BELMONT HIGH SCHOOL
PLANNING BOARD SUBMITTAL

JUNE 21 2019

PERKINS+WILL

DSPR APPLICATION

COVER LETTER

LETTERS OF SUPPORT

PARKING AGREEMENT

LANDSCAPE DRAWINGS

PHOTOMETRIC PLANS

BUILDING RENDERINGS

EXTERIOR ELEVATIONS

FLOOR PLANS

ROOF PLAN

ACOUSTIC REPORT

SITE SIGNAGE

CONSTRUCTION LOGISTICS PLANS

SWPPP

Town of Belmont
Planning Board

APPLICATION FOR DESIGN AND SITE PLAN REVIEW

Date: 12/19/2018

Planning Board
Homer Municipal Building
19 Moore Street
Belmont, MA 02478

To Whom It May Concern:

Pursuant to the provisions of Section 7.3, Design and Site Plan Review, of the Town of Belmont Zoning By-Laws, I/We the undersigned, being owner(s) of certain parcel of land (with the buildings thereon) situated on 221 Concord Avenue Street/Road, hereby make application to your Board for **DESIGN AND SITE PLAN REVIEW** for the erection or alteration on said premises or the use thereof under the applicable Section of the Zoning By-Laws of said Town for renovations and additions to Belmont High School including: site access; site circulation; parking and athletic fields.

_____ on the ground that the same will be in harmony with the general purpose and intent of said Zoning By-Law.

Petitioner(s) are further to comply with the requirements of Section 7.3.5 of said Zoning By-Law attached.

Signature of Petitioner _____
Print Name Stephen Dorrance
Address 19 Moore Street
Belmont, Ma
DaytimeTelephone Number (617) 993 2640

December 6, 2005

Town of Belmont

Belmont High School Building Committee

William Lovallo, Chair
John Phelan
Steve Dorrance
Lisa Fiore
Chris Messer, Secretary

Emma Thurston, Treasurer
Patricia Brusch, Vice Chair
Thomas Caputo
Jamie Shea
Joseph DeStefano

Patrice Garvin
Diane Miller
Joel Mooney
Robert McLaughlin
Michael McAllister

December 19, 2018

Belmont Planning Board
c/o Office of Community Development
19 Moore Street
Belmont, Massachusetts 02478

Dear Planning Board Members,

Under the direction of the Belmont High School Building Committee the Town of Belmont will be demolishing, renovating, reconstructing and constructing additions to the existing High School building located at 221 Concord Avenue. The project proposes a substantial addition and phased renovation to the existing building. The existing High School grade configuration is grades 9-12 and contains 257,120 square feet. The proposed new building is approximately 451, 000 square feet and will house grades 7-12. The new building will consist of 4 floors with new academic and science wings, new media and dining commons and new administrative and health suites. The existing gymnasium and swimming pool will be renovated. The project also includes new sitework consisting of new access roads, drop off loops, sidewalks, utilities, playing fields and landscaping.

The construction program will be undertaken while the existing High School remains fully occupied and operational. The construction program is expected to be undertaken in two phases. Work will also be scheduled over the summers and holiday breaks to alleviate some of the disruption to existing operations.

Funding for the project was approved by voter referendum and Town Meeting Vote in November of 2018.

Thank you in advance for your effort to review and approve the New Belmont 7-12 High School.

Sincerely,

Belmont High School Building Committee

William D. Lovallo
Chair

19 Moore Street (PO Box 56), Belmont, MA 02478
Telephone (617) 993-2640 * Facsimile (617) 993-2641

TOWN OF BELMONT

460 CONCORD AVENUE
P.O. BOX 130
BELMONT, MASSACHUSETTS 02478-0002
POLICE DEPARTMENT

TELEPHONE
(617) 484-1212

RICHARD J. MCLAUGHLIN
POLICE CHIEF

January 29, 2019

Town of Belmont Planning Board
Office of Community Development
19 Moore Street
Belmont, MA 02478

RE: Letter of Support for the New Belmont 7 -12 High School

To Whom It May Concern:

Please be informed that the Belmont Police Department has met with the Belmont High School Building Committee and their design professionals to review and comment on the preliminary design of the proposed New Belmont 7-12 High School. The Police Department's comments and concerns have been conveyed to the Building Committee and at this stage in the design the Police Department agrees with the concept of the proposed design of the site layout and building siting excluding lighting, signage and landscape. The Police Department has no objection to the general layout shown on the site plans for the proposed curb cuts, parking configuration, two-way traffic pattern, access drive loops at both school entrances, and location of the loading area. The Department, the Building Committee and the design professionals are committed to continue to cooperate and address all safety and security aspects of the New Belmont 7-12 High School.

Sincerely,

Richard J. McLaughlin

Police Chief

BELMONT FIRE DEPARTMENT
HEADQUARTERS
299 TRAPELO ROAD
BELMONT, MASSACHUSETTS 02478

DAVID L. FRIZZELL
CHIEF OF DEPARTMENT

TELEPHONE 617-993-2200
FAX 617-993-2201

Belmont Planning Board
C/O Community Development
Homer Building
19 Moore Street
Belmont, MA 02478

December 18, 2018

RE: Fire Department Review Belmont 7-12 School Project

To: The Members of the Belmont Planning Board,

I write to you today to offer an update on the Fire Department's status with the Belmont 7-12 School Project. The Belmont Fire Department has had meetings with the Belmont High School Building Committee and their design professionals to review and comment on the preliminary design of the proposed New Belmont 7-12 School complex. The Fire Department's preliminary comments and concerns have been conveyed to the Building Committee. At this stage in the design the Fire Department agrees with the concept of the proposed design of the site layout and building siting excluding lighting, signage and landscape. The Fire Department has no objection to the general layout shown on the site plans for the proposed curb cuts, parking configuration, two-way traffic pattern, access drive loops at both school entrances, and location of the loading area.

The Department awaits the formal design and confirmation that the Department's apparatus can navigate the site. Details on turning radii and drive lanes must be submitted for formal review. The Department is committed to working with the Building Committee and the design professionals to cooperate and address all safety and security aspects of the New Belmont 7-12 School project.

If you have any additional questions please feel free to contact the Fire Prevention Officer Captain Ken Gardiner or myself.

Yours Truly,

David L. Frizzell
Chief of Department

BELMONT PUBLIC SCHOOLS

JOHN P. PHELAN
SUPERINTENDENT OF SCHOOLS
(617) 993-5401

JANICE G. DARIAS
ASSISTANT SUPERINTENDENT
FOR CURRICULUM & INSTRUCTION
(617) 993-5410

644 PLEASANT STREET
BELMONT, MASSACHUSETTS 02478-2589
(617) 993-5400
FAX (617) 993-5409

ANTHONY R. DICOLOGERO
DIRECTOR OF FINANCE,
BUSINESS & OPERATIONS
(617) 993-5430
FAX (617) 993-5439

MARY PEDERSON
DIRECTOR OF HUMAN RESOURCES
(617) 993-5425

December 18, 2018

To: Belmont Planning Board

Please be informed that I have been meeting with the Belmont High School Building Committee and our design professionals to review and comment on the preliminary design of the proposed New Belmont 7-12 High School. My comments and concerns have been conveyed to the Building Committee and at this stage in the design I agree with the proposed design of the site layout and building siting excluding lighting, signage and landscape. I have no objection to the general layout shown on the site plans for the proposed curb cuts, parking configuration, two-way traffic pattern, access drive loops at both school entrances, and location of the loading area. The Building Committee, the design professionals and I are committed to continue to cooperate and address all design aspects of the New Belmont 7-12 High School.

Sincerely

John Phelan

Superintendent of Schools

Office of the Superintendent
Belmont Public Schools
Belmont, Massachusetts

To: Belmont High School Building Committee (BHSBC)

From: John P. Phelan, Superintendent

RE: 7-12 School Project Initial Parking Summary

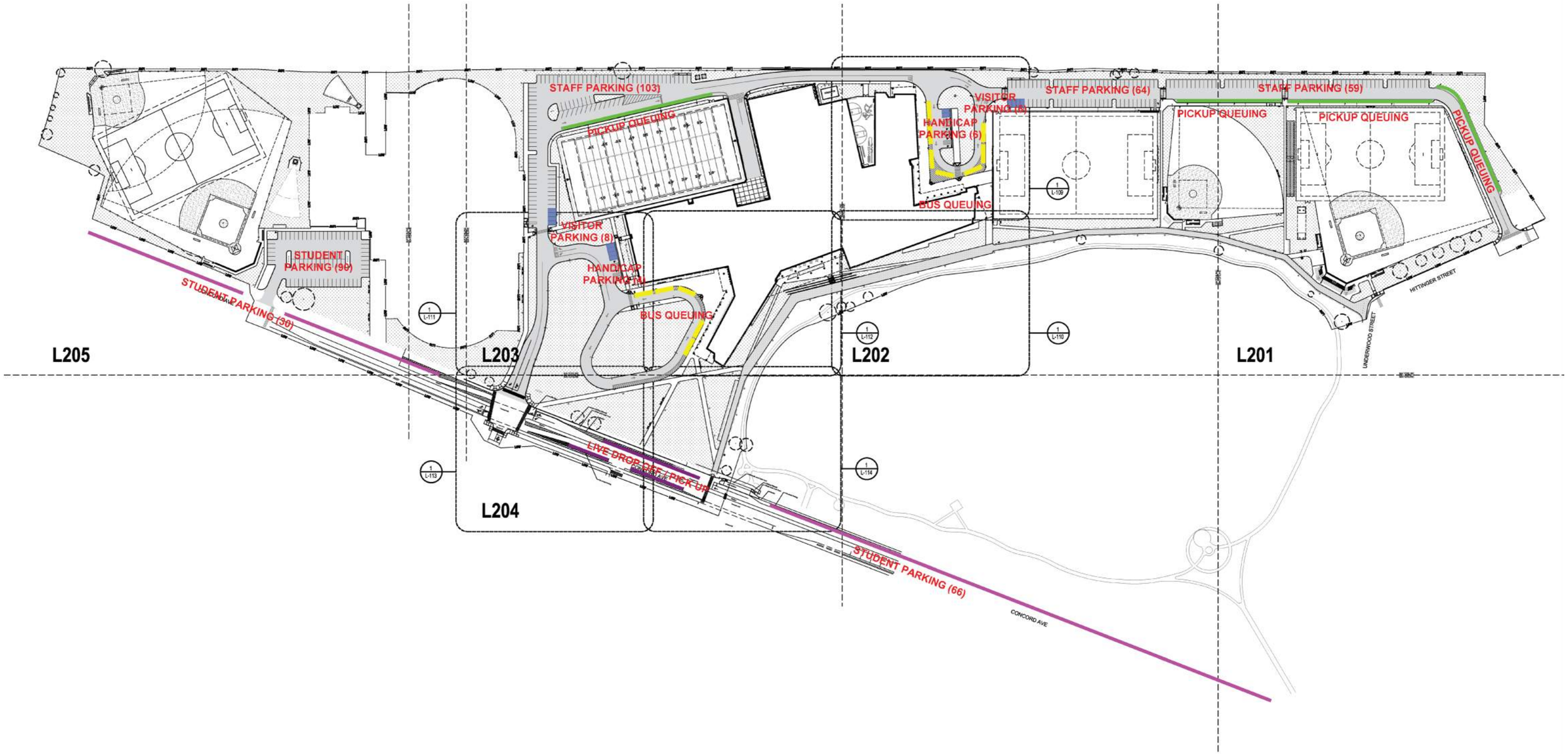
Date: March 4, 2019

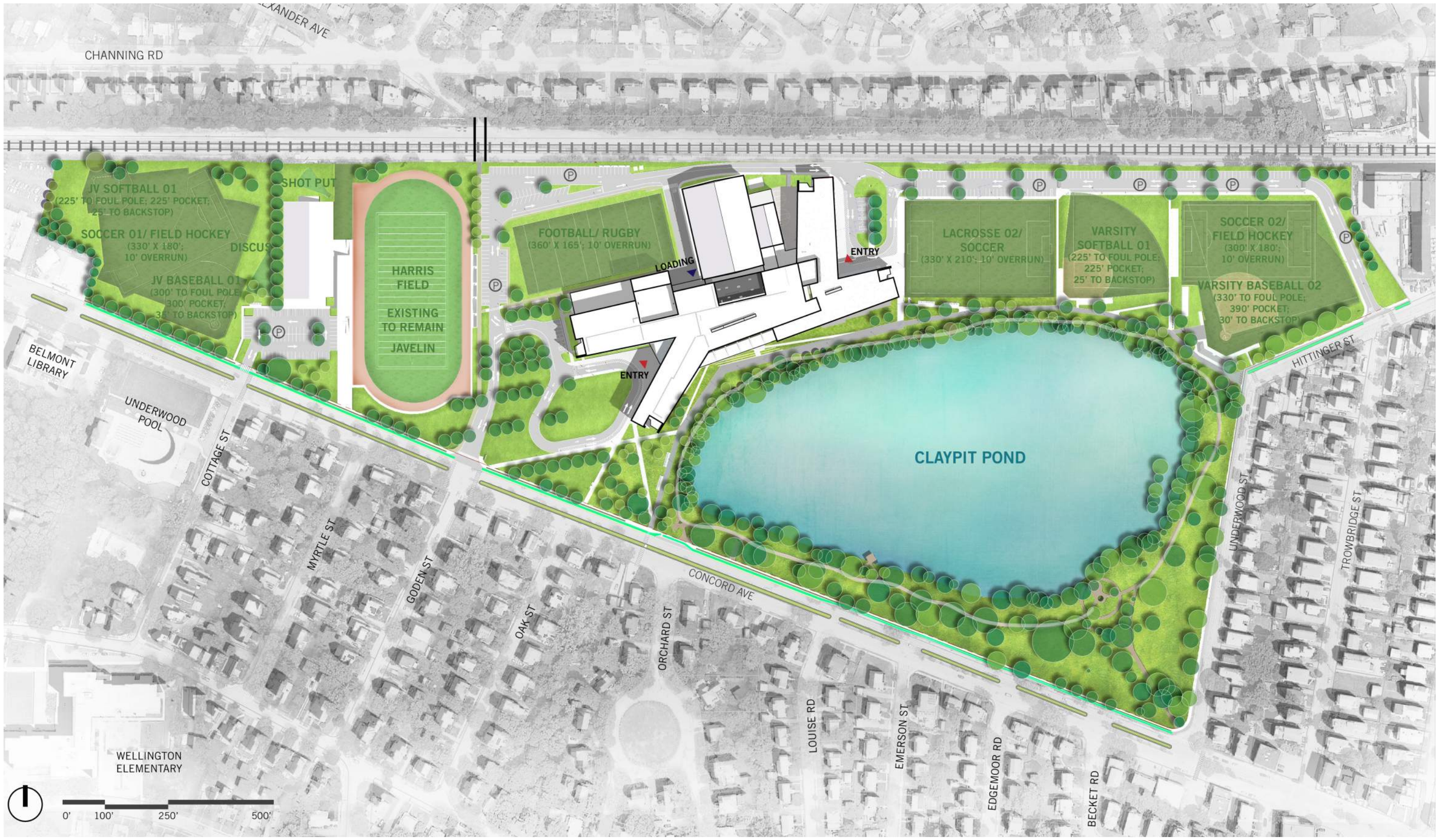
Per the request of the Town of Belmont Planning Board I am submitting an Initial Parking Summary for the final design of the 7-12 school project:

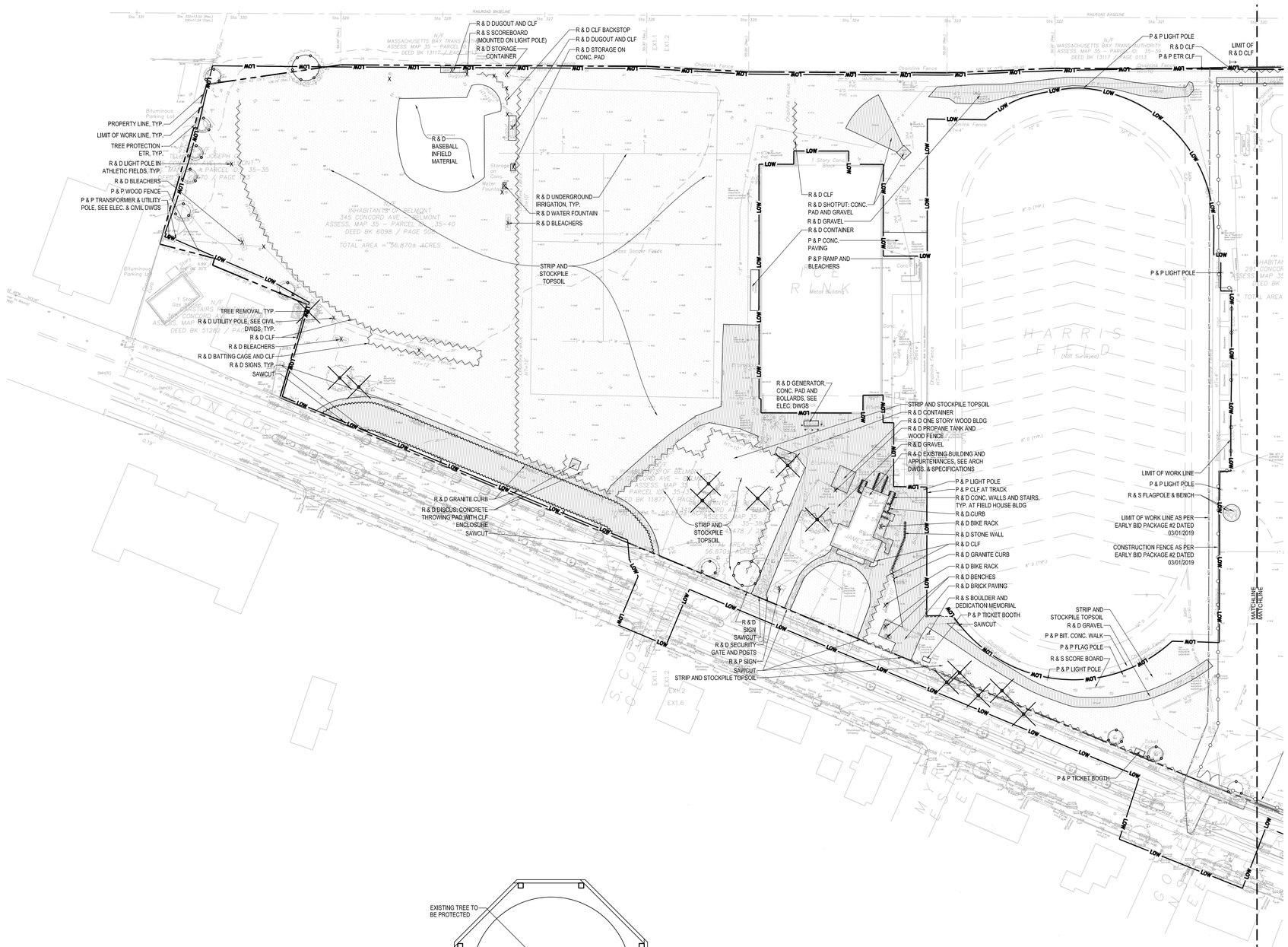
- ✓ The district will provide "way finding" parking for our staff and visitor by having upper school parking areas and lower school parking areas. We also plan on number parking spaces for further clarity.
- ✓ We will provide handicapped parking for each entrance of the school (upper and lower).
- ✓ There will be a dedicated bus loop for pick up and drop off for each school (upper and lower).
- ✓ We will also identify space for parent pick up "cueing" purposes on campus. We would also support identifying a " pick up and drop off area" on both the west and east side of Concord Ave to encourage parents to avoid driving on campus. We would hope to coordinate these areas within distance of the new traffic light / pedestrian crossing spaces on Concord Ave.
- ✓ We plan on having staff only parking on the site of the school. We suggest that student parking take place on Concord Ave (east and west) and at the parking lot located to the west of Harris Field.

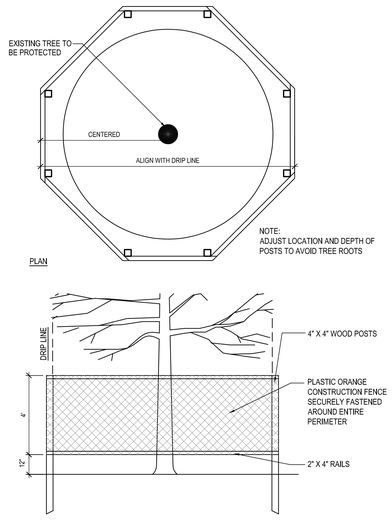
BELMONT HIGH SCHOOL June 20, 2019

TRAFFIC COUNTS		**Original Planning Board Proposal**
Existing Striped parking for school use		
Existing parking east of school	284	
Existing parking behind school	21	
Existing parking at field house	38	
Total parking for use by school	343	(284+21+38)
Additional site parking not striped		
Along ring road	85	
At ice rink	19	
Total civic event parking	428	(343+85)
Total site parking	447	(343+85+19)
Existing staff and visitor parking needs	162	
Remaining spaces for student parking	181	(343-162)
Added staff and visitor parking for 7-8	86	
Minimum staff and visitor parking for 7-12	248	(162+86)
Minimum parking needs 7-12	429	(248+181)
No change to student parking		
Proposed school parking totals	430	Change to student parking (+1)
Proposed school civic parking	430	Change to civic event parking (+2)
Proposed site parking totals	430	Change to total parking (-17)
Bus parking on site		
Current needs	9	
Future needs	10	
Student parking permits currently issued		
September start with	60	
June end of year end with	300	
Clearly not all students with parking permits are parking on campus		
New school changes for large civic events		
Field House – same		
New Theater – same size		
Graduation – same size event		
Bandorama – same size event		
Town Meeting – same size event		


STAFF PARKING (103)
PICKUP QUEUING
VISITOR PARKING (8)
HANDICAP PARKING (5)
BUS QUEUING
STUDENT PARKING (99)
STUDENT PARKING (30)
STAFF PARKING (64)
VISITOR PARKING (8)
HANDICAP PARKING (5)
PICKUP QUEUING
BUS QUEUING
STAFF PARKING (59)
PICKUP QUEUING
PICKUP QUEUING
PICKUP QUEUING
HITTINGER STREET
UNDERWOOD STREET
L205
L203
L202
L201
L204
LIVE DROP-OFF / PICK-UP
STUDENT PARKING (66)
CONCORD AVE


CHANNING RD
ALEXANDER AVE
JV SOFTBALL 01
(225' TO FOUL POLE; 225' POCKET; 25' TO BACKSTOP)
SOCCER 01/ FIELD HOCKEY
(330' X 180'; 10' OVERRUN)
DISCUS
JV BASEBALL 01
(300' TO FOUL POLE; 300' POCKET; 30' TO BACKSTOP)
SHOT PUT
HARRIS FIELD
EXISTING TO REMAIN
JAVELIN
FOOTBALL/ RUGBY
(360' X 165'; 10' OVERRUN)
LOADING
ENTRY
ENTRY
LACROSSE 02/ SOCCER
(330' X 210'; 10' OVERRUN)
VARSITY SOFTBALL 01
(225' TO FOUL POLE; 225' POCKET; 25' TO BACKSTOP)
SOCCER 02/ FIELD HOCKEY
(300' X 180'; 10' OVERRUN)
VARSITY BASEBALL 02
(330' TO FOUL POLE; 390' POCKET; 30' TO BACKSTOP)
CLAYPIT POND
BELMONT LIBRARY
UNDERWOOD POOL
COTTAGE ST
MYRTLE ST
GODEN ST
OAK ST
ORCHARD ST
CONCORD AVE
LOUISE RD
EMERSON ST
EDGEMOOR RD
BECKET RD
HITTINGER ST
UNDERWOOD ST
TROWBRIDGE ST
WELLINGTON ELEMENTARY
0'
100'
250'
500'





NOTES

1. TREE PROTECTION TO REMAIN IN PLACE THROUGHOUT CONSTRUCTION. REMOVE FOR FINAL LANDSCAPE TREATMENT.
2. ADJUST LOCATION OF TREE PROTECTION WITHIN TREE DRIPLINE ONLY WHEN NECESSARY TO PERFORM WORK SHOWN ON DRAWINGS.
3. STOCKPILING OF SOILS, STORING OF MATERIALS, PARKING OF VEHICLES OR LOCATION OF TEMPORARY STRUCTURES SHALL NOT OCCUR AT ANY TIME WITHIN THE DRIPLINE OF TREES TO REMAIN.

1 TREE PROTECTION

SCALE: 1" = 1'-0"

LEGEND:

LOW	LIMIT OF WORK LINE
LOW	LIMIT OF WORK LINE AS PER EARLY BID PACKAGE #2 DATED 03/01/2019
P & P	PRESERVE AND PROTECT
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE (OWNER TO PROVIDE LOCATION FOR SALVAGED ITEMS)
ETR	EXISTING TO REMAIN PRESERVE AND PROTECT
	TREE PROTECTION - ETR (1 / L100)
	PROPERTY LINE
	CONSTRUCTION FENCE AND GATES AS PER EARLY BID PACKAGE #2 DATED 03/01/2019
	SAWCUT LINE
	REMOVE AND DISPOSE WALLS
	REMOVE AND DISCARD ASPHALT PAVING OR CONCRETE
	STRIP AND STOCKPILE TOPSOIL
	TREES TO BE REMOVED
	R & D CURBING
	R & D FENCING

SITE PREPARATION NOTES:

1. EXISTING CONDITIONS INFORMATION IS FROM A SURVEY PERFORMED BY SAMIOTES CONSULTANTS, INC. AND MAY 2018.
2. TEMPORARY CONDITION INFORMATION PER EARLY BID PACKAGE #2 DATED 03/01/2019.
3. CONTRACTOR SHALL NOTIFY DIGSAFE (1-888-DIG-SAFE) AND VERIFY UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED TO ROADS, WALKS, UTILITIES, SITE IMPROVEMENTS, EXISTING OR PROPOSED, DAMAGED BY THIS PROJECT.
5. CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO STARTING WORK.
6. CONTRACTOR SHALL REMOVE ALL EXISTING STRUCTURES, FOOTINGS, PAVEMENT, WALKS, WALLS, STAIRS, TREES, SHRUBS, ETC. NECESSARY TO COMPLETE THE WORK UNDER THIS CONTRACT.
7. ALL ITEMS INDICATED "R&D" SHALL BE LEGALLY DISPOSED OF OFF-SITE UNLESS OTHER USE FOR MATERIAL IS INDICATED.
8. ITEMS TO BE SALVAGED SHALL BE STORED AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
9. REFER TO UTILITY DRAWINGS FOR TREATMENT OF EXISTING SITE UTILITIES AND DRAINAGE SYSTEMS.
10. SALVAGE ALL SITE SIGNAGE REQUIRED TO BE REMOVED BY THE WORK OF THIS PROJECT, AND PROVIDE TO OWNER'S REPRESENTATIVE. DISPOSE OF FOOTINGS AND DAMAGED POSTS.
11. REFER TO CIVIL DRAWINGS FOR CONSTRUCTION FENCING & EROSION CONTROL.
12. REFER TO GEOTECHNICAL INFORMATION FOR SUBSURFACE EXPLORATION LOCATIONS AND INFORMATION.
13. ALL EXISTING TREES TO REMAIN WITHIN THE LIMIT OF WORK AND WHERE INDICATED ON THE DRAWINGS SHALL BE PRUNED IN ACCORDANCE WITH THE SPECIFICATIONS.
14. REFER TO CONSTRUCTION MANAGER'S PHASING PLANS FOR SEQUENCE OF WORK AND ASSOCIATED TEMPORARY FACILITIES AND CONDITIONS.

PERKINS + WILL
225 FRANKLIN ST., SUITE 1100
BOSTON, MA 02110
t 617.478.0300
f 617.478.0321
www.perkinswill.com

WARNER LARSON
LANDSCAPE ARCHITECTS
150 WEST BROADWAY, BOSTON MA 02127
T 617.464.1440 F 617.464.1442
www.warnerlarson.com

NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER No. 3097 REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN



REVISIONS

MARK	ISSUE	DATE

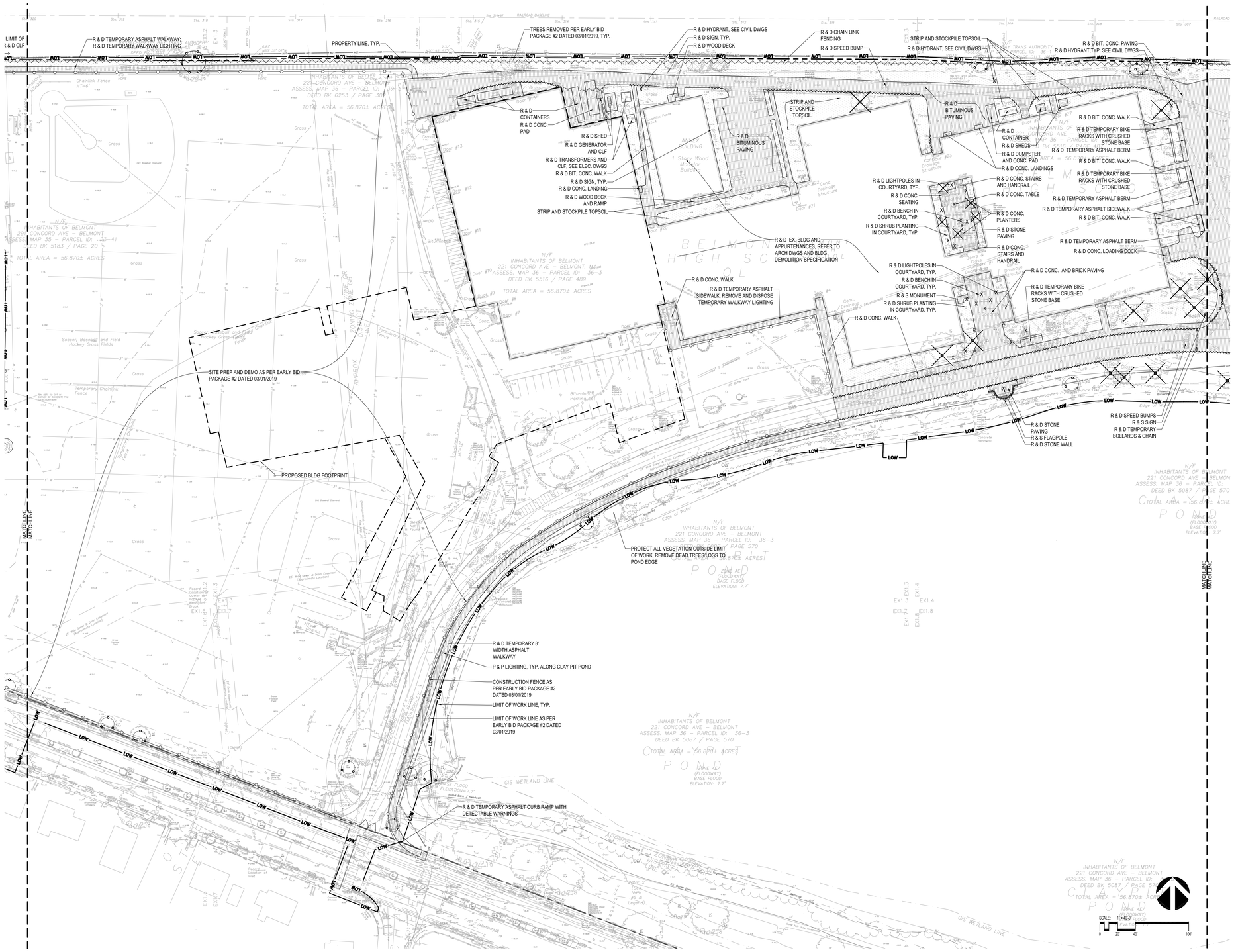
PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

SITE PREPARATION PLAN

L100



NOTE

1. REFER TO SITE PREPARATION NOTES & LEGEND ON SHEET L100.

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MASSACHUSETTS DAVID J. WARNER NO. 6105 REGISTERED LANDSCAPE ARCHITECT

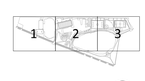
PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN



REVISIONS

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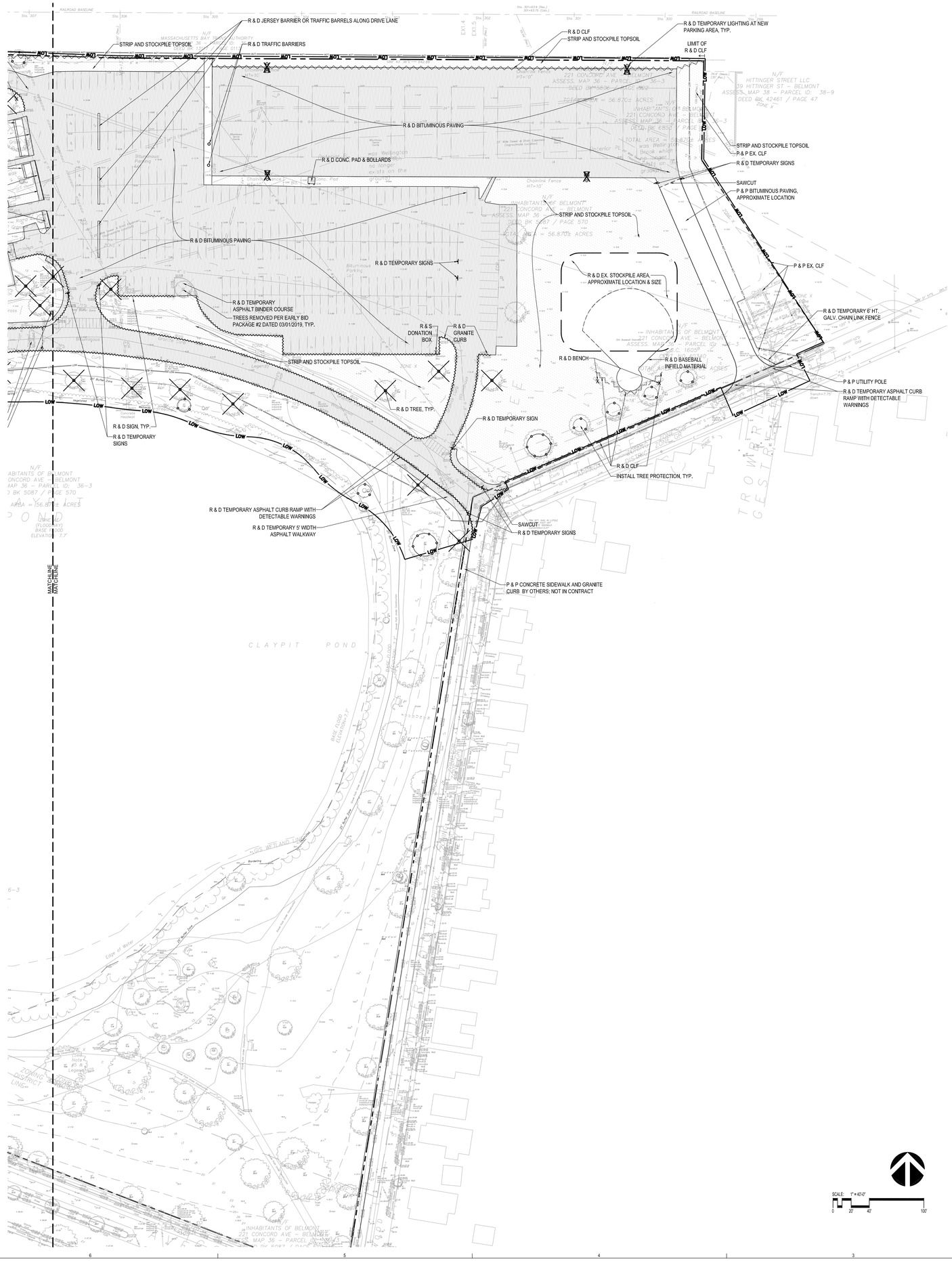
PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

SITE PREPARATION PLAN

L101



SCALE: 1" = 40'-0"
0 20' 40' 100'

NOTE

1. REFER TO SITE PREPARATION NOTES & LEGEND ON SHEET L100.

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NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER NO. 0081 REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

1 2 3

REVISIONS

MARK	ISSUE	DATE

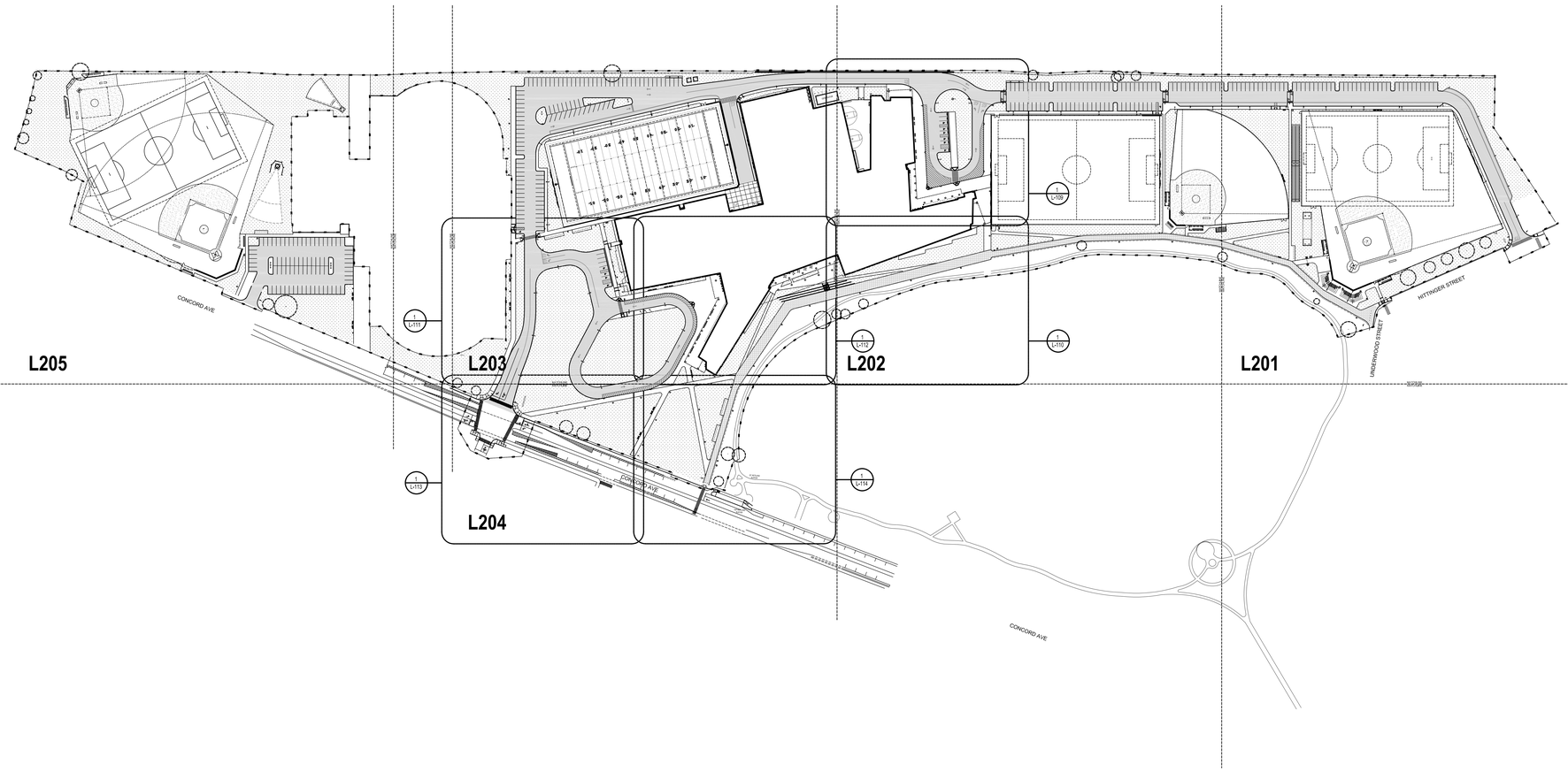
PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

SITE PREPARATION PLAN

L102



NOTES:

Belmont High School On-Site Parking Breakdown		
	Size	Count
West of Harris	18' x 9'	90
Sub-total		**90**
East of Harris		
Accessible Spaces	18' x 9'	12
Green Vehicle Spaces	18' x 9'	16
Electric Charging Spaces	18' x 9'	8
Conventional	18' x 9'	214
Parallel Spaces	22'x 8'	52
Sub-total		**302**
Total		**392**

SCALE: 1" = 100'-0"

0 50' 100' 250'

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www.warnerlarson.com

NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER NO. 4928 REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

OVERALL LAYOUT & MATERIALS PLAN

L200

LEGEND:

LOW	APPROXIMATE LIMIT OF WORK LINE
	VEHICULAR ASPHALT PAVING — 1 / L601
	VEHICULAR CONCRETE PAVING — 4 / L601
	CONCRETE WALKWAY PAVING — 3 / L601
	ASPHALT WALKWAY PAVING — 2 / L601
	DECORATIVE CONCRETE PAVING — 5 / L601
	CLAY PAVERS — 6 / L601
	STONE DUST — 7 / L601
	POROUS ASPHALT REFER TO CIVIL PLANS
	LAWN — 14 / L604
	STABILIZED LAWN SHOULDER — 8 / L601
8'	DIMENSION
	PEDESTRIAN LIGHTS - 14' HT. REFER TO ELECTRICAL PLANS
	ROADWAY LIGHTS - 20' HT. REFER TO ELECTRICAL PLANS
	EMERGENCY BLUE LIGHT PHONE REFER TO ELECTRICAL PLANS
	EV CHARGING STATION REFER TO ELECTRICAL PLANS
	DRINKING FOUNTAIN/BOTTLE FILLING STATION — 4 / L602 — 3 / L602
	TRASH/RECYCLING RECEPTACLE — 7 / L608
	ALUMINUM SLAT BENCH — 5 / L608
	BICYCLE RACKS — 6 / L608
	FLAGPOLE — 3,4 / L608
STOP	PAVEMENT MARKING - STOP LINE — 24 / L601
	PAVEMENT MARKING - CROSSWALK — 22 / L601
	PAVEMENT MARKING - DIRECTIONAL ARROW — 23 / L601
	ACCESSIBLE CURB RAMP — 21 / L601
	10' WIDTH DOUBLE SWING GATE (UNLESS OTHERWISE NOTED) — 8 / L602
	5' WIDTH SINGLE SWING GATE (UNLESS OTHERWISE NOTED) — 8 / L602
	VERTICAL GRANITE CURB — 11 / L601
	BITUMINOUS CONCRETE BERM — 19 / L602

LIGHTING SCHEDULE:

P1	PEDESTRIAN LIGHTS - 14' HT., TOTAL OF 19 PUREFORM LED POST TOP COMFORT PPT PPT-140L-1150-NW-G2-3-UNV
P2	PEDESTRIAN LIGHTS - 14' HT., TOTAL OF 30 PUREFORM LED POST TOP COMFORT PPT PPT-140L-650-NW-G2-2-UNV
A1	ROADWAY LIGHTS - 20' HT., TOTAL OF 3 PUREFORM LED AREA MEDIUM COMFORT P26 P26-140L-2100-NW-G2-2-UNV
A2	ROADWAY LIGHTS - 20' HT., TOTAL OF 43 PUREFORM LED AREA MEDIUM COMFORT P26 P26-140L-2100-NW-G2-3-UNV

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PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

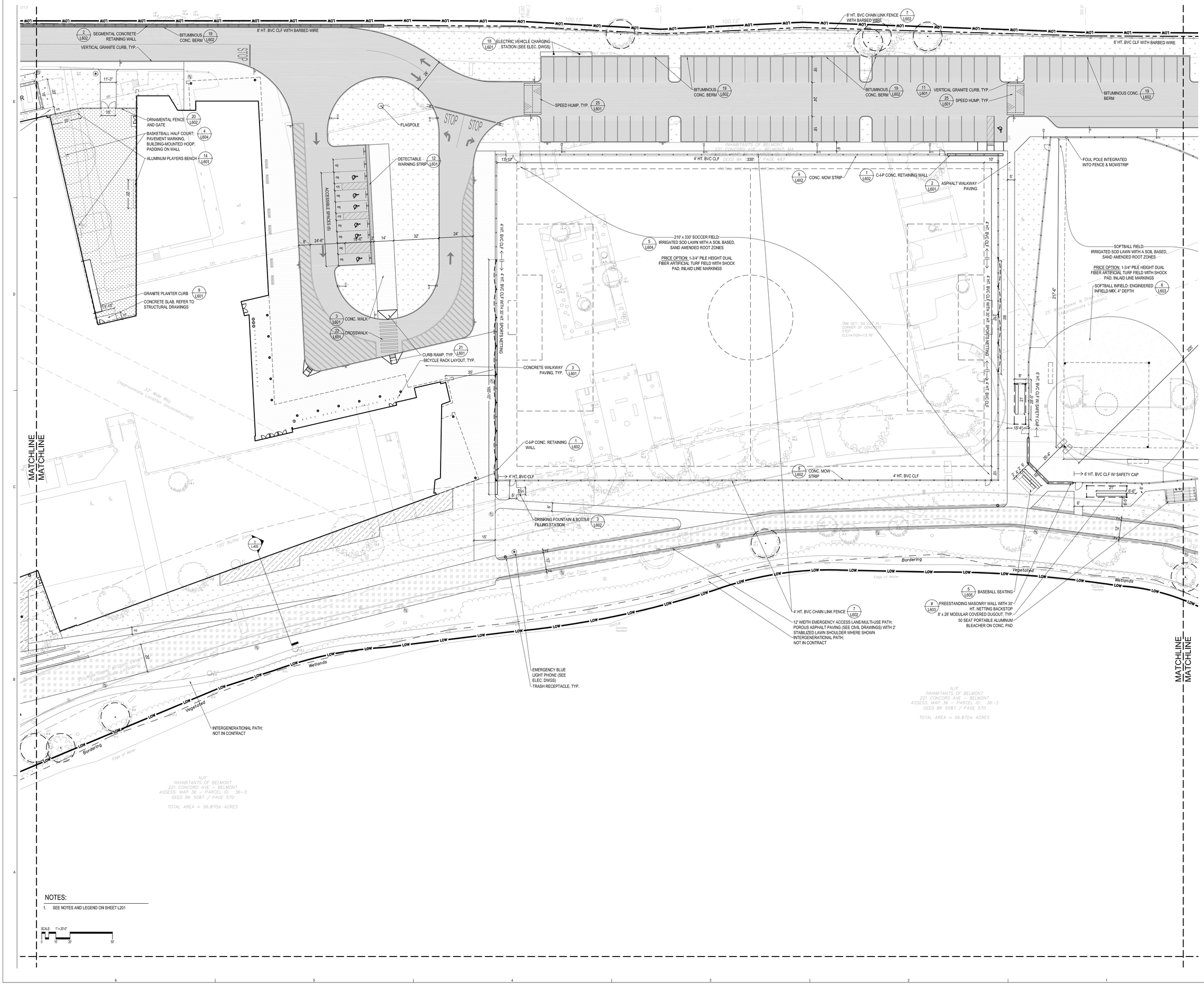
MARK	ISSUE	DATE
	PLANNING BD SET	**06.21.2019**

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

LAYOUT & MATERIALS PLAN

L201



NOTES:

1. SEE NOTES AND LEGEND ON SHEET L201

SCALE: 1" = 20'-0"

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NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

LAYOUT & MATERIALS PLAN

L202

MEET EXISTING FENCE

8' HT. BVC CHAIN LINK FENCE

8' HT. BVC CLF WITH BARBED WIRE

18 L601 ELECTRIC VEHICLE CHARGING STATION (SEE ELEC. DWGS)

TRANSFORMER ON CONCRETE PAD (SEE ELEC. DWGS)

8' HT. BVC CLF WITH BARBED WIRE

BITUMINOUS CONC. BERM 19 L602

VERTICAL GRANITE CURB, TYP.

GENERATOR

GENERATOR ON CONCRETE PAD (SEE ELEC. DWGS)

5 L602 CONC. FILLED STEEL BOLLARDS, TYP.

TRENCH DRAIN, SEE CIVIL DRAWINGS

VEHICULAR ASPHALT PAVING, TYP. 1 L601

STOP

C-I-P CONC. RETAINING WALL

C-I-P CURB 1

6' HT. BVC CLF

21 L601 CURB RAMP, TYP.

1 L602

3 L601 CONCRETE WALKWAY PAVING, TYP.

1 L601 VEHICULAR ASPHALT PAVING, TYP.

360'

165' x 360' RUGBY/FOOTBALL PRACTICE FIELD: 1-3/4" PILE HEIGHT DUAL FIBER ARTIFICIAL TURF FIELD WITH SHOCK PAD, INLAID LINE MARKINGS FOR RUGBY AND FOOTBALL

1 L604

18 L602 REMOVABLE RUGBY GOAL POSTS & PADS

REMOVABLE FOOTBALL GOAL POSTS & PADS

10 20 30 40 50 40 30 20 10

-10 -20 -30 -40 50 40 30 20 10

6' HT. BVC CLF

C-I-P CURB 3

C-I-P CURB 2

30' HT. SPORTS NETTING

3 L601 CONC. WALK, TYP.

VEHICULAR CONCRETE PAVING COMPACTOR 4 L601

CONC. FILLED STEEL BOLLARDS, TYP. 5 L602

7' X 12' DUMPSTER

33'-1"

7'-10"

N/F INHABITANTS OF BELMONT 221 CONCORD AVE – BELMONT, MA ASSESS. MAP 36 – PARCEL ID: 36–3 DEED BK 5516 / PAGE 489 TOTAL AREA = 56.870± ACRES

MATCHLINE MATCHLINE

17 L601 ACCESSIBLE SPACE (1)

21 L601 CURB RAMP, TYP.

22 L601 CROSSWALK, TYP.

EMERGENCY BLUE LIGHT PHONE (SEE ELEC. DWGS)

11 L601 VERTICAL GRANITE CURB, TYP.

BICYCLE RACK LAYOUT, TYP.

12 L601 DETECTABLE WARNING STRIP

ACCESSIBLE SPACES (4)

TRASH RECEPTACLE, TYP.

FLAGPOLE, TYP.

3 L601 CONCRETE WALKWAY PAVING, TYP.

11 L601 VERTICAL GRANITE CURB, TYP.

12' WIDTH EMERGENCY ACCESS LANE/MULTIUSE PATH: POROUS ASPHALT PAVING (SEE CIVIL DRAWINGS)

CONCRETE WALK 3 L601

NOTES:

1. SEE NOTES AND LEGEND ON SHEET L201

SCALE: 1" = 20'-0"

MATCHLINE MATCHLINE

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COMMONWEALTH OF MASSACHUSETTS DAVID J. WARNER REGISTERED LANDSCAPE ARCHITECT NO. 0124

PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

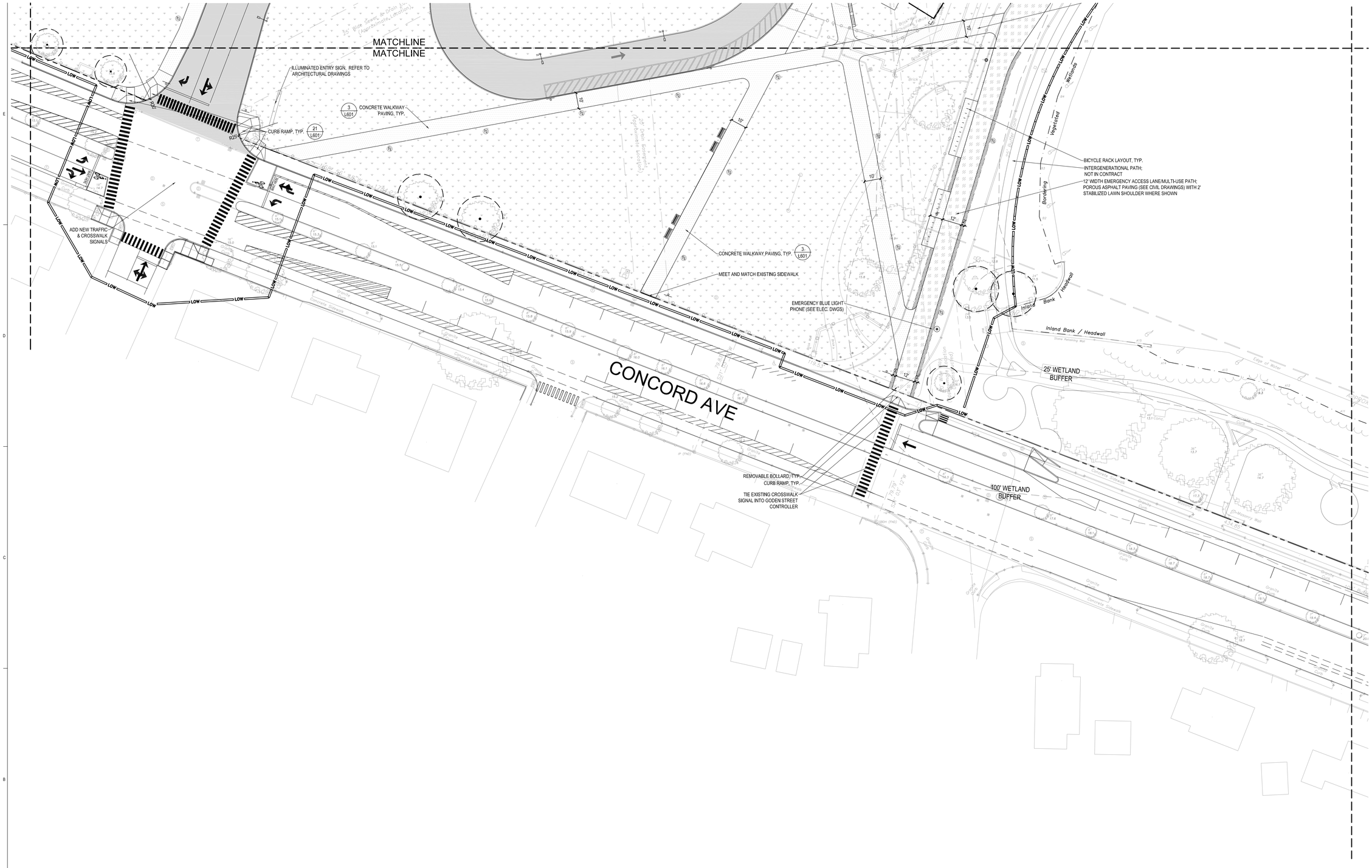
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JOB NUMBER	153003.001
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TITLE

LAYOUT & MATERIALS PLAN

L203



NOTES:

1. SEE NOTES AND LEGEND ON SHEET L201

SCALE: 1" = 20'-0"

0 10' 20' 50'

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PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

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TITLE

LAYOUT & MATERIALS PLAN

L204

6' HT. BVC CHAIN LINK FENCE

SOFTBALL BACKSTOP

6 / L603 SOFTBALL INFIELD: ENGINEERED INFIELD MIX, 4" DEPTH

14 / L601 ALUMINUM PLAYERS BENCH ON CONCRETE PAD, TYP.

6' HT. BVC CLF W/ SAFETY CAP

6' HT. BVC CLF

BASEBALL, SOFTBALL, SOCCER FIELD: IRRIGATED SOD LAWN WITH A SOIL BASED, SAND AMENDED ROOT ZONES

N/F
INHABITANTS OF BELMONT
345 CONCORD AVE – BELMONT
ASSESS. MAP 35 – PARCEL ID: 35-40
DEED BK 6098 / PAGE 508
TOTAL AREA = 50.870± ACRES

N/F
CARSTAIRS REALTY LLC
365 CONCORD AVE – BELMONT
ASSESS. MAP 35 – PARCEL ID: 35-36
DEED BK 51282 / PAGE 463

DRINKING FOUNTAIN & BOTTLE FILLING STATION

SHOTPUT: CONCRETE THROWING PAD WITH TOE BOARD, STONE DUST LANDING ARC 6 / L604

DISCUS: CONCRETE THROWING PAD WITH DISCUS ENCLOSURE (STEEL POSTS & NETTING) 7 / L604

BICYCLE RACK LAYOUT, TYP.

EMERGENCY BLUE LIGHT PHONE (SEE ELEC. DWGS)

VERTICAL GRANITE CURB, TYP. 11 / L601

VEHICULAR ASPHALT PAVING, TYP. 1 / L601

CONCRETE WALK, TYP. 3 / L601

47' HT. SPORTS NETTING (POLES & SPORTS NETTING)

BASEBALL INFIELD: ENGINEERED INFIELD MIX, 4" DEPTH

14 / L601 ALUMINUM PLAYERS BENCH ON CONCRETE PAD, TYP.

47' HT. BASEBALL BACKSTOP (POLES & SPORTS NETTING)

3 / L601 CONC. WALK, TYP.

22 / L601 ADD NEW CROSSWALK & TIE INTO GODEN STREET CONTROLLER

CURB RAMP, TYP. 21 / L601

CONCORD AVE

MATCHLINE

MATCHLINE

TBM SET: SQ CUT IN CORNER OF CONCRETE BASE FOR BLEACHERS ELEV. 17.19

NOTES:

1. SEE NOTES AND LEGEND ON SHEET L201

SCALE: 1" = 20'-0"

0 10' 20' 50

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COMMONWEALTH OF MASSACHUSETTS DAVID J. WARNER NO. 4098 REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

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TITLE

LAYOUT & MATERIALS PLAN

L205

8-INCH DUCTILE IRON

LIMIT OF WORK

PROPERTY LINE

ASPHALT CURB, TYP.
SEE DETAIL 19/L602

CATCH BASIN, TYP.
SEE CIVIL DWGS.

VEHICULAR ASPHALT PAVING, TYP.

MANHOLE, TYP.
SEE CIVIL DWGS.

GRANITE CURB, TYP.

EMERGENCY BLUE LIGHT POLE

PEDESTRIAN LIGHT, TYP.
14' POLE HT

FIRE HYDRANT, TYP.
SEE CIVIL DWGS.

BUILDING COLUMN, TYP.
SEE ARCH. DWGS.

P.A.

CONCRETE SURROUND

FLAGPOLE TYPE B WITH LED INTEGRATED INTO FLAGPOLE BALL

CONCRETE WALKWAY PAVING, TYP.

DETECTABLE WARNING PAVER

ACCESSIBLE PARKING, TYP.

FLUSH GRANITE CURB

ALIGN

SEE SHEET L-202

CONCRETE BENCH, TYP

STREET LIGHT, TYP.
20' POLE HT

VERTICAL GRANITE CURB, TYP

TRASH RECEPTACLE TYPE A

TRASH RECEPTACLE TYPE B

TRASH RECEPTACLE TYPE C

CURB RAMP

CROSSWALK PAVEMENT MARKING

CONTROL JOINT, TYP.

CONCRETE RETAINING WALL

BUILDING OVERHANG, TYP.
SEE ARCH. DWGS.

PEDESTRIAN LIGHT, TYP.
14' POLE HT.

(34) BIKE RACK, TYP.

TRASH RECEPTACLE TYPE A

L606

MATCHLINE - SEE L207

GENERAL NOTES

1. REFER TO SHEET L101 FOR MATERIALS AND LIGHTING LEGEND.
2. DO NOT SCALE THE DRAWINGS.
3. VERIFY LOCATIONS OF SITE IMPROVEMENTS INSTALLED UNDER OTHER SECTIONS.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE
5. WHERE DIMENSIONS ARE CALLED AS "EQUAL", ALL REFERENCED ITEMS SHALL BE SPACED EQUALLY, MEASURED TO THEIR CENTER LINES.
6. ALL MEASUREMENTS ARE TO FACE OF BUILDING, WALL OR OTHER FIXED SITE IMPROVEMENT. DIMENSIONS TO CENTER LINES ARE INDICATED.
7. COORDINATE ALL BASE AND HOUSEKEEPING PADS WITH MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT.

NOT FOR CONSTRUCTION

0 3' 5' 10' 20'
Scale: 1" = 10'

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MASSACHUSETTS REGISTERED LANDSCAPE ARCHITECT No. 1172

PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

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TITLE

PLAN ENLARGEMENT

L206

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MATCHLINE - SEE L206

MATCHLINE - SEE L209

CONCRETE WALKWAY PAVING, TYP.

BUILDING OVERHANG
SEE ARCH. DWGS.

CONTROL JOINT, TYP.

CONCRETE WALKWAY PAVING, TYP.

18" HT C.I.P. CONCRETE
RETAINING WALL, TYP

INTERGENERATIONAL PATH
NOT IN CONTRACT

WATER EDGE

LIMIT OF WORK

CONCRETE WALKWAY PAVING, TYP.

CONTROL JOINT, TYP.

BUILDING COLUMN
SEE ARCH. DWGS.

MANHOLE, TYP.
SEE CIVIL DWGS.

STABILIZED GRASS SHOULDER

POROUS ASPHALT PAVING

PEDESTRIAN LIGHT, TYP.
14' POLE HT.

LIMIT OF WORK

P.A.

CLAYPIT POND

INCH IRRIGATION

GENERAL NOTES

1. REFER TO SHEET L101 FOR MATERIALS AND LIGHTING LEGEND.

2. DO NOT SCALE THE DRAWINGS.

3. VERIFY LOCATIONS OF SITE IMPROVEMENTS INSTALLED UNDER OTHER SECTIONS.

4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE.

5. WHERE DIMENSIONS ARE CALLED AS "EQUAL", ALL REFERENCED ITEMS SHALL BE SPACED EQUALLY, MEASURED TO THEIR CENTER LINES.

6. ALL MEASUREMENTS ARE TO FACE OF BUILDING, WALL OR OTHER FIXED SITE IMPROVEMENT. DIMENSIONS TO CENTER LINES ARE INDICATED.

7. COORDINATE ALL BASE AND HOUSEKEEPING PADS WITH MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT.

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Scale: 1" = 10'

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MASSACHUSETTS
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No. 1178

PROJECT

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221 CONCORD AVE.
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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

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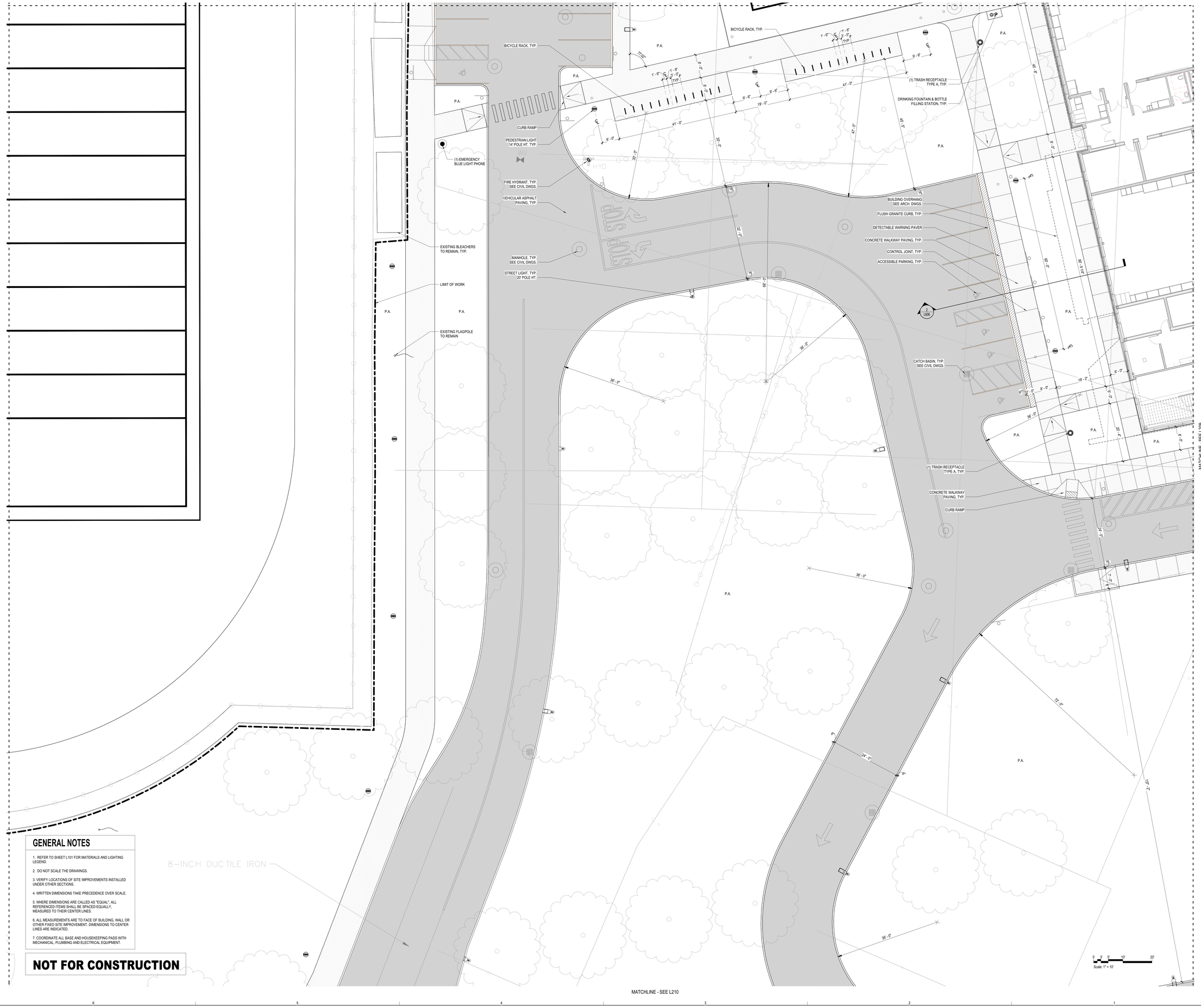
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TITLE

PLAN ENLARGEMENT

L207

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GENERAL NOTES

1. REFER TO SHEET L101 FOR MATERIALS AND LIGHTING LEGEND.
2. DO NOT SCALE THE DRAWINGS.
3. VERIFY LOCATIONS OF SITE IMPROVEMENTS INSTALLED UNDER OTHER SECTIONS.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE.
5. WHERE DIMENSIONS ARE CALLED AS "EQUAL", ALL REFERENCED ITEMS SHALL BE SPACED EQUALLY, MEASURED TO THEIR CENTER LINES.
6. ALL MEASUREMENTS ARE TO FACE OF BUILDING, WALL OR OTHER FIXED SITE IMPROVEMENT. DIMENSIONS TO CENTER LINES ARE INDICATED.
7. COORDINATE ALL BASE AND HOUSEKEEPING PADS WITH MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT.

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PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

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JOB NUMBER	153003.001
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TITLE

PLAN ENLARGEMENT

L208

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MATCHLINE - SEE L208

MATCHLINE - SEE L207

MATCHLINE - SEE L211

TRASH RECEPTACLE TYPE A
TRASH RECEPTACLE TYPE B
TRASH RECEPTACLE TYPE C
BUILDING COLUMN, TYP. SEE ARCH. DWGS.
BUILDING OVERHANG, TYP. SEE ARCH. DWGS.
CONCRETE BENCH, TYP.
MANHOLE, TYP. SEE CIVIL DWGS.
CATCH BASIN, TYP. SEE CIVIL DWGS.
FLAGPOLE TYPE A WITH LED INTEGRATED INTO FLAGPOLE BALL
CONTROL JOINT, TYP.
CURB RAMP
CONCRETE WALKWAY PAVING, TYP.
GRANITE CURB, TYP.
BICYCLE RACK, TYP.
STREET LIGHT, TYP. 20' POLE HT.
CATCH BASIN, TYP. SEE CIVIL DWGS.
MANHOLE, TYP. SEE CIVIL DWGS.
GREASE TRAP SEE CIVIL DWGS.
P.A.
TRASH RECEPTACLE TYPE A
TRASH RECEPTACLE TYPE B
TRASH RECEPTACLE TYPE C
BUILDING OVERHANG, TYP. SEE ARCH. DWGS.
TRASH RECEPTACLE TYPE A
BUILDING COLUMN, TYP. SEE ARCH. DWGS.
BUILDING OVERHANG, TYP. SEE ARCH. DWGS.
CONCRETE WALKWAY PAVING, TYP.
CONCRETE PAVING ON LANDINGS, TYP.
C.I.P. CONCRETE STAIRS, TYP.
ALUMINUM HANDRAIL, TYP.
CONTROL JOINT, TYP.
CONCRETE WALKWAY PAVING, TYP.
18" HT C.I.P. CONCRETE RETAINING WALL, TYP.
POROUS ASPHALT PAVING, TYP.
PEDESTRIAN LIGHT, TYP. 14' POLE HT.
INTERGENERATIONAL PATH NOT IN CONTRACT
LIMIT OF WORK
WATER EDGE
CLAYPIT POND
EXISTING CONCRETE HEADWALL TO REMAIN

GENERAL NOTES

1. REFER TO SHEET L101 FOR MATERIALS AND LIGHTING LEGEND.
2. DO NOT SCALE THE DRAWINGS.
3. VERIFY LOCATIONS OF SITE IMPROVEMENTS INSTALLED UNDER OTHER SECTIONS.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE.
5. WHERE DIMENSIONS ARE CALLED AS "EQUAL", ALL REFERENCED ITEMS SHALL BE SPACED EQUALLY, MEASURED TO THEIR CENTER LINES.
6. ALL MEASUREMENTS ARE TO FACE OF BUILDING, WALL OR OTHER FIXED SITE IMPROVEMENT. DIMENSIONS TO CENTER LINES ARE INDICATED.
7. COORDINATE ALL BASE AND HOUSEKEEPING PADS WITH MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT.

NOT FOR CONSTRUCTION

0 3" 5' 10' 20'
Scale: 1" = 10'

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

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06.21.2019

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TITLE

PLAN ENLARGEMENT

L209

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MATCHLINE - SEE L208

MATCHLINE - SEE L211

SEE SHEET L204

CATCH BASIN, TYP.
SEE CIVIL DWGS.

ILLUMINATED MONUMENTAL ENTRY SIGN
SEE ARCH. DWGS.

STREET LIGHT, TYP.
20' POLE HT.

VEHICULAR ASPHALT PAVING, TYP.

GRANITE CURB, TYP.

MANHOLE, TYP.
SEE CIVIL DWGS.

PEDESTRIAN LIGHT, TYP.
14' POLE HT.

CONCRETE WALKWAY
PAVING, TYP.

CONTROL JOINT, TYP.

PROPERTY LINE

LIMIT OF WORK

ALUMINUM BENCH
ON PEDESTRIAN CONCRETE PAD

P.A.

Bike Box

Concord AVE

Goden ST

Median

CONCORD AVE.

Existing Sidewalk
Street Level Cycle Track

Buffer

On-street Parking

WAIT HERE

10' - 0" TYP.

60' - 0" TYP.

GENERAL NOTES

1. REFER TO SHEET L101 FOR MATERIALS AND LIGHTING LEGEND.
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7. COORDINATE ALL BASE AND HOUSEKEEPING PADS WITH MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT.

NOT FOR CONSTRUCTION

0 3' 5' 10' 20'
Scale: 1" = 10'

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PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

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TITLE

PLAN ENLARGEMENT

L210

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MATCHLINE - SEE L209

MATCHLINE - SEE L210

CONCRETE WALKWAY PAVING, TYP.

ALUMINUM BENCH
ON PEDESTRIAN CONCRETE PAD, TYP.

TRASH RECEPTACLE TYPE A

MANHOLE, TYP.
SEE CIVIL DWGS.

8-INCH DUCTILE IRON

CONNECT TO EXISTING WATER LINE

FIRE HYDRANT, TYP.
SEE CIVIL DWGS.

PEDESTRIAN LIGHT, TYP.
14' POLE HT.

POROUS ASPHALT PAVING, TYP.

STABILIZED GRASS SHOULDER

CLAYPIT POND

(22) BICYCLE RACK, TYP.

CONTROL JOINT, TYP.

LIMIT OF WORK

INTERGENERATIONAL PATH
NOT IN CONTRACT

(1) EMERGENCY BLUE LIGHT PHONE

EXISTING INLAND BANK /HEADWALL TO REMAIN

(2) REMOVABLE BOLLARD, TYP.
SEE DETAIL 1/L608

P.A.

Median

Concord AVE

BUS

Bus Platform

Sidewalk Level Cycle Track

Existing Sidewalk

Street Level Cycle Track

Buffer

On-street Parking

Median

Concord AVE

Orchard St

Scale: 1" = 10'

GENERAL NOTES

1. REFER TO SHEET L101 FOR MATERIALS AND LIGHTING LEGEND.
2. DO NOT SCALE THE DRAWINGS.
3. VERIFY LOCATIONS OF SITE IMPROVEMENTS INSTALLED UNDER OTHER SECTIONS.
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7. COORDINATE ALL BASE AND HOUSEKEEPING PADS WITH MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT.

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MASSACHUSETTS
REGISTERED LANDSCAPE ARCHITECT
No. 1115

PROJECT

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221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET
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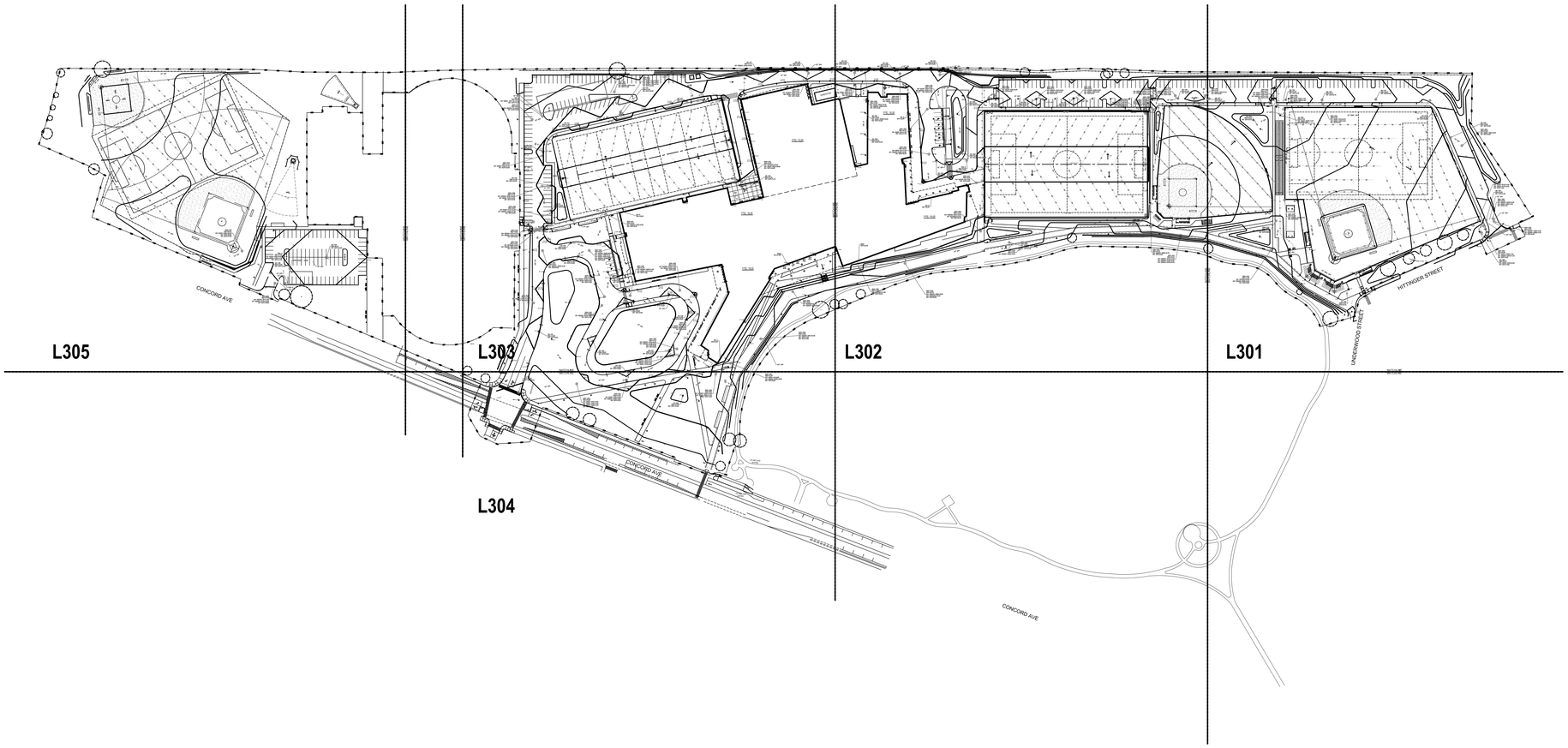
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TITLE

PLAN ENLARGEMENT

L211

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NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS
DAVID J. WARNER
NO. 4026
REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1
4

REVISIONS

MARK	ISSUE	DATE

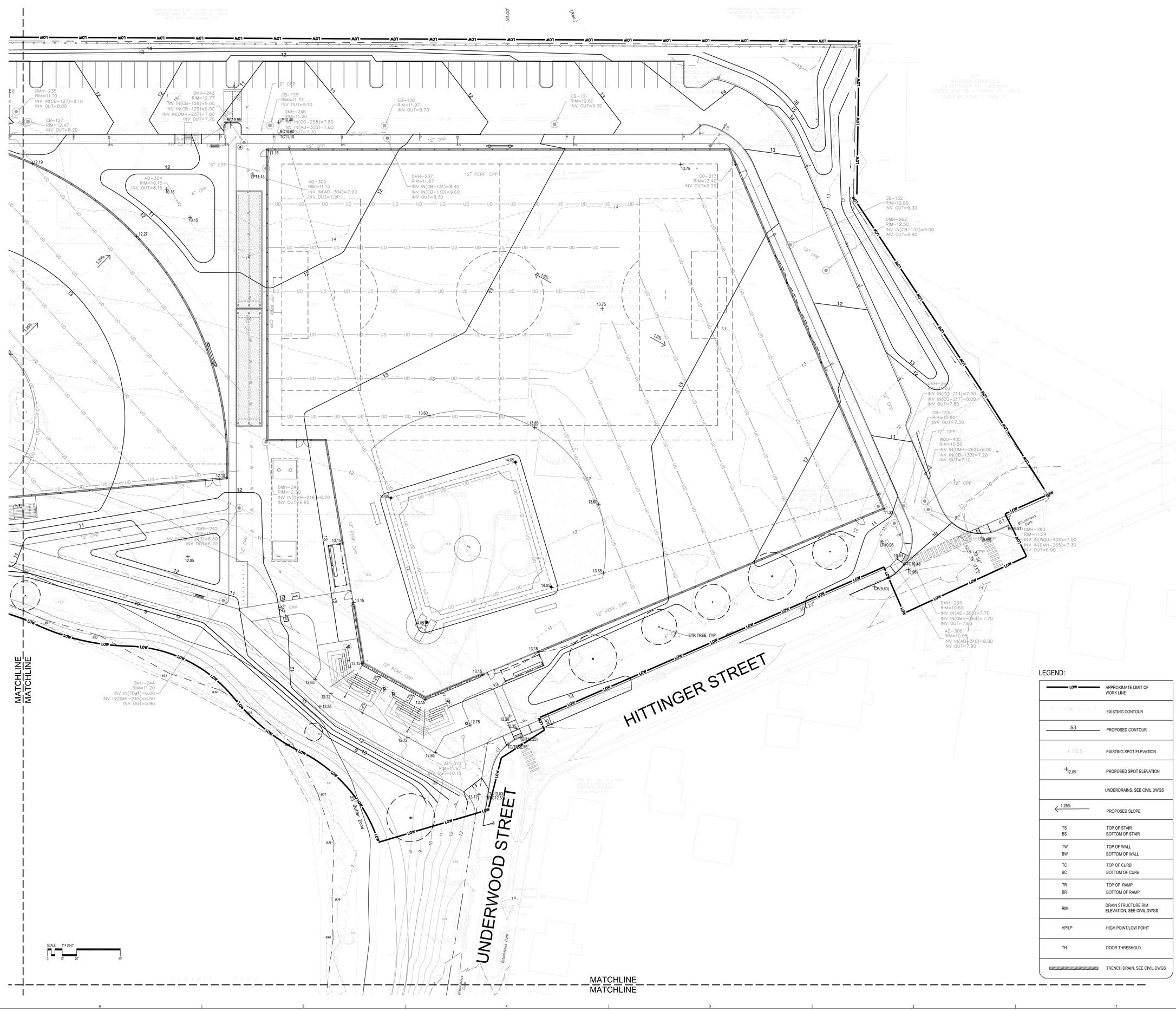
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CHECKED	TJ

TITLE

OVERALL GRADING PLAN

L300



LEGEND:

LOW	APPROXIMATE LIMIT OF WORK LINE
111	EXISTING CONTOUR
53	PROPOSED CONTOUR
x 112.5	EXISTING SPOT ELEVATION
+12.05	PROPOSED SPOT ELEVATION
UD	UNDERDRAINS, SEE CIVIL DWGS
1.25%	PROPOSED SLOPE
TS / BS	TOP OF STAIR / BOTTOM OF STAIR
TW / BW	TOP OF WALL / BOTTOM OF WALL
TC / BC	TOP OF CURB / BOTTOM OF CURB
TR / BR	TOP OF RAMP / BOTTOM OF RAMP
RIM	DRAIN STRUCTURE RIM ELEVATION, SEE CIVIL DWGS
HP/LP	HIGH POINT/LOW POINT
TH	DOOR THRESHOLD
	TRENCH DRAIN, SEE CIVIL DWGS

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NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER 37 NO. 6197 REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

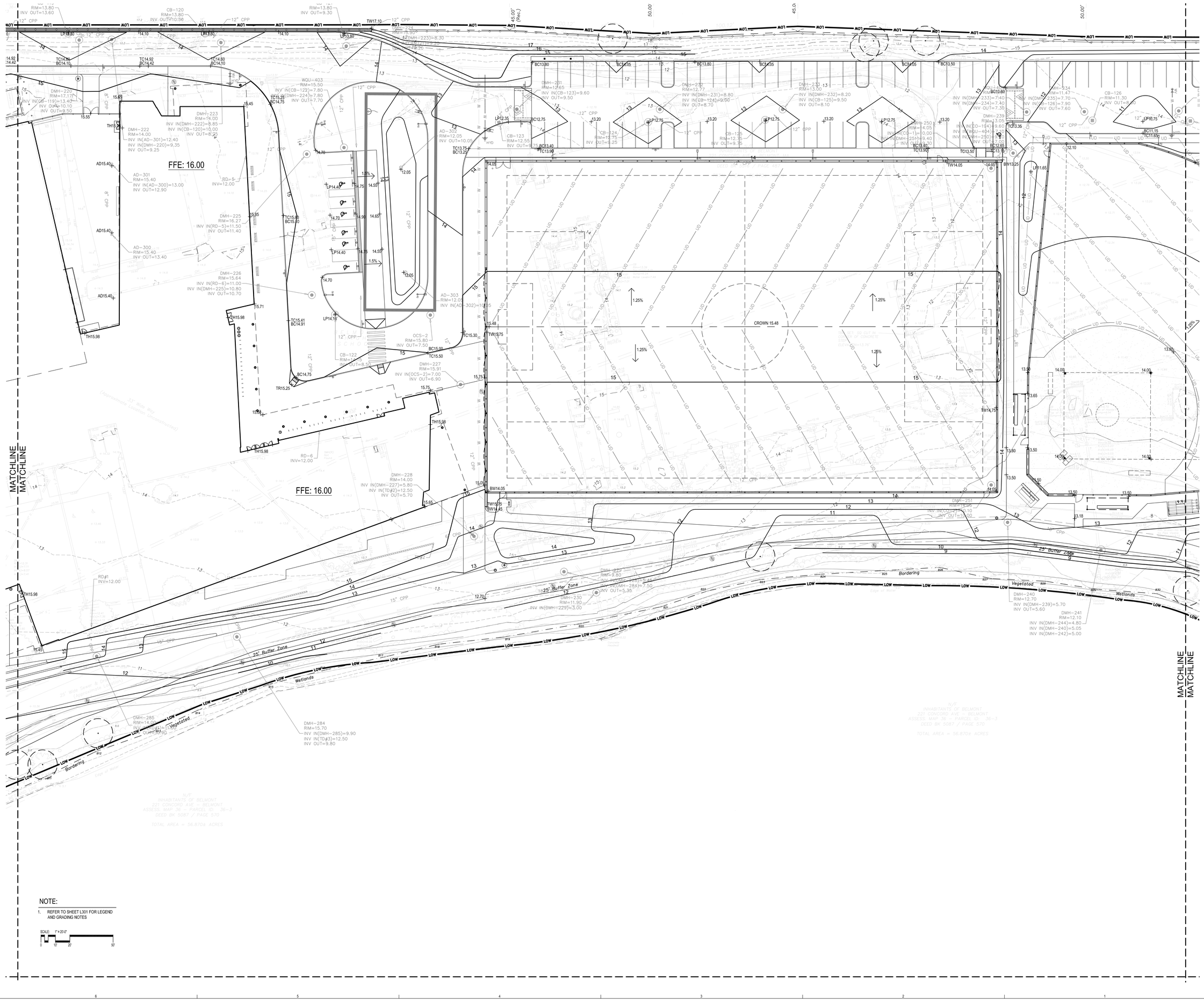
PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
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TITLE

GRADING PLAN

L301



NOTE:

1. REFER TO SHEET L301 FOR LEGEND AND GRADING NOTES

SCALE 1" = 20'-0"

0 10' 20' 50'

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PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

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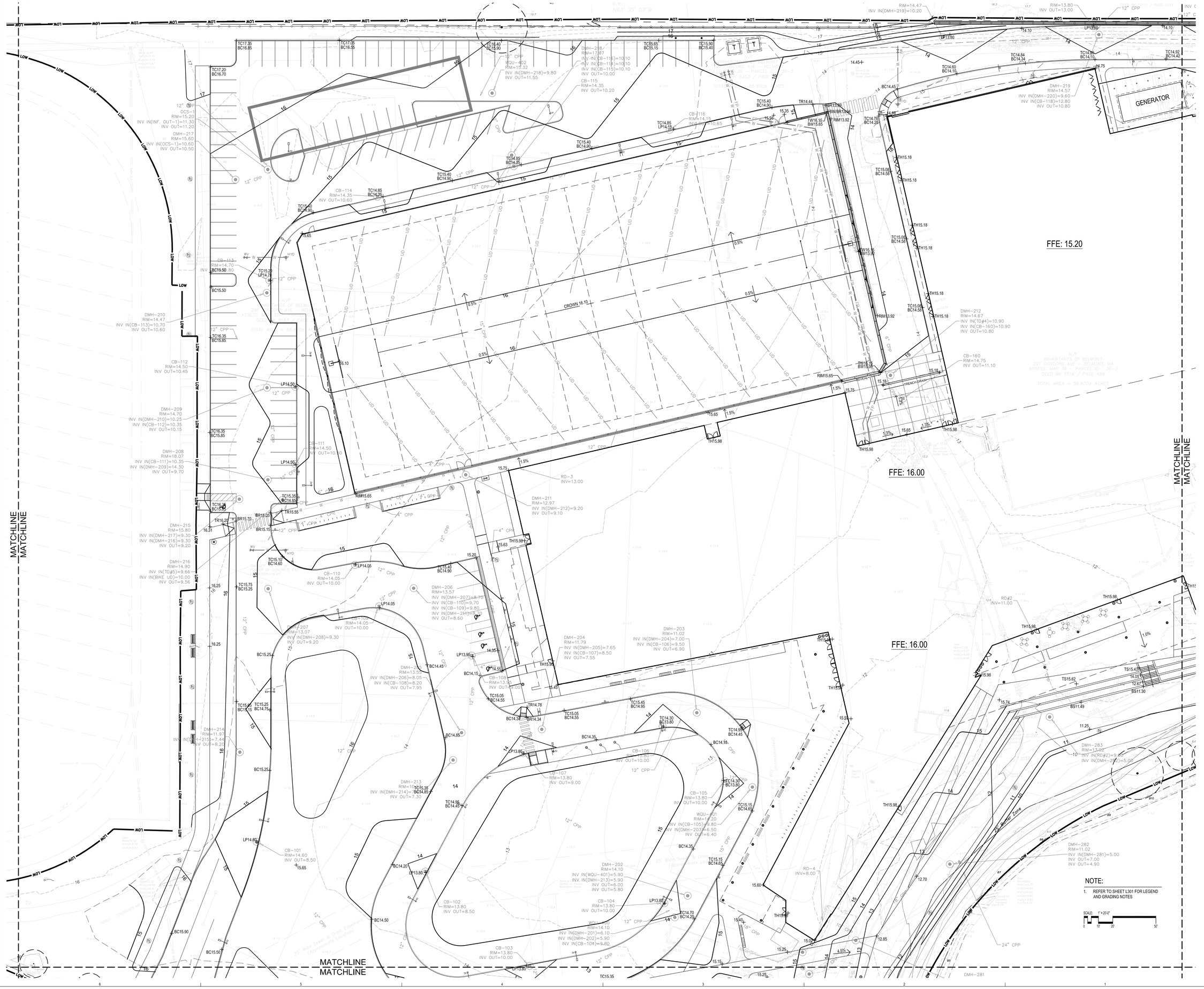
PLANNING BD SET
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JOB NUMBER	153003.001
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TITLE

GRADING PLAN

L302



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DAVID J. WARNER
REGISTERED LANDSCAPE ARCHITECT
NO. 2014

PROJECT

BELMONT HIGH SCHOOL
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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1
4

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET 06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
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TITLE

GRADING PLAN

L303

MATCHLINE
MATCHLINE

CONCORD AVE

25' WETLAND BUFFER

100' WETLAND BUFFER

NOTE:

1. REFER TO SHEET L301 FOR LEGEND AND GRADING NOTES

SCALE: 1" = 20'-0"

0 10' 20' 50'

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NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER NO. 3220 REGISTERED LANDSCAPE ARCHITECT

PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

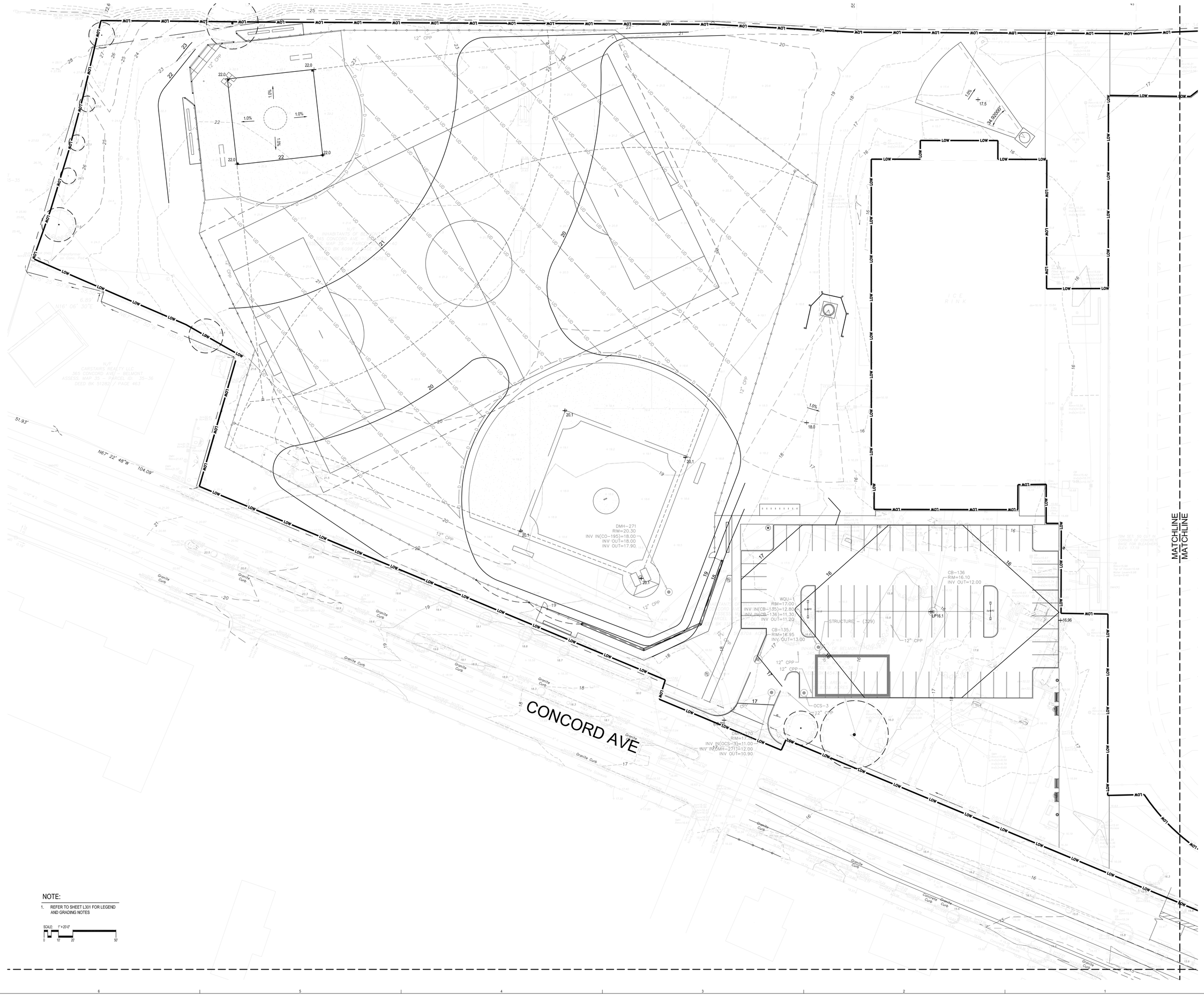
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TITLE

GRADING PLAN

L304



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MASSACHUSETTS
DAVID J WARNER
REGISTERED LANDSCAPE ARCHITECT
NO. 4207

PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1
4

REVISIONS

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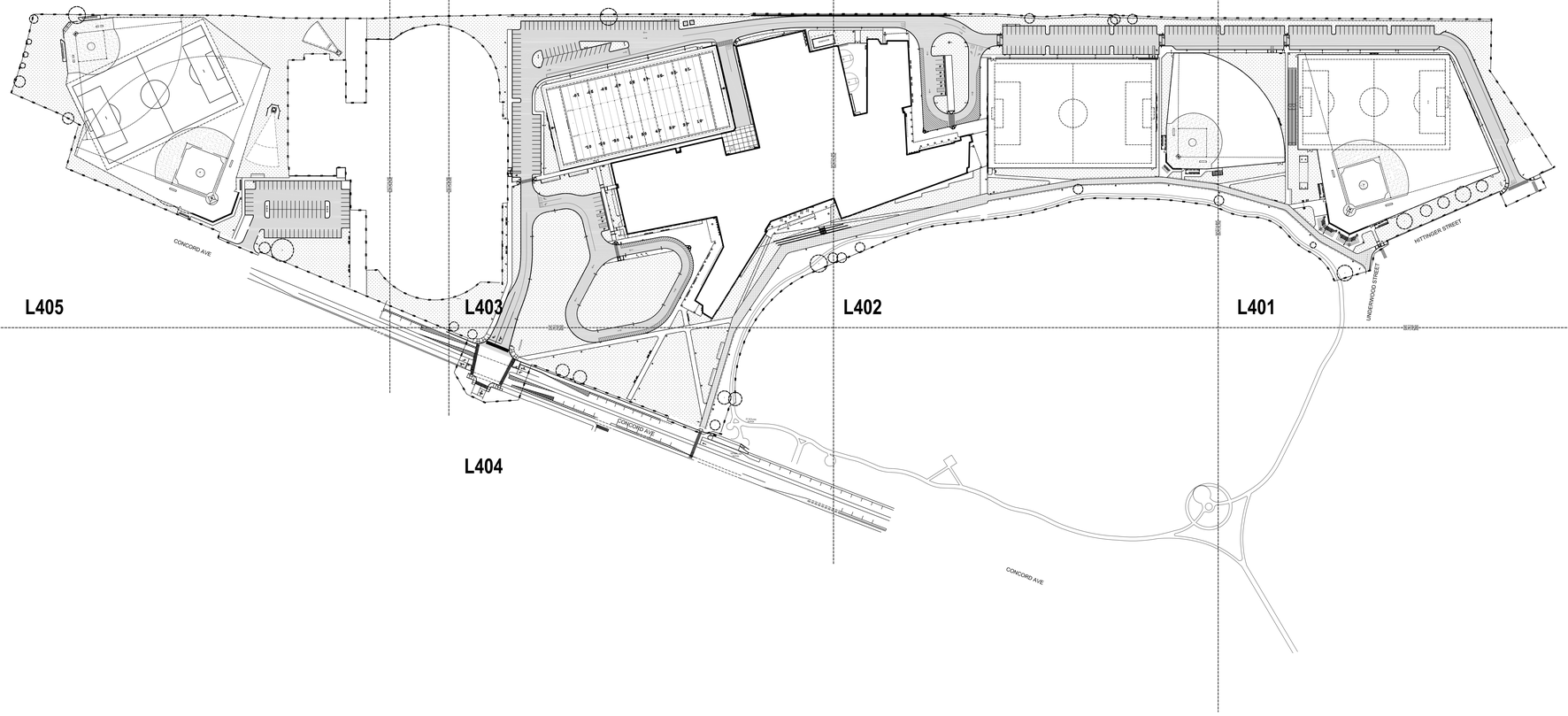
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JOB NUMBER	153003.001
DRAWN	AML
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TITLE

GRADING PLAN

L305



NOTES:

1. SEE NOTES AND LEGEND ON SHEET L401

SCALE: 1" = 100'-0"

0 50' 100' 250'

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NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER REGISTERED LANDSCAPE ARCHITECT NO. 4125

PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

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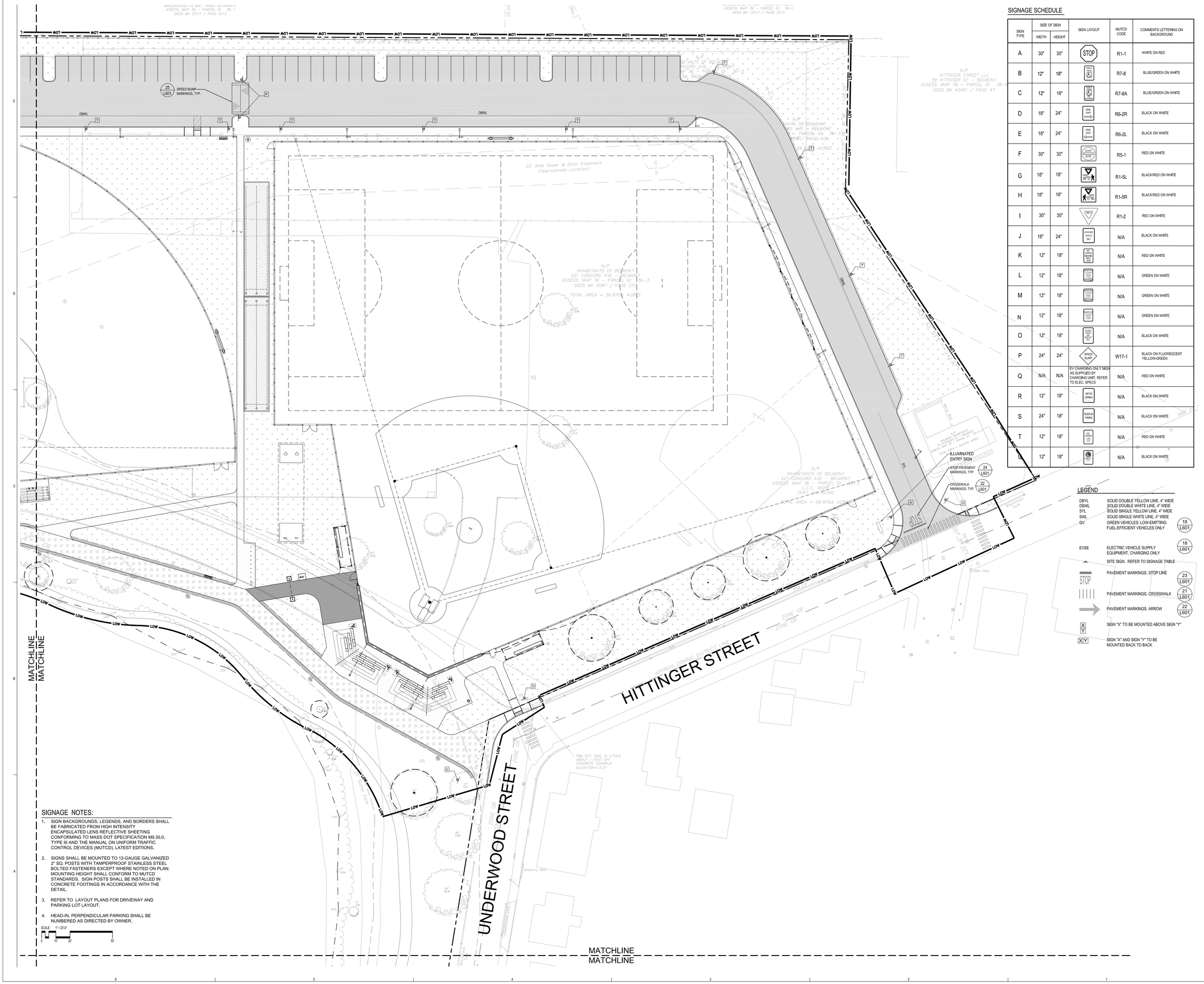
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JOB NUMBER	153003.001
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TITLE

OVERALL SIGNAGE & PAVEMENT MARKINGS PLAN

L400



SIGNAGE SCHEDULE

SIGN TYPE	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	SIGN LAYOUT	MUTCD CODE	COMMENTS LETTERING ON BACKGROUND
A	30"	30"	STOP	R1-1	WHITE ON RED
B	12"	18"	RESERVED PARKING	R7-8	BLUE/GREEN ON WHITE
C	12"	18"	RESERVED PARKING VAN ACCESSIBLE	R7-8A	BLUE/GREEN ON WHITE
D	18"	24"	ONE WAY	R6-2R	BLACK ON WHITE
E	18"	24"	ONE WAY	R6-2L	BLACK ON WHITE
F	30"	30"	DO NOT ENTER	R5-1	RED ON WHITE
G	18"	18"	R1-5L	BLACK/RED ON WHITE
H	18"	18"	R1-5R	BLACK/RED ON WHITE
I	30"	30"	YIELD	R1-2	RED ON WHITE
J	18"	24"	ADVANCE VEHICLES ONLY	N/A	BLACK ON WHITE
K	12"	18"	ALL VEHICLES TAKE CARE	N/A	RED ON WHITE
L	12"	18"	RESERVED SPACE FOR ELECTRIC VEHICLE CHARGING ONLY	N/A	GREEN ON WHITE
M	12"	18"	RESERVED SPACE FOR ELECTRIC VEHICLE CHARGING ONLY	N/A	GREEN ON WHITE
N	12"	18"	RESERVED SPACE FOR ELECTRIC VEHICLE CHARGING ONLY	N/A	GREEN ON WHITE
O	12"	18"	VISITOR SPACE ONE HOUR ONLY	N/A	BLACK ON WHITE
P	24"	24"	SPEED BUMP	W17-1	BLACK ON FLUORESCENT YELLOW-GREEN
Q	N/A	N/A	EV CHARGING ONLY SIGN AS SUPPLIED BY CHARGING UNIT. REFER TO ELEC. SPECS	N/A	RED ON WHITE
R	12"	18"	VISITOR PARKING	N/A	BLACK ON WHITE
S	24"	18"	RESERVED PARKING	N/A	BLACK ON WHITE
T	12"	18"	ALL HANDICAP SPACES MUST BE IN USE PERMIT	N/A	RED ON WHITE
U	12"	18"	HANDICAP PARKING	N/A	BLACK ON WHITE

LEGEND

DBYL	SOLID DOUBLE YELLOW LINE, 4" WIDE	
DBWL	SOLID DOUBLE WHITE LINE, 4" WIDE	
SYL	SOLID SINGLE YELLOW LINE, 4" WIDE	
SWL	SOLID SINGLE WHITE LINE, 4" WIDE	
GV	GREEN VEHICLES: LOW-EMITTING FUEL-EFFICIENT VEHICLES ONLY	18 L601
EVSE	ELECTRIC VEHICLE SUPPLY EQUIPMENT, CHARGING ONLY	18 L601
	SITE SIGN. REFER TO SIGNAGE TABLE	
STOP	PAVEMENT MARKINGS. STOP LINE	23 L601
	PAVEMENT MARKINGS. CROSSWALK	21 L601
	PAVEMENT MARKINGS. ARROW	22 L601
X Y	SIGN "X" TO BE MOUNTED ABOVE SIGN "Y"	
X | Y	SIGN "X" AND SIGN "Y" TO BE MOUNTED BACK TO BACK	

SIGNAGE NOTES:

1. SIGN BACKGROUNDS, LEGENDS, AND BORDERS SHALL BE FABRICATED FROM HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING CONFORMING TO MASS DOT SPECIFICATION M9.30.0, TYPE III AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITIONS.
2. SIGNS SHALL BE MOUNTED TO 12-GAUGE GALVANIZED 2" SQ. POSTS WITH TAMPERPROOF STAINLESS STEEL BOLTED FASTENERS EXCEPT WHERE NOTED ON PLAN. MOUNTING HEIGHT SHALL CONFORM TO MUTCD STANDARDS. SIGN POSTS SHALL BE INSTALLED IN CONCRETE FOOTINGS IN ACCORDANCE WITH THE DETAIL.
3. REFER TO LAYOUT PLANS FOR DRIVEWAY AND PARKING LOT LAYOUT.
4. HEAD-IN, PERPENDICULAR PARKING SHALL BE NUMBERED AS DIRECTED BY OWNER.

SCALE: 1" = 20'-0"
0 10 20 50

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NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER NO. 3127 REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

SIGNAGE & PAVEMENT MARKINGS PLAN

L401

STOP PAVEMENT MARKINGS, TYP. 24 L601

DIRECTIONAL PAVEMENT MARKINGS, TYP. 23 L601

18 L601 EVSE CHARGING ONLY PARKING SPACE, TYP.

EVSE (4)

GV (10)

25 L601 SPEED BUMP MARKINGS, TYP.

BASKETBALL HALF COURT PAVEMENT MARKING 4 L604

24 L601 STOP PAVEMENT MARKINGS, TYP.

ACCESSIBLE PARKING MARKINGS, TYP. 17 L601

12' WIDE CROSSWALK MARKINGS. 22 L601

YELLOW PAVEMENT MATCH WITH FIRE LANE MARKINGS

18 L601 GREEN VEHICLE PARKING SPACE, TYP.

INHABITANTS OF BELMONT
221 CONCORD AVE – BELMONT, MA
ASSESS. MAP 36 – PARCEL ID: 36-3
DEED BK 5516 / PAGE 487

TBM SET: SQ CUT IN CORNER OF CONCRETE STEP ELEVATION=13.76'

25' Wide Sewer & Drain Easement (Approximate Location)

100' Buffer Zone

25' Buffer Zone

Bordering Vegetated Wetlands

Edge of Water

Concrete Headwall

33' Wide Way (Approximate Location Unconstructed)

MATCHLINE

N/F
INHABITANTS OF BELMONT
221 CONCORD AVE – BELMONT
ASSESS. MAP 36 – PARCEL ID: 36-3
DEED BK 5087 / PAGE 570

TOTAL AREA = 56.870± ACRES

NOTES:

1. SEE NOTES AND LEGEND ON SHEET L401

SCALE: 1" = 20'-0"
0 10' 20' 50'

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PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET 06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

SIGNAGE & PAVEMENT MARKINGS PLAN

L402

NOTES:

1. SEE NOTES AND LEGEND ON SHEET L401

SCALE: 1" = 20'-0"

MATCHLINE
MATCHLINE

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PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

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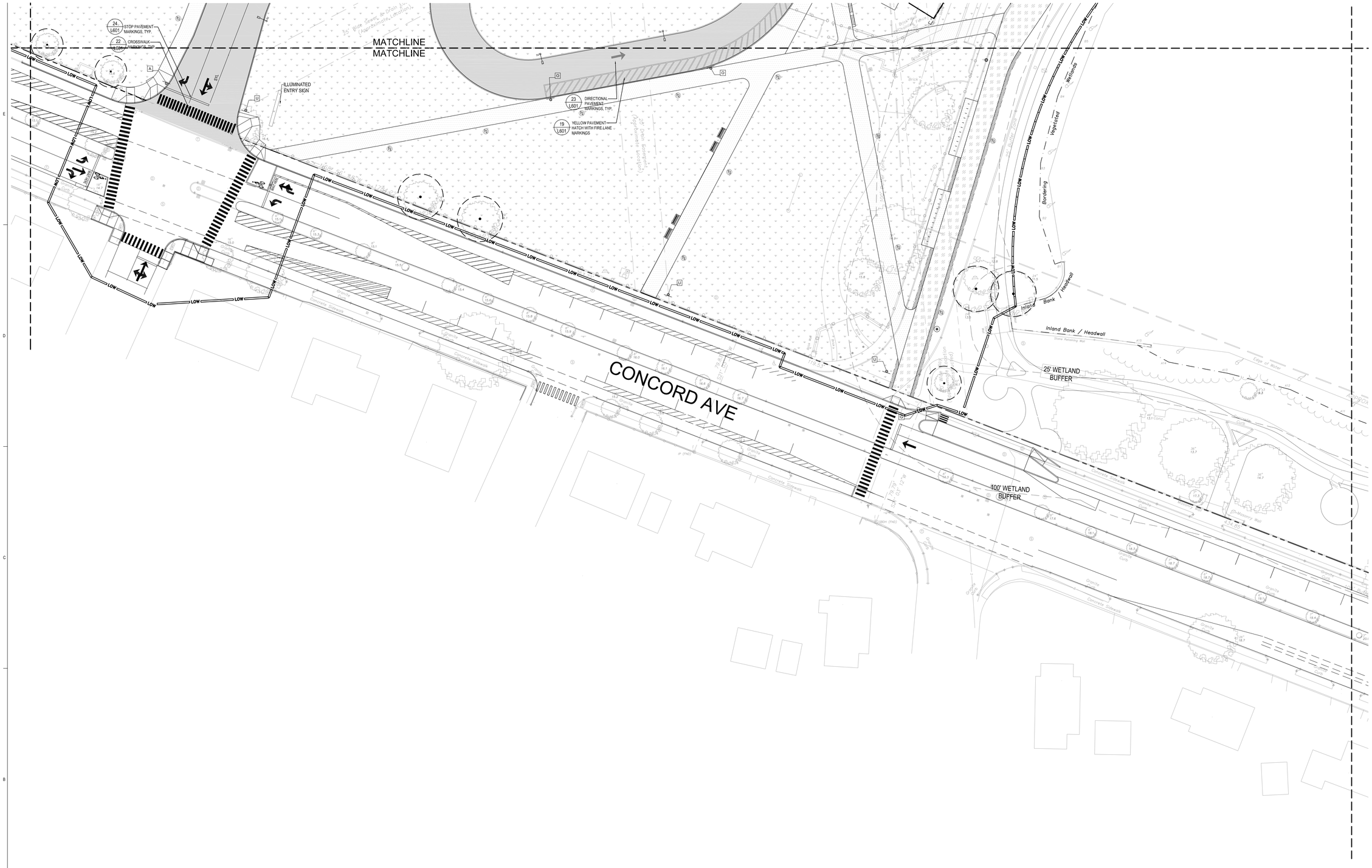
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JOB NUMBER	153003.001
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TITLE

SIGNAGE & PAVEMENT MARKINGS PLAN

L403



NOTES:

1. SEE NOTES AND LEGEND ON SHEET L401

SCALE: 1" = 20'-0"

0 10' 20' 50'

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PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

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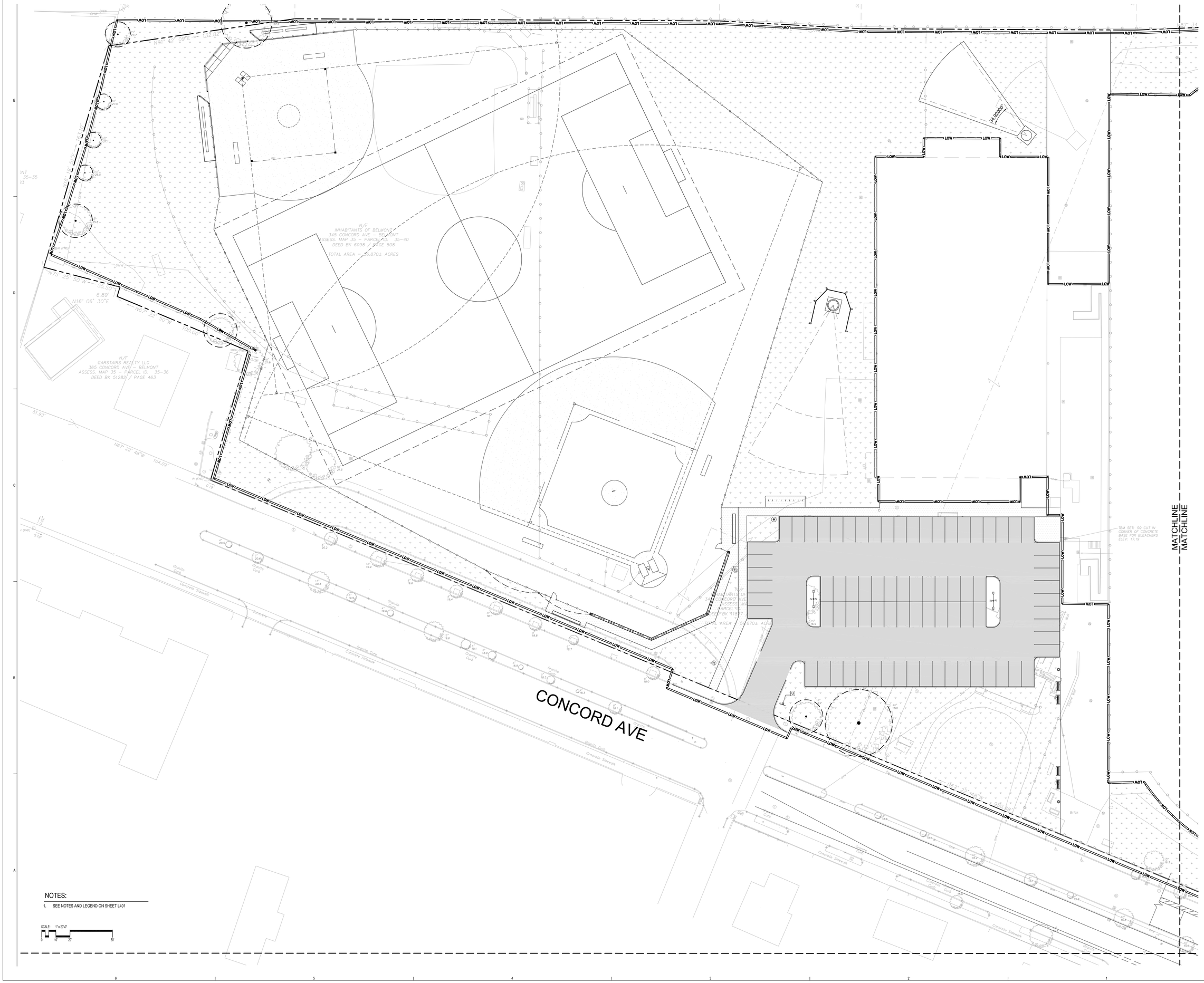
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TITLE

SIGNAGE & PAVEMENT MARKINGS PLAN

L404



NOTES:

1. SEE NOTES AND LEGEND ON SHEET L401

SCALE: 1" = 20'-0"

0 10' 20' 50'

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MASSACHUSETTS DAVID J. WARNER REGISTERED LANDSCAPE ARCHITECT No. 1178

PROJECT

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CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

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REVISIONS

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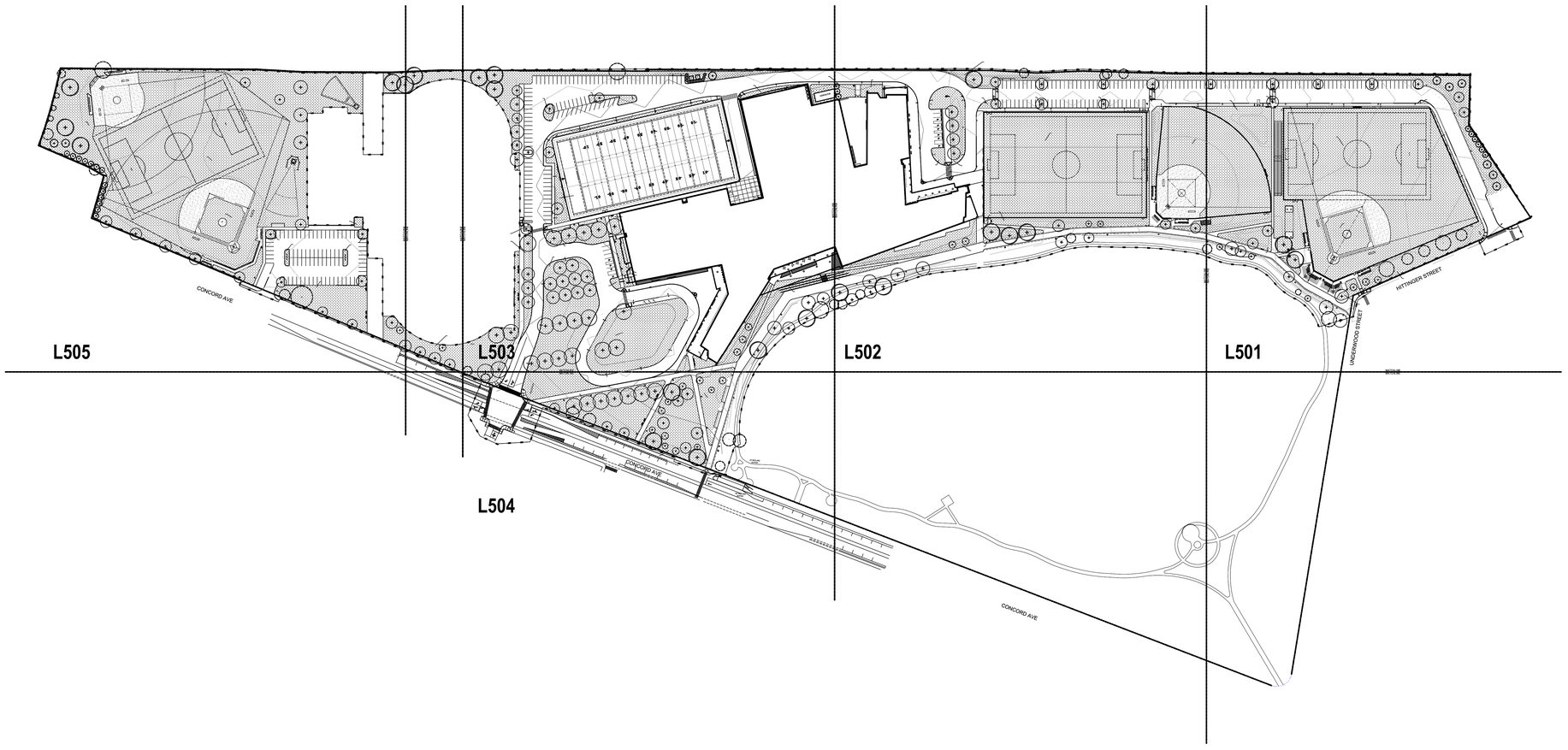
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JOB NUMBER	153003.001
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TITLE

SIGNAGE & PAVEMENT MARKINGS PLAN

L405



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DAVID J. WARNER
REGISTERED LANDSCAPE ARCHITECT
NO. 2097

PROJECT

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KEYPLAN

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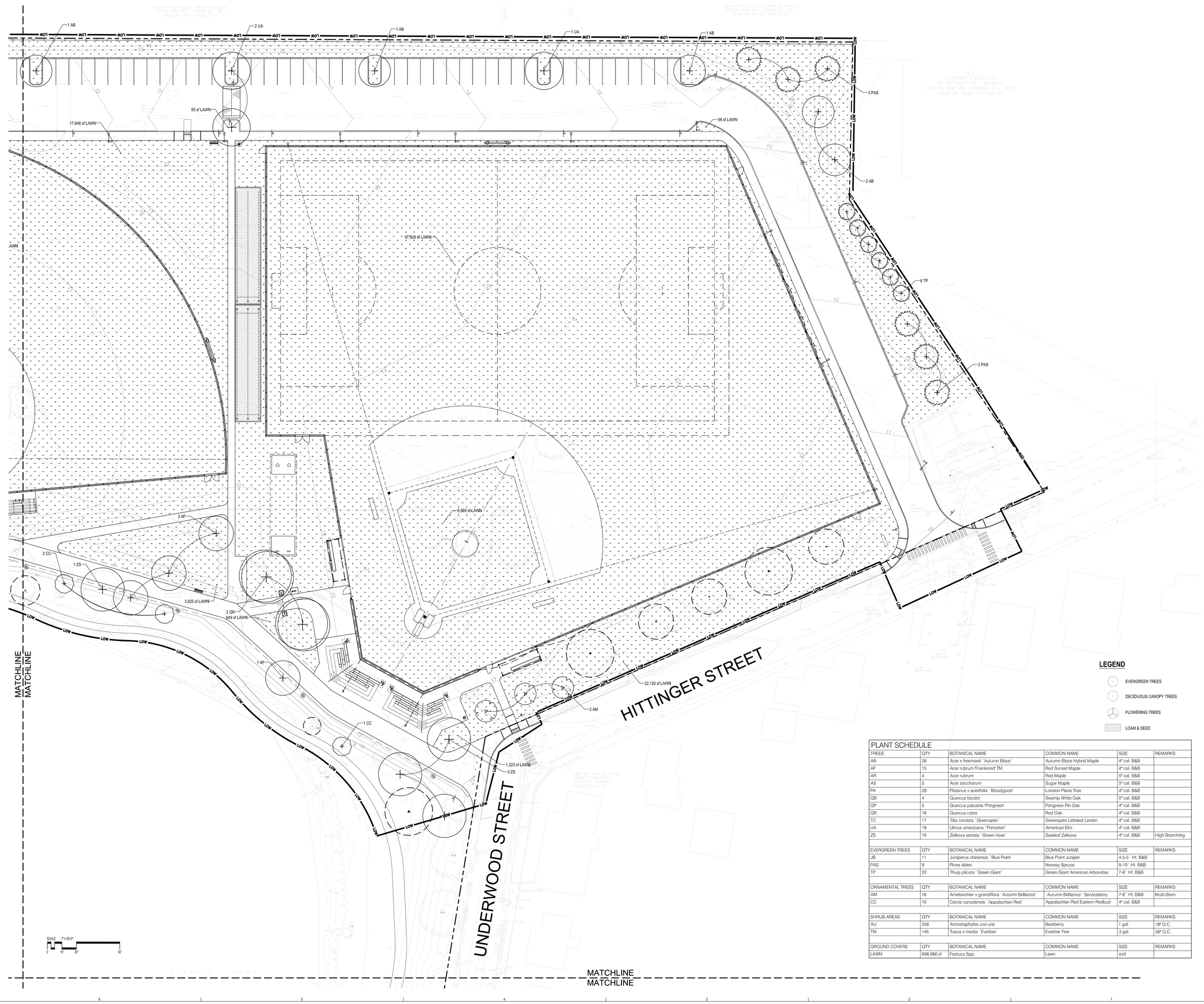
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TITLE

OVERALL PLANTING PLAN

L500



LEGEND

- EVERGREEN TREES
- DECIDUOUS CANOPY TREES
- FLOWERING TREES
- LOAM & SEED

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
AB	26	Acer x freemanii `Autumn Blaze`	Autumn Blaze Hybrid Maple	4" cal. B&B	
AF	15	Acer rubrum 'Franksred' TM	Red Sunset Maple	4" cal. B&B	
AR	4	Acer rubrum	Red Maple	5" cal. B&B	
AS	5	Acer saccharum	Sugar Maple	5" cal. B&B	
PA	28	Platanus x acerifolia `Bloodgood`	London Plane Tree	4" cal. B&B	
QB	4	Quercus bicolor	Swamp White Oak	5" cal. B&B	
QP	5	Quercus palustris 'Pringreen'	Pringreen Pin Oak	4" cal. B&B	
QR	18	Quercus rubra	Red Oak	4" cal. B&B	
TC	17	Tilia cordata `Greenspire`	Greenspire Littleleaf Linden	4" cal. B&B	
UA	19	Ulmus americana `Princeton`	American Elm	4" cal. B&B	
ZS	10	Zelkova serrata `Green Vase`	Sawleaf Zelkova	4" cal. B&B	High Branching
EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
JB	11	Juniperus chinensis `Blue Point`	Blue Point Juniper	4.5-5` Ht. B&B	
PAS	9	Picea abies	Norway Spruce	8-10` Ht. B&B	
TP	22	Thuja plicata `Green Giant`	Green Giant American Arborvitae	7-8` Ht. B&B	
ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
AM	16	Amelanchier x grandiflora `Autumn Brilliance`	`Autumn Brilliance` Serviceberry	7-8` Ht. B&B	Multi-Stem
CC	10	Cercis canadensis `Appalachian Red`	Appalachian Red Eastern Redbud	4" cal. B&B	
SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
AU	556	Arctostaphylos uva-ursi	Bearberry	1 gal.	18" O.C.
TM	146	Taxus x media `Everlow`	Everlow Yew	3 gal.	36" O.C.
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
LAWN	698,966 sf	Festuca Spp.	Lawn	sod	

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MASSACHUSETTS DAVID J WARNER REGISTERED LANDSCAPE ARCHITECT NO. 1017

PROJECT

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BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

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REVISIONS

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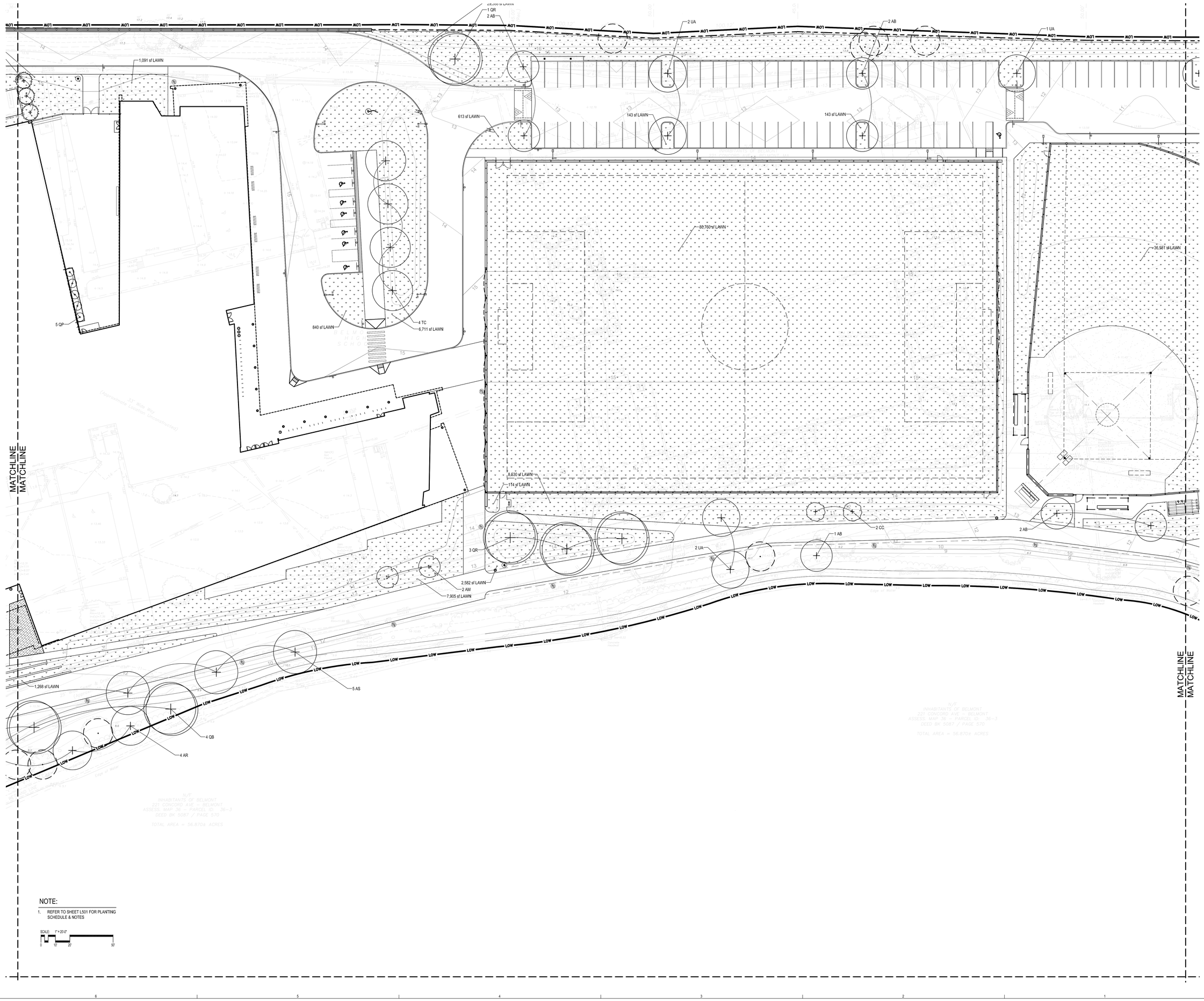
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JOB NUMBER	153003.001
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TITLE

PLANTING PLAN

L501



NOTE:

1. REFER TO SHEET L501 FOR PLANTING SCHEDULE & NOTES

SCALE: 1" = 20'-0"
0 10' 20' 50'

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MASSACHUSETTS
DAVID J. WARNER
REGISTERED LANDSCAPE ARCHITECT
NO. 2277

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

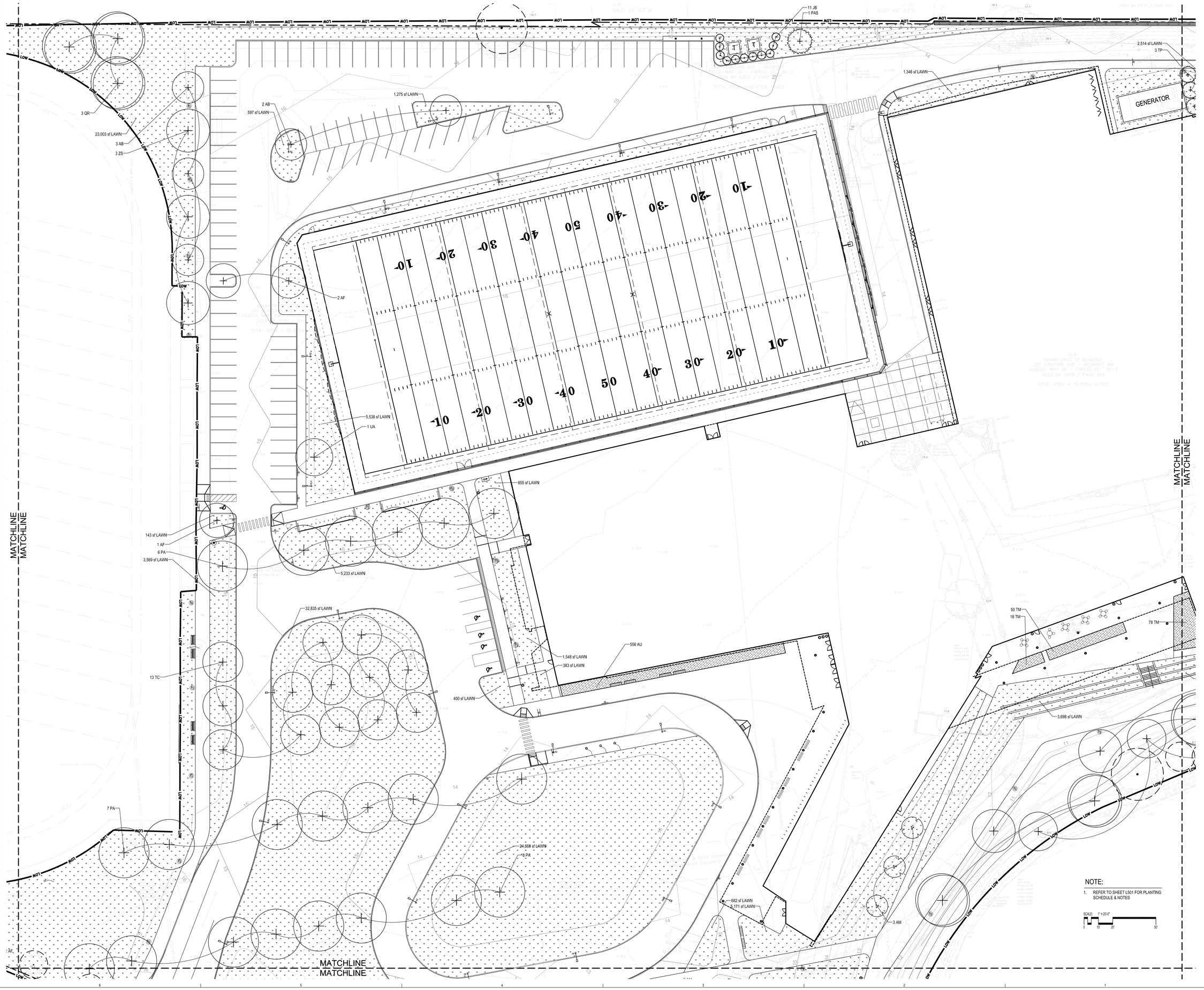
PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

PLANTING PLAN

L502



NOTE:

1. REFER TO SHEET L501 FOR PLANTING SCHEDULE & NOTES

SCALE: 1" = 20'-0"

0 10' 20' 50'

PERKINS + WILL

225 FRANKLIN ST., SUITE 1100
BOSTON, MA 02110
t 617.478.0300
f 617.478.0321
www.perkinswill.com

WARNER LARSON
LANDSCAPE ARCHITECTS

130 WEST BROADWAY, BOSTON MA 02127
T 617.464.1440 F 617.464.1442
www.warnerlarson.com

NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS
DAVID J. WARNER
REGISTERED LANDSCAPE ARCHITECT
NO. 1016

PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

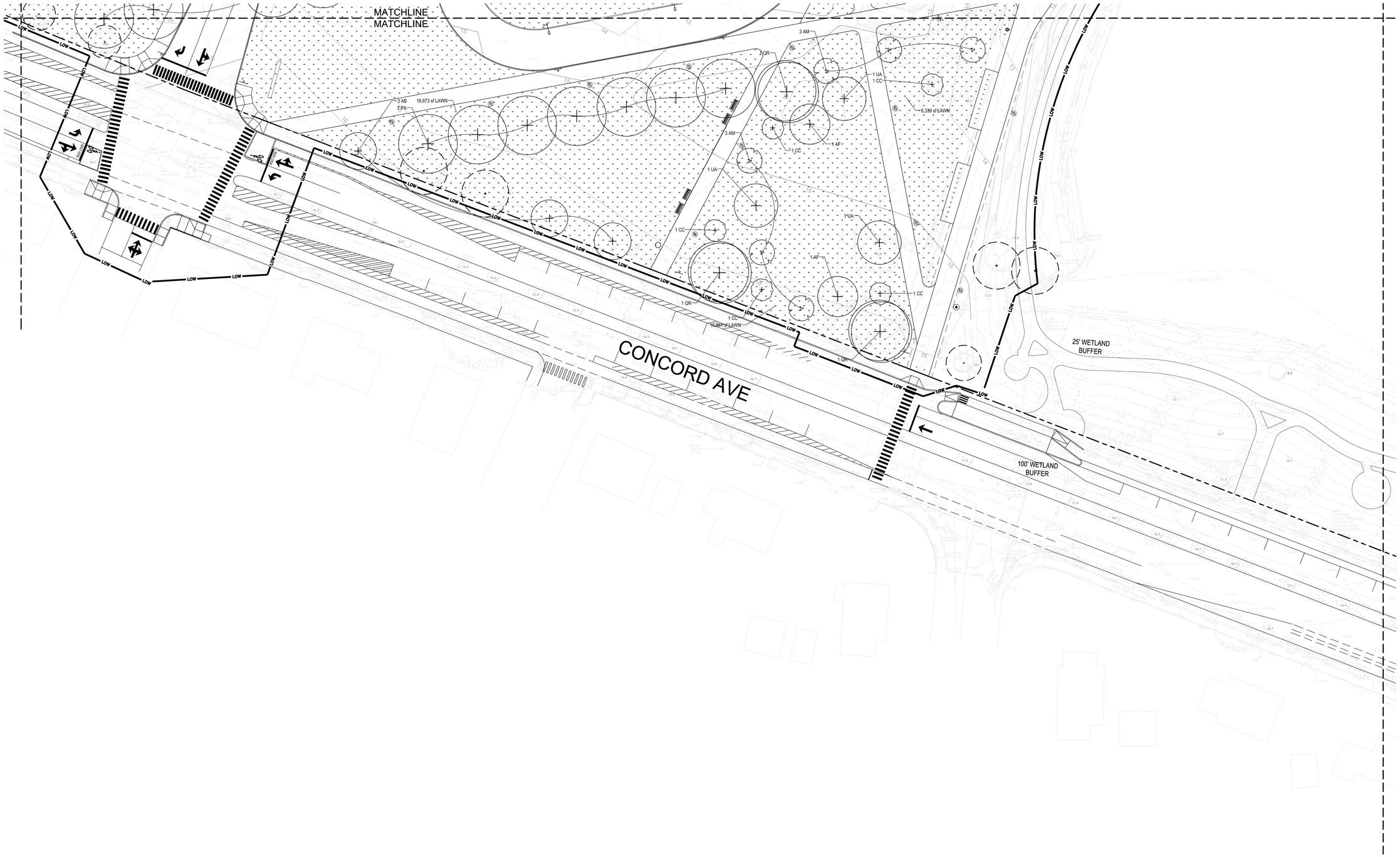
PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

PLANTING PLAN

L503



NOTE:

1. REFER TO SHEET L501 FOR PLANTING SCHEDULE & NOTES

SCALE: 1" = 20'-0"

0 10' 20' 50'

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225 FRANKLIN ST., SUITE 1100
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MASSACHUSETTS
DAVID J WARNER
No. 2021
REGISTERED LANDSCAPE ARCHITECT

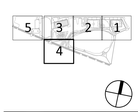
PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN



REVISIONS

MARK	ISSUE	DATE

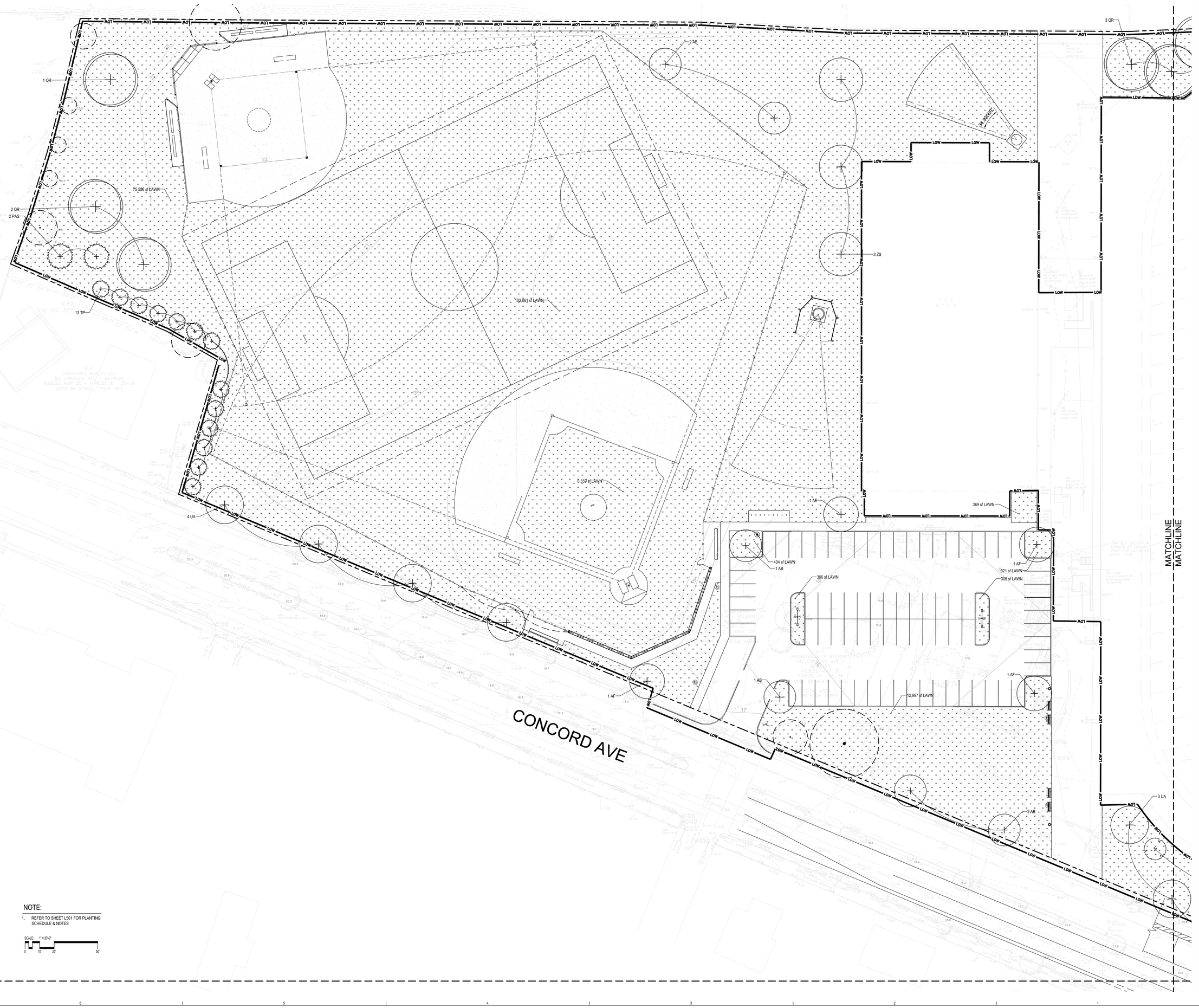
PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

PLANTING PLAN

L504



NOTE:

1. REFER TO SHEET L501 FOR PLANTING SCHEDULE & NOTES

SCALE: 1" = 20'-0"
0 10' 20' 50'

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NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER NO. 5012 REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

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KEYPLAN

5 3 2 1 4

REVISIONS

MARK	ISSUE	DATE

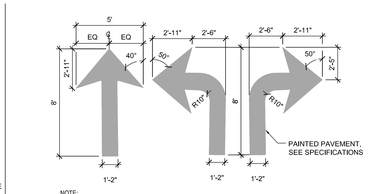
PLANNING BD SET
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JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

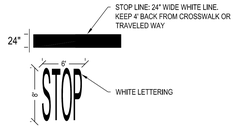
PLANTING PLAN

L505



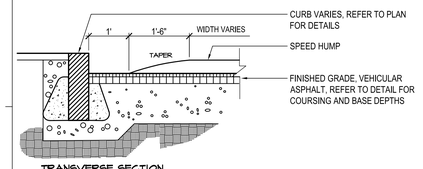
NOTE:
1. PROVIDE PAVEMENT MARKINGS WHERE SHOWN ON THE PLAN IN ACCORDANCE WITH THIS DETAIL.
2. PROVIDE SHOP DRAWINGS
3. SEE SPECIFICATIONS

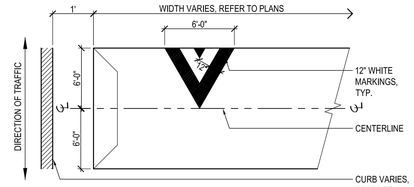
23 DIRECTIONAL PAVEMENT MARKINGS
SCALE: 1/4" = 1'-0"

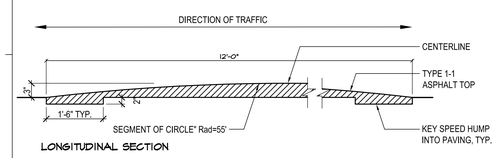


NOTE:
PROVIDE PAVEMENT MARKINGS WHERE SHOWN ON THE PLAN IN ACCORDANCE WITH THIS DETAIL.

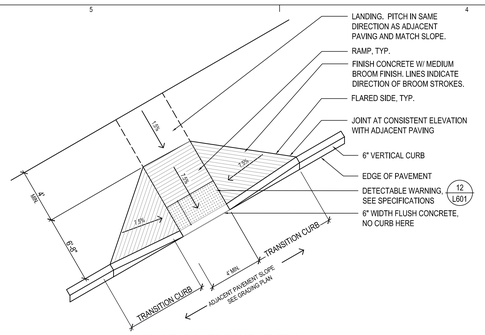
24 'STOP' PAVEMENT MARKINGS
SCALE: 1-1/2"=1'-0"



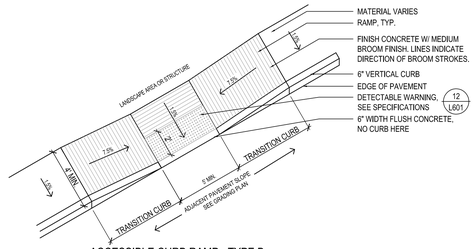




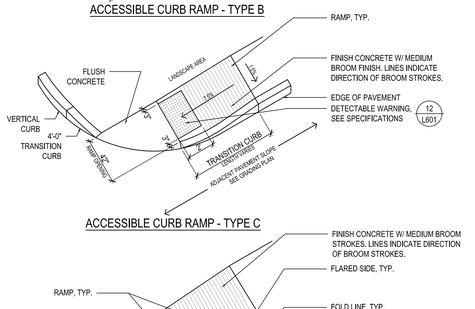
25 SPEED HUMP
SCALE: 3/4" = 1'-0"



ACCESSIBLE CURB RAMP - TYPE A



ACCESSIBLE CURB RAMP - TYPE B



ACCESSIBLE CURB RAMP - TYPE C

ACCESSIBLE CURB RAMP "TYPE D"

TRANSITION CURB LENGTH CHART ON 7.5% SLOPE RAMP W/ 6" CURB REVEAL

ADJACENT PAVEMENT SLOPE	TRANSITION LENGTH UPHILL SIDE	TRANSITION LENGTH DOWNHILL SIDE
0%	6.5'	6.5'
0-1%	7'-6"	6.5'
>1-2%	9.0'	6.5'
>2-3%	11.0'	6.5'
>3-4%	14.0'	6.5'
>4-5%	15.0' MAX	6.5'

NOTES:
1. CURBS AND WALKS ALONG ACCESSIBLE CURB RAMPS SHALL CONFORM TO THE APPLICABLE REGULATIONS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD AND THE AMERICANS WITH DISABILITIES ACT. NON-CONFORMING WORK SHALL BE REMOVED AND REINSTALLED AT THE CONTRACTORS EXPENSE.
2. MAXIMUM SLOPE ON RAMP NOT TO EXCEED 8.0%. MAXIMUM CROSS SLOPE PERPENDICULAR TO RAMP NOT TO EXCEED 1.8%.
3. MAXIMUM SLOPE ON LANDING NOT TO EXCEED 1.8%. MINIMUM SLOPE ON LANDING NOT TO BE LESS THAN 1%.
4. MAXIMUM TRANSITION CURB AND FLARED SIDE SLOPES NOT TO EXCEED 8.0%. MINIMUM TRANSITION CURB AND FLARED SIDE SLOPE NOT TO BE LESS THAN 7%.
5. SOME ACCESSIBLE CURB CUT CONFIGURATIONS INDICATED MAY REQUIRE RADIAL TRANSITION CURBS. SEE LAYOUT DRAWING FOR RADIAL DIMENSIONS. ADDITIONALLY, SEE PLAN FOR SOME RAMPS NOTED AS SIMILAR.
6. DETECTABLE WARNING SURFACE COLOR TO CONTRAST ADJACENT PAVING MATERIAL: DARK WITH LIGHT OR LIGHT WITH DARK AS DEFINED IN THE AMERICANS WITH DISABILITIES ACT, SEE SPECIFICATIONS.
7. CURB CUTS SHALL BE PERPENDICULAR TO THE CURB, UNLESS OTHERWISE SHOWN.
8. REFER TO TRANSITION CURB LENGTH CHART FOR TRANSITION CURB LENGTHS.
9. PROVIDE POSITIVE DRAINAGE AWAY FROM BOTTOM OF CURB RAMPS TO PREVENT PONDING.
10. ALL RAMPS SHALL BE CONCRETE PAVING PER DETAIL.

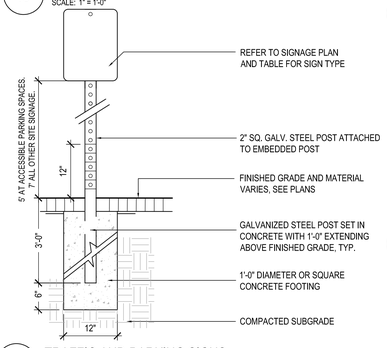
21 ACCESSIBLE CURB RAMPS
SCALE: 1/4" = 1'-0"

NOTE:
1. PROVIDE PAVEMENT MARKINGS WHERE SHOWN ON PLANS IN ACCORDANCE WITH THIS DETAIL.
2. SEE SPECIFICATIONS

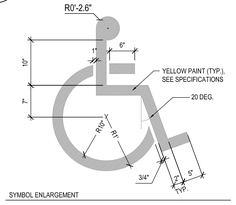
22 CROSSWALK MARKINGS
SCALE: 1" = 1'-0"

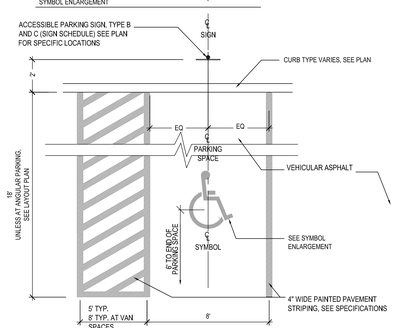


15 BOLLARD WITH SIGN
SCALE: 1" = 1'-0"

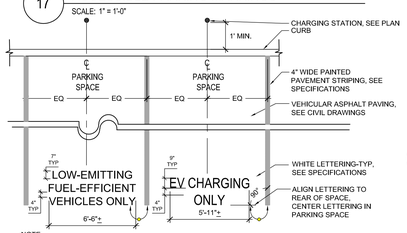


16 TRAFFIC AND PARKING SIGNS
SCALE: 1" = 1'-0"



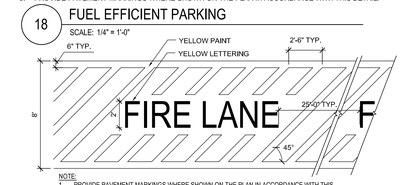


17 ACCESSIBLE PARKING MARKINGS
SCALE: 1" = 1'-0"



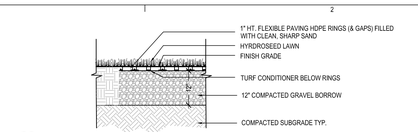
NOTE:
1. FE=LOW-EMITTING FUEL-EFFICIENT VEHICLES ONLY
2. EV= ELECTRIC CHARGING ONLY
3. PROVIDE PAVEMENT MARKINGS WHERE SHOWN ON THE PLAN IN ACCORDANCE WITH THIS DETAIL.

18 FUEL EFFICIENT PARKING
SCALE: 1/4" = 1'-0"

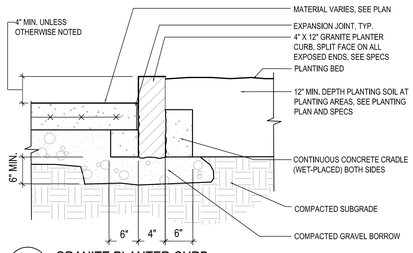


NOTE:
1. PROVIDE PAVEMENT MARKINGS WHERE SHOWN ON THE PLAN IN ACCORDANCE WITH THIS DETAIL.
2. PROVIDE SHOP DRAWINGS
3. SEE SPECIFICATIONS

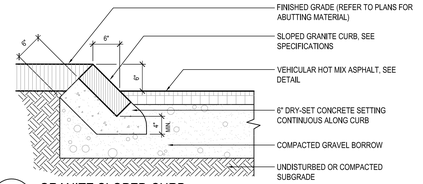
19 FIRE LANE PAVEMENT MARKINGS
SCALE: 1/4" = 1'-0"



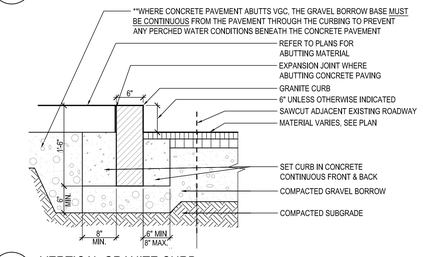
8 STABILIZED LAWN SHOULDER
SCALE: 3/4" = 1'-0"



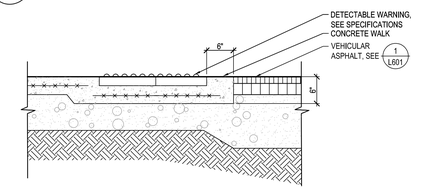
9 GRANITE PLANTER CURB
SCALE: 1" = 1'-0"



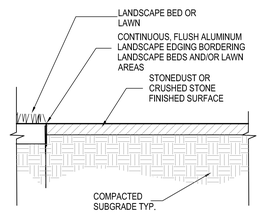
10 GRANITE SLOPED CURB
SCALE: 1" = 1'-0"



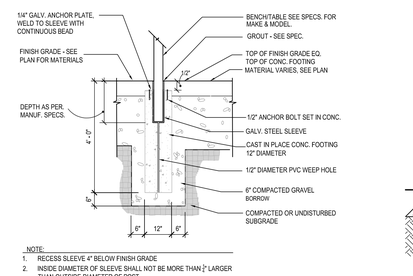
11 VERTICAL GRANITE CURB
SCALE: 1" = 1'-0"



12 DETECTABLE WARNING
SCALE: 1" = 1'-0"

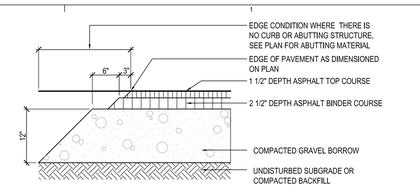


13 METAL EDGING
SCALE: 1" = 1'-0"

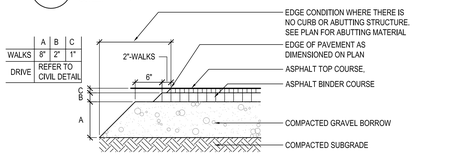


NOTE:
1. RECESS SLEEVE 4" BELOW FINISH GRADE
2. INSIDE DIAMETER OF SLEEVE SHALL NOT BE MORE THAN 1/2" LARGER THAN OUTSIDE DIAMETER OF POST

14 PLAYERS BENCH FOOTING
SCALE: 1/2" = 1'-0"

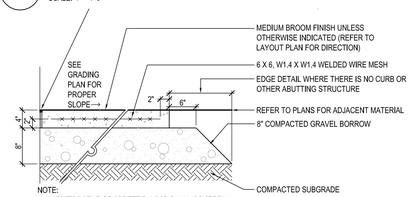


1 VEHICULAR ASPHALT PAVING
SCALE: 1" = 1'-0"



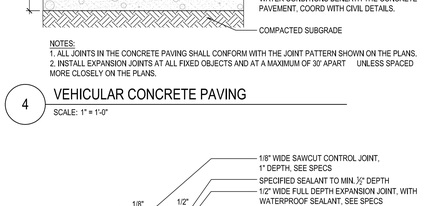
	A	B	C
WALKS	8"	2"	1"
DRIVE	REFER TO CIVIL DETAIL		

2 ASPHALT WALKWAY PAVING
SCALE: 1" = 1'-0"



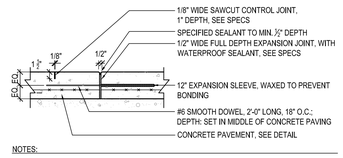
NOTE:
ALL JOINTS IN THE CONCRETE PAVING SHALL CONFORM WITH THE JOINT PATTERN SHOWN ON THE PLANS.

3 CONCRETE WALKWAY PAVING
SCALE: 1" = 1'-0"



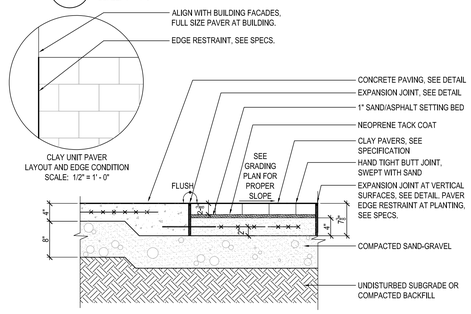
NOTES:
1. ALL JOINTS IN THE CONCRETE PAVING SHALL CONFORM WITH THE JOINT PATTERN SHOWN ON THE PLANS.
2. INSTALL EXPANSION JOINTS AT ALL FIXED OBJECTS AND AT A MAXIMUM OF 30' APART UNLESS SPACED MORE CLOSELY ON THE PLANS.

4 VEHICULAR CONCRETE PAVING
SCALE: 1" = 1'-0"



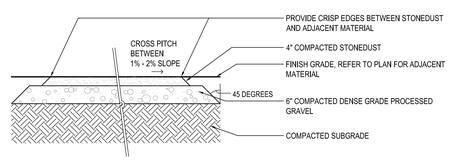
NOTES:
1. DOWEL IS TYPICAL AT ALL EXPANSION JOINTS WITHIN CONCRETE PAVING AND BETWEEN CONCRETE PAVING AND CONCRETE STAIRS.
2. DELETE EXPANSION SLEEVE AND DOWEL WHERE JOINT ABUTS RETAINING WALL, CURBS, OR OTHER VERTICAL SURFACES.
3. INSTALL JOINTS AS SHOWN ON PLAN.

5 EXPANSION AND CONTROL JOINTS
SCALE: 1" = 1'-0"



CLAY UNIT PAVER LAYOUT AND EDGE CONDITION
SCALE: 1/2" = 1' - 0"

6 CLAY UNIT PAVERS
SCALE: 1" = 1'-0"



7 STABILIZED STONEDUST
SCALE: 1" = 1'-0"

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PROJECT

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CLIENT LOGO IF AVAILABLE

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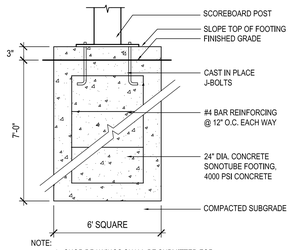
PLANNING BD SET 06.21.2019

JOB NUMBER	153003.001
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CHECKED	TJ

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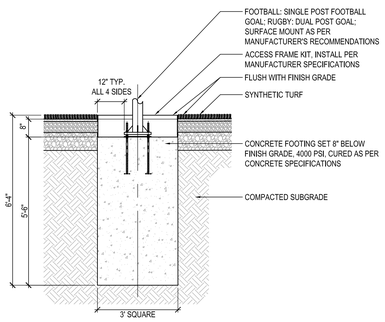
LANDSCAPE DETAILS

L601

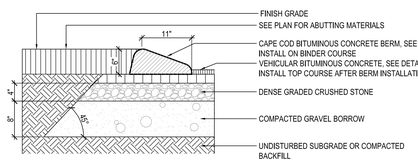


NOTE:
1. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY STRUCTURAL ENGINEER.
2. COORD. WITH ELECTRICAL ENGINEER FOR FOOTING SIZE AND DEPTH
3. FOOTING SIZE AND REINFORCEMENT TO BE PER ENGINEERED SHOP DRAWINGS.

17 MULTI-SPORT SCOREBOARD FOOTING
SCALE: 1" = 1'-0"

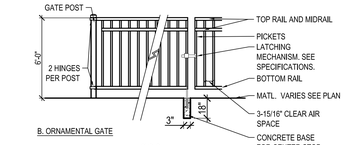


18 FOOTBALL & RUGBY GOAL POST FOOTING
SCALE: 1/2" = 1'-0"

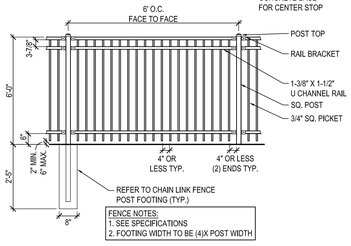


19 CAPE COD ASPHALT BERM
SCALE: 1" = 1'-0"

GATE NOTES:
1. SEE DETAIL FOR GATE POST FOOTING
2. REFER TO SPECIFICATIONS FOR MATERIAL AND DIMENSIONAL REQUIREMENTS.
3. FIELD MEASURE CONSTRUCTED BRICK PIERS PRIOR TO FABRICATION
4. AT PIERS, OMIT GATE POSTS, AND USE 4 DIRECT ATTACH GATE HINGES



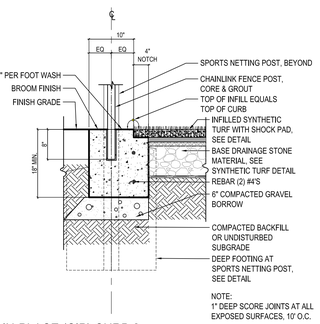
B. ORNAMENTAL GATE



FENCE NOTES:
1. SEE SPECIFICATIONS
2. FOOTING WIDTH TO BE (4)X POST WIDTH

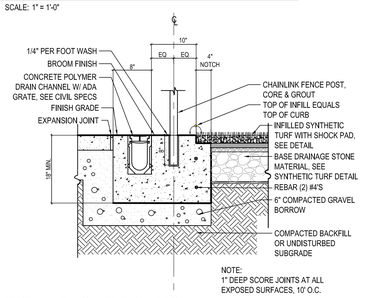
A. ORNAMENTAL FENCE

20 ORNAMENTAL FENCE
SCALE: 1/2" = 1'-0"



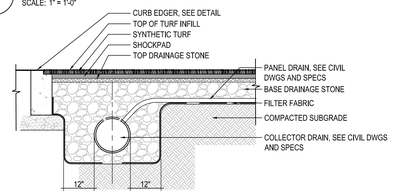
NOTE:
1" DEEP SCORE JOINTS AT ALL EXPOSED SURFACES, 10' O.C.

12 CAST-IN-PLACE (CIP) CURB 2
SCALE: 1" = 1'-0"

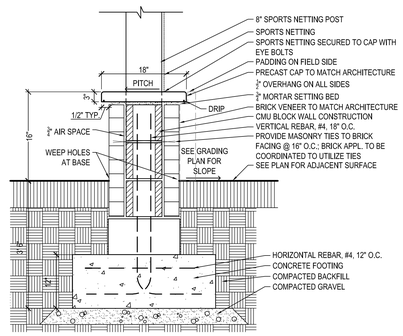


NOTE:
1" DEEP SCORE JOINTS AT ALL EXPOSED SURFACES, 10' O.C.

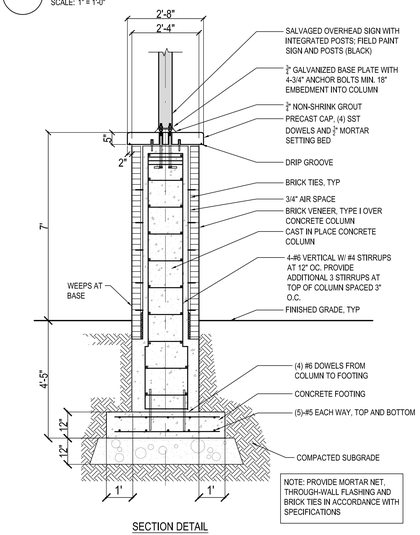
13 CAST-IN-PLACE (CIP) CURB 3
SCALE: 1" = 1'-0"



14 SYNTHETIC TURF COLLECTOR DRAIN
SCALE: 1/2" = 1'-0"



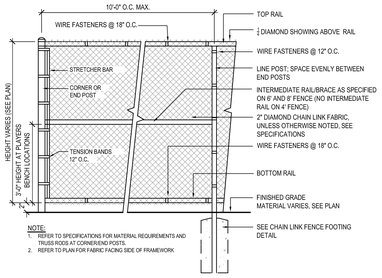
15 FREESTANDING MASONRY WALL
SCALE: 1" = 1'-0"



NOTE: PROVIDE MORTAR NET, THROUGH-WALL FLASHING AND BRICK TIES IN ACCORDANCE WITH SPECIFICATIONS

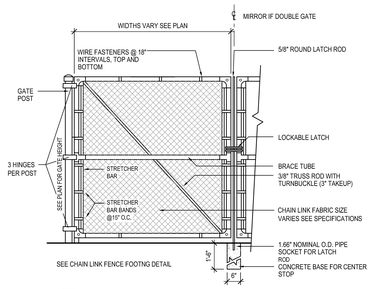
SECTION DETAIL

16 MASONRY VENEER PIERS
SCALE: 1/2" = 1'-0"



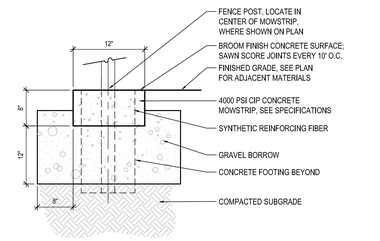
NOTE:
1. REFER TO SPECIFICATIONS FOR MATERIAL REQUIREMENTS AND TRUSS RODS AT CORNER/END POSTS.
2. REFER TO PLAN FOR FABRIC FACING SIDE OF FRAMEWORK

7 CHAIN LINK FENCE
SCALE: 1/2" = 1'-0"

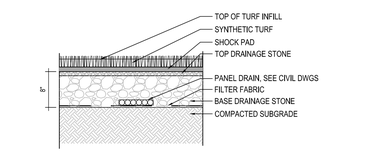


NOTES:
1. GATE WIDTHS AS NOTED ON PLAN
2. GATE POSTS SHALL BE 4" NOM. O.D.
3. GATE FRAMES AND BRACES SHALL BE 1.90" NOM. O.D.
4. REFER TO SPECIFICATIONS FOR MATERIAL REQUIREMENTS

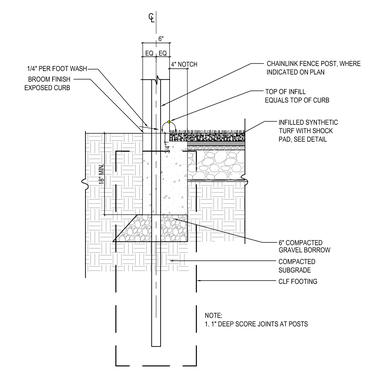
8 CHAIN LINK GATE
SCALE: 1/2" = 1'-0"



9 CONCRETE MOW STRIP AT FENCE POST
SCALE: 1" = 1'-0"



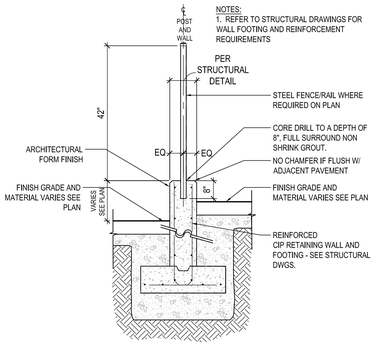
10 SYNTHETIC TURF
SCALE: 1" = 1'-0"



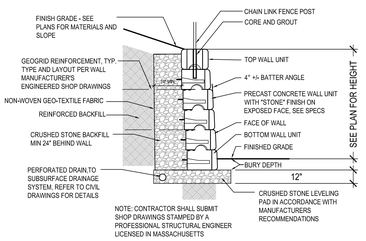
NOTE:
1. 1" DEEP SCORE JOINTS AT POSTS

11 CAST-IN-PLACE (CIP) CURB 1
SCALE: 1" = 1'-0"

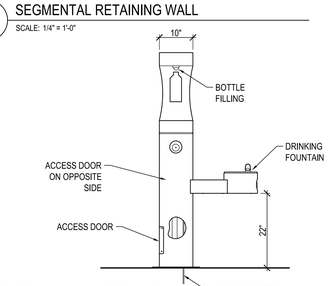
NOTES:
1. REFER TO STRUCTURAL DRAWINGS FOR WALL FOOTING AND REINFORCEMENT REQUIREMENTS



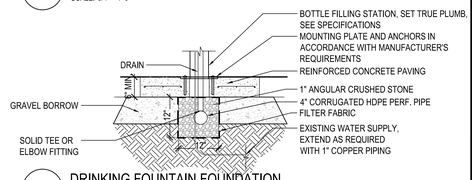
1 CAST-IN-PLACE CONCRETE RETAINING WALL
SCALE: 1/2" = 1'-0"



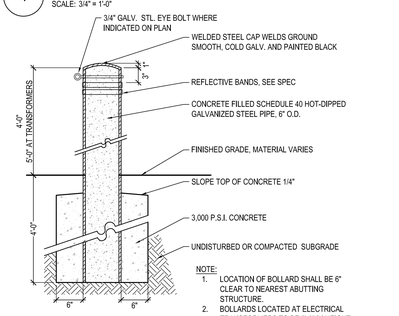
2 SEGMENTAL RETAINING WALL
SCALE: 1/4" = 1'-0"



3 BOTTLE FILLING STATION
SCALE: 3/4" = 1'-0"

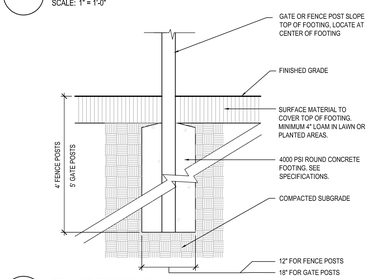


4 DRINKING FOUNTAIN FOUNDATION
SCALE: 3/4" = 1'-0"



NOTE:
1. LOCATION OF BOLLARD SHALL BE 6" CLEAR TO NEAREST ABUTTING STRUCTURE.
2. BOLLARDS LOCATED AT ELECTRICAL TRANSFORMERS TO BE 5'-0" IN HEIGHT

5 CONCRETE FILLED STEEL BOLLARD
SCALE: 1" = 1'-0"



6 FENCE FOOTING
SCALE: 1" = 1'-0"

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PROJECT

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BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

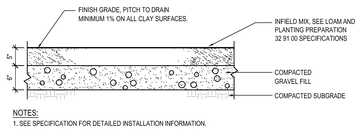
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06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
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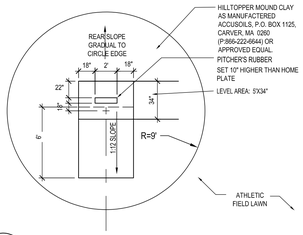
LANDSCAPE DETAILS

L602

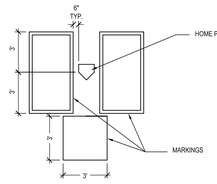


NOTES:
1. SEE SPECIFICATION FOR DETAILED INSTALLATION INFORMATION.

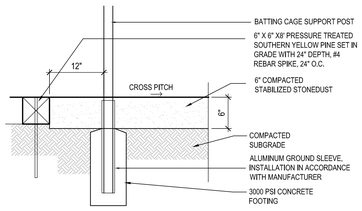
10 INFIELD MIX
SCALE: 1" = 1'-0"



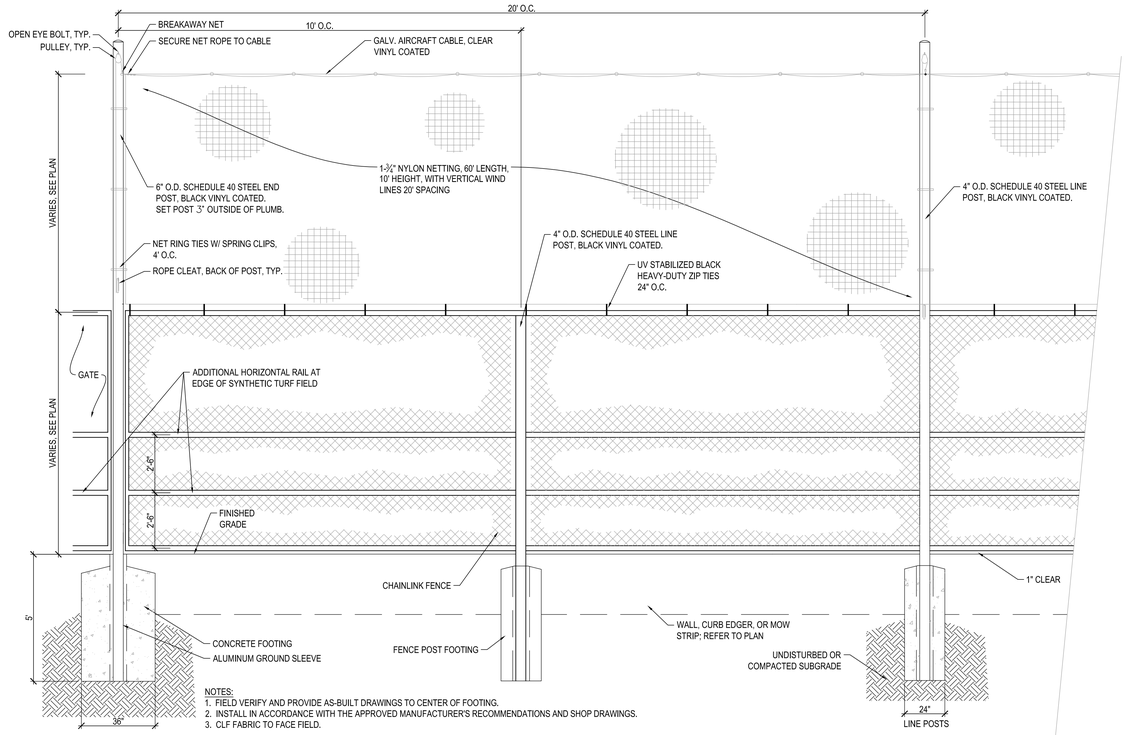
11 PITCHER'S MOUND
SCALE: 1/4" = 1'-0"



12 BATTER'S BOX
SCALE: 1/4" = 1'-0"

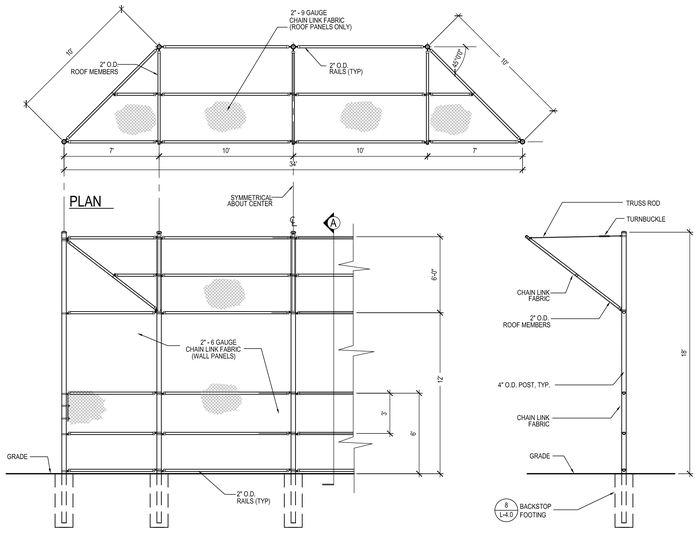


13 BATTING CAGE FOOTING AND SURFACING
SCALE: 1" = 1'-0"



NOTES:
1. FIELD VERIFY AND PROVIDE AS-BUILT DRAWINGS TO CENTER OF FOOTING.
2. INSTALL IN ACCORDANCE WITH THE APPROVED MANUFACTURER'S RECOMMENDATIONS AND SHOP DRAWINGS.
3. CLF FABRIC TO FACE FIELD.

4 NET AND FENCE
SCALE: 3/4" = 1'-0"

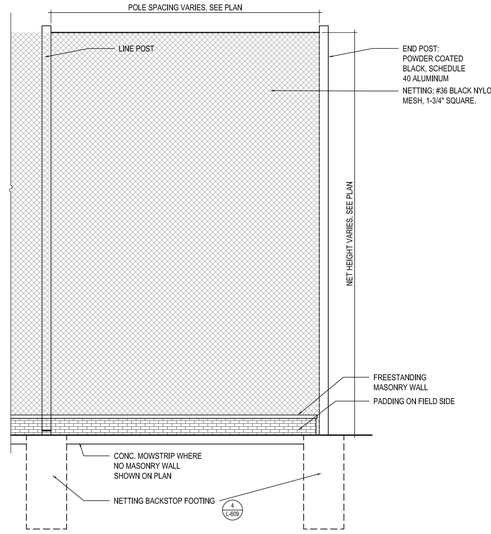


ELEVATION (TYP. BOTH SIDES)

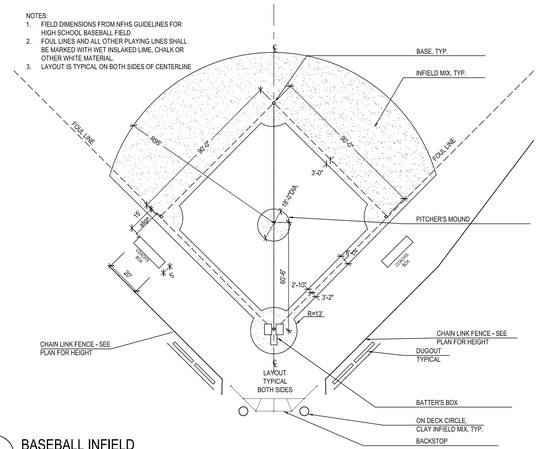
SECTION A

NOTE:
1. ALL POSTS, RAILS, FABRIC & HARDWARE TO BE THERMALLY FUSED BLACK VINYL COATED.
2. REFER TO CHAIN LINK SPECIFICATION FOR MATERIAL REQUIREMENTS.

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

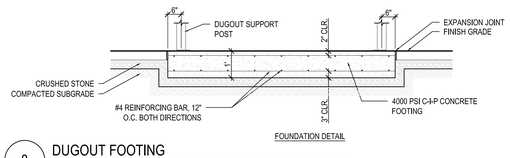


2 SPORTS NETTING BACKSTOP ELEVATION
SCALE: 1/4" = 1'-0"

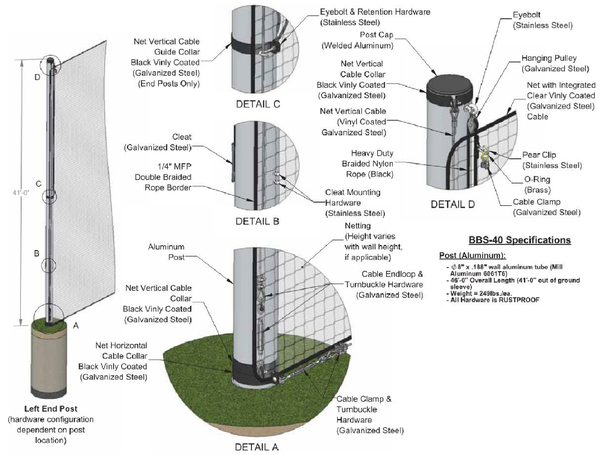


NOTE: AT SOFTBALL BULLPEN ONLY: DELETE CURB AND SLOPE; USE INFIELD MIX ONLY, NO MOUND CLAY

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



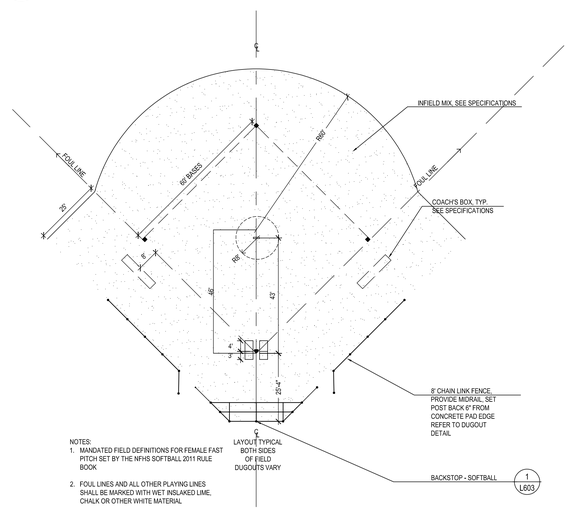
8 DUGOUT FOOTING
SCALE: 1/4" = 1'-0"



BBS-40 Specifications

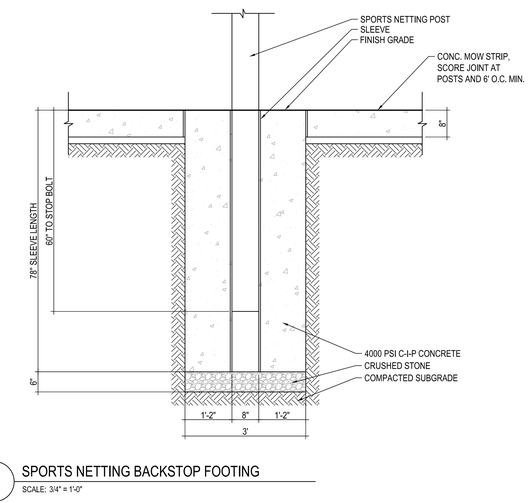
Post (Aluminum):
- **Ø 8" x .188" wall aluminum tube (Mill Aluminum 6061T6)**
- **66'-6" Overall Length (41'-0" out of ground sleeve)**
- **Weight = 240lbs./ea.**
- **All Hardware is RUSTPROOF**

5 NETTING BACKSTOP CONNECTION DETAILS
SCALE: 1" = 1'-0"



NOTES:
1. MANDATED FIELD DEFINITIONS FOR FEMALE FAST PITCH SET BY THE NFHS SOFTBALL 2011 RULE BOOK.
2. FOUL LINES AND ALL OTHER PLAYING LINES SHALL BE MARKED WITH WET INSLAKED LIME, CHALK OR OTHER WHITE MATERIAL

6 SOFTBALL INFIELD
SCALE: 13/256" = 1'-0"



3 SPORTS NETTING BACKSTOP FOOTING
SCALE: 3/4" = 1'-0"

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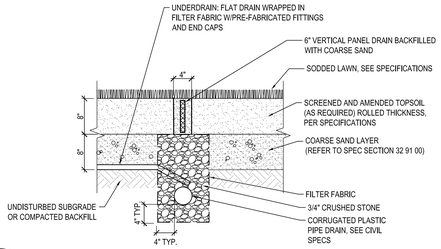
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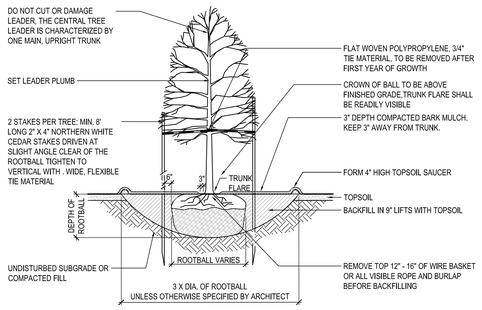
LANDSCAPE DETAILS

L603



9 SPORTS FIELD COLLECTION DRAIN

SCALE: 1" = 1'-0"

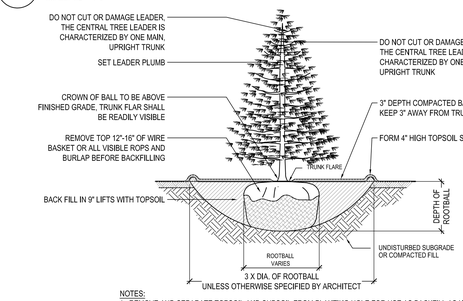


NOTES:

1. TREE SHALL BE MARKED ON ITS NORTH FACING SIDE AT NURSERY. TREE SHALL BE PLANTED WITH ORIGINAL NORTH FACING SIDE FACING NORTH ON SITE.
2. SEE SPECIFICATIONS FOR PLANTING, TOPSOIL AND MULCH REQUIREMENTS.
3. IF ROOTBALL IS PACKAGED IN "PLASTIC BURLAP" OR TREATED BURLAP, REMOVE BURLAP COMPLETELY.
4. DO NOT DAMAGE MAIN ROOTS OR ROOT BALL WHEN INSTALLING TREE STAKE.
5. ALL STAKES, GUYWIRES, AND TIES TO BE REMOVED AFTER THE FIRST YEAR OF GROWTH, UNLESS OTHERWISE SPECIFIED BY THE ARCHITECT.
6. WATER THOROUGHLY AFTER INSTALLATION AT RATE OF 3-5 GALLONS/INCH CALIPER.
7. PROVIDE SLOW RELEASE WATERING BAG AS PER SPECIFICATIONS
8. PROVIDE A MINIMUM OF 4 STAKES PER TREE

10 DECIDUOUS TREE PLANTING

SCALE: 1/2" = 1'-0"

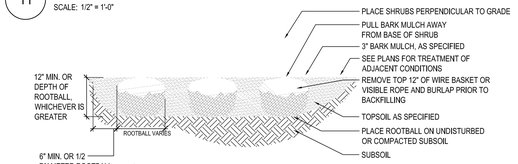


NOTES:

1. REMOVE AND SEPARATE TOPSOIL AND SUBSOIL FROM PLANTING HOLE FOR USE AS BACKFILL AS NOTED ABOVE.
2. IF ROOTBALL IS PACKAGED IN "PLASTIC BURLAP" OR TREATED BURLAP, REMOVE BURLAP COMPLETELY.
3. WATER THOROUGHLY AFTER INSTALLATION AT RATE OF 3-5 GALLONS/INCH CALIPER.

11 EVERGREEN TREE PLANTING

SCALE: 1/2" = 1'-0"

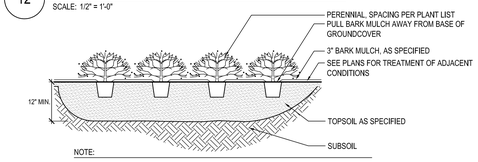


NOTE:

1. SEE SPECIFICATIONS FOR PLANTING, TOPSOIL AND MULCH
2. PLANTS TO BEAR SAME RELATIONSHIP TO FINISH GRADE AS TO PREVIOUS GRADE

12 SHRUB PLANTING

SCALE: 1/2" = 1'-0"

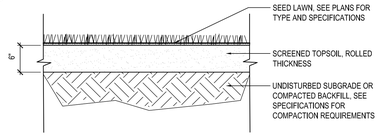


NOTE:

1. SEE SPECIFICATIONS FOR PLANTING, TOPSOIL AND MULCH
2. PLANTS TO BEAR SAME RELATIONSHIP TO FINISH GRADE AS TO PREVIOUS GRADE IN POTS

13 PERENNIALS AND GRASSES AND GROUNDCOVER PLANTING

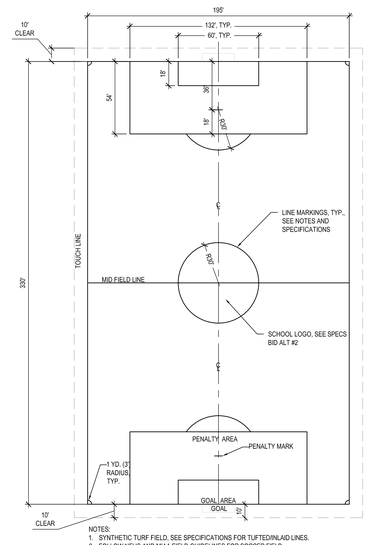
SCALE: 1/2" = 1'-0"



NOTE:
IF SEEDING OPERATIONS ARE COMPLETED TOO LATE IN THE FALL FOR ADEQUATE GERMINATION AND GROWTH OF GRASS, THEN MAINTENANCE SHALL CONTINUE INTO THE FOLLOWING SPRING, OR UNTIL FINAL ACCEPTANCE, AT NO COST TO THE OWNER.

14 SOD

SCALE: 1/2" = 1'-0"

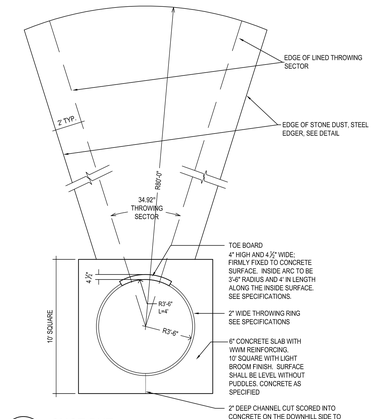


NOTES:

1. SYNTHETIC TURF FIELD, SEE SPECIFICATIONS FOR TUFTED/INLAID LINES.
2. FOLLOW NFHS AND MIAA FIELD GUIDELINES FOR SOCCER FIELD

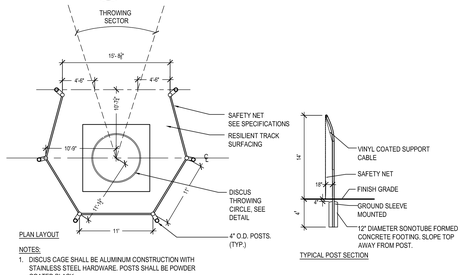
5 SOCCER FIELD

SCALE: 3/128" = 1'-0"



6 SHOT PUT

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

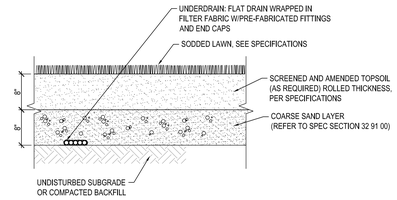


NOTES:

1. DISCUS CAGE SHALL BE ALUMINUM CONSTRUCTION WITH STAINLESS STEEL HARDWARE. POSTS SHALL BE POWDER COATED BLACK.

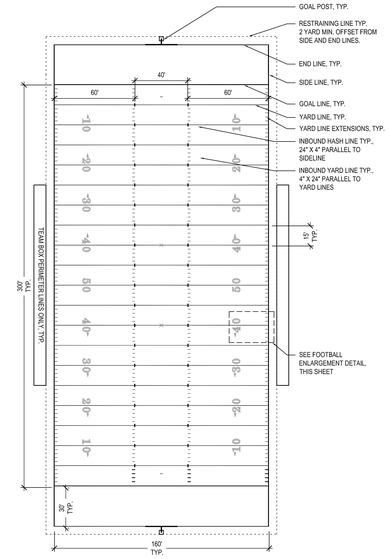
7 DISCUS ENCLOSURE

SCALE: 1/8" = 1'-0"



8 SPORTS FIELD SOIL CROSS SECTION

SCALE: 1" = 1'-0"

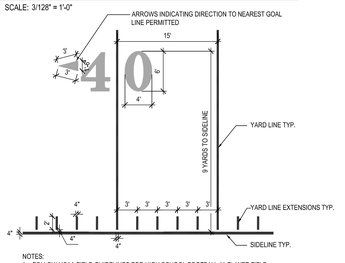


NOTES:

1. THE LINES REPRESENTING THE GOAL LINES, SIDELINES AND END LINES ARE OUTSIDE THE DIMENSIONS SHOWN.
2. THE YARD LINES ARE MARKED WITH THE MEASURED DISTANCE IN THE MIDDLE OF THE LINE.
3. AT SYNTHETIC TURF FIELD, SEE SPECIFICATIONS FOR TUFTED/INLAID LINES.
4. FOLLOW NCAA FIELD GUIDELINES FOR HIGH SCHOOL FOOTBALL 11-PLAYER FIELD
5. SEE SPECIFICATIONS

1 FOOTBALL FIELD

SCALE: 3/128" = 1'-0"

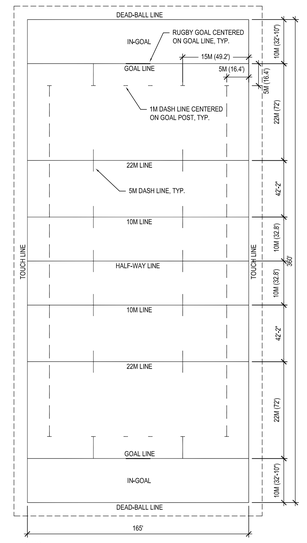


NOTES:

1. FOLLOW NCAA FIELD GUIDELINES FOR HIGH SCHOOL FOOTBALL 11-PLAYER FIELD
2. SEE SPECIFICATIONS FOR LINE COLORS

2 FOOTBALL ENLARGEMENT

SCALE: 1/8" = 1'-0"

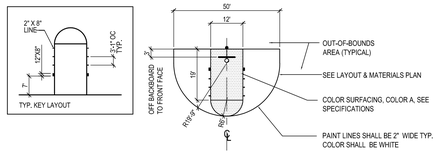


NOTES:

1. THE LINES REPRESENTING THE GOAL LINES, TOUCH LINES AND DEAD-BALL LINES ARE OUTSIDE THE DIMENSIONS SHOWN.
2. THE INTERIOR LINES ARE MARKED WITH THE MEASURED DISTANCE IN THE MIDDLE OF THE LINE.
3. AT SYNTHETIC TURF FIELD, SEE SPECIFICATIONS FOR TUFTED/INLAID LINES.

3 RUGBY FIELD

SCALE: 3/128" = 1'-0"



4 BASKETBALL HALF COURT

SCALE: 1"=20'

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130 WEST BROADWAY, BOSTON MA 02127
T 617.464.1440 F 617.464.1442
www.warnerlarson.com

NOTE: DOCUMENTS ARE NOT FOR CONSTRUCTION

MASSACHUSETTS DAVID J. WARNER REGISTERED LANDSCAPE ARCHITECT NO. 3125

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

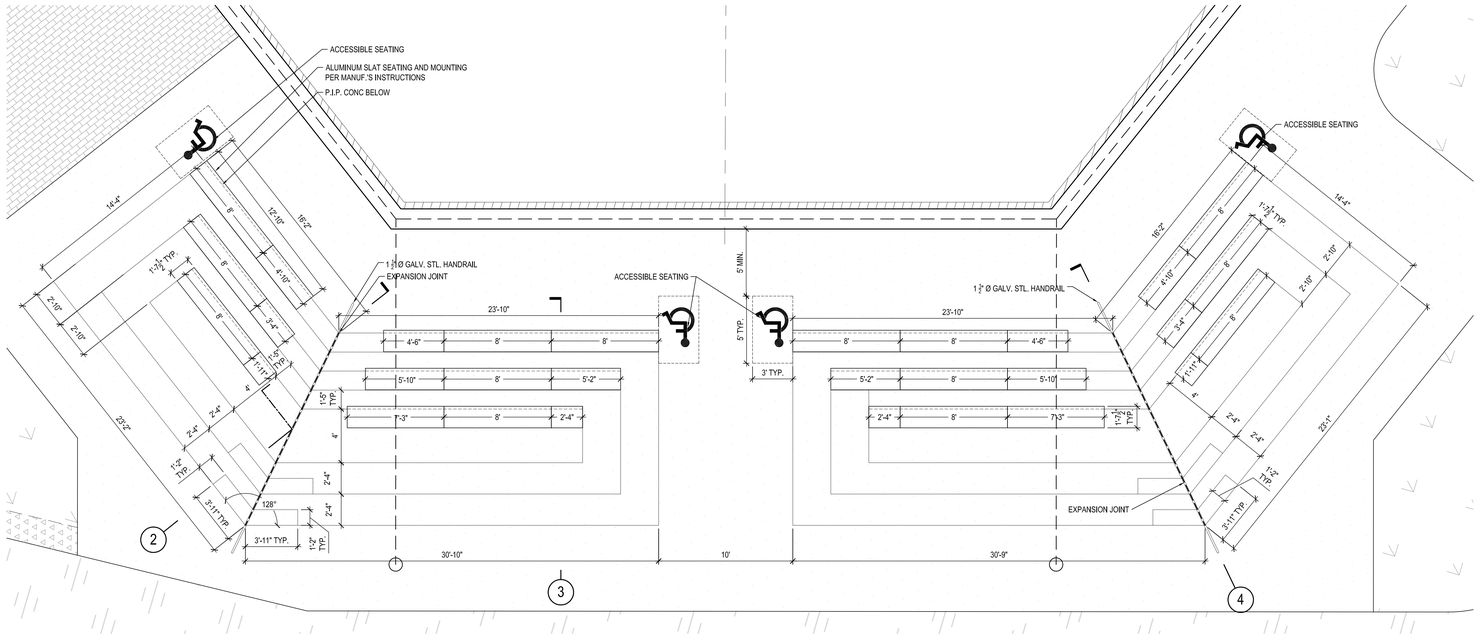
PLANNING BD SET 06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

TITLE

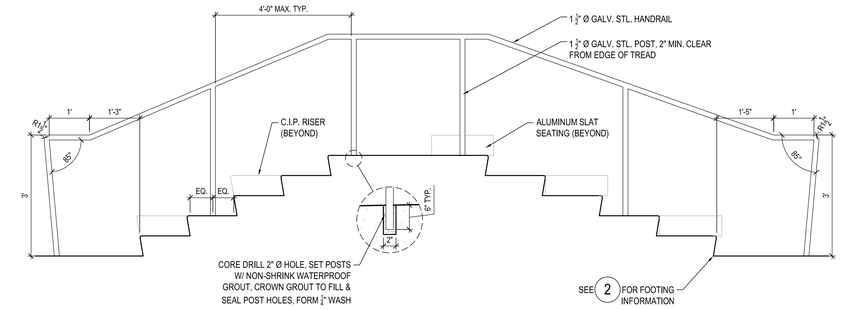
LANDSCAPE DETAILS

L604



1 BASEBALL SEATING ENLARGEMENT PLAN

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



4 BASEBALL SEATING SECTION @ HANDRAIL

SCALE: 3/4" = 1'-0"

2 BASEBALL SEATING SECTION @ STAIRS

SCALE: 3/4" = 1'-0"

5 ALUMINUM SLAT SEATING ENLARGEMENT

SCALE: 1 1/2" = 1'-0"

3 BASEBALL SEATING SECTION @ AMPHITHEATER SEATS

SCALE: 3/4" = 1'-0"

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MASSACHUSETTS DAVID J. WARNER NO. 4009 REGISTERED LANDSCAPE ARCHITECT

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

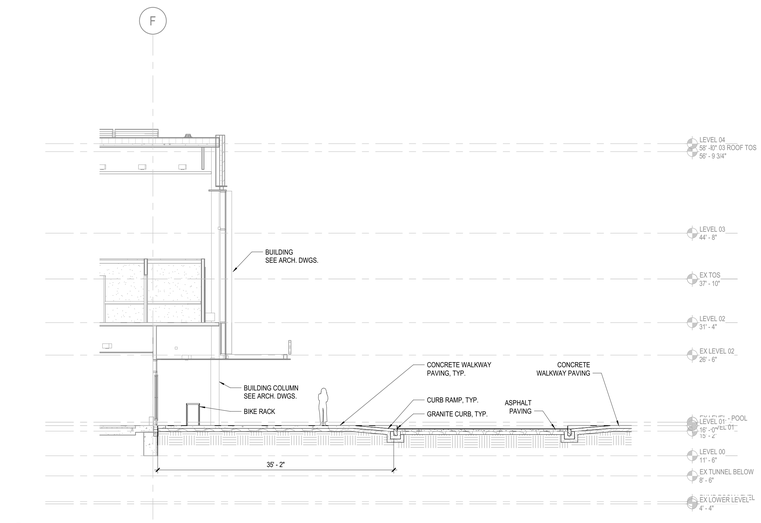
PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	AML
CHECKED	TJ

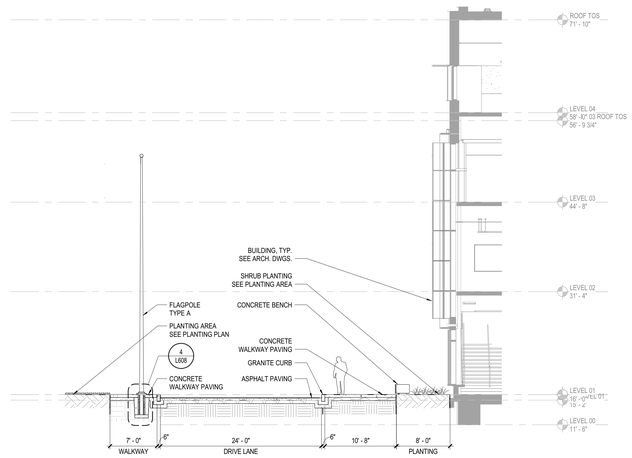
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LANDSCAPE DETAILS

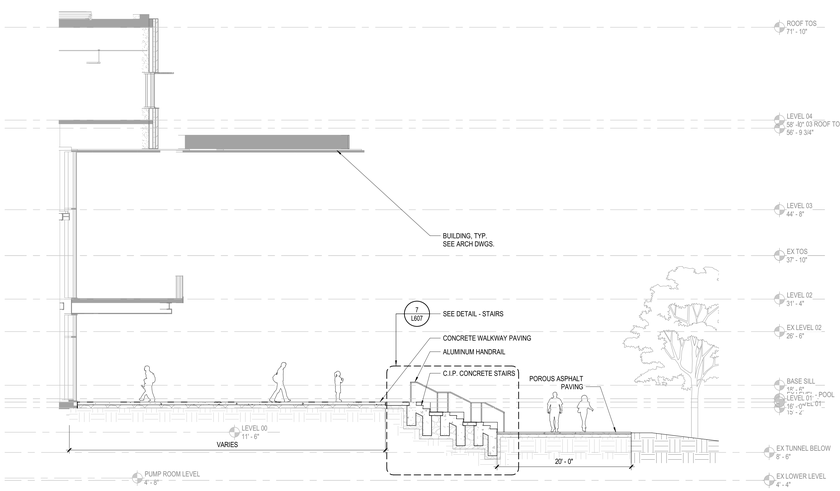
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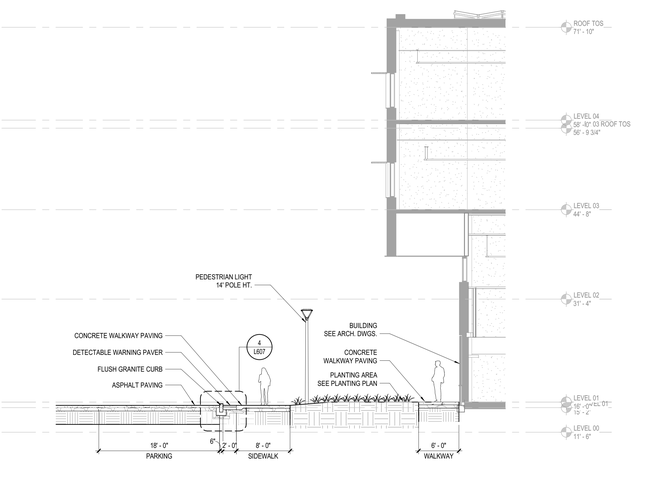
7 SECTION - LOWER SCHOOL DROP-OFF
1/8" = 1'-0"



6 SECTION - UPPER SCHOOL FLAG POLE
1/8" = 1'-0"



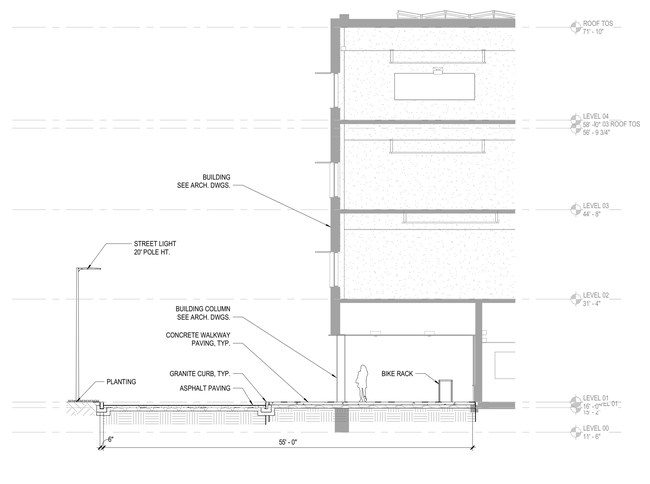
5 SECTION - TERRACE
1/8" = 1'-0"



4 SECTION - OUTDOOR CLASSROOM
1/8" = 1'-0"

3 SECTION - TERRACE STAIRS
1/8" = 1'-0"

2 SECTION - PARKING
1/8" = 1'-0"



1 SECTION - UPPER SCHOOL DROP-OFF
1/8" = 1'-0"

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No. 1114

PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET
06.21.2019

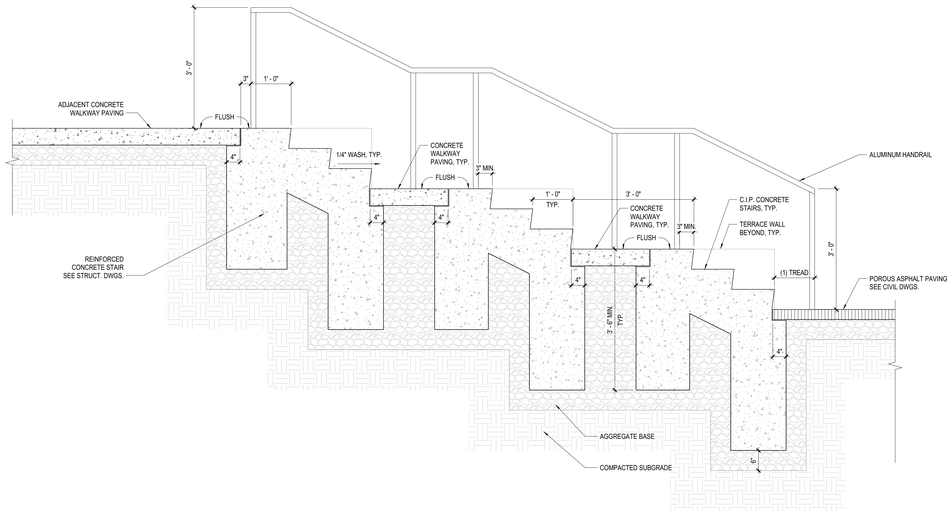
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CHECKED	VZ

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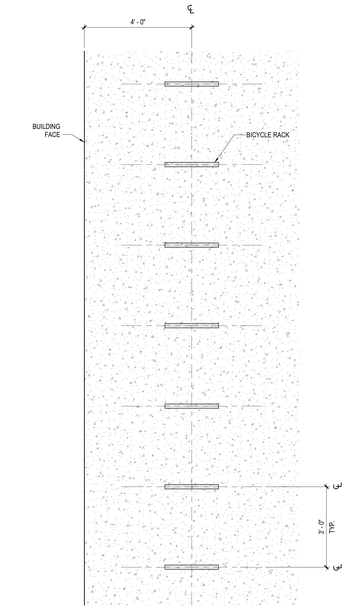
SITE SECTIONS

L606

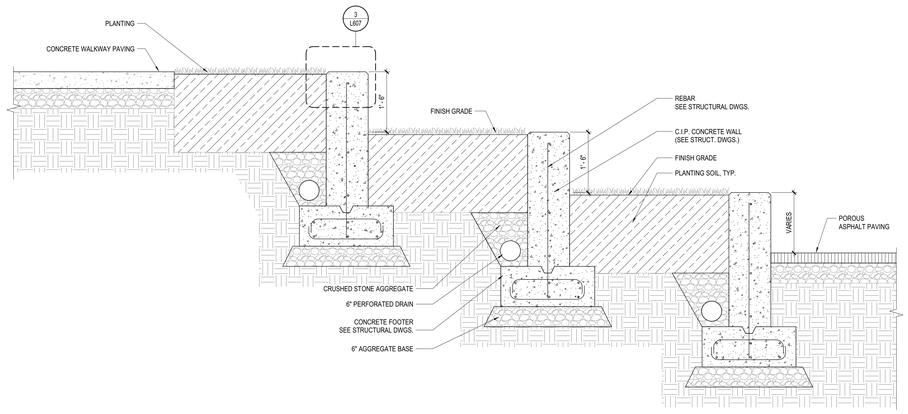
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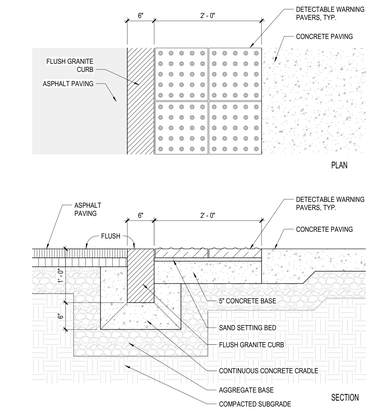
7 DETAIL - STAIRS
3/4" = 1'-0"



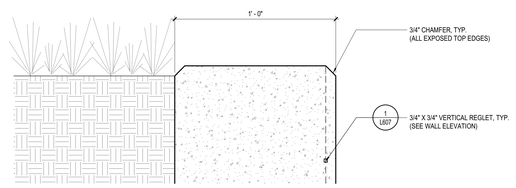
6 DETAIL - BICYCLE RACK LAYOUT
1/2" = 1'-0"



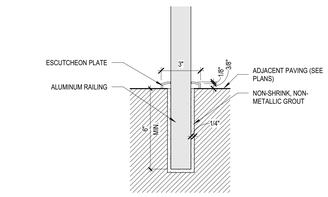
5 DETAIL - SEATING TERRACE
3/4" = 1'-0"



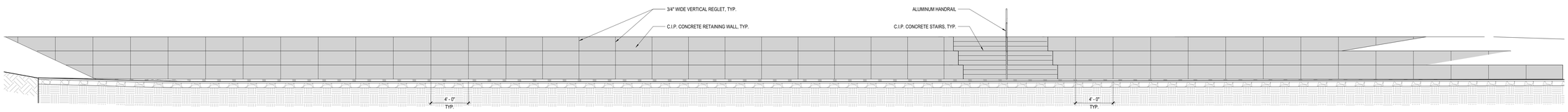
4 DETAIL - TRUNCATED DOME ADA PAVER @ FLUSH CURB
1" = 1'-0"



3 DETAIL - VERTICAL REGLET
3" = 1'-0"



2 DETAIL - HANDRAIL MOUNTING AT STAIR, TYP.
3" = 1'-0"



1 ELEVATION - SEATING TERRACE
1/4" = 1'-0"

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PROJECT

BELMONT HIGH SCHOOL
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BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN



REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET 06.21.2019

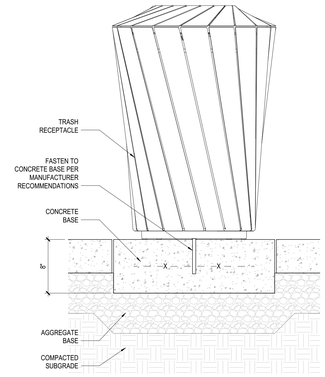
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CHECKED	VZ

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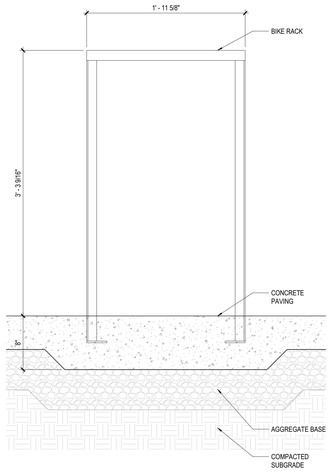
SITE DETAILS

L607

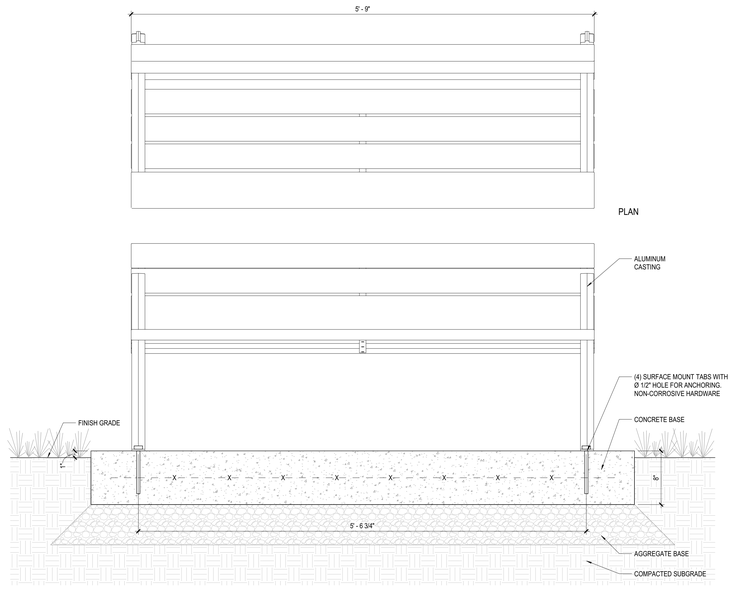
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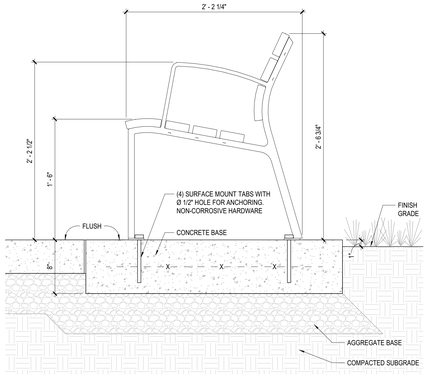
7 DETAIL - TRASH RECEPTACLE @ CONCRETE
1 1/2" = 1'-0"

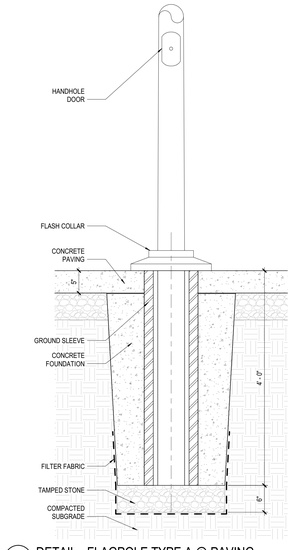


6 DETAIL - BICYCLE RACK
1 1/2" = 1'-0"

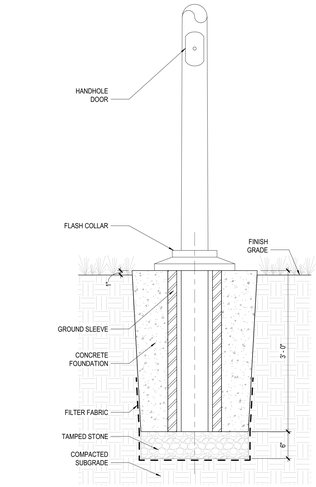


5 DETAIL - ALUMINUM BENCH
1 1/2" = 1'-0"

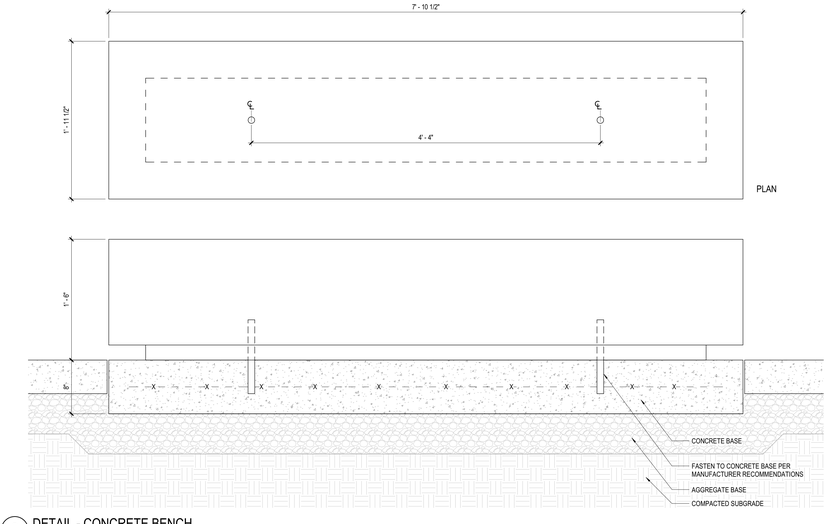




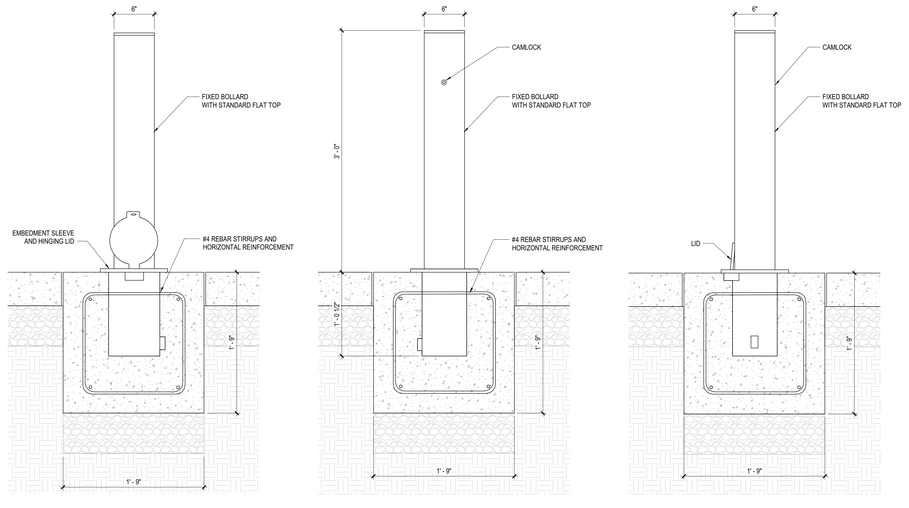
4 DETAIL - FLAGPOLE TYPE A @ PAVING
1" = 1'-0"



3 DETAIL - FLAGPOLE TYPE B @ PLANTING
1" = 1'-0"



2 DETAIL - CONCRETE BENCH
1 1/2" = 1'-0"



1 DETAIL - REMOVABLE BOLLARD
1 1/2" = 1'-0"

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REGISTERED LANDSCAPE ARCHITECT
NO. 1116

PROJECT

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BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN



REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET 06.21.2019

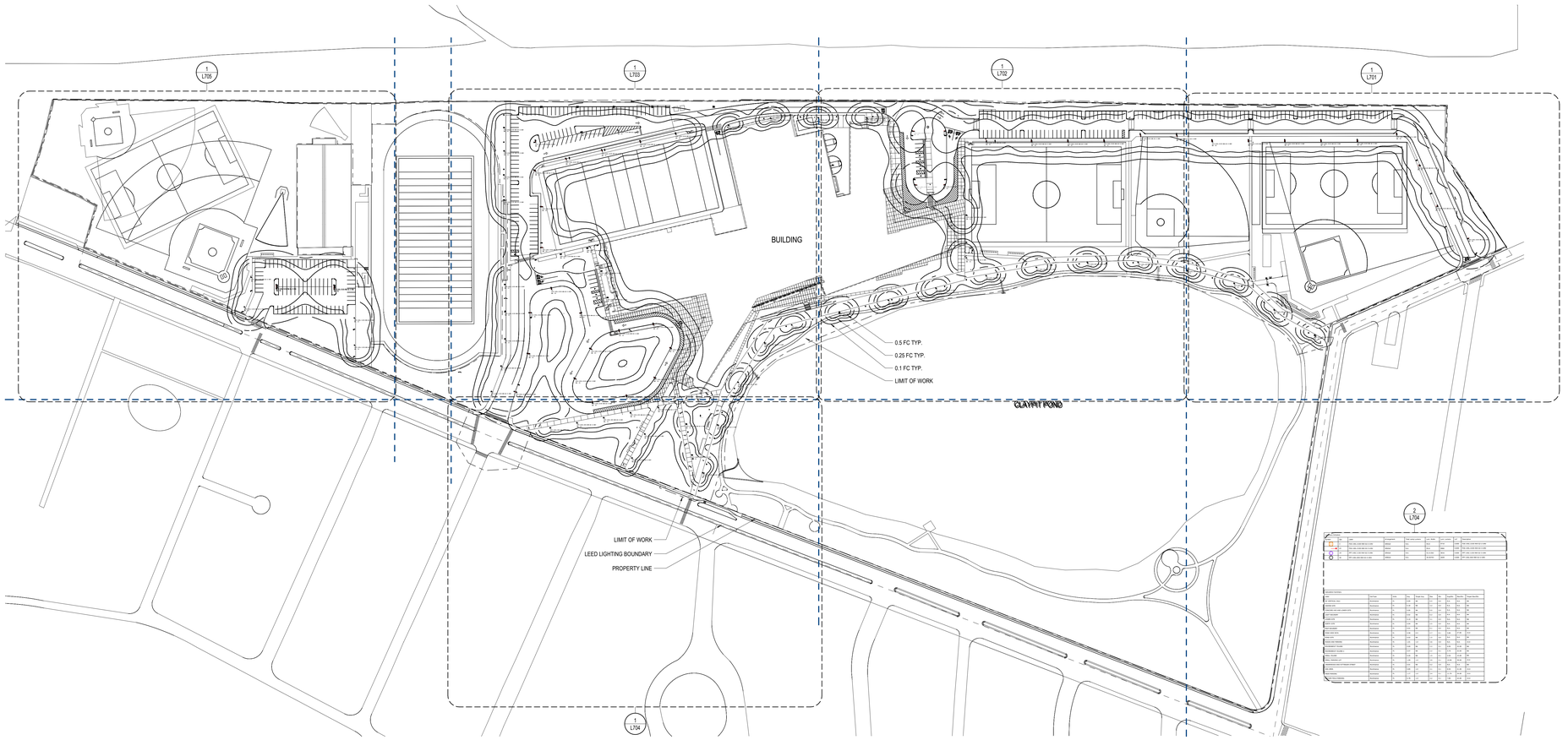
JOB NUMBER	153003.001
DRAWN	Author
CHECKED	Checker

TITLE

SITE DETAILS

L608

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Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Luminaire Watts	Total Watts	Description
	14	CWA-1-40K-T4M-MVOLT-GZ1-HA	SINGLE	N/A	0.900	40 watt	560 W	CWA-1-40K-T4M-MVOLT-GZ1-HA
	4	CWA-1-40K-T4M-MVOLT-GZ1-HA	SINGLE	N/A	0.900	40 watt	160 W	CWA-1-40K-T4M-MVOLT-GZ1-HA
	2	CWA-1-40K-T4M-MVOLT-GZ1-HA	SINGLE	N/A	0.900	40 watt	80 W	CWA-1-40K-T4M-MVOLT-GZ1-HA
	1	CWA-1-40K-T4M-MVOLT-GZ1-HA	SINGLE	N/A	0.900	40 watt	40 W	CWA-1-40K-T4M-MVOLT-GZ1-HA

Luminaire Schedule									
Symbol	Label	Arrangement	Qty	Total Lamp Lumens	LLF	Luminaire Watts	Total Watts	Description	
	CWA-1-40K-T4M-MVOLT-GZ1-HA	SINGLE	14	N/A	0.900	40 watt	560 W	CWA-1-40K-T4M-MVOLT-GZ1-HA	
	CWA-1-40K-T4M-MVOLT-GZ1-HA	SINGLE	4	N/A	0.900	40 watt	160 W	CWA-1-40K-T4M-MVOLT-GZ1-HA	
	CWA-1-40K-T4M-MVOLT-GZ1-HA	SINGLE	2	N/A	0.900	40 watt	80 W	CWA-1-40K-T4M-MVOLT-GZ1-HA	
	CWA-1-40K-T4M-MVOLT-GZ1-HA	SINGLE	1	N/A	0.900	40 watt	40 W	CWA-1-40K-T4M-MVOLT-GZ1-HA	

Statistics								
Label	Calculation Type	Units	Avg	Max	Min	Avg/Min	Max/Min	Average Max Min
Athletic Field	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Athletic Field - East	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Athletic Field - East Grass Area	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Athletic Field West	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Athletic Track	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Athletic Track - East	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Athletic Track - West	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Athletic Track Interior	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Basketball Courts 1	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Basketball Courts 2	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Boys' Locker	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Boys' Varsity Lot	Illuminance	fc	1.98	3.2	0.4	4.95	8.00	2.80
Boys' Varsity Lot Entrance Sidewalk	Illuminance	fc	1.98	3.2	0.4	4.95	8.00	2.80
Clay Pond	Illuminance	fc	0.00	0.0	0.0	N/A	N/A	N/A
Field Hockey	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88
Field Hockey - East	Illuminance	fc	11.69	30.0	3.1	3.77	9.68	3.88

GENERAL NOTES

1. REFER TO SHEET L704 FOR LUMINAIRE SCHEDULE, CALCULATION SUMMARY, LIGHTING ZONES LEGEND, AND LIGHTING ZONES KEY PLAN.

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PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET
06.21.2019

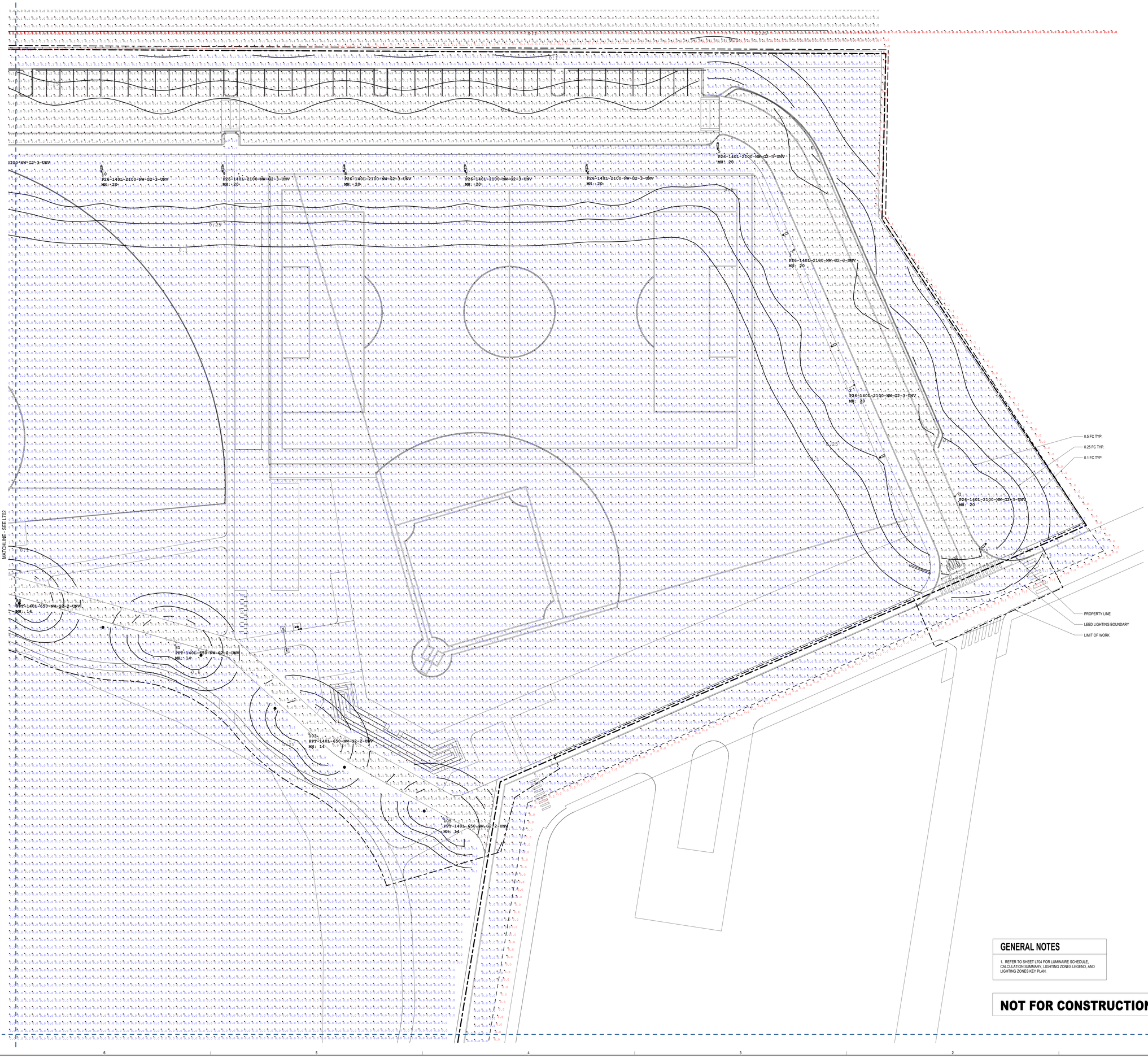
JOB NUMBER	153003.001
DRAWN	Author
CHECKED	Checker

TITLE

OVERALL PHOTOMETRICS PLAN

L700

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GENERAL NOTES

1. REFER TO SHEET L704 FOR LUMINAIRE SCHEDULE, CALCULATION SUMMARY, LIGHTING ZONES LEGEND, AND LIGHTING ZONES KEY PLAN.

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PERKINS +WILL

225 Franklin Street, Suite 1100
Boston, MA 02110
t 617.478.0300
www.perkinswill.com

MASSACHUSETTS REGISTERED LANDSCAPE ARCHITECT No. 1178

PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET
06.21.2019

JOB NUMBER	153003.001
DRAWN	Author
CHECKED	Checker

TITLE

PHOTOMETRICS PLAN

L701

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LIMIT OF WORK

PROPERTY LINE

LEED LIGHTING BOUNDARY

1
P26-140L-2100-NW-G2-3-UNV
MH: 20

2
P26-140L-2100-NW-G2-3-UNV
MH: 20

3
PPT-140L-1150-NW-G2-3-UNV
MH: 14

4
PPT-140L-650-NW-G2-2-UNV
MH: 14

5
PPT-140L-650-NW-G2-2-UNV
MH: 14

6
PPT-140L-650-NW-G2-2-UNV
MH: 14

7
PPT-140L-650-NW-G2-2-UNV
MH: 14

8
PPT-140L-650-NW-G2-2-UNV
MH: 14

9
PPT-140L-650-NW-G2-2-UNV
MH: 14

10
P26-140L-2100-NW-G2-3-UNV
MH: 20

11
P26-140L-2100-NW-G2-3-UNV
MH: 20

12
P26-140L-2100-NW-G2-3-UNV
MH: 20

13
P26-140L-2100-NW-G2-3-UNV
MH: 20

14
P26-140L-2100-NW-G2-3-UNV
MH: 20

15
P26-140L-2100-NW-G2-3-UNV
MH: 20

16
P26-140L-2100-NW-G2-3-UNV
MH: 20

17
P26-140L-2100-NW-G2-3-UNV
MH: 20

18
P26-140L-2100-NW-G2-3-UNV
MH: 20

19
P26-140L-2100-NW-G2-3-UNV
MH: 20

20
P26-140L-2100-NW-G2-3-UNV
MH: 20

0.5 FC TYP.

0.25 FC TYP.

0.1 FC TYP.

MATCHLINE - SEE L703

MATCHLINE - SEE L701

GENERAL NOTES

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MASSACHUSETTS REGISTERED LANDSCAPE ARCHITECT NO. 1176

PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

MARK	ISSUE	DATE

PLANNING BD SET 06.21.2019

JOB NUMBER	153003.001
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TITLE

PHOTOMETRICS PLAN

L702

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LIMIT OF WORK

PROPERTY LINE

LEED LIGHTING BOUNDARY

BUILDING

88
PPT-140L-1150-NW-G2-3-UNV
MH: 14

89
PPT-140L-1350-NW-G2-3-UNV
MH: 14

90
PPT-140L-1150-NW-G2-3-UNV
MH: 14

91
PPT-140L-1150-NW-G2-3-UNV
MH: 14

92
P26-140L-2100-NW-G2-3-UNV
MH: 20

93
P26-140L-2100-NW-G2-3-UNV
MH: 20

94
PPT-140L-1150-NW-G2-3-UNV
MH: 14

95
PPT-140L-1150-NW-G2-3-UNV
MH: 14

96
PPT-140L-1150-NW-G2-3-UNV
MH: 14

97
PPT-140L-1150-NW-G2-3-UNV
MH: 14

98
PPT-140L-1150-NW-G2-3-UNV
MH: 14

99
PPT-140L-1150-NW-G2-3-UNV
MH: 14

100
PPT-140L-1150-NW-G2-3-UNV
MH: 14

101
PPT-140L-2150-NW-G2-3-UNV
MH: 14

1
P26-140L-2100-NW-G2-3-UNV
MH: 20

2
P26-140L-2100-NW-G2-3-UNV
MH: 20

3
P26-140L-2100-NW-G2-3-UNV
MH: 20

4
P26-140L-2100-NW-G2-3-UNV
MH: 20

5
P26-140L-2100-NW-G2-3-UNV
MH: 20

6
P26-140L-2100-NW-G2-3-UNV
MH: 20

7
P26-140L-2100-NW-G2-3-UNV
MH: 20

8
P26-140L-2100-NW-G2-3-UNV
MH: 20

9
P26-140L-2100-NW-G2-3-UNV
MH: 20

10
P26-140L-2100-NW-G2-3-UNV
MH: 20

11
P26-140L-2100-NW-G2-3-UNV
MH: 20

12
P26-140L-2100-NW-G2-3-UNV
MH: 20

13
P26-140L-2100-NW-G2-3-UNV
MH: 20

14
P26-140L-2100-NW-G2-3-UNV
MH: 20

15
P26-140L-2100-NW-G2-3-UNV
MH: 20

16
P26-140L-2100-NW-G2-3-UNV
MH: 20

17
P26-140L-2100-NW-G2-3-UNV
MH: 20

18
P26-140L-2100-NW-G2-3-UNV
MH: 20

19
P26-140L-2100-NW-G2-3-UNV
MH: 20

20
P26-140L-2100-NW-G2-3-UNV
MH: 20

21
P26-140L-2100-NW-G2-3-UNV
MH: 20

22
P26-140L-2100-NW-G2-3-UNV
MH: 20

23
P26-140L-2100-NW-G2-3-UNV
MH: 20

24
P26-140L-2100-NW-G2-3-UNV
MH: 20

25
P26-140L-2100-NW-G2-3-UNV
MH: 20

26
P26-140L-2100-NW-G2-3-UNV
MH: 20

27
P26-140L-2100-NW-G2-3-UNV
MH: 20

28
P26-140L-2100-NW-G2-3-UNV
MH: 20

29
P26-140L-2100-NW-G2-3-UNV
MH: 20

30
P26-140L-2100-NW-G2-3-UNV
MH: 20

31
P26-140L-2100-NW-G2-3-UNV
MH: 20

32
P26-140L-2100-NW-G2-3-UNV
MH: 20

33
P26-140L-2100-NW-G2-3-UNV
MH: 20

34
P26-140L-2100-NW-G2-3-UNV
MH: 20

35
P26-140L-2100-NW-G2-3-UNV
MH: 20

36
P26-140L-2100-NW-G2-3-UNV
MH: 20

37
P26-140L-2100-NW-G2-3-UNV
MH: 20

38
P26-140L-2100-NW-G2-3-UNV
MH: 20

39
P26-140L-2100-NW-G2-3-UNV
MH: 20

40
P26-140L-2100-NW-G2-3-UNV
MH: 20

41
P26-140L-2100-NW-G2-3-UNV
MH: 20

42
P26-140L-2100-NW-G2-3-UNV
MH: 20

43
P26-140L-2100-NW-G2-3-UNV
MH: 20

44
P26-140L-2100-NW-G2-3-UNV
MH: 20

45
P26-140L-2100-NW-G2-3-UNV
MH: 20

46
P26-140L-2100-NW-G2-3-UNV
MH: 20

47
P26-140L-2100-NW-G2-3-UNV
MH: 20

48
P26-140L-2100-NW-G2-3-UNV
MH: 20

49
P26-140L-2100-NW-G2-3-UNV
MH: 20

50
P26-140L-2100-NW-G2-3-UNV
MH: 20

51
P26-140L-2100-NW-G2-3-UNV
MH: 20

52
P26-140L-2100-NW-G2-3-UNV
MH: 20

53
P26-140L-2100-NW-G2-3-UNV
MH: 20

54
P26-140L-2100-NW-G2-3-UNV
MH: 20

55
P26-140L-2100-NW-G2-3-UNV
MH: 20

56
P26-140L-2100-NW-G2-3-UNV
MH: 20

57
P26-140L-2100-NW-G2-3-UNV
MH: 20

58
P26-140L-2100-NW-G2-3-UNV
MH: 20

59
P26-140L-2100-NW-G2-3-UNV
MH: 20

60
P26-140L-2100-NW-G2-3-UNV
MH: 20

61
P26-140L-2100-NW-G2-3-UNV
MH: 20

62
P26-140L-2100-NW-G2-3-UNV
MH: 20

63
P26-140L-2100-NW-G2-3-UNV
MH: 20

64
P26-140L-2100-NW-G2-3-UNV
MH: 20

65
P26-140L-2100-NW-G2-3-UNV
MH: 20

66
P26-140L-2100-NW-G2-3-UNV
MH: 20

67
P26-140L-2100-NW-G2-3-UNV
MH: 20

68
P26-140L-2100-NW-G2-3-UNV
MH: 20

69
P26-140L-2100-NW-G2-3-UNV
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70
P26-140L-2100-NW-G2-3-UNV
MH: 20

71
PPT-140L-650-NW-G2-2-UNV
MH: 14

72
PPT-140L-650-NW-G2-2-UNV
MH: 14

73
PPT-140L-650-NW-G2-2-UNV
MH: 14

74
PPT-140L-650-NW-G2-2-UNV
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75
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MH: 14

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PPT-140L-650-NW-G2-2-UNV
MH: 14

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PPT-140L-650-NW-G2-2-UNV
MH: 14

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PPT-140L-650-NW-G2-2-UNV
MH: 14

83
PPT-140L-650-NW-G2-2-UNV
MH: 14

84
PPT-140L-650-NW-G2-2-UNV
MH: 14

85
PPT-140L-650-NW-G2-2-UNV
MH: 14

86
PPT-140L-650-NW-G2-2-UNV
MH: 14

87
PPT-140L-650-NW-G2-2-UNV
MH: 14

0.1 FC TYP.

0.25 FC TYP.

0.5 FC TYP.

MATCHLINE - SEE L702

MATCHLINE - SEE L704

GENERAL NOTES

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MASSACHUSETTS REGISTERED LANDSCAPE ARCHITECT No. 1176

PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET
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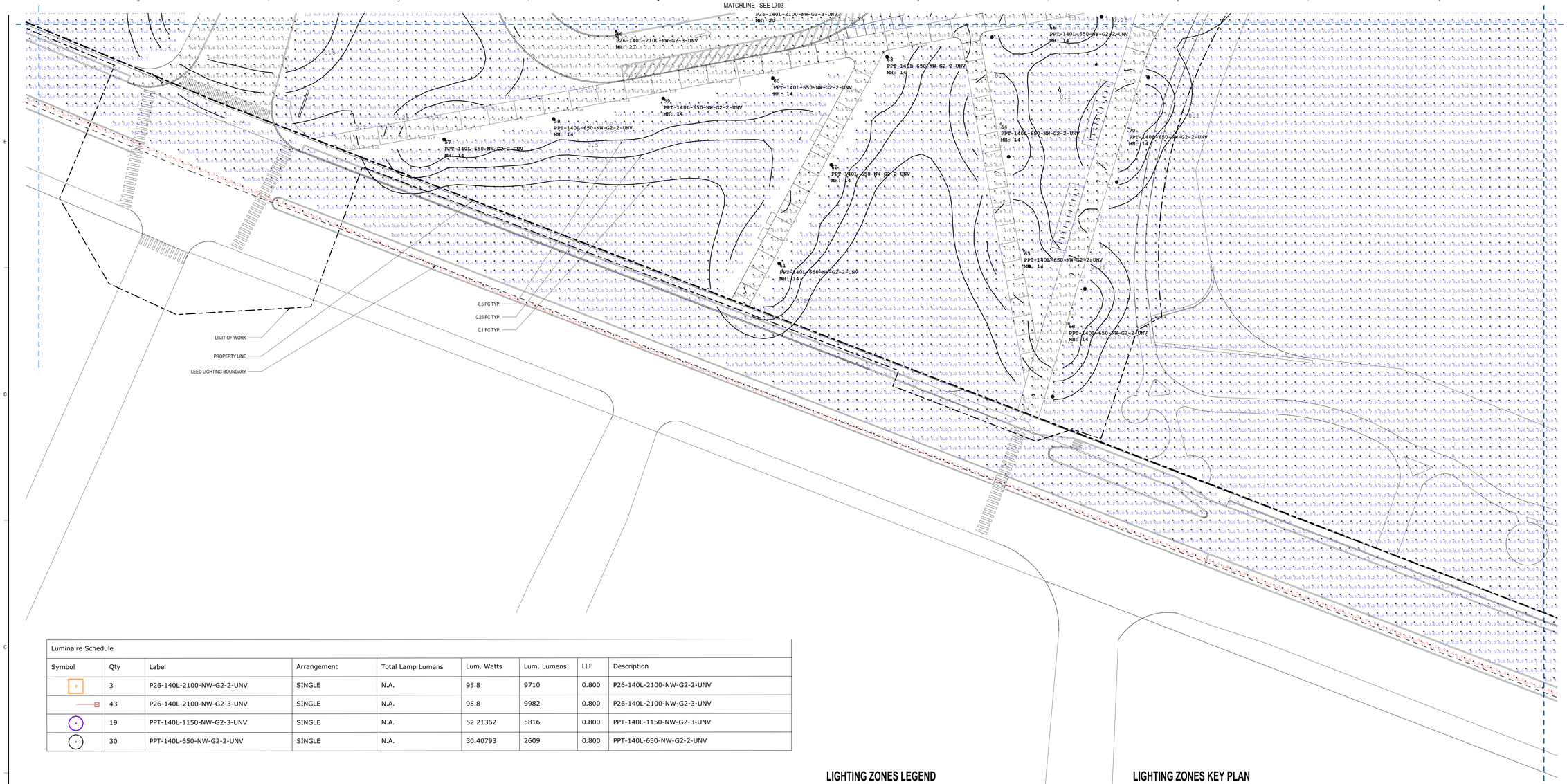
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CHECKED	Checker

TITLE

PHOTOMETRICS PLAN

L703

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Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	Lum. Watts	Lum. Lumens	LLF	Description
	3	P26-140L-2100-NW-G2-2-UNV	SINGLE	N.A.	95.8	9710	0.800	P26-140L-2100-NW-G2-2-UNV
	43	P26-140L-2100-NW-G2-3-UNV	SINGLE	N.A.	95.8	9982	0.800	P26-140L-2100-NW-G2-3-UNV
	19	PPT-140L-1150-NW-G2-3-UNV	SINGLE	N.A.	52.21362	5816	0.800	PPT-140L-1150-NW-G2-3-UNV
	30	PPT-140L-650-NW-G2-2-UNV	SINGLE	N.A.	30.40793	2609	0.800	PPT-140L-650-NW-G2-2-UNV

Calculation Summary									
Label	CalcType	Units	Avg	Target Avg	Max	Min	Avg/Min	Max/Min	Target Max/Min
40' VERTICAL CALC	Illuminance	Fc	0.09	NA	0.5	0.0	N.A.	N.A.	NA
CENTER SITE	Illuminance	Fc	0.18	NA	3.2	0.0	N.A.	N.A.	NA
CONCORD AVE AND LOWER SITE	Illuminance	Fc	0.00	NA	0.0	0.0	N.A.	N.A.	NA
LIGHT BOUNDRY	Illuminance	Fc	0.02	NA	0.2	0.0	N.A.	N.A.	NA
LOWER SITE	Illuminance	Fc	0.10	NA	3.1	0.0	N.A.	N.A.	NA
NORTH SITE	Illuminance	Fc	0.04	NA	2.5	0.0	N.A.	N.A.	NA
PAST BOUNDRY	Illuminance	Fc	0.01	NA	0.1	0.0	N.A.	N.A.	NA
POND SIDE PATH	Illuminance	Fc	0.58	0.5	2.7	0.1	5.80	27.00	15.0
POND SITE	Illuminance	Fc	0.02	NA	1.5	0.0	N.A.	N.A.	NA
ROADS AND PARKING	Illuminance	Fc	1.01	1.0	3.6	0.0	N.A.	N.A.	15.0
ROUNDABOUT ISLAND	Illuminance	Fc	0.69	NA	2.2	0.1	6.90	22.00	NA
ROUNDABOUT ISLAND 2	Illuminance	Fc	0.57	NA	2.2	0.1	5.70	22.00	NA
SMALL ISLAND	Illuminance	Fc	0.45	NA	1.5	0.1	4.50	15.00	NA
SMALL PARKING LOT	Illuminance	Fc	1.09	1.0	3.9	0.1	10.90	39.00	15.0
UNDERWOOD AND HITTINGER STREET	Illuminance	Fc	0.01	NA	0.2	0.0	N.A.	N.A.	NA
ADA AREA	Illuminance	Fc	0.85	1.0	2.1	0.1	8.50	21.00	15.0
MAIN PARKING	Illuminance	Fc	1.17	1.0	3.4	0.1	11.70	34.00	15.0
SOCCER FIELD PARKING	Illuminance	Fc	0.78	1.0	2.2	0.1	7.80	22.00	15.0

LIGHTING ZONES LEGEND

Calculation Summary	
Label	
40' CALC WALL	
BELMONT SITE	
BOUNDARY LINE	
CENTER SITE	
CONCORD AVENUE	
LAKE SIDE PATH	
NORTH SITE	
PAST NORTH BOUNDARY	
POND SITE	
ROADWAY AND PARKING	
ROUNDABOUT ISLAND	
ROUNDABOUT ISLAND 2	
SMALL ISLAND	
SMALL PARKING LOT	
UNDERWOOD AND HITTINGER STREET	
ADA ZONE	
MAIN PARKING	
SOCCER FIELD PARKING	

LIGHTING ZONES KEY PLAN



GENERAL NOTES

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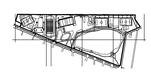
PROJECT

BELMONT HIGH SCHOOL
221 CONCORD AVE
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN



REVISIONS

MARK	ISSUE	DATE

PLANNING BD SET 06.21.2019

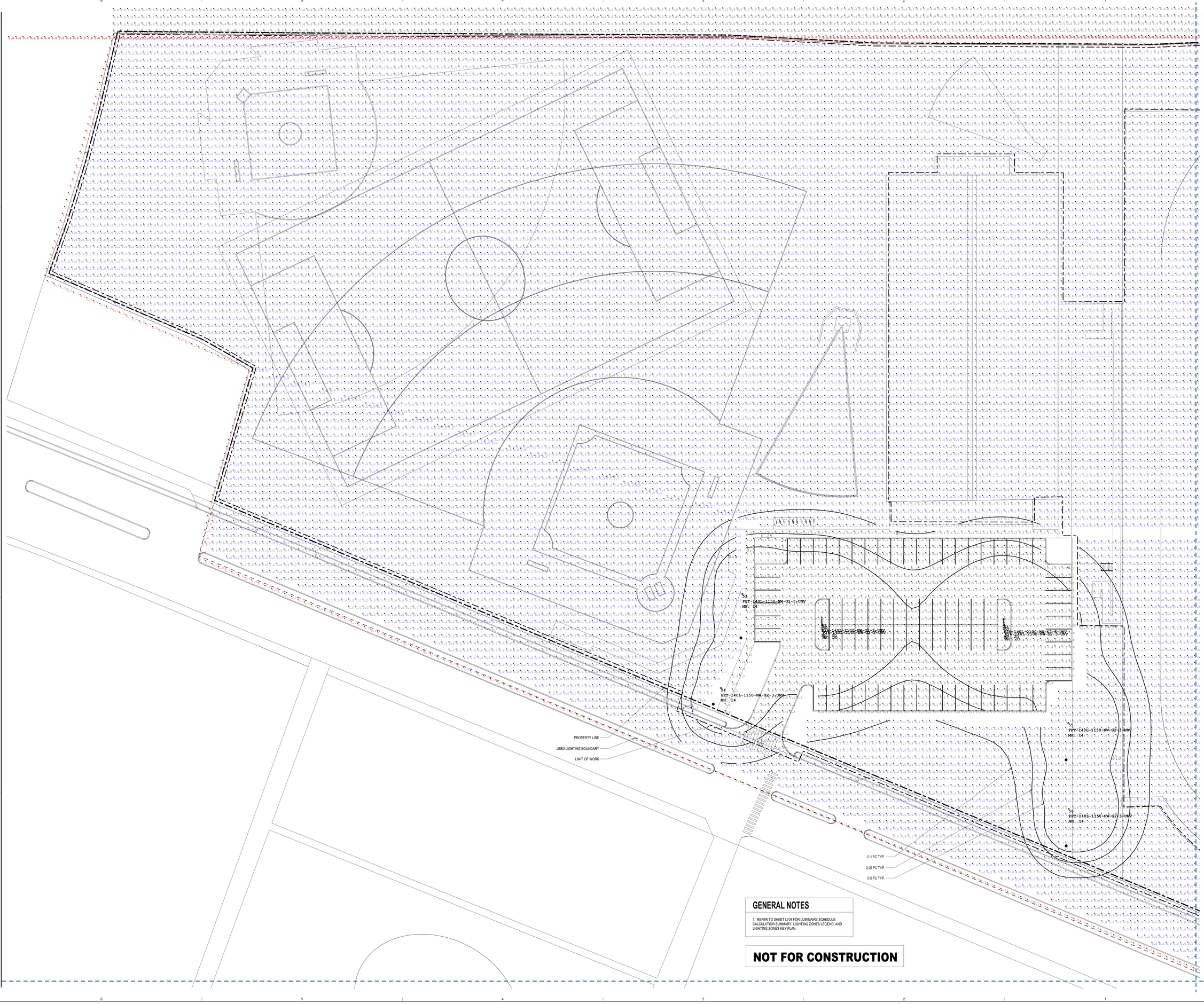
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PHOTOMETRICS PLAN

L704

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MASSACHUSETTS REGISTERED LANDSCAPE ARCHITECT No. 1115

PROJECT

BELMONT HIGH SCHOOL

221 CONCORD AVE.
BELMONT, MA 02478

CLIENT LOGO IF AVAILABLE

TOWN OF BELMONT

KEYPLAN

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PHOTOMETRICS PLAN

L705

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PERKINS+WILL

BUILDING RENDERING : VIEW FROM CONCORD AVE. (WINTER)




BELMONT HIGH SCHOOL


BELMONT HIGH SCHOOL

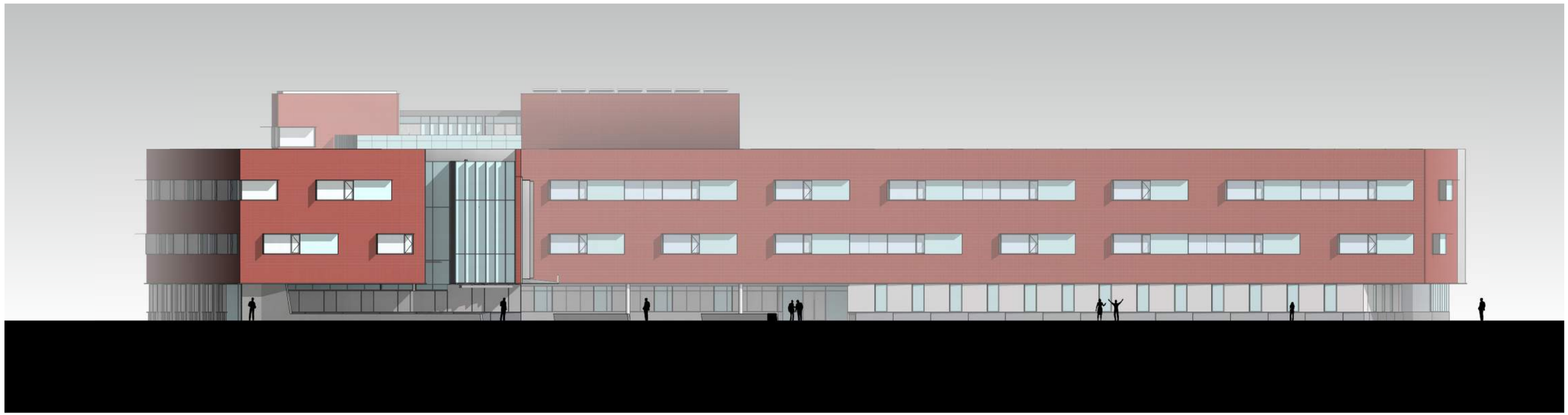



BELMONT MIDDLE SCHOOL

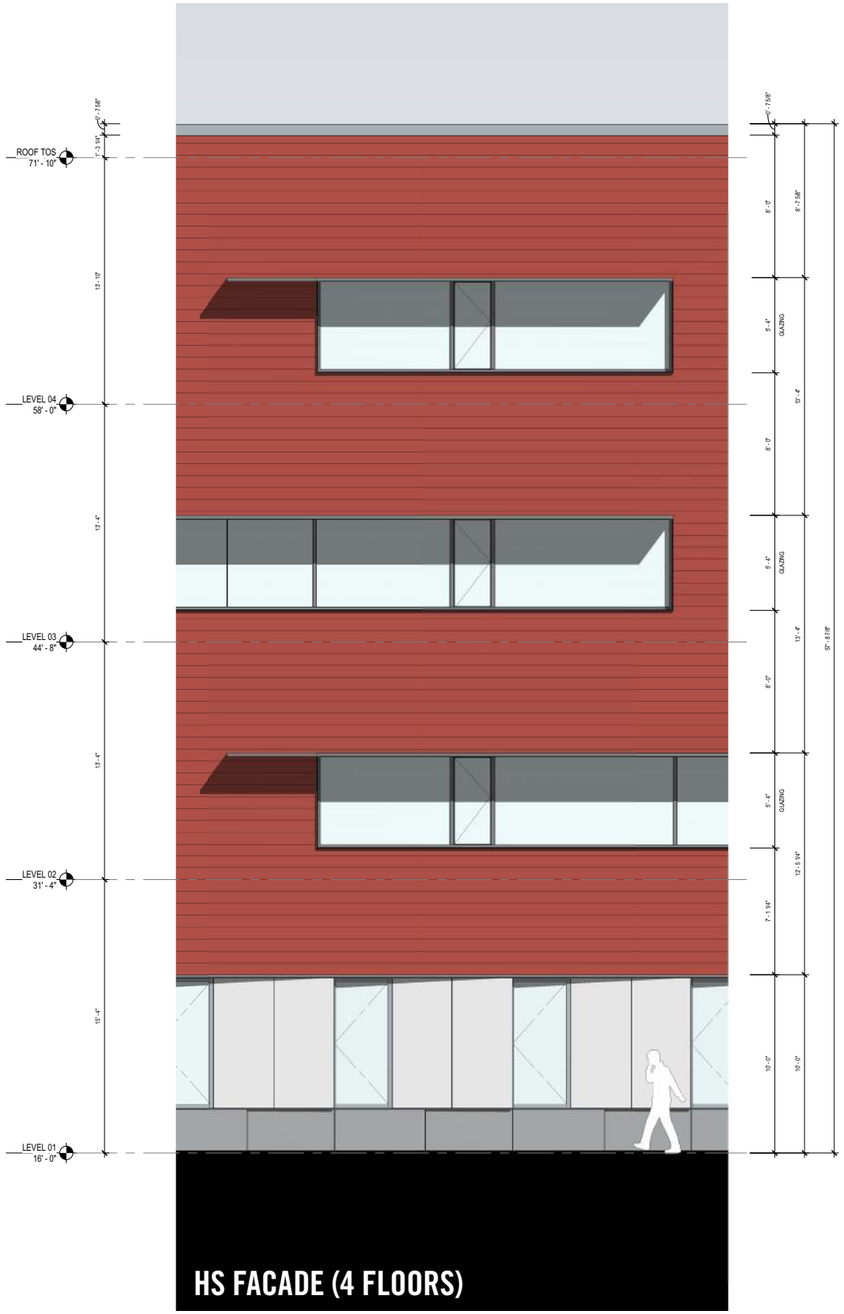


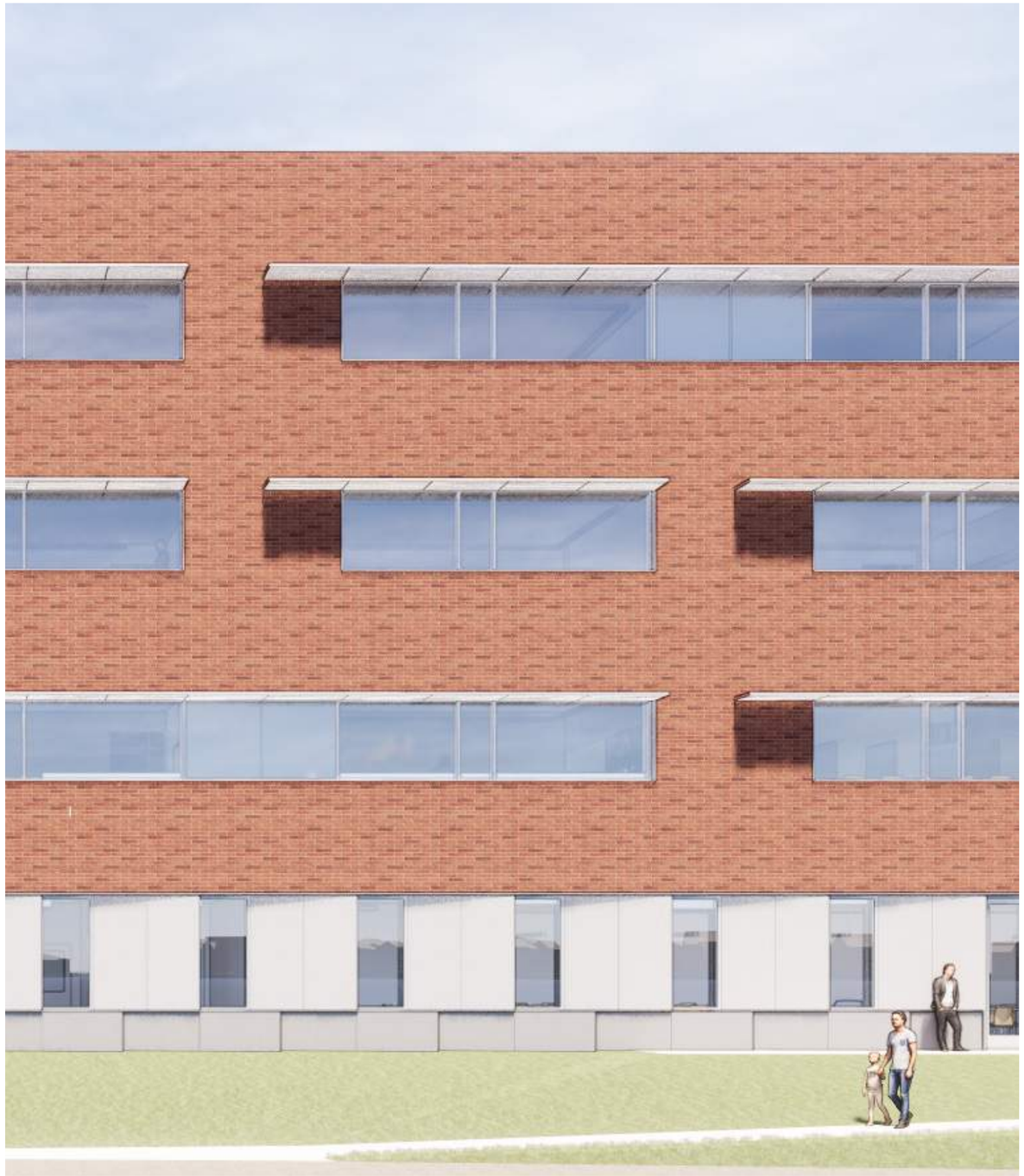

BELMONT HIGH SCHOOL



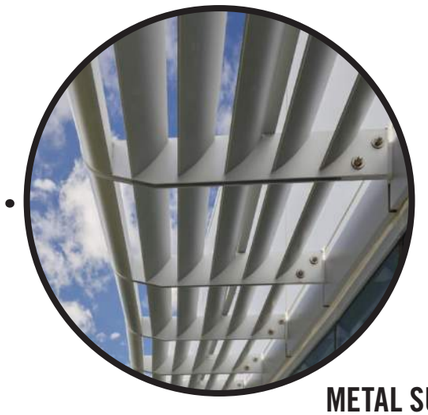




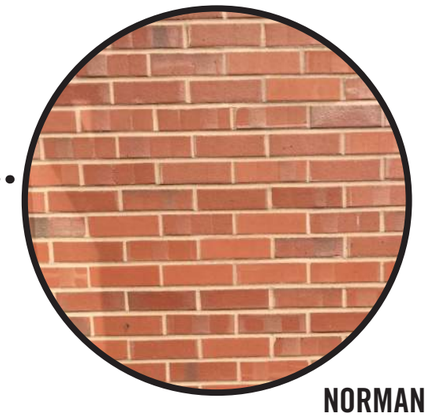

ROOF TOS
71' - 10"
LEVEL 04
58' - 0"
LEVEL 03
44' - 8"
LEVEL 02
31' - 4"
LEVEL 01
16' - 0"
13' - 10"
13' - 4"
13' - 4"
15' - 4"
8' - 7 5/8"
5' - 4"
GLAZING
13' - 4"
8' - 0"
5' - 4"
GLAZING
13' - 4"
8' - 0"
5' - 4"
GLAZING
12' - 5 1/4"
7' - 1 3/4"
15' - 0"
15' - 0"
55' - 8 7/8"
HS FACADE (4 FLOORS)







METAL SUNSHADES



NORMAN BRICK



CEMENTITIOUS PANEL &
PRECAST BASE

- **A** Brick Face - Norman Size, Limited Flashing
- **B** High Performance Concrete Panel, Sandblast Finish
- **C** Precast Base - Sandblast Finish
- **D** Clear Vision Glazing
- **E** Spandrel Glazing - Dark Metal Backpan
- **F** Light Grey Metal Panel
- **G** Dark Grey Metal Panel & Mullions
- **H** Perforated Metal Louvers
- **I** Horizontal Fixed Sunshade





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LEVEL 01 FLOOR PLAN

BELMONT PLANNING BOARD



PERKINS+WILL

LEVEL 02 FLOOR PLAN

BELMONT PLANNING BOARD



0 8' 16' 32'

PERKINS+WILL

LEVEL 03 FLOOR PLAN

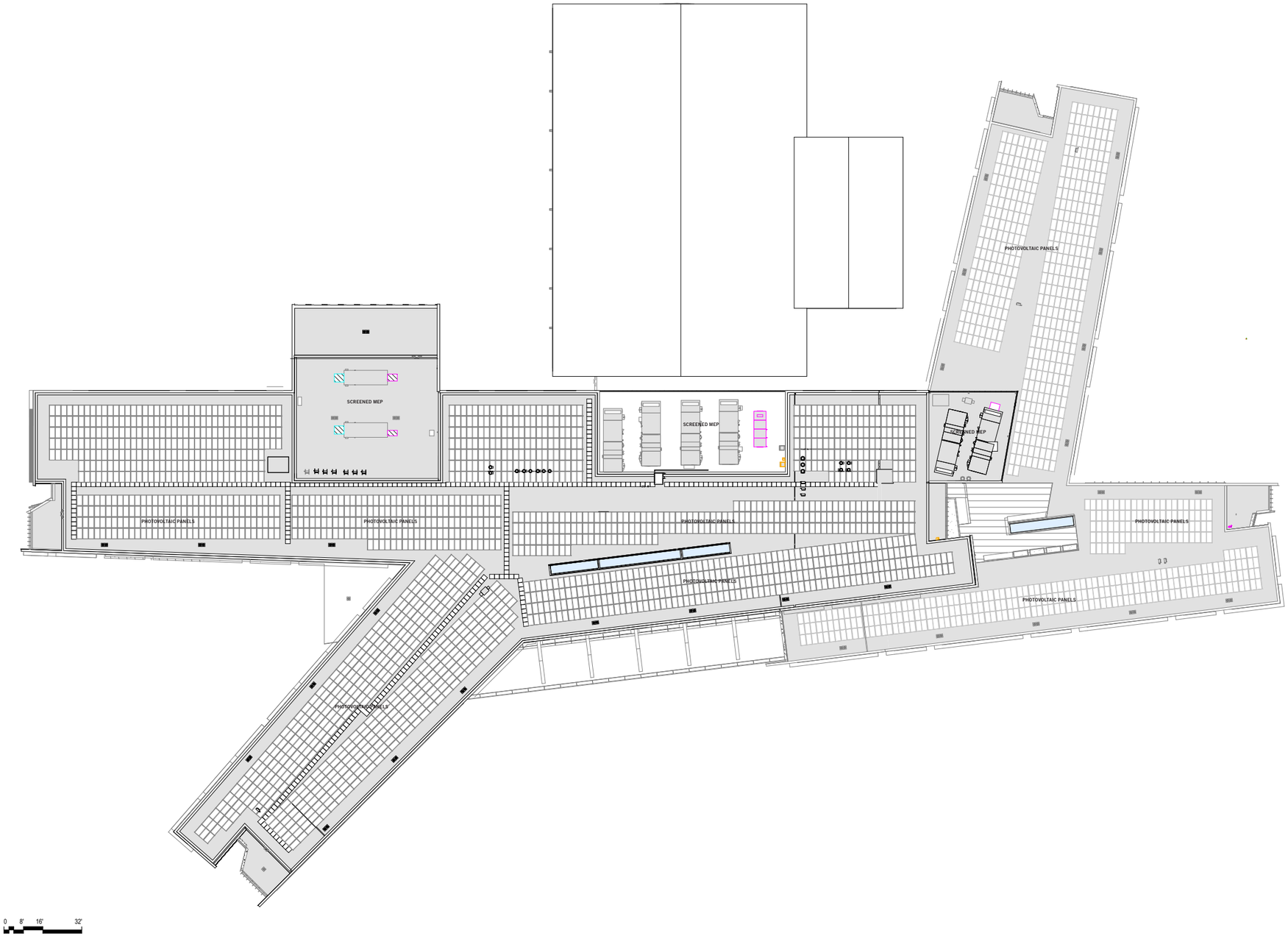
BELMONT PLANNING BOARD



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LEVEL 04 FLOOR PLAN

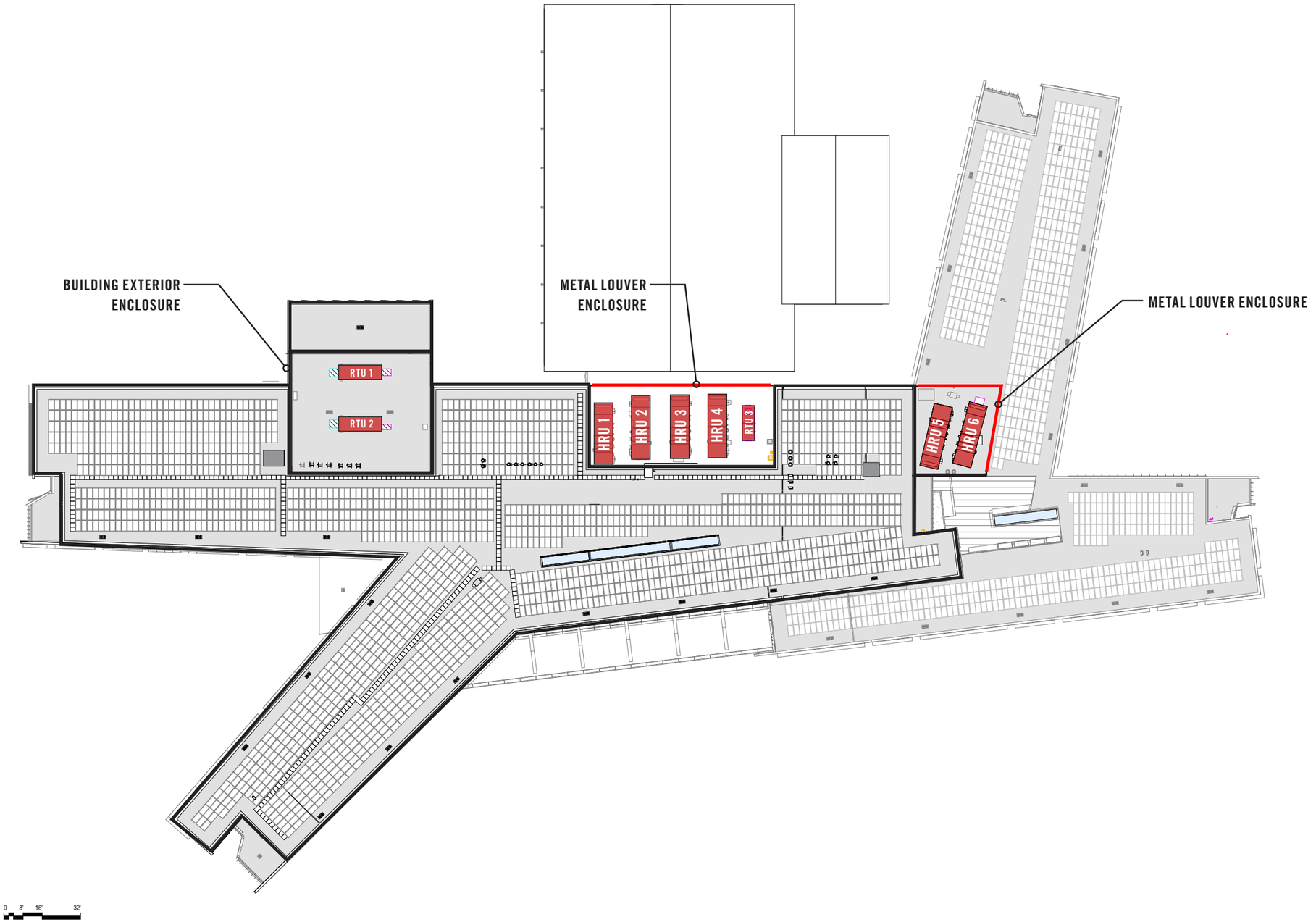
BELMONT PLANNING BOARD



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ROOF PLAN

BELMONT PLANNING BOARD

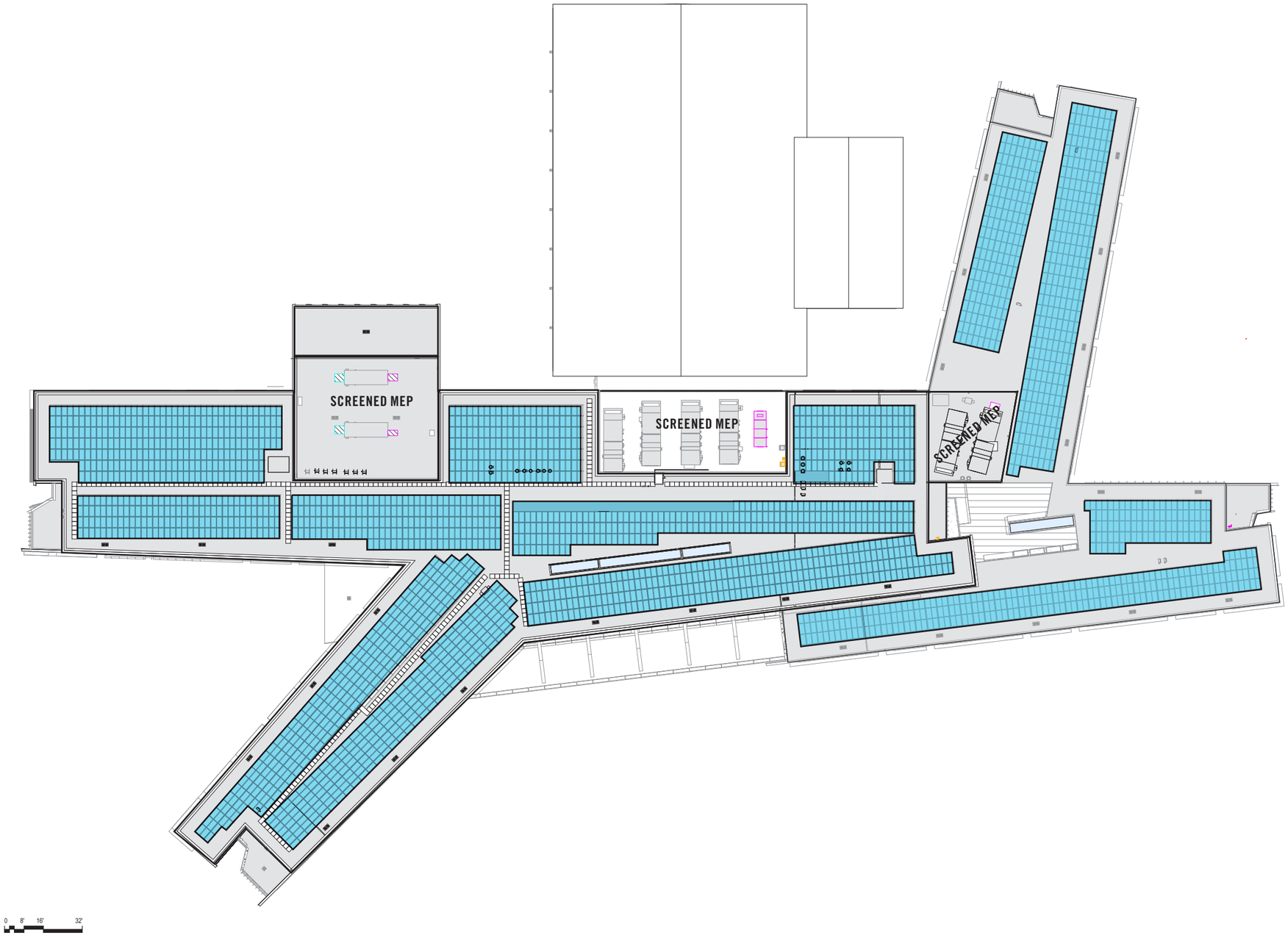

BUILDING EXTERIOR ENCLOSURE
METAL LOUVER ENCLOSURE
METAL LOUVER ENCLOSURE
RTU 1
RTU 2
HRU 1
HRU 2
HRU 3
HRU 4
RTU 3
HRU 5
HRU 6
0
8'
16'
32'

HEAT RECOVERY UNIT SCHEDULE (HRU) - HOT WATER AND CHILLED WATER COIL

			SUPPLY FAN											RETURN FAN											COOLING COIL (CHILLED WATER)														HEATING COIL (HOT WATER)										ELECTRICAL CHARACTERISTICS					
						STATIC PRESSURE (IN.WG)		WHEEL									WHEEL									AIR SIDE				CHILLED WATER DATA										AIR SIDE			HOT WATER DATA						TOTAL UNIT					
UNIT NO.	SERVICE	LOCATION	TOTAL AIRFLOW (CFM)	MIN. OA (CFM)	MIN % OF CFM	TOTAL	EXTERNAL	DIA (IN)	TYPE	RPM	MAX POWER (BHP)	MIN. MOTOR SIZE (HP)	TOTAL AIRFLOW (CFM)	PURGE AIR FLOW (CFM)	T.S.P (IN W.G)	E.S.P. (IN.WG)	DIA (IN)	TYPE	RPM	MAX. POWER (BHP)	MIN MOTOR SIZE (HP)	TOTAL COOLING (MBH)	SENS. COOLING (MBH)	MAX. FACE VELOC. (FPM)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	P.D. (IN.WG)	WATER FLOW RATE (GPM)	EWT (F)	LWT (F)	MAX PD (FT)	% GLYCOL	DISCHARGE AIR TEMPERATURE	TOTAL CAPACITY (MBH)	MAX FACE VELOCITY (FPM)	EAT (°F)	LAT (°F)	P.D. (IN.WG)	WATER FLOW RATE (GPM)	EWT (F)	LWT (F)	MAX PD (FT)	% GLYCOL	V	PH	MCA	MANUFACTURER	Model	REMARKS	STARTER TYPE
HRU-1	CLASSROOMS AREA B/C	ROOF AREA C	17395	17395	100.0	6.53	4.50	18	FAN WALLW ITH VFD	3862	42 TOTAL	(6) @ 7.0 EA	15660	0	3.50	2.50			0			945.0	653.3	400	83.1	72.9	48.3	47.4	0.64	315.0	44	56		30	55.0	329.9	500	47.7	65.3	0.21	33.0	130	110	2.95	30	480			ANNEXAIR	SIMILAR TO ERP-E	PROVIDE WITH MERV-8 PRE FILTER, MERV-13 FINAL FILTER, ENERGY RECOVERY WHEEL, AND 5 FOOT LONG DUCT MOUNTED SOUND ATTENUATION ON SUPPLY AND RETURN	VFD
HRU-2	CLASSROOMS AREA B/C	ROOF AREA C	21545	21545	100.0	6.53	4.50	18	FAN WALLW ITH VFD	3862	42 TOTAL	(6) @ 7.0 EA	21545	0	3.50	2.50			0			1158.9	801.6	400	82.0	66.5	48.1	47.3	0.64	387.0	44	56		30	52.0	404.8	500	47.7	65.1	0.21	40.5	130	110	2.95	30	480			ANNEXAIR	SIMILAR TO ERP-E	PROVIDE WITH MERV-8 PRE FILTER, MERV-13 FINAL FILTER, ENERGY RECOVERY WHEEL, AND 5 FOOT LONG DUCT MOUNTED SOUND ATTENUATION ON SUPPLY AND RETURN	VFD
HRU-3	CLASSROOMS AREA A	ROOF AREA C	18075	18075	100.0	6.53	4.50	18	FAN WALLW ITH VFD	3862	42 TOTAL	(6) @ 7.0 EA	18075	0	3.50	2.50			0			1035.0	687.0	400	83.5	67.6	48.3	47.4	0.64	345.0	44	56		30	55.0	343.4	500	47.6	65.3	0.21	34.4	130	110	2.95	30	480			ANNEXAIR	SIMILAR TO ERP-E	PROVIDE WITH MERV-8 PRE FILTER, MERV-13 FINAL FILTER, ENERGY RECOVERY WHEEL, AND 5 FOOT LONG DUCT MOUNTED SOUND ATTENUATION ON SUPPLY AND RETURN	VFD
HRU-4	CLASSROOMS AREA D/F	ROOF AREA C	16310	16310	100.0	6.53	4.50	18	FAN WALLW ITH VFD	3862	42 TOTAL	(6) @ 7.0 EA	16310	0	3.50	2.50			0			890.4	613.2	400	83.1	66.8	48.3	47.4	0.64	297.0	44	56		30	55.0	308.6	500	47.7	65.3	0.21	31.0	130	110	2.95	30	480			ANNEXAIR	SIMILAR TO ERP-E	PROVIDE WITH MERV-8 PRE FILTER, MERV-13 FINAL FILTER, ENERGY RECOVERY WHEEL, AND 5 FOOT LONG DUCT MOUNTED SOUND ATTENUATION ON SUPPLY AND RETURN	VFD
HRU-5	CLASSROOMS AREA D/F	ROOF AREA C	18435	18435	100.0	6.53	4.50	18	FAN WALLW ITH VFD	3862	42 TOTAL	(6) @ 7.0 EA	18435	0	3.50	2.50			0			995.8	690.8	400	83.0	66.6	48.3	47.4	0.64	332.1	44	56		30	55.0	349.0	500	47.7	65.3	0.21	35.0	130	110	2.95	30	480			ANNEXAIR	SIMILAR TO ERP-E	PROVIDE WITH MERV-8 PRE FILTER, MERV-13 FINAL FILTER, ENERGY RECOVERY WHEEL, AND 5 FOOT LONG DUCT MOUNTED SOUND ATTENUATION ON SUPPLY AND RETURN	VFD
HRU-6	CLASSROOMS AREA F	ROOF AREA C	19490	19490	100.0	6.53	4.50	18	FAN WALLW ITH VFD	3862	42 TOTAL	(6) @ 7.0 EA	19490	0	3.50	2.50			0			1092.7	736.9	400	83.3	67.2	48.3	47.4	0.64	364.4	44	56		30	55.0	370.3	500	47.6	65.3	0.21	37.0	130	110	2.95	30	480			ANNEXAIR	SIMILAR TO ERP-E	PROVIDE WITH MERV-8 PRE FILTER, MERV-13 FINAL FILTER, ENERGY RECOVERY WHEEL, AND 5 FOOT LONG DUCT MOUNTED SOUND ATTENUATION ON SUPPLY AND RETURN	VFD

ROOFTOP AIR HANDLING UNIT- CHILLED WATER COOLING / HOT WATER HEATING

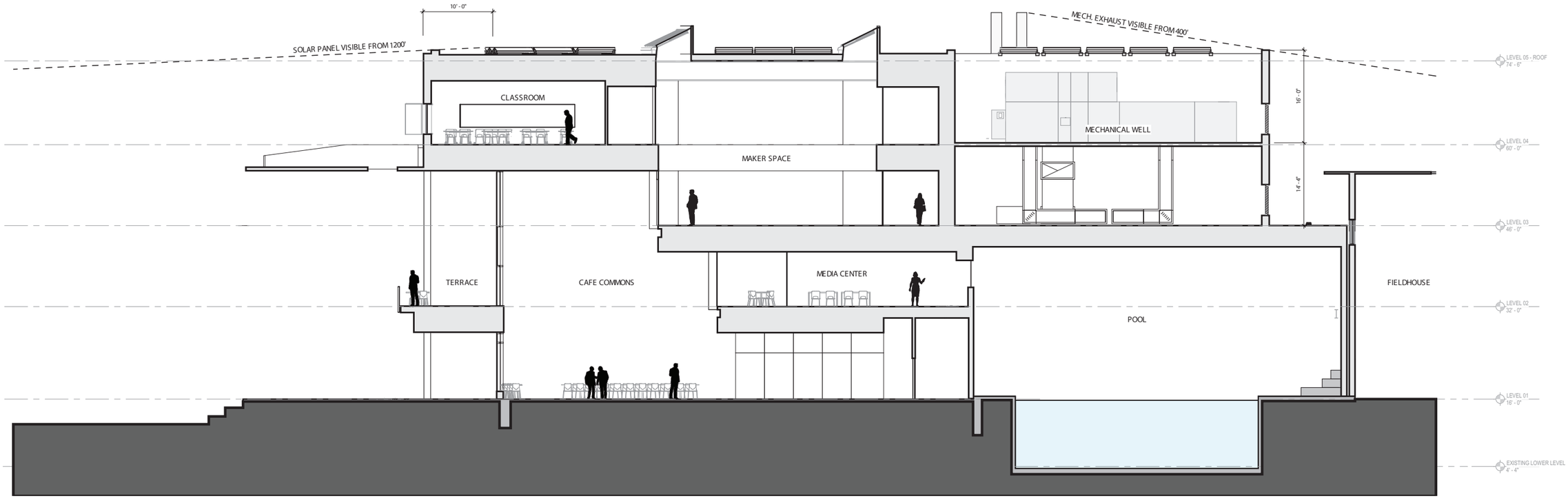
			SUPPLY FAN												RETURN FAN									CHILLED WATER COOLING COIL																HOT WATER HEATING COIL									ELECTRICAL DATA						
						CAPACITY CONTROL		STATIC PRESSURE (IN.WG)		WHEEL								WHEEL							AIR SIDE						WATER SIDE										AIR SIDE			HOT WATER SIDE														
UNIT NO.	SERVICE	LOCATION	TOTAL AIRFLOW (CFM)	MIN. OA (CFM)	MIN. UNIT AIRFLOW (CFM)	TYPE	TURN DOWN (%)	TOTAL W/ DIRTY FILTER (I')	EXT	DIA (IN)	MIN. CLASS	RPM	MAX POWER REQUIREMENT (BHP)	MOTOR SIZE (HP)	AIRFLOW (CFM)	E.S.P. (IN.WG)	T.S.P. (IN.WG)	DIA (IN)	MIN. CLASS	RPM	MAX. POWER REQUIREMENT (BHP)	MOTOR SIZE (HP)	TOTAL COOLING (MBH)	SENS. COOLING (MBH)	MAX. FACE VELOC. (FPM)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	MAX. P.D. (IN.WG)	FLOW (GPM)	EWT (°F)	LWT (°F)	MAX PD (FT)	GLYCOL %	CAPCAITY (MBH)	MAX. FACE VELOCITY (FPM)	EAT (°F)	LAT (°F)	MAX. P.D. (IN.WG)	WATER FLOW (GPM)	EWT (°F)	LWT (°F)	MAX. PD (FT. HD)	V	PH	TOTAL MCA	MANUFACTURER	MODEL	REMARKS	STARTER TYPE	DISCHARGE AIR TEMP. (°F)
RTU-1	STAGE	ROOF AREA B	5825	990		VFD		5.42	2.25		PLENUM	1800	2 @ 10.5 EA	2 @ 15 EA	5825	2.33	0.00		PLUG	1800	2 @ 4.2 EA	2 @ 7.5 EA	235.1	164.5	400	79.8	66.4	53.6	52.7	0.35	47.0	44.0	56.0	0.00	30	127.6	500	60.5	80.8	0.03	13.0	130	110	0.3	480	3	215.0	ANNEXAIR	SIMILAR TO AHU-E-16	TWO ELECTRICAL CIRCUITS. ONE CIRCUIT CONTROLS AND FANS @59 MCA AND SECOND CIRCUIT COOLING SYSTEM @156 MCA. PROVIDE WITH 5'-0" LONG SOUND ATTENUATORS FOR SUPPLY AND RETURN DUCTS.	VFD	55.0
RTU-2	AUDITORIUM	ROOF AREA B	9500	4100		VFD		5.42	2.25		PLENUM	1800	2 @ 10.5 EA	2 @ 15 EA	9500	2.33	0.00		PLUG	1800	2 @ 4.2 EA	2 @ 7.5 EA	527.2	409.7	400	91.9	68.8	51.5	49.7	0.35	88.0	44.0	56.0	0.00	30	68.9	500	60.9	67.7	0.03	7.0	130	110	0.3	480	3	215.0	ANNEXAIR	SIMILAR TO AHU-E-16	TWO ELECTRICAL CIRCUITS. ONE CIRCUIT CONTROLS AND FANS @59 MCA AND SECOND CIRCUIT COOLING SYSTEM @156 MCA. PROVIDE WITH 5'-0" LONG SOUND ATTENUATORS FOR SUPPLY AND RETURN DUCTS.	VFD	55.0
RTU-3	COMMONS	ROOF AREA C	9000	7485		VFD		5.42	2.25		PLENUM	1800	2 @ 10.5 EA	2 @ 15 EA	9000	2.33	0.00		PLUG	1800	2 @ 4.2 EA	2 @ 7.5 EA	456.5	315.5	400	82.8	67.0	50.3	49.4	0.35	91.4	44.0	56.0	0.00	30	33.5	500	47.9	52.0	0.03	3.4	130	110	0.3	480	3	215.0	ANNEXAIR	SIMILAR TO AHU-E-16	TWO ELECTRICAL CIRCUITS. ONE CIRCUIT CONTROLS AND FANS @59 MCA AND SECOND CIRCUIT COOLING SYSTEM @156 MCA. PROVIDE WITH 5'-0" LONG SOUND ATTENUATORS FOR SUPPLY AND RETURN DUCTS.	VFD	55.0



PERKINS+WILL

ROOF PLAN : PHOTOVOLTAIC LAYOUT

BELMONT PLANNING BOARD



ROOF TOP EQUIPMENT AND SCREENING : BUILDING SECTION

ACENTECH

33 Moulton Street
Cambridge MA 02138
617 499 8000
acentech.com

January 27, 2019

Jeff Brussel
Perkins + Will
225 Franklin Street, Suite 1100
Boston, MA 02110

Via email: jeff.brussel@perkinswill.com

Subject **Preliminary Environmental Sound Review and Recommendations**
Belmont Middle / High School
Belmont, MA
Acentech Project No. 629341

Dear Jeff:

This letter presents our review and recommendations for the proposed outdoor mechanical equipment for the new Belmont Middle / High School in Belmont, MA. This project site needs to comply with the Town of Belmont noise ordinance as well as the Massachusetts state regulation.

APPLICABLE NOISE REGULATION

Town of Belmont – Exterior Noise Standards

It shall be unlawful for any person at any location within the area of the Town to create any loud noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person, which causes the sound level when measured on any other property to exceed the greater of:

1. The maximum allowable exterior sound level outlined in Table I; or
2. Five dB over the background sound level.

Table 1. Maximum Allowable Exterior Sound Level

Noise Zone	Daytime Level 7AM to 10PM	Nighttime Level 10PM to 7AM
I	55 dBA	45 dBA
II	65 dBA	60 dBA

Our project and the surrounding areas are considered Zone I, which is defined as all residential properties and the grounds of any school, hospital or similar healthcare institution, house of worship or library while the same is in use, and any Cemetery or Open Space Subdistrict.

Mass DEP

The Massachusetts Department of Environmental Protection (MassDEP) requires sound emissions from the project not to exceed 10 dBA over the existing background sound level. In addition, the new exterior noise contribution cannot be tonal. A tone is defined when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels or more.

This project should follow the more conservative regulation, in this case the Massachusetts DEP noise regulation.

BACKGROUND SOUND LEVEL

We visited the project site from May 14, 2018 to May 20, 2018 to record the existing background sound levels (LA90) as required to confirm compliance with Town of Belmont and MassDEP noise regulations. This was done by installing a continuous noise monitor that recorded statistical sound measurements every 10 minutes over the course of this period. The aerial photograph shows the location selected for our measurement and evaluation.



The measurement results are summarized in Table 2 below. Refer to the attached graph at the end of this report for the complete measured sound levels over this period. $L_{A}90$ is used to represent the background sound levels. They are also summarized as follows:

Table 2. Measured Lowest Background Sound Level

L_{A90}, Lowest Nighttime Background Sound Levels 10PM to 7AM	L_{A90}, Lowest Daytime Background Sound Levels 7AM to 10PM
29 dBA	37 dBA

Based on the results of the measurements at Belmont Middle / High School and according to MassDEP, the broadband sound emissions by the new equipment should not exceed **39 dBA** during the nighttime hours and **47 dBA** during the daytime hours.

PREDICTED SOUND EMISSION LEVELS

All outdoor units evaluated are located on the roof level of the project. We have predicted the sound emission levels of the future equipment as listed below to the closest neighbors. The preliminary predicted sound levels will meet both the daytime and nighttime noise limits and are presented in subsequent sections of this report.

We have assumed that for nighttime conditions, some of the equipment will be reduced to in operation from the maximum fan speed and thus quieter than what is predicted here. As the design progresses, smaller equipment will be added into the calculations as more information is available.

The list of new equipment included in our study is as follows:

- **Three rooftop units (RTU),** ranging from 4600 cfm to 13,000 cfm, similar to Haakon or AnnexAir. These will be operated with VFDs to allow for turndown when the demand is lower. Some of the larger units will be provided with sound attenuators or acoustical louvers on the exhaust air openings similar to Vibro Acoustics or Price. Most of the units are located within a roof well or screened.

- **Six rooftop heat recovery units (HRU),** ranging from 18,500 cfm to 26,000 cfm, similar to Haakon or AnnexAir. These will be operated with VFDs to allow for turndown when the demand is lower. Some of the larger units will be provided with sound attenuators or acoustical louvers on the outdoor air inlet and exhaust air openings similar to Vibro Acoustics or Price. Most of the units are located within a roof well or screened.

- **One make up air unit (MAU),** 12,000 cfm, similar to Haakon or AnnexAir. This unit will serve the kitchen and only operate during the daytime hours.

- **Two energy recovery units (ERV),** ranging from 460 cfm to 1,100 cfm, similar to Haakon or AnnexAir.

- **One 1500 kW emergency generator,** with a custom sound attenuated enclosure similar to Pritchard Brown, and tested only during the daytime hours.

PREDICTED A-WEIGHTED SOUND LEVELS

Ten receiver locations have been selected as part of our receiver evaluation as shown in the appendix section attached at the end of this report. These are the closest residential properties abutting the future high school. The following table shows the predicted sound levels with the new rooftop equipment operating at 100% excluding the emergency generator:

TABLE 3. Estimated Sound Pressure Levels at Project Property Lines

Receiver	dBA
REC 1	36
REC 2	37
REC 3	35
REC 4	29
REC 5	31
REC 6	28
REC 7	29
REC 8	30
REC 9	32
REC 10	33
Night Limit	**39**

TONE EVALUATION

Based on the preliminary equipment sound data and the predicted sound levels to the receivers, we do not anticipate the equipment to emit tonal sound as defined by the state of Massachusetts.

CONCLUSION

Based on our evaluation of the proposed new equipment Belmont Middle / High School, the equipment sound emission to the community will be within the acceptable noise limits with the appropriate noise control as described in this report.

I trust this letter provides the information that you need at this time. If you have questions, please call me on my direct line at 617.499.8080.

Sincerely,

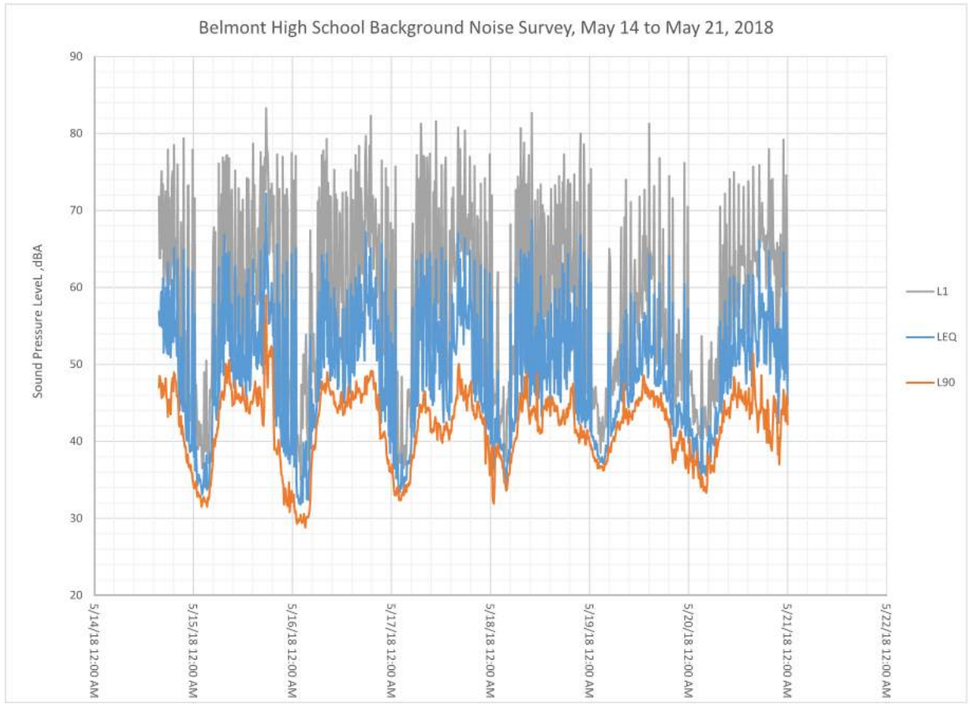


Rose Mary Su
Principal Consultant

Encl: Noise monitor results at Belmont Middle / High School

APPENDIX

Sound Levels Measured from May 14, 2018 to May 21, 2018 at Belmont High School



Type of Acoustic Instrumentation Used for Ambient Sound Measurements during survey

LONG-TERM MEASUREMENTS

Instrument Type	Manufacturer	Model
Sound Level Meter	Rion	NL-52
Preamplifier	Rion	NH-25
1/2" Microphone	Rion	UC-59
Acoustic Calibrator	Gen Rad	1987

Preliminary Equipment Sound Data

SOUND POWER LEVELS

Sound calculations are based on ASHRAE equations for attenuation of sound from lined plenums. To match actual test data, adjustments are made in the lower bands to account for sound reflection by the plenums.

Haakon casing sound absorption coefficients and transmission loss values used in the calculations have been obtained by an independent sound testing laboratory. The fan sound data is based on AMCA 300 testing.

UNIT	OPEN	SOUND POWER LEVELS (db)								
		BAND	1	2	3	4	5	6	7	8
		FREQ	63	125	250	500	1000	2000	4000	8000
ERV-1	RA INLET		57	50	57	61	57	54	52	50
ERV-1	SA DISCH		73	70	74	79	74	71	71	66
ERV-1	EA DISCH		80	77	74	72	70	71	68	61
ERV-1	OA INLET		55	50	59	65	56	55	56	52
ERV-1	RADIATED		66	62	50	50	50	50	50	50
HRU-1	RA INLET		76	70	86	85	77	74	72	65
HRU-1	SA DISCH		90	87	96	99	93	91	87	80
HRU-1	EA DISCH		87	84	97	95	90	88	84	76
HRU-1	OA INLET		82	77	89	91	82	79	77	71
HRU-1	RADIATED		76	73	70	64	50	50	50	50
HRU-2	RA INLET		80	73	88	88	79	77	74	68
HRU-2	SA DISCH		91	88	96	100	94	92	88	82
HRU-2	EA DISCH		89	86	99	98	92	91	87	80
HRU-2	OA INLET		84	79	89	93	83	80	78	73
HRU-2	RADIATED		78	75	71	66	50	50	50	50
HRU-3	RA INLET		77	70	85	85	77	73	71	65
HRU-3	SA DISCH		90	87	95	98	93	90	86	79
HRU-3	EA DISCH		87	84	96	94	90	87	83	75
HRU-3	OA INLET		82	77	88	91	82	79	76	71
HRU-3	RADIATED		76	73	69	63	50	50	50	50
HRU-4	RA INLET		78	72	87	86	78	75	73	66
HRU-4	SA DISCH		90	87	96	99	93	91	87	81
HRU-4	EA DISCH		88	85	98	96	92	89	85	78
HRU-4	OA INLET		83	78	89	92	82	80	77	71
HRU-4	RADIATED		77	74	71	65	50	50	50	50
HRU-5	RA INLET		78	71	86	85	78	75	72	65
HRU-5	SA DISCH		90	87	97	98	93	90	86	79
HRU-5	EA DISCH		88	85	98	96	92	89	85	77
HRU-5	OA INLET		83	77	89	91	83	79	77	70
HRU-5	RADIATED		77	74	70	64	50	50	50	50
HRU-6	RA INLET		77	71	87	84	77	74	72	64
HRU-6	SA DISCH		90	87	99	97	92	89	85	77
HRU-6	EA DISCH		88	86	98	95	91	89	84	76
HRU-6	OA INLET		83	78	91	90	81	78	76	69
HRU-6	RADIATED		77	74	72	62	50	50	50	50
MAU-1	SA DISCH		83	81	85	85	81	77	74	71
MAU-1	RA		73	77	89	76	72	72	70	64
MAU-1	OA		73	78	90	76	72	72	70	64
MAU-1	RADIATED		68	68	61	50	50	50	50	50
RTU-1	RA INLET		61	53	69	70	60	60	62	56
RTU-1	SA DISCH		78	75	87	85	80	77	73	65
RTU-1	EA DISCH		79	79	84	85	82	82	81	75
RTU-1	OA INLET		68	62	78	76	67	64	63	57

PROJECT: BELMONT HS

HAAKON INDUSTRIES

SOUND POWER LEVELS

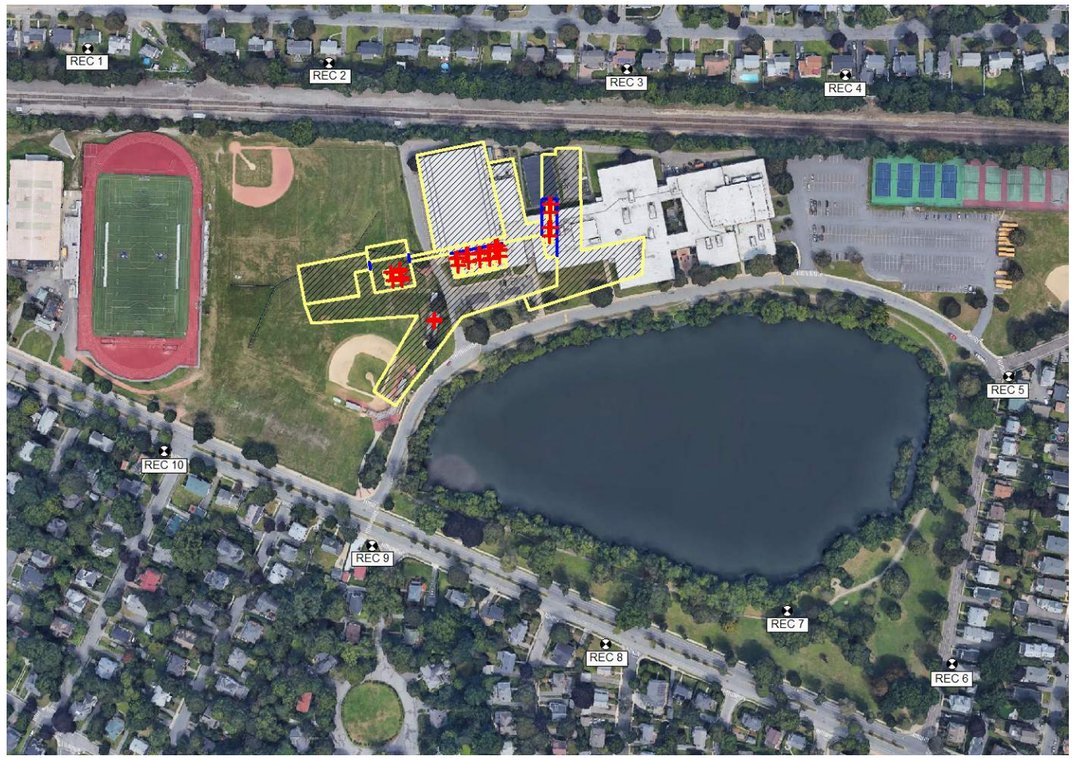
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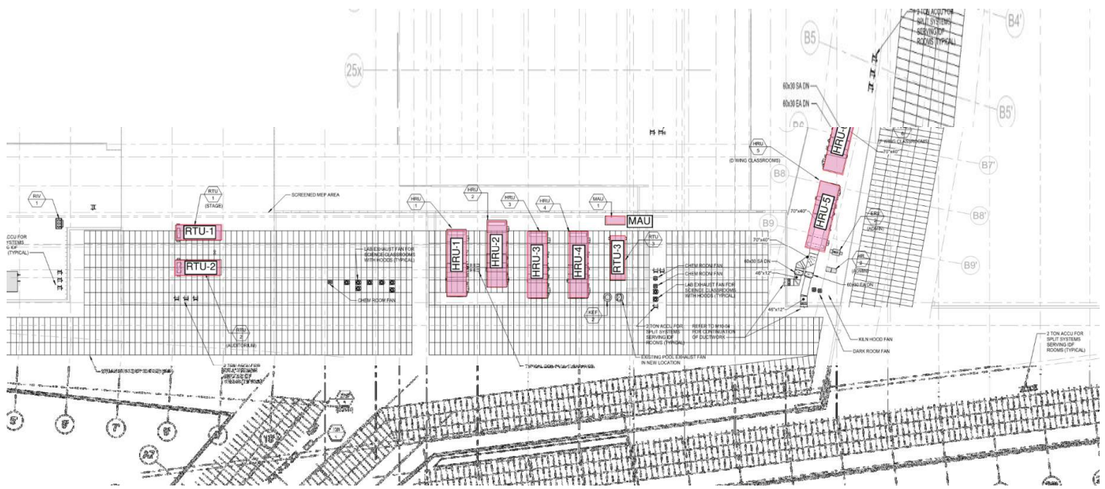
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UNIT	OPEN	SOUND POWER LEVELS (db)									
		BAND	1	2	3	4	5	6	7	8	
		FREQ	63	125	250	500	1000	2000	4000	8000	
RTU-1	RADIATED		68	66	61	53	50	50	50	50	
RTU-2	RA INLET		68	60	79	76	69	67	64	58	
RTU-2	SA DISCH		86	83	95	93	89	86	82	74	
RTU-2	EA DISCH		86	84	95	93	88	85	84	79	
RTU-2	OA INLET		78	72	87	85	77	74	72	64	
RTU-2	RADIATED		73	71	68	59	50	50	50	50	
RTU-3	RA INLET		69	61	79	77	69	67	65	58	
RTU-3	SA DISCH		83	80	92	91	86	83	79	71	
RTU-3	EA DISCH		85	83	96	95	90	88	84	77	
RTU-3	OA INLET		76	70	86	83	75	72	70	63	
RTU-3	RADIATED		73	70	68	59	50	50	50	50	

PROJECT:	BELMONT HS		HAAKON INDUSTRIES
DRAWN BY: WC	JOJ NO: 58989	DWG NO: 58989D102	11951 DYKE ROAD, RICHMOND, B.C. CANADA V7A 4A8
DATE: 2019-01-16	UNITS: METRIC	REVISION:	

Preliminary Equipment Locations and Receiver Locations





Preliminary Equipment Locations and Receiver Locations



CONCLUSION

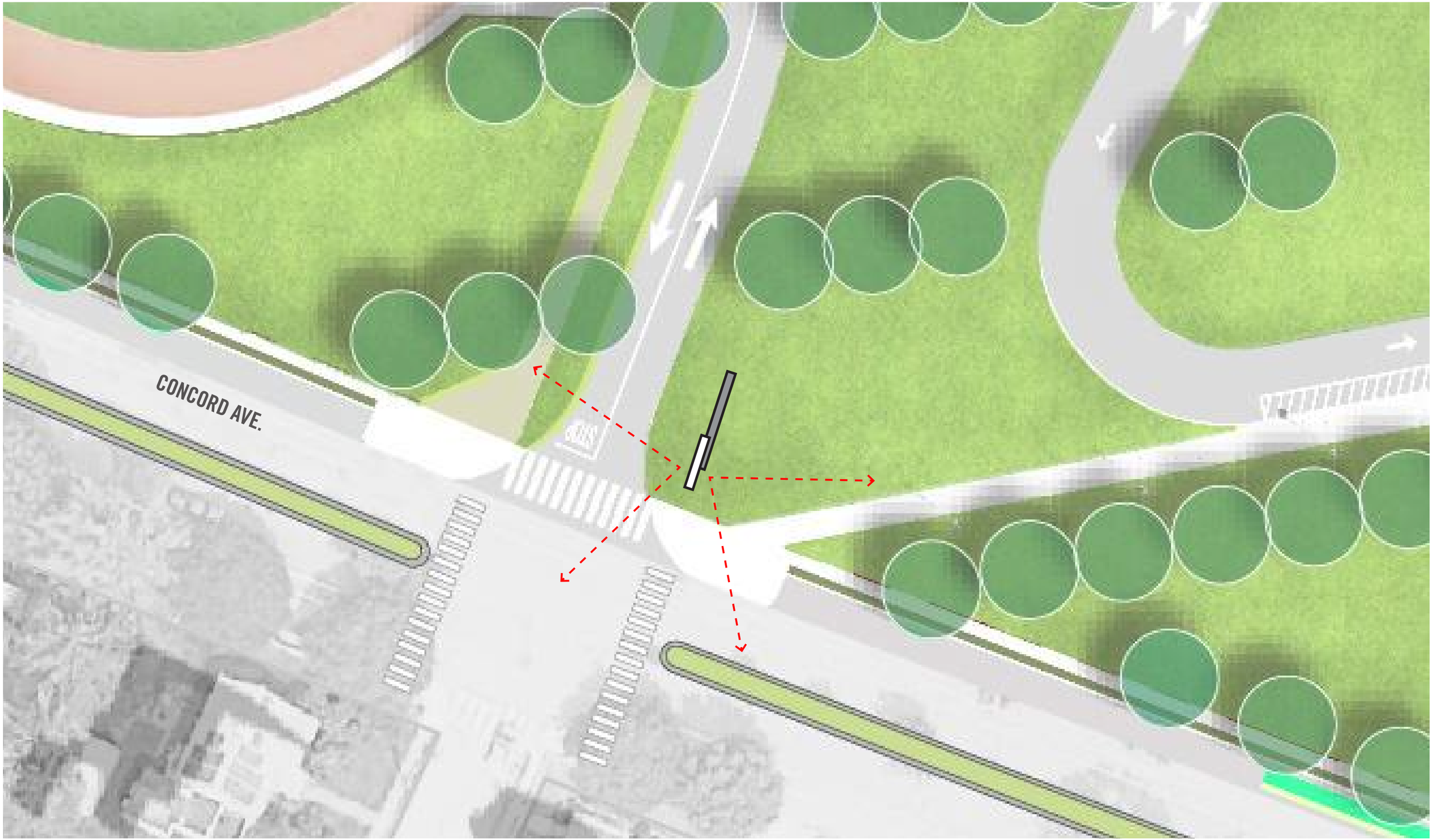
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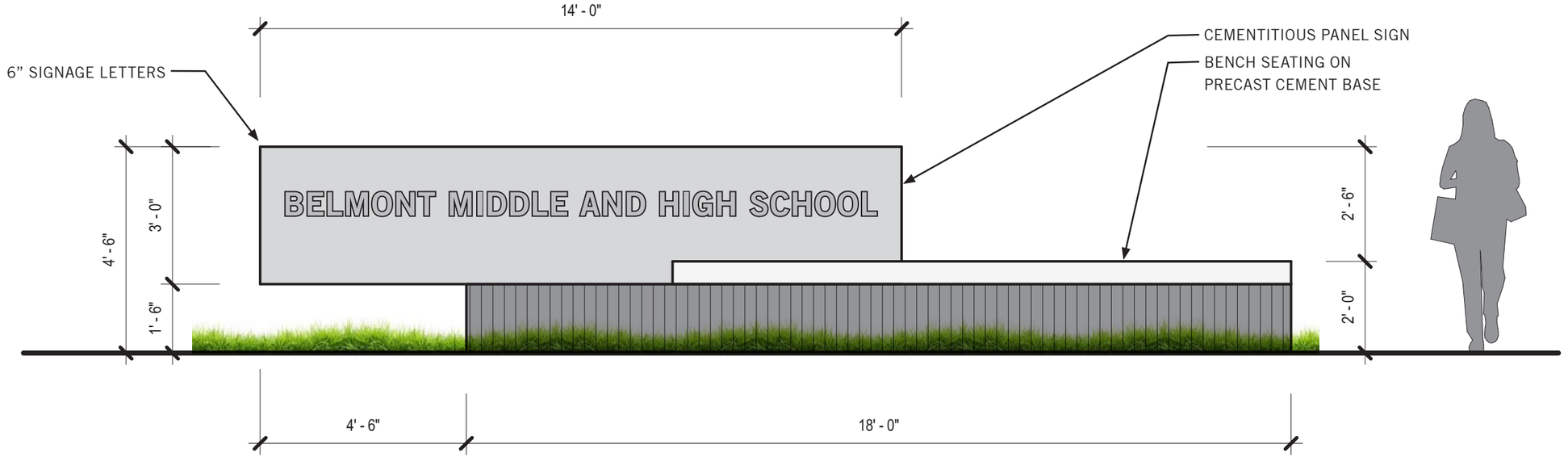


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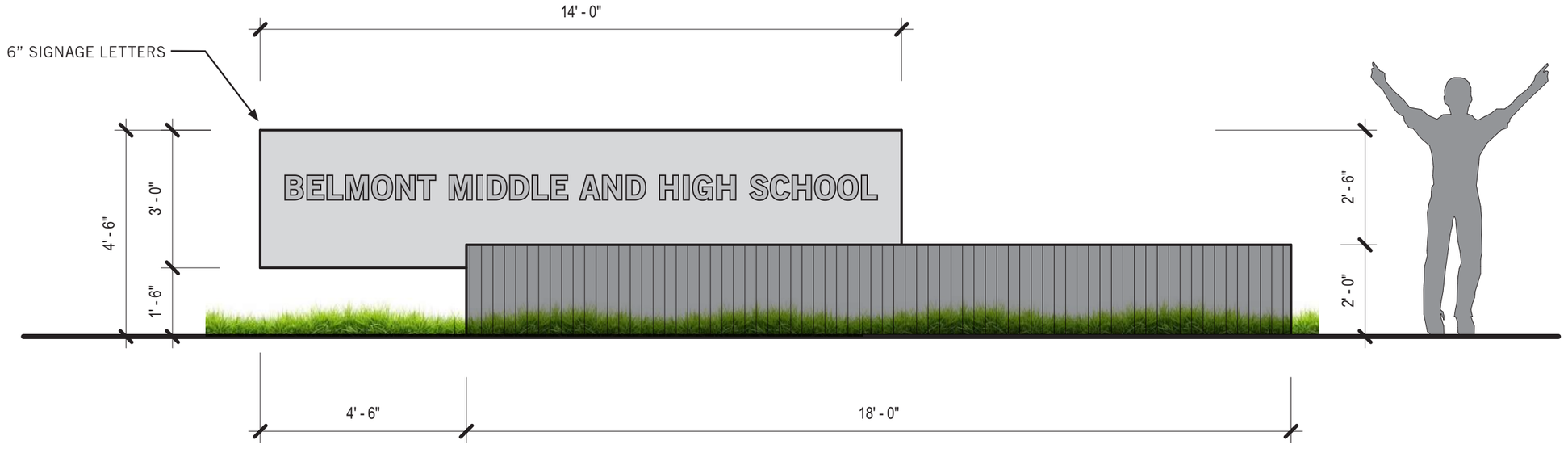
SITE SIGNAGE : LOCATIONS

BELMONT PLANNING BOARD


CONCORD AVE.



NAME SIGNAGE IS 42SF (BASE NOT INCLUDED)




SNYDER CENTER

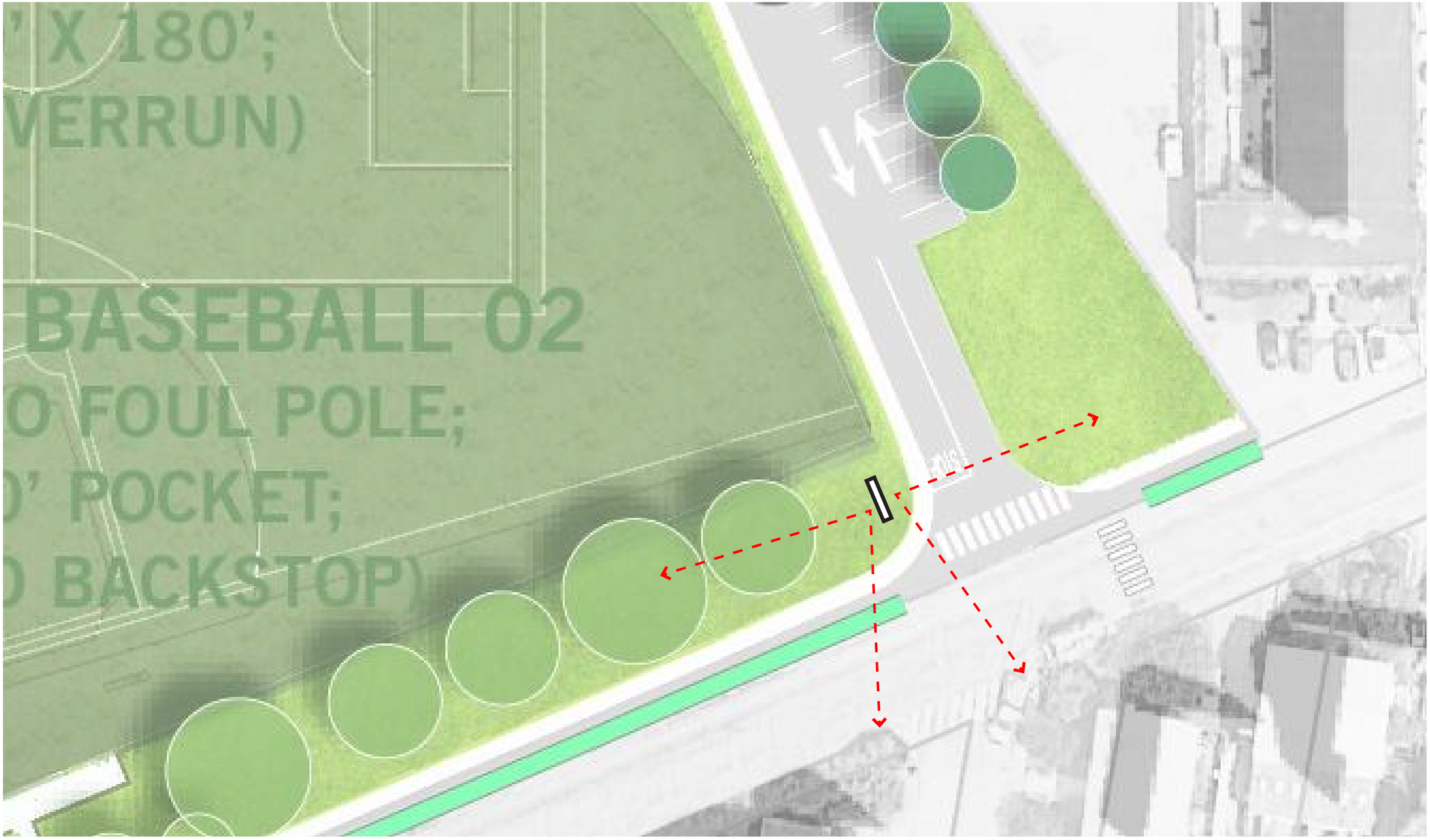





dpof

NAME SIGNAGE IS 42SF (BASE NOT INCLUDED)





PERKINS+WILL

SITE SIGNAGE : HITTINGER STREET

BELMONT PLANNING BOARD

VANDAL RESISTANT LETTERING



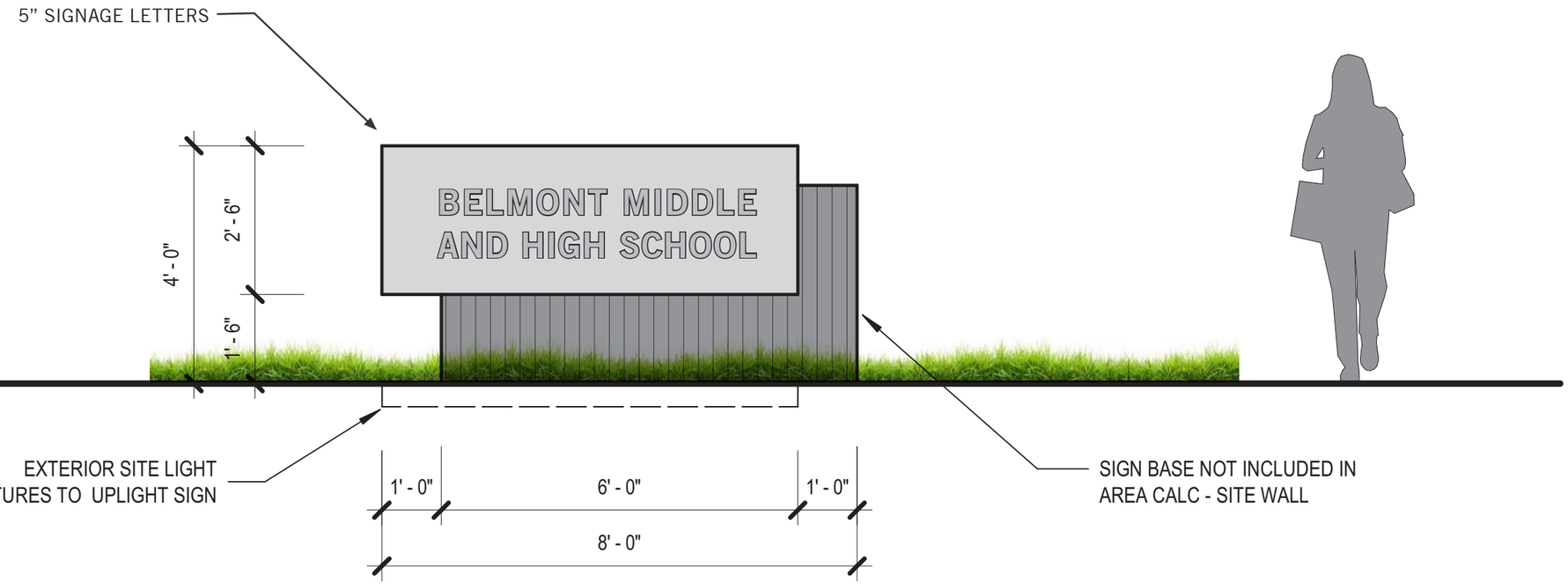
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EMBEDDED EXTRUSION

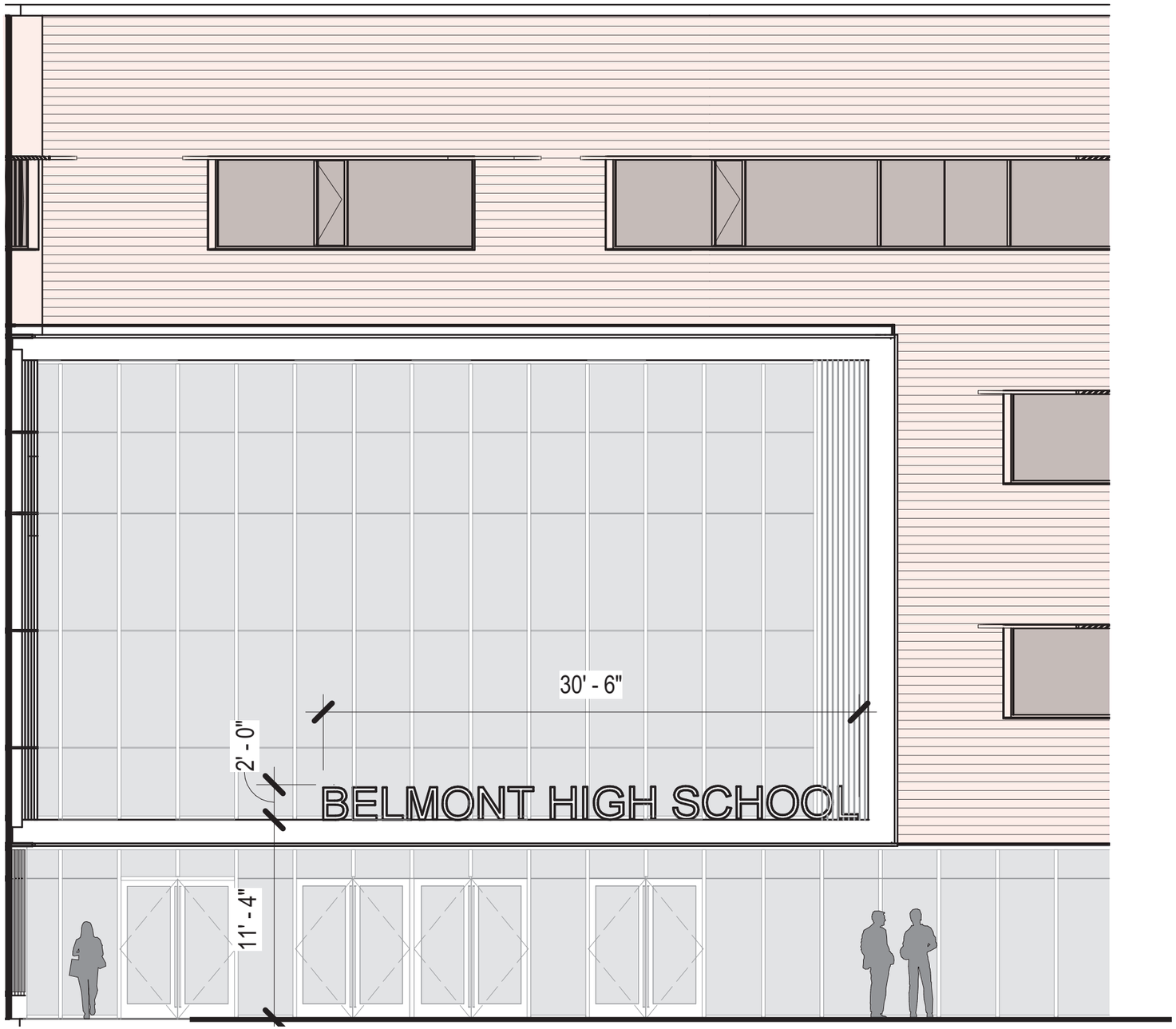


RECESSED



SITE SIGNAGE : HITTINGER STREET ELEVATION

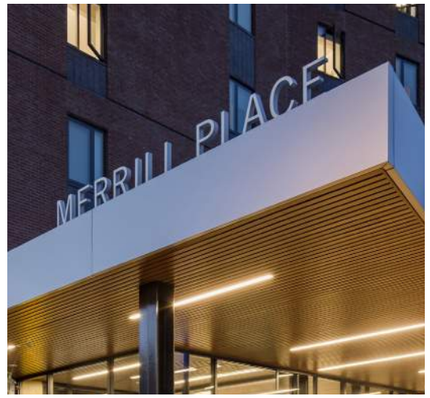

BELMONT MIDDLE
AND HIGH SCHOOL

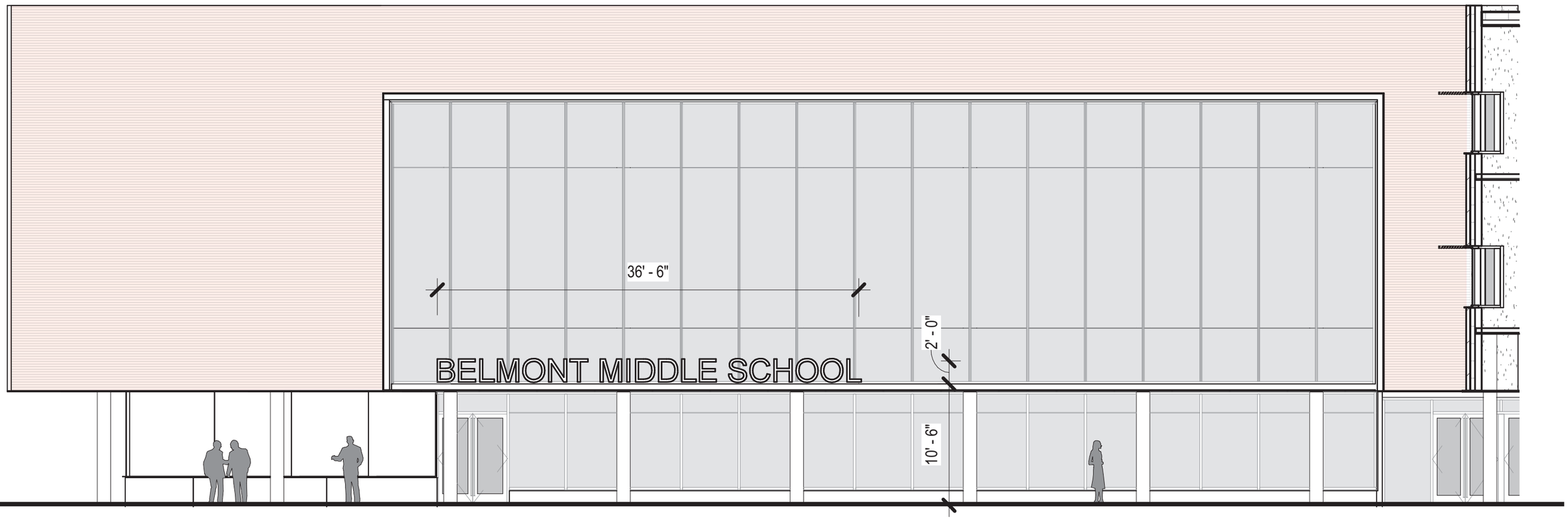

30' - 6"
2' - 0"
BELMONT HIGH SCHOOL
11' - 4"


MERRILL PLACE


BELMONT HIGH SCHOOL

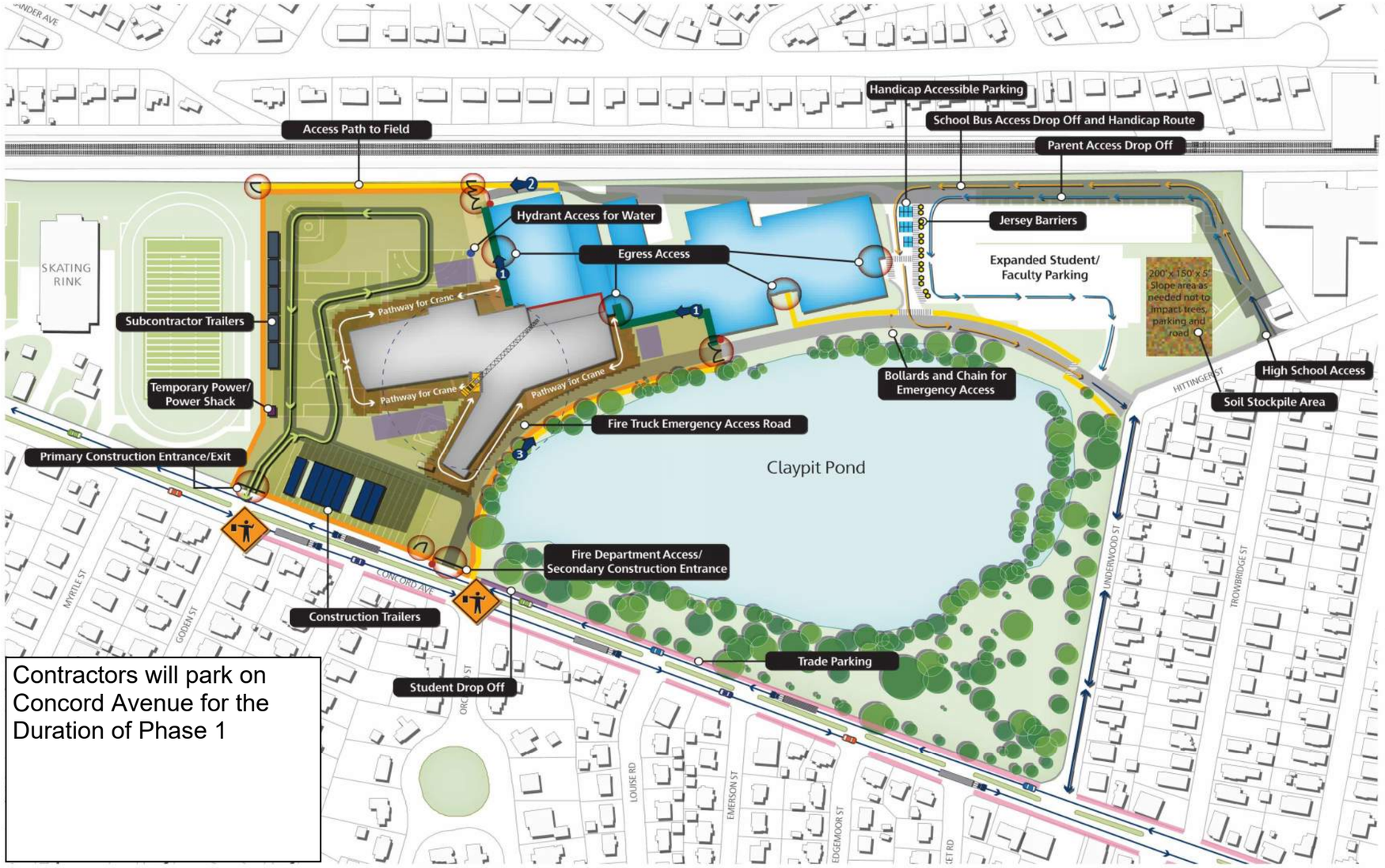






BUILDING SIGNAGE : MIDDLE SCHOOL ENTRANCE

SKANSKA



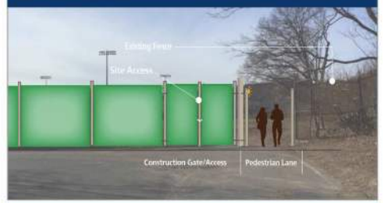
Contractors will park on Concord Avenue for the Duration of Phase 1

Phase 1
High School Construction

Detail 1



Detail 2



Detail 3



Construction Legend

- Construction fence
- Construction 30' rolling gate
- Construction double swing gate
- Construction Man Gate
- Knox Box
- Traffic control police flagman
- Egress
- Egress path
- Egress path with overhead protection
- Temporary wall w/ weather protection
- School occupied space
- Construction Laydown Area

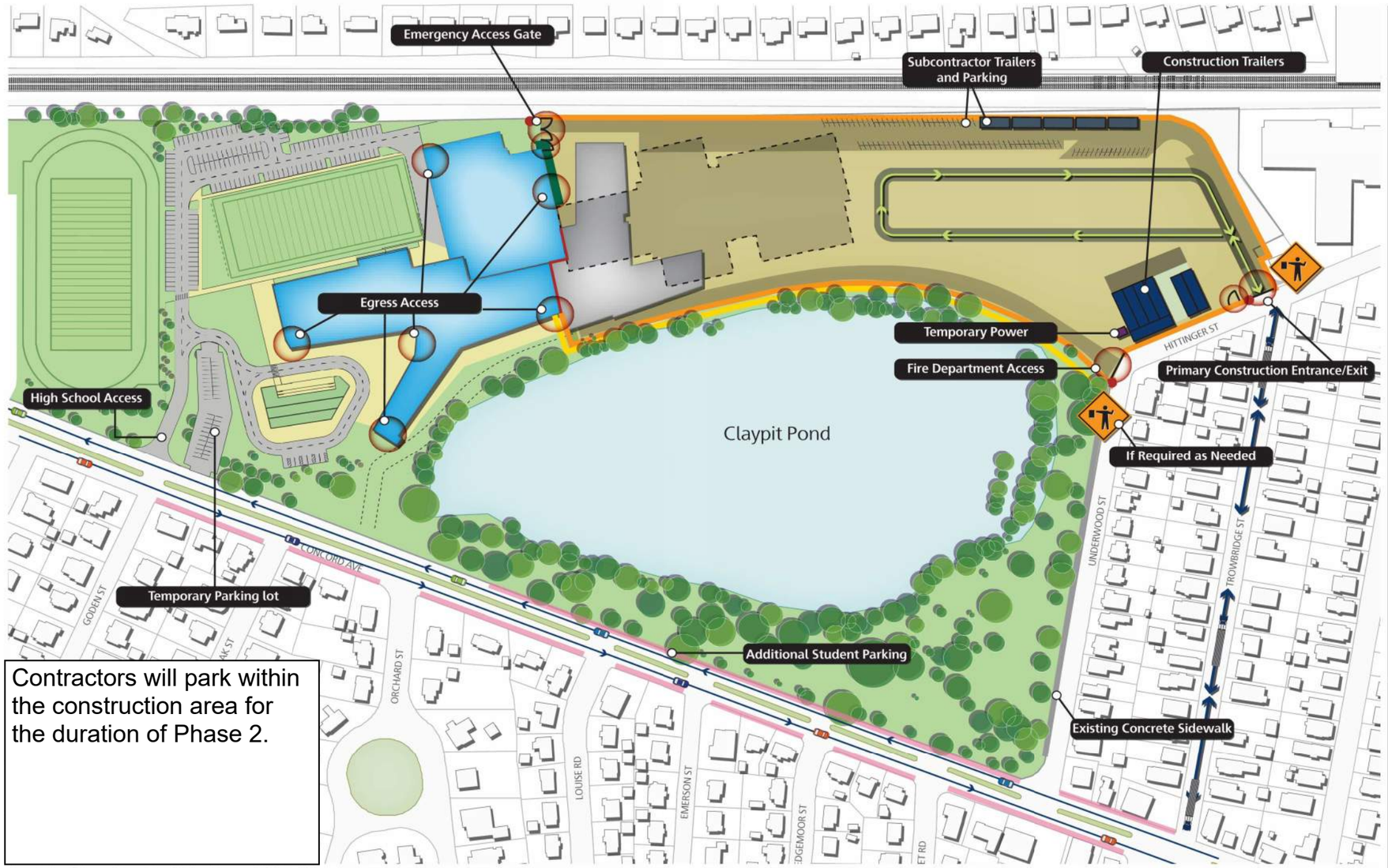
Belmont High School
Belmont, MA

June 2019 - August 2021

Logistic Plans
Scale: NTS

NORTH

SKANSKA



Contractors will park within the construction area for the duration of Phase 2.

Phase 2
Middle School Construction

Construction Legend

- Construction fence
- Construction 30' rolling gate
- Construction double swing gate
- Construction man gate
- Knox Box
- Traffic control police flagman
- Egress Path
- Temporary wall w/ weather protection
- School occupied space

Belmont High School
Belmont, MA

June 2021 - March 2023

Logistic Plans
Scale: NTS

NORTH

Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Belmont Middle and High School
221 Concord Avenue
Belmont, MA, 02478

SWPPP Prepared For:

Perkins+Will
225 Franklin Street
Boston, MA 02110

SWPPP Prepared By:

Nitsch Engineering
Michelle Callahan, PE
2 Center Plaza
Boston, MA 02108
T: 617-338-0063
F: 617-338-6472

SWPPP Preparation Date:

03/20/2019

Estimated Project Dates:

Project Start Date: 06/10/2019
Project Completion Date: 09/01/2023

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SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 Operator(s) / Subcontractor(s)

Operator(s):

Construction Manager Responsibilities:

Skanska USA Building Inc. shall maintain the Stormwater Pollution Prevention Plan (SWPPP) documentation and will conduct and document self-inspections required under the 2017 Construction General Permit (CGP) once every 7 days and within 24 hours of a storm event 0.25" or greater. Skanska USA Building Inc. will provide copies of inspections reports to the Owner's Representative within 24 hours following each inspection. Incidents of non-compliance will be immediately brought to the attention of the Owner's Representative. Skanska USA Building Inc. shall be responsible for maintaining compliance with the SWPPP, including all requirements in the CGP and will maintain erosion and sediment control Best Management Practices (BMPs) in all areas of the site under its day-to-day control.

Skanska USA Building Inc. shall file a Notice of Intent (NOI) to be covered by the CGP and obtain coverage by the Environmental Protection Agency (EPA) before beginning construction at the project. Permit coverage will be maintained throughout the project. Skanska USA Building Inc. shall not file a Notice of Termination (NOT) until all disturbed areas of the site under its day-to-day control have been fully stabilized with permanent erosion controls that satisfy the final stabilization requirements in the CGP or have met another criteria of the NOT. Skanska USA Building Inc. will maintain a clean site and construction trash and debris will be picked up and disposed of properly by the end of each day.

Each Operator is responsible for advising employees and subcontractors working on this project of the requirements in the CGP and SWPPP. Particular emphasis should be placed on ensuring that employees and subcontractors do not damage BMPs and maintain compliance with the CGP.

Skanska USA Building Inc.
Kris Olsen, Senior Superintendent
101 Seaport Blvd Suite 200
Boston, MA 02210
T: (617) 590-5166
Email address: kris.olsen@skanska.com

Owner's Representative Responsibilities:
Daedalus Projects, Inc. shall provide general oversight of the project including review of the SWPPP and any amendments, inspection reports, and corrective actions. Daedalus Projects, Inc. shall file a NOI to be covered by the CGP and obtain coverage by the EPA before beginning construction at the project. Permit coverage will be maintained throughout the project. Daedalus Projects, Inc. shall not file a notice of Termination until all disturbed areas of the site have been fully stabilized with permanent erosion controls that satisfy the final stabilization requirements in the CGP. Daedalus Projects, Inc. will coordinate with Skanska USA Building Inc. to maintain a clean site so that trash and debris will be picked up and disposed of properly by the end of the day.

Each Operator is responsible for advising employees and subcontractors working on this project of the requirements in the CGP and SWPPP. Particular emphasis should be placed on ensuring that employees and subcontractors do not damage BMPs and maintain compliance with the CGP.

Daedalus Projects, Inc.
Thomas G. Gatzunis P.E., C.B.O.
1 Faneuil Hall Marketplace
South Market Bldg, Suite 4195
Boston, MA 02109-6117
T: 617-451-2717
Email Address: tgatzunis@dpi-boston.com

Construction Manager:

Skanska USA Building Inc.
Kris Olsen, Senior Superintendent
101 Seaport Blvd Suite 200
Boston, MA 02210
T: (617) 590-5166
Email Address: kris.olsen@skanska.com

Emergency 24-Hour Contact:

Skanska USA Building Inc.
Kris Olsen, Senior Superintendent
T: (617) 590-5166

1.2 Stormwater Team

Construction Manager: Skanska USA Building Inc.

Stormwater Role/Responsibility: Responsible for overseeing the development of the SWPPP, modifications and updates to the SWPPP, and for compliance with the requirements in the CGP (e.g., installing and maintaining stormwater controls, conducting site inspections, picking up trash, taking corrective actions where required, etc.).

Contact:
Kris Olsen, Senior Suprintendent
T: (617) 590-5166
Email address: kris.olsen@skanska.com

I, Kris Olsen, have read the CGP and Understand the Applicable Requirements
☐ Yes
Date: _____

Site Contractor:

Stormwater Role/Responsibility: Responsible for compliance with the requirements in this permit (e.g., installing and maintaining stormwater controls, conducting site inspections, taking corrective actions where required, etc.).

Contact:
James Ganiatsos
T: (617) 590-4131
Email Address: jganiatsos@wlfrench.com

Refer to the Subcontractor Certifications/Agreements in Attachment G.

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 Project/Site Information

Project Name and Address

Project/Site Name: Belmont Middle and High School
Project Street/Location: 221 Concord Avenue
City/Town: Belmont
State: Massachusetts
ZIP Code: 02478
County or Similar Subdivision: Middlesex County

Project Latitude/Longitude

(Use **one** of three possible formats, and specify method)
Latitude: 1. 42.394713º (degrees, decimals)
Longitude: 1. -71.166506º (degrees, decimals)

Method for determining latitude/longitude:
☐ USGS topographic map (specify scale: _____) ☐ GPS
☒ Other (please specify): Google Earth

Horizontal Reference Datum:
☐ NAD 27 ☐ NAD 83 ☒ WGS 84

If you used a U.S.G.S topographic map, what was the scale? _____

Additional Project Information

Is the project/site located on Indian country lands, or located on a property of religious or cultural significance to an Indian tribe? ☐ Yes ☒ No

Are you applying for permit coverage as a "federal operator" as defined in Appendix A of the CGP?
☐ Yes ☒ No

Will there be demolition of any structure built or renovated before January 1, 1980?
☒ Yes ☐ No

If yes, do any of the structures being demolished have at least 10,000 square feet of floor space?
☒ Yes ☐ No

Was pre-development land use used for agriculture (see Appendix A of the CGP for definition of "agricultural land")?
☐ Yes ☒ No

Type of Construction Site (check all that apply): ☐ Single-Family Residential
☐ Multi-Family Residential ☐ Commercial ☐ Industrial ☒ Institutional ☐ Highway or Road
☐ Utility ☐ Other _____

2.2 Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?
☒ Yes ☐ No

Are there any surface waters that are located within 50 feet of your construction disturbances?
☒ Yes ☐ No

Table 1 – Names of Receiving Waters

Name(s) of the first surface water that receives stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)
001. Claypit Pond
002.
003.

Table 2 – Impaired Waters / TMDLs (Answer the following for each surface water listed in Table 1 above)

		If you answered yes, then answer the following:			
	Is this surface water listed as "impaired" on the CWA303(d) list?	What pollutant(s) are causing the impairment?	Has a TMDL been completed?	Title of the TMDL document	Pollutant(s) for which there is a TMDL
001.	☐ YES ☐ NO		☐ YES ☐ NO		
002.	☐ YES ☐ NO				
003.	☐ YES ☐ NO				

Table 3 – Tier 2, 2.5, or 3 Waters (Answer the following for each surface water listed in Table 1 above)

	Is this surface water designated as a Tier 2, Tier 2.5, or Tier 3 water?	If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as?
001.	☐ YES ☒ NO	
002.	☐ YES ☐ NO	
003.	☐ YES ☐ NO	

2.3 Nature of the Construction Activity

General Description of Project

The proposed project will consist of an Early Enabling Project phase as well as a main project phase. The Early Enabling portion includes the relocation of existing utilities so that piles can be driven for Phase 1 of the new Belmont High School building project. The Enabling Work consists of 550 LF of sewer relocation, 3,660 LF of water line relocation, 3,000 LF of added electrical and tel/data duct bank, stabilization of an existing walking path to provide site access, removal of 5 trees in the Buffer Zone, pile installation, temporary relocation of several existing utilities, and installation of erosion controls.

The main project phase will include tearing down of an original wing of the school to be reconstructed, general building renovations, and an addition to the existing portion of the building. Additional site and utility improvements include work to the athletic fields, new parking lots and driveway circulation, a new and upgraded stormwater management system, and other supporting utility improvements will also be included.

Size of Construction Project

Size of Property: 38 acres
Total Area of Construction Disturbances: 33 acres
Maximum Area to be Disturbed at Any One Time: 33 acres

Construction Support Activities

All support activities shall be in full compliance with all local and State Requirements including Order of Conditions issued by the Belmont Conservation Committee included in the Appendix section.

Concrete/Pavement Washout Stations:
Location of these operations will be determined by the contractor prior to the start of construction. Locations will be located away from resource areas and associated buffer zones.

Staging of Delivered Materials:
Construction equipment, materials and debris shall be stored in a clearly designated area. The entire project will be secured including the staging and storage areas. Non-hazardous building materials and construction scrap metals such as brick, wood, steel, metal, and pipe cuttings, shall be stored and covered as needed to ensure they do not move around in wind. Large items such as framing materials or structural materials shall be elevated, whenever possible, to limit contact with storm water runoff.

All hazardous materials such as oil-filters, petroleum products, paints and solvents, and equipment maintenance fluids shall be stored in a structurally sound, sealed, and clearly labeled area.

Staging of Excavated Materials:
Staging of soils and similar materials shall be done in such a manner to minimize the potential for impact of storm water runoff. When feasible, piles shall be covered, of if the soil stockpile shall remain for longer than 14 days stabilized with a hydro seed type mix to stabilize the soil and provide dust control. All piles

of soil shall have straw wattle installed to prevent sediment and other solids from being conveyed with storm water run-off to downstream infrastructure or surface waters. All piles shall be located a minimum of 100 feet from the wetland areas unless otherwise allowed in the Order of Conditions.

Vehicle and Equipment Fueling:
Vehicles anticipated on-site include excavators, bulldozers, front-end loaders, concrete trucks and paving equipment. All major maintenance operations will be performed off-site. Vehicle fueling for site equipment will occur in designated areas and as work progresses across the site, the new areas will be identified. Fueling areas shall be located a minimum of 100ft from a wetland or surface water and in compliance with the Order of Conditions. Fueling area shall include secondary containment with drip pans and spill pads readily available. Fueling areas shall be cleaned and inspected weekly.

Wheel Wash Stations:
Location of these operations have been determined and are identified on the Logistics Plans.

Contact Information for Construction Support Activity:
Name: Kris Olsen
Telephone: (617) 590-5166
Email: kris.olsen@skanska.com
Address and/or Latitude and Longitude: 221 Concord Ave, Belmont, MA 02478

Business Hours
Mon-Sat 7AM-3:30PM

2.4 Sequence and Estimated Dates of Construction Activities

Early Enabling Phase

- Site preparation, new utilities and demolition of pool structureSchedule: June 10th 2019 to September 1st 2019
- Area Disturbed During Phase: 20 acres
- Description of stormwater controls that will be installed/maintained during phase

Storm water controls as identified on the Erosion Control plan Drawing C100 and related specifications.

2.5 Allowable Non-Stormwater Discharges

List of Allowable Non-Stormwater Discharges Present at the Site

Type of Allowable Non-Stormwater Discharge	Likely to be Present at Your Site?
Discharges from emergency fire-fighting activities	☐ YES ☒ NO
Fire hydrant flushings	☒ YES ☐ NO
Landscape irrigation	☒ YES ☐ NO
Waters used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes	☒ YES ☐ NO
Water used to control dust	☒ YES ☐ NO
Potable water including uncontaminated water line flushings	☒ YES ☐ NO
External building washdown, provided soaps, solvents, and detergents are not used, and external surfaces do not contain hazardous substances (as defined in Appendix A of the CGP) (e.g., paint or caulk containing polychlorinated biphenyls (PCBs))	☒ YES ☐ NO
Pavement wash waters, provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used.	☒ YES ☐ NO
Uncontaminated air conditioning or compressor condensate	☐ YES ☒ NO
Uncontaminated, non-turbid discharges of ground water or spring water	☐ YES ☒ NO
Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated groundwater	☒ YES ☐ NO
Construction dewatering water discharged in accordance with Part 2.4 of the CGP	☒ YES ☐ NO

Note: You are prohibited from directing pavement wash waters directly into any water of the U.S., storm drain inlet, or stormwater conveyance, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control.

2.6 Site Maps

Site Maps must include the following:

a) Boundaries of the property. The map(s) in the SWPPP must show the overall boundary of the property.
b) Locations where construction activities will occur. The map(s) in the SWPPP must show the locations where construction activities will occur, including
    i. Locations where earth-disturbing activities will occur (note any phasing), including any demolition activities;
    ii. Approximate slopes before and after major grading activities (note any steep slopes);
    iii. Locations where sediment, soil, or other construction materials will be stockpiled;
    iv. Any water of the U.S. crossings;
    v. Designated points where vehicles will exit onto paved roads;
    vi. Locations of structures and other impervious surfaces upon completion of construction; and
    vii. Locations of onsite and off-site construction support activity areas covered by the permit (see Part 1.2.1.c).
c) Locations of all waters of the U.S. within and one mile downstream of the site's discharge point. Also identify if any are listed as impaired, or are identified as a Tier 2, Tier 2.5, or Tier 3 water.
d) Areas of federally listed critical habitats within the site and/or at discharge locations.
e) Type and extent of pre-construction cover on the site (e.g., vegetative cover, forest, pasture, pavement, structures).
f) Drainage patterns of stormwater and authorized non-stormwater before and after major grading activities.
g) Stormwater and authorized non-stormwater discharge locations. The permit requires the site map to show information pertaining to discharge locations including:
    i. Locations where stormwater and/or authorized non-stormwater will be discharges to storm drain inlets; and
    ii. Locations where stormwater and/or authorized non-stormwater will be discharged directly to waters of the U.S.
h) Locations of all potential pollutant-generating activities identified in Part 7.2.3.g. The permit requires identification in the site map of all potential pollutant-generating activities identified in Part 7.2.3.g.
i) Locations of stormwater controls, including natural buffer areas and any shared controls utilized to comply with this permit. The permit requires identification on the site map of the location of stormwater control measures.
j) Locations where polymers, flocculants, or other treatment chemicals will be used and stored. The permit requires identification on the site map of the locations where polymers, flocculants, or other treatment chemicals will be used and stored.

Refer to Attachment A

SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

3.1 Endangered Species Protection

Eligibility Criterion

Under which criterion listed in Appendix D of the CGP are you eligible for coverage under this permit?

☒ **A** ☐ **B** ☐ **C** ☐ **D** ☐ **E**

For reference purposes, the eligibility criteria listed in Appendix D of the CGP are as follows:

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of the CGP.

Criterion B. The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.

Criterion C. Federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.

Criterion D. Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion E. Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

i. a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or

ii. written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally-designated habitat.

You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion F. Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally-designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

For criterion A, indicate the basis for your determination that no federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's action area (as defined in Appendix A of the CGP). Check the applicable source of information you relied upon:

- ☐ Specific communication with staff of the U.S. Fish & Wildlife Service or National Marine Fisheries Service.
- ☐ Publicly available species list.
- ☒ Other source: NHESP data layer (August 2017 or as amended) from MassGIS - Refer to Attachment K

3.2 Historic Preservation

Appendix E (of the CGP), Step 1

Do you plan on installing any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

- ☐ Dike
- ☐ Berm
- ☒ Catch Basin
- ☒ Pond
- ☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
- ☒ Culvert
- ☒ Other type of ground-disturbing stormwater control: Water Quality Inlets, Water Quality Structures, Outlet Control Structure, Subsurface Infiltration System, Drain Manhole, Trench Drain

If you will not be installing any ground-disturbing stormwater controls, no further documentation is required for Section 3.2 of the Template.

Appendix E, Step 2

If you answered yes in Step 1, have prior cultural resource surveys or other evaluations determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties? ☒ YES ☐ NO

Appendix E, Step 3

If you are installing any stormwater controls that require subsurface earth disturbance, you must determine if these activities will have an effect on historic properties. This assessment may be based on historical sources, knowledge of the area, an assessment of the types of earth-disturbing activities you are engaging in, considerations of any controls and/or management practices you will adopt to ensure that your stormwater control related earth-disturbing activities will not have an effect on historic properties, and any other relevant factors.

Does your determination demonstrate that earth disturbances related to the installation of your stormwater controls will have no effect on historic properties? ☒ YES ☐ NO

If yes, provide documentation of the basis for your determination. If no, proceed to Appendix E, Step 4.

3.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

- ☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system);
- ☒ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow; and
- ☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

UIC registration will be filed prior to construction.

SECTION 4: EROSION AND SEDIMENT CONTROLS REQUIREMENTS

Section 4 of this document describes the stormwater controls that will be implemented throughout construction. The operator must install and maintain all stormwater controls in compliance with Parts 2.2 and 2.3 of the CGP. The operator must install stormwater controls by the time construction activity in any givern portion of the site begins.

The stormwater controls shall be designed and installed in accordance with good engineering practices and applicable design specifications. Specifications titled “312500- Erosion and Sedimentation Controls,” dated 3/20/2019 and prepared by Nitsch Engineering and details titled “Erosion and Sedimentation Control Details,” dated 3/20/2019 and prepared by Nitsch Engineering have been provided to the contractor under separate cover.

4.1 Natural Buffers or Equivalent Sediment Controls

Buffer Compliance Alternatives
Are there any surface waters within 50 feet of your project’s earth disturbances? ☒ YES ☐ NO
(Note: If no, no further documentation is required for Part 4.1 in the SWPPP Template. Continue to Part 4.2.)

Check the compliance alternative that you have chosen:

☐ I will provide and maintain a 50-foot undisturbed natural buffer.
(Note [1]: You must show the 50-foot boundary line of the natural buffer on your site map.)
(Note [2]: You must show on your site map how all discharges from your construction disturbances through the natural buffer area will first be treated by the site’s erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.)

☐ I will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.
(Note [1]: You must show the boundary line of the natural buffer on your site map.)
(Note [2]: You must show on your site map how all discharges from your construction disturbances through the natural buffer area will first be treated by the site’s erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.)

☒ It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore I will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

☐ I qualify for one of the exceptions in Appendix G Section G.2.2 of the CGP. (If you have checked this box, provide information on the applicable buffer exception that applies, below.)

Buffer Exceptions
Which of the following exceptions to the buffer requirements applies to your site?

☒ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail). Upgrades are involved regarding existing docks/ramps and walkways surrounding Claypit Pond. The Contractor shall ensure sedimentation and erosion controls are implemented in order to protect Claypit Pond from erosion and runoff to the greatest extent practicable.

(Note [1]: If this exception applies, no further documentation is required for Section 4.1 of the Template.)

4.2 Perimeter Controls

General
The site will be enclosed by a temporary construction fence as shown on the Erosion and Sedimentation Control Plan in Attachment A. Construction gates will be located at the entrance to the site as shown on the Erosion and Sedimentation Control Plan and all entrances will have stabilized construction entrances. All gates and entrances to the site will be secured during non-working hours. The areas of the site that will receive pollutant discharges will be surrounded by a Specific Perimeter Control listed below as shown on the Erosion and Sedimentation Control Plan in Attachment A. Sediment tracked offsite must be removed by the end of the same workday.

Specific Perimeter Controls

Perimeter Control # 1
- BMP Description: Silt Fence.
- Installation Schedule: Prior to the Start of Construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as described in part 2.1.4 of the CGP. Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

Perimeter Control # 2
- BMP Description: Silt Fence with Wattles.
- Installation Schedule: Prior to the Start of Construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as described in part 2.1.4 of the CGP. Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

Perimeter Control # 3
- BMP Description: Super Silt Fence.
- Installation Schedule: Prior to the Start of Construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as described in part 2.1.4 of the CGP. Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

Perimeter Control # 4
- BMP Description: Wattles.
- Installation Schedule: Prior to the Start of Construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as described in part 2.1.4 of the CGP.

Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.

- Responsible Staff: Construction Manager and Site Contractor(s).

Perimeter Control # 5

- BMP Description: Silt Fence with Straw Bales.
- Installation Schedule: Prior to the Start of Construction and/or immediately after stockpile is established.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25" or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
  Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

4.3 Sediment Track-Out

General
Gates will be located as shown on the Erosion and Sedimentation Control Plan in Attachment A to allow for construction vehicle access. Construction access points will have a stabilized construction entrance station or wheel wash station to minimize the track-out of sediment onto off-site streets, other paved areas, and sidewalks from vehicles exiting the construction site. Where sediment has been tracked out from your site onto paved roads, sidewalks, or other paved areas outside of your site, remove the deposited sediment by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day. Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked out sediment into any stormwater conveyance, storm drain inlet, or water of the U.S.

Specific Track-Out Controls

Track-Out Control # 1

- BMP Description: Street Sweeping.
- Installation Schedule: Start of construction.
- Inspection Schedule: The areas adjacent to the site should be inspected daily to determine if street sweeping is required.
- Responsible Staff Construction Manager and Site Contractor(s).

Track-Out Control # 2

- BMP Description: Stabilized Construction Entrance.
- Installation Schedule: Start of construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25" or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as described in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Track-Out Control # 3

- BMP Description: Wheel Wash Station.
- Installation Schedule: Start of construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25" or

greater.

- Maintenance: Ensure that all stormwater controls remain in effective. condition as described in part 2.1.4 of the CGP(s).
  The operator must provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of wash waters. The operator must ensure there is no discharge of soaps, solvents, or detergents in equipment and vehicle wash water. For storage of soaps, detergents, or solvents, the operator shall provide either a cover to minimze the exposure of these detergents to precipitation and to stormwater, or a similarily effective means designed to minimze discharge of pollutants from these areas.
- Responsible Staff: Construction Manager and Site Contractor.

4.4 Stockpiled Sediment or Soil

General
All soil stockpiles will be located outside of any natural buffers and away from existing and proposed catch basins and area drains and outside of proposed infiltration system footprints. A sediment barrier shall be installed along all downgradient perimeter areas. Examples of sediment barriers include silt fence, super silt fence, or wattles.

You are prohibited from hosing down or sweeping soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or water of the U.S.

For stockpiles that will be unused for 14 or more days, a cover such as a tarp or blown straw shall be provided or temporary stabilization should be provided (consistent with Part 2.2.14 of the CGP).

Specific Stockpile Controls

Stockpile Control # 1

- BMP Description: Silt Fence.
- Installation Schedule: Immediately after stockpile is established.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25" or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
  Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

Stockpile Control # 2

- BMP Description: Wattles.
- Installation Schedule: Immediately after stockpile is established.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25" or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
  Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

Stockpile Control # 3

- BMP Description: Tarp.
- Installation Schedule: When stockpile will remain inactive for 14 or more calendar days.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater
- controls remain in effective condition as decribed in part 2.1.4 of the CGP.
  Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

Stockpile Control # 4

- BMP Description: Straw Bales.
- Installation Schedule: Immediately after stockpile is established.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
  Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

Stockpile Control # 5

- BMP Description: Blown Straw.
- Installation Schedule: When stockpile will remain inactive for 14 or more calendar days.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
  Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

Stockpile Control # 6

- BMP Description: Hydroseeding.
- Installation Schedule: When stockpile will remain inactive for 14 or more calendar days.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
  Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

4.5 Minimize Dust

General

Disturbed land will be temporarily stabilized as required by the CGP. Dust will be minimized using measures including sprinkling/irrigation, vegetative cover, mulch, and/or stone. Stockpiles will be handled in accordance with section 4.4 of the SWPPP.

Earth-disturbing activities are considered temporarily ceased when work will not resume for a period of 14 or more calendar days. Stabilization shall be initiated when earth-disturbing activities are temporarily or permanently ceased. Stabilization activities shall be complete within 7 calendar days after the initiation of soil stabilization measures.

Specific Dust Controls

Dust Control # 1

- BMP Description: Sprinkling/Irrigation.
- Installation Schedule: As needed throughout earthwork activities as determined by the site contractor and construction manager.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
  Maintenance:
  Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Dust Control # 2

- BMP Description: Straw or Mulch.
- Installation Schedule: As needed throughout earthwork activities as determined by the site contractor and construction manager. When disturbed land will remain inactive for 14 or more calendar days.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

4.6 Minimize the Disturbance of Steep Slopes

General

Steep slopes (defined as slopes of 15% or greater in grade) are expected to be disturbed onsite. Disturbances to steep slopes will be minimized by phasing disturbances to those areas and by using stabilization practices designed to be used on steep grades.

Specific Steep Slope Controls

Steep Slope Control # 1

- BMP Description: Straw or Mulch.
- Installation Schedule: When disturbed land will remain inactive for 14 or more calendar days.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective. condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Steep Slope Control # 2

- BMP Description: Hydroseeding.
- Installation Schedule: When disturbed land will remain inactive for 14 or more calendar days.

- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Steep Slope Control # 3

- BMP Description: Soil Stabilization Mats.
- Installation Schedule: When disturbed land will remain inactive for 14 or more calendar days.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Steep Slope Control # 4

- BMP Description: Rip-Rap.
- Installation Schedule: When disturbed land will remain inactive for 14 or more calendar days.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

4.7 Preserve Native Topsoil

Onsite native topsoil shall be preserved, unless infeasible. Preserving native topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed.

Stockpiling topsoil at off-site locations or transferring topsoil to other locations is an example of a way to preserve native topsoil.

The contractor shall perform construction sequencing such that earth materials are exposed for a minimum of time before they are covered, seeded, or otherwise stabilized.

4.8 Minimize Soil Compaction

General

In areas where infiltration practices will be installed or areas of the site where final vegetative stabilization will occur, soil compaction shall be minimized. This includes restricting vehicle access and equipment use.

Areas used for post-construction infiltration shall be constructed after all ground surfaces are fully stabilized when feasible. If proposed infiltration areas are constructed prior to the site being fully stabilized, additional erosion controls shall be installed. All stockpiled and material storage areas shall be located outside of the areas proposed for post-construction infiltration.

Areas of post-construction landscaping shall be constructed after all ground surface are fully stabilized. If proposed landscaped areas are constructed prior to the site being fully stabilized, additional erosion controls shall be installed. All soil stockpiles and material storage areas shall be located outside of the areas proposed for post-

construction landscaping where feasible. Where this is not feasible, use techniques that rehabilitate and condition the soils as necessary to support vegetative growth prior to planting.

4.9 Storm Drain Inlets

General
All existing and proposed storm drain inlets affected by construction activities should be protected using an Inlet Sediment Filter as shown on the Erosion and Sedimentation Control Plan provided in Attachment A.

Clean or remove and replace the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found or by the end of the following business day if removal by the same business day is not feasible.

Specific Storm Drain Inlet Controls

Storm Drain Inlet Control # 1

- BMP Description: Inlet Sediment Filter.
- Installation Schedule: Prior to the Start of Construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective. condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Storm Drain Inlet Control # 2

- BMP Description: Inlet Protection with Gravel.
- Installation Schedule: Prior to the Start of Construction .
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Storm Drain Inlet Control # 3

- BMP Description: Inlet Protection with Block and Gravel.
- Installation Schedule: Prior to the Start of Construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

4.10 Minimize Erosion of Stormwater Conveyances

The contractor shall minimize erosion of stormwater conveyance channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters. The contractor shall install erosion controls and velocity dissipation devices within and along the length of any stormwater conveyance channel and at any outlet to slow down runoff to minimize erosion.

Stormwater Conveyance Control # 1

- BMP Description: Check Dam.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Stormwater Conveyance Control # 2

- BMP Description: Sediment Trap.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Stormwater Conveyance Control # 3

- BMP Description: Rip Rap.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Stormwater Conveyance Control # 4

- BMP Description: Grouted Rip Rap at outlets.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

4.11 Sediment Basins

All sediment basins should be located outside of any waterbody, resource area, and buffer zones. Sediment basins shall be sized to provide storage for either the volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet per acre drained.

Where feasible, outlet structures that withdraw water from the surface of the sediment basin shall be used. Erosion and velocity dissipation devices shall be installed at inlets and outlets to prevent erosion.

Accumulated sediment shall be removed to maintain at least one-half of the design capacity. The basin shall be maintained so that it remains in effective operating condition.

Sediment Basin Control # 1

- BMP Description: Check Dam.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or

greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Sediment Basin Control # 2

- BMP Description: Sediment Trap.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s)

Sediment Basin Control # 3

- BMP Description: Rip Rap.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Sediment Basin Control # 4

- BMP Description: Grouted Rip Rap at outlets.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

4.12 Chemical Treatment

Chemical treatment such as the use of polymers, flocculants, coagulants, or other treatment chemicals can only be applied where treated stormwater is directed to a sediment control such as a sediment basin or perimeter control before it is discharged. The sediment control should be installed before and after the chemical treatment is applied.

Chemicals must be appropriately suited to the types of soils likely to be exposed during construction and present in the discharges being treated.

All treatment chemicals shall be stored in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures, or provide equivalent measures designed and maintained to minimize potential discharges of treatment chemicals in stormwater or by any other means.

The contractor shall have a spill kit available onsite and ensure personnel are available to respond expeditiously in the event of a leak or spill.

Chemicals shall be used in accordance with good engineering practices and specifications of the chemical provider/supplier. Any departures from their specifications shall be documented in the SWPPP.

All persons who handle and use treatment chemicals on site shall be provided with appropriate, product-specific training which, among other things, must include proper dosing requirements.

Perform additional measure specified by the EPA Regional Office for the authorized use of cationic chemicals.

4.13 Dewatering Practices

Dewatering will occur in a way that minimizes the discharge of pollutants in ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation. Dewatering water shall be treated in compliance with Section 2.4 of the CGP and water with visible floating solids or foam may not be discharged.

Any applicable permits shall be obtained from local permitting authorities.

Dewatering Control # 1

- BMP Description: Sediment basin or Sediment Trap.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Dewatering Control # 2

- BMP Description: Sediment socks.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Dewatering Control # 3

- BMP Description: Dewatering Tanks.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or Greater and as required by the manufacturer.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

Dewatering Control # 4

- BMP Description: Filtration Systems.
- Installation Schedule: Start of construction of stormwater conveyance channel.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25” or Greater and as required by the manufacturer.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

4.14 Other Stormwater Controls

Any changes in construction activity that that include means of stormwater control not included in this document will be identified, the SWPPP will be amended, and the appropriate erosion and sedimentation controls will be implemented.

4.15 Site Stabilization

Initiate the installation of stabilization measures immediately in any areas of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days. Complete the installation of stabilization measures as soon as practicable, but no later than 7 calendar days after stabilization has been initiated.

Site Stabilization Practice #1
☐ *Vegetative* ☒ *Non-Vegetative*
☒ *Temporary* ☐ *Permanent*

- BMP Description: Soil Stabilization Mat.
- Installation Schedule: As/if required.
- Maintenance and Inspection: Once every 7 days and within 24 hours of a storm event 0.25” or Greater.
- Responsible Staff: Construction Manager and Site Contractor(s).

Site Stabilization Practice #2
☒ *Vegetative* ☐ *Non-Vegetative*
☒ *Temporary* ☐ *Permanent*

- BMP Description: Temporary Seeding.
- Installation Schedule: As/if required.
- Maintenance and Inspection: Once every 7 days and within 24 hours of a storm event 0.25” or greater.
- Responsible Staff: Construction Manager and Site Contractor(s).

SECTION 5: POLLUTION PREVENTION STANDARDS

5.1 Potential Sources of Pollution

Potential sources of sediment to stormwater runoff:

- Stockpiles and construction staging
- Clearing and grubbing operations
- Grading and site excavation
- Topsoil stripping
- Landscape operations
- Soil tracking offsite from construction vehicles
- Runoff from unstabilized areas
- Construction debris

Potential pollutants and sources, other than sediment, to stormwater runoff:

- Combined Staging Area – fueling activities, equipment maintenance, sanitary facilities, and hazardous waste storage
- Materials Storage Area – building materials, solvents, adhesives, paving materials, paints, aggregates, trash, etc.
- Construction Activity-paving, curb installation, concrete pouring, and building construction

Staging areas are shown on the Erosion and Sedimentation Control Plan provided in Attachment A.

Construction Site Pollutants

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (that could be discharged if exposed to stormwater)	**Location on Site** (or reference SWPPP site map where this is shown)
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Chlorinated hydrocarbons, organophosphates, carbonates, arsenic	Herbicides used for noxious weed control
Fertilizers	Nitrogen, phosphorous	Newly seeded areas
Plaster	Calcium sulphate, calcium carbonate, sulfuric acid	Building construction
Cleaning Solvents	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates	No equipment cleaning allowed in project limits
Asphalt	Oil, petroleum distillates	Streets and parking lots
Concrete	Limestone, sand pH, chromium	Curb and gutter, sidewalk, building construction
Glue, Adhesives	Polymers, epoxies	Building construction
Paints	Metal oxides, Stoddard solvent, talc, calcium carbonate, arsenic	Building construction
Curing compounds	Naphtha	Curb and gutter, building construction
Wood preservatives	Stoddard solvent, petroleum distillates, arsenic, copper, chromium	Timber pads, bracing, building construction
Hydraulic Oils/fluids	Mineral oil	Leaks/broken hoses from equipment
Gasoline	Benzene, ethyl benzene, toluene, xylene, MTBE	Secondary containment/staging area
Diesel Fuel	Petroleum distillate, oil & grease, naphthalene, xylenes	Secondary containment/staging area
Kerosene	Coal oil, petroleum distillates	Secondary containment/staging area
Antifreeze/coolant	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)	Leaks or broken hoses from equipment
Sanitary toilets	Bacteria, parasites, and viruses	Staging area

5.2 Spill Prevention and Response

BMP Description: Spill kit, vehicle washing, silt sack catch basin protection, silt fence
Installation Schedule: Start of construction activity
Maintenance and Inspection: Minimum weekly & as necessary
Responsible Staff: Construction Manager and Site Contractor

- Major vehicle maintenance onsite is prohibited
- Re-fueling of vehicles within 25 feet of a drainage structure is prohibited
- Spill kit shall be kept onsite consisting of:
  - Gloves
  - Absorbent mats
  - Drip pan

Spill Prevention and Control Plan

- Refer to contractor's Spill Plan (Page 352 on Skanska EH&S Manual.
- Manufacturers' recommended spill control methods will be posted onsite and site personnel will be made aware of the requirements.
- Cleanup supplies will be kept onsite in a materials storage area. This equipment will include: goggles, brooms, dustpans, mops, rags, gloves, oil absorbent, sawdust, plastic and metal trash cans, and other materials and supplies specifically designated for cleanup.
- All spills will be immediately cleaned up after discovery.
- The spill area will be well ventilated.
- Cleanup personnel will wear suitable protective clothing.
- Spills of toxic and/or hazardous material will be reported to state, local, and Federal authorities, as required by law. Spills shall also be reported immediately to the owner.
- A spill incident report will be filed detailing the amount and extent of the spill, material(s) involved, and effectiveness of the cleanup. This report will be on file at the Construction Manager/Site Contractor office, as well as kept onsite in the field office. A copy shall also be filed with the Hazard Communication Coordinator (HCC).

The Construction Manager/Site Contractor will designate someone onsite that will serve as the Spill Cleanup Coordinator. At least two other personnel will be designated as alternate spill coordinators. All spill control personnel will be trained in spill prevention, control, and cleanup. The names of the responsible personnel will be posted at the jobsite office of the Construction Manager/ Site Contractor.

5.3 Fueling and Maintenance of Equipment or Vehicles

General

Minor vehicle and equipment emergency maintenance can be performed onsite away from drainage structures. Major vehicle and equipment maintenance must be performed offsite. Equipment/vehicle storage areas and any onsite fuel tanks will be inspected weekly and after storm events. Equipment and vehicles will be inspected for leaks, equipment damage, and other service problems on each day of use. Any leaks will be repaired immediately or the equipment/vehicle will be removed from the site.

Minor vehicle and equipment emergency maintenance shall occur when a vehicle cannot be safely removed from the site. The vehicle should be repaired so it can be taken off-site so that the rest of the maintenance can occur.

Major vehicle maintenance onsite is prohibited. Re-fueling or maintenance of vehicles within 25 feet of a drainage structure shall be prohibited. Drip pans, drip cloths, or absorbent pads should be used when replacing spent fluids. The fluids should be collect and stored prior to being disposed of offsite.

Specific Pollution Prevention Practice #1

- BMP Description: Spill Kit.
- Installation Schedule: Onsite throughout construction.
- Responsible Staff: Construction Manager and Site Contractor.

Specific Pollution Prevention Practice #1

- BMP Description: Drip Pans, Drip Cloths, Absorbent Pads.
- Installation Schedule: Onsite throughout construction.
- Responsible Staff: Construction Manager and Site Contractor.

5.4 Washing of Equipment and Vehicles

General

Vehicle and equipment washout areas shall be constructed by the contractor so that no untreated water enters the storm drain system. Soaps, detergents, or solvents must be stored in a way to prevent these detergents from coming into contact with rainwater, or a similarly effective means designed to prevent the discharge of pollutants from these areas.

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1

- BMP Description: Designated vehicle/equipment washing areas
- Installation Schedule: Start of construction.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25" or greater.
- Responsible Staff: Construction Manager and Site Contractor

Pollution Prevention Practice # 2

- BMP Description: Spill kit, vehicle washing, straw bale catch basin protection, silt fence
- Installation Schedule: Start of construction activity
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25" or greater.
- Responsible Staff: Construction Manager and Site Contractor

5.5 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

5.5.1 Building Products

General

The contractor will recycle all construction materials possible. For materials that cannot be recycled, solid waste will be disposed of in accordance with DEP Regulations for Solid Waste Facilities, 310 CMR 10.00.

Any building materials required to be stored onsite will be stored at a combined staging and materials storage area as shown on the CMP. Larger items will be elevated by appropriate methods to minimize contact with runoff. The storage area will be inspected weekly and after storm events. It will be kept clean, organized, and equipped with appropriate cleaning supplies.

Building product usage shall follow the following good housekeeping BMPs:

- The Responsible Staff: Construction Manager or Site Contractor representative will inspect daily for inspection of the work area to ensure proper management of waste materials.
- Store only enough material onsite required for that job as to satisfy current construction needs.
- Store required materials in tightly lidded containers under cover.
- Store materials in original containers with clearly legible labels.
- Separate and store materials apart from each other.
- Do not mix materials unless specifically in accordance with manufacturers' recommendations.
- Use all products from a container before disposing of the container.
- Follow manufacturers' instructions for handling, storage, and disposing of all materials.
- All materials shall be stored in an area to prevent the discharge of pollutants from building products.

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1

- BMP Description: Perimeter Protection control around Stockpiles.
- Installation Schedule: Start of construction/ Immediately after stockpile is established.
- Inspection Schedule: Once every 7 days and within 24 hours of a storm event 0.25" or greater.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
  Remove any sediment before it has accumulated to one-half of the above-ground height of any perimeter control.
- Responsible Staff: Construction Manager and Site Contractor(s).

5.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials

- In storage areas, provide either (1) cover to minimize the exposure of these chemicals to precipitation and to stormwater or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas.
- Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label.

5.5.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

General

- Only skilled personnel in a designated area will perform fueling of vehicles onsite.
- Vehicles used onsite will be monitored for fuel and oil leaks.
- Vehicles used onsite will be maintained in good working order.
- Asphalt substances will be applied in accordance with manufacturers' recommendations.
- The use of petroleum products as a release agent for asphalt transport trucks is prohibited.
- Vehicle fueling will only be done in vehicle fueling areas located by the contractor. See section 5.3 of the SWPPP.
- The contractor shall be responsible for locating the fuel storage and re-fueling area onsite to minimize disturbance to construction activates and site area.
- Construction equipment not in active use for 5 minutes or more will be turned off.

5.5.4 Hazardous or Toxic Waste

(Note: Examples include paints, solvents, petroleum-based products, wood preservatives, additives, curing compounds, acids.)

General

- Keep products in their original containers.
- Original container labels should be clearly visible.
- Material safety data sheets will be kept onsite and be available.
- Follow all state, local, and Federal regulations regarding the handling, use, storage, and disposal of hazardous material.

Paints:

- All paint containers will be tightly sealed when not in use.
- Remove excess paint in original labeled containers from the jobsite.
- Paint will not be disposed of onsite. Remove excess paint material from the site and legally dispose of.
- Paint shall not be disposed of in the storm drain system.

5.5.5 Construction and Domestic Waste

General
The contractor will manage domestic waste onsite. The contractor will provide waste containers of sufficient size and number to contain construction and domestic wastes. The waste container lids will be kept closed when not in use and lids will be closed at the end of the business day for those containers that are actively used throughout the day. For waste containers that do not have lids, provide either a cover or a similarly effective means designed to minimize discharge of pollutants. Clean up immediately if containers overflow.

Pollution Prevention Practice # 1

- BMP Description: Dumpster.
- Installation Schedule: Start of construction.
- Maintenance and Inspection: Weekly and covered daily.
- Responsible Staff: Construction Manager and Site Contractor(s).

Pollution Prevention Practice # 2

- BMP Description: Litter/debris pick-up.
- Installation Schedule: Start of construction.
- Maintenance and Inspection: Daily.
- Responsible Staff: Construction Manager and Site Contractor(s).

5.5.6 Sanitary Waste

All sanitary waste portable toilets shall be positioned so that they are secure and will not be tipped or knocked over, and located away from any stormwater inlets or conveyances.

Pollution Prevention Practice # 1

- BMP Description: Porta John.
- Installation Schedule: Start of construction.
- Maintenance and Inspection: As manufacturer requires.
- Responsible Staff: Construction Manager and Site Contractor(s).

5.6 Washing of Applicators and Containers used for Paint, Concrete, or Other Materials

General
Washing of applicators and containers used for paint, concrete, or other materials shall follow the following good housekeeping BMPs:

- An effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials.
- All washwater must be directed into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.
- Washout and cleanout wastes should be handled as follows:
  - Do not dump liquid wastes into storm sewers.
  - Dispose of liquid wastes in accordance with applicable requirements.
  - Remove and dispose of hardened concrete waste consistent with the handling of other construction wastes.

- Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

Pollution Prevention Practice # 1

- BMP Description: Designated applicator and container washing areas.
- Installation Schedule: Start of construction.
- Maintenance and Inspection: Daily.
- Responsible Staff: Construction Manager and Site Contractor(s).

5.7 Fertilizers

General
If fertilizer is required onsite, installation will follow the following guidelines:

- Fertilizers will be used at the application rates called for in the specifications for the project.
- Once applied, fertilizer will be worked into the soil to minimize wash off from irrigation and stormwater.
- Fertilizer will be stored under cover.
- The contents of partially used fertilizer bags will be transferred to re-sealable, watertight containers clearly labeled with their contents.
- Avoid applying before heavy rains.
- Never apply to frozen ground.
- Never apply to stormwater conveyance channels with flowing water.

5.8 Other Pollution Prevention Practices

Any changes in construction activity that produce other allowable non-stormwater discharges will be identified, the SWPPP will be amended and the appropriate erosion and sedimentation controls will be implemented.

Control # X

- BMP Description: Description of control to be installed.
- Installation Schedule: Approximate date of installation.
- Inspection Schedule: Pick Inspection schedule from above.
- Maintenance: Ensure that all stormwater controls remain in effective condition as decribed in part 2.1.4 of the CGP.
- Responsible Staff: Construction Manager and Site Contractor(s).

SECTION 6: INSPECTION AND CORRECTIVE ACTION

6.1 Inspection Personnel and Procedures

Personnel Responsible for Inspections

Construction Manager: Skanska USA Building Inc
Contact Person: Robert Gearhart
T: (857) 303-2009

Site Contractor: W. L. French
Contact person: James Ganiatsos
T: (617) 590-4131

(Note: All personnel conducting inspections must be considered a "qualified person." CGP Part 4.1.1 clarifies that a "qualified person" is a person knowledgeable in the principles and practices of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.)

Inspection Schedule

Specific Inspection Frequency

The contractor shall inspect and maintain erosion control measures, and remove sediment therefrom, once every 7 days and within 24 hours of a storm event 0.25" or greater.

Rain Gauge Location:
TBD

Reductions in Inspection Frequency (if applicable):

Inspection frequency may be reduced to twice per month (no more than 14 days apart) for the first month in areas of the site where the stabilization steps outlines in Parts 2.2.14 of the CGP have been completed. After the first month, inspection frequency may be reduced to once per month. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required in Parts 4.2 and 4.3 as applicable. You must document the beginning and ending dates of this period in the SWPPP.

Inspection frequency may be reduced to once per month and within 24 hours of the occurrence of a storm event of 0.25 inches or greater if the project is located in an arid, semi-arid, or drought-stricken area and construction is occurring during the seasonally dry period or a period in which drought is predicted to occur. If this inspection frequency is followed, you must document the beginning and ending dates of this period in the SWPPP.

Inspections can be temporarily suspended under the following conditions:

- Earth-disturbing activity is suspended due to frozen condition;
- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least three months based on historic seasonal averaged. **If unexpected weather conditions make discharges likely, the operators must immediately resume the regular inspection schedule**;

- Land disturbances have been suspended; and
- All disturbed areas of the site have been stabilized in accordance with Part 2.2.14a of the CGP.

Inspection frequency may be reduced to once per month under the following conditions:

- The operator is still conducting earth disturbing activities under frozen conditions;
- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least three months based on historic seasonal averages. **If unexpected weather conditions make discharges likely, the operator must immediately resume the regular inspection schedule**; and
- Except for areas in which the operator is conducting earth-disturbing activities, disturbed areas of the site have been stabilized in accordance with Part 2.2.14a of the CGP.

Inspection Report Forms
Copies of inspection reports are in Attachment D.

6.2 Corrective Action

Personnel Responsible for Corrective Actions
Robert Gearhart, Skanska EH&S Manager
James Ganiatsos, W.L. French
Corrective Action Forms
A copy of the Corrective Action Form is in Attachment E.

6.3 Delegation of Authority

Duly Authorized Representative(s) or Position(s):
Skanska USA Building Inc.
Kris Olsen
Senior Superintendent
101 Seaport Blvd Suite 200
Boston, MA 02210
617-590-5166
kris.olsen@skanska.com

SECTION 7: TRAINING LOG

Refer to Attachment I for a Training Log to be completed for each SWPPP training session.

Table 7-1: Documentation for Completion of Training

Name	Date Training Completed

SECTION 8: CERTIFICATION AND NOTIFICATION

Operator – Owner's Representative

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

Operator – Construction Manager

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

SWPPP ATTACHMENTS

Attachment A – Site Maps

Attachment B – 2017 Construction General Permit

Attachment C – NOI and EPA Authorization Email

Attachment D – Inspection Form

Attachment E – Corrective Action Form

Attachment F – SWPPP Amendment Log

Attachment G – Subcontractor Certifications/Agreements

Attachment H – Grading and Stabilization Activities Log

Attachment I – SWPPP Training Log

Attachment J – Delegation of Authority Form

Attachment K – Endangered Species Documentation

Attachment L – Historic Preservation Documentation

Attachment M – Rainfall Gauge

Attachment N – Order of Conditions

Attachment A – Site Maps

Attachment B – 2017 Construction General Permit

Attachment C – NOI and EPA Authorization e-mail

Attachment D – Inspection Form

Attachment E – Corrective Action Form

Attachment F – SWPPP Amendment Log

Stormwater Pollution Prevention Plan
Belmont Middle and High School

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Attachment G –Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform onsite. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Attachment H – Grading and Stabilization Activities Log

Date Grading Activity Initiated	**Description of Grading Activity**	**Description of Stabilization Measure and Location**	**Date Grading Activity Ceased** (Indicate Temporary or Permanent)	**Date When Stabilization Measures Initiated**

Attachment I – SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: (*check as appropriate)*

- ❑ **Sediment and Erosion Controls**
- ❑ **Emergency Procedures**
- ❑ **Stabilization Controls**
- ❑ **Inspections/Corrective Actions**
- ❑ **Pollution Prevention Measures**

Specific Training Objective:_____

Attendee Roster: (*attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

Attachment J – Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Attachment K – Endangered Species Documentation

Attachment L – Historic Preservation Documentation

Attachment M – Rainfall Gauge Recording

Use the table below to record the rainfall gauge readings at the beginning and end of each work day. An example table follows.

Month/Year			Month/Year			Month/Year		
Day	Start time	End time	Day	Start time	End time	Day	Start time	End time
1			1			1		
2			2			2		
3			3			3		
4			4			4		
5			5			5		
6			6			6		
7			7			7		
8			8			8		
9			9			9		
10			10			10		
11			11			11		
12			12			12		
13			13			13		
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15			15			15		
16			16			16		
17			17			17		
18			18			18		
19			19			19		
20			20			20		
21			21			21		
22			22			22		
23			23			23		
24			24			24		
25			25			25		
26			26			26		
27			27			27		
28			28			28		
29			29			29		
30			30			30		
31			31			31		

Attachment N – Order of Conditions

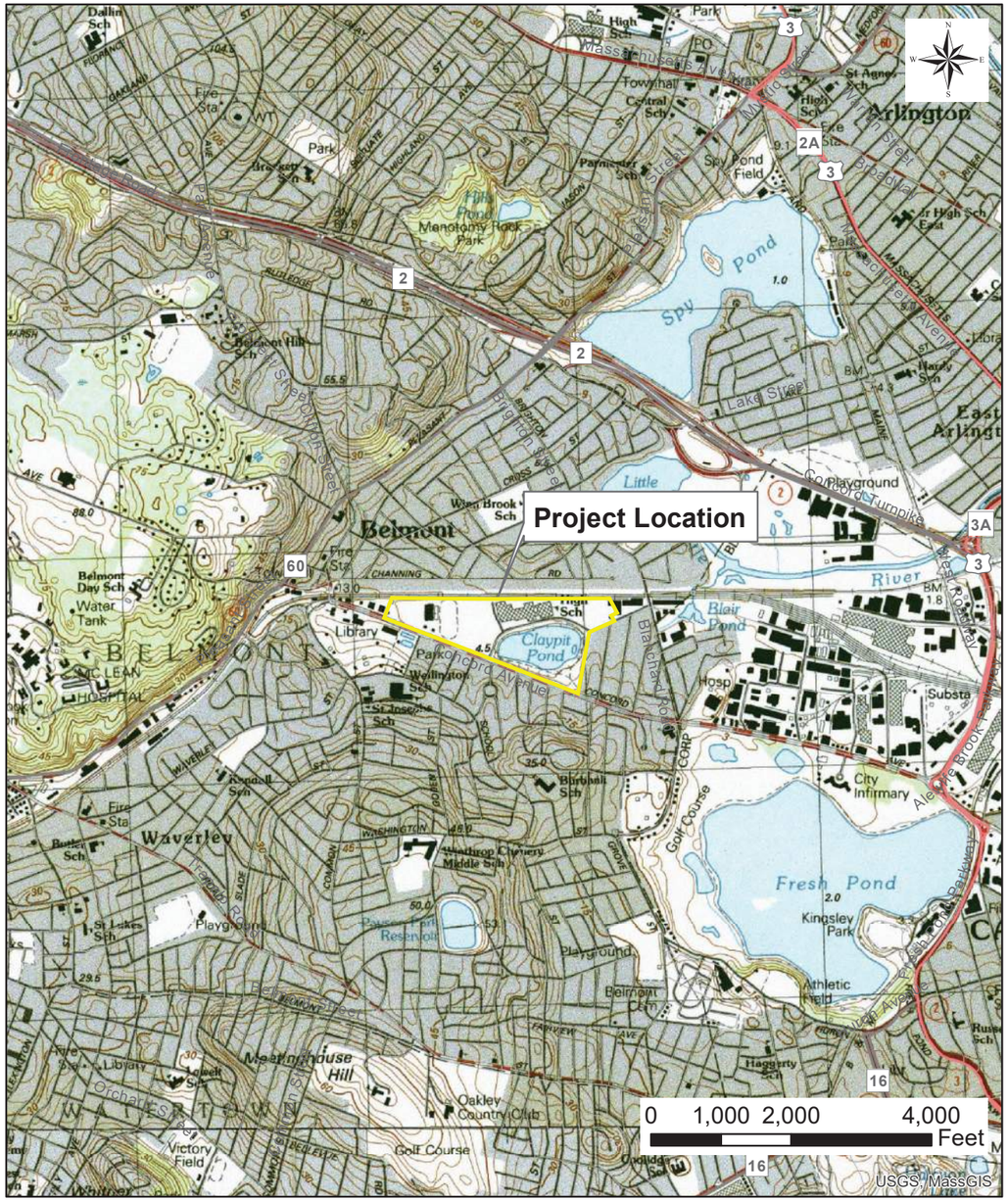


Figure 1: USGS Map
Belmont High School
Belmont, MA

Data Source: MassGIS
Nitsch Project #12296.1

Nitsch Engineering



Figure 2: Aerial Photo
Belmont High School
Belmont, MA

Data Source: MassGIS
Nitsch Project #12296.1

Nitsch Engineering



Figure 3: NHESP Map
Belmont High School
Belmont, MA

Data Source: MassGIS
Nitsch Project #12296.1

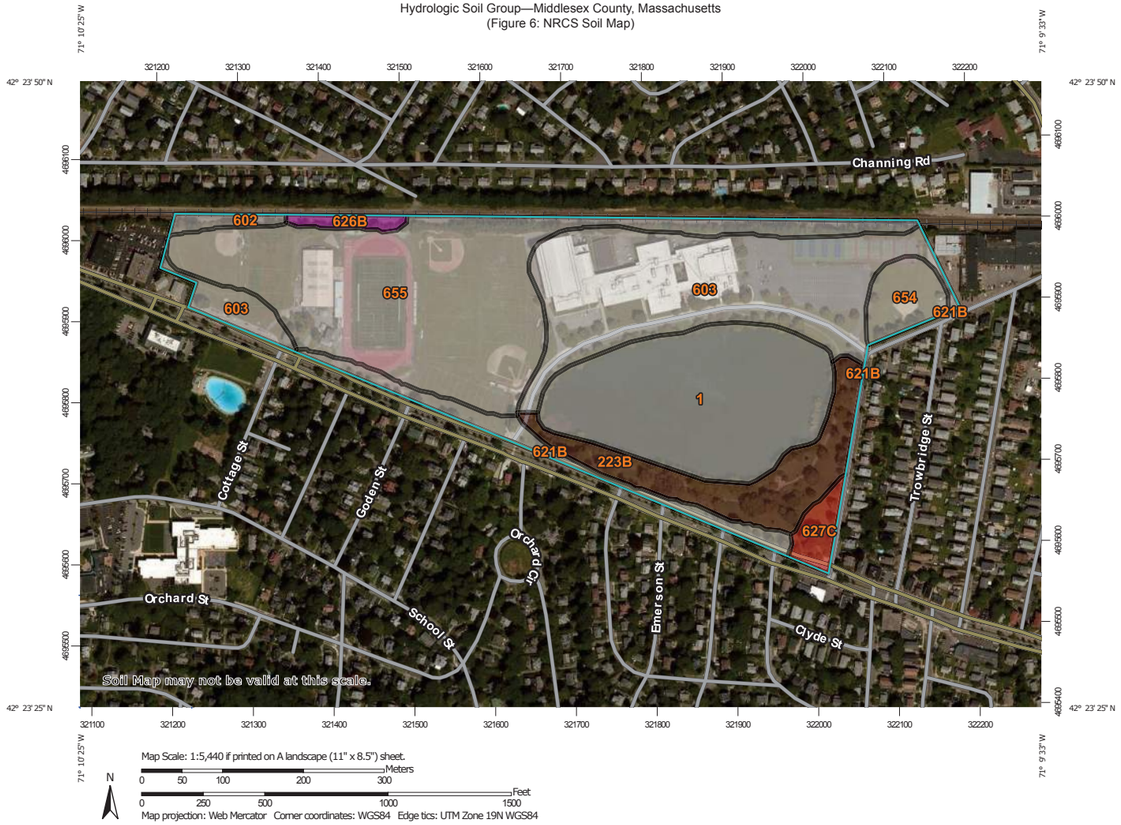
Nitsch Engineering



Figure 4: DEP Wetlands Map
Belmont High School
Belmont, MA

Data Source: MassGIS
Nitsch Project #12296.1

Nitsch Engineering



Map Scale: 1:5,440 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

Hydrologic Soil Group—Middlesex County, Massachusetts
(Figure 6: NRCS Soil Map)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 18, Sep 7, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 10, 2014—Aug 25, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		12.9	21.1%
223B	Scio very fine sandy loam, 3 to 8 percent slopes	B/D	5.5	8.9%
602	Urban land		0.6	1.0%
603	Urban land, wet substratum		16.1	26.3%
621B	Scio-Urban land complex, 0 to 8 percent slopes		2.5	4.0%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	0.6	1.0%
627C	Newport-Urban land complex, 3 to 15 percent slopes	D	1.1	1.7%
654	Udorthents, loamy		1.9	3.1%
655	Udorthents, wet substratum		20.1	32.8%
Totals for Area of Interest			**61.3**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

National Pollutant Discharge Elimination System
General Permit for Discharges from
Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA), as amended by the Water Quality Act of 1987, P.L. 100-4, "operators" of construction activities (defined in Appendix A) that meet the requirements of Part 1.1 of this National Pollutant Discharge Elimination System (NPDES) general permit, are authorized to discharge pollutants in accordance with the effluent limitations and conditions set forth herein. Permit coverage is required from the "commencement of construction activities" (see Appendix A) until one of the conditions for terminating CGP coverage has been met (see Part 8.2).

This permit becomes effective on **February 16, 2017**.

This permit and the authorization to discharge expire at 11:59pm, **February 16, 2022.**

Signed and issued this 11th day of January 2017

Deborah Szaro,
Acting Regional Administrator, EPA Region 1

Signed and issued this 11th day of January 2017

William K. Honker, P.E.,
Director, Water Division, EPA Region 6

Signed and issued this 11th day of January 2017

Javier Laureano, Ph.D.,
Director, Clean Water Division, EPA Region 2

Signed and issued this 11th day of January 2017

Karen Flournoy,
Director, Water, Wetlands, and Pesticides Division, EPA Region 7

Signed and issued this 11th day of January 2017

Jose C. Font,
Acting Director, Caribbean Environmental Protection Division, EPA Region 2.

Signed and issued this 11th day of January 2017

Darcy O'Connor,
Assistant Regional Administrator, Office of Water Protection, EPA Region 8

Signed and issued this 11th day of January 2017

Dominique Lueckenhoff,
Acting Director, Water Protection Division, EPA Region 3

Signed and issued this 11th day of January 2017

Kristin Gullatt
Deputy Director, Water Division, EPA Region 9

Signed and issued this 11th day of January 2017

César A. Zapata,
Deputy Director, Water Protection Division, EPA Region 4

Signed and issued this 11th day of January 2017

Daniel D. Opalski,
Director, Office of Water and Watersheds, EPA Region 10

Signed and issued this 11th day of January 2017

Christopher Korleski,
Director, Water Division, EPA Region 5