

To: Ms. Elizabeth Hughes, AICP, Town Planner
Town of Concord
Planning Division
141 Keyes Road
Concord, MA 01742

Date: January 2, 2024

Project #: 15630.00

From: Randall C. Hart, Principal
Ashley Domogala, EIT

Re: Response to Peer Review Letter #1 – Traffic Review
NOVO Riverside Commons
292-294 Baker Avenue
Concord, Massachusetts

VHB has received and reviewed the comments outlined in the November 6, 2023 Traffic Peer Review Letter from GPI on the proposed NOVO Riverside Commons development at 292-294 Baker Avenue in Concord, Massachusetts. The comments and our responses are provided below.

Site Circulation, Access, and Egress

Comment:

1. **GPI recommends that the Applicant install STOP signs and STOP lines for traffic exiting the site driveway onto Baker Avenue, as well as centerline markings on the site driveway between Baker Avenue and the entrance to the drop-off area at #292 Baker Avenue.**

Response: We agree with the recommendations and have updated the site plans to reflect the stop signs and lines as well as centerline pavement markings. See attached.

Comment:

2. **GPI recommends the Applicant install one-way arrows and signage, as well as STOP lines on the drop-off area exits at both #292 and #294 Baker Avenue.**

Response: We agree with the recommendations and have incorporated the one-way arrows and signage at the drop off areas.

Comment:

3. **There is currently no traffic control proposed at the internal intersection of the main drive aisle and the connection to #300 Baker Avenue. GPI recommends installing a STOP sign and STOP line on the #300 Baker Avenue driveway approach.**

Response: We agree with the recommendation and have incorporated the stop sign and lines into the updated site plans.

Comment:

4. Although there is a sidewalk proposed along the front of #292 Baker Avenue and a crosswalk to connect this sidewalk to #300 Baker Avenue, the sidewalk along the front of #292 Baker Avenue

ends at this internal intersection and no crosswalks are provided across the #300 Baker Avenue approach to this internal intersection. **GPI recommends the Applicant consider extending the sidewalks to provide a more continuous pedestrian path through the site, connecting to the parking field just west of the fire lane. In addition, the Applicant should consider installing crosswalks on all approaches to the internal intersection. Consideration should be given to the implementation of traffic calming measures, such as a raised or texture intersection.**

Response: Beals and Thomas has updated the Site Plan to extend the sidewalk west of the Fire Lane to parking spaces on the north side of the drive aisle. We have also added a sidewalk from the sidewalk along the front of the 300 Baker Avenue building to the sidewalk that connects to the proposed sidewalk in front of the 292 Baker Avenue building via a crosswalk.

Comment:

5. The main drive-aisle through the site is proposed to be 24-feet wide with perpendicular parking on both sides of the roadway. There are no sidewalks or crosswalks proposed for people parking in the first 30 parking spaces on the east side of the driveway to access the building at #292 Baker Avenue. This area will experience the heaviest volume of traffic during the morning and afternoon when residents are traveling to/from and employees are traveling to/from the adjacent office development. The lack of pedestrian accommodations in this area is likely to result in pedestrians walking in the roadway between flowing traffic and backing vehicles exiting parked spaces, resulting in significant conflict in this area. **GPI recommends the Applicant consider elimination of the parking spaces closest to Baker Avenue and/or provision of safe pedestrian accommodations for residents walking to/from these spaces.**

Response: We have added a crosswalk in the site driveway near Baker Avenue near the 292 Baker Avenue drop off area to access parking spaces on the east side of the driveway. We have also added a sidewalk along the ten parking spaces closest to Baker Avenue on the east side of the driveway.

Comment:

6. The handicap parking spaces are proposed to be located within the drop-off areas, which are only 20 feet wide. Although the hatched area between the handicap parking spaces will provide some additional maneuvering spaces, vehicles may have difficulty entering and exiting these spaces, particularly the spaces near #294 Baker Avenue. **The Applicant should provide vehicle turning path diagrams to depict the path of vehicles entering and exiting the handicap spaces.**

Response: We have prepared vehicle turning path diagrams and have attached as an exhibit to this document.

Comment:

7. **The Applicant should provide vehicle turning path diagrams depicting the access and circulation of emergency vehicles, delivery vehicles, and trash removal vehicles for the site.**

Response: We have prepared vehicle turning path diagrams for emergency vehicles, delivery vehicles, and trash removal vehicles, and have included as exhibits to this document.

Comment:

8. It appears that the Applicant is proposing to utilize the proposed public access trail for fire apparatus access to the buildings. **The Applicant should confirm that this is the case and demonstrate the ability of a fire apparatus to efficiently access and egress the public access trail.**

Response: The public access trail is only intended to be used by a pickup sized emergency access vehicle based on preliminary conversations with the Fire Department. The Fire Lane can be accessed directly from Baker Avenue and the proposed Fire Lane northwest of 292 Baker Avenue.

Traffic Impact Assessment

Comment:

9. The description of the intersection geometry included on Page 3 of the TIAS for the Baker Avenue at Concord Meadows Driveway appears to be referencing a different intersection along Commonwealth Avenue and may have been inadvertently included from a previous report. GPI has reviewed the geometry of the intersection as analyzed in the capacity and queue analysis and determined that the intersection was adequately modeled. Although the Trashology driveway across the street from the Concord Meadows Driveway was not included in the analysis, there were no vehicles recorded entering or exiting the driveway during the peak hours of analysis. Therefore, the inclusion of the Trashology driveway would result in negligible impacts to the findings of the traffic operations analysis.

Response: VHB notes that GPI did not receive the final version of the TIAS dated August 8, 2023, where this description was corrected. A copy of that version is provided for your reference, although the substantive comments that were referenced from the older version don't have material effect on the comments or responses provided in this document.

The Trashology driveway was included in the revised analysis in the revised TIAS, as one vehicle was recorded exiting in the weekday morning peak hour in the November 2023 counts.

Comment:

10. The proposed residential apartments will share access/egress with the adjacent office parking at #300 Baker Avenue; however, the Applicant has not included the intersection of Baker Avenue Extension / #300 Baker Avenue Driveway within the study area for the TIAS. **GPI recommends the Applicant update the TIAS to include this additional intersection.**

Response: The Baker Avenue Extension #300 Baker Avenue Driveway has been counted and is included in the updated analyses in the revised TIAS.

Comment:

11. The Applicant has included the intersection of Main Street (Route 62) / Baker Avenue / Cottage Street in the TIAS. It is important to note that this intersection is located immediately adjacent to the Main Street (Route 62) intersections with Crest Street and Old Bridge Road. Due to their proximity and conflicting movements, the operations at both of these intersections are directly impacted by one another. The Applicant's trip distribution estimate indicates that this is also the area that will experience the greatest traffic increase as a result of the proposed residential development. **Therefore, GPI recommends that the Applicant include the Main Street (Route 62), Old Bridge Road, and Crest Street intersections within the study area for the TIAS.**

Response: The Main Street (Route 62) at Old Bridge Road/Crest Street intersection has been counted and is included in the updated analyses in the revised TIAS.

Comment:

12. **Due to the proximity of the proposed site driveway to the existing railroad crossing on Baker Avenue, the Applicant should review the safety and adequacy of the existing railroad crossing, include signage, signals, gates, pedestrian crossing, etc., and provide recommendations for any necessary enhancements.**

Response: VHB has conducted a detailed assessment of the existing railroad crossing. The evaluation conducted and findings are summarized in a separate memorandum which is attached to this document. As summarized in the assessment, we have made the following recommendations:

- Improve sight lines between site driveway and rail crossing by clearing brush and tree branches as necessary.
- Restripe the pavement markings leading to the crossing.
- Extend the median leading to the crossing along Baker Avenue to the north

Comment:

13. GPI concurs with the seasonal and annual adjustments utilized to project traffic volumes to 2030 No- Build conditions.

Response: No response necessary.

Comment:

14. GPI notes that the public transportation section is referencing an old schedule for the Fitchburg Commuter Rail Line. Updating the schedule is not anticipated to impact the findings of the report.

Response: The Spring/Summer 2023 schedule was current at the time the traffic study was prepared. However, the Fall/Winter 2023 schedule is referenced in and attached to the revised TIAS.

Comment:

15. The intersection of Concord Turnpike / Baker Avenue Extension experienced a crash rate above the statewide average and is categorized as a Highway Safety Improvement Program (HSIP) eligible high- crash cluster based on 2018-2020 crash records. A Road Safety Audit (RSA) was conducted for the intersection in February 2020, but was not provided in the appendix of the report. The TIAS included potential contributing factors and noted several potential measures to improve safety, such as signal timing modifications, improved signage and pavement markings, geometric modifications, and pedestrian and bicycle accommodations. However, the Applicant has not made any commitments to implement any of these safety enhancements. **Due to the history of safety issues at this location and the project's direct impact on the operations of the intersection, GPI recommends that the Applicant commit to implementing measures to reduce collisions and mitigate project impacts at this location.**

Response: As shown in the operations analyses between the No-Build and Build, the project is expected to have minor influence on operations at this location. However, pending final occupancy permits for this project, the Proponent will perform some of the recommended safety improvements identified in the RSA. Namely, the Proponent would *"consider adjusting the signal timing to provide split phases for Baker Avenue Extension and Jughandle approaches. Split phases would provide dedicated phases for each approach, resulting in less turning movement crashes and conflicts"*. These improvements would be analyzed, reviewed with MassDOT, and to the extent consistent with MassDOT work on Route 2 would be implemented if approved by MassDOT. During the interim, if MassDOT makes these or other improvements at the intersection that address safety concerns, the Proponent will no longer bear such responsibility. The RSA report is attached to the revised TIAS.

Comment:

16. Although the crash rate for the Main Street (Route 62) / Baker Avenue / Cottage Street intersection is slightly below the statewide and District-wide averages, there is a high occurrence of angle and injury collisions at this location, as well as a high occurrence of peak-period collisions, indicating congestion may be a contributing factor. **The Applicant should review the collision patterns at this location and consider options for enhancing the safety of the intersection.**

Response: The Town of Concord recognizes that there are safety and operational issues at this intersection. They have engaged a design engineer and are proposing significant safety and operational improvements at this intersection. While the town did not mention this to VHB at the time the study was developed, we recently had a conversation with all town departments at which time DPW made us aware of the plan that

is currently considerably designed. While they shared the concept with us on screen, they have not fully reviewed it to date and therefore aren't willing to share hard copies. However, based on screen review, the improvements include the following:

- Upgrade the traffic signal with new equipment, pre-emption, crosswalks, and sidewalks;
- Add bike accommodation in-street eastbound on Main Street; and
- Modify Old Bridge Road/Crest Street to intersect Main Street at a 90-degree angle across from the TD Bank driveway to create a four-legged unsignalized intersection that is not included in the signal.

DPW suggested that the plan is to implement these improvements next year, so these enhancements to safety and operations will be in place by the time the project is open and operational. Therefore, additional improvements are likely not necessary or required.

It should also be noted that the crashes reported at Main Street (Route 62) at Baker Avenue/Cottage Street in the August TIA occurred at both the Baker Avenue/Cottage Street and Old Bridge Road/Crest Street intersections. In the revised TIA, the crashes are refined to split between Main Street (Route 62) at Baker Avenue/Cottage Street and Main Street (Route 62) at Old Bridge Road/Crest Street.

Comment:

17. The Applicant has not included traffic to be generated by the proposed mixed-use redevelopment of the former restaurant at #768 Elm Street within the projection of 2030 No-Build and Build traffic volumes. **GPI recommends that the Applicant update the analysis accordingly to include the traffic generated by this other development project to more accurately model the traffic operations at the Concord Turnpike (Route 2) / Baker Avenue Extension intersection.**

Response: At the time the traffic study was prepared, the #768 Elm Street project was not identified to VHB by the Town as a project to include in the background No-Build conditions. The background project associated with the #768 Elm Street project has been included in the updated analyses in the revised TIAS.

Comment:

18. The trip generation estimate for the proposed residential development was prepared using Institute of Transportation Engineers (ITE) trip rate data for Land Use Code (LUC) 221 – Mid-Rise Multifamily Housing. GPI agrees with the use of ITE data for this land use code to estimate the trips generated by the proposed development.

However, the Applicant then applied the average vehicle occupancy (AVO) of 1.18 for residential trips obtained from the U.S. Department of Transportation¹ to determine the number of person trips generated by the development. and then used US Census Data on means of commuting travel for the local Census Block to convert the person trips back to vehicle trips. This effectively applied a reduction in vehicle trips generated by the proposed development for the use of nearby transit facilities. Application of the average vehicle occupancy rate to the ITE trip estimates will not result in an estimation of total person trips generated by the proposed development.

Application of the AVO rate will only provide the total number of persons traveling in a personal / passenger vehicle as transit vehicles and those walking or bicycling to work are not accounted for within the AVO rate. The actual total person trips, when considering transit, walking, biking, and work-from-home (WFH) trips would be higher than estimated using the AVO rate. Therefore, the trip generation estimate contained in the TIAS likely underestimates the vehicle trips to be generated by the proposed development. It is also noted that the ITE Trip Generation Manual, 11th Edition provides trip rates for LUC 221 (Multifamily Housing – Mid-Rise) for facilities located close to rail transit, as well as trip rates for person trips and walk, bike, transit trips. **GPI recommends the Applicant utilize this information to estimate the impacts associated with proximity to the commuter rail station rather than application of the AVO rate.**

Response: VHB followed typical trip generation methodology for similar developments that has been accepted by MassDOT and municipalities across the state for many years. Local Census data was used instead of ITE trip generation for “close to rail transit” to be more accurate to local data, as transit/bike/walk facilities can vary greatly and the “not close to rail transit” has more data points. While applying the ITE data for LUC 221 close to rail transit results in more person trips, it results in less vehicle trips as demonstrated below. Therefore, the updated analysis still uses VHB’s original trip generation methodology as it is more conservative.

Table 1 Person Trips Comparison

Time Period	<u>AVO Applied</u> ¹	<u>Close to Rail Transit</u> ²
Weekday Daily		
Enter	538	N/A
<u>Exit</u>	<u>538</u>	<u>N/A</u>
Total	1,076	N/A
Weekday Morning Peak Hour		
Enter	21	43
<u>Exit</u>	<u>70</u>	<u>74</u>
Total	91	117
Weekday Evening Peak Hour		
Enter	57	101
<u>Exit</u>	<u>37</u>	<u>40</u>
Total	94	141

N/A = Not Available

- 1 Based on ITE LUC 221 (Multifamily Housing (Mid-Rise) – Not Close to Rail Transit) for 201 units with national AVO of 1.18 for residential trips applied.
- 2 Based on ITE LUC 221 (Multifamily Housing (Mid-Rise) – Close to Rail Transit) for 201 units.

Table 2 Vehicle Trips Comparison

<u>Time Period</u>	<u>AVO Applied</u> ¹	<u>Close to Rail Transit</u> ²
Weekday Daily		
Enter	430	478
<u>Exit</u>	<u>430</u>	<u>478</u>
Total	860	956
Weekday Morning Peak Hour		
Enter	17	23
<u>Exit</u>	<u>56</u>	<u>41</u>
Total	73	64
Weekday Evening Peak Hour		
Enter	46	38
<u>Exit</u>	<u>30</u>	<u>20</u>
Total	76	58

1 Based on ITE LUC 221 (Multifamily Housing (Mid-Rise) – Not Close to Rail Transit) for 201 units with national AVO of 1.18 for residential trips applied, then mode split applied based on local Census data.

2 Based on ITE LUC 221 (Multifamily Housing (Mid-Rise) – Close to Rail Transit) for 201 units.

Table 3 New Trips by Mode – Close to Rail Transit

<u>Time Period</u>	<u>Vehicle</u>	<u>Transit</u>	<u>Bike/Walk</u>	<u>WFH</u>
Weekday Daily				
Enter	478	N/A	N/A	N/A
<u>Exit</u>	<u>478</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Total	956	N/A	N/A	N/A
Weekday Morning Peak Hour				
Enter	23	2	10	N/A
<u>Exit</u>	<u>41</u>	<u>2</u>	<u>16</u>	<u>N/A</u>
Total	64	4	26	N/A
Weekday Evening Peak Hour				
Enter	38	1	14	N/A
<u>Exit</u>	<u>20</u>	<u>1</u>	<u>10</u>	<u>N/A</u>
Total	58	2	24	N/A

Note: Based on ITE LUC 221 (Multifamily Housing (Mid-Rise) – Close to Rail Transit) for 201 units.
 N/A = Not Available

Comment:

19. The TIAS states that the Applicant based the distribution of site-generated vehicle trips on journey-to-work calculations. GPI agrees with this approach, however when looking at the distribution of traffic to/from Concord, GPI noticed the Applicant did not send any traffic down Cottage Street. Both the elementary and middle schools are located to the south of the site and trips between the site and the schools would likely use Cottage Street. In addition, Cottage Street provides a cut-through route to Old Marlboro Road for access to Route 117.

Response: The trip distribution has been updated in the revised TIAS.

Comment:

20. In addition, the Applicant has assumed that all traffic to/from downtown Concord and Bedford will utilize Route 62 instead of Elm Street. During the peak hours, when traffic on Route 62 and Route 2 are heavy, Elm Street can be a viable and faster route to/from these locations. **The Applicant should update the trip distribution to include this use of Elm Street and Cottage Street.**

Response: The trip distribution has been updated in the revised TIAS.

Comment:

21. The Synchro capacity and queue analysis for the Main Street / Cottage Street / Baker Avenue intersection was prepared assuming that the Cottage Street northbound (NB) approach allows right turns on red; however, right-turn-on-red is prohibited at this location. **The Applicant should update the Synchro analysis accordingly.**

Response: The Synchro analysis has been updated to reflect no northbound right turns on red in the revised TIAS.

Comment:

22. The Concord Turnpike (Route 2) westbound (WB) channelized right-turn onto the Elm Street ramps was modeled in Synchro as a free movement; however, this movement is operating under YIELD control. **The Applicant should update the Synchro analysis accordingly.**

Response: The Synchro analysis has been updated to reflect the movement as permitted during the westbound phase only in the revised TIAS. (The analysis then conservatively assumes right turn on red during other phases.) There is no option to model a right turn as "yield" in the signal settings.

Comment:

23. GPI notes that the travel speeds on every roadway link within the Synchro model were analyzed as 30 MPH; however, the posted speed on Baker Avenue and Baker Avenue Extension is 25 MPH



and the posted speed along Concord Turnpike is 40 mph. As none of the intersections are part of a coordinated signal system, updating the travel speeds will have negligible impact on the operations of the study area intersections.

Response: As part of the updated Synchro analysis, the travel speeds on the roadway links were updated to match the posted speeds.

Comment:

24. The Applicant has not provided an assessment of the adequacy of the proposed parking supply within the TIAS. **GPI recommends the Applicant prepare an assessment of the potential parking demand based on Town of Concord zoning regulations and ITE parking demand generation rates.**

Response: A parking demand analysis has been included in the revised TIAS.

Comment:

25. The Applicant has proposed several Transportation Demand Management (TDM) measures to reduce single-occupant vehicle trips generated by the proposed development. In addition to the measures described in the TIAS, GPI recommends the Applicant consider the following additional TDM strategies:

- a. One ride share parking space is proposed within the development. GPI recommends the Applicant provide one space per building, located near the main entrance to each building.
- b. The Applicant should consider transit subsidies or rental reductions for residents utilizing the commuter rail.
- c. The Applicant has proposed a 10-foot public access trail through a portion of the site. GPI recommends extending this trail further north to meet the future Assabet Trail.
- d. The Applicant should consider parking strategies to reduce vehicle traffic, including restricting the available parking supply to one parking spaces per unit and/or charging fees for the use of parking spaces separate from rental fees.
- e. To reduce impervious space on the site, as well as parking maneuvers along the site driveway, the Applicant should consider strategies to share parking with the adjacent office development. These uses have opposite and complementary parking demand patterns where the office use will generate the greatest parking demand during the day on weekdays and the residential use will generate the greatest parking demand at night and on weekends. Sharing of parking between the uses could allow for a reduction in overall parking supply and the elimination of parking spaces located so close to the site driveway intersection with Baker Avenue, as well as internal intersections on site.

Response: The proponent will:

- Provide one ride share parking space per building located near main entrance (item a)
- Provide 10-foot public access trail through a portion of the site.
- Charge for parking under the building to try and minimize parking count to the extent that the Town of Concord Regulations allow it.
- Consider strategies to share parking adjacent to the site including in the proposed new parking garage.

Comment:

26. There is no sight line assessment provided within the TIAS, although the Applicant states in the Conclusion that sight distances will be maintained from the driveways. **GPI recommends the Applicant provide an assessment of the adequacy of the existing sight lines at both site driveway locations, as well as prepare a sight line plan to demonstrate the areas to be kept clear of vegetation, structures, or snow storage that may impede sight lines for vehicles exiting each site driveway. The sight line assessment should be based on the 85th percentile speeds along Baker Avenue and Baker Avenue Extension.**

Response: Sight distance analyses were completed for the proposed Baker Avenue driveway location (moved slightly north from the existing location) and the existing Baker Avenue Extension driveway location,



based on the 85th percentile speeds along Baker Avenue and Baker Avenue Extension. The sight distance analyses are presented in the revised TIAS.

Comment:

27. The Applicant has concluded that the project will have minimal impact on the operations of the study area intersections and that no additional improvements are required to mitigate the impacts of the proposed development. GPI has provided several comments on the methodology and analysis prepared within the TIAS that led the Applicant to this conclusion. These comments will need to be addressed before GPI can provide a final determination on the project's impacts to the operations of the study area intersections and whether any additional mitigation measures, beyond those already recommended within this comment letter, will be required. Once these comments are addressed, GPI will provide a final letter summarizing our recommendations for mitigation measures associated with the proposed development.

Response: While the Synchro analysis has been revised, the conclusion remains the same that the project will have minimal impact on the operations of the study area intersections.

Attachments

- › Updated Site Plan
- › Vehicle Turning Path Diagrams
- › Railroad Crossing Assessment

Response to Peer Review Letter #1 – Traffic Review – NOVO Riverside Commons
Ref: 15630.00
January 2, 2023



Updated Site Plan

NOVO RIVERSIDE COMMONS 292 & 294 BAKER AVENUE IN CONCORD, MASSACHUSETTS (Middlesex County)

OWNER

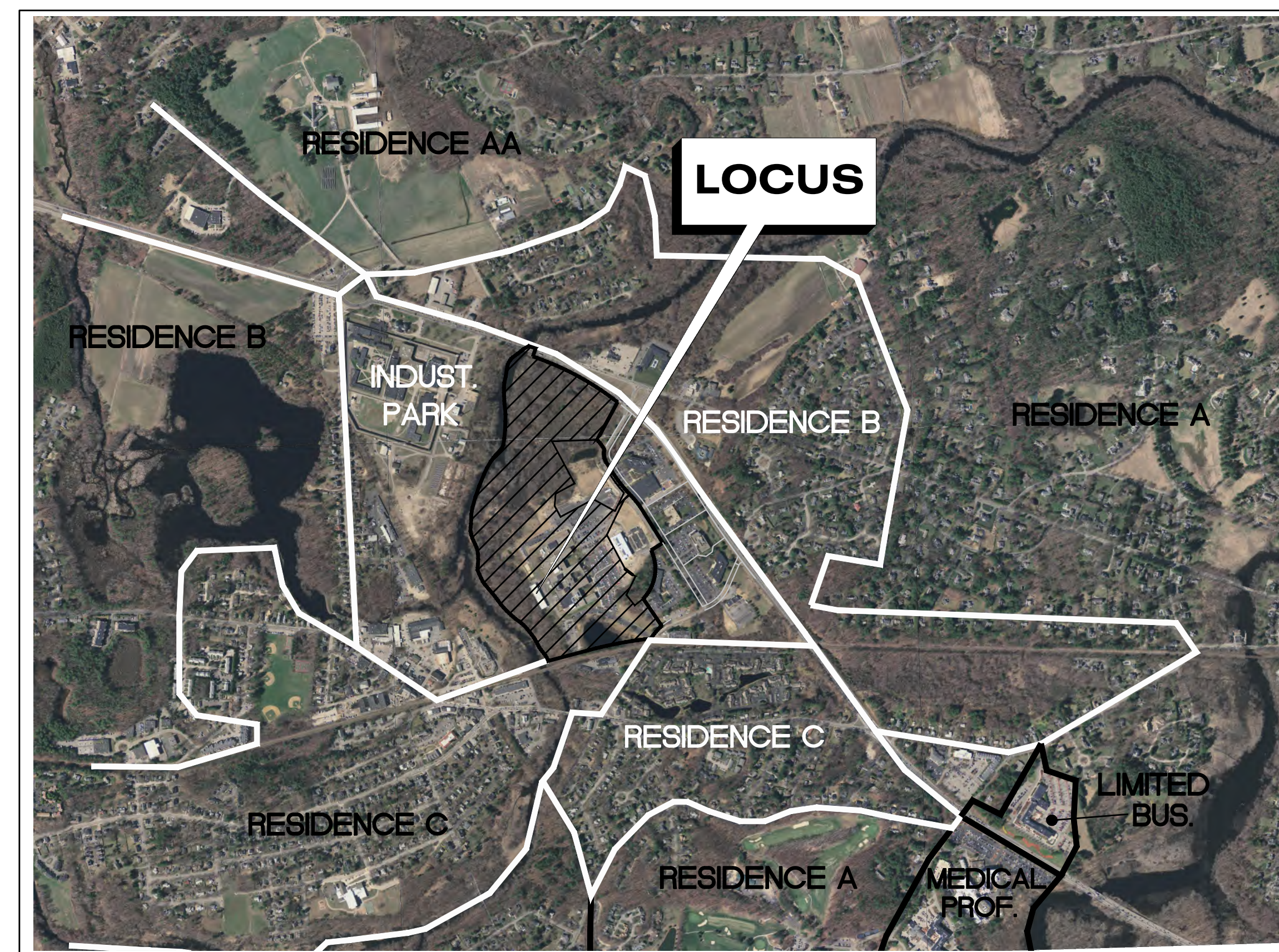
Taurus Investment Holdings, LLC
Two International Place
Boston, Massachusetts 02110

ARCHITECT

CUBE | 3
370 Merrimack Street, Suite 337
Lawrence, Massachusetts 01843

CIVIL ENGINEER/SURVEYOR

Beals and Thomas, Inc.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772



SHEET INDEX

C1.0	Cover Sheet/Locus Plan (1" = 1000')
C1.1	Notes, References, and Legend
TP-1 - TP-3	Topographic Plans
PL	Lotting Plan
C2.1	Layout and Materials Site Plan
C3.1	Grading and Drainage Plan
C4.1	Utilities Plan
C5.1 - C5.3	Site Details

Locus Map
Scale: 1" = 1000'



PEL SUBMISSION SET - MAY 22, 2023
REVISED - JULY 31, 2023
NOTICE OF INTENT - DECEMBER 18, 2023

Job No.: 2063.26
Plan No.: 206326P118C-001
Sheet C1.0

GENERAL NOTES

1. THE CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND OBTAIN NECESSARY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL PAY FEES AND POST BONDS ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE ENGINEER AND ARCHITECT AS REQUIRED.
2. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AND CONSTRUCTION MEANS AND METHODS.
3. LIMIT OF WORK SHALL BE EROSION CONTROL BARRIERS, LIMIT OF GRADING, SITE PROPERTY LINES, AND/OR AS INDICATED ON DRAWINGS.
4. PORTIONS OF THE ROADWAY, SIDEWALK, AND ROADSIDE AREA DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION PRIOR TO DISTURBANCE. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO OWNER.
5. CONTRACTOR SHALL VERIFY UTILITY STUB LOCATIONS AND ELEVATIONS IN THE FIELD PRIOR TO COMMENCING WORK.
6. ANY ALTERATION TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE CONTRACTOR ON RECORD DRAWINGS.
7. EXISTING TREES AND SHRUBS OUTSIDE THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON PRIOR APPROVAL OF THE OWNER.
8. CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN A TRENCH PERMIT PRIOR TO ANY TRENCHING ON SITE IN ACCORDANCE WITH 800 CMR 14.00.
9. FOR DRAWING LEGIBILITY, ALL EXISTING TOPOGRAPHIC FEATURES, EXISTING UTILITIES, PROPERTY BOUNDARIES, EASEMENTS, ETC., MAY NOT BE SHOWN ON ALL DRAWINGS. REFER TO ALL REFERENCED DRAWINGS AND OTHER DRAWINGS IN THIS SET FOR ADDITIONAL INFORMATION.

EROSION CONTROL AND SEDIMENTATION NOTES

1. A SEDIMENT CONTROL BARRIER SHALL BE INSTALLED ALONG THE EDGE OF PROPOSED WORK PRIOR TO THE COMMENCEMENT OF DEMOLITION OR CONSTRUCTION.
2. CONTRACTOR SHALL CLEAN AND MAINTAIN ALL SEDIMENT AND EROSION CONTROL MEASURES FOR THE DURATION OF CONSTRUCTION TO ENSURE THEIR CONTINUED FUNCTIONALITY.
3. ADDITIONAL EROSION CONTROL MEASURES AND/OR SEDIMENT CONTROL BARRIERS SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
4. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS DURING CONSTRUCTION TO ENSURE THAT CHANNELS, DITCHES, AND PIPES REMAIN CLEAR OF DEBRIS AND THAT THE EROSION AND SEDIMENTATION CONTROL MEASURES ARE INTACT.
5. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC WAYS. ANY SEDIMENT TRACKED ONTO PUBLIC WAYS SHALL BE SWEEPED AT THE END OF EACH WORKING DAY.
6. ALL STOCKPILE AREAS SHALL BE LOCATED WITHIN LIMIT OF WORK LINE AND STABILIZED TO PREVENT EROSION.
7. ALL DEBRIS GENERATED DURING SITE PREPARATION ACTIVITIES SHALL BE LEGALLY DISPOSED OF OFF SITE.
8. CONTRACTOR SHALL PROVIDE CRIBBING AS NECESSARY TO PROTECT EXISTING UTILITY LINES DURING CONSTRUCTION.
9. SITE ELEMENTS TO REMAIN SHALL BE PROTECTED FOR THE DURATION OF CONSTRUCTION.
10. ALL TOPSOIL ENCOUNTERED WITHIN THE LIMIT OF WORK SHALL BE STRIPPED TO ITS FULL DEPTH AND STOCKPILED FOR REUSE. EXCESS TOPSOIL SHALL BE DISPOSED OF ON SITE AS DIRECTED BY OWNER. TOPSOIL STOCKPILES SHALL REMAIN SEGREGATED FROM OTHER EXCAVATED SOIL MATERIALS.
11. TEMPORARY DIVERSION DITCHES, PERMANENT DITCHES, CHANNELS, EMBANKMENTS, AND ANY BLENDED SURFACE WHICH WILL BE EXPOSED FOR A PERIOD OF ONE MONTH OR MORE SHALL BE CONSIDERED CRITICAL VEGETATION AREAS. THESE AREAS SHALL BE MULCHED WITH STRAW. MULCH SHALL BE SPREAD UNIFORMLY IN A CONTINUOUS BLANKET OF SUFFICIENT THICKNESS TO COMPLETELY HIDE THE SOIL FROM VIEW.
12. AREAS IDENTIFIED AS CRITICAL VEGETATION AREAS SHALL BE STABILIZED DURING CONSTRUCTION BY SEEDING WITH ANNUAL RYE GRASS AT THE RATE OF FORTY (40) LBS/ACRE.
13. CONTRACTOR SHALL PROVIDE DUST CONTROL BY SPRINKLING OR OTHER APPROVED METHODS NECESSARY AND/OR AS DIRECTED BY THE OWNER OR THEIR REPRESENTATIVE.
14. FILTER BAGS SHALL BE INSTALLED IN ALL EXISTING CATCH BASINS PRIOR TO COMMENCEMENT OF CONSTRUCTION. FILTER BAGS SHALL ALSO BE INSTALLED IN ALL NEWLY INSTALLED CATCH BASIN PRIOR TO PERMANENT PAVEMENT INSTALLATION TO CONTROL SILTATION.
15. STRAW BALE CHECK DAMS SHALL BE PROVIDED ON TWO HUNDRED (200) FOOT SPACING WITHIN DRAINAGE SWALES AND DITCHES AND AT UPSTREAM ENDS OF DRAINAGE INLETS.
16. RIPRAP APRONS SHALL BE PROVIDED AT ALL DRAIN/CULVERT OUTLETS.
17. CONTRACTOR SHALL PREVENT ANY SOIL AND MATERIALS FROM ENTERING WETLANDS, STREAMS, AND OTHER RESOURCE AREAS.

LAYOUT AND MATERIALS NOTES

1. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
2. DIMENSIONS OF PARKING SPACES AND DRIVEWAYS ARE FROM FACE OF CURB.
3. DIMENSIONS FROM BUILDING ARE FROM FACE OF BUILDING.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND ALL DETAIL CONTIGUOUS TO THE BUILDING, LIGHTING, ENTRANCE PLAZA, DOORWAY PADS, LOADING DOCKS, ETC. CONTRACTOR SHALL STAKE OUT BUILDING FROM THE LATEST ARCHITECTURAL AND STRUCTURAL DRAWINGS.
5. CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER AND OWNER'S REPRESENTATIVE FOR RESOLUTION.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN SITE PLAN DIMENSIONS AND BUILDING PLANS BEFORE PROCEEDING WITH ANY PORTION OF SITE WORK WHICH MAY BE AFFECTED SO THAT PROPER ADJUSTMENTS TO THE SITE LAYOUT CAN BE MADE IF NECESSARY.
7. ACCESSIBLE RAMPS SHALL BE CONSTRUCTED PER MASSACHUSETTS STATE CODE AND THE AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES (WHICHEVER IS MORE STRINGENT).
8. EACH HANDICAP PARKING SPACE SHALL BE IDENTIFIED BY A SIGN SIX (6) FEET IN HEIGHT LOCATED AT THE FACE OF THE CURB. THE SIGN SHALL CONTAIN THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AS DESCRIBED IN THE AMERICANS WITH DISABILITIES ACT, PUBLIC LAW 101-336, (SEE DETAIL).
9. CONTRACTOR SHALL PROTECT EXISTING PROPERTY MONUMENTS AND ABUTTING PROPERTIES DURING CONSTRUCTION.

GRADING, DRAINAGE AND UTILITY NOTES

1. UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE AND ASSUMED. BEFORE COMMENCING SITE WORK CONTACT "DIG SAFE" AT 1-888-344-7233 TO LOCATE UNDERGROUND UTILITIES. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. NO EXCAVATION SHALL BE PERFORMED UNTIL UTILITY COMPANIES ARE PROPERLY NOTIFIED.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH COULD BE AFFECTED.
3. WORK PERFORMED AND MATERIALS FURNISHED SHALL CONFORM WITH THE LINES, GRADES AND OTHER SPECIFIC REQUIREMENTS AND SPECIFICATIONS OF THE TOWN OF CONCORD DPW.
4. AT LOCATIONS WHERE EXISTING CURBING OR PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH EDGE. BLEND NEW PAVEMENT, CURBS AND EARTHWORK SMOOTHLY INTO EXISTING BY MATCHING LINES, GRADES AND JOINTS. PITCH EVENLY BETWEEN SPOT GRADES. GRADE ALL AREAS TO DRAIN.
5. CONTRACTOR SHALL VERIFY EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
6. GRADES SHALL PITCH EVENLY BETWEEN SPOT ELEVATIONS. PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM OF 1/8" PER FOOT UNLESS SPECIFIED OTHERWISE. ANY DISCREPANCIES NOT ALLOWING THIS MINIMUM PITCH SHALL BE REPORTED TO THE ENGINEER PRIOR TO CONTINUING WORK.
7. THE CONTRACTOR SHALL SCHEDULE WORK TO ALLOW THE FINISHED SUBGRADE ELEVATIONS TO DRAIN PROPERLY WITHOUT PUDDLING OR PONDING. SPECIFICALLY, ALLOW WATER TO ESCAPE WHERE PROPOSED CURB MAY RETAIN RUNOFF PRIOR TO APPLICATION OF THE FINISH GRADE AND/OR SURFACE PAVING. CONTRACTOR SHALL PROVIDE TEMPORARY POSITIVE DRAINAGE AS REQUIRED.
8. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE RESPECTIVE UTILITY COMPANIES FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, AND ANY OTHER PRIVATE UTILITIES, AS REQUIRED.
9. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE OWNER AND ENGINEER FOR RESOLUTION.
10. UTILITY COVERS, GRATES, ETC. SHALL BE ADJUSTED TO BE FLUSH WITH THE PAVEMENT FINISH GRADE UNLESS OTHERWISE NOTED. RIM ELEVATIONS OF DRAINAGE STRUCTURES AND SANITARY SEWER MANHOLES ARE APPROXIMATE.
11. CONTRACTOR SHALL INSTALL UTILITIES (INCLUDING CONCRETE PADS) PER UTILITY COMPANY AND DRW STANDARDS.
12. DRAINAGE PIPE SHALL BE SMOOTH WALLED CORRUGATED POLYETHYLENE PIPE (ADS N-12 OR APPROVED EQUAL) EXCEPT WHERE NOTED OTHERWISE.
13. RIPRAP APRONS SHALL BE PROVIDED AT DRAIN/CULVERT OUTLETS.
14. SANITARY PIPE SHALL BE SDR-35 PVC UNLESS OTHERWISE NOTED.
15. INSULATE SANITARY PIPES WHERE DEPTH OF EARTH COVER IS LESS THAN FOUR (4) FEET FROM FINISHED GRADE.
16. WATER PIPE SHALL BE CLASS 52 CEMENT LINED DUCTILE IRON. WATER SERVICES SHALL BE COPPER TYPE K OR PE AS REQUIRED BY THE WATER DEPARTMENT.
17. WATER UTILITY IMPROVEMENTS SHALL COMPLY WITH THE AMERICAN WATERWORKS ASSOCIATION STANDARDS AND THE TOWN OF CONCORD WATER DEPARTMENT SPECIFICATIONS.
18. WATER LINES SHALL HAVE MINIMUM FIVE (5) FEET OF COVER.
19. CONTRACTOR SHALL PROTECT UNDERGROUND UTILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THE UTILITIES RESULTING FROM CONSTRUCTION LOADS SHALL BE RESTORED TO ORIGINAL CONDITION.
20. GAS, ELECTRIC, TELEPHONE AND FIRE ALARM CONNECTION LOCATIONS AND ROUTING ARE SUBJECT TO REVIEW AND APPROVAL BY APPROPRIATE UTILITY COMPANIES AND FIRE DEPARTMENT. CONTRACTOR SHALL COORDINATE CONNECTION TO MUNICIPAL FIRE ALARM.
21. EXCAVATION WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE PERFORMED BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
22. UNLESS OTHERWISE INDICATED, EXISTING UTILITIES TO BE ABANDONED SHALL BE CAPPED AND ABANDONED IN PLACE UNLESS THEY CONFLICT WITH PROPOSED IMPROVEMENTS. CAP REMAINING PORTIONS WHERE PARTIALLY REMOVED.
23. ABANDON EXISTING UTILITY SERVICES IN ACCORDANCE WITH UTILITY COMPANY AND TOWN REQUIREMENTS.
24. CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL BARRIERS AFTER RE-VEGETATION AND STABILIZATION OF DISTURBED AREAS, FOLLOWING APPROVAL OF THE CONSERVATION COMMISSION AND WETLAND SPECIALIST.
25. WETLANDS SHALL REMAIN UNDISTURBED; NO ENCROACHMENT PERMITTED.

LEGEND AND ABBREVIATIONS

EXISTING	PROPOSED	EXISTING	PROPOSED

TRAFFIC SIGN SUMMARY			
M.U.T.C.D. NUMBER	SPECIFICATIONS		DESCRIPTION
	WIDTH	HEIGHT	
R1-1	30"	30"	
R5-1	30"	30"	
R6-2L	24"	30"	
R6-2R	24"	30"	

PREPARED FOR:

TAURUS INVESTMENT HOLDINGS, LLC
 TWO INTERNATIONAL PLACE
 BOSTON, MASSACHUSETTS 02110

12/18/2023

FOR PERMITTING ONLY

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PREPARED BY:

 BEALS AND THOMAS, INC.
 144 Turnpike Road, Suite 210
 Southborough, Massachusetts 01772-2104
 T.508.366.0560 | www.bealsandthomas.com

5	
4	
3	
2	12/18/2023 NOTICE OF INTENT
1	07/31/2023 REVISION
0	05/22/2023 PEL SUBMISSION
	ISSUE DATE DESCRIPTION
DES	DWN
CHK'D	APP'D

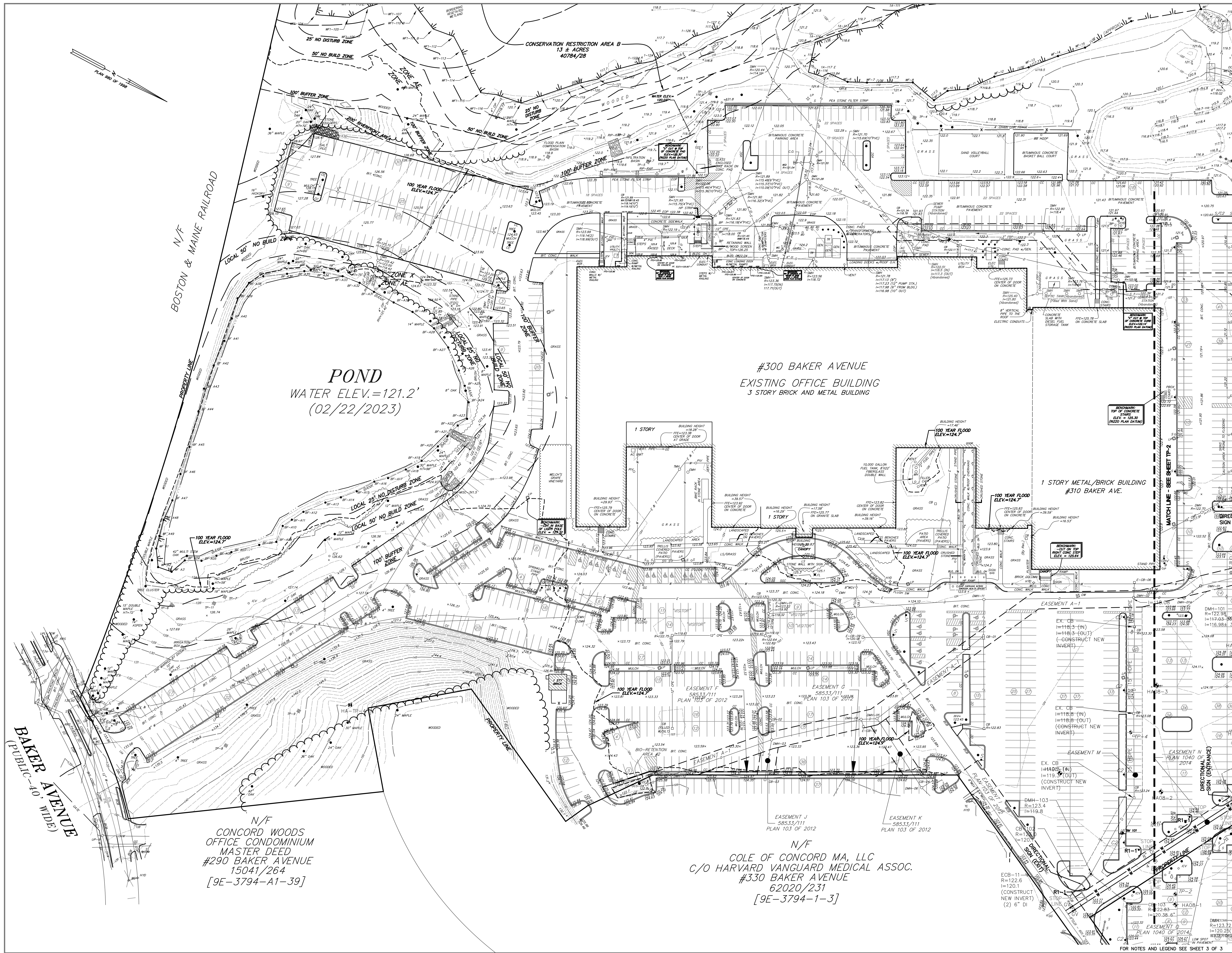
PROJECT:
NOVO RIVERSIDE COMMONS
292 & 294 BAKER AVENUE
 CONCORD, MASSACHUSETTS

SCALE: AS NOTED DATE: MAY 22, 2023

NOTES, REFERENCES AND LEGEND

B+T JOB NO.2063.27	C11
B+T PLAN NO. 206326P118C-002	

BEALS AND THOMAS, INC. SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, OR PROCEDURES UTILIZED BY THE CONTRACTOR, NOR FOR THE SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES, OR FOR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
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PREPARED FOR:
TAURUS INVESTMENT HOLDINGS, LLC
 610 N WYNMORE RD #200
 MAITLAND, FL 32751

RECORD OWNER:
CD 211 PROPERTY LLC
 DEED BOOK 74476, PAGE 431
 LOT B-1
 PLAN No. 989 OF 2014

DATE	DESCRIPTION
03/29/2023	UPDATED DETAIL
04/22/2016	ADDITIONAL DETAIL
01/29/2016	ADDITIONAL DETAIL
04/09/2015	FOR DATE ONLY
08/15/2015	FOR DATE ONLY
04/01/2014	FIRST ISSUE

ISSUE DATE DESCRIPTION
 ATL/MDH MEB APR/MEB/RJB/REW
 FLD CALC DWN CHK'D

Mark E. Benson
 3/29/2023

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TOPOGRAPHIC PLAN
 NOVO
 Riverside Commons
 BAKER AVENUE
 CONCORD, MA
 (MIDDLESEX COUNTY)

PREPARED BY:
BEALS + THOMAS
 BEALS AND THOMAS, INC.
 144 Turnpike Road
 Southborough, Massachusetts 01772-2104
 T 508.366.0560 | www.bealsandthomas.com

DATE: APRIL 01, 2014 METERS
 SCALE: 1" = 40'
 B+T JOB NO. 2063.26
 B+T PLAN NO. 206326P069F-002
 SHEET 2 OF 3

BAKER AVENUE
 (PUBLIC - 40' WIDE)

N/F
 CONCORD WOODS
 OFFICE CONDOMINIUM
 MASTER DEED
 #290 BAKER AVENUE
 15041/264
 [9E-3794-A1-39]

N/F
 COLE OF CONCORD MA, LLC
 C/O HARVARD VANGUARD MEDICAL ASSOC.
 #330 BAKER AVENUE
 62020/231
 [9E-3794-1-3]

FOR NOTES AND LEGEND SEE SHEET 3 OF 3

PREPARED FOR:
TAURUS INVESTMENT HOLDINGS, LLC
 610 N WYNMORE RD #200
 MAITLAND, FL 32751

RECORD OWNER:
CD 211 PROPERTY LLC
 DEED BOOK 74476, PAGE 431
 LOT B-1
 PLAN No. 989 OF 2014

ISSUE DATE DESCRIPTION
 AT/L/MDH MEB APR/MEB/RJB/REW
 FLD CALC DWN CHK'D

5 03/29/2023 UPDATED DETAIL
 4 04/22/2016 ADDITIONAL DETAIL
 3 01/29/2016 ADDITIONAL DETAIL
 2 04/09/2015 FOR DATE ONLY
 1 08/15/2015 FOR DATE ONLY
 0 04/01/2014 FIRST ISSUE

ISSUE DATE DESCRIPTION
 AT/L/MDH MEB APR/MEB/RJB/REW
 FLD CALC DWN CHK'D

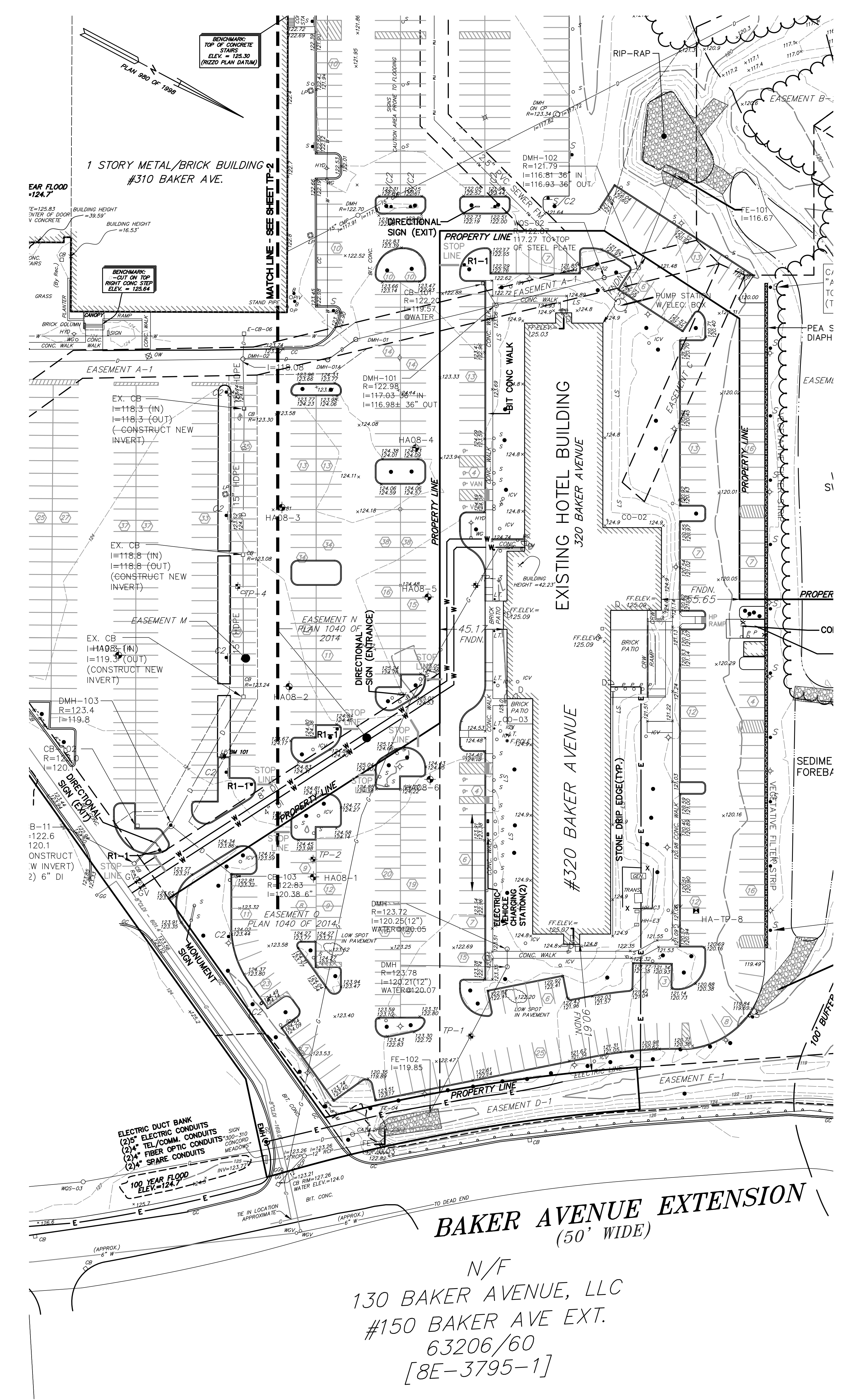
5 03/29/2023 UPDATED DETAIL
 4 04/22/2016 ADDITIONAL DETAIL
 3 01/29/2016 ADDITIONAL DETAIL
 2 04/09/2015 FOR DATE ONLY
 1 08/15/2015 FOR DATE ONLY
 0 04/01/2014 FIRST ISSUE

MARK E. BENSON
 No. 48416
 PROFESSIONAL SURVEYOR
 3/29/2023
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TOPOGRAPHIC PLAN
 NOVO
 Riverside Commons
 BAKER AVENUE
 CONCORD, MA
 (MIDDLESEX COUNTY)

PREPARED BY:
BEALS + THOMAS
 BEALS AND THOMAS, INC.
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 Southborough, Massachusetts 01772-2104
 T 508.366.0560 | www.bealsandthomas.com

DATE: APRIL 01, 2014 METERS
 0 5 10 25
 SCALE: 1"=40'
 B+T JOB NO. 2063.26
 B+T PLAN NO. 206326P069F-003
 SHEET 3 OF 3



RIM AND INVERT SCHEDULE

STRUCTURE	AS-BUILT RIM ELEV.	AS-BUILT INVERT	AS-BUILT SIZE & MATERIAL	CONNECTION
CB-01 (DOUBLE GRATE)	R=123.00	I=118.60	24 INCH HDPE	FROM DMH-05
		I=119.10	6 INCH HDPE	FROM (EXIST. PIPE)
		I=119.30	12 INCH HDPE	FROM (EXIST. PIPE)
		I=118.80	30 INCH HDPE	TO DMH-11
CB-02	R=122.91	I=119.91	12 INCH HDPE	TO DMH-03
CB-03	R=124.34	I=121.44	TOP OF BELL	TO DMH-03
CB-04	R=124.35	I=121.75	TOP OF BELL	TO DMH-06
CB-05	R=124.95	I=122.95	TOP OF BELL	TO BORE-1
DMH-01	R=122.98	I=117.73	36 INCH HDPE	FROM DMH-01A
		I=117.73	36 INCH HDPE	TO WGS-02
DMH-01A	R=123.19	I=117.91	36 INCH HDPE	FROM DMH-02
		I=117.91	36 INCH HDPE	TO DMH-01
DMH-02	R=123.43	I=118.03	36 INCH HDPE	FROM DMH-11
		I=118.08	12 INCH HDPE	FROM (NEW PIPE)
		I=119.08	15 INCH HDPE	FROM (EXIST. PIPE)
		I=118.08	36 INCH HDPE	TO DMH-01
DMH-03	R=123.10	I=120.05	12 INCH HDPE	FROM CB-02
		I=119.75	12 INCH HDPE	FROM DMH-03
		I=119.75	24 INCH HDPE	TO DMH-04
DMH-04	R=123.07	I=118.97	12 INCH HDPE	FROM E-08-08
		I=119.12	24 INCH HDPE	FROM DMH-03
		I=119.07	24 INCH HDPE	FROM DMH-05
DMH-05	R=123.13	I=118.73	24 INCH HDPE	FROM DMH-04
		I=118.88	12 INCH HDPE	FROM DMH-06
		I=118.78	24 INCH HDPE	TO CB-01
DMH-06	R=124.64	I=119.14	12 INCH HDPE	FROM CB-04
		I=119.14	12 INCH HDPE	FROM CB-05
		I=119.24	12 INCH HDPE	TO DMH-05

RIM AND INVERT SCHEDULE

STRUCTURE	AS-BUILT RIM ELEV.	AS-BUILT INVERT	AS-BUILT SIZE & MATERIAL	CONNECTION
DMH-10	R=127.78	I=120.86	24 INCH HDPE	FROM DMH-09
		I=120.98	24 INCH HDPE	TO WGS-03
DMH-11	R=123.65	I=118.55	30 INCH HDPE	FROM CB-01
		I=119.70	24 INCH HDPE	FROM (EXIST. PIPE)
		I=118.55	36 INCH HDPE	TO DMH-02
DMH-12	R=125.51	I=119.96	12 INCH HDPE	FROM OCS-3
		I=120.11	12 INCH HDPE	FROM OCS-4
		I=120.25	18 INCH HDPE	TO DMH-03
FE-01		I=122.07		FROM WGS-01
FE-02		I=118.87	36 INCH HDPE	FROM WGS-02
FE-03		I=117.48		FROM OCS-01
FE-04		I=120.11	24 INCH HDPE	FROM WGS-03
OCS-01	R=119.35	I=117.89	12 INCH	TO FE-03
OCS-04	R=123.40	I=120.32		TO DMH-12
WGS-01 (DOUBLE GRATE)	R=126.73	I=122.65	18 INCH HDPE	TO FE-01
WGS-02	R=122.39	I=117.20	36 INCH HDPE	FROM DMH-01
		I=117.20	36 INCH HDPE	TO FE-02
WGS-03	R=127.54	I=121.09	24 INCH HDPE	FROM DMH-10
		I=121.09	24 INCH HDPE	TO FE-04

RIZZO ASSOCIATES, INC. REFERENCES:

- PROPERTY LINE TAKEN FROM PLAN ENTITLED "APPROVAL NOT REQUIRED" BY RIZZO ASSOCIATES, INC., DATED OCT. 10, 2001, PLAN # 24 OF 2002, BOOK 34525, PG. 361.
- RIVER BANK, 100 YEAR FLOODPLAIN, AND BOUNDARY OF BORDERING VEGETATED WETLANDS DELINEATED BY RIZZO ASSOCIATES, INC. AND CONFIRMED BY THE TOWN OF CONCORD NATURAL RESOURCE COMMISSION DATED JANUARY 7, 1998. REFER TO PLAN ENTITLED "WETLAND RESOURCE AREA PLAN" BY RIZZO ASSOCIATES, INC., DATED APRIL 25, 1997, AND REVISED DECEMBER 22, 1997. 100 YEAR FLOOD LINE IN CONCORD, DATED JUNE 1988, SCALE 1"=1000'. ELEVATION DETERMINED AT ELEVATION 122.10.
- THE WETLANDS CONSERVANCY DISTRICT CONSISTS OF AREAS IN THE TOWN OF CONCORD, WHICH ARE WETLANDS. THE AREAS DEFINED ON THESE PLANS AS BORDERING VEGETATED WETLANDS ARE THE EXTENTS OF THE WETLAND CONSERVANCY DISTRICT, ACCORDING TO TOWN OF CONCORD ZONING BYLAW SECTION 7.3.1, AS CONFIRMED BY THE CONCORD NATURAL RESOURCE COMMISSION JANUARY 7, 1998.
- EXISTING CONDITIONS INFORMATION TAKEN FROM ENGINEERING DESIGN CONSULTANTS, INC. THE BOUNDARY PERFORMED BY DOUGLAS W. ANDRYSICK, PLS IN OCTOBER OF 1997.

EASEMENT NOTES

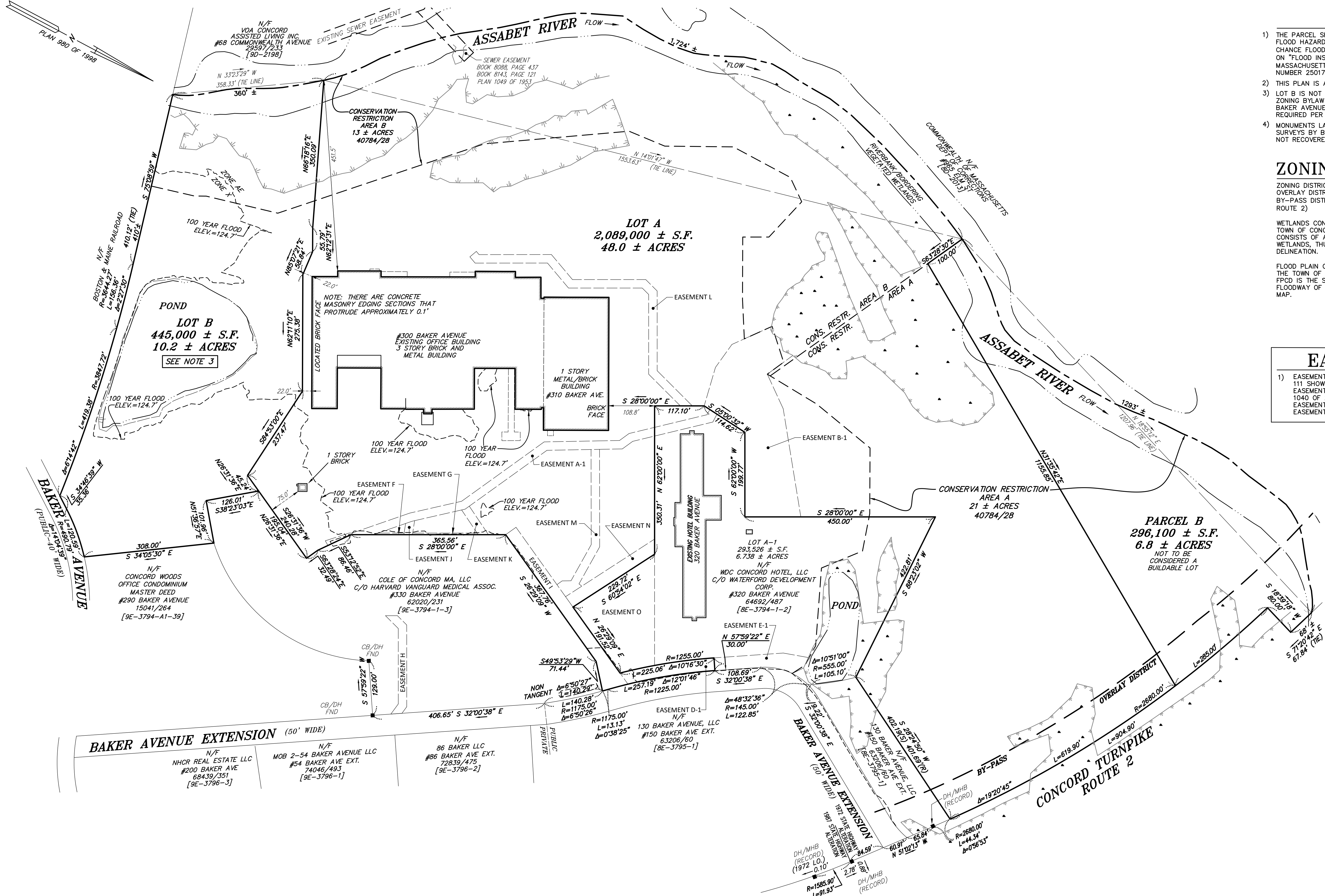
- EASEMENTS A THROUGH K RECORDED WITH BOOK 58533, PAGE 111 SHOWN ON PLAN No. 103 OF 2012. EASEMENTS L, N, O SHOWN ON PLAN RECORDED ON PLAN No. 1040 OF 2014. EASEMENTS A-1, B-1, D-1, E-1 ARE MODIFICATIONS TO PRIOR EASEMENTS AND EASEMENT M ARE NOT RECORDED.

NOTES

- THIS PLAN WAS PREPARED FROM THE FOLLOWING SOURCES:
 - INFORMATION TAKEN FROM A PLAN ENTITLED "EXISTING CONDITIONS PLAN", SHEET C-2, BY RIZZO ASSOCIATES, DATED JUNE 1, 2000, LAST REVISED OCTOBER 5, 2001. (SEE RIZZO ASSOCIATES, INC. REFERENCES BELOW)
 - SEWER AND DRAIN INFORMATION TAKEN FROM A PLAN SET ENTITLED "SITE PLAN I, SITE PLAN II, AND UTILITY PLAN, FOR ADDITIONS TO GENRAD 4A CONCORD, MASS..." PREPARED BY ANDERSON-NICHOLS ENGINEERS, DATED MARCH 28, 1980, LAST REVISED MAY 21, 1980.
 - A PORTION OF THIS PLAN WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND USING A ZEISS DELTA TOTAL STATION ON OR BETWEEN MARCH 27, 2013 AND APRIL 01, 2014. THE WORK AREA WAS UPDATED THROUGH APRIL 28, 2017. THE LIMIT OF AS-BUILT SURVEY WAS MADE ON THE GROUND MAY 4, AND 5 OF 2018. FIELD EDIT AND ADDITIONAL SURVEY PERFORMED ON JANUARY 31, 2020. ADDITIONAL SURVEY WAS PERFORMED BETWEEN FEBRUARY 16 AND FEBRUARY 22 2023.
 - WETLAND RESOURCE AREAS NEAR THE ASSABET RIVER WERE TAKEN FROM A PLAN ENTITLED "EXISTING CONDITIONS PLAN, ASSABET RIVER PEDESTRIAN TRAIL AND BRIDGE PROJECT, CONCORD, MASSACHUSETTS" PREPARED BY GREENMAN-PEDERSEN, INC., DATED APRIL 26, 2021.
- UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURFACE INDICATIONS, SUBSURFACE INDICATIONS, PAINT MARKS, CONTRACTOR RECORD DRAWINGS AND COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. BEFORE CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233.
- WETLAND RESOURCE AREAS FOR THE POND WERE DELINEATED BY BEALS AND THOMAS, INC. ON FEBRUARY 06, 2023.
- WETLAND RESOURCE AREA FLAGS FOR THE POND LOCATED BY TOTAL STATION METHODS BY BEALS AND THOMAS, INC. ON OR BETWEEN FEBRUARY 16, 2023 AND FEBRUARY 22, 2023.
- ALL ELEVATIONS REFER TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
- FOR DETAILED PROPERTY AND EASEMENT INFORMATION REFER TO PLAN TITLED "PLAN OF LAND, 300-330 BAKER AVENUE EXTENSION, CONCORD, MASSACHUSETTS" PREPARED BY BEALS AND THOMAS, INC ON JANUARY 26, 2012 AND RECORDED WITH MIDDLESEX SOUTH REGISTRY OF DEEDS AS PLAN No. 103 OF 2014.
- THE PARCEL SHOWN IS LOCATED IN ZONE AE (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), AS SHOWN ON "FLOOD INSURANCE RATE MAP, MIDDLESEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS) PANEL 359 OF 656", MAP NUMBER 25017C0359F, EFFECTIVE DATE JULY 7, 2014.
- FLOOD PLAN NOTE:

124.7	124.0	100 YEAR FLOOD
		NGVD 1988
	0.70	NGVD 1929

BAKER AVENUE EXTENSION
 (50' WIDE)
 N/F
 130 BAKER AVENUE, LLC
 #150 BAKER AVE EXT.
 63206/60
 [8E-3795-1]



NOTES

- 1) THE PARCEL SHOWN IS PARTIALLY LOCATED IN ZONE AE (SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD; BASE FLOOD ELEVATIONS DETERMINED), AS SHOWN ON "FLOOD INSURANCE RATE MAP, MIDDLESEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS) PANEL 359 OF 656", MAP NUMBER 25017C0359F, EFFECTIVE DATE JULY 7, 2014.
- 2) THIS PLAN IS A DIVISION OF LOT B-1 ON PLAN NO. 989 OF 2014.
- 3) LOT B IS NOT A BUILDABLE LOT AS DEFINED BY THE CONCORD ZONING BYLAW AS LOT B HAS ONLY 155.95 FEET OF FRONTAGE ON BAKER AVENUE AND A MINIMUM OF 200 FEET OF FRONTAGE IS REQUIRED PER LOT IN THE INDUSTRIAL PARK A DISTRICT.
- 4) MONUMENTS LABELED AS "RECORD" ARE SHOWN ON PREVIOUS SURVEYS BY BEALS AND THOMAS, INC. AND RECORD PLANS AND NOT RECOVERED OR VERIFIED FOR THIS SURVEY.

ZONING DISTRICTS

ZONING DISTRICT: INDUSTRIAL PARK A
 OVERLAY DISTRICTS:
 BY-PASS DISTRICT (SHOWN ON THE PREMISES ADJACENT TO ROUTE 2)
 WETLANDS CONSERVANCY DISTRICT (WCD)—ACCORDING TO THE TOWN OF CONCORD ZONING BYLAW SECTION 7.3.1, THE WCD CONSISTS OF AREAS IN THE TOWN OF CONCORD THAT ARE WETLANDS, THUS THE WCD IS THE SAME AS THE WETLAND DELINEATION.
 FLOOD PLAIN CONSERVANCY DISTRICT (FPCD)—ACCORDING TO THE TOWN OF CONCORD ZONING BYLAW SECTION 7.2.1.1, THE FPCD IS THE SAME AS THE 100 YEAR FLOOD BOUNDARY AND FLOODWAY OF THE FEMA FLOOD BOUNDARY AND FLOODWAY MAP.

EASEMENT NOTES

- 1) EASEMENTS A THROUGH K RECORDED WITH BOOK 58533, PAGE 111 SHOWN ON PLAN No. 103 OF 2012.
 EASEMENTS L, N, O SHOWN ON PLAN RECORDED ON PLAN No. 1040 OF 2014.
 EASEMENTS A-1, B-1, D-1, E-1 ARE MODIFICATIONS TO PRIOR EASEMENTS AND EASEMENT M ARE NOT RECORDED.

PREPARED FOR:
TAURUS INVESTMENT HOLDINGS, LLC
 610 N WYNMORE RD #200
 MAITLAND, FL 32751

RECORD OWNER:
CD 211 PROPERTY LLC
 DEED BOOK 74476, PAGE 431
 LOT B-1
 PLAN No. 989 OF 2014
 [9E-3794-1]

5	
4	
3	
2	
1	
0	05/22/2023 PEL SUBMISSION
ISSUE DATE	DESCRIPTION
ATL	MEB SJC MEB
FLD	CALC DWN CHK'D

Mark E. Benson
 5/22/2023

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ZONING TABLE

ZONING CLASSIFICATION: INDUSTRIAL PARK A ASSESSORS MAP#, BLOCK# AND LOT#	REQUIRED	PROPOSED		
		LOT A	LOT B (40B LOCUS)	PARCEL B
LOT AREA (MINIMUM)	4 ACRES	48.0 AC.	10.2 AC.	6.8 AC.
FRONTAGE (MINIMUM)	200' MIN.	—	155.95'	—
BAKER AVENUE	—	—	155.95'	—
BAKER AVENUE EXTENSION	—	270.32'	—	—
CONCORD TURNPIKE (ROUTE 2)	—	619.90'	—	433'±
AREA OUTSIDE FLOODPLAIN CONSERVANCY DISTRICT/ WETLANDS CONSERVANCY DISTRICT	—	5.91± AC. 12.3%±	4.54± AC. 10.5%±	—
MAXIMUM LOT COVERAGE (PAVING AND STRUCTURES)	50% MAX	28.6%	28.6%	0%
MAXIMUM LOT COVERAGE (ALL STRUCTURES)	20% MAX	11.6%	10.5%	0%

LEGEND

- RIVER/WATER LINE
- BUILDING
- FND FOUND
- MHB MASSACHUSETTS HIGHWAY BOUND
- (R) RECORD DISTANCE
- (S) SURVEY DISTANCE
- CONCRETE BOUND
- DRILL HOLE
- WETLANDS
- ASSESSOR PARCEL ID

LOTGING PLAN

PROJECT: **NOVO RIVERSIDE COMMONS 292 & 294 BAKER AVENUE**
 CONCORD, MASSACHUSETTS (MIDDLESEX COUNTY)

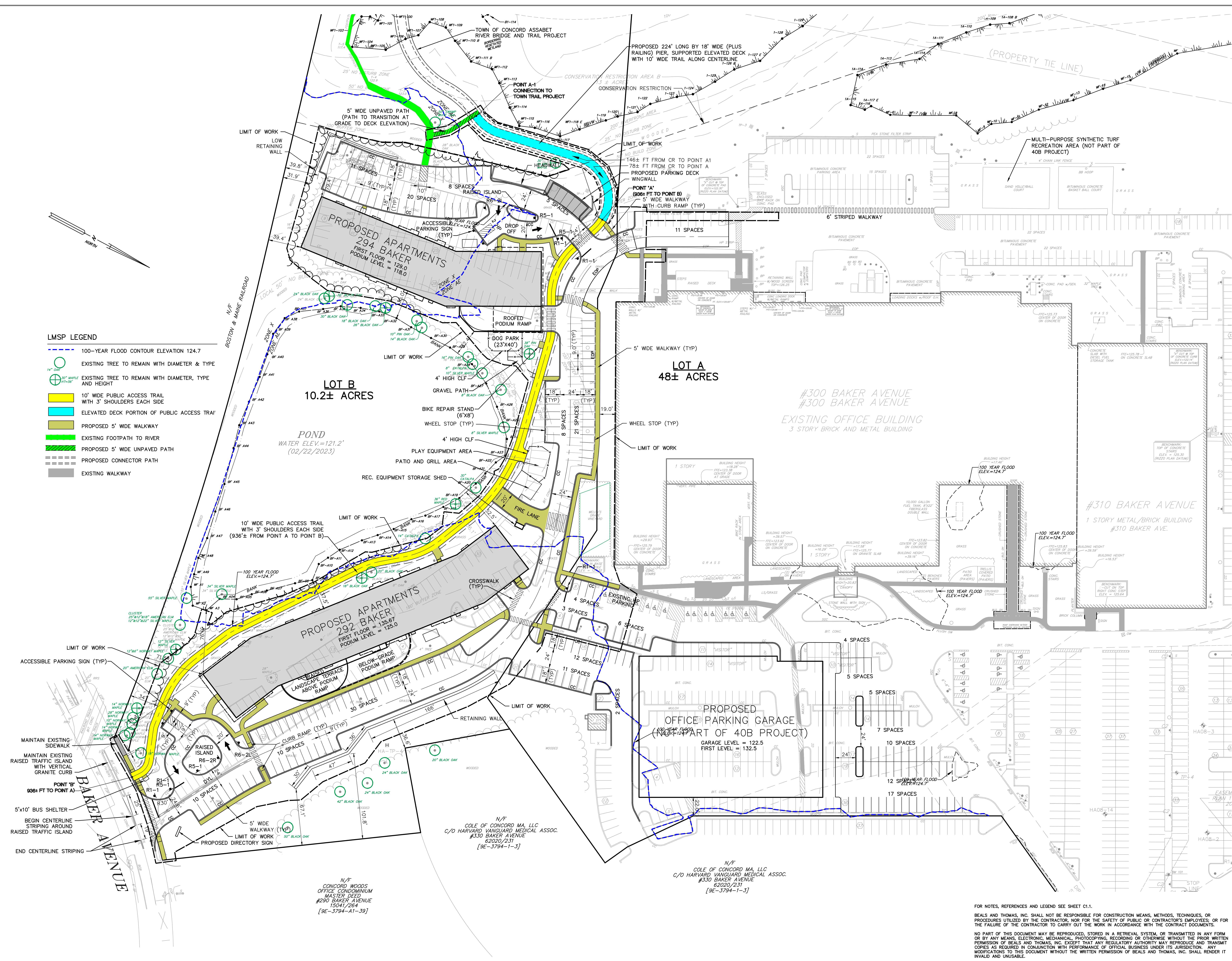
PREPARED BY:
BEALS + THOMAS

BEALS AND THOMAS, INC.
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 Southborough, Massachusetts 01772-2104
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DATE: MAY 22, 2023 METERS
 0 10 25 50 75 100
 SCALE: 1"=100' FEET

B+T JOB NO. 2063.27
 B+T PLAN NO. 206327P116A-001
 SHEET 1 OF 1

PL



- LMSF LEGEND**
- 100-YEAR FLOOD CONTOUR ELEVATION 124.7
 - EXISTING TREE TO REMAIN WITH DIAMETER & TYPE
 - ⊕ EXISTING TREE TO REMAIN WITH DIAMETER, TYPE AND HEIGHT
 - 10' WIDE PUBLIC ACCESS TRAIL WITH 3' SHOULDERS EACH SIDE
 - ELEVATED DECK PORTION OF PUBLIC ACCESS TRAIL
 - PROPOSED 5' WIDE WALKWAY
 - EXISTING FOOTPATH TO RIVER
 - PROPOSED 5' WIDE UNPAVED PATH
 - PROPOSED CONNECTOR PATH
 - EXISTING WALKWAY

PREPARED FOR:
TAURUS INVESTMENT HOLDINGS, LLC
 TWO INTERNATIONAL PLACE
 BOSTON, MASSACHUSETTS 02110

THOMAS JOHN MICHALAK
 CIVIL ENGINEER
 No. 49337
 State of Massachusetts
 12/18/2023

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REV	DATE	DESCRIPTION	
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2	12/18/2023	NOTICE OF INTENT	
1	07/31/2023	REVISION	
0	05/22/2023	PEL SUBMISSION	
	ISSUE DATE	DESCRIPTION	
DES	DWN	CHK'D	APP'D

PROJECT:
NOVO RIVERSIDE COMMONS
292 & 294 BAKER AVENUE
 CONCORD, MASSACHUSETTS

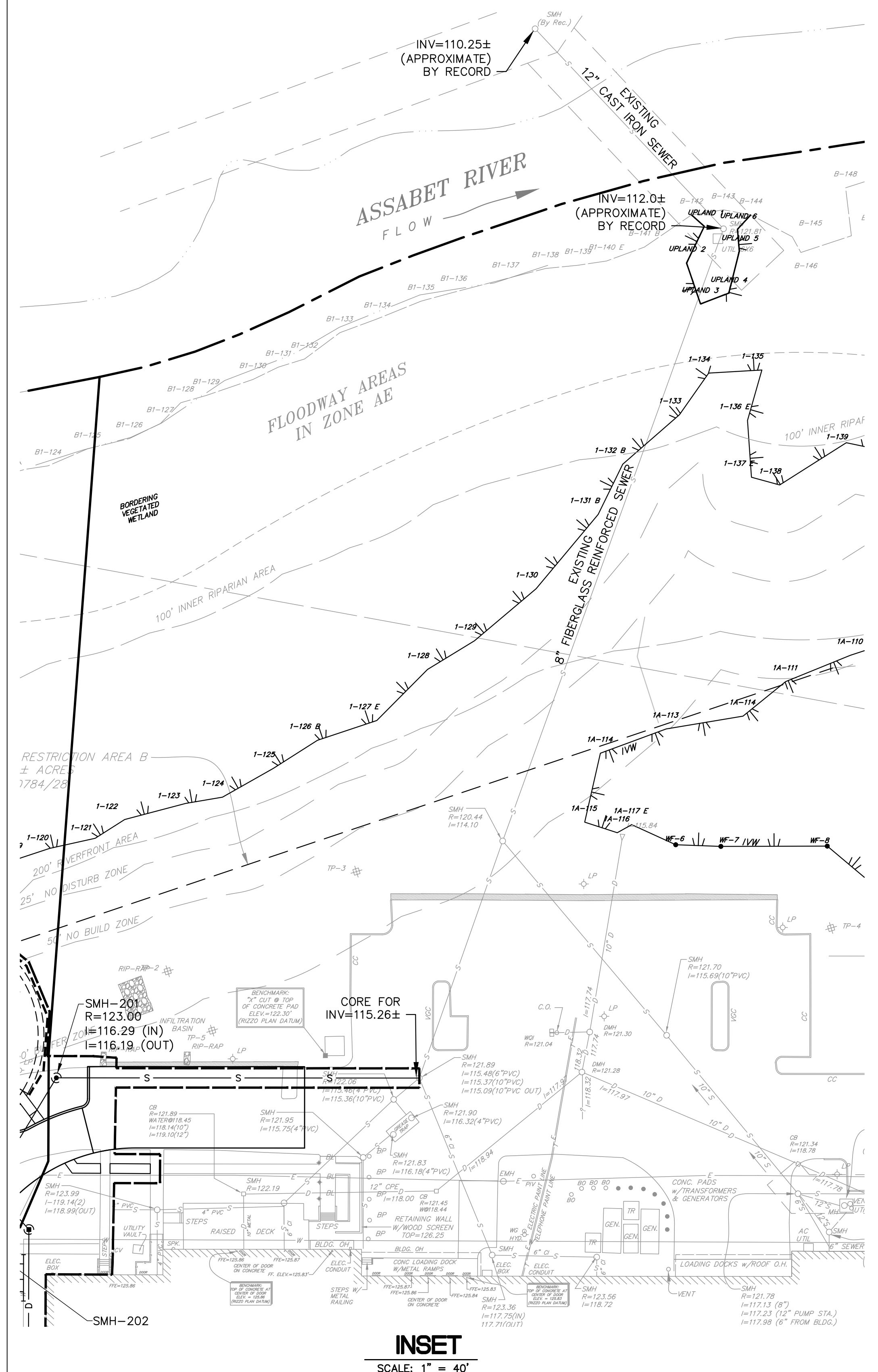
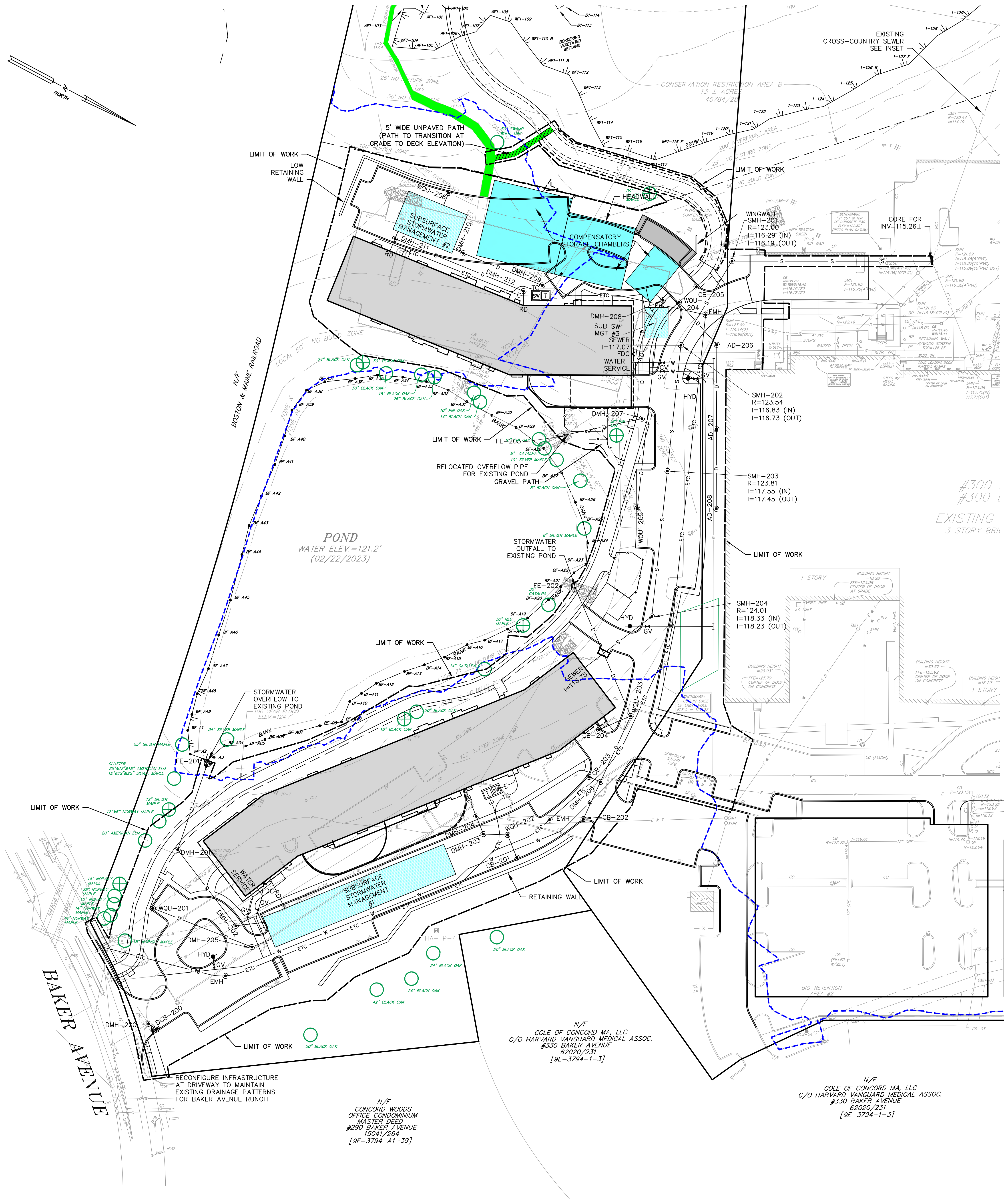
SCALE: 1" = 40' DATE: MAY 22, 2023

METERS: 0 10 20 30 40 50 60 70 80 90 100
 FEET: 0 20 40 60 80 100

LAYOUT AND MATERIALS SITE PLAN

B+T JOB NO. 2063.27
 B+T PLAN NO. 206327P1170-001
C21

FOR NOTES, REFERENCES AND LEGEND SEE SHEET C1.1.
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BAKER AVENUE

RECONFIGURE INFRASTRUCTURE AT DRIVEWAY TO MAINTAIN EXISTING DRAINAGE PATTERNS FOR BAKER AVENUE RUNOFF

N/F CONCORD WOODS OFFICE CONDOMINIUM MASTER DEED #290 BAKER AVENUE 15041/204 [9E-3794-A1-39]

N/F COLE OF CONCORD MA, LLC C/O HARVARD VANGUARD MEDICAL ASSOC. #330 BAKER AVENUE 62020/231 [9E-3794-1-3]

N/F COLE OF CONCORD MA, LLC C/O HARVARD VANGUARD MEDICAL ASSOC. #330 BAKER AVENUE 62020/231 [9E-3794-1-3]

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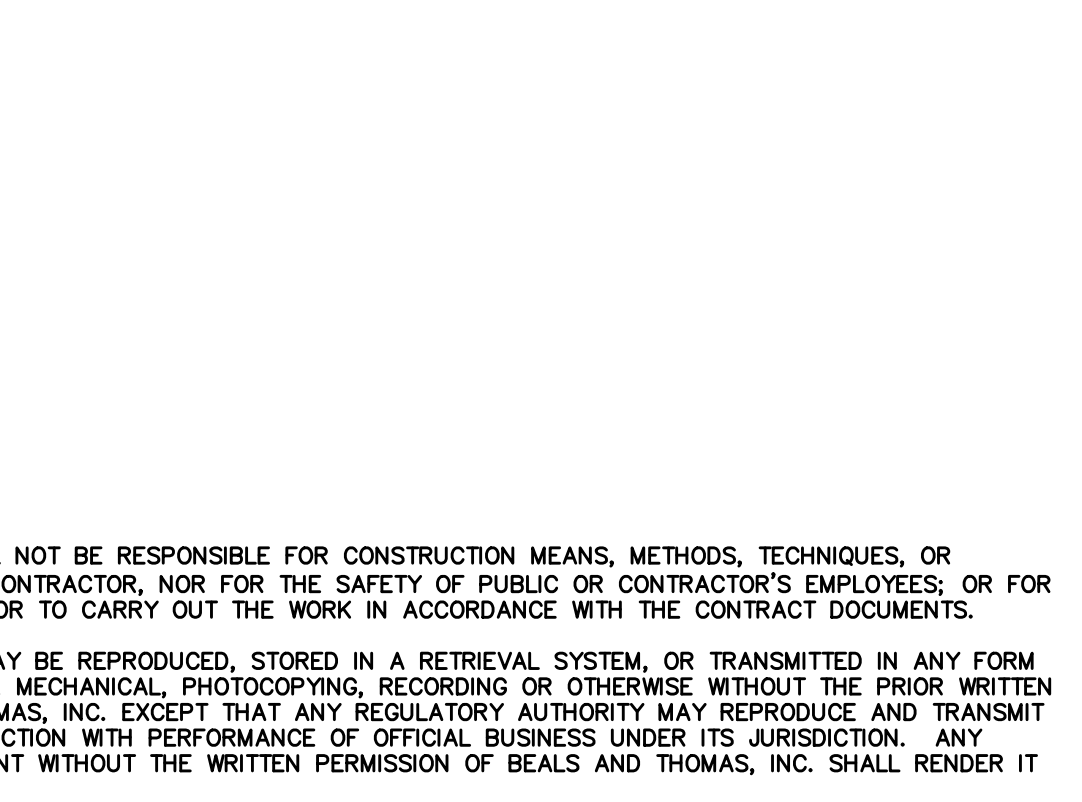
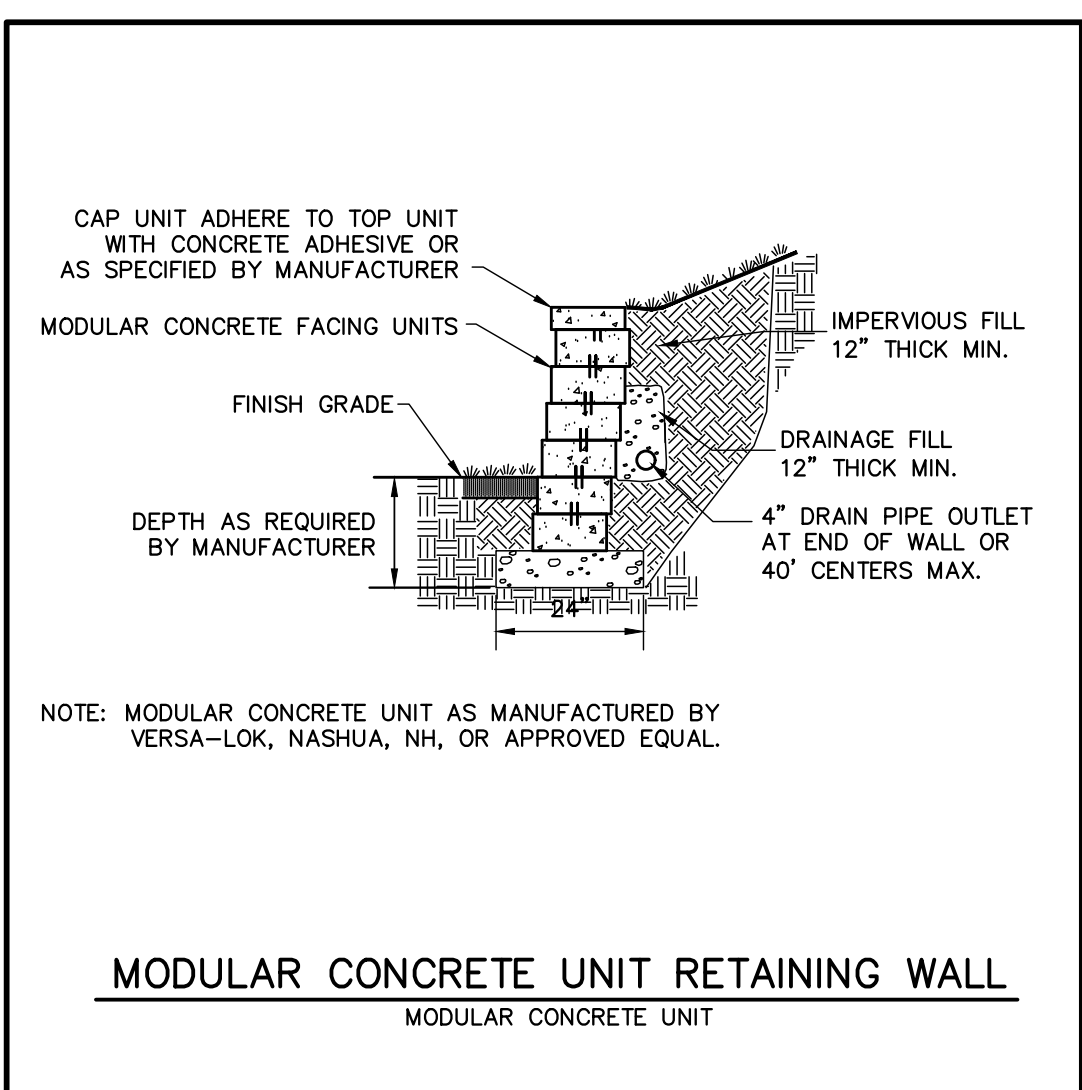
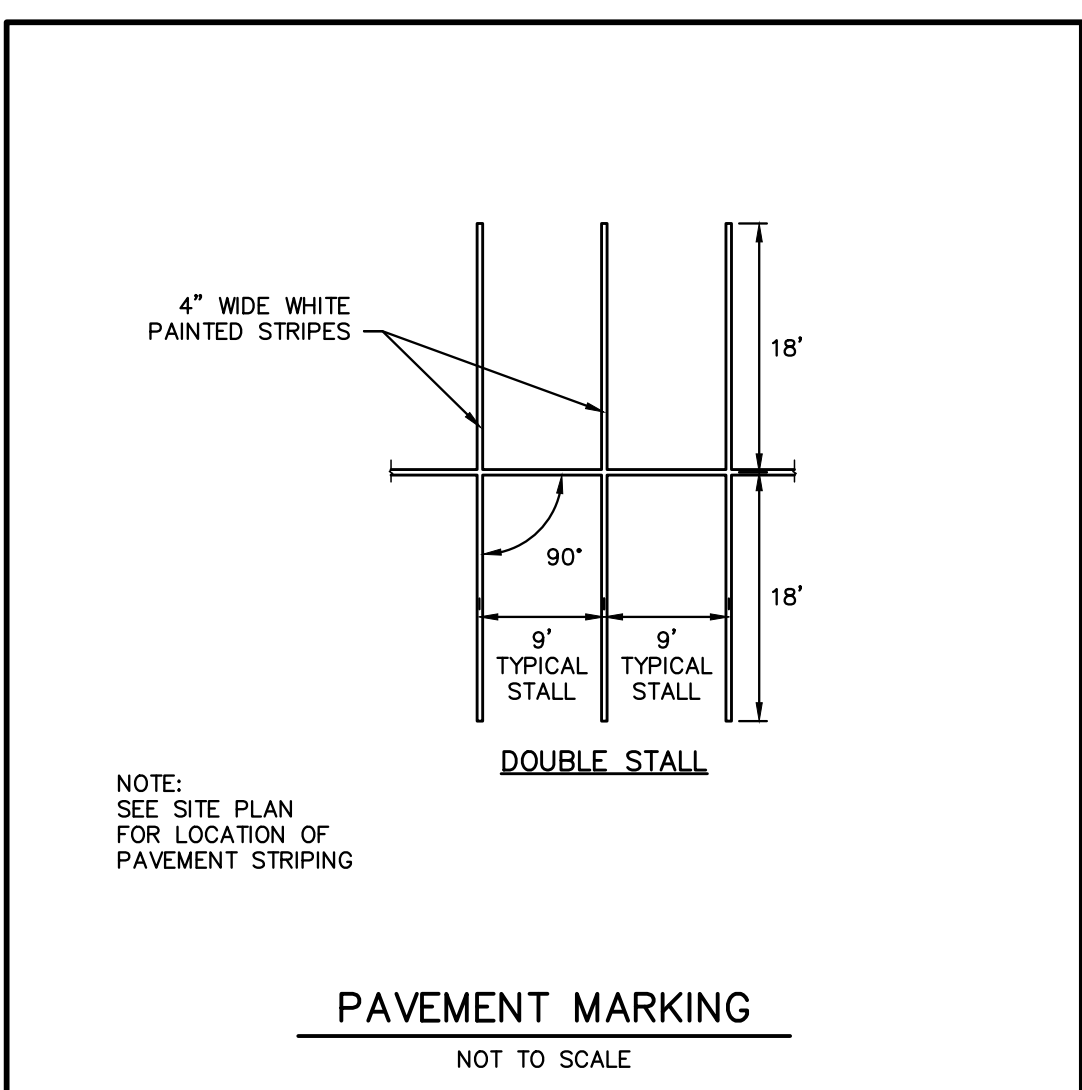
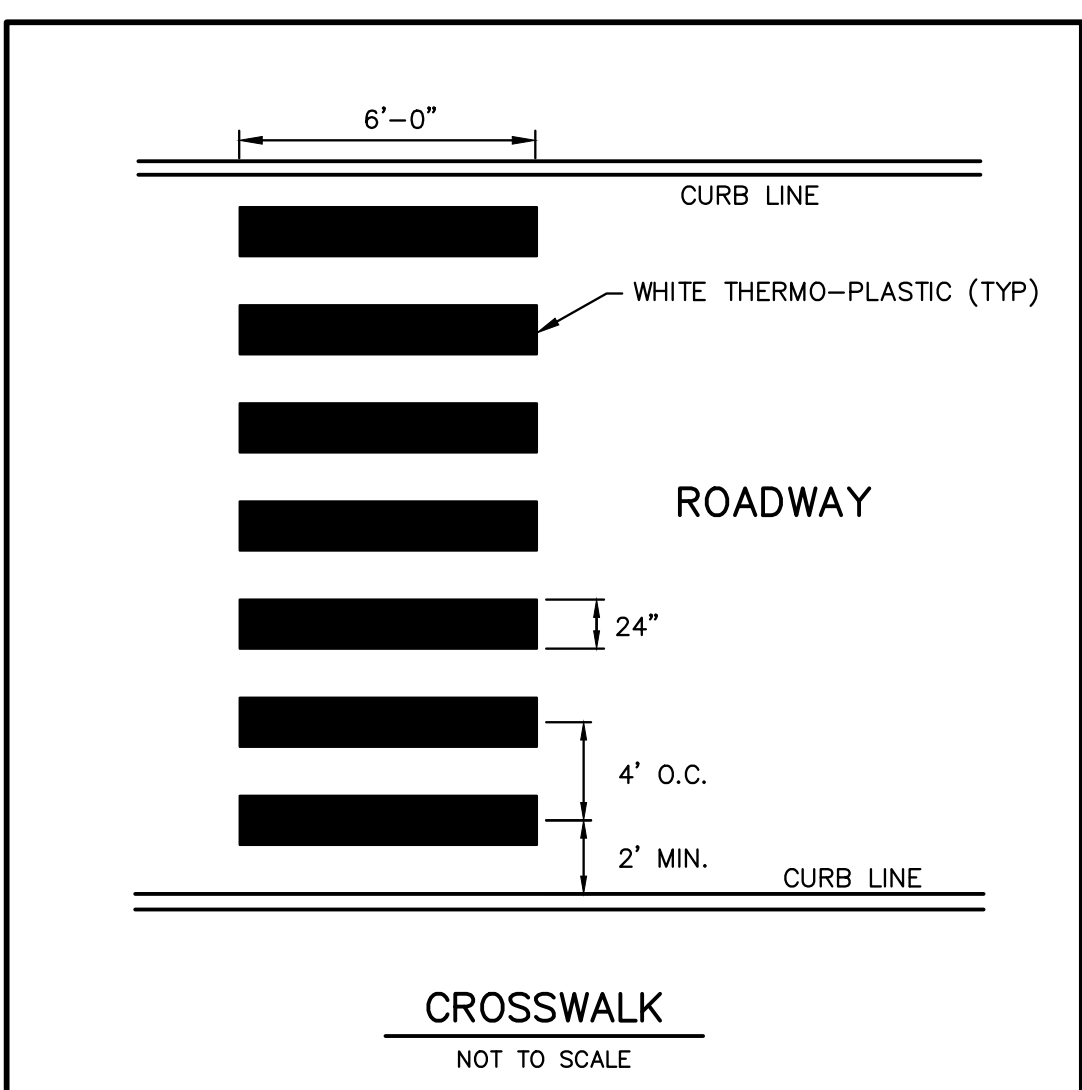
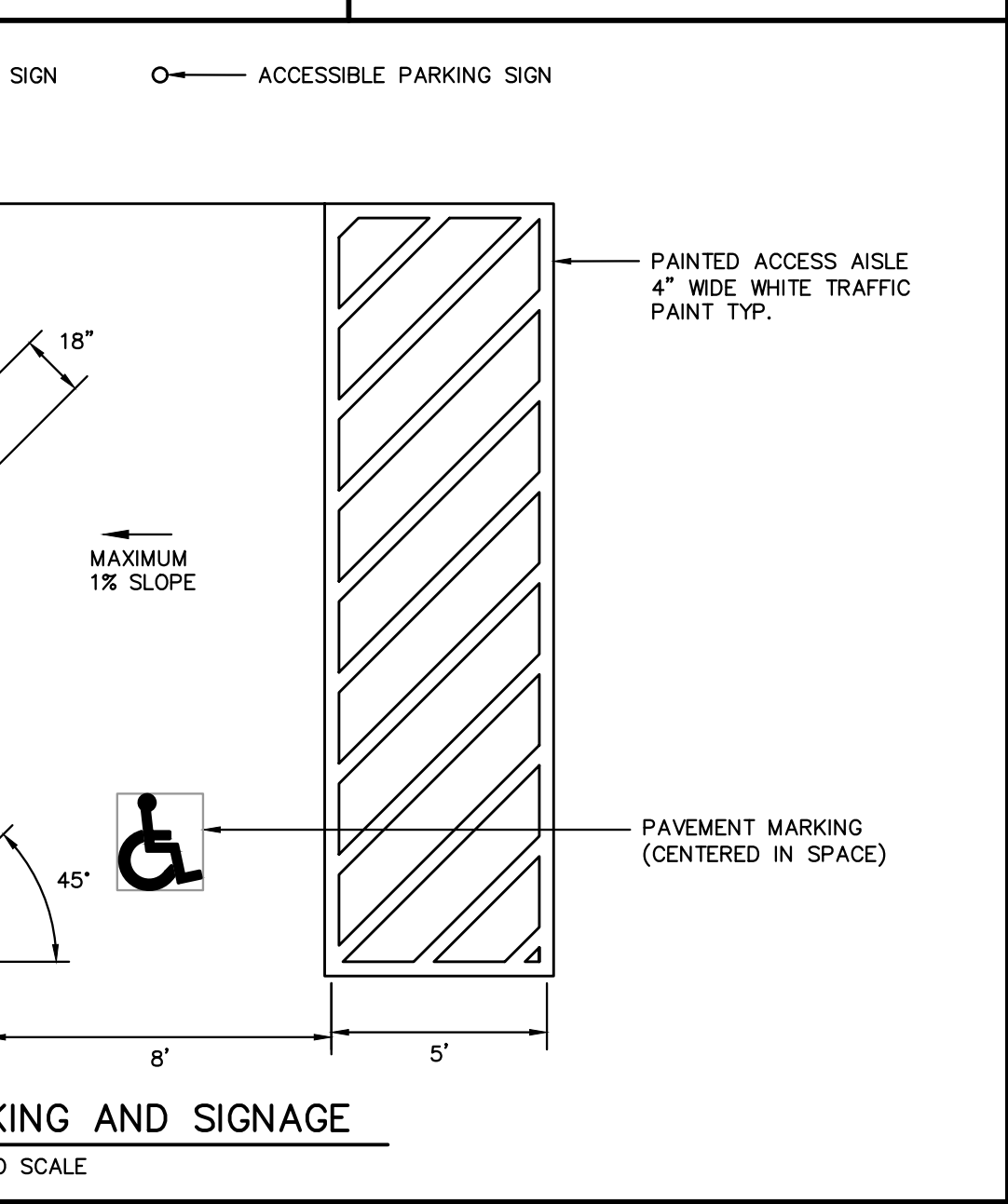
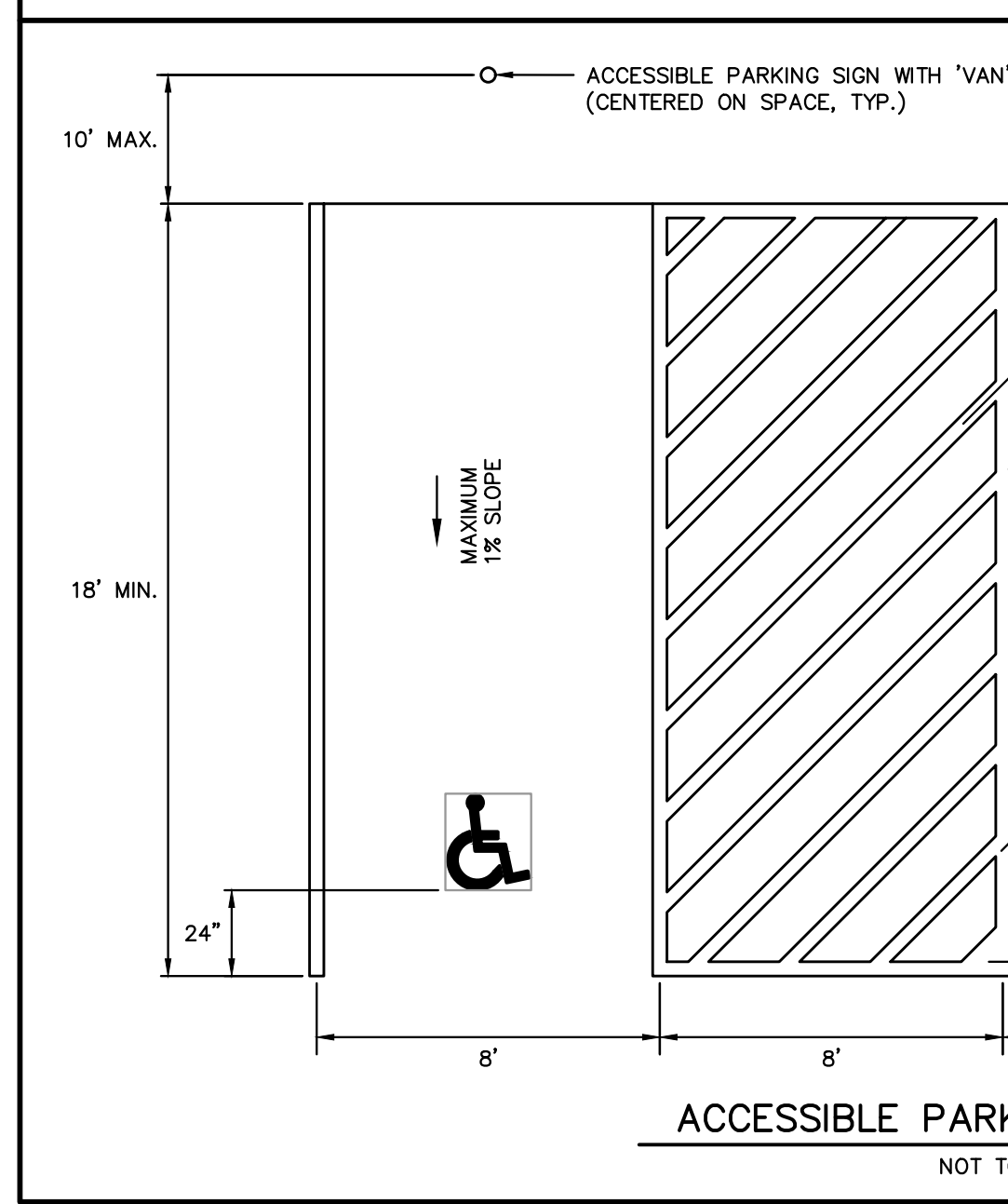
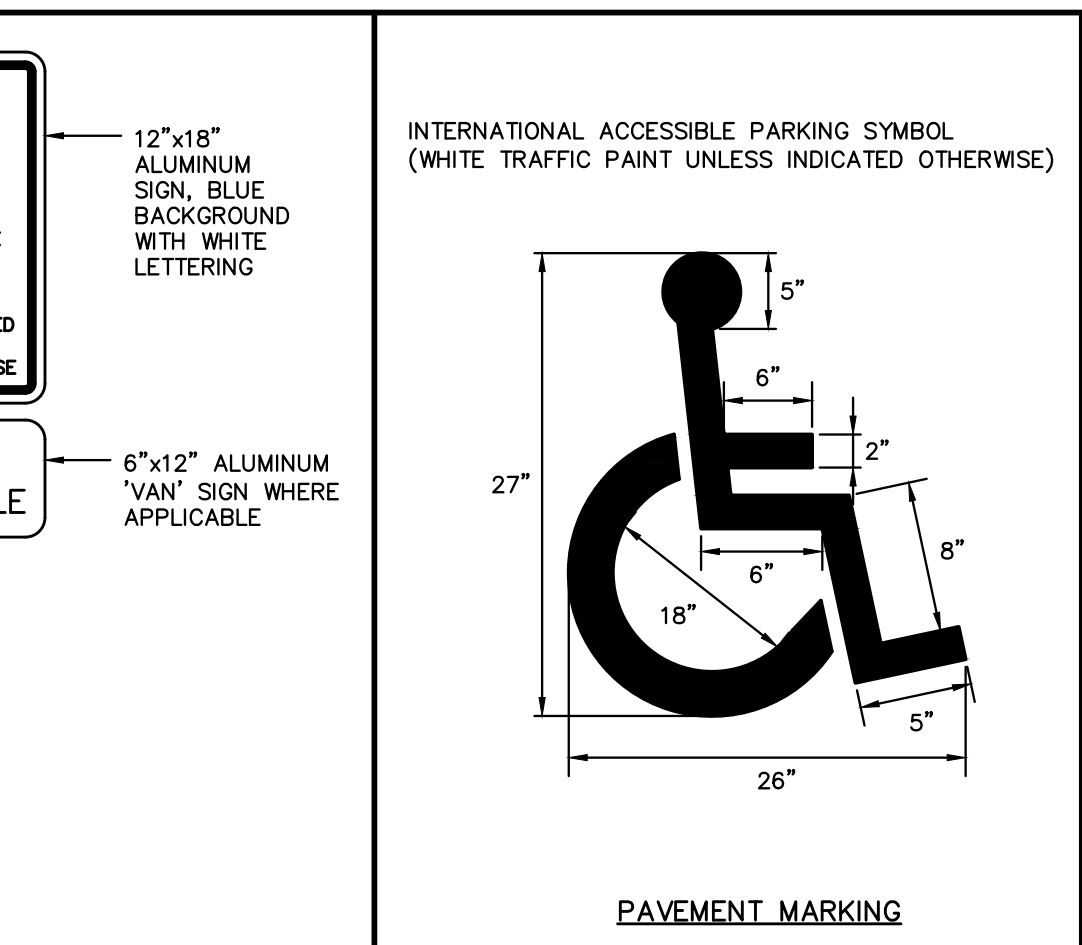
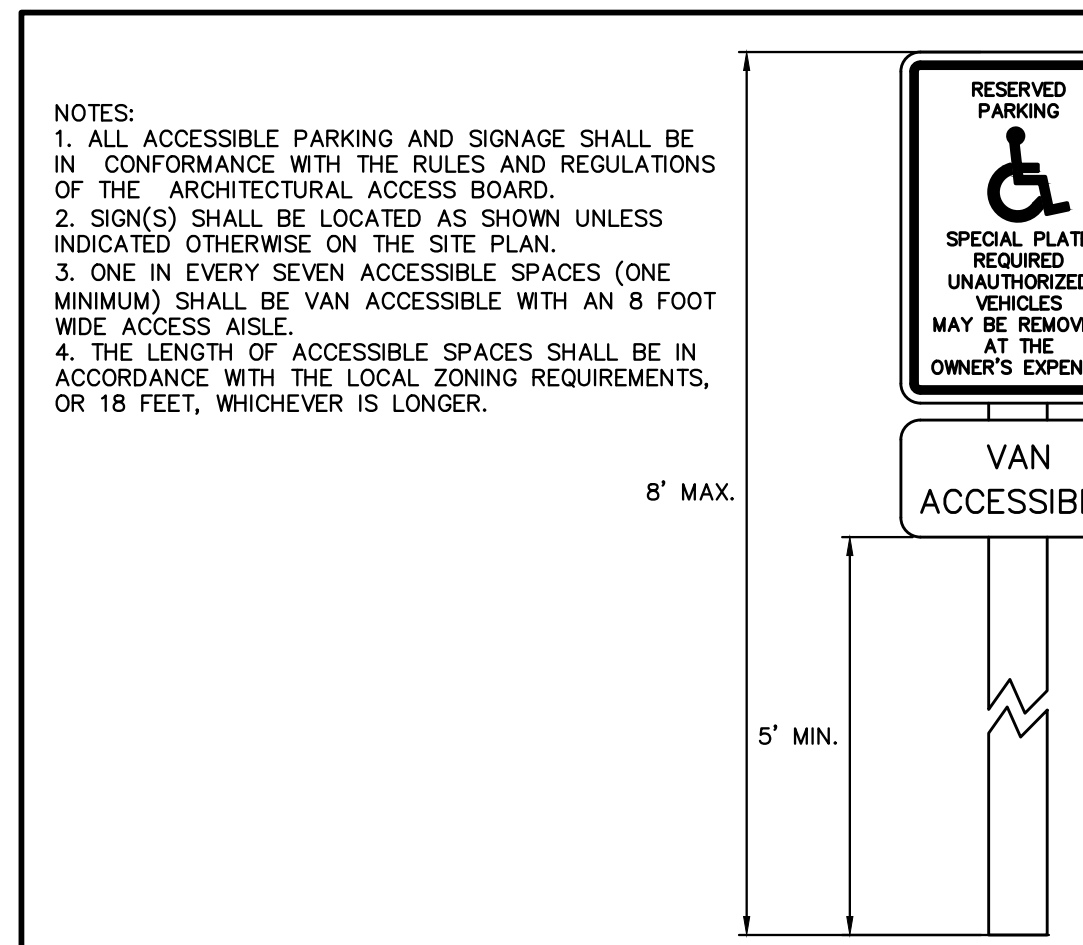
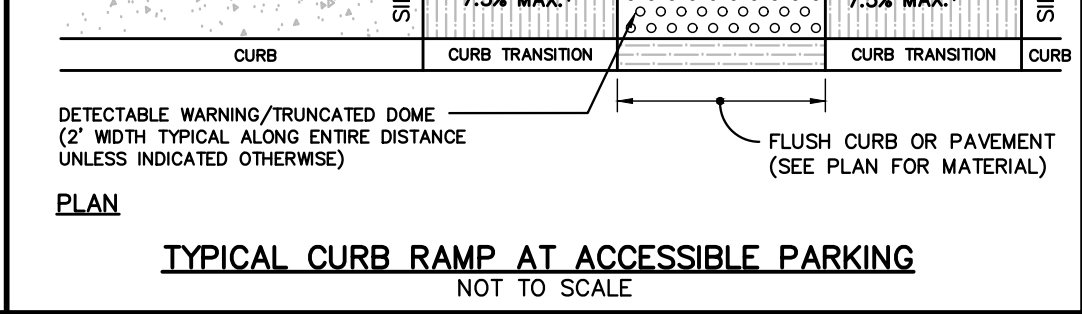
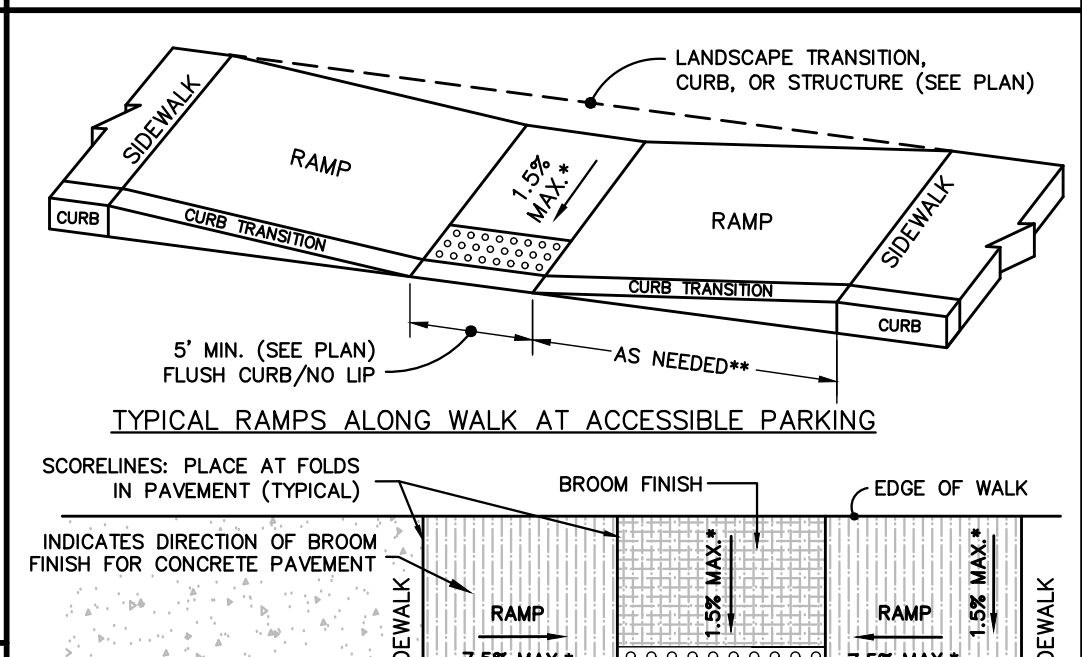
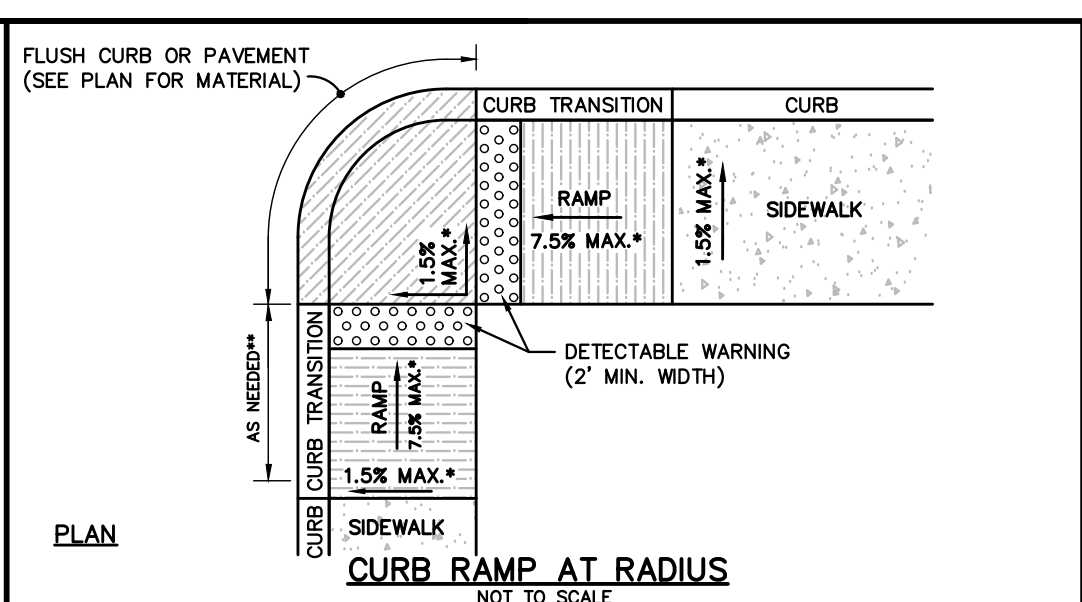
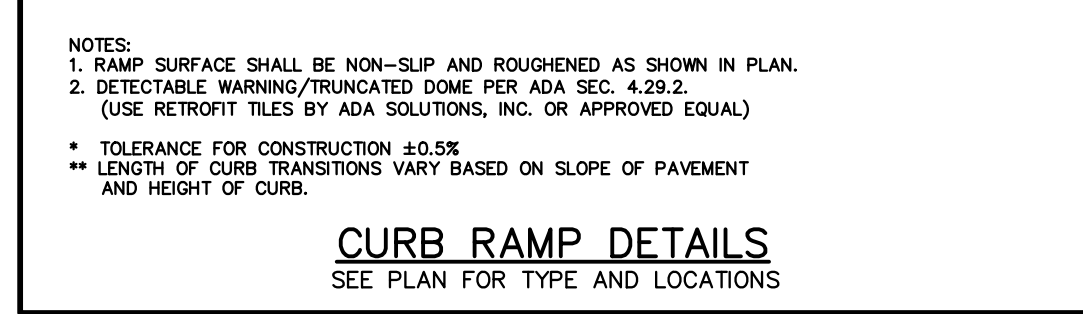
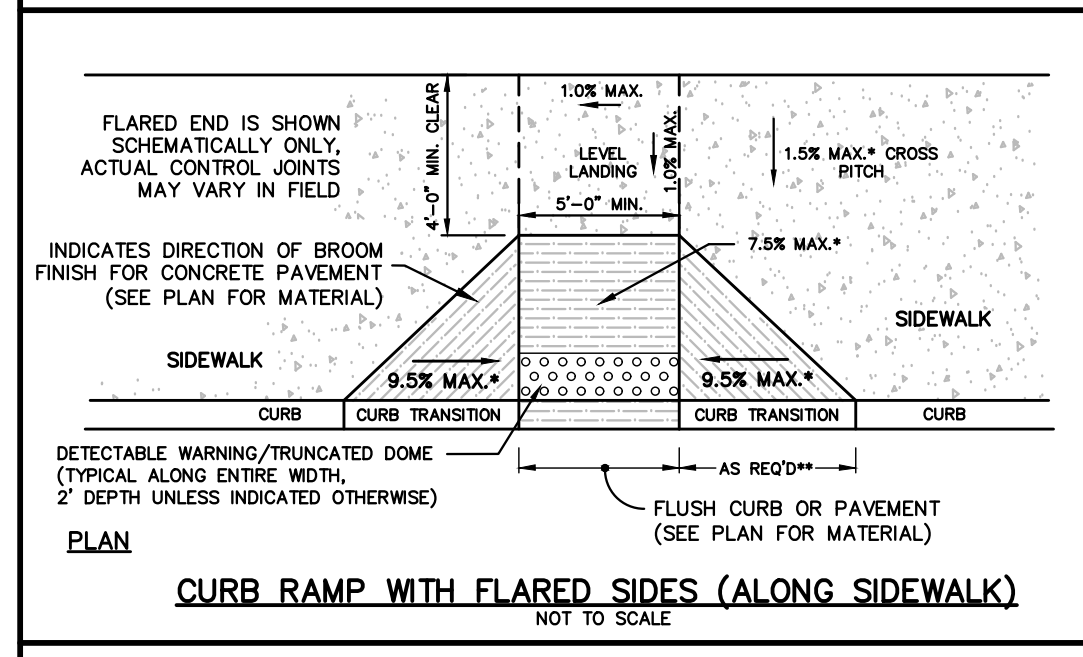
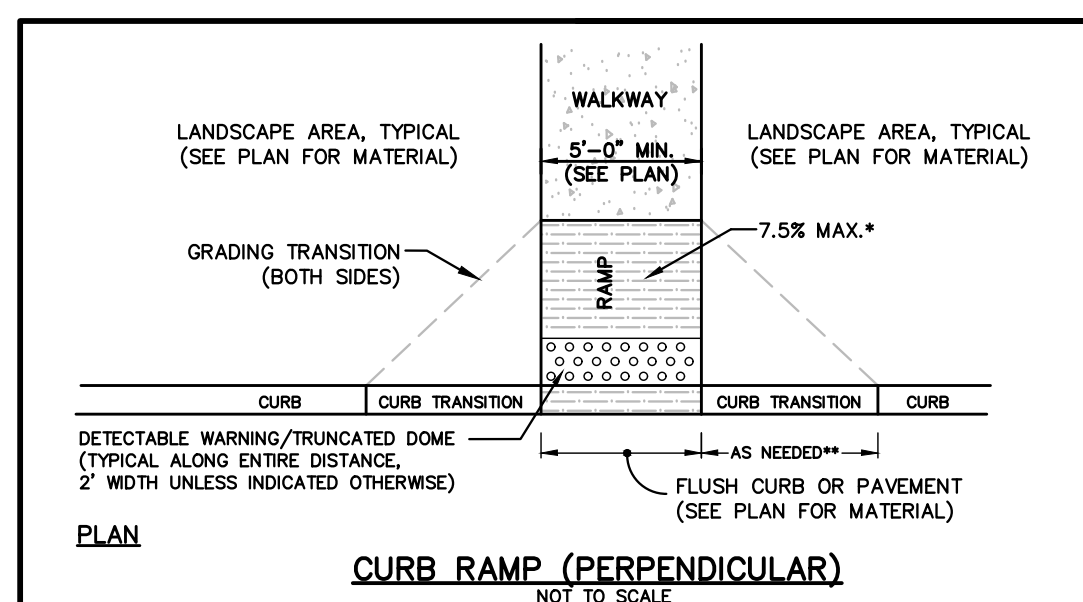
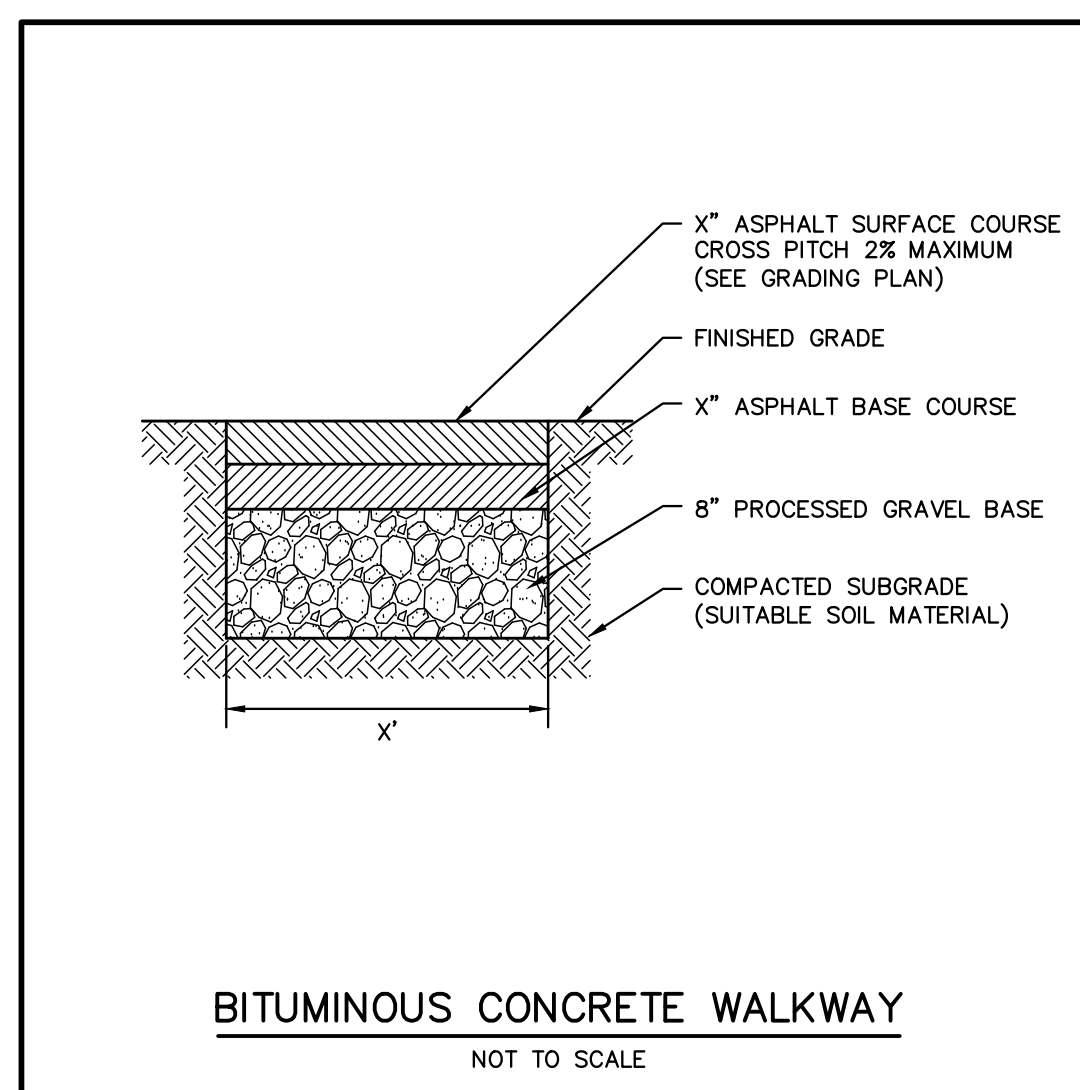
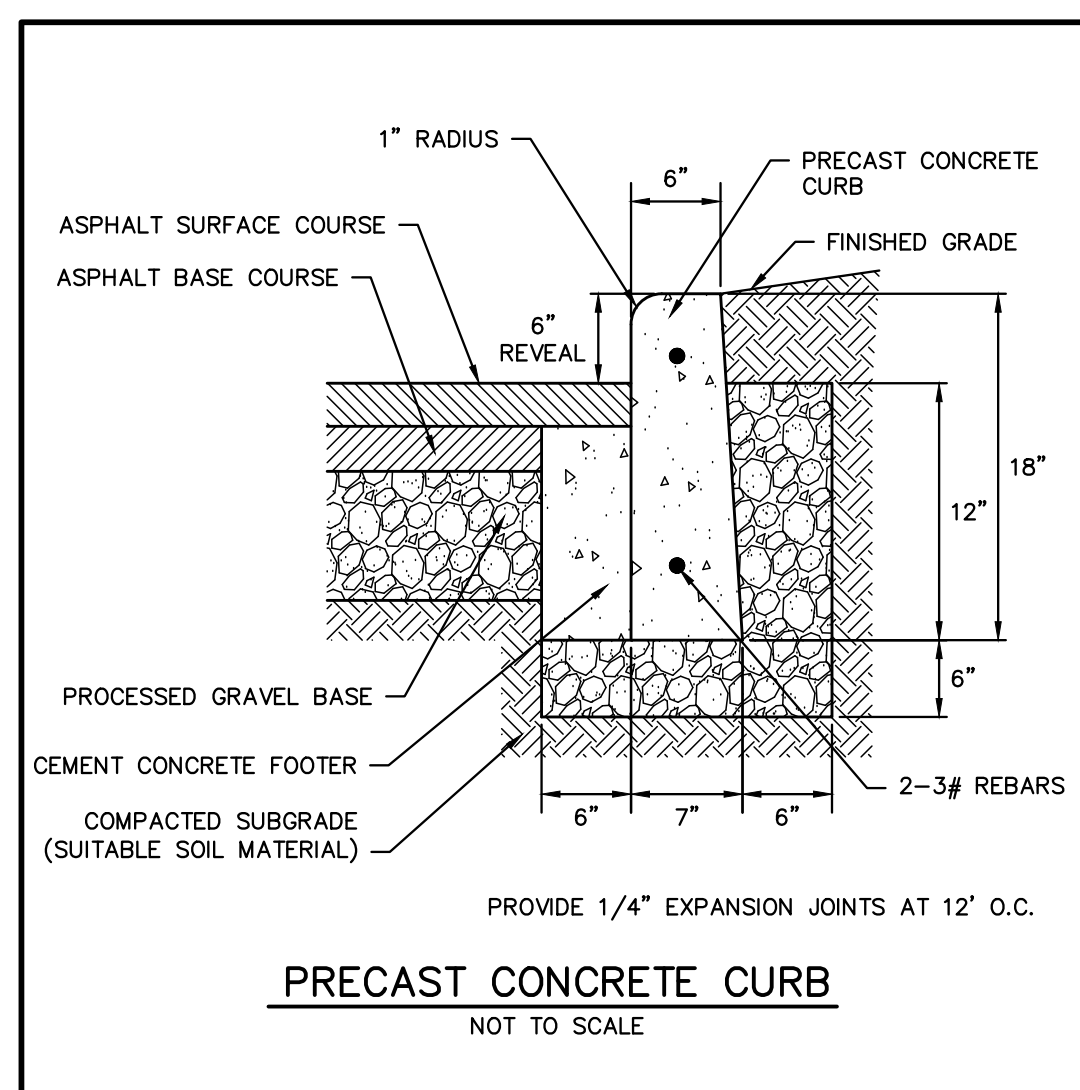
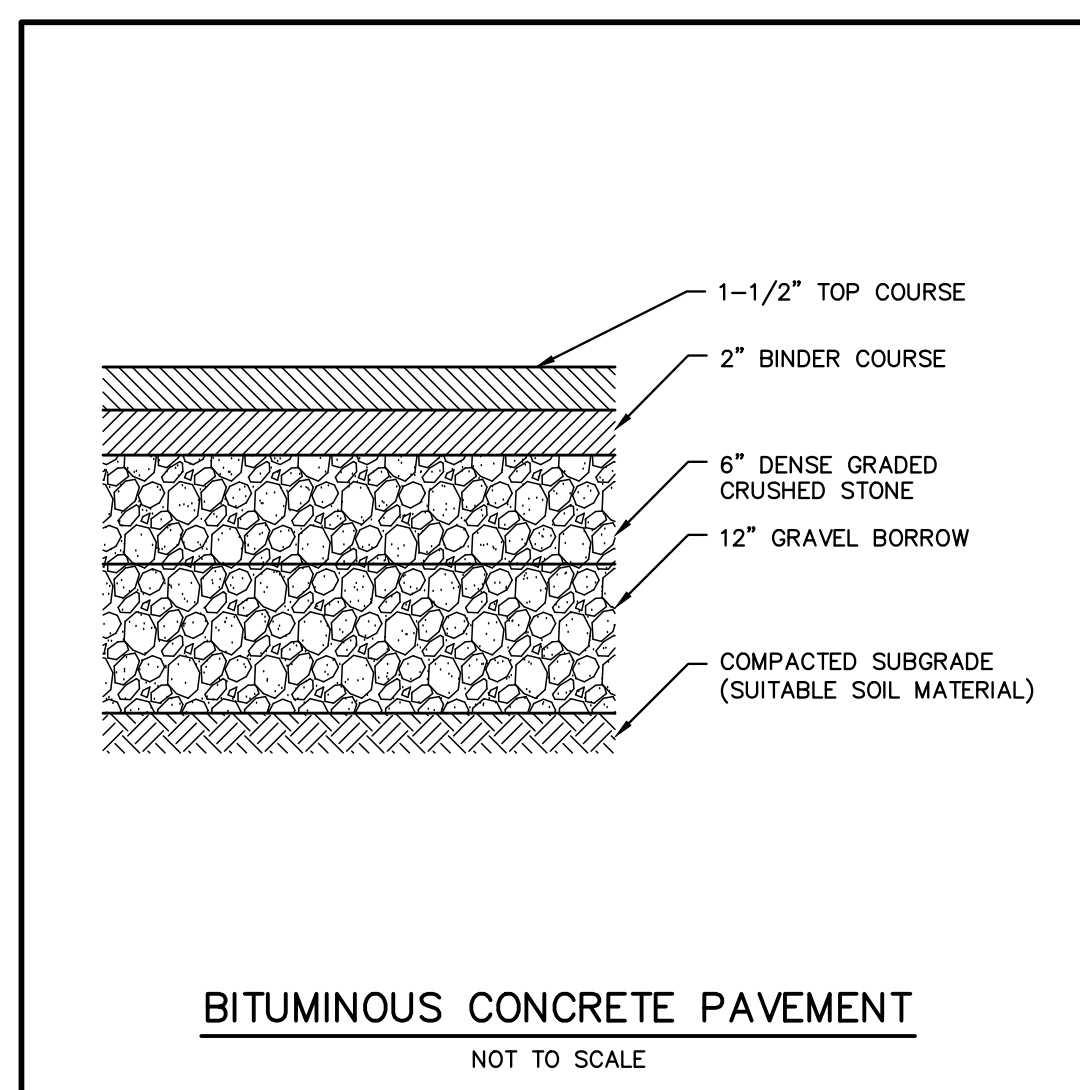
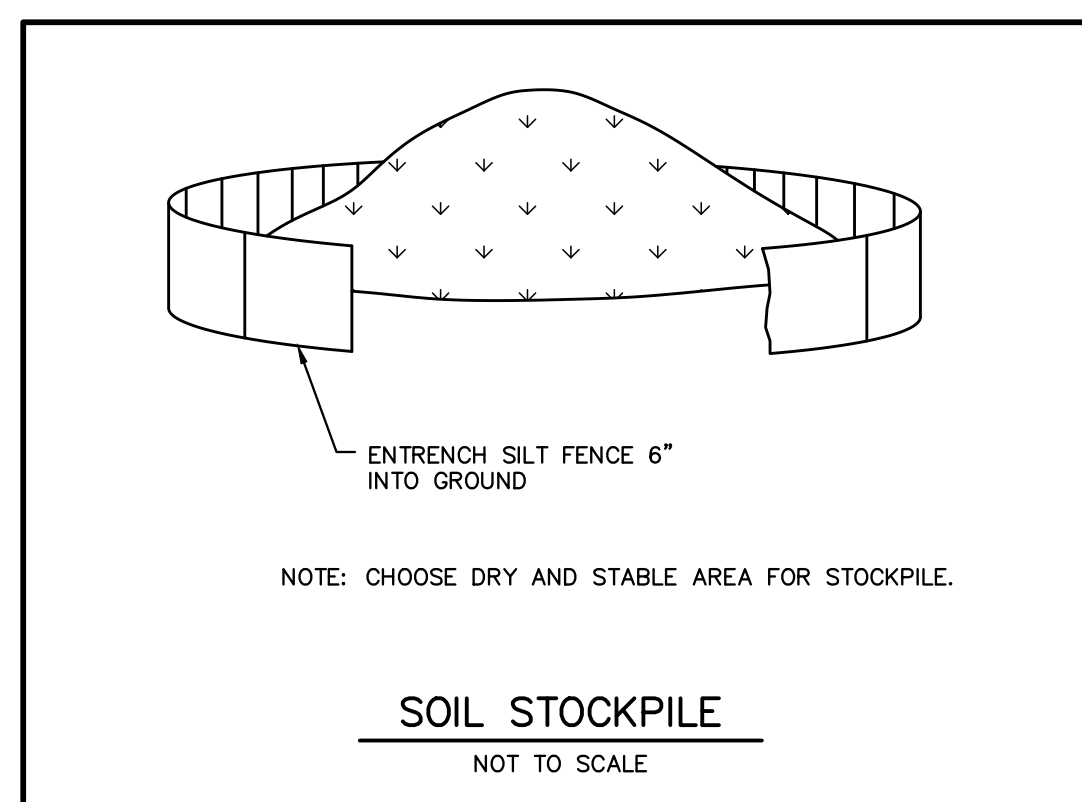
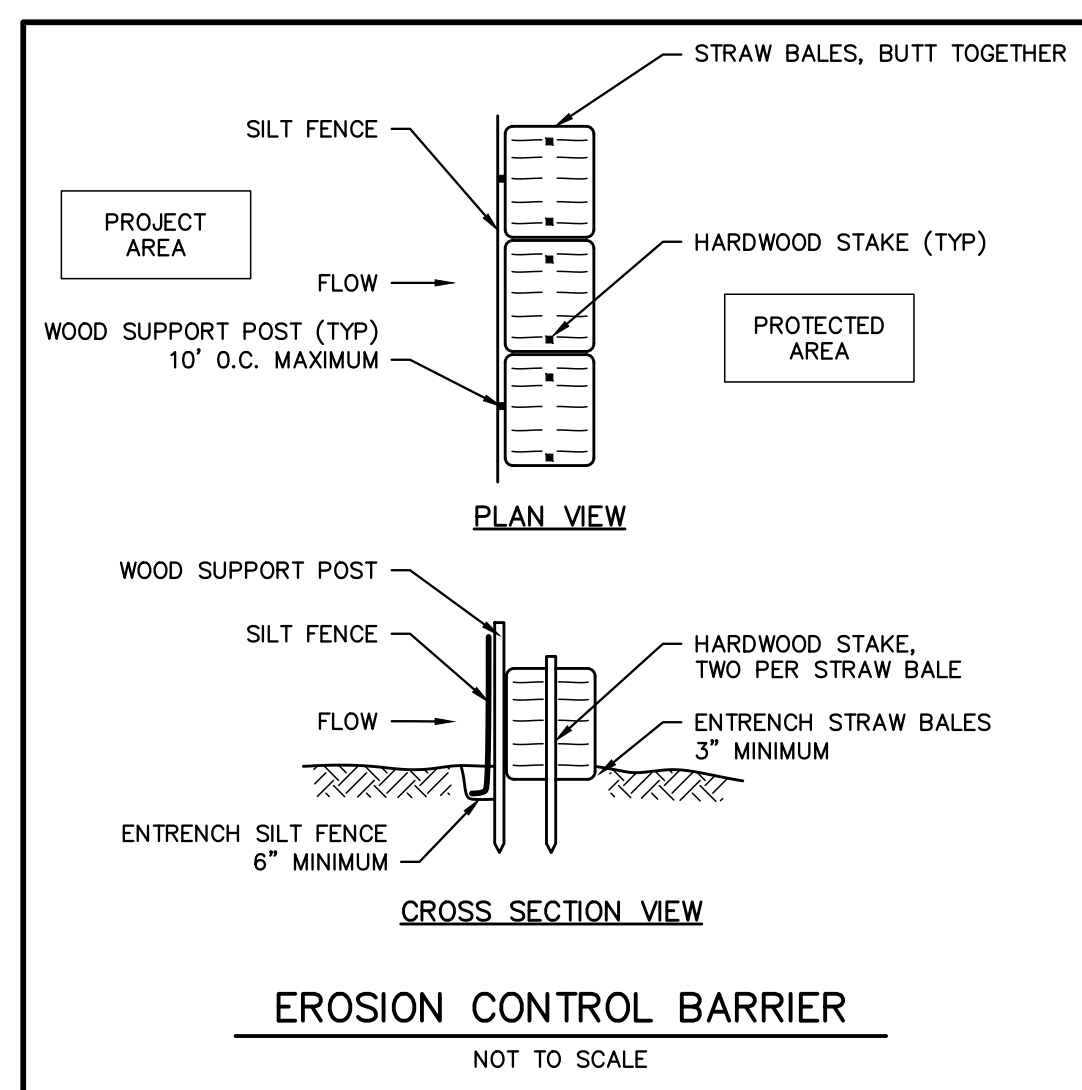
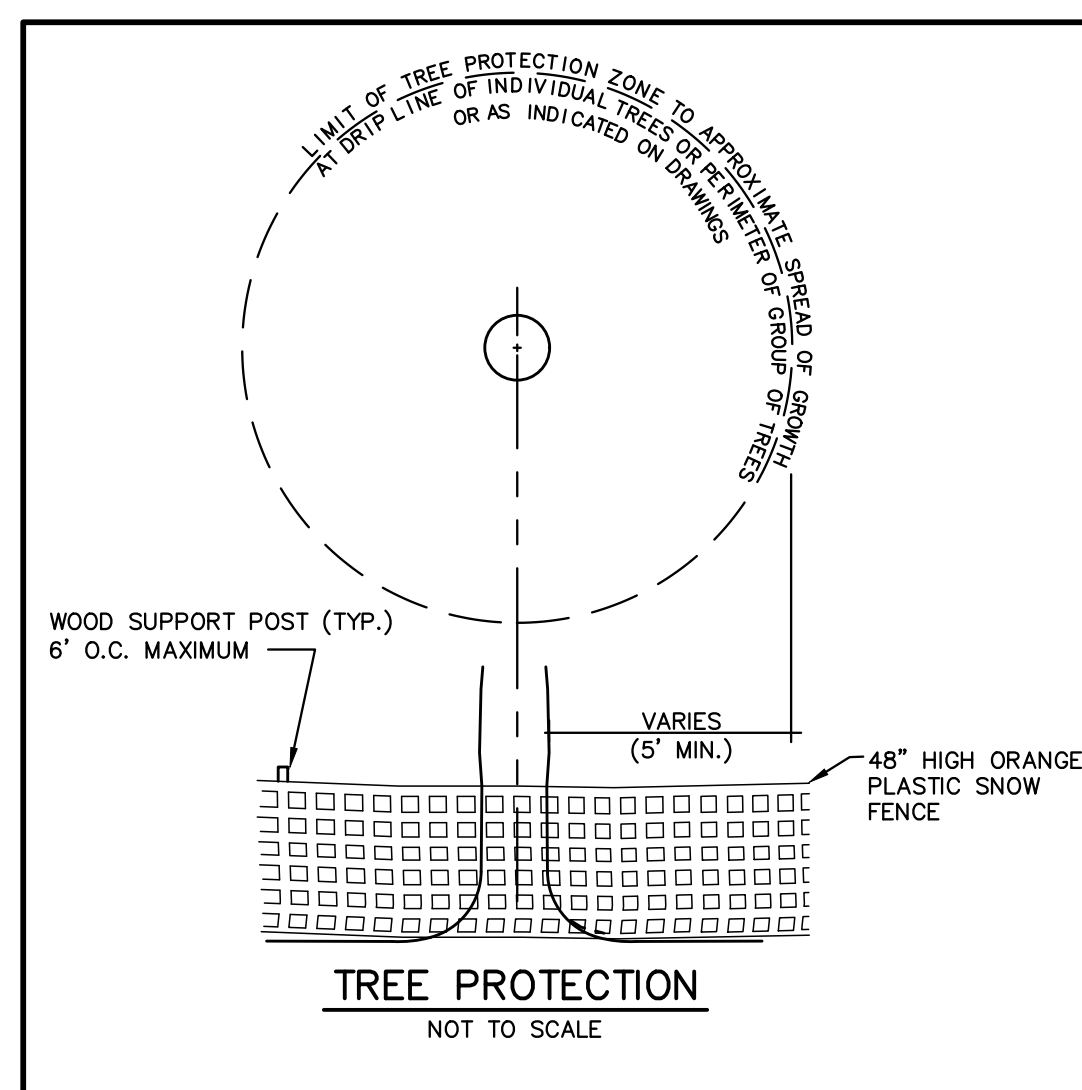
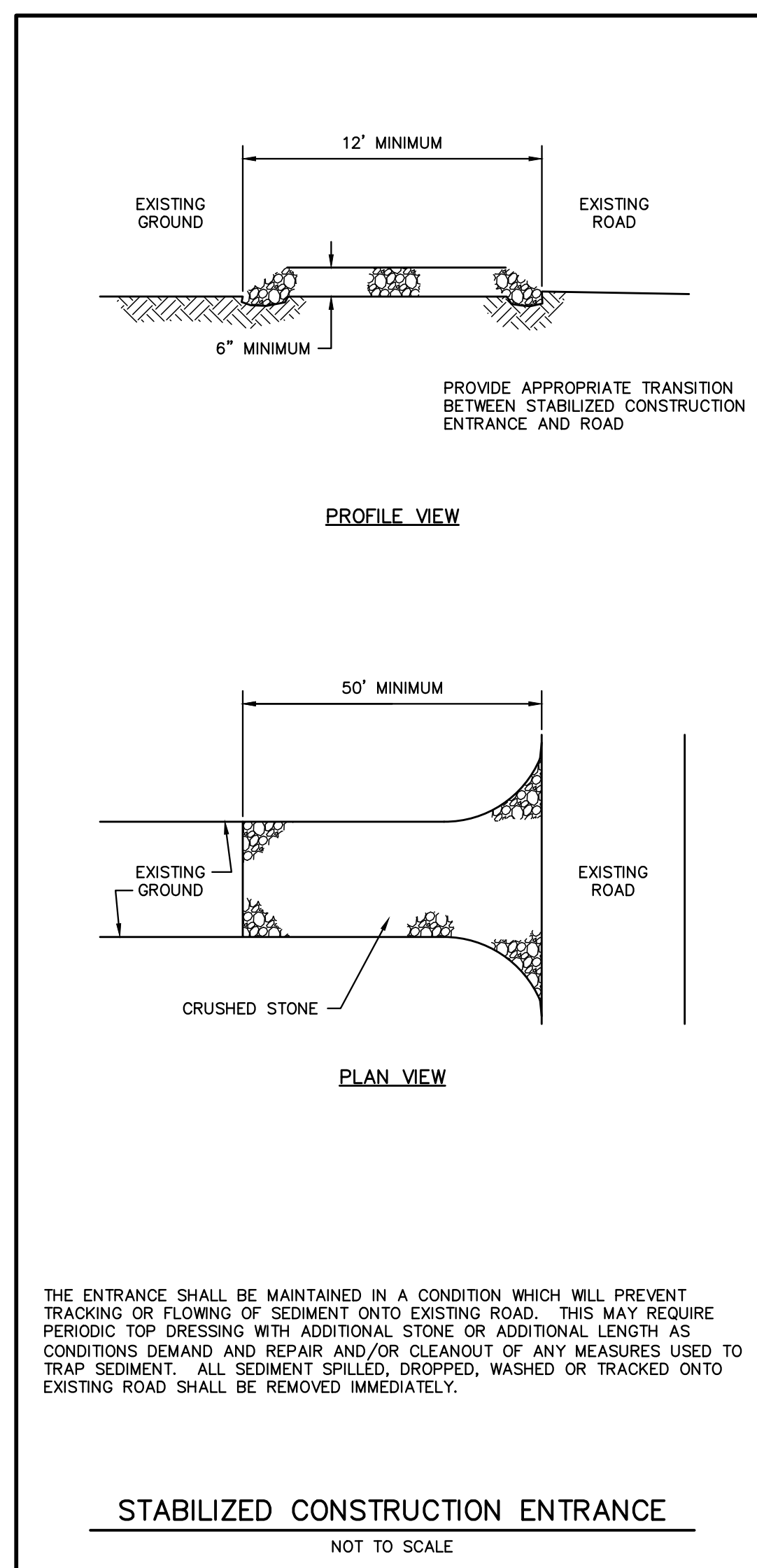
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2	12/18/2023	NOTICE OF INTENT	
1	07/31/2023	REVISION	
0	05/22/2023	PEL SUBMISSION	

PROJECT:
NOVO RIVERSIDE COMMONS 292 & 294 BAKER AVENUE
 CONCORD, MASSACHUSETTS

SCALE: 1" = 40' DATE: MAY 22, 2023
 METERS
 0 20 40 60 80 100
 FEET

UTILITY PLAN
 B+T JOB NO.2063.27
 B+T PLAN NO. 206327P1170-003
C41



PREPARED FOR:

TAURUS INVESTMENT HOLDINGS, LLC

TWO INTERNATIONAL PLACE
BOSTON, MASSACHUSETTS 02110

THOMAS JOHN MICHALAK
CIVIL ENGINEER
No. 49337

12/18/2023

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4		
3		
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0	05/22/2023	PEL SUBMISSION
	ISSUE DATE	DESCRIPTION
DES	DWN	CHK'D
		APP'D

PROJECT:

NOVO RIVERSIDE COMMONS
292 & 294 BAKER AVENUE
CONCORD, MASSACHUSETTS

SCALE: AS NOTED DATE: MAY 22, 2023

SITE DETAILS

B+T JOB NO.2063.27

B+T PLAN NO. 206326P118C-003

C5.1

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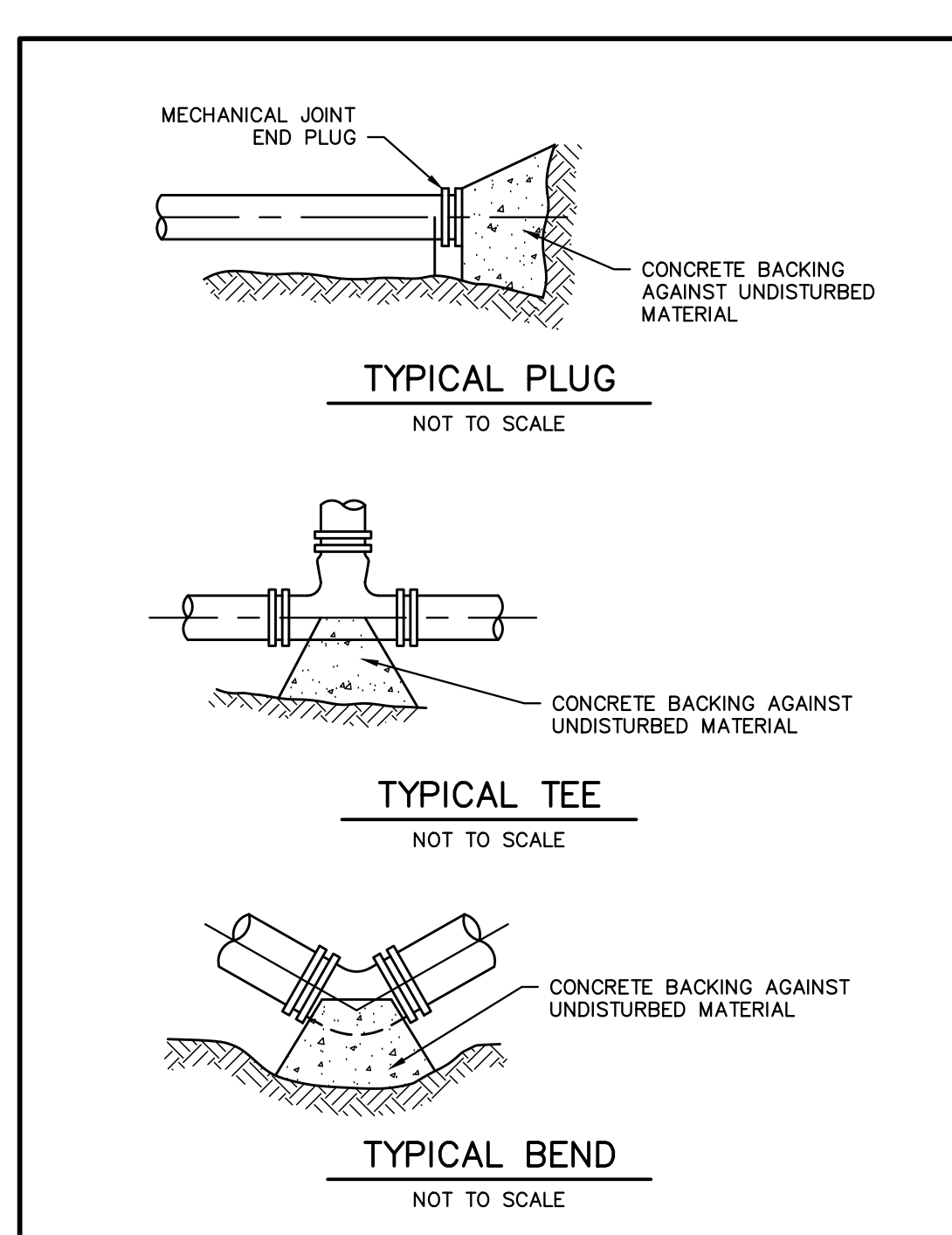
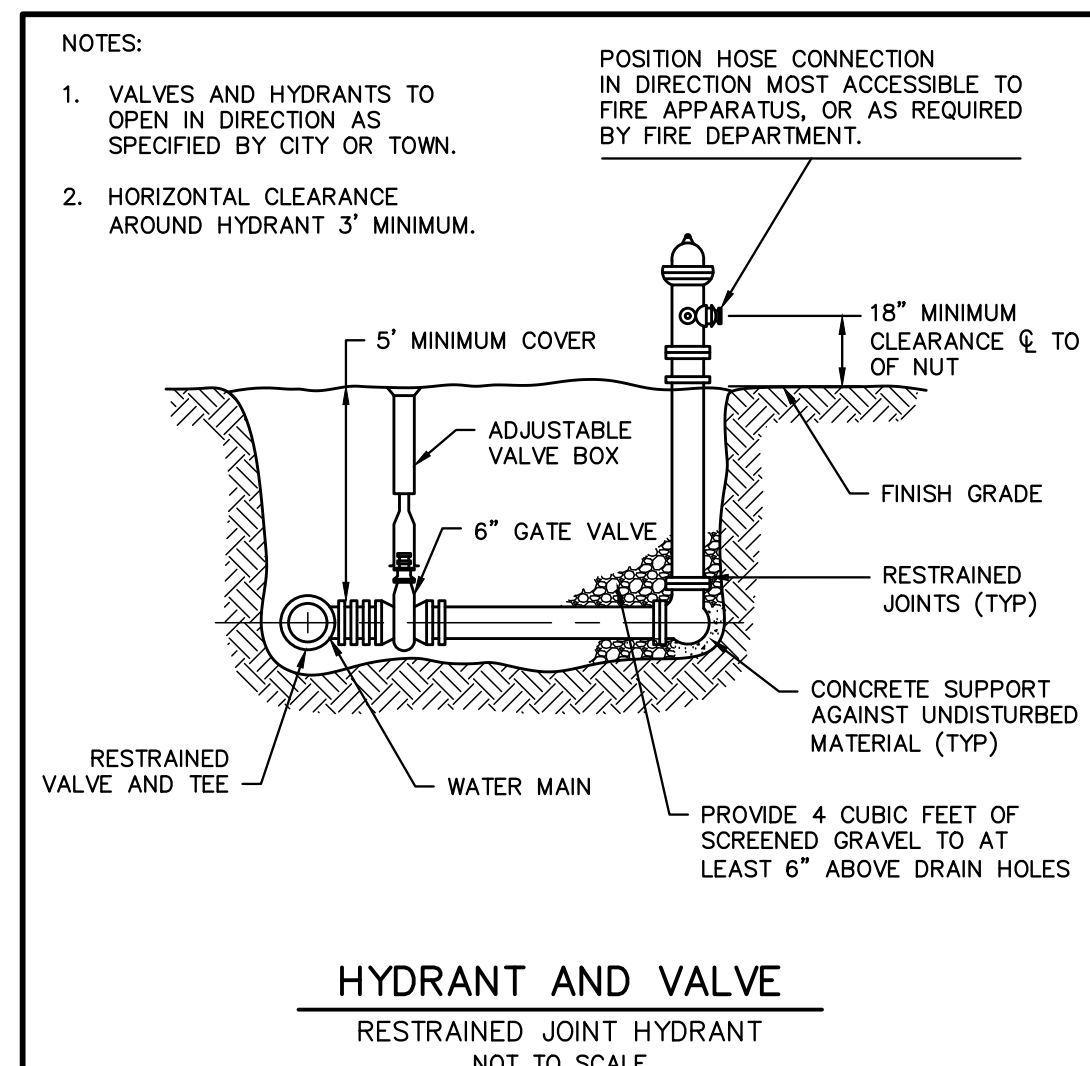
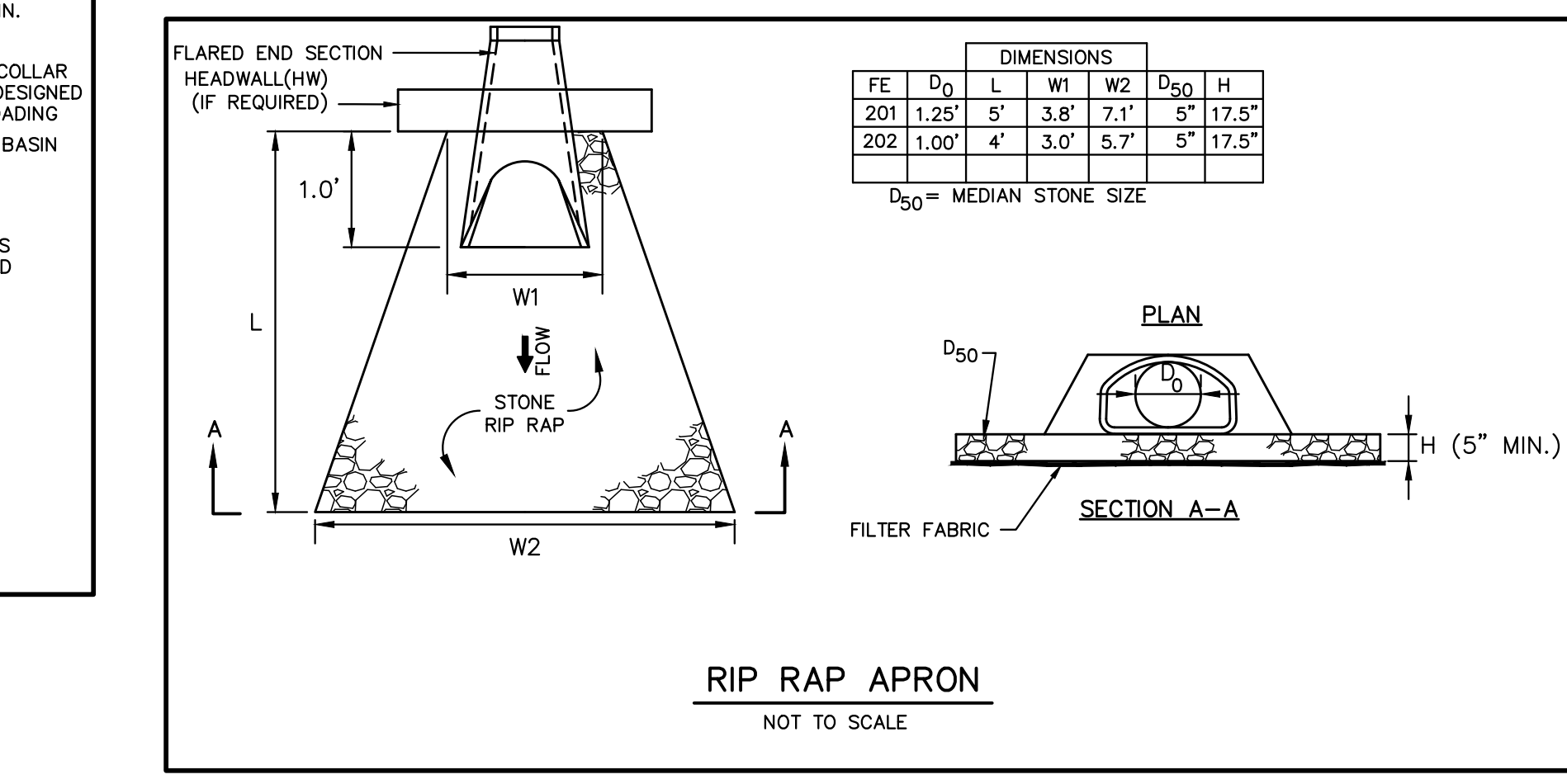
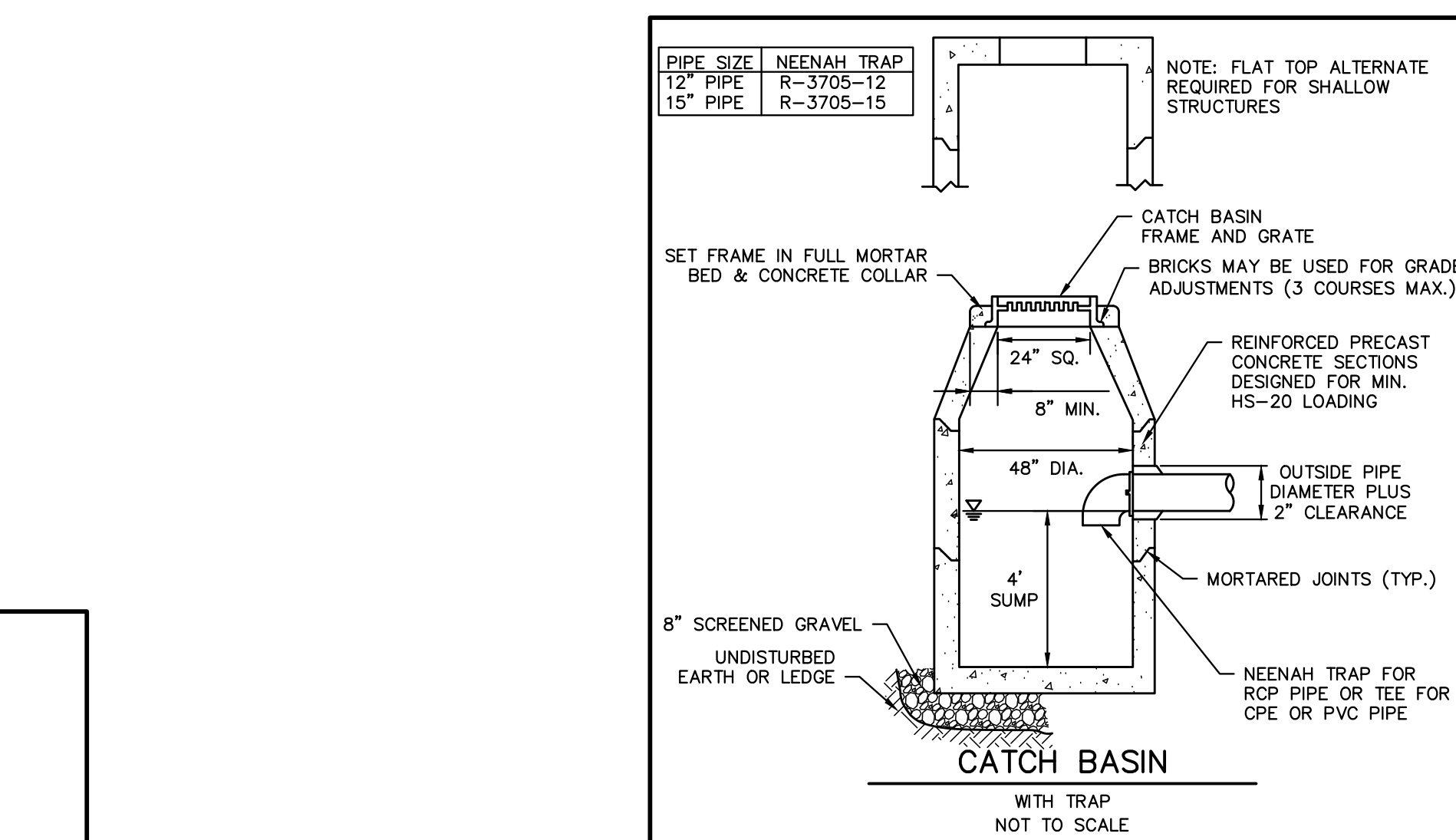
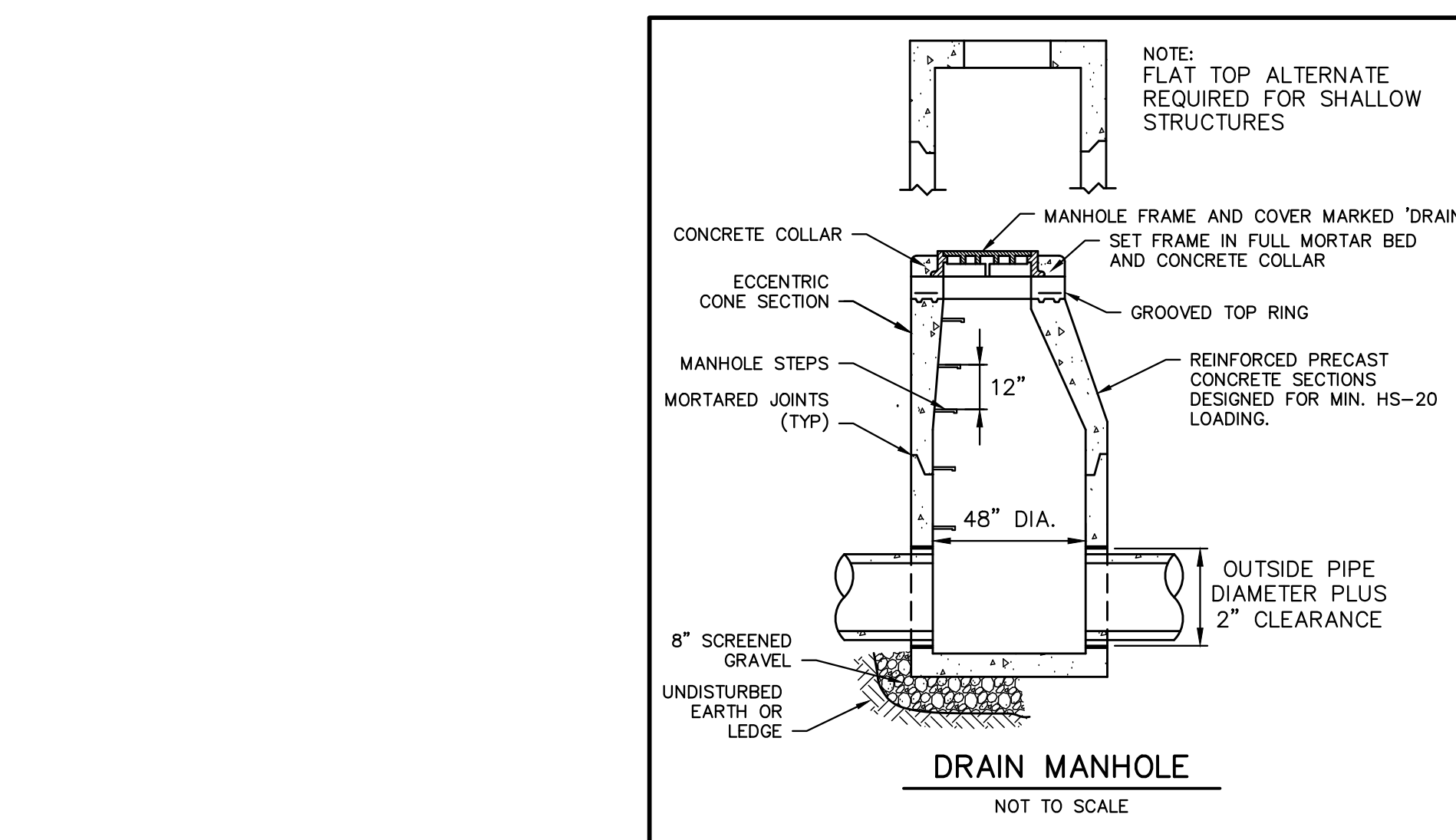
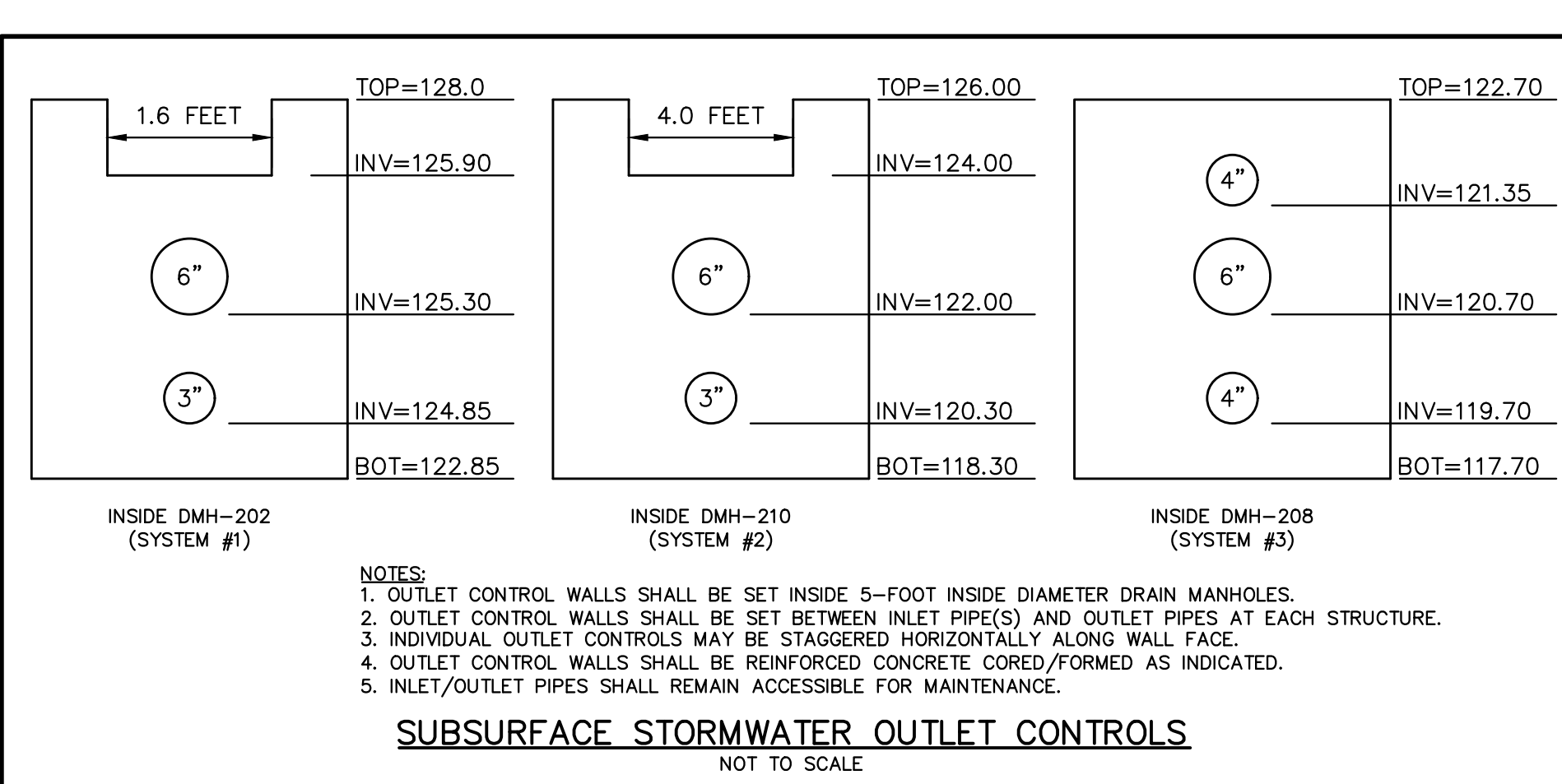
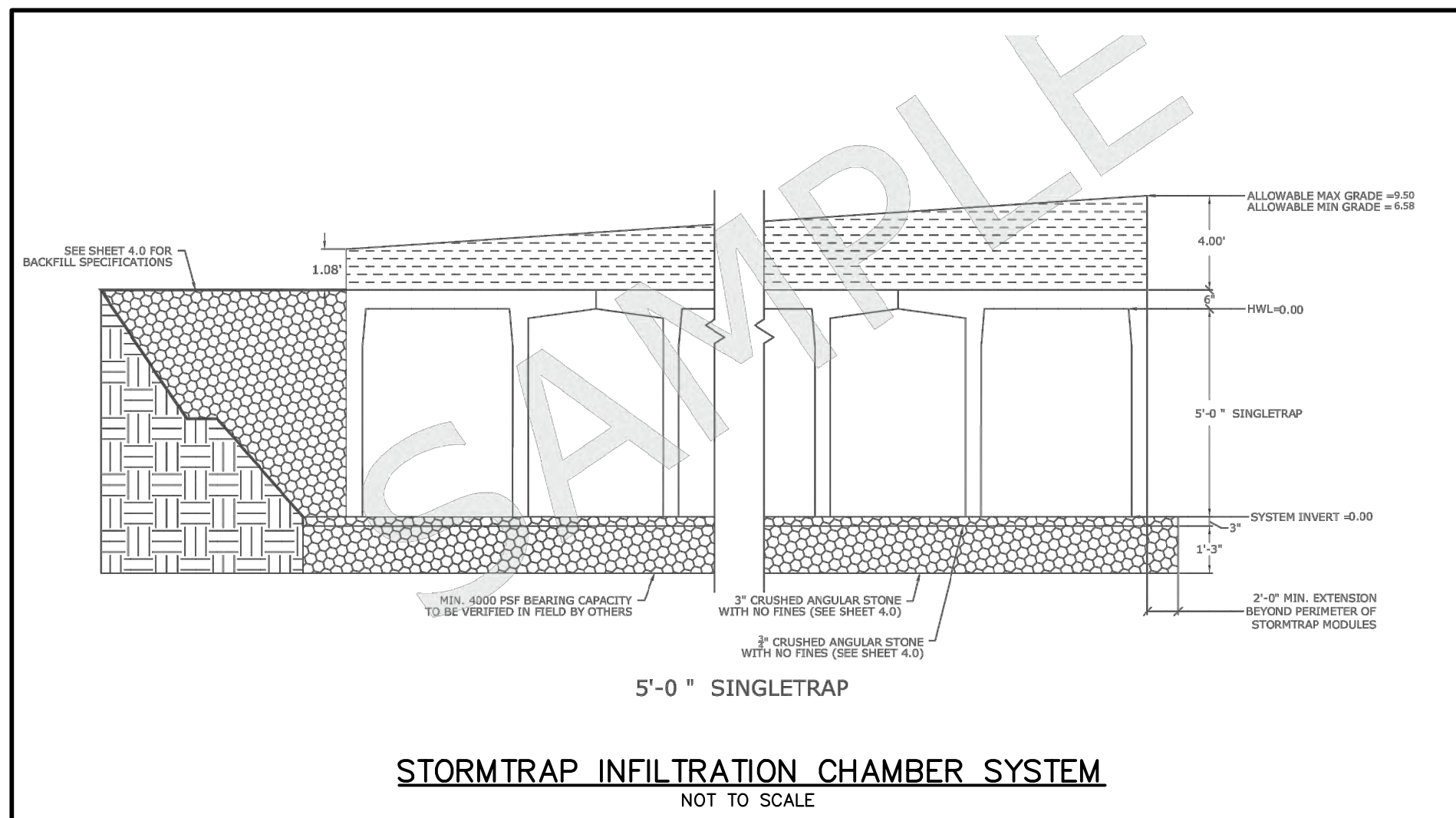
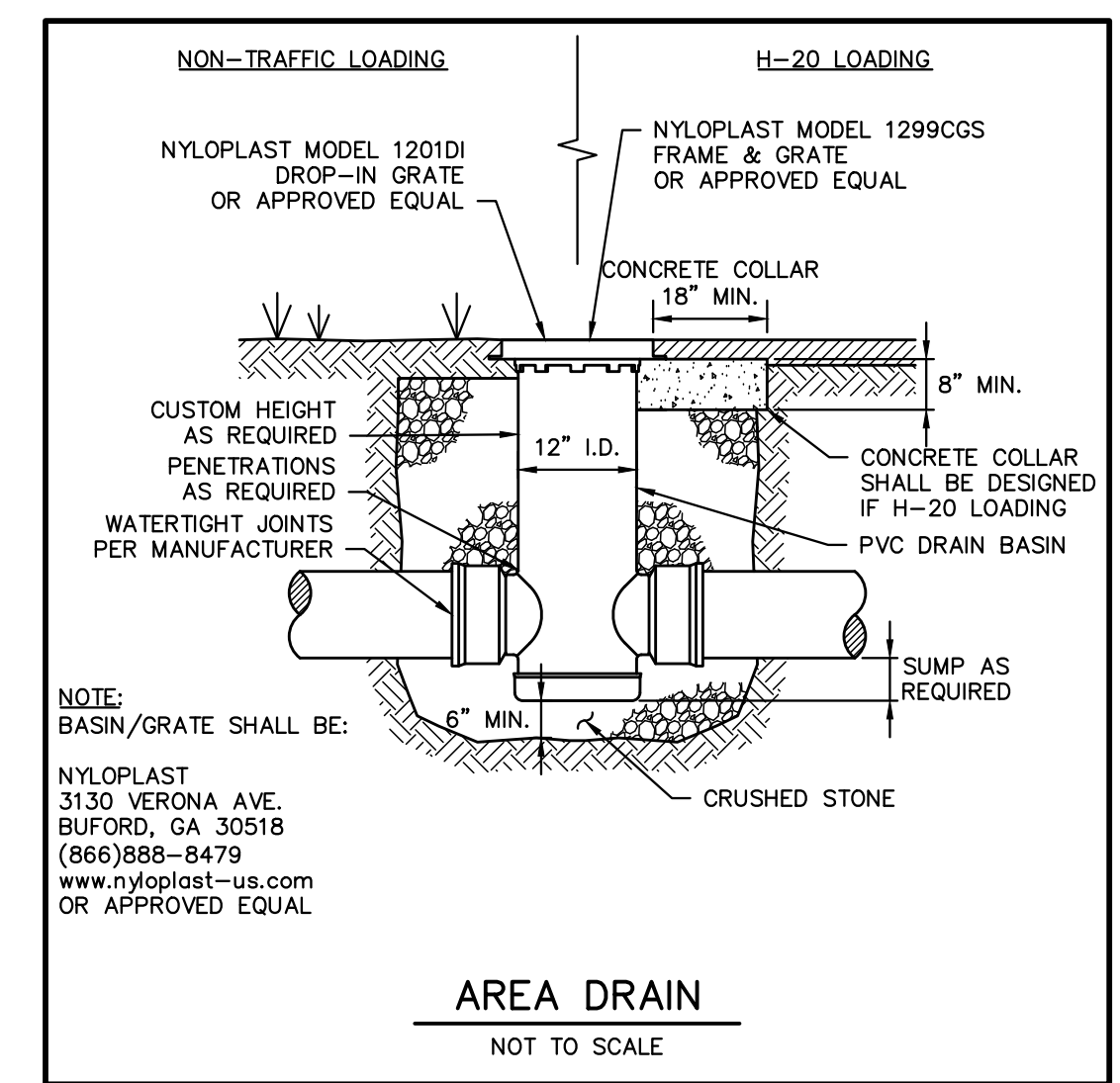
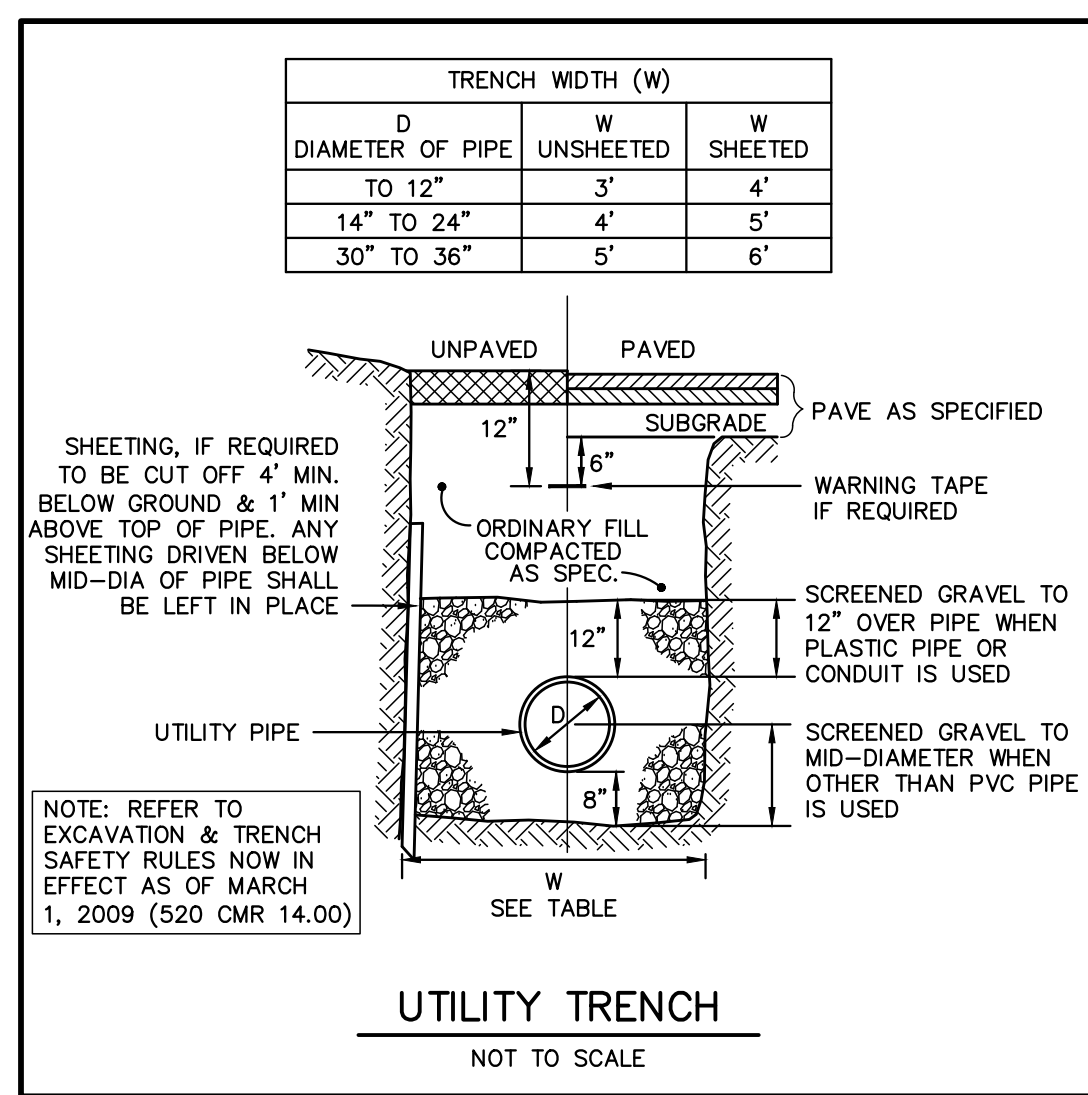
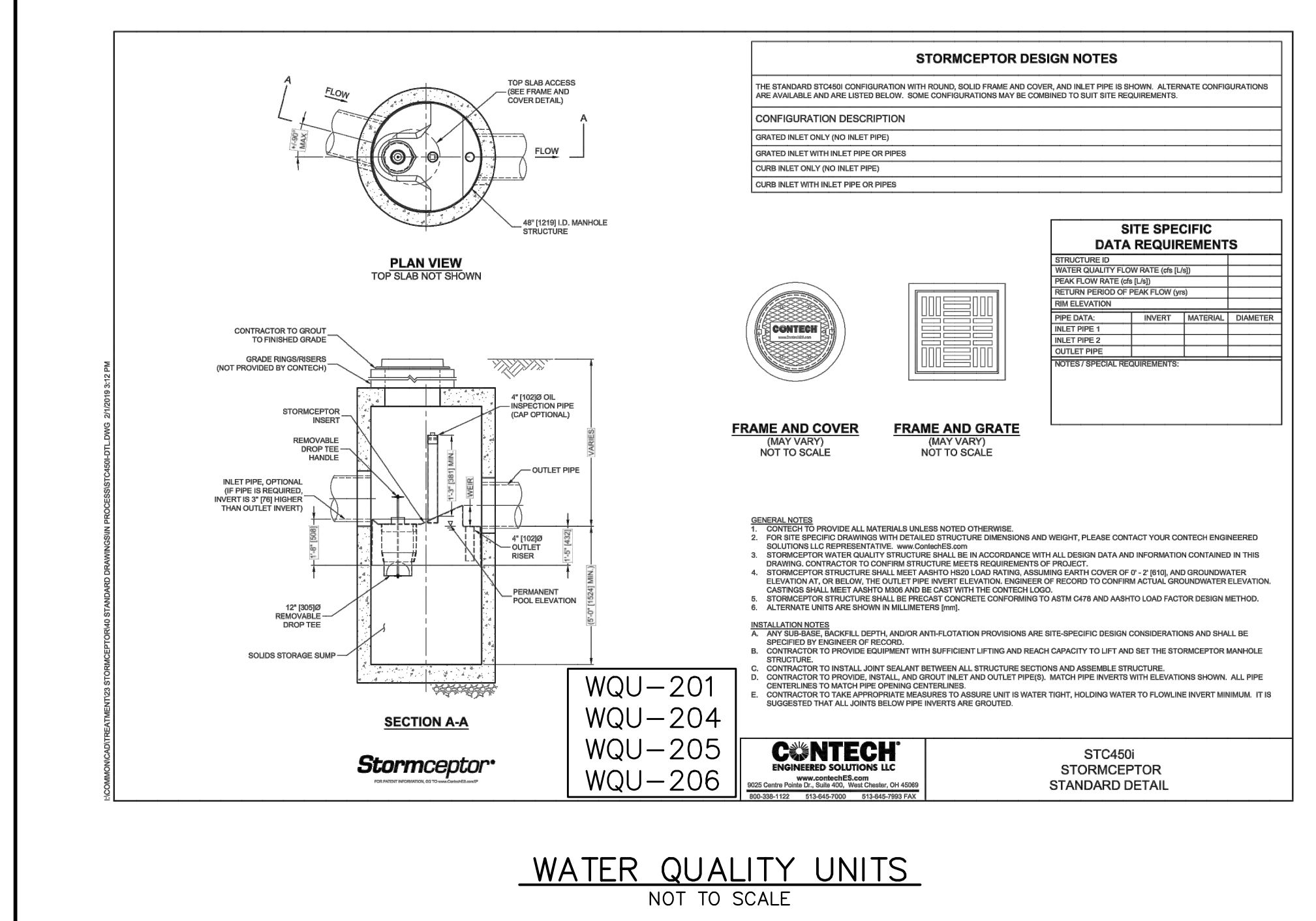
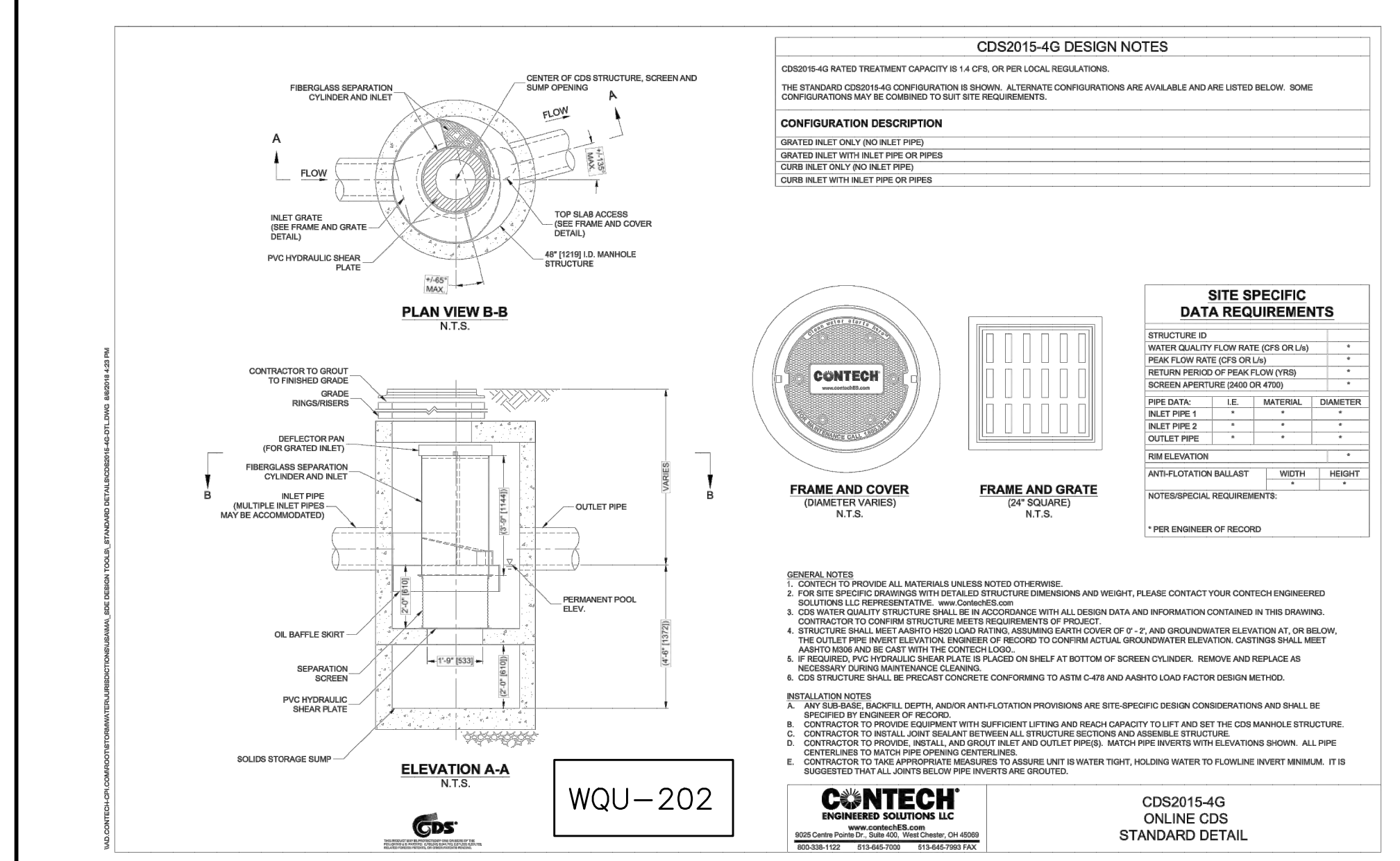
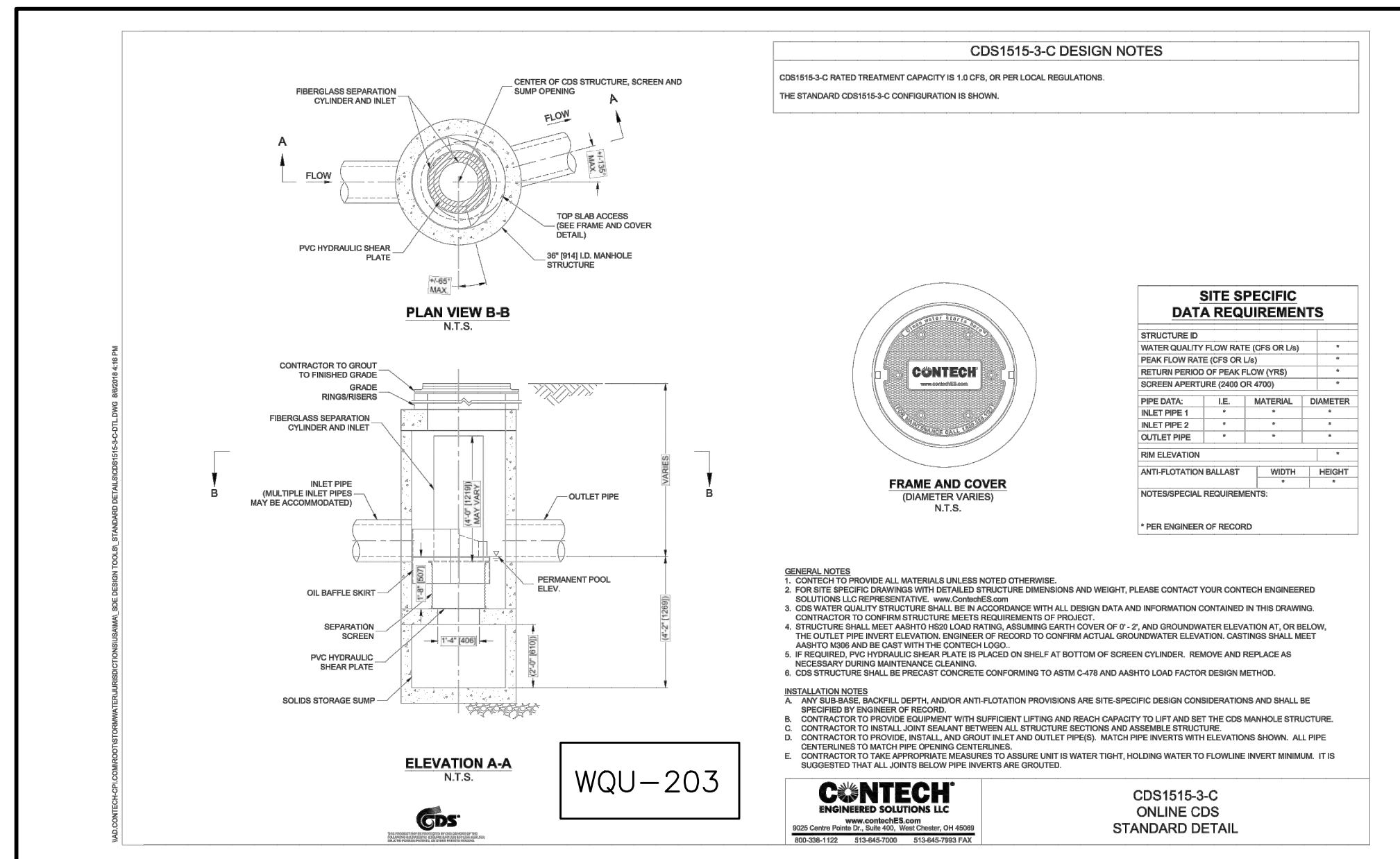
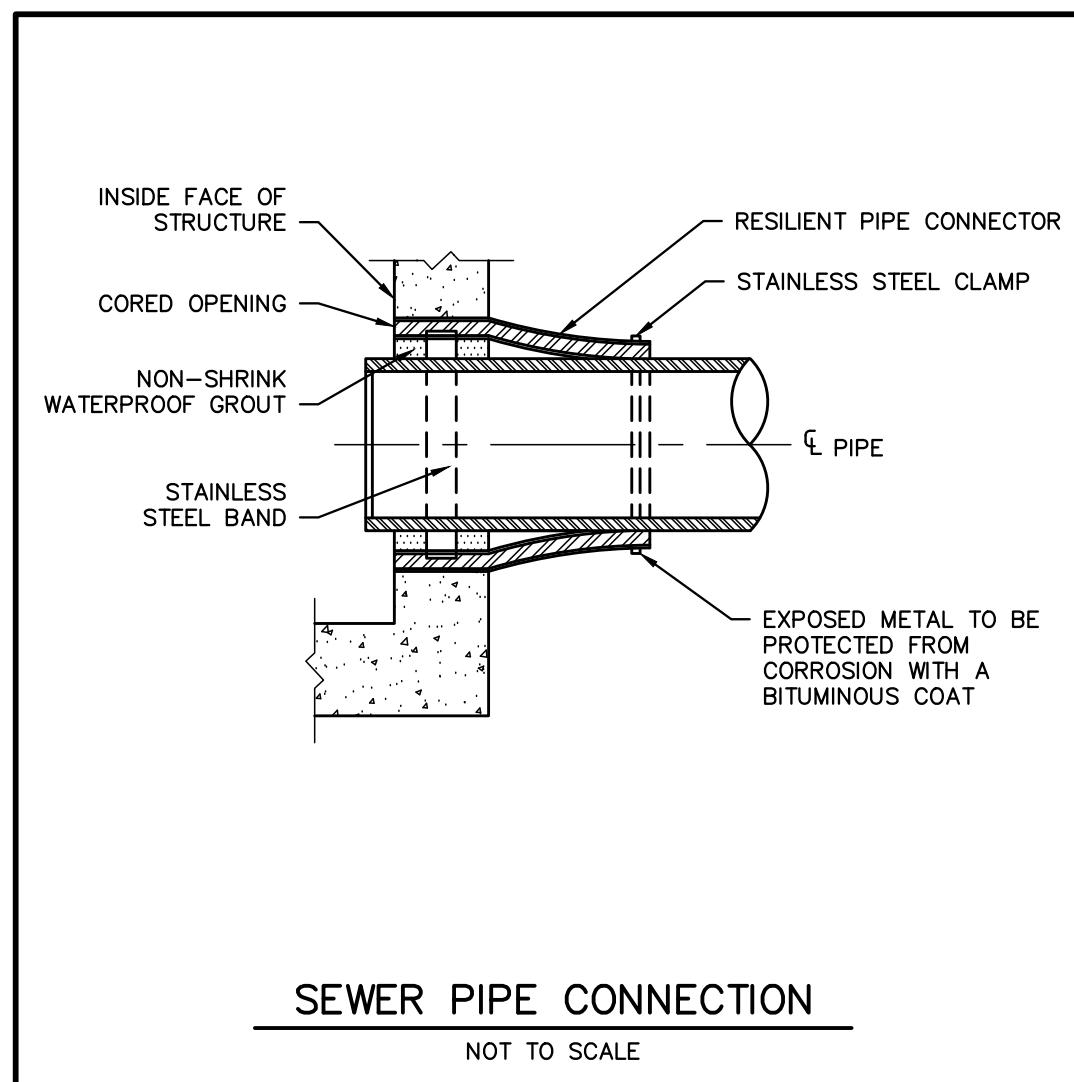
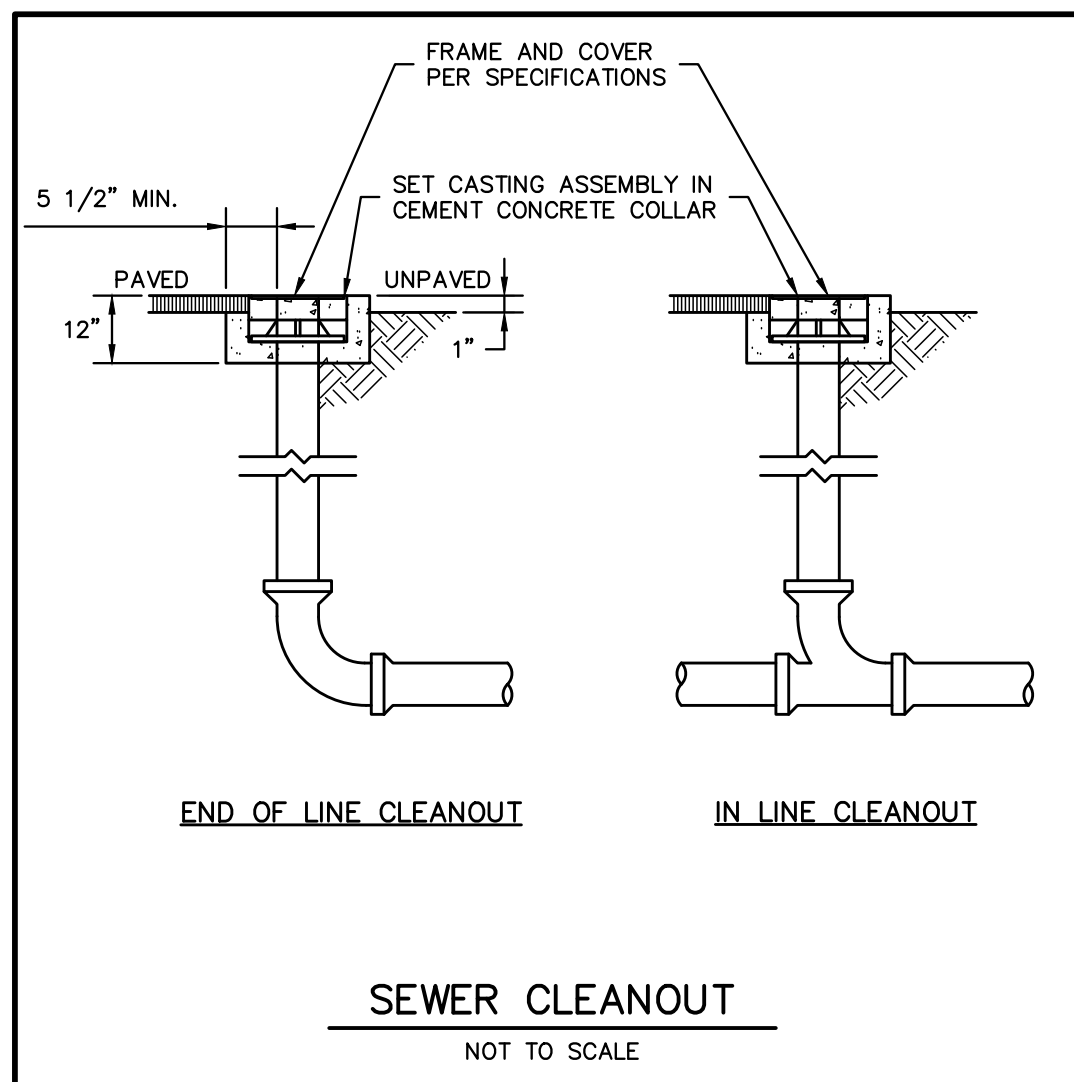
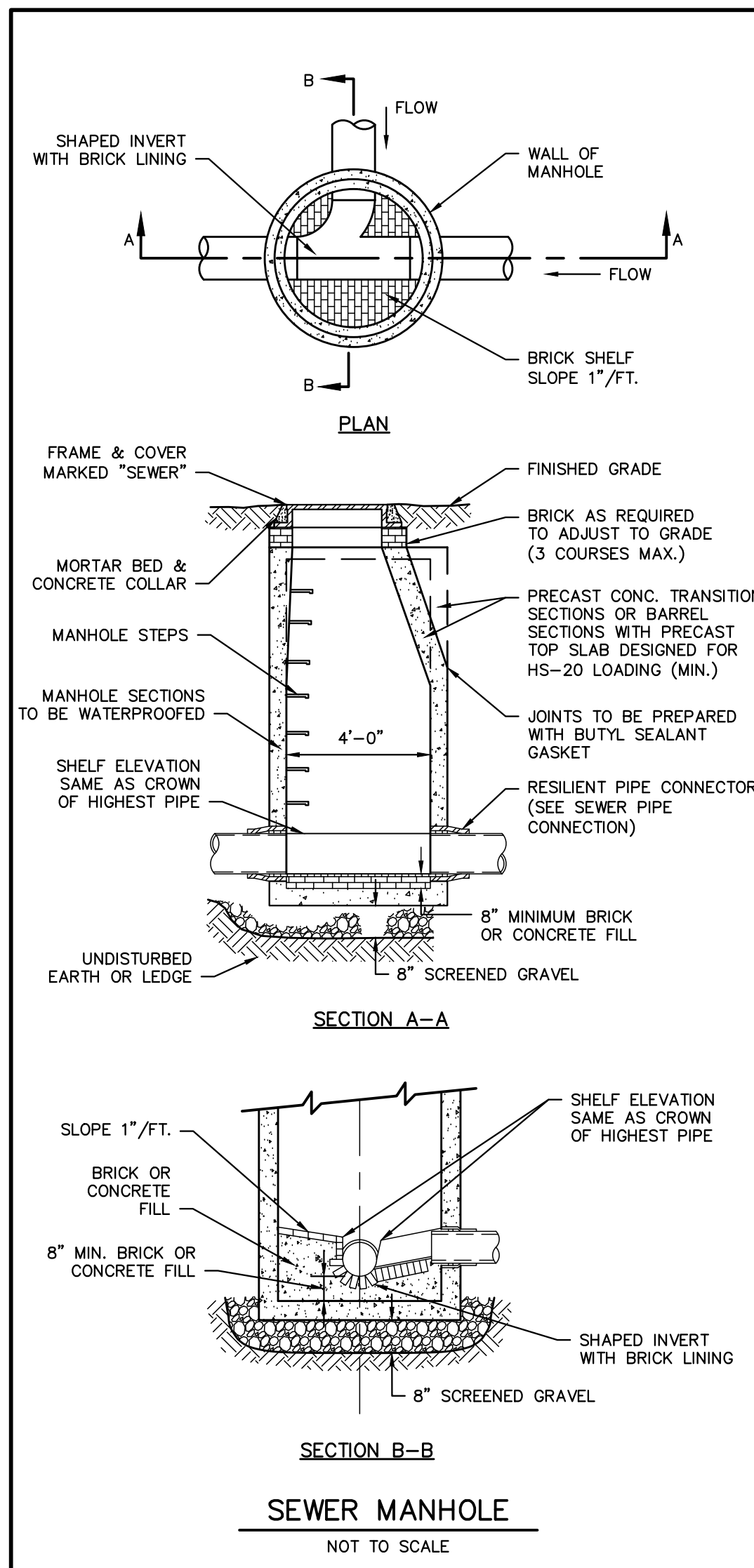
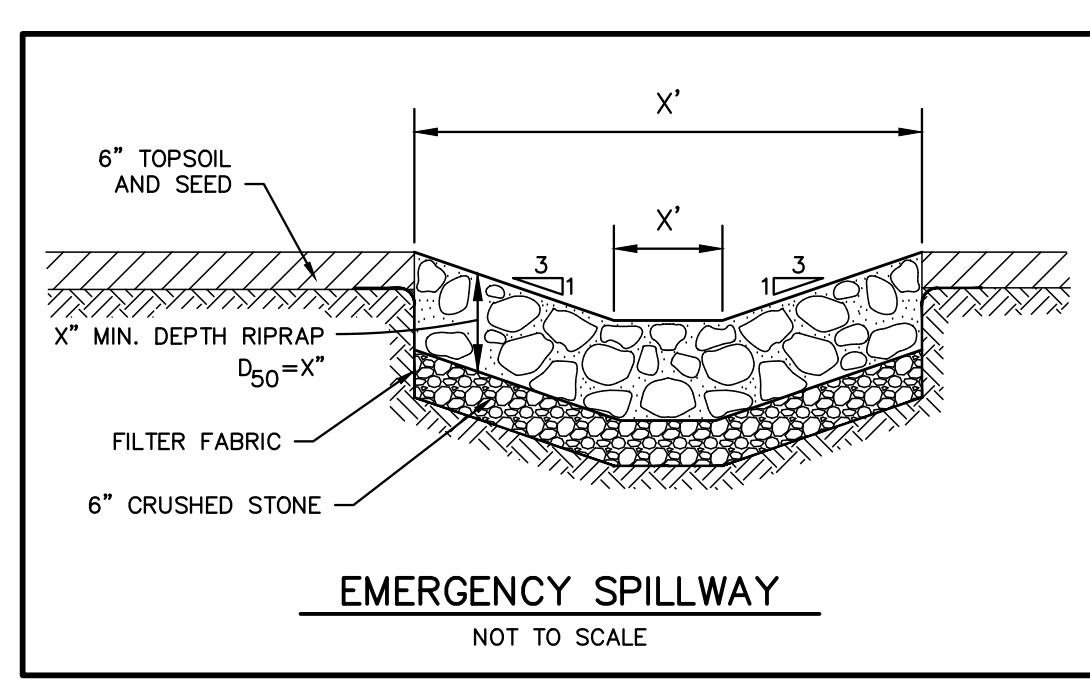
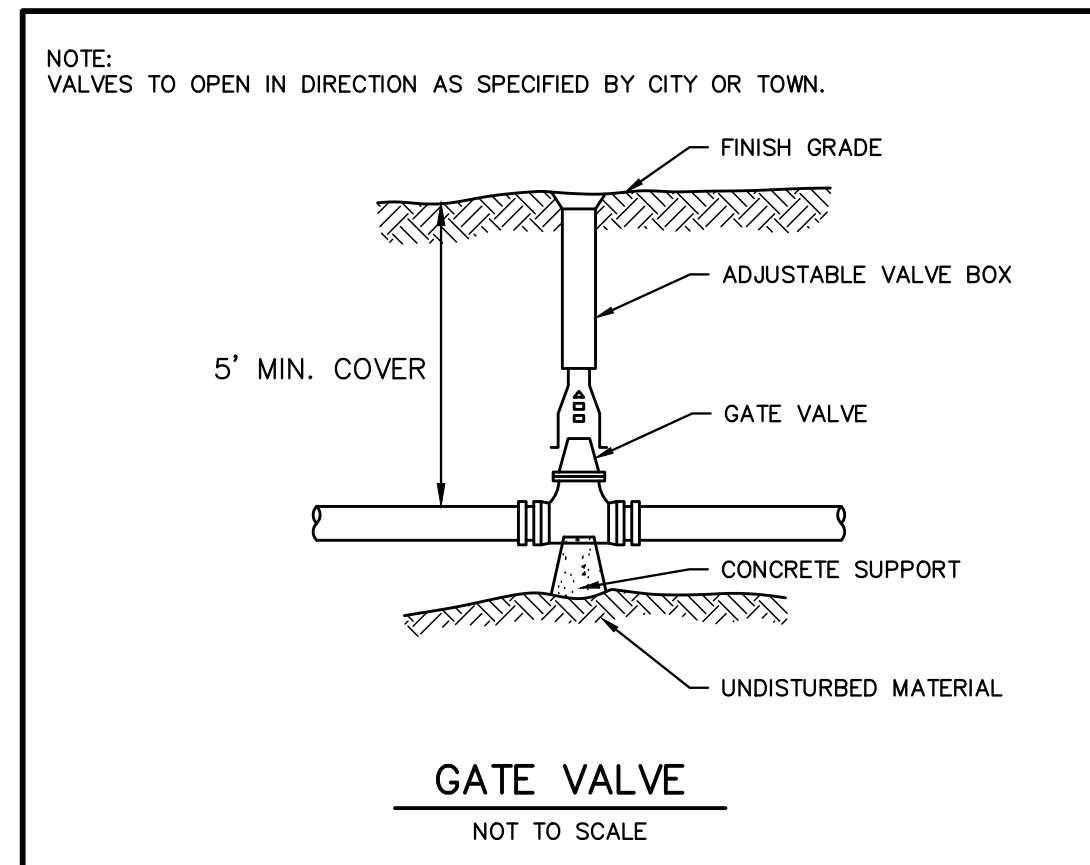


TABLE OF BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR WATER MAIN FITTINGS

SIZE OF MAIN (N.)	45° BEND	TEES & PLUGS	22 1/2° BEND
8" OR LESS	8	10	6
10" & 12"	22	16	13



PREPARED FOR:

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0	05/22/2023	PEL SUBMISSION	
		ISSUE DATE	DESCRIPTION

PROJECT:

NOVO RIVERSIDE COMMONS
292 & 294 BAKER AVENUE
CONCORD, MASSACHUSETTS

SCALE: AS NOTED DATE: MAY 22, 2023

SITE DETAILS

B+T JOB NO.2063.27
B+T PLAN NO. 206326P118C-004

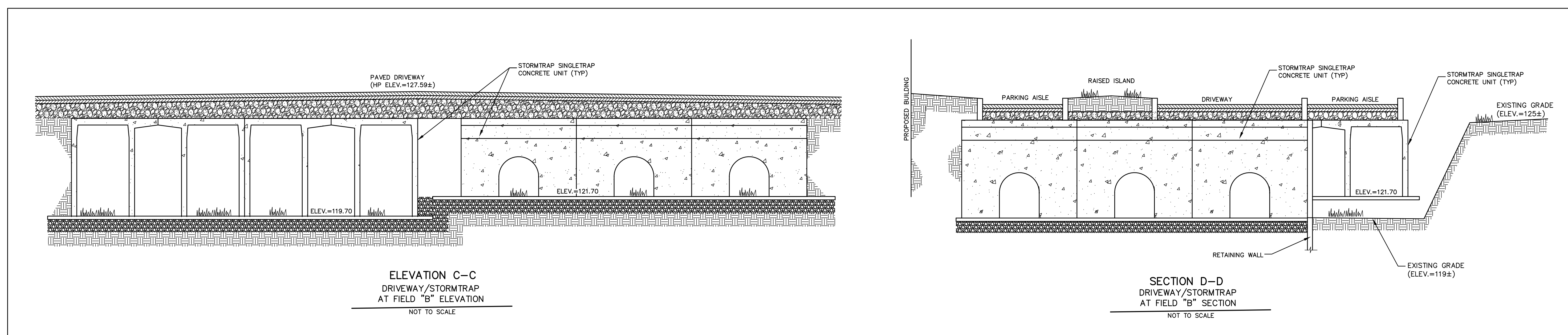
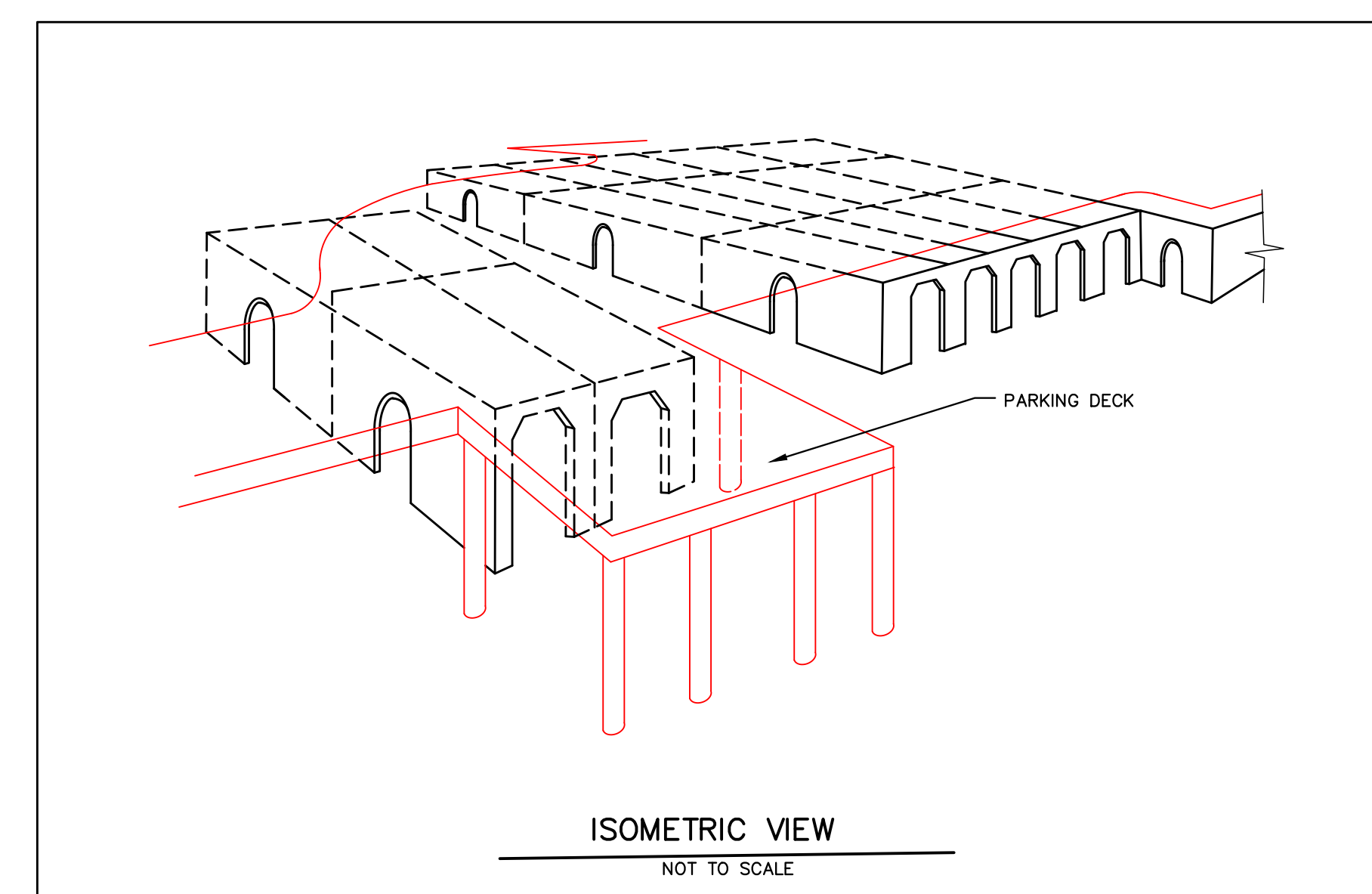
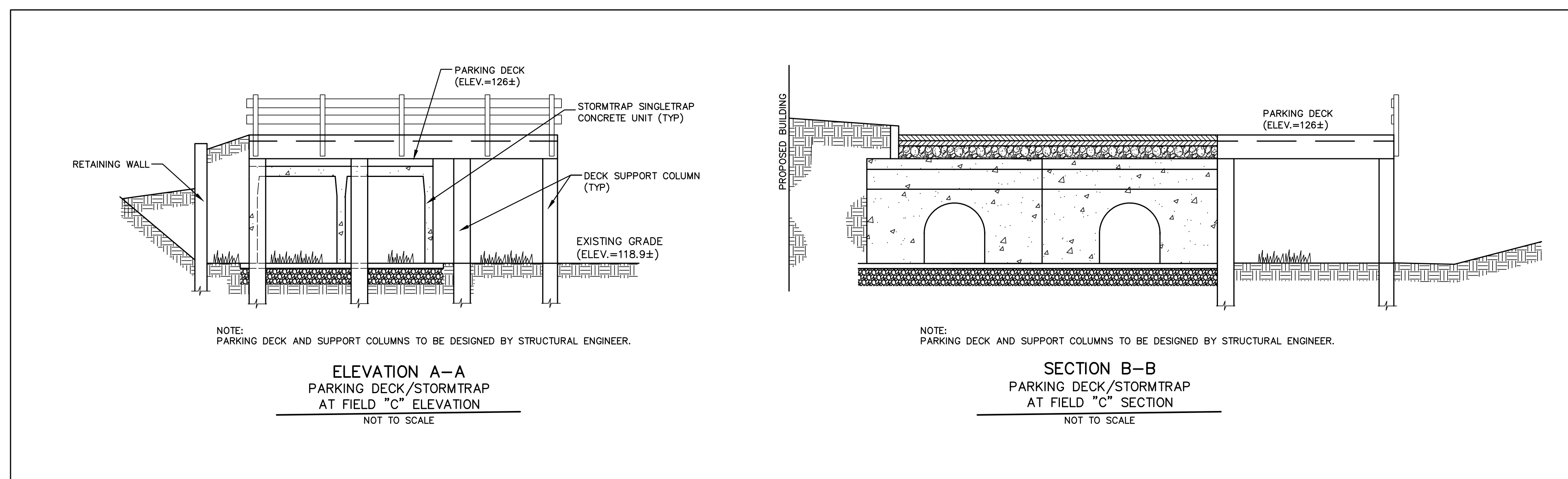
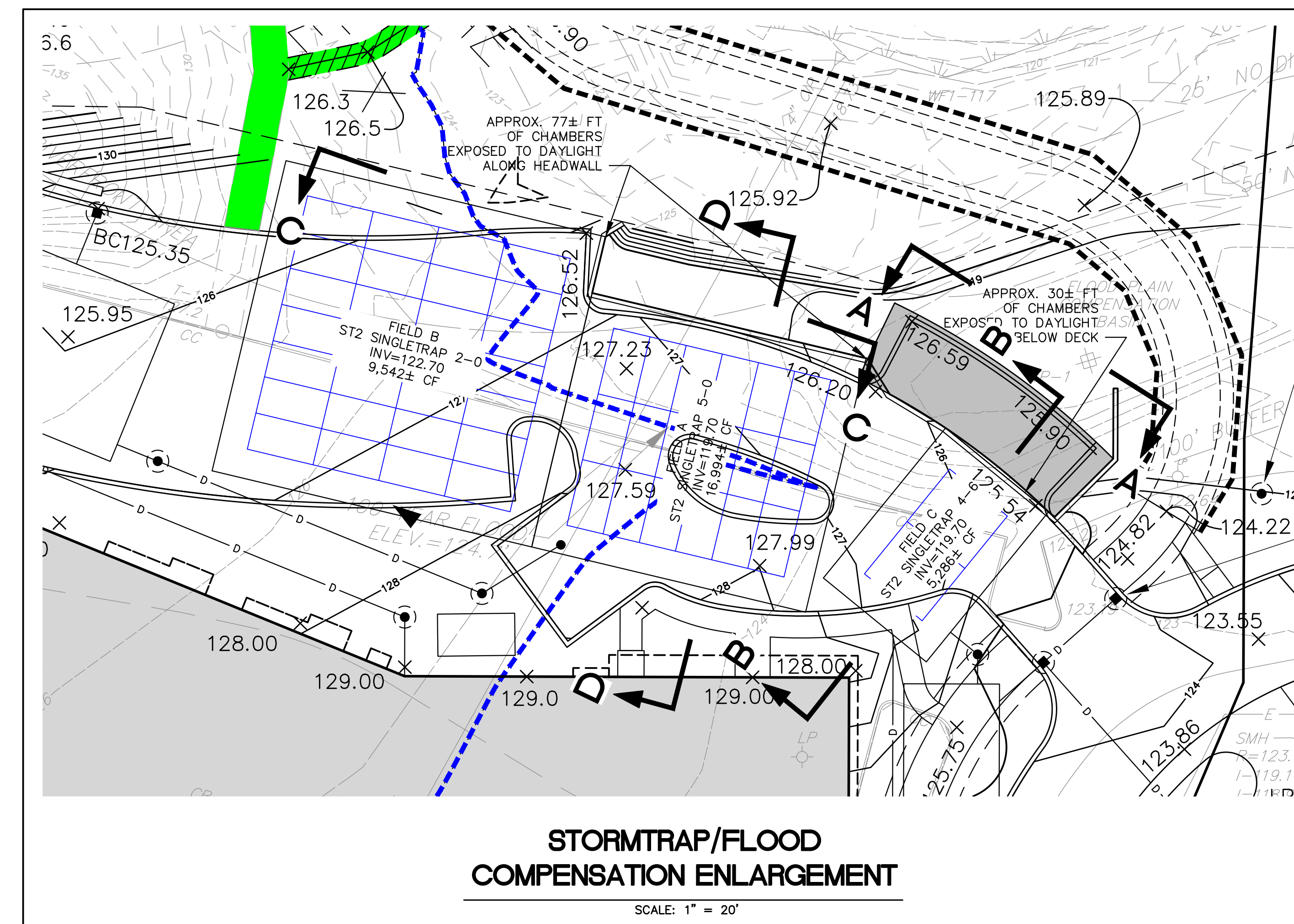
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	ISSUE DATE	DESCRIPTION	
DES	DWN	CHK'D	APP'D

PROJECT:
NOVO RIVERSIDE COMMONS 292 & 294 BAKER AVENUE
 CONCORD, MASSACHUSETTS

SCALE: 1" = 40' DATE: MAY 22, 2023



FLOOD COMPENSATION SECTIONS AND ELEVATIONS

B+T JOB NO.2063.27
 B+T PLAN NO. 206327P117D-004

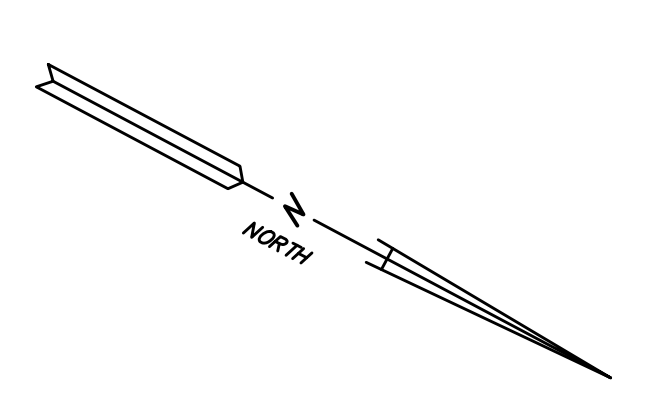
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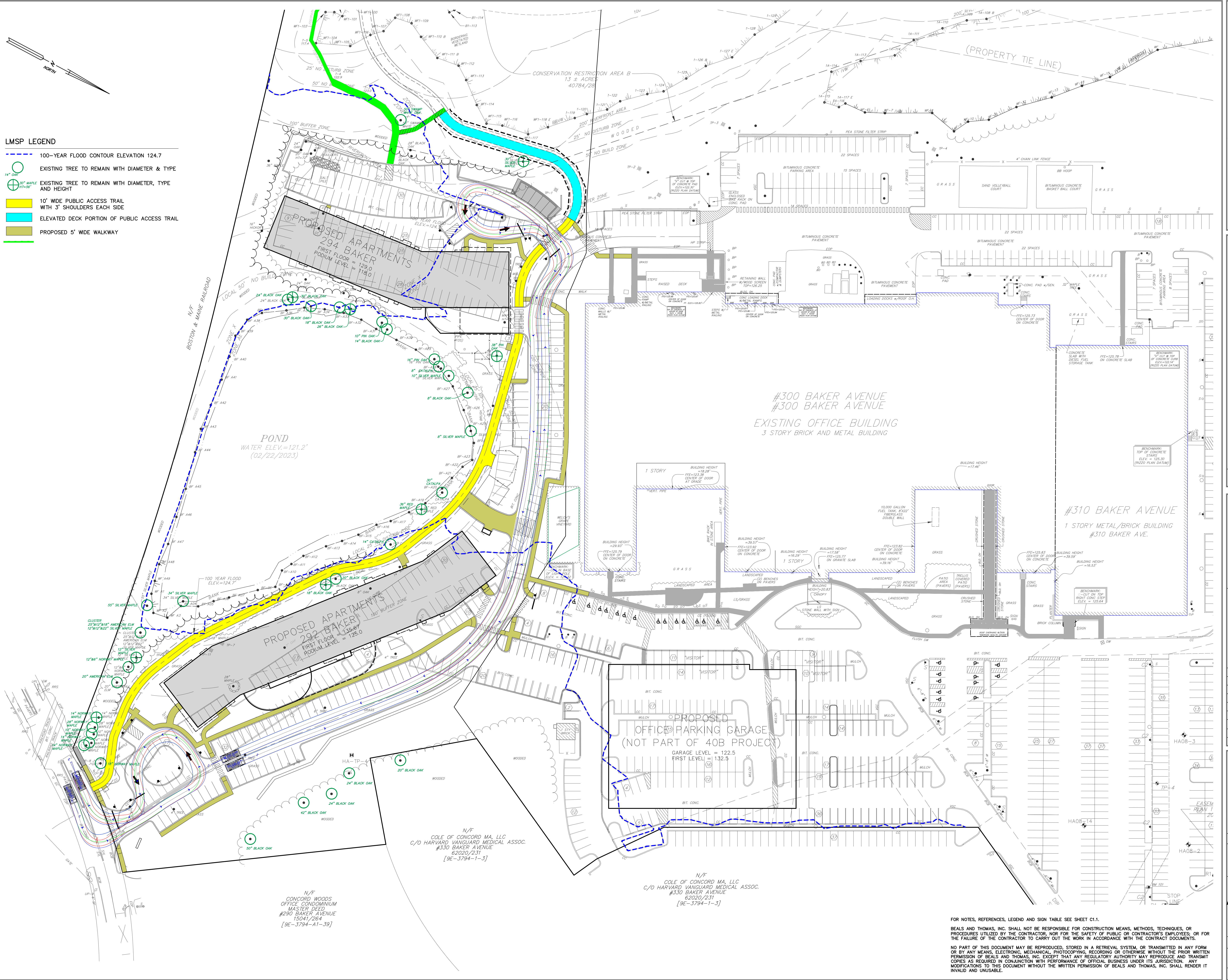
Response to Peer Review Letter #1 – Traffic Review – NOVO Riverside Commons
Ref: 15630.00
January 2, 2023



Vehicle Turning Path Diagrams



- LMSR LEGEND**
- 100-YEAR FLOOD CONTOUR ELEVATION 124.7
 - EXISTING TREE TO REMAIN WITH DIAMETER & TYPE
 - EXISTING TREE TO REMAIN WITH DIAMETER, TYPE AND HEIGHT
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 - PROPOSED 5' WIDE WALKWAY



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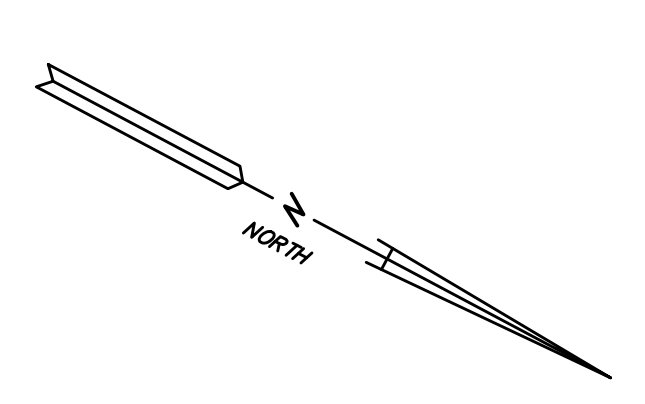
SCALE: 1" = 40' DATE: MAY 22, 2023

AMBULANCE/DELIVERY SWEPTH PATHS

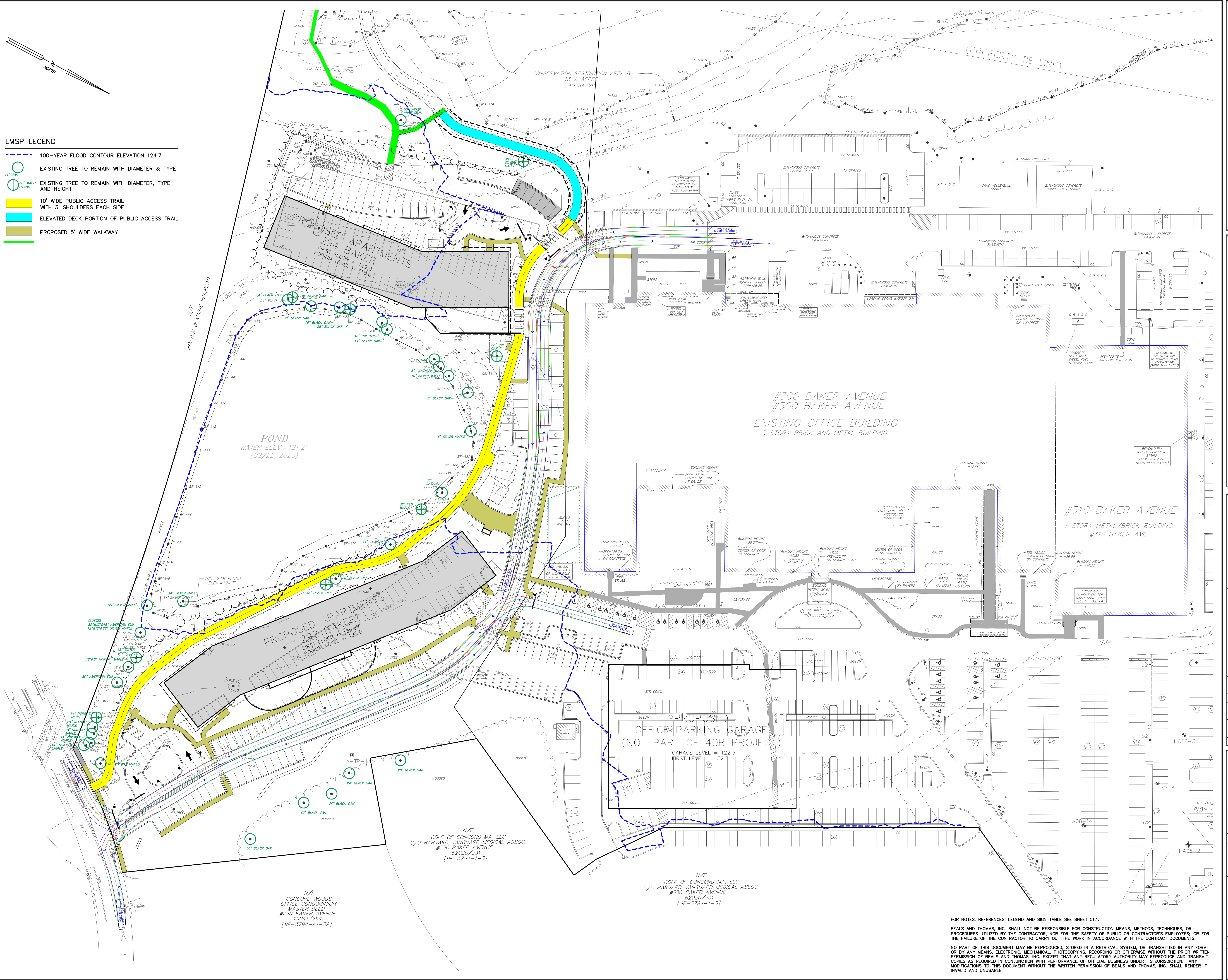
B+T JOB NO.2063.27
 B+T PLAN NO. 206327P126A-002

2

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- LMSP LEGEND**
- 100-YEAR FLOOD CONTOUR ELEVATION 124.7
 - EXISTING TREE TO REMAIN WITH DIAMETER & TYPE
 - EXISTING TREE TO REMAIN WITH DIAMETER, TYPE AND HEIGHT
 - 10' WIDE PUBLIC ACCESS TRAIL WITH 3' SHOULDERS EACH SIDE
 - ELEVATED DECK PORTION OF PUBLIC ACCESS TRAIL
 - PROPOSED 5' WIDE WALKWAY



PREPARED FOR:

TAURUS INVESTMENT HOLDINGS, LLC

TWO INTERNATIONAL PLACE
BOSTON, MASSACHUSETTS 02110

FOR PERMITTING ONLY

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PREPARED BY:

BEALS AND THOMAS

BEALS AND THOMAS, INC.
144 Turnpike Road, Suite 210
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.bealsandthomas.com

ISSUE DATE	DESCRIPTION
5	
4	
3	
2	12/18/2023 NOTICE OF INTENT
1	07/31/2023 REVISION
0	05/22/2023 PEL SUBMISSION

PROJECT:

NOVO RIVERSIDE COMMONS
292 & 294 BAKER AVENUE
CONCORD, MASSACHUSETTS

SCALE: 1" = 40' DATE: MAY 22, 2023

METERS
0 20 40 60 80 100
FEET

CONCORD FIRE LADDER 1 SWEPHTH PATHS

B+T JOB NO.2063.27

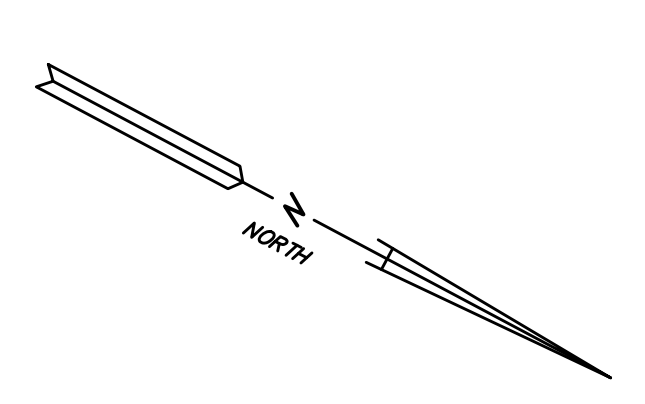
B+T PLAN NO. 206327P126A-003

3

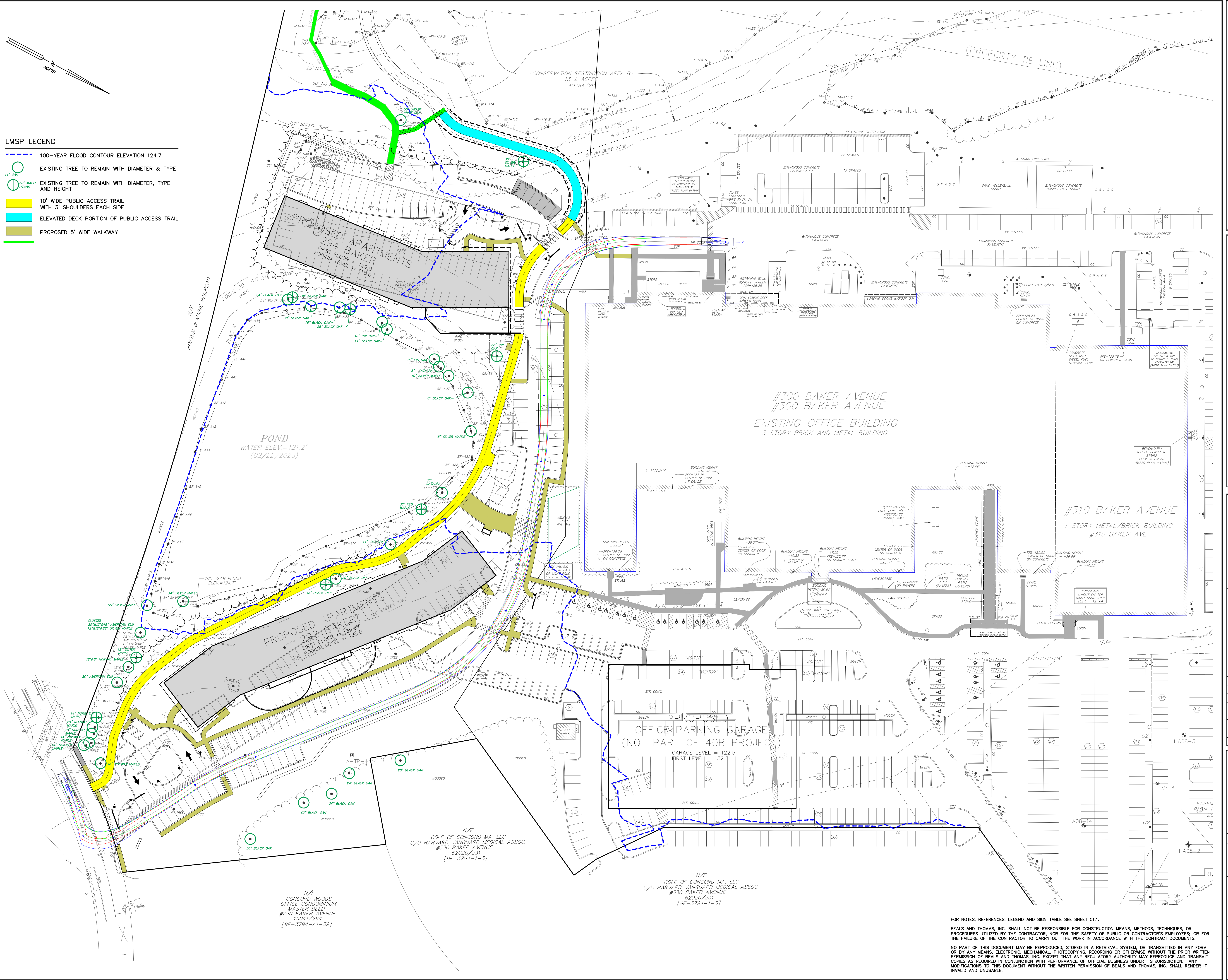
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	ISSUE DATE DESCRIPTION		
DES	DWN	CHK'D	APP'D

PROJECT:

NOVO RIVERSIDE COMMONS
292 & 294 BAKER AVENUE
CONCORD, MASSACHUSETTS

SCALE: 1" = 40' DATE: MAY 22, 2023

METERS
0 10 20 30 40 50 60 70 80 90 100
FEET

TRASH REMOVAL SWEPH PATH

B+T JOB NO.2063.27

B+T PLAN NO.
206327P126A-004

4

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Response to Peer Review Letter #1 – Traffic Review – NOVO Riverside Commons
Ref: 15630.00
January 2, 2023



Railroad Crossing Assessment



Memorandum

To: Town of Concord
Zoning Board of Appeals

Date: 12/11/23

Project #: 15630.00

From: James Payne

Re: Inspection of Baker Avenue Highway Grade Crossing

Existing Site Conditions:

Baker Avenue is a public road located in West Concord, Massachusetts, which crosses a double track rail line owned by the Massachusetts Bay Transportation Authority (MBTA). The railroad location is at Milepost 21.6 on the MBTA's Fitchburg Mainline. Approximately 38 trains and 4,922 roadway vehicles, including 24 school buses, traverse the crossing in a 24-hour period¹. The crossing is located within a quiet zone, and has an active warning system with flashing lights, gates, and bells (detailed below). The crossing features an existing sidewalk, on the west side of the roadway, with pedestrian gates.

The roadway approaches are asphalt and are in good condition. The roadway surface within the crossing envelope is also asphalt, which has settled and taken on an undulating surface. Median islands are present on both roadway approaches for approximately 60 feet from the crossing. Double yellow, no-passing markings extend beyond these in both directions. Through the crossing, lane delineator posts mark the outer boundaries of the roadway. The roadway speed limit is unmarked, but was noted in a previous inspection as 25mph¹. The crossing has a raised, crown-like profile relative to the roadway approaches, which presents a hazard for low ground clearance vehicles/trailers to become stuck on the crossing. The railway approaching and through the grade crossing is on a curve, and the track in good condition, with unfouled ballast and good surface. Structures and vegetation limit driver sight distances in all directions from the crossings, sometimes to within one hundred feet.

Existing Crossing Warning Devices:

- › NW Quadrant: Mast with crossbuck, six flashing lights, roadway and pedestrian gates, and bell. The pedestrian gate shares the same gate mechanism as the roadway gate.
- › NE Quadrant: Mast with crossbuck and two flashing lights.
- › SW Quadrant: Pedestrian gate on mast with no flashing lights.
- › SE Quadrant: Mast with crossbuck, four flashing lights, roadway gate, and bell.

¹ Per U.S. DOT Crossing Inventory Form, 11/5/23 (Attached)

Existing Roadway Signage:

Existing roadway and crossing signage is compliant with MUTCD standards:

- | | | |
|----------|------|---|
| › W10-1 | (x2) | "Highway-Rail Grade Crossing Advance Warning" |
| › W10-9P | (x4) | "No Train Horn" |
| › W10-5 | (x2) | "Low Ground Clearance" |
| › R4-7 | (x2) | "Keep off Median" |
| › R8-8 | (x2) | "Do Not Stop on Tracks" |
| › R15-1 | (x3) | "Crossbuck" |
| › R15-2P | (x3) | "Number of Tracks" |
| › I-13 | (x2) | "Emergency Notification Sign" |
| › OM1-1 | (x4) | "Object Marker" |

Action Items:

Short-Term Improvements:

- Clear vegetation to improve sight distances.
- Repaint pavement markings on the roadway approaches and through the crossing.
- Upon reconfiguration of the driveway entrance to the north of the grade crossing, extend the roadway median an additional twenty feet . (See photos #1, #2). Proponent is proposing to implement all short term improvements pending local and state approvals of the project.

Long-Term Improvements:

- Renew deteriorated crossing gate mechanism housings (See photo #9).
- Relocate crossing signals to comply with MUTCD prescribed distance to roadway curb. The closest edge of the flasher roundel or the closest piece of equipment to be mounted on the mast is twenty-four inches to the edge of the curb (MUTCD sec. 8, fig. 8C-1) (See photo #10).
- Reconfigure crossing gates in the northwest quadrant to have a dedicated pedestrian gate and mechanism. Alternatively, the Siemens "S80" mechanism addresses the safety concern with conventional combination or 'scissor' gate mechanisms, but would require MBTA approval (See photo #11).
- Replace the asphalt and rubber rail seal in the crossing envelope to remedy poor roadway surface conditions (See photo #3).
- Consider additional lights or cantilever signal installations to address sight distance concerns from surrounding structures (See photo #4).

Site Photos:



Photo 1: North approach, looking south



Photo 2: South approach, looking north



Photo 3: Settled roadway surface within crossing island



Photo 4: Limited/Obstructed view of approaching trains, seen from north side of crossing, looking east.



Photo 5: Track from crossing, view east



Photo 6: Track from crossing, view west



Photo 7: Crossing view from northwest quadrant



Photo 8: Crossing view of southeast quadrant



Photo 9: Deteriorated gate mechanism housing



Photo 10: Signal light background on northeast quadrant, showing damage from vehicle impact, proximity to road



Photo 11: Signal on northwest quadrant, showing pedestrian gate geared to same mechanism as roadway gate



Photo 12: Signal on **southwest** quadrant, showing pedestrian gate

Attachments:

- U.S. Department of Transportation Crossing Inventory Form
- Federal Railroad Administration Highway-Rail Grade Crossing Accident/Incident Report

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
 FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 11 / 05 / 2023		B. Reporting Agency <input checked="" type="checkbox"/> Railroad <input type="checkbox"/> Transit <input type="checkbox"/> State <input type="checkbox"/> Other		C. Reason for Update (Select only one) <input checked="" type="checkbox"/> Change in Data <input type="checkbox"/> Re-Open <input type="checkbox"/> New Crossing <input type="checkbox"/> Date Change Only <input type="checkbox"/> Closed <input type="checkbox"/> No Train Traffic <input type="checkbox"/> Quiet Zone Update <input type="checkbox"/> Admin. Correction <input type="checkbox"/> Change in Primary Operating RR			D. DOT Crossing Inventory Number 052348J
Part I: Location and Classification Information							
1. Primary Operating Railroad Massachusetts Bay Transportation Authority (MBTA)		2. State MASSACHUSETTS		3. County MIDDLESEX			
4. City / Municipality <input checked="" type="checkbox"/> In <input type="checkbox"/> Near CONCORD		5. Street/Road Name & Block Number Baker Avenue (Street/Road Name) * (Block Number)		6. Highway Type & No. LS			
7. Do Other Railroads Operate a Separate Track at Crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Specify RR CSX				
9. Railroad Division or Region <input type="checkbox"/> None <input type="checkbox"/> Commuter Rail		10. Railroad Subdivision or District <input type="checkbox"/> None <input type="checkbox"/> North Side		11. Branch or Line Name <input type="checkbox"/> None <input type="checkbox"/> Fitchburg Main Line		12. RR Milepost BF 0021.600 (prefix) (nnnn.nnn) (suffix)	
13. Line Segment VS 361 MAP 21		14. Nearest RR Timetable Station West Concord		15. Parent RR (if applicable) <input checked="" type="checkbox"/> N/A		16. Crossing Owner (if applicable) <input checked="" type="checkbox"/> N/A	
17. Crossing Type <input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	18. Crossing Purpose <input checked="" type="checkbox"/> Highway <input type="checkbox"/> Pathway, Ped. <input type="checkbox"/> Station, Ped.	19. Crossing Position <input checked="" type="checkbox"/> At Grade <input type="checkbox"/> RR Under <input type="checkbox"/> RR Over	20. Public Access (if Private Crossing) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21. Type of Train <input checked="" type="checkbox"/> Freight <input type="checkbox"/> Intercity Passenger <input checked="" type="checkbox"/> Commuter <input type="checkbox"/> Transit <input type="checkbox"/> Shared Use Transit <input type="checkbox"/> Tourist/Other	22. Average Passenger Train Count Per Day <input type="checkbox"/> Less Than One Per Day <input checked="" type="checkbox"/> Number Per Day 38		
23. Type of Land Use <input type="checkbox"/> Open Space <input type="checkbox"/> Farm <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional <input type="checkbox"/> Recreational <input type="checkbox"/> RR Yard							
24. Is there an Adjacent Crossing with a Separate Number? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) <input type="checkbox"/> No <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> Partial <input type="checkbox"/> Chicago Excused Date Established 7/2/2006 12:00:00				
26. HSR Corridor ID <input checked="" type="checkbox"/> N/A		27. Latitude in decimal degrees (WGS84 std: nn.nnnnnn) 42.4581502		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnn) -71.3871516		29. Lat/Long Source <input checked="" type="checkbox"/> Actual <input type="checkbox"/> Estimated	
30.A. Railroad Use *			31.A. State Use *				
30.B. Railroad Use *			31.B. State Use *				
30.C. Railroad Use *			31.C. State Use *				
30.D. Railroad Use *			31.D. State Use *				
32.A. Narrative (Railroad Use) *			32.B. Narrative (State Use) *				
33. Emergency Notification Telephone No. (posted) 800-449-6393		34. Railroad Contact (Telephone No.) 617-222-8240		35. State Contact (Telephone No.) 617-305-3763			
Part II: Railroad Information							
1. Estimated Number of Daily Train Movements							
1.A. Total Day Thru Trains (6 AM to 6 PM) 26	1.B. Total Night Thru Trains (6 PM to 6 AM) 12	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day <input type="checkbox"/> How many trains per week? _____			
2. Year of Train Count Data (YYYY) 2020		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 65 3.B. Typical Speed Range Over Crossing (mph) From 45 to 65					
4. Type and Count of Tracks Main 2 Siding 0 Yard 0 Transit 0 Industry 0							
5. Train Detection (Main Track only) <input checked="" type="checkbox"/> Constant Warning Time <input type="checkbox"/> Motion Detection <input type="checkbox"/> AFO <input type="checkbox"/> PTC <input type="checkbox"/> DC <input type="checkbox"/> Other <input type="checkbox"/> None							
6. Is Track Signaled? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			7.A. Event Recorder <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		7.B. Remote Health Monitoring <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 11/05/2023		PAGE 2		D. Crossing Inventory Number (7 char.) 052348J	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
2. Types of Passive Traffic Control Devices associated with the Crossing					
2.A. Crossbuck Assemblies (count) 0		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) <input type="checkbox"/> None <input checked="" type="checkbox"/> W10-1 4 <input type="checkbox"/> W10-3 <input type="checkbox"/> W10-11 <input type="checkbox"/> W10-2 <input type="checkbox"/> W10-4 <input type="checkbox"/> W10-12	
2.E. Low Ground Clearance Sign (W10-5) <input checked="" type="checkbox"/> Yes (count 2) <input type="checkbox"/> No		2.F. Pavement Markings <input checked="" type="checkbox"/> Stop Lines <input type="checkbox"/> Dynamic Envelope <input checked="" type="checkbox"/> RR Xing Symbols <input type="checkbox"/> None		2.G. Channelization Devices/Medians <input checked="" type="checkbox"/> All Approaches <input checked="" type="checkbox"/> Median <input type="checkbox"/> One Approach <input type="checkbox"/> None	2.H. EXEMPT Sign (R15-3) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.J. Other MUTCD Signs Specify Type R8-8 Count 2 Specify Type W10-9P Count 4 Specify Type R15-2P Count 3		2.K. Private Crossing Signs (if private) <input type="checkbox"/> Yes <input type="checkbox"/> No		2.L. LED Enhanced Signs (List types)	
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway 2 Pedestrian 2	3.B. Gate Configuration <input checked="" type="checkbox"/> 2 Quad <input type="checkbox"/> Full (Barrier) <input type="checkbox"/> 3 Quad Resistance <input type="checkbox"/> 4 Quad <input type="checkbox"/> Median Gates	3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane 0 <input type="checkbox"/> Incandescent Not Over Traffic Lane 0 <input type="checkbox"/> LED		3.D. Mast Mounted Flashing Lights (count of masts) 3 <input type="checkbox"/> Incandescent <input checked="" type="checkbox"/> LED <input checked="" type="checkbox"/> Back Lights Included <input checked="" type="checkbox"/> Side Lights Included	3.E. Total Count of Flashing Light Pairs 6
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ <input checked="" type="checkbox"/> Not Required		3.G. Wayside Horn <input type="checkbox"/> Yes Installed on (MM/YYYY) ____/____/____ <input checked="" type="checkbox"/> No		3.H. Highway Traffic Signals Controlling Crossing <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.I. Bells (count) 2
3.J. Non-Train Active Warning <input type="checkbox"/> Flagging/Flagman <input type="checkbox"/> Manually Operated Signals <input type="checkbox"/> Watchman <input type="checkbox"/> Floodlighting <input checked="" type="checkbox"/> None				3.K. Other Flashing Lights or Warning Devices Count 0 Specify type _____	
4.A. Does nearby Hwy Intersection have Traffic Signals? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4.B. Hwy Traffic Signal Interconnection <input checked="" type="checkbox"/> Not Interconnected <input type="checkbox"/> For Traffic Signals <input type="checkbox"/> For Warning Signs	4.C. Hwy Traffic Signal Preemption <input type="checkbox"/> Simultaneous <input type="checkbox"/> Advance	5. Highway Traffic Pre-Signals <input type="checkbox"/> Yes <input type="checkbox"/> No Storage Distance * _____ Stop Line Distance * _____	6. Highway Monitoring Devices (Check all that apply) <input type="checkbox"/> Yes - Photo/Video Recording <input type="checkbox"/> Yes - Vehicle Presence Detection <input checked="" type="checkbox"/> None	
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes 2		<input type="checkbox"/> One-way Traffic <input checked="" type="checkbox"/> Two-way Traffic <input type="checkbox"/> Divided Traffic	2. Is Roadway/Pathway Paved? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3. Does Track Run Down a Street? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/____ Width * 27 Length * 55 <input type="checkbox"/> 1 Timber <input type="checkbox"/> 2 Asphalt <input checked="" type="checkbox"/> 3 Asphalt and Timber <input type="checkbox"/> 4 Concrete <input type="checkbox"/> 5 Concrete and Rubber <input type="checkbox"/> 6 Rubber <input type="checkbox"/> 7 Metal <input type="checkbox"/> 8 Unconsolidated <input type="checkbox"/> 9 Composite <input type="checkbox"/> 10 Other (specify) _____					
6. Intersecting Roadway within 500 feet? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Approximate Distance (feet) _____			7. Smallest Crossing Angle <input type="checkbox"/> 0° - 29° <input type="checkbox"/> 30° - 59° <input checked="" type="checkbox"/> 60° - 90°		8. Is Commercial Power Available? * <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Part V: Public Highway Information					
1. Highway System <input type="checkbox"/> (01) Interstate Highway System <input type="checkbox"/> (02) Other Nat Hwy System (NHS) <input type="checkbox"/> (03) Federal AID, Not NHS <input checked="" type="checkbox"/> (08) Non-Federal Aid		2. Functional Classification of Road at Crossing <input type="checkbox"/> (0) Rural <input checked="" type="checkbox"/> (1) Urban <input type="checkbox"/> (1) Interstate <input type="checkbox"/> (5) Major Collector <input type="checkbox"/> (2) Other Freeways and Expressways <input type="checkbox"/> (3) Other Principal Arterial <input type="checkbox"/> (6) Minor Collector <input checked="" type="checkbox"/> (4) Minor Arterial <input type="checkbox"/> (7) Local		3. Is Crossing on State Highway System? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4. Highway Speed Limit 25 MPH <input checked="" type="checkbox"/> Posted <input type="checkbox"/> Statutory
7. Annual Average Daily Traffic (AADT) Year 2019 AADT 4922		8. Estimated Percent Trucks 2 %	9. Regularly Used by School Buses? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Average Number per Day 24		10. Emergency Services Route <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____					
Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					



**HIGHWAY-RAIL GRADE CROSSING
 ACCIDENT/INCIDENT REPORT**

DEPARTMENT OF TRANSPORTATION
 FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of		Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Amtrak (National Railroad Passenger Corporation)		1a. ATK	1b. 102989A
2. Other Railroad Involved in Train Accident/Incident		2a.	2b.
3. Railroad Responsible for Track Maintenance Amtrak (National Railroad Passenger Corporation)		3a. ATK	3b. 102989A
4. U.S. DOT-AAR Grade Crossing ID No. 052348J		5. Date of Accident/Incident 10/29/89	6. Time of Accident/Incident 08:40 AM
7. Nearest Railroad Station WEST CONCORD		8. Division	9. County MIDDLESEX
		10. State Abbr. 25	Code MA
11. City (if in a city) CONCORD		12. Highway Name or No. BAKER STREET	
		<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	
Highway User Involved		Rail Equipment Involved	
13. Type A. Auto C. Truck-trailer F. Bus J. Other Motor Vehicle B. Truck D. Pick-up truck G. School Bus K. Pedestrian E. Van H. Motorcycle M. Other (specify)		17. Equipment 1. Train (units pulling) 4. Car(s) (moving) 2. Train (units pushing) 5. Car(s) (standing) 3. Train (standing) 7. Light loco(s) (standing)	
Code A		8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL	
Code 2			
14. Vehicle Speed (est. mph at impact) 15		15. Direction (geographical) 1. North 2. South 3. East 4. West	
Code 3		18. Position of Car Unit in Train 1	
16. Position 1. Stalled on crossing 3. Moving over crossing 2. Stopped on Crossing 4. Trapped		19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user	
Code 3		Code 1	
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither		20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither	
Code 4		Code	
20c. State the name and quantity of the hazardous material released, if any			
21. Temperature (specify if minus) 75 °F		22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark	
Code 2		23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow	
Code 1			
24. Type of Equipment Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) 3. Commuter train 6. Cut of cars 9. Main./inspect. car		25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry	
Code 2		Code 1	
26. Track Number or Name 2			
27. FRA Track Class 3		28. Number of Locomotive Units 1	
29. Number of Cars 5		30. Consist Speed (Recorded if available) R. Recorded 25 mph E. Estimated	
Code E		31. Time Table Direction 1. North 2. South 3. East 4. West	
Code 3			
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) Warning 3. Standard FLS 6. Audible 9. Watchman 12. None		33. Signaled Crossing Warning 20 sec warn min (1);	
Code(s) 01 03 06		34. Whistle Ban 1. Yes 2. No 3. Unknown	
Code 1		Code 3	
35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach		36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown	
Code 1		Code 2	
37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown		Code 3	
38. Driver's Age 39. Driver's Gender 1. Male 2. Female		40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	
Code 2		41. Driver 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop	
Code 1			
42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown		43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed	
Code 3		Code 5	
Casualties to:		44. Driver was 1. Killed 2. Injured 3. Uninjured	
Killed 0 Injured 0		Code 3	
45. Was Driver in the Vehicle? 1. Yes 2. No		Code 1	
46. Highway-Rail Crossing Users 0 0		47. Highway Vehicle Property Damage (est. dollar damage) \$1,500	
		48. Total Number of Highway-Rail Crossing Users (include driver) 1	
49. Railroad Employees 0 0		50. Total Number of People on Train (include passengers and crew)	
52. Passengers on Train 0 0		51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No	
		Code 2	
53a. Special Study Block		53b. Special Study Block	
54. Narrative Description			
55. Typed Name and Title		56. Signature	
		57. Date	



**HIGHWAY-RAIL GRADE CROSSING
 ACCIDENT/INCIDENT REPORT**

DEPARTMENT OF TRANSPORTATION
 FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB Approval No. 2130-0500

Name Of		Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Amtrak (National Railroad Passenger Corporation)		1a. ATK	1b. 102989A
2. Other Railroad Involved in Train Accident/Incident		2a.	2b.
3. Railroad Responsible for Track Maintenance Amtrak (National Railroad Passenger Corporation)		3a. ATK	3b. 102989A
4. U.S. DOT-AAR Grade Crossing ID No. 052348J		5. Date of Accident/Incident 10/29/89	6. Time of Accident/Incident 08:40 AM
7. Nearest Railroad Station WEST CONCORD		8. Division	9. County MIDDLESEX
		10. State Abbr. 25 MA	Code
11. City (if in a city) CONCORD		12. Highway Name or No. BAKER STREET	
		<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	
Highway User Involved		Rail Equipment Involved	
13. Type A. Auto C. Truck-trailer F. Bus J. Other Motor Vehicle B. Truck D. Pick-up truck G. School Bus K. Pedestrian E. Van H. Motorcycle M. Other (specify)		17. Equipment 1. Train (units pulling) 4. Car(s) (moving) 2. Train (units pushing) 5. Car(s) (standing) 3. Train (standing) 7. Light loco(s) (standing)	
Code A		Code 2	
14. Vehicle Speed (est. mph at impact) 15		15. Direction (geographical) 1. North 2. South 3. East 4. West	
Code 3		Code 1	
16. Position 1. Stalled on crossing 3. Moving over crossing 2. Stopped on Crossing 4. Trapped		19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user	
Code 3		Code 1	
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither		20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither	
Code 4		Code	
20c. State the name and quantity of the hazardous material released, if any			
21. Temperature (specify if minus) 75 °F		22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark	
Code 2		Code 1	
23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow		Code 1	
24. Type of Equipment Consist 1. Freight train 4. Work train 7. Yard/Switching (single entry) 2. Passenger train 5. Single car 8. Light loco(s) 3. Commuter train 6. Cut of cars 9. Main./inspect. car		25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry	
Code 2		Code 1 2	
27. FRA Track Class 3		28. Number of Locomotive Units 1	
29. Number of Cars 5		30. Consist Speed (Recorded if available) R. Recorded 25 mph E. Estimated	
Code E		Code 3	
31. Time Table Direction 1. North 2. South 3. East 4. West		Code 3	
32. Type of Crossing 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (specify) Warning 3. Standard FLS 6. Audible 9. Watchman 12. None		33. Signaled Crossing Warning 34. Whistle Ban 1. Yes 2. No 3. Unknown	
Code(s) 01 03 06		Code 20 sec warn min (1);	
35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach		36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown	
Code 1		Code 2	
37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown		Code 3	
38. Driver's Age 39. Driver's Gender 1. Male 2. Female		40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	
Code 2		Code 1	
41. Driver 1. Drove around or thru the gate 4. Stopped on crossing 2. Stopped and then proceeded 5. Other (specify) 3. Did not stop		Code 1	
42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown		Code 3	
43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify) 2. Standing railroad equipment 4. Topography 6. Highway Vehicles 8. Not Obstructed		Code 5	
Casualties to:		44. Driver was 1. Killed 2. Injured 3. Uninjured	
Killed 0		Code 3	
Injured 0		Code 1	
46. Highway-Rail Crossing Users 0 0		47. Highway Vehicle Property Damage (est. dollar damage) \$1,500	
Code 1		Code 1	
49. Railroad Employees 0 0		50. Total Number of People on Train (include passengers and crew)	
Code 2		Code 2	
52. Passengers on Train 0 0		51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No	
Code 2		Code 2	
53a. Special Study Block		53b. Special Study Block	
54. Narrative Description			
55. Typed Name and Title		56. Signature	
57. Date			



**HIGHWAY-RAIL GRADE CROSSING
 ACCIDENT/INCIDENT REPORT**

**DEPARTMENT OF TRANSPORTATION
 FEDERAL RAILROAD ADMINISTRATION (FRA)**

OMB Approval No. 2130-0500

Name Of		Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad Boston & Maine Corporation [BM]		1a. BM	1b. 790414
2. Other Railroad Involved in Train Accident/Incident		2a.	2b.
3. Railroad Responsible for Track Maintenance Boston & Maine Corporation [BM]		3a. BM	3b. 790414
4. U.S. DOT-AAR Grade Crossing ID No. 052348J		5. Date of Accident/Incident 12/07/79	6. Time of Accident/Incident 08:00 AM
7. Nearest Railroad Station CONCORD		8. Division	9. County MIDDLESEX
		10. State Abbr. 25	Code MA
11. City (if in a city) CONCORD		12. Highway Name or No. BAKER AVE	
		<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	
Highway User Involved		Rail Equipment Involved	
13. Type A. Auto B. Truck C. Truck-trailer D. Pick-up truck E. Van F. Bus G. School Bus H. Motorcycle J. Other Motor Vehicle K. Pedestrian M. Other (specify)		17. Equipment 1. Train (units pulling) 2. Train (units pushing) 3. Train (standing) 4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL	
Code A		Code 1	
14. Vehicle Speed (est. mph at impact) 10		15. Direction (geographical) 1. North 2. South 3. East 4. West	
Code 1		Code 1	
16. Position 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped		19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user	
Code 3		Code 1	
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither		20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither	
Code 4		Code	
20c. State the name and quantity of the hazardous material released, if any			
21. Temperature (specify if minus) 45 °F		22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark	
Code 2		Code 1	
23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow		Code 1	
24. Type of Equipment Consist (single entry) 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car		25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry	
Code 2		Code 1	
26. Track Number or Name WESTBOUND MAIN LINE		Code	
27. FRA Track Class 3		28. Number of Locomotive Units 1	
29. Number of Cars 3		30. Consist Speed (Recorded if available) R. Recorded E. Estimated 30 mph	
Code E		Code 4	
31. Time Table Direction 1. North 2. South 3. East 4. West		Code 4	
32. Type of Crossing 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (specify) 12. None		33. Signaled Crossing Warning 20 sec warn min (1);	
Code(s) 01 03 06 07		Code	
34. Whistle Ban 1. Yes 2. No 3. Unknown		Code	
35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach		36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown	
Code 1		Code 2	
37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown		Code 1	
38. Driver's Age 39. Driver's Gender 1. Male 2. Female		40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	
Code 2		Code 2	
41. Driver 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop		42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown	
Code 1		Code 2	
43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other (specify) 8. Not Obscured		Code 8	
Casualties to:		44. Driver was 1. Killed 2. Injured 3. Uninjured	
Killed 0 Injured 0		Code 3	
45. Was Driver in the Vehicle? 1. Yes 2. No		Code 1	
46. Highway-Rail Crossing Users 0 0		47. Highway Vehicle Property Damage (est. dollar damage) \$700	
		48. Total Number of Highway-Rail Crossing Users (include driver) 2	
49. Railroad Employees 0 0		50. Total Number of People on Train (include passengers and crew)	
52. Passengers on Train 0 0		Code 2	
51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No		Code 2	
53a. Special Study Block		53b. Special Study Block	
54. Narrative Description			
55. Typed Name and Title		56. Signature	
57. Date			