

GENERAL NOTES:

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.
2. UNLESS OTHERWISE SHOWN, ALL NEW UTILITIES SHALL BE UNDERGROUND.
3. CONTRACTOR SHALL FURNISH CONSTRUCTION LAYOUT OF BUILDING AND SITE IMPROVEMENTS. THIS WORK SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR.
4. SAFETY MEASURES, CONSTRUCTION METHODS AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF CONTRACTOR.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND / OR REMOVAL HEREON. DAMAGED IMPROVEMENTS SHALL BE REPAIRED TO THE SATISFACTION OF THEIR RESPECTIVE OWNERS.
6. THIS PLAN IS NOT INTENDED TO SHOW AN ENGINEERED BUILDING FOUNDATION DESIGN, WHICH WOULD INCLUDE DETAILS AND FINAL ELEVATIONS OF FOOTINGS, WALLS AND SUBSURFACE DRAINAGE TO PREVENT INTERIOR FLOODING. SEE ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.
7. ANY INTENDED REVISION OF THE HORIZONTAL AND/OR VERTICAL LOCATION OF IMPROVEMENTS TO BE CONSTRUCTED AS SHOWN HEREON SHALL BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO IMPLEMENTATION.
8. RIM ELEVATIONS SHOWN FOR NEW STRUCTURES ARE APPROXIMATE AND ARE PROVIDED TO ASSIST CONTRACTOR WITH MATERIAL TAKEOFFS. FINISH RIM ELEVATIONS SHOULD MATCH PAVEMENT, GRADING OR LANDSCAPING, UNLESS SPECIFICALLY INDICATED OTHERWISE.
9. WHERE EXISTING UTILITY LINES/STRUCTURES ARE TO BE CUT/BROKEN DOWN,/ ABANDONED, LINES/STRUCTURES SHALL BE PLUGGED/CAPPED/FILLED IN ACCORDANCE WITH OWNER REQUIREMENTS.
10. THE CONTRACTOR SHALL VERIFY THE LOCATION AND RELATIVE ELEVATION OF BENCH MARKS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.
11. PROPOSED BUILDING FOUNDATION CONFIGURATION AND LOCATION ON THE LOT AS SHOWN ARE CONCEPTUAL AND SHALL BE VERIFIED AS TO CONFORMANCE WITH FINAL ARCHITECTURAL PLANS AND ZONING ORDINANCES PRIOR TO CONSTRUCTION.

REGULATORY NOTES:

1. CONTRACTOR SHALL CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK.
2. CONTRACTOR SHALL MAKE HIMSELF AWARE OF ALL CONSTRUCTION REQUIREMENTS, CONDITIONS, AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL COORDINATE AND OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES.
3. ALL WORK OUTSIDE OF BUILDING THAT IS LESS THAN 10 FEET FROM THE INSIDE FACE OF BUILDING FOUNDATIONS SHALL CONFORM WITH THE UNIFORM STATE PLUMBING CODE OF MASSACHUSETTS, 24B CMR 2.00.
4. IF DEWATERING IS IS REQUIRED THE CONTRACTOR SHALL PROVIDE A PLAN OF THE PROPOSED MEANS AND METHODS TO THE TOWN ENGINEER PRIOR TO THE START OF DEWATERING. ALL DEWATERING ACTIVITIES SHALL OCCUR ON THE UPGRADIENT SIDE OF THE EROSION CONTROL BARRIER.
5. ALL STREET SIGNS AND MARKINGS TO BE PLACED WITHIN THE RIGHT OF WAY ARE REQUIRED TO MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES WITH THE APPROPRIATE MASSDOT AMENDMENTS.

EROSION AND SEDIMENT CONTROL NOTES:

BEST MANAGEMENT PRACTICES (BMP) FOR EROSION AND SEDIMENTATION CONTROL ARE STAKED STRAW BALES, FILTER FENCES, HYDROSEEDING AND PHASED DEVELOPMENT. MANY STORMWATER BMP TECHNOLOGIES (E.G. INFILTRATION TECHNOLOGIES) ARE NOT DESIGNED TO HANDLE THE HIGH CONCENTRATIONS OF OF SEDIMENTS TYPICALLY FOUND IN CONSTRUCTION RUNOFF AND MUST BE PROTECTED FROM CONSTRUCTION RELATED SEDIMENT LOADINGS. CONSTRUCTION BMP'S MUST BE MAINTAINED.

IN DEVELOPING THE PROJECT, CERTAIN MEASURES WILL BE IMPLEMENTED TO MINIMIZE IMPACTS EROSION AND SEDIMENTATION COULD HAVE ON SURROUNDING AREAS. THIS NARRATIVE ADDRESSES ITEMS THAT INVOLVE PROPER CONSTRUCTION TECHNIQUES, CLOSE SURVEILLANCE OF WORKMANSHIP AND IMMEDIATE RESPONSE TO EMERGENCY SITUATIONS. THE DEVELOPER MUST BE PREPARED TO PROVIDE WHATEVER REASONABLE MEASURES NECESSARY TO PROTECT THE ENVIRONMENT DURING CONSTRUCTION AND STABILIZE ALL DISTURBED AREAS AS SOON AS CONSTRUCTION ENDS.

LANDSCAPING/SEEDING

1. LANDSCAPING/SEEDING SHALL OCCUR AS SOON AS POSSIBLE TO PROVIDE PERMANENT STABILIZATION OF DISTURBED SURFACES.
2. CONTRACTOR SHALL UTILIZE A VARIETY OF SLOPE STABILIZATION METHODS AND MATERIALS THAT SHALL BE ADJUSTED TO THE SITE CONDITIONS. EROSION CONTROL BLANKETS OR MIRAFI MIRMAT OR SIMILAR PRODUCTS SHALL BE AVAILABLE ON-SITE.
3. IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW FOR THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH STRAW, WOODCHIPS OR OTHER METHODS SHALL BE PROVIDED.
4. A MINIMUM OF 4" OF TOPSOIL SHALL BE PLACED AND ITS SURFACE SMOOTHED TO THE SPECIFIED GRADES.
5. THE USE OF HERBICIDES IS STRONGLY DISCOURAGED. CONTRACTOR SHALL CAREFULLY READ THE PERMIT DOCUMENTS FOR ANY OTHER RESTRICTIONS RELATED TO THE APPLIACTIONS OF FERTILIZERS.
6. HYDOSEEDING IS ENCOURAGED FOR STEEP SLOPES. APPLICATION RATES ON SLOPES GREATER THAN 3:1 SHALL HAVE A MINIMUM SEEDING RATEE IF 5 LBS. PER 1000 S.F. A LATEX OR FIBER TACKIFIER SHALL BE USED ON THESE SLOPES AT A MINIMUM RATE OF 50 LBS OF TACKIFIER PER 500 GAL. OF WATER USED.

PRE-CONSTRUCTION

1. THE CONTRACTOR SHALL HAVE A STOCKPILE OF MATERIALS REQUIRED TO CONTROL EROSION ON-SITE TO BE USED TO SUPPLEMENT OR REPAIR EROSION CONTROL DEVICES. THESE MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO, STRAW WATTLES AND CRUSHED STONE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL ON-SITE AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED REGARDLESS OF WHETHER THE MEASURES ARE SPECIFIED ON THE PLAN OR WITHIN THE PERMIT DECISIONS.

PRELIMINARY SITE WORK

1. MATERIALS, SUCH AS GRAVEL TO BE REMOVED, SHOULD BE STOCKPILED, SEPARATING THE THE TOPSOIL FOR FUTURE USE ON-SITE. EROSION CONTROL SHALL BE UTILIZED ALONG THE DOWN SLOPE SIDE OF THE PILES IF THE PILES ARE TO REMAIN FOR MORE THAN THREE WEEKS.
2. IF INTENSE RAINFALL IS ANTICIPATED, THE INSTALLATION OF SUPPLEMENTAL STRAW WATTLES SHALL BE CONSIDERED.

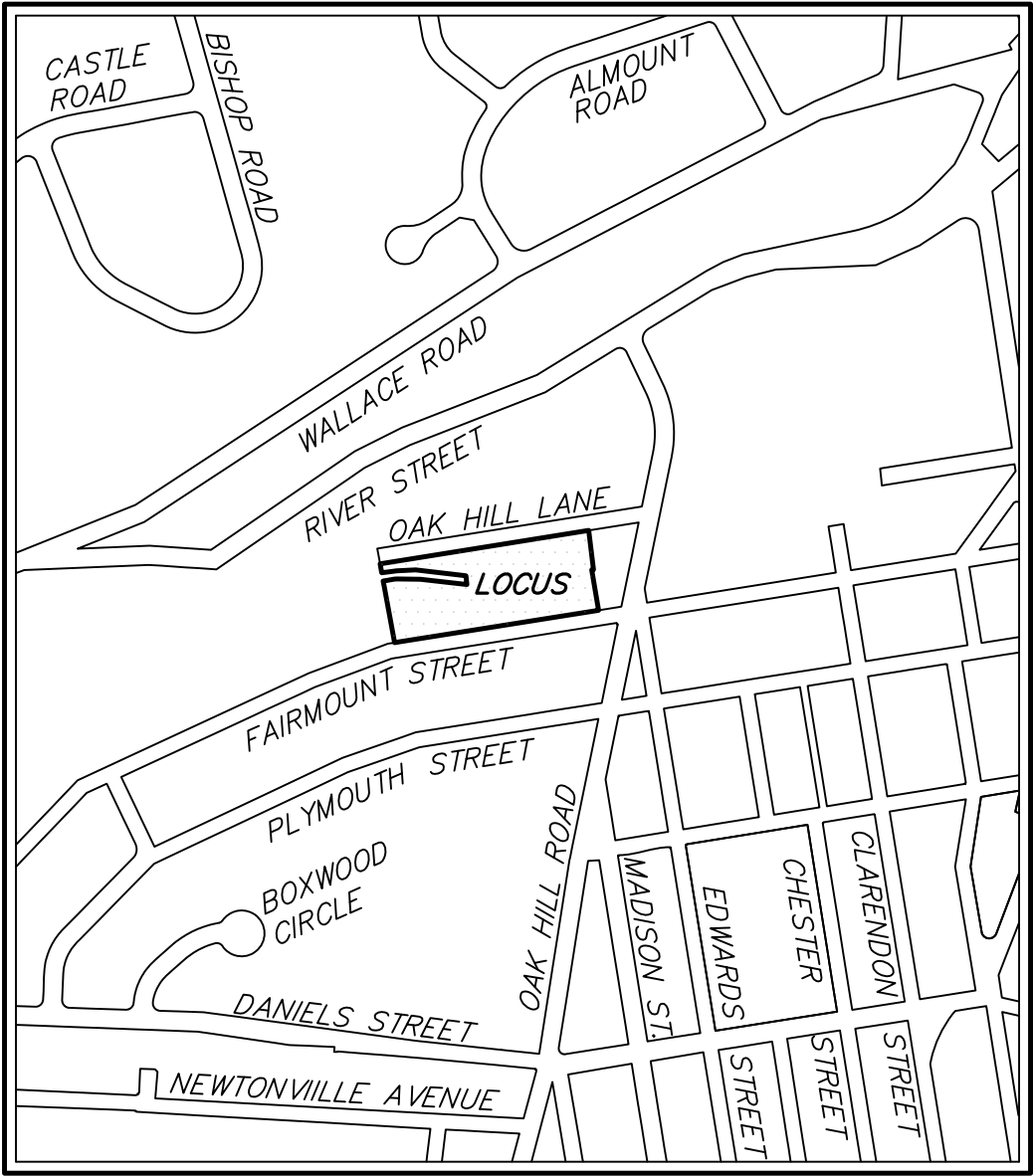
PERMIT SITE PLAN

#32 OAK HILL LANE

FITCHBURG, MA 01420

FOR

GREEN SOUL DEVELOPMENT, LLC.



VICINITY MAP

SCALE: 1"=500'

OWNER/APPLICANT:

GREEN SOUL DEVELOPMENT, LLC.
24 SIGOURNEY STREET, #2
BOSTON, MASSACHUSETTS 02130

PROJECT TEAM

CIVIL ENGINEER/LAND SURVEYORS:

HANCOCK ASSOCIATES
34 CHELMSFORD ST
CHELMSFORD, MASSACHUSETTS 01824

SHEET INDEX

SHEET 1	TITLE SHEET
SHEET 2	.....	EXISTING CONDITIONS
SHEET 3	.....	LAYOUT & MATERIALS PLAN
SHEET 4	.....	GRADING, DRAINAGE, & UTILITES PLAN
SHEET 5	.....	SITE WORK DETAILS
SHEET 6	.....	SITE WORK DETAILS

ZONING

ADAPTIVE INDUSTRIAL DISTRICT (AI)

ASSESSORS

MAP 63, BLOCK 29, LOT 0

RECORD OWNER

GREEN SOUL DEVELOPMENT, LLC.

REFERENCES

DEED BK 10306 PG 103
DEED BK 7934 PG 244
DEED BK 52 PG 91
DEED BK 66 PG 288
DEED BK 196 PG 516
DEED BK 402 PG 444
PLAN BK 246 PLAN 10

DIMENSIONAL REQUIREMENTS

	REQUIRED	PROVIDED
LOT AREA	NONE SF	110,706 SF
LOT FRONTAGE	20 FT	550 FT
LOT WIDTH	100 FT	550 FT
FRONT YARD	20 FT	0.21 FT*
SIDE YARD	25 FT	0 FT**
REAR YARD	20 FT	N/A FT
MAXIMUM BUILDING HEIGHT	75 FT	<75 FT
	*EXISTING NON-CONFORMITY	
	**WAIVER REQUIRED	

PARKING SUMMARY

MINIMUM PARKING SPACE AND PARKING LOT AISLE REQUIRED

FOR 90° PARKING ANGLE (2-WAY):

~STANDARD STALL SIZE: 9'x18'

~STANDARD DRIVE AISLE: 24'**

**WAIVER REQUIRED FOR EXISTING PARKING LOT ADJACENT TO FIREHOUSE

REQUIRED PARKING SPACE COUNT:

USE: ALL MARIJUANA ESTABLISHMENTS (ME), EXCEPT FOR MARIJUANA RETAILERS (MR); MARIJUANA RETAILERS (MR)

PARKING REQUIREMENT: ADEQUATE PARKING SPACES TO ACCOMMODATE UNDER NORMAL CIRCUMSTANCES THE MOTOR VEHICLES OF THE EMPLOYEES AND VISITORS TO THE PREMISES AS MAY BE DETERMINED BY THE PLANNING BOARD. 65 PARKING SPACES PROVIDED.

SURVEY NOTES:

1). EXISTING CONDITIONS SURVEY CONDUCTED BY JARVIS LAND SURVEY, INC. IN 2022.

REQUIRED WAIVERS:

SECTION 181.4126, FRONT YARDS. FRONT YARDS SHALL BE THE DISTANCE, MEASURED IN A STRAIGHT LINE, BETWEEN THE LOT FRONTAGE AND THE NEAREST POINT OF THE PRINCIPAL BUILDING OR ANY STRUCTURE ATTACHED TO THE PRINCIPAL BUILDING, INCLUDING GARAGES. A LOT HAVING FRONTAGE ON TWO (2) OR MORE STREETS SHALL HAVE TWO (2) OR MORE FRONT YARDS, EACH OF WHICH SHALL COMPLY WITH THE REQUIREMENTS OF THE FRONT YARD PROVISIONS. IN NO CASE SHALL ANY BUILDING OR STRUCTURE BE LOCATED CLOSER TO THE SIDELINE OF A STREET THAN THE MINIMUM REQUIRED FRONT YARD.

PROPOSED: WAIVED.THIS IS AN EXISTING NON-CONFORMITY FOR THE EXISTING STRUCTURES. THE PROPOSED STRUCTURES SHALL NOT ENCR OACH FURTHER THAN THE EXISTING ENCR OACHMENT.

SECTION 181.5145, BACKING DIRECTLY ONTO A STREET SHALL BE PROHIBITED EXCEPT FOR SINGLE, TWO, AND THREE FAMILY RESIDENCES.

PROPOSED:WAIVED TO ALLOW THE EMPLOYEE PARKING AND SECURED VAN PARKING ALONG OAK HILL LANE.

SECTION 181.5142, ALL PARKING STALLS SHALL BE STANDARD DIMENSION AND SHALL BE LAID OUT AND STRIPED IN COMPLIANCE WITH THE FOLLOWING MINIMUM PROVISIONS... (SEE TABLE)

REQUIRED:24' WIDE MANEUVERING AISLE

PROPOSED: WAIVED TO ALLOW PAVING AND STRIPING OF EXISTING PARKING AREA.

181.516 LANDSCAPING REQUIREMENTS FOR PARKING AREAS

SECTION 181.5161, PARKING AREAS WITH MORE THAN TEN (10) SPACES SHALL CONTAIN 150 SQUARE FEET OF PLANTED AREAS FOR EVERY 1,000 SQUARE FEET OF PARKING PROPOSED, INCLUDING AISLES, APPROPRIATELY SITUATED WITHIN THE INTERIOR OF THE PARKING AREA. SUCH PLANTED AREA SHALL CONTAIN AN APPROPRIATE MIX OF SHADE TREES AND OTHER PLANTS.

SECTION 181.5162, PARKING LOTS LOADING AREAS, AND SERVICE AREAS SHALL BE SCREENED FROM VIEW, TO THE EXTENT FEASIBLE, FROM ALL ADJACENT RESIDENTIALLY ZONED PROPERTIES, BY THE USE OF PLANTED AREAS, BERMS, NATURAL CONTOURS OR NATURAL VEGETATION, FENCES OR A COMBINATION OF THE ABOVE.

SECTION 181.5163, BUFFER STRIPS BETWEEN ANY PARKING LOT SERVING A MULTI-FAMILY OR NONRESIDENTIAL USE AND THE REAR OR SIDE LOT LINES OF PROPERTY IN A RESIDENTIAL DISTRICT SHALL MEET THE FOLLOWING SPECIFICATIONS (SEE TABLE)

PROPOSED: WAIVED. THERE ARE NO LANDSCAPING BUFFERS IN THE EXISTING CONDITION; OR THROUGHOUT THE NEIGHBORHOOD.

SECTION 181.525, LOADING AREAS SHALL PROVIDE SCREENING IN ACCORDANCE WITH SECTION 181.54.

PROPOSED: WAIVED.

SECTION 181.54 GENERAL LANDSCAPING REQUIREMENTS

PROPOSED: WAIVE ITEMS 181.541 THROUGH 181.547. THE EXISTING BUILDING AND PARKING AREAS PROVIDE NO BUFFER. NO LANDSCAPE BUFFERS ARE PRESENT ON ABUTTING LOTS OR WITHIN THE NEIGHBORHOOD.

SITE ADDRESS:

#32
OAK HILL
LANE

Fitchburg, Massachusetts 01420

PREPARED FOR:

Green Soul
Development, LLC.

24 Sigourney Street, #2
Boston, Massachusetts 02130

HANCOCK
ASSOCIATES

Civil Engineers

Land Surveyors

Landscape Architects

Environmental
Consultants

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4.	JR	BG	10/25/23	BUILDING PERMIT REVISIONS	
3.	JR	BG	5/24/23	UPDATE DRAINAGE PIPE LABEL	
2.	JR	BG	5/09/23	TOWN COMMENTS	
1.	JR	BG	4/18/23	REVISED PARKING LAYOUT	
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION	
DATE:			12/5/22	DESIGN BY:	JR
SCALE:			AS SHOWN	DRAWN BY:	JR
APPRVD BY:			BG	CHECK BY:	JP

TITLE
SHEET

DWG: 26414eng.dwg

LAYOUT: TS

SHEET: 1 OF 6

JOB NO.: 26414

C-1

#32
OAK HILL
LANE

PREPARED FOR:

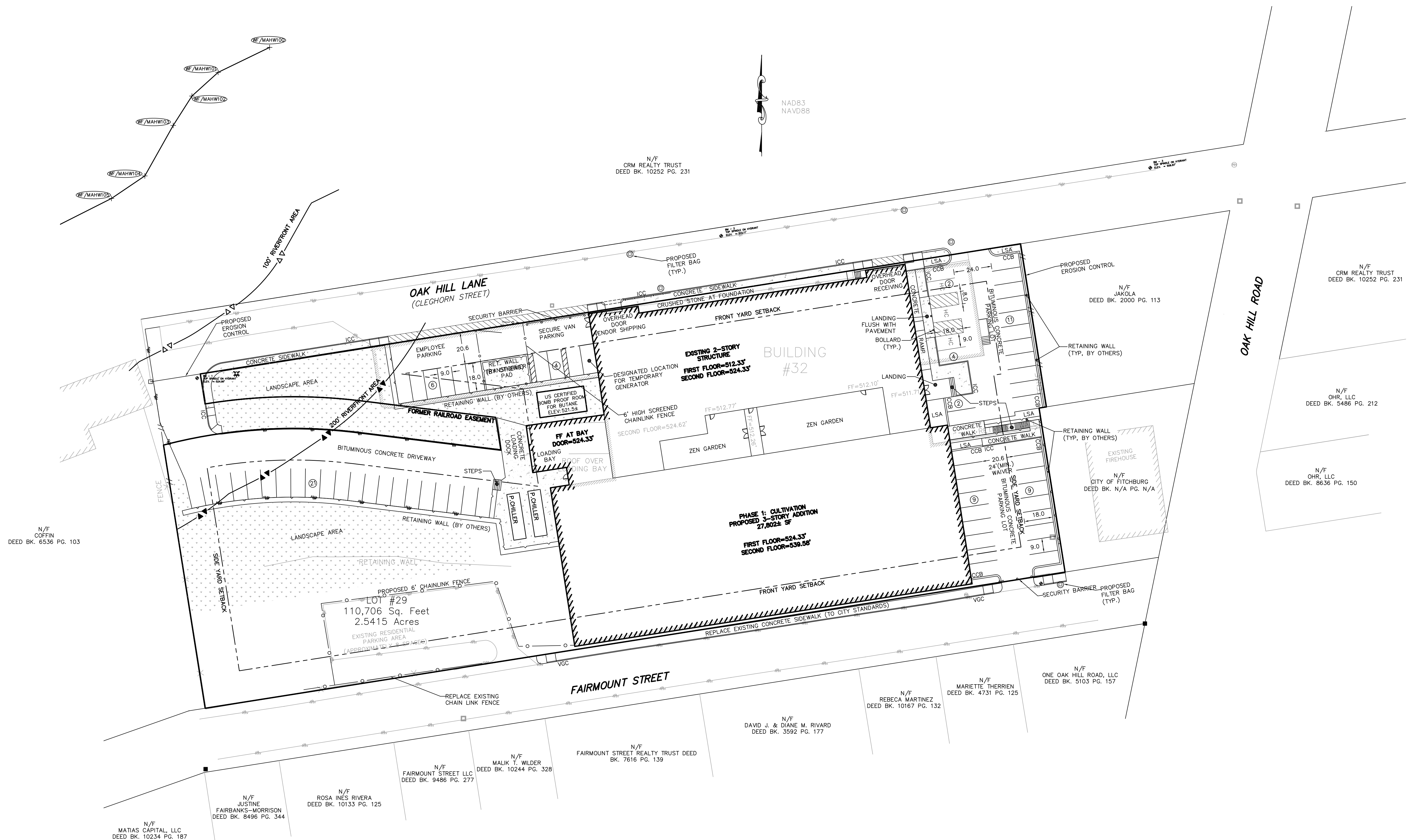
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NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
DATE:			12/5/22	DESIGN BY: JR
SCALE:			1"=30'	DRAWN BY: JR
APPRVD BY:			BG	CHECK BY: JR

JOB NO.: 26414

C-3



SCALE: 1" = 30'

A horizontal scale bar with tick marks at 0, 30, 60, and 120 feet. The bar is divided into three equal segments, each representing 30 feet.

SOIL TEST DATA:

DATE: 09/01/2022
EVALUATOR: JOHN REILLY, SE# 14354
WITNESS: N/A
2022-TP1
DEPTH: HZ TEXTURE FLEV.=523.0±
0-16" A LOAMY SAND
16-32" C FINE SAND

NOTES: REFUSAL @ 32"; NO OBSERVABLE GROUNDWATER

2022-TP2
DEPTH: HZ TEXTURE FLEV.=524.0±
0-46" FILL FINE SANDY LOAM

NOTES: REFUSAL @ 46"; NO OBSERVABLE GROUNDWATER

2022-TP3
DEPTH: HZ TEXTURE FLEV.=526.0±
0-44" FILL SANDY LOAM

NOTES: REFUSAL @ 44"; NO OBSERVABLE GROUNDWATER, BRICKS, BOULDERS & CONCRETE PRESENT; POCKETS OF SAND

2022-TP4
DEPTH: HZ TEXTURE FLEV.=527.75±
0-96" FILL LOAMY SAND

NOTES: REFUSAL @ 96"; COLOR CHANGE AT 56"; POCKETS OF FINE SAND

2022-TP5
DEPTH: HZ TEXTURE FLEV.=527.5±
0-96"± FILL SEE NOTES BELOW

NOTES: NO REFUSAL; MATERIAL MIXED POCKETS OF SAND, LOAMY SAND & SANDY LOAM, WEeping @ 75"; STANDING WATER @ 82"; BOULDERS, COBBLES & GRAVEL PRESENT

2022-TP6
DEPTH: HZ TEXTURE FLEV.=524.0±
0-70" FILL LOAMY SAND

NOTES: REFUSAL @ 70"; REDOX, CONCENTRATIONS AND DEPLETIONS @ 42"

2022-TP7
DEPTH: HZ TEXTURE FLEV.=511.0±
0-2" BINDER
2-37" FILL LOAMY SAND

NOTES: REFUSAL @ 37"; REDOX, CONCENTRATIONS AND DEPLETIONS @ 30"

2022-TP8
DEPTH: HZ TEXTURE FLEV.=508.0±
0-2" BINDER
2-28" FILL LOAMY SAND
28-30" Ad LOAMY SAND
30-36" FILL 2 FINE SANDY LOAM
36-90" C LOAMY SAND

NOTES: REFUSAL @ 90"; THE FILL HORIZON AT 30-36" OF DEPTH WAS COMPLETELY WASHED OUT AND GRAY

UTILITY NOTES:

1). THE EXISTING SEWER CONNECTION SHALL BE INSPECTED PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION AND CONDITION.

2). CONFIRM THE ADEQUACY AND CONDITION OF THE EXISTING GAS SERVICE WITH THE PRIVATE UTILITY PROVIDER.

3). DROP CONNECTION MANHOLES SHALL BE PRECAST CONCRETE STRUCTURES WITH A 5" INSIDE DIAMETER AND AN INSIDE DROP RESTRAINED PIPE.

4). DYE TESTING SHALL BE CONDUCTED ON ALL EXISTING SITE STORMWATER DRAINAGE INFRASTRUCTURE TO CONFIRM THAT THERE IS NO CROSS CONNECTION TO THE CITY'S SANITARY SEWER CONNECTION.

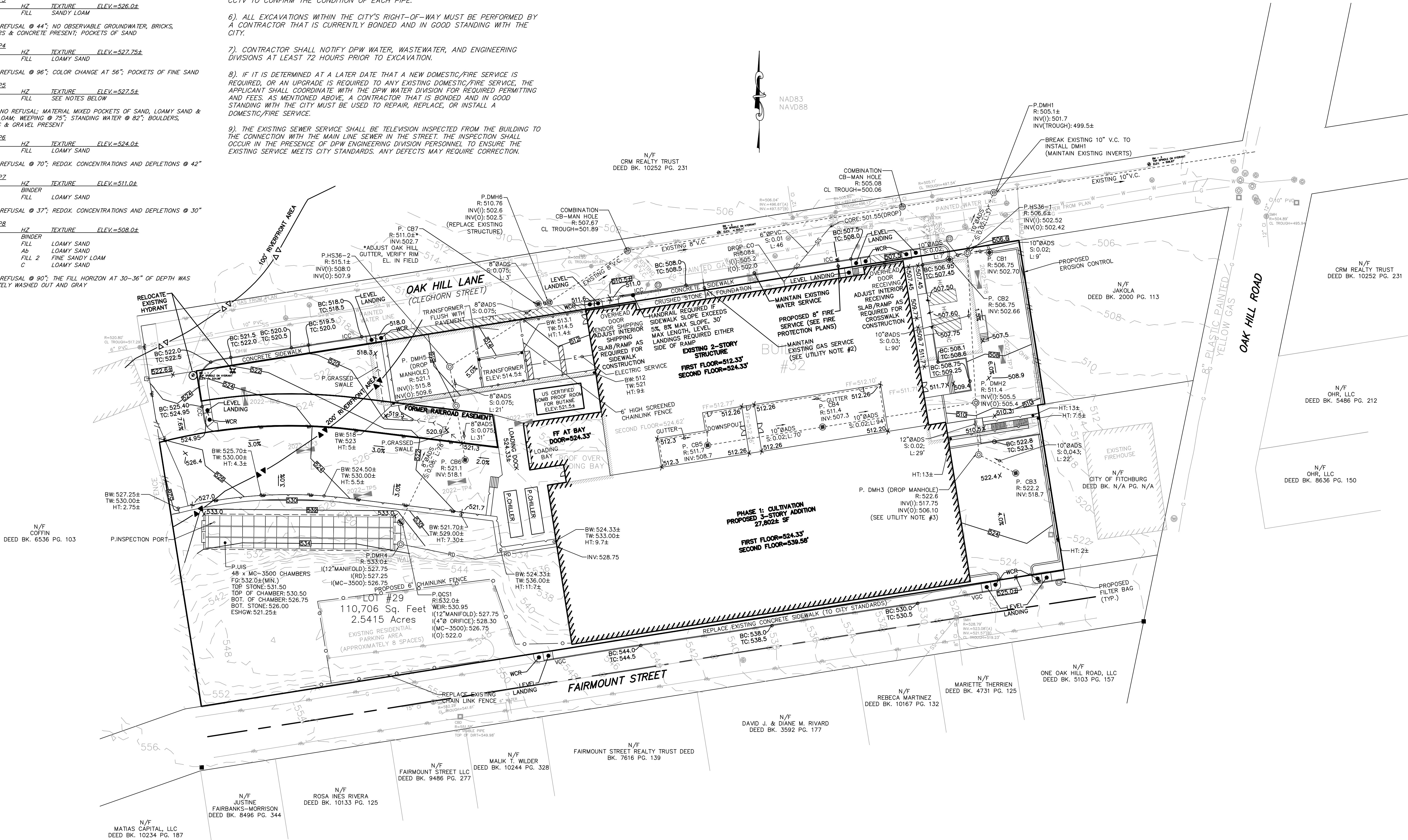
5). ALL EXISTING SITE STORMWATER DRAINAGE PIPING SHALL BE INSPECTED VIA CCTV TO CONFIRM THE CONDITION OF EACH PIPE.

6). ALL EXCAVATIONS WITHIN THE CITY'S RIGHT-OF-WAY MUST BE PERFORMED BY A CONTRACTOR THAT IS CURRENTLY BONDED AND IN GOOD STANDING WITH THE CITY.

7). CONTRACTOR SHALL NOTIFY DPW WATER, WASTEWATER, AND ENGINEERING DIVISIONS AT LEAST 72 HOURS PRIOR TO EXCAVATION.

8). IF IT IS DETERMINED AT A LATER DATE THAT A NEW DOMESTIC/FIRE SERVICE IS REQUIRED, OR AN UPGRADE IS REQUIRED TO ANY EXISTING DOMESTIC/FIRE SERVICE, THE APPLICANT SHALL COORDINATE WITH THE DPW WATER DIVISION FOR REQUIRED PERMITTING AND FEES. AS MENTIONED ABOVE, A CONTRACTOR THAT IS BONDED AND IN GOOD STANDING WITH THE CITY MUST BE USED TO REPAIR, REPLACE, OR INSTALL A DOMESTIC/FIRE SERVICE.

9). THE EXISTING SEWER SERVICE SHALL BE TELEVISION INSPECTED FROM THE BUILDING TO THE CONNECTION WITH THE MAIN LINE SEWER IN THE STREET. THE INSPECTION SHALL OCCUR IN THE PRESENCE OF DPW ENGINEERING DIVISION PERSONNEL TO ENSURE THE EXISTING SERVICE MEETS CITY STANDARDS. ANY DEFECTS MAY REQUIRE CORRECTION.



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NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION

DATE: 12/5/22 DESIGN BY: JR
SCALE: 1"=30' DRAWN BY: JR
APPRVD BY: BG CHECK BY: JP

GRADING AND
DRAINAGE
PLAN

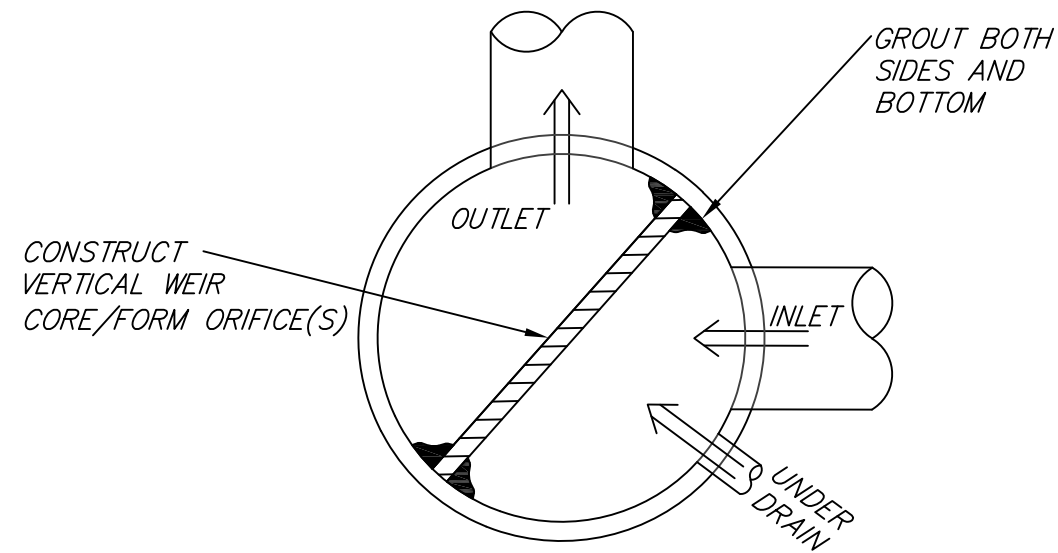
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LAYOUT: GDU

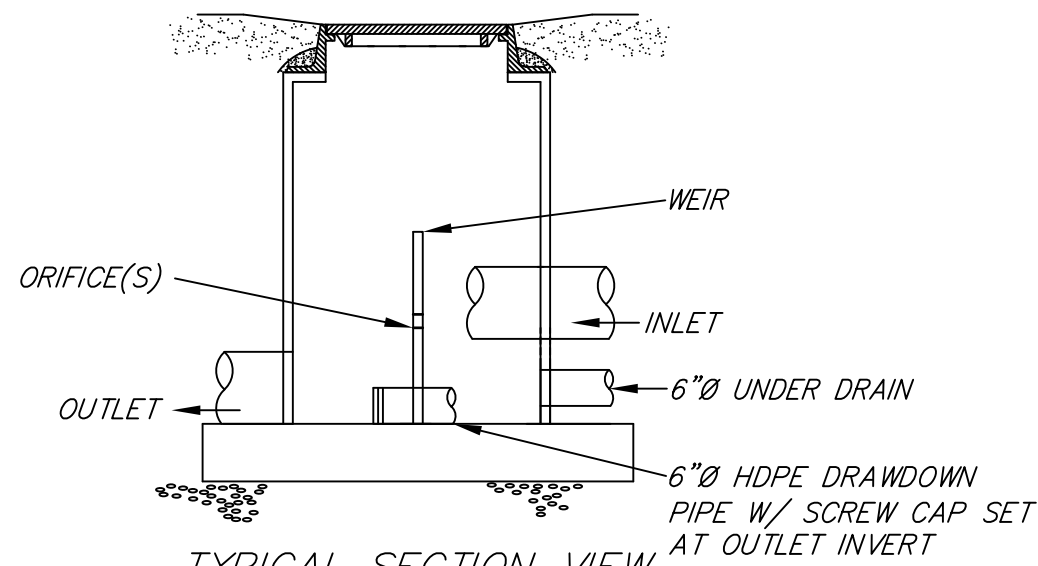
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JOB NO.: 26414

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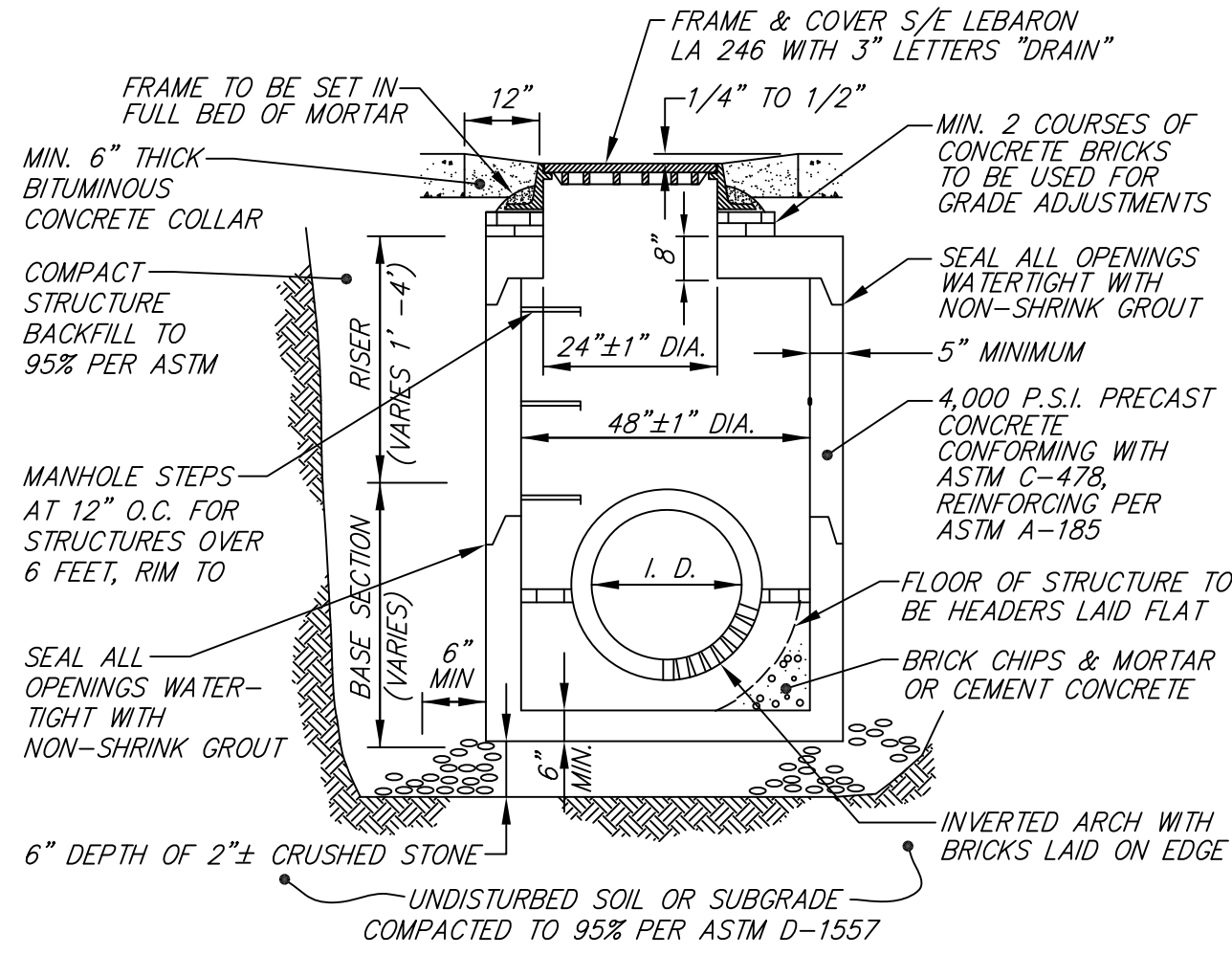
TYPICAL PLAN VIEW
SEE SITE PLAN FOR INDIVIDUAL
SYSTEM LAYOUTS & INVERTS



NOTE: 1. SEE DRAIN MANHOLE DETAIL FOR STANDARD
MANHOLE CONSTRUCTION SPEC'S
2. SEE PLAN FOR INVERT ELEVATIONS

OUTLET CONTROL STRUCTURE (P.OCS)

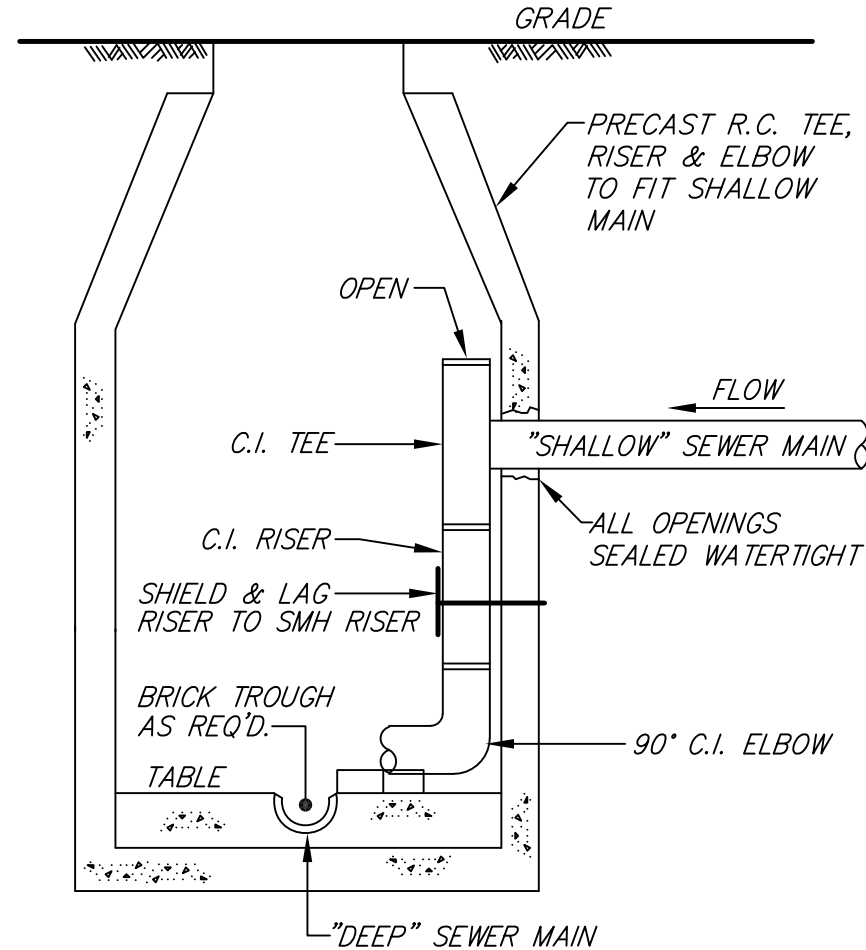
NOT TO SCALE



NOTE: CONICAL TOP MAY ALSO BE USED

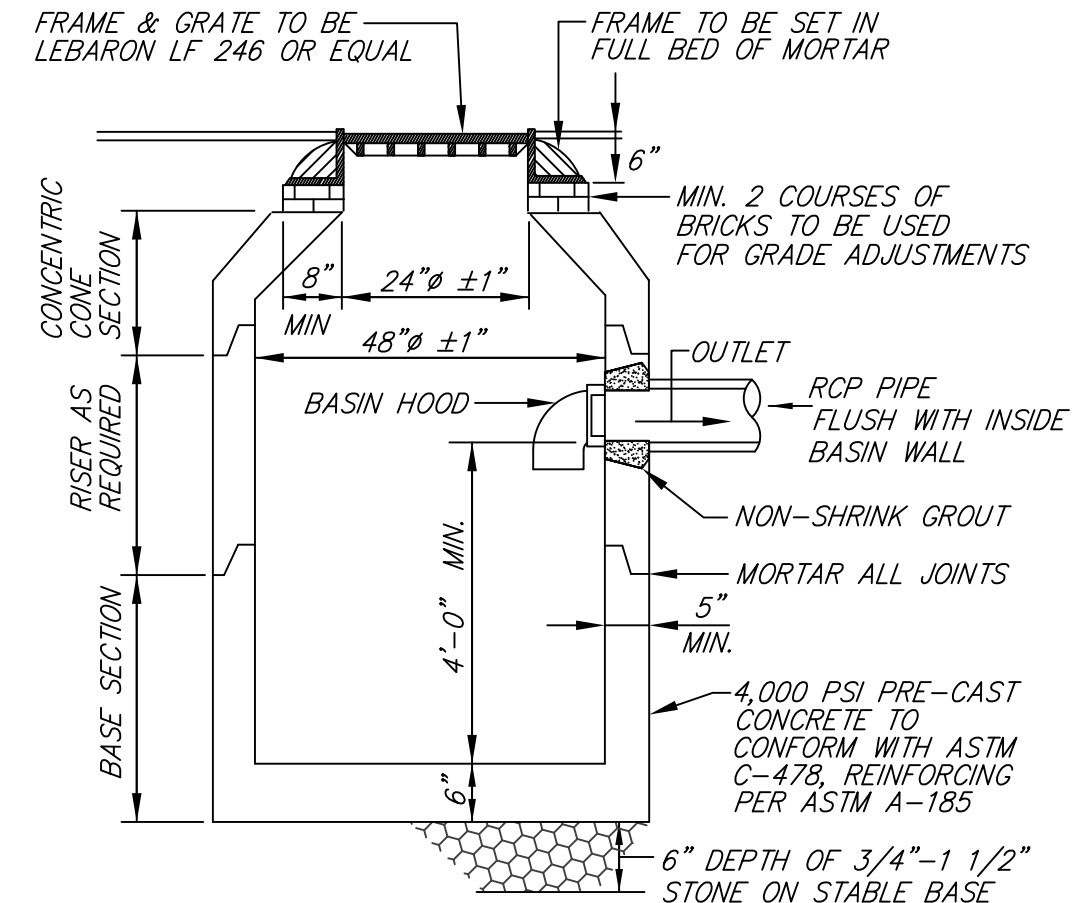
DRAIN MANHOLE

TYPICAL CROSS SECTION
NOT TO SCALE



DROP SEWER MANHOLE

CROSS SECTION
NOT TO SCALE



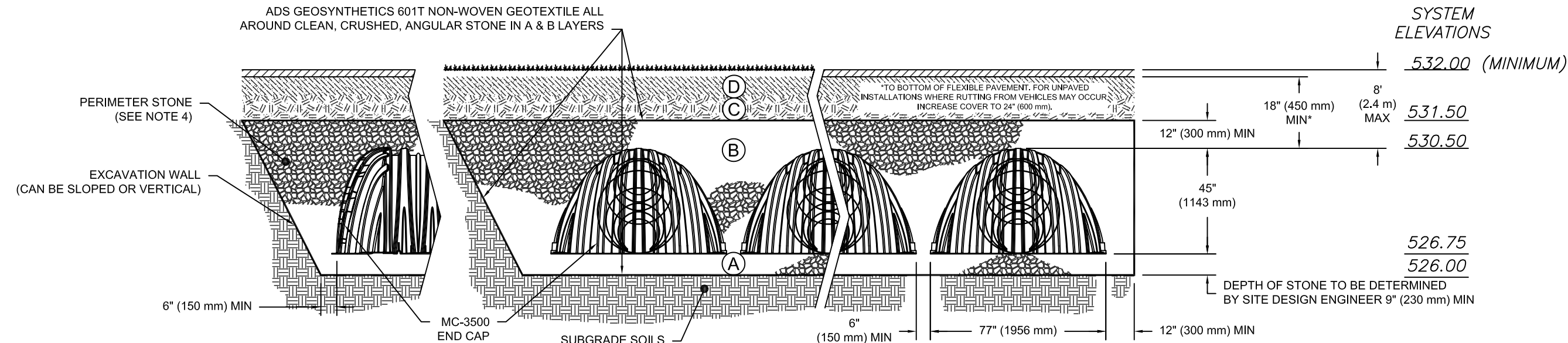
CATCH BASIN WITH HOOD

TYPICAL CROSS SECTION - NOT TO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145' A-1, A-2-4, A-3 OR AASHTO M43' 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43' 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43' 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



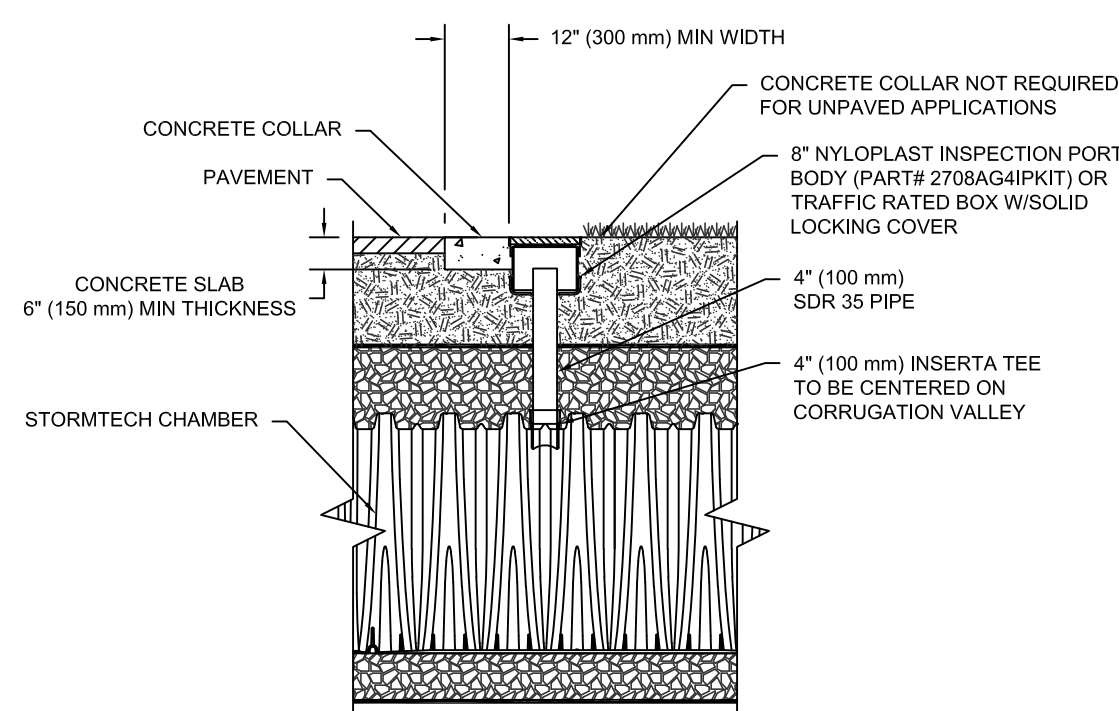
NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2767 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT² IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

MC-3500 CROSS SECTION DETAIL

TYPICAL CROSS SECTION - NOT TO SCALE

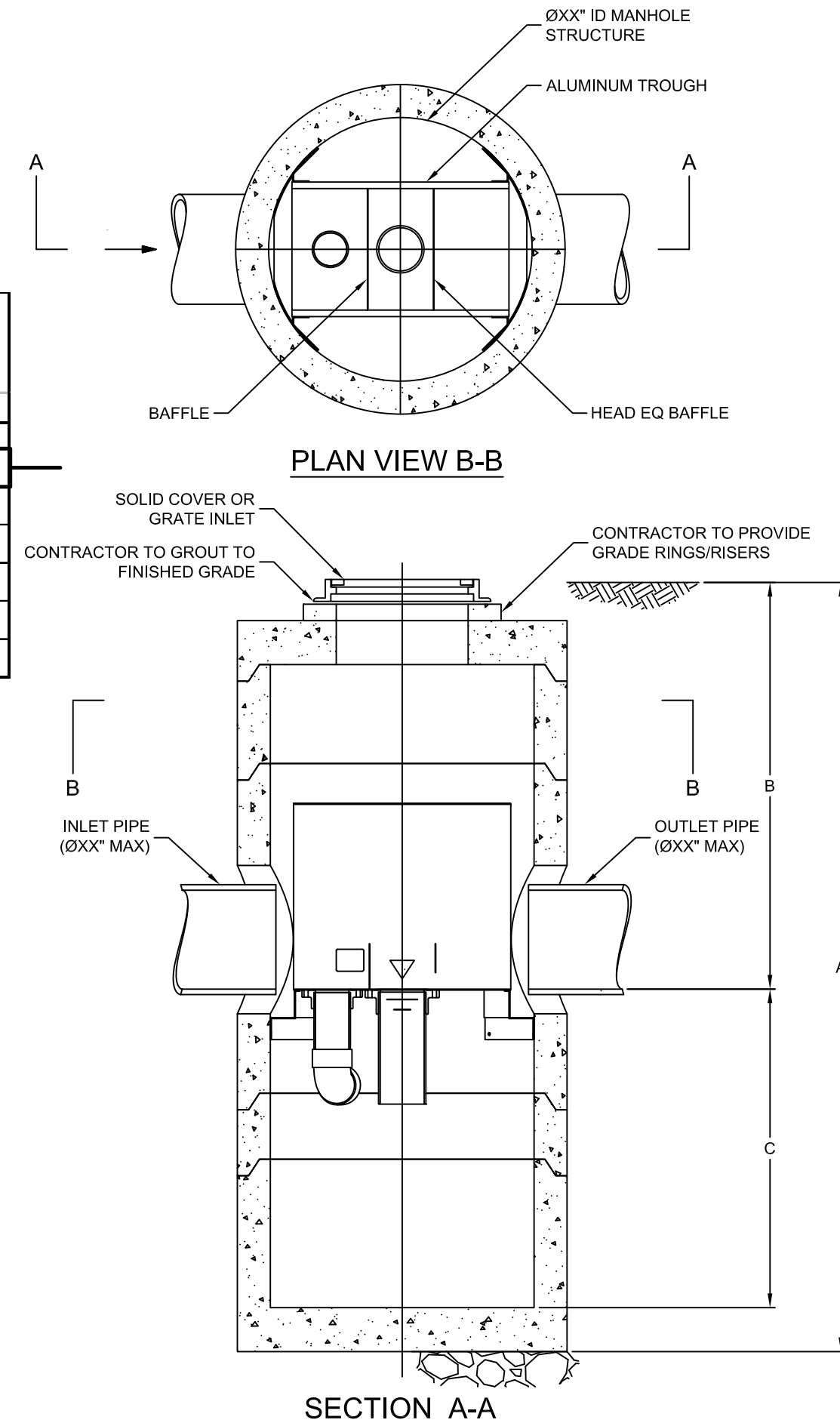
VortSentry Model	Manhole Diameter (ID)		Total Treatment Flow Rate		Typical Total Distance Rim to Outside Bottom		Typical Distance Rim to Invert		Typical Depth Below Invert (Inside)		Approximate Minimum Distance Rim to Invert		Maximum Pipe Diameter (ID)	
A														
B														
C														
	ft	mm	cfs	l/s	ft	m	ft	m	ft	mm	ft	m	in	mm
HS36	3	900	0.55	15.6	10.16	3.10	4.08	1.24	5.58	1702	3.00	0.91	18	450
HS48	4	1200	1.20	34.0	13.25	4.04	6.00	1.83	6.75	2057	4.00	1.22	24	600
HS60	5	1500	2.20	62.3	15.13	4.61	6.50	1.98	7.96	2426	4.82	1.47	30	750
HS72	6	1800	3.70	104.8	16.56	5.05	6.75	2.06	9.15	2788	5.59	1.70	36	900
HS84	7	2100	5.60	158.6	18.85	5.75	7.75	2.36	10.35	3156	5.00	1.52	42	1050
HS96	8	2400	8.10	229.4	20.87	6.36	8.50	2.59	11.54	3518	6.91	2.11	48	1200



NOTE: INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)

NOT TO SCALE



SECTION A-A

CONTECH VortSentry HS

NOT TO SCALE

SITE ADDRESS:

#32
OAK HILL
LANE

Fitchburg, Massachusetts 01420

PREPARED FOR:

Green Soul
Development, LLC.

24 Sigourney Street, #2
Boston, Massachusetts 02130

HANCOCK
ASSOCIATES

Civil Engineers

Land Surveyors

Landscape Architects

Environmental
Consultants

34 CHELMSFORD ROAD, CHELMSFORD, MA 01824
VOICE (978) 244-0110, FAX (978) 244-1133
WWW.HANCOCKASSOCIATES.COM

4.	JR	BG	10/25/23	BUILDING PERMIT REVISIONS	
3.	JR	BG	5/24/23	UPDATE DRAINAGE PIPE LABEL	
2.	JR	BG	5/09/23	TOWN COMMENTS	
1.	JR	BG	4/18/23	REVISED PARKING LAYOUT	
NO.	BY	APP	DATE	ISSUE/REVISION	DESCRIPTION
DATE:	12/5/22	DESIGN BY:	JR		
SCALE:	AS SHOWN	DRAWN BY:	JR		
APPRVD BY:	BG	CHECK BY:	JP		

SITE
DETAILS

DWG: 26414eng.dwg

LAYOUT: DET(1)

SHEET: 5 OF 6

JOB NO.: 26414

C-5

