

ST. LOUIS SPONGE PARK

PHASE I

404 WEST 6TH STREET



SEALS	CERTIFYING PROFESSIONALS	DRAWINGS
	CHERI RUANE, FASLA WESTON & SAMPSON, INC. 85 DEVONSHIRE STREET, 3RD FLOOR BOSTON, MA 02109	SHEETS L001-L802
	JAMES PEARSON, P.E. WESTON & SAMPSON, INC. 55 WALKERS BROOK DRIVE, SUITE 100 READING, MA 01867	SHEETS C201-C401
	KYLE ELMY, P.E. WESTON & SAMPSON, INC. 55 WALKERS BROOK DRIVE, SUITE 100 READING, MA 01867	SHEETS AQ100-AQ131
	ROBERT MCALEER, P.E. WESTON & SAMPSON, INC. 55 WALKERS BROOK DRIVE, SUITE 100 READING, MA 01867	SHEETS E001-E400



- FOR ILLUSTRATIVE PURPOSES ONLY -

OWNER:
CITY OF LOWELL
DEPARTMENT OF PLANNING AND DEVELOPMENT
50 ARCAD DRIVE
LOWELL, MA 01852

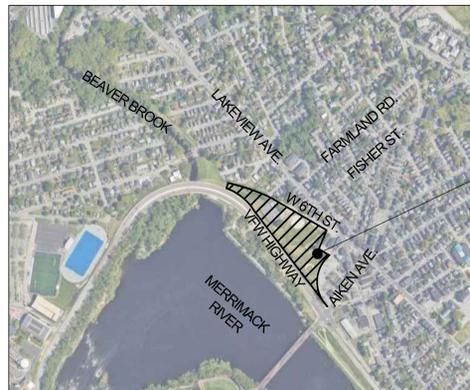
LANDSCAPE ARCHITECT/ENGINEER:
WESTON & SAMPSON ENGINEERS, INC
85 DEVONSHIRE STREET, 3RD FLOOR
BOSTON, MA 02109

SURVEY:
PRECISION LAND SURVEYING, INC.,
32 TURNPIKE ROAD, SOUTHBOROUGH, MA 01772

BID DOCUMENTS

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SITE
LOCATION

LOCATION MAP
NOT TO SCALE

SEPTEMBER 20, 2024

Prepared By

Weston & SampsonSM

Weston & Sampson Engineers, Inc.
85 Devonshire Street, 3rd Floor
Boston, MA 02109

978.532.1900 800.SAMPSON
www.westonandsampson.com

GENERAL NOTES

- 1. SITE SURVEY AND TOPOGRAPHICAL INFORMATION BASED ON THE GROUND SURVEY PERFORMED BY PRECISION LAND SURVEYING, INC., 04/08/2024.
2. PROPERTY LINES ARE APPROXIMATELY LOCATIONS AS PROVIDED FROM THE CITY OF LOWELL GIS DEPARTMENT ON 8/27/2024.
3. ALL BIDDERS ARE REQUIRED TO INSPECT THE PROJECT SITE IN ITS ENTIRETY PRIOR TO SUBMITTING THEIR BID, AND BECOME FAMILIAR WITH ALL CONDITIONS AS THEY MAY AFFECT THEIR BID. CONTRACTOR AND SUB-CONTRACTOR SHALL BE FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS PRIOR TO COMMENCING THE CONSTRUCTION.
4. LOCATIONS OF ANY UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF SUCH UTILITIES, PROTECTING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGE DONE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES. IN ACCORDANCE WITH M.G.L. CHAPTER 82, SECTION 40, INCLUDING AMENDMENTS, CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING PRIOR TO EXCAVATION. CONTRACTOR SHALL ALSO CALL "DIG SAFE" AT (888) 344-7233 NO LESS THAN 72 HOURS, (EXCLUSIVE OF WEEKENDS AND HOLIDAYS), PRIOR TO SUCH EXCAVATION. DOCUMENTATION OF REQUESTS SHALL BE PROVIDED TO PROJECT REPRESENTATIVE PRIOR TO EXCAVATION WORK.
5. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE OWNERS REPRESENTATIVE FOR RESOLUTION OF THE CONFLICT.
6. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY OWNER AT NO ADDITIONAL COST TO THE CITY OF LOWELL.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE EXTENT OF EXCAVATION AND DEMOLITION REQUIRED TO RECEIVE SITE IMPROVEMENTS.
8. ANY DISCREPANCIES OR CONFLICTS BETWEEN THE DRAWINGS AND EXISTING CONDITIONS, EXISTING CONDITIONS TO REMAIN, TEMPORARY CONSTRUCTION, PERMANENT CONSTRUCTION AND WORK OF ADJACENT CONTRACTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER BEFORE PROCEEDING. ITEMS ENCOUNTERED IN AREAS OF EXCAVATION THAT ARE NOT INDICATED ON THE DRAWINGS, BUT ARE VISIBLE ON SURFACE, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER.
9. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR ON "AS-BUILT" DRAWINGS.
10. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS OUTSIDE THE PROJECT LIMITS, SHALL BE RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.
11. ALL WORK SHOWN ON THE PLANS AS BOLD SHALL REPRESENT PROPOSED WORK. THE TERM "PROPOSED [PROP]" INDICATES WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND SALVAGE (R&S)", OR REMOVE, RELOCATE, SALVAGE, (R,R&S).
12. ALL KNOWN EXISTING STATE, COUNTY AND CITY LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND ARE INDICATED ON THE PLANS.
13. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT HIS EMPLOYEES, AS WELL AS PUBLIC USERS FROM INJURY DURING THE ENTIRE CONSTRUCTION PERIOD USING ALL NECESSARY SAFEGUARDS, INCLUDING BUT NOT LIMITED TO, THE ERECTION OF TEMPORARY WALKS, STRUCTURES, PROTECTIVE BARRIERS, COVERING, OR FENCES AS NEEDED.
14. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH THE NAME OF THE OSHA "COMPETENT PERSON" PRIOR TO CONSTRUCTION.
15. FILLING OF EXCAVATED AREAS SHALL NOT TAKE PLACE WITHOUT THE PRESENCE OR PERMISSION OF THE OWNER.
16. EXISTING TREES TO REMAIN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. NO STOCKPILING OF MATERIAL, EQUIPMENT OR VEHICULAR TRAFFIC SHALL BE ALLOWED WITHIN THE DRIP LINE OF TREES TO REMAIN. NO GUYS SHALL BE ATTACHED TO ANY TREE TO REMAIN. WHEN NECESSARY OR AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL ERECT TEMPORARY BARRIERS FOR THE PROTECTION OF EXISTING TREES DURING CONSTRUCTION.
17. TREES AND SHRUBS WITHIN THE LIMITS OF WORK SHALL BE REMOVED ONLY UPON THE APPROVAL OF THE OWNER'S REPRESENTATIVE OR AS NOTED ON THE PLANS.
18. NO FILLING SHALL OCCUR AROUND EXISTING TREES TO REMAIN WITHOUT THE APPROVAL OF THE OWNER OR OWNER REPRESENTATIVE.
19. THE CONTRACTOR SHALL REMOVE ALL SURFACE VEGETATION PRIOR TO GRADING THE SITE. TREES AND STUMPS SHALL BE REMOVED AND DISPOSED COMPLETE BY CONTRACTOR IN ACCORDANCE WITH SPECIFICATION SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, REUSE AND/OR OFFSITE DISPOSAL OF EXCAVATED MATERIAL. TEMPORARY EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS (INCLUDING SILT FENCE, STRAW WATTLERS, OR SILT SOCKS) SHALL BE INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THESE TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE PROJECT WHICH COST SHALL BE INCIDENTAL TO THE PROJECT.
20. ALL UNSUITABLE UNCONTAMINATED EXCESS SOIL FROM CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY IN ACCORDANCE WITH SPECIFICATION SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, REUSE AND/OR OFFSITE DISPOSAL OF EXCAVATED MATERIAL. REMOVAL ACTIVITIES SHALL BE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS AT NO ADDITIONAL COST TO THE CITY. SUITABLE SOIL EXCAVATION AS PART OF THE PROJECT MUST MEET ONE OR MORE OF THE MATERIAL REQUIREMENTS SPECIFIED. ON-SITE FILL MATERIALS, WHICH DO NOT CONFORM TO THE SPECIFICATIONS, SHALL NOT BE USED BELOW ANY STRUCTURES. IF THE CONTRACTOR PROPOSES TO USE THE EXISTING FILL ON SITE BELOW PAVEMENT AREAS, HE MUST DEMONSTRATE THAT THE FILL MEETS THE REQUIREMENTS PER THE SPECIFICATIONS. ALL EXCAVATED FILL MATERIAL WHICH DOES NOT MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT NO ADDITIONAL COST.
21. CONTRACTOR IS RESPONSIBLE FOR STAKING CONSTRUCTION BASELINES IN FIELD WITH A MASSACHUSETTS REGISTERED PROFESSIONAL LAND SURVEYOR. NO CONSTRUCTION WILL BE PERFORMED WITHOUT THE PROPOSED BASELINES AND LAYOUTS APPROVED BY THE ENGINEER.
22. NO FILL SHALL CONTAIN HAZARDOUS MATERIALS.
23. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AROUND PERIMETER OF WORK AREA (LIMIT OF WORK). FENCE SHALL NOT IMPEDE TRAVEL WAYS.
24. ANY QUANTITIES SHOWN ON PLANS ARE FOR COMPARATIVE BIDDING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE PROJECT SITE TO VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO SUBMITTING BID.
25. ALL EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE MAINTAINED FREE OF DEBRIS, SOIL, SEDIMENT, AND FOREIGN MATERIAL AND OPERATIONAL THROUGHOUT THE LIFE OF THE CONTRACT. REMOVE ALL SOIL, SEDIMENT, DEBRIS AND FOREIGN MATERIAL FROM ALL DRAINAGE STRUCTURES, INCLUDING BUT NOT LIMITED TO, DRAINAGE INLETS, MANHOLES AND CATCH BASINS WITHIN THE LIMIT OF WORK AND DRAINAGE STRUCTURES OUTSIDE THE LIMIT OF WORK THAT ARE IMPACTED BY THE WORK FOR THE ENTIRE DURATION OF CONSTRUCTION.
26. CONTRACTOR'S STAGING AREA MUST BE WITHIN THE CONTRACT LIMIT LINE AND IN AREAS APPROVED BY OWNER. ANY OTHER AREAS THAT THE CONTRACTOR MAY WISH TO USE FOR STAGING MUST BE COORDINATED WITH THE OWNER.
27. THE CONTRACTOR SHALL KEEP ALL STREETS, PARKING LOTS AND WALKS THAT ARE NOT RESTRICTED FROM PUBLIC USE DURING CONSTRUCTION BROOM CLEAN AT ALL TIMES. THE CONTRACTOR SHALL USE ACCEPTABLE METHODS AND MATERIALS TO MAINTAIN ADEQUATE DUST CONTROL THROUGHOUT CONSTRUCTION.
28. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER.
29. CONTRACTOR SHALL DEWATER AS NECESSARY TO PERFORM THE PROPOSED WORK. CONTRACTOR SHALL BE AWARE OF A HIGH WATER TABLE RANGING FROM 36" TO 42" BELOW EXISTING FINISHED GRADE.
30. THE LIMIT OF WORK SHALL BE DELINEATED IN THE FIELD PRIOR TO THE START OF SITE CLEARING OR CONSTRUCTION AND AGREED UPON WITH THE OWNER'S REPRESENTATIVE.
31. DEEP SUMP CATCH BASINS AND STORMWATER BASIN SHALL BE CLEANED FOLLOWING CONSTRUCTION AND SHALL FOLLOW THE OPERATION AND MAINTENANCE PLAN THEREAFTER.
32. HAULING OF EARTH MATERIALS TO AND FROM THE SITE SHALL BE RESTRICTED TO THE HOURS OF 7 AM TO 5 PM.
33. ANY BOULDERS 3 CY OR SMALLER SHALL BE CONSIDERED UNDOCUMENTED FILL AND SHALL BE DISPOSED OF AT NO ADDITIONAL COST TO THE CITY.
34. WORK ON SATURDAYS SHALL ONLY BE CONDUCTED IF PRIOR WRITTEN PERMISSION IS PROVIDED BY THE CITY.
35. NO TRUCKS LEFT IDLING ON CITY STREETS DURING CONSTRUCTION. CONSTRUCTION TRAFFIC AT NO TIME SHALL IMPEDE FLOW OF RESIDENT TRAFFIC.

EROSION AND SEDIMENT CONTROL NOTES

- 1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION. REFER TO PLANS FOR APPROXIMATE LOCATION OF EROSION AND SEDIMENT CONTROL. REFER TO SPECS AND DETAILS FOR TYPE OF EROSION AND SEDIMENT CONTROL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUAL MAINTENANCE OF ALL CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL MEET ALL OF THE STATE OF MASSACHUSETTS D.E.P. AND THE CITY OF LOWELL WETLAND ORDINANCE REGULATIONS FOR SEDIMENT AND EROSION CONTROL.
4. EXCAVATED MATERIAL STOCKPILED ON THE SITE SHALL BE SURROUNDED BY A RING OF UNBROKEN SEDIMENT AND EROSION CONTROL FENCE. THE LIMITS OF ALL GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMIT OF CONTRACT SHALL REMAIN TOTALLY UNDISTURBED UNLESS OTHERWISE APPROVED BY OWNERS REPRESENTATIVE.
5. ALL CATCH BASINS AND DRAIN GRATES WITHIN LIMIT OF CONTRACT SHALL BE PROTECTED WITH SILT SACKS DURING THE ENTIRE DURATION OF CONSTRUCTION.
6. EROSION CONTROL BARRIERS TO BE INSTALLED AT THE TOE OF SLOPES PER SHEETS L200-201, NOTES, DETAILS AND SPECIFICATIONS.
7. THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR CONSTRUCTION OPERATIONS AS APPROVED BY OWNER.
8. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ON TO PUBLIC/Private ROADS.

DEMOLITION & SITE PREPARATION NOTES

- 1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION, DEMOLITION AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
2. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS. IF THE OWNER RETAINS ANY MATERIAL THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER TO HAVE THOSE MATERIALS REMOVED OFF SITE AT NO ADDITIONAL COST.
3. UNLESS SPECIFICALLY NOTED TO BE REMOVED / SALVAGED (R&S), ALL SITE FEATURES CALLED FOR REMOVAL SHALL BE REMOVED WITH THEIR FOOTINGS, ATTACHMENTS, BASE MATERIAL, ETC., TRANSPORTED FROM THE SITE TO BE DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE AND AT NO ADDITIONAL COST TO THE OWNER.
4. ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. ANY FEATURES DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN. OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
6. IT SHALL BE THE CONTRACTOR'S OPTION, WITH CONCURRENCE OF THE OWNER, TO REUSE EXISTING GRAVEL IF IT MEETS THE REQUIREMENTS OF THE SPECIFICATIONS FOR GRAVEL BORROW.
7. STRIP AND STOCKPILE TOPSOIL SHALL INCLUDE REMOVAL OF GRASS, SHRUBS, AND UNDERBRUSH, REMOVAL OF ROOTS, STOCKPILING OF TOPSOIL, ROUGH GRADING, INSTALLATION OF LOAM (IF APPLICABLE), FINE GRADING, SEEDING AND TURF ESTABLISHMENT BY THE CONTRACTOR.
8. TREES DESIGNATED FOR REMOVAL SHALL BE TAGGED BY CONTRACTOR AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
9. THE STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED AT LOCATIONS DESIGNATED BY OWNER OR OWNERS REPRESENTATIVE. PROTECTION OF STORED MATERIALS AND EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. LOAM / TOP SOIL DESIGNATED FOR REUSE AS GENERAL FILL SHALL BE BLENDED WITH SUITABLE BORROW MATERIAL AS SPECIFIED.
11. THE CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN. CONTRACTOR SHALL INSTALL TREE PROTECTION BARRIER AFTER CLEARING UNDERBRUSH AND TAKE DUE CARE TO PREVENT INJURY TO TREES DURING CLEARING OPERATIONS.

LAYOUT & MATERIALS NOTES

- 1. REFER TO EXISTING CONDITIONS PLANS FOR SURVEY INFORMATION (SHEET L102).
2. COORDINATE ALL LAYOUT ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY DEMOLITION, GRADING AND UTILITIES OPERATIONS ENCOMPASSED BY THIS CONTRACT. SET, PROTECT AND REPLACE REFERENCE STAKES AS NECESSARY OR AS REQUIRED BY THE OWNERS REPRESENTATIVE.
3. ALL WORK SHALL BE PERFORMED BY CONTRACTOR UNLESS SPECIFICALLY INDICATED THAT THE WORK WILL BE PERFORMED "BY OTHERS" OR "UNDER SEPARATE CONTRACT".
4. TO FACILITATE LAYOUT OF PROPOSED SITE FEATURES AND FACILITIES, LAYOUT INFORMATION FOR CERTAIN FUTURE WORK, WHICH IS NOT INCLUDED WITHIN THE SCOPE OF THIS CONTRACT HAS BEEN PROVIDED ON THE LAYOUT AND MATERIALS PLAN FOR INFORMATION ONLY. SOME ITEMS ARE "NOT IN CONTRACT" (NIC) AND SHOWN FOR REFERENCE ONLY.
5. THE LAYOUT OF SITE AMENITIES AND FENCES MUST BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
6. THE LAYOUT OF ALL NEW PATHWAYS / WALKWAYS AND THE GRADING OF ALL SLOPES AND CROSS SLOPES SHALL CONFORM TO THE MASSACHUSETTS RULES AND REGULATIONS FOR HANDICAP ACCESS CMR 821, AND THE AMERICANS WITH DISABILITIES ACT (ADA), TITLE 3. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE REQUIRED.
7. ALL LAYOUT LINES, OFFSETS, OR REFERENCES TO LOCATING OBJECTS ARE EITHER PARALLEL OR PERPENDICULAR UNLESS OTHERWISE DESIGNATED WITH ANGLE OFFSETS NOTED.
8. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER. ALL LAYOUT SHALL BE PERFORMED BY A MA, REGISTERED PROFESSIONAL LAND SURVEYOR.
9. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES. ALL BITUMINOUS CONCRETE SHALL BE TREATED WITH AN RS-1 TACK COAT AT POINT OF CONNECTION. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT AND MATERIALS PLAN.
10. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENT OF ALL PROPOSED FENCES AND GATES.
12. THE DEPTH OF LOAM BORROW FOR ALL PROPOSED LAWN AREAS SHALL BE 6" MINIMUM. ALL DISTURBED AREAS SHALL BE RESTORED WITH LOAM AND SEED UNLESS OTHERWISE NOTED.
13. SURVEY CONTROL POINTS AND COORDINATES ARE INDICATED ON THE PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT OR CREATE HIS OWN PROTECTED CONTROL POINTS FROM THIS INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL LAYOUT POINTS ARE CONSISTENT WITH CONTROL INFORMATION. RESETTING OF DAMAGED OR MISSING LAYOUT MARKERS AS NECESSARY IS AT NO ADDITIONAL COST TO THE OWNER.

GRADING, DRAINAGE AND UTILITY NOTES

- 1. ALL WORK RELATING TO INSTALLATION, RENOVATION OR MODIFICATION OF WATER, DRAINAGE AND/OR SEWER SERVICES SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF LOWELL DPW.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
3. ALL GRADING IS TO BE SMOOTH AND CONTINUOUS WHERE PROPOSED SURFACES MEET EXISTING SURFACES, ELIMINATE ROUGH SPOTS AND ABRUPT GRADE CHANGES AND MEET LINE AND GRADE OF EXISTING CONDITIONS WITH NEW IMPROVEMENTS.
4. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE (1.5% MINIMUM) AWAY FROM ALL BUILDING FOUNDATIONS AND STRUCTURES.
5. CONTRACTOR SHALL ENSURE ALL AREAS ARE PROPERLY PITCHED TO DRAIN, WITH NO SURFACE WATER PONDING OR PUDDLING.
6. MINIMUM CROSS SLOPE ON ALL WALKWAYS WILL BE 1.0% MINIMUM TO PROVIDE POSITIVE DRAINAGE. ANY DISCREPANCIES NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO THE OWNER PRIOR TO CONTINUING WORK.
7. ALL UTILITY GRATES, COVERS OR OTHER SURFACE ELEMENTS INTENDED TO BE EXPOSED AT GRADE SHALL BE FLUSH WITH THE ADJACENT FINISHED GRADE AND ADJUSTED TO PROVIDE A SMOOTH TRANSITION AT ALL EDGES. ALL UTILITY GRATES WITHIN PLAYING FIELDS OR INDICATED TO BE "BURIED" SHALL BE 4" BELOW FINISH GRADE AND COVERED WITH FINISH MATERIAL INDICATED ON PLANS.
8. THE CONTRACTOR SHALL SET SUBGRADE ELEVATIONS TO ALLOW FOR POSITIVE DRAINAGE AND PROVIDE EROSION CONTROL DEVICES, STRUCTURES, MATERIALS AND CONSTRUCTION METHODS TO DIRECT SILT MIGRATION AWAY FROM DRAINAGE AND OTHER UTILITY SYSTEMS, PUBLIC/Private STREETS AND WORK AREAS. CLEAN BASINS REGULARLY AS NEEDED AND AT THE END OF THE PROJECT.
9. EXCAVATION REQUIRED WITHIN PROXIMITY OF KNOWN EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
10. WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING, PROVIDING VERTICAL CURVES OR ROUNDS AT ALL TOP AND BOTTOM OF SLOPES.
11. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, BLEND GRADES TO EXISTING CONDITIONS WITHIN 5 FEET OF PROPOSED CONTOURS.
12. RESTORE ALL DISTURBED AREAS AND LIMITS OF ALL REMOVALS TO LOAM AND SEED (L&S) UNLESS OTHERWISE NOTED.
13. SEE EARTHWORK SECTION OF SPECIFICATIONS FOR SPECIFIC EXCAVATION AND FILLING PROCEDURES.
14. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS, STRUCTURE RIMS AND INVERTS, ALONG WITH PIPE SIZES AND CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL MAKE THE ENGINEER AWARE OF ANY DISCREPANCIES OR POOR UTILITY PIPES/CONDUITS, APPARATUS OR STRUCTURE CONDITION PRIOR TO CONSTRUCTION

ENVIRONMENTAL NOTES

- 1. THE CONTRACTOR IS ADVISED THAT THE SITE ABUTS AND IS NEAR PARCELS REGULATED UNDER THE MASSACHUSETTS CONTINGENCY PLAN (MCP), 310 CMR 40.0000. THE MCP SITE RELEASE TRACKING NUMBERS (RTN) INCLUDE 3-34288 AT THE VFW HIGHWAY AND ACROSS THE VFW HIGHWAY, RTN 3-34464.
2. THE CONTRACTOR SHALL CONSTRUCT A COVER SYSTEM AS SPECIFIED IN THE CONTRACT DRAWINGS. THE COVER SYSTEM SHALL INCLUDE AN ORANGE GEOTEXTILE DEMARCATION LAYER, AS SPECIFIED IN SECTION 31 05 19.13 - GEOTEXTILE FABRICS, OVERLAIN WITH A MINIMUM OF 18 INCHES OF CLEAN IMPORTED MATERIALS AND SURFACE. IN SELECT AREAS FINISHED WITH CONCRETE OR ASPHALT AS DEPICTED ON THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL INSTALL AN ORANGE GEOTEXTILE DEMARCATION LAYER AND A MINIMUM OF 12 INCHES OF IMPORTED MATERIAL.
3. THE CONTRACTOR SHALL PERFORM DUST MONITORING DURING THE DISTURBANCE AND HANDLING OF THE SOILS PER THE REQUIREMENTS AND ACTION LEVELS LISTED IN SECTION 01 14 19.16 DUST CONTROL. THE CONTRACTOR SHALL STOP WORK IF THERE ARE EXCEEDANCES OF DUST ACTION LEVELS AND APPLY SUPPLEMENTAL DUST CONTROLS UNTIL EXCEEDANCES OF DUST ACTION LEVELS ARE MET.
4. THE CONTRACTOR SHALL PREPARE AND FOLLOW A HEALTH AND SAFETY PLAN AS SPECIFIED IN SECTION 01 35 29, HEALTH AND SAFETY PLAN.

ABBREVIATIONS

Table with 2 columns: GENERAL and PROPOSED. Lists various abbreviations and their full names, such as PROP (PROPOSED), ADJ (ADJUST), BIT. CONC. (BITUMINOUS CONCRETE), etc.

UTILITIES

Table with 2 columns: GCI (GUTTER INLET), CBI (CATCH BASIN), CB (CATCH BASIN), etc. Lists utility symbols and their corresponding descriptions.

ALIGNMENT/GRADING

Table with 2 columns: BW (BOTTOM OF WALL), BC (BOTTOM OF CURB), PI (POINT OF INTERSECTION), etc. Lists alignment and grading symbols and their descriptions.

CITY OF LOWELL logo and address: ST. LOUIS SPONGE PARK, 406 WEST 6TH STREET, LOWELL, MA 01850.

Weston & Sampson logo and contact information: Weston & Sampson Engineers, Inc., 85 Devonshire Street, 3rd Floor, Boston, MA 02109. Phone: 978.532.1900, Fax: 800.SAMPSON.

Consultants table with columns: No., Date, Description. Includes a COA (Certificate of Approval) section.

Revisions table with columns: No., Date, Description. Includes a COA (Certificate of Approval) section.

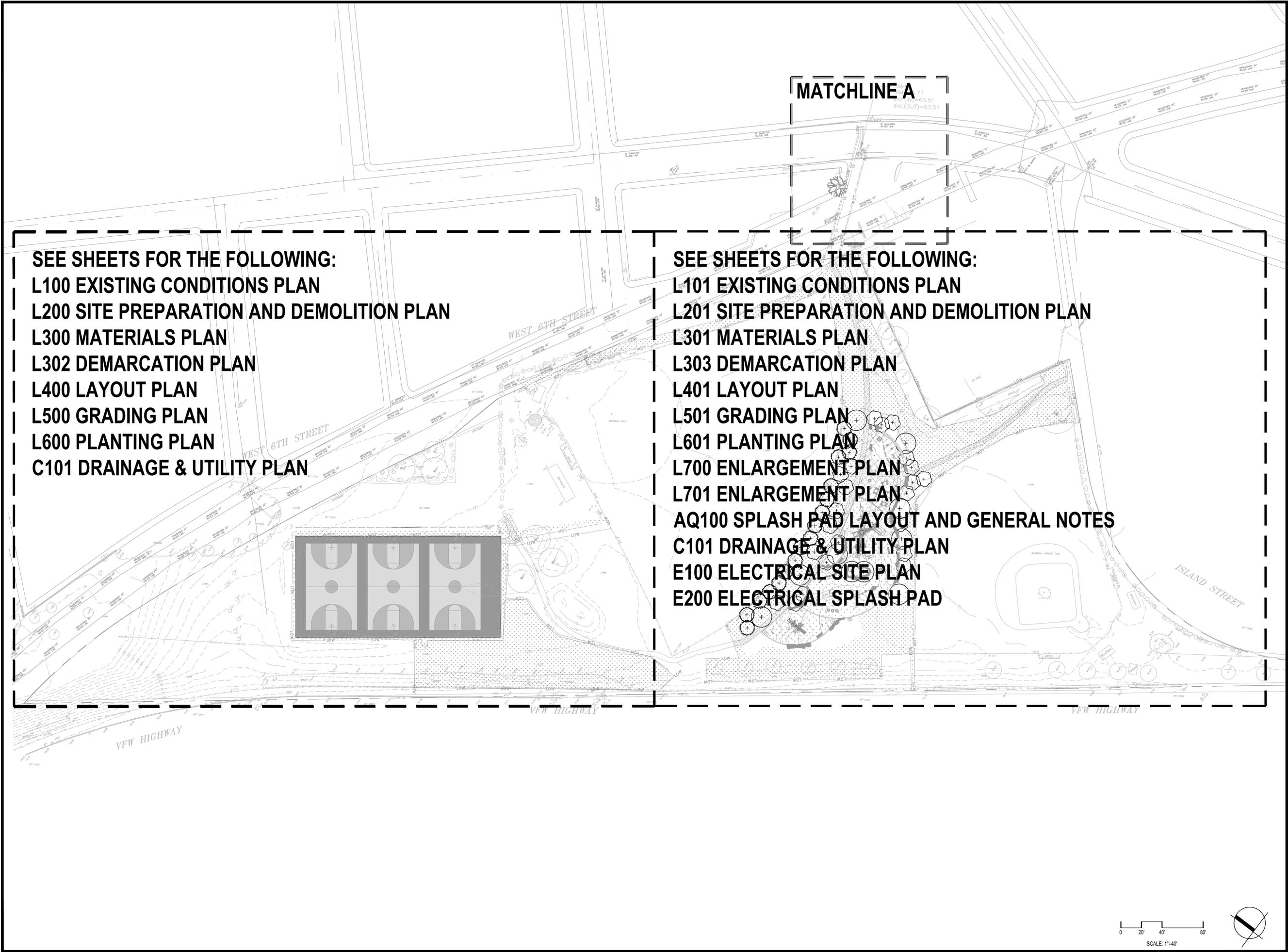
Seal of the State of Massachusetts and a circular seal for the City of Lowell, Department of Public Works, Landscape Architecture.

BID DOCUMENTS section with scale: 1"=20'.

Date: SEPTEMBER 20, 2024. Drawn By: AG, KA, EB, KH. Reviewed By: JL. Approved By: CR. W&S Project No.: ENG24-0303. W&S File No.:

Drawing Title: GENERAL NOTES.

Sheet Number: L001.



SEE SHEETS FOR THE FOLLOWING:
L100 EXISTING CONDITIONS PLAN
L200 SITE PREPARATION AND DEMOLITION PLAN
L300 MATERIALS PLAN
L302 DEMARCATION PLAN
L400 LAYOUT PLAN
L500 GRADING PLAN
L600 PLANTING PLAN
C101 DRAINAGE & UTILITY PLAN

SEE SHEETS FOR THE FOLLOWING:
L101 EXISTING CONDITIONS PLAN
L201 SITE PREPARATION AND DEMOLITION PLAN
L301 MATERIALS PLAN
L303 DEMARCATION PLAN
L401 LAYOUT PLAN
L501 GRADING PLAN
L601 PLANTING PLAN
L700 ENLARGEMENT PLAN
L701 ENLARGEMENT PLAN
AQ100 SPLASH PAD LAYOUT AND GENERAL NOTES
C101 DRAINAGE & UTILITY PLAN
E100 ELECTRICAL SITE PLAN
E200 ELECTRICAL SPLASH PAD

MATCHLINE A
 INV. (IN) = 63.51
 INV. (OUT) = 63.51

Project: CITY OF LOWELL



ST. LOUIS SPONGE PARK
 406 WEST 6TH STREET
 LOWELL, MA 01850

Weston & Sampson
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Drawing Title:
PLAN INDEX SHEET

Sheet Number:
L002



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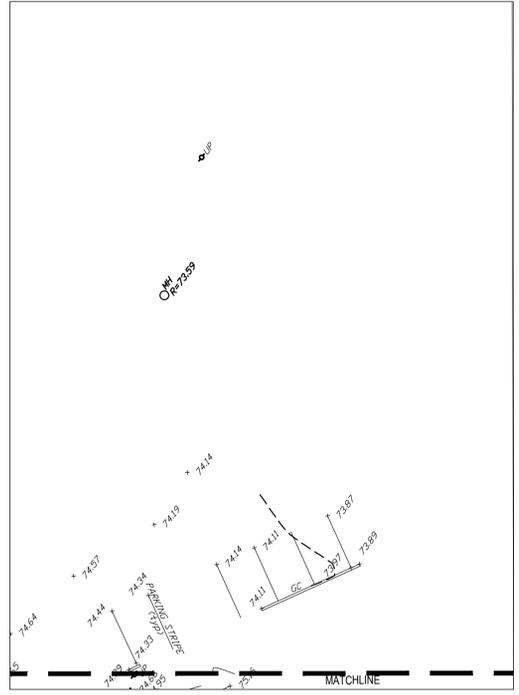


LEGEND

- BIT CONC BITUMINOUS CONCRETE
- BH BASKETBALL
- CB CATCH BASIN
- CLF CHAIN LINK FENCE
- CONC CONCRETE
- DMH DRAIN MANHOLE
- GC GRANITE CURB
- GG GAS GATE
- GR GUARD RAIL
- GW GUY WIRE
- HYD HYDRANT
- INVERT INVERT
- LS LANDSCAPING
- MH MANHOLE
- PLST PLASTIC LANDSCAPING TIMBER
- R RIM
- S SIGN
- SMH SEWER MANHOLE
- UP UTILITY POLE
- UP LT UTILITY POLE W/LIGHT
- WG WATER GATE
- 24" T 24" TREE

MATCHLINE- SEE INSET PLAN BELOW

MATCHLINE - SEE 100



(A) INSET PLAN

Scale: 1"=20'



Project: CITY OF LOWELL



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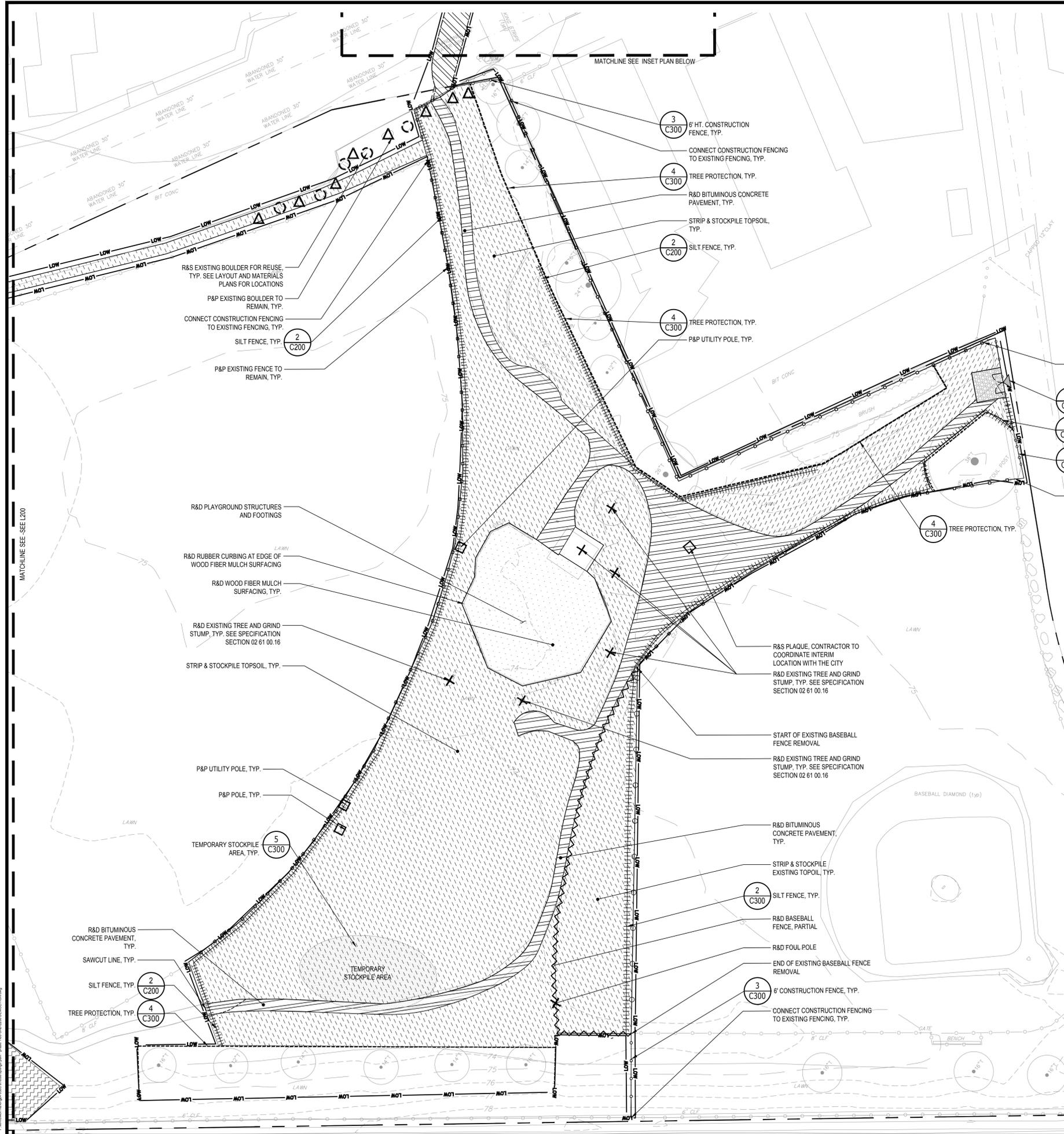
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Drawing Title:

EXISTING CONDITIONS PLAN

Sheet Number:

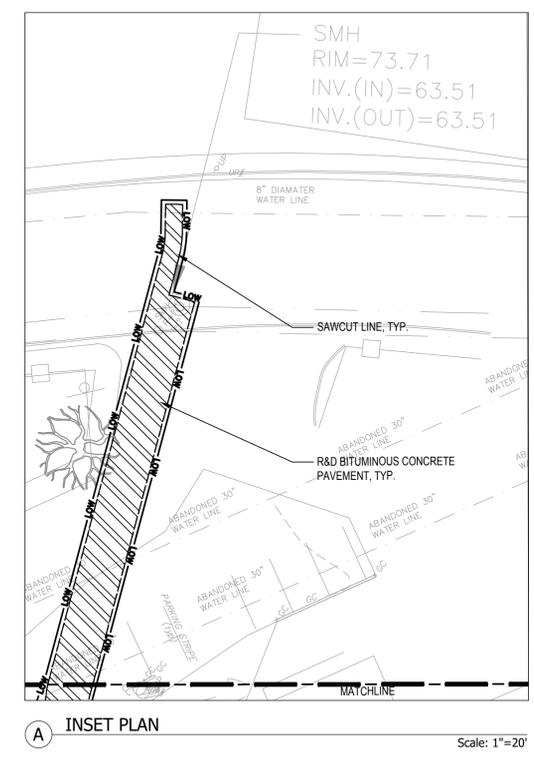
L101



LEGEND

	PROPERTY LINE	
	LIMIT OF WORK	
	6' HT. CONSTRUCTION FENCE, TYP.	3 C300
	P&P EXISTING FENCE TO REMAIN, TYP.	
	SITE FEATURE REMOVAL	
	SAWCUT LINE, TYP.	
	SILT FENCE, TYP.	2 C200
	STOCKPILE AREA, TYP.	5 C300
	R&D BITUMINOUS CONCRETE PAVEMENT, TYP.	
	R&D WOOD FIBER SAFETY SURFACING, TYP.	
	STRIP AND STOCKPILE TOPSOIL, TYP.	
	R&D PLAYGROUND SURFACING	
	R&D SITE ELEMENT, TYP.	
	P&P EXISTING BOULDER FOR REUSE, TYP.	
	P&P EXISTING BOULDER IN PLACE, TYP.	
	CONSTRUCTION ENTRANCE, TYP.	1 C200
	TREE PROTECTION, TYP.	4 C300
	TREE PROTECTION, TYP.	4 C300
	PROTECT EX. STRUCTURES, TYP. ADJUST PER GRADING AND DRAINAGE PLANS, TYP.	6 C300
	P&P	
	TYP.	
	R&D	

NOTE:
 1. SEE SHEET L001 FOR SITE PREPARATION AND DEMOLITION NOTES
 2. CONTRACTOR TO MOVE AND STOCKPILE EXISTING BOULDERS TO FACILITATE CONSTRUCTION ACCESS AS NEEDED. CONTRACTOR SHALL RETURN BOULDERS TO PROVIDE VEHICLE ACCESS RESTRICTIONS. REMAINING BOULDERS TO BE INCORPORATED INTO THE PROPOSED DESIGN PER THE LANDSCAPE ARCHITECT.



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Drawing Title:
SITE PREPARATION DEMOLITION EROSION & SEDIMENT PLAN

Sheet Number:
L201



LEGEND

- — — — — PROPERTY LINE
- — — — — LIMIT OF WORK
- - - - - ADD ALT. 2-S PLAYGROUND SCOPE
-  ORANGE DEMARCATION LAYER - REFER TO SITE DETAILS FOR LAYER DEPTH

Project: CITY OF LOWELL



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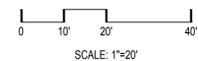
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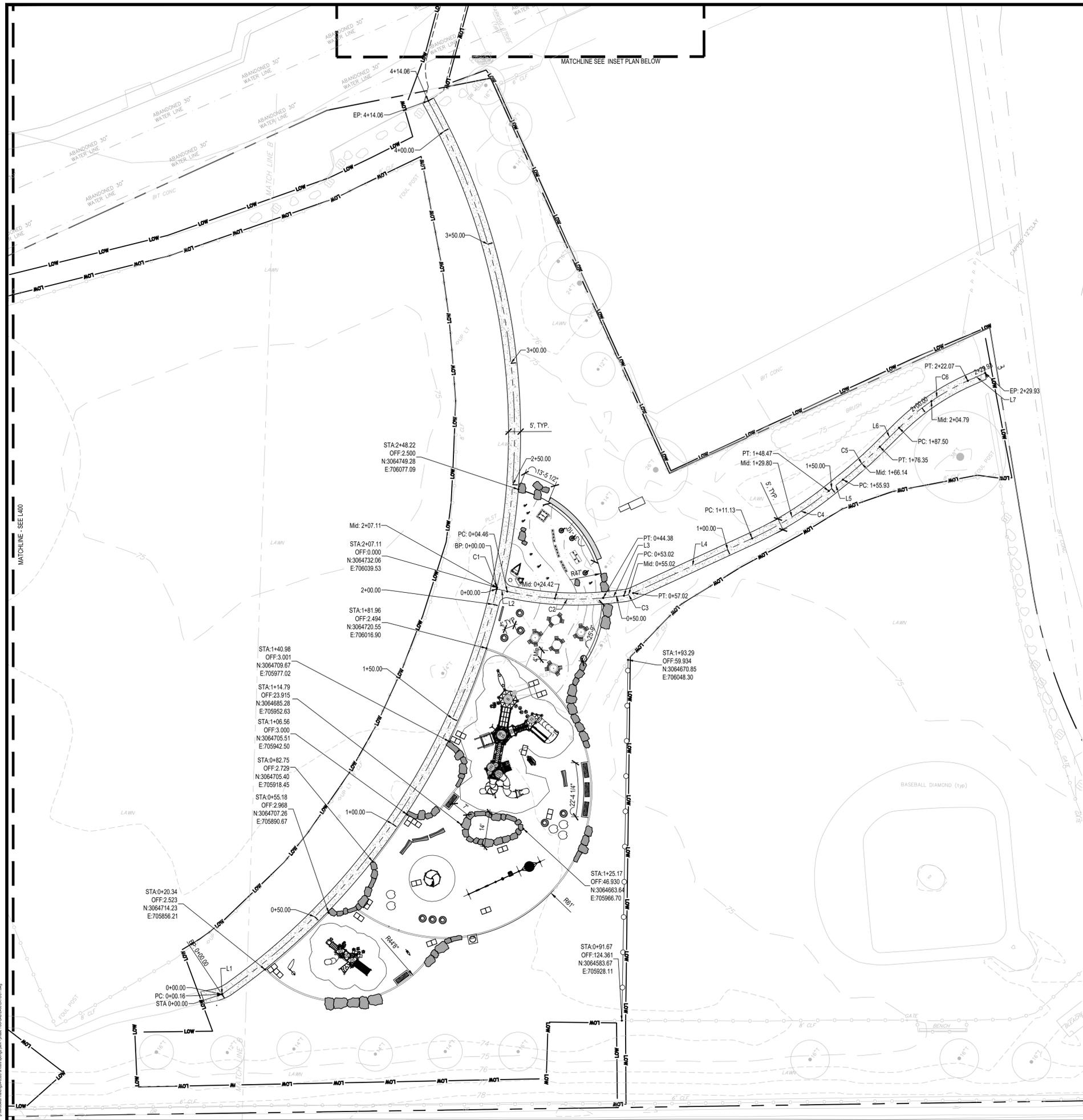
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DEMARCATION LAYER PLAN

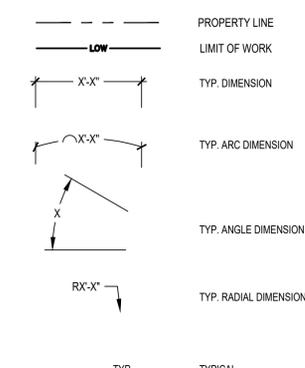
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L303





LEGEND



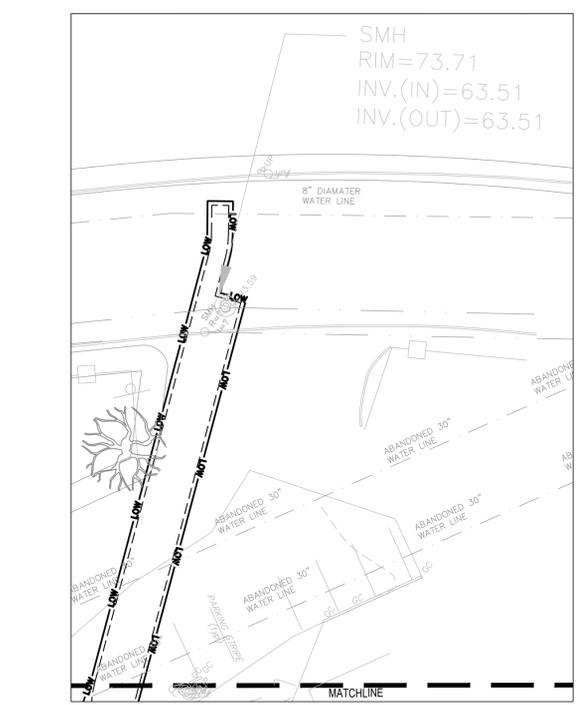
NOTE:
1. SEE SHEET L001 FOR LAYOUT NOTES

Line Table: Alignments

Line #	Length	Direction	Start Point	End Point	START NORTHING	START EASTING
L1	0.163	S70° 38' 50.10"E	(705837.3160,3064722.3945)	(705837.4701,3064722.3404)	3064722.39	705837.32
L2	4.464	S23° 59' 25.18"E	(706038.9625,3064731.8091)	(706040.7775,3064727.7307)	3064731.81	706038.96
L3	8.638	S43° 12' 26.00"E	(706062.4663,3064694.4055)	(706068.3805,3064688.1090)	3064694.41	706062.47
L4	54.109	S81° 32' 41.77"E	(706071.5356,3064685.6771)	(706119.1081,3064659.8957)	3064685.68	706071.54
L5	7.460	S75° 34' 29.44"E	(706153.7796,3064646.2801)	(706161.0047,3064644.4216)	3064646.28	706153.78
L6	11.150	S81° 21' 10.94"E	(706181.0055,3064640.3393)	(706192.0286,3064638.6630)	3064640.34	706181.01
L7	7.863	S60° 56' 05.15"E	(706224.5788,3064627.5798)	(706231.4516,3064623.7600)	3064627.58	706224.58

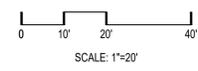
Curve Table: Alignments

Curve #	Radius	Length	Chord Direction	Start Point	End Point	START NORTHING	START EASTING
C1	280.500	413.901	N66° 06' 37.82"E	(705837.4701,3064722.3404)	(706182.5007,3064875.1612)	3064722.34	705837.47
C2	130.670	39.916	S33° 03' 24.96"E	(706040.7775,3064727.7307)	(706062.4663,3064694.4055)	3064727.73	706040.78
C3	12.500	4.001	S52° 22' 33.88"E	(706068.3805,3064688.1090)	(706071.5356,3064685.6771)	3064688.11	706068.38
C4	152.500	37.342	S68° 33' 35.60"E	(706119.1081,3064659.8957)	(706175.3776,3064646.2801)	3064659.90	706119.11
C5	202.500	20.422	S78° 27' 50.19"E	(706161.0047,3064644.4216)	(706181.0055,3064640.3393)	3064644.42	706161.00
C6	97.500	34.566	S71° 11' 47.98"E	(706192.0286,3064638.6630)	(706224.5788,3064627.5798)	3064638.66	706192.03



(A) INSET PLAN

Scale: 1"=20'



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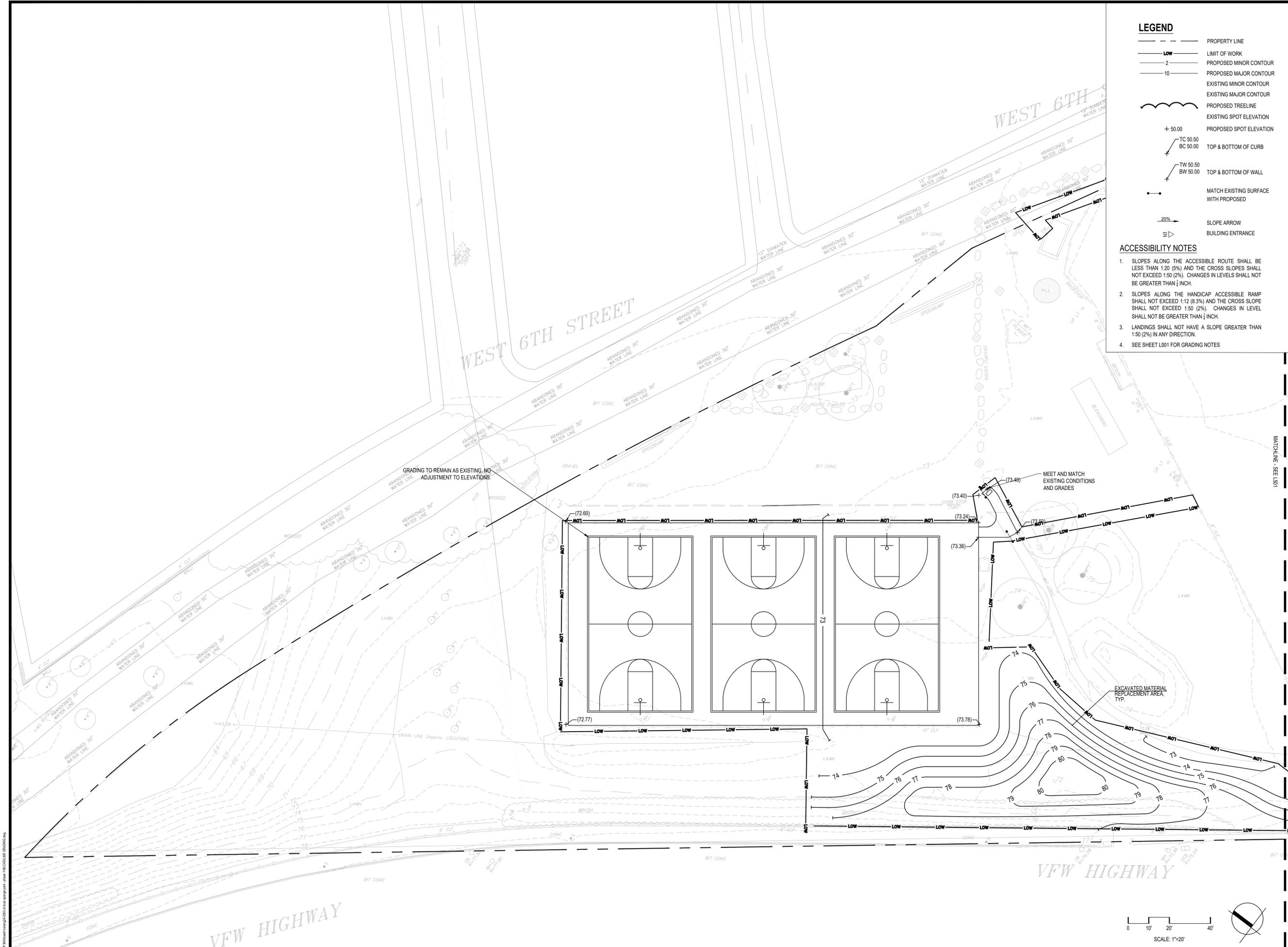
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LAYOUT PLAN

Sheet Number:
L401



- LEGEND**
- — — — — PROPERTY LINE
 - — — — — LOW LIMIT OF WORK
 - — — — — 2 PROPOSED MINOR CONTOUR
 - — — — — 10 PROPOSED MAJOR CONTOUR
 - — — — — EXISTING MINOR CONTOUR
 - — — — — EXISTING MAJOR CONTOUR
 - — — — — PROPOSED TREELINE
 - — — — — EXISTING SPOT ELEVATION
 - — — — — PROPOSED SPOT ELEVATION
 - TC 50.50
BC 50.00 TOP & BOTTOM OF CURB
 - TW 50.50
BW 50.00 TOP & BOTTOM OF WALL
 - — — — — MATCH EXISTING SURFACE WITH PROPOSED
 - 20% SLOPE ARROW
 - BUILDING ENTRANCE

- ACCESSIBILITY NOTES**
1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN 1/4 INCH.
 2. SLOPES ALONG THE HANDICAP ACCESSIBLE RAMP SHALL NOT EXCEED 1:12 (8.3%) AND THE CROSS SLOPE SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVEL SHALL NOT BE GREATER THAN 1/4 INCH.
 3. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
 4. SEE SHEET L001 FOR GRADING NOTES

Project: CITY OF LOWELL

ST. LOUIS SPONGE PARK

406 WEST 6TH STREET
LOWELL, MA 01850

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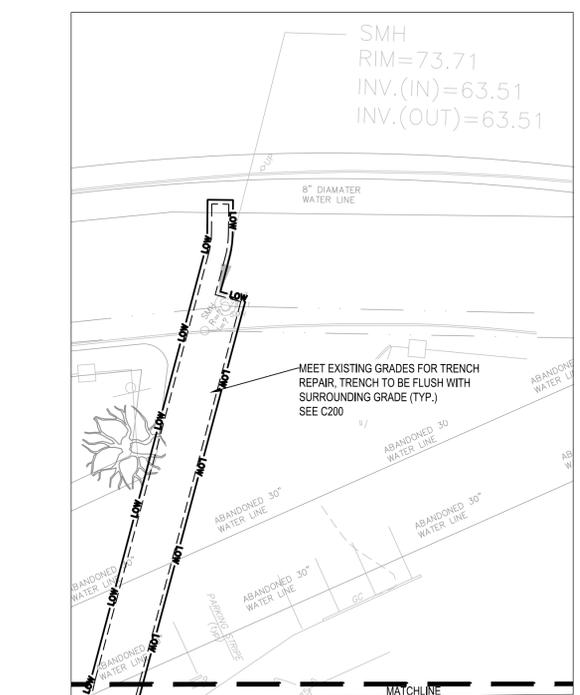
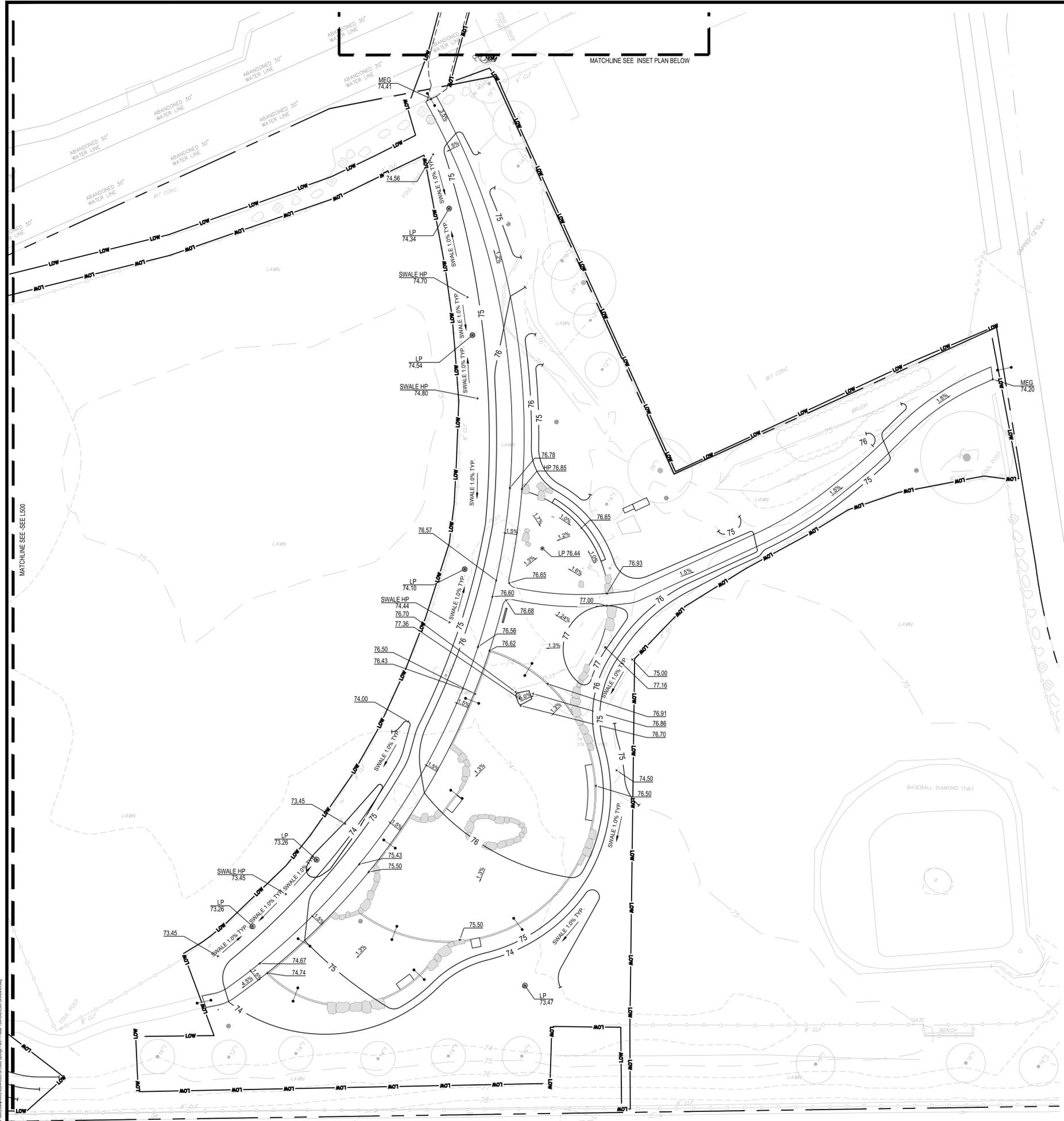
GRADING PLAN

Sheet Number:

L500

SCALE: 1"=20'

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LEGEND

- — — — — PROPERTY LINE
- — — — — LOW LIMIT OF WORK
- — — — — 2 PROPOSED MINOR CONTOUR
- — — — — 10 PROPOSED MAJOR CONTOUR
- — — — — EXISTING MINOR CONTOUR
- — — — — EXISTING MAJOR CONTOUR
- — — — — PROPOSED TREELINE
- — — — — EXISTING SPOT ELEVATION
- + 50.00 PROPOSED SPOT ELEVATION
- TC 50.50
BC 50.00 TOP & BOTTOM OF CURB
- TW 50.50
BW 50.00 TOP & BOTTOM OF WALL
- — — — — MATCH EXISTING SURFACE WITH PROPOSED
- 20% SLOPE ARROW
- — — — — BUILDING ENTRANCE

- ACCESSIBILITY NOTES**
- SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN 1/4 INCH.
 - SLOPES ALONG THE HANDICAP ACCESSIBLE RAMP SHALL NOT EXCEED 1:12 (8.3%) AND THE CROSS SLOPE SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVEL SHALL NOT BE GREATER THAN 1/4 INCH.
 - LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
 - SEE SHEET L001 FOR GRADING NOTES

Project: CITY OF LOWELL

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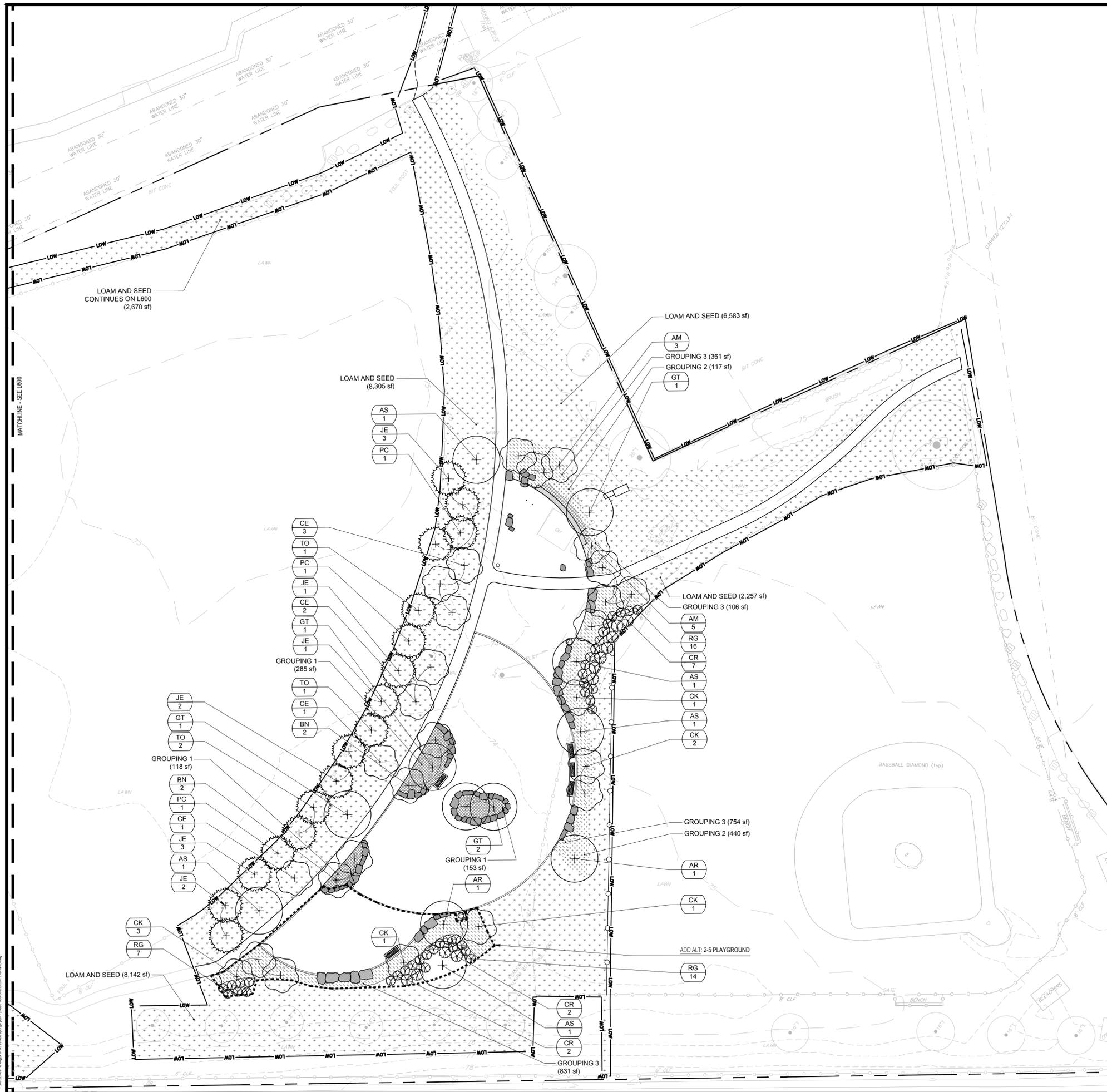
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GRADING PLAN

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L501



BASE BID PLANT SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
TREES				
AR	ACER RUBRUM	RED MAPLE	2.5'-3' CAL	1
AS	ACER SACCHARUM	SUGAR MAPLE	2.5'-3' CAL	2
BN	BETULA NIGRA	RIVER BIRCH MULTI-TRUNK	10'-12' HT.	2
GT	GLEDITSIA TRIACANTHOS	HONEY LOCUST	2.5'-3' CAL	4

LOAM AND SEED
 LOAM AND SEED SEE SPECIFICATIONS **40,892 SF** SEED

'GREENING THE CITIES' PLANT SCHEDULE - NOT IN CONTRACT

CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
TREES				
AR	ACER RUBRUM	RED MAPLE	1.5'-2' CAL	1
AS	ACER SACCHARUM	SUGAR MAPLE	1.5'-2' CAL	3
BN	BETULA NIGRA	RIVER BIRCH MULTI-TRUNK	6'-8' HT.	2
GT	GLEDITSIA TRIACANTHOS	HONEY LOCUST	1.5'-2' CAL	1
JE	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	6'-8' HT.	10
PC	PICEA PUNGENS	COLORADO SPRUCE	6'-8' HT.	3
TO	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	6'-8' HT.	4
AM	AMELANCHIER CANADENSIS	CANADIAN SERVICEBERRY MULTI-TRUNK	6'-8' HT.	8
CE	CERCIS CANADENSIS	EASTERN REDBUD MULTI-TRUNK	6'-8' HT.	7
CK	CORNUS KOUSA	KOUSA DOGWOOD	6'-8' HT.	8

ADD ALT. #3: SHRUB AND PERENNIAL PLANT SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
SHRUBS				
CR	CORNUS SERICEA	RED TWIG DOGWOOD	3 GAL.	11
RG	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	3 GAL.	38

GROUPING 1 **556 SF**
 CAREX STRICTA / TUSSOCK SEDGE 80 FLAT, PLUG 50% @ 24" oc
 CAREX VULPINOIDEA / FOX SEDGE 144 FLAT, PLUG 50% @ 18" oc

GROUPING 2 **557 SF**
 PANICUM VIRGATUM / SWITCH GRASS 35 1 GAL. 50% @ 36" oc
 SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM 35 1 GAL. 50% @ 36" oc

GROUPING 3 **1,221 SF**
 ASCLEPIAS INCARNATA / SWAMP MILKWEED 72 1 GAL. 20% @ 24" oc
 ASTER NOVAE-ANGLIAE / NEW ENGLAND ASTER 72 1 GAL. 20% @ 24" oc
 ECHINACEA PURPUREA / CONEFLOWER 72 1 GAL. 20% @ 24" oc
 MONARDA DIDYMA / BEE BALM 126 1 GAL. 20% @ 18" oc
 RUDBECKIA HIRTA / BLACK-EYED SUSAN 72 1 GAL. 20% @ 24" oc

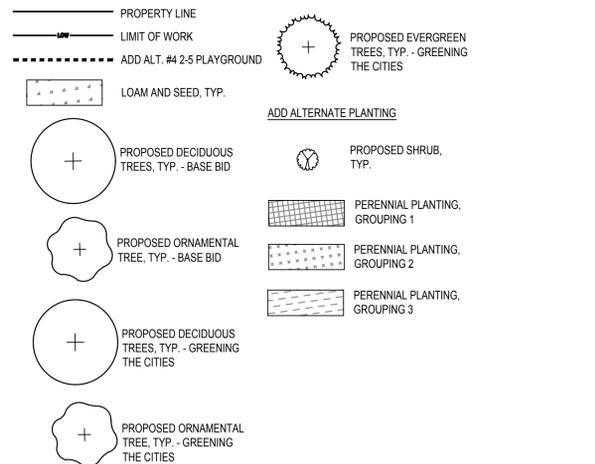
ADD ALT. #4 2-5 PLAY AREA PLANT SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
TREES				
AS	ACER SACCHARUM	SUGAR MAPLE	2.5'-3' CAL.	1
AR	ACER RUBRUM	RED MAPLE	2.5'-3' CAL.	1
CK	CORNUS KOUSA	KOUSA DOGWOOD	6'-8' HT.	5

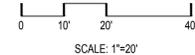
SHRUBS
 CR CORNUS SERICEA RED TWIG DOGWOOD 3 GAL. 4
 RG RHUS AROMATICA 'GRO-LOW' GRO-LOW FRAGRANT SUMAC 3 GAL. 7

GROUPING 3 **831 SF**
 ASCLEPIAS INCARNATA / SWAMP MILKWEED 37 1 GAL. 20% @ 24" oc
 ASTER NOVAE-ANGLIAE / NEW ENGLAND ASTER 37 1 GAL. 20% @ 24" oc
 ECHINACEA PURPUREA / CONEFLOWER 37 1 GAL. 20% @ 24" oc
 MONARDA DIDYMA / BEE BALM 68 1 GAL. 20% @ 18" oc
 RUDBECKIA HIRTA / BLACK-EYED SUSAN 37 1 GAL. 20% @ 24" oc

LEGEND



PLANTING NOTES:
 1. THE DEPTH OF LOAM BORROW FOR ALL PROPOSED LAWN AREAS SHALL BE 6" MINIMUM. ALL DISTURBED AREAS SHALL BE RESTORED WITH LOAM AND SEED UNLESS OTHERWISE NOTED.
 2. ALL REFERENCES TO LOAM AND SEED REFER TO HYDROMULCH SEEDED LAWN, SEE SPECIFICATIONS.



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PLANTING PLAN

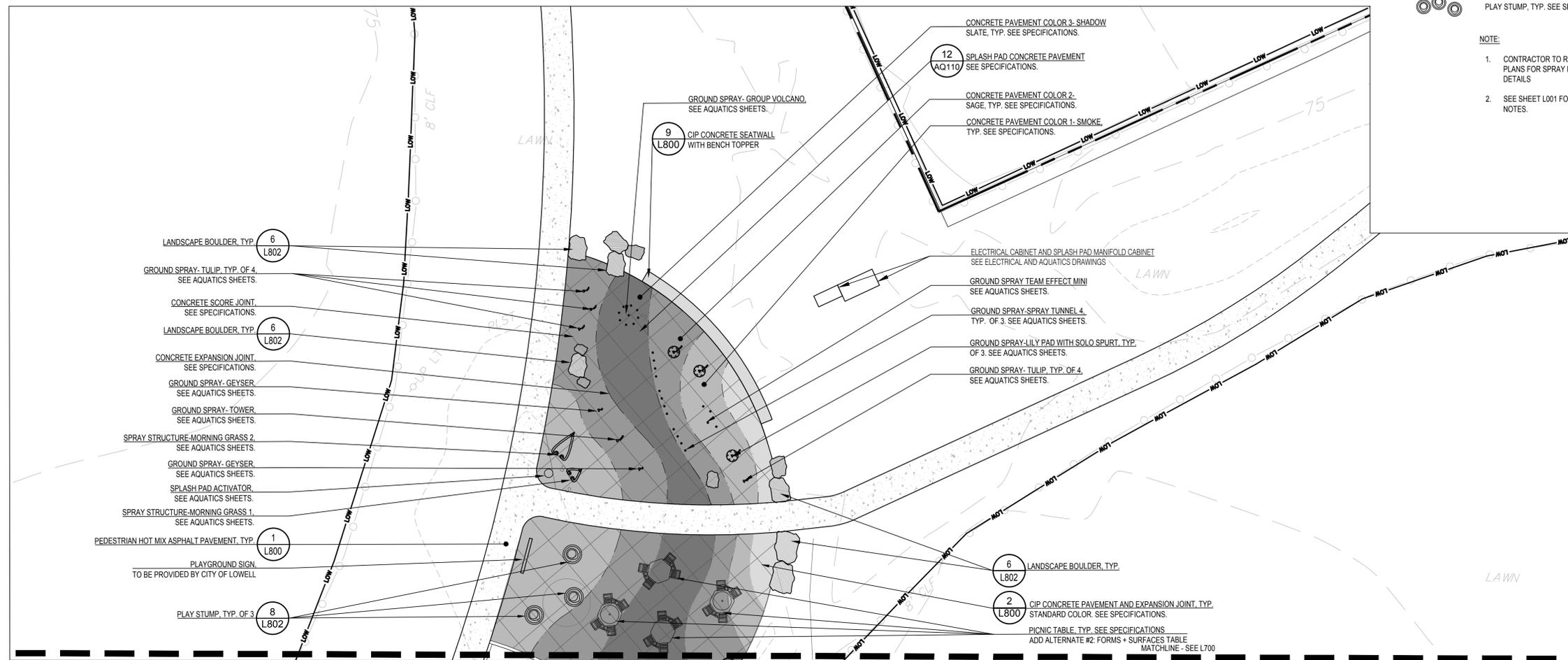
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L601

LEGEND

- PROPERTY LINE
- LOW --- LIMIT OF WORK
-  PEDESTRIAN HOT MIX ASPHALT PAVEMENT, TYP. 1
L800
-  CONCRETE PAVEMENT - STANDARD COLOR, TYP. SEE SPECIFICATIONS. 2
L800 12
AQ110
-  CONCRETE PAVEMENT - COLOR 1, TYP. (SMOKE) SEE SPECIFICATIONS. 2
L800 12
AQ110
-  CONCRETE PAVEMENT - COLOR 2, TYP. (SAGE) SEE SPECIFICATIONS. 2
L800 12
AQ110
-  CONCRETE PAVEMENT - COLOR 3, TYP. (SHADOW SLATE) SEE SPECIFICATIONS. 2
L800 12
AQ110
-  LANDSCAPE BOULDER, TYP. SEE SPECIFICATIONS. 6
L802
-  PROJECT SIGN TO BE PROVIDED BY CITY OF LOWELL
-  PICNIC TABLE, TYP. SEE SPECIFICATIONS.
-  CAST IN PLACE CONCRETE SEATWALL WITH BENCH TOPPER, TYP. 9
L800
-  PLAY STUMP, TYP. SEE SPECIFICATIONS. 8
L802

NOTE:

1. CONTRACTOR TO REFER TO AQUATICS PLANS FOR SPRAY PAD PLANS AND DETAILS
2. SEE SHEET L001 FOR MATERIAL NOTES.



Project: CITY OF LOWELL



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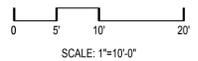
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SPLASH PAD & PICNIC AREA ENLARGEMENT PLAN

Sheet Number:

L701



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DESIGN CODE COMPLIANCE:

105 CMR 435.00 MASSACHUSETTS MINIMUM STANDARDS FOR SWIMMING POOLS...3/20/1998	
AMERICAN NATIONAL STANDARDS FOR PUBLIC POOLS - ANSINSP-1.....	2014
AMERICAN NATIONAL STANDARDS FOR PUBLIC SPAS- ANSINSP-2.....	1999
NATIONAL ELECTRICAL CODE(NFPA 70).....	2011
VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT.....	2008
ADAAG.....	2010
MASSACHUSETTS BUILDING CODE - 9TH EDITION.....	2015

CONSTRUCTION NOTES

- ALL WORK SHALL COMPLY WITH NATIONAL ELECTRIC CODE SECTION 680 AND ANY LOCAL REQUIREMENTS WHICH APPLY TO SPRAY PAD CONSTRUCTION.
- SPRAY PAD CONTRACTOR SHALL ASSIST "BY OTHERS" TO ASSURE THAT OTHER TRADE PROVIDE REQUIRED EQUIPMENT: SUCH AS, FILL WATER BACKFLOW PREVENTORS, HOSE BIBS, MECHANICAL VENTILATION, FLOOR DRAINS, LIGHTING.
- ALL SPRAY PAD WORK CONCRETE SHALL BE 5,000 PSI, INCLUDING CONCRETE FOR DECKS, FOOTINGS AND WALLS, AND ANY MISCELLANEOUS SITE CONCRETE. USE OF ACCELERATES ARE PROHIBITED
- ALL REINFORCING SHALL BE UNCOATED, BLACK, REBAR, #4 BAR 12" ON CENTER EACH WAY UNLESS OTHERWISE NOTED.
- SPRAY PAD VAULT FLOORS SHALL SLOPE TO DRAINS, SUMPS, OR DOORS.
- ALL PVC PIPING EXPOSED TO UV LIGHT SHALL BE PAINTED.
- ALL GRATES SHALL BE SECURED WITH NON CORROSIVE TAMPER PROOF SCREWS.
- ALL FLOORS AND SPRAY PADS SHALL BE PITCHED A MINIMUM OF 1/8" PER FOOT TO DECK DRAINS.
- PIPING IS SHOWN FOR CLARIFICATION AND MAY NOT SHOW EXACT ROUTING OR WIDTH. CONTRACTOR SHALL INSTALL PIPING WITH AS FEW CHANGES BASED UPON JOB SITE CONDITIONS.
- PIPING SYSTEM SHALL BE INSTALLED IN A MANNER THAT CAN BE EASILY WINTERIZED WITHOUT MODIFICATION AFTER EACH SEASON.

GENERAL NOTES

- DESIGN, CONSTRUCTION, AND MAINTENANCE OF THE SPRAY PAD AND RELATED FACILITY SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS PUBLIC HEALTH CODE, CHAPTER 105 CMR 435 MINIMUM STANDARDS FOR SWIMMING POOLS, BUILDING CODE, AND ALL THE RULES AND REGULATIONS OF DEPARTMENT OF HEALTH.
- THE ENGINEER SHALL MAKE PERIODIC OBSERVATIONS OF THE SPRAY PAD CONSTRUCTION AS MAY BE NEEDED OR REQUIRED.
- ALL HOSE BIBS SHALL BE PROVIDED WITH VACUUM BREAKERS.
- ALL PROPOSED WORK IS SHOWN BOLD ON DRAWINGS.
- ANY DEVIATION FROM APPROVED PLANS OR SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER AND SUBMITTED TO THE HEALTH DEPARTMENT, IN WRITING, BEFORE SUCH CHANGES ARE MADE.

ELECTRICAL NOTES

- ELECTRICAL WORK SHALL BE CONDUCTED BY ELECTRICAL CONTRACTOR.
- GROUND AND BOND ALL ELECTRICAL EQUIPMENT, SPRAY PAD REINFORCING, SPRAY PAD ACCESSORIES, AND PIPING IN ACCORDANCE WITH NATIONAL ELECTRIC CODE REQUIREMENTS, ARTICLE 680 OF THE ELECTRICAL CODE AND BY STATE AND LOCAL CODES HAVING JURISDICTION BY OTHERS.
- ALL ELECTRICAL OUTLETS IN THE EQUIPMENT AREA, AND SPRAY DECK AREA SHALL BE GROUND-FAULT CIRCUIT INTERRUPTER TYPE BY OTHERS.
- WIRE SPRAY DECK CONTROL PANELS, CHEMICAL TREATMENT EQUIPMENT, AND AUTOFILLS BY OTHERS (SUPPLIED BY SPRAY DECK CONTRACTOR)
- NO ELECTRICAL WIRING SHALL PASS OVERHEAD WITHIN A 20 FOOT HORIZONTAL DISTANCE OF THE SPRAY PAD.
- ALL WORK SHALL COMPLY WITH NATIONAL ELECTRIC CODE SECTION 680 AND ANY LOCAL REQUIREMENTS WHICH APPLY TO SPRAY DECK CONSTRUCTION.

HYDRAULIC NOTES

- PIPING IS SHOWN PARTIALLY DIAGRAMMATIC. RUN PIPES IN FIELD CONDITIONS. THE ARRANGEMENT OF THE EQUIPMENT AND THE RUN OF PIPES SHALL CLOSELY RESEMBLE CONTRACT DRAWINGS.
- ALL PIPING SHALL BE FULLY SUPPORTED IN ACCORDANCE WITH CODE REQUIREMENTS AND DETAILS ALLOWING FOR SEISMIC CONTROL.
- HYDROSTATICALLY TEST ALL PRESSURE LINES AT 50 PSI FOR A PERIOD OF 2 HOURS, REPAIR ALL LEAKS, AND RE - TEST AS REQUIRED. 15 PSI SHALL BE HELD ON ALL LINES UNTIL THE COMMENCEMENT OF FILTRATION SYSTEM. IF PIPING HAS LOST PRESSURE THE CONTRACTOR SHALL RETEST THE LINE AT NO COST TO OWNER.
- ALL SPRAY PAD AND FILTER PIPING SHALL BE SCHEDULE 80 PVC WITH PRESSURE RATED FITTINGS. (EXCEPT AS NOTED)
- VALVES SHALL BE BUTTERFLY, OR BALL TYPE, RATED FOR 150 PSI MINIMUM WORKING PRESSURE.
- PIPING IN SPRAY PAD VAULT SHALL BE CONNECTED WITH FLANGED JOINTS OR UNIONS TO FACILITATE REPAIRS.
- ALL VALVES 2-INCHES AND SMALLER TO BE TRUE UNION PVC BALL TYPE. ALL VALVES 3-INCH AND LARGES TO BE BUTTERFLY TYPE. 3-INCH TO 6-INCH TO BE LEVER OPERATED. 8-INCH AND LARGES TO BE GEAR OPERATED. ALL VALVES SHALL BE RATED FOR 150 PSI MINIMUM WORKING PRESSURE.
- ALL PIPING IN SPRAY DECK EQUIPMENT VAULT SHALL HAVE FLANGED JOINTS OR UNION CONNECTIONS TO FACILITATE REPAIRS.

COMPLIANCE REQUIREMENTS

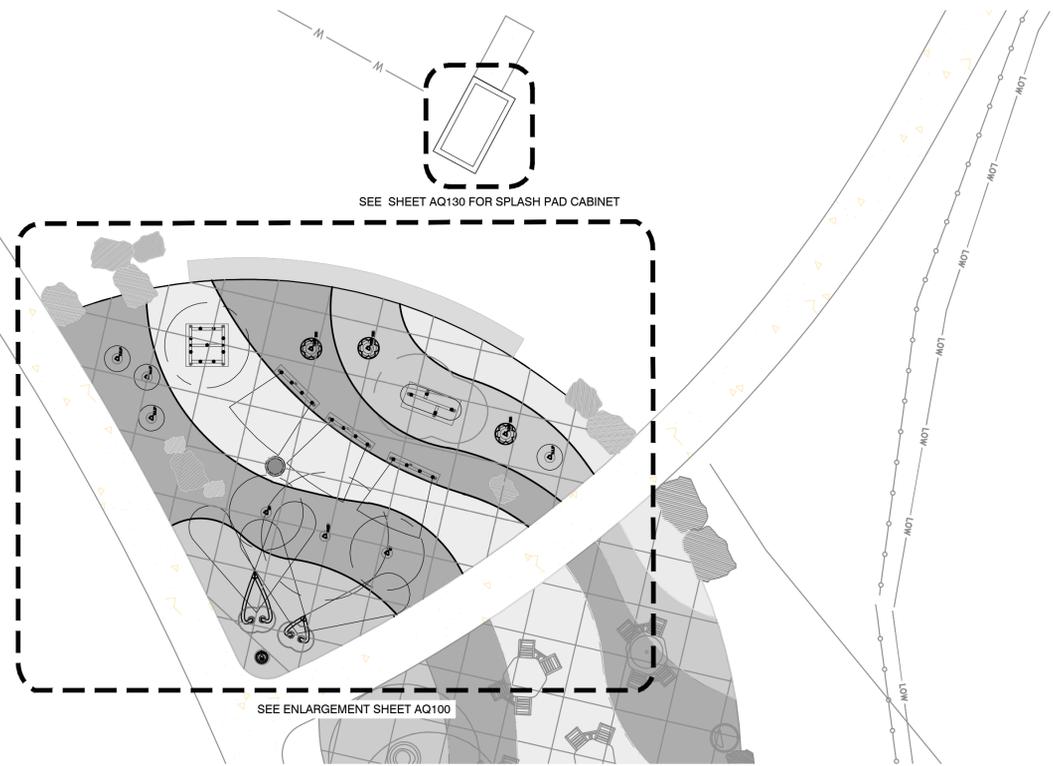
- THE PROPOSED DESIGN IS TO PROVIDE AN INTERACTIVE WATER PLAY FEATURE.
- FOR PERMITTING PURPOSES, THIS INTERACTIVE WATER PLAY FEATURE SHALL BE PERMITTED IN ACCORDANCE WITH LOCAL AND STATE CODE REQUIREMENTS.
- THE PROPOSED SPRAY PAD IS OWNED BY CITY OF LOWELL, MASSACHUSETTS.

OPERATIONAL AND TRAINING NOTES

- CONTRACTOR'S OPERATING INSTRUCTIONS REQUIREMENTS AND COMPLETION DELIVERABLES:
 - PROVIDE COMPLETE INSTRUCTIONS AND WRITTEN MANUALS TO THE SPRAY PAD OPERATOR.
 - VALVE AND EQUIPMENT OPERATING INSTRUCTIONS WILL BE POSTED IN THE VAULT OR ENCLOSURE AND PROTECTED FROM WEATHER AND CHEMICALS.
 - PROVIDE ONE TRAINING EVENT TO THE SPRAY PAD OPERATORS. AT THE CONCLUSION OF EACH TRAINING EVENT, THE CONTRACTOR SHALL SECURE THE SIGNATURE OF THE OPERATOR ON A TRAINING EVENT RECEIPT.
- A COMPREHENSIVE SET OF OPERATING INSTRUCTIONS SHALL BE PREPARED AND POSTED WHICH SHALL LIST EACH VALVE AND NUMBER IN CONJUNCTION WITH A SIMPLE HYDRAULIC DIAGRAM. INSTRUCTIONS SHALL BE GIVEN FOR FILLING SPRAY PAD, BACKWASHING, VACUUMING, DRAINING OF SPRAY PAD, CHEMICAL TREATMENT, AND FILTERING THE INSTRUCTIONS SHALL BE ENGAGED IN A CLEAR PLEXIGLAS FRAME, AND MOUNTED IN A PROMINENT PLACE IN THE SPRAY PAD VAULT.

WATER NOTES

- WATER FOR SPRAY PAD USE SHALL BE PROVIDED THROUGH A MASSACHUSETTS APPROVED BACK FLOW PREVENTION DEVICE OR DEVICES APPROVED BY THE WATER SUPPLY AUTHORITY.



SPLASH PAD ENLARGEMENT

SCALE: 3/16" = 1'-0"



Project: CITY OF LOWELL

 ST. LOUIS PARK
 406 WEST 6TH STREET
 LOWELL, MA 01850

Weston & Sampson
 Weston & Sampson Engineers, Inc.
 85 Devonshire Street, 3rd Floor
 Boston, MA 02109
 978.532.1900 800.SAMPSON
 www.westonandsampson.com

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SPLASH PAD LAYOUT AND GENERAL NOTES

Sheet Number:
AQ100

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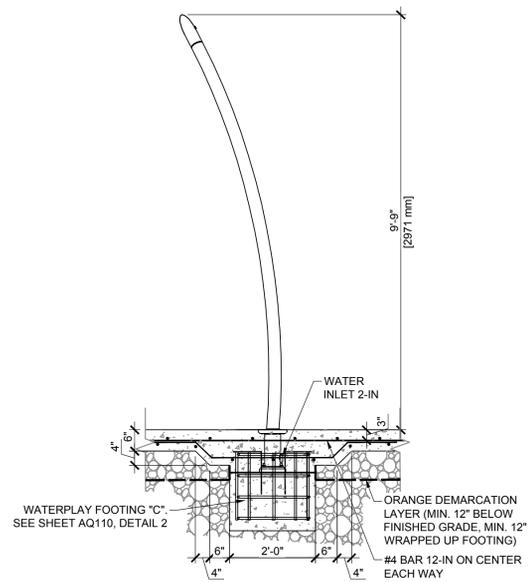
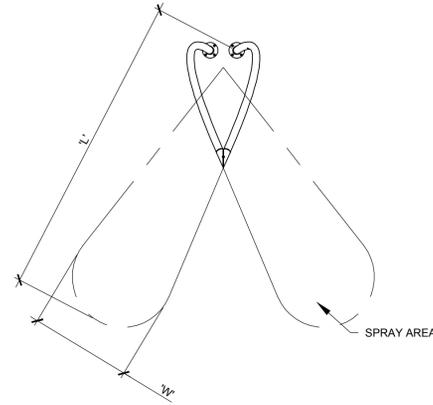
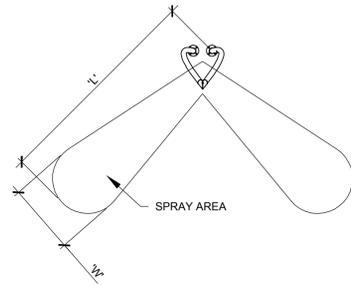

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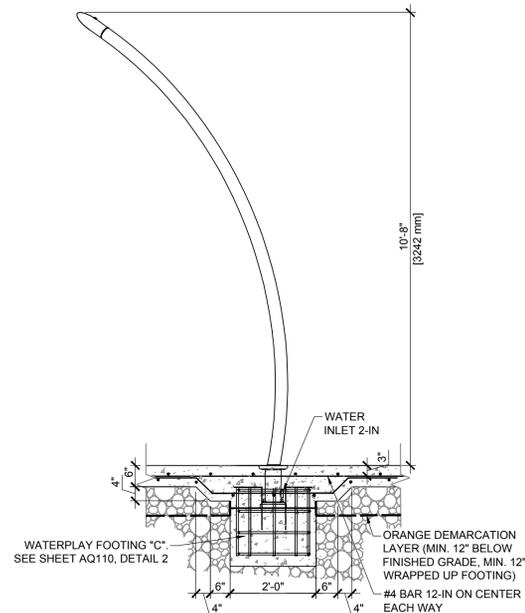
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SPLASH PAD DETAILS

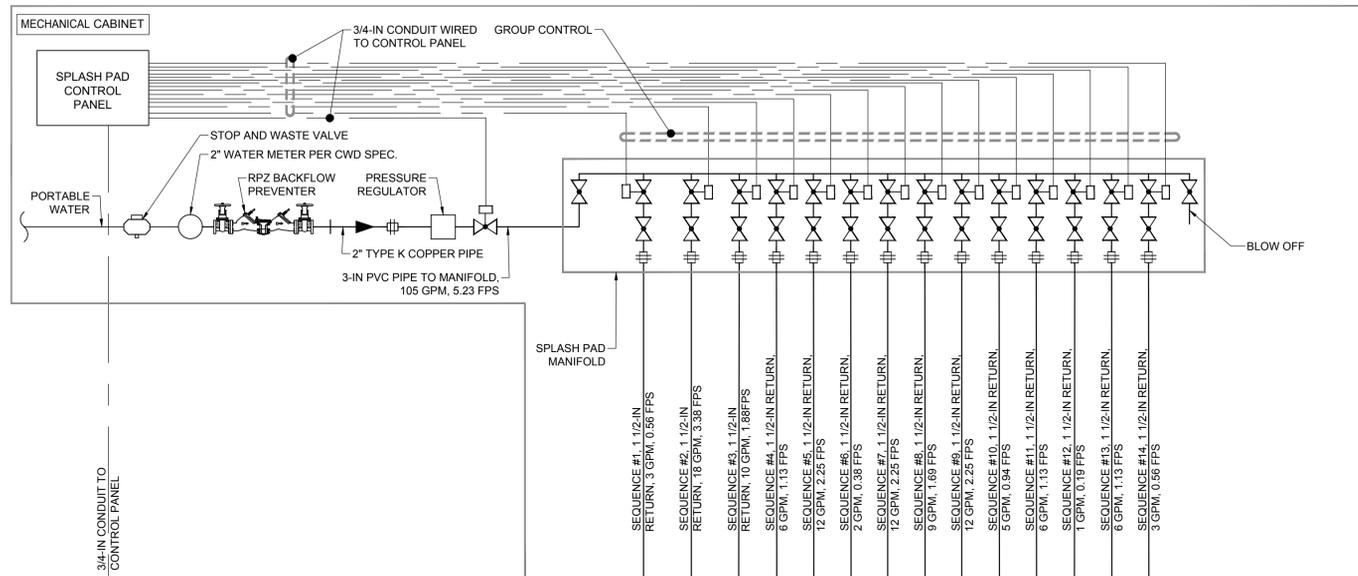
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1 FS MORNING GRASS 1
 SCALE: 1/2" - 1'-0"



2 FS MORNING GRASS 2
 SCALE: 1/2" - 1'-0"



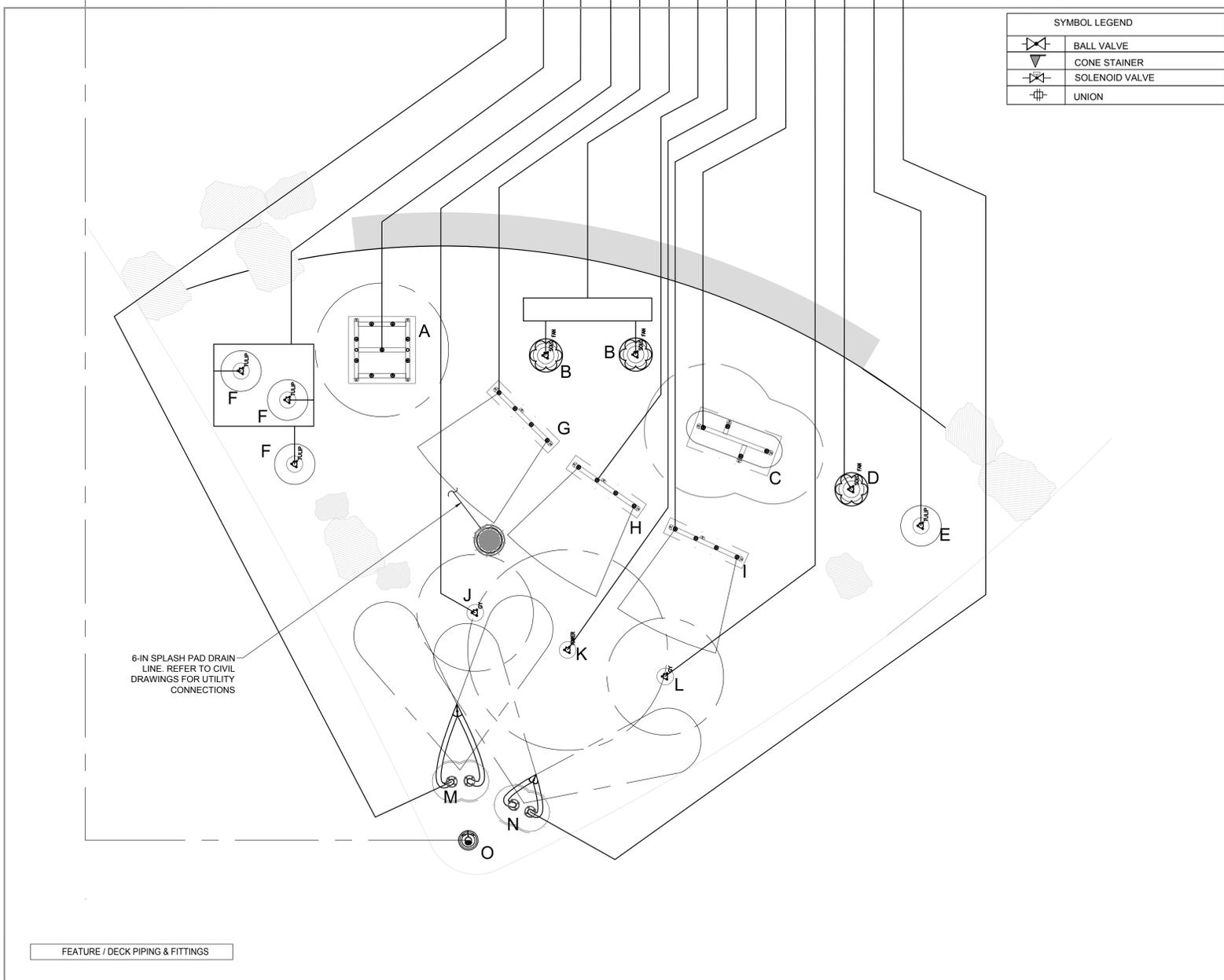
SPLASH PAD EQUIPMENT SCHEDULE				
MISCELLANEOUS EQUIPMENT				
QTY	ITEM	MANUFACTURER	CAT NO.	DESCRIPTION
1	STEEL CABINET	CUSTOM	CUSTOM PER DETAIL	CABINET SHALL BE FABRICATED FROM 1/8-IN STEEL. THE CABINET SHALL BE SANDED EPOXY PRIMED AND PAINTED WITH A URETHANE ENAMEL TOP COAT, COLOR BLACK. DIMENSIONS 6'-0" BY 3'-6" BY 4'-0" DEEP WITH 2 DOORS ON EACH SIDE, AND ALL PIPE SLEEVES PER PIPING PLANS.
1	DRAIN	WATERPLAY	0010-4133	18-IN DIA. MAIN DRAIN WITH 6-IN CONNECTIONS. 200 GPM MAX. COLOR TO BE SELECTED BY OWNERSHIP
SPLASH PAD EQUIPMENT				
QTY	ITEM	MANUFACTURER	CAT NO.	DESCRIPTION
1	FS MORNING GRASS 1	WATERPLAY	0010-1448	ADJUSTABLE PRECISION JET, FREE STANDING FEATURE INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION. COLOR TO BE SELECTED BY OWNERSHIP
1	FS MORNING GRASS 2	WATERPLAY	0010-1449	ADJUSTABLE PRECISION JET, FREE STANDING FEATURE INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION. COLOR TO BE SELECTED BY OWNERSHIP
2	GS GEYSER	WATERPLAY	0010-7478	ADJUSTABLE PRECISION JET, GROUND SPRAY INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION
1	GS GROUP VOLCANO	WATERPLAY	0010-7495	ADJUSTABLE PRECISION JET, GROUND SPRAY INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION
3	GS LILY PAD (SOLO SPURT)	WATERPLAY	0010-7491-7	ADJUSTABLE PRECISION JET, GROUND SPRAY INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION
3	GS SPRAY TUNNEL 4 (THE WAVE)	WATERPLAY	0010-7496	ADJUSTABLE PRECISION JET, GROUND SPRAY INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION
1	GS TEAM EFFECT MINI	WATERPLAY	0010-9815	ADJUSTABLE PRECISION JET, GROUND SPRAY INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION
1	GS TOWER SPRAY	WATERPLAY	0010-7488	ADJUSTABLE PRECISION JET, GROUND SPRAY INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION
4	GS TULIP	WATERPLAY	0010-7489	ADJUSTABLE PRECISION JET, GROUND SPRAY INSTALLED IN PRE-MANUFACTURED MANIFOLD THAT INCLUDES WATER FEED CONNECTION
1	ACTIVATION POWER POST	WATERPLAY	0010-1854	ACTIVATION BOLLARD, CONTROLS THE ON AND OFF FEATURES OF THE SPRAY PAD. COLOR TO BE SELECTED BY OWNERSHIP
1	FEATURE CONTROL PANEL	WATERPLAY	0010-2248	CONTROLS FOUNTAIN SPRAY FEATURES, LIGHTING, WATER CONTROL, WIND CONTROL AND CONTAINING A TOUCH SCREEN PANEL.
1	CUSTOM MANIFOLD	WATERPLAY	0010-2809	15 PORT MANIFOLD WITH SLOW CLOSING SOLENOID VALVES

SPLASH PAD DATA	
DESCRIPTION	AMOUNT / RATE
TOTAL SPLASH PAD SURFACE	1183 S.F.
TOTAL FLOW	105 GPM

SYMBOL LEGEND	
	BALL VALVE
	CONE STAINER
	SOLENOID VALVE
	UNION

KEY LETTER	FEATURE	QUANTITY	PER FEATURE			
			FLOW RATE	TOTAL FLOW	PIPE SIZE	VELOCITY
A	GS GROUP VOLCANO	1	10 GPM	10 GPM	1 1/2 INCH	1.88 FPS
B	GS LILY PAD (SOLO SPURT)	2	1 GPM	2 GPM	1 1/2 INCH	0.38 FPS
C	GS TEAM EFFECT MINI	1	5 GPM	5 GPM	1 1/2 INCH	0.94 GPM
D	GS LILY PAD (SOLO SPURT)	1	1 GPM	1 GPM	1 1/2 INCH	0.19 FPS
E	GS TULIP	1	6 GPM	6 GPM	1 1/2 INCH	1.13 GPM
F	GS TULIP	3	6 GPM	18 GPM	1 1/2 INCH	3.38 FPS
G	GS SPRAY TUNNEL 4	1	12 GPM	12 GPM	1 1/2 INCH	2.25 FPS
H	GS SPRAY TUNNEL 4	1	12 GPM	12 GPM	1 1/2 INCH	2.25 GPM
I	GS SPRAY TUNNEL 4	1	12 GPM	12 GPM	1 1/2 INCH	2.25GPM
J	GS GEYSER	1	6 GPM	6 GPM	1 1/2 INCH	1.13 FPS
K	GS TOWER SPRAY	1	9 GPM	9 GPM	1 1/2 INCH	1.69 FPS
L	GS GEYSER	1	6 GPM	6 GPM	1 1/2 INCH	1.13 FPS
M	FS MORNING GRASS 2	1	3 GPM	3 GPM	1 1/2 INCH	0.56 FPS
N	FS MORNING GRASS 1	1	3 GPM	3 GPM	1 1/2 INCH	0.56 FPS

SEQUENCING OF FEATURES
 ACTIVATOR POST (O) SHALL CONTROL ALL GROUND SPRAY FEATURES.
 CONTRACTOR SHALL COORDINATE WITH THE CITY TO PROGRAM VARYING SEQUENCES AND SEQUENCE DURATIONS.



Project: CITY OF LOWELL

 ST. LOUIS PARK
 406 WEST 6TH STREET
 LOWELL, MA 01850

Weston & Sampson
 Weston & Sampson Engineers, Inc.
 85 Devonshire Street, 3rd Floor
 Boston, MA 02109
 978.532.1900 800.SAMPSON
 www.westonandsampson.com

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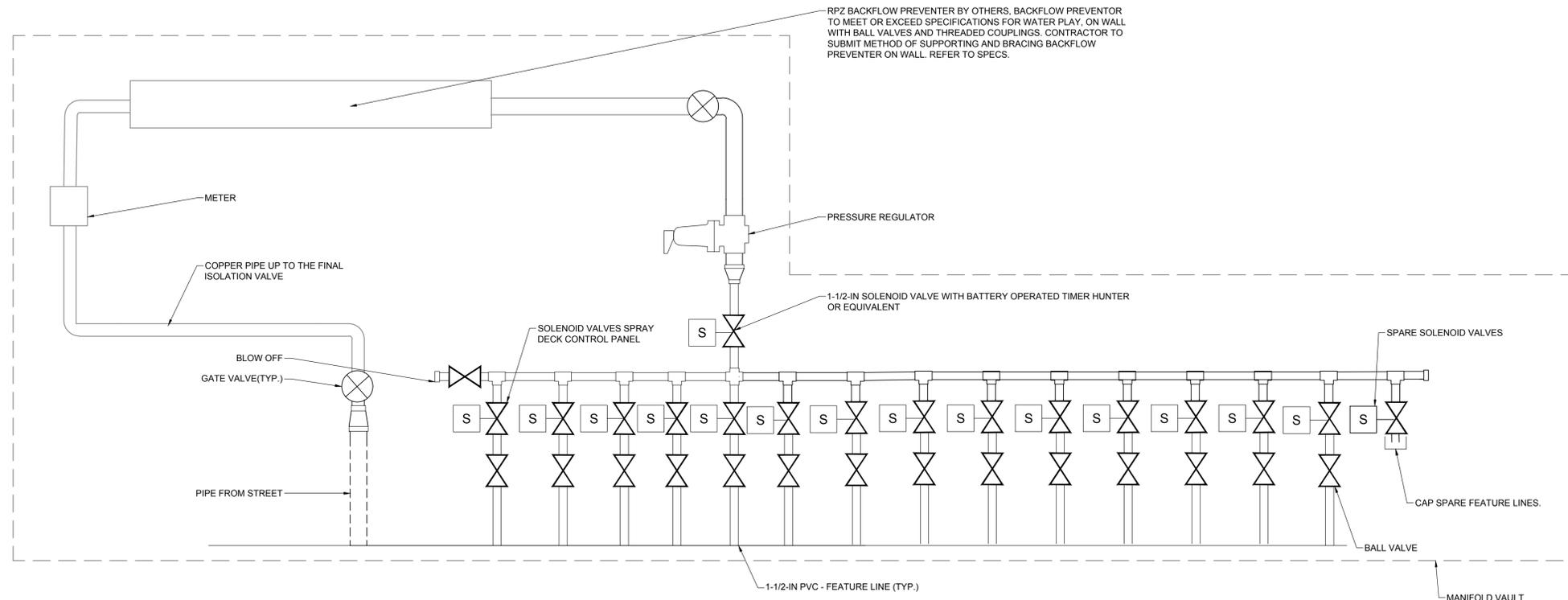
Drawing Title:

SPLASH PAD PIPING EQUIPMENT LIST

Sheet Number:

AQ120

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- NOTE:
1. INSTALL A BRASS BLOWOFF FITTING AND VALVE ON THE OUTFLOW SIDE OF THE BACKFLOW PREVENTION DEVICE TO WINTERIZE THE SYSTEM AS REQUIRED.
 2. THE BACKFLOW PREVENTER & METER SHALL BE INSTALLED WITH UNIONS, HANGERS, SUPPORTS AND ALL OTHER APPROPRIATE FITTINGS, IN ORDER TO EASILY REMOVE THE DEVICE FOR SERVICE AND TO MEET ALL APPLICABLE PLUMBING CODES.
 3. CONFIRM LAYOUT AND ALIGNMENT REQUIREMENTS FOR ALL PIPING, FITTINGS, VALVES, METER, AND BACKFLOW PREVENTER WITH CITY OF CHELSEA PLUMBING INSPECTOR PRIOR TO INSTALLATION.

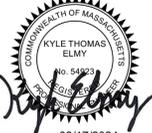
1 SPLASH PAD MANIFOLD
SCALE: N.T.S.

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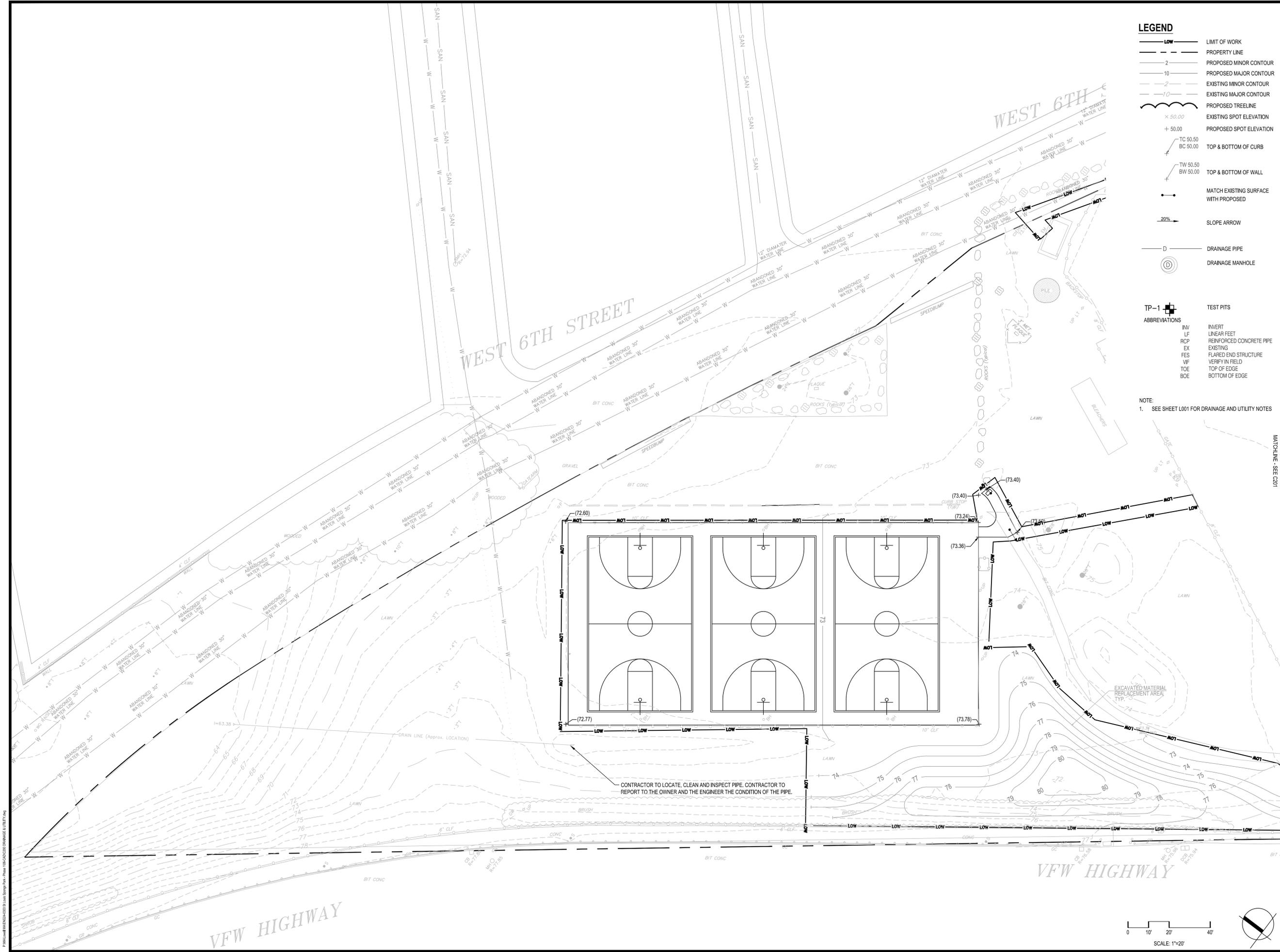
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Drawing Title:
SPLASH PAD SITE PIPING AND DETAILS

Sheet Number:
AQ131



LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED TREELINE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- TOP & BOTTOM OF CURB
- TOP & BOTTOM OF WALL
- MATCH EXISTING SURFACE WITH PROPOSED
- SLOPE ARROW
- DRAINAGE PIPE
- DRAINAGE MANHOLE
- TEST PITS

ABBREVIATIONS

- INV INVERT
- LF LINEAR FEET
- RCP REINFORCED CONCRETE PIPE
- EX EXISTING
- FES FLARED END STRUCTURE
- VIF VERIFY IN FIELD
- TOE TOP OF EDGE
- BOE BOTTOM OF EDGE

NOTE:
1. SEE SHEET L001 FOR DRAINAGE AND UTILITY NOTES

Project: CITY OF LOWELL

ST. LOUIS SPONGE PARK

406 WEST 6TH STREET
LOWELL, MA 01850

Weston & Sampson

Weston & Sampson Engineers, Inc.
85 Devonshire Street, 3rd Floor
Boston, MA 02109
978.532.1900 800.SAMPSON
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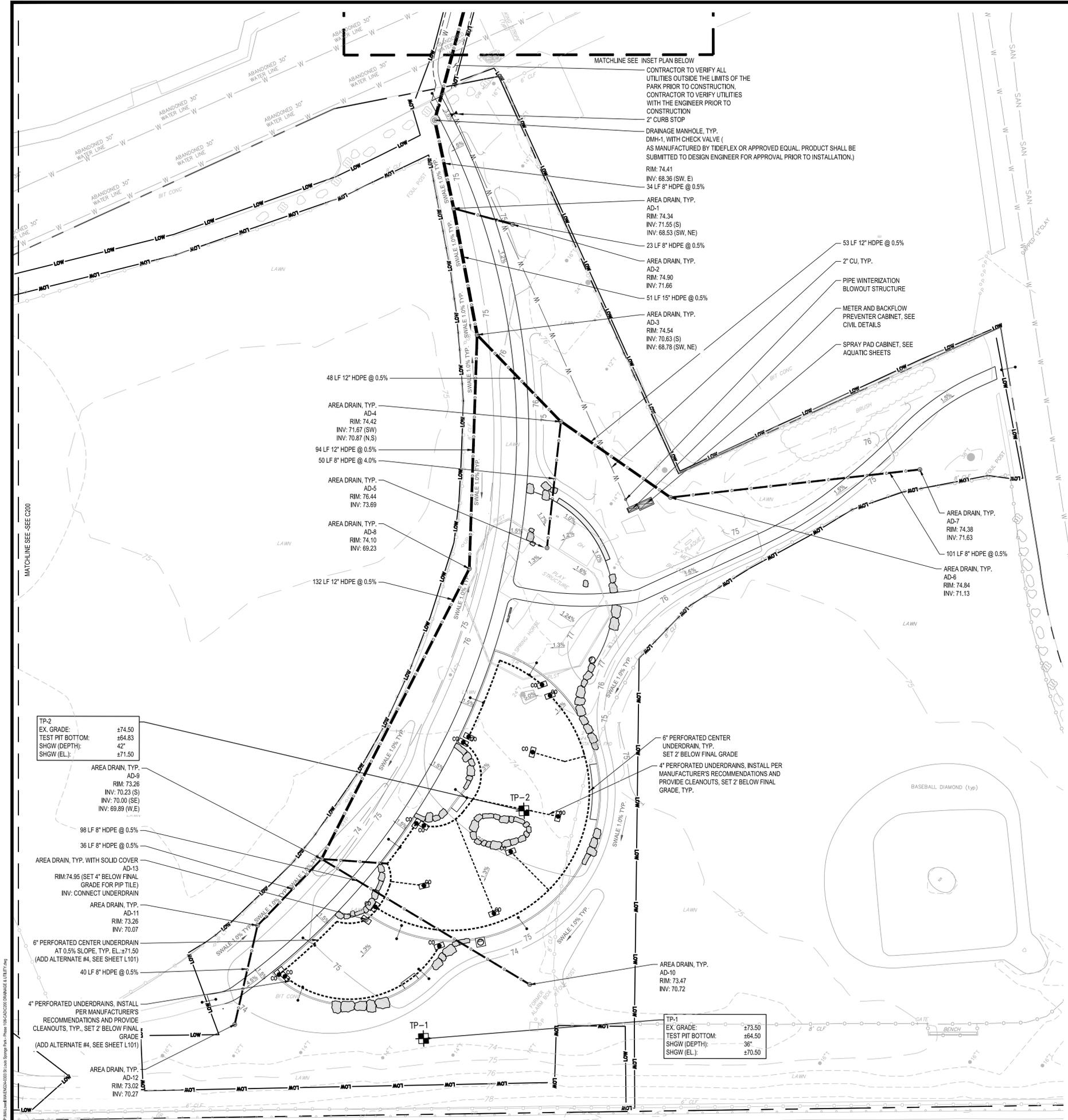
DRAINAGE & UTILITY PLAN

Sheet Number:

C100

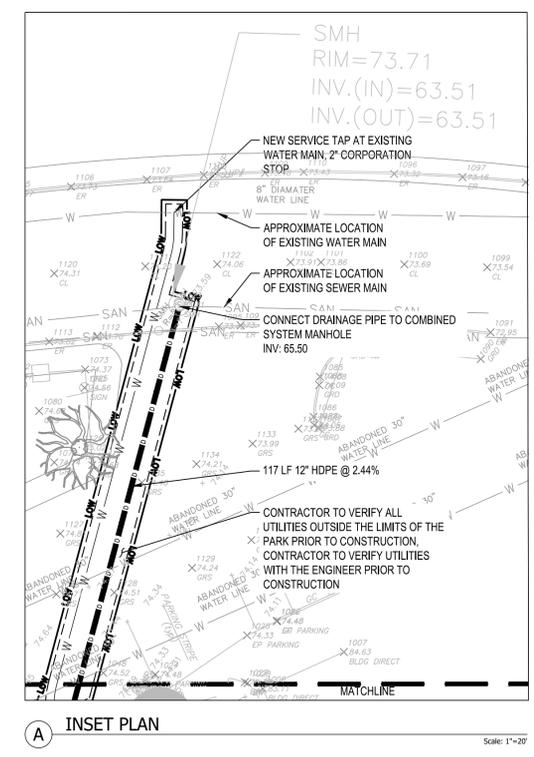
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- ### LEGEND
- LIMIT OF WORK
 - PROPERTY LINE
 - PROPOSED MINOR CONTOUR
 - PROPOSED MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - EXISTING MAJOR CONTOUR
 - PROPOSED TREELINE
 - EXISTING SPOT ELEVATION
 - PROPOSED SPOT ELEVATION
 - TOP & BOTTOM OF CURB
 - TOP & BOTTOM OF WALL
 - MATCH EXISTING SURFACE WITH PROPOSED
 - SLOPE ARROW
 - AREA DRAIN
 - DRAINAGE PIPE
 - DRAINAGE MANHOLE
 - CURB STOP
 - WATER LINE
 - CLEAN OUT
 - TEST PITS
- ABBREVIATIONS**
- INV INVERT
 - LF LINEAR FEET
 - RCP REINFORCED CONCRETE PIPE
 - EX EXISTING
 - FES FLARED END STRUCTURE
 - VIF VERIFY IN FIELD
 - TOE TOP OF EDGE
 - BOE BOTTOM OF EDGE

NOTE:
1. SEE SHEET L001 FOR DRAINAGE AND UTILITY NOTES



(A) INSET PLAN



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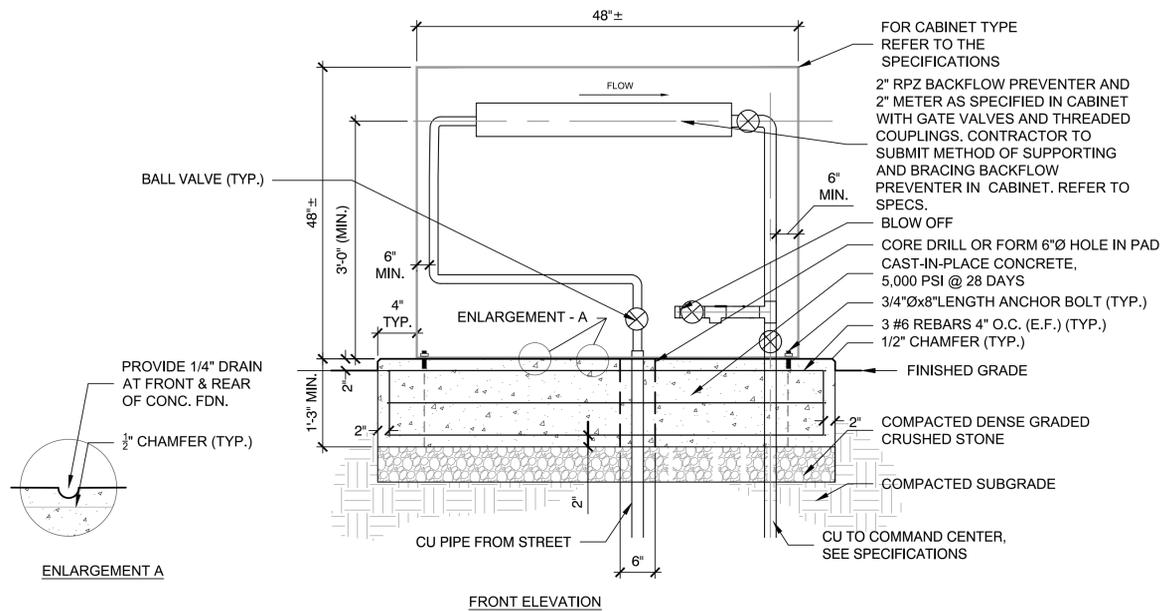
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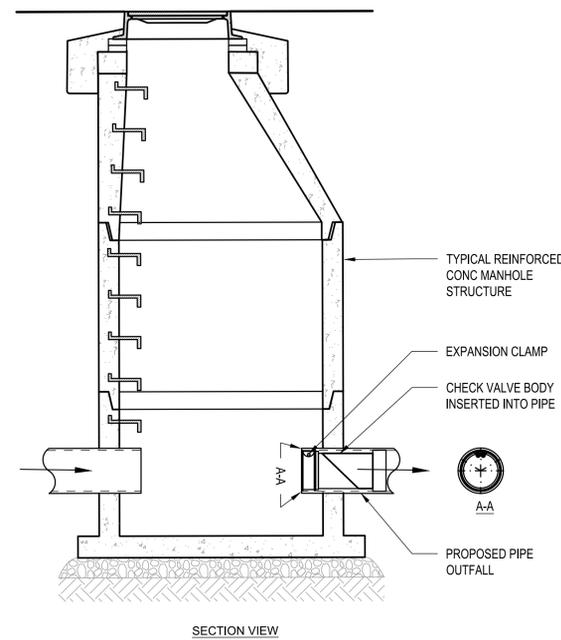
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Sheet Number: **C101**

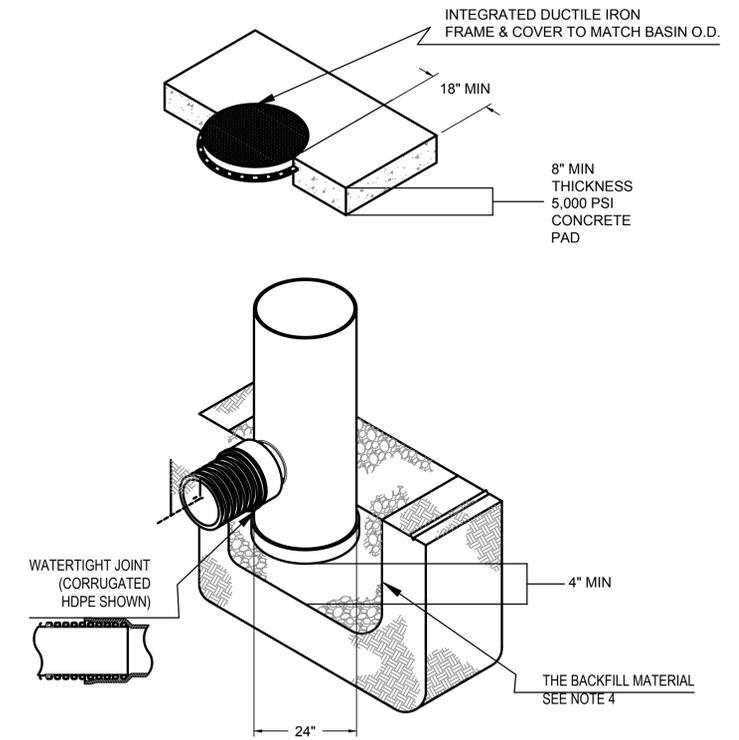


- NOTES:**
1. INSTALL A BRASS BLOWOFF FITTING AND VALVE ON THE OUTFLOW SIDE OF THE BACKFLOW PREVENTION DEVICE TO WINTERIZE THE SYSTEM AS REQUIRED.
 2. THE BACKFLOW PREVENTER & METER SHALL BE INSTALLED WITH UNIONS, HANGERS, SUPPORTS AND ALL OTHER APPROPRIATE FITTINGS, IN ORDER TO EASILY REMOVE THE DEVICE FOR SERVICE AND TO MEET ALL APPLICABLE PLUMBING CODES.
 3. BACKFLOW PREVENTER SHALL BE INSTALLED A MINIMUM 6" FROM THE WALLS OF THE METER CABINET.
 4. CONFIRM LAYOUT AND ALIGNMENT REQUIREMENTS FOR ALL PIPING, FITTINGS, VALVES, METER, AND BACKFLOW PREVENTER WITH CITY OF BOSTON PLUMBING INSPECTOR PRIOR TO INSTALLATION.
 5. SEE SPECIFICATIONS FOR EQUIPMENT INFORMATION
 6. PIPING WITHIN METER CABINET TO BE COPPER TUBING (TYPE L).

1 BACKFLOW PREVENTER AND WATER CONNECTION IN CABINET
NOT TO SCALE

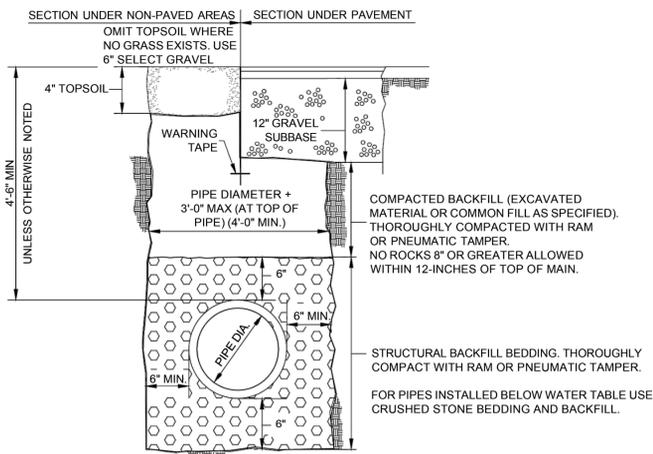


2 INLINE DRAINAGE CHECK VALVE
NOT TO SCALE



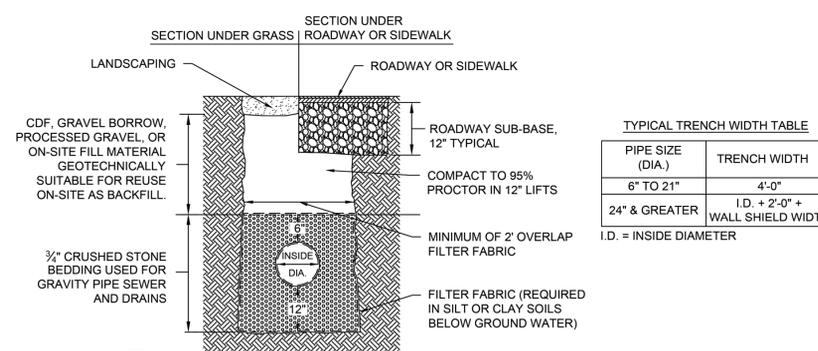
1. 24" SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05 AND SHALL MEET H-20 WHEEL LOAD RATING.
2. 24" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3. YARD DRAIN, COVER AND FRAME SHALL BE AS MANUFACTURED BY NYLOPLAST, OR APPROVED EQUAL.
4. SHALL BE 12-INCHES OF CRUSHED STONE ALL AROUND MEETING THE REQUIREMENTS SPECIFIED IN SECTION 31 23 00 - EARTHWORKS.

3 YARD DRAIN CONCRETE FRAME DETAIL
NOT TO SCALE



- NOTES:**
1. CITY OF LOWELL MAY REQUIRE FLOWABLE FILL AT ITS DISCRETION.
 2. FOR LOCATIONS WHERE LEDGE IS ENCOUNTERED, STRUCTURAL BEDDING SHALL BE MINIMUM OF 12" THICK UNDER PIPE.
 3. FILL MATERIAL SHALL BE COMPACTED TO 95% PROCTOR DENSITY.
 4. ALL TRENCHES SHALL BE SHORED IN ACCORDANCE WITH OSHA REGULATIONS

4 CITY OF LOWELL TRENCH DETAIL FOR WATER MAIN
NOT TO SCALE



- NOTE:**
1. CITY ENGINEER TO APPROVE BACKFILL MATERIAL AS GEOTECHNICALLY SUITABLE.
 2. TRENCH SUPPORT SHALL CONFORM TO OSHA REQUIREMENTS.
 3. CDF SHALL BE USED FOR BACKFILL FOR TRENCHES DEEPER THAN 4 FEET WHERE EXCAVATION IS FOR PIPE REPAIRS AND SERVICE CONNECTIONS OR OTHERWISE REQUIRED BY THE ENGINEER.
 4. BACKFILL MATERIALS SHALL MEET MASSDOT HIGHWAY DIVISION STANDARD SPECIFICATIONS SECTION M1: SOILS AND BORROW MATERIALS FOR BACKFILL MATERIALS INCLUDING PROCESSED GRAVEL.
 5. CDF SHALL MEET MASSDOT HIGHWAY DIVISION STANDARD SPECIFICATIONS M4.08 CONTROLLED DENSITY FILL TYPE 2E FLOWABLE (EXCAVATABLE).

5 CITY OF LOWELL TRENCH DETAIL FOR SEWER OR DRAIN MAIN LINE PIPES
NOT TO SCALE

TYPICAL TRENCH WIDTH TABLE

PIPE SIZE (DIA.)	TRENCH WIDTH
6" TO 21"	4'-0"
24" & GREATER	I.D. + 2'-0" + WALL SHIELD WIDTH

I.D. = INSIDE DIAMETER

Consultants:

No.	Date	Description

Revisions:

No.	Date	Description

COA:

Seal:
JAMES I. PEARSON
CIVIL
No. 50675
PROFESSIONAL ENGINEER
9/29/2024

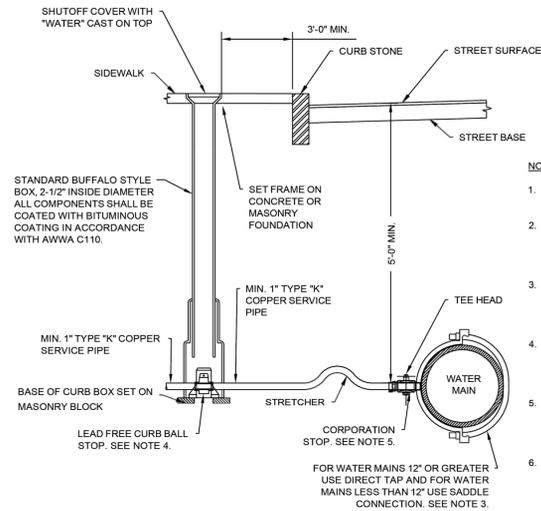
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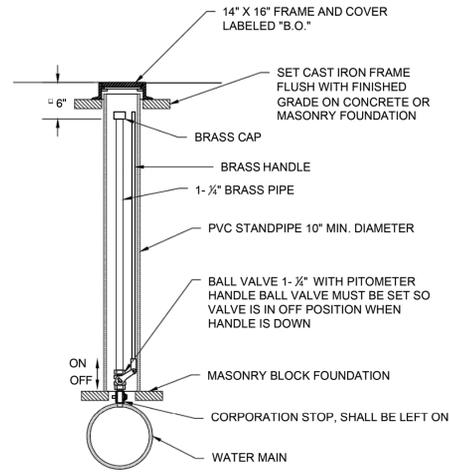
Date: SEPTEMBER 20, 2024
Drawn By: AG, KA, EB, KH
Reviewed By: JL
Approved By: CR
W&S Project No.: ENG24-0303
W&S File No.: ---

Drawing Title:
CIVIL DETAILS

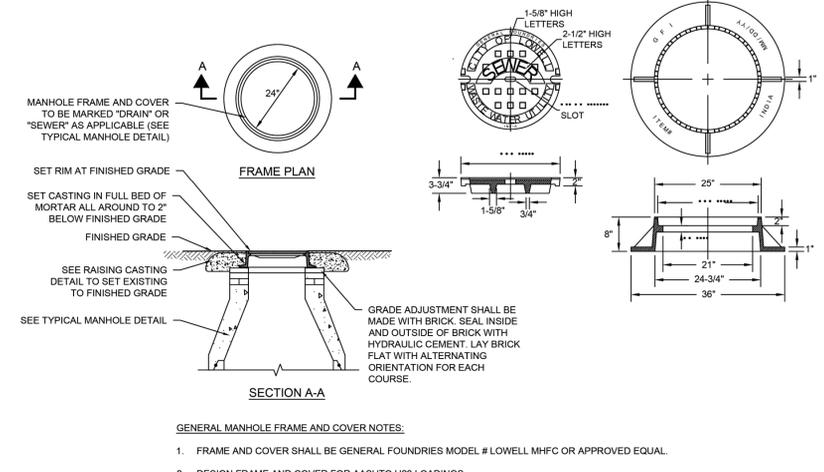
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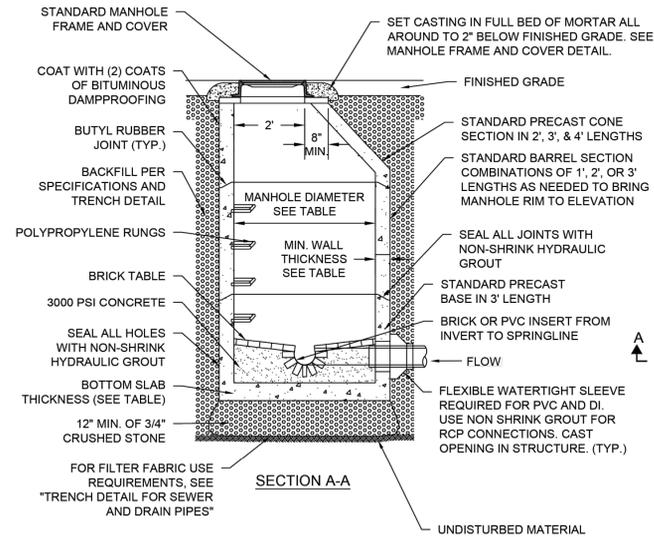
1 CITY OF LOWELL COPPER WATER SERVICE CONNECTION
NOT TO SCALE



2 CITY OF LOWELL MANUAL AIR RELEASE VALVE/BLOW-OFF
NOT TO SCALE



3 CITY OF LOWELL NEW MANHOLE FRAME AND COVER
NOT TO SCALE



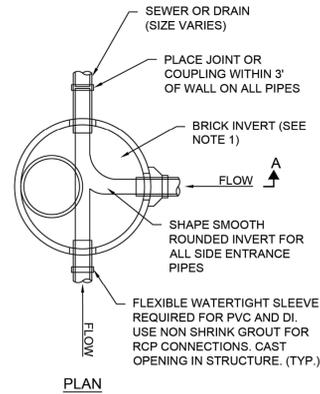
4 CITY OF LOWELL TYPICAL SEWER AND DRAIN MANHOLE
NOT TO SCALE

TABLE 1 : MANHOLE DIMENSIONS				
MANHOLE DIAMETER	SIDE WALL MIN. THICKNESS	BOTTOM SLAB MIN. THICKNESS	MAX PIPE DIAMETER * RCP DI/PVC	
4'	5"	6"	24"	30"
5'	6"	8"	36"	42"
6'	6"	8"	48"	54"
8'	8"	8"	66"	72"
10'	10"	10"	72"	84"

* MAY VARY DEPENDING ON SIZE AND LOCATION OF ADDITIONAL PENETRATIONS OR RELATIONSHIP OF PENETRATIONS IN MANHOLE

GENERAL MANHOLE NOTES:

- INNER EDGE OF BRICK TABLE TO BE AT ELEVATION OF CROWN OF TOP OF PIPE. TABLE TO SLOPE AT 8.3% TO INSIDE OF MANHOLE BASE.
- SEWER OR DRAIN MANHOLE DIAMETER SHALL BE 4- FEET, 5- FEET, 6- FEET, 8- FEET, OR 10- FEET AS SHOWN ON PLAN/PROFILE VIEWS.
- DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHTO H20 LOADINGS.
- FOR DESCRIPTION OF MATERIALS, SEE SPECIFICATIONS.
- OPENING IN TOP MANHOLE SECTION SHALL MATCH CASTING NOMINAL DIAMETER.
- MANHOLES LARGER THAN 4-INCH IN DIAMETER AT THE BASE SHALL BE REDUCED IN DIAMETER TO 4-INCH AT TOP RISER SECTION



5 CITY OF LOWELL PERMANENT TRENCH PATCH
NOT TO SCALE

Consultants:

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Revisions:

No.	Date	Description

COA:



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