Posting Date: September 20, 2019

NOTICE OF A SPECIAL MEETING
BONDURANT PLANNING AND ZONING COMMISSION
SEPTEMBER 23, 2019

NOTICE IS HEREBY GIVEN that a special meeting of the Planning and Zoning Commission will be held at 6:00 p.m., on Monday, September 23, 2019, in the Community Room at the Bondurant City Center, 200 Second Street, Northeast, Bondurant, Polk County, Iowa. Said meeting is open and the public is encouraged to attend.

AGENDA

1. Call to Order
2. Roll Call
3. Perfecting and Approval of the Agenda
4. Approval of the Commission Minutes – September 12, 2019
5. Guests requesting to address the Planning and Zoning Commission
6. **PUBLIC HEARING** – Regarding Bulk Regulations for M1 & M2 and Modifying the Overlay District Provision
7. **RESOLUTION NO. PZ-190923-24** – Resolution regarding the Bulk Regulations for M1 & M2
8. **RESOLUTION NO. PZ-190923-25** – Resolution regarding the Modification of the Overlay District Provision
9. **RESOLUTION NO. PZ-190923-26** – Resolution regarding the Site Plan for Project Bluejay
10. Reports/Comments and appropriate action thereon:
    a. Commission Members
    b. Commission Chair
    c. City Administrator
    d. City Council Liaison
11. Adjournment

Planning & Zoning Commission Meetings:

- Regular Meeting, October 10, 2019
- Regular Meeting, October 24, 2019
- Regular Meeting, November 14, 2019
- Regular Meeting, December 12, 2019

CITY OF BONDURANT
PLANNING AND ZONING COMMISSION
SEPTEMBER 12, 2019
MINUTES

1. Call to Order

   Commission Chair Cuellar called the meeting to order at 6:00 p.m.

2. Roll Call

   Roll call was taken and a quorum was declared.

Present:	Commission Member Brian Clayton, Commission Member Karen Keeran, Commission Member Joe Phearman, Commission Member Kristin Brostrom, Commission Member Torey Cuellar, Commission Member Angela McKenzie, Commission Member Andy Mains
City Officials Present:	City Administrator Marketa Oliver, City Clerk Shelby Hagan, Council Member Doug Elrod, City Engineer Bob Veenstra

3. Perfecting and Approval of the Agenda

   Motion by Clayton, seconded by Brostrom, to approve the agenda. Vote on Motion 7-0. Motion declared carried unanimously.

4. Approval of the Commission Minutes – August 22 2019

   Motion by McKenzie, seconded by Mains, to approve the August 22, 2019 minutes. Vote on Motion 7-0. Motion declared carried unanimously.

5. Guests requesting to address the Commission – None.

6. **RESOLUTION NO. PZ-190912-22** – Resolution regarding the Site Plan for Roadside Machinery & Supplies Co.

   Korey Marsh, Snyder & Associates, explained the site plan to the Commission. Items discussed drainage, street easements, building in an outlot, architectural paneling, screening, etc. The Commission agreed to move forward with the following conditions for recommendation for the Board of Adjustment including the conditions listed from Veenstra & Kimm, Inc.:

   1. Color deviation between the office and garage doors on the southwest side of the building.

2. Chainlink fence with berming. Commission agreed that the opaque requirement is not necessary.

Motion by Clayton, seconded by McKenzie, to approve RESOLUTION NO. PZ-190912-22. Roll Call: Ayes: McKenzie, Clayton, Cuellar, Keeran, Mains, Phearman. Nays: Brostrom. Absent: None. Motion Carried 6-1.

7. **RESOLUTION NO. PZ-190912-23** – Resolution regarding the Conditional Use Permit and Site Plan for Bondurant Borrow Pit

   The Commission discussed the possibility of the property owner signing an agreement for annexation into the City limits.

   Motion by Keeran, seconded by Mains, to table RESOLUTION NO. PZ-190912-23. Roll Call: Ayes: McKenzie, Clayton, Cuellar, Keeran, Mains, Phearman, Brostrom. Nays: None. Absent: Mains. Motion Carried 7-0.

8. Discussion Item –
   a. Building Height and Overlay District – The Commission discussed the bulk regulations for M1 and M2 as well as the overlay district forCommission Member Phearman suggested changed the height regulations on commercial districts as well.
   b. Traffic Study Policy – Bob Veenstra, Veenstra & Kimm, Inc., explained the policy. He explained that the City typically conducts the study, and the developer pays for the study. The Commission agreed with the policy and it will appear on the next City Council agenda.

9. Reports/Comments and appropriate action thereon:
   a. Commission Member Comments
   McKenzie – Officially a City Council candidate.
   Clayton – Comments regarding a nuisance property.
   Keeran – Questioned status of renaming Ziegler Drive.
   Mains – Comments on a few nuisance property.
   Phearman – Questioned maintenance on empty lots in developments, questioned A3 Auto.
   Brostrom – None.
   b. Commission Chair Comments – Commented on the agenda statements, and reminded members to not reply to all on emails.
   c. City Administrator Comments – Certified Site update, DR Horton update.
   d. City Council Liaison – Planning Director update, RMS comments.

10. Adjournment

   Moved by McKenzie, seconded by Clayton to adjourn the meeting at 8:31 p.m. Vote on Motion 7-0. Motion declared carried unanimously.

____
Shelby Hagan, City Clerk

ATTEST:

____
Torey Cuellar, Commission Chair

NOTICE OF PUBLIC HEARING

The Planning & Zoning Commission for the City of Bondurant will meet at 6:00 p.m. on September 23, 2019, and the City Council for the City of Bondurant will meet at 6:00 p.m. on September 30, 2019, in the Community Room of the City Center, 200 2nd St. NE, Bondurant, Polk County, Iowa, to consider adjusting the bulk regulations for M1 and M2, and to consider modifying the Overlay District provision. All interested parties are encouraged to attend.

BUSINESS OF THE PLANNING & ZONING COMMISSION
BONDURANT, IOWA

AGENDA STATEMENT

Item No. 7
For Meeting of 09/23/19

ITEM TITLE: Resolution regarding the amendment to the City of Bondurant Zoning Code to Modify Chapter XX Pertaining to M1 & M2 Bulk Regulations

CONTACT PERSON: Marketa Oliver, City Administrator

SUMMARY EXPLANATION:
The attached resolution adjusts the building heights allowable in industrial zones. With the City's new fire equipment (ladder truck that reaches 114 feet) and with recent discussions with developers on a number of different industrial pieces, staff recommends adjusting the height restriction further, as outlined in the attached ordinance.

_X__Resolution ______ Ordinance ____ Contract ____Other (Specify)________________________

Funding Source ______________ NA ______________________________________

APPROVED FOR SUBMITTAL ____
City Administrator

RECOMMENDATION: Approve the resolution on a roll call vote.

PLANNING AND ZONING COMMISSION
RESOLUTION NO. PZ-190923-24

RESOLUTION REGARDING THE AMENDMENT TO THE CITY OF BONDURANT ZONING CODE TO MODIFY CHAPTER XX PERTAINING TO M1 & M2 BULK REGULATIONS

WHEREAS, the City of Bondurant Zoning Code Chapter 178.13, paragraph 5, subsection H is recommended to be amended to read as follows:

Screening of a sufficient height and density to obscure structures and activities shall be erected at all locations where an Industrial “M” District is immediately adjacent to a Residential “R” District.

Summary of M-1 Bulk Regulations:

(A) Front Yard Setback	50 ft.
(B) Side Yard Setbacks	20 ft. 25 ft. if adjacent to street, “R”, or “C-1" district
(C) Rear Yard Setback	50ft.
(D) Maximum Height	~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building setback for an overall maximum of no more than an average of 104 feet building height from finished floor.
(E) Maximum Stories	3 with up to 5 with additional setback
(F) Lot Area	10,000 sq. ft.
(G) Open Space	15%
(H) Screening	Sufficient height and density

WHEREAS, Chapter 178.14, paragraph 4, subsection F is recommended to be amended to read as follows:

F. Maximum Heights. ~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building setback for an overall maximum of no more than an average of 104 feet building height from finished floor.

WHEREAS, Chapter 178.14, paragraph 4, subsection G is recommended to be amended to read as follows:

Summary of M-2 Bulk Regulations:

(A) Minimum Lot Area	None
(B) Minimum Lot Width	None
(C) Front Yard Setback	30 ft. from the existing or proposed right-of-way line.
(D) Side Yard Setbacks	20 ft. 25 ft. if adjacent to street, “R”, or “C-1" district
(E) Rear Yard Setback	40ft., except that where a railroad right-of-way is immediately adjacent to the rear of a lot, the rear yard requirement need not apply.
(F) Maximum Height	~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building

	setback for an overall maximum of no more than an average of 104 feet building height from finished floor.
(G) Number of Stories	3 with up to 5 with additional setback

NOW, THEREFORE, BE IT RESOLVED, by the Planning and Zoning Commission of the City of Bondurant, Iowa, that the amendment to the City of Bondurant Zoning Code to modify Chapter 178 pertaining to the M1 and M2 Bulk Regulations is approved and forwarded to the City Council with a recommendation for approval of same.

Moved by ____________________, Seconded by ____________________to adopt.

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the Planning and Zoning Commission held on September 23, 2019; among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

____
Shelby Hagan, City Clerk

Action	Yay	Nay	Abstain	Absent
McKenzie				
Clayton				
Cuellar				
Keeran				
Mains				
Phearman				
Brostrom				

____
Torey Cuellar, Commission Chair

Bondurant
Life Connecting

BUSINESS OF THE PLANNING AND ZONING COMISSION
BONDURANT, IOWA
AGENDA STATEMENT

Item No.
For Meeting of 09.23.2019

ITEM TITLE: Public Hearing on Ordinance amending the Code of Ordinances of the City of Bondurant, Iowa, 2002, Chapter 178 Zoning Code – District Regulations

CONTACT PERSON: Marketa Oliver, City Administrator

SUMMARY EXPLANATION:
The attached ordinance adjusts the building heights allowable in industrial zones. With the City's new fire equipment (ladder truck that reaches 114 feet) and with recent discussions with developers on a number of different industrial pieces, staff recommends adjusting the height restriction further, as outlined in the attached ordinance. The ordinance adjusts maximum story/height restrictions in the bulk regulations for the C-2 General Commercial, M-1 Limited Industrial, and M-2 Medium Industrial zoning districts.

_____Resolution __X__ Ordinance ____ Contract ______Other (Specify)____________________

Funding Source _______NA______________________________

APPROVED FOR SUBMITTAL ______________________________
City Administrator

RECOMMENDATION: Hold public hearing and make recommendation to City Council on the proposed ordinance.

CITY OF BONDURANT
ORDINANCE NO. 190930-XXX

AN ORDINANCE AMENDING THE CODE OF ORDINANCES OF THE CITY OF BONDURANT, IOWA, 2002, BY AMENDING CHAPTER 178, Zoning Code – District Regulations

BE IT ENACTED by the City Council of the City of Bondurant, Polk County, Iowa:

Section 1. **SECTION AMENDED. BULK REGULATIONS MODIFIED.** Chapter 178.13, paragraph 5, subsection D is amended to read as follows.

D. Maximum Heights. ~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building setback for an overall maximum of no more than an average of 104 feet building height from finished floor.

Section 2. **SECTION AMENDED. BULK REGULATIONS MODIFIED.** Chapter 178.13, paragraph 5, subsection E is amended to read as follows.

E. Maximum Number of Stories. 3 with up to an additional 5 with supplemental setback

Section 3. **SECTION AMENDED. BULK REGULATIONS MODIFIED.** Chapter 178.13, paragraph 5, subsection H is amended to read as follows.

Screening of a sufficient height and density to obscure structures and activities shall be erected at all locations where an Industrial "M" District is immediately adjacent to a Residential "R" District.

Summary of M-1 Bulk Regulations:

(A) Front Yard Setback	50 ft.
(B) Side Yard Setbacks	20 ft. 25 ft. if adjacent to street, "R", or "C-1" district
(C) Rear Yard Setback	50ft.
(D) Maximum Height	~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building setback for an overall maximum of no more than an average of 104 feet building height from finished floor.
(E) Maximum Stories	3 with up to 5 with additional setback
(F) Lot Area	10,000 sq. ft.
(G) Open Space	15%
(H) Screening	Sufficient height and density

Section 4. **BULK REGULATIONS MODIFIED.** Chapter 178.14, paragraph 4, subsection F is amended to read as follows.

F. Maximum Heights. ~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building setback for an overall maximum of no more than an average of 104 feet building height from finished floor.

Section 5. **BULK REGULATIONS MODIFIED.** Chapter 178.14, paragraph 4, subsection G is amended to read as follows.

Summary of M-2 Bulk Regulations:

(A) Minimum Lot Area	None
(B) Minimum Lot Width	None
(C) Front Yard Setback	30 ft. from the existing or proposed right-of-way line.
(D) Side Yard Setbacks	20 ft. 25 ft. if adjacent to street, “R”, or “C-1" district
(E) Rear Yard Setback	40ft., except that where a railroad right-of-way is immediately adjacent to the rear of a lot, the rear yard requirement need not apply.
(F) Maximum Height	~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building setback for an overall maximum of no more than an average of 104 feet building height from finished floor.
(G) Number of Stories	3 with up to an additional 5 with supplemental setback

Section 6. **BULK REGULATIONS MODIFIED.** Chapter 178.08, paragraph 4, subsection E is amended to read as follows.

E. Maximum Heights. ~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building setback for an overall maximum of no more than an average of 104 feet building height from finished floor.

Section 7. **BULK REGULATIONS MODIFIED.** Chapter 178.08, paragraph 4, subsection E is amended to read as follows.

F. Maximum Number of Stories - 3 with up to an additional 5 with supplemental setback.

Section 8. **BULK REGULATIONS MODIFIED.** Chapter 178.08, paragraph 4, subsection H is amended to read as follows.

Summary of M-2 Bulk Regulations:

(A) Minimum Lot Area	None
(B) Front Yard Setback	50 ft.
(C) Side Yard Setbacks	None Buffer if adjacent to “R”
(D) Rear Yard Setback	25 ft.
(E) Maximum Height	~~65~~ 80 ft, with an additional 12 feet (1 story) of heights permitted for every 10 feet of additional building

	setback for an overall maximum of no more than an average of 104 feet building height from finished floor.
(F) Maximum Stories	3 with up to an additional 5 with supplemental setback
(G) Open Space	15%

Section 9. **REPEALER.** All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Section 10. **SEVERABILITY.** If any section, provisions, sentence, clause, phrase or part of this ordinance shall be adjudicated, invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any provision, section, subsection, sentence clause, phrase or part thereof not adjudged invalid or unconstitutional.

Section 11. **EFFECTIVE DATE.** This ordinance shall be in full force and effect following its passage, adoption and publication as required by law.

CITY OF BONDURANT, POLK COUNTY, IOWA

____
CURT SULLIVAN, MAYOR

ATTEST:

____
SHELBY HAGAN, CITY CLERK

(SEAL)

FIRST CONSIDERATION:
SECOND CONSIDERATION:
THIRD CONSIDERATION:

Bondurant
Life Connecting

BUSINESS OF THE PLANNING & ZONING COMMISSION
BONDURANT, IOWA

AGENDA STATEMENT

Item No. 8
For Meeting of 09/12/19

ITEM TITLE: Resolution regarding the amendment to the City of Bondurant Zoning Code to Modify Chapter XX Pertaining to the Overlay District

CONTACT PERSON: Marketa Oliver, City Administrator

SUMMARY EXPLANATION:
The attached resolution modifies the Overlay District ordinance that affects buildings along Highway 65. Recent discussions have shown the ordinance to be in need of updating. The ordinance is compatible with forthcoming language from the City's Regional Master Plan overlay district as well.

_X_ Resolution ______ Ordinance ____ Contract ____ Other (Specify)____________________

Funding Source ______________ NA ________________________________

APPROVED FOR SUBMITTAL ______________________________________
City Administrator

RECOMMENDATION: Approve the resolution on a roll call vote.

PLANNING AND ZONING COMMISSION
RESOLUTION NO. PZ-190923-25

RESOLUTION REGARDING THE AMENDMENT TO THE CITY OF BONDURANT ZONING CODE TO MODIFY CHAPTER 179 PERTAINING TO THE OVERLAY DISTRICT

WHEREAS, the City of Bondurant Zoning Code Chapter 179.2, paragraph I, subsection 6 is struck in its entirety and replaced with the following:

6. **Arterial Corridor Overlay:** All buildings or any portion of a building in any Commercial (C) or Manufacturing (M) zoning district, which are within 500 feet of Highway 65, lots fronting on 2nd Street Northeast, 2nd Street Northwest, Grant Street North, Grant Street South, and any portion of Northeast 72nd Street within the City of Bondurant, shall adhere to the following standards. Multi-family residential structures and non-residential structures in Residential (R) zoning districts built in the Arterial Corridor Overlay District must comply with the standards set out in Section 1.1.2 and Section 1.1.3 of this ordinance.

    a. All buildings should be designed to minimize single plane walls and boxy appearance through the use of pitched roofs, dormers, cupolas, multiple rooflines, and relief in long wall expanses.

    b. Loading docks, service areas or overhead doors shall not face the corridor.

    c. Access to Highway 65 shall occur via the DOT's predetermined access points (PDA's).

    d. Buildings proposed in commercial or industrial areas that are adjacent to less intense uses (e.g. residential or civic uses) should be designed with and articulated roofline, giving emphasis to architectural elements that will help divide the mass of a large building into smaller, identifiable parts.

    e. Commercial and industrial buildings shall incorporate façade modulation in all building elevations visible to the public or adjacent to other less intense uses in order to preserve building scale and reduce the effect of long, large or expansive wall surfaces. Variation of these surfaces can be accomplished by physical offsets or the use of color, pattern or texture.

    f. Buildings shall incorporate architectural design elements, materials, and colors into the side and rear building elevations similar to those used in the front building elevation.

    g. Exterior Building Materials: For the purposes of this section, exterior building materials shall be divided into the following three categories:

        i. Primary Materials:

        1. Brick veneer, fired clay (including thin brick veneer when applied in a manner that gives the appearance of full depth brick)
        2. Stone (including synthetic stone veneer)
        3. Glass, clear or slightly tinted (not including mirrored or heavily tinted glass)
        4. Burnished/ground-faced block
        5. Architectural quality precast concrete panels (high finish precast concrete panels, textured or burnished, and integrally colored - not painted)
        6. Architectural quality, metal wall panel systems (high quality metal panels for decorative surface application with concealed fasteners)
        7. Materials of similar quality, appearance and durability as determined by the Zoning Administrator

    ii. Secondary Materials:
        1. Wood or cement fiber siding
        2. Split-faced block
        3. Traditional stucco
        4. Architectural quality, metal wall panel systems (high quality metal panels for decorative surface application with exposed fasteners)
        5. Exterior Insulation and Finish System (EIFS)
        6. Materials of similar quality, appearance and durability as determined by the Zoning Administrator

    iii. Limited Materials:
        1. Smooth concrete block
        2. Site cast and precast concrete panels (plain and may be painted)
        3. Metal siding, panels and trim
        4. Mirrored or heavily tinted glass
        5. Vinyl and PVC panels, siding, and trim
        6. Composite wood panels, siding, and trim
        7. Materials of similar quality, appearance and durability as determined by the Zoning Administrator

h. Exterior Building Materials Requirements: All Buildings shall comply with the following standard:

    i All public street-facing building facades shall incorporate no less than two (2) different Primary Materials as defined herein this section, together comprising a majority or no less than fifty percent (50%) of the total façade surface area. Limited Materials as defined herein shall not be used on a street-facing façade except as a minor trim element not to exceed ten percent (10%) of the total façade surface area.
    ii All facades other than public street-facing building facades shall incorporate at least one (1) Primary or Secondary Material, as defined herein this section, comprising no less than eighty percent (80%) of the total façade surface area. Limited Materials as defined herein

shall not be used except as a minor trim element not to exceed twenty percent (20%) of the total façade surface area.

City Council / Planning and Zoning Commission Joint Site Plan Review. In the event that the City Council desires to amend a Site Plan approved by the Planning and Zoning Commission, a joint meeting of the City Council and Planning and Zoning Commission will be scheduled. The purpose of this meeting will be to discuss any items on which the City Council, Planning, and Zoning Commission are not in agreement, with the expectation that said discussion will result in agreement between the two bodies on the outstanding issues. At the conclusion of the meeting, the Planning and Zoning Commission will vote on the site plan, regardless of whether or not there are agreed upon changes to the site plan. Following the Planning and Zoning Commission vote, the City Council will vote on the site plan, regardless of whether or not there are agreed upon changes to the site plan. The vote of the City Council is final and takes priority over the vote of the Planning and Zoning Commission. The developer or developer's representative shall be present at this meeting.

NOW, THEREFORE, BE IT RESOLVED, by the Planning and Zoning Commission of the City of Bondurant, Iowa, that the amendment to the City of Bondurant Zoning Code to modify Chapter 179 pertaining to the Overlay District Provision is approved and forwarded to the City Council with a recommendation for approval of same.

Moved by ____________________, Seconded by ____________________to adopt.

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the Planning and Zoning Commission held on September 23, 2019; among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

____
Shelby Hagan, City Clerk

Action	Yay	Nay	Abstain	Absent
McKenzie				
Clayton				
Cuellar				
Keeran				
Mains				
Phearman				
Brostrom				

____
Torey Cuellar, Commission Chair

Bondurant
Life Connecting

BUSINESS OF THE PLANNING AND ZONING COMISSION
BONDURANT, IOWA
AGENDA STATEMENT

Item No.
For Meeting of 09.23.2019

ITEM TITLE: Public hearing Ordinance amending the Code of Ordinances of the City of Bondurant, Iowa, 2002, Chapter 179 Zoning Code – Additional Provisions

CONTACT PERSON: Marketa Oliver, City Administrator

SUMMARY EXPLANATION:
The attached ordinance modifies the Overlay District ordinance that affects buildings along Highway 65. Recent discussions have shown the ordinance to be in need of updating. The ordinance is compatible with forthcoming language from the City's Regional Master Plan overlay district as well.

_____Resolution __X__ Ordinance ____ Contract ______Other (Specify)____________________

Funding Source _______ NA ____________________

APPROVED FOR SUBMITTAL ____________________
City Administrator

RECOMMENDATION: Hold public hearing and make recommendation to the City Council

CITY OF BONDURANT
ORDINANCE NO. 190916-XXX

AN ORDINANCE AMENDING THE CODE OF ORDINANCES OF THE CITY OF BONDURANT, IOWA, 2002, BY AMENDING CHAPTER 179, Zoning Code – Additional Provisions

BE IT ENACTED by the City Council of the City of Bondurant, Polk County, Iowa:

Section 1. **SECTION AMENDED.** Chapter 179.2, paragraph I, subsection 6 is struck in its entirety and replaced with the following:

6. **Arterial Corridor Overlay:** All buildings or any portion of a building in any Commercial (C) or Manufacturing (M) zoning district, which are within 500 feet of Highway 65, lots fronting on 2nd Street Northeast, 2nd Street Northwest, Grant Street North, Grant Street South, and any portion of Northeast 72nd Street within the City of Bondurant, shall adhere to the following standards. Multi-family residential structures and non-residential structures in Residential (R) zoning districts built in the Arterial Corridor Overlay District must comply with the standards set out in Section 1.1.2 and Section 1.1.3 of this ordinance.

    a. All buildings should be designed to minimize single plane walls and boxy appearance through the use of pitched roofs, dormers, cupolas, multiple rooflines, and relief in long wall expanses.

    b. Loading docks, service areas or overhead doors shall not face the corridor.

    c. Access to Highway 65 shall occur via the DOT's predetermined access points (PDA's).

    d. Buildings proposed in commercial or industrial areas that are adjacent to less intense uses (e.g. residential or civic uses) should be designed with and articulated roofline, giving emphasis to architectural elements that will help divide the mass of a large building into smaller, identifiable parts.

    e. Commercial and industrial buildings shall incorporate façade modulation in all building elevations visible to the public or adjacent to other less intense uses in order to preserve building scale and reduce the effect of long, large or expansive wall surfaces. Variation of these surfaces can be accomplished by physical offsets or the use of color, pattern or texture.

    f. Buildings shall incorporate architectural design elements, materials, and colors into the side and rear building elevations similar to those used in the front building elevation.

    g. Exterior Building Materials: For the purposes of this section, exterior building materials shall be divided into the following three categories:

        i. Primary Materials:

            1. Brick veneer, fired clay (including thin brick veneer when applied in a manner that gives the appearance of full depth brick)
            2. Stone (including synthetic stone veneer)

3. Glass, clear or slightly tinted (not including mirrored or heavily tinted glass)
4. Burnished/ground-faced block
5. Architectural quality precast concrete panels (high finish precast concrete panels, textured or burnished, and integrally colored - not painted)
6. Architectural quality, metal wall panel systems (high quality metal panels for decorative surface application with concealed fasteners)
7. Materials of similar quality, appearance and durability as determined by the Zoning Administrator

ii. Secondary Materials:
  1. Wood or cement fiber siding
  2. Split-faced block
  3. Traditional stucco
  4. Architectural quality, metal wall panel systems (high quality metal panels for decorative surface application with exposed fasteners)
  5. Exterior Insulation and Finish System (EIFS)
  6. Materials of similar quality, appearance and durability as determined by the Zoning Administrator

iii. Limited Materials:
  1. Smooth concrete block
  2. Site cast and precast concrete panels (plain and may be painted)
  3. Metal siding, panels and trim
  4. Mirrored or heavily tinted glass
  5. Vinyl and PVC panels, siding, and trim
  6. Composite wood panels, siding, and trim
  7. Materials of similar quality, appearance and durability as determined by the Zoning Administrator

h. Exterior Building Materials Requirements: All Buildings shall comply with the following standard:

i All public street-facing building facades shall incorporate no less than two (2) different Primary Materials as defined herein this section, together comprising a majority or no less than fifty percent (50%) of the total façade surface area. Limited Materials as defined herein shall not be used on a street-facing façade except as a minor trim element not to exceed ten percent (10%) of the total façade surface area.

ii All facades other than public street-facing building facades shall incorporate at least one (1) Primary or Secondary Material, as defined herein this section, comprising no less than eighty percent (80%) of the total façade surface area. Limited Materials as defined herein shall not be used except as a minor trim element not to exceed twenty percent (20%) of the total façade surface area.

City Council / Planning and Zoning Commission Joint Site Plan Review. In the event that the City Council desires to amend a Site Plan approved by the Planning and Zoning Commission, a joint meeting of the City Council and Planning and Zoning Commission will be scheduled. The purpose of this meeting will be to discuss any items on which the City Council, Planning, and Zoning Commission are not in agreement, with the expectation that said discussion will result in agreement between the two bodies on the outstanding issues. At the conclusion of the meeting, the Planning and Zoning Commission will vote on the site plan, regardless of whether or not there are agreed upon changes to the site plan. Following the Planning and Zoning Commission vote, the City Council will vote on the site plan, regardless of whether or not there are agreed upon changes to the site plan. The vote of the City Council is final and takes priority over the vote of the Planning and Zoning Commission. The developer or developer's representative shall be present at this meeting.

Section 4. **REPEALER.** All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Section 5. **SEVERABILITY.** If any section, provisions, sentence, clause, phrase or part of this ordinance shall be adjudicated, invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any provision, section, subsection, sentence clause, phrase or part thereof not adjudged invalid or unconstitutional.

Section 6. **EFFECTIVE DATE.** This ordinance shall be in full force and effect following its passage, adoption and publication as required by law.

CITY OF BONDURANT, POLK COUNTY, IOWA

____
CURT SULLIVAN, MAYOR

ATTEST:

____
SHELBY HAGAN, CITY CLERK

(SEAL)

FIRST CONSIDERATION:
SECOND CONSIDERATION:
THIRD CONSIDERATION:

Bondurant
Life Connecting

BUSINESS OF THE PLANNING & ZONING COMMISSION
BONDURANT, IOWA

AGENDA STATEMENT

Item No. 9
For Meeting of 09/23/19

ITEM TITLE: Resolution regarding the Site Plan for Project Bluejay

CONTACT PERSON: Marketa Oliver, City Administrator

SUMMARY EXPLANATION:

_X__Resolution ______ Ordinance ___ Contract ____Other (Specify)______________________

Funding Source _____________NA____

APPROVED FOR SUBMITTAL ____
City Administrator

RECOMMENDATION: Approve the resolution on a roll call vote.

PLANNING AND ZONING COMMISSION
RESOLUTION NO. PZ-190923-26

RESOLUTION REGARDING THE SITE PLAN FOR PROJECT BLUEJAY

WHEREAS, Shive Hattery, Inc. submitted a Site Plan for Project Bluejay; AND

WHEREAS, the applicant is Ryan Companies US, Inc.; AND

WHEREAS, the site address is in Bondurant, Iowa; AND

WHEREAS, the zoning for the property is M-1, Light Industrial District; AND

WHEREAS, legal description is as follows:

ALL THE PART OF THE SE 1/4 OF SECTION 1, TOWNSHIP 79 NORTH, RANGE 23 WEST OF THE 5TH P.M. LYING SOUTH OF HIGHWAY 65 (HUBBELL AVE.) (EXCEPT THE PART DEEDED TO POLK COUNTY RECORDED IN BOOK 11107, PAGE 333); AND THE SOUTH 81.5 ACRES OF THE NORTHEAST FRACTIONAL 1/4 LYING SOUTHEAST OF HIGHWAY 65 (EXCEPT THE NORTH 398 FEET THEREOF) IN SECTION 1 TOWNSHIP 79 NORTH, RANGE 23 WEST OF THE 5TH P.M, POLK COUNTY IOWA.

NOW, THEREFORE, BE IT RESOLVED, by the Planning and Zoning Commission of the City of Bondurant, Iowa, that the Site Plan for Project Bluejay is approved and forwarded to the City Council with a recommendation for approval of same.

Moved by ____________________, Seconded by _______________________to adopt.

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the Planning and Zoning Commission held on September 23, 2019; among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

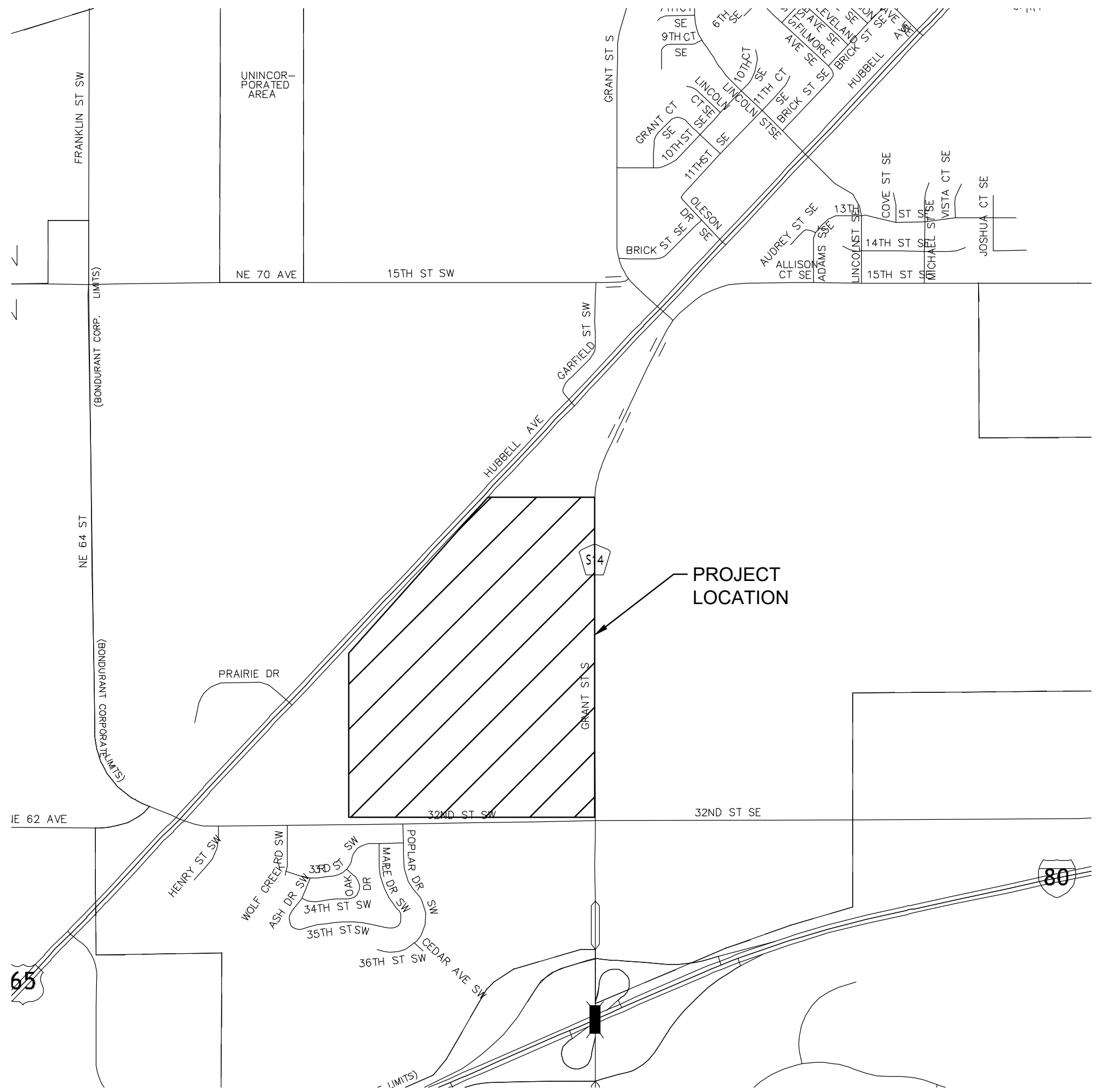
____
Shelby Hagan, City Clerk

Action	Yay	Nay	Abstain	Absent
McKenzie				
Clayton				
Mains				
Keeran				
Cuellar				
Phearman				
Brostrom				

____
Torey Cuellar, Commission Chair

PROJECT BLUEJAY

BONDURANT, IOWA



VICINITY MAP:

NOT TO SCALE

APPLICANT

RYAN COMPANIES US, INC.
111 EAST GRAND, SUITE 200
DES MOINES, IA 50309
(515) 309-8500

ENGINEER

SHIVE-HATTERY, INC.
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IA 50266
(515) 223-8104
CONTACT: CHRIS BAUER
CBAUER@SHIVE-HATTERY.COM

ZONING & BULK REGULATIONS

M-1 - LIMITED INDUSTRIAL DISTRICT

FRONT SETBACK	50 FT
SIDE SETBACK	20 FT OR 25 FT IF ADJACENT TO STREET, "R", OR "C-1" DISTRICT
REAR SETBACK	50 FT
MAXIMUM HEIGHT	80 FT WITH AN ADDITIONAL 12 FEET (1 STORY) OF HEIGHT PERMITTED FOR EVERY 10 FEET OF ADDITIONAL BUILDING SETBACK FOR AN OVERALL MAXIMUM OF NO MORE THAN AN AVERAGE OF 104 FEET BUILDING HEIGHT FROM FINISH FLOOR
MAXIMUM STORIES	3 STORIES WITH UP TO 5 WITH ADDITIONAL SETBACK
LOT AREA	10,000 SF
OPEN SPACE	15%
SCREENING	SUFFICIENT HEIGHT AND DENSITY

PROPOSED PARKING SUMMARY:

REQUIRED PARKING

PROPOSED WAREHOUSE	
1 SPACE / EMPLOYEES	= 1120 SPACES
(ANTICIPATED NUMBER OF EMPLOYEES = 1120 ON MAX SHIFT)	
1 SPACE / 200 SF OF GFA OFFICE SPACE	42,530 SF = 213 SPACES
TOTAL PARKING REQUIRED	= 1,333 SPACES
TOTAL PARKING PROVIDED	= 1,817 SPACES
ACCESSIBLE PARKING	
REQUIRED ACCESSIBLE PARKING	= 28 SPACES
20 SPACES /1,000 STALLS + 1 SPACE/ 100 SPACES OVER 1,000	
PROVIDED ACCESSIBLE PARKING	= 32 SPACES (8 VAN ACCESSIBLE)

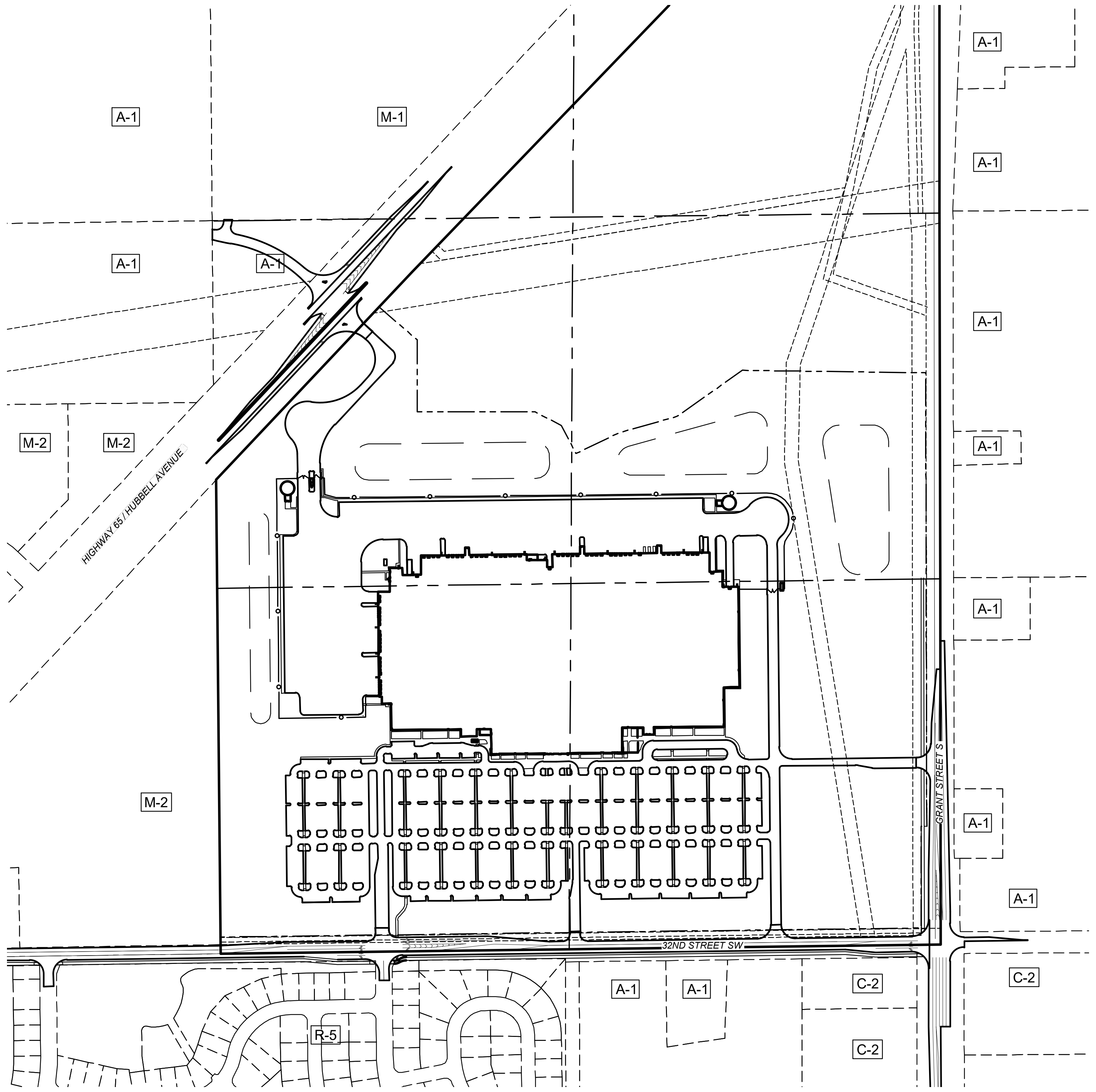
PROPOSED SITE SUMMARY

EXISTING SITE CALCULATIONS:		**PROPOSED SITE CALCULATIONS:**	
IMPERVIOUS AREA:	0 SF	IMPERVIOUS AREA:	2,381,212 SF
PERVIOUS AREA:	4,928,378 SF	PERVIOUS AREA:	2,547,166 SF
TOTAL EX. SITE AREA:	4,928,378 SF	TOTAL PROP. SITE AREA:	4,928,378 SF

OPEN SPACE REQUIRED = 739,257 SF (15%)
OPEN SPACE PROVIDED = 2,547,166 SF (51.6%)

TOTAL DISTURBED AREA = 4,704,469 SF

BUILDING HEIGHT - APPROXIMATELY 94' FROM TOP OF FINISH FLOOR AT HIGHEST PEAK



PROJECT LOCATION

1" = 300'

NORTH

LANDSCAPE REQUIREMENTS SUMMARY:

OPEN SPACE:

MINIMUM OPEN SPACE FOR M-1 DISTRICT = 15% OF GROSS LAND AREA INCLUDED IN BUILDING LOT AND AT LEAST 90% OF THE REQUIRED OPEN SPACE SHALL BE LANDSCAPED WITH LIVING GROUND COVER.
LOT AREA WITHIN GRADING LIMITS: 107.99 ACRES
REQUIRED OPEN SPACE: 739,257 (15.0%)
OPEN SPACE PROVIDED: 58.47 ACRES (51.6%)

PARKING LOT:

1 TREE PER 18 PARKING SPACES
FOR 1,825 CAR PARKING STALLS = 102 TREES AND 102 PARKING ISLANDS
PARKING LOT TREES PROVIDED = 201
PARKING LOT ISLANDS PROVIDED = 201

SITE LANDSCAPING:

TREES SHALL BE REQUIRED AT A RATE OF 1 TREE PER 50 FEET OF STREET FRONTAGE, OR 1 TREE PER 6 PARKING, LOADING, AND STACKING SPACES ON SITE, WHICHEVER IS GREATER. THE LATTER APPLIES TO THIS SITE.
1,825 CAR PARKING SPOTS + 201 TRAILER STALLS = 2,026 STALLS
2,026 STALLS / 6 = 338 TREES REQUIRED ON SITE
1 TREE PER 50' OF STREET FRONTAGE SHALL BE PLANTED IN THE FRONT YARD SETBACK
32ND STREET SW, GRANT STREET S, AND HUBBELL AVENUE FRONTAGE = 5,406 LF / 50 = 109 TREES
MINIMUM 109 TREES PLANTED ALONG 32ND STREET SW, GRANT STREET S, AND HUBBELL AVENUE FRONTAGE

201 PARKING LOT TREES + 109 FRONTAGE TREES + 28 ADDITIONAL SITE TREES = 338 TOTAL SITE REQUIRED TREES

ALL PARKING LOT TREES SHALL BE DECIDUOUS SHADE TREES.
UP TO 25% OF THE REQUIRED TREES ON SITE MAY BE DECIDUOUS ORNAMENTAL, EVERGREEN, OR CONIFEROUS.
338 TREES x 25% = 85 TREES AS ORNAMENTAL, EVERGREEN, OR CONIFEROUS.

ADDITIONAL PROPOSED QUANTITIES:

LOW MAINTENANCE LAWN MIX - 9.4 ACRES
NATIVE SHORTGRASS PRAIRIE MIX - 39.5 ACRES
NATIVE WETLAND SEED MIX - 2.6 ACRES

Sheet List Table

Sheet Number	Sheet Title
C000	COVER SHEET
C001	GENERAL NOTES
C002	EXISTING CONDITIONS
C100	OVERALL PLAN
C101	SITE PLAN
C102	SITE PLAN
C103	SITE PLAN
C104	SITE PLAN
C105	SITE PLAN
C106	SITE PLAN
C200	OVERALL GRADING PLAN
C201	GRADING PLAN
C202	GRADING PLAN
C203	GRADING PLAN
C204	GRADING PLAN
C205	GRADING PLAN
C206	GRADING PLAN
C250	EROSION CONTROL PLAN
C300	OVERALL UTILITY PLAN
C301	UTILITY PLAN
C302	UTILITY PLAN
C303	UTILITY PLAN
C304	UTILITY PLAN
C305	UTILITY PLAN
C306	UTILITY PLAN
C500	CONSTRUCTION DETAILS
C501	CONSTRUCTION DETAILS
C502	CONSTRUCTION DETAILS
L100	OVERALL LANDSCAPE PLAN
L101	LANDSCAPE PLAN
L102	LANDSCAPE PLAN
L103	LANDSCAPE PLAN
L104	LANDSCAPE PLAN
L105	LANDSCAPE PLAN
L106	LANDSCAPE PLAN

LEGAL DESCRIPTION

ALL THE PART OF THE SE 1/4 OF SECTION 1, TOWNSHIP 79 NORTH, RANGE 23 WEST OF THE 5TH P.M. LYING SOUTH OF HIGHWAY 65 (HUBBELL AVE.) (EXCEPT THE PART DEEDED TO POLK COUNTY RECORDED IN BOOK 11107, PAGE 333); AND THE SOUTH 81.5 ACRES OF THE NORTHEAST FRACTIONAL 1/4 LYING SOUTHEAST OF HIGHWAY 65 (EXCEPT THE NORTH 398 FEET THEREOF) IN SECTION 1 TOWNSHIP 79 NORTH, RANGE 23 WEST OF THE 5TH P.M, POLK COUNTY IOWA.

BENCHMARKS

POLK COUNTY BENCHMARK 963 - NEAR SW CORNER SEC 2-79-23, IN NE QUADRANT OF INTERSECTION OF NE 56TH STREET AND NE 62ND AVENUE. TOP OF NW BOLT ON HIGH TRANSMISSION POLE BASE

ELEVATION = 963.038 (NAVD88)

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

Signature: ______________________ Date

Printed or typed name: CHRISTOPHER R. BAUER
License Number: -
My License Renewal Date is: DECEMBER 31, 2019
PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL:
ALL SHEETS

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 Westown Pkwy, Suite 100 | West Des Moines, Iowa 50266
515.223.8104 | www.shive-hattery.com
Iowa | Illinois | Indiana

PROJECT BLUEJAY
—
BONDURANT, IOWA

PRELIMINARY - NOT FOR CONSTRUCTION

2019-09-20
SITE PLAN SUBMITTAL
PROJECT NO: 419393-0
CLIENT NO: ---

C000

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GENERAL NOTES:

1. THE LOCATIONS OF UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS PLOTTED ON THE DRAWINGS ARE APPROXIMATE ONLY AND WERE OBTAINED FROM RECORDS MADE AVAILABLE TO SHIVE-HATTERY, INC. THERE MAY BE OTHER EXISTING UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS NOT KNOWN TO SHIVE-HATTERY, INC. AND NOT SHOWN ON THIS DRAWING. THE UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT CRITICAL LOCATIONS TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATION.
3. IOWA CODE 480, UNDERGROUND FACILITIES INFORMATION, REQUIRES VERBAL NOTICE TO IOWA ONE-CALL BY CALLING 811 OR 1-800-292-8989, NOT LESS THAN 48 HOURS BEFORE EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS.
4. THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
5. NO WORK SHALL BE PERFORMED BEYOND THE PROJECT LIMITS WITHOUT PRIOR AUTHORIZATION FROM THE OWNER'S REPRESENTATIVE.
6. PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
7. MAINTAIN POSITIVE DRAINAGE ON THE SITE THROUGHOUT THE PROJECT DURATION.
8. SITE CLEAN-UP SHALL BE PERFORMED ON A DAILY BASIS. SIDEWALKS, PARKING LOTS, ROADWAYS, ETC. SHALL BE KEPT CLEAN AT ALL TIMES.
9. ALL OPEN EXCAVATIONS SHALL BE PROTECTED.
10. REPLACE ANY PROPERTY MONUMENTS REMOVED OR DESTROYED BY CONSTRUCTION. MONUMENTS SHALL BE SET BY A LAND SURVEYOR REGISTERED TO PRACTICE IN THE STATE OF IOWA.
11. ANY WORK REQUIRED TO COMPLETE THE SCOPE OF THIS PROJECT BUT NOT SPECIFICALLY CALLED OUT, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THE COMPLETION OF THIS WORK.
12. WORK WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT WILL BE CONSIDERED UNACCEPTABLE. UNACCEPTABLE WORK, WHETHER THE RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS OR ANY OTHER CAUSE, FOUND TO EXIST PRIOR TO THE FINAL ACCEPTANCE OF THE WORK, SHALL BE REMOVED AND REPLACED IN AN ACCEPTABLE MANNER, AS REQUIRED BY SHIVE-HATTERY, INC. AT THE CONTRACTOR'S EXPENSE. WORK DONE CONTRARY TO THE INSTRUCTIONS OF SHIVE-HATTERY, INC., WORK DONE BEYOND THE LINES SHOWN ON THE PLANS OR ANY EXTRA WORK DONE WITHOUT AUTHORITY WILL NOT BE PAID FOR.
13. ALL SLOPES IN PAVEMENT SHALL BE UNIFORM TO AVOID PONDING.
14. ALL DIMENSIONS TO BACK-OF-CURB UNLESS NOTED OTHERWISE.
15. CONTOURS AND SPOT ELEVATIONS SHOWN ARE TO FINISHED GRADE.
16. NO PONDING OF WATER WILL BE ACCEPTED ON ANY NEW PAVEMENT OR OVERLAY AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY ANY AREAS OF EXISTING OR PROPOSED PAVEMENTS THAT HAVE POTENTIAL TO POND WATER AND MAKE ANY ADJUSTMENTS NECESSARY TO ENSURE THAT WATER WILL POSITIVELY DRAIN ACROSS THE PAVING OR OVERLAY.
17. STAGING LOCATION FOR CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER AND DEVELOPERS.
18. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES NECESSARY TO PROTECT AGAINST SILTATION, EROSION, AND DUST POLLUTION ON THE PROJECT SITE AND ANY OFF SITE BORROW OR DISPOSAL AREAS USED FOR THIS PROJECT. COMPLY WITH SOIL EROSION CONTROL REQUIREMENTS OF IOWA CODE, FEDERAL REGULATIONS, AND LOCAL ORDINANCES.
19. CONTRACTOR SHALL NOT DISTURB VEGETATION OUTSIDE GRADING LIMITS. CONTRACTOR SHALL MINIMIZE DISTURBANCE WITHIN GRADING LIMITS TO THAT NECESSARY TO ACHIEVE PROPOSED GRADES AS SHOWN.
20. ALL AREAS DISTURBED BY CONSTRUCTION, NOT DESIGNATED AS PLANTED, SHALL BE SODDED OR SEEDED ACCORDING TO THE CONSTRUCTION PLANS.
21. CONTRACTOR TO PROVIDE TRAFFIC CONTROL ACCORDING TO MUTCD STANDARDS AND COORDINATE WITH THE CITY OF BONDURANT FOR ANY AND ALL PERMITTING RELATED TO TRAFFIC CONTROL IN THE PUBLIC R.O.W.
22. THE SITE SHALL BE MAINTAINED IN COMPLIANCE WITH THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) AND ALL CITY CODES APPLICABLE ON THE DATE OF SITE PLAN APPROVAL.
23. NOTIFY UTILITY COMPANIES WHO HAVE FACILITIES THAT ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS OF THE SCHEDULE PRIOR TO EACH STAGE OF CONSTRUCTION.
24. CONTROL DUST SPREADING FROM ALL WORK AND STAGING AREAS.
25. CONTRACTOR TO COORDINATE ANY GRADE ADJUSTMENTS WITH THE DESIGN ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
26. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK OF ALL SUBCONTRACTOR(S) INVOLVED IN THE PROJECT.
27. ALL EXISTING UTILITY STRUCTURES SHALL BE ADJUSTED TO FINAL FINISH GRADES.
28. SIGNING, STRIPING, OR OTHER TRAFFIC CONTROL DEVICES ON THE DRIVEWAY APPROACHES TO PUBLIC STREETS SHOULD CONFORM TO THE (MUTCD) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (FEDERAL HIGHWAY ADMINISTRATION, 2009 EDITION).

WATER LINE CONSTRUCTION NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES AND WHETHER ADDITIONAL UTILITIES EXIST.
2. WATER TO BE INSTALLED WITH A MINIMUM COVER OF 5 FEET DEEP OR LOWER TO ACCOMMODATE UTILITY CROSSINGS.
3. CONTACT FIRE DEPARTMENT OF ANY CHANGES THAT AFFECT FIRE/EMERGENCY ACCESS TO SITE, BUILDING, FDC'S, PIV'S, HYDRANTS, AND FRONT DOORS.
4. ALL WATER LINE SHALL BE PVC C900.
5. ALL EXISTING AND PROPOSED HYDRANTS AND VALVES SHALL BE ADJUSTED TO FINAL GRADES.
6. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF AN APPROVED BACKFLOW PREVENTION ASSEMBLY(IES) FOR CONTAINMENT IN ALL NEW CONSTRUCTION.

CONSTRUCTION NOT SPECIFICALLY DETAILED OR SPECIFIED WITHIN THE PLANS OR PROJECT SPECIFICATIONS SHALL CONFORM TO MOST RECENT EDITION OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS).

GRADING AND EROSION CONTROL NOTES:

1. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
2. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL.
3. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
4. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
5. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
6. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
7. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE SEEDED. THESE AREAS SHALL BE SEEDED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS.
8. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
9. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.
10. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, WATTLES, INLET PROTECTION, ETC.) TO PREVENT EROSION.
12. ALL STORM SEWER INTAKES THAT RECEIVE STORMWATER RUNOFF FROM DISTURBED AREAS SHALL BE PROVIDED WITH A FILTER SACK. SEE DETAIL.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION, PERIODIC CHECKING AND REINSTALLATION OF EROSION AND SEDIMENTATION CONTROL MEASURES.
14. OWNER SHALL ASSUME RESPONSIBILITY FOR ALL EROSION CONTROL UNTIL DELEGATED TO CONTRACTOR ONCE THE PROJECT CONSTRUCTION STARTS.
15. A SWPPP WILL BE PREPARED AND WILL BE MADE AVAILABLE TO THE CONTRACTOR AND SUBMITTED TO THE CITY PRIOR TO CONSTRUCTION.

STORM SEWER CONSTRUCTION NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES AND WHETHER ADDITIONAL UTILITIES EXIST.
2. PIPE LENGTHS SHOWN ARE INSIDE EDGE TO INSIDE EDGE OF STRUCTURES.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL STORM FLOW ONSITE UNTIL NEW SYSTEM IS INSTALLED.
4. RCP STORM SEWER PIPING TO HAVE WRAPPED JOINTS, AND PIPE TRENCHES WILL BE BACKFILLED WITH GRANULAR MATERIAL TO AID IN PAVEMENT SUBDRAINAGE.
5. ALL HDPE PIPE SHALL BE DUAL-WALLED.
6. CONTRACTOR TO MODIFY EXISTING INVERTS TO ACCOMMODATE NEW PIPE CONNECTIONS.
7. ALL HDPE BENDS AND CONNECTIONS SHALL BE MANUFACTURED CONNECTIONS.
8. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING STORM SEWER WITHIN THE PROJECT AREA AT THE COMPLETION OF THE PROJECT.
9. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING AND REBUILDING STORM STRUCTURES AS NECESSARY TO MATCH FINAL GRADES.
10. WHERE RCP STORM SEWER CROSSES THE WATER SERVICE, PROVIDE O-RING GASKETS AT JOINTS ONE FULL LENGTH OF SEWER PIPE ON EITHER SIDE OF THE CROSSING ACCORDING TO CITY OF BONDURANT REQUIREMENTS.

SANITARY SEWER CONSTRUCTION NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES AND WHETHER ADDITIONAL UTILITIES EXIST.
2. PIPE LENGTHS SHOWN ARE CENTERLINE TO CENTERLINE OF STRUCTURES.
3. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING AND REBUILDING MANHOLES AS NECESSARY TO MATCH FINAL GRADES. CHIMNEY SEALS SHALL BE USED.

LEGEND

GENERAL SITE

PLAN MARK	DESCRIPTION
▭	PROPOSED BUILDING
◉	GUARD POST/ BOLLARD
♿	HANDICAPPED PARKING
◑	SHRUB
⊙	DECIDUOUS TREE
✺	CONIFEROUS TREE
	SINGLE POLE SIGN
	DOUBLE POLE SIGN
o——▫—▫	TRAFFIC SIGNAL WITH ARM
——o——	CHAINLINK FENCE
⌒⌒⌒⌒⌒⌒⌒	TREE LINE
— — 621 — —	EXISTING MINOR CONTOUR
— — 620 — —	EXISTING MAJOR CONTOUR
——621——	MINOR CONTOUR
——620——	MAJOR CONTOUR
▭	LIGHT DUTY PCC PAVING
▨	MEDIUM DUTY PCC PAVING
■	HEAVY DUTY PCC PAVING
⛶	PCC SIDEWALK PAVING

LEGEND

GENERAL SITE DESIGN

PLAN MARK	DESCRIPTION
625.00	SPOT ELEVATION
TC/GU	TOP OF CURB AND GUTTER ELEVATION
2%	SLOPE ARROW
⤳	FLOW ARROW
➡	TRAFFIC FLOW
∿∿∿∿∿	SILT FENCE
▬ ▬ ▬	▬	LIMITS
⮥	LEFT-TURN ARROW
⮧	RIGHT-TURN ARROW
⇨	THRU ARROW
⇧⇨	LEFT/ THRU ARROW
⇨⇩	RIGHT/ THRU ARROW
⇧⇨⇩	LEFT/ RIGHT/ THRU ARROW

LEGEND

UTILITIES

PLAN MARK	DESCRIPTION
ØØ	UTILITY POLE W/TRANSFORMER
⚲	FIRE HYDRANT
⊲	FLARED END SECTION
[	UTILITY END CAP
⋈	VALVE
C	CABLE TV PEDESTAL
⊡	CLEANOUT
	JUNCTION BOX
○	MANHOLE
Ⓓ	EXISTING STORM MANHOLE
	ELECTRICAL MANHOLE
Ⓢ	EXISTING SANITARY MANHOLE
○	TELEPHONE MANHOLE
T	TELEPHONE PEDESTAL
□	VAULT BOX
HH	HANDHOLE
S	SIGNAL BOX
G	GAS METER
	ELECTRIC METER
□	TRANSFORMER
W	WATER METER
	AIR CONDITIONER
▥	EXISTING CURB INLET
⊜	EXISTING INTAKE - CIRCLE
▤▤ ▤	PROPOSED CURB INLET
Ⓓ	PROPOSED STORM MANHOLE
Ⓢ	PROPOSED SANITARY MANHOLE

LEGEND

SURVEY

PLAN MARK	DESCRIPTION
⯐	BENCH MARK
●	IRON ROD - FOUND
○	IRON ROD - SET
▲	MONUMENT FOUND
✱	X CUT FOUND

LEGEND

UTILITY LINES

EXISTING LINE TYPE	DESCRIPTION	PROPOSED LINE TYPE
——OE——	ELECTRIC - OVERHEAD	——OE——
— — —E— —	ELECTRIC - UNDERGROUND	— — —E— —
—·G·——··	GAS MAIN	—·G·——··
—·—W—·—	WATER MAIN	—·—W—·—
—)——)	SANITARY SEWER	—)——)
—>——>	STORM SEWER	—>——> ▬ ▬ ▬ ▬ ▬
——OT——	TELEPHONE - OVERHEAD	——OT——
— — —T— —	TELEPHONE - UNDERGROUND	— — —T— —
——OC——	CABLE LINE - OVERHEAD	——OC——
— — —C— —	CABLE LINE - UNDERGROUND	— — —C— —
— — —FO— —	FIBER OPTICS	— — —FO— —

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515.223.8104 | www.shive-hattery.com
Iowa | Illinois | Indiana

PROJECT BLUEJAY

BONDURANT, IOWA

PRELIMINARY - NOT FOR CONSTRUCTION

DRAWN: ---
APPROVED: ---
ISSUED FOR: SITE PLAN SUBMITTAL
DATE: 2019-09-20
PROJECT NO: 419393-0
FIELD BOOK: ---
CLIENT NO: ---

GENERAL NOTES

C001

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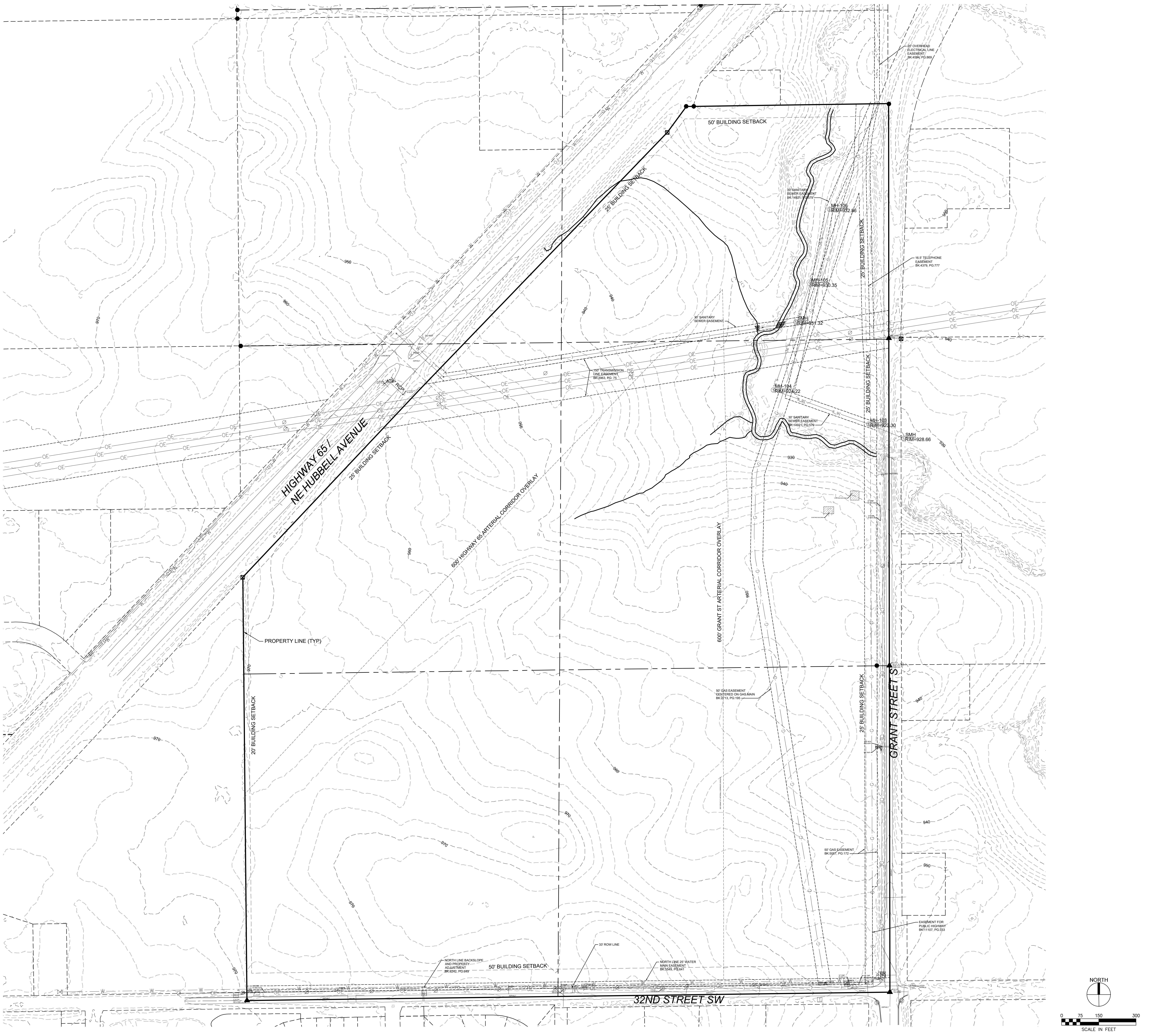
HIGHWAY 65 /
NE HUBBELL AVENUE
32ND STREET SW
GRANT STREET S
50' BUILDING SETBACK
25' BUILDING SETBACK
20' BUILDING SETBACK
PROPERTY LINE (TYP)
600' HIGHWAY 65 ARTERIAL CORRIDOR OVERLAY
600' GRANT ST ARTERIAL CORRIDOR OVERLAY
20' OVERHEAD ELECTRICAL LINE EASEMENT BK:4594, PG:869
30' SANITARY SEWER EASEMENT BK:14921, PG:579
MH-106 RIM=932.86
MH-105 RIM=930.35
SMH RIM=931.32
16.5' TELEPHONE EASEMENT BK:4379, PG:777
30' SANITARY SEWER EASEMENT
150' TRANSMISSION LINE EASEMENT BK:3963, PG: 75
MH-104 RIM=924.22
30' SANITARY SEWER EASEMENT BK:14921, PG:579
MH-103 RIM=923.30
SMH RIM=928.66
NO PASSING
EXISTING BUILDING
24" CMP
24" RCP
DO NOT
YIELD
CONCRETE
ASPHALT
NE COR SE 1/4 - SE 1/4 SEC 1-79-23 FND PK NAIL
50' GAS EASEMENT CENTERED ON GAS MAIN BK:2713, PG:195
4'X3' BOX CULVERT
RIP RAP
50' GAS EASEMENT BK:5087, PG:172
EASEMENT FOR PUBLIC HIGHWAY BK:11107, PG:333
33' ROW LINE
NORTH LINE BACKSLOPE AND PROPERTY ADJUSTMENT BK:8242, PG:649
NORTH LINE 25' WATER MAIN EASEMENT BK:5549, PG:641
12" CMP
35 MPH
GRAVEL
FIBER
930
940
950
960
970
NORTH
0
75
150
300
SCALE IN FEET

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PROJECT BLUEJAY

BONDURANT, IOWA

PRELIMINARY - NOT FOR CONSTRUCTION

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APPROVED: CRB
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DATE: 2019-09-20
PROJECT NO: 419393-0
FIELD BOOK: ---
CLIENT NO: ---

EXISTING CONDITIONS

C002

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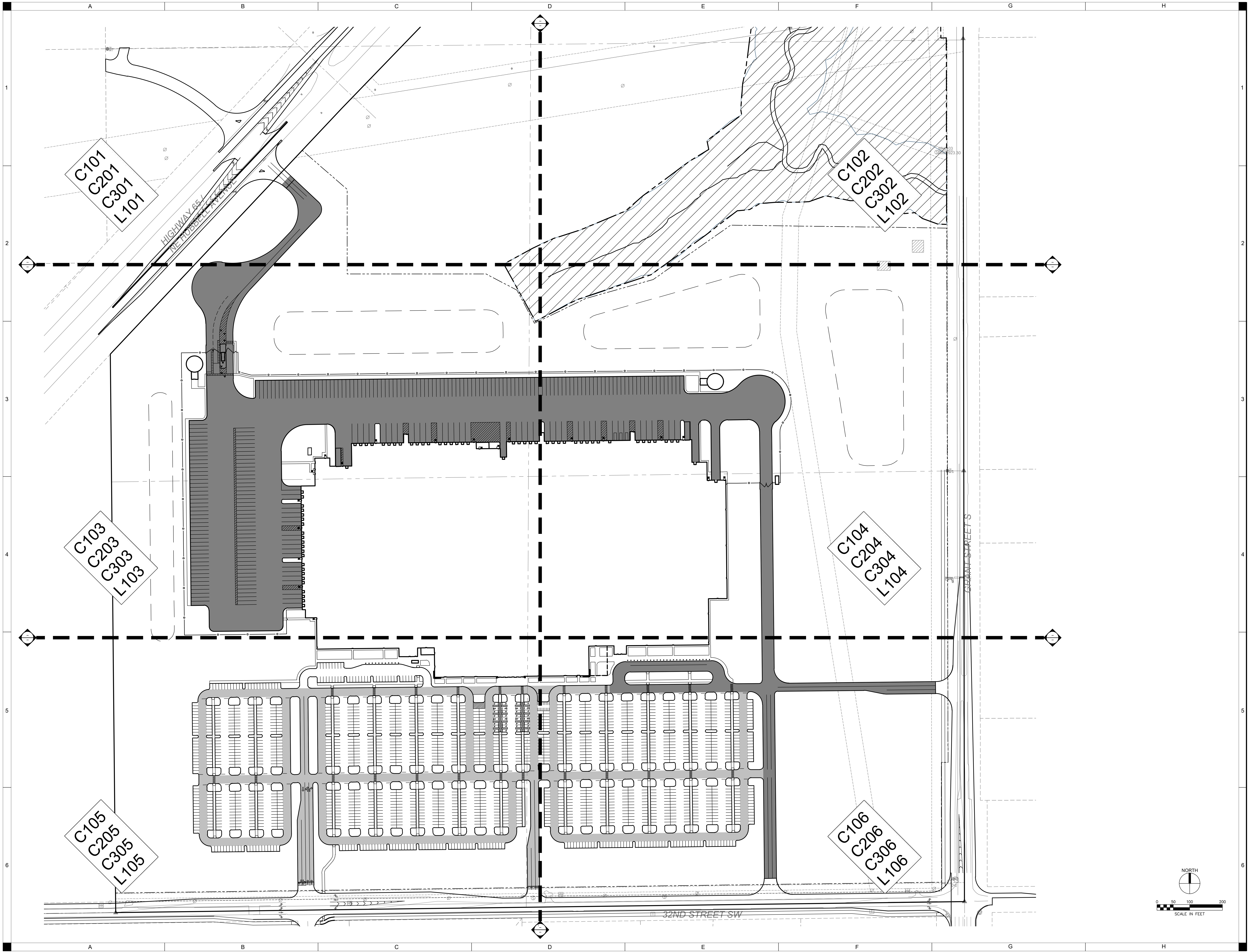

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OVERALL PLAN

C100

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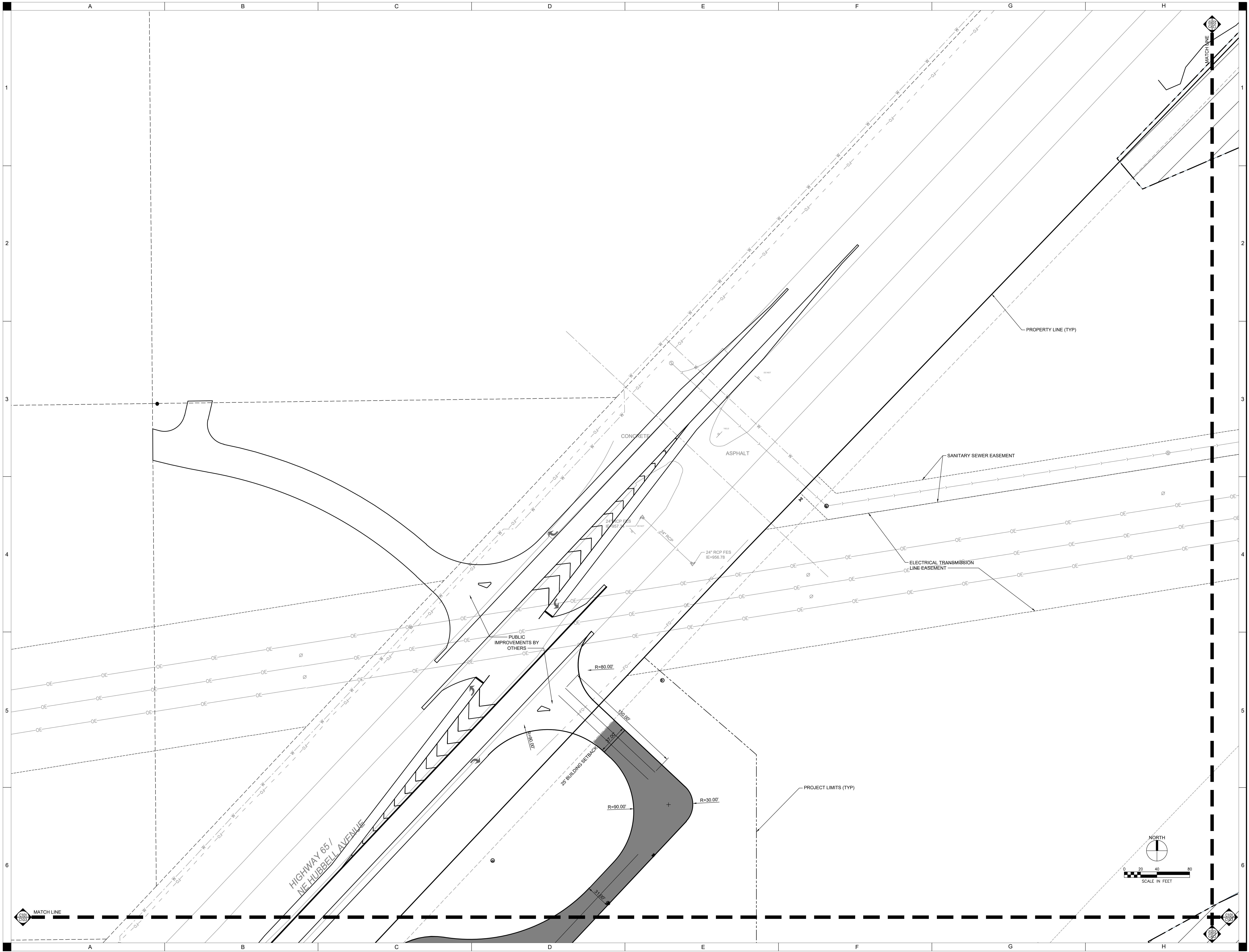

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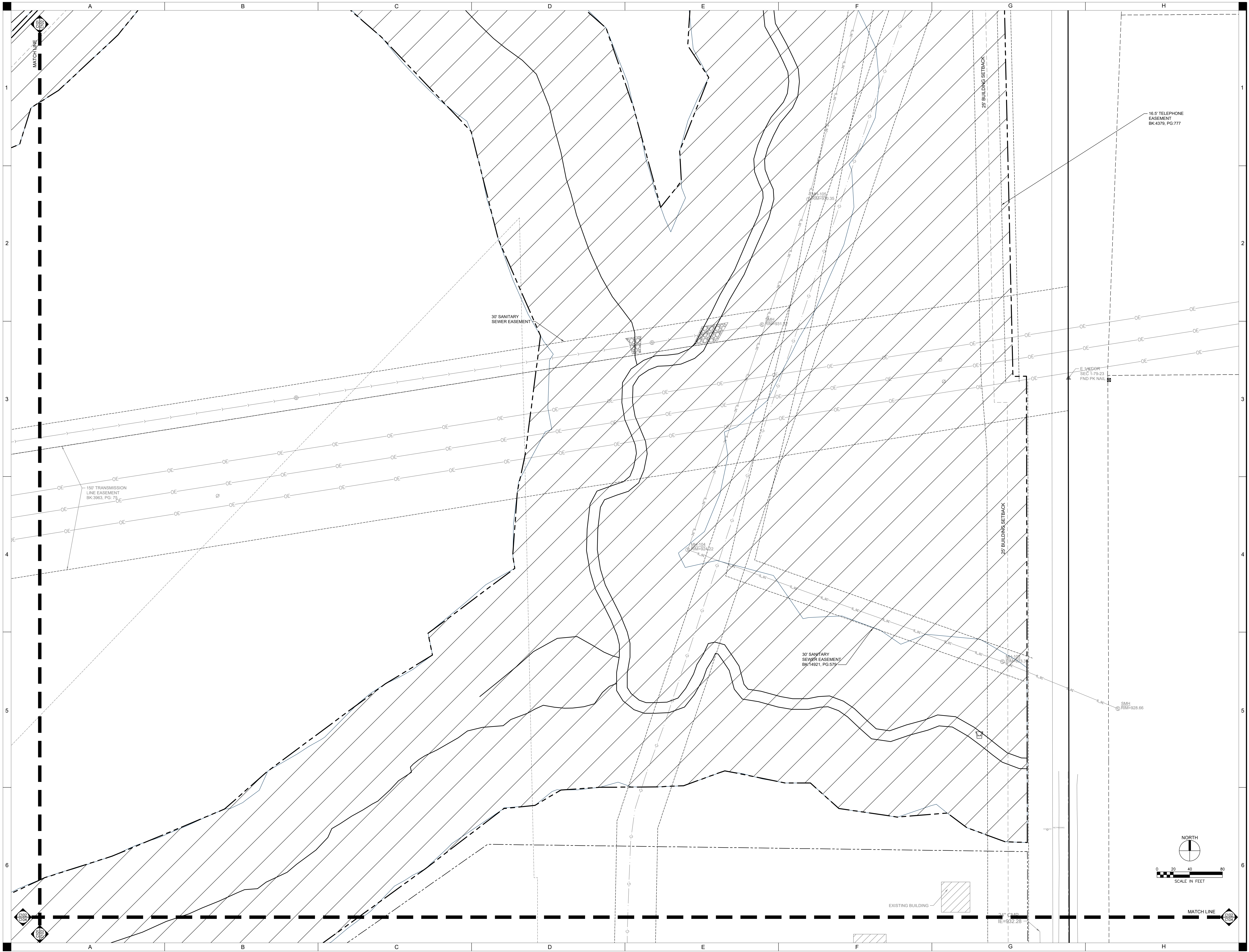
SITE PLAN

C101



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CLIENT NO: ---

SITE PLAN

C102

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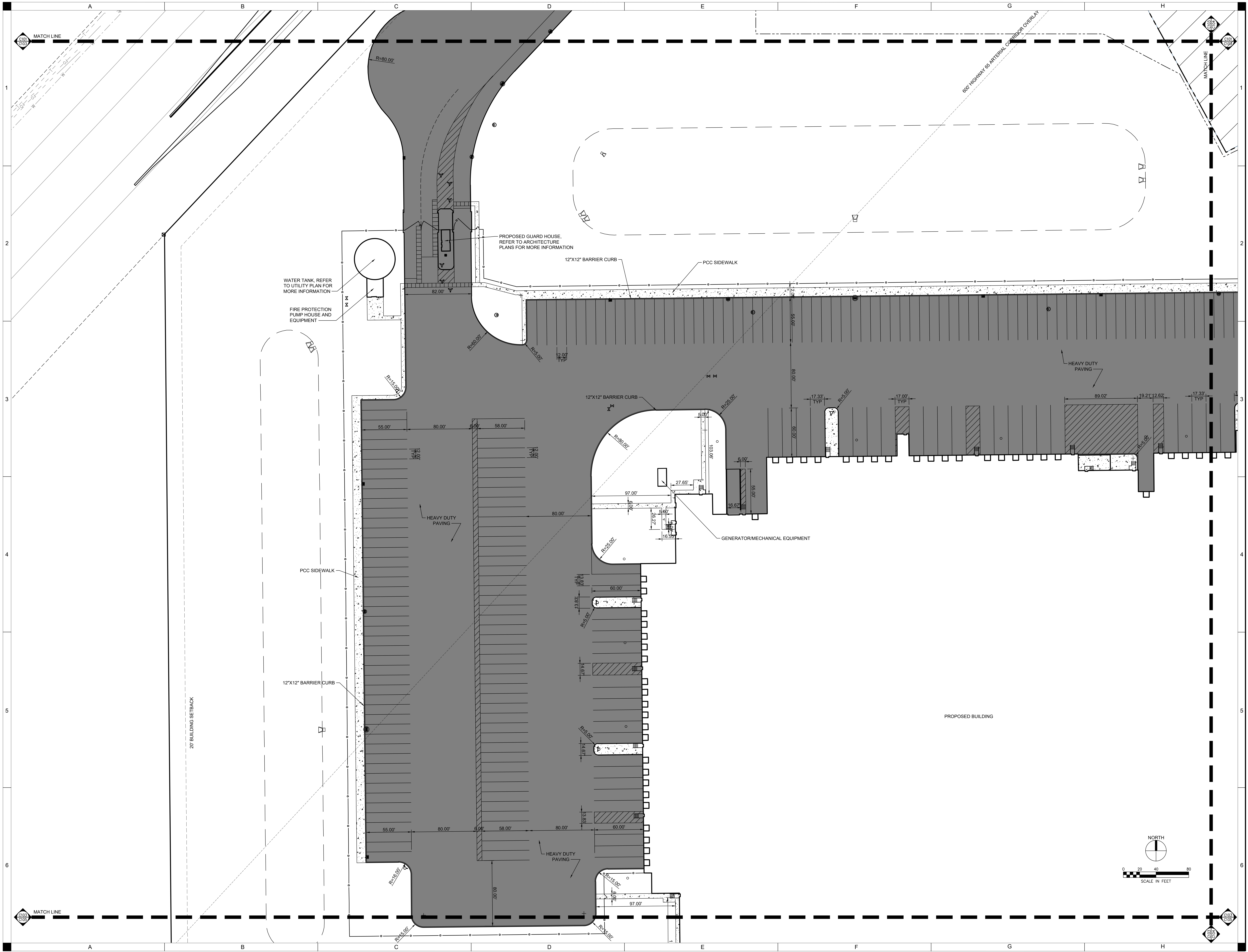

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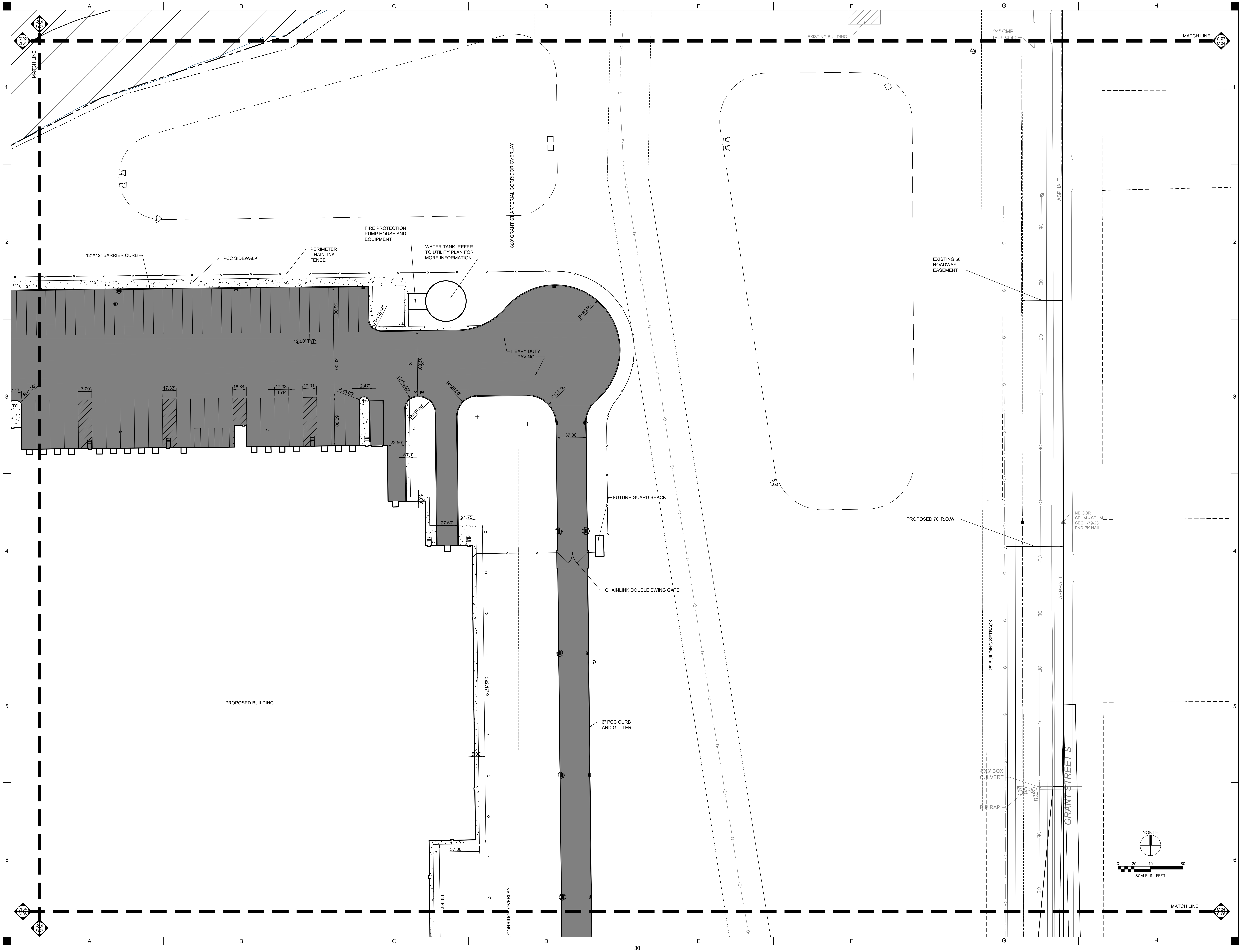
CLIENT NO: ---

SITE PLAN

C103



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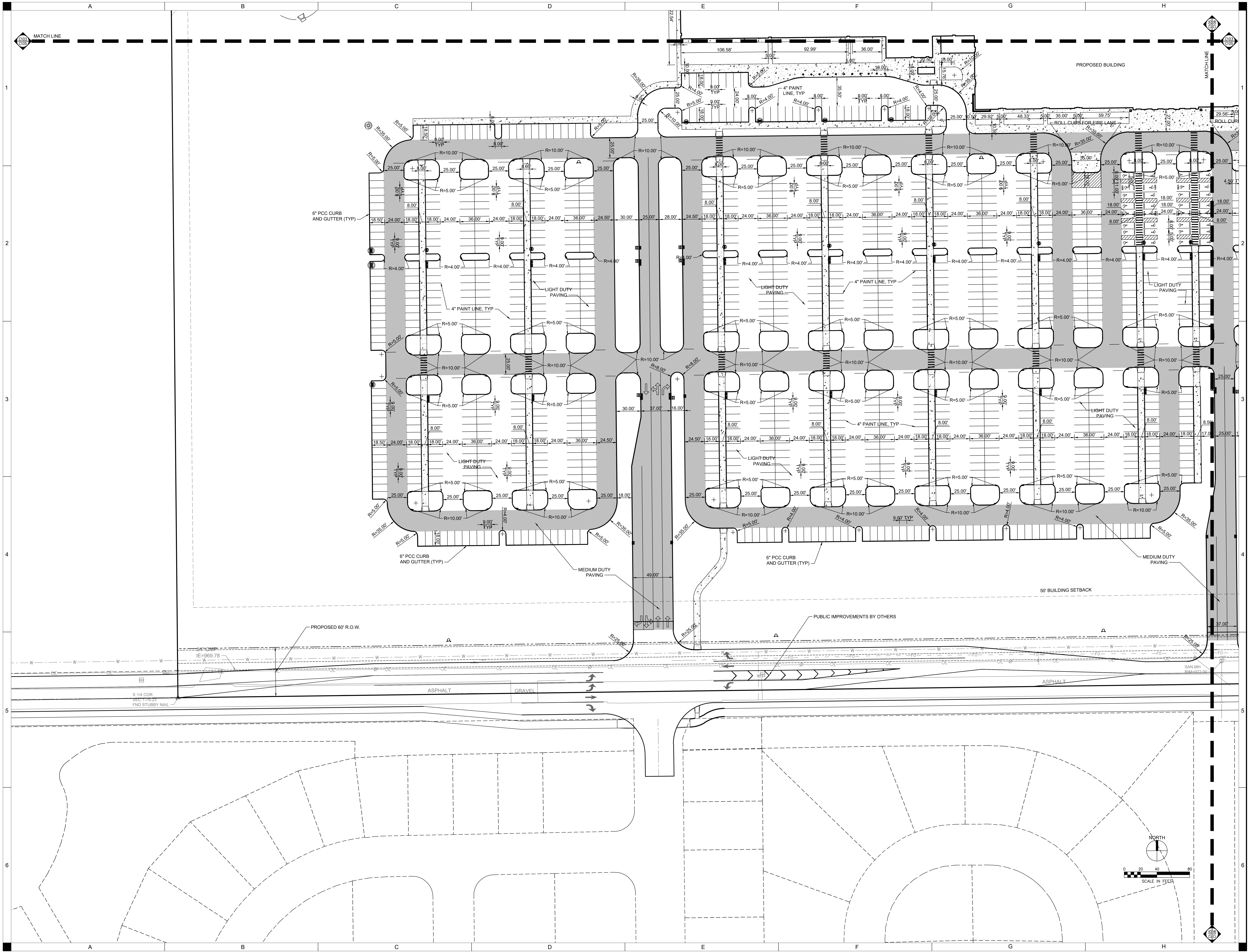
SITE PLAN

C104



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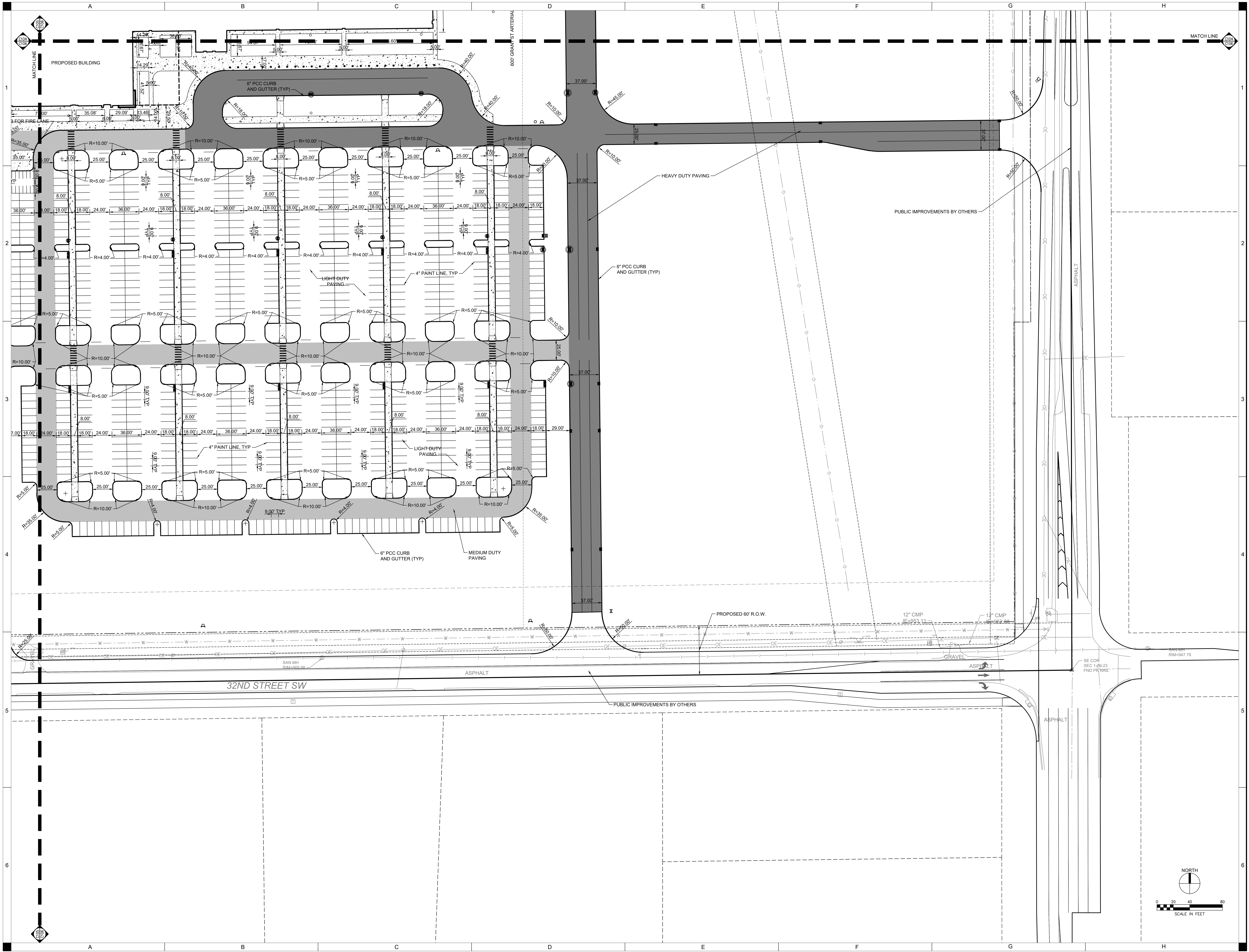
SITE PLAN

C105



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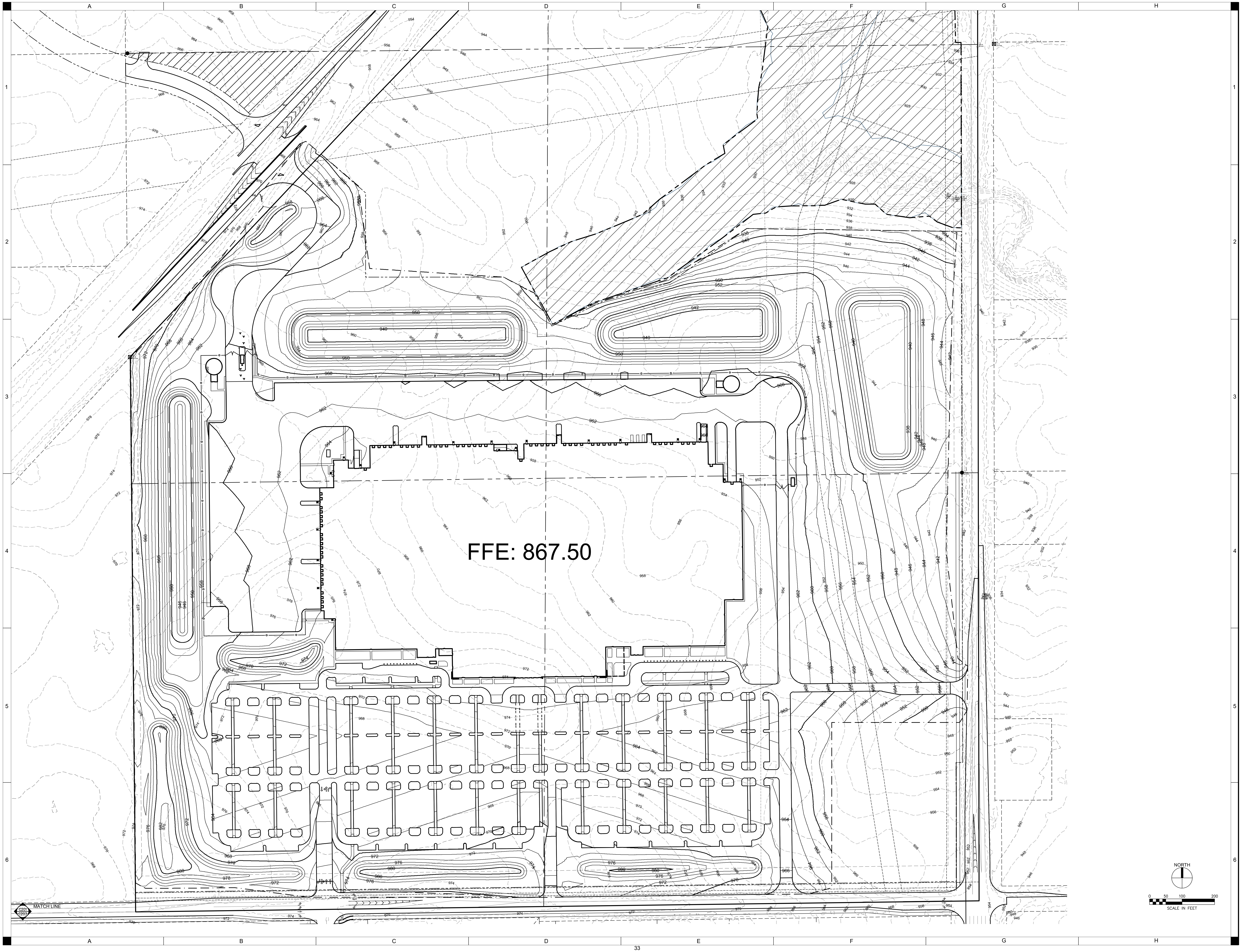
SITE PLAN

C106



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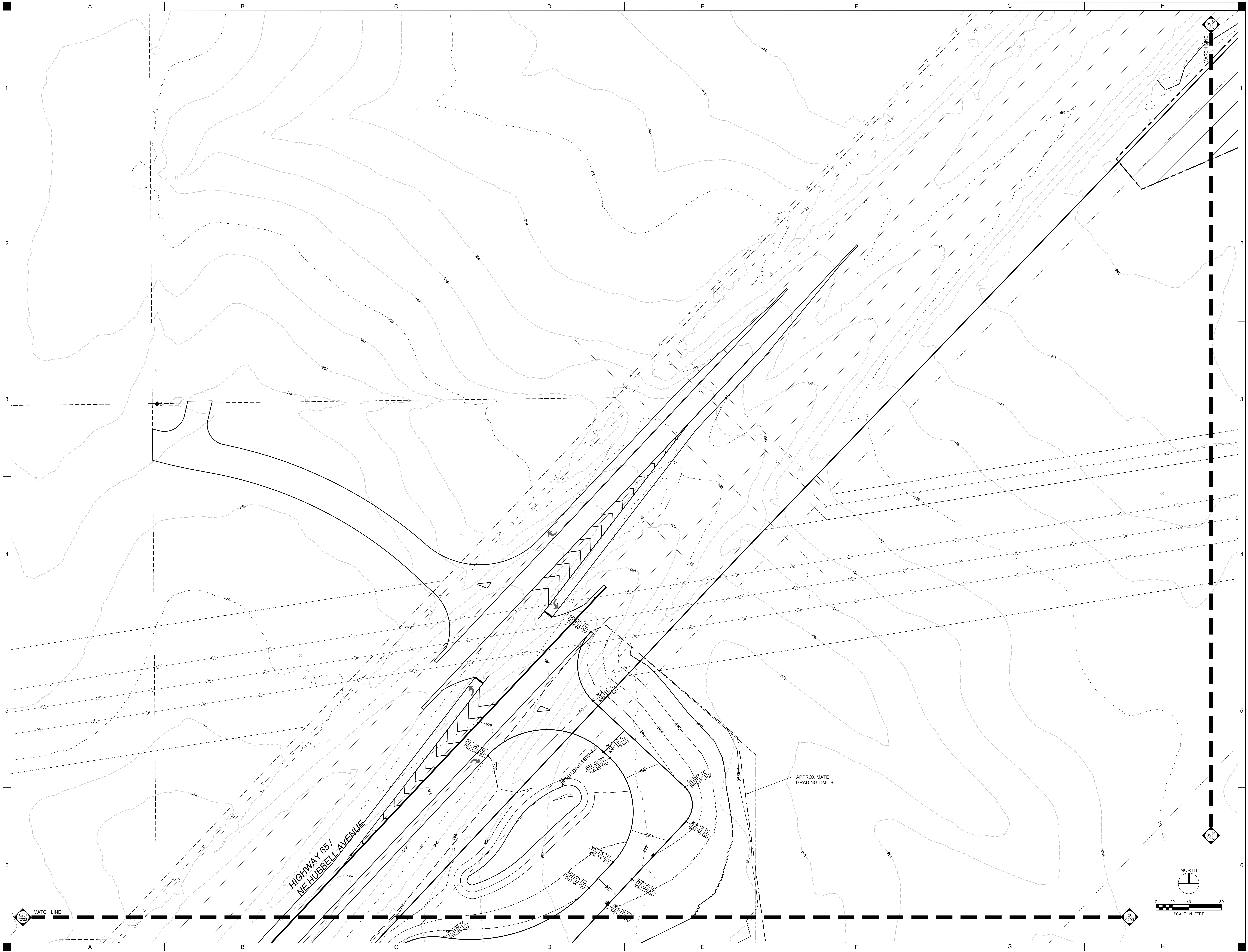
CLIENT NO: ---

OVERALL GRADING PLAN

C200



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GRADING PLAN

C201

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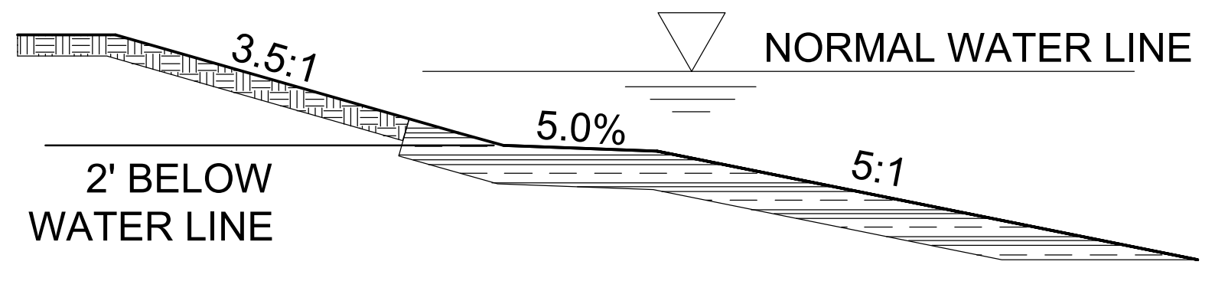
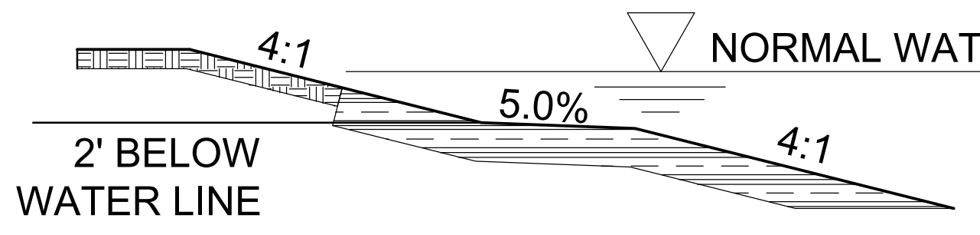


① BASIN 1 EDGE
NOT TO SCALE



② BASIN 2,3, & 4 EDGE
NOT TO SCALE

BASIN 1 HYDRAULIC DESIGN BASIS

BOTTOM OF BASIN	945.00
INLET FLOWLINE	951.00
TOP OF BASIN ELEVATION	958.00
100 YEAR STORAGE VOLUME	410,964 CF
100 YEAR DETENTION ELEVATION	956.67
100 YEAR DISCHARGE	58.46 CFS

BASIN 2 HYDRAULIC DESIGN BASIS

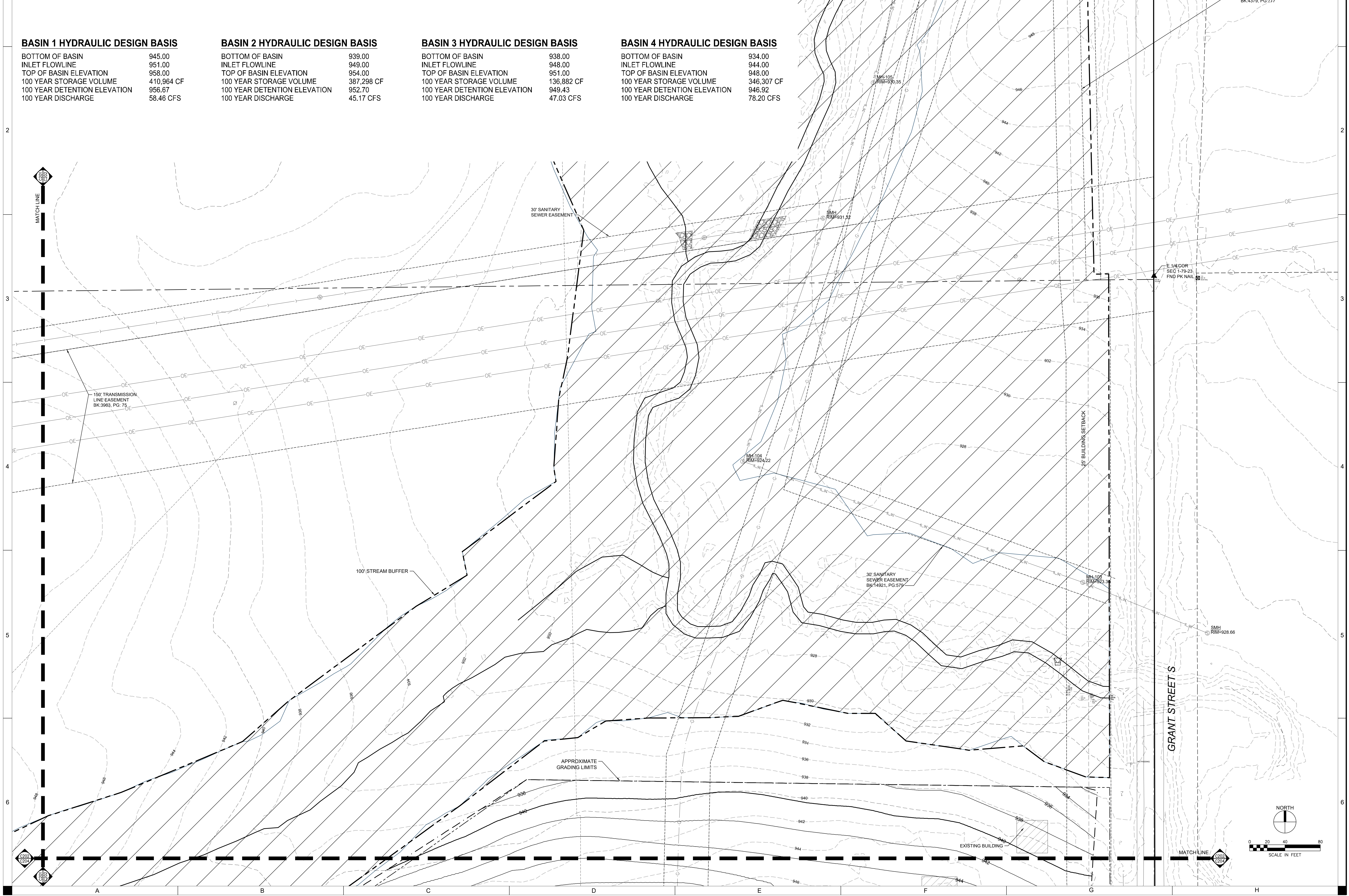
BOTTOM OF BASIN	939.00
INLET FLOWLINE	949.00
TOP OF BASIN ELEVATION	954.00
100 YEAR STORAGE VOLUME	387,298 CF
100 YEAR DETENTION ELEVATION	952.70
100 YEAR DISCHARGE	45.17 CFS

BASIN 3 HYDRAULIC DESIGN BASIS

BOTTOM OF BASIN	938.00
INLET FLOWLINE	948.00
TOP OF BASIN ELEVATION	951.00
100 YEAR STORAGE VOLUME	136,882 CF
100 YEAR DETENTION ELEVATION	949.43
100 YEAR DISCHARGE	47.03 CFS

BASIN 4 HYDRAULIC DESIGN BASIS

BOTTOM OF BASIN	934.00
INLET FLOWLINE	944.00
TOP OF BASIN ELEVATION	948.00
100 YEAR STORAGE VOLUME	346,307 CF
100 YEAR DETENTION ELEVATION	946.92
100 YEAR DISCHARGE	78.20 CFS



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PROJECT BLUEJAY

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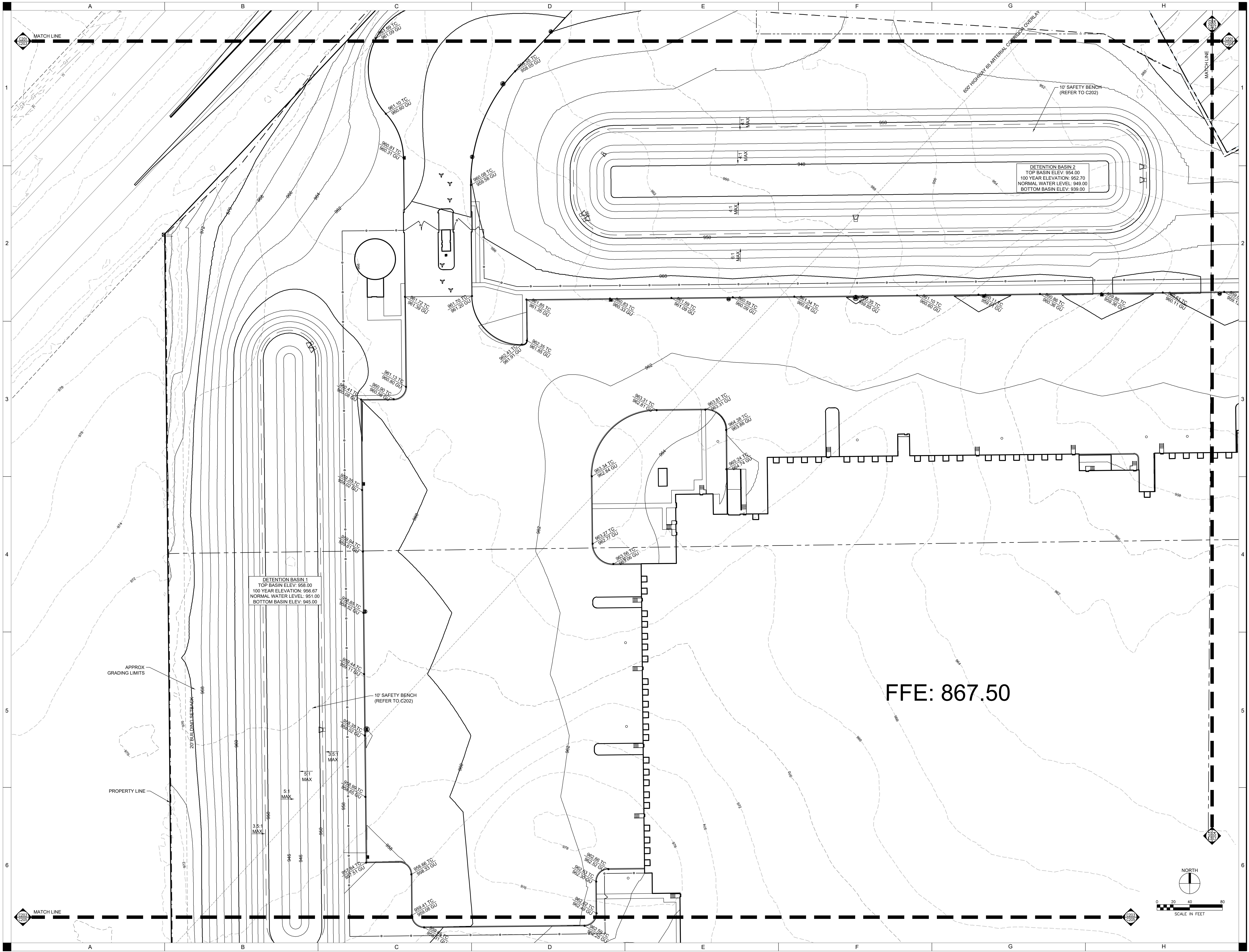
GRADING PLAN

C202



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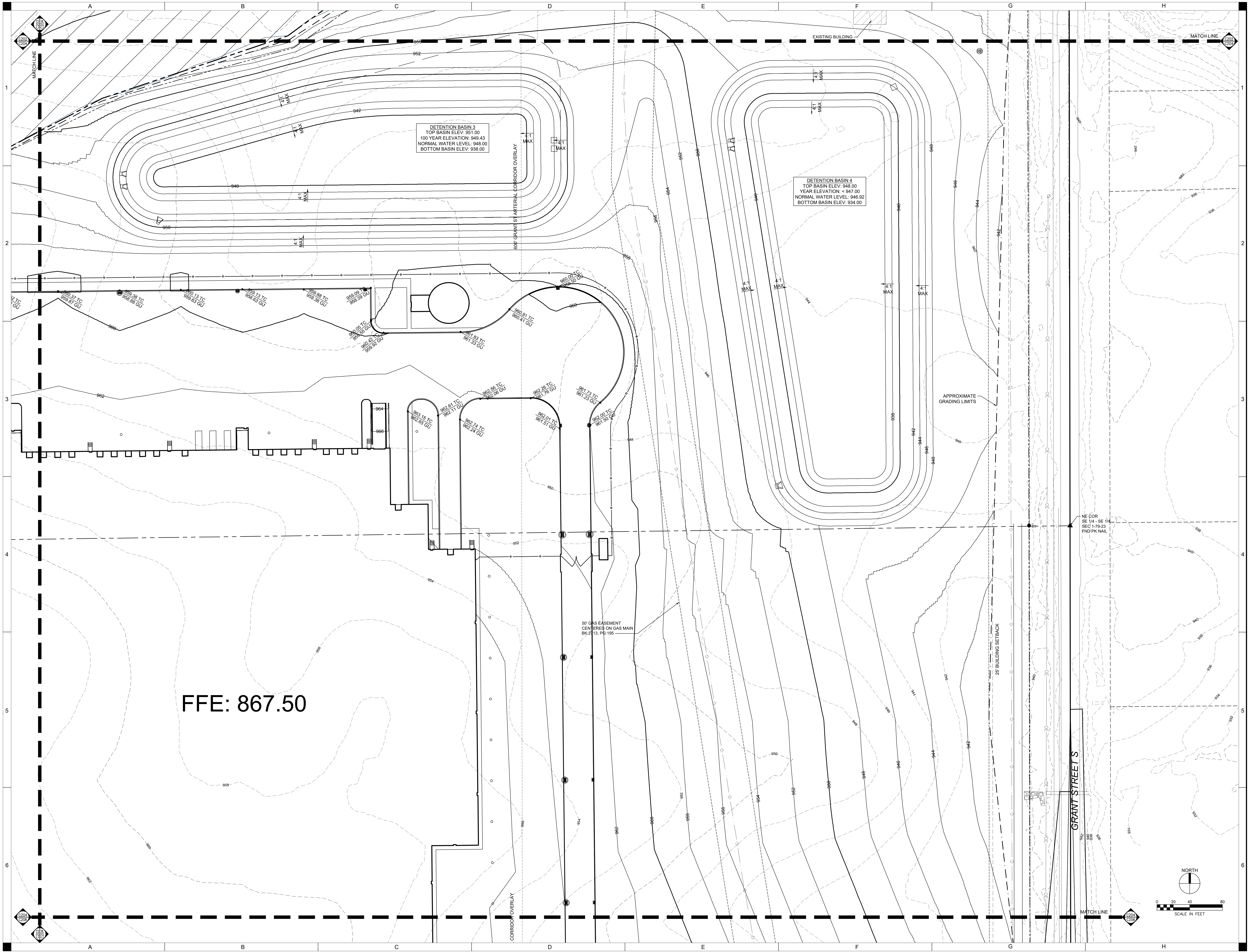
CLIENT NO: ---

GRADING PLAN

C203



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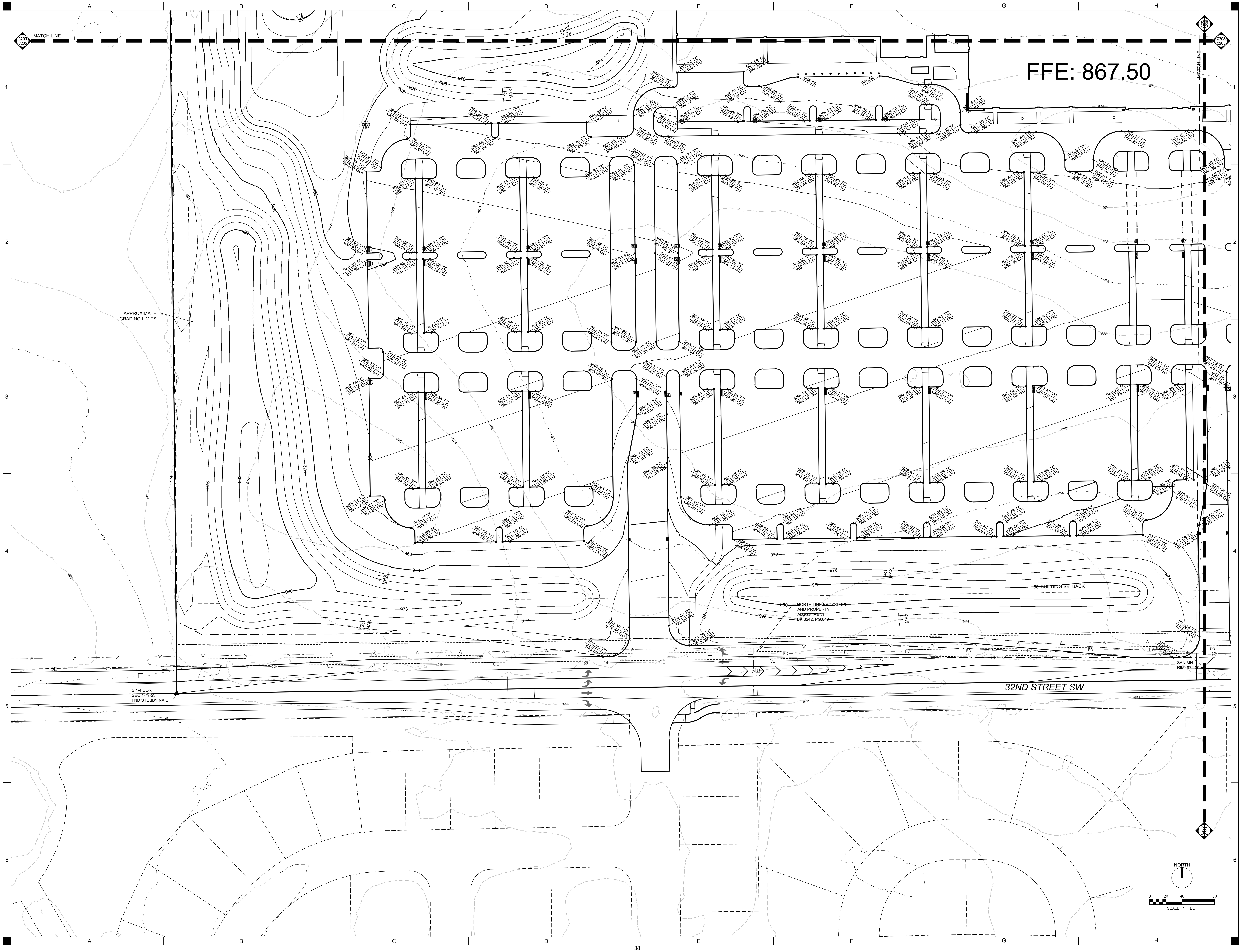
DATE: 2019-09-20
PROJECT NO: 419393-0
FIELD BOOK: ---
CLIENT NO: ---

GRADING PLAN

C204



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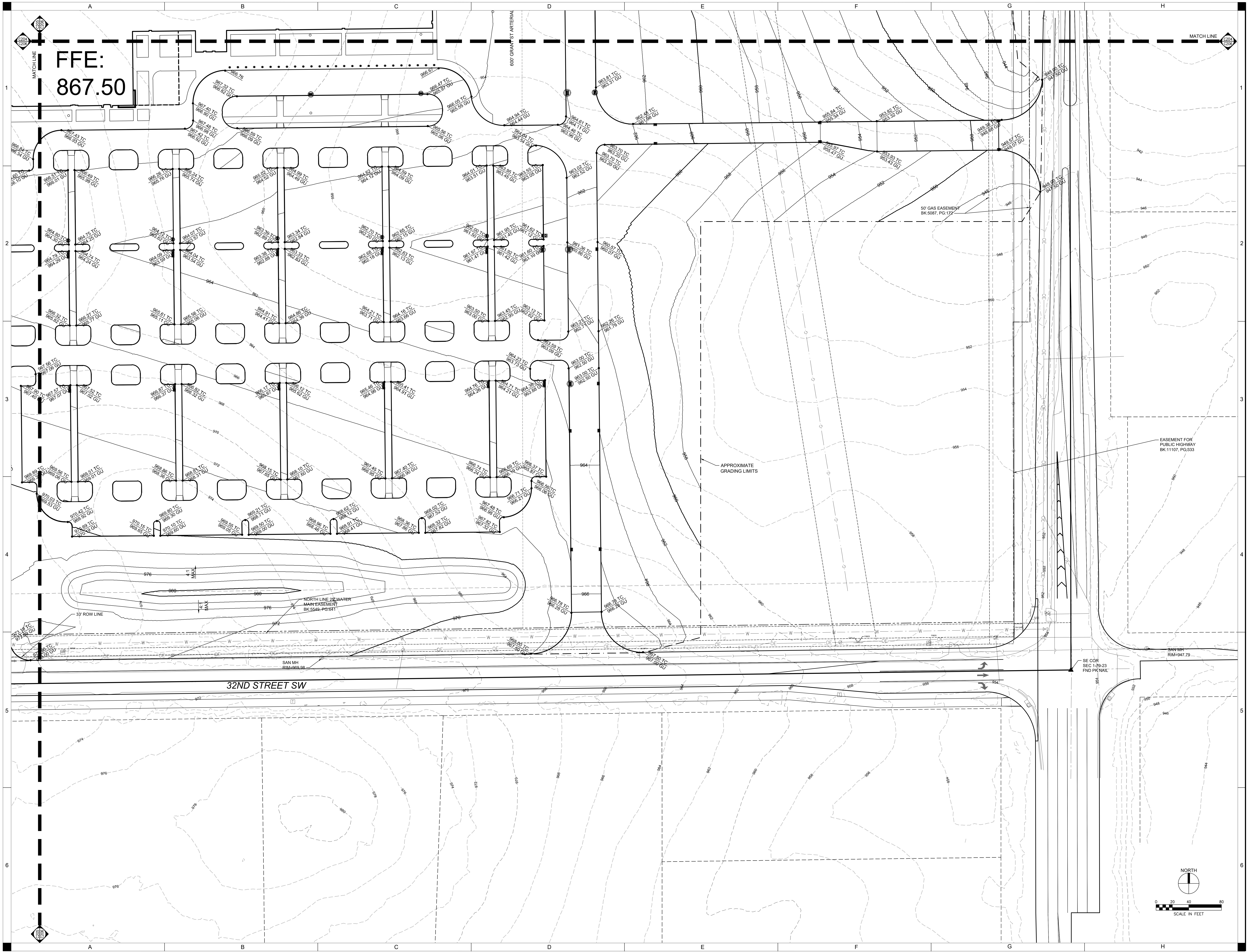
PROJECT NO: 419393-0
FIELD BOOK: ---
CLIENT NO: ---

GRADING PLAN

C205


FFE: 867.50
MATCH LINE
C204
C206
600' GRANT ST ARTERIAL
50' GAS EASEMENT BK:5087, PG:172
EASEMENT FOR PUBLIC HIGHWAY BK:11107, PG:333
APPROXIMATE GRADING LIMITS
NORTH LINE 25' WATER MAIN EASEMENT BK:5549, PG:641
33' ROW LINE
SAN MH RIM=969.98
SAN MH RIM=947.79
SE COR SEC 1-79-23 FND PK NAIL
32ND STREET SW
4:1 MAX
NORTH
0
20
40
80
SCALE IN FEET
A
B
C
D
E
F
G
H
1
2
3
4
5
6

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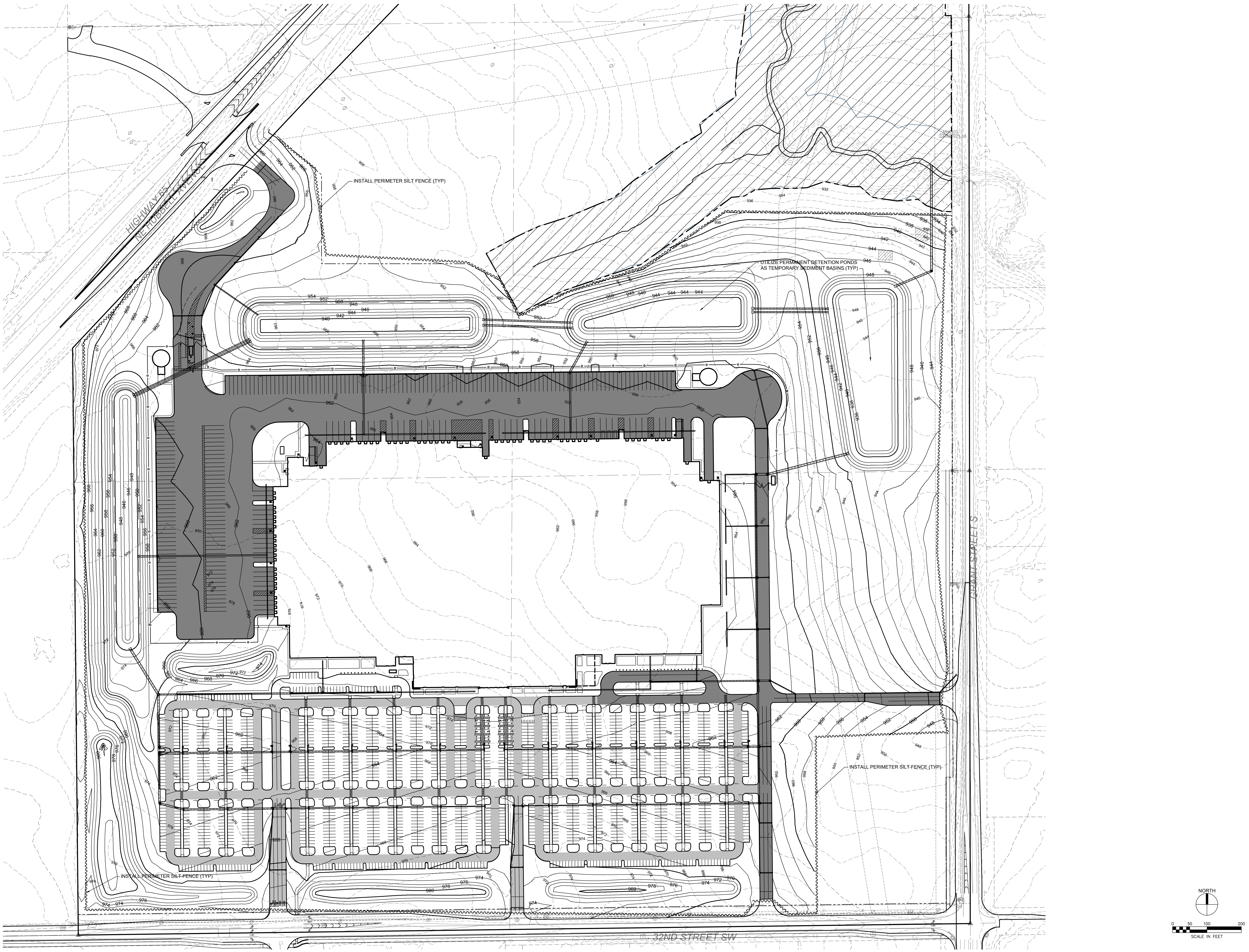
CLIENT NO: --

GRADING PLAN

C206


A
B
C
D
E
F
G
H
1
2
3
4
5
6
HIGHWAY 65 / NE HUBBELL AVENUE
INSTALL PERIMETER SILT FENCE (TYP)
UTILIZE PERMANENT DETENTION PONDS AS TEMPORARY SEDIMENT BASINS (TYP)
INSTALL PERIMETER SILT FENCE (TYP)
INSTALL PERIMETER SILT FENCE (TYP)
GRANT STREET S
32ND STREET SW
NORTH
0
50
100
200
SCALE IN FEET

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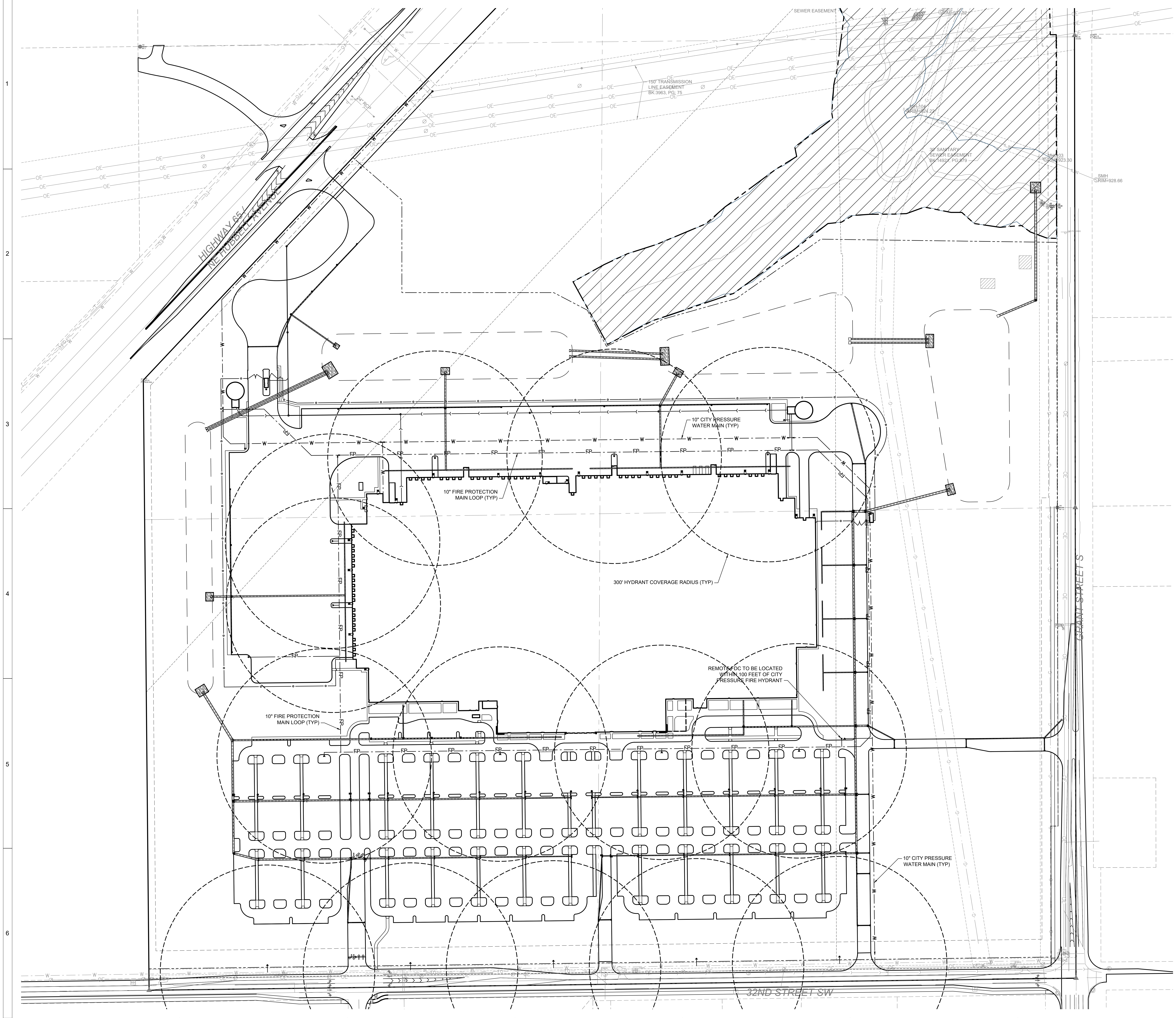
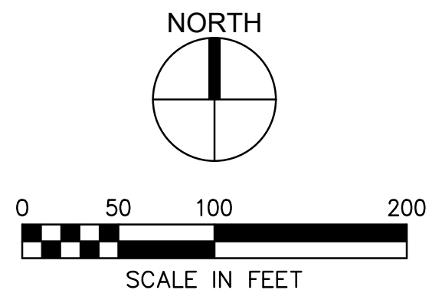
CLIENT NO: --

EROSION CONTROL
PLAN

C250


A
B
C
D
E
F
G
H
1
2
3
4
5
6
SEWER EASEMENT
150' TRANSMISSION LINE EASEMENT BK:3963, PG: 75
MH-104 RIM=924.22
30' SANITARY SEWER EASEMENT BK.14921, PG.579
MH-103 RIM=923.30
SMH RIM=928.66
RIM=931.32
HIGHWAY 65 / NE HUBBELL AVENUE
10" CITY PRESSURE WATER MAIN (TYP)
10" FIRE PROTECTION MAIN LOOP (TYP)
300' HYDRANT COVERAGE RADIUS (TYP)
REMOTE FDC TO BE LOCATED WITHIN 100 FEET OF CITY PRESSURE FIRE HYDRANT
10" FIRE PROTECTION MAIN LOOP (TYP)
10" CITY PRESSURE WATER MAIN (TYP)
GRANT STREET S
32ND STREET SW
OE
W
FP

FIRE HYDRANT NOTE:
1. ALL HYDRANTS ON CITY PRESSURE WATER MAIN TO BE STANDARD YELLOW COLOR.
2. ALL HYDRANTS ON FIRE PROTECTION LOOP TO BE PAINTED BLUE.



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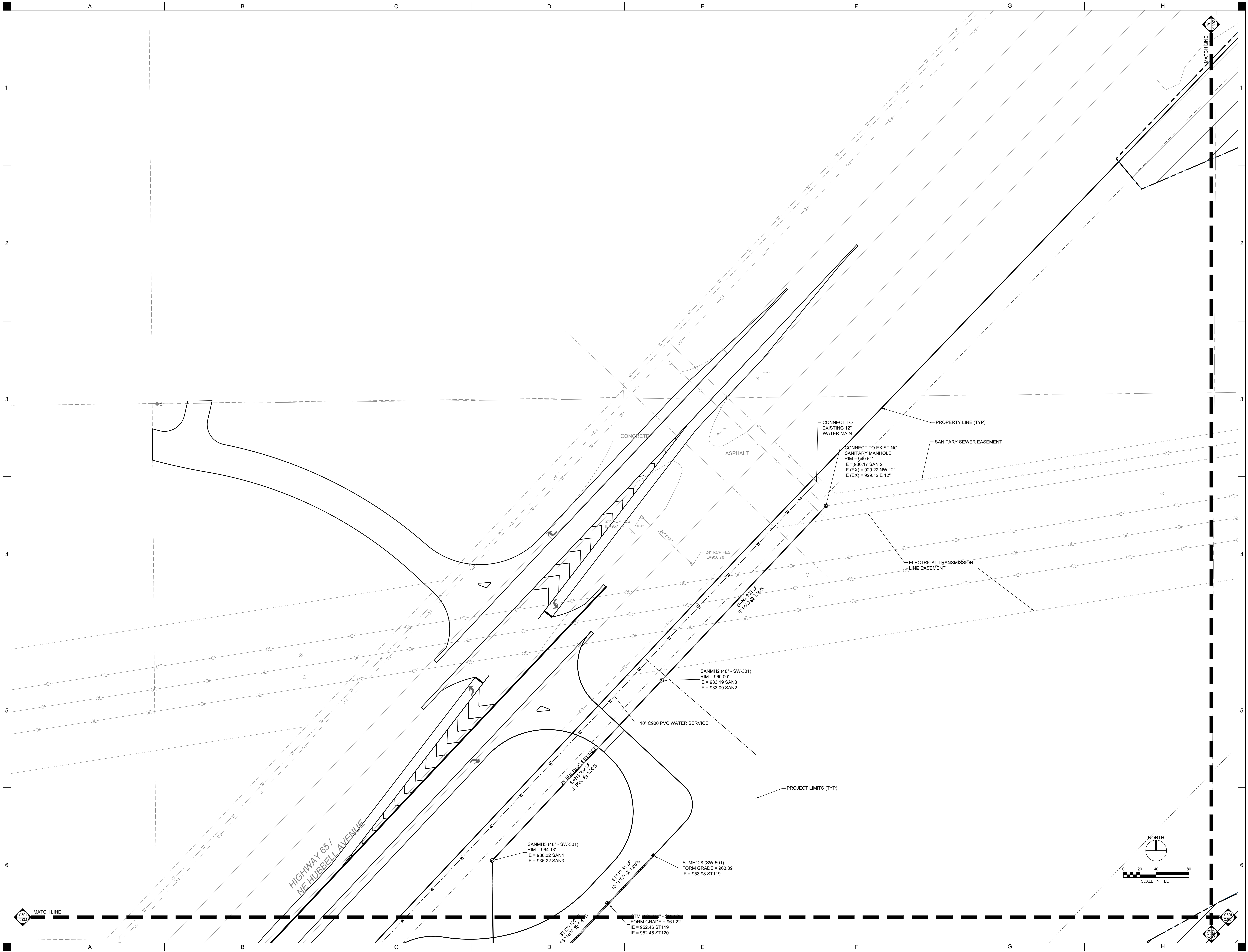
FIELD BOOK: ---
CLIENT NO: ---

OVERALL UTILITY
PLAN

C300



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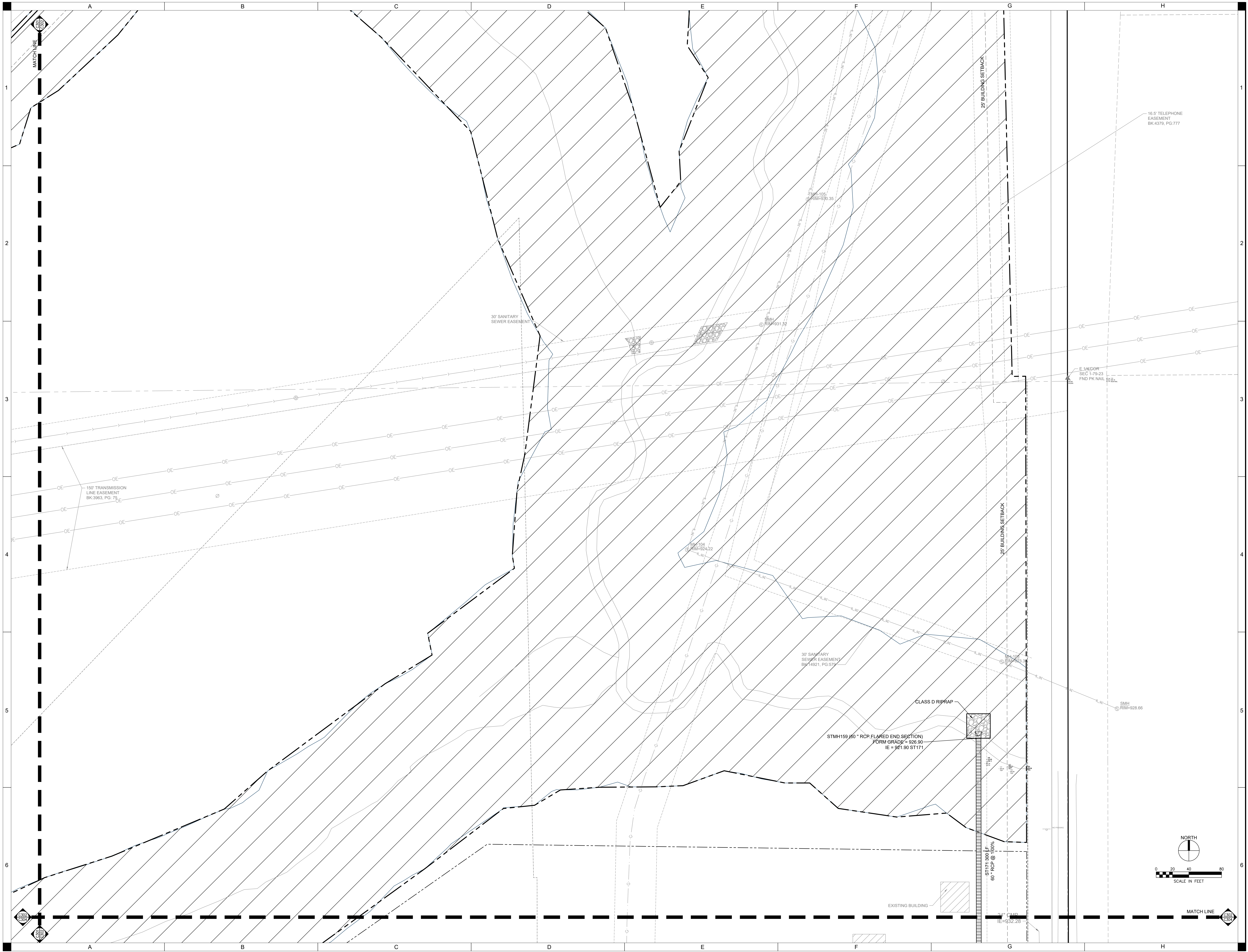
CLIENT NO: ---

UTILITY PLAN

C301



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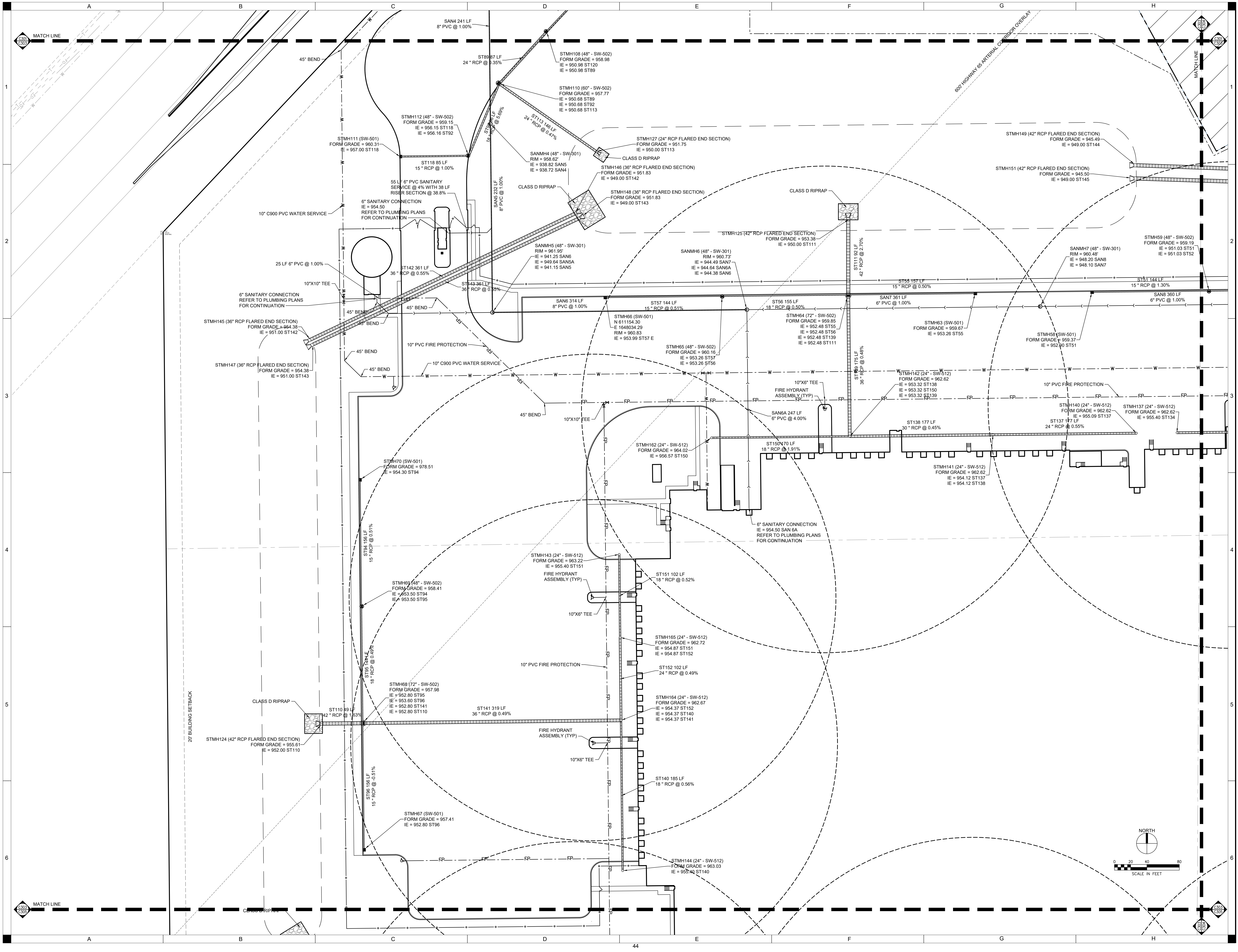
CLIENT NO: ---

UTILITY PLAN

C302



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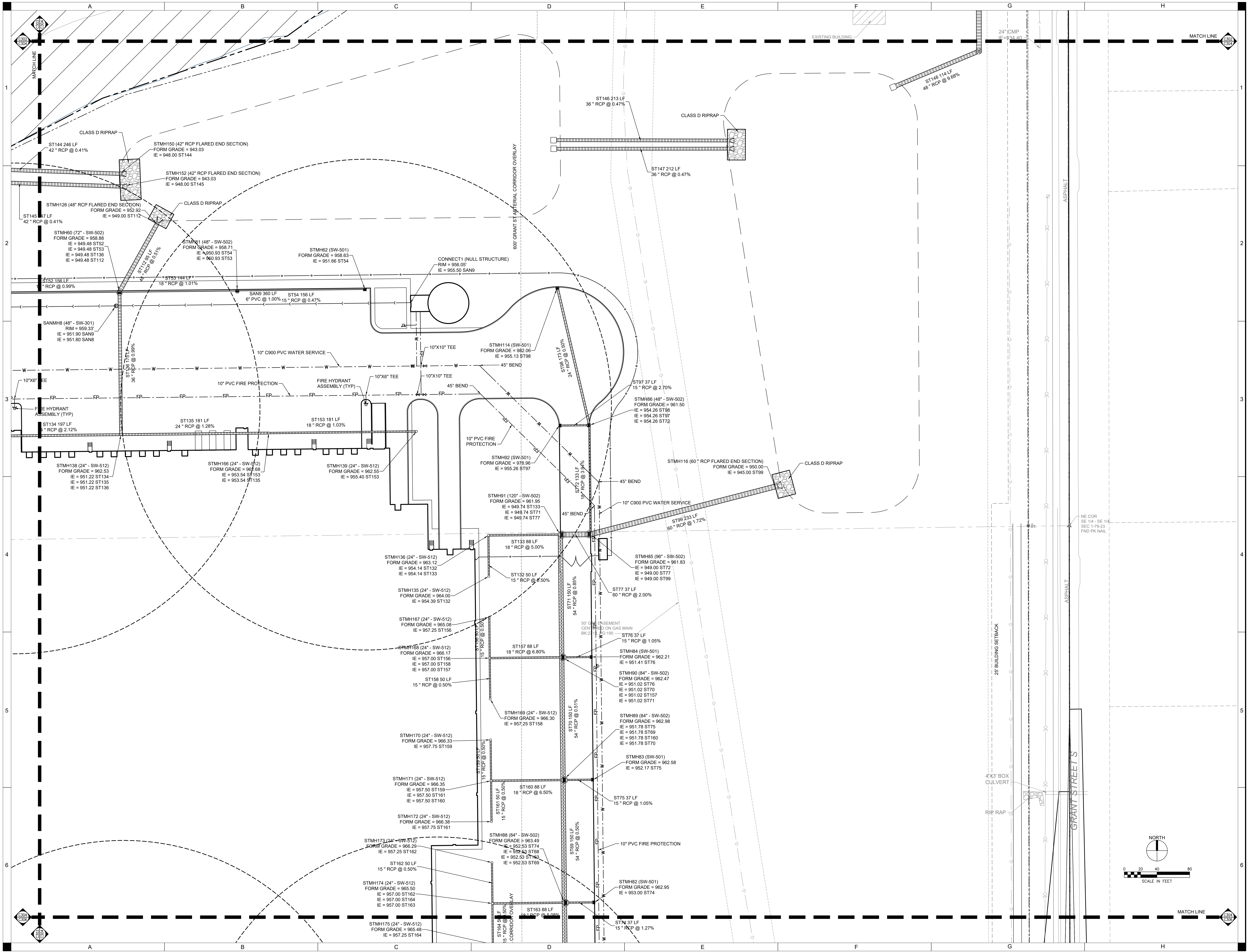
CLIENT NO: ---

UTILITY PLAN

C303



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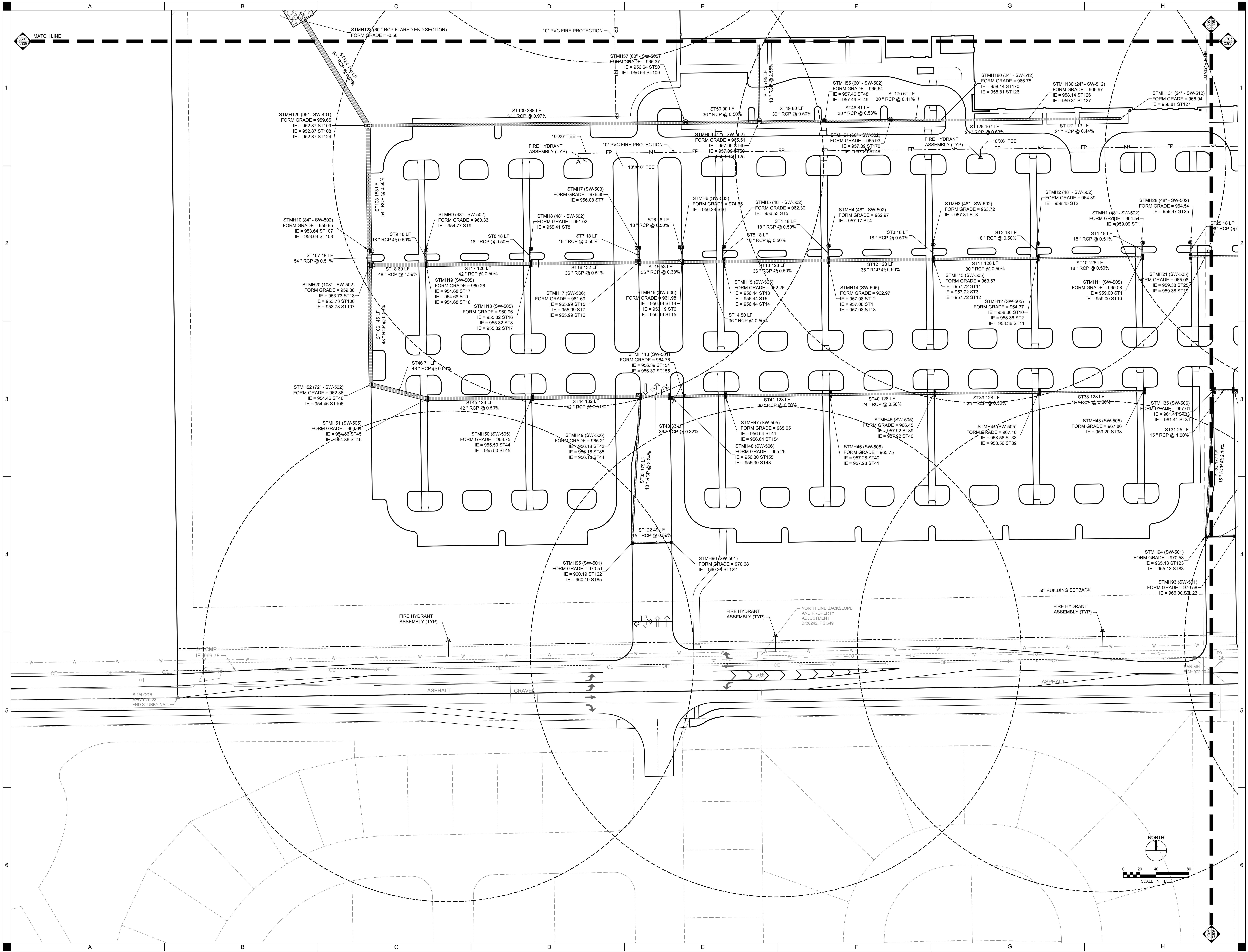
UTILITY PLAN

C304



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PROJECT BLUEJAY

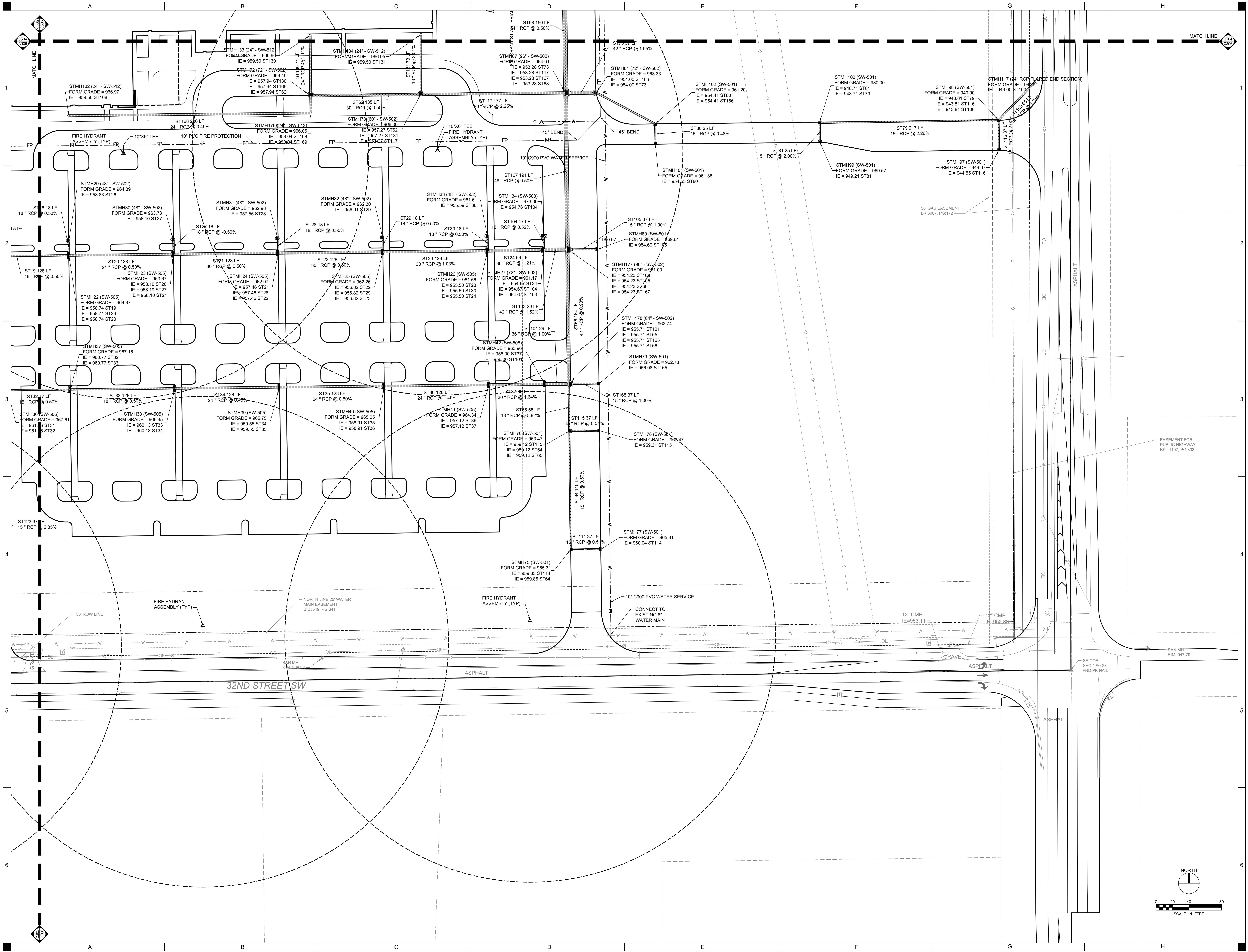
BONDURANT, IOWA

PRELIMINARY - NOT FOR CONSTRUCTION

DRAWN: ---
APPROVED: ---
ISSUED FOR: SITE PLAN SUBMITTAL
DATE: 2019-09-20
PROJECT NO: 419393-0
FIELD BOOK: ---
CLIENT NO: ---

UTILITY PLAN

C305



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PROJECT BLUEJAY

BONDURANT, IOWA

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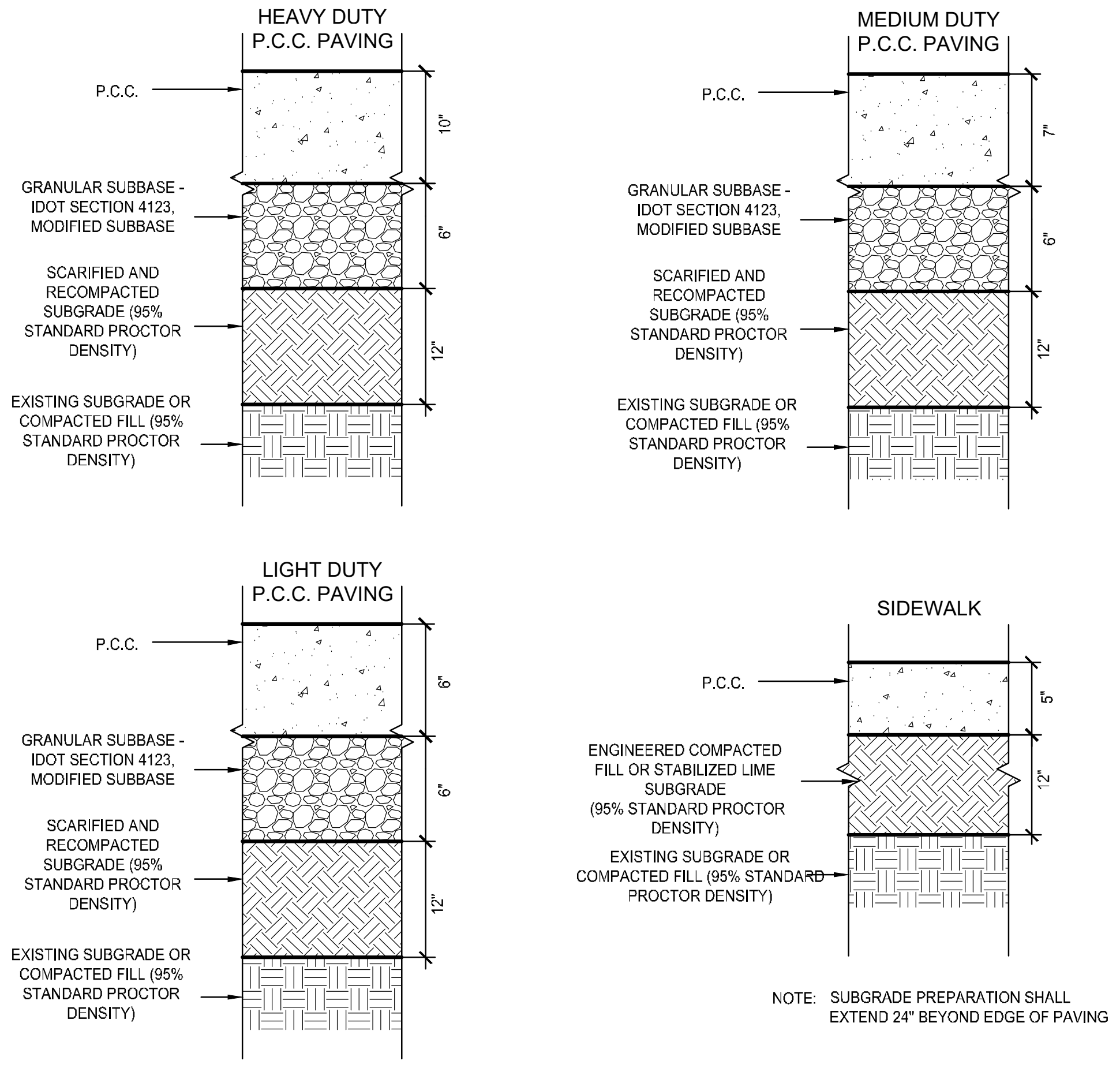
PROJECT NO: 419393-0
FIELD BOOK: ---
CLIENT NO: ---

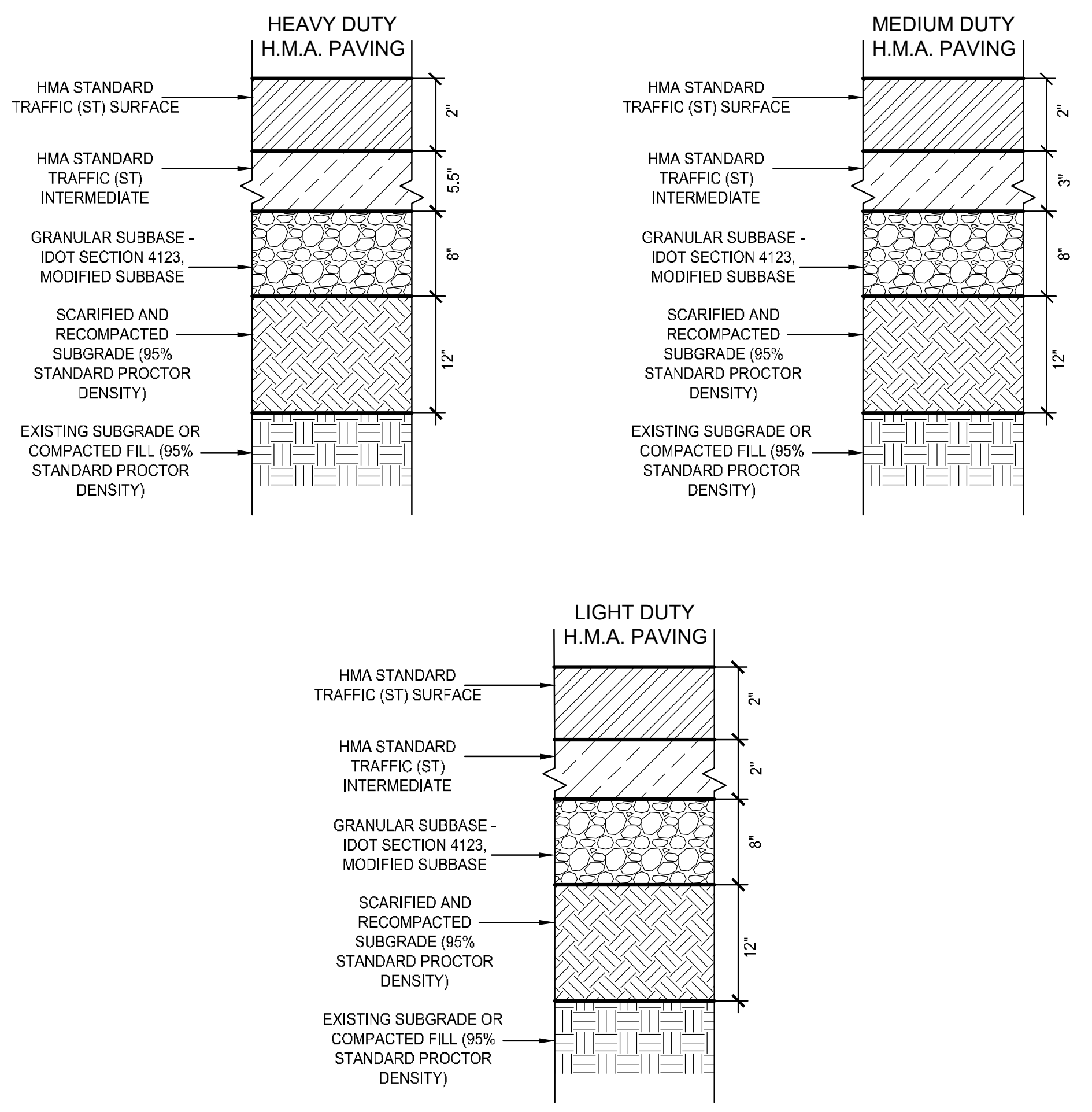
UTILITY PLAN

C306

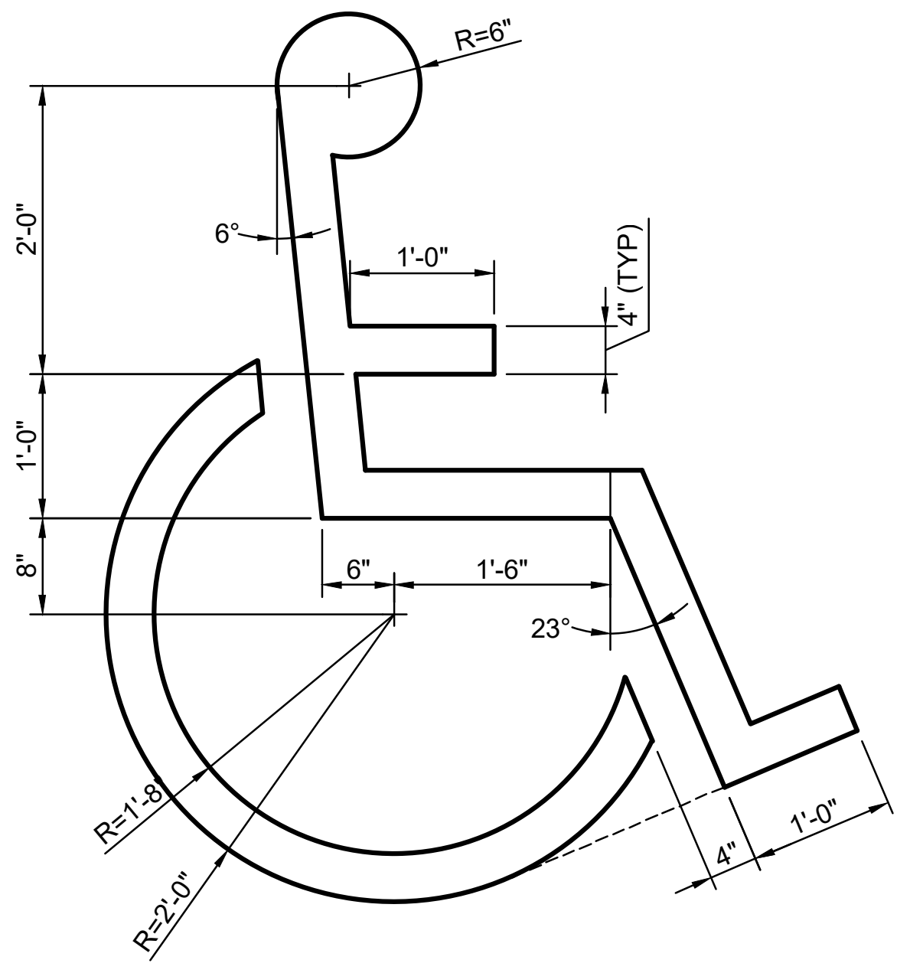

HEAVY DUTY P.C.C. PAVING
P.C.C.
GRANULAR SUBBASE - IDOT SECTION 4123, MODIFIED SUBBASE
SCARIFIED AND RECOMPACTED SUBGRADE (95% STANDARD PROCTOR DENSITY)
EXISTING SUBGRADE OR COMPACTED FILL (95% STANDARD PROCTOR DENSITY)
10"
6"
12"
MEDIUM DUTY P.C.C. PAVING
P.C.C.
GRANULAR SUBBASE - IDOT SECTION 4123, MODIFIED SUBBASE
SCARIFIED AND RECOMPACTED SUBGRADE (95% STANDARD PROCTOR DENSITY)
EXISTING SUBGRADE OR COMPACTED FILL (95% STANDARD PROCTOR DENSITY)
7"
6"
12"
LIGHT DUTY P.C.C. PAVING
P.C.C.
GRANULAR SUBBASE - IDOT SECTION 4123, MODIFIED SUBBASE
SCARIFIED AND RECOMPACTED SUBGRADE (95% STANDARD PROCTOR DENSITY)
EXISTING SUBGRADE OR COMPACTED FILL (95% STANDARD PROCTOR DENSITY)
6"
6"
12"
SIDEWALK
P.C.C.
ENGINEERED COMPACTED FILL OR STABILIZED LIME SUBGRADE (95% STANDARD PROCTOR DENSITY)
EXISTING SUBGRADE OR COMPACTED FILL (95% STANDARD PROCTOR DENSITY)
5"
12"

NOTE: SUBGRADE PREPARATION SHALL EXTEND 24" BEYOND EDGE OF PAVING

A2 PCC PAVEMENT CROSS SECTIONS
NOT TO SCALE

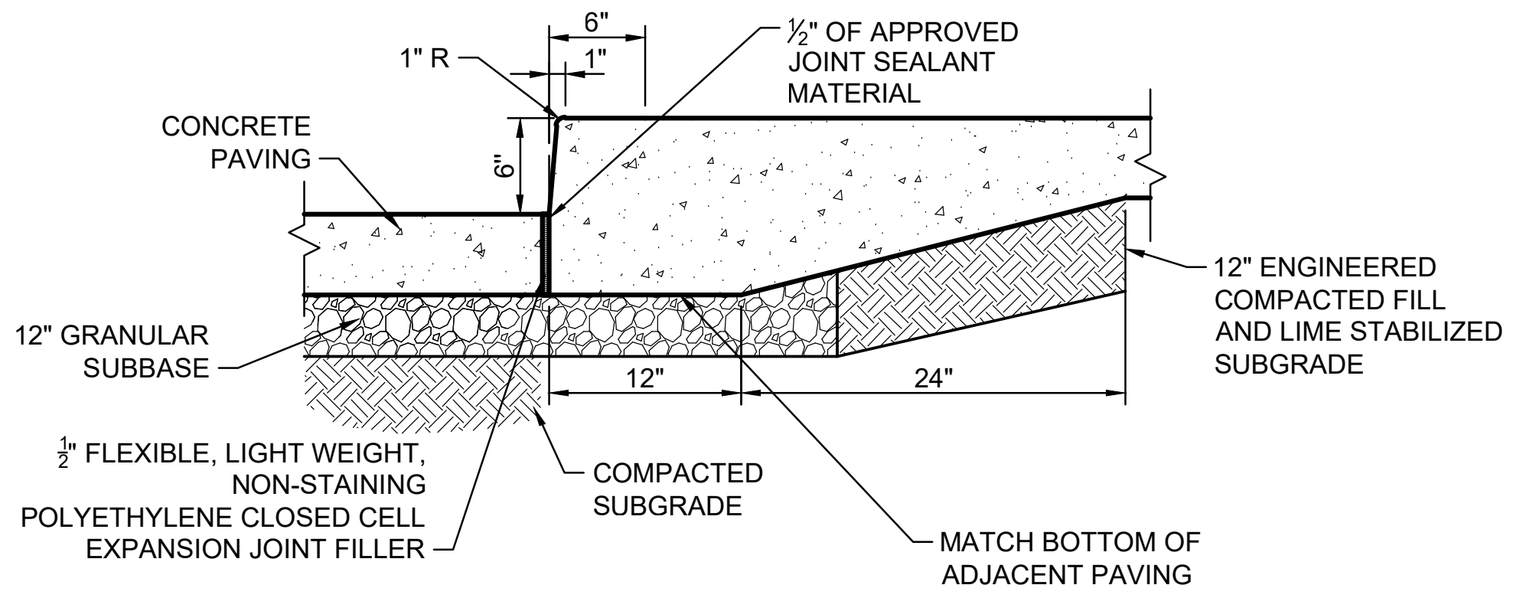

HEAVY DUTY H.M.A. PAVING
HMA STANDARD TRAFFIC (ST) SURFACE
HMA STANDARD TRAFFIC (ST) INTERMEDIATE
GRANULAR SUBBASE - IDOT SECTION 4123, MODIFIED SUBBASE
SCARIFIED AND RECOMPACTED SUBGRADE (95% STANDARD PROCTOR DENSITY)
EXISTING SUBGRADE OR COMPACTED FILL (95% STANDARD PROCTOR DENSITY)
2"
5.5"
8"
12"
MEDIUM DUTY H.M.A. PAVING
HMA STANDARD TRAFFIC (ST) SURFACE
HMA STANDARD TRAFFIC (ST) INTERMEDIATE
GRANULAR SUBBASE - IDOT SECTION 4123, MODIFIED SUBBASE
SCARIFIED AND RECOMPACTED SUBGRADE (95% STANDARD PROCTOR DENSITY)
EXISTING SUBGRADE OR COMPACTED FILL (95% STANDARD PROCTOR DENSITY)
2"
3"
8"
12"
LIGHT DUTY H.M.A. PAVING
HMA STANDARD TRAFFIC (ST) SURFACE
HMA STANDARD TRAFFIC (ST) INTERMEDIATE
GRANULAR SUBBASE - IDOT SECTION 4123, MODIFIED SUBBASE
SCARIFIED AND RECOMPACTED SUBGRADE (95% STANDARD PROCTOR DENSITY)
EXISTING SUBGRADE OR COMPACTED FILL (95% STANDARD PROCTOR DENSITY)
2"
2"
8"
12"

C2 HMA PAVEMENT CROSS SECTIONS (ALTERNATE)
NOT TO SCALE

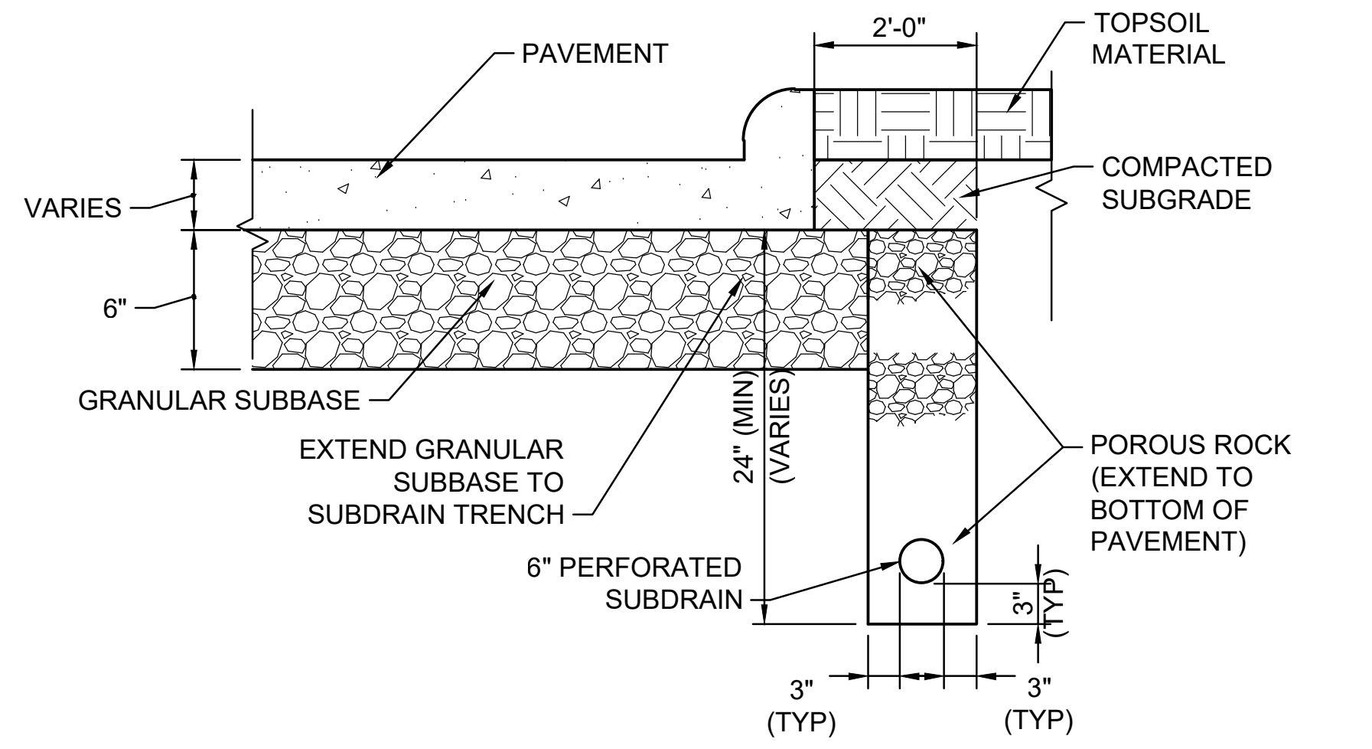


NOTE: SYMBOL TO BE CENTERED IN PARKING SPACE AND ORIENTED AS ILLUSTRATED ON PLANS.

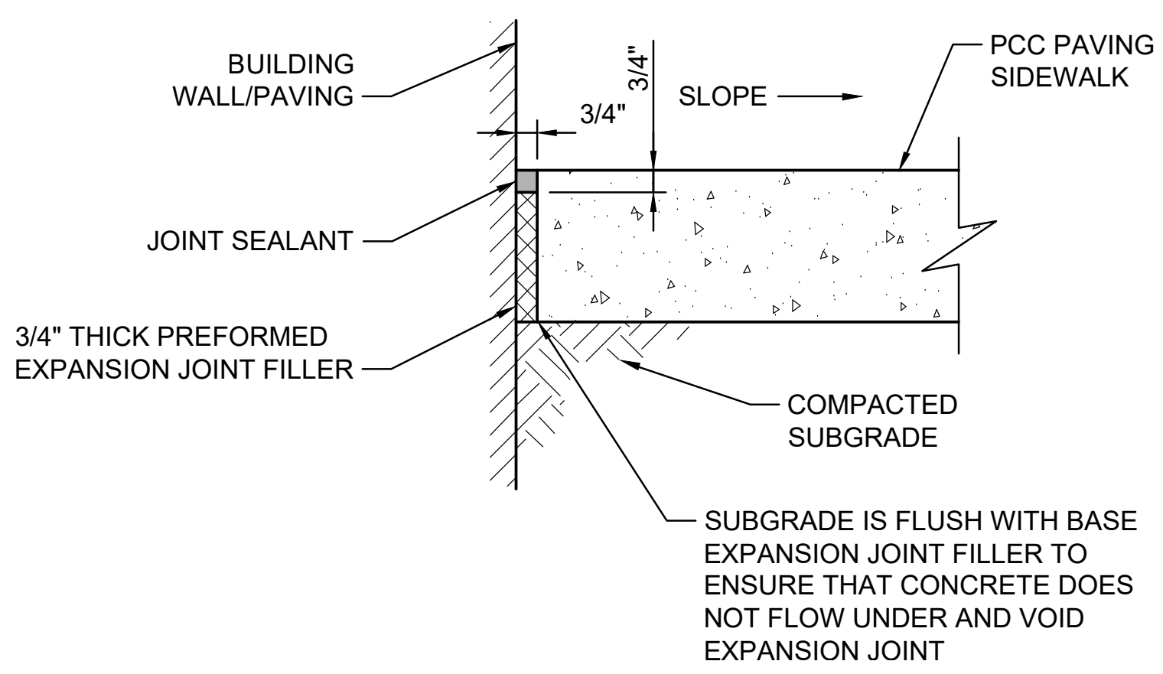
E2 HANDICAPPED PARKING SYMBOL
NOT TO SCALE


6"
1" R
1"
½" OF APPROVED JOINT SEALANT MATERIAL
CONCRETE PAVING
6"
12" ENGINEERED COMPACTED FILL AND LIME STABILIZED SUBGRADE
12" GRANULAR SUBBASE
12"
24"
½" FLEXIBLE, LIGHT WEIGHT, NON-STAINING POLYETHYLENE CLOSED CELL EXPANSION JOINT FILLER
COMPACTED SUBGRADE
MATCH BOTTOM OF ADJACENT PAVING

G1 INTEGRAL PCC CURB AND SIDEWALK
NOT TO SCALE

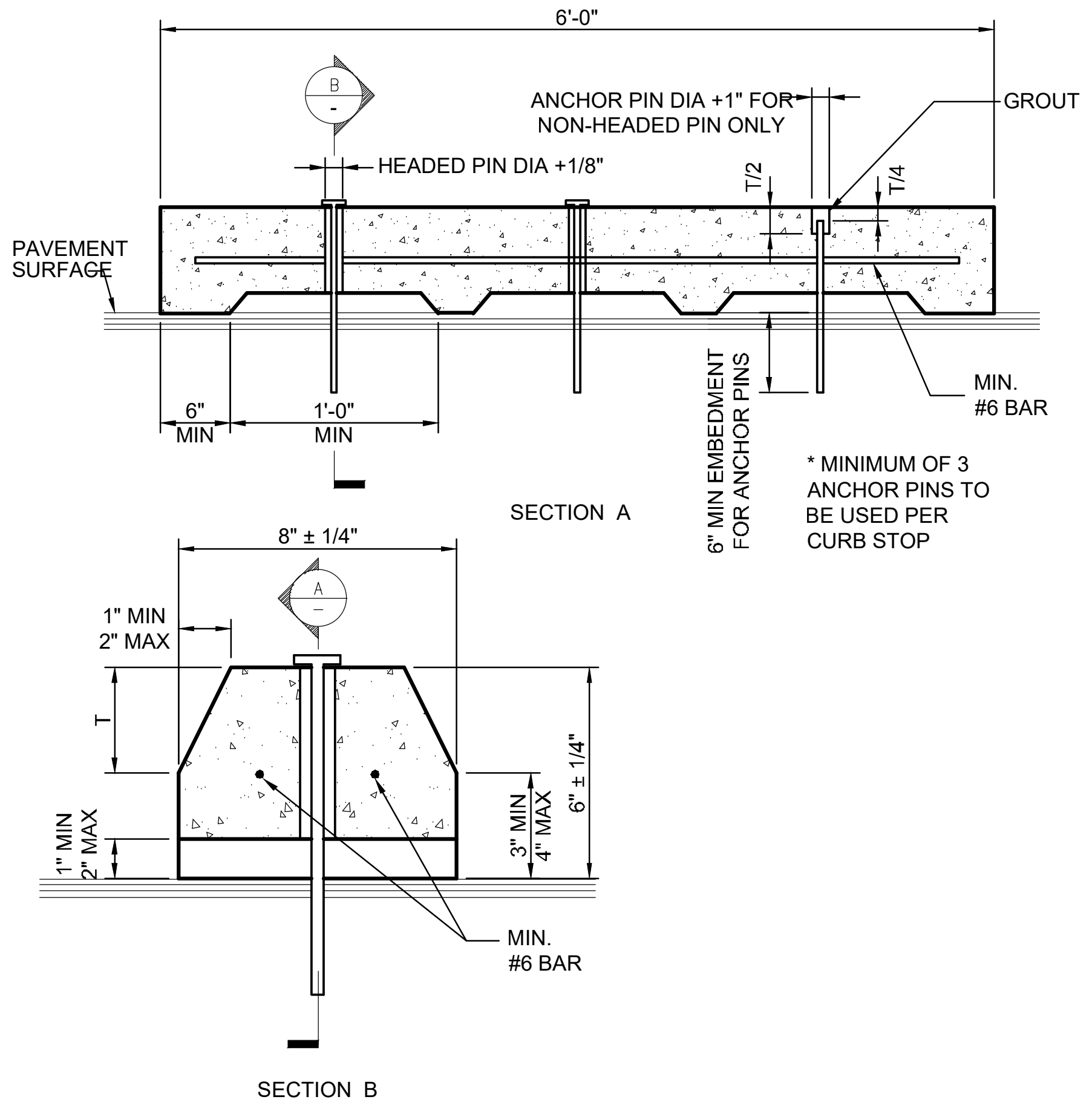


G2 PAVING SUBDRAIN
NOT TO SCALE

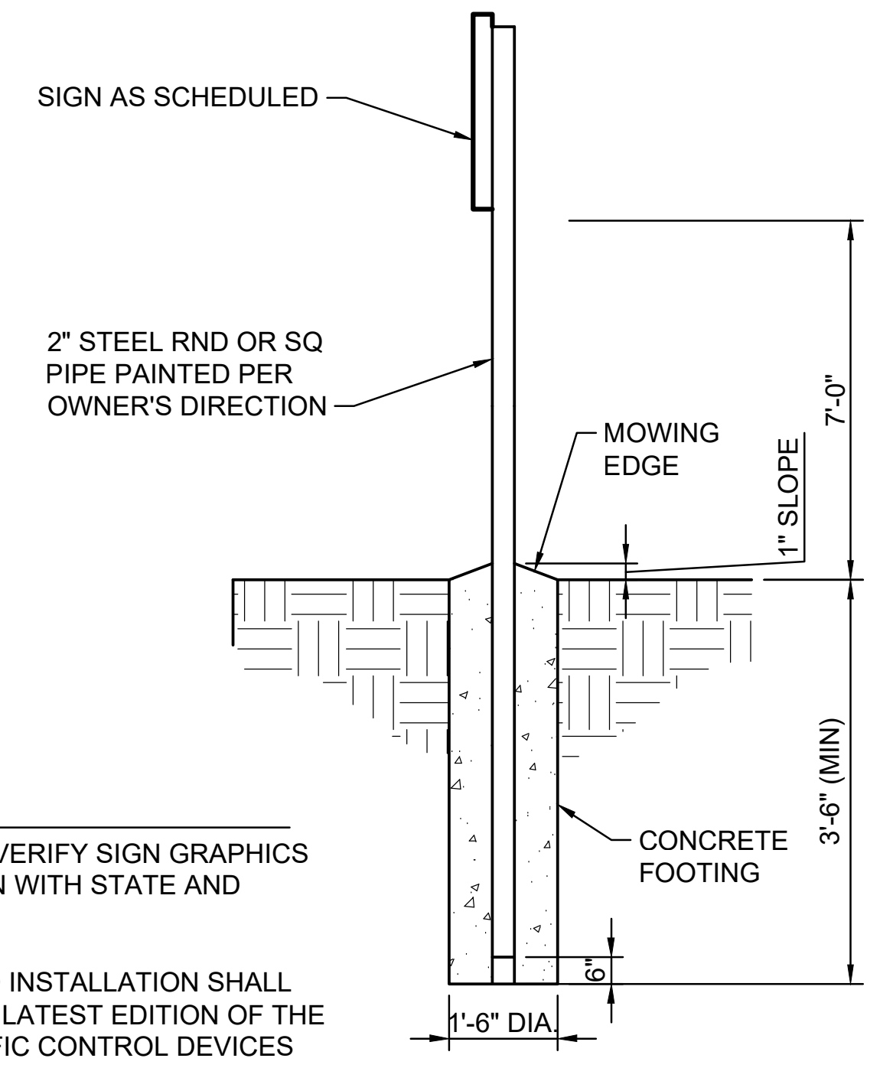

BUILDING WALL/PAVING
3/4"
3/4"
SLOPE
PCC PAVING OR SIDEWALK
JOINT SEALANT
3/4" THICK PREFORMED EXPANSION JOINT FILLER
COMPACTED SUBGRADE
SUBGRADE IS FLUSH WITH BASE EXPANSION JOINT FILLER TO ENSURE THAT CONCRETE DOES NOT FLOW UNDER AND VOID EXPANSION JOINT

NOTE:
ALL PREFORMED JOINT MATERIAL SHALL BE INSTALLED PERPENDICULAR TO THE PAVEMENT SURFACE AND CARE SHALL BE EXERCISED THROUGHOUT THE CONSTRUCTION OF THE PAVEMENT TO ENSURE THAT SUCH JOINT MATERIAL REMAINS IN PROPER POSITION UPON COMPLETION OF PAVING OPERATION.

A4 ISOLATION JOINT
NOT TO SCALE

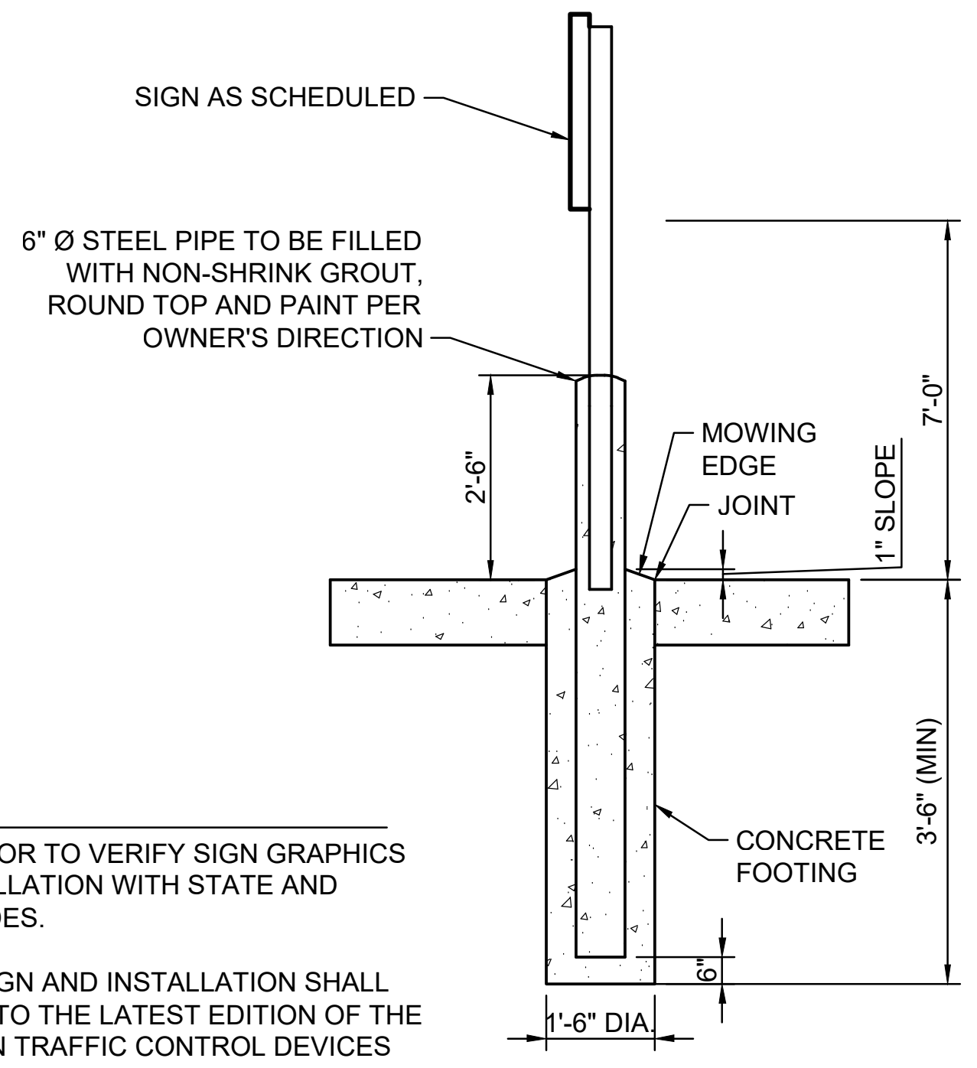


C4 PCC WHEEL STOP
NOT TO SCALE



NOTES:
1. CONTRACTOR TO VERIFY SIGN GRAPHICS AND INSTALLATION WITH STATE AND LOCAL CODES.
2. TRAFFIC SIGN AND INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON TRAFFIC CONTROL DEVICES

E4 SIGN POST
NOT TO SCALE


SIGN AS SCHEDULED
6" Ø STEEL PIPE TO BE FILLED WITH NON-SHRINK GROUT, ROUND TOP AND PAINT PER OWNER'S DIRECTION
2'-6"
MOWING EDGE
JOINT
1" SLOPE
7'-0"
CONCRETE FOOTING
3'-6" (MIN)
6"
1'-6" DIA.

NOTES:
1. CONTRACTOR TO VERIFY SIGN GRAPHICS AND INSTALLATION WITH STATE AND LOCAL CODES.
2. TRAFFIC SIGN AND INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON TRAFFIC CONTROL DEVICES

G4 BOLLARD SIGN POST
NOT TO SCALE

If crosswalks are marked, locate ramps, exclusive of flares, within the crosswalk markings.

① Perpendicular ramp: Maximum running slope of 8.3%. Maximum cross slope of 2%. At mid-block crossings, cross slope may exceed 2% to match roadway grade.

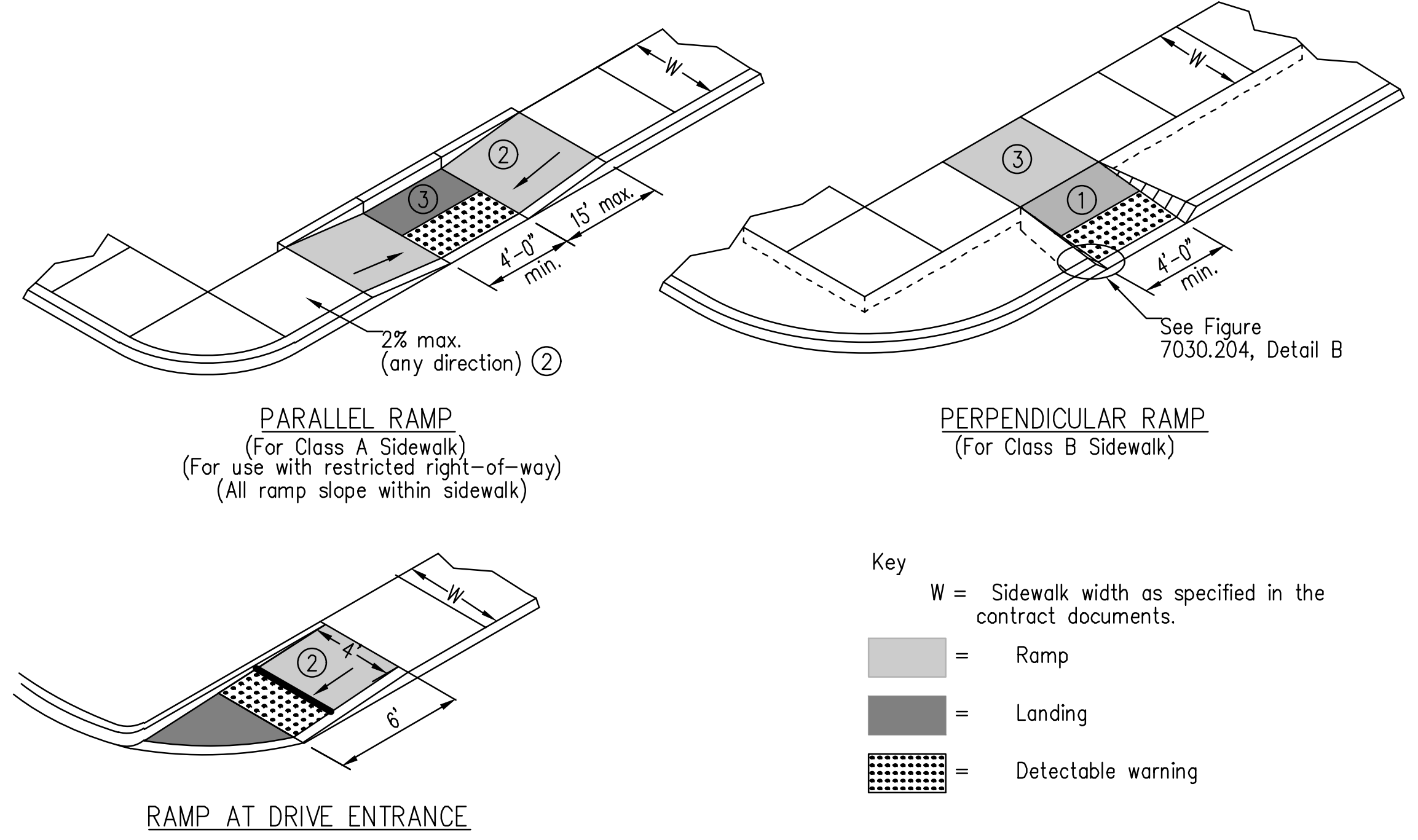
② Parallel ramp: Maximum cross slope of 2%. The length of the parallel ramp is not required to exceed 15 feet, regardless of resulting slope. Do not exceed 8.3% slope for parallel ramps shorter than 15 feet.

③ Landing: Maximum slope of 2% in any direction. At mid-block crossings, cross slope of landing may exceed 2% to match roadway grade.

④ Flare required if ramp is contiguous with sidewalk.

⑤ Provide 2% cross slope across median for drainage. For wide medians (12 feet or greater), curb ramps may be used at both sides with a 48 inch by 48 inch minimum landing in between.

⑥ For crossings controlled by signals and timed for full crossing, detectable warnings are not required at medians.



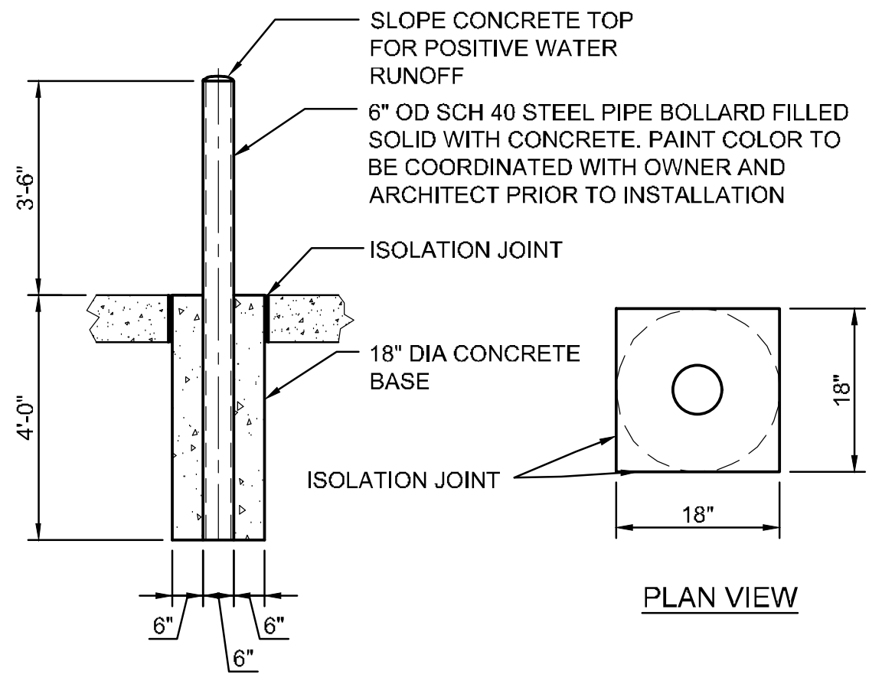
PARALLEL RAMP
(For Class A Sidewalk)
(For use with restricted right-of-way)
(All ramp slope within sidewalk)

PERPENDICULAR RAMP
(For Class B Sidewalk)

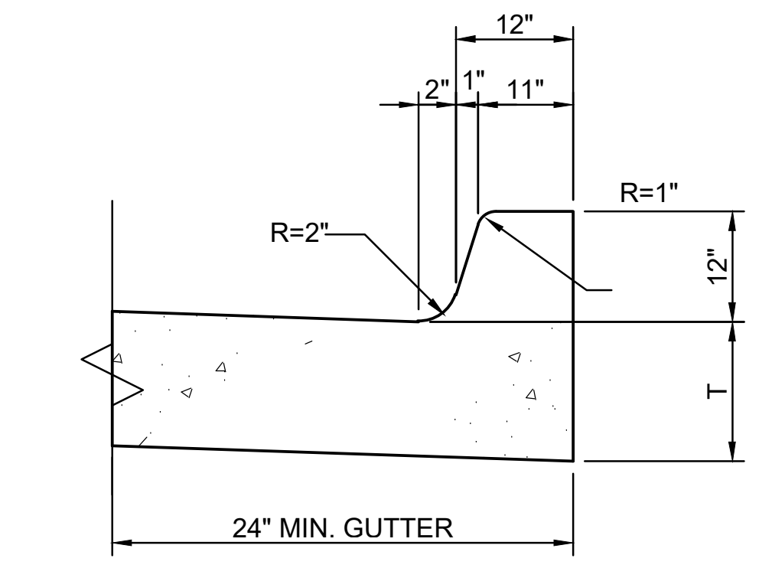
RAMP AT DRIVE ENTRANCE

Key
W = Sidewalk width as specified in the contract documents.
▒ = Ramp
▓ = Landing
⠿ = Detectable warning

A6 SIDEWALK RAMPS
NOT TO SCALE


SLOPE CONCRETE TOP FOR POSITIVE WATER RUNOFF
6" OD SCH 40 STEEL PIPE BOLLARD FILLED SOLID WITH CONCRETE. PAINT COLOR TO BE COORDINATED WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION
ISOLATION JOINT
18" DIA CONCRETE BASE
ISOLATION JOINT
3'-6"
4'-0"
6"
6"
6"
18"
18"
PLAN VIEW

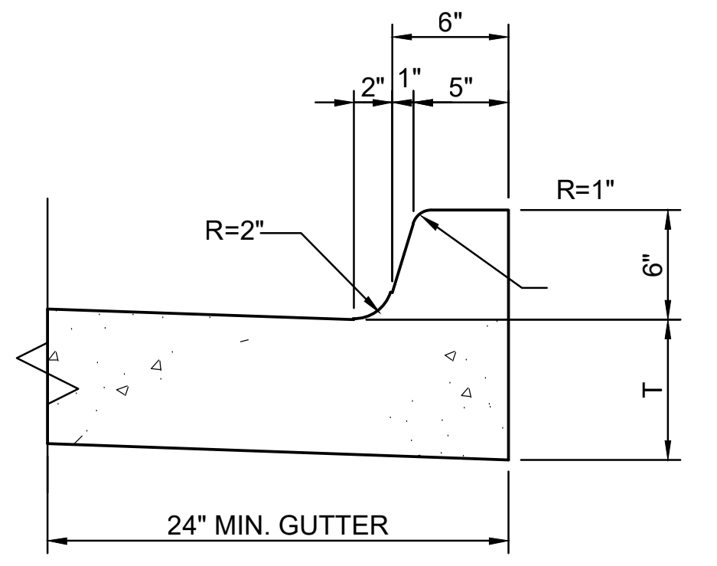
C5 SECURITY BOLLARD
NOT TO SCALE



T = THICKNESS OF PAVEMENT

NOTE: CURB MAY BE POURED INTEGRALLY WITH PAVEMENT IN PLACE OF CURB AND GUTTER SECTION.

D5 12" PCC CURB AND GUTTER
NOT TO SCALE



T = THICKNESS OF PAVEMENT

NOTE: CURB MAY BE POURED INTEGRALLY WITH PAVEMENT IN PLACE OF CURB AND GUTTER SECTION.

C6 6" PCC CURB AND GUTTER
NOT TO SCALE

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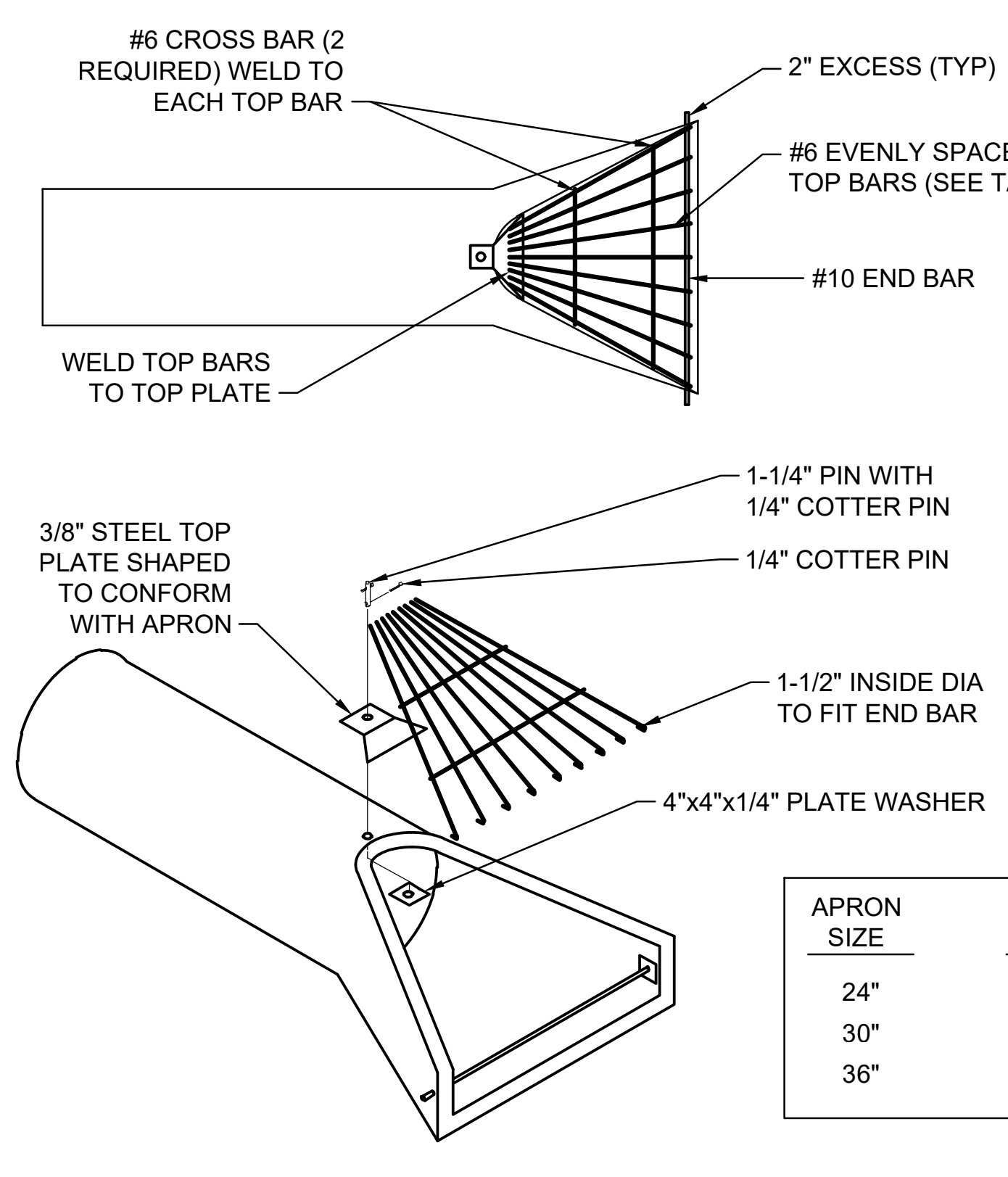
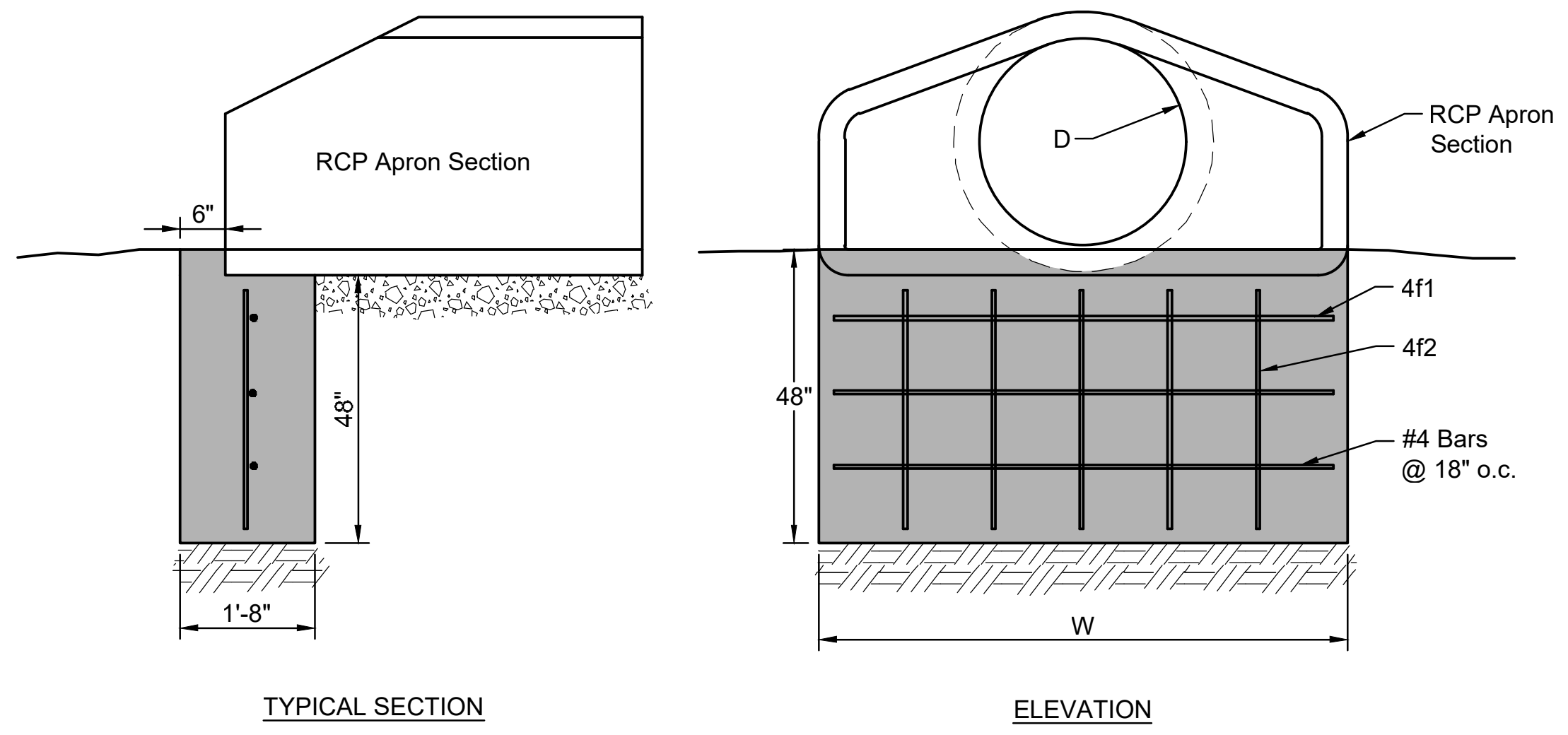
CONSTRUCTION DETAILS

C500


#6 CROSS BAR (2 REQUIRED) WELD TO EACH TOP BAR
2" EXCESS (TYP)
#6 EVENLY SPACED TOP BARS (SEE TABLE)
#10 END BAR
WELD TOP BARS TO TOP PLATE
1-1/4" PIN WITH 1/4" COTTER PIN
1/4" COTTER PIN
3/8" STEEL TOP PLATE SHAPED TO CONFORM WITH APRON
1-1/2" INSIDE DIA TO FIT END BAR
4"x4"x1/4" PLATE WASHER

APRON SIZE	TOP BARS REQUIRED
24"	8
30"	10
36"	12

A2 FLARED END SECTION WITH TRASH GUARD



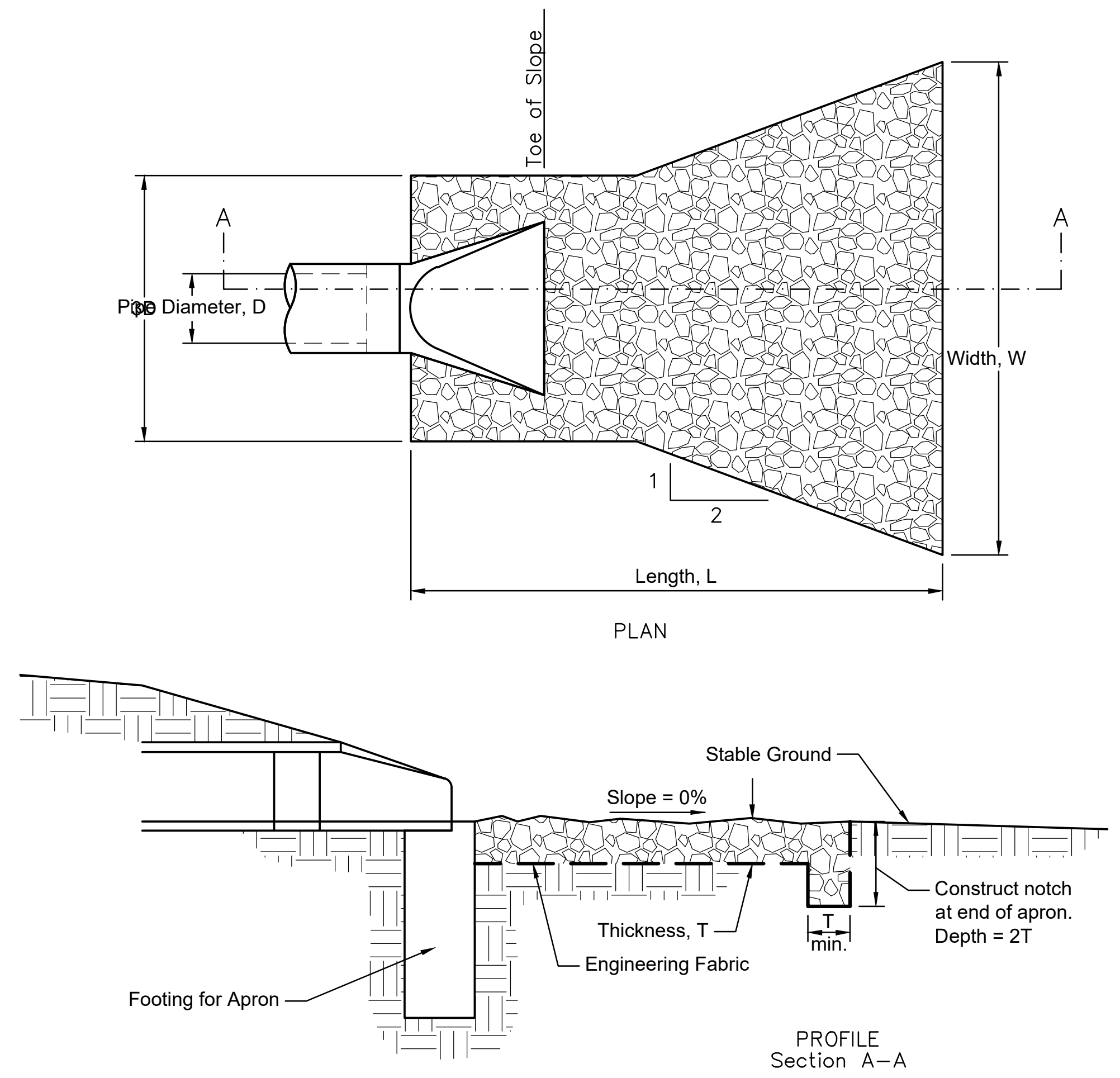
TYPICAL SECTION

ELEVATION

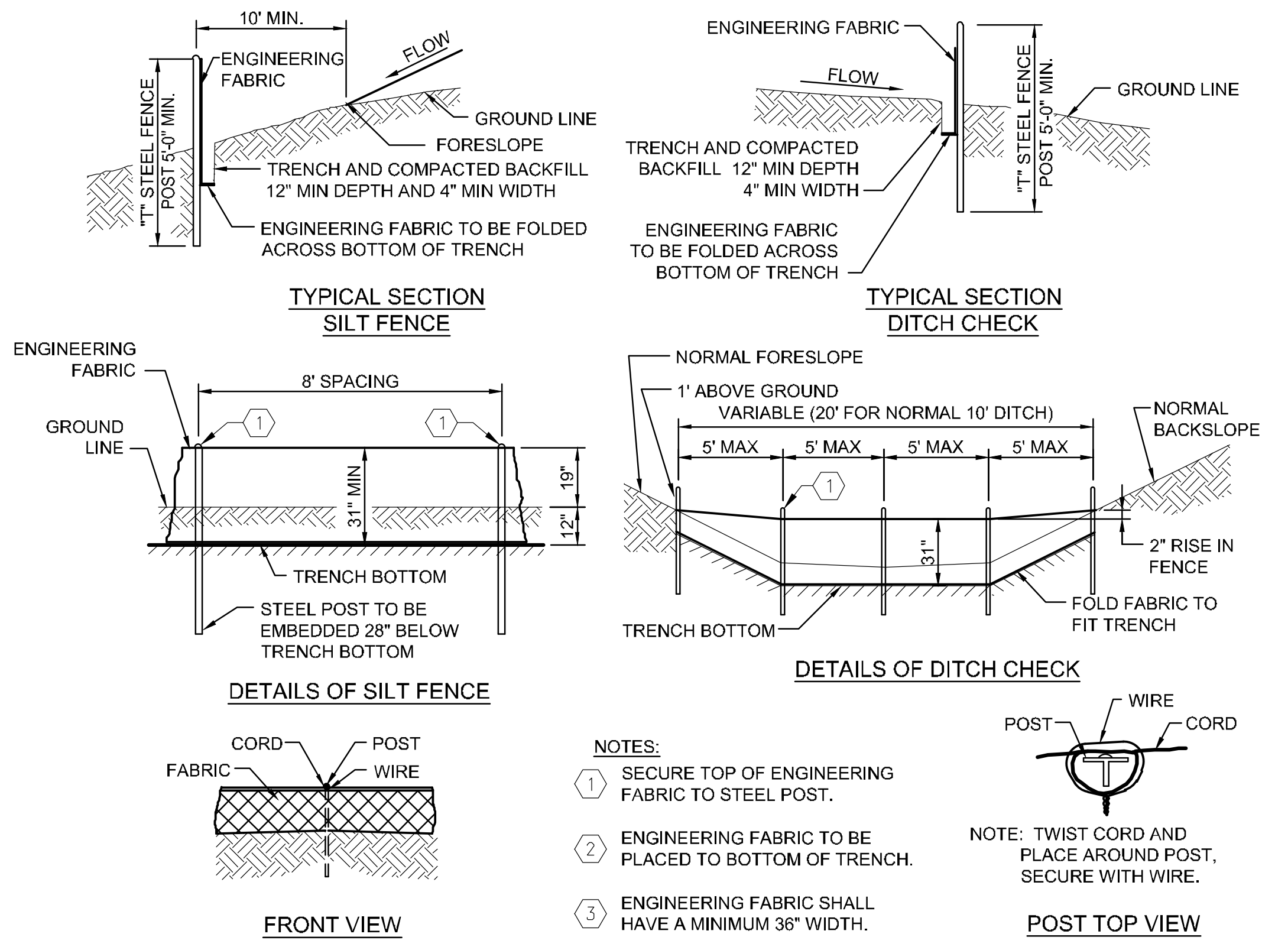
REINFORCING BAR LIST

D	W	Mark	Size	Length	Count
12"	2'-4"	4f1	4	2'-0"	3
		4f2	4	3'-8"	2
15"	2'-10 ½"	4f1	4	2'-6 ½"	3
		4f2	4	3'-8"	2
18"	3'-5"	4f1	4	3'-1"	3
		4f2	4	3'-8"	3
24"	4'-6"	4f1	4	4'-2"	3
		4f2	4	3'-8"	3
30"	5'-7"	4f1	4	5'-3"	3
		4f2	4	3'-8"	4
36"	6'-8"	4f1	4	6'-4"	3
		4f2	4	3'-8"	5
42"	7'-3"	4f1	4	6'-11"	3
		4f2	4	3'-8"	5

C2 FLARED END SECTION FOOTING



E2 FLARED END SECTION RIP RAP


10' MIN.
ENGINEERING FABRIC
FLOW
GROUND LINE
FORESLOPE
TRENCH AND COMPACTED BACKFILL 12" MIN DEPTH AND 4" MIN WIDTH
ENGINEERING FABRIC TO BE FOLDED ACROSS BOTTOM OF TRENCH
"T" STEEL FENCE POST 5'-0" MIN.
TYPICAL SECTION SILT FENCE
ENGINEERING FABRIC
FLOW
GROUND LINE
TRENCH AND COMPACTED BACKFILL 12" MIN DEPTH 4" MIN WIDTH
ENGINEERING FABRIC TO BE FOLDED ACROSS BOTTOM OF TRENCH
"T" STEEL FENCE POST 5'-0" MIN.
TYPICAL SECTION DITCH CHECK
ENGINEERING FABRIC
GROUND LINE
8' SPACING
1
1
31" MIN
19"
12"
TRENCH BOTTOM
STEEL POST TO BE EMBEDDED 28" BELOW TRENCH BOTTOM
DETAILS OF SILT FENCE
NORMAL FORESLOPE
1' ABOVE GROUND
VARIABLE (20' FOR NORMAL 10' DITCH)
5' MAX
5' MAX
5' MAX
5' MAX
NORMAL BACKSLOPE
1
31"
2" RISE IN FENCE
FOLD FABRIC TO FIT TRENCH
TRENCH BOTTOM
DETAILS OF DITCH CHECK
CORD
POST
FABRIC
WIRE
FRONT VIEW
POST
WIRE
CORD
POST TOP VIEW

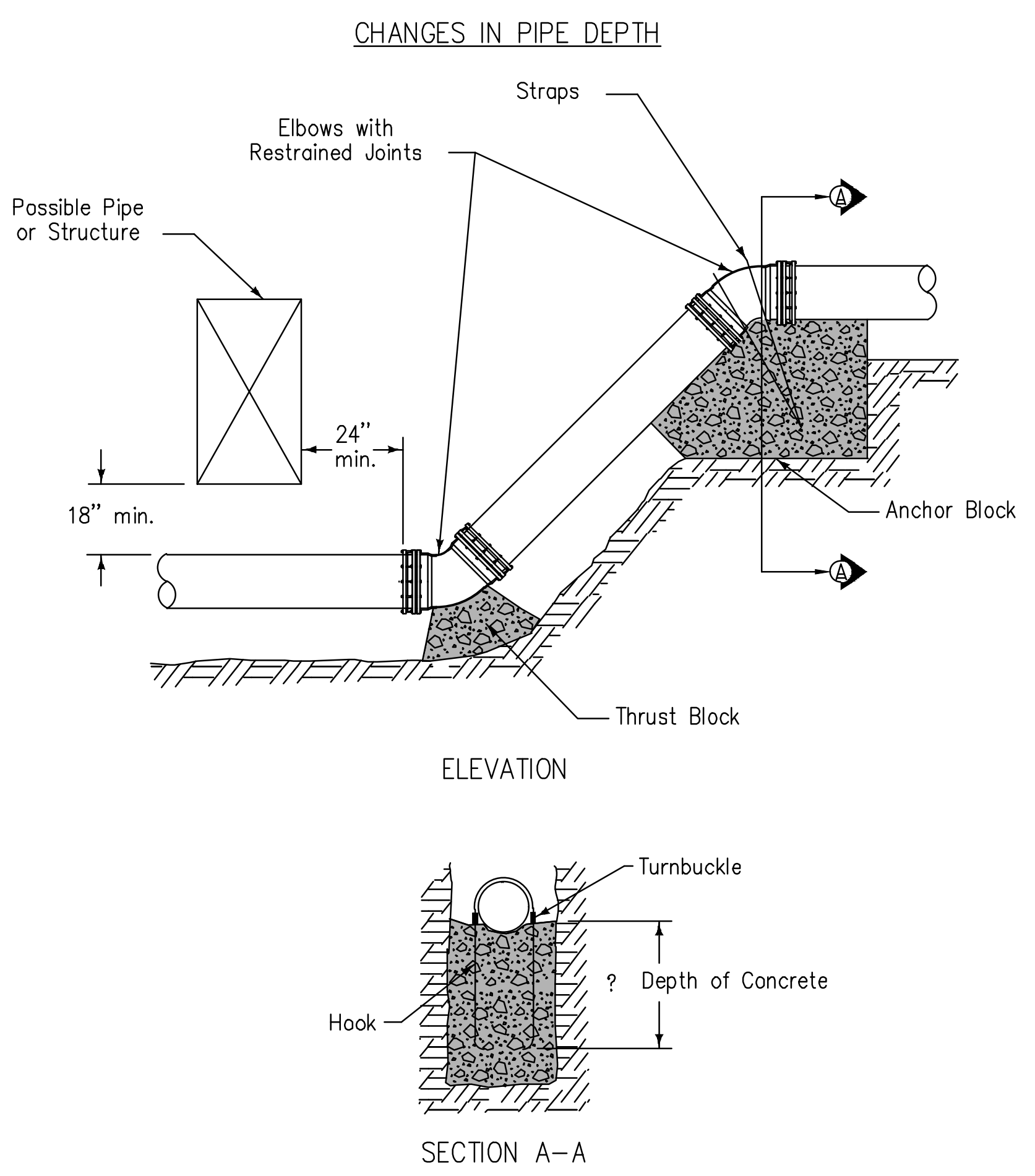
NOTES:

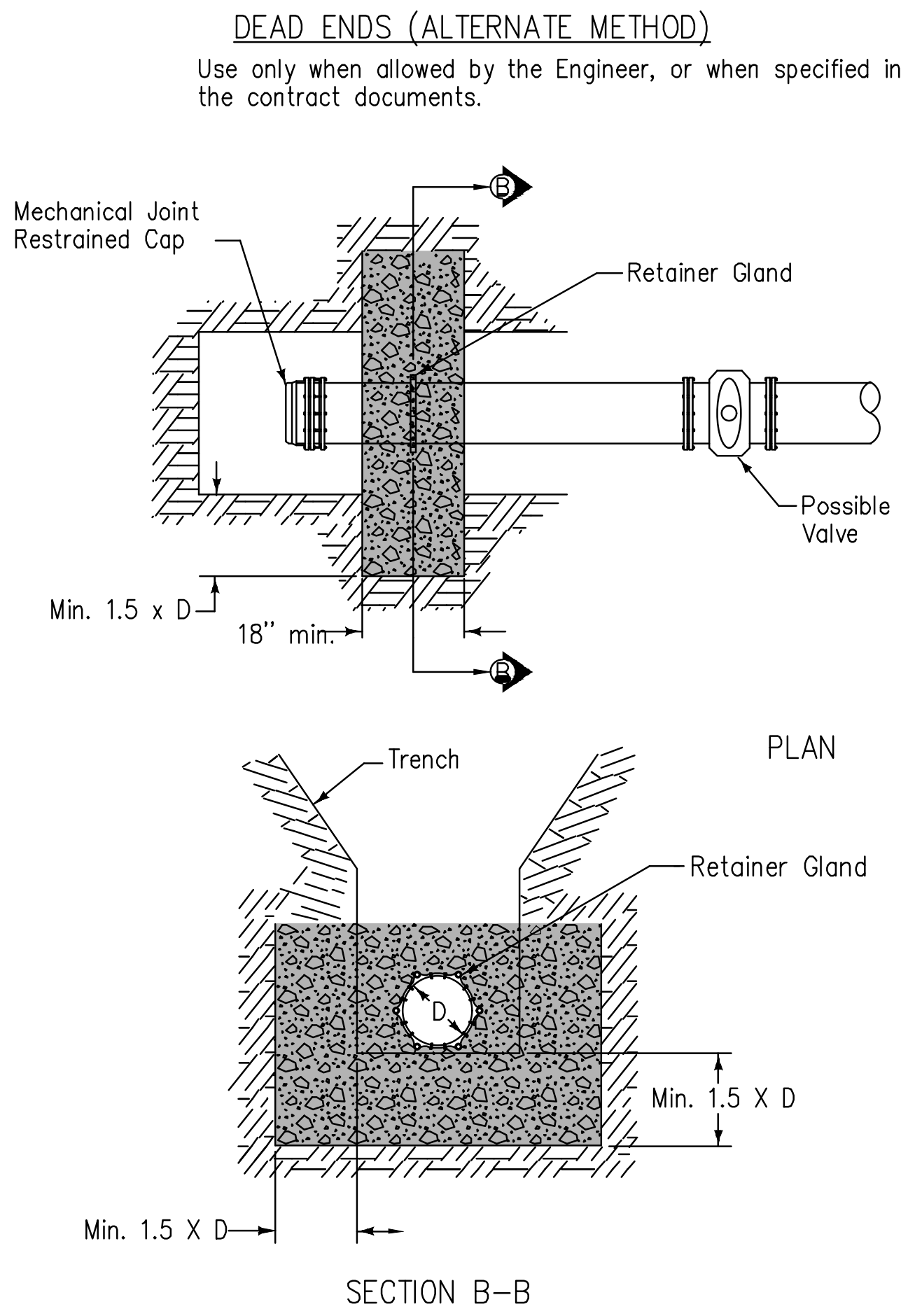
1. SECURE TOP OF ENGINEERING FABRIC TO STEEL POST.
2. ENGINEERING FABRIC TO BE PLACED TO BOTTOM OF TRENCH.
3. ENGINEERING FABRIC SHALL HAVE A MINIMUM 36" WIDTH.

NOTE: TWIST CORD AND PLACE AROUND POST, SECURE WITH WIRE.

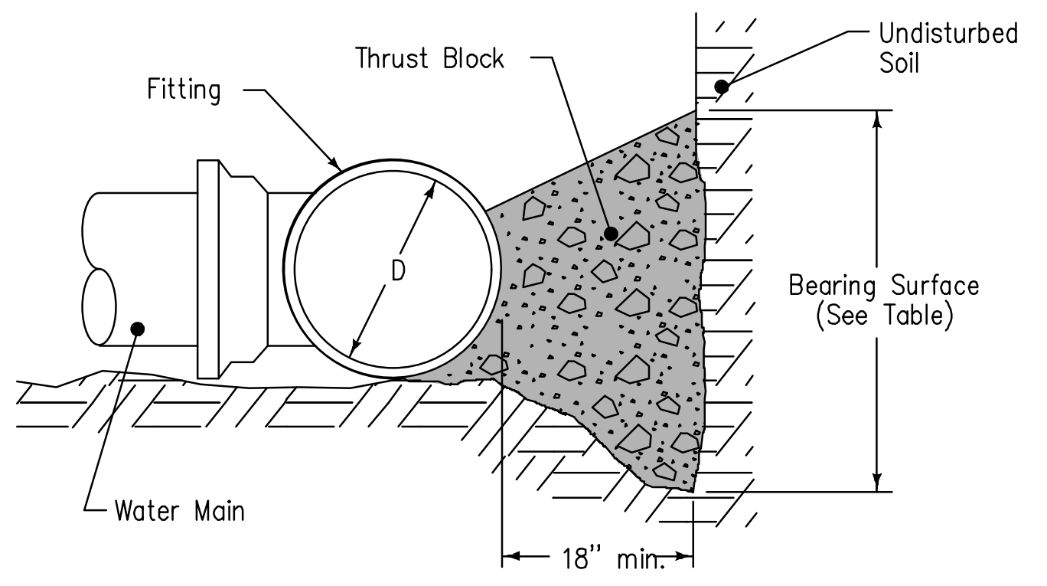
G2 SILT FENCE

NOT TO SCALE





Use only when allowed by the Engineer, or when specified in the contract documents.



TYPICAL SECTION

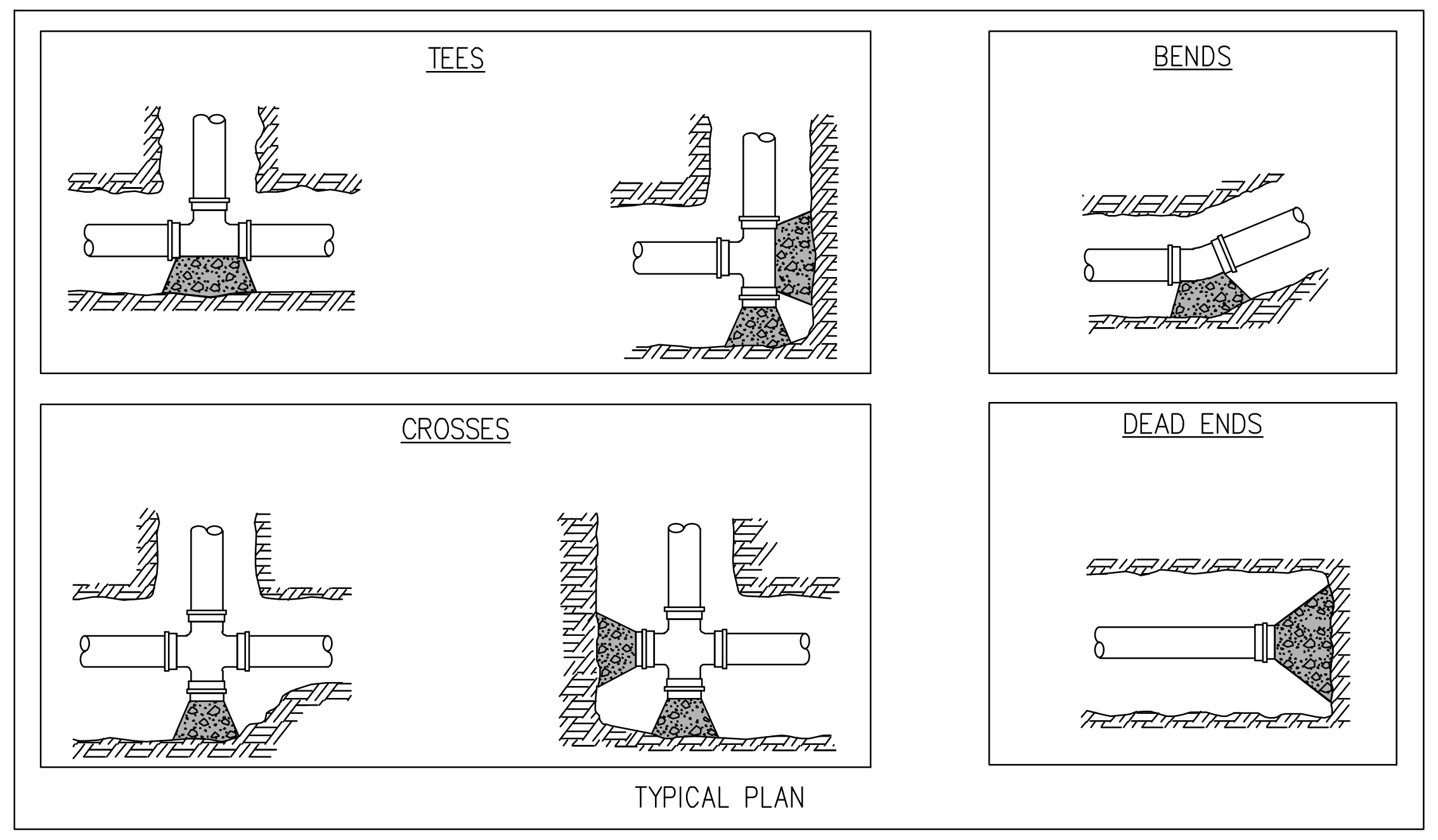
Extend thrust blocks to undisturbed soil. Excavation into trench wall may be necessary.

Form vertical surfaces of poured concrete thrust blocks except on bearing surface.

Encase all fittings in polyethylene wrap. Do not allow concrete to directly contact joints or fitting bolts.

Diameter of Pipe, D (inches)	MINIMUM BEARING SURFACE (sf)				
	Bends				Tees and Dead Ends
	1 1?°	22?°	45°	90°	
4	1	1	2	4	3
6	1	2	4	8	6
8	2	4	7	14	10
10	3	6	1 1	21	15
12	4	8	16	29	21
14	5	1 1	21	39	28
16	7	14	27	50	36
18	9	17	34	63	45
20	1 1	21	42	78	55
24	15	31	60	1 1 1	78
30	24	47	92	171	120
36	34	67	132	244	173

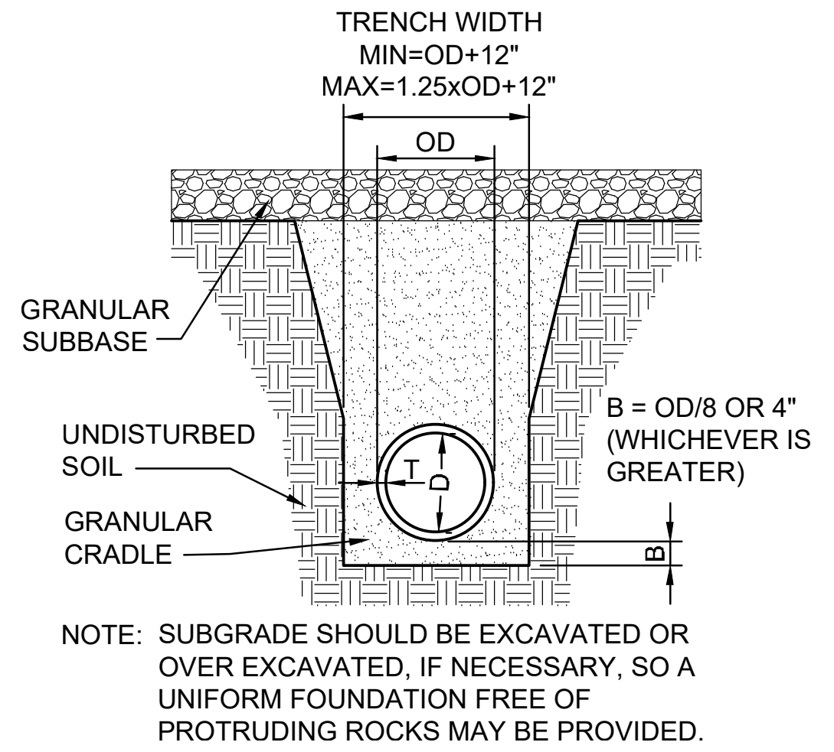
Minimum surface area based on water pressure of 150 psi and allowable soil pressure of 1,000 psf.



TYPICAL PLAN

A6 THRUST BLOCKS

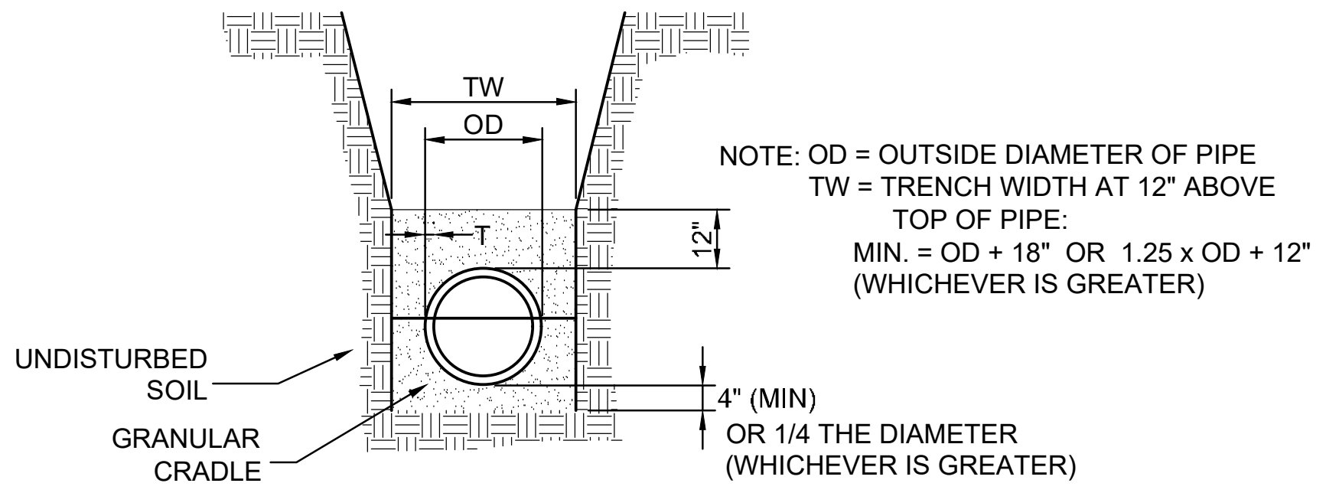
NOT TO SCALE



NOTE: SUBGRADE SHOULD BE EXCAVATED OR OVER EXCAVATED, IF NECESSARY, SO A UNIFORM FOUNDATION FREE OF PROTRUDING ROCKS MAY BE PROVIDED.

D1 RIGID PIPE EXCAVATION & BEDDING

NOT TO SCALE



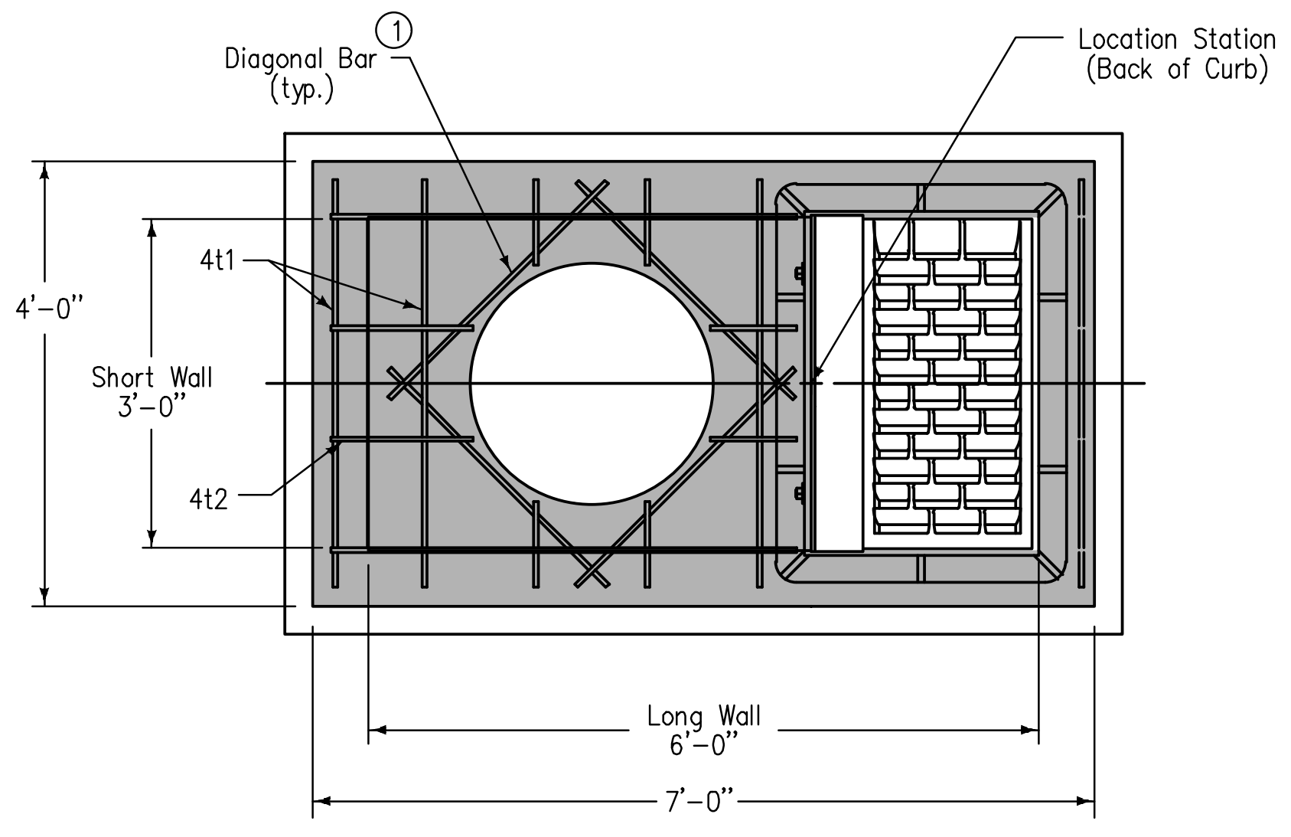
NOTE: OD = OUTSIDE DIAMETER OF PIPE
TW = TRENCH WIDTH AT 12" ABOVE TOP OF PIPE:
MIN. = OD + 18" OR 1.25 x OD + 12"
(WHICHEVER IS GREATER)

SUBGRADE SHOULD BE EXCAVATED OR OVER EXCAVATED, IF NECESSARY, SO A UNIFORM FOUNDATION FREE OF PROTRUDING ROCKS MAY BE PROVIDED.

NOTE: SANITARY PIPE BEDDING SHALL BE PER THE WDM STANDARD SPECS. SEE WDM DWG NO. 4.1. WATER PIPE BEDDING SHALL BE PER THE WDMWW STANDARD SPECS. SEE WDMWW DWG NO. 3.

D2 FLEXIBLE PIPE BEDDING

NOT TO SCALE

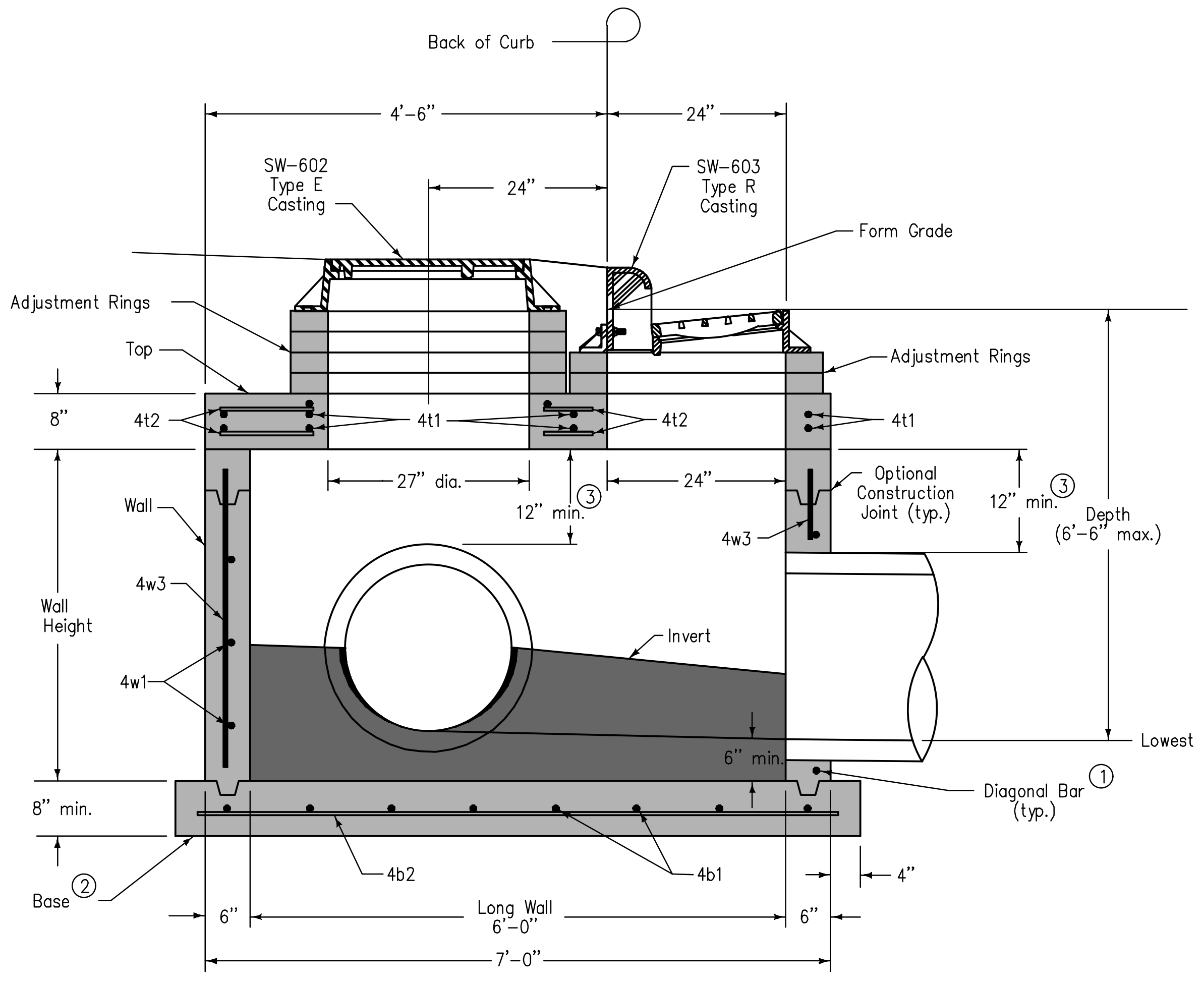


PLAN

REINFORCING BAR LIST						
Mark	Size	Location	Shape	Count	Length	Spacing
4t1	4	Top	——	12	3'–8"	12"
4t2	4	Top	——	8	4'–2"	12"
4b1	4	Base	——	7	4'–2"	13"
4b2	4	Base	——	5	7'–2"	10"
4w1	4	Short Walls	——	Varies	3'–8"	12"
4w2	4	Long Walls	——	Varies	6'–8"	12"
4w3	4	Walls	——	18	Wall Height minus 4"	13"

MAXIMUM PIPE DIAMETERS		
Pipe Location	Precast Structure	Cast–in–place Structure
Short Wall	24"	30"
Long Wall	30"	36"

① Install four #4 diagonal bars at manhole opening and at all pipe openings.



TYPICAL SECTION

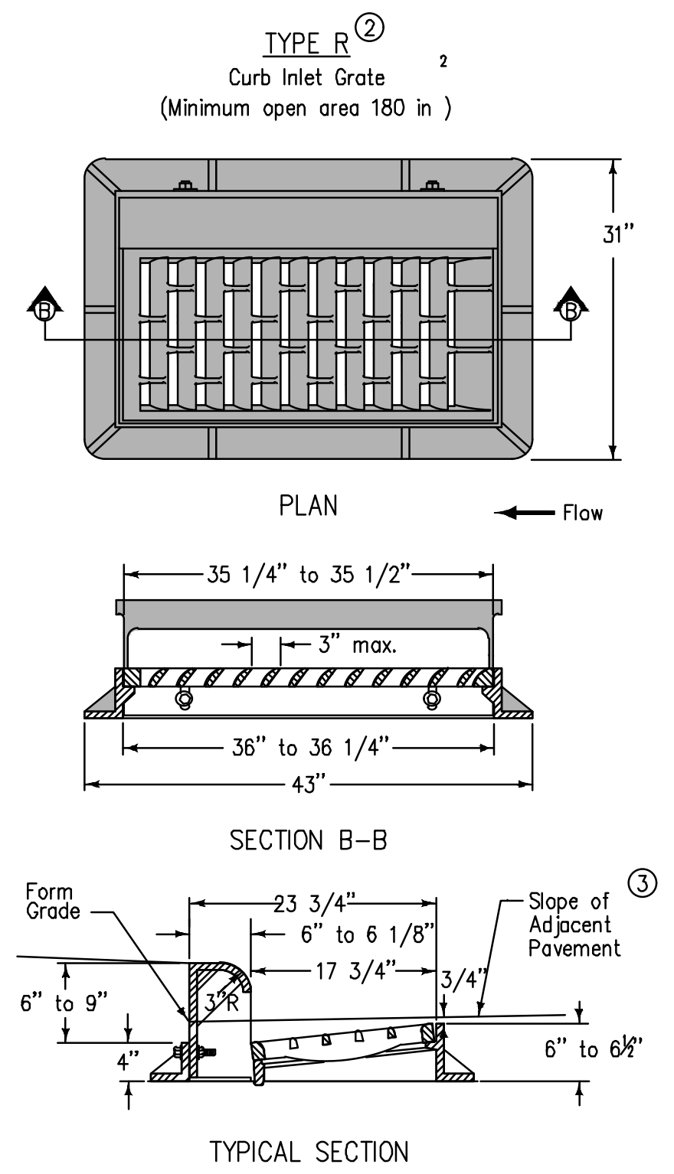
Refer to SW–514 for boxout details.

① Install four #4 diagonal bars at manhole opening and at all pipe openings.

② Cast–in–place base shown. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

③ 12 inch minimum wall height above all pipes.

D6 SINGLE GRATE INTAKE WITH MANHOLE (SW-503)



① For use in paving without curb. Use only when specified in the contract documents.

② Provide bicycle–safe vane–style grate with offset longitudinal ribs between vanes. At low points, grates with vanes facing both directions of flow are allowed.

③ For details of boxout pavement, refer to SW–514.

G6 CASTINGS FOR GRATE INTAKES (SW-603)

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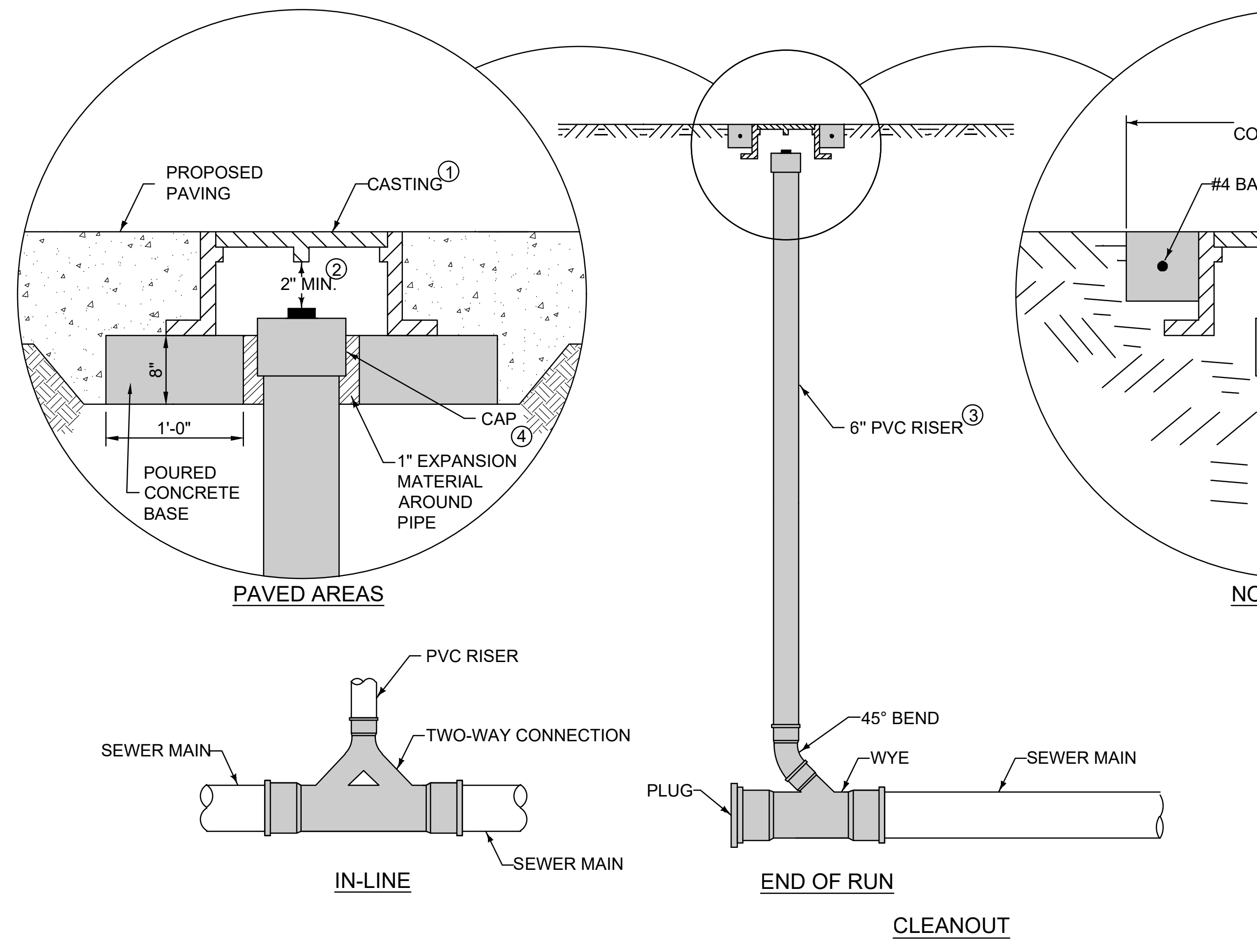
DRAWN: ---
APPROVED: ---
ISSUED FOR: SITE PLAN SUBMITTAL
DATE: 2019-09-20
PROJECT NO: 419393-0
FIELD BOOK: ---
CLIENT NO: ---

CONSTRUCTION DETAILS

C501



① NEENAH R-1975-A HEAVY DUTY CASTING AND LID

② DO NOT ALLOW CASTING TO BEAR ON TOP OF RISER PIPE.

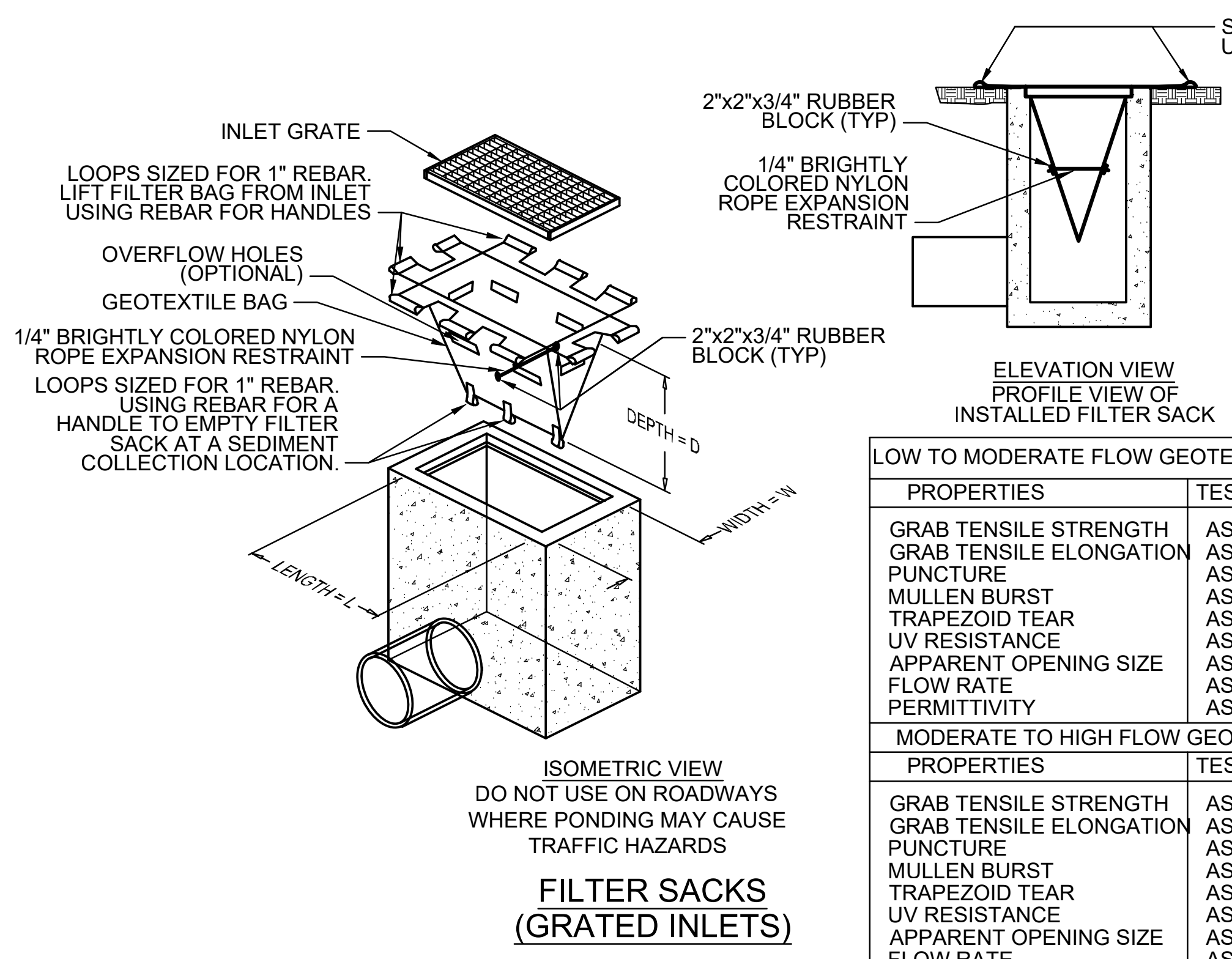
③ 6-INCH PVC SERVICE PIPE

④ THREADED PVC CAP OR IRON BODY FERRULE WITH BRASS SCREW PLUG

APPROVED STAINLESS
STEEL ANCHOR BOLT-6
BOLTS MINIMUM

A2 SUBDRAIN CLEANOUTS

NOT TO SCALE


INLET GRATE
LOOPS SIZED FOR 1" REBAR. LIFT FILTER BAG FROM INLET USING REBAR FOR HANDLES
OVERFLOW HOLES (OPTIONAL)
GEOTEXTILE BAG
1/4" BRIGHTLY COLORED NYLON ROPE EXPANSION RESTRAINT
LOOPS SIZED FOR 1" REBAR. USING REBAR FOR A HANDLE TO EMPTY FILTER SACK AT A SEDIMENT COLLECTION LOCATION.
2"x2"x3/4" RUBBER BLOCK (TYP)
DEPTH = D
WIDTH = W
LENGTH = L
ISOMETRIC VIEW
DO NOT USE ON ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS
FILTER SACKS (GRATED INLETS)
2"x2"x3/4" RUBBER BLOCK (TYP)
1/4" BRIGHTLY COLORED NYLON ROPE EXPANSION RESTRAINT
SECURE LIFTING LOOPS TO OR UNDER SUROUNDING SURFACE
ELEVATION VIEW
PROFILE VIEW OF INSTALLED FILTER SACK

1. EMPTY FILTER SACK WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE WILL BE WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS.
3. AN OIL ADSORBENT PAD OR PILLOW CAN BE PURCHASED WHEN OILS SPILLS ARE A CONCERN.
4. INSPECT PER REGULARTORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK WILL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK WILL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK WILL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

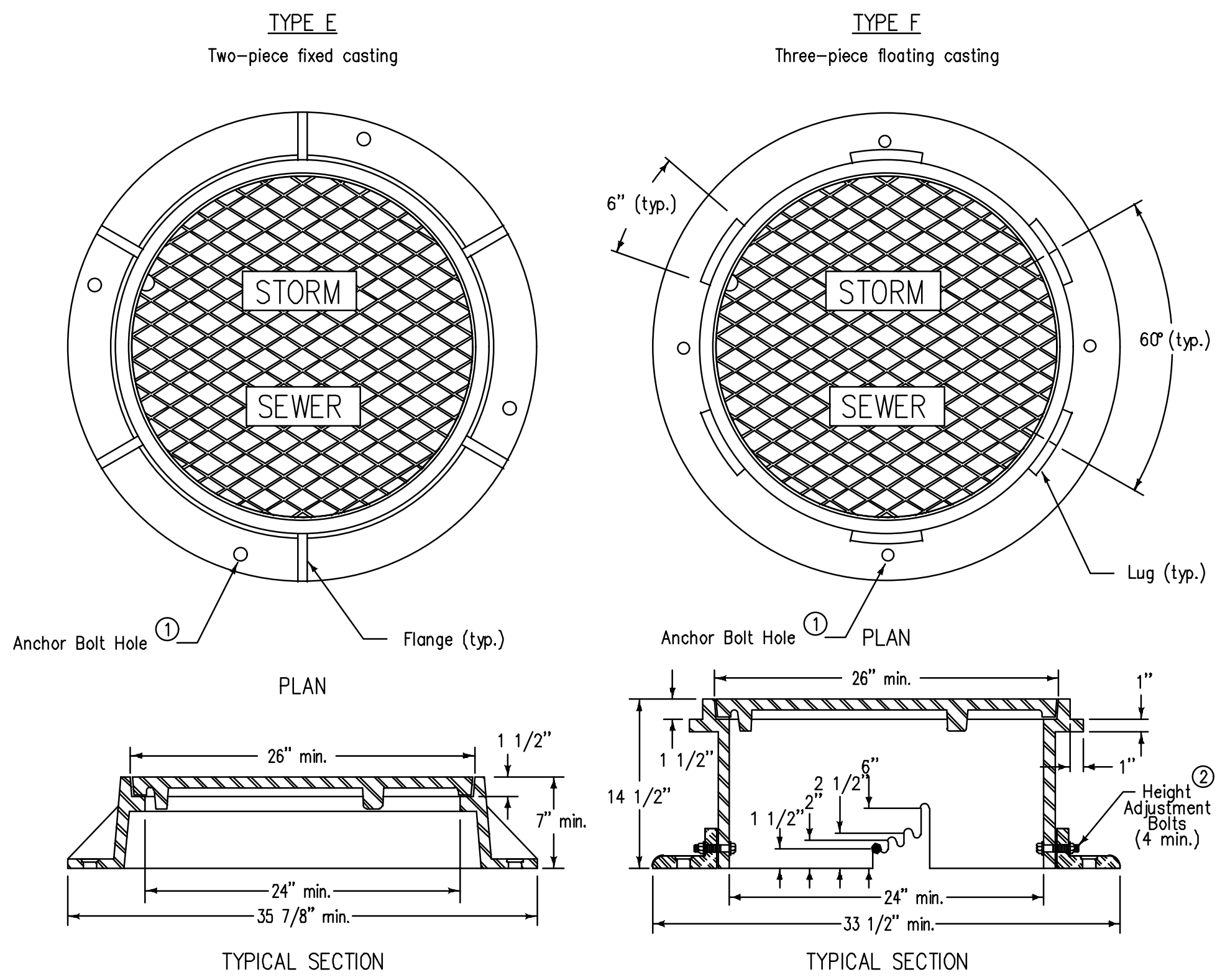
LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	8420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

D2 FILTER SACKS



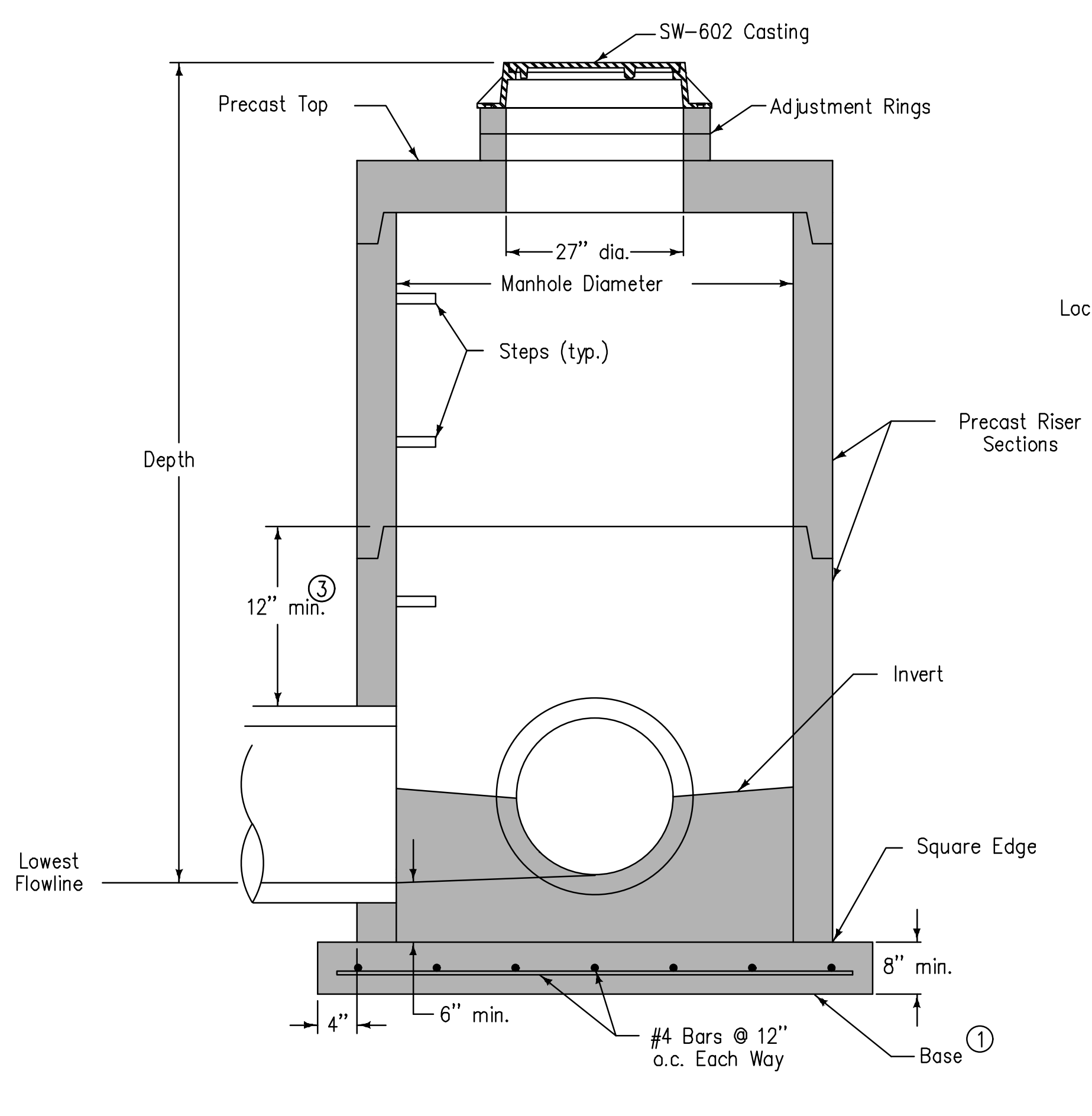
FRAME NOTES:
SIZE AND SPACING OF LUGS AND FLANGES MAY VARY.

COVER NOTES:
ROUGHNESS PATTERN AND TEXT STYLES MAY VARY. MINIMUM ONE CONCEALED PICKHOLE.

① IF FRAME IS REQUIRED TO BE ATTACHED TO STRUCTURE, DRILL FOUR 7/8" DIAMETER HOLES OR SLOTS, EQUALLY SPACED AROUND FRAME.

② REMOVE BOLTS UPON COMPLETION OF PAVING

G2 CASTINGS FOR STORM SEWER MANHOLES (SW-602)

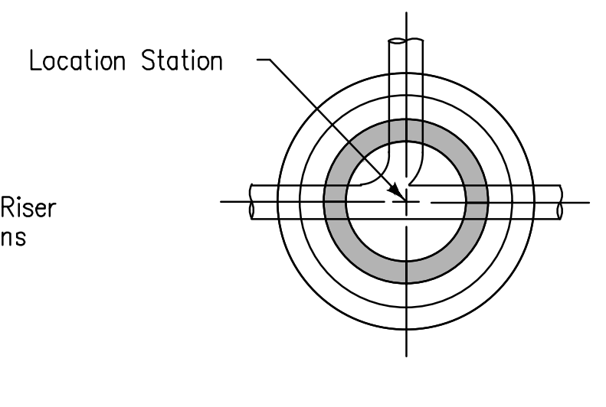


TYPICAL SECTION

① Cast-in-place base shown. If base is precast integral with bottom riser, the footprint of the base is not required to extend beyond the outer edge of the riser.

② For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.

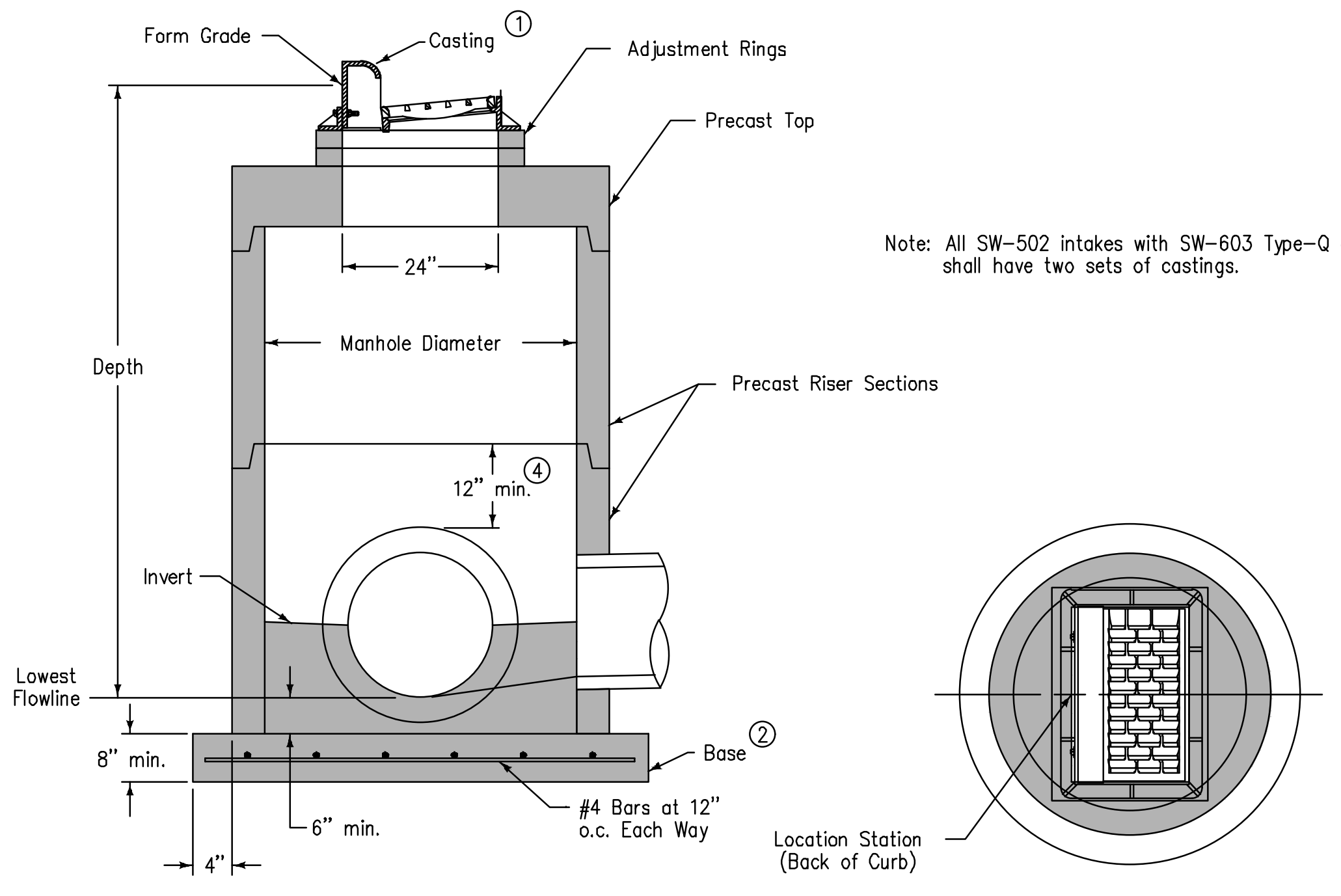
③ 12 inch minimum riser height above all pipe openings.



PLAN

Manhole Diameter (inches)	Maximum Pipe Diameter (inches) for 2 Pipes ②	
	At 180° Separation	At 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

A4 CIRCULAR STORM SEWER MANHOLE, (SW-401)



Note: All SW-502 intakes with SW-603 Type-Q castings shall have two sets of castings.

TYPICAL SECTION

PLAN

Refer to SW-514 for boxout details.

① Inlet casting shall be SW-603 drainage frame and grate or approved equal.

② Cast-in-place base shown. Base may be square. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

③ For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.

④ 12 inch minimum riser height above all pipes.

Manhole Diameter (inches)	Maximum Pipe Diameter (inches) for 2 Pipes ③	
	at 180° Separation	at 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

D4 CIRCULAR GRATE INTAKE, (SW-502)

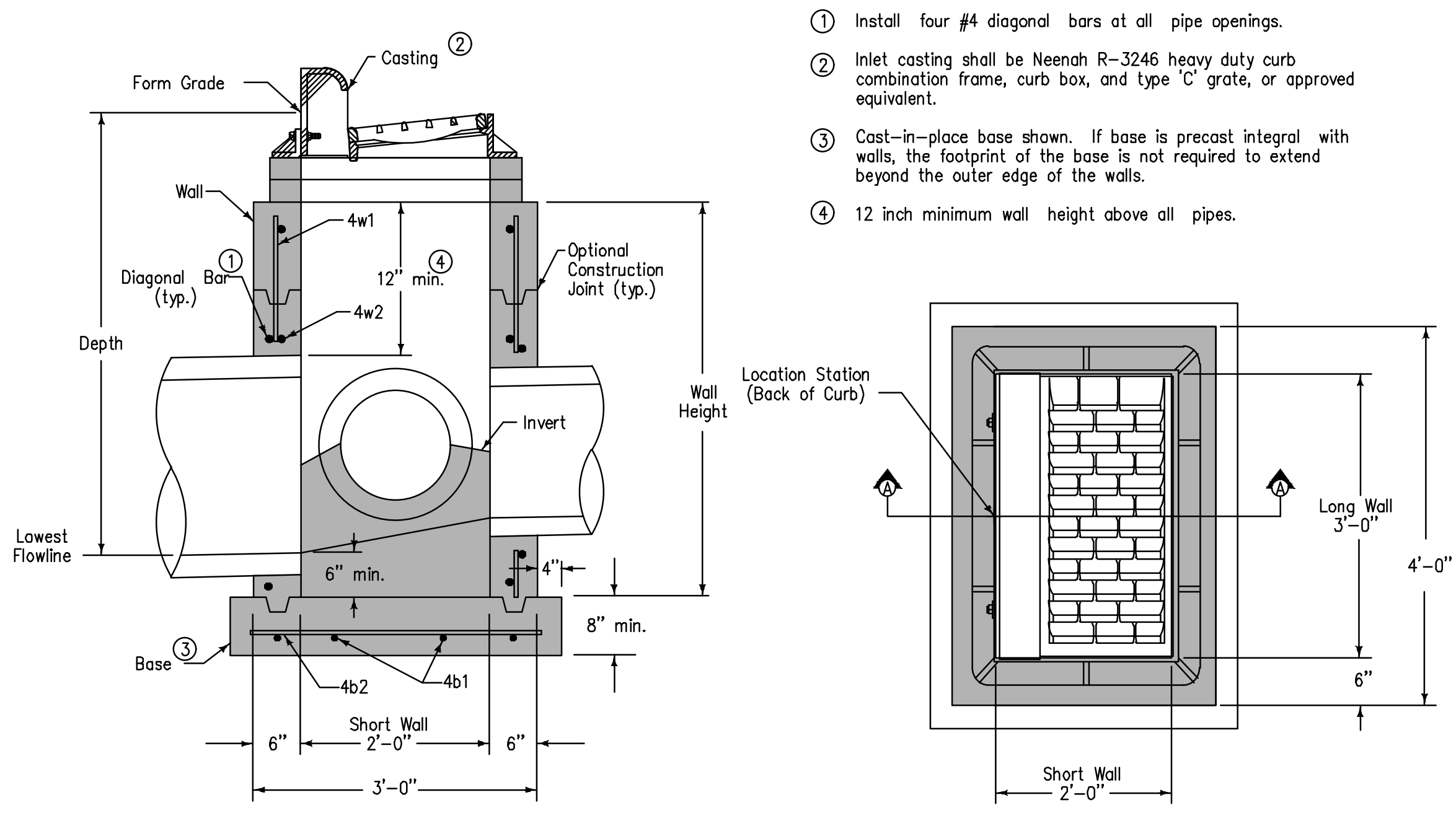
NOT TO SCALE

① Install four #4 diagonal bars at all pipe openings.

② Inlet casting shall be Neenah R-3246 heavy duty curb combination frame, curb box, and type 'C' grate, or approved equivalent.

③ Cast-in-place base shown. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

④ 12 inch minimum wall height above all pipes.



SECTION A-A

PLAN

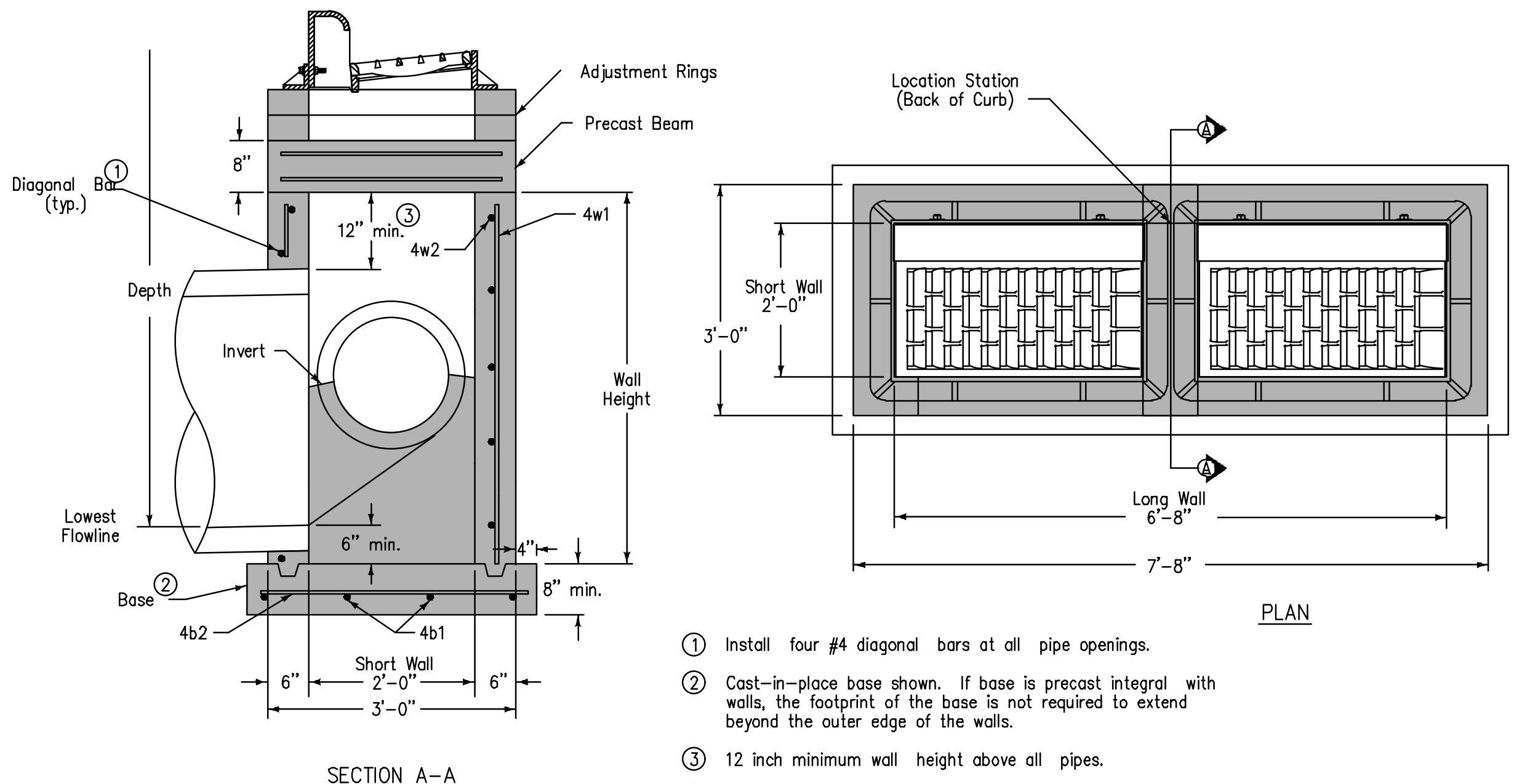
REINFORCING BAR LIST

Mark	Size	Location	Shape	Length	Count	Spacing
4w1	4	Walls	—	Wall Height minus 4"	14	12"
4w2	4	Long Walls	—	3'-8"	Varies	12"
4w3	4	Short Walls	—	2'-8"	Varies	12"
4b1	4	Base	—	4'-2"	4	10"
4b2	4	Base	—	3'-2"	5	10"

MAXIMUM PIPE DIAMETERS

Pipe Location	Precast Structure	Cast-in-place Structure
Short Wall	15"	18"
Long Wall	24"	30"

A6 SINGLE CURB INTAKE, (SW-501)



① Install four #4 diagonal bars at all pipe openings.

② Cast-in-place base shown. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

③ 12 inch minimum wall height above all pipes.

④ Inlet casting shall be Neenah R-3246 heavy duty curb combination frame, curb box, and type 'C' grate, or approved equivalent.

REINFORCING BAR LIST

Mark	Size	Location	Shape	Count	Length	Spacing
4t1	4	Beam	—	4	2'-8"	4"
4b1	4	Base	—	4	7'-10"	10"
4b2	4	Base	—	8	3'-2"	12"
4w1	4	Walls	—	20	Wall Height minus 4"	12"
4w2	4	Long Walls	—	Varies	7'-4"	12"
4w3	4	Short Walls	—	Varies	2'-8"	12"

MAXIMUM PIPE DIAMETERS

Pipe Location	Precast Structure	Cast-in-place Structure
Short Wall	15"	18"
Long Wall	60"	66"

D6 DOUBLE CURB INTAKE, (SW-505)

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PROJECT BLUEJAY

BONDURANT, IOWA

PRELIMINARY - NOT FOR CONSTRUCTION

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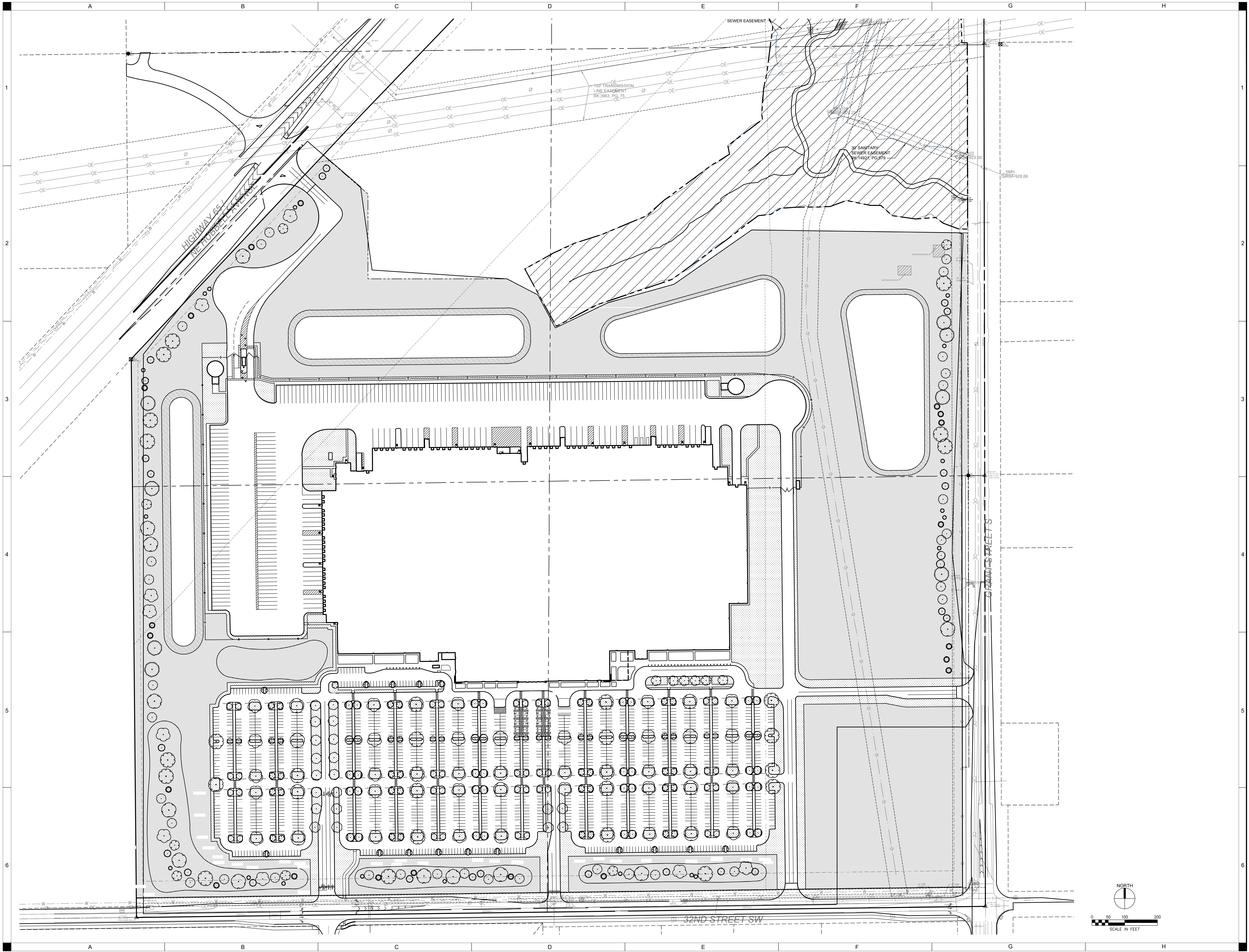
CONSTRUCTION DETAILS

C502



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PROJECT BLUEJAY

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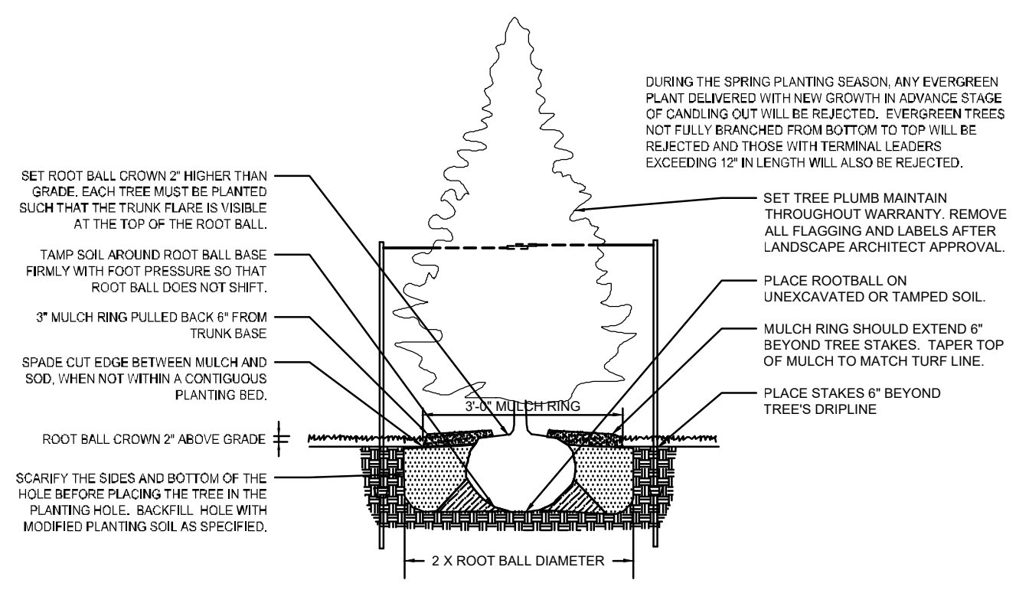
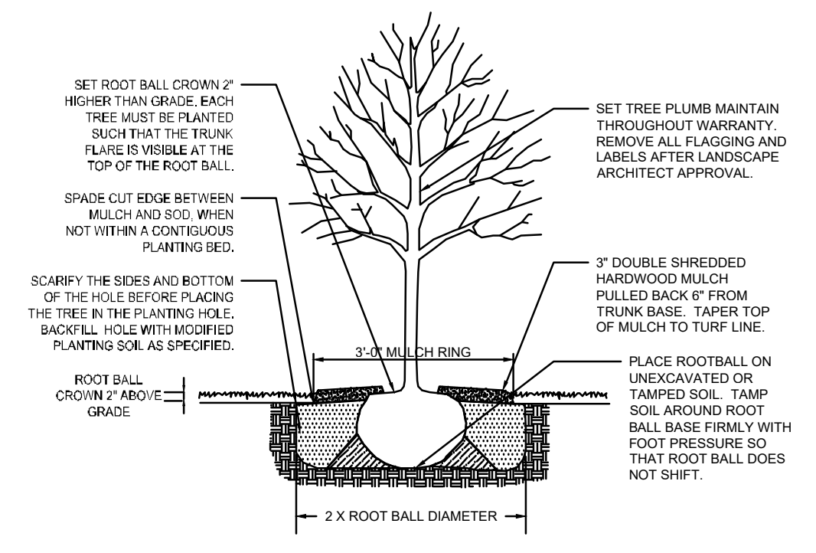
OVERALL LANDSCAPE PLAN

L100

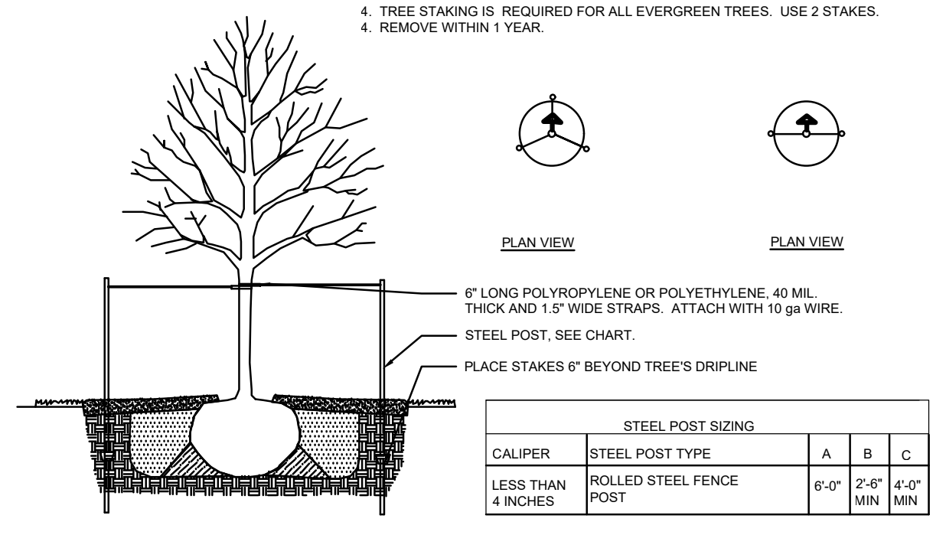

DURING THE SPRING PLANTING SEASON, ANY EVERGREEN PLANT DELIVERED WITH NEW GROWTH IN ADVANCE STAGE OF CANDLING OUT WILL BE REJECTED. EVERGREEN TREES NOT FULLY BRANCHED FROM BOTTOM TO TOP WILL BE REJECTED AND THOSE WITH TERMINAL LEADERS EXCEEDING 12" IN LENGTH WILL ALSO BE REJECTED.
SET ROOT BALL CROWN 2" HIGHER THAN GRADE. EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL.
TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.
3" MULCH RING PULLED BACK 6" FROM TRUNK BASE
SPADE CUT EDGE BETWEEN MULCH AND SOD, WHEN NOT WITHIN A CONTIGUOUS PLANTING BED.
ROOT BALL CROWN 2" ABOVE GRADE
SCARIFY THE SIDES AND BOTTOM OF THE HOLE BEFORE PLACING THE TREE IN THE PLANTING HOLE. BACKFILL HOLE WITH MODIFIED PLANTING SOIL AS SPECIFIED.
SET TREE PLUMB MAINTAIN THROUGHOUT WARRANTY. REMOVE ALL FLAGGING AND LABELS AFTER LANDSCAPE ARCHITECT APPROVAL.
PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL.
MULCH RING SHOULD EXTEND 6" BEYOND TREE STAKES. TAPER TOP OF MULCH TO MATCH TURF LINE.
PLACE STAKES 6" BEYOND TREE'S DRIPLINE
3'-0" MULCH RING
2 X ROOT BALL DIAMETER

① CONIFEROUS TREE PLANTING
NOT TO SCALE


SET ROOT BALL CROWN 2" HIGHER THAN GRADE. EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL.
SPADE CUT EDGE BETWEEN MULCH AND SOD, WHEN NOT WITHIN A CONTIGUOUS PLANTING BED.
SCARIFY THE SIDES AND BOTTOM OF THE HOLE BEFORE PLACING THE TREE IN THE PLANTING HOLE. BACKFILL HOLE WITH MODIFIED PLANTING SOIL AS SPECIFIED.
ROOT BALL CROWN 2" ABOVE GRADE
SET TREE PLUMB MAINTAIN THROUGHOUT WARRANTY. REMOVE ALL FLAGGING AND LABELS AFTER LANDSCAPE ARCHITECT APPROVAL.
3" DOUBLE SHREDDED HARDWOOD MULCH PULLED BACK 6" FROM TRUNK BASE. TAPER TOP OF MULCH TO TURF LINE.
PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL. TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.
3'-0" MULCH RING
2 X ROOT BALL DIAMETER

② DECIDUOUS TREE PLANTING
NOT TO SCALE

NOTES:
1. STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRES. PLACE OUTSIDE OF PLANTING HOLE. DRIVE PLUMB REGARDLESS OF GROUND SLOPE.
3. TREE STAKING IS REQUIRED FOR ALL DECIDUOUS TREES. USE 3 STAKES.
4. TREE STAKING IS REQUIRED FOR ALL EVERGREEN TREES. USE 2 STAKES.
4. REMOVE WITHIN 1 YEAR.


PLAN VIEW
PLAN VIEW
6" LONG POLYROPYLENE OR POLYETHYLENE, 40 MIL. THICK AND 1.5" WIDE STRAPS. ATTACH WITH 10 ga WIRE.
STEEL POST, SEE CHART.
PLACE STAKES 6" BEYOND TREE'S DRIPLINE

STEEL POST SIZING				
CALIPER	STEEL POST TYPE	A	B	C
LESS THAN 4 INCHES	ROLLED STEEL FENCE POST	6'-0"	2'-6" MIN	4'-0" MIN

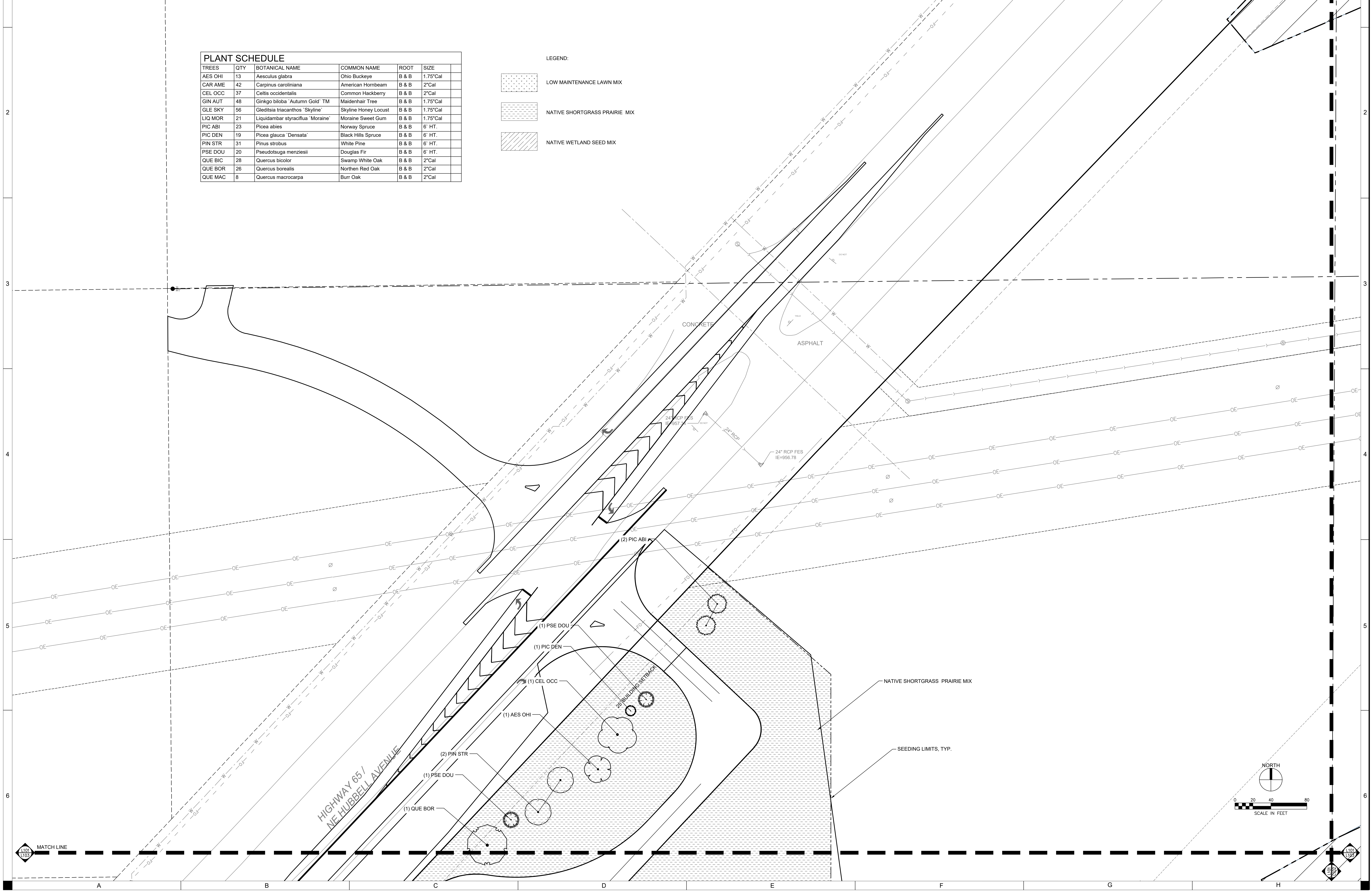
③ TREE STAKING DETAIL
NOT TO SCALE

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE
AES OHI	13	Aesculus glabra	Ohio Buckeye	B & B	1.75"Cal
CAR AME	42	Carpinus caroliniana	American Hornbeam	B & B	2"Cal
CEL OCC	37	Celtis occidentalis	Common Hackberry	B & B	2"Cal
GIN AUT	48	Ginkgo biloba `Autumn Gold` TM	Maidenhair Tree	B & B	1.75"Cal
GLE SKY	56	Gleditsia triacanthos `Skyline`	Skyline Honey Locust	B & B	1.75"Cal
LIQ MOR	21	Liquidambar styraciflua `Moraine`	Moraine Sweet Gum	B & B	1.75"Cal
PIC ABI	23	Picea abies	Norway Spruce	B & B	6` HT.
PIC DEN	19	Picea glauca `Densata`	Black Hills Spruce	B & B	6` HT.
PIN STR	31	Pinus strobus	White Pine	B & B	6` HT.
PSE DOU	20	Pseudotsuga menziesii	Douglas Fir	B & B	6` HT.
QUE BIC	28	Quercus bicolor	Swamp White Oak	B & B	2"Cal
QUE BOR	26	Quercus borealis	Northen Red Oak	B & B	2"Cal
QUE MAC	8	Quercus macrocarpa	Burr Oak	B & B	2"Cal

LEGEND:

░	LOW MAINTENANCE LAWN MIX
▤	NATIVE SHORTGRASS PRAIRIE MIX
▨	NATIVE WETLAND SEED MIX



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PROJECT BLUEJAY

BONDURANT, IOWA

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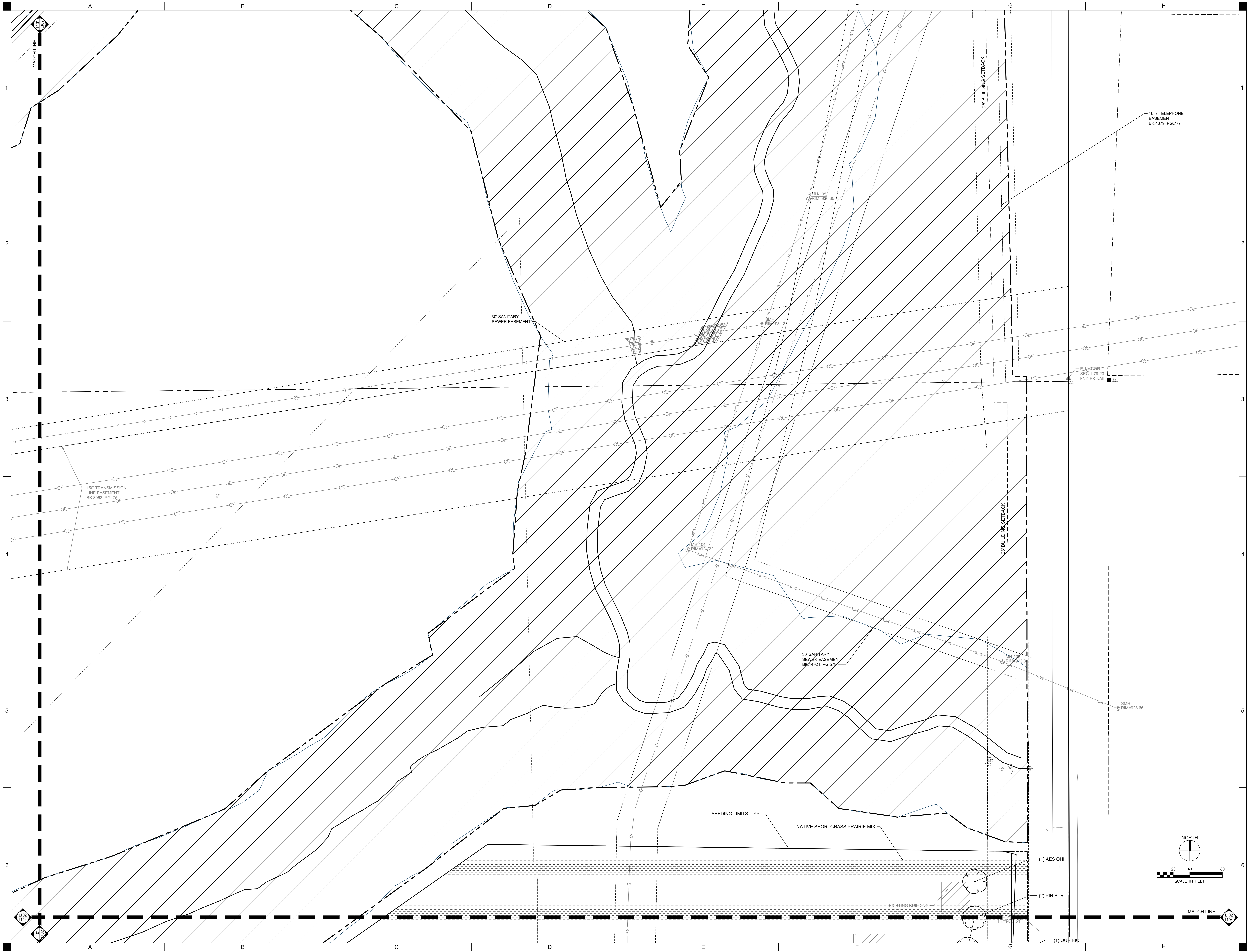
LANDSCAPE PLAN

L101



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LANDSCAPE PLAN

L102

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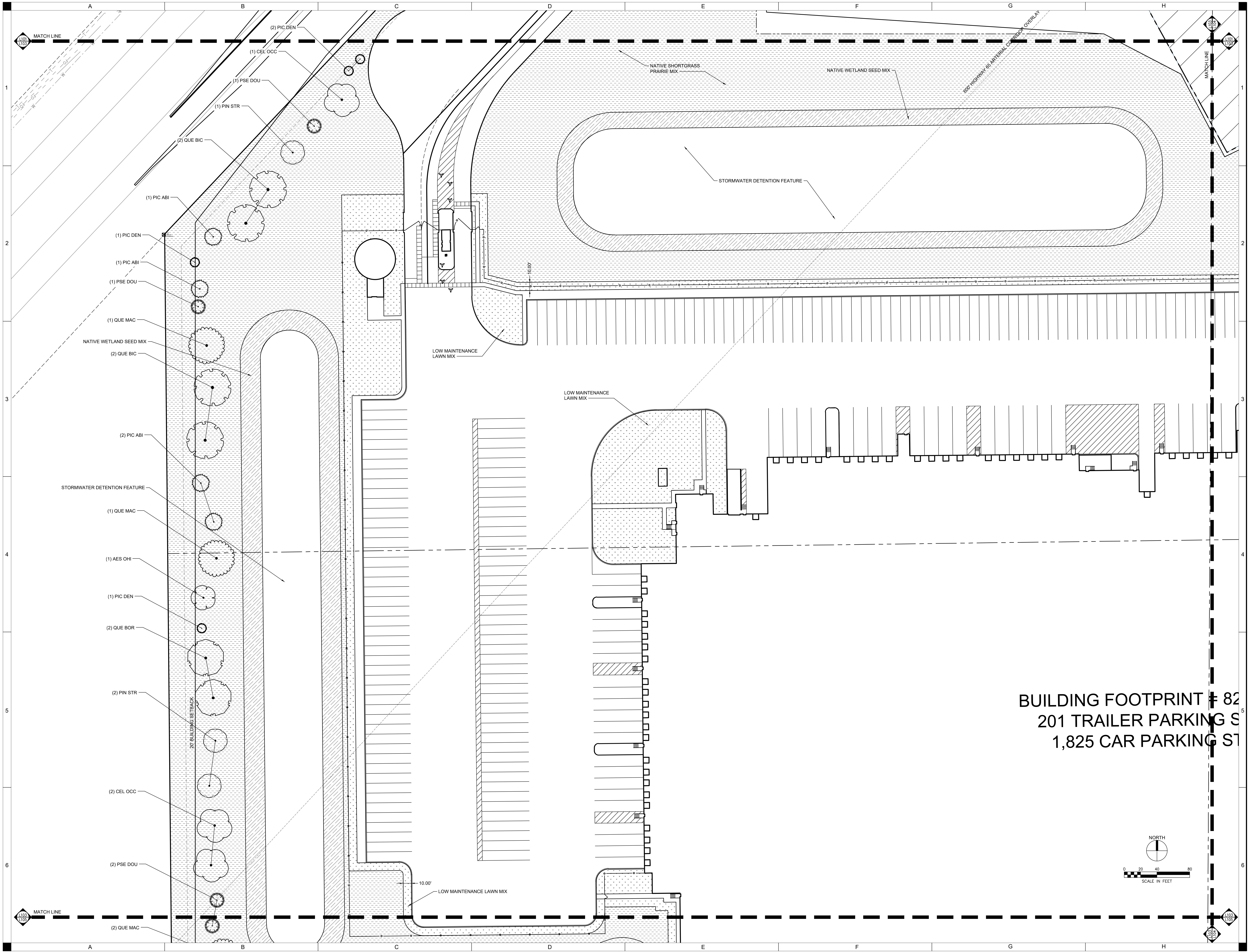

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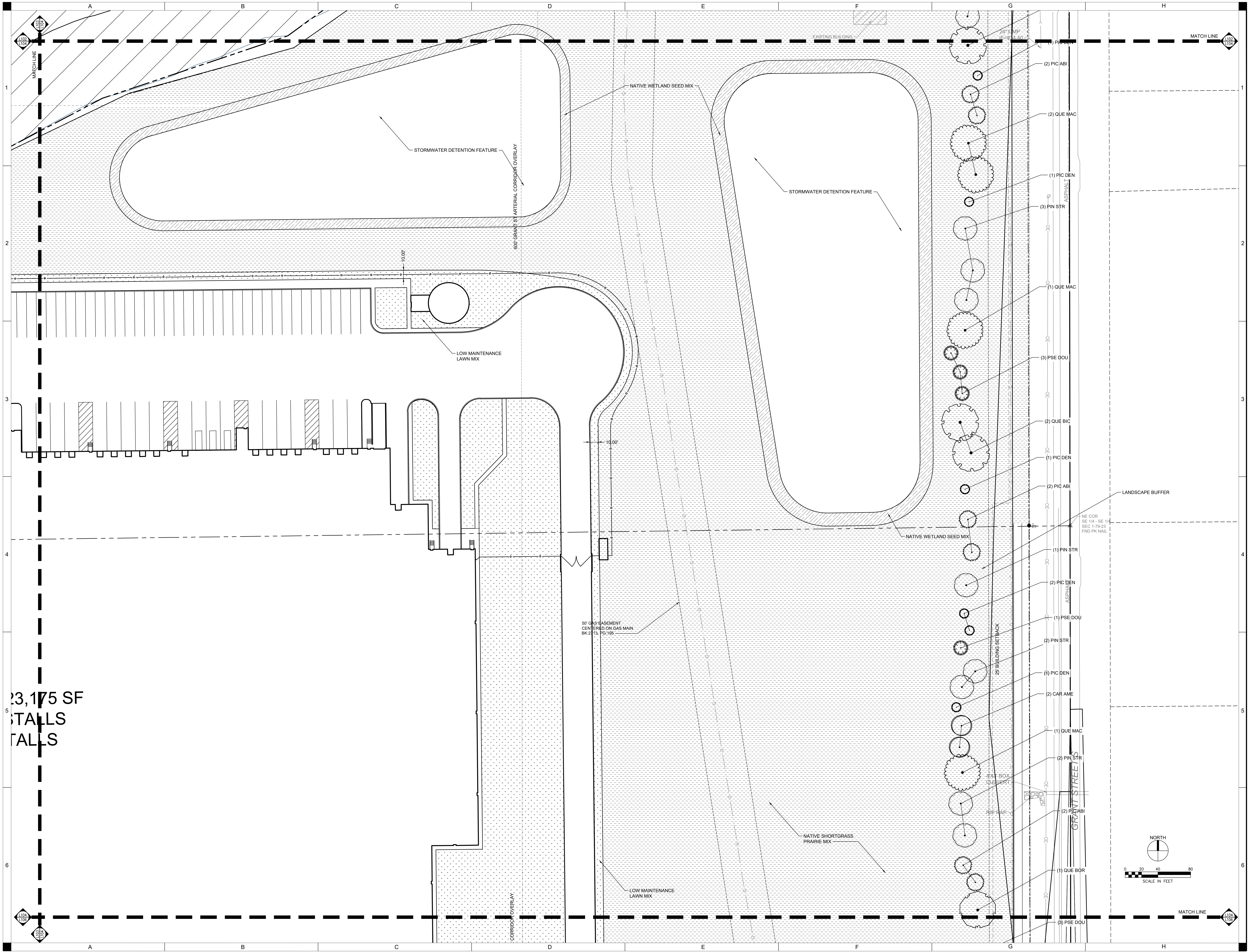
LANDSCAPE PLAN

L103



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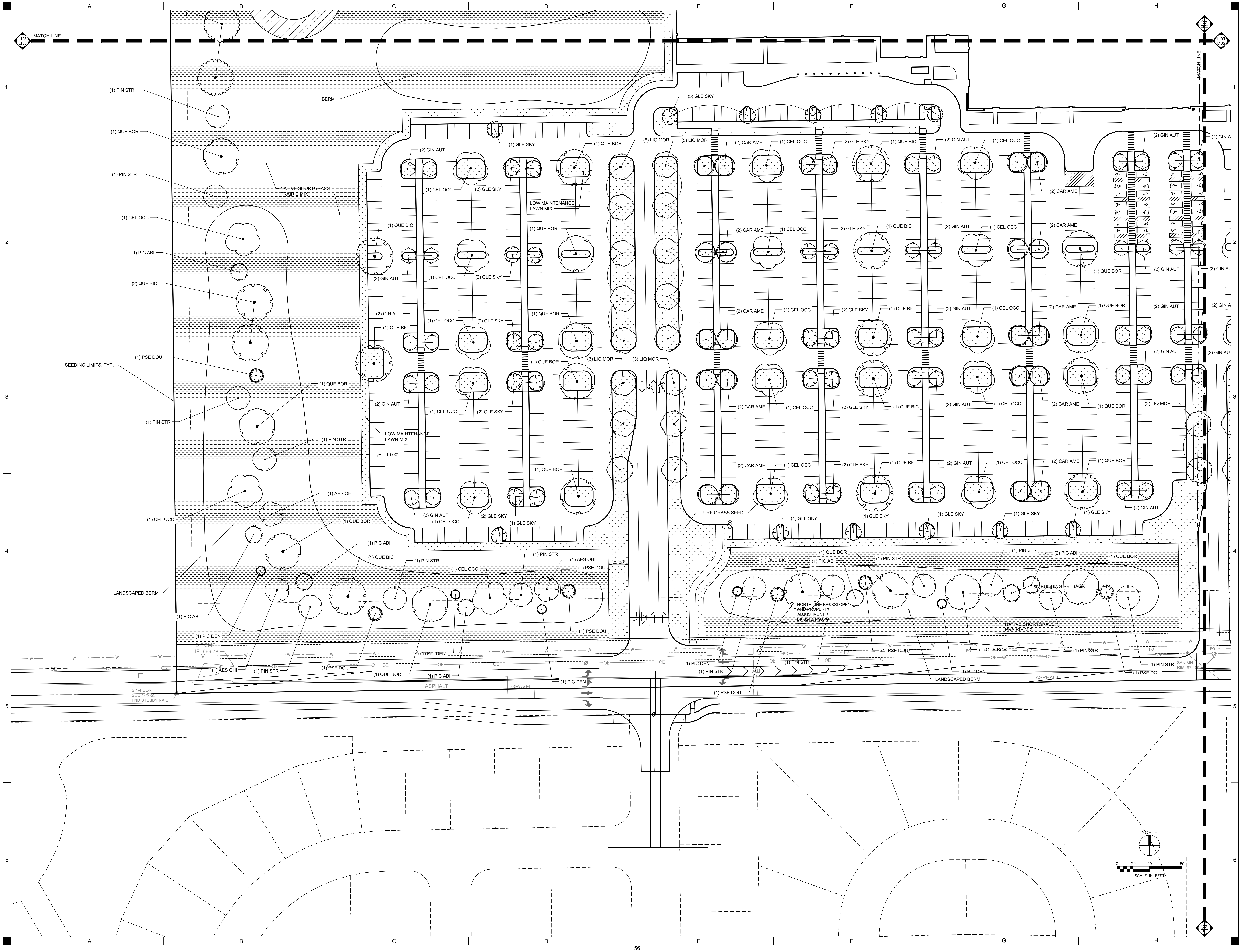
LANDSCAPE PLAN

L104



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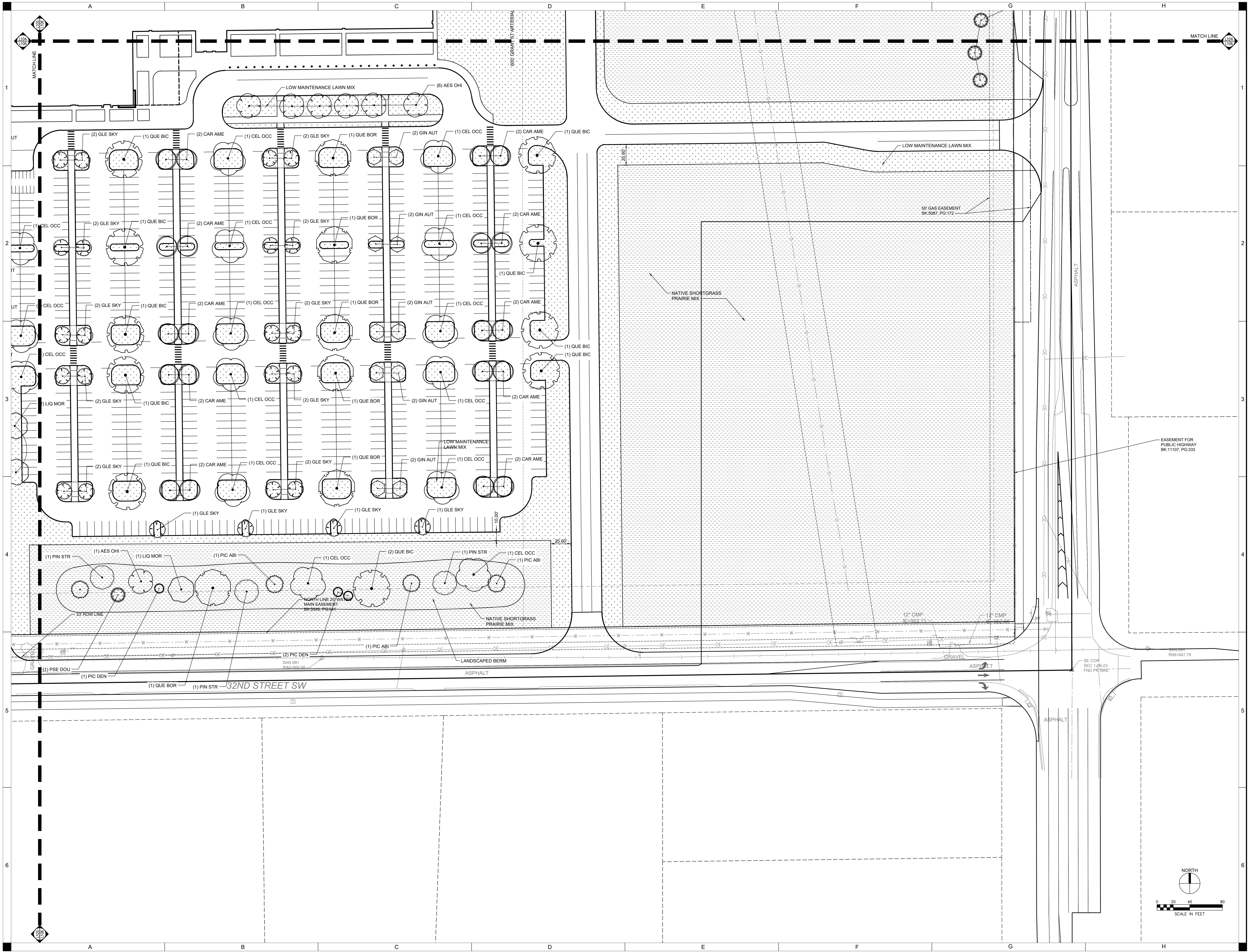
LANDSCAPE PLAN

L105



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LANDSCAPE PLAN

L106

DRAFT
September 16, 2019

Marketa Oliver
City Administrator
City of Bondurant
200 Second Street NE
P.O. Box 37
Bondurant, Iowa 50035

BONDURANT, IOWA
PROJECT BLUEJAY
SITE PLAN AND DRAINAGE REPORT
REVIEW COMMENTS

The writer has completed a review of the initial submittal of the site plan and stormwater drainage report for Project Bluejay. Based on review of the site plan the writer would note the following:

1. The site plan shows M1 zoning and appropriate bulk regulations.

2. The site plan indicates under the M1 zoning ordinance a total of 1,333 parking spaces would be required. The site plan indicates a total of 1,817 parking spaces are provided.

3. The site plan indicates the open space is 51.6% of the total site. The open space is in excess of the minimum requirement of 15%.

4. The maximum height of the building is shown at 94 feet.

5. The site plan indicates a total of 201 parking lot trees are required. A total of 201 parking lot trees is provided.

6. The site plan indicates a total of 109 frontage trees is required. The site plan shows a total of 127 trees in addition to the parking lot trees.

7. The general notes should include a note that all construction is to comply with the 2019 Edition of SUDAS.

8. The site plan indicates water service is provided by a 10-inch water main that connects to the City of Bondurant's water main crossing of Highway 65 constructed. The water main continues southwesterly along Highway 65. The water main continues easterly along the north side of the building and south along the east side of the building to connect to the water main on 32nd Street SE.

9. It is assumed the water main through this site will be private. The water main will create a loop in the City of Bondurant's water distribution system.

10. The City of Bondurant will not regulate the valve placement on the private water main. A valve is required at both water main connections that would be accessible to the City of Bondurant in the event it is necessary to isolate one end of the private water main.

11. Fire protection to the site is provided by a separate fire protection system. A fire booster pump and storage tank is located at the northwest corner and at the northeast corner of the site.

12. The fire protection water main is located around all four sides of the building. All fire hydrants on the site are connected to the fire protection system water main.

13. Given the height of the building and the proximity of the hydrants to the building it is recommended the Fire Chief be consulted to make sure there is adequate separation between the building face and hydrant locations.

14. Sanitary sewer is provided by a connection to the City's sanitary sewer on the east side of Highway 65.

15. The 8-inch sanitary sewer extends southwesterly along Highway 65 and continues east along the north side of the building.

16. The sanitary sewer is shown at slopes ranging from 0.47% to 1.00%. The sanitary sewer would meet the minimum slope requirements of the Iowa Department of Natural Resources.

17. It is assumed the sanitary sewer through the site will be privately owned.

18. The storm sewer sizes and slopes are shown on the site plan.

19. No calculations for the sizing of the storm sewer was included with the initial submittal.

20. All of the stormwater drainage from the site is either routed to one of the four stormwater ponds or allowed to discharge overland in an undetained manner.

21. The storm sewers in the west half of the parking lot and the storm sewer on the west side of the building is routed to stormwater Retention Basin 1 located west of the building.

22. The storm sewers from the truck entrance drive and the westerly portion of the north side of the building is routed directly to Retention Basin 2.

23. The storm sewers in the east half of the north side of the building are routed directly to Retention Basin 3.

24. The storm sewers in the east half to the parking lot and the storm sewer along the east side of the building are routed directly to Retention Basin 4.

25. The stormwater retention basins are interconnected with the flow routed from Retention Basin 1 through Retention Basin 2, Retention Basin 3 and finally to Retention Basin 4. The only discharge from the site is at the northeast corner of the site from Retention Basin 4 to Mud Creek.

26. The overall site includes future development areas located east of the current site and south of Retention Basin 4. Although the stormwater drainage report indicates the retention basin is sized for future development of the site these areas are not included in the storm sewer system as part of Project Bluejay.

27. The site is configured for truck traffic on the north side of the building and employee/visitor parking in the parking lots on the south side of the building.

28. The employee parking lots include three access drives to 32nd Street SW.

29. The west parking lot drive aligns with the intersection of Poplar Drive SW in the Wolf Creek development.

30. The other two parking lot entrances are tee intersections to 32nd Street SW.

31. The easterly parking lot drive is configured in a manner that can be used as a truck entrance drive.

32. At the west entrance drive there are two inbound lanes and two exit lanes. The two exit lanes include one right turn lane and one straight/left turn lane.

33. The improved intersection of Poplar Street SW, the west driveway and 32nd Street SW includes one through lane, one right turn lane and two left turn lanes for east bound traffic or 32nd Street SW and one left turn, one through lane and one right turn lane for west bound traffic.

34. During the conference call on September 10, 2019 it was indicated the intent is for additional right-of-way acquisition and widening of 32nd Street SW to be northerly. However, the site plan shows a portion of the new pavement encroaching outside of the right-of-way on the south side of 32nd Street SW on property owned by the Wolf Creek Homeowners Association.

35. At the easterly two drive access points to 32nd Street SW a three lane configuration is shown on the driveway with one inbound, one left turn outbound and one right turn outbound lane. At both intersections no improvements beyond the two lane configuration are shown for 32nd Street SW.

36. The site plan shows truck access drive to Grant Street S including the reconfiguration of Grant Street S. This secondary access has one inbound lane, one left turn outbound lane and one right turn outbound lane.

37. Although the primary truck traffic appears to be handled on the north side of the building there is a loop drive at the east end of the south side of the building that appears to be configured for larger vehicle traffic.

38. The primary truck entrance is from Highway 65/NE Hubbell Avenue at the reconfigured intersection previously proposed by the City of Bondurant. This intersection includes one inbound lane, one left outbound lane and one right outbound lane.

39. The site plan shows a sidewalk from the parking lot to 32nd Street SW on the east side of the west drive. No other exterior perimeter sidewalks are shown.

40. The site plan shows the proposed first floor elevation of the building to be 867.5.

41. The site plan shows berms along the north side of 32nd Street SW in the area between the right-of-way and parking lot. The top of the berm ranges from Elevation 876 to Elevation 880. The berm has a height approximately 8.5 feet above the first floor elevation at the berm west of the west driveway and 12.5 feet above the first floor elevation where the berms between the east and central drive and between the central and east drive.

42. As indicated earlier the majority of the site is graded to drain toward the detention basins. However, there are areas along the south boundary that drain directly to 32nd Street SW.

43. The future development sites located at the southeast corner of the site are generally graded to drain easterly.

44. There appears to be no berming along the westerly, northwesterly or northerly boundaries of the site.

45. The landscaping plan shows the perimeter trees located along the northwest frontage of the site, along the east side of the site adjacent to Grant Street S and along the south side of the site in the berm areas along the north side of 32nd Street SW.

46. The parking lot trees are shown on all of the interior islands and along the access drives of the parking lot.

47. The site plan indicates significant portions of the site are to be planted in native short grass, prairie grasses and other low maintenance grasses.

48. The site indicates there will be 2.6 acres seeded with native wetland seed mix, 39.5 acres seeded with a native short grass prairie mix and 9.4 acres seeded with a low maintenance lawn mix.

Based on review of the stormwater drainage plan the following comments are offered:

1. The stormwater drainage plan sets forth the design concept for onsite stormwater drainage and the sizing for the stormwater retention basins.

2. As part of the final stormwater drainage report the City requests more detailed analysis leading to the summary conclusions in the report be provided as appendix material.

3. The stormwater drainage report identifies three onsite and one offsite drainage basin under the current condition. The vast majority of the onsite drainage currently flows easterly either directly to Mud Creek or to a culvert under Grant Street S that continues overland east of Grant Street S to Mud Creek.

4. There is a small drainage basin at the southwest corner of the site that currently drains southwesterly.

5. The report identifies an area west of the site boundary on the southeast side of Highway 65 that drains to the site. This area is considered an offsite area.

6. As part of the stormwater drainage all of the runoff from the site is being intercepted and routed through the series of stormwater retention basins to a single point of discharge or allowed to flow directly offsite. The offsite areas are undetained and are located along the perimeter of the site.

7. All of the analysis was completed assuming the soils were Type D.

8. The stormwater analysis included an area identified as DA6.1 and DA6.2 located east of the site and south of Retention Basin 4. This area is calculated to be included in the sizing of the retention basin. As discussed earlier this area will be allowed to discharge offsite until developed in the future.

9. The future development areas are not captured as part of the initial stormwater drainage plan and continue to discharge easterly to the culvert under Grant Street S. The site improvements will reduce the runoff area tributary to the culvert from 49.36 acres to 14.62 acres.

10. The total site evaluated is 113.15 acres for the onsite area and the 3.05 acre pass through area for a total evaluated area of 116.19 acres.

11. The stormwater drainage report calculates the current time of concentration for Drainage Basins 1, 2 and 3 onsite and the additional impact of the offsite area that flows through an onsite area.

12. The stormwater drainage report indicates the onsite times of concentration in the developed condition were established at five minutes. The short time of concentration reflects the developed nature of the site with short travel times to the nearest point of interception of the overland flow.

13. The stormwater report calculates the current 5 year storm runoff to be 232.02 cfs. This includes 226.57 cfs from the onsite and 5.45 cfs for the offsite area.

14. The report calculates the allowable release rate under the developed condition based on the Q_5 undeveloped runoff from the onsite area and Q_{100} runoff from the offsite area to be 238.60 cfs. This includes 226.22 cfs for the onsite areas and 12.38 cfs for the Q_{100} undeveloped runoff from the offsite area.

15. The maximum release rate from the site is 175.45 cfs in a Q_{100} storm in the developed condition. The release rate is less than the allowable release rate of 238.60 cfs.

16. The release rate of 175.45 cfs includes the 78.20 cfs discharge from the retention basin and 97.25 cfs from the undetained areas.

17. The most significant undetained areas are along the south side of the site adjacent to 32nd Street SW with a release rate of approximately 73 cfs. It appears the release rate to 32nd Street SW under the developed condition is greater than the current flow to 32nd Street SW.

18. While the City allows undetained areas to discharge directly the City requires an analysis of the downstream conveyance system in instances where there is a significant increase in runoff due to development. In this instance, is appears this runoff will be captured in the storm sewer system of the reconstructed 32nd Street SW if it is constructed as an urban section with storm sewer.

19. The stormwater retention is provided by a sequence of four retention basins.

20. It appears all four of the stormwater retention basins are wet bottom basins.

21. Stormwater Retention Basin 1 has a water level of 951.00. The maximum water elevation under a 100 year event is 956.67 for an increase of 5.67 feet.

22. The emergency overflow elevation from Retention Basin 1 is 960.00 providing a freeboard of 3.33 feet. The freeboard is satisfactory.

23. The release rate from Retention Basin 1 is 58.46 cfs through a single 36-inch culvert.

24. The storage volume under a 100 year storm event in Retention Basin 1 is 410,964 cubic feet.

25. Stormwater Retention Basin 2 has a normal water level of 949.00. The maximum water elevation in a 100 year storm event is 952.70, for an increase of 3.70 feet.

26. The emergency overflow elevation from Retention Basin 2 is 954.00 providing a freeboard of 1.30 feet. The freeboard is satisfactory.

27. The maximum discharge rate from Retention Basin 2 is 45.17 cfs through a single 36-inch culvert.

28. The storage volume is a 100 year storm event in Retention Basin 2 is 387,298 cubic feet.

29. Stormwater Retention Basin 3 has a normal water elevation of 948.00. Under a 100 year storm event the maximum water level in Retention Basin 3 is 949.43, for an increase of 1.43 feet.

30. The emergency overflow elevation from Retention Basin 3 is 951.00, or a freeboard of 1.57 feet. The freeboard is satisfactory.

31. The maximum release rate from Retention Basin 3 is 47.03 cfs through twin 24-inch culverts.

32. The maximum stored volume for Retention Basin 3 in a 100 year storm event is 136,882 cubic feet.
33. The normal water elevation in Retention Basin 4 is 944.00. Under a 100 year storm event the maximum water elevation is 946.92, or an increase of 2.92 feet.
34. The emergency overflow elevation for Retention Basin 4 is 9.48, or a freeboard of 1.08 feet. The freeboard of 1.08 feet just meets the City's recommended minimum freeboard of 1.00 feet.
35. The release rate from Retention Basin 4 is 78.20 cfs through a 36-inch culvert to Mud Creek. This release rate is the only release from the onsite detained areas.
36. Under a 100 year storm event the maximum stored volume in Retention Basin 4 is 346,307 cubic feet.

If you have any questions or comments concerning the project, please contact the writer at 225-8000, or at bveenstra@v-k.net.

VEENSTRA & KIMM, INC.

H. R. Veenstra Jr.

HRVJr:paj
4285-089
cc: John Horton, City of Bondurant
Kelsey Scallon, Shive Hattery

VEENSTRA & KIMM, INC.
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September 20, 2019

Marketa Oliver
City Administrator
City of Bondurant
200 Second Street NE
P.O. Box 37
Bondurant, Iowa 50035

BONDURANT, IOWA
PROJECT BLUEJAY
SITE PLAN AND DRAINAGE REPORT
REVIEW COMMENTS

The writer has completed a review of the submittal of the site plan and stormwater drainage report for Project Bluejay. Based on review of the initial site plan comments were informally provided to the project representatives. A second submittal of the site plan was received and reviewed. Based on review of the second submittal of the site plan the writer would note the following:

1. The site plan shows M1 zoning and appropriate bulk regulations.

2. The site plan indicates under the M1 zoning ordinance a total of 1,333 parking spaces would be required. The site plan indicates a total of 1,817 parking spaces are provided.

3. The site plan indicates the open space is 51.6% of the total site. The open space is in excess of the minimum requirement of 15%.

4. The maximum height of the building is shown at 94 feet.

5. The general notes should include a note that all construction is to comply with the 2019 Edition of SUDAS.

6. The site plan indicates water service is provided by a 10-inch water main that connects to the City of Bondurant's water main crossing of Highway 65 constructed. The water main continues southwesterly along Highway 65. The water main continues easterly along the north side of the building and south along the east side of the building to connect to the water main on 32nd Street SE.

7. The water main through this site will be private. The water main will create a loop in the City of Bondurant's water distribution system.

8. The City of Bondurant will not regulate the valve placement on the private water main. A valve is shown at both water main connections that would be accessible to the City of Bondurant in the event it is necessary to isolate one end of the private water main.

9. Hydrants on the private water main are located near the fire booster facilities and at a few other locations.

10. Fire protection to the site is provided by a separate fire protection system. A fire booster pump and storage tank is located at the northwest corner and at the northeast corner of the site.

11. The fire protection water main is located around all four sides of the building. All fire hydrants on the site are connected to the fire protection system water main.

12. Along the south side of building hydrants on the fire protection main are located along the north side of the parking lot. It appears these hydrants have adequate separation from the building.

13. Along the north side of the building the fire hydrants are located in the islands adjacent to the building in the larger corner island and along the north side of the parking lot. The site plan is being modified to move one hydrant to the north side of the parking lot.

14. Along the west side of the building the hydrants are located in the islands in the parking lot. These hydrants are located relatively close to the building and are within the building fall distance. The general location of the hydrants on the west side of the building is satisfactory given the location of the hydrants on the north and south side of the building.

15. On the east side of the building the fire protection main is located on the east side of the driveway. Hydrants on this side of the building located adjacent to the fire protection main are adequate.

16. The hydrants include three hydrants on the private main connected to the City system and the hydrants on the separate fire protection system. This provides two separate groups of hydrants for increased fire protection reliability.

17. The hydrants connected to the private main will be color coded to match the standard City hydrant. The hydrants on the fire protection system will be a different color to avoid confusion.

18. The site plan shows the addition of fire hydrants to the existing water main along the north side of 32nd Street SW. There is discussion of replacing the water main along 32nd Street SW with a larger water main. If the water main improvements are included in the street improvements the hydrants along 32nd Street SW would be part of the street project rather than being added as part of the site plan improvements.

19. Sanitary sewer is provided by a connection to the City's sanitary sewer on the east side of Highway 65.

20. The 8-inch sanitary sewer extends southwesterly along Highway 65 and continues east along the north side of the building.

21. The sanitary sewer is shown at slopes ranging from 0.47% to 1.00%. The sanitary sewer would meet the minimum slope requirements of the Iowa Department of Natural Resources.

22. It is assumed the sanitary sewer through the site will be privately owned.

23. The storm sewer sizes and slopes are shown on the site plan.

24. No calculations for the sizing of the storm sewer was included with the initial submittal.

25. All of the stormwater drainage from the site is either routed to one of the four stormwater ponds or allowed to discharge overland in an undetained manner.

26. The storm sewers in the west half of the parking lot and the storm sewer on the west side of the building is routed to stormwater Retention Basin 1 located west of the building.

27. The storm sewers from the truck entrance drive and the westerly portion of the north side of the building is routed directly to Retention Basin 2.

28. The storm sewers in the east half of the north side of the building are routed directly to Retention Basin 3.

29. The storm sewers in the east half to the parking lot and the storm sewer along the east side of the building are routed directly to Retention Basin 4.

30. The stormwater retention basins are interconnected with the flow routed from Retention Basin 1 through Retention Basin 2, Retention Basin 3 and finally to Retention Basin 4. The only discharge from the site is at the northeast corner of the site from Retention Basin 4 to Mud Creek.

31. The overall site includes future development areas located east of the current site and south of Retention Basin 4. Although the stormwater drainage report indicates the retention basin is sized for future development of the site these areas are not included in the storm sewer system as part of Project Bluejay.

32. It is anticipated as part of the project 32nd Street SW from Highway 65 to Grant Street S will be reconstructed as an urban street section. The urban street section will have curb and gutter and a longitudinal storm sewer. The area along the north side of 32nd Street SW will drain toward 32nd Street SW. The details regarding the storm sewer along 32nd Street SW will need to be developed during the design of the street improvements.

33. The site is configured for truck traffic on the north side of the building and employee/visitor parking in the parking lots on the south side of the building.

34. The employee parking lots include three access drives to 32nd Street SW.

35. The west parking lot drive aligns with the intersection of Poplar Drive SW in the Wolf Creek development.

36. The other two parking lot entrances are tee intersections to 32nd Street SW.

37. The easterly parking lot drive is configured in a manner that can be used as a truck entrance drive.

38. At the west entrance drive there are two inbound lanes and two exit lanes. The two exit lanes include one right turn lane and one straight/left turn lane.

39. The improved intersection of Poplar Street SW, the west driveway and 32nd Street SW includes one through lane, one right turn lane and two left turn lanes for east bound traffic or 32nd Street SW and one left turn, one through lane and one right turn lane for west bound traffic.

40. During the conference call on September 10, 2019 it was indicated the intent is for additional right-of-way acquisition and widening of 32nd Street SW to be northerly. However, the site plan shows a portion of the new pavement encroaching outside of the right-of-way on the south side of 32nd Street SW on property owned by the Wolf Creek Homeowners Association.

41. At the easterly two drive access points to 32nd Street SW a three lane configuration is shown on the driveway with one inbound, one left turn outbound and one right turn outbound lane. At both intersections no improvements beyond the two lane configuration are shown for 32nd Street SW.

42. The site plan shows truck access drive to Grant Street S including the reconfiguration of Grant Street S. This secondary access has one inbound lane, one left turn outbound lane and one right turn outbound lane.

43. Although the primary truck traffic appears to be handled on the north side of the building there is a loop drive at the east end of the south side of the building that appears to be configured for larger vehicle traffic.

44. The primary truck entrance is from Highway 65/NE Hubbell Avenue at the reconfigured intersection previously proposed by the City of Bondurant. This intersection includes one inbound lane, one left outbound lane and one right outbound lane.

45. The site plan shows a sidewalk from the parking lot to 32nd Street SW on the east side of the west drive. No other exterior perimeter sidewalks are shown.

46. 32nd Street SW and Grant Street S would fall under the City's complete streets policy. Provisions for a trail/sidewalk will need to be addressed as part of the improvements to 32nd Street SW and Grant Street S.

47. The site plan shows the proposed first floor elevation of the building is to be 967.5. The site plan notes the first floor elevation to be 867.5 but that elevation has a typographic error as the 8 should be 9.

48. The site plan shows a small berm along the northwest side of the site just southeast of the entrance for Highway 65.

49. The site plan shows berms along the north side of 32nd Street SW in the area between the right-of-way and parking lot. The top of the berm ranges from Elevation 976 to Elevation 980. The berm has a height approximately 8.5 feet above the first floor elevation at the berm west of the west driveway and 12.5 feet above the first floor elevation where the berms between the east and central drive and between the central and east drive.

50. At the southwest corner of the site the berm located on the west side of the primary drive extends north along the west boundary of the site. This berm is designed to partially screen the visibility of the site from the area to the southwest including the westerly part of the Wolf Creek development.

51. For the balance of the west boundary of the site no berm is provided adjacent to the current undeveloped field area. In this area the ground slope is from the west property line downward by several feet toward the parking lot and building area.

52. There is no berming along the east side of the site adjacent to Grant Street S. The ground elevations along Grant Street S are generally in the 840s. Grant Street S is located 20 to 25 feet below the first floor elevation of the building. Based on the relatively uniform slope from Grant Street S to the east face of the building the building view will be unobstructed from the east and the top of the building will be generally from 110 to 115 feet above the road elevation.

53. As indicated earlier the majority of the site is graded to drain toward the retention basins. There are areas along the south boundary that drain directly to 32nd Street SW.

54. The future development sites located at the southeast corner of the site are generally graded to drain easterly.

55. Based on the size of the parking lot a total of 201 parking lot trees are required.

56. Based on the site plan a total of 109 frontage trees are required.

57. The total number of trees required on the site is 310. The total number of trees provided is 372, or 62 more trees than the minimum number of trees required.

58. Under the City's site plan ordinance, no trees would be required along the west boundary of the site as that adjoins an industrial area.

59. To provide better screening of the site particularly from the southwest the site plan shows additional trees located along the west boundary of the site. The site plan indicates significant portions of the site are to be planted in native short grass, prairie grasses and other low maintenance grasses.

60. The site indicates there will be 2.6 acres seeded with native wetland seed mix, 39.5 acres seeded with a native short grass prairie mix and 9.4 acres seeded with a low maintenance lawn mix.

Based on review of the stormwater drainage plan the following comments are offered:

1. The stormwater drainage plan sets forth the design concept for onsite stormwater drainage and the sizing for the stormwater retention basins.

2. As part of the final stormwater drainage report the City requests more detailed analysis leading to the summary conclusions in the report be provided as appendix material.

3. The stormwater drainage report identifies three onsite and one offsite drainage basin under the current condition. The vast majority of the onsite drainage currently

flows easterly either directly to Mud Creek or to a culvert under Grant Street S that continues overland east of Grant Street S to Mud Creek.

4. There is a small drainage basin at the southwest corner of the site that currently drains southwesterly.

5. The report identifies an area west of the site boundary on the southeast side of Highway 65 that drains to the site. This area is considered an offsite area.

6. As part of the stormwater drainage all of the runoff from the site is being intercepted and routed through the series of stormwater retention basins to a single point of discharge or allowed to flow directly offsite. The offsite areas are undetained and are located along the perimeter of the site.

7. All of the analysis was completed assuming the soils were Type D.

8. The stormwater analysis included an area identified as DA6.1 and DA6.2 located east of the site and south of Retention Basin 4. This area is calculated to be included in the sizing of the retention basin. As discussed earlier this area will be allowed to discharge offsite until developed in the future.

9. The future development areas are not captured as part of the initial stormwater drainage plan and continue to discharge easterly to the culvert under Grant Street S. The site improvements will reduce the runoff area tributary to the culvert from 49.36 acres to 14.62 acres.

10. The total site evaluated is 113.15 acres for the onsite area and the 3.05 acre pass through area for a total evaluated area of 116.19 acres.

11. The stormwater drainage report calculates the current time of concentration for Drainage Basins 1, 2 and 3 onsite and the additional impact of the offsite area that flows through an onsite area.

12. The stormwater drainage report indicates the onsite times of concentration in the developed condition were established at five minutes. The short time of concentration reflects the developed nature of the site with short travel times to the nearest point of interception of the overland flow.

13. The stormwater report calculates the current 5 year storm runoff to be 232.02 cfs. This includes 226.57 cfs from the onsite and 5.45 cfs for the offsite area.

14. The report calculates the allowable release rate under the developed condition based on the Q_5 undeveloped runoff from the onsite area and Q_{100} runoff from the

offsite area to be 238.60 cfs. This includes 226.22 cfs for the onsite areas and 12.38 cfs for the Q_{100} undeveloped runoff from the offsite area.

15. The maximum release rate from the site is 175.45 cfs in a Q_{100} storm in the developed condition. The release rate is less than the allowable release rate of 238.60 cfs.

16. The release rate of 175.45 cfs includes the 78.20 cfs discharge from the retention basin and 97.25 cfs from the undetained areas.

17. Excluding the future development area that will drain easterly to Grant Street S the majority of the undetained area is located along the south boundary of the site and generally encompasses the area from the right-of-way of 32nd Street SW to the berm area.

18. Based on the design the amount of runoff in the area south of the berms would increase the runoff above the current condition. To address this increase in the runoff the stormwater drainage plan for 32nd Street SW shows the storm sewer along most of the reconstructed 32nd Street SW being routed northerly through Retention Basin 1. While the runoff from the site leaves the site undetained it is routed back through the stormwater retention basins effectively providing the required level of stormwater retention.

19. The details regarding the routing of flow through the stormwater retention basin from the storm sewer along 32nd Street SW will need to be refined during the design of the street improvements. Routing this flow will require an adjustment of the design flows through the four retention basins.

20. As of this date for consideration of the site plan the details regarding the routing of flow from 32nd Street SW have not been fully evaluated. However, any adjustments in the stormwater retention basins as a result of this flow can be addressed by technical adjustments during the project development phase.

21. The stormwater retention is provided by a sequence of four retention basins.

22. It appears all four of the stormwater retention basins are wet bottom basins.

23. Stormwater Retention Basin 1 has a water level of 951.00. The maximum water elevation under a 100 year event is 956.67 for an increase of 5.67 feet.

24. The emergency overflow elevation from Retention Basin 1 is 960.00 providing a freeboard of 3.33 feet. The freeboard is satisfactory.

25. The release rate from Retention Basin 1 is 58.46 cfs through a single 36-inch culvert.

26. The storage volume under a 100 year storm event in Retention Basin 1 is 410,964 cubic feet.

27. Stormwater Retention Basin 2 has a normal water level of 949.00. The maximum water elevation in a 100 year storm event is 952.70, for an increase of 3.70 feet.

28. The emergency overflow elevation from Retention Basin 2 is 954.00 providing a freeboard of 1.30 feet. The freeboard is satisfactory.

29. The maximum discharge rate from Retention Basin 2 is 45.17 cfs through a single 36-inch culvert.

30. The storage volume is a 100 year storm event in Retention Basin 2 is 387,298 cubic feet.

31. Stormwater Retention Basin 3 has a normal water elevation of 948.00. Under a 100 year storm event the maximum water level in Retention Basin 3 is 949.43, for an increase of 1.43 feet.

32. The emergency overflow elevation from Retention Basin 3 is 951.00, or a freeboard of 1.57 feet. The freeboard is satisfactory.

33. The maximum release rate from Retention Basin 3 is 47.03 cfs through twin 24-inch culverts.

34. The maximum stored volume for Retention Basin 3 in a 100 year storm event is 136,882 cubic feet.

35. The normal water elevation in Retention Basin 4 is 944.00. Under a 100 year storm event the maximum water elevation is 946.92, or an increase of 2.92 feet.

36. The emergency overflow elevation for Retention Basin 4 is 9.48, or a freeboard of 1.08 feet. The freeboard of 1.08 feet just meets the City's recommended minimum freeboard of 1.00 feet.

37. The release rate from Retention Basin 4 is 78.20 cfs through a 36-inch culvert to Mud Creek. This release rate is the only release from the onsite detained areas.

38. Under a 100 year storm event the maximum stored volume in Retention Basin 4 is 346,307 cubic feet.

In summary, the revised submittal of the site plan being presented to the City in advance of the September 23, 2019 Plan & Zoning Commission addressed all of the comments in the original submittal of the site plan with the exception of a couple of very minor items that will be corrected. These items are the building floor elevation and final hydrant locations. The only item that will require additional follow up is the refinement of the storm sewer analysis dealing with the storm sewer from 32nd Street SW that will need to be addressed as part of the design of the street improvements given the size and magnitude of the project it is quite likely there will be minor adjustments and refinements in the site plan as the project progresses. Again, these adjustments do not appear to affect the total project and would not appear to be of a magnitude that would require reconsideration of the approval of the site plan.

If you have any questions or comments concerning the project, please contact the writer at 225-8000, or at bveenstra@v-k.net.

VEENSTRA & KIMM, INC.

H. R. Veenstra Jr.

HRVJr:paj
4285-089
cc: John Horton, City of Bondurant

Marketa Oliver

From: Kelsey A. Scallon <kscallon@shive-hattery.com>
Sent: Friday, September 20, 2019 3:48 PM
To: 'bveenstra@v-k.net'

Subject: Project Bluejay Site Plan Resubmittal Comments

Bob,

To follow up on our conversation about outstanding site plan comments:

1. Discrepancy between the labeled finish floor elevation and the surrounding contour elevations. The finish floor elevation label on the grading plans contains a typo. The elevation should read 967.50 instead of 867.50.
2. A hydrant is desired on the fire protection line on the north side of the building to provide better coverage of the building outside of the fall zone. A hydrant can be added to the north to be fed from the fire protection main.
3. Trees have been added to the landscape plan but do not appear to be updated in the landscape counts on the cover page. The landscape summary should read: 201 parking lot trees + 109 frontage trees + 62 additional trees = 372 total site trees. Trees were added to the west property line for better screening but no trees were removed from the parking lot at this point in time. The landscape plan is likely to continue to change as the design evolves.

I understand that you will include these comments in your P&Z memo for the site plan to be approved contingent upon some of these minor modifications. Let me know if I've misunderstood anything we discussed or you need any additional information.

Thanks!

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