Appendix M

Homebuilder letters and maps regarding storm water concerns in platted subdivision

Contents:

a) 2014 01 08, Autumn Park Plat 2 (6 pages).

b) 2013 12 17, Autumn Park Plat 3 (9 pages).

c) 2013 12 09 Beaverbrooke West Plat 8 (13 pages).

d) 2013 12 06 Beaverbrooke West Plat 9 (4 pages).

e) 2013 12 18 Brooke Ridge Plat 1 (4 pages).

FOX engineering

Aspen Business Park | 414 South 17th Street, Suite 107 | Ames, Iowa 50010

January 8, 2014

Mr. Scott Clyce, Building Inspector
City of Grimes
101 NE Harvey St.
Grimes, IA 50111

RE: Autumn Park Plat 2 drainage swales
PROJECT # 8630-06K.702

Mr. Clyce,

As this plat will soon be released for home building the following information is being presented to assist homebuilders in meeting the intent of the grading plan.

The attached plan sheets (6 – Grading, 7 Plan & Profile & 2 – details) from the approved construction drawings show how the site is to be graded. The below information is from those plan sheets. The final plat is provided to show street address information and easements.

An item the homebuilder might easily overlook is how the sidewalk needs to be graded at the overflow sites. Sidewalk slopes away from the street (reverse of normal).

1. Stormwater emergency overflow spillway(s), please grade, and install PCC sidewalk, to the appropriate detail on plan sheet 2:
   a. lot 10 (**1000** NW **8th St.**)
   b. lot 11 (**800** NW **Harvest Drive**)
   c. between lots 22 & 23 (**801** NW **Harvest Drive** & **800** NW **Autumn Park Drive**, respectively)
2. Stormwater flowage easement swale(s), please grade in accordance with details on plan sheets 2 & 6.
   a. lot 10 (**1000** NW **8th St.**) – this is on the west side of the lot and flows south to the detention pond.
   b. between lots 16 & 30 (**909** NW **Harvest Dr.** & **908** NW **Autumn Park Dr.**, respectively) flows between lots to the south – ***5-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%****.*
   c. between lots 17 & 29 (**905** NW **Harvest Dr.** & **904** NW **Autumn Park Dr.**, respectively) flows between lots to the south – ***5-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%****.*
   d. between lots 18 & 28 (**901** NW **Harvest Dr.** & **900** NW **Autumn Park Dr.**, respectively) flows between lots to the south – ***5-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***
   e. between lots 19 & 27 (**813** NW **Harvest Dr.** & **816** NW **Autumn Park Dr.**, respectively) flows between lots to the south – ***5-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

f. between lots 20 & 26 (**809** NW **Harvest Dr.** & **812** NW **Autumn Park Dr.**, respectively) flows between lots to the south – ***5-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

g. between lots 21 & 25 (**805** NW **Harvest Dr.** & **808** NW **Autumn Park Dr.**, respectively) flows between lots to the south – ***5-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

h. between lots 22 & 24 (**801** NW **Harvest Dr.** & **804** NW **Autumn Park Dr.**, respectively) flows between lots to the south – ***5-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

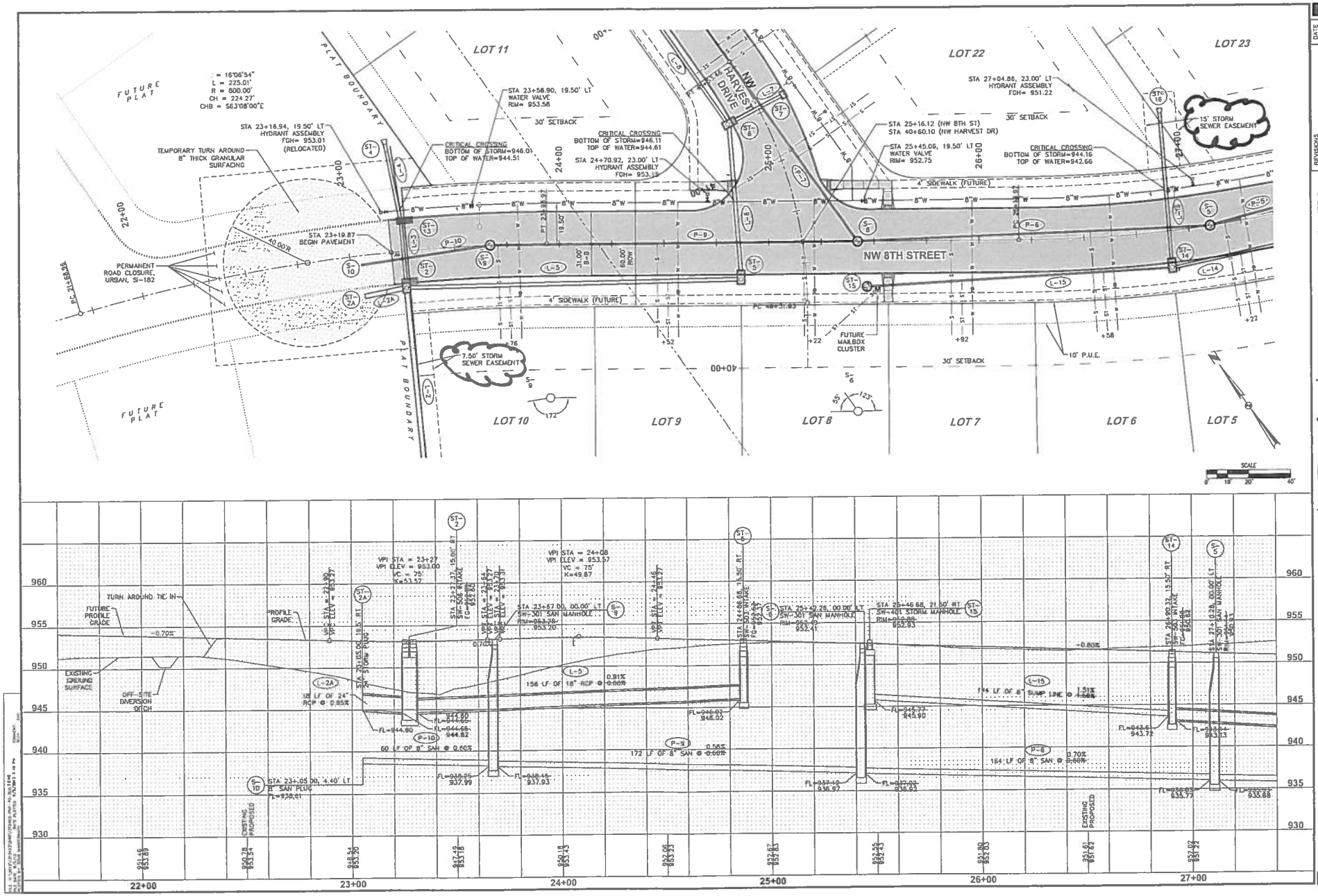
i. between lots 22 & 23 (**801** NW **Harvest Dr.** & **800** NW **Autumn Park Dr.**, respectively) flows between lots to the south – ***5-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

Sincerely,
FOX Engineering Associates, Inc.

Brandt Williamson

Attachments: construction drawing plan sheets 2, 6 & 7, recorded final plat

K:\!proj\8000\8630-06K Autumn Park Plat 2/702 Observation/homebuilder info/2014 01 08 letter to Scott Clyce-swales.doc



REVISIONS	DATE
RECORD DRAWINGS	09/05/13
THIRD SUBMITTAL	03/06/13
SECOND SUBMITTAL	02/18/13
FIRST SUBMITTAL	02/08/13

3405 S.E. CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PHONE: (515) 369-4400 FAX: (515) 369-4410
ENGINEER: RDR TECH:
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 2

PLAN AND PROFILE

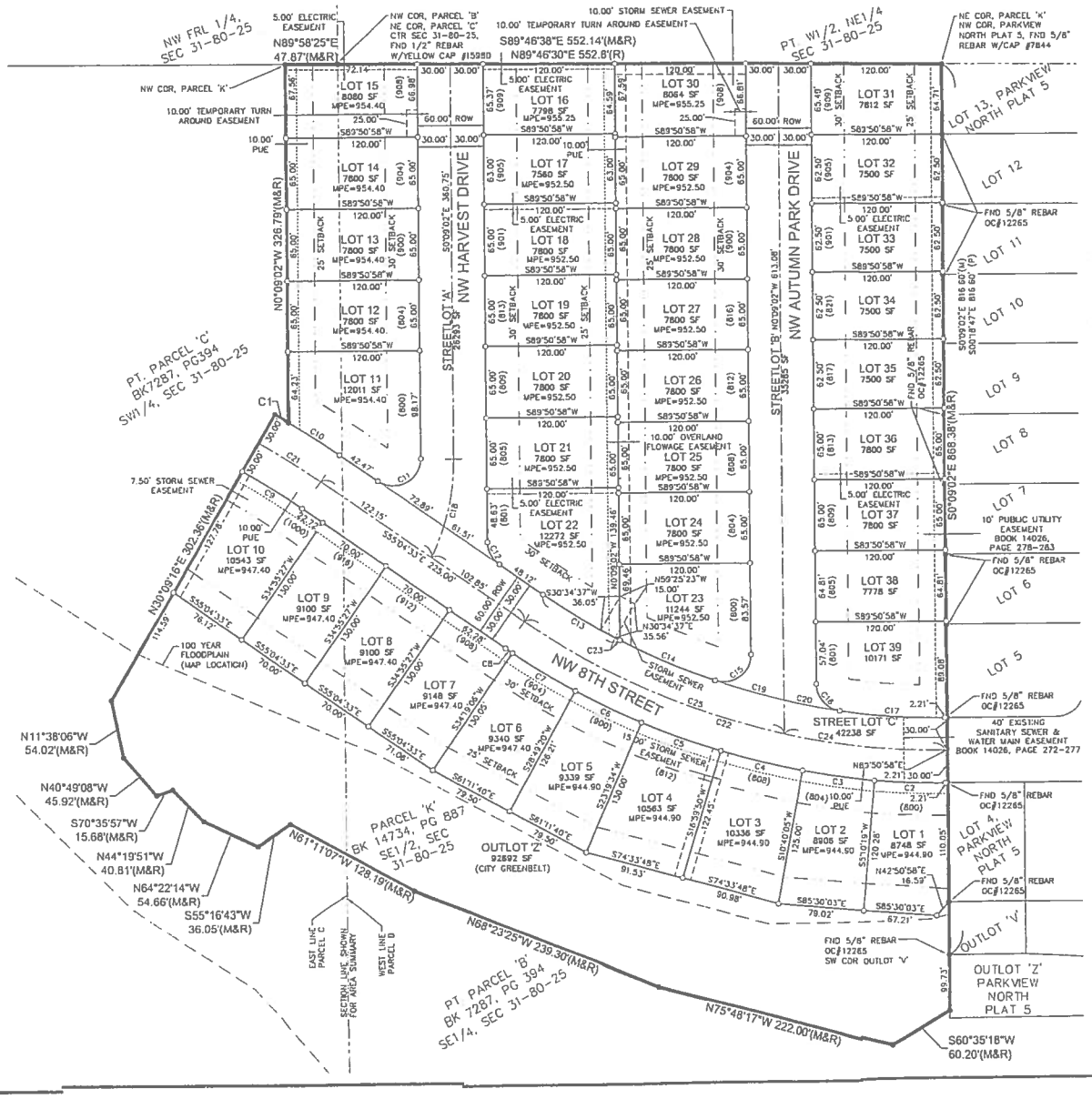
GRIMES, IOWA

1212.493

Doc ID: 027854680029 Type: PLT
Kind: PLAT
Recorded: 09/06/2013 at 09:13:06 AM
Pgs: 1 Fees: $72.00 Page 1 of 8
Polk County, Iowa
JULIE D. MASSENTY RECORDER
Filed 2014-00001880
Bk 14944 Pg 538-546

AUTUMN PARK PLAT 2

FINAL PLAT



PLAT DESCRIPTION:

PARCEL 'K' AS SHOWN ON THE PLAT OF SURVEY RECORDED IN BOOK 14734, PAGE 887 IN THE SOUTH HALF OF SECTION 31, TOWNSHIP 80 NORTH, RANGE 25 WEST OF THE FIFTH PRINCIPAL MERIDIAN, CITY OF GRIMES, POLK COUNTY, IOWA AND CONTAINING 12.20 ACRES (531,422 SQUARE FEET).

PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS OF RECORD.

OWNER:

GRIMES LOTS, L.L.C.
2400 86TH STREET, SUITE 24
URBANDALE, IOWA 50322-4306
CONTACT: DAVE HARMEYER 515-276-3456

ENGINEER/SURVEYOR:

CIVIL DESIGN ADVANTAGE
3405 SE CROSSROADS DR, SUITE G
GRIMES, IOWA 50111

AREA SUMMARY:

PARCEL IN SW 1/4 = 457,407 SQ.FT.
PARCEL IN SE 1/4 = 74,015 SQ.FT.
SUM = 531,422 SQ.FT.

DATE OF SURVEY:

JANUARY, 2013

NOTE:

DRIVEWAYS ON LOTS 16 AND 31 SHALL BE CONSTRUCTED ON THE SOUTH HALF OF THE LOTS.

ZONING:

R-4 PLANNED RESIDENTIAL DEVELOPMENT DISTRICT

LOTS 1-10: R2-70 UNDERLYING ZONING
MIN. LOT WIDTH = 70' WITH NO RESTRICTION ON THE NUMBER OF LOTS ABOVE 75' IN WIDTH.
MIN. FRONT YARD = 30'
MIN. REAR YARD = 25'
MIN. SIDE YARD = 1-1/2 STORY 7'/14' TOTAL
2 STORY 7'/15' TOTAL

LOTS 11-39: R2-60 UNDERLYING ZONING
MIN. LOT WIDTH = 60' WITH NO RESTRICTION ON THE NUMBER OF LOTS ABOVE 65' IN WIDTH.
MIN. FRONT YARD = 30'
MIN. REAR YARD = 25'
MIN. SIDE YARD = 1-1/2 STORY 7'/14' TOTAL
2 STORY 7'/15' TOTAL

CURVE DATA:

CURVE	DELTA	RADIUS	LENGTH	BEARING	CHORD
(M&R) C1	0°59'07"	830.00'	14.27'	S59°21'11"E	14.27'
C2	5°19'21"	700.00'	65.03'	N87°29'21"W	65.00'
C3	5°29'46"	700.00'	67.15'	N82°04'48"W	67.12'
C4	6°18'44"	700.00'	77.32'	N78°10'03"W	77.28'
C5	6°18'44"	700.00'	77.32'	N69°50'18"W	77.28'
C6	5°29'46"	700.00'	67.15'	N83°55'33"W	67.12'
C7	5°29'46"	700.00'	67.15'	N58°25'47"W	67.12'
C8	0°36'21"	700.00'	7.40'	N55°22'43"W	7.40'
C9	4°46'11"	770.00'	64.10'	N57°27'38"W	64.08'
C10	3°47'04"	830.00'	54.82'	S56°58'05"E	54.81'
C11	125°04'29"	25.00'	54.57'	N62°23'13"E	44.37'
C12	54°55'31"	25.00'	23.97'	S27°38'47"E	23.06'
C13	7°20'44"	640.00'	82.05'	S58°44'55"E	82.00'
C14	8°28'35"	640.00'	94.68'	S66°39'35"E	94.60'
C15	109°15'10"	25.00'	47.67'	N54°28'33"E	40.77'
C16	81°19'21"	25.00'	35.48'	S40°48'42"E	32.58'
C17	8°40'39"	640.00'	96.93'	S85°48'42"E	96.84'
C18	26°44'48"	200.00'	93.36'	S13°13'21"W	92.52'
C19	5°34'08"	640.00'	65.92'	S73°50'55"E	65.89'
C20	4°40'25"	640.00'	52.20'	S70°08'11"E	52.18'
C21	4°46'11"	800.00'	66.60'	S57°27'38"E	66.58'
C22	35°04'29"	670.00'	410.15'	S72°36'47"E	403.78'
C23	0°27'09"	640.00'	5.05'	S82°11'43"E	5.05'
C24	12°44'35"	670.00'	149.01'	S83°46'45"E	148.71'
C25	22°19'54"	670.00'	261.14'	S66°14'30"E	259.49'

LEGEND:

	FOUND	SET
SECTION CORNER AS NOTED	▲	△
1/2" REBAR, YELLOW CAP#16747 (UNLESS OTHERWISE NOTED)	●	○
PLATTED BEARING & DISTANCE	P	
MEASURED BEARING & DISTANCE	M	
RECORDED BEARING & DISTANCE	R	
DEEDED BEARING & DISTANCE	D	
MINIMUM PROTECTION ELEVATION	MPE	
PUBLIC UTILITY EASEMENT	P.U.E.	
ORANGE CAP #	OC#	
CENTERLINE		
SECTION LINE		
EASEMENT LINE		

State of Iowa, Polk County ss
I hereby certify that the attached plat name has been found to be unique to Polk County and has been entered of record in the office of the Polk County Auditor
this 20th day of September 20 13
JAMES ENCOSTALLY, County Auditor
By Michelle Williams

I HEREBY CERTIFY THAT THIS LAND SURVEYING DOCUMENT WAS PREPARED AND THE RELATED SURVEY WORK WAS PERFORMED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF IOWA.

LICENSED LAND SURVEYOR MICHAEL D. LEE 16747 IOWA

Michael D. Lee 8-30-13
MICHAEL D. LEE, P.L.S. DATE

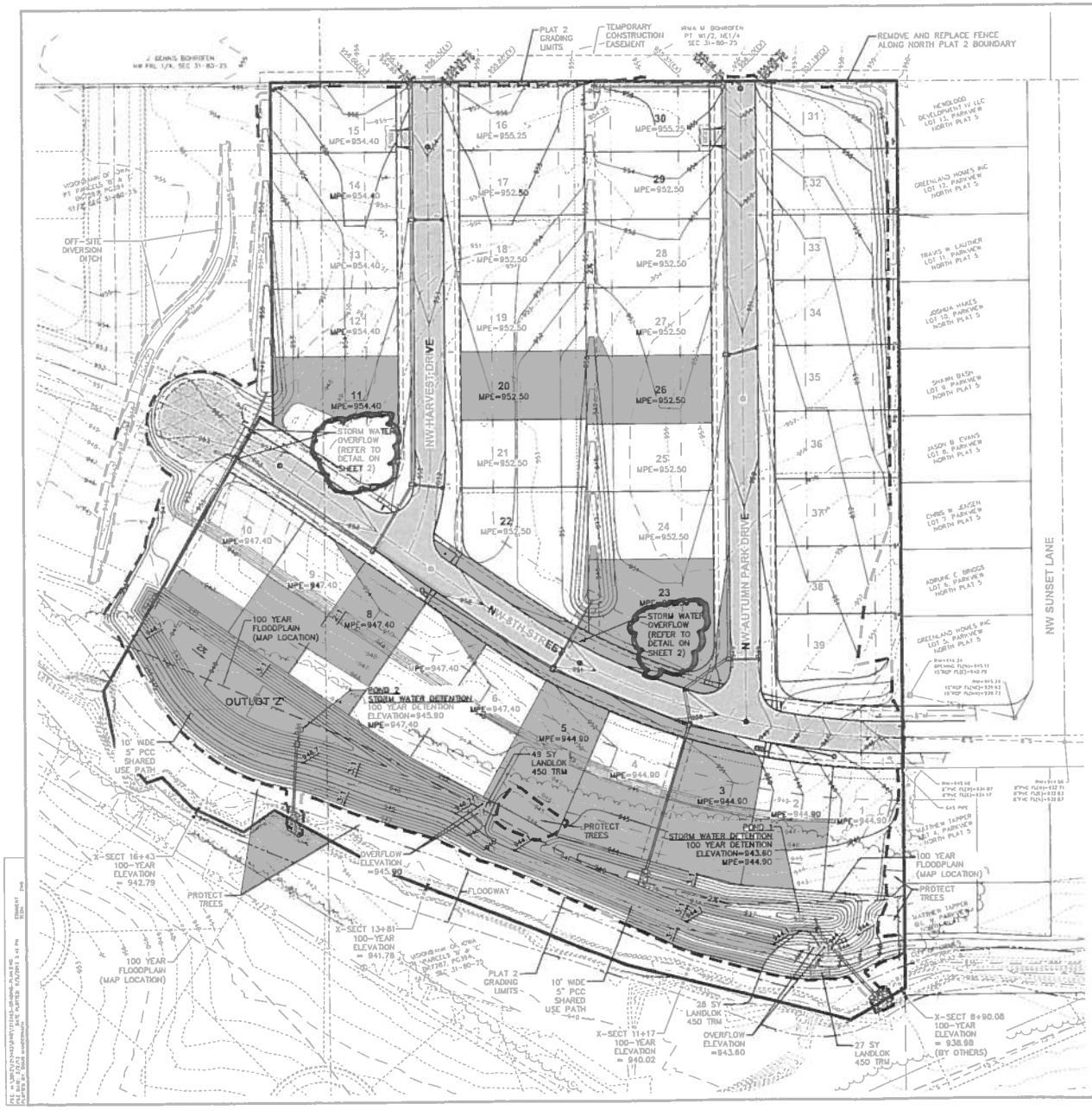
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2014
PAGES OR SHEETS COVERED BY THIS SEAL:
THIS SHEET

REVISIONS	DATE
FIRST SUBMITTAL	5/1/13

3405 SE CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PH: (515) 369-4400 Fax: (515) 369-4410
ENGINEER: — TECH: —
CIVIL DESIGN ADVANTAGE
GRIMES, IOWA

AUTUMN PARK PLAT 2
FINAL PLAT

1/1
1212493



NOTES

1. REFER TO SEPARATE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROLS AND POLLUTION PREVENTION REQUIREMENTS.
2. PROTECT ALL TREES OUTSIDE GRADING LIMITS AND NOTIFY OWNER OF LARGE TREES WITHIN GRADING LIMITS. REVIEW ALL TREE CLEARING WITH OWNER ON SITE PRIOR TO CONSTRUCTION.
3. REFER TO SHEET 2 FOR STORM WATER OVERFLOW DETAILS.
4. CONTRACTOR SHALL NOT PLACE ANY FILL, INCLUDING TEMPORARY STOCKPILES, IN THE FLOODWAY.
5. COMPACTION OF FILL IN THE EXISTING 100-YEAR FLOODPLAIN TO BE NOT LESS THAN (95%) MAX. STANDARD PROCTOR DRY DENSITY WITH COHESIVE SOILS.

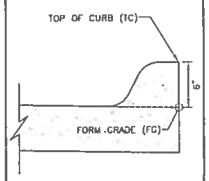
REVISIONS	DATE
RECORD DRAWINGS	09/05/13
THIRD SUBMITTAL	03/06/13
SECOND SUBMITTAL	02/18/13
FIRST SUBMITTAL	02/08/13

3405 S.E. CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PHONE: (515) 369-4400 FAX: (515) 369-4410
ENGINEER: RDR
TECH:
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 2
GRADING PLAN

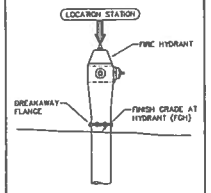
GRIMES, IOWA

1212.493



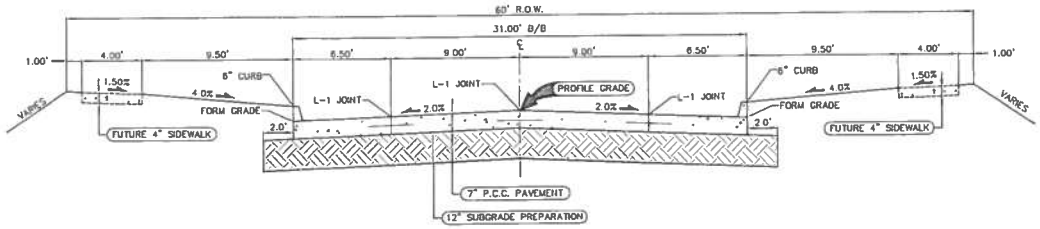
INTEGRAL 6" STANDARD CURB SPOT ELEVATION REFERENCE DETAIL

NOT TO SCALE



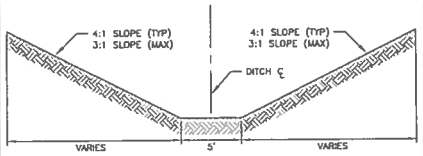
HYDRANT ASSEMBLY SPOT ELEVATION REFERENCE DETAIL

NOT TO SCALE



TYPICAL SECTION - 31' P.C.C. ROADWAY WITH 60' ROW

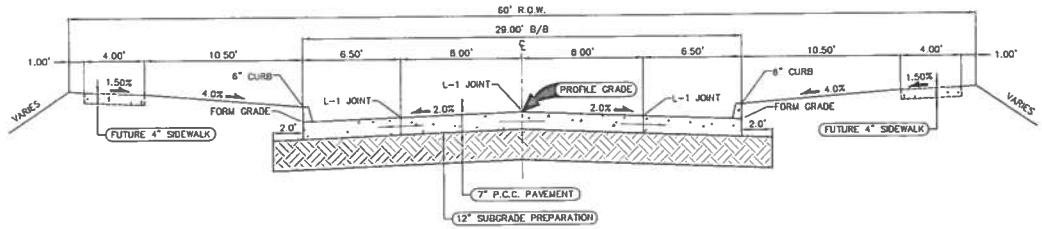
NOT TO SCALE



NOTE.
SEE SWPPP FOR EROSION CONTROLS AND STABILIZATION PRIOR TO SEEDING. SEED WITH TYPE 4 MIX (SUDAS).

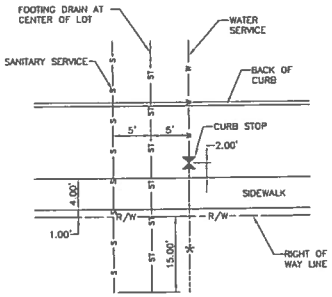
TYPICAL SWALE DETAIL

NOT TO SCALE



TYPICAL SECTION - 29' P.C.C. ROADWAY WITH 60' ROW

NOT TO SCALE

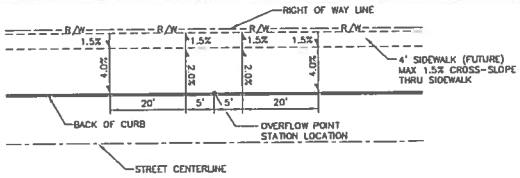


NOTES:
1. ALL SERVICES SHOULD BE MARKED WITH STEEL POSTS (WATER-BLUE, STORM-WHITE, SANITARY-GREEN). POSTS SHALL BE A MINIMUM OF 4' TALL.
2. ALL SERVICE LOCATIONS ARE TO BE STAMPED INTO THE CURB WITH LETTER IRONS (TOP, SIDE, BOTTOM).
3. THE CURB STOP MUST LIE 2.0' OFF THE SIDEWALK BETWEEN THE SIDEWALK AND THE STREET.

* EXTEND WATER SERVICES ON LOTS 1-10 15' PAST ROW

SERVICE DETAIL

NOT TO SCALE



STREET	STATION	SIDE
NW 8TH STREET	23+27	RIGHT
NW 8TH STREET	23+27	LEFT
NW 8TH STREET	27+05	LEFT

TYPICAL RIGHT OF WAY GRADING AT STORM WATER OVERFLOW POINTS

NOT TO SCALE

REVISIONS	DATE
RECORD DRAWINGS	09/05/13
THIRD SUBMITTAL	03/08/13
SECOND SUBMITTAL	02/18/13
FIRST SUBMITTAL	12/03/12

3405 S.E. CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PHONE: (515) 369-4400 FAX: (515) 369-4410
ENGINEER: RDR
TECH:
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 2

TYPICAL SECTIONS AND DETAILS

GRIMES, IOWA

1212.493

FOX engineering

Aspen Business Park | 414 South 17th Street, Suite 107 | Ames, Iowa 50010

December 17, 2013

Mr. Scott Clyce, Building Inspector
City of Grimes
101 NE Harvey St.
Grimes, IA 50111

RE: Autumn Park Plat 3 drainage swales
PROJECT # 8630-06K.703

Mr. Clyce,

As this plat will soon be released for home building the following information is being presented to assist homebuilders in meeting the intent of the grading plan.

The attached plan sheets (7 & 8 – Grading & 3 & 4 – details) from the approved construction drawings show how the site is to be graded. The below information is from those plan sheets and has had street address information added to assist with locating the swales and overflow spillways.

An item the homebuilder might easily overlook is how the sidewalk needs to be graded at the overflow sites. Sidewalk slopes away from the street (reverse of normal).

1. Stormwater emergency overflow spillway(s), please grade to the appropriate details on plan sheet 3:
   a. **NW Brookside Dr.** – station 11+14, this is on the east (right) side of the roadway and overflows to the detention pond for Plat 1.
   b. between lots 11 & 12 (**916** & **1000** NW **5th St.,** respectively)
   c. between lots 27 & 28 (**616** & **613** NW **Harvest Court,** respectively)
   d. between lots 35 & 36 (**512** & **513** NW **Autumn Park Court**, respectively)
   e. between lots 46 & 47 (**608** & **601** NW **Sunset Court,** respectively)
2. Stormwater flowage easement swale(s), please grade in accordance with details on plan sheets 4, 7 & 8.
   a. **NW Brookside Dr.** – station 11+14, this is on the east (right) side of the roadway and overflows to the detention pond for Plat 1.
   b. between lots 27 & 28 (**616** & **613** NW **Harvest Ct.,** respectively) flows between lots to the NE – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum),*** *minimum longitudinal slope to drain.*
   c. between lots 11 & 12 (**916** & **1000** NW **5th St.,** respectively) flows between the lots to the south – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum),*** *minimum longitudinal slope is* ***1.50%.***
   d. between lots 4 & 2 (**800** NW **5th St.** & **405** NW **Sunset Ln.,** respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum),*** *minimum longitudinal slope is* ***4.0%.***

e. between lots 4 & 3 (**800** NW **5th St.** & **409** NW **Sunset Ln.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

f. between lots 28 & 34 (**613** NW **Harvest Ct.** & **508** NW **Autumn Park Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

g. between lots 29 & 34 (**609** NW **Harvest Ct.** & **508** NW **Autumn Park Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

h. between lots 30 & 33 (**605** NW **Harvest Ct.** & **504** NW **Autumn Park Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

i. between lots 31 & 32 (**601** NW **Harvest Ct.** & **500** NW **Autumn Park Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

j. between lots 39 & 40 (**501** NW **Autumn Park Ct.** & **500** NW **Sunset Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

k. between lots 38 & 41 (**505** NW **Autumn Park Ct.** & **504** NW **Sunset Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

l. between lots 37 & 42 (**509** NW **Autumn Park Ct.** & **508** NW **Sunset Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

m. between lots 37 & 43 (**509** NW **Autumn Park Ct.** & **512** NW **Sunset Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

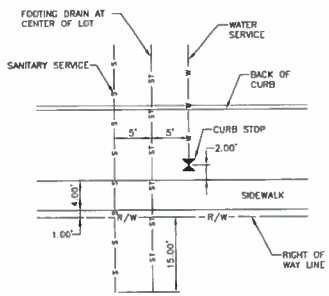
n. between lots 36 & 44 (**513** NW **Autumn Park Ct.** & **600** NW **Sunset Ct.**, respectively) flows between lots to the north – ***2-foot*** *bottom minimum width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***

o. Lots 53-48 (NW **Sunset Ct.**), east side – ***2-foot*** *minimum bottom width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.*** ***NOTE: this swale is east of the property line and should not be disturbed by the homebuilder.***

Sincerely,
FOX Engineering Associates, Inc.

Brandt Williamson

K:\!proj\8000\8630-06K Autumn Park Plat 3/703 Observation/homebuilder info/2013 12 17 letter to Scott Clyce-swales.doc

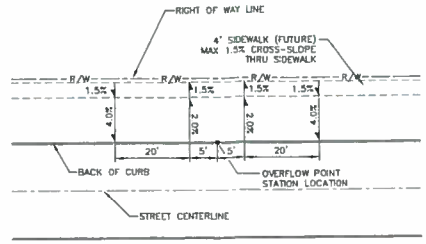


NOTES:

1. ALL SERVICES SHOULD BE MARKED WITH STEEL POSTS (WATER-BLUE, STORM-WHITE, SANITARY-GREEN). POSTS SHALL BE A MINIMUM OF 4' TALL.
2. ALL SERVICE LOCATIONS ARE TO BE STAMPED INTO THE CURB WITH LETTER IRONS (TOP, SIDE, BOTTOM).
3. THE CURB STOP MUST BE 2.0' OFF THE SIDEWALK BETWEEN THE SIDEWALK AND THE STREET.

SERVICE DETAIL

NOT TO SCALE

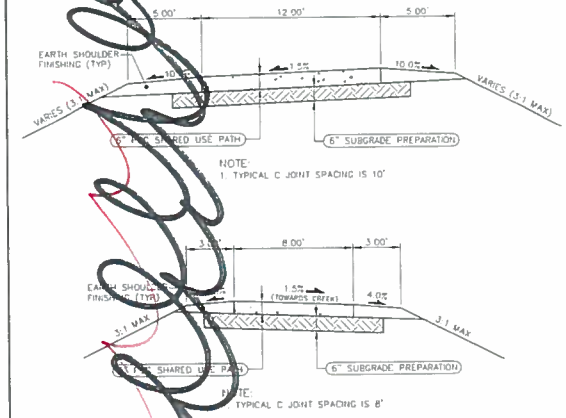


STREET	STATION	SIDE
BROOKSIDE DR	11+14	RIGHT
NW 5TH ST	55+92	RIGHT
NW HARVEST CT	73+38	RIGHT
NW AUTUMN PARK CT	83+14	RIGHT
NW SUNSET CT	37+94	RIGHT

613/616 ←
601/608 ←
→ 916/1000
→ 512/513

TYPICAL RIGHT OF WAY GRADING AT STORM WATER OVERFLOW POINTS

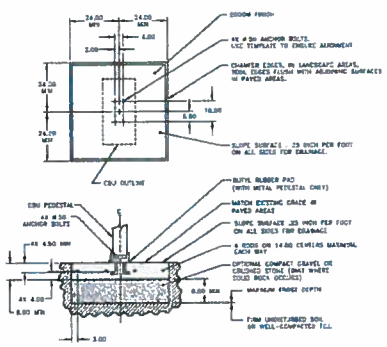
NOT TO SCALE



TYPICAL SECTION 12' AND 8' SHARED USE PATH

NOT TO SCALE

USPS APPROVED SPECIFICATIONS – CONCRETE PAD (SINGLE UNIT)

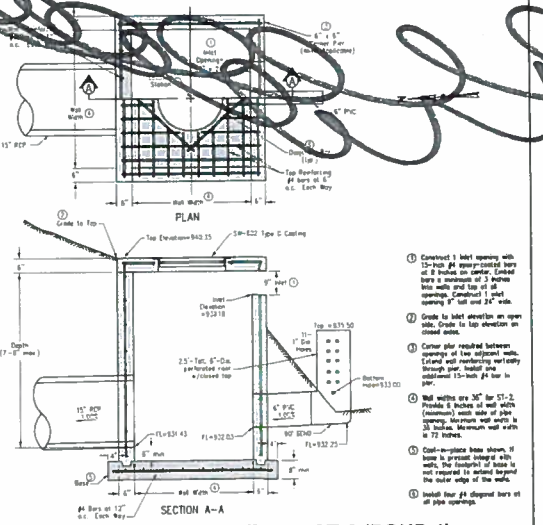


NOTES

1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS, CONTAIN 6% MIN - 8% MAX AIR ENTRAINMENT AND BE PLACED WITH A 3.50 - 4.50 SLUMP IN ACCORDANCE WITH ACI 301.
2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615, GRADE 60.
3. ANCHOR BOLTS SHALL CONFORM TO ASTM A193, CLASS B8M, TYPE 316 STAINLESS STEEL.

MAILBOX PAD DETAIL

NOT TO SCALE



① Construct 1 inlet opening with 12-inch #4 epoxy-coated bars at 8 inches on center. Embed bars a minimum of 3 inches into walls and top of all openings. Construct 1 inlet opening 8" tall and 24" wide.

② Grade to inlet elevation on open side. Grade to top elevation on closed sides.

③ Corner pier required between openings of two adjacent walls. Lateral wall reinforcing vertically through pier. Install one additional 15-inch #4 bar in pier.

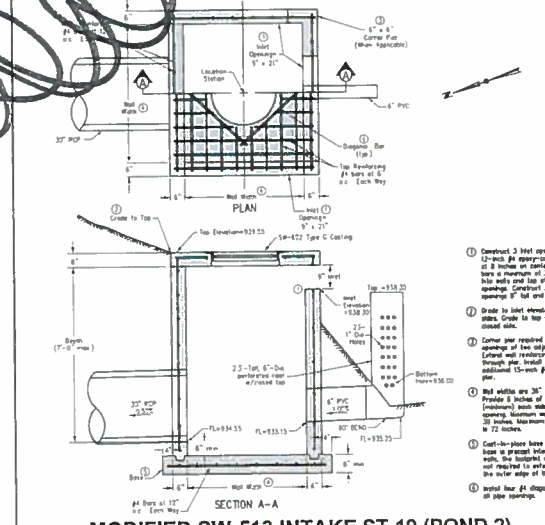
④ Wall widths are 36" for ST-2. Provide 6 inches of wall width (minimum) each side of pipe opening. Maximum wall width is 30 inches. Maximum wall width is 72 inches.

⑤ Cast-in-place base shown. If base is precast integral with walls, the footprint of base is not required to extend beyond the outer edge of the walls.

⑥ Install four #4 diagonal bars at all pipe openings.

MODIFIED SW-513 INTAKE ST-2 (POND 1)

NOT TO SCALE



① Construct 3 inlet openings with 12-inch #4 epoxy-coated bars at 8 inches on center. Embed bars a minimum of 3 inches into walls and top of all openings. Construct 3 inlet openings 9" tall and 21" wide.

② Grade to inlet elevation on open sides. Grade to top elevation on closed side.

③ Corner pier required between openings of two adjacent walls. Lateral wall reinforcing vertically through pier. Install one additional 15-inch #4 bar in pier.

④ Wall widths are 36" for ST-19. Provide 6 inches of wall width (minimum) each side of pipe opening. Maximum wall width is 30 inches. Maximum wall width is 72 inches.

⑤ Cast-in-place base shown. If base is precast integral with walls, the footprint of base is not required to extend beyond the outer edge of the walls.

⑥ Install four #4 diagonal bars at all pipe openings.

MODIFIED SW-513 INTAKE ST-19 (POND 2)

NOT TO SCALE

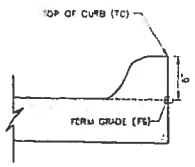
REVISIONS	DATE
THIRD SUBMITTAL	06/18/13
SECOND SUBMITTAL	05/24/13
FIRST SUBMITTAL	04/15/13

3405 S.E. CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PHONE: (515) 369-4400 FAX: (515) 369-4410
ENGINEER: RDR / ENH TECH: LMK
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 3

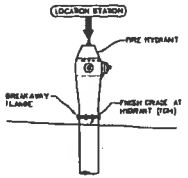
TYPICAL SECTIONS AND DETAILS

GRIMES, IOWA



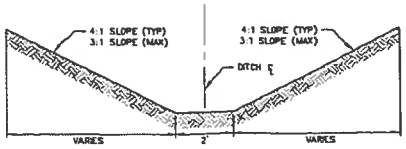
INTEGRAL 6" STANDARD CURB SPOT ELEVATION REFERENCE DETAIL

NOT TO SCALE



HYDRANT ASSEMBLY SPOT ELEVATION REFERENCE DETAIL

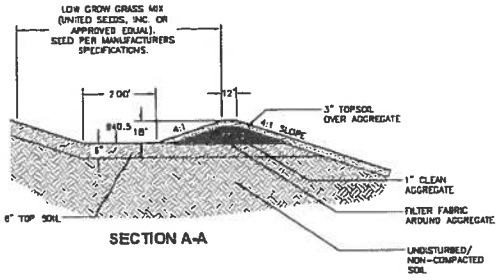
NOT TO SCALE



NOTE:
SEE SWPPP FOR EROSION CONTROLS AND STABILIZATION PRIOR TO SEEDING. SEED WITH TYPE 4 MIX (SUDAS).

TYPICAL SWALE DETAIL

NOT TO SCALE



SECTION A-A

INFILTRATION BASIN DETAIL

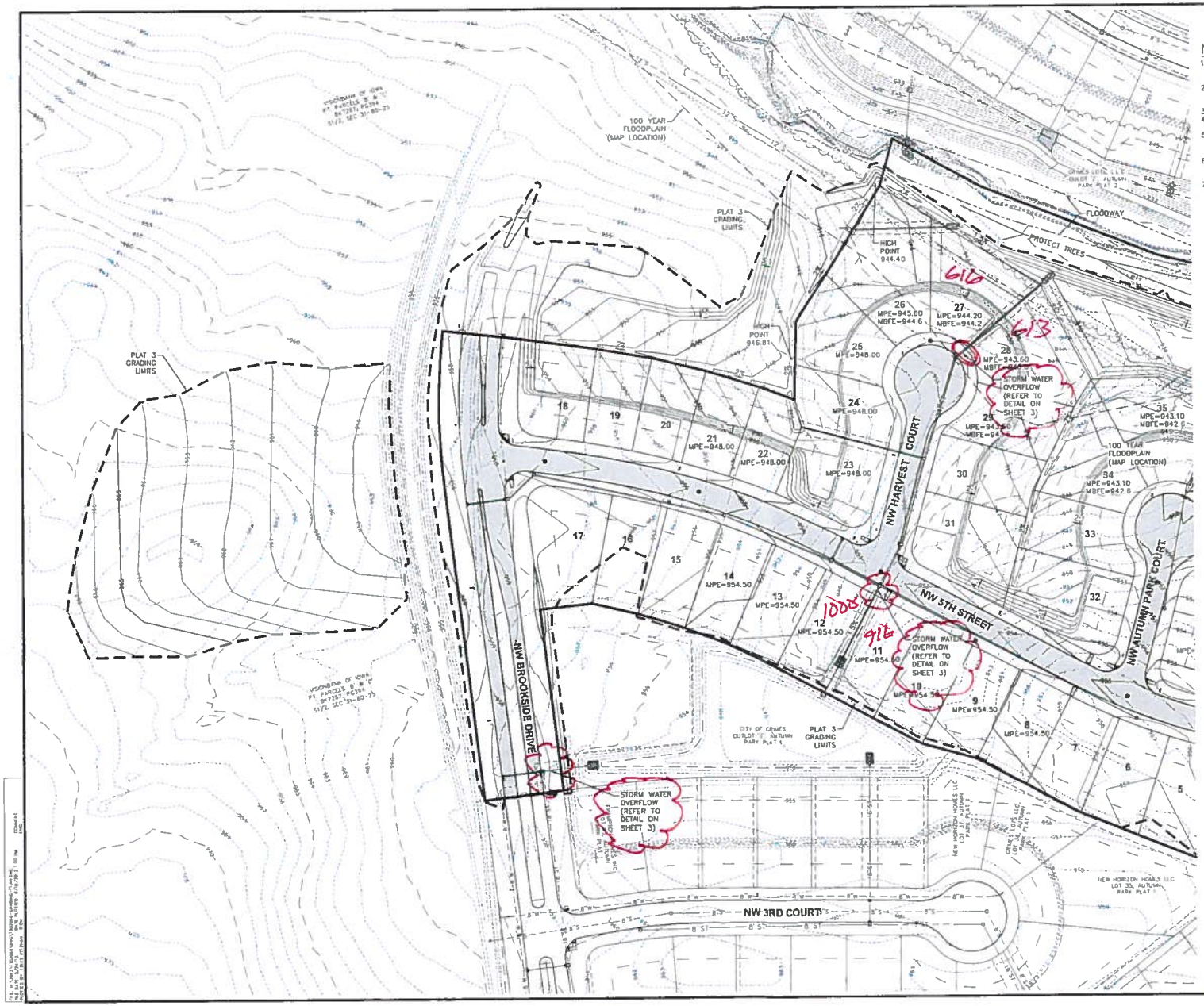
NOT TO SCALE

REVISIONS	DATE
THIRD SUBMITTAL	09/19/13
SECOND SUBMITTAL	02/04/13
FIRST SUBMITTAL	04/15/13

3405 S.E. CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PHONE: (515) 369-4400 FAX: (515) 369-4410
ENGINEER: RDR / EINH TECH: LMK
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 3
TYPICAL SECTIONS AND DETAILS

GRIMES, IOWA



NOTES

1. REFER TO SEPARATE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROLS AND POLLUTION PREVENTION REQUIREMENTS.
2. PROTECT ALL TREES OUTSIDE GRADING LIMITS AND NOTIFY OWNER OF LARGE TREES WITHIN GRADING LIMITS. REVIEW ALL TREE CLEARING WITH OWNER ON SITE PRIOR TO CONSTRUCTION.
3. REFER TO SHEET 3 FOR STORM WATER OVERFLOW DETAILS.
4. CONTRACTOR SHALL NOT PLACE ANY FILL, INCLUDING TEMPORARY STOCKPILES, IN THE FLOODWAY.
5. COMPACTION OF FILL IN THE EXISTING 100-YEAR FLOODPLAIN TO BE NOT LESS THAN (95%) MAX. STANDARD PROCTOR DRY DENSITY WITH COHESIVE SOILS.
6. THE 100 YEAR FLOODPLAIN (MAP LOCATION) WAS PLACED BASED ON FLOOD INSURANCE RATE MAP #190301 0080 C DATED NOVEMBER 18, 1992.
7. MPE = MINIMUM PROTECTION ELEVATION.
   MBFE = MINIMUM BASEMENT FLOOR ELEVATION

N

SCALE 0 30' 60' 120'

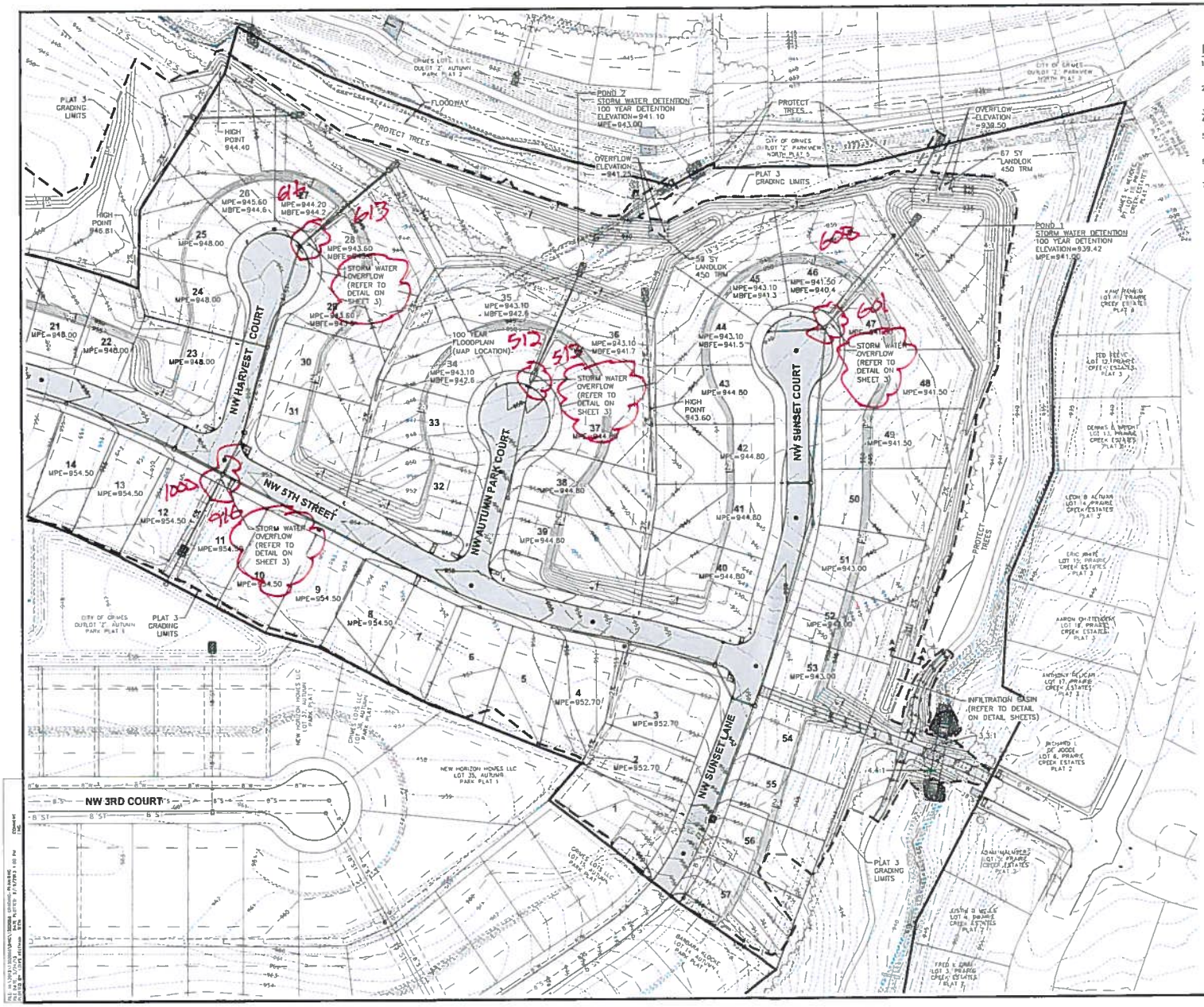
REVISIONS	DATE
THIRD RESUBMITTAL	10/18/13
SECOND RESUBMITTAL	10/24/13
FIRST RESUBMITTAL	08/26/13

3405 S.E. CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PHONE: (515) 369-4400 FAX: (515) 369-4410
ENGINEER: RDR / ENH TECH: LMK
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 3
GRADING PLAN

GRIMES, IOWA

1302 066



NOTES

1. REFER TO SEPARATE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROLS AND POLLUTION PREVENTION REQUIREMENTS.
2. PROTECT ALL TREES OUTSIDE GRADING LIMITS AND NOTIFY OWNER OF LARGE TREES WITHIN GRADING LIMITS. REVIEW ALL TREE CLEARING WITH OWNER ON SITE PRIOR TO CONSTRUCTION.
3. REFER TO SHEET 3 FOR STORM WATER OVERFLOW DETAILS.
4. CONTRACTOR SHALL NOT PLACE ANY FILL, INCLUDING TEMPORARY STOCKPILES, IN THE FLOODWAY.
5. COMPACTION OF FILL IN THE EXISTING 100-YEAR FLOODPLAIN TO BE NOT LESS THAN (95%) MAX. STANDARD PROCTOR DRY DENSITY WITH COHESIVE SOILS.
6. THE 100 YEAR FLOODPLAIN (MAP LOCATION) WAS PLACED BASED ON FLOOD INSURANCE RATE MAP #190901 0050 C DATED NOVEMBER 18, 1992.
7. MPE = MINIMUM PROTECTION ELEVATION.
   MBFE = MINIMUM BASEMENT FLOOR ELEVATION.

REVISIONS	DATE
1 MID SUBMITTAL	02/04/13
2 FINAL SUBMITTAL	02/26/13
3 BID SUBMITTAL	04/19/13

3405 S.E. CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PHONE: (515) 369-4400 FAX: (515) 369-4410
ENGINEER: RDR / ENH | TECH: LMK
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 3
GRADING PLAN

GRIMES, IOWA

1302.066

AUTUMN PARK PLAT 3

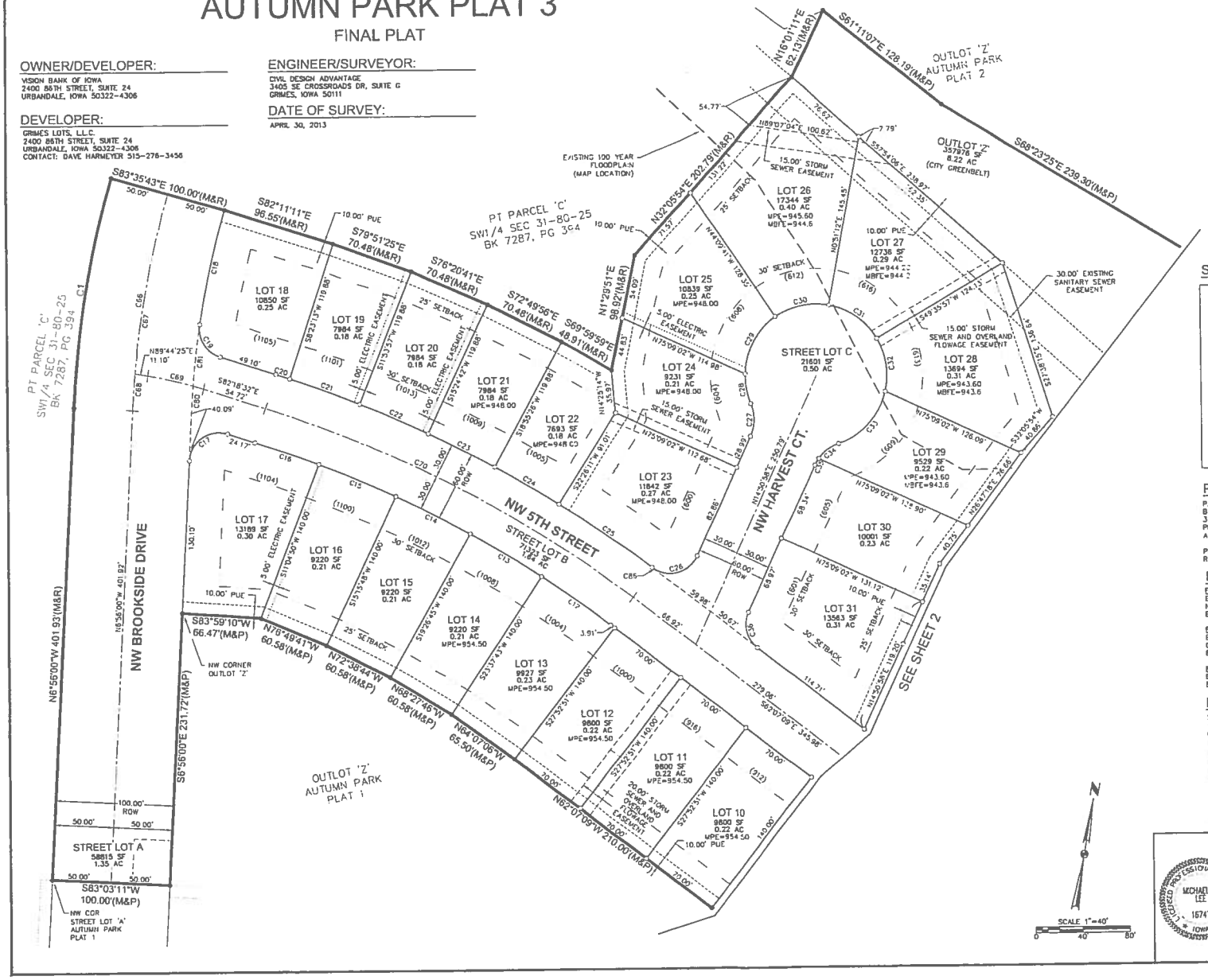
FINAL PLAT

OWNER/DEVELOPER:
VISION BANK OF IOWA
2400 86TH STREET, SUITE 24
URBANDALE, IOWA 50322-4306

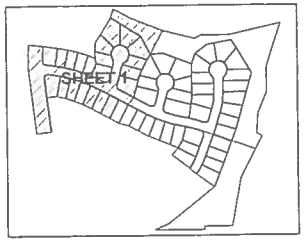
DEVELOPER:
GRIMES LOTS, L.L.C.
2400 86TH STREET, SUITE 24
URBANDALE, IOWA 50322-4306
CONTACT: DAVE HARMEYER 515-276-3456

ENGINEER/SURVEYOR:
CIVIL DESIGN ADVANTAGE
3405 SE CROSSROADS DR, SUITE G
GRIMES, IOWA 50111

DATE OF SURVEY:
APRIL 30, 2013



SHEET INDEX:



PLAT DESCRIPTION:

PARCEL 'L' AS SHOWN ON THE PLAT OF SURVEY RECORDED IN BOOK 14805, PAGE 427-428 IN THE SOUTH HALF OF SECTION 31, TOWNSHIP 80 NORTH, RANGE 25 WEST OF THE FIFTH PRINCIPAL MERIDIAN, CITY OF GRIMES, POLK COUNTY, IOWA AND CONTAINING 27.92 ACRES (1,216,067 SQUARE FEET).

PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS OF RECORD.

BENCHMARK:

FEG-002:
BURY BOLT ON FH ON THE NE CORNER OF NW 8TH ST AND NW PRAIRIE CREEK DR BY LOT ADDRESS 801
ELEVATION=943.59

FEG-003:
BURY BOLT ON FH ON THE EAST SIDE OF NW PRAIRIE CREEK DR BY LOT ADDRESSES 813 AND 809.
ELEVATION=947.00

FEG-004:
BURY BOLT ON FH ON THE NORTH SIDE OF NW 10TH CIR BETWEEN LOT ADDRESSES 601 AND 521. ELEVATION=957.93

LEGEND:

	FOUND	SET
SECTION CORNER AS NOTED	▲	△
1/2" REBAR, YELLOW CAP #16747 (UNLESS OTHERWISE NOTED)	●	○
PLATTED BEARING & DISTANCE	P	
MEASURED BEARING & DISTANCE	M	
RECORDED BEARING & DISTANCE	R	
DEEDED BEARING & DISTANCE	D	
MINIMUM PROTECTION ELEVATION	MPE	
MINIMUM BASEMENT FLOOR ELEVATION	MBFE	
PUBLIC UTILITY EASEMENT	P.U.E.	
CENTERLINE		
SECTION LINE		
EASEMENT LINE		

I HEREBY CERTIFY THAT THIS LAND SURVEYING DOCUMENT WAS PREPARED AND THE RELATED SURVEY WORK WAS PERFORMED 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.

MICHAEL D. LEE, PLS — DATE 11-5-13

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2014
PAGES OR SHEETS COVERED BY THIS SEAL
THIS SHEETS ONE, TWO AND THREE

REVISIONS	DATE
3rd Revision	11/04/13
2nd Revision	06/25/13
1st Revision	06/12/13

3405 SE CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PH: (515) 369-4400 Fax: (515) 369-4410
ENGINEER: — TECH: —
CIVIL DESIGN ADVANTAGE
GRIMES, IOWA

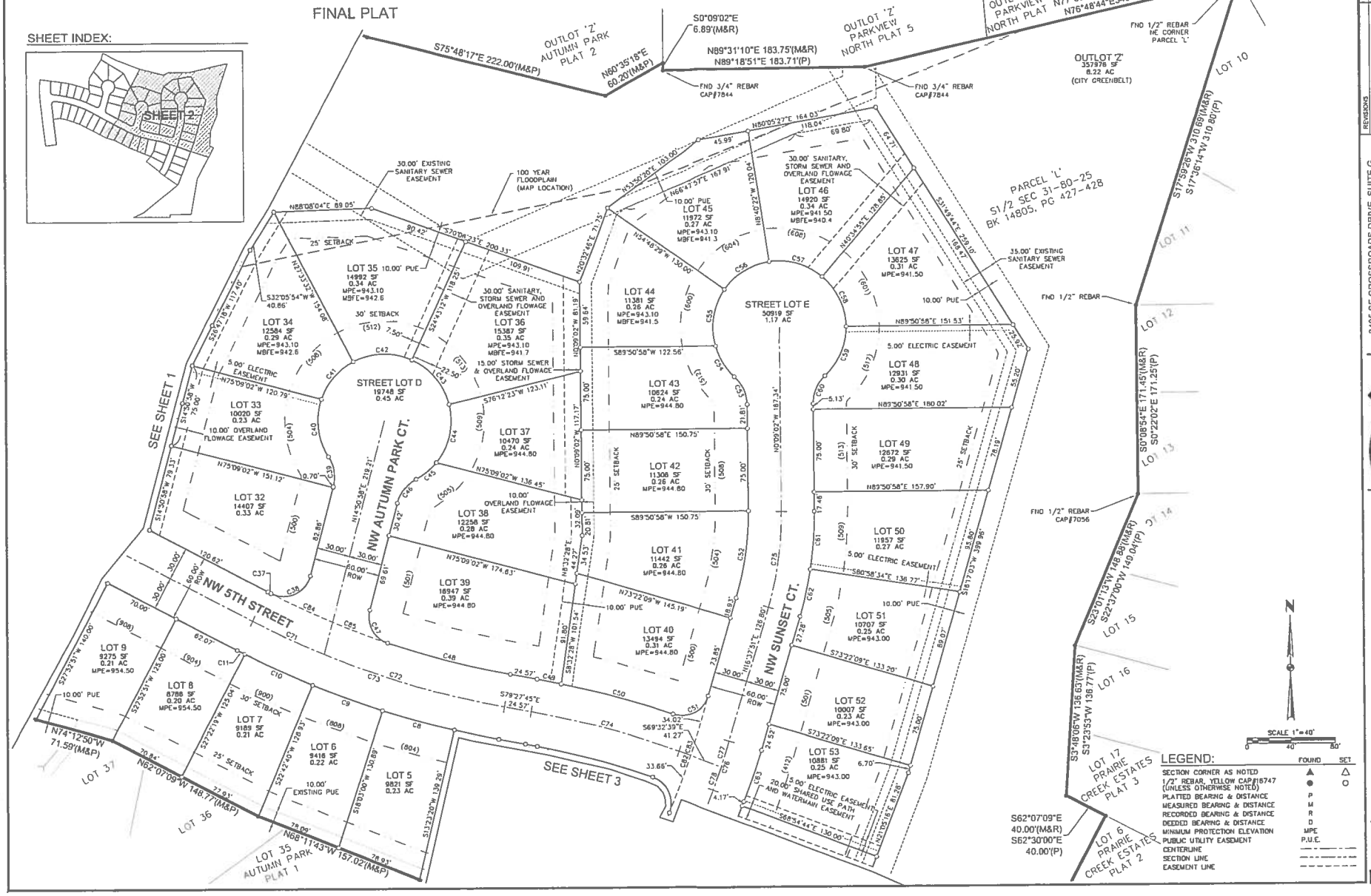
AUTUMN PARK PLAT 3
FINAL PLAT

1/3
1302066

AUTUMN PARK PLAT 3

FINAL PLAT

SHEET INDEX:



REVISIONS	DATE
3rd Revision	7/14/13
2nd Revision	08/19/13
1st Revision	09/12/13

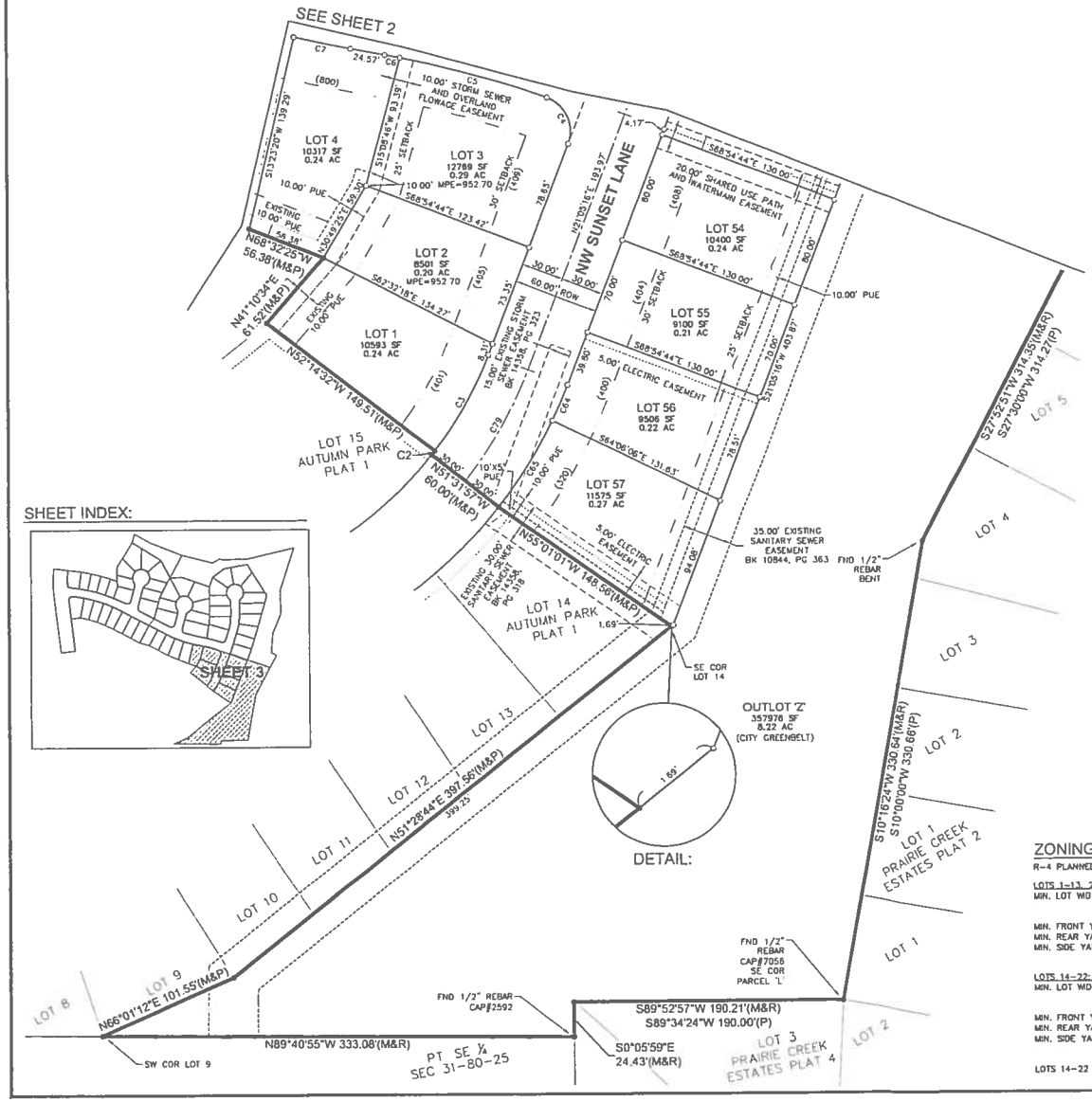
3405 SE CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PH: (515) 369-4400 Fax: (515) 369-4410
ENGINEER: --- TECH: ---
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 3
FINAL PLAT
GRIMES, IOWA

1302066

AUTUMN PARK PLAT 3

FINAL PLAT



SHEET INDEX:

CURVE DATA:

CURVE	DELTA	RADIUS	LENGTH	BEARING	CHORD	CURVE	DELTA	RADIUS	LENGTH	BEARING	CHORD
(M&R)C1	13°20'17"	850.00'	197.87'	N01°15'51"W	197.43'	C46	47°14'19"	34.50'	28.44'	S38°26'07"W	27.65'
(M&R)C2	0°42'35"	270.00'	3.34'	N38°06'45"E	3.34'	C47	85°45'53"	25.00'	37.42'	S28°01'58"E	34.02'
C3	16°40'12"	270.00'	78.56'	N29°25'22"E	78.28'	C48	8°32'51"	770.00'	114.87'	S75°11'20"E	114.78'
C4	91°42'14"	25.00'	40.01'	N24°45'51"W	35.88'	C49	1°32'34"	830.00'	22.35'	S78°41'28"E	22.35'
C5	8°02'02"	770.00'	107.97'	N74°37'59"W	107.88'	C50	7°14'06"	830.00'	104.81'	S74°18'08"E	104.74'
C6	0°48'45"	770.00'	10.92'	N79°03'23"W	10.92'	C51	92°41'04"	25.00'	40.44'	N62°58'23"E	36.17'
C7	2°49'55"	830.00'	41.03'	N78°02'48"W	41.02'	C52	16°56'48"	270.00'	79.86'	N8°09'30"E	79.57'
C8	4°39'38"	830.00'	67.52'	N74°18'01"W	67.50'	C53	47°14'19"	34.50'	28.44'	N23°46'11"W	27.65'
C9	4°39'39"	830.00'	67.52'	N69°38'22"W	67.50'	C54	31°21'01"	60.50'	33.10'	N31°42'50"W	32.69'
C10	4°39'39"	830.00'	67.52'	N64°58'43"W	67.50'	C55	51°13'50"	60.50'	54.10'	N9°34'36"E	52.31'
C11	0°31'44"	830.00'	7.66'	N62°23'01"W	7.66'	C56	46°08'07"	60.50'	48.72'	N58°15'34"E	47.41'
C12	4°15'08"	970.00'	71.99'	N64°14'43"W	71.97'	C57	49°15'17"	60.50'	52.01'	S74°02'43"E	50.42'
C13	4°10'58"	970.00'	70.81'	N68°27'46"W	70.80'	C58	49°09'21"	60.50'	51.90'	S24°50'24"E	50.33'
C14	4°10'58"	970.00'	70.81'	N72°38'44"W	70.80'	C59	47°21'00"	60.50'	50.00'	S23°24'47"W	48.59'
C15	4°10'58"	970.00'	70.81'	N76°49'41"W	70.80'	C60	47°14'19"	34.50'	28.44'	S23°26'07"W	27.65'
C16	3°23'22"	970.00'	57.38'	N80°36'51"W	57.37'	C61	9°10'28"	330.00'	52.84'	S4°26'12"W	52.78'
C17	104°37'28"	25.00'	45.65'	S45°22'44"W	39.57'	C62	7°36'25"	330.00'	43.81'	S12°49'39"W	43.78'
C18	7°35'15"	750.00'	99.32'	S2°38'39"W	99.25'	C63	4°27'25"	630.00'	49.01'	S18°51'34"W	48.99'
C19	81°07'34"	25.00'	35.40'	S41°44'45"E	32.51'	C64	4°48'38"	330.00'	27.71'	S23°29'35"W	27.70'
C20	0°41'45"	1030.00'	12.51'	S81°57'40"E	12.51'	C65	12°34'09"	330.00'	72.39'	S32°10'59"W	72.25'
C21	3°30'44"	1030.00'	63.14'	S79°51'25"E	63.13'	C66	13°20'17"	800.00'	186.23'	N0°15'51"W	185.81'
C22	3°30'44"	1030.00'	63.14'	S76°20'41"E	63.13'	C67	11°06'36"	800.00'	155.12'	N0°50'59"E	154.88'
C23	3°30'44"	1030.00'	63.14'	S72°49'56"E	63.13'	C68	2°13'41"	800.00'	31.11'	N5°49'09"W	31.11'
C24	3°30'44"	1030.00'	63.14'	S69°19'12"E	63.13'	C69	7°57'03"	350.00'	48.57'	S86°17'03"E	48.53'
C25	5°19'19"	1030.00'	95.67'	S64°54'10"E	95.64'	C70	20°11'23"	1000.00'	352.38'	S72°12'50"E	350.56'
C26	102°54'32"	25.00'	44.90'	N66°18'14"E	39.11'	C71	5°07'36"	800.00'	71.58'	S84°40'57"E	71.56'
C27	47°14'19"	34.50'	28.44'	N8°46'11"W	27.65'	C72	12°13'00"	800.00'	170.58'	S73°21'15"E	170.25'
C28	24°08'00"	60.50'	25.48'	N20°19'21"W	25.29'	C73	17°20'36"	800.00'	242.16'	S70°47'27"E	241.24'
C29	54°05'40"	60.50'	57.12'	N16°47'29"E	55.02'	C74	9°55'06"	800.00'	138.49'	S74°30'12"E	138.31'
C30	45°00'53"	60.50'	47.53'	N68°20'46"E	46.32'	C75	18°46'53"	300.00'	87.87'	N8°14'25"E	87.55'
C31	48°44'45"	60.50'	51.47'	S64°46'25"E	49.93'	C76	4°27'25"	600.00'	46.67'	N16°51'34"E	46.66'
C32	43°53'40"	60.50'	46.35'	S18°27'13"E	45.22'	C77	2°20'53"	600.00'	24.59'	N17°48'18"E	24.59'
C33	58°35'40"	60.50'	61.87'	S32°47'27"W	59.21'	C78	2°06'32"	600.00'	22.08'	N20°02'00"E	22.08'
C34	36°06'27"	34.50'	21.74'	S44°02'03"W	21.38'	C79	17°22'47"	300.00'	91.00'	N29°46'39"E	90.65'
C35	11°07'52"	34.50'	6.70'	S20°24'54"W	6.69'	C80	1°45'42"	750.00'	23.06'	N6°03'09"W	23.06'
C36	78°58'07"	25.00'	33.58'	S23°38'05"E	31.11'	C81	3°59'19"	750.00'	52.21'	N3°10'38"W	52.20'
C37	0°14'03"	770.00'	3.15'	S62°14'10"E	3.15'	C82	2°11'12"	570.00'	21.75'	N19°59'40"E	21.75'
C38	102°47'51"	25.00'	44.85'	N86°14'53"E	39.08'	C83	2°16'13"	570.00'	22.58'	N17°45'58"E	22.58'
C39	47°14'19"	34.50'	28.44'	N8°46'11"W	27.65'	C84	4°34'57"	770.00'	61.59'	S84°38'40"E	61.57'
C40	51°33'08"	60.50'	54.44'	N6°36'47"W	52.62'	C85	3°58'46"	770.00'	53.48'	S88°55'32"E	53.47'
C41	43°16'41"	60.50'	45.70'	N40°48'08"E	44.62'	C86	0°07'21"	1030.00'	2.20'	S62°10'49"E	2.20'
C42	52°16'44"	60.50'	55.20'	N88°34'50"E	53.31'						
C43	51°29'11"	60.50'	54.37'	S39°32'12"E	52.56'						
C44	53°13'19"	60.50'	56.20'	S12°49'03"W	54.20'						
C45	22°39'34"	60.50'	23.93'	S50°45'30"W	23.77'						

ZONING

R-4 PLANNED RESIDENTIAL DEVELOPMENT DISTRICT

LOTS 1-13, 23-57: R2-70 UNDERLYING ZONING

MIN. LOT WIDTH = 70' WITH NO RESTRICTION ON THE NUMBER OF LOTS ABOVE 75' IN WIDTH.
MIN. FRONT YARD = 30'
MIN. REAR YARD = 25'
MIN. SIDE YARD = 1-1/2 STORY 7'/14' TOTAL
2 STORY 7'/15' TOTAL

LOTS 14-22: R2-60 UNDERLYING ZONING

MIN. LOT WIDTH = 60' WITH NO RESTRICTION ON THE NUMBER OF LOTS ABOVE 65' IN WIDTH.
MIN. FRONT YARD = 30'
MIN. REAR YARD = 25'
MIN. SIDE YARD = 1-1/2 STORY 7'/14' TOTAL
2 STORY 7'/15' TOTAL

LOTS 14-22 MIN. 65' WIDE

N

SCALE 1"=40'
0 40' 80'

LEGEND:

	FOUND	SET
SECTION CORNER AS NOTED	▲	△
1/2" REBAR, YELLOW CAP#16747 (UNLESS OTHERWISE NOTED)	●	○
PLATTED BEARING & DISTANCE	P	
MEASURED BEARING & DISTANCE	M	
RECORDED BEARING & DISTANCE	R	
DEEDED BEARING & DISTANCE	D	
MINIMUM PROTECTION ELEVATION	MPE	
PUBLIC UTILITY EASEMENT	P.U.E.	
CENTERLINE		
SECTION LINE		
EASEMENT LINE		

DATE	REVISIONS
11/14/13	3rd Revision
06/28/13	2nd Revision
06/12/13	1st Revision

3405 SE CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PH: (515) 369-4400 Fax: (515) 369-4410
ENGINEER: — TECH: —
CIVIL DESIGN ADVANTAGE

AUTUMN PARK PLAT 3
FINAL PLAT
GRIMES, IOWA

3/3

1302066

FOX engineering

Aspen Business Park | 414 South 17th Street, Suite 107 | Ames, Iowa 50010

December 9, 2013

Mr. Scott Clyce, Building Inspector
City of Grimes
101 NE Harvey St.
Grimes, IA 50111

RE: Beaverbrook West Plat 8 drainage swales
PROJECT # 8630-98D.708

Mr. Clyce,

Because this plat is "crowded" with many infrastructure items home builders should be made aware of the following information is being presented to assist you, and homebuilders, in meeting the intent of the grading plan and keeping structures uncovered.

Some of this information is excerpted from the developer's punchlist.

The attached plan sheets (C2.4 – Grading & C7.1 – details) from the approved construction drawings show how the site is to be graded. The below information is from those plan sheets and has had street address information added to assist with locating the swales and overflow spillways.

An item that might easily get overlooked is how the sidewalk needs to be graded at the overflow sites.

Something to be especially aware of is the 20-foot wide drainage swale along the north side of lot 123. This could make it rather difficult for the homebuilder to "site" the house within the lot.

Lot 13 will be similar to lot 123 in that the 8-foot wide drainage swale runs along the side (east) of the lot and may create a problem for "siting" the house.

Items 3, 4 & 5 are listed as items to look for at the final walk-through to make certain they are at finished grade and haven't been disturbed.

An unusual aspect of this plat is how lots 89, 90 & 91 are currently designated as a detention pond and will need to be brought up to grade with structural fill before they can be built on. There are four (4) restrictor plates inside the storm water structure that need to be removed when the lots are ready for building.

Another unusual situation is the storm sewer service to lots 9 & 10. Both services come in from the side of the lot off the trail.

Street Names – please note that NW 18th Circle, on the construction plans, is officially NW Charlotte Court (spelling on filed final plat).

As a suggestion, it might be helpful to provide a copy of this information to homebuilders when a building permit is requested. To that end, feel free to contact me for additional copies.

1. Stormwater emergency overflow spillway(s), please grade to the appropriate details on plan sheets C2.4 & C7.1:
    a. Pond in lot 98 (***1613 Prairie Creek Dr.***) – ***10-foot*** *bottom width, side slope* ***4:1****, elevation* ***933.70*** *– SE corner of lot* ***overflows trail*** *onto NW Beaverbrooke Blvd.*
    b. Pond (offsite) is now in lot 23 (***1509 Prairie Creek Dr.***) of Plat 9– ***16-foot*** *bottom width, side slope* ***4:1****, elevation* ***935.01*** *– NE corner* ***overflows sidewalk*** *onto NW Beaverbrooke Blvd.*
    c. Beaverbrooke Blvd @ intersection with N. James Street - ***85-foot*** *bottom width, side slope* ***4:1****, elevation* ***918.00.***
    d. Overflow #1 in lot 88 (***1800 Sunset Lane***) – ***20-foot*** *bottom width, side slope* ***3:1****, elevation* ***942.20*** *– along the back side (west) of the lot, flows north in the drainage swale.*
    e. Overflow #2 in lot 67 (***801 Charlotte Ct.***) – ***8-foot*** *bottom width, elevation* ***941.00*** *- along the back side (south) of the lot, flows east in the drainage swale.*
    f. Overflow #3 in between lots 84 & 85 (***1904 & 1900 Sunset Lane***, respectively) – ***14-foot*** *bottom width, side slope* ***3:1****, elevation* ***940.00*** *- flows from drainage swale in the back (west) of the lots, easterly between the house lots to* ***overflow the sidewalk*** *onto Sunset Lane.*
    g. Overflow #4 in between lots 83 & 84 (***1908 & 1904 Sunset Lane***, respectively) – ***8-foot*** *bottom width, side slope* ***3:1****, elevation* ***940.00*** *- flows from drainage swale in the back (west) of the lots, easterly, between the house lots to* ***overflow the sidewalk*** *onto Sunset Lane.*
    h. Overflow #5 in lot 123 (***2013 Sunset Lane***) – ***20-foot*** *bottom width, side slope* ***3:1****, elevation* ***930.00*** *- overflows Sunset Lane to flow east,* ***over the sidewalk****, along the north side of the lot to empty into the pond.*
    i. Overflow #6 in lot 14 (***2109 Prairie Creek Dr.***) – ***8-foot*** *bottom width, side slope* ***3:1****, elevation* ***923.25*** *- overflows the area intake at the back (east) of the lot, flowing north,* ***over the sidewalk,*** *onto Gabus Drive.*
    j. Overflow #7 in lot 13 (***2219 Gabus Dr.***) – ***8-foot*** *bottom width, side slope* ***3:1****, elevation* ***921.50*** *- overtops Gabus Drive to flow north,* ***over the sidewalk****, along the east side of the lot to the creek.*
    k. Overflow #8 in lot 103 (***1717 Prairie Creek Dr.***) – ***8-foot*** *bottom width, side slope* ***3:1****, elevation* ***933.00*** *– overflows the area intake at the back (east) of the lot, flowing north,* ***over the sidewalk,*** *onto NW 18th St.*
    l. Overflow #9 in lot 47 (**2108 Harvest Dr.**) – ***8-foot*** *bottom width, side slope* ***3:1****, elevation* ***936.50*** *- overflows from the drainage swale in the back of the lot (west) northerly, to* ***overflow the sidewalk,*** *onto NW Gabus Drive.*

2. Stormwater flowage easement swale(s), please grade in accordance with details on plan sheets C2.4 & C7.1:
    a. Lots 21-25, **Prairie Ck. Dr.**, east side – ***5-foot*** *bottom width, side slope* ***4:1****, minimum longitudinal slope is* ***2.0%****.*
    b. Lots 47-56, **Harvest Dr.**, west side – ***5-foot*** *bottom width, side slope* ***4:1****, minimum longitudinal slope is* ***1.3%****.*
    c. Lots 89-92, **Sunset Ln.**, west side – ***5-foot*** *bottom width, side slope* ***4:1****, minimum longitudinal slope is* ***2.0%****.*
    d. Lots 100-102, **Prairie Ck. Dr.**, east side – ***10-foot*** *bottom width, side slope* ***4:1****, minimum longitudinal slope is* ***2.0%****.*
    e. Lots 109-120, **Sunset Ln.**, east side – ***5-foot*** *bottom width, side slope* ***4:1****, minimum longitudinal slope is* ***2.0%****.*
    f. Lots 127-129, **Sunset Ln.**, north side – ***5-foot*** *bottom width, side slope* ***4:1****, minimum longitudinal slope is* ***2.0%****.*
3. Sanitary sewer, please raise casting to finish grade, center over the opening and attach to the structure:
    a. Lot 67 - ***801*** *NW* ***Charlotte Court*** (near back of curb)
    b. Lot 33 - ***2004*** *NW* ***Prairie Creek Dr.*** (NW corner-adjacent to trail) #1107
4. Storm sewer casting, please adjust to finish grade, center over the opening and attach to the structure.
    a. Existing casting in lot 103 (***1717*** *NW* ***Prairie Creek Dr.***)
    b. Existing intake in lot 103 (elev. 932.00)
5. Storm sewer subdrain clean-out structure, please trim pipe to grade, install cap, casting and pour PCC collar in accordance with the detail on plan sheet C7.1:
    a. Lot 12 (***2223*** *NW* ***Gabus Dr.***)
    b. Lot 83 *(**1908** NW **Sunset Lane**)*
    c. Lot 119 (***1909*** *NW* ***Sunset Lane***)
    d. Lot 78 *(**2012** NW **Sunset Lane**)*
    e. Lot 126 (***2101*** *NW* ***Sunset Lane***)
    f. Lot 103 (***1717*** *NW* ***Prairie Creek Dr.***)
    g. Lot 25 (***1801*** *NW* ***Prairie Creek Dr.***)
    h. Lot 26 (***1720*** *NW* ***Prairie Creek Dr.***)
    i. Lot 46 *(**2332** NW **Gabus Dr.**)*
    j. Lot 47 *(**2108** NW **Harvest Dr.**)*

Here is a list, address/lot#, of storm water items that each homebuilder could review:

lot 1 (***2405** NW **Gabus Dr.***)

- Storm sewer casting (behind the curb intake) in SW corner of the lot.

lot 2 (***2401** NW **Gabus Dr.***)

- storm sewer casting in the SE corner of the lot, between back of curb and sidewalk and adjacent to the ADA ramp.

lot 9 (***2309** NW **Gabus Dr.***)

- storm sewer service – comes into the lot from the east side (connection to the system is beneath the trail).

lot 10 (***2305** NW **Gabus Dr.***)

- storm sewer service – comes into the lot from the west side (connection to the system is beneath the trail).

lot 12 (***2223** NW **Gabus Dr.***)

- clean-out casting (subdrain) in SW corner of lot, between back of curb and sidewalk.

lot 13 (***2219** NW **Gabus Dr.***)

- overflow/drainage easement – ***8-foot** bottom width, side slope **3:1**, elevation **921.50** - overtops Gabus Drive to flow north, **over the sidewalk**, along east side of lot to the creek.*

lot 14 (***2109** NW **Prairie Creek Dr.***)

- overflow/drainage easement – ***8-foot** bottom width, side slope **3:1**, elevation **923.25** - overflows the area intake at the back (east) of the lot, flowing north, **over the sidewalk,** onto Gabus Drive.*
- area intake in NE corner of lot.

lot 16 (***2101** NW **Prairie Creek Dr.***)

- area intake in back (east) of the lot.

lot 18 (***2009** NW **Prairie Creek Dr.***)

- area intake in back (east) of the lot.

lot 19 (***2005** NW **Prairie Creek Dr.***)

- area intake in back (east) of the lot.

lot 20 (***2001** NW **Prairie Creek Dr.***)

- area intake in back (east) of the lot.

lot 21 ***(1913** NW **Prairie Creek Dr.)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%.***
- area intake in back (east) of the lot.

lot 22 ***(1909** NW **Prairie Creek Dr.)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%.***

lot 23 ***(1905** NW **Prairie Creek Dr.)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%.***

lot 24 ***(1901** NW **Prairie Creek Dr.)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%.***

lot 25 (***1801** NW **Prairie Creek Dr.***)

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%.***
- clean-out casting (subdrain) in SW corner of lot between back of curb and sidewalk.

lot 26 (***1720** NW **Prairie Creek Dr.***)

- clean-out casting (subdrain) in SE corner of lot between back of curb and sidewalk.
- storm sewer casting (behind the curb intake) in the SE corner of the lot.

lot 27 (***1800** NW **Prairie Creek Dr.***)

- storm sewer casting (between back of curb and sidewalk) in SE corner of the lot.

lots 29 & 30 (***1900 & 1904** NW **Prairie Creek Dr.***, respectively)

- storm sewer casting (behind the curb intake) at the common property line.

lot 33 (***2004** NW **Prairie Creek Dr.***)

- sanitary sewer manhole in the NW corner of lot, adjacent to the trail.
- storm sewer casting (behind the curb intake) in the NE corner of the lot.

lots 36 & 37 (***2100 & 2104** NW **Prairie Creek Dr.***, respectively)

- storm sewer casting between sidewalk and back of curb (at common property line).

lot 38 (***2108 NW Prairie Creek Dr.***)

- storm sewer manhole casting (back of curb) – NE corner of lot there are two (2) castings [east curb intake & north curb intake].

lot 46 ***(2332** NW **Gabus Dr.)***

- clean-out casting (subdrain), between back of curb and sidewalk, SW corner of lot.
- storm sewer casting (behind the curb intake) in the NW corner of the lot.

lot 47 ***(2108** NW **Harvest Dr.)***

- overflow/drainage easement – ***8-foot** bottom width, side slope **3:1**, elevation **936.50** - overflows from drainage swale in back of lot (west) northerly, to **overflow the sidewalk,** onto Gabus Drive.*
- clean-out casting (subdrain), between back of curb and sidewalk, in the SE corner of the lot.
- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 48 ***(2104** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 49 ***(2100** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 50 ***(2012** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 51 ***(2008** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 52 ***(2004** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 53 ***(2000** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 54 ***(1912** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 55 ***(1908** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 56 ***(1904** NW **Harvest Dr.)***

- overland flowage easement/swale, west side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **1.3%.***

lot 59 ***(1808** NW **Harvest Dr.)***

- clean-out casting (subdrain), between back of curb and sidewalk, in SE corner of lot.

lot 60 ***(1809** NW **Harvest Dr.)***

- clean-out casting (subdrain), between back of curb and sidewalk, in SW corner of lot.
- storm sewer casting (between back of curb and sidewalk) in SW corner of lot.

lot 63 ***(1905** NW **Harvest Dr.)***

- storm sewer casting (behind the curb intake) in NW corner of lot.

lot 64 (***808** NW **Charlotte Court***)

- storm sewer area intake, in back (west) of lot.

lot 65 (***804** NW **Charlotte Court***)

- storm sewer area intake (1 of 2), in back (west) of lot.
- storm sewer area intake (2 of 2), in back (SW) of lot.

lot 66 (***800** NW **Charlotte Court***)

- storm sewer area intake, in back (south) of lot.

lot 67 (***801** NW **Charlotte Court***)

- overflow/drainage easement – ***8-foot** bottom width, elevation **941.00** - along back side (south) of lot, flows east in the drainage swale.*
- sanitary sewer manhole casting (near back of curb) in NE corner of lot.
- storm sewer area intake, in back (SW) of lot.

lot 68 (***805** NW **Charlotte Court***)

- storm sewer manhole casting (near back of curb) in NW corner of lot.

lot 74 ***(2001** NW **Harvest Dr.)***

- storm sewer casting (behind the curb intake) in SW corner of lot.

lot 76 ***(2009** NW **Harvest Dr.)***

- storm sewer casting (behind the curb intake) in NW corner of.

lot 78 ***(2012** NW **Sunset Lane)***

- clean-out casting (subdrain), between back of curb and sidewalk, in NW corner of lot.

lot 83 ***(1908** NW **Sunset Lane)***

- overflow/drainage easement – ***8-foot** bottom width, side slope **3:1**, elevation **940.00** - flows from drainage swale in back (west) of lots, easterly between house lots to **overflow the sidewalk** onto Sunset Lane.*
- clean-out casting (subdrain), between back of curb and sidewalk, in NE corner of lot.

lots 83 & 84 (***1908 & 1904*** *NW* ***Sunset Lane***, respectively)

- overflow/drainage easement – ***8-foot*** *bottom width, side slope* ***3:1****, elevation* ***940.00*** *- flows from drainage swale in back (west) of lots, easterly between the house lots to* ***overflow the sidewalk*** *onto Sunset Lane.*

lots 84 & 85 (***1904 & 1900*** *NW* ***Sunset Lane***, respectively)

- overflow/drainage easement – ***14-foot*** *bottom width, side slope* ***3:1****, elevation* ***940.00*** *- flows from drainage swale in back (west) of lots, easterly between the house lots to* ***overflow the sidewalk*** *onto Sunset Lane.*
- storm sewer area intake, in back (east) of lot.

lot 86 *(****1808*** *NW* ***Sunset Lane****)*

- storm sewer area intake, in back (east) of lot.

lot 88 (***1800*** *NW* ***Sunset Lane***)

- overflow/drainage easement – ***20-foot*** *bottom width, side slope* ***3:1****, elevation* ***942.20*** *– along the back side (west) of the lot, flows north in the drainage swale.*

lot 89 (***1716*** *NW* ***Sunset Lane***)

- overland flowage easement/swale, west side – ***5-foot*** *bottom width, side slope* ***4:1****, min. longitudinal slope is* ***2.0%****.*
- this is currently a temporary sediment basin, it will require: a) structural fill, b) removal of restrictor plates (4) in storm water structure & c) plugging holes from skimmer pipes.

lot 90 (***1712*** *NW* ***Sunset Lane***)

- overland flowage easement/swale, west side – ***5-foot*** *bottom width, side slope* ***4:1****, min. longitudinal slope is* ***2.0%****.*
- this is currently a temporary sediment basin, it will require: a) structural fill, b) removal of restrictor plates (4) in storm water structure & c) plugging holes from skimmer pipes.

lot 91 (***1708*** *NW* ***Sunset Lane***)

- overland flowage easement/swale, west side – ***5-foot*** *bottom width, side slope* ***4:1****, min. longitudinal slope is* ***2.0%****.*
- this is currently a temporary sediment basin, it will require: a) structural fill, b) removal of restrictor plates (4) in storm water structure & c) plugging holes from skimmer pipes.

lot 92 (**1704** NW **Sunset Lane**)

- overland flowage easement/swale, west side – ***5-foot*** *bottom width, side slope* ***4:1****, min. longitudinal slope is* ***2.0%****.*

lot 95 (***1601*** *NW* ***Prairie Creek Dr.***)

- storm sewer casting (behind curb intake) in SW corner of lot.

lot 98 (***1613** NW **Prairie Creek Dr.***)

- overflow/drainage easement – ***10-foot** bottom width, side slope **4:1**, elevation **933.70** – SE corner of lot **overflows trail** onto NW Beaverbrooke Blvd.*

lot 100 *(**1705** NW **Prairie Creek Dr.**)*

- overland flowage easement/swale, east side – ***10-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 101 *(**1709** NW **Prairie Creek Dr.**)*

- overland flowage easement/swale, east side – ***10-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 102 *(**1713** NW **Prairie Creek Dr.**)*

- overland flowage easement/swale, east side – ***10-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 103 (***1717** NW **Prairie Creek Dr.***)

- overflow/drainage easement – ***8-foot** bottom width, side slope **3:1**, elevation **933.00** – overflows area intake at back (east) of lot, flowing north, **over the sidewalk,** onto NW 18th St*
- clean-out casting (subdrain), between back of curb and sidewalk, in NW corner of lot.
- storm sewer casting, 1 of 2 existing, in NE corner of lot.
- storm sewer casting, 2 of 2 existing, in NE corner of lot.

lot 108 *(**1700** NW **Prairie Creek Dr.**)*

- storm sewer casting (between back of curb and sidewalk) in East side of lot.
- storm sewer casting (between back of curb and sidewalk) in South side of lot.

lot 109 *(**1701** NW **Sunset Lane**)*

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*
- storm sewer casting (behind curb intake) in SW corner of lot.
- storm sewer casting (between back of curb & sidewalk) in SW corner [west side] of lot.

lot 110 *(**1705** NW **Sunset Lane**)*

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 111 *(**1709** NW **Sunset Lane**)*

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 112 *(**1713** NW **Sunset Lane**)*

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 113 ***(1801** NW **Sunset Lane)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*
- storm sewer casting (behind the curb intake) in NW corner of lot.

lot 114 ***(1805** NW **Sunset Lane)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 115 ***(1809** NW **Sunset Lane)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 116 ***(1813** NW **Sunset Lane)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 117 ***(1901** NW **Sunset Lane)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 118 ***(1905** NW **Sunset Lane)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 119 (***1909** NW **Sunset Lane***)

- clean-out casting (subdrain), between back of curb and sidewalk, in NW corner of lot.
- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 120 ***(2001** NW **Sunset Lane)***

- overland flowage easement/swale, east side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*
- storm sewer structure in NE corner of lot.

lot 121 ***(2005** NW **Sunset Lane)***

- storm sewer structure in SW corner of lot (between back of curb and sidewalk and adjacent to trail).

lot 123 (***2013** NW **Sunset Lane***)

- overflow/drainage easement – ***20-foot** bottom width, side slope **3:1**, elevation **930.00** - overflows Sunset Lane to flow east, **over the sidewalk**, along north side of lot to empty into the pond.*
- storm sewer casting (behind the curb intake) in SW corner of lot.

lot 126 (***2101** NW **Sunset Lane***)

- clean-out casting (subdrain), between back of curb and sidewalk, in SW corner of lot.

lot 127 ***(2105** NW **Sunset Lane)***

- overland flowage easement/swale, north side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

lot 128 ***(2109** NW **Sunset Lane)***

- overland flowage easement/swale, north side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

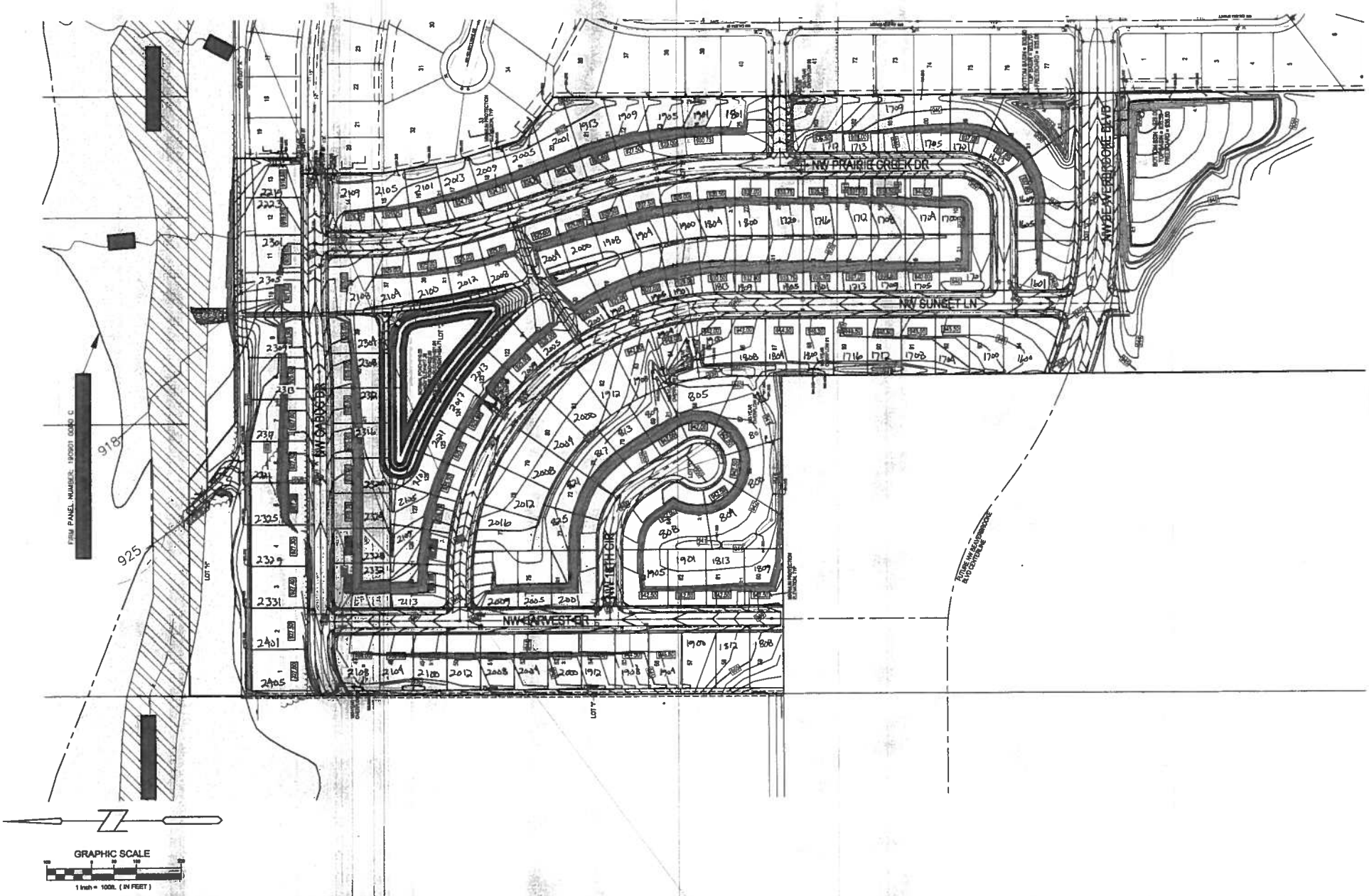
lot 129 ***(2113** NW **Sunset Lane)***

- overland flowage easement/swale, north side – ***5-foot** bottom width, side slope **4:1**, minimum longitudinal slope is **2.0%**.*

Sincerely,
FOX Engineering Associates, Inc.

Brandt Williamson

K:\Iproj\8000\8630-98D Beaverbrooke West Plat 9/708 Observation/homebuilder info/2013 12 09 letter to Scott Clyce-swales(a).doc

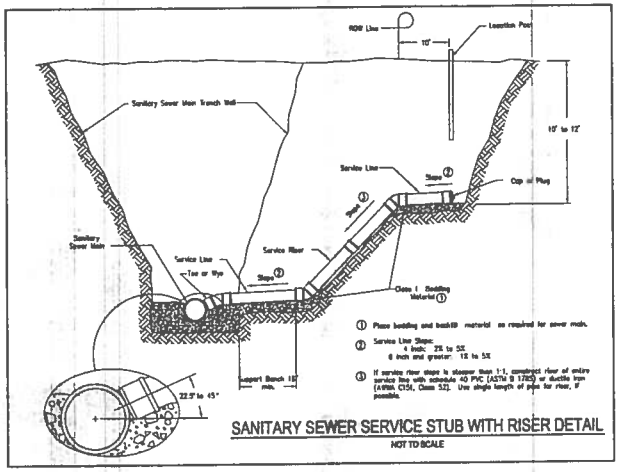


Bishop Engineering
"Planning Your Successful Development"
3501 104th Street

BEAVERBROOKE WEST PLAT 8
GRIMES, IA

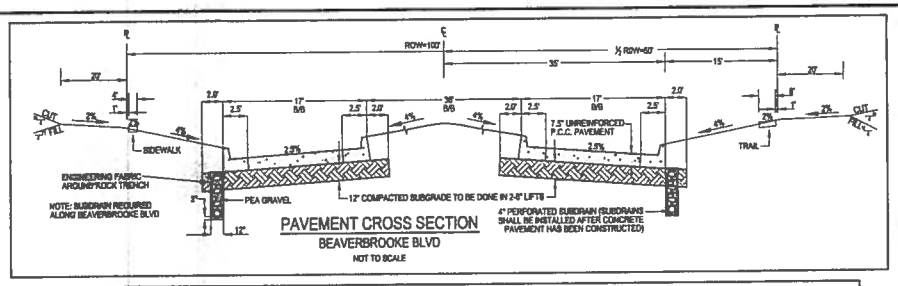
REFERENCE NUMBER	030001 040577 070084
DRAWN BY:	JMR
CHECKED BY:	DB
REVISION DATE:	2-7-13 2ND C 3-4-13 3RD C 3-15-13 FINAL
PROJECT NUMBER:	12006
SHEET NUMBER:	C2.4

N:\Land projects 2012\12006E\dwg\C2 GRADING.dwg 3/15/2013 2:25:03 PM CDT



SANITARY SEWER SERVICE STUB WITH RISER DETAIL

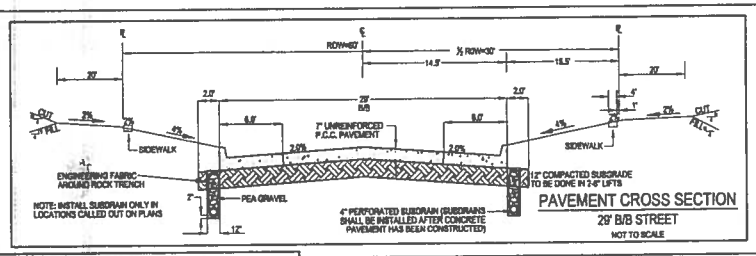
NOT TO SCALE



PAVEMENT CROSS SECTION

BEAVERBROOKE BLVD

NOT TO SCALE

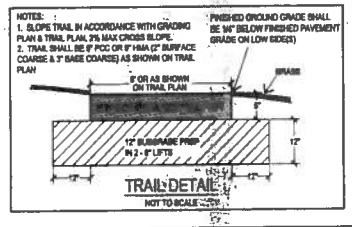


PAVEMENT CROSS SECTION

29' B/B STREET

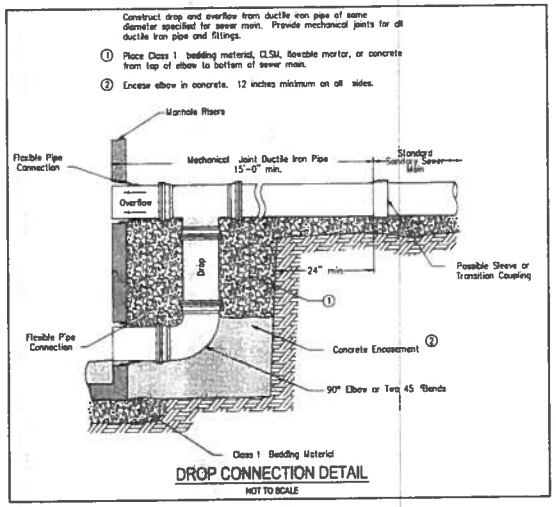
NOT TO SCALE

NOTES:
1. SLOPE TRAIL IN ACCORDANCE WITH GRADING PLAN & TRAIL PLAN, 3% MAX CROSS SLOPE.
2. TRAIL SHALL BE 8" PCC OR 8" HMA (2" SURFACE COARSE & 3" BASE COARSE) AS SHOWN ON TRAIL PLAN



TRAIL DETAIL

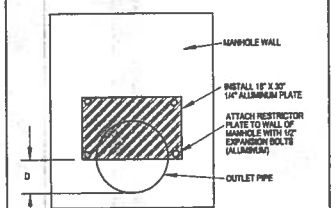
NOT TO SCALE



DROP CONNECTION DETAIL

NOT TO SCALE

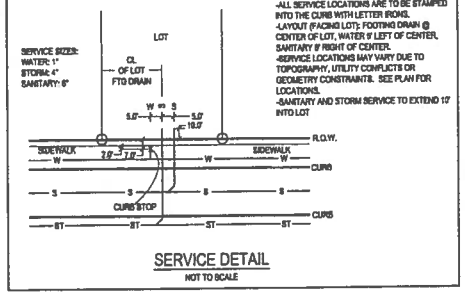
NOTE: RESTRICTOR PLATE SHALL BE INSTALLED SUCH THAT NO PIPES, OTHER THAN THE OUTLET PIPE, ARE OBSTRUCTED



DETENTION POND	STRUCTURE #	OUTLET PIPE SIZE	D (IN)
SOUTH	708	12"	3.5"
OFFSITE	854	24"	10"
BEAVERBROOKE	1200	30"	26.5"

RESTRICTOR PLATE DETAIL

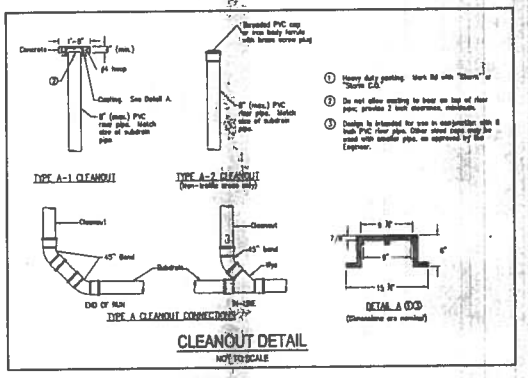
NOT TO SCALE



NOTES:
-ALL SERVICE LOCATIONS ARE TO BE STAMPED INTO THE CURB WITH LETTER IRONS.
-LAYOUT (FACING LOT): FOOTING DRAIN @ CENTER OF LOT, WATER 9' LEFT OF CENTER, SANITARY 9' RIGHT OF CENTER.
-SERVICE LOCATIONS MAY VARY DUE TO TOPOGRAPHY, UTILITY CONFLICTS OR GEOMETRY CONSTRAINTS. SEE PLAN FOR LOCATIONS.
-SANITARY AND STORM SERVICE TO EXTEND 10' INTO LOT

SERVICE DETAIL

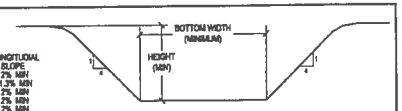
NOT TO SCALE



CLEANOUT DETAIL

NOT TO SCALE

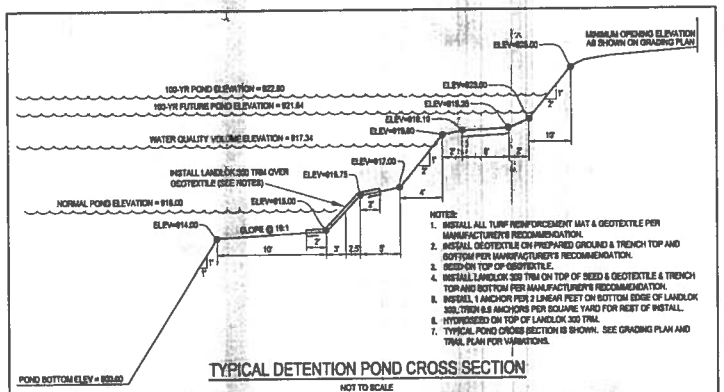
DITCH	BOTTOM WIDTH	HEIGHT	LONGITUDIAL SLOPE
LOTS 21-25	9'	0.5'	2% MIN
LOTS 47-68	9'	0.75'	1.3% MIN
LOT 80-82	9'	1'	2% MIN
LOTS 100-102	13'	0.5'	2% MIN
LOTS 109-120	9'	1'	2% MIN
LOTS 122-128	9'	1'	2% MIN
PHASE I OPPOSITE	43'	1'	2% MIN
PHASE I CUL-DE-SAC	10'	1'	1% MIN



DITCH CROSS SECTION

DRAINAGE DITCH DETAIL

NOT TO SCALE

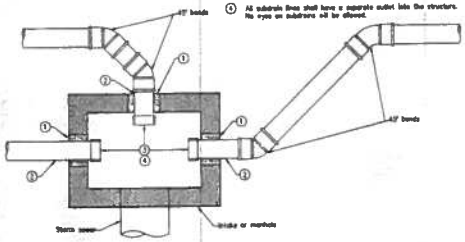


NOTES:
1. INSTALL ALL TURF REINFORCEMENT MAT & GEOTEXTILE PER MANUFACTURER'S RECOMMENDATION.
2. INSTALL GEOTEXTILE ON PREPARED GROUND & TRENCH TOP AND BOTTOM PER MANUFACTURER'S RECOMMENDATION.
3. SEED ON TOP OF GEOTEXTILE.
4. INSTALL LANDLOK 300 TRM ON TOP OF SEED & GEOTEXTILE & TRENCH TOP AND BOTTOM PER MANUFACTURER'S RECOMMENDATION.
5. INSTALL 1 ANCHOR PER 3 LINEAR FEET ON BOTTOM EDGE OF LANDLOK 300, TRIM 0.5 ANCHORS PER SQUARE YARD FOR REST OF INSTALL.
6. HYDROSEED ON TOP OF LANDLOK 300 TRM.
7. TYPICAL POND CROSS SECTION IS SHOWN. SEE GRADING PLAN AND TRAIL PLAN FOR VARIATIONS.

TYPICAL DETENTION POND CROSS SECTION

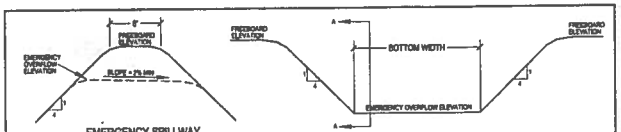
NOT TO SCALE

① Fill annular space with non-shrink grout.
② Outlets through intake walls to be CMP, corrugated, double-walled HDPE, or PVC.
③ Extend outlet pipe into structure as required to install removable radiant guard grate. Radiant guard grates complying with Iowa DOT std. 4-2.01 are required for pipes 9 inches and smaller.
④ All subdrain lines shall have a separate outlet into the structure. No wyes on subdrains will be allowed.



SUBDRAIN OUTLET TO STORM INTAKE DETAIL

NOT TO SCALE



EMERGENCY SPILLWAY SECTION A-A

EMERGENCY SPILLWAY CROSS SECTION

DETENTION POND	BOTTOM WIDTH	OVERFLOW ELEVATION	FREEBOARD ELEVATION
SOUTH	10'	933.70	935.00
OFFSITE	50'	936.00	938.00
BEAVERBROOKE	50'	918.00	919.00

POND EMERGENCY SPILLWAY DETAIL

NOT TO SCALE

EMERGENCY OVERFLOW	BOTTOM WIDTH	OVERFLOW ELEVATION	OVERFLOW HEIGHT	CHANNEL WIDTH	CHANNEL HEIGHT
#1	20'	942.00	1.0'	10'	1.0'
#2	8'	941.00	0.5'	6'	0.5'
#3	14'	940.00	2.0'	14'	1.0'
#4	8'	940.00	2.0'	8'	1.0'
#5	20'	930.00	2.0'	10'	1.0'
#6	8'	923.35	1.0'	6'	1.0'
#7	8'	921.50	2.0'	6'	1.0'
#8	8'	933.00	1.0'	6'	1.0'
#9	8'	938.50	1.0'	8'	1.0'

EMERGENCY SPILLWAY CROSS SECTION

EMERGENCY SPILLWAY DETAIL

NOT TO SCALE

Bishop Engineering
"Planning Your Successful Development"
3501 104th Street
Des Moines, Iowa 50322-3825

BEAVERBROOKE WEST PLAT 8
GRIMES, IA

REFERENCE NUMBER:
030001
040577
070084

DRAWN BY: JMR

CHECKED BY: DB

REVISION DATE:
2-7-13 2ND CT
3-4-13 3RD CT
3-18-13 FINAL

PROJECT NUMBER: 12006

SHEET NUMBER: C7.1

FOX engineering

Aspen Business Park | 414 South 17th Street, Suite 107 | Ames, Iowa 50010

December 6, 2013

Mr. Scott Clyce, Building Inspector
City of Grimes
101 NE Harvey St.
Grimes, IA 50111

RE: Beaverbrook West Plat 9 drainage swales
PROJECT # 8630-98D.709

Mr. Clyce,

As this plat will soon be released for home building the following information is being presented to assist homebuilders in meeting the intent of the grading plan.

This information is excerpted from the developer's punchlist.

The attached plan sheets (C2.1 – Grading & C6.1 – details) from the approved construction drawings show how the site is to be graded. The below information is from those plan sheets and has had street address information added to assist with locating the swales and overflow spillways.

An item the homebuilder might easily overlook is how the sidewalk needs to be graded at the overflow sites.

An unusual aspect of this site is how lots 58, 59 & 60 are currently designated as a detention pond and will need to be brought up to grade with structural fill before they can be built on. A storm water structure and 73 l.f. of 24-inch RCP will also need to be installed before the lots can be built on.

As a suggestion, it might be helpful to provide a copy of this information to homebuilders when a building permit is requested. To that end, feel free to contact me for additional copies.

1. Stormwater emergency overflow spillway(s), please grade to the appropriate details on plan sheets C2.1 & C6.1:
   a. Pond in lot 58 (**1512 NW Sunset Ln.**) – ***40-foot*** *bottom width, elevation* ***945.39*** – *NE corner of lot overflows sidewalk onto NW Beaverbrooke Blvd.*
   b. Pond in lot 23 (**1509 NW Prairie Creek Dr.**) – ***16-foot*** *bottom width, elevation* ***935.01*** – *NE corner overflows sidewalk onto NW Beaverbrooke Blvd.*
   c. Overflow #1 in lot 8 (**508 NW 11th St.**) – ***4-foot*** *bottom width, elevation* ***954.00*** – *along the east side of the lot, flows north to 11th St, over the sidewalk, from spillway in the middle of the lot.*
   d. Overflow #2 in between lots 69 & 70 (**1208 & 1204 Sunset Ln.**, respectively) – ***8-foot*** *bottom width, elevation* ***958.00*** *- flows from spillway, near the back of the lots, easterly, to the curb/sidewalk at Sunset Lane.*

e. Overflow #3 in lot 16 (**1305 NW Prairie Creek Dr.**) – ***4-foot*** *bottom width, elevation* ***940.00*** *– NE corner flows over the sidewalk onto NW 13th St.*

f. Overflow #4 in between lots 54 & 55 (**1409 & 1413 Sunset Ln.**, respectively) and lots 28 & 29 (**1416 & 1412 Prairie Creek Dr.**, respectively) – ***14-foot*** *bottom width, elevation* ***947.00*** *- overflows Sunset Lane to flow east between the 4 house lots to empty onto Prairie Creek Dr.*

g. Overflow #5 in between lots 20 & 21 (**1505 & 1501 Prairie Creek Dr.**, respectively) – ***10-foot*** *bottom width, elevation* ***942.00*** *- overflows from Prairie Creek Dr. to flow east between the house lots to the detention basin.*

h. Overflow #6 in between lots 58 & 59 (**1512 & 1508 Sunset Ln.**, respectively) – ***4-foot*** *bottom width, elevation* ***948.00*** *- flows from undeveloped land, to the west, easterly between the house lots to overflow the sidewalk onto Sunset Lane.*

2. Stormwater flowage easement swale(s), please grade in accordance with details on plan sheets C2.1 & C6.1.

   a. Lots 1-5 (**13th St.**), south side – ***6-foot*** *bottom width, min. long. slope is* ***2%.***

   b. Lots 5-8 (**13th St.**), south side – ***6-foot*** *bottom width, min. long. slope is* ***2%.***

   c. Lots 9-16 (**Prairie Ck. Dr.**), east side – ***5-foot*** *bottom width, min. longitudinal slope is* ***2%.***

   d. Lots 24-25 (**Prairie Ck. Dr.**), north side – ***6-foot*** *bottom width, min. longitudinal slope is* ***2.5%.***

   e. Lots 60-65 (**Sunset Ln.**), west side – ***6-foot*** *bottom width, min. longitudinal slope is* ***1.5%.***

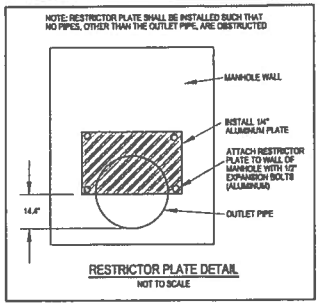
   f. Lots 68-73 (**Sunset Ln.**), west side – ***6-foot*** *bottom width, min. long. slope is* ***2%.***

3. Storm sewer, NOTE - **future work** in lots 58 & 59 includes installation of a SW-401 manhole, 73 l.f. of 24-inch RCP and removal of the temporary standpipe.

Sincerely,
FOX Engineering Associates, Inc.

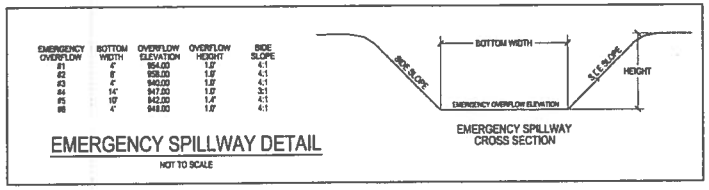
Brandt Williamson

K:\!proj\8000\8630-98D Beaverbrooke West Plat 9/709 Observation/homebuilder info/2013 12 06 letter to Scott Clyce-swales.doc



RESTRICTOR PLATE DETAIL

NOT TO SCALE

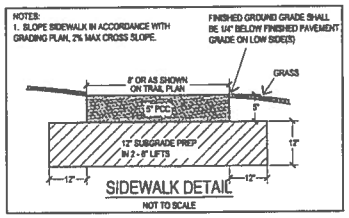


EMERGENCY OVERFLOW	BOTTOM WIDTH	OVERFLOW ELEVATION	OVERFLOW HEIGHT	SIDE SLOPE
#1	4'	934.00	1.0'	4:1
#2	8'	939.00	1.0'	4:1
#3	4'	940.00	1.0'	4:1
#4	14'	947.00	1.0'	3:1
#5	10'	942.00	1.4'	4:1
#6	4'	948.00	1.0'	4:1

EMERGENCY SPILLWAY DETAIL

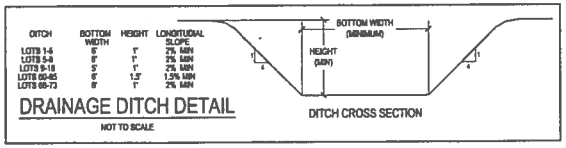
NOT TO SCALE

EMERGENCY SPILLWAY CROSS SECTION



SIDEWALK DETAIL

NOT TO SCALE

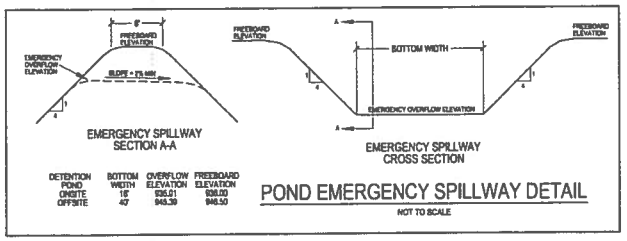


DITCH	BOTTOM WIDTH	HEIGHT	LONGITUDIAL SLOPE
LOTS 1-5	5'	1'	2% MIN
LOTS 5-8	8'	1'	2% MIN
LOTS 9-18	5'	1'	2% MIN
LOTS 60-65	6'	1.5'	1.5% MIN
LOTS 66-73	8'	1'	2% MIN

DRAINAGE DITCH DETAIL

NOT TO SCALE

DITCH CROSS SECTION



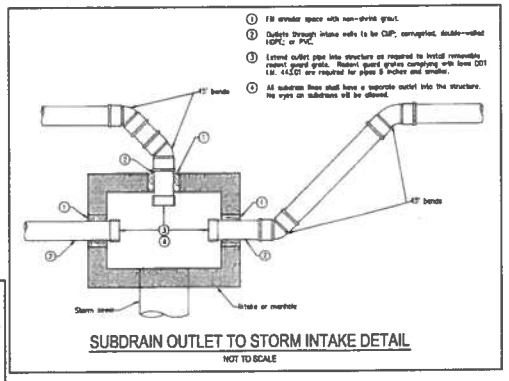
EMERGENCY SPILLWAY SECTION A-A

EMERGENCY SPILLWAY CROSS SECTION

DETENTION POND	BOTTOM WIDTH	OVERFLOW ELEVATION	FREEBOARD ELEVATION
ONSITE	18'	936.01	938.00
OFFSITE	40'	945.39	946.50

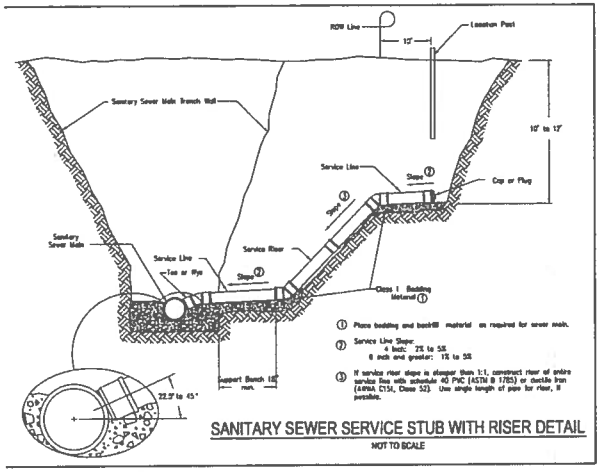
POND EMERGENCY SPILLWAY DETAIL

NOT TO SCALE



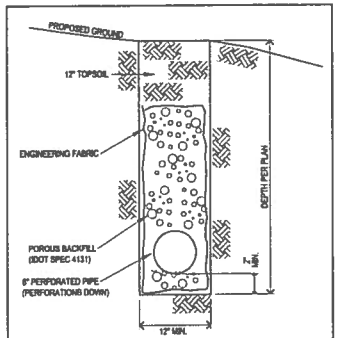
SUBDRAIN OUTLET TO STORM INTAKE DETAIL

NOT TO SCALE



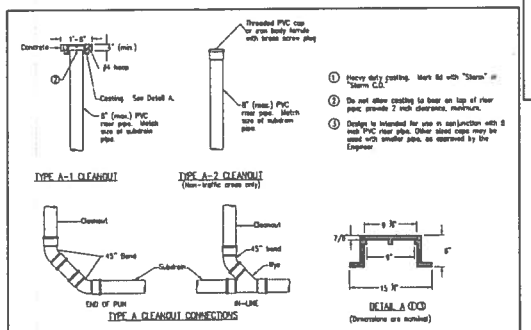
SANITARY SEWER SERVICE STUB WITH RISER DETAIL

NOT TO SCALE



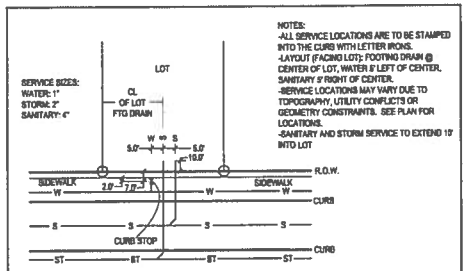
STANDARD SUBDRAIN DETAIL

NOT TO SCALE



CLEANOUT DETAIL

NOT TO SCALE



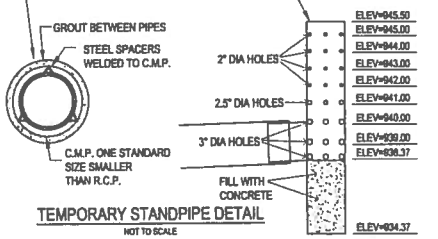
NOTES:
-ALL SERVICE LOCATIONS ARE TO BE STAMPED INTO THE CURB WITH LETTER IRONS.
-LAYOUT (FACING LOT): FOOTING DRAIN @ CENTER OF LOT, WATER 8' LEFT OF CENTER, SANITARY 5' RIGHT OF CENTER.
-SERVICE LOCATIONS MAY VARY DUE TO TOPOGRAPHY, UTILITY CONFLICTS OR GEOMETRY CONSTRAINTS. SEE PLAN FOR LOCATIONS.
-SANITARY AND STORM SERVICE TO EXTEND 10' INTO LOT

SERVICE DETAIL

NOT TO SCALE

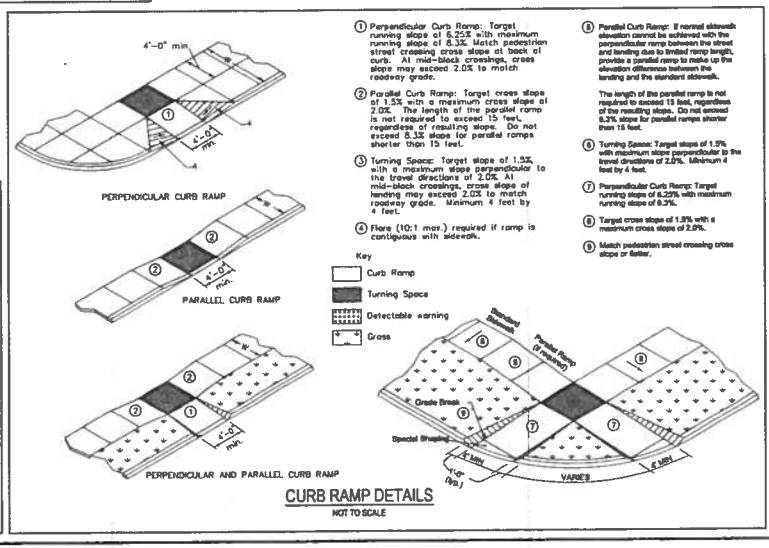
TEMPORARY STANDPIPE NOTES:

1. THE STAND PIPE SHALL CONSIST OF A 60" TEE. STEEL SPACERS SHALL BE WELDED LONGITUDINALY TO THE PIPE TO PROVIDE A SNUG FIT. ENGINEERING FABRIC (TREVIRA SPUNBOND OR EQUAL) SHALL BE SECURELY WRAPPED AROUND THE PIPE. LOW STRENGTH GROUT SHALL BE POURED BETWEEN THE 2 PIPES TO PROVIDE STABILITY AND PREVENT LEAKAGE.
2. HOLES SHALL BE DRILLED IN CMP STANDPIPE AS SHOWN. DRILL 8 HOLES EVENLY SPACED AROUND THE STANDPIPE AT EACH ELEVATION.



TEMPORARY STANDPIPE DETAIL

NOT TO SCALE



① Perpendicular Curb Ramp: Target running slope of 8.33% with maximum running slope of 8.3%. Match pedestrian street crossing cross slope at back of curb. At mid-block crossings, cross slope may exceed 2.0% to match roadway grade.

② Parallel Curb Ramp: Target cross slope of 1.5% with a maximum cross slope of 2.0%. 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 Turning Space: Target slope of 1.5% with a maximum slope perpendicular to the travel directions of 2.0%. At mid-block crossings, cross slope of landing may exceed 2.0% to match roadway grade. Minimum 4 feet by 4 feet.

④ Flare (10:1 max.) required if ramp is contiguous with sidewalk.

⑤ Parallel Curb Ramp: If normal sidewalk elevation cannot be achieved with the perpendicular ramp between the street and landing due to limited ramp length, provide a parallel ramp to make up the elevation difference between the landing and the standard sidewalk.

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

⑥ Turning Space: Target slope of 1.5% with maximum slope perpendicular to the travel directions of 2.0%. Minimum 4 feet by 4 feet.

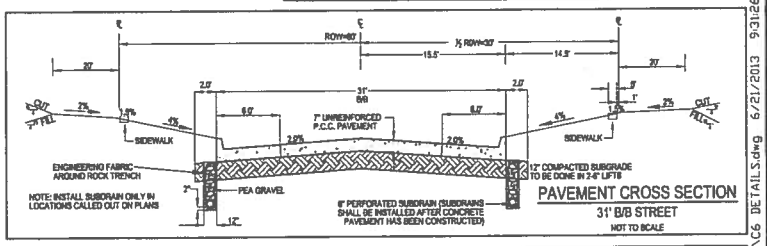
⑦ Perpendicular Curb Ramp: Target running slope of 8.33% with maximum running slope of 8.3%.

⑧ Target cross slope of 1.5% with a maximum cross slope of 2.0%.

⑨ Match pedestrian street crossing cross slope or flatter.

CURB RAMP DETAILS

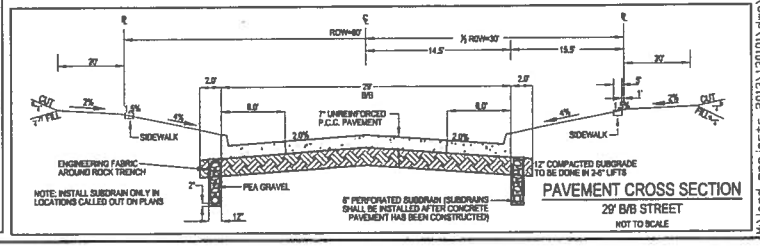
NOT TO SCALE



PAVEMENT CROSS SECTION

31' B/B STREET

NOT TO SCALE



PAVEMENT CROSS SECTION

29' B/B STREET

NOT TO SCALE

Bishop Engineering
"Planning Your Successful Development"
3501 104th Street
Des Moines, Iowa 50322-3054

BEAVERBROOKE WEST PLAT 9
GRIMES, IA

REFERENCE NUMBER:

DRAWN BY: JMR

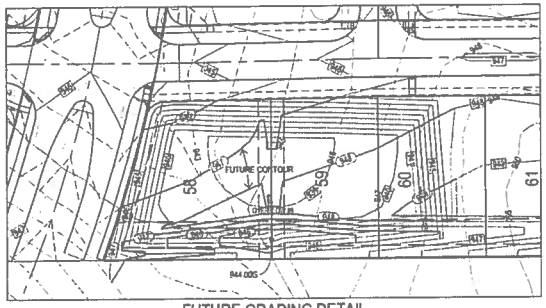
CHECKED BY: DSB

REVISION DATE:
4/12/13 1ST PR
4/30/13 2ND PR
5/24/13 1ST CC
6/27/13 BID SET

PROJECT NUMBER:

SHEET NUMBER: C6.1

M:\land projects 2013\130101\dwg\C6 DETAILS.dwg 6/21/2013 9:31:26 AM CDT



FUTURE GRADING DETAIL

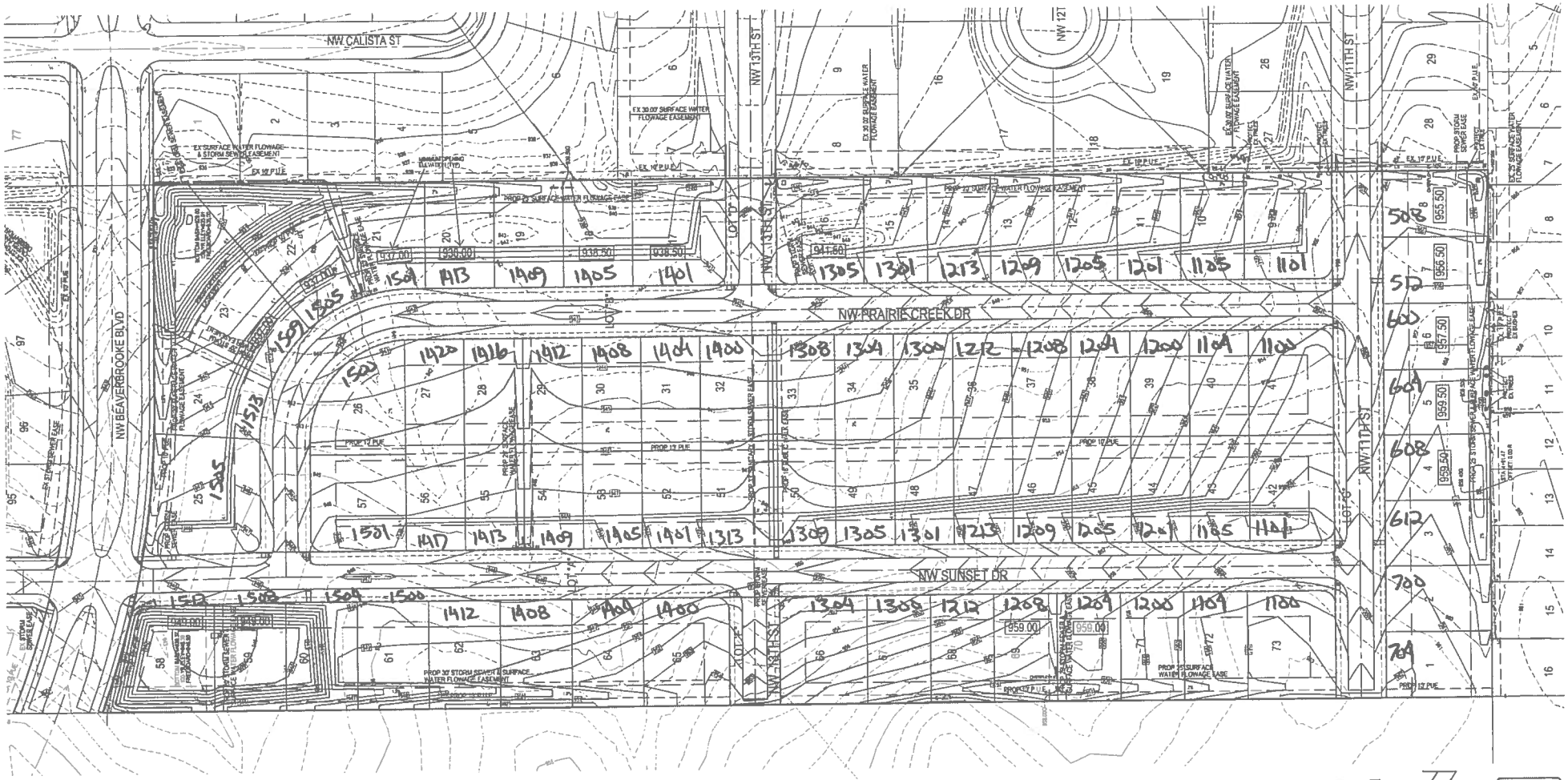
SCALE: 1"=50'

TOPSOIL NOTES:

1. STRIP AND STOCKPILE 6" OF TOPSOIL ON ALL DISTURBED AREAS.
2. USE TOPSOIL FOR ALL AREAS EXCEPT UNDER PAVEMENT.
3. RESPREAD TOPSOIL TO 6" DEPTH ON ALL GREEN (NON PAVED AREAS). TOPSOIL SHALL BE FREE OF ALL ROCK AND DEBRIS LARGER THAN ½" IN SIZE.
4. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL TOPSOIL REQUIREMENTS OF IOWA DNR GENERAL PERMIT NO 2 ARE MET.

GRADING NOTES:

1. CONTRACTOR SHALL ENSURE ENTIRE SITE HAS POSITIVE DRAINAGE AND NO PONDING SHALL OCCUR.
2. GRADE SEDIMENT POND AND INSTALL TEMPORARY STANDPIPE PER DETAIL ON SHEET C8.1.
3. SEDIMENT POND SHALL REMAIN IN PLACE UNTIL DEVELOPMENT OCCURS ON THE OFFSITE DRAINAGE WAY AT THAT TIME, THE ADJACENT PROPERTY OWNER WILL BE RESPONSIBLE FOR FILLING IN THE SEDIMENT POND WITH STRUCTURAL FILL AND GRADING AREA AS SHOWN ON DETAIL ON THIS SHEET. BEAVERBROOKE DEVELOPMENT COMPANY SHALL REMOVE THE TEMPORARY STANDPIPE, EXTEND STORM SEWER, AND INSTALL INTAKE AS SHOWN ON SHEET C4.4.
4. ONCE THE SEDIMENT POND IS FILLED IN, HOUSES MAY BE BUILT ON LOTS 58-60.



Bishop Engineering
"Planning Your Successful Development"
3501 104th Street
Des Moines, Iowa 50322-3825

BEAVERBROOKE WEST PLAT 9
GRIMES, IA

REFERENCE NUMBER:

DRAWN BY: JMR

CHECKED BY: DBB

REVISION DATE:
4/12/13 1ST PP
4/30/13 2ND PP
5/24/13 1ST CD
6/27/13 BID SET

PROJECT NUMBER:

SHEET NUMBER: C2.1

N:\land projects 2012\12025\dwg\C2 GRADE.dwg 6/21/2013 7:39:49 AM CDT

FOX engineering

Aspen Business Park | 414 South 17th Street, Suite 107 | Ames, Iowa 50010

December 18, 2013

Mr. Scott Clyce, Building Inspector
City of Grimes
101 NE Harvey St.
Grimes, IA 50111

RE: Brooke Ridge Plat 1 drainage swales
PROJECT # 8630-12E.701

Mr. Clyce,

As this plat will soon be released for home building the following information is being presented to assist homebuilders in meeting the intent of the grading plan.

The attached plan sheets (6 & 7 – Grading and 2 – details) from the approved construction drawings show how the site is to be graded. The below information is from those plan sheets and has had street address information added to assist with locating the swales and overflow spillway.

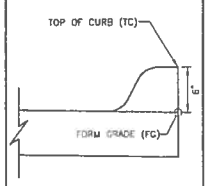
An item the homebuilder might easily overlook is how the sidewalk needs to be graded at the overflow site. Sidewalk slopes away from the street (reverse of normal).

1. Stormwater emergency overflow spillway, please grade to the appropriate detail(s) on plan sheet 2:
   a. between lots 17 & 18 (**2313 & 2401** NW **Springbrooke Dr.**, respectively)
   b. trail overflow in ROW for lot 1 (**2612** NW **Springbrooke Dr.**)
   c. trail overflow in ROW for lot 29 (**2613** NW **Springbrooke Dr.**)
2. Stormwater flowage easement swale(s), please grade in accordance with details on plan sheets 2, 6 & 7.
   a. back end (east) of lots 25 through 29 (**2513, 2601, 2605, 2609 & 2613** NW **Springbrooke Dr.**, respectively) flows to the north – ***5-foot*** *bottom width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is* ***2.0%.***
   b. back end (east) of lots 24 through 18 (**2509, 2505, 2501, 2413, 2409, 2405, & 2401** NW **Springbrooke Dr.**, respectively) flows to the south – ***5-foot*** *bottom width, side slopes* ***4:1 (typical), 3:1 (max.)****, min. longitudinal slope is* ***2.0%.***
   c. between lots 17 & 18 (**2313 & 2401** NW **Springbrooke Dr.**, respectively) flows between lots to the east – ***5-foot*** *bottom width, side slopes* ***4:1 (typical), 3:1 (maximum)****, minimum longitudinal slope is constant slope to storm structure.*

Sincerely,
FOX Engineering Associates, Inc.

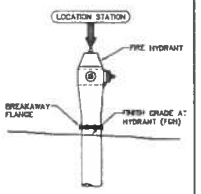
Brandt Williamson

K:\proj\8000\8630-12E Brooke Ridge Plat 1/701 Observation/homebuilder info/2013 12 18 letter to Scott Clyce-swales.doc



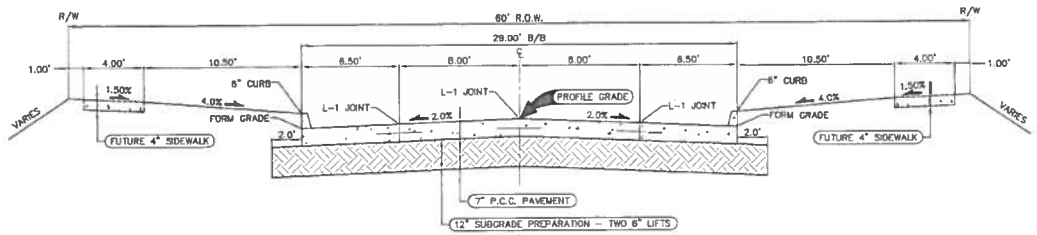
INTEGRAL 6" STANDARD CURB SPOT ELEVATION REFERENCE DETAIL

NOT TO SCALE



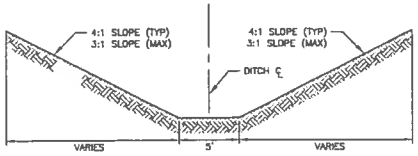
HYDRANT ASSEMBLY SPOT ELEVATION REFERENCE DETAIL

NOT TO SCALE



TYPICAL SECTION - 29' P.C.C. ROADWAY WITH 60' ROW

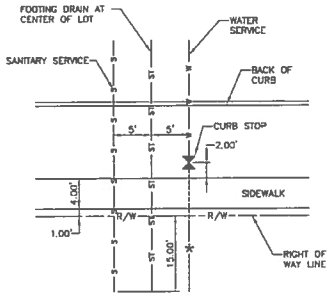
NOT TO SCALE



NOTE:
SEE SWPPP FOR EROSION CONTROLS AND STABILIZATION PRIOR TO SEEDING. SEED WITH TYPE 4 MIX (SUDAS).

TYPICAL SWALE DETAIL

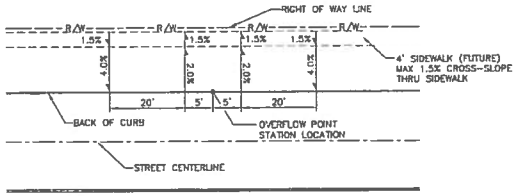
NOT TO SCALE



NOTES:
1. ALL SERVICES SHOULD BE MARKED WITH STEEL POSTS (WATER-BLUE, STORM-WHITE, SANITARY-GREEN). POSTS SHALL BE A MINIMUM OF 4' TALL.
2. ALL SERVICE LOCATIONS ARE TO BE STAMPED INTO THE CURB WITH LETTER IRONS (TOP, SIDE, BOTTOM).
3. THE CURB STOP MUST LIE 2.0' OFF THE SIDEWALK BETWEEN THE SIDEWALK AND THE STREET.

SERVICE DETAIL

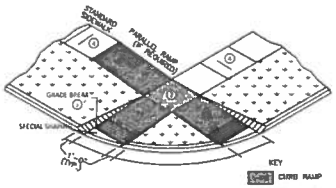
NOT TO SCALE



STREET	STATION	SIDE
SPRING BROOKE	22+31	LEFT

TYPICAL RIGHT OF WAY GRADING AT STORM WATER OVERFLOW POINTS

NOT TO SCALE



① PARALLEL CURB RAMP- IF NORMAL SIDEWALK ELEVATION CANNOT BE ACHIEVED WITH THE PERPENDICULAR RAMP BETWEEN THE STREET AND LANDING DUE TO LIMITED RAMP LENGTH, PROVIDE A PARALLEL RAMP TO MAKE UP THE ELEVATION DIFFERENCE BETWEEN THE LANDING AND THE STANDARD SIDEWALK.

THE LENGTH OF THE PARALLEL RAMP IS NOT REQUIRED TO EXCEED 15 FEET, REGARDLESS OF THE RESULTING SLOPE. DO NOT EXCEED 8.3% SLOPE FOR PARALLEL RAMPS SHORTER THAN 15 FEET.

② TURNING SPACE: TARGET SLOPE OF 1.5% WITH MAXIMUM SLOPE PERPENDICULAR TO THE TRAVEL DIRECTIONS OF 2.0%. MINIMUM 4 FEET BY 4 FEET.

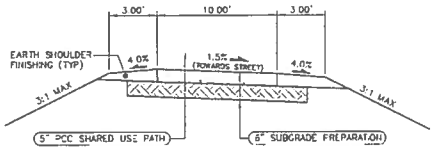
③ PERPENDICULAR CURB RAMP- TARGET RUNNING SLOPE OF 8.33% WITH MAXIMUM RUNNING SLOPE OF 8.3%.

④ TARGET CROSS SLOPE OF 1.5% WITH A MAXIMUM CROSS SLOPE OF 2.0%.

⑤ MATCH PEDESTRIAN STREET CROSSING CROSS SLOPE OR FLATTER.

KEY
- CURB RAMP
- TURNING SPACE
- DETECTABLE WARNING
- GRASS

CURB RAMP FOR CLASS B OR C SIDEWALK



NOTE:
1. TYPICAL C JOINT SPACING IS 10'

TYPICAL SECTION 10' SHARED USE PATH

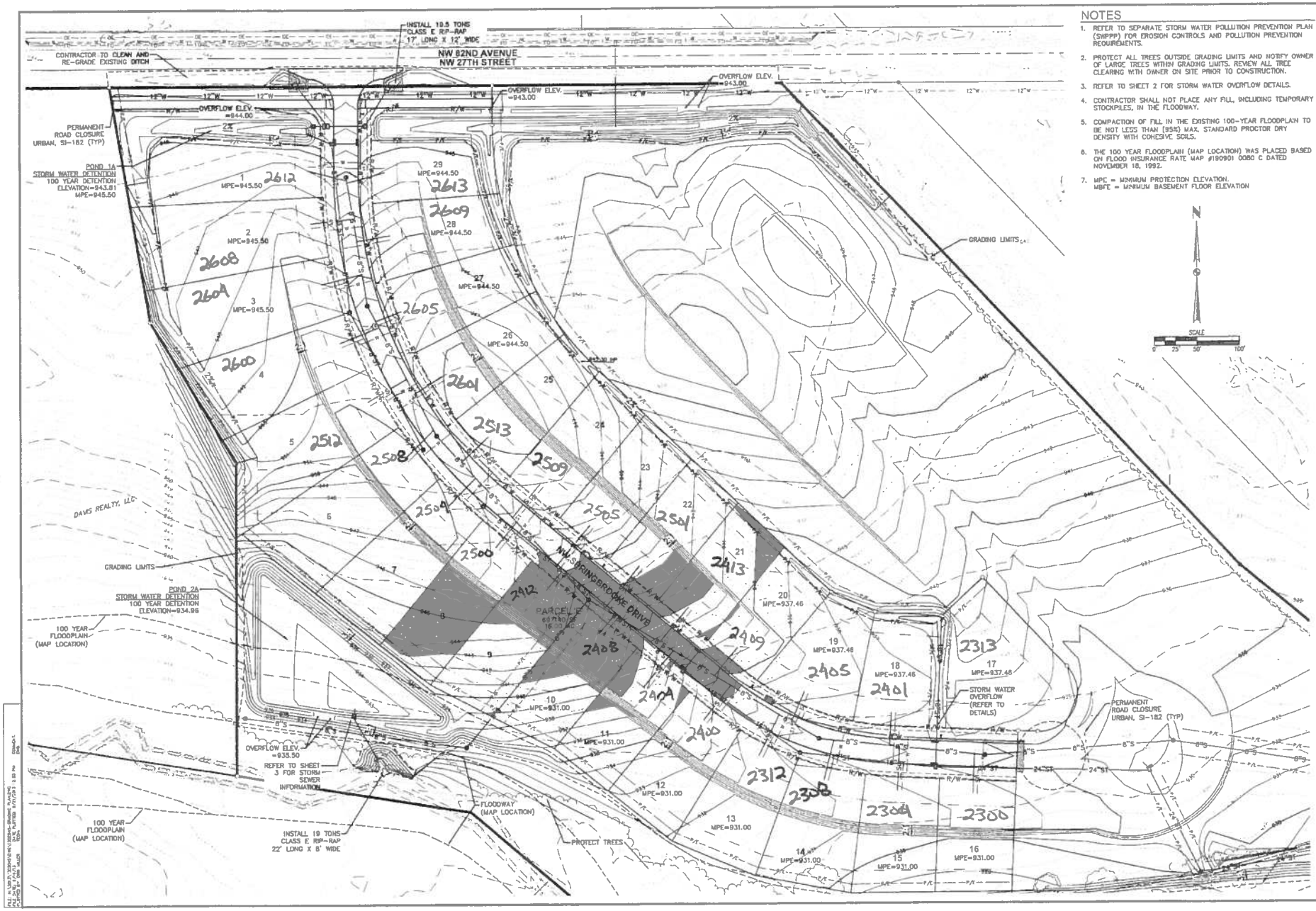
NOT TO SCALE

REVISIONS	DATE
THIRD SUBMITTAL	8-21-13
SECOND SUBMITTAL	7-31-13
FIRST SUBMITTAL	6-19-13

3405 S.E. CROSSROADS DRIVE, SUITE G
GRIMES, IOWA 50111
PHONE (515) 309-4400 FAX (515) 309-4410
ENGINEER: RAH | PM: DAM
CIVIL DESIGN ADVANTAGE

BROOKE RIDGE PLAT 1
TYPICAL SECTIONS AND DETAILS

GRIMES, IOWA



NOTES

1. REFER TO SEPARATE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROLS AND POLLUTION PREVENTION REQUIREMENTS.
2. PROTECT ALL TREES OUTSIDE GRADING LIMITS AND NOTIFY OWNER OF LARGE TREES WITHIN GRADING LIMITS. REVIEW ALL TREE CLEARING WITH OWNER ON SITE PRIOR TO CONSTRUCTION.
3. REFER TO SHEET 2 FOR STORM WATER OVERFLOW DETAILS.
4. CONTRACTOR SHALL NOT PLACE ANY FILL, INCLUDING TEMPORARY STOCKPILES, IN THE FLOODWAY.
5. COMPACTION OF FILL IN THE EXISTING 100-YEAR FLOODPLAIN TO BE NOT LESS THAN (95%) MAX. STANDARD PROCTOR DRY DENSITY WITH COHESIVE SOILS.
6. THE 100 YEAR FLOODPLAIN (MAP LOCATION) WAS PLACED BASED ON FLOOD INSURANCE RATE MAP #190901 0080 C DATED NOVEMBER 18, 1992.
7. MPE = MINIMUM PROTECTION ELEVATION.
   MBFE = MINIMUM BASEMENT FLOOR ELEVATION

REVISIONS	DATE
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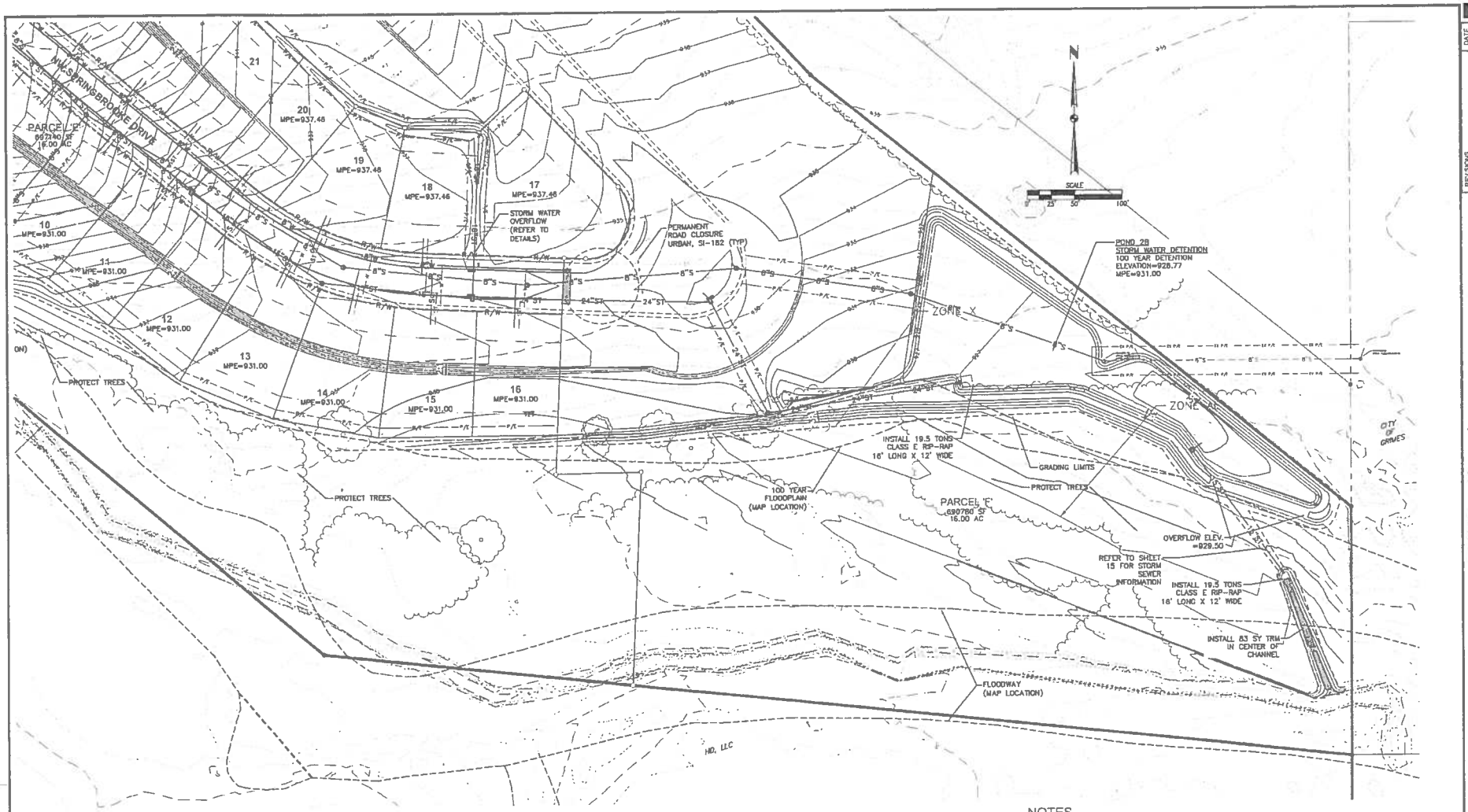
BROOKE RIDGE PLAT 1
GRADING PLAN

GRIMES, IOWA



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6. THE 100 YEAR FLOODPLAIN (MAP LOCATION) WAS PLACED BASED ON FLOOD INSURANCE RATE MAP #190901 0050 C DATED NOVEMBER 18, 1992.
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BROOKE RIDGE PLAT 1
GRADING PLAN

GRIMES, IOWA

1302.045