PRIVATE STORM SEWER
LKQ SELF SERVICE
TO SERVE LOT 1, BLOCK 1, STOCKYARD INDUSTRIAL PARK ADDITION
0178 PPD (607861)

GENERAL NOTES

1. Contractor will be required to provide a minimum advance notice of fourty-eight (48) hours to utility companies prior to starting any excavation as follows:

   Kansas One-Call 687-2470

   The Contractor must notify the following in case of an emergency:

Cox Communications	260-7204
Kansas Gas Service	888-482-4950
Westar	383-8600
AT&T	1-800-286-8313
City of Wichita Water Department	262-6000
City of Wichita Sewer Maintenance	262-6000

2. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. Location information has been obtained from the various utility companies and is either from company record drawings or company-provided field locations. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

3. A saw cut of the full depth of existing surface courses or pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required, except when such saw cuts are within three (3) feet of an existing joint the limits of removal shall be extended to the existing joint.

4. This project is located within the limits of a larger project which will include building construction. A Storm Water Pollution Prevention Plan for the entire project has been prepared for this site and provided to the City. The contractor shall comply with that plan during construction.

5. This project is to be constructed in accordance with City of Wichita Standard Specifications for the Construction of City Projects, and Policy on Construction of Public Works Improvements by Private Contract.

6. No work shall begin on this project before required bonds are submitted to the City of Wichita, and the project inspector has been notified.

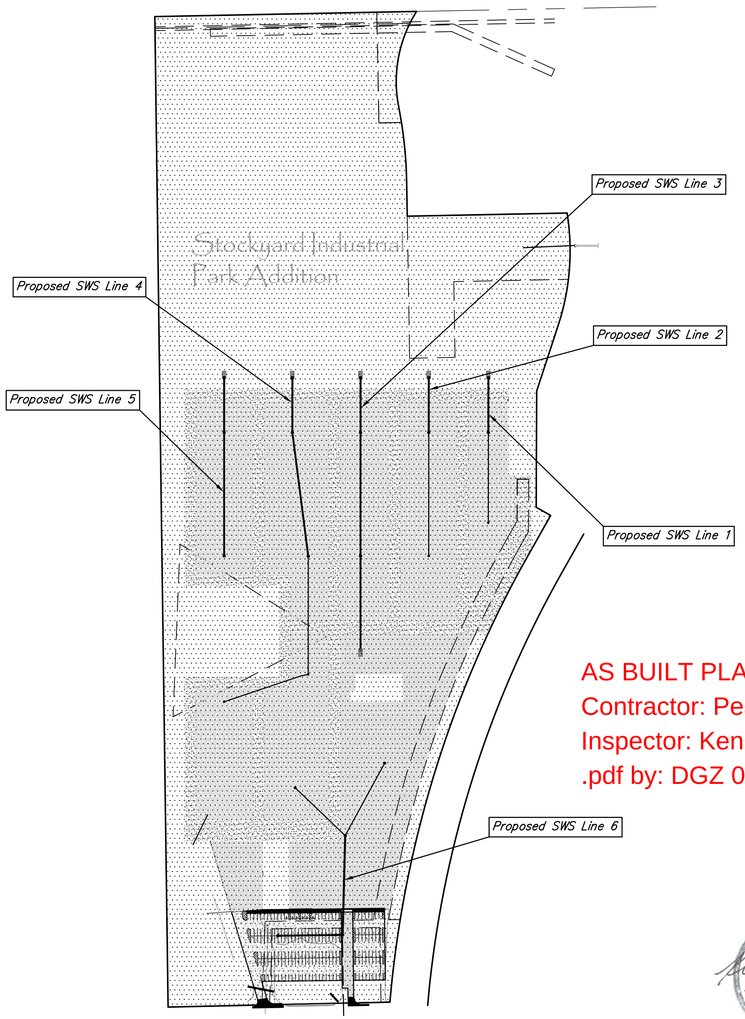
7. All areas of public R/W disturbed by construction of this project are to be restored in accordance with Administrative Regulation AR 6.5 of the City of Wichita.

8. Contractor shall monitor soil excavated on site for contaminants. In the event that contaminated soil is identified, a plan shall be implemented to prevent the release of contaminated runoff into the offsite drainage areas.

9. Sheets 13 through 17 are the plans for site grading and will not be inspected with the Private Drainage Project. They are included for information only.

10. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agricultural permit. Any material dumped in waters of the United States or wetlands is subject to U.S Corps of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archaeological investigations unless buried in a previously approved borrow location.

7. This development complies with Chapter 16.32 of the City Code. The owner will be responsible for the maintenance for all stormwater management controls installed with this project, including items that are listed as information only.

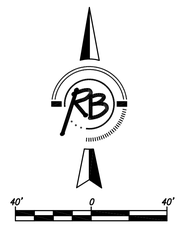


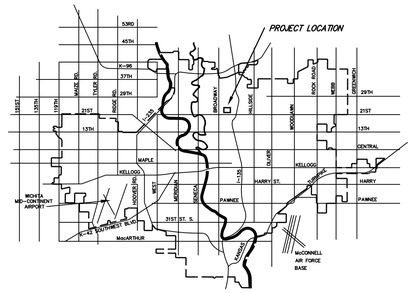
BENCH MARKS

BENCH MARK#1: CITY OF WICHITA DISC IN NE CORNER OF BASE FOR R.R. SIGNAL LIGHT ON NORTH SIDE 21ST STREET N., 15'± EAST OF CENTER OF MAIN TRACKS, ONE BLOCK EAST OF MOSLEY.
ELEVATION = 1311.37 NAVD88

BENCHMARK #2: "T" CUT IN CONCRETE AT EDGE OF ROADWAY AT SE CORNER OF PROPERTY
ELEVATION = 1311.36 NAVD88

INDEX OF SHEETS





VICINITY MAP

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
.pdf by: DGZ 06/20/14

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

Engineering 8/27/13

Stormwater 08/27/13

NOTE TO CONTRACTORS

Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said Inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection, nor shall any work be commenced without written authorization by the City Engineer.

KENNETH W. LEE LICENSED 15373 8-27-13 KANSAS PROFESSIONAL ENGINEER

IMPROVEMENT DISTRICT

CITY OF WICHITA, KANSAS
GARY JANZEN, P.E. - CITY ENGINEER

Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main
Wichita, Kansas 67203
www.rbkansas.com
(316) 264-8008
(316) 264-4621 fax
E-mail: info@rbkansas.com

4072E

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
.pdf by: DGZ 06/20/14

60' 0 60'

S00° 15' 00.82"W
306.830'

S29° 28' 09.82"W
1118.110'

S29° 28' 09.82"W
57.390'

L=1246.536, R=2915.000

Existing Building

22 SY Light Stone Rip-Rap

15" ADS DRAIN BASIN
1310.6 Top
1307.9 FL

145 L.F. 15" ADS N-12 PIPE @0.30% GRADE

245 L.F. 10" ADS N-12 PIPE @0.30% GRADE

12" ADS DRAIN BASIN
1311.5 Top
1309.1 FL

Proposed Pond See Sheet 11

15" ADS DRAIN BASIN
1311.4 Top
1307.4FL

140 L.F. 15" ADS N-12 PIPE @0.30% GRADE

340 L.F. 10" ADS N-12 PIPE @0.30% GRADE

12" ADS DRAIN BASIN
1311.7 Top
1308.5 FL

22 SY Light Stone Rip-Rap

15" ADS DRAIN BASIN
1311.4 Top
1307.5 FL

140 L.F. 15" ADS N-12 PIPE @0.30% GRADE

340 L.F. 12" ADS N-12 PIPE @0.30% GRADE

12" ADS DRAIN BASIN
1311.7 Top
1308.6 FL

250 L.F. 12" ADS N-12 PIPE @0.30% GRADE

22 SY Light Stone Rip-Rap

1309.3 FL
End Section

Existing Building

12" AREA INLET
1311.0 Top
1309.0 FL

206 L.F. 15" ADS N-12 PIPE

15" AREA INLET
1311.0 Top
1308.1 FL

218 L.F. 10" ADS N-12 PIPE

298.00'

Existing Building

GRASSED SWALE

565.570'
S88° 43' 54.62"W

251.24'

22 SY Light Stone Rip-Rap

15" ADS DRAIN BASIN
1311.3 Top
1308.1FL

145 L.F. 15" ADS N-12 PIPE @0.30% GRADE

330 L.F. 12" ADS N-12 PIPE @0.30% GRADE

12" ADS DRAIN BASIN
1311.7 Top
1309.1 FL

312 L.F. 10" ADS N-12 PIPE @0.30% GRADE

12" ADS DRAIN BASIN
1312.40 Top
1310.00 FL

183 L.F. 10" ADS N-12 PIPE

15" AREA INLET
1311.2 Top
1309.2 FL

TOWER GUY ANCHORS

222 L.F. 10" ADS N-12 PIPE @0.30% GRADE

Existing Building

22 SY Light Stone Rip-Rap

15" ADS DRAIN BASIN
1310.8 Top
1308.3 FL

145 L.F. 15" ADS N-12 PIPE @0.30% GRADE

340 L.F. 12" ADS N-12 PIPE @0.30% GRADE

1312.6 Top
1309.32 FL
12" ADS DRAIN BASIN

Cell Tower

12" ADS DRAIN BASIN
1312.75 Top
1310.45 FL

83 L.F. 10" ADS N-12 PIPE @0.30% GRADE

253.95'

Proposed 8' Fence By Others

Proposed 8' Chain-link Fence

PP W/DROP

NOTE:

CONTRACTOR MAY USE RCP IN LIEU OF ADS PIPE WITH THIS PROJECT.

CONTRACTOR MAY USE PRECAST CONCRETE INLETS ON THIS PROJECT WITH PRIOR APPROVAL.

Proposed 3" AC Millings on 4" Recycled Crushed Concrete
25,689 SY

Proposed 4" Recycled Crushed Concrete
77,505 SY

Proposed Light Duty AC Pavement (treated subgrade)
7,096 SY

Proposed Heavy Duty AC Pavement (treated subgrade)
739 SY

DIRTWORK
Cut: 22,336 Cu.Yd.
Fill: 13,885 Cu.Yd
Net: 8,451 Cu.Yd Cut
*Calculation to Top of Surfacing

REV. 10-7-13

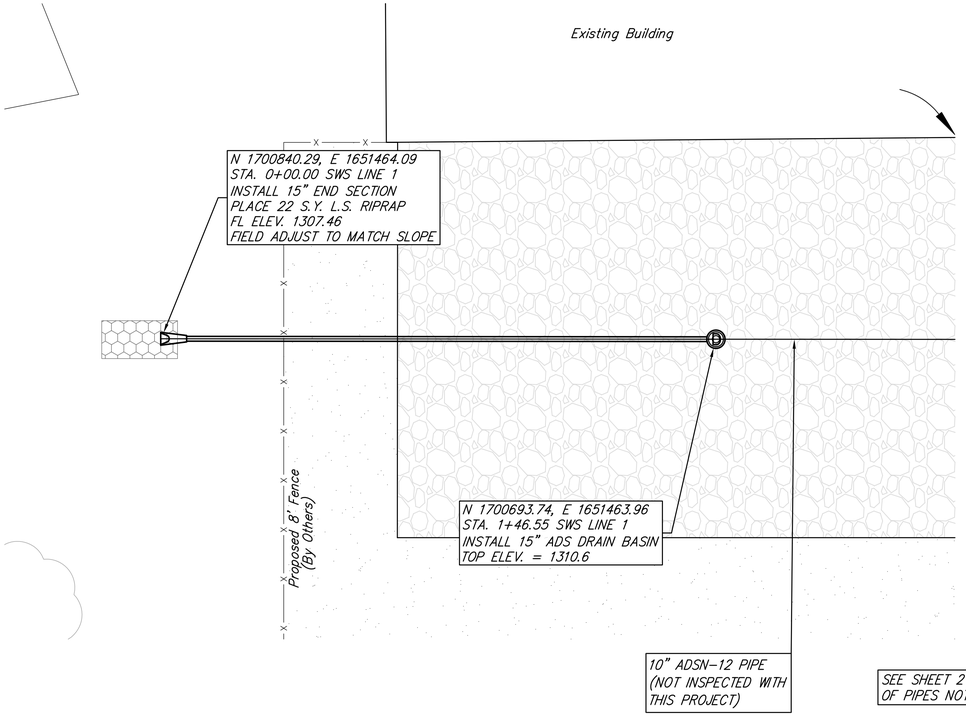
OVERALL SITE PLAN
LKQ SELF SERVICE SITE IMPROVEMENTS

SEAL

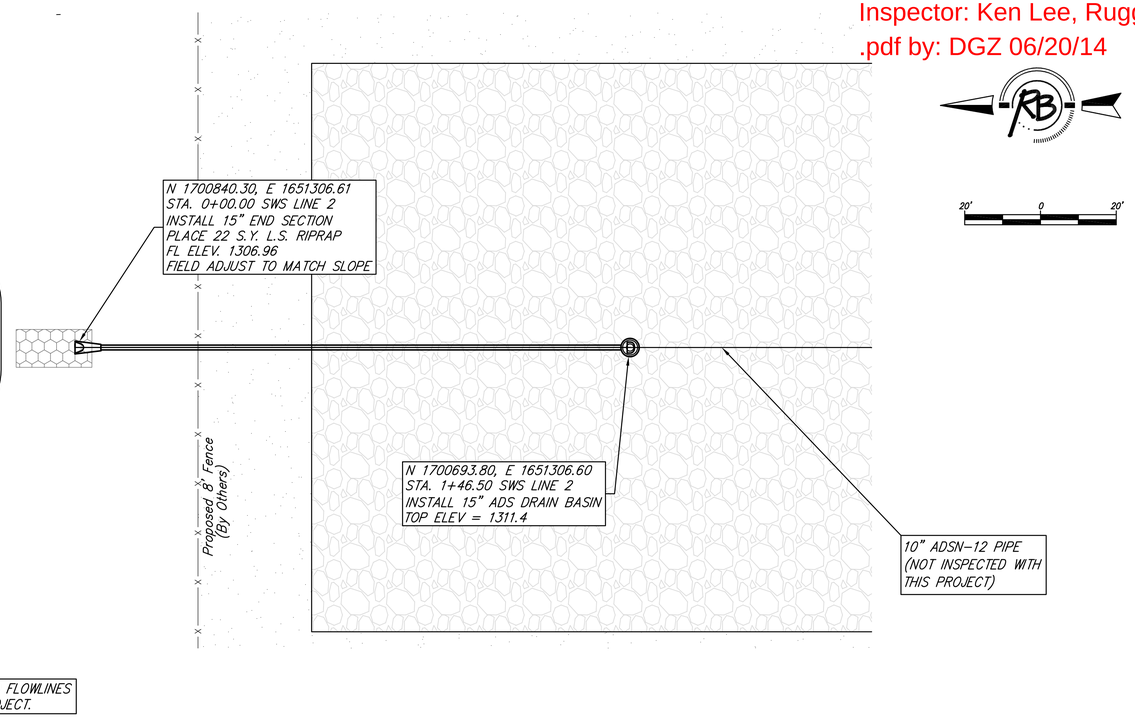
RUGGLES & BOHM
ENGINEERING | SURVEYING | LANDSCAPE ARCHITECTURE | GOVERNMENT
924 NORTH MAIN WICHITA, KANSAS 67203 P (316) 264-8008 F (316) 264-4621
WWW.RBKANSAS.COM

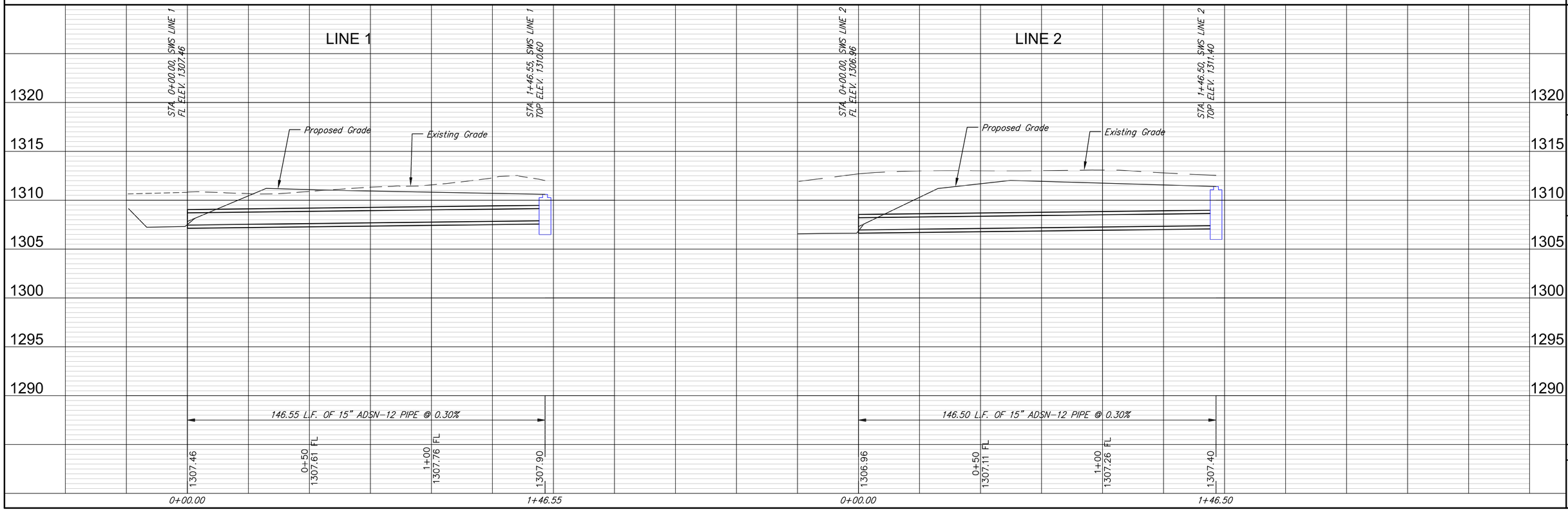
DATE	Aug. 1, 2013
DESIGN	KWL
DRAWN	CH
REVIEW	
PROJECT NUMBER	
RB JOB NO.	
DWG. SCALE	
DRAWING FILE	
SHEET	2 OF 23

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
.pdf by: DGZ 06/20/14



SEE SHEET 2 FOR PROPOSED TOPS, AND FLOWLINES OF PIPES NOT INSPECTED WITH THIS PROJECT.





RUGGLES BOHM

REVISED
DRAWN MLP
DESIGN KWL
DATE Aug. 1, 2013
REVIEW
UTILITY

PROJECT NUMBER .
DRAWING FILE ENG BASE {SWS 1&2}

STORMWATER SEWER PLAN & PROFILE
LINE 1 & 2
WICHITA, KANSAS

RB JOB 4072E
SHEET 3 OF 23

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
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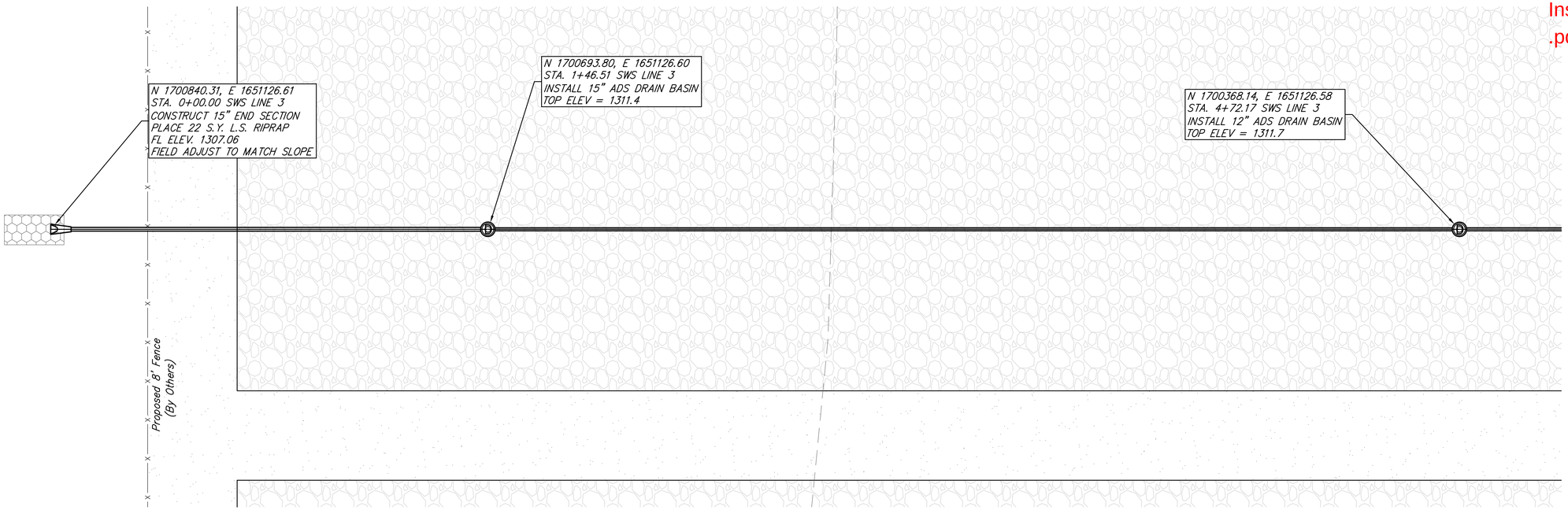

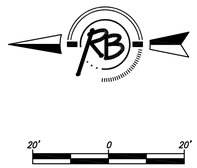

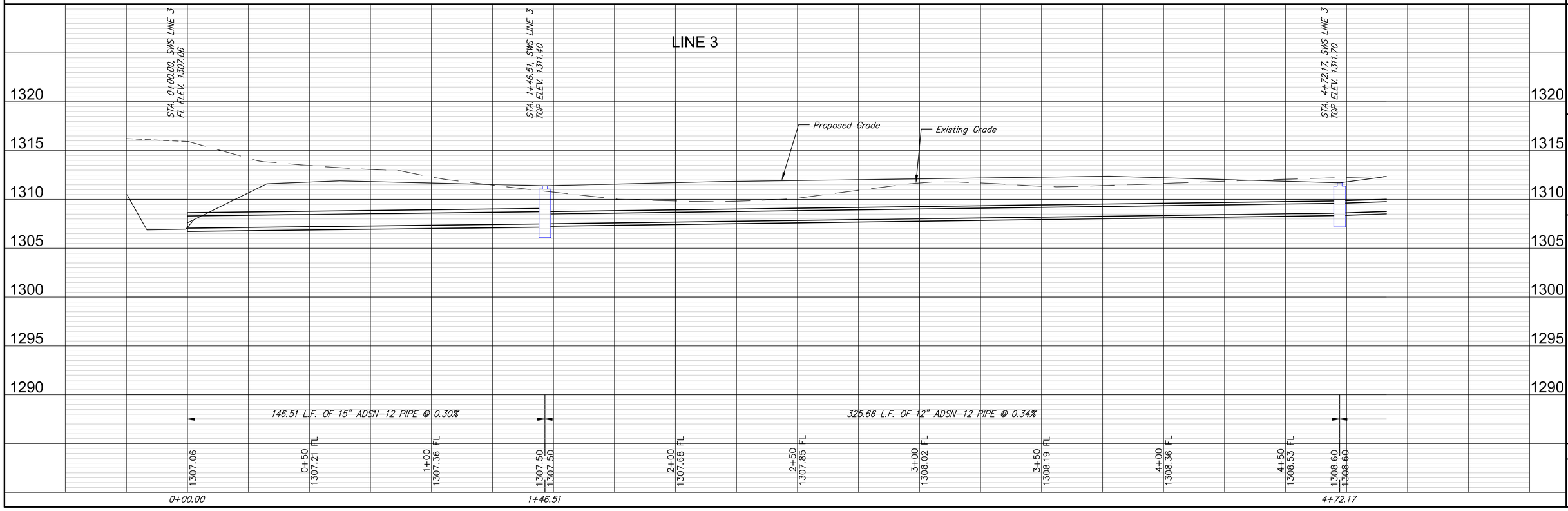

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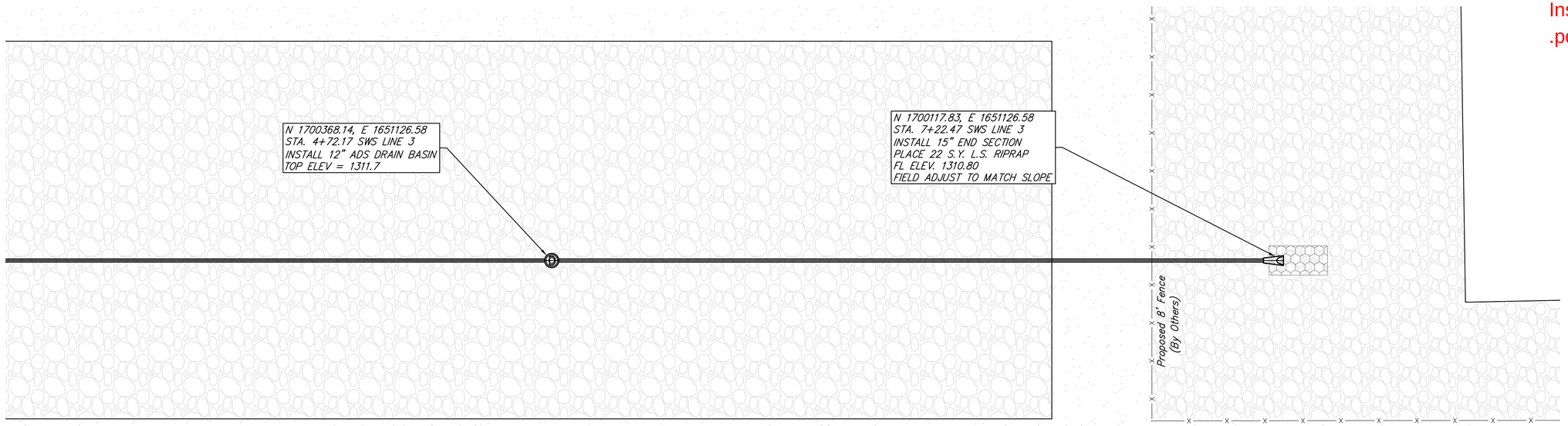
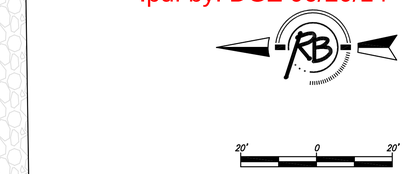
REVISED
DRAWN MLP
DESIGN KWL
DATE Aug. 1, 2013
REVIEW
UTILITY
PROJECT NUMBER .
DRAWING FILE ENG BASE {SWS 3}

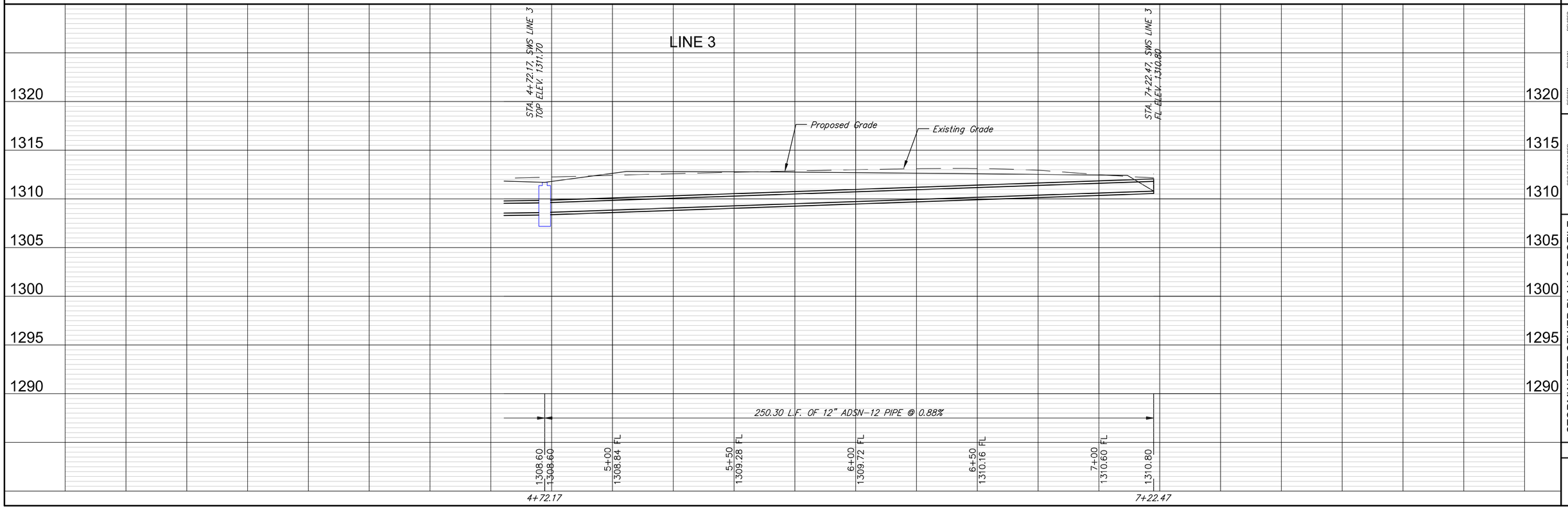
STORMWATER SEWER PLAN & PROFILE
LINE 3
WICHITA, KANSAS

RB JOB 4072E
SHEET 4 OF 23

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
.pdf by: DGZ 06/20/14







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651 N. MAIN · WICHITA, KANSAS 67203 · P 316.264.6696 · F 316.264.6421
WWW.RUGGLESBOHM.COM

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UTILITY
DATE Aug. 1, 2013
REVIEW

PROJECT NUMBER .
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STORMWATER SEWER PLAN & PROFILE
LINE 3
WICHITA, KANSAS

RB JOB 4072E
SHEET 5 OF 23

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
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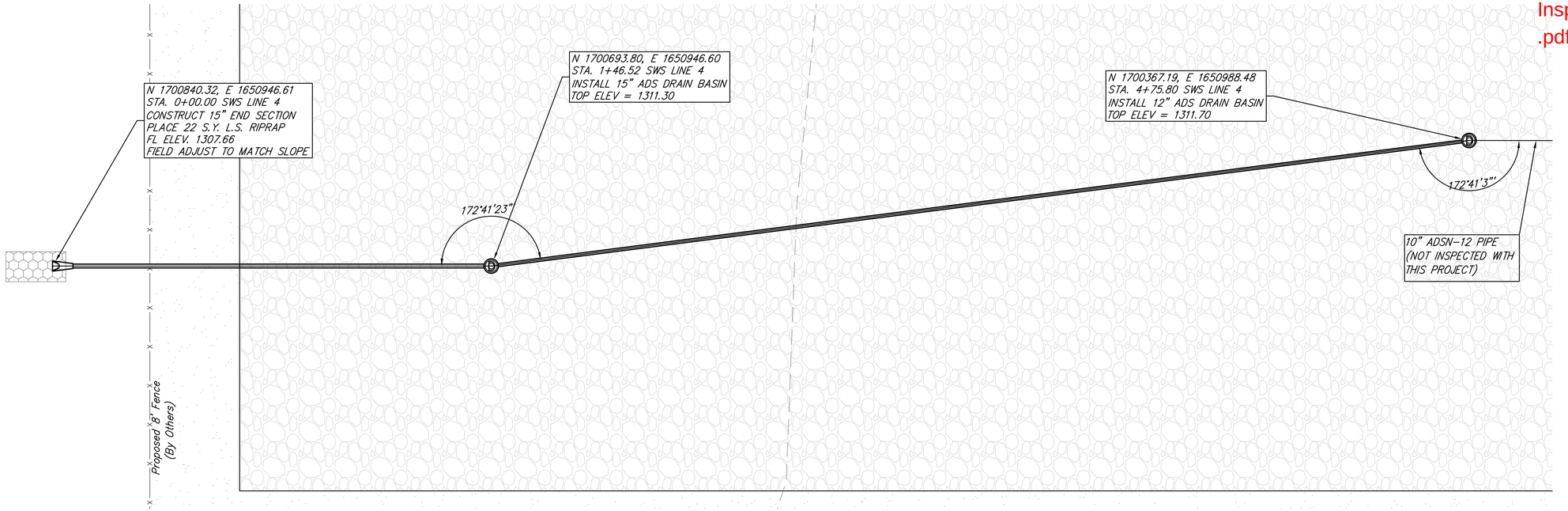

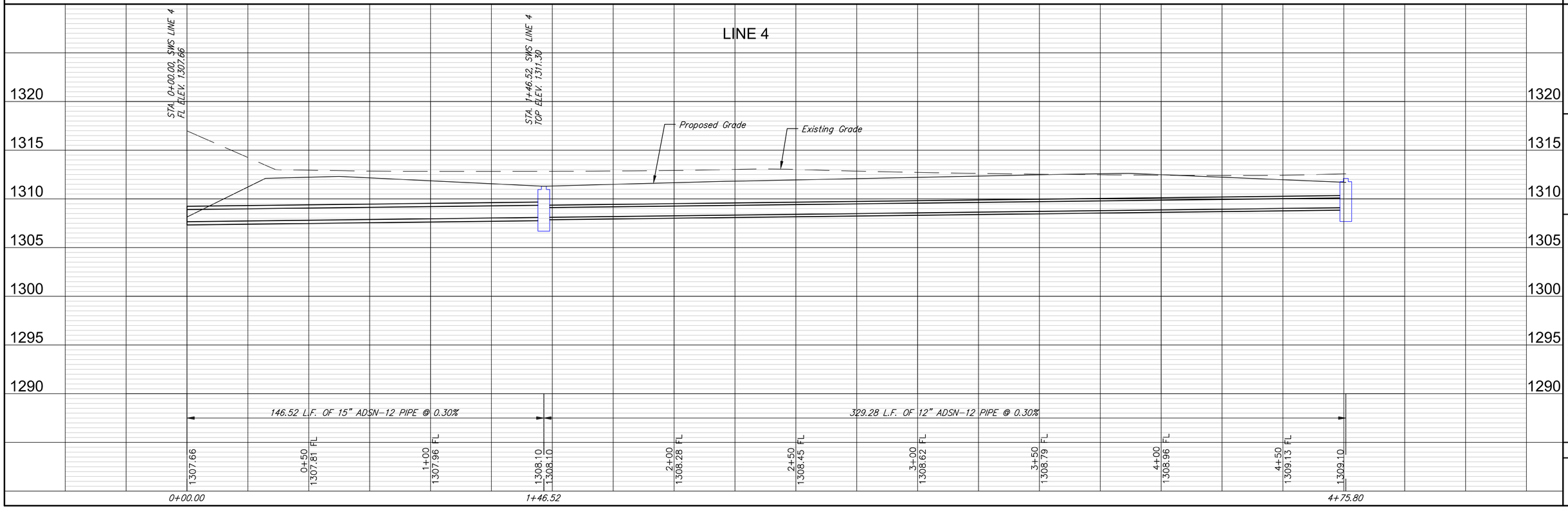

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DRAWN MLP
DESIGN KWL
UTILITY
DATE Aug. 1, 2013
REVIEW

PROJECT NUMBER .
DRAWING FILE ENG BASE {SWS 4}

STORMWATER SEWER PLAN & PROFILE
LINE 4
WICHITA, KANSAS

RB JOB 4072E
SHEET 6 OF 23

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
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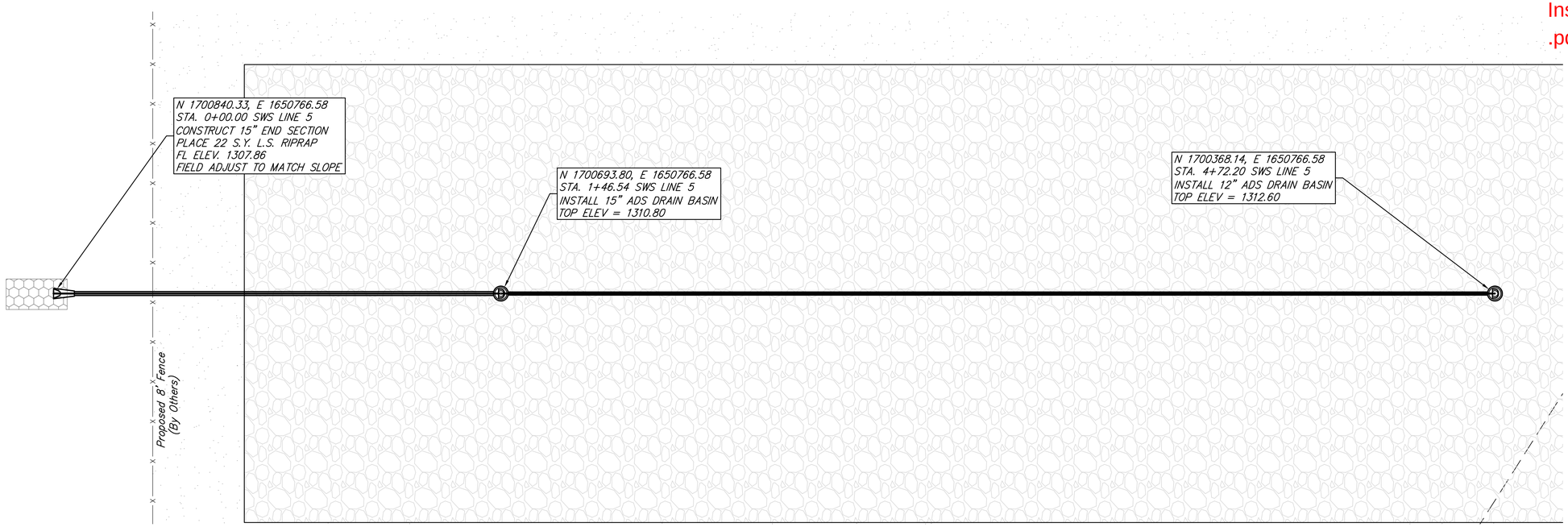
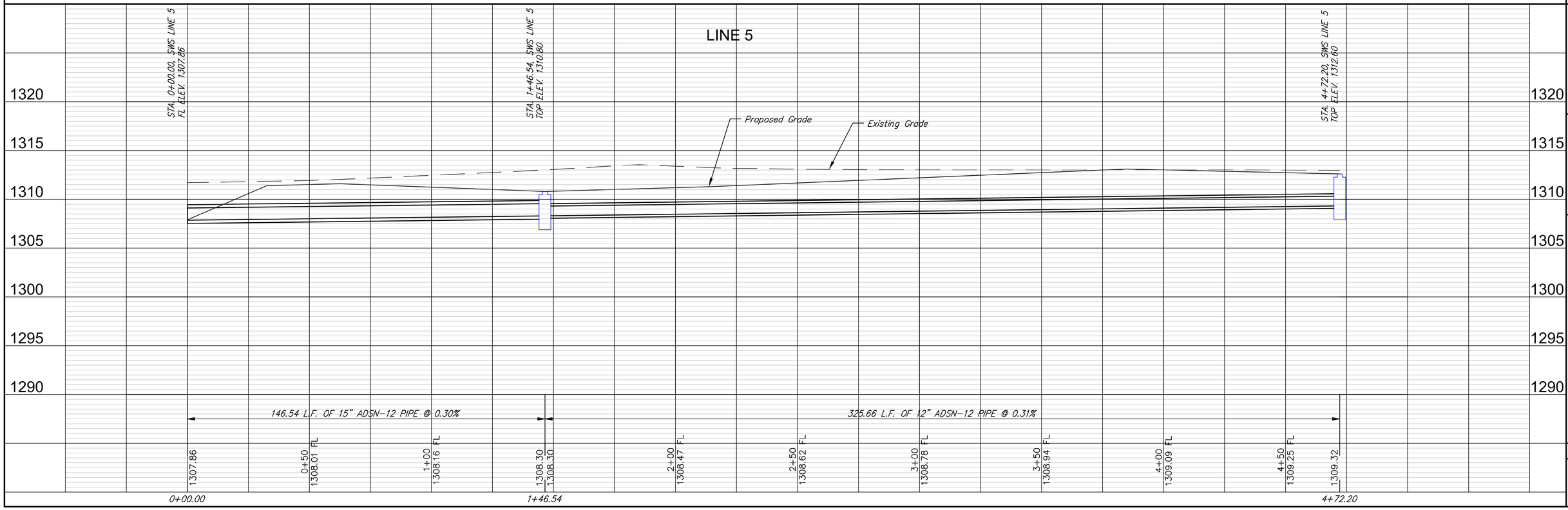


SEE SHEET 2 FOR PROPOSED TOPS, AND FLOWLINES OF PIPES NOT INSPECTED WITH THIS PROJECT.



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DRAWN MLP
DESIGN KWL
UTILITY
DATE Aug. 1, 2013
REVIEW

PROJECT NUMBER .
DRAWING FILE ENG BASE {SWS 5}

STORMWATER SEWER PLAN & PROFILE
LINE 5
WICHITA, KANSAS

RB JOB 4072E
SHEET 7 OF 23

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
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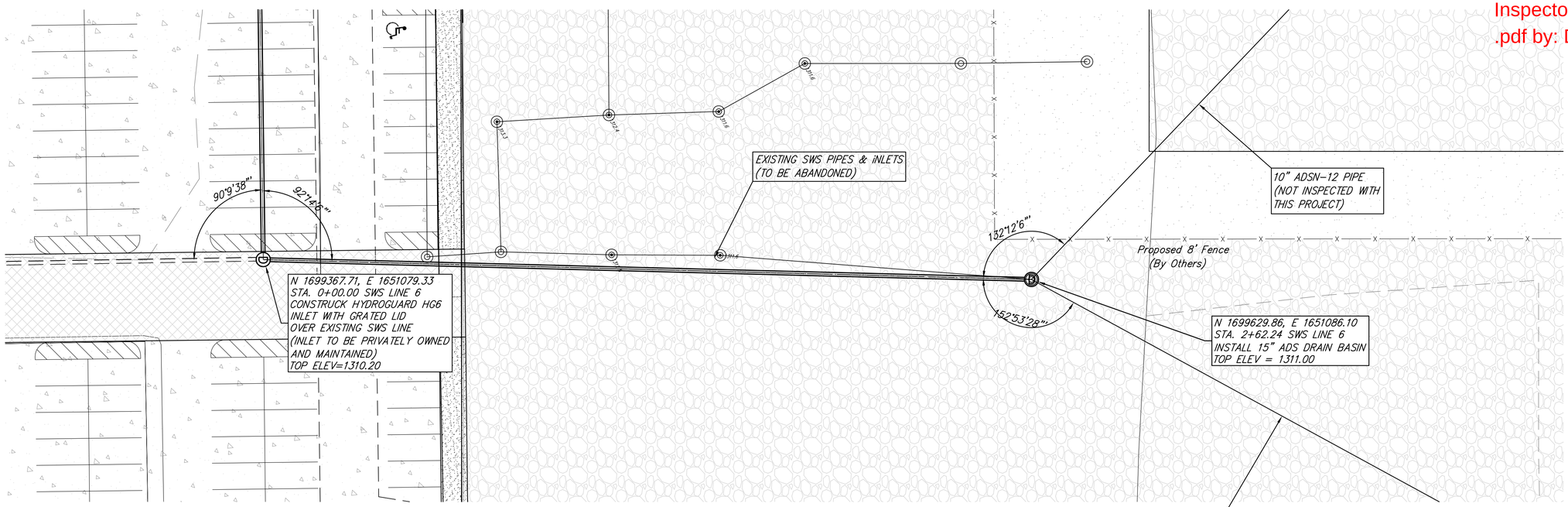

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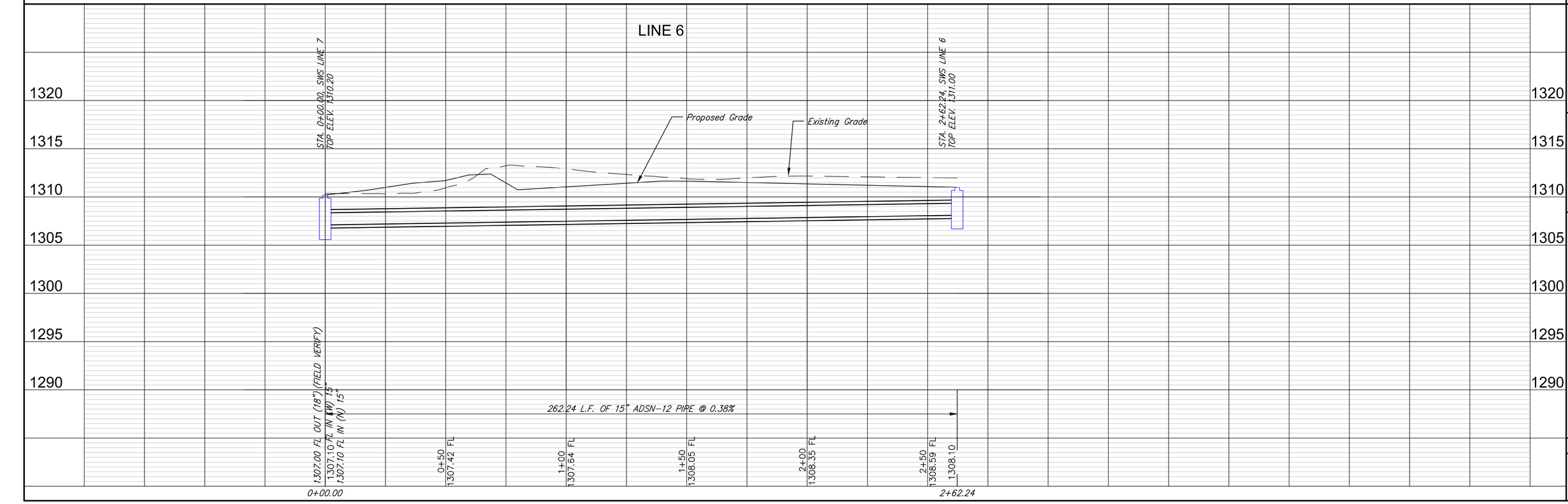

RUGGLES BOHM

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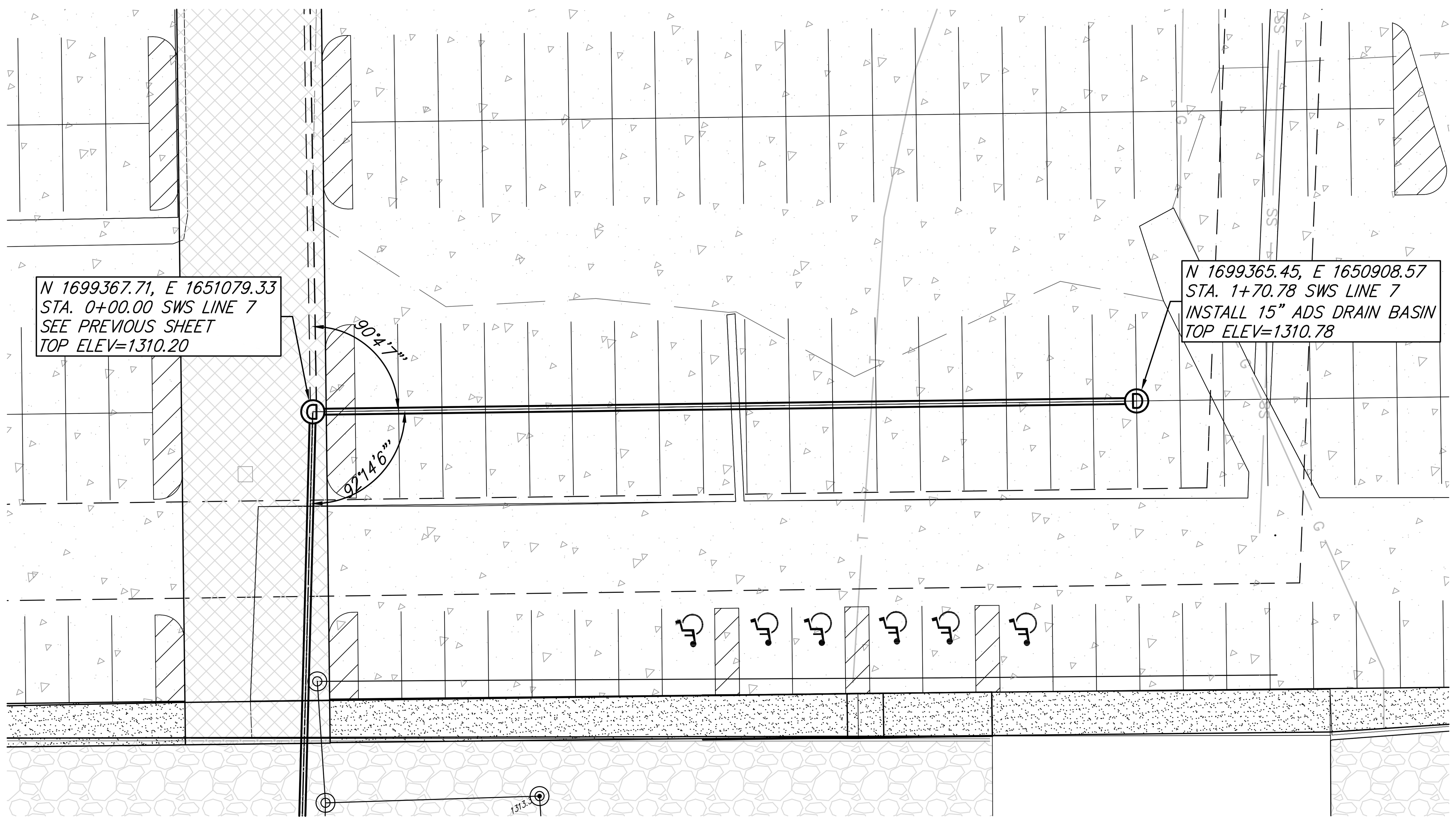
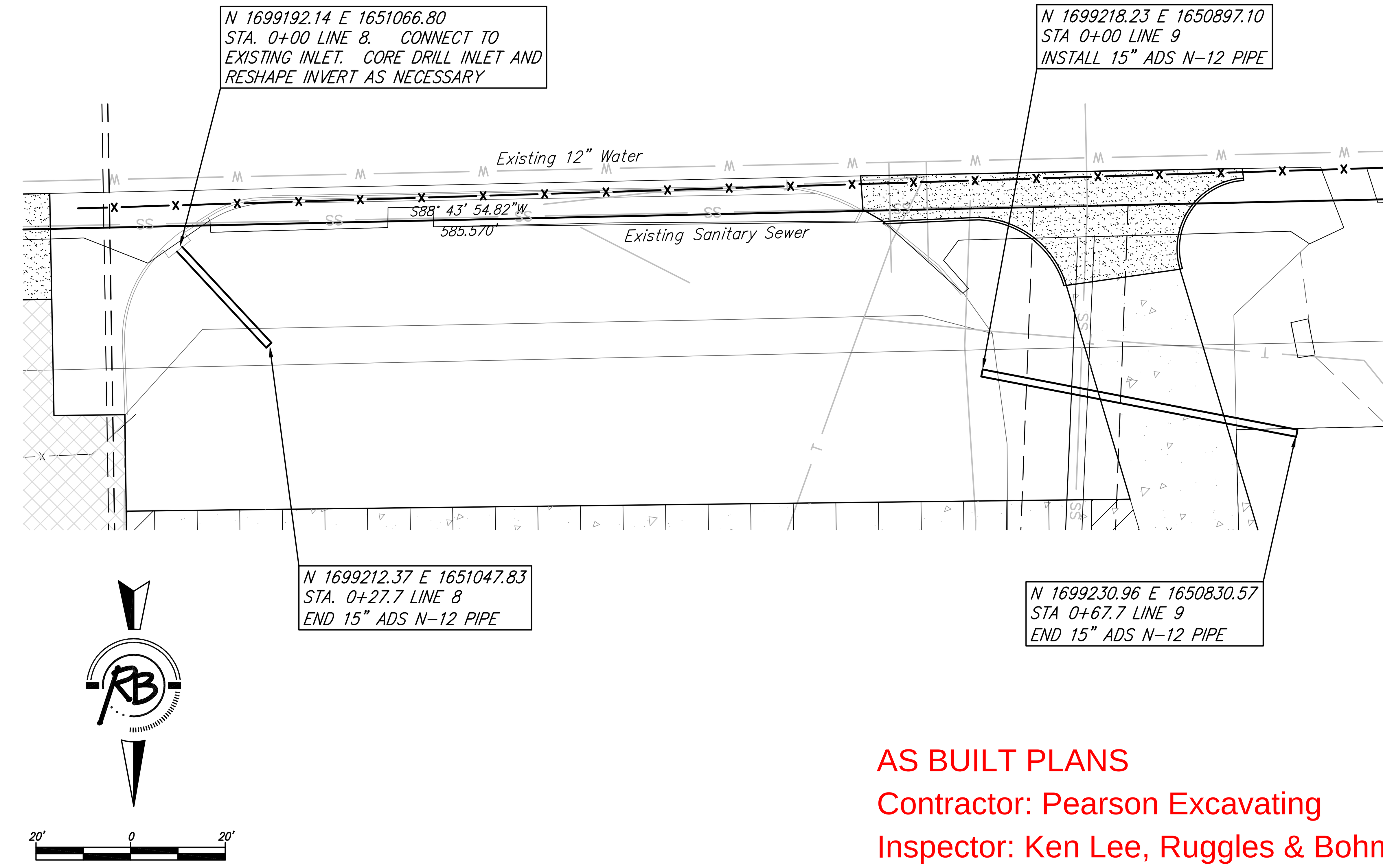
DESIGN KWL
DATE Aug. 1, 2013
REVIEW
UTILITY
PROJECT NUMBER .
DRAWING FILE ENG BASE {SWS 6}

STORMWATER SEWER PLAN & PROFILE
LINE 6
WICHITA, KANSAS

RB JOB 4072E
SHEET 8 OF 23





AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
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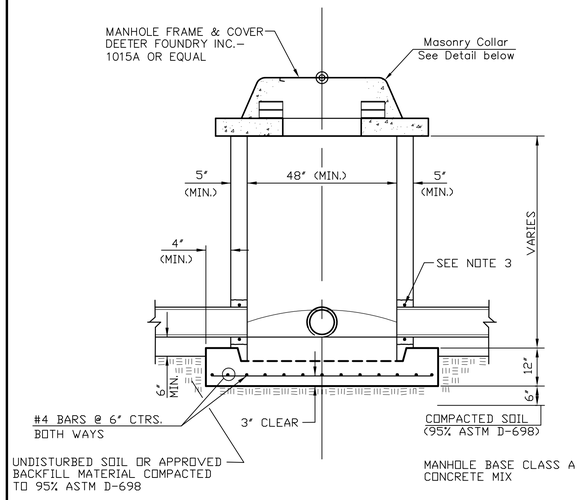
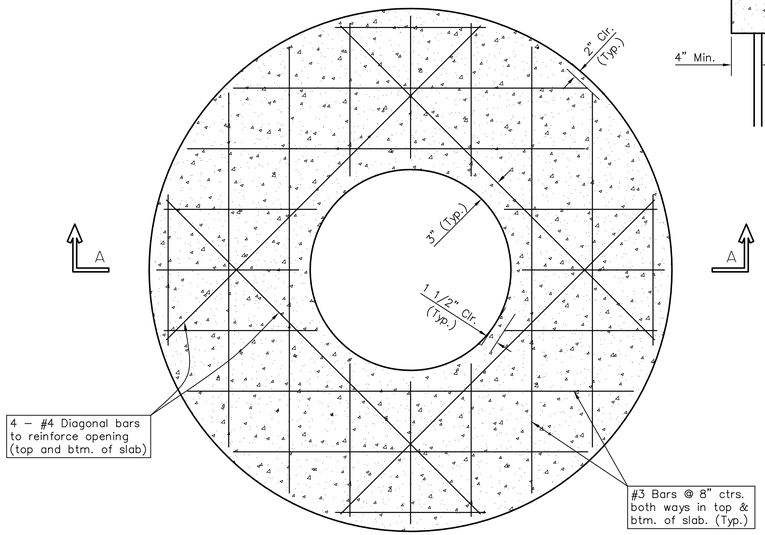
REVISED	REVIEW
DRAWN MLP	DATE Aug. 1, 2013
DESIGN KWL	UTILITY
PROJECT NUMBER .	DRAWING FILE ENG BASE {SWS 6}

STORMWATER SEWER PLAN & PROFILE
LINE 6
WICHITA, KANSAS

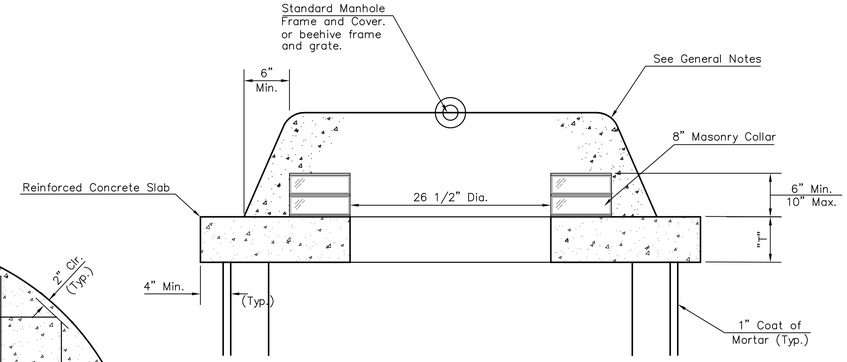
RB JOB 4072E



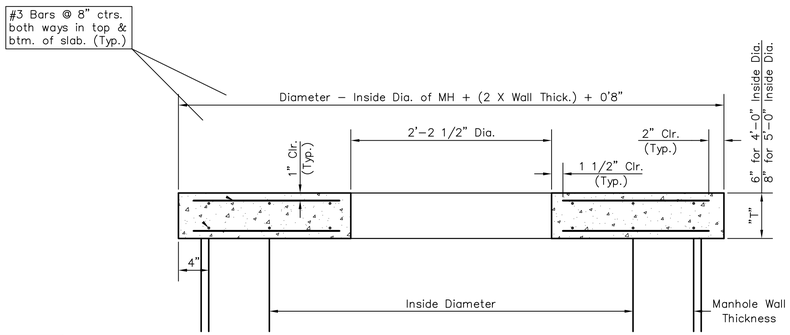
SHALLOW TYPE "P" MANHOLE



PLAN

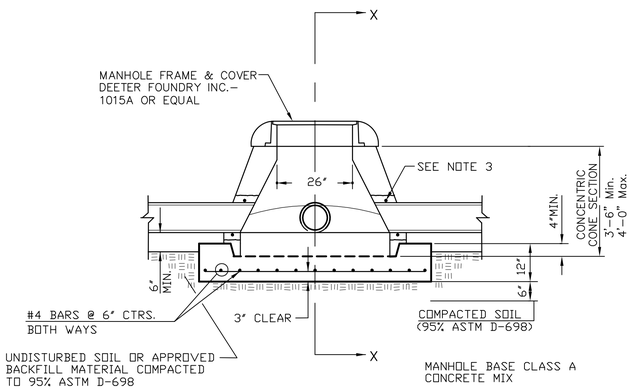


MASONRY COLLAR DETAIL

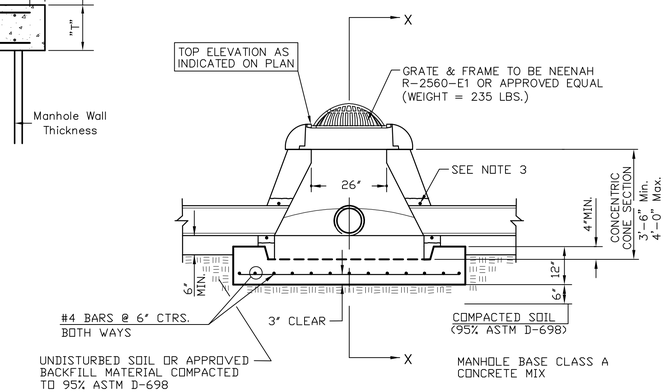


SECTION A–A

CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE "P" MANHOLE



SPECIAL SHALLOW TYPE "P" MANHOLE WITH BEEHIVE FRAME & GRATE

GENERAL NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON–SHRINK GROUT SHALL BE NON–METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON–SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEMEC SERIES 66 HI–BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
9. LIFTING HOLES SHALL BE FILLED WITH NON–SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL BE CLASS A CONCRETE THROUGHOUT. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
13. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MAHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
14. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
15. ALL BRICK USED IN MANHOLE CONSTRUCTION SHALL MEET GRADE SW OF ASTM C652 OR C62–87.

SHALLOW TYPE "P" MANHOLE DETAILS WITH BEEHIVE INLET

SEAL

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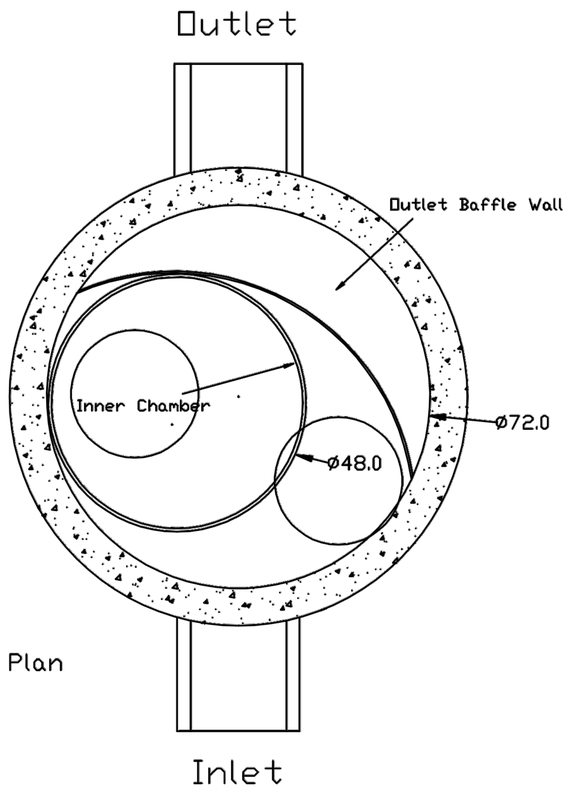
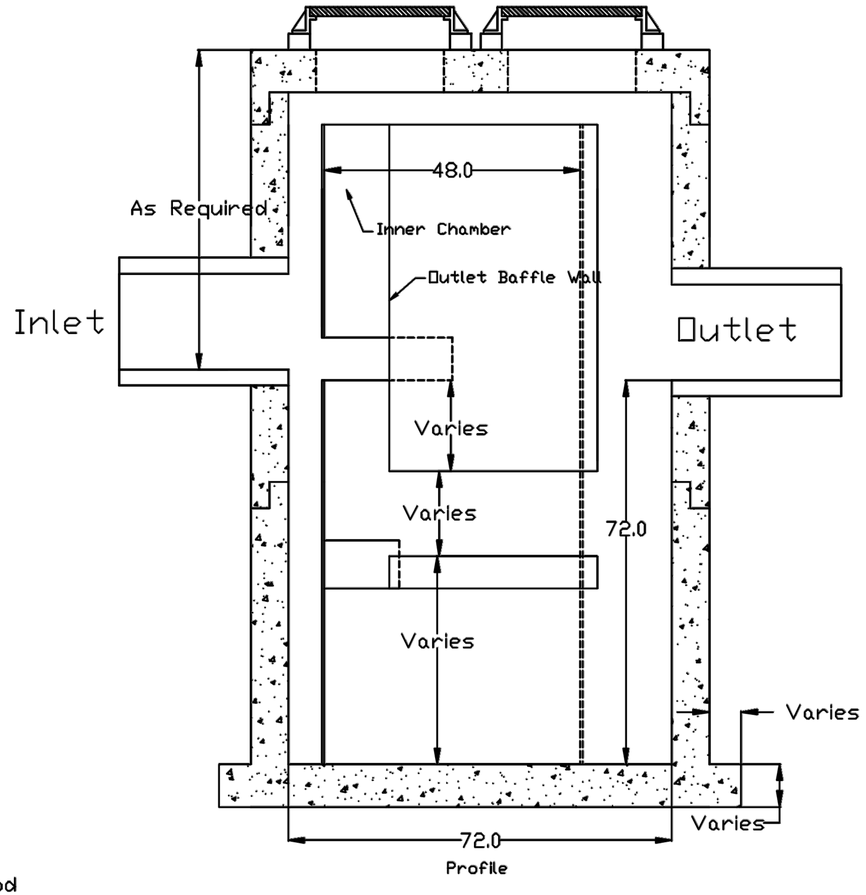
PROJECT NUMBER	RB JOB NO.	DWG. SCALE
0178 PPD	4072E	

DRAWING FILE: ENG BASE {MH DETAIL}

DATE: Aug. 1, 2013
DESIGN
DRAWN
REVIEW
SHEET 10 OF 23





U.S. Patent No. 6,951,619

Dimensions in inches
Permanent Pool Volume = 1250 US gallons
The Hydroguard must be cleaned after the construction period if it is used as a sediment and erosion control measure
The Hydroguard should be inspected once per year for stabilized sites
Inspection will determine the maintenance frequency (annual maintenance or once every two years typical for stabilized sites)
Sites with unstable conditions (exposed soil or materials storage) will require more frequent inspection and maintenance

Hydroworks, LLC
50 S. 21st St., Kenilworth, NJ 07033
Phone: 888-290-7900 Fax: 888-783-7271
Web: www.hydroworks.com

Hydroworks HG6 (72"ø)

PROJECT:

LOCATION:

REVISION DATE: 02/10/2011

Hydroworks

WATER QUALITY INLET DETAIL

SEAL

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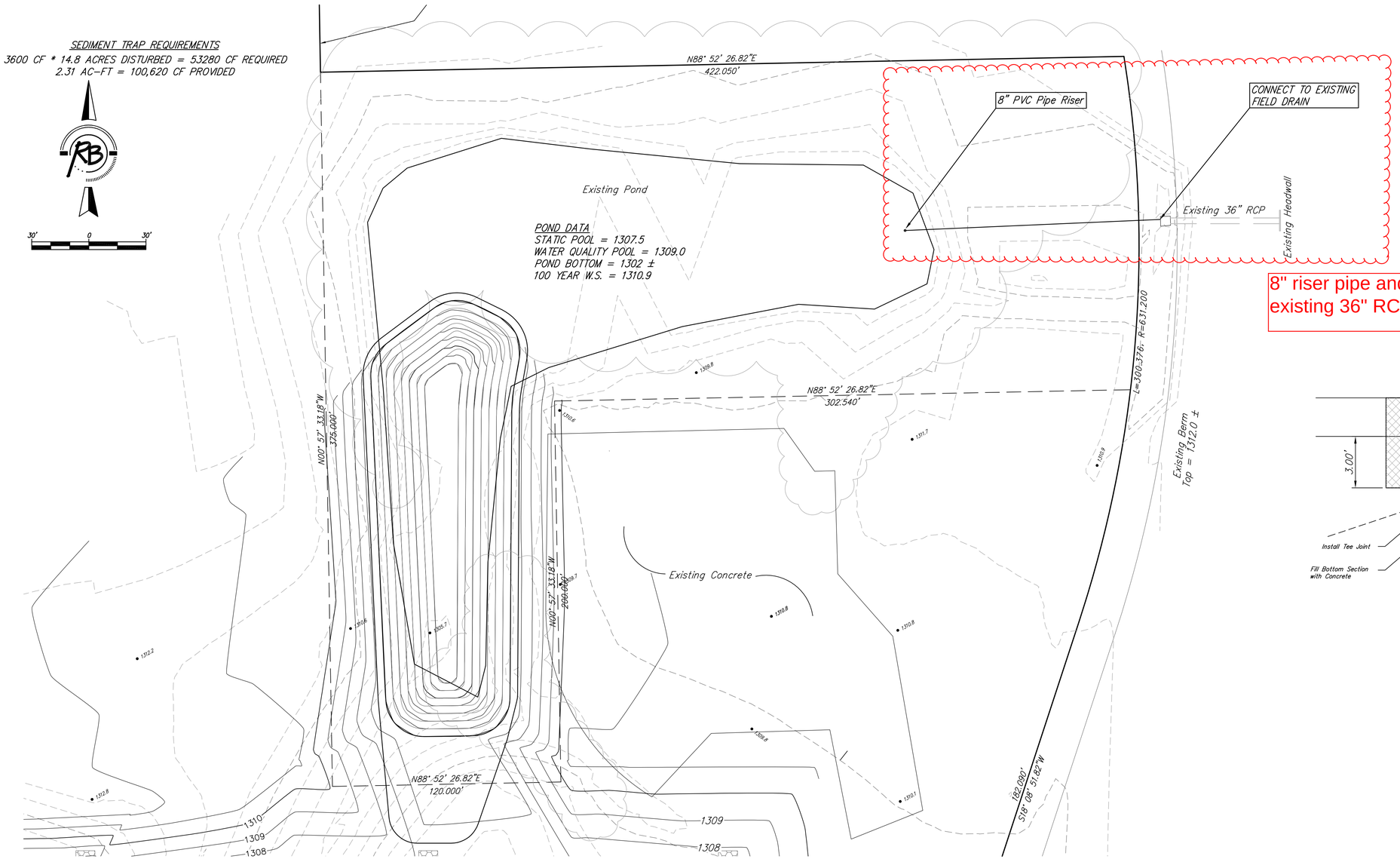
PROJECT NUMBER	RB JOB NO.	DWG. SCALE	DATE	SHEET
0178 PPD	4072E		Aug. 1, 2013	11 OF 23

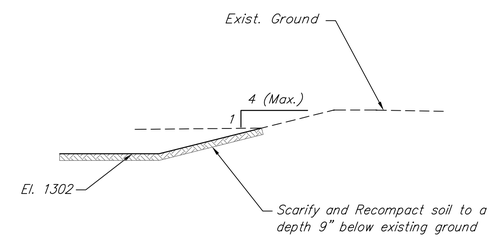
DESIGN
DRAWN
REVIEW
DRAWING FILE: ENG BASE {WQ DETAIL}

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
.pdf by: DGZ 06/20/14

SEDIMENT TRAP REQUIREMENTS
3600 CF * 14.8 ACRES DISTURBED = 53280 CF REQUIRED
2.31 AC-FT = 100,620 CF PROVIDED

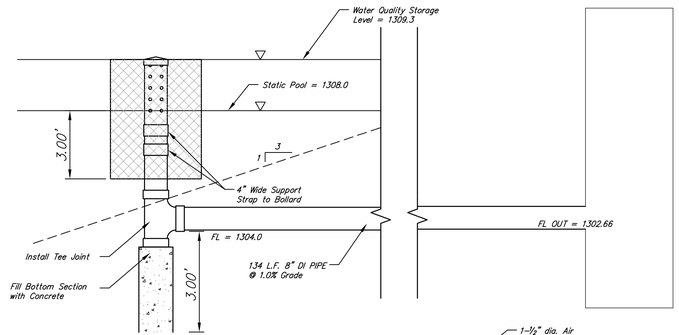
30' 0 30'

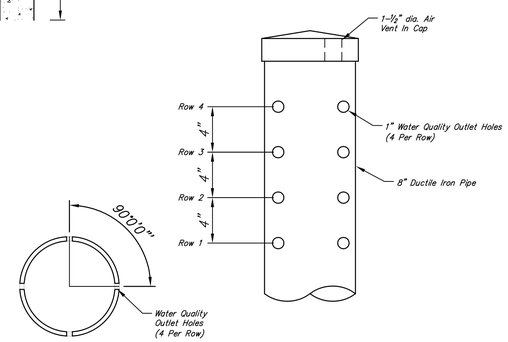




POND DETAIL

8" riser pipe and connection to existing 36" RCP was not installed.





NOTE:

CONTRACTOR SHALL PUMP POND DOWN AS NECESSARY TO EXCAVATE POND.

REMOVE EXISTING TREES AS NECESSARY FOR POND EXPANSION.

WATER QUALITY RISER OPENINGS SHALL BE WRAPPED AND COVERED DURING CONSTRUCTION.

Pond Information

Elevation (ft)	Area (acres)	Discharge (cfs)	Incremental Volume (ac-ft)	Total Volume (ac-ft)
1302	0.05	0	0	0
1305	0.40	0	0.68	0.68
1307.5	0.90	0.01	1.63	2.31
1309	1.60	0.3	1.88*	4.19
1310	2.17	18.0	1.89	6.08
1311	3.85	36.0	3.01	9.09
1312	4.50	61.0	4.00	13.09

Static Pool Storage (acts as silt storage during construction)
* WQ Volume & Channel Protection Volume

Pond Outflow controlled by Riser Assembly from 1307.5 to 1309.0. From 1309 to 1310.9, pond outflows through an existing 6' channel.

NORTH POND
LKQ SELF SERVICE SITE IMPROVEMENTS

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PROJECT NUMBER	RB JOB NO.	DWG. SCALE	SHEET
			12 OF 23

DRAWING FILE

DATE: Aug. 1, 2013
DESIGN: KWL
DRAWN: CH
REVIEW:

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
.pdf by: DGZ 06/20/14

40' 0 40'

15" Yard Inlet
1310.8 Top

15" Yard Inlet
1311.3 Top

15" Yard Inlet
1311.4 Top

15" Yard Inlet
1311.4 Top

15" Yard Inlet
1310.6 Top

EXISTING
BUILDING

SWS Line 5
See Sheet 7

SWS Line 4
See Sheet 6

SWS Line 3
See Sheet
4–5

SWS Line 2
See Sheet 3

SWS Line 1
See Sheet 3

12" Yard Inlet
1312.6 Top

12" Yard Inlet
1311.7 Top

12" Yard Inlet
1311.7 Top

12" Yard Inlet
1311.7 Top

12" Yard Inlet
1311.5 Top

Protect Guy
Anchor During
Construction

Proposed 8'
Fence by
Others

Cell Tower
Easement

Cell Tower

Protect Guy
Anchor During
Construction

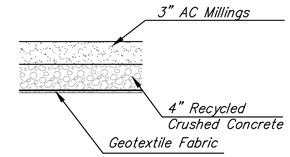
30' UTIL. ESMT.

N88° 52' 26.82"E
120.000'

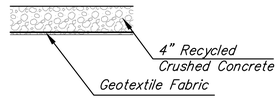
S00° 15' 00.82"W
706.830'

S29° 28' 09.82"W
97.390'

S29° 28' 09.82"W
128.110'



AC MILLINGS DETAIL



RECYCLED CONCRETE

FOR INFORMATION ONLY

NORTH SITE GRADING
LKQ SELF SERVICE SITE IMPROVEMENTS

SEAL

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PROJECT NUMBER	RB JOB NO.	DWG. SCALE
DRAWING FILE		

DATE Aug. 1, 2013
DESIGN KWL
DRAWN CH
REVIEW
SHEET 13 OF 23

AS BUILT PLANS
Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
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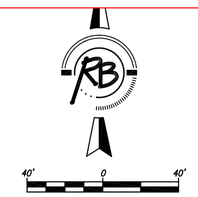
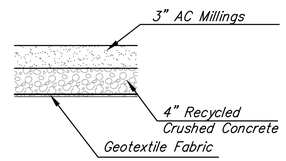
Protect Guy Anchor During Construction
Proposed 8' Fence by Others
Cell Tower Easement
12" End Section 1310.8 Top
12" Yard Inlet 1312.4 Top
Protect Guy Anchor During Construction
12" Yard Inlet 12.3 Top
PROTECT MONITORING WELLS DURING CONSTRUCTION
EXISTING BUILDING
40' UTILITY EASEMENT
12" Yard Inlet 1311.0 Top
12" Yard Inlet 1311.2 Top
SWS Line __ See Sheet __
SWS Line __ See Sheet __
88 LF 10" ADS Pipe
12" Yard Inlet 1311.0 Top
Proposed 8' Fence by Others
FF=1312.1
FF=1313.1
L=1246.5.16 R=2915.000
BNSF RAILROAD COMPANY





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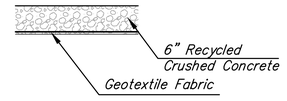

RECYCLED CONCRETE

REV. 10-7-13

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SOUTH SITE GRADING
LKQ SELF SERVICE SITE IMPROVEMENTS

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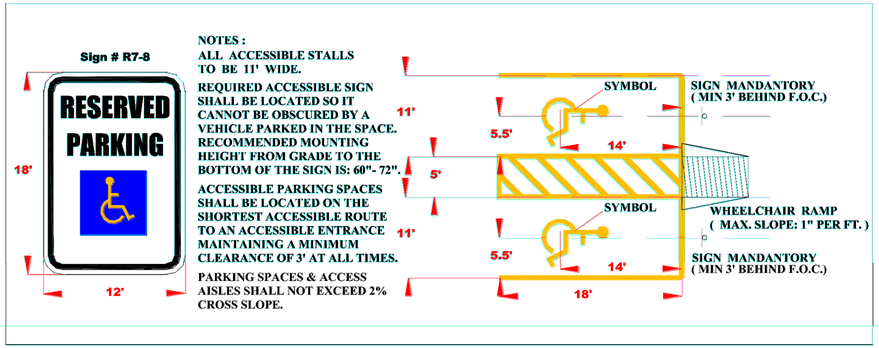
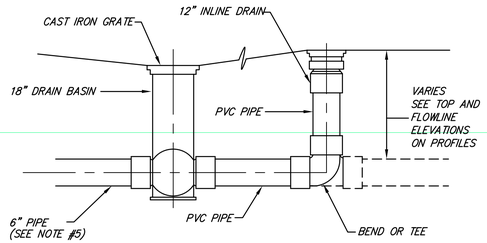
PROJECT NUMBER	RB JOB NO.	DWG. SCALE
DRAWING FILE		

DATE: Aug. 1, 2013
DESIGN: KWL
DRAWN: CH
REVIEW:
SHEET: 14 OF 23



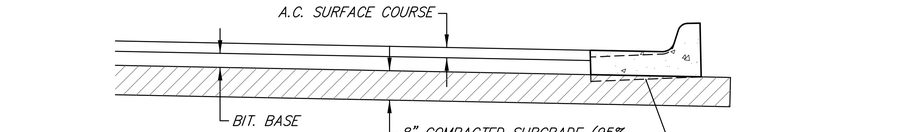
ACCESSIBLE STALL & SIGN DETAIL



DRAIN BASIN/ INLINE DRAIN

STORM DRAIN NOTES:

1. STORM DRAIN PIPE (EXCEPT WHERE SPECIFIC MATERIAL IS INDICATED) TO BE EITHER REINFORCED CONCRETE PIPE AS SPECIFIED BELOW, CLOSED PROFILE PVC PIPE MEETING ASTM D-1784 (FOR SIZES 21"-48"), OR SDR 35 PVC PIPE MEETING ASTM F-679 OR D-3034 (FOR SIZES 8"-18").
2. REINFORCED CONCRETE PIPE SHALL BE CLASS III, MEETING REQUIREMENTS OF ASTM C-76 FOR WALL B.
3. SDR 35 PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321.
4. DRAIN BASINS TO BE PREFABRICATED PVC BASINS WITH SLOTTED CAST IRON GRATES (AS MFGD. BY ADS, INC. OR APPROVED EQUAL).
5. CONNECTION OF DISSIMILAR PIPE MATERIALS SHALL BE MADE WITH ADAPTERS MADE FOR THAT PURPOSE.
6. PRECAST CONCRETE INLETS MAY BE USED AT CONTRACTORS OPTION WITH ENGINEER'S APPROVAL OF SHOP DRAWINGS.

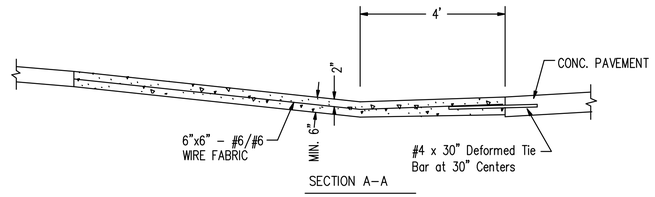


NOTE:

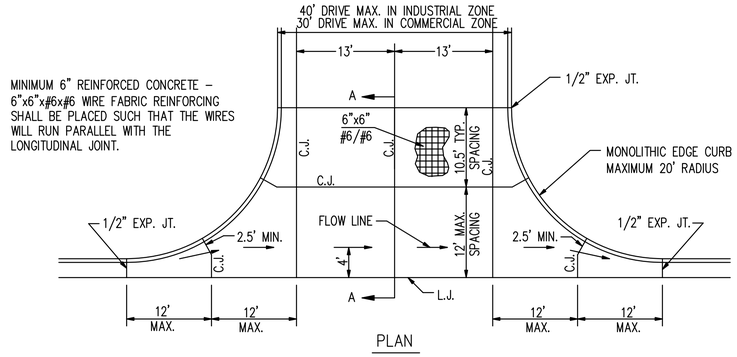
LIGHT-DUTY AC = 2" SURFACE, 3.5" BIT. BASE.
HEAVY-DUTY AC = 2" SURFACE, 5.5" BIT. BASE

NOTE: 6" AB-3 MAY BE USED IN LIEU OF STABILIZED SOIL.

PARKING LOT PAVEMENT/& GUTTER DETAIL



SECTION A-A



MINIMUM 6" REINFORCED CONCRETE - 6"x6"x#6x#6 WIRE FABRIC REINFORCING SHALL BE PLACED SUCH THAT THE WIRES WILL RUN PARALLEL WITH THE LONGITUDINAL JOINT.

PLAN

DRIVE APPROACH DETAIL

FOR INFORMATION ONLY

PARKING LOT AND ADS DRAIN DETAILS
LKQ SELF SERVICE SITE IMPROVEMENTS

SEAL

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DATE	Aug. 1, 2013
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DWG. SCALE	
SHEET	15 OF 23
DRAWING FILE	

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Contractor: Pearson Excavating
Inspector: Ken Lee, Ruggles & Bohm
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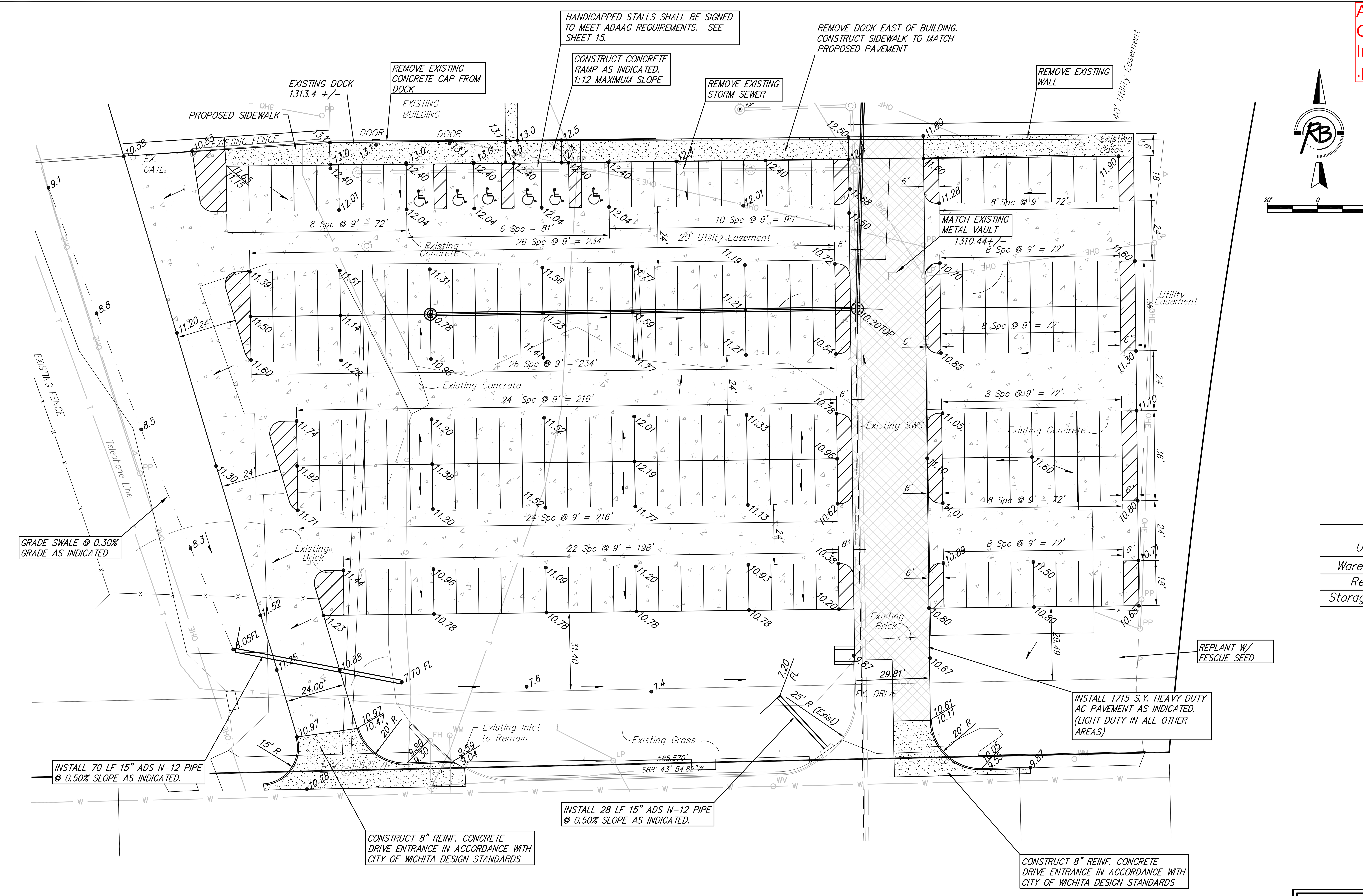

Use	Required Ratio	Area	Stalls Required
Warehouse	1/2000	8000	4
Retail	1/250	4122	17
Storage Yard	1/43560	900,371	21
		Total	42

187 Standard Stall Provided
6 Handicapped Stalls Provided

REV. 10-7-13

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SOUTH PARKING LOT
LKQ SELF SERVICE SITE IMPROVEMENTS

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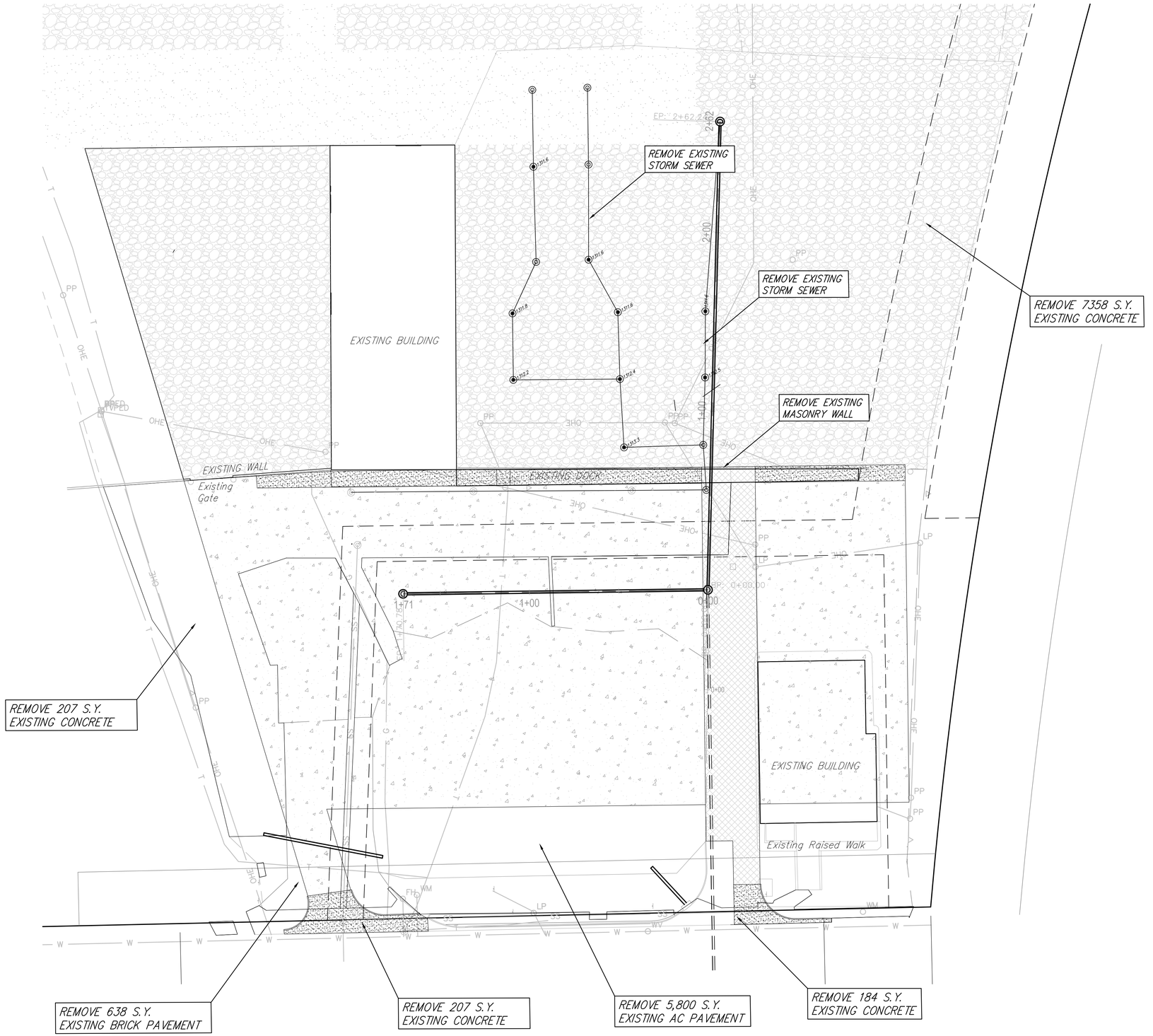
SHEET 16 OF 23



NOTES:

ALL CONCRETE, ASPHALT, BRICK AND OTHER PAVEMENT EXPOSED DURING EXCAVATION ACTIVITIES MUST BE REMOVED FROM THE SITE.

ALL TRASH AND DEBRIS THAT IS ENCOUNTERED DURING GRADING ACTIVITIES MUST BE REMOVED FROM THE SITE.

EXCESS SOIL AND GRAVEL MAY BE STOCKPILED IN THE NORTHWEST AREA OF THE SITE (WEST OF THE POND).

FOR INFORMATION ONLY

DEMOLITION PLAN
LKQ SELF SERVICE SITE IMPROVEMENTS

SEAL

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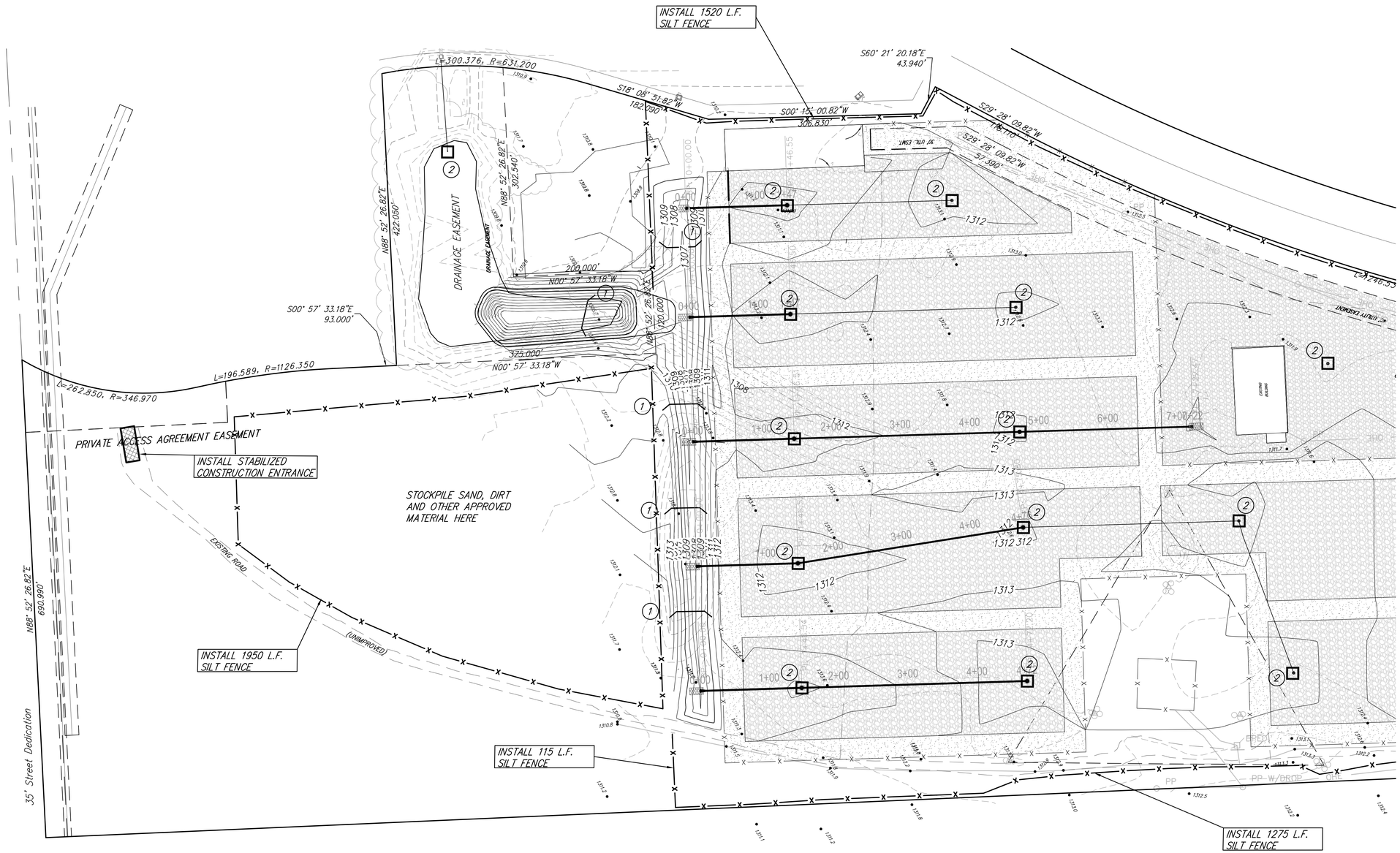
DESIGN	KWL
DRAWN	CH
REVIEW	
PROJECT NUMBER	
RB JOB NO.	
DWG. SCALE	
DRAWING FILE	
SHEET	17 OF 23



SILT FENCE

DITCH CHECK (1)

INLET PROTECTION (2)

STABILIZED AREA

NORTH EROSION CONTROL PLAN
LKQ SELF SERVICE SITE IMPROVEMENTS

SEAL

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PROJECT NUMBER	RB JOB NO.	DWG. SCALE

DRAWING FILE

DATE: Aug. 1, 2013

DESIGN: KWL

DRAWN: CH

REVIEW:

SHEET: 18 OF 23

INSTALL 1273 L.F.
SILT FENCE

INSTALL 1519 L.F.
SILT FENCE

CATV LINE

1311

1313

PP

BURIED CATV/FIBER

20' UTIL. ESMT.

UTIL. ESMT.

100' CHICAGO ROCK ISLAND & PACIFIC RAILROAD COMPANY

Existing Brick

30' Contingent Street Dedication

S88° 43' 54"W 585.52'(M)

PROVIDE INLET SEDIMENT BARRIER

PROVIDE INLET SEDIMENT BARRIER

INSTALL 760 L.F.
SILT FENCE

MAINTAIN STABILIZED CONSTRUCTION ENTRANCE

INSTALL 395 L.F.
SILT FENCE

30 0 30'

SILT FENCE

INLET PROTECTION (1)

DROP INLET PROTECTION (2)

STABILIZED AREA

SOUTH EROSION CONTROL PLAN
LKQ SELF SERVICE SITE IMPROVEMENTS

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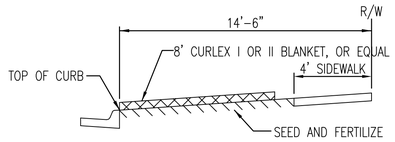
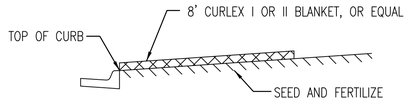
PROJECT NUMBER	RB JOB NO.	DWG. SCALE
DRAWING FILE		

DATE Aug. 1, 2013
DESIGN KWL
DRAWN CH
REVIEW

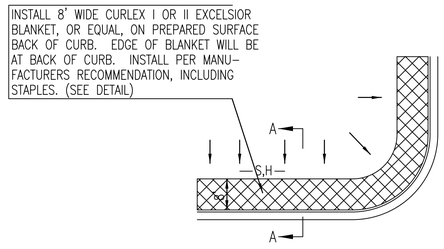
SHEET 19 OF 23



SECTION B-B



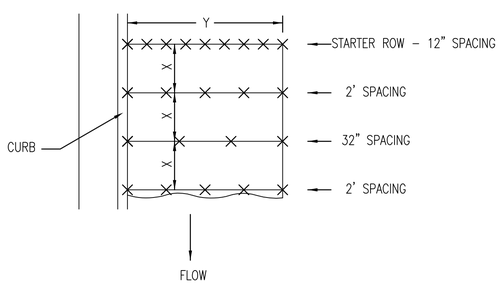
SECTION A-A



GENERAL NOTES

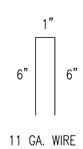
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

BACK OF CURB PROTECTION DETAIL



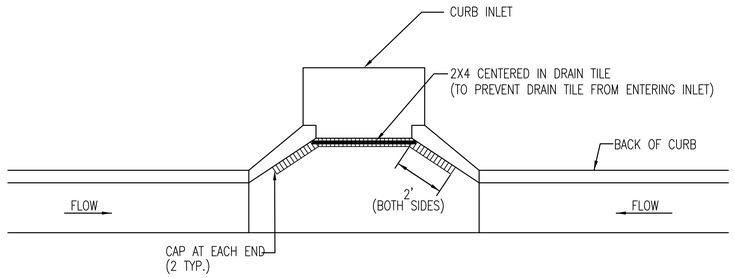
STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP
(X & Y = RECOMMENDED BY MANUFACTURE)



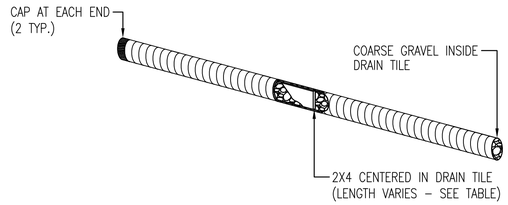
STAPLE

DETAILS FOR APPROVED EROSION CONTROL MAT



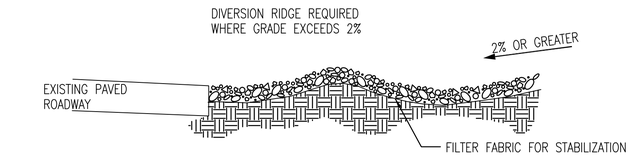
NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"

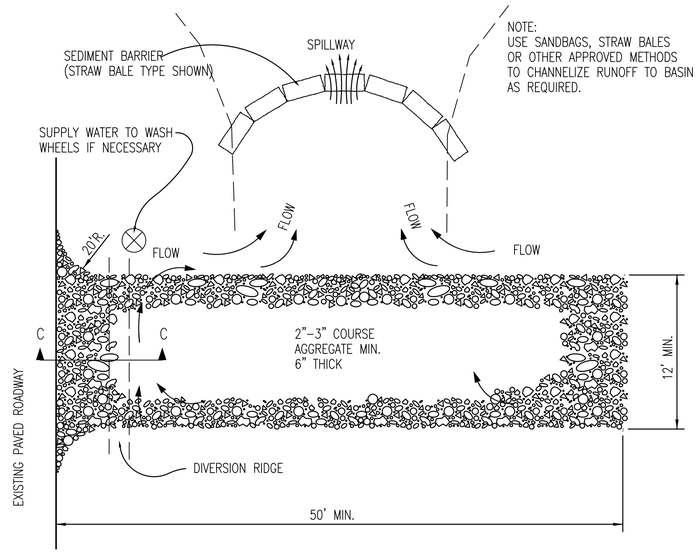


CURB INLET PROTECTION

4" PERFORATED PIPE W/ GRAVEL



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

CITY ENGINEER
GARY JANZEN, P.E.

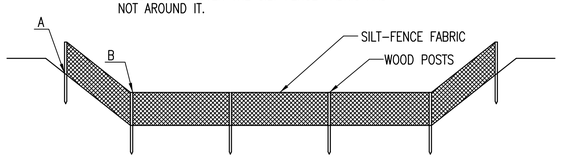
PROJECT NUMBER	OCA NUMBER	DATE
		08/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN	DRAWN

SHEET
20 *of* 23

NOTE: POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE SILT FENCE FABRIC AND NOT AROUND IT.



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED.
WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK, NOT OVER IT. SILT FENCE DITCH CHECKS OFTEN FAIL WHEN OVERTOPPED.
SILT FENCE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
THE SILT FENCE SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE TOP OF THE LOW POINT OF THE FENCE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
SILT FENCE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD.
SILT FENCE SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	SPACING CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS AT LEAST 12" DEEP BY 6" WIDE.
EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK.
PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH FOR LATER USE.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSTREAM SIDE OF THE TRENCH.
PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSTREAM EDGE OF THE TRENCH.
LINE TWO SIDES OF THE TRENCH WITH THE FABRIC AS SHOWN ON DETAIL. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED.
LAY THE EXPOSED SILT FENCE ON THE UPSTREAM SIDE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSTREAM OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 24". PLACE POSTS NO MORE THAN 4' APART.
ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

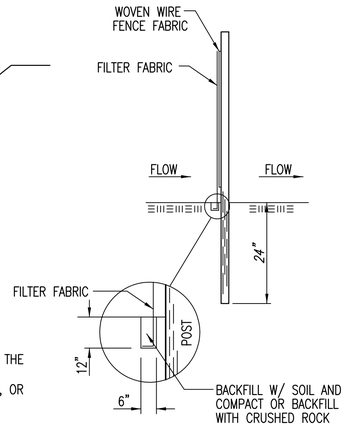
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK–NOT OVER IT. PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. SILT FENCE INSTALLATIONS QUICKLY DETERIORATE WHEN WATER OVERTOPS THEM.
DO NOT PLACE SILT FENCE POSTS ON THE UPSTREAM SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT PLACE A SILT FENCE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.
DO NOT PLACE SILT FENCE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.
FOLLOW PRESCRIBED DITCH CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.
DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE LOW POINT ON THE TOP OF THE FENCE.
DO NOT PLACE SILT FENCE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

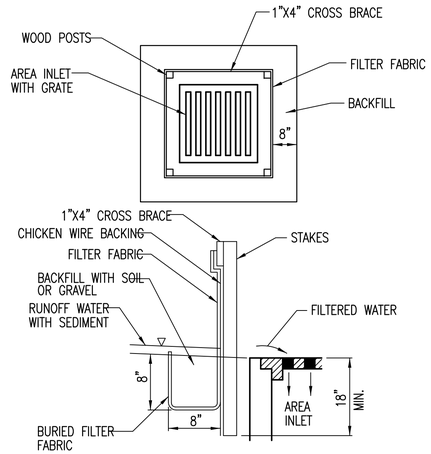
INSPECTION AND MAINTENANCE:

SILT FENCE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



ANCHOR TRENCH DETAIL



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE WIRE OR POLYMERIC MESH BACKING USED TO HELP SUPPORT THE SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
THE MATERIAL USED TO FRAME THE TOPS OF THE POSTS SHOULD BE 1" BY 4" BOARDS.
SILT FENCE FABRIC AND SUPPORT BACKING SHOULD BE ATTACHED TO THE WOODEN POSTS AND FRAME WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE A SILT FENCE DROP INLET BARRIER IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED.
WATER SHOULD FLOW THROUGH SILT FENCE, NOT OVER IT. SILT FENCE BARRIERS FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED.
WHEN USED AS A BARRIER FOR AREA INLETS, SILT FENCE FABRIC AND POSTS MUST BE SUPPORTED AT THE TOP BY A WOODEN FRAME.
WHEN A SILT FENCE BARRIER FOR AREA INLETS IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 8" DEEP BY 8" WIDE.
DRIVE POSTS TO A DEPTH OF AT LEAST 18" AROUND THE PERIMETER OF THE AREA INLET.
THE DISTANCE BETWEEN POSTS SHOULD BE 4' OR LESS. IF THE DISTANCE BETWEEN TWO ADJACENT CORNER POSTS IS MORE THAN 4', ADD ANOTHER POST(S) BETWEEN THEM.
CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN FRAME MADE OF 1" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING.
ATTACH THE WIRE OR POLYMERIC–MESH BACKING TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC LONG ENOUGH TO WRAP AROUND THE PERIMETER OF THE AREA INLET. ADD MORE LENGTH FOR OVERLAPPING THE FABRIC JOINT. PLACE THE EDGE OF THE FABRIC IN THE TRENCH, STARTING AT THE OUTSIDE EDGE OF THE TRENCH. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED.
ATTACH THE SILT FENCE TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. THE JOINT SHOULD BE OVERLAPPED TO THE NEXT POST.

NOTE: WHEN A SILT FENCE BARRIER FOR AREA INLET IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

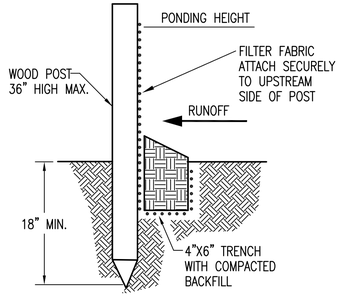
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE BARRIER FOR AREA INLET–NOT OVER IT. PLACE A SILT FENCE BARRIER FOR AREA INLET IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. SILT FENCE BARRIER FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED.
DO NOT PLACE POSTS ON THE OUTSIDE OF THE SILT FENCE BARRIER FOR AREA INLET. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESISTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT INSTALL SILT FENCE BARRIER FOR AREA INLETS WITHOUT FRAMING THE TOP OF THE POSTS. THE CORNER POSTS AROUND AREA INLETS ARE STRESSED IN TWO DIRECTIONS WHEREAS A NORMAL SILT FENCE IS ONLY STRESSED IN ONE DIRECTION. THIS ADDED STRESS REQUIRES MORE SUPPORT.

INSPECTION AND MAINTENANCE:

SILT FENCE BARRIER FOR AREA INLETS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE SILT FENCE?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



SILT FENCE BARRIERS

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT–OF–WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE.
MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH.
PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT–FENCE FABRIC SHOULD REMAIN EXPOSED.
LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS.
JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18".
PLACE POSTS NO MORE THAN 4' APART.
ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES.
DO NOT PLACE SILT–FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT.
SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND–SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

INSPECTION AND MAINTENANCE:

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DO THE SILT FENCES SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SILT FENCE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
.	.	11/2010

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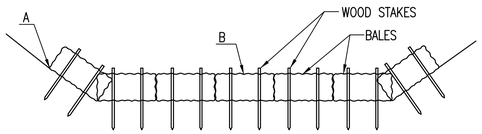
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET 21 of 23

NOTE: POINT A MUST BE HIGHER THAN POINT B
SO THAT WATER FLOWS OVER THE BALES AND
NOT AROUND THEM.



STRAW BALE DITCH CHECKS

MATERIAL SPECIFICATION:

BALE DITCH CHECKS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
OPTIONAL: THE DOWNSTREAM SCOUR APRON SHOULD BE CONSTRUCTED OF A DOUBLE-NETTED STRAW EROSION-CONTROL BLANKET AT LEAST 6' WIDE.
OPTIONAL: THE METAL LANDSCAPE STAPLES USED TO ANCHOR THE EROSION-CONTROL BLANKET SHOULD BE AT LEAST 8" LONG.

PLACEMENT:

BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
STRAW BALE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD.
BALES SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.
THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH-IT WILL BE USED LATER.
OPTIONAL: ON THE DOWNSTREAM SIDE OF THE TRENCH, ROLL OUT A LENGTH OF EROSION-CONTROL BLANKET (SCOUR APRON) EQUAL TO THE LENGTH OF THE TRENCH. PLACE THE UPSTREAM EDGE OF THE EROSION-CONTROL BLANKET ALONG THE BOTTOM UPSTREAM EDGE OF THE TRENCH. THE EROSION CONTROL BLANKET SHOULD BE ANCHORED IN THE TRENCH WITH ONE ROW OF 8" LANDSCAPE STAPLES PLACED ON 18" CENTERS. THE REMAINDER OF THE EROSION-CONTROL BLANKET (THE PORTION THAT IS NOT LYING IN THE TRENCH) WILL SERVE AS THE DOWNSTREAM SCOUR APRON. THIS SECTION OF THE BLANKET SHOULD BE ANCHORED TO THE GROUND WITH 8" LANDSCAPE STAPLES PLACED AROUND THE PERIMETER OF THE BLANKET ON 18" CENTERS. THE REMAINDER OF THE BLANKET SHOULD BE ANCHORED USING TWO EVENLY SPACED ROWS OF 8" LANDSCAPE STAPLES ON 18" CENTERS PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSTREAM SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP AND EXTEND UPSTREAM NO MORE THAN 24".

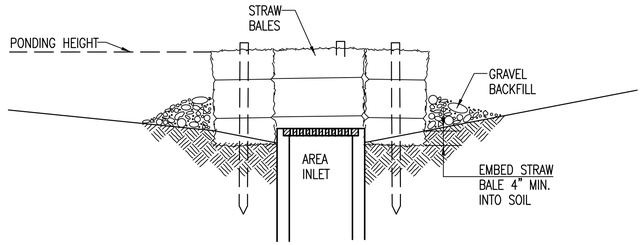
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

DO NOT PLACE A BALE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.
DO NOT PLACE BALE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.
FOLLOW PRESCRIBED DITCH-CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.
DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE.
DO NOT PLACE BALE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE DITCH CHECKS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE CHECK.

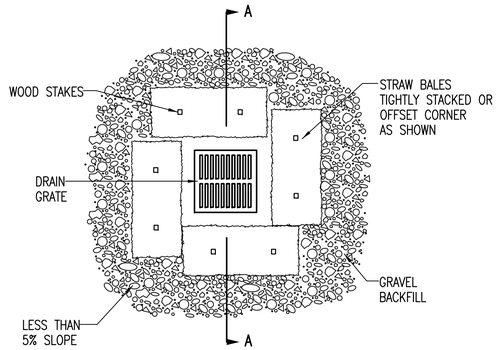
INSPECTION AND MAINTENANCE:

BALE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES AND/OR SCOUR APRONS (OPTIONAL) DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

MATERIAL SPECIFICATION:

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET.
WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS.
STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.
NOTE: WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

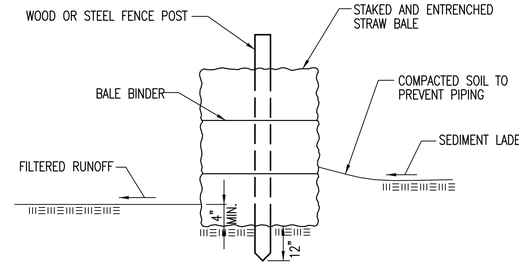
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR.
BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE AREA INLET BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, BALE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
BALE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS.
DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STRAW BALE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
.	.	11/2010

CITY ENGINEER'S OFFICE
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WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET
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FINAL PLAT

STOCKYARD INDUSTRIAL PARK ADDITION

AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS