SECTION 00 90 01
BIDDING AND CONTRACT REQUIREMENTS
ADDENDUM NUMBER (05)

SmithGroup, Inc.
35 E Wacker Dr #900
Chicago, IL 60661
312.641.0770

To: Prospective Bidders

Issued: May 9, 2024

Re: ADDENDUM NUMBER (05) TO THE BIDDING DOCUMENTS FOR

Bid 24-032 Elgin Sports Complex Expansion
Architect's Project Number: 14106

This addendum forms a part of the bidding and contract documents and modifies the original bidding documents dated April 11, 2024. Acknowledge receipt of this addendum in the space provided on Bid Form. FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.

ADDENDA TO THE PROJECT MANUAL – VOLUME 1

1. SCHEDULE OF PRICES – Added a bid item line for Division 00 and 01.

2. Section 321813 S-Synthetic Turf, paragraph 1.1.A.1.a: Delete and replace with the following: a. All materials, labor and equipment for installation of the synthetic turf system as indicated on the drawings.

3. Section 321813 S-Synthetic Turf, paragraph 2.2.A.a: Delete and replace with the following: a. 2.25" pile height.

4. Section 321813 S-Synthetic Turf, paragraph 2.2.A.c: Delete and replace with the following: c. Minimum 6 pounds per square foot total infill weight (min 1.5 pounds sand to max 4 pounds sand).

5. Section 321813 S-Synthetic Turf, paragraph 3.2.A.1-4: Delete and replace with the following: A. Base stone construction shall be in accordance with Section 312000 S-Earth Moving.

6. Section 321813.10 S-Playground Turf, paragraph 2.1.J: J. Delete and replace with the following: J. Infill material: Natural sand or Envirofill non-toxic, non-absorbent green silicone dioxide granules. Recycled rubber is not an acceptable infill material for the turf.

7. Section 321813.10 S-Playground Turf, add paragraph 2.1.K: K. Engineered playground underlayment shall consist of DuPont Ground Grid filled with recycled rubber and Safety Foam Pro or approved equal. Recycled rubber is an acceptable underlayment material.

8. Updated to include trace wire - LANDSCAPE IRRIGATION

ADDENDA TO THE DRAWINGS – VOLUME 1

1. CS-101 - LAYOUT AND MATERIALS PLAN - AREA B & CS-102 - LAYOUT AND MATERIALS PLAN - AREA C - Added gravel shoulder to west side of Sports Way
2. CS-401 - PLAZA ENLARGEMENT - Added Bench keyed notes
3. LP-102 - LANDSCAPE PLAN - AREA B - Revised limits and quantities of lawn seed mix
4. LP-103 - LANDSCAPE PLAN - AREA C - Revised limits and quantities of detention basin and lawn seed mixes
5. LP-501- PLANTING DETAILS AND SCHEDULE: Updated planting schedule
6. ALT-500 – ALTERNATE DETAILS - Updated Detail 8
7. Updated - IR-100 - IRRIGATION PLAN
8. Updated ALT-200 - ALTERNATE 2 – ATHLETIC FIELD 3 IRRIGATION
9. Updated ALT-201 - ALTERNATE 8 - CORE AREA IRRIGATION
10. Updated - IR-200 – IRRIGATION DETAILS
11. Updated - IR-201 – IRRIGATION DETAILS

ADDENDA TO THE PROJECT MANUAL – VOLUME 2

1. None

ADDENDA TO THE DRAWINGS – VOLUME 2

1. Updated S-001 – GENERAL NOTES AND ABBREVIATIONS -
2. Updated S-502 - TYPICAL DETAILS

SUPPORTING INFORMATIONAL DOCUMENTS:

1. CAD File Named: 14106-Elgin SC Expansion-CAD.dwg & CONTRACTOR ELECTRONIC/DATA/DIGITAL FILES AGREEMENT – A CAD file for the project has been provided to the bidders for information only. Any downloading and use is subject to the terms in the CONTRACTOR ELECTRONIC/DATA/DIGITAL FILES AGREEMENT. Bidders downloading the file **shall** sign the unmodified agreement and return it back to SmithGroup before bid submission.
2. Pre-Bid Meeting Minutes added to Addendum 5 packet.

CLARIFICATIONS – VOLUME 1:

1. Please provide a playground component list with all critical fall heights. **See updates to ALT-500 in Addendum 5**.
2. The drawings don't list a CFH for individual equipment pieces. Please provide critical fall height information for individual pieces of equipment in order to quote the appropriate impact attenuation system. **See updates to ALT-500 in Addendum 5**
3. Could you please make the .cad file available for bidding purposes. **Provided in via Addendum 5**.
4. When you get a moment could you forward all of the cad files associated with the above mentioned project. Without these cad files it is delaying our takeoff. **Provided in via Addendum 5**.
5. Can you provide civil CAD files for takeoff purposes? **Provided in via Addendum 5**.
6. Has the project been engineered by both Com-ed and Nicor-Gas? We would like to be able to run the natural gas into the site meters and utilize for winter heat. **Natural gas service is not used in this project, per documents. Electrical design has been coordinate with ComEd and needs to be coordinated with all site utilities and plans**.

7. The Bike Rack shows on Volume 1 Alt-300, are the Bike Racks in the Base Bid or the Alternate 3? **Bike racks are not in Alternate 3, as delineated in ALT-100**.
8. Wood Bench from Harvested tree from site: • Drawing CS-506 Detail 5 calls out for a wood bench to be made from a tree harvested from the site, what is the length. **See CS & ALT sheets. CS-401 reissued in Addendum 5 for bench location clarity in base bid. Coordinate work with G.H. Woodworking.**
9. • Drawing Alt-103 & Alt-500 show 4 Benches. Is this the only location we have Benches, are they only in Alternate 3? **See CS & ALT sheets. CS-401 reissued in Addendum 5 for bench location clarity in base bid. Coordinate work with G.H. Woodworking.**
10. What is the height/depth of the containment curb around the playfields in Detail 8/ALT-500 shows 4 but does not list length. **Playground Containment Curb is detailed on sheet ALT-500. See plans for lengths**.
11. The existing bike path shown to connect, north of work area, does not appear to be existing. Please confirm that we do not need to perform any work in the existing path. **Existing path is shown on multiple sheets throughout set**.
12. Please confirm what the required work indicated by the dashed triangle hashing on the shrubs in Area A on Drawing CD-101 is. See snip below. **See Callout "C" and planting plans**.
13. Vol. 1 Page E101 – Key note E108 does not appear on the drawings or any other drawing that we could locate, please provide location of this note and/or details for the site telecom scope. **This keynote is in reference to telecom/fiber scope of work which was deferred to Addendum 3. Disregard this keynote and refer to Addendum 3 E-120 series drawings dated 5/2/2024 for all telecom/fiber/security scope of work.**
14. Spec section 329200 - S - LAWNS Part 3.3 B & C call out the required depth for topsoil placement for sod and low-mow seeding areas. Please provide the depth of topsoil required for lawn seed mix areas. Also, please confirm the required depth of topsoil is 18" for native seed mix areas. **See Specs, LP and LNP Sheet Notes and details. Lawn Sod and Lawn Seed require same depths**.
15. Spec section 323300 sub paragraph 2.5 Pavilion Shelter, Drawing A-001 Calls out the Pavilion to be by others, Drawing CS-401 Keyed Note "J" (see detail 6/CS-506, Drawing CS-506 detail 6 - states "Preliminary Not for Construction", Drawing CS-401 Keyed Note "J" Drawing S-101 states "Pavilion by Others", this drawing does show what could be columns or piers but not sure. Please confirm if the Pavilion is part of the SOW for this bid and if so, please provide foundation information? **Pavilion is in scope of work. See S-500 for Pavilion Footing**.
16. Drawing CS-502 Detail 1 Retaining Wall Note 4 States that the Contractor is responsible obtaining required permits for the segmented retaining wall, including associated permitting fees (what are these) and how much? **These are typical construction permits. Contractor to verify cost and permits needed**.
17. There are multiple areas shown on grading plans CG-102 and CG-103 that show grading limits with no grading, but on the landscape plan it shows restoration within these areas of no grading. Please confirm if it is required to topsoil and seed/sod within these areas of no grading. **Per specifications and sheets, all planted areas require topsoil**.
18. Will there be revised landscaping plans issued to reflect the revised grading plans issued in Addendum #3? The limits of the native seed mixes does not match the contours particularly in the South detention basin of Area C. **See updated sheets (LP-102-103 & 501) issued in Addendum 5**.
19. 2. Are we to include General Conditions, Overhead & Profit, and Bond amount under Bid Line No. 7 in the Schedule of Prices? **See updated Schedule of Values issued in Addendum**
20. 16. Please provide key that identifies the symbol in the snip below. The symbol can be found on Drawing CS-307 near station marking 33+00. **The "hatch-like" linework is not hatching intended to represent a site feature; they are contour lines that have since been removed.**
21.

CLARIFICATIONS – VOLUME 2:

1. 2. Is VP Buildings (www.varcopruden.com) an approved metal building manufacturer for this project? See 2.1 A. **VP Buildings may be approved for this project, subject to compliance with**

requirements and ability to meet all aspects of the design intent per the design drawings and specifications; final approval is subject to review of a full submittal by the project Architect.

2. Refer 2/ S-111 Concessions Building Conditioned Envelope Roof Plan: **See following responses:**
3. Provide a detail showing the construction of the wood framing bearing condition at CL. AC, AF, AG-, and AJ. **Refer to "Typical Detail Wood Ledger Support of Joists @ CMU or Concrete Wall" on S-502**
4. Provide a detail showing the construction of the wood framing connection at the intersection of CL. A1 – AG-, CL. A1 – AJ, CL. A2 – AC, CL. A2 – AF, CL. A2+ - AF, CL. A2+ - AG-, CL. A4 – AC, CL. A4 – AF, CL. A5 – AG-, and CL. A5 – AJ. **Refer to "Typical Detail Wood Ledger Support of Joists @ CMU or Concrete Wall" on S-502**
5. 4. Spec. section 074223.16 sub paragraph 1.1 B. 1. and Spec section 133419 sub paragraph 1.1.B.1 references a spec section 077253 “snow guards”, but no such section exists. If it is the intent that Snow Guards are to be provided, please provide spec as well as show location/count on required drawings, if not please omit reference to 077253? **Repeated question, see prior response**
6. 3. Confirm plan tag “S1” equals Roof Sheathing (Standard) nom. 5/8” thick T&G plywood. **Refer to Slab/Deck Schedule on S-601 for "S1" details: 3/4" Plywood Sheathing and S-001 for general notes**
7. 4. Provide a drawing showing the required roof framing bridging layout. **Refer to S-001 "Framing Lumber" general notes No. 16**
8. Refer 1/ S-111 Concessions Building Conditioned Envelope Roof Plan: **See following responses:**
9. 1. Provide a detail showing the construction of the wood framing bearing condition at CL. AA, AB, AC, AF, AG-, and AJ. **Wood joists are not bearing along full CL. AA and AB and instead span to steel member W8x58, reference 1/ S-111. For CL. AC, refer to section detail 5/ S-401 for hold down angle connection. For CL. AF, refer to "Typical Sawn Lumber Joists to Sawn Lumber Girders" detail on S-502.**
10. 2. Provide a detail showing the construction of the wood framing connection at the intersection of CL. A2+ - AF, and CL. A2+ – AG-. **Refer to "Typical Detail Wood Ledger Support of Joists @ CMU or Concrete Wall" on S-502**
11. 3. Confirm plan tag “S1” equals Roof Sheathing (Standard) nom. 5/8” thick T&G plywood. **Refer to Slab/Deck Schedule on S-601 for "S1" details: 3/4" Plywood Sheathing and S-001 for general notes**
12. 4. Provide a drawing showing the required roof framing bridging layout. **Refer to S-001 "Framing Lumber" general notes No. 16**
13. Refer 1/A-501 Assembly – **Slab On Grade. See following responses:**
14. 1. Advise as to whether the 07.32 (INSUL-1) XPS RIGID BOARD INSULATION AS SPECIFIED (DIV-07) is required to extend under the entirety of the slab. Please clarify. **Confirmed: INSUL-1 is required to extend under the full slab.**
15. 2. Advise as to whether 1/A-501pertains to both the Concessions and Maintenance structures. Please clarify. **Confirmed: 1/A-501 applies to both buildings.**
16. 1. Dimensions differs from the scale on drawings A101, A-111, A201, A202, S-100, S-111, S-120. Please let us know if these drawings will be revised in Addendum #2, or let us know how to proceed. **Upon checking the indicated sheets, the scale appears correct; discrepancies may be due to scaling errors in printing. In all cases written dimensions govern, do not scale drawings to obtain missing dimensions. If critical dimensions are missing please ask the Architect for confirmation of the exact location needed.**
17. 3. A spec is provided for coiling counter doors but cannot be found on the plans. There are two (2) openings in the Concessions 100 Room but no detail for coiling counter doors can be located and they aren’t called out on the door schedule. Detail 2 on Sheet A-551 shows a sliding window system but no coiling counter door. Also see Detail 1-3 on Sheet A-531. Please provide direction on how we should proceed. **Similar question as RFI 26, similar response as follows: The design intent is for the Concessions service openings to receive both sliding glass windows and lockable coiling countertop doors as specified. Please note that these openings will also receive an air curtain device on the interior as indicated on the Mechanical plans, see 1/M-201, Keynote 13;**

Mechanical coordination will be required. The drawings will be revised for clarity on the intended placement of the coiling countertop doors.

18. 5. Could VP Buildings (www.varcopruden.com) be approved as an acceptable/equal Metal Building manufacturer for this project? See Spec section 133419 sub paragraph 2.1 A.? **Repeated question, see prior response.**
19. 6. In the Maintenance building can the X brace run through the clerestory windows at the North Elevation? **Repeated question, see prior response.**
20. 7. The Entry Porch is not of typical PEMB design. • The drawings show columns with knee braces and are these pipe or tube columns (canopy elevations shown on A-202) this is not typical for a PEMB manufacture? **Similar question to previous question, similar response as follows: Please adhere to the design intent, provide framing by others if required, including pipe columns with knee braces as depicted in the drawings (Sheet A-202 EXTERIOR ELEVATIONS - MAINTENANCE). Provide shop drawings for Architect's approval**.
21. • These entry porch columns at CL's B1, B3, B4. B5, BD, BC, BB and BA are not sized. There are column spacing and other details that would not match the bid drawings. Should this framing system be by others/structural or can we design this per the PEMB's delegated design in the member sizes and shapes as economical per their design? **Similar question to previous question, similar response as follows: Please adhere to the design intent, provide framing by others if required, including pipe columns with knee braces as depicted in the drawings (Sheet A-202 EXTERIOR ELEVATIONS -MAINTENANCE). Provide shop drawings for Architect's approval**.
22. • Please provide foundation/pier detail for Entry Porch Canopy. **Refer to S-120 for sonotube foundation locations and "Sonotube Foundation Schedule" on S-601 for reinforcement and additional details**
23. 8. Drawing S-110 CL A4 left of CL AA make's reference to the Rain Harvest Cistern foundation being shown on Civil/Structural drawings, I found in the Volume 1 drawings a Detail 7/S-500 titled Cistern Foundation however this detail number and page number do not exist on any page showing the Basin. **The referenced detail applies. Cistern foundation details not shown on structural drawings (S-XXX), only location relative to building is shown.**
24. 12. Is the Gabion wall height to be the same 8'-0" height of the buildings exterior wall shown in elevation 4/A-201? **Confirmed: Top of Gabion wall is to be 8'-0" matching the 8'-0" datum shown at the Concessions Building, as shown on the exterior elevations.**
25. 17. Please provide product details and mounting details for the bench identified on Wall section 7 on Drawing A-311. **See detail 1/A-551.**
26. 18. There are 2 Plumbing Fixture Schedule one is on A632 and the other on P601, the two schedules have conflicting information and the P601. Which Plumbing Fixture Schedule are we to follow? **The schedule on A-632 is shown for coordination purposes only, please refer to the schedule on P-601 for fixture selections.**
27. 19. Please provide basis of design and spec sections for the Conc-1 and Conc-2 floor finished called out in the Room Finish Schedule. **Please refer to SECTION 033546 – B - CONCRETE FLOOR SEALER AND HARDENER.**
28. 1. The Concession Building bathroom benches per elevation 2 & 8/A-211 indicate the wall benches to be solid surface material (SS-1), but Detail 1/A-511 & 1/A-551 keynote #6.07 says this bench is to be salvaged wood. **Please advise if this bench is wood or solid surface. Confirmed bench is to be solid surface (SS-1). Drawings and notes are corrected for clarity see Addnendum 4, sheet A-551**.
29.

This addendum consists of (6) pages, excluding attachments.

END 00 90 01.

Attachments:

1. **CONTRACTOR ELECTRONIC/DATA/DIGITAL FILES AGREEMENT**
2. **CAD File Named: 14106-Elgin SC Expansion-CAD.dwg**
3. **Pre-Bid Meeting Minutes**

4. **Specifications – Volume 1:**
    a. SCHEDULE OF VALUES – See City Website
    b. 328400 - LANDSCAPE IRRIGATION

5. **Drawings – Volume 1**:
    a. CS-101 - LAYOUT AND MATERIALS PLAN - AREA B
    b. CS-102 - LAYOUT AND MATERIALS PLAN - AREA C
    c. CS-401 - PLAZA ENLARGEMENT
    d. LP-102 - LANDSCAPE PLAN - AREA B
    e. LP-103 - LANDSCAPE PLAN - AREA C
    f. LP-501- PLANTING DETAILS AND SCHEDULE
    g. ALT-500 – ALTERNATE DETAILS
    h. IR-100 - IRRIGATION PLAN
    i. ALT-200 - ALTERNATE 2 – ATHLETIC FIELD 3 IRRIGATION
    j. ALT-201 - ALTERNATE 8 - CORE AREA IRRIGATION
    k. IR-200 – IRRIGATION DETAILS
    l. IR-201 – IRRIGATION DETAILS

6. **Specifications – Volume 2:**
    a. None

7. **Drawings – Volume 2**:
    a. S-001 – GENERAL NOTES AND ABBREVIATIONS
    b. S-502 - TYPICAL DETAILS

SMITHGROUP

CONTRACTOR ELECTRONIC/DATA/DIGITAL FILES AGREEMENT

SG Project Title: Elgin Sports Complex Expansion – Bid 2
SG Project Location: City of Elgin, IL
SG Project Number: 14106

The Contractor has requested that SmithGroup, Inc (SmithGroup) provide certain electronic/data/digital files (Files) from SmithGroup's Instruments of Service, and/or Work Product, as the case may be, for the Project identified above. The Files are requested for the purpose of providing convenience in the preparation of submittals, such as shop drawings and coordination drawings.

Contractor covenants and agrees that: 1) the Files are Instruments of Service of SmithGroup, the author, and/or Work Product of SmithGroup, as the case may be; 2) in providing the Files, SmithGroup does not transfer common law, statutory law, or other rights, including copyrights; 3) the Files are not Contract Documents, in whole or in part; and 4) the Files are not As-Built files.

Contractor acknowledges that due to the limitations of the Files, not all elements of the SmithGroup's services may be represented in the Files, this being in the sole discretion of SmithGroup. Accordingly, although SmithGroup will endeavor to represent all material elements of SmithGroup's services in the Files, any use shall not relieve the Contractor, or other Contractor authorized recipients or their respective obligations.

Contractor understands that the Files have been prepared to SmithGroup criteria and may not conform to Contractor's drafting or other documentation standards. The Contractor further agrees that they are using the Files at their own risk, and that SmithGroup does not warrant the accuracy of these Files.

Contractor understands that due to the translation process of certain CADD formats, and the transmission of such Files to Contractor that SmithGroup does not guarantee the accuracy, completeness or integrity of the data, and that the Contractor will hold SmithGroup harmless for any data or file clean-up required to make these Files usable.

Contractor understands that even though SmithGroup may have computer virus scanning software to detect the presence of computer viruses, there is no guarantee that computer viruses are not present in the Files, and that Contractor will hold SmithGroup harmless for such viruses and their consequences, as well as any and all liability or damage caused by the presence of a computer virus in the Files.

Contractor agrees that the use of the Files does not reduce nor modify the Contractor's bidding or contract responsibilities for submitting complete and coordinated services.

Contractor agrees, to the fullest extent permitted by law, to indemnify and hold SmithGroup harmless from any and all damage, liability, or cost (including protection from loss due to attorney's fees and costs of defense), arising from or in any way connected with and changes made to the Files by Contractor or Contractor's failure to coordinate the electronic Files with modifications to the Contract Documents.

Under no circumstances shall transfer of Files to Contractor be deemed a sale by SmithGroup. SmithGroup makes no warranties, express or implied, of merchantability or fitness for any particular purpose.

Accepted for the Contractor:

	Company
By	Title
Signature	Date

SMITHGROUP

MEETING MINUTES
www.smithgroup.com

PROJECT	Elgin Pre-Bid Meeting	MEETING NO.	1
PROJECT NO.	14106	MEETING DATE	4/24/2024
SUBJECT	Pre-Bid	MEETING TIME	3:00pm
PREPARED BY	SmithGroup	MEETING LOCATION	Centre of Elgin

ATTENDED	NAME	COMPANY
	Daina DeNye	City of Elgin
	Maria Cumpata	City of Elgin
	Barb Keselica	City of Elgin
	Greg Hulke	City of Elgin
	Paul Wiese	SmithGroup
	Bryan Zundel	SmithGroup
	Kamil Radecki	SmithGroup

For Contractor Attendees see Qualified Bidders List issued in Addendum 2.

The meeting covered the following Agenda:

1) Procurement and contracting requirements
2) Communication during bidding period
3) Contracting requirements
4) Construction documents
5) Schedule
6) Post-Meeting addendum

Questions:
Is it a requirement to be a part of labor union?
In Elgin there is a labor union but not required to be able to bid on project

Question about work being done by others on and around site.
Rt 31 is under construction by IDOT and is not expected to interfere with the project.
There is a Nicor project that has temporary easements on site.

Question about project award and schedule
Project will be awarded in June, completion for 2025.

For the addendum we are planning to issue addendum tomorrow and again next week.

Is this a tax exempt Project?
Yes it is. Elgin will give the tax exempt letter to anyone who needs it.

What bid bond percentage is this project?
It is 5%, but it will be cleared up in the addendum.

Do you have agency hired for testing?
Owner will pay for testing agency; contractor must test material brought by contactor.

Is the owner getting and installing equipment? Is the electrical to be done by owner or contractor? Bryan asked to submit question in writing

Is there any fire safety to be done by contactor?
It will be clarified in the addendum.

Can you send a list of meeting attendees?
Yes

Foundation drawing s110 s112….
It is unclear what was asked, but please submit the question in writing.

END OF MINUTES

If the information contained in these minutes does not reflect your understanding of the meeting, please advise the writer immediately in writing. Otherwise, we will assume that it is accurate.

ATTACHMENTS

Qualified Bidders List issued in Addendum 2.

SECTION 328400 – S-LANDSCAPE IRRIGATION

PART 1 - GENERAL

1.1 SCOPE

A. Furnish all labor, materials, supplies, equipment, tools and transportation, and perform all operations in connection with and reasonably incidental to the complete installation of the irrigation system, pumping station and guarantee/warranty as shown on the drawings, the installation details, and as specified herein.

1.2 ITEMS OF WORK INCLUDED

A. Items of work specifically included are:

1. Procurement of all applicable licenses, permits, and fees.
2. Coordination of Utility Location. (“Call Before You Dig”)
3. Installation, connection of all sensors, and programming of irrigation controller.
4. Installation and connection to irrigation central control system.
5. Provision and connection of electrical power supply to the irrigation control system.
6. Installation of pumping plant for irrigation system.
7. Maintenance period.
8. Sleeving for irrigation pipe and wire.

1.3 ITEMS OF WORK NOT INCLUDED

A. Items of work specifically excluded are:

1. Excavation, installation and backfill of tap into municipal water line.
2. Excavation, installation and backfill of water meter and vault.

1.4 RELATED WORK

A. Division 00 00 00 – Procurement and Contracting Requirements

B. Division 01 00 00 – General Requirements

C. Division 02 00 00 – Existing Conditions

D. Division 32 00 00 – Exterior Improvements

1. Section 32 92 00 – Lawns
2. Section 32 93 00 – Exterior Plantings

1.5 SUBMITTALS

A. Submit samples under provisions of Contract Documents

B. Deliver four (4) copies of all required submittals to the Engineer within fifteen (15) days from the date of the Notice to Proceed.

C. Materials List: All components specifically identified on the irrigation drawings. Quantities of materials need not be included.

D. Manufacturers' Data: Submit manufacturers' catalog cuts, specifications, and operating instructions for equipment shown on the materials list. Highlight specific items to be utilized for construction of the irrigation system.

E. Shop Drawings: Submit shop drawings called for in the installation details. Show products required for proper installation, their relative locations, and critical dimensions. Note modifications to the installation detail.

F. Project Record Drawings: Submit project record (As-Built) drawings to Owner prior to commencement of maintenance period per Contract Documents. Accurate and complete project record drawings will be required before the maintenance period begins.

1.6 RULES AND REGULATIONS

A. Work and materials shall be in accordance with the latest edition of the National Electric Code, the Uniform Plumbing Code as published by the Western Plumbing Officials Association, and applicable laws and regulations of the governing authorities.

B. When the contract documents call for materials or construction of a better quality or larger size than required by the above-mentioned rules and regulations, provide the quality and size required by the contract documents.

C. If quantities are provided either in these specifications or on the drawings, these quantities are provided *for information only*. It is the Contractor's responsibility to determine the actual quantities of all material, equipment, and supplies required by the project and to complete an independent estimate of quantities and wastage.

1.7 TESTING

A. Notify the Engineer three (3) days in advance of any testing.

B. Pressure Test:

1. Pipelines jointed with rubber gaskets or threaded connections may be subjected to a pressure test at any time after partial completion of backfill. Pipelines jointed with solvent-welded PVC joints shall be allowed to cure a minimum of 24 hours before testing. Pipelines installed with thrust blocks shall have the concrete cured for a minimum of seven (7) days before testing.

2. Subsections of mainline pipe may be tested independently, subject to the review of the Engineer.

3. Furnish clean, clear water, pumps, labor, fittings, and all equipment necessary to conduct tests or retests.

4. The test pressure shall not exceed the rated working pressure of the pipe.

a. Hydrostatic Pressure Test:

1) Fill mainline pipe with water, purge all air out of the system. Subject mainline pipe to a hydrostatic pressure of 150 PSI for two hours. Test with mainline components installed. A 2 PSI pressure variation is allowed.

a) The use of an air compressor to provide pressure is not allowed.

2) Fill lateral pipe with water, purge all air out of the system. Subject lateral pipe to a hydrostatic pressure of 75 PSI. Test with risers for sprinklers capped.

a) The use of an air compressor to provide pressure is not allowed.

3) Backfill to prevent pipe from moving under pressure. Expose couplings and fittings.

4) Leakage will be detected by visual inspection. Replace defective pipe, fitting, joint, valve, or appurtenance. Repeat the test until the pipe passes test.

a) Cement or caulking to seal leaks is prohibited.

5) The Engineer reserves the option to furnish the gauges and metering devices for the tests.

C. Operational Test:

1. Prior to the Operational Test connect and configure all system sensors.

a. The flow sensor shall be operational and operated per the manufacturer's instructions to learn the flow for all zones to be tested. The flow shall be stored in the controller's memory.

b. The master valve shall be installed and connected to the controller, and fully operational.

c. All rain, wind, temperature, weather or other sensors specified on the plan shall be installed, connected, and fully operational.

2. Activate each remote-control valve in sequence from controller. The Engineer will visually observe operation, water application patterns, and leakage.

3. Replace defective remote-control valve, solenoid, wiring, or appurtenance to correct operational deficiencies.

4. Replace, adjust, or move water emission devices to correct operation or coverage deficiencies.

5. Replace defective pipe, fitting, joint, valve, sprinkler, or appurtenance to correct leakage problems.

6. Cement or caulking to seal leaks is prohibited.

7. Repeat test(s) until each lateral passes all tests.

8. The Engineer will measure and record static and dynamic pressure at the point of connection and in the system mainline at various locations.

9. The Engineer will measure and record dynamic pressure at various sprinklers and water emission devices.

1.8 CONSTRUCTION REVIEW

A. The purpose of on-site reviews by the Engineer is to periodically observe the work in progress and the Contractor's interpretation of the construction documents and to address questions with regards to the installation.

1. Scheduled reviews such as those for irrigation system layout or testing should be scheduled with the Engineer as required by these specifications.

2. Impromptu reviews may occur at any time during the project.

3. Final review will occur at the completion of the irrigation system and Record Drawing (As-Built) submittal.

1.9 GUARANTEE/WARRANTY AND REPLACEMENT

A. The purpose of this guarantee/warranty is to ensure that the Owner receives irrigation materials of prime quality, installed and maintained in a thorough and careful manner.

1. For a period of one year from commencement of the formal maintenance period, guarantee/warranty irrigation materials, equipment, and workmanship against defects. Fill and repair depressions. Restore landscape or structural features damaged by the settlement of irrigation trenches or excavations. Repair damage to the premises caused by a defective item. Make repairs within seven (7) days of notification from the Engineer.

2. Costs for all guarantee/warranty work shall be entirely paid for by the Contractor.

3. Contract documents govern replacements identically as with new work. Make replacements at no additional cost to the contract price.

4. Guarantee/warranty applies to originally installed materials and equipment and replacements made during the guarantee/warranty period.

PART 2 - PRODUCTS

2.1 QUALITY

A. Use materials that are new and without flaws or defects of any type and are the best of their class and kind.

2.2 SUBSTITUTIONS

A. Pipe sizes referenced in the Construction Documents are minimum sizes and may be increased at the option of the Contractor. Substitutions in pressure class of pipe shall be approved by the Irrigation Designer.

2.3 IRRIGATION PUMP, FILTER AND CONTROLS

A. Provide all materials required for a fully functioning cistern pump and filter system to provide water to the irrigation system.

B. Refer to pirrigation drawings and details for more information.

C. Provide materials required by local code for installation of the pump, filter, controls, and associated components.

2.4 SLEEVING

A. Install separate sleeve beneath paved areas to route each run of irrigation pipe or wiring bundle.

B. Sleeving material beneath pedestrian pavements shall be Class 200 / Schedule 40 PVC bell end pipe with solvent welded joints.

C. Sleeving beneath drives and streets shall be Class 200 PVC/ Schedule 40 PVC bell end pipe with solvent welded joints.

D. Sleeving diameter: As indicated on the drawings and installation details or equal to twice the nominal diameter of the pipe or wiring bundle being sleeved.

1. Furnish and install size sleeves for wiring bundles per the current NEC Conduit Fill calculations and charts.

2.5 PIPE AND FITTINGS

A. Mainline Pipe and Fittings:

1. Use rigid, unplasticized polyvinyl chloride (PVC) round pipe, National Sanitation Foundation (NSF) approved, extruded from material meeting the requirements of Cell Classification 12454 as defined in ASTM Standard D1784, with an integral belled end.

2. Use Class 200, SDR-21, rated at 200 PSI, conforming to the dimensions and tolerances established by ASTM Standard D2241 and ASTM Standard D2672. Use PVC pipe rated at higher pressures than Class 200 in the case of small nominal diameters which are not manufactured in Class 200.

a. Use solvent weld pipe for mainline pipe with a nominal diameter less than 3-inches or where a pipe connection occurs in a sleeve. Use Schedule 40/80, Type 1, Cell Classification 12454, PVC solvent weld fittings conforming to ASTM Standard D1784 and ASTM Standard D2466 (Schedule 40)/D2467 (Schedule 80). All belled end pipe shall have tapered sockets to create an interference type fit, which meet or exceed the dimensional requirements and minimum socket length for pressure type sockets as defined by ASTM Standard 2672. Use primer specifically approved by the pipe manufacturer. Solvent cement to conform to ASTM Standard D2564.

3. Contractor shall run a #14-AWG, direct bury, UL listed tracer wire by Paige Wire along the length of all PVC mainline and lateral pipe. Wire shall be continuous with wire splices only placed within valve boxes and labeled on the record drawing. No wires are to be exposed. Use purple jacketed wire. Tape the tracer wire to the pipe at 15-foot intervals. Label tracer wire runs in each valve box.

B. Lateral Pipe and Fittings:

1. Use Class 200, SDR-21, rated at 200 PSI, conforming to the dimensions and tolerances established by ASTM Standard D2241. Use PVC pipe rated at higher pressures than Class 200 in the case of small nominal diameters that are not manufactured in Class 200. All belled end pipe shall have tapered sockets to create an interference type fit, which meet or exceed the dimensional requirements and minimum socket length for pressure type sockets as defined by ASTM Standard 2672.

a. Use Schedule 40/80/120 conforming to the dimensions and tolerances established by ASTM Standard D1785. All belled end pipe shall have tapered sockets to create an interference type fit, which meet or exceed the dimensional requirements and minimum socket length for pressure type sockets as defined by ASTM Standard 2672. All belled end pipe shall have tapered sockets to create an interference type fit, which meet or exceed the dimensional requirements and minimum socket length for pressure type sockets as defined by ASTM Standard 2672.

1) Use Schedule 40/80, Type 1, Cell Classification 12454, PVC solvent weld fittings conforming to ASTM Standard D1784 and ASTM Standard D2466 (Schedule 40)/D2467 (Schedule 80).

b. Use primer approved by the pipe manufacturer. Solvent cement to conform to ASTM Standard D2564, of a type approved by the pipe manufacturer.

1) Solvent welded pipe shall not be installed when the outside temperature drops below forty-five (45) degrees Fahrenheit.

c. Flexible high-density polyethylene (HDPE) pipe is an alternate to rigid PVC pipe.

1) HDPE SDR-11.5 (100 PSI) polyethylene is an acceptable alternative to Class 200 PVC pipe for laterals. HDPE pipe sizes to be used are 1-inch, 1.25-inch, 1.5-inch, 2-inch, IPS sized and outside diameter controlled. HDPE pipe shall conform to ASTM D3035 and be manufactured to IPS dimensions.

2) Use Type 1, cell classification 12454PVC as defined in ASTM Standard D1784 insert fittings conforming to ASTM Standard D2609 designed for use with flexible polyethylene (PE) pipe. Use stainless steel pinch clamps or worm gear clamps (including stainless steel screw) to join pipe and fittings.

C. Specialized Pipe and Fittings:

1. Copper pipe: Use Type K drawn temper (hard or rigid) copper pipe conforming to ASTM Standard B88.

a. Use wrought copper or cast bronze fittings that are dezincification resistant and conform to ASTM Standard B75, soldered or threaded per the installation details. Use a 95% tine and 5% antimony solder. Use a thread sealant approved by the pipe manufacturer.

2. Galvanized steel pipe: Use Schedule 40/80 conforming to ASTM Standard A123.

a. Use galvanized, threaded, Class 150, malleable iron fittings conforming to ASME Standard B16.3 and ASTM Standard A123.

3. Use a dielectric union wherever a copper-based metal (copper, brass, bronze) is joined to an iron-based metal (iron, galvanized steel, stainless steel).

4. Assemblies calling for pre-fabricated swing joints shall utilize SPEARS swing joints or approved equal. Swing joints shall be rated at 315 psi, and use O-ring, Buttress thread and street elbow construction.

5. Joint sealant:

    a. Use only Teflon-type tape pipe joint sealant on plastic threads. Use nonhardening, nontoxic pipe joint sealant formulated for use on water-carrying pipes on metal threaded connections.

6. Marking Tape:

    a. Mainline Pipe - Christy underground I.D. tape TA.DT.6.P.NPW.

2.6 MAINLINE COMPONENTS

A. Main System Shutoff Valve (Gate Valve at POC): As presented in the installation details.

B. Winterization Assembly (Quick Coupling Valve at POC): As presented in the installation details.

C. Master Valve Assembly: As presented in the installation details.

D. Flow Sensor Assembly: As presented in the installation details.

E. Isolation Gate Valve Assembly: As presented in the installation details. Install a separate valve box over a 3-inch depth of 3/4-inch gravel for each assembly.

F. Quick Coupling Valve Assembly: Double swing joint arrangement as presented in the installation details. Install at a height where key can be inserted, turned and valve pressurized without removing threaded handle.

G. Combination Pressure Regulator/Wye-Strainer Assembly: As presented in the installation details. Install a separate valve box over a 3-inch depth of 3/4-inch gravel for each assembly.

H. Air/Vacuum Relief Valve Assembly: As presented in the installation details.

2.7 SPRINKLER IRRIGATION COMPONENTS

A. Remote Control Valve (RCV) Assembly for Sprinkler Laterals – Hunter ICV-FS:

1. As presented in the installation details and plan legend. Use wire connectors and waterproofing sealant to join control wires to solenoid valves. Use standard identifications tags marked with controller name and station number. Install a separate valve box over a 3-inch depth of washed pea gravel for each assembly. Use 8-ounce minimum weight non-woven geotextile fabric underneath pea gravel and box assembly to prevent dirt and debris intrusion. Adjust valve flow control per manufacturer's recommendations prior to use.

    a. Install decoder compatible with irrigation controller on each valve for communication on 2-wire control system.

2. Sprinkler Assembly -Hunter 1-25-04-SS-R: As presented in the drawings and installation details and plan legend.

2.8 CONTROL SYSTEMS COMPONENTS

A. Irrigation Controller

1. Controller – Hunter Industries A2C-75S-SS two-wire controller with LTE Cellular Cartridge.

    a. The controller shall be mounted where indicated in the drawings.

    b. Controller is to be installed and grounded per manufacturer recommendations.

    c. Power to the controller will be provided by the electrician to the controller location. The contractor will be responsible for making the connection from the power drop to the controller.

    d. The controller will be mounted as directed by the Owner. Provide and install a Paige lightning surge arrestor 250090LED on the power to the controller.

    e. Controller to be capable of automatic adjustment of irrigation run times based on input from an on-site weather sensor.

f. Product manufacture and local distributor are to provide base training for the operation of the controllers at no cost to the owner. The distributor is to have complete knowledge of the operation and programming background of the control system.

B. Instrumentation:

1. As presented in the drawings and installation details.
2. Weather Sensor
   a. Sensor shall be manufactured by Hunter Industries , model SOLAR-SYNC
   b. Sensor to have adjustable rain shut-off capability from 1/8" – 1" of rainfall.
   c. Sensor to have freeze shut-off capability when the ambient temperature is 37°F or lower.
   d. Sensor to be capable of processing weather data and providing input to the irrigation controller for automatic adjustment of irrigation run times.
   e. Sensor to connect wirelessly to irrigation controller.
3. Flow Sensor
   a. The irrigation controller shall get flow information from the pump station.
   b. Wire flow sensor output from pump station to irrigation controller per manufacturers recommendations.

C. Control Wire:

1. Use American Wire Gauge (AWG) No.12/14 solid copper conforming to ASTM B-3 or ASTM B-8. Type UF or PE cable, UL approved for direct underground burial from the controller unit to each remote-control valve. Use American Wire Gauge (AWG) No.12 wire for common wire.
   a. Two-Wire Cable:
      1) Use Two-wire cable shall be 14-AWG, 2-conductor, Maxi cable, as manufactured by Paige Wire.
      2) Cable shall have two, conductors conforming to ASTM B-33. Inner conductors are to be listed as Type UF/TWU by UL or ETL or CSA.
      3) Insulation shall be polyvinyl chloride, black and red.
      4) Cable assembly shall have the insulated conductors laid parallel within the jacket.
      5) Outer jacket shall be pressure extruded high density PE conforming to ICEA S-61-402 and NEMA WC5 Jacket Thickness of 3/64-inch minimum jacket material to completely fill interstices between the two insulated conductors.
      6) Provide five-feet of extra wire at each valve so that the decoder can be easily removed from the valve box and serviced.
      7) Refer to drawings for wire jacket colors. Wire color shall be continuous over its entire length.
      8) Use Decoder Cable Fusing Device for water-proof quick-disconnect isolation of 2-wire cable path for troubleshooting of damaged wire path sections.
   b. Wire Color for tWO Wire Controllers:

1)	Active Two Wire Path 1	Blue
2)	Active Two Wire Path 2	Green
3)	Active Two Wire Path 3	Red
4)	Active Two Wire Path 4	Black
5)	Spare Two Wire Path	Orange

D. Splices: Use wire connectors with waterproof sealant. Wire connector to be of UV radiation resist plastic construction consisting of two pieces, one piece which snap locks into the other. Connector shall be pre-filled with non-hardening silicone gel. Utilize twist style wire connector provided with assembly to connect wires.

1. Wire connectors to meet requirements of UL Standard 486D
2. Utilize DBR/Y-600 Black Splices
3. Encase wiring not located near PVC irrigation pipe in PVC Schedule 80 electrical conduit. Utilize long sweep elbows for changes of direction.

E. Warning tape: Detectable Warning Tape reading “Caution: Buried Electrical Line Below” shall be inert plastic film highly resistant to alkalis, acids, or other destructive chemical components likely to be encountered in soils. Tape shall be six inches wide, colored red.

F. Grounding

1. All controllers and decoders are to be grounded as indicated on the drawings. Minimum grounding per details and per the ASIC detail for controller grounding.
2. Grounding shall be a rod and plate arrangement for the controller.
3. Grounding Rod
   a. 5/8-inch diameter, UL listed, copper-clad ground rod, 8-feet in length, with a 10-AWG factory welded insulated conductor, 15-feet in length.
   b. Manufacturer shall be Paige Wire, model number 182000IC10 or approved equal.
   c. Clamps, wire nuts, and / or CADWELD “One-Shot” connectors are not approved for use.
   d. Install rod per manufacturers guidelines as to not damage the rod or welded conductor.
   e. Ground rods shall be placed in their own ten-inch round valve box.
4. Grounding Plate
   a. 4-inch by 36-inch copper ground plate with a 10-AWG welded insulated conductor, 10-feet in length.
   b. Manufacturer shall be Paige Wire, model number 182201IC or approved equal.
   c. Provide 50-pounds of ground enhancement material (GEM) / earth contact backfill on the top and the bottom of each plate, for a total of 100-pounds per plate.
   d. Manufacture shall be Loresco, Paige Electric model number 1820058 or 1820059 based on site soil conditions or approved equal.
5. All wire connections between the ground rod and ground plate leads to the surge suppression device shall be made via a Paige Wire re-enterable terminal connector, model number 270RC3 or approved equal.
6. The Contractor will be responsible to provide earth ground of two-wire ohm reading of not more than ten-ohms or approved in writing from the manufacture or within manufacture’s acceptable range.
7. The supplying distributor shall check all ohm readings with a ground resistance tester (commonly referred to as a “Megger”) and provide documentation, signed by the distributor, that all readings are under ten-ohms. The Contractor will be responsible for making adjustments to the grounding system to achieve this reading at no additional cost to the Owner.

2.9 OTHER COMPONENTS

A. Tools and Spare Parts: Provide operating keys, servicing tools, test equipment, other items and spare parts indicated in the General Notes of the drawings.

1. Additionally, provide the following:

a. Two operating keys for each type and size of manually operated valve.

b. Two keys for each type and size of quick coupler.

c. Two of each servicing wrench or tool needed for complete access, adjustment, installation of nozzles and repair of all spray, rotary and rotor type sprinklers.

d. Two 3" diameter pressure gauges and associated fittings to measure system pressure and pressure at spray, rotary and rotor type sprinklers and remote-control valves. Pressure gauge shall have a range of 0-160 PSI.

e. Two sets of keys for each controller, enclosure or equipment that requires keyed access.

1) If required, keys shall be keyed to match other locks that the Owner possess.

2. All instruction manuals, repair manuals, operating manuals and original paper work related to the products that were installed during construction of the irrigation system.

B. Owner Stock: Include the following for owner stock for future replacements.

1. Five (5) of each type of spray and rotary sprinkler body.

2. Five (5) of each type of rotor body.

3. Ten (10) of each type, radius, arc, and nozzle of spray and rotary sprinkler.

4. Ten (10) of each type and size of rotor nozzle.

5. Three (3) of each type of drip operation indicator.

6. Ten (10) of each type of drip emitter.

7. Five (5) of each type of valve decoder.

8. One (1) of each type of sensor decoder.

9. Five (5) of each type of surge protector/arrestor.

10. 100-feet continuous length of inline emitter drip tubing of each flow rate and inline emitter spacing.

11. Ten (10) sets of waterproof connectors.

12. Five (5) of each type and size of fitting; inline emitter, point source drip, sprinkler, sprinkler lateral and mainline.

PART 3 - EXECUTION

3.1 INSPECTION AND REVIEWS

A. Site Inspections:

1. Verify site conditions and note irregularities affecting work of this section. Report irregularities to the Engineer prior to beginning work.

2. Beginning work of this section implies acceptance of all existing conditions.

3. Contractor will be held responsible for coordination between landscape and irrigation system installation.

4. Landscape material locations shown on the Landscape Plan shall take precedence over the irrigation system equipment locations. If irrigation equipment is installed in conflict with the landscape material locations shown on the Landscape Plan, the Contractor will be required to relocate the irrigation equipment, as necessary, at Contractor’s expense.

B. Utility Location (Call Before You Dig)

1. Arrange for and coordinate with local authorities the location of all underground utilities.

2. Repair any underground utilities damaged during construction. Make repairs at no additional cost to the contract price.

C. Irrigation System Layout Review: Irrigation system layout review will occur after the staking has been completed. Notify the Engineer three business days in advance of review. Modifications will be identified by the Engineer at this review.

3.2 LAYOUT OF WORK

A. Stake out the irrigation system. Adjust system layout from plans to conform to final approved landscape design. Items staked shall include: Sprinklers, pipe, control valves, manual drains, controller, and isolation valves, grounding locations and sleeving.

B. Install all mainline pipe and mainline components inside of project property lines.

3.3 EXCAVATION, TRENCHING AND BACKFILLING

A. Excavate to permit the pipes to be laid at the intended elevations and to permit work space for installing connections and fittings.

B. Minimum cover (distance from top of pipe or control wire to finish grade):

1. 24-inch / 18-inch over mainline pipe and over electrical conduit.
2. 26-inch / 18-inch over control wire.
3. 26-inch/18-inch over signal wire.
4. 18-inch / 12-inch over lateral pipe to sprinklers.
5. 8-inch over drip lateral pipe in turf or paved areas downstream of drip system zone control valves.
6. 3-inch minimum mulch cover over drip lateral pipe in planting beds downstream of drip system zone control valves. PVC UV radiation resistant lateral pipe shall be installed directly on the soil surface under landscape fabric.

C. Backfill only after lines have been reviewed and passed hydrostatic tests and accepted by the Owner.

1. Excavated material is generally satisfactory for backfill. Backfill shall be free from rubbish, vegetable matter, frozen materials, and stones larger than 1/2-inch in maximum dimension. Remove material not suitable for backfill. Backfill placed next to pipe shall be free of sharp objects which may damage the pipe. All soil shall be screened and pass through a square opening 1/2" x 1/2.
2. Backfill un-sleeved pipe and sleeves in either of the following manners:
    a. Backfill and puddle the lower half of the trench. Allow to dry 24 hours. Backfill the remainder of the trench in 6-inch layers. Compact to density of surrounding soil.
    b. Backfill the trench by depositing the backfill material equally on both sides of the pipe in 6-inch layers and compacting to the density of surrounding soil.
3. Enclose pipe and wiring beneath roadways, walks, curbs, etc. in sleeves. Minimum compaction of backfill for sleeves shall be 95% Standard Proctor Density, ASTM D698-78. Conduct one compaction test for each sleeved crossing less than 50 feet long. Conduct two compaction tests for each sleeved crossing greater than 50 feet long. Costs for such testing and any necessary retesting shall be paid for by the Contractor. Use of water for compaction around sleeves, puddling, will not be permitted.
4. Dress backfilled areas to original grade
5. Where utilities conflict with irrigation trenching and pipe work, contact the Engineer for trench depth adjustments.

3.4 SLEEVING AND BORING

A. Install sleeving at a depth which permits the encased pipe or wiring to remain at the specified burial depth.

B. Extend sleeve ends six inches beyond the edge of the paved surface. Cover pipe ends and mark with stakes. Mark concrete with a chiseled "X" at sleeve end locations.

C. Bore for sleeves under obstructions which cannot be removed. Employ equipment and methods designed

for horizontal boring.

3.5 ASSEMBLING PIPE AND FITTINGS

A. General:

1. Keep pipe free from dirt and pipe scale. Cut pipe ends square and deburr. Clean pipe ends.
2. Keep ends of assembled pipe capped to prevent dirt and debris intrusion. Remove caps only when necessary to continue assembly.

B. Mainline Pipe and Fittings:

1. Use only strap-type friction wrenches for threaded plastic pipe. Tighten threaded plastic pipe per pipe and fitting manufacturers recommendations.
2. PVC Solvent Weld Pipe:
   a. Use primer and solvent cement. Join pipe in a manner recommended by the manufacturer and in accordance with accepted industry practices.
   b. Cure for 30 minutes before handling and 24 hours before allowing water in pipe.
   c. Snake pipe from side to side within the trench.
3. Fittings: The use of cross and wye type fittings is not permitted.

C. Lateral Pipe and Fittings:

1. Use only strap-type friction wrenches for threaded plastic pipe. Tighten threaded plastic pipe per pipe and fitting manufacturers recommendations.
2. PVC Solvent Weld Pipe:
   a. Use primer and solvent cement. Join pipe in the manner recommended by the manufacturer and in accordance with accepted industry practices.
   b. Cure for 30 minutes before handling and 24 hours before allowing water in the pipe.
   c. Snake pipe from side to side within the trench.
3. Polyethylene (PE) Pipe:
   a. Join pipe in the manner recommended by manufacturer and in accordance with accepted industry practices.
   b. Snake pipe from side to side within the trench.
4. Fittings: The use of cross and wye type fittings is not permitted.

D. Specialized Pipe and Fittings:

1. Copper Pipe:
   a. Buff surfaces to be joined to a bright finish. Coat with solder flux.
   b. Solder so that a continuous bead shows around the joint circumference.
2. Galvanized Steel Pipe:
   a. Join pipe in the manner recommended by manufacturer and in accordance with accepted industry practices.
   b. Use factory-made threads whenever possible. Field-cut threads will be permitted only where necessary. Cut threads on axis using clean, sharp dies.
   c. Apply Teflon-type tape or pipe joint compound to the male threads only.
3. Pre-fabricated double swing joints: Install per manufacturer's recommendations.
4. Low Density Polyethylene Hose: Install per manufacturer's recommendations.

5. PVC Threaded Connections:
    a. Use only factory-formed threads. Field-cut threads are not permitted.
    b. Use only thread sealant recommended by pipe and fitting manufacturer.
    c. When connection is plastic-to-metal, the plastic component shall have male threads and the metal component shall have female threads.
6. Make metal-to-metal, threaded connections with Teflon-type tape or pipe joint compound applied to the male threads only.

3.6 INSTALLATION OF MAINLINE COMPONENTS

A. Main System Shut Off Valve: Install where indicated on the drawings.

B. Winterization Assembly: Install where indicated on the drawings.

C. Master Valve Assembly: Install where indicated on the drawings.

D. Flow Sensor Assembly: Install where indicated on the drawings.

E. Isolation Gate Valve Assembly:
1. Install where indicated on the drawings.
2. Locate at least 12-inches from and align with adjacent walls or edges of paved areas.

F. Quick Coupling Valve Assembly: Install where indicated on the drawings.

G. Combination Pressure Regulator/Wye-Strainer Assembly: Install where indicated on the drawings.

H. Manual Drain Valve Assembly: Install where indicated on the drawings and at other low points in the mainline piping. Determine additional low points after staking mainline and approve locations with Owner.

I. Air/Vacuum Relief Valve Assembly: Install where indicated on the drawings and at other high points in the mainline piping. Determine additional high point after staking mainline and approve locations with Owner.

3.7 INSTALLATION OF SPRINKLER IRRIGATION COMPONENTS

A. Remote Control Valve (RCV) Assembly for Sprinkler Laterals:
1. Flush mainline before installation of RCV assembly.
2. Install where indicated on the drawings. Wire connectors and waterproof sealant shall be used to connect control wires to remote control valve wires. Install connectors and sealant per the manufacturer's recommendations.
3. Install only one RCV to a valve box. Locate valve box at least 12-inches from and align with nearby walls or edges of paved areas. Group RCV assemblies together where practical. Arrange grouped valve boxes in rectangular patterns. Allow at least 12-inches between valve boxes.
4. Adjust RCV to regulate the downstream operating pressure.
5. Attach ID tag with controller station number to control wiring.

B. Sprinkler Assembly:
1. Flush lateral pipe before installing sprinkler assembly.
2. Install per the installation details at locations shown on the drawings.
3. Locate rotary sprinklers 6-inches from adjacent walls, fences, or edges of paved areas.
4. Set sprinklers perpendicular to the finish grade.
5. Supply appropriate nozzle or adjust arc of coverage of each sprinkler for best performance.
6. Adjust the radius of throw of each sprinkler for best performance.

3.8 INSTALLATION OF CONTROL SYSTEM COMPONENTS

A. Irrigation Controller Unit:

1. The location of the controller unit as depicted on the drawings is approximate; the Engineer will determine the exact site location upon commencement of contract. during sprinkler layout review.
2. Lightning protection: Ground rods are to have a minimum diameter of 3/4" and a minimum length of 10 feet. These are to be driven into the ground in a vertical position or an oblique angle not to exceed 15 degrees at location 10 feet from the electronic equipment, the ground plate, or the wires and cables connected to said equipment, as shown in the irrigation details. The rod is to be stamped with the UL logo. A 6 AWG solid bare copper wire (no more than 12 feet long) shall be connected to the ground rod by the installer using a Cadweld GR1161G" One-Shot" welding kit. This wire shall be connected to the electronic equipment ground lug as shown in the detail above.
3. Lightning protection: Provide on all remote-control valve wiring as recommended by the manufacturer. Provide other components such as ground rod, grounding wire, etc., to manufacturer's recommendations.
4. Install primary surge protection arrestors on incoming power lines.
5. Install one valve output surge protection arrestor on each control wire and one for the common wire.
6. Attach wire markers to the ends of control wires inside the controller unit housing. Label wires with the identification number (see drawings) of the remote-control valve to which the control wire is connected.
7. Connect control wires to the corresponding controller terminal.

B. Instrumentation:

1. Install sensors per the installation details and manufacturer's recommendations. Install at locations shown on the drawings.
2. Install electrical connections between irrigation controller and sensors per manufacturer's recommendations.

C. Control Wire:

1. Bundle control wires where two or more are in the same trench. Bundle with pipe wrapping tape spaced at 10-foot intervals.
2. Provide a 24-inch excess length of wire in an 8-inch diameter loop at each 90-degree change of direction, at both ends of sleeves, and at 100-foot intervals along continuous runs of wiring. Make wiring loop by turning control wire 5 turns around 1-inch pipe. Coil 24-inch length of wire within each remote-control valve box.
3. If a control wire must be spliced, make splice with wire connectors and waterproof sealant, installed per the manufacturer's instructions. Locate splice in a valve box which contains an irrigation valve assembly, or in a separate 6-inch round valve box. Use same procedure for connection to valves as for in-line splices.
4. Unless noted on plans, install wire parallel with and under PVC mainline pipe. If wire is installed adjacent to section of metal pipe, separate wire from pipe minimum of 6-inches and install wire in PVC conduit.
5. Encase wire not installed with PVC mainline pipe in electrical conduit.

D. Warning tape: Detectable Warning Tape shall be installed approximately 6 inches above mainline pipe where required or where specified.

3.9 INSTALLATION OF OTHER COMPONENTS

A. Tools and Spare Parts:

1. Prior to the Pre-Maintenance Review, supply to the Owner operating keys, servicing tools, test equipment, and any other items indicated on the drawings.

2. Prior to Final Review, supply to the Owner the spare parts indicated in the General Notes on the drawings.

B. Other Materials: Install other materials or equipment shown on the drawings or installation details to be part of the irrigation system, even though such items may not have been referenced in these specifications.

3.10 PROJECT RECORD (AS-BUILT) DRAWINGS

A. Maintain on-site and separate from documents used for construction, one complete set of contract documents as Project Documents. Keep documents current. Do not permanently cover work until as-built information is recorded.

B. Record pipe and wiring network alterations. Record work which is installed differently than shown on the construction drawings. Record accurate reference dimensions, measured from at least two permanent reference points, of each irrigation system valve, each backflow prevention device, each controller or control unit, each sleeve end, each stub-out for future pipe or wiring connections, and other irrigation components enclosed within a valve box.

C. Prior to Final Review, purchase from the Engineer a reproducible mylar copy of the drawings. Using technical drafting pen, duplicate information contained on the project drawings maintained on site. Label each sheet "Record Drawing". Completion of the Record Drawings will be a prerequisite for the Final Review.

3.11 MAINTENANCE

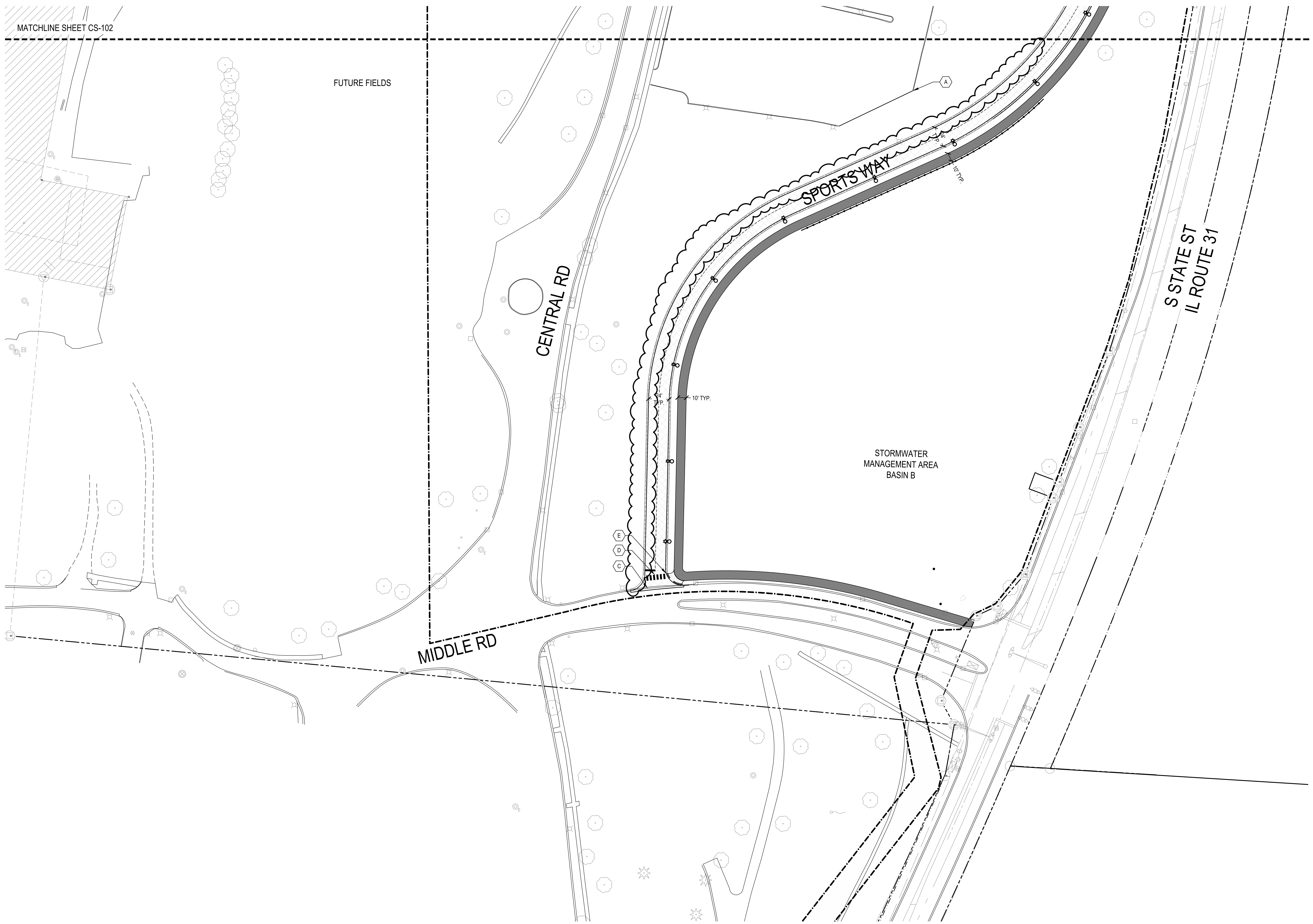
A. Upon completion of Final Review, maintain irrigation system for a duration of 30 calendar days. Make periodic examinations and adjustments to irrigation system components to achieve the most desirable application of water.

B. Following completion of the Contractor's maintenance period, the Owner will be responsible for maintaining the system in working order during the remainder of the guarantee/warranty period, for performing necessary minor maintenance, for trimming around sprinklers, for protecting against vandalism, and for preventing damage during the landscape maintenance operation.

3.12 CLEAN-UP

A. Upon completion of work, remove from the site all machinery, tools, excess materials, and rubbish.

END OF SECTION



SHEET NOTES

1. SEE SHEET CS-100 FOR LAYOUT AND MATERIALS NOTES.

KEYED NOTES

- (A) NEW EDGE OF EXISTING PARKING LOT
- (B) BICYCLE GUARDRAIL (6 / CS-504)
- (C) TIE IN PROPOSED ROAD INTO EXISTING ROAD
- (D) CROSSWALK WITH STOP BAR AND STOP SIGN
- (E) ADA RAMP - TYPE B (15 / CS-500)

LEGEND

- PROPERTY LINE
- EASEMENT
- LIMIT OF CONSTRUCTION
- MEDIUM DUTY ASPHALT PAVMENT (1 / CS-500)
- LIGHT DUTY ASPHALT PAVEMENT (2 / CS-500)
- CITY OF ELGIN PAVEMENT STANDARD (3.24 / CU-502)
- HEAVY DUTY INTEGRAL COLORED CONCRETE PAVEMENT (6 / CS-500)
- HEAVY DUTY CONCRETE PAVEMENT (6 / CS-500)
- CONCRETE PAVEMENT (5 / CS-500)
- GRAVEL SHOULDER (4 / CS-500)
- TURF (1 / CS-505)
- ADA TACTILE WARNING
- CONTROL JOINT (7 / CS-500)
- ISOLATION (EXPANSION) JOINT (8 / CS-500)
- CONCRETE TURNDOWN (9 / CS-500)
- STANDARD CURB AND GUTTER (## / CS-500)
- RETAINING WALL (2 / CS-502)
- CHAIN LINK FENCE (1 / CS-504)
- BACKSTOP NET (1 / CS-503)
- POST AND CHAIN (5 / CS-504)
- GUARDRAIL (4 / CS-504) (6 / CS-504)
- 6FT MASONRY DUMPSTER ENCLOSURE
- WOOD BENCH ON CONCRETE PAD WITH PLINTH (5 / CS-506)
- FLAGPOLES (7 / CS-506)
- ROADWAY LIGHT POLE (SEE ELECTRICAL)
- PARKING LOT LIGHT POLE (SEE ELECTRICAL)
- SPORTS FIELD LIGHT POLE (SEE ELECTRICAL)
- LIGHT POLE (SEE ELECTRICAL)
- REMOVABLE BOLLARDS, TYP. (3 / CS-506)
- BOLLARDS, TYP. (4 / CS-506)

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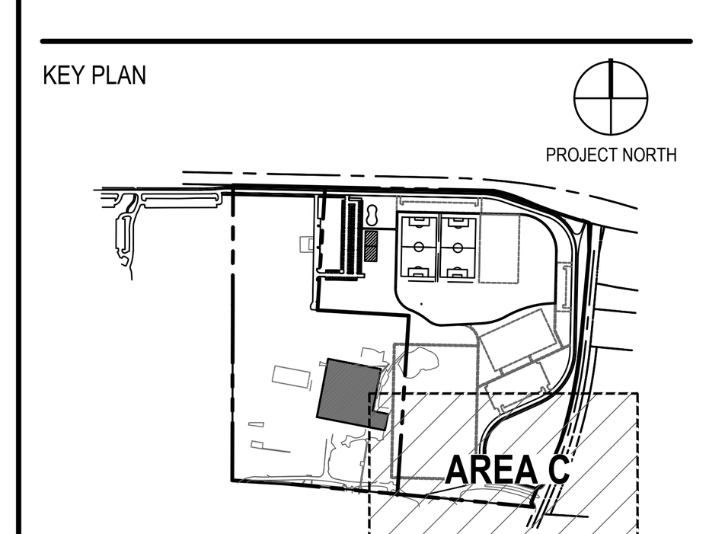
ADDENDUM 3	3	05/02/2024
ISSUE FOR BID	1	04/11/2024

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

KEY PLAN



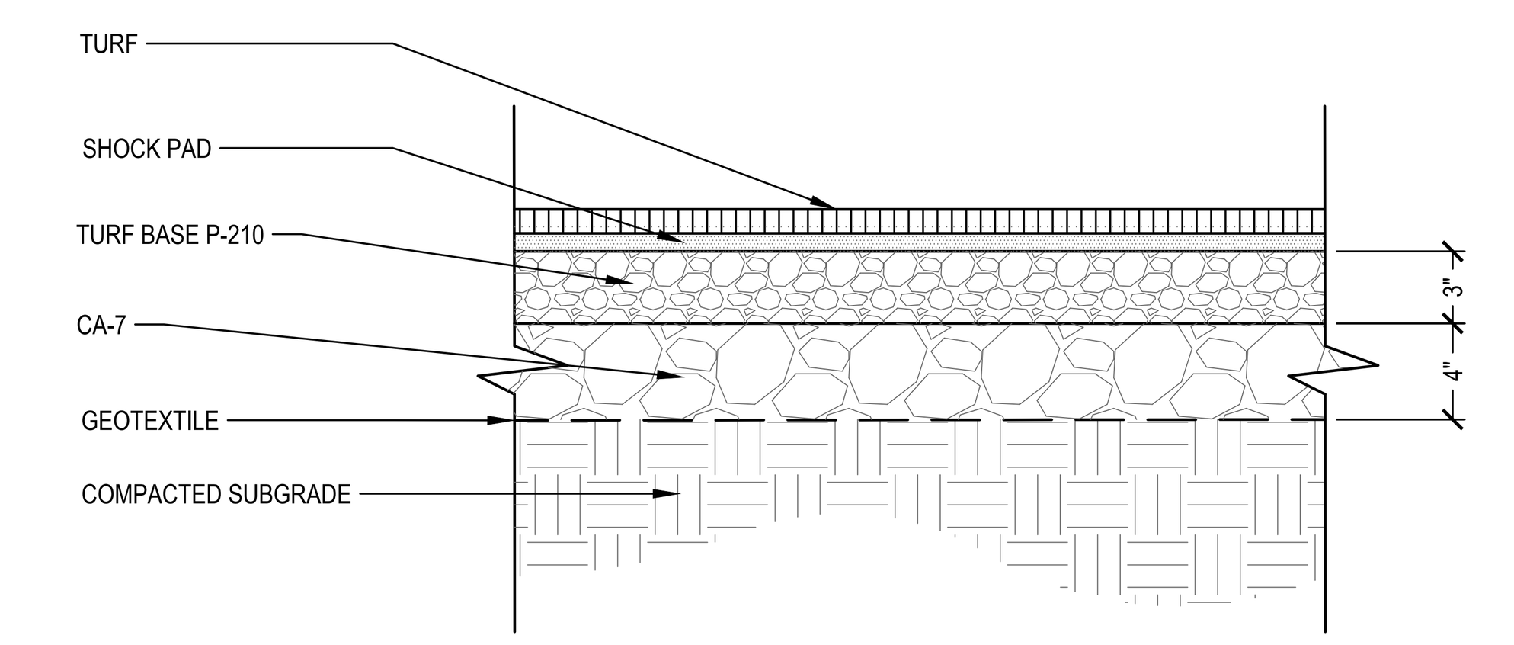
DRAWING TITLE
LAYOUT AND MATERIALS PLAN - AREA C

0' 25' 50' 100'
SCALE: 1" = 50'

SCALE

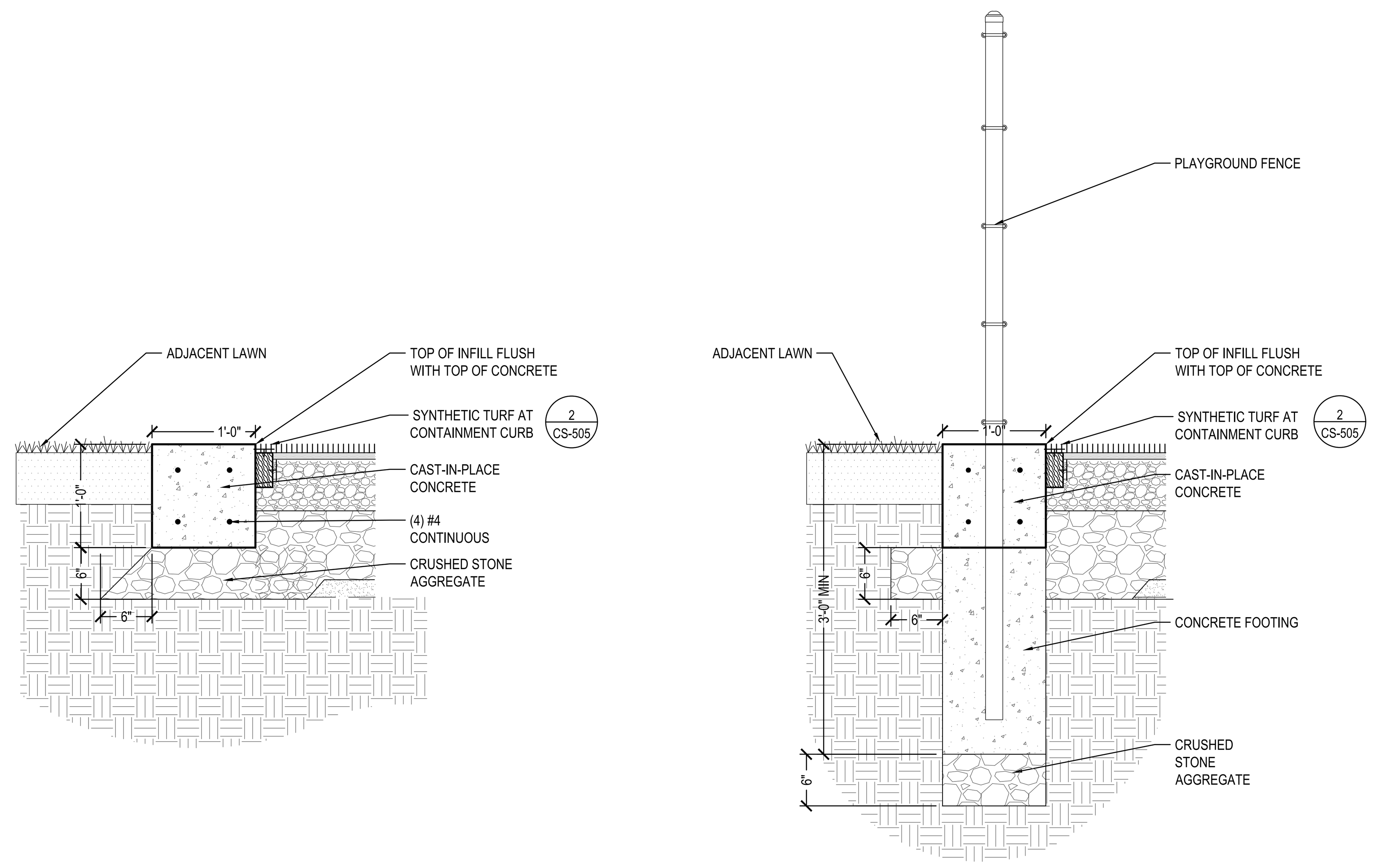
14106
PROJECT NUMBER

CS-103
DRAWING NUMBER



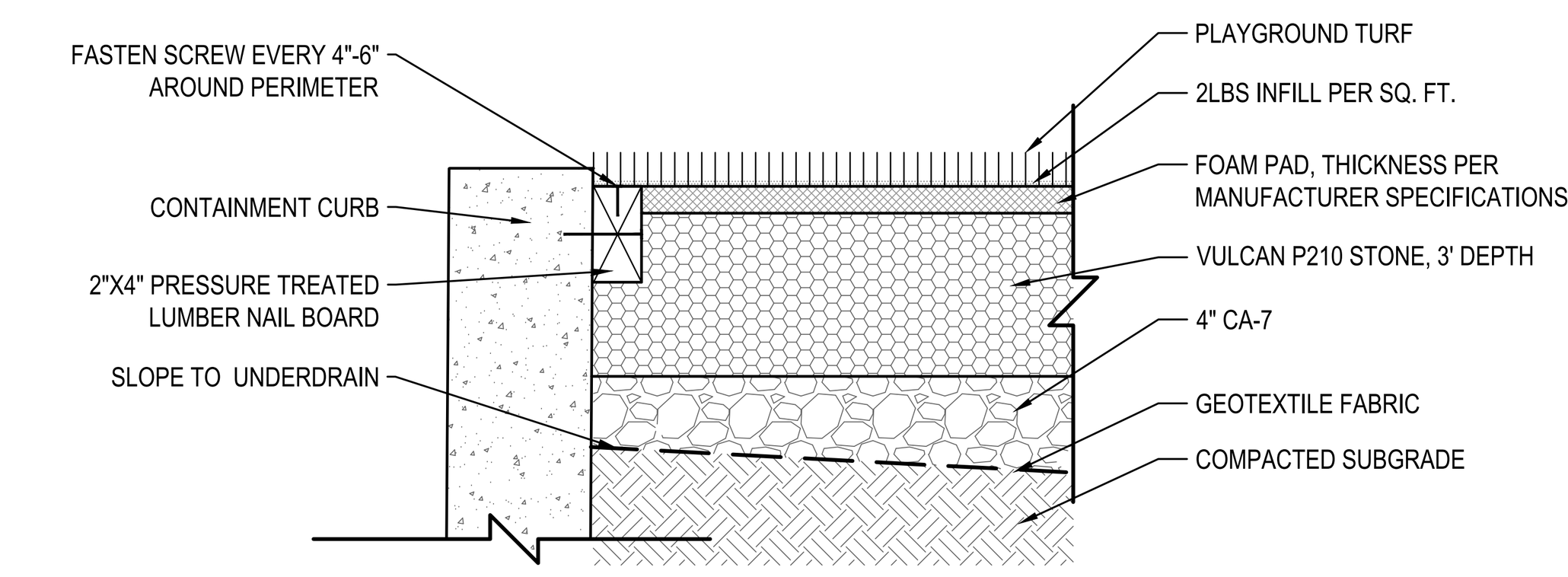
1 SYNTHETIC TURF ALTERNATE 1

SCALE: 1 1/2" = 1'



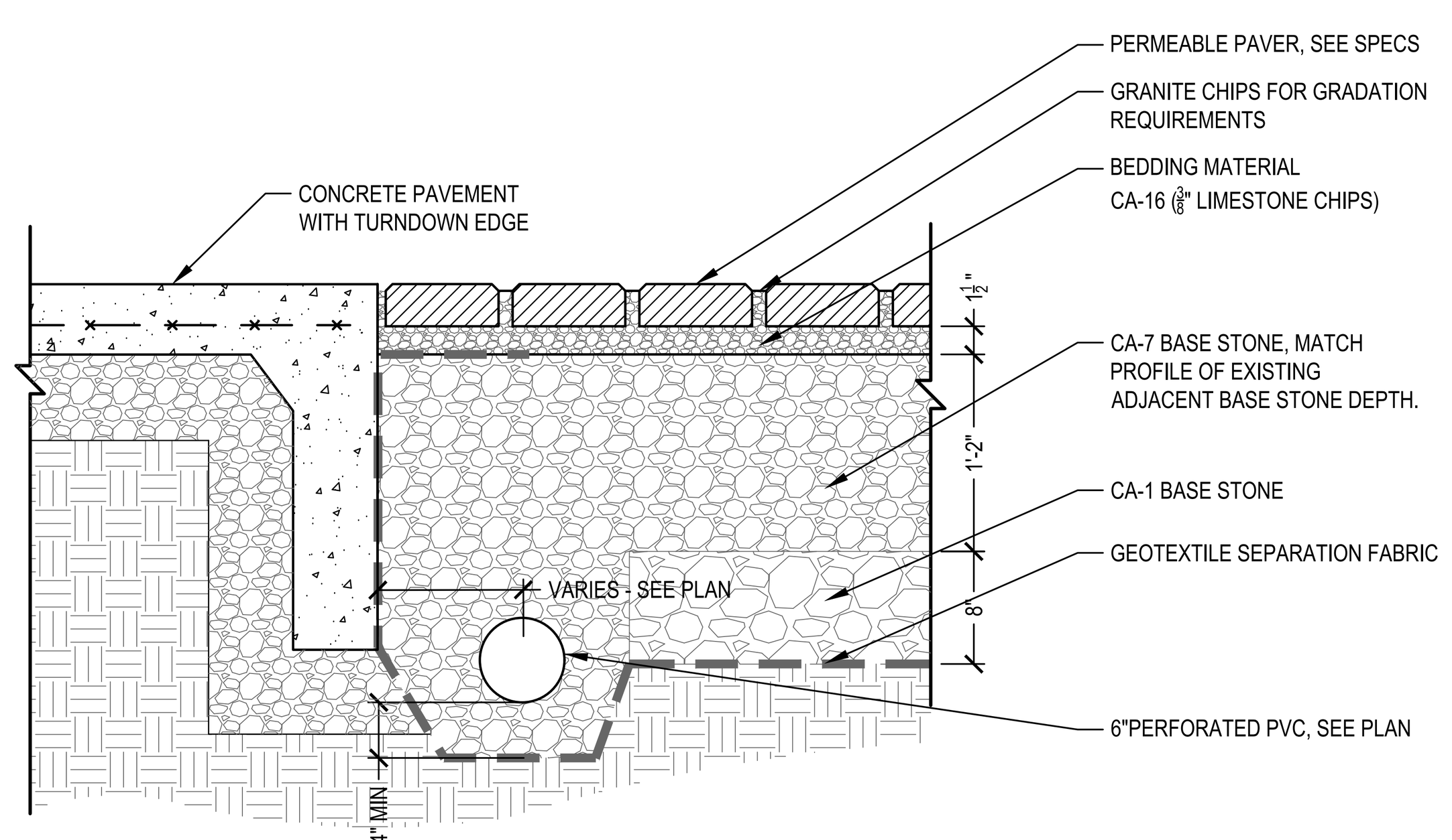
2 PLAYGROUND CONTAINMENT CURB

SCALE: 1" = 1'



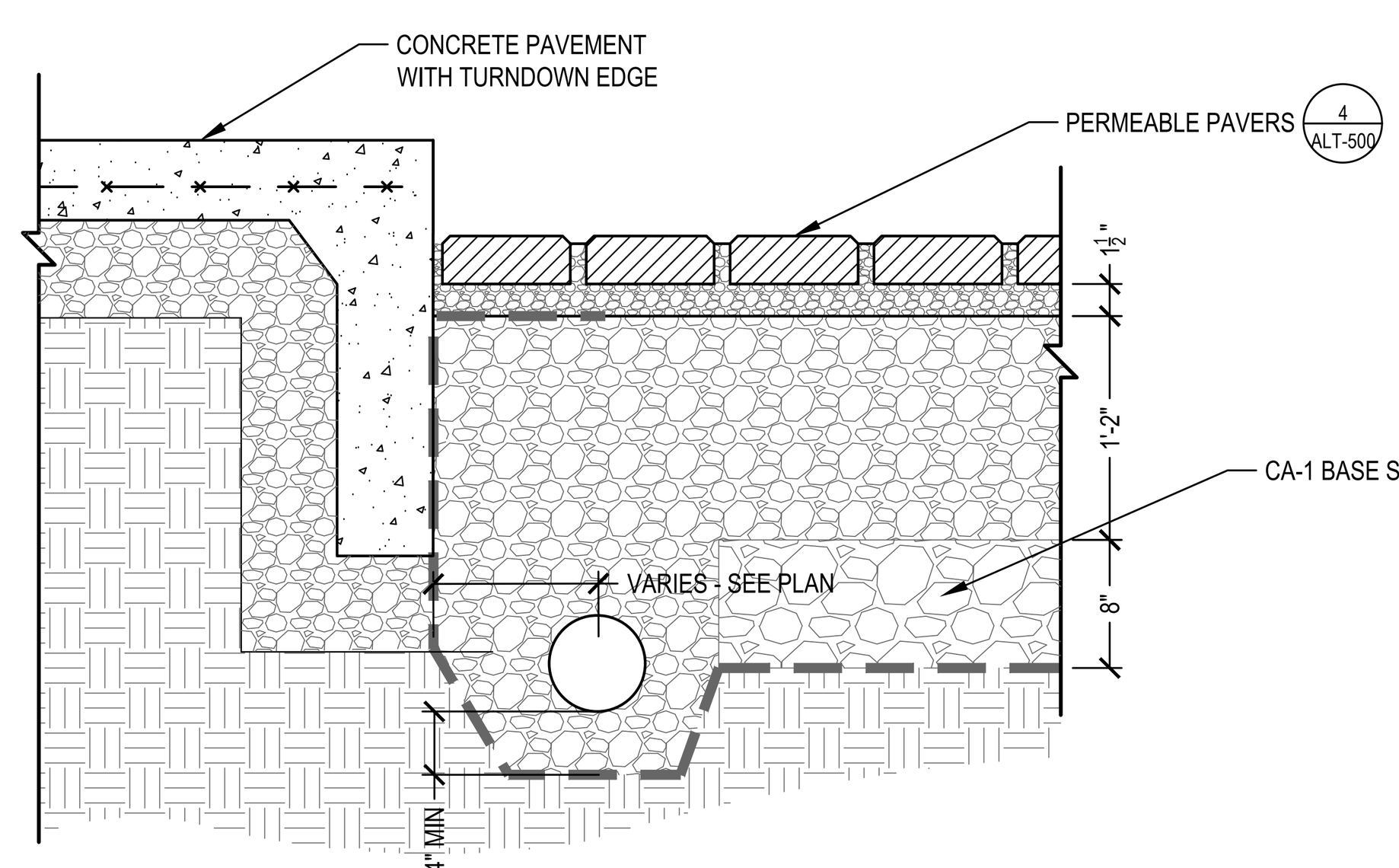
3 PLAYGROUND TURF

SCALE: 1 1/2" = 1'



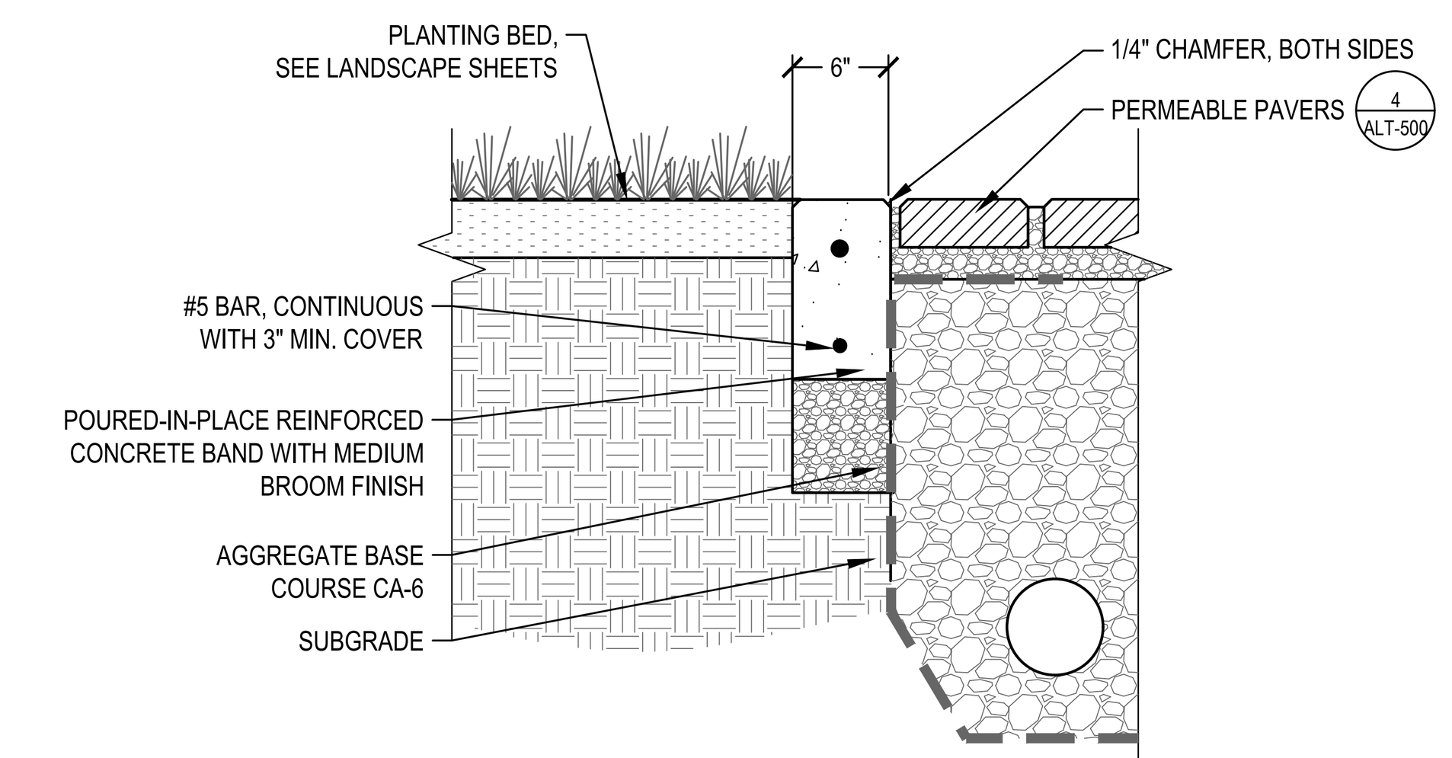
4 PERMEABLE PAVERS

SCALE: 1" = 1'-0"



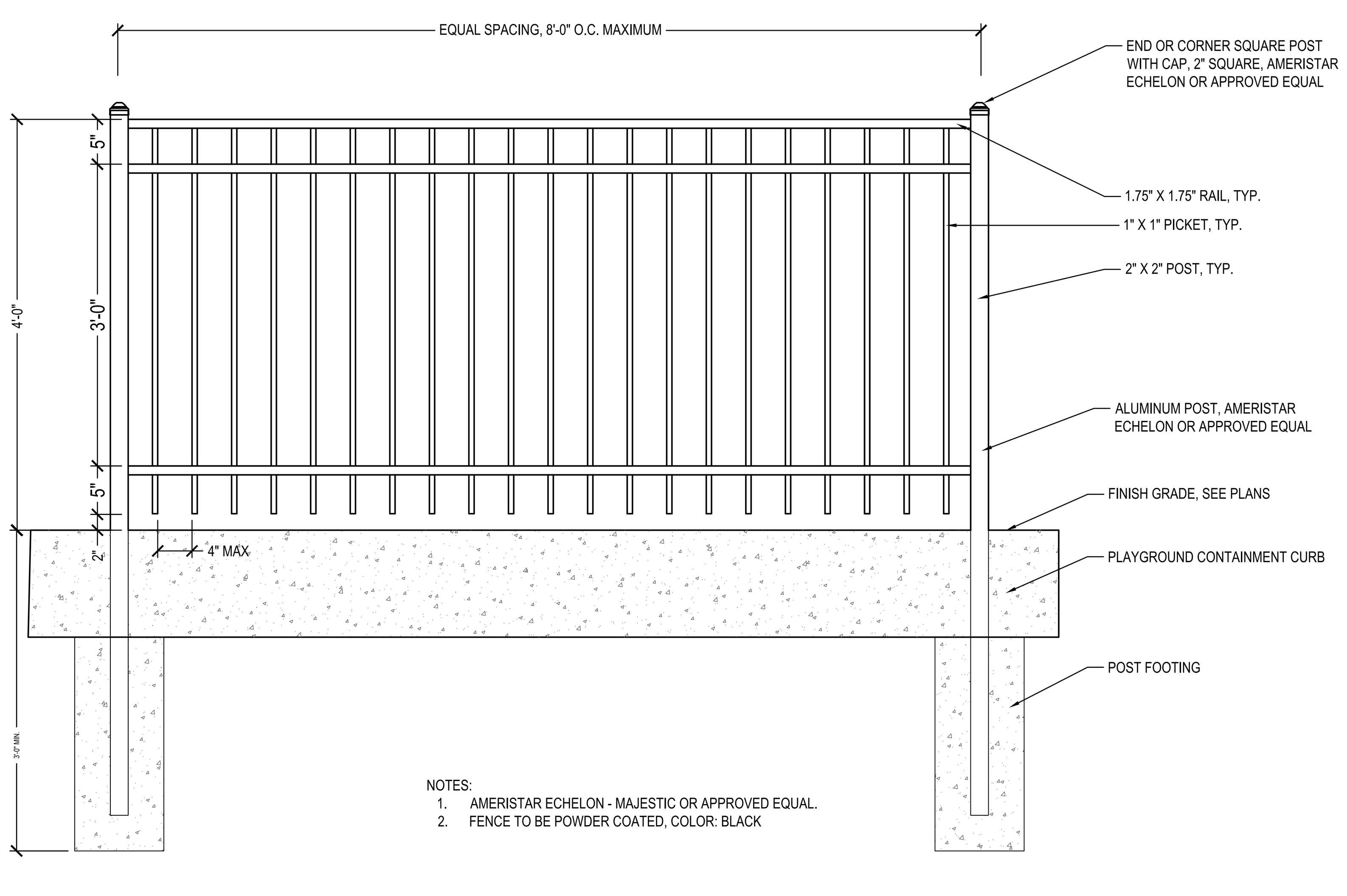
5 PERMEABLE PAVERS EDGE AT CONCRETE CURB

SCALE: 1" = 1'-0"



6 PERMEABLE PAVERS EDGE AT PLANT BED

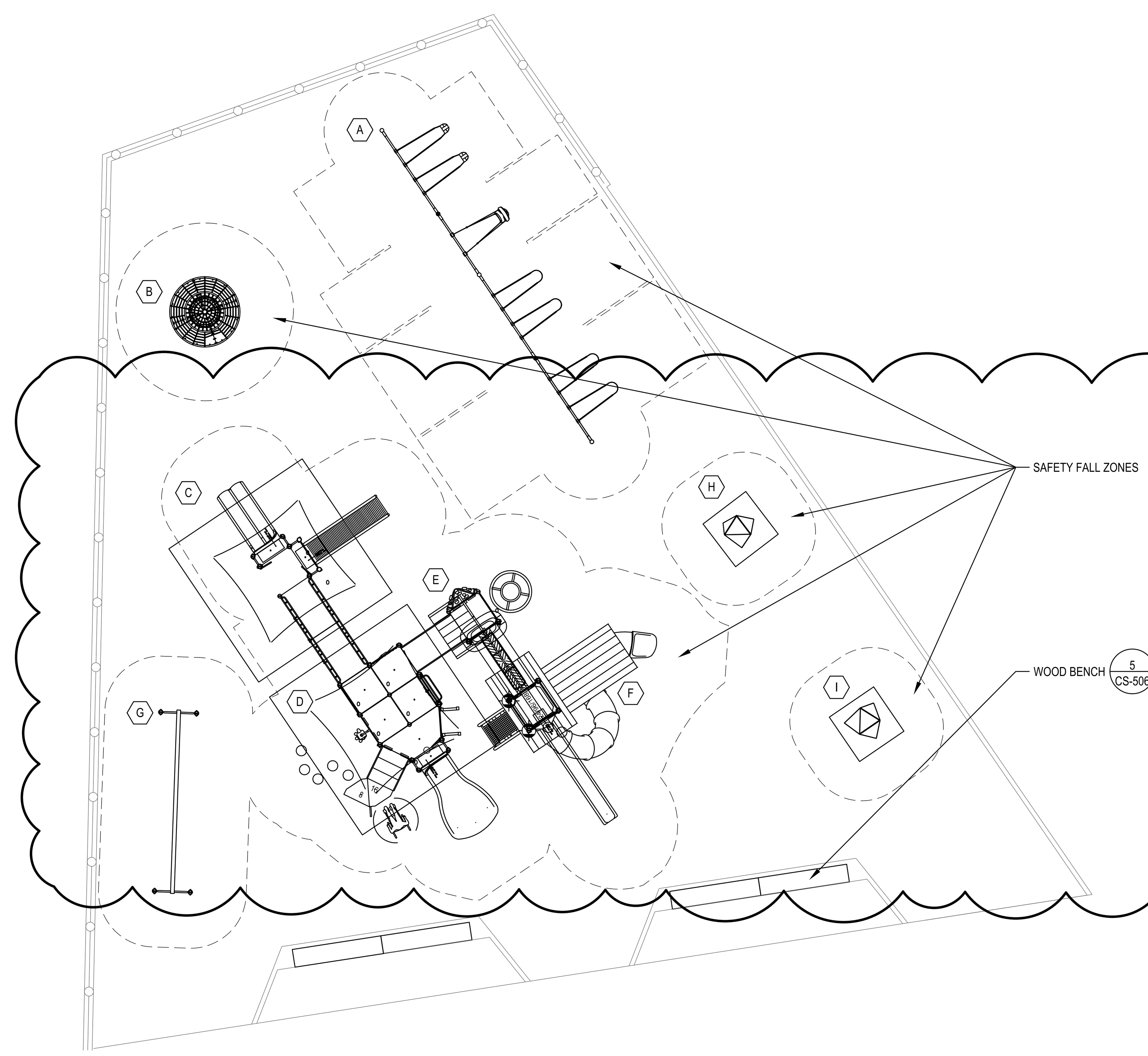
SCALE: 1" = 1'



NOTES:
1. AMERISTAR ECHELON - MAJESTIC OR APPROVED EQUAL.
2. FENCE TO BE POWDER COATED, COLOR: BLACK

7 PLAYGROUND ORNAMENTAL FENCE

SCALE: 1" = 1'



PLAYGROUND SCHEDULE

KEY	ITEM	QTY	FALL HT	MANUFACTURER	CONTACT
A	SWINGS	1	8 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744
B	CONE SPINNER	1	10 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744
C	ROLLER SLIDE AND DOUBLE WIDE SLIDE	1	4 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744
D	INFINITY & DOUBLE WALL CLIMBERS, SLALOM SLIDE, COUNTER PANEL & TRANSFER STATION	1	4 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744
E	SILO SCRAMBLE, ROCK CHALLENGE WALL, & OVERHEAD CLIMBER UNDER CATWALK BRIDGE	1	8 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744
F	X TOWER	1	14 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744
G	ZIPLINE	1	8 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744
H	10' STONE BOULDER	1	10 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744
I	12' STONE BOULDER	1	12 FT	LITTLE TIKES COMMERCIAL	PARKREATION (847)419-7744

8 PLAYGROUND LAYOUT

SCALE: 1" = 10'

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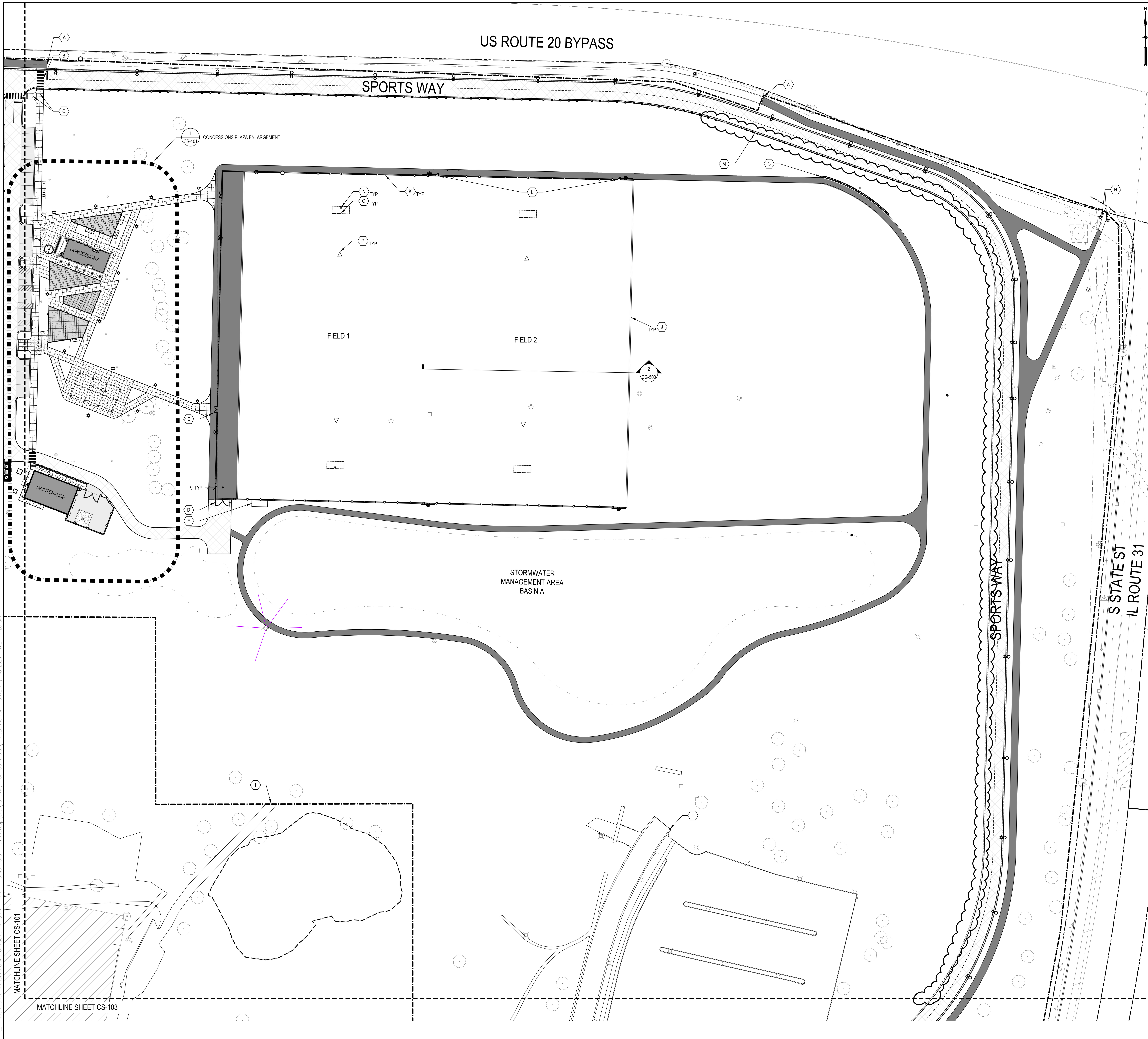
KEY PLAN

DRAWING TITLE
ALTERNATE DETAILS

SCALE

PROJECT NUMBER
14106

DRAWING NUMBER
ALT-500



SHEET NOTES

1. SEE SHEET CS-100 FOR LAYOUT AND MATERIALS NOTES.

KEYED NOTES

- A — PROPOSED BIKE PATH CONNECTS TO EXISTING
- B — STOP BAR AND STOP SIGN (2/CS-507)
- C — ADA RAMP - TYPE B (15/CS-500)
- D — DOUBLE SWING GATE WITH 10 FOOT LEAFS (VEHICULAR) (3/CS-504)
- E — DOUBLE SWING GATE WITH 4 FOOT LEAFS (PEDESTRIAN) (3/CS-504)
- F — SCOREBOARD PAD (4/CS-505)
- G — SEGMENTAL RETAINING WALL (1, 2/CS-502)
- H — EXISTING GATEWAY COLUMNS WITH NEW LIGHT FIXTURES, SEE ELECTRICAL DRAWINGS
- I — END OF EXISTING ROAD
- J — CHAINLINK FENCE (1/CS-504)
- K — BACKSTOP (1/CS-503)
- L — SINGLE LEAF 4 FOOT PEDESTRIAN GATE WITH PANIC EXIT (2/CS-504)
- M — VEHICULAR GUARDRAIL (4/CS-504)
- N — (2) 20FT HT FOOTBALL GOALS, INSTALL PER SPECIFICATIONS &
- O — CONTRACTOR TO PROVIDE (4) PORTABLE SOCCER GOALS
- P — CONTRACTOR TO PROVIDE (4) PORTABLE LACROSSE GOAL

LEGEND

- PROPERTY LINE
- EASEMENT
- LIMIT OF CONSTRUCTION
- MEDIUM DUTY ASPHALT PAVMENT (1/CS-500)
- LIGHT DUTY ASPHALT PAVEMENT (2/CS-500)
- CITY OF ELGIN PAVEMENT STANDARD (3.24/CU-502)
- HEAVY DUTY INTEGRAL COLORED CONCRETE PAVEMENT (6/CS-500)
- HEAVY DUTY CONCRETE PAVEMENT (6/CS-500)
- CONCRETE PAVEMENT (5/CS-500)
- GRAVEL SHOULDER (4/CS-500)
- TURF (1/CS-505)
- ADA TACTILE WARNING
- CONTROL JOINT (7/CS-500)
- ISOLATION (EXPANSION) JOINT (8/CS-500)
- CONCRETE TURNDOWN (9/CS-500)
- STANDARD CURB AND GUTTER (##/CS-500)
- RETAINING WALL (2/CS-502)
- CHAIN LINK FENCE (1/CS-504)
- BACKSTOP NET (1/CS-503)
- POST AND CHAIN (5/CS-504)
- GUARDRAIL (4/CS-504) (6/CS-504)
- 6FT MASONRY DUMPSTER ENCLOSURE
- WOOD BENCH ON CONCRETE PAD WITH PLINTH (5/CS-506)
- FLAGPOLES (7/CS-506)
- ROADWAY LIGHT POLE (SEE ELECTRICAL)
- PARKING LOT LIGHT POLE (SEE ELECTRICAL)
- SPORTS FIELD LIGHT POLE (SEE ELECTRICAL)
- LIGHT POLE (SEE ELECTRICAL)
- REMOVABLE BOLLARDS, TYP. (3/CS-506)
- BOLLARDS, TYP. (4/CS-506)

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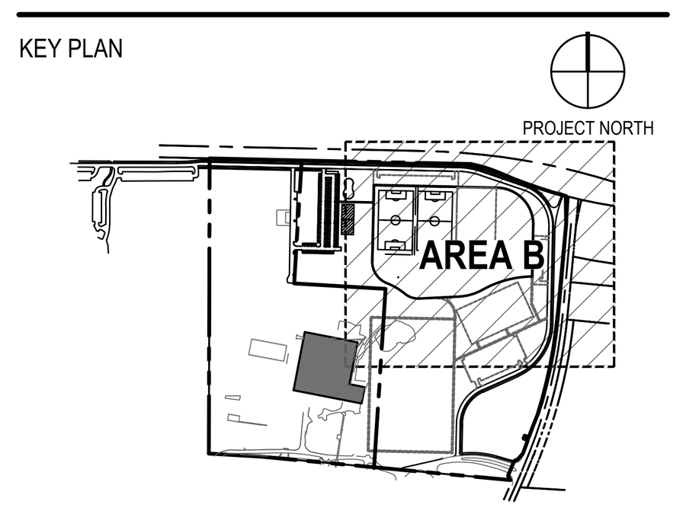
KEY PLAN



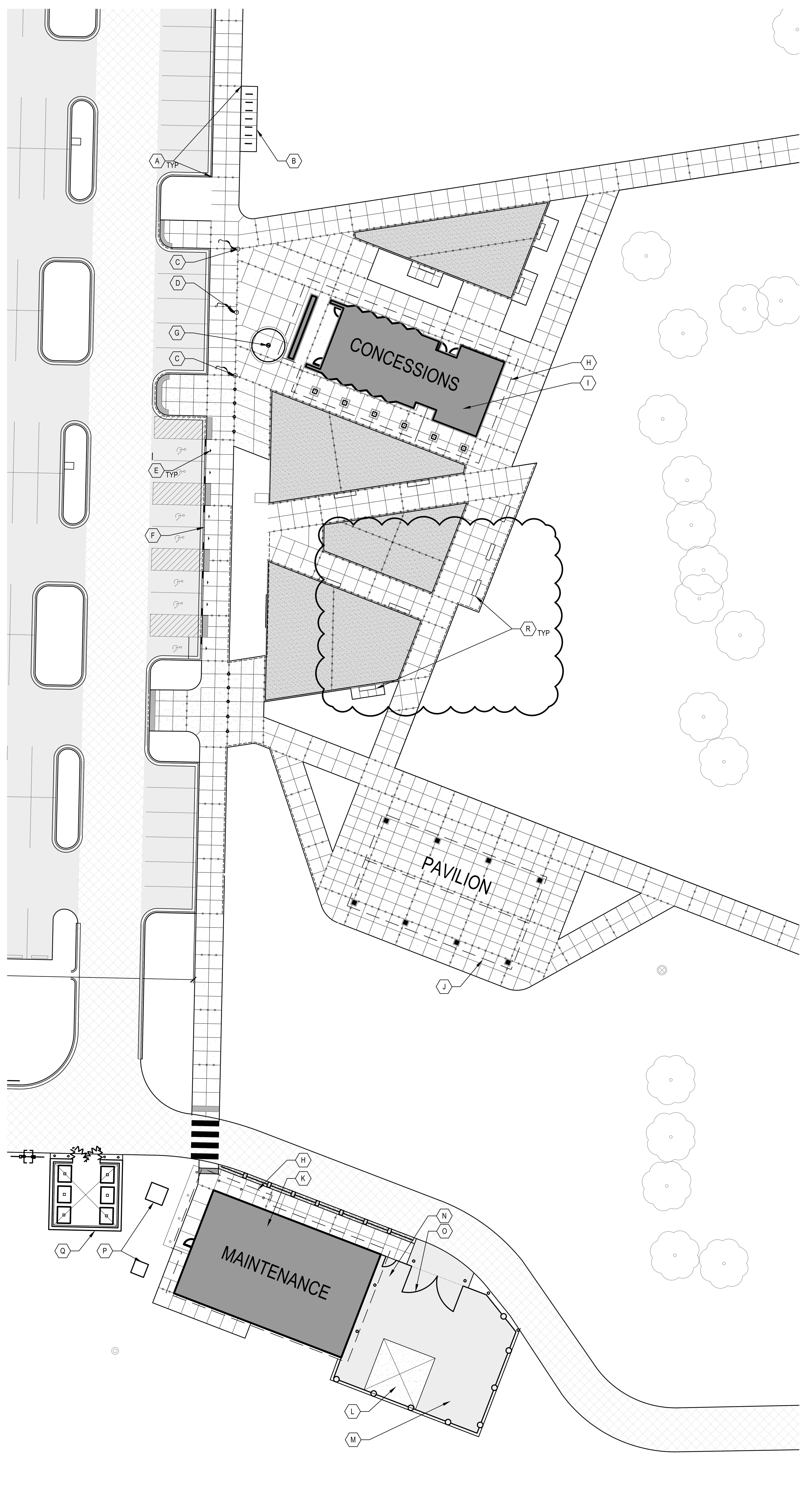
DRAWING TITLE
LAYOUT AND MATERIALS PLAN - AREA B

SCALE: 1" = 50'

SCALE

14106
PROJECT NUMBER

CS-102
DRAWING NUMBER



CONCESSIONS PLAZA ENLARGEMENT

SCALE: 1"=20'-0"

SHEET NOTES

1. SEE SHEET CS-100 FOR LAYOUT AND MATERIALS NOTES.

KEYED NOTES

- A — ALIGN JOINT, TYP
- B — BIKE RACKS (1,2 / CS-506)
- C — FLAGPOLE - 25' HEIGHT (7 / CS-506)
- D — FLAGPOLE - 35' HEIGHT (7 / CS-506)
- E — ADA PARKING SIGNS (1 / CS-507)
- F — ADA BARRIER CURB (18 / CS-500)
- G — RAINWATER COLLECTION CISTERN FOR IRRIGATION
- H — BUILDING ROOF OVERHEAD
- I — PROPOSED CONCESSIONS BUILDING, SEE ARCHITECTURAL SHEETS
- J — PROPOSED SHELTER PAVILLION (6 / CS-506)
- K — PROPOSED MAINTENANCE BUILDING, SEE ARCHITECTURAL SHEETS
- L — WASH DOWN AREA WITH HEAVY DUTY CONCRETE PAVEMENT (6 / CS-500)
- M — PROPOSED MAINTENANCE YARD
- N — SINGLE LEAF 4 FOOT PEDESTRIAN GATE WITH PANIC EXIT (2 / CS-504)
- O — DOUBLE SWING GATE WITH 10 FOOT LEAFS (VEHICULAR) (3 / CS-504)
- P — TRANSFORMER, SEE ELECTRICAL PLANS
- Q — TRASH ENCLOSURE, SEE SITE DETAILS SHEET CS-508
- R — WOOD BENCH (5 / CS-506)

LEGEND

- PROPERTY LINE
- EASEMENT
- LIMIT OF CONSTRUCTION
- MEDIUM DUTY ASPHALT PAVMENT (1 / CS-500)
- LIGHT DUTY ASPHALT PAVEMENT (2 / CS-500)
- CITY OF ELGIN PAVEMENT STANDARD (3.24 / CU-502)
- HEAVY DUTY INTEGRAL COLORED CONCRETE PAVEMENT (6 / CS-500)
- HEAVY DUTY CONCRETE PAVEMENT (6 / CS-500)
- CONCRETE PAVEMENT (5 / CS-500)
- GRAVEL SHOULDER (4 / CS-500)
- TURF (1 / CS-505)
- ADA TACTILE WARNING
- CONTROL JOINT (7 / CS-500)
- ISOLATION (EXPANSION) JOINT (8 / CS-500)
- CONCRETE TURNDOWN (9 / CS-500)
- STANDARD CURB AND GUTTER (## / CS-500)
- RETAINING WALL (2 / CS-502)
- CHAIN LINK FENCE (1 / CS-504)
- BACKSTOP NET (1 / CS-503)
- POST AND CHAIN (5 / CS-504)
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- FLAGPOLES (7 / CS-506)
- ROADWAY LIGHT POLE (SEE ELECTRICAL)
- PARKING LOT LIGHT POLE (SEE ELECTRICAL)
- SPORTS FIELD LIGHT POLE (SEE ELECTRICAL)
- LIGHT POLE (SEE ELECTRICAL)
- REMOVABLE BOLLARDS, TYP. (3 / CS-506)
- BOLLARDS, TYP. (4 / CS-506)

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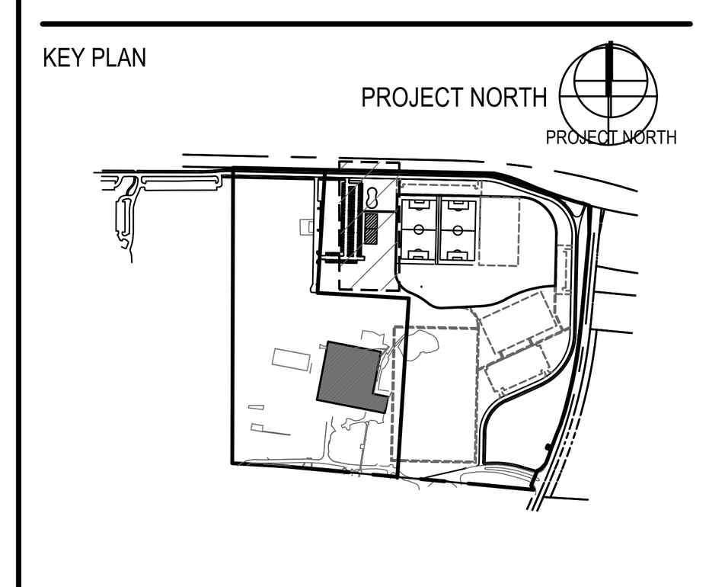
KEY PLAN

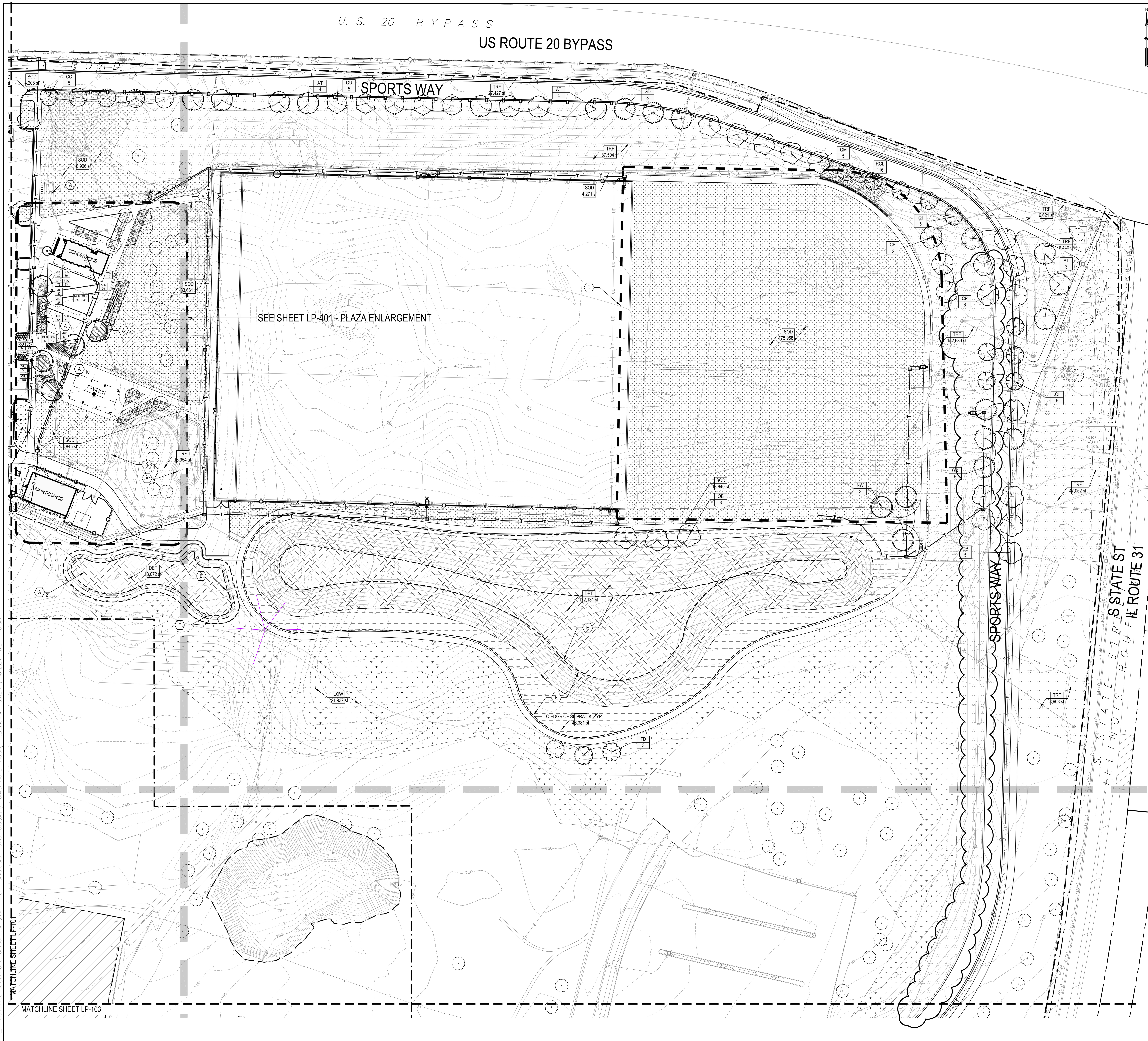


DRAWING TITLE
PLAZA ENLARGEMENT

SCALE: AS NOTED
SCALE

14106
PROJECT NUMBER

CS-401
DRAWING NUMBER



SHEET NOTES

1. SEE SHEET LP-100 FOR LANDSCAPE SHEET NOTES

KEYNOTE

- A — BIOSWALE (2 / LP-501)
- B — 14 EXISTING SHADE TREES, APPROXIMATELY 3" CALIPER EACH, TO BE TRANSPLANTED IMMEDIATELY AFTER REMOVAL FROM EXISTING LOCATION. SEE LEGEND AND PLAN FOR LOCATIONS OF TRANSPLANTED TREES.
- C — TRENCH RESTORATORATION, SEED WITH BLANKET TO MATCH EXISTING. SEE CIVIL.
- D — IRRIGATION BY OTHERS. SEE SHEETS IR-100, IR-200, IR-201
- E — TYPE S-75 EROSION CONTROL BLANKET AT BOTTOM OF BASIN, SEE SHEET LNP-100 FOR SPECIFICATIONS
- F — TYPE S-150 EROSION CONTROL BLANKET AT SLOPED AREAS BETWEEN SINGLE DASHED LINES, SEE SHEET LNP-100 FOR SPECIFICATIONS

LEGEND

- PROPERTY LINE
- LIMIT OF CONSTRUCTION
- STORMWATER MANAGEMENT AREA (1 / LP-501)
- EXISTING TREES
- PROPOSED LOCATION OF TRANSPLANTED EXISTING TREE. SEE KEYNOTE D.
- DECIDUOUS TREE (8 / LP-500) (1 / LP-500)
- EVERGREEN TREE (8 / LP-500) (2 / LP-500)
- SHRUB (8 / LP-500) (3 / LP-500)
- PERENNIALS AND ORNAMENTAL GRASSES (8 / LP-500) (4 / LP-500)
- NATIVE LOW PROFILE DRY MESIC PRAIRIE SEED MIX, SEE LNP SHEETS (1 / LP-501)
- NATIVE LOW PROFILE WET TO MESIC PRAIRIE SEED MIX, SEE LNP SHEETS (1 / LP-501)
- BIOSWALE SEED MIX, SEE LNP SHEETS (2 / LP-501)
- LOW-MOW SEED MIX
- LAWN SEED MIX
- SOD LAWN
- SHOVEL CUT LANDSCAPE EDGE (10 / LP-500)
- PLANT/SEED BOUNDARY
- EXISTING TREES TO BE TRANSPLANTED. SEE KEYNOTE D.

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KEY PLAN

AREA B

DRAWING TITLE
LANDSCAPE PLAN - AREA B

SCALE: 1" = 50'

SCALE

PROJECT NUMBER 14106

DRAWING NUMBER LP-102

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SHEET NOTES

1. SEE SHEET LP-100 FOR LANDSCAPE SHEET NOTES

KEYNOTE

- A — BIOSWALE (2 / LP-501)
- B — 14 EXISTING SHADE TREES, APPROXIMATELY 3" CALIPER EACH, TO BE TRANSPLANTED IMMEDIATELY AFTER REMOVAL FROM EXISTING LOCATION. SEE LEGEND AND PLAN FOR LOCATIONS OF TRANSPLANTED TREES.
- C — TRENCH RESTORATORATION, SEED WITH BLANKET TO MATCH EXISTING. SEE CIVIL
- D — IRRIGATION BY OTHERS. SEE SHEETS IR-100, IR-200, IR-201
- E — TYPE S-75 EROSION CONTROL BLANKET AT BOTTOM OF BASIN, SEE SHEET LNP-100 FOR SPECIFICATIONS
- F — TYPE S-150 EROSION CONTROL BLANKET AT SLOPED AREAS BETWEEN SINGLE DASHED LINES, SEE SHEET LNP-100 FOR SPECIFICATIONS

LEGEND

- PROPERTY LINE
- LIMIT OF CONSTRUCTION
- STORMWATER MANAGEMENT AREA (1 / LP-501)
- EXISTING TREES
- PROPOSED LOCATION OF TRANSPLANTED EXISTING TREE. SEE KEYNOTE D.
- DECIDUOUS TREE (8 / LP-500) (1 / LP-500)
- EVERGREEN TREE (8 / LP-500) (2 / LP-500)
- SHRUB (8 / LP-500) (3 / LP-500)
- PERENNIALS AND ORNAMENTAL GRASSES (8 / LP-500) (4 / LP-500)
- NATIVE LOW PROFILE DRY MESIC PRAIRIE SEED MIX, SEE LNP SHEETS (1 / LP-501)
- NATIVE LOW PROFILE WET TO MESIC PRAIRIE SEED MIX, SEE LNP SHEETS (1 / LP-501)
- BIOSWALE SEED MIX, SEE LNP SHEETS (2 / LP-501)
- LOW-MOW SEED MIX
- LAWN SEED MIX
- SOD LAWN
- SHOVEL CUT LANDSCAPE EDGE (10 / LP-500)
- PLANT/SEED BOUNDARY
- EXISTING TREES TO BE TRANSPLANTED. SEE KEYNOTE D.

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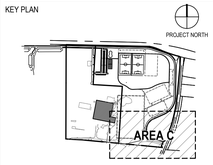


DRAWING TITLE
LANDSCAPE PLAN - AREA C

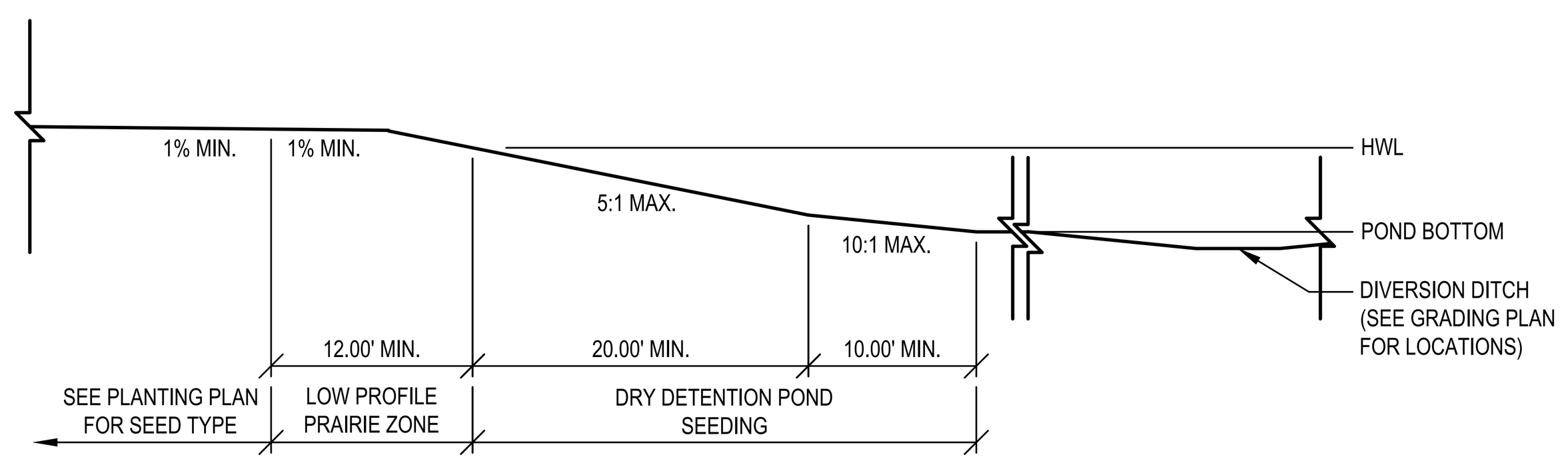
0' 20' 50' 100'
SCALE: 1" = 50'

SCALE 14106

PROJECT NUMBER

LP-103

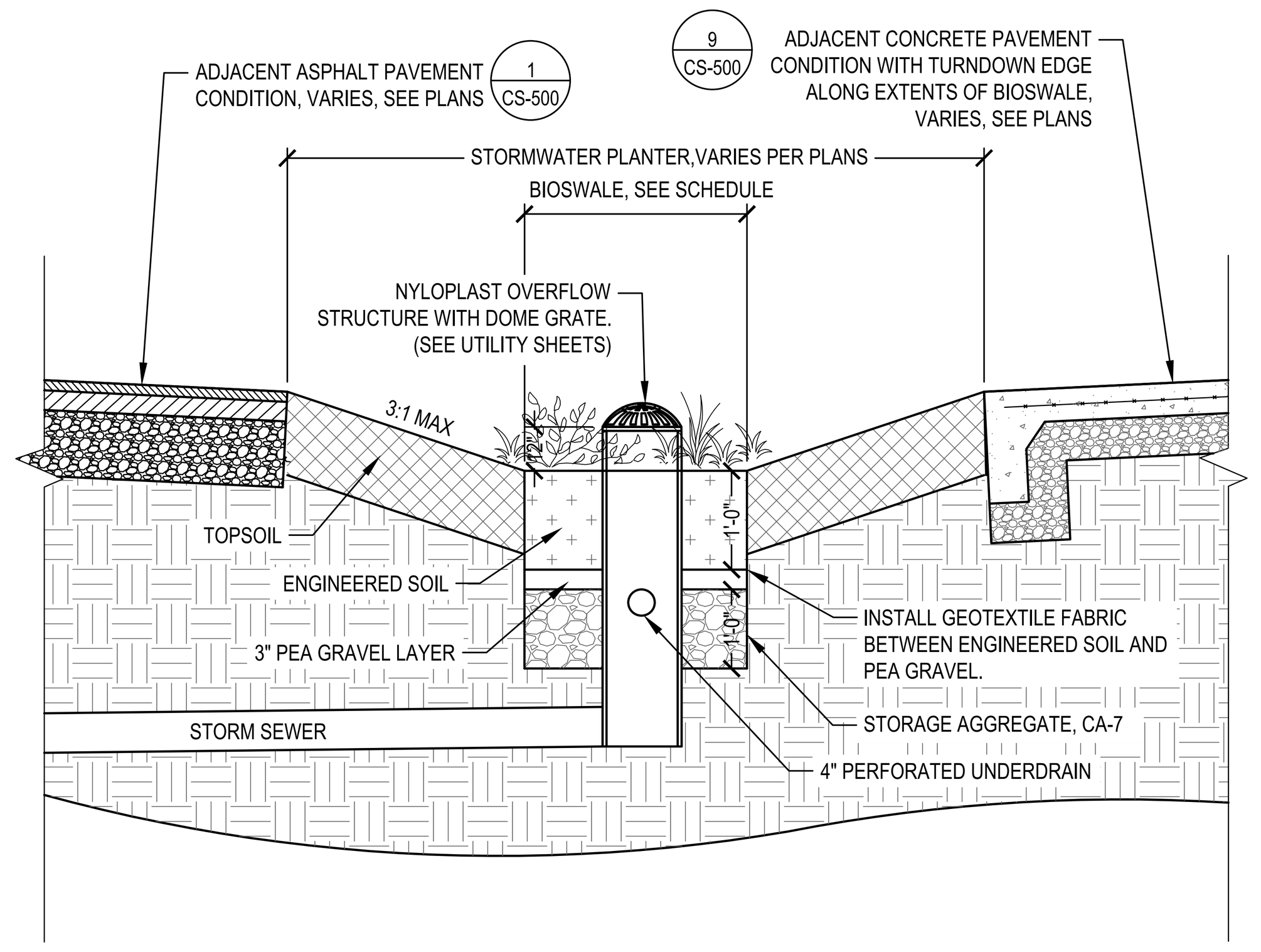
DRAWING NUMBER



NOTES:
1. ALL NATIVE SEED AREAS SHALL HAVE A MINIMUM 18" TOPSOIL DEPTH.
2. ALL SLOPES 5:1 OR GREATER SHALL RECEIVE EROSION CONTROL BLANKET. BLANKET SHALL EXTEND A MINIMUM OF 3' BEYOND LIMITS OF 5:1 SLOPES.
3. OVERLAP SEEDING ZONES ABOVE NWL BY 1'-0"
4. SEE GRADING PLANS FOR SLOPES.
5. SEE LNP SHEETS FOR SEED MIXES.

1 DRY BOTTOM DETENTION BASIN

SCALE: 1"=10'-0"



2 BIOSWALE

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

BIOSWALE SCHEDULE

NO.	ENGINEERED SOIL BOTTOM ELEVATION	PLANT BED ELEVATION EXTENTS*
1	747	747-749
2	744	744-745
3	746	N/A - lawn
4	747	N/A - lawn
5	746	N/A - lawn
6	749	N/A - lawn
7	749	N/A - lawn
8	747	747-749
9	748	748-749
10	748	748-749

*See Landscape Sheets for Plant Types and Topsoil Depths

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	FORM		REMARKS
EVERGREEN TREES							
	TD	3	TAXODIUM DISTICHUM / BALD CYPRESS	10 - 12` HT.	B&B		
SHADE TREES							
	AT	14	ACER SACCHARUM 'GREEN MOUNTAIN' / GREEN MOUNTAIN SUGAR MAPLE	3" CAL.	B&B		
	CC	10	CARPINUS CAROLINIANA / AMERICAN HORNBEAM	3" CAL.	B&B		SINGLE STEMMED
	CP	9	CELTIS OCCIDENTALIS 'PRAIRIE PRIDE' / PRAIRIE PRIDE HACKBERRY	3" CAL.	B&B		
	GD	8	GYMNOCLADUS DIOICA 'ESPRESSO' / KENTUCKY COFFEETREE	3" CAL.	B&B		
	NW	14	NYSSA SYLVATICA 'WILDFIRE' / WILDFIRE TUPELO	3" CAL.	B&B		
	QB	26	QUERCUS BICOLOR / SWAMP WHITE OAK	3" CAL.	B&B		
	QI	13	QUERCUS IMBRICARIA / SHINGLE OAK	3" CAL.	B&B		
	QM	16	QUERCUS MACROCARPA / BURR OAK	3" CAL.	B&B		
	QU	5	QUERCUS MUEHLENBERGII / CHINKAPIN OAK	3" CAL.	B&B		
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	FORM	SPACING	REMARKS
SHRUBS							
	AM	14	ARONIA MELANOCARPA / BLACK CHOKEBERRY	#5		60" o.c.	
	CS	9	CEPHALANTHUS OCCIDENTALIS 'SMCOSS' / SUGAR SHACK® BUTTONBUSH	#5		36" o.c.	
	IL	37	ITEA VIRGINICA 'LITTLE HENRY' / LITTLE HENRY VIRGINIA SWEETSPIRE	#5		36" o.c.	
	IV	21	ITEA VIRGINICA 'MORTON' / SCARLET BEAUTY VIRGINIA SWEETSPIRE	#5		36" o.c.	
GRASSES							
	CAR	177	CAREX STRICTA / TUSSOCK SEDGE	#3		18" o.c.	
	CHL	148	CHASMANTHIUM LATIFOLIUM / NORTHERN SEA OATS	#3		18" o.c.	
	SCO	126	SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM	#3		24" o.c.	
	SSA	319	SESLERIA AUTUMNALIS / AUTUMN MOOR GRASS	#3		18" o.c.	
PERENNIALS							
	ALC	151	ALLIUM X 'CHIVETTE' / CHIVETTE ALLIUM	#3		18" o.c.	
	ASC	54	ASCLEPIAS INCARNATA / SWAMP MILKWEED	#3		18" o.c.	
	ASD	57	ASTER DIVARICATUS / WHITE WOOD ASTER	#3		18" o.c.	
	CLG	67	CHELONE GLABRA / WHITE TURTLEHEAD	#3		18" o.c.	
	MON	177	MONARDA DIDYMA / BEE BALM	#3		18" o.c.	
	RGL	462	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC	#5		60" o.c.	
	STH	168	STACHYS OFFICINALIS 'HUMMELO' / HUMMELO BETONY	---		18" o.c.	
	VRL	150	VERNONIA LETTERMANNII 'IRON BUTTERFLY' / IRON BUTTERFLY IRONWEED	#3		24" o.c.	
	VNV	22	VERNONIA NOVEBORACENSIS / NEW YORK IRONWEED	#3		30" o.c.	
SEED MIX							
	BIO	4,193 SF	BIOSWALE SEED MIX	SEED			LNP SHEETS
	LOW	259,616 SF	LOW-MOW SEED MIX	SEED			
	PRA	84,412 SF	NATIVE LOW PROFILE DRY MESIC PRAIRIE SEED MIX	SEED			LNP SHEETS
	DET	278,451 SF	NATIVE LOW PROFILE WET TO MESIC PRAIRIE SEED MIX	SEED			LNP SHEETS
	TRF	431,561 SF	SEEDED LAWN	SEED			
SOD							
	SOD	329,335 SF	SOD LAWN	---			

2 PLANT SCHEDULE

CALL J.U.L.I.E. 1-800-892-0123
48 Hours (2 working days) Before You Dig.

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Elgin, Illinois 60123

VOLUME 1 OF 2

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CHICAGO, IL 60610
312.944.9600
www.hpzs.com

ISSUED FOR	REV	DATE
ADDENDUM 5	5	05/08/2024
ISSUE FOR BID	1	04/11/2024

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

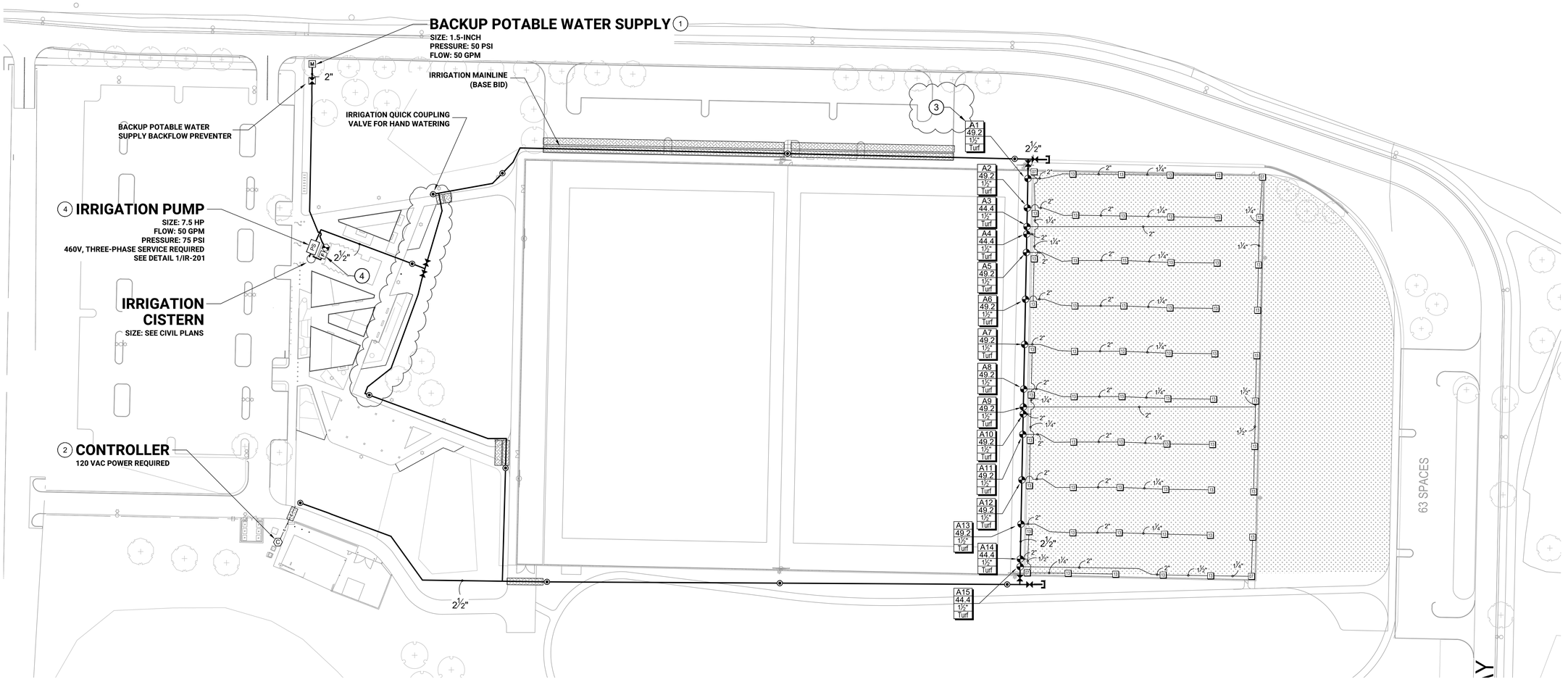
KEY PLAN

DRAWING TITLE
PLANTING DETAILS AND SCHEDULE

SCALE

PROJECT NUMBER 14106

DRAWING NUMBER LP-501



INSTALLATION GENERAL NOTES

1. THE SYSTEM DESIGN ASSUMES A MINIMUM DYNAMIC PRESSURE FOR THE IRRIGATION SYSTEM OF 75 PSI DOWNSTREAM OF THE PUMP STATION, AT A DESIGN FLOW OF 50 GPM AT THE 2-INCH IRRIGATION POINT-OF-CONNECTION (POC). TAP, METER, BACKFLOW PREVENTER, MASTER VALVE AND FLOW METER SHALL BE SIZED AS INDICATED IN THE DRAWING LEGEND. VERIFY PRESSURE AND FLOW ON SITE PRIOR TO CONSTRUCTION.
2. READ THOROUGHLY AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND INSTALLATION DETAILS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION.
3. COORDINATE UTILITY LOCATES ("CALL BEFORE YOU DIG") OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
4. DO NOT PROCEED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. IF DISCREPANCIES IN CONSTRUCTION DETAILS, LEGEND, NOTES, OR SPECIFICATIONS ARE DISCOVERED, BRING ALL SUCH OBSTRUCTIONS OR DISCREPANCIES TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
5. THE DRAWINGS ARE DIAGRAMMATIC. THEREFORE, THE FOLLOWING SHOULD BE NOTED:
   A. ALTHOUGH IRRIGATION COMPONENTS MAY BE SHOWN OUTSIDE PLANTING AREAS FOR CLARITY, INSTALL IRRIGATION PIPE AND WIRING IN LANDSCAPED AREAS WHENEVER POSSIBLE.
   B. TREE AND SHRUB LOCATIONS AS SHOWN ON LANDSCAPE PLANS TAKE PRECEDENCE OVER IRRIGATION EQUIPMENT LOCATIONS. AVOID CONFLICTS BETWEEN THE IRRIGATION SYSTEM, PLANTING MATERIALS, AND ARCHITECTURAL FEATURES.
   C. USE ONLY STANDARD TEES AND ELBOW FITTINGS. USE OF TEES IN THE BULLNOSE CONFIGURATION, OR USE OF CROSS TYPE FITTINGS IS NOT ALLOWED.
6. PROVIDE THE FOLLOWING COMPONENTS TO THE OWNER PRIOR TO THE COMPLETION OF THE PROJECT:
   A. TWO (2) OPERATING KEYS FOR EACH TYPE OF MANUALLY OPERATED VALVES.
   B. TWO (2) OF EACH SERVICING WRENCH OR TOOL NEEDED FOR COMPLETE ACCESS, ADJUSTMENT, AND REPAIR OF ALL ROTARY SPRINKLERS.
7. SELECT NOZZLES FOR SPRAY AND ROTARY SPRINKLERS WITH ARCS WHICH PROVIDE COMPLETE AND ADEQUATE COVERAGE WITH MINIMUM OVERSPRAY FOR THE SITE CONDITIONS. CAREFULLY ADJUST THE RADIUS OF THROW AND ARC OF COVERAGE OF EACH ROTARY SPRINKLER TO PROVIDE THE BEST PERFORMANCE.
8. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF IRRIGATION SLEEVING. SLEEVES ARE REQUIRED FOR BOTH PIPING AND ELECTRICAL WIRING AT EACH HARDSCAPE CROSSING. COORDINATE INSTALLATION OF SLEEVING WITH OTHER TRADES. ANY PIPE OR WIRE WHICH PASSES BENEATH EXISTING HARDSCAPE WHERE SLEEVING WAS NOT INSTALLED WILL REQUIRE HORIZONTAL BORING BY THE IRRIGATION CONTRACTOR. PIPE SLEEVES SHALL BE SIZED TWICE THE NOMINAL SIZE OF THE PIPE PASSING THROUGH.
9. INSTALL ALL ELECTRICAL POWER TO THE IRRIGATION CONTROL SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL ELECTRIC UTILITY CODES.
10. THE FOLLOWING SHOULD BE NOTED REGARDING PIPE SIZING: IF A SECTION OF UNSIZED PIPE IS LOCATED BETWEEN TWO IDENTICALLY SIZED SECTIONS, THE UNSIZED PIPE IS THE SAME NOMINAL SIZE AS THE TWO SIZED SECTIONS. THE UNSIZED PIPE SHOULD NOT BE CONFUSED WITH THE DEFAULT PIPE SIZE NOTED IN THE LEGEND.
11. INSTALL TWO (2) #14 AWG CONTROL WIRES ON STANDARD WIRE SYSTEMS OR ONE (1) #14 AWG TWO-WIRE PAIR ON TWO-WIRE SYSTEMS, FOR USE AS SPARES. INSTALL SPARE WIRES FROM CONTROLLER LOCATION TO EACH DEAD-END OF MAINLINE. COIL 3 FEET OF WIRE IN VALVE BOX.

IDPH RAINWATER RE-USE AND IRRIGATION APPROVAL NOTE

THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENGAGING A LICENSED PLUMBING OR IRRIGATION CONTRACTOR TO SUBMIT A WRITTEN REQUEST FOR WRITTEN APPROVAL FOR USE OF AN ALTERNATIVE WATER SOURCE TO THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH. THE LICENSED PLUMBING OR IRRIGATION CONTRACTOR SHALL SUBMIT WRITTEN PLANS AND SPECIFICATIONS OF THE ALTERNATIVE WATER SOURCE UTILIZATION METHOD IN ACCORDANCE WITH THE ILLINOIS ADMINISTRATIVE CODE TITLE 77: PUBLIC HEALTH SECTION 892.50 (C).

IRRIGATION LEGEND

- POINT-OF-CONNECTION ASSEMBLY
- IRRIGATION MAINLINE CAP ASSEMBLY
- MAINLINE PIPE: **PURPLE CLASS 200 PVC 2 1/2-INCH SIZE UNLESS OTHERWISE INDICATED**
- SLEEVES: **CLASS 200 PVC**
- IRRIGATION CONTROL WIRES IN CONDUIT OR WITH WARNING TAPE
- LATERAL PIPE TO SPRINKLERS: **PURPLE CLASS 200 PVC 1-INCH SIZE UNLESS OTHERWISE INDICATED**
- UNCONNECTED PIPE CROSSING
- REMOTE CONTROL VALVE ASSEMBLY FOR SPRINKLER LATERALS: **HUNTER ICV-FS (SIZED PER PLAN) W/ HUNTER ICD DECODER**
- REMOTE CONTROL DRIP VALVE ASSEMBLY: **HUNTER ICZ-101**
- QUICK COUPLING VALVE ASSEMBLY: **HUNTER HQ-5-LRC-R W/ PURPLE LOCKING LID HK-55 QUICK COUPLER KEY AND HS-1 SWIVEL FOR 3/4" HOSE**
- ISOLATION GATE VALVE ASSEMBLY: **MATCO 514**
- BACKFLOW PREVENTION ASSEMBLY: **FEBCO 825YA (1.5")**
- PS PUMP ASSEMBLY: **SEE SHEET IR-201 FOR SPECIFICATIONS**

A1 / 14 / 1" / Turf
- INDICATES CONTROLLER AND STATION NUMBER (A = BASE BID, B = ALTERNATE 2, C = ALTERNATE 8)
- INDICATES LATERAL DISCHARGE (GPM)
- INDICATES VALVE SIZE (INCHES)
- INDICATES LANDSCAPE APPLICATION

- Ⓐ IRRIGATION CONTROLLER UNIT WITH **WR-CLIK SENSOR A2C-LTE CELL CARTRIDGE HUNTER A2C-75D-SS TWO WIRE CONTROLLER**
- INLINE DRIP TUBING: **NETAFIM TLCV6-12 WITH RAINBIRD XQF DRIPLINE HEADER 0.6 GPH EMITTERS, 12" EMITTER SPACING, 12" ROW SPACING**

POP-UP ROTOR SPRINKLER:
HUNTER I-25-04-SS-R
PRESSURE: 50 PSI

04	NOZZLE	RADIUS: 41'	FLOW: 4.3	GPM
05	NOZZLE	RADIUS: 44'	FLOW: 4.8	GPM
07	NOZZLE	RADIUS: 47'	FLOW: 7.0	GPM
08	NOZZLE	RADIUS: 49'	FLOW: 8.3	GPM
10	NOZZLE	RADIUS: 52'	FLOW: 10.1	GPM
13	NOZZLE	RADIUS: 53'	FLOW: 11.2	GPM
15	NOZZLE	RADIUS: 56'	FLOW: 13.4	GPM
18	NOZZLE	RADIUS: 58'	FLOW: 14.5	GPM
20	NOZZLE	RADIUS: 62'	FLOW: 17.8	GPM
23	NOZZLE	RADIUS: 64'	FLOW: 21.9	GPM
25	NOZZLE	RADIUS: 66'	FLOW: 23.5	GPM
28	NOZZLE	RADIUS: 68'	FLOW: 26.9	GPM

POP-UP GEAR DRIVEN ROTORS: **HUNTER I-20-06**
PRESSURE: **45 PSI**

NOZZLE	RADIUS	FLOW
1.5	31'	1.5 GPM
2.0	34'	2.0 GPM
2.5	35'	2.5 GPM
3.0	38'	3.0 GPM
4.0	40'	4.0 GPM
5.0	42'	5.0 GPM
6.0	43'	6.0 GPM
8.0	44'	8.0 GPM

- Ⓑ Ⓒ Ⓓ POP-UP ROTATING SPRAY SPRINKLER: **HUNTER PROS-06-PRS40-CV W/MP2000 NOZZLES**
  PRESSURE: **40 PSI** RADIUS: **13 FEET TO 21 FEET**
  FLOW (GPM): **K-0.77 G-1.10 R-1.48**
- Ⓔ Ⓕ Ⓖ POP-UP ROTATING SPRAY SPRINKLER: **HUNTER PROS-06-PRS40-CV W/MP3000 NOZZLES**
  PRESSURE: **40 PSI** RADIUS: **22 FEET TO 30 FEET**
  FLOW (GPM): **B-1.82 Y-2.73 A-3.64**
- Ⓒ POP-UP ROTATING SPRAY SPRINKLER: **HUNTER PROS-06-PRS40-CV W/MPCORNER NOZZLE**
  PRESSURE: **40 PSI** RADIUS: **8 FEET TO 14 FEET**
  FLOW (GPM): **45°-0.19 90°-0.39 105°-0.45**
- POP-UP SPRAY SPRINKLER: **HUNTER PROS-06-PRS30-CV W/10 SERIES NOZZLE**
  PRESSURE: **30 PSI** RADIUS: **10 FEET**
  FLOW (GPM): **Q-0.42 H-0.88 F-1.59**

CONSTRUCTION NOTES

1. THE IRRIGATION SYSTEM POINT-OF-CONNECTION (POC) SHALL BE DOWNSTREAM OF THE IRRIGATION WATER TAP AND METER INSTALLED BY OTHERS AT THE APPROXIMATE LOCATION SHOWN. INSTALL BACKFLOW PREVENTION UNIT AND MASTER VALVE ASSEMBLY AS INDICATED. VERIFY EXACT LOCATION OF POC WITH OWNER'S REPRESENTATIVE.
2. WALL MOUNT THE IRRIGATION CONTROLLER AT THE APPROXIMATE LOCATION SHOWN. COORDINATE ELECTRICAL POWER TO THE CONTROLLER WITH THE OWNER'S REPRESENTATIVE. CARE SHOULD BE TAKEN TO INSTALL THE IRRIGATION CONTROLLER IN A LOCATION THAT IS ACCESSIBLE FOR MAINTENANCE, AND SCREENED FROM VIEW EITHER BEHIND ENTRY WALLS, NEXT TO BUILDINGS, OR BEHIND PLANT MATERIAL. FINAL LOCATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.
3. VALVES LABELED 'A' ARE PART OF THE BASE BID PACKAGE. VALVES LABELED 'B' AND 'C' ARE PART OF THE ALTERNATE BID PACKAGE.
4. POTABLE FILL VALVE AND FLOW SENSOR TO BE MOUNTED IN ENCLOSURE ON EXTERIOR BUILDING WALL.

BASE BID ESTIMATED ANNUAL WATER USE

THE IRRIGATION SYSTEM AS SHOWN ON THIS PLAN HAS AN ESTIMATED ANNUAL WATER USE OF 2,179,444 GALLONS. TO VERIFY EFFICIENT IRRIGATION SYSTEM OPERATION, THE OWNER SHALL COMPARE THIS ESTIMATED IRRIGATION WATER USE WITH ACTUAL WATER USE, AS RECORDED ON SITE, AFTER ALL PLANT MATERIAL HAS BEEN ESTABLISHED.

THE ESTIMATED ANNUAL IRRIGATION WATER USE OF THIS SYSTEM IS BASED ON 30-YEARS AVERAGE EVAPOTRANSPIRATION RATES (ET) FOR THE LOCAL AREA AND TYPICAL NEW IRRIGATION SYSTEM EQUIPMENT EFFICIENCIES. MAJOR DEVIATIONS FROM THIS ESTIMATE USE SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER AND CURRENT IRRIGATION MAINTENANCE COMPANY AT THE TIME OF THE DEVIATION.

TO VERIFY EFFICIENT IRRIGATION SYSTEM OPERATION AND WATER USE, AN IRRIGATION SYSTEM EVALUATION AND AUDIT SHOULD BE PERFORMED.

TRACER WIRE

CONTRACTOR SHALL RUN A #14-AWG, DIRECT BURY, UL LISTED TRACER WIRE BY PAIGE WIRE ALONG THE THE LENGTH OF ALL PVC MAINLINE AND LATERAL PIPE. WIRE SHALL BE CONTINUOUS WITH WIRE SPLICES ONLY PLACED WITHIN VALVE BOXES AND LABELED ON THE RECORD DRAWING. NO WIRES ARE TO BE EXPOSED. USE PURPLE JACKETED WIRE. TAPE THE TRACER WIRE TO THE PIPE AT 15-FOOT INTERVALS. LABEL TRACER WIRE RUNS IN EACH VALVE BOX.

ALTERNATE BID ESTIMATED ANNUAL WATER USE

THE IRRIGATION SYSTEM AS SHOWN ON THIS PLAN HAS AN ESTIMATED ANNUAL WATER USE OF 1,170,650 GALLONS. TO VERIFY EFFICIENT IRRIGATION SYSTEM OPERATION, THE OWNER SHALL COMPARE THIS ESTIMATED IRRIGATION WATER USE WITH ACTUAL WATER USE, AS RECORDED ON SITE, AFTER ALL PLANT MATERIAL HAS BEEN ESTABLISHED.

THE ESTIMATED ANNUAL IRRIGATION WATER USE OF THIS SYSTEM IS BASED ON 30-YEARS AVERAGE EVAPOTRANSPIRATION RATES (ET) FOR THE LOCAL AREA AND TYPICAL NEW IRRIGATION SYSTEM EQUIPMENT EFFICIENCIES. MAJOR DEVIATIONS FROM THIS ESTIMATE USE SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER AND CURRENT IRRIGATION MAINTENANCE COMPANY AT THE TIME OF THE DEVIATION.

TO VERIFY EFFICIENT IRRIGATION SYSTEM OPERATION AND WATER USE, AN IRRIGATION SYSTEM EVALUATION AND AUDIT SHOULD BE PERFORMED.

HAND WATERING ESTIMATED ANNUAL WATER USE

THE IRRIGATION SYSTEM AS SHOWN ON THIS PLAN HAS AN ESTIMATED ANNUAL WATER USE OF 1,773,499 GALLONS. TO VERIFY EFFICIENT IRRIGATION SYSTEM OPERATION, THE OWNER SHALL COMPARE THIS ESTIMATED IRRIGATION WATER USE WITH ACTUAL WATER USE, AS RECORDED ON SITE, AFTER ALL PLANT MATERIAL HAS BEEN ESTABLISHED.

THE ESTIMATED ANNUAL IRRIGATION WATER USE OF THIS SYSTEM IS BASED ON 30-YEARS AVERAGE EVAPOTRANSPIRATION RATES (ET) FOR THE LOCAL AREA AND TYPICAL NEW IRRIGATION SYSTEM EQUIPMENT EFFICIENCIES. MAJOR DEVIATIONS FROM THIS ESTIMATE USE SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER AND CURRENT IRRIGATION MAINTENANCE COMPANY AT THE TIME OF THE DEVIATION.

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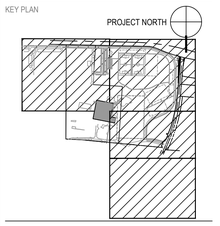
ISSUED FOR	REV	DATE
ADDENDUM 3	3	05/02/2024
ISSUE FOR BID	1	04/11/2024

SEALS AND SIGNATURES

Mark Kempf 002932

KEY PLAN



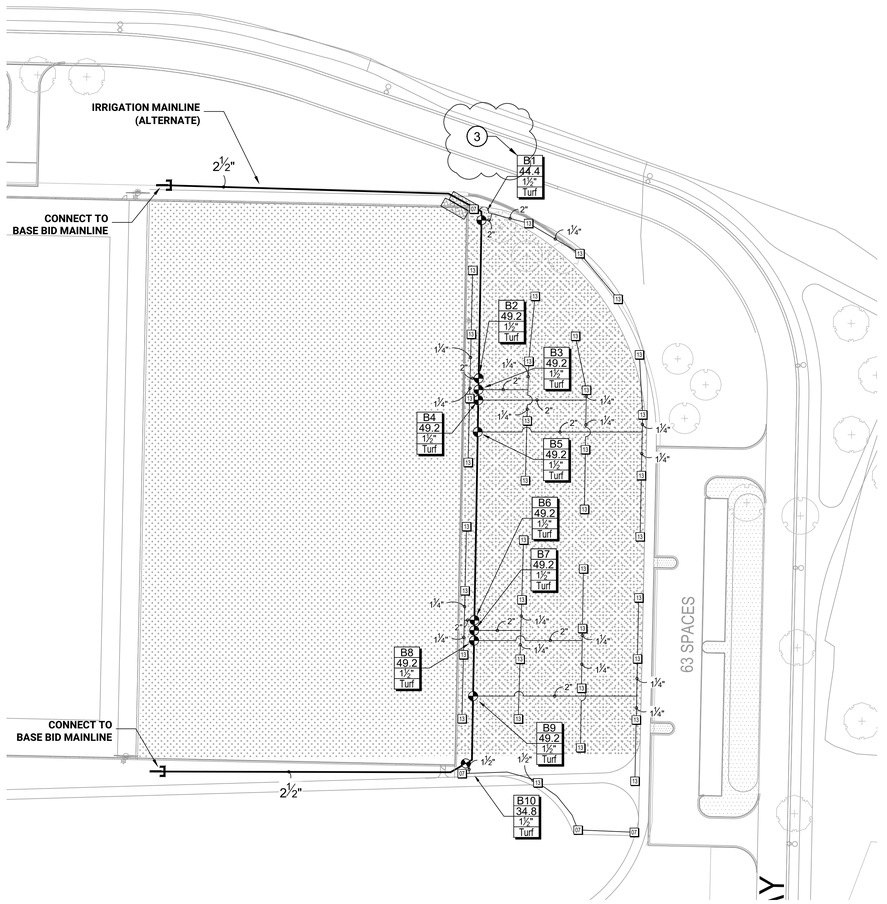
DRAWING TITLE
IRRIGATION PLAN

0' 25' 50' 100'
SCALE: 1" = 50'

SCALE 14106

PROJECT NUMBER

DRAWING NUMBER
IR-100



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- POP-UP ROTATING SPRAY SPRINKLER: **HUNTER PROS-06-PRS40-CV W/MP3000 NOZZLES** PRESSURE: **40 PSI** RADIUS: **22 FEET TO 30 FEET** FLOW (GPM): **B-1.82 Y-2.73 A-3.64**
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- POP-UP SPRAY SPRINKLER: **HUNTER PROS-06-PRS30-CV W/10 SERIES NOZZLE** PRESSURE: **30 PSI** RADIUS: **10 FEET** FLOW (GPM): **Q-0.42 H-0.88 F-1.59**

CONSTRUCTION NOTES

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4. **POTABLE FILL VALVE AND FLOW SENSOR TO BE MOUNTED IN ENCLOSURE ON EXTERIOR BUILDING WALL.**

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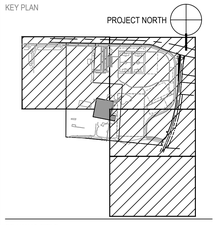
ISSUED FOR	REV	DATE
ADDENDUM 3	3	05/02/2024
ISSUE FOR BID	1	04/11/2024

SEALS AND SIGNATURES

KEY PLAN



DRAWING TITLE

ALTERNATE 2 - ATHLETIC FIELD 3 IRRIGATION

0' 25' 50' 100'
SCALE: 1" = 50'

SCALE 14106

PROJECT NUMBER

ALT-200

DRAWING NUMBER

IRRIGATION LEGEND

- POINT-OF-CONNECTION ASSEMBLY
- IRRIGATION MAINLINE CAP ASSEMBLY
- MAINLINE PIPE: **PURPLE CLASS 200 PVC**
  2 1/2-INCH SIZE UNLESS OTHERWISE INDICATED
- SLEEVES: **CLASS 200 PVC**
- C — IRRIGATION CONTROL WIRES IN CONDUIT OR WITH WARNING TAPE
- LATERAL PIPE TO SPRINKLERS: **PURPLE CLASS 200 PVC**
  1-INCH SIZE UNLESS OTHERWISE INDICATED
- UNCONNECTED PIPE CROSSING
- REMOTE CONTROL VALVE ASSEMBLY FOR SPRINKLER LATERALS:
  HUNTER ICV-FS (SIZED PER PLAN) W/ HUNTER ICD DECODER
- REMOTE CONTROL DRIP VALVE ASSEMBLY: **HUNTER ICZ-101**
- QUICK COUPLING VALVE ASSEMBLY: **HUNTER HQ-5-LRC-R W/ PURPLE LOCKING LID**
  HK-55 QUICK COUPLER KEY AND
  HS-1 SWIVEL FOR 3/4" HOSE
- ISOLATION GATE VALVE ASSEMBLY: **MATCO 514**
- BACKFLOW PREVENTION ASSEMBLY: **FEBCO 825YA (1.5")**
- PS — PUMP ASSEMBLY: **SEE SHEET IR-201 FOR SPECIFICATIONS**

A1 / 14 / 1" / Turf
- INDICATES CONTROLLER AND STATION NUMBER
  A = BASE BID
  B = ALTERNATE 2
  C = ALTERNATE 8
- INDICATES LATERAL DISCHARGE (GPM)
- INDICATES VALVE SIZE (INCHES)
- INDICATES LANDSCAPE APPLICATION

- (A) IRRIGATION CONTROLLER UNIT
  WITH **WR-CLIK SENSOR**
  A2C-LTE CELL CARTRIDGE
  HUNTER A2C-75D-SS TWO WIRE CONTROLLER
- INLINE DRIP TUBING: **NETAFIM TLCV6-12 WITH RAINBIRD XQF DRIPLINE HEADER**
  0.6 GPH EMITTERS, 12" EMITTER SPACING, 12" ROW SPACING

POP-UP ROTOR SPRINKLER:
HUNTER I-25-04-SS-R
PRESSURE: 50 PSI

04	NOZZLE	RADIUS: 41'	FLOW: 4.3	GPM
05	NOZZLE	RADIUS: 44'	FLOW: 4.8	GPM
07	NOZZLE	RADIUS: 47'	FLOW: 7.0	GPM
08	NOZZLE	RADIUS: 49'	FLOW: 8.3	GPM
10	NOZZLE	RADIUS: 52'	FLOW: 10.1	GPM
13	NOZZLE	RADIUS: 53'	FLOW: 11.2	GPM
15	NOZZLE	RADIUS: 56'	FLOW: 13.4	GPM
18	NOZZLE	RADIUS: 58'	FLOW: 14.5	GPM
20	NOZZLE	RADIUS: 62'	FLOW: 17.8	GPM
23	NOZZLE	RADIUS: 64'	FLOW: 21.9	GPM
25	NOZZLE	RADIUS: 66'	FLOW: 23.5	GPM
28	NOZZLE	RADIUS: 68'	FLOW: 26.9	GPM

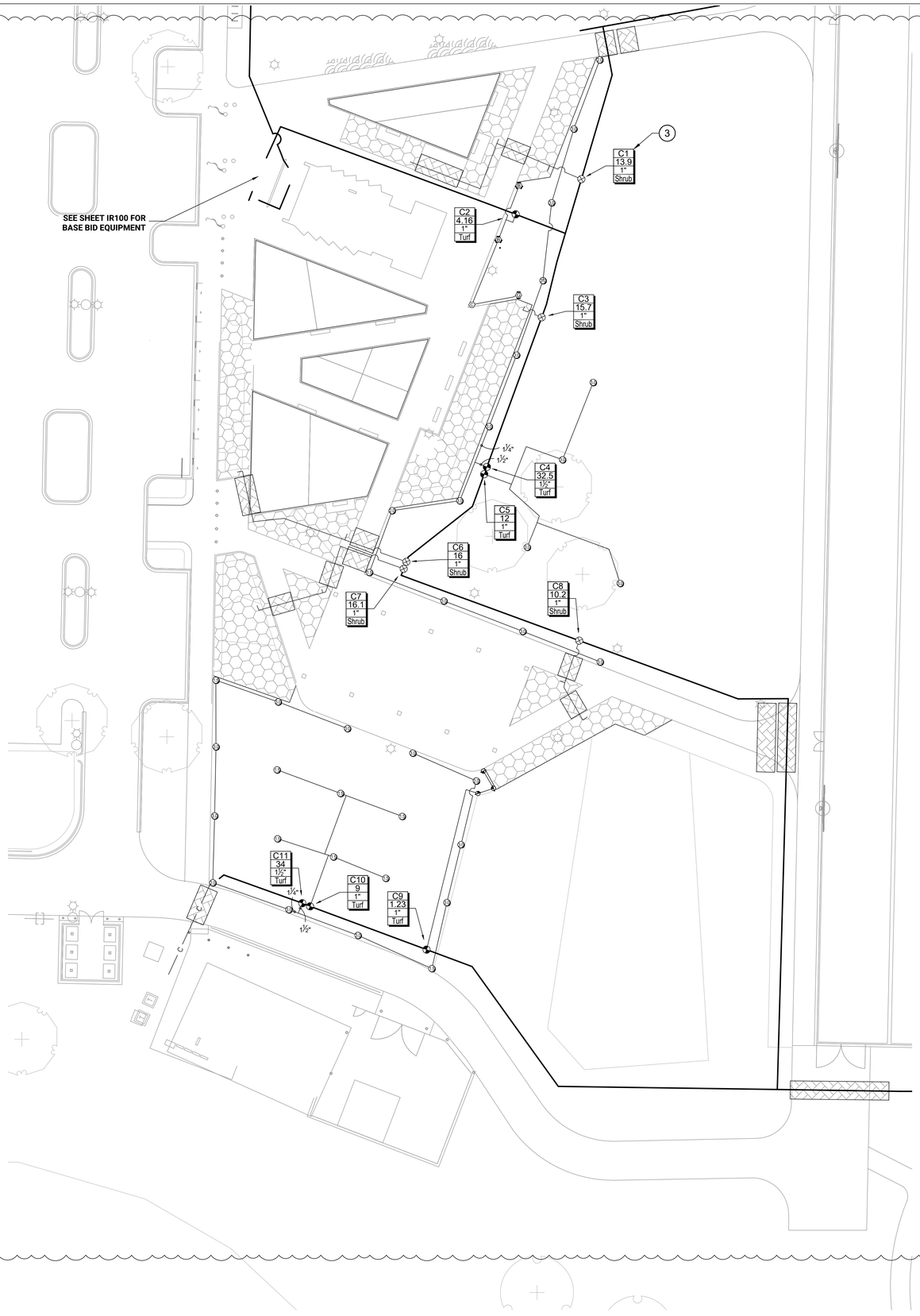
POP-UP GEAR DRIVEN ROTORS: **HUNTER I-20-06**
PRESSURE: **45 PSI**

NOZZLE	RADIUS	FLOW
1.5	**31'**	**1.5 GPM**
2.0	**34'**	**2.0 GPM**
2.5	**35'**	**2.5 GPM**
3.0	**38'**	**3.0 GPM**
4.0	**40'**	**4.0 GPM**
5.0	**42'**	**5.0 GPM**
6.0	**43'**	**6.0 GPM**
8.0	**44'**	**8.0 GPM**

- (D) (E) (F) POP-UP ROTATING SPRAY SPRINKLER: **HUNTER PROS-06-PRS40-CV W/MP2000 NOZZLES**
  PRESSURE: **40 PSI** RADIUS: **13 FEET TO 21 FEET**
  FLOW (GPM): **K-0.77 G-1.10 R-1.48**
- (J) (K) (L) POP-UP ROTATING SPRAY SPRINKLER: **HUNTER PROS-06-PRS40-CV W/MP3000 NOZZLES**
  PRESSURE: **40 PSI** RADIUS: **22 FEET TO 30 FEET**
  FLOW (GPM): **B-1.82 Y-2.73 A-3.64**
- (C) POP-UP ROTATING SPRAY SPRINKLER: **HUNTER PROS-06-PRS40-CV W/MPCORNER NOZZLE**
  PRESSURE: **40 PSI** RADIUS: **8 FEET TO 14 FEET**
  FLOW (GPM): **45°-0.19 90°-0.39 105°-0.45**
- (G) (H) (I) POP-UP SPRAY SPRINKLER: **HUNTER PROS-06-PRS30-CV W/10 SERIES NOZZLE**
  PRESSURE: **30 PSI** RADIUS: **10 FEET**
  FLOW (GPM): **Q-0.42 H-0.88 F-1.59**

CONSTRUCTION NOTES

1. **THE IRRIGATION SYSTEM POINT-OF-CONNECTION (POC) SHALL BE DOWNSTREAM OF THE IRRIGATION WATER TAP AND METER INSTALLED BY OTHERS AT THE APPROXIMATE LOCATION SHOWN. INSTALL BACKFLOW PREVENTION UNIT AND MASTER VALVE ASSEMBLY AS INDICATED. VERIFY EXACT LOCATION OF POC WITH OWNER'S REPRESENTATIVE.**
2. **WALL MOUNT THE IRRIGATION CONTROLLER AT THE APPROXIMATE LOCATION SHOWN. COORDINATE ELECTRICAL POWER TO THE CONTROLLER WITH THE OWNER'S REPRESENTATIVE. CARE SHOULD BE TAKEN TO INSTALL THE IRRIGATION CONTROLLER IN A LOCATION THAT IS ACCESSIBLE FOR MAINTENANCE, AND SCREENED FROM VIEW EITHER BEHIND ENTRY WALLS, NEXT TO BUILDINGS, OR BEHIND PLANT MATERIAL. FINAL LOCATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.**
3. **VALVES LABELED 'A' ARE PART OF THE BASE BID PACKAGE. VALVES LABELED 'B' AND 'C' ARE PART OF THE ALTERNATE BID PACKAGE.**
4. **POTABLE FILL VALVE AND FLOW SENSOR TO BE MOUNTED IN ENCLOSURE ON EXTERIOR BUILDING WALL.**



ELGIN SPORTS COMPLEX EXPANSION

709 Sports Way,
Elgin, Illinois 60123

Owner:

ELGIN
THE CITY IN THE SUBURBS

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312.641.0770
www.smithgroup.com

HPZS
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CHICAGO, IL 60610
312.944.9600
www.hpzs.com

ISSUED FOR	REV	DATE
ADDENDUM 3	3	05/02/2024
ISSUE FOR BID	1	04/11/2024

SEALS AND SIGNATURES

002932

KEY PLAN

PROJECT NORTH

DRAWING TITLE

ALTERNATE 8 - CORE AREA IRRIGATION

0 10' 20' 40'

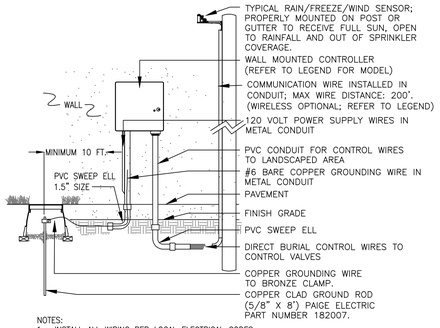
SCALE: 1" = 20'

SCALE

PROJECT NUMBER 14106

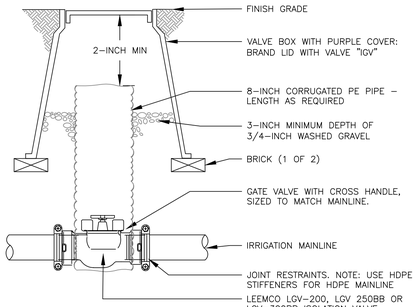
DRAWING NUMBER ALT-201

Hines Inc
SITE WATER ENGINEERING SERVICES
323 W. DRAKE RD, SUITE 204
FORT COLLINS, COLORADO 80526
Telephone: 970.282.1800
Web: www.hinesinc.com



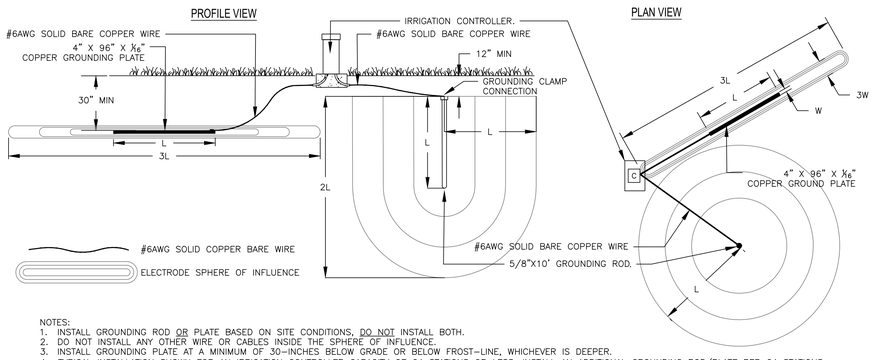
NOTES:
1. INSTALL ALL WIRING PER LOCAL ELECTRICAL CODES.
2. INSTALL GROUND ROD WITHIN IRRIGATED TURF AREA. IF IRRIGATED TURF AREA IS NOT IN CLOSE PROXIMITY TO CONTROLLER, INSTALL ONE (1) DRIP EMITTER FROM NEAREST DRIP VALVE IN VALVE BOX HOUSING GROUNDING ROD.

1 WALL MOUNT CONTROLLER ASSEMBLY



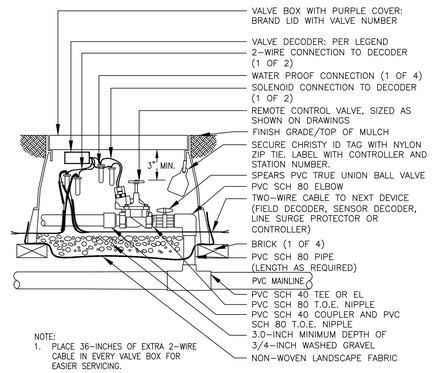
NOTES:
1. NOMINAL SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE.

2 ISOLATION GATE VALVE ASSEMBLY 2, 2.5 & 3-INCH MAINLINE



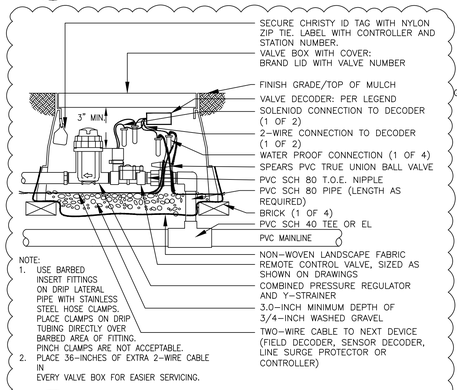
NOTES:
1. INSTALL GROUNDING ROD OR PLATE BASED ON SITE CONDITIONS, DO NOT INSTALL BOTH.
2. DO NOT INSTALL ANY OTHER WIRE OR CABLES INSIDE THE SPHERE OF INFLUENCE.
3. INSTALL GROUNDING PLATE AT A MINIMUM OF 30-INCHES BELOW GRADE OR BELOW FROST-LINE, WHICHEVER IS DEEPER.
4. TYPICAL INSTALLATION SHOWN FOR AN IRRIGATION CONTROLLER CAPACITY OF 64 STATIONS OR LESS, INSTALL AN ADDITIONAL GROUNDING ROD/PLATE PER 64 STATIONS.

3 TYPICAL IRRIGATION CONTROLLER GROUNDING ROD OR PLATE INSTALLATION



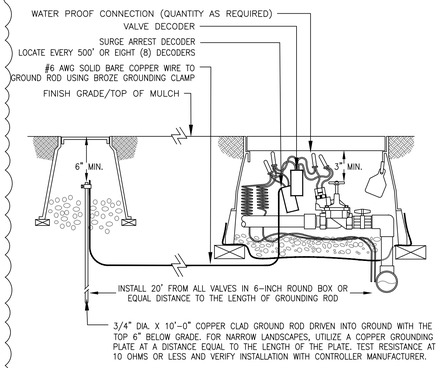
NOTE:
1. PLACE 36-INCHES OF EXTRA 2-WIRE CABLE IN EVERY VALVE BOX FOR EASIER SERVICING.

4 REMOTE CONTROL SPRINKLER VALVE ASSEMBLY

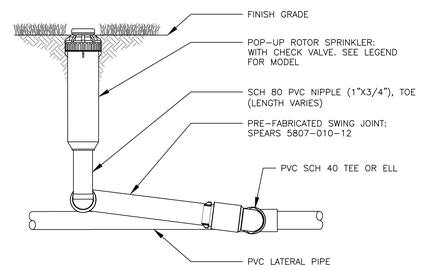


NOTE:
1. USE BARBED INSERT FITTINGS ON DRIP LATERAL PIPE WITH STAINLESS STEEL HOSE CLAMPS. PLACE CLAMPS ON DRIP TUBING DIRECTLY OVER BARBED AREA OF FITTING. PINCH CLAMPS ARE NOT ACCEPTABLE.
2. PLACE 36-INCHES OF EXTRA 2-WIRE CABLE IN EVERY VALVE BOX FOR EASIER SERVICING.

5 REMOTE CONTROL DRIP VALVE ASSEMBLY

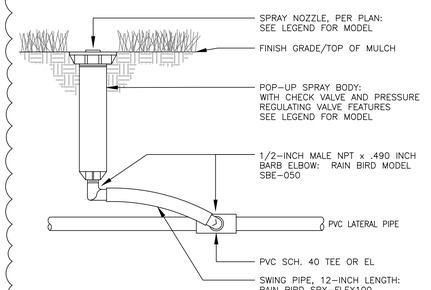


6 TYPICAL GROUNDING (AT VALVE) ASSEMBLY

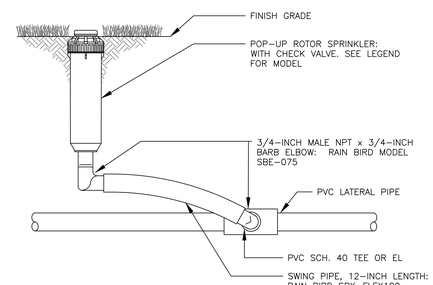


NOTES:
1. INSTALL PLASTIC RISERS FOR ROTORS IN NATIVE AREAS.

7 6-INCH GEAR DRIVEN ROTOR ASSEMBLY W/SWING JOINT

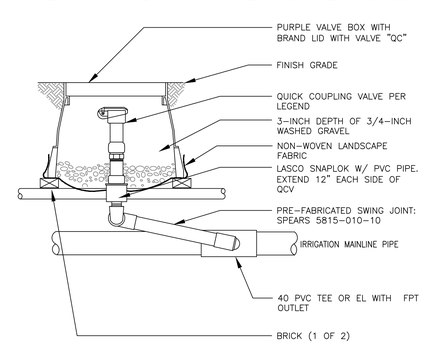


8 6-INCH POP UP SPRAY SPRINKLER ASSEMBLY

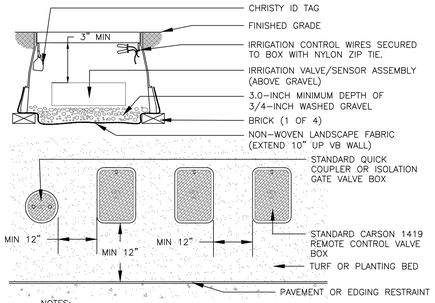


NOTES:
1. INSTALL PLASTIC RISERS FOR ROTORS IN NATIVE AREAS.

9 6-INCH GEAR DRIVEN ROTOR ASSEMBLY

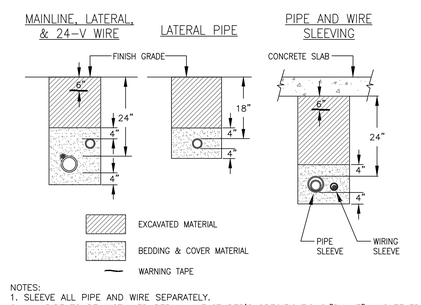


10 QUICK COUPLING VALVE ASSEMBLY



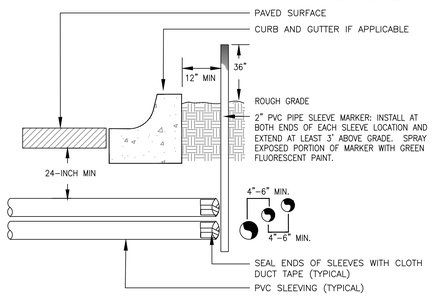
NOTES:
1. INSTALL ONLY ONE RCV TO VALVE BOX. LOCATE AT LEAST 12-INCHES FROM AND ALIGN WITH NEARBY WALLS OR EDGES OF PAVED AREAS. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL.
4. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL, BUT AVOID GROUPING MORE THAN THREE (3) STANDARD VALVE BOXES TOGETHER IN A SERIES.
5. ARRANGE GROUPED VALVE BOXES IN RECTANGULAR PATTERNS.

11 TYPICAL VALVE BOX INSTALLATION



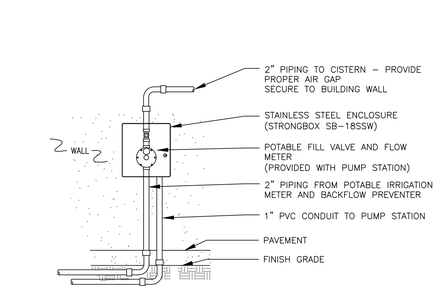
NOTES:
1. SLEEVE ALL PIPE AND WIRE SEPARATELY.
2. ALL PIPE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS."SNAKE" UNSLEEVED PLASTIC PIPE IN TRENCH. PROVIDE A MINIMUM OF 2" CLEARANCE TO SIDE OF TRENCH AND BETWEEN PIPES.
3. ALL 120-V WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS. PROVIDE LOOSE 20" LOOP OF 2-WIRE CABLE AT ALL CHANGES OF DIRECTION OVER 30 DEGREES.

12 TYPICAL TRENCHING DETAIL

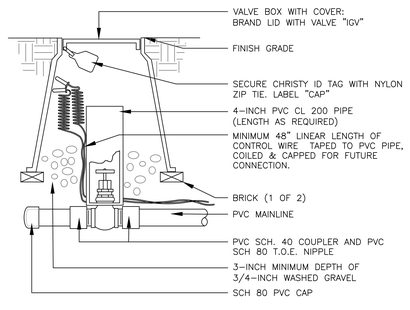


NOTE:
1) ALL SLEEVING TO BE CLASS 200 BE PVC, SIZED AS NOTED.
2) INSTALL SLEEVES IN SIDE-BY-SIDE CONFIGURATION WHERE MULTIPLE SLEEVES ARE TO BE INSTALLED. SPACE SLEEVES 4" TO 6" APART. DO NOT STACK SLEEVES VERTICALLY.

13 TYPICAL SLEEVING DETAIL

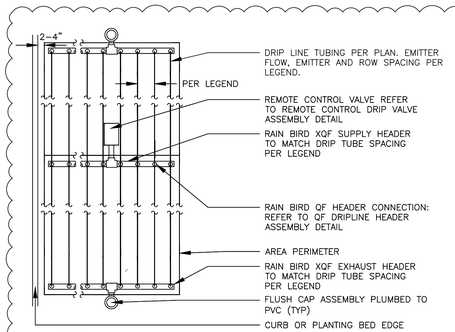


14 POTABLE CONTROL VALVE AND FLOW METER



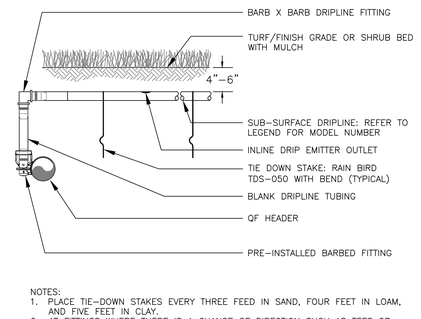
NOTES:
1. NOMINAL SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE.
2. INSTALL SCH 80 PVC CAP A MINIMUM OF 4-INCHES DOWNSTREAM OF ISOLATION GATE VALVE FOR FUTURE INSTALLATION OF SCH 80 PVC COUPLER.

15 MAINLINE & CONTROL WIRE STUB-OUT (FUTURE CONNECTION)



NOTES:
1. INSTALL SYSTEM PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR EQUIPMENT APPLICATION AND INSTALLATION.
2. MAXIMUM FLOW FOR 1-INCH REMOTE CONTROL VALVE ASSEMBLY IS 10 GPM.
3. INSTALL AT A DEPTH OF 4"-6" IN UNIFORM SOIL.

16 SUBSURFACE DRIP ASSEMBLY IN SHRUB BEDS



NOTES:
1. PLACE TIE-DOWN STAKES EVERY THREE FEED IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
2. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.
3. INSERTION PLOW AND TRENCHED INSTALLATIONS DO NOT REQUIRE TIE-DOWN STAKES.

17 QF DRIPLINE HEADER ASSEMBLY

ELGIN SPORTS COMPLEX EXPANSION

709 Sports Way,
Elgin, Illinois 60123

Owner:

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THE CITY IN THE SUBURBS

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HPZS
314 W INSTITUTE PL
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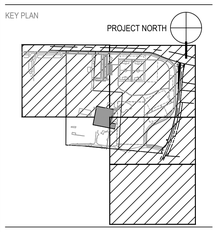
CHICAGO, IL 60610
312.944.9600
www.hpzs.com

ISSUED FOR	REV	DATE
ADDENDUM 3	3	05/02/2024
ISSUE FOR BID	1	04/11/2024

SEALS AND SIGNATURES

KEY PLAN



DRAWING TITLE
IRRIGATION DETAILS

Hines Inc
SITE WATER ENGINEERING SERVICES
323 W. DRAKE RD, SUITE 204
FORT COLLINS, COLORADO 80526
Telephone: 970.282.1800
Web: www.hinesinc.com

SCALE
14106

PROJECT NUMBER
IR-200

DRAWING NUMBER

PUMP STATION SPECIFICATIONS:
NAME: ELGIN SOCCER IRRIGATION PUMP
PUMP STATION TO BE MANUFACTURED BY WATERTRONICS,
PRECISION PUMPING, OR APPROVED EQUAL.
BASIS OF DESIGN: WATERTRONICS SKYHARVESTER
CONTACT ERIC PIFER @ 262-224-3263 FOR PRICING

STATION MODEL: SHFV-1-(?K)-7.5-460-3-50-75
STATION TOTAL PERFORMANCE: 50 GPM @ 75 PSI
DISCHARGE REGULATE PRESSURE: 75 PSI

PUMP NO.1: 7.5HP (3600 RPM)
PUMP STATION INTAKE CONNECTION SIZE: 2"
PUMP STATION DISCHARGE CONNECTION SIZE: 2"
UL LISTED UNDER: UL-QCZJ PACKAGED PUMP STATION

POWER REQUIREMENTS
460V - 3PHZ - 60HZ - 15 FULL LOAD AMPS

STATION COMPONENTS:
1. PUMP AND MOTOR
2. INLET PRESSURE / VACUUM GAUGE
3. PRESSURE TRANSDUCER w/ GAUGE
4. DISCHARGE ISOLATION VALVE
5. ALUMINUM DEAD-FRONT HIGH VOLTAGE DISCONNECT PANEL (UNPAINTED)
6. MARINE GRADE ALUMINUM ENCLOSURE (UNPAINTED)
7. MARINE GRADE ALUMINUM BASE (UNPAINTED)
8. VARIABLE FREQUENCY DRIVE
9. PUMP STATION ENCLOSURE FAN
10. CHECK VALVE
11. MAIN DISCONNECT SWITCH
12. LOW LEVEL FLOAT
13. 1" BLOW OUT PORT
14. FLOW SENSOR
15. PUMP VOLUTE TEMP SENSOR
16. INTAKE ISOLATION VALVE
17. SCH. 40 EPOXY COATED STEEL PIPE
18. GROOVE CONNECTION FOR 360deg SWIVEL
19. LEVEL TRANSDUCER
20. CITY WATER FILL VALVE
21. CITY WATER FLOW SENSOR

FIELD WIRE SCHDULE:
LEVEL SENSOR: 18AWG (2) COND. SHIELDED 500FT MAX
LEVEL FLOAT: 14AWG (2) COND.
CITY FLOW SENSOR: 18AWG (2) COND. SHIELDED 500FT MAX
CITY SOLENOID VALVE: 14AWG (2) COND.

CONTROL PANEL TO INCLUDE:
-COLOR TOUCHSCREEN OPERATOR INTERFACE
-FILTER CONTROLS AND DISPLAY
-FLOW SENSOR DISPLAY AND TOTALIZERS
-PSI DISPLAY AND SET POINTS
-AUTO RE-ENABLING OF PUMP BASED UPON WATER AVAILABILITY
-PUMP RUNNING STATUS & RUN-TIME HRS
-LEVEL CONTROLS AND DISPLAY IN "INCHES" & "GALLONS"
-USER ABILITY TO ADJUST SYSTEM PARAMETERS
-VFD PRESSURE REGULATION FOR ENERGY EFFICIENCY
-BRANCH CIRCUIT PROTECTION
-U.L. 508 LISTED CONTROL PANEL ASSEMBLY
-PROGRAMABLE PLC "programable logic controller"
-NON-FUSABLE MAIN DISCONNECT
-HOA (hand, off, auto) SWITCH FOR PUMP
-SERIAL MODBUS PLC CAPABILITY

DESCRIPTION OF OPERATION:

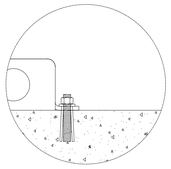
PUMP WILL START VIA PRESSURE DROP SENSED IN WATER MAINLINE AND REGULATE A CONSTANT PRESSURE AT VARIABLE FLOW RATE. PUMP WILL RETIRE BASED UPON AN ADJUSTABLE MINIMUM WATER DEMAND (FLOW) AND SUSTAINED REGULATE PRESSURE.

WATER WILL BE DRAWN OUT OF TANK. ONCE USER ADJUSTABLE LEVEL SETPOINT IS SATISFIED THE CITY FILL VALVE WILL OPEN ALLOWING WATER TO ENTER INTO THE STORAGE TANK. CITY WATER LEVEL CONTROLS WILL BE SET SO TO MAINTAIN A LOW WATER LEVEL IN THE TANK, LEAVING THE MOST AMOUNT OF ROOM TO HARVEST THE NEXT RAINFALL EVENT. IF TANK LEVEL CONTINUES TO DROP WITH FILL VALVE OPEN, PUMP WILL SHUT DOWN ON LOW LEVEL ALARM. PUMP WILL RE-ENABLE UPON USER ADJUSTABLE ALARM RE-SET LEVEL. FILL VALVE WILL REMAIN OPEN AND OPERATE INDEPENDENTLY OF PUMP ALARM LOGIC.

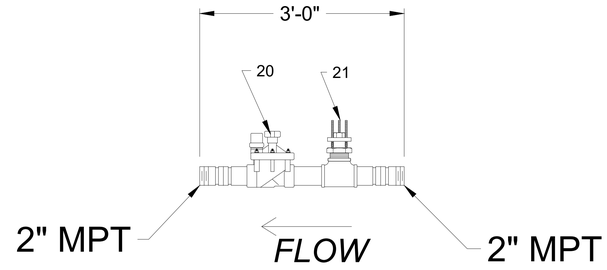
PUMP SYSTEM WILL TOTALIZE ALL WATER PUMPED AND ALL CITY MAKE UP WATER USED.

CITY WATER CAPACITY MUST SUPPLY A MIN 50GPM TO TANK.

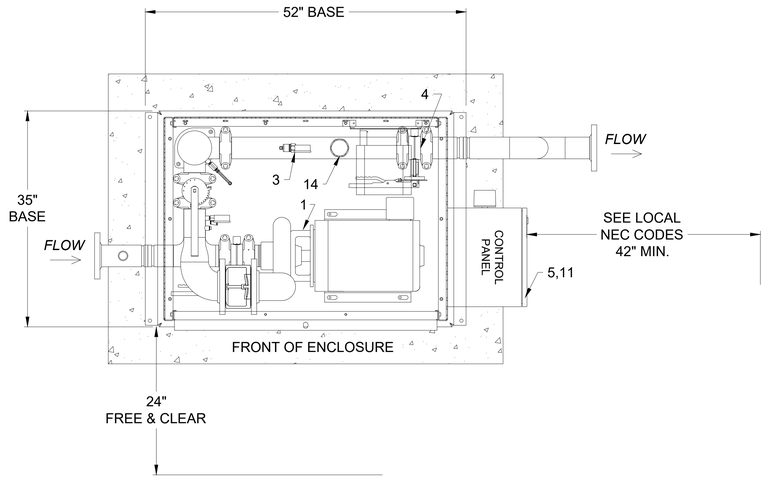
SYSTEM SHALL HAVE THE FOLLOWING ALARMS AT MINIMUM
-HIGH DISCHARGE PRESSURE
-LOW DISCHARGE PRESSURE
-VFD FAULT
-LOW LOW LEVEL SHUT DOWN (HARD FAULT)
-LOW LEVEL ALARM (SOFT FAULT)
-FILTER ALARM
-PIPE FILL ALARM (SYSTEM CAN NOT PRESSURIZE)
-LOSS OF PHASE OR PHASE REVERSAL
-HIGH VOLTAGE
-LOW VOLTAGE
-CONTROL POWER ALARM

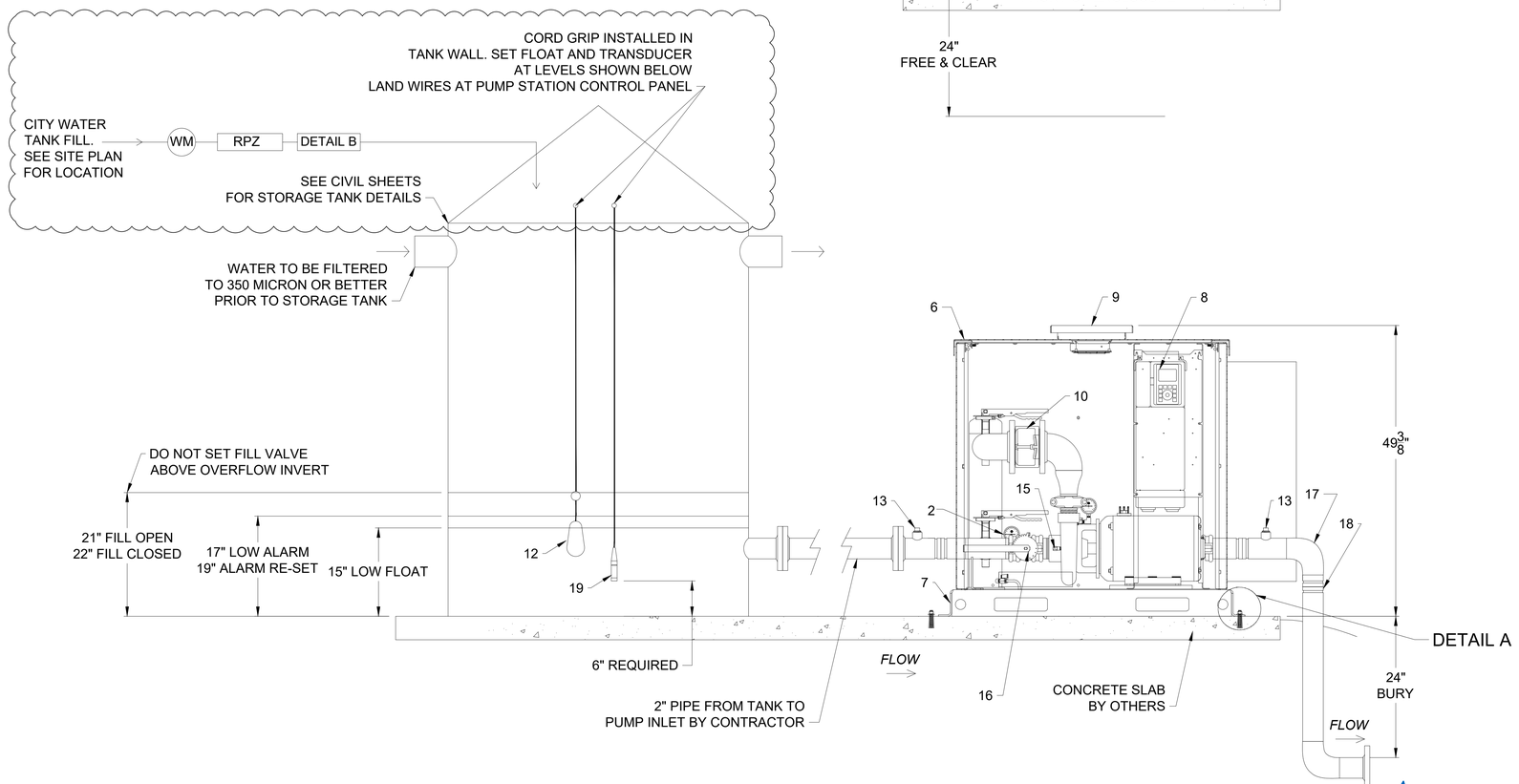


DETAIL "A"
CONCRETE ANCHOR
TYPICAL (4) LOCATIONS



DETAIL B: POTABLE TANK FILL LINE DETAIL: NTS
INSTALL IN MECHANICAL ROOM OR OUTDOOR VALVE BOX
(VALVE BOX MUST DRAIN TO PREVENT FLOODING)





PUMP STATION GENERAL NOTES

1. VERIFY EXISTING POWER ONSITE PRIOR TO ORDERING PUMP. PUMP POWER RATING MUST MATCH EXISTING POWER ONSITE.
2. MAINTAIN NEC CLEARANCES AROUND PUMP FOR MAINTENANCE ACCESS PER LOCAL CODE.
3. PUMP STATION MUST BE DRAINED & WINTERIZED IN COLD WEATHER CLIMATES

1 IRRIGATION PUMP DETAILS
SCALE NTS

ELGIN SPORTS COMPLEX EXPANSION
709 Sports Way,
Elgin, Illinois 60123

Owner:
ELGIN
THE CITY IN THE SUBURBS

SMITHGROUP
35 EAST WACKER
SUITE 900
CHICAGO, IL 60601
312.641.0770
www.smithgroup.com

HPZS
314 W INSTITUTE PL
SUITE 1E
CHICAGO, IL 60610
312.944.9600
www.hpzs.com

ISSUED FOR	REV	DATE
ADDENDUM 3	3	05/02/2024
ISSUE FOR BID	1	04/11/2024

SEALS AND SIGNATURES

KEY PLAN
PROJECT NORTH

DRAWING TITLE
IRRIGATION DETAILS

SCALE
14106

PROJECT NUMBER
IR-201

DRAWING NUMBER

Hines Inc
SITE WATER ENGINEERING SERVICES
323 W. DRAKE RD, SUITE 204
FORT COLLINS, COLORADO 80526
Telephone: 970.282.1800
Web: www.hinesinc.com

GENERAL NOTES

1. ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND SHALL CONFORM TO THE PROJECT SPECIFICATIONS, INCLUDING THE 2015 INTERNATIONAL BUILDING CODE AS ADOPTED BY THE CITY OF ELGIN, IL. THE FOLLOWING STANDARDS WERE USED AS SPECIFIED IN THE GOVERNING BUILDING CODE:
   a. ASCE 7-10 MINIMUM DESIGN LOADS (AND ASSOCIATED CRITERIA) FOR BUILDINGS AND OTHER STRUCTURES
   b. ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   c. TMS 402/602-13 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
   d. NDS-2015 NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION WITH 20XX SUPPLEMENT
   e. AISC 360-13 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
2. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING, BRACING, AND SHEETING AND SHALL MAKE SAFE ALL FLOORS, ROOFS, WALLS, AND ADJACENT PROPERTY AS PROJECT CONDITIONS REQUIRE. SHORING AND SHEETING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE PROJECT JURISDICTION, HIRED BY THE CONTRACTOR, WHO SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR THE OWNER'S REVIEW.
3. THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. THESE NOTES HIGHLIGHT RATHER THAN REPLACE THE SPECIFICATIONS CONTAINED IN THE PROJECT MANUAL.

FOUNDATIONS

1. BUILDING FOUNDATIONS SHALL BEAR ON UNDISTURBED SOIL HAVING A MINIMUM BEARING CAPACITY OF 3000 PSF AS SPECIFIED BY THE GEOTECHNICAL CONSULTANT, GSG CONSULTANTS, INC.IN THEIR REPORT DATED DECEMBER 19, 2023. ADEQUACY OF BEARING STRATUM SHALL BE VERIFIED IN FIELD PRIOR TO PLACING CONCRETE. ALL NECESSARY ADJUSTMENTS TO THE BOTTOM OF FOOTINGS TO BE REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
2. DO NOT PLACE BACKFILL AGAINST BASEMENT WALLS UNTIL ALL FLOORS BRACING THESE WALLS ARE IN PLACE AND HAVE ATTAINED THEIR 28-DAY STRENGTH.
3. ALL EXTERIOR FOOTINGS SHALL BE PLACED A MINIMUM OF 3'- 6" BELOW FINAL GRADE.
4. CONCRETE SHALL BE POURED IN DRY EXCAVATIONS. CONTRACTOR SHALL NOTE SOIL AND WATER CONDITIONS AS SHOWN BY BORINGS INCLUDED IN THE REFERENCED GEOTECHNICAL SUBSURFACE INVESTIGATION REPORT(S) AND DEPTHS OF FOOTING AS SHOWN ON FOUNDATION PLANS.

CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE FOLLOWING GOVERNING STANDARDS:
   A. AMERICAN CONCRETE INSTITUTE (ACI) "BUILDING CODE REQUIREMENTS FOR CONCRETE" (ACI 318)
   B. ACI COLLECTION, LATEST EDITION
   C. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICE"
2. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS, UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL SUBMIT A PROJECT-SPECIFIC SIGNED AND SEALED CONCRETE MIX DESIGN FOR EACH CONCRETE TYPE SPECIFIED IN THE CONTRACT DOCUMENTS. WHERE 033000 SPECIFICATIONS HAVE BEEN INCLUDED IN THE CONTRACT DOCUMENTS, REFER TO THAT SPECIFICATION SECTION FOR BALANCE OF MIX DESIGN REQUIREMENTS (AGGREGATES, ADMIXTURES, W/C RATIO, AIR CONTENT, ETC.)
4. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 OR A775 EPOXY COATED WHEN CALLED OUT ON PLAN. REINFORCING STEEL SHALL BE DETAILED ACCORDING TO THE ACI "DETAILS AND DETAILING OF REINFORCEMENT" (ACI 315).
5. REINFORCING STEEL TO BE WELDED TO CONFORM TO ASTM A706 GRADE 60.
6. WELDED WIRE REINFORCEMENT (W.W.R.) SHALL CONFORM TO ASTM A1064, WITH A MINIMUM YIELD STRENGTH OF 65,000 PSI.
7. COORDINATE SIZE AND LOCATION OF ALL OPENINGS AND PIPE SLEEVES WITH ALL OTHER DISCIPLINES. MINIMUM CONCRETE BETWEEN SLEEVES SHALL BE 6".
8. GENERAL CONTRACTOR SHALL PROVIDE COORDINATED MEP TRADE SUBMITTALS FOR DESIGN TEAM REVIEW OF PENETRATIONS. ALL TRADES SHALL BE OVERLAID INTO ONE SUBMITTAL TO CAPTURE AND EVALUATE ALL PENETRATIONS THROUGH SLABS AND WALLS TOGETHER.
9. ALL GROUT SHALL BE NONSHRINK WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI.
10. MINIMUM CONCRETE COVER FOR REINFORCING STEEL IN CAST-IN-PLACE NON-PRESTRESSED MEMBERS SHALL BE AS FOLLOWS:
    A. ALL CONCRETE CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND: 3”
    B. ALL CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
       a. 2” (#6 THROUGH #18 BARS)
       b. 1-1/2” (#5 BAR, W31 OR D31 WIRE, AND SMALLER)
    C. NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
       a. SLABS, JOISTS, AND WALLS:
          • 1-1/2” (#14 THROUGH #18 BARS)
          • 3/4" (#11 BAR AND SMALLER)
       b. BEAMS, COLUMNS, PEDESTALS, AND TENSION TIES (STIRRUPS, TIES, SPIRALS, HOOPS, AND PRIMARY REINFORCEMENT): 1-1/2”
11. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. NO CONCRETE WORK SHALL COMMENCE WITHOUT APPROVED SHOP DRAWINGS.
12. CLEAN AND ROUGHEN TO 1/4" AMPLITUDE ALL EXISTING CONCRETE SURFACES TO RECEIVE NEW CONCRETE PRIOR TO PLACEMENT.
13. SEE OTHER DRAWINGS IN THIS PROJECT FOR SIZE AND LOCATIONS OF EQUIPMENT PADS, INSERTS, AND EMBED ITEMS.
14. REINFORCING DOWELS, WATER STOPS, AND OTHER EMBED ITEMS SHALL BE INSTALLED AND SECURED PRIOR TO CONCRETE PLACEMENT. "WET-SETTING" OF EMBEDDED ITEMS IS NOT PERMITTED.
15. CONDUIT EMBEDDED IN CONCRETE SHALL FOLLOW THE GUIDELINES IN THE TYPICAL DETAILS. THE CONTRACTOR SHALL NOT VIOLATE THESE GUIDELINES WITHOUT WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD. CONTRACTOR TO PROVIDE SHOP DRAWINGS SHOWING LAYOUT OF ALL EMBEDDED CONDUIT FOR APPROVAL BY ENGINEER OF RECORD BEFORE PLACEMENT.

CONCRETE BLOCK

1. ALL CONCRETE BLOCK WORK SHALL CONFORM TO THE "NATIONAL CONCRETE MASONRY ASSOCIATION TEK MANUAL FOR THE DESIGN AND CONSTRUCTION OF CONCRETE MASONRY", LATEST EDITION, AND "ACI 530-BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES".
2. CONCRETE BLOCK SHALL BE OF LIGHTWEIGHT AGGREGATE AND CONFORM TO THE FOLLOWING STANDARDS: HOLLOW BLOCK: ASTM C90.

NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNIT (PSI)	NET AREA COMPRESSIVE STRENGTH OF MASONRY ASSEMBLY, F'm (PSI) USING TYPE S MORTAR
2000	2000
3250	2500
3900	2750
4500	3000

UNLESS OTHERWISE NOTED ON PLANS AND/OR ELEVATIONS, CONCRETE BLOCK UNIT STRENGTH SHALL BE 2000 PSI MIN. (NOTE: CONCRETE BLOCK WITH UNIT STRENGTH HIGHER THAN 2000 PSI GENERALLY REQUIRES LONGER DELIVERY LEAD TIMES.)

3. ALL MORTAR SHALL BE ASTM C270, TYPE S.
4. ALL GROUT FOR FILLING CELLS SHALL BE ASTM C 476 WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI BUT NOT LESS THAN THE COMPRESSIVE STRENGTH OF THE MASONRY ASSEMBLY, F'm. WHERE GROUT CELLS DO NOT EXCEED 4" IN DIAMETER FINE GROUT SHALL BE USED.
5. ALL BLOCK DIMENSIONS INDICATED ON STRUCTURAL PLANS ARE NOMINAL DIMENSIONS. DESIGN OF WALL REINFORCING ASSUMES CONCRETE MASONRY UNITS THAT ARE 16" LONG AND HAVE TWO CORES/CELLS, RESULTING IN A NOMINAL BAR SPACING OF 8" ON CENTER.
6. ALL CONCRETE BLOCK BELOW GRADE SHALL BE FILLED SOLID WITH GROUT.
7. CONCRETE BLOCK BELOW BEAM OR TRUSS BEARING POINTS SHALL BE FILLED SOLID FOR A MINIMUM OF TWO COURSES IN DEPTH AND A MINIMUM OF 32" IN WIDTH, UNLESS NOTED OTHERWISE.
8. INSTALL STANDARD WEIGHT LADDER-TYPE JOINT REINFORCEMENT AT 16" ON CENTER (SPACED VERTICALLY).
9. UNLESS NOTED OTHERWISE ALL MASONRY WALLS SHALL BE REINFORCED WITH #4@48" ON CENTER VERTICAL. GROUT ALL REINFORCED CELLS SOLID. PROVIDE DOWELS TO MATCH VERTICAL REINFORCING AT FOUNDATION.
10. PROVIDE CONTINUOUS BOND BEAM WITH 2-#5 CONTINUOUS MINIMUM AT TOPMOST COURSE OF EACH FLOOR LEVEL AND AT ALL TOP OF PARAPET CONDITIONS, TYPICAL THROUGHOUT.

GLAZED STRUCTURAL MASONRY

1. ALL STRUCTURAL GLAZED MASONRY TILE WORK SHALL CONFORM TO "ACI 530-BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES".
2. STRUCTURAL GLAZED TILE MASONRY SHALL BE CERAMIC GLAZED AS MANUFACTURED BY ELGIN BUTLER COMPANY (OR APPROVED EQUAL) AND SHALL CONFORM TO THE FOLLOWING STANDARDS: HOLLOW BLOCK - ASTM C-126, GRADE S, TYPE I & II.
   THE NET AREA COMPRESSIVE STRENGTH OF MASONRY ASSEMBLY, F'm, SHALL BE 2000 PSI MIN.
3. ALL MORTAR SHALL BE ASTM C270, TYPE S.
4. ALL GROUT FOR FILLING CELLS SHALL BE ASTM C 476 WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI BUT NOT LESS THAN THE COMPRESSIVE STRENGTH OF THE MASONRY ASSEMBLY, F'm. WHERE GROUT CELLS DO NOT EXCEED 4" IN DIAMETER FINE GROUT SHALL BE USED.
5. ALL GLAZED MASONRY TILE DIMENSIONS INDICATED ON STRUCTURAL PLANS ARE NOMINAL DIMENSIONS. DESIGN OF WALL REINFORCING ASSUMES GLAZED MASONRY TILE UNITS THAT ARE 16" LONG (NOMINALLY) AND HAVE TWO CORES/CELLS, RESULTING IN A NOMINAL BAR SPACING OF 8" ON CENTER.
6. GLAZED MASONRY TILE SHALL NOT BE IN CONTACT WITH EARTH IN FINAL BUILT CONDITION.
7. GLAZED MASONRY TILE BELOW BEAM OR TRUSS BEARING POINTS SHALL BE FILLED SOLID FOR A MINIMUM OF TWO COURSES IN DEPTH AND A MINIMUM OF 32" IN WIDTH, UNLESS NOTED OTHERWISE.
8. INSTALL STANDARD WEIGHT LADDER-TYPE JOINT REINFORCEMENT AT 16" ON CENTER (SPACED VERTICALLY).
9. UNLESS NOTED OTHERWISE ALL GLAZED MASONRY TILE WALLS SHALL BE REINFORCED WITH #4@48" ON CENTER VERTICAL. GROUT ALL REINFORCED CELLS SOLID. PROVIDE DOWELS TO MATCH VERTICAL REINFORCING AT FOUNDATION.
10. PROVIDE CONTINUOUS BOND BEAM WITH 2-#5 CONTINUOUS MINIMUM AT TOPMOST COURSE OF EACH FLOOR LEVEL AND AT ALL TOP OF PARAPET CONDITIONS, TYPICAL THROUGHOUT.
11. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW AND APPROVAL. NO CONCRETE BLOCK WORK SHALL COMMENCE WITHOUT APPROVED SHOP DRAWINGS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE FOLLOWING GOVERNING STANDARDS:
   A. AISC 360 "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS".
   B. AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
   C. AMERICAN WELDING SOCIETY (AWS D1.1) "STRUCTURAL WELDING CODE - STEEL".
   D. RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) “SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS”.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:
   A. WIDE FLANGE BEAMS, COLUMNS, AND STRUCTURAL TEES: ASTM A992.
   B. HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE C.
   C. STRUCTURAL PIPE SECTIONS: ASTM A53, GRADE B.
   D. CHANNELS, ANGLES, AND PLATES: ASTM A36 UNLESS OTHERWISE NOTED.
   E. BOLTED CONNECTIONS SHALL BE PER ASTM F3125. GRADES ARE TO BE SELECTED AS FOLLOWS:
      a. STANDARD BEAM TO BEAM/GIRDER: ASTM F3125, GRADES A325, F1852, A490 OR F2280 BOLTS IN SNUG-TIGHTENED JOINTS (3/4" DIAMETER MINIMUM WITH HARDENED WASHERS).
      b. BEAM/GIRDER TO COLUMN CONNECTIONS, COLUMN SPLICES AND BOLTS EXPERIENCING TENSION LOADS (UNLESS OVERSIZED OR SLOTTED HOLES ARE USED, IN WHICH CASE SLIP-CRITICAL JOINTS SHALL BE USED): ASTM F3125, GRADES A325, F1852, A490 OR F2280 BOLTS IN PRETENSIONED JOINTS (3/4” DIAMETER MINIMUM WITH HARDENED WASHERS).
      c. MOMENT CONNECTIONS AND BRACED FRAME CONNECTIONS: ASTM F3125, GRADES A325, F1852, A490 OR F2280 BOLTS IN SLIP CRITICAL JOINTS (3/4” DIAMETER MINIMUM WITH HARDENED WASHERS). FAYING SURFACES SHALL BE CLASS A UNLESS OTHERWISE NOTED.
      d. PER AISC 341, ALL BOLTS SHALL BE INSTALLED AS PRETENSIONED HIGH STRENGTH BOLTS AND MEET THE REQUIREMENTS FOR SURFACE PREPARATION FOR SLIP CRITICAL CONNECTIONS WITH CLASS A SLIP COEFFICIENT OR HIGHER. THE AVAILABLE SHEAR STRENGTH OF BOLTED JOINTS USING STANDARD HOLES SHALL BE CALCULATED AS THAT FOR BEARING TYPE JOINTS.
   F. ANCHOR RODS: ASTM F1554, GRADE 36.
3. STEEL CONNECTIONS SHALL BE STANDARD AISC FRAMED BEAM CONNECTIONS, AND SHALL BE SELECTED OR COMPLETED BY AN EXPERIENCED STEEL DETAILER, DESIGNED BY A LICENSED ENGINEER WORKING FOR THE FABRICATOR, WHO SHALL PROVIDE CALCULATIONS, UTILIZING LRFD LOADS AND PROCEDURES. UNLESS OTHERWISE NOTED ON PLAN, PROVIDE CONNECTIONS BASED ON MINIMUM SHEAR CAPACITY REQUIREMENTS IN THE FOLLOWING TABLE WHICH ARE BASED ON AISC SINGLE SHEAR TAB CONNECTIONS.

   THIS TABLE IS BASED ON SINGLE-SHEAR TAB CONNECTIONS, ASSUMING 5/16" A36 SINGLE-PLATE, 3/4" DIA. A325-N BOLTS

MINIMUM SHEAR CAPACITY REQUIREMENTS			
BEAM DEPTH (NOMINAL)	MIN. SHEAR CAPACITY ASD (Kips)	MIN. SHEAR CAPACITY LRFD (Kips)	MIN. NUMBER OF BOLT ROWS
8", 10"	16	24	2
12", 14"	28	42	3

   B. REINFORCING IS TO BE PROVIDED AT CONNECTIONS WHERE CUTS REDUCE THE SHEAR OR MOMENT CAPACITY BELOW THAT REQUIRED TO SUSTAIN THE REACTION. FLANGES AND WEBS ARE TO BE REINFORCED WHERE THE LOCAL CAPACITY TO SUSTAIN CONNECTION LOADS ARE INADEQUATE. CUTS OR COPES MAY PREVENT MINIMUM NUMBER OF BOLT ROWS SHOWN ABOVE FROM BEING ACHIEVED, WHICH IS ACCEPTABLE PENDING WRITTEN APPROVAL AND CONFIRMATION THAT MINIMUM SHEAR CAPACITY HAS BEEN MET.
   C. CONNECTIONS SHALL BE DESIGNED FOR SHEAR AND ECCENTRICITY, CONSIDERING THAT THE CONNECTIONS ARE AN EXTENSION OF THE BEAMS AND GIRDERS.
4. MINIMUM WELD SIZE IS 1/4" FILLET UNLESS NOTED OTHERWISE.
5. ALL BEAMS EXCEPT CANTILEVER BEAMS SHALL BE FABRICATED AND INSTALLED WITH NATURAL CAMBER UP. CANTILEVER BEAMS SHALL BE FABRICATED AND INSTALLED SO THAT NATURAL CAMBER RAISES CANTILEVER END.
6. FIELD CUTTING OR BURNING OF STEEL IS PROHIBITED EXCEPT WITH THE EXPRESS WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD (IN WHICH CASE ALL BURNING OF STEEL MUST CONFORM TO THE THERMAL CUTTING REQUIREMENTS OF AISC AND AWS).
7. WELDING SHALL BE PERFORMED BY CERTIFIED, AWS-QUALIFIED WELDERS. WELDING ELECTRODES FOR CARBON STEEL SHALL BE AWS 5.1, CLASS E70XX.
8. ALL EXTERIOR EXPOSED STEEL AND STEEL SUPPORTING EXTERIOR SHALL BE HOT DIPPED GALVANIZED. HOT DIP GALVANIZING SHALL CONFORM TO ASTM A123, REPAIR SCRATCHES OR ABRADED GALVANIZED SURFACE WITH ZINC RICH PAINT.
9. LINTELS SHALL BE INSTALLED OVER ALL OPENINGS IN MASONRY WALLS AS FOLLOWS:

MASONRY OPENING	LINTEL
4' - 0" OR LESS	L4x3-1/2x5/16 LLV
4' - 1" TO 7' - 0"	L6x3-1/2x5/16 LLV

   A. 3-1/2" LEGS ARE HORIZONTAL.
   B. PROVIDE ONE ANGLE FOR EACH 4" OF WALL THICKNESS.
   C. PROVIDE L5x5x5/16 ANGLES FOR 6" THICK WALLS AND PARTITIONS WITH OPENINGS UP TO 6' - 0".
   D. PROVIDE MINIMUM 6" BEARING AT EACH END.
   E. LINTELS OVER 6' - 4" SHALL BE FIREPROOFED.
10. SHOP AND ERECTION DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. NO FABRICATION OF STEEL SHALL COMMENCE WITHOUT APPROVED SHOP DRAWINGS.
11. SHOP DRAWING SUBMITTALS SHALL FOLLOW THE FOLLOWING SEQUENCE (WITH EACH NOT BEING SUBMITTED UNTIL THE PREVIOUS ONE IS APPROVED):
    A. ERECTION PLANS
    B. PIECE DETAILS AND PIECE-SPECIFIC CONNECTION CALCULATIONS
12. PROVIDE MECHANICALLY GALVANIZED BOLTS FOR EXTERIOR APPLICATIONS.
13. ALL STEEL COLUMN SPLICES AND STEEL CONNECTIONS MUST MEET THE REQUIREMENTS OF SECTION 1615/1616 OF IBC 2015/2018.
14. ALL EXTERIOR STEEL FRAMING TO BE SANDBLASTED AFTER GALVANIZATION TO ALLOW FOR EXTERIOR PAINT APPLICATION.

FRAMING LUMBER

1. ALL FRAMING LUMBER WORK SHALL CONFORM TO THE FOLLOWING GOVERNING STANDARDS:
   A. AMERICAN WOOD COUNCIL "WOOD FRAME CONSTRUCTION MANUAL FOR ONE- AND TWO-FAMILY DWELLINGS"
   B. AMERICAN WOOD COUNCIL "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION","NDS SUPPLEMENT: DESIGN VALUES FOR WOOD CONSTRUCTION", AND "SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC".
2. FRAMING LUMBER SHALL HAVE EACH PIECE GRADE STAMPED, SHALL BE SURFACED DRY (EXCEPT STUDS, WHICH SHALL BE KILN DRIED) AND SHALL CONFORM TO THE FOLLOWING SPECIES AND GRADES:
   A. RAFTERS AND JOISTS: DOUGLAS FIR-LARCH #2,
   B. BEAMS, GIRDERS AND HEADERS: DOUGLAS FIR-LARCH #1
   C. STUDS AND PLATES: DOUGLAS FIR-LARCH STUD GRADE,
3. TIMBER LUMBER SHALL CONFORM TO THE FOLLOWING SPECIES AND GRADES:
   A. POST AND TIMBER: DOUGLAS FIR-LARCH #1
   B. BEAMS AND STRINGERS: DOUGLAS FIR-LARCH #1
4. PRESERVATIVE-TREATED WOOD: PROVIDE TREATED LUMBER COMPLYING WITH ACQ-D (CARBONATE). COPPER AZOLE (CA-B), OR SODIUM BORATE (SBX (DOT) WITH NaS10/2) AT ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY, OR AS OTHERWISE INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. ACZA TREATMENT IS NOT PERMITTED. TREATED LUMBER AND/OR PLYWOOD SHALL BEAR THE LABEL OF AN ACCREDITED AGENCY SHOWING 0.40 PCF RETENTION. WHERE LUMBER AND/OR PLYWOOD IS CUT OR DRILLED AFTER TREATMENT, THE TREATED SURFACE SHALL BE FIELD-TREATED WITH COPPER NAPTHENATE (THE CONCENTRATION OF WHICH SHALL CONTAIN A MINIMUM OF 2% COPPER METAL) BY REPEATED BRUSHING, DIPPING, OR SOAKING UNTIL THE WOOD ABSORBS NO MORE PRESERVATIVE. REFER TO NOTES 2 AND 3 FOR SPECIES AND GRADE OF TIMBER, UNLESS OTHERWISE NOTED ON PLAN.
5. ALL WOOD FRAMING INCLUDING DETAILS FOR BRIDGING, BLOCKING, FIRE STOPPING, ETC., SHALL CONFORM TO THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" AND ITS SUPPLEMENTS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE NFPA "MANUAL FOR HOUSE FRAMING" OR THE GOVERNING LOCAL/STATE BUILDING CODE.
6. FASTENING SHALL BE IN ACCORDANCE WITH THE MOST RESTRICTIVE OF THE GOVERNING LOCAL/STATE BUILDING CODE AND THE MANUFACTURER'S RECOMMENDED FASTENING SCHEDULES.
7. ALL FLUSH FRAMED CONNECTIONS SHALL BE MADE WITH APPROVED GALVANIZED STEEL JOIST OR BEAM HANGERS, MINIMUM 18 GAUGE, INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
8. WHERE FRAMING LUMBER IS FLUSH FRAMED TO MICROLLAM, STEEL OR FLITCH-PLATE GIRDER, SET THESE GIRDERS 1/2" CLEAR (MIN.) BELOW TOP OF FRAMING LUMBER, TO ALLOW FOR SHRINKAGE.
9. STUD BEARING WALLS ARE TO BE 2x4 @ 16" ON CENTER AT THE INTERIOR AND 2x6 @ 16" ON CENTER AT THE EXTERIOR, UNLESS NOTED OTHERWISE ON PLAN.
10. ALL RAFTERS AND JOISTS SHALL ALIGN DIRECTLY WITH STUDS BELOW. WHERE REQUIRED, INSTALL ADDITIONAL STUDS.
11. LAP ALL PLATES AT CORNERS AND AT INTERSECTION OF PARTITIONS.
12. STAGGER ALL TOP AND BOTTOM PLATE SPLICES A MINIMUM OF 32 INCHES.
13. USE DOUBLE STUDS @ ENDS OF WALL AND ENDS OF WALL OPENINGS.
14. AT THE ENDS OF ALL BEAMS, HEADERS AND GIRDERS PROVIDE A BUILT UP OR SOLID POST WHOSE WIDTH IS AT LEAST EQUAL TO THE WIDTH OF THE MEMBER IT IS SUPPORTING AND WHOSE DEPTH IS 4" (NOMINAL) AT INTERIOR WALLS AND 6" (NOMINAL) AT EXTERIOR WALLS, UNLESS OTHERWISE NOTED.
15. USE DOUBLE TRIMMERS AND HEADERS AT ALL FLOOR OPENINGS WHERE BEAMS ARE NOT DESIGNATED.
16. PROVIDE CROSS BRIDGING AT A MAXIMUM OF 8'-0" ON CENTER.
17. BUILT UP BEAMS LESS THAN 8" DEEP SHALL BE SPIKED TOGETHER WITH (2) 16d NAILS @16" ON CENTER. BUILT UP BEAMS GREATER THAN 8" DEEP SHALL BE SPIKED TOGETHER WITH (3) 16d NAILS @16" ON CENTER.
18. WHERE THERE IS NO PLYWOOD WALL SHEATHING, PROVIDE DIAGONALS AT ALL EXTERIOR CORNERS OF STUD WALLS AT EACH FLOOR. (1x4 BRACES LET INTO STUDS AND NAILED AT EACH STUD CROSSING WITH (2) 10d NAILS.)
19. WHERE CANTILEVERED BEAMS ARE INDICATED, THE FAR CONNECTOR SHALL BE CAPABLE OF RESISTING AN UPLIFT OF 1000 LBS. MINIMUM, UNLESS NOTED OTHERWISE.
20. NO NEW OR EXISTING JOISTS SHALL BE CUT OR NOTCHED WITHOUT APPROVAL.
21. FOR HEADERS NOT CALLED OUT ON PLAN:

WOOD HEADER SCHEDULE		
ROUGH OPENING WIDTH	HEADER	
	2x4 WALL	2x6 WALL
LESS THAN 3'-0"	(2) 2x6	(3) 2x8
3'-1" TO 4'-0"	(2) 2x8	(3) 2x8
4'-1" TO 6'-0"	(2) 2x10	(3) 2x10
6'-1" TO 8'-0"	(2) 2x12	(3) 2x12
OVER 8'-0"	SEE PLANS	SEE PLANS

NOTE:

PROVIDE (1) JACK STUD FOR SPANS LESS THAN 4'-0".
PROVIDE (2) JACK STUDS FOR SPANS FROM 4'-1" TO 8'-0".
PROVIDE (3) JACK STUDS FOR SPANS OVER 8'-0".

22. ALL LIGHT-GAUGE HANGERS SUPPORTING PRESERVATIVE TREATED WOOD SHALL MEET OR EXCEED G185 (1.85 OZ OF ZINC PER SQUARE FOOT). ALTERNATIVELY, STAINLESS STEEL CONNECTIONS MAY BE USED. FASTENERS SHALL MATCH THE HANGER FINISH AND MATERIAL.
23. WHERE JOIST ORIENTATION IS PARALLEL TO EXTERIOR STUD OR FOUNDATION WALLS, PROVIDE FULL-SECTION BLOCKING FOR 3 BAYS @ 4'-0" ON CENTER MAXIMUM WHERE SHEATHING IS NOT CONTINUOUSLY FASTENED TO TOP OR BOTTOM OF JOIST. PROVIDE 18 GA x 1-1/2" x 1'-0" (MINIMUM) FLAT TENSION STRAP BETWEEN ALIGNED BLOCKING MEMBERS.
24. ALL SILL PLATES SHALL BE PRESSURE TREATED AND ANCHORED TO FOUNDATION WALLS WITH 1/2" DIAMETER HEADED ANCHOR BOLTS (ASTM F1554) @ 4'-0" ON CENTER AND WITHIN 12" OF ALL SILL PLATES SPLICES. (MINIMUM 7" EMBED.)

WOOD STRUCTURAL PANEL SHEATHING

1. PROVIDE STRUCTURAL 1 PLYWOOD SHEATHING WITH BOND CLASSIFICATIONS APPROPRIATE TO THE END USE: "EXTERIOR" (PERMANENT EXPOSURE), OR "EXPOSURE 1" (CONSTRUCTION EXPOSURE ONLY)
2. FLOOR SHEATHING: NOM. 3/4" THICK T&G PLYWOOD (48/24 SPAN RATING), APA STURD-I-FLOOR, OR ADVANTECH SUBFLOOR.
3. ROOF SHEATHING (STANDARD): NOM. 3/4" THICK T&G PLYWOOD (48/24 SPAN RATING).
4. ROOF SHEATHING (UNDER SLATE OR CLAY TILE): NOM. 3/4" THICK T&G PLYWOOD (48/24 SPAN RATING).
5. WALL SHEATHING (STANDARD: NOM. 1/2" THICK PLYWOOD (32/16 SPAN RATING).
6. WALL SHEATHING (BEHIND SLATE, CLAY TILE, OR MASONRY VENEER): NOM. 3/4" THICK PLYWOOD (48/24 SPAN RATING).
7. USE PLY CLIPS OR OTHER EDGE SUPPORT AS REQUIRED FOR PLYWOOD SHEATHING.
8. LEAVE 1/16" SPACE AT ALL PLYWOOD PANEL END JOINTS AND 1/8" SPACE AT ALL PANEL EDGE JOINTS.
9. UNLESS NOTED OTHERWISE, WALL SHEATHING SHALL BE FASTENED TO FRAMING WITH 8d COMMON NAILS @ 4" ON CENTER AT EACH SHEET PERIMETER AND 12" ON CENTER ELSEWHERE. PROVIDE 2x6 BLOCKING AT ALL FREE EDGES.
10. UNLESS NOTED OTHERWISE, ROOF SHEATHING SHALL BE FASTENED TO FRAMING WITH 8d COMMON NAILS @ 6" ON CENTER AT EACH SHEET PERIMETER AND 12" ON CENTER ELSEWHERE.
11. ALL FLOOR SHEATHING SHALL BE GLUED AND SCREWED TO FLOOR JOISTS USING AN APA APPROVED ADHESIVE AND #8 SCREWS @ 6" ON CENTER AT EACH SHEET PERIMETER AND 12" ON CENTER ELSEWHERE, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTIONS (IBC)

A. INSPECTIONS REQUIRED BY THE LOCAL JURISDICTION SHALL BE PERFORMED BY A TESTING AGENCY PROVIDED BY THE OWNER FOR THE FOLLOWING ITEMS:
   A. INSPECTION OF FABRICATORS (IBC 1704.2.5)
   B. STEEL CONSTRUCTION (IBC 1705.2)
      a. STRUCTURAL STEEL (IBC 1705.2.1)
         1. STRUCTURAL STEEL WELDING (AISC 360, AWS D1.1)
         2. HIGH STRENGTH BOLTS (AISC 360)
   C. CONCRETE CONSTRUCTION (IBC 1705.3, TABLE 1705.3)
      a. MATERIALS TESTS (IBC 1705.3.2, TABLE 1705.3)
   D. MASONRY CONSTRUCTION (IBC 1705.4, ACI 530 AND ACI 530.1 LEVEL B QUALITY ASSURANCE)
   E. WOOD CONSTRUCTION (IBC 1705.5)
   F. SOILS (IBC 1705.6, TABLE 1705.6)
   G. FABRICATED ITEMS (IBC 1705.10)
B. STRUCTURAL OBSERVATIONS REQUIRED BY THE LOCAL JURISDICTION AND IBC 1704.5 SHALL BE PERFORMED BY A REGISTERED DESIGN PROFESSIONAL PROVIDED BY THE OWNER. STRUCTURAL OBSERVATIONS SHALL BE THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS.
   1. TESTING AGENCY FOR THE INSPECTIONS SHALL FILE ALL APPROPRIATE FORMS WITH THE BUILDING DEPARTMENT.

STANDARD ABBREVIATIONS

ADD'L	ADDITIONAL
ADJ.	ADJACENT
A/E	DESIGN TEAM OF RECORD
ALT.	ALTERNATE
ANCH.	ANCHOR
APPROX.	APPROXIMATE/APPROXIMATELY
ARCH.	ARCHITECT/ARCHITECTURAL
BLDG.	BUILDING
BM.	BEAM
B.O.	BOTTOM OF
BOT.	BOTTOM
BRG.	BEARING
BSMT.	BASEMENT
CANT.	CANTILEVER
CFS	COLD FORMED STEEL
C.I.P.	CAST IN PLACE
C.J.	CONTRACTION JOINT
CLG.	CEILING
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
COMP.	COMPOSITE
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
COORD.	COORDINATE/COORDINATION
CONTR.	CONTRACTOR
COTR	CONTRACT OFFICER'S TECHNICAL REPRESENTATIVE
CTR.	CENTER
DBL.	DOUBLE
DEMO	DEMOLITION/DEMOLISH
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
D.L.	DEAD LOAD
DN.	DOWN
DTL.	DETAIL
DWG(S)	DRAWING(S)
DWL.	DOWEL
EA.	EACH
E.F.	EACH FACE
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMBED.	EMBEDMENT
E.O.	EDGE OF
ENGR.	ENGINEER
E.O.R.	ENGINEER OF RECORD
EQ.	EQUAL
E.S.	EACH SIDE
E.W.	EACH WAY
EXP.	EXPANSION
EXT.	EXTERIOR
FDN.	FOUNDATION
FIN.	FINISH
FLR.	FLOOR
FRMG.	FRAMING
F.S.	FAR SIDE
FT.	FEET
FTG.	FOOTING
GA.	GAGE
GALV.	GALVANIZED
G.B.	GRADE BEAM
HDR.	HEADER
HGR.	HANGER
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
HT.	HEIGHT
HVAC	HEATING, VENTILATION, & AIR CONDITIONING
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
I.J.	ISOLATION JOINT
INFO	INFORMATION
INT.	INTERIOR
JT.	JOINT
K	KIP
LB.	POUND
L.L.	LIVE LOAD
LLBB	LONG LEGS BACK-TO-BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
L.P.	LOW POINT
L.W.	LIGHTWEIGHT
L.W.	LONG WAY
MAS.	MASONRY
MAX.	MAXIMUM
MECH.	MECHANICAL
MEP	MECH., ELECT., PLUMBING, & FIRE PROTECTION
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MPII	MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS
N.F.	NEAR FACE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
N.W.	NORMAL WEIGHT
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OPNG.	OPENING
OPP.	OPPOSITE
PC.	PIECE
P/C	PRECAST
PED.	PEDESTAL
PERP.	PERPENDICULAR
PL.	PLATE
PLF	POUNDS PER LINEAR FOOT
PREFAB.	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P-T	POST-TENSIONED
REINF.	REINFORCE(D)/REINFORCEMENT
REQ'D	REQUIRED
REV.	REVISION
SCHED.	SCHEDULE
SECT.	SECTION
S.I.F.	STEP IN FOOTING
SLBB	SHORT LEGS BACK-TO-BACK
SIM.	SIMILAR
S.O.G.	SLAB ON GRADE
SPEC.	SPECIFICATION
SQ.	SQUARE
S.S.	STAINLESS STEEL
STD.	STANDARD
STIFF.	STIFFENER
STL.	STEEL
S.W.	SHORT WAY
SYM.	SYMMETRIC
T & B	TOP & BOTTOM
TEMP.	TEMPORARY/TEMPERATURE
THK.	THICK(NESS)
T.O.	TOP OF
TR.	TRANSFER
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
W/	WITH
W.P	WORK POINT
W.W.R.	WELDED WIRE REINFORCEMENT
#	NUMBER/SIZE
Ø	DIAMETER

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ADDENDUM 5	*5*	*05/09/2024*
ISSUE FOR BID	*1*	*04/11/2024*

SEALS AND SIGNATURES

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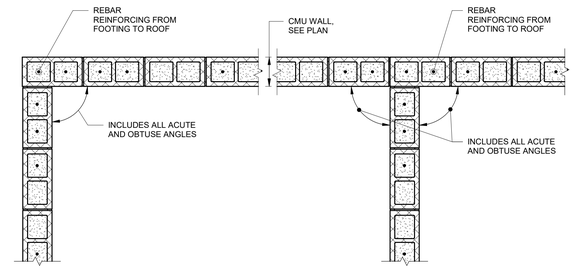
SHEET TITLE
GENERAL NOTES AND ABBREVIATIONS

31184
PROJECT NUMBER

S-001
SHEET NUMBER

Plot Date: 5/9/2024 11:02:34 AM Author



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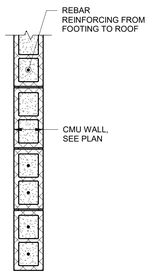
INTERSECTION DETAIL

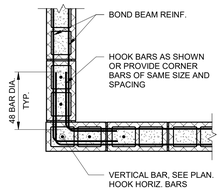


STRAIGHT DETAIL

NOTES:
1. SEE WALL SCHEDULE, SXXX, FOR WALL TYPE, f'm, VERTICAL REINF'G, & HORIZONTAL JOINT REINFORCING, TYP.
2. DESIGN OF WALL REINF'G ASSUMES CONCRETE MASONRY UNITS THAT ARE 15 5/8" LONG AND HAVE TWO CORES/CELLS, RESULTING IN A NOMINAL BAR SPACING OF 8" O.C.

TYPICAL DETAIL SHEAR WALL REINFORCING

N.T.S.



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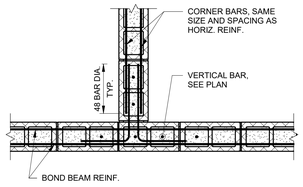

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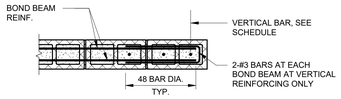
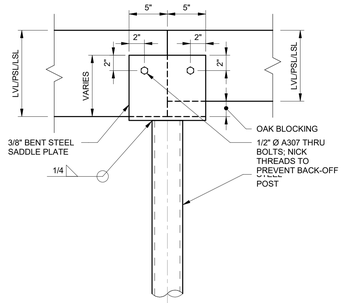


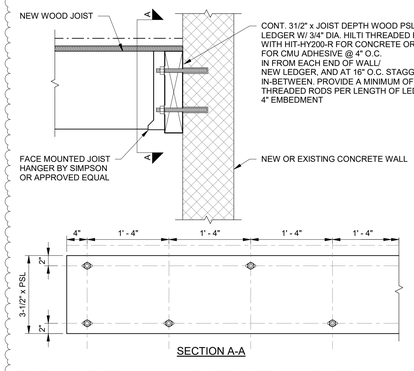
TYPICAL DETAIL END AND JAMB VERTICAL BARS AT BOND BEAM

N.T.S.



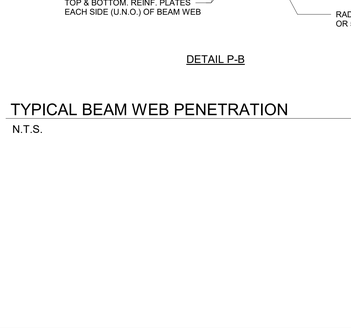
TYPICAL LVL/PSL/LSL GIRDER CONNECTION TO SINGLE-LIFT POST

N.T.S.



TYPICAL DETAIL WOOD LEDGER SUPPORT OF JOISTS @ CMU OR CONCRETE WALL

N.T.S.

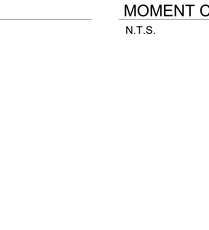


ANCHOR BOLT SIZE	HOLE Ø IN BASE PL	EDGE DISTANCE FROM CENTER LINE OF BOLT HOLE
3/4" Ø	1-5/16" Ø	2"
7/8" Ø	1-9/16" Ø	2"
1" Ø	1-7/8" Ø	2"
1-1/4" Ø	2-1/8" Ø	2-1/2"
1-1/2" Ø	2-3/8" Ø	2-1/2"

TYPICAL COLUMN BASE PLATE AT PIPE OR TUBE COLUMN

N.T.S.

BEAM TO HSS COLUMN



BEAM TO WF COLUMN FLANGE

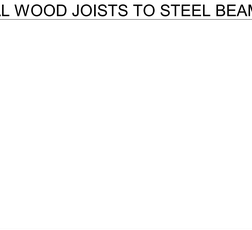
BEAM TO WF COLUMN WEB

WF BEAM TO WF BEAM

NOTES:
1. CONNECTION DETAILS SHOWN ABOVE ARE SCHEMATIC ONLY. THE CONTRACTOR MAY SUBMIT ALTERNATE DETAILS FROM THOSE SHOWN ABOVE, BUT IN ANY CASE THE CONTRACTOR IS RESPONSIBLE FOR PRODUCING STEEL SHOP DRAWINGS IN ACCORDANCE WITH THE PROJECT GENERAL NOTES AND AISC GUIDELINES. CALCULATIONS SHALL BE SUBMITTED AS REQUIRED IN THE GENERAL NOTES AND ELSEWHERE IN THE CONTRACT DOCUMENTS.
2. THE CONTRACTOR SHALL DETAIL THE PROJECT CONNECTIONS FOR THE LOADS AS INDICATED IN THE CONTRACT DOCUMENTS, PER AISC GUIDELINES. THE SCHEMATIC DETAILS ABOVE ARE NOT SUGGESTIVE OF SPECIFIC CAPACITIES. THE NUMBER AND SIZE OF BOLTS, SIZE AND LENGTH OF WELDS, AND SIZE OF STEEL PIECES MUST BE DETERMINED PER AISC GUIDELINES AND THE CONTRACT DOCUMENTS.
3. PROVIDE FULL DEPTH CONNECTIONS AT ALL PERIMETER BEAM CONNECTIONS AND AT BEAM CONNECTIONS TO PERIMETER BEAMS, UNLESS OTHERWISE NOTED.

TYPICAL SUGGESTED SHEAR CONNECTIONS AT GRAVITY LOADS ONLY

N.T.S.



TYPICAL BEAM BEARING ON NEW MASONRY WALL

N.T.S.

TYPICAL SAWN LUMBER JOISTS TO SAWN LUMBER GIRDERS

N.T.S.

DETAIL P-A

SECTION

DETAIL P-C

DETAIL P-B

SECTION

SECTION

NOTES:
1. SEE PLAN FOR OPENING SIZE AND LOCATION
2. ALL OPENING TO BE CENTERED AT BEAM MID-DEPTH.
3. AN ADDITIONAL 2 STUDS PER FOOT (IN ADDITION TO STUDS SHOWN ON PLAN) ARE REQUIRED AT EACH END OF OPENING FOR 3'-0".
4. COORDINATE ALL BEAM PENETRATION WITH HVAC, PLUMBING AND ELECTRICAL CONTRACTORS.

TYPICAL BEAM WEB PENETRATION

N.T.S.

NOTE:
1. CONNECTION DETAILS SHOWN ABOVE ARE SCHEMATIC DETAILS ONLY. CONTRACTOR SHALL DETAIL MOMENT CONNECTIONS BASED ON NOTE 4, IN ACCORDANCE WITH CODES AND SHALL PROVIDE SIGNED AND SEALED CALCULATIONS FOR FULL CONNECTIONS PRIOR TO SUBMITTAL OF SHOP DRAWINGS.
2. ALL BOLTS TO BE HIGH-STRENGTH, SLIP CRITICAL.
3. PROVIDE BOLTED CONNECTION IN WEB FOR BEAM REACTION PER GENERAL NOTES.
4. PROVIDE PRETENSIONED BOLTS FOR STRUCTURES OVER 125' IN HEIGHT.
5. DESIGN MOMENT CONNECTION FOR FULL PLASTIC CAPACITY OF BEAM.

TYPICAL HSS COLUMN MOMENT CONNECTION (THRU PLATE)

N.T.S.

TYPICAL WOOD JOISTS TO STEEL BEAM (FACE MOUNTED)

N.T.S.

NOTE:
ALL STEEL TO BE HOT DIPPED GALVANIZED AND SANDBLASTED FOR PAINTING, SEE GENERAL NOTES.

TYPICAL CRUCIFORM POST AT GABION WALL

N.T.S.

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TYPICAL DETAILS

31184
PROJECT NUMBER

S-502
SHEET NUMBER

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