INTERCHANGE DEVELOPMENT LLC PHASE 2

MERCHANTS WAY
CONCORD, NEW HAMPSHIRE

GENERAL INFORMATION

OWNER

MAP 06P LOT 5
INTERCHANGE DEVELOPMENT LLC
152 MORRILL ROAD
CANTERBURY, NH 03224

APPLICANT

INTERCHANGE DEVELOPMENT LLC
152 MORRILL ROAD
CANTERBURY, NH 03224

PREPARED FOR

INTERCHANGE DEVELOPMENT LLC
152 MORRILL ROAD
CANTERBURY, NH 03224

RESOURCE LIST

PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT
41 GREEN STREET, 3RD FLOOR
CONCORD, NH 03301
PHONE: (603) 225-8515
CONTACT: MATT WALSH

CODE ADMINISTRATION
37 GREEN STREET, CONCORD, NH 03301
PHONE: (603) 225-8580
CONTACT: TRACEY HUTTON

CITY MANAGER
41 GREEN STREET, CONCORD, NH 03301
PHONE: (603) 225-8570
CONTACT: THOMAS J. ASPELL JR.

GENERAL SERVICES (PUBLIC WORKS)
311 NORTH STREET, CONCORD, NH 03301
PHONE: (603) 228-2737
CONTACT: CHIP CHESLEY (DIRECTOR)

POLICE DEPARTMENT
35 GREEN STREET, CONCORD, NH 03301
PHONE: (603) 225-8600
CONTACT: BRADLEY C. OSGOOD (CHIEF OF POLICE)

FIRE DEPARTMENT
24 HORSESHOE POND LANE,
CONCORD, NH 03301
PHONE: (603) 225-8650
CONTACT: JOHN CHISHOLM (FIRE CHIEF)

ABUTTERS

MAP 06P, LOT 1
STATE/NH,DEPTARTMENT OF TRANSPORTATION
107 N MAIN ST
CONCORD NH 03301-4951

MAP 06P, LOT 3
PELILLO PETER & WADDELL ANDREA
18 SHOESTRING RD
CANTERBURY NH 03224-2026

MAP 06P, LOT4
BECK FRANK E III & LISA MARIE
10 SHOESTRING RD
CANTERBURY NH 03224-2026

MAP 06P, LOT2
COCHRANE SANDRA L
24 SHOESTRING RD
CANTERBURY NH 03224-2026

MAP 06P, LOT 6
INTERCHANGE DEVELOPMENT LLC
152 MORRILL ROAD
CANTERBURY, NH 03224

MAP 06P, LOT 7
WHEELABRATOR CONCORD CO LP
100 ARBORETUM DR STE 310
NEWINGTON NH 03801-7833

MAP 06P, LOT 8
CONCORD REGIONAL SOLID WASTE RESOURCE RECOVERY
347B VILLAGE ST
PENACOOK NH 03303-4516

MAP 06P, LOT 11
ROYAL TIMBER REALTY LLC
14 WHITNEY RD
CONCORD NH 03301-1831

MAP 06P, LOT 12
MORRILL MILL POND LLC
152 MORRILL RD
CANTERBURY NH 03224-2305

MAP 06P, LOT 13
MORRILL MILL POND LLC
152 MORRILL RD
CANTERBURY NH 03224-2305

MAP 06P, LOT 12-1
6 WHITNEY ROAD LLC
6 WHITNEY RD
CONCORD NH 03301-1831

MAP 267 LOT 29 (CANTERBURY)
JODY MCWILLIAMS
6 OLD BOYCE ROAD
CANTERBURY NH 03224

MAP 267 LOT 28 (CANTERBURY)
ROBERT & MARY ANN CO TRUSTEES
WOLFE FAMILY REV TRUST
98 SOUTH STREET
CONCORD NH 03301

CONDOMINIUM LAND UNIT 3
DSM REALTY C/O MS. CHERYL STREET
881 EAST STREET
TEWKSBURY, MA 01876

UTILITY CONTACT INFORMATION

WATER
CITY OF CONCORD -GENERAL SERVICES DEPT.
CHIP CHESLEY
311 NORTH STATE STREET
CONCORD NH 03301
6032-228-2737

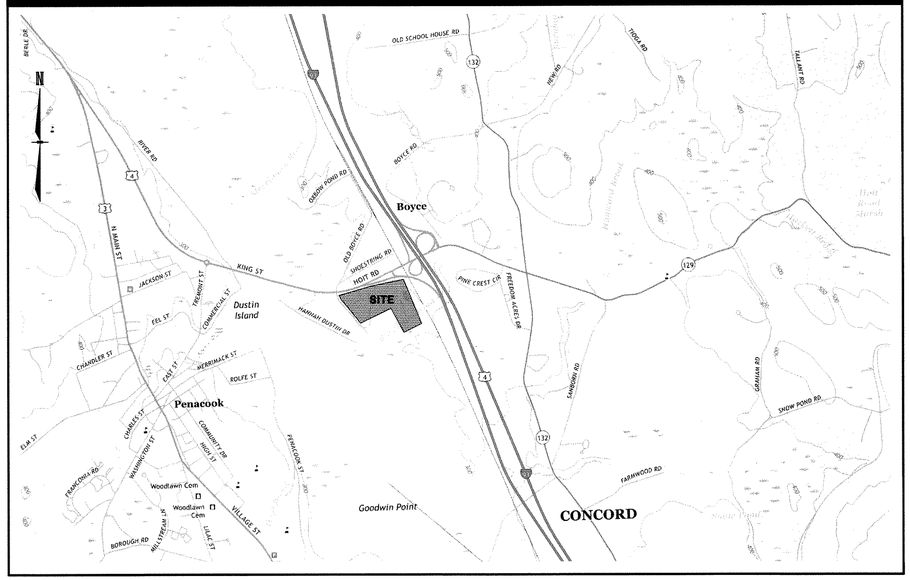
SEWER
CITY OF CONCORD -GENERAL SERVICES DEPT.
CHIP CHESLEY
311 NORTH STATE STREET
CONCORD NH 03301
6032-228-2737

ELECRIC
UNITIL SERVICE CORP.
TYLER GLUECK
W: 603-379-3827
C: 484-866-0027
glueckt@unitil.com

COMCAST
Steven Marshall
Project Coordinator
WNEN – NH
steven_marshall@comcast.com
603-678-8274 - Office

TELEPHONE
CONSOLIDATED COMMUNICATIONS
MIKE MULLEN
64 Regional Dr
Concord, NH 03301
mike.mullen@consolidated.com
603.226.1505 office
603.801.5064 cell
603.226.1413 fax

VICINITY PLAN



2000 1000 0 2000
SCALE: 1"=2000'

INDEX OF SHEETS

PERMITS / APPROVALS

	NUMBER	APPROVED	EXPIRES
MAJOR SITE PLAN	2023-105	-	-
NHDES SEWER DISCHARGE	D2021-0410	5/11/2021	5/11/2024
NHDES WETLANDS STANDARD DREDGE & FILL	2019-00778	8/23/2019	8/23/2024
NHDES ALTERATION OF TERRAIN	AoT-1831	7/13/2020	7/13/2024

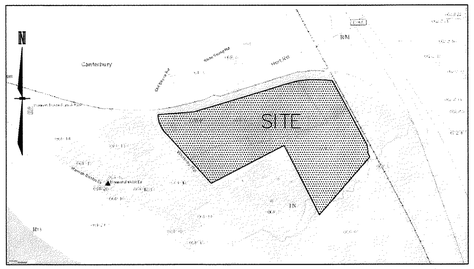
WAIVERS

THE FOLLOWING WAIVERS FROM THE CITY OF CONCORD, NH, SITE REVIEW REGULATIONS WERE GRANTED BY THE PLANNING BOARD ON JULY 19, 2023:

1. SITE REVIEW REGULATIONS SECTION 19 ACCESS & DRIVEWAY STANDARDS–TABLE 19–2 –NON RESIDENTIAL DRIVEWAY SPACING REQUIREMENTS.
   NO TWO LANE STREET SHALL BE GREATER THAN 28' IN WIDTH.
2. CITY OF CONCORD CONSTRUCTION STANDARDS – MINIMUM 4' PIPE COVER STORM DRAIN.

THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING PERMITS TO BE OBTAINED FROM THE CITY OF CONCORD ENGINEERING SERVICES DIVISION:

A. DRIVEWAY PERMIT
B. ENCUMBRANCE PERMIT (FOR WORK THAT WILL ENCUMBER THE ROW, PUBLIC SIDEWALKS, AND/OR METERED PARKING SPACES)
C. EXCAVATION PERMIT (FOR WORK WITHIN THE ROW)
D. UTILITY CONNECTION PERMITS (SEWER AND WATER SERVICES; STORM DRAIN CONNECTIONS)



LOCATION PLAN

400 200 0 400
SCALE: 1"=4000'

LEGEND

PROPOSED

■ SBTBS	STONE BOUND		GAS GATE
● IRTBS	IRON PIN		LIGHT POLE
◉ DHS	DRILL HOLE		BUILDING MOUNTED LIGHT
	GUARD RAIL		HYDRANT
SGC	SLOPED GRANITE CURB		SEWER MANHOLE
VGC	VERTICAL GRANITE CURB		DRAIN MANHOLE
ICC	INTEGRAL CONCRETE CURB		CATCH BASIN
	EDGE OF PAVEMENT		TRANSFORMER PAD
	EDGE OF GRAVEL		WATER GATE
	WOOD FENCE		UTILITY POLE
	SILT FENCE	×201.5	SPOT GRADE
	SIGN	200	INDEX CONTOUR
	TRAFFIC FLOW	202	INTERMEDIATE CONTOUR
	TREELINE		SEWER LINE
		W	WATER LINE
			DRAIN LINE
		G	GAS LINE
		UGE/T/C	UNDERGROUND UTILITIES

NOTE: SEE EXISTING CONDITIONS PLAT FOR EXISTING LEGEND

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

APPROVED
UNDER THE PROVISIONS OF R.S.A. 674:35 & R.S.A. 674: 36
CITY PLANNING BOARD
CITY OF CONCORD, NEW HAMPSHIRE
In accordance with vote of the board dated:
Approval of this plan is limited to the lots as shown
Chair Clerk

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – 03/14/2023

RECEIVED
MAR 5 2024
City of Concord
Planning Division

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

COVER

PHASE 2 SITE PLANS
MERCHANTS WAY, CONCORD, NH
OWNED BY/ PREPARED FOR
INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com

FILE	DR	PWH	FB	–	
95830.08	CK	JSH	CADFILE	95830–08_SITE PLANS	C–1

LEGEND

PROPOSED	
	PROPERTY LINE
	ZONING LINE
	EASEMENT
	BASELINE
	SETBACK (STRUCTURE)
	SETBACK (PARKING)
	SETBACK (LANDSCAPE)
	GRAVEL ROAD
EOP	EDGE OF PAVEMENT
VGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
CC	CONCRETE CURB
	INTEGRATED CONCRETE CURB
BIT	BUTIMINOUS ASPHALT CURB
CCB	CAPE COD BERM
	TREE LINE
	FENCE (CHAIN LINK)
	SILT FENCE
	5' CONTOUR
	1' CONTOUR
x	SPOT GRADE
##	PARKING COUNT
	ACCESSIBLE PARKING SYMBOL
	TRAFFIC FLOW ARROW (NOT PAINTED)
	SIGN (SINGLE POST)

PROPOSED	
	CONCRETE
	GRAVEL
	CONSTRUCTION ENTRANCE
	SNOW STORAGE
	RIPRAP
	DRAIN LINE
	SEWER LINE
	WATER LINE
	GAS LINE
	OVERHEAD UTILITY LINE
	UNDERGROUND UTILITY LINE
	WATER GATE VALVE
	WATER SHUTOFF
	FLOOD LIGHT
	UTILITY POLE
TP-#	TEST PIT LOCATION
IT-#	INFILTRATION TEST LOCATION

GENERAL NOTES

1. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
2. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE CITY PLANNING BOARD.
3. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF CONCORD, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO CITY OF CONCORD DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE CITY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE CITY, COUNTY, AND/OR STATE AGENCY.
4. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
5. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
6. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
7. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
8. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
9. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
10. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
11. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
12. ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
13. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
14. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
15. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
16. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS AND CONDITIONS OF ALL PROJECT-SPECIFIC PERMITS AND APPROVALS AS LISTED ON THE COVER SHEET TO THESE PLANS
    B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    E. TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST AND UNSIGHTLY DEBRIS FROM CONSTRUCTION ACTIVITIES.
    F. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    G. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    H. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    I. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    J. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    K. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    L. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    M. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE PLANNING DIRECTOR AND PER CITY REGULATIONS.
    N. THE UMRLAC RECOMMENDS THAT THE PROPERTY OWNER(S) AND/OR PROPERTY MANAGERS CONSIDER HIRING ONLY NEW HAMPSHIRE GREEN SNOWPRO CERTIFIED SALT APPLICATORS FOR THEIR SNOW AND ICE MANAGEMENT CONTRACTORS FOR THIS SITE. PROGRAM INFORMATION INCLUDING A LIST OF CERTIFIED GREEN SNOWPRO SALT APPLICATORS CAN BE FOUND BY VISITING: HTTPS://WWW.DES.NH.GOV/LAND/ROADS/ROAD-SALT-REDUCTION/GREEN-SNOWPRO-CERTIFICATION.

GRADING NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE.
6. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
8. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
9. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.

UTILITY NOTES

1. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
3. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
7. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
8. SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). FORCE MAINS AND FITTINGS SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
9. ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF CONCORD STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, SEWER LINE MUST BE CONSTRUCTED OF FORCE MAIN MATERIALS (PER ENV-WQ 704.08) FROM BUILDING OR MANHOLE TO MANHOLE, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 6' HORIZONTALLY TO THE WATER LINE.
10. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
11. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
12. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
13. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
14. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
15. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
16. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	MUNICIPAL
WATER	MUNICIPAL
ELECTRIC	UNITIL

DIG SAFE SYSTEM, INC. — CONTACT DIG SAFE TO BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 03/14/2023

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

NOTES & LEGEND

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

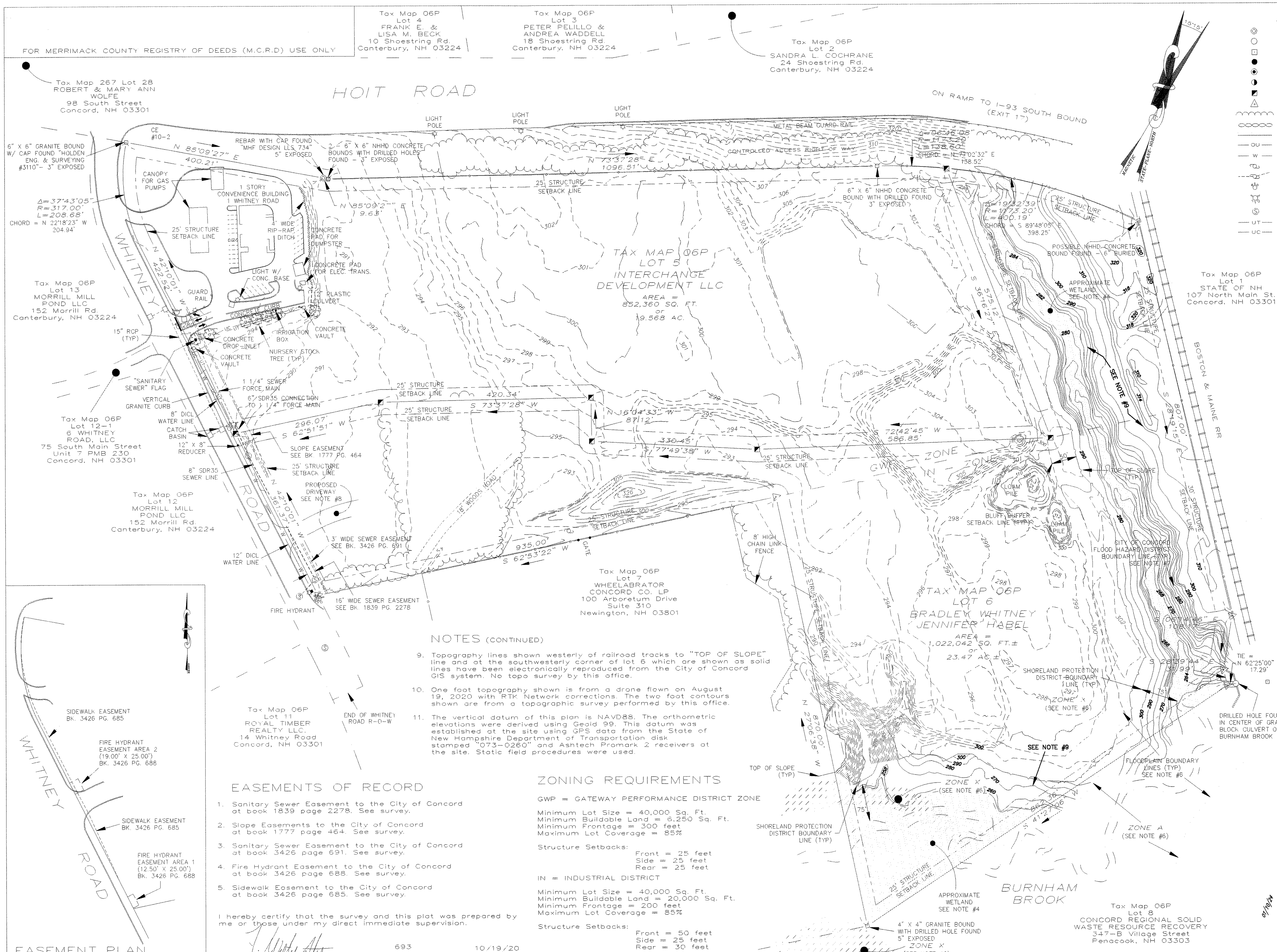
SCALE: NTS **MARCH 14, 2023**

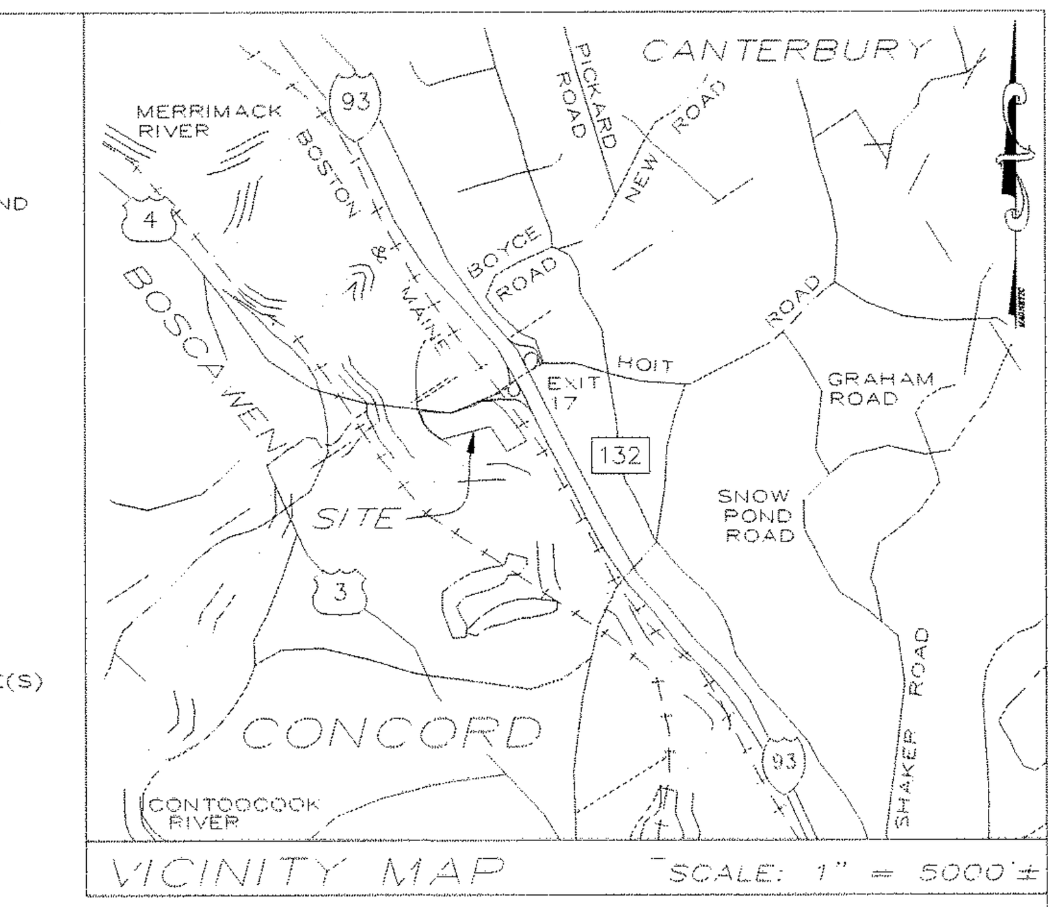
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	PWH	FB	-	
95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	C-2

4331-2

FOR MERRIMACK COUNTY REGISTRY OF DEEDS (M.C.R.D) USE ONLY





LEGEND

- IRON PIPE/STEEL PIN FOUND
- DRILLED HOLE FOUND
- GRANITE/STONE BOUND FOUND
- DRILLED HOLE SET
- 1" REBAR WITH CAP SET
- 1" REBAR SET
- GRANITE BOUND SET
- BOUNDARY POINT
- TREE LINE
- STONE WALL
- EDGE OF PAVEMENT
- — OU — OVERHEAD UTILITY LINES
- — W — WATER LINE
- UTILITY POLE
- UTILITY POLE WITH GUY WIRE(S)
- WATER SHUTOFF
- FIRE HYDRANT
- SEWER MANHOLE
- — UT — UNDERGROUND TELEPHONE
- — UC — UNDERGROUND CABLE

NOTES

1. Owner of Record: Tax Map 06P Lot 6 – Bradley Whitney & Jennifer Habel having a mailing address of 78 North Pembroke Road – Epsom, NH 03234. For deed reference see Probate #15-02345

   Owner of Record: Tax Map 06P Lot 5 – Interchange Development LLC having a mailing address of 152 Morrill Road – Canterbury, NH 03224. For deed reference see M.C.R.D. at Bk. 3219 Pg. 598.

2. Boundary information shown for Lot 5 is from a field survey performed by this office between the dates of February 2007 and December 2013 with an electronic total station instrument having a control traverse error of closure of 1 in 22165. Performed according to the NH Code of Administration Rules (Lan 503.04– Classification "U") for the surveys of real property. Boundary information shown for Lot 6 is from plan ref. #1. No boundary survey has been performed by this office.

3. The horizontal datum of this plan is NAD88 (CORS 96). This datum was established at the site using GPS data from the State of New Hampshire Department of Transportation standard disk designation "073-0260" and Ashtech Promark 2 receivers at the site. Static field procedures were used.

4. Approximate location of wetlands outside of the project area.

5. The limits of Jurisdictional wetlands as shown on this plat were delineated by Gove Environmental Services, Inc., on 10/18/2018 utilizing the following standards:

   US Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Technical Report ERDC/EL TR-12-1. January 2012. Version 2.0.

   Field Indicators of Hydric Soils in the United States. A Guide for Identifying and Delineating Hydric Soils, Version 7.0. United States Department of Agriculture (2010).

   North American Digital Flora: National Wetland Plant List, current version.

6. Floodplain boundary lines shown hereon have been electronically reproduced from the FIRM–Flood Insurance Rate Map–Panel 0337E – Map Number 33013C0337E with an effective date of April 19, 2010.

   ZONE X = Areas of 0.2% annual chance flood: areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile: and areas protected by levees from 1% annual chance flood.

   ZONE X = Areas determined to be outside the 0.2% annual chance floodplain (no shading).

   ZONE A = Special Flood Hazard Areas (SFHAs) subject to inundation by the 1% annual chance flood – No base Flood Elevations determined.

7. A portion of Tax Map 06P Lot 6 is located within the Flood Hazard District. Said District consists of ZONE A and ZONE X (shaded area) as shown hereon.

8. The proposed driveway location WILL BE in compliance with the existing easements along Whitney Road. See Bk. 3426 Pg. 691 for rights of the City of Concord.

NOTES (CONTINUED)

9. Topography lines shown westerly of railroad tracks to "TOP OF SLOPE" line and at the southwesterly corner of lot 6 which are shown as solid lines have been electronically reproduced from the City of Concord GIS system. No topo survey by this office.

10. One foot topography shown is from a drone flown on August 19, 2020 with RTK Network corrections. The two foot contours shown are from a topographic survey performed by this office.

11. The vertical datum of this plan is NAVD88. The orthometric elevations were derived using Geoid 99. This datum was established at the site using GPS data from the State of New Hampshire Department of Transportation disk stamped "073-0260" and Ashtech Promark 2 receivers at the site. Static field procedures were used.

PLAN REFERENCES

1. Plan entitled "SUBDIVISION PLAN OF THE LAND OF ROBERT C. & SUSAN A. WHITNEY" dated March 15, 1990. Prepared by Holden Engineering & Surveying, Inc. and recorded at the M.C.R.D. as plan number 11669.
2. Plan entitled "RE-SUBDIVISION PLAT LAND OF SUSAN A. WHITNEY" dated March 17, 2010. Prepared by this office and recorded at the M.C.R.D. as plan number 19568.
3. Plan entitled "EASEMENT PLAN PREPARED FOR DRAKE PETROLEUM COMPANY, INC." dated January 22, 2013. Prepared by MHF Design Consultants, Inc. and recorded at the M.C.R.D. as plan number 201300027018.
4. Plan entitled "RE-SUBDIVISION PLAT LAND OF SUSAN A. WHITNEY AND INTERCHANGE DEVLOPMENT LLC" dated Februsry 10, 2014. Prepared by this office and recorded at the M.C.R.D. as plan number 201400012586.

EASEMENTS OF RECORD

1. Sanitary Sewer Easement to the City of Concord at book 1839 page 2278. See survey.
2. Slope Easements to the City of Concord at book 1777 page 464. See survey.
3. Sanitary Sewer Easement to the City of Concord at book 3426 page 691. See survey.
4. Fire Hydrant Easement to the City of Concord at book 3426 page 688. See survey.
5. Sidewalk Easement to the City of Concord at book 3426 page 685. See survey.

I hereby certify that the survey and this plat was prepared by me or those under my direct immediate supervision.

Licensed Land Surveyor	License No.	Date
[signature]	693	10/19/20

ZONING REQUIREMENTS

GWP = GATEWAY PERFORMANCE DISTRICT ZONE

Minimum Lot Size = 40,000 Sq. Ft.
Minimum Buildable Land = 6,250 Sq. Ft.
Minimum Frontage = 300 feet
Maximum Lot Coverage = 85%

Structure Setbacks:
Front = 25 feet
Side = 25 feet
Rear = 25 feet

IN = INDUSTRIAL DISTRICT

Minimum Lot Size = 40,000 Sq. Ft.
Minimum Buildable Land = 20,000 Sq. Ft.
Minimum Frontage = 200 feet
Maximum Lot Coverage = 85%

Structure Setbacks:
Front = 50 feet
Side = 25 feet
Rear = 30 feet

APPROVED

UNDER THE PROVISIONS OF R.S.A. 674:35 & R.S.A. 674:36

CITY PLANNING BOARD

CITY OF CONCORD, NEW HAMPSHIRE

In accordance with vote of the board dated:

Approval of this plat is limited to lots as shown

Clerk Chair

01/10/24

FWS LAND SURVEYING P.L.L.C.

56 BOYCE ROAD CANTERBURY, NH 03224
(603) 783 – 9924

STATE OF NEW HAMPSHIRE No. 693 F. WEBSTER STOUT LICENSED LAND SURVEYOR SIGNATURE

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.

NO.	DATE	REVISION

DATE: OCTOBER 19, 2020

PROJECT NO. 18-032 EXSTDRONE

SHEET 1 OF 1

EXISTING CONDITIONS PLAT

LANDS OF

BRADLEY WHITNEY AND JENNIFER HABEL
INTERCHANGE DEVELOPMENT LLC

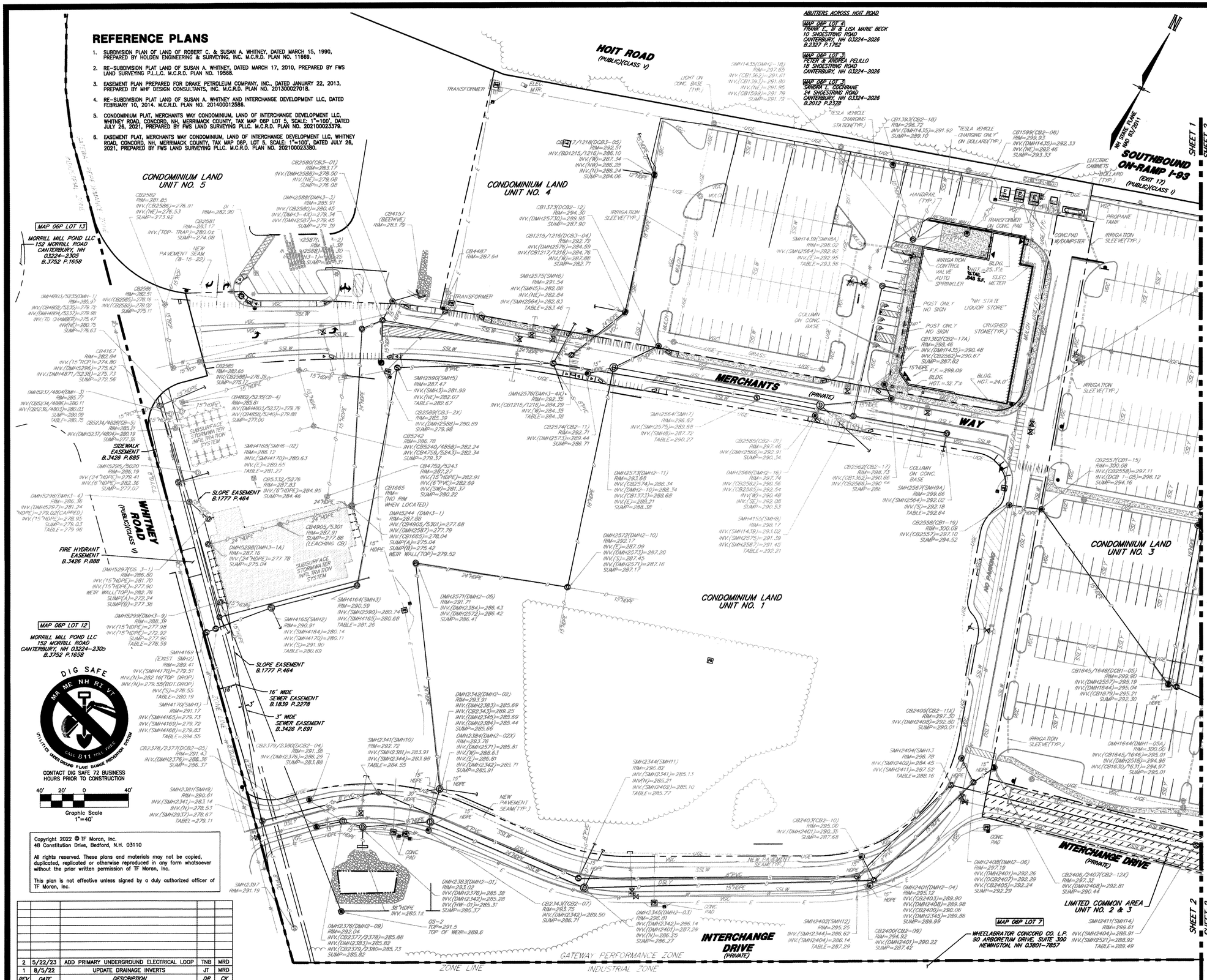
LOCATION

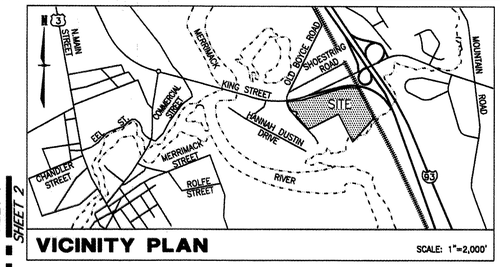
WHITNEY ROAD – CONCORD, NH – MERRIMACK COUNTY
TAX MAP 06P LOTS 5 & 6

4331_3

REFERENCE PLANS

1. SUBDIVISION PLAN OF LAND OF ROBERT C. & SUSAN A. WHITNEY, DATED MARCH 15, 1990, PREPARED BY HOLDEN ENGINEERING & SURVEYING, INC. M.C.R.D. PLAN NO. 11669.
2. RE-SUBDIVISION PLAT LAND OF SUSAN A. WHITNEY, DATED MARCH 17, 2010, PREPARED BY FWS LAND SURVEYING P.L.L.C. M.C.R.D. PLAN NO. 19568.
3. EASEMENT PLAN PREPARED FOR DRAKE PETROLEUM COMPANY, INC., DATED JANUARY 22, 2013, PREPARED BY MHF DESIGN CONSULTANTS, INC. M.C.R.D. PLAN NO. 201300027018.
4. RE-SUBDIVISION PLAT LAND OF SUSAN A. WHITNEY AND INTERCHANGE DEVELOPMENT LLC, DATED FEBRUARY 10, 2014. M.C.R.D. PLAN NO. 201400012586.
5. CONDOMINIUM PLAT, MERCHANTS WAY CONDOMINIUM, LAND OF INTERCHANGE DEVELOPMENT LLC, WHITNEY ROAD, CONCORD, NH, MERRIMACK COUNTY, TAX MAP 06P LOT 5, SCALE: 1"=100', DATED JULY 26, 2021, PREPARED BY FWS LAND SURVEYING PLLC. M.C.R.D. PLAN NO. 202100023379.
6. EASEMENT PLAT, MERCHANTS WAY CONDOMINIUM, LAND OF INTERCHANGE DEVELOPMENT LLC, WHITNEY ROAD, CONCORD, NH, MERRIMACK COUNTY, TAX MAP 06P, LOT 5, SCALE: 1"=100', DATED JULY 26, 2021, PREPARED BY FWS LAND SURVEYING PLLC. M.C.R.D. PLAN NO. 202100023380.





VICINITY PLAN

SCALE: 1"=2,000'

NOTES

1. OWNER OF RECORD OF MAP 06P, LOTS 5, 5-1, 5-2, 5-4:
   (MAP 06P, LOT 5: 1 WHITNEY ROAD)
   (MAP 06P, LOT 5-1: 2-10 MERCHANTS WAY)
   (MAP 06P, LOT 5-2: 20-23 MERCHANTS WAY)
   (MAP 06P, LOT 5-4: 5-11 MERCHANTS WAY)
   INTERCHANGE DEVELOPMENT LLC
   152 MORRILL ROAD
   CANTERBURY, NH 03224-2305
   DEED REFERENCE: B. 3752 P. 1637

   OWNER OF RECORD OF MAP 06P, LOT 5-2:
   (20-23 INTERCHANGE WAY)
   DEMOULAS SUPERMARKET INC.
   875 EAST STREET
   TEWKSBURY, MA 01876-1469
   DEED REFERENCE: B.3764 P.2325

   AREA OF PARCEL = 1,447,315 S.F.± OR 33.23 ACRES±
2. MAP 06P LOT 5 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE ASBUILT CONDITIONS PRESENT ON TAX MAP 06P, LOTS 5, 5-1, 5-2, 5-3 AND 5-4 LOCATED ON WHITNEY DRIVE, MERCHANTS WAY AND INTERCHANGE WAY IN CONCORD, NEW HAMPSHIRE AS SHOWN HEREON, AND NO OTHER PURPOSE.
4. THE SUBJECT PARCEL IS LOCATED WITHIN THE GATEWAY PERFORMANCE ZONING DISTRICT (GWP) AND THE INDUSTRIAL ZONING DISTRICT (IN).

   GATEWAY PERFORMANCE ZONING DISTRICT (GWP)
   MINIMUM LOT SIZE: NONE
   MINIMUM LOT FRONTAGE: 300 FEET
   MINIMUM BUILDING SETBACKS:
   - FRONT: 25 FEET
   - SIDE: 25 FEET
   - REAR: 25 FEET

   MINIMUM LOT COVERAGE: 85 PERCENT
   MAXIMUM BUILDING HEIGHT: 45 FEET

   INDUSTRIAL ZONING DISTRICT (IN)
   MINIMUM LOT SIZE: 40,000 SQUARE FEET
   MINIMUM BUILDABLE LAND AREA: 20,000 SQUARE FEET
   MINIMUM LOT FRONTAGE: 200 FEET
   MIN. BUILDING SETBACKS:
   - FRONT: 50 FEET
   - SIDE: 30 FEET
   - REAR: 25 FEET

   MIN. LOT COVERAGE: 85 PERCENT
   MAXIMUM BUILDING HEIGHT: 45 FEET

   A PORTION OF THE SUBJECT PREMISES IS LOCATED WITHIN THE SHORELAND PROTECTION OVERLAY DISTRICT.
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR MERRIMACK COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33013C0337E, EFFECTIVE DATE: APRIL 19, 2010, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NH STATE PLANE (NAD 83/2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE MERRIMACK COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TF MORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.

PROGRESS PRINT
MAY 22, 2023

SEE SHEET 2 FOR: REFERENCE PLANS EASEMENT, RIGHTS & RESTRICTIONS LEGEND

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION, FURTHER, THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE DURING APRIL OF 2022. SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN. (RSA 676:18-III)

5-22-23
DATE

MICHAEL R. DAHLBERG, LLS
NH LICENSE NO. 714
FOR TF MORAN, INC.

STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R. DAHLBERG — LICENSED LAND SURVEYOR — SIGNATURE
5-22-23

TAX MAP 06P LOTS 5, 5-1, 5-2, 5-3, 5-4

ASBUILT PLAN

CONCORD CROSSING

WHITNEY ROAD, MERCHANTS WAY & INTERCHANGE DRIVE
CONCORD, NEW HAMPSHIRE

OWNED BY
INTERCHANGE DEVELOPMENT LLC
(TAX MAP 06P LOTS 5, 5-1, 5-2, 5-4)
DEMOULAS SUPERMARKET, INC.
(TAX MAP 06P LOTS 5-3)
PREPARED FOR
INTERCHANGE DEVELOPMENT LLC

SCALE: 1"=40' **AUGUST 16, 2022**

DIG SAFE — MA ME NH RI VT — CALL 811 TOLL FREE — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

40' 20' 0 40'
Graphic Scale 1"=40'

REV.	DATE	DESCRIPTION	DR	CK
2	5/22/23	ADD PRIMARY UNDERGROUND ELECTRICAL LOOP	TNB	MRD
1	8/5/22	UPDATE DRAINAGE INVERTS	JT	MRD

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
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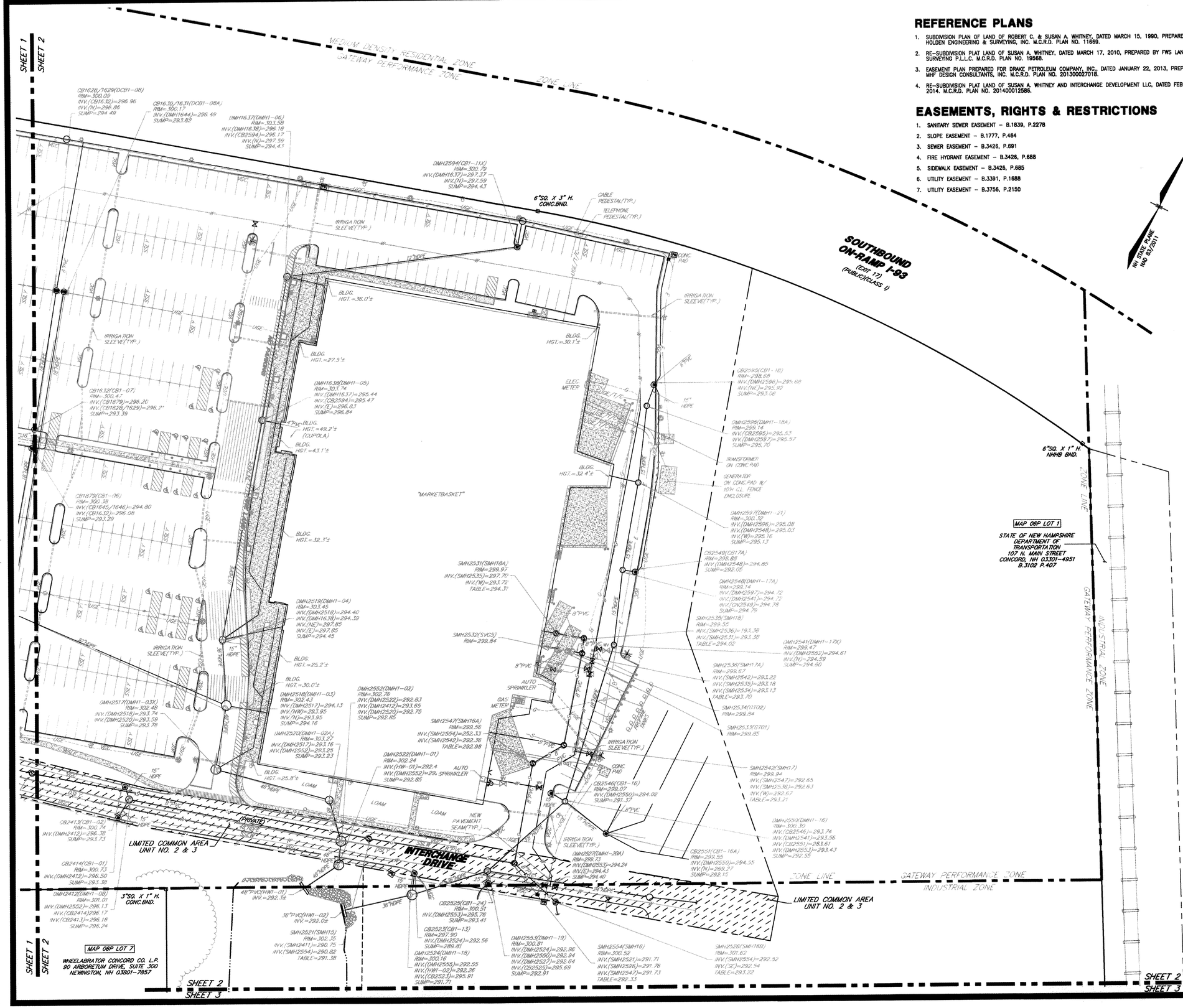
PROJ. NO.	DR	FB	
95830.01	TNB	2196	SHEET 1 OF 3
	CK MRD	CADFILE 95830-00 Asbuilt-2022	

SHEET 2
SHEET 2

4331-4



REFERENCE PLANS

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3. EASEMENT PLAN PREPARED FOR DRAKE PETROLEUM COMPANY, INC., DATED JANUARY 22, 2013, PREPARED BY MHF DESIGN CONSULTANTS, INC. M.C.R.D. PLAN NO. 201300027018.
4. RE-SUBDIVISION PLAT LAND OF SUSAN A. WHITNEY AND INTERCHANGE DEVELOPMENT LLC, DATED FEBRUARY 10, 2014. M.C.R.D. PLAN NO. 201400012586.

EASEMENTS, RIGHTS & RESTRICTIONS

1. SANITARY SEWER EASEMENT – B.1839, P.2278
2. SLOPE EASEMENT – B.1777, P.464
3. SEWER EASEMENT – B.3426, P.691
4. FIRE HYDRANT EASEMENT – B.3426, P.688
5. SIDEWALK EASEMENT – B.3426, P.685
6. UTILITY EASEMENT – B.3391, P.1688
7. UTILITY EASEMENT – B.3756, P.2150

LEGEND

VERTICAL GRANITE CURB	VGC	GAS VALVE	GV
SLOPED BITUMINOUS CURB	SBC	LIGHT POLE	
EDGE OF PAVEMENT	EOP	HYDRANT	
IRRIGATION SLEEVE		ELECTRIC PULLBOX	E
SIGN		DETECTABLE WARNING SURFACE	
SEWER LINE	S	CONCRETE	
WATER LINE	W	CRUSHED STONE	
DRAIN LINE	D	RIP-RAP	
GAS LINE	G	BOUND	
U.G. ELEC.,TEL., & CABLE	UGE,T,C	DRILL HOLE	
UNDERGROUND ELETRIC	UGE	IRON PIN	
SEWER MANHOLE	S	CABLE PEDESTAL	C
DRAIN MANHOLE	D	TELEPHONE PEDESTAL	T
CATCH BASIN		IRRIGATION CONTROL VALVE	
WATER GATE		BENCHMARK	
BOLLARD			

PROGRESS PRINT
MAY 22, 2023

DIG SAFE
MA ME NH RI VT
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CALL 811 TOLL FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

40' 20' 0 40'
Graphic Scale 1"=40'

REV.	DATE	DESCRIPTION	DR	CK
2	5/22/23	ADD PRIMARY UNDERGROUND ELECTRICAL LOOP	TNB	MRD
1	8/5/22	UPDATE DRAINAGE INVERTS	JT	MRD

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION, FURTHER, THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE DURING APRIL OF 2022, SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN. (RSA 676:18-III)

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — No. 714 — MICHAEL R. DAHLBERG

MICHAEL R. DAHLBERG, LLS
NH LICENSE NO. 714
FOR TF MORAN, INC.

8-16-22
DATE

SIGNATURE
5-22-23

TAX MAP 06P LOTS 5, 5-1, 5-2, 5-3, 5-4

ASBUILT PLAN

CONCORD CROSSING

WHITNEY ROAD, MERCHANTS WAY & INTERCHANGE DRIVE
CONCORD, NEW HAMPSHIRE

OWNED BY
INTERCHANGE DEVELOPMENT LLC
(TAX MAP 06P LOTS 5, 5-1, 5-2, 5-4)
DEMOULAS SUPERMARKET, INC.
(TAX MAP 06P LOTS 5-3)
PREPARED FOR
INTERCHANGE DEVELOPMENT LLC

SCALE: 1"=40' **AUGUST 16, 2022**

TFM
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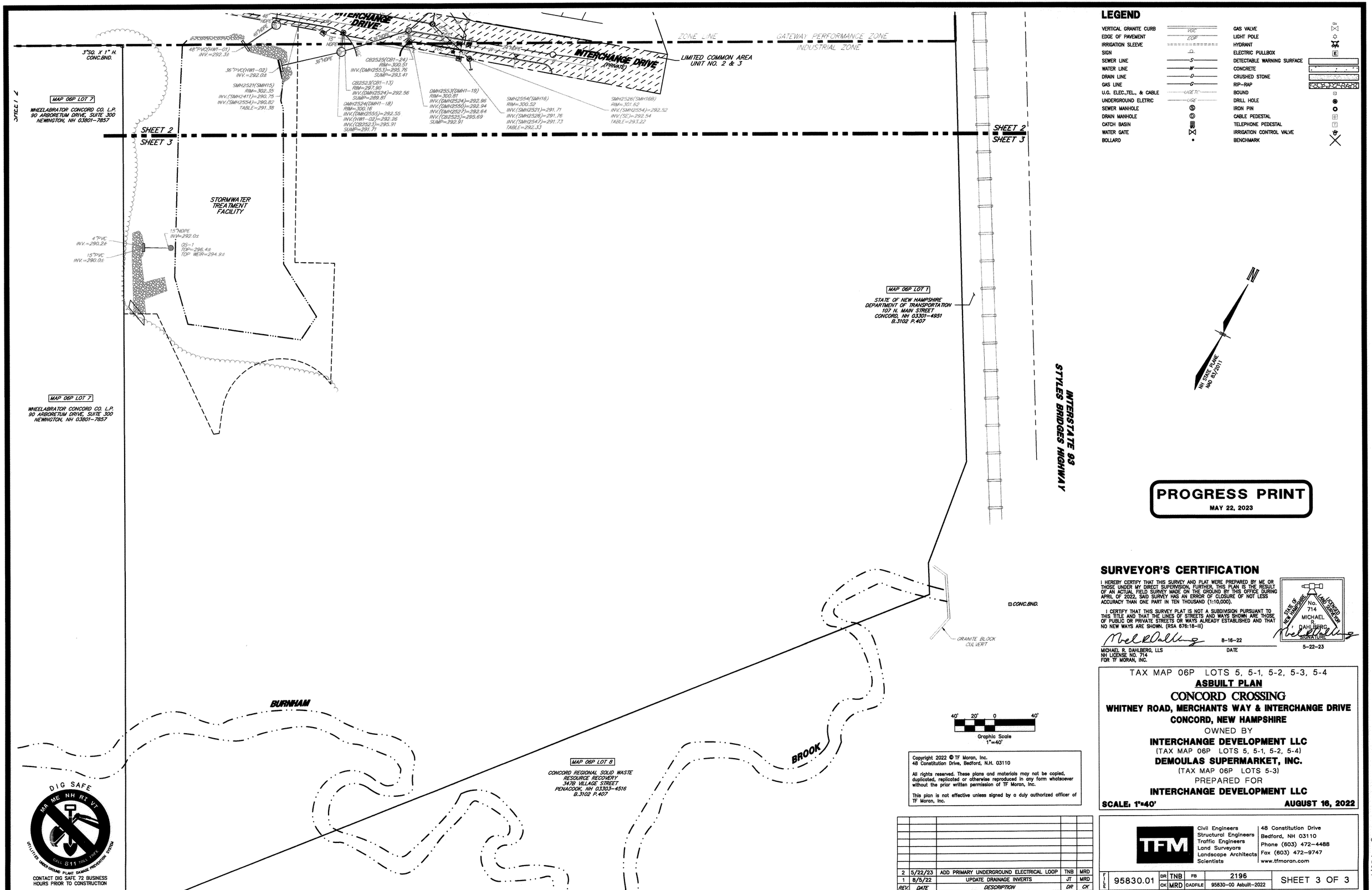
FILE	95830.01	DR	TNB	FB	2196	SHEET 2 OF 3
		CK	MRD	CADFILE	95830-00 Asbuilt-2022	

4331-5



LEGEND

VERTICAL GRANITE CURB	VGC	GAS VALVE	GV
EDGE OF PAVEMENT	EOP	LIGHT POLE	
IRRIGATION SLEEVE		HYDRANT	
SIGN		ELECTRIC PULLBOX	E
SEWER LINE	S	DETECTABLE WARNING SURFACE	
WATER LINE	W	CONCRETE	
DRAIN LINE	D	CRUSHED STONE	
GAS LINE	G	RIP-RAP	
U.G. ELEC.,TEL., & CABLE	UGE/T/C	BOUND	
UNDERGROUND ELETRIC	UGE	DRILL HOLE	
SEWER MANHOLE	S	IRON PIN	
DRAIN MANHOLE	D	CABLE PEDESTAL	C
CATCH BASIN		TELEPHONE PEDESTAL	T
WATER GATE		IRRIGATION CONTROL VALVE	
BOLLARD		BENCHMARK	

PROGRESS PRINT
MAY 22, 2023

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION, FURTHER, THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE DURING APRIL OF 2022, SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

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8-16-22
DATE

MICHAEL R. DAHLBERG, LLS
NH LICENSE NO. 714
FOR TF MORAN, INC.

NEW HAMPSHIRE — No. 714 — MICHAEL R. DAHLBERG — LAND SURVEYOR — SIGNATURE

5-22-23

REV.	DATE	DESCRIPTION	DR	CK
2	5/22/23	ADD PRIMARY UNDERGROUND ELECTRICAL LOOP	TNB	MRD
1	8/5/22	UPDATE DRAINAGE INVERTS	JT	MRD

TAX MAP 06P LOTS 5, 5-1, 5-2, 5-3, 5-4

ASBUILT PLAN

CONCORD CROSSING

WHITNEY ROAD, MERCHANTS WAY & INTERCHANGE DRIVE
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(TAX MAP 06P LOTS 5, 5-1, 5-2, 5-4)
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PREPARED FOR
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SCALE: 1"=40' **AUGUST 16, 2022**

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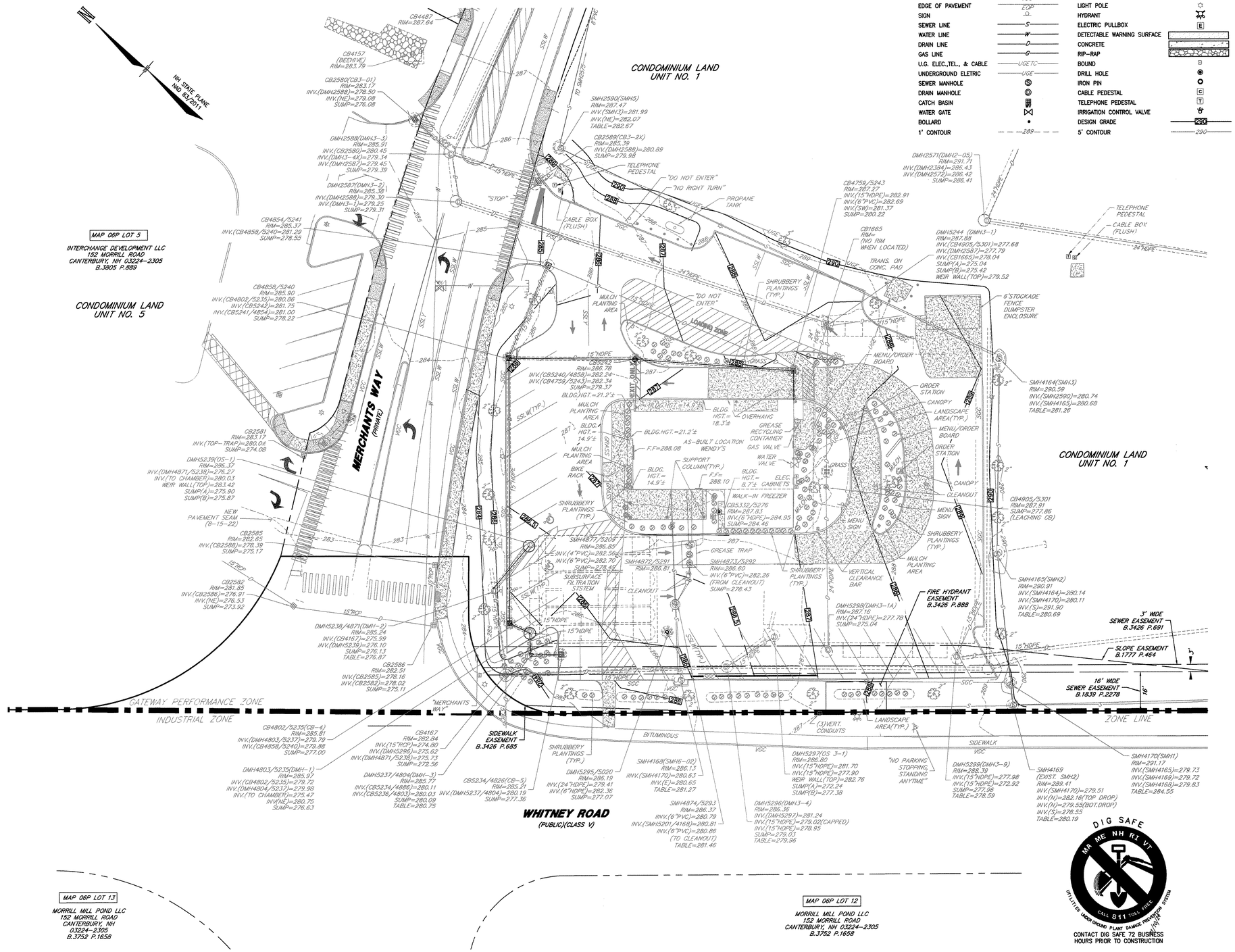
FILE	DR	FB		
95830.01	TNB	2196	SHEET 3 OF 3	
	CK MRD	CADFILE 95830-00 Asbuilt-2022		

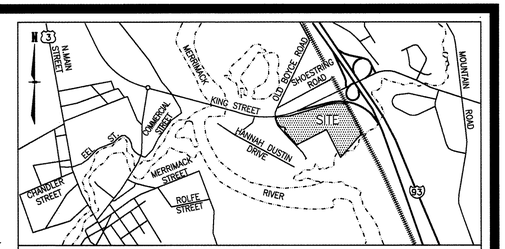
4331-6

DIG SAFE
MA ME NH RI VT
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CALL 811 TOLL FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



LEGEND

VERTICAL GRANITE CURB	VGC	GAS VALVE	GV
EDGE OF PAVEMENT	EOP	LIGHT POLE	
SIGN		HYDRANT	
SEWER LINE	S	ELECTRIC PULLBOX	E
WATER LINE	W	DETECTABLE WARNING SURFACE	
DRAIN LINE	D	CONCRETE	
GAS LINE	G	RIP-RAP	
U.G. ELEC.,TEL., & CABLE	UGETC	BOUND	
UNDERGROUND ELETRIC	UGE	DRILL HOLE	
SEWER MANHOLE	S	IRON PIN	
DRAIN MANHOLE	D	CABLE PEDESTAL	C
CATCH BASIN		TELEPHONE PEDESTAL	T
WATER GATE		IRRIGATION CONTROL VALVE	
BOLLARD		DESIGN GRADE	280
1' CONTOUR	289	5' CONTOUR	290



VICINITY PLAN

SCALE: 1"=2,000'

REFERENCE PLANS

1. RE-SUBDMSION PLAT LAND OF SUSAN A. WHITNEY AND INTERCHANGE DEVELOPMENT LLC, DATED FEBRUARY 10, 2014. M.C.R.D. PLAN NO. 201400012586.
2. CONDOMINIUM PLAT, MERCHANTS WAY CONDOMINIUM, LAND OF INTERCHANGE DEVELOPMENT LLC, WHITNEY ROAD, CONCORD, NH, MERRIMACK COUNTY, TAX MAP 06P LOT 5, SCALE: 1"=100', DATED JULY 26, 2021, PREPARED BY FWS LAND SURVEYING PLLC. M.C.R.D. PLAN NO. 202100023379.
3. EASEMENT PLAT, MERCHANTS WAY CONDOMINIUM, LAND OF INTERCHANGE DEVELOPMENT LLC, WHITNEY ROAD, CONCORD, NH, MERRIMACK COUNTY, TAX MAP 06P, LOT 5, SCALE: 1"=100', DATED JULY 26, 2021, PREPARED BY FWS LAND SURVEYING PLLC. M.C.R.D. PLAN NO. 202100023380.

NOTES

1. OWNER OF RECORD OF MAP 06P, LOTS 5-1:
   (MAP 06P, LOT 5-1: 2-10 MERCHANTS WAY)
   INTERCHANGE DEVELOPMENT LLC
   152 MORRILL ROAD
   CANTERBURY, NH 03224-2305
   DEED REFERENCE: MCRD BK. 3805 PG. 889
2. MAP 06P LOT 5-1 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE AS-BUILT CONDITIONS PRESENT ON TAX MAP 06P, LOT 5-1 LOCATED AT 2-10 WHITNEY DRIVE, IN CONCORD, NEW HAMPSHIRE AS SHOWN HEREON, AND NO OTHER PURPOSE.
4. THE SUBJECT PARCEL IS LOCATED WITHIN THE GATEWAY PERFORMANCE ZONING DISTRICT (GWP).

MINIMUM LOT SIZE:	NONE
MINIMUM LOT FRONTAGE:	300 FEET
MINIMUM BUILDING SETBACKS:	
• FRONT:	25 FEET
• SIDE:	25 FEET
• REAR:	25 FEET
MINIMUM LOT COVERAGE:	85 PERCENT
MAXIMUM BUILDING HEIGHT:	45 FEET

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR MERRIMACK COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33013C0337E, EFFECTIVE DATE: APRIL 19, 2010, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NH STATE PLANE (NAD 83/2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE MERRIMACK COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TF MORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION, FURTHER, THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE DURING APRIL OF 2022, SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN. (RSA 676:18-III)

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — No. 714 — MICHAEL R. DAHLBERG

MICHAEL R. DAHLBERG, LLS — 10/11/22
SIGNATURE — DATE
NH LICENSE NO. 714
FOR TF MORAN, INC.

Graphic Scale 1"=20' (20' 10' 0 20')

DIG SAFE — NH ME MA RI VT — CALL 811 TOLL FREE — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TAX MAP 06P LOT 5-1

AS-BUILT PLAN

WENDY'S AT CONCORD CROSSING

MERCHANTS WAY

CONCORD, NEW HAMPSHIRE

PREPARED FOR

HILLSON CONTRACTORS, INC.

SCALE: 1"=20' — **OCTOBER 11, 2022**

REV.	DATE	DESCRIPTION	DR	CK

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive, Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE 95830.00 | DR TNB | CK MRD | FB | CADFILE 95830-00 Asbuilt-2022-Wendys | 2201 | SHEET 1 OF 1

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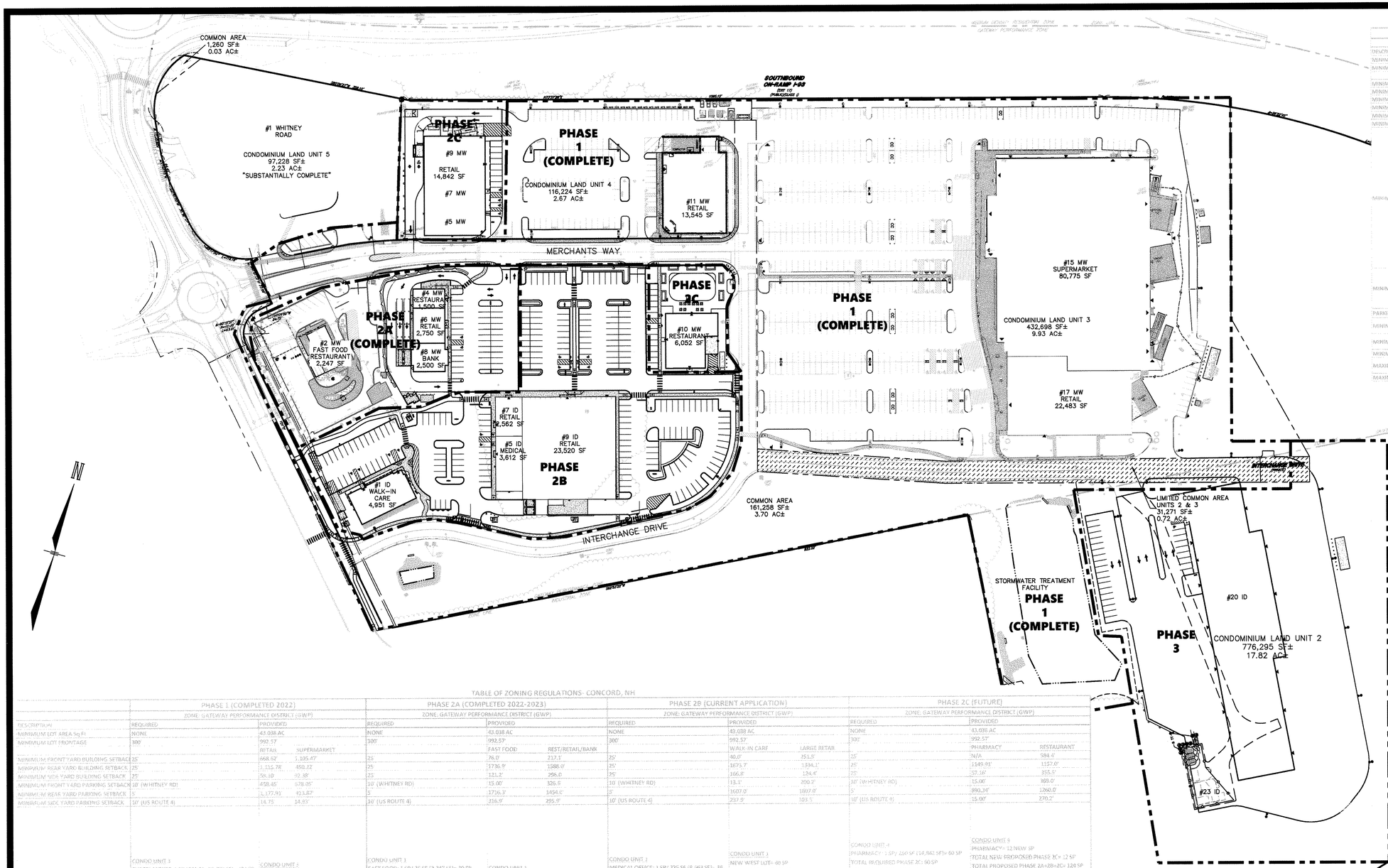

TABLE OF ZONING REGULATIONS- CONCORD, NH

	PHASE 3 (FUTURE)
	ZONE: INDUSTRIAL
DESCRIPTION	REQUIRED / PROVIDED
MINIMUM LOT AREA SqFt	NONE / 43,038 AC
MINIMUM LOT FRONTAGE	300' / 992.57'
MINIMUM FRONT YARD BUILDING SETBACK	25' / N/A
MINIMUM REAR YARD BUILDING SETBACK	25' / 288.7'
MINIMUM SIDE YARD BUILDING SETBACK	25' / 223.9'
MINIMUM FRONT YARD PARKING SETBACK	30' (WHITNEY RD) / N/A
MINIMUM REAR YARD PARKING SETBACK	5' / 549.26'
MINIMUM SIDE YARD PARKING SETBACK	10' (US ROUTE 4) / 551.47'
MINIMUM NUMBER PARKING SPACES	CONDO UNIT 2 WAREHOUSE DISTRIBUTION: 1 SP/2,500 SF (45,004 SF) = 32 SP / CONDO UNIT 2 WAREHOUSE DISTRIBUTION: 32 SP
MINIMUM NUMBER ADA PARKING SPACES	2 SP / CONDO UNIT 2 2 SP
PARKING SPACE DIMENSIONS	19' X 9' / 15' X 8' (COMPACT) / 19' X 9' / 15' X 8' (COMPACT)
MINIMUM LOADING AREAS	2 SPACES FOR WAREHOUSING 20,000-40,000 SF / 2 SPACES
MINIMUM DRIVE-THRU STACKING	N/A / N/A
MINIMUM INTERNAL LANDSCAPING	5% OF PARKING / CIRCULATION AREAS / 5.00%
MAXIMUM BUILDING HEIGHT	45' / <45'
MAXIMUM LOT COVERAGE (IMPERVIOUS)	65% / 65%

REFERENCE PLANS

1. RE-SUBDIVISION PLAT LANDS OF SUSAN A. WHITNEY AND INTERCHANGE DEVELOPMENT LLC. LOCATION, WHITNEY ROAD – CONCORD, NH – MERRIMACK COUNTY, TAX MAPS 06P LOTS 5 & 6. PREPARED BY FWS LAND SURVEYING P.L.L.C., DATED FEB. 10, 2014 LAST REVISED MAY 01, 2014.
2. "AS –BUILT PLAN –CONCORD CROSSING", WHITNEY ROAD, MERCHANTS WAY & INTERCHANGE DRIVE, CONCORD, NH, DATED 8/16/22, BY TFMORAN.
3. "AS–BUILT PLAN–WENDY'S AT CONCORD CROSSING", MERCHANTS WAY, CONCORD, NH, DATED 10/11/22, BY TFMORAN.
4. "SITE DEVELOPMENT PLANS, 4–8 MERCHANTS WAY DEVELOPMENT", MERCHANTS WAY, CONCORD, NH, DATED 1/19/22 (REVISED THRU 8/15/22), BY TFMORAN.

NOTES

1. THE PURPOSE OF THIS PLAN IS TO SHOW A MIXED USE DEVELOPMENT WHICH INCLUDES A LOT LINE ADJUSTMENT, COMMON ACCESS/PARKING AREAS AND COMMON UTILITIES.
2. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING SERVICES:
   DRAINAGE: PRIVATE
   SEWER: MUNICIPAL
   WATER: MUNICIPAL
   ELECTRIC: UNITIL
3. BOUNDARY INFORMATION SHOWN HEREON IS BASED ON REFERENCE PLAN INFORMATION.
4. WETLANDS INFORMATION DEPICTED ON THIS PLAN IS FROM REFERENCE PLAN INFORMATION.
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR THE CITY OF CONCORD, NEW HAMPSHIRE, COMMUNITY PANEL NUMBER 33013C0337E, EFFECTIVE DATE: APRIL 18, 2010, INDICATES THAT THE SUBJECT PARCEL IS PARTIALLY LOCATED WITHIN A FLOOD HAZARD AREA.
6. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN ARE THOSE WHICH IDENTIFIED BASED ON DATA USED IN CONCEPTUAL DESIGN. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH DEED RESEARCH AND A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.

TABLE OF ZONING REGULATIONS- CONCORD, NH

	PHASE 1 (COMPLETED 2022)		PHASE 2A (COMPLETED 2022-2023)		PHASE 2B (CURRENT APPLICATION)		PHASE 2C (FUTURE)	
	ZONE: GATEWAY PERFORMANCE DISTRICT (GWP)		ZONE: GATEWAY PERFORMANCE DISTRICT (GWP)		ZONE: GATEWAY PERFORMANCE DISTRICT (GWP)		ZONE: GATEWAY PERFORMANCE DISTRICT (GWP)	
DESCRIPTION	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
MINIMUM LOT AREA SqFt	NONE	43,038 AC	NONE	43,038 AC	NONE	43,038 AC	NONE	43,038 AC
MINIMUM LOT FRONTAGE	300'	992.57'	300'	992.57'	300'	992.57'	300'	992.57'
		RETAIL / SUPERMARKET		FAST FOOD / REST/RETAIL/BANK		WALK-IN CARE / LARGE RETAIL		PHARMACY / RESTAURANT
MINIMUM FRONT YARD BUILDING SETBACK	25'	468.62' / 1,105.47'	25'	76.0' / 217.1'	25'	40.0' / 251.5'	25'	N/A / 584.4'
MINIMUM REAR YARD BUILDING SETBACK	25'	1,115.78' / 450.22'	25'	1736.9' / 1388.0'	25'	1673.7' / 1334.1'	25'	1149.93' / 1157.0'
MINIMUM SIDE YARD BUILDING SETBACK	25'	58.10' / 92.38'	25'	121.2' / 298.0'	25'	166.8' / 124.4'	25'	57.16' / 355.5'
MINIMUM FRONT YARD PARKING SETBACK	30' (WHITNEY RD)	458.45' / 578.05'	30' (WHITNEY RD)	15.00' / 326.5'	30' (WHITNEY RD)	13.1' / 250.2'	30' (WHITNEY RD)	15.00' / 869.0'
MINIMUM REAR YARD PARKING SETBACK	5'	2,177.91' / 913.87'	5'	1716.3' / 1454.6'	5'	1607.0' / 1607.0'	5'	890.34' / 1260.0'
MINIMUM SIDE YARD PARKING SETBACK	10' (US ROUTE 4)	14.75' / 14.83'	10' (US ROUTE 4)	316.9' / 295.9'	10' (US ROUTE 4)	257.9' / 103.5'	10' (US ROUTE 4)	15.00' / 270.2'
MINIMUM NUMBER PARKING SPACES	CONDO UNIT 3 SUPERMARKET: 1 SP/ 250 SF (80,775 SF)= 324 SP RETAIL: 1 SP/ 250 SF (22,483 SF)= 90 SP CONDO UNIT 4 RETAIL 2: 1 SP/ 250 SF (13,556 SF)= 54 SP TOTAL REQUIRED: 467 SP	CONDO UNIT 3 SUPERMARKET/RETAIL 1= 557 SP RETAIL 2= 122 SP TOTAL PROVIDED: 666 SP (Incl 28 ADA)	CONDO UNIT 1 FAST FOOD: 1 SP/ 75 SF (2,247 SF)= 30 SP RESTAURANT: 1 SP/ 75 SF (1,500 SF)= 20 SP RETAIL: 1 SP/ 250 SF (2,750 SF)= 11 SP BANK: 1 SP/ 200 SF (2,500 SF)= 12 SP TOTAL REQUIRED PHASE 2A: 73 SP	CONDO UNIT 1 FAST FOOD= 30 SP RESTAURANT/RETAIL/BANK= 36 SP TOTAL PROVIDED PHASE 2A= 66 SP	CONDO UNIT 1 MEDICAL OFFICE: 1 SP/ 225 SF (8,563 SF)= 38 SP RETAIL: 1 SP/ 250 SF (26,928 SF)= 105 SP TOTAL REQUIRED PHASE 2B= 143 SP TOTAL REQUIRED PHASE 2A+2B= 218 SP	CONDO UNIT 1 NEW WEST LOT= 60 SP NEW NORTH LOT= 78 SP NEW EAST LOT= 61 SP TOTAL PROPOSED PHASE 2B= 199 SP TOTAL PROPOSED PHASE 2A+2B= 265 SP	CONDO UNIT 4 PHARMACY: 1 SP/ 250 SF (14,582 SF)= 60 SP TOTAL REQUIRED PHASE 2C= 60 SP TOTAL REQUIRED PHASE 2A+2B+2C= 172 SP CONDO UNIT 1 RESTAURANT: 1 SP/ 75 SF (6,052 SF)= 81 SP TOTAL REQUIRED PHASE 2C: 81 SP TOTAL REQUIRED PHASE 2A+2B+2C: 297 SP CONDO UNITS 5&6 TOTAL REQUIRED: 411 SP	CONDO UNIT 6 PHARMACY= 12 NEW SP TOTAL NEW PROPOSED PHASE 2C= 12 SP TOTAL PROPOSED PHASE 2A+2B+2C= 124 SP CONDO UNIT 1 RESTAURANT= 14 NEW SP TOTAL NEW PROPOSED PHASE 2C= 14 SP TOTAL PROPOSED PHASE 2A+2B+2C= 279 SP CONDO UNITS 1&4 TOTAL PROPOSED=403 SP CUP REQUIRED
MINIMUM NUMBER ADA PARKING SPACES	2% OF 464 = 9.3 SP	CONDO UNIT 3 SUPERMARKET/RETAIL 1= 24 SP CONDO UNIT 4 RETAIL 2: 4 SP TOTAL PROVIDED: 28 SP	2% OF 73 = 1.5 SP	CONDO UNIT 1 FAST FOOD= 2 SP RESTAURANT/RETAIL/BANK= 2 SP TOTAL PROVIDED: 4 SP	2% OF 144 = 2.8 SP	CONDO UNIT 1 NEW WEST LOT= 6 SP NEW NORTH LOT= 8 SP TOTAL PROPOSED PHASE 2B= 10 SP	CONDO UNIT 4 2% OF 60 = 1.2 SP CONDO UNIT 1 2% OF 81 = 1.6 SP	CONDO UNIT 6 4 SP PHASE 2C CONDO UNIT 1 2 SP PHASE 2C
PARKING SPACE DIMENSIONS	19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)
MINIMUM LOADING AREAS	5 SPACE FOR RETAIL @103,000 SF 1 SPACE FOR RETAIL @ 13,500 SF	4 SPACES FOR RETAIL @ 103,000 SF 1 SPACE FOR RETAIL @ 13,500 SF	N/A	N/A	N/A	N/A	N/A	N/A
MINIMUM DRIVE-THRU STACKING	N/A	N/A	BANK: 5 STACKING SP PER WINDOW FAST FOOD: 11 STACKING SP PER WINDOW	BANK: 20 SP FAST FOOD: 32 SP	N/A	N/A	PHARMACY: 2 STACKING SP PER WINDOW	PHARMACY: 5 SP
MINIMUM INTERNAL LANDSCAPING	5% OF PARKING / CIRCULATION AREAS	5.00%	5% OF PARKING / CIRCULATION AREAS	N/A % (LESS THAN 50 SPACES EA.)	5% OF PARKING / CIRCULATION AREAS	10.15%	5% OF PARKING / CIRCULATION AREAS	5.00%
MAXIMUM BUILDING HEIGHT	45'	37.0' Supermarket 25.5' Liquor Store	45'	45'	45'	<45'	45'	<45'
MAXIMUM LOT COVERAGE (IMPERVIOUS)	65%	41%	65%	45%	65%	52%	65%	58%

HORIZONTAL SCALE 1"=80'
80 40 0 80

APPROVED BY THE CONCORD PLANNING BOARD

ON _____

CHAIRMAN: _____ AND

CLERK: _____

REV	DATE	DESCRIPTION	DR	CK
5	6/20/2022	UPDATE MED OFFICE& RETAIL BOX	MSK	JSH
4	5/16/2022	GENERAL REVISIONS	MSK	JSH
3	10/6/2021	REVISIONS PER NOTICE OF DECISION	PWH	JSH
2	8/20/2021	REVISIONS PER CITY COMMENTS	PWH	JSH
1	7/12/2021	REV. PER FAST FOOD RESTAURANT SUBMITTAL	PWH	JSH

TAX MAP 06P LOTS 5 & 6

COMPREHENSIVE DEVELOPMENT PLAN

MIXED USE DEVELOPMENT

WHITNEY ROAD, CONCORD, NH

OWNED BY/PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=80' **JUNE 17, 2019**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

DWG NO.	95830.08	DR	JSH	FB		C-3
		CK	RED	CADFILE	95830-08 Site Plans	

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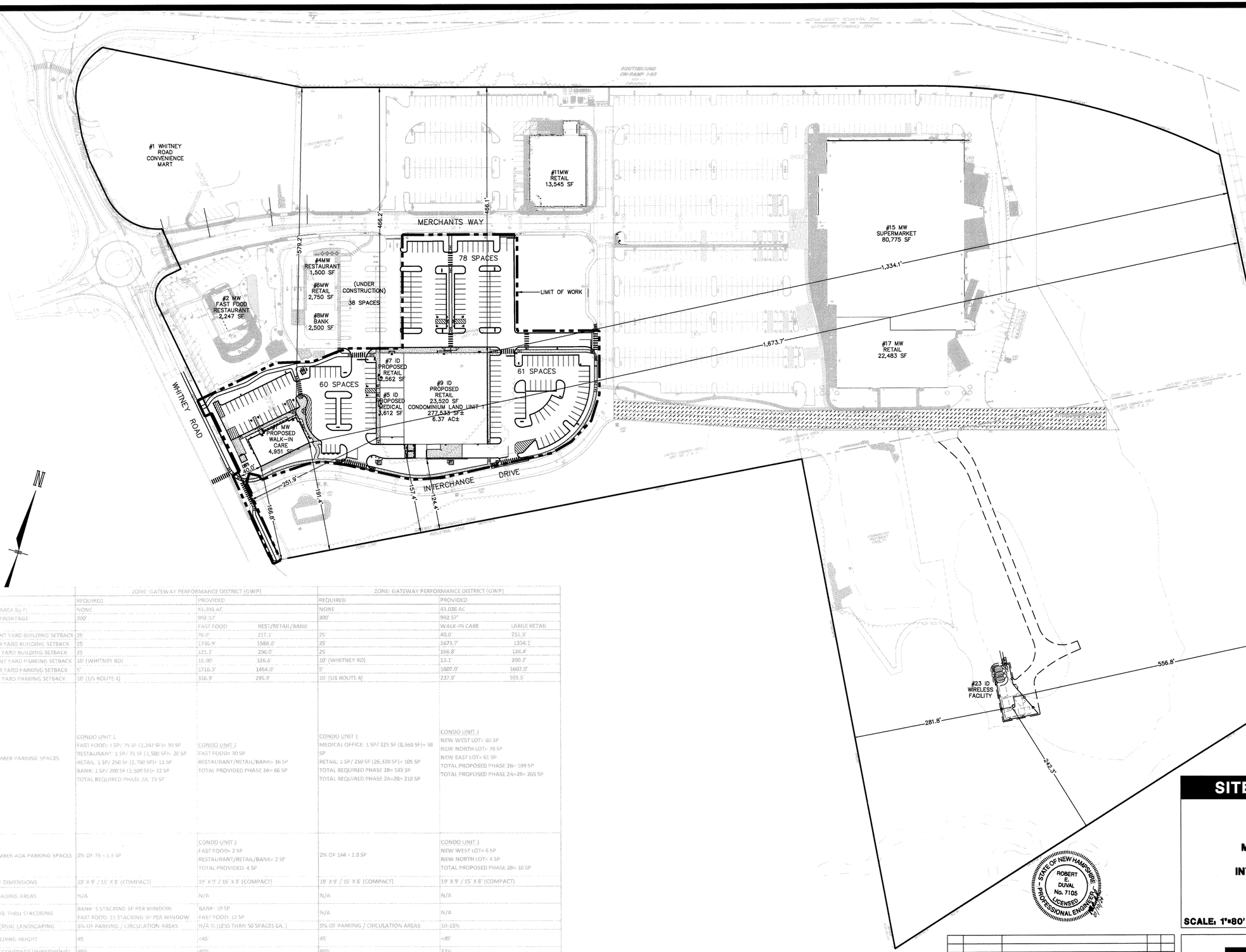

DESCRIPTION	ZONE: GATEWAY PERFORMANCE DISTRICT (GWP) REQUIRED	PROVIDED		ZONE: GATEWAY PERFORMANCE DISTRICT (GWP) REQUIRED	PROVIDED	
MINIMUM LOT AREA SQ. FT.	NONE	43,858 AC		NONE	43.038 AC	
MINIMUM LOT FRONTAGE	300'	992.57'		300'	992.57'	
		FAST FOOD	REST/RETAIL/BANK		WALK-IN CARE	LARGE RETAIL
MINIMUM FRONT YARD BUILDING SETBACK	25'	76.0'	217.1	25'	40.0'	251.9'
MINIMUM REAR YARD BUILDING SETBACK	25'	1736.9'	1588.0'	25'	1673.7'	1334.1'
MINIMUM SIDE YARD BUILDING SETBACK	25'	121.2'	296.0'	25'	166.8'	124.4'
MINIMUM FRONT YARD PARKING SETBACK	10' (WHITNEY RD)	15.00'	326.6'	10' (WHITNEY RD)	13.1'	200.2'
MINIMUM REAR YARD PARKING SETBACK	5'	1716.3'	1454.0'	5'	1607.0'	1607.0'
MINIMUM SIDE YARD PARKING SETBACK	10' (US ROUTE 4)	316.9'	295.9'	10' (US ROUTE 4)	237.9'	103.5'
MINIMUM NUMBER PARKING SPACES	CONDO UNIT 1 FAST FOOD: 1 SP/ 75 SF (2,247 SF)= 30 SP RESTAURANT: 1 SP/ 75 SF (1,500 SF)= 20 SP RETAIL: 1 SP/ 250 SF (2,750 SF)= 11 SP BANK: 1 SP/ 200 SF (2,500 SF)= 12 SP TOTAL REQUIRED PHASE 2A: 73 SP	CONDO UNIT 1 FAST FOOD= 30 SP RESTAURANT/RETAIL/BANK= 36 SP TOTAL PROVIDED PHASE 2A= 66 SP		CONDO UNIT 1 MEDICAL OFFICE: 1 SP/ 225 SF (8,563 SF)= 38 SP RETAIL: 1 SP/ 250 SF (26,328 SF)= 105 SP TOTAL REQUIRED PHASE 2B= 143 SP TOTAL REQUIRED PHASE 2A+2B= 218 SP	CONDO UNIT 1 NEW WEST LOT= 60 SP NEW NORTH LOT= 78 SP NEW EAST LOT= 61 SP TOTAL PROPOSED PHASE 2B= 199 SP TOTAL PROPOSED PHASE 2A+2B= 265 SP	
MINIMUM NUMBER ADA PARKING SPACES	2% OF 73 = 1.5 SP	CONDO UNIT 1 FAST FOOD= 2 SP RESTAURANT/RETAIL/BANK= 2 SP TOTAL PROVIDED: 4 SP		2% OF 144 = 2.8 SP	CONDO UNIT 1 NEW WEST LOT= 6 SP NEW NORTH LOT= 4 SP TOTAL PROPOSED PHASE 2B= 10 SP	
PARKING SPACE DIMENSIONS	19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)		19' X 9' / 15' X 8' (COMPACT)	19' X 9' / 15' X 8' (COMPACT)	
MINIMUM LOADING AREAS	N/A	N/A		N/A	N/A	
MINIMUM DRIVE THRU STACKING	BANK: 5 STACKING SP PER WINDOW FAST FOOD: 11 STACKING SP PER WINDOW	BANK: 10 SP FAST FOOD: 12 SP		N/A	N/A	
MINIMUM INTERNAL LANDSCAPING	5% OF PARKING / CIRCULATION AREAS	N/A % (LESS THAN 50 SPACES EA.)		5% OF PARKING / CIRCULATION AREAS	10-15%	
MAXIMUM BUILDING HEIGHT	45	<45'		45	<45'	
MAXIMUM LOT COVERAGE (IMPERVIOUS)	85%	45%		85%	52%	

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=80'
80 40 0 80

APPROVED BY THE CONCORD PLANNING BOARD

CHAIRMAN: _____ AND

CLERK: _____

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED
PROFESSIONAL ENGINEER
3/10/2023

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

OVERALL SITE PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=80' **MARCH 14, 2023**

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	PWH	FB	–	
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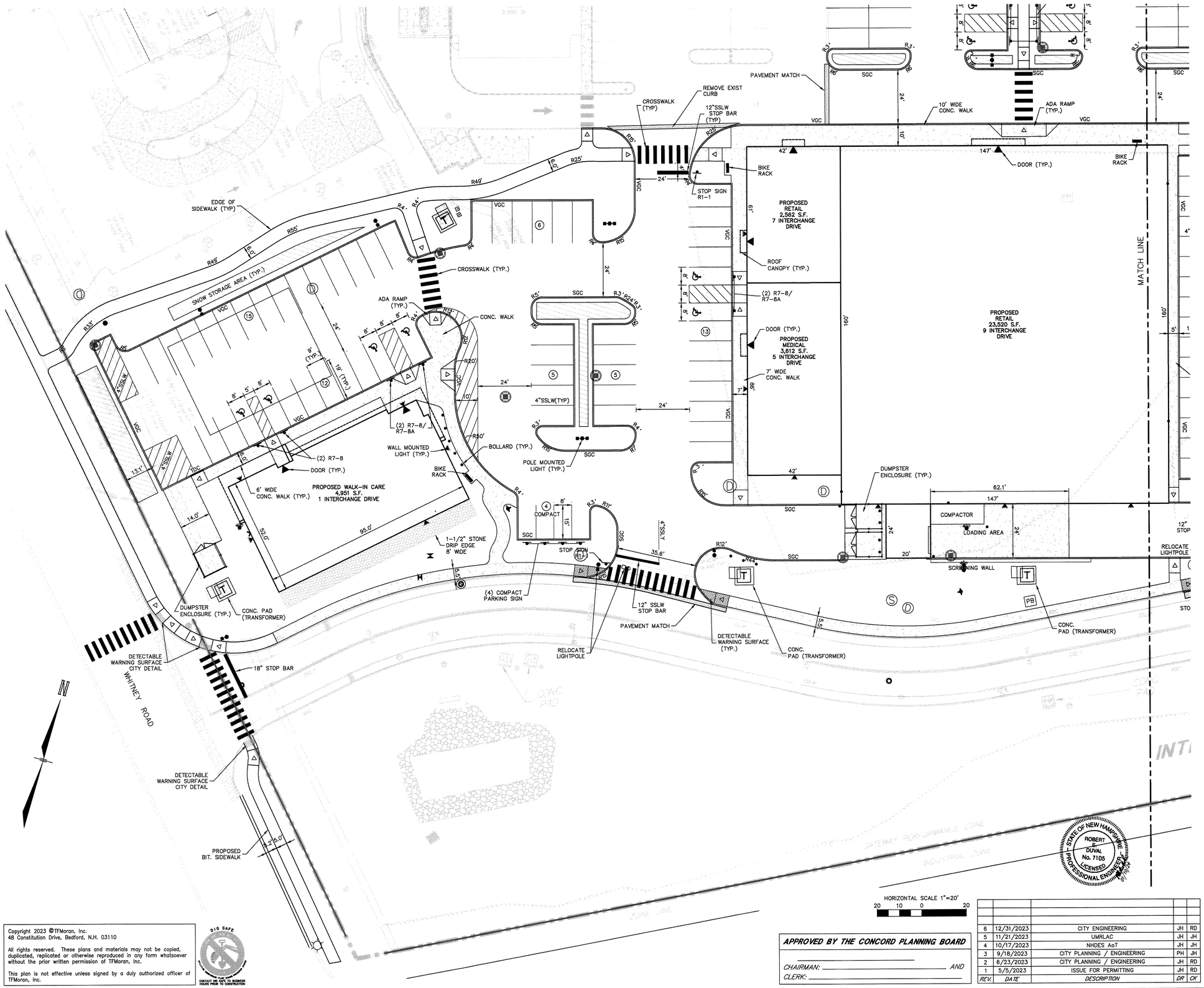

HORIZONTAL SCALE 1"=20'
20 10 0 20

REFERENCE PLANS

1. RE-SUBDIVISION PLAT LANDS OF SUSAN A. WHYNEY AND INTERCHANGE DEVELOPMENT LLC. LOCATION, WHITNEY ROAD – CONCORD, NH – MERRIMACK COUNTY, TAX MAPS 06P LOTS 5 & 6. PREPARED BY FWS LAND SURVEYING P.L.L.C., DATED FEB. 10, 2014 AND LAST REVISED MAY 01, 2014.
2. RE-SUBDIVISION PLAT, LANDS OF BRADLEY WHITNEY AND JENNIFER HABEL, INTERCHANGE DEVELOPMENT LLC, WHITNEY ROAD, CONCORD, NH, MERRIMACK COUNTY, TAX MAP 06P LOTS 5 & 6, PREPARED BY FWS LAND SURVEYING PLLC, DATED NOVEMBER 16, 2018.
3. EXISTING CONDITIONS PLAT LANDS OF BRADLEY WHITNEY AND JENNIFER HABEL – INTERCHANGE DEVELOPMENT LLC. LOCATION, WHITNEY ROAD – CONCORD, NH – MERRIMACK COUNTY, TAX MAP 06P LOTS 5 & 6. PREPARED BY FWS LAND SURVEYING P.L.L.C., DATED OCTOBER 19, 2020.
4. CONDOMINIUM PLAT – "MERCHANTS WAY CONDOMINIUM" – LAND OF – INTERCHANGE DEVELOPMENT LLC – LOCATION – WHITNEY ROAD – CONCORD, NH – MERRIMACK COUNTY – TAX MAP 06P LOT 5, DATED JULY 26, 2021.
5. INTERCHANGE DEVELOPMENT LLC – SITE DEVELOPMENT PLANS – TAX MAP 06P LOTS 5 & 6 – MIXED USE DEVELOPMENT – WHITNEY ROAD, CONCORD, NH – OWNED BY – BREADLEY WHITNEY & JENNIFER HABEL & INTERCHANGE DEVELOPMENT L.L.C. – PREPARED FOR – INTERCHANGE DEVELOPMENT L.L.C.. PREPARED BY TFMORAN, INC., DATED JUNE 17, 2019 AND LAST REVISED APRIL 20, 2021.
6. SITE DEVELOPMENT PLANS–TAX MAP 06P LOT 5, FAST FOOD RESTAURANT, 2 MERCHANTS WAY, CONCORD NH, OWNED BY /PREPARED FOR INTERCHANGE DEVELOPMENT L.L.C., PREPARED BY TFMORAN INC., DATED JUNE 14, 2021 AND LAST REVISED OCTOBER 6, 2021.

NOTES

1. THE PURPOSE OF THIS PLAN IS TO DEPICT A PROPOSED URGENT CARE, RETAIL, AND MEDICAL OFFICES DEVELOPMENT WITH ASSOCIATED SITE IMPROVEMENTS.
2. REFER TO SHEET C-4 FOR ZONING/PARKING REQUIREMENTS
3. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING SERVICES:

DRAINAGE:	PRIVATE
SEWER:	MUNICIPAL
WATER:	MUNICIPAL
ELECTRIC:	UNITIL

4. BOUNDARY INFORMATION SHOWN HEREON IS BASED ON REFERENCE PLAN INFORMATION.
5. TOPOGRAPHY WAS GENERATED FROM REFERENCE PLAN INFORMATION.
6. WETLANDS INFORMATION DEPICTED ON THIS PLAN IS FROM REFERENCE PLAN INFORMATION.
7. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR THE CITY OF CONCORD, NEW HAMPSHIRE, COMMUNITY PANEL NUMBER 33013C0337E, EFFECTIVE DATE: APRIL 18, 2010, INDICATES THAT THE SUBJECT PARCEL IS PARTIALLY LOCATED WITHIN A FLOOD HAZARD AREA. MINIMUM BUILDING FINISH FLOOR ELEVATION IS APPROXIMATELY 270 FEET.
8. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN ARE THOSE WHICH IDENTIFIED BASED ON DATA USED IN CONCEPTUAL DESIGN. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH DEED RESEARCH AND A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
9. THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
10. THIS PROPERTY IS SUBJECT TO CONDOMINIUM OWNERSHIP. REFER TO CONDOMINIUM SITE PLANS PREPARED BY FWS LAND SURVEYING P.L.L.C. FOR ADDITIONAL DETAIL.
11. THE FUTURE PHASES WILL BE SUBJECT TO SEPARATE SITE PLAN APPROVALS.
12. RETAINING WALLS EXCEEDING FOUR FEET IN HEIGHT REQUIRE A BUILDING PERMIT FROM CITY CODE ENFORCEMENT.
13. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF CONCORD'S CONSTRUCTION STANDARDS AND DETAILS (LATEST ADDITION), AND CITY STANDARDS SHALL TAKE PRECEDENCE IN CASE OF ANY DETAILS OR PLANS IN CONFLICT.
14. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND IN ACCORDANCE WITH SECTION 25.02(1) OF THE SITE PLAN REGULATIONS.
15. PER SITE PLAN REGULATION 12.09, UPON COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS TOO THE ENGINEERING SERVICES DIVISION PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
16. THE CONTRACTOR SHALL SET UP A PRECONSTRUCTION MEETING WITH THE ENGINEERING SERVICES DIVISION TO DISCUSS CONSTRUCTION REQUIREMENTS, SITE INSPECTIONS, ASSOCIATED FEES, SCHEDULES, ETC.
17. THE CONTRACTOR SHALL OBTAIN UTILITY CONNECTION PERMITS FROM THE ENGINEERING SERVICES DIVISION FOR THE PROPOSED WATER SERVICE, SEWER SERVICE, AND STORM DRAIN CONNECTION(S). INDIVIDUAL PERMITS WILL BE REQUIRED FOR EACH CONNECTION.
18. THE CONTRACTOR SHALL OBTAIN A DRIVEWAY PERMIT FROM THE ENGINEERING SERVICES DIVISION FOR THE PROPOSED DRIVEWAY.
19. A WAIVER WAS GRANTED ON JULY 19, 2023 FROM THE SITE PLAN REGULATIONS, SECTION 19 – ACCESS AND DRIVEWAY STANDARDS, TO ALLOW FOR A 36.2 FT WIDE DRIVEWAY AT 1 INTERCHANGE DRIVE AND A 31.9' WIDE DRIVEWAY AT 9 INTERCHANGE DRIVE, WHERE A MAXIMUM OF 28 FT FOR A TWO-WAY DRIVEWAY IS ALLOWED.
20. A WAIVER WAS GRANTED ON JULY 19, 2023 FROM THE SITE PLAN REGULATIONS, SECTION 22.07(2) – STORM WATER RECHARGE, TO PROVIDE 18 INCHES OF SEPARATION TO THE SEASONAL HIGH-WATER TABLE, WHERE 4 FT IS REQUIRED.

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

SITE LAYOUT PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE – ROBERT S. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – 07/19/23

APPROVED BY THE CONCORD PLANNING BOARD

CHAIRMAN: _____ *AND*

CLERK: _____

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

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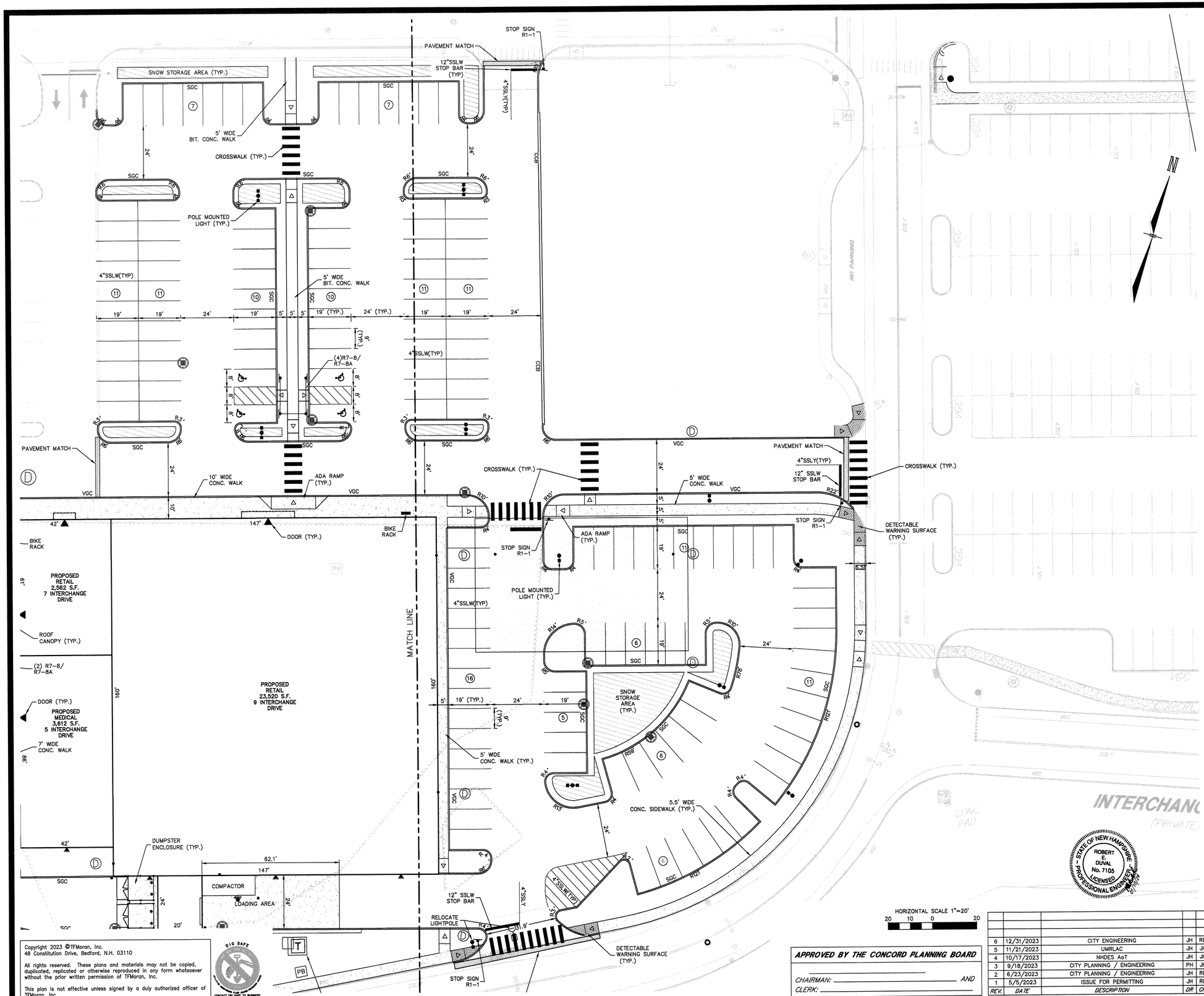
FILE						
95830.08	DR	PWH	FB	–	C-5
	CK	JSH	CADFILE	95830-08_SITE PLANS	

DIG SAFE – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

4331-10



HORIZONTAL SCALE 1"=20'
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APPROVED BY THE CONCORD PLANNING BOARD

CHAIRMAN: _____ AND

CLERK: _____

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SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

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STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 10/31/23

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FILE	95830.08	DR	PWH	FB	--	C-6
		CK	JSH	CADFILE	95830-08_SITE PLANS	

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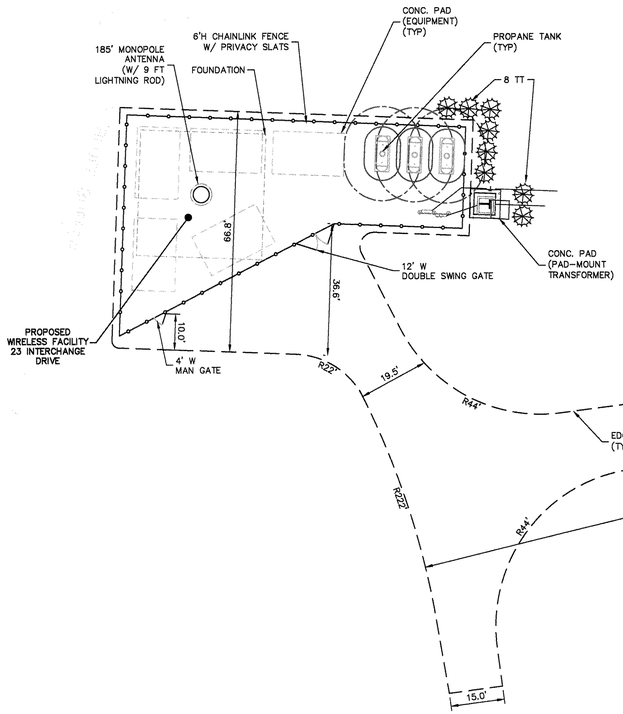

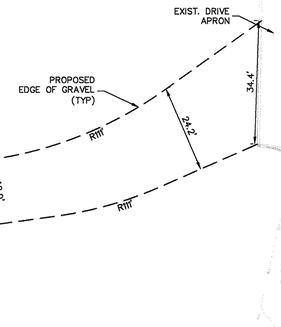

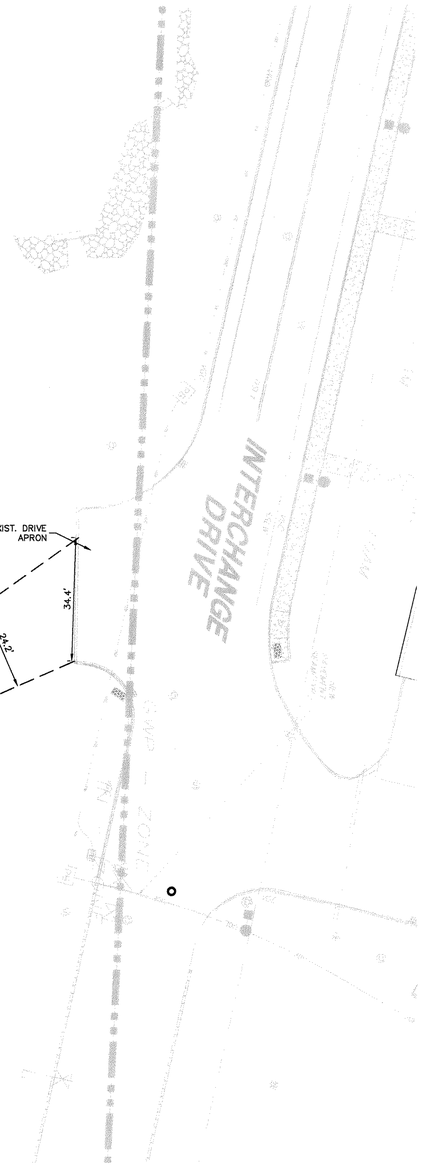

LANDSCAPE LEGEND

CELL TOWER

SYMBOL	QTY	BOTANICAL NAME / COMMON NAME	SIZE	REMARKS
TT	23	THUJA O. 'TECHNY' MISSION ARBORVITAE	5' TO 6'	B&B

HORIZONTAL SCALE 1"=20'

20 10 0 20

APPROVED BY THE CONCORD PLANNING BOARD

CHAIRMAN: _____ AND

CLERK: _____

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1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 3/14/2023

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

SITE LAYOUT PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

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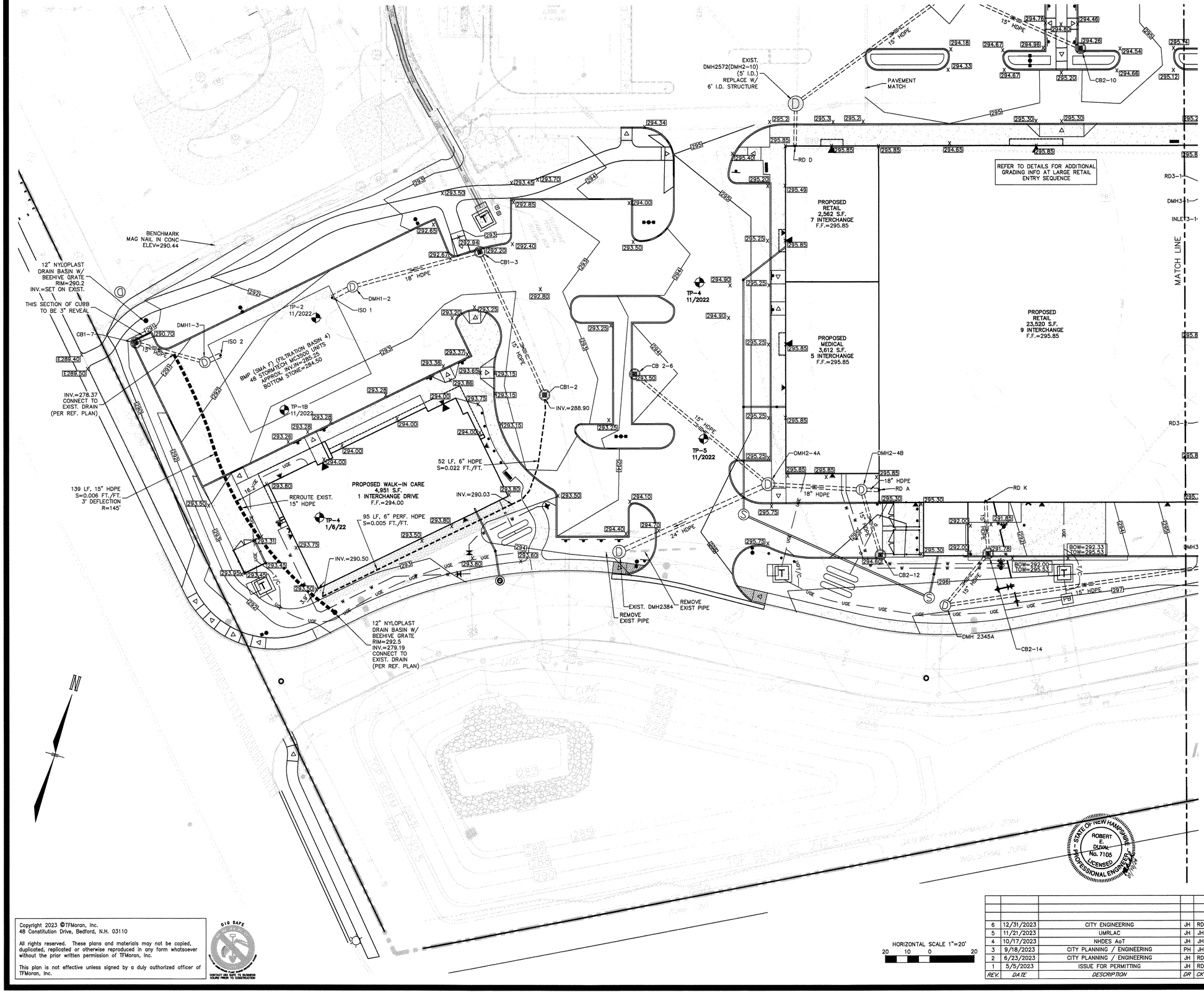
95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

4331-12



NOTES

1. ALL WORK SHALL CONFORM TO THE CITY OF CONCORD CONSTRUCTION STANDARDS, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL SURROUNDING CONDITIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
6. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL CONFORM TO CITY OF CONCORD CONSTRUCTION STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
7. STORM DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
8. ALL MANHOLES IN PAVEMENT SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
9. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
10. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
11. IN ACCORDANCE WITH RSA 430:53 AND Agr 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
12. THE SITE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
13. THE SITE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
14. THE EROSION CONTROL PRACTICES SHOWN ON THESE PLANS ARE ILLUSTRATIVE ONLY AND SHALL BE SUPPLEMENTED BY THE SITE CONTRACTOR AS NEEDED.
15. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
16. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
17. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
18. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS AND ALIGNMENTS.
19. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEERS RECOMMENDED METHODS TO ADDRESS ANY GROUNDWATER ISSUES THAT ARE FOUND ON SITE.
20. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
21. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
22. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
23. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
24. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
25. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
26. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
27. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
28. CONSERVATION AREA DISTRICT SIGNAGE IS REQUIRED TO BE PLACED ON EXISTING VEGETATATION AT 100 FT ON CENTER ALONG THE INTERIOR EDGE OF THE BLUFF BUFFER AROUND THE PERIMETER OF THE PROPERTY. SIGNAGE SHALL CONFIRM TO CITY OF CONCORD CONSERVATION COMMISSION STANDARDS.
29. ALL STORMWATER IMPROVEMENTS WILL BE MAINTAINED BY THE PROPERTY OWNER IN PERPETUITY IN ACCORDANCE WITH:
    - 29.1. LOCAL , STATE, FEDERAL REGULATIONS
    - 29.2. NHDES STORMWATER MANUAL RECOMMENDATIONS
    - 29.3. STORMWATER MAINTENANCE AND OPERATIONS PLAN
    - 29.4. MANUFACTURERS SPECIFICATIONS.

REFERENCE PLANS

1. "SK-12 FILTRATION POND #1 UPDATE," DATED JUNE 10, 2021, PREPARED BY TFMORAN, INC. REFERENCE FILE: 95830-00_SITEDETAILS: SK-12

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

GRADING & DRAINAGE PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 07/19/23

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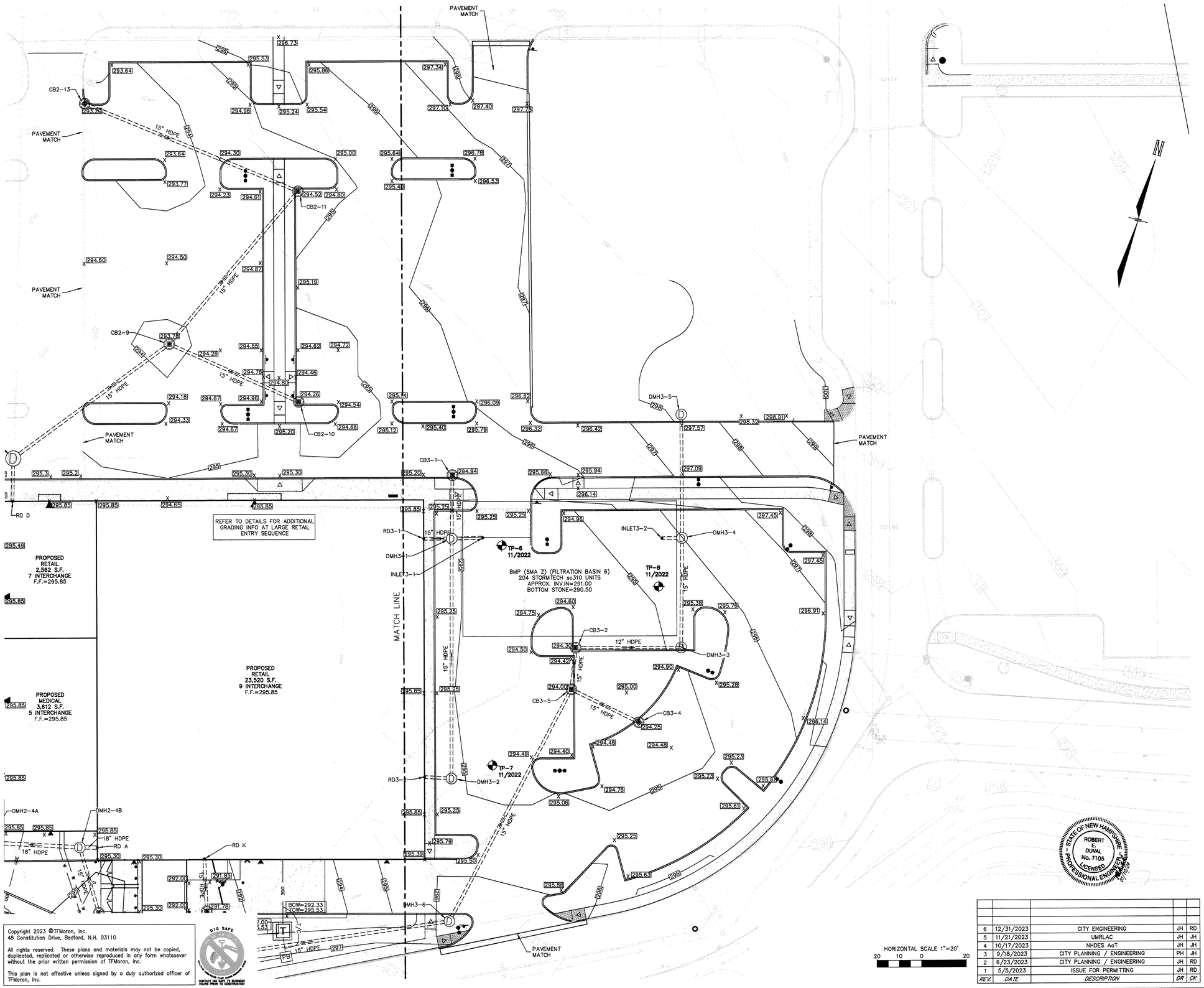
FILE	DR	PWH	FB	–	
95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	C-8

4/33/23



HORIZONTAL SCALE 1"=20'
20 10 0 20

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER

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SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

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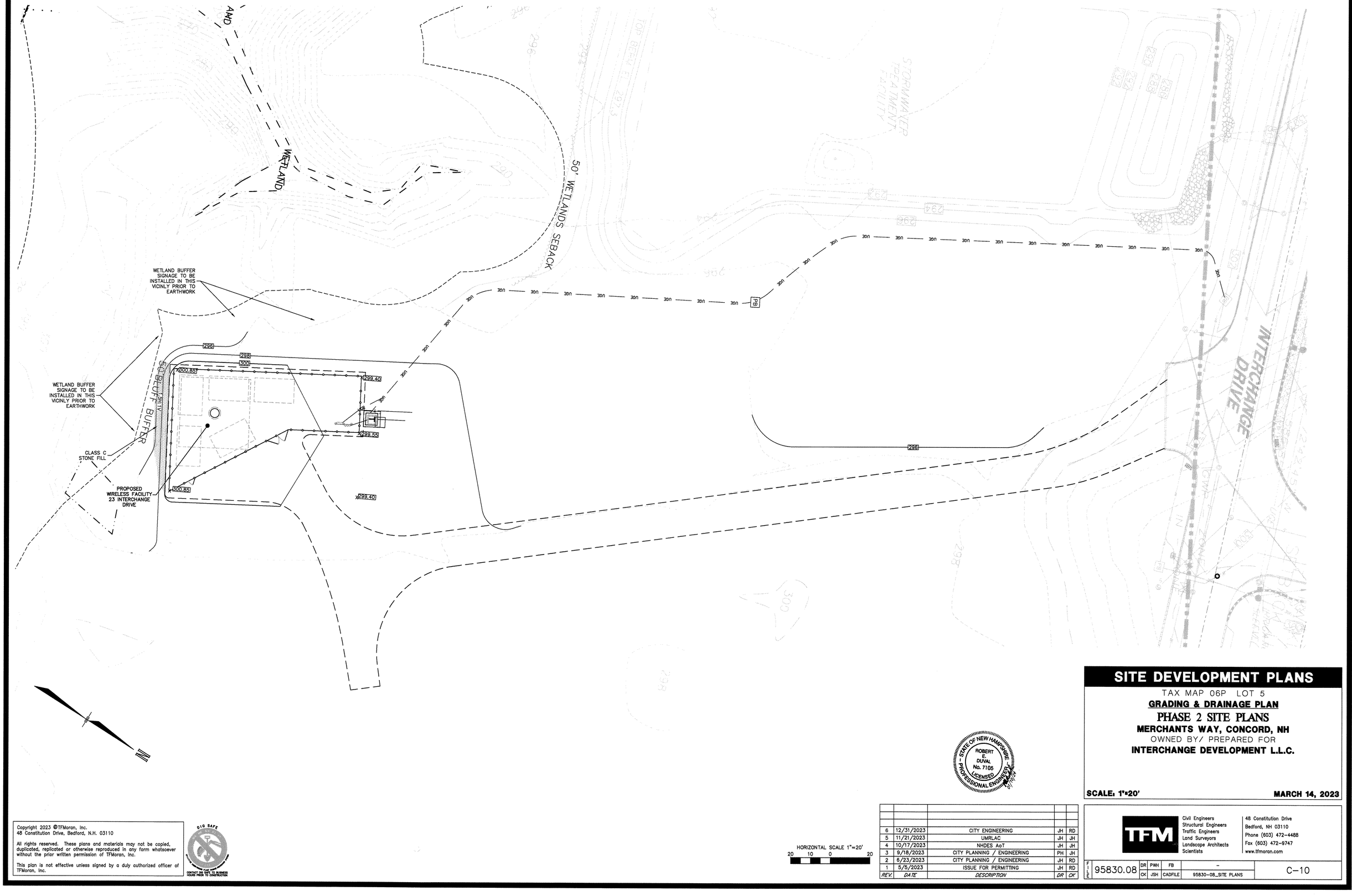

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

GRADING & DRAINAGE PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

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HORIZONTAL SCALE 1"=20'
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95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	

4331-15

Structure Table	
Structure Name	Structure Details
CB 2-6	RIM = 293.50 Pipe – (103) INV OUT = 289.343
CB1-2	RIM = 292.50 Pipe – (61) INV OUT = 288.098
CB1-3	RIM = 292.20 Pipe – (61) INV IN = 287.660 Pipe – (94) INV OUT = 287.560
CB1-7	RIM = 290.70 Pipe – (95) INV OUT = 285.753
DMH1-2	RIM = 292.27 Pipe – (94) INV IN = 287.055 Pipe – (105) INV OUT = 285.350
DMH1-3	RIM = 291.48 Pipe – (95) INV IN = 285.430 Pipe – (106) INV OUT = 285.327
DMH2-4A	RIM = 295.65 Pipe – (103) INV IN = 288.906 Pipe – (102) INV OUT = 288.799
EXIST. DMH2384	RIM = 294.06 Pipe – (102) INV IN = 288.425
ISO 1	RIM = 292.22 Pipe – (105) INV IN = 285.250
ISO 2	RIM = 291.65 Pipe – (106) INV IN = 285.250

Structure Table	
Structure Name	Structure Details
CB2-9	RIM = 293.78 Pipe – (69) INV IN = 289.454 Pipe – (72) INV IN = 287.770 Pipe – (75) INV OUT = 287.770
CB2-10	RIM = 294.26 Pipe – (69) INV OUT = 289.910
CB2-11	RIM = 294.52 Pipe – (167) INV IN = 288.332 Pipe – (72) INV OUT = 288.230
CB2-12	RIM = 294.60 Pipe – (166) INV OUT = 290.651
CB2-13	RIM = 293.20 Pipe – (167) INV OUT = 288.850
CB2-14	RIM = 291.78 Pipe – (112) INV IN = 288.819 Pipe – (112) (2) INV OUT = 288.727
CB3-1	RIM = 294.94 Pipe – (153) INV OUT = 291.462
CB3-2	RIM = 294.30 Pipe – (151) INV OUT = 291.857 Pipe – (163) INV OUT = 290.408
CB3-4	RIM = 294.25 Pipe – (158) INV OUT = 289.942
CB3-5	RIM = 294.00 Pipe – (158) INV IN = 289.219 Pipe – (163) INV IN = 289.582 Pipe – (159) INV OUT = 289.119
DMH 2-10	RIM = 295.25 Pipe – (75) INV IN = 287.300 Pipe – (121) INV IN = 287.450
DMH 2345A	RIM = 296.77 Pipe – (112) (2) INV IN = 288.576 Pipe – (160) INV IN = 287.165
DMH2-4B	RIM = 295.44 Pipe – (59) INV IN = 289.387 Pipe – (166) INV IN = 290.311 Pipe – (59) (1) INV OUT = 289.387
DMH3-1	RIM = 295.21 Pipe – (153) INV IN = 291.301 Pipe – (156) INV IN = 291.270 Pipe – (157) INV IN = 291.332 Pipe – (154) INV OUT = 291.000
DMH3-2	RIM = 295.26 Pipe – (155) INV IN = 291.912 Pipe – (156) INV OUT = 291.847
DMH3-3	RIM = 295.15 Pipe – (151) INV IN = 291.626 Pipe – (152) INV OUT = 291.518
DMH3-4	RIM = 295.99 Pipe – (149) INV IN = 291.578 Pipe – (152) INV IN = 291.227 Pipe – (150) INV OUT = 291.146
DMH3-5	RIM = 298.02 Pipe – (149) INV OUT = 293.005
DMH3-6	RIM = 296.50 Pipe – (159) INV IN = 287.964 Pipe – (160) INV OUT = 287.864
INLET3-1	RIM = 295.00 Pipe – (154) INV IN = 290.991

Structure Table	
Structure Name	Structure Details
INLET3-2	RIM = 295.75 Pipe – (150) INV IN = 291.054
RD A	RIM = 295.35 Pipe – (59) INV OUT = 289.500
RD D	RIM = 295.85 Pipe – (121) INV OUT = 288.790
RD K	RIM = 292.68 Pipe – (112) INV OUT = 289.052
RD3-1	RIM = 295.85 Pipe – (157) INV OUT = 291.490
RD3-2	RIM = 295.85 Pipe – (155) INV OUT = 291.991

Pipe Table			
Pipe Name	Size	Length	Slope
Pipe – (61)	15"Corrugated HDPE Pipe	70 L.F.	0.62%
Pipe – (94)	18"	59 L.F.	0.85%
Pipe – (95)	15"	32 L.F.	1.00%
Pipe – (102)	24"Corrugated HDPE Pipe	74 L.F.	0.51%
Pipe – (103)	15"Corrugated HDPE Pipe	78 L.F.	0.56%
Pipe – (105)	24"Corrugated HDPE Pipe	10 L.F.	0.96%
Pipe – (106)	24"Corrugated HDPE Pipe	8 L.F.	1.00%

Pipe Table			
Pipe Name	Size	Length	Slope
Pipe – (59)	18"Corrugated HDPE Pipe	8 L.F.	1.43%
Pipe – (69)	15"Corrugated HDPE Pipe	64 L.F.	0.72%
Pipe – (72)	15"Corrugated HDPE Pipe	89 L.F.	0.51%
Pipe – (75)	15"Corrugated HDPE Pipe	87 L.F.	0.54%
Pipe – (112)	15"Corrugated HDPE Pipe	23 L.F.	1.00%
Pipe – (121)	15"Corrugated HDPE Pipe	19 L.F.	7.01%
Pipe – (149)	15"Corrugated HDPE Pipe	55 L.F.	2.60%
Pipe – (150)	15"Corrugated HDPE Pipe	9 L.F.	1.03%
Pipe – (151)	12"Corrugated HDPE Pipe	47 L.F.	0.49%
Pipe – (152)	15"Corrugated HDPE Pipe	49 L.F.	0.60%
Pipe – (153)	15"Corrugated HDPE Pipe	28 L.F.	0.57%
Pipe – (154)	15"Corrugated HDPE Pipe	14 L.F.	0.06%
Pipe – (155)	15"Corrugated HDPE Pipe	12 L.F.	0.66%
Pipe – (156)	15"Corrugated HDPE Pipe	107 L.F.	0.54%
Pipe – (157)	15"Corrugated HDPE Pipe	13 L.F.	1.26%
Pipe – (158)	15"Corrugated HDPE Pipe	34 L.F.	2.15%
Pipe – (159)	15"Corrugated HDPE Pipe	117 L.F.	0.99%
Pipe – (160)	15"Corrugated HDPE Pipe	130 L.F.	0.54%
Pipe – (163)	15"Corrugated HDPE Pipe	19 L.F.	4.44%
Pipe – (112) (2)	15"Corrugated HDPE Pipe	30 L.F.	0.50%

Pipe Table			
Pipe Name	Size	Length	Slope
Pipe – (59) (1)	18"Corrugated HDPE Pipe	40 L.F.	1.19%
Pipe – (166)	15"Corrugated HDPE Pipe	30 L.F.	1.12%
Pipe – (167)	15"	104 L.F.	0.50%

STRUCTURE TABLE

	RIM	INV. IN	INV. IN	INV. OUT	PIPE DIA	COVER IN	COVER OUT
CB1-2	292.5			288.1	1.25		3.15
CB1-3	292.2	287.66		287.56	1.25/1.5	3.29	3.14
DMH1-2	292.27	287.05		285.35	1.5	3.71	5.42
DMH1-3	291.48	285.43		285.33	1.25	4.8	4.9
CB1-7	290.7			285.75	1.25		3.7
ND81	290.2	EXIST.		EXIST.			
CB2-6	293.5			289.34	1.25		2.91
DMH2-4A	295.65	288.91	288.31	288.8	1.5/2	5.24	4.74
DMH2-4B	295.44	290.31	289.39	289.39	1.25/1.5	3.88	4.55
EXIST. DMH 2384	294.06	288.43		285.71	2/2.5	3.63	5.85
CB2-12	294.6			290.65	1.25		2.7
CB2-13	293.2			288.85	1.25		3.1
CB2-11	294.52	288.33		288.23	1.25	4.94	5.04
CB2-9	293.78	289.45	287.77	287.77	1.25	3.08	4.76
CB2-10	294.26			289.91	1.25		3.1
EXIST. DMH2572 (DMH2-10)	295.25	287.3	287.45	287.16	1.25/2	6.55	6.09
CB3-1	294.94			291.46	1.25		2.23
DMH3-1	295.21	291.3	291.27	291	1.25	2.69	2.96
DMH3-2	295.26	291.91		291.85	1.25	2.1	2.16
DMH3-4	296	291.58	291.23	291.15	1.25	3.17	3.6
DMH3-5	298			293.01	1.25		3.74
DMH3-3	295.15	291.63		291.52	1.25	2.27	2.38
CB3-2	294.3	291.85		290.41	1	1.45	2.89
CB3-4	294.3			289.94	1.25		3.11
CB3-5	294	289.58	289.22	289.12	1.25	3.17	3.63
DMH3-6	296.5	287.96		287.86	1.25	7.29	7.39
DMH2345A	296.77	288.58	287.17	EXIST.	1.25	6.94	
CB2-14	291.78	288.82		288.73	1.25	1.71	1.8

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER
3/14/23

REV.	DATE	DESCRIPTION	DR	CK
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5	11/21/2023	UMRLAC	JH	JH
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2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

DRAINAGE TABLE

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS NOTED **MARCH 14, 2023**

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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Bedford, NH 03110
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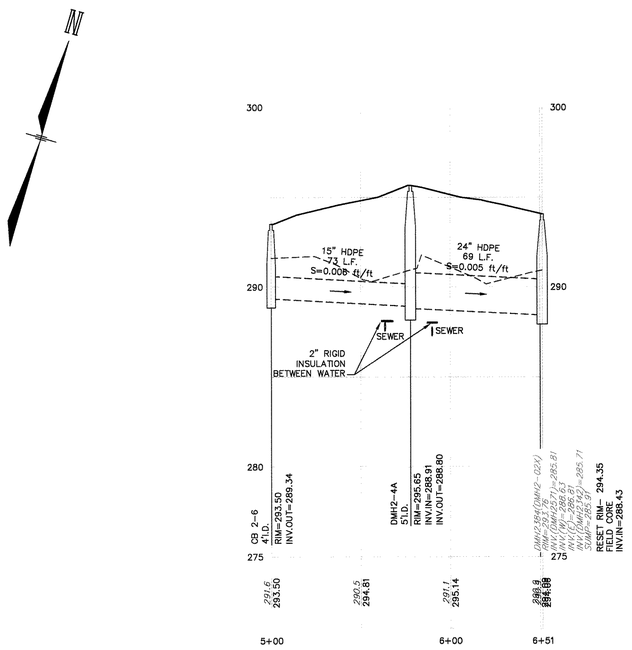
4331-16



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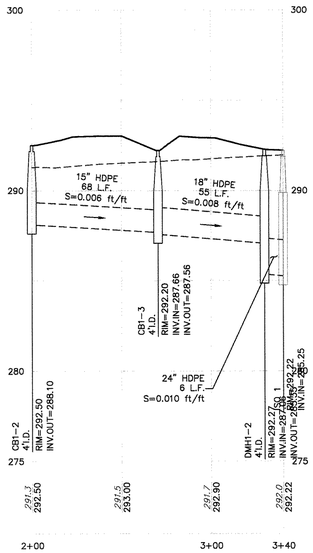

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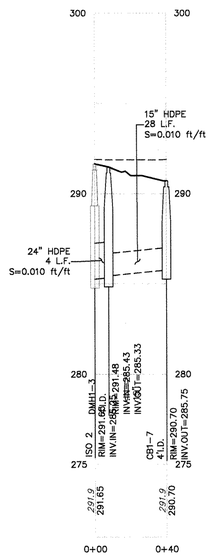

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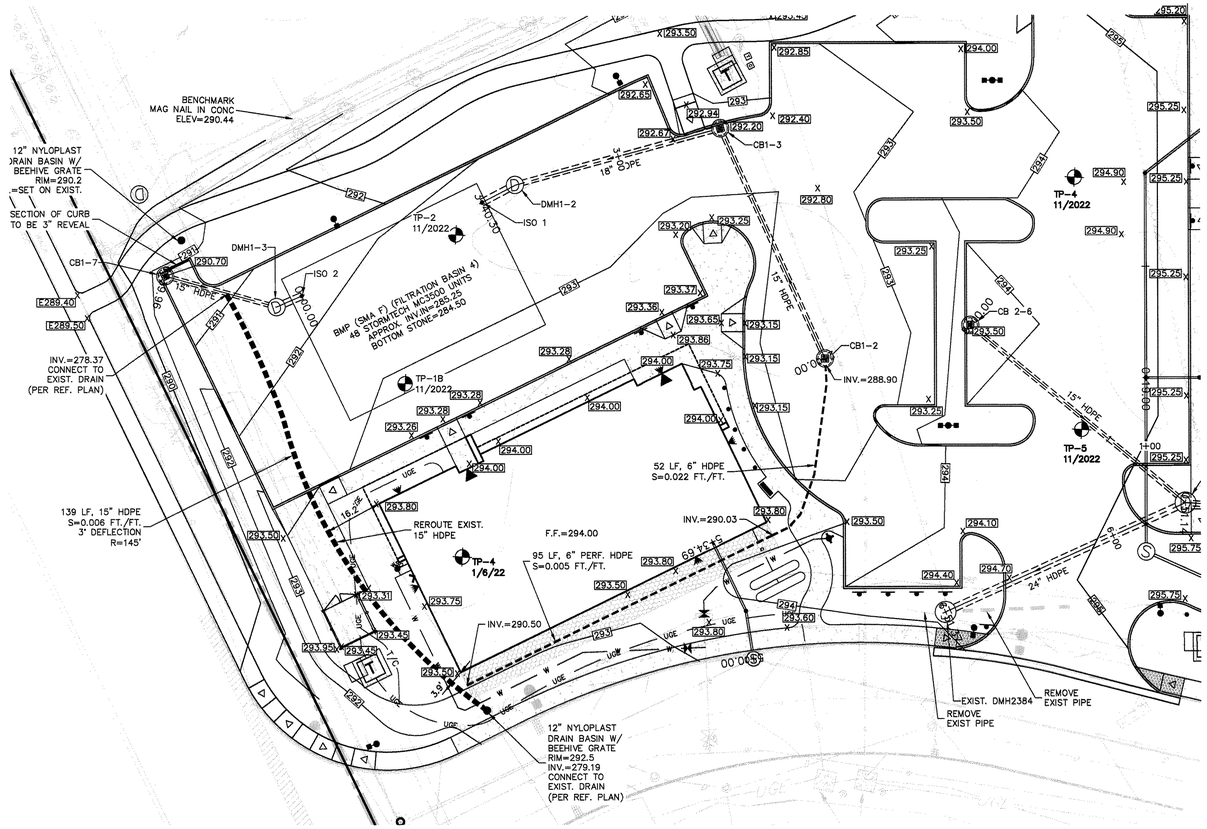

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=40'
40 20 0 40
VERTICAL SCALE 1"=4'
4 0 4

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER
9/10/23

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

DRAINAGE PROFILES

PHASE 2 SITE PLANS

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OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

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FILE	DR	PWH	FB	–	
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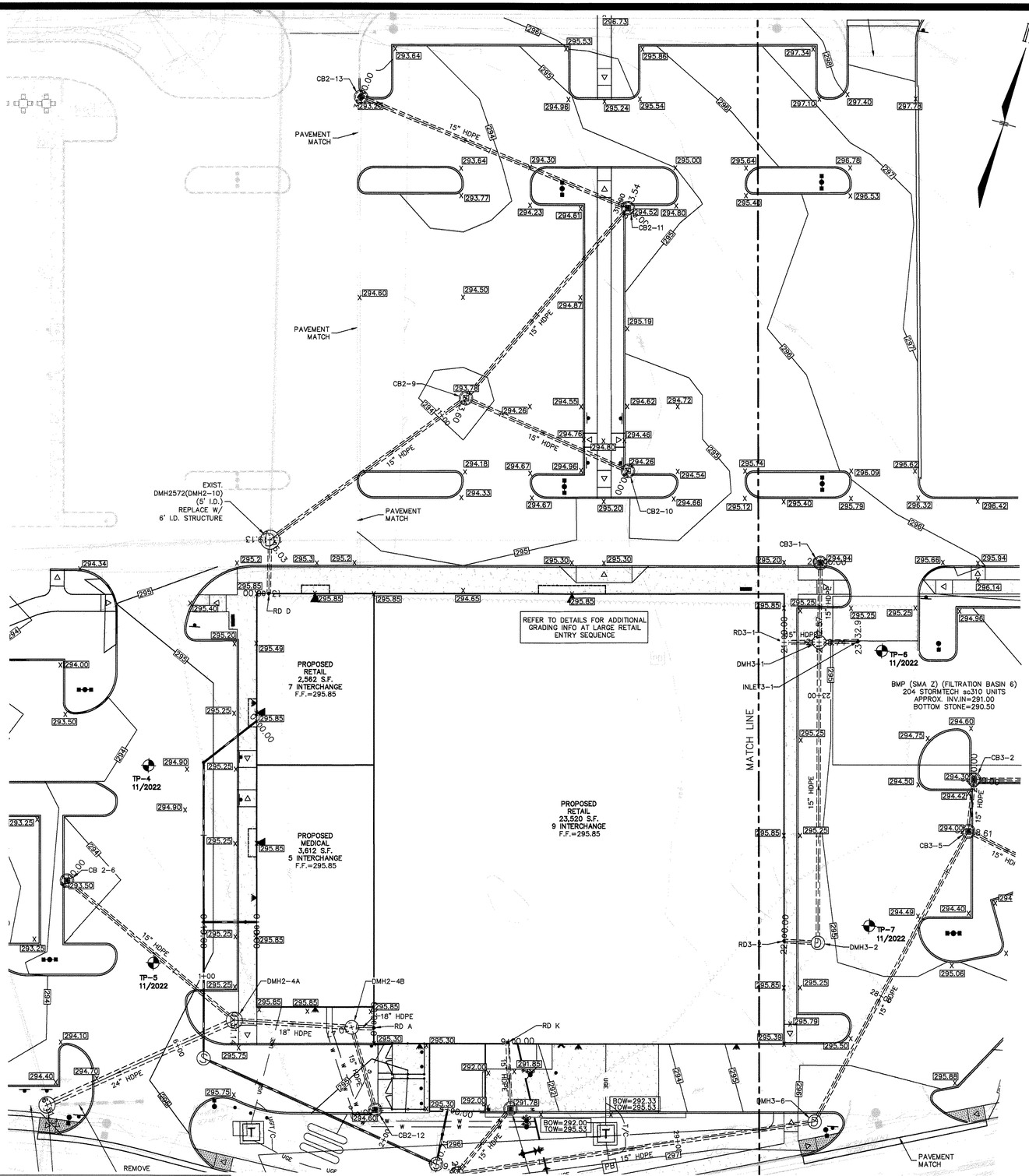
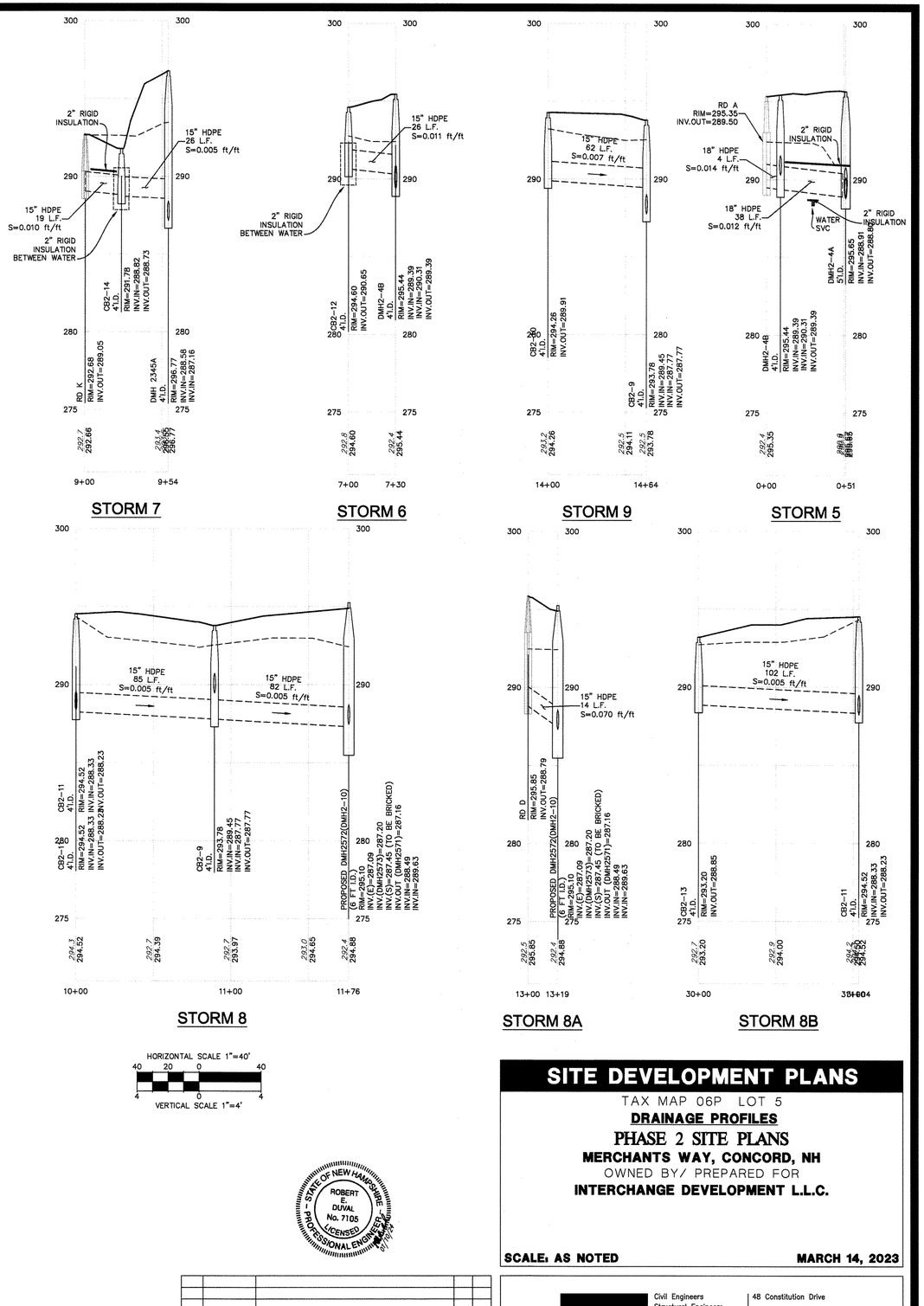
4331-17



DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



HORIZONTAL SCALE 1"=40'
40 20 0 40
VERTICAL SCALE 1"=4'
4 0 4

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER
12/19/23

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

DRAINAGE PROFILES

PHASE 2 SITE PLANS

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PROJ.	DR	PWH	FB	-	
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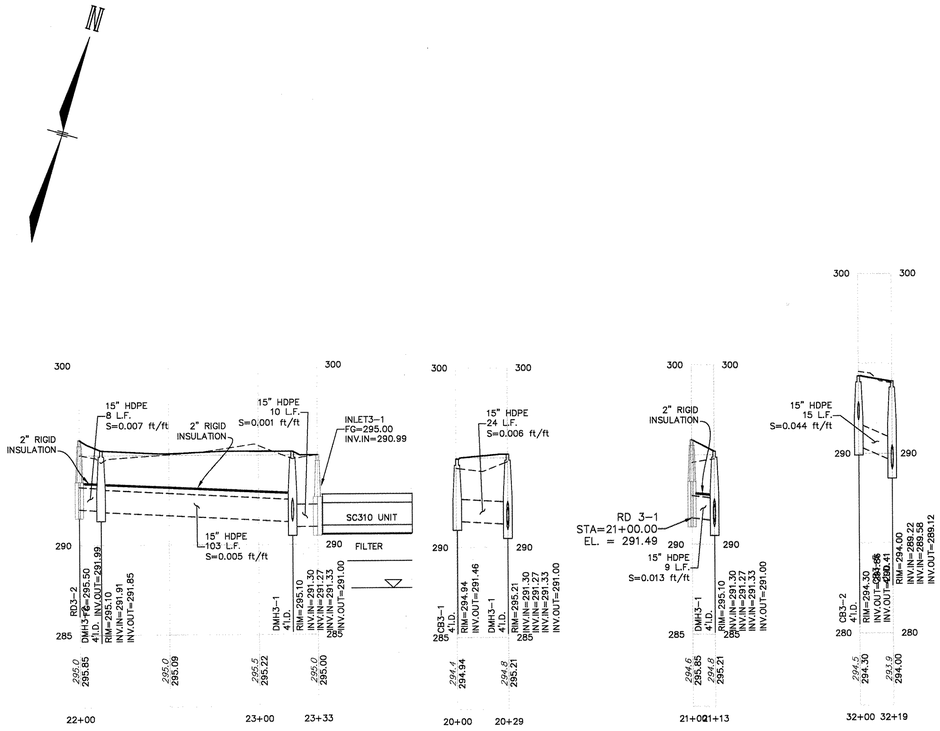

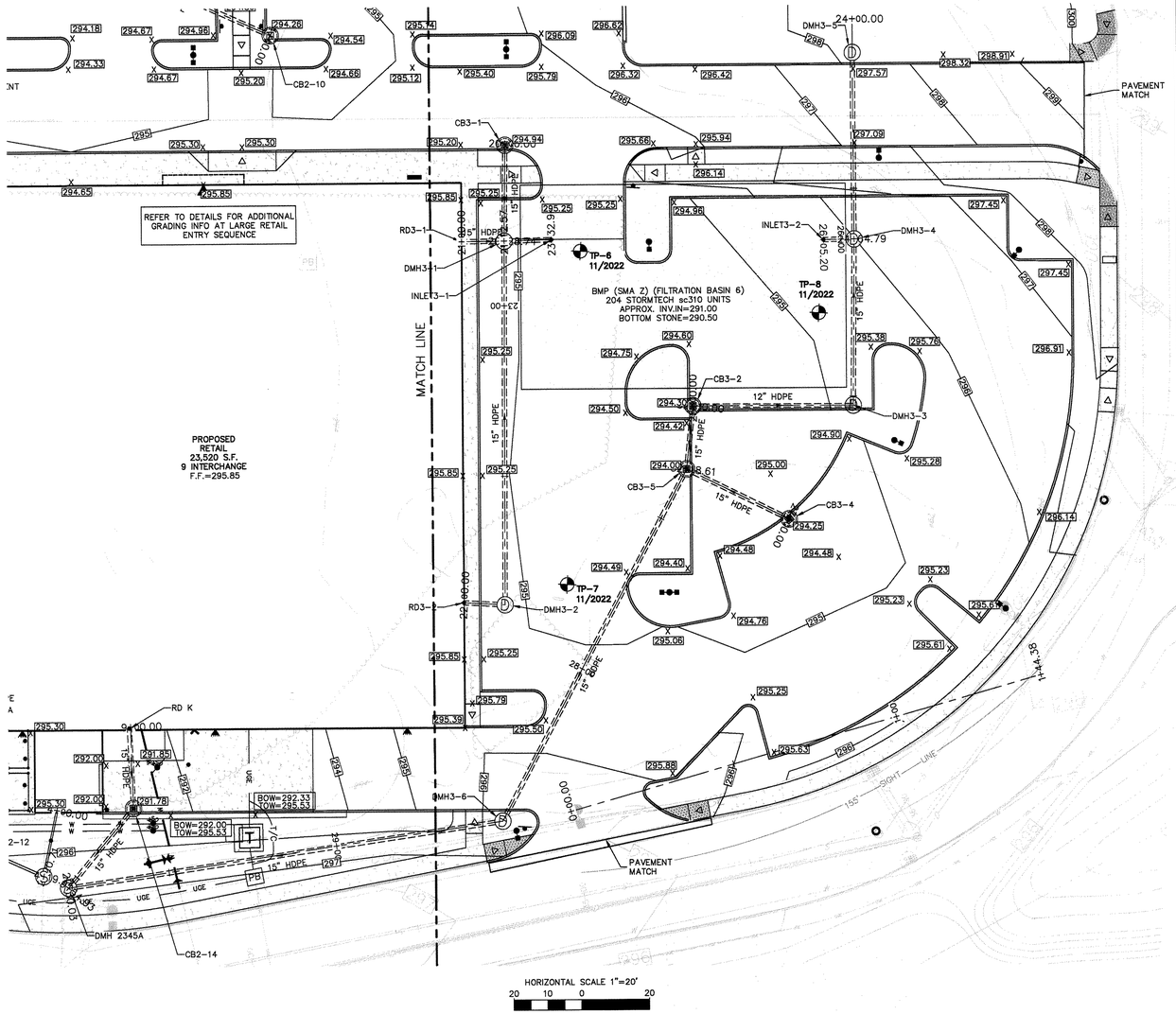

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

DRAINAGE PROFILES

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER

SCALE: AS NOTED **MARCH 14, 2023**

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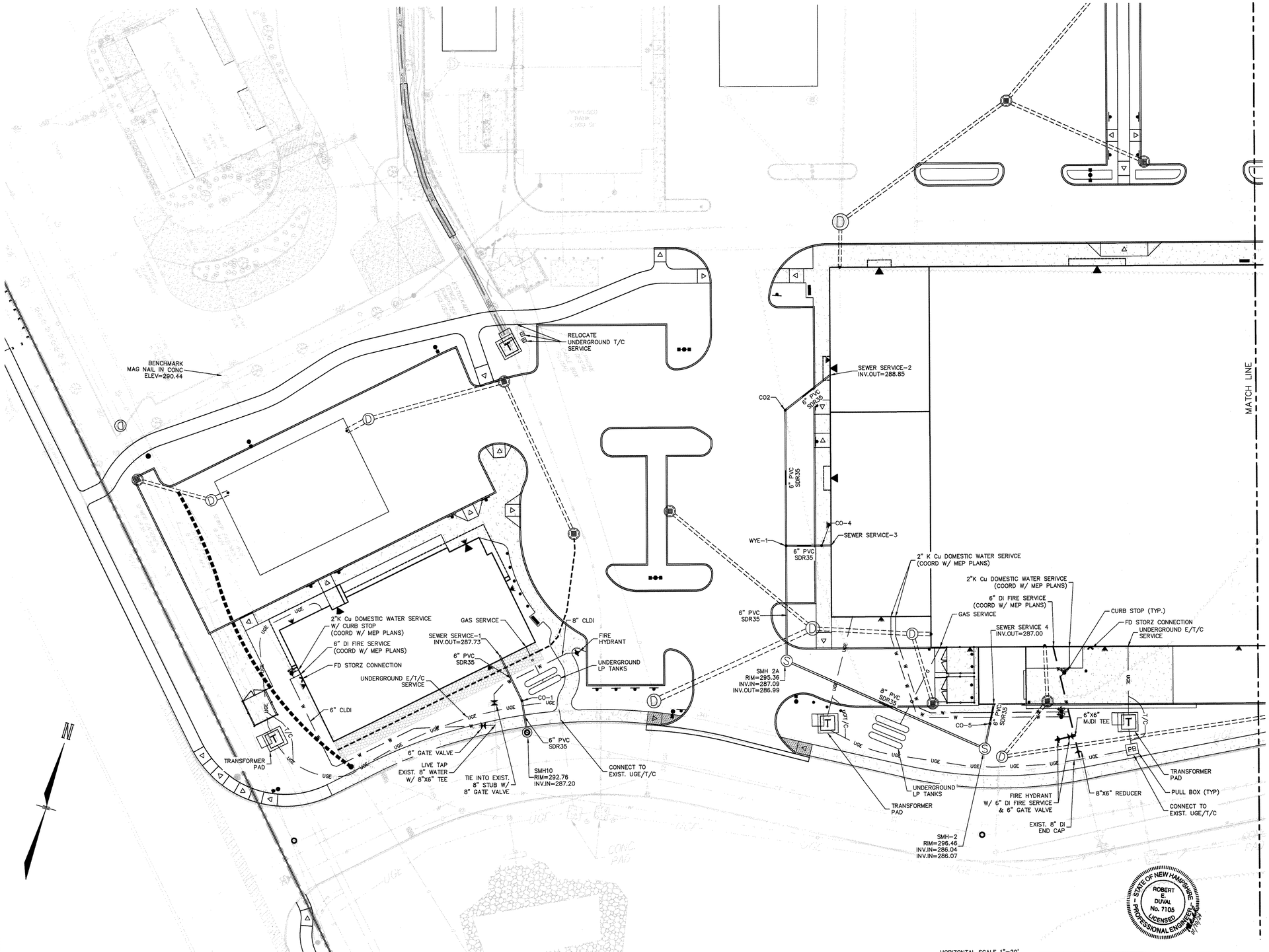
FILE 95830.08 | DR PWH | FB - | CK JSH | CADFILE 95830-08_SITE PLANS | C-14

HORIZONTAL SCALE 1"=40'
40 20 0 40
VERTICAL SCALE 1"=4'
4 0 4

4331-19



NOTES

1. ALL WORK SHALL CONFORM TO THE CITY OF CONCORD CONSTRUCTION STANDARDS, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL SURROUNDING CONDITIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (911) AT LEAST 72 HOURS BEFORE DIGGING.
4. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
6. ALL MANHOLES IN PAVEMENT SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
7. SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
8. ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF CONCORD CONSTRUCTION STANDARDS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5 FEET COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10 FEET MINIMUM. THRUST BLOCKS SHALL BE USED AT ALL BENDS IN THE WATER MAINS.
9. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
10. VERIFY UTILITY CONNECTIONS TO BUILDING WITH ARCHITECTURAL DRAWINGS.
11. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
12. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS AND ALIGNMENTS.
13. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
14. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

UTILITY PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

HORIZONTAL SCALE 1"=20'

20 10 0 20

APPROVED BY THE CONCORD PLANNING BOARD

CHAIRMAN: _____ *AND*

CLERK: _____

REV.	DATE	DESCRIPTION	DR	CK
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FILE	DR	PWH	FB	–	C-15
95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	

STATE OF NEW HAMPSHIRE
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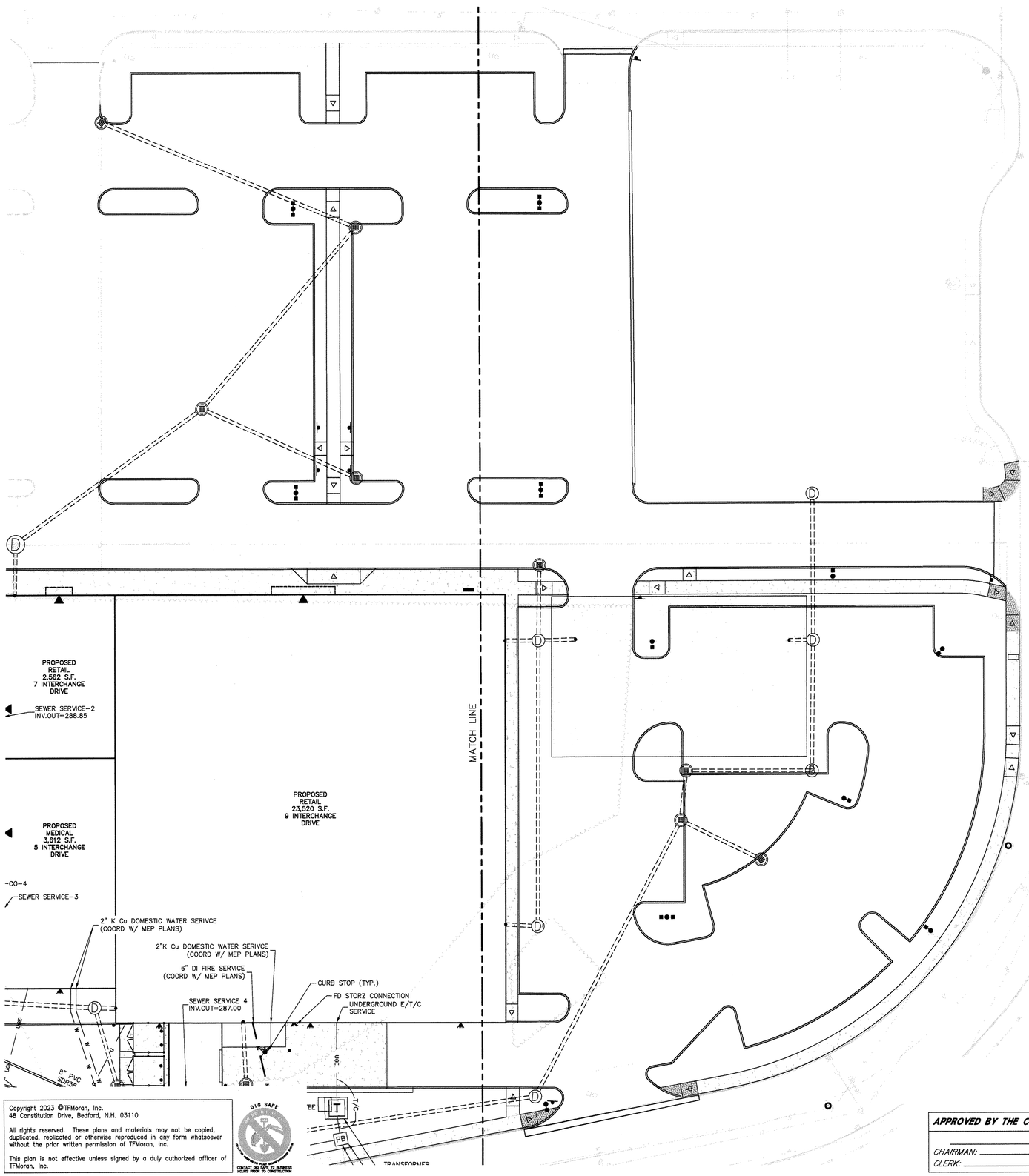
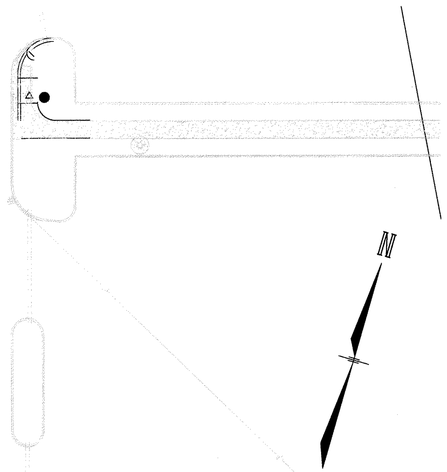
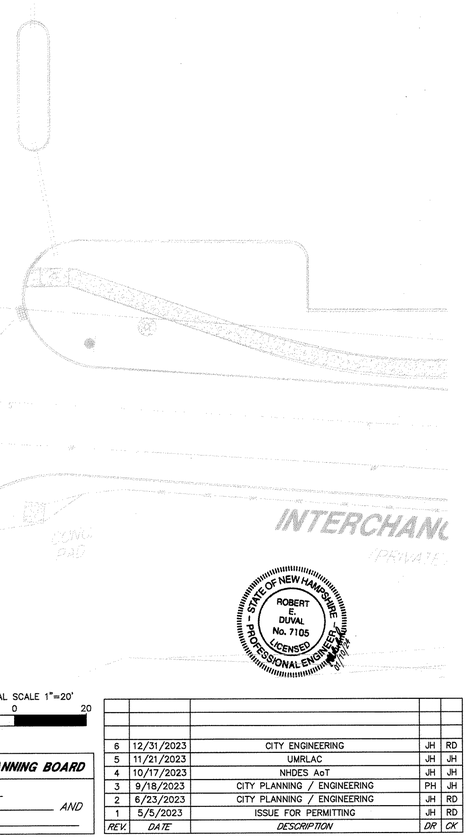
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

4331_24







DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'
20 10 0 20

APPROVED BY THE CONCORD PLANNING BOARD

CHAIRMAN: _____ AND

CLERK: _____

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER
07/14/23

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1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

UTILITY PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

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SCALE: 1"=20' **MARCH 14, 2023**

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FILE	DR	PWH	FB	–	
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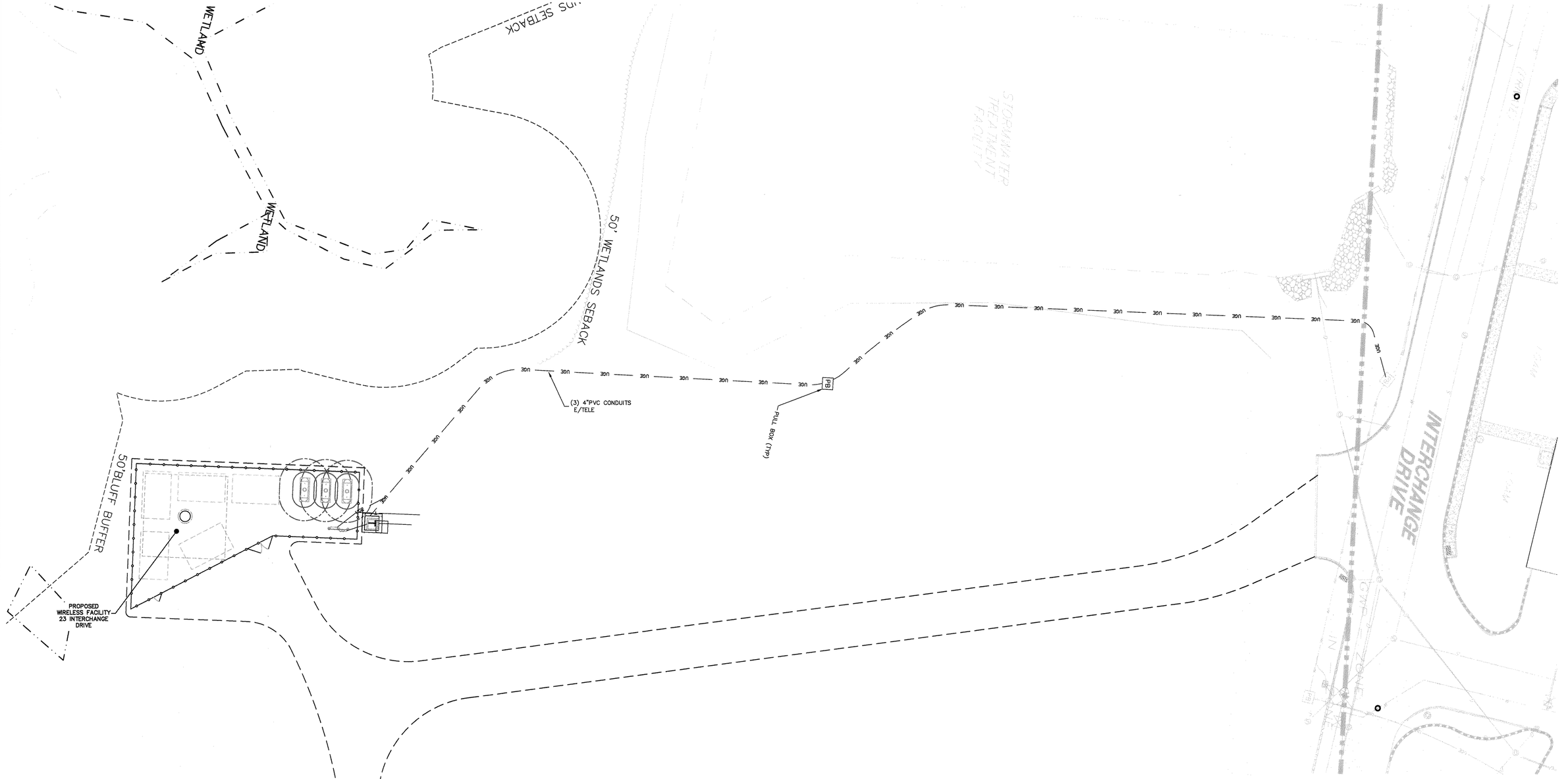
4331-21



SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

UTILITY PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

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HORIZONTAL SCALE 1"=20'

20 10 0 20

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – 07/14/23

APPROVED BY THE CONCORD PLANNING BOARD

CHAIRMAN: _____ *AND*

CLERK: _____

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Scientists

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Bedford, NH 03110
Phone (603) 472-4488
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FILE	DR	PWH	FB	–	
95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	C-17

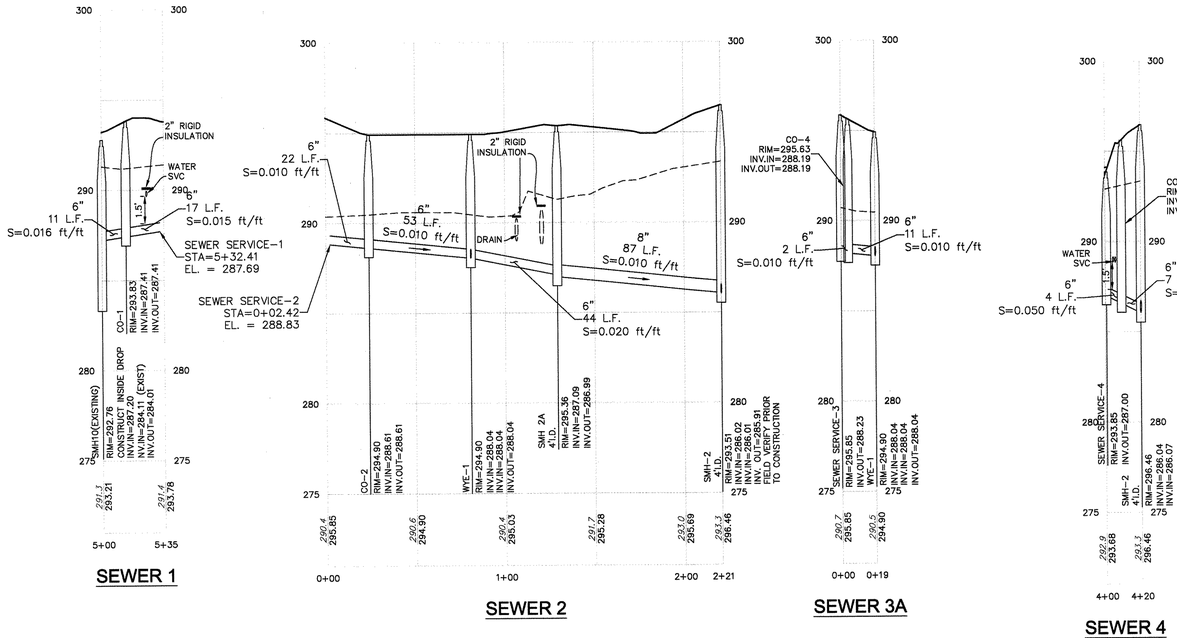
4331-22

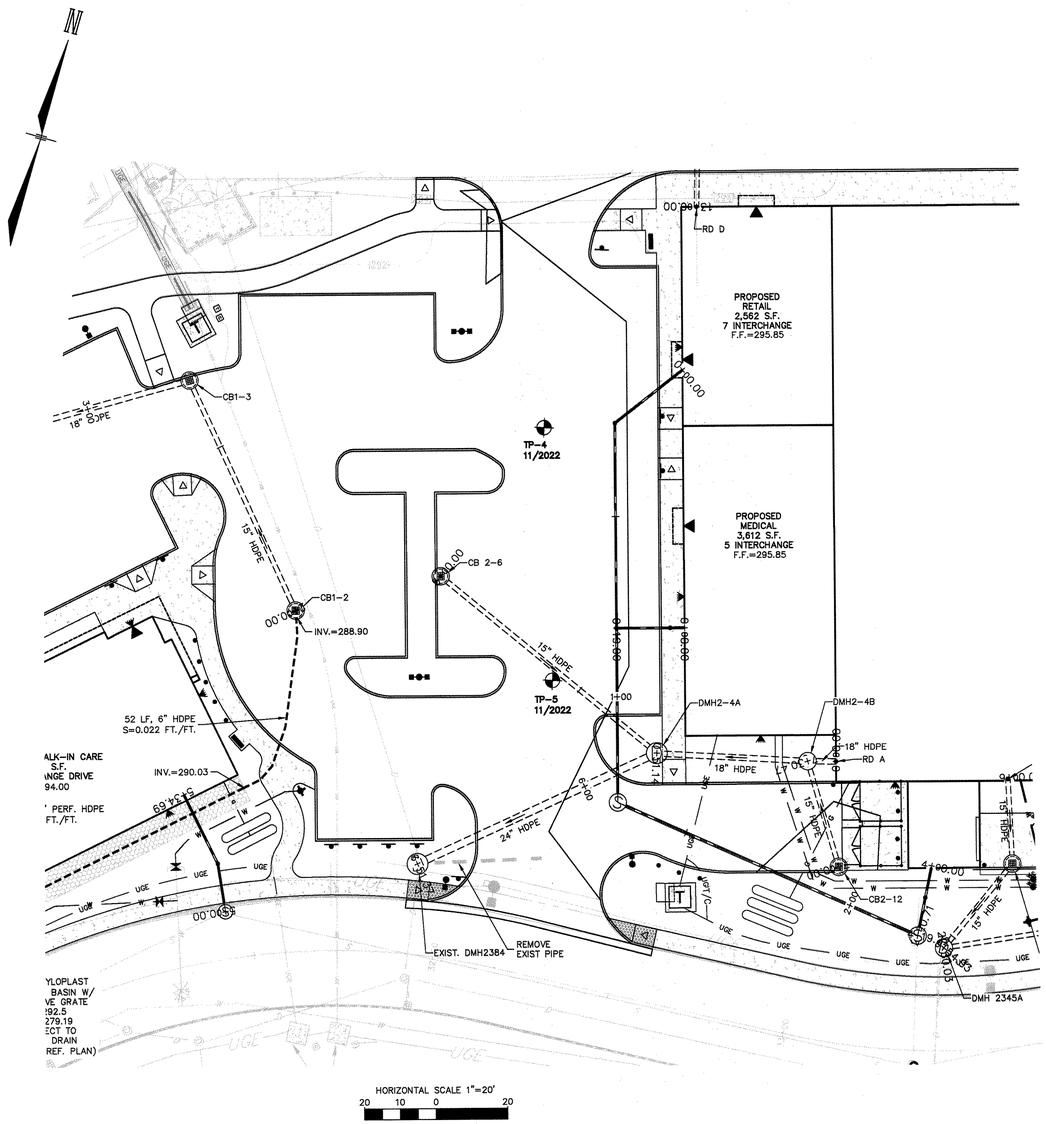
Structure Table	
Structure Name	Structure Details
CO–1	RIM = 293.83 Pipe – (90) INV IN = 287.408 Pipe – (92) INV OUT = 287.410
SEWER SERVICE–1	RIM = 293.78 Pipe – (90) INV OUT = 287.727
SMH10	RIM = 292.76 Pipe – (92) INV IN = 287.200

Pipe Table			
Pipe Name	Size	Length	Slope
Pipe – (90)	6"	21 L.F.	1.50%
Pipe – (92)	6"	13 L.F.	1.56%

Structure Table	
Structure Name	Structure Details
CO–2	RIM = 294.90 Pipe – (83) (2) INV IN = 288.610 Pipe – (84) (2) INV OUT = 288.610
CO–4	RIM = 295.63 Pipe – (169) INV IN = 288.190 Pipe – (86) (1) (2) INV OUT = 288.190
CO–5	RIM = 295.59 Pipe – (81) (1) INV IN = 286.580 Pipe – (81) (1) (1) INV OUT = 286.580
SERVICE–2	RIM = 295.85 Pipe – (83) (2) INV OUT = 288.850
SEWER SERVICE–3	RIM = 295.85 Pipe – (169) INV OUT = 288.230
SEWER SERVICE–4	RIM = 293.85 Pipe – (81) (1) INV OUT = 287.001
SMH–2	RIM = 296.46 Pipe – (81) (1) (1) INV IN = 286.039 Pipe – (85) (1) INV IN = 286.070
SMH 2A	RIM = 295.36 Pipe – (91) (2) INV IN = 287.092 Pipe – (85) (1) INV OUT = 286.990
WYE–1	RIM = 294.90 Pipe – (86) (1) (2) INV IN = 288.040 Pipe – (84) (2) INV IN = 288.040 Pipe – (91) (2) INV OUT = 288.040

Pipe Table			
Pipe Name	Size	Length	Slope
Pipe – (81) (1)	6"	8 L.F.	5.03%
Pipe – (83) (2)	6"	24 L.F.	1.00%
Pipe – (84) (2)	6"	57 L.F.	1.00%
Pipe – (85) (1)	8"	91 L.F.	1.01%
Pipe – (86) (1) (2)	6"	15 L.F.	1.00%
Pipe – (91) (2)	6"	48 L.F.	1.96%
Pipe – (169)	6"	4 L.F.	1.00%
Pipe – (81) (1) (1)	6"	11 L.F.	5.03%





SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

SEWER PROFILES

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS NOTED **MARCH 14, 2023**

ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
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4	10/17/2023	NHDES AoT	JH	JH
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2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

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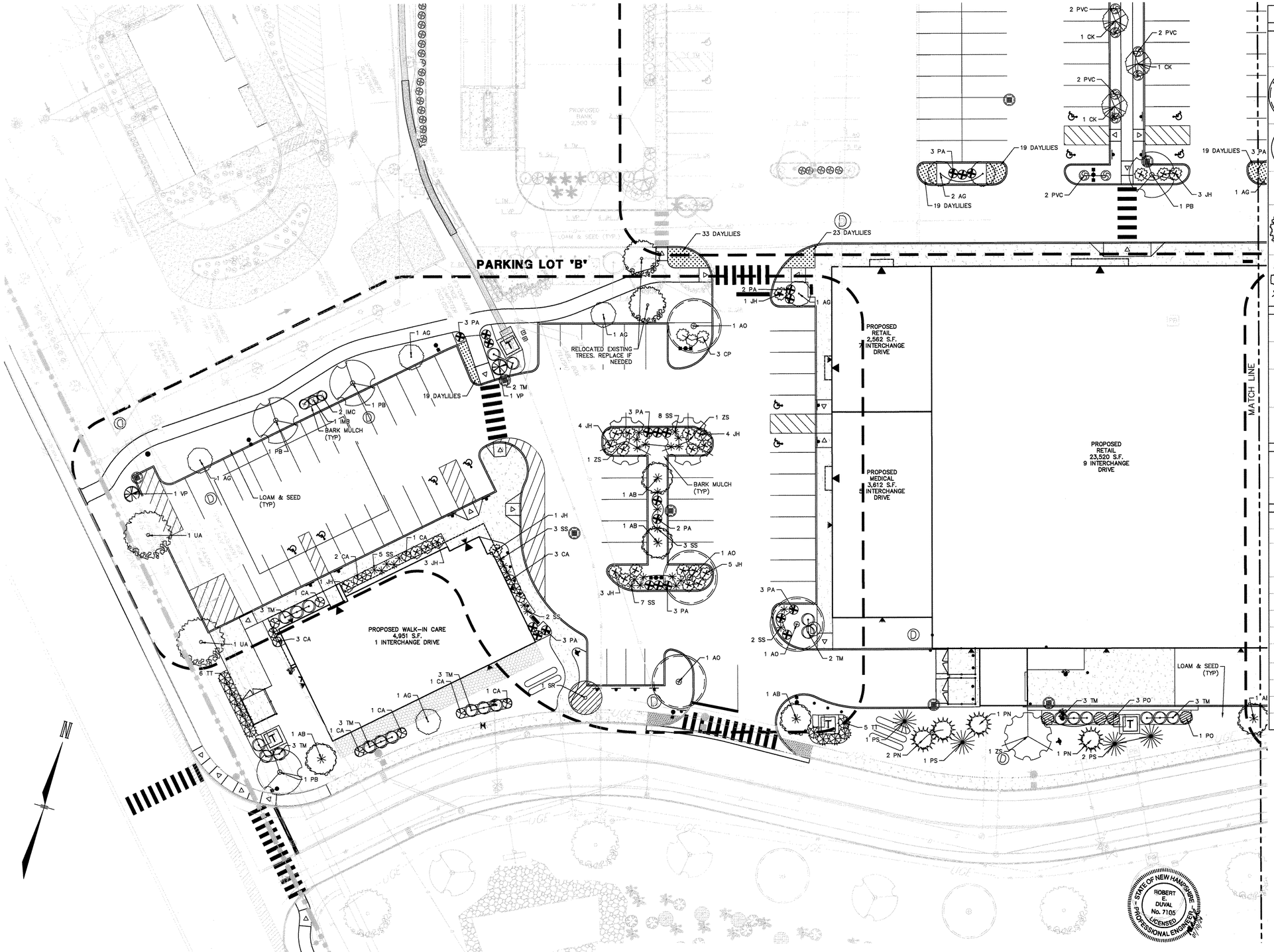
DIG SAFE – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

4331-23



LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
SHADE TREES				
AB	9	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE	2 1/2" TO 3" CAL.	B&B
AO	6	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2" TO 3" CAL.	B&B
PB	4	PLATANUS X ACREIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANETREE	2 1/2" TO 3" CAL.	B&B
QP	2	QUERCUS PALUSTRIS 'GREEN PILLAR' GREEN PILLAR PIN OAK	2 1/2" TO 3" CAL.	B&B
UA	2	ULMUS AMERICANA 'PRINCETON' PRINCETON AMERICAN ELM	2 1/2" TO 3" CAL.	B&B
ZS	4	ZELKOVA SERRATA 'VILLAGE GREEN' VILLAGE GREEN ZELKOVA	2 1/2" TO 3" CAL.	B&B
ORNAMENTAL TREES				
AG	12	AMELANCHIER X GRANDIFLORA 'ROBIN HILL' ROBIN HILL SERVICEBERRY	2 1/2" TO 3" CAL.	B&B
CK	4	CORNUS KOUSA KOUSA DOGWOOD	2 1/2" TO 3" CAL.	B&B
CC	2	CRATAEGUS LAEVIGATA 'CRIMSON CLOUD' CRIMSON CLOUD HAWTHORN	2 1/2" TO 3" CAL.	B&B
SR	1	SYRINGA RETICULATA JAPANESE LILAC TREE	2 1/2" TO 3" CAL.	B&B
EVERGREEN TREES				
PS	4	PICEA PUNGENS 'BLUE SELECT' SELECT BLUE SPRUCE	6' TO 7'	B&B
PN	4	PICEA NIGRA NORWAY SPRUCE	6' TO 7'	B&B
SHRUBS				
CP	7	CHAMAECYPRIS P. 'F. MOPS' MOP'S THREAD-LEAF FALSECYPRESS	3 GAL.	CONT.
CA	14	CLETHRA ALNIFOLIA 'RUBY SPICE' RUBY SPICE SUMMERSWEET	3 GAL.	CONT.
IMC	6	ILEX X MESERVEAE 'CHINA GIRL' CHINA GIRL HOLLY	5 GAL.	CONT.
IMB	3	ILEX X MESERVEAE 'CHINA BOY' CHINA BOY HOLLY	3 GAL.	CONT.
JH	77	JUNIPERUS H. 'PLUMOSA COMPACTA' YOUNGTOWN JUNIPER	3 GAL.	CONT.
PO	5	PHYSOCARPUS O. SUMMER WINE' SUMMER WINE NINEBARK	3 GAL.	CONT.
TM	28	TAXUS MEDIA 'HICKSII' HICK'S YEW	2' TO 2 1/2'	B&B
TT	11	THUJA O. 'TECHNY' MISSION ARBORVITAE	5' TO 6'	B&B
VP	5	VIBURNUM P.T. 'SHOSHONI' SHOSHONI DOUBLEFILE VIBURNUM	3' TO 4'	B&B
SS	38	SALVIA SUPERBA 'BLUE HILL' BLUE HILL SAGE	1 GAL.	CONT.
PA	36	PENNISETUM ALO. 'HAMELN' HAMELN DWARF FOUNTAIN GRASS	1 GAL.	CONT.
PVC	27	PANICUM V. 'CHEYENNE SKY' CHEYENNE SKY SWITCH GRASS	2 GAL.	CONT.
	113/114	HEMEROCALLIS 'HAPPY RETURNS/PARDON ME' HAPPY RETURNS/ PARDON ME DAYLILY	1 GAL. 24" O.C.	CONT.

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

LANDSCAPE PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

HORIZONTAL SCALE 1"=20'
20 10 0 20

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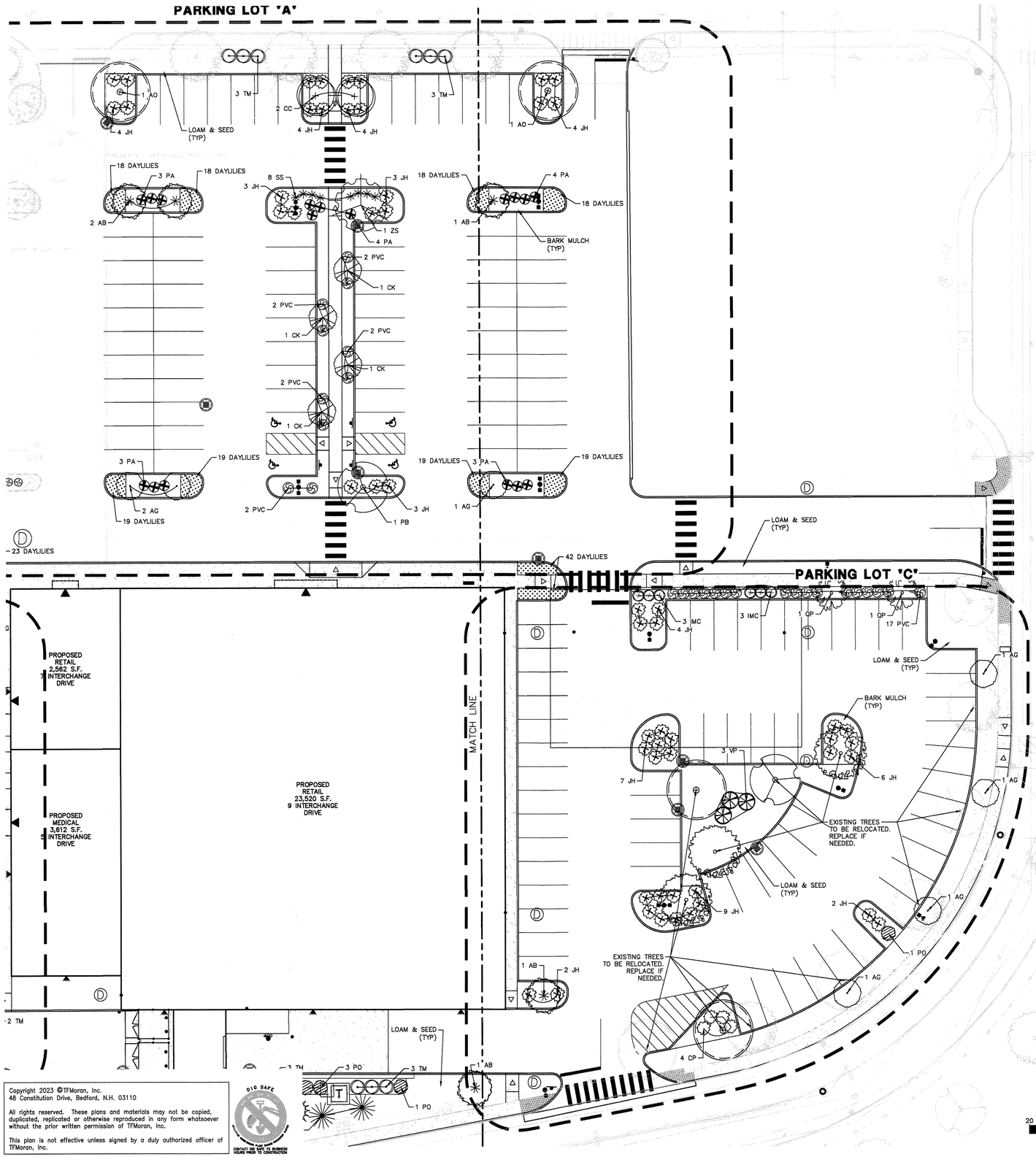
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER

4331-24



HORIZONTAL SCALE 1"=20'
20 10 0 20

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) [FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN] IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1–1996].
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL–FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. ALL LANDSCAPED AREAS INCLUDING LAWNS SHALL BE PROVIDED WITH UNDERGROUND IRRIGATION. SEE IRRIGATION NOTES.
10. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
11. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258–FN."

GUARANTEE

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

IRRIGATION NOTES

1. THE IRRIGATION SYSTEM SHALL BE DESIGNED BY AN APPROVED IRRIGATION DESIGN/BUILD CONTRACTOR ACCEPTABLE TO THE OWNERS REPRESENATIVE.
2. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE IRRIGATION SYSTEM DESIGN AND SHOP DRAWINGS TO THE OWNER 30 DAYS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING AND PROPOSED UTILITIES AND NOTIFY THE OWNER'S REPRESENTATIVE OF CONFLICTS.
4. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR A COMPLETE AND OPERABLE IRRIGATION SYSTEM AND SHALL FOLLOW ALL APPLICABLE CODES.
5. REFER TO ARCHITECTURAL PLANS FOR LOCATION OF THE IRRIGATION SYSTEM'S BUILDING CONNECTION AND CONTROLS.
6. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS AND PRODUCT SPECIFICATIONS FOR INSTALLATION.

CALCULATIONS

PARKING LOT PERIMETER (28–7–10(a) ZONING ORDINANCE):
REQUIRED:
–LESS THAN 375 SPACES = 10' FRONT PERIMETER LANDSCAPE AREA, AND 5' SIDE/REAR.
PROPOSED:
–29 SPACES WITH 15' PERIMETER LANDSCAPE AREA

INTERIOR GREEN SPACE (28–7–10(b) ZONING ORDINANCE):
–MORE THAN 50 AND LESS THAN 375 SPACES = 5% INTERIOR GREEN
–LESS THAN 50 SPACES = N/A

–LOT A TOTAL PROPOSED PARKING LOT AREA = 47,850 SF
LOT A REQUIRED GREEN SPACE = 2,393 SF
LOT A PROPOSED GREEN SPACE = 5,283 SF (11%)

–LOT B TOTAL PROPOSED PARKING LOT AREA = 28,081 SF
LOT B REQUIRED GREEN SPACE = 1,404 SF
LOT B PROPOSED GREEN SPACE = 2,892 SF (10%)

–LOT C TOTAL PROPOSED PARKING LOT AREA = 26,721 SF
LOT C REQUIRED GREEN SPACE = 1,336 SF
LOT C PROPOSED GREEN SPACE = 4,093 SF (15%)

PARKING AREA SHADE TREES (28–7–10(d) ZONING ORDINANCE):
–ONE (1) ORNAMENTAL OR SHADE TREE PER 2,000 SQUARE FEET OF PARKING LOT AREA TREES TO BE WITHIN 20' OF THE PARKING LOT, OR IN LANDSCAPED AREAS BETWEEN BUILDINGS AND THE PARKING FIELD.

LOT A TOTAL REQUIRED = 47,850 SF/ 2,000 SF = 24 TREES
LOT A TOTAL PROVIDED = 29 TREES (16 PROPOSED, 13 PREVIOUSLY APPROVED)

LOT B TOTAL REQUIRED = 28,081 SF/ 2,000 SF = 14 TREES
LOT B TOTAL PROVIDED = 19 TREES (18 PROPOSED, 1 PREVIOUSLY APPROVED)

LOT C TOTAL REQUIRED = 26,721 SF/ 2,000 SF = 13 TREES
LOT C TOTAL PROVIDED = 15 TREES (8 PROPOSED, 7 PREVIOUSLY APPROVED)

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

LANDSCAPE PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

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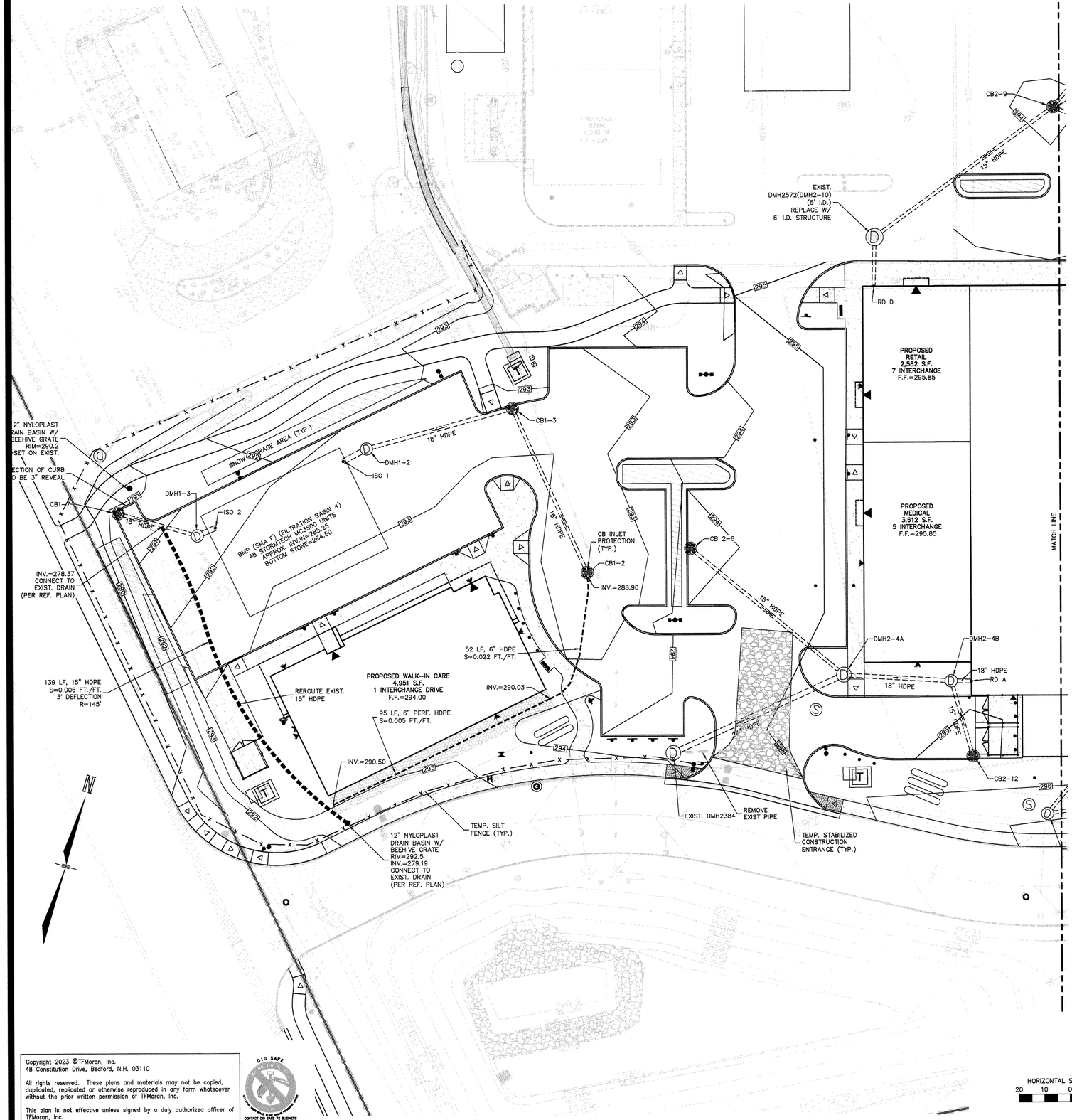

HORIZONTAL SCALE 1"=20'
20 10 0 20

CONSTRUCTION GENERAL PERMIT

1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), NEEDS TO OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA). AS PART OF THE CGP, A STORM WATER NOTICE OF INTENT (NOI) WILL NEED TO BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI WILL NEED TO BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.
2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. IN ADDITION, ONE CAN CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

1. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

   TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SQUARE FEET. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

   PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL CONSIST OF 0.45 LBS/1,000 S.F. TALL FESCUE, 0.20 LBS/1,000 S.F. CREEPING RED FESCUE, AND 0.20 LBS/1,000 S.F. BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

2. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

   SILT SOCK – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT SOCK WILL BE INSTALLED BY OTHERS. POSTS SHALL BE USED WITH AT LEAST 6 INCHES OF THE POST BURIED BELOW THE GROUND SURFACE TO PREVENT THE SILT SOCK FROM FORMING GAPS NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE SILT SOCK WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

   SILT FENCE – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8 INCHES OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

   STABILIZED CONSTRUCTION ENTRANCE – WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE CONSTRUCTION SITE TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20 FEET WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12 INCHES OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL THE REMAINDER OF THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEPT ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.

   CATCH BASINS – WILL BE CLEANED ON AN ANNUAL BASIS TO REMOVE ALL SEDIMENTS FROM THE CATCH BASIN SUMPS.

   CATCH BASIN PROTECTION – WILL BE INSTALLED AT ALL CATCH BASINS WITHIN THE CONSTRUCTION AREA. FILTER FABRIC WILL BE INSTALLED AROUND THE GRATES OF CATCH BASINS THAT ARE LOCATED IN THE TRAVEL WAY AND STONE/FILTER FABRIC PROTECTION WILL BE INSTALLED AT THE CATCH BASINS FOUND WITHIN THE PARKING AREA AND GRASS.

   BLANKET SLOPE PROTECTION – SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED. BLANKETS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, MULTI-FLAMENT, OR MONO-FLAMENT POLYPROPYLENE NETTING OR MESH.

   STONE CHECK DAMS – WILL BE INSTALLED IN EXISTING AND PROPOSED GRASS SWALES TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS AND PREVENT EROSION OF THE SWALE.

3. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER

ENVIRONMENTAL COMMITMENTS

1. THE SITE IS WITHIN THE VICINITY OF KNOW HABITAT FOR WOOD TURTLE (GLYPTEMYS INSCULPTA) A STATE SPECIES OF SPECIAL CONCERN.
2. EXCLUSIONARY FENCING SHALL BE INSTALLED IN THE CONSTRUCTION AREA (E.G. SILT FENCING) TO MINIMIZE THE POTENTIAL FOR TURTLES TO BE IMPACTED DURING CONSTRUCTION ACTIVITIES. THIS SHALL BE INSTALLED PRIOR TO APRIL 11 AND BE MAINTAINED THROUGH OCTOBER 15, 2020. IF PROJECT ACTIVITIES EXTEND INTO 2021 (OR BEYOND), THE SILT FENCE SHALL BE INSTALLED AGAIN PRIOR TO APRIL AND MAINTAINED THROUGH OCTOBER 15TH (OR BE MAINTAINED THROUGHOUT THE CONSTRUCTION TIMEFRAME).
3. PRIOR TO AND FOLLOWING THE INSTALLATION OF THE SILT FENCE, A QUALIFIED BIOLOGIST SHALL INSPECT THE SITE FOR WOOD TURTLES AND OTHER SPECIES AND MOVE INDIVIDUALS TO SUITABLE LOCATIONS OUTSIDE THE SILT FENCE PERIMETER IN CLOSE PROXIMITY TO WHERE THEY WERE FOUND.
4. NHFG SHALL BE CONTACTED IF WOOD TURTLES OR ANY OTHER LISTED SPECIES ARE ENCOUNTERED (SEE #6 FOR CONTACT INFORMATION).
5. SAND ESCAPE RAMPS SHALL BE INSTALLED AT NO LESS THAN 300 FEET APART AS SHOWN ON THE PLANS TO ALLOW ANY ENTRAPPED TURTLES TO EXIST THE SITE BY CLIMBING OVER THE SILT FENCE.
6. WOOD TURTLE FLYERS SHALL BE POSTED ONSITE WHICH PROVIDE IDENTIFICATION DETAILS AND ADVISE PERSONNEL TO CONTACT MELISSA DOPERALSKI 603-271-1738 OR JOSH MEDYESY 603-271-1125 AT NH FISH & GAME WITH OBSERVATIONS – PLEASE TAKE PHOTOGRAPHS IF FEASIBLE.
7. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
8. ACCESS GATES SHALL REMAIN CLOSED AT THE END OF THE WORK DAY (6 AM TO 6 PM), WEEKENDS, AND DURING WORK DAY HOURS DURING TIMES OF NO TRAFFIC ENTERING OR EXITING THE SITE. THIS RESTRICTION IS IN EFFECT FROM APRIL 1ST TO OCTOBER 15TH OF EACH CONSTRUCTION YEAR TO ELIMINATE THE POSSIBILITY OF PROTECTED WILDLIFE FROM ENTERING THE SITE.
9. CONSERVATION AREA DISTRICT SIGNAGE IS REQUIRED TO BE PLACED ON EXISTING VEGETATATION AT 100 FT ON CENTER ALONG THE INTERIOR EDGE OF THE BLUFF BUFFER AROUND THE PERIMETER OF THE PROPERTY. SIGNAGE SHALL CONFIRM TO CITY OF CONCORD CONSERVATION COMMISSION STANDARDS.

NOTES (CONTINUED)

4. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE TYPES OF SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE EPA SHALL TAKE THE FOLLOWING STEPS:
   - NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., CALL (202) 426-2675.
   - WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
   - MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

   GOOD HOUSEKEEPING:
   THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.
   - AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
   - ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
   - PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
   - SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
   - WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
   - MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
   - TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS.
   - THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

   HAZARDOUS PRODUCTS:
   THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.
   - PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
   - ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
   - IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

   PRODUCT SPECIFIC PRACTICES:
   THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

   PETROLEUM PRODUCTS:
   ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

   FERTILIZERS:
   FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

   PAINTS;
   ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

   CONCRETE TRUCKS:
   EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

   SPILL CONTROL PRACTICES:
   IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   - MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
   - MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
   - ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
   - THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
   - SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
   - THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
   - THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

5. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.
6. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.5 INCH OR GREATER. INSPECTIONS REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

STORMWATER MANAGEMENT PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

REV	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive, Bedford, NH 03110, Phone (603) 472-4488, Fax (603) 472-9747, www.tfmoran.com

FILE 95830.08 | DR PWH | FB - | OK JSH | CADFILE 95830-08_SITE PLANS | C-21

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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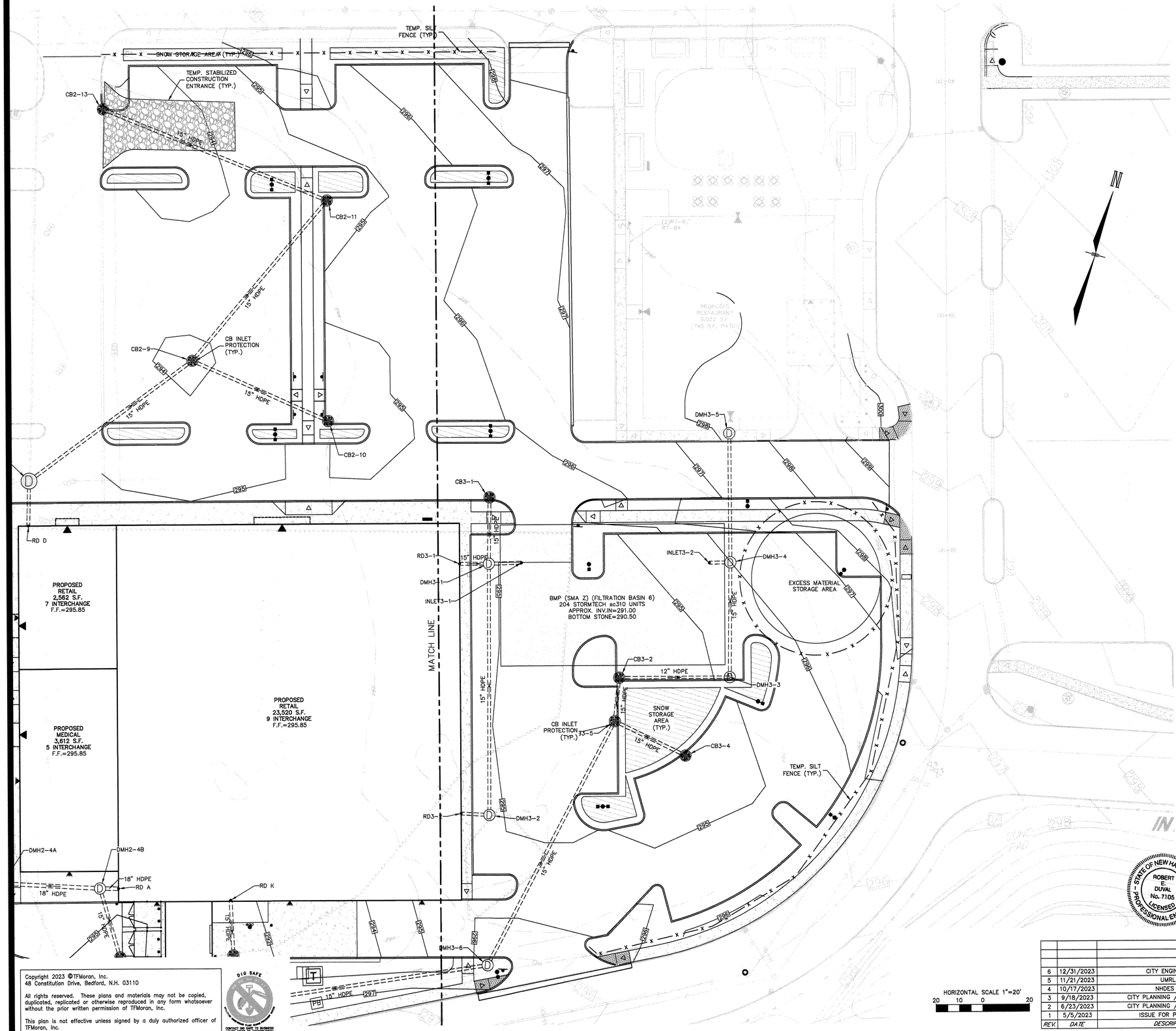

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK
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1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

STORMWATER MANAGEMENT PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

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Fax (603) 472-9747
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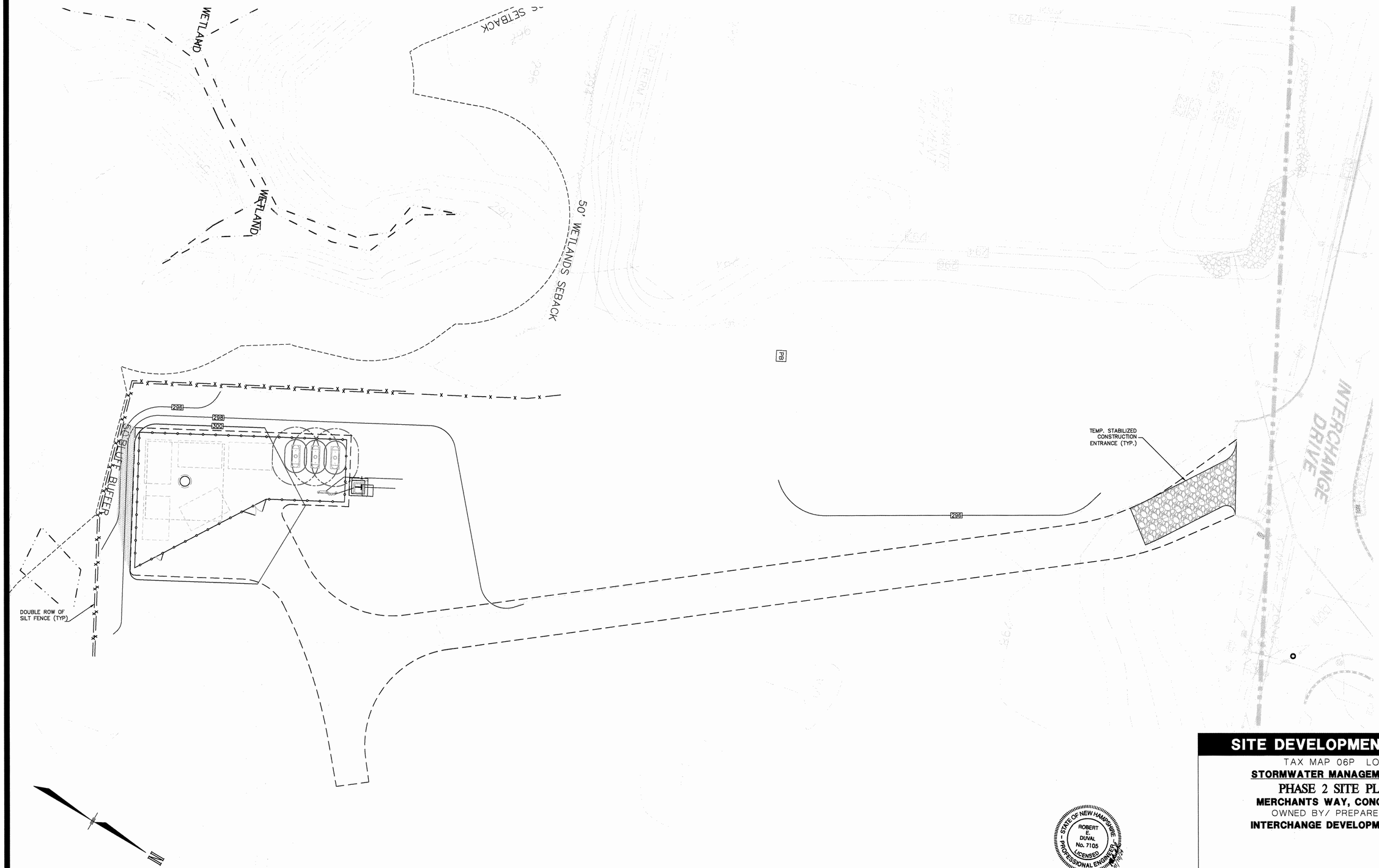

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
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2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED
PROFESSIONAL ENGINEER
6/23/2023

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

STORMWATER MANAGEMENT PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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FILE	95830.08	DR	PWH	FB	-	C-23
		CK	JSH	CADFILE	95830-08_SITE PLANS	

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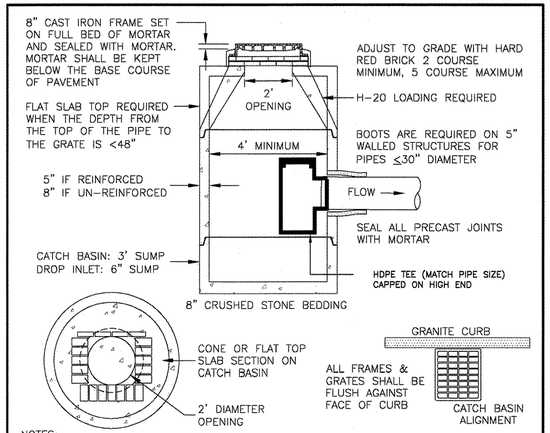
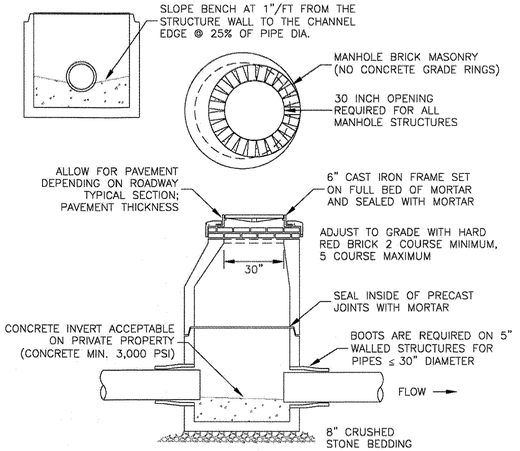


NOTES:
1. CONCRETE SHALL BE 4,000 PSI AFTER 28 DAYS.
2. SEAL ALL PRECAST JOINTS WITH BITUMASTIC SEAL.
3. LIFT HOLES AND BOOT RECESSES ARE TO BE SEALED WITH MORTAR FLUSH TO THE OUTSIDE STRUCTURE WALL PRIOR TO BACKFILLING.
4. MINIMUM DEPTH FROM RIM TO INVERT OF THE HIGHEST PIPE SHALL BE: 12"ø=3.7', 15"ø=3.9', 18"ø=4.2', 24"ø=4.8', 30"ø=5.3', 36"ø=5.8'
5. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES. NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.
6. MANHOLES AND TRAFFIC SIGNAL LOOPS SHALL BE SEPARATED BY A MINIMUM OF 2' TO ALLOW FOR MAINTENANCE OF STRUCTURE.
7. THREE FLANGED FRAMES SHALL BE USED FOR INSTALLATIONS ADJACENT TO VERTICAL GRANITE CURB.
8. NHDOT TYPE "F" GRATE REQUIRED FOR ROADWAYS HAVING SLOPES EQUAL TO OR GREATER THAN 3%. TYPE "F" SHALL BE BICYCLE SAFE.
9. BRICK WORK SHALL BE RECTANGULAR AND CONFORM TO THE DIMENSIONS OF THE GRATE BEING USED. TYPE "B" GRATES SHALL BE ALIGNED WITH THE 22" DIMENSION AGAINST THE CURB.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: STORM DRAIN
1	DRAFTING	11-11	CATCH BASIN / DROP INLET	DRAWING NO. SD-5
–	–	–		DATE: 12/08 PAGE: 1
–	–	–		
APPROVED BY:				

STRM-CB_DI_3.dwg

Go To Details | Go To TOC

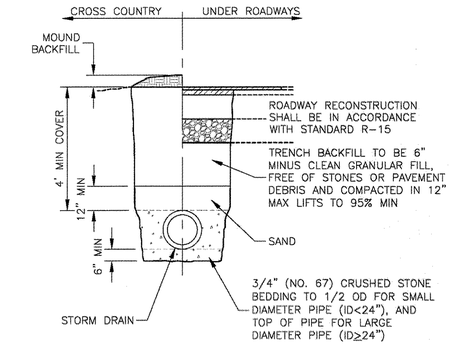


NOTES:
1. CONCRETE: 4,000 PSI AFTER 28 DAYS
2. H-20 LOADING REQUIRED
3. 5" MINIMUM WALL THICKNESS IF REINFORCED, 8" IF UN-REINFORCED
4. SEAL ALL PRECAST JOINTS WITH BITUMASTIC SEAL
5. LIFT HOLES AND BOOT RECESSES ARE TO BE SEALED WITH MORTAR FLUSH TO THE OUTSIDE STRUCTURE WALL PRIOR TO BACKFILLING
6. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES. NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS
7. MANHOLES AND TRAFFIC SIGNAL LOOPS SHALL BE SEPARATED BY A MINIMUM OF 2' TO ALLOW FOR MAINTENANCE OF STRUCTURE

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: STORM DRAIN
–	–	–	STORM DRAIN MANHOLE (PRIVATE)	DRAWING NO. SD-3
–	–	–		DATE: 02/19 PAGE: 1
–	–	–		
–	–	–		

SD3_STRM-Concrete Invert PRIVATE.dwg

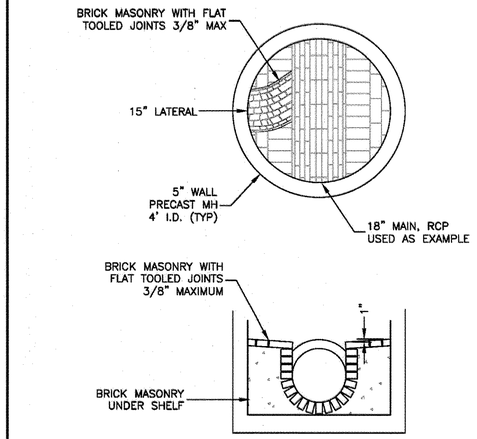
Go To Details | Go To TOC



NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: STORM
1	Standard Reference	01.19	STORM DRAIN TRENCH	DRAWING NO. SD-1
–	–	–		DATE: 04/15 PAGE: 1
–	–	–		
–	–	–		

SD1_Storm Drain Trench.dwg

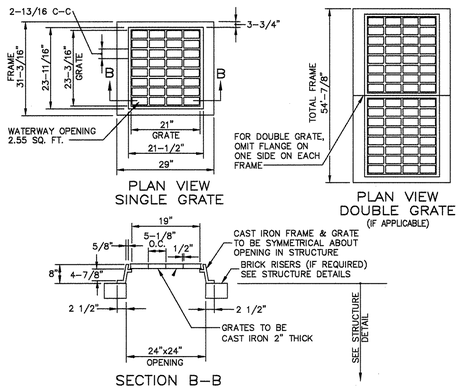
Go To Details | Go To TOC



NOTES:
1. FOR 12" TO 15", CONSTRUCT INVERT THROUGH LOWER HALF OF PIPE
   12" PIPE – 9 BRICK MINIMUM
   15" PIPE – 11 BRICK MINIMUM
2. FOR MAINS GREATER THAN 15", CONSTRUCT INVERT TO TOP OF PIPE
3. MAINTAIN TROUGH WIDTH THROUGH STRUCTURE
4. TYPICAL BRICK, ASTM DESIGNATION: C321-93

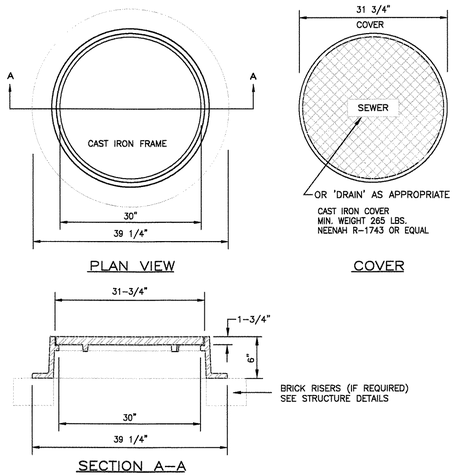
NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: STORM
–	–	–	STORM DRAIN BRICK SHELF CONSTRUCTION	DRAWING NO. SD-4
–	–	–		DATE: 03/15 PAGE: 1
–	–	–		
–	–	–		

SD4_STRM-Brick Shelf Const_2.dwg



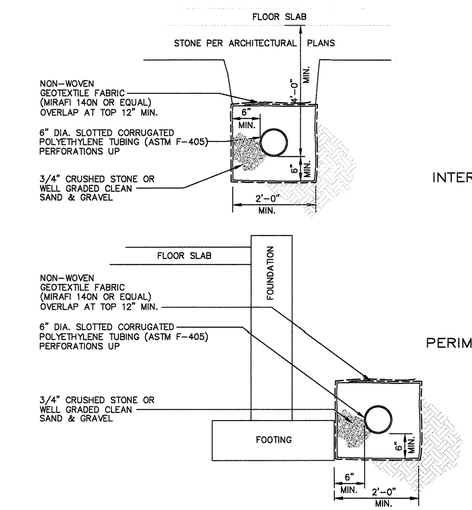
FRAME AND GRATE

NHDOT TYPE B ALT 1 – H20 LOADING NOT TO SCALE



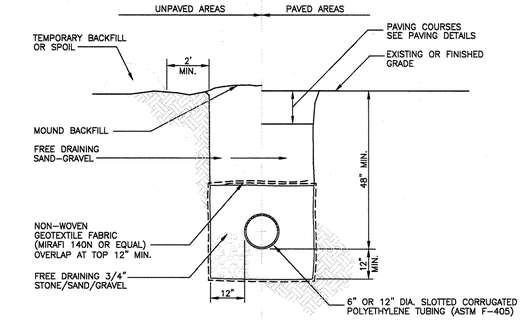
MANHOLE FRAME & COVER

HEAVY DUTY NOT TO SCALE



FOUNDATION UNDERDRAIN

NOT TO



UNDERDRAIN TRENCH

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – 8/10/23

REV.	DATE	DESCRIPTION	DR	CK
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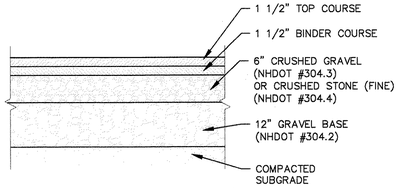
PROJ. #	DR	PWH	FB	–	
95830.08	CK	JSH	CADFILE	95830-08_DETAILS	C-24

4331-29

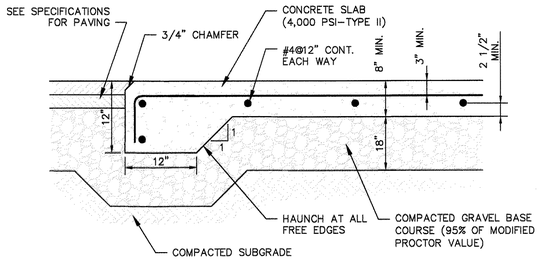


NOTE:

1. THIS PAVEMENT SECTION IS TO BE USED FOR PRICING AND PERMITTING ONLY. FINAL PAVEMENT SECTIONS SHALL BE DETERMINED BY LICENSED GEOTECHNICAL ENGINEER FOR THE SPECIFIC SITE.

STANDARD DUTY PAVEMENT

N.T.S.

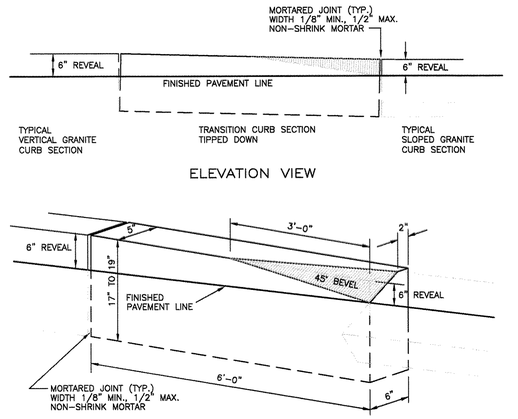


NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
2. MAXIMUM ALLOWABLE SLUMP SHALL NOT EXCEED 4" AND THE MAXIMUM W/C RATIO SHALL NOT EXCEED 0.45.
3. REINFORCING STEEL SHALL BE ASTM A615 GR 60 DEFORMED BARS (UNCOATED).
4. ALL REINFORCING STEEL SHALL BE SECURED IN A PROPER POSITION ON CHAIRS AS MANUFACTURED BY RICHMOND OR APPROVED EQUAL.
5. CONTRACTOR TO CONSULT THE PROJECTS SOILS ENGINEER TO ENSURE THAT THE BASE COURSE HAS BEEN PREPARED PROPERLY PRIOR TO CONCRETE PLACEMENT.
6. PROPOSED SLAB TO BE CONSTRUCTED TO MATCH PROPOSED DRAINAGE PATTERN IN PAVED AREA. ELECTRICAL PAD SHALL BE CONSTRUCTED 1.0' MIN ABOVE SURROUNDING GRASSED AREAS TO ALLOW DRAINAGE TO FLOW AROUND PAD.

COMPACTOR/DUMPSTER/LOADING PAD

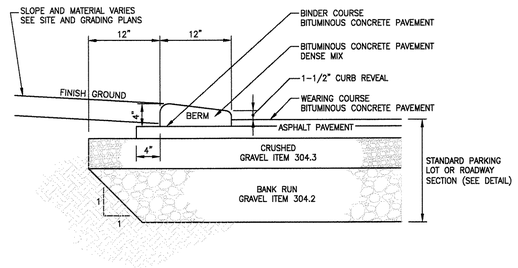
N.T.S.



CURB TRANSITION

VERTICAL GRANITE TO SLOPED GRANITE

NOT TO SCALE



CAPE COD BERM

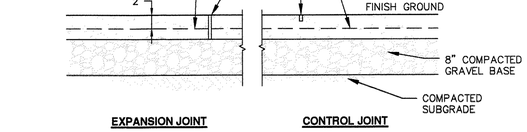
NOT TO SCALE

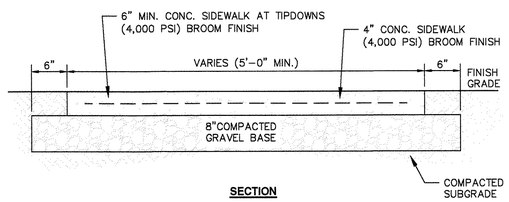
NOTES:

1. MAXIMUM ALLOWABLE LONGITUDINAL SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5% AND THE MAXIMUM CROSS SLOPE SHALL BE 2%.
2. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
3. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
4. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
5. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
6. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.
7. ALL CONTROL JOINTS TO BE SAW CUT 1" DEEP WITH 1/8" CHAMFER EACH SIDE.
8. ALL CONSTRUCTION JOINTS TO BE TOOLED, DOWELED AND SLEEVED, AND SEALED WITH PREFORMED EXPANSION JOINT FILLER AND EXPANSION JOINT SEALANT.
9. EXPOSED AGGREGATE SURFACE FINISH SHALL BE FILLMORE INDUSTRIES 1/2" UNCRUSHED GRAVEL STONE.

WHEELCHAIR RAMP TYPE C (PRIVATE SITE)

N.T.S.

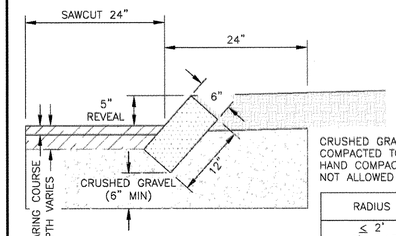




CROSS COUNTRY CONCRETE SIDEWALK

N.T.S.

Go To Details Go To TOC



CRUSHED GRAVEL TO BE COMPACTED TO 95% MIN HAND COMPACTION IS NOT ALLOWED

MIN LENGTH OF STRAIGHT CURB STONES 18"
MAX LENGTH OF STRAIGHT CURB STONES 8'
MAX LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART

ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

RADIUS	MAX LENGTH
≤ 2'	CURVED CURB RADIAL JOINTS
>2' – 15'	18"
16' – 28'	2'
29' – 41'	3'
42' – 55'	4'
56' – 68'	5'
69' – 82'	6'
83' – 96'	7'
97' – 110'	8'
OVER 110'	

FINISH SURFACE AND TOLERANCES FOR SLOPED GRANITE CURB

AREA	FINISH SURFACE	TOLERANCE
ARRIS LINES	STRAIGHT AND TRUE ON TOP, FRONT AND ENDS. DRILL HOLES NOT DEEPER THAN ¼" ALLOWED IN ARRIS LINES.	+¼" TO –¼"
FACES EXPOSED PART	PLANES; NO DRILL HOLES IN FACES LONGER THAN 8" OR DEEPER THAN ¼".	+1" TO –1"
CONCEALED PART	DRILL HOLES NOT OBJECTIONABLE.	
ENDS	SQUARE WITH FACE EXCEPT AS INDICATED.	
JOINTS	ON TANGENT, MAXIMUM WIDTH: 1".	+½" TO –½"
	ON CURVES OVER 15' RADIUS, WIDEN TOP OR BOTTOM FROM 1" AS NECESSARY.	+½" TO –½"
	ON CURVES WITH 15' RADIUS AND UNDER, USE RADIAL JOINTS OR CURVED CURB AS INDICATED. OPTIMUM WIDTH: 1"	+½" TO –½"

NO.	REVISION	DATE
1	DRAFTING	11.11
2	REMOVED FF	12.15
3	SAWCUT	5.19
–	–	–

City of Concord Engineering Services Division

SECTION: SITE/STREET

SLOPED GRANITE CURB

DRAWING NO. C–2

DATE: 12/08 PAGE: 1

C1-C2_RSMY-Granite Curb.2.dwg

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 6/7/2024

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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FILE: 95830.08 DR: PWH CK: JSH FB: – CADFILE: 95830-08_DETAILS

C–25

4331 – 30

Go To Details | Go To TOC

GENERAL NOTES:

1. THE DIMENSIONS AND GRADES SHOWN ON THIS STANDARD WILL BE ADHERED TO IN THE DESIGN AND THE CONSTRUCTION OF SIDEWALK RAMPS. WHERE SIDEWALKS RUN ADJACENT TO ROADWAYS ON STEEP (5% OR GREATER) GRADES, RAMP GRADES WILL BE AS FLAT AS POSSIBLE. (ON LOW SIDE OF DRIVES AND INTERSECTING SIDE STREETS, RAMPS SHALL SLOPE TOWARDS DRIVE OR SIDE STREET AT 2%)
2. NOMINAL RAMP DIMENSIONS AND GRADES:
   RAMP WIDTH – 5' MINIMUM
   RAMP SLOPE – 8.3% MAXIMUM
   FLARE SLOPE – 10% MAXIMUM
   RAMP CROSS SLOPE – 2% MAXIMUM
3. CURB RAMPS SHALL BE CONSTRUCTED OF 6" PORTLAND CEMENT CONCRETE (CLASS AA, 4000 PSI) WITH 6"X6" W2.9XW2.9 WOVEN WIRE FABRIC REINFORCING PLACED 2½" FROM THE TOP OF THE SLAB WITH 6" CRUSHED GRAVEL SUBBASE
4. ALL SIDEWALKS AND LANDINGS SHALL HAVE A CROSS SLOPE OF 2% DRAINING TOWARD THE STREET, DRIVE, OR PARKING AREA
5. A LEVEL LANDING (NO GREATER THAN 2% SLOPE IN ANY DIRECTION) SHALL BE PROVIDED AT THE TOP OF SIDEWALK RAMPS TO ALLOW FOR STOPPING AND MANEUVERING OF WHEELCHAIRS
6. LEVEL LANDINGS (NO GREATER THAN 2% SLOPE IN ANY DIRECTION) AT THE BOTTOM OF PERPENDICULAR RAMPS SHALL BE WHOLLY CONTAINED WITHIN MARKED CROSSWALKS
7. DUMMY JOINTS SHALL BE PROVIDED AT TRANSITIONS (GRADE CHANGES) AT TOPS AND BOTTOMS OF RAMPS AND FLARES
8. VERTICAL DROP–OFF EDGES TO RAMPS WILL NOT BE BUILT UNLESS THE RAMP ABUTS AN AREA WHICH WILL NOT BE USED BY PEDESTRIANS
9. A ¼" CURB REVEAL WILL BE PROVIDED WHERE THE RAMP ADJOINS THE ROADWAY
10. AT MARKED CROSSWALKS, THE FULL WIDTH OF THE RAMP OR LANDING SHALL BE CONTAINED WITHIN THE PAVEMENT MARKINGS
11. RAMP FLARES SHOULD BE LOCATED OUTSIDE THE DIRECT LINE OF TRAVEL MOST LIKELY TO BE FOLLOWED BY THE VISUALLY IMPAIRED
12. SIGNS, POLES, PLANTERS, MAILBOXES, ETC., SHALL NOT BE LOCATED WHERE THEY WILL INTERFERE WITH THE USE OF SIDEWALK RAMPS
13. SIDEWALK RAMPS SHALL NOT BE LOCATED WHERE USERS MUST CROSS DROP INLET GRATES, MANHOLE COVERS, OR OTHER ACCESS LIDS. IF THIS CANNOT BE AVOIDED THEN GRATE DESIGN AND PLACEMENT SHALL CONFORM TO ADA REQUIREMENTS
14. CURB DRAINAGE SHOULD BE CONSTRUCTED SO AS TO PRECLUDE THE FLOW OF WATER PAST THE SIDEWALK RAMP
15. WHEREVER FEASIBLE, TWO SIDEWALK RAMPS ARE RECOMMENDED IN PREFERENCE TO A SINGLE RAMP
16. SIDEWALKS THAT ARE LESS THAN 5' WIDE REQUIRE 5' WIDE BY 5' LONG PASSING AREAS (NO GREATER THAN 2% CROSS SLOPE) AT INTERVALS NOT TO EXCEED 200'
17. E.O.P. = EDGE OF PAVEMENT
18. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE U.S. ACCESS BOARD FOR PUBLIC RIGHTS–OF–WAY.

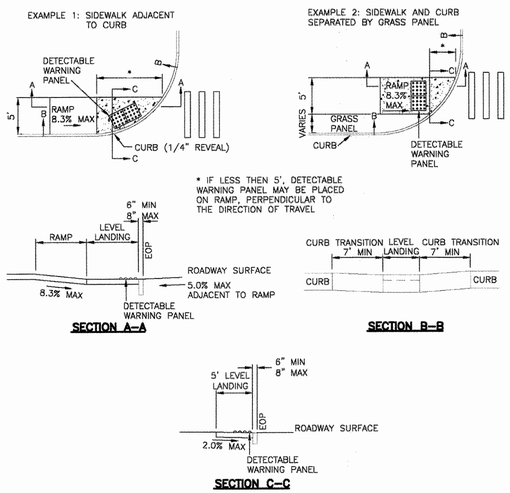
NO.	REVISION	DATE
1	REV STYLE	11-08
2	NOTE 18	5.19

City of Concord Engineering Services Division

SIDEWALK RAMP GENERAL

SECTION: SITE/STREET
DRAWING NO. CR–2

SINGLE WALK STRAIGHT APPROACH TO PARALLEL RAMP



NO.	REVISION	DATE
1	REV STYLE	11-08
2	SECT C–C	11-08
–	–	–
–	–	–

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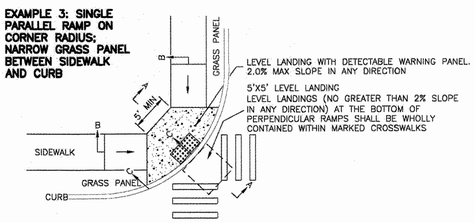
City of Concord Engineering Services Division

SIDEWALK RAMP TYPE 1

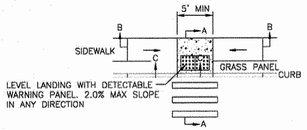
SECTION: SITE/STREET
DRAWING NO. CR–3
DATE: 12/08 PAGE: 1

Go To Details | Go To TOC

EXAMPLE 3: SINGLE PARALLEL RAMP ON CORNER RADIUS; NARROW GRASS PANEL BETWEEN SIDEWALK AND CURB



EXAMPLE 4: SINGLE RAMP ON TANGENT; NARROW GRASS PANEL



NO.	REVISION	DATE
1	DRAFTING	12.15
–	–	–
–	–	–

APPROVED BY:

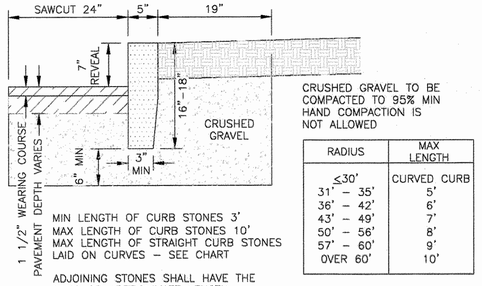
City of Concord Engineering Services Division

SIDEWALK RAMP TYPE 6, EXAMPLES 3 & 4

SECTION: SITE/STREET
DRAWING NO. CR–9
DATE: 12/08 PAGE: 1

CR1–CR13_RDWY–Curb Ramps_10.dwg

Go To Details | Go To TOC



CRUSHED GRAVEL TO BE COMPACTED TO 95% MIN HAND COMPACTION IS NOT ALLOWED

RADIUS	MAX LENGTH
≤30'	CURVED CURB
31' – 35'	5'
36' – 42'	6'
43' – 49'	7'
50' – 56'	8'
57' – 60'	9'
OVER 60'	10'

MIN LENGTH OF CURB STONES 3'
MAX LENGTH OF CURB STONES 10'
MAX LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART

ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

FINISH SURFACE AND TOLERANCES FOR VERTICAL GRANITE CURB

AREA	FINISH SURFACE	TOLERANCE
TOP	5" WIDE OR AS OTHERWISE SHOWN, SAWN TRUE PLANE.	+⅛" TO +⅜"
	FRONT AND BACK ARRIS LINES PITCHED STRAIGHT AND PARALLEL.	+⅛" TO +⅜"
FRONT FACE	RIGHT ANGLE TO TOP, APPROXIMATELY TRUE PLANE. NO DRILL HOLES SHOWING IN TOP 10"	+1" TO –½"
BACK FACE EXPOSED	PLANE PARALLEL WITH FRONT FACE. STRAIGHT SPLIT TO 1½" BELOW EXPOSED SURFACE. NO LARGER THAN ¼" SEGMENT OF DRILL HOLES SHOWING IN ARRIS LINES.	+1" TO –1"
CONCEALED	BELOW 1½" FROM EXPOSED SURFACE.	+1½" TO –1½"
BOTTOM	APPROXIMATELY PARALLEL TO TOP. MINIMUM WIDTH: 3"	SEE PLANS
ENDS EXPOSED PORTION	SQUARE WITH PLANES OF TOP AND FACE	
JOINTS EXPOSED	OPTIMUM WIDTH: 1"	
CONCEALED	TO BREAK BACK NO MORE THAN 4"	+⅜" TO –¾"

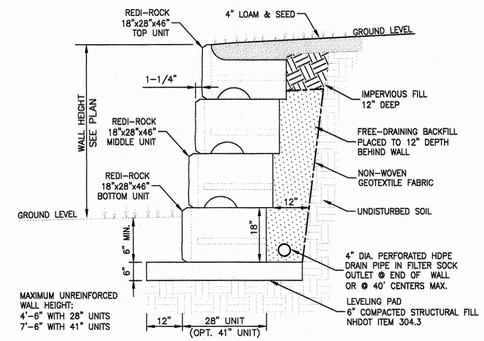
NO.	REVISION	DATE
1	DRAFTING	12.15
2	SAWCUT	5.19
–	–	–
–	–	–

City of Concord Engineering Services Division

VERTICAL GRANITE CURB

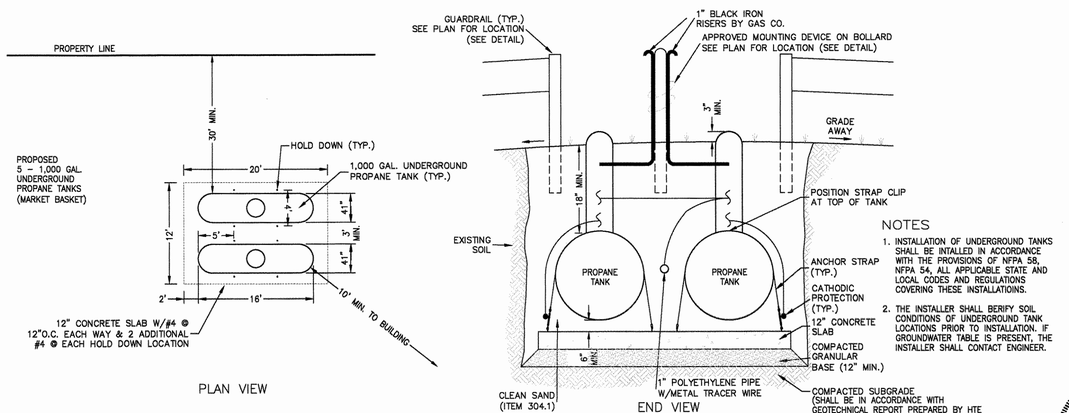
SECTION: SITE/STREET
DRAWING NO. C–1
DATE: 12/08 PAGE: 1

C1–C2_RDWY–Granite Curb_2.dwg



REDI–ROCK RETAINING WALL

UNREINFORCED SCALE: 1/2"=1'–0"



NOTES

1. INSTALLATION OF UNDERGROUND TANKS SHALL BE INTALLED IN ACCORDANCE WITH THE PROVISIONS OF NFPA 58, NFPA 54, ALL APPLICABLE STATE AND LOCAL CODES AND REGULATIONS COVERING THESE INSTALLATIONS.
2. THE INSTALLER SHALL BERIFY SOIL CONDITIONS OF UNDERGROUND TANK LOCATIONS PRIOR TO INSTALLATION. IF GROUNDWATER TABLE IS PRESENT, THE INSTALLER SHALL CONTACT ENGINEER.

PROPANE TANK INSTALLATION

NOT TO SCALE

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – 3/14/2023

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

REV	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

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Fax (603) 472–9747
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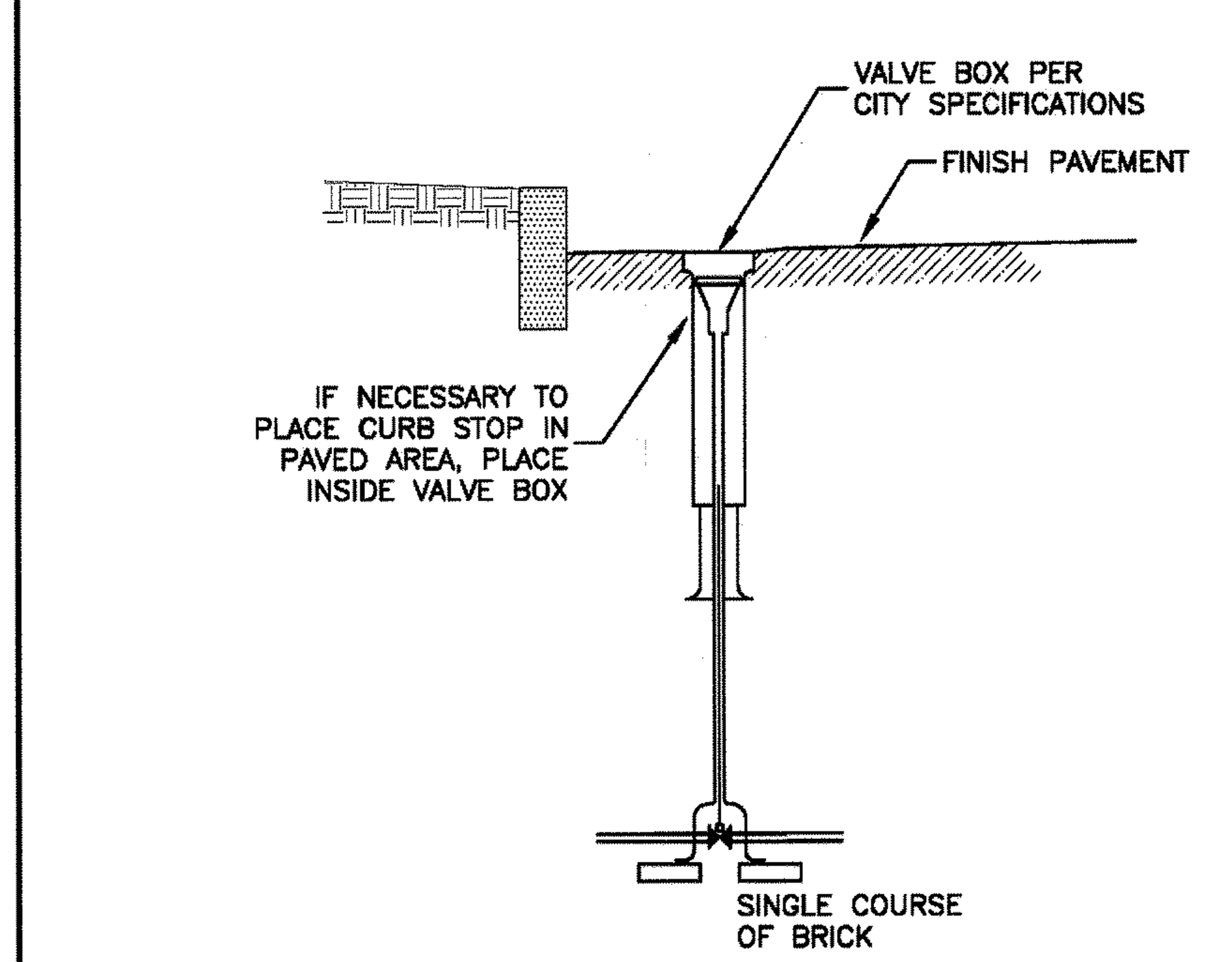
FILE 95830.08 | DR PWH | FB – | CK JSH | CADFILE 95830–08_DETAILS

C–26

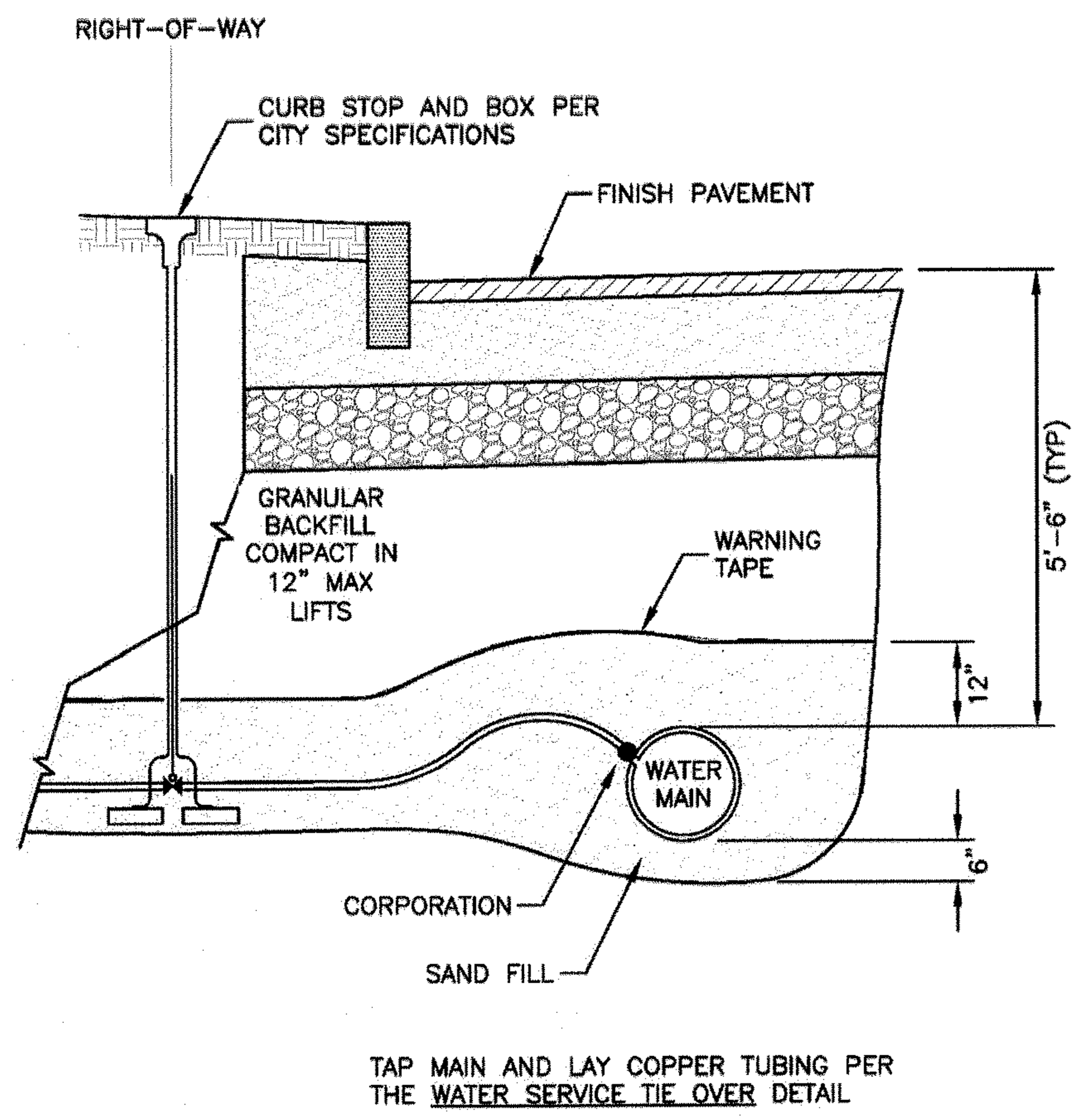
DIG SAFE – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

4331–31



NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: WATER
-	-	-	CURB STOP IN PAVEMENT	DRAWING NO. W-13
-	-	-		DATE: 3/13 PAGE: 1
-	-	-		
APPROVED BY:				

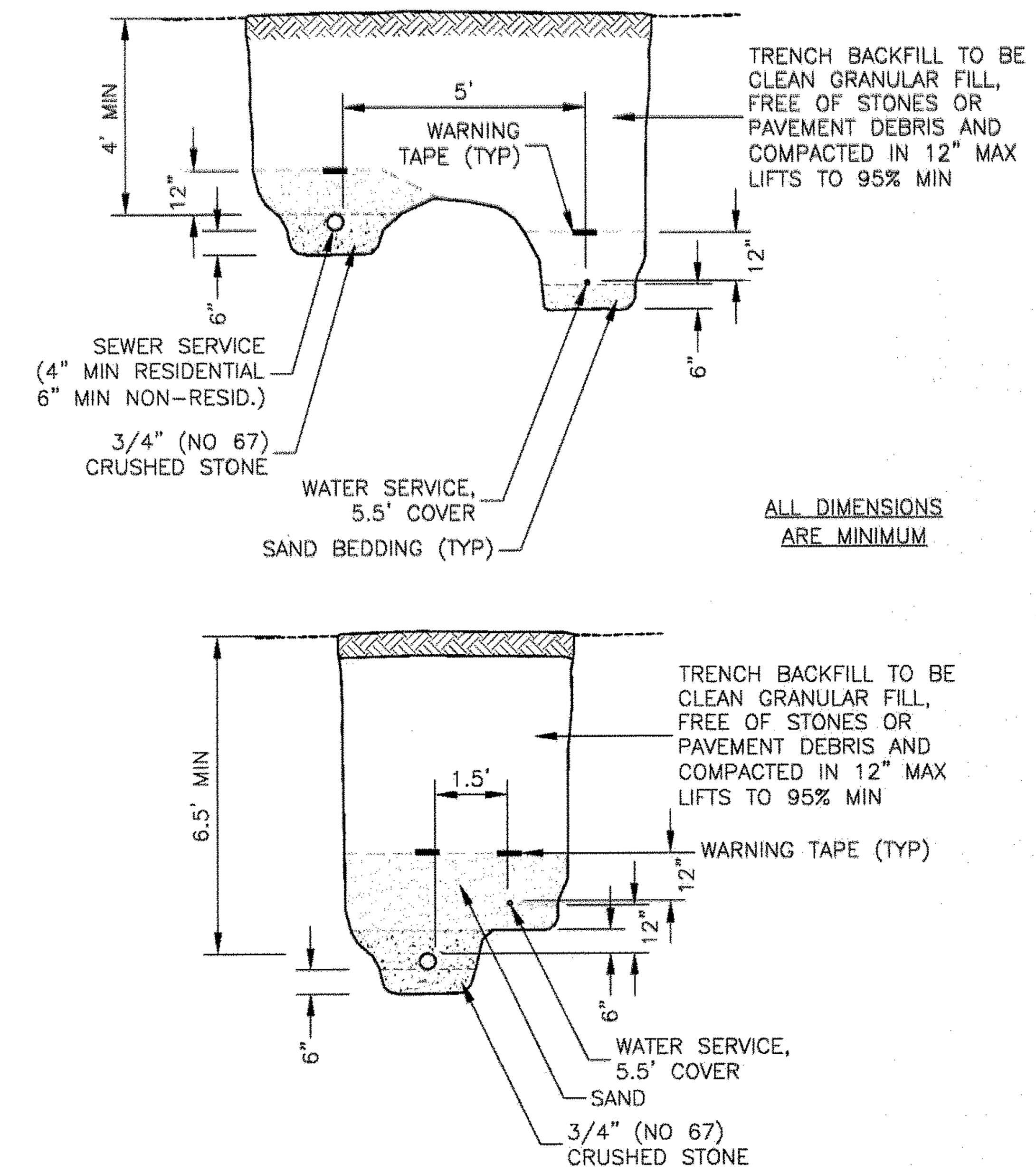
WATR-Curb Stop_2.dwg



TAP MAIN AND LAY COPPER TUBING PER THE WATER SERVICE TIE OVER DETAIL

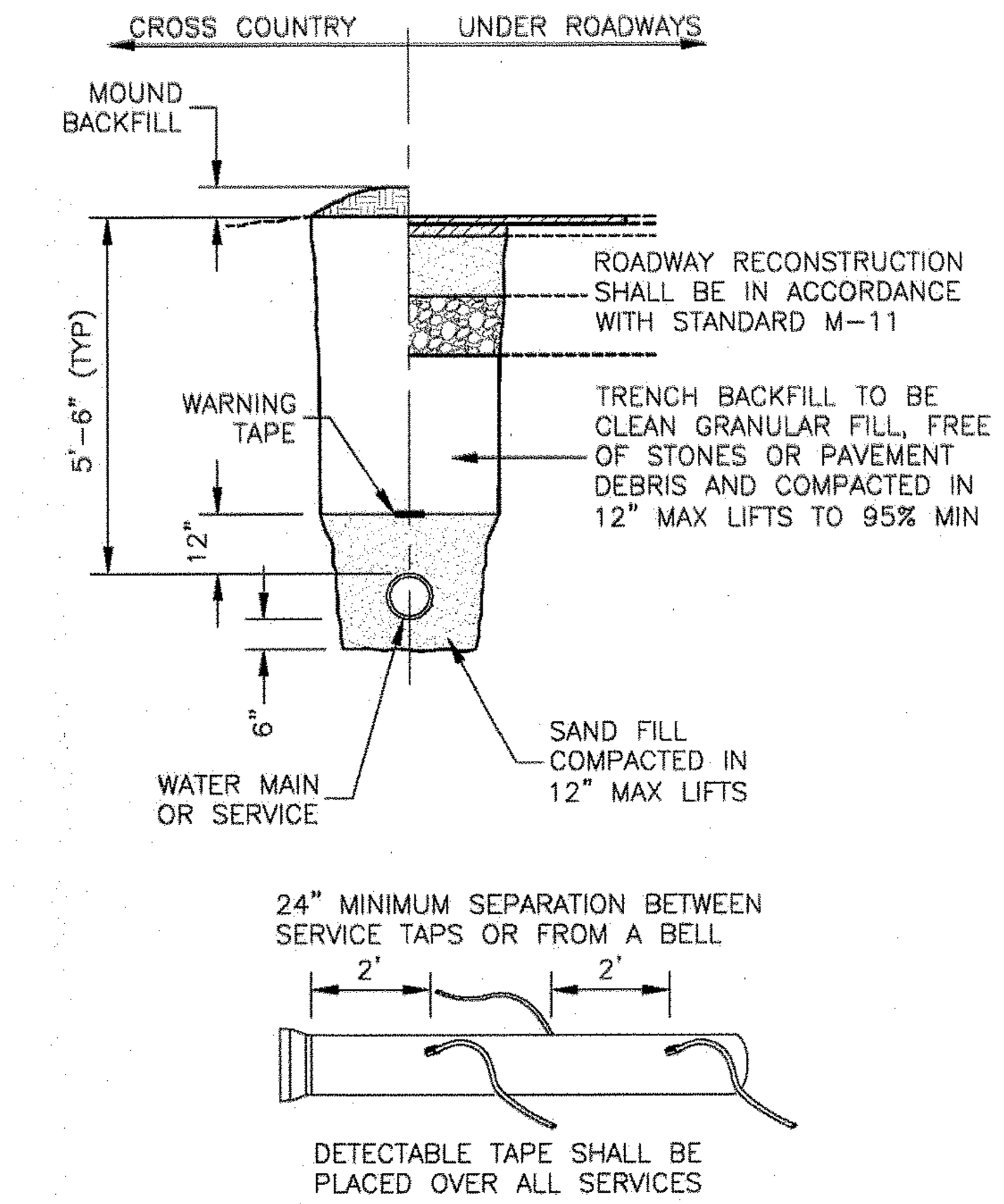
NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: WATER
1	MARKING TAPE	12/13	WATER SERVICE INSTALLATION	DRAWING NO. W-14
-	-	-		DATE: 11/11 PAGE: 1
-	-	-		
APPROVED BY:				

WATR-Service Installation_2.dwg



NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SEWR-WATR
-	-	-	WATER AND SEWER SERVICE TRENCH	DRAWING NO. SS-7
-	-	-		DATE: 03/15 PAGE: 1
-	-	-		
APPROVED BY:				

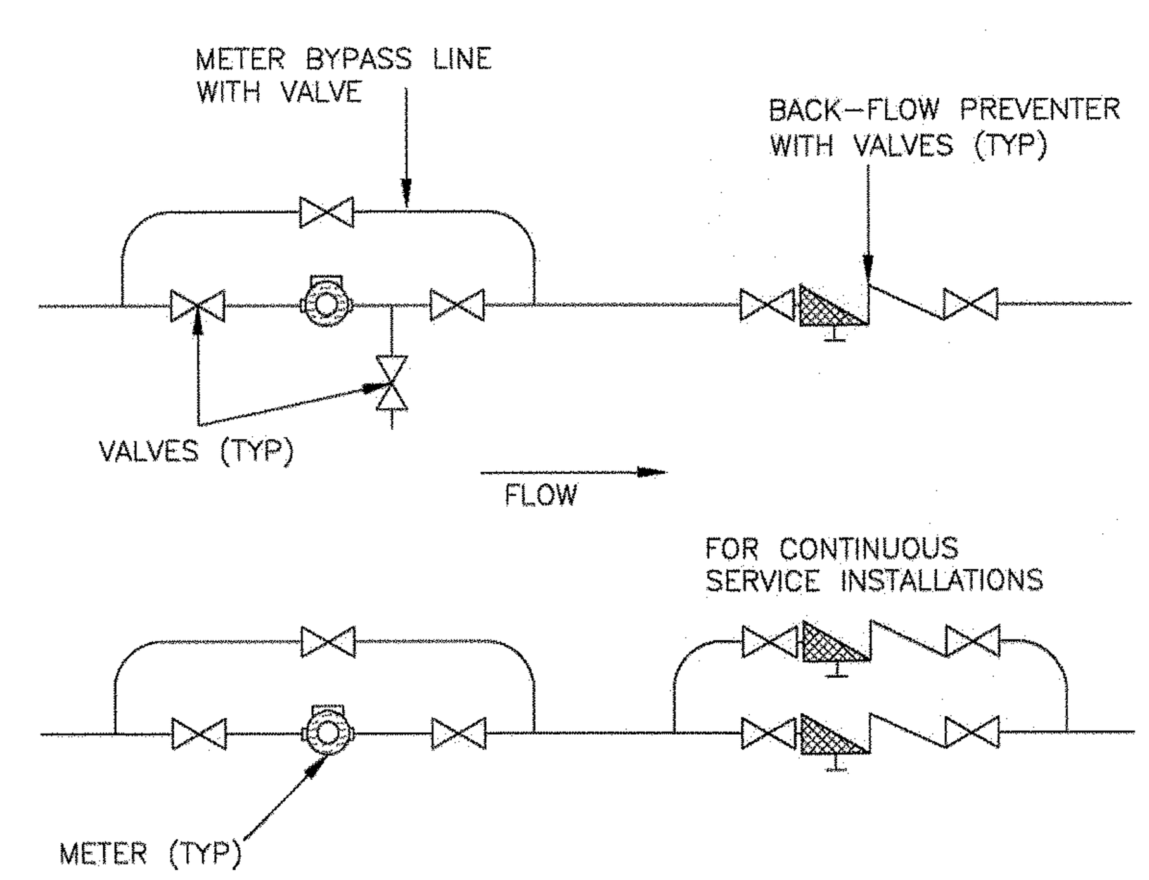
SEWR-Service Trench_3.dwg



NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SEWER
1	NEW FORMAT	4.15	WATER MAIN/SERVICE TRENCH	DRAWING NO. W-1
-	-	-		DATE: 12/08 PAGE: 1
-	-	-		
APPROVED BY:				

WATR-Main-Service Trench_3.dwg

Go To Details
Go To TOC



ON ALL WATER SERVICES WITH A METER SIZE OF 1½" OR LARGER, A BYPASS LINE WITH A 2" TEST OUTLET IS REQUIRED.

AN IDLER OR METER SPACER WITH GASKETS AND BOLTS CAN BE OBTAINED FROM THE CITY UTILITY BILLING OFFICE TO ASSIST WITH METER PLUMBING.

NO OBSTRUCTIONS ARE ALLOWED:
BEFORE THE METER 5 x D
BEFORE A METER WITH STRAINER 3 x D
AFTER THE METER 2 x D
WHERE D = PIPE DIAMTER

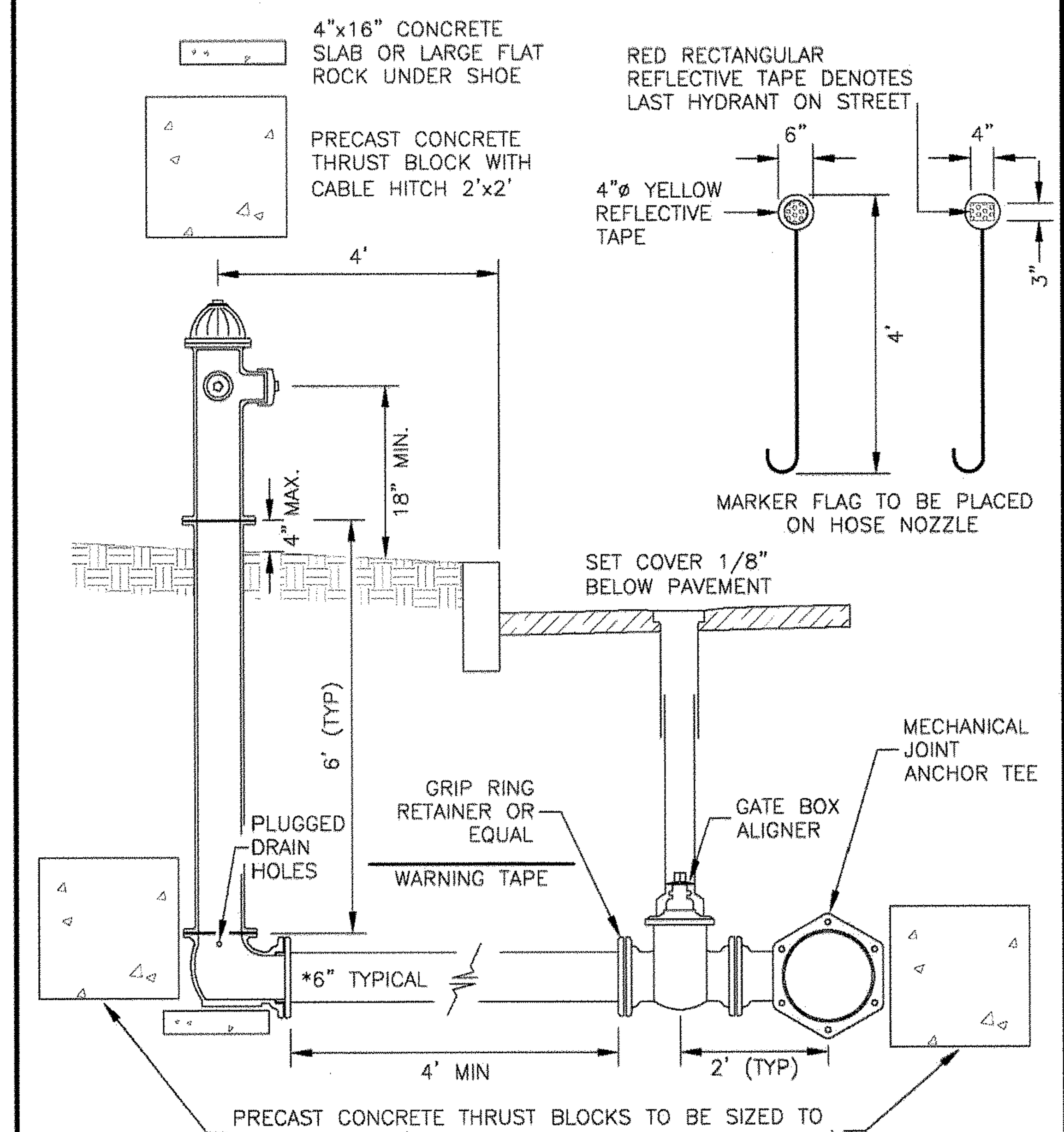
LAYING LENGTH OF METERS:

⅝" x ¾"		=	7½"
1" x	___	=	10¾"
1½" x	___	=	13"
2" x	___	=	17"
3" TURBO x	___	=	16"
TURBO x	___	=	14"

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: WATER
1	REM 2" TEST	4.15	WATER METER INSTALLATION	DRAWING NO. W-9
-	-	-		DATE: 12/08 PAGE: 1
-	-	-		
-	-	-		

W9_WATR-Meters_1.dwg

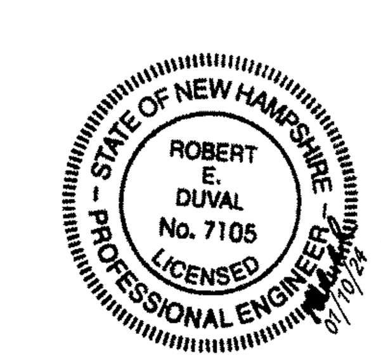
Go To Details
Go To TOC



* SHOULD THE HYDRANT BE MORE THAN 20' FROM THE MAIN, THE HYDRANT SERVICE SHALL BE 8" TO A POINT IMMEDIATELY ADJACENT TO THE HYDRANT WHERE THE SERVICE WILL BE REDUCED TO 6"

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: WATER
1	FLANGE HEIGHT	11.11	FIRE HYDRANT	DRAWING NO. W-2
2	DRAFTING	11.11		DATE: 12/08 PAGE: 1
3	Nozzle Height	02.19		
-	-	-		

W2_WATR-Hydrant.dwg



REV.	DATE	DESCRIPTION	DR	CK
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3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

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INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

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FILE	DR	PWH	FB	-	
95830.08	CK	JSH	CADFILE	95830-08_DETAILS	C-27

4331-32

SEWER SERVICE NOTES

1) MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE SIX (6) INCHES.

2) PIPE AND JOINT MATERIALS:
A. PLASTIC SEWER PIPE
1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 & 214 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) ENV-WQ 704.06 GRAVITY SEWER PIPE TESTING.
(A) ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

(B) LOW-PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH THE FOLLOWING TESTING STANDARDS IN EFFECT AT THE TIME THE TEST IS CONDUCTED:
(1) ASTM F1417 "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR", AVAILABLE AS NOTED IN APPENDIX D; OR
(2) UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW-PRESSURE AIR TESTING OF INSTALLED SEWER PIPE", AVAILABLE AS NOTED IN APPENDIX D.

(C) ALL NEW GRAVITY SEWERS SHALL BE:
(1) CLEANED AND VISUALLY INSPECTED USING A LAMP TEST AND BY INTRODUCING WATER TO DETERMINE THAT THERE IS NO STANDING WATER IN THE SEWER; AND
(2) TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.

(D) ALL PLASTIC SEWER PIPE SHALL BE VISUALLY INSPECTED AND DEFLECTION TESTED NOT LESS THAN 30 DAYS NOR MORE THAN 90 DAYS FOLLOWING INSTALLATION.
(E) THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% PERCENT OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

10) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%-55% PASSING	3/8 INCH SCREEN
0%-10% PASSING	#4 SIEVE
0%-5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

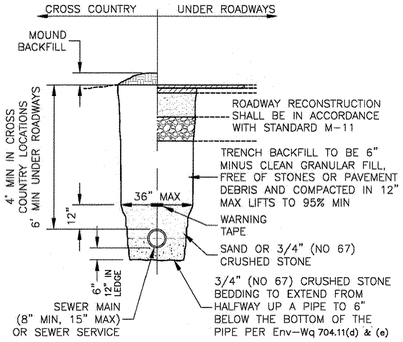
11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

13) THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSES A ½-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE.

14) TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING:
(1) DEBRIS;
(2) PIECES OF PAVEMENT;
(3) ORGANIC MATTER;
(4) TOP SOIL;
(5) WET OR SOFT MUCK;
(6) PEAT OR CLAY;
(7) EXCAVATED LEDGE MATERIAL;
(8) ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION; AND
(9) ANY MATERIAL NOT APPROVED BY THE ENGINEER.

15) FOR EXCAVATION IN LEDGE, EXCAVATION SHALL EXTEND AT LEAST 12" BELOW THE BOTTOM OF THE SEWER PIPE PER ENV-WQ 704.11 (0).



NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SEWER
–	–	–	SANITARY SEWER MAIN/SERVICE TRENCH	DRAWING NO. SM-1
–	–	–		DATE: 08/13 PAGE: 1
–	–	–		
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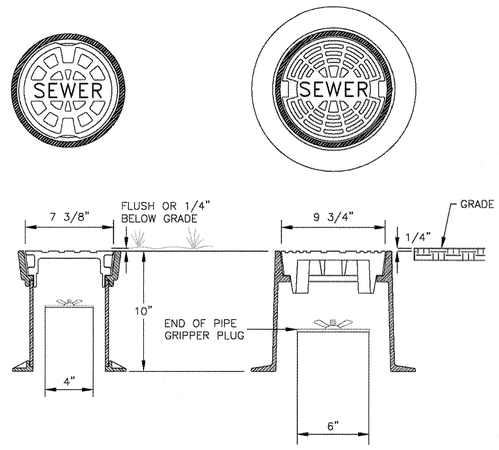

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SEWER
–	–	–	CLEANOUT COVERS 4" OR 6"	DRAWING NO. SS-4
–	–	–		DATE: 12/08 PAGE: 1
–	–	–		
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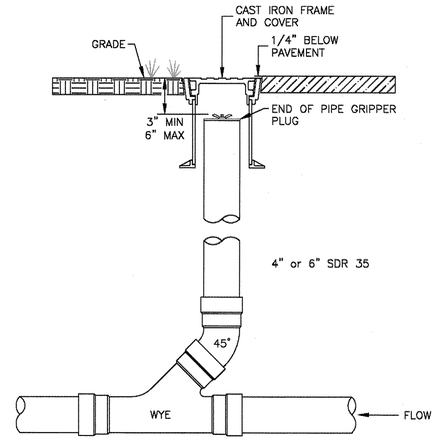

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SEWER
–	–	–	CLEANOUTS ON SERVICE LATERALS	DRAWING NO. SS-3
–	–	–		DATE: 12/08 PAGE: 1
–	–	–		
APPROVED BY:				

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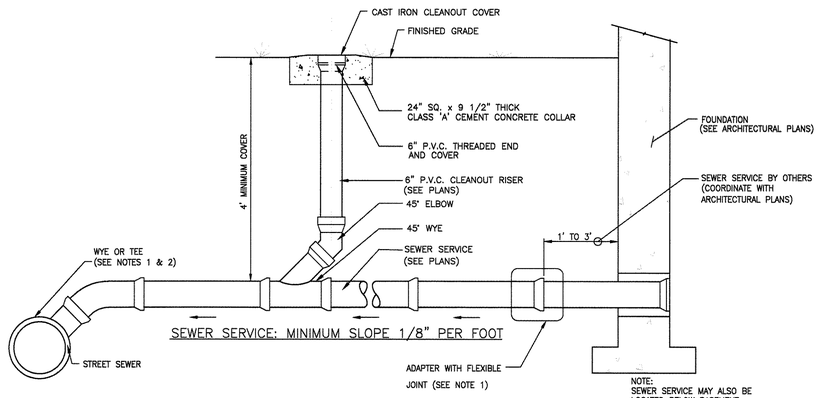
NOTES:

1) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

2) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.



SEWER SERVICE & CLEANOUT

NOT TO SCALE

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – ROBERT E. DUVAL No. 7105 LICENSED – 03/15/23

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE: 95830.08	DR	PWH	FB	–	C-28
	CK	JSH	CADFILE	95830-08_DETAILS	

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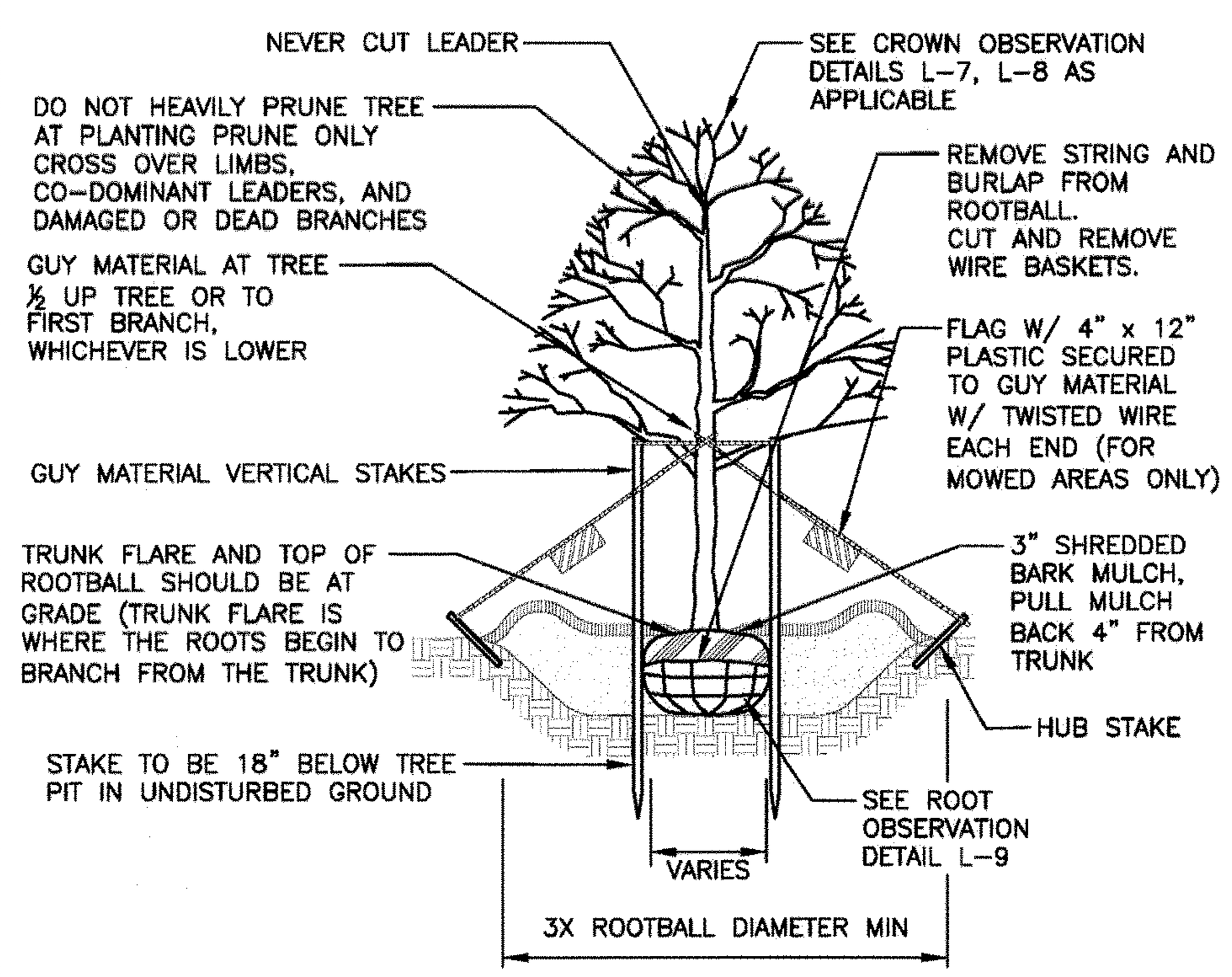

NOTES:

1. GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECT. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING.
2. TYPICALLY ONLY TREES WITH A 3" OR GREATER CALIPER NEED TO BE STAKED. TREES WITH LESS THAN A 3" CALIPER NEED TO BE STAKED ONLY AS REQUIRED BY LANDSCAPE ARCHITECT.
3. ONLY WRAP TREE TRUNKS AS REQUIRED BY LANDSCAPE ARCHITECT.
4. TREE SHALL BE SET PLUMB, AFTER SETTLEMENT.
5. LOAM FOR BACKFILLING SHALL BE AMENDED AS REQUIRED BY LANDSCAPE ARCHITECT.
6. CITY TREES PLANTED ON PRIVATE PROPERTY, ADJACENT TO A PUBLIC RIGHT-OF-WAY, NEED TO BE PLANTED A MINIMUM OF 10 FEET FROM THE EDGE OF THE CITY SIDEWALK.
7. ALL NURSERY TAGS, TAPE, AND SIMILAR MATERIALS SHALL BE REMOVED.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE	
1	NOTES	4.15	DECIDUOUS TREE PLANTING	DRAWING NO. L-1	
–	–	–		DATE: 12/08	PAGE: 1
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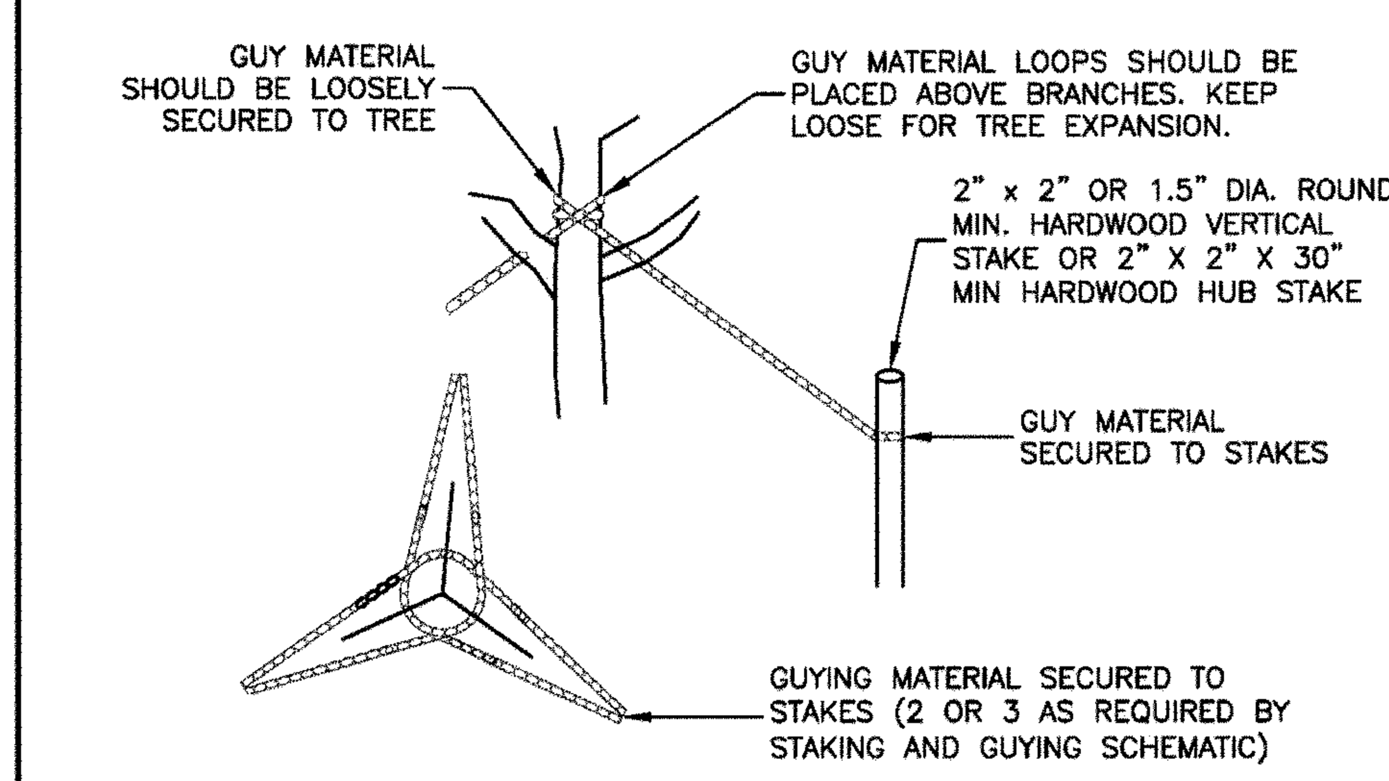

NOTE:
ONLY USE PLASTIC CHAINLOCK (LANDSCAPE QUALITY AND SUITABLE FOR GUYING TREES) OR EQUIVALENT GUYING MATERIAL.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE	
–	–	–	DECIDUOUS TREE – GUYING & STAKING	DRAWING NO. L-2	
–	–	–		DATE: 12/08	PAGE: 1
–	–	–			
APPROVED BY:					

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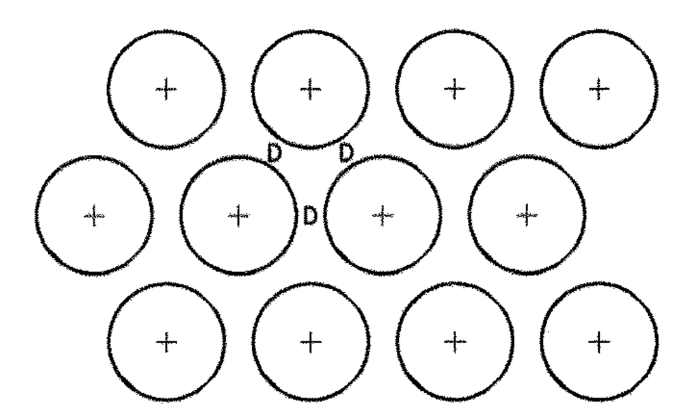
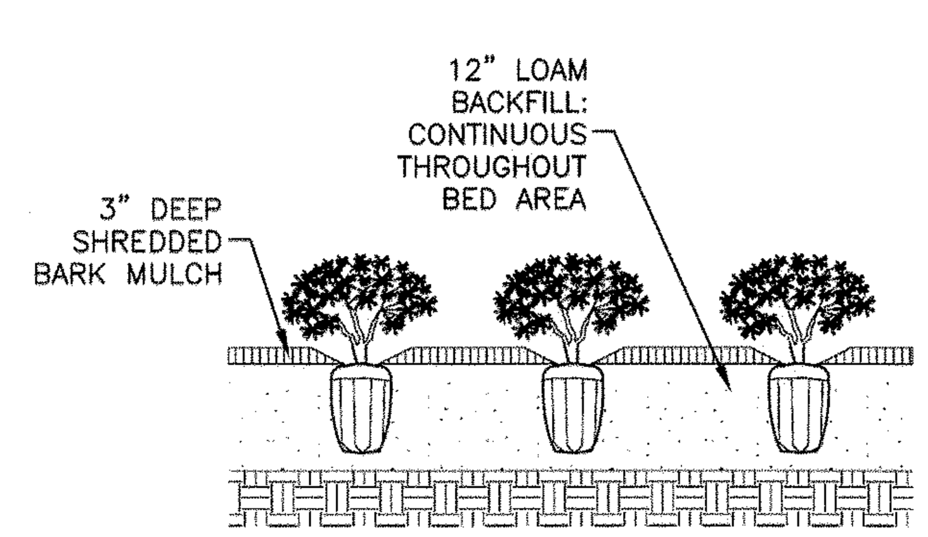


TYPICAL BED PLANT SPACING

D = DIMENSION OF PLANT SPACING (SHRUB OR GROUNDCOVER AS INDICATED ON PLANS)



GROUNDCOVER BED PLANTING

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE	
–	–	–	GROUNDCOVER PLANTING	DRAWING NO. L-5	
–	–	–		DATE: 12/08	PAGE: 1
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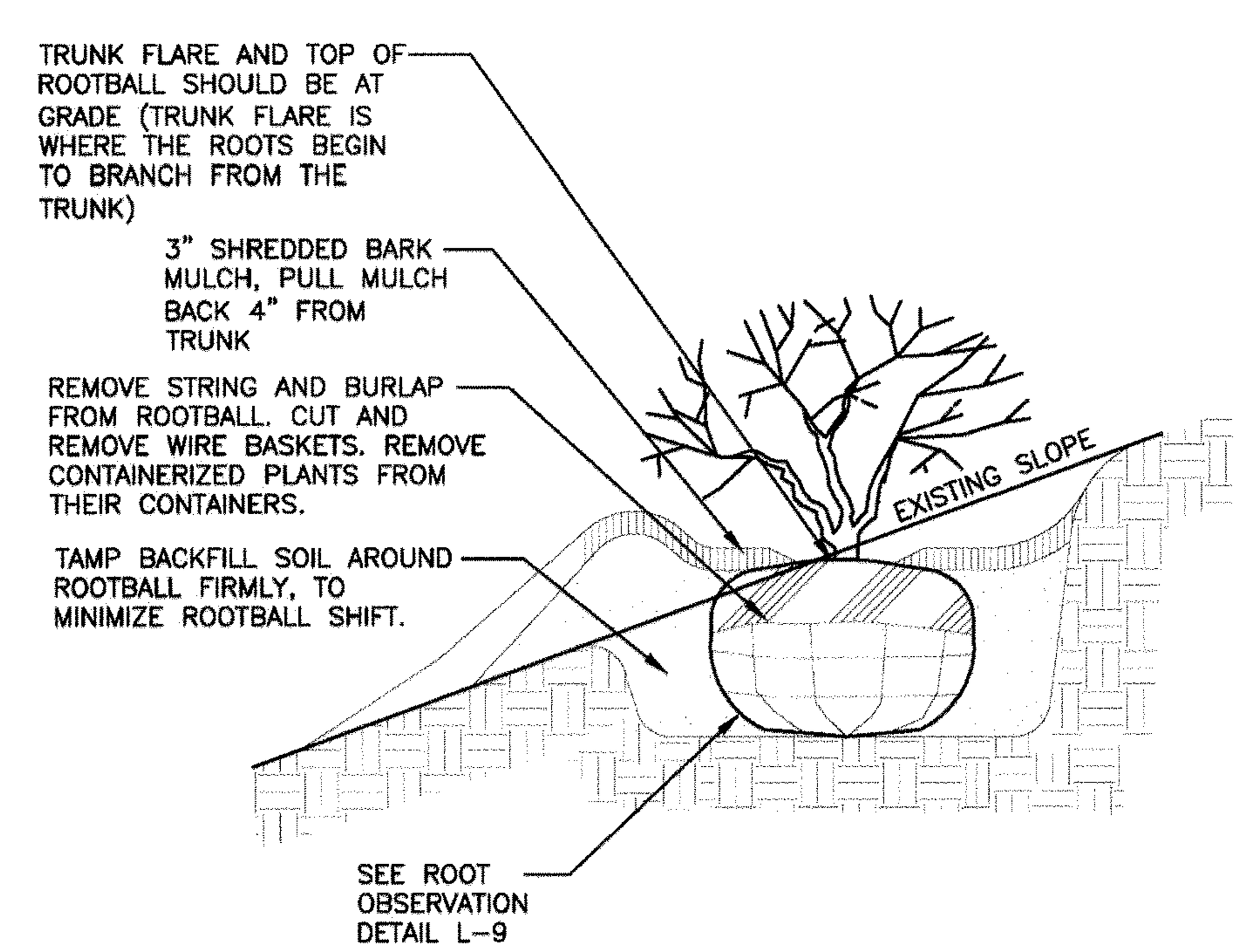
–	–	–			

L1-L9_LDSC Landscape



NOTES:

1. DO NOT HEAVILY PRUNE SHRUB AT PLANTING, PRUNE ONLY CROSSOVER LIMBS AND DAMAGED OR DEAD BRANCHES.
2. BACKFILL WITH LOAM, AMEND AS REQUIRED BY LANDSCAPE ARCHITECT.
3. SHRUBS & GROUNDCOVER PLANTED ADJACENT TO CITY SIDEWALKS NEED TO BE PLACED SO THE PLANTS, AT THEIR MATURE HEIGHT & WIDTH, WILL NOT ENCROACH INTO THE CITY'S SIDEWALK.
4. TREE TO BE SET PLUMB, AFTER SETTLEMENT.
5. ALL NURSERY TAGS, TAPE, AND SIMILAR MATERIALS SHALL BE REMOVED.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE	
1	NOTES	4.15	SHRUB PLANTING	DRAWING NO. L-4	
–	–	–		DATE: 12/08	PAGE: 1
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LANDSCAPE SPECIFICATIONS

PLANTING

1. EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.
2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE POCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.
3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.
4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.
5. DISH TOP OF BACKFILL TO ALLOW FOR MULCH – PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6' DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2' BEYOND THE OUTER MOST BRANCHES.
6. MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT LESS THAN 3" THICKNESS OF BARK MULCH, 3/8"-2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJACENT FINISH GRADES AS DIRECTED IN THE FIELD.
7. STAKE AND GUY TREES IMMEDIATELY AFTER PLANTING (TREE SUPPORT STAKES SHALL BE 2" X 3" X 8'0", WOOD STAKES. GUYING WIRE SHALL BE NO. 12 GAUGE GALVANIZED SOFT STEEL WIRE. HOSE FOR COVERING WIRE SHALL BE NEW OR USED TWO PLY RUBBER HOSE NOT LESS THAN 1/2 INCH INSIDE DIAMETER. (PLASTIC "CINCH-TIES" OR EQUIVALENT FASTENING DEVICE MAY BE AN ACCEPTABLE GUY WIRE AND HOSE PROTECTOR SUBSTITUTE.)
8. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.
9. TREES TO REMAIN STAKED FOR 1 FULL GROWING SEASON.
10. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

LANDSCAPE MAINTENANCE

LAWN

1. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE LAWN IS ESTABLISHED, BUT NOT LESS THAN THE FOLLOWING PERIODS:
   - A. SEEDED LAWNS: 60 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
     - 1. WHEN FULL MAINTENANCE PERIOD HAS NOT ELAPSED BEFORE END OF PLANTING SEASON, OR IF LAWN IS NOT FULLY ESTABLISHED, CONTINUE MAINTENANCE DURING NEXT PLANTING SEASON.
   - B. SODDED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
   - C. PLUGGED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
   - D. SPRIGGED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
2. MAINTAIN AND ESTABLISH LAWN BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH LAWN.
   - A. IN AREAS WHERE MULCH HAS BEEN DISTURBED BY WIND OR MAINTENANCE OPERATIONS, ADD NEW MULCH. ANCHOR AS REQUIRED TO PREVENT DISPLACEMENT.
3. WATERING: PROVIDE AND MAINTAIN TEMPORARY PIPING, HOSES, AND LAWN-WATERING EQUIPMENT TO CONVEY WATER FROM SOURCES AND KEEP LAWN UNIFORMLY MOIST TO A DEPTH OF FOUR INCHES (100 mm).
   - A. 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.
   - B. WATER LAWN AT A MINIMUM RATE OF ONE INCH (25 mm) PER WEEK.
4. MOW LAWN AS SOON AS TOP GROWTH IS TALL ENOUGH TO CUT. REPEAT MOWING TO MAINTAIN SPECIFIC HEIGHT WITHOUT CUTTING MORE THAN 40 PERCENT OF GRASS HEIGHT. REMOVE NO MORE THAN 40 PERCENT OF GRASS-LEAF GROWTH IN INITAL OR SUBSEQUENT MOWINGS. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET. SCHEDULE INITIAL AND SUBSEQUENT MOWINGS TO MAINTAIN THE FOLLOWING GRASS HEIGHT.
   - A. MOW GRASS TO ½ INCH (13 mm) HIGH OR LESS.
   - B. MOW GRASS ½ TO 1 INCH (13 TO 25 mm) HIGH OR LESS.
   - C. MOW GRASS 1 TO 2 INCHES (25 TO 50 mm) HIGH OR LESS.
   - D. MOW GRASS 1-1/2 TO 2 INCHES (38 TO 50 mm) HIGH OR LESS.
   - E. MOW GRASS 2 TO 3 INCHES (50 TO 75 mm) HIGH OR LESS.
5. LAWN POSTFERTILIZATION: APPLY FERTILIZER AFTER INITIAL MOWING AND WHEN GRASS IS DRY.
   - A. USE FERTILIZER THAT WILL PROVIDE ACTUAL NITROGEN OF AT LEAST 1 lb/1,000 SF (0.45 kg/92.9 SM) TO LAWN AREA.

MEADOW

1. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE MEADOW IS ESTABLISHED, BUT FOR NOT LESS THAN 40 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
2. MAINTAIN AND ESTABLISH MEADOW BY WATERING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH.
3. WATERING: PROVIDE AND MAINTAIN TEMPORARY PIPING, HOSES, AND LAWN-WATERING EQUIPMENT TO CONVEY WATER FROM SOURCES AND KEEP MEADOW UNIFORMLY MOIST.
   - A. 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.
   - B. WATER LAWN AT A MINIMUM RATE OF 1/2 INCH (13 mm) PER WEEK FOR 4 WEEKS.

TREES AND SHRUBS:

1. PRUNING SHOULD BE STARTED EARLY AND KEPT UP AT REGULAR INTERVALS. TREES SHOULD BE PRUNED AND SHAPED TO AVOID SPLITTING LATER IN LIFE. BROKEN TOPS AND BRANCHES SHOULD BE REMOVED AS SOON AS POSSIBLE AFTER INJURY. BROKEN, WEAK OR DISEASED BRANCHES SHOULD BE REMOVED FIRST, DEAD BRANCHES SECOND AND HEALTHY BRANCHES LAST.
2. TREES AND SHRUBS SHOULD BE PROTECTED AGAINST DAMAGE INCURRED WITH LAWN MOWERS AND GARDEN EQUIPMENT. KEEPING GRASS AWAY FROM TREE TRUNKS WITH THE USE OF MULCH IS RECOMMENDED.
3. THE USE OF ROAD SALT AROUND TREES AND SHRUBS SHOULD BE AVOIDED OR MINIMIZED.
4. LANDSCAPED AREAS SHALL BE ROUTINELY MAINTAINED FREE OF DEBRIS AND LITTER. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE. MAINTAINENCE SHALL INCLUDE THE REPLACEMENT OF ALL DEAD PLANT MATERIAL WITHIN THE GUARANTEED CONTRACT PERIOD.

LANDSCAPE SPECIFICATIONS

SITE AND SOIL PREPARATION

1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.
2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 4 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.
3. LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.6. LOAM SHALL CONTAIN A MINIMUM OF THREE PERCENT (3%) AND A MAXIMUM OF TWENTY PERCENT (20%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.
4. NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.
5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.
6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.
7. THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

SEEDING

1. ROUGH GRADING SHALL BE COMPLETED PRIOR TO THE START OF PLANTING IN ANY GIVEN AREA OF THE PROJECT SITE.
2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15, EXCEPT FOR RESEEDING OF BARE SPOTS AND MAINTENANCE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEEDED OR SODDED. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. AFTER OCTOBER 15 DISTURBED SOILS SHALL BE PROTECTED IN ACCORDANCE WITH THE WINTER CONSTRUCTION NOTES.

ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

TYPICAL LAWN MIX (MIN. 200 LBS/ACRE):

33% CREEPING RED FESCUE	(MIN. 66 LBS/ACRE)
42% PERENNIAL RYEGRASS	(MIN. 84 LBS/ACRE)
21% KENTUCKY BLUEGRASS	(MIN. 42 LBS/ACRE)
4% REDTOP	(MIN. 8 LBS/ACRE)

WILDFLOWER SLOPE (NHDOT TYPE 45) MIX 3:1 OR GREATER SLOPES (MIN. 160 LBS/ACRE):

38% CREEPING RED FESCUE	(MIN. 60 LBS/ACRE)
32% PERENNIAL RYEGRASS	(MIN. 51 LBS/ACRE)
5% REDTOP	(MIN. 8 LBS/ACRE)
5% ALSIKE CLOVER	(MIN. 8 LBS/ACRE)
5% BIRDSFOOT TREFOIL	(MIN. 8 LBS/ACRE)
3% LANCE-LEAF COREOPSIS	(MIN. 3 LBS/ACRE)
3% OXEYE DAISY	(MIN. 3 LBS/ACRE)
3% BUTTERFLY WEED	(MIN. 3 LBS/ACRE)
3% BLACKEYED SUSAN	(MIN. 3 LBS/ACRE)
3% WILD LUPINE	(MIN. 3 LBS/ACRE)

GENERAL SLOPE (NHDOT TYPE 44) MIX 3:1 OR GREATER SLOPES (MIN. 160 LBS/ACRE):

44% CREEPING RED FESCUE	(MIN. 70 LBS/ACRE)
38% PERENNIAL RYEGRASS	(MIN. 60 LBS/ACRE)
6% REDTOP	(MIN. 10 LBS/ACRE)
6% ALSIKE CLOVER	(MIN. 10 LBS/ACRE)
6% BIRDSFOOT TREFOIL	(MIN. 10 LBS/ACRE)

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – 01/10/24

6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD
REV.	DATE	DESCRIPTION	DR	CK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

4331-34

CONSTRUCTION SEQUENCE NOTES

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
3. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES PRIOR TO ANY EARTH MOVING OPERATION.
4. ROUGH GRADE SITE OR PHASED WORK AREA. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.

   AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
5. CONSTRUCT CULVERTS, SUBSURFACE INFILTRATION BASINS, WET POND AND INFILTRATION BASIN. PLACE HEADWALLS, RIP-RAP AND OTHER DRAINAGE FACILITIES ACCORDING TO PLAN. THE CONTRACTOR SHALL STABILIZE ALL CONTRIBUTING AREAS PRIOR TO DIRECTING FLOW TO THEM.
6. INSTALL ALL UNDERGROUND UTILITIES.
7. CONSTRUCT BUILDINGS.
8. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
9. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES PERIODICALLY AND IMMEDIATELY AFTER STORM EVENTS.
10. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
11. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.

* REFER TO THE STORM WATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

GENERAL NOTES

1. ALL IN PAVEMENT MANHOLES SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
4. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
5. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
6. REFER TO THE TOWN STANDARD DETAILS, LATEST REVISION, FOR ADDITIONAL INFORMATION AND CRITERIA.
7. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND PONDS PRIOR TO DIRECTING FLOW TO THEM.
8. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.

OVERWINTER STABILIZATION

1. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
2. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.
3. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.
4. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.
5. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.
6. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. INSTALLATION OF SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A VEGETATIVE COVER OF GREATER THAN 85%. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 4" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

   TYPICAL LAWN MIX (MIN. 200 LBS/ACRE):
   33% CREEPING RED FESCUE (MIN. 66 LBS/ACRE)
   42% PERENNIAL RYEGRASS (MIN. 84 LBS/ACRE)
   21% KENTUCKY BLUEGRASS (MIN. 42 LBS/ACRE)
   4% REDTOP (MIN. 8 LBS/ACRE)

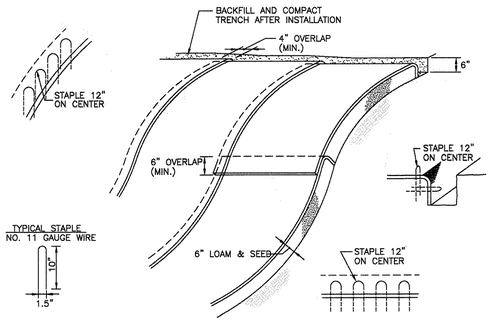
   TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
   100% ANNUAL RYE

   WILDFLOWER SLOPE (NHDOT TYPE 45) MIX 3:1 OR GREATER SLOPES (MIN. 160 LBS/ACRE):
   38% CREEPING RED FESCUE (MIN. 60 LBS/ACRE)
   32% PERENNIAL RYEGRASS (MIN. 51 LBS/ACRE)
   5% REDTOP (MIN. 8 LBS/ACRE)
   5% ALSIKE CLOVER (MIN. 8 LBS/ACRE)
   5% BIRDSFOOT TREFOIL (MIN. 8 LBS/ACRE)
   3% LANCE-LEAF COREOPSIS (MIN. 3 LBS/ACRE)
   3% OXEYE DAISY (MIN. 3 LBS/ACRE)
   3% BUTTERFLY WEED (MIN. 3 LBS/ACRE)
   3% BLACKEYED SUSAN (MIN. 3 LBS/ACRE)
   3% WILD LUPINE (MIN. 3 LBS/ACRE)

   GENERAL SLOPE (NHDOT TYPE 44) MIX 3:1 OR GREATER SLOPES (MIN. 160 LBS/ACRE):
   44% CREEPING RED FESCUE (MIN. 70 LBS/ACRE)
   38% PERENNIAL RYEGRASS (MIN. 60 LBS/ACRE)
   6% REDTOP (MIN. 10 LBS/ACRE)
   6% ALSIKE CLOVER (MIN. 10 LBS/ACRE)
   6% BIRDSFOOT TREFOIL (MIN. 10 LBS/ACRE)

   A. PLACING LOAM ON SITE
      a. ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
   a. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
   b. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.

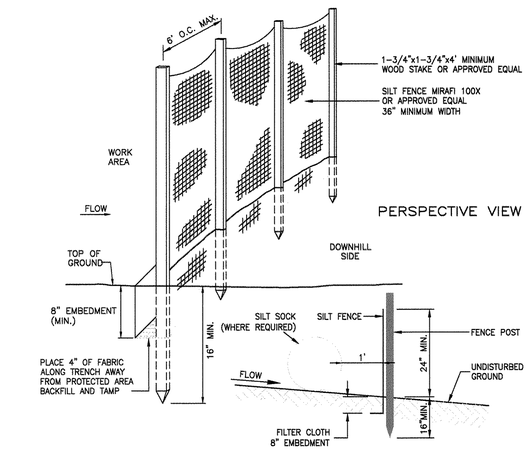
   B. SEED BED PREPARATION
      AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.
6. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
7. HAY MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS AREA NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.
9. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS, IN ACCORDANCE WITH NHDES GUIDELINES.



1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
5. BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC-2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD-OCF 30, OR APPROVED EQUAL.
6. BLANKET SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, MULTI-FILAMENT, OR MONO-FILAMENT POLYPROPYLENE NETTING OR MESH.

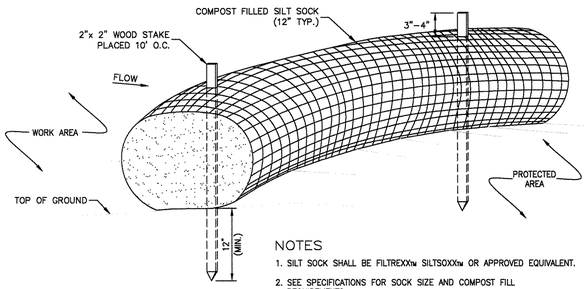
BLANKET SLOPE PROTECTION

FOR EROSION CONTROL — NOT TO SCALE



SILT FENCE

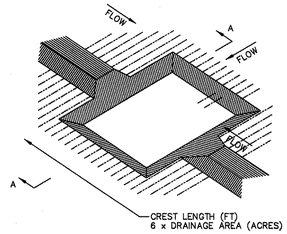
NOT TO SCALE



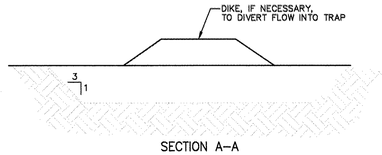
NOTES
1. SILT SOCK SHALL BE FILTREXXw SILTSOXXw OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT SOCK

NOT TO SCALE



ISOMETRIC VIEW

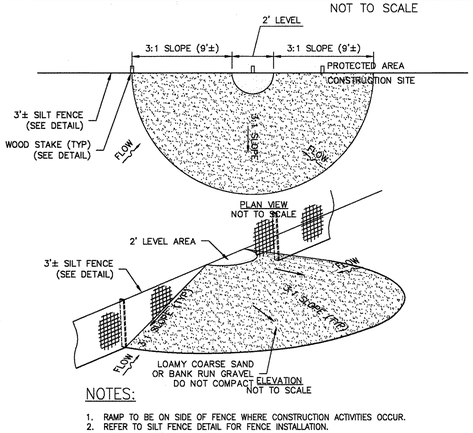


SECTION A-A

NOTES
1. SEDIMENT TRAPS AND/OR BASINS SHOULD BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED.

SEDIMENT TRAP

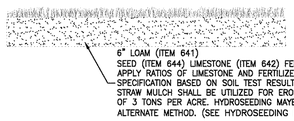
NOT TO SCALE



NOTES:
1. RAMP TO BE ON SIDE OF FENCE WHERE CONSTRUCTION ACTIVITIES OCCUR.
2. REFER TO SILT FENCE DETAIL FOR FENCE INSTALLATION.
3. SPACE AT 300'.

SILTATION FENCE WILDLIFE RAMP

NOT TO SCALE



LOAM & SEED

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 9/14/23

REV.	DATE	DESCRIPTION	DR	CK
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DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

4331-35

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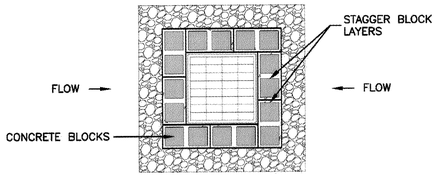
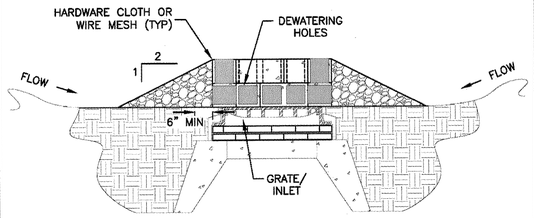


PLAN



SECTION

CONSTRUCTION REQUIREMENTS

1. LAY FIRST COURSE OF BLOCK ON ITS SIDE FOR DEWATERING. PLACE BLOCKS AGAINST FRAME FOR SUPPORT.
2. PLACE HARDWARE CLOTH OR WIRE MESH OVER BLOCK OPENINGS TO SUPPORT STONE.
3. PLACE STONE ON A 2:1 OR FLATTER SLOPE UP TO THE TOP OF BLOCK.
4. REMOVE STONE AND BLOCKS, AS DIRECTED, WHEN NO LONGER NEEDED. BEFORE STONE AND BLOCKS ARE REMOVED, STABILIZE ANY SEDIMENT WHICH IS PERMITTED TO STAY IN PLACE WITH VEGETATION.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: EPSC
–	–	–	STONE & BLOCK GRATE INLET PROTECTION DETAILS	DRAWING NO. E–2
–	–	–		DATE: 01/09 PAGE: 1
–	–	–		

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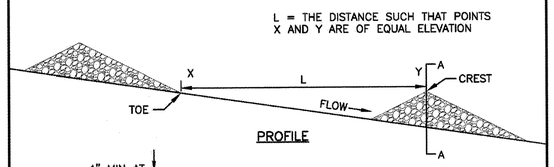
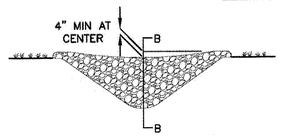
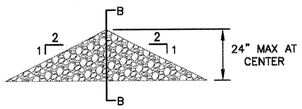
Go To Details | Go To TOC



PROFILE



SECTION A–A



SECTION B–B

CONSTRUCTION REQUIREMENTS

1. PLACE STONE TO THE LINES, GRADES AND LOCATIONS AS SHOWN ON THE PLAN OR AS DIRECTED.
2. SET SPACING OF STONE CHECK DAMS SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE TO A POINT BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS NEEDED OR DIRECTED.
5. REMOVE STONE, AS DIRECTED, WHEN NO LONGER NEEDED. AFTER BARRIER IS REMOVED, STABILIZE ANY SEDIMENT WHICH IS PERMITTED TO STAY IN PLACE WITH VEGETATION.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: EPSC
–	–	–	STONE CHECK DAM DETAILS	DRAWING NO. E–3
–	–	–		DATE: 01/09 PAGE: 1
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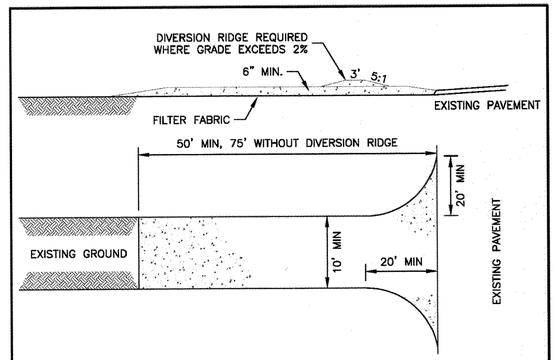

CONSTRUCTION REQUIREMENTS

1. STONE SIZE – 3" COARSE AGGREGATE.
2. THICKNESS – 6" MIN
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. LENGTH – NOT LESS THAN 50', EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MIN LENGTH WOULD APPLY.
7. WIDTH – 10' MIN, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
8. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE.
9. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
10. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
11. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: EPSC
–	–	–	CONSTRUCTION ENTRANCE DETAIL	DRAWING NO. E–1
–	–	–		DATE: 01/08 PAGE: 1
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APPROVED BY:				

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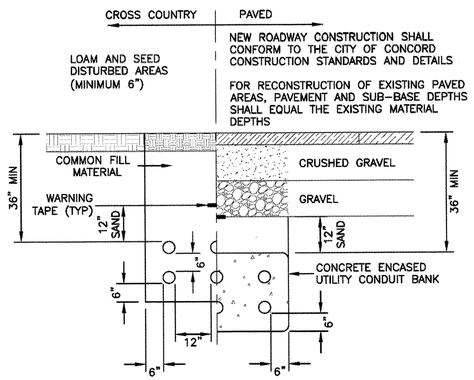


UNDERGROUND CONDUIT INSTALLATIONS SHALL BE COORDINATED WITH ALL LOCAL UTILITIES INCLUDING ELECTRIC, TELEPHONE, GAS, CABLE, STEAM, AND CITY OF CONCORD FIRE ALARM/SIGNAL AND ENGINEERING SERVICES DIVISIONS.

CONDUIT CROSSINGS SHALL BE SWEEPS AT RIGHT ANGLES TO THE STREET. 90° BENDS ARE NOT ACCEPTABLE

PROPOSED CONDUITS WITHIN PAVED SECTIONS OF STREETS SHALL BE RIGID METAL OR SCH 80 PVC CONDUIT. WHEN THE PROPER DEPTH CANNOT BE ACHIEVED, SCH 40 PVC CONDUIT ENCASED IN CONCRETE SHALL BE USED.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET
–	–	–	TYPICAL UTILITY CONDUIT INSTALLATION	DRAWING NO. U–1
–	–	–		DATE: 03/15 PAGE: 1
–	–	–		

U1_UTIL_Utility Conduit_2.dwg

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER

6	12/31/2023	CITY ENGINEERING	JH	RD	
5	11/21/2023	UMRLAC	JH	JH	
4	10/17/2023	NHDES AoT	JH	JH	
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH	
2	8/23/2023	CITY PLANNING / ENGINEERING	JH	RD	
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD	
REV.	DATE	DESCRIPTION	DR	CK	

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

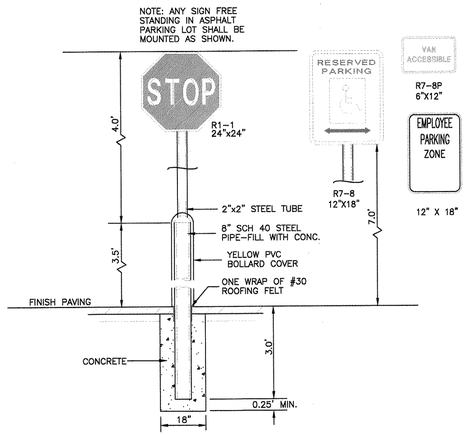
INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com

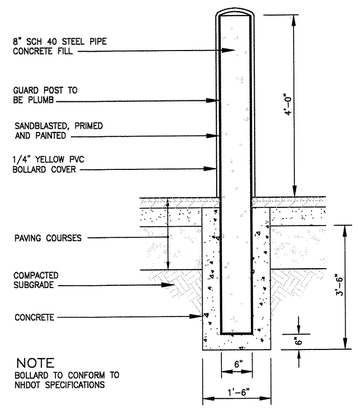
FILE	95830.08	DR	PWH	FB	–	C–31
		CK	JSH	CADFILE	95830–08_DETAILS	

4331-36



SIGN POLE IN PAVEMENT

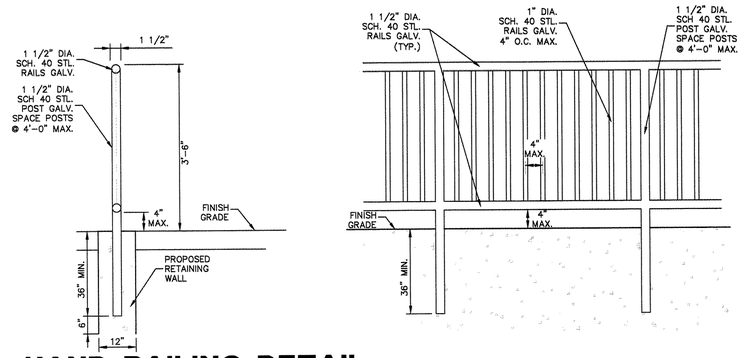
FOR POLES IN SIDEWALKS — NOT TO SCALE



NOTE
BOLLARD TO CONFORM TO NHDOT SPECIFICATIONS

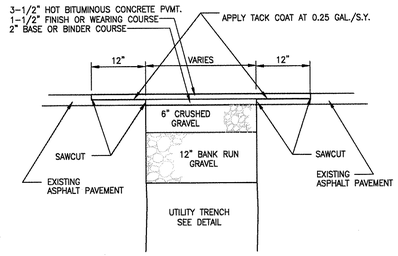
BOLLARD

NOT TO SCALE



HAND RAILING DETAIL

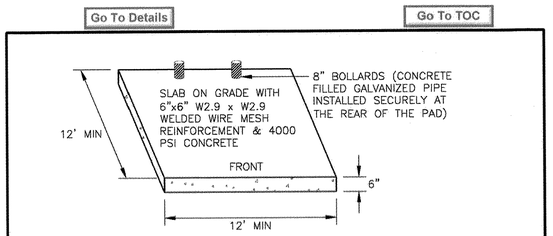
IN GROUND — NOT TO SCALE

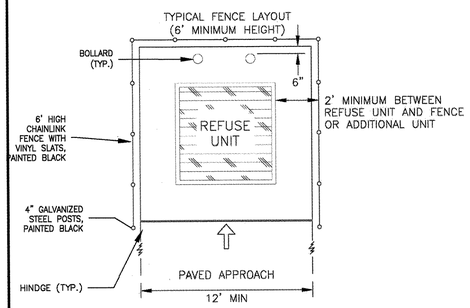


PAVEMENT TRENCH PATCH

FLUSH — NOT TO SCALE

Go To Details — Go To TOC





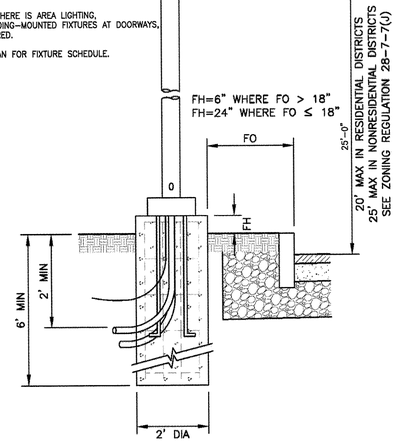
NOTES:
1. DUMPSTER PADS AND ASSOCIATED SCREENING SHALL BE PLACED WHERE THE REFUSE BINS CAN BE UNLOADED WITH A SINGLE TURNING MOVEMENT WITH A 35' FRONT LOADING TRUCK. THE WIDTH OF THE GATE SHOULD BE TAKEN INTO ACCOUNT WHEN REVIEWING TURNING MOVEMENTS.
2. GATES SHALL BE PROVIDED UNLESS THE DUMPSTER IS BLOCKED FROM VIEW FROM THE PUBLIC RIGHT-OF-WAY AND ABUTTING PROPERTIES BY BUILDINGS OR WALLS.
3. TRASH CONTAINERS SHALL BE LOCATED A MINIMUM DISTANCE OF 25' FROM ANY DRAINAGE STRUCTURE, INLET OR STORMWATER FACILITY.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION:	SITE
1	NOTE 2	01.15	SINGLE DUMPSTER PAD	DRAWING NO.	M-8
–	–	–		DATE: 12/08	PAGE: 1
–	–	–			
–	–	–			

M8-M9_SITE-Dumpster Pad_5.dwg

Go To Details — Go To TOC

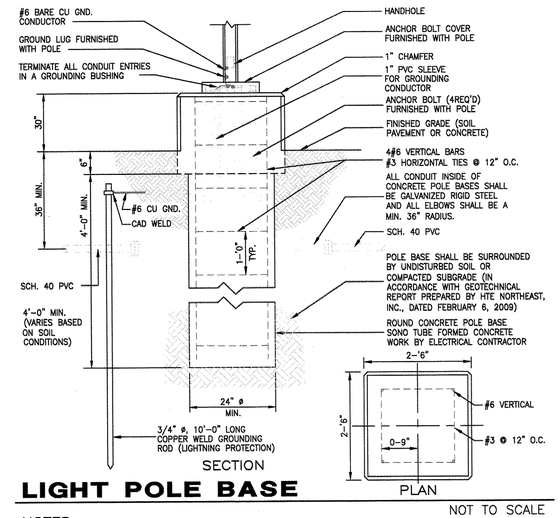
NOTES
1. FIXTURES MUST BE GROUNDED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES, OR THE NATIONAL ELECTRICAL CODE.
2. CENTER OF POLE BASES TO BE SET 4'-0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON DRAWING.
3. LIGHTING SHOWN HERE IS AREA LIGHTING. SUPPLEMENTAL BUILDING-MOUNTED FIXTURES AT DOORWAYS, ETC. MAY BE REQUIRED.
4. SEE LIGHTING PLAN FOR FIXTURE SCHEDULE.



THIS INFORMATION MAY NOT CONTAIN ALL DETAILS REQUIRED FOR CONSTRUCTION. APPROPRIATE MODIFICATION MAY BE REQUIRED TO ENSURE SUITABILITY OF THESE DRAWINGS FOR THE SPECIFIC APPLICATION. IT IS THE USERS RESPONSIBILITY TO ENSURE INSTALLATION OF THE EQUIPMENT/SYSTEM IN ACCORDANCE WITH BUILDING/PROJECT SPECIFICATIONS, APPLICABLE CODES AND STANDARDS.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION:	ROADWAY
–	–	–	TYPICAL LIGHT POLE AND FOUNDATION	DRAWING NO.	M-13
–	–	–		DATE: 01/14	PAGE: 1
–	–	–			
–	–	–			

M13_SITE-Light Pole Base_2.dwg



LIGHT POLE BASE

NOT TO SCALE

NOTES
1. 2" PVC FOR CAMERAS AT ALL FRONT POWER.
2. PAINTED YELLOW IN PAVEMENT AREAS.

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 3/14/23

SCALE: AS SHOWN — **MARCH 14, 2023**

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
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4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

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FILE 95830.08 | DR PWH | FB - | CK JSH | CADFILE 95830-08_DETAILS | C-32

DIG SAFE — CONTACT DIG SAFE 72 HOURS (3 BUSINESS HOURS) PRIOR TO CONSTRUCTION

4331_37

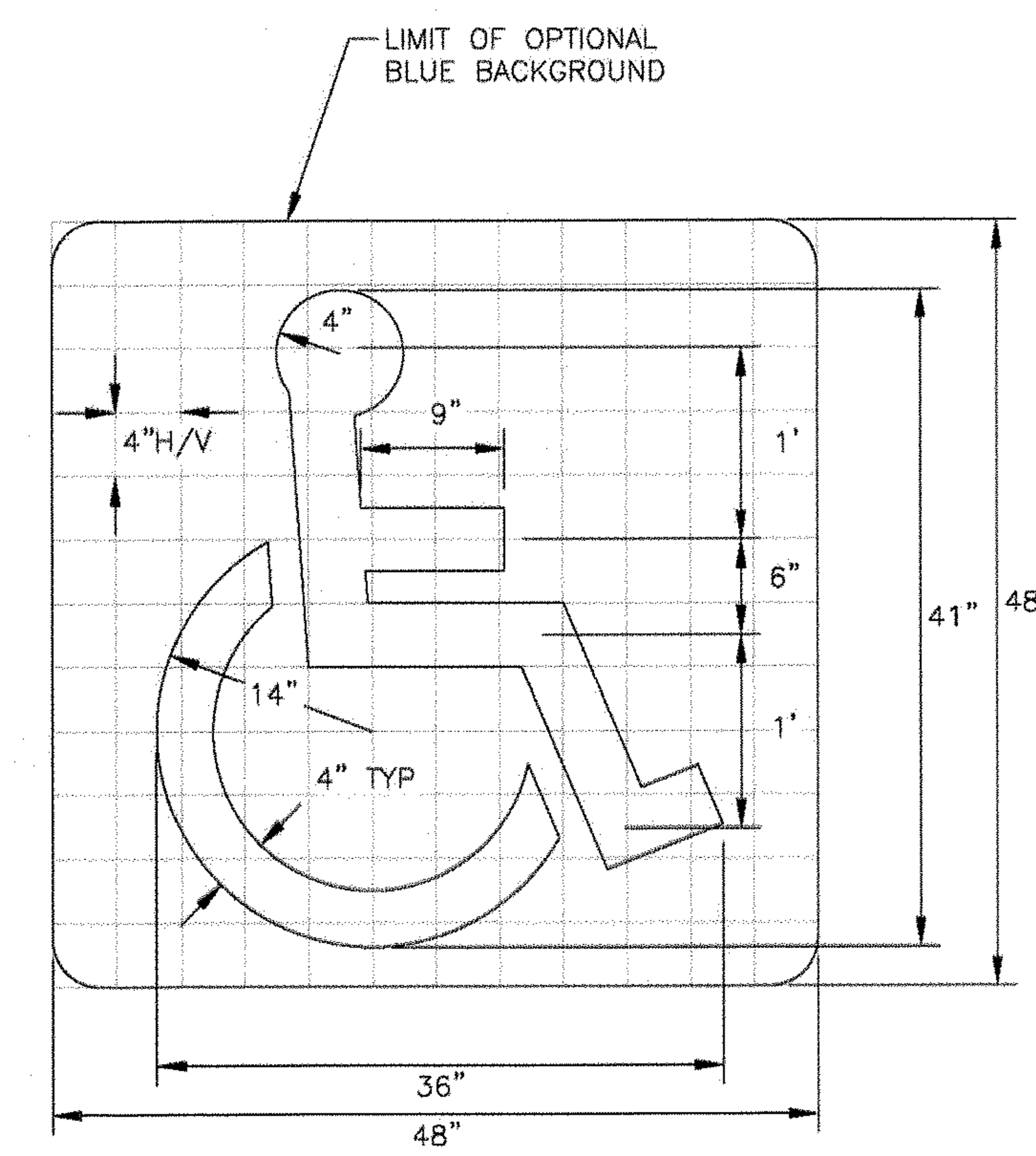
PAINTED 12" HIGH LETTERS

NO PARKING

OR 8'

OR 8'

Go To Details | Go To TOC

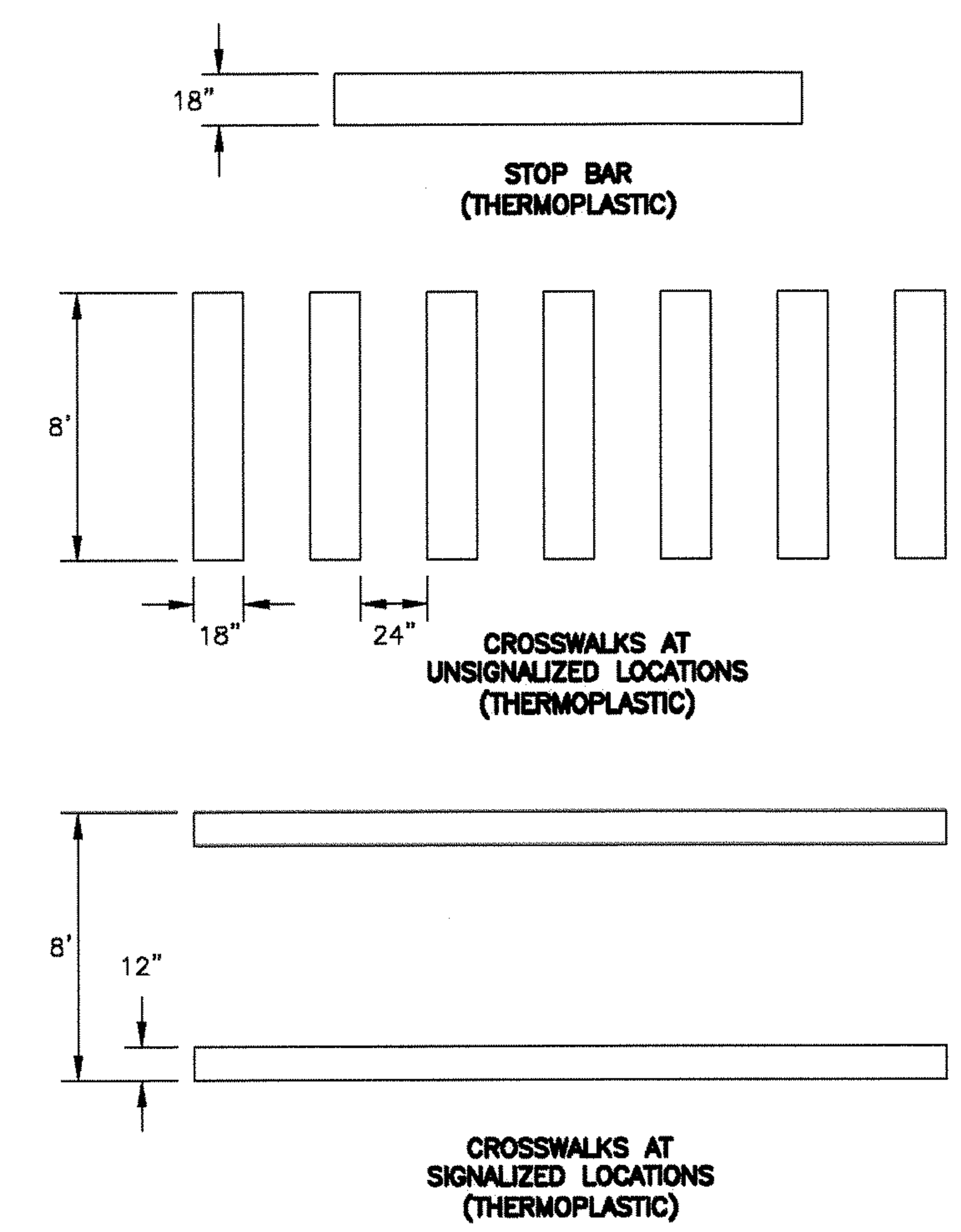


SYMBOL SHALL BE WHITE WITH AN OPTIONAL BLUE BACKGROUND

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET	
–	–	–	ACCESSIBLE PARKING SPACE PAVEMENT MARKING	DRAWING NO. M–5	
–	–	–		DATE: 12/08	PAGE: 1
–	–	–			

M3–M5_RDWY–Pavement Markings.dwg

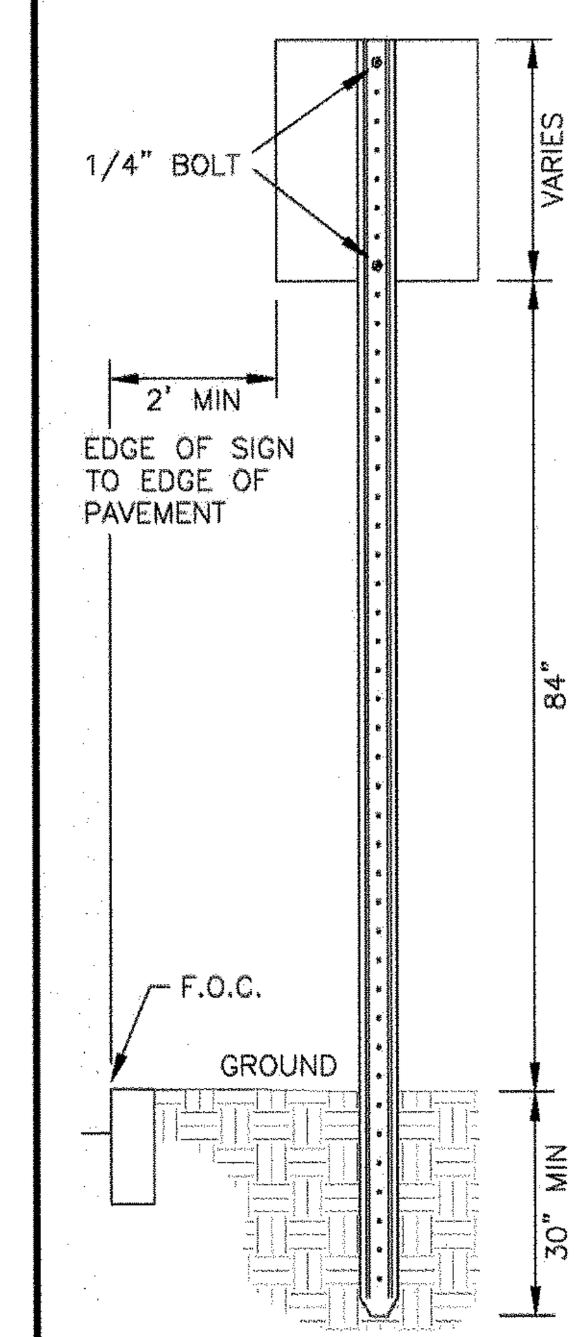
Go To Details | Go To TOC



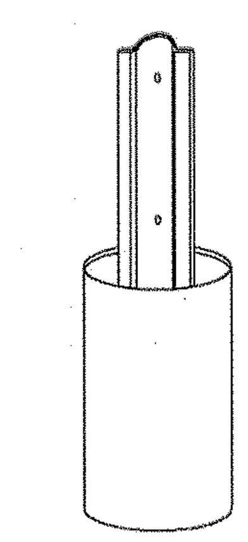
NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET	
–	–	–	PAVEMENT MARKINGS	DRAWING NO. M–3	
–	–	–		DATE: 12/08	PAGE: 1
–	–	–			

M3–M5_RDWY–Pavement Markings.dwg

Go To Details | Go To TOC



NOTES:
1. POSTS SHALL BE PLUMB. ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND REPLACED. CUTTING THE DAMAGED PORTION OUT AND SPLICING THE POST TOGETHER IS NOT ACCEPTABLE.
2. WHEN POSTS ARE SET, THE HOLES SHALL BE DUG TO THE PROPER DEPTH. AFTER INSERTING POSTS, THE HOLES SHALL BE BACK FILLED WITH SUITABLE MATERIAL IN LAYERS NOT EXCEEDING 6" DEEP WHEN COMPACTED; CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED. AFTER DRIVING, THE TOP OF THE POST SHALL HAVE THE SAME CROSS-SECTIONAL DIMENSION AS THE BODY OF THE POST. BATTERED HEADS WILL NOT BE ACCEPTED.
4. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
5. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
6. WHEN SIGN IS IN PLACE, NO PART OF THE POST SHALL EXTEND ABOVE SIGN.



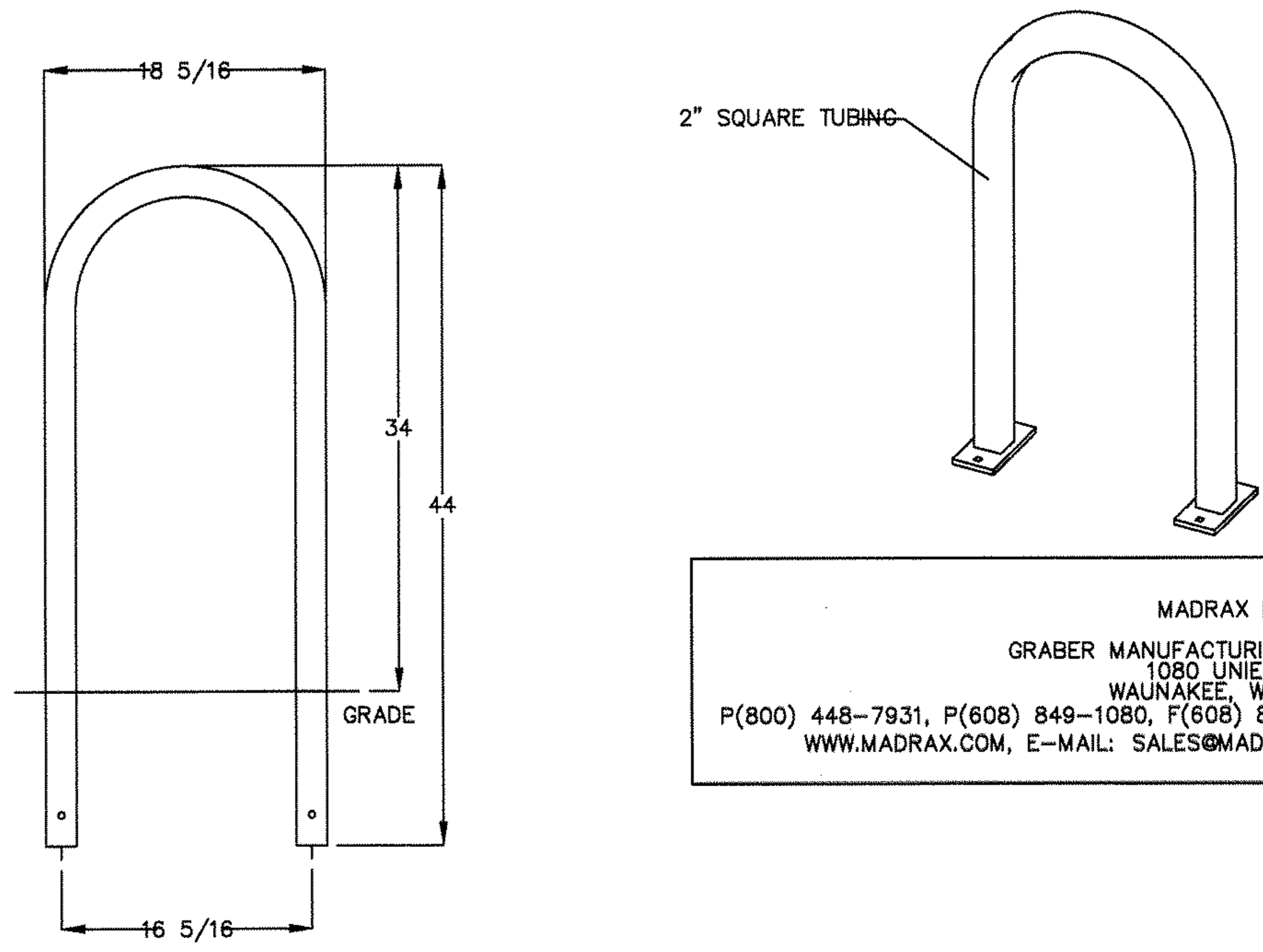
GREEN ENAMEL, 2.5#/FT MINIMUM FLANGED CHANNEL STEEL POST

PVC OR STEEL SLEEVE REQUIRED IN PAVED OR CONCRETE LOCATIONS

SLEEVE WILL BE LARGE ENOUGH TO ALLOW FOR REPLACEMENT POST

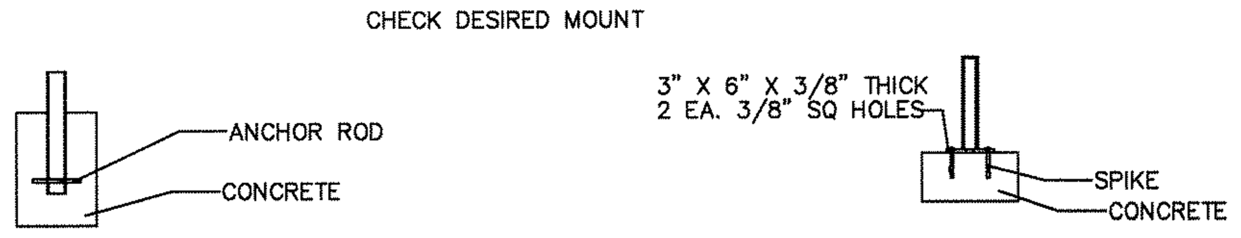
NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET	
1	DRAFTING	11/11	ROAD SIGN POST and SLEEVE – URBAN	DRAWING NO. M–1	
2	POST #/FT	8/13		DATE: 12/08	PAGE: 1
–	–	–			

M1–M2_RDWY–Sign Post.dwg



MADRAX DIVISION
GRABER MANUFACTURING, INC.
1080 UNIEK DRIVE
WAUNAKEE, WI 53597
P(800) 448-7931, P(608) 849-1080, F(608) 849-1081
WWW.MADRAX.COM, E-MAIL: SALES@MADRAX.COM

CHECK DESIRED MOUNT



☐ IN GROUND MOUNT (IG)

☐ SURFACE FLANGE MOUNT (SF)

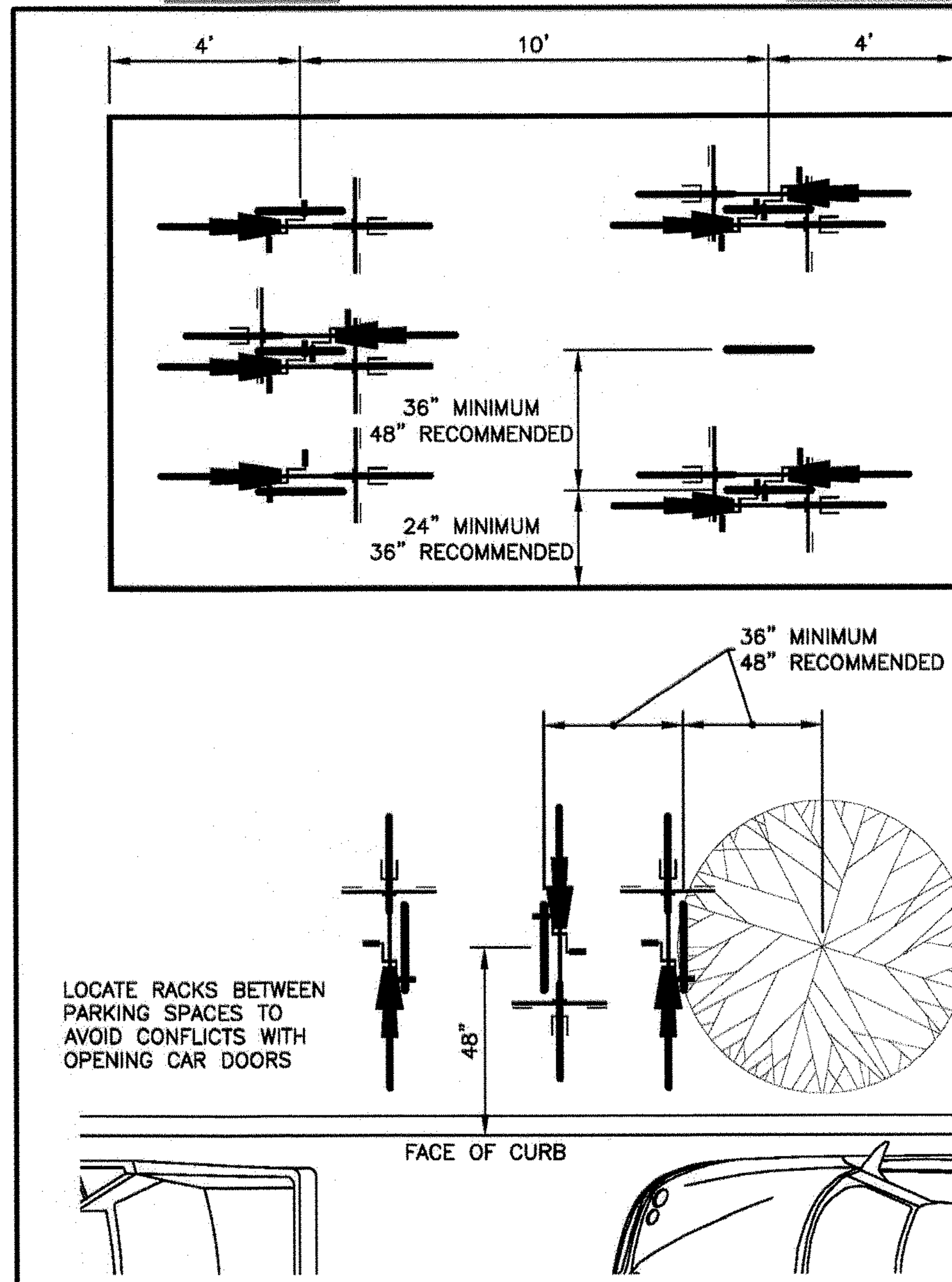
PRODUCT: U200-IG(SF)
DESCRIPTION: 'U' BIKE RACK
2 BIKE, SURFACE OR IN GROUND MOUNT
DATE: 10-22-18
ENG: SMC

NOTES:
1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. CONSULTANT TO SELECT COLOR (FINISH), SEE MANUFACTURER'S SPECIFICATIONS
3. SEE SITE PLAN FOR LOCATION OR CONSULT OWNER.

BICYCLE RACK

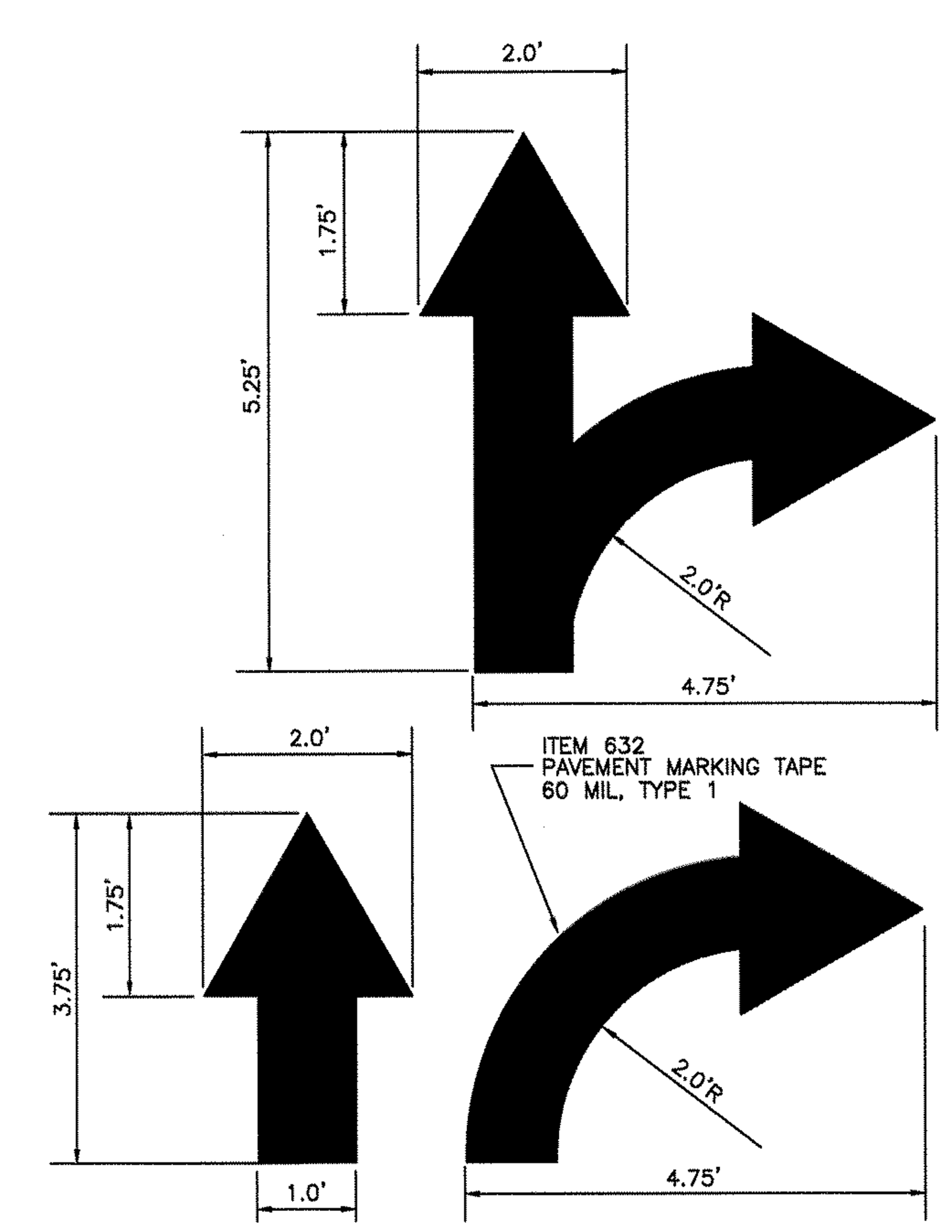
MADRAX OR EQUAL — NOT TO SCALE

Go To Details | Go To TOC



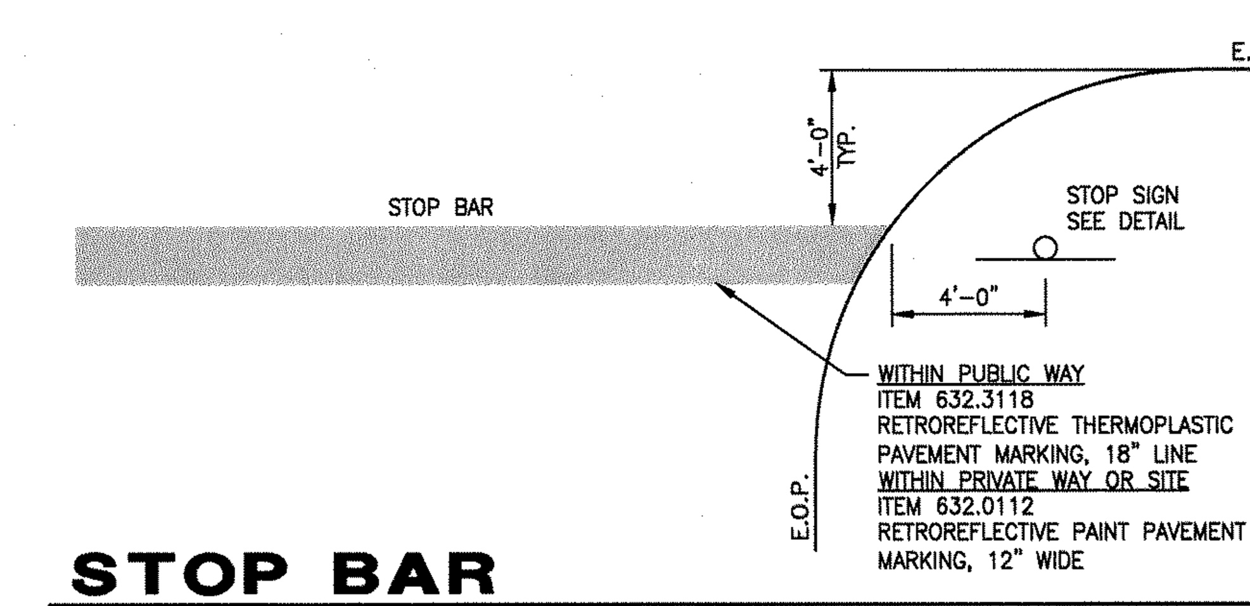
NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE	
–	–	–	BICYCLE PARKING	DRAWING NO. M–12	
–	–	–		DATE: 08/13	PAGE: 1
–	–	–			

M12_SITE–Bike Parking_3.dwg



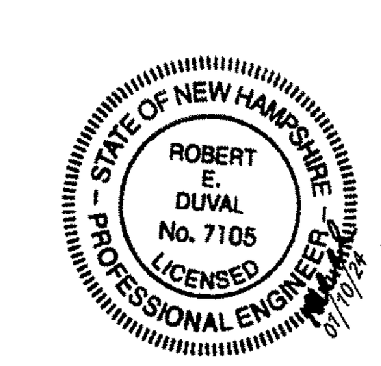
TRAFFIC FLOW ARROW

NOT TO SCALE



STOP BAR

NOT TO SCALE



REV.	DATE	DESCRIPTION	DR	CK
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4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN — **MARCH 14, 2023**

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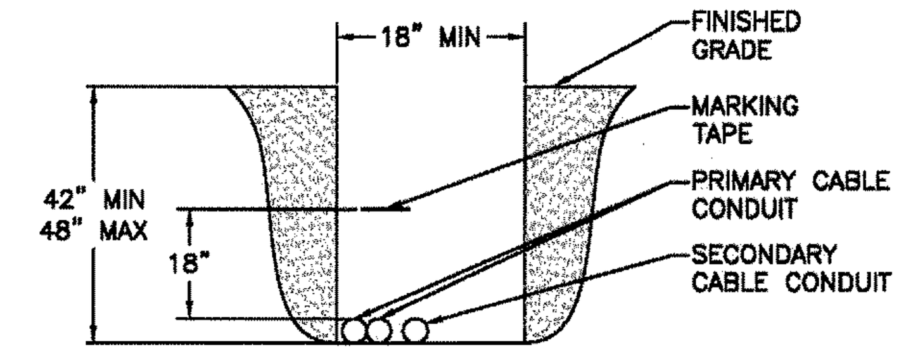
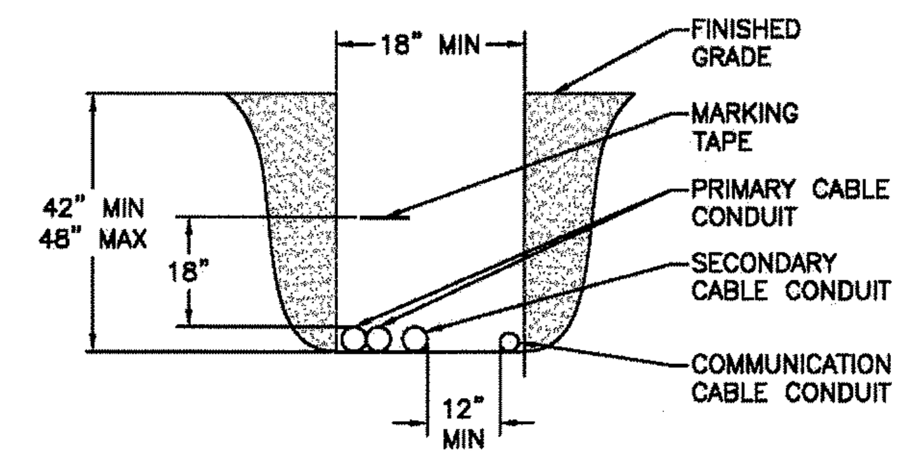
FILE	DR	PWH	FB	–	
95830.08	CK	JSH	CADFILE	95830-08_DETAILS	C-33

4331-38

UNDERGROUND DISTRIBUTION CONDUITS & DUCTS TRENCH REQUIREMENTS



ELECTRIC ONLY TRENCH



JOINT TRENCH

NOTES:

1.) COMMUNICATION CONDUITS SHALL HAVE A MINIMUM OF 12" OF SEPARATION FROM ELECTRIC CONDUITS.

2.) GAS LINES SHALL HAVE A MINIMUM OF 36" OF SEPARATION FROM ELECTRIC AND COMMUNICATION CONDUITS.

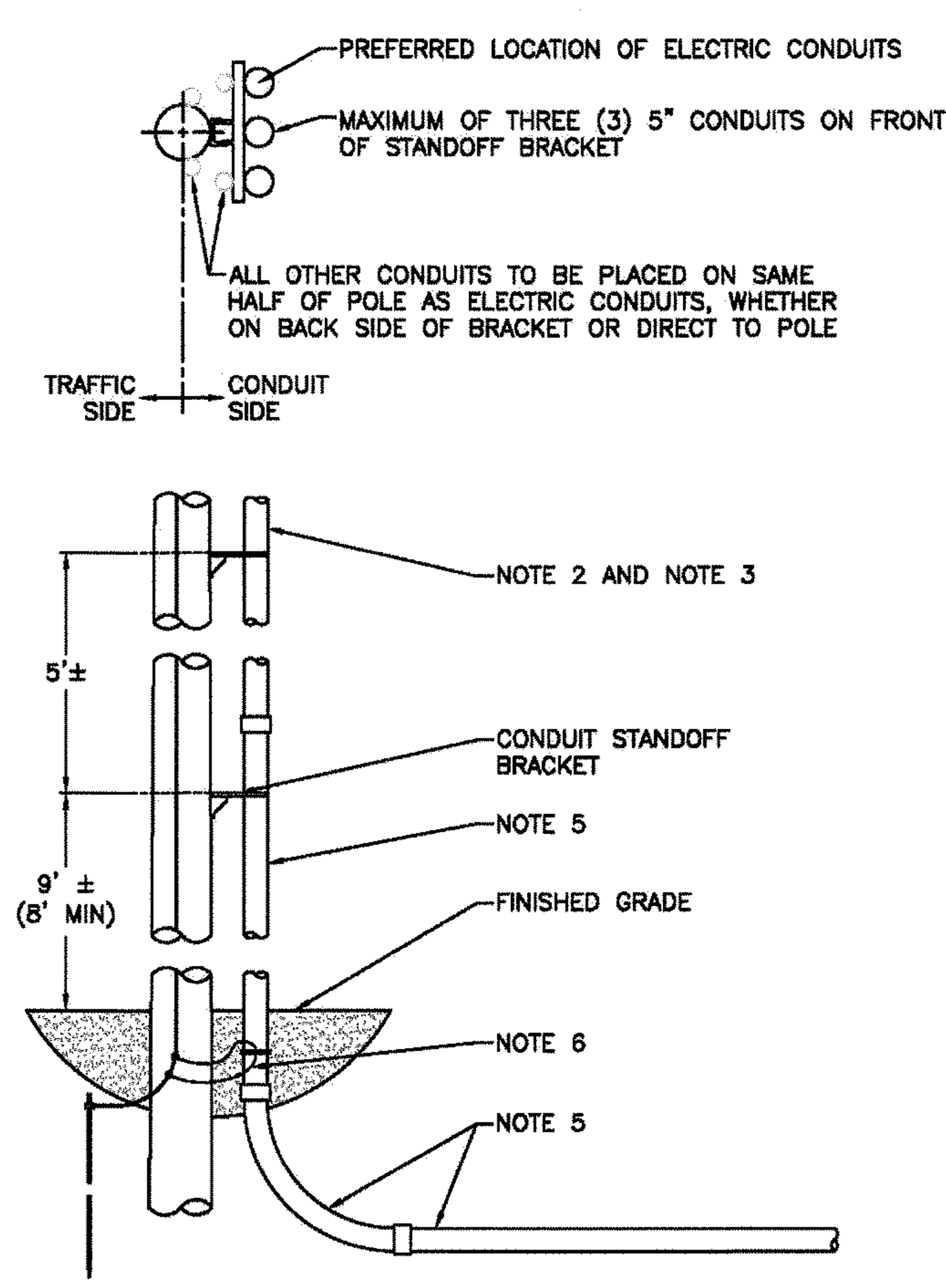
3.) WATER AND SEWER LINES SHALL HAVE A MINIMUM OF 48" HORIZONTAL SEPARATION FOR PARALLEL RUNS AND MINIMUM OF 12" VERTICAL SEPARATION FOR CROSSING RUNS.

4.) SEE STANDARD 2-2-1 FOR ADDITIONAL TRENCH AND CONDUIT REQUIREMENTS.

Unitil	CONSTRUCTION STANDARD	APPROVED	PAK
		DATE	11/25/14
		STANDARD	2-2-2

UNDERGROUND DISTRIBUTION CONDUITS & DUCTS CONDUIT RISER DETAIL

PAGE 1 OF 2



Unitil	CONSTRUCTION STANDARD	APPROVED	PAK
		DATE	6/10/15
		STANDARD	2-2-3

UNDERGROUND DISTRIBUTION CONDUITS & DUCTS CONDUIT RISER DETAIL

PAGE 2 OF 2

NOTES:

1.) LOCATE RISER CONDUITS ON POLE AWAY FROM TRAFFIC.

2.) RISER POLE SHALL BE LOCATED TO ALLOW FOR BUCKET TRUCK ACCESS.

3.) ELECTRIC CONDUITS SHALL EXTEND INTO THE ELECTRIC SPACE (I.E. ABOVE THE TOP OF THE COMMUNICATIONS WORKER 40" SAFETY ZONE).

4.) TOP END OF VERTICAL RISER CONDUIT SHALL BE WEATHER-SEALED AFTER INSTALLATION OF CABLES. UNTIL CABLES ARE INSTALLED, TEMPORARILY CAP OR TAPE THE TOP END OF THE VERTICAL RISER CONDUIT.

5.) RISER SWEEPS AND THE ATTACHED FIRST VERTICAL AND FIRST HORIZONTAL CONDUIT SECTIONS SHALL BE GALVANIZED RIGID STEEL.

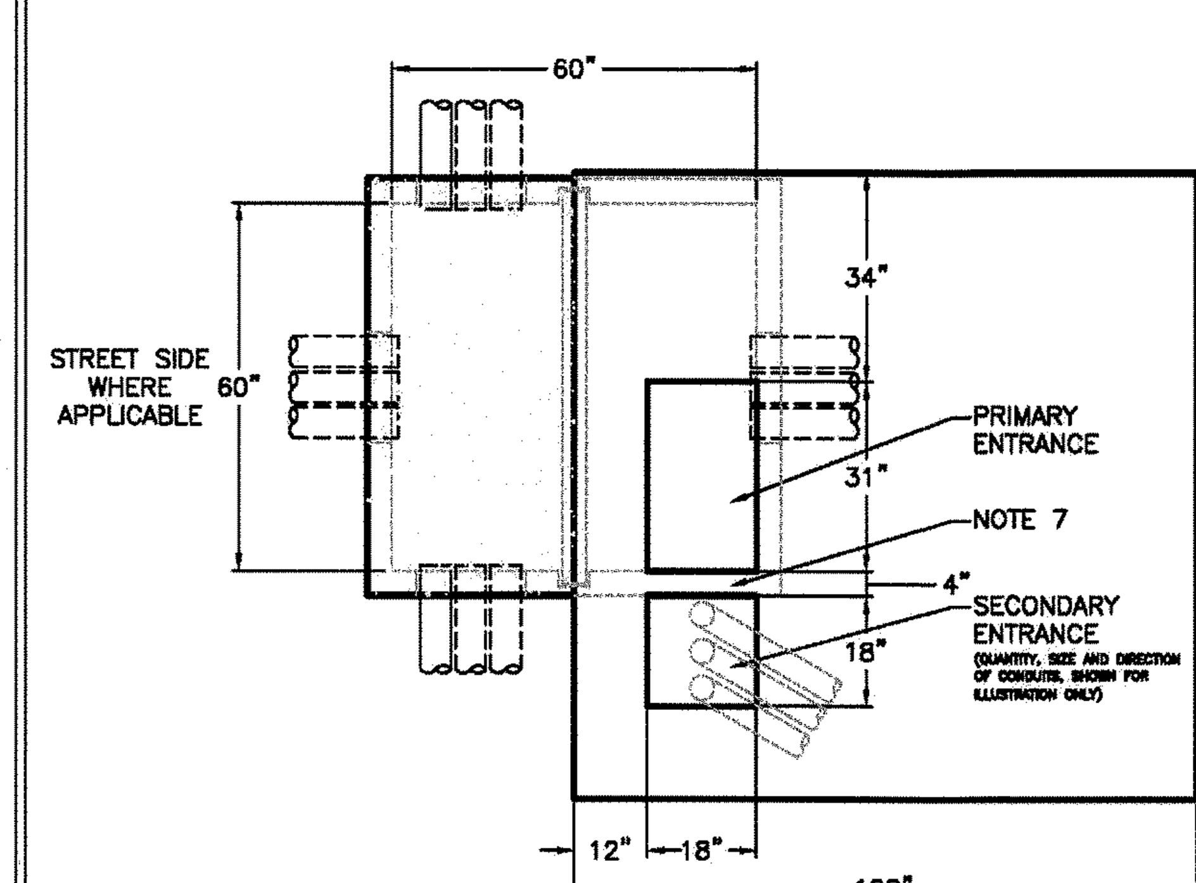
6.) BOND STEEL CONDUIT TO POLE GROUND WITH A CONTINUOUS LENGTH OF #6 AWG (MINIMUM) BARE COPPER WIRE LOOPED THROUGH THE BONDING CLAMP AT THE CONDUIT END WITH BOTH ENDS CONNECTED AT THE POLE GROUND.

7.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.

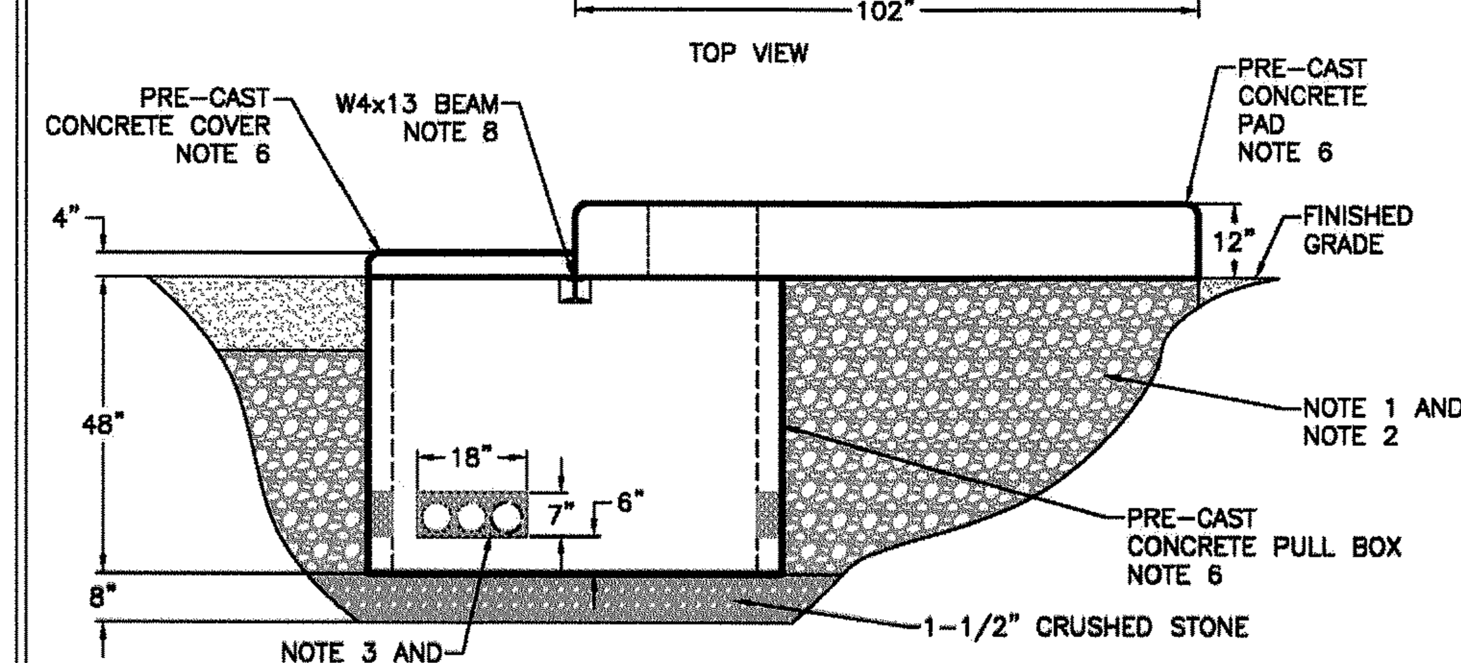
Unitil	CONSTRUCTION STANDARD	APPROVED	PAK
		DATE	6/10/15
		STANDARD	2-2-3

UNDERGROUND DISTRIBUTION EQUIPMENT PAD AND PULL BOX – THREE PHASE TRANSFORMER

PAGE 1 OF 2



TOP VIEW



SIDE VIEW

Unitil	CONSTRUCTION STANDARD	APPROVED	PAK
		DATE	1/21/15
		STANDARD	2-3-14

UNDERGROUND DISTRIBUTION EQUIPMENT PAD AND PULL BOX – THREE PHASE TRANSFORMER

PAGE 2 OF 2

NOTES:

1.) THE FIRST 12" OF BACKFILL MATERIAL AROUND CONDUITS SHALL NOT CONTAIN ROCKS LARGER THAN 1-1/2" IN THEIR GREATEST DIMENSIONS AND SHALL CONTAIN ENOUGH FINES TO FILL ALL VOIDS. THE REMAINDER OF THE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3" IN DIAMETER. ALL BACKFILL MATERIAL SHALL BE FREE OF DECOMPOSABLE (ORGANIC) MATERIAL.

2.) COMPACTED GRAVEL UNDER ALL AREAS OF THE PAD.

3.) EXTEND CONDUITS FULLY THROUGH PULL BOX WALLS, BUT LESS THAN 2" BEYOND INSIDE SURFACE OF THE WALL.

4.) SEAL AROUND ALL CONDUIT OPENINGS IN PULL BOX WALLS WITH HYDRAULIC CEMENT.

5.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.

6.) PULL BOXES, EQUIPMENT PADS AND COVERS SHALL BE FABRICATED PER UNITIL PROVIDED FABRICATION DRAWINGS AND BY UNITIL APPROVED FABRICATORS ONLY.

7.) 4" PARTITION IN THE PAD SEPARATING THE PRIMARY ENTRANCE FROM THE SECONDARY ENTRANCE SHALL BE CENTERED OVER THE WALL OF THE PULL BOX.

8.) SHIM BEAM AND GROUT SOLID UNDER BOTTOM FLANGE, SUCH THAT BEAM IS FLUSH WITH TOP OF PULL BOX

9.) THE APPROXIMATE WEIGHT OF A 60"x60" PULL BOX IS 6,700 POUNDS.

10.) THE APPROXIMATE WEIGHT OF A 68"x34" COVER IS 850 POUNDS.

11.) THE APPROXIMATE WEIGHT OF A THREE PHASE TRANSFORMER PAD IS 10,000 POUNDS.

12.) THE LOAD RATING OF A THREE PHASE TRANSFORMER PAD IS 20,000 POUNDS.

Unitil	CONSTRUCTION STANDARD	APPROVED	PAK
		DATE	1/21/15
		STANDARD	2-3-14

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER 01/10/24

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

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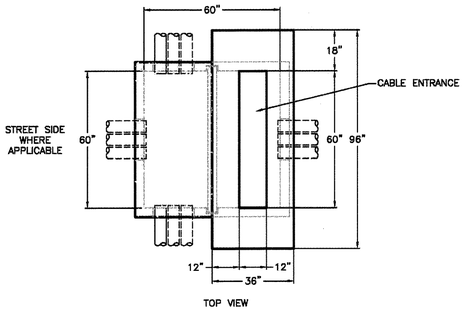
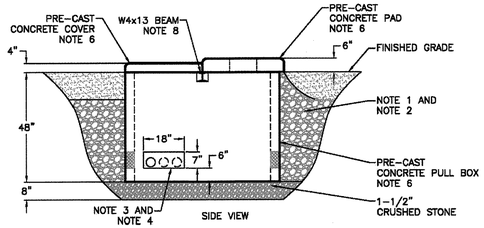
PAGE 1 OF 2

UNDERGROUND DISTRIBUTION EQUIPMENT
PAD AND PULL BOX – THREE PHASE SECTIONALIZING CABINET



TOP VIEW



SIDE VIEW

Unitil	CONSTRUCTION STANDARD	APPROVED PAK DATE 1/21/15 STANDARD 2-3-16

PAGE 2 OF 2

UNDERGROUND DISTRIBUTION EQUIPMENT
PAD AND PULL BOX – THREE PHASE SECTIONALIZING CABINET

NOTES:

1.) THE FIRST 12" OF BACKFILL MATERIAL AROUND CONDUITS SHALL NOT CONTAIN ROCKS LARGER THAN 1-1/2" IN THEIR GREATEST DIMENSIONS AND SHALL CONTAIN ENOUGH FINES TO FILL ALL VOIDS. THE REMAINDER OF THE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3" IN DIAMETER. ALL BACKFILL MATERIAL SHALL BE FREE OF DECOMPOSABLE (ORGANIC) MATERIAL.

2.) COMPACTED GRAVEL UNDER ALL AREAS OF THE PAD.

3.) EXTEND CONDUITS FULLY THROUGH PULL BOX WALLS, BUT LESS THAN 2" BEYOND INSIDE SURFACE OF THE WALL.

4.) SEAL AROUND ALL CONDUIT OPENINGS IN PULL BOX WALLS WITH HYDRAULIC CEMENT.

5.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.

6.) PULL BOXES, EQUIPMENT PADS AND COVERS SHALL BE FABRICATED PER UNITIL PROVIDED FABRICATION DRAWINGS AND BY UNITIL APPROVED FABRICATORS ONLY.

7.) A THREE PHASE SECTIONALIZING CABINET PAD WILL ACCOMMODATE AN 84" SECTIONALIZING CABINET.

8.) SHIM BEAM AND GROUT SOLID UNDER BOTTOM FLANGE, SUCH THAT BEAM IS FLUSH WITH TOP OF PULL BOX

9.) THE APPROXIMATE WEIGHT OF A 60"x60" PULL BOX IS 6,700 POUNDS.

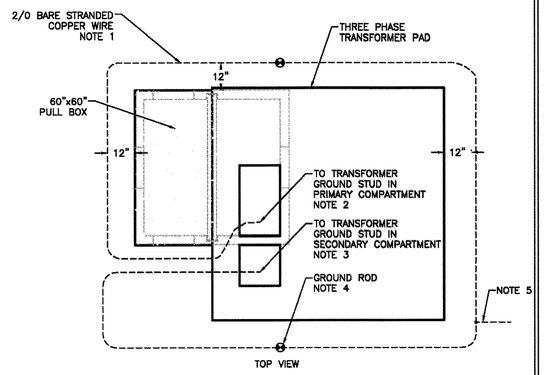
10.) THE APPROXIMATE WEIGHT OF A 68"x34" COVER IS 850 POUNDS.

11.) THE APPROXIMATE WEIGHT OF A THREE PHASE SECTIONALIZING CABINET PAD IS 1,500 POUNDS.

12.) THE LOAD RATING OF A THREE PHASE SECTIONALIZING CABINET PAD IS 500 POUNDS,

Unitil	CONSTRUCTION STANDARD	APPROVED PAK DATE 1/21/15 STANDARD 2-3-16

UNDERGROUND DISTRIBUTION EQUIPMENT
GROUNDING – THREE PHASE TRANSFORMER



TOP VIEW

NOTES:

1.) THE GROUND RING SHALL BE 12" BELOW FINISHED GRADE.

2.) SIX FEET (72") OF EXTRA WIRE AT ONE END OF THE GROUND RING SHALL BE LEFT EXPOSED IN THE PULL BOX FOR CONNECTION IN THE TRANSFORMER PRIMARY COMPARTMENT. THAT GROUND WIRE SHALL ENTER THE PULL BOX BELOW GRADE THROUGH ONE OF THE CONDUIT ENTRANCES OR THROUGH THE OPEN BOTTOM.

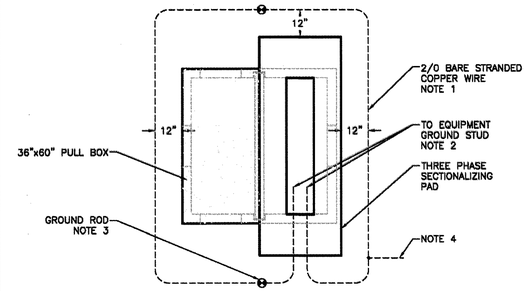
3.) SIX FEET (72") OF EXTRA WIRE AT THE OTHER END OF THE GROUND RING SHALL BE LEFT EXPOSED FOR CONNECTION IN THE TRANSFORMER SECONDARY COMPARTMENT. THAT GROUND WIRE SHALL ENTER FROM BELOW GRADE THROUGH THE SECONDARY ENTRANCE IN THE PAD.

4.) THE GROUND RODS SHALL BE 5/8" DIA. BY 8' LONG AND SHALL BE GALVANIZED STEEL OR COPPERWELD. GROUND RODS SHALL BE CONNECTED TO THE GROUND RING WITH UL APPROVED CONNECTORS.

5.) TWO FEET (24") OF #6 AWG BARE COPPER WIRE IS TO BE LEFT EXPOSED FOR COMMUNICATIONS TO BOND TO THE GROUND RING. THE #6 AWG WIRE SHALL BE BONDED TO THE GROUND RING WITH UL APPROVED CONNECTORS.

Unitil	CONSTRUCTION STANDARD	APPROVED PAK DATE 1/12/15 STANDARD 2-3-21

UNDERGROUND DISTRIBUTION EQUIPMENT
GROUNDING – THREE PHASE SECTIONALIZING CABINET



NOTES:

1.) THE GROUND RING SHALL BE 12" BELOW FINISHED GRADE.

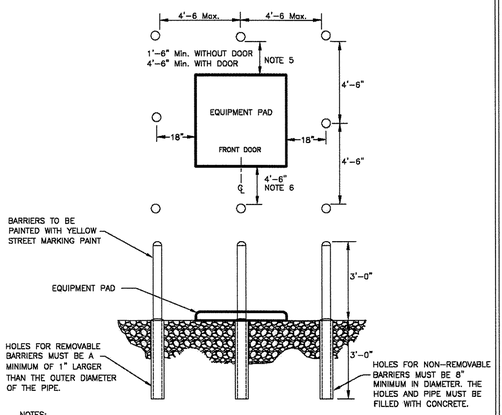
2.) SIX FEET (72") OF EXTRA WIRE FOR EACH GROUND RING LEG SHALL BE LEFT EXPOSED IN THE PULL BOX FOR EQUIPMENT GROUNDING CONNECTIONS. THE GROUND WIRE SHALL ENTER THE PULL BOX BELOW GRADE THROUGH ONE OF THE CONDUIT ENTRANCES OR THROUGH THE OPEN BOTTOM.

3.) THE GROUND RODS SHALL BE 5/8" DIA. BY 8' LONG AND SHALL BE GALVANIZED STEEL OR COPPERWELD. GROUND RODS SHALL BE CONNECTED TO THE GROUND RING WITH UL APPROVED CONNECTORS.

4.) TWO FEET (24") OF #6 AWG BARE COPPER WIRE IS TO BE LEFT EXPOSED FOR COMMUNICATIONS TO BOND TO THE GROUND RING. THE #6 AWG WIRE SHALL BE BONDED TO THE GROUND RING WITH UL APPROVED CONNECTORS.

Unitil	CONSTRUCTION STANDARD	APPROVED PAK DATE 2/12/15 STANDARD 2-3-23

UNDERGROUND DISTRIBUTION EQUIPMENT
VEHICULAR PROTECTION BARRIERS (INSTALLATION REQUIREMENTS)



NOTES:

1. BARRIER TO BE 4" STEEL PIPE 6'– 0" LONG AND CONCRETE FILLED.
2. NO OVERHEAD OBSTACLES PERMITTED ABOVE UNITILS EQUIPMENT, UNLESS APPROVED BY THE STANDARDS DEPARTMENT.
3. BARRIERS ON SIDES NOT ACCESSIBLE TO VEHICLE MAY BE OMITTED.
4. ALL MATERIALS AND LABOR FOR PROTECTIVE BARRIER INSTALLATION SHALL BE PROVIDED BY CUSTOMER.
5. PROVIDE ADEQUATE CLEARANCE FOR ITEMS SUCH AS: COOLING COILS AND OPENING OF DOORS ON EQUIPMENT.
6. IF THE 4'–6" CLEARANCE CAN NOT BE MAINTAINED, THE BARRIERS IN FRONT OF THE DOOR MUST BE MADE REMOVABLE.
7. THERE SHALL BE A MINIMUM 6' CLEARANCE FROM A BARRIER TO THE CENTERLINE OF A FIRE HYDRANT.

CAUTION: INSTALLATION OF BARRIER MUST BE COORDINATED WITH ELECTRICAL CABLES OR CONDUIT INSTALLATION.

Unitil	CONSTRUCTION STANDARD	APPROVED GB DATE 9/11/07 STANDARD 2-3-27-Temp.

PAGE 2 OF 2

UNDERGROUND DISTRIBUTION CONDUITS & DUCTS TRENCH & CONDUIT GENERAL REQUIREMENTS

13.) CONDUIT RUNS SHALL BE CLEANED BY PULLING A CLEANING PLUG OR MANDREL (NO SMALLER THAN 1/4" LESS THAN THE CONDUIT) THROUGH THE CONDUIT.

14.) ALL CONDUIT RUNS SHALL HAVE A 2,500# FLAT, WOVEN, POLYESTER PULLING LINE INSTALLED.

15.) ALL CONDUITS SHALL HAVE 36" (MINIMUM) COVER.

16.) SPARE CONDUITS SHALL BE INSTALLED UNDER ROADWAYS, DRIVEWAYS AND PAVED AREAS AND HAVE SUITABLE APPROVED PLUGS OR CAPS INSTALLED IN ALL EXPOSED ENDS.

17.) CONDUITS INSTALLED UNDER ROADWAYS, DRIVEWAYS, PARKING LOTS, OR ANY TRAVELED WAY SHALL BE SCHEDULE 80 PVC OR RIGID STEEL, OR MAY BE CONCRETE–ENCASED SCHEDULE 40 PVC WITH APPROVAL BY UNITIL.

18.) CONDUIT RUNS THAT ARE LESS THAN THE MINIMUM DEPTH MUST BE CONCRETE ENCASED AND APPROVED BY UNITIL.

19.) CONCRETE ENCASED PVC MUST HAVE 4" (MINIMUM) OF CONCRETE ON ALL SIDES.

20.) PARALLEL RUN UTILITIES:
- WATER AND SEWER – THERE SHALL BE 4' (MINIMUM) OF HORIZONTAL DISTANCE FROM ELECTRIC CONDUITS AND 12" (MINIMUM) OF VERTICAL CLEARANCE FROM ELECTRIC CONDUITS FOR CROSSING RUNS.
- GAS – THERE SHALL BE 3' (MINIMUM) CLEARANCE FROM ELECTRIC CONDUITS IN ALL DIRECTIONS.
- COMMUNICATION CONDUITS – THERE SHALL BE 12" (MINIMUM) OF SEPARATION FROM ELECTRIC CONDUITS.

21.) CONDUIT SIZES SHALL BE:
- 3" FOR SINGLE PHASE SERVICE RUNS UP TO AND INCLUDING 200 AMPS.
- 4" FOR SINGLE PHASE SECONDARY RUNS.
- 4" FOR SINGLE PHASE SERVICES OVER 200 AMPS AND UP TO AND INCLUDING 400 AMPS.
- 4" FOR THREE PHASE SERVICES UP TO AND INCLUDING 400 AMPS.
- 4" FOR SINGLE PHASE PRIMARY RUNS
- 5" FOR THREE PHASE PRIMARY RUNS
- CONDUIT SIZE FOR CUSTOMER OWNED CABLES SHALL BE SIZED BY THE CUSTOMER.

Unitil	CONSTRUCTION STANDARD	APPROVED PAK DATE 1/12/15 STANDARD 2-2-1

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – 6/1/1979

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	PWH	FB	–	
95830.08	CK	JSH	CADFILE	95830-08_DETAILS	C-35

4331-40

STORMTECH PRODUCT SPECIFICATIONS

1.0 GENERAL
STORMTECH CHAMBERS ARE DESIGNED TO 1.1 CONTROL STORMWATER RUNOFF. AS A SUBSURFACE RETENTION SYSTEM, STORMTECH CHAMBERS RETAIN AND ALLOW EFFECTIVE INFILTRATION OF WATER INTO THE SOIL. AS A SUBSURFACE DETENTION SYSTEM, STORMTECH CHAMBERS DETAIN AND ALLOW FOR THE METERED FLOW OF WATER TO AN OUTFALL.

2.0 CHAMBER PARAMETERS

2.1 THE CHAMBER SHALL BE INJECTION MOLDED OF POLYPROPYLENE RESIN TO BE INHERENTLY RESISTANT TO ENVIRONMENTAL STRESS CRACKING (ESCR), AND TO MAINTAIN ADEQUATE STIFFNESS THROUGH HIGHER TEMPERATURES EXPERIENCED DURING INSTALLATION AND SERVICE.

2.2 THE NOMINAL CHAMBER DIMENSIONS OF THE STORMTECH SC-740 SHALL BE 30.0 INCHES TALL, 51.0 INCHES WIDE AND 90.7 INCHES LONG.

2.3 THE CHAMBER SHALL HAVE A CONTINUOUSLY CURVED SECTION PROFILE.

2.4 THE CHAMBER SHALL BE OPEN-BOTTOMED.

2.5 THE CHAMBER SHALL INCORPORATE AN OVERLAPPING CORRUGATION JOINT SYSTEM TO ALLOW CHAMBER ROWS OF ALMOST ANY LENGTH TO BE CREATED. THE OVERLAPPING CORRUGATION JOINT SYSTEM SHALL BE EFFECTIVE WHILE ALLOWING A CHAMBER TO BE TRIMMED TO SHORTEN ITS OVERALL LENGTH.

2.6 THE NOMINAL STORAGE VOLUME OF A JOINED STORMTECH SC-740 CHAMBER SHALL BE 74.9 CUBIC FEET PER CHAMBER WHEN INSTALLED PER STORMTECH'S TYPICAL DETAILS (INCLUDES THE VOLUME OF CRUSHED ANGULAR STONE WITH AN % POROSITY). THIS EQUATES TO ASSUMED 40 CUBIC FEET OF STORAGE/SQUARE FOOT OF BED.

2.2 THE CHAMBER SHALL HAVE FORTY-EIGHT ORIFICES PENETRATING THE SIDEWALLS TO ALLOW FOR LATERAL CONVEYANCE OF WATER.

2.7 THE CHAMBER SHALL HAVE TWO ORIFICES NEAR ITS TOP TO ALLOW FOR EQUALIZATION OF AIR PRESSURE BETWEEN ITS INTERIOR AND EXTERIOR.

2.8 THE CHAMBER SHALL HAVE BOTH OF ITS ENDS 2.9 OPEN TO ALLOW FOR UNIMPEDED HYDRAULIC FLOWS AND VISUAL INSPECTIONS DOWN A ROW'S ENTIRE LENGTH.

2.10 THE CHAMBER SHALL HAVE 14 CORRUGATIONS.

2.11 THE CHAMBER SHALL HAVE A CIRCULAR, INDENTED, FLAT SURFACE ON THE TOP OF THE CHAMBER FOR AN OPTIONAL 4-INCH INSPECTION PORT OR CLEAN-OUT.

2.12 THE CHAMBER SHALL BE ANALYZED AND DESIGNED USING AASHTO METHODS FOR THERMOPLASTIC CULVERTS CONTAINED IN THE LRFD BRIDGE DESIGN SPECIFICATIONS, 2ND EDITION, INCLUDING INTERIM SPECIFICATIONS THROUGH 2001. DESIGN LIVE LOAD SHALL BE THE AASHTO HS20 TRUCK. DESIGN SHALL CONSIDER EARTH AND LIVE LOADS AS APPROPRIATE FOR THE MINIMUM TO MAXIMUM SPECIFIED DEPTH OF FILL.

2.13 THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY.

3.0 END CAP PARAMETERS

3.1 THE END CAP SHALL BE INJECTION MOLDED OF POLYPROPYLENE RESIN TO BE INHERENTLY RESISTANT TO ENVIRONMENTAL STRESS CRACKING, AND TO MAINTAIN ADEQUATE STIFFNESS THROUGH HIGHER TEMPERATURES EXPERIENCED DURING INSTALLATION AND SERVICE.

3.2 THE END CAP SHALL BE DESIGNED TO FIT INTO ANY CORRUGATION OF A CHAMBER, WHICH ALLOWS: CAPPING A CHAMBER THAT HAS ITS LENGTH TRIMMED; SEGMENTING ROWS INTO STORAGE BASINS OF VARIOUS LENGTHS.

3.3 THE END CAP SHALL HAVE SAW GUIDES TO ALLOW EASY CUTTING FOR VARIOUS DIAMETERS OF PIPE THAT MAY BE USED TO INLET THE SYSTEM.

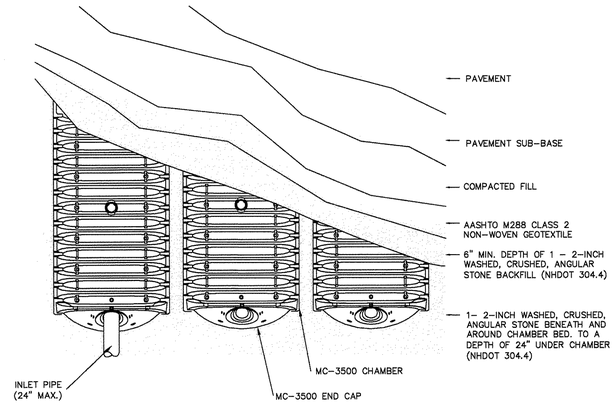
3.4 THE END CAP SHALL HAVE EXCESS STRUCTURAL ADEQUACIES TO ALLOW CUTTING AN ORIFICE OF ANY SIZE AT ANY INVERT ELEVATION.

3.5 THE PRIMARY FACE OF AN END CAP SHALL BE CURVED OUTWARD TO RESIST HORIZONTAL LOADS GENERATED NEAR THE EDGES OF BEDS.

3.6 THE END CAP SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY.

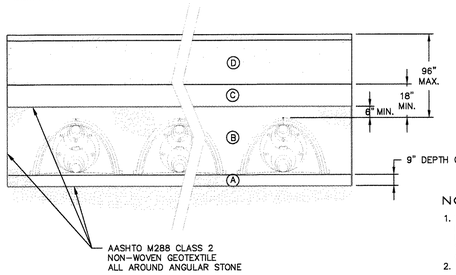
STORMTECH GENERAL NOTES

1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. OUR TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 18 INCHES NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 96 INCHES INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24 INCHES, MAXIMUM COVER IS 96 INCHES.
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS SHOWN IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS SHOWN IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS SHOWN IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. SEE CURRENT PRODUCT WARRANTY FOR DETAILS. TO ACQUIRE A COPY CALL STORMTECH AT 1-888-892-2694 OR VISIT WWW.STORMTECH.COM.



STORMTECH MC-3500 CHAMBER SYSTEM PLAN VIEW DETAIL

NOT TO SCALE



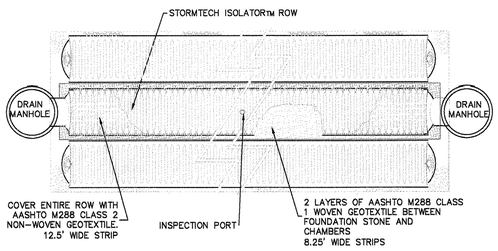
NOTES

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED RECHARGE BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.

ACCEPTABLE FILL MATERIALS STORMTECH MC-3500 CHAMBER SYSTEM

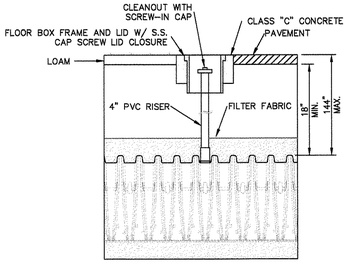
STORMTECH ISOLATOR™ ROW & INLET PROFILE VIEW DETAIL

NOT TO SCALE



STORMTECH ISOLATOR™ ROW PLAN VIEW DETAIL

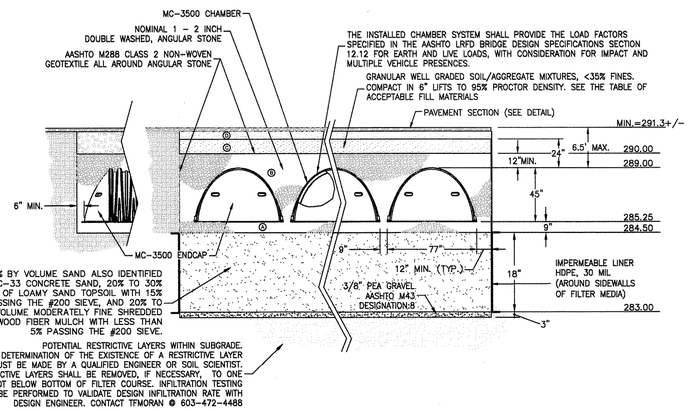
NOT TO SCALE



STORMTECH MC-3500 CHAMBER SYSTEM INSPECTION PORT DETAIL

NOT TO SCALE

MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION	AASHTO M145 DESIGNATION	COMPACTION/DENSITY REQUIREMENT
D FILL MATERIAL FROM 18" TO GRADE ABOVE CHAMBERS	ANY SOIL/ROCK MATERIALS, NATIVE SOILS OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	N/A	PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C FILL MATERIAL FOR 6" TO 18" ELEVATION ABOVE CHAMBERS (24" FOR UNPAVED INSTALLATIONS)	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	A-1 A-2 A-3	COMPACT IN 6" LIFTS TO A MINIMUM 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 LBS. DYNAMIC FORCE NOT TO EXCEED 20,000 LBS.
B EMBEDMENT STONE SURROUNDING AND TO A 6" ELEVATION ABOVE CHAMBERS	DOUBLE WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 - 2 INCH	3, 357, 4, 467, 5, 56, 57	N/A	NO COMPACTION REQUIRED
A FOUNDATION STONE BELOW CHAMBERS	DOUBLE WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 - 2 INCH	3, 357, 4, 467, 5, 56, 57	N/A	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY



MC-3500 CHAMBER TYPICAL CROSS SECTION

NOT TO SCALE

UNDERGROUND STORMWATER DETENTION SYSTEM OPERATION AND MAINTENANCE PLAN

THE OWNER IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF THE PROPOSED STORMWATER COLLECTION SYSTEM INCLUDING ROUTINE INSPECTION, CLEANING AND MAINTENANCE OF MANHOLES, DEEP SUMP HOODED CATCH BASINS, CLEAN OUTS, UNDERGROUND DETENTION SYSTEMS AND REGULAR STREET SWEEPING.

SCHEDULE FOR INSPECTION AND MAINTENANCE AFTER CONSTRUCTION:

STREET SWEEPING

-STREET SWEEPING EFFORTS SHALL BE CONDUCTED AT LEAST ONCE A MONTH OUTSIDE OF WINTER MONTHS.

-SAND SWEPT FROM THE ROADWAYS AND PARKING LOTS WILL BE REMOVED TO AN APPROVED OFF-SITE LOCATION.

DEEP SUMP CATCH BASINS & LEACHING CATCH BASINS

-INLETS SHOULD BE CLEANED ANNUALLY AND INSPECTED SEMI-ANNUALLY.

-ALL SEDIMENTS, FLOATABLES, AND HYDROCARBONS SHOULD BE PROPERLY HANDLED AND DISPOSED OF, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES AND REGULATIONS.

UNDERGROUND DETENTION SYSTEMS (STORMTECH ISOLATOR MC-4500 OR EQUAL)

-ISOLATOR ROWS AND PIPE HEADERS SHALL BE INSPECTED IMMEDIATELY AFTER COMPLETION OF THE SITE'S CONSTRUCTION. THE NORMAL INSPECTION SCHEDULE AFTER CONSTRUCTION FOR ISOLATOR ROWS IS SEMI ANNUAL UNTIL AN UNDERSTANDING OF THE SITE'S CHARACTERISTICS IS DEVELOPED. PIPE HEADERS SHOULD BE INSPECTED QUARTERLY AFTER CONSTRUCTION.

-INSPECTION OF THE ISOLATOR ROW SHALL INVOLVE A VISUAL CHECK USING EITHER THE INSPECTION PORTS OR AN ACCESS MANHOLE.

-IF UPON VISUAL INSPECTION OF THE ISOLATOR ROW, IT IS FOUND THAT SEDIMENT HAS ACCUMULATED TO AN AVERAGE DEPTH EXCEEDING 3 INCHES, CLEANOUT IS REQUIRED.

-CLEANOUT OF SEDIMENT WITHIN THE PIPE HEADER IS REQUIRED WHEN THE SEDIMENT VOLUME HAS REDUCED THE STORAGE AREA BY 25% OR THE DEPTH OF SEDIMENT HAS REACHED APPROXIMATELY 25% OF THE DIAMETER OF THE STRUCTURE.

-CLEANOUT OF THE ACCUMULATED MATERIAL IN THE PIPE HEADER SHOULD BE ACCOMPLISHED BY VACUUM PUMPING. CLEANOUT SHOULD BE PERFORMED DURING DRY WEATHER AND CARE SHOULD BE TAKEN TO AVOID FLUSHING SEDIMENTS OUT THROUGH THE OUTLET PIPES AND INTO THE CHAMBER ROWS.

A SITE MAINTENANCE LOG WILL BE KEPT. THIS LOG WILL RECORD THE DATES WHEN MAINTENANCE TASKS WERE COMPLETED, THE PERSON WHO COMPLETED THE TASK, AND ANY OBSERVATIONS OF MALFUNCTIONS IN COMPONENTS OF THE STORMWATER MANAGEMENT SYSTEM. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL REPRESENTATIVE OR VISIT WWW.STORMTECH.COM.

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER – 6/19/23

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
4	10/17/2023	NHDES AoT	JH	JH
3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

TFM
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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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4331-41

SC-310 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-310.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE OR POLYETHYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418-16a (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED
     OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD. THE MINIMUM REQUIRED BY ASTM F2787 AND/OR SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2922 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310 SYSTEM

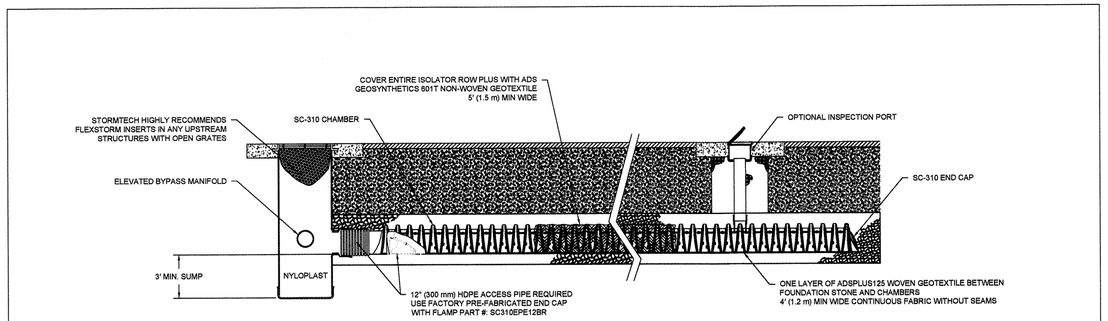
1. STORMTECH SC-310 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.
   STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

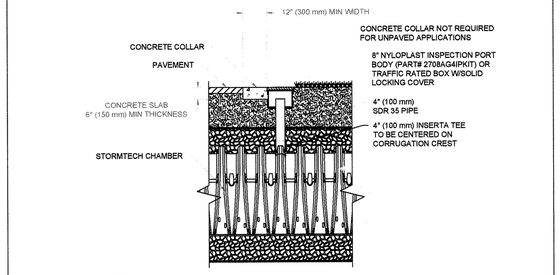
1. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE"
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



3 SC-310 ISOLATOR ROW PLUS DETAIL



4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

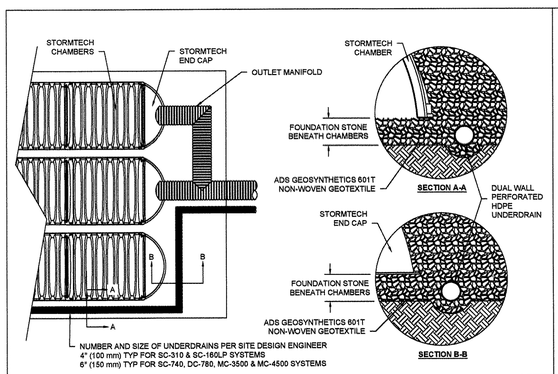
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

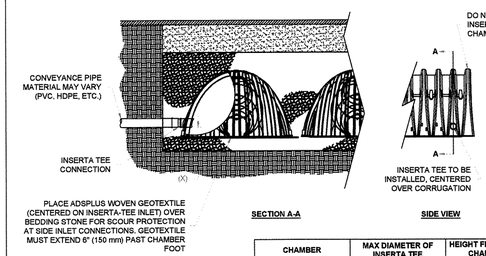
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



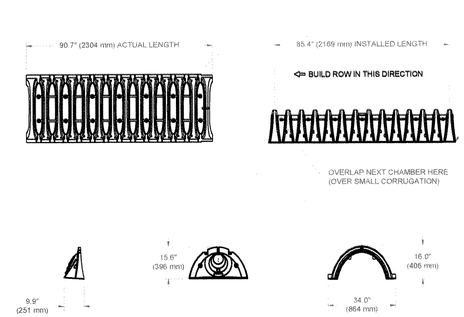
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

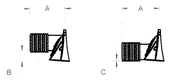
6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET	** ** **
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET	** ** **
WEIGHT	35.0 lbs.	(16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR"
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE06B / SC310EPE06BPC			---	0.5" (13 mm)
SC310EPE08T / SC310EPE08TPC	8" (200 mm)	11.9" (302 mm)	3.5" (89 mm)	---
SC310EPE08B / SC310EPE08BPC			---	0.6" (15 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC			---	0.7" (18 mm)
SC310EPE12B	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)
SC310EPE12BR	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

2 SC-310 TECHNICAL SPECIFICATIONS

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STORMTECH SC-310 CHAMBER SYSTEM TYPICAL DETAILS

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
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3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
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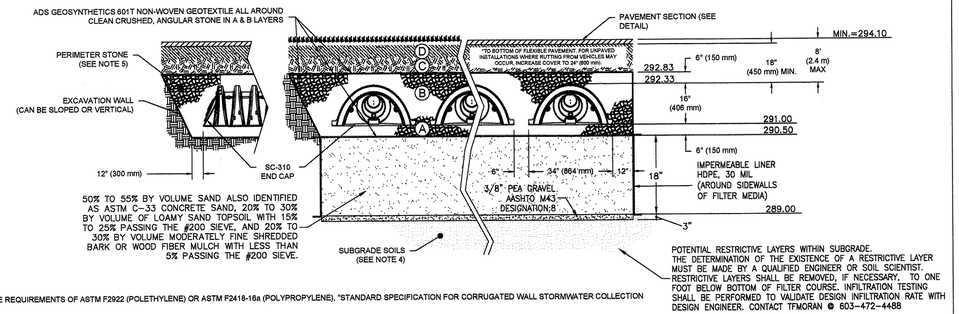
4331-42

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145** A-1, A-2-4, A-3 OR AASHTO M43** 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43** 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43** 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

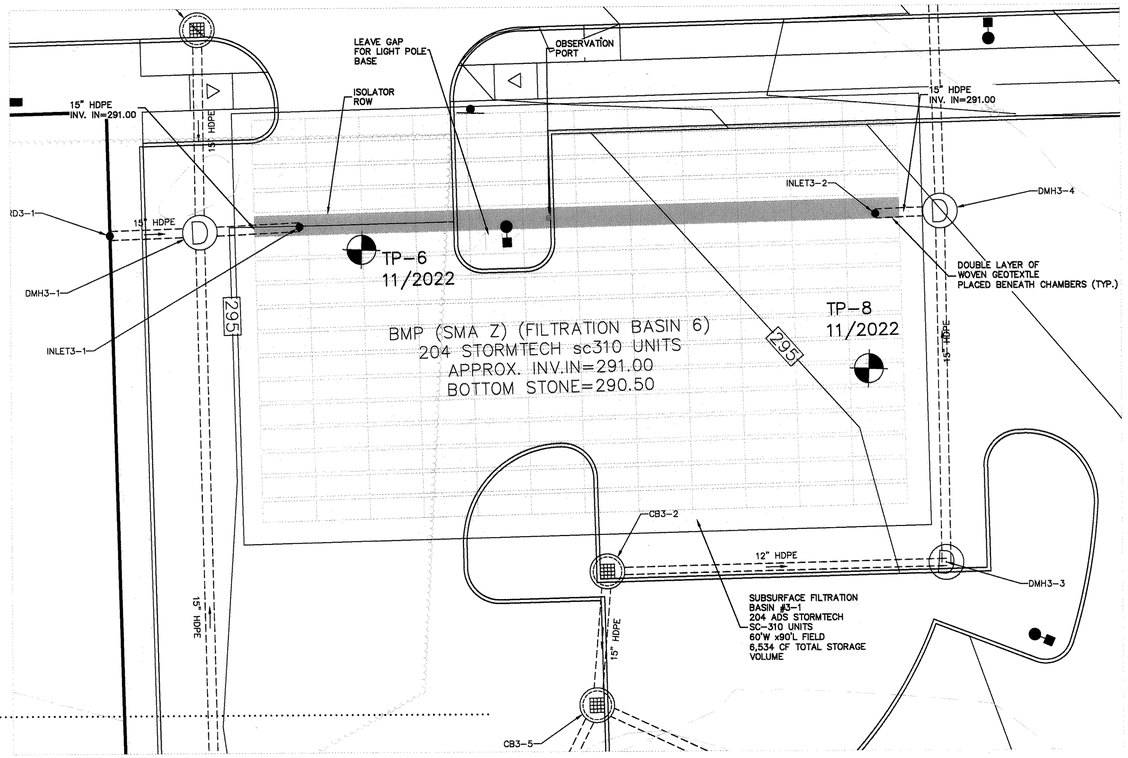
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

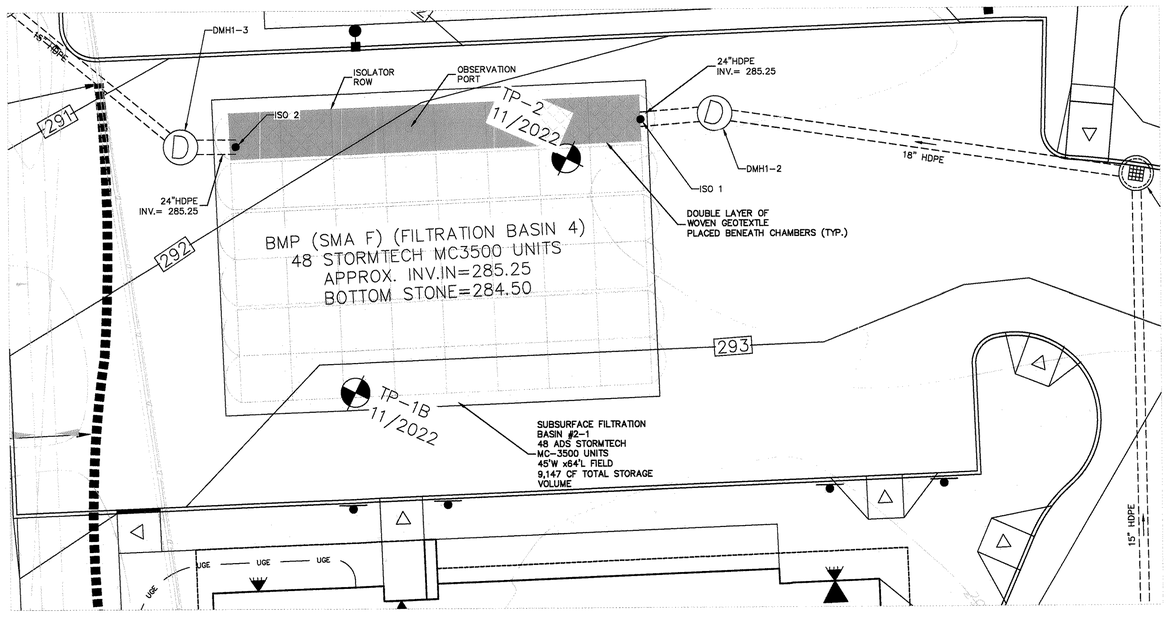
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418-16a (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 YELLOW COLORS.

1 SC-310 CROSS SECTION DETAIL



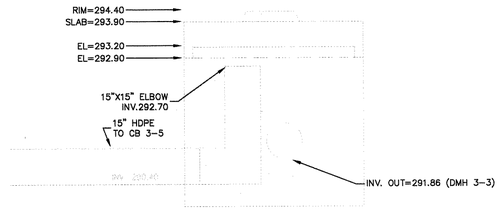
BMP (SMA Z) FILTRATION BASIN 6

1"=10'



BMP (SMA F) FILTRATION BASIN 4

1"=10'



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NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 03/14/23

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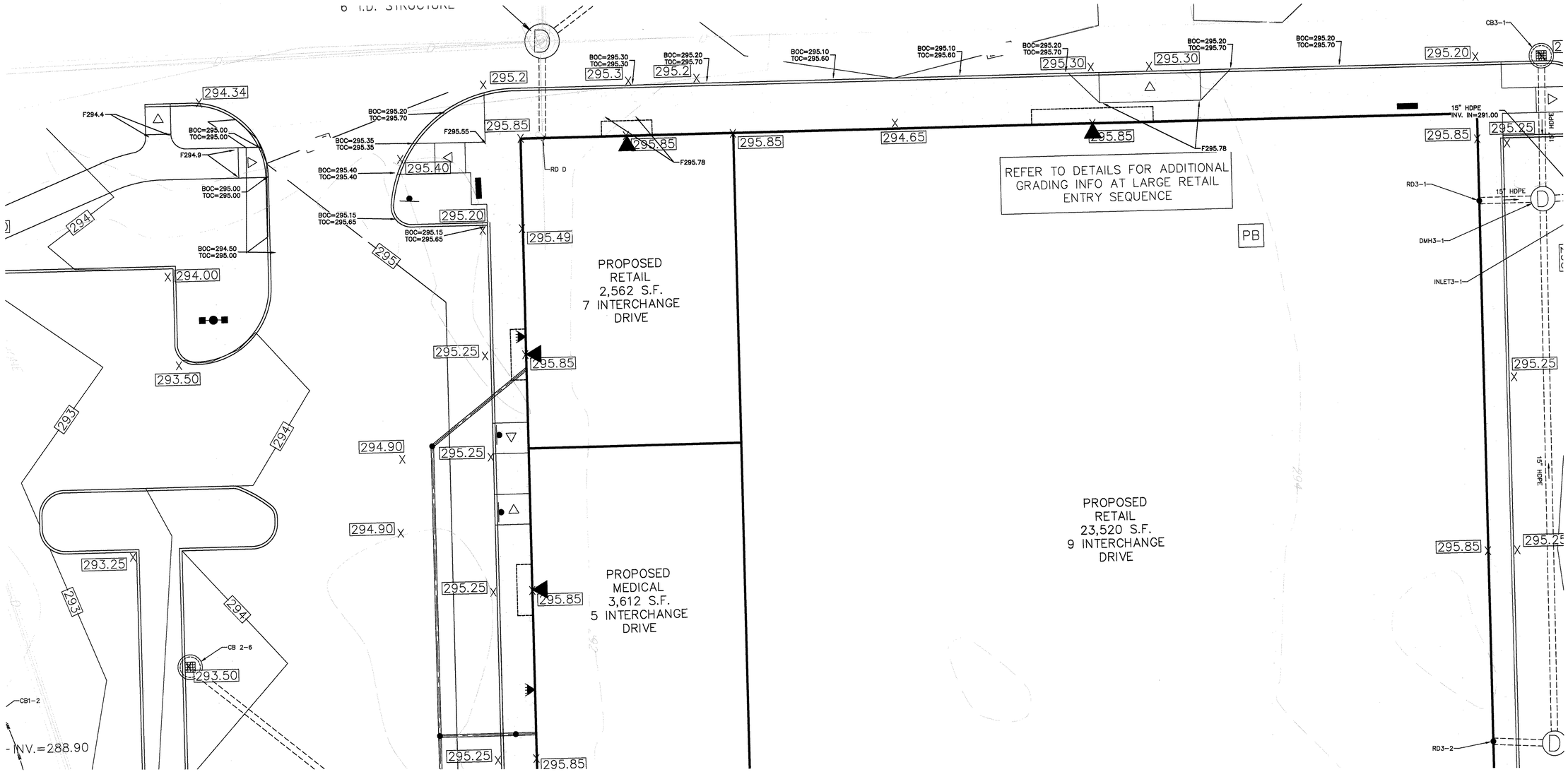

GRADING DETAIL A

1"=10'

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

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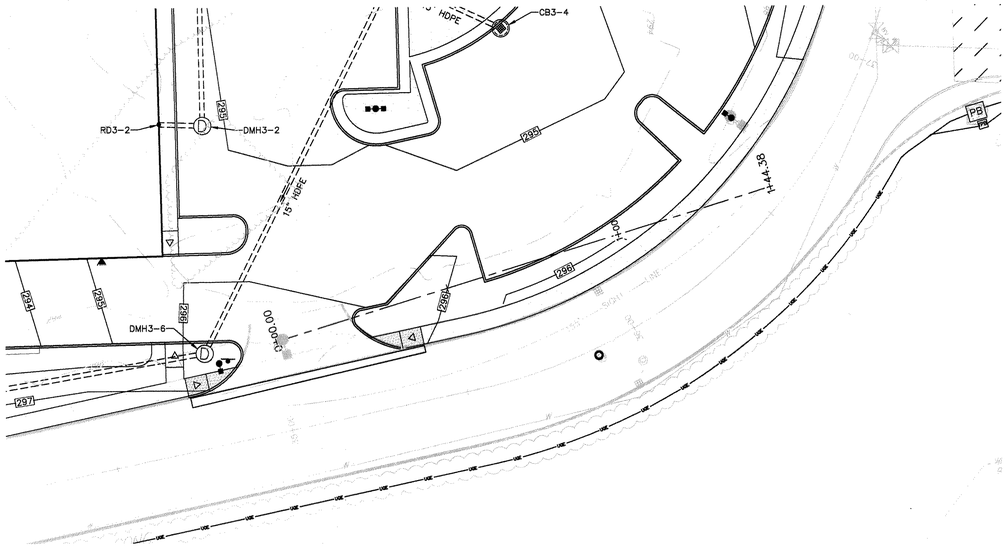
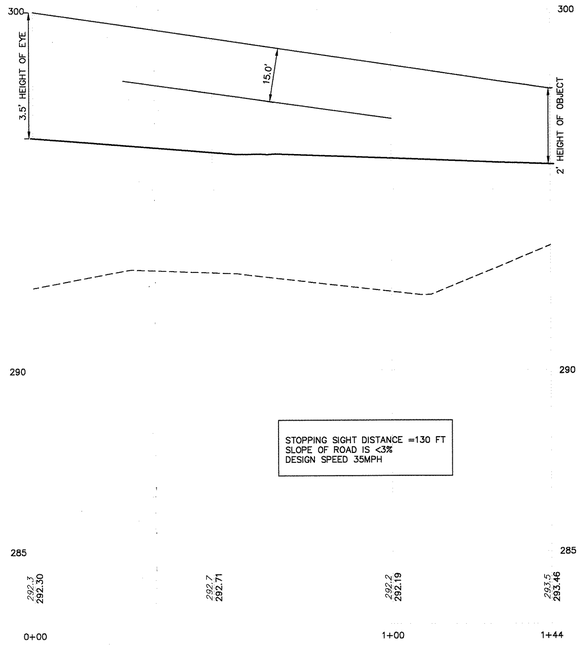


SIGHT DISTANCE PLAN- STOPPING (AASHTO)

1"=20'



STOPPING SIGHT DISTANCE =130 FT
SLOPE OF ROAD IS <3%
DESIGN SPEED 35MPH

ALIGNMENT - SITE LINE 1

SIGHT DISTANCE PROFILE- STOPPING (AASHTO)

1"=20'

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER
01/10/24

REV.	DATE	DESCRIPTION	DR	CK
6	12/31/2023	CITY ENGINEERING	JH	RD
5	11/21/2023	UMRLAC	JH	JH
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3	9/18/2023	CITY PLANNING / ENGINEERING	PH	JH
2	6/23/2023	CITY PLANNING / ENGINEERING	JH	RD
1	5/5/2023	ISSUE FOR PERMITTING	JH	RD

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

CONSTRUCTION DETAILS

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: AS SHOWN **MARCH 14, 2023**

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Land Surveyors
Landscape Architects
Scientists

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FILE	95830.08	DR	PWH	FB	-	C-40
		CK	JSH	CADFILE	95830-08_DETAILS	

4331-45

Urgent Care, Small Tenant Lots

Illuminance (Fc)
Average = 2.07
Maximum = 3.4
Minimum = 0.7
Avg/Min Ratio = 2.96
Max/Min Ratio = 4.86

Department Store Parking Lots

Illuminance (Fc)
Average = 2.33
Maximum = 4.1
Minimum = 1.3
Avg/Min Ratio = 1.79
Max/Min Ratio = 3.15

Luminaire Schedule - Site Lighting

Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	4	C-EX	Single	EXISTING CANOPY LIGHTING	0.900	2305	22	88
	2	M1	SINGLE	COOPER: GNC-SA1A-740-U-T3-CXX // WALL MTD 15' AFG	0.900	4978	34	68
	10	M2	SINGLE	COOPER: GNC-SA1A-740-U-T4W-CXX // WALL MTD 15' AFG	0.900	4942	34	340
	3	P1-EX	SINGLE	EXISTING POLE AND FIXTURE	0.900	18591	166	498
	3	P2-EX	SINGLE	EXISTING POLE AND FIXTURE	0.900	18242	166	498
	2	P2-EX-R	SINGLE	EXISTING PROPOSED RELOCATION POLE AND FIXTURE	0.900	18242	166	332
	1	P2-NEW	SINGLE	COOPER: GLEON-SA3B-740-U-T2-CXX // VALMONT: R-240840606T4-D1-CXX (25' AFG)	0.900	17121	124	124
	4	P5-EX	BACK-BACK	EXISTING POLE AND BACK-TO-BACK FIXTURE	0.900	32055	279	2232
	2	S4-EX	Single	EXISTING POLE AND FIXTURE	0.900	11745	113	226
	5	T1-2	Back-Back	COOPER: GLEON-SA2D-740-U-5MQ-CXX // VALMONT: R-240840606T4-D2-CXX (25' AFG)	0.900	16723	129	1290
	4	T2	Single	COOPER: GLEON-SA2C-740-U-T4W-CXX // VALMONT: R-240840606T4-D1-CXX (25' AFG)	0.900	14371	113	452
	2	T3	Single	COOPER: GLEON-SA2D-740-U-5MQ-CXX // VALMONT: R-240840606T4-D1-CXX (25' AFG)	0.900	16676	129	258
	1	T4	Single	COOPER: GLEON-SA2B-740-U-T4W-CXX // VALMONT: R-240840606T4-D1-CXX (25' AFG)	0.900	11610	85	85
	2	T5-2	Back-Back	COOPER: GLEON-SA2A-740-U-5MQ-CXX // VALMONT: R-240840606T4-D2-CXX (25' AFG)	0.900	10015	66	264
	2	T5-2EX	Back-Back	EXISTING POLE AND BACK-TO-BACK FIXTURE	0.900	10015	66	264
	2	W1-EX	SINGLE	EXISTING WALL MTD FIXTURE	0.900	6458	59	118
	3	W2-EX	Single	EXISTING WALL MTD FIXTURE	0.900	3348	25.4	76.2
	1	W3-EX	Single	EXISTING WALL MTD FIXTURE	0.900	3429	25.4	25.4

STATE OF NEW HAMPSHIRE
ROBERT E. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER

THE SOURCE FOR ALL THINGS L.E.D.
CHARRON

#	Date	Comments

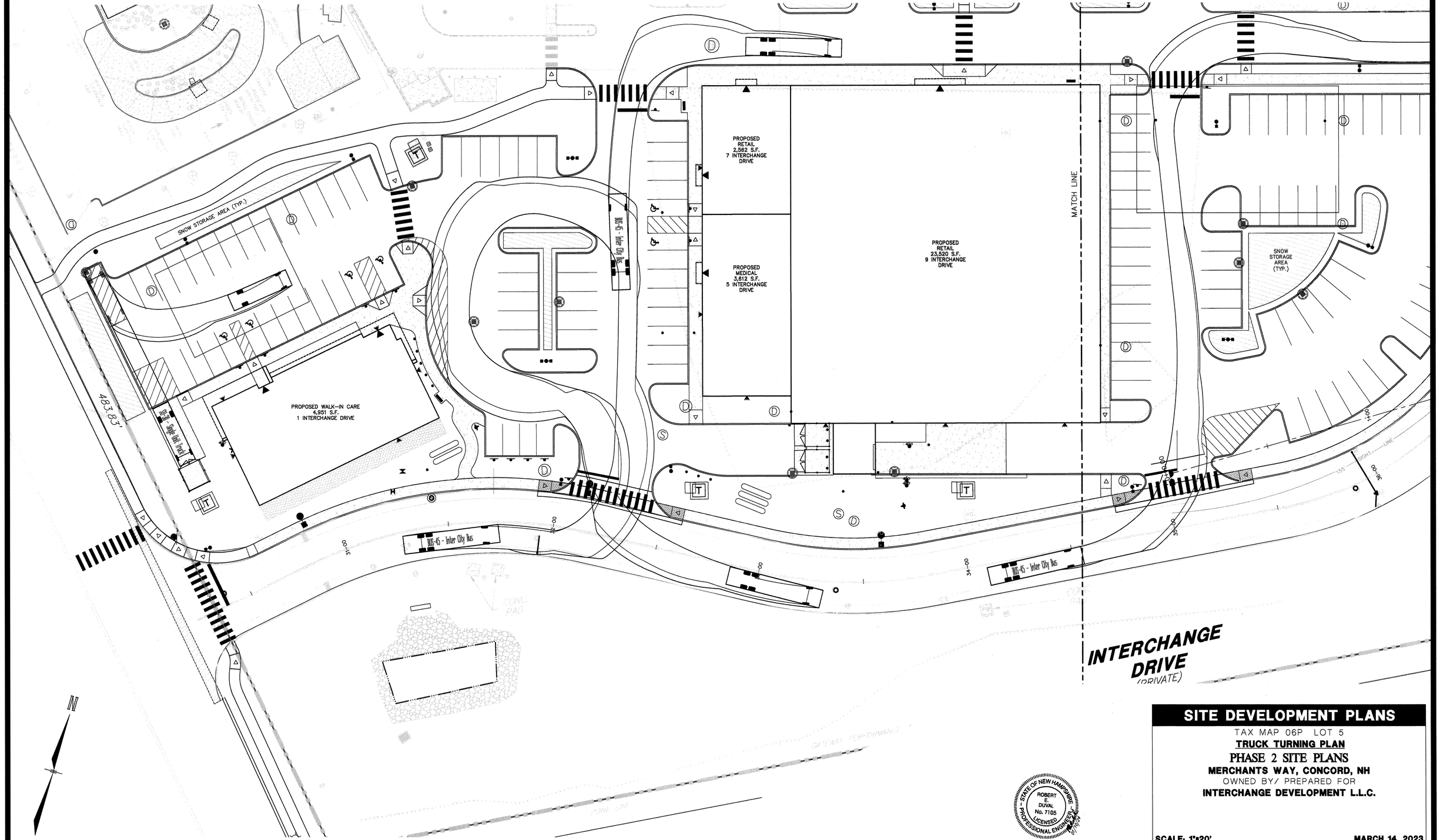
Revisions

Drawn By: MJO
Checked By:
Date:9/11/2023
Scale: NTS

Updated Interchange Development - Exit 17 Site Lighting
Concord, NH

Page M of 1

4331-46



SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

TRUCK TURNING PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

STATE OF NEW HAMPSHIRE — ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — 10/10/23

SCALE: 1"=20' **MARCH 14, 2023**

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

NOTES

DESIGN VEHICLE IS A NHCRP FIRE LADDER TRUCK FOR ALL BUILDIGNS WITH ACCESS TO FRONT DOOR.
DESIGN VEHICLE FOR BIG BOX LOADING AREA IS A WB-67

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK
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PROJECT NO.	DR	PWH	FB	–	SHEET NO.
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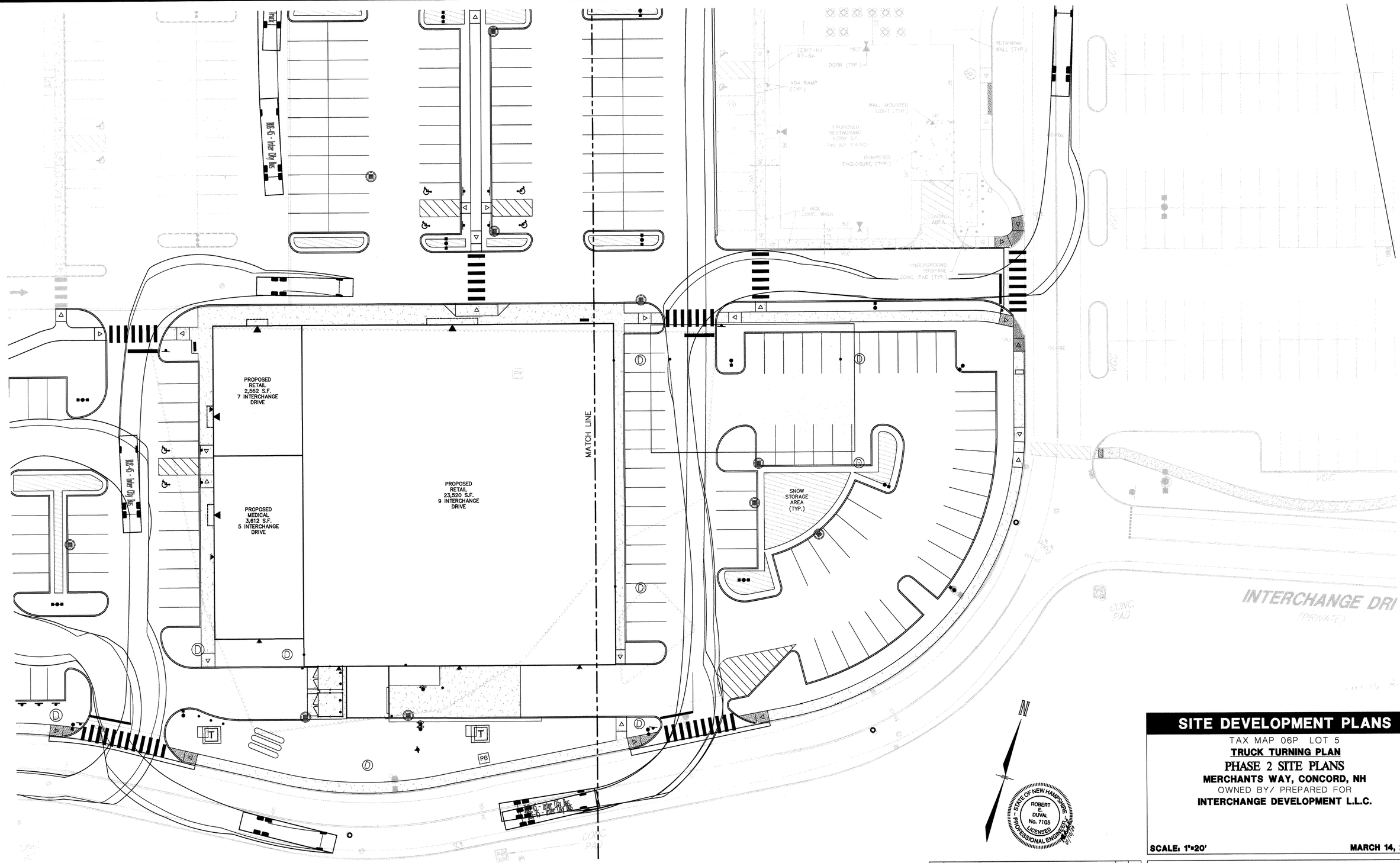

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

TRUCK TURNING PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

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SCALE: 1"=20' **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE
ROBERT P. DUVAL
No. 7105
LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1"=20'
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95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	T-2

DIG SAFE
CONTACT DIG SAFE AT LEAST THREE BUSINESS HOURS PRIOR TO CONSTRUCTION

4331-48

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

TRUCK TURNING PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

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FILE	DR	PWH	FB		
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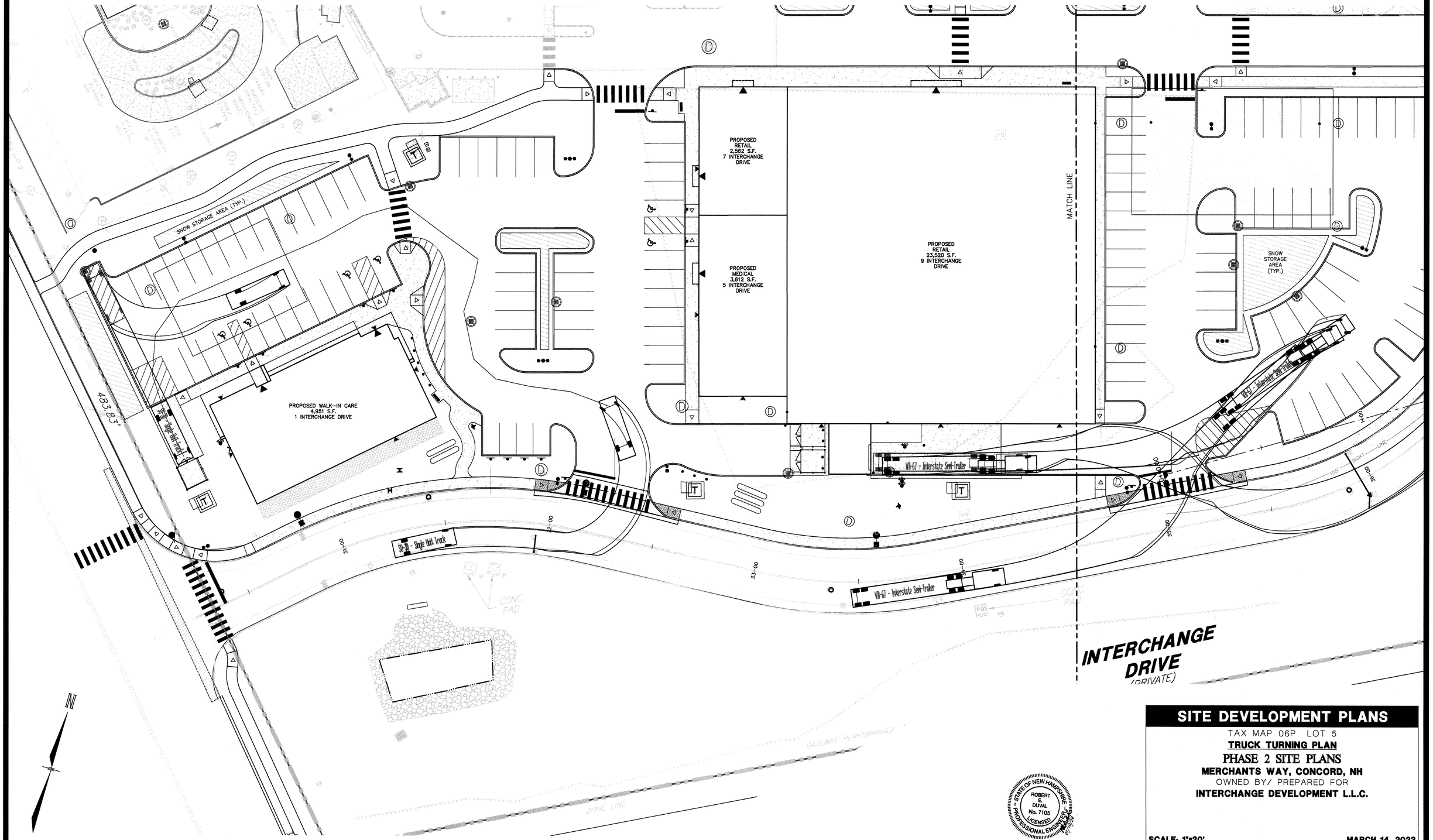

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

TRUCK TURNING PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

NOTES

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DESIGN VEHICLE FOR BIG BOX LOADING AREA IS A WB-67

HORIZONTAL SCALE 1"=20'
20 10 0 20

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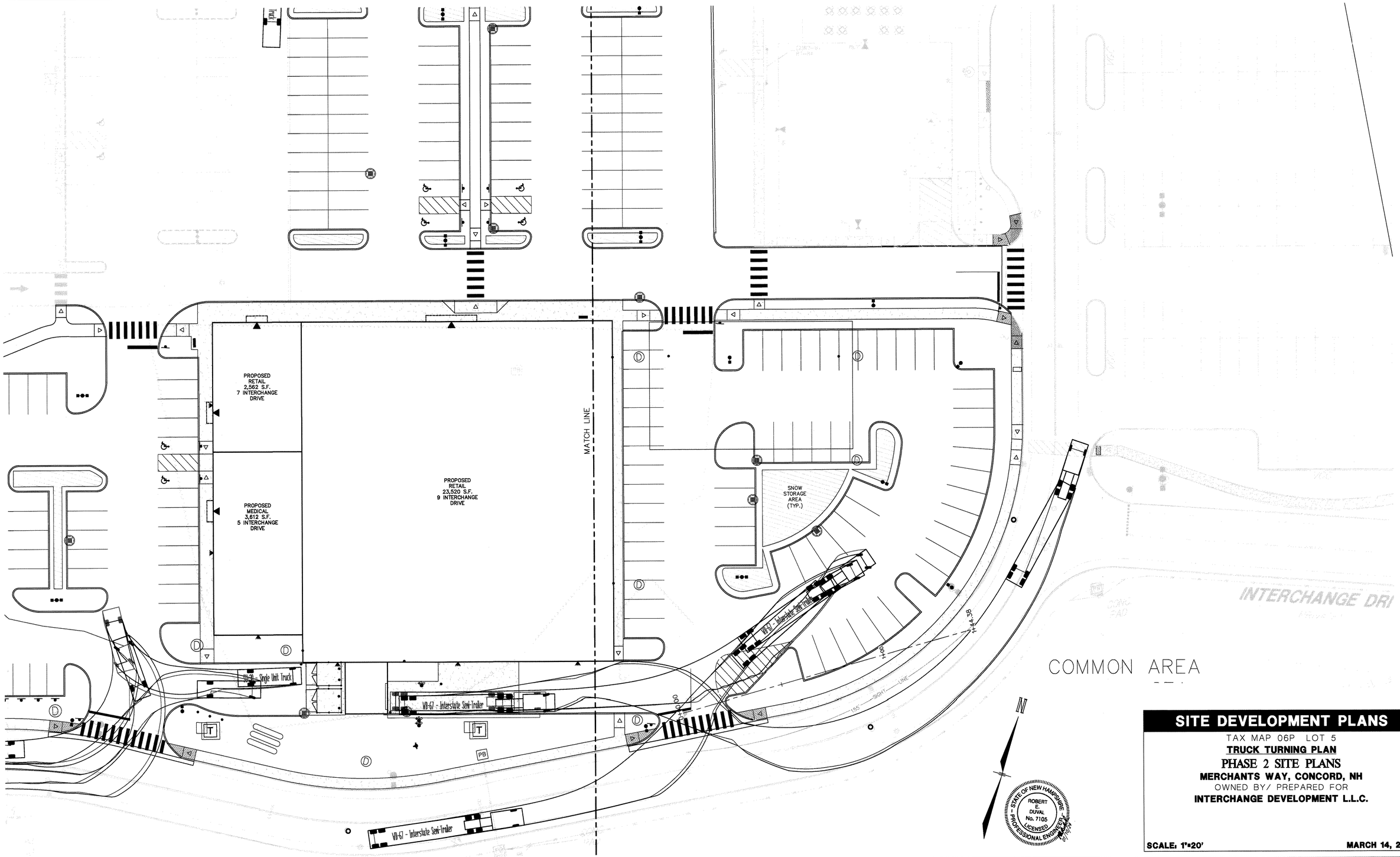
PROJECT	DR	PWH	FB	–	T-4
95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	

4331-50



SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

TRUCK TURNING PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

SCALE: 1"=20' **MARCH 14, 2023**

STATE OF NEW HAMPSHIRE
ROBERT E DUVAL
No. 7105
LICENSED
PROFESSIONAL ENGINEER
03/14/2023

HORIZONTAL SCALE 1"=20'
20 10 0 20

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95830.08	CK	JSH	CADFILE	95830-08_SITE PLANS	

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

4331-51

SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

TRUCK TURNING PLAN

PHASE 2 SITE PLANS

MERCHANTS WAY, CONCORD, NH

OWNED BY/ PREPARED FOR

INTERCHANGE DEVELOPMENT L.L.C.

ROBERT E. DUVAL No. 7105 LICENSED PROFESSIONAL ENGINEER — STATE OF NEW HAMPSHIRE

SCALE: 1"=20'

MARCH 14, 2023

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HORIZONTAL SCALE 1"=20'
20 10 0 20

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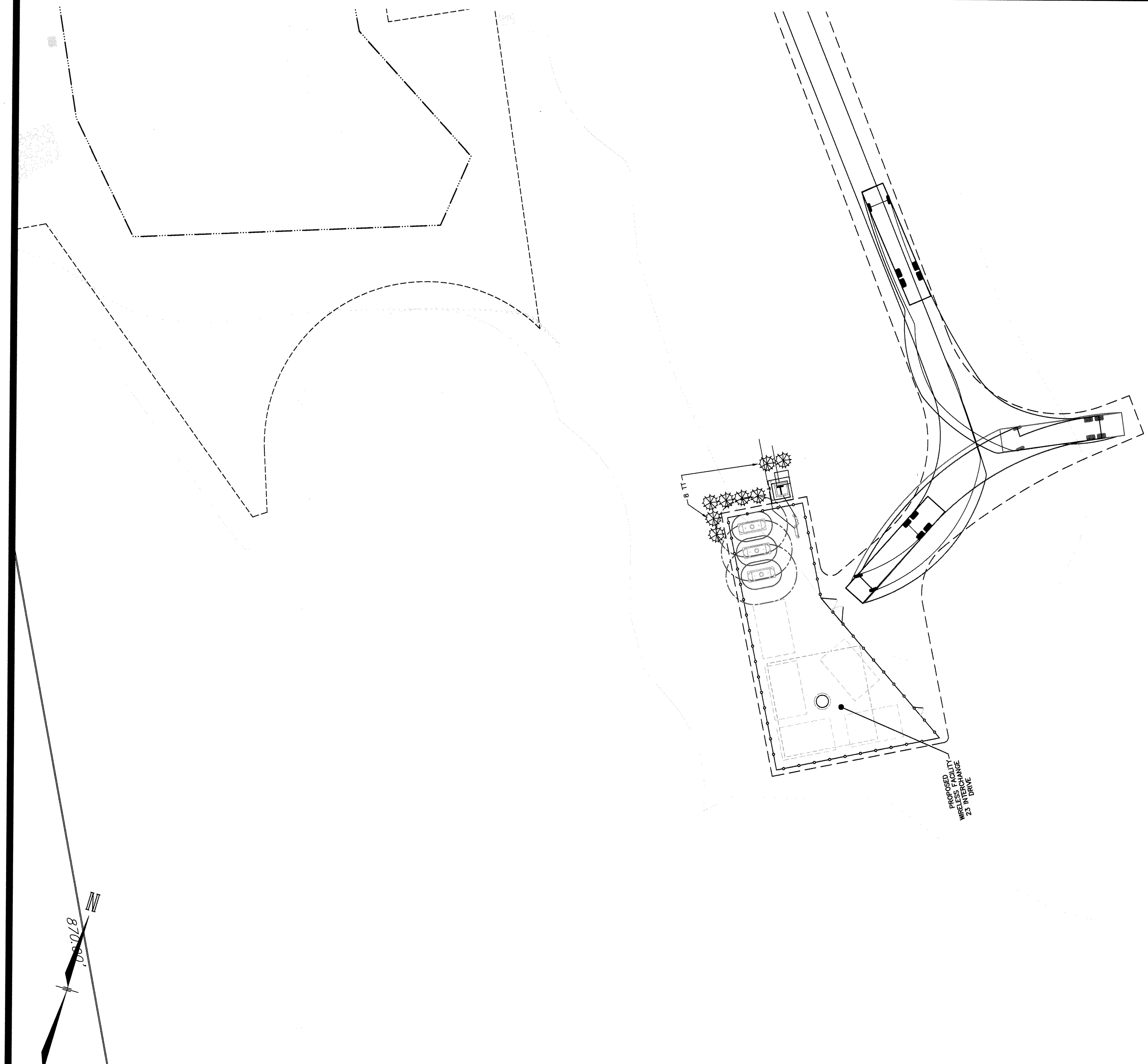
NOTES

DESIGN VEHICLE IS A NHCRP FIRE LADDER TRUCK FOR ALL BUILDIGNS WITH ACCESS TO FRONT DOOR.
DESIGN VEHICLE FOR BIG BOX LOADING AREA IS A WB-67

4331_52



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SITE DEVELOPMENT PLANS

TAX MAP 06P LOT 5

TRUCK TURNING PLAN

PHASE 2 SITE PLANS

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MARCH 14, 2023

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