

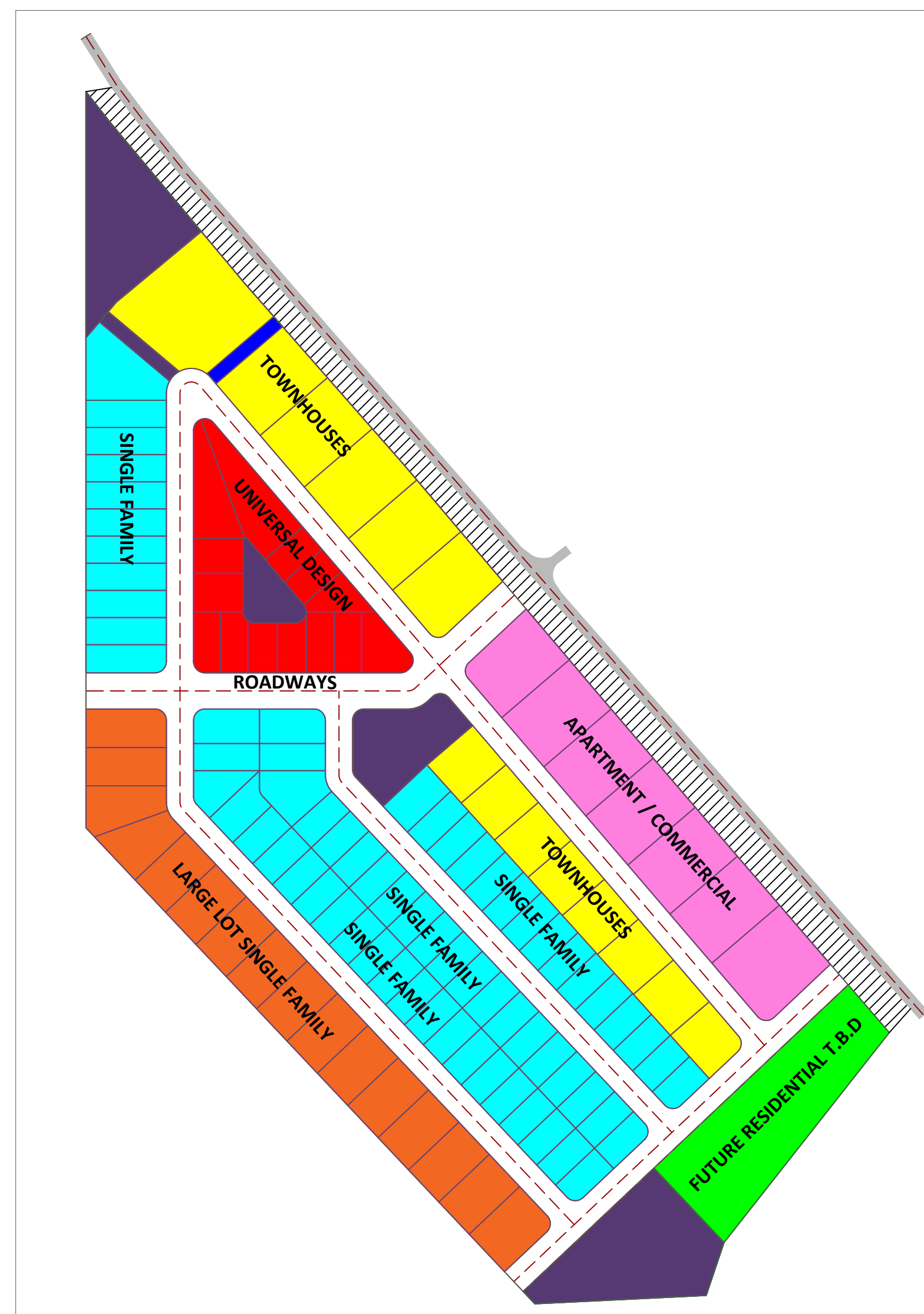


INNOVATIVE INFRASTRUCTURE

# CITY OF BELLEVUE EXPANSION PROJECT



PROJECT LOCATION MAP (N.T.S)



HOUSING LAYOUT

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SHEET NO.

**G001**

## GENERAL CONSTRUCTION NOTES

1. TOPOGRAPHICAL INFORMATION BASED UPON LIDAR DATA PROVIDED BY IOWA DEPARTMENT OF NATURAL RESOURCES.
2. THE MATERIAL AND THE CONSTRUCTION OF THIS PROJECT SHALL BE DONE IN CONFORMANCE WITH THE IOWA STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) AND THE SPECIFICATIONS PROVIDED IN THIS DRAWING SET.
3. LOCATIONS OF UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF UTILITIES, PROTECTING ALL EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES.
4. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
5. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR ON "AS-BUILT" DRAWINGS.
6. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT HIS EMPLOYEES, AS WELL AS PUBLIC FROM INJURY DURING THE ENTIRE CONSTRUCTION PERIOD USING ALL NECESSARY SAFEGUARDS, INCLUDING BUT NOT LIMITED TO THE ERECTION OF TEMPORARY WALKS, STRUCTURES, PROTECTIVE BARRIERS, COVERING, OR FENCES AS NEEDED.
7. THE CONTRACTOR SHALL REMOVE ALL SURFACE VEGETATION PRIOR TO GRADING THE SITE. SUMPS SHALL BE REMOVED BY THE CONTRACTOR. TEMPORARY EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS SHALL BE INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THESE TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE PROJECT WHICH COST SHALL BE INCIDENTAL TO THE PROJECT.
8. ALL UNSUITABLE UNCONTAMINATED EXCESS SOIL FROM CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. REMOVAL ACTIVITIES SHALL BE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. ALL EXCAVATED FILL MATERIAL WHICH DOES NOT MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT NO ADDITIONAL COST.
9. CONTRACTOR IS RESPONSIBLE FOR STAKING CONSTRUCTION BASELINES IN FIELD BY A PROFESSIONAL SURVEYOR AND APPROVED BY THE ENGINEER.
10. NO FILL SHALL CONTAIN HAZARDOUS MATERIALS.
11. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AROUND PERIMETER OF WORK AREA. FENCE SHALL NOT IMPEDE TRAVEL WAYS.
12. IT IS A CONTRACTOR RESPONSIBILITY TO VISIT THE PROJECT SITE TO VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO SUBMITTING BID.
13. ALL EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE MAINTAINED FREE OF DEBRIS, SOIL, AND SEDIMENT. REMOVE ALL SOIL, SEDIMENT, AND DEBRIS FROM ALL DRAINAGE STRUCTURES, INCLUDING BUT NOT LIMITED TO DRAINAGE INLETS, MANHOLES, AND CATCH BASINS WITHIN THE LIMIT OF WORK AND DRAINAGE STRUCTURES OUTSIDE THE LIMIT OF WORK THAT ARE IMPACTED BY THE WORK FOR THE ENTIRE DURATION OF CONSTRUCTION.
14. CONTRACTOR'S STAGING AREA MUST BE WITHIN THE CONTRACT LIMIT LINE AND IN AREAS APPROVED BY OWNER.
15. CONTRACTOR SHALL KEEP ALL STREETS, PARKING LOTS, AND WALKS THAT ARE NOT RESTRICTED FROM THE PUBLIC USE DURING CONSTRUCTION CLEAN AT ALL TIMES.
16. CONTRACTOR SHALL USE ACCEPTABLE METHODS AND MATERIALS TO MAINTAIN ADEQUATE DUST CONTROL THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL DEWATER AS NEEDED.
17. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER.
18. DEEP SUMP CATCH BASINS AND STORMWATER BASIN SHALL BE CLEANED FOLLOWING CONSTRUCTION AND SHALL FOLLOW THE OPERATION AND MAINTENANCE PLAN.

## EROSION AND SEDIMENT CONTROL

1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION. REFER TO PLAN FOR APPROXIMATE LOCATION OF EROSION AND SEDIMENT CONTROL. REFER TO SPECS AND DETAILS FOR TYPE OF EROSION AND SEDIMENT CONTROL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUAL MAINTENANCE OF ALL CONTROL DEVICES DURING THE PROJECT.
3. EXCAVATED MATERIAL STOCKPILED ON THE SITE SHALL BE SURROUNDED BY A RING OF UNBROKEN SEDIMENT AND EROSION CONTROL FENCE. THE LIMITS OF ALL GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMIT OF CONTRACT SHALL REMAIN TOTALLY UNDISTURBED UNLESS OTHERWISE NOTED.
4. ALL CATCH BASINS AND DRAIN GRATES WITHIN LIMIT OF CONTRACT SHALL BE PROTECTED WITH FILTER FABRIC DURING THE ENTIRE DURATION OF CONSTRUCTION.
5. EROSION CONTROL BARRIERS TO BE INSTALLED AT THE TOE OF SLOPES.
6. ANY AREA OUTSIDE THE PROJECT LIMIT THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
7. ALL POINTS OF CONSTRUCTION EGREES OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ON THE PUBLIC / PRIVATE ROADS.

## SWPPP PREPARATION from SUDAS Manual

- A. Prepare a SWPPP according to the requirements of the Iowa DNR NPDES General Permit No. 2.
- B. Have the SWPPP prepared by an individual experienced in erosion and sediment control.
- C. Ensure that controls utilized in the SWPPP conform to the type and quantity of erosion and sediment controls specified in the contract documents.
- D. Submit the completed SWPPP to the Engineer for review and approval prior to filing the Notice of Intent.
- E. Upon approval of the Engineer, file public notices, as required by the NPDES General Permit No. 2.
- F. File the Notice of Intent and fee, as required by the NPDES General Permit No. 2.

## SWPPP MANAGEMENT

Coordinate and carry out all requirements of Iowa DNR NPDES General Permit No. 2 and any local ordinance requirements, including:

- A. Update the SWPPP according to the requirements of the NPDES General Permit No. 2.
- B. Revise the SWPPP and implement changes, as necessary, to prevent sediment or hazardous materials from being transported off the site.
- C. Submit all SWPPP revisions to the Engineer for review and approval.
- D. Perform and maintain records of weekly erosion and sediment control site inspections, unless otherwise specified in the contract documents.
- E. Maintain records of transfer of responsibility under the NPDES General Permit No. 2.
- F. Retain all records on-site, or as required by the NPDES General Permit No. 2.
- G. After final stabilization, file a Notice of Discontinuation, according to the NPDES General Permit No. 2.
- H. Provide all records and documentation to the Engineer upon completion of the project. Retain a copy of all records for the period required under the Permit.
- I. Continue to perform the work required under this item throughout the duration of the project, and until final stabilization is achieved and a Notice of Discontinuation is filed.

## EROSION AND SEDIMENT CONTROL INSPECTION

- A. Perform inspections according to and at frequency required by the Iowa DNR NPDES General Permit No. 2.
- B. Schedule necessary maintenance or improvements for items that are included in the contract documents.
- C. Notify the Engineer immediately of situations requiring attention beyond that provided for in the contract documents.

## SILT FENCES from SUDAS Manual

### A. Installation:

1. Install material along the contour of the ground, as specified in the contract documents, or as directed by the Engineer.
2. Install silt fence with a mechanical soil slicing machine that creates a slit in the ground while simultaneously installing the fabric. The trenching method may be used when situations will not allow soil slicing, as determined by the Engineer.
3. Construct a "J-hook at each end of a continuous run of silt fence, by turning the end of the silt fence uphill, as necessary to prevent runoff from flowing around ends when water behind the fence ponds to a level even with the top of the fence.
4. Insert 12 inches of fabric to a minimum depth of 6 inches (fabric may be folded below the ground line).
5. Compact installation by driving along each side of the silt fence, or by other means, as necessary to adequately secure the fabric in the ground, to prevent pullout and water flow under the fence.
6. Drive steel posts into the ground alongside the silt fence, to a minimum depth of 20 inches, unless otherwise specified by the Engineer. Space posts as required to adequately support silt fence.

B. Maintenance: Repair or replace non-functioning silt fence that allows water to flow under the fence, is torn, or is otherwise damaged, due to inadequate installation, at no additional cost to the Contracting Authority.

### C. Removal:

1. Remove the silt fence upon final stabilization of the project area, or according to the staging indicated in the SWPPP.
2. Remove and dispose of silt fence and posts.
3. Remove sediment or spread to match finished grade; ensure proper drainage.
4. Stabilize the area disturbed by removal operations.

### D. Replacement:

1. When accumulated sediment reaches a level one-half the height of the fence, remove the silt fence as described above, and replace according to the installation instructions above.
2. At the Engineer's option, the existing silt fence and accumulated sediment may be left in place, and a new silt fence installed up-slope from the existing silt fence.
3. When allowed by the Engineer, the existing silt fence may be left in place and the accumulated sediment removed to the original ground line and within 6 inches of the silt fence. Carefully inspect the existing silt fence for structural integrity and signs of undermining. Make any necessary repairs.

## FILTER SOCKS from SUDAS Manual

### A. Installation:

1. Pneumatically fill mesh filter sock of size and length specified in the contract documents, or as directed by the Engineer. Alternative methods of filling the sock may be allowed upon approval of the Engineer.
2. Fill socks with filter material.
3. Place the filter sock along the contour as specified in the contract documents, or as directed by the Engineer.
4. Place additional filter material or soil from the site, on the upstream side of the sock, in the seam between the tube and the ground.
5. Construct a "J-hook"at each end of a continuous run of filter sock, by turning the end of the sock uphill, as necessary to prevent runoff from flowing around the ends when water behind the sock ponds up to a level even with the top of the sock.
6. Drive stakes into the ground at a maximum spacing of 10 feet, and as required to secure the sock and prevent movement.
7. Repair or replace non-functioning filter socks that allow water to flow under the sock, are torn, or are otherwise damaged, due to inadequate installation.

8. Remove filter material from damaged socks that are located along streambanks, around intakes, in ditches, or in other locations where the material may be carried to surface waters.

C. Removal: When specified in the contract documents, or as directed by the Engineer; remove the filter sock upon completion of the project, and after final stabilization is achieved; or as indicated in the SWPPP, if applicable.

1. Upon completion of the project, completely remove socks and filter material that are located along streambanks, around intakes, in ditches, or in other locations where the filter material may be carried to surface waters if the sock degrades and/or tears.
2. Slice the sock longitudinally. Remove and dispose of the filter sock material and stakes.
3. Spread the filter material and accumulated sediment to match finished grade and to ensure proper drainage.
4. If the site has been brought to finished grade and prepared for permanent seeding, spread and incorporate the filter material into the surface by tilling, or as required to break up any large particles and provide a finished surface suitable for permanent seeding.

### D. Replacement:

1. When accumulated sediment reaches a level one-half the height of the sock, or when the sock becomes clogged with sediment and no longer allows runoff to flow through, remove the sock as described above, and replace according to the installation instructions above.
2. At the Engineer's option, the existing filter sock and accumulated sediment may be left in place, and a new filter sock installed up-slope from the existing filter sock.

PROJECT: CEE: 4850

DATE : 11/14/2019

DRAWN BY: DG

REVISION:

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EXPANSION PROJECT

216TH ST  
BELLEVUE, IA

SHEET NAME

GENERAL NOTES

SHEET NO.

**GI100**



PROJECT:	CEE: 4850
DATE :	12/11/2019
DRAWN BY:	STW MGT
REVISION:	

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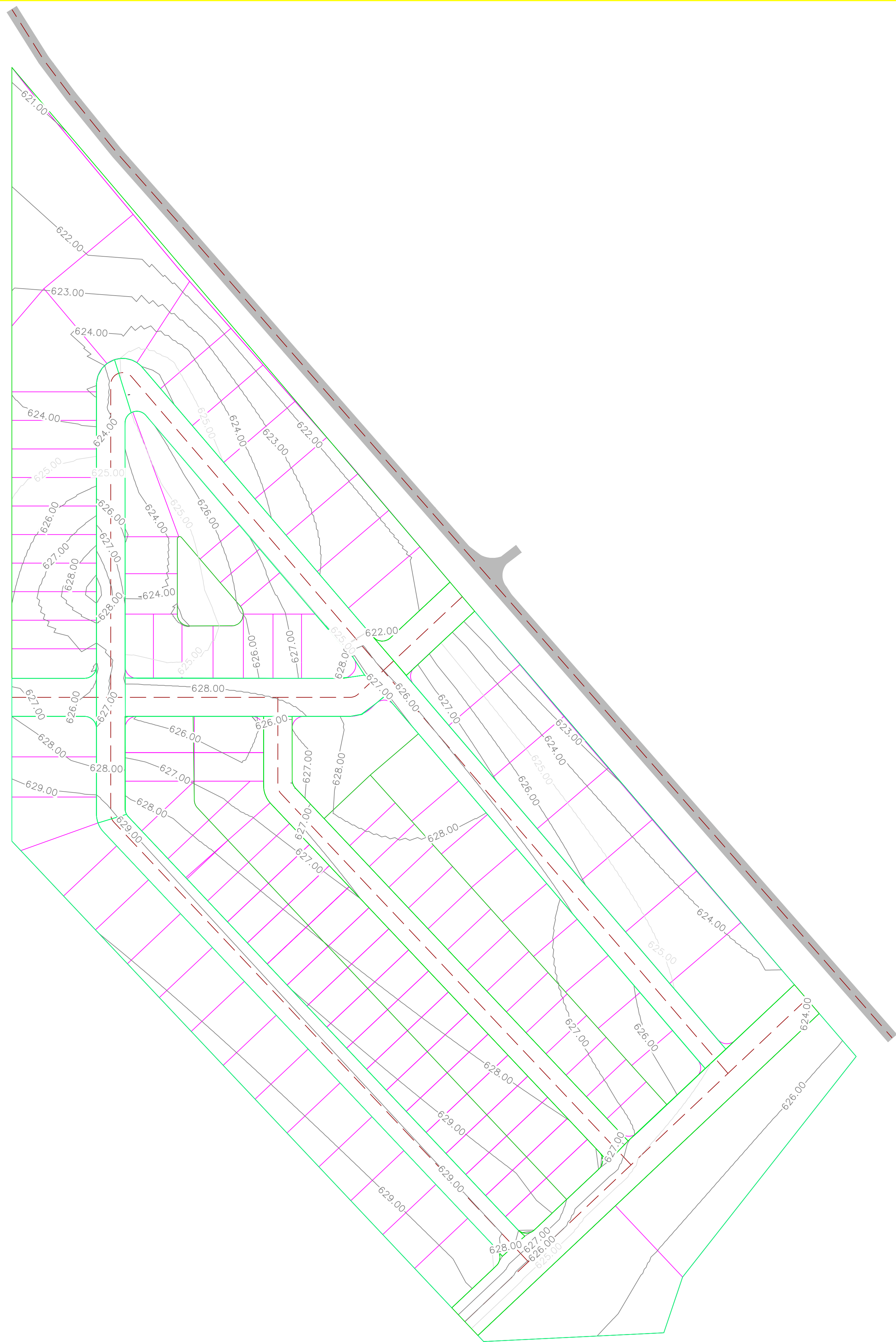


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**EXPANSION PROJECT**  
216TH ST  
BELLEVUE, IOWA

SHEET NAME  
EXISTING  
CONDITIONS

SHEET NO.  
**C1**



**GRADING NOTES:**

1. WORK RELATED TO INSTALLATION, OR MODIFICATION OF WATER, DRAINAGE, OR SEWER SERVICES SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF BELLEVUE.
2. ORGANIC TOPSOILS SHALL BE STRIPPED AND STOCKPILED OUTSIDE OF THE EARTHWORK AREA FOR RE-SPREAD AFTER THE SITE IS GRADED. EXACT STRIPPING DEPTHS SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. NO TOPSOIL MAY LEAVE THE SITE.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT DISCREPANCIES TO THE OWNER.
4. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS AND STRUCTURES.
5. CONTRACTOR SHALL ENSURE ALL AREAS ARE PROPERLY PITCHED TO DRAIN, WITH NO SURFACE WATER PONDING.
6. ALL NEW WALKWAYS / ACCESS PATHS MUST CONFORM TO CURRENT AMERICANS WITH DISABILITIES ACT (ADA) REGULATIONS: WALKWAYS SHALL MAINTAIN A CROSS PITCH OF NOT MORE THAN ONE AND A HALF PERCENT (1.5%) AND THE RUNNING SLOPE (PARALLEL TO THE DIRECTION OF TRAVEL) BETWEEN 1% MIN. AND 5% MAX.
7. MINIMUM SLOPE ON ALL WALKWAYS WILL BE 1% TO PROVIDE POSITIVE DRAINAGE.
8. ALL UTILITES, GRATES, COVERS OR OTHER SURFACE ELEMENTS INTENDED TO BE EXPOSED AT GRADE SHALL BE FLUSH WITH THE ADJACENT FINISHED GRADE AND ADJUSTED TO PROVIDE A SMOOTH TRANSITION AT ALL EDGES.
9. CONTRACTOR SHALL SET SUBGRADE ELEVATIONS TO ALLOW FOR POSITIVE DRAINAGE AND PROVIDE EROSION CONTROL DEVICES, STRUCTURES, MATERIALS AND CONSTRUCTION METHODS TO DIRECT SILT MIGRATION AWAY FROM DRAINAGE AND OTHER UTILITY SYSTEMS, PUBLIC / PRIVATE STREETS AND WORK AREAS.
10. EXCAVATION REQUIRED WITHIN PROXIMITY OF KNOWN EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES INCURRED DURING CONSTRUCTION OPERATIONS.
11. WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING PROVIDING VERTICAL CURVES OR ROUNDS AT ALL TOP AND BOTTOM OF SLOPES.
12. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, BLEND GRADES TO EXISTING CONDITIONS WITHIN 5 FEET OF PROPOSED CONTOURS.

PROJECT:	CEE: 4850
DATE :	12/11/2019
DRAWN BY:	STW MGT
REVISION:	

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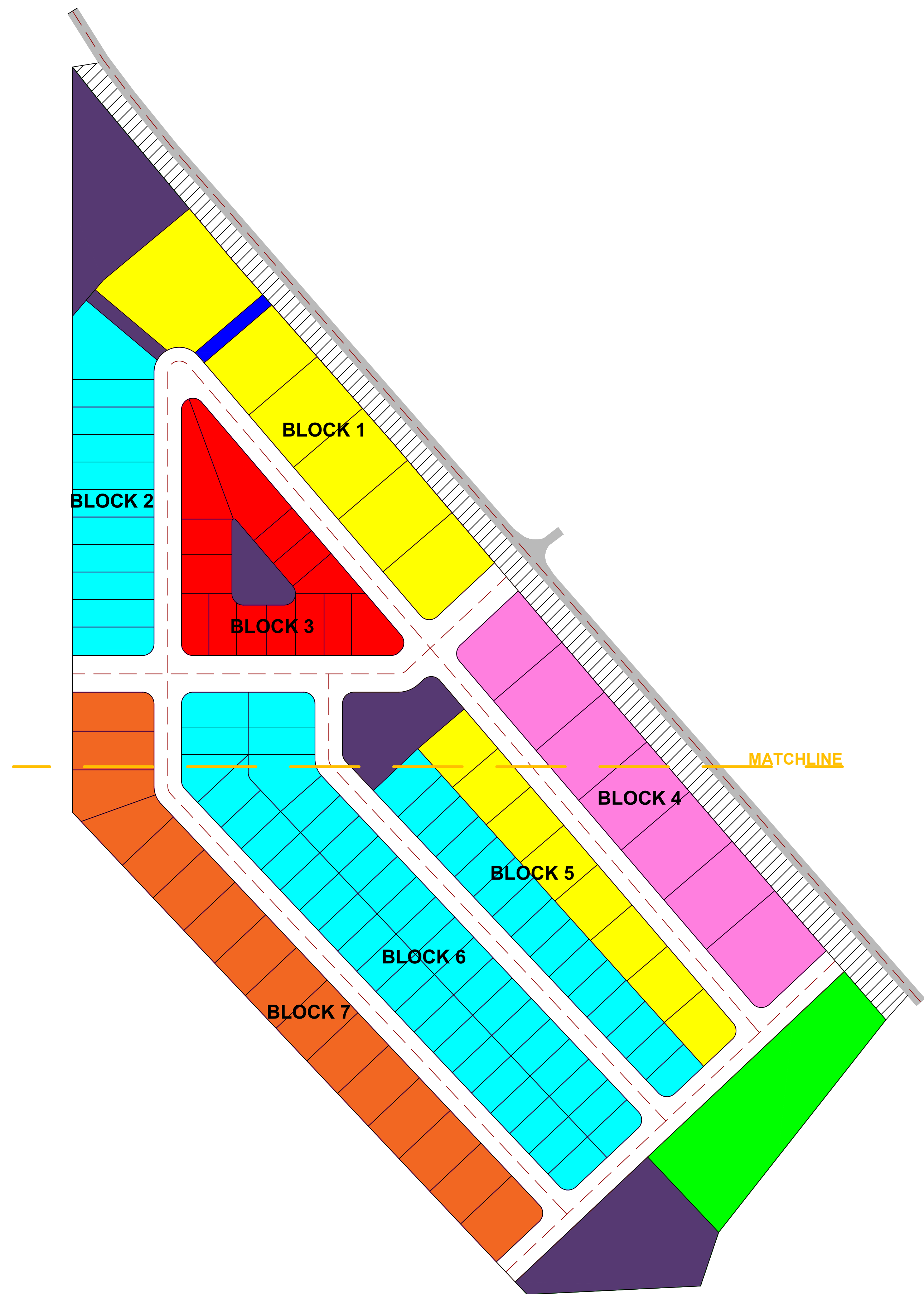
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**EXPANSION PROJECT**

216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
**GRADING PLAN**

SHEET NO.  
**C2**



**NOTES**

1. UNIVERSAL DESIGN LOTS ARE LOTS THAT WILL CONTAIN BUILDINGS THAT ARE CONSTRUCTED FOLLOWING THE UNIVERSAL DESIGN STANDARDS.
2. APARTMENT LOTS ARE SIZED TO FIT 12 UNIT APARTMENT BUILDINGS.
3. TOWNHOUSE LOTS ARE SIZED TO FIT EITHER 4 OR 6 UNIT TOWNHOUSES DEPENDING ON THE LOCATION OF THE LOT AND AVAILABLE SPACE.

**LEGEND**

- SINGLE FAMILY HOUSING LOTS
- APARTMENT AND POSSIBLE COMMERCIAL LOTS
- TOWNHOUSE LOTS
- UNIVERSAL DESIGN LOTS
- FUTURE RESIDENTIAL SIZED FOR MARKET DEMAND
- LARGE LOT SINGLE FAMILY
- PARK / OPEN SPACE / POSSIBLE DRAINAGE LOCATIONS
- TRAIL EASEMENT
- BUFFER STRIP
- ROADWAY RIGHT-OF-WAY
- PARCEL BOUNDARY

PROJECT:	CEE: 4850
DATE :	11/11/2019
DRAWN BY:	CAN
REVISION:	

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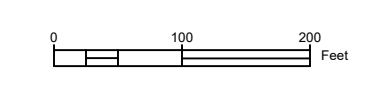
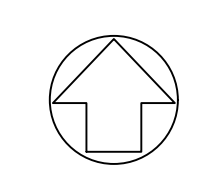
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**EXPANSION PROJECT**

216TH ST  
 BELLEVUE, IA

SHEET NAME  
 LAND USE PLAN

SHEET NO.  
**CL100**





**NOTES**

1. UNIVERSAL DESIGN LOTS ARE LOTS THAT WILL CONTAIN BUILDINGS THAT ARE CONSTRUCTED FOLLOWING THE UNIVERSAL DESIGN STANDARDS.
2. APARTMENT LOTS ARE SIZED TO FIT 12 UNIT APARTMENT BUILDINGS.
3. TOWNHOUSE LOTS ARE SIZED TO FIT EITHER 4 OR 6 UNIT TOWNHOUSES DEPENDING ON THE LOCATION OF THE LOT AND AVAILABLE SPACE.
4. ALL AREAS LISTED ARE IN SQUARE FEET

**LEGEND**

- SINGLE FAMILY HOUSING LOTS
- APARTMENT AND POSSIBLE COMMERCIAL LOTS
- TOWNHOUSE LOTS
- UNIVERSAL DESIGN LOTS
- FUTURE RESIDENTIAL SIZED FOR MARKET DEMAND
- LARGE LOT SINGLE FAMILY
- PARK/OPEN SPACE/POSSIBLE DRAINAGE LOCATIONS
- TRAIL EASEMENT
- BUFFER STRIP
- ROADWAY RIGHT-OF-WAY
- PARCEL BOUNDRY

PROJECT: CEE: 4850  
 DATE: 11/20/2019  
 DRAWN BY: CAN  
 REVISION:

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**EXPANSION PROJECT**

216TH ST  
 BELLEVUE, IA

SHEET NAME  
 LAND USE PLAN

SHEET NO.  
**CL101**

**NOTES**

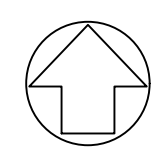
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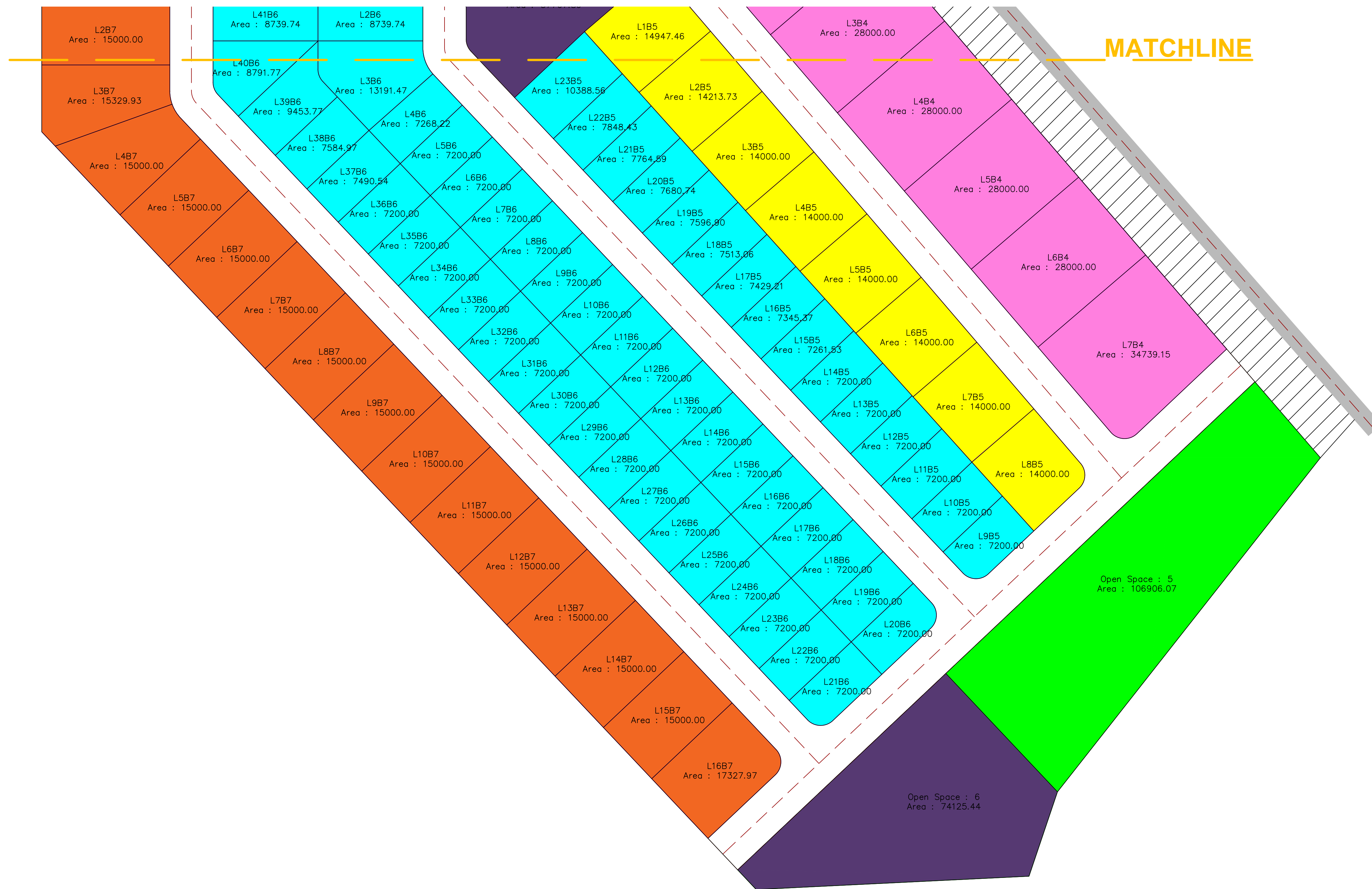
**LEGEND**

- SINGLE FAMILY HOUSING LOTS
- APARTMENT AND POSSIBLE COMMERCIAL LOTS
- TOWNHOUSE LOTS
- UNIVERSAL DESIGN LOTS
- FUTURE RESIDENTIAL SIZED FOR MARKET DEMAND
- LARGE LOT SINGLE FAMILY
- PARK/OPEN SPACE/POSSIBLE DRAINAGE LOCATIONS
- TRAIL EASEMENT
- BUFFER STRIP
- ROADWAY RIGHT-OF-WAY
- PARCEL BOUNDRY

0 100 200 Feet

**MATCHLINE**





### NOTES

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2. APARTMENT LOTS ARE SIZED TO FIT 12 UNIT APARTMENT BUILDINGS.
3. TOWNHOUSE LOTS ARE SIZED TO FIT EITHER 4 OR 6 UNIT TOWNHOUSES DEPENDING ON THE LOCATION OF THE LOT AND AVAILABLE SPACE.
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### LEGEND

- SINGLE FAMILY HOUSING LOTS
- APARTMENT AND POSSIBLE COMMERCIAL LOTS
- TOWNHOUSE LOTS
- UNIVERSAL DESIGN LOTS
- FUTURE RESIDENTIAL SIZED FOR MARKET DEMAND
- LARGE LOT SINGLE FAMILY
- PARK/OPEN SPACE/POSSIBLE DRAINAGE LOCATIONS
- TRAIL EASEMENT
- BUFFER STRIP
- ROADWAY RIGHT-OF-WAY
- PARCEL BOUNDARY

PROJECT:	CEE: 4850
DATE :	11/20/2019
DRAWN BY:	CAN
REVISION:	

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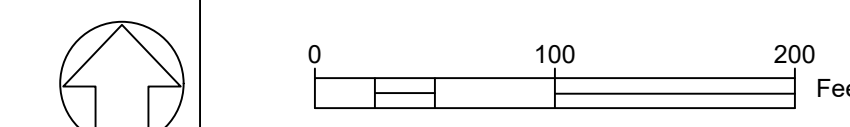
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## EXPANSION PROJECT

216TH ST  
 BELLEVUE, IA

SHEET NAME  
 LAND USE PLAN

SHEET NO.  
**CL102**






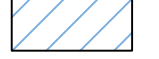


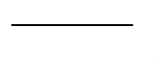
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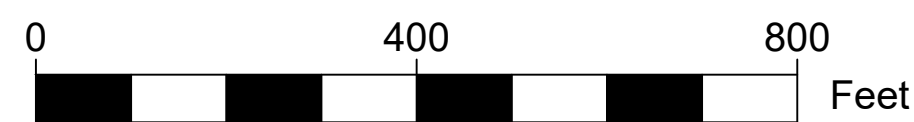
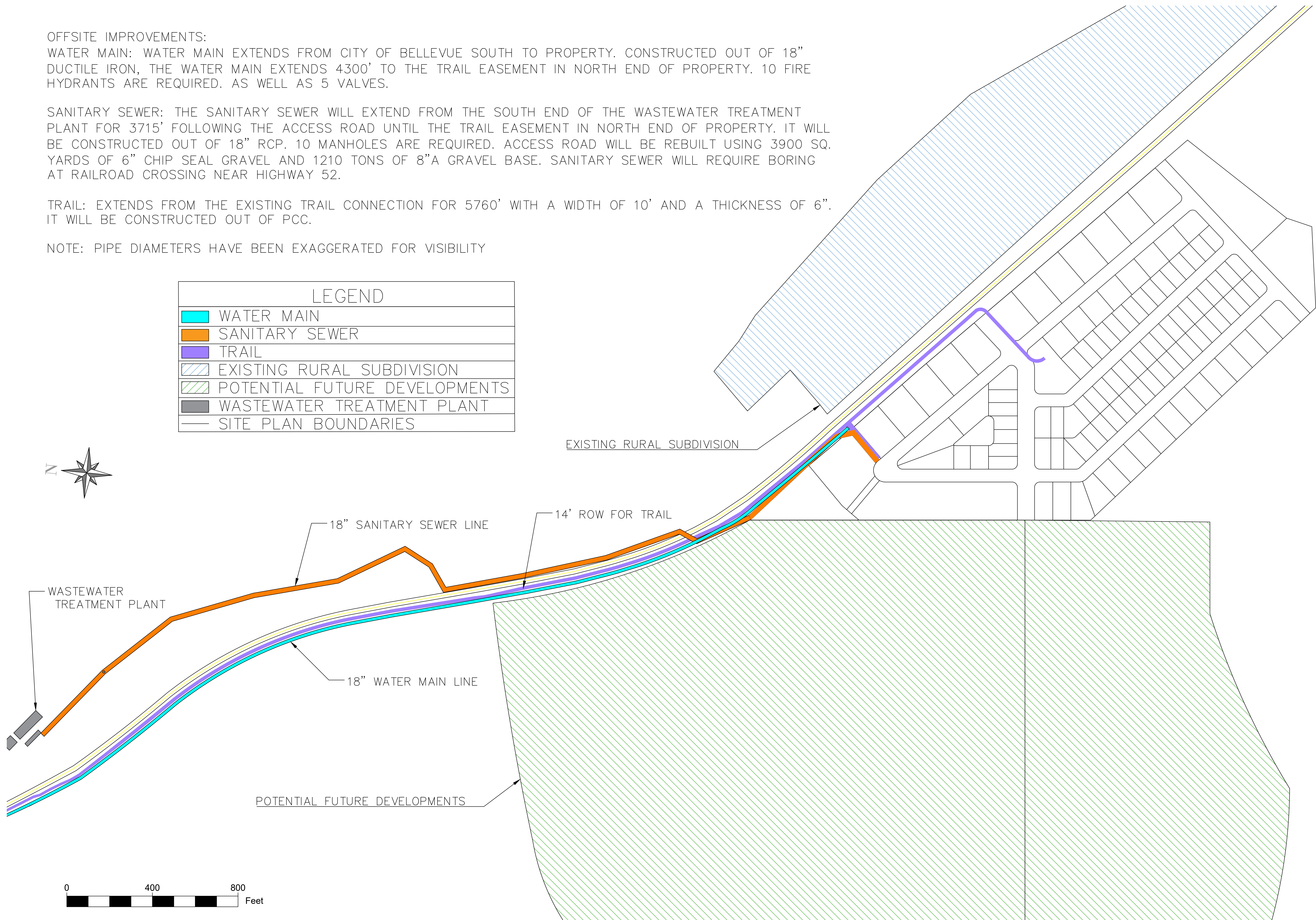
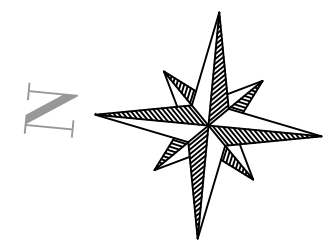
**WATER MAIN:** WATER MAIN EXTENDS FROM CITY OF BELLEVUE SOUTH TO PROPERTY. CONSTRUCTED OUT OF 18" DUCTILE IRON, THE WATER MAIN EXTENDS 4300' TO THE TRAIL EASEMENT IN NORTH END OF PROPERTY. 10 FIRE HYDRANTS ARE REQUIRED. AS WELL AS 5 VALVES.

**SANITARY SEWER:** THE SANITARY SEWER WILL EXTEND FROM THE SOUTH END OF THE WASTEWATER TREATMENT PLANT FOR 3715' FOLLOWING THE ACCESS ROAD UNTIL THE TRAIL EASEMENT IN NORTH END OF PROPERTY. IT WILL BE CONSTRUCTED OUT OF 18" RCP. 10 MANHOLES ARE REQUIRED. ACCESS ROAD WILL BE REBUILT USING 3900 SQ. YARDS OF 6" CHIP SEAL GRAVEL AND 1210 TONS OF 8" A GRAVEL BASE. SANITARY SEWER WILL REQUIRE BORING AT RAILROAD CROSSING NEAR HIGHWAY 52.

**TRAIL:** EXTENDS FROM THE EXISTING TRAIL CONNECTION FOR 5760' WITH A WIDTH OF 10' AND A THICKNESS OF 6". IT WILL BE CONSTRUCTED OUT OF PCC.

NOTE: PIPE DIAMETERS HAVE BEEN EXAGGERATED FOR VISIBILITY

LEGEND	
	WATER MAIN
	SANITARY SEWER
	TRAIL
	EXISTING RURAL SUBDIVISION
	POTENTIAL FUTURE DEVELOPMENTS
	WASTEWATER TREATMENT PLANT
	SITE PLAN BOUNDARIES



PROJECT:	CEE: 4850
DATE :	11/21/2019
DRAWN BY:	KM
REVISION:	

**THE UNIVERSITY OF IOWA**  
**CIVIL AND ENVIRONMENTAL ENGINEERING**  
 4105 SEAMANS CENTER FOR THE  
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 103 S CAPITOL ST  
 IOWA CITY, IOWA 52242  
 PHONE: 319.335.5647  
 FAX: 319.335.5660  
 EMAIL: civil-hawks@iowa.edu



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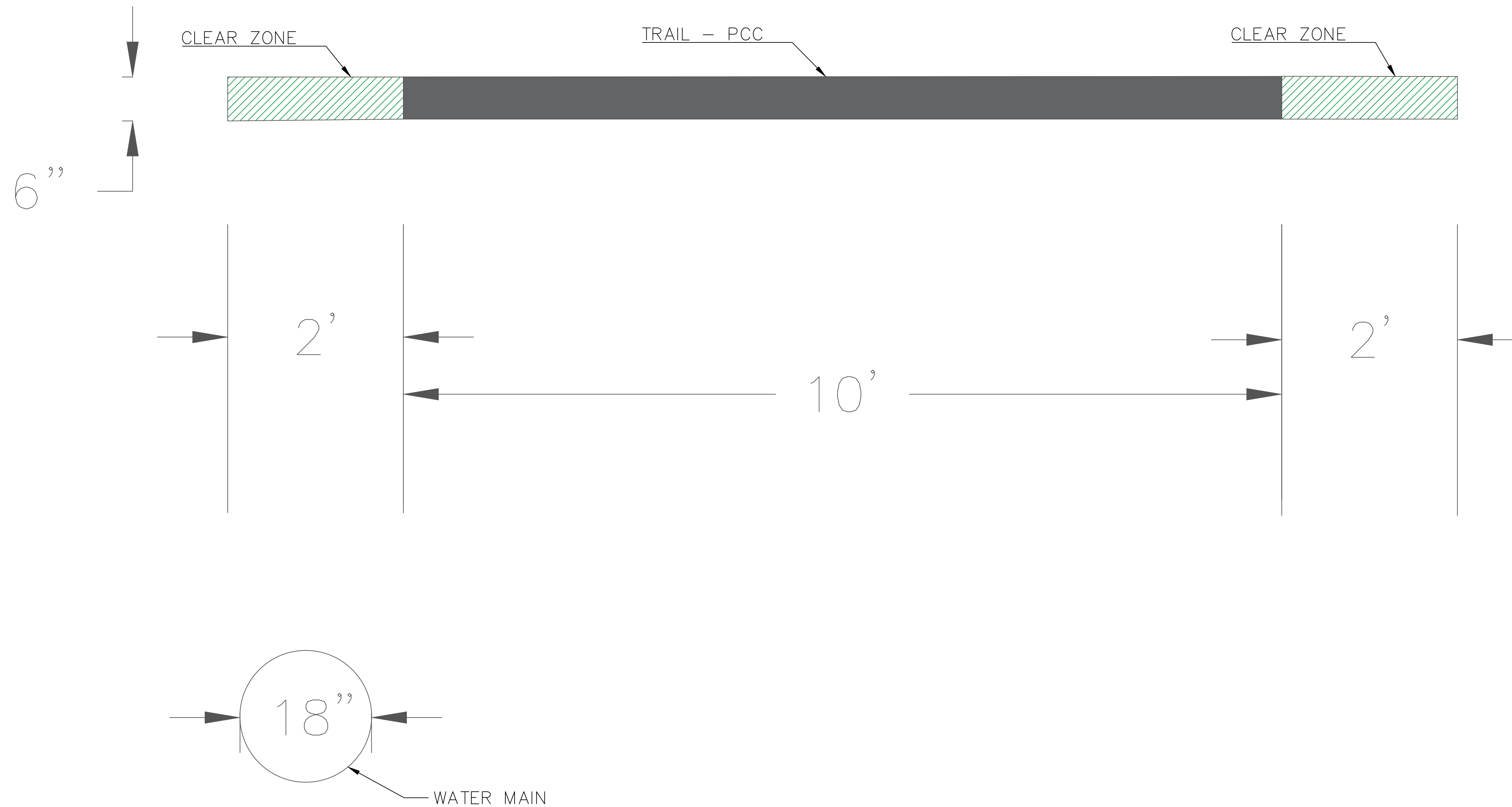
**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IA

SHEET NAME  
 OFFSITE UTILITIES  
 & BIKE TRAIL

SHEET NO.  
**CT101**

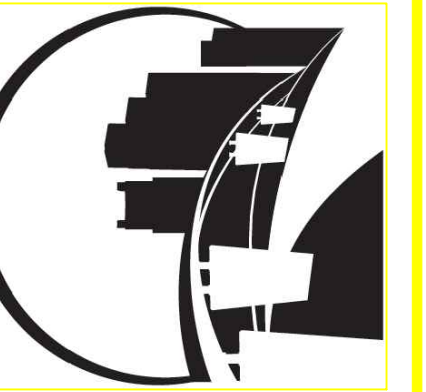


THE FOLLOWING SHOWS THE DIMENSIONS FOR THE TRAIL DESIGN AND WATER MAIN PIPE. THE 14' COORIDOR CONTAINS A 10' MAIN TRAIL WITH 2' OF CLEARANCE ON EACH SIDE OF THE TRAIL. THE PCC PAVEMENT IS 6" THICK AS RECOMMENDED BY IOWA'S STATEWIDE URBAN DESIGN AND SPECIFICATIONS.THE WATER MAIN WILL FOLLOW ALONG THE ROUTE OF THE TRAIL. THE RECOMMENDED DIAMETER OF THE OFFSITE WATER MAIN IS 18" OF DUCTILE IRON.



PROJECT:	CEE: 4850
DATE :	11/20/2019
DRAWN BY:	KM
REVISION:	

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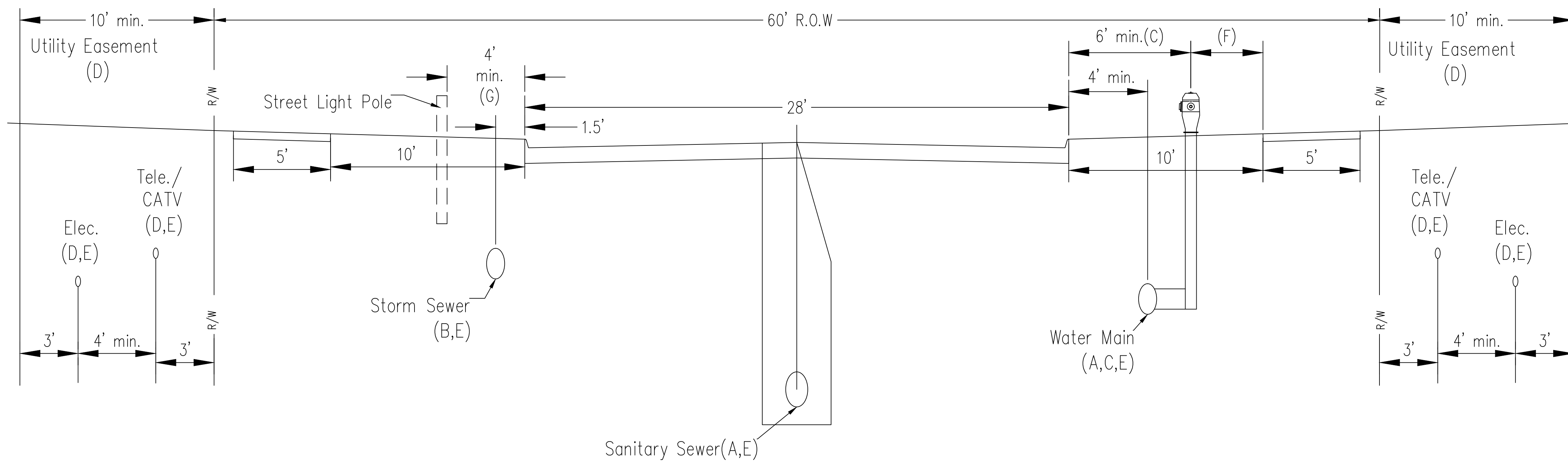
**EXPANSION PROJECT**

216TH ST  
 BELLEVUE, IA

SHEET NAME  
 TRAIL CROSS SECTION

SHEET NO.  
**CT501**

Local Street

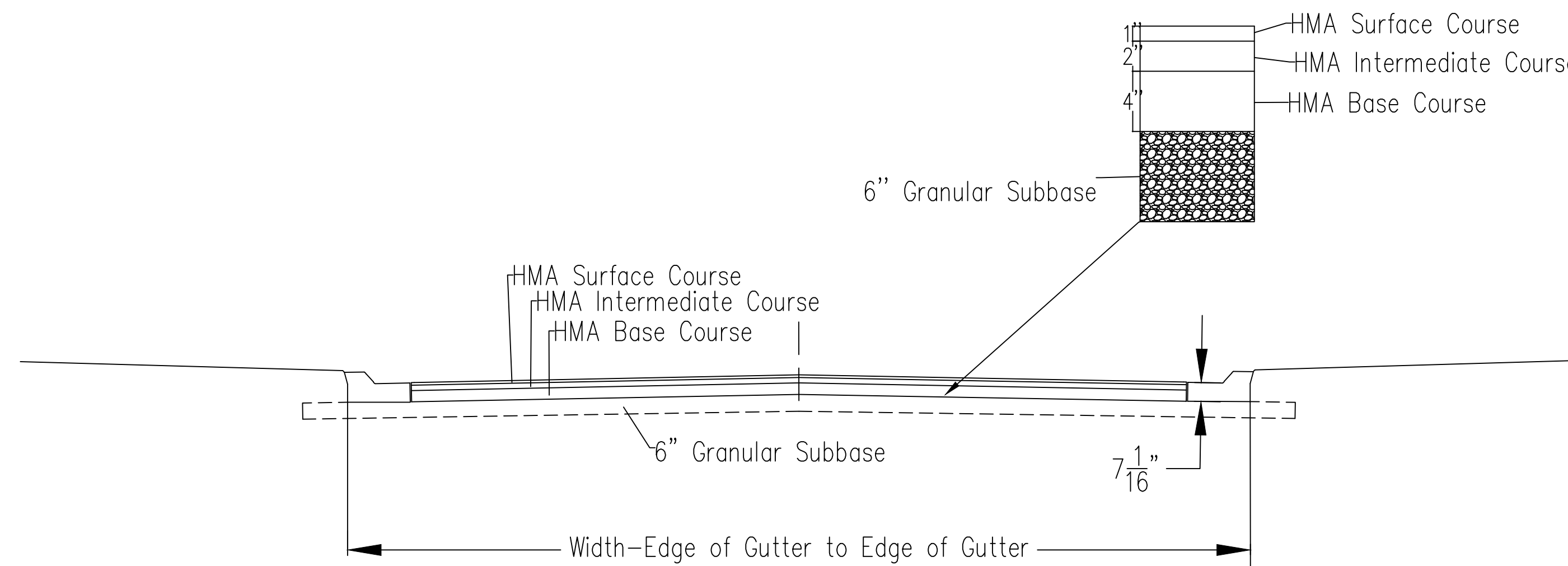


GENERAL NOTES

- A. When utilities are in the right-of-way, the following should be adhered to unless otherwise approved by the Jurisdiction:
- All utilities should be buried. When the overhead utilities are allowed to cross the roadway, the minimum vertical clearances are 20 feet for the main cable and 18 feet for services.
  - Sanitary sewer: If under pavement, install in the center of the street. If outside the pavement, install on the west or north side of the street.
- B. Storm Sewers: The normal location is 1.5 feet from the back of curb. In areas of combination manholes and intakes are used, the location increases to 5 feet.
- C. Water Mains, Valves, and Hydrants:
- The normal location is 4 feet behind the back of curb. In areas of combination manholes and intakes, this distance is increased to minimum of 6 feet.
  - For local streets and minor collectors with limited right-of-way, use a 90 degrees anchoring elbow between the hydrant tee and the valve. For maintenance purposes, the minimum distance between the centerline of the valve box and the face of the hydrant is 18 inches.

- D. Depth of Bury:
- Public Utilities:
    - Water: Varies from 4 feet to 5.5 feet. Refer to Chapter 4.
    - Sanitary Sewer: minimum 8 feet.
    - Storm Sewer: Approximately 4 feet.
- E. Maintain a minimum separation of 2 feet from the edge of the sidewalk or shared use path to obstructions such as fire hydrants, utility poles, signs, etc.
- F. Meet object setback, clear zone, and curb offset requirements of Section 5C-1.
- G. Pipe Bedding and Backfill:
- Class III and Class IVA Backfill Material:
    - Compact to at least 95% of Standard Proctor Density within right-of-way.
    - Compact to at least 90% of Standard Proctor Density outside right-of-way.
    - Obtain required compaction within a soil moisture range of optimum moisture to 4% above optimum moisture content.

From Iowa SUDAS Chapter 9 Figure 9A-1.01: Typical Urban Utility Locations



HMA PAVEMENT SECTION

PROJECT:	CEE: 4850
DATE :	12/5/2019
DRAWN BY:	KX
REVISION:	

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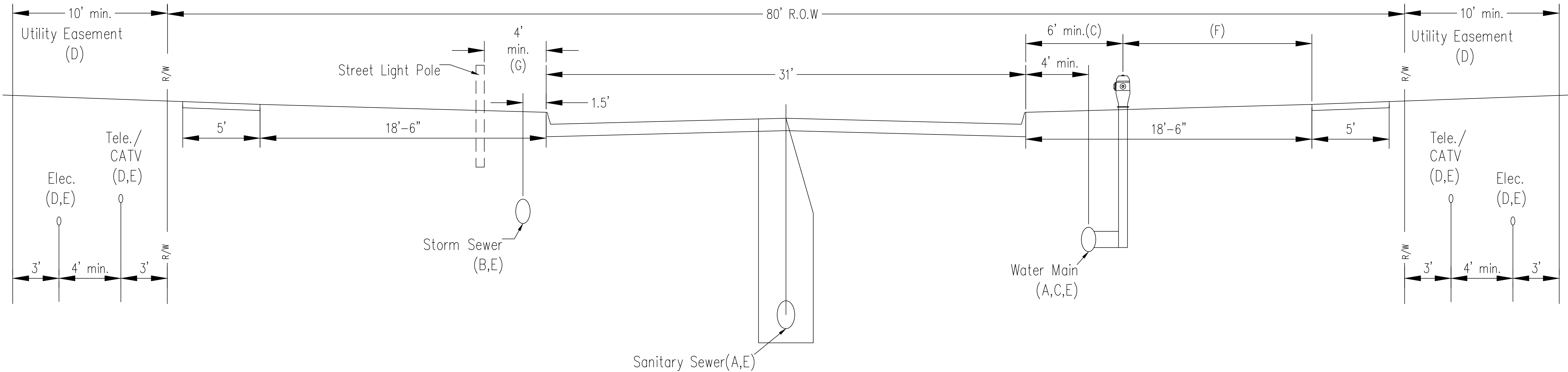
Expansion Project

216TH ST  
 BELLEVUE, IA

SHEET NAME  
 LOCAL STREET

SHEET NO.  
**CU S01**

# Arterial Street

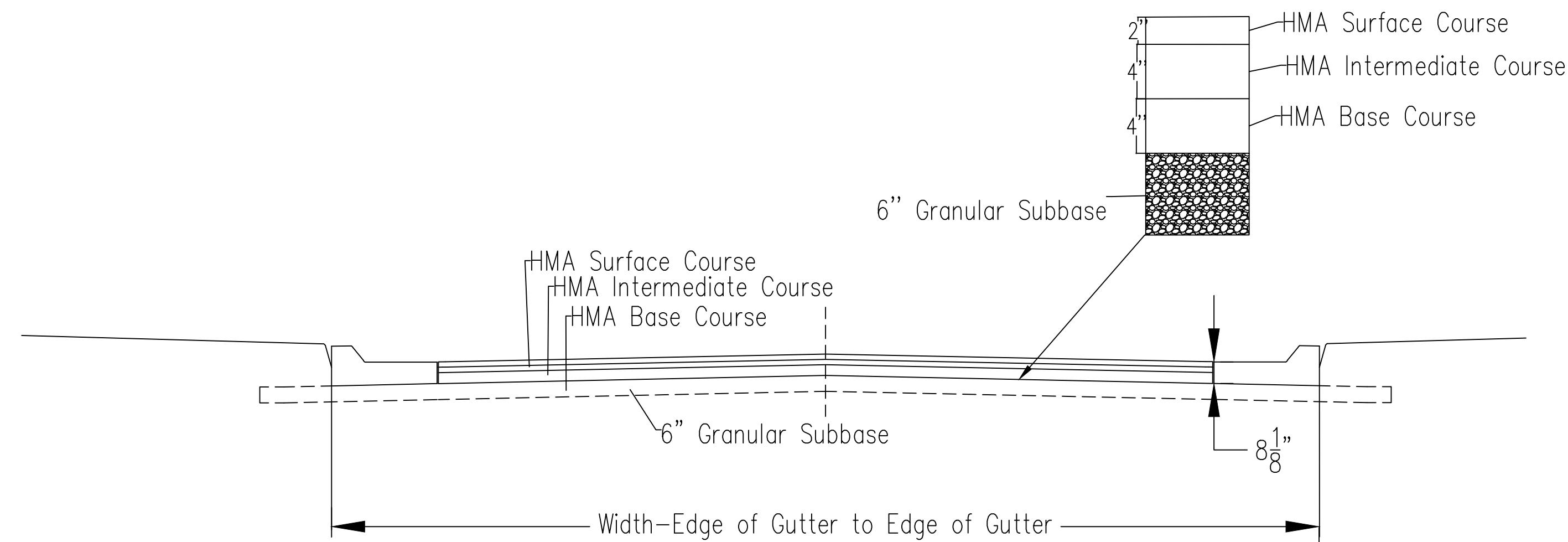


### GENERAL NOTES

- A. When utilities are in the right-of-way, the following should be adhered to unless otherwise approved by the Jurisdiction:
- All utilities should be buried. When the overhead utilities are allowed to cross the roadway, the minimum vertical clearances are 20 feet for the main cable and 18 feet for services.
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    - Sanitary Sewer: minimum 8 feet.
    - Storm Sewer: Approximately 4 feet.
- E. Maintain a minimum separation of 2 feet from the edge of the sidewalk or shared use path to obstructions such as fire hydrants, utility poles, signs, etc.
- F. Meet object setback, clear zone, and curb offset requirements of Section 5C-1.
- G. Pipe Bedding and Backfill:
- Class III and Class IVA Backfill Material:
    - Compact to at least 95% of Standard Proctor Density within right-of-way.
    - Compact to at least 90% of Standard Proctor Density outside right-of-way.
    - Obtain required compaction within a soil moisture range of optimum moisture to 4% above optimum moisture content.

From Iowa SUDAS Chapter 9 Figure 9A-1.01: Typical Urban Utility Locations



HMA PAVEMENT SECTION

PROJECT:	CEE: 4850
DATE :	12/5/2019
DRAWN BY:	KX
REVISION:	

**THE UNIVERSITY OF IOWA**  
**CIVIL AND ENVIRONMENTAL ENGINEERING**  
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**EXPANSION PROJECT**

214TH ST  
BELLEVUE, IA

SHEET NAME  
ARTERIAL STREET

SHEET NO.  
**CU S02**



PROJECT:	CEE-4850
DATE :	11/20/2019
DRAWN BY:	SW MGT
REVISION:	

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 FAX: 319.335.5660  
 EMAIL: [civil-hawks@iowa.edu](mailto:civil-hawks@iowa.edu)

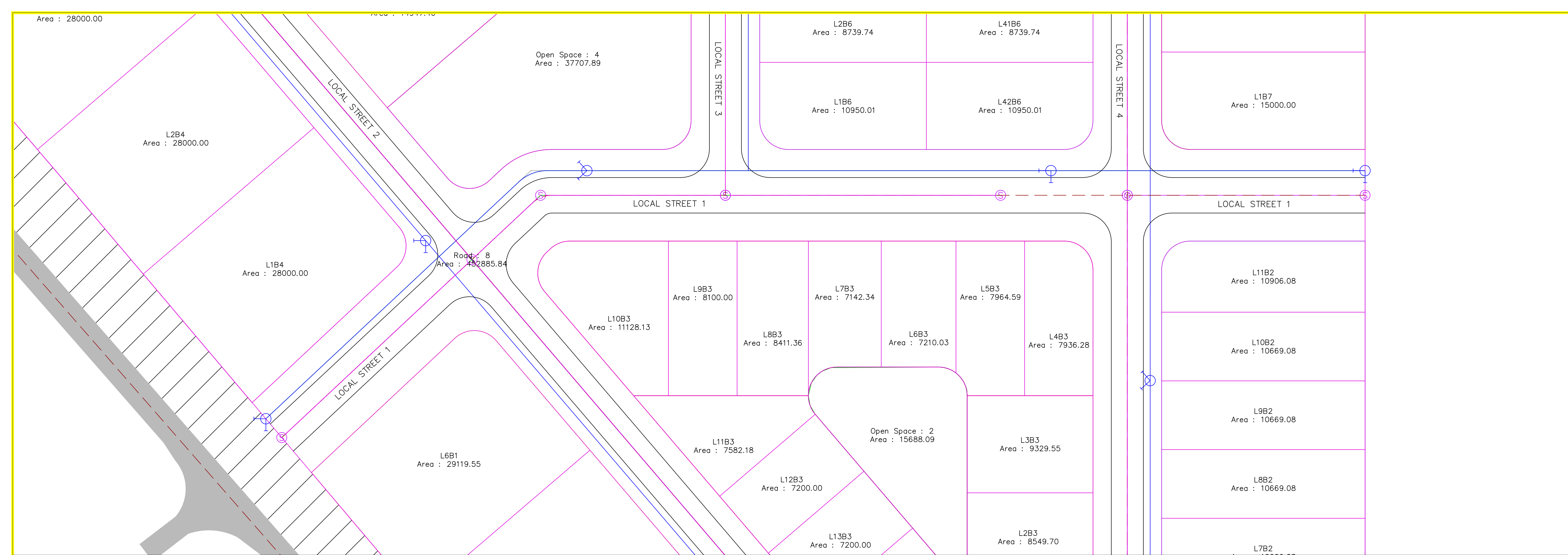


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**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
**ONSITE PIPE LAYOUT**

SHEET NO.  
**CW100**



PROJECT:	CEE: 4850
DATE :	11/18/2016
DRAWN BY:	cds
REVISION:	

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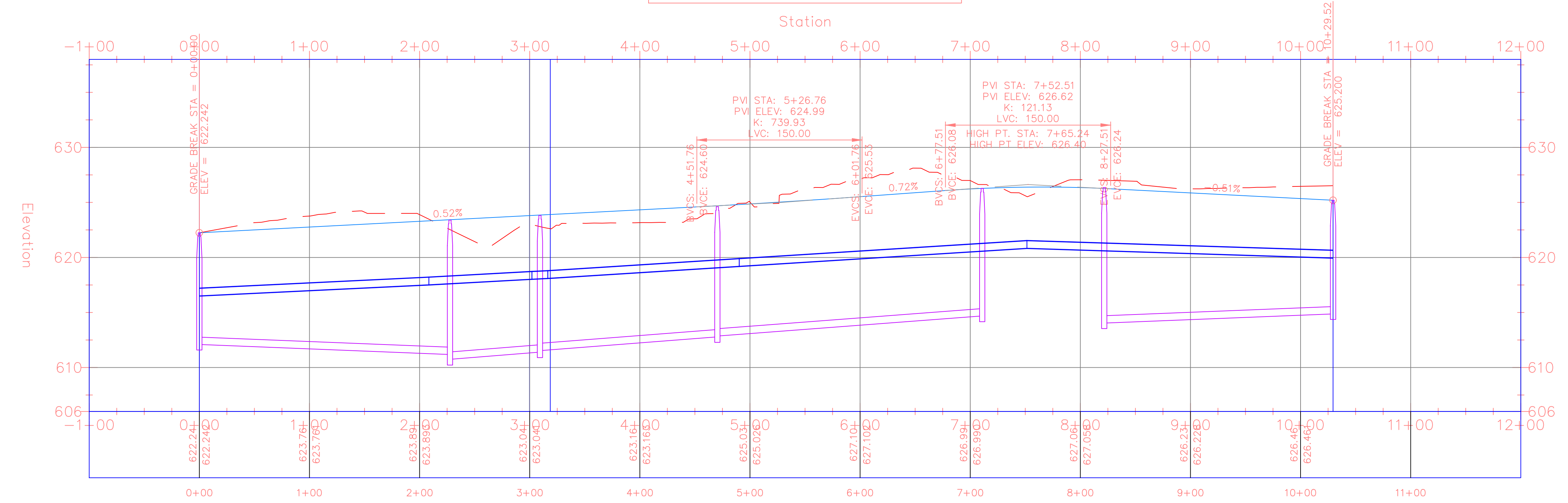
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FOR CONSTRUCTION

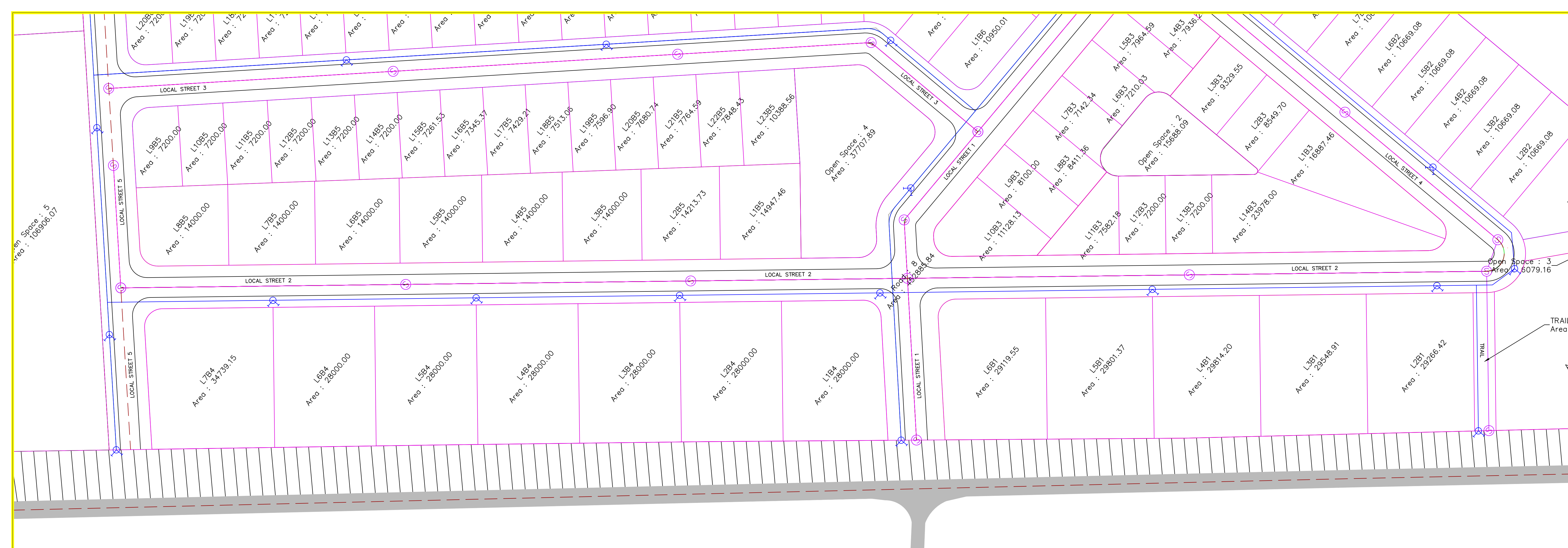
**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IA

SHEET NAME  
**SANITARY SEWER  
 WATER MAIN**

SHEET NO.  
**CW101**

Local Street 1 PROFILE





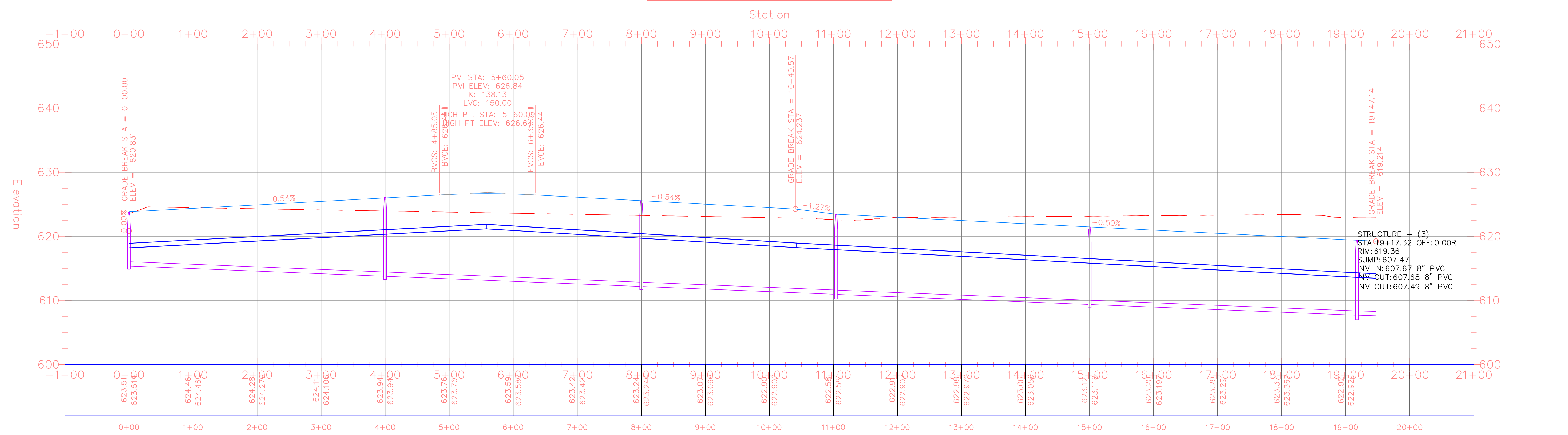
PROJECT: CEE: 4850  
 DATE: 11/18/2016  
 DRAWN BY: cds  
 REVISION:

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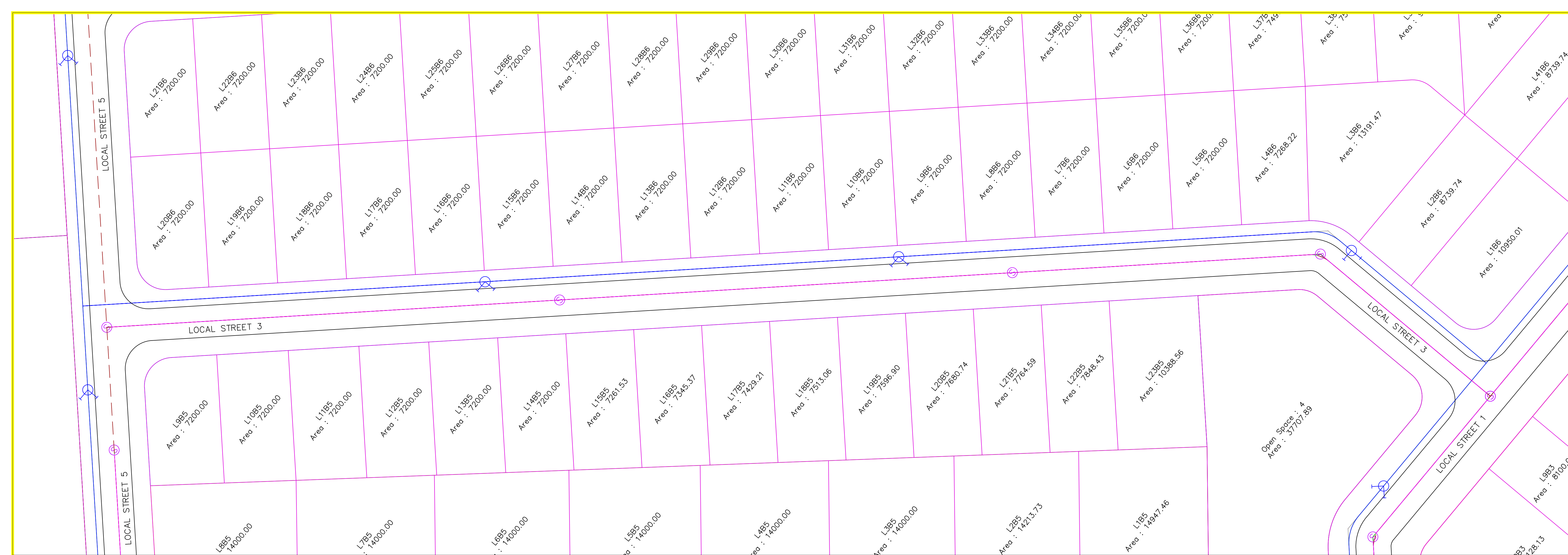
Local Street 2 PROFILE



**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IA


SHEET NAME  
 SANITARY SEWER  
 WATER MAIN

SHEET NO.  
**CW102**

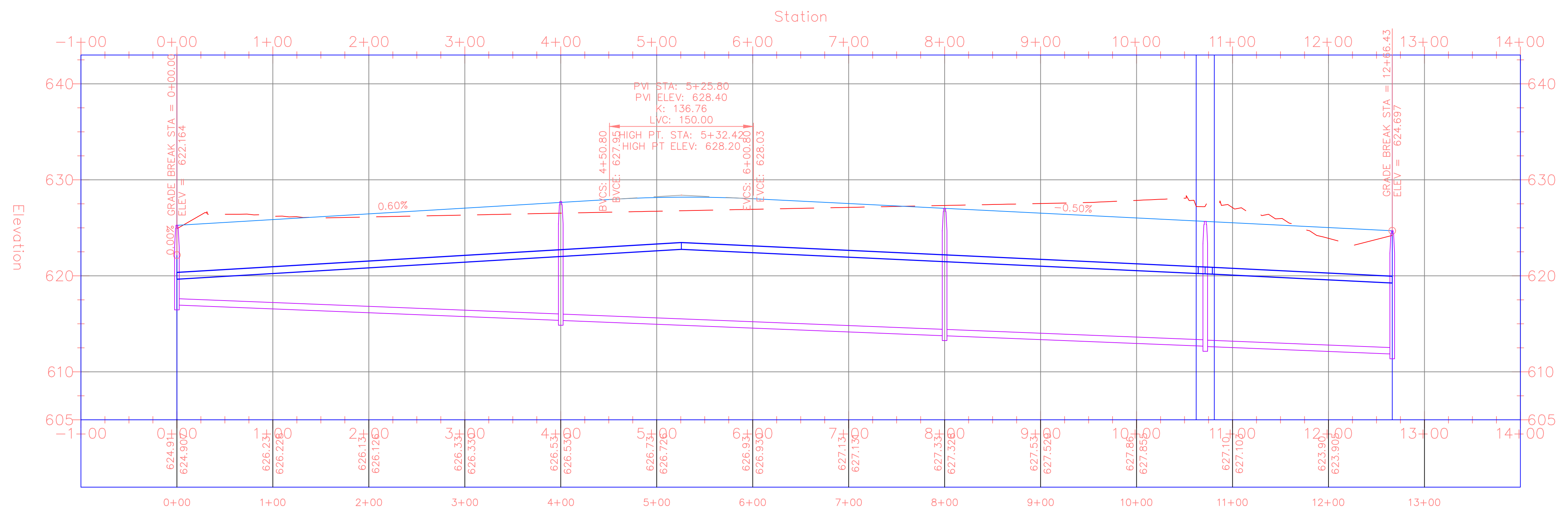


PROJECT: CEE: 4850  
 DATE: 11/18/2016  
 DRAWN BY: cds  
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Local Street 3 PROFILE



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**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IA

SHEET NAME  
 SANITARY SEWER  
 WATER MAIN

SHEET NO.  
**CW103**

PROJECT: CEE: 4850  
 DATE: 11/18/2016  
 DRAWN BY: cds  
 REVISION:

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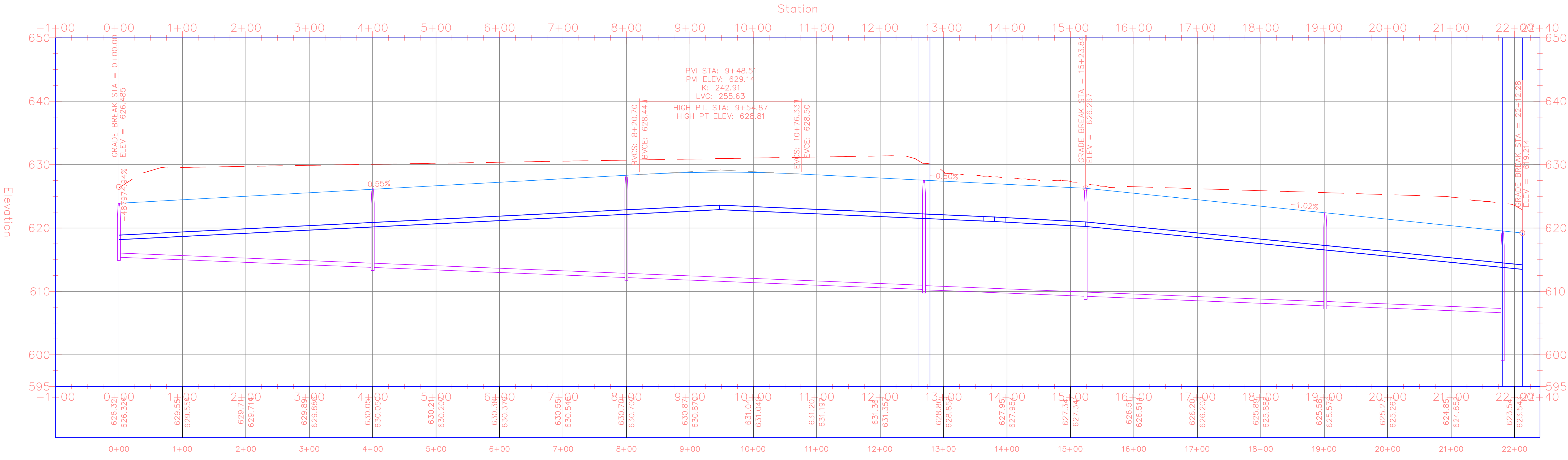
**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IA

SHEET NAME  
 SANITARY SEWER  
 WATER MAIN

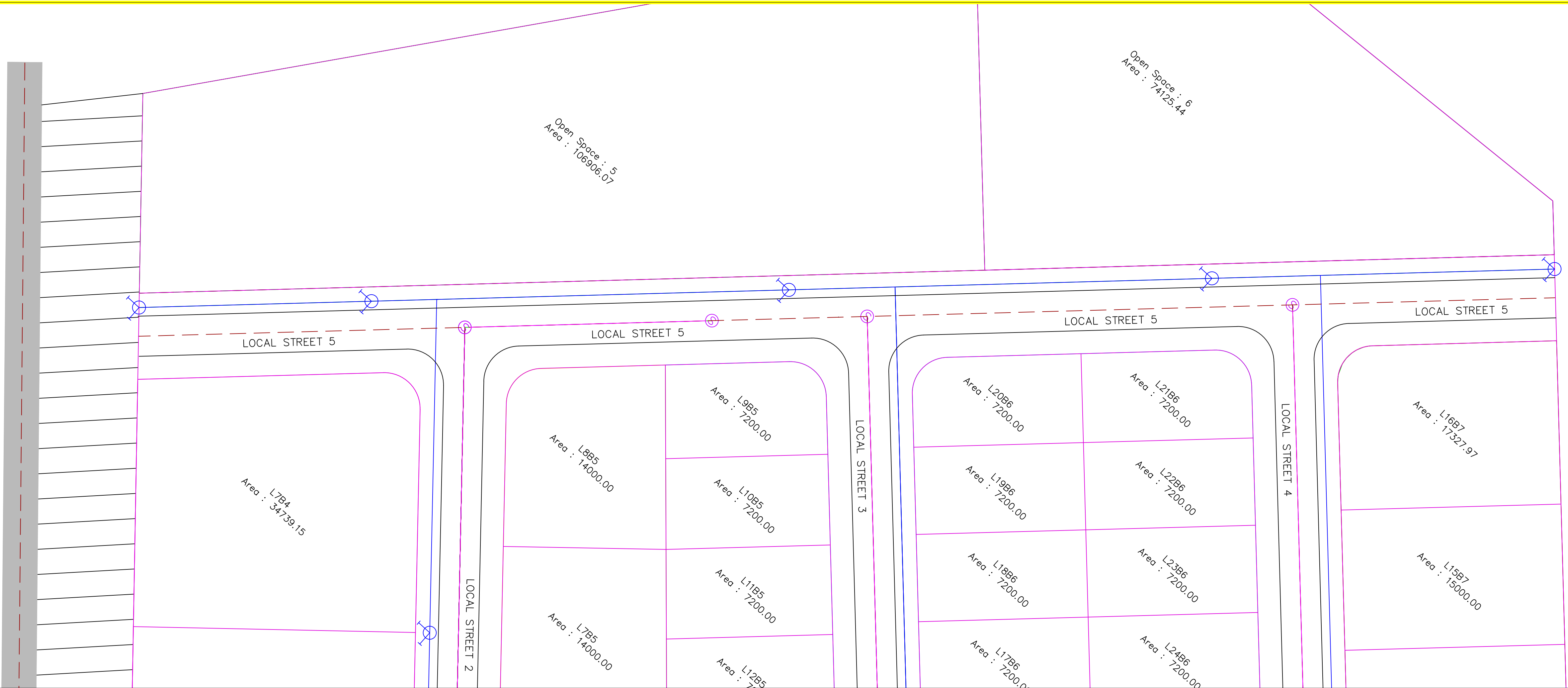
SHEET NO.  
**CW104**



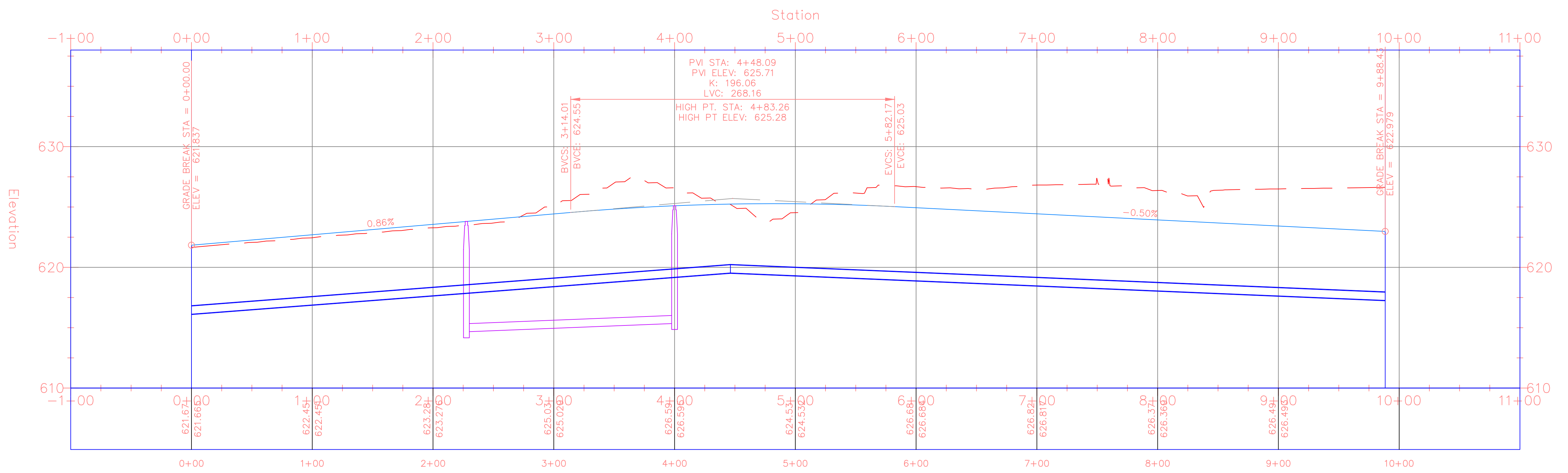
Local Street 4 PROFILE







Local Street 5 PROFILE



PROJECT:	CEE: 4850
DATE :	11/18/2016
DRAWN BY:	cds
REVISION:	

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 FAX: 319.335.5660  
 EMAIL: civil-hawks@iowa.edu



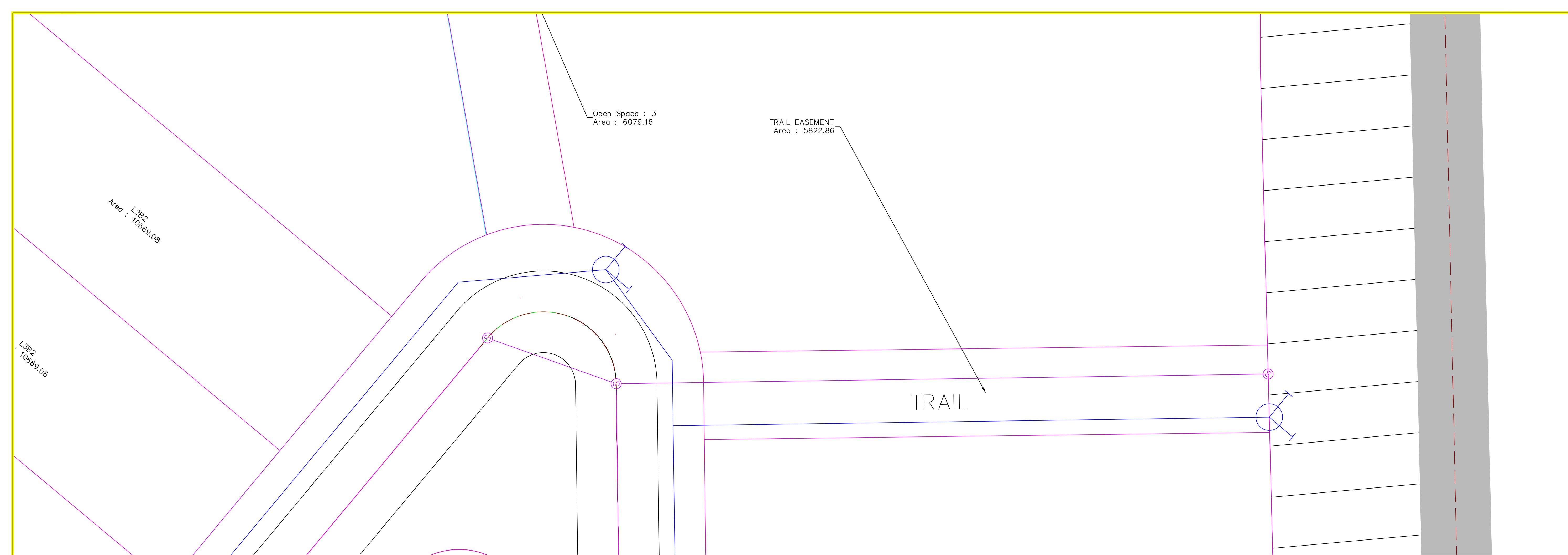
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**EXPANSION PROJECT**

216TH ST  
 BELLEVUE, IA

SHEET NAME  
 SANITARY SEWER  
 WATER MAIN

SHEET NO.  
**CW105**



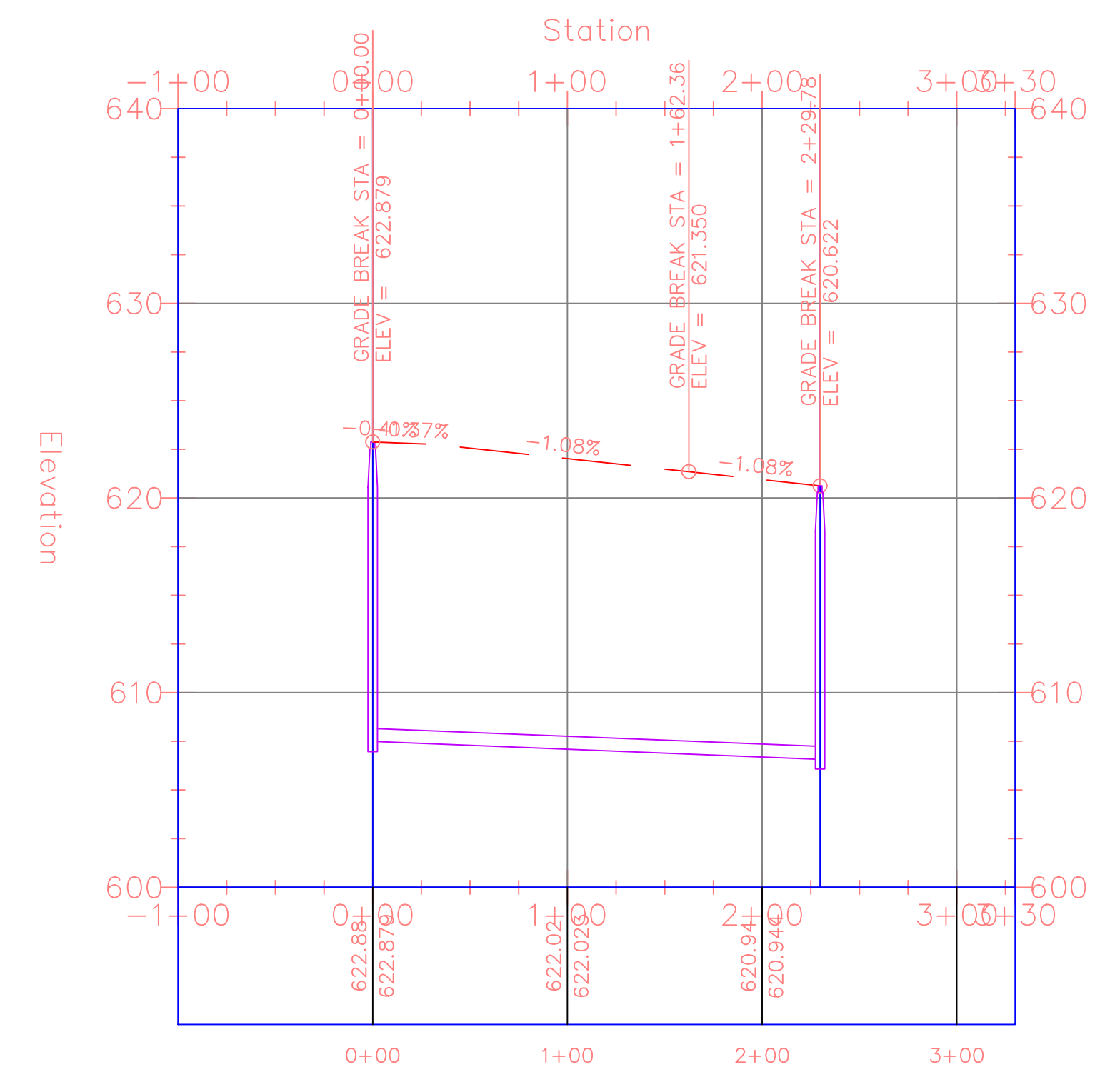
PROJECT:	CEE: 4850
DATE :	11/18/2016
DRAWN BY:	cds
REVISION:	

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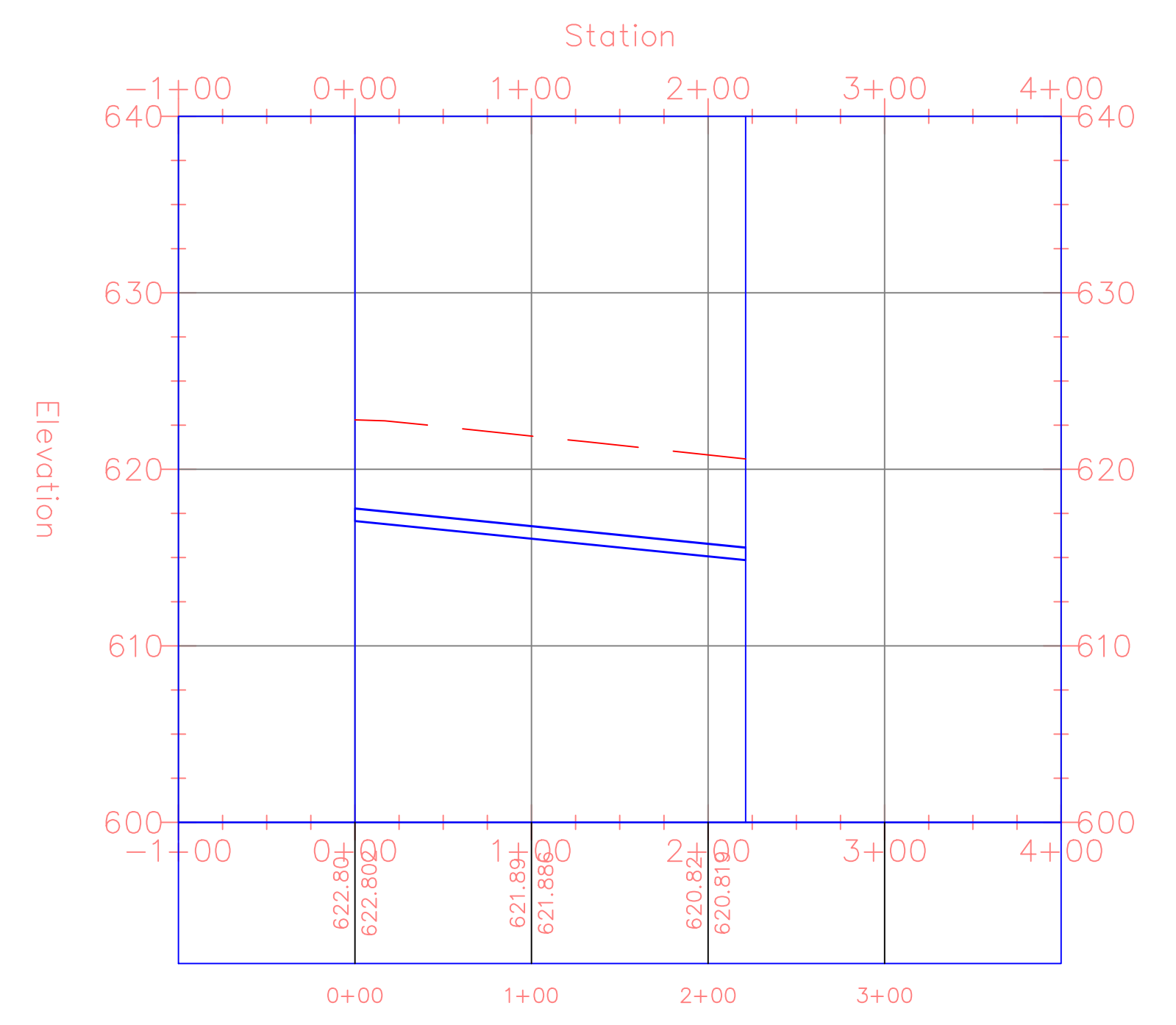


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outlet sewer Alignment PROFILE



outlet water PROFILE

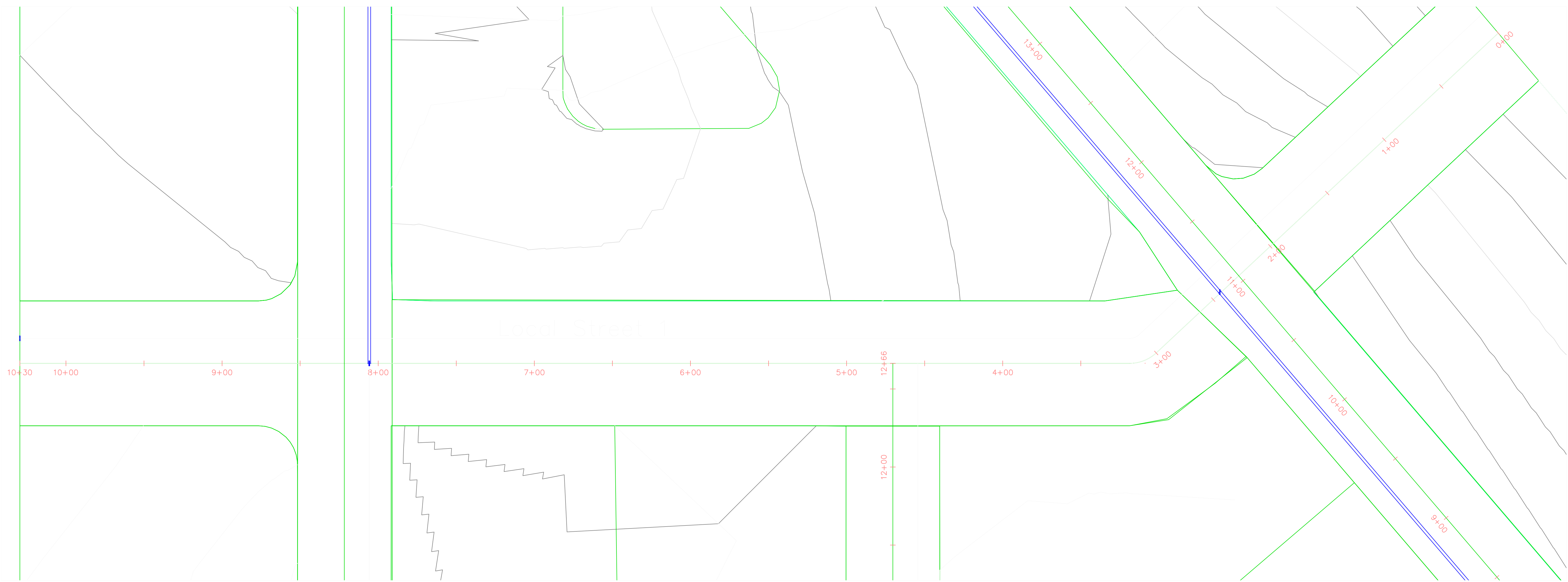


**EXPANSION PROJECT**

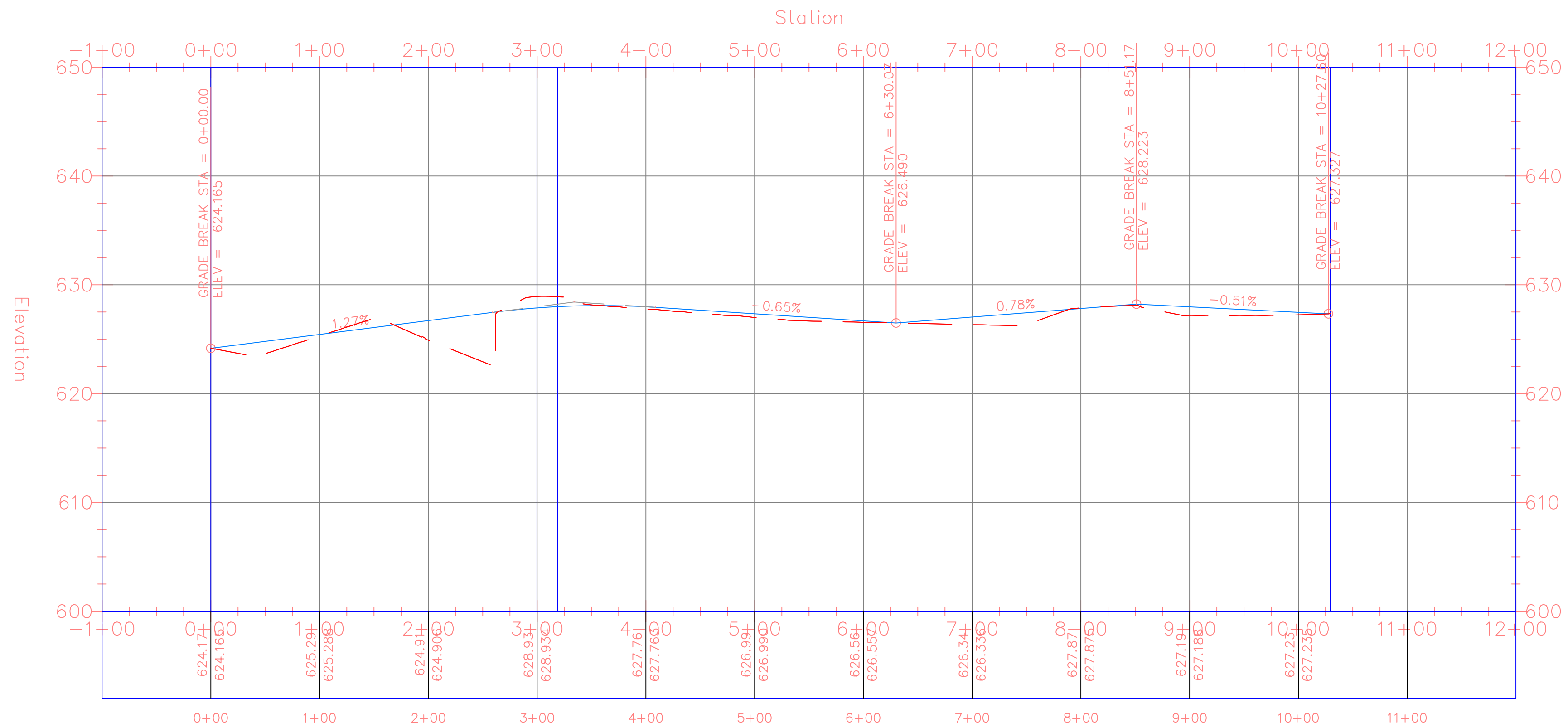
216TH ST  
 BELLEVUE, IA

SHEET NAME  
 SANITARY SEWER  
 WATER MAIN

SHEET NO.  
**CW106**



Local Street 1 PROFILE



PROJECT:	CEE: 4850
DATE :	11/20/2019
DRAWN BY:	SW MGT
REVISION:	

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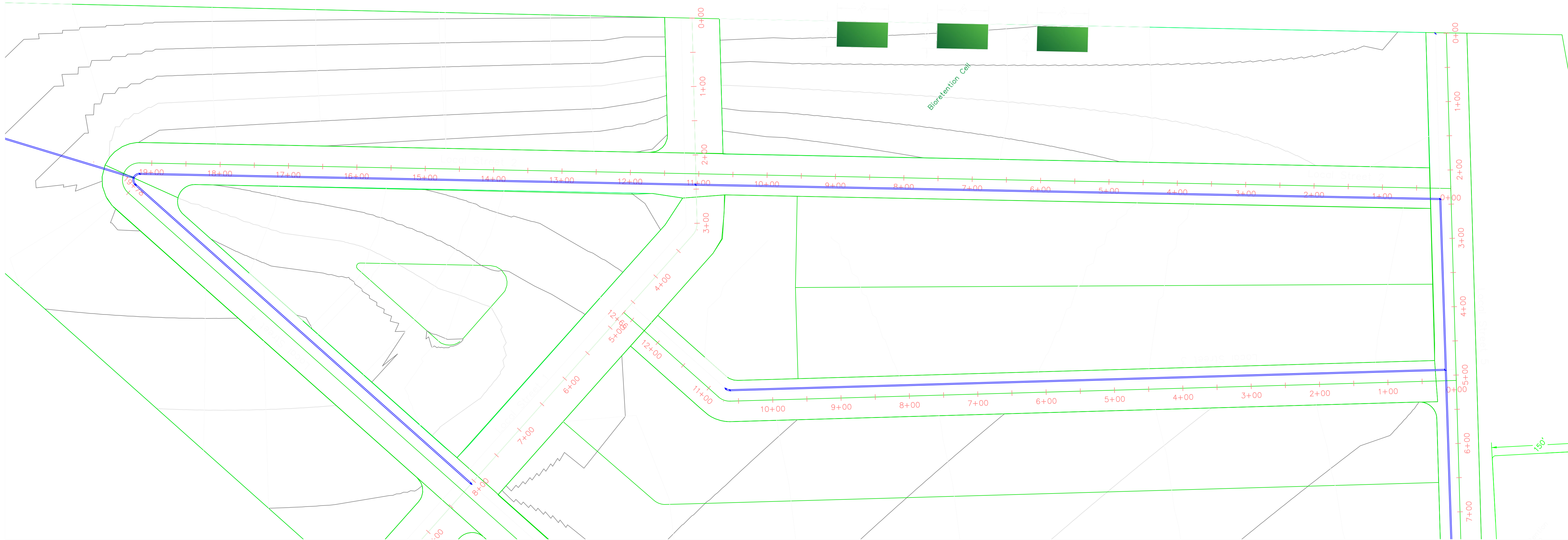


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**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
 STORMSEWER  
 PROFILES

SHEET NO.  
**CS100**



PROJECT:	CEE: 4850
DATE :	11/20/2019
DRAWN BY:	SW MGT
REVISION:	

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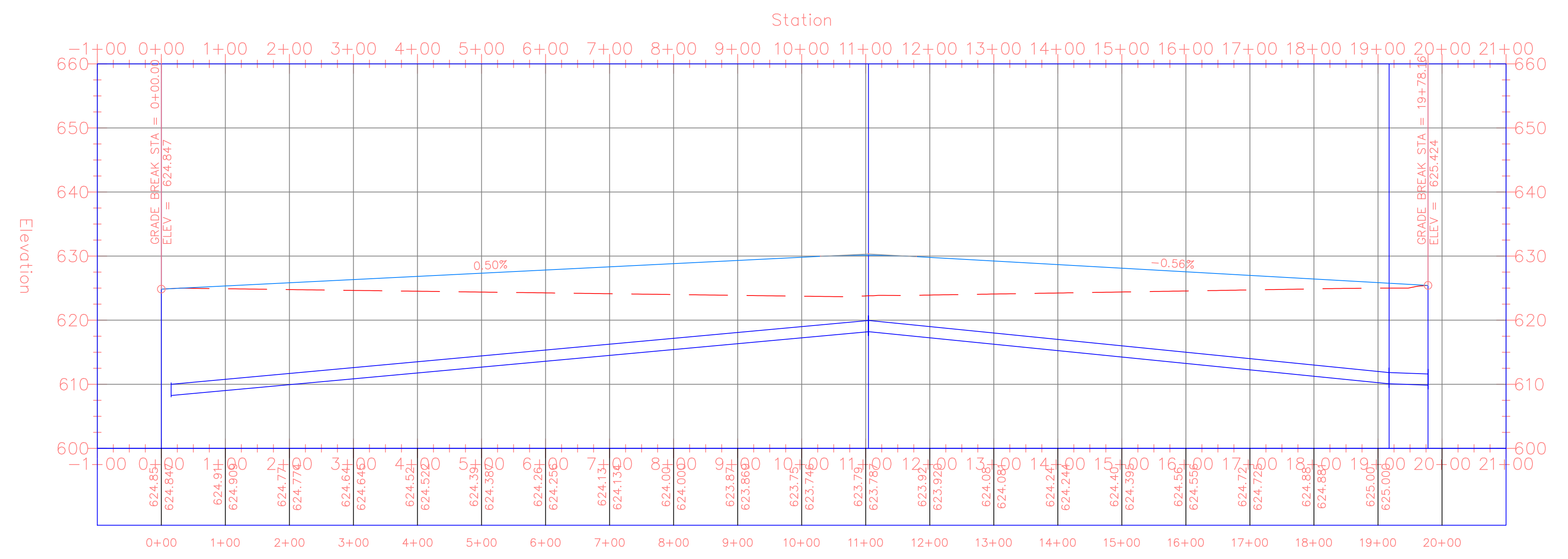
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FOR CONSTRUCTION

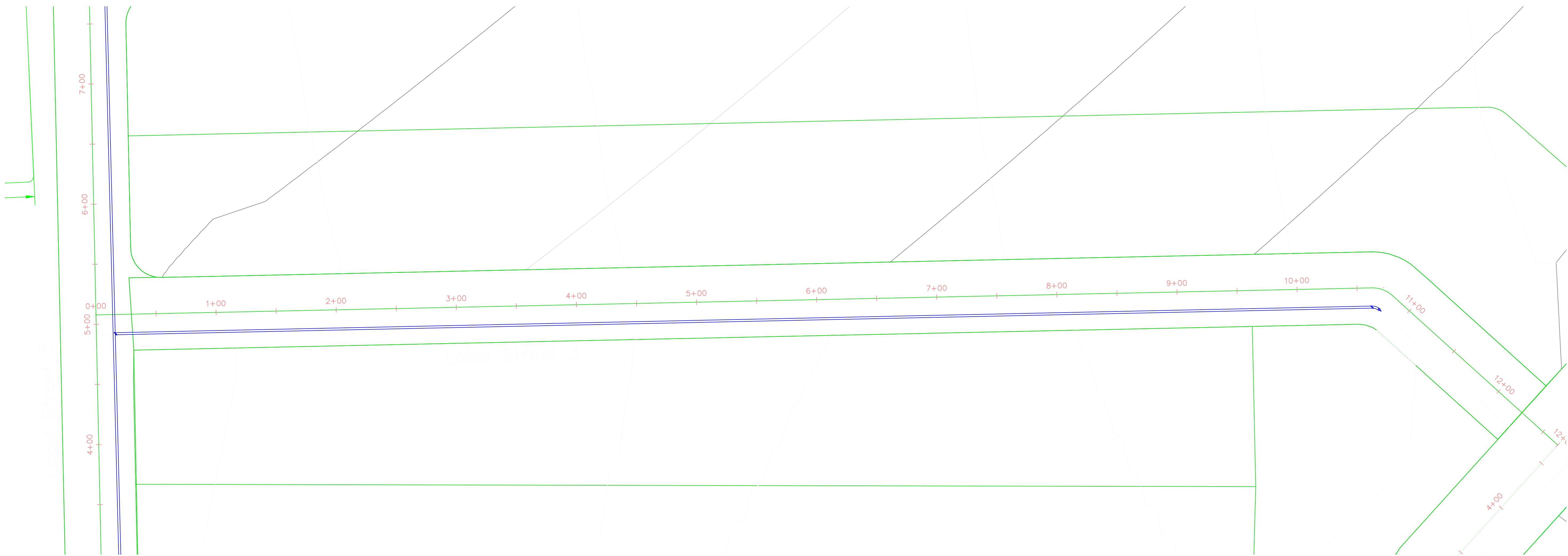
**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
**STORMSEWER  
 PROFILES**

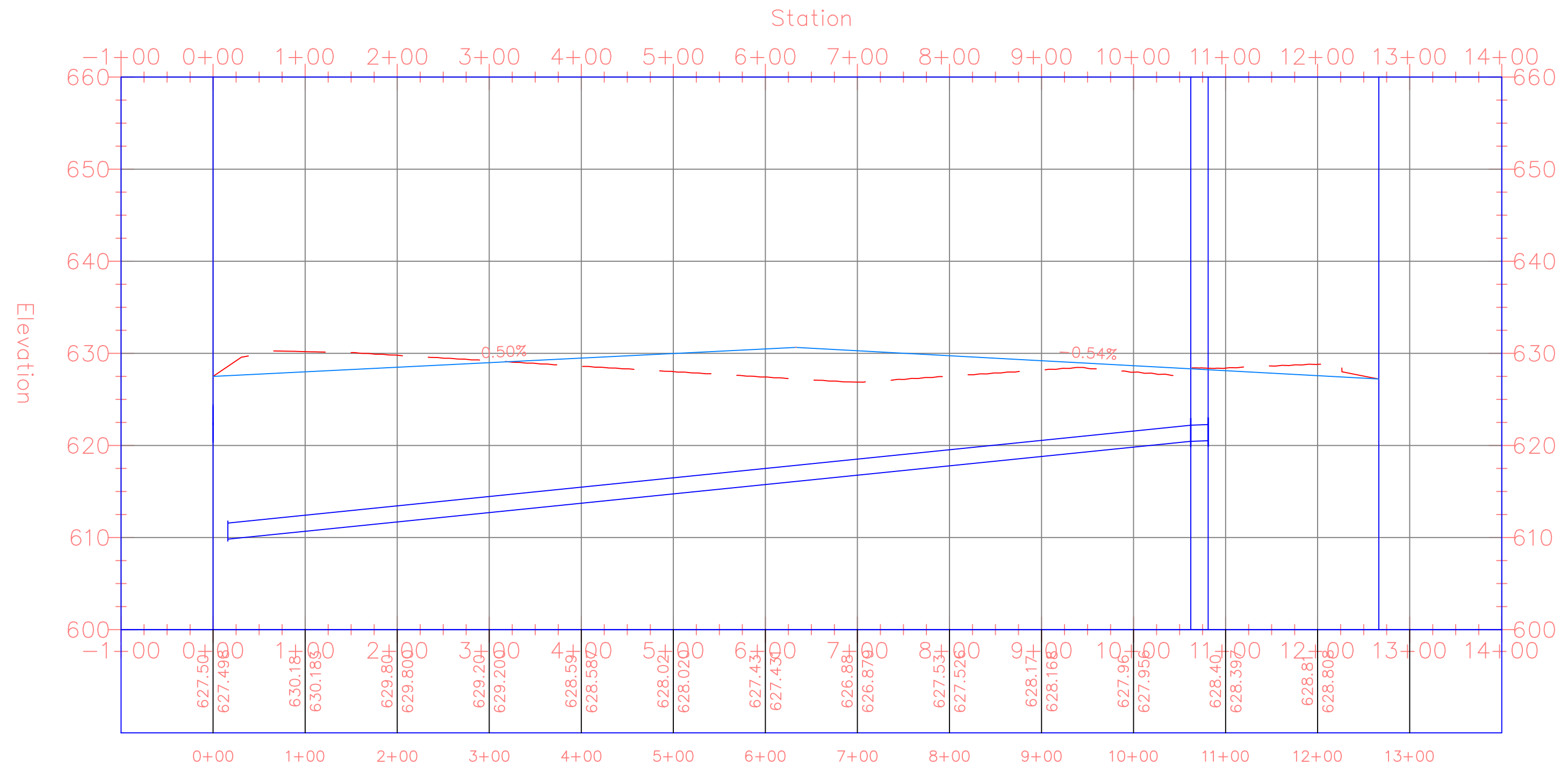
SHEET NO.  
**CS101**

Local Street 2 (1) PROFILE



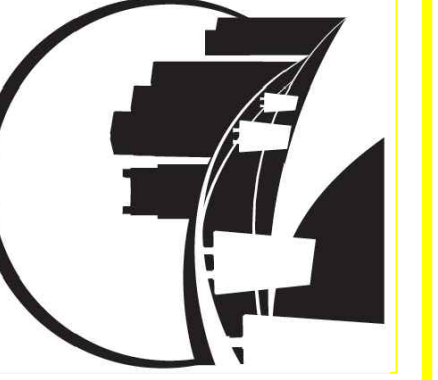


Local Street 3 PROFILE



PROJECT:	CEE-4850
DATE :	11/20/2019
DRAWN BY:	SW MGT
REVISION:	

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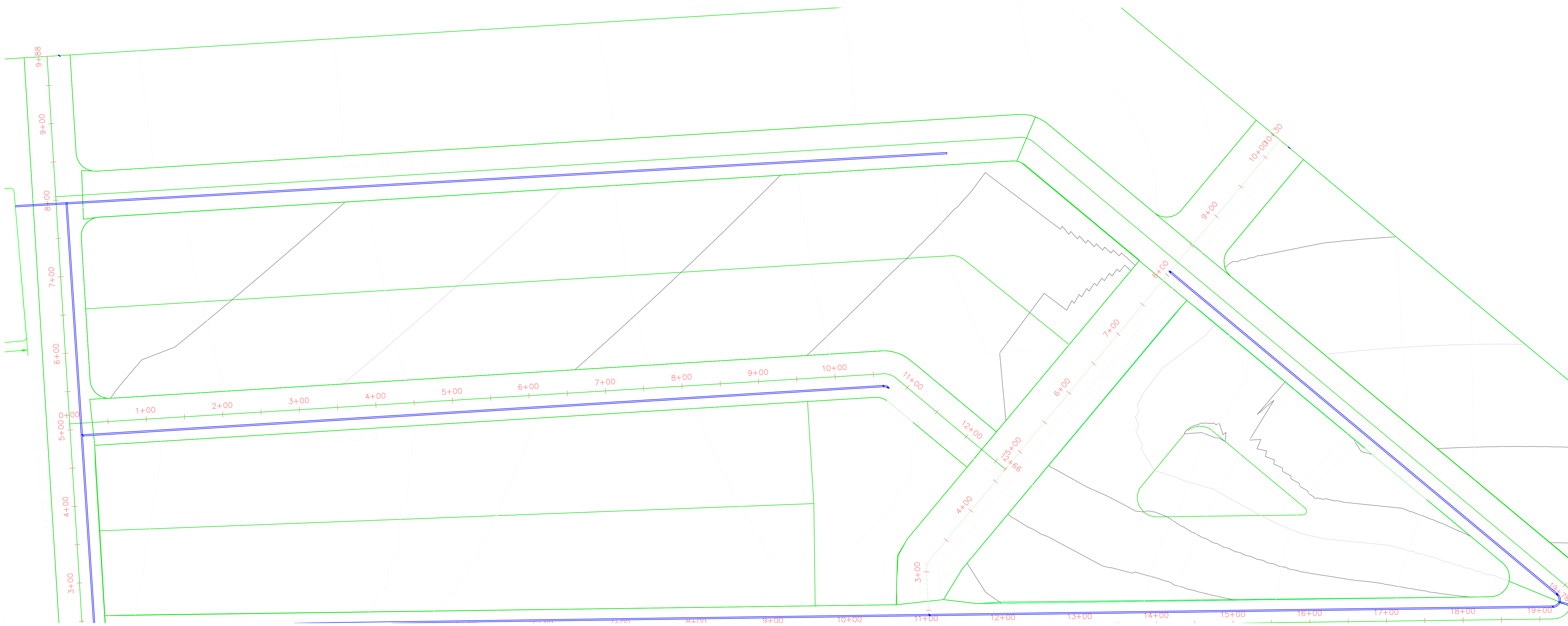
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**EXPANSION PROJECT**

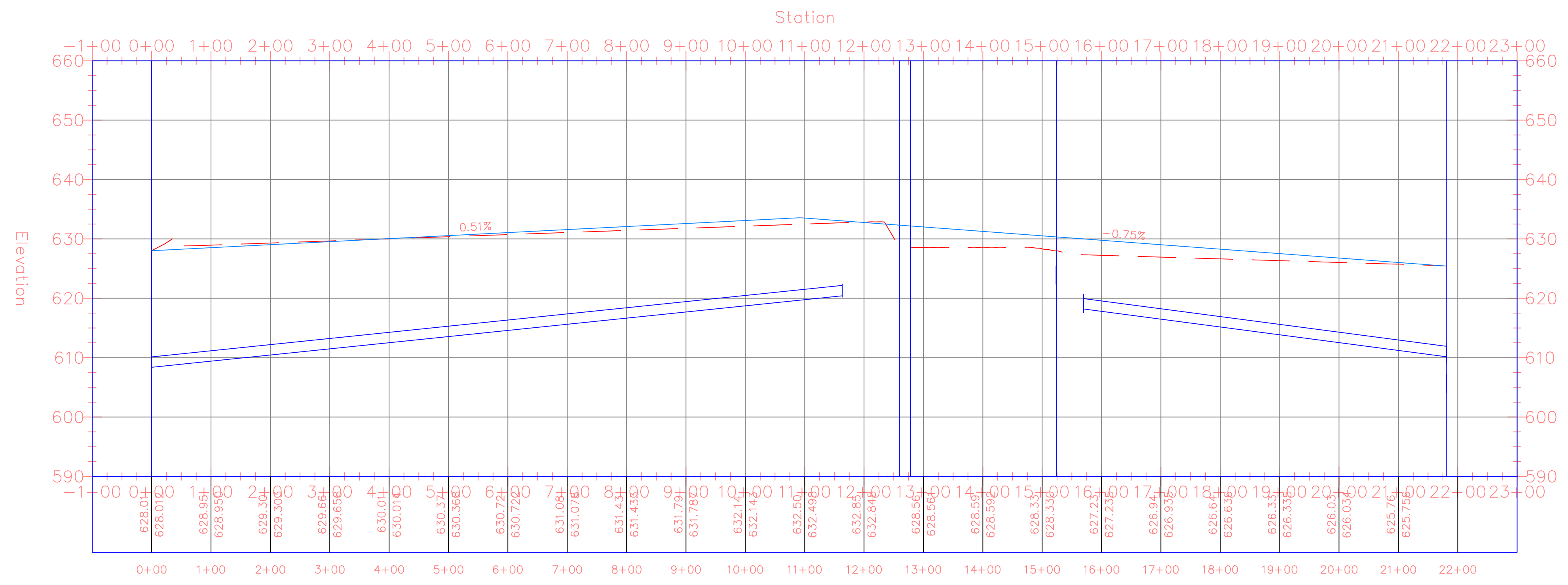
216TH ST  
BELLEVUE, IOWA

SHEET NAME  
STORMSEWER  
PROFILES

SHEET NO.  
**CS102**

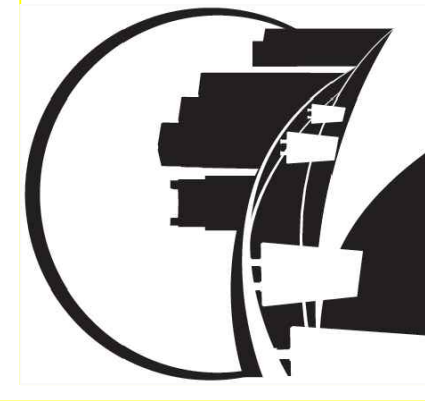


Local Street 4 PROFILE



PROJECT:	CEE: 4850
DATE :	11/20/2019
DRAWN BY:	SW MGT
REVISION:	

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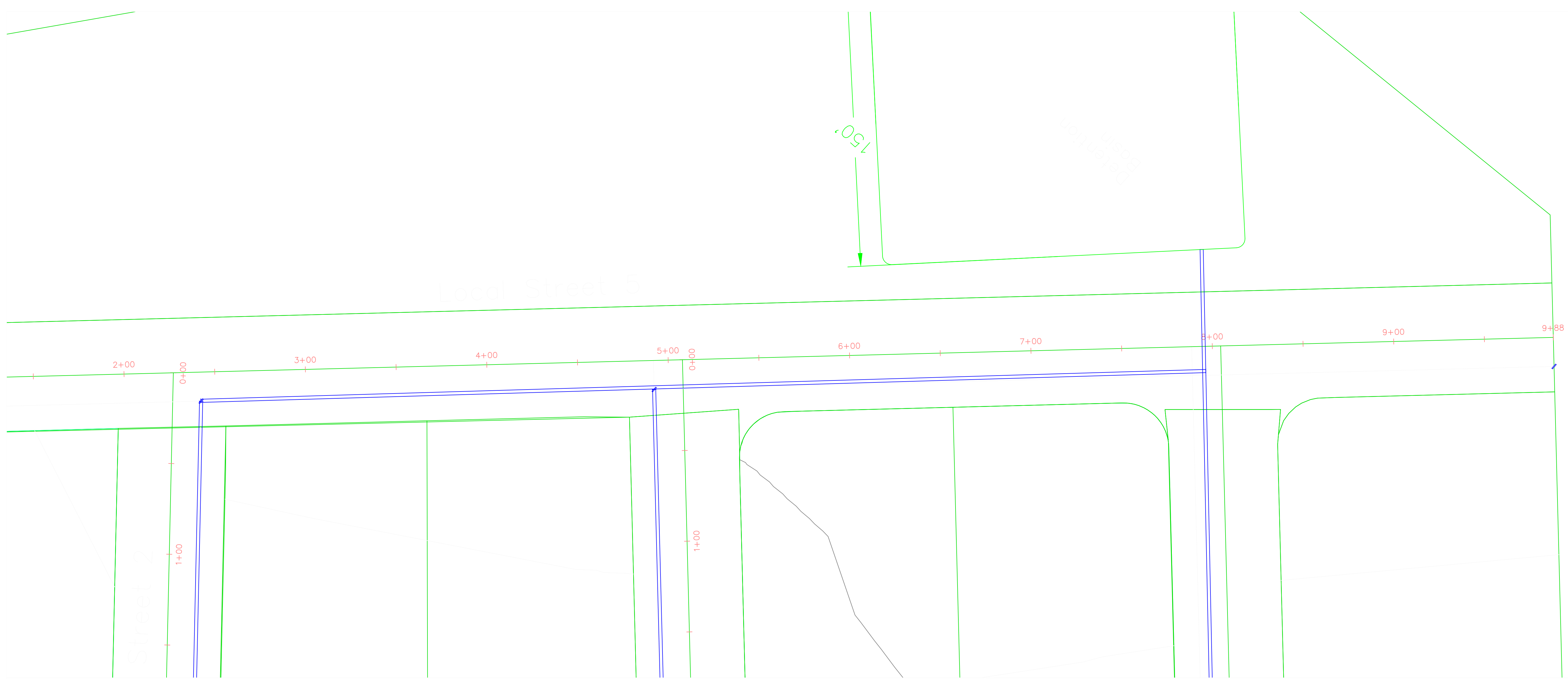


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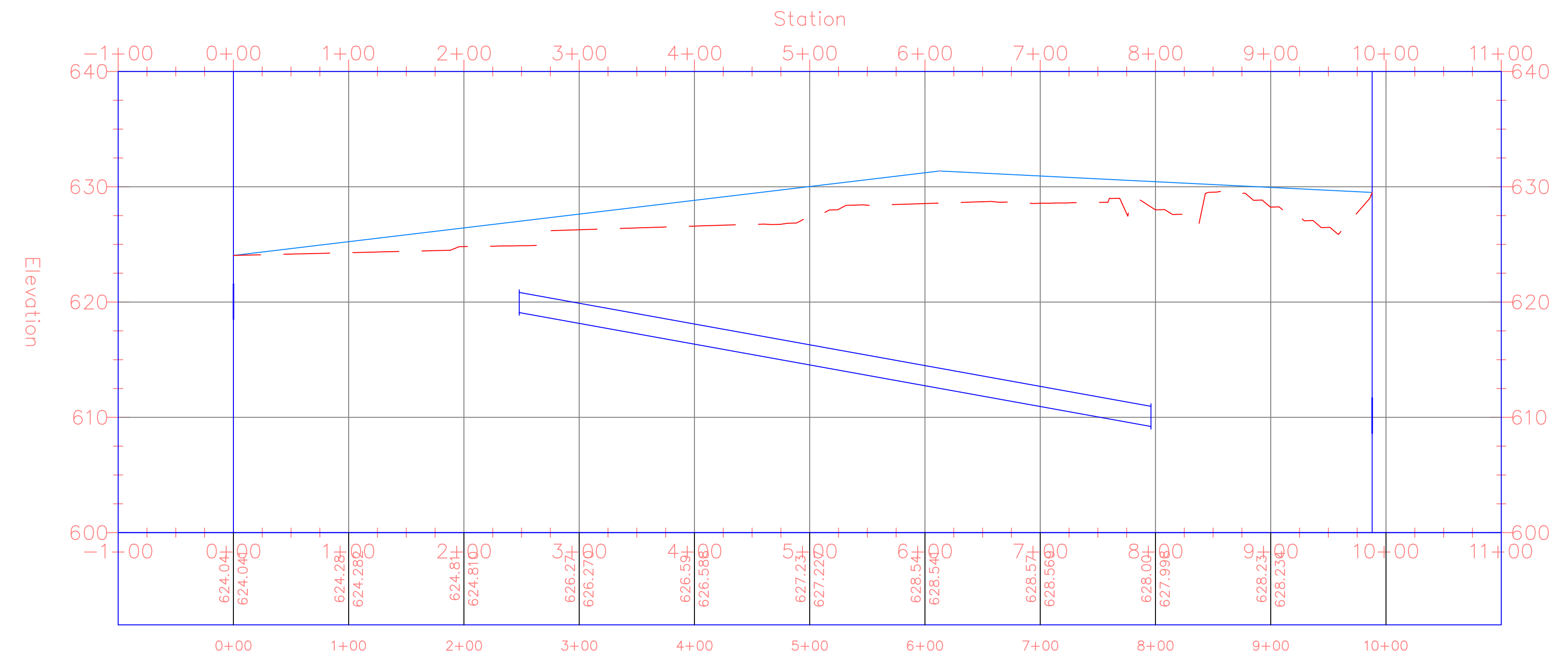
**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
**STORMSEWER  
 PROFILES**

SHEET NO.  
**CS103**



Local Street 5 PROFILE



PROJECT: CEE:4850  
 DATE: 11/20/2019  
 DRAWN BY: SW MGT  
 REVISION:

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**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
**STORMSEWER PROFILES**

SHEET NO.  
**CS104**

**NOTES**

1. BASED ON ISWMM RECOMMENDATION, THE FINE, HARDWOOD MULCH LAYER WILL BE A 3" DEPTH.
2. THE MODIFIED SOIL LAYER WILL BE 24" DEEP. THE MODIFIED SOIL WILL BE A MIXTURE OF 75-90% WASHED CONCRETE SAND, 0-10% ORGANIC MATERIALS, AND 0-25% TOPSOIL..
3. THE AGGREGATE LAYER WILL BE AT LEAST 12" DEEP CONSISTING OF 1-2" CLEAN AGGREGATE. THE AGGREGATE LAYER WILL HAVE THE POROSITY OF 35-40%.
4. THE TOTAL CROSS-SECTIONAL DEPTH WILL BE 39".

PROJECT:	CEE: 4850
DATE :	12/13/2019
DRAWN BY:	SW MGT
REVISION:	

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 EMAIL: civil-hawks@iowa.edu



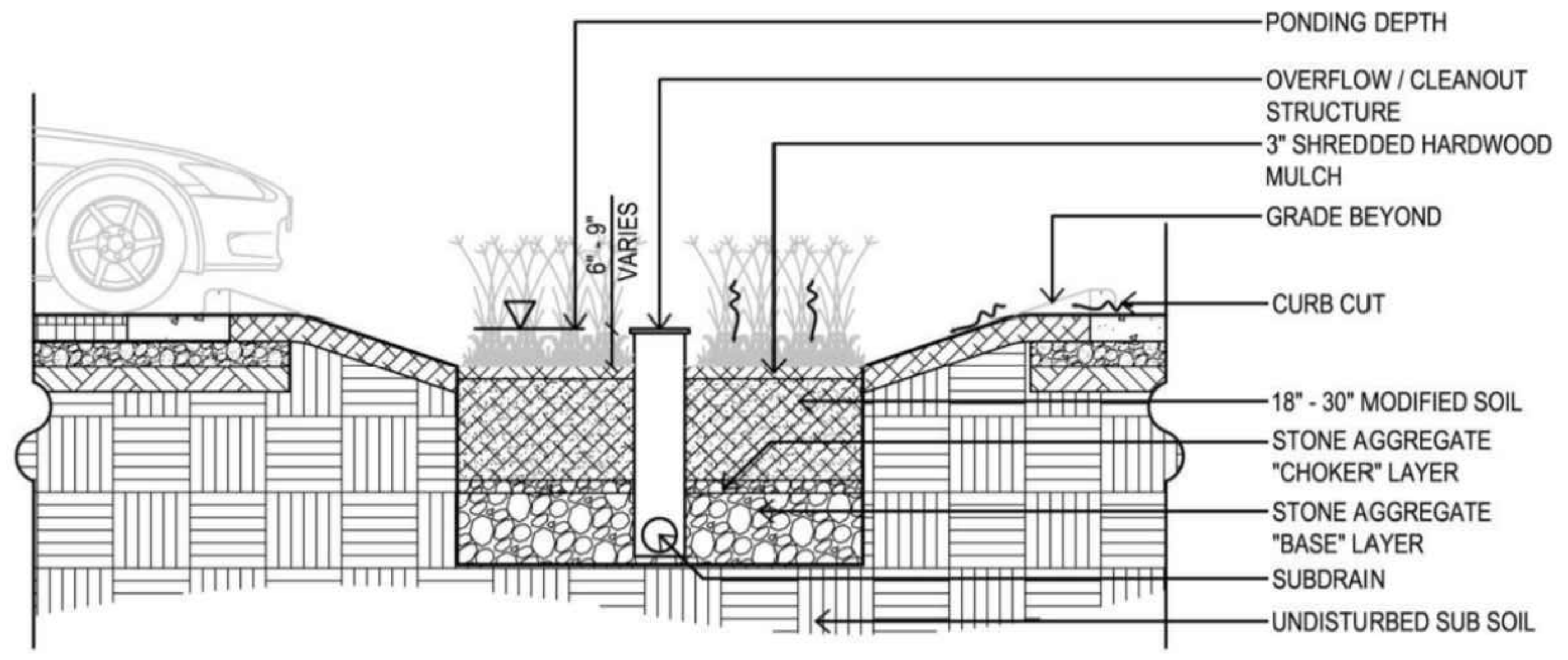
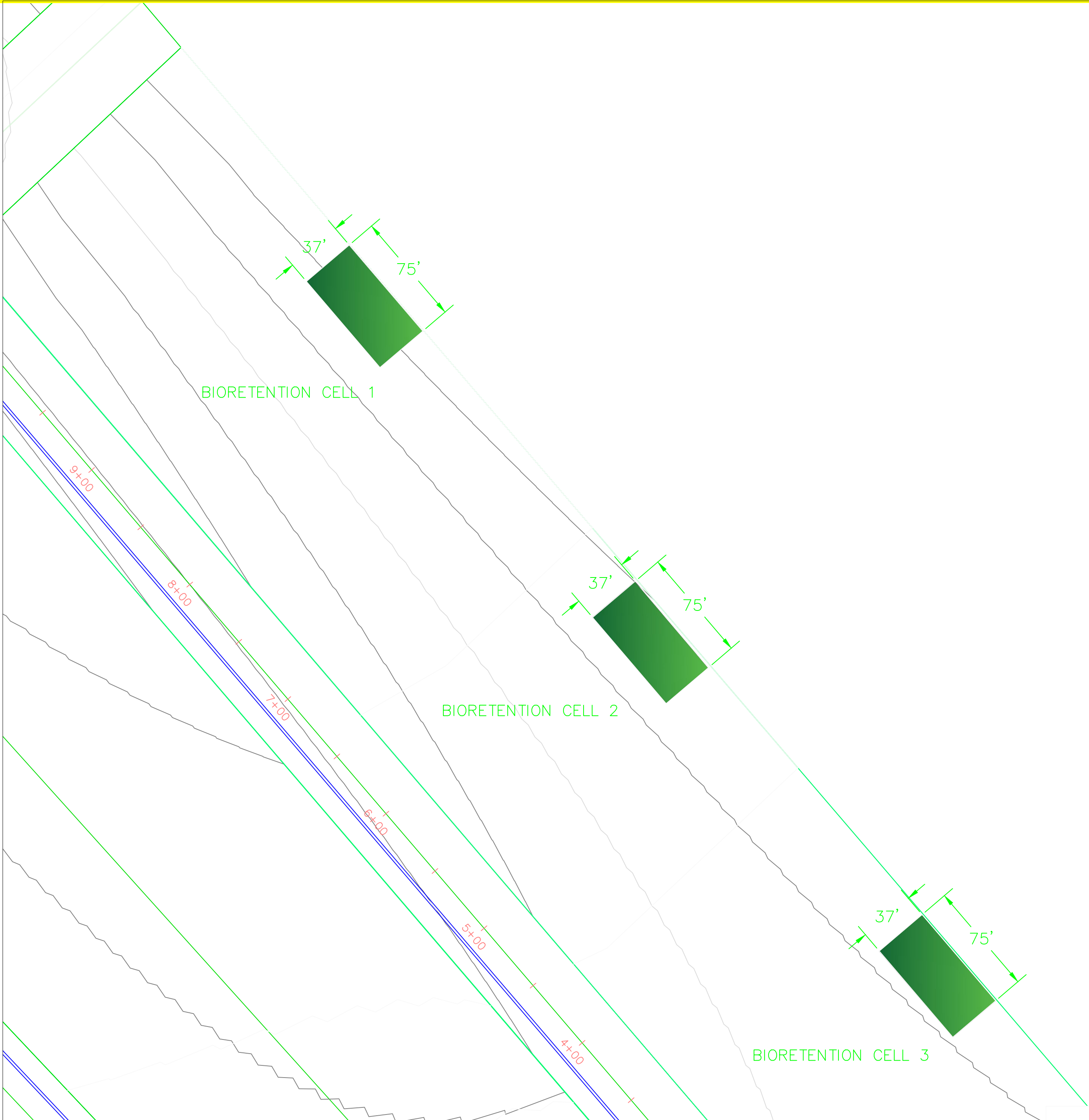
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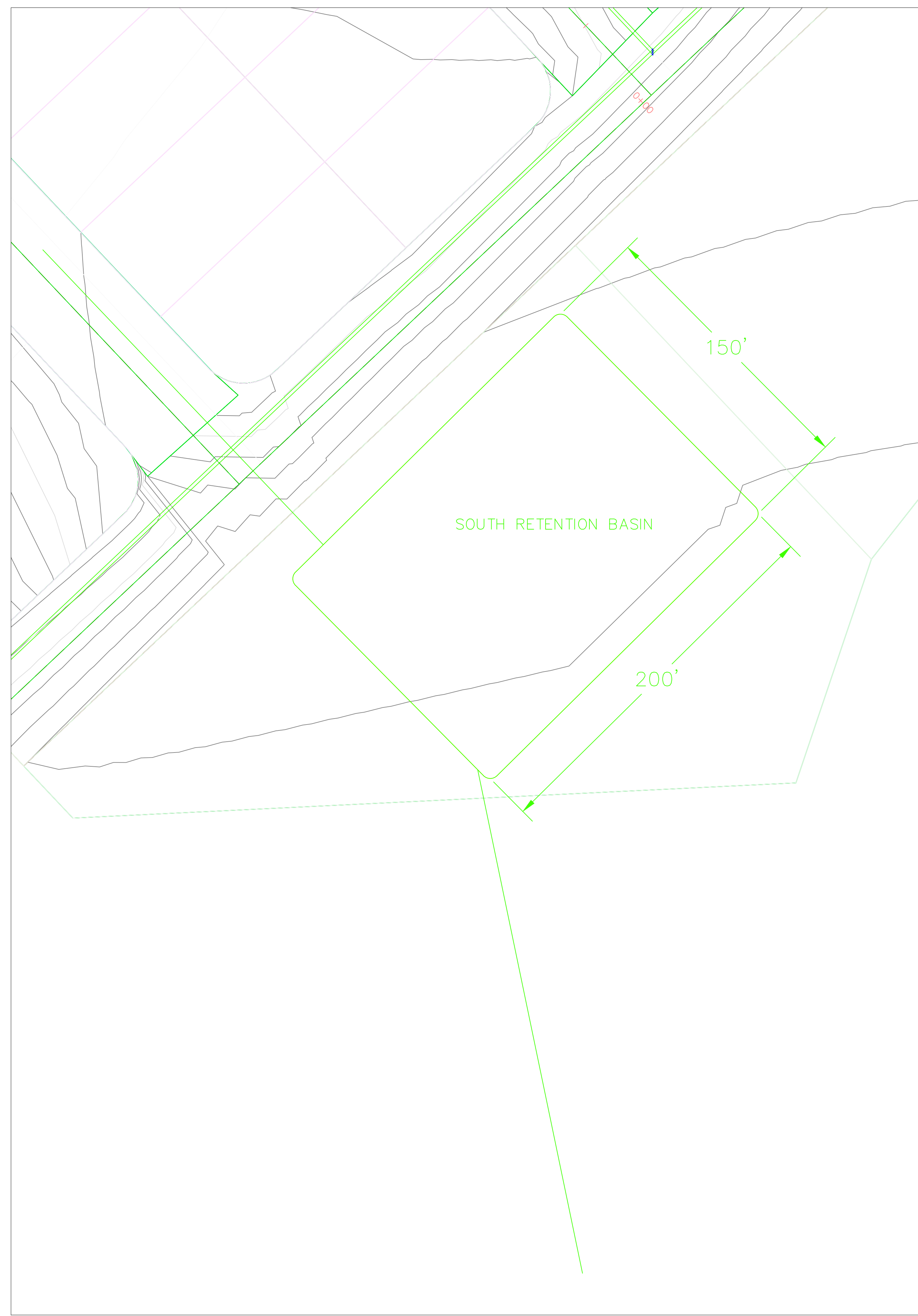
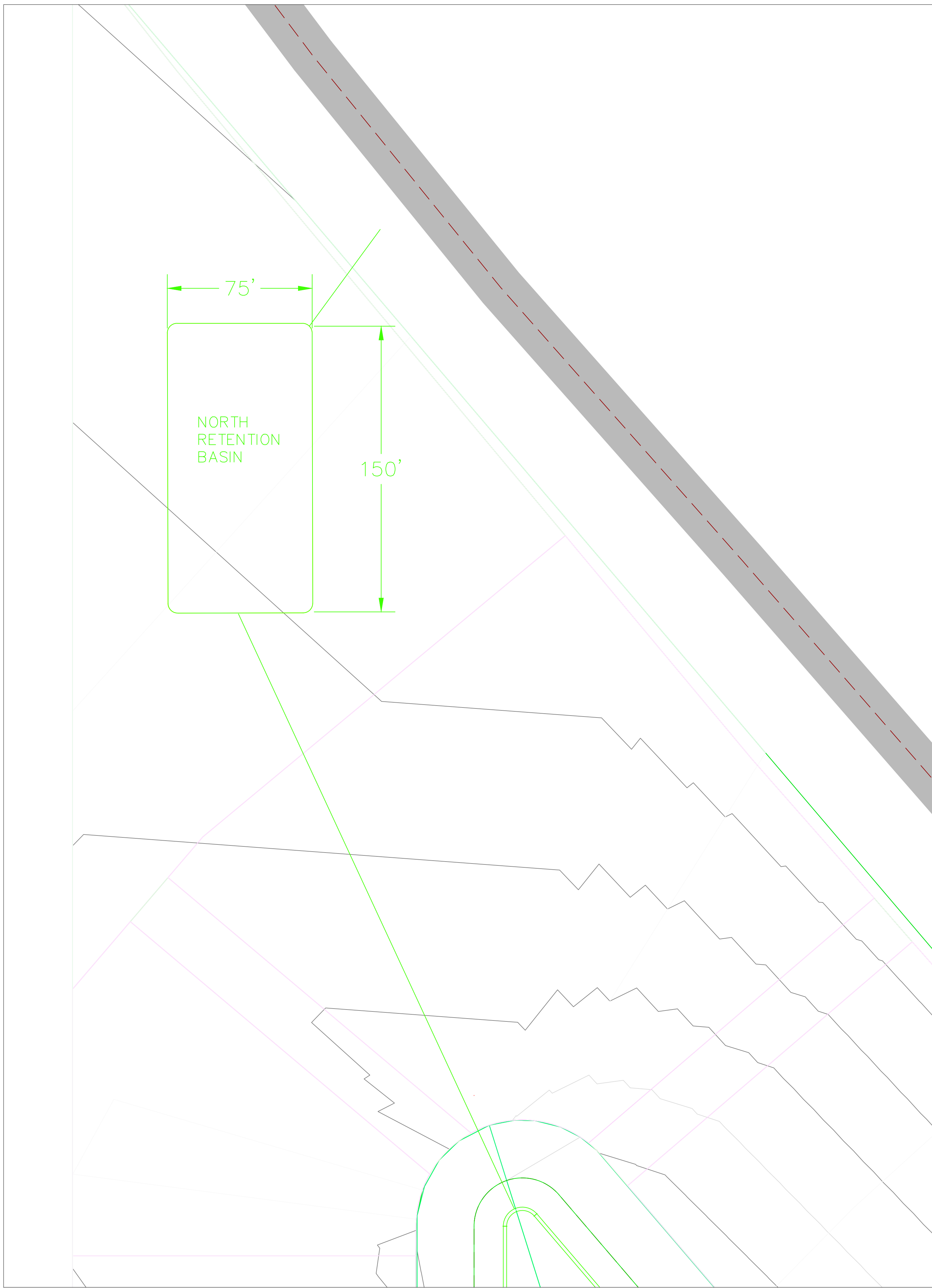
216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
 BIORETENTION CELL LAYOUT

SHEET NO.  
**CB100**







PROJECT: CEE-4850  
 DATE: 11/11/2019  
 DRAWN BY: CAN  
 REVISION:

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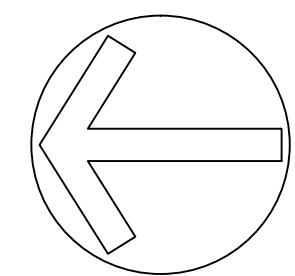
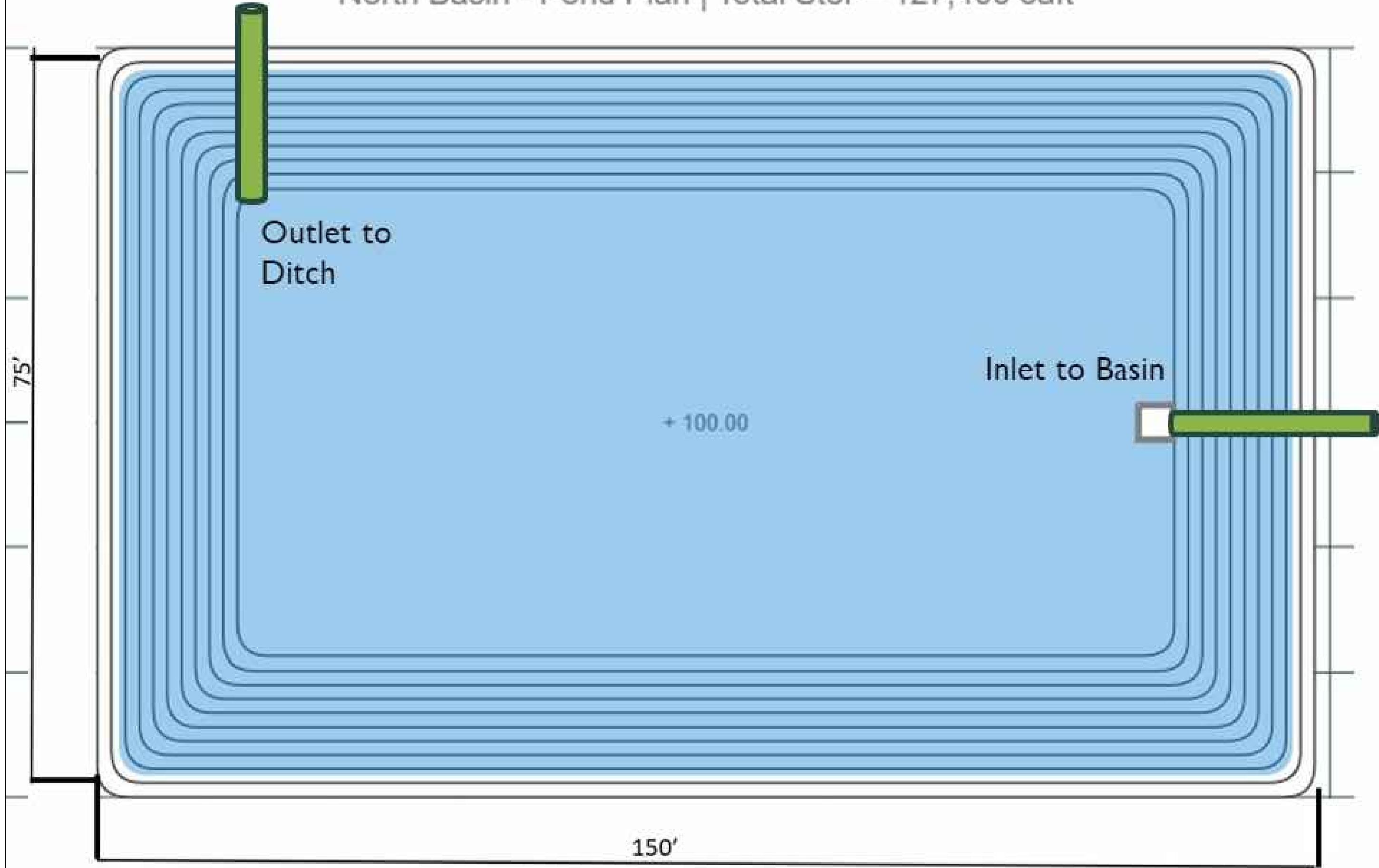
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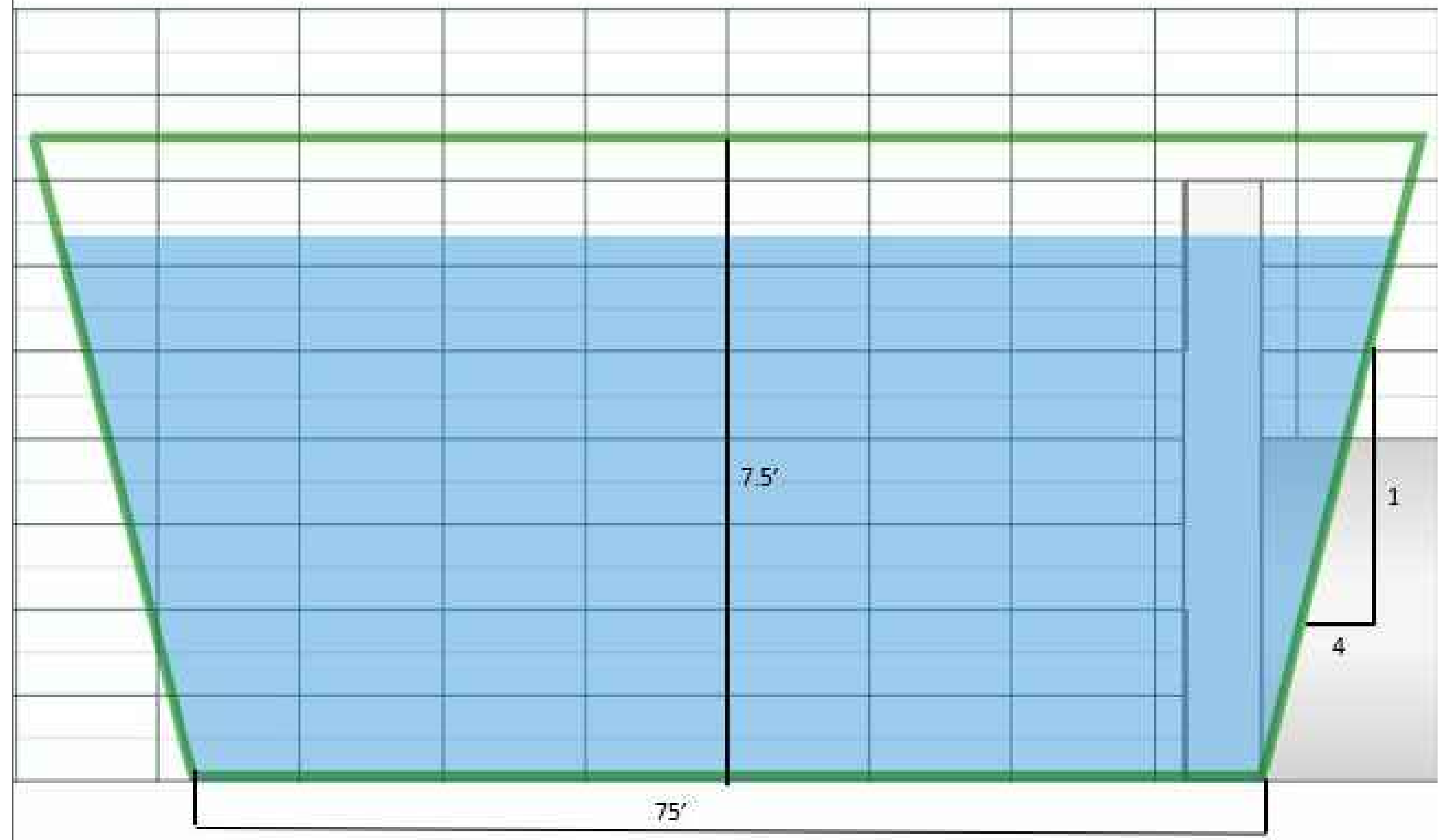
SHEET NAME  
 RETENTION BASIN  
 LAYOUT

SHEET NO.  
**CB101**

North Basin - Pond Plan | Total Stor = 127,406 cuft



North Basin - Pond Profile | Total Stor = 127,406 cuft



PROJECT:	CEE: 4850
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REVISION:	

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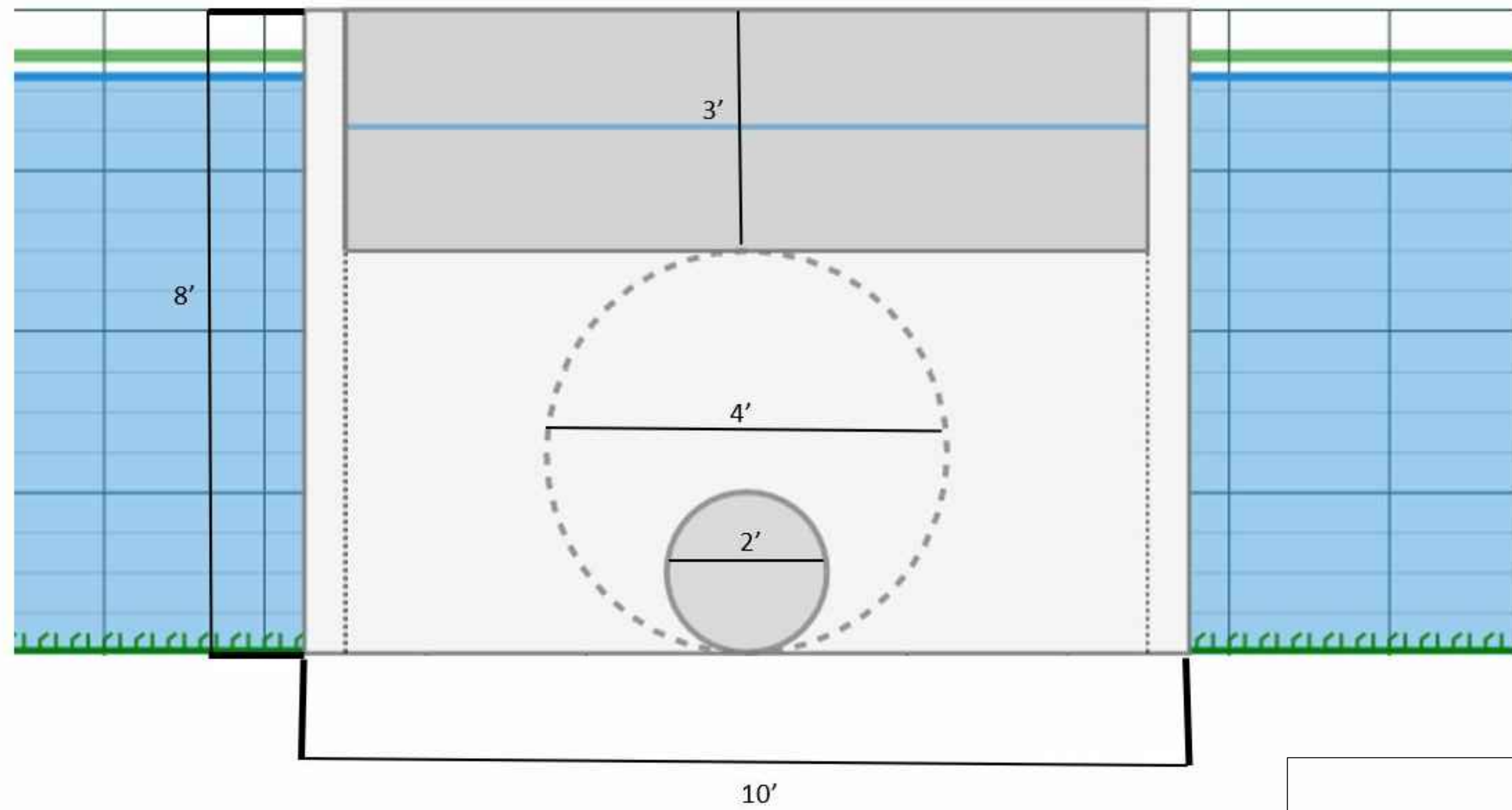
**EXPANSION PROJECT**

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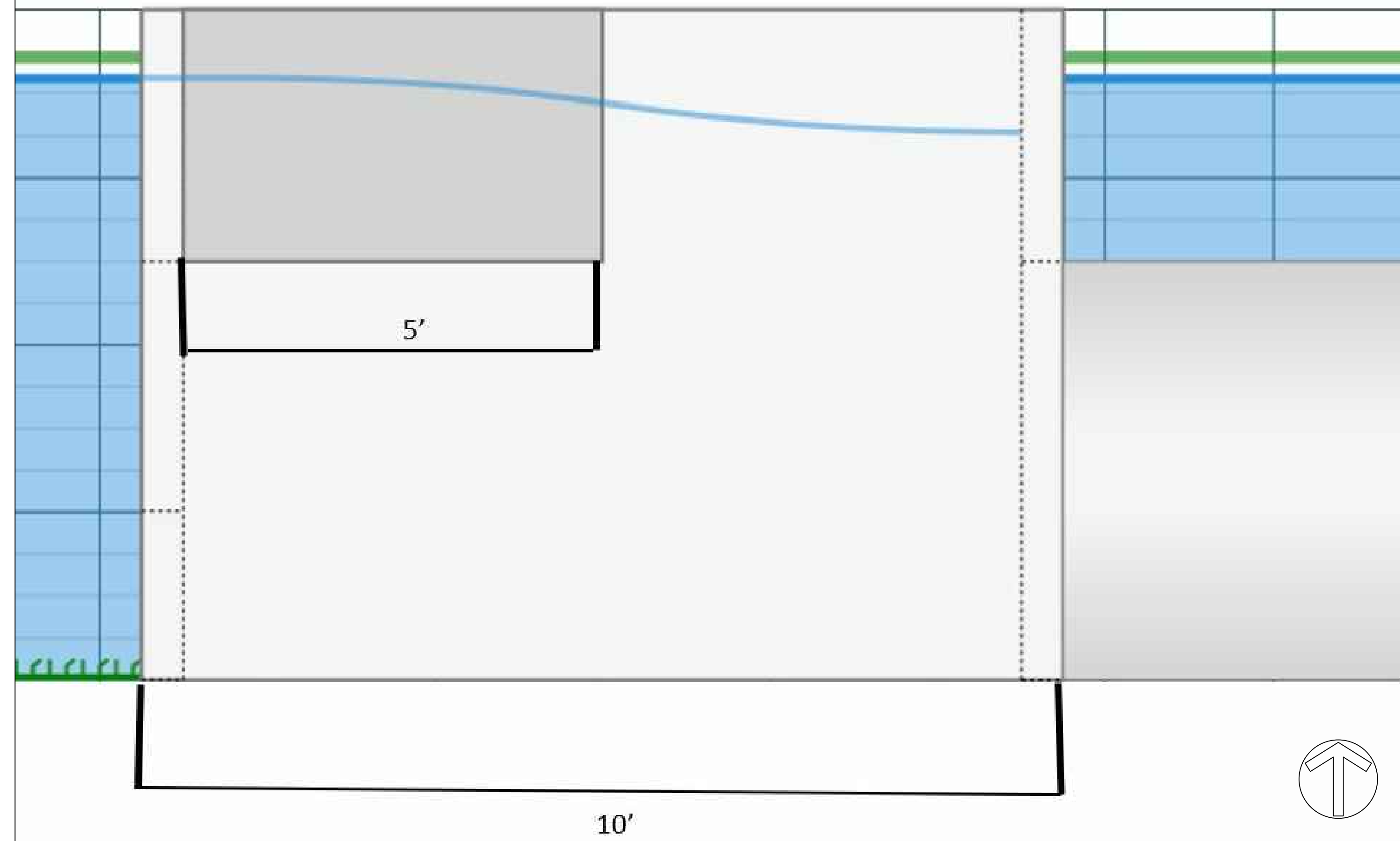
SHEET NAME  
 NORTH BASIN  
 PROFILE

SHEET NO.  
**CB102**

North Basin - Pond Outlet Schematic - 100-yr Water Surface



North Basin - Pond Outlet Schematic - 100-yr Water Surface



PROJECT:	CEE: 4850
DATE :	11/20/2019
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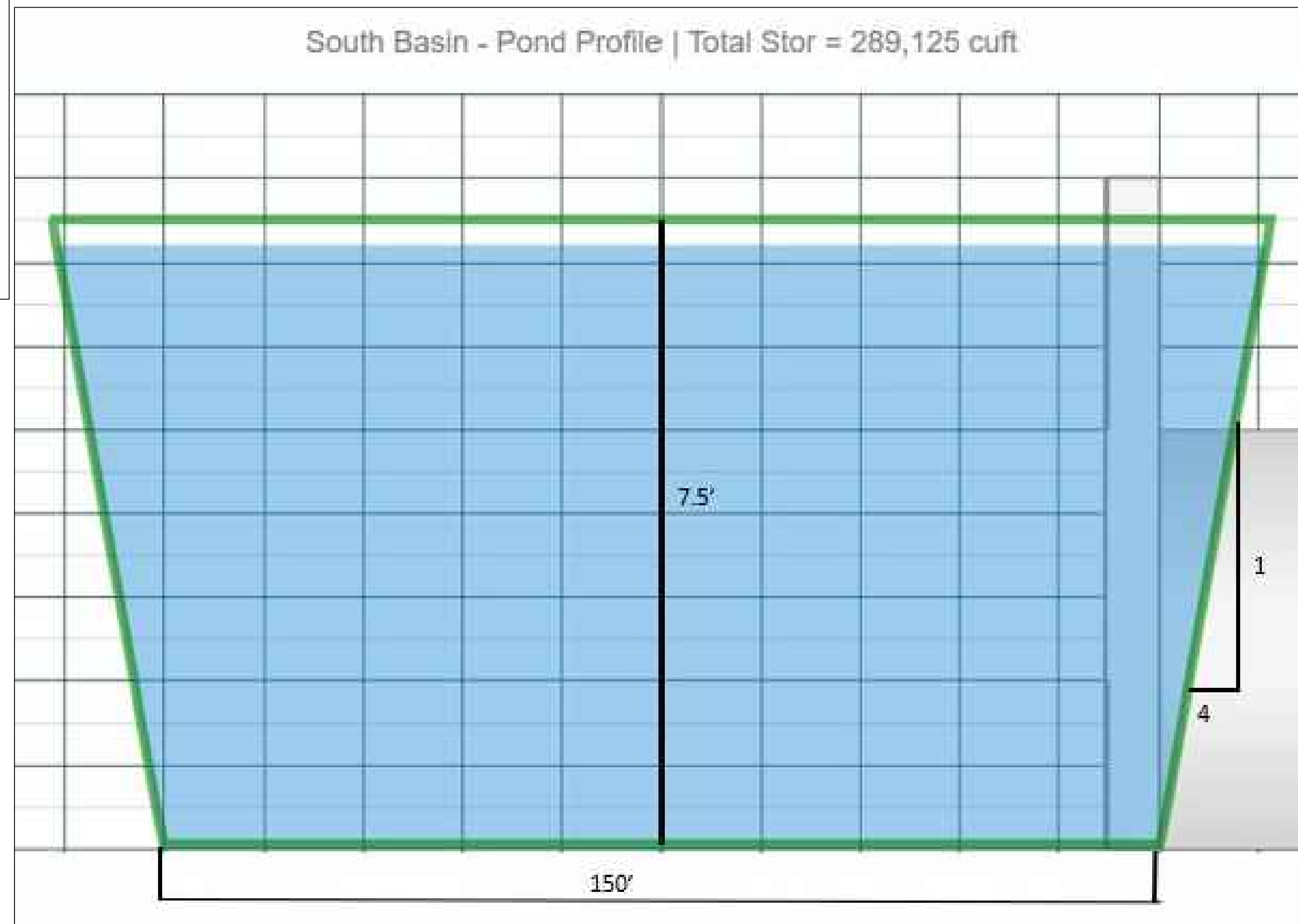
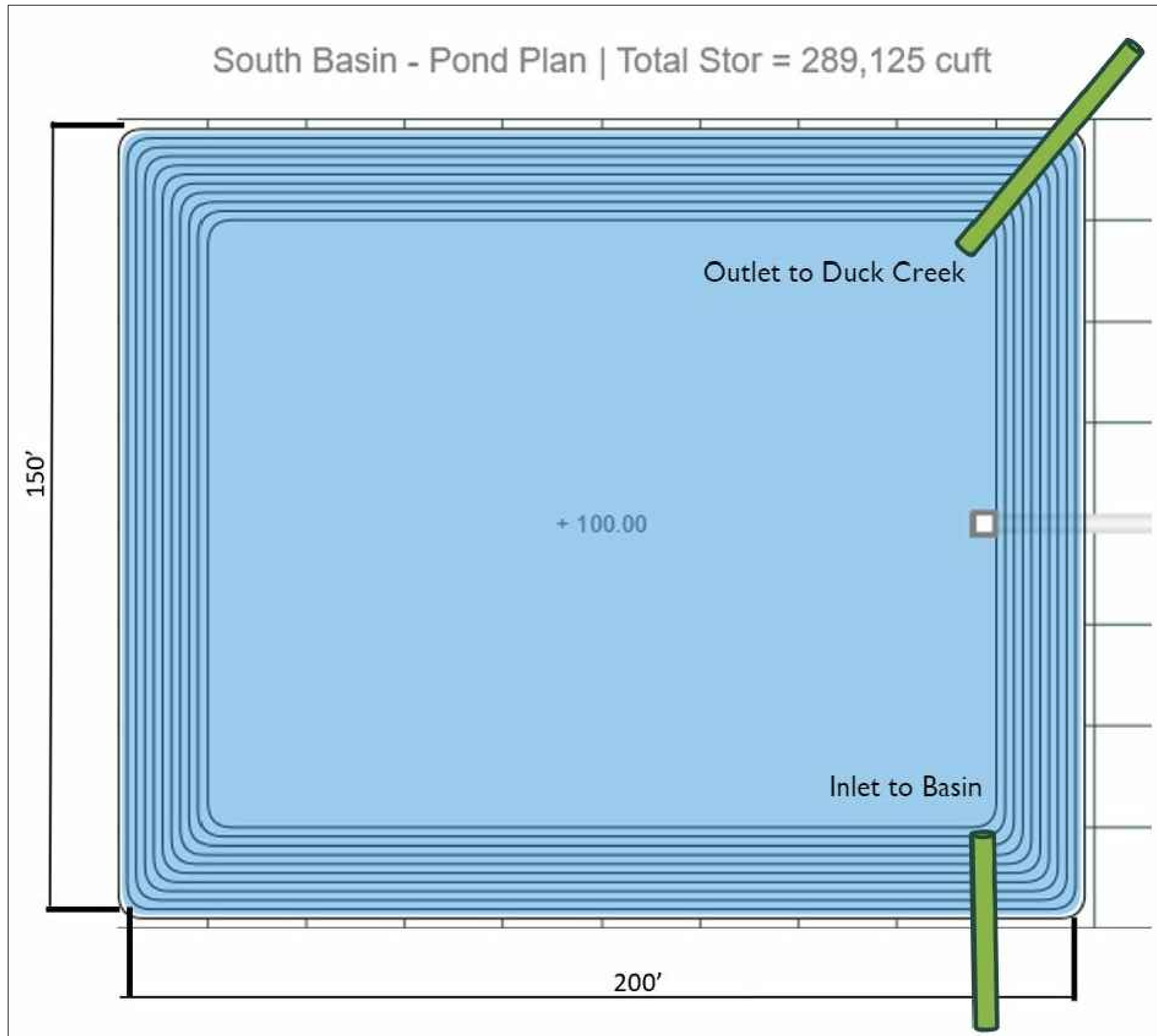
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**EXPANSION PROJECT**

216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
 NORTH BASIN  
 OUTLET STRUCTURE

SHEET NO.  
**CB103**



PROJECT:	CEE: 4850
DATE :	11/20/2019
DRAWN BY:	SW MGT
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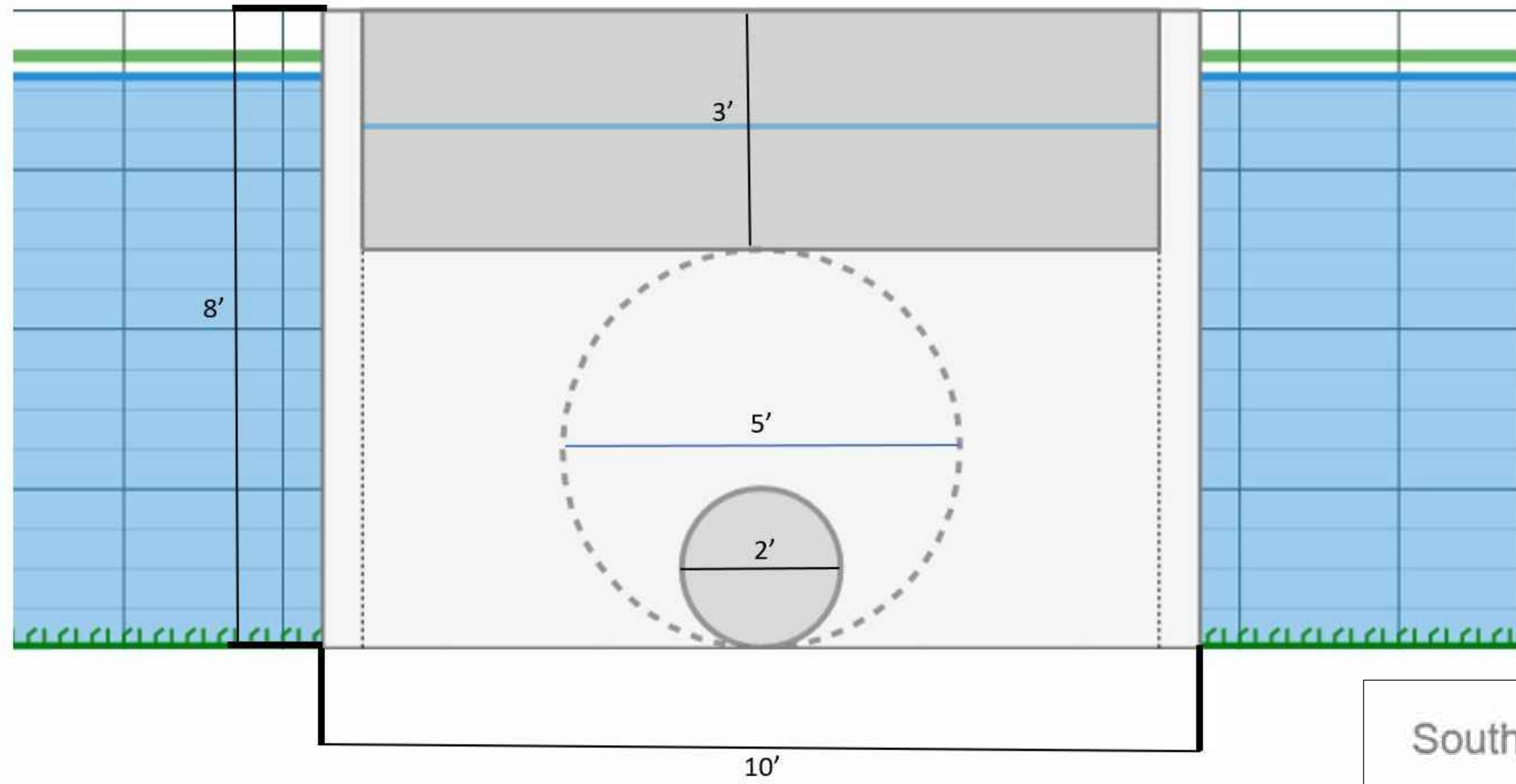
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**EXPANSION PROJECT**  
 216TH ST  
 BELLEVUE, IOWA

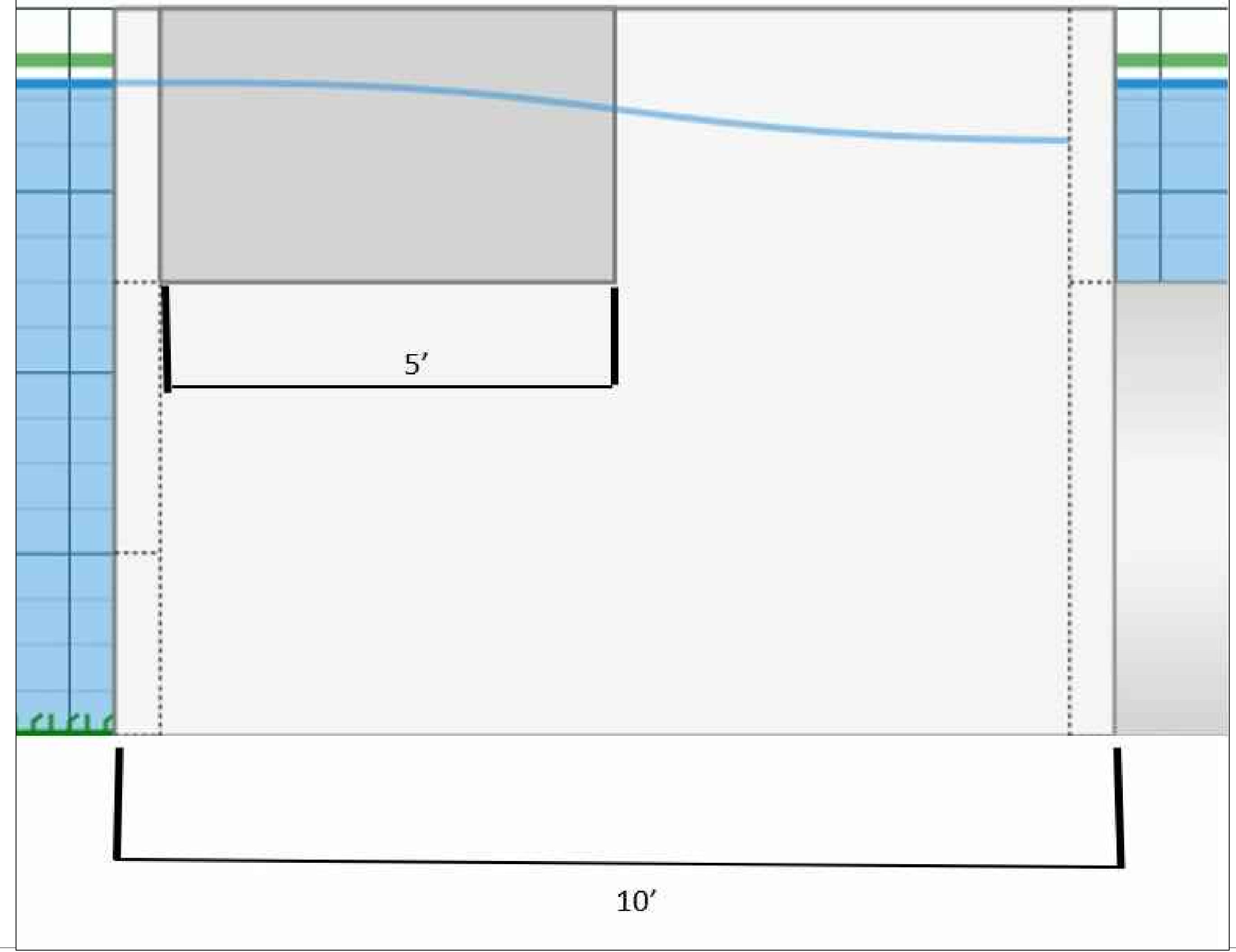
SHEET NAME  
 SOUTH BASIN  
 PROFILE

SHEET NO.  
**CB104**

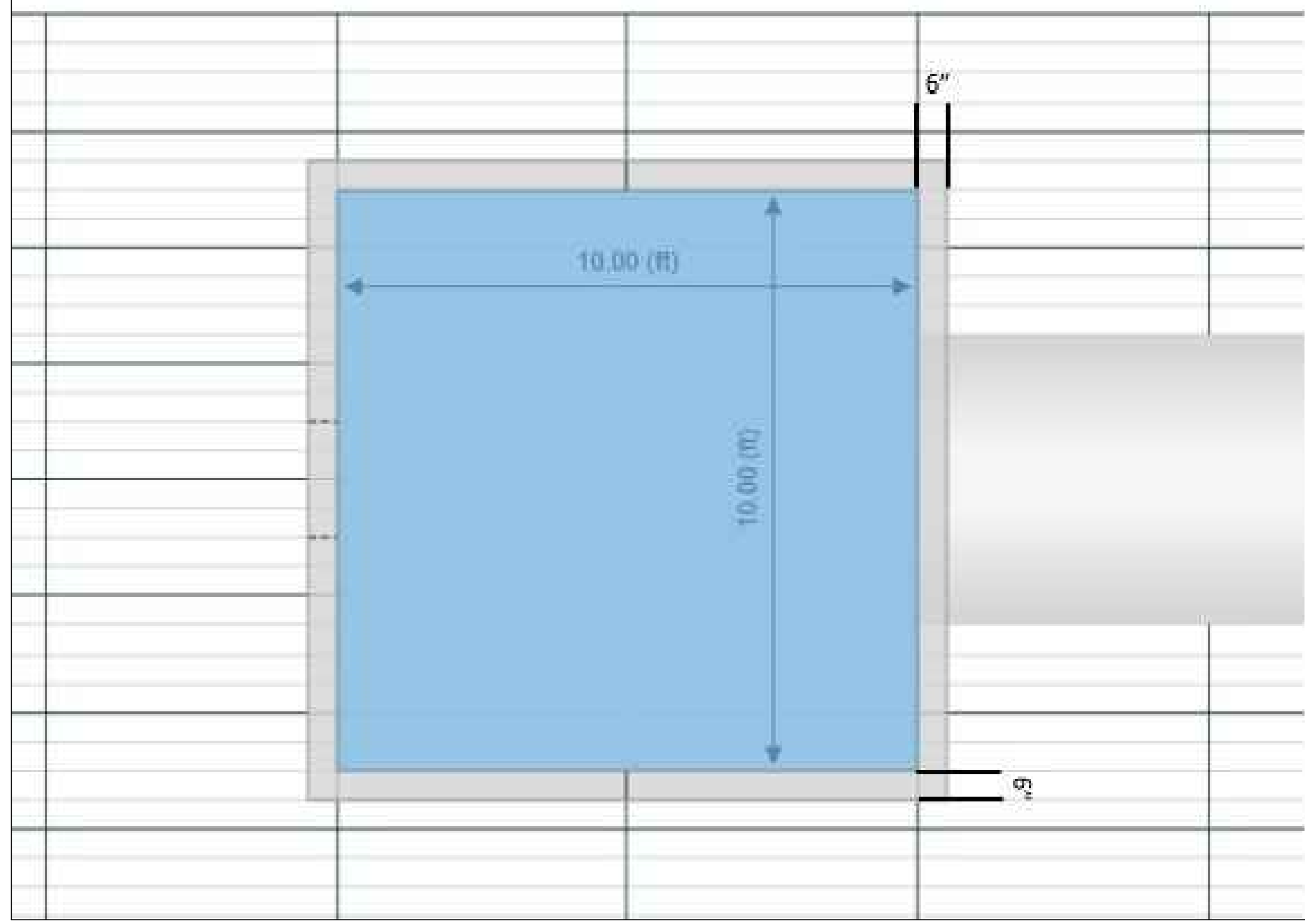
South Basin - Pond Outlet Schematic - 100-yr Water Surface



South Basin - Pond Outlet Schematic - 100-yr Water Surface



South Basin - Pond Outlet Schematic



PROJECT:	CEE: 4850
DATE :	11/20/2019
DRAWN BY:	SW MGT
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**EXPANSION PROJECT**

216TH ST  
 BELLEVUE, IOWA

SHEET NAME  
 SOUTH BASIN  
 OUTLET STRUCTURE

SHEET NO.  
**CB105**

