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January 22, 2024

Town of Hamilton  
Planning Board  
650 Ashbury Street  
Hamilton, MA 01936

Attn: Mr. Patrick Reffett, Director of Planning and Inspectional Services

Re: Hamilton-Wenham Regional High School Athletic Campus Redevelopment  
Site Plan Review Application and Stormwater Management Permit Application –  
Response to Comments  
Gale JN 718601

Dear Mr. Reffett,

On behalf of the Hamilton-Wenham Regional School District (HWRSD), Gale Associates, Inc. (Gale) is submitting this letter in response to the Town of Hamilton Planning Board and Peer Reviewer comments regarding the Site Plan Permit Application Package, which were received January 8, 2024, for the project referenced above. Below you will find the peer review comments in **bold** font and Gale’s responses in plain text.

**Site Plan Comments:**

- 1. The plans should be signed and sealed by the Professional Engineer (PE) of record and the Professional Land Surveyor (PLS) of record prior to final approval of the Site Plan Review Application (ZBL §10.7.5 3).**

Response: As discussed at the Planning Board hearing on January 9, 2024, the plans will be signed and sealed following final review by the Peer Reviewer once all changes have been incorporated into the plan.

- 2. The land surveyor shall certify the accuracy of the locations of the buildings, setbacks, and all other required dimensions to property lines (ZBL §10.7.5 3). It does not appear that an instrument survey was performed and consequently, relief is required. In lieu of seeking relief, it is likely that a property plan of the Hamilton-Wenham Regional High School facility was prepared at the time of property acquisition or at the time that the school was constructed and could be updated by the Professional Land Surveyor of Record and submitted to satisfy the requirement.**

Response: A copy of the property survey for the Hamilton-Wenham Regional High School has been provided as part of the submittal, which was utilized to confirm setbacks. Refer to Existing Conditions Survey Sheets 1 and 2 prepared by Hancock Survey Associates, dated 2/10/1997.

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- 3. A Zoning Chart should be provided showing “required and provided” for “applicable criteria.” We recommend that the Planning Board allow the Zoning Chart to be omitted (ZBL §10.7.5 4).**

Response: A zoning chart has been provided on Plan Sheet G002.

- 4. Show bearings and distance for on-site lot lines and lot lines of abutting properties in a general way or seek relief (ZBL §10.7.5 7). It is likely that a property plan of the Hamilton-Wenham Regional High School campus was prepared when the property was acquired or developed, and this could be submitted to satisfy the requirement.**

Response: Refer to Comment 2 above.

- 5. Show the approximate boundary of the Conservancy District (Wetland Overlay Zone) (ZBL §10.7.5 8).**

Response: The Wetland Overlay Zone has been added to the plans. Refer to Plan Sheet C100.

- 6. Seek relief from requirements to show the entire property and in particular the total square footage of all buildings and the entirety of all wetland resource areas (ZBL §10.7.5 9, 10). As stated in Comment 2, it is likely that a property plan of the Hamilton-Wenham Regional High School facility was previously prepared and could be submitted to satisfy the requirement.**

Response: Refer to Comment 2 above.

- 7. Show utilities (water, sewer, natural gas (if applicable), and electrical cables or seek relief (ZBL §10.7.5 12).**

Response: Utilities associated with this project have been shown on Plan Sheets C301 and C302.

- 8. Show the proposed “front yard “setbacks to the sideline of Longmeadow Way for the Amenities Building and possibly the storage units or seek relief. Refer to Comment 2 (ZBL §10.7.5 14).**

Response: The front yard setback for the proposed Amenities Building has been provided on Plan Sheets C102 and C102B.

- 9. Show any directional or way finding signage (ZBL §10.7.5 16).**

Response: Signage will be provided, as requested. Refer to Plan Sheet C102 and C102B.



**10. Provide a parking calculation (ZBL §10.7.5 19). Refer to Comments 22-23.**

Response: As noted in Comments 21-22, based on places of public assembly, one (1) parking space is required for every three (3) seats. The permanent grandstand will have 993 seats. Therefore, 331 parking spaces are required. Note that the high school has 357 spaces. Based on the fact that athletic events are not conducted when school is in session, adequate parking spaces should be provided. In addition, with the field project, we are adding two (2) accessible spaces and one (1) loading space at the Amenities Building.

**Utilities Comments:**

**11. Show utilities for the Amenities Building, including pipe diameters, materials, class, slopes, structures, and inverts.**

- a. Show the building water service.
- b. Show the building sanitary sewer service.
- c. Show the cable utility services (electric, cable)
- d. Show the building natural gas service if applicable.

Response: The utilities for the Amenities Building have been provided on the plans. Please refer to Plan Sheets C301 and C302. Note that no gas service will be provided at the site.

**12. Provide a complete photometric of the Athletic Campus, not just the cutoff perimeter line.**

Response: The updated photometric for the campus has been provided. Refer to updated Plan Sheets IS1 and IS2.

**13. Provide detail on the lighting fixtures and in particular provide information on compliance with dark skies principals.**

Response: The proposed lighting has been designed to meet the Dark Skies program.

**14. Specify fixture mounting heights.**

Response: Light fixture mounting heights for each field have been provided in the Athletic Lighting Exhibits attached.

**15. Provide a light pole and pole foundation detail.**

Response: A typical light pole and pole foundation detail has been provided. Refer to the Athletic Lighting Exhibits attached.

**16. Provide any possible mitigation which minimizes the visibility of lighting fixtures and point sources of light from adjacent residences.**



Response: Each of the proposed light fixtures is equipped with shields to minimize glare from adjacent residences. Refer to the Athletic Lighting Exhibits attached, including the standard light shield and Progression of Athletic Lighting.

**17. Provide lighting controls that shut off field lights when the fields are not in active use.**

Response: The proposed lighting systems are provided with an elaborate control system where lights can be turned off and on by school staff using their cell phones, as well as via a timing system that will turn the lights off at the required time specified.

**Access and Parking Comments:**

**18. Confer with Town emergency services and determine which vehicles would respond to the fields in case of injury or other emergency. It is likely that an ambulance (AASHTO SU vehicle) and fire apparatus with defibrillator (AASHTO BUS 40 commonly used to emulate fire apparatus) must be accommodated.**

Response: HWRSD/Gale are in the process of scheduling meetings with the Fire Department, EMTs, and Police to confirm vehicles that will respond to the fields and will provide adequate access, as required.

**19. Revise the geometry of the pavement approach and/or adjust the location of the 12-ft. wide swing gates serving the multipurpose field and track and the two adjacent 12-ft. wide swing gates serving the west multipurpose field and the 165 X 300 soccer field such that each field can be accessed (enter and exit) by the emergency vehicles (per Comment 12) in a single continuous turning movement. Revise the geometry of the gravel access road approach and/or adjust the location of the 12-ft. wide swing gates serving the softball field such that the field can be accessed by the emergency vehicles in a continuous turning movement.**

**Non-vehicular access should be accommodated and encouraged.**

Response: The plans have been updated to adjust 12-ft. access gates, as requested, as well as providing continuous turning movements at each field. Refer to Plan Sheets C101, C102, and C103.

**20. Provide bicycle racks at each field.**

Response: Bike racks will be provided at each field, as requested. Refer to Plan Sheets C101, C102, and C103.



- 21. For places of public assembly, one parking place is required for every three seats (ZBL §6.1). The Athletic Campus bleachers will provide 1,007 seats total (not including temporary bleachers) which results in a requirement for 336 parking spaces.**

Response: Refer to Comment 10 above.

- 22. Determine through field observation, the peak parking demand for non-athletic based school use that occurs during the time when the athletic facilities are in use for competitive events. Determine if the parking supply can accommodate simultaneous nonathletic based school parking demand plus the 336 parking spaces required for the athletic facilities.**

Response: HWRSD has confirmed that athletic events are not permitted to occur when school is in session. Therefore, with 357 spaces available at the school, adequate parking should be provided.

- 23. Expand the parking supply if required to accommodate the calculated parking demand (Comment ) or provide a parking management plan. Provision should be made for dropping off athletes and spectators and for turnaround of vehicles unable to locate a parking space. Provide a hammerhead turnaround at the east end of the existing parking field to accommodate drop-offs and turnarounds.**

Response: The plans have been updated to provide a hammerhead turnaround, as requested, along with three (3) additional parking spaces by the Amenities Building. Refer to Plan Sheets C102 and C102B.

- 24. The School District may not want private passenger vehicles circulating around the school building. Bus drop-offs may be appropriate in front of the Amenities Building. As no turnaround is provided, busses would exit by circulating behind the school building. Place a sign at the east end of the parking area stating, "Busses Only Beyond this Point."**

Response: HWRSD has indicated that bus drop-offs are at the front of the school and the drive around the rear of the school is used for fire access only. An "Authorized Vehicles Only" sign (MUTCD R5-11) has been incorporated into the design, prefer to Plan Sheet C102B.

**Grading Comments:**

- 25. Clarify is the 4-ft. wide walk adjacent to the softball field curbed or is the walk to be delineated with a pavement edgeline.**

Response: Based on emergency access peer review comments, access to the softball field has been revised and the 4-ft. walk has been removed.



**26. Segments of the unit masonry wall south of the Amenities Building has an exposed face of approximately 5.3-ft. and require fall protection.**

Response: Based on updated plans, the masonry wall south of the amenities building is no longer required and has been removed.

**27. Show top and bottom of wall elevations for the wall at the east end of the track and along the east and south edges of the Multi-Purpose Combination Synthetic Turf Field.**

Response: Grading plans will be adjusted accordingly to reflect the updated Layout and Materials Plan and peer review stormwater review comments, once received. Should a retaining wall be required, top and bottom wall elevations will be provided.

**Accessibility Comments:**

**28. Confirm that all bleachers have provisions to accommodate persons with limited mobility.**

Response: The proposed bleacher system will provide required ramps and designated seating areas for person of limited mobility. Refer to the Grandstand Plan attached.

**29. Ensure that all bleachers are provided with an accessible route. We note that the bleacher seating for the tennis courts is not accessible by pavement.**

Response: All proposed walkways will meet ADA requirements for accessible routes.

**30. The 4-ft. wide walk adjacent to the softball field is not an accessible route as it is obstructed by a light pole and does not provide continuity to reach the bleachers. If the walk is curbed, ramps must be provided at either end**

Response: Refer to Comment 25 above.

**Public Safety Comments:**

**31. Obtain written approval of the Athletic Campus from the Fire Department/ Emergency Services.**

Response: Refer to Comment 18 above, HWRSD/Gale are in the process of scheduling a meeting with the Fire Department/Emergency Services to review the project. Any comments they may have will be addressed and their approval requested. Note their written approval will be provided to the Planning Board.



**32. Obtain written approval of the Athletic Campus from the Police Department.**

Response: Refer to Comment 18 above, HWRSD/Gale are in the process of scheduling a meeting with the Police Department to review the project. Any comments they may have will be addressed and their approval requested. Note their written approval will be provided to the Planning Board.

**Construction Comments:**

**Add construction notes to the plans.**

**33. Work hours including deliveries and on-site engine warmup and idling shall comply with the School District's requirements and further shall be limited to 7:00 AM to 5:00 PM on weekdays with no work on Sunday or legal holidays.**

Response: This note has been added to the plans, refer to Plan Sheet G002.

**34. Mark the limit of work with high visibility temporary fencing.**

Response: As noted at the hearing on January 9, 2024, the limit of work on the plans is depicted by the limit of the silt sock. Temporary construction fencing has been added to the plans. Refer to the Plan Sheet G002 for "Construction General Notes" addressing the limit of work and construction fencing.

**35. Provide convenient sanitary facilities and trash collection containers. Remove any litter or waste two times per week or more frequently if required.**

Response: This note has been added to the plans, refer to Plan Sheet G002. Also note that this is covered in Gale's standard clean-up and protection specification sections.

**36. Due to proximity of wetlands, dust control should be limited to the application of mist using potable water.**

Response: This note has been added to the plans; refer to Plan Sheet G002.

**37. Designate an on-site refueling area with a paved surface and berm to contain a fuel spill.**

Response: This note has been added to the plans; refer to Plan Sheet G002.

**38. Sweep Bay Road in proximity to the site during earth or materials transport whenever sediment deposits are visible.**

Response: This note has been added to the plans; refer to Plan Sheet G002.



**Construction Details Comments:**

**39. Pavement Jointing Detail – Specify joint to be sawcut.**

Response: The Pavement Jointing Detail 5 on Plan Sheet C502 has been updated to specify joint to be sawcut.

**40. Driveway Pavement Section – If the “Dense Graded Crushed Stone” layer specifies MassDOT M2.01.7, we recommend limiting the thickness to approximately 2-inches due to the fines content. The remainder of the granular base should be specified as Gravel Borrow MassDOT M1.03.0 Type c or crushed stone. We recommend a minimum thickness of 12-inches for the granular base in areas subject to regular vehicle traffic (which is the standard for subdivision streets) and a minimum thickness of 8-inches for the granular base elsewhere.**

Response: Driveway Pavement Section Detail 3 on Plan Sheet C502 has been updated, as requested.

**41. Sidewalk Pavement Section – We recommend limiting the thickness of the “Dense Graded Crushed Stone” layer to approximately 2-inches. Refer to Comment 40.**

Response: Sidewalk Pavement Section Detail 2 on Plan Sheet C502 has been updated, as requested.

**42. Handicapped Accessible Ramp – Show maximum slope. The specified length of 14-ft. would only apply to a specific elevation change.**

Response: Handicap Accessible Ramp Detail 5 on Plan Sheet C503 has been updated to show maximum slope.

**43. Backstop Detail – Shop drawing review by a Structural MA Professional Engineer is recommended. Require site specific soil testing as part of shop drawing review. Consider specifying black vinyl coated fabric to match fencing.**

Response: The Backstop Detail 1 on Plan Sheet C505 has been updated to specify the use of site specific soil testing as part of the shop drawing review. Also note the backstop will be specified to be black vinyl fabric.

**44. Segmental Block Retaining Wall – Require site specific soil testing as part of shop drawing review. Specify the free-draining backflow material.**

Response: The Segmental Block Retaining Wall Detail 4 on Plan Sheet C514 has been updated to specify the use of site specific soil testing as part of the shop drawing review and the free draining backfill material specified.





We hope you find our responses to your comments acceptable. Please do not hesitate to contact the undersigned, at [kdh@gainc.com](mailto:kdh@gainc.com) or (508) 259-3534, if you require additional information or clarification.

Best regards,

GALE ASSOCIATES, INC.

*Kathleen D. Hervol/cmh*

Kathleen D. Hervol  
Director of Athletics

KDH/cmh

Enclosures:

- Updated Permitting Plans
  - G002 – General Notes
  - C100 – Layout and Material Key Plan
  - C101, C102, C102B, and C103 – Layout and Materials Plans
  - C301 and C302 – Utilities Plans
  - C502, C503, C505, and C514 – Detail Sheets
  - IS1 and IS2 – Illumination/Photometric Plans
- Athletic Lighting Exhibits
  - Typical Light Fixture and Poles
  - Light Pole Foundation Plan
  - Progression of Athletic Lighting
  - EXH-1 – Athletic Lighting Pole Height Exhibit Plan
- Grandstand Plan
- Existing Conditions Survey (Existing School and Property)

CC:

- Mr. Thomas Houston, Peer Reviewer – Professional Services Corp.
- Mr. Thomas Geary – Hamilton-Wenham Regional School District

DEMOLITION NOTES

- 1. DEMOLITION TO COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE STARTING SELECTIVE DEMOLITION. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
2. THE OWNER MAY OCCUPY PORTIONS OF THE BUILDING IMMEDIATELY ADJACENT TO SELECTIVE DEMOLITION AREAS. CONDUCT SELECTIVE DEMOLITION SO THAT OWNERS' OPERATIONS WILL NOT BE DISRUPTED. PROVIDE NOT LESS THAN 72 HOURS NOTICE TO OWNER OF ACTIVITIES (IF ANY) THAT MAY AFFECT THEIR OPERATIONS.
3. SURVEY THE CONDITION OF THE SITE TO DETERMINE WHETHER REMOVING ANY ELEMENT MIGHT RESULT IN UNDESIRABLE DAMAGE OF ANY PORTION OF ADJACENT FACILITIES DURING SELECTIVE DEMOLITION.
4. MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS.
5. CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, PARKING LOTS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AND USED FACILITIES.
6. CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS, FACILITIES, AND SITE IMPROVEMENTS TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA.
7. USE WATER MIST AND OTHER SUITABLE METHODS TO LIMIT THE SPREAD OF DUST AND DIRT. COMPLY WITH GOVERNING ENVIRONMENTAL PROTECTION REGULATIONS.
8. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
9. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF SELECTIVE DEMOLITION.
10. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. CONTRACTOR TO BE RESPONSIBLE FOR ANY CUTTING AND PATCHING THAT IS REQUIRED.
11. PROMPTLY DISPOSE OF DEMOLISHED MATERIALS. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE.
12. DO NOT BURN DEMOLISHED MATERIALS.
13. TRANSPORT DEMOLISHED MATERIALS OFF OWNER'S PROPERTY AND LEGALLY DISPOSE OF THEM, IF NOT DESIGNATED TO BE SALVAGED BY THE OWNER OR REUSED.
14. IN AREAS WHERE BITUMINOUS CONCRETE IS TO BE REMOVED, THE EDGE OF ANY BITUMINOUS CONCRETE TO REMAIN MUST BE A CLEAN SAW-CUT EDGE.

EROSION CONTROL NOTES

- 1. THE CONTRACTOR SHALL FILE A NPDES CONSTRUCTION GENERAL PERMIT AS REQUIRED BY THE EPA AT LEAST 14 DAYS PRIOR TO GROUNDBREAKING. NPDES PERMIT AND PLANS SHALL BE KEPT ON SITE FOR REVIEW AT ALL TIMES FOR THE DURATION OF CONSTRUCTION.
2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STATE REGULATIONS AND ALL TOWN REGULATIONS AND PERMIT CONDITIONS.
3. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK OR EARTHWORK OPERATIONS, AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
4. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED SILTATION FENCES TO PREVENT AND/OR CONTROL SILTATION AND EROSION. OTHERWISE SPOIL MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND DISPOSED OF LEGALLY AND IN CONFORMANCE TO ALL TOWN REGULATIONS.
5. ALL EROSION CONTROL MEASURES SHALL BE ROUTINELY INSPECTED, CLEANED AND REPAIRED OR REPLACED AS NECESSARY THROUGHOUT ALL PHASES OF CONSTRUCTION. IN ADDITION, INSPECTION SHALL TAKE PLACE AFTER EACH RAINFALL EVENT AND BEFORE FORECASTED RAIN.
6. ALL SEDIMENTS MUST BE REMOVED PRIOR TO REACHING THE EXISTING DRAINAGE SYSTEMS AND/OR ANY ENVIRONMENTAL RESOURCE AREAS.
7. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE ENGINEER OR THE OWNER TO MITIGATE ANY EMERGENCY CONDITION.
8. THE AREA OR AREAS OF ENTRANCE AND EXIT TO AND FROM THE SITE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OUTSIDE OF CONSTRUCTION AREA MUST BE REMOVED IMMEDIATELY.
9. EROSION CONTROL DEVICES MAY BE ADDED OR REDUCED IN THE FIELD AS DIRECTED BY THE OWNER/ENGINEER.
10. THE CONTRACTOR IS RESPONSIBLE FOR REESTABLISHING ANY EROSION CONTROL DEVICE WHICH THEY DISTURB. THE CONTRACTOR SHALL NOTIFY THE OWNER/ENGINEER OF ANY DEFICIENCIES IN THE ESTABLISHED EROSION CONTROL MEASURES WHICH MAY LEAD TO UNAUTHORIZED DISCHARGE OR STORM WATER POLLUTION, SEDIMENTATION OR OTHER POLLUTANTS. UNAUTHORIZED POLLUTANTS INCLUDE, BUT ARE NOT LIMITED TO, EXCESS CONCRETE DUMPING OR CONCRETE RESIDUE, POINTS, SOLVENTS, GREASES, FUEL AND LUBE OIL, PESTICIDES, AND SOLID WASTE MATERIALS.

GRADING NOTES

- 1. ALL GRADING SHALL MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) AND LOCAL BUILDING AND ACCESSIBILITY CODES. IN GENERAL, GRADING OF SIDEWALKS SHALL NOT EXCEED 2.0% CROSS SLOPE AND 5.0% RUNNING SLOPE, GRADING OF ADA PARKING STALLS AND LOADING ZONES SHALL NOT EXCEED 2.0% IN ANY DIRECTION AND GRADING OF PLAZA AND GATHERING AREAS SHALL NOT EXCEED 2.0% IN ANY DIRECTION. GRADING ON SIDEWALK CURB RAMPS AND OTHER ACCESSIBLE RAMPS SHALL NOT EXCEED 8.0%. ALL AREAS SHALL PROVIDE POSITIVE DRAINAGE AS TO NOT POOL WATER, MINIMUM SLOPES SHALL BE 1.0% UNLESS OTHERWISE NOTED.
2. ALL PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNED GRADIENT ARE TO BE USED IN THE EVENT OF ANY DISCREPANCIES.
3. GRADING SHALL BE PERFORMED TO ALLOW WATER TO FLOW AWAY FROM BUILDING STRUCTURES, AND TO NOT ALLOW PUDDLING OF WATER ANYWHERE ON SITE.
4. MINOR ADJUSTMENTS TO FINISH GRADE TO ACCOMPLISH DRAINAGE FLOW ARE ACCEPTABLE, IF NECESSARY, UPON PRIOR APPROVAL OF ENGINEER.
5. NEW PAVEMENT SHALL BE FLUSH AT ANY JUNCTURE WITH EXISTING PAVEMENT.
6. ALL EXCAVATIONS SHOULD BE STABILIZED BY CUTTING BACK SIDE SLOPES OR USING SHORING AND BRACING AS REQUIRED. ALL EXCAVATION AND SHORING SHALL BE DONE IN ACCORDANCE WITH OSHA STANDARDS AND MGL CH. 149 SECT. 129A.
7. ANY DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DISCHARGE OF SILTY OR OTHERWISE "DIRTY" WATER INTO DRAINAGE SYSTEM OR ANY BODY OF WATER, WETLAND OR RESOURCE AREA SHALL NOT BE PERMITTED.

GENERAL NOTES

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK. ALL EXISTING CONTROL POINTS AND BENCHMARKS HAVE BEEN PROVIDED ON THE EXISTING CONDITIONS PLANS. ANY ADDITIONAL CONTROL POINTS SHALL BE ESTABLISHED AND MAINTAINED BY THE CONTRACTOR.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, AND CITY STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE CITY STANDARDS AND REGULATIONS FOR USE ON THIS PROJECT.
3. BARRICADING, TRAFFIC CONTROL, AND PROJECT SIGNS SHALL CONFORM TO ALL STATE, LOCAL REGULATIONS. AREA ADJACENT TO THE PROJECT SITE WILL BE IN USE DURING CONSTRUCTION AT VARIOUS TIMES. THE CONTRACTOR WILL PROVIDE ADEQUATE CONSTRUCTION FENCING DURING EACH PHASE OF THE PROJECT TO FULLY SECURE THE PROPOSED SITE SUBJECT TO OWNER APPROVAL. THE FENCING MAY NEED ADJUSTMENT AT VARIOUS TIMES WITHOUT CONTRACT MODIFICATION.
4. THE GENERAL CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS AND/OR CONNECTION FEES REQUIRED.
6. GENERAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS APPLICABLE INCLUDING BUT NOT LIMITED TO ELECTRICAL, LIGHTING, AND GAS. THE CONTRACTOR ACKNOWLEDGES THAT ANOTHER CONTRACTOR WILL BE UNDER A SEPARATE CONTRACT. THE CONTRACTOR WILL COORDINATE HIS EFFORTS IN GOOD FAITH, AND WORK IN HARMONY WITH THE OTHER CONTRACTOR. NO EXTRA WILL BE AWARDED DUE TO CONFLICTS BETWEEN CONTRACTORS.
7. SUBSTITUTIONS AND APPROVAL OF "OR-EQUAL" PRODUCTS IN PLACE OF THOSE SPECIFIED WILL NOT BE ALLOWED WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER OR ENGINEER.

GENERAL UTILITY NOTES

- 1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORD PLANS AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
3. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.
4. TRENCH EXCAVATIONS SHALL BE IN ACCORDANCE WITH ALL PROVISIONS OF OSHA PART 1926, SUBPART P -EXCAVATIONS, TRENCHES AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH'S STANDARDS AND NECESSARY TRENCH SAFETY PLANS TO THE ENGINEER AND CITY FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION.
5. ALL DRAIN, WATER AND SANITARY SEWER PIPES INSTALLED WITHIN 10 FEET OF THE BUILDING (BY OTHERS) MUST BE PERMITTED AND INSTALLED BY A MASSACHUSETTS LICENSED PLUMBER.
6. CONTRACTOR SHALL VERIFY ALL EXISTING INVERTS AND RIM ELEVATIONS PRIOR TO CONSTRUCTION.
7. THE CONTRACTOR SHALL ADJUST ALL UTILITY CASTINGS TO BE FLUSH WITH PROPOSED GRADE UNLESS OTHERWISE INDICATED ON PLAN.
8. THE CONTRACTOR SHALL FIELD COORDINATE WITH THE ELECTRICAL ENGINEER TO DETERMINE EXACT POINT OF SERVICE CONNECTION. REFER TO THE SITE ELECTRICAL DRAWINGS FOR UTILITY SERVICE ENTRANCE LOCATIONS, SIZES, AND CIRCUITING.
9. CONTRACTOR SHALL PURGE LIFTING HOLES ON ALL CONCRETE STRUCTURES.

LANDSCAPING NOTES

- 1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASE.
2. ALL PLANTS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED.
3. ALL TREES MUST BE STRAIGHT-TRUNKED AND FULL-HEADED AND MEET ALL REQUIREMENTS SPECIFIED.
4. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
6. ALL PLANTING AREAS MUST BE COMPLETELY MULCHED AS SPECIFIED.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) OF THE PLANTING AREAS AND LAWN UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE OWNER.
9. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING ON THE DATE OF TOTAL ACCEPTANCE. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE GUARANTEE PERIOD.
10. AFTER BEING DUG AT THE NURSERY SOURCE, ALL TREES IN LEAF SHALL BE ACCLIMATED FOR TWO (2) WEEKS UNDER A MIST SYSTEM PRIOR TO INSTALLATION.
11. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
12. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
13. ALL SHRUB, GROUND COVER AND SEASONAL COLOR ANNUAL PLANTING BEDS ARE TO BE COMPLETELY COVERED WITH HARDWOOD MULCH TO A MINIMUM DEPTH OF FOUR INCHES.

LOCUS PROPERTY ZONING TABLE - R1-B, SINGLE RESIDENTIAL DISTRICT

Table with 3 columns: REQUIRED, PROVIDED, and a third column. Rows include LOT AREA PER DWELLING UNIT (40,000 SF), MINIMUM LOT FRONTAGE (125 FT), MINIMUM LOT WIDTH AND DEPTH (100 FT AT BUILDING), MAXIMUM BUILDING HEIGHT (35 FT), MAXIMUM NUMBER OF STORIES (3 STORIES), MAXIMUM BUILDING COVERAGE OF LOT (25%), MINIMUM FRONT YARD (25' (50' TO CENTERLINE)), and MINIMUM SIDE/REAR YARD (15').

GENERAL CONSTRUCTION NOTES

- 1. WORK HOURS INCLUDING DELIVERIES AND ON-SITE ENGINE WARM-UP AND IDLING SHALL COMPLY WITH THE SCHOOL DISTRICT'S REQUIREMENTS AND FURTHER SHALL BE LIMITED TO 7:00 AM TO 5:00 PM ON WEEKDAYS WITH NO WORK ON SUNDAY OR LEGAL HOLIDAYS.
2. MARK THE LIMIT OF WORK WITH HIGH VISIBILITY TEMPORARY FENCING.
3. PROVIDE CONVENIENT SANITARY FACILITIES AND TRASH COLLECTION CONTAINERS. REMOVE ANY LITTER OR WASTE TWO TIMES PER WEEK OR MORE FREQUENTLY IF REQUIRED.
4. DUE TO PROXIMITY OF WETLANDS, DUST CONTROL SHOULD BE LIMITED TO THE APPLICATION OF MIST USING POTABLE WATER.
5. DESIGNATE AN ON-SITE REFUELING AREA WITH A PAVED SURFACE AND BERM TO CONTAIN A FUEL SPILL.
6. SWEEP BAY ROAD IN PROXIMITY TO THE SITE DURING EARTH OR MATERIALS TRANSPORT WHENEVER SEDIMENT DEPOSITS ARE VISIBLE.

ABBREVIATIONS

Table with 4 columns: ABBREVIATION, APPROX, APPROXIMATE, MAX, MAXIMUM. Includes terms like BC (BOTTOM OF CURB), BCC (BITUMINOUS CONCRETE), BIT (BITUMINOUS), BLDG (BUILDING), BVV (BORDERING VEGETATED WETLAND), BW (BOTTOM OF WALL), CB (CATCH BASIN), CCB (CAPE COD BERM), CLDI (CONCRETE LINED DUCTILE IRON), CMP (CORRUGATED METAL PIPE), CONC (CONCRETE), COND (CONDUIT), DIA (DIAMETER), DIM (DIMENSION), DMH (DRAIN MANHOLE), E/T/C (ELECTRIC / TELEPHONE / CABLE), EMH (ELECTRIC MANHOLE), EOP (EDGE OF PAVEMENT), EXIST (EXISTING), FND (FOUND), GSO (GAS SHUT OFF), HDPE (HIGH DENSITY POLYETHYLENE), HH (HANDHOLE), HYD (HYDRANT), INV (INVERT ELEVATION).



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PROJECT: ATHLETIC CAMPUS IMPROVEMENTS HAMILTON-WENHAM REGIONAL HIGH SCHOOL 775 BAY ROAD SOUTH HAMILTON, MA 01982
OWNER: HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT 5 SCHOOL STREET WENHAM, MA 01984

Table with 4 columns: NO., DATE, DESCRIPTION, BY. Row 1: 1/22/2024, PEER REVIEW COMM, KFR.

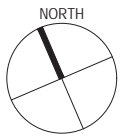
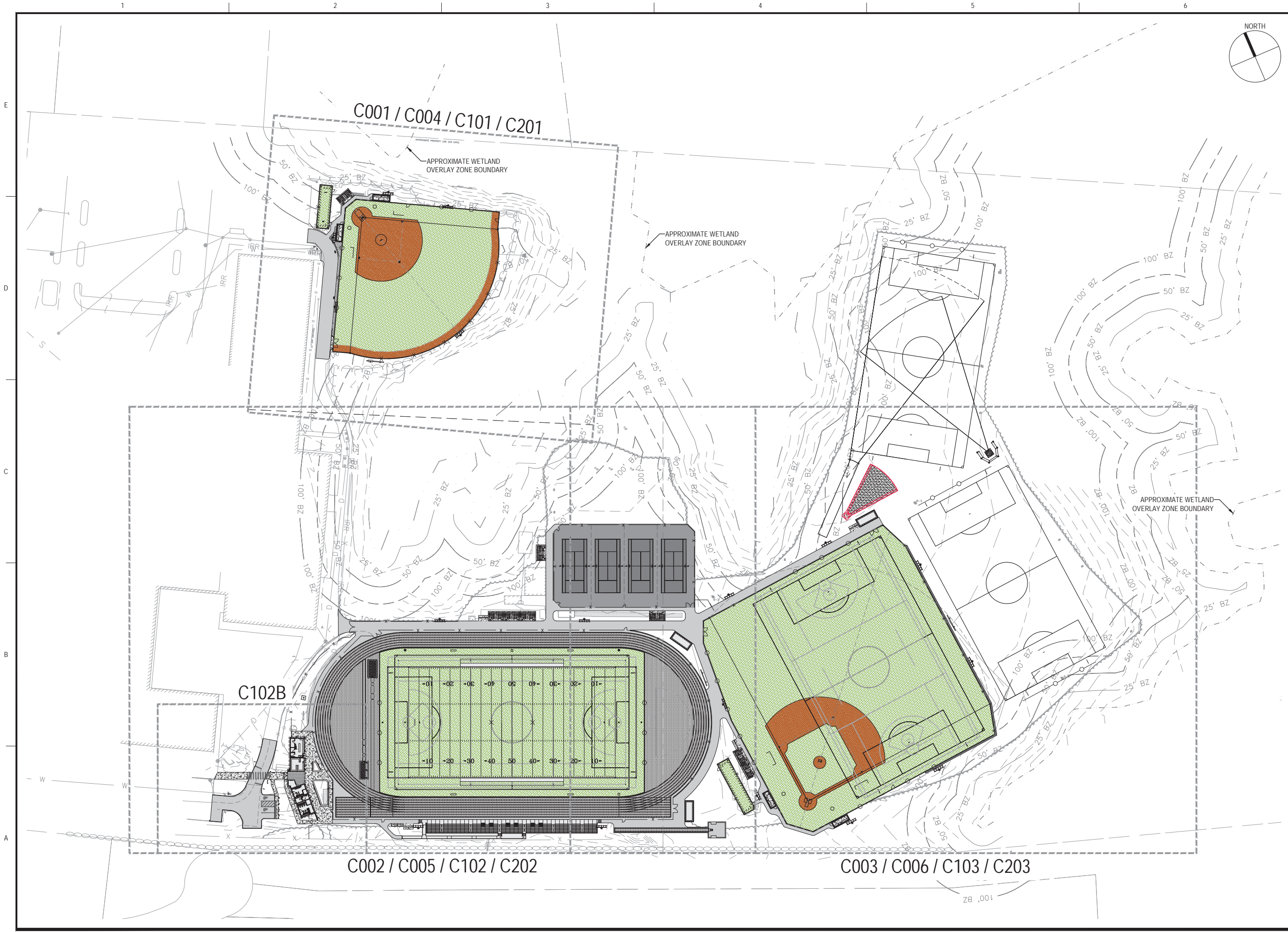
Table with 4 columns: NO., DATE, DESCRIPTION, BY. Row 1: PROJECT NO., 718600. Row 2: CADD FILE, 718600\_G001. Row 3: DESIGNED BY, MSK / KFR. Row 4: DRAWN BY, MSK / KFR. Row 5: CHECKED BY, KDH. Row 6: DATE, 11/16/2023. Row 7: DRAWING SCALE, -.

GRAPHIC SCALE

SHEET TITLE

NOTES AND LEGEND

Table with 2 columns: DRAWING NO., G002. Row 2: 2 OF 33



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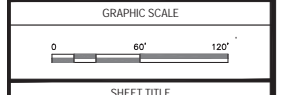
**PERMIT SET**

**PROJECT**  
 ATHLETIC CAMPUS IMPROVEMENTS  
 HAMILTON-WENHAM REGIONAL HIGH SCHOOL  
 775 BAY ROAD  
 SOUTH HAMILTON, MA 01982

**OWNER**  
 HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT  
 5 SCHOOL STREET  
 WENHAM, MA 01984

1/22/2024	PEER REVIEW COMM.	KFR

NO.	DATE	DESCRIPTION	BY
PROJECT NO.	718600		
CADD FILE	718601_C101		
DESIGNED BY	MSK		
DRAWN BY	MSK		
CHECKED BY	KDH		
DATE	11/16/2023		
DRAWING SCALE	1" = 60'		

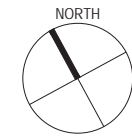


SHEET TITLE

**LAYOUT AND MATERIALS KEY PLAN**

DRAWING NO.  
**C100**

9 OF 33



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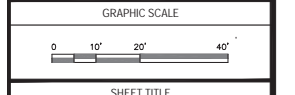
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PROJECT  
**ATHLETIC CAMPUS IMPROVEMENTS  
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 SOUTH HAMILTON, MA 01982**

OWNER  
 HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT  
 5 SCHOOL STREET  
 WENHAM, MA 01984

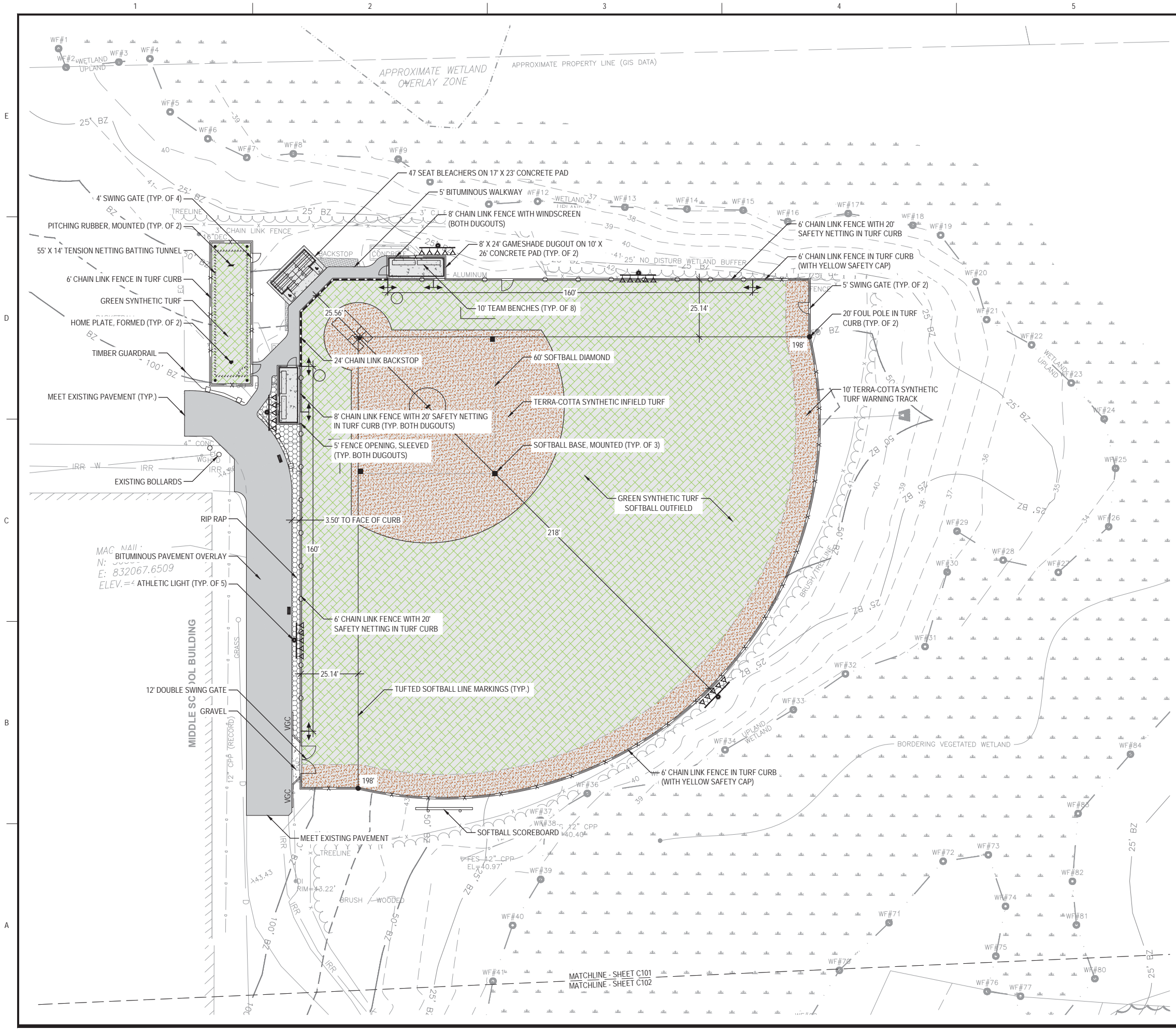
NO.	DATE	DESCRIPTION	BY
PROJECT NO.	718600		
CADD FILE	718601_C101		
DESIGNED BY	MSK		
DRAWN BY	MSK		
CHECKED BY	KDH		
DATE	11/16/2023		
DRAWING SCALE	1" = 20'		



SHEET TITLE

**LAYOUT AND MATERIALS PLAN  
 SHEET 1 OF 4**

DRAWING NO.	<b>C101</b>
10 OF 33	



- LAYOUT AND MATERIALS NOTES:**
- LOAM AND SEED ALL DISTURBED AREAS.
  - CONTRACTOR IS RESPONSIBLE FOR FIRST PAINTING OF ALL NON-TUFTED FIELD STRIPING OR SELECTIVE STRIPING AS SPECIFIED BY THE OWNER.

**LAYOUT AND MATERIALS LEGEND**

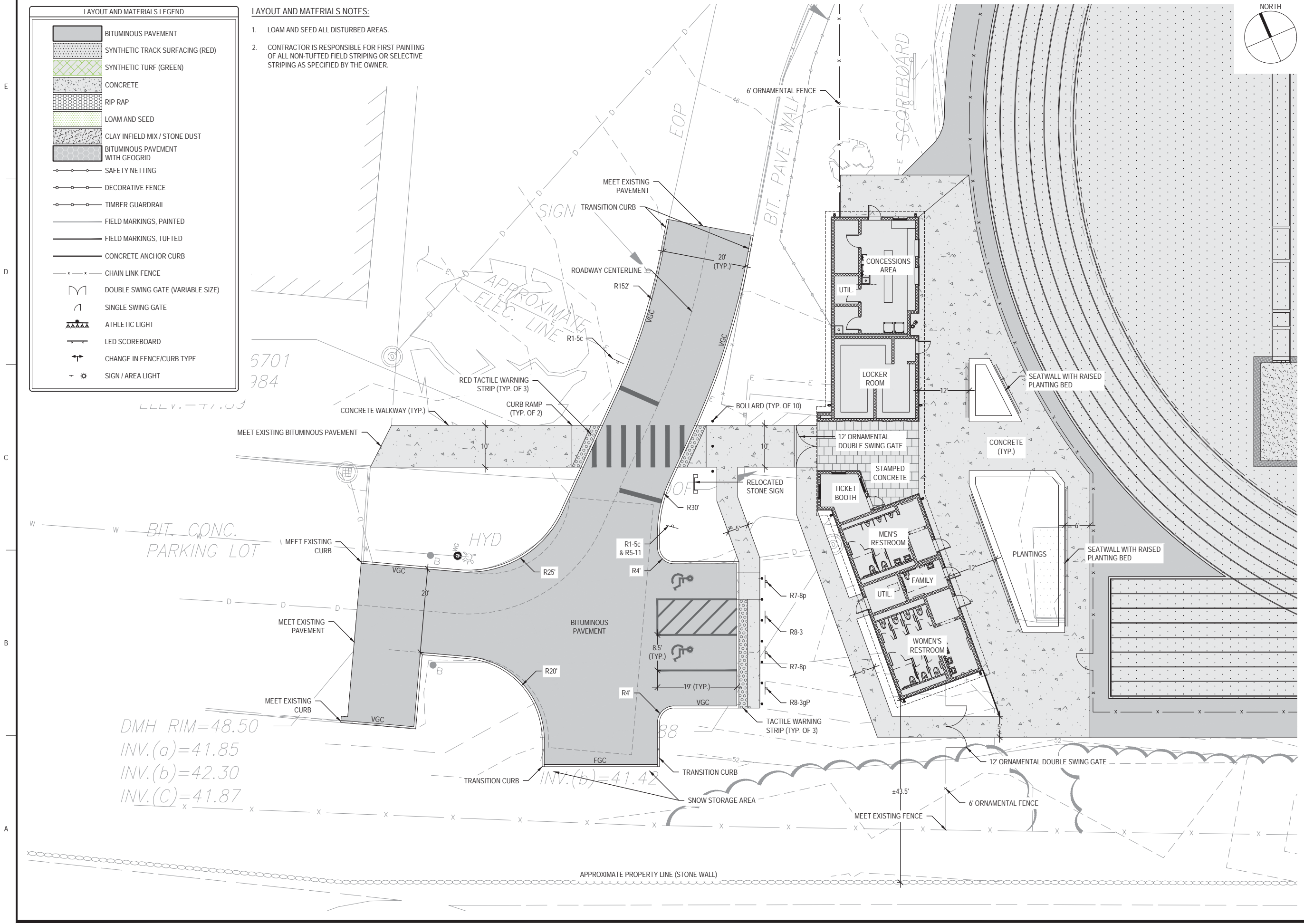
	BITUMINOUS PAVEMENT
	SYNTHETIC TRACK SURFACING (RED)
	SYNTHETIC TURF (GREEN)
	CONCRETE
	RIP RAP
	LOAM AND SEED
	CLAY INFIELD MIX / STONE DUST
	BITUMINOUS PAVEMENT WITH GEOGRID
	SAFETY NETTING
	DECORATIVE FENCE
	TIMBER GUARDRAIL
	FIELD MARKINGS, PAINTED
	FIELD MARKINGS, TUFTED
	CONCRETE ANCHOR CURB
	CHAIN LINK FENCE
	DOUBLE SWING GATE (VARIABLE SIZE)
	SINGLE SWING GATE
	ATHLETIC LIGHT
	LED SCOREBOARD
	CHANGE IN FENCE/CURB TYPE
	SIGN / AREA LIGHT



**LAYOUT AND MATERIALS LEGEND**

[Pattern]	BITUMINOUS PAVEMENT
[Pattern]	SYNTHETIC TRACK SURFACING (RED)
[Pattern]	SYNTHETIC TURF (GREEN)
[Pattern]	CONCRETE
[Pattern]	RIP RAP
[Pattern]	LOAM AND SEED
[Pattern]	CLAY INFILD MIX / STONE DUST
[Pattern]	BITUMINOUS PAVEMENT WITH GEOGRID
[Symbol]	SAFETY NETTING
[Symbol]	DECORATIVE FENCE
[Symbol]	TIMBER GUARDRAIL
[Symbol]	FIELD MARKINGS, PAINTED
[Symbol]	FIELD MARKINGS, TUFTED
[Symbol]	CONCRETE ANCHOR CURB
[Symbol]	CHAIN LINK FENCE
[Symbol]	DOUBLE SWING GATE (VARIABLE SIZE)
[Symbol]	SINGLE SWING GATE
[Symbol]	ATHLETIC LIGHT
[Symbol]	LED SCOREBOARD
[Symbol]	CHANGE IN FENCE/CURB TYPE
[Symbol]	SIGN / AREA LIGHT

- LAYOUT AND MATERIALS NOTES:**
- LOAM AND SEED ALL DISTURBED AREAS.
  - CONTRACTOR IS RESPONSIBLE FOR FIRST PAINTING OF ALL NON-TUFTED FIELD STRIPING OR SELECTIVE STRIPING AS SPECIFIED BY THE OWNER.



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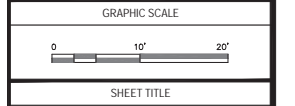
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**PROJECT**  
 ATHLETIC CAMPUS IMPROVEMENTS  
 HAMILTON-WENHAM REGIONAL HIGH SCHOOL  
 SOUTH HAMILTON, MA 01982

**OWNER**  
 HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT  
 5 SCHOOL STREET  
 WENHAM, MA 01984

NO.	DATE	DESCRIPTION	BY
PROJECT NO.	718600		
CADD FILE	718601_C101		
DESIGNED BY	MSK		
DRAWN BY	MSK		
CHECKED BY	KDH		
DATE	1/22/2024		
DRAWING SCALE	1" = 10'		

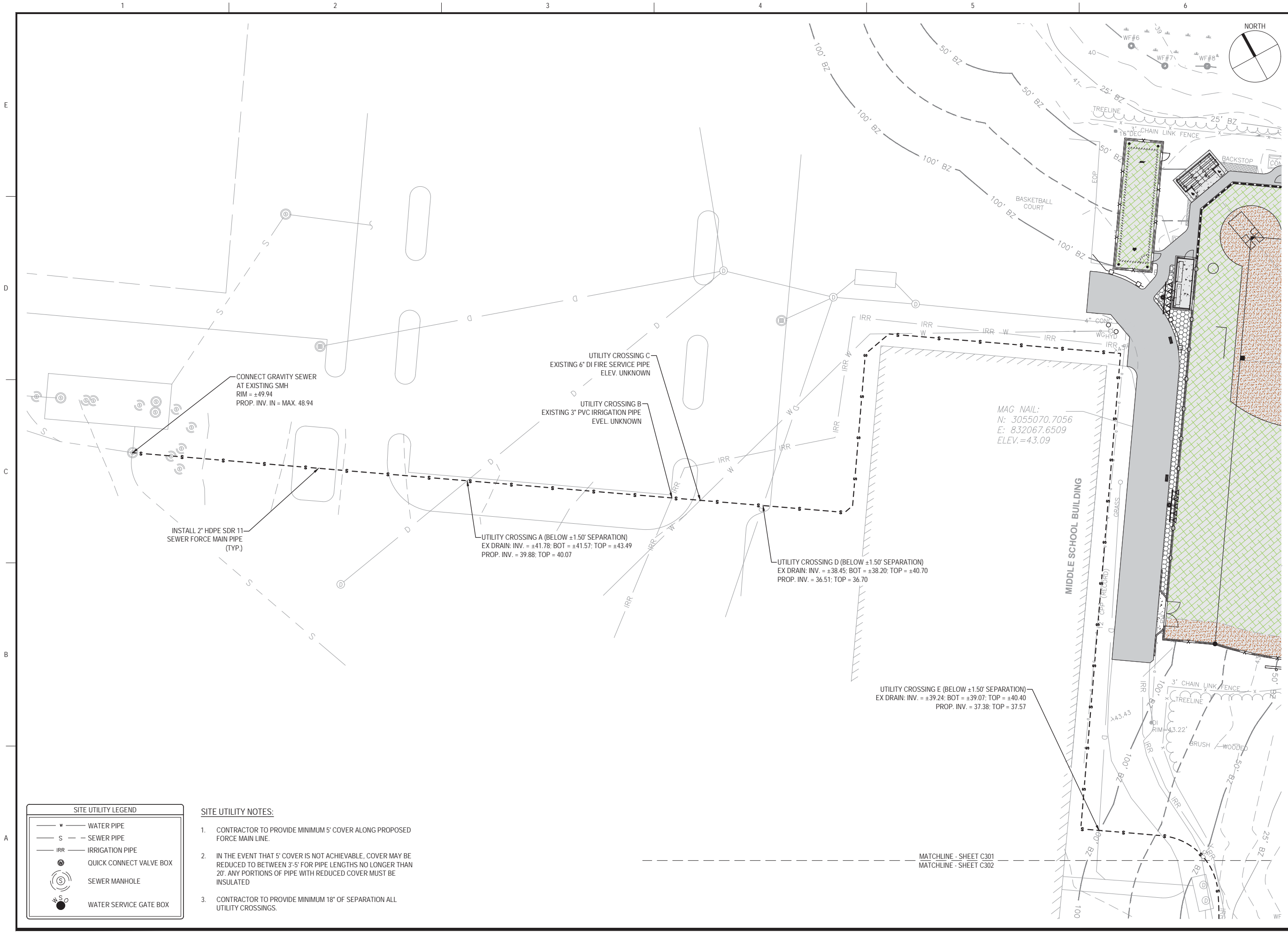


SHEET TITLE  
**LAYOUT AND MATERIALS PLAN  
 SHEET 3 OF 4**

DRAWING NO.  
**C102B**

12 OF 33





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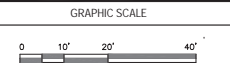
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PROJECT  
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OWNER  
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 5 SCHOOL STREET  
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NO.	DATE	DESCRIPTION	BY
PROJECT NO.	718600		
CADD FILE	718601_C301		
DESIGNED BY	MSK		
DRAWN BY	MSK		
CHECKED BY	KDH		
DATE	1/22/2024		
DRAWING SCALE	1" = 20'		



SHEET TITLE  
**SITE  
 UTILITIES PLAN  
 SHEET 1 OF 2**

DRAWING NO. <b>C301</b>
16 OF 33

**SITE UTILITY LEGEND**

- W — WATER PIPE
- S — SEWER PIPE
- IRR — IRRIGATION PIPE
- ⊕ QUICK CONNECT VALVE BOX
- ⊙ SEWER MANHOLE
- ⊙ W S O WATER SERVICE GATE BOX

- SITE UTILITY NOTES:**
- CONTRACTOR TO PROVIDE MINIMUM 5' COVER ALONG PROPOSED FORCE MAIN LINE.
  - IN THE EVENT THAT 5' COVER IS NOT ACHIEVABLE, COVER MAY BE REDUCED TO BETWEEN 3'-5' FOR PIPE LENGTHS NO LONGER THAN 20'. ANY PORTIONS OF PIPE WITH REDUCED COVER MUST BE INSULATED
  - CONTRACTOR TO PROVIDE MINIMUM 18" OF SEPARATION ALL UTILITY CROSSINGS.

MATCHLINE - SHEET C301  
 MATCHLINE - SHEET C302





1

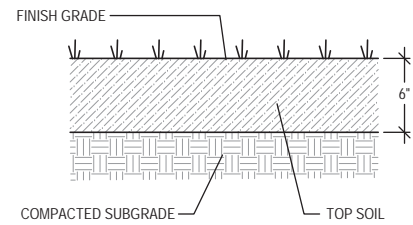
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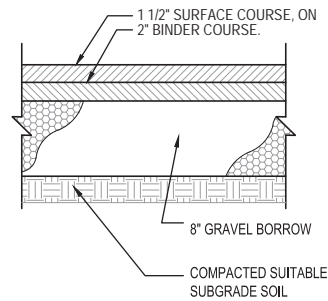
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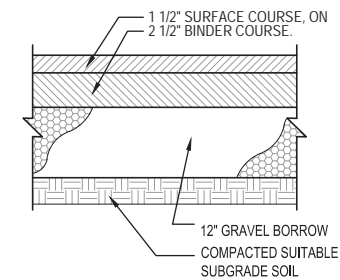
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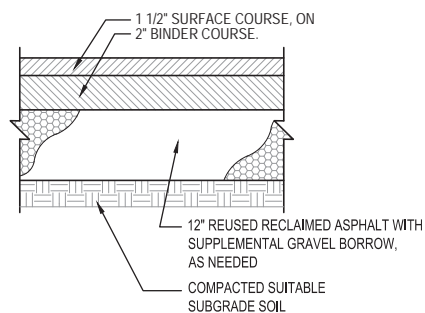
**1 LOAM & SEED (DISTURBED AREAS)**  
N.T.S.



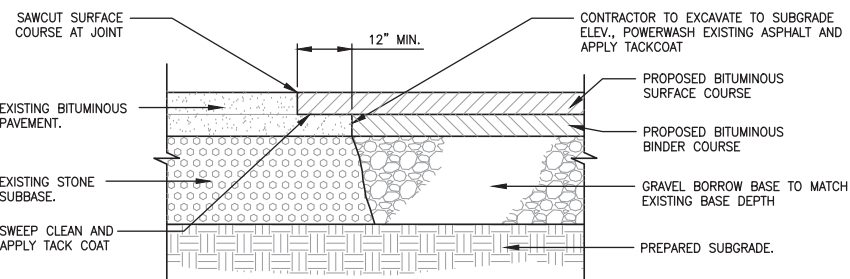
**2 SIDEWALK PAVEMENT SECTION**  
N.T.S.



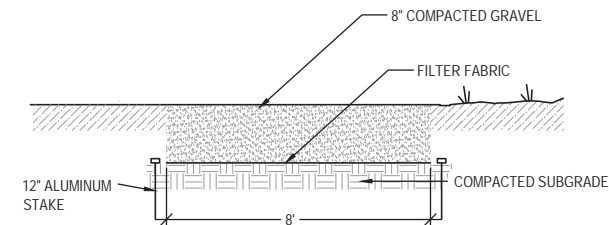
**3 DRIVEWAY PAVEMENT SECTION**  
N.T.S.



**4 DRIVEWAY PAVEMENT SECTION (RECLAIM)**  
N.T.S.

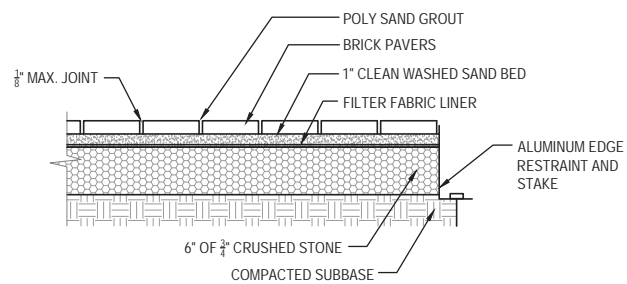


**5 PAVEMENT JOINTING DETAIL**  
N.T.S.

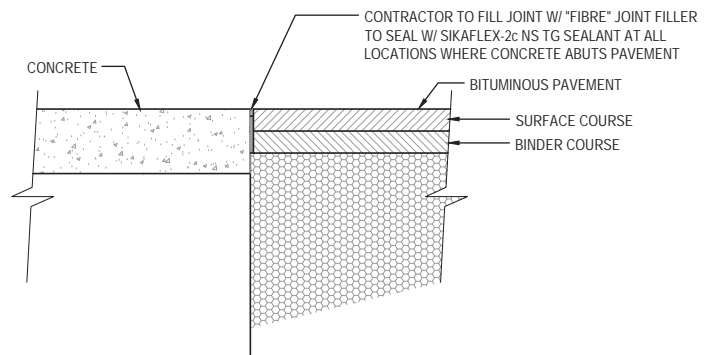


**6 GRAVEL EMERGENCY ACCESS DRIVE**  
N.T.S.

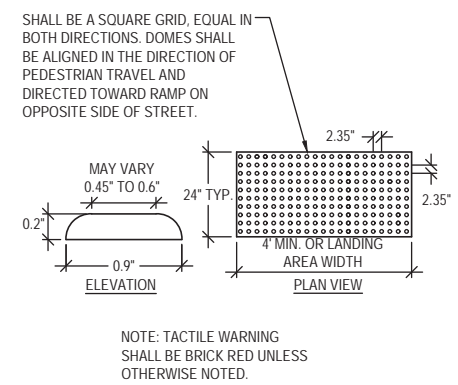
NOTE:  
PATTERN AND COLORS TO BE  
APPROVED BY OWNER PRIOR TO  
INSTALLATION



**7 BRICK PAVERS**  
N.T.S.



**8 TYPICAL CONCRETE TO PAVEMENT DETAIL (ALL CASES)**  
N.T.S.



**9 TACTILE WARNING STRIP**  
N.T.S.



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PROJECT  
**ATHLETIC CAMPUS IMPROVEMENTS  
HAMILTON-WENHAM REGIONAL HIGH SCHOOL  
775 BAY ROAD  
SOUTH HAMILTON, MA 01982**

OWNER  
**HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT  
5 SCHOOL STREET  
WENHAM, MA 01984**

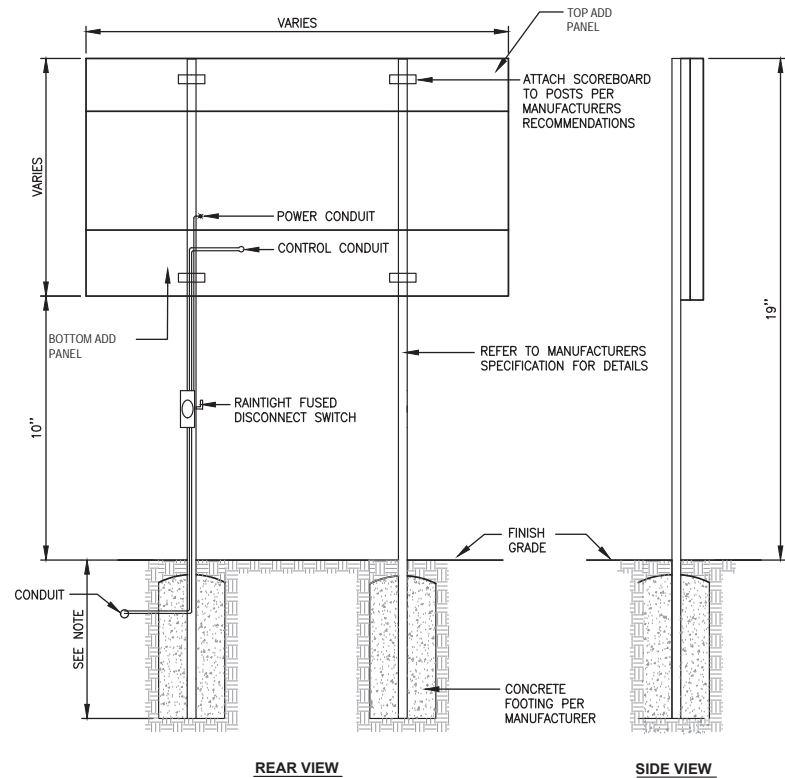
1/22/2024	PEER REVIEW COMM.	KFR
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NO.	DATE	DESCRIPTION	BY
PROJECT NO.	718600		
CADD FILE	718601_C500		
DESIGNED BY	MSK		
DRAWN BY	MSK		
CHECKED BY	KDH		
DATE	1/22/2024		
DRAWING SCALE	N.T.S.		

GRAPHIC SCALE

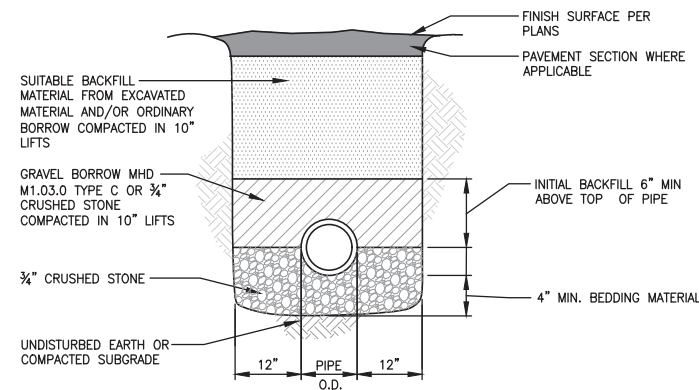
SHEET TITLE  
**GENERAL DETAILS  
SHEET 2 OF 3**

DRAWING NO.  
**C502**



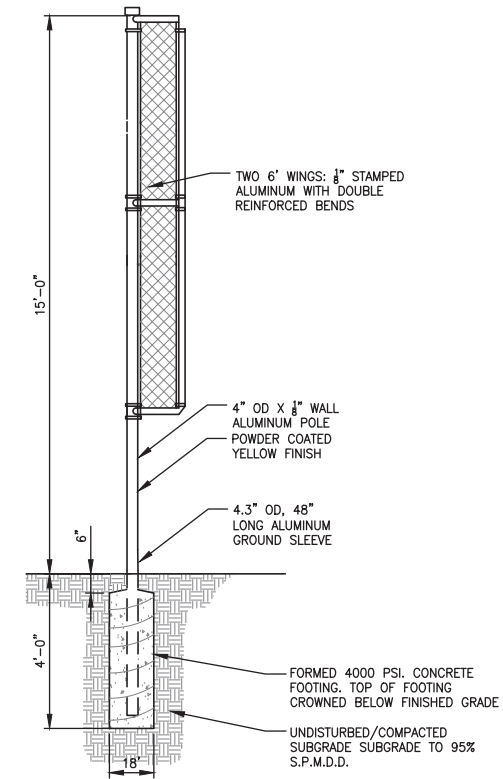
1 SCOREBOARD DETAIL  
N.T.S.

- NOTES:  
 1. SEE SPECIFICATION FOR MODEL NUMBER.  
 2. FOUNDATION DESIGN MUST BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS PRIOR TO INSTALLATION.  
 3. REFER TO SPECIFICATIONS FOR PRODUCT AND INSTALLATION DETAILS.

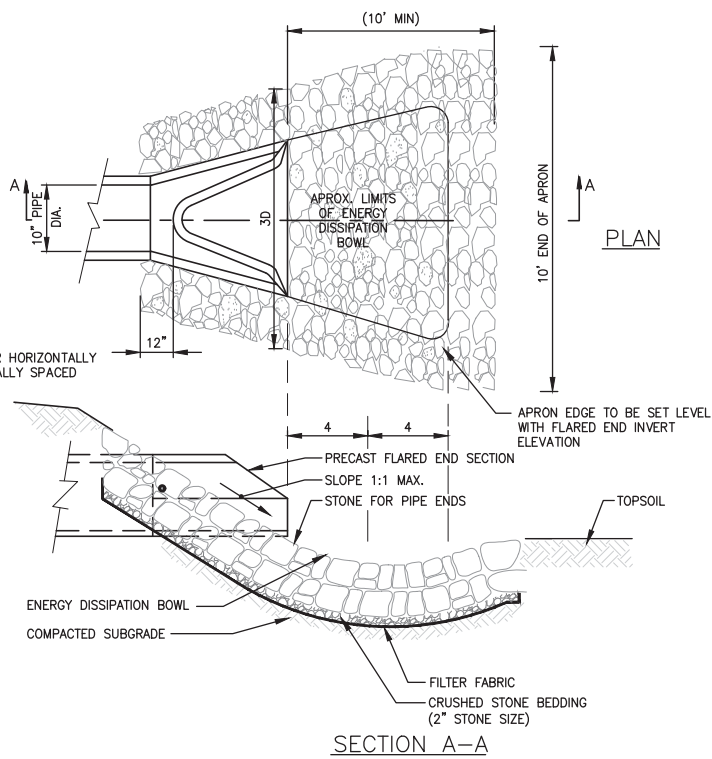


2 HDPE TRENCH DETAIL (UP TO 24" DIA.)  
N.T.S.

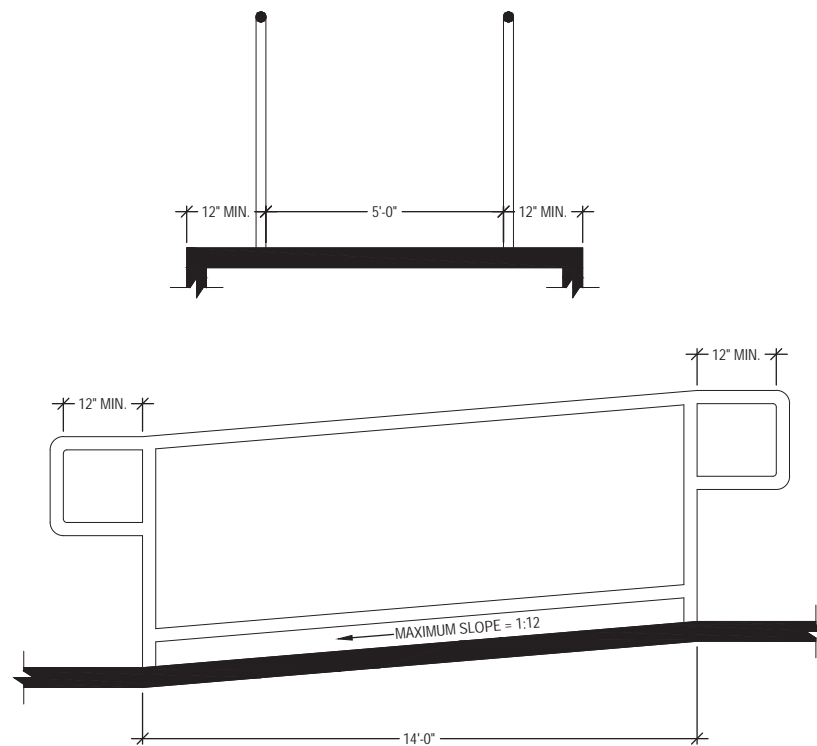
NOTE:  
 CONTRACTOR SHALL PROVIDE SHEETING, TRENCH BOX OR SLOPED WALLS IN ACCORDANCE WITH APPLICABLE SAFETY REGULATIONS



3 FOUL POLE  
N.T.S.

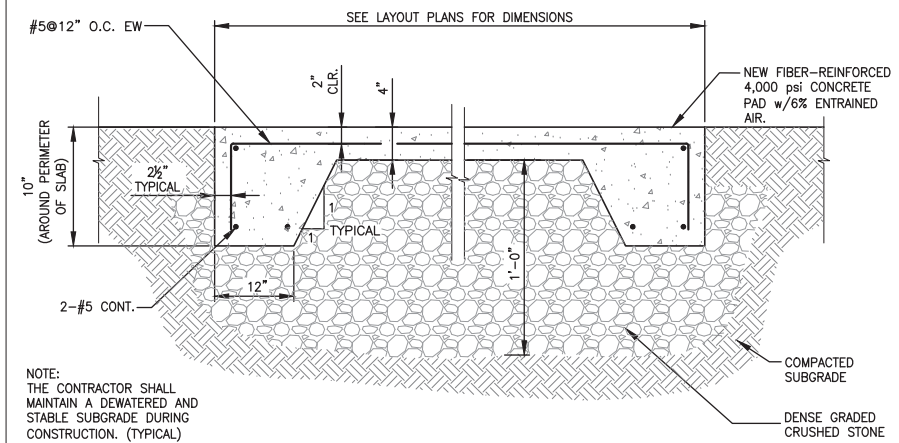


4 FLARED END SECTION & LEVEL SPREADER  
N.T.S.



5 HANDICAP ACCESSIBLE RAMP  
N.T.S.

NOTE:  
 1. REFER TO GRADING AND DRAINAGE PLAN FOR PROPOSED ELEVATIONS.



6 CONCRETE SLAB (BLEACHERS/DUGOUT)  
N.T.S.

NOTE:  
 THE CONTRACTOR SHALL MAINTAIN A DEWATERED AND STABLE SUBGRADE DURING CONSTRUCTION. (TYPICAL)



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PROJECT  
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**775 BAY ROAD**  
**SOUTH HAMILTON, MA 01982**  
 OWNER  
**HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT**  
**5 SCHOOL STREET**  
**WENHAM, MA 01984**

1/22/2024 PEER REVIEW COMM. KFR

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	718600
CADD FILE	718601_C500
DESIGNED BY	MSK
DRAWN BY	MSK
CHECKED BY	KDH
DATE	1/22/2024
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

SHEET TITLE

GENERAL DETAILS  
 SHEET 3 OF 3

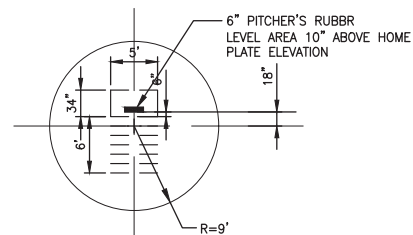
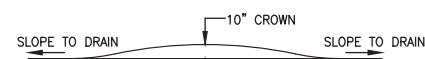
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C503

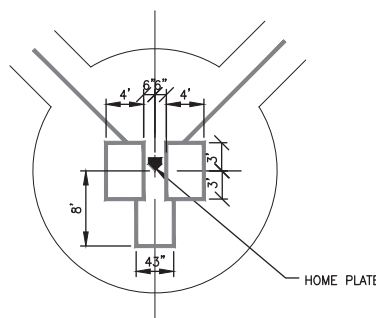
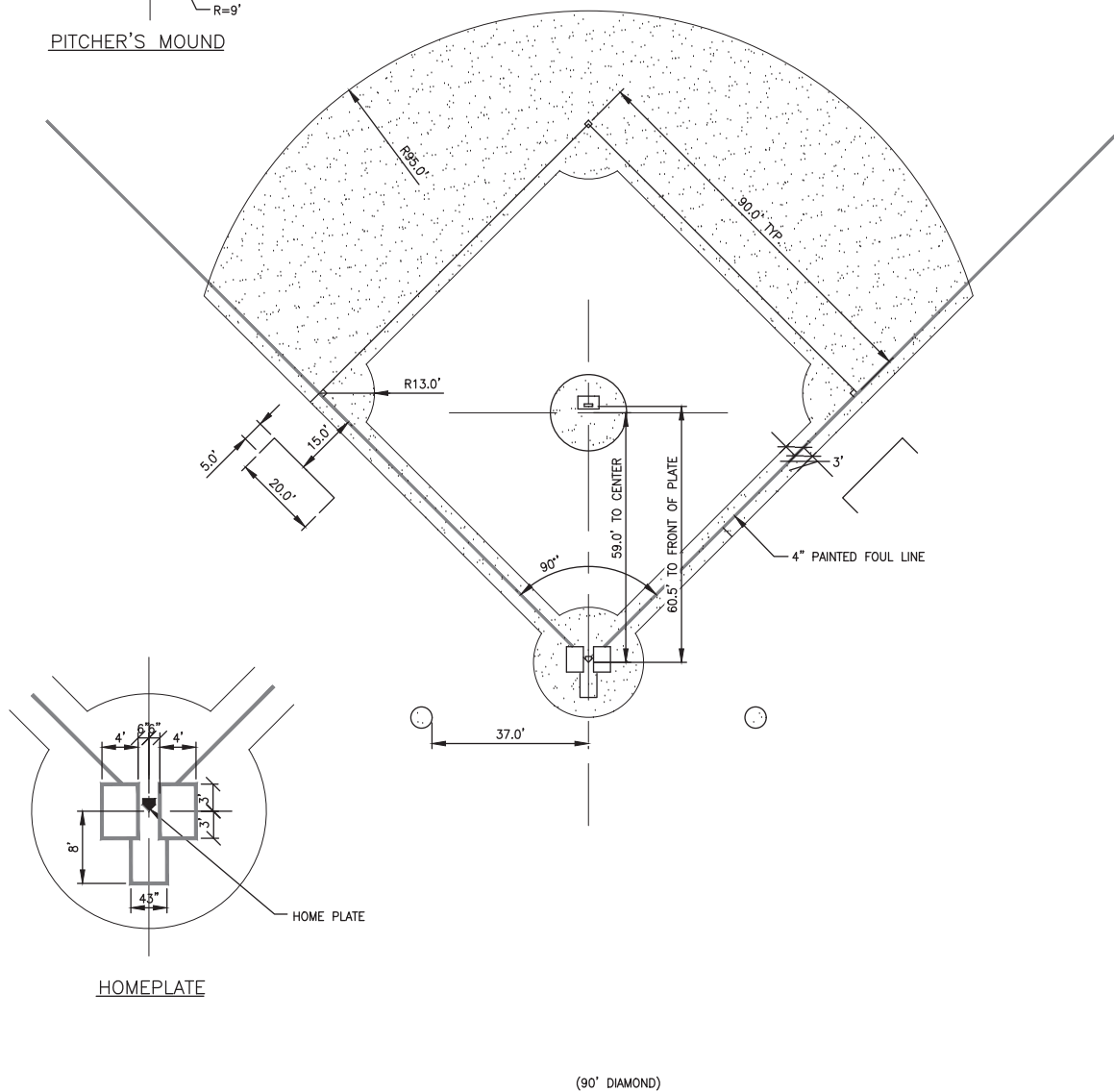
19 OF 33



THE DEGREE OF SLOPE FROM 6" IN FRONT OF THE PITCHER'S PLATE TO A POINT 6' TOWARDS HOME PLATE SHALL BE 1" TO 1', SLOPE SHALL BE UNIFORM

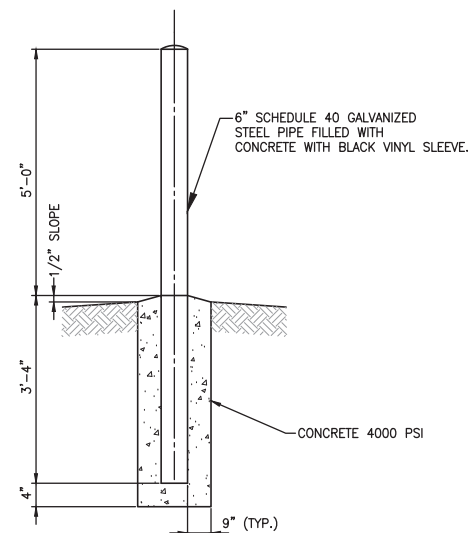


PITCHER'S MOUND

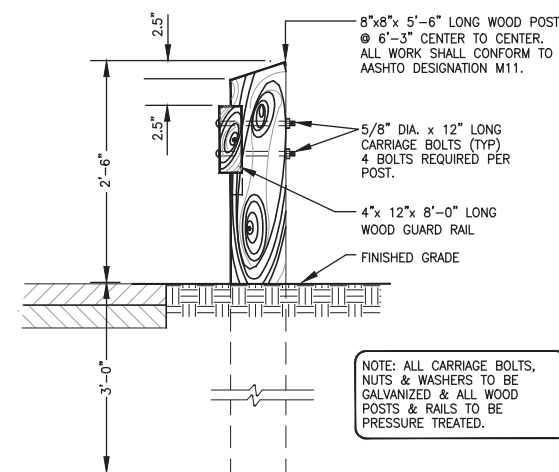


HOMEPLATE

1 BASEBALL INFIELD LAYOUT  
N.T.S.



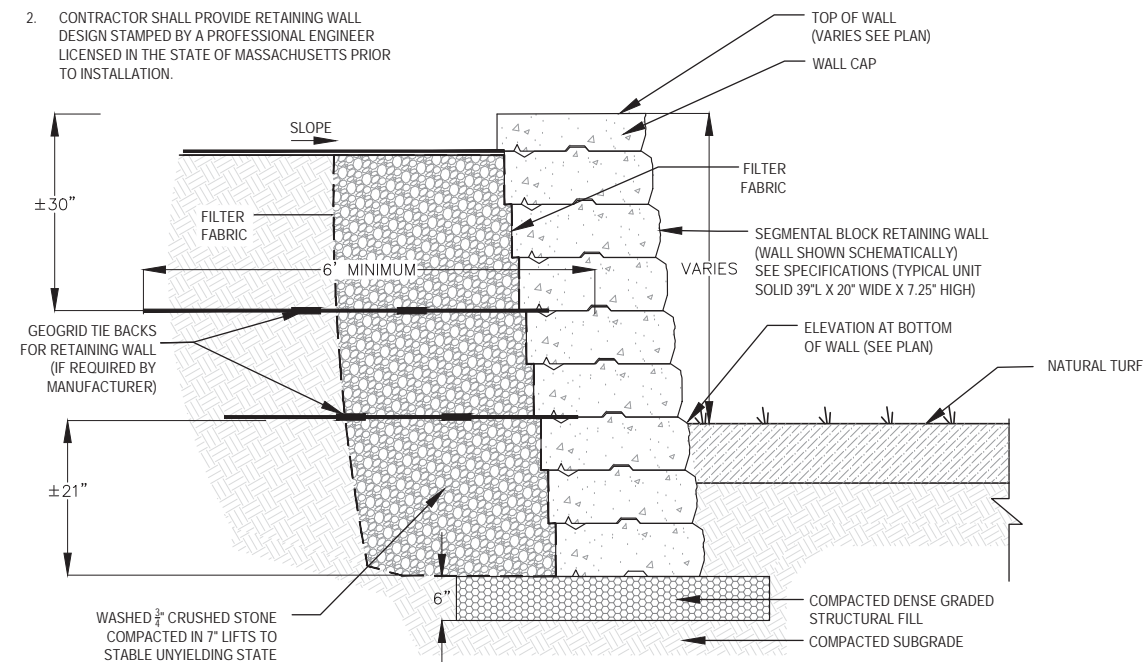
2 BOLLARD DETAIL  
N.T.S.



3 TYP. WOODEN GUARD RAIL DETAIL  
N.T.S.

BACKSTOP FOOTING NOTES:

- CONTRACTOR TO PROVIDE PERTINENT SOIL TESTING FOR USE IN RETAINING WALL DESIGN, PER NOTE 2.
- CONTRACTOR SHALL PROVIDE RETAINING WALL DESIGN STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS PRIOR TO INSTALLATION.



4 SEGMENTAL BLOCK RETAINING WALL  
N.T.S.



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PERMIT SET

PROJECT  
ATHLETIC CAMPUS IMPROVEMENTS  
HAMILTON-WENHAM REGIONAL HIGH SCHOOL  
775 BAY ROAD  
SOUTH HAMILTON, MA 01982

OWNER  
HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT  
5 SCHOOL STREET  
WENHAM, MA 01984

1/22/2024	PEER REVIEW COMM.	KFR
-----------	-------------------	-----

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	718600
CADD FILE	718601_C500
DESIGNED BY	MSK
DRAWN BY	MSK
CHECKED BY	KDH
DATE	1/22/2024
DRAWING SCALE	N.T.S.

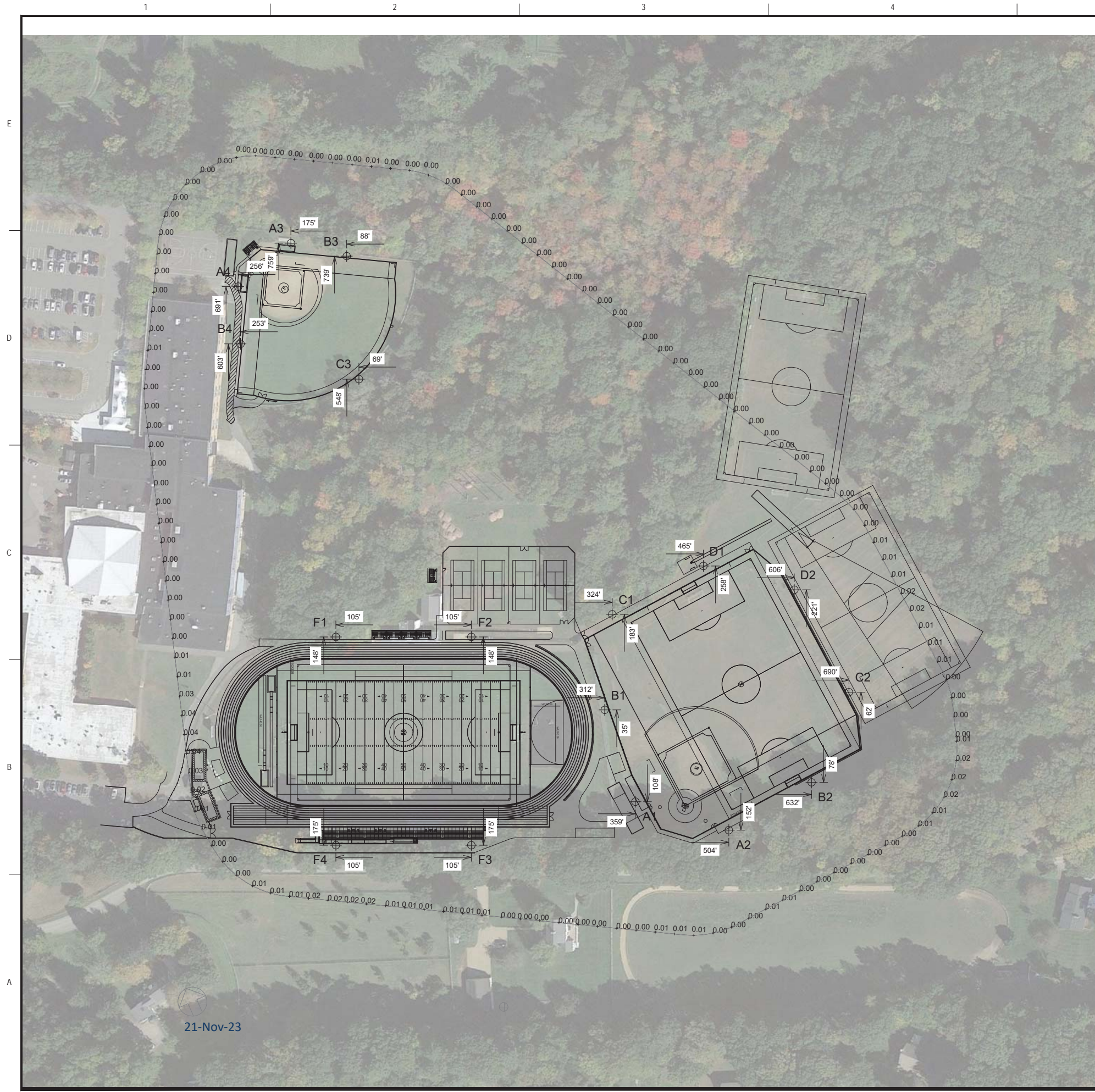
GRAPHIC SCALE

SHEET TITLE

MAIN ATHLETIC CAMPUS DETAILS  
SHEET 7 OF 11

DRAWING NO.

C514



# Hamilton Wenham HS Softball

South Hamilton, MA

Grid Summary	
Name	Spill at 150'
Size	360' x 160'
Spacing	30.0' x 10.0'
Height	3.0' above grade

Illumination Summary	
MAINTAINED VERTICAL FOOTCANDLES: 90° TILT	
Entire Grid	
Scan Average	0.01
Maximum	0
Minimum	0
Avg/Min	-
Max/Min	-
UG (adjacent pts)	0.00
CU	0.00
No. of Points	134
<b>LUMINAIRE INFORMATION</b>	
Applied Circuits	A,B,C,D
No. of Luminaires	129
Total Load	114.78 kW



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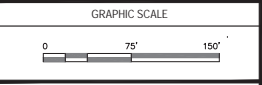
**PERMIT SET**

PROJECT  
**ATHLETIC CAMPUS IMPROVEMENTS  
HAMILTON-WENHAM REGIONAL HIGH SCHOOL  
775 BAY ROAD  
SOUTH HAMILTON, MA 01982**

OWNER  
HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT  
5 SCHOOL STREET  
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NO.	DATE	DESCRIPTION	BY

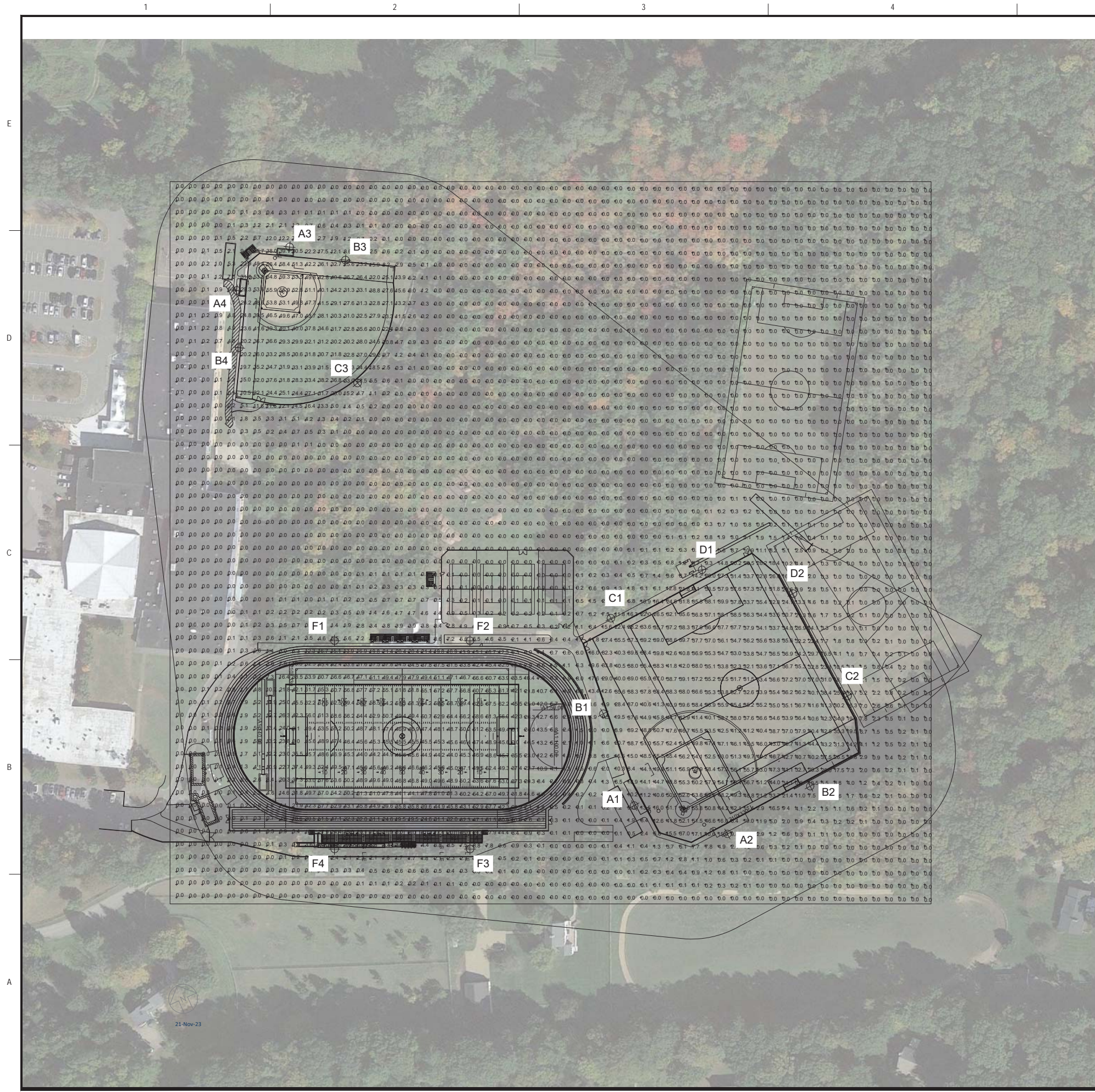
PROJECT NO.	718600
CADD FILE	718600_IS1
DESIGNED BY	MSK
DRAWN BY	MSK
CHECKED BY	KDH
DATE	1/22/2024
DRAWING SCALE	1" = 75'



SHEET TITLE

**ILLUMINATION  
SUMMARY  
(ZERO LINE)**

DRAWING NO.	IS1
1 OF 2	



**Hamilton Wenham HS Softball  
South Hamilton, MA**

Grid Summary	
Name	Zero Grid
Spacing	20.0' x 20.0'
Height	3.0' above grade

Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDELES	
Entire Grid	
Scan Average	8.96
Maximum	68
Minimum	0
Avg/Min -	
Max/Min -	
UG (adjacent pts)	1319.19
CU	0.89
No. of Points	400
<b>LUMINAIRE INFORMATION</b>	
Applied Circuits	A,B,C,D
No. of Luminaires	129
Total Load	114.78 kW



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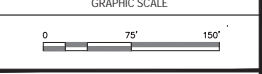
**PERMIT SET**

PROJECT  
**ATHLETIC CAMPUS IMPROVEMENTS  
HAMILTON-WENHAM REGIONAL HIGH SCHOOL  
775 BAY ROAD  
SOUTH HAMILTON, MA 01982**

OWNER  
**HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT  
5 SCHOOL STREET  
WENHAM, MA 01984**

NO.	DATE	DESCRIPTION	BY

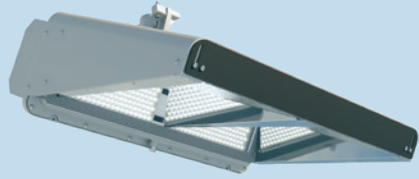
PROJECT NO.	718600
CADD FILE	718600_IS1
DESIGNED BY	MSK
DRAWN BY	MSK
CHECKED BY	KDH
DATE	1/22/2024
DRAWING SCALE	1" = 50'



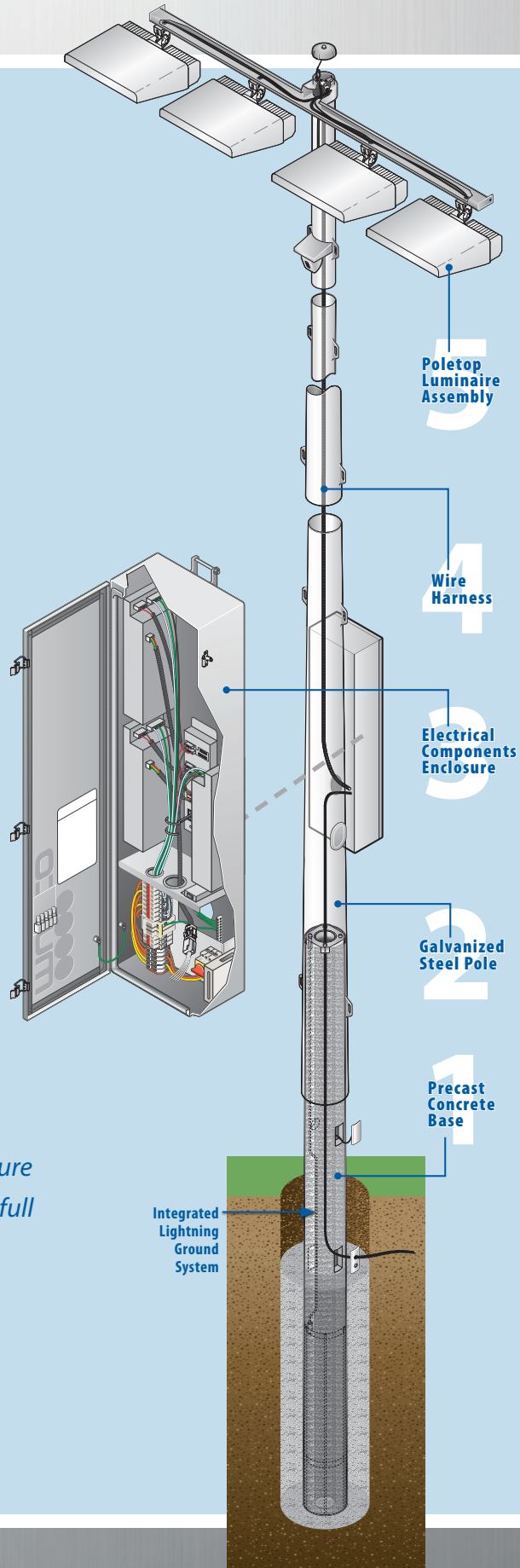
SHEET TITLE

**ILLUMINATION  
SUMMARY  
(OVERALL)**

DRAWING NO.	IS2
2 OF 2	



**TLC for LED**<sup>®</sup>  
Total Light Control™



*"Advancements in all aspects of fixture design are critical to achieving the full performance of LED technology."*

— U.S. Department of Energy  
[www.energy.gov/eere/ssl/led-basics](http://www.energy.gov/eere/ssl/led-basics)

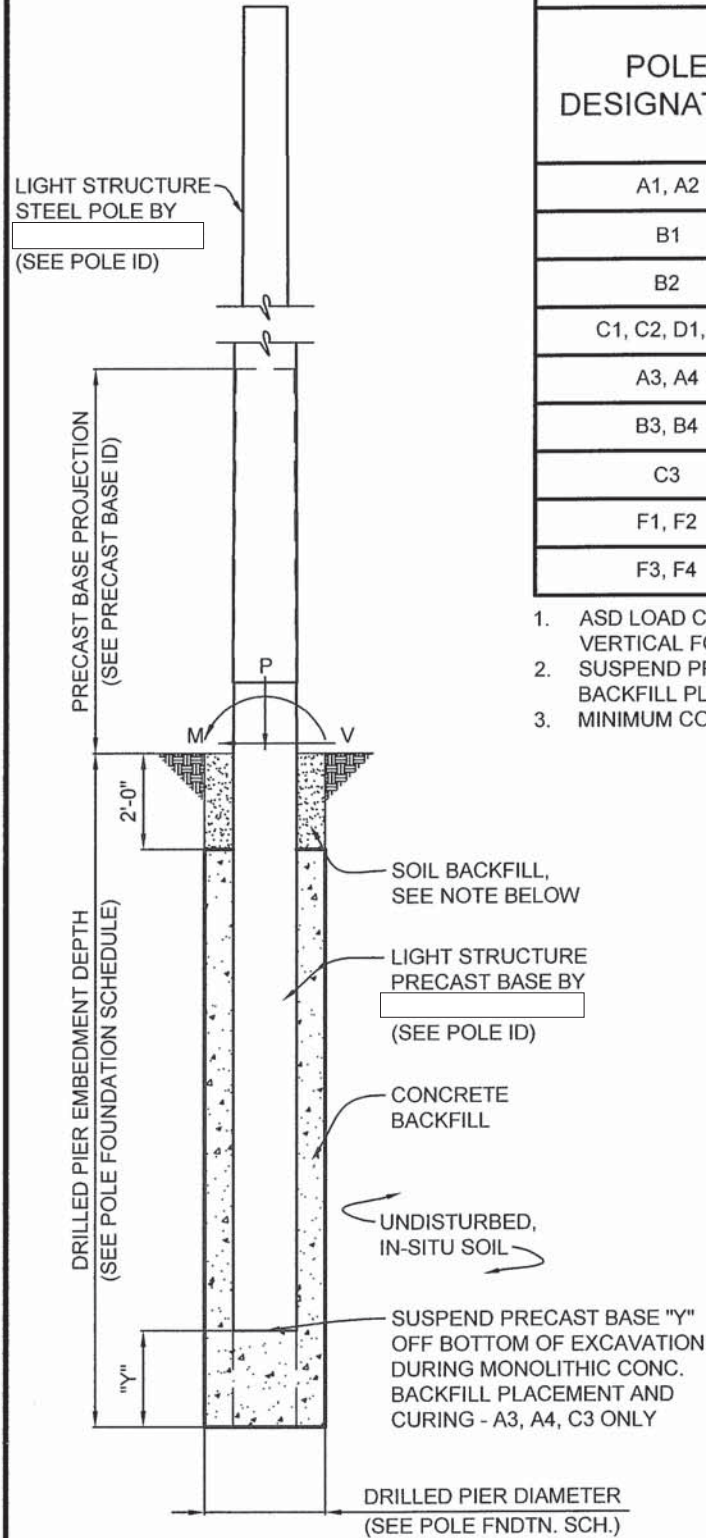
Typical Athletic Light - Assembly



## Total Light Control™ – TLC-LED-1200 Luminaire



Typical Light Fixture with Shield



**POLE FOUNDATION ELEV.**

SCALE: NOT TO SCALE

**SOIL BACKFILL NOTE:**

THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL, WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).

POLE FOUNDATION SCHEDULE							
POLE DESIGNATION	FORCES (1.)			DRILLED PIER			
	MOMENT (M) FT-LBS	SHEAR (V) LBS	VERTICAL (P) LBS	DIAMETER INCHES	EMBEDMENT DEPTH	SUSPENSION "Y" (2.)	CONCRETE BACKFILL YD <sup>3</sup> (3.)
A1, A2	99,626	2,142	2,916	36	16'-0"	NA	2.8
B1	144,146	2,641	3,445	48	16'-0"	NA	5.6
B2	144,948	2,649	3,445	48	16'-0"	NA	5.6
C1, C2, D1, D2	100,925	2,157	2,916	36	16'-0"	NA	2.8
A3, A4	50,878	1,247	1,284	36	13'-0"	1'-0"	2.6
B3, B4	71,847	1,685	1,956	36	14'-0"	NA	2.6
C3	44,058	1,226	1,248	36	13'-0"	3'-0"	2.7
F1, F2	135,693	2,648	3,361	48	16'-0"	NA	5.6
F3, F4	136,871	2,658	3,361	48	16'-0"	NA	5.6

- ASD LOAD COMBINATION D + 0.6W. VERTICAL FORCE IS WEIGHT OF DRESSED POLE (DOES NOT INCLUDE PRECAST BASE WEIGHT)
- SUSPEND PRECAST BASE "Y" OFF THE BOTTOM OF THE EXCAVATION DURING MONOLITHIC CONCRETE BACKFILL PLACEMENT AND CURING. NA = NOT APPLICABLE, SUSPENSION NOT REQUIRED.
- MINIMUM CONCRETE BACKFILL VOLUME, SITE CONDITIONS MAY REQUIRE ADDITIONAL BACKFILL.

PRECAST BASE IDENTIFICATION					
PRECAST BASE TYPE	PRECAST BASE WEIGHT	PRECAST BASE LENGTH	PROJECTION ABOVE GRADE	STANDARD EMBEDMENT	OUTSIDE DIAMETER
2B	1,690 LBS	17'-3"	7'-3"	10'-0"	12.00"
3B	2,470 LBS	20'-0"	8'-0"	12'-0"	13.38"
4B	3,490 LBS	22'-0"	8'-0"	14'-0"	15.75"
5B	4,580 LBS	23'-11"	7'-11"	16'-0"	18.25"

POLE IDENTIFICATION				
POLE DESIGNATION	POLE TYPE	PRECAST BASE TYPE	FIXTURE CONFIGURATION (FIX. PER XARM)	FIXTURE AND ACCESSORIES EPA (FT <sup>2</sup> )
A1, A2	LSS80B	5B	6 (5)	13.5
B1	LSS90A	5B	10 (7)	22.8
B2	LSS90A	5B	10 (7)	22.8
C1, C2, D1, D2	LSS80B	5B	6 (5)	14.0
A3, A4	LSS70A	3B	3 (3)	7.2
B3, B4	LSS70C	4B	6 (5)	13.0
C3	LSS60A	2B	7 (4)	15.7
F1, F2	LSS80B	5B	12 (5+5)	27.3
F3, F4	LSS80B	5B	12 (5+5)	27.3

- POLES B3 & B4 HAVE (1) MUSCO LED FIXTURE AT 30'-0" AGL INCLUDED ABOVE.
- POLES F3 & F4 HAVE (2) MUSCO LED FIXTURES AT 25'-0" AGL INCLUDED ABOVE.
- POLE B2 HAS (3) MUSCO LED FIXTURES AT 20'-0" AGL INCLUDED ABOVE.
- POLES A1, A2, C1, C2, D1, & D2 HAVE (1) MUSCO LED FIXTURE AT 15'-6" AGL INCL. ABOVE.
- POLES B1 & C3 HAVE (3) MUSCO LED FIXTURES AT 15'-6" AGL INCLUDED ABOVE.
- POLES F1 & F2 HAVE (2) MUSCO LED FIXTURES AT 15'-6" AGL INCLUDED ABOVE.

**DESIGN NOTES**

**DESIGN PARAMETERS:**

WIND:  $V_{ult} = 127$  MPH,  $V_{asd} = 98$  MPH (EXPOSURE C, RISK CATEGORY II) PER MASSACHUSETTS STATE BUILDING CODE - 780 CMR, 9TH EDITION (IBC 2015 / ASCE 7-10).

**GEOTECHNICAL PARAMETERS:**

ALLOWABLE END BEARING SOIL PRESSURE: 3,000 PSF  
 ALLOWABLE LATERAL SOIL BEARING PRESSURE:  
 0 PSF/FT (GRADE TO -2'-0"); 240 PSF/FT (-2'-0" TO -5'-0"); 115 PSF/FT (BELOW -5'-0")  
 IN ACCORDANCE WITH MASSACHUSETTS STATE BUILDING CODE - 780 CMR, 9TH EDITION, CHAPTER 18.

DESIGN SOIL PARAMETERS ARE AS NOTED. ACTUAL ALLOWABLE SOIL PARAMETERS MUST BE VERIFIED ON SITE. REFERENCE GEOTECHNICAL ENGINEERING REPORT, FILE NO. 91770.00, PREPARED BY NOBIS ENGINEERING, INC.; CONCORD, NH.

A GEOTECHNICAL ENGINEER OR REPRESENTATIVE OF IS RECOMMENDED (NOT REQUIRED) TO BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.

ENCOUNTERING SOIL FORMATIONS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS OR EXCAVATION PROCEDURES MAY OCCUR. POLE FOUNDATIONS WILL NEED TO BE ANALYZED ACCORDING TO THE SOIL CONDITIONS THAT EXIST. IF ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDINGLY. REVISIONS WILL BE ANALYZED PER RECOMMENDATIONS DIRECTED BY A REGISTERED ENGINEER.

ALL EXCAVATIONS MUST BE FREE OF LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND CONCRETE BACKFILL PLACEMENT. TEMPORARY CASINGS OR DRILLERS SLURRY MAY BE USED TO STABILIZE THE EXCAVATION DURING INSTALLATION. CASINGS MUST BE REMOVED DURING CONCRETE BACKFILL PLACEMENT. CONCRETE BACKFILL MUST BE PLACED WITH A TREMIE WHEN SLURRY OR WATER IS PRESENT WITHIN THE EXCAVATION.

CONTRACTOR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS, AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.

**CONCRETE:**

CONCRETE SHALL BE AIR-ENTRAINED AND HAVE A MINIMUM COMPRESSIVE DESIGN STRENGTH AT 28 DAYS OF 3,000 PSI. 3,000 PSI CONCRETE SPECIFIED FOR EARLY POLE ERECTION, ACTUAL REQUIRED MINIMUM ALLOWABLE CONCRETE STRENGTH IS 1,000 PSI. ALL PIERS AND CONCRETE BACKFILL MUST BEAR ON AND AGAINST FIRM UNDISTURBED SOIL.

**GENERAL NOTES:**

FIXTURES MUST BE LOCATED TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY OBSTRUCTION. ENGINEER MUST BE NOTIFIED IF FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WITHIN / NEAR ANY SLOPES STEEPER THAN 3H : 1V. POLES, FIXTURES, PRECAST BASES, ELECTRICAL ITEMS AND INSTALLATION LIGHTING.



HAMILTON-WENHAM  
 HIGH SCHOOL  
 FIELD LIGHTING  
 SOUTH HAMILTON, MA

STRUCTURAL  
 ENGINEERS, P.C.  
 114 NICHOLAS DRIVE  
 MARSHALLTOWN, IOWA 50158  
 PHONE NUMBER: 641-752-6334  
 EMAIL: MSL.INFO@SEPC.BIZ

DRAWING TITLE:  
 POLE AND FOUNDATION  
 SCALE: SEE PLAN  
 NOTES:  
 SCAN #108724D

PROJECT NUMBER  
 108724

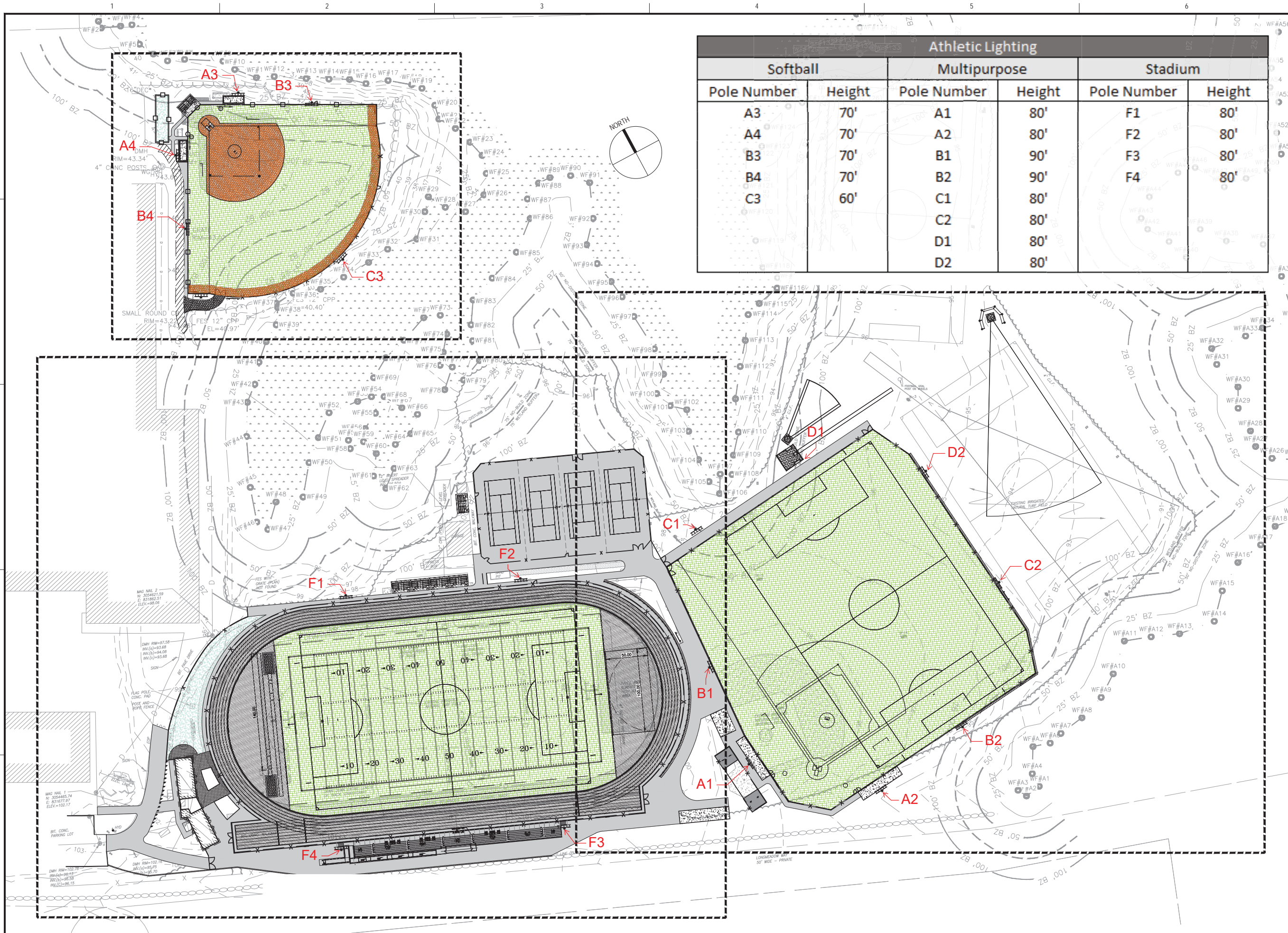
DATE  
 01 DECEMBER 2023

DRAWING NUMBER  
 C1

OF ONE



Progression of Athletic Lighting



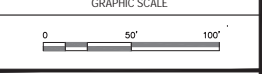
Athletic Lighting					
Softball		Multipurpose		Stadium	
Pole Number	Height	Pole Number	Height	Pole Number	Height
A3	70'	A1	80'	F1	80'
A4	70'	A2	80'	F2	80'
B3	70'	B1	90'	F3	80'
B4	70'	B2	90'	F4	80'
C3	60'	C1	80'		
		C2	80'		
		D1	80'		
		D2	80'		

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**PROJECT**  
 ATHLETIC CAMPUS IMPROVEMENTS  
 HAMILTON-WENHAM REGIONAL HIGH SCHOOL  
 775 BAY ROAD  
 SOUTH HAMILTON, MA 01982

**OWNER**  
 HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT  
 5 SCHOOL STREET  
 WENHAM, MA 01984

NO.	DATE	DESCRIPTION	BY
PROJECT NO.		718600	
CADD FILE		718600_C101	
DESIGNED BY		MSK	
DRAWN BY		MSK	
CHECKED BY		KDH	
DATE		1/19/2024	
DRAWING SCALE		1" = 50'	



SHEET TITLE  
 ATHLETIC LIGHTING  
 POLE HEIGHT EXHIBIT  
 PLAN

DRAWING NO.  
 EXH-1  
 9 OF 33



ASSESSOR'S MAP 40, LOT 11  
MAP 41, LOT 1

ZONING: R-19 SINGLE RESIDENTIAL DISTRICT  
CONSERVANCY DISTRICT

REFERENCES:  
DEEDS: DEED BOOK 4717, PAGE 212

PLANS: PLAN BOOK 56, PLAN 19  
PLAN #678 OF 1960

- NOTES:
- SEE SHEET 2 OF 3 FOR LEGEND.
  - ELEVATIONS SHOWN HEREON REFER TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (MEAN SEA LEVEL).
  - THE 30' CONTOUR LINE SHOWN (CONSERVANCY DISTRICT) IS BASED ON ACTUAL FIELD DETERMINATION OF ELEVATION 30' ON THE GROUND.
  - THE 100 YEAR FLOODPLAIN ELEVATION IN THIS PORTION OF THE MILES RIVER IS ELEVATION 28.0 FLOOD INSURANCE RATE MAP - COMMUNITY #250084 DATED 6/4/90.
  - WETLANDS SHOWN HEREON WERE DELINEATED BY CAROL JOHNSON ASSOCIATES WITH THE EXCEPTION OF THE FOLLOWING: FLASGS DESIGNATED L.E.C. WERE PLACED BY LELITO ENVIRONMENTAL CONSULTANTS, INC. AND THOSE FLAGS DESIGNATED WITH THE SUFFIX "A" WERE PLACED BY THE HAMILTON CONSERVATION COMMISSION.
  - WETLAND FLASGS #225 THROUGH #230 WERE NOT REVIEWED BY THE HAMILTON CONSERVATION COMMISSION DURING THE FEBRUARY 4, 1995 SITE WALK.
  - UNDERGROUND UTILITIES SHOWN HEREON ARE COMPILED FROM FIELD LOCATIONS OF STRUCTURES AND FROM AVAILABLE RECORD INFORMATION ON FILE AT THE TOWN ENGINEER'S OFFICE, TOWN D.P.W., MASS HIGHWAY DEPT., AND UTILITY COMPANIES. OTHER UNDERGROUND SERVICES EXIST. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER AND THE CONTRACTOR TO VERIFY THE LOCATION, SIZE AND ELEVATION OF ALL UTILITIES WITHIN THE AREA OF PROPOSED WORK AND TO CONTACT "DUG-SAFE" AT 1-800-322-4844 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR CONSTRUCTION.
  - LOCATION OF SEPTIC LEACHING FIELD FROM PLAN ENTITLED "HAMILTON - WENHAM REGIONAL HIGH SCHOOL" BY KILHAM, HOPKINS, GREELEY & BRODIE, ARCHITECTS DATED 3/30/61.
  - INTERIOR BUILDING PARTITIONS SHOWN HEREON ARE APPROXIMATE ONLY AND ARE NOT TO BE USED FOR DESIGN PURPOSES.
  - EVIDENCE OF UNDERGROUND ELECTRIC LINES EXIST AT THE UTILITY POLES AND PARKING LOT LIGHTS SHOWN HEREON. THE LOCATIONS OF SAID LINES ARE UNKNOWN.

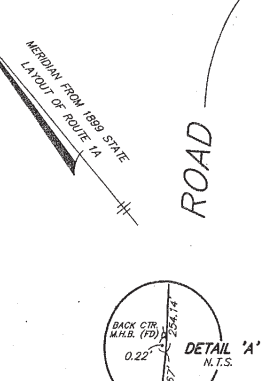
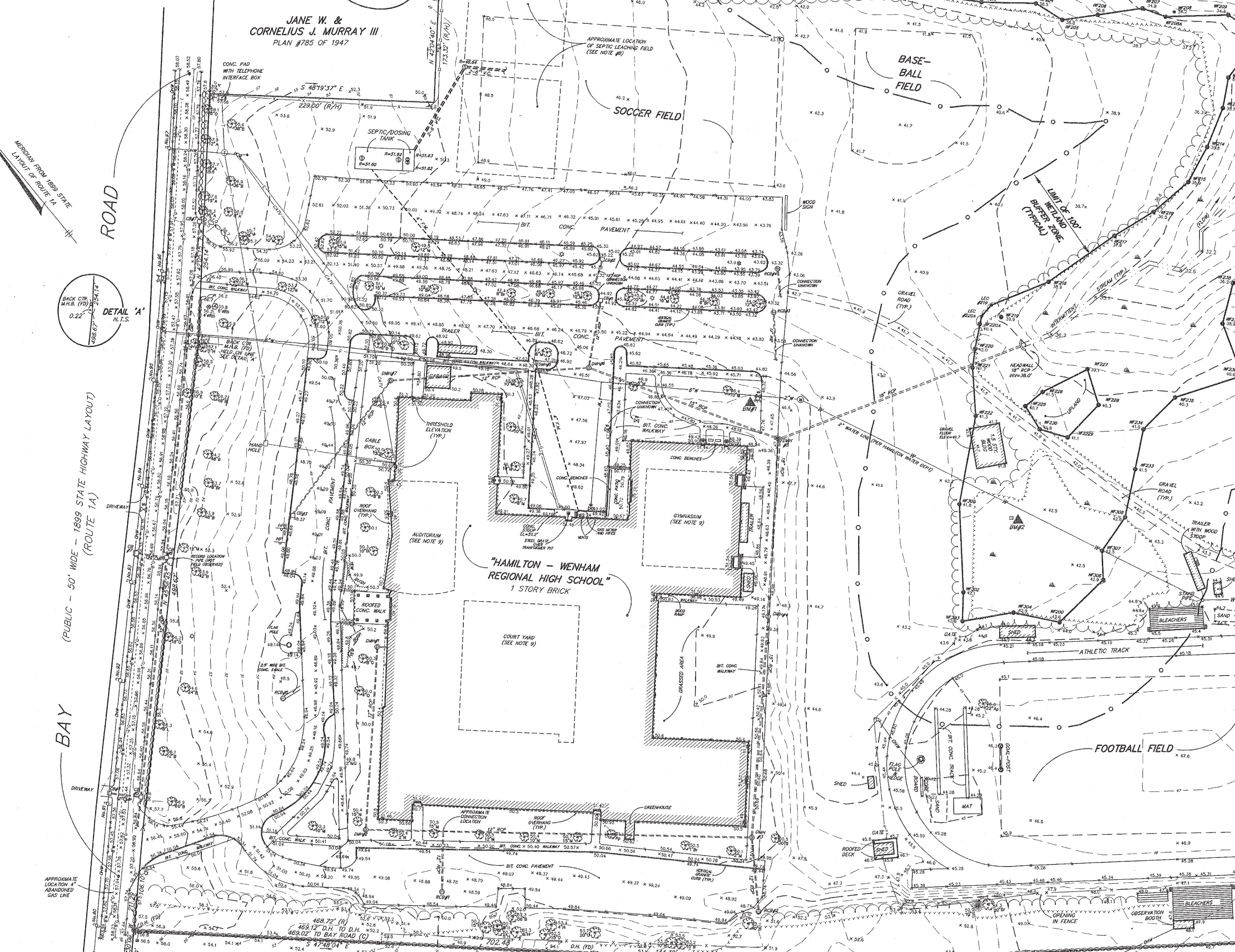
UTILITY OPERATING AUTHORITIES:  
WATER: TOWN OF HAMILTON  
BAY ROAD DRAINAGE:  
COMMONWEALTH OF MASSACHUSETTS  
GAS: ESSEX COUNTY GAS COMPANY  
TELEPHONE: NEW ENGLAND TELEPHONE  
CABLE/TV: CONTINENTAL CABLEVISION  
ELECTRIC: MASSACHUSETTS ELECTRIC CO.

TABLE OF UTILITY STRUCTURE DATA

STRUCTURE	RIM	INVERT
DMH #1	50.44	12" IN = 46.2
DMH #2	50.44	12" OUT = 46.2
RCB #1	48.54	12" IN = 45.8
RCB #2	50.0	12" OUT = 45.7
DMH #3	50.2	12" IN = 45.4
DMH #4	49.08	12" IN = 43.2 (S)
DMH #5	47.68	12" IN = 43.4 (W)
RCB #3	42.96	15" OUT = 43.2
RCB #4	43.12	15" IN = 42.2
DMH #6	46.20	18" OUT = 42.2
CB #2	45.12	18" IN = 41.2
DMH #7	50.42	18" OUT = 40.1
CB #3	48.34	12" IN = 41.7
RCB #5	48.04	15" OUT = 41.7
SMH #1	47.80	41.9' AT TOP OUTLET HOOD
BAY ROAD		41.9' AT TOP OUTLET HOOD
CB #4	56.94	NO PIPES OBSERVED
CB #5	56.64	53.4' = WATER ELEV. (3/21/96)
CB #6	55.74	49.9' AT SUMP
CB #7	56.30	CRUSHED 12" CMP
CB #8	57.02	12" CMP = 52.4 (SW)
		12" CMP = 52.64 (NW)
		12" CMP = 52.5' (NE)
		12" CMP = 53.16 (SW)
		12" CMP = 52.90 (NW)
		12" CMP = 53.12 (NE)
		NO PIPES OBSERVED
		53.5' = WATER ELEV. (3/21/96)
		48.3' AT SUMP
		12" CMP OUT = 53.49

ELEVATION BENCH MARKS  
DATUM: N.G.V.D. OF 1929

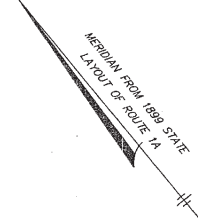
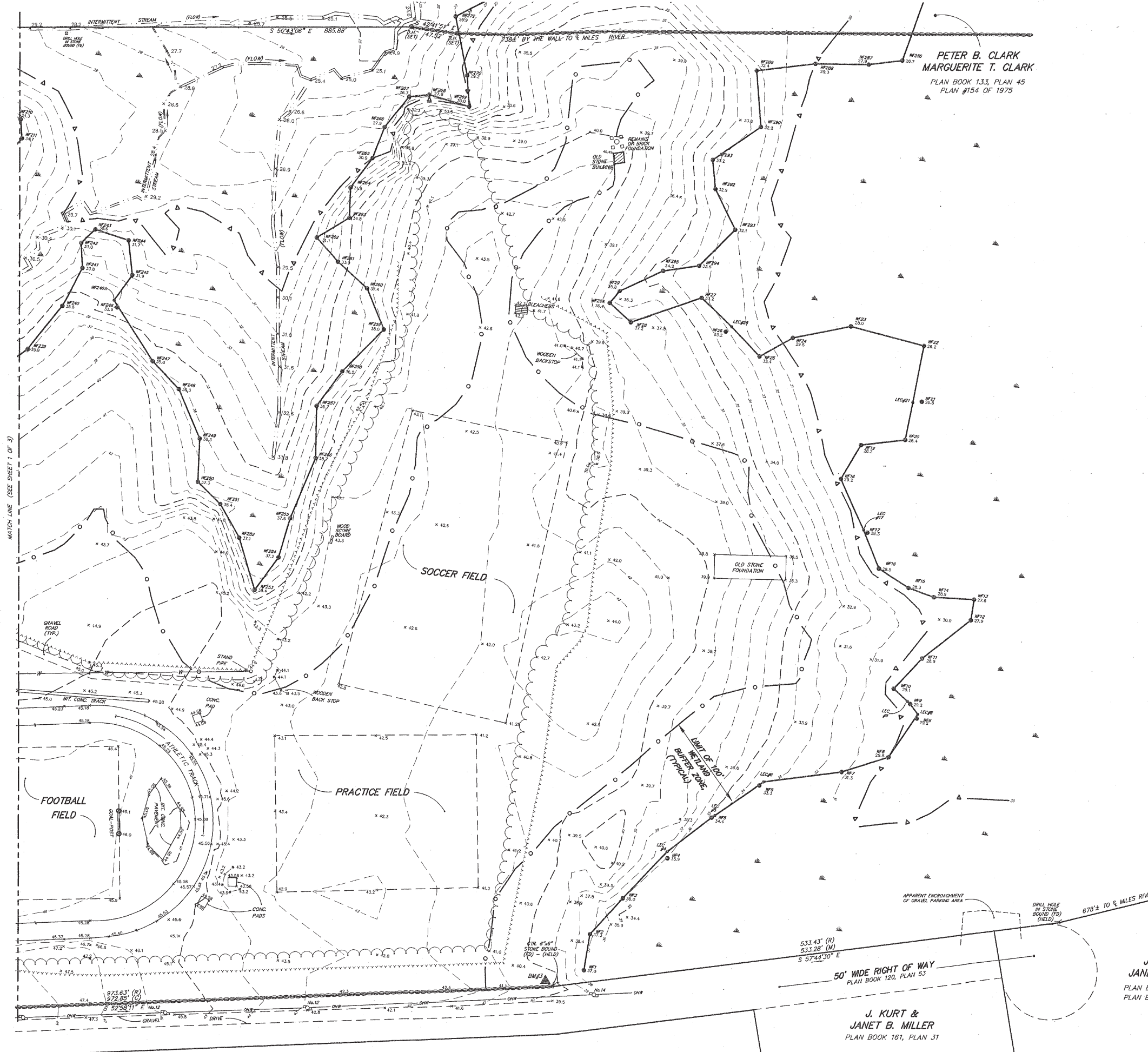
NO.	DESCRIPTION	ELEV.
1.	REAR BONNET BOLT ON HYDRANT	47.90
2.	SOUTHWEST CORNER TOP STONE BOUND	42.70
3.	EASTERLY CORNER TOP STONE BOUND	40.66



NOTES:

1) SEE SHEET 1 OF 3 FOR ADDITIONAL NOTES, REFERENCES, AND BENCHMARK DATA.

PETER B. CLARK  
MARGUERITE T. CLARK  
PLAN BOOK 133, PLAN 45  
PLAN #154 OF 1975



LEGEND

- 52 --- SURFACE CONTOUR
  - 32.53 SPOT ELEVATION
  - HEDGE/SHRUB LINE
  - PROMINENT DECIDUOUS TREE WITH ELEVATION, SIZE AND SPECIES
  - APPROXIMATE TREE "TRUNK LINE"
  - WOODEN FENCE
  - CHAINLINK FENCE
  - SEWER & MANHOLE, MATERIAL & SIZE
  - SEWER FORCE MAIN & SIZE
  - DRAIN, CATCH-BASIN, MANHOLE, ROUND CATCH-BASIN, MATERIAL & SIZE
  - WATER MAIN WITH SIZE, GATE VALVE, FIRE HYDRANT & WATER MANHOLE
  - GAS MAIN & GATE VALVE & GATE VALVE
  - U-TILE AND DESIGNATION, OVERHEAD WIRES AND GUY WIRE
  - LIGHTPOLE
  - FLOOD LIGHT
  - ROUND CATCH BASIN
  - ELECTRIC MANHOLE & UNDERGROUND ELECTRIC LINES
  - TELEPHONE MANHOLE & UNDERGROUND TELEPHONE LINES
  - BUILDING ENTRANCE
  - D.H. DRILL HOLE
  - S.B.D.H. STONE BOUND WITH DRILL HOLE
  - RCP REINFORCED CONCRETE PIPE
  - V.C. WTRIFIED CLAY
  - CMP CORRUGATED METAL PIPE
  - (R) RECORD
  - (C) CALCULATED
  - (R/H) RECORD AND HELD
  - (M) FIELD MEASURED
  - 35.6 LINE OF BORDERING VEGETATED WETLAND WITH FLAG NUMBER AND ELEV.
  - LIMIT OF 100' WETLAND BUFFER ZONE
  - △ 50' CONTOUR CONSERVANCY DISTRICT
  - STONE WALL
  - CATV UNDERGROUND CABLE TV LINE
  - EDGE OF PAVEMENT
  - 45.12 VERTICAL GRANITE CURB WITH TOP AND BOTTOM CURB ELEVATIONS
- PLANT SPECIES:
- E ELM (*Ulmus americana*)
  - M MAPLE (*Acer sp.*)
  - B BEECH (*Fagus grandifolia*)
  - O OAK (*Quercus rubra*)
  - D DOGWOOD (*Cornus sp.*)
  - A ASH (*Fraxinus sp.*)
  - MP MACHOLIA (*sp.*)
  - Rh RHODODENDRON (*sp.*)
  - Ap APPLE (*Malus sp.*)
  - R Birch (*Betula sp.*)
  - L LOCUST (*Rosalia pseudoacacia*)
  - S SPRUCE (*Picea sp.*)
  - H HICKORY (*Carya sp.*)

MATCH LINE (SEE SHEET 1 OF 3)

J. KURT &  
JANET B. MILLER  
PLAN BOOK 161, PLAN 31  
PLAN BOOK 120, PLAN 53

J. KURT &  
JANET B. MILLER  
PLAN BOOK 161, PLAN 31

