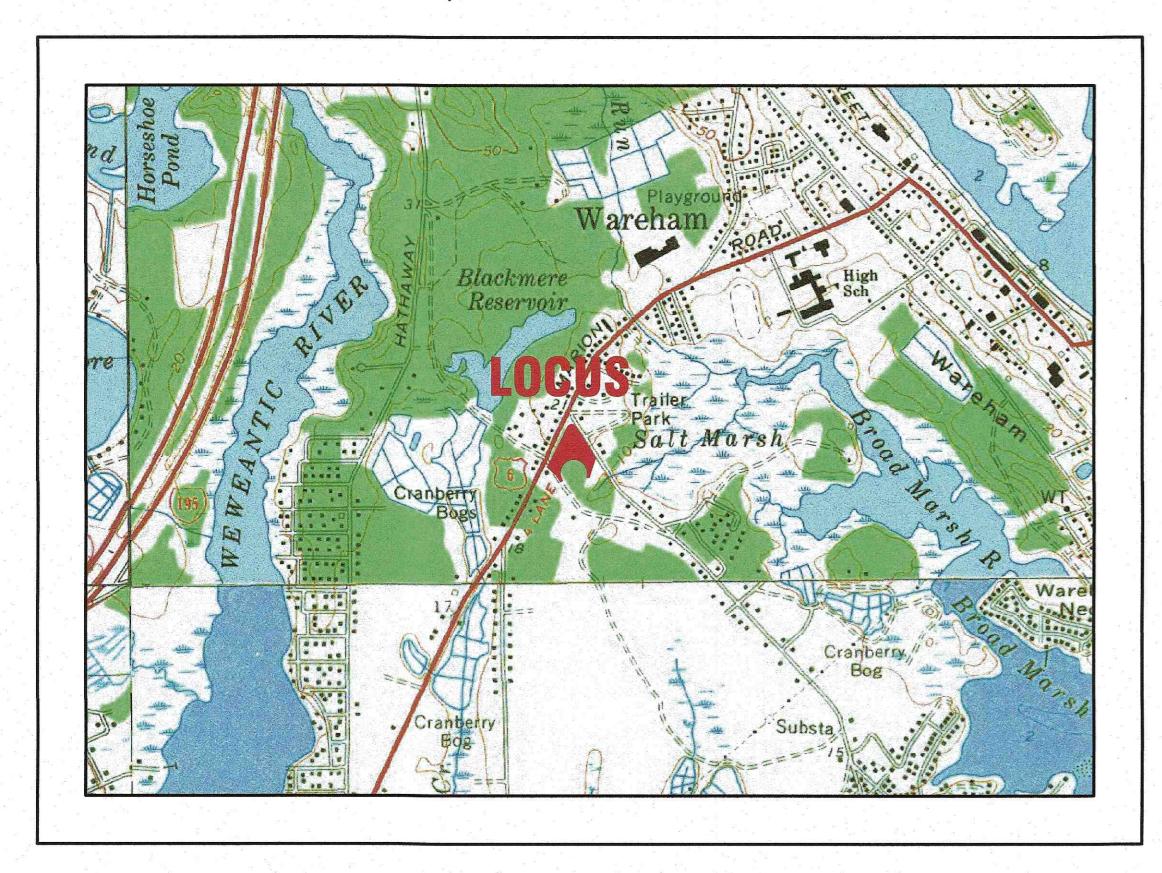
# DAMIEN'S FOOD PANTRY

SITE DEVELOPMENT PLAN 242 MARION ROAD WAREHAM, MASSACHUSETTS

OWNER: THE FAMILY PANTRY-DAMIEN'S PLACE CORP.
P.O. BOX 730
WAREHAM, MA 02538



- U.S.G.S. LOCUS PLAN - SCALE: 1"=1000"

# SITE DATA

ZONING DISTRICT: MULTIPLE RESIDENCE 30
ASSESSOR'S MAP: 56
ASSESSOR'S LOT: 1004—B
REQUIRED LOT AREA: 30,000 S.F.
REQUIRED ROAD FRONTAGE: 150'
FRONT SETBACK: 20'
SIDE & REAR SETBACK: 10'
MAX. PRINCIPAL BUILDING HEIGHT: 35'
MAX. BUILDING COVERAGE: 25%
MAX. LOT COVERAGE: NR
WATER SUPPLY: TOWN WATER
SANITARY SEWER: TOWN SEWER
LANDSCAPE BUFFER: 10'

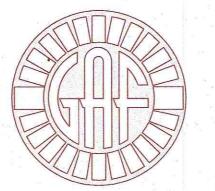
# **ZONING DATA**

	ZONING TABLE	ALLOWED	PROPOSED	
	LOT AREA:	30,000 S.F.	108,040± S.F.	
	FRONT SETBACK:	20'	86'	
	SIDE SETBACK:	10'	56.6	
	REAR SETBACK:	10'	84.2'	
IAX.	BUILDING COVERAGE:	25%	4.6%	

# PARKING DATA:

REQUIRED: 1 SPACE PER 300 S.F. G.F.A. (RETAIL) 5,000 S.F./300 S.F.= 17 SPACES NUMBER OF PARKING SPACES REQUIRED=17

TOTAL PROVIDED=33

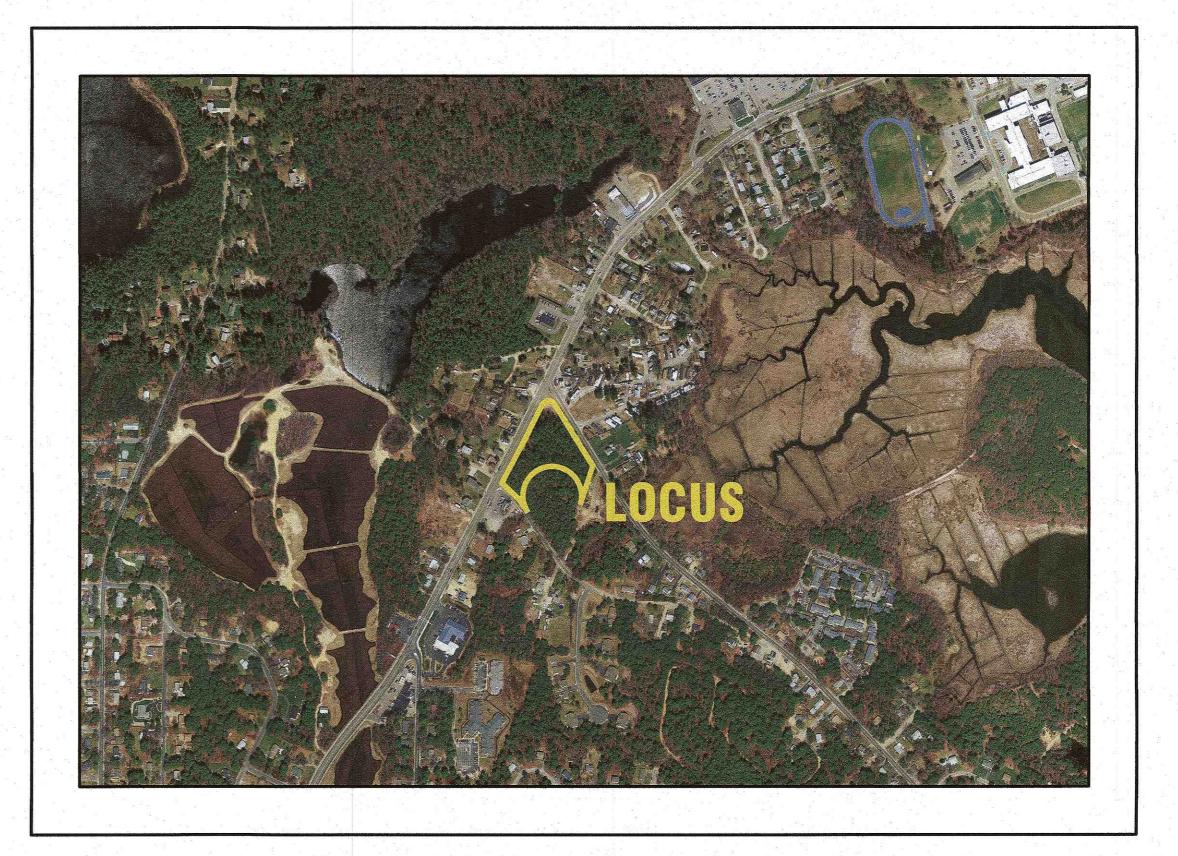


# G.A.F. ENGINEERS & LAND SURVEYORS 266 MAIN STREET, WAREHAM, MA 02571

266 MAIN STREET, WAREHAM, MA 02571
TEL: (508) 295-6600 FAX: (508) 295-6634
E-MAIL: info@gafenginc.com

AUGUST 4, 2022

APPLICANT: DAMIEN'S FOOD PANTRY
P.O. BOX 730
WAREHAM, MA 02538



- AERIAL OVERVIEW -

SCALE: 1"=500'

# PLAN INDEX:

SHEET NO.	DESCRIPTION:
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3	SITE OVERVIEW PLAN
4	EX. CONDITIONS
5	LAYOUT & UTILITIES
6	GRADING & DRAINAGE
7	EROSION CONTROL PLAN
8	LANDSCAPING PLAN
9	DETAIL SHEET 1
10	DETAIL SHEET 2
11	DETAIL SHEET 3
12	FIRE TRUCK ACCESS PLAN
FLOOD ZONE DAT	<b>.</b> .

FLOOD ZONE DATA:
THE PROJECT IS WITHIN FLOOD ZONE X &
SHADED ZONE X. REFER TO THE F.E.M.A.
FLOOD INSURANCE RATE MAP PANEL NUMBER
25023C0488K, DATED: JULY 7, 2021.

 DRAWN BY:
 JMP
 3
 4/12/23
 JMP
 WFM
 NO CHANGES THIS SHAME

 CHECKED BY:
 WFM
 NO CHANGES THIS SHAME

 JOB NO.:
 22-9838
 2
 11/8/22
 JMP
 WFM
 NO CHANGES THIS SHAME

 SCALE:
 AS NOTED
 1
 11/2/22
 JMP
 WFM
 PER PEER REVIEW COMINGES THIS SHAME

 REV.
 DATE
 BY
 APP'D
 DESCRIPTION

APPROVED BY:

WILLIAM F.

WILLIAM F.

WADDEN
CVNL
NO. 32983

ENGINEERS & LAND SURVEYORS

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PROFESSIONAL EN 266 MAIN STRE TEL: (508) 295. E-MAII

COVER SHEET

WAREHAM, MA

PREPARED FOR:

SITE DEVELO
COVER
CALCHINATION ROAD
PREPAR

DWG. 1 OF 12

**PERMIT SET** 

#### **GENERAL NOTES:**

- ALL UNDERGROUND UTILITIES SHOWN OR NOT SHOWN WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS AND IN PART FROM FIELD SURVEY AND ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. BEFORE EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION, OR REPAIRING. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. SEE MGL CHAPTER 370, ACTS OF 1963. CONTRACTORS MUST CALL DIG-SAFE AT (1-888-DIG-SAFE OR 811) G.A.F. ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- EXISTING CONDITIONS INFORMATION IS BASED ON ACTUAL FIELD SURVEY, PRIVATE UTILITY PLANS, AND OTHER AVAILABLE SOURCES. ACTUAL FIELD SURVEY WAS PERFORMED BY G.A.F. ENGINEERING, INC. ON VARIOUS DATES AND MOST RECENTLY IN APRIL OF 2022.
- THE CONTRACTOR SHALL COORDINATE AND OBTAIN ALL REQUIRED PERMITS, GIVE ALL NOTICES, COMPLY WITH ALL LAWS AND REGULATIONS, AND PAY ALL FEES ASSOCIATED WITH THE INSTALLATION OF THIS WORK.
- THE CONTRACTOR SHALL FIELD VERIFY, PRIOR TO CONSTRUCTION ALL EXISTING UNDERGROUND UTILITY LOCATIONS AND POINTS OF INTERCONNECTION.
- THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, SUPERVISION, TOOLS, EQUIPMENT, FUEL, POWER, SANITARY FACILITIES AND INCIDENTALS NECESSARY FOR THE FURNISHING, PERFORMANCE, TESTING, START-UP AND COMPLETION OF THIS WORK.
- 6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER OF ANY CONFLICTS DISCOVERED IN THE FIELD.
- ANY CHANGES TO THESE PLANS THAT ARE MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE CONTRACTOR ON RECORD DOCUMENTS AND REPORTED TO THE OWNER AND ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN EXCAVATION AND TRENCH PERMIT PURSUANT TO 520 CMR 14.00 AS APPLICABLE PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR WILL ALSO NEED TO COMPLY TO FINAL CURB CUT DEISGN, CONSTRUCTION DETAILS AND ANY CONDITIONS ISSUED FOR THE CURB CUT PERMIT THAT WILL BE ISSUED BY MassDOT. CONTRACTOR SHALL COORDINATE WITH ENGINEER PRIOR TO CONSTRUCTION.

#### **CONSTRUCTION NOTES:**

- IN GENERAL, THE PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY FITTING, CHANGE IN DIRECTION OR DETAIL OF CONSTRUCTION.
- THE LOCATION OF UTILITIES WERE OBTAINED FROM VARIOUS SOURCES OF INFORMATION. THE EXACT LOCATION AND COMPLETENESS IS NOT GUARANTEED. THE CONTRACTOR MUST NOTIFY DIG SAFE PRIOR TO THE START OF CONSTRUCTION (1-888-DIG-SAFE OR 811). G.A.F. ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF PERSONNEL AND PROTECTION OF PROPERTY AT THE SITE OR ADJACENT THERETO INCLUDING TREES, SHRUBS, LAWNS, PAVEMENTS, ROADWAYS, STRUCTURES AND UNDERGROUND UTILITIES NOT DESIGNED FOR REMOVAL, RELOCATION, OR REPLACEMENT.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION REQUIRED FOR THE INSTALLATION OF THIS WORK.
- 5. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND OF GOOD QUALITY.
- THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL AND OTHER DEBRIS RESULTING FROM THIS WORK.
- 7. ALL PAVEMENT MARKINGS DISTURBED BY CONSTRUCTION SHALL BE RESTORED AS PART OF THIS WORK.
- THE CONTRACTOR SHALL INSTITUTE ALL SAFETY MEASURES NECESSARY TO PROTECT THE PUBLIC SAFETY. THIS SHALL INCLUDE, BUT NOT LIMITED TO, BARRICADES, SIGNS, LIGHTING, FENCES, POLICE DETAILS, AND ANY OTHER MEANS AS DIRECTED. NO TRENCHES ARE TO REMAIN OPEN OVERNIGHT.
- 9. ELEVATIONS ARE IN FEET AND TENTHS AND ARE BASED ON THE DATUM OF NAVD-88.
- 10. SIDE SLOPE GRADING SHALL BE AS NOTED ON THE SITE PLANS.
- 11. ALL SIDE SLOPES SHALL BE DRESSED WITH 4 INCHES OF TOPSOIL. WHERE SIDE SLOPES EXCEED 3:1, PROVIDE AN EROSION CONTROL BLANKET OVER THE PLANTED SEED BED. SEE PLAN FOR LOCATIONS.
- 12. ALL SEWER AND PLUMBING WORK SHALL CONFORM WITH 248 CMR 10.00 UNIFORM STATE PLUMBING CODE AND THE TOWN OF WAREHAM SEWER DEPARTMENTS SPECIFICATIONS.
- 13. ALL METHODS AND MATERIALS SHALL CONFORM WITH MassDOT STANDARDS AND SPECIFICATIONS, AND THE REQUIREMENTS OF THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.
- 14. ALL UTILITY INSTALLATIONS SHALL BE IN CONFORMANCE WITH ALL APPLICABLE TOWN, STATE AND FEDERAL REQUIREMENTS & REGULATIONS.
- 15. DEWATERING IF REQUIRED SHALL BE DIRECTED TO A 15'x15' MIN. SQUARE OF HAYBALES OR A DIRTBAG. CONTRACTOR SHALL SIZE, PROVIDE AND MAINTAIN DEWATERING EQUIPMENT FOR THE CONTROL, COLLECTION AND DISPOSAL OF GROUND AND SURFACE WATER WHERE NECESSARY TO COMPLETE THE WORK.

# **EROSION CONTROL NOTES:**

- THE SITE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SUITABLE EROSION AND SEDIMENTATION CONTROL DEVICES ON SITE DURING CONSTRUCTION AS REQUIRED TO PREVENT SILT FROM LEAVING THE SITE. SILT WILL NOT BE ALLOWED BEYOND CONSTRUCTION LIMITS. ADDITIONAL PROTECTION: ON-SITE PROTECTION MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNFORESEEN CONDITIONS OR ACCIDENTS.
- EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLANS DOES NOT PROVIDE SUFFICIENT EROSION AND SEDIMENT CONTROL, ADDITIONAL CONTROL MEASURES SHALL BE IMPLEMENTED. CONTRACTOR IS RESPONSIBLE FOR REPAIRING OR REPLACING EROSION CONTROL DEVICES WHICH BECOME INEFFECTIVE.
- CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR ALL GRADING AND OTHER LAND DISTURBING ACTIVITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE CLEANUP AND REMOVAL OF ANY BUILDUP OF SEDIMENT WHICH ESCAPES FROM THE SITE.
- CONTRACTOR IS RESPONSIBLE FOR CLEANING SILT AND DEBRIS OUT OF ALL STORM DRAINAGE STRUCTURES UPON THE COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL TEMPORARY EROSION CONTROL MEASURES AFTER CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS HAVE BEEN STABILIZED
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ANY FINES LEVIED AGAINST THE SITE FOR VIOLATIONS OF EROSION CONTROL REGULATIONS.
- CONTRACTOR SHALL PROVIDE TEMPORARY GROUND COVER FOR ALL AREAS WITH EXPOSED SOIL WHICH WILL NOT BE DISTURBED BY GRADING OPERATIONS FOR A PERIOD OF THIRTY DAYS OR MORE.
- 9. IF WORK ON THIS PROJECT IS SUSPENDED FOR ANY REASON, THE CONTRACTOR SHALL MAINTAIN THE SOIL EROSION AND SEDIMENTATION CONTROL FACILITIES IN GOOD CONDITION DURING THE SUSPENSION OF WORK.
- 10. SPRINKLE OR APPLY DUST SUPPRESSERS TO MINIMIZE DUST AT THE CONSTRUCTION SITE. MAINTAIN DUST CONTROL MEASURES UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED

# DRAINAGE OPERATION AND MAINTENANCE SCHEDULE:

- THE OPERATION AND MAINTENANCE (0&M) SCHEDULE DURING THE CONSTRUCTION PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. THE OUTLINE BELOW SHALL BE FOLLOWED TO ENSURE THE PROPER CONSTRUCTION AND FUNCTION OF THE DRAINAGE FACILITIES.
- IN CONJUNCTION WITH THE SITE CONSTRUCTION, ALL DRAINAGE STRUCTURES SHALL BE INSTALLED AND THE AFFECTED AREAS STABILIZED (LOAM AND SEED, HYDROSEED, PLANTED, RIP-RAP, ETC.). PERMANENT STABILIZATION OF THESE AREAS SHALL BE STARTED AS SOON AS POSSIBLE.
- EROSION CONTROL SHALL BE PLACED ALONG THE LIMITS OF WORK AND WHERE SHOWN ON THE PLAN.
- ALL EXISTING CATCH BASINS SHALL HAVE A TEMPORARY SILT SACK INSTALLED IN THEM PRIOR TO CONSTRUCTION. ALL PROPOSED CATCH BASINS SHALL HAVE TEMPORARY SILT SACK INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL REMOVE AND DISPOSE OF THEM AT THE COMPLETION OF CONSTRUCTION. ALL EXISTINTG AND PROPOSED CATCH BASINS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION. IF THERE IS ANY SEDIMENT BUILDUP, THE AFFECTED STRUCTURES SHALL BE CLEANED IMMEDIATELY, AND ALL MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
- 4. THE INFILTRATION CHAMBERS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION. IF THERE IS ANY SEDIMENT BUILDUP, THE AFFECTED STRUCTURES SHALL BE CLEANED IMMEDIATELY, AND ALL MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
- 5. THE SEDIMENT FOREBAYS AND DRAINAGE BASINS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION. IF THERE IS ANY SEDIMENT BUILDUP, THE AFFECTED STRUCTURES SHALL BE CLEANED IMMEDIATELY, AND ALL MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
- 6. ALL AREAS SHALL BE INSPECTED WEEKLY, AND AFTER LARGE STORMS. IF THERE IS EVIDENCE OF EROSION, THE ERODED AREA SHALL BE RE-STABILIZED, AND MEASURES SHALL BE TAKEN TO PREVENT REOCCURRENCE. THIS SCHEDULE MUST BE ADHERED TO BY THE CONTRACTOR UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.

#### POST-CONSTRUCTION OPERATION AND MAINTENANCE PLAN:

UPON THE COMPLETION OF CONSTRUCTION, MAINTENANCE SHALL BE CONDUCTED BY THE OWNER OR OWNER'S AGENT ON THE SITE. THE FOLLOWING SHALL BE CARRIED OUT BY THE RESPONSIBLE PARTY AND SHALL BE ADHERED TO ENSURE THE PROPER OPERATION OF THE DRAINAGE FACILITIES.

- PARKING LOT SWEEPING IS AN EFFECTIVE NONSTRUCTURAL SOURCE CONTROL THAT WILL REMOVE SEDIMENT FROM PAVED SURFACES. PARKING LOT SWEEPING SHOULD BE DONE BY THE USE OF A HIGH EFFICIENCY VACUUM SWEEPER OR REGENERATIVE AIR SWEEPER. PARKING LOT SWEEPING SHALL BE DONE TWICE PER YEAR. ONCE REMOVED FROM PAVED SURFACES, THE SWEEPINGS MUST BE HANDLED AND DISPOSED OF PROPERLY IN ONE OF THE WAYS APPROVED BY MASSDEP (SEE POLICY # BAW-18-001: REUSE & DISPOSAL OF STREET SWEEPINGS).
- STONE SPLASH PADS AT PIPE ENDS SHALL BE CLEANED FOUR TIMES PER YEAR AND INSPECTED MONTHLY, ADD STONE IF NECESSARY. ALL SEDIMENTS AND HYDROCARBONS SHOULD BE REMOVED AND DISPOSED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
- SEDIMENT FOREBAY IS AN EXCAVATED PIT, BERMED AREA DESIGNED TO SLOW INCOMING STORMWATER RUNOFF AND FACILITATING THE GRAVITY SEPARATION OF SUSPENDED SOLIDS. SEDIMENT FOREBAYS SHALL BE INSPECTED MONTHLY AND CLEANED OUT AT LEAST FOUR (4) TIMES PER YEAR. WHEN MOWING GRASSES, KEEP THE GRASS HEIGHT NO GREATER THAN SIX (6) INCHES. SET MOWER BLADES NO LOWER THAN THREE (3) INCHES. CHECK FOR SIGNS OF RILLING AND GULLYING AND REPAIR AS NEEDED. AFTER REMOVING SEDIMENT, REPLACE ANY VEGETATION DAMAGED DURING THE CLEAN-OUT BY EITHER RESEEDING OR RESODDING. WHEN RESEEDING, INCORPORATE PRACTICES SUCH AS HYDROSEEDING WITH A TACKIFIER, BLANKET OR SIMILAR PRACTICE TO ENSURE THAT NO SCOUR OCCURS IN THE FOREBAY, WHILE THE SEEDS GERMINATE AND DEVELOP ROOTS.
- DRAINAGE BASIN AREAS SHALL BE INSPECTED AT LEAST FOUR TIMES PER YEAR TO ENSURE THE BASINS ARE OPERATING AS INTENDED. ALSO INSPECT THE BASINS DURING AND AFTER MAJOR STORM EVENTS TO DETERMINE IF THE BASINS ARE MEETING THE EXPECTED DETENTION TIMES. EXAMINE THE OUTLET STRUCTURE FOR EVIDENCE OF CLOGGING OR OUTFLOW RELEASE VELOCITIES GREATER THAN THE DESIGN FLOW. POTENTIAL PROBLEMS THAT SHALL BE CHECKED INCLUDE: SUBSIDENCE, EROSION, CRACKING OR TREE GROWTH ON THE EMBANKMENT: DAMAGE TO THE EMERGENCY SPILLWAY; SEDIMENT ACCUMULATION AROUND THE OUTLET; INADEQUACY OF THE INLET/OUTLET CHANNEL EROSION CONTROL MEASURES; CHANGES IN THE CONDITION OF THE PILOT CHANNEL: AND EROSION WITHIN THE BASIN AND BANKS. MAKE ANY NECESSARY REPAIRS IMMEDIATELY, MOW THE UPPER-STAGE, SIDE SLOPES AND EMBANKMENTS AT LEAST TWICE PER YEAR. REMOVE SEDIMENT AS NECESSARY, BUT AT LEAST ONCE EVERY FIVE YEARS. SEDIMENT SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL STATE AND FEDERAL REGULATIONS.
- 5. PROPRIETARY CATCH BASINS (WATER QUALITY CATCH BASINS) ARE UNDERGROUND RETENTION SYSTEMS DESIGNED TO REMOVE TRASH, DEBRIS AND COARSE SEDIMENT FROM STORMWATER RUNOFF AND SERVE AS TEMPORARY SPILL CONTAINMENT DEVICES FOR FLOATABLES SUCH AS OILS AND GREASE. INSPECT THE UNITS MONTHLY AND CLEAN AT LEAST TWO TIMES PER YEAR AND AT THE END OF THE FOLIAGE AND SNOW-REMOVAL SEASONS. SEDIMENTS MUST ALSO BE REMOVED WHENEVER THE DEPTH OF DEPOSITS IS GREATER THAN OR EQUAL TO ONE HALF THE DEPTH FROM THE BOTTOM OF THE INVERT. SEDIMENT SHALL BE REMOVED THROUGH THE USE OF A VACUUM TRUCK. SEDIMENT MUST BE HANDLED AND DISPOSED OF PROPERLY IN ONE OF THE WAYS ALREADY APPROVED BY MASSDEP (SEE MASSDEP POLICY ON MANAGEMENT OF CATCH BASIN CLEANINGS) IF THERE IS EVIDENCE THAT THEY HAVE BEEN CONTAMINATED BY A SPILL OR OTHER MEANS. THE CLEANINGS MUST BE EVALUATED IN ACCORDANCE WITH THE MASSDEP HAZARDOUS WASTE REGULATIONS, 310 CMR 30.00 AND HANDLED AS HAZARDOUS WASTE.
- INFILTRATION CHAMBERS SHALL BE INSPECTED AFTER EVERY MAJOR STORM EVENT IN THE FIRST FEW MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND FUNCTION. THEREAFTER, THE INFILTRATION CHAMBERS SHALL BE INSPECTED AT LEAST FOUR TIMES PER YEAR. WATER DEPTH IN THE INFILTRATION CHAMBERS SHOULD BE OBSERVED AND MEASURED AT 0, 24, AND 48-HOUR INTERVALS AFTER A MAJOR STORM EVENT AT LEAST ONCE PER YEAR. CLEARANCE RATES ARE CALCULATED BY DIVIDING THE DROP IN THE WATER LEVEL (INCHES) BY THE ELAPSED TIME (HOUR). A COMPARISON OF CLEARANCE RATE MEASUREMENTS TAKEN OVER THE YEARS PROVIDE A USEFUL TOOL TRACKING ANY CLOGGING PROBLEMS WITH THE UNDERGROUND INFILTRATION SYSTEM.
- INSPECT POP-UP DRAINAGE EMITTERS DURING AND 24 HOURS AFTER ALL MAJOR STORM EVENTS. KEEP POP-UP DRAINAGE EMITTERS FREE AND CLEAR FROM BUILD UP OF DEBRIS ON THE LID. REMOVE SNOW WHEN REQUIRED. INSPECT THE POP-UP DRAINAGE EMITTER LID MONTHLY. REPAIR OR REPLACE AS NEEDED.

# **DRAINAGE INSTALLATION NOTES:**

- ALL DRAINAGE PIPES, UNLESS OTHERWISE NOTED, ARE TO BE ADS N-12 PIPE WITH SOIL TIGHT JOINTS AND FITTINGS. REFER TO PLAN FOR LOCATION, SIZES AND SLOPES.
- ALL ROOF DRAIN PIPES, UNLESS OTHERWISE NOTED, ARE TO BE 6" ADS N-12 PIPE WITH SOIL TIGHT JOINTS AND FITTINGS. MINIMUM SLOPE TO BE 1.00%. REFER TO PLAN FOR LOCATIONS.
- MINIMUM COVER ON PIPES SHALL NOT BE LESS THAN 1.5 FEET.
- ALL PERFORATED PIPE SHALL BE ADS HDPE PIPE WITH AASHTO CLASS II PERFORATION PATTERN.
- ALL WORK AND MATERIAL SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.

# **DEMOLITION NOTES:**

- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE HIS/HER OWN DETERMINATION OF SUBSURFACE CONDITIONS, INCLUDING THE LOCATION OF ROCK AND THE ACTUAL LOCATION OF UTILITIES OR OTHER FEATURES WHICH MAY AFFECT HIS/HER WORK. ANY UNSUITABLE MATERIAL ENCOUNTERED DURING CONSTRUCTION WILL BE REPORTED TO THE ENGINEER OF RECORD FOR RESOLUTION AND CONSTRUCTION METHOD.
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND APPARATUS NECESSARY AND SHALL DO ALL WORK REQUIRED TO COMPLETE THE DEMOLITION, REMOVAL, AND ALTERATIONS OF EXISTING FACILITIES, INCLUDING PIPING SYSTEMS AND APPURTENANCES. DRAINAGE. PAVEMENT. LANDSCAPE AND SITE FEATURES ENCOUNTERED DURING THE INSTALLATION AS INDICATED ON THE DRAWINGS, AS HEREIN SPECIFIED, AND/OR AS DIRECTED BY THE DESIGN ENGINEER
- ALL EQUIPMENT, PIPING, AND OTHER MATERIALS THAT ARE NOT TO BE RELOCATED OR TO BE RETURNED TO THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY HIM, AWAY FROM THE SITE OF THE WORK AND AT HIS OWN EXPENSE.
- ALL DEMOLITION OR REMOVAL OF EXISTING STRUCTURES, PAVEMENT, UTILITIES EQUIPMENT, AND APPURTENANCES, LANDSCAPE AND SITE FEATURES SHALL BE ACCOMPLISHED WITHOUT DAMAGING THE INTEGRITY OF EXISTING STRUCTURES, EQUIPMENT, PAVEMENT, APPURTENANCES, AND TREES TO REMAIN.
- 5. SUCH ITEMS THAT ARE DAMAGED SHALL BE EITHER REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED PRIOR TO THE START OF HIS WORK TO THE SATISFACTION OF THE DESIGN ENGINEER AND/OR THE OWNER.
- 6. PROVIDE TWO (2) COPIES OF PROPOSED METHODS AND OPERATIONS OF DEMOLITION TO THE OWNER AND ENGINEER FOR REVIEW PRIOR TO THE START OF WORK, INCLUDE IN THE SCHEDULE THE COORDINATION FOR SHUTOFF, CAPPING AND CONTINUATION OF UTILITY SERVICES AS REQUIRED.
- PROVIDE A DETAILED SEQUENCE OF WORK TO THE DESIGN ENGINEER AND THE OWNER FOR DEMOLITION AND REMOVAL WORK TO ENSURE THE UNINTERRUPTED PROGRESS OF THE OWNER'S OPERATIONS.
- ENSURE THE SAFE PASSAGE OF PERSONS AROUND THE AREA OF DEMOLITION. CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURES, OTHER FACILITIES AND PERSONS.
- PROVIDE INTERIOR AND EXTERIOR SHORING, BRACING, OR SUPPORT TO PREVENT MOVEMENT, SETTLEMENT OR COLLAPSE OF STRUCTURES TO BE DEMOLISHED AND ADJACENT FACILITIES TO REMAIN.
- 10. THE CONTRACTOR SHALL PROMPTLY REPAIR DAMAGES CAUSED BY DEMOLITION OPERATIONS TO ADJACENT FACILITIES AT NO COST TO THE OWNER.

## **WATER INSTALLATION NOTES:**

- ALL WATER MAINS, SERVICES, GATE VALVES/GATE BOX, CURB STOPS, HYDRANTS. FITTINGS, ETC. & METHOD OF INSTALLATION SHALL CONFORM TO THE WAREHAM FIRE DISTRICT RULES & REGULATIONS.
- WATER SERVICE SHALL BE FLUSHED TESTED & DISINFECTED IN ACCORDANCE WITH THE WAREHAM FIRE DISTRICT REQUIREMENTS.
- CONTRACTOR TO COORDINATE WITH THE WAREHAM FIRE DISTRICT FOR THE INSPECTIONS OF THE WATER MAIN INSTALLATION.
- 4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE INSTALLATION OF THE WATER SERVICE.
- 5. THE CONTRACTOR SHALL OBTAIN A COPY OF THE REGULATIONS FROM THE WAREHAM FIRE DISTRICT BEFORE PROCEEDING WITH THE INSTALLATION OF THE WATER SERVICE.

#### APPROX. APPROXIMATE BOTTOM OF CURB BIT. CONC. BITUMINOUS CONCRETE BLDRS BOULDERS BW BOTTOM OF WALL BVW BORDERING VEGETATED WETLANDS CATCH BASIN CONCRETE BOUND/DRILL HOLE CB/DH CCB CAPE COD BERM CEM. CEMENT C.I. CONC. CAST IRON CONCRETE C.O. CLEAN OUT C.L.D.I CEMENT LINED DUCTILE IRON CORRUGATED METAL PIPE CMP CORRUGATED PLASTIC PIPE CPP DIA DIAMETER DMH DRAIN MANHOLE DUCTILE IRON DCS DRAINAGE CONTROL STRUCTURE ELECTRIC ELEV., EL. **ELEVATION** EOP : EDGE OF PAVEMENT EX. EXISTING F.D.C. FIRE DEPARTMENT CONNECTION F.E.S. FLARED END SECTION F.F.E. FINISHED FLOOR ELEVATION FND. FOUND FIRE PROTECTION GG,GV GAS GATE, GAS VALVE HANDICAP PARKING HIGH DENSITY POLYETHYLENE H.D.P.E. H.P. HYD HIGH POINT **HYDRANT** INV. INVERT L.P. LOW POINT MAX MAXIMUM MED MEDIUM MIN. MINIMUM N.T.S. NOT TO SCALE NOW OR FORMERLY OHW OVERHEAD WIRE PCC PRECAST CONCRETE CURBING PVC POLYVINYL CHLORIDE PIPE PROP. PROPOSED PAVED WATERWAY RCP REINFORCED CONCRETE PIPING RADIUS R&D REMOVE AND DISPOSE R&S REMOVE AND STOCK SB/DH STONE BOUND/DRILL HOLE SEWER SGC SLOPED GRANITE CURBING SEWER MANHOLE STA STATION TOP OF CURB TOP OF WALL TYP. TYPICAL TOP OF FOUNDATION UTILITY POLE UNDERGROUND ELECTRIC VERTICAL GRANITE CURB VGC WATER WG,WV WATER GATE, WATER VALVE WATER QUALITY STRUCTURE WQ CB WATER QUALITY CAYCH BASIN

**ABBREVIATIONS** 

ADS

ASBESTIC CONCRETE

ADVANCED DRAINAGE SYSTEM

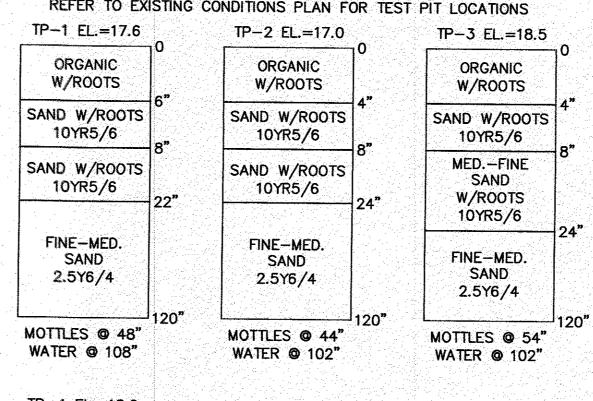
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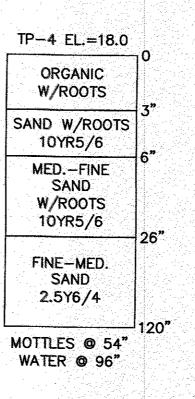
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# TEST PIT DATA

DATE OF TESTING: JUNE 21, 2022 PERFORMED BY: BRIAN GRADY, G.A.F. ENGINEERING INC. REFER TO EXISTING CONDITIONS PLAN FOR TEST PIT LOCATIONS





WHERE REQUIRED THE CONTRACTOR TO REMOVE ALL UNSUITABLE SOILS AND REPLACE WITH CLEAN SAND AND GRAVEL APPROVED BY DESIGN ENGINEER. SEE PLANS FOR DEPTHS AND LOCATIONS.

**LEGEND EXISTING** DESC. **PROPOSED** CONTOURS <del>-----</del>55-----53x5 SPOT GRADES 52x5 ✓ 52x5 WETLANDS \_\_---/ F.E.M.A. FLOOD ZONE DRAIN LINE \_\_\_\_D\_\_\_ PERFORATED DRAIN LINE ---D--------RD-----ROOF DRAIN LINE -----RD-----B CATCH BASIN (CB) 0 DRAIN MANHOLE (DMH) CLEAN OUT (C.O.) 0 ELECTRIC MANHOLE (EMH) UNDERGROUND UTILITIES -----UE---------UE ---OHW---OVERHEAD WIRES ——OHW—— ~O-UTILITY POLE ~ \_ \_ -() GUY POLE -0 **—** W WATER GATE VALVE WATER SHUTOFF/CURB STOP POST INDICATOR VALVE WATER LINE FIRE PROTECTION LINE -----FP-ليا ـ ۵ SEWER MANHOLE (SMH) SEWER LINE ----FM-FORCE MAIN ----FM--TREELINE www LIGHT POST GAS LINE ——G— EV EV GAS GATE/VALVE GAS SHUTOFF

> SIGN **FENCE** BOUND TEST PIT/PERC TEST SILT FENCE 0---0---0 GUARD RAIL 00000 FLARED END SECTION STONE WALL

 $\infty$ 

GAS METER

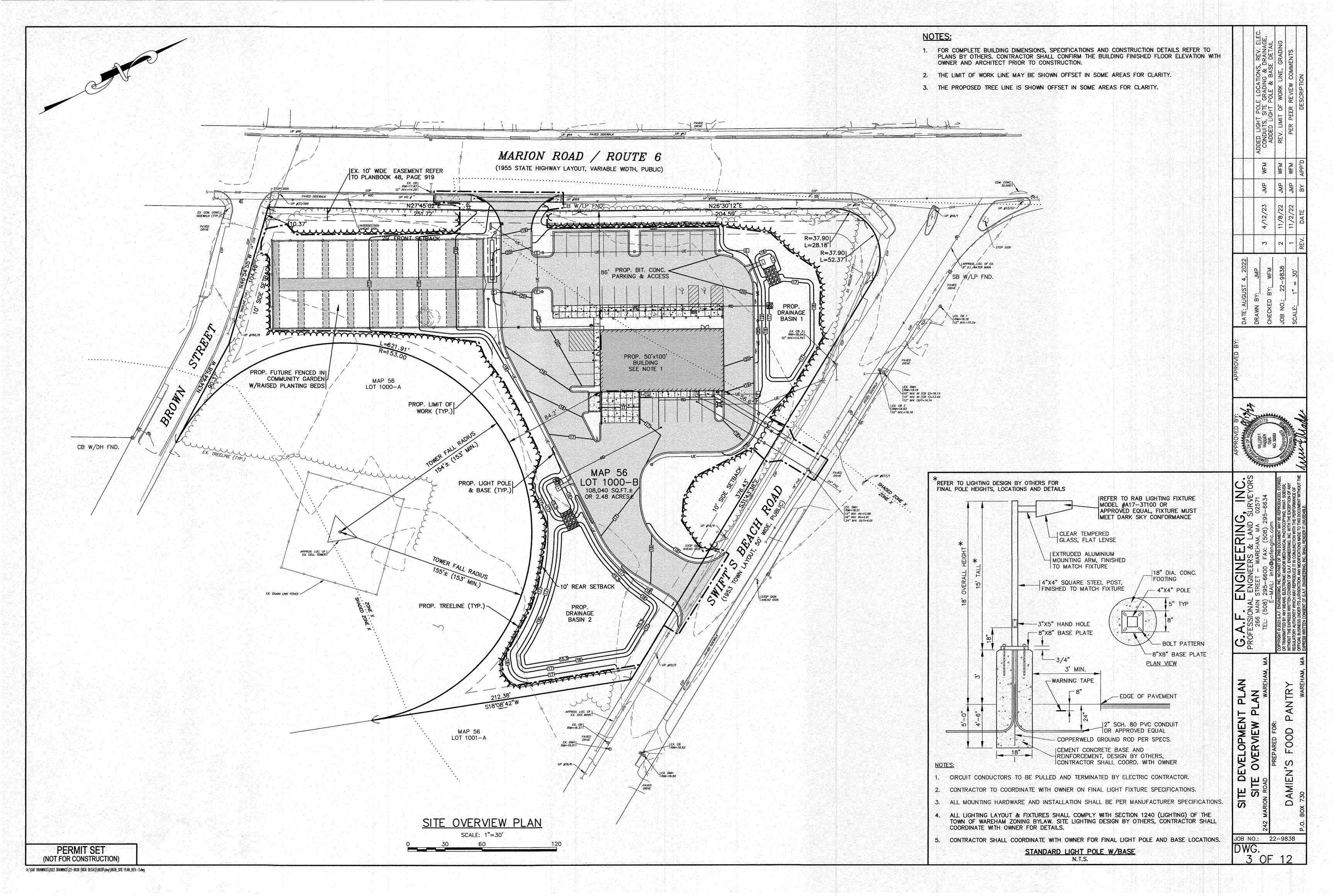
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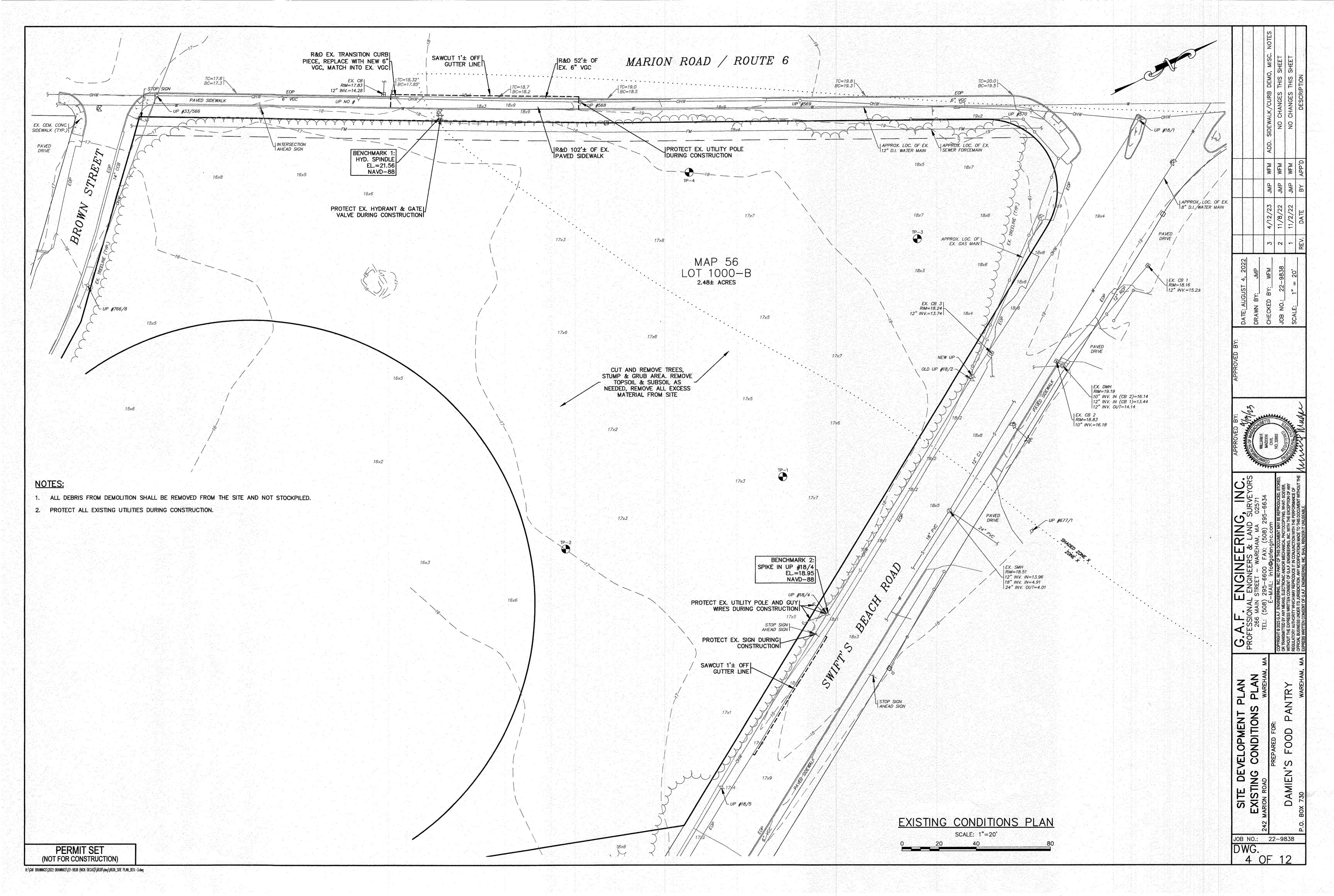
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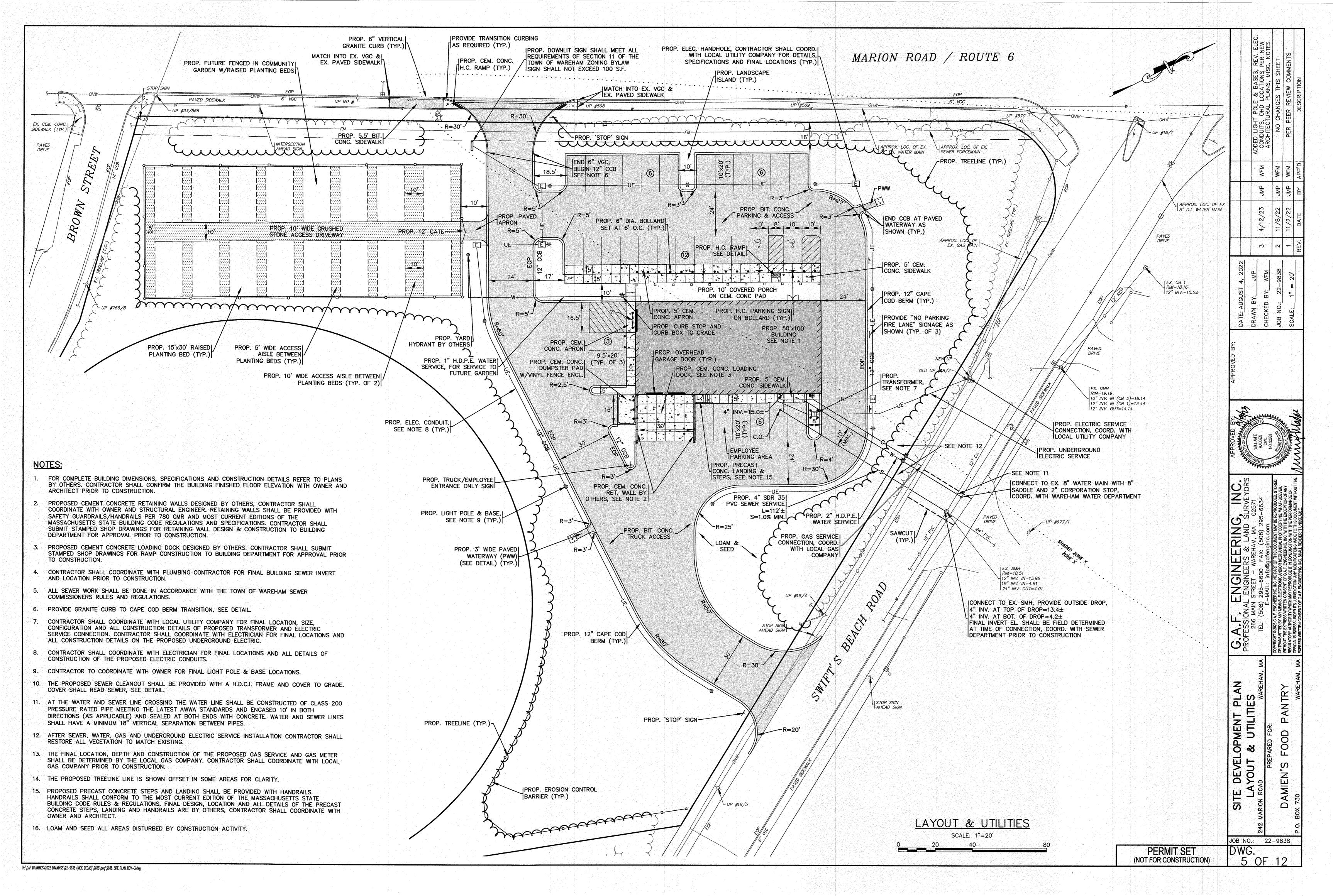
GEND

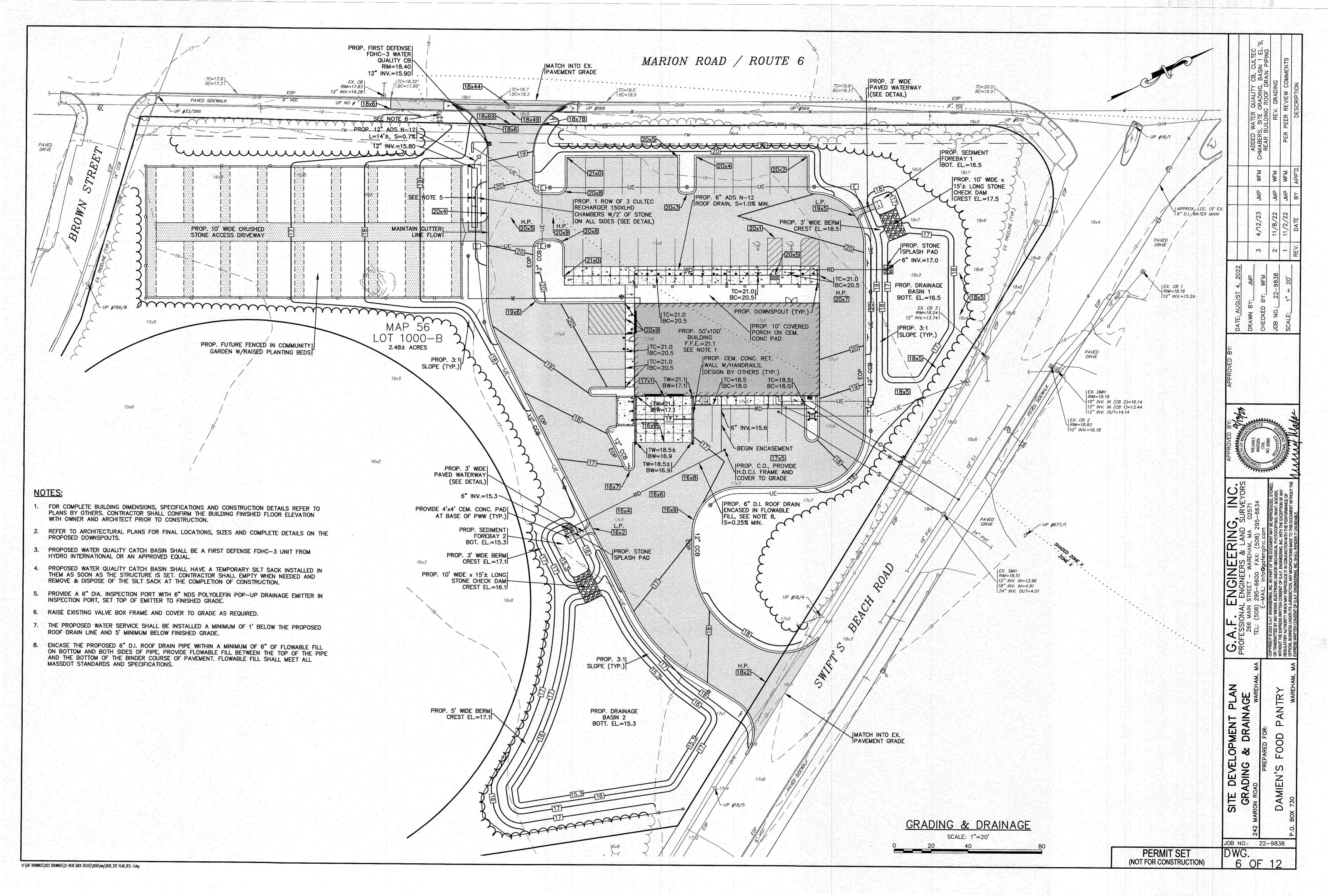
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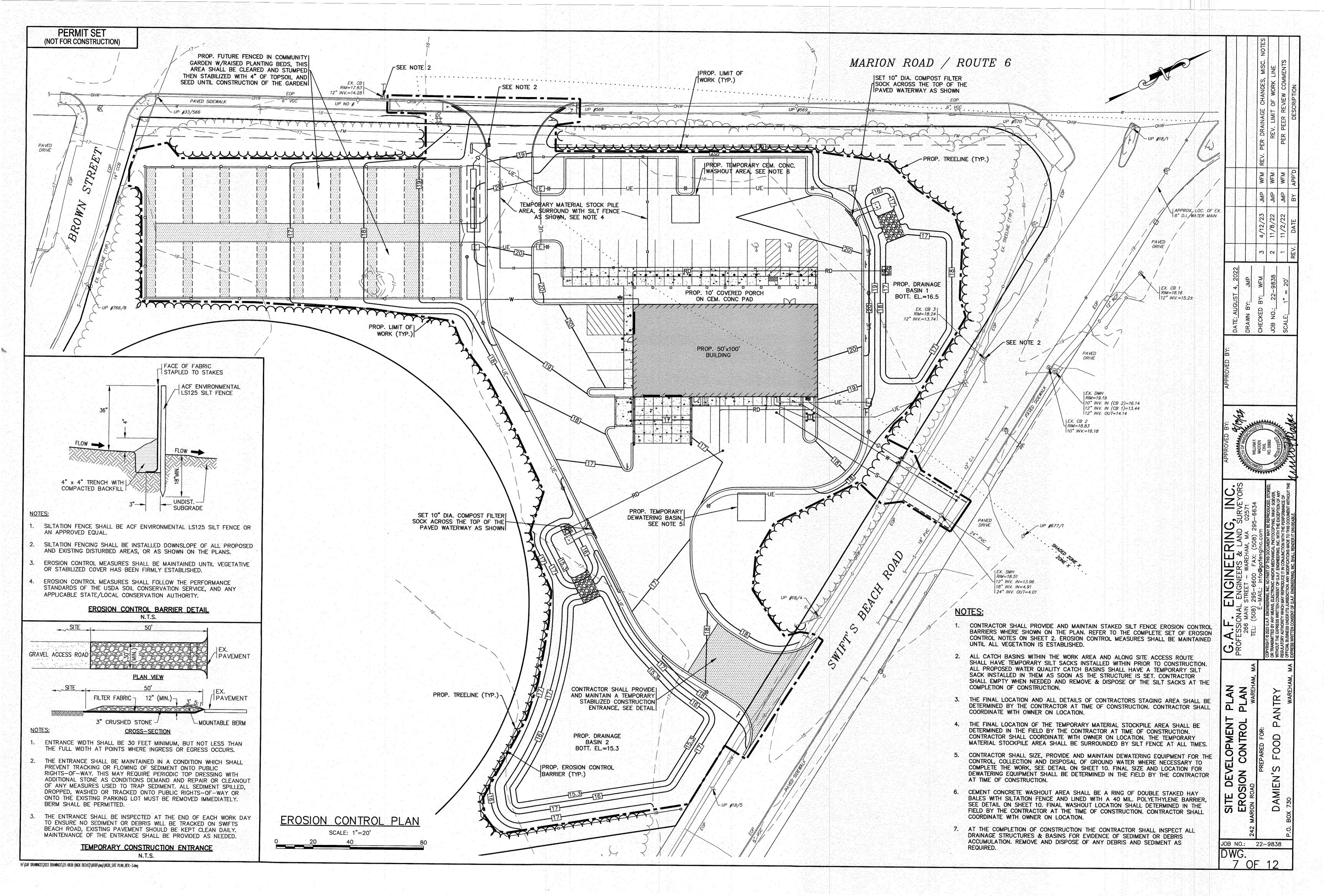
PERMIT SET (NOT FOR CONSTRUCTION)

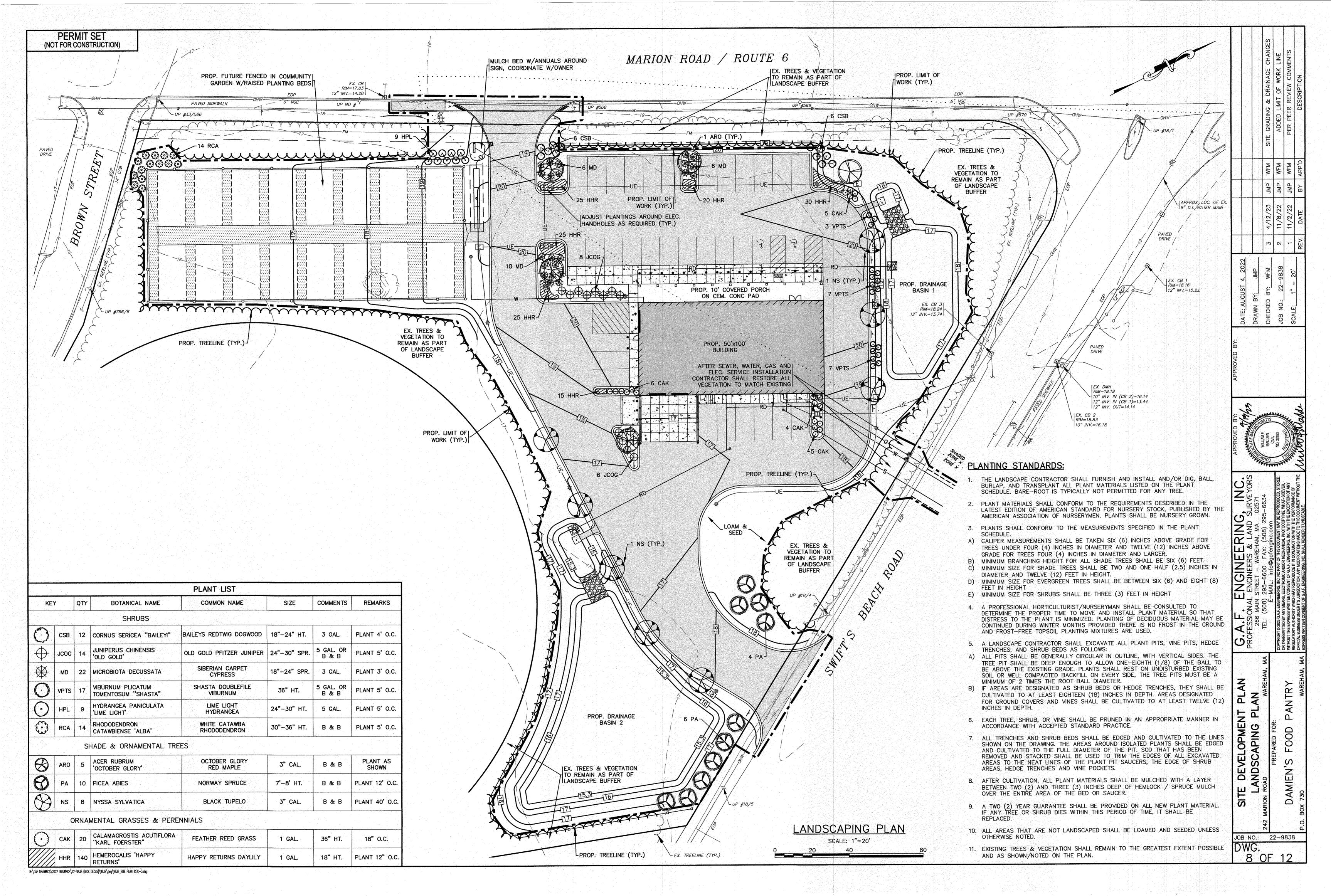


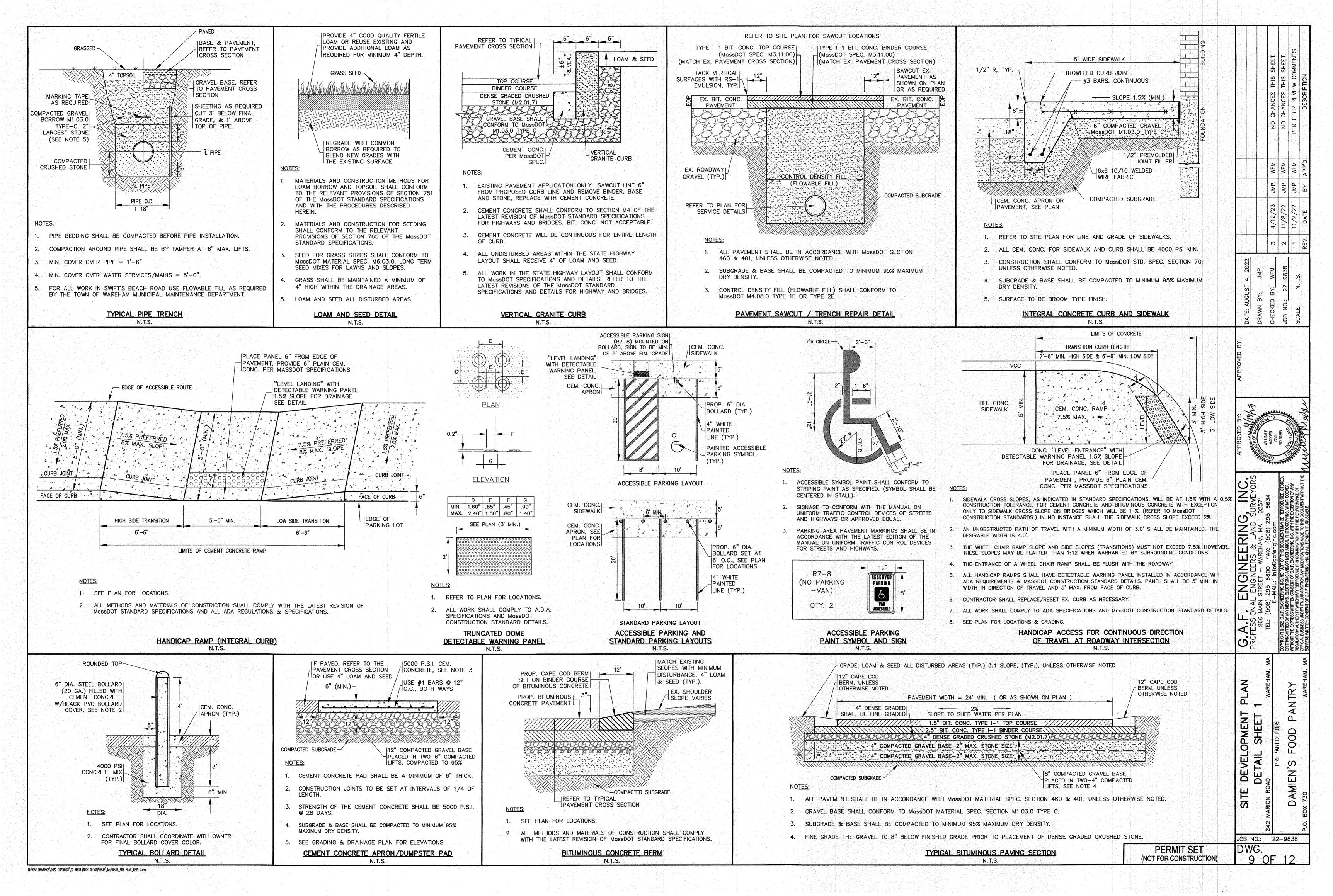


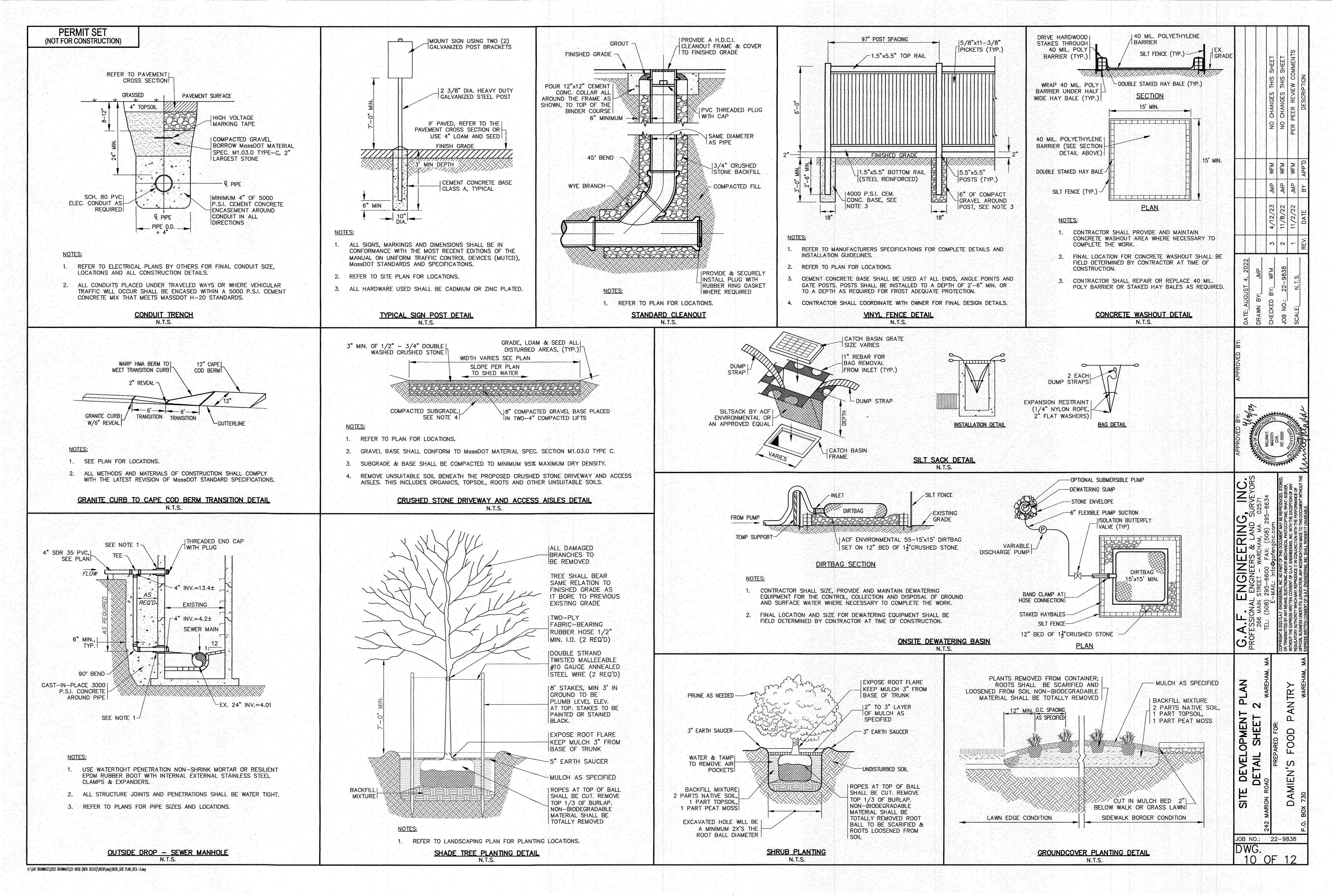


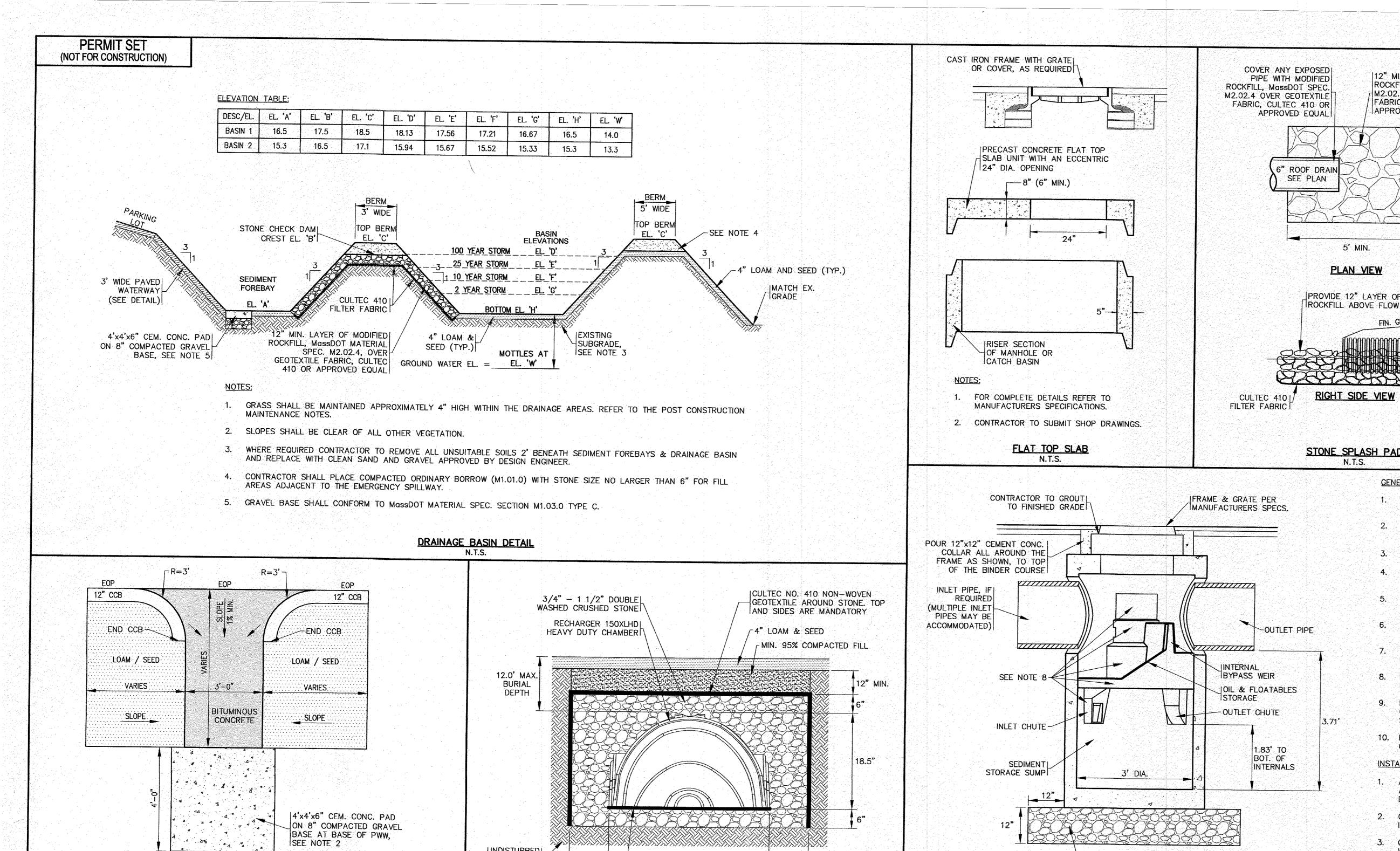


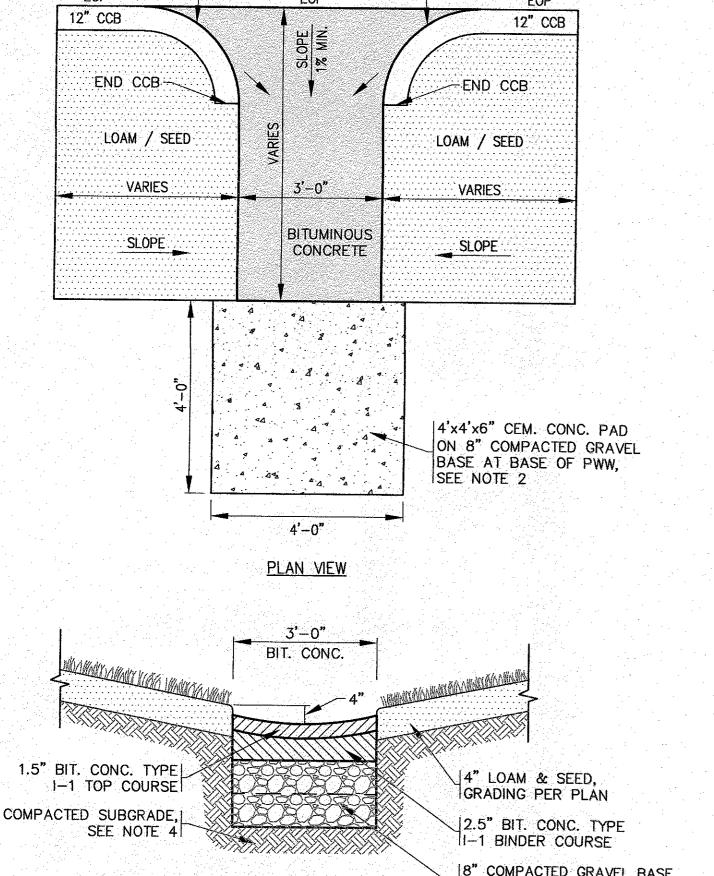


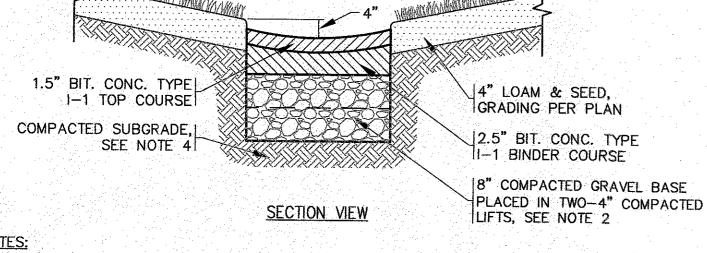








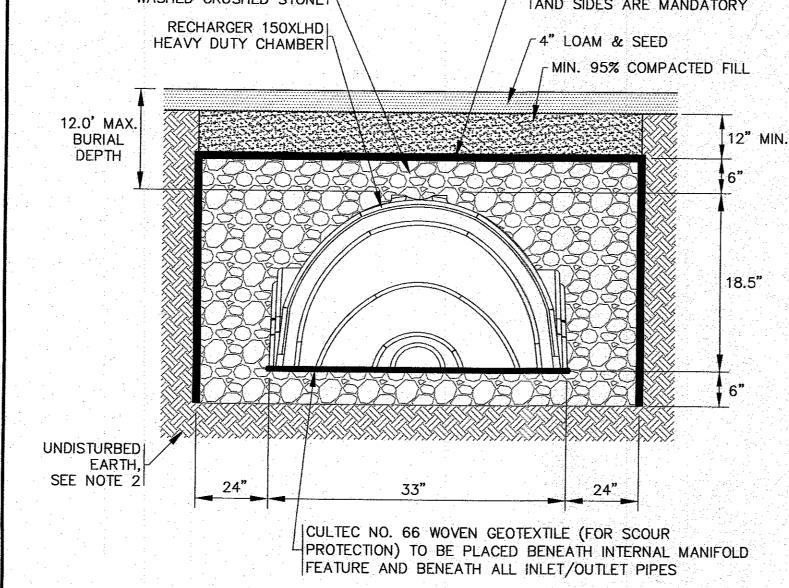




- 1. REFER TO GRADING & DRAINAGE PLAN FOR LOCATION AND ELEVATIONS OF PAVED WATERWAYS.
- 2. GRAVEL BASE SHALL CONFORM TO MassDOT MATERIAL SPEC. SECTION M1.03.0 TYPE C.
- 3. SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY
- REMOVE UNSUITABLE SOIL BENEATH THE PROPOSED PAVED WATERWAYS. THIS INCLUDES ORGANICS, TOPSOIL, ROOTS AND OTHER UNSUITABLE SOILS.

N.T.S.

## PAVED WATERWAY DETAIL



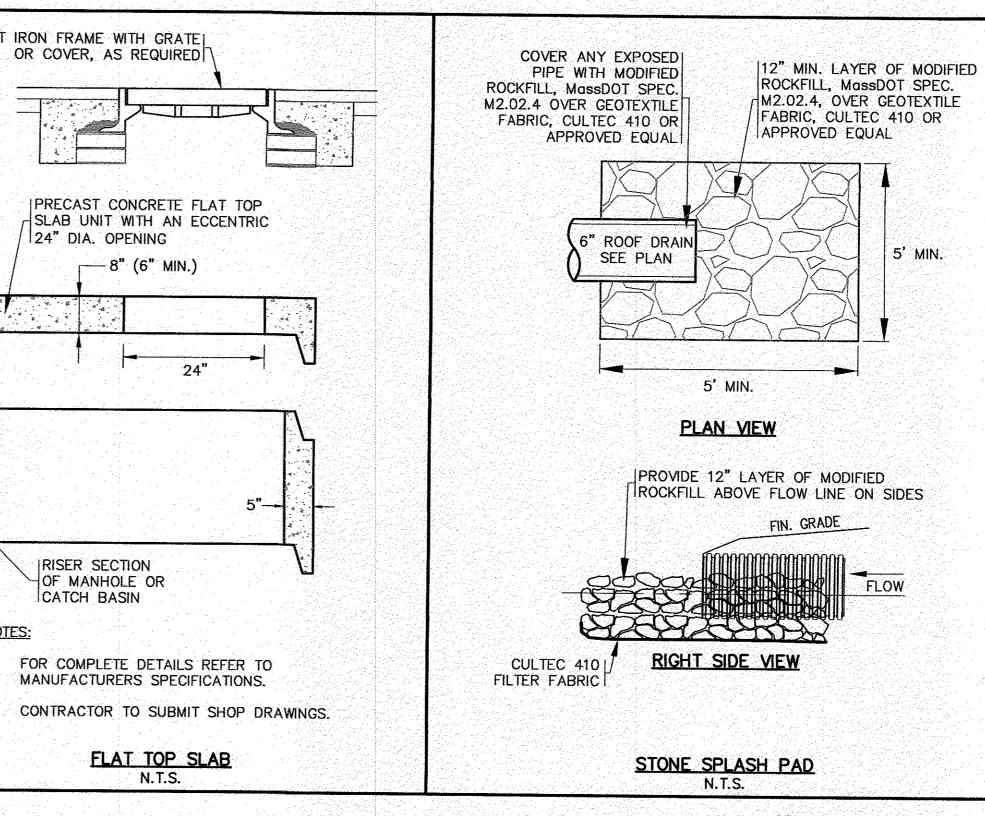
## SYSTEM ELEVATIONS:

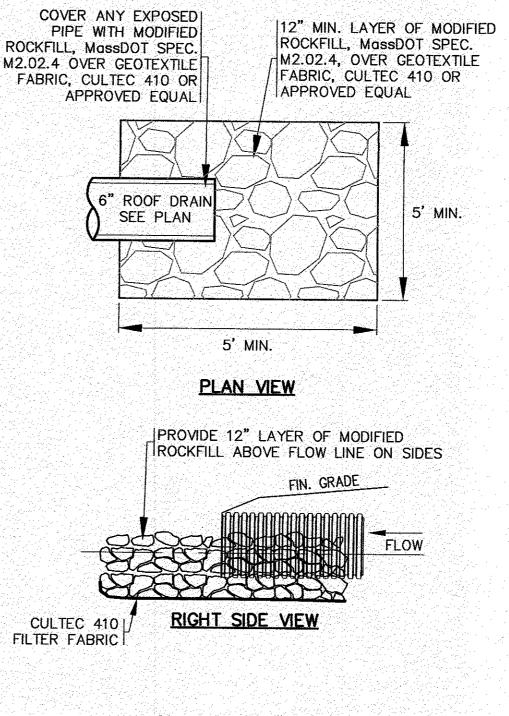
15.30 15.80 17.30 17.80	BOTTOM OF STONE	BOTTOM 150XLHD'S	TOP 150XLHD'S	TOP OF STONE	
	15.30	15.80	17.30	17.80	

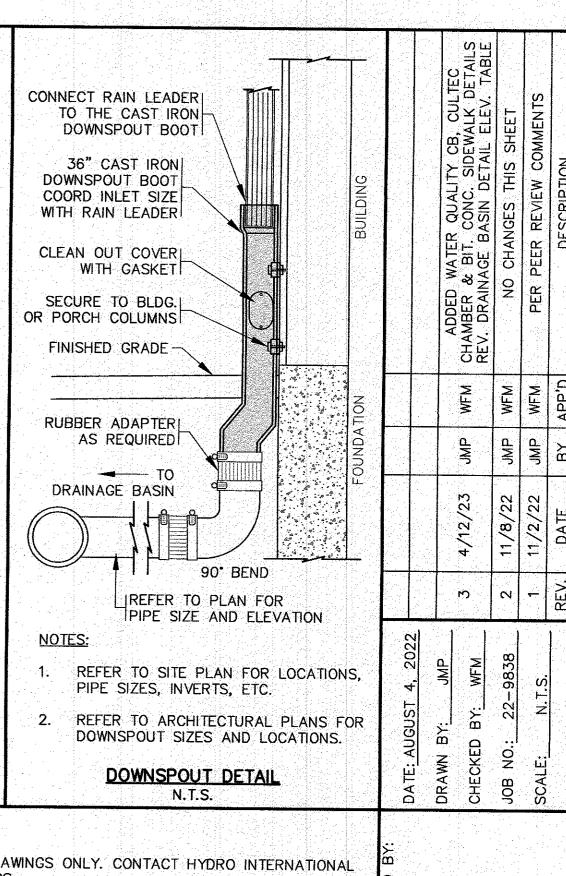
## NOTES:

- REFER TO PLAN FOR LOCATIONS.
- REMOVE ALL UNSUITABLE SOIL 2' MINIMUM BENEATH AND AROUND ALL SIDES OF THE PROPOSED LEACHING CHAMBERS & CRUSHED STONE. THIS INCLUDES ORGANICS, TOPSOIL, ROOTS AND OTHER UNSUITABLE SOILS REPLACE WITH CLEAN SAND AND GRAVEL APPROVED BY DESIGN ENGINEER.
- 3. FOR COMPLETE INSTALLATION DETAILS REFER TO CULTEC SPECIFICATIONS

CULTEC R150XLHD DETAIL







**GENERAL NOTES:** 

- GENERAL ARRANGEMENT DRAWINGS ONLY. CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC DRAWINGS.
- THE DIAMETER OF THE INLET AND OUTLET PIPES MAY BE NO MORE THAN 18". REFER TO PLAN FOR PIPE SIZES.
- MULTIPLE INLET PIPES POSSIBLE (REFER TO PROJECT PLAN).
- INLET/OUTLET PIPE ANGLE CAN VARY TO ALIGN WITH DRAINAGE NETWORK (REFER TO PROJECT PLANS).
- 5. PEAK FLOW RATE AND MINIMUM HEIGHT LIMITED BY AVAILABLE COVER AND PIPE DIAMETER.
- LARGER SEDIMENT STORAGE CAPACITY MAY BE PROVIDED WITH DEEPER SUMP DEPTH.
- THE TREATMENT SYSTEM SHALL USE AN INDUCED VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
- 8. REFER TO MANUFACTURERS SHOP DRAWINGS FOR COMPLETE DETAILS, DIMENSIONS AND SYSTEM PARTS.
- FIRST DEFENSE STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING. ALL CASTINGS SHALL MEET AASHTO M306 AND HYDRO INTERNATIONAL SPECIFICATIONS.
- 10. FIRST DEFENSE UNIT SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.

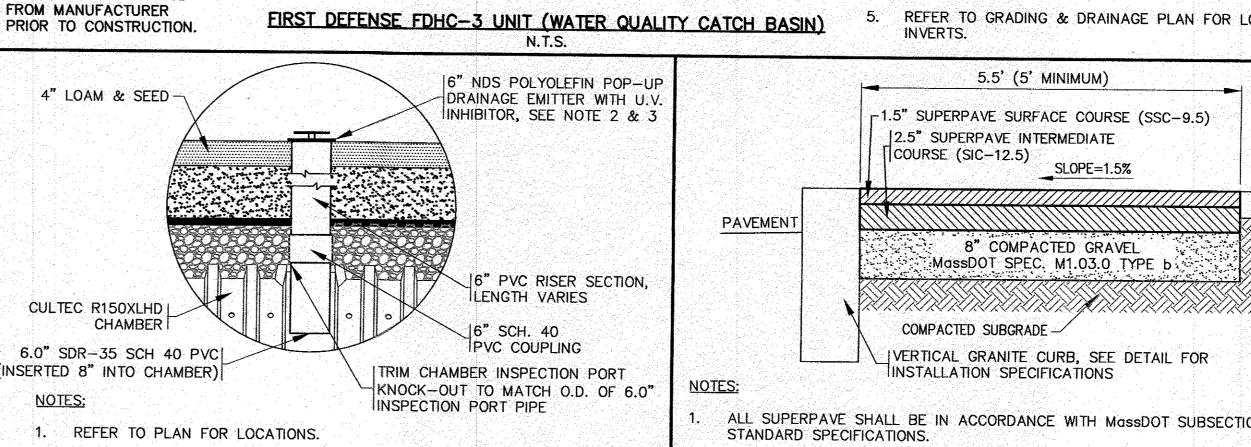
## **INSTALLATION NOTES:**

- 1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- 2. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- 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.
- 4. FOR COMPLETE INSTALLATION DETAILS REFER TO THE MANUFACTURERS INSTALLATION SPECIFICATIONS.
- REFER TO GRADING & DRAINAGE PLAN FOR LOCATION, ELEVATIONS AND

MATCH INTO

EX. GRADE, 4"

LOAM & SEED



PROVIDE A LEVEL BASE OF 3/4"

12" BEYOND THE STRUCTURE BASE

TO 1-1/2" CRUSHED STONE TO

PROTECT THE POP-UP DRAINAGE EMITTER DURING CONSTRUCTION

FOR COMPLETE DETAILS AND INSTALLATION GUIDELINES REFER TO

DRAINAGE EMITTER IN INSPECTION PORT DETAIL

N.T.S.

WITH A 12" PERFORATED PIPE PLACED AROUND THE UNIT.

THE MANUFACTURER'S SPECIFICATIONS.

CONTRACTOR SHALL

**OBTAIN SHOP DRAWINGS** 

- ALL SUPERPAVE SHALL BE IN ACCORDANCE WITH MassDOT SUBSECTION 702 OF THE 2021
- GRAVEL BORROW SHALL CONFORM TO MassDOT SPEC. SECTION M1.03.0, TYPE b.
- SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY.
- ALL UNDISTURBED AREAS WITHIN MARION ROAD LAYOUT SHALL RECEIVE 4" OF LOAM AND SEED.

BIT. CONC. SIDEWALK N.T.S.

Z Z DEVELOPMENT DETAIL SHEET ഗ

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