

**CITY OF NORWALK
REPORT TO THE NORWALK PLANNING COMMISSION**

- REQUEST:** Request from Norwalk Land Co to approve the Preliminary Plat and Site Plan of the ***Norwalk Orchard View Townhomes***
- MEETING DATE:** April 25, 2016
- STAFF CONTACT:** Luke Parris, AICP
City Planner
- APPLICANT(S):** Norwalk Land Co
PO Box 267
Johnston, Iowa 50263
- GENERAL DESCRIPTION:** This request would create 76 townhome lots and site plan out the location of buildings and private roadways on Parcel 3 of the Orchard View PUD. The proposal is developed with the requests submitted in a separate PUD amendment.
- IMPACT ON NEIGHBORHOOD:** The surrounding ground is currently undeveloped with the exception of nearby two-family homes along Wright Road to the southeast. The surrounding development is all planned as single family residential as a part of various PUDs.
- VEHICULAR & PEDESTRIAN TRAFFIC:** The plat/site plan shows two connections onto Orchard Hills Drive at the intersections of Sycamore Drive and Braeburn Drive. The streets internal to the development are private and meet the city's standards for private streets. A four-way controlled intersection with stop signs will likely be required at the Sycamore Drive intersection.
- TRAIL PLAN:** The site would have a 5' wide sidewalk installed along Orchard Hills Drive.
- ZONING HISTORY FOR SITE AND IMMEDIATE VICINITY:** The site was zoned in the Orchard View Planned Unit Development on October 4, 2012 (Ordinance 12-09). The site is identified as Parcel 3 in the PUD and allows for R-3 uses. A request has been submitted to amend the following conditions in the PUD:
- Setbacks from private roadways are identified on the attached Master Plan for Parcel 3.
 - Change the required setback for the complex from 30' to 35' and to allow for a 15' buffer to overlap the 35' setback.
 - The requirement for "owner occupied units" be deleted.

The surround ground is zoned R-1 in the Orchard View and Orchard Hills PUDs. The ground directly south of the proposed development is not located in the City and is not zoned.

**BUFFERS REQUIRED/
NEEDED:**

The proposed development would require a buffer next to any adjacent single-family districts. Single family districts are located on the east, west, and north. The developer has shown a 15' wide buffer that includes the required 1.4 planting multiplier identified in the City Zoning Ordinance. The developer has requested that the buffer be allowed to overlap the setback in a proposed PUD amendment. Staff reviewed the buffer requirements of surrounding metro communities and found that all would allow a buffer to overlap the setback.

DRAINAGE:

The development includes a storm sewer system that connects with the City system along Orchard Hills Drive. The western portion of the development drains to the southwest into a detention pond that releases at the south property line.

**DEVELOPMENT
HISTORY:**

The area was planned as a PUD on October 3, 2012. A preliminary plat that included the area as an outlot was approved in January 2014.

FLOODPLAIN:

None of the proposed lots are located within a floodplain.

PARKLAND:

Parkland dedication was identified as a park in the northern area of the Orchard View development.

**OPEN SPACE AND
LANDSCAPING:**

The Zoning Ordinance requires 30% open space. The development is 294,489 square feet and would be required to have 88,347 square feet. 59 trees and 89 shrubs are provided to meet the planting requirements. An additional 215 trees and 374 shrubs are provided as part of the required landscaped buffer.

**PARKING
REQUIREMENTS:**

The zoning ordinance requires 2.5 spaces for each dwelling unit. One garage space can be counted towards the requirement, as well as driveway space. The development has 76 units and would be required to have 190 parking spaces. Each unit has an attached garage and room for two cars parked in a driveway. This provides 228 parking spaces. An additional 8 visitor parking spaces have been provided.

**ARCHITECTURAL
STANDARDS:**

The City's Architectural Standards require that multi-family townhomes incorporate 3 different materials from the City's list of classified materials. The developer submitted elevations for units that they would like to build though they have not

submitted the final elevations for this project. The elevations submitted met the City's Architectural Standards and anything similar would be considered acceptable.

**UTILITIES: WATER,
SANITARY SEWER,
STORM SEWER.**

- An 8" public water main is provided throughout the site with an associated easement.
- Hydrants are shown throughout the site at appropriate spacing to provide adequate coverage to all units.
- An 8" public sanitary sewer is to be constructed along Braeburn Drive and the proper easements have been shown.
- Private storm sewer is provided throughout the site. A portion of the storm sewer connects into existing City storm sewer, the remaining sewer drains into a private detention basin in the southwest of the development.

**RELATIONSHIP TO
COMPREHENSIVE LAND
USE PLAN:**

The future land use plan for the area is identified as High Density Residential. This R-3 development meets the intent of the Comprehensive Plan.

**STAFF ANALYSIS –
ZONING ORDINANCE:**

The Preliminary Plat consists of 76 townhome lots. The plat consists of 6.77 acres of land northwest of the proposed intersection of Orchard Hills Drive and Wright Road.

Streets shown will be private and maintained by the owner's association. The Zoning Ordinance requires that these streets be signed with blue signs and labeled as "Private Streets."

The area is currently being considered for a rezoning amendment to the Echo Valley Community PUD. The proposed PUD amendment proposes the following changes:

- Setbacks from private roadways are identified on the attached Master Plan for Parcel 3.
- Change the required setback for the complex from 30' to 35' and to allow for a 15' buffer to overlap the 35' setback.
- The requirement for "owner occupied units" be deleted.

The PUD requires that multi-family structures along the perimeter of the development be no taller than two stories. The proposed development includes two-story units along the perimeter and three-story units on the interior of the site.

**STAFF ANALYSIS –
SUBDIVISION
ORDINANCE:**

The Subdivision Ordinance requires that Preliminary Plat submissions details on lot design, street layout, sanitary sewer layout, water main layout, grading, and storm water

management. All information has been submitted by the applicant.

**STAFF
RECOMMENDATION:**

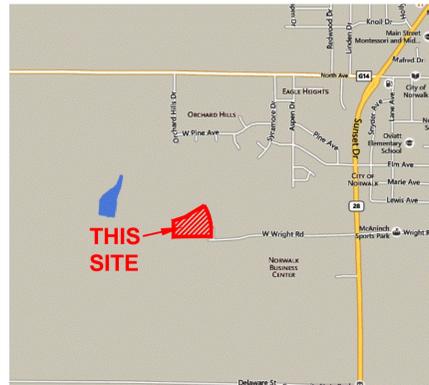
Staff recommends that the request for the Preliminary Plat & Site Plan for the Norwalk Orchard View Townhomes be approved with the following conditions:

- That the details of the amendment to the Orchard View PUD be incorporated into the Preliminary Plat.
- That the finalized elevations for the dwelling unit types conform to the City's Architectural Standards.
- That the applicant provides all supporting documentation required within the Norwalk Subdivision Regulations.
- That any significant modifications to the final plat be reviewed and approved by the Planning & Zoning Commission and City Council.

NORNALK ORCHARD VIEW TOWNHOMES

NORNALK, IA

NORNALK LAND CO. L.L.C., P.O. BOX 267, JOHNSTON, IOWA 50263 ATTN: JOHN LARSON



VICINITY SKETCH
NORTH
NOT TO SCALE

SHEET INDEX

| SHEET # | SHEET TITLE |
|---------|----------------|
| 1 | COVER |
| 2 | DIMENSION PLAN |
| 3 | UTILITY PLAN |
| 4 | GRADING PLAN |
| 5 | LANDSCAPE PLAN |

UTILITY CONTACTS:

| | |
|---------------------|--|
| SANITARY SEWER | - NORNALK PUBLIC WORKS DEPARTMENT (515-401-0228) |
| WATER MAIN | - NORNALK PUBLIC WORKS DEPARTMENT (515-401-0228) |
| STORM SEWER | - NORNALK PUBLIC WORKS DEPARTMENT (515-401-0228) |
| NATURAL GAS UTILITY | - MID AMERICAN ENERGY (515-252-6547) |
| ELECTRIC | - MID AMERICAN ENERGY (515-252-6547) |

AREAS:

| | | | |
|------------|---|--------------|--------|
| BUILDINGS | = | 66,647 S.F. | 22.7% |
| IMPERVIOUS | = | 84,551 S.F. | 28.7% |
| OPEN SPACE | = | 143,291 S.F. | 48.6% |
| TOTAL | = | 294,489 S.F. | 100.0% |

QUANTITIES

| | |
|--|---|
| SANITARY SEWER | |
| PUBLIC- REFER TO PUBLIC IMPROVEMENT DRAWINGS | |
| 532 LF. | 8-INCH SANITARY SEWER |
| 2 EA. | SW-301 SANITARY MANHOLE |
| 2 EA. | SW-301 SANITARY MANHOLE W/ SW-301 DROP CONNECTION |
| PRIVATE- | |
| 614 LF. | 8-INCH SANITARY SEWER |
| 3 EA. | SW-301 SANITARY MANHOLE |
| 16 EA. | 6-INCH SANITARY SEWER SERVICE |
| 16 EA. | SANITARY SEWER CLEANOUT |

WATER MAIN

| | |
|--|---|
| PUBLIC- REFER TO PUBLIC IMPROVEMENT DRAWINGS | |
| 1,760 LF. | 8-INCH WATER MAIN |
| 4 EA. | 8"X8"X8" TEE |
| 7 EA. | 8-INCH VALVE |
| 3 EA. | 8-INCH 11.25" BEND |
| 5 EA. | 8-INCH 22.5" BEND |
| 4 EA. | 8-INCH 45" BEND |
| 6 EA. | HYDRANT, TEE AND 6-INCH VALVE |
| 4 EA. | 6-INCH SERVICES W/MAINFOLD (SEE DETAIL) |
| 12 EA. | 4-INCH SERVICES W/MAINFOLD (SEE DETAIL) |

STORM SEWER QUANTITIES

| | |
|-----------|--|
| PRIVATE- | |
| 56 LF. | 12-INCH RCP CL III |
| 1,002 LF. | 15-INCH RCP CL III |
| 34 LF. | 24-INCH RCP CL III |
| 2 EA. | 12-INCH RCP F.E.S. |
| 1 EA. | 24-INCH RCP F.E.S. |
| 6 EA. | SW-501 INTAKE W/SH-603 TYPE R CASTING |
| 1 EA. | SW-505 INTAKE W/SH-603 TYPE R CASTING |
| 2 EA. | 48" DIA. SW-401 MANHOLE W/SH-602 TYPE E CASTING |
| 3 EA. | 24" DIA. SW-512 AREA INTAKE W/SH-604 TYPE 4B GRATE |

PAVING

| | |
|-----------|---|
| PRIVATE- | |
| 5,354 SQ. | 6-INCH NON-REINFORCED P.C.C. W/2.5" ROLL CURB (6-INCH CURB TO BE USED AT STREET INTAKES AND AT INTERSECTIONS W/ORCHARD HILLS DRIVE. SEE PLAN) |
| 5,944 SQ. | SUBGRADE PREPARATION |
| 66 LF. | HANDICAP PEDESTRIAN RAMPS W/TRUNCATED DOMES |
| | 5-FOOT WIDE SIDEWALK |

PARKING REQUIREMENTS

EACH UNIT IS REQUIRED TO HAVE AT LEAST 1 GARAGE STALL

VISITOR PARKING REQUIRED: 76 UNITS @ 1 SPACE / 10 UNITS = 8 SPACES

PARKING PROVIDED: 8 VISITOR SPACES, 152 SURFACE STALLS + 152 GARAGE STALLS = 312 SPACES PROVIDED

ZONING:

EXISTING: ORCHARD VIEW P.U.D.

P.U.D.:

ORCHARD VIEW P.U.D. - PARCEL 3

SETBACKS:

MINIMUM SETBACK FROM PROPERTY BOUNDARIES - 35'
MINIMUM BUILDING SEPARATION - 15'

FLOOD ZONE:

ZONE 'X'
FEMA FIRM FLOOD INSURANCE RATE MAP NUMBER 1910C1021F, REVISED OCTOBER 16, 2014.

ZONE 'X'
FEMA FIRM FLOOD INSURANCE RATE MAP NUMBER 1910C1021F, REVISED OCTOBER 16, 2014.

EASEMENT NOTES:

- ALL STORM SEWER EASEMENTS ARE TO BE 20 FEET WIDE OR TWO TIMES THE DEPTH, WHICHEVER IS GREATER.
- ALL SANITARY SEWER EASEMENTS ARE TO BE 30 FEET WIDE OR TWO TIMES THE DEPTH, WHICHEVER IS GREATER.
- THE USE OF PUBLIC UTILITY EASEMENTS IS SUBORDINATE TO THE CITY'S USE OF ITS DESIGNATED EASEMENT.
- SOME LOTS ACCEPT DRAINAGE FROM ADJACENT PROPERTY. BUILDING ON THESE LOTS MUST TAKE INTO ACCOUNT UPSTREAM DRAINAGE.

GENERAL NOTES

- ALL CONSTRUCTION (PUBLIC & PRIVATE) SHALL BE IN ACCORDANCE WITH THE 2015 EDITION OF SUDAS STANDARD SPECIFICATIONS. CONTRACTOR SHALL ARRANGE FOR TESTING AND INSPECTION AND NOTIFY THE FOLLOWING AT LEAST ONE WEEK PRIOR TO BEGINNING CONSTRUCTION:
 - CITY OF NORNALK PUBLIC WORKS DEPARTMENT.
 - NORNALK LAND CO., L.L.C.
 - CIVIL ENGINEERING CONSULTANTS, INC.
 - IOWA ONE-CALL
- THE LOCATION OF EXISTING FACILITIES AND APPURTENANCES SHOWN ON THIS PLAN ARE BASED ON AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING TO DETERMINE EXACT FACILITIES LOCATIONS. CIVIL ENGINEERING CONSULTANTS, INC. DOES NOT GUARANTEE THE LOCATION OF EXISTING FACILITIES AS SHOWN, OR THAT ALL EXISTING FACILITIES ARE SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL PUBLIC AND PRIVATE UTILITY PROVIDERS SERVING THIS AREA, AND IOWA ONE CALL, TO DETERMINE THE EXTENT AND PRECISE LOCATION OF EXISTING FACILITIES BEFORE CONSTRUCTION BEGINS.
- THE CONTRACTOR SHALL PROTECT EXISTING ON-SITE FACILITIES FROM DAMAGE RESULTING FROM THE CONTRACTOR'S WORK. IF DAMAGE, BREAKAGE, INTERRUPTION OF SERVICE, ETC. OF EXISTING FACILITIES DOES OCCUR THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE UTILITY'S OWNER. DAMAGE TO UTILITIES OR STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE UTILITY OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY FARM TILE DAMAGE DURING CONSTRUCTION AND RECORDING LOCATION OF TILE.
- A GEOTECHNICAL REPORT FOR THIS PROJECT CAN BE OBTAINED BY CONTACTING THE OWNER.
- ANY CHANGES TO THE CONSTRUCTION DRAWINGS DURING CONSTRUCTION SHALL BE APPROVED IN WRITING BY THE CITY OF NORNALK PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY CHANGES MADE DURING CONSTRUCTION THAT HAVE NOT BEEN APPROVED IN WRITING BY THE CITY OF NORNALK PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF NORNALK PUBLIC WORKS DEPARTMENT 48-HOURS IN ADVANCE OF ANY WORK BEING PERFORMED ON A HOLIDAY OR WEEKEND.
- ALL CONSTRUCTION STAKING SHALL BE PERFORMED BY A LICENSED ENGINEER OR LAND SURVEYOR.
- A CERTIFIED AS-BUILT GRADING PLAN SHALL BE PROVIDED TO THE CITY OF NORNALK PUBLIC WORKS DEPARTMENT PRIOR TO ACCEPTANCE OF PUBLIC IMPROVEMENTS AND APPROVAL OF THE FINAL PLAN.
- ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THE PLANS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ALL APPLICABLE SAFETY REGULATIONS.
- THE CONTRACTOR SHALL CONDUCT CLEAN-UP, SURFACE RESTORATION, AND SURFACE REPLACEMENT ACTIVITIES AS CONSTRUCTION PROGRESSES. ALL DEBRIS SPILLED ON THE R.O.W. OR ON ADJACENT PROPERTY SHALL BE PICKED UP BY THE CONTRACTOR AT THE END OF EACH DAY.
- IF DISCREPANCY EXISTS BETWEEN THE DETAILED PLANS AND THE QUANTITIES, THE PLANS SHALL GOVERN.
- THE CITY OF NORNALK REQUIRES ALL HANDICAP ACCESS RAMPS AND LANDING PADS TO BE CONSTRUCTED AS PART OF THE PUBLIC IMPROVEMENTS. SIDEWALKS AND TRAILS ARE NOT TO BE CONSTRUCTED AS PART OF THESE IMPROVEMENTS.

LEGAL DESCRIPTION

A PARCEL OF LAND IN OUTLOT '2', NORNALK ORCHARD VIEW PLAT 2, AN OFFICIAL PLAT RECORDED IN BOOK 2015, PAGE 8011 AT THE WARREN COUNTY RECORDER'S OFFICE, CITY OF NORNALK, WARREN COUNTY, IOWA THAT IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SE CORNER OF SAID OUTLOT '2'; THENCE N04°00'00"W, 38.70 FEET ALONG THE SOUTH LINE OF SAID OUTLOT '2' TO THE SW CORNER OF SECTION 13, TOWNSHIP 71 NORTH, RANGE 25 WEST OF THE 5TH P.M.; THENCE N04°16'56"W, 464.85 FEET ALONG THE SOUTH LINE OF SAID OUTLOT '2' AND SAID SECTION 13 TO A POINT; THENCE N00°45'03"E, 136.91 FEET TO A POINT; THENCE N03°14'22"W, 304.26 FEET TO A POINT; THENCE N4°43'35"E, 41.06 FEET TO A POINT; THENCE N04°43'24"E, 70.41 FEET TO A POINT; THENCE N44°21'42"E, 70.43 FEET TO A POINT; THENCE N43°24'13"E, 71.60 FEET TO A POINT; THENCE N47°12'36"E, 54.13 FEET TO A POINT; THENCE N51°10'57"E, 54.04 FEET TO A POINT; THENCE N50°25'21"E, 90.00 FEET TO A POINT ON THE EAST LINE OF SAID OUTLOT '2'; THENCE S01°54'39"E, 262.44 FEET ALONG SAID EAST LINE TO A POINT OF CURVATURE; THENCE SOUTHERLY ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 136.80 FEET AND A CHORD BEARING S15°42'23"E, AN ARC LENGTH OF 402.45 FEET ALONG SAID EAST LINE TO A POINT OF TANGENCY; THENCE S00°04'47"W, 42.44 FEET ALONG SAID EAST LINE TO THE POINT OF BEGINNING AND CONTAINING 6.71 ACRES MORE OR LESS.

CONSTRUCTION SCHEDULE

05/15/16 TO 05/30/16 - CLEARING, ROUGH GRADING, SILT FENCE, SEDIMENT BASIN & TEMPORARY SEEDING
06/15/16 TO 06/15/16 - UTILITY CONSTRUCTION
06/15/16 TO 07/15/16 - PAVING
07/15/16 TO 07/31/16 - FINAL GRADING/SEEDING

GENERAL LEGEND

| PROPOSED | EXISTING |
|--------------------------------|-----------------------------|
| --- PLAT BOUNDARY | --- LOT LINE |
| --- SECTION LINE | ○ SANITARY/STORM MANHOLE |
| --- LOT LINE | ○ WATER VALVE |
| --- CENTERLINE | ○ FIRE HYDRANT |
| --- EASEMENT LINE | ○ STORM SEWER SINGLE INTAKE |
| ▭ FLARED END SECTION | ○ STORM SEWER DOUBLE INTAKE |
| ▭ TYPE SW-501 STORM INTAKE | ○ STORM SEWER ROUND INTAKE |
| ▭ TYPE SW-502 STORM INTAKE | ○ FLARED END SECTION |
| ▭ TYPE SW-503 STORM INTAKE | ○ DECIDUOUS TREE |
| ▭ TYPE SW-504 STORM INTAKE | ○ CONIFEROUS TREE |
| ▭ TYPE SW-505 STORM INTAKE | ○ SHRUB |
| ▭ TYPE SW-506 STORM INTAKE | ○ POWER POLE |
| ▭ TYPE SW-511 STORM INTAKE | ○ STREET LIGHT |
| ▭ TYPE SW-512 STORM INTAKE | ○ GUY ANCHOR |
| ▭ TYPE SW-513 STORM INTAKE | ○ ELECTRIC TRANSFORMER |
| ▭ TYPE SW-401 STORM MANHOLE | ○ GAS METER |
| ▭ TYPE SW-402 STORM MANHOLE | ○ TELEPHONE RISER |
| ▭ TYPE SW-403 STORM MANHOLE | ○ SIGN |
| ▭ TYPE SW-301 SANITARY MANHOLE | ○ UNDERGROUND TELEVISION |
| ▭ TYPE SW-302 SANITARY MANHOLE | ○ UNDERGROUND ELECTRIC |
| ▭ TYPE SW-304 SANITARY MANHOLE | ○ UNDERGROUND GAS |
| ○ STORM/SANITARY CLEANOUT | ○ UNDERGROUND FIBER OPTIC |
| ○ WATER VALVE | ○ UNDERGROUND TELEPHONE |
| ○ FIRE HYDRANT ASSEMBLY | ○ OVERHEAD ELECTRIC |
| ○ BLOW-OFF HYDRANT | ○ SANITARY SEWER WITH SIZE |
| ○ DETECTABLE WARNING PANEL | ○ STORM SEWER WITH SIZE |
| | ○ WATER MAIN WITH SIZE |
| | ○ EXISTING CONTOUR |
| | ○ TREELINE |
| | ○ BUILDING SETBACK LINE |
| | ○ PUBLIC UTILITY EASEMENT |
| | ○ MINIMUM OPENING ELEVATION |

BENCHMARKS

BRASS PLUG IN HEADWALL OF REINFORCED BOX CULVERT, AT NORTHWEST CORNER OF INTERSECTION OF IOWA HIGHWAY 28 AND ELM AVENUE. ELEVATION-----874.90

BURY BOLT ON HYDRANT, AT NORTHEAST CORNER OF INTERSECTION OF ASPEN DRIVE AND ELM AVENUE. ELEVATION-----924.44

CUT 'X' INTERSECTION SYCAMORE DRIVE AND ELM AVENUE. ELEVATION-----934.71

CERTIFICATIONS

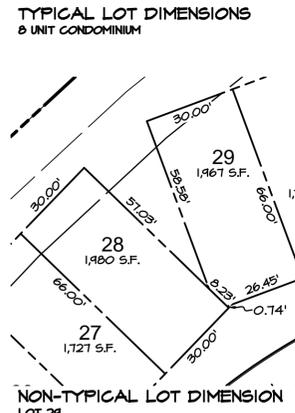
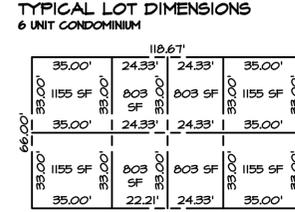
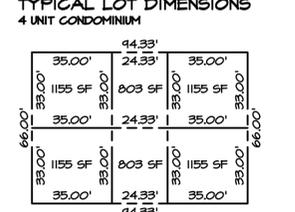
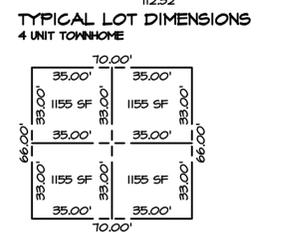
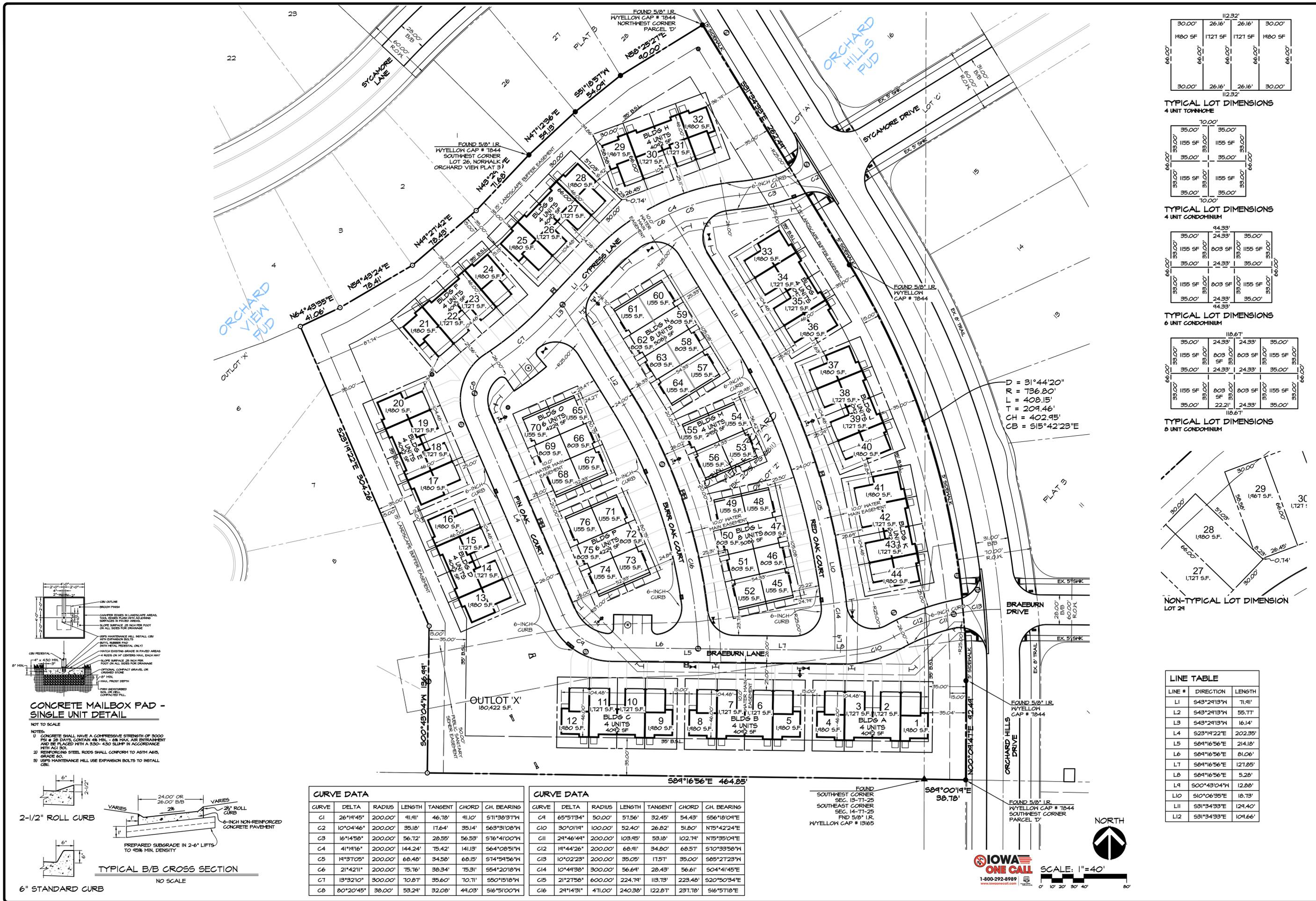
| | |
|--|---|
| | I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA. BY: MICHAEL D. MORGAN, IOWA REG. NO. 383 PAGES OR SHEETS COVERED BY THIS SEAL: SHEET 5 |
| | I HEREBY CERTIFY THAT THIS LAND SURVEYING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF IOWA. JERRY P. OLIVER, IOWA REG. NO. 7844 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2016 PAGES OR SHEETS COVERED BY THIS SEAL: |
| | I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT 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. MELISSA M. HILLS, IOWA REG. NO. 16023 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2017 PAGES OR SHEETS COVERED BY THIS SEAL: 1 - 5 |

Civil Engineering Consultants, Inc.
2400 86th Street, Unit 12, Des Moines, Iowa, 50322
515.276.4884 . Fax: 515.276.7084 . mail@cecinc.com



| DATE: | REVISIONS | COMMENTS |
|------------|-----------|------------|
| 05/21/2016 | 1 | 04/18/2016 |
| | 2 | |
| | 3 | |
| | 4 | |
| | 5 | |
| | 6 | |

NORNALK ORCHARD VIEW TOWNHOMES
NORNALK, IA
COVER



| LINE # | DIRECTION | LENGTH |
|--------|-------------|---------|
| L1 | S43°29'13"W | 71.91' |
| L2 | S43°29'13"W | 55.71' |
| L3 | S43°29'13"W | 16.14' |
| L4 | S23°14'22"E | 202.35' |
| L5 | S89°16'56"E | 214.18' |
| L6 | S89°16'56"E | 81.06' |
| L7 | S89°16'56"E | 127.85' |
| L8 | S89°16'56"E | 5.28' |
| L9 | S00°43'04"W | 12.88' |
| L10 | S10°06'35"E | 18.73' |
| L11 | S31°34'33"E | 124.40' |
| L12 | S31°34'33"E | 104.66' |

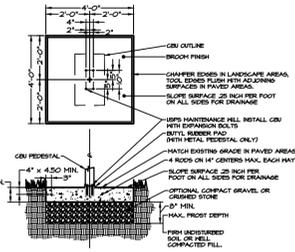
| CURVE | DELTA | RADIUS | LENGTH | TANGENT | CHORD | CH. BEARING |
|-------|-----------|---------|---------|---------|---------|-------------|
| C1 | 26°14'45" | 200.00' | 91.91' | 46.78' | 91.10' | S71°38'37"W |
| C2 | 10°04'46" | 200.00' | 35.18' | 17.64' | 35.14' | S63°31'08"W |
| C3 | 16°14'58" | 200.00' | 56.72' | 28.55' | 56.53' | S76°41'00"W |
| C4 | 41°19'16" | 200.00' | 144.24' | 75.42' | 141.13' | S64°08'51"W |
| C5 | 19°37'05" | 200.00' | 68.48' | 34.58' | 68.15' | S74°54'56"W |
| C6 | 21°42'11" | 200.00' | 75.76' | 38.34' | 75.31' | S54°20'18"W |
| C7 | 13°32'10" | 300.00' | 70.81' | 35.60' | 70.71' | S50°15'18"W |
| C8 | 80°20'45" | 38.00' | 53.24' | 32.08' | 44.03' | S16°51'00"W |

| CURVE | DELTA | RADIUS | LENGTH | TANGENT | CHORD | CH. BEARING |
|-------|-----------|---------|---------|---------|---------|-------------|
| C9 | 65°57'34" | 50.00' | 51.56' | 32.45' | 54.43' | S56°10'04"E |
| C10 | 30°01'14" | 100.00' | 52.40' | 26.82' | 51.80' | N75°42'24"E |
| C11 | 24°46'44" | 200.00' | 103.45' | 53.18' | 102.71' | N75°35'04"E |
| C12 | 14°44'26" | 200.00' | 68.91' | 34.80' | 68.57' | S70°33'58"W |
| C13 | 10°02'23" | 200.00' | 35.05' | 17.57' | 35.00' | S85°21'23"W |
| C14 | 10°44'38" | 300.00' | 56.84' | 28.43' | 56.61' | S04°41'45"E |
| C15 | 21°27'58" | 600.00' | 224.74' | 113.73' | 223.48' | S20°50'34"E |
| C16 | 24°14'31" | 471.00' | 240.38' | 122.87' | 237.78' | S16°57'18"E |

IOWA ONE CALL
1-800-292-9989
www.iowacall.com

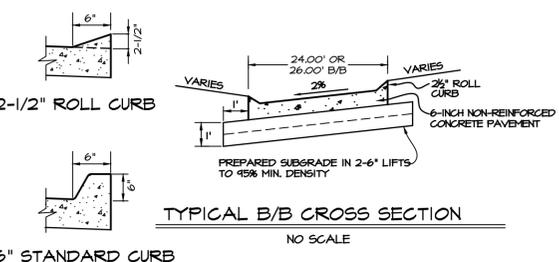
SCALE: 1"=40'

NORTH



CONCRETE MAILBOX PAD - SINGLE UNIT DETAIL
NOT TO SCALE

NOTES:
1) CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS, CONTAIN 4# MIN. - 6# MAX. AIR ENTRAINMENT AND BE PLACED WITH A 3/32" - 4/30 SLUMP IN ACCORDANCE WITH ACI 308.
2) REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615, GRADE 60.
3) USES MAINTENANCE HILL USE EXPANSION BOLTS TO INSTALL CURB.



Civil Engineering Consultants, Inc.
2400 86th Street, Unit 12, Des Moines, Iowa, 50322
515.276.4884 · Fax: 515.276.7084 · mail@cecinc.com

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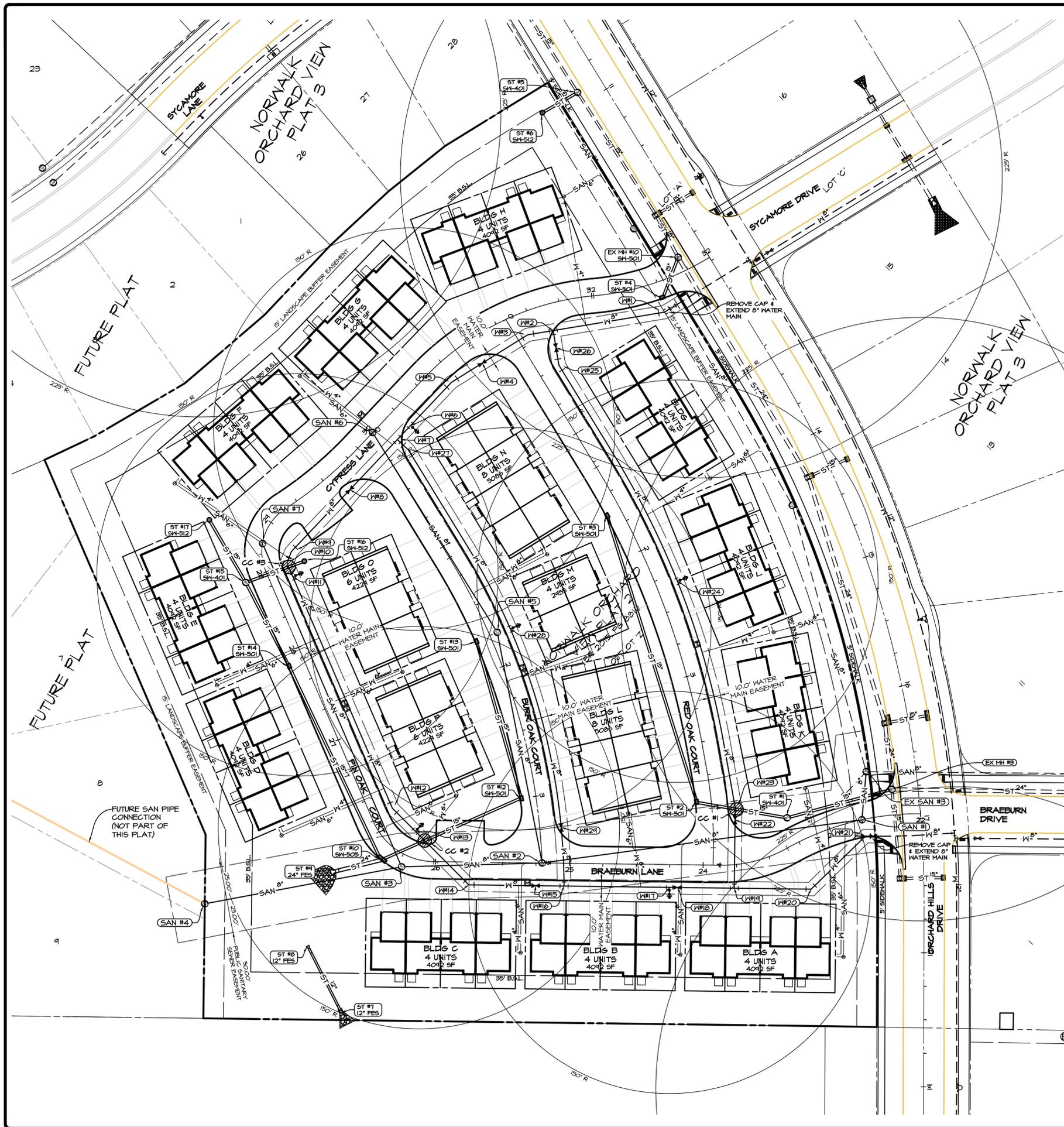
NORWALK ORCHARD VIEW TOWNHOMES
NORWALK, IA

DIMENSION PLAN

SHEET 2 OF 5
E-7442

| DATE: | REVISIONS | COMMENTS |
|------------|-----------|------------|
| 09/21/2016 | 1 | 04/18/2016 |
| | 2 | |
| | 3 | |
| | 4 | |
| | 5 | PHH |
| | 6 | CM |

DATE OF SURVEY: 03/19/2016
DESIGNED BY: PHH
DRAWN BY: CM



NOTE:
 FG ELEVATIONS IN TABLE REPRESENT FINISH GRADE ELEVATION AT STRUCTURES.

| WATER STRUCTURE TABLE | | |
|-----------------------|-----------------------------|------------------|
| NAME | LOCATION | DETAILS |
| W#1 | STA. 32+40.33, 22.40' RT. & | FG ELEV = 944.06 |
| W#2 | STA. 31+65.21, 20.11' RT. & | FG ELEV = 943.91 |
| W#3 | STA. 31+44.14, 17.00' RT. & | FG ELEV = 944.34 |
| W#4 | STA. 31+00.00, 14.74' RT. & | FG ELEV = 945.14 |
| W#5 | STA. 30+70.50, 16.61' RT. & | FG ELEV = 945.85 |
| W#6 | STA. 30+25.00, 17.00' RT. & | FG ELEV = 946.36 |
| W#7 | STA. 30+10.61, 17.00' RT. & | FG ELEV = 946.21 |
| W#8 | STA. 29+60.41, 18.11' RT. & | FG ELEV = 945.95 |
| W#9 | STA. 29+16.50, 22.04' RT. & | FG ELEV = 944.30 |
| W#10 | STA. 28+61.35, 17.00' RT. & | FG ELEV = 944.54 |
| W#11 | STA. 28+50.00, 17.00' RT. & | FG ELEV = 944.37 |
| W#12 | STA. 28+26.10, 17.00' RT. & | FG ELEV = 942.17 |
| W#13 | STA. 28+25.00, 14.04' RT. & | FG ELEV = 942.20 |
| W#14 | STA. 25+75.00, 17.00' LT. & | FG ELEV = 941.80 |
| W#15 | STA. 25+25.00, 17.00' LT. & | FG ELEV = 942.30 |

| WATER STRUCTURE TABLE | | |
|-----------------------|-----------------------------|------------------|
| NAME | LOCATION | DETAILS |
| W#16 | STA. 25+03.71, 17.02' LT. & | FG ELEV = 942.48 |
| W#17 | STA. 24+25.00, 17.00' LT. & | FG ELEV = 943.33 |
| W#18 | STA. 24+18.95, 17.00' LT. & | FG ELEV = 943.47 |
| W#19 | STA. 23+78.11, 17.44' LT. & | FG ELEV = 943.37 |
| W#20 | STA. 23+34.20, 35.44' LT. & | FG ELEV = 943.51 |
| W#21 | STA. 22+75.00, 12.46' LT. & | FG ELEV = 940.87 |
| W#22 | STA. 4+04.75, 16.70' LT. & | FG ELEV = 942.64 |
| W#23 | STA. 4+01.18, 17.42' LT. & | FG ELEV = 942.98 |
| W#24 | STA. 2+31.28, 16.00' LT. & | FG ELEV = 943.76 |
| W#25 | STA. 0+48.80, 16.00' LT. & | FG ELEV = 944.86 |
| W#26 | STA. 0+37.63, 20.97' LT. & | FG ELEV = 944.61 |
| W#27 | STA. 0+25.00, 16.00' LT. & | FG ELEV = 946.44 |
| W#28 | STA. 1+76.54, 16.00' LT. & | FG ELEV = 944.84 |
| W#29 | STA. 3+25.00, 16.00' LT. & | FG ELEV = 943.09 |

WATER NOTE:
 1. REFER TO PUBLIC IMPROVEMENT DRAWINGS FOR ALL WATER MAIN CONSTRUCTION.

| SANITARY STRUCTURE TABLE | | |
|--|-----------------------------|--|
| NAME | LOCATION | DETAILS |
| EX SAN #3 | STA. 16+54.90, 37.00' RT. & | RIM = 941.15 IN S = 914.05 |
| 48" SW-301 MANHOLE & SW-307 DROP CONNECTION W/SW-301 A CASTING | | |
| SAN #1 | STA. 22+75.00, 0.00' & | RIM = 940.61 IN N = 914.29 OUT N = 914.14 |
| 48" SW-301 MANHOLE W/SW-601 B CASTING | | |
| SAN #2 | STA. 25+20.37, 0.00' & | RIM = 942.06 IN N = 915.36 IN N = 931.00 OUT E = 915.26 |
| 48" SW-301 MANHOLE & SW-307 DROP CONNECTION W/SW-601 B CASTING | | |
| SAN #3 | STA. 26+22.28, 9.26' LT. & | RIM = 941.06 IN N = 915.88 IN N = 931.00 OUT E = 915.78 |
| 48" SW-301 MANHOLE W/SW-601 A CASTING | | |
| SAN #4 | STA. 26+57.21, 14.01' LT. & | RIM = 941.96 OUT E = 916.48 |
| 48" SW-301 MANHOLE W/SW-601 B CASTING | | |
| SAN #5 | STA. 1+75.00, 6.00' LT. & | RIM = 944.47 IN N = 935.10 OUT S = 935.00 |
| 48" SW-301 MANHOLE W/SW-601 B CASTING | | |
| SAN #6 | STA. 30+01.63, 0.00' & | RIM = 946.44 OUT SE = 937.00 |
| 48" SW-301 MANHOLE W/SW-601 B CASTING | | |
| SAN #7 | STA. 28+82.98, 0.00' & | RIM = 944.67 OUT SE = 935.67 |
| 48" SW-301 MANHOLE W/SW-601 B CASTING | | |

| SANITARY PIPE TABLE | | | |
|---------------------|--------|---------|-------|
| PIPE | DIA. | LENGTH | SLOPE |
| EX SAN #3 TO SAN #1 | 8" PVC | 36 LF. | 0.40% |
| SAN #2 TO SAN #5 | 8" PVC | 175 LF. | 2.28% |
| SAN #3 TO SAN #7 | 8" PVC | 263 LF. | 1.78% |
| SAN #1 TO SAN #2 | 8" PVC | 241 LF. | 0.40% |
| SAN #2 TO SAN #3 | 8" PVC | 105 LF. | 0.40% |
| SAN #3 TO SAN #4 | 8" PVC | 150 LF. | 0.40% |
| SAN #5 TO SAN #6 | 8" PVC | 176 LF. | 1.08% |

| STORM PIPE TABLE | | | |
|--------------------|-------------------|---------|-------|
| PIPE | DIA. | LENGTH | SLOPE |
| ST #1 TO EX MH #1 | 15" RCP CLASS III | 81 LF. | 4.23% |
| ST #2 TO ST #1 | 15" RCP CLASS III | 70 LF. | 1.22% |
| ST #3 TO ST #2 | 15" RCP CLASS III | 224 LF. | 1.00% |
| ST #4 TO EX MH #10 | 15" RCP CLASS III | 33 LF. | 1.00% |
| ST #6 TO ST #5 | 15" RCP CLASS III | 30 LF. | 1.00% |
| ST #8 TO ST #7 | 12" RCP CLASS III | 56 LF. | 1.00% |
| ST #10 TO ST #9 | 24" RCP CLASS III | 34 LF. | 1.64% |
| ST #12 TO ST #10 | 15" RCP CLASS III | 113 LF. | 2.25% |
| ST #13 TO ST #12 | 15" RCP CLASS III | 122 LF. | 1.4% |
| ST #14 TO ST #10 | 15" RCP CLASS III | 158 LF. | 1.77% |
| ST #15 TO ST #14 | 15" RCP CLASS III | 70 LF. | 1.00% |
| ST #15 TO ST #16 | 15" RCP CLASS III | 47 LF. | 1.00% |
| ST #17 TO ST #15 | 15" RCP CLASS III | 54 LF. | 1.32% |

SANITARY NOTE:
 1. REFER TO PUBLIC IMPROVEMENT DRAWINGS FOR CONSTRUCTION OF SANITARY #1 - #4 & EX SAN #3.

| SW-401 MANHOLE TABLE | | |
|----------------------|---------------------------------------|--|
| NAME | LOCATION | DETAILS |
| EX MH #3 | 60" SW-401 MANHOLE W/SW-602 F CASTING | RIM = 939.99 IN N = 933.22 OUT E = 931.80 |
| EX MH #10 | SW-401 MANHOLE W/SW-602 F CASTING | RIM = 942.14 IN S = 938.47 OUT S = 937.47 |
| ST #3 | SW-401 MANHOLE W/SW-602 E CASTING | RIM = 942.40 IN N = 936.75 OUT E = 936.65 |
| ST #5 | SW-401 MANHOLE W/SW-602 E CASTING | RIM = 944.36 IN S = 940.94 OUT S = 940.24 |
| ST #15 | SW-401 MANHOLE W/SW-602 E CASTING | RIM = 944.48 IN E = 934.55 OUT SE = 934.45 |

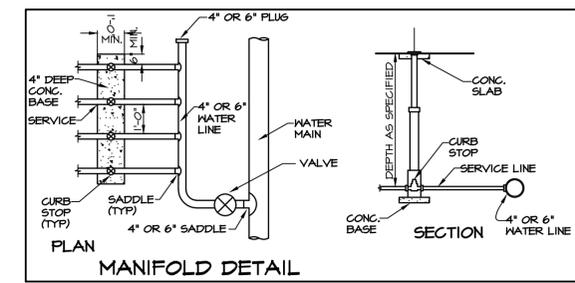
| PAVEMENT INTAKE TABLE | | |
|-----------------------|---------------------------------|---|
| NAME | LOCATION | DETAILS |
| ST #2 | SW-501 INTAKE W/SW-603 R GRATE | GRATE = 942.23 IN N = 937.10 OUT E = 937.60 |
| ST #3 | SW-501 INTAKE W/SW-603 R GRATE | GRATE = 943.56 OUT S = 934.93 |
| ST #10 | SW-505 INTAKE W/SW-603 R GRATES | GRATE = 941.18 IN NE = 935.84 IN N = 935.84 OUT N = 935.64 |
| ST #14 | SW-501 INTAKE W/SW-603 R GRATE | GRATE = 943.14 IN N = 938.75 OUT SE = 938.65 |

| SW-512 INTAKE TABLE | | |
|---------------------|-------------------------------------|-----------------------------------|
| NAME | LOCATION | DETAILS |
| ST #6 | 18" SW-512 INTAKE W/SW-604 4A GRATE | GRATE = 944.84 OUT NE = 941.24 |
| ST #16 | 18" SW-512 INTAKE W/SW-604 4A GRATE | GRATE = 943.76 OUT N = 940.22 |
| ST #17 | 18" SW-512 INTAKE W/SW-604 4A GRATE | GRATE = 944.27 OUT SE = 940.26 |

| STORM F.E.S. TABLE | | |
|--------------------|-----------------------------|-------------|
| NAME | LOCATION | DETAILS |
| ST #7 | STA. 26+21.04, 12.60' LT. & | FE = 934.01 |
| ST #8 | STA. 26+35.74, 97.47' LT. & | FE = 934.03 |
| ST #1 | STA. 26+47.30, 46.86' LT. & | FE = 935.00 |

STORM NOTE:
 1. EX MH #3 & EX MH #10 MAY NEED TO HAVE RIMS ADJUSTED TO MATCH THE RIM ELEVATIONS SHOWN IN THE TABLE. VERIFY THE ASBUILT ELEVATIONS PRIOR TO CONSTRUCTION.
 2. ST #5 IS TO BE CONSTRUCTED OVER THE EXISTING 15" RCP. VERIFY THE EXISTING FE'S AND POUR CONCRETE COLLARS & WELL DEFINED INVERTS. BASE SHALL BE POURED IN PLACE.

CRITICAL CROSSINGS
 CC#1 FE 15" RCP = 937.21
 F.G. = 942.93
 TOP 8-INCH WATER = 935.50
 CC#2 FE 15" RCP = 936.61
 F.G. = 941.79
 TOP 8-INCH WATER = 934.85
 CC#3 FE 15" RCP = 934.90
 F.G. = 944.49
 TOP 8-INCH WATER = 938.15



NOTE: USE 4" WATER LINE FROM MAIN TO MANIFOLD FOR ALL 4-PLEX BUILDINGS. ALL BUILDINGS GREATER THAN 4 UNITS SHALL HAVE A 6" WATER LINE FROM MAIN TO MANIFOLD.

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NORWALK ORCHARD VIEW TOWNHOMES
 NORWALK, IA

UTILITY PLAN

DATE: 09/21/2016
 REVISIONS: 1 04/18/2016
 2
 3
 4
 5
 6
 DATE OF SURVEY: 02/15/2016
 DESIGNED BY: PPH
 DRAWN BY: CM

SHEET 3 OF 5
 E-7442

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NORTH

SCALE: 1" = 40'



GRADING AND EROSION CONTROL NOTES

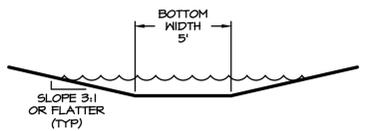
- ALL DIMENSIONS ARE TO BACK OF CURB, OUTSIDE OF BUILDING WALL, AND TO PROPERTY LINES.
- ALL SPOT ELEVATIONS ARE AT GUTTER, UNLESS NOTED OTHERWISE.
- STRIP TOPSOIL FROM ALL AREAS WHICH ARE TO RECEIVE STRUCTURAL FILL.
- AREAS TO RECEIVE FILL TO BE BENCHED.
- PREPARE BOTTOM OF BENCH FOR FILL BY DISCING TO A DEPTH OF 6-INCHES AND COMPACT. ANY LOCALIZED AREAS WHICH CANNOT BE SATISFACTORILY COMPACTED OR WHICH SHOW EVIDENCE OF PUMPING ACTION SHALL BE UNDERCUT AND RECOMPACTED WITH ON-SITE FILL.
- ALL SITE GRADING FILL SHALL BE COMPACTED TO A DENSITY THAT IS NOT LESS THAN 95% STANDARD PROCTOR.
- ALL AREAS WHICH ARE TO RECEIVE PAVING SHALL HAVE THE TOP 12-INCHES DISCED AND RECOMPACTED TO 95% STANDARD PROCTOR DENSITY.
- THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL MATCH URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, BETWEEN 0 AND 4% OVER OPTIMUM MOISTURE.
- UNLESS GRADING FOR A DESIGNED SUMP OR LOW POINT AREA, GRADE ALL SITE AREAS TO DRAIN WITHOUT TRAPPING OR PONDING SURFACE WATER WHEN SITE GRADING IS COMPLETE.
- FINAL GRADES WITHIN PAVED AREAS SHALL BE WITHIN 0.1' OF PLAN GRADE, ALL OTHER AREAS TO BE WITHIN 0.2' OF PLAN GRADE.
- TOPSOIL SHALL BE RESPREAD TO A MINIMUM THICKNESS OF 4-INCHES ON ALL DISTURBED UNPAVED AREAS.
- BACKFILL TO TOP OF ALL CURBS.
- GRADING & TREE PROTECTION LIMITS SHALL BE STAKED PRIOR TO ANY TREE REMOVAL.
- CIVIL ENGINEERING CONSULTANTS, INC. IS NOT A GEOTECHNICAL ENGINEER.
- A GEOTECHNICAL REPORT FOR THIS PROJECT CAN BE OBTAINED BY CONTACTING THE ENGINEER AND ASKING FOR GEOTECHNICAL EXPLORATION REPORT. THE CONTRACTOR SHALL REFER TO AND FOLLOW THE RECOMMENDATIONS OF ALLENDER-BUTZKE GEOTECHNICAL REPORT PN 191244 DATED OCTOBER 31, 2013.
- STREET PAVEMENT SUBGRADE SHALL BE COMPACTED PER THE GUIDELINES IN THE GEOTECHNICAL EXPLORATION REPORT.
- EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND INSPECTED IN ACCORDANCE WITH IUDAS SECTION 9040, BY A CERTIFIED PROFESSIONAL IN EROSION & SEDIMENT CONTROL (CPESC). A CPESC IS A RECOGNIZED SPECIALIST IN SOIL EROSION AND SEDIMENT CONTROL, THE SOIL AND WATER CONSERVATION SOCIETY AND THE INTERNATIONAL EROSION CONTROL ASSOCIATION, IN COOPERATION WITH THE AMERICAN SOCIETY OF AGRONOMY, SPONSOR THE CERTIFICATION PROGRAM. CIVIL ENGINEERING CONSULTANTS, INC. IS NOT A CERTIFIED PROFESSIONAL IN EROSION & SEDIMENT CONTROL.
- ALL SLOPES SHALL BE 3:1 OR FLATTER FOR THE SITE.
- A REGIONAL STORM WATER DETENTION & SEDIMENT BASIN IS LOCATED IN ORCHARD TRAIL PLAT 4. REFER TO THE SWPPP PLAN FOR THAT PLAT. NPDES PERMIT NO. 25444-25701. THE REGIONAL BASIN IS LOCATED IN OUTLOT 'Z', ORCHARD VIEW PLAT 4 AND PROVIDES DETENTION FOR THE EAST 3.0 ACRES OF THIS SITE.

MULCHING TABLE

- DRY STRAW OR HAY, 2 TONS PER ACRE. ANCHOR STRAW WITH MULCH TILLER OR ASPHALT TACT @ 1200 PER ACRE.
- WOOD CHIPS OR BARK, 10-12 TONS PER ACRE.

QUANTITIES

| | |
|------------|---------------------------------------|
| 143,251 SF | SEEDING (TYPE II EROSION CONTROL MIX) |
| 1,454 LF | SILT FENCE |
| 11 EA | INLET FILTERS |
| 7 TN | DRY STRAW OR HAY MULCH (2 TN / ACRE) |
| 30 TN | CLASS E RIP RAP |



GRASS SWALE DETAIL
NO SCALE

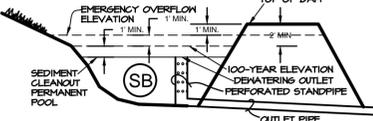
SEEDING NOTES

- FERTILIZER (16-16-16) SHALL BE APPLIED TO THE AREA TO BE SEED AT A RATE OF 650 LBS/ACRE.
- THE AREA TO BE SEED SHALL BE SMOOTH, AND ALL WASHED AND GULLIES FILLED TO MEET THE DESIRED CROSS SECTION. AREAS ACCESSIBLE TO MACHINERY SHALL BE CULTIVATED TO A DEPTH OF 3". AREAS INACCESSIBLE TO MACHINE SHALL BE CULTIVATED TO A DEPTH OF 1 1/2 INCHES.
- THE FERTILIZER SHALL BE INCORPORATED INTO THE SOIL TO A DEPTH OF 3" WITH A MECHANICAL ROCK PICKER OR A SPRING TOOTH CULTIVATOR.
- ON ALL AREAS ACCESSIBLE TO MACHINERY, A DROP-TYPE SEEDER ATTACHED TO A LANDSCAPE ROLLER SHALL BE USED TO SOW THE GRASS SEED. ON AREAS INACCESSIBLE TO MACHINERY A CYCLONE SEEDER WILL BE PERMITTED. NO OTHER HAND SEEDING METHOD IS ACCEPTABLE.
- ALL SEEDED AREAS SHALL BE MULCHED IMMEDIATELY AFTER SEEDING BY APPLYING 2 TONS OF DRY MULCH PER ACRE.
- THE MULCH MAY CONSIST OF STRAW (OAT, WHEAT, BARLEY OR RYE), HAY, BROMSGRASS, TIMOTHY, ORCHARD GRASS, ALFALFA OR CLOVER SHALL NOT BE USED. ALL MATERIAL MUST BE FREE FROM ALL NOXIOUS WEEDS.
- ALL SEEDED AREAS SHALL BE WATERED ARTIFICIALLY A MINIMUM OF TWICE A DAY FOR THE FIRST WEEK AFTER INSTALLATION, AND ONCE A DAY DURING THE SECOND AND THIRD WEEK AFTER INSTALLATION.

LEGEND

| EXISTING/PROPOSED | DESCRIPTION |
|-------------------|----------------------------------|
| --- | PLAT BOUNDARY |
| --- SAN 8" | SANITARY SEWER # SIZE |
| --- ST 18" | STORM SEWER # SIZE |
| --- W 8" | WATER MAIN # SIZE |
| ○ | MANHOLE |
| ⊕ | STORM INTAKE |
| ⊕ | FIRE HYDRANT |
| ⊕ | VALVE |
| --- | EXISTING FENCE |
| --- | SILT FENCE |
| --- | INLET FILTER |
| ○ | EXISTING / PROPOSED STREET TREES |
| ○ | EXISTING / PROPOSED TREELINE |
| --- | PROPOSED TREE PROTECTION FENCING |

SEDIMENT BASIN DETAIL



12" Ø PERFORATED STAND PIPE
OVERFLOW = 941.00, 1" MIN. STORAGE ELEV = 936.40
TOP OF STAND PIPE = 931.74, INVERT OUT = 934.00
2 HORZ. ROWS @ 4.0' O.C., OF 4 - 2" Ø EVENLY SPACED STARTING @ ELEV = 936.40

BENCHMARK
BRASS PLUG IN HEADWALL OF REINFORCED BOX CULVERT AT NORTHWEST CORNER OF INTERSECTION OF IOWA HIGHWAY 20 AND ELM AVENUE.
ELEVATION = 874.90

BURY BOLT ON HYDRANT, AT NORTHEAST CORNER OF INTERSECTION OF ASPEN DRIVE AND ELM AVENUE.
ELEVATION = 424.44

CUT 'X' INTERSECTION SYCAMORE DRIVE AND ELM AVENUE.
ELEVATION = 439.71

| ACTIVITY | SCHEDULE |
|--|---|
| MOW GRASS TO MAINTAIN HEIGHT OF 3-6 INCHES | AS NEEDED (FREQUENTLY/SEASONALLY) |
| REMOVE SEDIMENT BUILDUP IN THE BOTTOM OF THE GRASS SWALE ONCE IT HAS ACCUMULATED TO 25% OF ORIGINAL DESIGN VOLUME. | AS NEEDED (INFREQUENTLY) |
| INSPECT GRASS ALONG SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES AND CORRECT. | ANNUALLY (SEMI ANNUALLY THE FIRST YEAR) |
| REMOVE TRASH AND DEBRIS ACCUMULATED IN THE CHANNEL. | AS NEEDED BASED ON INSPECTION |
| BASED ON INSPECTION, PLANT AN ALTERNATIVE GRASS SPECIES IF THE ORIGINAL GRASS COVER HAS NOT BEEN SUCCESSFULLY ESTABLISHED. | ROUTINE |

DRY DETENTION/DRY ED BASIN INSPECTION & MAINTENANCE

| ACTIVITY SCHEDULE | DESCRIPTION |
|---|--|
| ANNUALLY AND FOLLOWING SIGNIFICANT STORM EVENTS | REMOVE DEBRIS FROM BASIN SURFACE TO MINIMIZE OUTLET CLOGGINGS AND IMPROVE AESTHETICS. INSPECT INSTALLED LOW-FLOW ORIFICES IN ED BASINS FOR CLOGGING |
| AS NEEDED BASED ON INSPECTION | REMOVE SEDIMENT BUILDUP REPAIR AND RE-VEGETATE ERODED AREAS PERFORM STRUCTURAL REPAIRS TO INLET AND OUTLETS |
| ROUTINE | MOW TO LIMIT UNWANTED VEGETATION |

IOWA ONE CALL
1-800-292-8989
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NORTH

SCALE: 1" = 40'

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CEC

| DATE: | REVISIONS | COMMENTS |
|------------|-----------|------------|
| 09/21/2016 | 1 | 04/18/2016 |
| | 2 | |
| | 3 | |
| | 4 | |
| | 5 | PHH |
| | 6 | GM |

DATE OF SURVEY: 02/19/2016
DESIGNED BY: PHH
DRAWN BY: GM

NORWALK ORCHARD VIEW TOWNHOMES
NORWALK, IA

GRADING PLAN

SHEET **4** OF 5
E-7442



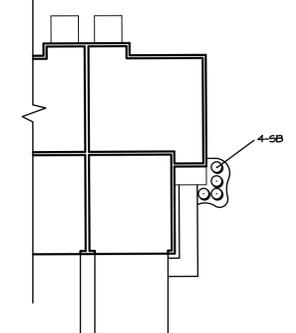
PLANTING SCHEDULE

| | | | | |
|-------|--|-------------|--------|-------------------------|
| AR 20 | Acer rubrum Red Maple | 2" Cal. | B4B | See Plan |
| QB 4 | Quercus bicolor Swamp White Oak | 2" Cal. | B4B | See Plan |
| GT 20 | Gleditsia triacanthos 'skyline' Skyline Honeylocust | 2" Cal. | B4B | See Plan |
| UA 4 | Ulmus americana American Elm | 3" Cal. | B4B | See Plan |
| PT 7 | Populus tremuloides Quaking Aspen | 3" Cal. | Cont. | See Plan |
| CC 14 | Crataegus crusgalli 'cockspur' Thornless Hawthorn | 1 1/2" Cal. | Cont. | See Plan |
| ER 6 | Cercis canadensis Eastern Redbud | 1 1/2" Cal. | Cont. | Multi-trunk See Plan |
| MP 21 | Malus species Prairiefire Crabapple | 1 1/2" Cal. | Cont. | See Plan |
| PS 6 | Pinus strobus White Pine | 6'-8" Ht. | TS/B4B | See Plan |
| PG 20 | Picea glauca densata Blackhills Spruce | 6'-8" Ht. | TS/B4B | See Plan |
| AG 17 | Abies concolor White Fir | 6'-8" Ht. | TS/B4B | See Plan |
| JC 50 | Juniperus chinensis Sea Green Juniper | #3 | Cont. | See Plan |
| CD 85 | Corydalis divaricata 'Snow Fairy' Variegated Blue Mist Spirea | #2 | Cont. | See Plan |
| MF 72 | Meibomia Florida 'Verweig' Mt. Forest Heigelia | #2 | Cont. | See Plan |
| VT 74 | Viburnum trilobum American Cranberry Bush Viburnum | 3" Cal. | Cont. | See Plan |
| DS 46 | DierVilla sessilifolia Cool Spish Honeysuckle | #2 | Cont. | See Plan |
| CA 86 | Calamagrostis x acutiflora Karl Foerster Grass | #2 | Cont. | See Plan |
| BN 14 | Asclepias tuberosa Butterfly Weed | #2 | Cont. | See Plan |
| SB 20 | Spiraea x bumalda 'Anthony Waterer' Anthony Waterer Spirea | #2 | Cont. | See Plan |
| PC 11 | Prunus cerasifera Purple Leaf Plum | 2" Cal. | Cont. | See Plan |

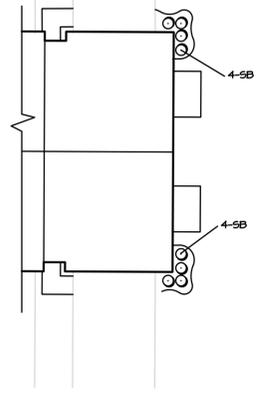
PLANTING NOTES

- ALL SITEWORK, SODDING AND LANDSCAPING SHALL BE IN ACCORDANCE WITH WEST DES MOINES STANDARD SPECIFICATIONS UNLESS SPECIFIED OTHERWISE.
http://ftp.ndm-ia.com/NDM_Metro%20Design%20Standards/
- ALL PLANT MATERIAL SHALL AT LEAST MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1-1986).
- CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF COMPLETION AND ACCEPTANCE BY OWNERS REPRESENTATIVE AFTER INSTALLATION.
- NO PLANT MATERIAL SHALL BE SUBSTITUTED WITHOUT AUTHORIZATION OF LANDSCAPE ARCHITECT AND THE CITY.
- 2" TO 3" CALIPER DECIDUOUS TREES SHALL BE STAKED (2 STAKES) AND WRAPPED IMMEDIATELY AFTER PLANTING. ALL CONIFERS SHALL BE STAKED (2 STAKES).
- ALL TREES, SHRUBS, BEDS & GROUND COVERS SHALL BE MULCHED WITH AT LEAST 3" SHREDDED BARK MULCH.
- PLANT QUANTITIES ARE FOR CONTRACTORS CONVENIENCE, DRAWING SHALL PREVAIL WHERE CONFLICT OCCURS.
- ONE WEEK PRIOR TO INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AT CIVIL ENGINEERING CONSULTANTS, INC. (TELEPHONE 515-276-4884).
- THE CONTRACTOR SHALL STAKE LOCATION OF PLANTS FOR LANDSCAPE ARCHITECT'S APPROVAL BEFORE DIGGING HOLES.
- ALL DECIDUOUS TREES SHALL BE PLANTED AT LEAST 5' FROM R.O.W. AND CONIFEROUS TREES AT LEAST 10' FROM R.O.W.
- ALL DISTURBED AREAS SHALL BE SEEDDED OR SODDED AS SHOWN ON DRAWING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF IDENTIFICATION TAGS, CONTAINERS, AND BURLAP CORDS ON ALL PLANT MATERIAL PRIOR TO COMPLETION OF THE PROJECT.
- ALL METERS AND MECHANICAL TO BE SCREENED BY PLANTINGS OR SCREEN WALL.
- NO OVERSTORY TREES ARE ALLOWED WITHIN PUBLIC SANITARY AND STORM SEWER EASEMENTS.
- SEEDING
 - SOW SEED WITH DRILL-TYPE SEEDING MACHINE. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
 - DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
 - DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.
 - SOW SEED AT A TOTAL RATE OF 6 lb/1000 sf.
 - RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.
 - PROTECT SEEDDED AREAS WITH SLOPES EXCEEDING 1:4 WITH EROSION-CONTROL BLANKETS AND 1:6 WITH EROSION-CONTROL FIBER MESH INSTALLED AND STAPLED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - PROTECT SEEDDED AREAS WITH SLOPES NOT EXCEEDING 1:6 BY SPREADING STRAW MULCH. SPREAD UNIFORMLY AT A MINIMUM RATE OF 2 TONS/ACRE TO FORM A CONTINUOUS BLANKET 1-1/2 INCHES IN LOOSE DEPTH OVER SEEDDED AREAS. SPREAD BY HAND, BLOWER, OR OTHER SUITABLE EQUIPMENT.
 - ANCHOR STRAW MULCH BY CRIMPING INTO SOIL WITH SUITABLE MECHANICAL EQUIPMENT.
- PROTECT SEEDDED AREAS FROM HOT DR, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH UNIFORMLY TO A DEPTH OF 3/16 INCH, AND ROLL SURFACE SMOOTH.
- SODDING
 - LAY SOD WITHIN 24 HOURS OF HARVESTING. DO NOT LAY SOD IF DORMANT OR IF GROUND IS FROZEN OR MUDDY.
 - LAY SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS, BUTT ENDS AND SIDES OF SOD; DO NOT STRETCH OR OVERLAP. STAGGER SOD STRIPS OR PADS TO OFFSET JOINTS IN ADJACENT COURSES. AVOID DAMAGE TO SUBGRADE OR SOD DURING INSTALLATION. TAMP AND ROLL LIGHTLY TO ENSURE CONTACT WITH SUBGRADE. ELIMINATE AIR ROCKETS, AND FORM A SMOOTH SURFACE. WORK SIFTED SOIL OR FINE SAND INTO MINOR CRACKS BETWEEN PIECES OF SOD; REMOVE EXCESS TO AVOID SMOTHERING SOD AND ADJACENT GRASS.
 - LAY SOD ACROSS ANGLE OF SLOPES EXCEEDING 1:3.
 - ANCHOR SOD ON SLOPES EXCEEDING 1:6 WITH WOOD PEGS OR STEEL STAPLES SPACED AS RECOMMENDED BY SOD MANUFACTURER BUT NOT LESS THAN 2 ANCHORS PER SOD STRIP TO PREVENT SLIPPAGE.
 - SATURATE SOD WITH FINE WATER SPRAY WITHIN TWO HOURS OF PLANTING. DURING FIRST WEEK AFTER PLANTING, WATER DAILY OR MORE FREQUENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A MINIMUM DEPTH OF 1-1/2 INCHES BELOW SOD.
 - ISLANDS TO BE SODDED WITH MUCH RINGS AT TREE LOCATIONS PER DETAIL.
 - THE 30 FOOT BUFFER PARK LANDSCAPING ALONG E. P. TRUE PARKWAY WILL BE INSTALLED BY THE DEVELOPER AS A PART OF THE JORDAN WEST OVERLAY DISTRICT SITE PLAN.

TYPICAL PLANTING DETAIL (SINGLE SIDDED TOWNHOMES)



TYPICAL PLANTING DETAIL (DOUBLE SIDDED TOWNHOMES)



LANDSCAPE REQUIREMENTS

OPEN SPACE
REQUIRED: 2 TREE & 3 SHRUBS/3000 SF
294,484 X 30% = 88,347
88,347 SF/1500 = 59
88,347 SF/1500 = 04
04 SHRUBS

PROPOSED:
54 TREES
04 SHRUBS

15' BUFFER
REQUIRED: 2.0 OVERSTORY, 1 EVERGREEN
TREES, 2.0 UNDERSTORY & 22 SHRUBS/100 LF
1633 LF / 100 = 17
48 OVERSTORY
119 EVERGREEN TREES
48 UNDERSTORY
374 SHRUBS

PROVIDED:
48 OVERSTORY
119 EVERGREEN TREES
48 UNDERSTORY
374 SHRUBS

Civil Engineering Consultants, Inc.
2400 86th Street, Unit 12, Des Moines, Iowa, 50322
515.276.4884 · Fax: 515.276.7084 · mail@cecinc.com

| DATE: | REVISIONS | COMMENTS |
|------------|-----------|------------|
| 09/21/2016 | 1 | 04/18/2016 |
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| | 4 | |
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DATE OF SURVEY: 03/19/2016
DESIGNED BY: MPH
DRAWN BY: CM

NORWALK ORCHARD VIEW TOWNHOMES
NORWALK, IA
LANDSCAPE PLAN

SHEET
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OF 5
E-7442

