONCRETE WASHOUT FACILITY.
7. THE FACILITY NEEDS TO BE INSPECTED DAILY TO ENSURE PLASTIC LININGS ARE STILL INTACT AND SIDEWALLS ARE NOT DAMAGED.
8. THE FACILITY NEEDS TO BE CLEANED OR CHANGED WHEN 75% FULL.
9. IF THE WASHOUT IS NEARING CAPACITY, VACUUM AND DISPOSE OF THE WASTE MATERIAL IN AN APPROVED MANNER AND INSTALL A NEW PLASTIC LINING AFTER EVERY CLEANING.
10. PLACE A SECURE, NON–COLLAPSING, NON–WATER COLLECTING COVER OVER THE CONCRETE WASHOUT FACILITY PRIOR TO PREDICTED WET WEATHER.

CONCRETE WASHOUT

10


12"
2"-5"
6"
6"
3"(7.5cm)

ACROSS SLOPE INSTALLATION

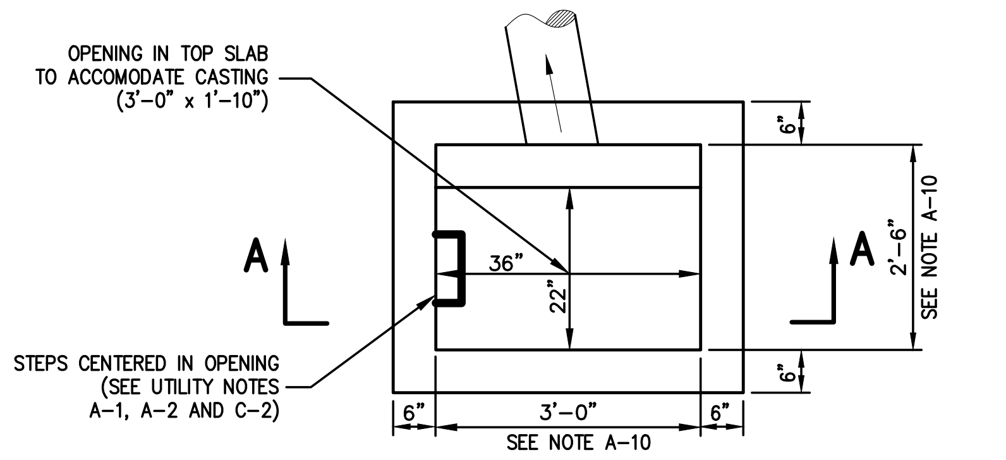
DOWN SLOPE INSTALLATION

NOTES:

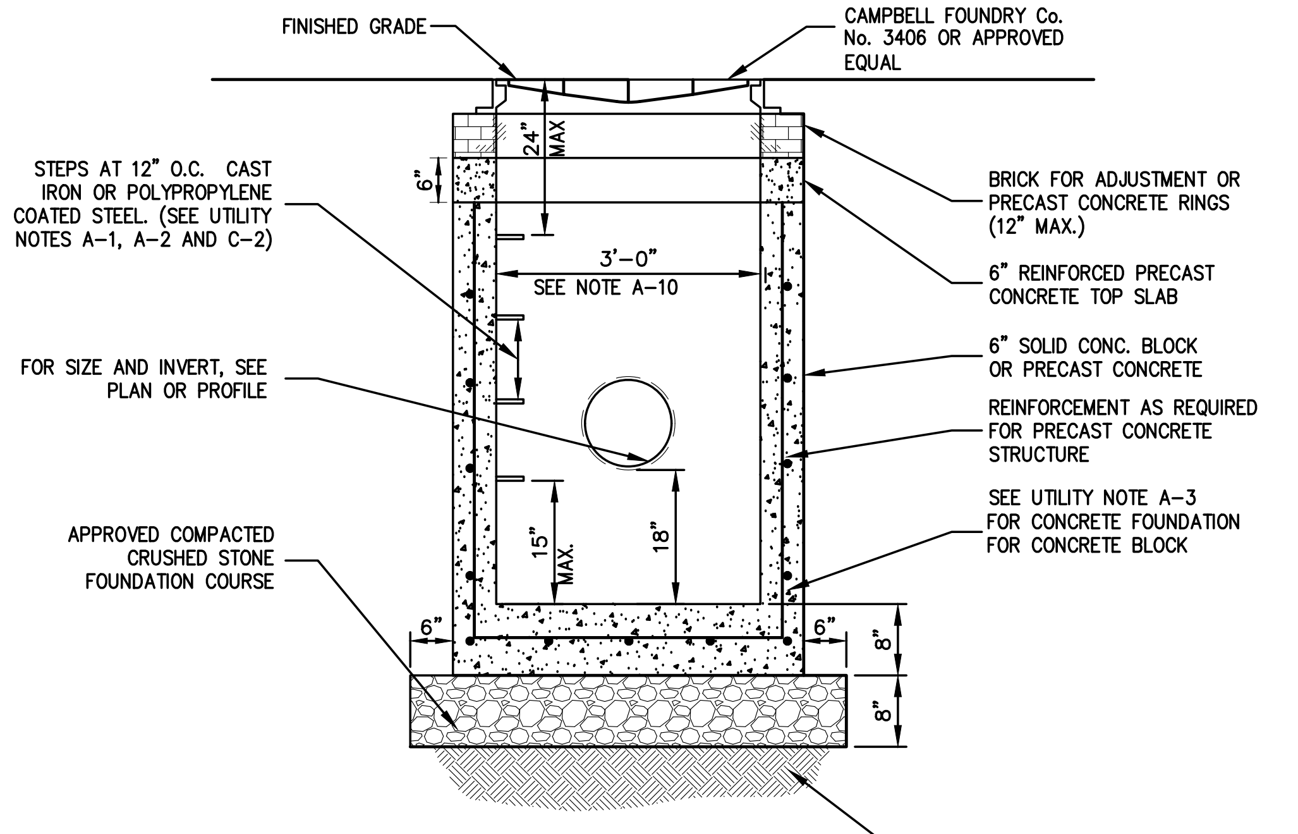
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPS EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL THE RECPS EITHER DOWN OR HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" – 5" OVERLAP DEPENDING ON THE RECPS TYPE.
5. CONSECUTIVE RECPS SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECPS WIDTH.
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
7. MATERIAL FOR THE RECP SHALL BE EAST COAST EROSION CONTROL ECS–2B BIODEGRADABLE DOUBLE NET STRAW OR APPROVED EQUAL.

ROLLED EROSION CONTROL MATTING

11


OPENING IN TOP SLAB TO ACCOMODATE CASTING (3'-0" x 1'-10")
A
A
36"
22"
6"
2'-6" SEE NOTE A-10
6"
STEPS CENTERED IN OPENING (SEE UTILITY NOTES A-1, A-2 AND C-2)
6"
3'-0"
6"
SEE NOTE A-10

PLAN


FINISHED GRADE
FRAME & GRATE: CAMPBELL FOUNDRY Co. No. 3406 OR APPROVED EQUAL
6"
24" MAX
STEPS AT 12" O.C. CAST IRON OR POLYPROPYLENE COATED STEEL. (SEE UTILITY NOTES A-1, A-2 AND C-2)
3'-0"
SEE NOTE A-10
BRICK FOR ADJUSTMENT OR PRECAST CONCRETE RINGS (12" MAX.)
6" REINFORCED PRECAST CONCRETE TOP SLAB
6" SOLID CONC. BLOCK OR PRECAST CONCRETE
FOR SIZE AND INVERT, SEE PLAN OR PROFILE
REINFORCEMENT AS REQUIRED FOR PRECAST CONCRETE STRUCTURE
SEE UTILITY NOTE A-3 FOR CONCRETE FOUNDATION FOR CONCRETE BLOCK
APPROVED COMPACTED CRUSHED STONE FOUNDATION COURSE
15" MAX.
18"
6"
6"
8"
8"
APPROVED SUBGRADE

SECTION A–A

NOTE

1. REINFORCE PRECAST CONCRETE TOP SLAB AND REINFORCE PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED TO ACCOMMODATE AN H–20 DESIGN LOAD.
2. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON DRAWING C–904

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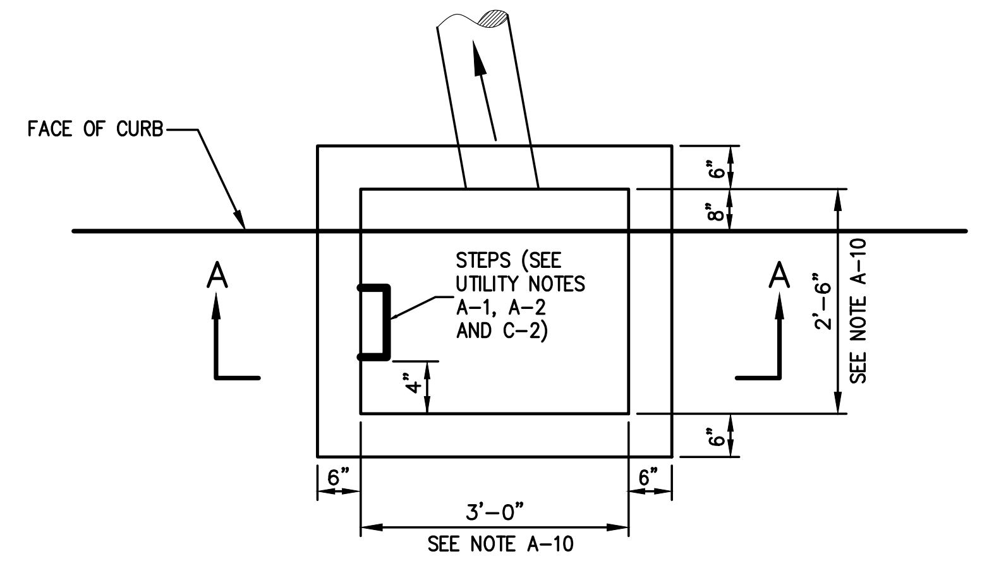
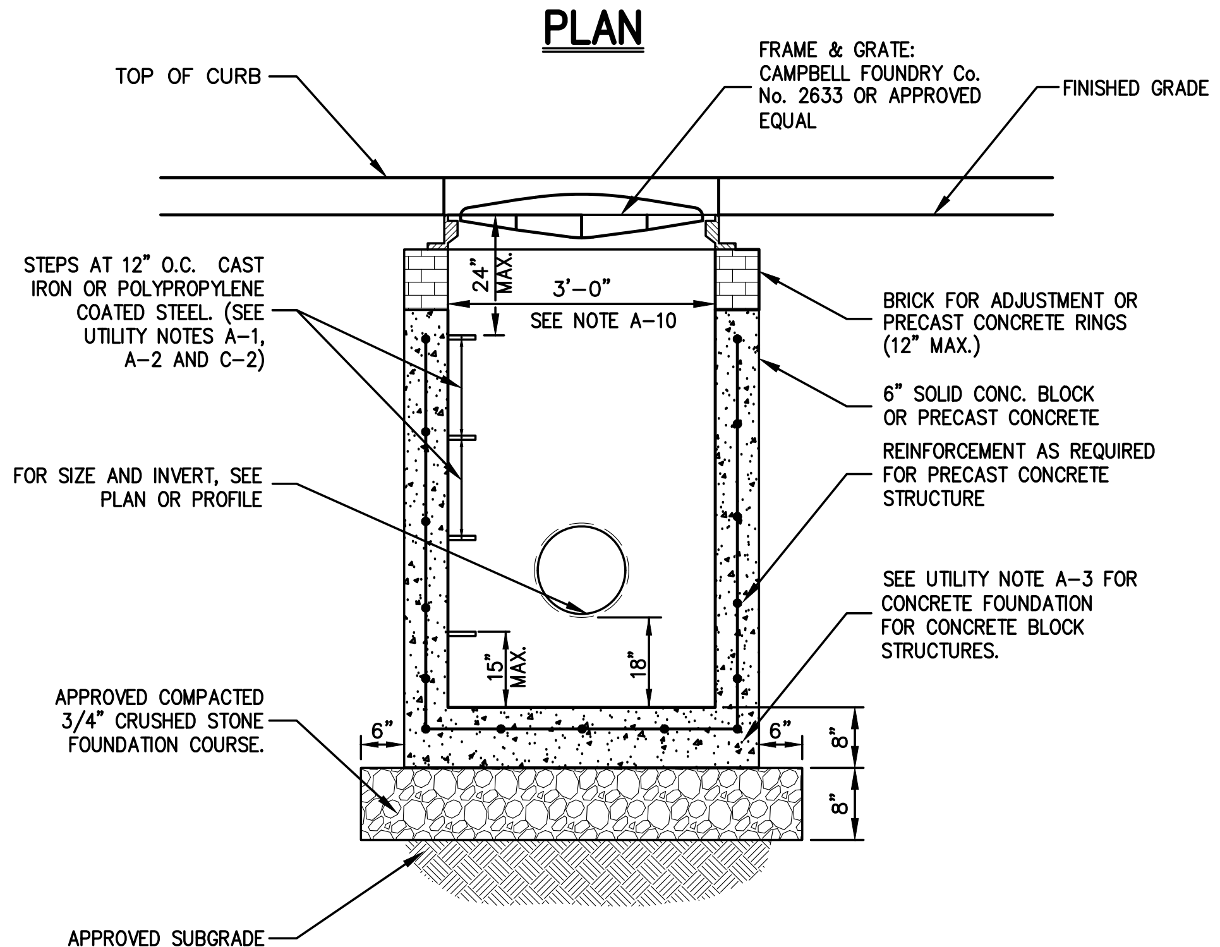
DRAIN INLET (TYPE DI)
(with sump–w/o finger underdrains)

12


FACE OF CURB
6"
8"
A
STEPS (SEE UTILITY NOTES A-1, A-2 AND C-2)
A
2'-6" SEE NOTE A-10
4"
6"
6"
3'-0"
6"
SEE NOTE A-10

PLAN


TOP OF CURB
FRAME & GRATE: CAMPBELL FOUNDRY Co. No. 2633 OR APPROVED EQUAL
FINISHED GRADE
STEPS AT 12" O.C. CAST IRON OR POLYPROPYLENE COATED STEEL. (SEE UTILITY NOTES A-1, A-2 AND C-2)
24" MAX.
3'-0"
SEE NOTE A-10
BRICK FOR ADJUSTMENT OR PRECAST CONCRETE RINGS (12" MAX.)
6" SOLID CONC. BLOCK OR PRECAST CONCRETE
REINFORCEMENT AS REQUIRED FOR PRECAST CONCRETE STRUCTURE
FOR SIZE AND INVERT, SEE PLAN OR PROFILE
SEE UTILITY NOTE A-3 FOR CONCRETE FOUNDATION FOR CONCRETE BLOCK STRUCTURES.
15" MAX.
18"
APPROVED COMPACTED 3/4" CRUSHED STONE FOUNDATION COURSE.
6"
6"
8"
8"
APPROVED SUBGRADE

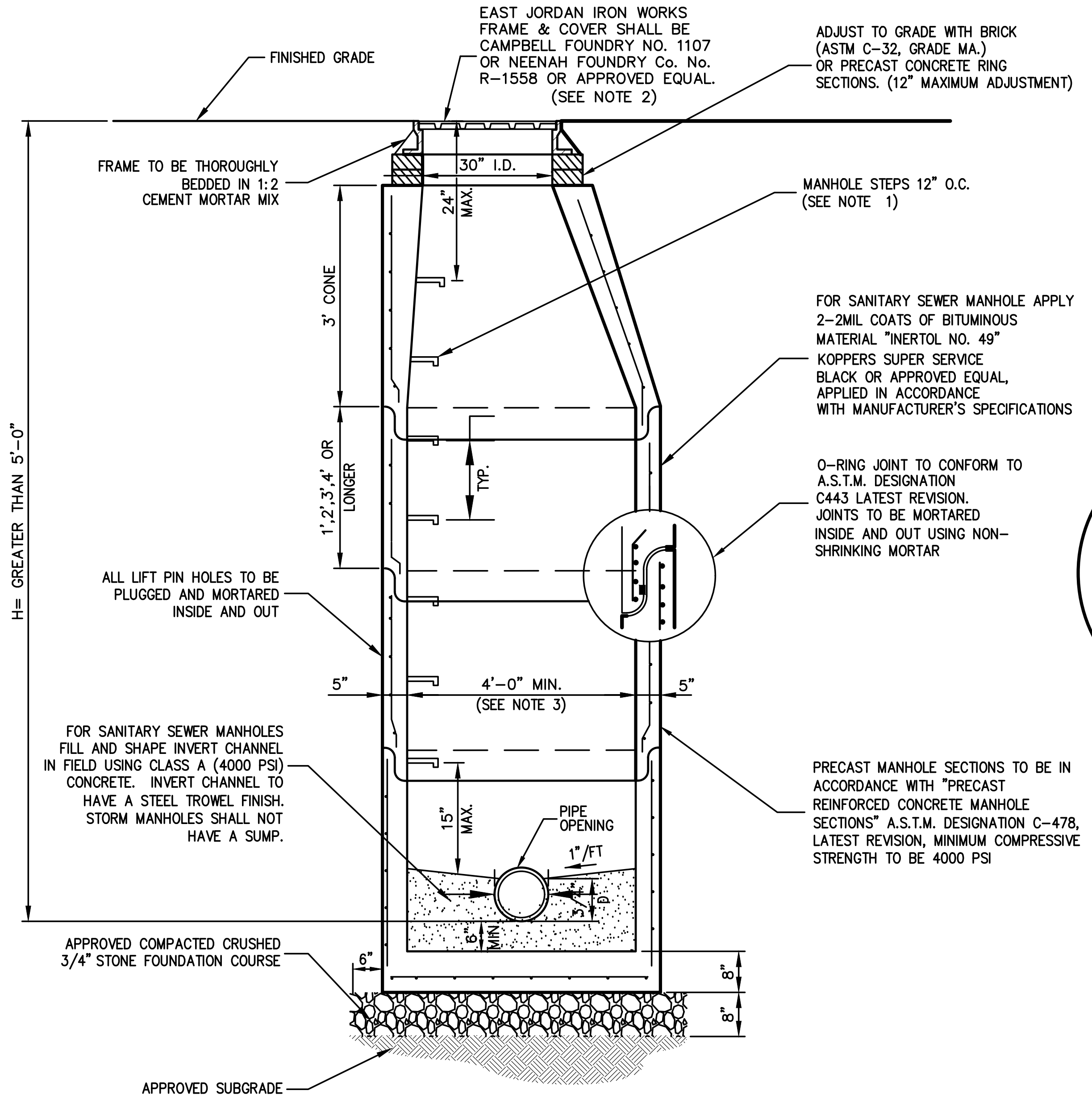
SECTION A–A

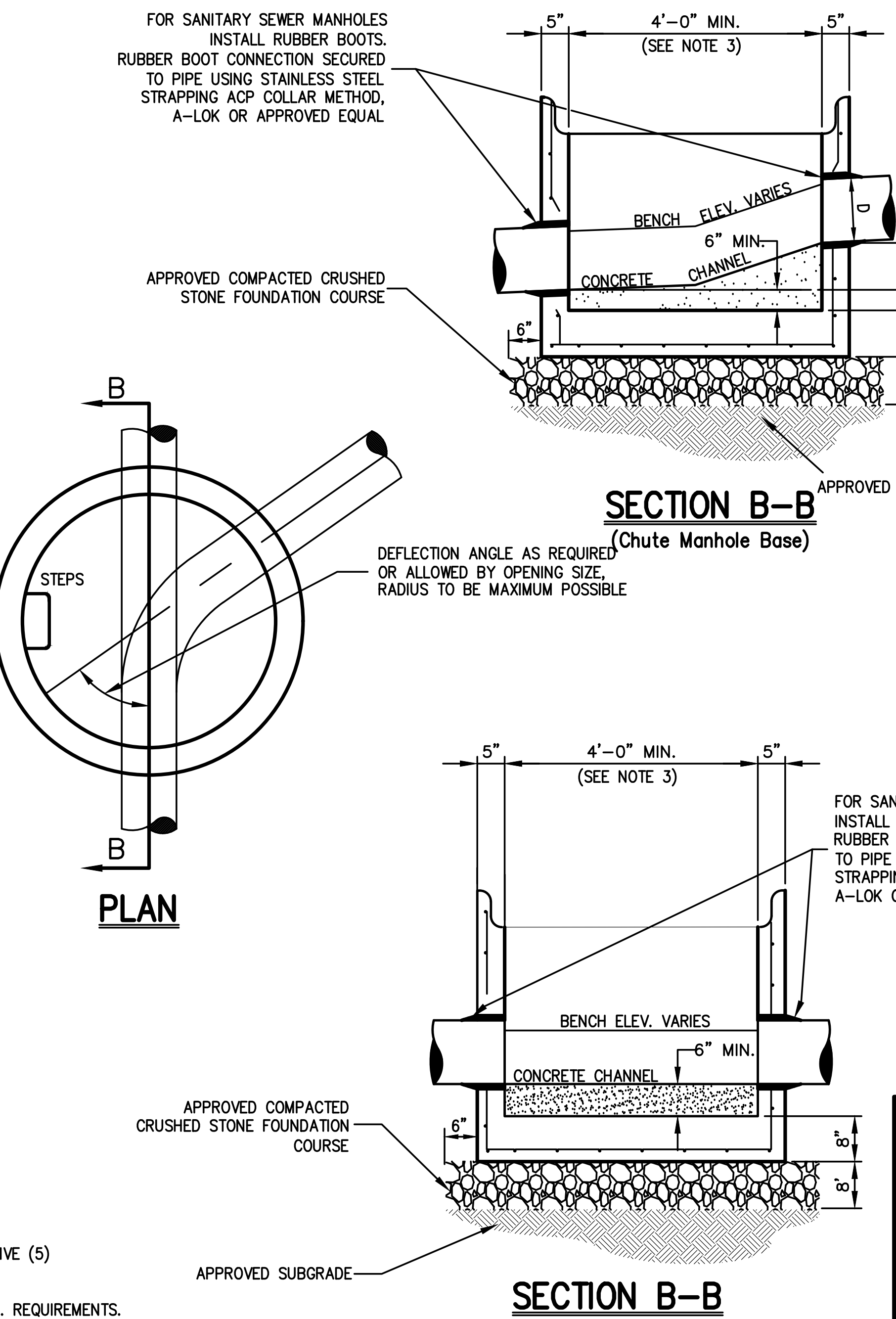
NOTE:

1. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON DRAWING C–904

DRAIN INLET (TYPE CI)
(with sump–w/o finger underdrains)

13


FINISHED GRADE
EAST JORDAN IRON WORKS FRAME & COVER SHALL BE CAMPBELL FOUNDRY NO. 1107 OR NEENAH FOUNDRY Co. No. R-1558 OR APPROVED EQUAL. (SEE NOTE 2)
ADJUST TO GRADE WITH BRICK (ASTM C-32, GRADE MA.) OR PRECAST CONCRETE RING SECTIONS. (12" MAXIMUM ADJUSTMENT)
FRAME TO BE THOROUGHLY BEDDED IN 1:2 CEMENT MORTAR MIX
30" I.D.
24" MAX.
MANHOLE STEPS 12" O.C. (SEE NOTE 1)
3' CONE
FOR SANITARY SEWER MANHOLE APPLY 2-2MIL COATS OF BITUMINOUS MATERIAL "INERTOL NO. 49" KOPPERS SUPER SERVICE BLACK OR APPROVED EQUAL, APPLIED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
H= GREATER THAN 5'-0"
1',2',3',4' OR LONGER
TYP.
O-RING JOINT TO CONFORM TO A.S.T.M. DESIGNATION C443 LATEST REVISION. JOINTS TO BE MORTARED INSIDE AND OUT USING NON-SHRINKING MORTAR
ALL LIFT PIN HOLES TO BE PLUGGED AND MORTARED INSIDE AND OUT
5"
4'-0" MIN. (SEE NOTE 3)
5"
FOR SANITARY SEWER MANHOLES FILL AND SHAPE INVERT CHANNEL IN FIELD USING CLASS A (4000 PSI) CONCRETE. INVERT CHANNEL TO HAVE A STEEL TROWEL FINISH. STORM MANHOLES SHALL NOT HAVE A SUMP.
15" MAX.
PIPE OPENING
1"/FT
D
6" MIN
PRECAST MANHOLE SECTIONS TO BE IN ACCORDANCE WITH "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS" A.S.T.M. DESIGNATION C-478, LATEST REVISION, MINIMUM COMPRESSIVE STRENGTH TO BE 4000 PSI
APPROVED COMPACTED CRUSHED 3/4" STONE FOUNDATION COURSE
6"
8"
8"
APPROVED SUBGRADE


FOR SANITARY SEWER MANHOLES INSTALL RUBBER BOOTS. RUBBER BOOT CONNECTION SECURED TO PIPE USING STAINLESS STEEL STRAPPING ACP COLLAR METHOD, A-LOK OR APPROVED EQUAL
5"
4'-0" MIN. (SEE NOTE 3)
5"
BENCH ELEV. VARIES
6" MIN.
CONCRETE CHANNEL
D
2'-0" MAX.
APPROVED COMPACTED CRUSHED STONE FOUNDATION COURSE
6"
8"
8"
APPROVED SUBGRADE
B
B
STEPS
DEFLECTION ANGLE AS REQUIRED OR ALLOWED BY OPENING SIZE, RADIUS TO BE MAXIMUM POSSIBLE
5"
4'-0" MIN. (SEE NOTE 3)
5"
FOR SANITARY SEWER MANHOLES INSTALL RUBBER BOOTS RUBBER BOOT CONNECTION SECURED TO PIPE USING STAINLESS STEEL STRAPPING ACP COLLAR METHOD, A-LOK OR APPROVED EQUAL.
BENCH ELEV. VARIES
6" MIN.
CONCRETE CHANNEL
APPROVED COMPACTED CRUSHED STONE FOUNDATION COURSE
6"
8"
8'
APPROVED SUBGRADE

SECTION B–B
(Chute Manhole Base)

PLAN

SECTION B–B
(Standard Manhole Base)

NOTES:

1. MANHOLE STEPS SHALL BE CAST IRON NEENAH No. R–1981–0 OR CAMPBELL FOUNDRY No. 2588–1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE LETTERS "SEWER" AND STORM DRAIN MANHOLES SHALL HAVE LETTERS "DRAIN" CAST ON COVER. THE COVERS SHALL HAVE VENT HOLES.
3. MANHOLES WITH DEPTH (h) 10' OR GREATER SHALL BE FIVE (5) FEET IN DIAMETER.
4. MANHOLES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS.
5. SEE "NOTES PERTAINING TO MANHOLES" UNDER "UTILITY NOTES" ON DRAWING C–904

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

MANHOLE (TYPE B)
(H > 5'–0")<10'–0")

14

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New York, New York 10018
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MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

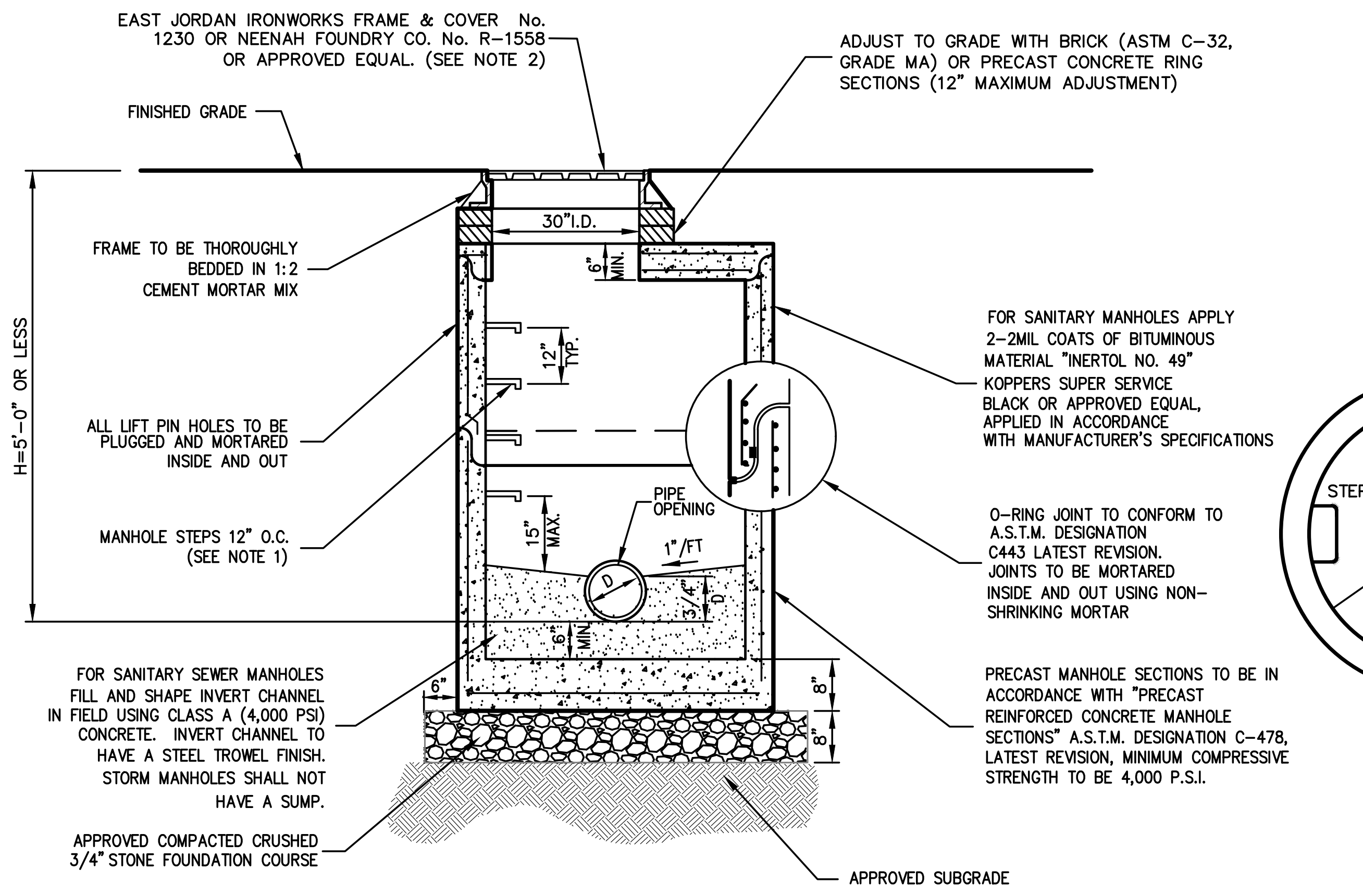
REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	07.16.20
2	REISSUED PER PB COMMENTS	08.21.20
3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	FOR PLANNING BOARD APPROVAL	04.09.21
6	REISSUED PER ENGINEER COMMENTS	05.10.21
7	ISSUED FOR DOB SUBMISSION	09.10.21
8	ISSUED FOR BID	10.15.21

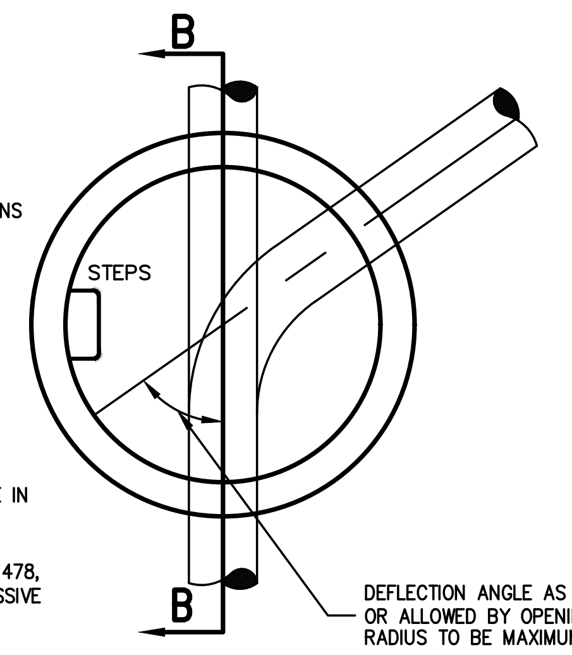
DRAWN BY : DC
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 1.16.2020
SCALE : N.T.S
ISSUE :

DRAWING TITLE :
CONSTRUCTION DETAILS

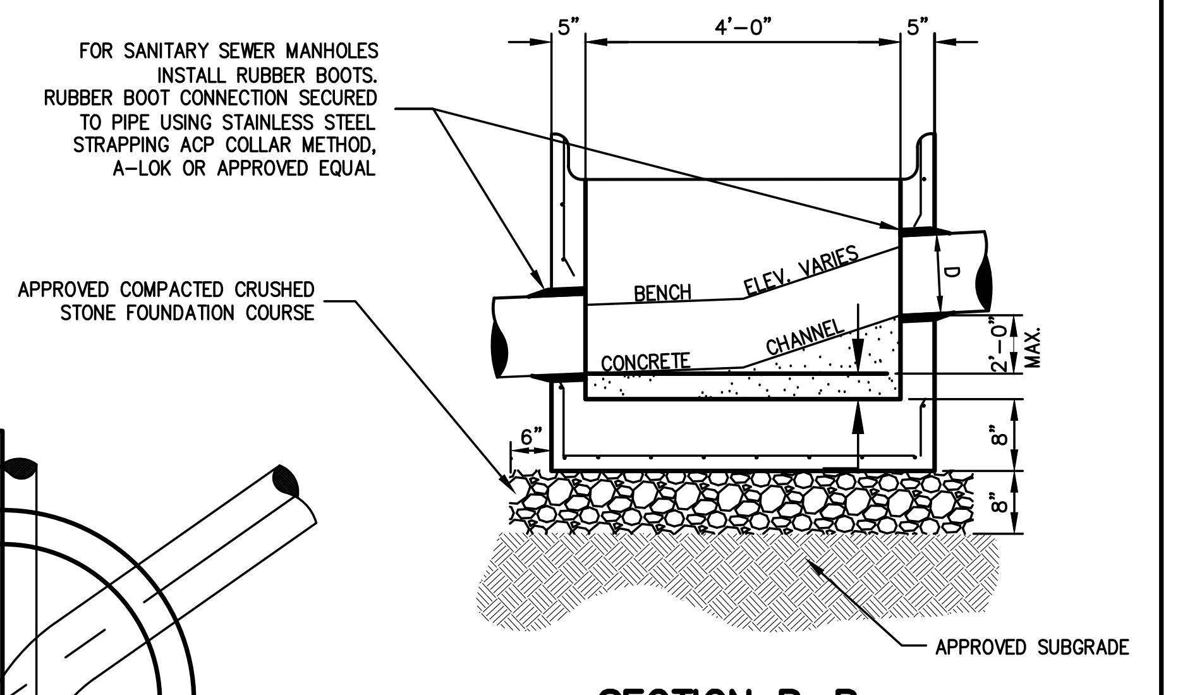
DWG NUMBER :
C-901

JMC PROJECT: 19005-1
SCR: NA
DWG FILE: 19005-DETAILS-CD


EAST JORDAN IRONWORKS FRAME & COVER No. 1230 OR NEENAH FOUNDRY CO. No. R-1558 OR APPROVED EQUAL. (SEE NOTE 2)
ADJUST TO GRADE WITH BRICK (ASTM C-32, GRADE MA) OR PRECAST CONCRETE RING SECTIONS (12" MAXIMUM ADJUSTMENT)
FINISHED GRADE
30"I.D.
6" MIN.
FRAME TO BE THOROUGHLY BEDDED IN 1:2 CEMENT MORTAR MIX
12" TYP.
H=5'-0" OR LESS
ALL LIFT PIN HOLES TO BE PLUGGED AND MORTARED INSIDE AND OUT
FOR SANITARY MANHOLES APPLY 2-2MIL COATS OF BITUMINOUS MATERIAL "INERTOL NO. 49" KOPPERS SUPER SERVICE BLACK OR APPROVED EQUAL, APPLIED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
MANHOLE STEPS 12" O.C. (SEE NOTE 1)
15" MAX.
PIPE OPENING
1"/FT
D
3/4" D
6" MIN.
O-RING JOINT TO CONFORM TO A.S.T.M. DESIGNATION C443 LATEST REVISION. JOINTS TO BE MORTARED INSIDE AND OUT USING NON-SHRINKING MORTAR
FOR SANITARY SEWER MANHOLES FILL AND SHAPE INVERT CHANNEL IN FIELD USING CLASS A (4,000 PSI) CONCRETE. INVERT CHANNEL TO HAVE A STEEL TROWEL FINISH. STORM MANHOLES SHALL NOT HAVE A SUMP.
6"
8"
8"
PRECAST MANHOLE SECTIONS TO BE IN ACCORDANCE WITH "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS" A.S.T.M. DESIGNATION C-478, LATEST REVISION, MINIMUM COMPRESSIVE STRENGTH TO BE 4,000 P.S.I.
APPROVED COMPACTED CRUSHED 3/4" STONE FOUNDATION COURSE
APPROVED SUBGRADE

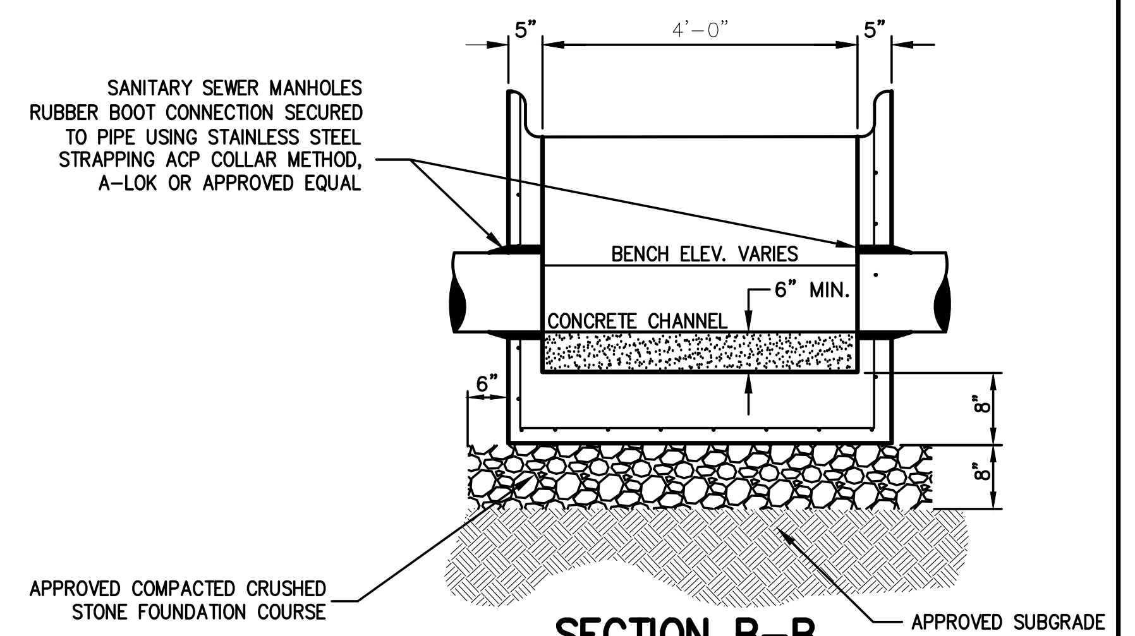

B
STEPS
B
DEFLECTION ANGLE AS REQUIRED OR ALLOWED BY OPENING SIZE, RADIUS TO BE MAXIMUM POSSIBLE

PLAN


FOR SANITARY SEWER MANHOLES INSTALL RUBBER BOOTS. RUBBER BOOT CONNECTION SECURED TO PIPE USING STAINLESS STEEL STRAPPING ACP COLLAR METHOD, A-LOK OR APPROVED EQUAL
5"
4'-0"
5"
APPROVED COMPACTED CRUSHED STONE FOUNDATION COURSE
BENCH
ELEV. VARIES
CONCRETE
CHANNEL
D
2'-0" MAX.
6"
8"
8"
APPROVED SUBGRADE

SECTION B–B

(Chute Manhole Base)


5"
4'-0"
5"
SANITARY SEWER MANHOLES RUBBER BOOT CONNECTION SECURED TO PIPE USING STAINLESS STEEL STRAPPING ACP COLLAR METHOD, A-LOK OR APPROVED EQUAL
BENCH ELEV. VARIES
6" MIN.
CONCRETE CHANNEL
6"
8"
8"
APPROVED COMPACTED CRUSHED STONE FOUNDATION COURSE
APPROVED SUBGRADE

SECTION B–B

(Standard Manhole Base)

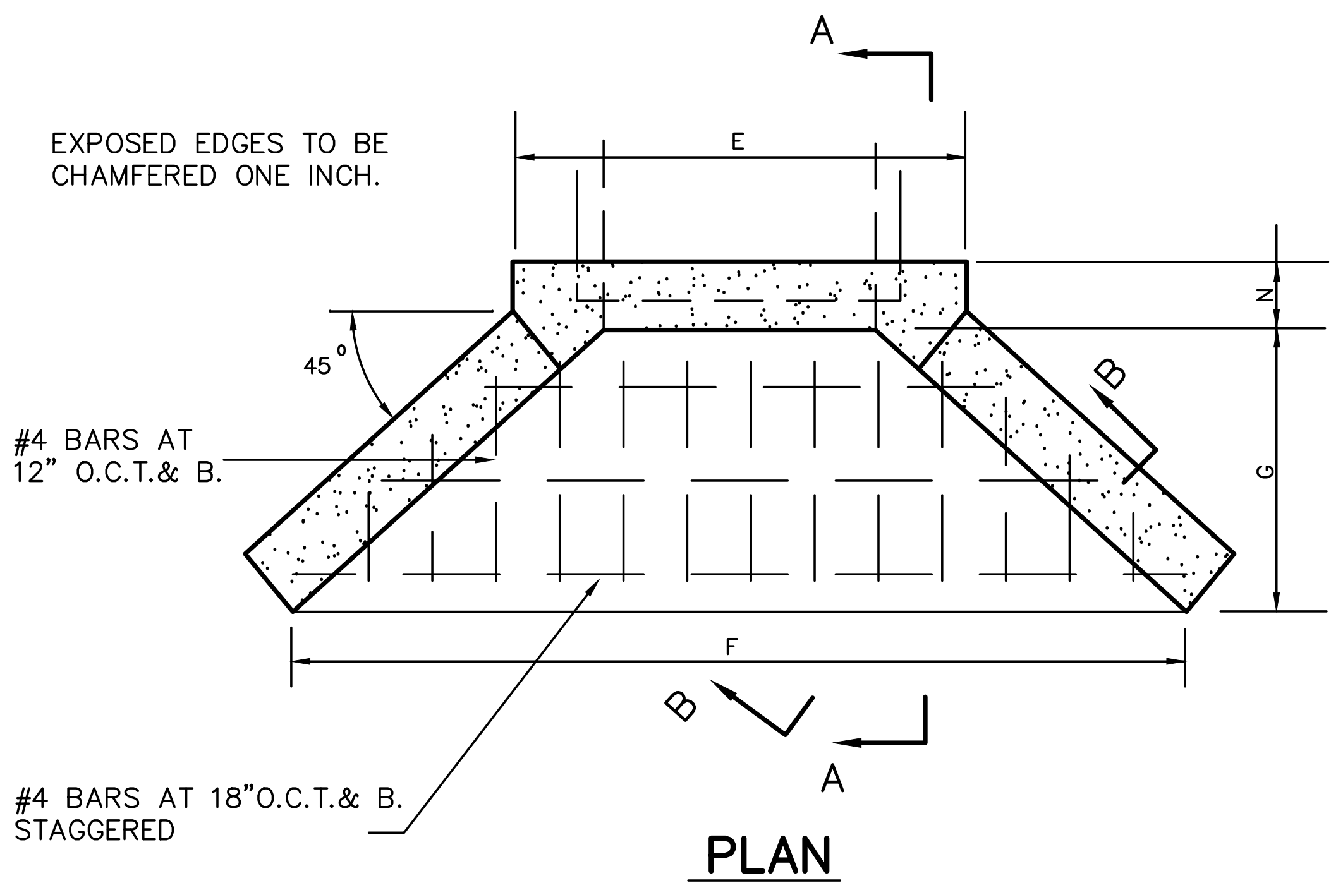
NOTES:

1. MANHOLE STEPS SHALL BE CAST IRON NEENAH No. R-1981-0 OR CAMPBELL FOUNDRY No. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE LETTERS "SEWER" AND STORM DRAIN MANHOLES SHALL HAVE LETTERS "DRAIN" CAST ON COVER. THE COVERS SHALL HAVE VENT HOLES.
3. MANHOLES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS.
4. SEE "NOTES PERTAINING TO MANHOLES" UNDER "UTILITY NOTES" ON DRAWING C-904

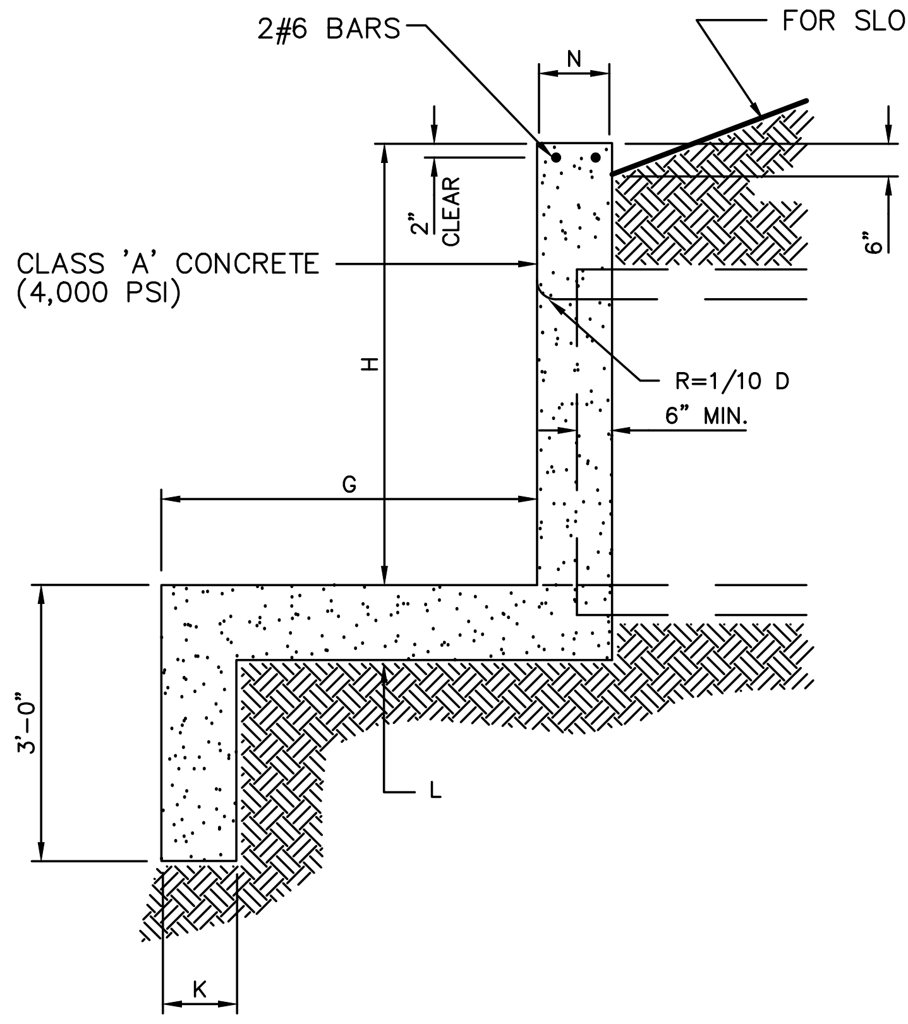
MANHOLE (TYPE A)

(H < 5'-0")

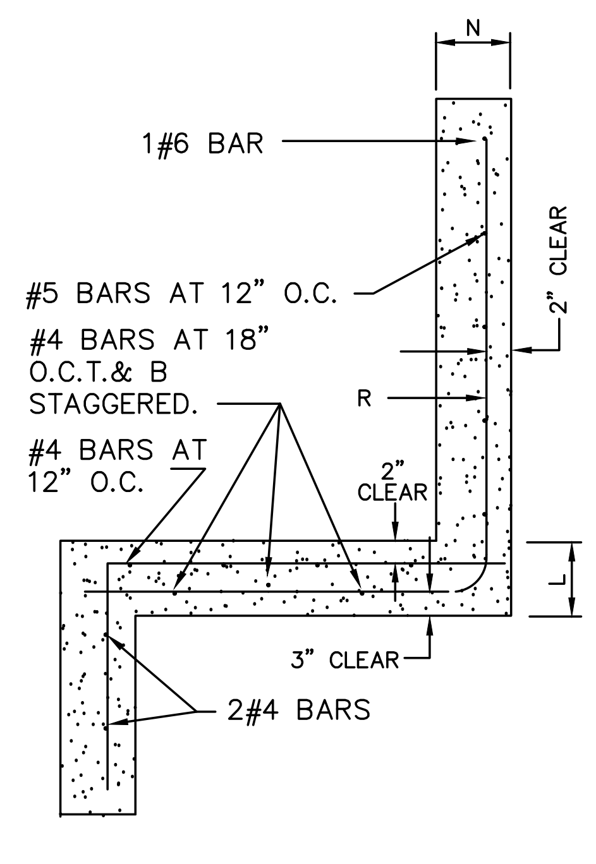
15


A
EXPOSED EDGES TO BE CHAMFERED ONE INCH.
E
45°
N
B
#4 BARS AT 12" O.C.T.& B.
G
F
B
A
#4 BARS AT 18"O.C.T.& B. STAGGERED

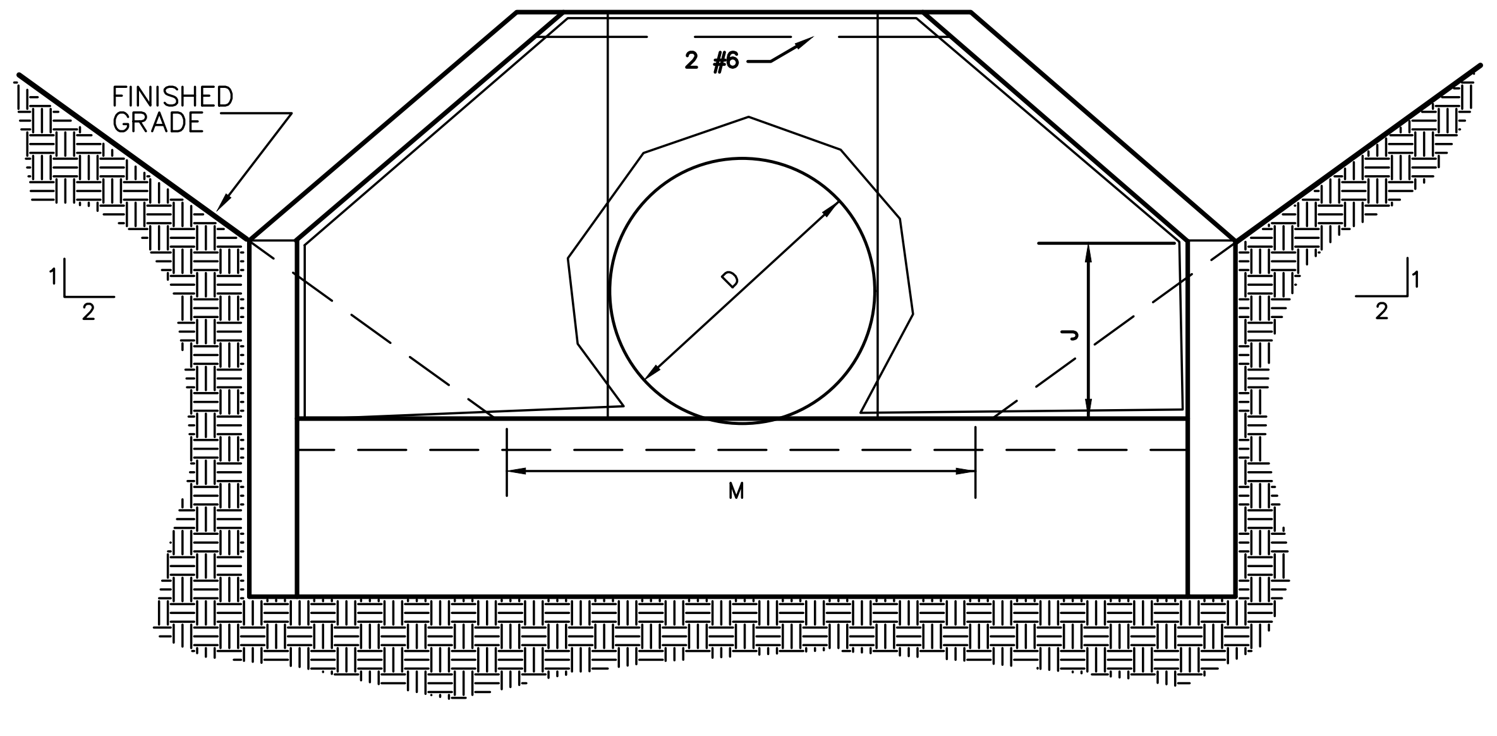
PLAN


2#6 BARS
FOR SLOPE SEE PLAN
N
2" CLEAR
6"
CLASS 'A' CONCRETE (4,000 PSI)
H
R=1/10 D
6" MIN.
G
3'-0"
L
K

SECTION A–A


N
1#6 BAR
2" CLEAR
#5 BARS AT 12" O.C.
#4 BARS AT 18" O.C.T.& B STAGGERED.
R
#4 BARS AT 12" O.C.
2" CLEAR
L
3" CLEAR
2#4 BARS

SECTION B–B


FINISHED GRADE
2 #6
1
2
D
J
M
2
1

FRONT ELEVATION

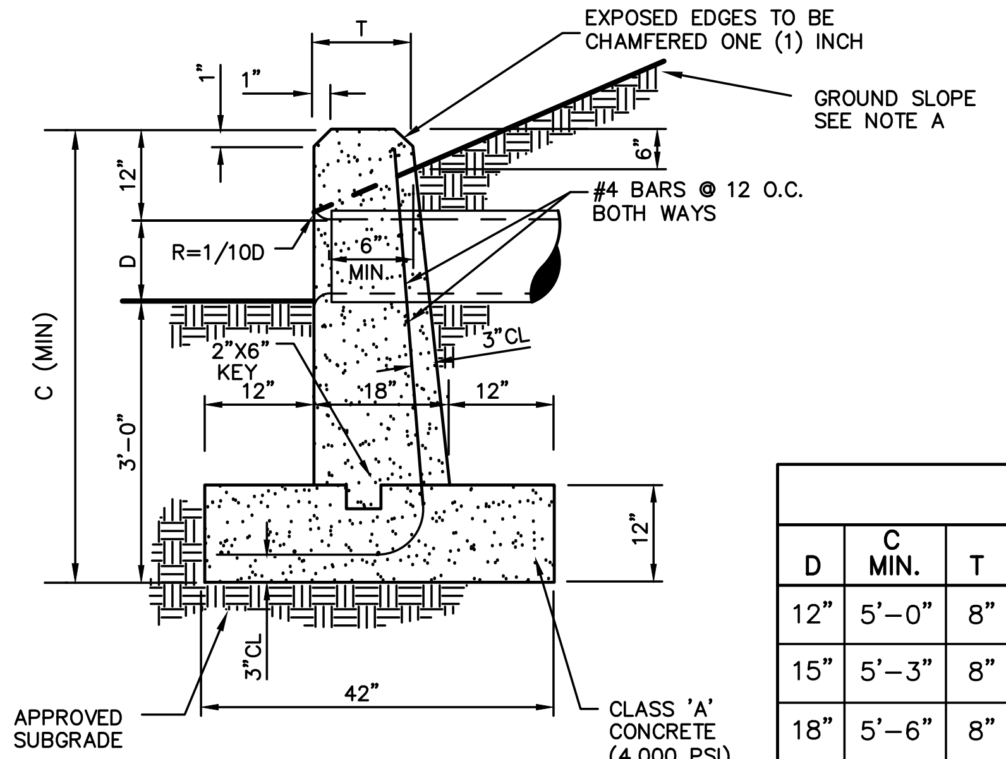
D	E	F	G	H	J	K	L	R	N
24"	3'-8"	8'-0"	3'-0"	3'-6"	$J=\frac{F-M}{4}+0'-6"$	8"	8"	#5 @ 12"O.C.	8"
27"	3'-11"	8'-3"	3-0"	3'-9"		8"	8"	#5 @ 12"O.C.	8"
30"	4'-2"	8'-6"	3'-0"	4'-0"		8"	8"	#5 @ 12"O.C.	10"
36"	4'-8"	10'-0"	3'-6"	4'-6"		8"	10"	#5 @ 12"O.C.	10"
42"	5'-3"	11'-6"	4'-0"	5'-0"		8"	10"	#5 @ 12"O.C.	10"
48"	5'-10"	13'-0"	4'-6"	5'-6"		8"	10"	#5 @ 12"O.C.	12"
54"	6'-5"	14'-6"	5'-0"	6'-0"		9"	12"	#6 @ 8"O.C.	12"
60"	7'-0"	16'-0"	5'-6"	6'-6"		9"	12"	#6 @ 8"O.C.	12"
66"	7'-7"	17'-6"	6'-0"	7'-0"		9"	12"	#6 @ 8"O.C.	14"
72"	8'-2"	19'-0"	6'-6"	7-6"		9"	12"	#6 @ 8"O.C.	14"

M-WIDTH OF DITCH

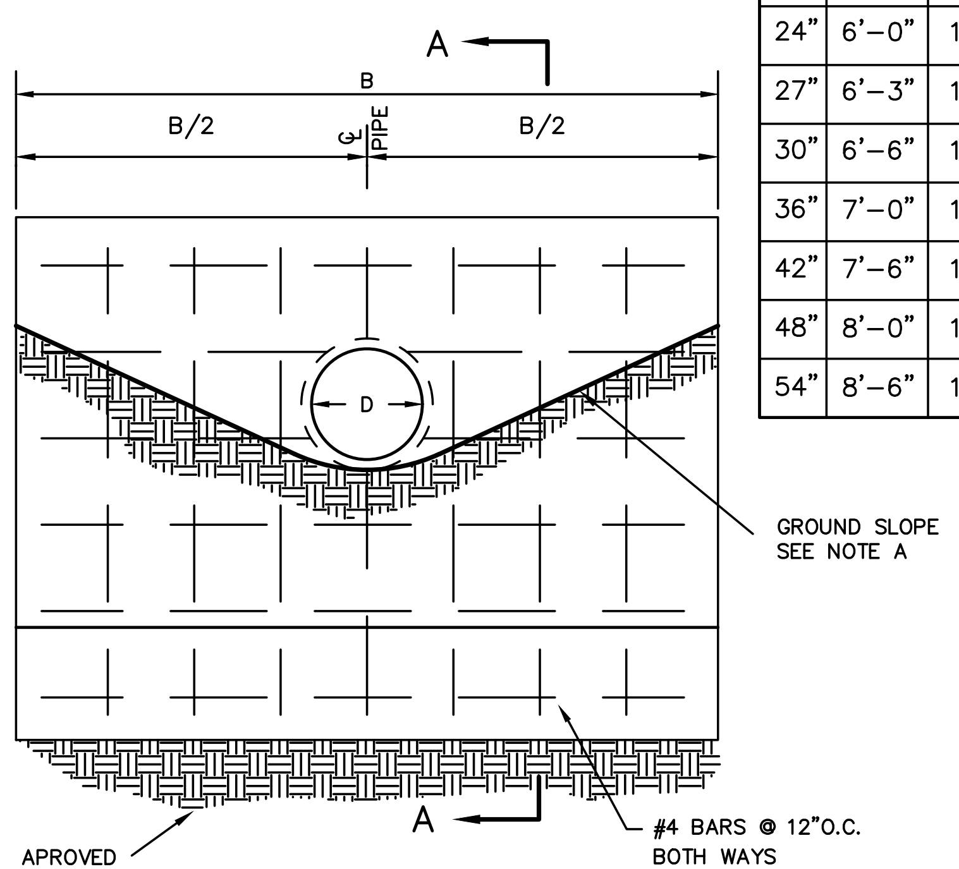
TABLE OF DIMENSIONS

CONCRETE HEADWALL (TYPE A)

16


T
1"
1"
EXPOSED EDGES TO BE CHAMFERED ONE (1) INCH
GROUND SLOPE SEE NOTE A
6"
12"
#4 BARS @ 12 O.C. BOTH WAYS
D
R=1/10D
6" MIN.
C (MIN)
3'-0"
2"X6" KEY
3"CL
12"
18"
12"
12"
3"CL
42"
APPROVED SUBGRADE
CLASS 'A' CONCRETE (4,000 PSI)

SECTION A–A


A
B
B/2
℄ PIPE
B/2
D
GROUND SLOPE SEE NOTE A
A
APROVED SUBGRADE
#4 BARS @ 12"O.C. BOTH WAYS

ELEVATION

			1.5:1 SLOPE	2:1 SLOPE	3:1 SLOPE
D	C MIN.	T	B	B	B
12"	5'-0"	8"	5'-0"	6'-0"	7'-0"
15"	5'-3"	8"	5'-6"	7'-0"	8'-9"
18"	5'-6"	8"	6'-0"	8'-0"	10'-6"
21"	5'-9"	10"	7'-0"	9'-0"	12'-3"
24"	6'-0"	10"	8'-0"	10'-0"	14'-0"
27"	6'-3"	12"	8'-6"	11'-0"	15'-9"
30"	6'-6"	12"	9'-0"	12'-0"	17'-6"
36"	7'-0"	12"	10'-6"	13'-6"	19'-6"
42"	7'-6"	12"	12'-0"	15'-0"	22'-6"
48"	8'-0"	12"	13'-6"	16'-6"	25'-6"
54"	8'-6"	12"	15'-0"	18'-0"	28'-6"

NOTE A

GROUND SLOPE TO BE 3 HORIZONTAL TO 1

SPECIFIED (SEE CHART)

VERTICAL UNLESS OTHERWISE

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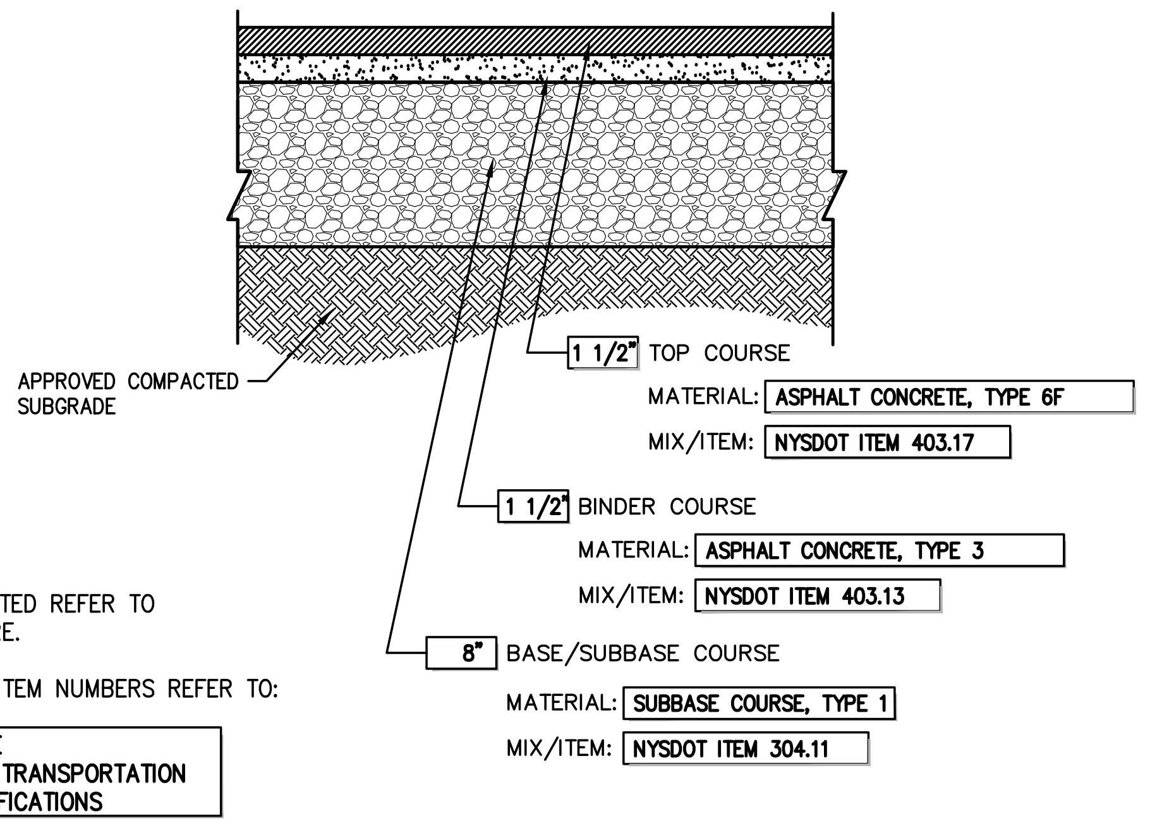
STRAIGHT CONCRETE HEADWALL

17


APPROVED COMPACTED SUBGRADE
1 1/2" TOP COURSE
MATERIAL: ASPHALT CONCRETE, TYPE 6F
MIX/ITEM: NYSDOT ITEM 403.17
1 1/2" BINDER COURSE
MATERIAL: ASPHALT CONCRETE, TYPE 3
MIX/ITEM: NYSDOT ITEM 403.13
8" BASE/SUBBASE COURSE
MATERIAL: SUBBASE COURSE, TYPE 1
MIX/ITEM: NYSDOT ITEM 304.11

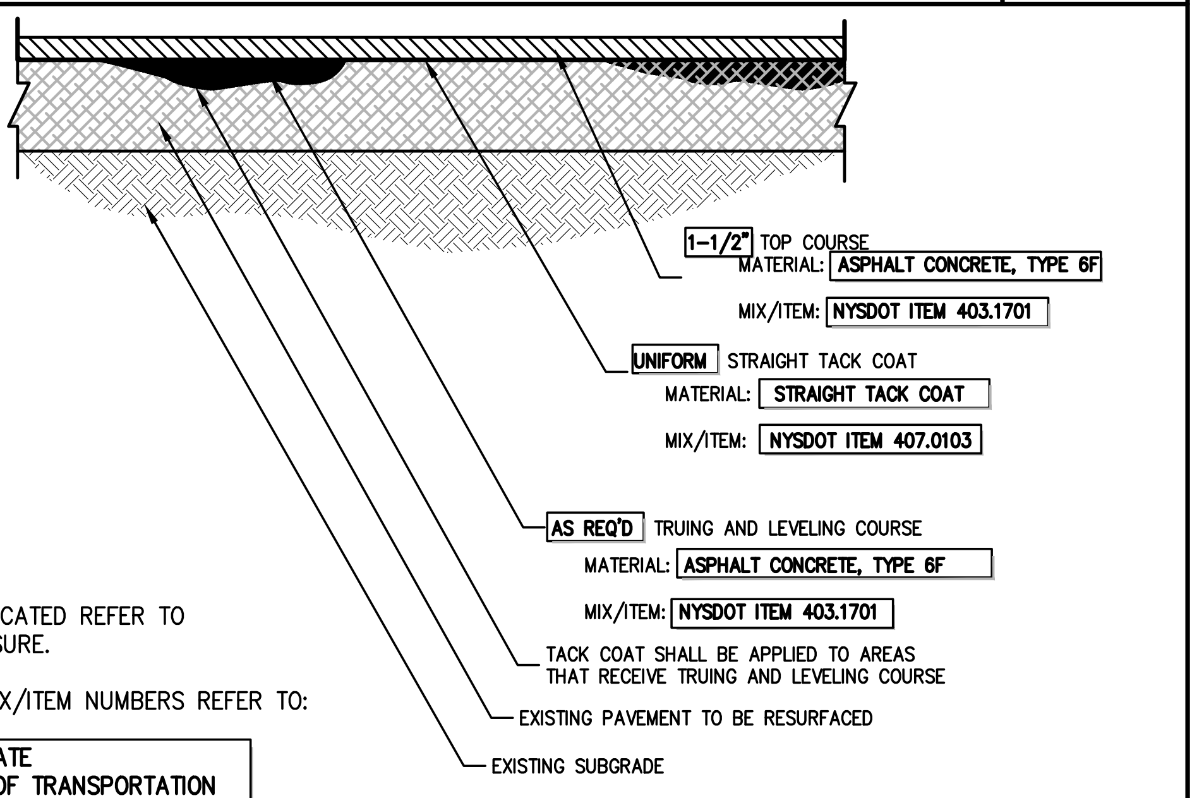
NOTES:

1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. MATERIAL AND MIX/ITEM NUMBERS REFER TO:

NEW YORK STATE
DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS

SITE PAVEMENT

18


1-1/2" TOP COURSE
MATERIAL: ASPHALT CONCRETE, TYPE 6F
MIX/ITEM: NYSDOT ITEM 403.1701
UNIFORM STRAIGHT TACK COAT
MATERIAL: STRAIGHT TACK COAT
MIX/ITEM: NYSDOT ITEM 407.0103
AS REQ'D TRUING AND LEVELING COURSE
MATERIAL: ASPHALT CONCRETE, TYPE 6F
MIX/ITEM: NYSDOT ITEM 403.1701
TACK COAT SHALL BE APPLIED TO AREAS THAT RECEIVE TRUING AND LEVELING COURSE
EXISTING PAVEMENT TO BE RESURFACED
EXISTING SUBGRADE

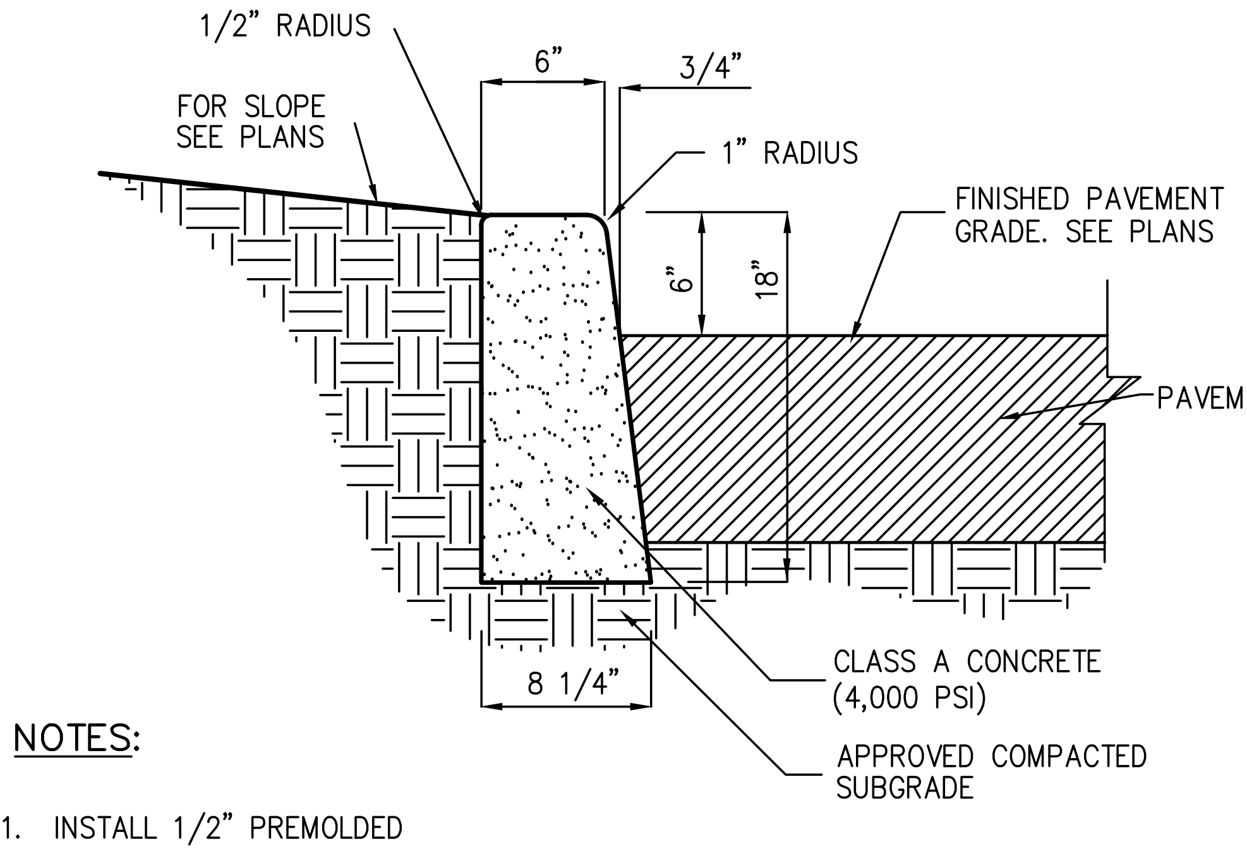
NOTES:

1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. MATERIAL AND MIX/ITEM NUMBERS REFER TO:

NEW YORK STATE
DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS

PAVEMENT RESURFACING

19

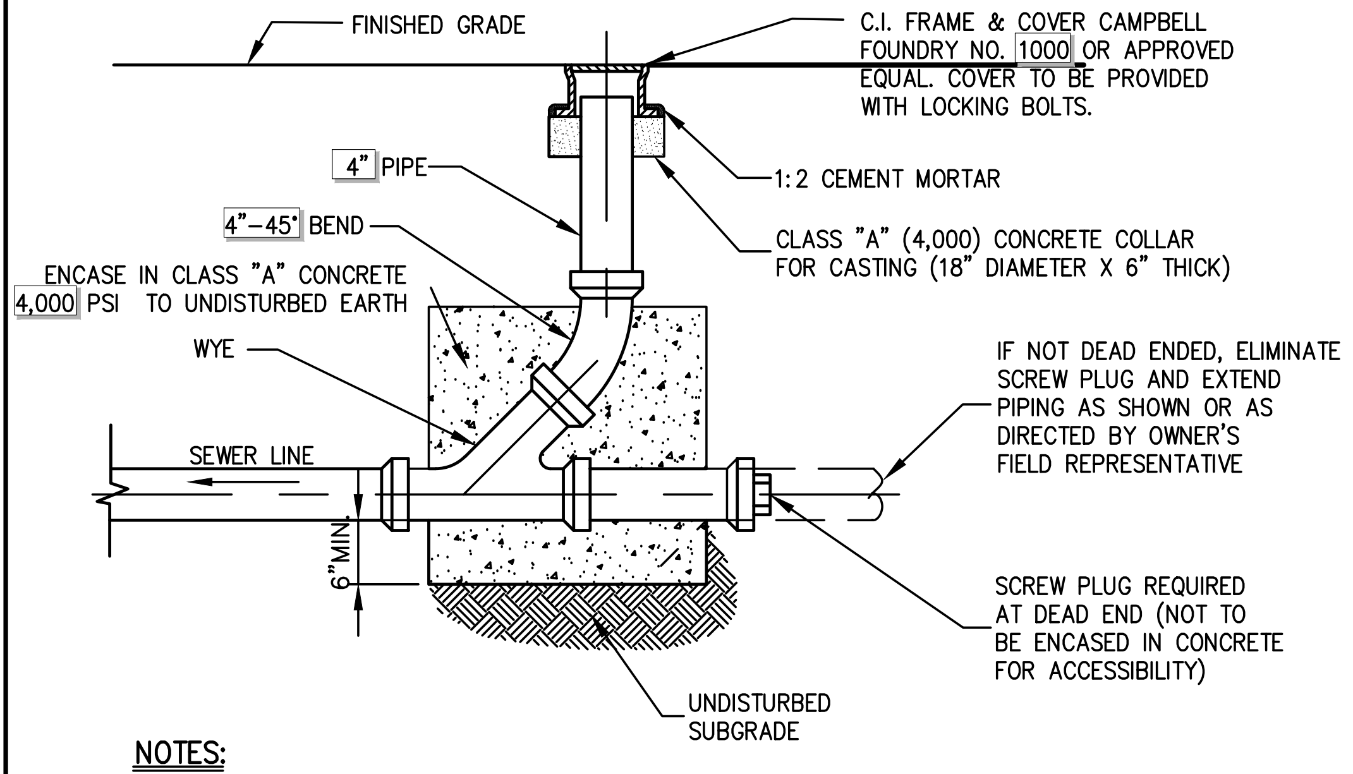

1/2" RADIUS
6"
3/4"
FOR SLOPE SEE PLANS
1" RADIUS
FINISHED PAVEMENT GRADE. SEE PLANS
6"
18"
PAVEMENT
8 1/4"
CLASS A CONCRETE (4,000 PSI)
APPROVED COMPACTED SUBGRADE

NOTES:

1. INSTALL 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT EVER 20 FEET.
2. UNLESS DIRECTED OTHERWISE, EXPANSION JOINTS SHALL ALSO BE INSTALLED AT THE PC AND PT OF ALL RADIUS CURB.
3. EACH EXPANSION JOINT SHALL BE LEFT EXPOSED AND NOT COVERED WITH A SKIM COAT OF CONCRETE.
4. INSTALL CONSTRUCTION JOINTS MID-WAY BETWEEN EXPANSION JOINTS SO THAT LENGTH OF CURB SEGMENTS WILL BE TEN (10) FEET.
5. LENGTH OF CURB SEGMENTS AT CLOSURES MAY BE VARIED BUT SHALL NOT BE LESS THAN FOUR (4) FEET.
6. WHEN INSTALLED ADJACENT TO SIDEWALK OR CONCRETE PAVEMENT, MATCH EXPANSION JOINTS.

CAST-IN-PLACE CONCRETE CURB

20

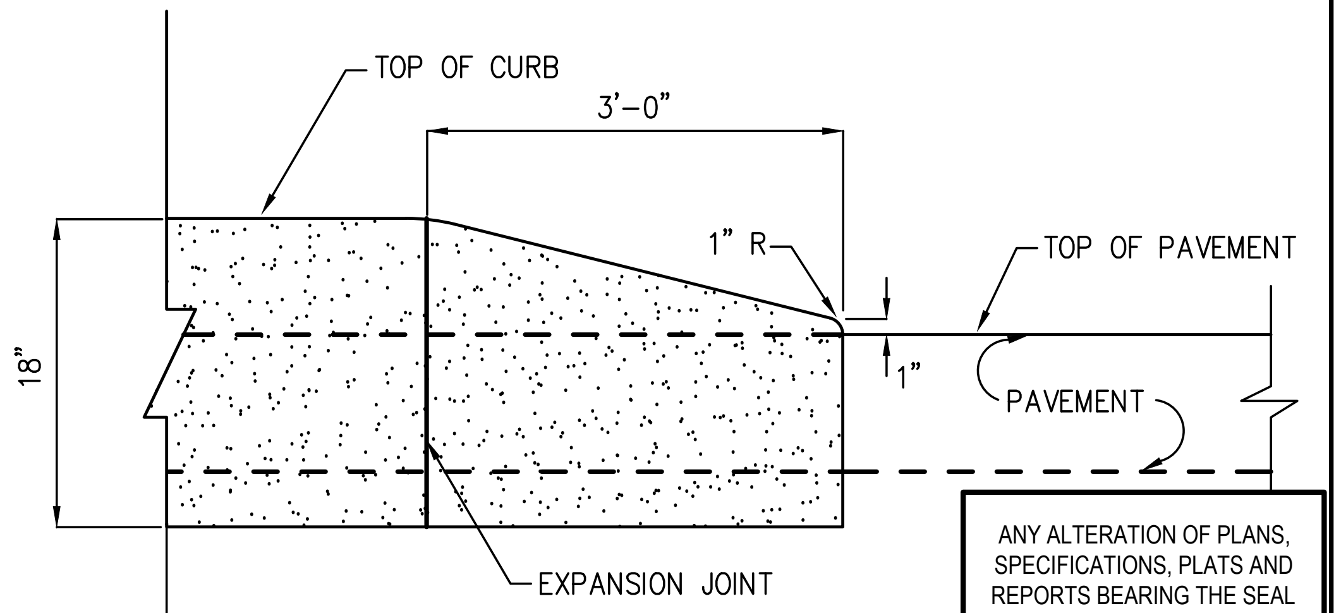

FINISHED GRADE
C.I. FRAME & COVER CAMPBELL FOUNDRY NO. 1000 OR APPROVED EQUAL. COVER TO BE PROVIDED WITH LOCKING BOLTS.
4" PIPE
1:2 CEMENT MORTAR
4"-45° BEND
CLASS "A" (4,000) CONCRETE COLLAR FOR CASTING (18" DIAMETER X 6" THICK)
ENCASE IN CLASS "A" CONCRETE 4,000 PSI TO UNDISTURBED EARTH
WYE
IF NOT DEAD ENDED, ELIMINATE SCREW PLUG AND EXTEND PIPING AS SHOWN OR AS DIRECTED BY OWNER'S FIELD REPRESENTATIVE
SEWER LINE
6" MIN.
SCREW PLUG REQUIRED AT DEAD END (NOT TO BE ENCASED IN CONCRETE FOR ACCESSIBILITY)
UNDISTURBED SUBGRADE

NOTES:

1. ALL PIPE MATERIAL FOR CLEANOUT TO BE DUCTILE IRON PIPE.
2. FOR INVERT OF SEWER LINE SEE PLAN.

CLEANOUT WITHOUT MANHOLE

21


TOP OF CURB
3'-0"
1" R
TOP OF PAVEMENT
18"
1"
PAVEMENT
EXPANSION JOINT

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CONCRETE CURB ENDING

22

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MANHATTAN BEER DISTRIBUTORS
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SUFFERN, NEW YORK

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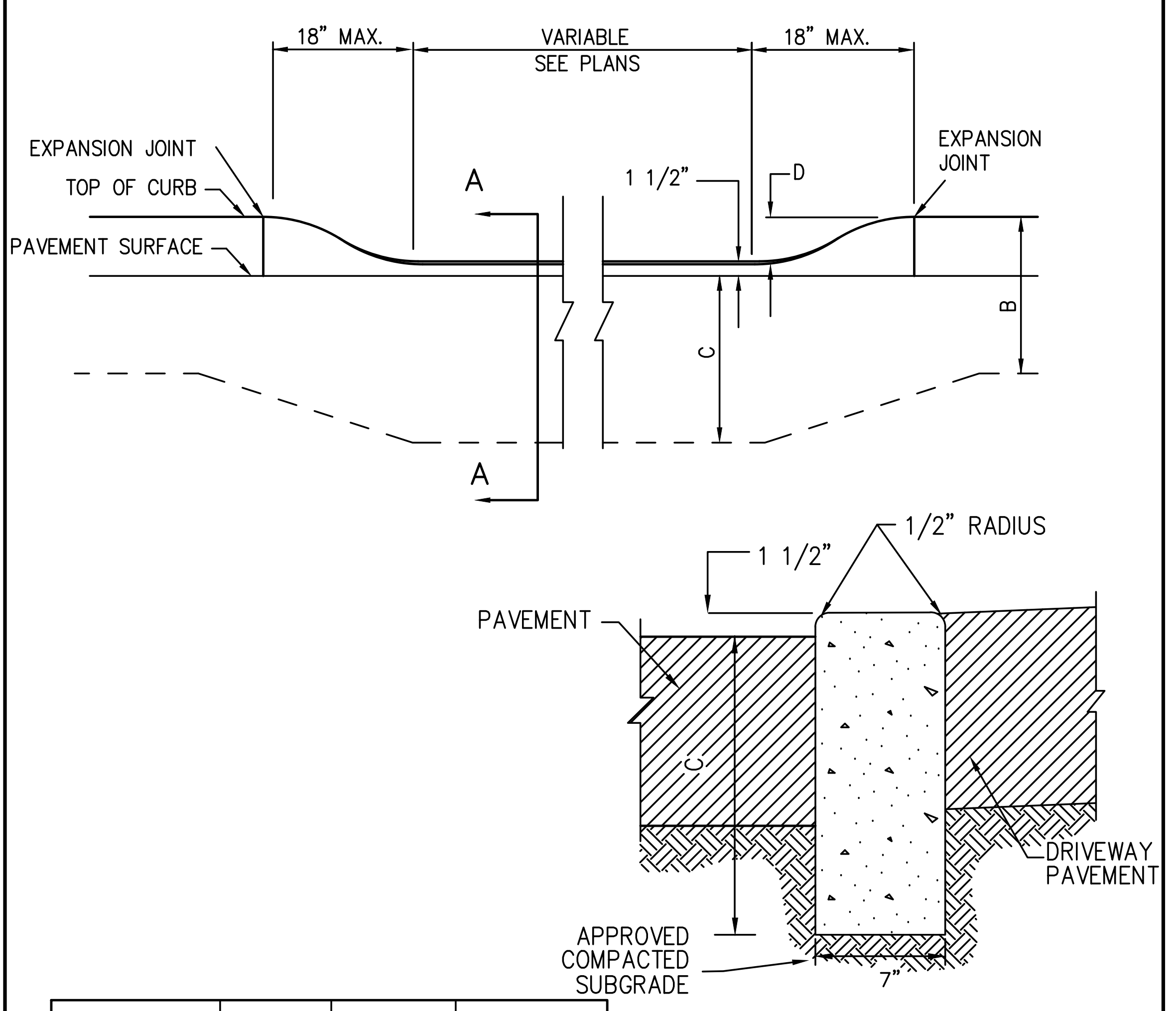
7	ISSUED FOR DOB SUBMISSION	09.10.21
8	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	1.16.2020
SCALE :	N.T.S
ISSUE :	

DRAWING TITLE :
CONSTRUCTION
DETAILS

DWG NUMBER :
C-902

JMC PROJECT: 19005-1
SCR: NA
DWG FILE: 19005-DETAILS-CD


18" MAX.
VARIABLE
SEE PLANS
18" MAX.
EXPANSION JOINT
TOP OF CURB
PAVEMENT SURFACE
A
1 1/2"
D
EXPANSION JOINT
B
C
A
1 1/2"
1/2" RADIUS
PAVEMENT
C
DRIVEWAY PAVEMENT
APPROVED COMPACTED SUBGRADE
7"

SECTION A–A

CURB SIZE	DIM. B	DIM. C	DIM. D
7" X 18"	18"	16"	4 1/2"
9" X 20"	20"	18"	4 1/2"
9" X 22"	22"	20"	4 1/2"

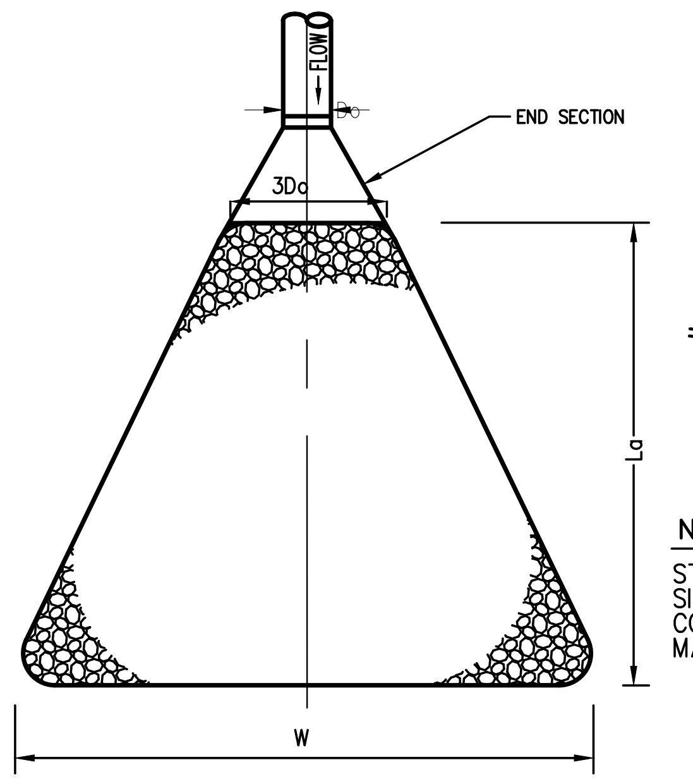
METHOD OF DEPRESSING CURB AT DRIVEWAYS

DEPRESSED CONCRETE CURB

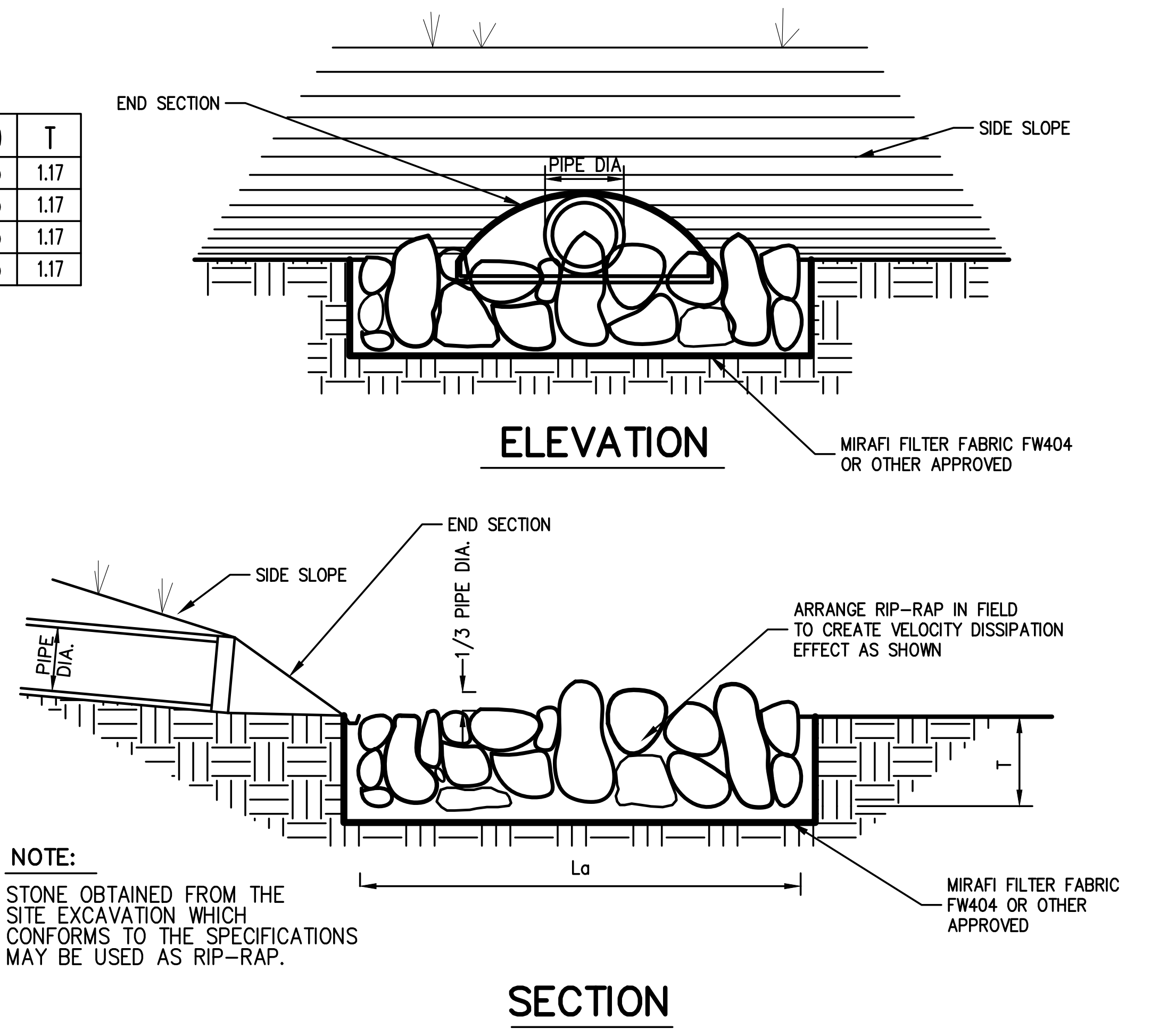
23

W = WIDTH (feet)
La = LENGTH (feet)
Do = DIAMETER (feet)
d50 = MEDIAN STONE DIAMETER (feet)
TW = TAILWATER (feet)
Q = DISCHARGE (cfs)
T = THICKNESS OF APRON (feet)

STRUCTURE	Q	Do	W	La	d50	T
HW A–1	4.45	1.25	10.25	9	0.25	1.17
HW A–3	20.97	3.0	8.2	13	0.25	1.17
HW A–4–1	55.79	3.0	8.2	13	0.25	1.17
HW B–1	2.29	1.5	9.25	8	0.25	1.17


FLOW
END SECTION
3Do
La
W

PLAN


END SECTION
SIDE SLOPE
PIPE DIA
MIRAFI FILTER FABRIC FW404 OR OTHER APPROVED
SIDE SLOPE
END SECTION
PIPE DIA.
1/3 PIPE DIA.
ARRANGE RIP–RAP IN FIELD TO CREATE VELOCITY DISSIPATION EFFECT AS SHOWN
T
La
MIRAFI FILTER FABRIC FW404 OR OTHER APPROVED

ELEVATION

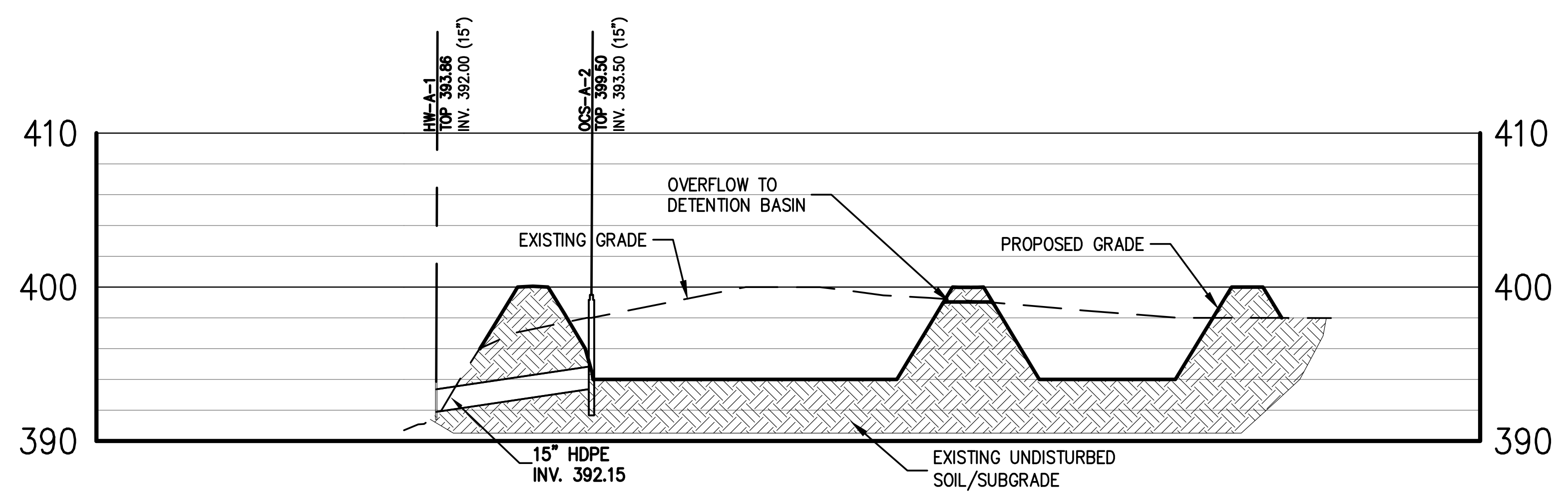
NOTE:
STONE OBTAINED FROM THE SITE EXCAVATION WHICH CONFORMS TO THE SPECIFICATIONS MAY BE USED AS RIP–RAP.

SECTION

RIP–RAP APRON/ENERGY DISSIPATOR

END SECTION

24


HW–A–1
TOP 393.86
INV. 392.00 (15")
OCS–A–2
TOP 399.50
INV. 393.50 (15")
410
410
OVERFLOW TO DETENTION BASIN
EXISTING GRADE
PROPOSED GRADE
400
400
390
390
15" HDPE
INV. 392.15
EXISTING UNDISTURBED SOIL/SUBGRADE

Infiltration Basin

NOTES:

1. SOILS SHALL HAVE A CLAY CONTENT OF LESS THAN 20% AND A SILT/CLAY CONTENT OF LESS THAN 40%.
2. INFILTRATION BASINS CANNOT BE LOCATED IN FILL SOILS

INFILTRATION AND DETENTION BASIN DETAIL

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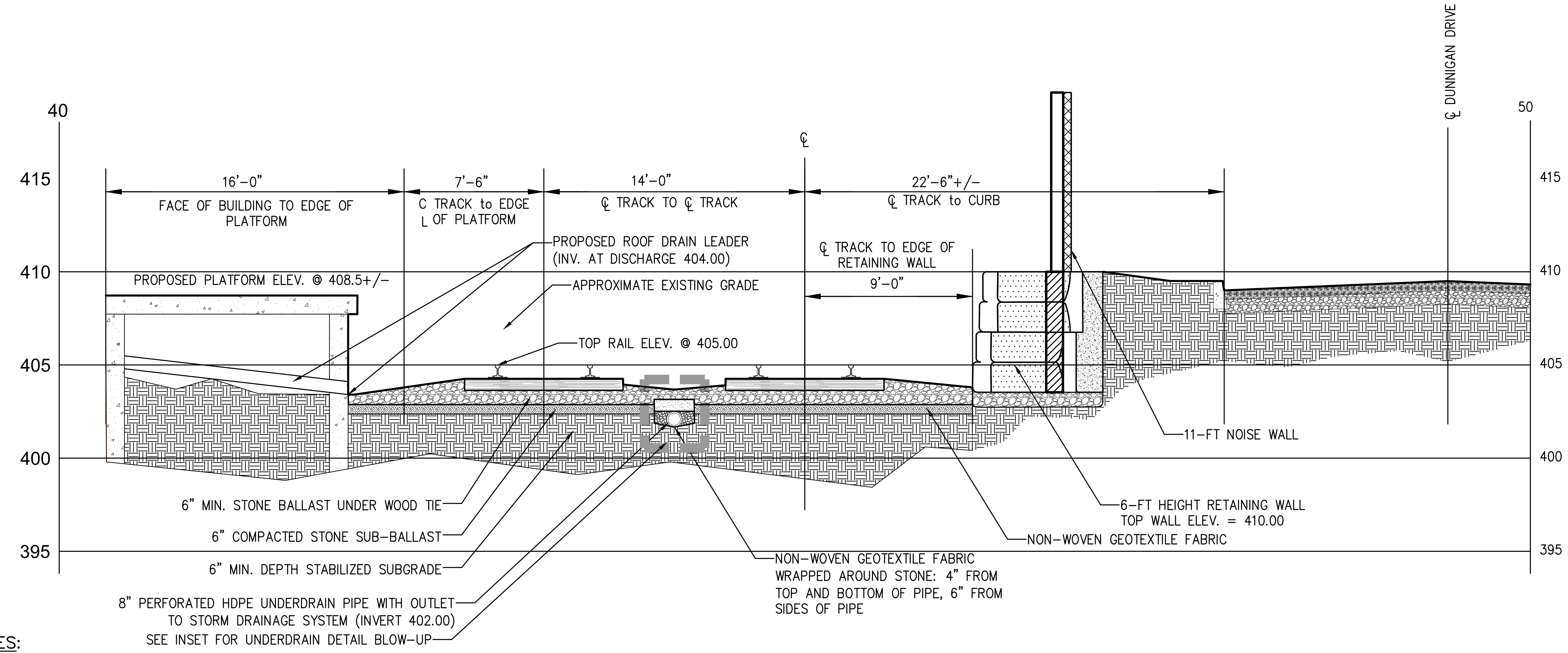
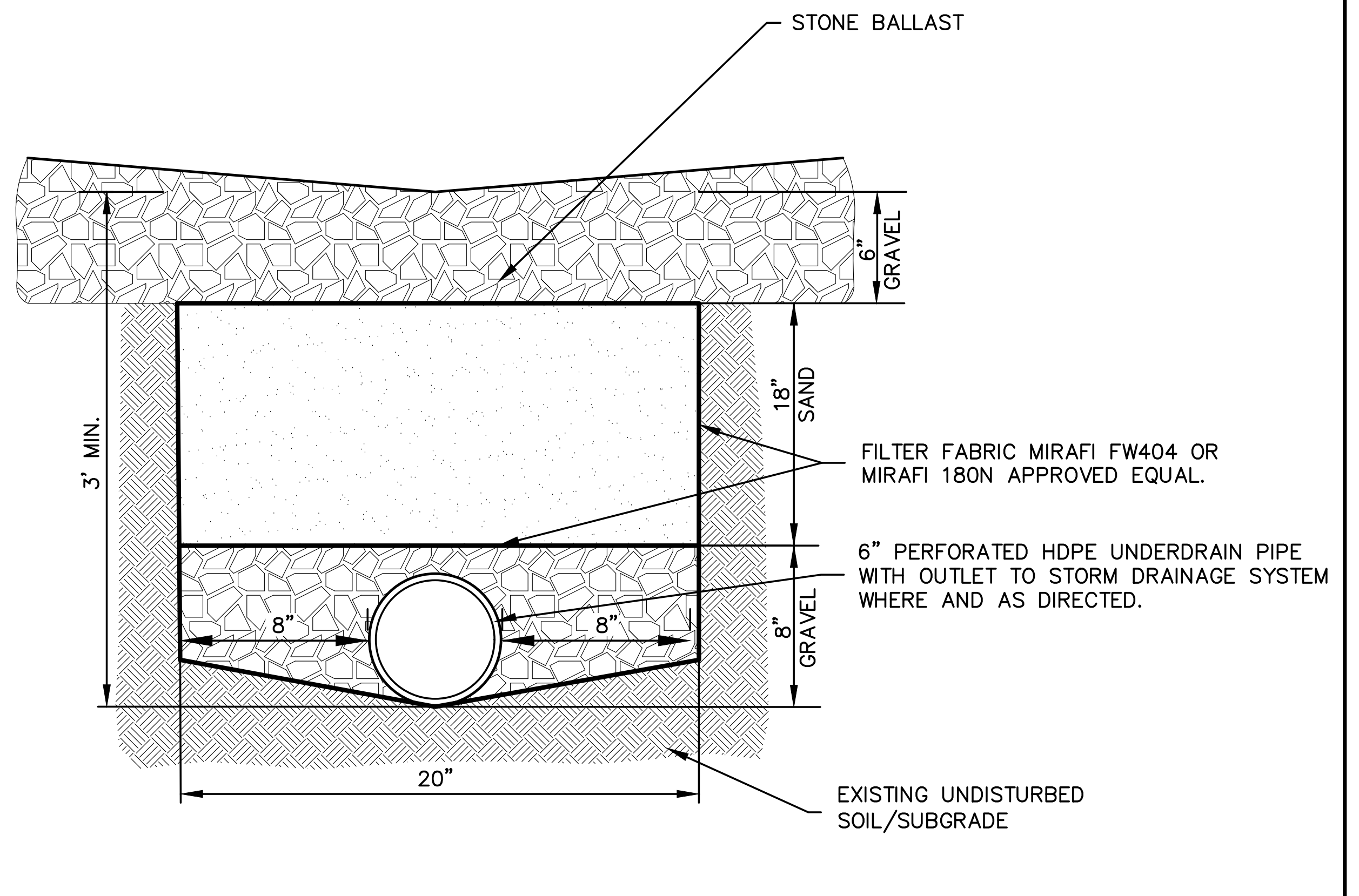

40
415
410
405
400
395
16'–0"
FACE OF BUILDING TO EDGE OF PLATFORM
7'–6"
℄ TRACK to EDGE OF PLATFORM
14'–0"
℄ TRACK TO ℄ TRACK
℄
22'–6"+/–
℄ TRACK to CURB
℄ DUNNIGAN DRIVE
50
415
410
405
400
395
PROPOSED ROOF DRAIN LEADER (INV. AT DISCHARGE 404.00)
℄ TRACK TO EDGE OF RETAINING WALL
9'–0"
PROPOSED PLATFORM ELEV. @ 408.5+/–
APPROXIMATE EXISTING GRADE
TOP RAIL ELEV. @ 405.00
11–FT NOISE WALL
6" MIN. STONE BALLAST UNDER WOOD TIE
6–FT HEIGHT RETAINING WALL TOP WALL ELEV. = 410.00
6" COMPACTED STONE SUB–BALLAST
NON–WOVEN GEOTEXTILE FABRIC
6" MIN. DEPTH STABILIZED SUBGRADE
NON–WOVEN GEOTEXTILE FABRIC WRAPPED AROUND STONE: 4" FROM TOP AND BOTTOM OF PIPE, 6" FROM SIDES OF PIPE
8" PERFORATED HDPE UNDERDRAIN PIPE WITH OUTLET TO STORM DRAINAGE SYSTEM (INVERT 402.00)
SEE INSET FOR UNDERDRAIN DETAIL BLOW–UP

NOTES:

1. CROSS SECTION TAKEN FROM PLANS PREPARED BY CONSTRUCTION CONSULTATION SERVICES.
2. THIS DETAIL IS PROVIDED FOR DRAINAGE INFORMATION ONLY AND DESIGN OF UNDERDRAIN DETAIL AS SHOWN HEREON. REFER TO CONSTRUCTION CONSULTATIONS SERVICES DRAWINGS FOR ALL OTHER SPECIFICATIONS AND DETAILS.

SCALE: 1" = 5'


STONE BALLAST
6" GRAVEL
18" SAND
3' MIN.
FILTER FABRIC MIRAFI FW404 OR MIRAFI 180N APPROVED EQUAL.
6" PERFORATED HDPE UNDERDRAIN PIPE WITH OUTLET TO STORM DRAINAGE SYSTEM WHERE AND AS DIRECTED.
8"
8"
8" GRAVEL
20"
EXISTING UNDISTURBED SOIL/SUBGRADE

UNDERDRAIN DETAIL BLOW–UP

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DRAINAGE CROSS SECTION DETAIL

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6	FOR PLANNING BOARD APPROVAL	04.09.21
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8	ISSUED FOR DOB SUBMISSION	09.10.21
9	ISSUED FOR BID	10.15.21

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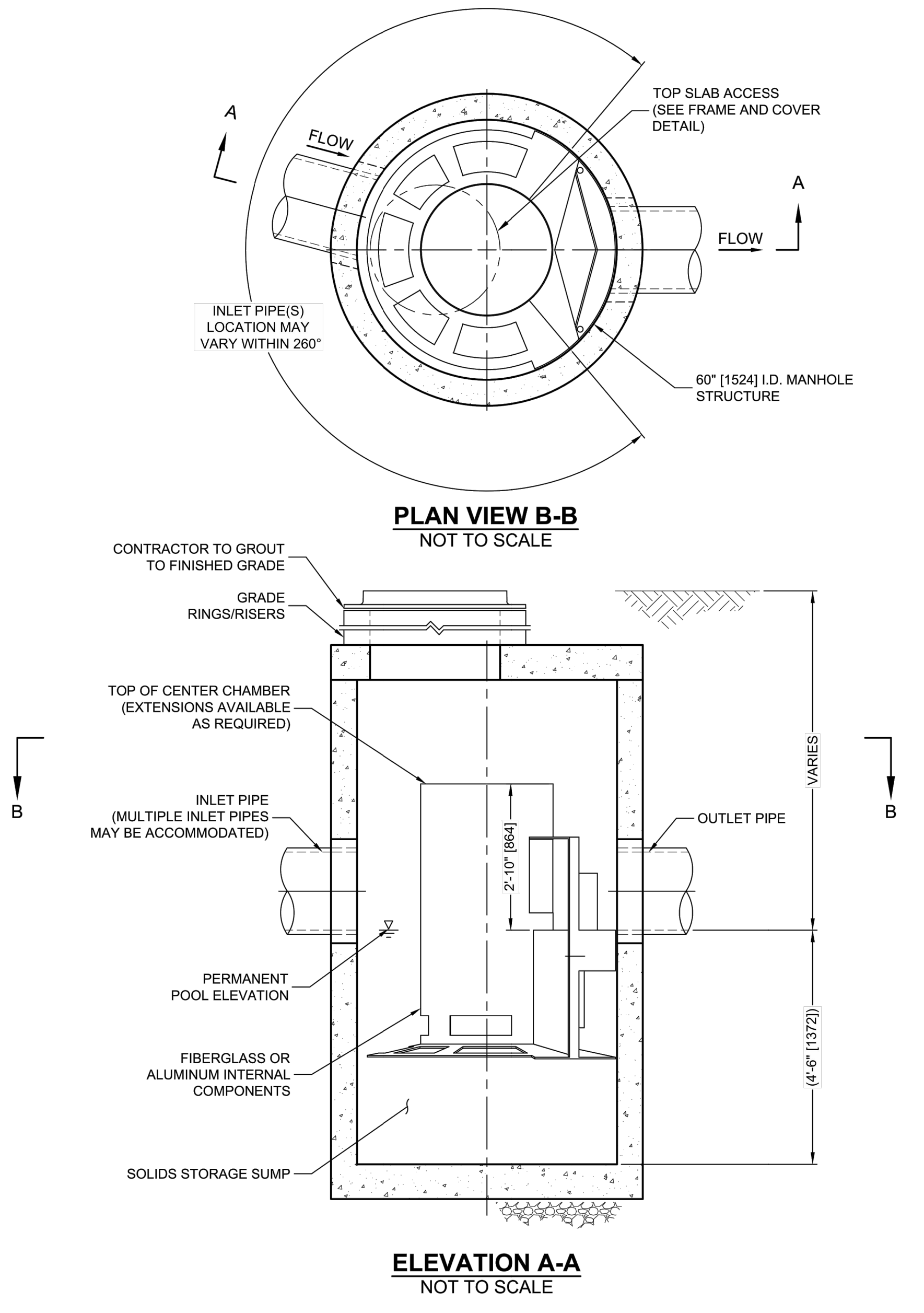
CHECKED BY : JPM/JAR
APPROVED BY : DL
DATE : 7.16.2020
SCALE : N.T.S
ISSUE :

DRAWING TITLE :
CONSTRUCTION
DETAILS

DWG NUMBER :
C-903

JMC PROJECT: 19005-1
SCR: NA
DWG FILE: 19005-DETAILS-CD


A
FLOW
TOP SLAB ACCESS (SEE FRAME AND COVER DETAIL)
A
FLOW
INLET PIPE(S) LOCATION MAY VARY WITHIN 260°
60" [1524] I.D. MANHOLE STRUCTURE
CONTRACTOR TO GROUT TO FINISHED GRADE
GRADE RINGS/RISERS
TOP OF CENTER CHAMBER (EXTENSIONS AVAILABLE AS REQUIRED)
B
INLET PIPE (MULTIPLE INLET PIPES MAY BE ACCOMMODATED)
OUTLET PIPE
B
VARIES
2'-10" [864]
PERMANENT POOL ELEVATION
FIBERGLASS OR ALUMINUM INTERNAL COMPONENTS
(4'-6" [1372])
SOLIDS STORAGE SUMP

PLAN VIEW B-B
NOT TO SCALE

ELEVATION A-A
NOT TO SCALE

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CASCADE SEPARATOR DESIGN NOTES

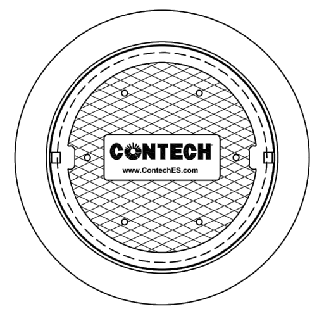
THE STANDARD CS-5 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			WQS E-2
WATER QUALITY FLOW RATE (cfs [L/s])			1.90
PEAK FLOW RATE (cfs [L/s])			10.84
RETURN PERIOD OF PEAK FLOW (yrs)			100
RIM ELEVATION			414.53
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1	406.00	HDPE	24"
INLET PIPE 2			
OUTLET PIPE	406.00	HDPE	24"
NOTES / SPECIAL REQUIREMENTS:			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FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SEE DETAIL 29 ON THIS SHEET FOR MAINTENANCE NOTES

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

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CS-5
CASCADE SEPARATOR
STANDARD DETAIL

WQS E-2: CONTECH CS-5 UNIT

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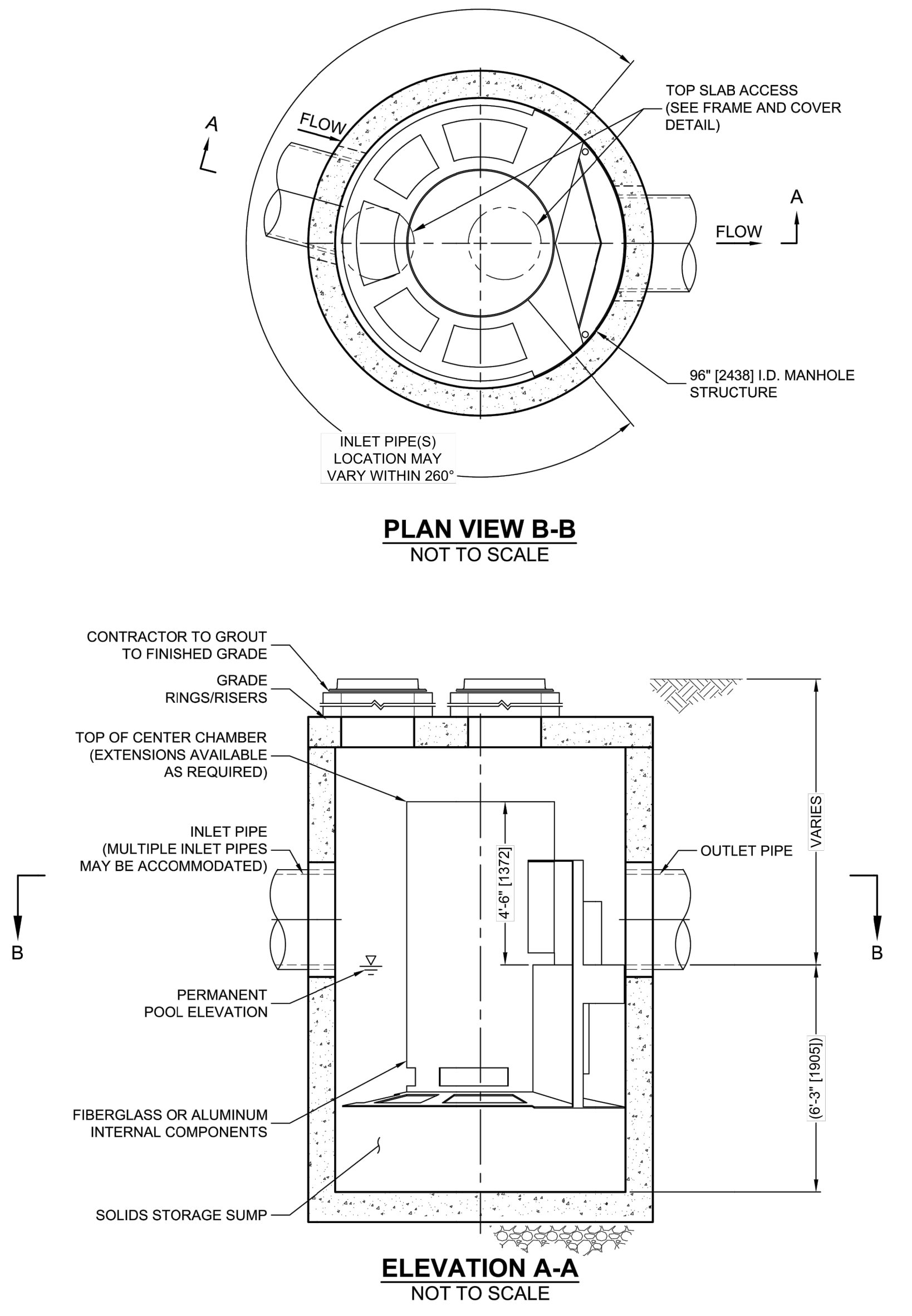
A
FLOW
TOP SLAB ACCESS (SEE FRAME AND COVER DETAIL)
A
FLOW
96" [2438] I.D. MANHOLE STRUCTURE
INLET PIPE(S) LOCATION MAY VARY WITHIN 260°
CONTRACTOR TO GROUT TO FINISHED GRADE
GRADE RINGS/RISERS
TOP OF CENTER CHAMBER (EXTENSIONS AVAILABLE AS REQUIRED)
INLET PIPE (MULTIPLE INLET PIPES MAY BE ACCOMMODATED)
B
OUTLET PIPE
B
VARIES
4'-6" [1372]
PERMANENT POOL ELEVATION
(6'-3" [1905])
FIBERGLASS OR ALUMINUM INTERNAL COMPONENTS
SOLIDS STORAGE SUMP

PLAN VIEW B-B
NOT TO SCALE

ELEVATION A-A
NOT TO SCALE

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CASCADE SEPARATOR DESIGN NOTES

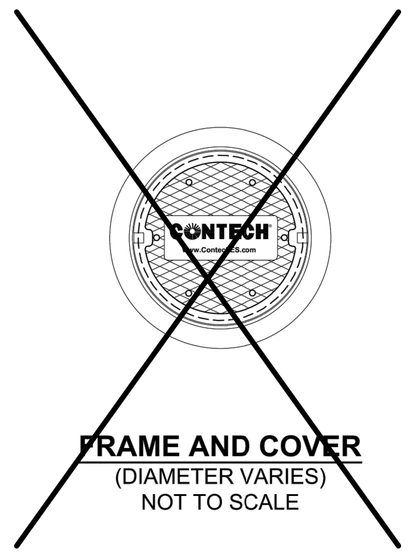
THE STANDARD CS-8 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- [✓ CURB INLET WITH INLET PIPE OR PIPES]

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			WQS G-3
WATER QUALITY FLOW RATE (cfs [L/s])			10.83
PEAK FLOW RATE (cfs [L/s])			32
RETURN PERIOD OF PEAK FLOW (yrs)			100
RIM ELEVATION			399.55
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1	396.00	HDPE	36"
INLET PIPE 2	396.00	HDPE	36"
OUTLET PIPE	396.00	HDPE	36"
NOTES / SPECIAL REQUIREMENTS:			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~~**FRAME AND COVER**~~
~~(DIAMETER VARIES)~~
~~NOT TO SCALE~~

SEE DETAIL 29 ON THIS SHEET FOR MAINTENANCE NOTES

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

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CS-8
CASCADE SEPARATOR
STANDARD DETAIL

WQS G-3: CONTECH CS-8 UNIT

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NOTES PERTAINING TO WATER QUALITY STRUCTURES

1. THE WATER QUALITY STRUCTURE SHOULD BE INSPECTED AT REGULAR INTERVALS AND MAINTAINED WHEN NECESSARY TO ENSURE OPTIMUM PERFORMANCE.
2. AT A MINIMUM, INSPECTIONS SHOULD BE PERFORMED TWICE PER YEAR (SPRING AND FALL). HOWEVER, MORE FREQUENT INSPECTIONS MAY BE NECESSARY IN CLIMATES WHERE WINTER SANDING OPERATIONS MAY LEAD TO RAPID ACCUMULATIONS, OR IN EQUIPMENT WASH-DOWN AREAS. INSTALLATIONS SHOULD ALSO BE INSPECTED MORE FREQUENTLY WHERE EXCESSIVE AMOUNTS OF TRASH ARE EXPECTED.
3. OPEN ACCESS COVER FOR VISUAL INSPECTION AND MEASURE THE DISTANCE FROM THE STANDING WATER SURFACE TO THE SEDIMENT PILE WITH A MEASURING STICK OR TAPE. IF LESS THAN 4 FEET, INSERT HOSE FROM VACUUM TRUCK INTO THE SUMP AND SCREEN THROUGH BOTH ACCESS COVERS TO CLEAN OUT THE STANDING WATER, LAYER OF OIL, SEDIMENT, TRASH, ETC.
4. THE SCREEN MUST BE POWERWASHED TO ENSURE IT IS FREE OF TRASH AND DEBRIS.
5. CLEANING OF A WATER QUALITY STRUCTURE SHOULD BE DONE DURING DRY WEATHER CONDITIONS WHEN NO FLOW IS ENTERING THE SYSTEM. THE USE OF A VACUUM TRUCK IS GENERALLY THE MOST EFFECTIVE AND CONVENIENT METHOD OF REMOVING POLLUTANTS FROM THE SYSTEM.
6. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES TO PREVENT LEAKAGE OF RUNOFF INTO THE SYSTEM FROM ABOVE AND TO ENSURE PROPER SAFETY PRECAUTIONS. CONFINED SPACE ENTRY PROCEDURES NEED TO BE FOLLOWED IF PHYSICAL ACCESS IS REQUIRED. DISPOSAL OF ALL MATERIAL REMOVED MUST BE DONE IN ACCORDANCE WITH LOCAL REGULATIONS.

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WATER QUALITY STRUCTURE MAINTENANCE NOTES

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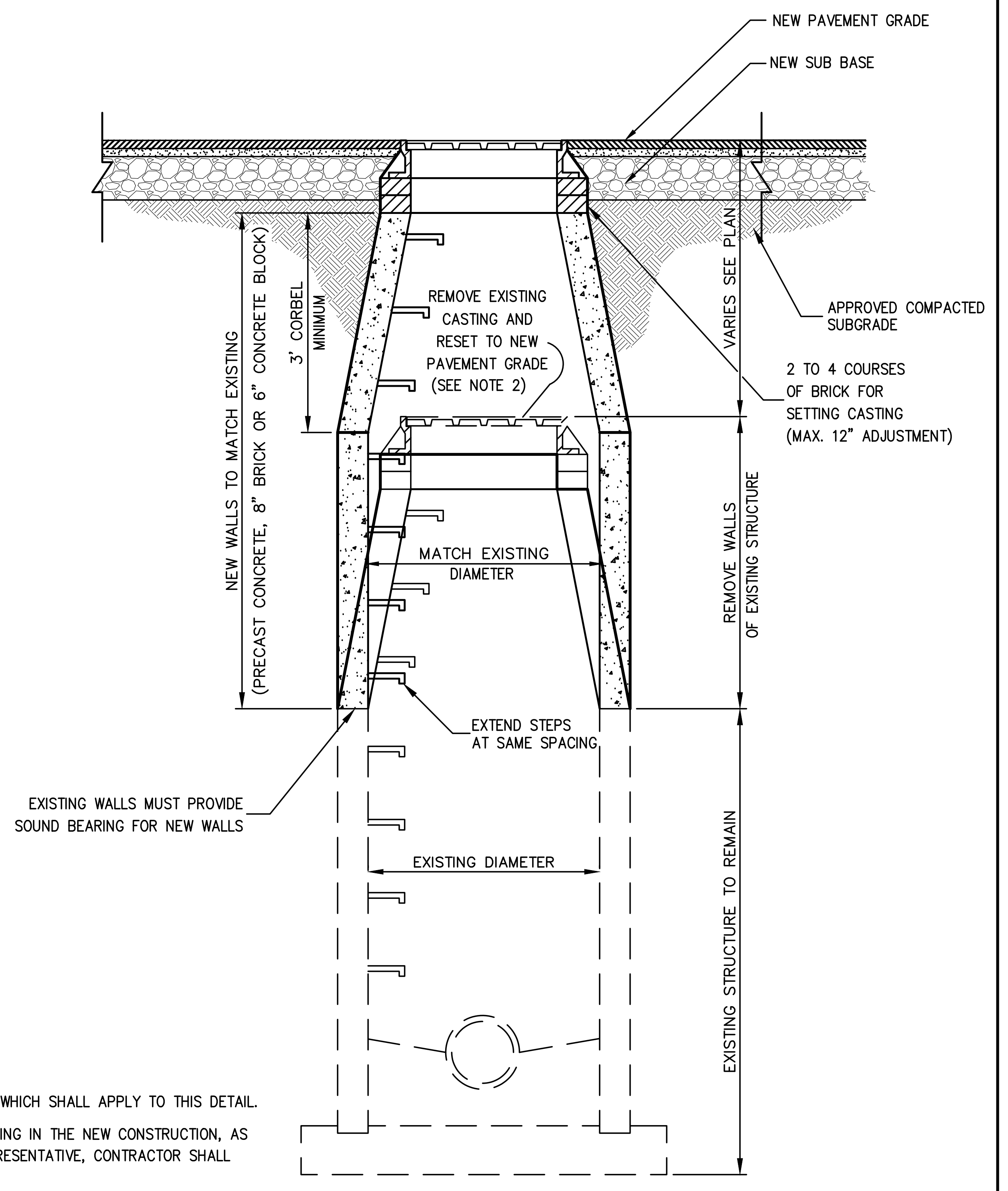
NEW PAVEMENT GRADE
NEW SUB BASE
NEW WALLS TO MATCH EXISTING (PRECAST CONCRETE, 8" BRICK OR 6" CONCRETE BLOCK)
3' CORBEL MINIMUM
REMOVE EXISTING CASTING AND RESET TO NEW PAVEMENT GRADE (SEE NOTE 2)
VARIES SEE PLAN
APPROVED COMPACTED SUBGRADE
2 TO 4 COURSES OF BRICK FOR SETTING CASTING (MAX. 12" ADJUSTMENT)
MATCH EXISTING DIAMETER
REMOVE WALLS OF EXISTING STRUCTURE
EXTEND STEPS AT SAME SPACING
EXISTING WALLS MUST PROVIDE SOUND BEARING FOR NEW WALLS
EXISTING DIAMETER
EXISTING STRUCTURE TO REMAIN

NOTES:
1. SEE "UTILITY NOTES" ON DRAWING C-904 WHICH SHALL APPLY TO THIS DETAIL.
2. IF EXISTING CASTING IS UNFIT FOR RESETTING IN THE NEW CONSTRUCTION, AS DETERMINED BY THE OWNER'S FIELD REPRESENTATIVE, CONTRACTOR SHALL FURNISH AND SET NEW CASTING.

EXISTING MANHOLE RECONSTRUCTED AND RAISED

30

NOTES PERTAINING TO DRAIN INLETS

A-1 STEPS WILL NOT BE REQUIRED IN INLETS LESS THAN FOUR (4) FEET IN DEPTH. STEPS WILL BE REQUIRED IN INLETS FOUR (4) FEET OR GREATER IN DEPTH. DEPTHS FOR DRAIN INLETS SHALL BE MEASURED FROM FINISHED GRADE TO INSIDE BOTTOM OF STRUCTURE (INCLUDING SUMP AS APPLICABLE).

A-2 WHEN STEPS ARE REQUIRED, STEPS SHALL COMPLY WITH THE SAME REQUIREMENTS OF ASTM STANDARD C-478, ARTICLE 13 ENTITLED "MANHOLE STEPS & LADDERS".

A-3 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND CONSTRUCT THE PROPER SIZE STRUCTURE INCLUDING THE NECESSARY OPENINGS TO ACCOMMODATE THE WORK AS SHOWN ON THE PLANS OR ORDERED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.

A-4 ALL NECESSARY PATCHING FOR DRAIN STRUCTURES SHALL BE ACCOMPLISHED WITH NON-SHRINKING CEMENT MORTAR GROUT, APPROVED EQUAL TO SIKA-SET AS MANUFACTURED BY THE SIKA CHEMICAL CORP. JOINTS BETWEEN STRUCTURES AND PIPES SHALL BE SEALED WITH NON-SHRINK GROUT.

A-5 FOUNDATIONS FOR PRECAST CONCRETE STRUCTURES SHALL BE SET ON A COMPACTED LAYER OF APPROVED CRUSHED STONE HAVING A MINIMUM COMPACTED THICKNESS OF EIGHT (8) INCHES.

A-6 ALL PIPES SHALL BE CUT FLUSH WITH THE INSIDE WALL OF THE STRUCTURE.

A-7 PROVIDE REINFORCED CONCRETE TOP SLAB FOR OVERSIZED DRAIN INLETS WITH PROPER SIZE OPENING TO ACCOMMODATE INSTALLATION OF FRAME & GRATE.

A-8 FOR MASONRY STRUCTURES GREATER THAN TEN (10) FEET IN DEPTH, THICKNESS OF MASONRY WALLS SHALL BE INCREASED TO TWELVE (12) INCHES.

A-9 FOR ALL STRUCTURES GREATER THAN 10 FEET IN DEPTH, STRUCTURES SHALL PROVIDE MINIMUM INSIDE DIMENSIONS OF 4 FEET X 4 FEET.

NOTES PERTAINING TO MANHOLES

B-1 PRECAST CONCRETE MANHOLES SHALL COMPLY WITH ASTM STANDARD C-478. MANHOLE JOINTS SHALL COMPLY WITH ASTM STANDARD C-443.

B-2 FOR PRECAST CONCRETE MANHOLES FIVE (5) FEET OR LESS IN HEIGHT, TOP CONE SECTION SHALL BE REPLACED WITH PRECAST REINFORCED CONCRETE SLAB (6" MIN. THICKNESS) WITH OPENING OF SUFFICIENT SIZE TO ACCOMMODATE MANHOLE CASTING.

B-3 FOR MANHOLES 10 FEET OR MORE IN DEPTH, MANHOLE DIAMETER SHALL BE FIVE (5) FEET.

B-4 TERMINAL MANHOLE FLOORS SHALL BE SLOPED TOWARD OUTFALL PIPE.

B-5 INVERT CHANNELS FOR PRECAST CONCRETE MANHOLES SHALL BE CONSTRUCTED OF CONCRETE.

B-6 NOTES A-1, A-2, A-4, A-5, A-6 & A-7 UNDER "NOTES PERTAINING TO DRAIN INLETS" ABOVE SHALL APPLY TO MANHOLES.

NOTES PERTAINING TO PRECAST CONCRETE STRUCTURES FOR STORM DRAINS, SANITARY SEWERS AND WATER LINES

C-1 ALL PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.

C-2 STEPS SHALL BE LOCATED WITHIN STRUCTURE TO AVOID PLACEMENT OVER PIPES WHEN PRACTICABLE.

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UTILITY NOTES

31

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3	REISSUED PER PB COMMENTS	09.17.20
4	REISSUED PER PB COMMENTS	10.20.20
5	FOR PLANNING BOARD APPROVAL	04.09.21
6	REISSUED PER ENGINEER COMMENTS	05.10.21
7	ISSUED FOR DOB SUBMISSION	09.10.21
8	ISSUED FOR BID	10.15.21

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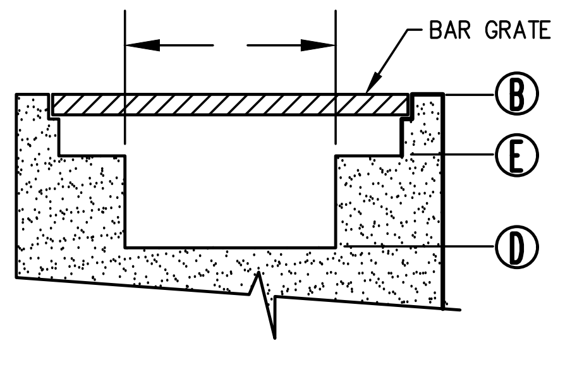
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	7.16.2020
SCALE :	N.T.S
ISSUE :	

DRAWING TITLE :
CONSTRUCTION
DETAILS

DWG NUMBER :
C-904

JMC PROJECT: 19005-1
SCR: NA
DWG FILE: 19005-DETAILS-CD


BAR GRATE
B
E
D

RECTANGULAR WEIR

ABBREVIATIONS

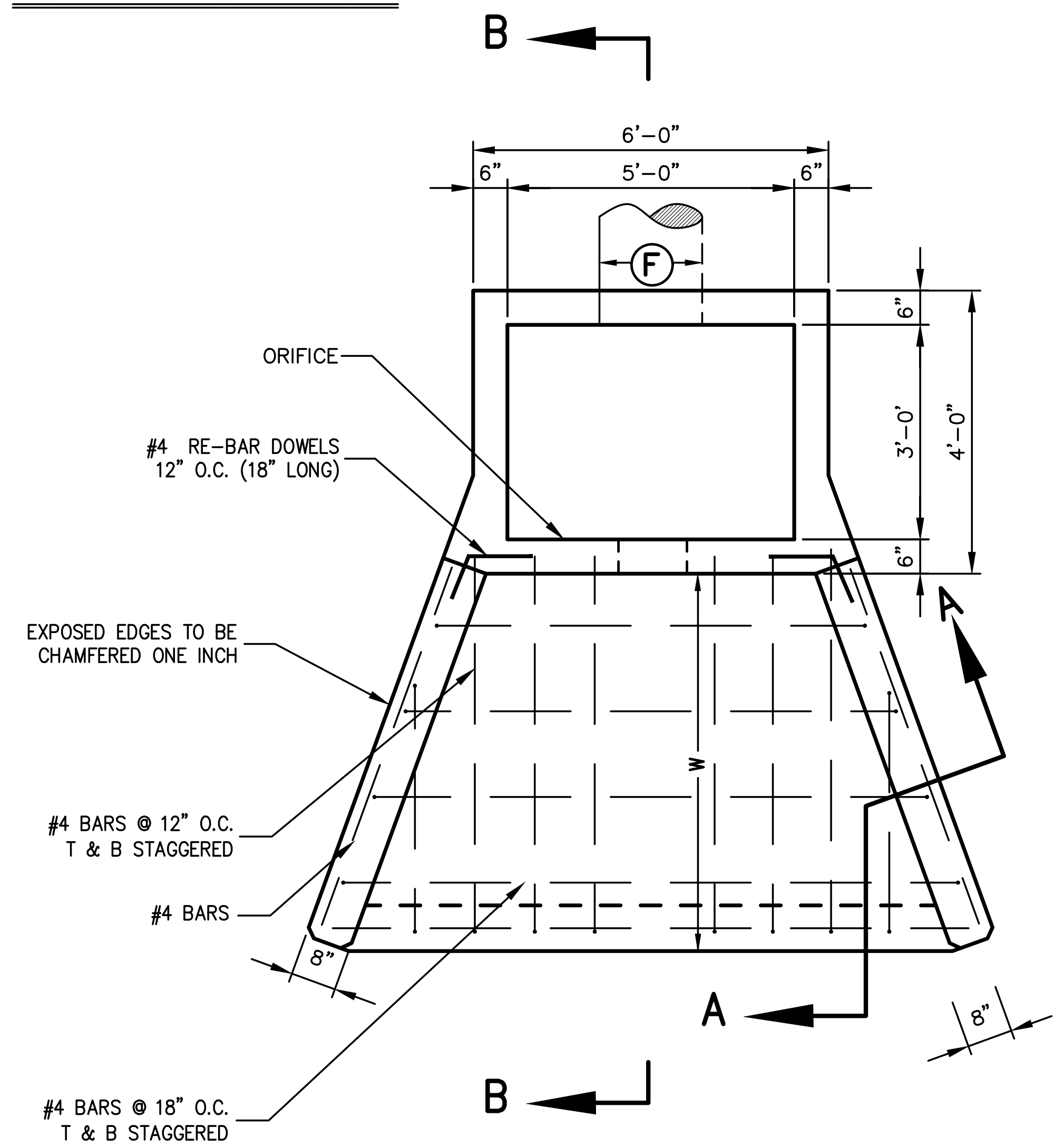
OCS	OUTLET CONTROL STRUCTURE
ELEV.	ELEVATION
IF	INFLOW
OF	OUTFLOW
NA	NOT APPLICABLE
O.C.	ON CENTER
T&B	TOP AND BOTTOM
EW	EACH WAY

STRUCTURE CHART

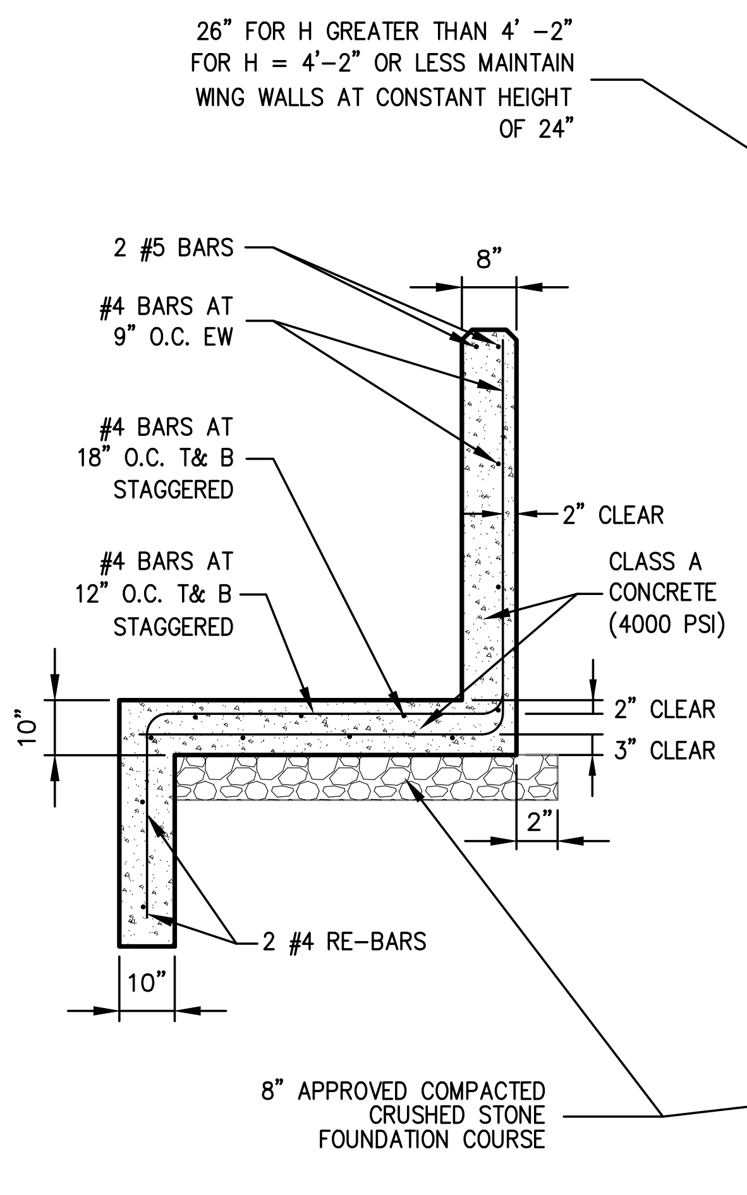
BASIN No.	STRUCTURE No.	ELEV GRATE (B)	PIPE/ORIFICE SIZE AND INVERT ELEVATION		WEIR				H	W
			ORIFICE (C)	PIPE (F)	TYPE	BOTTOM ELEV. (D)	TOP ELEV. (E)	LENGTH (L)		
1	OCS-A-2	399.50	12" @ 394.00	15" @ 393.50	RECTANGULAR	399.05	399.50	5'	5.5'	3'

NOTES:

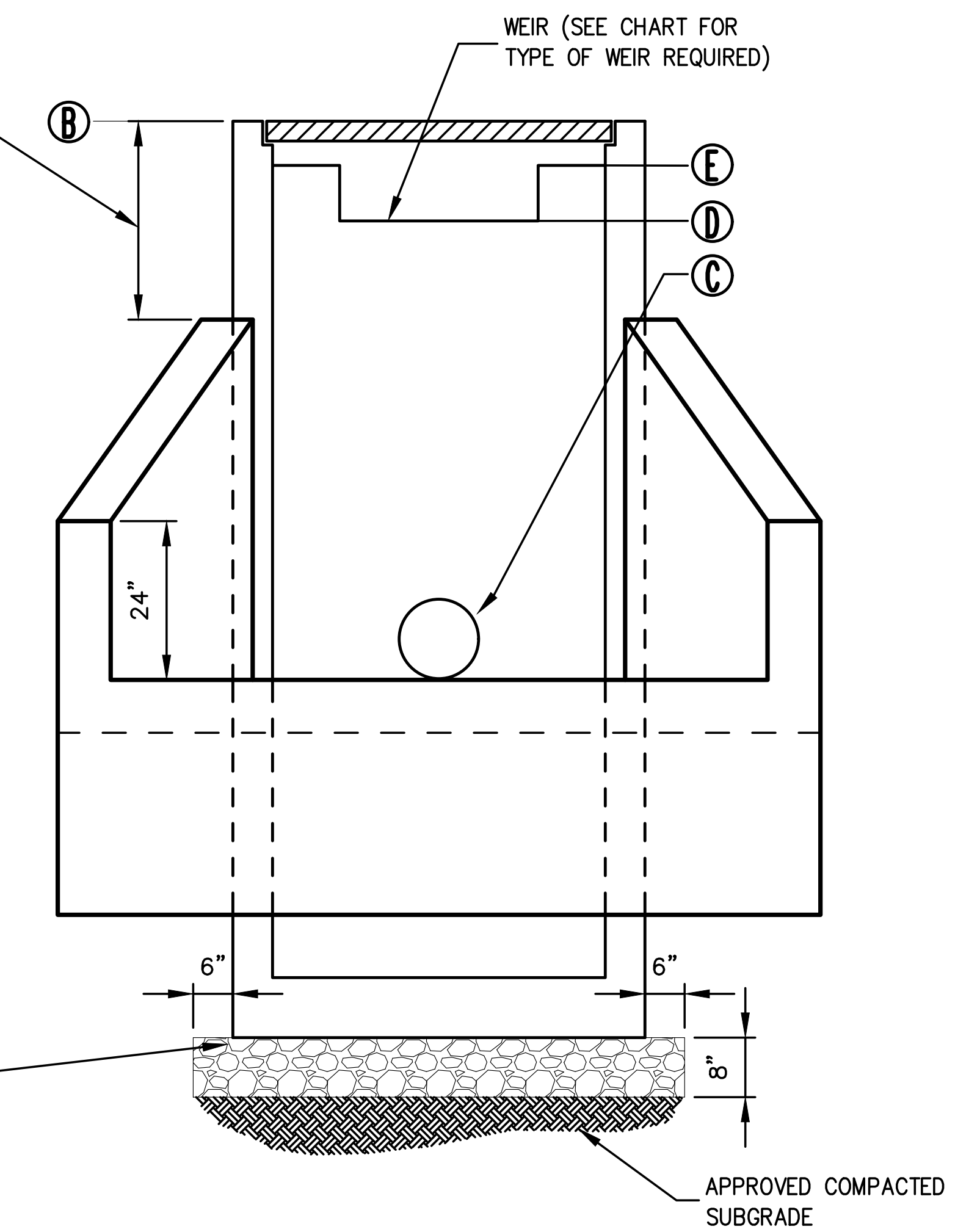
1. PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD


B
6'-0"
6"
5'-0"
6"
F
ORIFICE
#4 RE-BAR DOWELS 12" O.C. (18" LONG)
6"
3'-0'
4'-0"
6"
EXPOSED EDGES TO BE CHAMFERED ONE INCH
A
W
#4 BARS @ 12" O.C. T & B STAGGERED
#4 BARS
8"
A
8"
#4 BARS @ 18" O.C. T & B STAGGERED
B

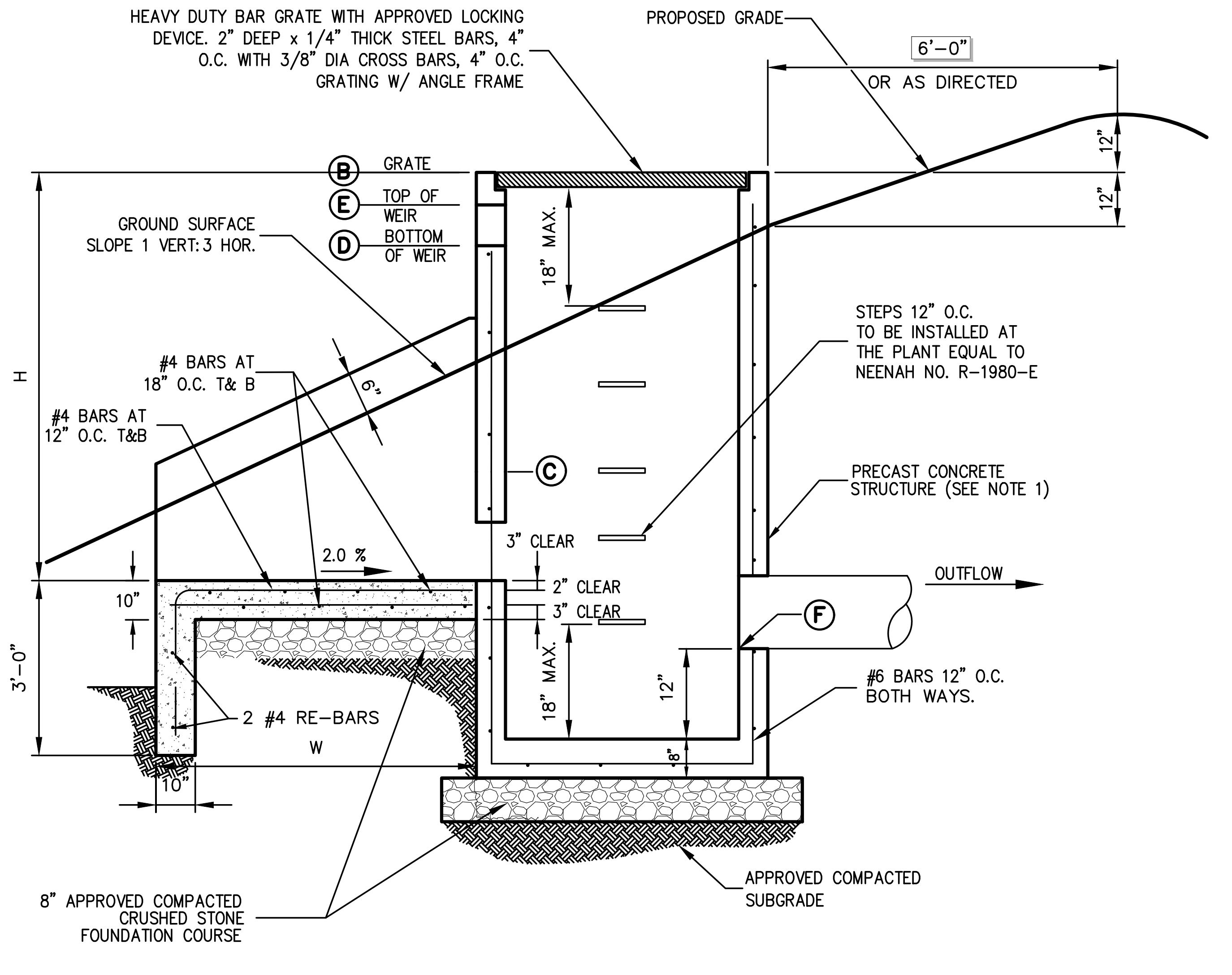
PLAN VIEW


26" FOR H GREATER THAN 4' -2" FOR H = 4'-2" OR LESS MAINTAIN WING WALLS AT CONSTANT HEIGHT OF 24"
2 #5 BARS
8"
#4 BARS AT 9" O.C. EW
#4 BARS AT 18" O.C. T& B STAGGERED
2" CLEAR
#4 BARS AT 12" O.C. T& B STAGGERED
CLASS A CONCRETE (4000 PSI)
10"
2" CLEAR
3" CLEAR
2"
2 #4 RE-BARS
10"
8" APPROVED COMPACTED CRUSHED STONE FOUNDATION COURSE

SECTION A-A


WEIR (SEE CHART FOR TYPE OF WEIR REQUIRED)
B
E
D
C
24"
6"
6"
8"
APPROVED COMPACTED SUBGRADE

FRONT ELEVATION

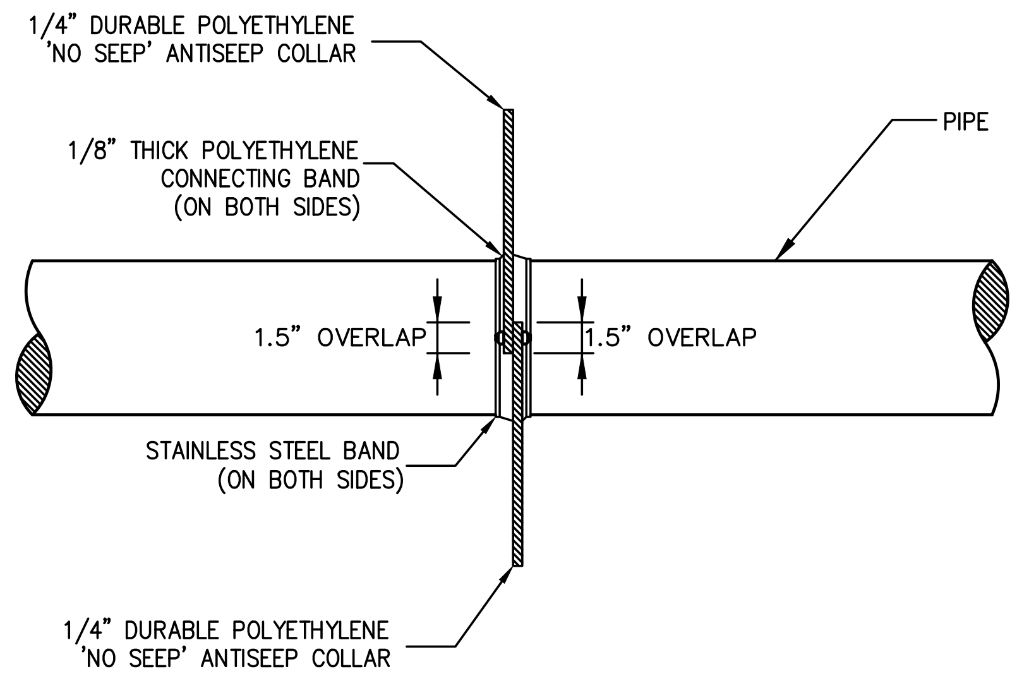

HEAVY DUTY BAR GRATE WITH APPROVED LOCKING DEVICE. 2" DEEP x 1/4" THICK STEEL BARS, 4" O.C. WITH 3/8" DIA CROSS BARS, 4" O.C. GRATING W/ ANGLE FRAME
PROPOSED GRADE
6'-0"
OR AS DIRECTED
12"
12"
B GRATE
E TOP OF WEIR
D BOTTOM OF WEIR
GROUND SURFACE SLOPE 1 VERT:3 HOR.
18" MAX.
H
STEPS 12" O.C. TO BE INSTALLED AT THE PLANT EQUAL TO NEENAH NO. R-1980-E
#4 BARS AT 18" O.C. T& B
6"
#4 BARS AT 12" O.C. T&B
C
PRECAST CONCRETE STRUCTURE (SEE NOTE 1)
3" CLEAR
2.0 %
OUTFLOW
10"
2" CLEAR
3" CLEAR
F
3'-0"
2 #4 RE-BARS
W
18" MAX.
12"
#6 BARS 12" O.C. BOTH WAYS.
8"
10"
8" APPROVED COMPACTED CRUSHED STONE FOUNDATION COURSE
APPROVED COMPACTED SUBGRADE

SECTION B-B

OUTLET CONTROL STRUCTURE

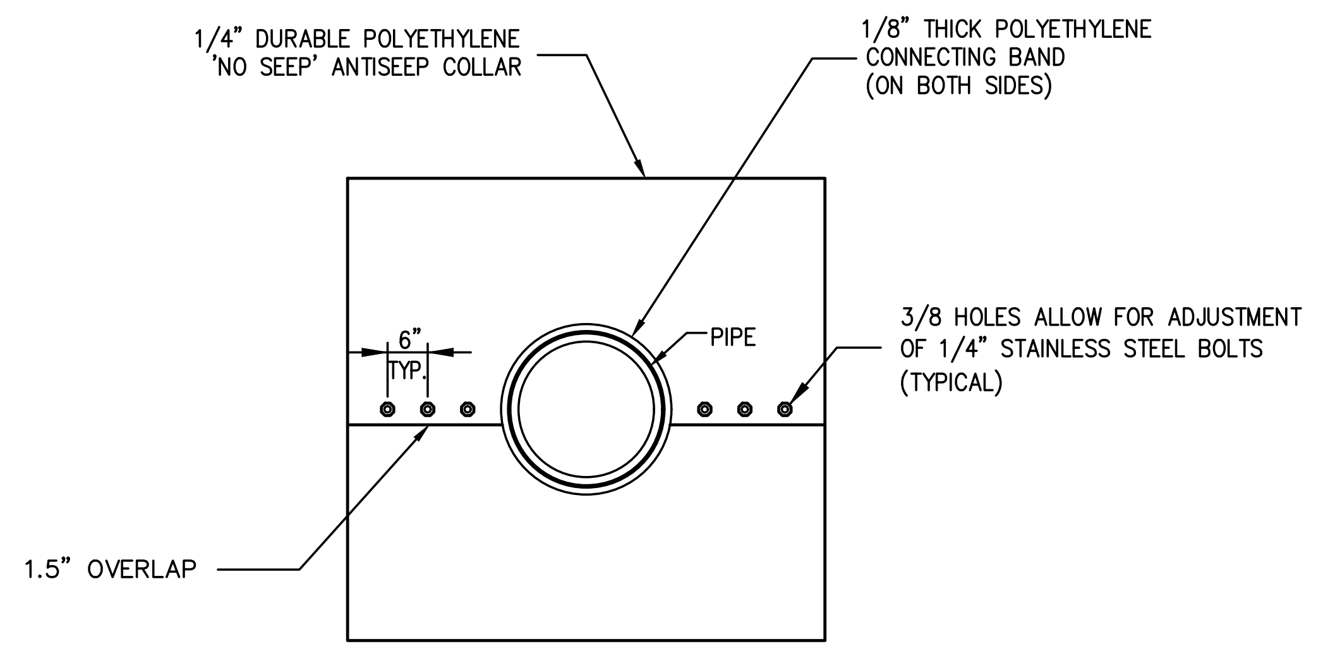
(RECTANGULAR)

32


1/4" DURABLE POLYETHYLENE 'NO SEEP' ANTISEEP COLLAR
1/8" THICK POLYETHYLENE CONNECTING BAND (ON BOTH SIDES)
PIPE
1.5" OVERLAP
1.5" OVERLAP
STAINLESS STEEL BAND (ON BOTH SIDES)
1/4" DURABLE POLYETHYLENE 'NO SEEP' ANTISEEP COLLAR

2 COLLARS	3 COLLARS	4 COLLARS
4.5' X 4.5'	3.5' X 3.5'	3.0' X 3.0'

PLAN


1/4" DURABLE POLYETHYLENE 'NO SEEP' ANTISEEP COLLAR
1/8" THICK POLYETHYLENE CONNECTING BAND (ON BOTH SIDES)
6" TYP.
PIPE
3/8 HOLES ALLOW FOR ADJUSTMENT OF 1/4" STAINLESS STEEL BOLTS (TYPICAL)
1.5" OVERLAP

CROSS SECTION

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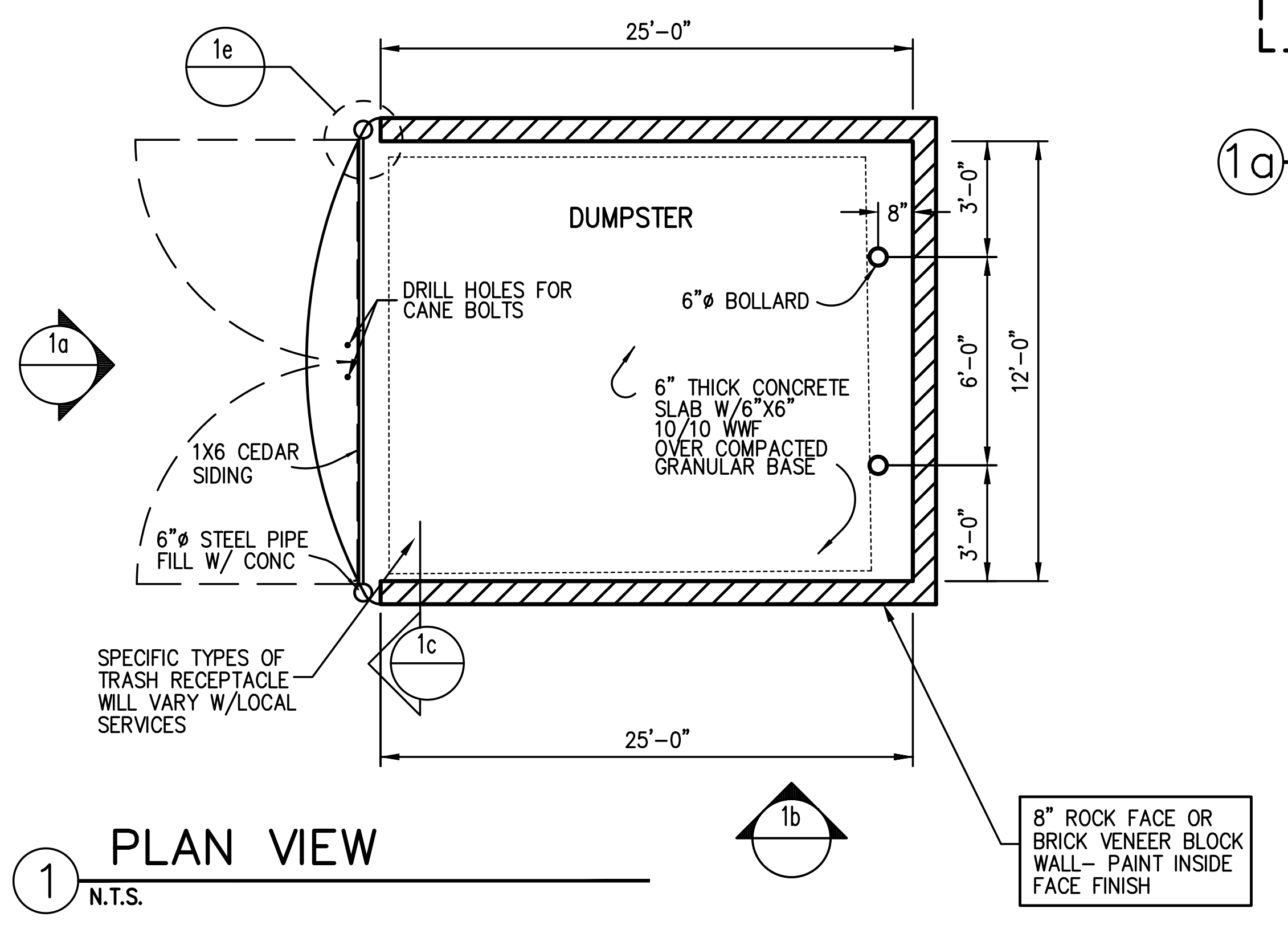
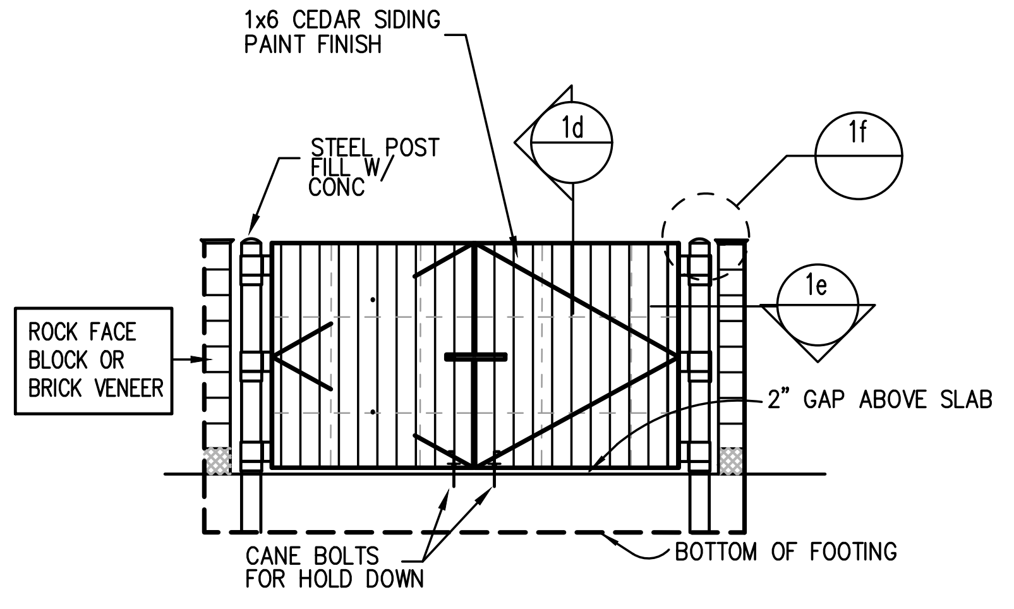
ANTISEEP COLLAR

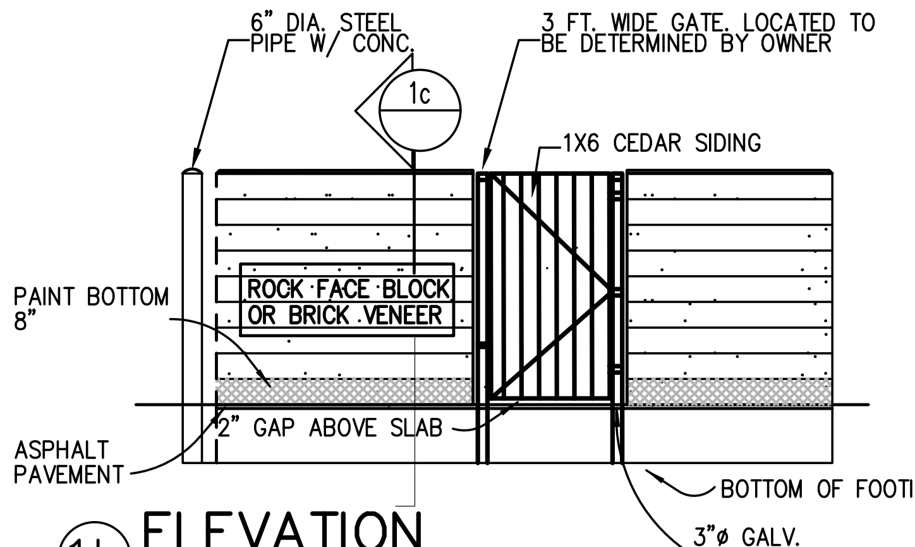
33


1e
25'-0"
DUMPSTER
8"
3'-0"
6"ø BOLLARD
DRILL HOLES FOR CANE BOLTS
1a
6" THICK CONCRETE SLAB W/6"X6" 10/10 WWF OVER COMPACTED GRANULAR BASE
6'-0"
12'-0"
1X6 CEDAR SIDING
6"ø STEEL PIPE FILL W/ CONC
3'-0"
1c
SPECIFIC TYPES OF TRASH RECEPTACLE WILL VARY W/LOCAL SERVICES
25'-0"
1b
8" ROCK FACE OR BRICK VENEER BLOCK WALL- PAINT INSIDE FACE FINISH

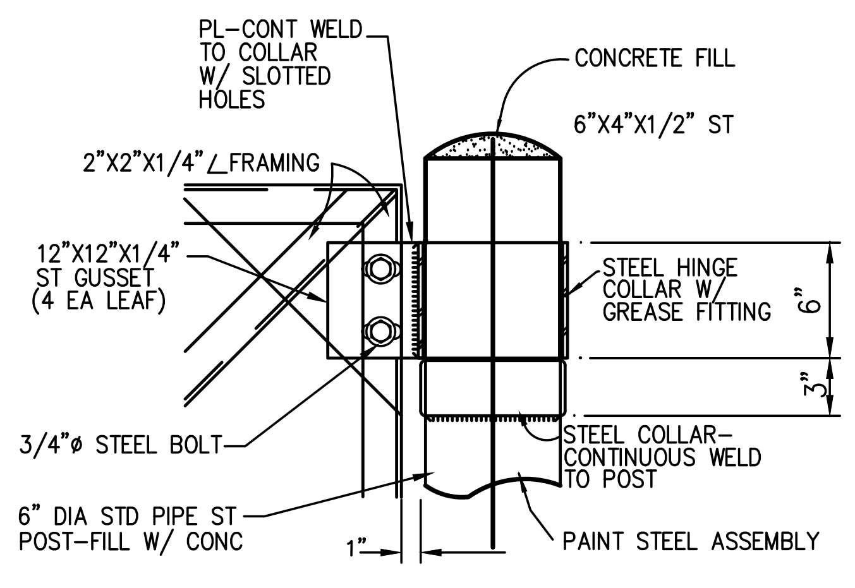
1 PLAN VIEW
N.T.S.


1x6 CEDAR SIDING PAINT FINISH
STEEL POST FILL W/ CONC
1d
1f
1e
ROCK FACE BLOCK OR BRICK VENEER
2" GAP ABOVE SLAB
CANE BOLTS FOR HOLD DOWN
BOTTOM OF FOOTING

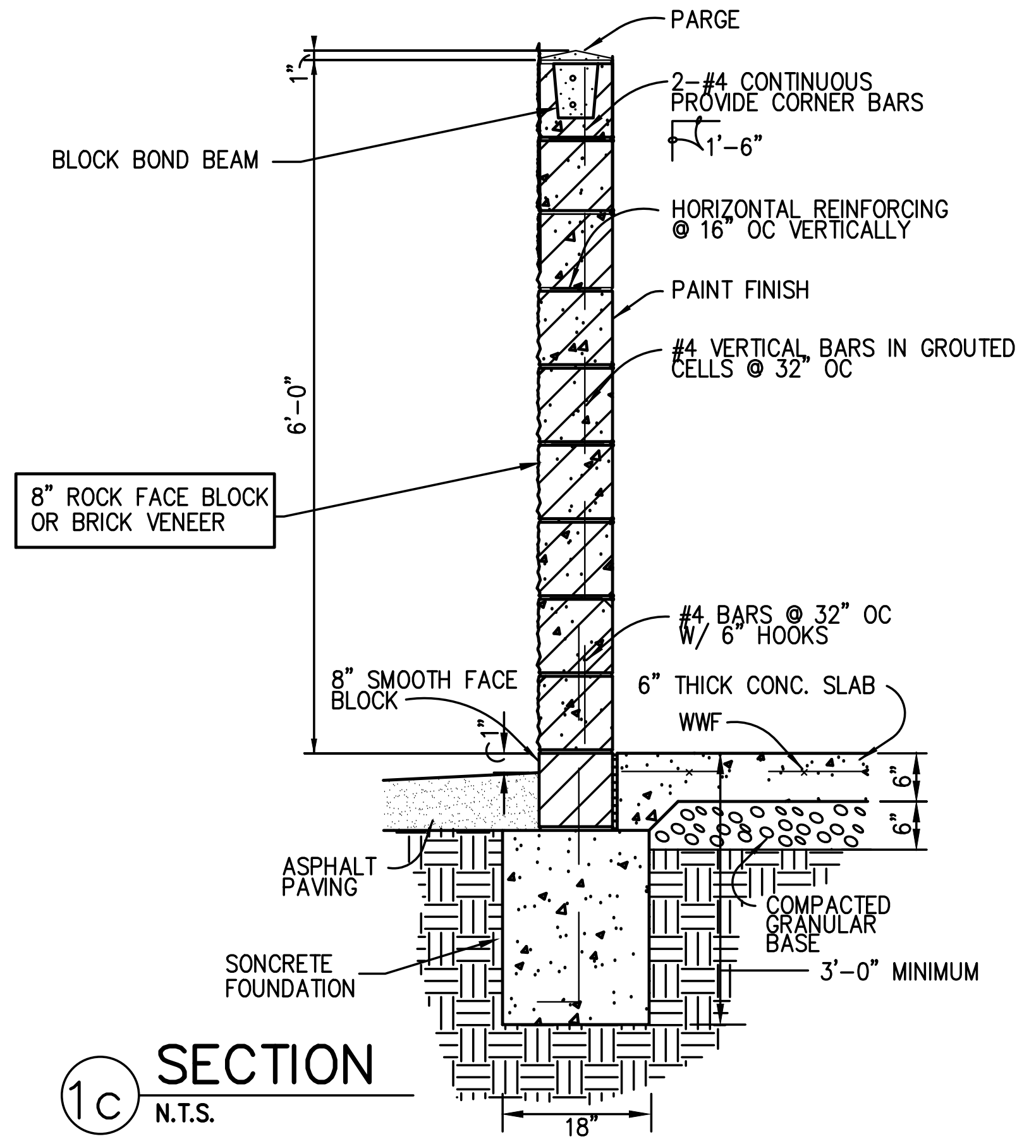
1a ELEVATION
N.T.S.


6" DIA. STEEL PIPE W/ CONC.
3 FT. WIDE GATE. LOCATED TO BE DETERMINED BY OWNER
1c
1X6 CEDAR SIDING
PAINT BOTTOM 8"
ROCK FACE BLOCK OR BRICK VENEER
ASPHALT PAVEMENT
2" GAP ABOVE SLAB
BOTTOM OF FOOTING
3"ø GALV. STEEL PIPE

1b ELEVATION
N.T.S.


PL-CONT WELD TO COLLAR W/ SLOTTED HOLES
CONCRETE FILL
6"X4"X1/2" ST
2"X2"X1/4" ∠ FRAMING
12"X12"X1/4" ST GUSSET (4 EA LEAF)
STEEL HINGE COLLAR W/ GREASE FITTING
6"
3"
3/4"ø STEEL BOLT
STEEL COLLAR- CONTINUOUS WELD TO POST
6" DIA STD PIPE ST POST-FILL W/ CONC
1"
PAINT STEEL ASSEMBLY

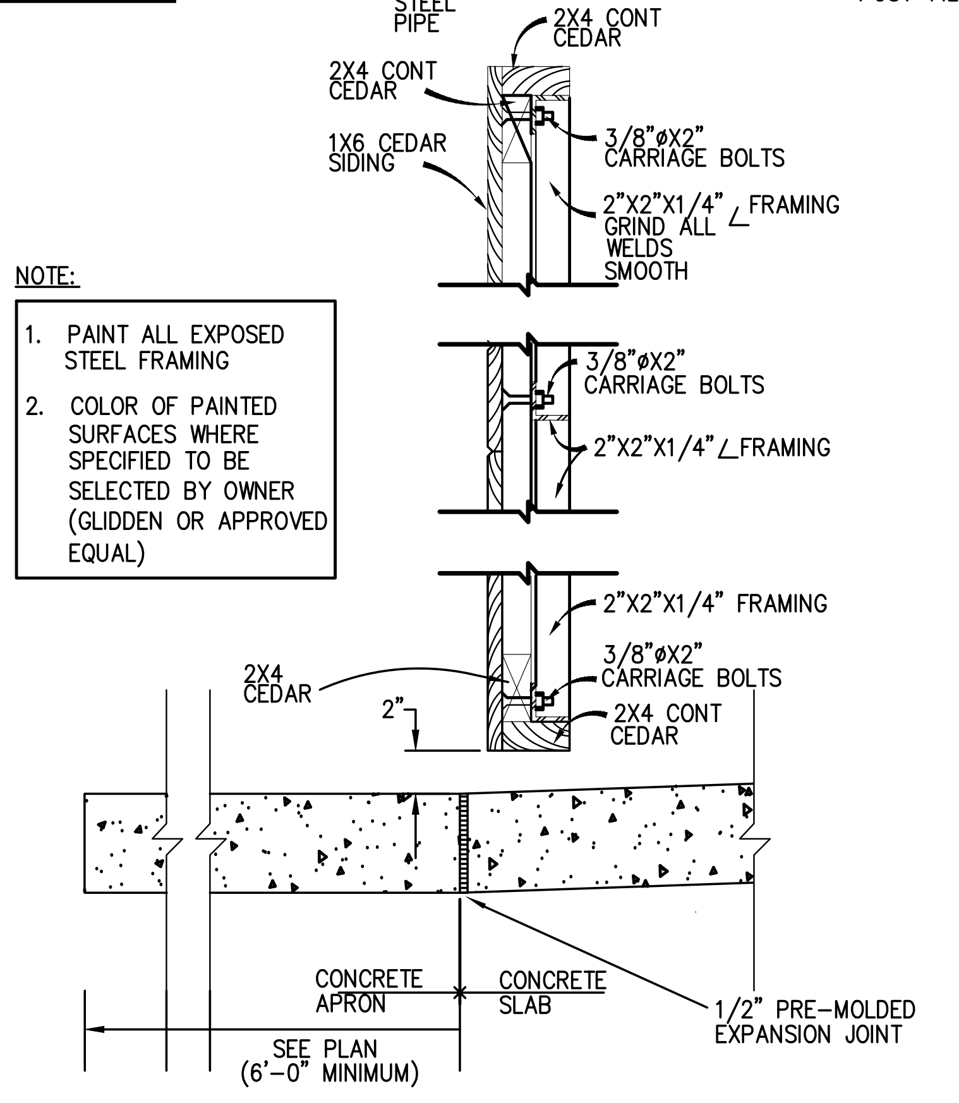
1f DETAIL
N.T.S.


PARGE
1"
2-#4 CONTINUOUS PROVIDE CORNER BARS
1'-6"
BLOCK BOND BEAM
HORIZONTAL REINFORCING @ 16" OC VERTICALLY
PAINT FINISH
#4 VERTICAL BARS IN GROUTED CELLS @ 32" OC
6'-0"
8" ROCK FACE BLOCK OR BRICK VENEER
#4 BARS @ 32" OC W/ 6" HOOKS
8" SMOOTH FACE BLOCK
6" THICK CONC. SLAB
WWF
1"
6"
6"
ASPHALT PAVING
COMPACTED GRANULAR BASE
SONCRETE FOUNDATION
3'-0" MINIMUM
18"

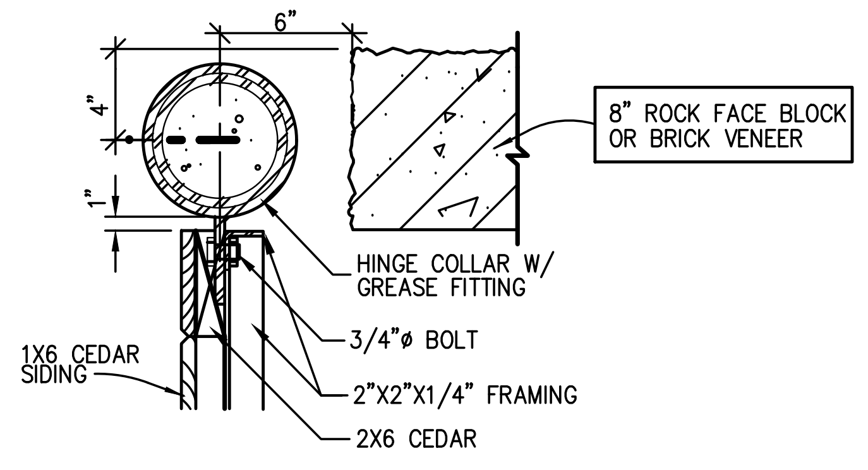
1c SECTION
N.T.S.

NOTE:

1. PAINT ALL EXPOSED STEEL FRAMING
2. COLOR OF PAINTED SURFACES WHERE SPECIFIED TO BE SELECTED BY OWNER (GLIDDEN OR APPROVED EQUAL)


2X4 CONT CEDAR
2X4 CONT CEDAR
1X6 CEDAR SIDING
3/8"øX2" CARRIAGE BOLTS
2"X2"X1/4" ∠ FRAMING GRIND ALL WELDS SMOOTH
3/8"øX2" CARRIAGE BOLTS
2"X2"X1/4" ∠ FRAMING
2"X2"X1/4" FRAMING
2X4 CEDAR
3/8"øX2" CARRIAGE BOLTS
2X4 CONT CEDAR
2"
CONCRETE APRON
CONCRETE SLAB
1/2" PRE-MOLDED EXPANSION JOINT
SEE PLAN (6'-0" MINIMUM)

1d SECTION
N.T.S.


6"
4"
1"
8" ROCK FACE BLOCK OR BRICK VENEER
HINGE COLLAR W/ GREASE FITTING
3/4"ø BOLT
1X6 CEDAR SIDING
2"X2"X1/4" FRAMING
2X6 CEDAR

1e DETAIL
N.T.S.

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

TRASH ENCLOSURE WITH CONCRETE PAD

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MANHATTAN BEER DISTRIBUTORS
20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	08.21.20
2	REISSUED PER PB COMMENTS	09.17.20
3	REISSUED PER PB COMMENTS	10.20.20
4	FOR PLANNING BOARD APPROVAL	04.09.21
5	REISSUED PER ENGINEER COMMENTS	05.10.21
6	ISSUED FOR DOB SUBMISSION	09.10.21
7	ISSUED FOR BID	10.15.21

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ISSUE :	

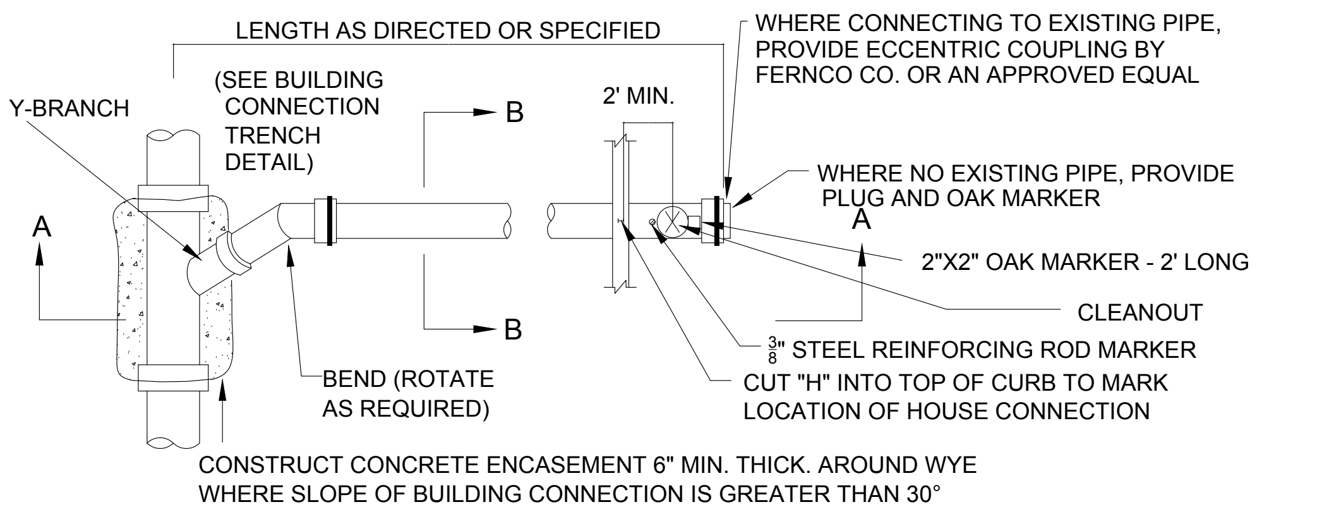
DRAWING TITLE :

CONSTRUCTION DETAILS

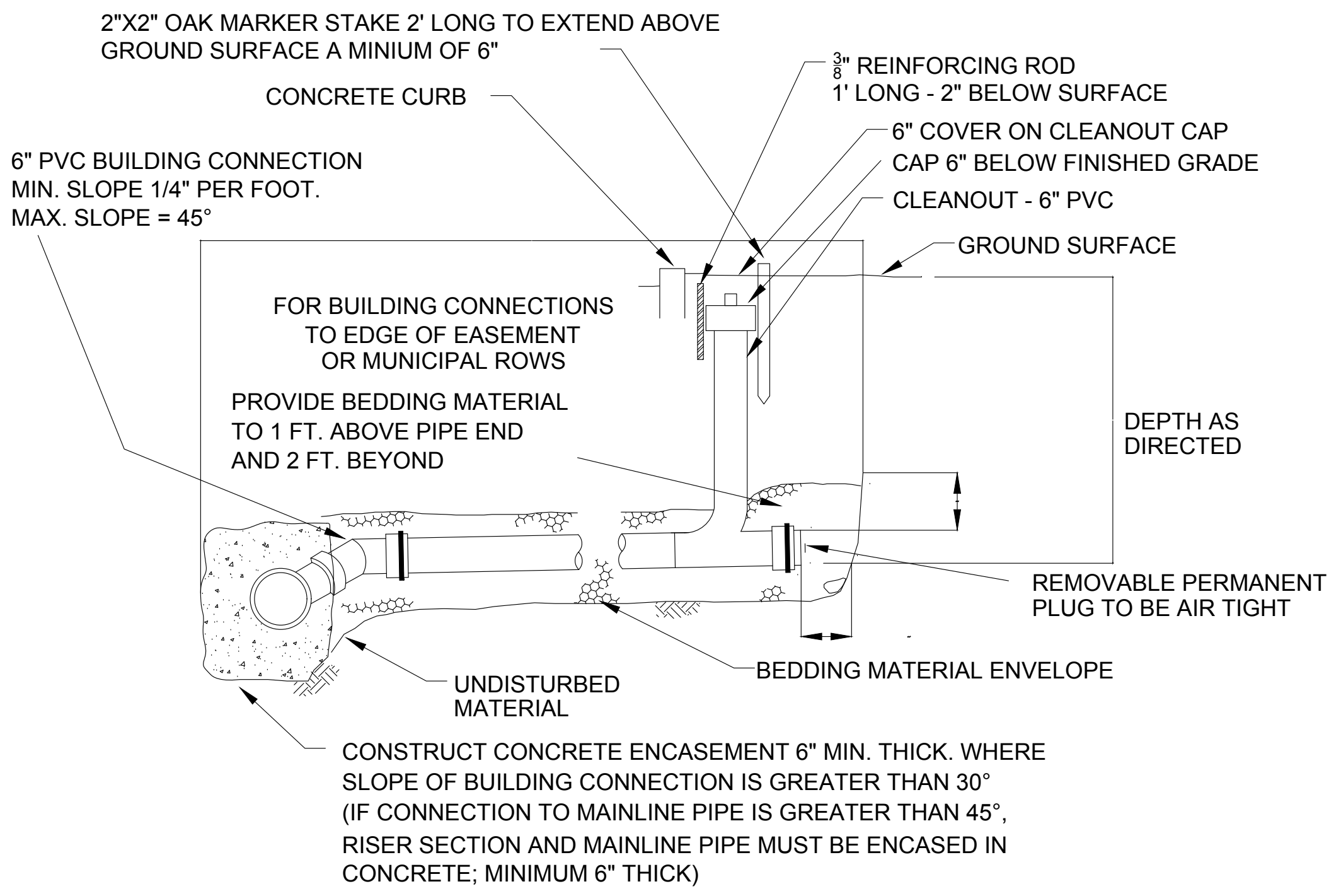
DWG NUMBER :

C-905

JMC PROJECT: 19005-1
SCR: NA
DWG FILE: 19005-DETAILS-CD


LENGTH AS DIRECTED OR SPECIFIED
WHERE CONNECTING TO EXISTING PIPE, PROVIDE ECCENTRIC COUPLING BY FERNCO CO. OR AN APPROVED EQUAL
Y-BRANCH
(SEE BUILDING CONNECTION TRENCH DETAIL)
2' MIN.
B
B
A
A
WHERE NO EXISTING PIPE, PROVIDE PLUG AND OAK MARKER
2"X2" OAK MARKER - 2' LONG
CLEANOUT
3/8" STEEL REINFORCING ROD MARKER
BEND (ROTATE AS REQUIRED)
CUT "H" INTO TOP OF CURB TO MARK LOCATION OF HOUSE CONNECTION
CONSTRUCT CONCRETE ENCASEMENT 6" MIN. THICK. AROUND WYE WHERE SLOPE OF BUILDING CONNECTION IS GREATER THAN 30°

BUILDING CONNECTION PLAN


2"X2" OAK MARKER STAKE 2' LONG TO EXTEND ABOVE GROUND SURFACE A MINIUM OF 6"
3/8" REINFORCING ROD 1' LONG - 2" BELOW SURFACE
CONCRETE CURB
6" COVER ON CLEANOUT CAP
CAP 6" BELOW FINISHED GRADE
6" PVC BUILDING CONNECTION MIN. SLOPE 1/4" PER FOOT. MAX. SLOPE = 45°
CLEANOUT - 6" PVC
GROUND SURFACE
FOR BUILDING CONNECTIONS TO EDGE OF EASEMENT OR MUNICIPAL ROWS
PROVIDE BEDDING MATERIAL TO 1 FT. ABOVE PIPE END AND 2 FT. BEYOND
DEPTH AS DIRECTED
REMOVABLE PERMANENT PLUG TO BE AIR TIGHT
UNDISTURBED MATERIAL
BEDDING MATERIAL ENVELOPE
CONSTRUCT CONCRETE ENCASEMENT 6" MIN. THICK. WHERE SLOPE OF BUILDING CONNECTION IS GREATER THAN 30° (IF CONNECTION TO MAINLINE PIPE IS GREATER THAN 45°, RISER SECTION AND MAINLINE PIPE MUST BE ENCASED IN CONCRETE; MINIMUM 6" THICK)

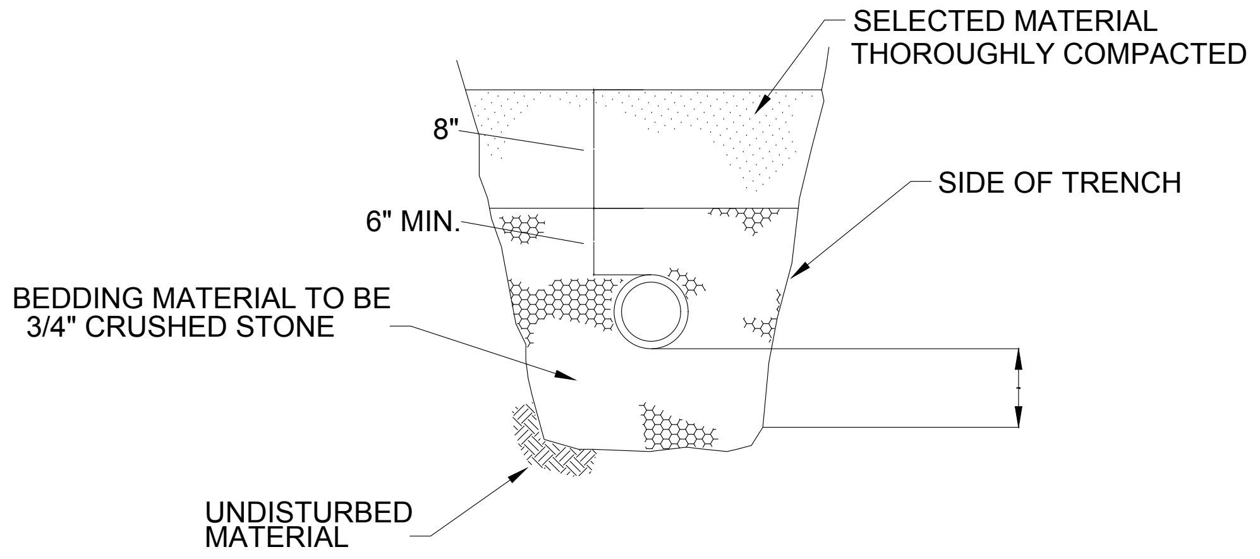
SECTION A-A

BUILDING CONNECTION ELEVATION

BUILDING CONNECTION DETAIL

N.T.S.

BUILDING CONNECTION DETAIL 35

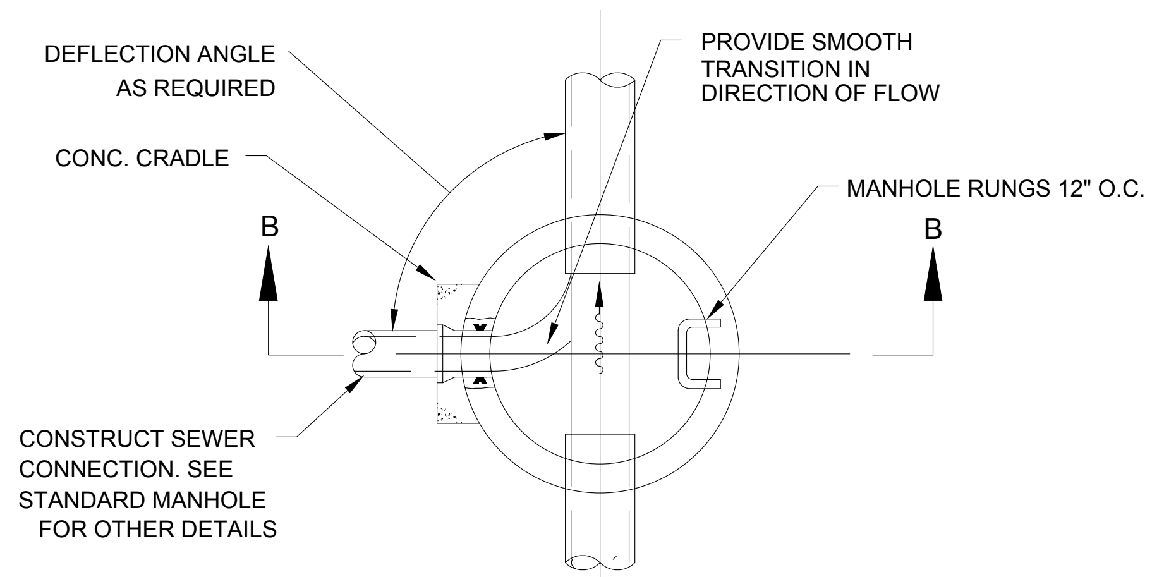

SELECTED MATERIAL THOROUGHLY COMPACTED
8"
6" MIN.
SIDE OF TRENCH
BEDDING MATERIAL TO BE 3/4" CRUSHED STONE
UNDISTURBED MATERIAL

SECTION B-B

BUILDING CONNECTION TRENCH DETAIL

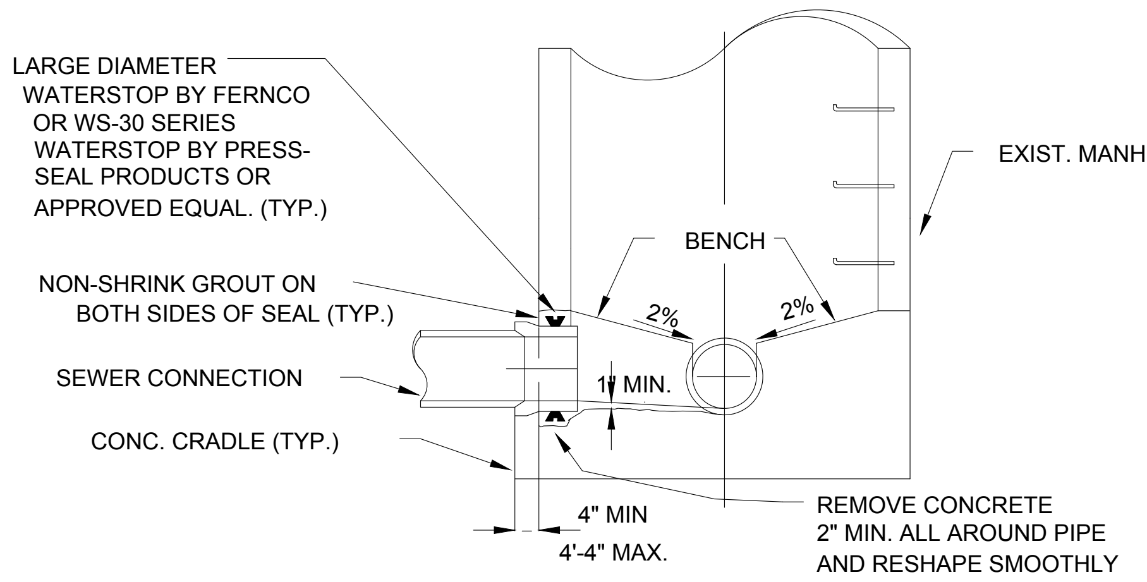
N.T.S.

BUILDING CONNECTION TRENCH DETAIL 36


DEFLECTION ANGLE AS REQUIRED
PROVIDE SMOOTH TRANSITION IN DIRECTION OF FLOW
CONC. CRADLE
MANHOLE RUNGS 12" O.C.
B
B
CONSTRUCT SEWER CONNECTION. SEE STANDARD MANHOLE FOR OTHER DETAILS

SECTIONAL PLAN

1. CLEAN AND ROUGHEN ALL SURFACES AGAINST WHICH NEW MORTAR IS TO BE PLACED.
2. EXIST CONC TO BE REMOVED TO MEET NEW CHANNEL. CONC TO BE REMOVED TO A LINE AT LEAST 1-INCH BEYOND FINISHED CHANNEL LINE AND FINISHED OFF TO NEW LINE WITH CEMENT MORTAR.
3. WHERE PIPE IS ABANDONED, PLUG PIPE WITH 12-INCH MIN CONC. AND BUILDUP CHANNEL TO ELEV OF EXISTING BENCH TO DIVERT FLOW OF NEW MH CHANNEL.
4. THE PIPE PENETRATION MUST NOT BE THROUGH THE CONE SECTION OR A MANHOLE JOINT NOR SHALL IT INTERFERE WITH THE MANHOLE RUNGS.

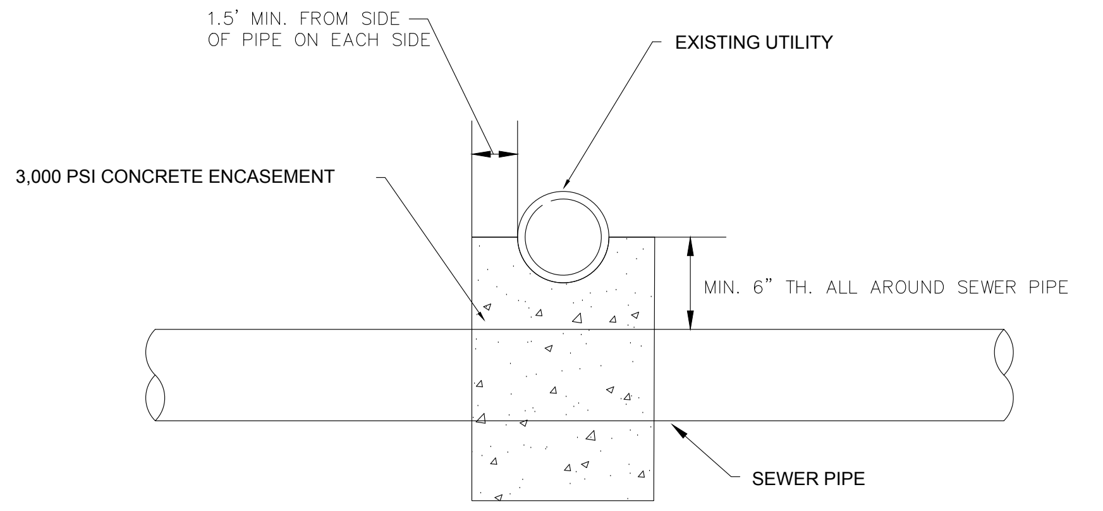

LARGE DIAMETER WATERSTOP BY FERNCO OR WS-30 SERIES WATERSTOP BY PRESS-SEAL PRODUCTS OR APPROVED EQUAL. (TYP.)
EXIST. MANHOLE
BENCH
NON-SHRINK GROUT ON BOTH SIDES OF SEAL (TYP.)
2%
2%
SEWER CONNECTION
1" MIN.
CONC. CRADLE (TYP.)
4" MIN
4'-4" MAX.
REMOVE CONCRETE 2" MIN. ALL AROUND PIPE AND RESHAPE SMOOTHLY WITH CEMENT MORTAR

SECTION B-B

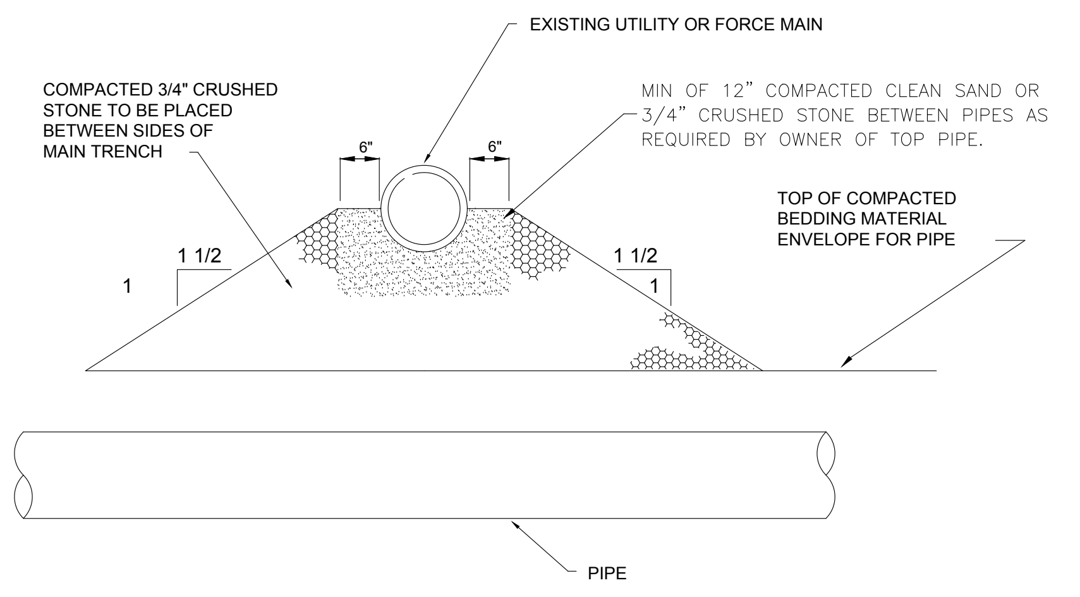
SEWER CONNECTION TO EXISTING MANHOLE - SECTION

N.T.S.

SEWER CONNECTION TO EXISTING MANHOLE – SECTION 37


1.5' MIN. FROM SIDE OF PIPE ON EACH SIDE
EXISTING UTILITY
3,000 PSI CONCRETE ENCASEMENT
MIN. 6" TH. ALL AROUND SEWER PIPE
SEWER PIPE

(WHEN CLEARANCE BETWEEN PIPES IS LESS THAN 6")


EXISTING UTILITY OR FORCE MAIN
COMPACTED 3/4" CRUSHED STONE TO BE PLACED BETWEEN SIDES OF MAIN TRENCH
MIN OF 12" COMPACTED CLEAN SAND OR 3/4" CRUSHED STONE BETWEEN PIPES AS REQUIRED BY OWNER OF TOP PIPE.
6"
6"
TOP OF COMPACTED BEDDING MATERIAL ENVELOPE FOR PIPE
1 1/2
1
1 1/2
1
PIPE

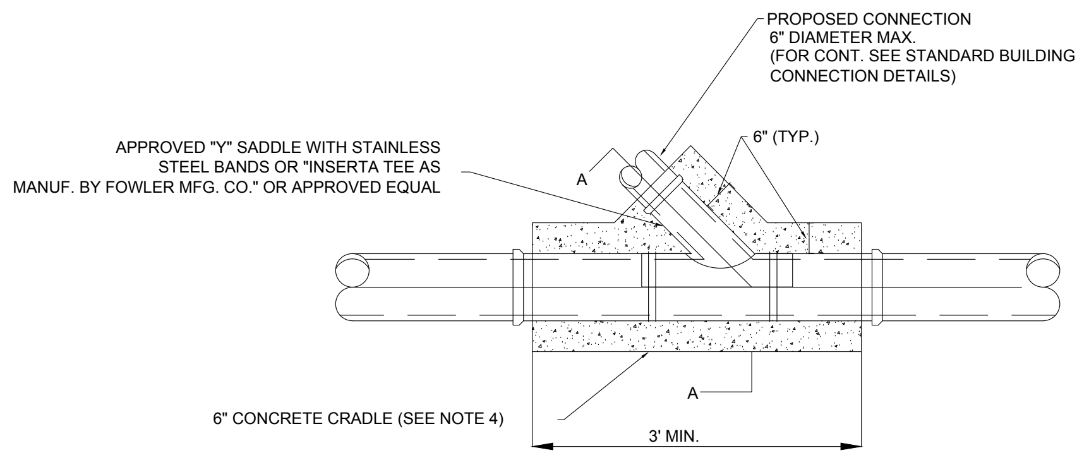
(WHEN CLEARANCE BETWEEN PIPES IS 6" OR MORE)

NOTE:
WHEN THE CLEARANCE BETWEEN A SEWER AND WATER MAIN OF A CROSSING LESS THAN 18", EITHER THE SEWER MUST BE PRESSURE TESTED AT 150 PSI OR THE SEWER OR WATER MAIN MUST BE ENCASED IN A WATERTIGHT CARRIER PIPE 10' ON BOTH SIDES OF THE CROSSING.

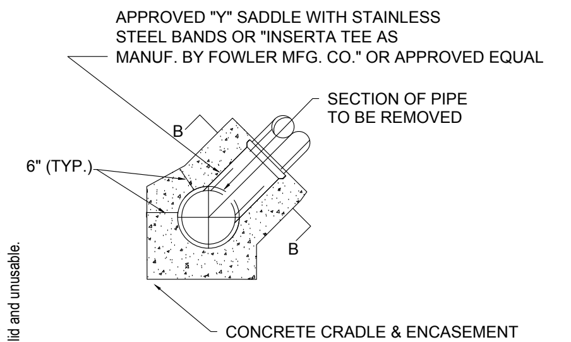
UTILITY CROSSING DETAILS

N.T.S.

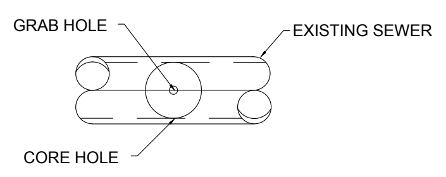
UTILITY CROSSING DETAILS 38


PROPOSED CONNECTION 6" DIAMETER MAX. (FOR CONT. SEE STANDARD BUILDING CONNECTION DETAILS)
APPROVED "Y" SADDLE WITH STAINLESS STEEL BANDS OR "INSERTA TEE AS MANUF. BY FOWLER MFG. CO." OR APPROVED EQUAL
A
6" (TYP.)
A
6" CONCRETE CRADLE (SEE NOTE 4)
3' MIN.

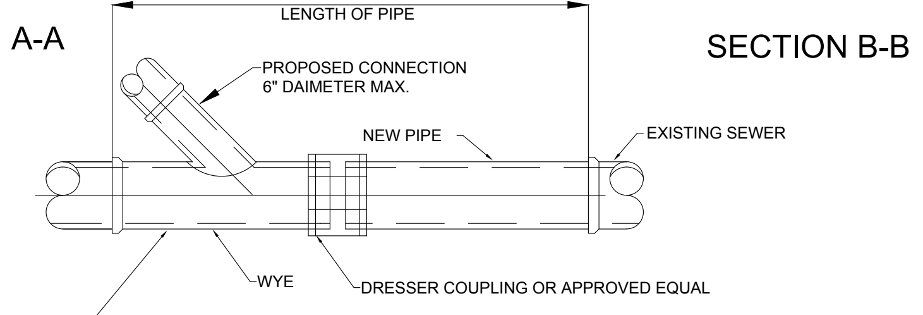
PLAN - ALTERNATIVE "A"


APPROVED "Y" SADDLE WITH STAINLESS STEEL BANDS OR "INSERTA TEE AS MANUF. BY FOWLER MFG. CO." OR APPROVED EQUAL
SECTION OF PIPE TO BE REMOVED
B
6" (TYP.)
B
CONCRETE CRADLE & ENCASEMENT

SECTION A-A


GRAB HOLE
EXISTING SEWER
CORE HOLE

SECTION B-B


REMOVE ONE LENGTH OF PIPE
PROPOSED CONNECTION 6" DAIMETER MAX.
NEW PIPE
EXISTING SEWER
WYE
DRESSER COUPLING OR APPROVED EQUAL

NOTE: CONSTRUCT CONCRETE ENCASEMENT OR 3/4" CRUSHED STONE BEDDING AS REQUIRED BY "BUILDING CONNECTION TRENCH DETAIL" AND "BUILDING CONNECTION DETAIL"

PLAN - ALTERNATIVE "B"

NOTES:
1) PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT DETAILS AND SPECIFICATIONS OF THE SADDLE THAT IS TO BE USED, FOR THE ROCKLAND COUNTY SEWER DISTRICT OR REVIEWING AGENCY TO REVIEW AND APPROVE.
2) ENCASE ENTIRE SADDLE IN CONCRETE.
3) THE NEW SERVICE PIPE SHALL NOT PROTRUDE INTO THE EXISTING INTERCEPTOR PIPE.
4) WHERE SEWER IS 24" DIAM OR LARGER, CONTRACTOR MAY USE "INSERTA TEE" AND ENCASE TEE AND TOP OF PIPE WITH 6" OF QUICKSETTING WATERPROOF CEMENT WITHIN 12" OF THE TEE RATHER THAN CONCRETE ENCASEMENT ALL AROUND PIPE.

BUILDING CONNECTION TO EXISTING SEWER DETAIL

N.T.S.

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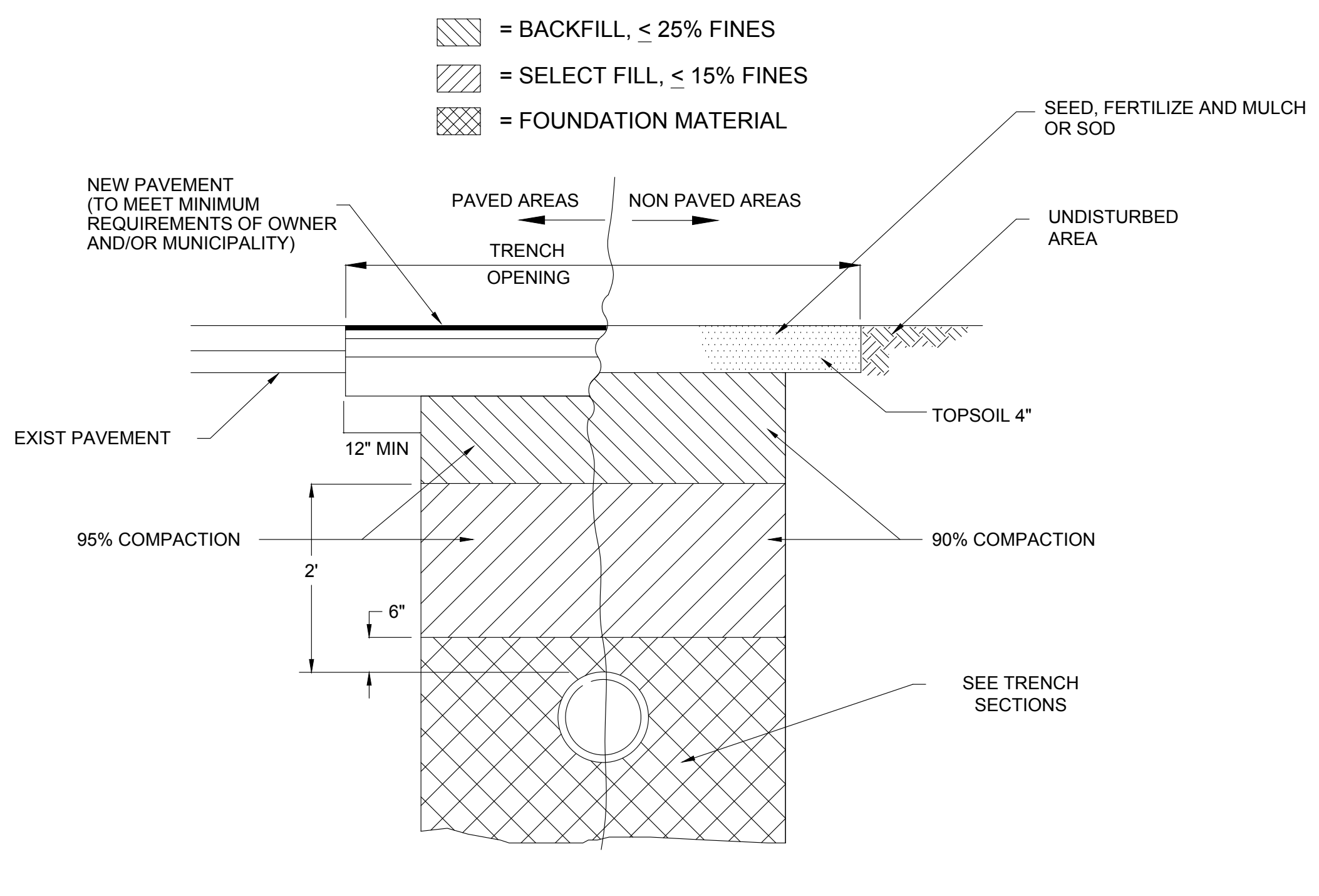
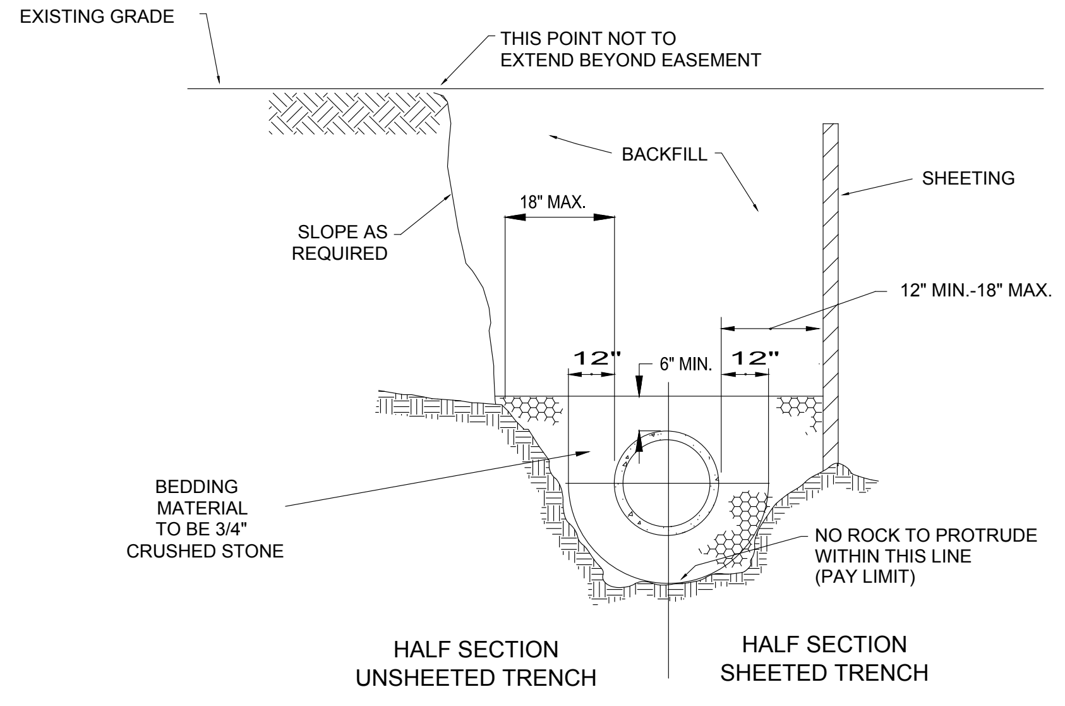
BUILDING CONNECTION TO EXISTING SEWER DETAIL 39


= BACKFILL, ≤ 25% FINES
= SELECT FILL, ≤ 15% FINES
= FOUNDATION MATERIAL
SEED, FERTILIZE AND MULCH OR SOD
NEW PAVEMENT (TO MEET MINIMUM REQUIREMENTS OF OWNER AND/OR MUNICIPALITY)
PAVED AREAS
NON PAVED AREAS
UNDISTURBED AREA
TRENCH OPENING
EXIST PAVEMENT
12" MIN
TOPSOIL 4"
95% COMPACTION
90% COMPACTION
2'
6"
SEE TRENCH SECTIONS

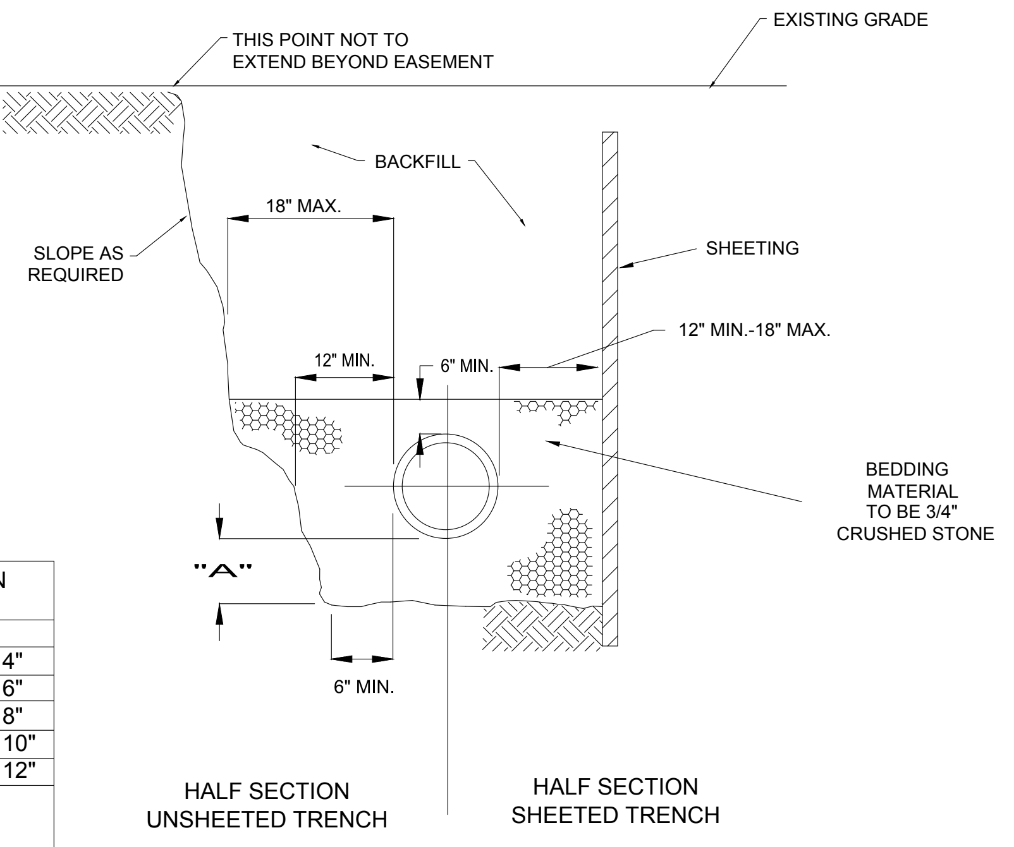
PIPE TRENCH BACKFILL DETAIL

N.T.S.

PIPE TRENCH BACKFILL DETAIL 40


EXISTING GRADE
THIS POINT NOT TO EXTEND BEYOND EASEMENT
BACKFILL
SHEETING
18" MAX.
SLOPE AS REQUIRED
12" MIN.-18" MAX.
12"
6" MIN.
12"
BEDDING MATERIAL TO BE 3/4" CRUSHED STONE
NO ROCK TO PROTRUDE WITHIN THIS LINE (PAY LIMIT)
HALF SECTION UNSHEETED TRENCH
HALF SECTION SHEETED TRENCH

TRENCH IN ROCK


THIS POINT NOT TO EXTEND BEYOND EASEMENT
EXISTING GRADE
BACKFILL
18" MAX.
SLOPE AS REQUIRED
SHEETING
12" MIN.-18" MAX.
12" MIN.
6" MIN.
BEDDING MATERIAL TO BE 3/4" CRUSHED STONE
"A"
6" MIN.
HALF SECTION UNSHEETED TRENCH
HALF SECTION SHEETED TRENCH

MINIMUM FOUNDATION THICKNESS	
PIPE DIAMETER	"A"*
4"-6"	4"
8"-18"	6"
21"-24"	8"
27"-30"	10"
36"-78"	12"

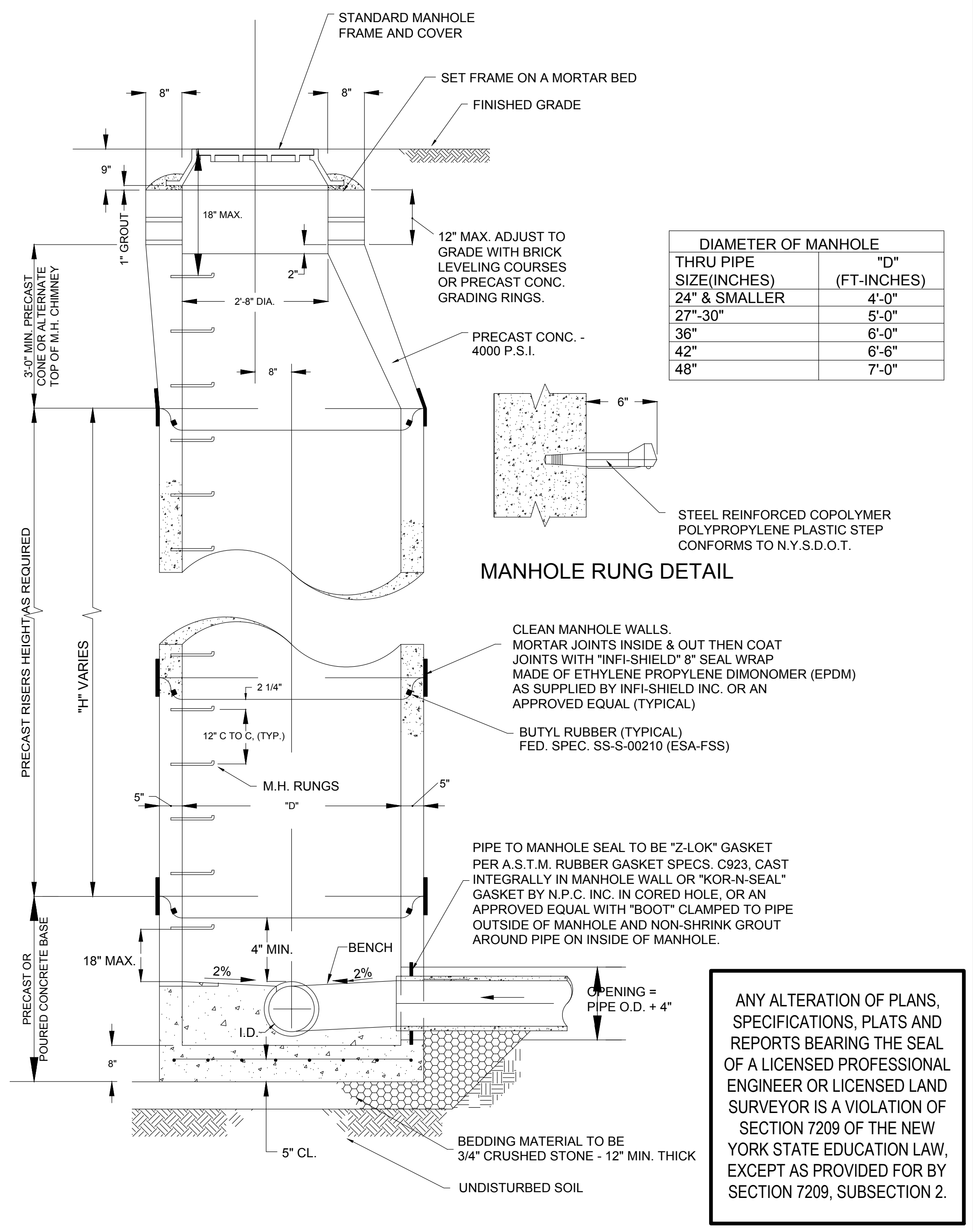
*INCREASE "A" BY 1/2" FOR EVERY FOOT THAT DEPTH TO TOP OF PIPE EXCEEDS 16'

TRENCH IN EARTH

TRENCH SECTIONS

N.T.S.

TRENCH SECTIONS 41


STANDARD MANHOLE FRAME AND COVER
SET FRAME ON A MORTAR BED
8"
8"
FINISHED GRADE
9"
18" MAX.
1" GROUT
12" MAX. ADJUST TO GRADE WITH BRICK LEVELING COURSES OR PRECAST CONC. GRADING RINGS.
2"
2'-8" DIA.
3'-0" MIN. PRECAST CONE OR ALTERNATE TOP OF M.H. CHIMNEY
PRECAST CONC. - 4000 P.S.I.
8"
6"
STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP CONFORMS TO N.Y.S.D.O.T.
MANHOLE RUNG DETAIL
PRECAST RISERS HEIGHT AS REQUIRED
"H" VARIES
CLEAN MANHOLE WALLS. MORTAR JOINTS INSIDE & OUT THEN COAT JOINTS WITH "INFI-SHIELD" 8" SEAL WRAP MADE OF ETHYLENE PROPYLENE DIMONOMER (EPDM) AS SUPPLIED BY INFI-SHIELD INC. OR AN APPROVED EQUAL (TYPICAL)
2 1/4"
12" C TO C, (TYP.)
BUTYL RUBBER (TYPICAL) FED. SPEC. SS-S-00210 (ESA-FSS)
M.H. RUNGS
5"
"D"
5"
PIPE TO MANHOLE SEAL TO BE "Z-LOK" GASKET PER A.S.T.M. RUBBER GASKET SPECS. C923, CAST INTEGRALLY IN MANHOLE WALL OR "KOR-N-SEAL" GASKET BY N.P.C. INC. IN CORED HOLE, OR AN APPROVED EQUAL WITH "BOOT" CLAMPED TO PIPE OUTSIDE OF MANHOLE AND NON-SHRINK GROUT AROUND PIPE ON INSIDE OF MANHOLE.
PRECAST OR POURED CONCRETE BASE
18" MAX.
4" MIN.
BENCH
2%
2%
OPENING = PIPE O.D. + 4"
I.D.
8"
5" CL.
BEDDING MATERIAL TO BE 3/4" CRUSHED STONE - 12" MIN. THICK
UNDISTURBED SOIL

DIAMETER OF MANHOLE	
THRU PIPE SIZE(INCHES)	"D" (FT-INCHES)
24" & SMALLER	4'-0"
27"-30"	5'-0"
36"	6'-0"
42"	6'-6"
48"	7'-0"

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PRECAST STANDARD MANHOLE SECTION

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PRECAST STANDARD SANITARY MANHOLE SECTION 42

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SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	REISSUED PER PB COMMENTS	10.27.20
2	FOR PLANNING BOARD APPROVAL	04.09.21
3	REISSUED PER ENGINEER COMMENTS	05.10.21
4	ISSUED FOR DOB SUBMISSION	09.10.21
5	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	10.20.2020
SCALE :	N.T.S
ISSUE :	

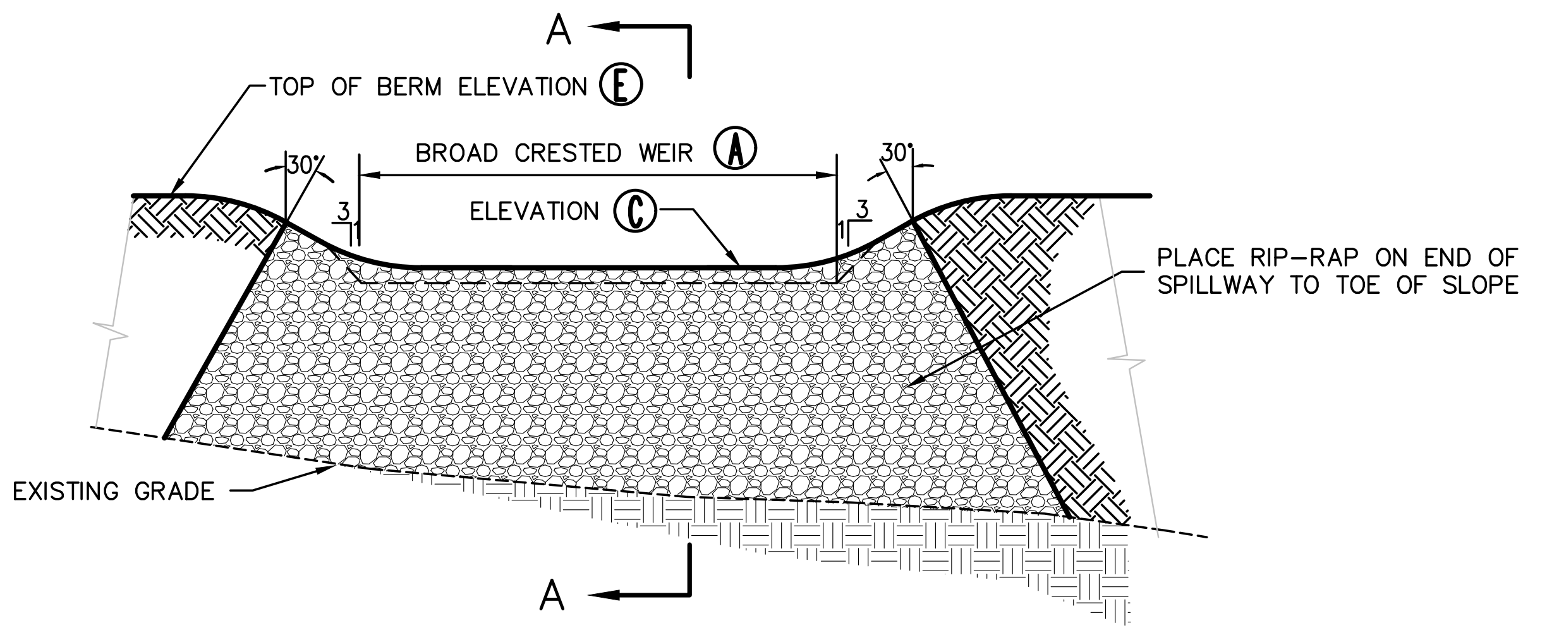
DRAWING TITLE :
CONSTRUCTION DETAILS

DWG NUMBER :
C-906

JMC PROJECT: 19005-1
SCR: NA
DWG FILE: 19005-DETAILS-CD

STRUCTURE CHART

BASIN No.	EMERGENCY SPILLWAY (feet)			TOP EMBANKMENT(feet)	
	LENGTH Ⓐ	BREAD. Ⓑ	ELEV. Ⓒ	EMBAN. Ⓓ	ELEV. Ⓔ
INFLITRATION	36.00	9.50	399.00	8.50	400.00
DETENTION	25.00	9.50	399.50	8.50	400.50


A
TOP OF BERM ELEVATION Ⓔ
BROAD CRESTED WEIR Ⓐ
30°
30°
3
1
ELEVATION Ⓒ
PLACE RIP-RAP ON END OF SPILLWAY TO TOE OF SLOPE
EXISTING GRADE
A

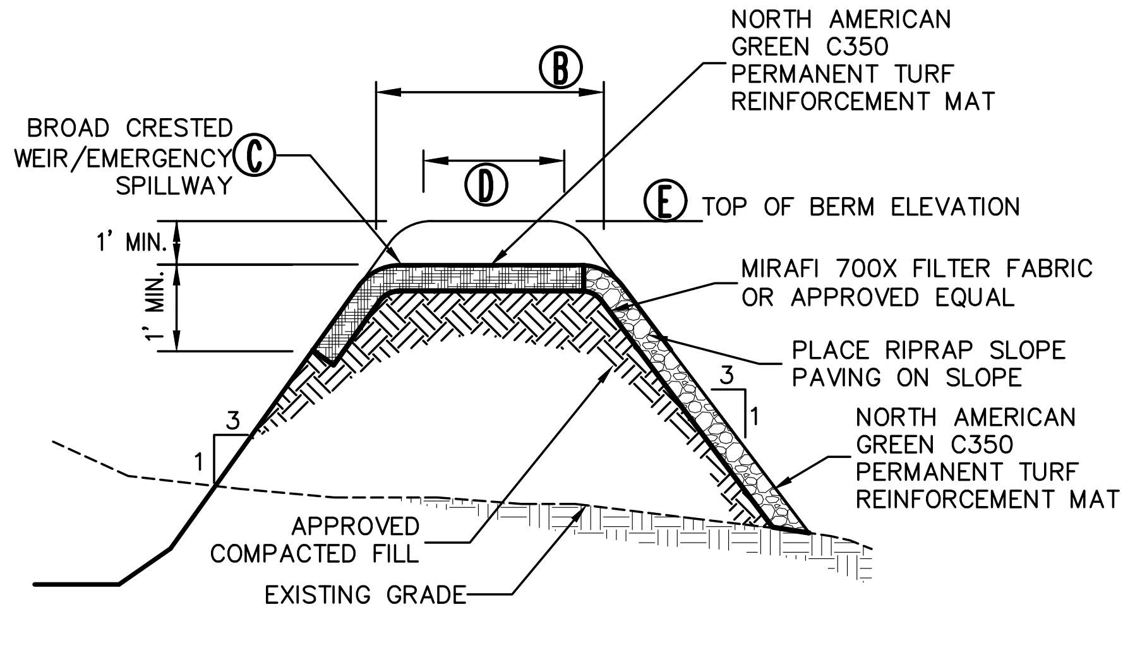
ELEVATION (DOWNSTREAM)

SPECIFICATION FOR BERM CONSTRUCTION

SURFACE OF AREA TO RECEIVE FILL SHOULD BE STRIPPED OF SURFACE TOPSOIL, BRUSH, ETC., PRIOR TO ANY FILL PLACEMENT.

EMBANKMENT FILL TO BE SPREAD IN MAXIMUM 12-INCH THICK LIFTS AND COMPACTED TO 95 PERCENT OF MODIFIED PROCTOR DENSITY (ASTM 1557) AT PLUS OR MINUS 2 PERCENT OF OPTIMUM MOISTURE CONTENT.

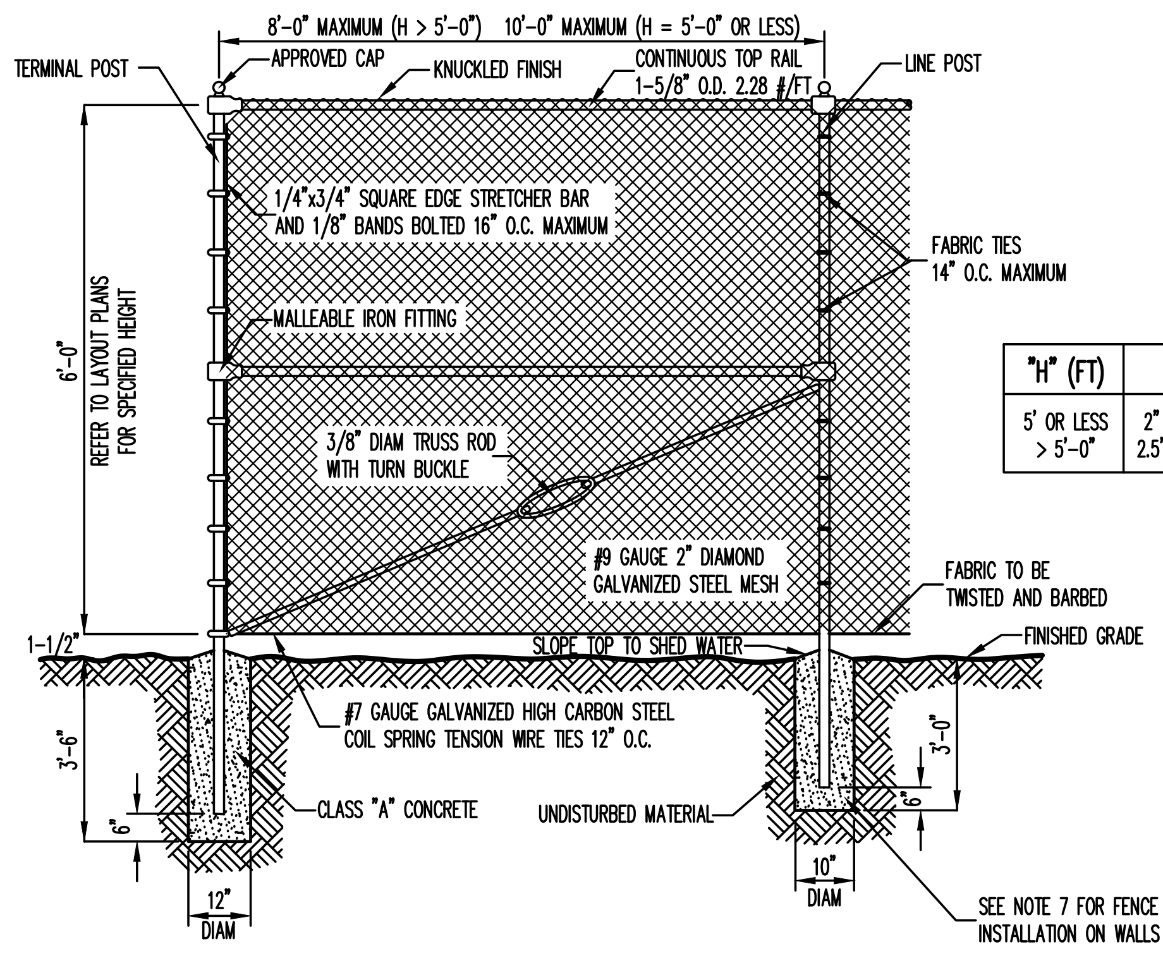
FILL CONSTRUCTION TO BE DONE UNDER THE INSPECTION OF A QUALIFIED SOILS ENGINEER. IN-PLACE FIELD DENSITY TESTS SHOULD BE DONE ON EACH LIFT TO DETERMINE THAT THE SPECIFICATIONS ARE BEING MET.


Ⓑ
NORTH AMERICAN GREEN C350 PERMANENT TURF REINFORCEMENT MAT
BROAD CRESTED WEIR/EMERGENCY Ⓒ SPILLWAY
Ⓓ
Ⓔ TOP OF BERM ELEVATION
1' MIN.
1' MIN.
MIRAFI 700X FILTER FABRIC OR APPROVED EQUAL
PLACE RIPRAP SLOPE PAVING ON SLOPE
3
1
3
1
NORTH AMERICAN GREEN C350 PERMANENT TURF REINFORCEMENT MAT
APPROVED COMPACTED FILL
EXISTING GRADE

SECTION 'A-A'

EMERGENCY OVERFLOW SPILLWAY

43


8'-0" MAXIMUM (H > 5'-0") 10'-0" MAXIMUM (H = 5'-0" OR LESS)
TERMINAL POST
APPROVED CAP
KNUCKLED FINISH
CONTINUOUS TOP RAIL 1-5/8" O.D. 2.28 #/FT
LINE POST
1/4"x3/4" SQUARE EDGE STRETCHER BAR AND 1/8" BANDS BOLTED 16" O.C. MAXIMUM
FABRIC TIES 14" O.C. MAXIMUM
MALLEABLE IRON FITTING
6'-0"
REFER TO LAYOUT PLANS FOR SPECIFIED HEIGHT
3/8" DIAM TRUSS ROD WITH TURN BUCKLE
#9 GAUGE 2" DIAMOND GALVANIZED STEEL MESH
FABRIC TO BE TWISTED AND BARBED
1-1/2"
SLOPE TOP TO SHED WATER
FINISHED GRADE
#7 GAUGE GALVANIZED HIGH CARBON STEEL COIL SPRING TENSION WIRE TIES 12" O.C.
3'-6"
6"
CLASS "A" CONCRETE
UNDISTURBED MATERIAL
3'-0"
6"
12" DIAM
10" DIAM
SEE NOTE 7 FOR FENCE INSTALLATION ON WALLS

"H" (FT)	LINE POST	TERMINAL POST
5' OR LESS	2" O.D./2.72 #/FT	2.5" O.D./3.65 #/FT
> 5'-0"	2.5" O.D./3.65 #/FT	3" O.D./5.79 #/FT

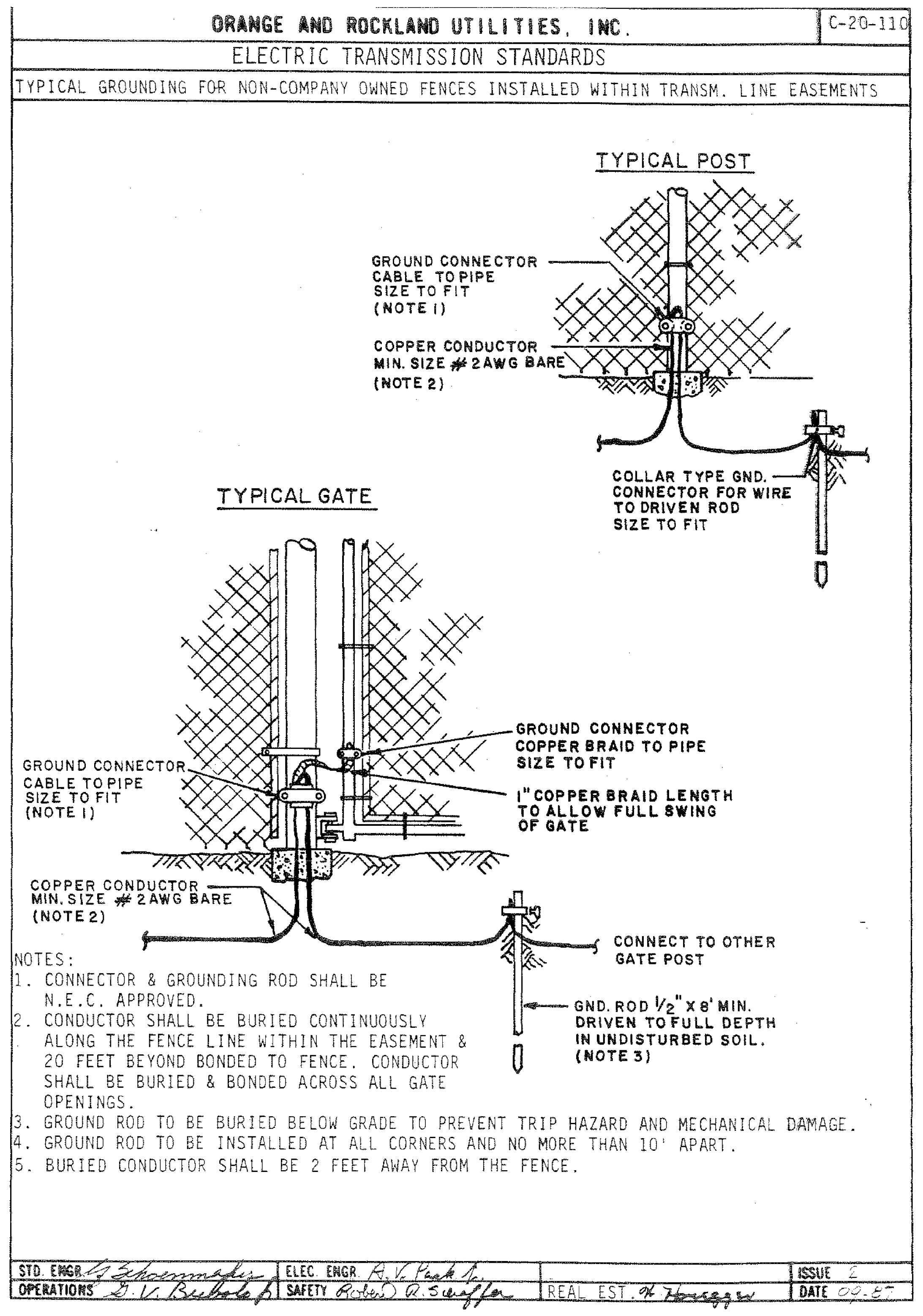
NOTES:

1. ALL POSTS, RAILS, FABRIC AND ACCESSORIES SHALL BE GALVANIZED.
2. POST AND RAILS SHALL BE STANDARD FULL WEIGHT GALVANIZED SCHEDULE 40 PIPE MANUFACTURED AND GALVANIZED IN ACCORDANCE WITH ASTM A120. ALL MATERIALS SHALL BE NEW AND FIRST CLASS AND SHALL NOT INCLUDE RECONDITIONED OR REROLLED PIPE.
3. FITTINGS SHALL BE MALLEABLE IRON FITTINGS CONFORMING TO THE REQUIREMENTS OF ASTM A47 GALVANIZED IN ACCORDANCE WITH ASTM A153.
4. FABRIC SHALL BE 9 GAUGE GALVANIZED 2" MESH. TOP SELVAGE SHALL HAVE KNUCKLED FINISH.
5. TENSION WIRE SHALL BE 7 GAUGE MEETING THE REQUIREMENTS OF ASTM A641 AS MODIFIED HEREIN. THE TENSILE STRENGTH SHALL BE AT LEAST 80,000 PSI WITH A GALVANIZED COATING OF NOT LESS THAN 0.7 OZ. PER SQUARE FOOT.
6. FABRIC TIES SHALL BE MINIMUM 9 GAUGE GALVANIZED STEEL OR ALUMINUM. MINIMUM SPACING SHALL BE AS FOLLOWS:
   - A. 14" O.C. AT LINE POSTS
   - B. 24" O.C. AT TOP RAIL
   - C. 12" O.C. AT TENSION WIRE
7. WHERE CHAIN LINK FENCE IS TO BE INSTALLED ON WALLS, THE FENCE POSTS SHALL BE IMBEDDED A MINIMUM OF TWELVE (12) INCHES IN THE WALL. NEWLY CONSTRUCTED WALLS SHALL BE PROVIDED WITH PROPER SIZE SLEEVES TO ACCOMMODATE FENCE POSTS. FENCE POSTS SHALL BE SECURELY GROUTED IN PLACE USING AN APPROVED HIGH STRENGTH, NON-SHRINKING, NON-STAINING GROUT.
8. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT SHOP AND ERECTION DRAWINGS INDICATING MATERIALS, SIZES AND DIMENSIONS OF FENCING TO THE OWNER'S FIELD REPRESENTATIVE PRIOR TO ORDERING MATERIALS FOR HIS REVIEW AND APPROVAL.
9. PRIOR TO INSTALLATION OF THE FENCE, THE CONTRACTOR SHALL CHECK THE FENCE LAYOUT WITH THE OWNER'S FIELD REPRESENTATIVE WHO MUST APPROVE THE LAYOUT BEFORE ANY OF THE WORK IS TO BE DONE.

CHAIN LINK FENCE

(GALVANIZED)

44



ORANGE AND ROCKLAND UTILITIES, INC. C-20-110

ELECTRIC TRANSMISSION STANDARDS

TYPICAL GROUNDING FOR NON-COMPANY OWNED FENCES INSTALLED WITHIN TRANSM. LINE EASEMENTS

TYPICAL POST
GROUND CONNECTOR CABLE TO PIPE SIZE TO FIT (NOTE 1)
COPPER CONDUCTOR MIN. SIZE # 2 AWG BARE (NOTE 2)
COLLAR TYPE GND. CONNECTOR FOR WIRE TO DRIVEN ROD SIZE TO FIT
TYPICAL GATE
GROUND CONNECTOR COPPER BRAID TO PIPE SIZE TO FIT
GROUND CONNECTOR CABLE TO PIPE SIZE TO FIT (NOTE 1)
1" COPPER BRAID LENGTH TO ALLOW FULL SWING OF GATE
COPPER CONDUCTOR MIN. SIZE # 2 AWG BARE (NOTE 2)
CONNECT TO OTHER GATE POST
GND. ROD 1/2" X 8' MIN. DRIVEN TO FULL DEPTH IN UNDISTURBED SOIL. (NOTE 3)

NOTES:

1. CONNECTOR & GROUNDING ROD SHALL BE N.E.C. APPROVED.
2. CONDUCTOR SHALL BE BURIED CONTINUOUSLY ALONG THE FENCE LINE WITHIN THE EASEMENT & 20 FEET BEYOND BONDED TO FENCE. CONDUCTOR SHALL BE BURIED & BONDED ACROSS ALL GATE OPENINGS.
3. GROUND ROD TO BE BURIED BELOW GRADE TO PREVENT TRIP HAZARD AND MECHANICAL DAMAGE.
4. GROUND ROD TO BE INSTALLED AT ALL CORNERS AND NO MORE THAN 10' APART.
5. BURIED CONDUCTOR SHALL BE 2 FEET AWAY FROM THE FENCE.

STD. ENGR. G. Schoonmaker	ELEC. ENGR. A. V. Peak Jr.		ISSUE 2
OPERATIONS D. V. Bubolo	SAFETY Robert A. Schaffer	REAL EST. H. Honegger	DATE 09.87

FENCE GROUNDING

45

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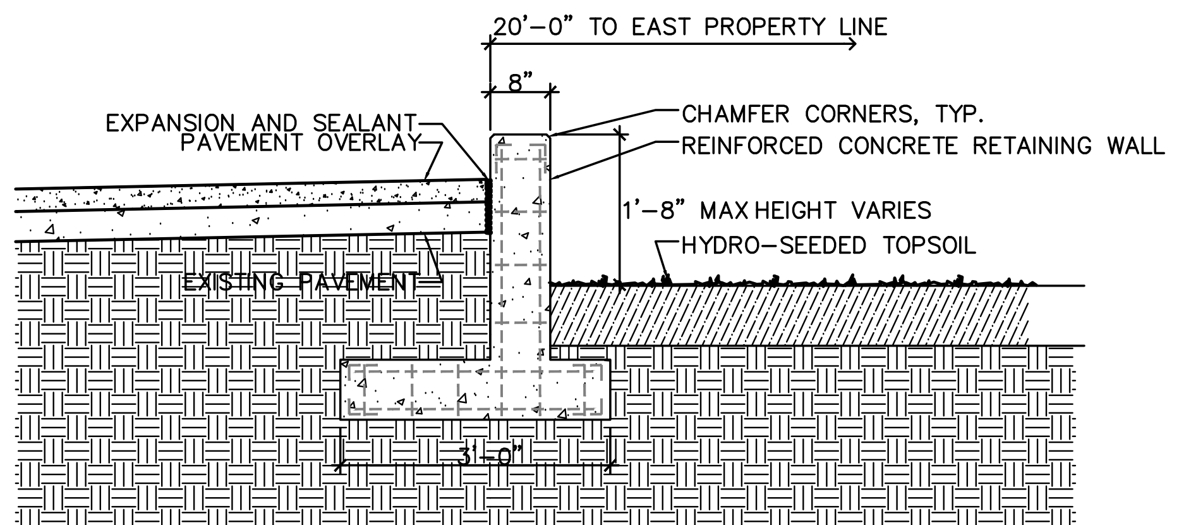
20'-0" TO EAST PROPERTY LINE
8"
EXPANSION AND SEALANT
PAVEMENT OVERLAY
CHAMFER CORNERS, TYP.
REINFORCED CONCRETE RETAINING WALL
1'-8" MAX HEIGHT VARIES
HYDRO-SEEDED TOPSOIL
EXISTING PAVEMENT
3'-0"

CONCRETE RETAINING WALL

46

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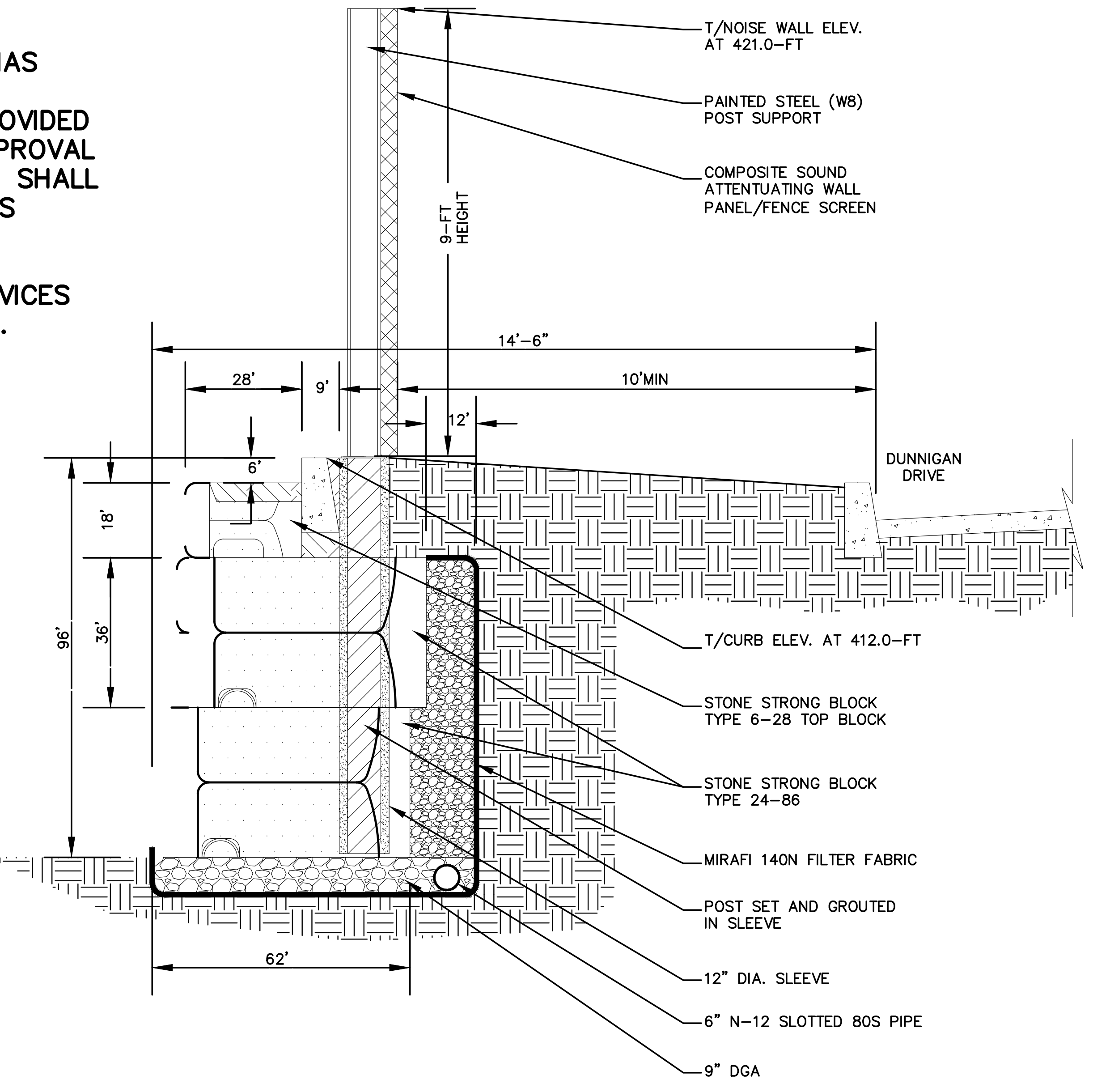
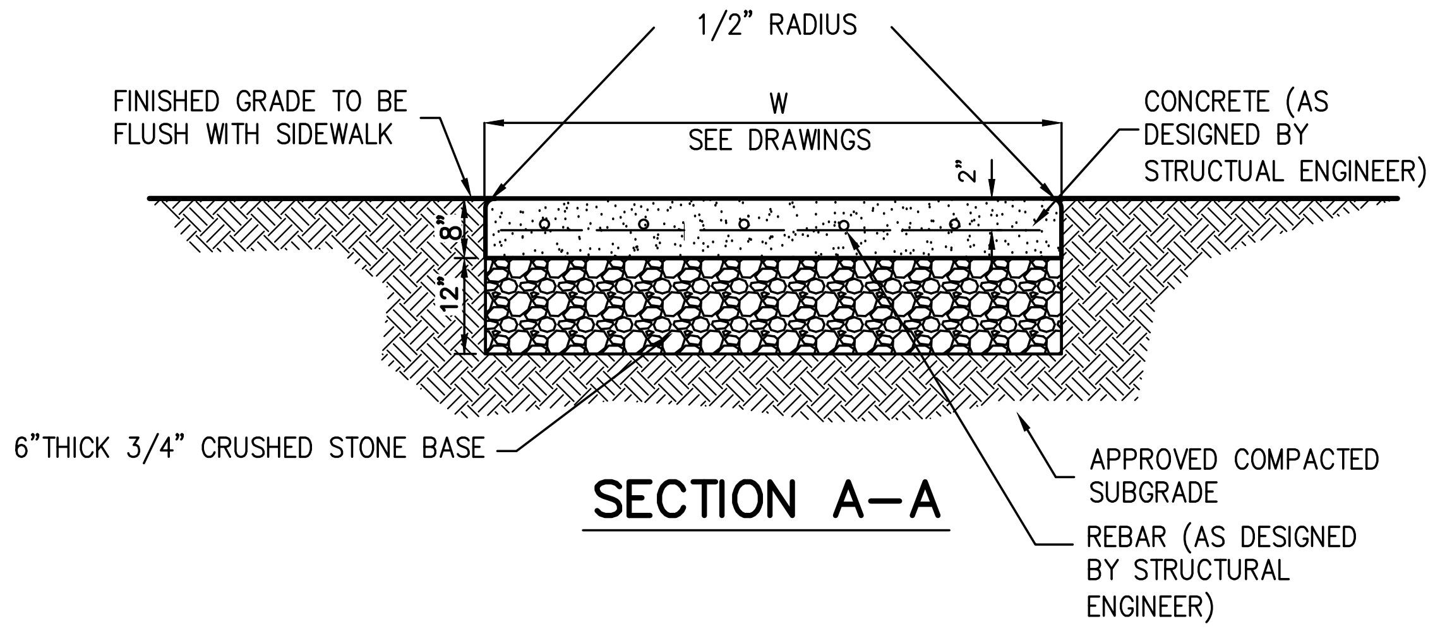

T/NOISE WALL ELEV. AT 421.0-FT
PAINTED STEEL (W8) POST SUPPORT
COMPOSITE SOUND ATTENTUATING WALL PANEL/FENCE SCREEN
9-FT HEIGHT
14'-6"
28'
9'
10'MIN
12'
6'
DUNNIGAN DRIVE
18'
96'
36'
T/CURB ELEV. AT 412.0-FT
STONE STRONG BLOCK TYPE 6-28 TOP BLOCK
STONE STRONG BLOCK TYPE 24-86
MIRAFI 140N FILTER FABRIC
POST SET AND GROUTED IN SLEEVE
62'
12" DIA. SLEEVE
6" N-12 SLOTTED 80S PIPE
9" DGA

NOTE:
STONE STRONG BLOCK CELLS TO BE FILLED WITH CONCRETE

BLOCK RETAINING WALL AND SOUND WALL

47


1/2" RADIUS
FINISHED GRADE TO BE FLUSH WITH SIDEWALK
W
SEE DRAWINGS
2"
CONCRETE (AS DESIGNED BY STRUCTUAL ENGINEER)
8"
12"
6"THICK 3/4" CRUSHED STONE BASE
APPROVED COMPACTED SUBGRADE
REBAR (AS DESIGNED BY STRUCTURAL ENGINEER)

SECTION A-A

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CONCRETE LOADING DOCK

48

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20 DUNNIGAN DRIVE
SUFFERN, NEW YORK

REV	DESCRIPTION	DATE
1	FOR PLANNING BOARD APPROVAL	04.09.21
2	REISSUED PER ENGINEER COMMENTS	05.10.21
3	ISSUED FOR DOB SUBMISSION	09.10.21
4	ISSUED FOR BID	10.15.21

DRAWN BY :	DC
CHECKED BY :	JPM/JAR
APPROVED BY :	DL
DATE :	04.09.2021
SCALE :	N.T.S
ISSUE :	

DRAWING TITLE :

CONSTRUCTION DETAILS

DWG NUMBER :

C-907

JMC PROJECT: 19005-1
SCR: NA
DWG FILE: 19005-DETAILS-CD

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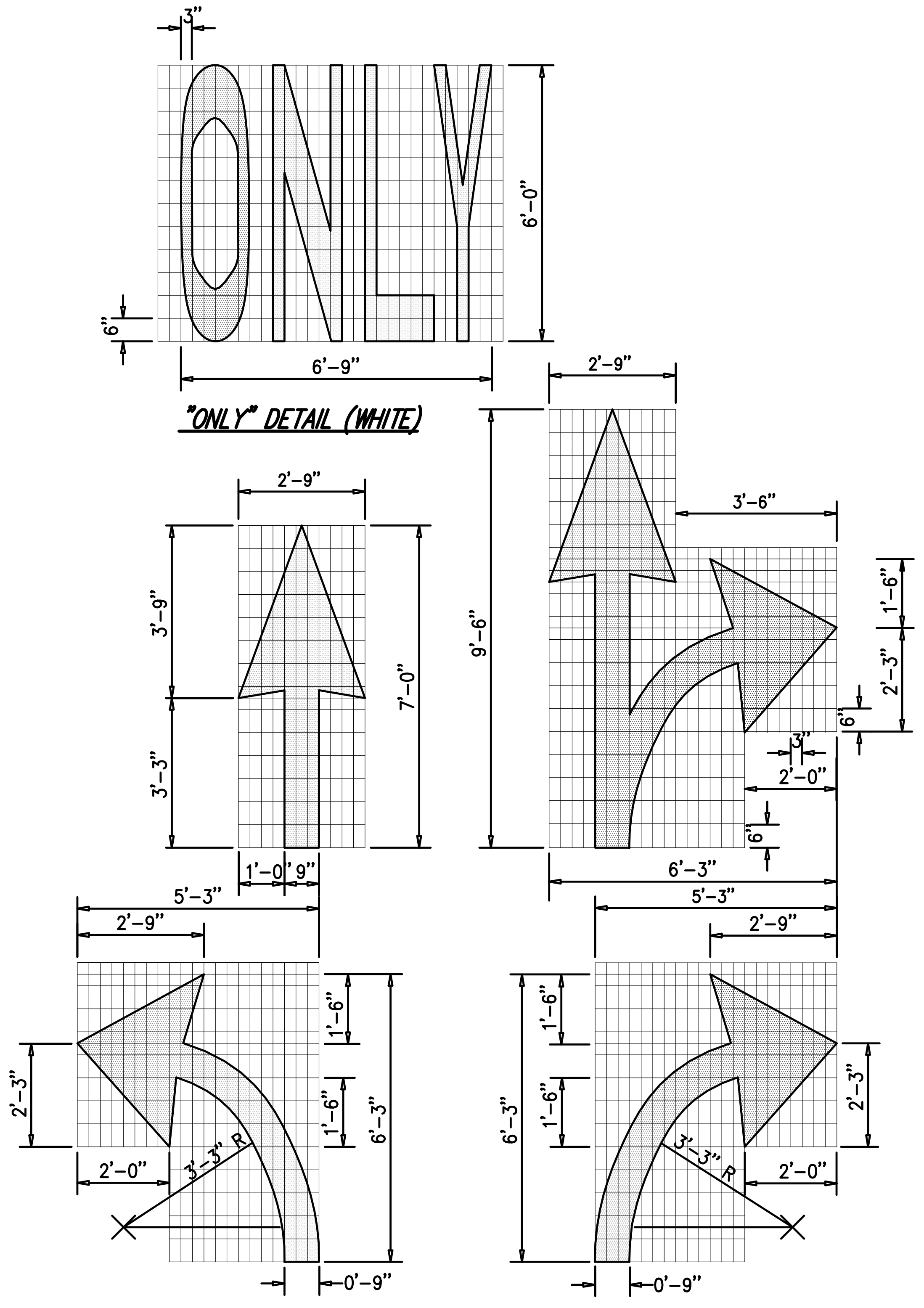
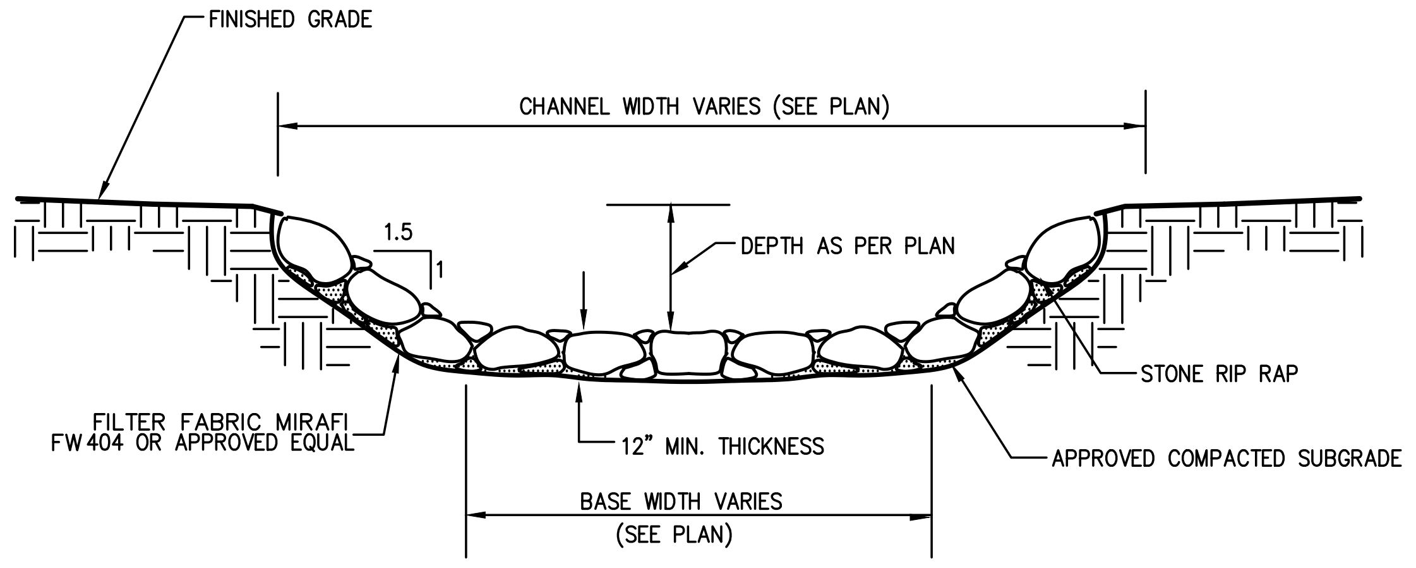

3"
6'-0"
6"
6'-9"
2'-9"
2'-9"
3'-6"
3'-9"
3'-3"
7'-0"
9'-6"
1'-6"
2'-3"
6"
3"
2'-0"
6"
1'-0"
9"
6'-3"
5'-3"
5'-3"
2'-9"
2'-9"
1'-6"
1'-6"
2'-3"
6'-3"
2'-0"
3'-3" R
1'-6"
1'-6"
6'-3"
3'-3" R
2'-0"
2'-3"
0'-9"
0'-9"

"ONLY" DETAIL (WHITE)

ELONGATED ARROWS FOR PAVEMENT MARKINGS

PAVEMENT TEXT & ARROWS
(ON-SITE)

49


FINISHED GRADE
CHANNEL WIDTH VARIES (SEE PLAN)
1.5
1
DEPTH AS PER PLAN
STONE RIP RAP
FILTER FABRIC MIRAFI FW 404 OR APPROVED EQUAL
12" MIN. THICKNESS
APPROVED COMPACTED SUBGRADE
BASE WIDTH VARIES (SEE PLAN)

NOTE:

AREA ADJACENT TO CHANNEL TO BE BROUGHT TO FINISHED GRADE IMMEDIATELY AS REQUIRED, TOPSOILED, SEEDED AND MAINTAINED FOR EROSION CONTROL.

STONE RIP RAP CHANNEL

50

X

X

X

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REV	DESCRIPTION	DATE
1	ISSUED FOR DOB SUBMISSION	09.10.21
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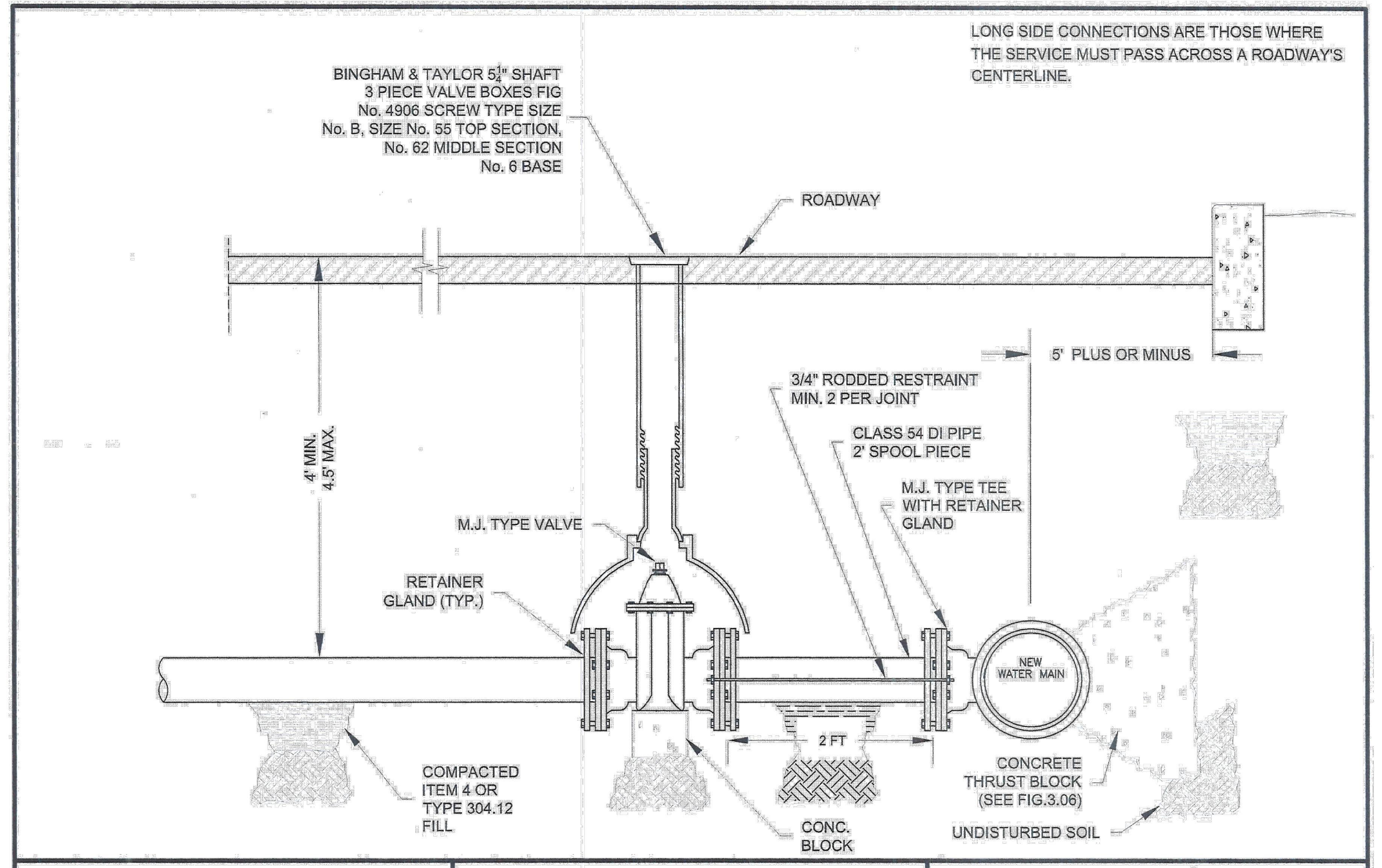
LONG SIDE CONNECTIONS ARE THOSE WHERE THE SERVICE MUST PASS ACROSS A ROADWAY'S CENTERLINE.
BINGHAM & TAYLOR 5¼" SHAFT 3 PIECE VALVE BOXES FIG No. 4906 SCREW TYPE SIZE No. B, SIZE No. 55 TOP SECTION, No. 62 MIDDLE SECTION No. 6 BASE
ROADWAY
5' PLUS OR MINUS
3/4" RODDED RESTRAINT MIN. 2 PER JOINT
CLASS 54 DI PIPE 2' SPOOL PIECE
M.J. TYPE TEE WITH RETAINER GLAND
4' MIN. 4.5' MAX.
M.J. TYPE VALVE
RETAINER GLAND (TYP.)
NEW WATER MAIN
2 FT
COMPACTED ITEM 4 OR TYPE 304.12 FILL
CONC. BLOCK
CONCRETE THRUST BLOCK (SEE FIG.3.06)
UNDISTURBED SOIL

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SPECIFICATION DETAILS

INSTALLATION OF WATER SYSTEMS APPURTENANCES

4" AND LARGER SERVICE CONNECTION (LONG SIDE)

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FIGURE 3.05

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4" AND LARGER SERVICE CONNECTION

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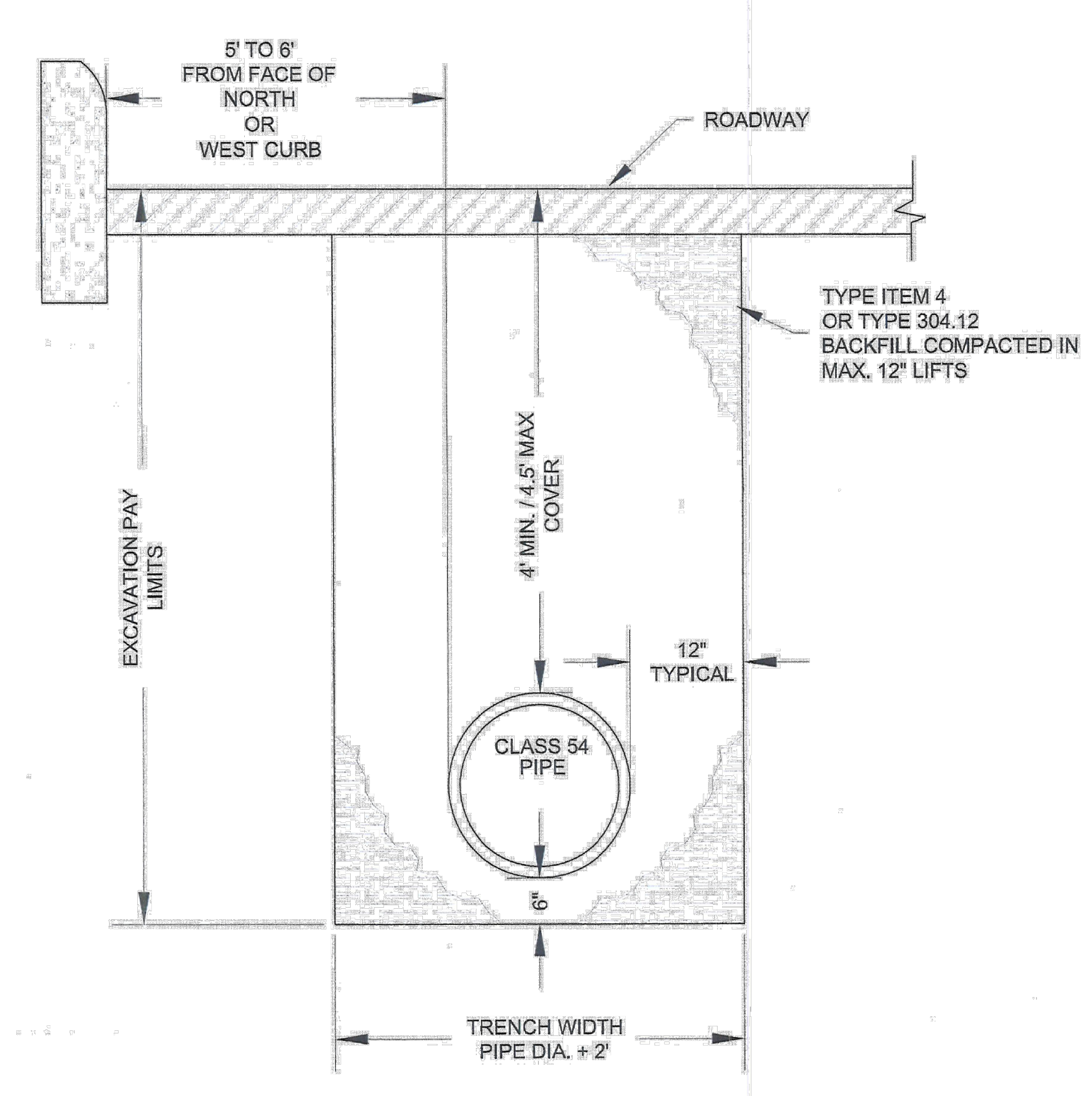
5' TO 6' FROM FACE OF NORTH OR WEST CURB
ROADWAY
TYPE ITEM 4 OR TYPE 304.12 BACKFILL COMPACTED IN MAX. 12" LIFTS
EXCAVATION PAY LIMITS
4' MIN. / 4.5' MAX COVER
12" TYPICAL
CLASS 54 PIPE
6"
TRENCH WIDTH PIPE DIA. + 2'

NOTE:

1. BACKFILL SHALL BE PLACED IN MINIMUM 12" LIFTS AND COMPACTED USING MECHANICAL MEANS OF COMPACTION OR AS APPROVED BY SUEZ WATER.
2. WOOD BLOCKING SHALL NOT BE USED BENEATH THE PIPE AS A MEANS OF SETTING GRADE.
3. ROCK AND SOIL EXCAVATION PAY LIMITS SHALL BE BASED ON 4 FEET OF DEPTH, PLUS THE DIAMETER OF PIPE PLUS 6 INCHES OF BEDDING. THE TRENCH WIDTH SHALL BE BASED ON THE PIPE DIAMETER PLUS 24 INCHES. COSTS ASSOCIATED WITH OVER EXCAVATION SHALL BE AT THE CONTRACTORS EXPENSE.
4. THE COST FOR CONSTRUCTION OF NEW ROADWAYS SHALL NOT BE INCLUDED IN THE CONTRACTORS COST.

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SPECIFICATION DETAILS

INSTALLATION OF WATER SYSTEMS APPURTENANCES

TRENCHING PROPOSED PRIVATE ROADWAY

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FIGURE 3.12

SCALE: NTS

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TRENCHING PROPOSED PRIVATE ROADWAY

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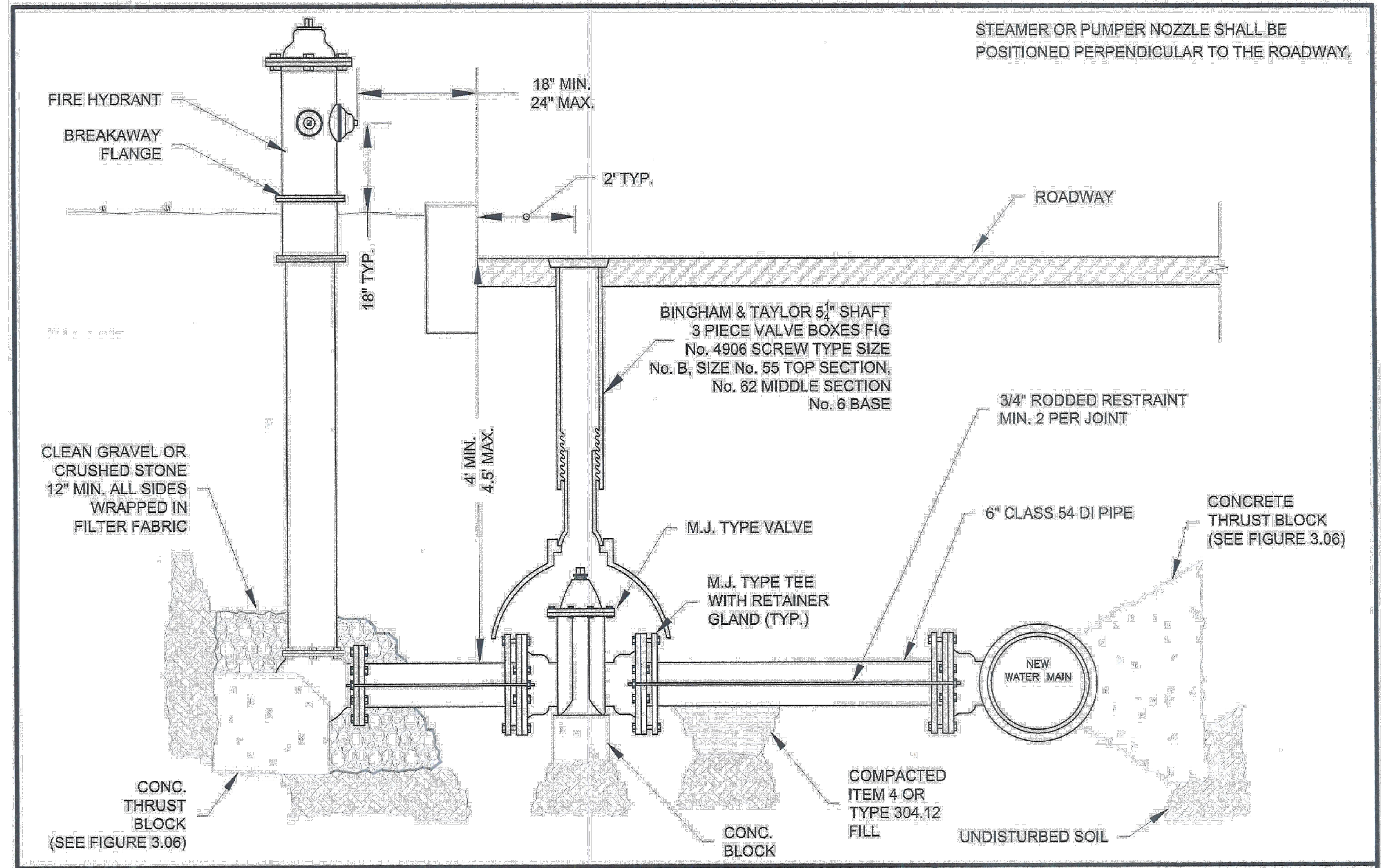
STEAMER OR PUMPER NOZZLE SHALL BE POSITIONED PERPENDICULAR TO THE ROADWAY.
FIRE HYDRANT
BREAKAWAY FLANGE
18" MIN. 24" MAX.
2' TYP.
ROADWAY
18" TYP.
BINGHAM & TAYLOR 5¼" SHAFT 3 PIECE VALVE BOXES FIG No. 4906 SCREW TYPE SIZE No. B, SIZE No. 55 TOP SECTION, No. 62 MIDDLE SECTION No. 6 BASE
3/4" RODDED RESTRAINT MIN. 2 PER JOINT
CLEAN GRAVEL OR CRUSHED STONE 12" MIN. ALL SIDES WRAPPED IN FILTER FABRIC
4' MIN. 4.5' MAX.
M.J. TYPE VALVE
6" CLASS 54 DI PIPE
CONCRETE THRUST BLOCK (SEE FIGURE 3.06)
M.J. TYPE TEE WITH RETAINER GLAND (TYP.)
NEW WATER MAIN
CONC. THRUST BLOCK (SEE FIGURE 3.06)
COMPACTED ITEM 4 OR TYPE 304.12 FILL
CONC. BLOCK
UNDISTURBED SOIL

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SPECIFICATION DETAILS

INSTALLATION OF WATER SYSTEMS APPURTENANCES

FIRE HYDRANT INSTALLATION DETAIL (NEW MAIN)

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FIGURE 3.07

SCALE: NTS

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FIRE HYDRANT INSTALLATION DETAIL

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