PLAN REFERENCE:

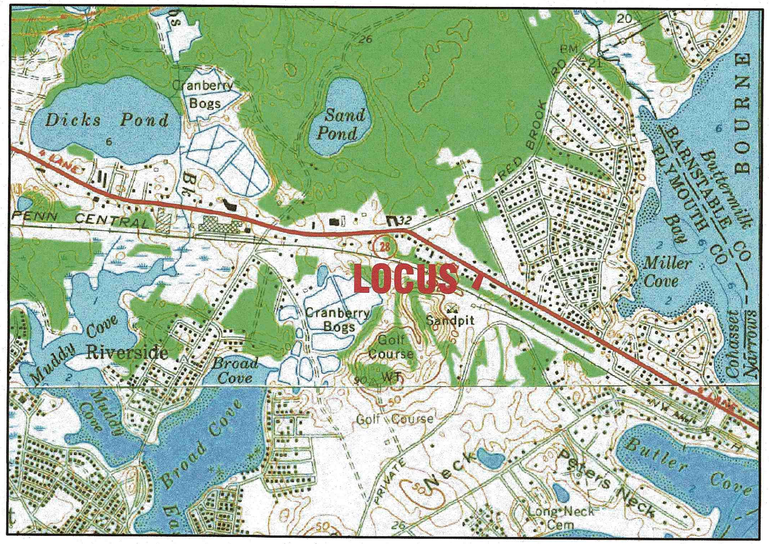
REFER TO A PLAN PREPARED BY G.A.F. ENGINEERING, INC. ENTITLED "APPROVAL NOT REQUIRED PLAN, 3127 CRANBERRY HIGHWAY, WAREHAM, MA, PREPARED FOR PETER KOULOURAS", DATED JUNE 3, 2022. SEE PLYMOUTH COUNTY REGISTRY OF DEEDS, PLAN BOOK 66, PAGE 398.

PETER KOULOURAS

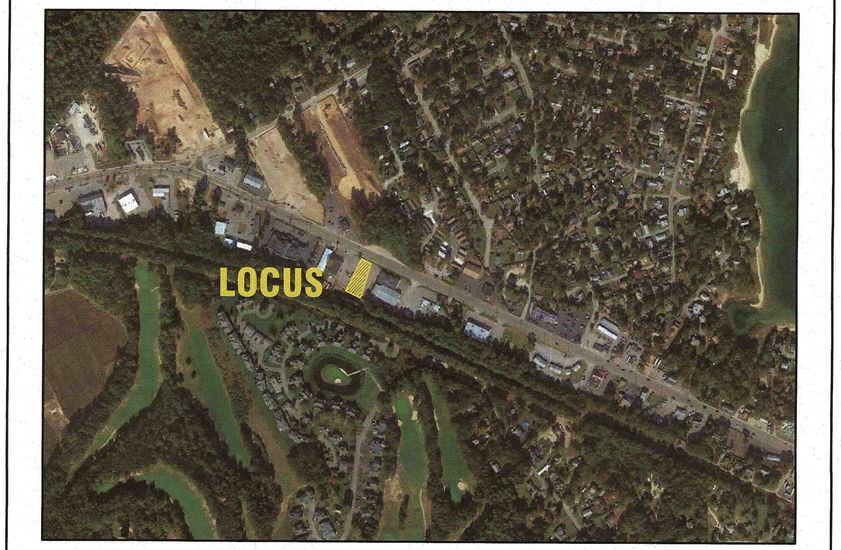
SITE DEVELOPMENT PLAN
3127 CRANBERRY HIGHWAY
WAREHAM, MASSACHUSETTS

OWNER: PETER KOULOURAS
P.O. BOX 961
N. FALMOUTH, MA

APPLICANT: PETER KOULOURAS
P.O. BOX 961
N. FALMOUTH, MA



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



— AERIAL OVERVIEW —
SCALE: 1"=400'

SITE DATA

ZONING DISTRICT: STRIP COMMERCIAL
ASSESSOR'S MAP: 8
ASSESSOR'S LOTS: PARCEL 'B'
FORMERLY PART OF LOT 1022.A
MIN. LOT AREA: 30,000 S.F.
MIN. ROAD FRONTAGE: 150'
MIN. FRONT SETBACK: 20'
MIN. SIDE & REAR SETBACK: 10'
MAX. BUILDING HEIGHT: 40'
MAX. BUILDING COVERAGE: 40%
MAX. IMPERVIOUS COVERAGE: 65%
WATER SUPPLY: TOWN WATER
SANITARY SEWER: TOWN SEWER
DISTANCE FROM RESIDENTIAL DISTRICT: 40'

ZONING DATA:

ZONING TABLE	ALLOWED	EXISTING	PROVIDED
LOT AREA:	30,000 S.F.	15,881± S.F.	SAME AS EXISTING
FRONTAGE:	150'	69.11'	SAME AS EXISTING
FRONT SETBACK:	20'	N/A	105.3'
SIDE SETBACK:	10'	N/A	10.5'
REAR SETBACK:	10'	N/A	56.5'
MAX. BUILDING COVERAGE:	40%	N/A	8.8%
MAX. IMPERVIOUS COVERAGE:	60%	99.5%	65.9%

PARKING DATA:

REQUIRED: 5 PARKING SPACES FOR EACH LIFT OR BAY
2 BAYS=10 PARKING SPACES
TOTAL REQUIRED=10 PARKING SPACES

PROVIDED:
TOTAL PROVIDED=14 PARKING SPACES

G.A.F. ENGINEERING, INC.
PROFESSIONAL ENGINEERS & LAND SURVEYORS
266 MAIN STREET, WAREHAM, MA 02571
TEL: (508) 295-6600 FAX: (508) 295-6634
E-MAIL: info@gafenginc.com

MAY 25, 2023

PLAN INDEX:

SHEET NO.	DESCRIPTION:
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3	EX. CONDITIONS & DEMOLITION
4	LAYOUT & UTILITIES
5	GRADING & DRAINAGE
6	EROSION CONTROL PLAN
7	LANDSCAPING PLAN
8	DETAIL SHEET 1
9	DETAIL SHEET 2
10	DETAIL SHEET 3

FLOOD ZONE DATE:

THE PROJECT IS LOCATED WITHIN FLOOD ZONE X.
REFER TO THE F.E.M.A. FLOOD INSURANCE RATE MAP
PANEL NUMBER 25023C0494-K, DATED: JULY 6, 2021.

PERMIT SET
(NOT FOR CONSTRUCTION)

REV.	DATE	BY	APP'D	DESCRIPTION

DATE: MAY 25, 2023
DRAWN BY: JMP
CHECKED BY: WFM
JOB NO.: 22-9890
SCALE: AS NOTED

APPROVED BY:
APPROVED BY: 5/31/23
COMMONWEALTH OF MASSACHUSETTS WILLIAM F. MADEN NO. 33993 REGISTERED PROFESSIONAL ENGINEER

G.A.F. ENGINEERING, INC.
PROFESSIONAL ENGINEERS & LAND SURVEYORS
266 MAIN STREET - WAREHAM, MA 02571
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SITE DEVELOPMENT PLAN
COVER SHEET
3127 CRANBERRY HIGHWAY WAREHAM, MA
PREPARED FOR:
PETER KOULOURAS
P.O. BOX 961 N. FALMOUTH, MA

JOB NO.: 22-9890
DWG. 1 OF 10

H:\GAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURIS)\9890\dwg\9890-SITE-PLAN_ALT-1.dwg

GENERAL NOTES:

1. 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.
2. 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 MAY OF 2023.
3. 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.
4. THE CONTRACTOR SHALL FIELD VERIFY, PRIOR TO CONSTRUCTION ALL EXISTING UNDERGROUND UTILITY LOCATIONS AND POINTS OF INTERCONNECTION.
5. 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.
7. 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.
8. 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.
9. 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:

1. IN GENERAL, THE PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY FITTING, CHANGE IN DIRECTION OR DETAIL OF CONSTRUCTION.
2. 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.
3. 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.
4. 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.
6. 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.
8. 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:

1. 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.
2. 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.
3. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR ALL GRADING AND OTHER LAND DISTURBING ACTIVITIES PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE CLEANUP AND REMOVAL OF ANY BUILDUP OF SEDIMENT WHICH ESCAPES FROM THE SITE.
5. CONTRACTOR IS RESPONSIBLE FOR CLEANING SILT AND DEBRIS OUT OF ALL STORM DRAINAGE STRUCTURES UPON THE COMPLETION OF CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL TEMPORARY EROSION CONTROL MEASURES AFTER CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS HAVE BEEN STABILIZED.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ANY FINES LEVIED AGAINST THE SITE FOR VIOLATIONS OF EROSION CONTROL REGULATIONS.
8. 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.

PERMIT SET
(NOT FOR CONSTRUCTION)

DRAINAGE OPERATION AND MAINTENANCE SCHEDULE:

THE OPERATION AND MAINTENANCE (O&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.

1. 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.
2. EROSION CONTROL SHALL BE PLACED ALONG THE LIMITS OF WORK WHERE SHOWN ON THE PLANS.
3. ALL PROPOSED WATER QUALITY CATCH BASINS SHALL HAVE TEMPORARY SILT SACK INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL EMPTY WHEN NEEDED AND REMOVE & DISPOSE OF THE SILT SACKS AT THE COMPLETION OF CONSTRUCTION. ALL PROPOSED WATER QUALITY 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. ALL AREAS SHALL BE INSPECTED WEEKLY, AND AFTER ANY 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.

1. 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).
2. 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.
3. 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.
4. 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:

1. ALL DRAINAGE PIPES, UNLESS OTHERWISE NOTED, ARE TO BE ADS N-12 PIPE AND FITTINGS WITH SOIL TIGHT JOINTS REFER TO PLAN FOR LOCATION, SIZES AND SLOPES.
2. ALL ROOF DRAIN PIPES, UNLESS OTHERWISE NOTED, ARE TO BE 4" ADS N-12 PIPE AND FITTINGS WITH SOIL TIGHT JOINTS. MINIMUM SLOPE TO BE 1.00% REFER TO PLAN FOR LOCATIONS.
3. MINIMUM COVER ON PIPES SHALL NOT BE LESS THAN 1.5 FEET.
4. ALL PERFORATED PIPE SHALL BE ADS HDPE PIPE WITH AASHTO CLASS II PERFORATION PATTERN.
5 ALL WORK AND MATERIAL SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.
6. SOIL CONDITIONS IN THE AREA OF THE PROPOSED LEACHING GALLEYS SHALL BE CONFIRMED PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH DESIGN ENGINEER.

DEMOLITION NOTES:

1. 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.
2. 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.
3. 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.
4. 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.
7. 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.
8. ENSURE THE SAFE PASSAGE OF PERSONS AROUND THE AREA OF DEMOLITION. CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURES, OTHER FACILITIES AND PERSONS.
9. 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:

1. ALL WATER MAINS, SERVICES, GATE VALVES/GATE BOX, CURB STOPS, HYDRANTS, FITTINGS, ETC. & METHOD OF INSTALLATION SHALL CONFORM TO THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENTS RULES & REGULATIONS.
2. WATER SERVICE SHALL BE PRESSURE TESTED, FLUSHED, DISINFECTED & SAMPLED FOR BACTERIOLOGICAL ANALYSIS IN ACCORDANCE WITH THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENTS REQUIREMENTS.
3. CONTRACTOR TO COORDINATE WITH THE ONSET FIRE DISTRICT AND THE ONSET WATER DEPARTMENT FOR THE INSPECTIONS OF THE WATER SERVICE INSTALLATION.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE INSTALLATION OF THE WATER SYSTEM.
5. THE CONTRACTOR SHALL OBTAIN A COPY OF THE "ONSET FIRE DISTRICT, WATER DEPARTMENT GENERAL PROCEDURES, CONSTRUCTION SPECIFICATIONS & MATERIAL SPECIFICATIONS" FROM THE ONSET WATER DEPARTMENT BEFORE PROCEEDING WITH THE INSTALLATION OF THE WATER SYSTEM.
6. ALL WATER MAINS SHALL BE RESTRAINED JOINT 8" CLASS 52 DOUBLE CEMENT LINED DUCTILE IRON PIPE WITH PUSH-ON JOINTS AND MECHANICAL JOINT FITTINGS OR APPROVED EQUAL.
7. ALL WATER SERVICE LINES SHALL BE INSTALLED A MINIMUM OF 10' FROM SEWER SERVICE LINES.

ABBREVIATIONS

AC	ASBESTIC CONCRETE
ADS	ADVANCED DRAINAGE SYSTEM
APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BIT. CONC.	BITUMINOUS CONCRETE
BLDRS	BOULDERS
BW	BOTTOM OF WALL
BVW	BORDERING VEGETATED WETLANDS
CB	CATCH BASIN
CB/DH	CONCRETE BOUND/DRILL HOLE
CCB	CAPE COD BERM
CEM.	CEMENT
C.I.	CAST IRON
CONC.	CONCRETE
C.O.	CLEAN OUT
C.L.D.I.	CEMENT LINED DUCTILE IRON
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
DIA	DIAMETER
DMH	DRAIN MANHOLE
D.I.	DUCTILE IRON
DCS	DRAINAGE CONTROL STRUCTURE
E	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
FP	FIRE PROTECTION
G	GAS
GG,GV	GAS GATE, GAS VALVE
H.C.	HANDICAP PARKING
H.D.P.E.	HIGH DENSITY POLYETHYLENE
H.P.	HIGH POINT
HYD	HYDRANT
INV.	INVERT
L.P.	LOW POINT
MAX	MAXIMUM
MED	MEDIUM
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
N/F	NOW OR FORMERLY
OHW	OVERHEAD WIRE
PCC	PRECAST CONCRETE CURBING
PVC	POLYVINYL CHLORIDE PIPE
PROPP.	PROPOSED
PWW	PAVED WATERWAY
RCP	REINFORCED CONCRETE PIPING
R	RADIUS
R&D	REMOVE AND DISPOSE
R&S	REMOVE AND STOCK
SB/DH	STONE BOUND/DRILL HOLE
S	SEWER
SGC	SLOPED GRANITE CURBING
SMH	SEWER MANHOLE
STA	STATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP.	TYPICAL
T/O/F	TOP OF FOUNDATION
UP	UTILITY POLE
UE	UNDERGROUND ELECTRIC
VGC	VERTICAL GRANITE CURB
W	WATER
WG,WV	WATER GATE, WATER VALVE
WQS	WATER QUALITY STRUCTURE
WQ CB	WATER QUALITY CAYCH BASIN

LEGEND

EXISTING	DESC.	PROPOSED
15	CONTOURS	45
15x5	SPOT GRADES	45x5 45x5
	WETLANDS	
	30' NO ACTIVITY ZONE	
	100' BUFFER ZONE	
	200' RIVERFRONT AREA	
	F.E.M.A. FLOOD ZONE	
D	DRAIN LINE	D
RD	ROOF DRAIN LINE	RD
	CATCH BASIN (CB)	
D	DRAIN MANHOLE (DMH)	D
E	ELECTRIC MANHOLE (EMH)	E
UE	UNDERGROUND UTILITIES	UE
OHW	OVERHEAD WIRES	OHW
	UTILITY POLE	
	GUY POLE	
WV	WATER GATE VALVE	WV
	WATER SHUTOFF/CURB STOP	
	HYDRANT	
	POST INDICATOR VALVE	
W	WATER LINE	W
FP	FIRE PROTECTION LINE	FP
S	SEWER MANHOLE (SMH)	S
S	SEWER LINE	S
	TREE/BRUSH LINE	
	LIGHT POST	
G	GAS LINE	G
GV	GAS GATE/VALVE	GV
	GAS SHUTOFF	
	GAS METER	
	SIGN	
	FENCE	
	BOUND	
PT PC	TEST PIT/PERC TEST	
	SILT FENCE	
	GUARD RAIL	
	FLARED END SECTION	
	STONE WALL	
W	WELL	W

REV.	DATE	BY	APP'D	DESCRIPTION

DATE: MAY 25, 2023
DRAWN BY: JMP
CHECKED BY: WFM
JOB NO.: 22-9890
SCALE: AS NOTED

APPROVED BY:

APPROVED BY: 5/31/23
COMMONWEALTH OF MASSACHUSETTS WILLIAM F. MADDEN JR. CIVIL NO. 39883 REGISTERED PROFESSIONAL ENGINEER

G.A.F. ENGINEERING, INC.
PROFESSIONAL ENGINEERS & LAND SURVEYORS
266 MAIN STREET - WAREHAM, MA 02571
TEL: (508) 295-6600 FAX: (508) 295-6634
E-MAIL: info@gafenginc.com

SITE DEVELOPMENT PLAN
GENERAL NOTES & LEGEND
3127 CRANBERRY HIGHWAY WAREHAM, MA

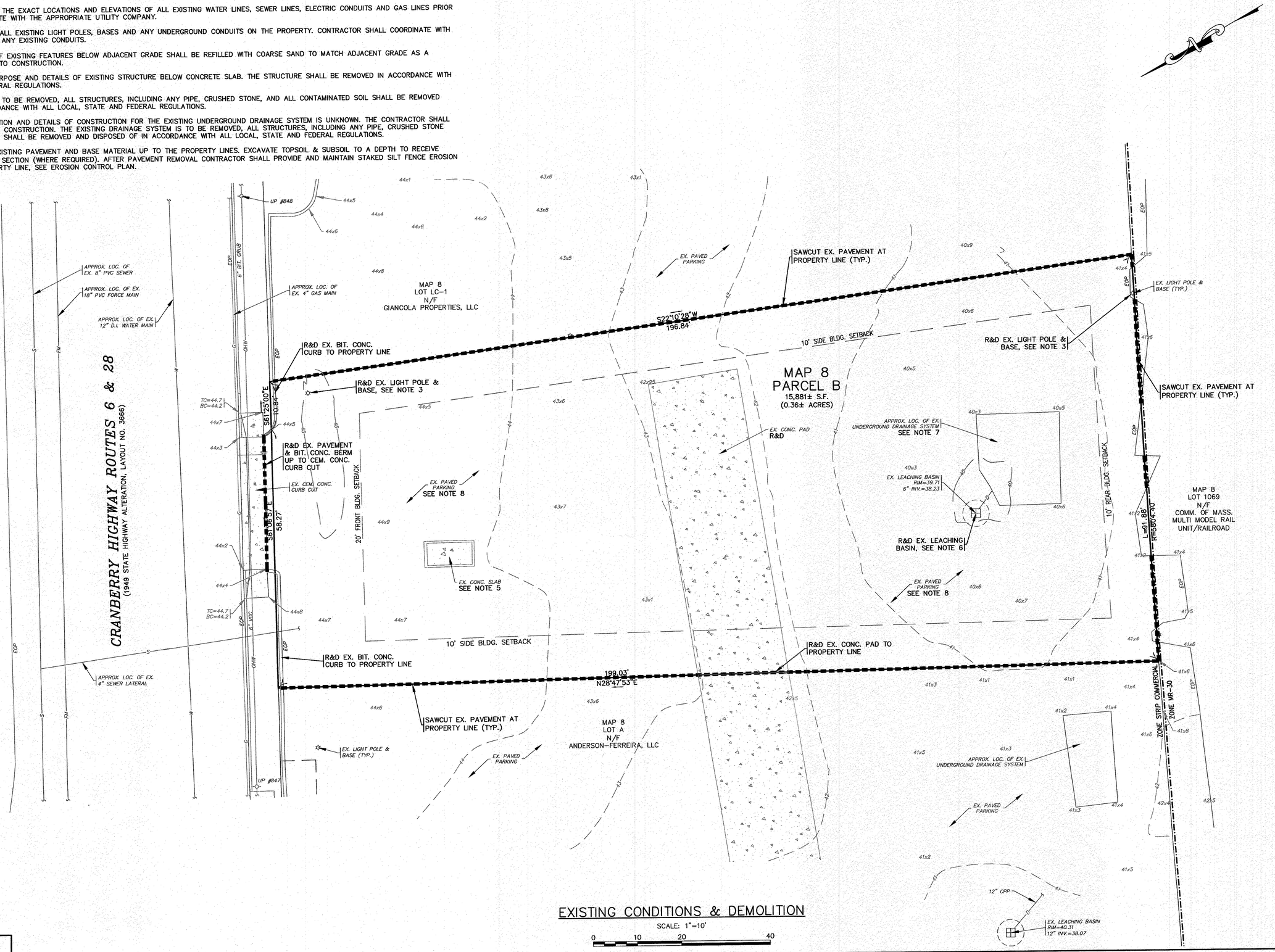
PREPARED FOR:
PETER KOULOURAS
N. FALMOUTH, MA
P.O. BOX 961

JOB NO.: 22-9890
DWG. 2 OF 10

H:\GAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURIS)\9890\dwg\9890-SITE-PLAN_ALT-1.dwg

NOTES:

1. ALL DEBRIS FROM DEMOLITION INCLUDING ANY PAVEMENT & CURBING REMOVAL, UTILITIES REMOVAL, DRAINAGE STRUCTURE REMOVAL, STONE REMOVAL, FENCE REMOVAL, TREE CLEARING, STUMPING, GRUBBING, ETC. SHALL BE REMOVED FROM THE SITE AND NOT STOCKPILED UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL CONFIRM THE EXACT LOCATIONS AND ELEVATIONS OF ALL EXISTING WATER LINES, SEWER LINES, ELECTRIC CONDUITS AND GAS LINES PRIOR TO CONSTRUCTION. COORDINATE WITH THE APPROPRIATE UTILITY COMPANY.
3. CONTRACTOR SHALL REMOVE ALL EXISTING LIGHT POLES, BASES AND ANY UNDERGROUND CONDUITS ON THE PROPERTY. CONTRACTOR SHALL COORDINATE WITH ELECTRICIAN WHEN REMOVING ANY EXISTING CONDUITS.
4. ANY EXCAVATION/REMOVAL OF EXISTING FEATURES BELOW ADJACENT GRADE SHALL BE REFILLED WITH COARSE SAND TO MATCH ADJACENT GRADE AS A TEMPORARY MEASURE PRIOR TO CONSTRUCTION.
5. CONTRACTOR TO CONFIRM PURPOSE AND DETAILS OF EXISTING STRUCTURE BELOW CONCRETE SLAB. THE STRUCTURE SHALL BE REMOVED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
6. WHERE A LEACHING BASIN IS TO BE REMOVED, ALL STRUCTURES, INCLUDING ANY PIPE, CRUSHED STONE, AND ALL CONTAMINATED SOIL SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
7. THE EXACT LOCATION, ELEVATION AND DETAILS OF CONSTRUCTION FOR THE EXISTING UNDERGROUND DRAINAGE SYSTEM IS UNKNOWN. THE CONTRACTOR SHALL DETERMINE DETAILS PRIOR TO CONSTRUCTION. THE EXISTING DRAINAGE SYSTEM IS TO BE REMOVED, ALL STRUCTURES, INCLUDING ANY PIPE, CRUSHED STONE AND ALL CONTAMINATED SOIL SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
8. REMOVE AND DISPOSE ALL EXISTING PAVEMENT AND BASE MATERIAL UP TO THE PROPERTY LINES. EXCAVATE TOPSOIL & SUBSOIL TO A DEPTH TO RECEIVE PROPOSED PAVEMENT CROSS SECTION (WHERE REQUIRED). AFTER PAVEMENT REMOVAL CONTRACTOR SHALL PROVIDE AND MAINTAIN STAKED SILT FENCE EROSION CONTROL BARRIER AT PROPERTY LINE, SEE EROSION CONTROL PLAN.



EXISTING CONDITIONS & DEMOLITION

SCALE: 1"=10'

0 10 20 40

PERMIT SET
(NOT FOR CONSTRUCTION)

H:\GAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURIS)\9890Fplan\9890-SITE-PLAN_ALT-1.dwg

REV.	DATE	BY	APP'D	DESCRIPTION

DATE: MAY 25, 2023
DRAWN BY: JMP
CHECKED BY: WFM
JOB NO.: 22-9890
SCALE: 1" = 10'

APPROVED BY:

APPROVED BY: 5/9/23

COMMONWEALTH OF MASSACHUSETTS WILLIAM F. MARCH CIVIL NO. 32980 REGISTERED PROFESSIONAL ENGINEER

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SITE DEVELOPMENT PLAN
EX. CONDITIONS & DEMOLITION
3127 CRANBERRY HIGHWAY WAREHAM, MA

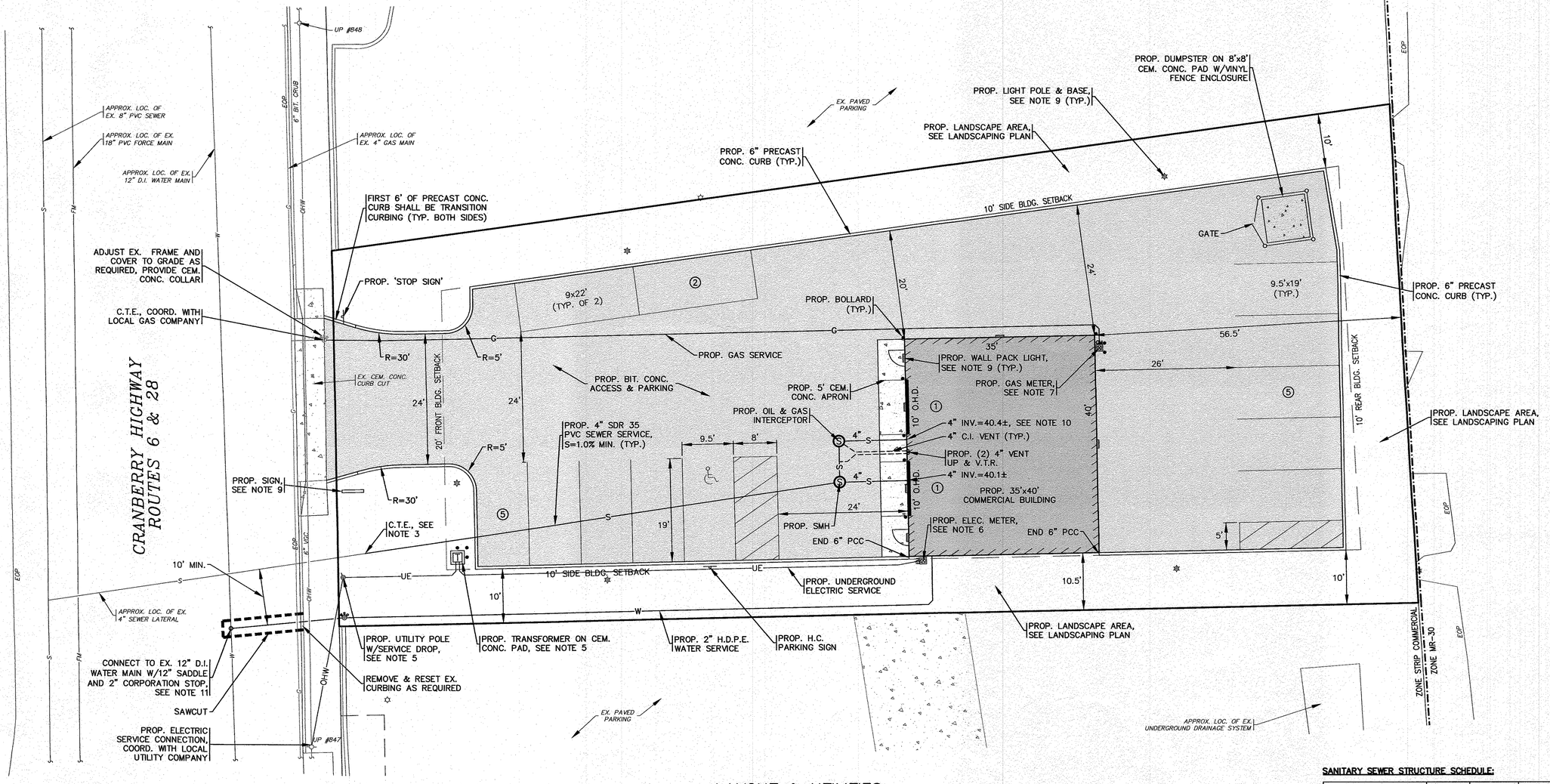
PREPARED FOR:
PETER KOULOURAS
P.O. BOX 951
N. FALMOUTH, MA

JOB NO.: 22-9890

DWG. 3 OF 10

NOTES:

1. REFER TO ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ALL PROPOSED COMMERCIAL BUILDING DIMENSIONS, CONSTRUCTION NOTES AND DETAILS. CONTRACTOR SHALL CONFIRM SLAB ELEVATION WITH OWNER PRIOR TO CONSTRUCTION.
2. ALL SEWER WORK SHALL BE DONE IN ACCORDANCE WITH THE TOWN OF WAREHAM SEWER COMMISSIONERS RULES AND REGULATIONS.
3. CONTRACTOR SHALL CONFIRM TYPE, SIZE AND ELEVATION OF EXISTING SEWER SERVICE PRIOR TO CONSTRUCTION. CONFIRM WITH WAREHAM SEWER DEPARTMENT AND ENGINEER.
4. FINAL BUILDING SEWER INVERTS SHALL BE DETERMINED BY THE PLUMBING CONTRACTOR AT TIME OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR.
5. CONTRACTOR SHALL COORDINATE WITH THE LOCAL UTILITY COMPANY AND ELECTRICIAN FOR ALL DETAILS ON THE ELECTRIC SERVICE CONNECTION AND FOR FINAL LOCATION, SIZE, CONFIGURATION AND ALL CONSTRUCTION DETAILS OF THE PROPOSED UTILITY POLE WITH SERVICE DROP AND THE PROPOSED TRANSFORMER.
6. THE FINAL LOCATIONS, DEPTH AND CONSTRUCTION DETAILS OF THE PROPOSED UNDERGROUND ELECTRIC SERVICE AND ELECTRIC METER SHALL BE DETERMINED BY THE LOCAL UTILITY COMPANY. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY AND ELECTRICIAN PRIOR TO CONSTRUCTION.
7. THE FINAL LOCATIONS, DEPTH'S AND CONSTRUCTION DETAILS OF THE PROPOSED GAS SERVICE AND GAS METER HALL BE DETERMINED BY THE LOCAL GAS COMPANY. CONTRACTOR SHALL COORDINATE WITH LOCAL GAS COMPANY PRIOR TO CONSTRUCTION.
8. PROPOSED SIGN SHALL MEET ALL REQUIREMENTS OF SECTION 11 (SIGNS) OF THE TOWN OF WAREHAM ZONING BYLAW. SIGN DESIGN BY OTHERS, CONTRACTOR SHALL COORDINATE WITH OWNER FOR DETAILS.
9. THE LIGHTING LAYOUT AND ALL LIGHT FIXTURES SHALL COMPLY WITH SECTION 1240 (LIGHTING) OF THE TOWN OF WAREHAM ZONING BYLAW. FINAL LIGHTING DESIGN BY OTHERS, CONTRACTOR SHALL COORDINATE WITH OWNER.
10. INTERIOR FLOOR DRAIN PLANS, DESIGN AND LAYOUT BY OTHERS, CONTRACTOR SHALL COORDINATE WITH OWNER AND PLUMBING CONTRACTOR PRIOR TO CONSTRUCTION. FINAL INVERT SHALL BE DETERMINED IN THE FIELD BY PLUMBING CONTRACTOR.
11. ALL PROPOSED WATER WORK, MATERIAL AND CONSTRUCTION SPECIFICATIONS SHALL BE APPROVED AND DONE IN ACCORDANCE WITH THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENT RULES AND SPECIFICATIONS. CONTRACTOR SHALL COORDINATE WITH THE ONSET FIRE DISTRICT AND ONSET WATER DEPARMENT PRIOR TO CONSTRUCTION.
12. LOAM AND SEED ALL DISTURBED AREAS.



LAYOUT & UTILITIES

SCALE: 1"=10'

0 10 20 40

SANITARY SEWER STRUCTURE SCHEDULE:

STRUCTURE	RIM EL.	INV. (IN)	INV. (OUT)
OIL&GAS INTERCEPTOR	43.1±	40.20	39.87
SEWER MANHOLE	43.2±	(2) 39.80	39.70

PERMIT SET
(NOT FOR CONSTRUCTION)

H:\CAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURIS)\9890\dwg\9890-SITE-PLAN_ALT-1.dwg

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APPROVED BY:

APPROVED BY: 5/31/23
COMMONWEALTH OF MASSACHUSETTS WILLIAM F. MADDEN CIVIL NO. 39886 REGISTERED PROFESSIONAL ENGINEER
William F. Madden

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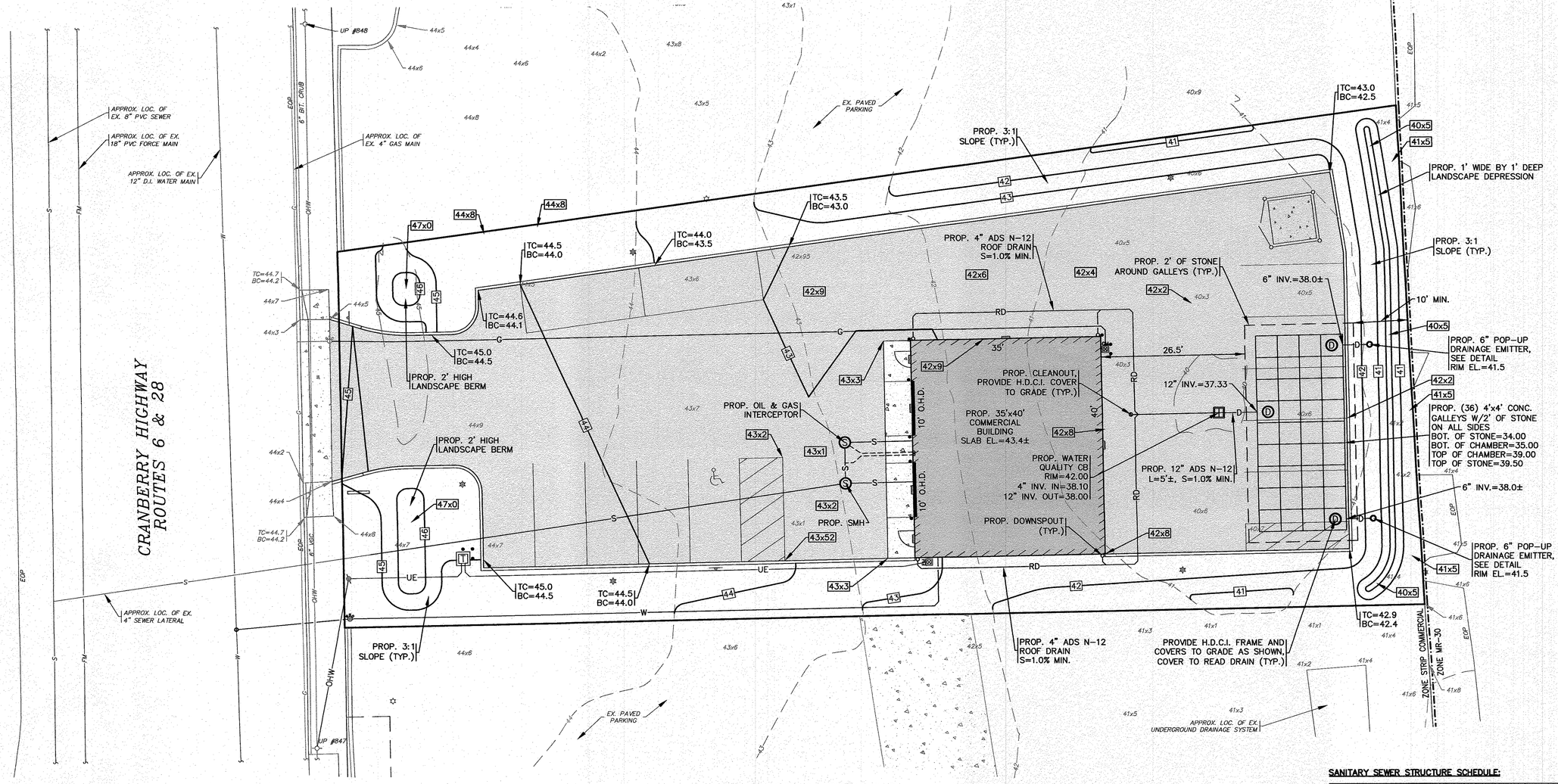
SITE DEVELOPMENT PLAN
LAYOUT & UTILITIES
3127 CRANBERRY HIGHWAY WAREHAM, MA

PREPARED FOR:
PETER KOULOURAS
P.O. BOX 961 N. FALMOUTH, MA

JOB NO.: 22-9890
DWG. 4 OF 10

NOTES:

1. REFER TO ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ALL PROPOSED COMMERCIAL BUILDING DIMENSIONS, CONSTRUCTION NOTES AND DETAILS. CONTRACTOR SHALL CONFIRM SLAB ELEVATION WITH OWNER PRIOR TO CONSTRUCTION.
2. ALL PROPOSED WATER QUALITY CATCH BASINS SHALL HAVE A TEMPORARY SILT SACK INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL EMPTY WHEN NEEDED AND REMOVE & DISPOSE OF THE SILT SACKS AT THE COMPLETION OF CONSTRUCTION.
3. PROPOSED WATER QUALITY CATCH BASIN SHALL BE A FIRST DEFENSE FDHC-3 UNIT FROM HYDRO INTERNATIONAL OR AN APPROVED EQUAL.
4. REFER TO ARCHITECTURAL PLANS BY OTHERS FOR FINAL LOCATIONS, SIZES AND COMPLETE CONSTRUCTION DETAILS ON THE PROPOSED DOWNSPOUTS.
5. WATER MAIN/SERVICES SHALL BE INSTALLED A MINIMUM OF 1' BELOW ALL PROPOSED DRAINAGE AND ROOF DRAINAGE PIPES AND 5' MINIMUM BELOW GRADE.
6. PROVIDE CLEAN OUTS WITH H.D.C.I. FRAME AND COVER TO GRADE, COVER TO READ 'DRAIN'.



DRAINAGE & GRADING

SCALE: 1"=10'

0 10 20 40

SANITARY SEWER STRUCTURE SCHEDULE:

STRUCTURE	RIM EL.	INV. (IN)	INV. (OUT)
OIL&GAS INTERCEPTOR	43.1±	40.20	39.87
SEWER MANHOLE	43.2±	(2) 39.80	39.70

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APPROVED BY:

APPROVED BY: 5/31/23

COMMONWEALTH OF MASSACHUSETTS — WILLIAM MADDEN CIVIL NO. 32088 — REGISTERED PROFESSIONAL ENGINEER

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SITE DEVELOPMENT PLAN
DRAINAGE & GRADING
3127 CRANBERRY HIGHWAY — WAREHAM, MA

PREPARED FOR:
PETER KOULOURAS
P.O. BOX 961 — N. FALMOUTH, MA

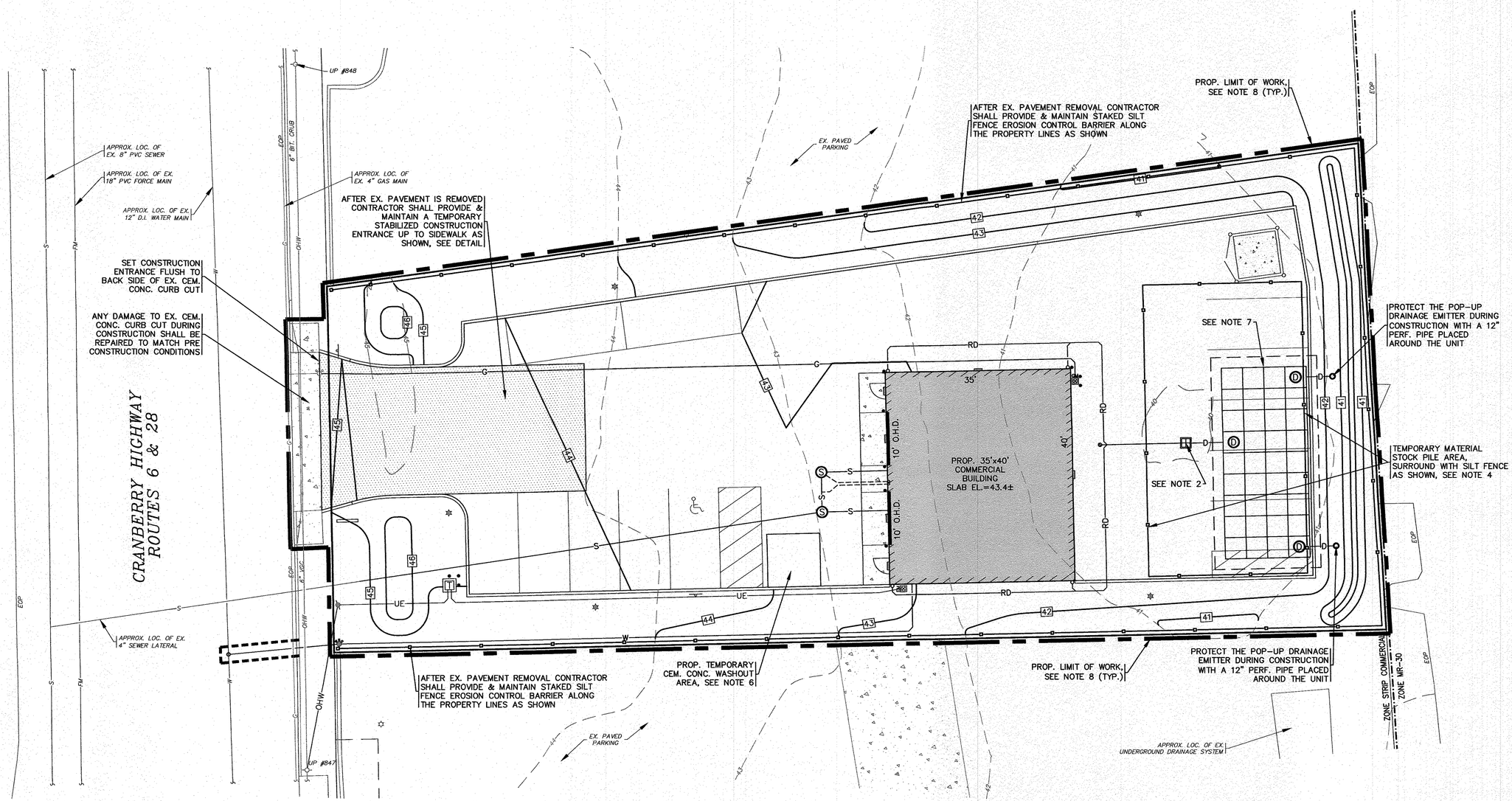
JOB NO.: 22-9890

DWG.
5 OF 10

H:\GAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURIS)\9890(dwg)\9890-SITE-PLAN_ALT-1.dwg

NOTES:

1. CONTRACTOR SHALL PROVIDE AND MAINTAIN STAKED SILT FENCE EROSION CONTROL BARRIERS WHERE SHOWN ON THE PLAN. SEE DETAIL ON SHEET 10. REFER TO THE COMPLETE SET OF EROSION CONTROL NOTES ON SHEET 2. EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL VEGETATION IS ESTABLISHED.
2. THE PROPOSED WATER QUALITY CATCH BASIN SHALL HAVE A TEMPORARY SILT SACK INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL EMPTY WHEN NEEDED AND REMOVE & DISPOSE OF THE SILT SACKS AT THE COMPLETION OF CONSTRUCTION.
3. THE LOCATION AND ALL DETAILS OF CONTRACTORS STAGING AREA SHALL BE DETERMINED BY THE CONTRACTOR AT TIME OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH OWNER ON LOCATION.
4. THE FINAL LOCATION OF THE TEMPORARY MATERIAL STOCKPILE AREA SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AT TIME OF CONSTRUCTION. THE TEMPORARY MATERIAL STOCKPILE AREA SHALL BE SURROUNDED BY SILT FENCE AT ALL TIMES. ONCE ESTABLISHED THE TEMPORARY STOCKPILE AREA SHALL BE INSPECTED AND APPROVED BY THE SITE ENGINEER.
5. CONTRACTOR SHALL SIZE, PROVIDE AND MAINTAIN DEWATERING EQUIPMENT FOR THE CONTROL, COLLECTION AND DISPOSAL OF GROUND WATER WHERE NECESSARY TO COMPLETE THE WORK. FINAL SIZE AND LOCATION FOR DEWATERING EQUIPMENT SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AT TIME OF CONSTRUCTION.
6. CEMENT CONCRETE WASHOUT AREA SHALL BE A SQUARE OF DOUBLE STAKED HAY BALES WITH SILTATION FENCE AND LINED WITH A 40 MIL. POLYETHYLENE BARRIER, SEE DETAIL. FINAL WASHOUT LOCATION SHALL DETERMINED IN THE FIELD BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH OWNER ON LOCATION.
7. AT THE COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL INSPECT ALL DRAINAGE STRUCTURES FOR EVIDENCE OF SEDIMENT OR DEBRIS ACCUMULATION. REMOVE AND DISPOSE OF ANY DEBRIS AND SEDIMENT AS REQUIRED.
8. THE PROPOSED LIMIT OF WORK LINE IS SHOWN OFFSET IN SOME AREAS FOR PLAN CLARITY.
9. ONCE ESTABLISHED ALL EROSION CONTROL MEASURES AND LOCATION OF STOCKPILED MATERIAL SHALL BE INSPECTED AND APPROVED BY THE SITE ENGINEER.
10. THE LOCATION AND ALL DETAILS OF THE TEMPORARY CHAIN LINK CONSTRUCTION FENCE SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH OWNER.



EROSION CONTROL PLAN

SCALE: 1"=10'

0 10 20 40

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WILLIAM F. MADDEN CIVIL NO. 39883 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

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SITE DEVELOPMENT PLAN
EROSION CONTROL PLAN
3127 CRANBERRY HIGHWAY WAREHAM, MA

PREPARED FOR:
PETER KOULOURAS
P.O. BOX 961 N. FALMOUTH, MA

JOB NO.: 22-9890

DWG.
6 OF 10

H:\GAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURIS)\9890\dwg\9890-SITE-PLAN_ALT-1.dwg

PLANTING STANDARDS:

1. THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR DIG, BALL, BURLAP, AND TRANSPLANT ALL PLANT MATERIALS LISTED ON THE PLANT SCHEDULE. BARE-ROOT IS TYPICALLY NOT PERMITTED FOR ANY TREE.

2. PLANT MATERIALS SHALL CONFORM TO THE REQUIREMENTS DESCRIBED IN THE LATEST EDITION OF AMERICAN STANDARD FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANTS SHALL BE NURSERY GROWN.

3. PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED IN THE PLANT SCHEDULE.
A) CALIPER MEASUREMENTS SHALL BE TAKEN SIX (6) INCHES ABOVE GRADE FOR TREES UNDER FOUR (4) INCHES IN DIAMETER AND TWELVE (12) INCHES ABOVE GRADE FOR TREES FOUR (4) INCHES IN DIAMETER AND LARGER.
B) MINIMUM BRANCHING HEIGHT FOR ALL SHADE TREES SHALL BE SIX (6) FEET.
C) MINIMUM SIZE FOR SHADE TREES SHALL BE TWO AND ONE HALF (2.5) INCHES IN DIAMETER AND TWELVE (12) FEET IN HEIGHT.
D) MINIMUM SIZE FOR EVERGREEN TREES SHALL BE BETWEEN SIX (6) AND EIGHT (8) FEET IN HEIGHT
E) MINIMUM SIZE FOR SHRUBS SHALL BE THREE (3) FEET IN HEIGHT

4. A PROFESSIONAL HORTICULTURIST/NURSERYMAN SHALL BE CONSULTED TO DETERMINE THE PROPER TIME TO MOVE AND INSTALL PLANT MATERIAL SO THAT DISTRESS TO THE PLANT IS MINIMIZED. PLANTING OF DECIDUOUS MATERIAL MAY BE CONTINUED DURING WINTER MONTHS PROVIDED THERE IS NO FROST IN THE GROUND AND FROST-FREE TOPSOIL PLANTING MIXTURES ARE USED.

5. A LANDSCAPE CONTRACTOR SHALL EXCAVATE ALL PLANT PITS, VINE PITS, HEDGE TRENCHES, AND SHRUB BEDS AS FOLLOWS:
A) ALL PITS SHALL BE GENERALLY CIRCULAR IN OUTLINE, WITH VERTICAL SIDES. THE TREE PIT SHALL BE DEEP ENOUGH TO ALLOW ONE-EIGHTH (1/8) OF THE BALL TO BE ABOVE THE EXISTING GRADE. PLANTS SHALL REST ON UNDISTURBED EXISTING SOIL OR WELL COMPACTED BACKFILL ON EVERY SIDE, THE TREE PITS MUST BE A MINIMUM OF 2 TIMES THE ROOT BALL DIAMETER.
B) IF AREAS ARE DESIGNATED AS SHRUB BEDS OR HEDGE TRENCHES, THEY SHALL BE CULTIVATED TO AT LEAST EIGHTEEN (18) INCHES IN DEPTH. AREAS DESIGNATED FOR GROUND COVERS AND VINES SHALL BE CULTIVATED TO AT LEAST TWELVE (12) INCHES IN DEPTH.

6. EACH TREE, SHRUB, OR VINE SHALL BE PRUNED IN AN APPROPRIATE MANNER IN ACCORDANCE WITH ACCEPTED STANDARD PRACTICE.

7. ALL TRENCHES AND SHRUB BEDS SHALL BE EDGED AND CULTIVATED TO THE LINES SHOWN ON THE DRAWING. THE AREAS AROUND ISOLATED PLANTS SHALL BE EDGED AND CULTIVATED TO THE FULL DIAMETER OF THE PIT. SOD THAT HAS BEEN REMOVED AND STACKED SHALL BE USED TO TRIM THE EDGES OF ALL EXCAVATED AREAS TO THE NEAT LINES OF THE PLANT PIT SAUCERS, THE EDGE OF SHRUB AREAS, HEDGE TRENCHES AND VINE POCKETS.

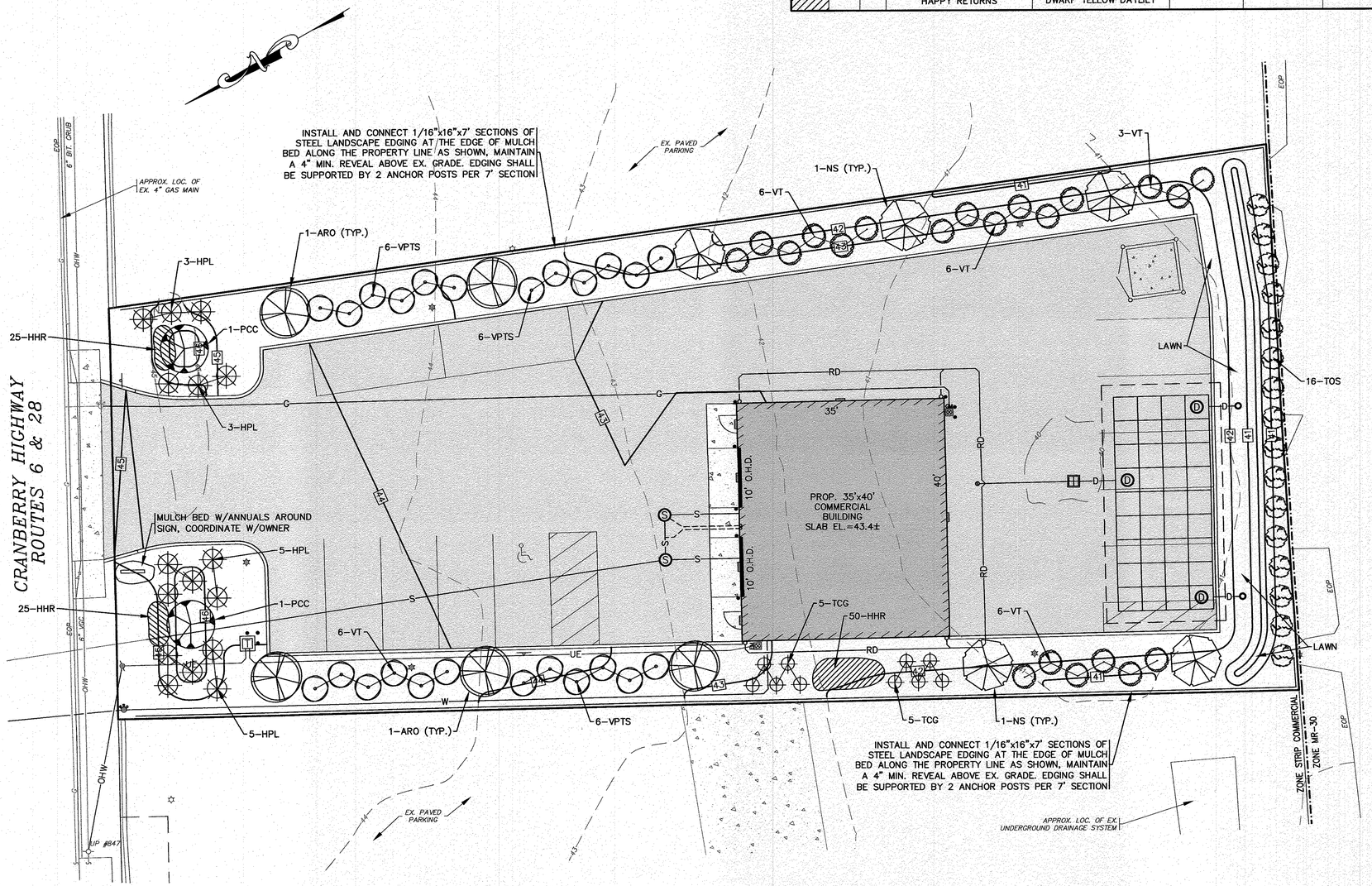
8. AFTER CULTIVATION, ALL PLANT MATERIALS SHALL BE MULCHED WITH A LAYER BETWEEN TWO (2) AND THREE (3) INCHES DEEP OF HEMLOCK / SPRUCE MULCH OVER THE ENTIRE AREA OF THE BED OR SAUCER.

9. A TWO (2) YEAR GUARANTEE SHALL BE PROVIDED ON ALL NEW PLANT MATERIAL. IF ANY TREE OR SHRUB DIES WITHIN THIS PERIOD OF TIME, IT SHALL BE REPLACED.

10. ALL AREAS THAT ARE NOT LANDSCAPED SHALL BE LOAMED AND SEEDED.

PLANT LIST

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS	REMARKS
SHRUBS						
HPL	16	HYDRANGEA PANICULATA 'LIME LIGHT'	LIME LIGHT HYDRANGEA	24"-30" HT.	5 GAL.	PLANT 5' O.C.
TCG	10	TAXUS CUSPIDATA 'GREEN WAVE'	GREEN WAVE SPREADING YEW	18"-24"" SPR	4 GAL.	PLANT 4' O.C.
TOS	16	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD ARBORVITAE	6'-7' HT.	B & B	PLANT 5' O.C.
VPTS	24	VIBURNUM PLICATUM TOMENTOSUM "SHASTA"	SHASTA DOUBLEFILE VIBURNUM	36" HT.	5 GAL.	PLANT 5' O.C.
VT	21	VIBURNUM TRILOBUM	AMERICAN CRANBERRYBUSH	3'-4' HT.	B & B	PLANT 5' O.C.
SHADE & ORNAMENTAL TREES						
ARO	5	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL.	B & B	PLANT 35' O.C.
NS	5	NYSSA SYLVATICA	BLACK TUPELO	3" CAL.	B & B	PLANT 35' O.C.
PCC	2	PYRUS CALLERYANA 'CHANTICLEER'	CLEVELAND SELECT CALLERY PEAR	3" CAL.	B & B	PLANT 35' O.C.
ORNAMENTAL GRASSES & PERENNIALS						
HHR	100	HEMEROCALIS 'HAPPY RETURNS'	HAPPY RETURNS DWARF YELLOW DAYLILY	1 GAL.	18" HT.	12" O.C.



LANDSCAPING PLAN

SCALE: 1"=10'

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COMMONWEALTH OF MASSACHUSETTS — WILLIAM F. MADDEN — CIVIL — NO. 32853 — REGISTERED PROFESSIONAL ENGINEER

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LANDSCAPING PLAN
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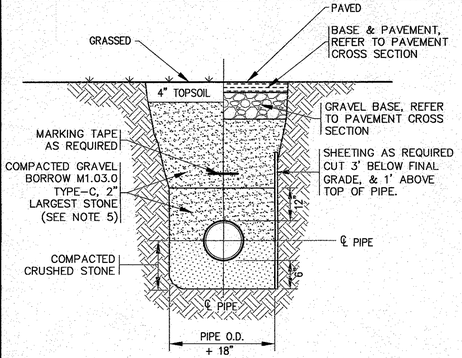
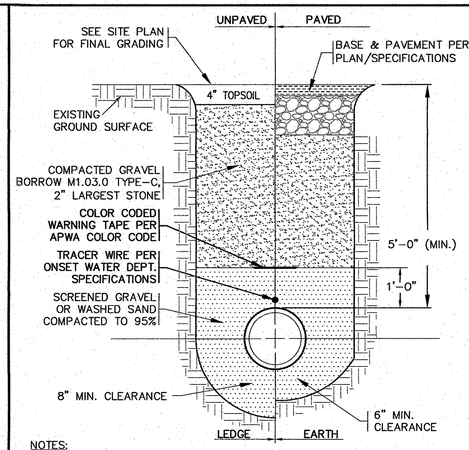
DWG. 7 OF 10



NOTES:

1. PIPE BEDDING SHALL BE COMPACTED BEFORE PIPE INSTALLATION.
2. COMPACTION AROUND PIPE SHALL BE BY TAMPER AT 6" MAX. LIFTS.
3. MIN. COVER OVER PIPE = 1'-6"
4. MIN. COVER OVER WATER SERVICES/MAINS = 5'-0".
5. FOR ALL WORK IN CRANBERRY HIGHWAY USE FLOWABLE FILL AS REQUIRED BY THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.

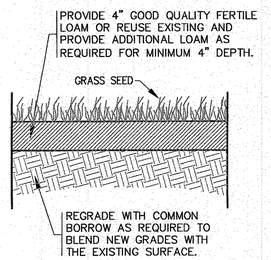
TYPICAL PIPE TRENCH
N.T.S.



NOTES:

1. PIPE BEDDING SHALL BE COMPACTED BEFORE PIPE INSTALLATION.
2. COMPACTION AROUND PIPE SHALL BE BY TAMPER AT 6" MAX. LIFTS.
3. INSTALL TRACER WIRE AND TERMINATION TRACE WIRE ACCESS BOX PER ONSET FIRE & ONSET WATER DEPARTMENTS SPECIFICATIONS AND DIRECTION OF THE ONSET WATER DEPARTMENT.

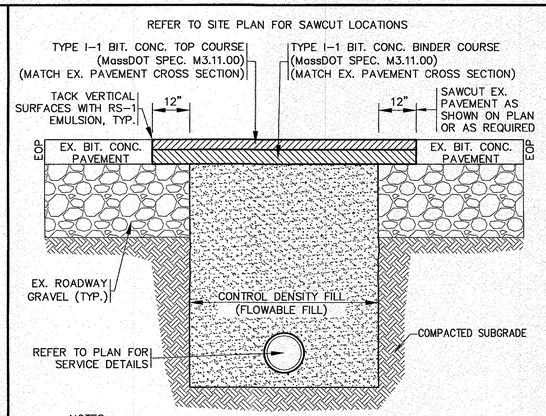
WATER PIPE TRENCH
N.T.S.



NOTES:

1. MATERIALS AND CONSTRUCTION METHODS FOR LOAM BORROW AND TOPSOIL SHALL CONFORM TO THE RELEVANT PROVISIONS OF SECTION 751 OF THE MassDOT STANDARD SPECIFICATIONS AND WITH THE PROCEDURES DESCRIBED HEREIN.
2. MATERIALS AND CONSTRUCTION FOR SEEDING SHALL CONFORM TO THE RELEVANT PROVISIONS OF SECTION 765 OF THE MassDOT STANDARD SPECIFICATIONS.
3. SEED FOR GRASS STRIPS SHALL CONFORM TO MassDOT MATERIAL SPEC. M6.03.0, LONG TERM SEED MIXES FOR LAWNS AND SLOPES.
4. LOAM AND SEED ALL DISTURBED AREAS.

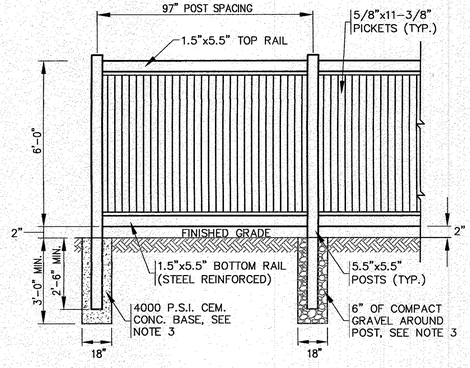
LOAM AND SEED DETAIL
N.T.S.



NOTES:

1. ALL PAVEMENT SHALL BE IN ACCORDANCE WITH MassDOT SECTION 460 & 401, UNLESS OTHERWISE NOTED.
2. SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY.
3. CONTROL DENSITY FILL (FLOWABLE FILL) SHALL CONFORM TO MassDOT M4.08.0 TYPE 1E OR TYPE 2E.

PAVEMENT SAWCUT / TRENCH REPAIR DETAIL
N.T.S.



NOTES:

1. REFER TO MANUFACTURERS SPECIFICATIONS FOR COMPLETE DETAILS AND INSTALLATION GUIDELINES.
2. REFER TO PLAN FOR LOCATIONS.
3. CEMENT CONCRETE BASE SHALL BE USED AT ALL ENDS, ANGLE POINTS AND GATE POSTS. POSTS SHALL BE INSTALLED TO A DEPTH OF 2'-6" MIN. OR TO A DEPTH AS REQUIRED FOR FROST ADEQUATE PROTECTION.

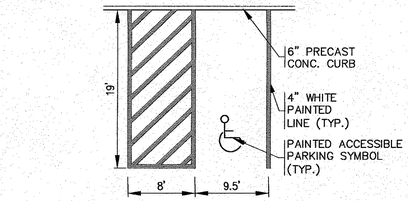
VINYL FENCE DETAIL
N.T.S.

REV.	DATE	BY	APP'D	DESCRIPTION

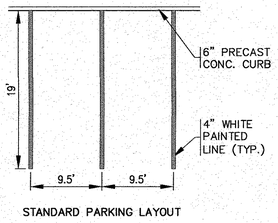
DATE: MAY 25, 2023
DRAWN BY: JMP
CHECKED BY: WFM
JOB NO.: 22-9890
SCALE: N.T.S.

APPROVED BY:

APPROVED BY: 6/6/23

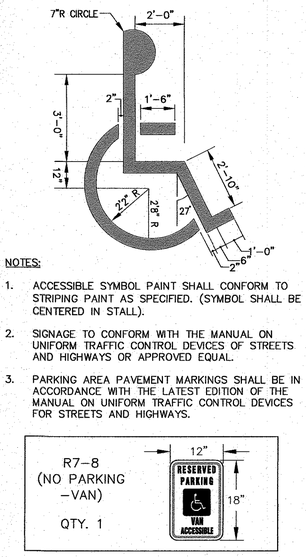


ACCESSIBLE PARKING LAYOUT



STANDARD PARKING LAYOUT

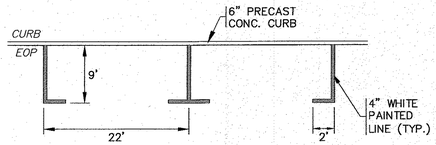
ACCESSIBLE PARKING AND STANDARD PARKING LAYOUTS
N.T.S.



NOTES:

1. ACCESSIBLE SYMBOL PAINT SHALL CONFORM TO STRIPING PAINT AS SPECIFIED. (SYMBOL SHALL BE CENTERED IN STALL).
2. SIGNAGE TO CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OF STREETS AND HIGHWAYS OR APPROVED EQUAL.
3. PARKING AREA PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

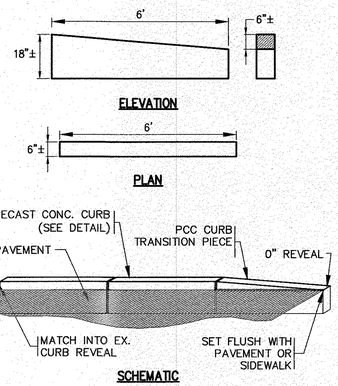
ACCESSIBLE PARKING PAINT SYMBOL AND SIGN
N.T.S.



NOTES:

1. REFER TO PLAN FOR LOCATIONS.

PARALLEL PARKING LAYOUT
N.T.S.

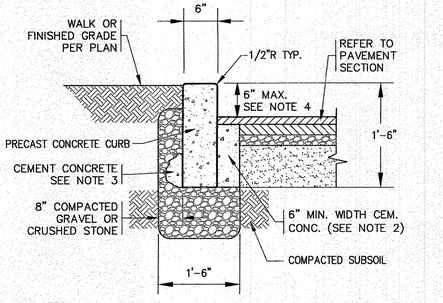


SCHEMATIC

NOTES:

1. REFER TO PLAN FOR MATERIAL & LOCATIONS.
2. PROVIDE RADIAL TRANSITION CURBING WHERE REQUIRED. REFER TO MANUFACTURES INSTALLATION DETAILS.
3. ALL WORK SHALL CONFORM TO MassDOT SPECIFICATIONS AND DETAILS. REFER TO THE LATEST REVISIONS OF THE MassDOT STANDARD SPECIFICATIONS AND DETAILS FOR HIGHWAY AND BRIDGES.
4. SEE PRECAST CONCRETE CURB DETAIL FOR CURBING INSTALLATION.

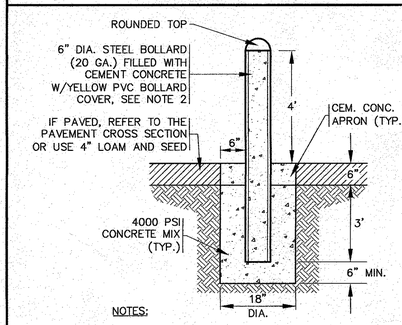
TRANSITION CURB DETAIL
N.T.S.



NOTES:

1. CEMENT CONCRETE SHALL CONFORM TO SECTION M4 OF THE LATEST REVISION OF MassDOT STANDARD SPECIFICATIONS. BIT. CONC. NOT ACCEPTABLE.
2. 4000 PSI CEMENT CONCRETE WILL BE CONTINUOUS FOR ENTIRE LENGTH OF CURB.
3. 1 CU.YD. OF 4000 PSI CEMENT CONCRETE WILL BE PLACED WITHIN 12" OF ALL JOINTS AT BACK OF CURBING. AS SHOWN.
4. MATCH EXISTING PRECAST CONCRETE CURB REVEAL WHERE REQUIRED. CONTRACTOR SHALL FIELD VERIFY EXISTING PRECAST CONCRETE CURB REVEAL PRIOR TO CONSTRUCTION.

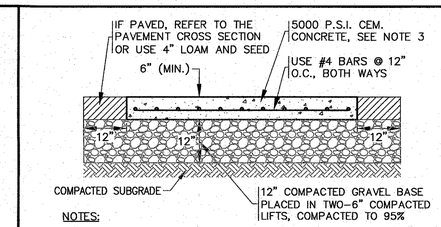
PRECAST CONCRETE CURB
N.T.S.



NOTES:

1. SEE PLAN FOR LOCATIONS.
2. CONTRACTOR SHALL COORDINATE WITH OWNER FOR FINAL BOLLARD COVER COLOR.

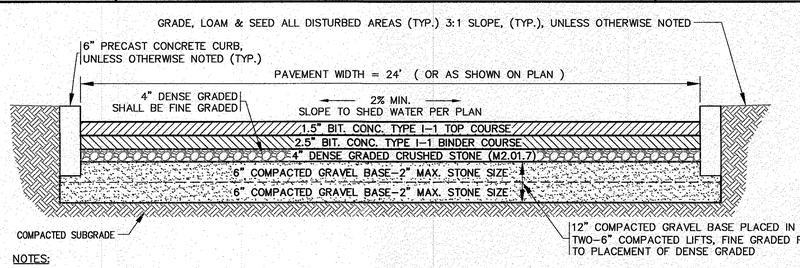
TYPICAL BOLLARD DETAIL
N.T.S.



NOTES:

1. CEMENT CONCRETE PAD SHALL BE A MINIMUM OF 6" THICK.
2. CONSTRUCTION JOINTS TO BE SET AT INTERVALS OF 1/4 OF LENGTH.
3. STRENGTH OF THE CEMENT CONCRETE SHALL BE 5000 P.S.I. @ 28 DAYS.
4. SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY.
5. SEE GRADING & DRAINAGE PLAN FOR ELEVATIONS.

CEMENT CONCRETE APRON/DUMPSTER PAD
N.T.S.



NOTES:

1. ALL PAVEMENT SHALL BE IN ACCORDANCE WITH MassDOT MATERIAL SPEC. SECTION 460 & 401, UNLESS OTHERWISE NOTED.
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.
4. FINE GRADE THE GRAVEL TO 8" BELOW FINISHED GRADE PRIOR TO PLACEMENT OF DENSE GRADED CRUSHED STONE.

TYPICAL BITUMINOUS PAVING SECTION
N.T.S.

G.A.F. ENGINEERING, INC.
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SITE DEVELOPMENT PLAN
DETAIL SHEET 1
3127 CRANBERRY HIGHWAY WAREHAM, MA

PREPARED FOR:
PETER KOULOURAS
N. FALMOUTH, MA
P.O. BOX 961

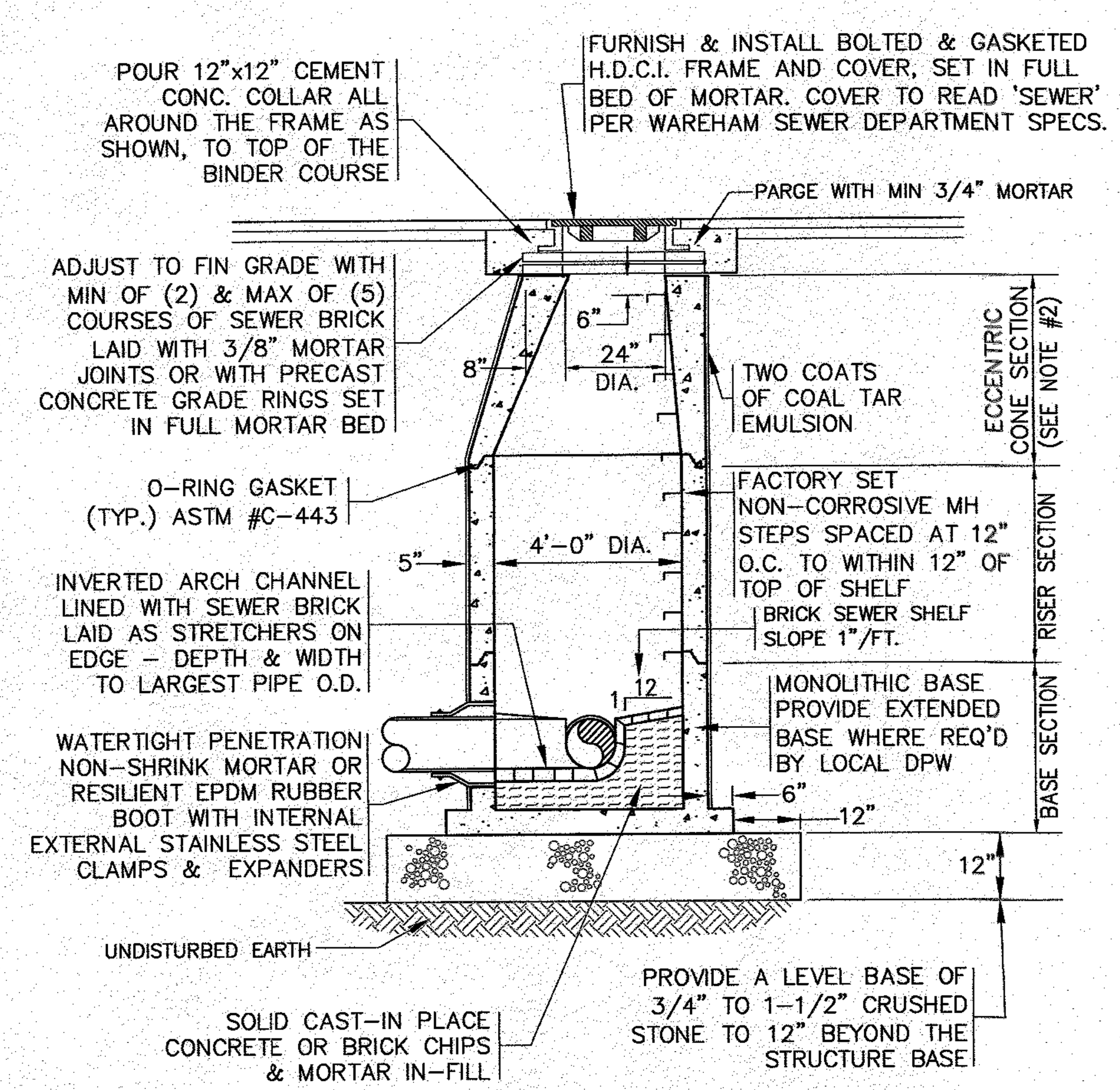
JOB NO.: 22-9890

PERMIT SET
(NOT FOR CONSTRUCTION)

DWG.
8 OF 10

H:\GAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURS)\9890.dwg\9890-SITE-PLAN_ALT-1.dwg

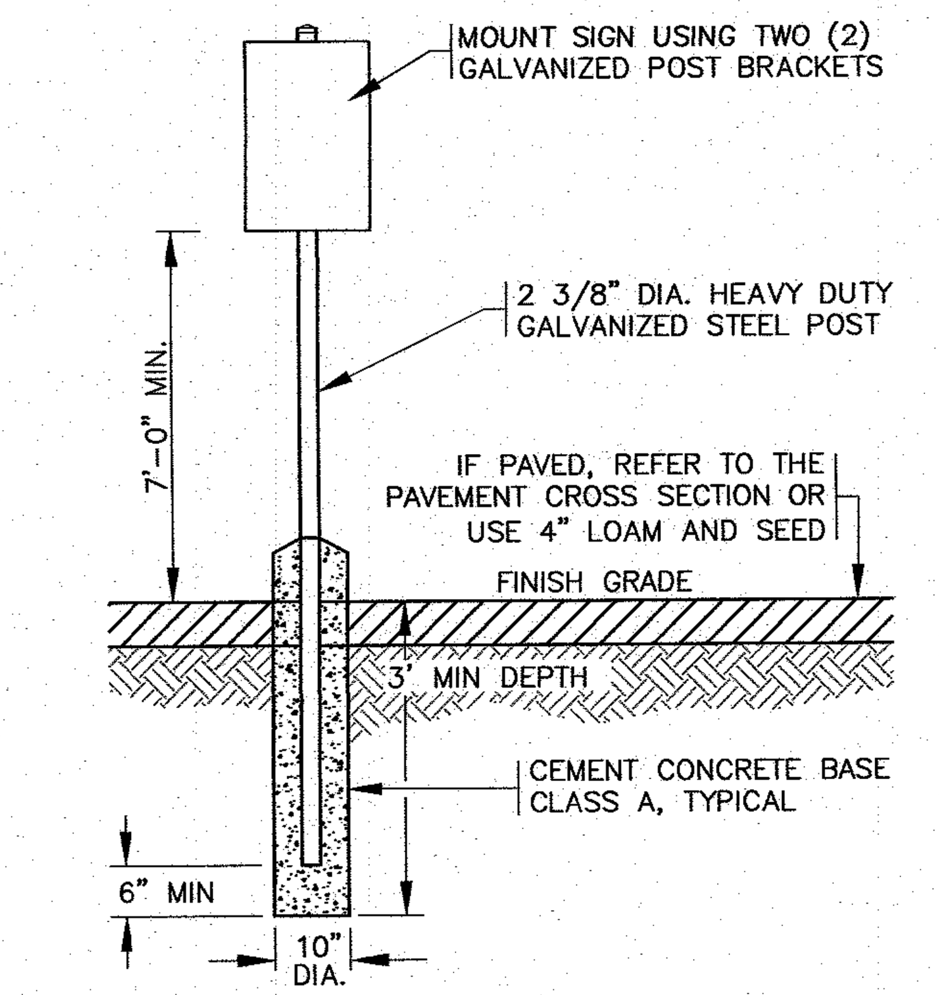
PERMIT SET
(NOT FOR CONSTRUCTION)



NOTES:

1. ALL STRUCTURES SHALL BE PRECAST CONC. IN ACCORDANCE WITH ASTM C-478 WITH H-20 LOADING. SECTION HEIGHTS VARY.
2. FOR SHALLOW INSTALLATION AND WHEN APPROVED BY THE ENGINEER, FLAT TOP H-20 SLAB ALLOWED, SUBMIT SHOP DWGS.
3. ALL STRUCTURE JOINTS AND PENETRATIONS SHALL BE WATER TIGHT. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. REFER TO PLANS FOR PIPE SIZES, INVERTS, RIMS AND LOCATIONS.

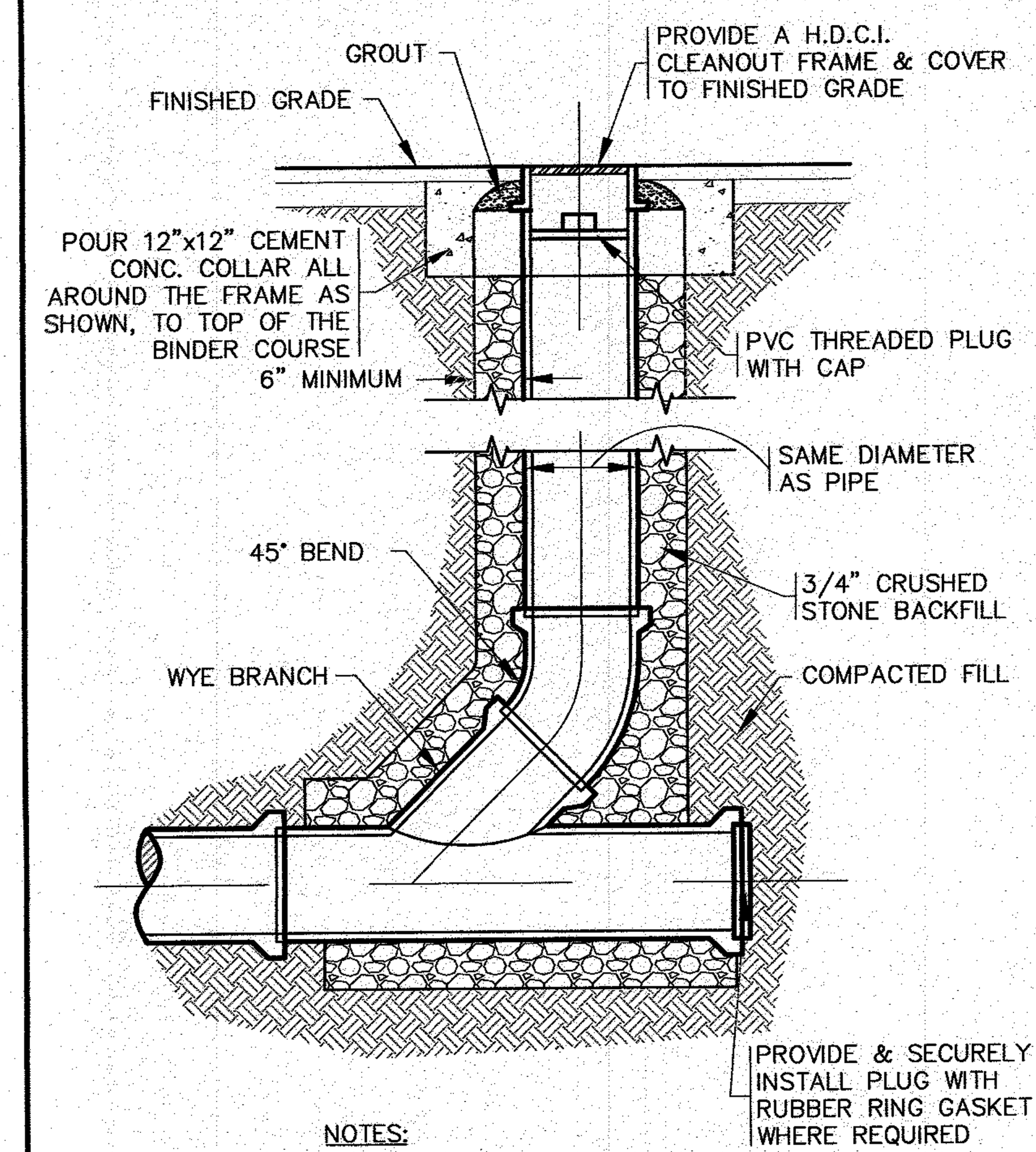
SEWER MANHOLE
N.T.S.



NOTES:

1. ALL SIGNS, MARKINGS AND DIMENSIONS SHALL BE IN CONFORMANCE WITH THE MOST RECENT EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), MassDOT STANDARDS AND SPECIFICATIONS.
2. REFER TO SITE PLAN FOR LOCATIONS.
3. ALL HARDWARE USED SHALL BE CADMIUM OR ZINC PLATED.

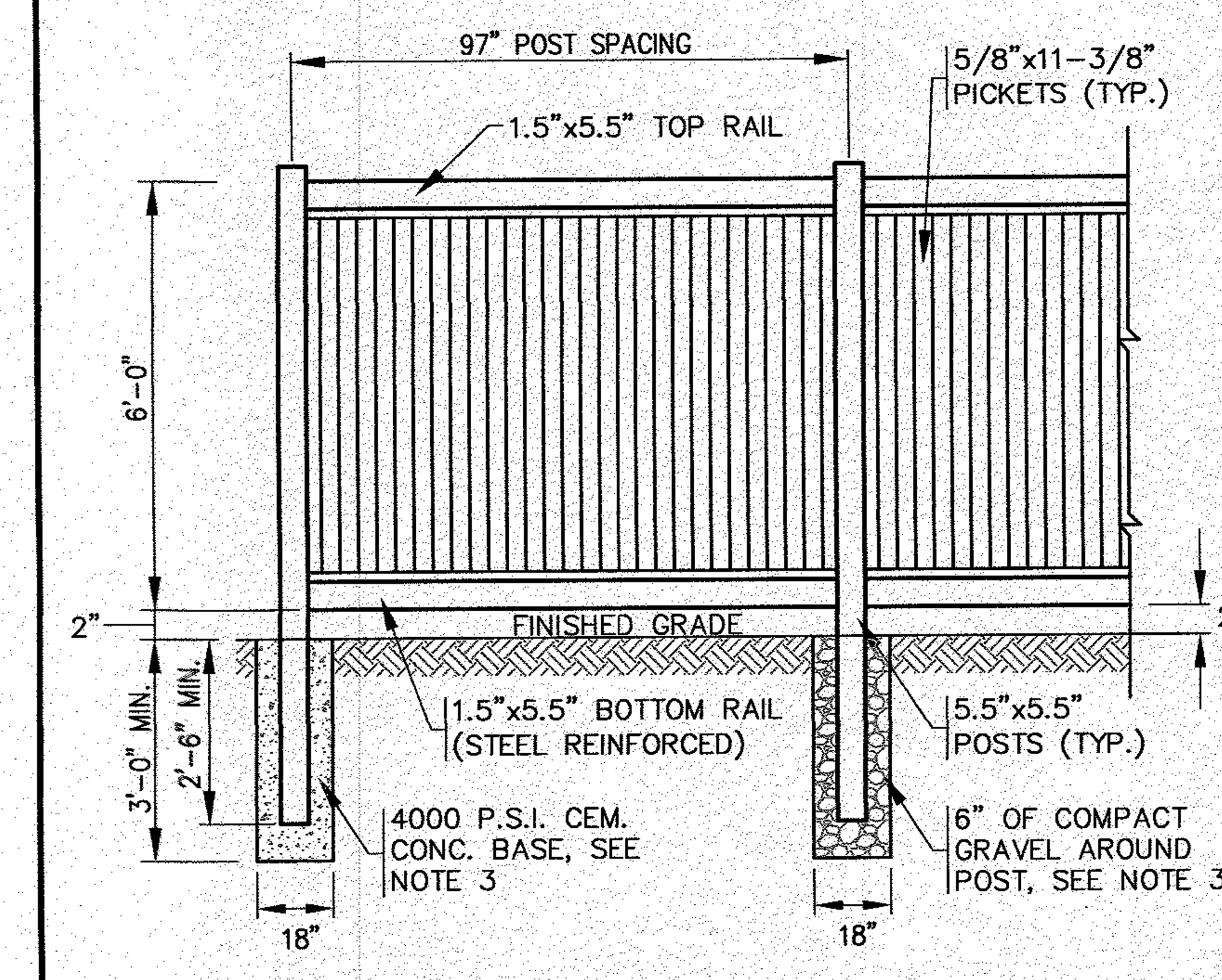
TYPICAL SIGN POST DETAIL
N.T.S.



NOTES:

1. REFER TO PLAN FOR LOCATIONS.

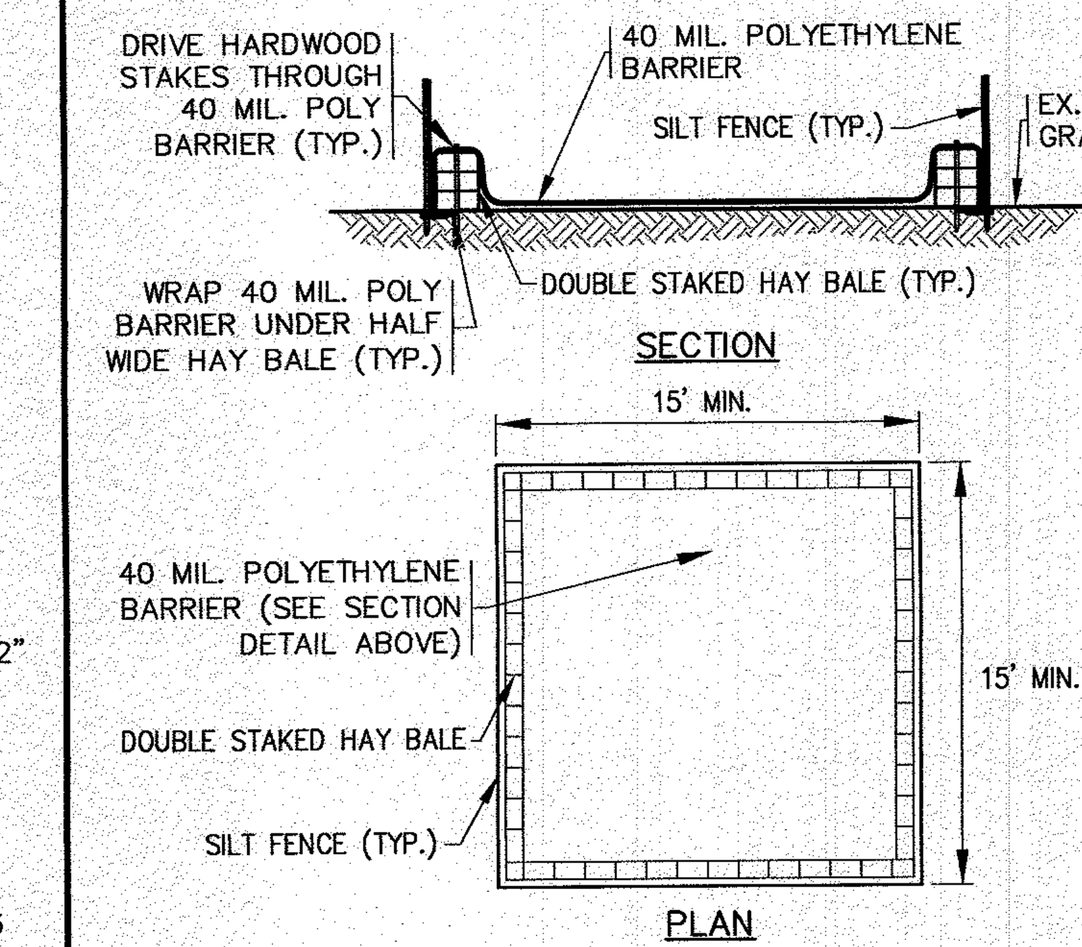
STANDARD CLEANOUT
N.T.S.



NOTES:

1. REFER TO MANUFACTURERS SPECIFICATIONS FOR COMPLETE DETAILS AND INSTALLATION GUIDELINES.
2. REFER TO PLAN FOR LOCATIONS.
3. CEMENT CONCRETE BASE SHALL BE USED AT ALL ENDS, ANGLE POINTS AND GATE POSTS. POSTS SHALL BE INSTALLED TO A DEPTH OF 2'-6" MIN. OR TO A DEPTH AS REQUIRED FOR FROST ADEQUATE PROTECTION.
4. CONTRACTOR SHALL COORDINATE WITH OWNER FOR FINAL DESIGN DETAILS.

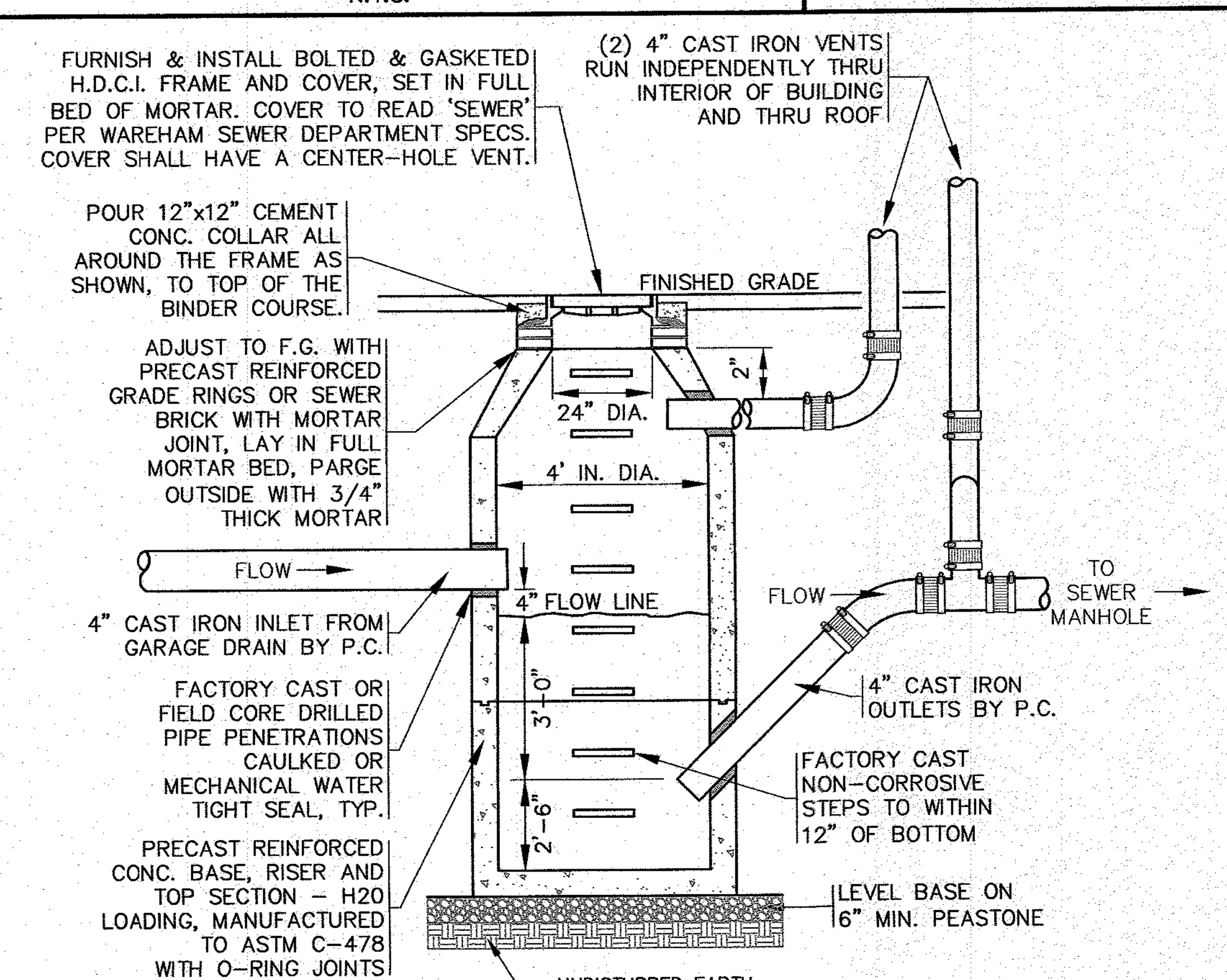
VINYL FENCE DETAIL
N.T.S.



NOTES:

1. CONTRACTOR SHALL PROVIDE AND MAINTAIN CONCRETE WASHOUT AREA WHERE NECESSARY TO COMPLETE THE WORK.
2. FINAL LOCATION FOR CONCRETE WASHOUT SHALL BE FIELD DETERMINED BY CONTRACTOR AT TIME OF CONSTRUCTION.
3. CONTRACTOR SHALL REPAIR OR REPLACE 40 MIL. POLY BARRIER OR STAKED HAY BALES AS REQUIRED.

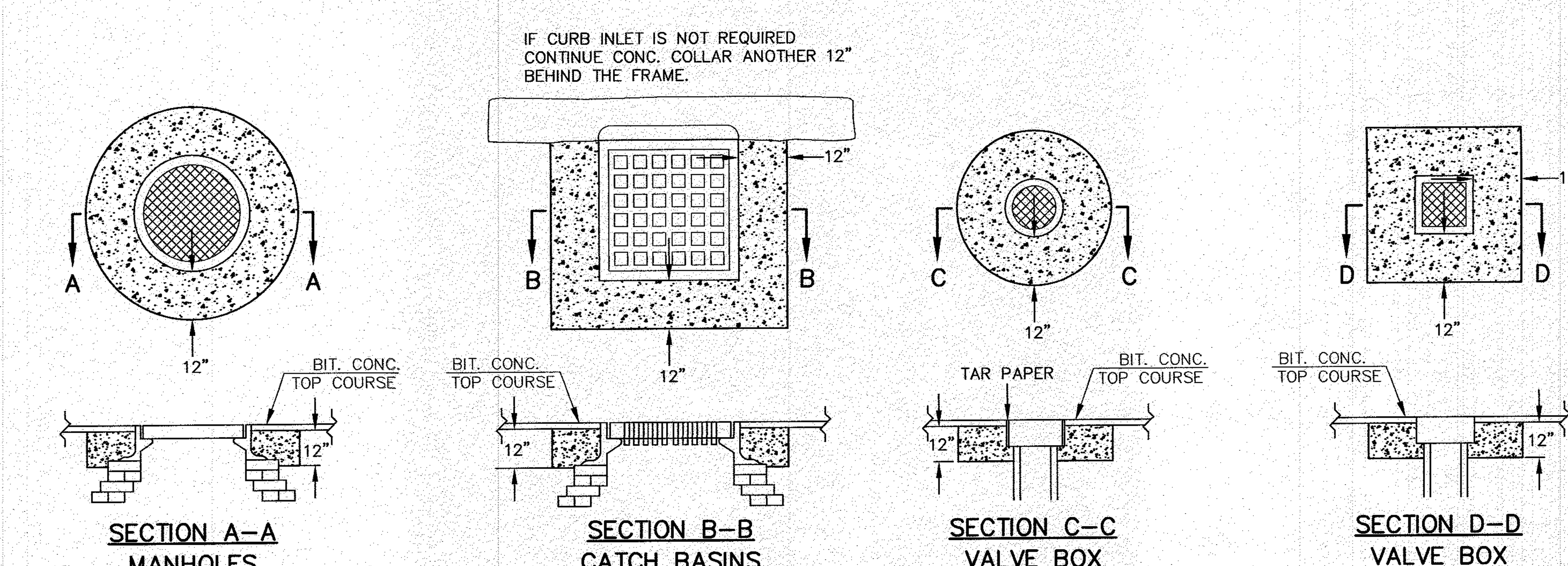
CONCRETE WASHOUT DETAIL
N.T.S.



NOTES:

1. INTERCEPTOR STRUCTURE AND COMPONENTS TO BE FURNISHED AND SET BY THE GENERAL CONTRACTOR. THE P.C. SHALL FURNISH AND INSTALL INLET, OUTLET AND VENT PIPING, CO-ORDINATE PIPING PENETRATION SIZES AND INVERTS WITH GENERAL CONTRACTOR.
2. ALL PIPING SHALL BE NO HUB EXTRA HEAVY CAST IRON SOIL PIPE WITH APPROVED STAINLESS STEEL BAND CLAMPS, IN ACCORDANCE WITH STATE PLUMBING CODE AND LOCAL REGULATIONS.

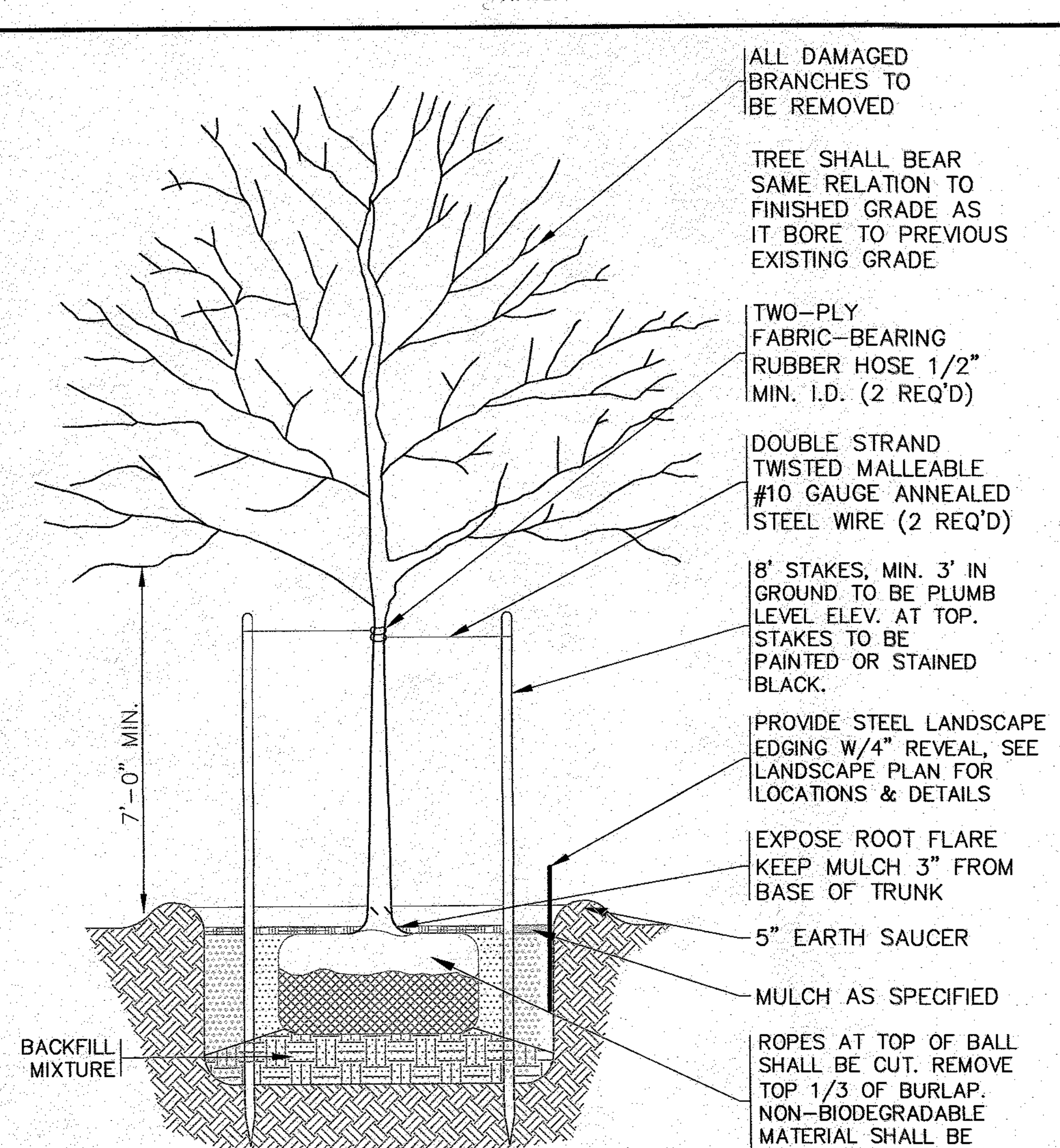
OIL & GAS INTERCEPTOR DETAIL
N.T.S.



NOTES:

1. CEMENT CONCRETE SHALL BE 5000 PSI AND CONFORM TO SECTION M4 OF THE LATEST REVISION OF MassDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
2. WHEN INSTALLED UNDER PAVEMENT THE CEMENT CONCRETE COLLARS SHALL BE SET TO THE TOP OF THE BINDER COURSE.
3. WHEN INSTALLED IN GRASS AREAS THE CEMENT CONCRETE COLLAR SHALL BE SET TO FINISHED GRADE.

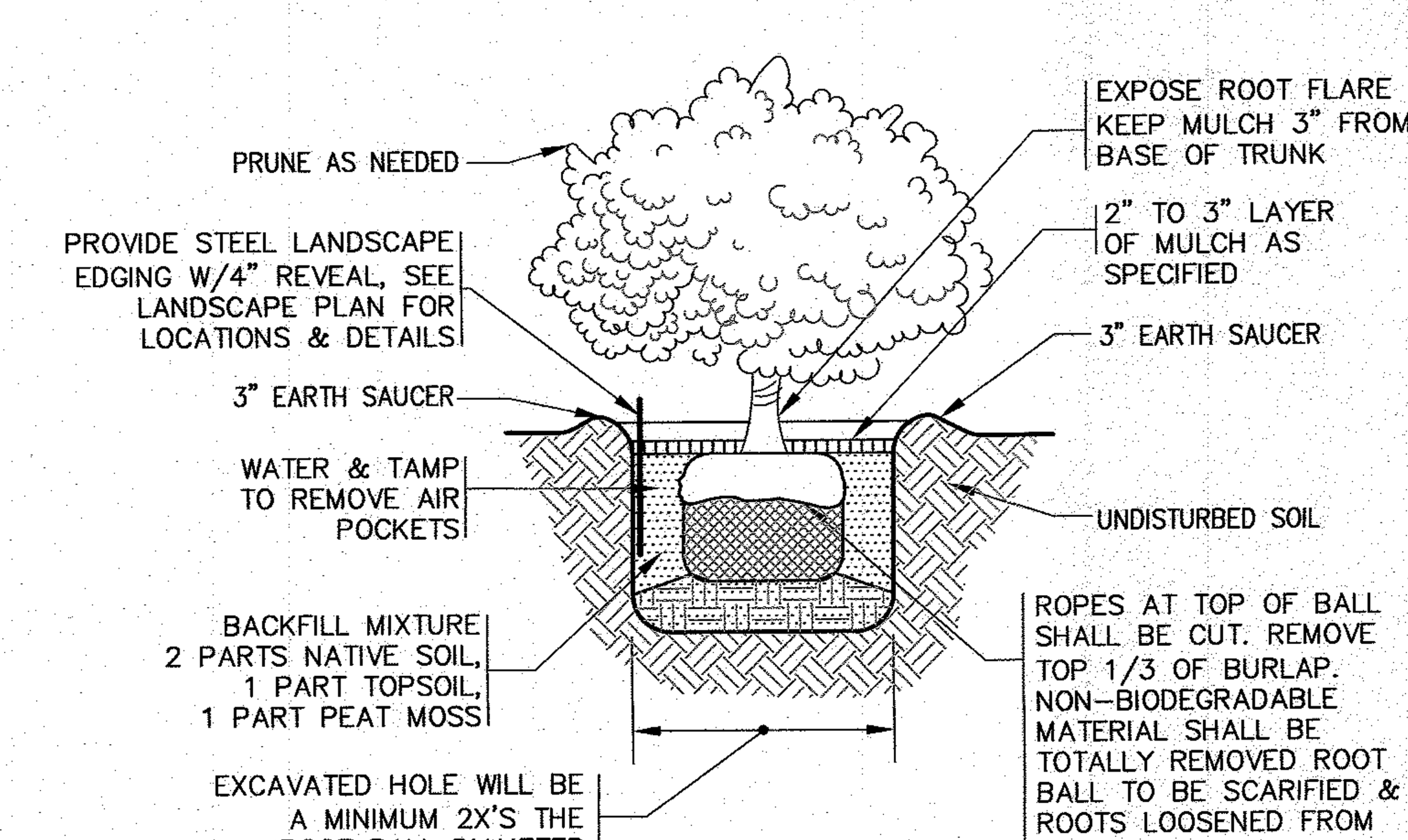
CONCRETE COLLARS
N.T.S.



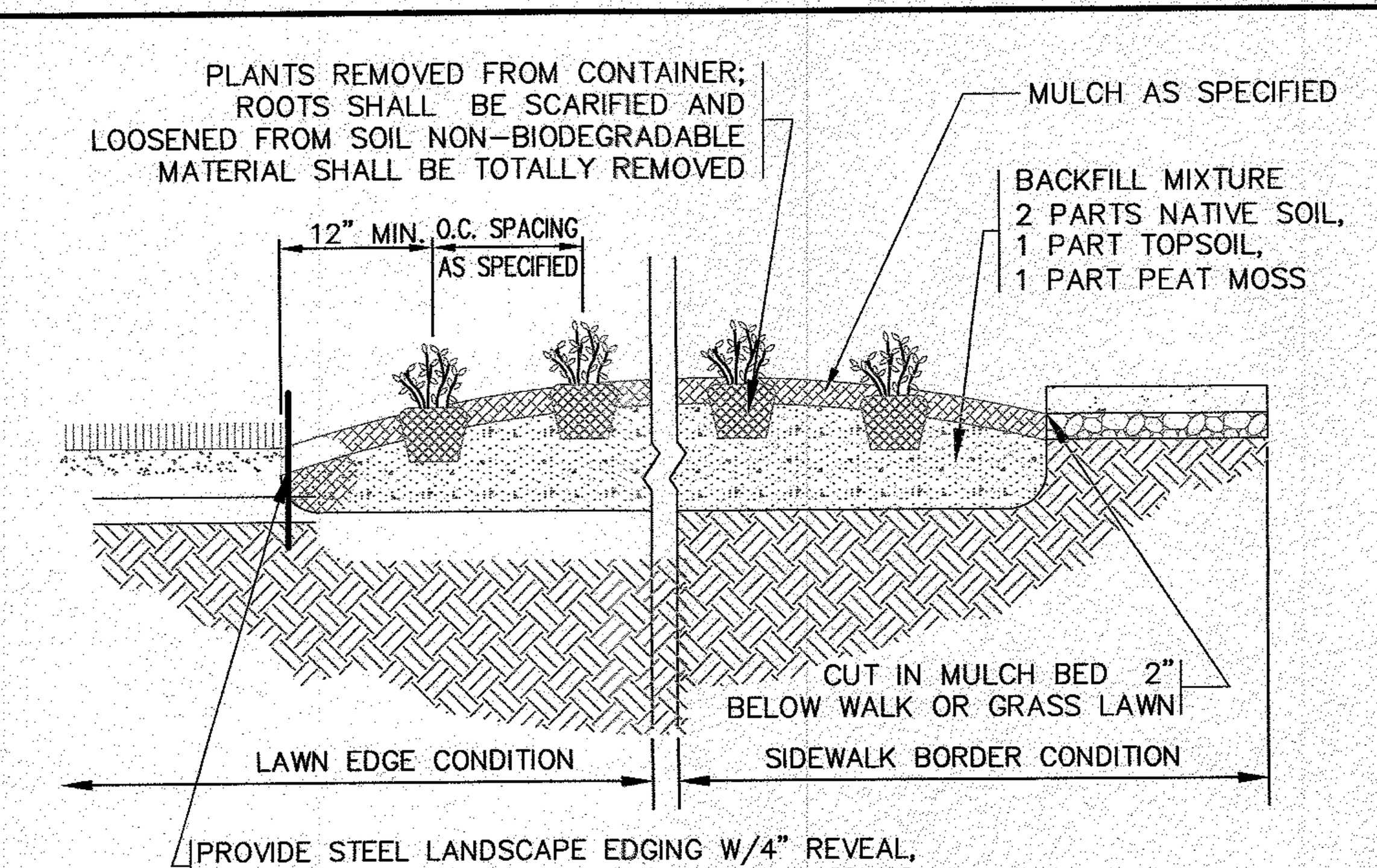
NOTES:

1. REFER TO LANDSCAPING PLAN FOR PLANTING LOCATIONS.

SHADE TREE PLANTING DETAIL
N.T.S.



SHRUB PLANTING
N.T.S.



GROUNDCOVER PLANTING DETAIL
N.T.S.

REV.	DATE	BY	APP'D	DESCRIPTION

DATE: MAY 25, 2023
DRAWN BY: JMP
CHECKED BY: WFM
JOB NO.: 22-9890
SCALE: N.T.S.

APPROVED BY:

APPROVED BY:

G.A.F. ENGINEERING, INC.
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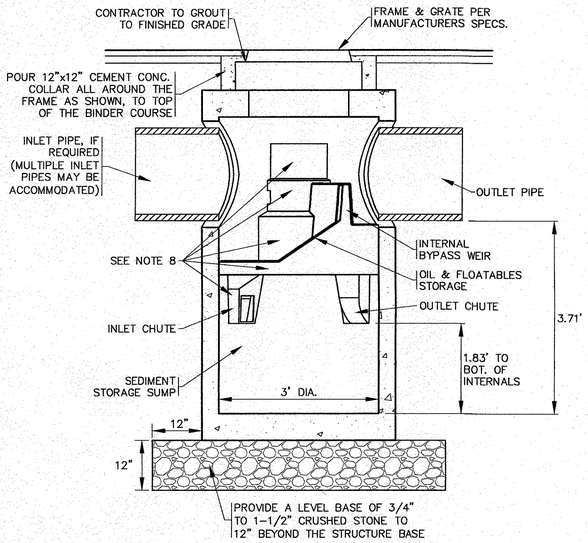
SITE DEVELOPMENT PLAN
DETAIL SHEET 2
3127 CRANBERRY HIGHWAY WAREHAM, MA

PREPARED FOR:
PETER KOULOURAS
P.O. BOX 961 N. FALMOUTH, MA

JOB NO.: 22-9890
DWG.
9 OF 10

H:\GAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURAS)\9890\dwg\9890-SITE-PLAN_ALT-1.dwg

PERMIT SET
(NOT FOR CONSTRUCTION)



NOTE:
CONTRACTOR SHALL OBTAIN SHOP DRAWINGS FROM MANUFACTURER PRIOR TO CONSTRUCTION.

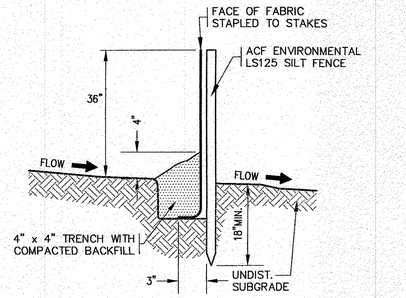
GENERAL NOTES:

1. GENERAL ARRANGEMENT DRAWINGS ONLY. CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC DRAWINGS.
2. THE DIAMETER OF THE INLET AND OUTLET PIPES MAY BE NO MORE THAN 18". REFER TO PLAN FOR PIPE SIZES.
3. MULTIPLE INLET PIPES POSSIBLE (REFER TO PROJECT PLAN).
4. 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.
6. LARGER SEDIMENT STORAGE CAPACITY MAY BE PROVIDED WITH DEEPER SUMP DEPTH.
7. 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.
9. 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.
3. 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.
5. REFER TO GRADING & DRAINAGE PLAN FOR LOCATION, ELEVATIONS AND INVERTS.

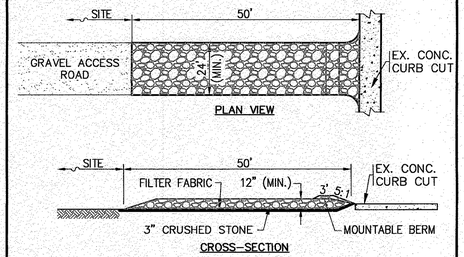
FIRST DEFENSE FDHC-3 UNIT (WATER QUALITY CATCH BASIN)
N.T.S.



NOTES:

1. SILTATION FENCE SHALL BE ACF ENVIRONMENTAL LS125 SILT FENCE OR AN APPROVED EQUAL.
2. SILTATION FENCING SHALL BE INSTALLED DOWNSLOPE OF ALL PROPOSED AND EXISTING DISTURBED AREAS, OR AS SHOWN ON THE PLANS.
3. EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATIVE OR STABILIZED COVER HAS BEEN FIRMLY ESTABLISHED.
4. EROSION CONTROL MEASURES SHALL FOLLOW THE PERFORMANCE STANDARDS OF THE USDA SOIL CONSERVATION SERVICE, AND ANY APPLICABLE STATE/LOCAL CONSERVATION AUTHORITY.

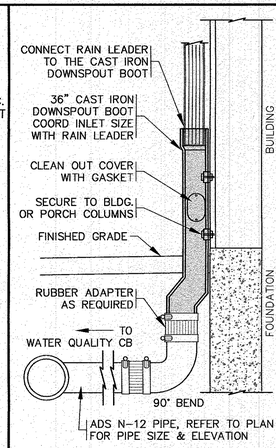
EROSION CONTROL BARRIER DETAIL
N.T.S.



NOTES:

1. ENTRANCE WIDTH SHALL BE 24 FEET MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL 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 OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED.
3. THE ENTRANCE SHALL BE INSPECTED AT THE END OF EACH WORK DAY TO ENSURE NO SEDIMENT OR DEBRIS WILL BE TRACKED ON THE EXISTING ROADWAY, EXISTING PAVEMENT SHOULD BE KEPT CLEAN DAILY. MAINTENANCE OF THE ENTRANCE SHALL BE PROVIDED AS NEEDED.

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

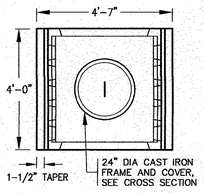


NOTES:

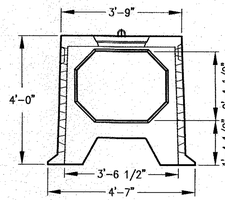
1. REFER TO SITE PLAN FOR LOCATIONS, PIPE SIZES, INVERTS, ETC.
2. REFER TO ARCHITECTURAL PLANS FOR DOWNSPOUT SIZES AND LOCATIONS.

DOWNSPOUT DETAIL
N.T.S.

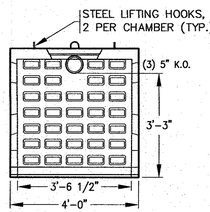
STORM EVENT	ELEVATION
2 YEAR STORM	35.40
10 YEAR STORM	36.52
25 YEAR STORM	37.26
100 YEAR STORM	38.47



PLAN VIEW

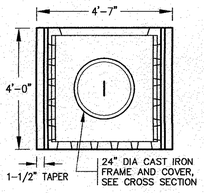


FRONT & BACK VIEW

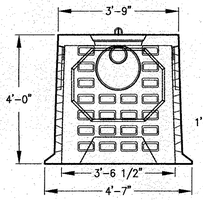


SIDE VIEW

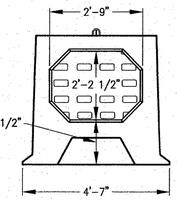
LEACHING GALLEY CENTER SECTION
N.T.S.



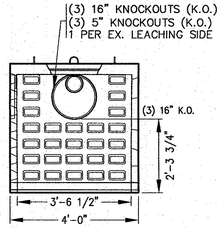
PLAN VIEW



FRONT VIEW



BACK VIEW



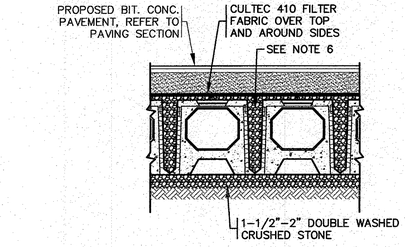
SIDE VIEW

LEACHING GALLEY END SECTION
N.T.S.

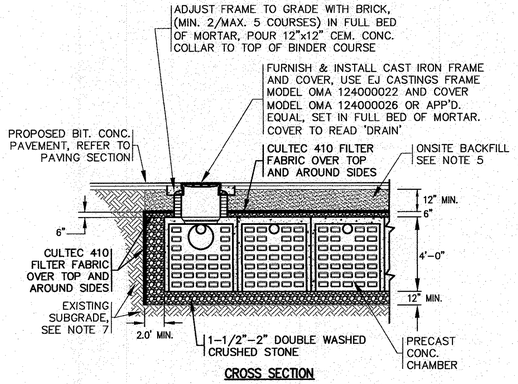
4'x4' GALLEY NOTES:

1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGNED FOR HS-20 LOADING.
3. GALLEY AVAILABLE IN BOTH END AND CENTER SECTIONS. CENTER SECTIONS HAVE LARGE OPENING IN BOTH THE BACK AND FRONT SIDES.
4. REFER TO THE DRAINAGE & GRADING SHEET FOR INVERTS AND ELEVATIONS.
5. USE ON SITE BACKFILL OVER CONC. GALLEYS WHERE GALLEYS ARE NOT UNDER PAVEMENT. WHEN GALLEYS ARE UNDER PAVEMENT REFER TO PAVEMENT CROSS SECTION.
6. FILL ANY GAPS BETWEEN GALLEY CHAMBERS WITH 1-1/2"-2" DOUBLE WASHED CRUSHED STONE.
7. CONTRACTOR TO REMOVE ALL UNSUITABLE SOILS 2' MINIMUM BENEATH AND AROUND ALL SIDES OF THE LEACHING GALLEYS. THIS INCLUDES ORGANICS, TOPSOIL, ROOTS AND OTHER UNSUITABLE SOILS, REPLACE WITH CLEAN SOIL, SAND AND GRAVEL APPROVED BY DESIGN ENGINEER.

PRECAST CONCRETE LEACHING GALLEYS
N.T.S.



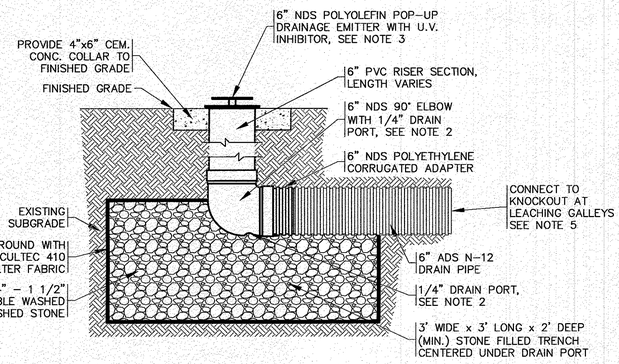
CENTER CROSS SECTION



CROSS SECTION

SYSTEM ELEVATIONS:

BOTTOM OF STONE	BOTTOM OF GALLEY	TOP OF GALLEY	TOP OF STONE
34.00	35.00	39.00	39.50

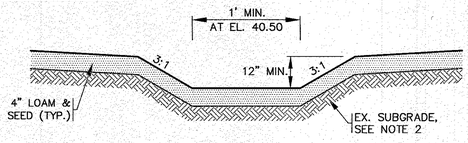


NOTES:

1. REFER TO SITE PLAN FOR LOCATION.
2. INCREASE THE 1/4" DRAIN PORT TO 1" DIA.
3. PROTECT THE POP-UP DRAINAGE EMITTER DURING CONSTRUCTION WITH A 12" PERFORATED PIPE PLACE AROUND THE UNIT.
4. FOR COMPLETE DETAILS AND INSTALLATION GUIDELINES REFER TO THE MANUFACTURER'S SPECIFICATIONS.
5. SLOPE PIPE FROM CULTEC CHAMBERS DOWN TO DRAINAGE EMITTER AT A MINIMUM OF 2.0%.

DRAINAGE EMITTER
N.T.S.

STORM EVENT	ELEVATION
2 YEAR STORM	40.50
10 YEAR STORM	40.51
25 YEAR STORM	40.63
100 YEAR STORM	40.85



NOTES:

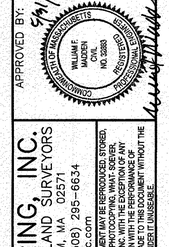
1. GRASS SHALL BE MAINTAINED A MINIMUM OF 4" HIGH WITHIN THE DRAINAGE AREAS.
2. CONTRACTOR TO REMOVE ALL UNSUITABLE SOILS 2' MINIMUM BENEATH AND AROUND ALL SIDES OF THE LANDSCAPE DEPRESSION. THIS INCLUDES ORGANICS, TOPSOIL, ROOTS AND OTHER UNSUITABLE SOILS, REPLACE WITH CLEAN SOIL, SAND AND GRAVEL APPROVED BY DESIGN ENGINEER.
3. REFER TO DRAINAGE AND GRADING PLAN FOR LOCATION AND ELEVATIONS.

LANDSCAPE DEPRESSION
N.T.S.

REV.	DATE	BY	APP'D	DESCRIPTION

DATE: MAY 25, 2023
DRAWN BY: JMP
CHECKED BY: WFM
JOB NO.: 22-9890
SCALE: N.T.S.

APPROVED BY:



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SITE DEVELOPMENT PLAN
DETAIL SHEET 3
3127 CRANBERRY HIGHWAY WAREHAM, MA

PREPARED FOR:
PETER KOULOURAS
P.O. BOX 961 N. FALMOUTH, MA

JOB NO.: 22-9890
DWG. 10 OF 10

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