

FOR REGISTRY USE ONLY

REV.	DATE	BY	APPD	DESCRIPTION
1	11/14/19	JH	WFM	PER PLANNING BOARD REVIEW

"I CERTIFY THAT THIS PLAN WAS PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS." THE CERTIFICATION MADE HEREON IS INTENDED TO MEET THE REGISTRY OF DEEDS REQUIREMENTS AND IS NOT A CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN.

ABUTTERS SHOWN ARE FROM THE TOWN OF WAREHAM TAX ASSESSMENT RECORDS

APPROVED BY: *Robert A. Braman, Jr.*  
ROBERT A. BRAMAN, JR.  
P.L.S. # 45850

DATE: AUG. 26, 2019  
DRAWN BY: JH  
CHECKED BY: WFM  
JOB NO.: 18-9257  
SCALE: 1" = 20'

APPROVED BY: *Robert A. Braman, Jr.*  
ROBERT A. BRAMAN, JR.  
P.L.S. # 45850

APPROVED BY: *William F. Mather*  
WILLIAM F. MATHER  
P.L.S. # 45850

APPROVED BY THE TOWN OF WAREHAM PLANNING BOARD

DATE APPROVED \_\_\_\_\_

DATE SIGNED *12/9/19*

THIS ENDORSEMENT OF THE PLANNING BOARD SHOULD NOT BE CONSTRUED TO BE A DETERMINATION OF CONFORMANCE WITH ZONING REGULATIONS FOR ALL LOTS AFFECTED.

THIS ENDORSEMENT OF THE PLANNING BOARD SHOULD NOT BE CONSTRUED TO BE A DETERMINATION OF CONFORMANCE WITH THE ZONING BY-LAWS IN ACCORDANCE WITH DIVISION VI, ARTICLE I AND ITS IMPLEMENTING WETLANDS PROTECTION REGULATIONS AS WELL AS MASSACHUSETTS WETLAND PROTECTION ACT, M.G.L. CH. 131, §40 AND ITS IMPLEMENTING REGULATIONS, 310 CMR 10.00 FOR ALL LOTS AFFECTED.

THIS ENDORSEMENT OF THE PLANNING BOARD SHOULD NOT BE CONSTRUED TO BE A DETERMINATION OF CONFORMANCE WITH THE EARTH REMOVAL REGULATIONS IN ACCORDANCE WITH DIVISION IV, ARTICLE III OF THE TOWN BY-LAWS FOR ALL LOTS AFFECTED.

**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: gae@gaef.com

**DEFINITIVE SUBDIVISION PLAN OF LAND**

PREPARED FOR: **DAVID M. MATHER**

JOB NO.: 18-9257  
DWG. 1 OF 3

**PLAN STATEMENT ;**

THE PURPOSE OF THIS PLAN IS TO CREATE A TWO LOT SUBDIVISION OF LOT M-20

A 16' WIDE GRAVEL DRIVEWAY IS PROPOSED IN THE 40' WIDE WAY SHOWN. OWNERSHIP OF THE WAY WILL REMAIN WITH LOT M-20-B.

REFER TO LETTER TO PLANNING BOARD FOR THE LIST OF WAIVERS REQUESTED.

**LOT DATA ;**

ASSESSORS MAP & LOT ;  
MAP 39, LOT M-20

APPLICANT / LOT OWNER ;  
DAVID M. & LISA RENEE MATHER  
6412 LEDGE MOUNTAIN DRIVE  
AUSTIN, TX 78731  
TELEPHONE ;

DEED REFERENCE ;  
BOOK 50233, PAGE 271

ZONING DISTRICT ; R-30

WATER SUPPLY ; TOWN WATER

SEPTIC/SEWER ; TOWN SEWER

**TOWN OF WAREHAM**

'THIS IS TO CERTIFY THAT TWENTY DAYS HAVE ELAPSED SINCE THE NOTICE OF THE APPROVAL FROM THE PLANNING BOARD WAS RECEIVED AND RECORDED, AND THAT NO NOTICE OF APPEAL HAS BEEN FILED IN THIS OFFICE'

TOWN CLERK \_\_\_\_\_

DATE SIGNED \_\_\_\_\_

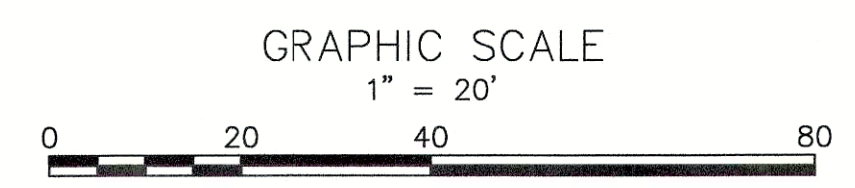
**ZONING DATA ;**

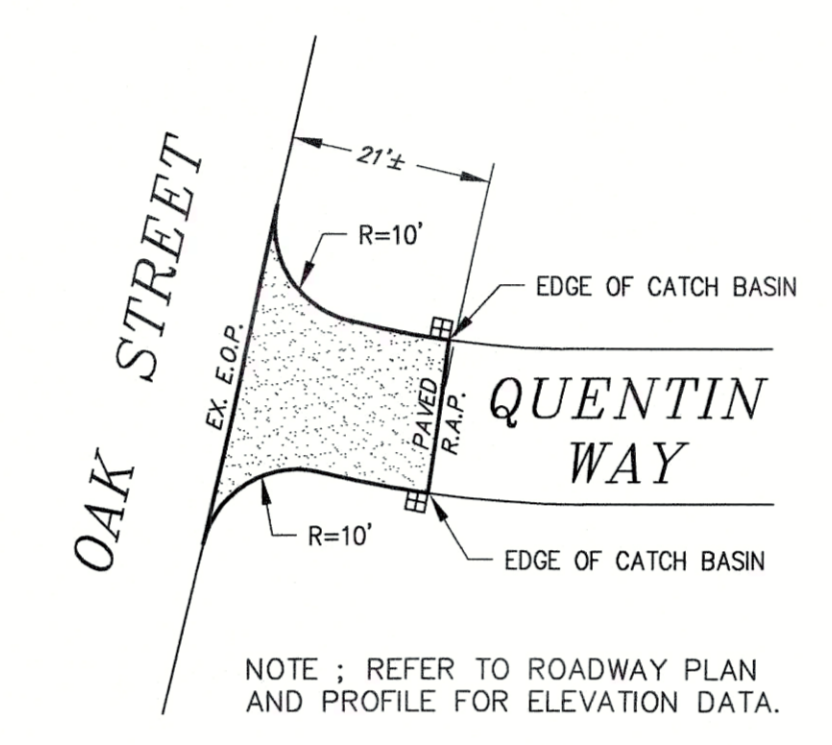
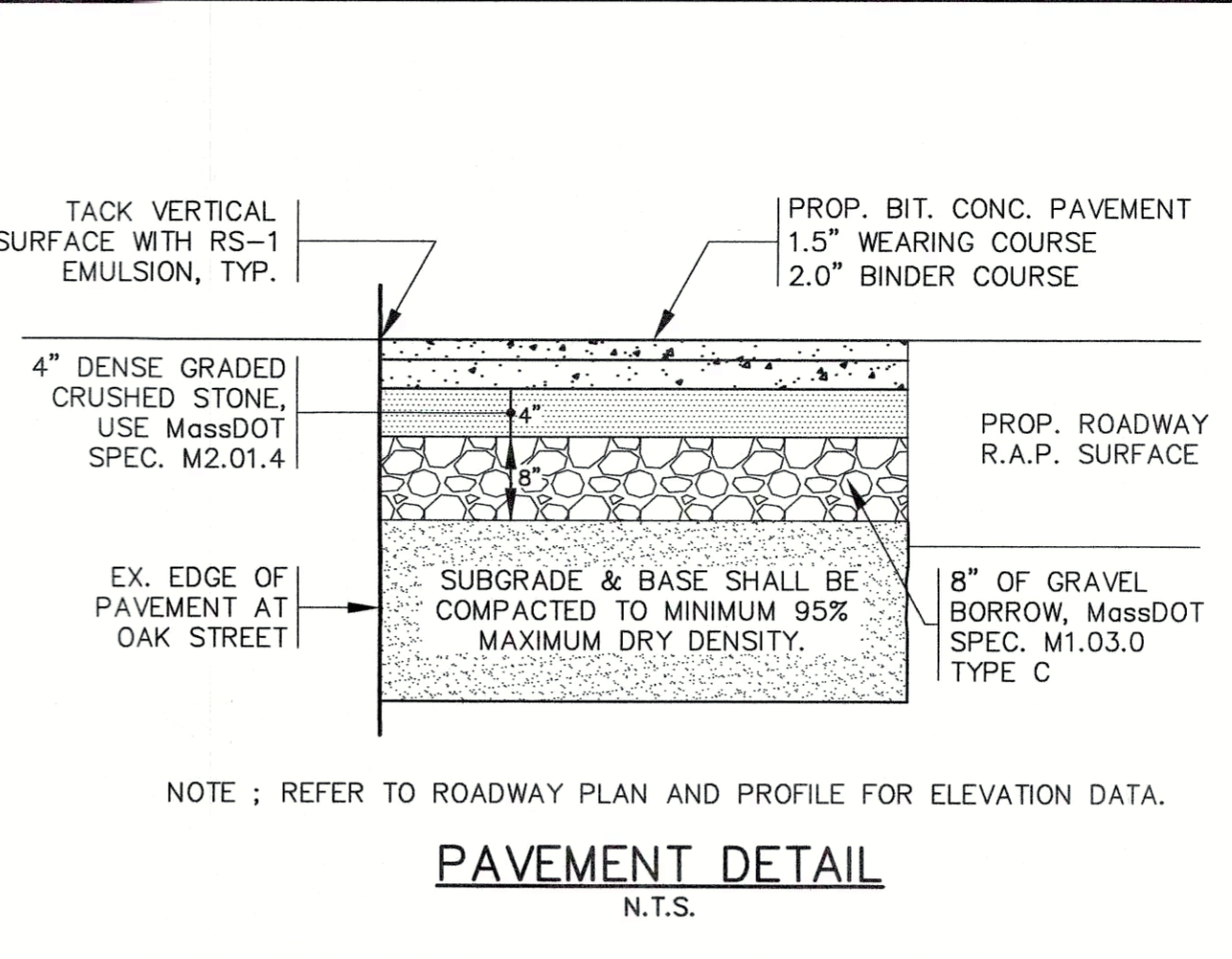
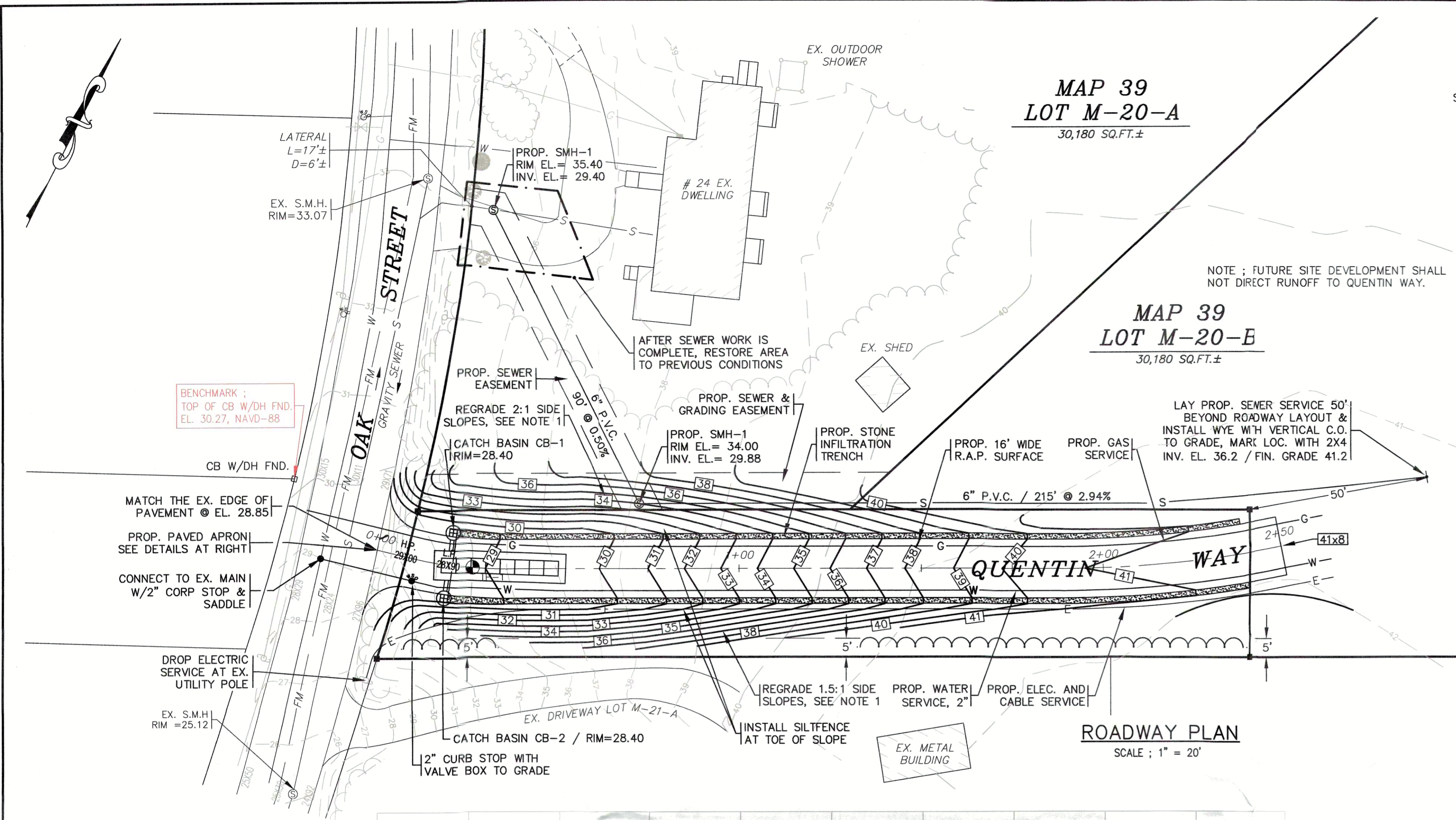
DISTRICT ; R-30

MINIMUM LOT AREA ; 30,000 SQ.FT.  
MINIMUM FRONTAGE ; 150'  
MINIMUM FRONT SETBACK ; 20'  
MINIMUM SIDE SETBACK ; 10'  
MINIMUM REAR SETBACK ; 10'  
MAXIMUM BLDG. HEIGHT ; 35'  
MAXIMUM BLDG. COVER ; 25%

**FLOOD DATA ;**

ENTIRE LOT IS WITHIN ZONE X. SEE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL NO. 25023C0489K, DATED FEBRUARY 5, 2014.





KEY TO SYMBOLS		
EXISTING	DESC.	PROPOSED
	CONTOURS	
	SEWER MAIN	
	SEWER MANHOLE (SMH)	
	OVERHEAD WIRES	
	UTILITY POLE	
	WATER GATE/VALVE	
	WATER SHUTOFF/CURB STOP	
	HYDRANT	
	GAS GATE/VALVE	
	GAS SHUTOFF	
	WATER LINE	
	GAS LINE	

- NOTES:
- IN GENERAL, PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY FITTING, CHANGE IN DIRECTION OR DETAIL OF CONSTRUCTION. THE LOCATION OF UTILITIES SHOWN ARE OBTAINED FROM VARIOUS SOURCES, AND THE EXACT LOCATION AND COMPLETENESS IS NOT GUARANTEED.
  - THE CONTRACTOR SHALL NOTIFY THE WATER DEPARTMENT, DEPARTMENT OF MUNICIPAL MAINTENANCE AND DIG SAFE PRIOR TO THE START OF ANY EXCAVATION. (1-888-DIG-SAFE) THE CONTRACTOR SHALL FIELD VERIFY, PRIOR TO CONSTRUCTION ALL EXISTING UNDERGROUND UTILITY LOCATIONS AND POINTS OF INTERCONNECTION. CONTRACTOR SHALL GIVE ALL NOTICES, COMPLY WITH ALL LAWS AND REGULATIONS, AND PAY ALL FEES ASSOCIATED WITH THE INSTALLATION OF THIS WORK.
  - THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, SUPERVISION, TOOLS, EQUIPMENT, FUEL, POWER, SANITARY FACILITIES AND INCIDENTALS NECESSARY FOR THE START-UP, PERFORMANCE AND COMPLETION OF THIS WORK. ALL MATERIALS USED SHALL BE NEW AND FREE FROM DEFECTS AND BE OF GOOD QUALITY.
  - THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL AND OTHER DEBRIS RESULTING FROM THIS WORK. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION REQUIRED FOR THE INSTALLATION OF THIS WORK.
  - THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF PERSONNEL AND PROTECTION OF PROPERTY AT THE SITE. 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. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PERMITS AND EXCAVATION AND TRENCH SAFETY REQUIREMENTS PURSUANT TO 520 CMR 14.00.

**TEST PIT DATA**

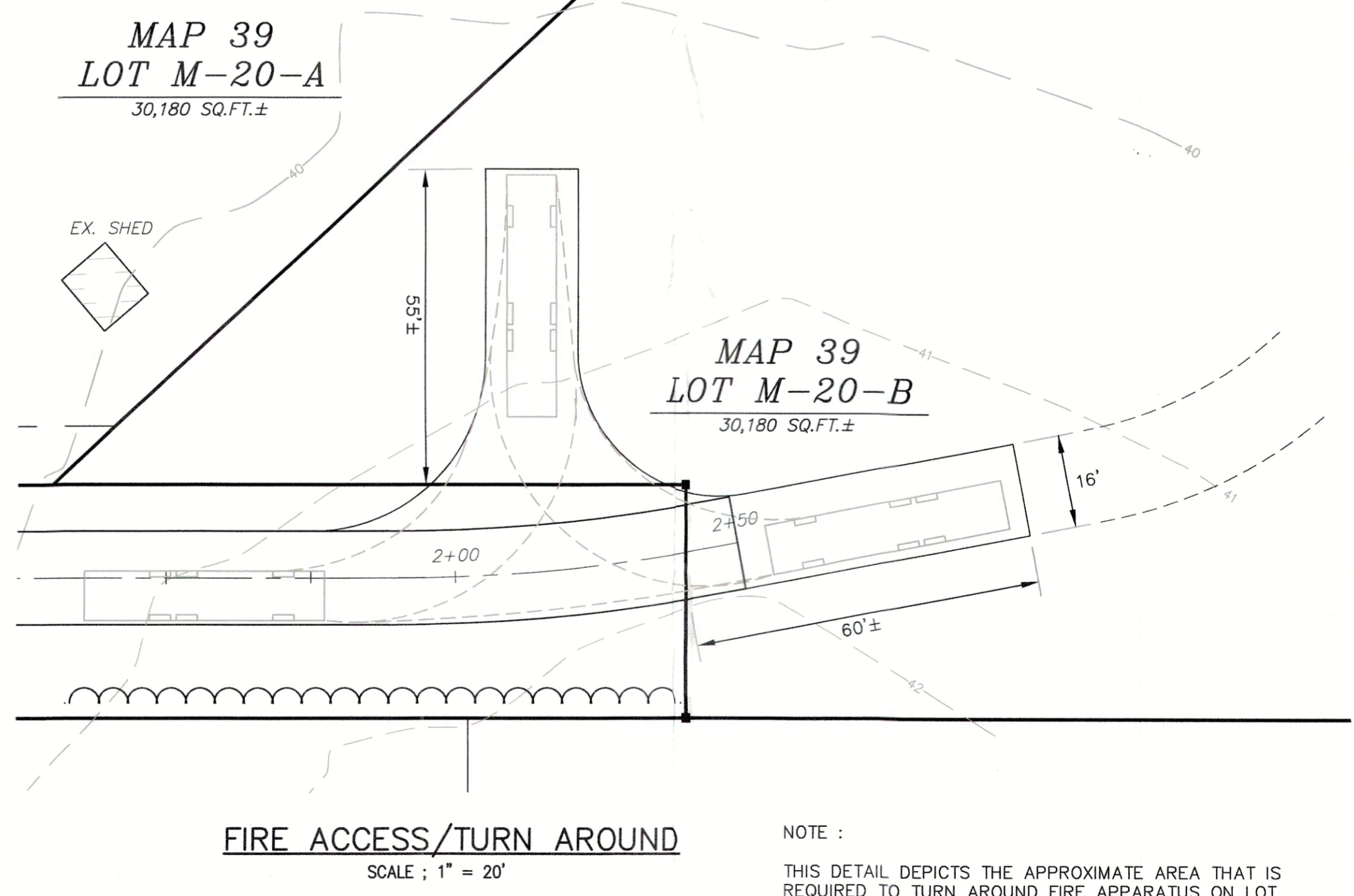
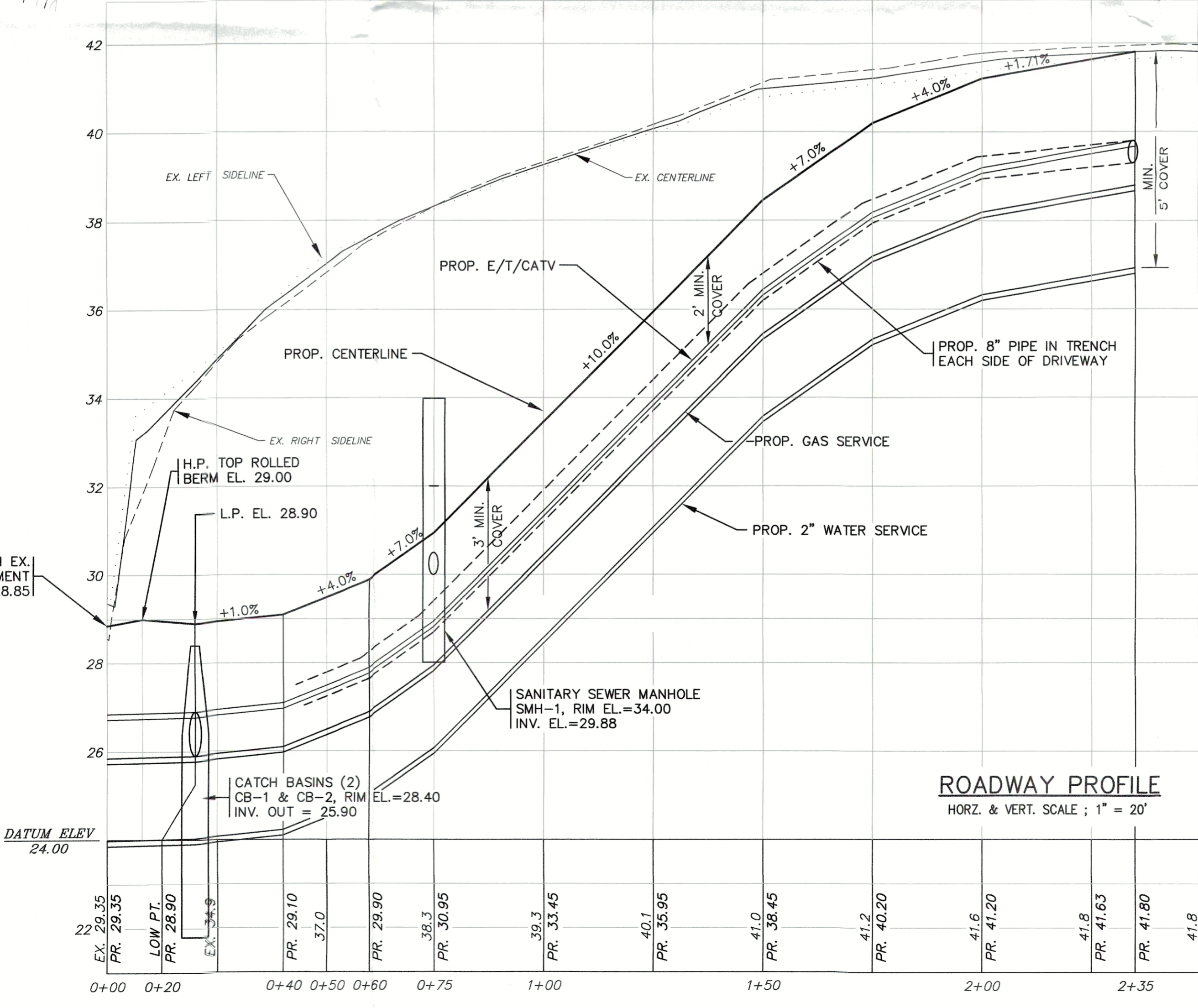
DATE OF TESTING: AUGUST 22, 2019  
 PERFORMED BY: BRIAN GRADY OF G.A.F. ENGINEERING INC.  
 TP-1 EL.=35.0

A	LOAMY SAND W/ ROOTS 10YR3/2	0"
B	LOAMY SAND W/10% GRVL., COBB. & BLDRS. 10YR5/6	6"
C	FRIABLE LOAMY SAND W/10% GRVL., COBB. & FEW BLDRS. 2.5Y6/4	26"

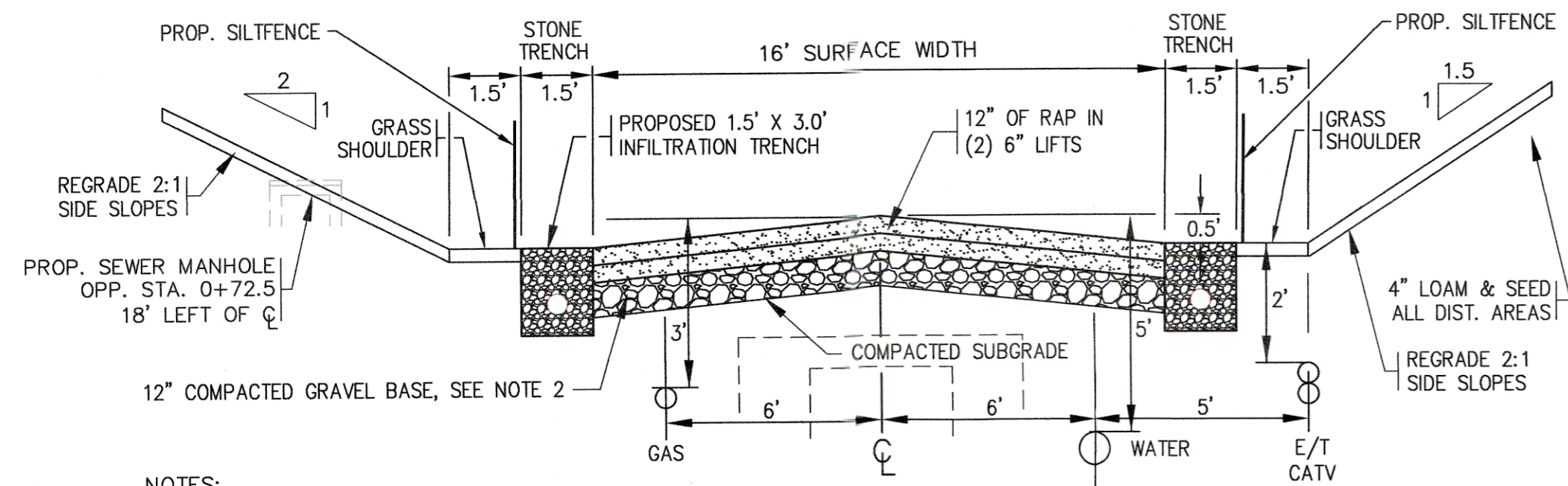
NO MOTTLES ENC.  
 NO WATER ENC.

**REGRADING NOTES:**

- REGRADE EACH SIDE OF THE PROPOSED ROADWAY WITH 2:1 OR 1.5:1 SIDE SLOPES AS SHOWN. INSTALL SILTFENCE AT THE TOE OF THE SLOPES. ALL SIDE SLOPES SHALL BE STABILIZED WITH AN EROSION CONTROL BLANKET OVER THE PLANTED SEED BED.
- A CEMENT CONCRETE BLOCK RETAINING WALL MAY BE USED AS A DESIGN ALTERNATIVE TO THE 2:1 OR 1.5:1 SLOPES.



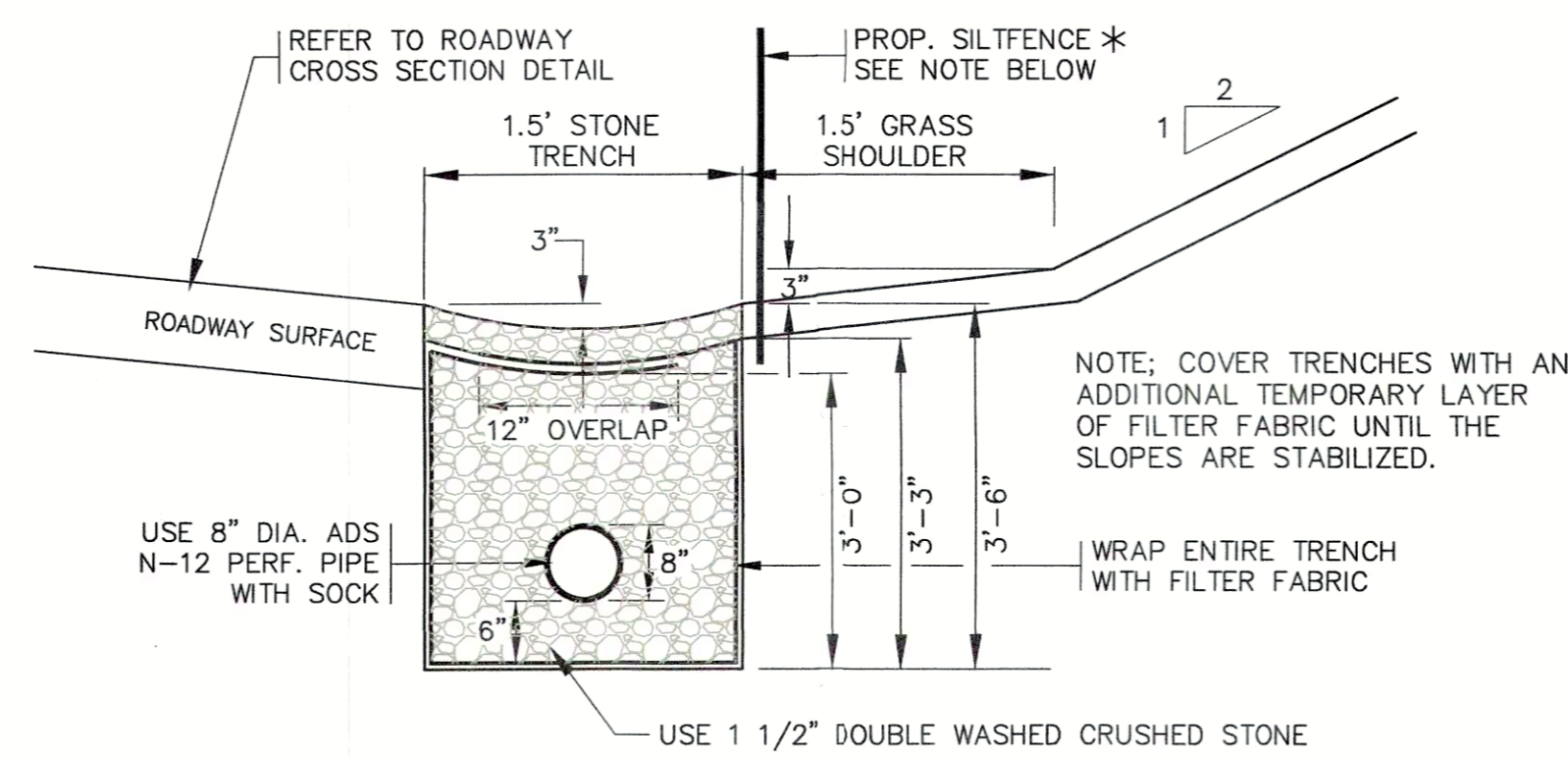
DATE: AUG. 26, 2019	DATE: 11/14/19	DATE: 11/14/19	DATE: 11/14/19
DRAWN BY: JH	CHECKED BY: WFM	JOB NO.: 18-9257	SCALE: 1" = 20'
APPROVED BY: [Signature]	APPROVED BY: [Signature]	APPROVED BY: [Signature]	APPROVED BY: [Signature]
<b>G.A.F. ENGINEERING, INC.</b> PROFESSIONAL ENGINEERS & LAND SURVEYORS 266 MAIN STREET - WAREHAM, MA 02571 TEL: (508) 295-6600 FAX: (508) 295-6634 E-MAIL: gae@gaef-eng.com			
PREPARED FOR: <b>DAVID M. MATHER</b> 24 OAK STREET WAREHAM, MA			
DWG. NO.: 18-9257 <b>2 OF 3</b>			



- NOTES:**
- REMOVE ALL SAND & OTHER UNSUITABLE MATERIAL IN THE ROADWAY AREA, TO DEPTH OF PROPOSED SUBGRADE.
  - COMPACT GRAVEL IN (2) 6" LIFTS. GRAVEL BASE SHALL CONFORM TO MassDOT SPEC. M1.03.0 TYPE C, 2" MAX STONE SIZE.
  - PLACE 12" OF THE RECYCLED ASPHALT PRODUCT, (RAP) COMPACTED IN (2) 6" LAYERS, TO GRADES SHOWN.

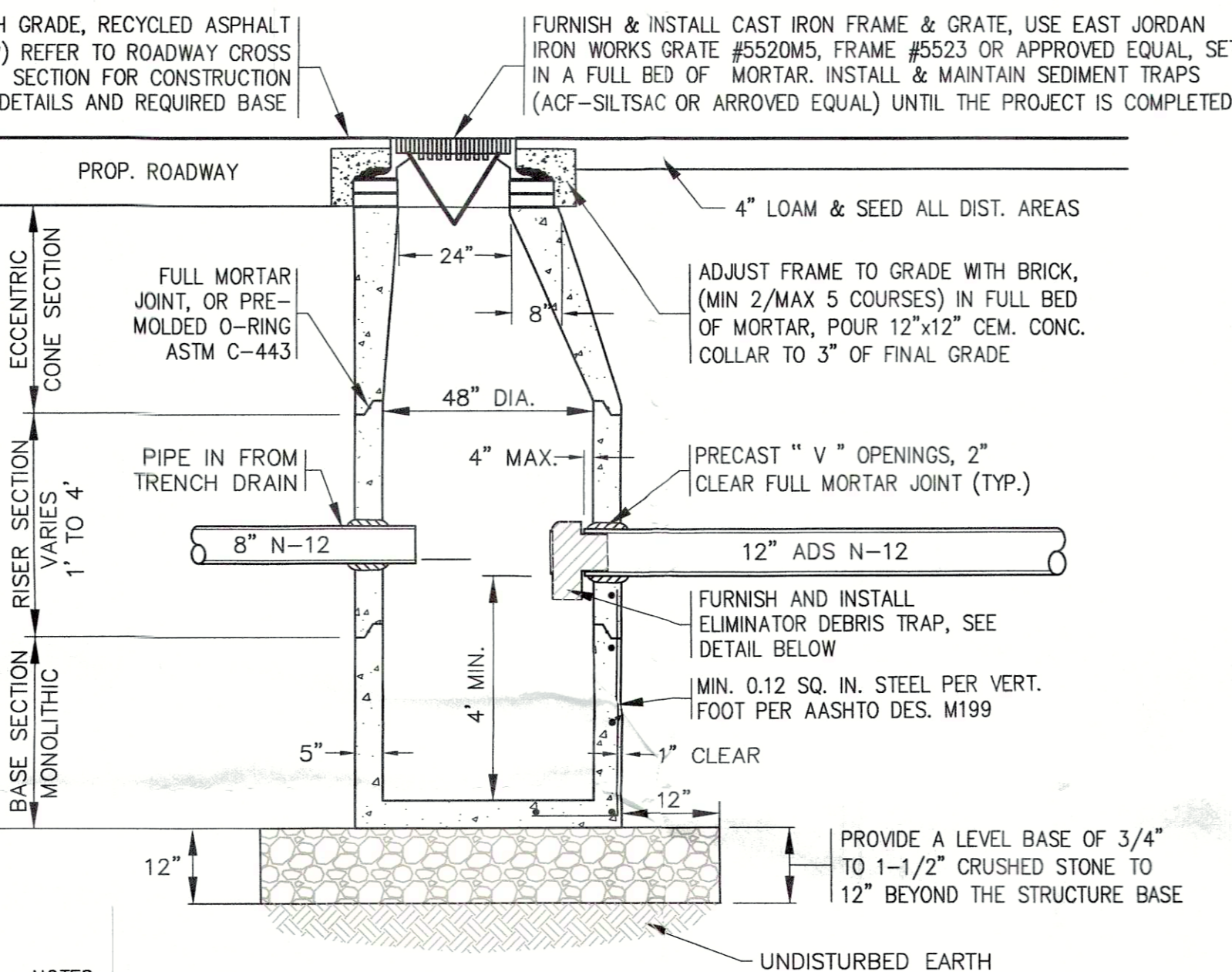
**ROADWAY CROSS SECTION**

N.T.S.



**INFILTRATION TRENCH**

N.T.S.



- NOTES:**
- STRUCTURES SHALL BE PRECAST CONCRETE IN ACCORDANCE WITH ASTM C-478, WITH H-20 LOADING, SECTION HEIGHTS VARY. CONCRETE STRENGTH 4000 PSI @ 28 DAYS.
  - FOR SHALLOW INSTALLATION AND WHEN APPROVED BY THE ENGINEER, A FLAT TOP H-20 SLAB WITH A 24" OPENING CAST ECCENTRICALLY MAY BE USED. CONTRACTOR TO SUBMIT SHOP DRAWINGS.
  - ALL STRUCTURE JOINTS AND PENETRATIONS SHALL BE WATER TIGHT.
  - REFER TO PLANS FOR PIPE SIZES, INVERTS, RIMS AND LOCATIONS.
  - PROVIDE A 12" ADS N-12 EQUALIZER PIPE BETWEEN PROPOSED CATCH BASINS, SEE PLAN FOR INVERTS.

**PRECAST CONCRETE CATCH BASIN**

N.T.S.

**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 PROTECTION 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.
- 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.
- SPRINKLE OR APPLY DUST SUPPRESSERS TO MINIMIZE DUST AT THE CONSTRUCTION SITE. MAINTAIN DUST CONTROL MEASURES UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AN ADEQUATE TRUCK RUNOFF PAD AT OAK STREET. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO OAK STREET. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO OAK STREET MUST BE REMOVED IMMEDIATELY. BERM PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.

**DRAINAGE INSTALLATION NOTES:**

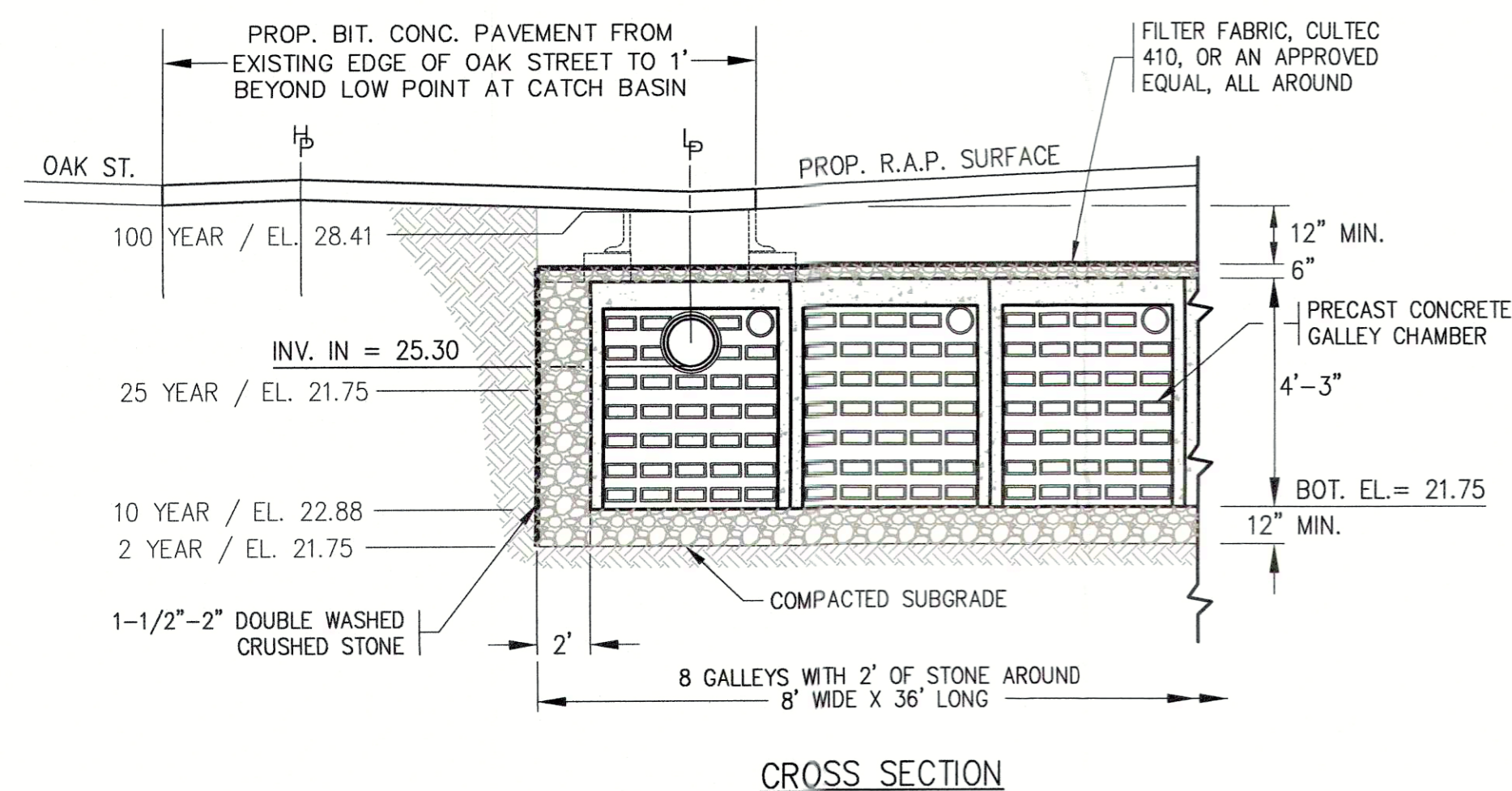
- ALL DRAINAGE PIPES, UNLESS OTHERWISE NOTED, ARE TO BE ADS-N-12 PIPE WITH SOIL TIGHT JOINTS AND FITTINGS. REFER TO PLAN FOR LOCATION, SIZES AND SLOPES.
- MIN. COVER ON PIPES SHALL NOT BE LESS THAN 1.5 FEET.
- ALL WORK AND MATERIAL SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.

**DRAINAGE OPERATION AND MAINTENANCE SCHEDULE:**

- THE DRAINAGE FACILITIES SHOWN ON THESE PLANS ARE FOR THE DRAINAGE AREA SHOWN IN THE STORMWATER REPORT ONLY AND FOR NO OTHER. FUTURE SITE WORK ON LOT M-20-B SHALL NOT INCREASE RUNOFF TO QUENTIN WAY.
- 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.
- IN CONJUNCTION WITH THE ROADWAY 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.
  - ALL CATCH BASINS SHALL HAVE TEMPORARY SILT SACKS INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL REMOVE AND DISPOSE OF THEM AT THE COMPLETION OF CONSTRUCTION. THE 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.
  - STONE FILLED TRENCHES SHALL BE COVERED WITH AN ADDITIONAL TEMPORARY LAYER OF FILTER FABRIC UNTIL THE ABOVE GRADIENT SLOPE IS STABILIZED. IF THERE IS ANY EVIDENCE OF SEDIMENT ENTERING THE TRENCHES, THE AFFECTED AREA OF THE TRENCH SHALL BE FULLY RECONSTRUCTED INCLUDING THE FILTER FABRIC.
  - ALL AREAS SHALL BE INSPECTED WEEKLY, & AFTER LARGE STORMS. IF THERE IS EVIDENCE OF EROSION, THE ERODED AREA SHALL BE RE-STABILIZED, & MEASURES SHALL BE TAKEN TO PREVENT REOCCURRENCE. THIS SCHEDULE MUST BE ADHERED TO BY THE CONTRACTOR AND OWNER.

**NOTES:**

- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's 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 COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP's.
- ROLL THE RECP's (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 6" OVERLAP.
- CONSECUTIVE RECP's SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH. NOTE: "IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.
- REFER TO NORTH AMERICAN GREEN FOR INSTALLATION METHODS AND STAPLE CONFIGURATION FOR PRODUCT #C125BN.



**CROSS SECTION**

**4'x4' GALLEY NOTES:**

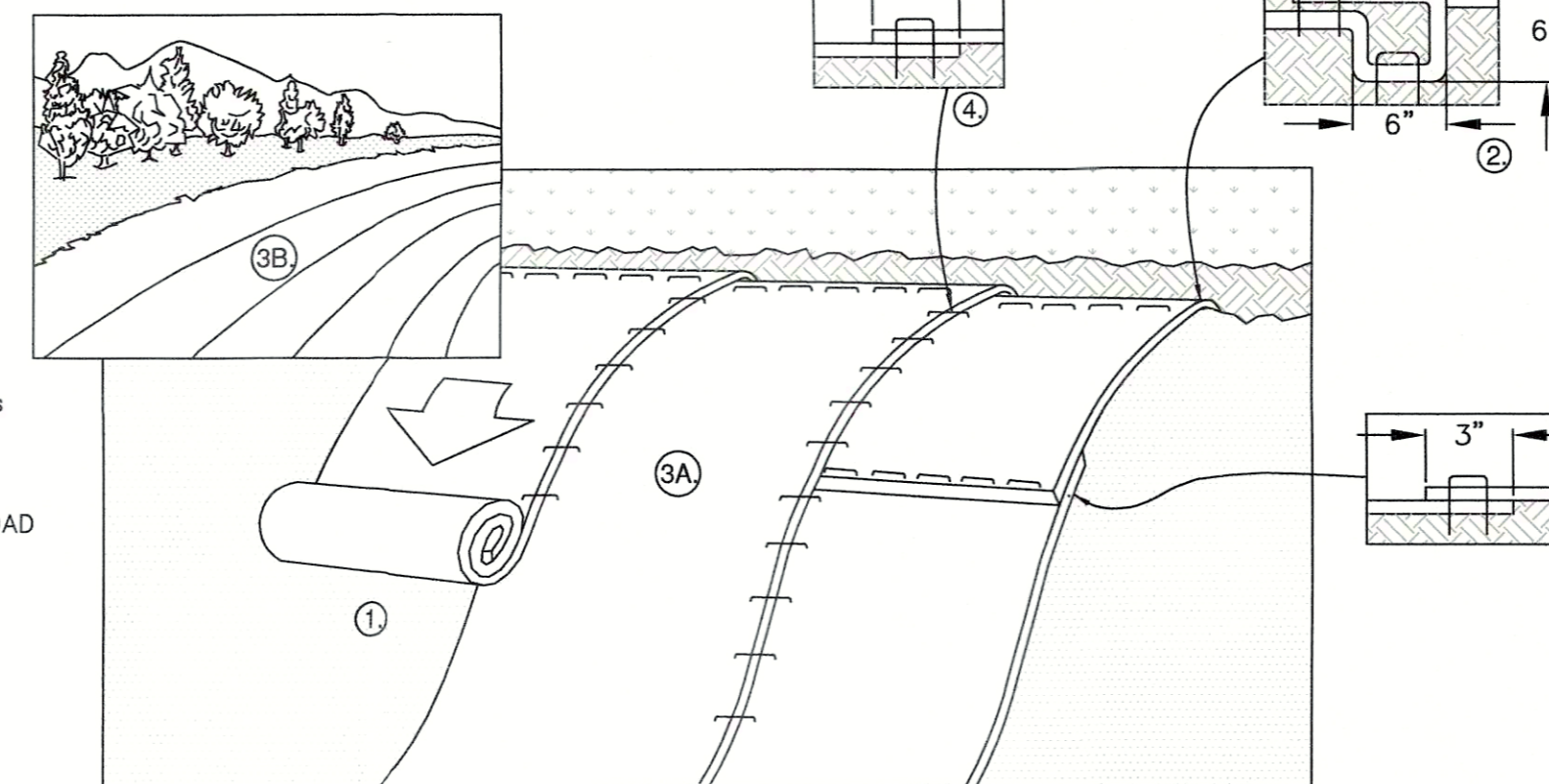
- CONCRETE SHALL BE 5,000 PSI MINIMUM AFTER 28 DAYS. UNITS SHALL BE DESIGNED FOR HS-20 LOADING.
- GALLEY AVAILABLE IN BOTH END AND CENTER SECTIONS. CENTER SECTIONS HAVE LARGE OPENING IN BOTH THE BACK AND FRONT SIDES.
- WHERE GALLEYS ARE UNDER ROADWAY SURFACE, REFER TO ROADWAY CROSS SECTION BASE MATERIALS.

**CONCRETE LEACHING GALLEY**

N.T.S.



**EROSION CONTROL Products**  
Guaranteed SOLUTIONS  
5401 ST. WENDEL-CYNTHIANA ROAD  
POSEYVILLE, IN 47633  
800-772-2040  
www.nagreen.com



**EROSION CONTROL BLANKET SLOPE DETAIL**

N.T.S.

DATE: AUG. 26, 2019	DRAWN BY: JH	CHECKED BY: WFM	JOB NO.: 18-9257	SCALE: 1" = 20'
APPROVED BY:				
APPROVED BY:				
<b>G.A.F. ENGINEERING, INC.</b> PROFESSIONAL ENGINEERS & LAND SURVEYORS 286 MAIN STREET - WAREHAM, MA 02571 TEL: (508) 295-6600 FAX: (508) 295-6634 E-MAIL: gaf@gef-eng.com				
<b>DEFINITIVE SUBDIVISION</b> <b>ROAD PROFILE &amp; DETAILS</b> WAREHAM, MA PREPARED FOR: <b>DAVID M. MATHER</b> 24 OAK STREET WAREHAM, MA				
JOB NO.:	18-9257			
DWG. NO.:	3 OF 3			