

VILLAGE DENTAL



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MEP CONSULTANTS

STRUCTURAL

Peninsula

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PROGRESS
NOT FOR
CONSTRUCTION

10/06/2025

PROJECT TEAM:



CIVIL ENGINEER:
GUTOSKEY AND ASSOCIATES
P 406.543.6900

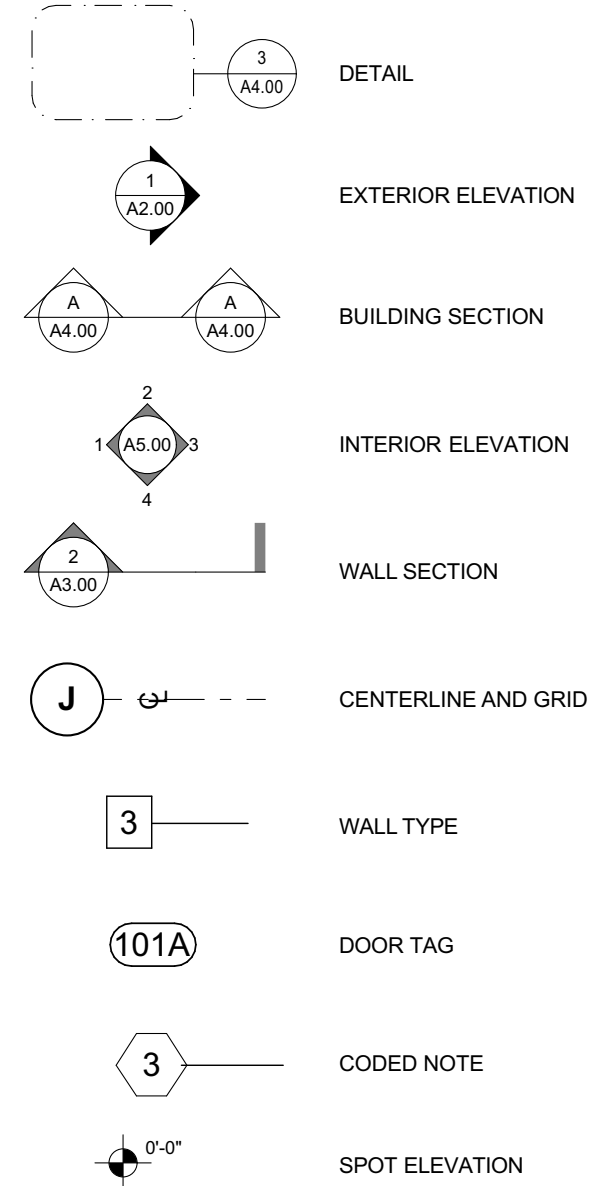
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ORATEC DESIGN BUILD
P 330.552.8211

MEP ENGINEER:
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P 216.531.8880

ABBREVIATIONS

ABV	ABOVE	HC	HOLLOW CORE
AC	AIR CONDITIONING	HDWR.	HARDWARE
AFF	ABOVE FINISHED FLOOR	HM	HOLLOW METAL
ALT	ALTERNATE	HVAC	HEATING, VENTILATION, AND
AHJ	AUTHORITY HAVING JURISDICTION	HT	HEIGHT
ALUM	ALUMINUM	INSUL	INSULATION
APPROX.	APPROXIMATELY	JST	JOIST
ARCH	ARCHITECTURAL	LAM	LAMINATED
ASPH	ASPHALT	LF	LINEAR FOOT
BD	BOARD	MAS	MASONRY
BLDG	BUILDING	MATL	MATERIAL
BRG	BEARING	MECH	MECHANICAL
BTTM	BOTTOM	MFG.	MANUFACTURER
BTW	BETWEEN	MIN.	MINIMUM
CF	CUBIC FEET	MISC	MISCELLANEOUS
CIP	CAST IN PLACE	MTD	MOUNTED
CJ	CONTROL JOINT	MTL	METAL
CLG	CEILING	NOM	NOMINAL
CLR	CLEAR	NTS	NOT TO SCALE
CMU	CONCRETE MASONRY UNIT	OI	OVER
CONC	CONCRETE	O.C.	ON CENTER
CO	CONTINUOUS	OPN	OPENING
DBL	DOUBLE	PREFAB	PREFABRICATED
DEPT	DEPARTMENT	PLYWD	PLYWOOD
DIA	DIAMETER	P.LAM	PLASTIC LAMINATE
DN	DOWN	PR	PAIR
DR	DOOR	PSI	POUNDS PER SQUARE INCH
DS	DOWNSPOUT	REF	REFERENCE
DTL	DETAIL	RM	ROOM
DWG	DRAWING	RO	ROUGH OPENING
EA	EACH	REQ	REQUIRED
ELEC	ELECTRICAL	SC	SOLID CORE
EQ	EQUAL	SECT	SECTION
EXH	EXHAUST	SH	SIMILAR
EXIST	EXISTING	STRUC	STRUCTURAL
EXP	EXPOSED	TYP	TYPICAL
EXT	EXTERIOR	UNO	UNLESS NOTED OTHERWISE
FD	FLOOR DRAIN	WI	WITH
FIN	FINISHED	WWF	WELDED WIRE FABRIC
FLR	FLOOR		
FT	FOOT		
FTG	FOOTING		
FUR	FURRING		
GALV	GALVANIZED		
GA	Gauge		
GC	GENERAL CONTRACTOR		
GYP BD.	GYP SUM BOARD		
GYP	GYP SUM		

SYMBOLS



MATERIALS LEGEND

	DIMENSIONAL LUMBER		GRAVEL
	PLYWOOD		CONCRETE
	FINISH WOOD		CONCRETE BLOCK
	GYP SUM BOARD		STEEL
	BRICK		RIGID INSULATION
	EARTH		SPRAY FOAM INSULATION
	STONE VENEER		MINERAL WOOL INSULATION
	BLOCKING		METAL DECK

PROJECT GENERAL NOTES

CONTRACTOR SHALL PROVIDE ALL MATERIALS AND WORKMANSHIP FOR ALL CONSTRUCTION REQUIRED HEREIN AND SHALL BE IN ACCORDANCE WITH THE:

COMMERCIAL BUILDING CODE: 2024 OF OHIO (IBC 2021 + AMENDMENTS)
EXISTING BUILDING CODE: 2024 OF OHIO (IBC 2021 + AMENDMENTS)
RESIDENTIAL BUILDING CODE: 2019 OF OHIO (IRC 2018 + AMENDMENTS)
MECHANICAL CODE: 2024 OF OHIO (MCC 2021 + AMENDMENTS)
ELECTRICAL CODE: 2023 OF OHIO (NFPA 70, 2023 + AMENDMENTS)
PLUMBING CODE: 2024 OF OHIO (IPC 2021 + AMENDMENTS)
ENERGY CONSERVATION CODE: 2021 OF OHIO (IECC 2021 + AMENDMENTS)
ACCESSIBILITY CODE: 2017 OF OHIO (A117.1, 2017 + AMENDMENTS)
FUEL AND GAS CODE: 2021 OF OHIO (IFGC 2021 + AMENDMENTS)
FIRE CODE: 2017 OF OHIO

THE CONTRACTOR WILL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, PERMITS, TAXES, AND INSURANCE NECESSARY TO COMPLETE THE WORK INDICATED AND/OR IMPLIED IN THE CONSTRUCTION DOCUMENTS UNLESS NOTED OTHERWISE AND WILL COORDINATE THE WORK RESPONSIBILITIES OF ALL SUBCONTRACTORS, ALL LABOR AND MATERIALS TO CARRY OUT FULLY THE INTENTIONS OF THE PLANS AND SPECIFICATIONS ARE PART OF THE CONTRACT, WHETHER OR NOT SPECIFICALLY DOCUMENTED.

ALL WORK WILL CONFORM TO THE CURRENT OHIO BUILDING, MECHANICAL & PLUMBING CODES, AS WELL AS THE CURRENT NATIONAL BOARD OF FIRE UNDERWRITERS AND ALL OTHER APPLICABLE CITY CODES. LOCAL LAWS AND AUTHORITIES HAVING JURISDICTION, CODE STANDARDS AND PUBLICATIONS OF PRIVATE AND PUBLIC BODIES MENTIONED WITHIN THE SPECIFICATIONS OR ON THE DRAWINGS, WILL BE CONSIDERED TO BE THOSE IN FORCE AT THE TIME OF THE CONTRACT AWARD.

THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONTROLLED INSPECTIONS AND ANY TECHNICAL TESTING REQUIRED FOR CONTROLLED INSPECTIONS AS STIPULATED BY ALL APPLICABLE CODES.

ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT WILL BE NEW AND FREE OF DEFECTS AND WILL BE SUPPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED, AND CONDITIONED AS DIRECTED BY THE RESPECTIVE MANUFACTURERS, UNLESS SPECIFIED OTHERWISE.

THE CONTRACTOR WILL NOTIFY THE ARCHITECT OF ANY ERRORS, OMISSIONS, CONFLICTS, OR AMBIGUITIES IN AND BETWEEN THE DRAWINGS AND THE SPECIFICATIONS PRIOR TO PROCEEDING WITH THE WORK. IF SUCH NOTICE IS NOT FURNISHED TO THE ARCHITECT, THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE DRAWINGS AND SPECIFICATIONS AND TO HAVE FOUND THEM IN PROPER FORM FOR EXECUTION.

THE CONTRACTOR REPRESENTS THAT HE HAS HAD ADEQUATE ACCESS TO THE JOB SITE AND BUILDING AREA IN WHICH THE WORK IS TO BE PERFORMED, THAT HE HAS SATISFIED HIMSELF AS TO THE NATURE AND LOCATION OF WORK, INCLUDING ANY OBSTRUCTIONS, SCOPE OF WORK, ACTUAL LEVELS, THE EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING THE EXECUTION OF THE WORK AND ALL OTHER MATTERS WHICH CAN IN ANY WAY AFFECT THE WORK OR THE COST THEREOF UNDER THIS CONTRACT, AND THAT HE HAS STUDIED THE CONTRACT DOCUMENTS AND ALL OTHER DOCUMENTS PERTAINING TO THE INSTALLATION OF OTHER TRADES WHOSE WORK MAY INFLUENCE HIS WORK.

THE CONTRACTOR WILL ASSUME FULL RESPONSIBILITY, INCLUDING RESPONSIBILITY FOR ALL RELATED COSTS FOR ANY AND ALL WORK DONE WITHOUT THE APPROVAL OF THE ARCHITECT IF SUCH WORK IS IN CONFLICT WITH THE CONTRACT, DRAWINGS, OR SPECIFICATIONS.

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE SAFE WORKING CONDITIONS AT THE SITE. THE ARCHITECT AND OWNER WILL NOT BE DEEMED TO HAVE ANY RESPONSIBILITY OR LIABILITY IN CONNECTION HERewith.

CONSTRUCTION OPERATIONS WILL NOT INVOLVE INTERRUPTION OF HEATING, WATER, ELECTRICAL, OR OTHER SERVICES TO ANY PORTION OF THE BUILDING OUTSIDE THE LIMITS OF THE CONSTRUCTION SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTING ANY DEFICIENCIES CAUSED BY DEFECTIVE OR ILL TIMED WORK AT NO ADDITIONAL COST TO THE OWNER.

NO SUBSTITUTIONS ARE PERMITTED EXCEPT WHERE THE TERM "APPROVED EQUAL" APPEARS. ALL SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE ARCHITECT. THE CONTRACTOR IS TO SUBMIT SAMPLES OR CATALOG CUTS OF ALL VISIBLE MATERIALS AND EQUIPMENT FOR THE ARCHITECT'S APPROVAL PRIOR TO INSTALLATION.

CONTRACTOR TO MAINTAIN FULL SET OF PLANS AND INSTALLATION INSTRUCTIONS ON SITE.

PERFORM VISUAL INSPECTION OF ENVELOPE AND INSULATION TO MEET 2021 IECC, 402.5.1.5
"BUILDING ENVELOPE PERFORMANCE VERIFICATION" ITEM 2

PROJECT INFORMATION

TWO STORY COMMERCIAL ADDITION TO AN EXISTING HISTORIC STRUCTURE.

KNOWN AS PART OF GREAT LOT NO. 56 OF HUDSON TOWNSHIP AND PART OF BLOCK NO. 3 IN SAID VILLAGE: BEGINNING AT THE INTERSECTION OF THE SOUTH LINE OF DIVISION STREET WITH THE EAST LINE OF EAST MAIN STREET WHICH POINT IS THE NORTHWEST CORNER OF SAID BLOCK; THENCE WITH THE SOUTH LINE OF SAID DIVISION STREET S 89° 47' 00" E 147.96 FEET TO AN IRON PIPE; THENCE WITH THE WEST LINE OF PREMISES SOLD TO L. LAUDENSLAGER S. 0° 28' 00" W. 30 FEET TO A POINT IN SAID LINE; THENCE WESTERLY ALONG A LINE DRAWN APPROXIMATELY PARALLEL TO THE SOUTH LINE OF DIVISION STREET TO A POINT IN THE EAST LINE OF EAST MAIN STREET, SAID BEING 30 FEET FROM THE POINT OF INTERSECTION OF THE SOUTH LINE OF DIVISION STREET WITH THE EAST LINE OF EAST MAIN STREET; THENCE WITH THE EAST LINE OF EAST MAIN STREET N 0° 13' 00" E 30 FEET TO THE PLACE OF BEGINNING.

CITY: HUDSON
COUNTY: SUMMIT
PARCEL #: 3200737
ACRES: 0.1019
DISTRICT: 5 - VILLAGE CORE DISTRICT HISTORIC DISTRICT

SETBACKS:
FRONT YARD: A MIN. OF 75% OF THE FRONT WALL SHALL BE BUILT TO THE EDGE OF THE FRONT SIDEWALK.
REAR YARD: 10', EXCEPT WHEN ABUTTING A RESIDENTIAL USE THEN IT'S 20'.
SIDE YARD: 0', EXCEPT WHEN ABUTTING A RESIDENTIAL USE THEN IT'S 15'.

MAX HEIGHT: 45'
ACTUAL HEIGHT: 25'-11"

USE: BUSINESS
CONSTRUCTION TYPE: V-8

PARKING: OFFICE ± 1 SPACE / 400 SF AND 1 SPACE FOR EACH 200 SF AS MAX. PERMITTED PARKING
REQUIRED ± 2 SPACES

GROSS ADDITION BUILDING AREAS:

SQUARE FOOTAGE	
FLOOR	AREA
FIRST FLOOR	572
SECOND FLOOR	525
	1,097 SF

ALLOWABLE BUILDING AREA:
B: 9,000 SF, NOT SPRINKLED

OCCUPANCY:
B: BUSINESS/OFFICE AREA ± 150 GROSS
FIRST FLOOR: 572 / 150 ± 4 OCCUPANTS
SECOND FLOOR: 525 / 150 ± 4 OCCUPANTS
TOTAL ± 8 OCCUPANTS

SECTION 1017.2: EXIT ACCESS TRAVEL DISTANCE FOR OCCUPANCY, NOT SUPPRESSED IS 200'

DRAWING INDEX

* DENOTES SHEETS PRINTED IN COLOR

*G1.00	COVER SHEET
C1.00	SITE PLAN
C1.01	CALCULATIONS
C1.02	CALCULATIONS
C-1.1	OVERALL PLAN
C-1.2	SWM PLAN
C-1.3	GENERAL NOTES
AS1.00	SITE PHOTOS
AS1.01	ARCHITECTURAL SITE PLAN
L0.01	LANDSCAPE PLAN
L0.02	LANDSCAPE PLANTING DETAILS
L0.03	LANDSCAPE SPECIFICATIONS
L0.04	LANDSCAPE SPECIFICATIONS
L0.05	LANDSCAPE SPECIFICATIONS
L0.06	LANDSCAPE SPECIFICATIONS
L0.07	LANDSCAPE SPECIFICATIONS
L0.08	LANDSCAPE SPECIFICATIONS

A1.01	FLOOR PLANS
A3.00	EXTERIOR ELEVATIONS
A4.00	BUILDING SECTIONS
A4.01	BUILDING SECTIONS
A5.00	SPECIFICATIONS
A5.01	SPECIFICATIONS

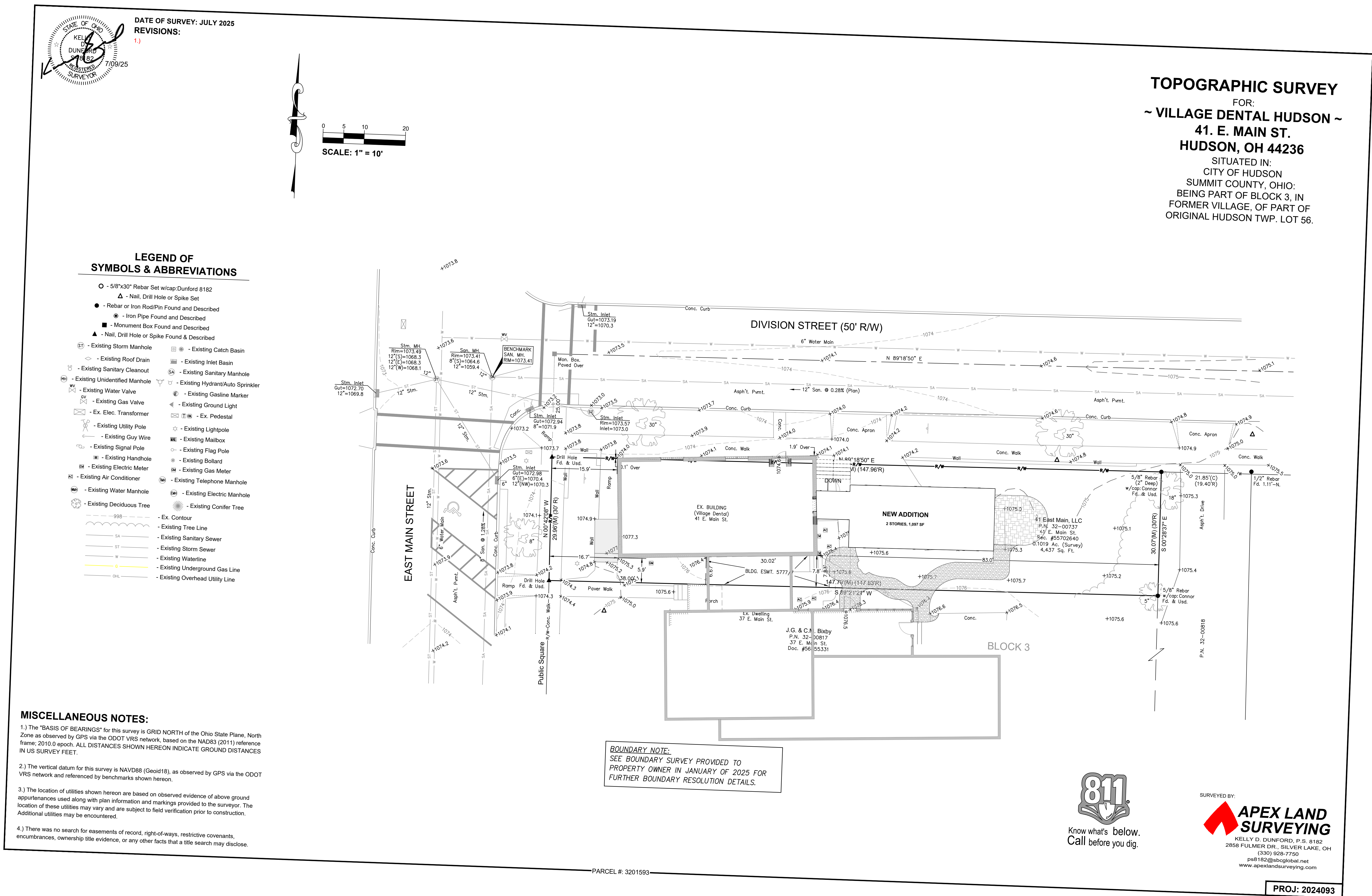
VILLAGE DENTAL
41 E. MAIN STREET, HUDSON, OH 44236

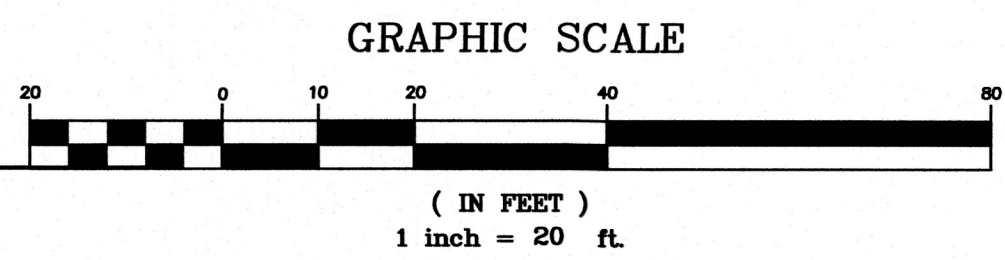
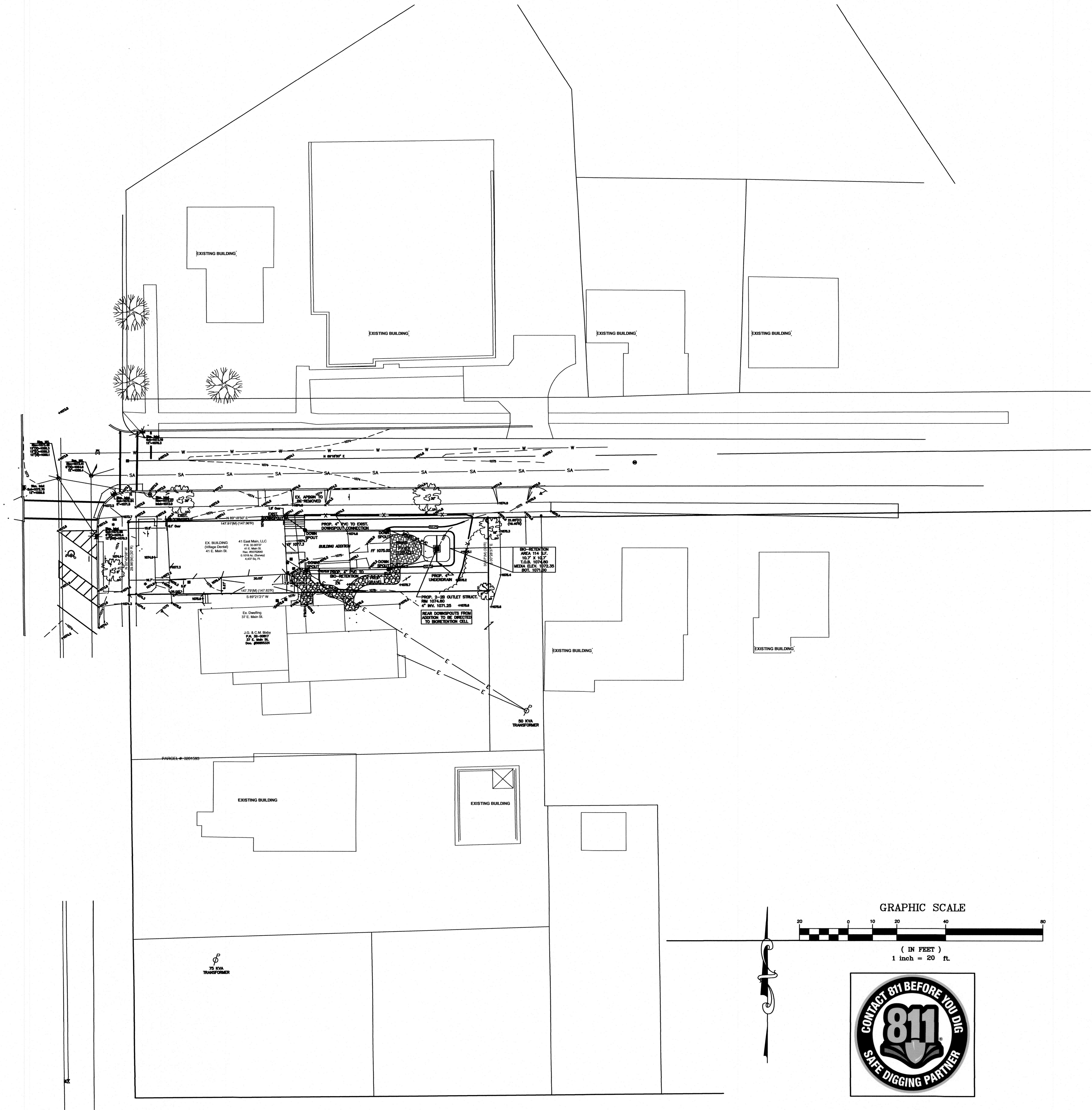
PROJECT #: 2501
ISSUE:
AHRB REVIEW 04-01-2025
VARIANCE SET 04-17-2025
PLANNING COMMISSION 09-15-2025

COVER SHEET

*G1.00

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Revisions:

1	NEW SHEET 10/27/25
2	
3	
4	
5	
6	
7	

VILLAGE DENTAL

P.P.N.32-00737

41 EAST MAIN ST.

HUDSON – SUMMIT COUNTY – OHIO

GUTOSKEY & ASSOCIATES INC.

Civil Engineers, Surveyors and Land Planners

10186 GOTTSCHALK PKWY, SUITE 4 TEL (440) 543-8900

CHAGRIN FALLS, OHIO 44023 JOEGUTOSKEY@GUTOSKEY.COM

OVERALL PLAN

Date: 10/27/25

Scale: Hor. 1" = 20'

Vert. _____

Filename: _____

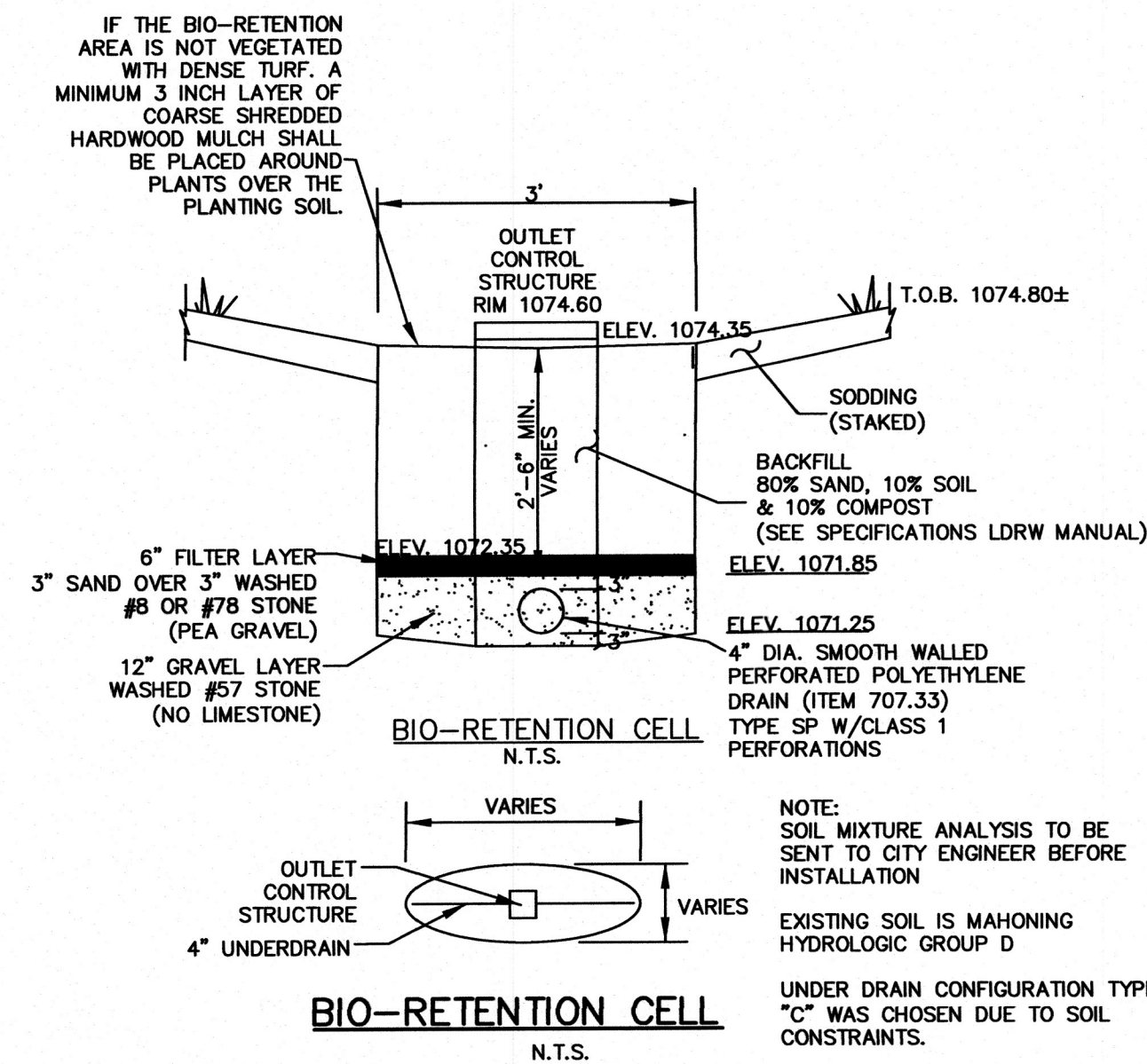
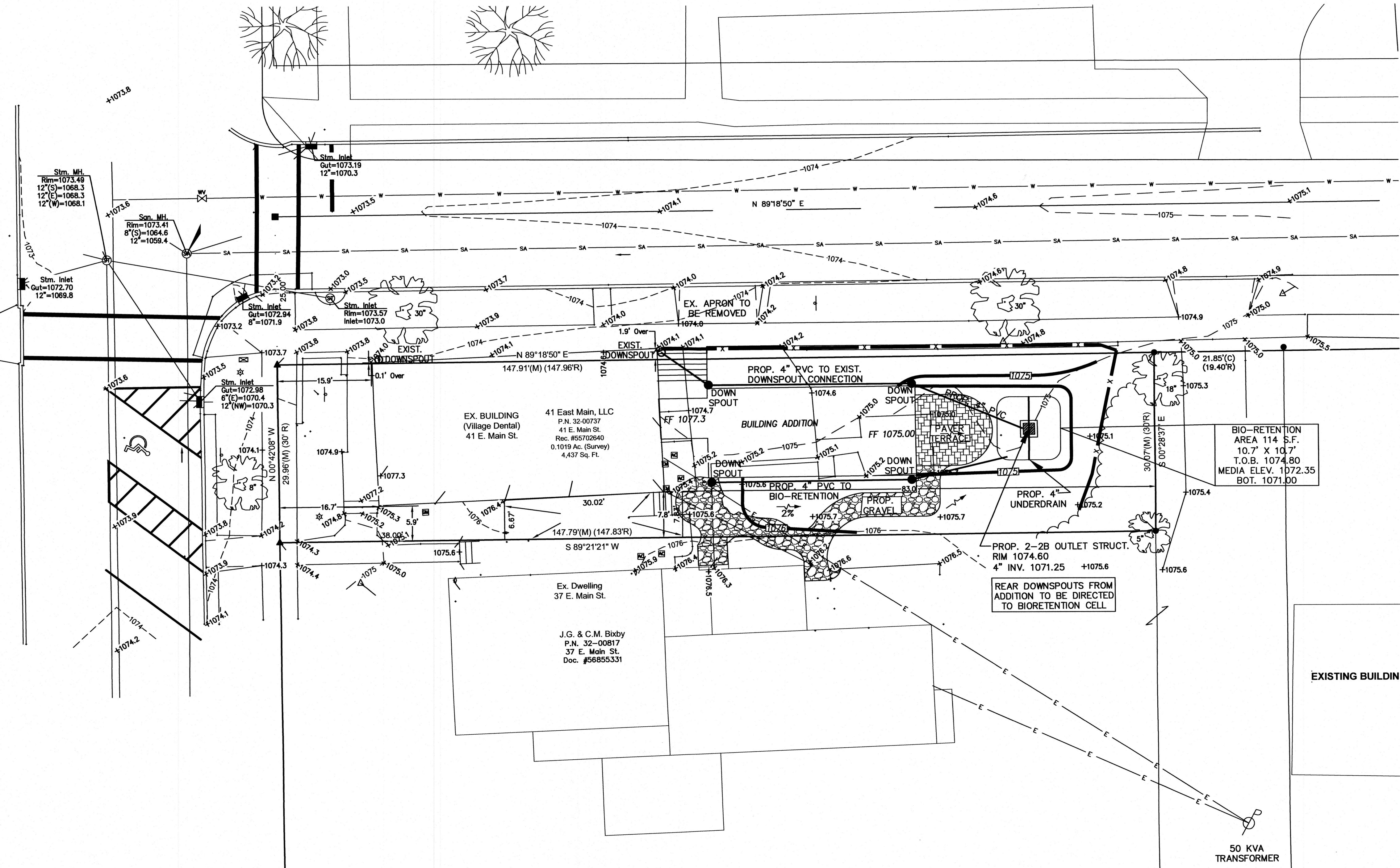
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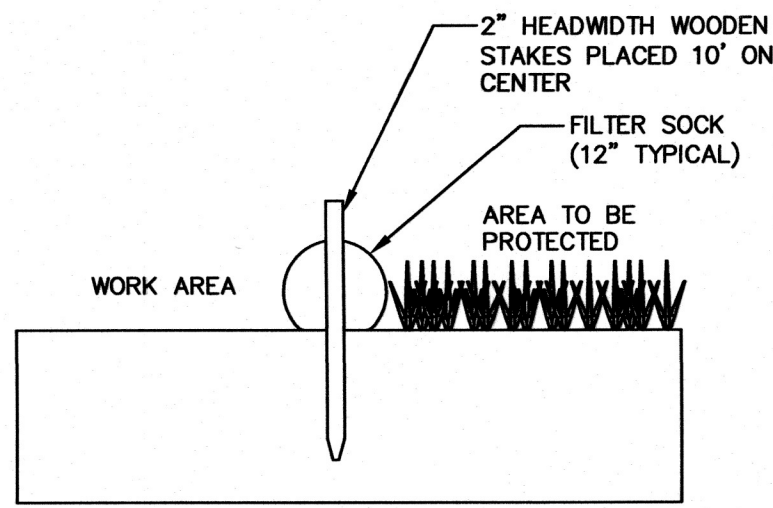
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CONTRACT No. 25-4246

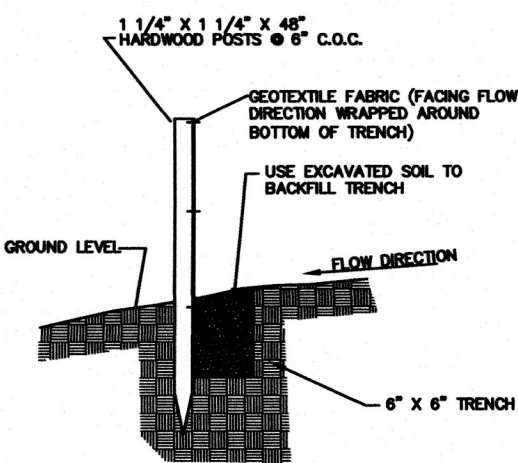


NOTES:
SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.
TOPOGRAPHIC & EXISTING CONDITIONS SURVEY PROVIDED BY CLIENT.
THERE SHALL BE NO STAGING OF EQUIPMENT, MATERIALS, OR EMPLOYEE VEHICLES IN THE RIGHT OF WAY.
CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES WITHIN THE PROJECT AREA.
THIS PLAN MEETS THE REQUIREMENTS OF THE OHIO EPA GENERAL PERMIT AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY OH000006.

BIO-RETENTION CELL CALCULATION	
TOTAL AREA = 0.10 AC.	
AREA FILTER = 0.05(IMPERVIOUS AREA) = BIO-RET. S.F.	
0.05(2264) = 113.2 S.F. USE 114 S.F.	
114 S.F. X 0.25' DEPTH = 28.5 C.F.	



SILT SOCK DETAIL
(TYPICAL CROSS SECTION)



SILT FENCE DETAIL
(TYPICAL CROSS SECTION)

Street Sweeping & Vacuuming

Practices to remove tracked sediment to prevent the sediment from entering a storm drain or watercourse.

These practices are implemented anywhere sediment is tracked from the project site onto public or private paved roadways, typically at points of ingress/egress.

- * Inspect potential sediment tracking locations daily.
- * Visible sediment tracking shall be swept and/or vacuumed daily.
- * If not mixed with debris or trash, consider incorporating the removed sediment bank into the project.
- * Use caution to not sweep up any unknown substance or any object that may be potentially hazardous.
- * Adjust brooms frequently: maximize efficiency of sweeping operations.
- * After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

LEGEND

LIMITS OF DISTURBANCE

SILT CONTROL FENCE/SOCK (SF)

INLET PROTECTION (IP)

NOTE: EROSION MEASURES ARE NOT SHOWN TO SCALE

TEMPORARY SEEDING & MULCHING (SEED MIX NO. 1):
TEMPORARY SEEDING SHALL BE APPLIED WITHIN SEVEN (7) DAYS ON ALL BARE AREAS THAT WILL NOT BE DISTURBED FOR 14 DAYS.
-PERENNIAL RYE GRASS 2 LBS./1000 S.F.
-COMMERCIAL FERTILIZER SHALL BE (12-12-12) AND CONFORM TO ORLD 10 LBS./1000 S.F.
-MULCH & STRAW 2 TONS/ACRE

ALL TEMPORARY SEEDING ITEMS & PROCEDURES SHALL CONFORM TO ORLD UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREA WITHIN 50 FEET OF A WATERCOURSE AND NOT AT FINAL GRADE.	WITHIN 2 DAYS OF THE MOST RECENT DISTURBANCE, IF THAT AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS.
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREA, INCLUDING SOIL STOCKPILES, THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A WATERCOURSE.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE WITHIN THAT AREA.
DISTURBED AREAS THAT WILL BE IDLE OVER THE WINTER.	PRIOR TO NOVEMBER 1.

NOTE: WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. THESE TECHNIQUES MAY INCLUDE MULCHING, EROSION MATTING, OR PLACEMENT OF STONE.

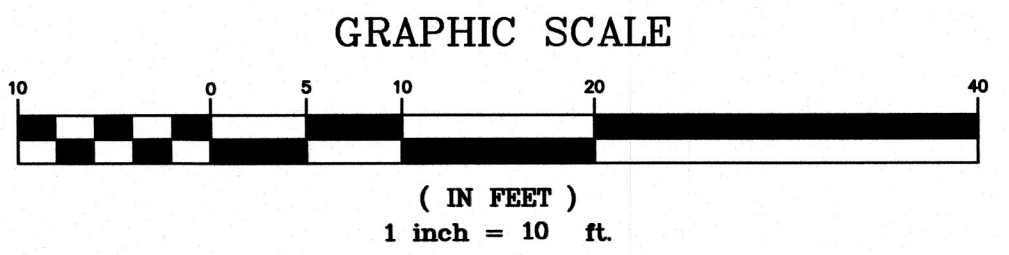
PERMANENT SEEDING & MULCHING (SEED MIX NO. 2):

SEDIMENT CONTROL SHALL BE ACCOMPLISHED BY SEEDING AND MULCHING IMMEDIATELY UPON COMPLETION OF EXCAVATION OR FILL AND FINISHED GRADING IN ACCORDANCE WITH ORLD OR AS DIRECTED BY THE CITY ENGINEER. THE FOLLOWING MIXTURES SHALL BE USED FOR SEEDING IN ACCORDANCE WITH ORLD:

KENTUCKY BLUEGRASS-40%
CREEPING RED FESCUE-40% 3LBS./1000 S.F.
PERENNIAL RYEGRASS-20%
FERTILIZER 12 LBS./1000 S.F. (12-12-12)
MULCH/STRAW 2 TONS/ACRE

RESTORATION OF ALL DISTURBED AREAS SHALL IMMEDIATELY FOLLOW EXCAVATION AND GRADING OPERATIONS. DELAY IN RESTORATION SHALL NECESSITATE TEMPORARY EROSION CONTROL MEASURES APPROVED BY THE ENGINEER AND AT THE CONTRACTOR'S COST.

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREA THAT WILL LIE DORMANT FOR ONE YEAR OR MORE.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE WITHIN THAT AREA.
ANY AREA WITHIN 50 FEET OF A WATERCOURSE AND AT FINAL GRADE.	WITHIN 2 DAYS OF REACHING FINAL GRADE.
ANY AREA AT FINAL GRADE.	WITHIN 7 DAYS OF REACHING FINAL GRADE WITHIN THAT AREA.



CITY NOTES:

A \$2,000 INSPECTION ESCROW WILL BE NEEDED AT THE FINAL APPROVAL OF THE PLANS, PRIOR TO A PRE-CONSTRUCTION MEETING.

A PERFORMANCE BOND IN THE AMOUNT OF 110% OF THE ITEMS OUTSIDE OF THE RIGHT-OF-WAY AND ALL STORM SEWER WORK. THAT NUMBER SHALL BE TAKEN FROM AN ENGINEERS ESTIMATED CONSTRUCTION COST STAMPED AND SIGNED BY THE ENGINEER.

A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE CITY OF HUDSON PRIOR TO ANY WORK BEGINNING.

THERE SHALL BE NO STAGING OF EQUIPMENT, MATERIALS, OR EMPLOYEE VEHICLES IN THE R/W.

NO ROAD CLOSURES WILL BE PERMITTED WITHOUT A WRITTEN APPROVAL FROM THE CITY MANAGER.

Revisions:
1 9/15/25
2 10/27/25
3
4
5
6
7

VILLAGE DENTAL
P.P.N.32-00737
41 EAST MAIN ST.
HUDSON - SUMMIT COUNTY - OHIO

GUTOSKEY & ASSOCIATES INC.
Civil Engineers, Surveyors and Land Planners
10335 GOTTSCHALK PKWY, SUITE 4 Tel: (440) 645-6900
CHAGRIN FALLS, OHIO 44023 JOEGUTOSKEY@GUTOSKEY.COM

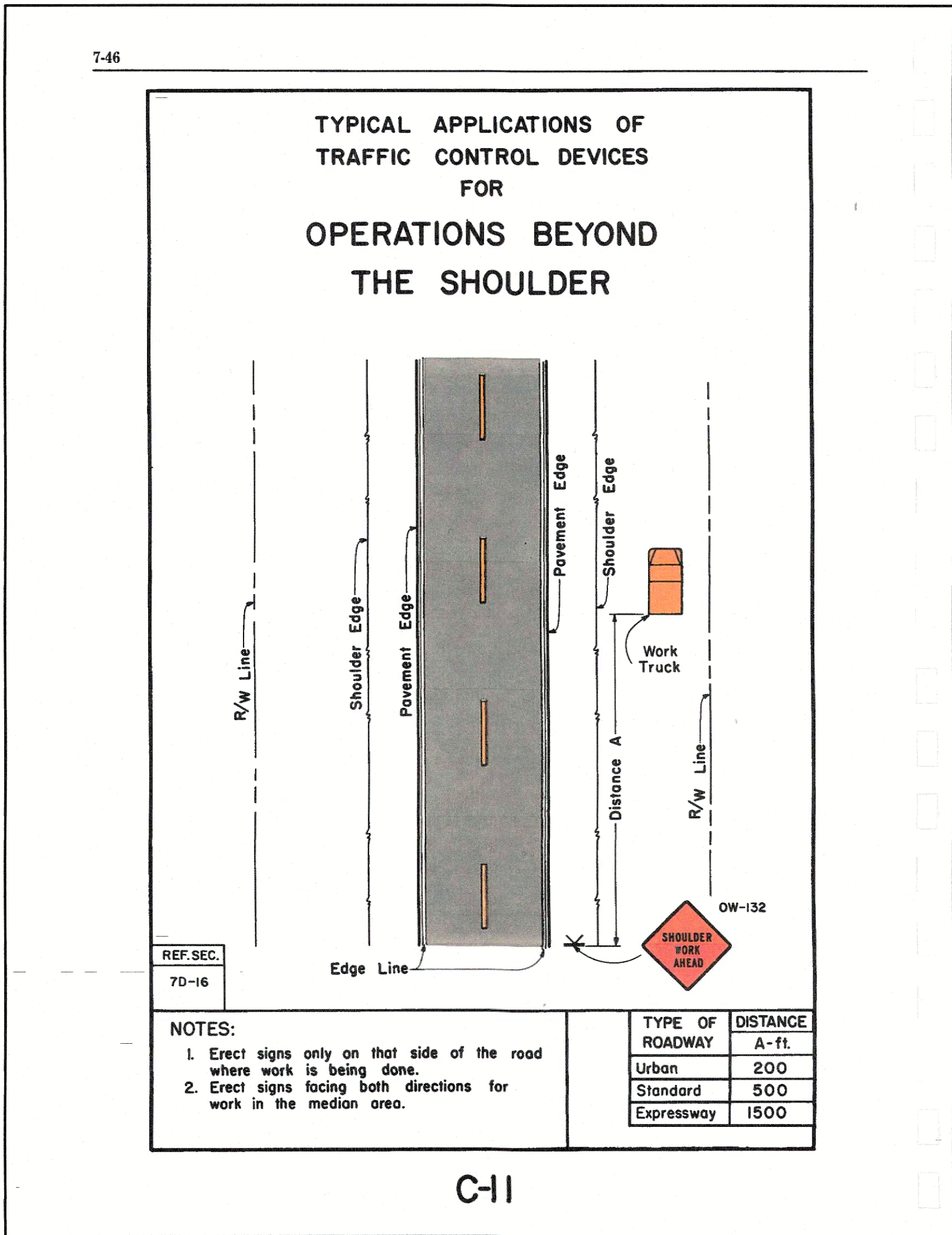
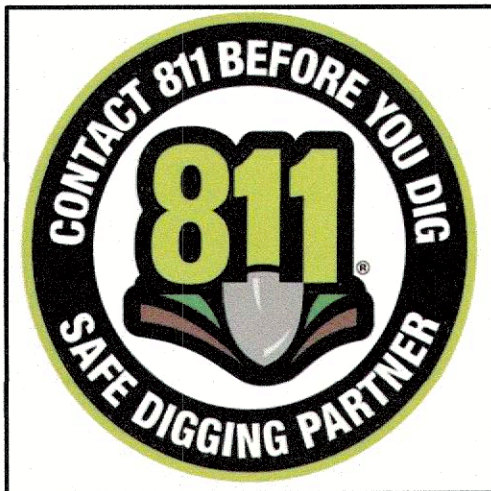
SWM PLAN

STATE OF OHIO
JOSEPH GUTOSKEY
51851
REGISTERED PROFESSIONAL ENGINEER

Date: 8/8/25
Scale: Hor. 1" = 10'
Vert. 1" = 10'
Filename:
Checked By:
F.B. No.:
Sheet C-1.2
CONTRACT No. 25-4246

EXHIBIT A
GENERAL CONSTRUCTION NOTES

- CONSTRUCTION OF THE SITE WORK AND UTILITIES SHALL BE GOVERNED BY THE CITY OF HUDSON'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS REQUIRED FOR THE PROJECT.
- THE CONTRACTOR MUST ALERT THE OHIO UTILITY PROTECTION SERVICES AT 1-800-382-2784 AT LEAST 48 HOURS BEFORE ANY EXCAVATION IS TO BEGIN.
- ALL EXISTING APPURTENANCES (UTILITY POLES, VALVES, HYDRANTS, MANHOLES, ETC.) ARE TO BE MAINTAINED BY THE CONTRACTOR UNLESS OTHERWISE SHOWN ON THE PLANS.
- THE DESIGN ENGINEER CERTIFIES THAT ALL UTILITIES ARE SHOWN AS THEY APPEAR ON EXISTING RECORDS OR FIELD LOCATED.
- ALL KNOWN ABOVE AND UNDERGROUND SERVICES HAVE BEEN NOTED ON THE DRAWINGS. THE CONTRACTOR ACCEPTS FULL RESPONSIBILITY FOR ANY SERVICES DAMAGED DURING THE CONSTRUCTION OF THE PROJECT WHETHER SHOWN OR NOT ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE SERVICE AS SOON AS POSSIBLE AT THE CONTRACTOR'S OWN EXPENSE.
- VIDEO TAPING OF PROJECT SHALL BE DELIVERED AND ACCEPTED BY THE CITY OF HUDSON ENGINEERING DEPARTMENT A MINIMUM OF 14 CALENDAR DAYS PRIOR TO START OF CONSTRUCTION ACTIVITIES.
- NOTIFY THE CITY OF HUDSON ENGINEERING DEPARTMENT A MINIMUM OF FORTY-EIGHT HOURS (2 WORKING DAYS) PRIOR TO THE START OF CONSTRUCTION.
- A PRECONSTRUCTION MEETING SHALL BE SCHEDULED A MINIMUM OF 48 HOURS (2 WORKING DAYS) AFTER SUBMISSION OF A MINIMUM OF 6 APPROVED SETS OF PLANS AND ALL SHOP DRAWINGS APPLICABLE TO THE PROPOSED IMPROVEMENTS. A PRECONSTRUCTION MEETING MUST BE HELD PRIOR TO START OF ANY CONSTRUCTION.
- THE LIMITS OF CLEARING AND GRADING SHALL BE FIELD STAKED AND LINED WITH ORANGE CONSTRUCTION FENCING 48 HOURS (2 WORKING DAYS) PRIOR TO THE PRECONSTRUCTION MEETING. AREAS BEYOND THE LIMITS OF CLEARING AND GRADING SHALL NOT BE DISTURBED INCLUDING THE STOCKPILE OF ANY MATERIALS OR CONSTRUCTION TRAFFIC.
- ALL ROAD SURFACES, EASEMENTS, OR RIGHT-OF-WAY DISTURBED BY THE CONSTRUCTION OF ANY PART OF THESE IMPROVEMENTS ARE TO BE RESTORED ACCORDING TO THE CITY OF HUDSON "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION" AS DIRECTED BY THE CITY OF HUDSON AND/OR ITS ENGINEER.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY OF HUDSON OR ITS REPRESENTATIVE IF SUSPECTED HAZARDOUS MATERIAL OR ANY OTHER MATERIAL THAT MAY CREATE A HEALTH RISK IS DISCOVERED ON SITE.
- ALL DISTURBED STORM SEWERS AND/OR APPURTENANCES, SIGNS, GUARD RAILING, MAIL AND/OR PAPER BOXES, DRIVE CULVERTS, FENCES, TREES, LANDSCAPING, OR OTHER ITEMS DISTURBED BY THE CONSTRUCTION SHALL BE RESTORED OR REPAIRED TO AT LEAST THE BEFORE-CONSTRUCTION CONDITION.
- ANY DEFECTS DISCOVERED IN NEW CONSTRUCTION, WORKMANSHIP, EQUIPMENT OR MATERIALS SHALL BE REPAIRED, OR CORRECTED BY APPROVED METHODS AS DIRECTED BY THE CITY OF HUDSON.
- NUCLEAR COMPACTION TESTING SHALL BE REQUIRED FOR ALL FILL AREAS OVER TWO FEET (2') IN DEPTH, AT 6" LIFTS PER ASTM A-1557, 95% MODIFIED.
- APPROVAL BY THE CITY OF HUDSON ENGINEER CONSTITUTES NEITHER EXPRESSED NOR IMPLIED WARRANTIES AS TO THE FITNESS, ACCURACY, OR SUFFICIENCY OF PLANS, DESIGNS OR SPECIFICATIONS.
- DURING TAPPING OF EXISTING UTILITIES, ANY TRAFFIC CONTROL REQUESTED OR REQUIRED BY THE CITY OF HUDSON WILL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE CITY.
- COMPLIANCE WITH THE OCCUPATIONAL AND SAFETY ACT OF 1970 IS REQUIRED BY ALL CONTRACTORS ON THIS PROJECT.
- ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
- ALL DISTURBED AREAS SHALL RECEIVE 4" OF TOPSOIL AND BE SEEDED AND MULCHED AS PER SECTION 9 - LANDSCAPING AND STREET TREES OF THE CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.
- IF MUD, SOIL, OR OTHER DEBRIS IS DEPOSITED ON ADJACENT STREETS, ROADS, OR OTHER PROPERTY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF SUCH AS DIRECTED BY THE CITY OF HUDSON OR ITS ENGINEER AT THE END OF EACH WORK DAY, OR AS REQUIRED DURING THE WORK DAY.
- ALL PROPOSED SLOPES 3:1 OR STEEPER AND ALL EARTHEN DRAINAGE WAYS SHALL RECEIVE JUTE OR EXCELSIOR MATTING AS PER ODOT 667 OR 668.
- ALL STORM SEWERS WITHIN PUBLIC RIGHTS-OF-WAY AND CITY OF HUDSON EASEMENTS SHALL BE PER SECTION 4 - STORM COLLECTION OF THE CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.
- ALL PIPES SHALL BE PLACED OVER 4" OF BEDDING. BEDDING MATERIAL SHALL BE AS SPECIFIED IN CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION, FOR THE TYPE OF PIPE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PROTECTING THE FLOW OF VEHICULAR AND PEDESTRIAN TRAFFIC AROUND THE JOB SITE. TRAFFIC CONTROL SHALL BE COORDINATED WITH THE CITY OF HUDSON POLICE DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PLANT TICKETS FOR ALL MATERIALS DELIVERED TO THE SITE. PLANT TICKETS MUST SHOW NET QUANTITY OF DELIVERED MATERIAL. MATERIAL DELIVERED OR PLACED WITHOUT PLANT TICKETS SHALL BE REMOVED AND PROPERLY DISPOSED AT THE EXPENSE OF THE CONTRACTOR.
- ALL DELIVERED MATERIALS SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HUDSON OR OTHER APPLICABLE AGENCIES. THE CITY OF HUDSON, OR ITS REPRESENTATIVE, RESERVES THE RIGHT TO REJECT ANY DELIVERED MATERIAL WHICH DOES NOT CONFORM TO THE APPLICABLE STANDARDS AND SPECIFICATIONS.
- THE CITY OF HUDSON OR ITS REPRESENTATIVE, RESERVES, THE RIGHT TO HALT ALL CONSTRUCTION ACTIVITY FOR NONCONFORMANCE OF PLANS, SPECIFICATIONS AND OTHER APPLICABLE STANDARDS OR REGULATIONS.
- ALL CHANGES TO APPROVED DRAWINGS AND/OR SPECIFICATIONS MUST BE REAPPROVED BY THE CITY OF HUDSON PRIOR TO CONSTRUCTION.
- ALL PAVING MATERIAL MUST BE PROVIDED BY ODOT CERTIFIED SUPPLIER. WRITTEN PROOF SHALL BE REQUIRED UPON DELIVERY OF MATERIALS. THE CERTIFIED MIX DESIGN MUST BE SUBMITTED TO, AND APPROVED BY, THE CITY OF HUDSON PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING.
- CONTRACTOR/DEVELOPER SHALL PROVIDE ALL REQUIRED ROADWAY SIGNAGE AS PER ODOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES INCLUDING STREET IDENTIFICATION SIGNAGE PER CITY STANDARDS FOR ALL ASPECTS OF THE IMPROVEMENT.
- ALL BONDS AND OR LETTERS OF CREDIT SHALL NOT BE RELEASED OR REDUCED AND NO WATER OR SANITARY SEWER CUSTOMERS CAN BE CONNECTED UNTIL ALL RECORD DRAWINGS HAVE BEEN SUBMITTED, REVIEWED AND APPROVED BY THE CITY OF HUDSON.
- ALL WORK AS PART OF THESE PLANS SHALL BE COMPLETED, INCLUDING ALL PUNCH LIST AND DEFICIENCY WORK WITHIN 1 YEAR OF THE START OF CONSTRUCTION.
- FAILURE TO COMPLETE THE PROJECT IN ITS ENTIRETY AS APPROVED BY THE PLANNING COMMISSION, INCLUDING PUNCH LIST ITEMS, WILL RESULT IN THE CITY OF HUDSON HOLDING ALL FUTURE ZONING CERTIFICATES UNTIL ALL WORK HAS BEEN COMPLETED AND APPROVED.
- MANUFACTURERS OR SUPPLIERS AFFIDAVIT FOR ALL CONSTRUCTION MATERIALS SHALL BE PROVIDED AS PER THE CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION PRIOR TO THE START OF CONSTRUCTION.
- THE CONSTRUCTION OF SANITARY SEWERS, WATER MAINS, LIFT STATIONS AND APPURTENANCES IS PROHIBITED UNTIL ALL PLANS HAVE BEEN APPROVED BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY.
- ALL SANITARY SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HUDSON "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.
- ALL SANITARY SEWERS CONSTRUCTED IN SUMMIT COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES (SC-DOES) SERVICE DISTRICTS AND SERVED BY SC-DOES SHALL COMPLY WITH SC-DOES REQUIREMENTS.



Revisions:
1 NEW SHEET 10/27/25
2
3
4
5
6
7

VILLAGE DENTAL
P.P.N.32-00737
41 EAST MAIN ST.
HUDSON - SUMMIT COUNTY - OHIO

GUTOSKEY & ASSOCIATES INC.
Civil Engineers, Surveyors and Land Planners
10195 GOTTSCHALK PKWY, SUITE 4 Tel (440) 543-6900
CHAGRIN FALLS, OHIO 44023 JOEGUTOSKEY@GUTOSKEY.COM

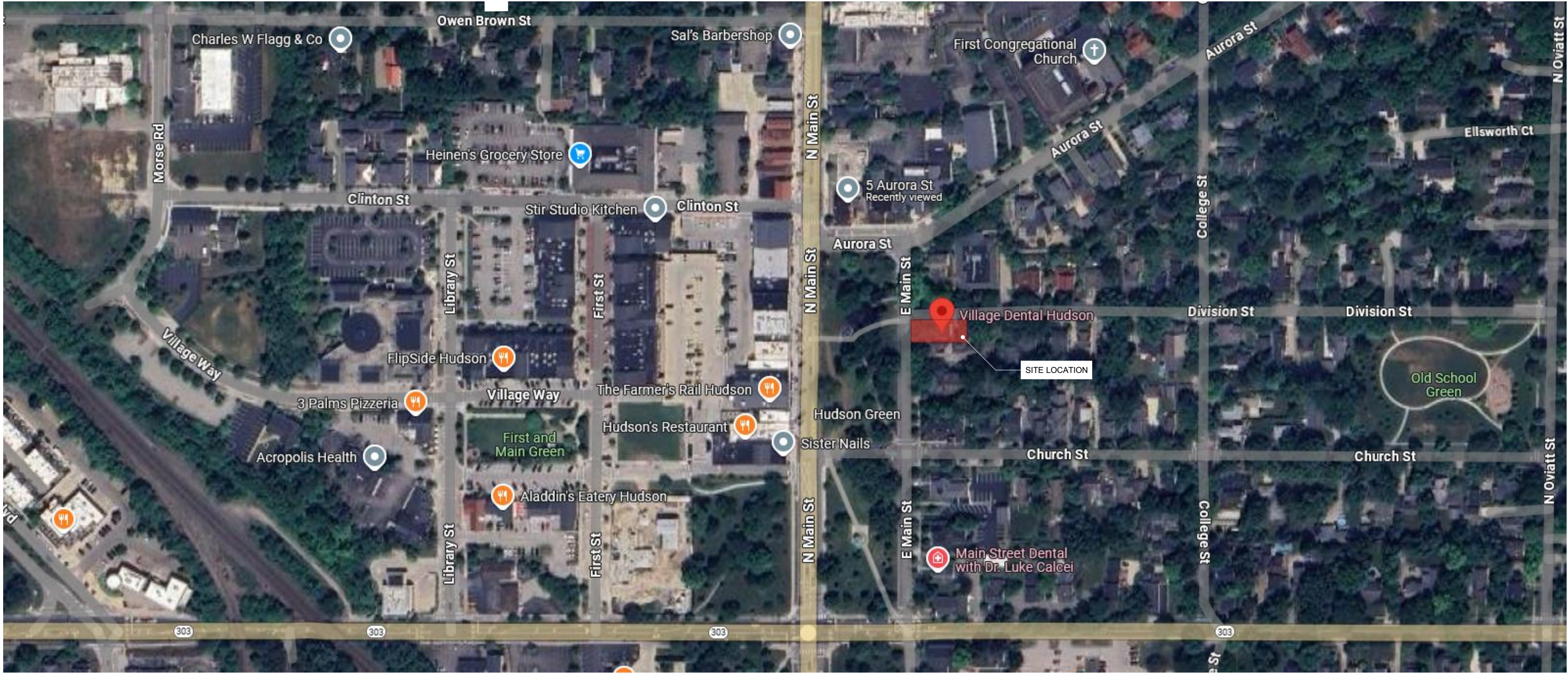
GENERAL NOTES

JOSEPH GUTOSKEY
51851
REGISTERED PROFESSIONAL ENGINEER

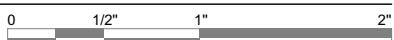
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Sheet
C-1.3

CONTRACT No.
25-4246



1 VICINITY MAP
NOT TO SCALE



Peninsula

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1775 Main Street
Peninsula, Ohio 44264
T 330.657.2800

PROGRESS
NOT FOR
CONSTRUCTION
10/30/2025

PROJECT TEAM:

P PENINSULA
ARCHITECTS

CIVIL ENGINEER:
GUTOSKEY AND ASSOCIATES
P 406.543.6900

STRUCTURAL ENGINEER:
ORATEC DESIGN BUILD
P 330.552.8211

MEP ENGINEER:
DEWK ASSOCIATES
P 216.531.8860

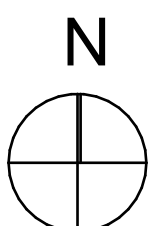
VILLAGE DENTAL
41 E. MAIN STREET, HUDSON, OH 44236

PROJECT #: 2501
ISSUE:
AHR REVIEW 04-01-2025
VARIANCE SET 04-17-2025
PLANNING COMMISSION 09-16-2025

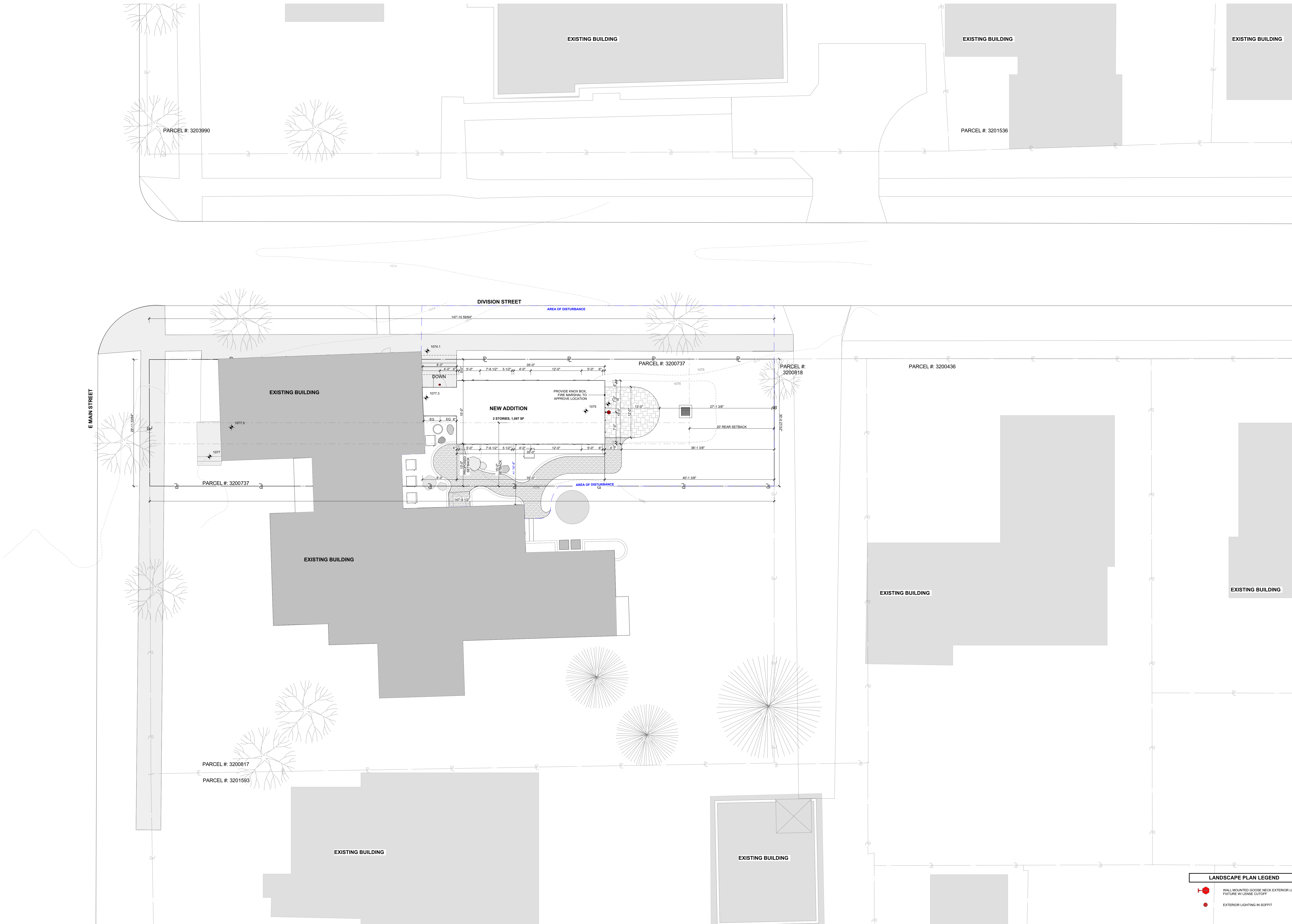
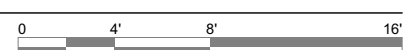
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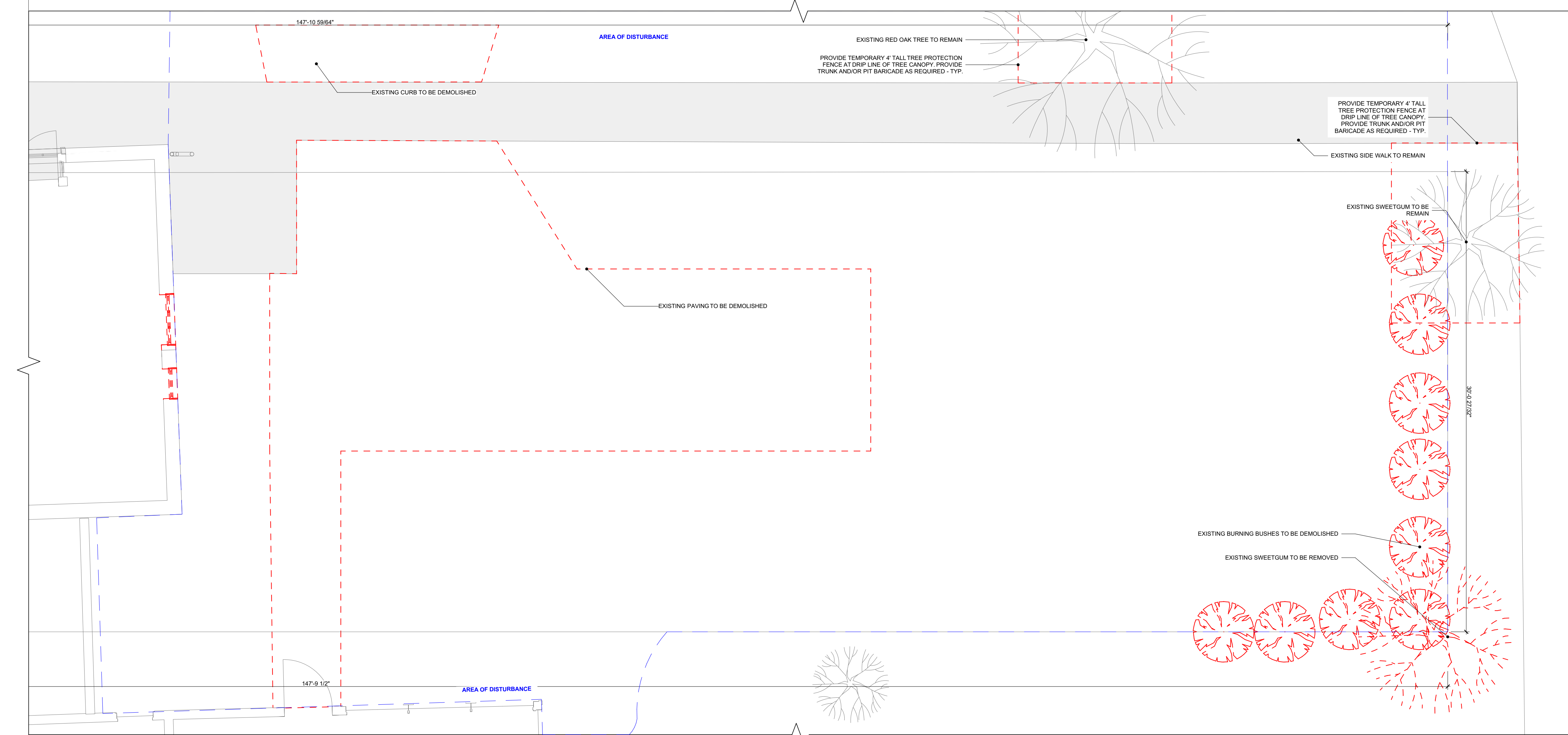
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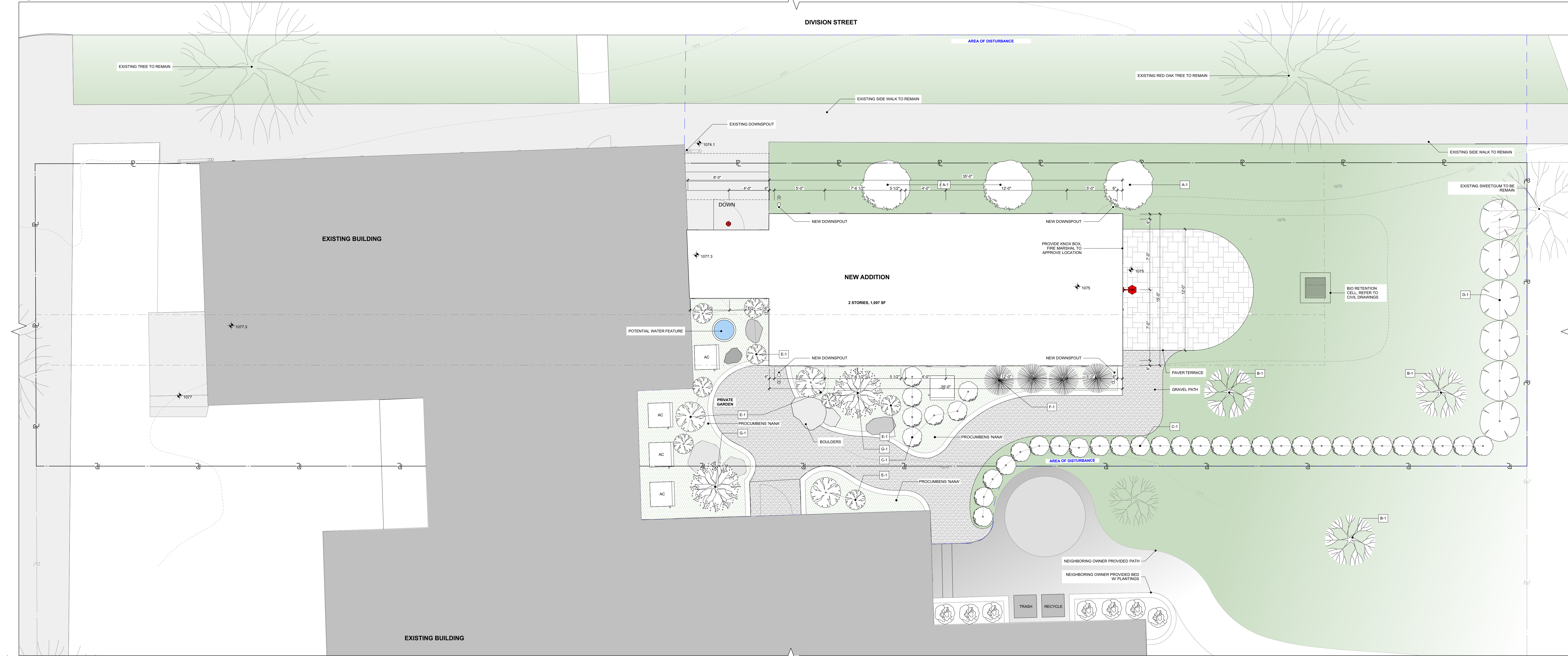
LANDSCAPE PLAN LEGEND	
	WALL MOUNTED GOOSE NECK EXTERIOR LIGHT FIXTURE W/ LENSE CUTOFF
	EXTERIOR LIGHTING IN SOFFIT





3 DEMOLITION AND PROTECTION LANDSCAPE PLAN

SCALE: 1/4" = 1'-0"



1 LANDSCAPE PLAN

SCALE: 1/4" = 1'-0"

PLANTING SCHEDULE						
CODE	LATIN NAME	COMMON NAME	SIZE	TREE CALIPER	SPACING	QTY.
A-1	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	20' H X 20' W	4"	-	3
B-1	CORNUS FLORIDA	FLOWERING DOGWOOD	30' H X 25' W	5"	-	2
C-1	BUXUS SEMPERVIRENS	ENGLISH BOXWOOD	4' H X 4' W	-	2'	35
D-1	AMERICAN HOLLY	ILEX	6' H X 4' W	-	4'	6
E-1	RHODODENDRON 'P.J.M.'	P.J.M. RHODODENDRON	3' H X 3' W	-	4'	11
F-1	ITEA VIRGINICA	LITTLE HENRY SWEETSPIRE	3' H X 3' W	-	3'	4
G-1	ACER PALMATUM	'HANA MATOI' JAPANESE MAPLE	4' H X 4' W	2"	-	2

LANDSCAPE PLAN LEGEND	
	WALL MOUNTED GOOSE NECK EXTERIOR LIGHT FIXTURE W/ LENSE CUTOFF
	EXTERIOR LIGHTING IN SOFFIT
	AIR CONDITIONING CONDENSER UNIT

LANDSCAPE NOTES	
1.	GARBAGE CANS ARE TO BE STORED INSIDE ADDITION.

SECTION 31 22 19 - FINISH GRADING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. This Section applies to the final subgrade preparation, placement of Soil Mixes and amending of in-place (in-Situ) soil or on-site stockpiled soils. Sections 32 91 00 – 32 91 50 (Topsoil – Planting Mixes) for testing, soil mix components and preparation, amendments, and hauling apply.

1.02 SUMMARY

- A. This Section includes the following:
- Preparation of subgrade soils in planting areas for each specified soil mix and type.
 - Includes ripping of subgrade and in situ soils, and debris removal.
 - Placement of Soil Mix(s) and Amendments.
 - Fine Grading of Turfgrass and Planting Area Soil Surfaces.

1.03 REFERENCES

- A. ASTM – ASTM International: D 1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
- B. EPA – Environmental Protection Agency:
- Method 8015.
 - Method 8020.
- C. SSSA – Soil Science Society of America, Inc.
- Methods of Soil Analysis Part 1 – Physical and Mineralogical Methods, 1986.
 - Methods of Soil Analysis Part 3 – Chemical Methods, 1996.
- D. USDA – United States Department of Agriculture:
- Texture Triangle Classification.
 - Handbook No. 60.

1.04 DEFINITIONS

- A. Acceptance, Acceptable, or Accepted: Acceptance by the Architect in writing.
- B. Aesthetic Acceptance of Grades: Acceptance by the Architect in writing of the aesthetic carelessness of the contours. Aesthetic acceptance does not address whether areas drain properly, are at the correct elevations, or whether the soil has been compacted properly.
- C. Backfill: Soil material or controlled low-strength material used to fill an excavation.
- D. Debris or Deleterious Materials: Elements including, but not limited to, concrete, concrete masonry, wood, excavated rock and rock fragments, rubble, overburden soils, abandoned utility structures, trash, refuse, and litter.
- E. Excessive Compaction: Planting area soil or soil compaction greater than 75 percent maximum dry density as determined by ASTM D 1557.
- F. Finished Grades: The required final soil surface elevations and contours indicated on the Drawings.
- G. Planting Soil Mix: A specified profile of soil system components, such as, soil, sand and compost homogeneously blended to produce a specified planting soil mix.

2501 – Village Dental FINISH GRADING 31 22 19 - 1

- E. Verify placement locations and depths for each specified soil mix and type.
- F. Place the specified planting soil or mix in 6-inch lifts over the Transition Layer to the depths specified on the drawings.
- G. Carefully settle soils to eliminate air pockets and to minimize future settling. Lightly scarify previously placed lift surfaces prior to placing subsequent lifts.
- H. Compact each lift by applying enough water to achieve optimum moisture allowing consolidation and locking of soil particles.
- A vibratory plate compactor, or other suitable method, shall be used to achieve greater than 80 to 85 percent maximum dry density as determined by the Standard Proctor Test ASTM D698-12. Moisture content and compaction shall be verified using ASTM D6936-15.
 - After any additional settlement has occurred, restore areas to finished grade prior to additional work within the area commencing.
- I. For Lawn Areas, roll the whole surface of lawn bed with a hand roller weighing approximately one hundred pounds (100 lb.) per foot (12") of roller width. Fill all depressions caused by compaction operations with additional soil and re-grade. Lightly roll and rake until the surface presents a smooth, even, uniform in finish and to grade.
- J. Backfill for Trees: Unless noted otherwise or approved in writing by Architect, the excavated tree pit soil is not acceptable backfill material for trees. Remove excavated soil from site and use specified soil mix in this section. Install as specified in Section 32 93 00 "Plants" and per drawing details. Placing, shoring, or anchoring is the responsibility of the Contractor as shown on the drawings.
- K. Protect areas where soil has been placed and prepared against construction activity with site protection fence. See Section 32 92 00 Turf Grass and Sod for additional protection.

3.05 FINISH GRADING

- A. Perform, profile, and contours indicated. Provide subgrade surfaces parallel to finished surface grades. Provide uniform levels and slopes between new elevations and existing grades.
- B. General:
- Uniformly grade areas to a smooth uniform surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - Provide a smooth transition between adjacent existing grades and new grades.
 - Out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
 - Slope finish grades to drain surface water away from buildings, walks, paving, and other structures unless indicated otherwise.
 - Slope finish grades to drain surface water to drainage swales, catch basins, area drains, or trench drains as shown on the Drawings.
 - Grade soil surface smooth to be free of high and low areas which will inhibit surface drainage.
 - Grade the soil surface at the edges of lawn areas, along paving areas, and curbs to an elevation 1 inch below the finished surface of adjacent paving and curbs, unless indicated otherwise.
 - Hand-rake soil surface using screed boards, string lines, and laser levels to achieve smooth surfaces acceptable to the Architect.

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2.05 SAND JOINT FILLERS

- A. Stabilized Sand for Joints: Gator Supersand Bond by Alliance Designer Products Inc., 225 Boulevard Bellerose West, Laval Quebec H7L 6A1.
- Color: To be selected from manufacturer's full range.
- B. Herbicide: Commercial chemical for weed control, registered with the EPA. Provide in granular, liquid, or wettable powder form.

PART 3 - EXECUTION

3.01 GENERAL EXCAVATION AND EMBANKMENT

- A. Excavate to the line and grade specified in the contract documents. Minimize over-excavation.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
- Under structures, building slabs, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 98 percent.
 - Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 98 percent.
- D. Subbase: Install aggregate subbase to a compacted depth of 8 to 12-inches minimum. Install the subbase in minimum 3 to 4-inch lifts, and compact to a minimum 95% Standard Proctor Density (ASTM D698).

3.02 STONE RETAINING AND FREE-STANDING WALLS

- A. Stone walls shall be placed at locations as shown on the drawings and installed with the following requirements:
- Stone "retaining" stacked walls shall be constructed to the dimensions shown on the drawings and shall be constructed with a vertical batter on the front and back face as shown on the drawings.
 - Stone "Freestanding" walls to be vertical with no batter unless noted on drawings.
 - All walls to be dry laid.
 - The stone of the wall shall be laid to form substantial masonry presenting a neat, finished appearance.
 - Face Stones:
 - Face stones shall be laid to break joints.
 - Minimum overlap: 12-inches unless noted on drawings.
 - Freestanding wall to overlap 50/50 with joints in middle to adjacent stone course.
 - Rock shall be hand finished as needed to keep regular face profiles and batter.
 - All face stones shall be ploughed with a string line on straight walls or laid to batter status.Where batter is required, batter to be consistent with respect to all parts of the wall and shall meet the minimum requirements set forth in the detail.
 - The degree of roughness on the exposed face shall be measured with a six-foot (6') straightedge supported between adjacent projections and stone face.

2501 – Village Dental LANDSCAPE STONework 31 37 19 - 3

- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appliances, or other man-made stationary features constructed above or below the ground surface.
- I. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or soil materials.
- J. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically soil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- K. Transition Layer: The specified planting soil mix for a planting area is homogeneously blended into the existing (ripped) native soil substrate to create a "transition" layer between the subgrade and specified planting soil mix. Transition layers vary pending specified soil mix for each planting area.
- L. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.05 SUBMITTALS

- A. Equipment Data: Submit descriptive information with ground pressure load data for each proposed item of equipment to be used. Equipment data will be evaluated for compost mix compaction potential. All equipment used in placing the compost shall have a ground pressure level of 4.5 psi or lower.
- Large earth moving equipment (D4, D6 dozers) must have rubberized base tracks with low ground pressure.
 - Equipment with metal cleats will not be permitted.

1.06 QUALITY ASSURANCE

- A. Qualifications:
- Installation and mixing foreman on the job shall be competent English-speaking supervisor(s), experienced in planting soil preparation for lawn and planting installations. Supervisor shall remain on the site during the entire installation process.
 - Perform work with personnel totally familiar with planting and lawn soil preparation and planting installations under the supervision of a foreman experienced with landscape work.
 - Testing Laboratory: Experienced person(s) employed by public or private testing laboratory, qualified and capable of performing tests, making soil recommendations, and issuing reports as specified. The Testing Laboratory shall submit a Statement of Qualifications regarding the specified testing. The Testing Laboratory shall be as approved by the Architect.
 - It shall be the responsibility of the Contractor to see that the specifications are being adhered to. Failure of the Architect to immediately reject unsatisfactory workmanship or to notify the Contractor of higher deviation from the specifications shall not relieve the Contractor of his/her responsibility to repair and/or replace unsatisfactory work.
- B. Pre-Installation Conferences: Person(s) responsible for soil preparation and mixes of this Section shall attend Pre-Installation Conference(s) to coordinate with other sections.
- C. Testing and Inspection Service: A qualified independent geotechnical testing and inspection laboratory shall perform soil testing and inspection services under the supervision of a registered professional engineer during earthwork and finish grading operations.
- D. Finished Grading Smoothness Mock-Up:
- Prepare a 20-foot by 20-foot area of finished graded soil representing the finished graded surface of the planting areas.
 - Locate mockup on site in an area easily referenced during fine grading operations.

2501 – Village Dental FINISH GRADING 31 22 19 - 2

- C. Equipment: Use equipment and hand tools of appropriate size and type to achieve the profiles, and a smooth soil surface free of high areas, depressions, equipment tracks, and excessive compaction.
- D. Depressions and Loose Material: Fill any depressions and remove loose material to finish surface true to line and grade, presenting a smooth and undisturbed surface.
- E. Excessive Compaction:
- Take precautions to prevent finished graded surfaces from becoming excessively compacted.
 - Protect finished graded surfaces from excessive compaction from vehicular, equipment, and foot traffic by laying down planks, plywood, or other accepted protective devices.
 - Do not store or stockpile materials on finished soil graded surfaces.
 - Mechanically loosen excessively compacted soil areas to full depth.

3.06 TOLERANCES

- A. Planting Areas:
- Grade soil surface to within 0.05-foot of grades indicated on the Drawings, except bring soil surface grades along paving, curbs, and other structures to within 0.01-foot of grades indicated on the Drawings.
 - Transition soil surface grades along paving, curbs, and other structures to areas of less strict tolerance over a 5-foot distance.
- B. Allowances: Make proper allowances for settlement.

3.07 ADJUSTING

- A. Soil Finished Grade:
- Provide allowance for 32 hours of adjustment grading work with a 4-person hand-grading crew to smooth and shape the soil surfaces using hand rakes, shovels, and other hand tools.
 - After the soil surface elevations have been graded to be within the specified tolerances, perform adjustment grading Work under the direction of the Architect in the field.
 - Do not rely on adjustment grading to bring finished grade elevations to within specified tolerances.

3.08 FIELD QUALITY CONTROL

- A. Aesthetic Acceptance of Grades:
- Upon completion of finish grading Work, schedule a review by the Architect to obtain aesthetic acceptance.
 - Provide 3 days advance written notification.
 - Do not commence seeding, sodding, or other planting Work until receiving aesthetic acceptance in writing.
- B. Test for Excessive Compaction:
- Where excessive compaction is suspected by Architect, have a Geotechnical Engineer perform nuclear density field tests.
 - Correct excessively compacted soil areas to the depth of the excessive compaction by means and methods acceptable to the Architect prior to installing plant material.

3.09 PROTECTION

2501 – Village Dental FINISH GRADING 31 22 19 - 7

- e. Variations more than 1/2 inch in 10 feet measured from the straight edge to the extreme depression in the stone, will not be permitted.
- f. Rear faces shall present approximately plane surfaces and shall in general conform to the detail.
- g. Clean and wash face and top of walls such that the visual surfaces of the rocks are free of soil and staining to provide a clean natural appearance. If washing does not clean off unwanted residue, then Contractor shall wash off residue with muriatic acid and water, using a brush to scrub off the residue.
6. Backfill retaining wall as detailed. Fill each course as wall is assembled to maintain structural stability and batter.

END OF SECTION 31 37 19

- Protect accepted mockup from physical damage and erosion until date of Final Completion.
 - The accepted mockup shall be the standard by which finish grading will be judged.
- E. The Architect reserves the right to inspect and test grading operations at any time and as deemed necessary for verification of conformance to specification requirements. Any subsurface or grading conditions not meeting the requirements of the Specifications to be corrected by the Contractor before continuing with any further operation of the project and at no cost to the project.

1.07 PROJECT CONDITIONS

- A. Examination: Promptly notify Construction Manager and Architect of unexpected subsurface conditions. Discontinue work until notification to resume work is provided by the Construction Manager.
- B. Environmental Requirements:
- Do not work soil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that clouds will not break readily.
 - Apply water, if necessary, to bring soil to optimum moisture content for fine grading operations.
 - Do not perform fine grading work when subgrade and/or soils are muddy or frozen.
- C. Existing Conditions:
- Locate existing underground utilities in areas of work. If utilities are indicated to remain in place, provide adequate means of support and protection during fine grading operations.
 - If uncharted, or incorrectly charted, piping, or other utilities are encountered during the Work, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
 - Do not interrupt existing utilities serving facilities occupied by Owner or others, during occupied hours, except when permitted in writing by Construction Manager and then only after acceptable temporary utility services have been provided.
 - Provide minimum 48-hour notice to Construction Manager and receive written notice to proceed before interrupting any utility.
 - Contact the Local Utilities Protection Service before commencement.

1.08 SEQUENCING

- A. Soil Placement: To prevent excessive soil compaction, avoid placing soil in areas subject to construction vehicle and equipment traffic. Coordinate work of this section with other project work as contained in all other Sections of the project specifications.

PART 2 - PRODUCTS

2.01 SOILS

- A. Refer to Sections 32 91 00 through 32 91 50 for Soil Mixes.

PART 3 - EXECUTION

3.01 FIELD ENGINEERING

- A. General:

2501 – Village Dental FINISH GRADING 31 22 19 - 3

- A. Protecting Fine Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and restorable grades to specified tolerances where, completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
- C. Scarify or remove and replace soil material to depth as directed by Soils Engineer; reshape and recompact.
- D. Repair erosion that occurs before and during plant or lawn installation.
- E. During construction, maintain temporary soil erosion and sedimentation control measures in place. Inspect, repair, and replace damaged or missing items as work progresses.

3.10 DISPOSAL AND CLEAN UP

- A. Promptly remove soil and debris created by soil work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Legally dispose of off-site all refuse and debris from these operations. Do not dump or burn materials on site.
- C. Maintain the site in an orderly condition during the progress of the Work. Continuously and promptly remove excess waste materials; keep lawn areas, walks, and roads clear. Store materials and equipment where directed. Promptly remove equipment, surplus materials, and debris and trash resulting from operations under this Contract upon completion and prior to initial acceptance of Work. Leave the site in a neat, order condition "broom clean".

END OF SECTION 31 22 19

SECTION 32 13 13 - CONCRETE PAVING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes exterior cement concrete pavement for the following:
- Pedestrian Concrete Pavement.
 - Curbs and Gutters.
 - Steps and Ramps
 - Sub-base Slabs-on-Grade for Unit Pavements.
 - Job-Built Concrete Edge Restraints.
 - Curing and/or Sealing.

1.02 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.
- B. Construction Joint: Joint produced when one pour is placed up against an existing one (cold joint)
- C. Contrction Joint: Joint produced that isolates the crack (control joint).
- D. Isolation Joint: Joint containing expansion material and/or caulking material to allow the joint to "flex" based on air temperature (expansion joint). Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.
- E. W/C Ratio: The ratio by weight of water to cementitious materials.

1.03 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at project site.
- Review methods and procedures related to concrete paving, including but not limited to, the following:
 - Concrete mixture design
 - Quality control of concrete materials and concrete paving construction practices.
 - Finishes
 - Require representatives of each entity directly concerned with concrete paving to attend, including the following:
 - Contractor's superintendent.
 - Independent testing agency responsible for concrete design mixtures.
 - Ready-mix concrete manufacturer.
 - Concrete paving Subcontractor.
 - Manufacturer's representative of stamped concrete paving system used for stamped detectable warnings.

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product.

2501 – Village Dental CONCRETE PAVING 32 13 13 - 1

- Provide all layout work required. Establish extent of fine grading by area and elevation; designate and identify datum elevation and project engineering reference points. Set required lines, levels, and elevations.
- Provide as many grade stakes and string lines as required to achieve smooth finish grades acceptable to the Architect. Mark each stake to indicate design finished grade indicated.
- Swale Flow Lines, Bottom of Slopes, Top of Slopes and Grade breaks: Install grade stakes at maximum 20 feet on center.
- High Points and Low Points: Install grade stakes at high points and low points including top of berms, catch basins and area drain runs.

3.02 EXAMINATION

- A. Examine areas and conditions under which work is to be performed. Obtain and examine the records and drawings of adjacent work and of existing utilities and their connections for conditions which may affect the work under this Section.
- B. Verify all work requiring access through or adjacent to areas where each planting soil mix is to be placed has been completed and no further access will be required. If access will be required, this must be coordinated with the Contractor.
- C. Confirm subgrade is clear of all construction debris, trash, rubble, and any foreign material. If fuels, oils, concrete washout silt or other material harmful to plants have been spilled into the subgrade material, excavate the soil sufficiently to remove the harmful material. Fill any over excavation with approved fill and compact to the required subgrade compaction.
- D. Confirm subgrade is at the proper elevation, parallel to the finished grade and compacted as shown on the Drawings.
- E. Verify that conditions are suitable to receive Work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- F. Excessive Compaction: Verify subgrade in planting area is not excessively compacted.
- G. Soil Preparation: Verify off-site soil preparation is complete and ready for transporting to site.
- H. Notify Architect of any unacceptable sub-grade conditions. Do not start the installation of the soil mix until sub-grade conditions have been corrected.

3.03 PREPARATION

- A. Review soil analysis testing results and requirements needed for each specified soil mix and amendment. Testing Agency recommendations may vary and require contractor to provide additional testing or preparations prior to placement of soils.
- B. Protection of Existing Conditions:
- Protect structures, utilities, sidewalks, pavements, irrigation systems, paving, plant materials, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by fine grading operations.
 - Provide barricades, fences, or other barriers to protect existing conditions to remain from damage during construction.
 - Use every possible precaution to prevent excessive compaction of planting area soil within or adjacent to the areas of Work.
 - Do not store material or equipment, permit burning, or operate or park equipment under the branches of existing trees to remain.
 - Submit written notification of conditions damaged during construction immediately to the Owner.

SECTION 31 37 19 – LANDSCAPE STONework

PART 1 - GENERAL

1.01 SUMMARY

- A. The work shall consist of furnishing and installing natural landscape stone, such as ledge rock and/or builders, constructed and in conformance with the details shown on the contract drawings, and/or as directed by the Architect.
- B. Stonework shall consist of the following:
- Dry – Stacked Sandstone Free Standing Wall
 - Dry – Stacked Sandstone Retaining Wall

1.02 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
- ASTM International (ASTM):
 - D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft³ (600 kN-m/m³)).

1.03 DEFINITIONS

- A. Terms "boulders," and "rock," may be used interchangeably in this section.
- B. Boulders: Shall be granite, limestone, sandstone (as indicated on the drawings), of an approved size, shape, and type. Boulder dimensions shall be as shown on the contract drawings.
- C. Ledge Rock: Irregular naturally flat pieces of limestone or sandstone protruding to form a ledge. Typically used along stream beds, irregular wall structures and steps.
- D. Flagstone: Irregular naturally flat pieces of limestone or sandstone used for walkways, patios, and flooring. Dimensions vary with each of approved approximately 4 sq. ft. or larger.

1.04 SUBMITTALS

- A. Contractor shall cooperate with Architect in obtaining and providing samples of all specified materials.
- B. Contractor shall submit certified laboratory test certificates for all items required in this section.

1.05 QUALITY ASSURANCE

- A. Mock-up:
- Prior to the construction of the dry stacked stonework, Contractor shall show Architect an example of similar rock features equal to or better than they had constructed previously.
 - After acceptance of this previous work, Contractor shall construct approximately 3 full step risers as shown on the drawings and 3 courses of stone wall by 6 ft length (of each wall type) for approval by Architect.
 - If the construction is approved, Contractor shall construct the rest of the steps. If the construction is not approved, Contractor shall make any changes required by Owner and Architect to obtain approval and construct the remainder of the steps as approved.

- B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Jointing Plan: Show drawings indicating locations for all Construction, Contraction, and Isolation/Expansion joints.

1.06 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer, ready-mix concrete manufacturer and testing agency.
- B. Material Certificates: For the following, from manufacturer:
- Cementitious materials.
 - Steel reinforcement and reinforcement accessories.
 - Admixtures.
 - Curing and Sealing compounds.
 - Bonding agent or epoxy adhesive.
 - Joint fillers.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:
- Aggregates: Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
 - Field quality-control reports.
 - Minutes of Preinstallation conference.

1.06 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C-94 requirements for production facilities and equipment.
- B. Testing Agency Qualifications: Qualified according to ASTM C 1017 and ASTM E 329 for testing indicated.
- Personnel conducting field tests shall be qualified as ACI Concrete Field-Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
- C. Installer Qualifications:
- Minimum of five (5) years' experience installing finished concrete paving in climates that experience seasonal freeze-thaw cycles.
 - Installer shall demonstrate minimum of five (5) years successful experience installing exposed/seeded aggregate special finish concrete paving and cite five (5) successful installations in climates within the same climate region as the project. At least one project shall be 3,000 sf minimum. For each project, include the following information:
 - Project description
 - Project location
 - Date of installation
 - Completed project photos

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- C. Assure all grass and weed growth has been extinguished prior to placing the specified soil mix as indicated on the drawings. Respray areas still exhibiting grass, weed, or other plant growth. Follow manufacturer's recommendation for allowing grass and weed control to properly kill vegetation prior to amending soils.
- D. De-compact sub-grade soils and in situ soils by soil ripping.
- Prior to placing each specified soil mix or, rip areas to receive the specified soil on the same day soil mix is placed.
 - Rip subgrade to a depth of 6 inches. Place ripping lines at 18 inches on center.
 - Make second ripping pass in the direction 90 degrees to the direction of the first ripping pass.
 - Do not rip closer than 24 inches to installed underground utility lines and structures.
 - Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so soil material will bond with existing material.
 - Once the subgrade is ripped, only equipment with a ground pressure not to exceed 4.5 p.s.i. shall be used, ex. padded, wide-tracked LGP rated dozers and/or excavators, small to medium tractors with turf tires, etc.

E. Transition Layer:

- Uniformly place 3 inches or as designated by the drawings, the specified soil over the ripped areas. Using mechanical equipment, blend the specified soil into the ripped subgrade approx. 2-4 inches in depth and/or as designated on the drawings.
 - For 32 91 30 - HSCS Soil Mix, uniformly place 3 inches (or as designated by the drawings) HSCS Base Mix soil over the ripped areas. Using mechanical equipment, blend the Base Mix soil into the ripped subgrade approx. 2-4 inches in depth or as designated on the drawings.
- Do not place final lifts of specified soil until the Transition Layer has been blended.
- Remove any debris (see Definitions) greater than 1 inch in diameter or 2 inches in length that has been worked to the surface of the transition zone.
- Tree Root Protection
 - All work inflicting on root systems of existing plant material shall be reviewed and approved by the Architect prior to beginning work.
 - Protect tree root systems from damage adjacent to soil work where ripping is required.
 - Soil ripping may not be conducted when existing roots are in the immediate vicinity. All work inflicting on root systems of existing plant material shall be reviewed and approved by the Architect prior to beginning work.
 - Where tree roots are present within the designated soils zone, carefully blend native soils with the Compost using hand tools.
 - Uniformly moisten or aerate Transition Layer before compaction to within 2 percent of optimum moisture content.

3.04 PLACEMENT OF SOIL MIXES

- A. Verify proper placement and blending of Transitions Layer has been completed.
- B. Lightly scarify Transition Layer prior to placing the specified soil mix.
- C. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
- D. Remove and replace or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Source Limitations: Obtain each type of paver, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.02 NATIVE STONE WALLS – BARN STONE

- A. Native sandstone by:
- Basis of Design Manufacturer:

The Bear Hill Stone Company
12470 State Rd. 520
P.O. Box 457
Glenmont, OH 44428
Ph. No. 330 – 377-5110
Ph. www.briarhillstone.com
 - Wall Type 2a and 2b:
 - Match stone type and finish as per Architecture (Ph. No. 440-543-8300)
 - Size: 8" x 8" x 30"

2.03 SUB-BASE AND SUB-SLABS

- A. Compacted Aggregate Base Course (without concrete sub-slabs): Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve unless noted otherwise drawings.

2.04 GEOTEXTILES

- A. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters, with elongation less than 50 percent, complying with AASHTO M 288 and the following, measured per test methods referenced:
- Survivability: Class 2; AASHTO M 288.
 - Survivability: As follows:
 - Grab Tensile Strength: 247 lbf; ASTM D 4632.
 - Sewn Seam Strength: 222 lbf; ASTM D 4632.
 - Tear Strength: 90 lbf; ASTM D 4533.
 - Puncture Strength: 90 lbf; ASTM D 4833.
 - Apparent Opening Size: No. 60sieve, maximum; ASTM D 4751.
 - Permeability: 0.02 per second, minimum; ASTM D 4491.
 - UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
 - Manufacturer: Subject to compliance with requirements, provide products by one of the following:
 - Mirafi 140N nonwoven drainage fabric manufactured by Mirafi, Inc., Charlotte, NC 28224.

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- D. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- E. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
- Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship and as indicated in the pre-construction meeting.
 - Where concrete is called to be sealed, seal one half of the mockup area for color and finish review by Architect.
 - Notify Architect as soon as possible in advance of dates and times when mockups will be constructed.
 - Obtain Architect's approval of mockups before starting construction.
 - Maintain approved mockups during construction in an undisturbed condition as a standard for judging the completed pavement.
 - Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.07 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

1.08 FIELD CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
- B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
- When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 - Do not use frozen materials or materials containing ice or snow.
 - Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.
- C. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
- Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Ch

PART 2 - PRODUCTS

2.01 CONCRETE, GENERAL

- ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.02 FORMS

- Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
 - Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.
- Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.03 STEEL REINFORCEMENT

- Reinforcing Bars: ASTM A615, Grade 60, deformed.
- Steel Bar Mats: ASTM A104; with ASTM A615, Grade 60 deformed bars; assembled with clips.
- Joint Dowel Bars: ASTM A615, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.
 - Sleeves for Round Dowels: "Speed Dowel", size to fit dowel, as available from Greenstreak, Inc., St. Louis, MO (800-8325-9504), www.greenstreak.com; or equal.
- Tie Bars: ASTM A615, Grade 60, deformed.
- Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSi's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
 - Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.04 CONCRETE MATERIALS

- Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project.
 - Portland Cement: ASTM C150, Gray Portland cement Type II Type III.
 - Type III: High early strength may be used with written approval and at the contractor's expense.
 - Fly Ash: ASTM C618, Class C or Class F.
 - Slag Cement: ASTM C895, Grade 100 or 120.
- Normal-Weight Aggregates: ASTM C33, Class 4S, uniformly graded. Provide aggregates from a single source throughout entire project. Provide aggregates free of iron pyrite.
 - Maximum Coarse-Aggregate Size: 3/4-inch nominal.
 - Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- Air-Entraining Admixtue: ASTM C260.
- Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain no more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
 - Water-Reducing Admixtue: ASTM C494, Type A.

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- Retarding Admixtue: ASTM C494, Type B.
- Water-Reducing and Retarding Admixtue: ASTM C494, Type D.
- High-Range, Water-Reducing Admixtue: ASTM C494, Type F.
- High-Range, Water-Reducing and Retarding Admixtue: ASTM C494, Type G.
- Plasticizing and Retarding Admixtue: ASTM C1017, Type II.

- Water: Potable and complying with ASTM C94.

2.05 CURING MATERIALS

- Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- Water: Potable.
- Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B, dissipating (Standard Broom Finishes)
 - Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - Dayton Superior Corporation; Day Chem Res Cure (J-11-W).
 - Eucil Chemical Company (Thi); Kurex DR VOG.
 - LBM Construction Chemicals, Inc.; LBM Cure R.
 - Meadows, W. R., Inc.; Series 1100.
- The curing compound shall not be used as the final sealer for the concrete.
- For concrete indicated to be sealed, curing compound shall be compatible with sealer.

2.06 RELATED MATERIALS

- Expansion and Isolation Joint-Filler Strips: ASTM D 1752. Provide with joint caps.
 - Basis of design: Products by WR Meadows.
 - Cork: ASTM-D1752 Type II.
 - Typical Thickness: 1/4 inch.
 - Joint Cap: Two-piece device with upper portion removable after curing period; width corresponding to joint filler.
 - Plastic strips with a removable top for placing caulking or sealant that is designed specifically for expansion between concrete pours.
- Epoxy-Bonding Adhesive: ASTM C681, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
 - Types I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

2.07 CONCRETE MIXTURES

- Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
 - Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

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- When automatic machine placement is used, determine design mixtures, and obtain laboratory test results that comply with or exceed requirements.
- Cementitious Materials: Use fly ash, pozzolan, slag cement, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
 - Fly Ash or Pozzolan: 25 percent.
 - Slag Cement: 50 percent.
 - Combined Fly Ash or Pozzolan, and Slag Cement: 50 percent, with fly ash or pozzolan not exceeding 25 percent.
- Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
 - Air Content: 6 percent plus or minus 1-1/2 percent for 3/4-inch nominal maximum aggregate size.
- Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
 - Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
- Concrete Mixtures: Normal-weight concrete.
 - Compressive Strength (28 Days): 4500 psi.
 - Job-Built Edge Restraints: 3000 psi with Compressive Strength (28 days).
 - Maximum W/C Ratio at Point of Placement: 0.45.

2.08 CONCRETE MIXING

- Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94. Furnish batch certificates for each batch discharged and used in the Work.
 - When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94. Mix concrete materials in appropriate drum-type batch machine mixer.
 - For concrete batches of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
 - For concrete batches larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
- Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 3 - EXECUTION

3.01 EXAMINATION

- Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
 - Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

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- Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.
 - Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
- Proof-roll with a pneumatic-tired and loaded, 10-wheel, landem-axle dump truck weighing not less than 15 tons.
- Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Section 31 20 00 "Earth Moving."
- Proceed with installation only after unsatisfactory conditions have been corrected.
- Paving thickness varies. See plans and details for each specific condition. Any concrete paving thickness not shown in plan shall be 4-inch minimum thickness.

3.02 PREPARATION

- Remove loose material from compacted subbase surface immediately before placing concrete.

3.03 EDGE FORMS AND SCREED CONSTRUCTION

- Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- Clear forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.04 STEEL REINFORCEMENT INSTALLATION

- General: Comply with CRSi's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.05 JOINTS

- General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
 - When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- Contraction Joints (Cold Joints): Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
 - Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
 - Provide tie bars at sides of paving strips where indicated.
- Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- Dowelled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- Isolation Joints (Expansion Joints): Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
 - Locate expansion joints at intervals as shown, unless otherwise indicated.

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- Extend joint fillers full width and depth of joint.
- Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
- Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
- Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
- During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

- Contraction Joints (Control Joints): Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

- Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
 - Curbs and Gutters: Provide saw cut joints at 10 ft on-center unless noted otherwise. Throat cut to 9 inches deep.
- Walls, Walls, and Concrete Paved Surfaces: Refer to drawings for details and general layout.
- Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.

- Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

- Edging: After initial floating, tool edges of paving, gutters, and joints in concrete with an edging tool to a 1/4-inch radius. Do not re-tool edges after applying surface finishes. Eliminate tool marks on concrete surfaces. "Picture Framing" tooling anywhere is not to be done, unless noted.

3.06 CONCRETE PLACEMENT

- Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in. Notify other trades to permit installation of their work.
- Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only

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- square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislodging reinforcement dowels and joint devices.
- Spread paving surface with a straightedge and strike off.
- Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- Curbs, Gutters, and Edge Restraints: If automatic machine placement is used for curb, gutter, and edge restraint placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove, and replace with formed concrete.
- When adjoining pavements are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength. Do not drive vehicles on pavement until the full 28-day strength is attained.
- Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.07 SUB-BASE SLABS FOR UNIT PAVING

- General: Comply with ACI 301 for formwork, placement, and screeding of concrete.
- Deposit and consolidate concrete for sub-base slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - Consolidate concrete during placement and screed slab surfaces with a straightedge and strike off to correct elevations.
 - Slope surfaces uniformly to drains where required.
- Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess bleed water appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
 - Class B Finish: Finished concrete surface for subbases shall be wood floated to a slightly rough surface. Surface shall not deviate more than 1/4 in. in 10 ft.

3.08 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

- Curbs and Edge Restraints: Provide monolithic finish by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.09 FLOAT FINISHING

- General: Do not add water to concrete surfaces during finishing operations.
- Bull Float Finish: After striking off initial pour of concrete, begin the second floating operation when bleed water sheen has disappeared, and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

3.10 BROOM FINISH

- Monolithic Broom Finish: After float floating concrete surface and prior to applying curing compound or curing and sealing compounds, provide a monolithic broom finished concrete surface as specified below.
 - Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

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- Available Products:
 - Sika Corporation; Sikaflex – 2c NS.
 - Dynafix by Pecora, Harleyville, PA; (800) 523-6688, (215) 723-6051; www.pecora.com.
- Color: To be selected by Architect from manufacturer's "Color Pack" system.

2.04 JOINT-SEALANT BACKER MATERIALS

- Joint-Sealant Backer Materials: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by joint-sealant manufacturer, based on field experience and laboratory testing.
- Round Backer Rods for Cold- and Hot-Applied Joint Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.
- Round Backer Rods for Cold-Applied Joint Sealants: ASTM D 5249, Type 3, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.
- Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D 5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.05 PRIMERS

- Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

- Examine joints to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
 - Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- Surface Cleaning of Joints: Before installing joint sealants, clean out joints immediately to comply with joint-sealant manufacturer's written instructions.
 - Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

- Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.03 INSTALLATION OF JOINT SEALANTS

- Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions.

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CONCRETE PAVING JOINT SEALANTS
32 13 13 - 4

2501 – Village Dental

CONCRETE PAVING JOINT SEALANTS
32 13 13 - 5

2501 – Village Dental

UNIT PAVING
32 14 00 - 1

2501 – Village Dental

UNIT PAVING
32 14 00 - 2

Time: Not less than 5 years successful experience with installation of work of the type required by this project.		A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely lashed.		ASTM C67 for Freeze/Thaw. Provide brick without frogs or cores in surfaces exposed to view in the completed Work.		A. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33 for fine aggregate, except that no more than 3 percent passing the No. 200 sieve.		A. Manufacturer's Requirements: 1. Meet requirements of paver manufacturers' current printed instructions, except requirements that conflict with the Contract Documents.											
3. Projects: Successfully completed a minimum of five projects of not less than the size required by the Work of this Section. The project sizes must represent not less than the minimum amount of unit paving types required for this project.		B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.		b. Thickness: 2-3/4 inches. c. Face Size: 4 x 8 d. Color: Running Full Range e. Pattern: Herringbone		2.05 AGGREGATE SETTING-BED MATERIALS A. Aggregate for Leveling or Bedding Course: 1. Crushed #9 limestone grits—ASTM D 448 for size		B. Concrete Subbase: For system requiring concrete subbases, refer to Section 32 13 13 "Concrete Paving" for finish specifications. Confirm finish and grade tolerances prior to paver installation.											
4. Workmanship: Use an adequate number of skilled personnel who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of the Work of this Section.		C. Store aggregates where grading and other required characteristics can be maintained, and contamination avoided.		B. Chippage Limits of Installed Pavers: In addition to the requirements of ASTM C902 the following shall apply at final completion: 1. Chipping: No more than 5% of all installed pavers shall be chipped on their exposed edges. 2. Individual Edges: No more than 20% of the length of any exposed edge shall be chipped. 3. Size of Chips: No individual chip shall be more than 1/2 inch long as measured along the edge of the paver. No chip extending more than 1/8 inch from the edge of the paver shall be more than 1/8 inch deep. 4. No chip shall expose underlying material of a different color to the face of the paver. 5. Stacked Bond Pattern Requirements: The overall measurement for outside face to outside face of 24 pavers, when laid in contact in a straight line shall not vary by more than 3-1/2 inches for end to end and 1-1/2 inches for add to side with. 6. Efflorescence: Brick shall be rated "not effloresced" when tested according to ASTM C67.		1. Temporary Edge Restraints: Precast exposed surfaces of brick pavers with a continuous film of a temporary protective coating that is compatible with brick, mortar, and grout products and can be removed without damaging grout or brick. Do not coat unexposed brick surfaces; handle brick to prevent coated surfaces from contacting backs or edges of other units. If, despite these precautions, coating does contact bonding surfaces of brick, remove coating from bonding surfaces before setting brick.		C. Prior to installation, notify Architect in writing of any conflicts. D. Provide edge restraints as indicated. Install edge restraints before placing unit pavers. 1. Install edge restraints to comply with manufacturer's written instructions. Unless noted on drawings or details, install anchors at intervals required to hold edge restraints in place during and after unit paver installation.											
5. Installer's foreman shall have at least 5-years of experience and be always on site while this Section is being performed. Foreman shall not be charged during work unless approved in writing by Architect.		D. Store liquids in tightly closed containers protected from freezing.		2.06 SUB-BASE AND SUB-SLABS A. Compacted Aggregate Base Course: Section 31 20 00 Earth Moving specifications apply. B. Concrete Sub-slabs: Section 32 13 13 Concrete Paving specifications apply. C. Geotextile Sub-Surface Drainage and Structural Fabrics: Refer to Section 31 20 00 Earth Moving.		2.07 ACCESSORIES A. Cork Joint Filler: Preformed strips complying with ASTM D 1752, Type II. B. Compressible Foam Filler: Preformed strips complying with ASTM D 1056, Grade 2A1. C. Geotextile Fabric for Sand Stops: Soil separator shall be 12-inch square Miraf 140N nonwoven drainage fabric manufactured by Mirafi, Inc., Charlotte, NC 28224.		E. Temporary Edge Restraints: Install temporary edge restraints at transitions between project phases or as needed to maintain traffic. Provide edge restraints suitable for the support of vehicular traffic or as approved by the Engineer. F. Do not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be visible in finished work.											
E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.		1.09 FIELD CONDITIONS A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.		2.02 BRICK PAVERS A. Clay Brick Pavers: Reclaimed bricks. If not available, Basis of Design Manufacturer: Pine Hall Brick Company Ph. No.: (800) 952-7425 www.pinehallbrick.com		2.08 SAND JOINT FILLERS A. Stabilized Sand for Joints: Gator Supersand Bond by Alliance Designer Products Inc., 225 Boulevard Bellefleur West, Laval, Quebec H7L 6A1. 1. Color: To be selected from manufacturer's full range. B. Herbicide: Commercial chemical for weed control, registered with the EPA. Provide in granular, liquid, or wettable powder form.		G. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Use a wet saw if possible. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable. H. Locate wet saws in an area which debries from the sawing operation cannot stain, contaminate, or otherwise soil surfaces of completed Work, either from the setting of dust or from the runoff of the dust onto finish Work.											
1. Construction of Mock-ups: a. Construct one 10-foot by 10-foot area of unit paving for each material type. 1) Sample to include compacted aggregate/bottomless setting bed, pavers representing pattern as per drawings, edge restraint and filled joints with specified setting bed material. b. Coordinate locations of in-place mock-ups at Pre-construction conference. 1) Identify quantity of key areas each mock-up is to represent. Submit drawing for Architects approval. 2) Construct mockup in a location where mockup can be referenced. 3) Construct as many mockups as necessary to achieve an acceptable mockup to Owner and Architect. 4) Remove all rejected mockups immediately after "approval" of mockups samples have been officially accepted by the Architect.		2.01 MANUFACTURERS A. Source Limitations: Obtain each type of unit paver, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.		2.03 EDGE RESTRAINTS, CURBS AND GRATES A. Steel Edge Restraints (Precast): Manufacturer's standard weathered steel edging 3/16 inch thick by 3 inches high by 3 inch wide. Color: Weathered. 1. Manufacturer: Subject to compliance with requirements, provide products by one of the following: a. A.P.E.3 - Border Concepts, Inc. b. Ryerson c. Other B. Heavy Duty (Vehicular) Steel Paving Retention Angles: Borcon TM - Weathered Steel angle. 1. Manufacturer: Border Concepts, Inc. a. A.P.E. Paver Edge Restraint: 1/4" x 4" x 4" 1) Color: Borcon (Untreated) b. Threaded rods for anchorage of steel plates and angles: ASTM A 193, Type 304 Stainless Steel, with 70,000-psi minimum tensile strength. c. Hex Nuts and coupling nuts for stainless steel threaded rod and stainless-steel bolts: ASTM A 194, Type 304, stainless. 1) Flat Washers: Type 304 stainless steel 1/8" thick.		I. Exercise care in handling coated brick pavers to prevent coated surfaces from contacting backs or edges of other units. Remove coating from bonding surfaces before setting brick.		3.04 SAND OR AGGREGATE SETTING-BED APPLICATIONS (Over Concrete Base) A. Drill deep holes as indicated on drawings into concrete sub-base. Pre-drill prior to leveling course being installed and through entire thickness of concrete sub-base. B. Fill holes with specified aggregate. C. Place geotextile fabric over weed holes. Tack in place so not to be displaced during leveling sand installation. DO NOT COVER WEED HOLES with tape. D. Place leveling course and screed to a thickness of 1 to 1-1/2 inches, ensuring that moisture content remains constant, and density is loose and constant until pavers are set and compacted. 1. The bedding material shall be spread over the areas to be constructed to create an uncompacted loose surface onto which the pavers shall be placed. The laying course shall be such that each compaction forms a uniform layer nominally one inch thick. Upon completion of the works the final surface of the pavers shall be 1/8 in. to 1/4 in. above adjacent finishes. 2. It shall be laid to a tolerance of plus or minus 3/16 in., allowing for the correct surcharge. Where distances between screed rails exceed 12 ft. intervals an intermediate rail shall be set to line and level. Screed rails shall be used at 4 ft. centers where grade changes occur. 3. The screeded bedding sand shall not be subjected to any traffic by either mechanical or pedestrian use. 4. Sufficient material shall be placed to ensure that no delay occurs to paver laying. Bedding aggregate that has been screeded but not covered with pavers at the end of each day's work shall be taken up and re-screeded prior to re-commencement of work. 5. The voids left after the removal of screed rails shall be filled with loose bedding material as the laying of pavers proceeds.											
2. Approval: a. Demonstrate the proposed range of aesthetic effects and workmanship. b. Obtain Owner's Representative approval of mockups before starting unit paver installation. c. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work. d. Demolish and remove mockups when directed. e. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.		2.02 BRICK PAVERS A. Clay Brick Pavers: Reclaimed bricks. If not available, Basis of Design Manufacturer: Pine Hall Brick Company Ph. No.: (800) 952-7425 www.pinehallbrick.com		2.03 EDGE RESTRAINTS, CURBS AND GRATES A. Steel Edge Restraints (Precast): Manufacturer's standard weathered steel edging 3/16 inch thick by 3 inches high by 3 inch wide. Color: Weathered. 1. Manufacturer: Subject to compliance with requirements, provide products by one of the following: a. A.P.E.3 - Border Concepts, Inc. b. Ryerson c. Other B. Heavy Duty (Vehicular) Steel Paving Retention Angles: Borcon TM - Weathered Steel angle. 1. Manufacturer: Border Concepts, Inc. a. A.P.E. Paver Edge Restraint: 1/4" x 4" x 4" 1) Color: Borcon (Untreated) b. Threaded rods for anchorage of steel plates and angles: ASTM A 193, Type 304 Stainless Steel, with 70,000-psi minimum tensile strength. c. Hex Nuts and coupling nuts for stainless steel threaded rod and stainless-steel bolts: ASTM A 194, Type 304, stainless. 1) Flat Washers: Type 304 stainless steel 1/8" thick.		J. The bedding material shall be spread over the areas to be constructed to create an uncompacted loose surface onto which the pavers shall be placed. The laying course shall be such that each compaction forms a uniform layer nominally one inch thick. Upon completion of the works the final surface of the pavers shall be 1/8 in. to 1/4 in. above adjacent finishes. K. Where unit paving is to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations, including areas where waterproofing system is turned up or lashed against vertical surfaces. L. Proceed with installation only after unsatisfactory conditions have been corrected.		3.02 PREPARATION A. Remove substrates from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and lubricants. B. Clean concrete substrates to remove dirt, dust, debris, and loose particles. C. Proof-roll prepared subgrade according to requirements in Section 31 20 00 "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive subbase and base course for unit pavers.											
1.07 PRECONSTRUCTION TESTING A. Preconstruction Adhesion and Compatibility Testing: Submit to latex-additive manufacturer, for testing as indicated below. Samples of flooring materials shall be cut to affect mortar and grout that contain latex additives. 1. Use manufacturer's standard test methods to determine whether mortar and grout materials will obtain optimal adhesion with, and will be nonstaining to, installed brick and other materials constituting brick flooring installation.		2.02 BRICK PAVERS A. Clay Brick Pavers: Reclaimed bricks. If not available, Basis of Design Manufacturer: Pine Hall Brick Company Ph. No.: (800) 952-7425 www.pinehallbrick.com		2.03 EDGE RESTRAINTS, CURBS AND GRATES A. Steel Edge Restraints (Precast): Manufacturer's standard weathered steel edging 3/16 inch thick by 3 inches high by 3 inch wide. Color: Weathered. 1. Manufacturer: Subject to compliance with requirements, provide products by one of the following: a. A.P.E.3 - Border Concepts, Inc. b. Ryerson c. Other B. Heavy Duty (Vehicular) Steel Paving Retention Angles: Borcon TM - Weathered Steel angle. 1. Manufacturer: Border Concepts, Inc. a. A.P.E. Paver Edge Restraint: 1/4" x 4" x 4" 1) Color: Borcon (Untreated) b. Threaded rods for anchorage of steel plates and angles: ASTM A 193, Type 304 Stainless Steel, with 70,000-psi minimum tensile strength. c. Hex Nuts and coupling nuts for stainless steel threaded rod and stainless-steel bolts: ASTM A 194, Type 304, stainless. 1) Flat Washers: Type 304 stainless steel 1/8" thick.		K. The bedding material shall be spread over the areas to be constructed to create an uncompacted loose surface onto which the pavers shall be placed. The laying course shall be such that each compaction forms a uniform layer nominally one inch thick. Upon completion of the works the final surface of the pavers shall be 1/8 in. to 1/4 in. above adjacent finishes. L. Where unit paving is to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations, including areas where waterproofing system is turned up or lashed against vertical surfaces. M. Proceed with installation only after unsatisfactory conditions have been corrected.		3.02 PREPARATION A. Remove substrates from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and lubricants. B. Clean concrete substrates to remove dirt, dust, debris, and loose particles. C. Proof-roll prepared subgrade according to requirements in Section 31 20 00 "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive subbase and base course for unit pavers.											
1.08 DELIVERY, STORAGE, AND HANDLING		2.02 BRICK PAVERS A. Clay Brick Pavers: Reclaimed bricks. If not available, Basis of Design Manufacturer: Pine Hall Brick Company Ph. No.: (800) 952-7425 www.pinehallbrick.com		2.03 EDGE RESTRAINTS, CURBS AND GRATES A. Steel Edge Restraints (Precast): Manufacturer's standard weathered steel edging 3/16 inch thick by 3 inches high by 3 inch wide. Color: Weathered. 1. Manufacturer: Subject to compliance with requirements, provide products by one of the following: a. A.P.E.3 - Border Concepts, Inc. b. Ryerson c. Other B. Heavy Duty (Vehicular) Steel Paving Retention Angles: Borcon TM - Weathered Steel angle. 1. Manufacturer: Border Concepts, Inc. a. A.P.E. Paver Edge Restraint: 1/4" x 4" x 4" 1) Color: Borcon (Untreated) b. Threaded rods for anchorage of steel plates and angles: ASTM A 193, Type 304 Stainless Steel, with 70,000-psi minimum tensile strength. c. Hex Nuts and coupling nuts for stainless steel threaded rod and stainless-steel bolts: ASTM A 194, Type 304, stainless. 1) Flat Washers: Type 304 stainless steel 1/8" thick.		L. The bedding material shall be spread over the areas to be constructed to create an uncompacted loose surface onto which the pavers shall be placed. The laying course shall be such that each compaction forms a uniform layer nominally one inch thick. Upon completion of the works the final surface of the pavers shall be 1/8 in. to 1/4 in. above adjacent finishes. M. Where unit paving is to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations, including areas where waterproofing system is turned up or lashed against vertical surfaces. N. Proceed with installation only after unsatisfactory conditions have been corrected.		3.02 PREPARATION A. Remove substrates from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and lubricants. B. Clean concrete substrates to remove dirt, dust, debris, and loose particles. C. Proof-roll prepared subgrade according to requirements in Section 31 20 00 "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive subbase and base course for unit pavers.											
2501 – Village Dental		UNIT PAVING 32 14 00 - 3		2501 – Village Dental		UNIT PAVING 32 14 00 - 4		2501 – Village Dental		UNIT PAVING 32 14 00 - 5		2501 – Village Dental		UNIT PAVING 32 14 00 - 6		2501 – Village Dental		UNIT PAVING 32 14 00 - 7	
6. Spreading of the bedding course material shall stop when weather conditions are unsuitable. If inclement weather causes deterioration of the laying coarse sand, it shall be filled and stored to one side to drain before its reuse.				2. Maximum Variation of Finished Paving Surface from 10 Foot Straight Edge: 1/8-inch. 3. Maximum Lippage Between Paver Units: 1/32-inch. 4. No "birdbaths" or other surface irregularities will be permitted. 5. Correct all irregularities to the satisfaction of the Architect.															
3.05 INSTALLING PAVERS: A. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures as recommended by the manufacturer. B. Laying Paver Units: 1. Place pavers away from an edge restraint or the existing laying face in such a manner as to ensure squareness of pattern. Cut header course pavers to accommodate alignment tolerances of the restraints. Full pavers shall be laid first. 2. Place pavers so that joints are aligned and installed in the pattern as shown on the Drawings. a. Paver joint size: As noted on details and drawings. 3. Use string lines to hold pattern lines and elevations true. 4. All radial units are to be uniformly tapered with minimum 1/16" width and maximum 3/16" joints. 5. Lay rows of full units first. 6. Cut off and fit closure units subsequently. 7. Cut paver units with power diamond blade masonry saw where partial pavers abut straight surfaces. 8. Cut radial paver edges with a diamond-blade masonry saw by kerfing and grinding, or other accepted method, where pavers abut round elements such as manholes, tree gratings, cleanouts, and bollards to achieve smoothly curved edges parallel with the abutting surfaces with maximum 1/8" wide joints. 9. Do not allow other construction traffic on pavement during the paver installation until pavers have been compacted and joints have been filled with sand. C. Rolling: Machine roll units to plane surface. Use neoprene coated rollers or operate rollers on plywood to avoid causing damage to the pavers. D. Joint Pattern: As indicated on the drawings. 1. Where pattern is on a radius or curve, saw cut pavers both sides to maintain radii as follows: a. Radii up to 5 ft. cut every paver. b. Radii 5 to 10 ft. cut every second paver. c. Radii 10 to 15 ft. cut every third paver. d. Radii 15 to 25 ft. cut every fifth paver. e. Radii over 25 ft. no cutting required E. Modify paver pattern and/or provide additional cuts to adjacent pavers as necessary when the cutting of a paver will result in less than one third of a full paver. Pavers sliced longitudinally, except when being placed around utility manholes will not be accepted. All cut paver faces to be vertical, top edges shall be free from chips and pattern modification/additional cuts shall be as acceptable to the Architect. F. Tolerances: 1. Unit to Unit - Joint Width: 1/8" joints minimum, +1/16". Do not lay hand tight unless noted on drawings or tabs are present on pavers.				2. Maximum Variation of Finished Paving Surface from 10 Foot Straight Edge: 1/8-inch. 3. Maximum Lippage Between Paver Units: 1/32-inch. 4. No "birdbaths" or other surface irregularities will be permitted. 5. Correct all irregularities to the satisfaction of the Architect.															
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G. Adequate quantities of Planting Mix materials shall be provided to attain, after compaction and natural settlement, all design finish grades. Verify quantities for placement as specified to suit site conditions.

2.05 FERTILIZERS AND OTHER SOIL AMENDMENT MATERIALS

- A. Fertilizers and other soil amendment materials will only be used based on results of analysis and the recommendations of a qualified landscape Agronomist.
1. All fertilizers used shall be labeled showing the brand name, minimum guaranteed analysis, nutrients derived from statement, package weight and manufacturer's name and address.
2. Limestone: Ground Agricultural Limestone with a minimum of 88 percent of calcium and magnesium carbonates. Ground limestone material shall have total 100 percent passing the 10-mesh sieve, minimum of 50 percent passing the 20 mesh sieve and a minimum of 50 percent passing the 100 mesh sieve as packaged or prior to pelletizing.
3. Sulfur: Granular, Biodegradable with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.
4. Agricultural Gypsum: Finely ground product containing a minimum of 90 percent calcium sulfate.

PART 3 - EXECUTION

- 3.01 GENERAL
- A. Section 31 22 19 – Finish Grading applies.

END OF SECTION 32 91 30

2501 - Village Dental TOPSOIL - HIGH SAND CONTENT SOIL 32 91 30 - 10

- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.02 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.03 TURF AREA PREPARATION

- A. General: Prepare planting area for soil placement, mix planting soil and finish grades according to Sections 32 91 00 – through 32 91 50 Planting Preparation specifications.
- B. Placing Planting Soil: Place and prepare soil mix per Specifications 31 22 19 - Finish Grading.
1. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.04 APPLICATION OF FERTILIZER

- A. Fertilizers and conditioners shall be applied at the following rates:
1. Fertilizer – Apply at rates according to soil analysis testing reports.
- B. Mixing with planting soil:
1. Fertilizer and conditioners shall be spread over the entire lawn areas at the application rates indicated above.
2. Materials shall be uniformly and thoroughly mixed into the top 4" of topsoil by discing, rototilling, or other approved method.

3.05 PREPARATION FOR EROSION-CONTROL MATERIALS

- A. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.
- B. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.06 SODDING

- A. Harvest, deliver, store, and lay sod within 12 hours of harvesting unless a suitable preservation method is accepted by Architect prior to delivery time. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form solid mass with tightly fitted joints. Butt ends and sides of sod, do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work rolled soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
1. Lay sod across slopes exceeding 1:3.

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- molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.
- J. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

- K. Planting Area: Areas to be planted.
- L. Plant Spread: Measurement of main body diameter, not measurement from branch tip to branch tip.
- M. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. Soil preparations vary. See Sections 32 91 00 through 32 91 40 – Planting Prep and Soils for soil preparation and drawing designations for planting soils.
1. Planting Soil Mix: A sand/silt/compost material produced off-site by homogeneously blending topsoil and sand with compost to produce the specified planting mix type.
2. "Planting Soil Mix" and "Planting Soil" are interchangeable terms used throughout this specification.
- N. Plant; Plants; Planting Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- O. Root Flare (root collar, trunk flare, root crown): The area at the base of the plant stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- P. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- Q. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- R. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.
- S. Substantial Completion Acceptance: The date at the end of the Planting, Planting Soil, and Irrigation Installation where the Architect accepts that all work has been completed, and the Warranty period (aka "Contractor's Warranty Period") is to begin. This date may be different than the date of substantial completion for the other sections of the project.
- T. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.04 COORDINATION

- A. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.
- 1.05 ACTION SUBMITTALS
- A. Product Data: For each type of product.
1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Plant Photographs: Include color photographs (2) minimum per species, in digital format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 20 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify

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SECTION 32 92 00 - TURF GRASS AND SOD

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
- Sodding.
 - Turf renovation.
 - Erosion-control material(s).
 - Maintenance.

1.02 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
- B. Base Mix: Homogeneously blended mix of the specified topsoil and the specified sand which is then used for mixing with the specified organic amendment to create various Planting Mixes.
- C. Compost: An organic material that has been aerobically composted and stabilized from feedstocks such as a green waste (yard debris) or other suitable organic materials.
- D. Finish Grade: Elevation of finished surface of planting soil.
- E. Manufactured Planting Soil Mix: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce a planting soil mix.
- F. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- G. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- H. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. Soil preparations vary. See Sections 329100 through 329140 – Planting Prep and Soils for soil preparation and drawing designations for planting soils.
- I. Sand: A naturally occurring material that has been processed to remove coarse gravel, silt, and clay and sized to meet the specifications.
- J. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- K. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.
- L. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.03 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site prior to beginning seedbed preparations. Construction Manager, Owner and Architect should be notified at least one week prior to the intended meeting date.

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2. Anchor sod on slopes exceeding 1:6 with biodegradable sod stakes spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.
- C. Saturate soil with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.
- D. No heavy equipment to be allowed on the amended soil during installation of sod. All equipment for sodding and maintenance should be either track type or utilize high flotation turf type tires.

3.07 TURF RENOVATION

- A. Renovate existing turf where indicated.
- B. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.
1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
2. Install new planting soil as required.
- C. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.
- D. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.
- E. Mow, dethatch, core aerate, and rake existing turf.
- F. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.
- G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.
- H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.
- I. Apply soil amendments and initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grade.
1. Soil Amendment(s): Amend soil as per soil test results for specified turf grass soils. See applicable Sections 32 91 00 through 32 91 40 – Planting Prep and Soils for specified soil mix, testing, installation, and preparation.
2. Initial Fertilizer: Slow-release fertilizer applied according to manufacturer's recommendations.
- J. Water newly planted areas and keep moist until new turf is established.

3.08 TURF MAINTENANCE

- A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape installer. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
1. Sodded Turf: 30 days from date of Substantial Completion.
- B. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. Apply treatments as required to keep turf and soil free of pests and pathogens or disease.

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- each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.
3. Tree Selection Approvals:
- a. Acceptable trees will meet the following health and structure requirements: single dominate leader, branching and root structure appropriate for species, caliper size or height per plans, pest, and disease free and other ANSI requirements. Acceptable trees will also meet the following aesthetic requirements: straight trunk, symmetry, uniformity and fullness of branching, general form, and overall uniformity of all trees of a species. No trees shall be delivered to the site without documentation.
- B. Samples for Verification: For each of the following:
- Organic Mulch: 1-pint volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
 - Weed Control Barrier: 12 by 12 inches.
 - Proprietary Root-Ball-Stabilization Device: One unit.
 - Slow-Release, Tree-Watering Device: One unit of each size required.
 - Edging Materials and Accessories: Manufacturer's standard size, to verify color selected.

1.06 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape installer. Include a list of similar projects completed by installer demonstrating installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
- Manufacturer's certified analysis of standard products.
- C. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.
- D. Close out submittals: Submit to the Architect for approval.
1. Plant maintenance data, requirements and recommended maintenance schedules and procedures for Owner to establish during the Warranty Period.
- E. Warranty period site visit record: If the client assumes maintenance responsibilities during the warranty period per the specifications, the Contractor is to submit a written record to the Architect of his/her observations visits, citing any problems, potential problems, and any recommended corrective actions needed by the client. Refer to Part 3 for Maintenance responsibilities.

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.
1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals or the American Nursery and Landscape Association.
2. Experience: Five years' experience in landscape installation.
3. Submit reference list of at least five recent projects indicating project name, address, telephone number, contract amount, Architect's, and Facilities Manager's name.
4. Landscape Contractors submitting bids shall be pre-qualified before award of contract. Each reference shall be contacted to verify workmanship and general business practices.

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1.04 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape installer.
1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
2. Experience: Five years' experience in turf installation.
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personal Certifications: Installer's personnel assigned to the Work shall have certification in one of the following categories from the Professional Landcare Network:
- Certified Landscape Technician - Exterior, with installation or maintenance
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.
- C. Product Certificates: For fertilizers, from manufacturer.
- D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project. Only use when necessary.

1.05 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.
1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals, the Ohio Nursery and Landscape Association or the American Nursery and Landscape Association.
2. Experience: Five years' experience in turf installation.
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personal Certifications: Installer's field supervisor shall have certification in one of the following categories from the National Association of Landscape Professionals:
- Landscape Industry Certified Technician - Exterior.
 - Landscape Industry Certified Lawn Care Manager.
 - Landscape Industry Certified Lawn Care Technician.
5. Pesticide Applicator: State licensed, commercial.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation"

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- Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
3. Treat infestation of weeds or crabgrass by hand weeding or herbicidal control. Furnish and install weed chemical control as recommended by manufacturer. Herbicidal controls, including renovation before sodding operations, shall be acceptable to the Architect.
- C. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- D. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowing's. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowing's to maintain the following grass height:
1. Mow turf-type tall fescue to a height of 2 to 3 inches.
- E. Turf Post-fertilization: Apply slow-release fertilizer after initial mowing and when grass is dry.
1. Use fertilizer that provides actual nitrogen of at least 1 lb./1000 sq. ft. to turf area.

3.09 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
1. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.10 OBSERVATION AND ACCEPTANCE

- A. Beneficial Occupancy: the acknowledgement by the Owner and Architect that the landscape work defined by plans and specifications is substantially complete. The Architect shall provide the Contractor with a written punch list indicating items to be corrected or corrected by the contractor within a two-week period from notification:
1. Site review to be requested by the Contractor when the landscape installation meets all the requirements of the plans and specifications.
- B. Final Acceptance: the date of final acceptance shall be when the Architect verifies that all the items on the punch list have been completed and / or corrected by the Contractor
1. Warranty does not commence until acceptance by the Owner
- 3.11 PESTICIDE APPLICATION
- A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.12 CLEANUP AND PROTECTION

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5. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
6. Personal Certifications: Installer's field supervisor shall have certification in the following categories from the National Association of Landscape Professionals:
- Landscape Industry Certified Exterior Technician
 - Landscape Industry Certified Horticulture Technician
 - Landscape Industry Certified Lawn Care Technician
7. Pesticide Applicator: State licensed, commercial.
- B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
1. Selection of plants purchased under allowances is made by Architect, who tags plants at their place of growth before they are prepared for transplanting.
- C. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
- Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
 - Other Plants: Measure with stems, petioles, and foliage in their normal position.
- D. Plant Material Observation: Architect may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Architect may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
1. Notify Architect of sources of planting materials seven days in advance of delivery to site.
- E. Plant Quantity Verification: All scaled dimensions on the drawings are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities and shall immediately inform the Architect of any discrepancies between the information on the drawings and the actual conditions, refraining from doing any work in said areas until given approval to do so by the Architect.
1. In the case of a discrepancy in the plant quantities between the plan drawings and the plant call outs, list or plant schedule, the number of plants or square footage of the planting bed drawn on the plan drawings shall be deemed correct and prevail.
- F. Preinstallation Conference: Conduct conference at Project.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.
- B. Bulk Materials:
- Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - Submit reference list of at least five recent projects to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - Accompany each delivery of bulk materials with appropriate certificates.

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sections in TP1's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

C. Bulk Materials:

- Do not dump or store bulk materials near structures, utilities, walkways, and pavements, or on existing turf areas or plants.
- Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
- Accompany each delivery of bulk materials with appropriate certificates.

1.08 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion insert starting time.
- Spring Planting: April 1 to June 1.
 - Fall Planting: August 15 to October 1.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.
- C. Work notification: Notify the Architect at least seven working days before installation of lawn materials.
- D. Verify location and extent of underground utilities. Protect existing utilities, irrigation, paving and other facilities from damage caused by lawn work operations.
- E. Perform lawn work only after planting and other work affecting ground surface has been completed.
- F. Restrict traffic from lawn areas until grass is established. Erect temporary signs and barriers as required by the Architect.
- G. Locate, protect, and maintain newly installed irrigation system during lawn work operations. Repair irrigation system components, damaged during lawn work operations, at Contractor's expense.
- H. Provide necessary hose and watering equipment as required for lawn maintenance.

1.09 WARRANTY

- A. Warranty Period: Warranty, that grasses shall be in a healthy and flourishing condition of active growth at the end of the growing season after the date of Final Acceptance.
- B. Conditions: Established turf that is free of dead or dying patches and shows vigorous growth of foliage of normal density, size, and color.
- C. Delays: Delays in completion of planting operations which extend the planting and/or acceptance of Substantial Completion into the next planting season shall extend the Warranty period accordingly.

PART 2 - PRODUCTS

2.01 TURFGRASS SOD

- A. Turfgrass Species: Sod of grass species as follows, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:

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- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.
- C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- D. Remove nondegradable erosion-control measures after grass establishment period.

3.13 MAINTENANCE SERVICE

- A. Verify with Owner that maintenance service is required for Project. Consider deleting this article for small-scale residential projects. Generally, a maintenance period should be long enough to ascertain the initial establishment of healthy turf.
- B. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
- Sodded Turf: 30 days from date of Substantial Completion of Sod Installation operations.
 - Modified ERTurf.

END OF SECTION 32 92 00

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- C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or break the trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and transportation.
- D. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
- If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.
- E. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.
- F. Handling Plants:
- Handle ball and burlap plants by root ball.
 - Pad trunk and branches where hoisting cables or straps contact.
 - Handle container plants by containers, not by tops, stems or trunks.
 - Do not bind or handle plants with wire or rope.
- G. Deliver plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
- Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 - Do not remove container-grown stock from containers before time of planting.
 - Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

1.09 FIELD CONDITIONS

- A. Work notification: Notify the Architect at least seven working days before installation of plant material.
- B. At trees must be evaluated and approved by the Architect prior to planting.
- C. Verify location and extent of underground utilities. Protect existing utilities, paving and other facilities from damage caused by landscaping operations.
- D. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.
- E. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by the Owner or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:
- Do not proceed with interruption of services or utilities without Architect's written permission.
- F. Install plant materials during time periods indicated. Planting operations conducted at other times only at option and full responsibility of Contractor and without additional compensation, except as follows:
- G. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
- Spring Planting: March 1 to June 1.

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- Sun and Partial Shade: Turf-type tall fescue (90%) and Hybrid bluegrass - CV Thermal Blue Grass (10%) by:
 - Medina Turf Farms meeting a mean quality ratio of 6.3 or higher according to the National Turfgrass Evaluation Program's latest trials: http://www.ntes.org/data/12017_16-01771600.pdf
 - Or local equal.
- B. Sod Stakes
1. Basis of Design by: GreenStakes www.GreenStakes.com
- a. Biodegradable Stakes: ASTM D6400 (in USA) & EN13432 (Europe & International) Biodegradable Standard.

2.02 FERTILIZERS

- A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
1. Composition: Nitrogen, phosphorus, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.03 PESTICIDES

- A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

2.04 EROSION-CONTROL MATERIALS

- A. Erosion-Control Blankets: Biodegradable wood exceller, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire stakes, 6 inches long.
- B. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-corr mesh, a minimum of 0.92 lb/sq. yd., with 50 to 65 percent open area. Include manufacturer's recommended steel wire stakes, 6 inches long.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
- Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - Uniformly moisten excessively dry soil that is not workable, or which

VILLAGE DENTAL
41 E MAIN STREET HUIDSON OH 44236