

**GENERAL NOTES:**

- Contractor will be required to provide notice to utility companies a minimum of twenty-four (24) hours prior to any excavation, as follows:

Kansas One-Call (316)687-2470

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

Cox Communications (316)262-4270 or (316)263-2061

Westar Energy/  
Kansas Gas & Electric Company (800)482-4950  
AT&T 1-555-1212  
City of Wichita Water Department (316)268-4908  
City of Wichita Sewer Department (316)268-4071  
Aquila Natural Gas (316)941-1608 or (800)303-0357

- Exist. utilities and their locations, 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 which do not conflict with proposed constructions.

- The Contractor to verify utility locations prior to construction of this project.

- Utility service and installation shall be coordinated with the respective utility owner. Contacts are:

Kansas Gas Service Jim Coe (316)832-3126  
Westar Energy Miles Capps (316)261-6251  
Aquila Networks Calvin Briggs (316)942-8811  
Wichita Water & Sewer Kerry Gibson (316)268-4555  
AT&T Jim Toben (316)268-2759  
Cox Communications Mark Anaya (316)262-4270

- All lawn/turf areas disturbed by construction of proposed improvements shall be restored with the same grass as existing. Restoration of disturbed areas shall include, but not limited to, soil preparation, fertilizing, seeding, mulching (all seeded areas, outside the limits of erosion mat placement), and/or reseeded, and installation of erosion control mat. All seeding work shall be in accordance with the City of Wichita Standard Specifications and the City of Wichita Administrative Regulations No. AR 6.5 which governs cleanup and respiration or replacement following construction, all cost for the soil preparation, seeding and mulching (all seeded areas, outside the limits of erosion mat placement) shall be paid for through the lump sum bid item for "Seeding." All seeded areas within eight feet of the back of new curb shall be covered with an approved erosion mat, which shall be paid for by the measured quantity bid item "Back of Curb Protection (8' wide)."

- Traffic affected by the construction of this project shall be handled in accordance with the latest edition of the Manual on Uniform Traffic Control Devices.

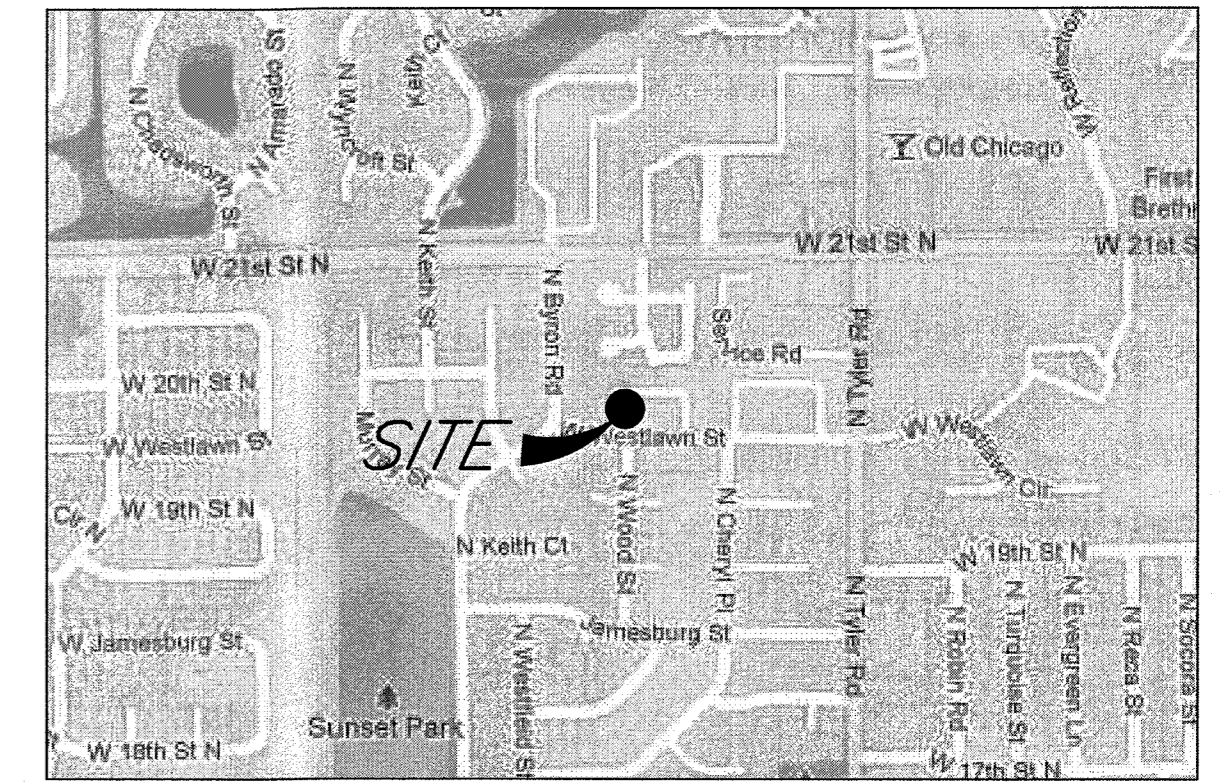
- It is the contractor's responsibility to visit this site to better understand the extent of site clearing and restoration to be performed. Site Clearing and Restoration shall include all costs for removal of items which a pay item is not provided.

- The contractor shall be responsible for preserving property irons. The contractor will be required to re-establish any property irons which are damaged or destroyed by the construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws.

- Properties within the project limits may have underground sprinkler systems in public right-of-way which conflict with new construction. Contractor will be required to remove such improvements should they not be removed by their owner at the time of construction of the project. The contractor will be required to salvage all sprinkler heads and/or valves and give such material to owner. Portions of underground sprinkler systems not in conflict with new construction shall be protected from damage and shall remain in place. All work in connection with underground sprinkler systems shall be considered as subsidiary to the contract pay items for work.

- Cuts made in paved surfaces on public property will be repaired by the City's Contractor and charged against the contractor. Unit Repair prices are available from the city at 268-4418. A surcharge may be applicable. Call 268-4418 for details. Repair costs to be paid prior to release of utility service if utilities are effected.

# DRAINAGE TO SERVE BERKSHIRE APARTMENT West Westlawn Street 0158 PPD (607861) CITY OF WICHITA, KANSAS Gary Janzen, P.E., City Engineer



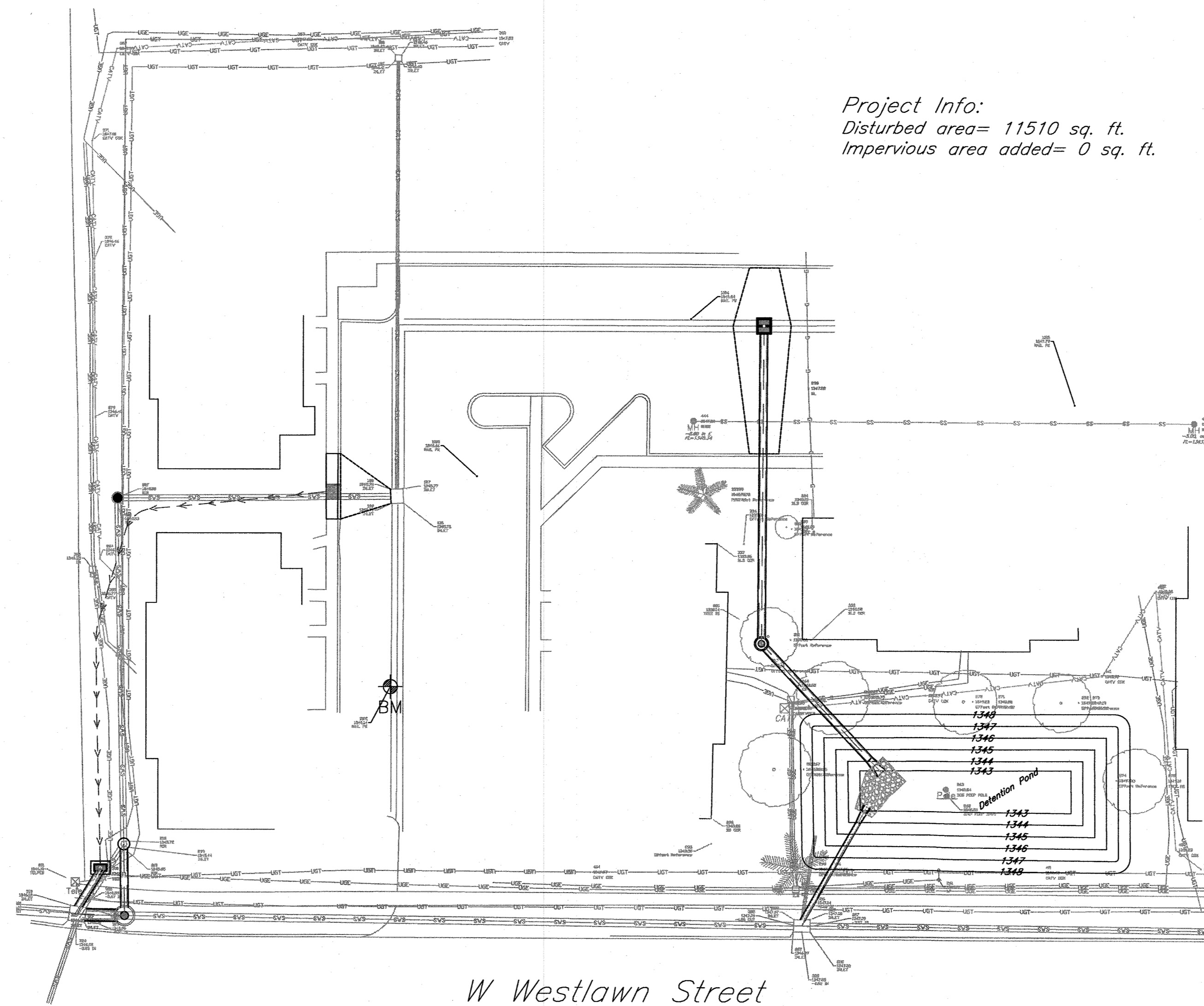
**LOCATION MAP**  
(For Visual Use Only)

**Index of Sheets:**

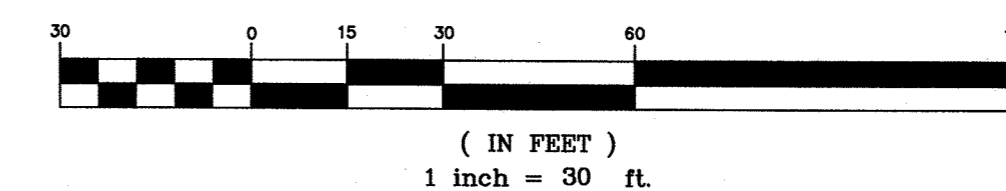
- 1.0 Cover Sheet
- 2.0 Plan Sheet/Grading Plan
- 3.0 Plan and Profile Lines 1, 2 & 3
- 3.1 Plan and Profile Line 4
- 3.2 Single-Double Drop Inlet Details
- 3.3 Double-Double Drop Inlet Details
- 3.4 Inlet Beam Details
- 3.5 Precast Reinf. Conc. MH Details
- 3.6 MH Frame and Cover Details
- 4.0 Erosion Control Plan
- 4.1 Erosion Control Details
- 4.2 Erosion Control Details

**Benchmark:**

PK Nail, about 62 ft south of the area inlet on the parking lot.  
Elev. = 1346.14 (NAVD 88)



Project Info:  
Disturbed area= 11510 sq. ft.  
Impervious area added= 0 sq. ft.

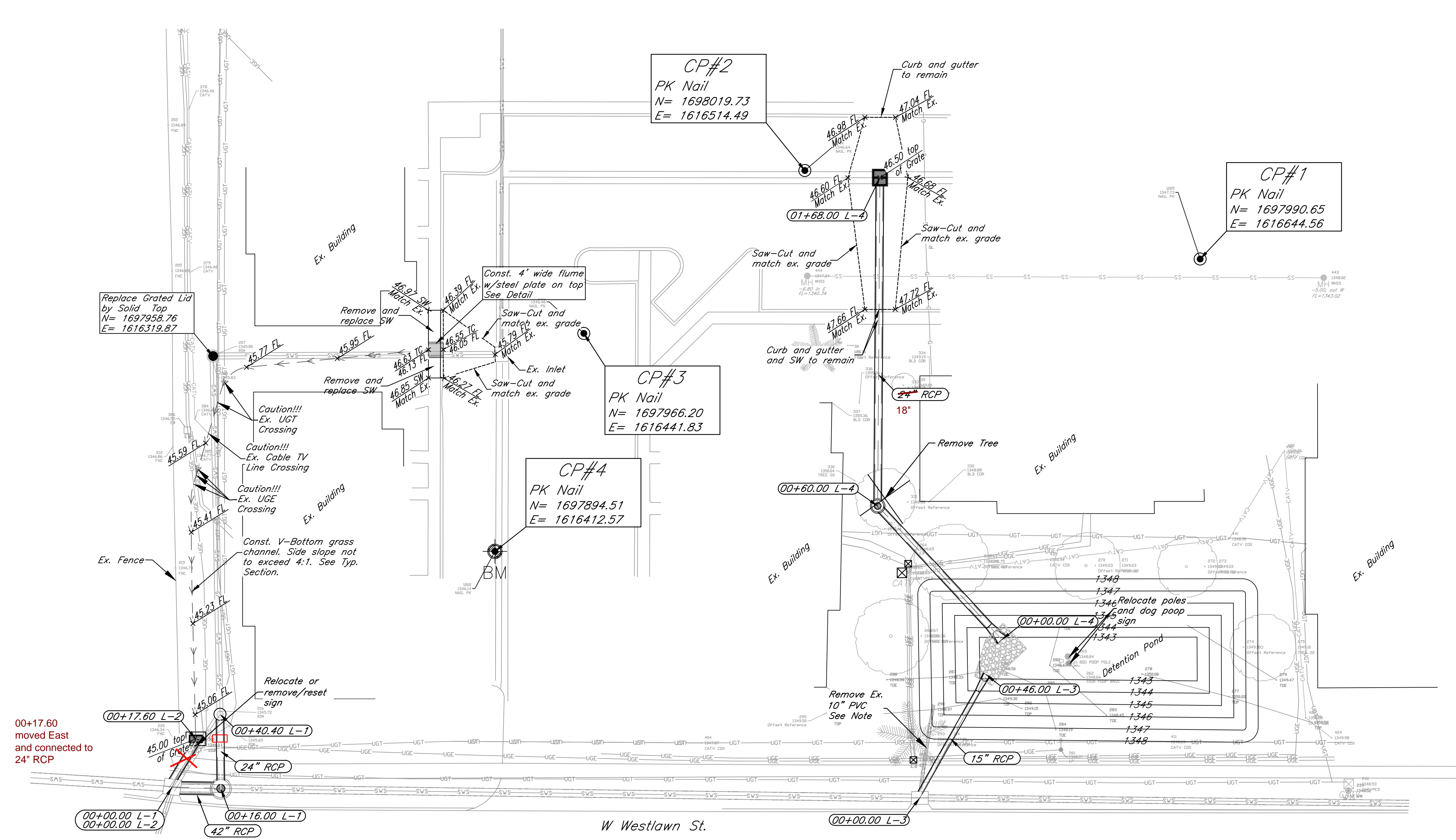


|  |   |
|--|---|
| <b>AS BUILTS</b>                                 |   |
| Contractor:<br>Ewertz<br>Excavation<br>5/15/2014 | Project Inspector:<br>Larry Gann<br><br>117 E. Lewis, Wichita, KS 67202 (316)264-0242 |

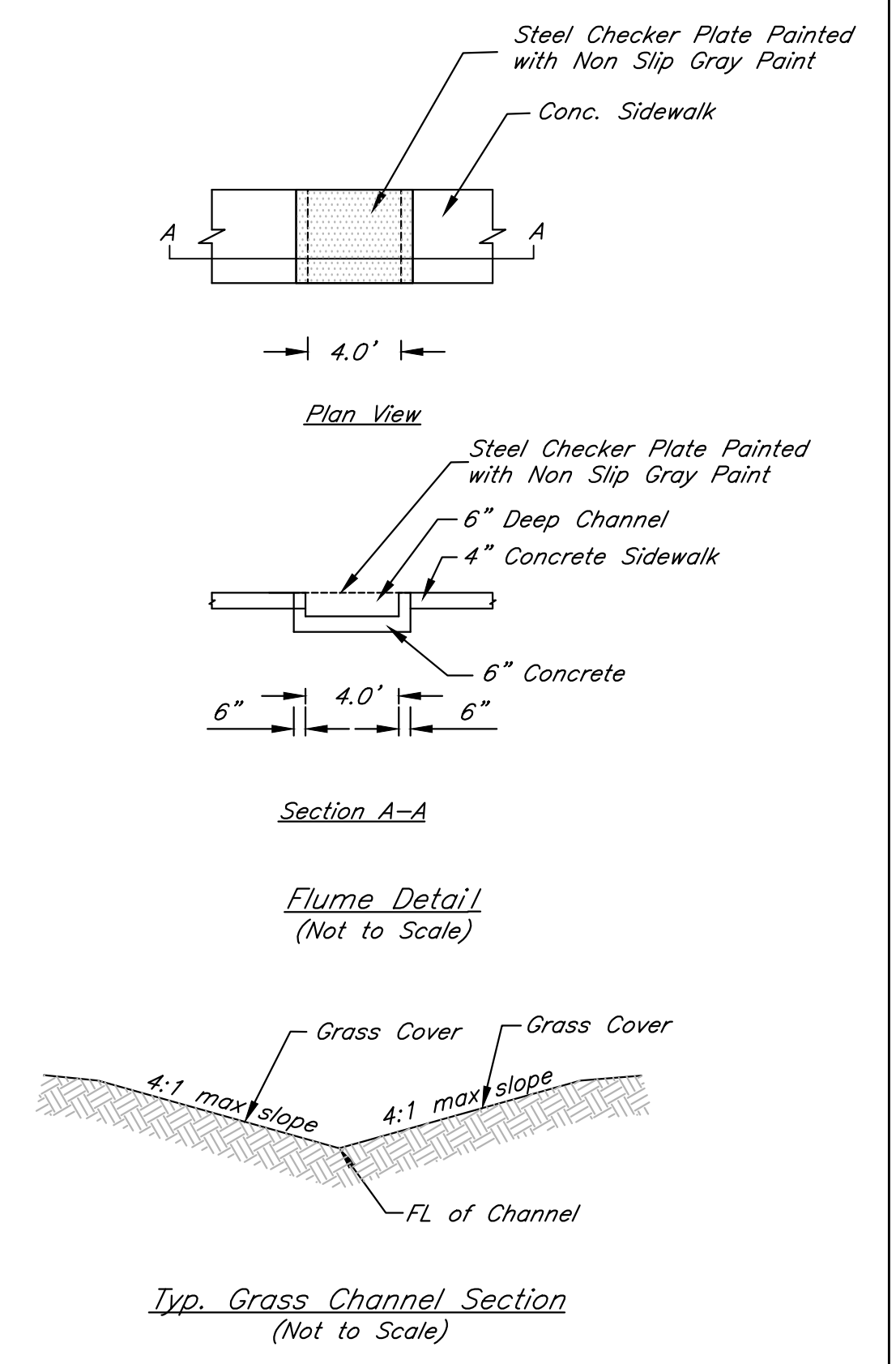
February 2013

|  |         |
|--|---------|
| APPROVED AS NOTED  |         |
| Storm Water Utility Office:  | 4-17-13 |
| City Engineers Office:   | 4-17-13 |
| NOTE TO CONTRACTORS  |         |
| Installation, inspection and testing for this project is 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. All Construction and Materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office). |         |

516 S. Market, Wichita, KS 67202 (316)264-0242



- Notes:
- Contractor shall uncover and verify the depth and size of existing utilities before construction/installation of pipes and structures
  - Contractor shall field verify 10" PVC and its origin. Cut 10" PVC and drain to the pond and remove the portion to the inlet.



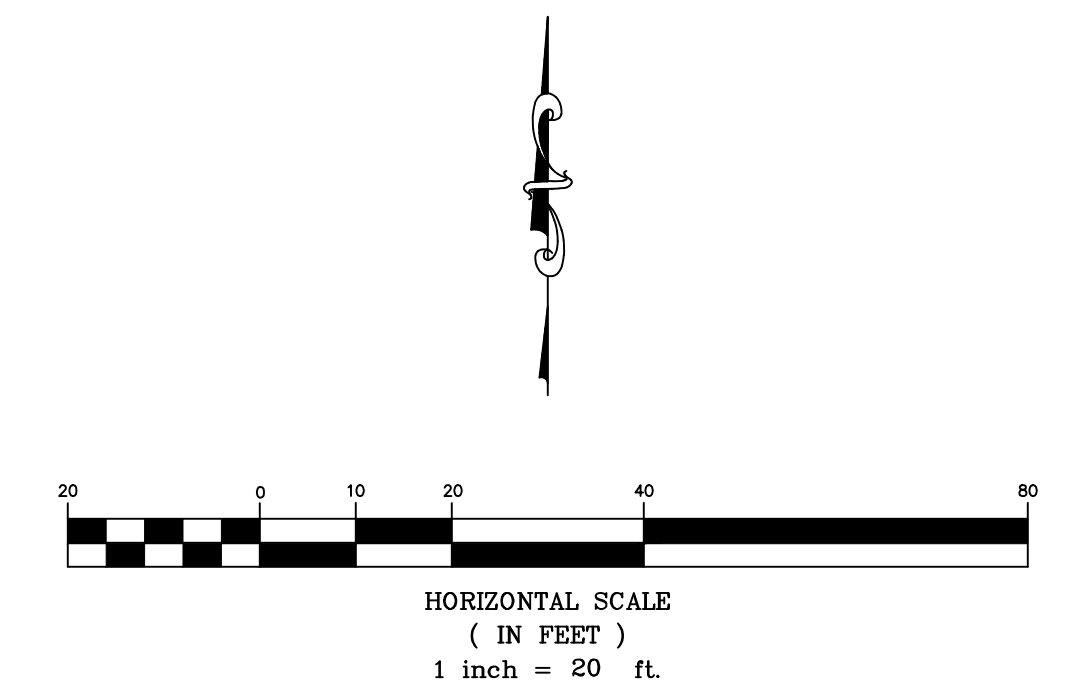
Benchmark:  
PK Nail, about 62 ft south of the area inlet on the parking lot.  
Elev. = 1346.14 (NAVD 88)

| LINE 1       |                              |          |           |       |                |       |  |       |
|--------------|------------------------------|----------|-----------|-------|----------------|-------|--|-------|
| STRUCTURE    | LOCATION                     |          | RIM ELEV. |       | LID TYPE       |       | FLOWLINE INFO.   |       |
|              | DESIGN                       | BUILT    | DESIGN    | BUILT | DESIGN         | BUILT | DESIGN   | BUILT |
| 00+00.00 L-1 | N=1697817.04<br>E=1616306.40 | N=<br>E= |           |       | Existing       |       | 42" FL (in)=1340.31<br>Ex. 42" FL (out)=1340.31                        |       |
| 00+16.00 L-1 | N=1697816.51<br>E=1616322.40 | N=<br>E= | 1346.13   |       | Solid          |       | 24" FL (in)=1340.51<br>Ex. 30" FL (in)=1341.15<br>42" FL (out)=1340.41 |       |
| 00+40.40 L-1 | N=1697840.95<br>E=1616322.13 | N=<br>E= | 1345.68   |       | Existing Grate |       | 24" FL (out)=1340.61   |       |

| LINE 2       |                              |          |           |       |          |       |                          |       |
|--------------|------------------------------|----------|-----------|-------|----------|-------|--------------------------|-------|
| STRUCTURE    | LOCATION                     |          | RIM ELEV. |       | LID TYPE |       | FLOWLINE INFO.           |       |
|              | DESIGN                       | BUILT    | DESIGN    | BUILT | DESIGN   | BUILT | DESIGN                   | BUILT |
| 00+00.00 L-2 | N=1697832.86<br>E=1616314.18 | N=<br>E= | 1345.00   |       | Grate    |       | Ex. 24" FL (out)=1340.52 |       |

| LINE 3       |                              |          |           |       |          |       |                      |       |
|--------------|------------------------------|----------|-----------|-------|----------|-------|----------------------|-------|
| STRUCTURE    | LOCATION                     |          | RIM ELEV. |       | LID TYPE |       | FLOWLINE INFO.       |       |
|              | DESIGN                       | BUILT    | DESIGN    | BUILT | DESIGN   | BUILT | DESIGN               | BUILT |
| 00+00.00 L-3 | N=1697813.45<br>E=1616552.36 | N=<br>E= |           |       |          |       | 15" FL (in)=1342.43  |       |
| 00+46.00 L-3 | N=1697853.89<br>E=1616574.28 | N=<br>E= |           |       |          |       | 15" FL (out)=1342.61 |       |

| LINE 4       |                              |          |           |       |          |       |                          |              |
|--------------|------------------------------|----------|-----------|-------|----------|-------|--------------------------|--------------|
| STRUCTURE    | LOCATION                     |          | RIM ELEV. |       | LID TYPE |       | FLOWLINE INFO.           |              |
|              | DESIGN                       | BUILT    | DESIGN    | BUILT | DESIGN   | BUILT | DESIGN                   | BUILT        |
| 00+00.00 L-4 | N=1697865.48<br>E=1616579.32 | N=<br>E= |           |       |          |       | 24" FL (out)=1342.71     | 18" FL (out) |
| 00+60.00 L-4 | N=1697909.43<br>E=1616538.47 | N=<br>E= | 1350.00   |       | Solid    |       | 24" FL (in, out)=1342.83 | 18" FL (out) |
| 01+68.00 L-4 | N=1698017.43<br>E=1616539.22 | N=<br>E= | 1346.35   |       | Grate    |       | 24" FL (out)=1343.05     | 18" FL (out) |

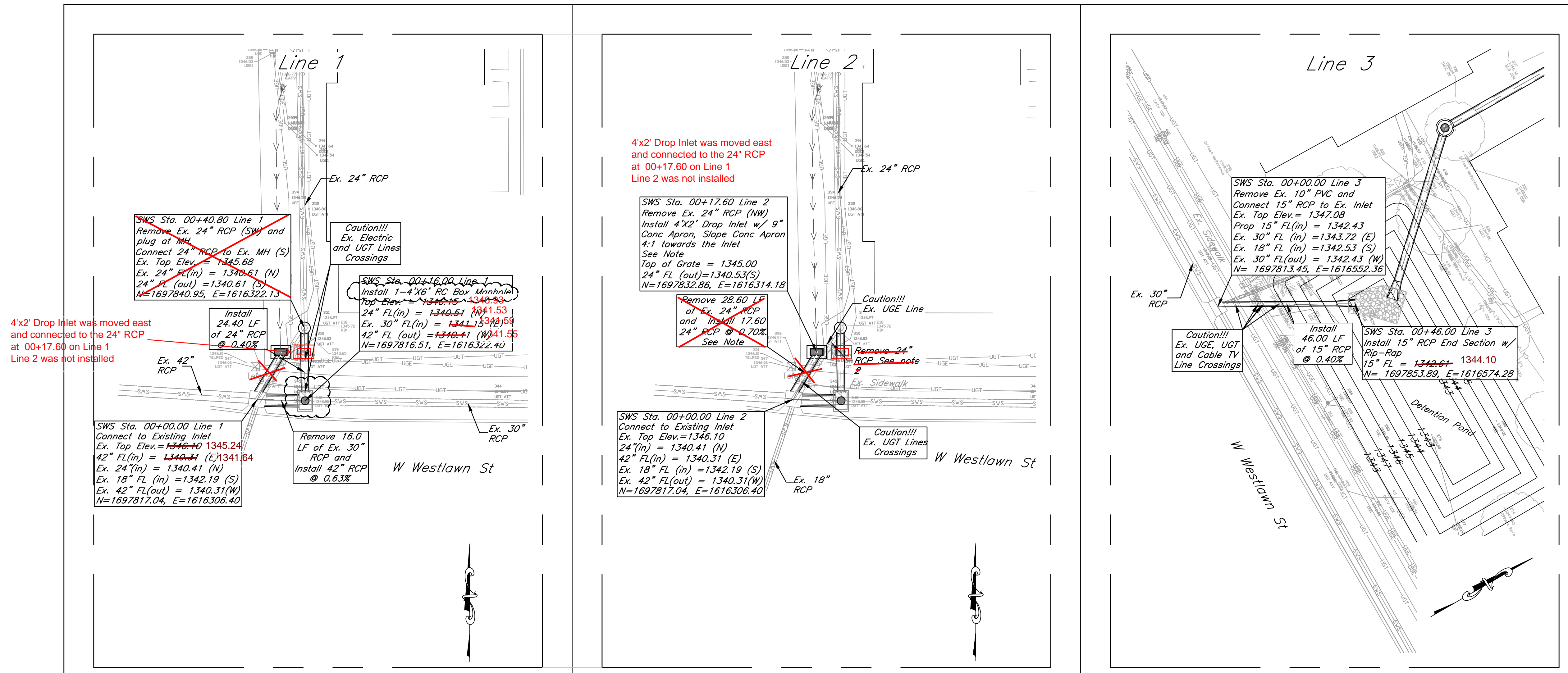


Berkshire Apartment  
Plan Sheet/Grading Plan  
Wichita, Kansas



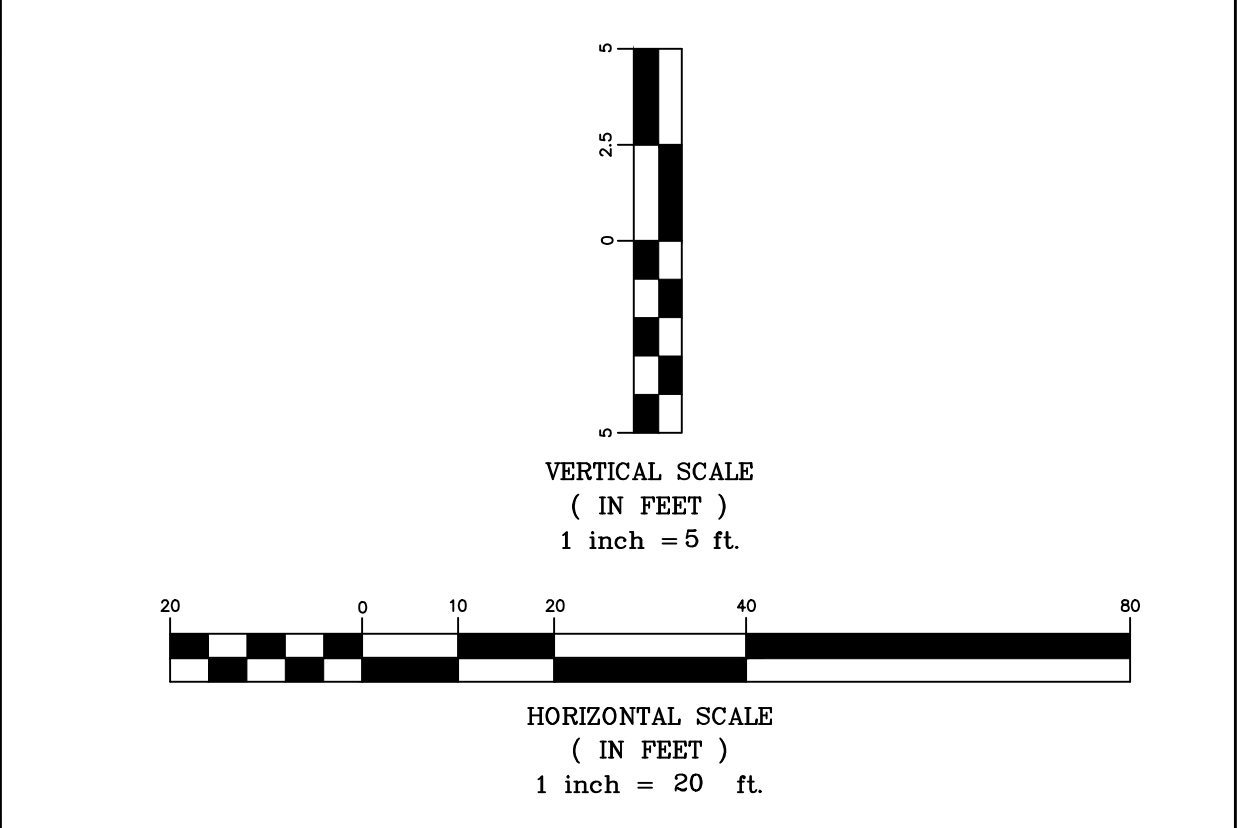
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|------------------|-------------|-----------------|--------------|
| PROJECT NUMBER   |             |                 |              |
| KEM NO.<br>12135 | FILE        | DATE<br>02/2012 | SHEET<br>2.0 |
| DESIGN<br>GP     | DRAWN<br>GP | REVISED         |              |

Apr 16, 2012



Note:  
 Contractor shall uncover and verify the existing underground electric and telephone line. Install 4'x2' drop inlet along the length, 10' SW from inlet at Sta 00+40.80 Line 1, if there is no utility conflict with the proposed Inlet. In this case contractor shall remove 10' RCP(NE) and tie the existing 24" RCP into proposed 4'x2' Inlet. There is no need to install 17.60 LF of RCP. Contractor shall install per plan (Line 2) if there is direct utility conflict with other utilities along the length of exiting 24" RCP.

| Station | Line 1   | Line 2   | Line 3  |
|---------|--|--|---|
| 1360    | Ex. Type 1A Curb Inlet<br>Ex. Top = 1345.24<br>SWS Sta. 00+00.00 Line 1<br>Connect to Existing Inlet<br>Ex. Top Elev. = 1345.24<br>42" FL(in) = 1340.31 (W)<br>42" FL(in) = 1340.31 (E)<br>Ex. 24" FL(in) = 1340.61 (N)<br>24" FL(out) = 1340.61 (S)<br>N=1697840.95, E=1616322.15 | Ex. Type 1A Curb Inlet<br>Ex. Top = 1346.10<br>SWS Sta. 00+00.00 Line 2<br>Connect to Existing Inlet<br>Ex. Top Elev. = 1346.10<br>24" FL(in) = 1340.41 (N)<br>42" FL(in) = 1340.31 (E)<br>Ex. 18" FL(in) = 1342.19 (S)<br>Ex. 42" FL(out) = 1340.31 (W)<br>N=1697817.04, E=1616306.40 | Connect to Ex. Inlet<br>Ex. Top = 1347.08<br>SWS Sta. 00+00.00 Line 3<br>Remove Ex. 10" PVC and<br>Connect 15" RCP to Ex. Inlet<br>Ex. Top Elev. = 1347.08<br>Prop 15" FL(in) = 1342.43<br>Ex. 30" FL(in) = 1343.72 (E)<br>Ex. 18" FL(in) = 1342.53 (S)<br>Ex. 30" FL(out) = 1342.43 (W)<br>N= 1697813.45, E=1616552.36 |
| 1350    | Ground   | Ground   | Ex. Ground<br>Prop. Ground  |
| 1340    | 16.00 LF of 42" RCP @ 0.63%<br>24.40 LF of 24" RCP @ 0.40%   |  | 46.00 LF of 15" RCP @ 0.40%   |
| 1330    | Ex. 42" FL(out) = 1340.31 (W)<br>42" FL(in) = 1340.31 (E)<br>42" FL(out) = 1340.44 (W)<br>24" FL(in) = 1340.61 (N)<br>24" FL(out) = 1340.61 (S)<br>N=1697840.95, E=1616322.15  | Ex. 42" FL(out) = 1340.31 (W)<br>24" FL(in) = 1340.41 (N)<br>24" FL(out) = 1340.53 (SW)<br>N=1697817.04, E=1616306.40  | Ex. 30" FL(out) = 1342.43<br>15" FL(in) = 1342.43<br>+06.77<br>+14.43<br>+20.56<br>1344.10<br>15" FL = 1344.10<br>N= 1697853.89, E=1616574.28   |
| 1320    | 0+00   | 0+00   | 0+00  |

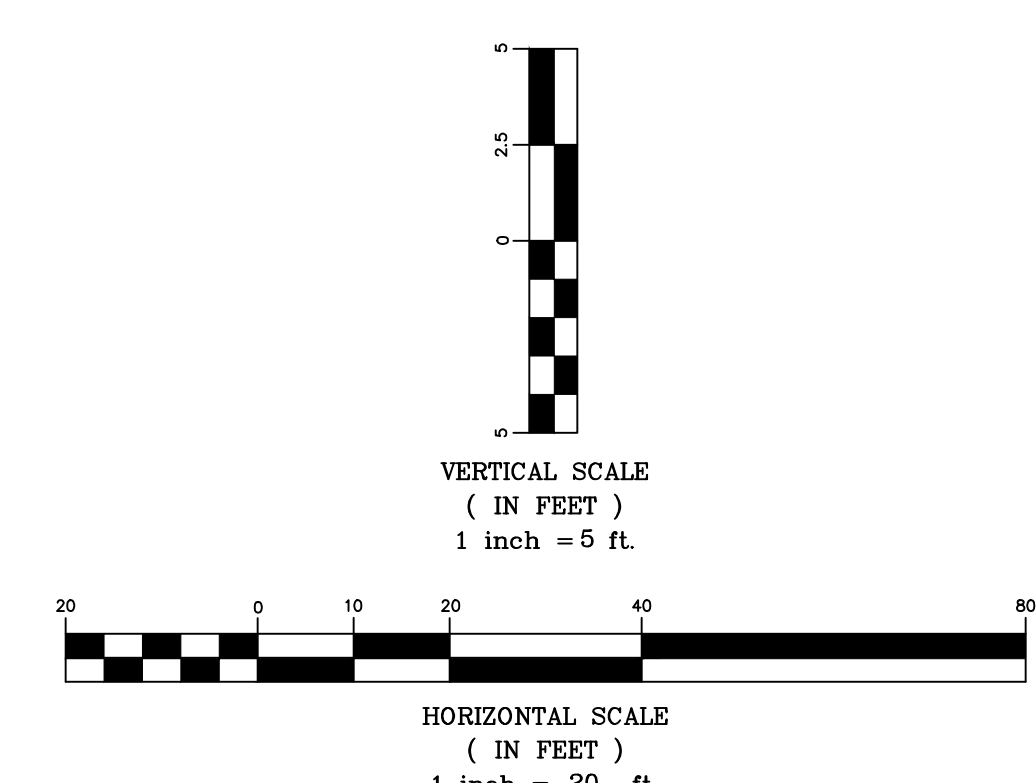
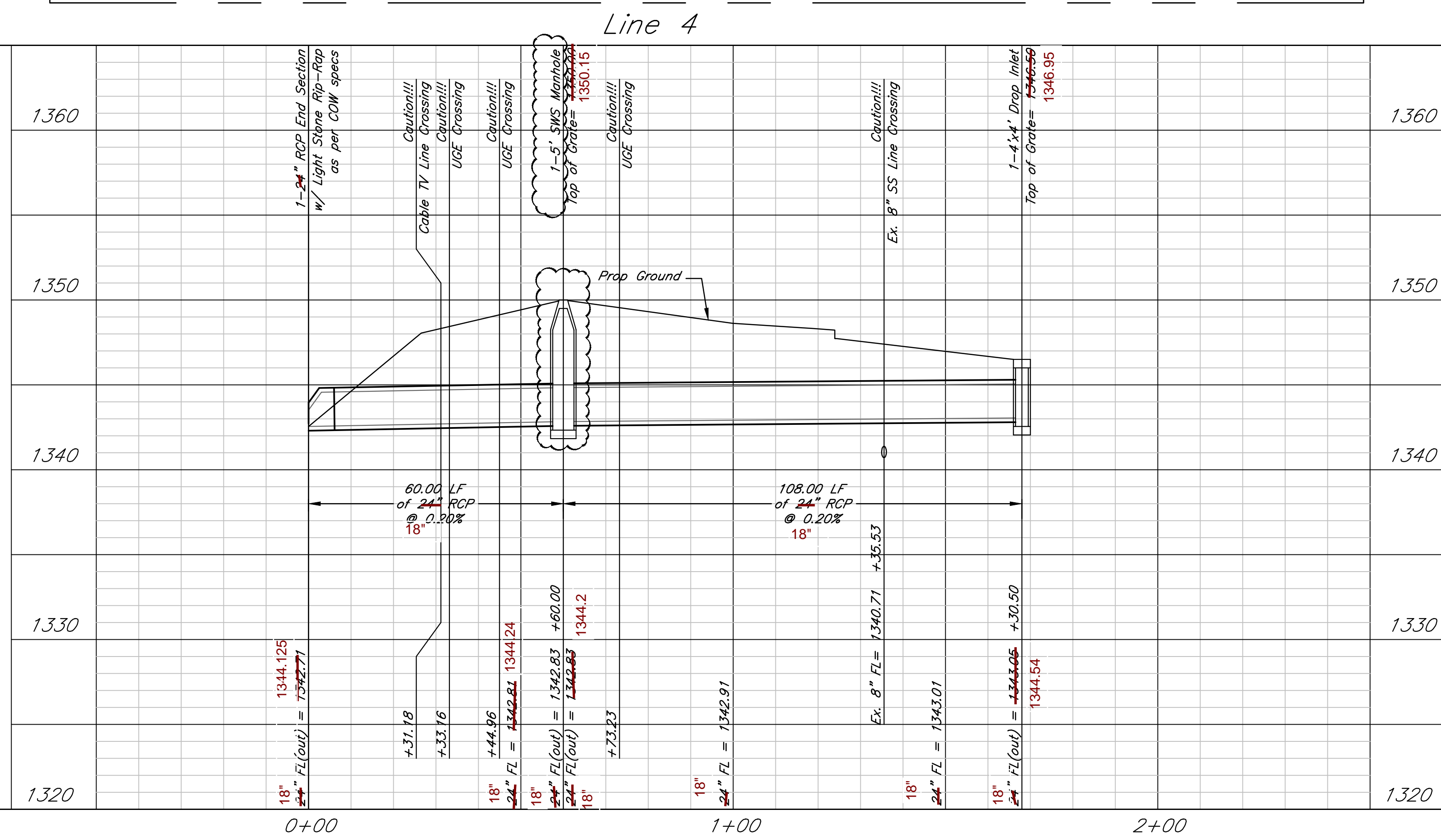
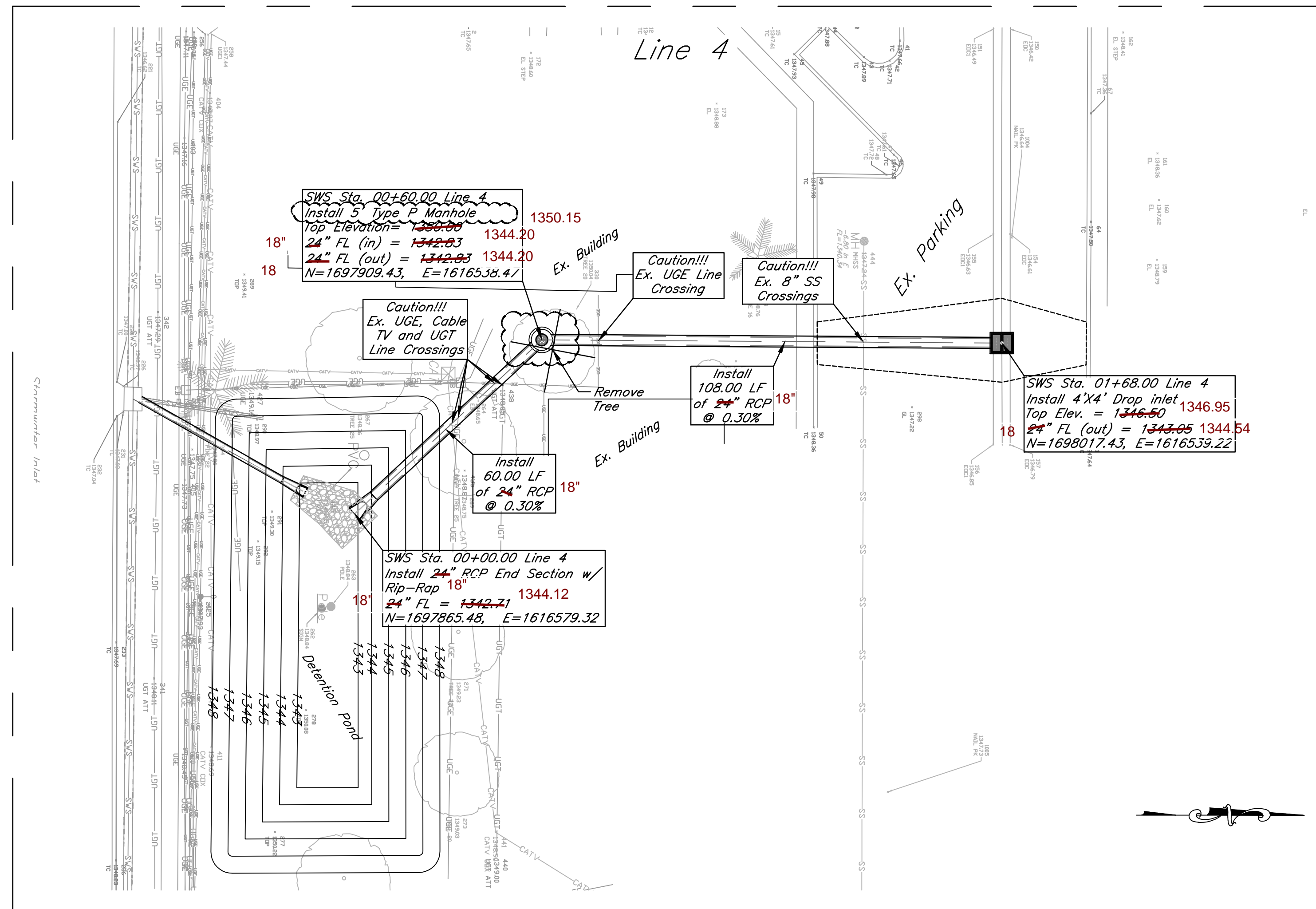


Berkshire Apartment  
 SWS Lines 1, 2, & 3  
 Wichita, Kansas

PROJECT NUMBER

|               |          |              |       |
|---------------|----------|--------------|-------|
| KEM NO. 12135 | FILE     | DATE 02/2012 | SHEET |
| DESIGN GP     | DRAWN GP | REVISED      | 3.0   |

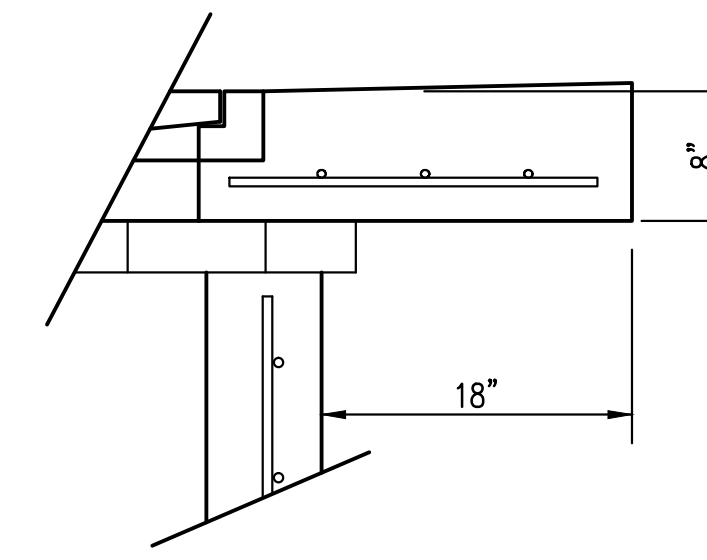
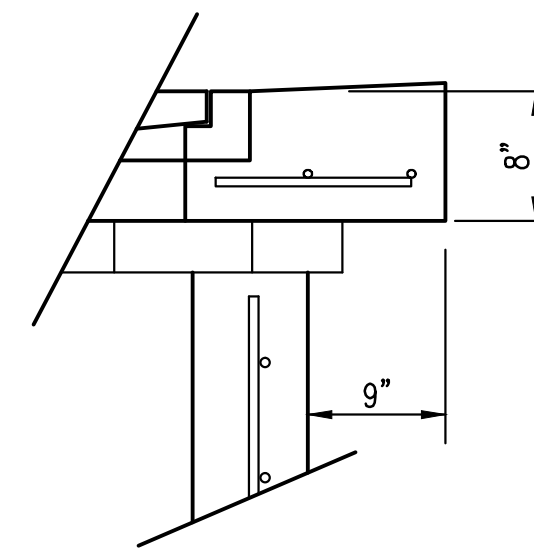
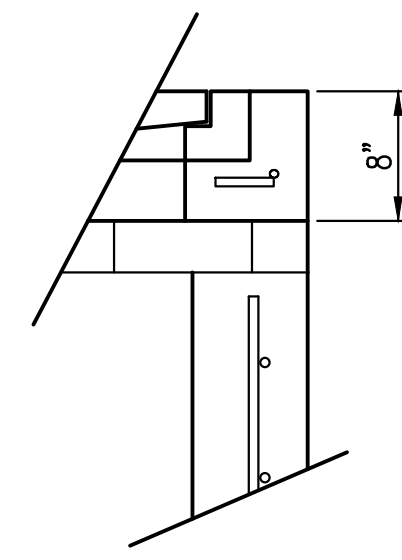
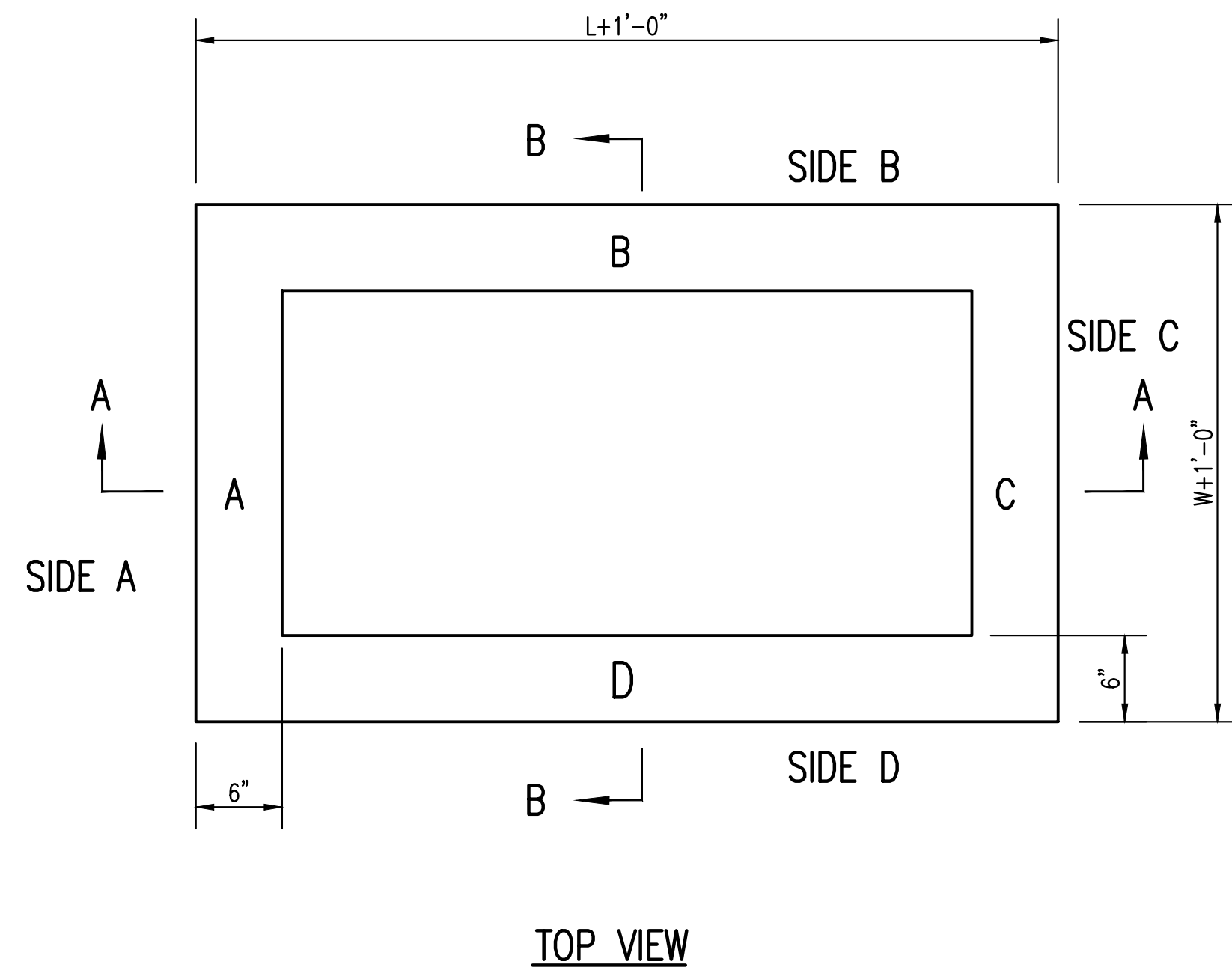
516 S. Market, Wichita, KS 67202 (316)284-0242



Berkshire Apartment  
SWS Line 4  
Wichita, Kansas

|              |                  |         |                 |                     |
|--------------|------------------|---------|-----------------|---------------------|
|              | PROJECT NUMBER   |         |                 | SHEET<br><b>3.1</b> |
|              | KEM NO.<br>12135 | FILE    | DATE<br>02/2012 |                     |
| DESIGN<br>GP | DRAWN<br>GP      | REVISED |                 |                     |

November 5, 2013



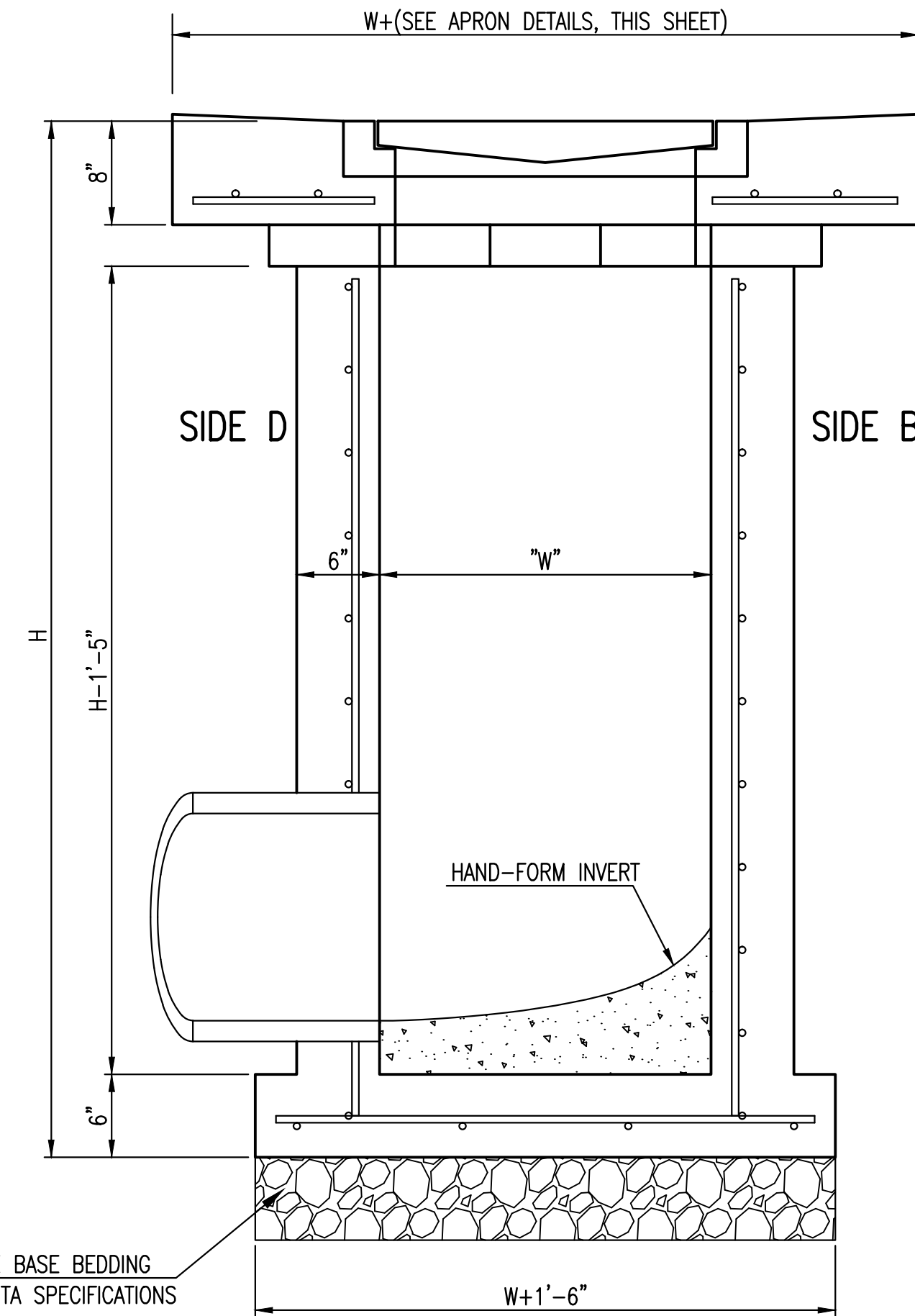
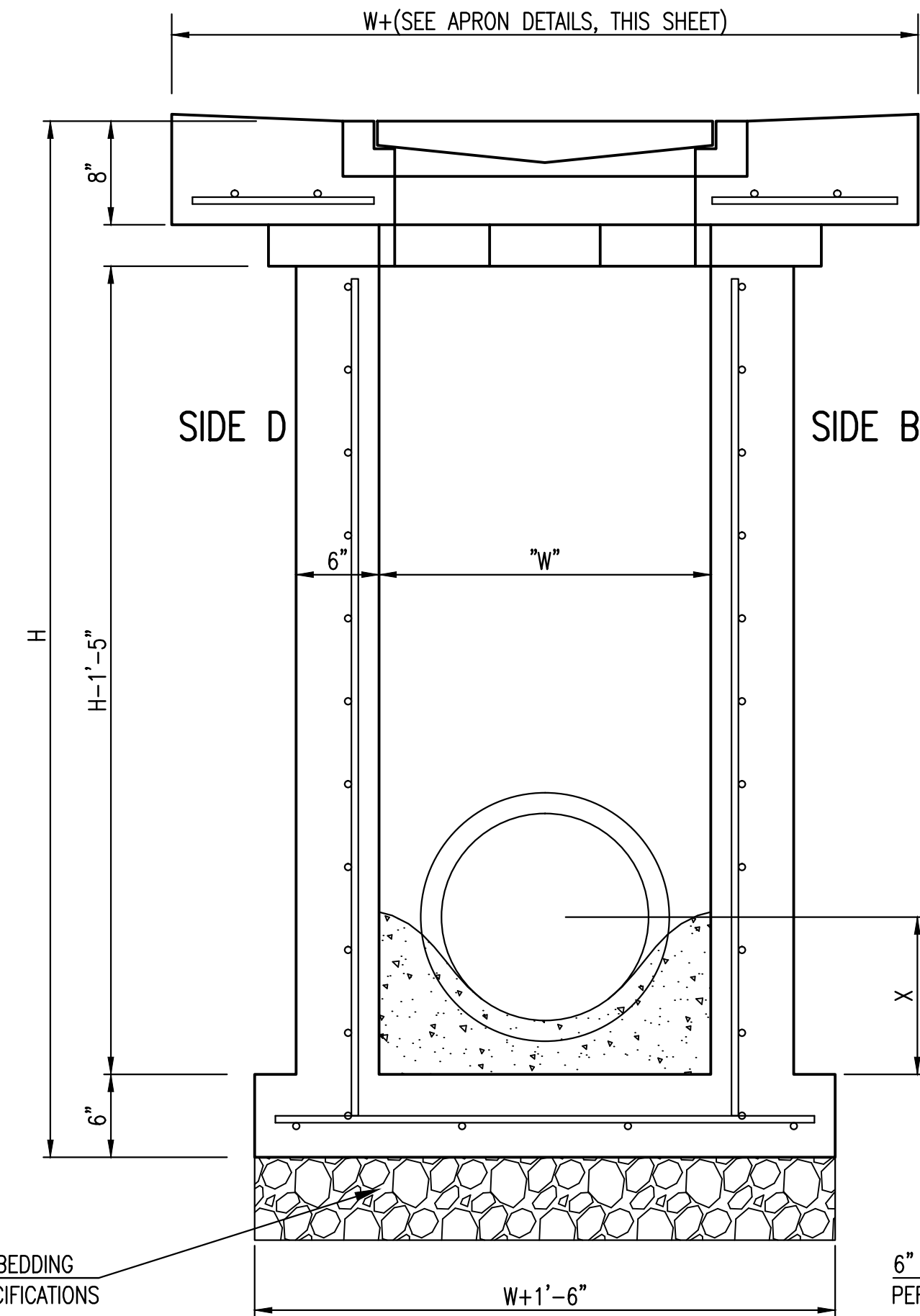
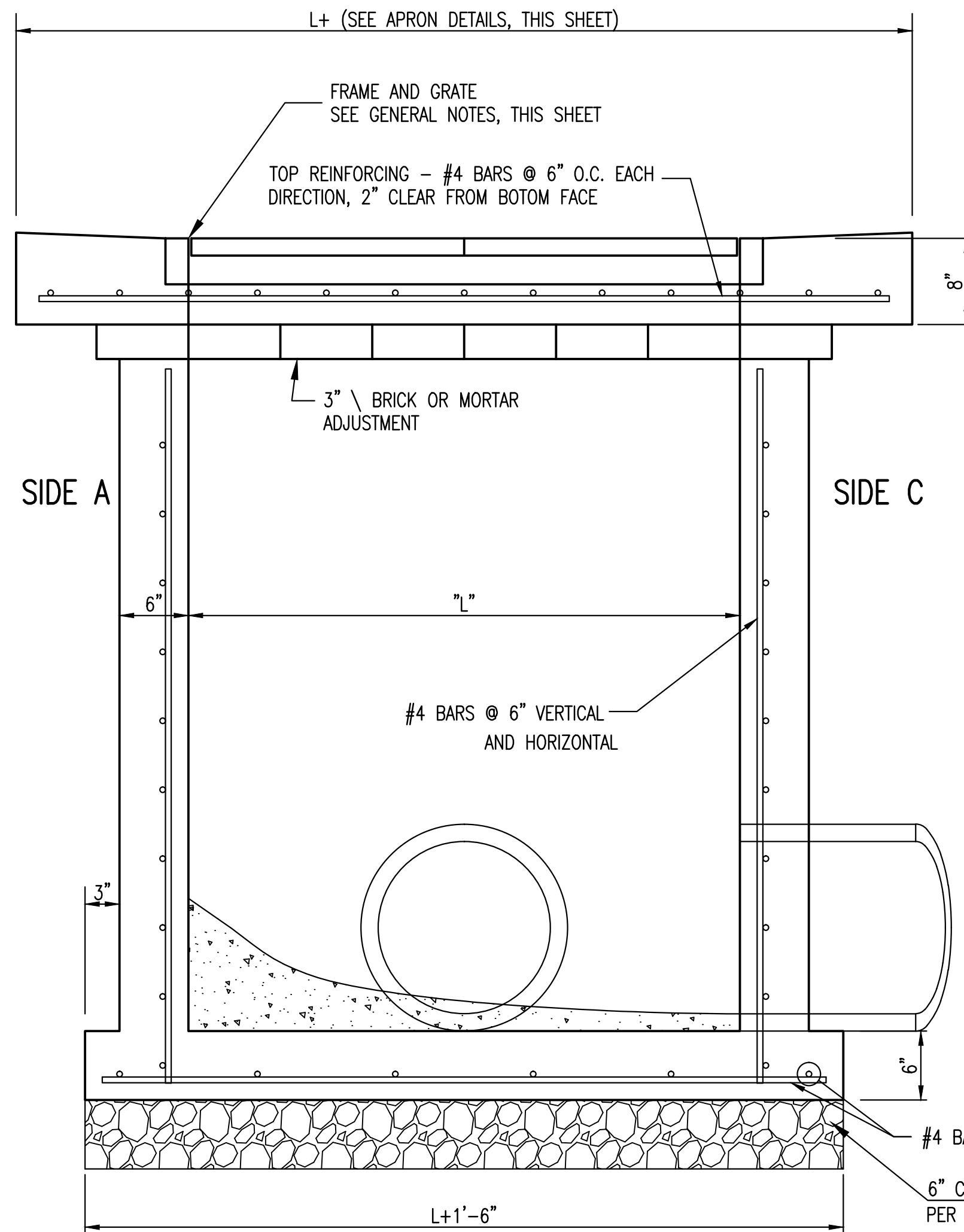
\* APRON TO EXTEND ON ALL 4 SIDES OF INLET.  
DESIGNER TO DESIGNATE APRON SIZE.

W=2' and L=2' for SINGLE DROP INLET  
W=2' and L=4' for DOUBLE DROP INLET

The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only.  
If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

**GENERAL NOTES**

1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
3. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
4. INLET FRAME AND GRATE TO BE DEETER #2433, EJIW #5391-Z1 OR APPROVED EQUAL FOR 2'x2' SINGLE DROP INLET AND DEETER #2434, EJIW #5391 Z3 OR APPROVED EQUAL FOR 2'x4' DOUBLE DROP INLET.
5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.

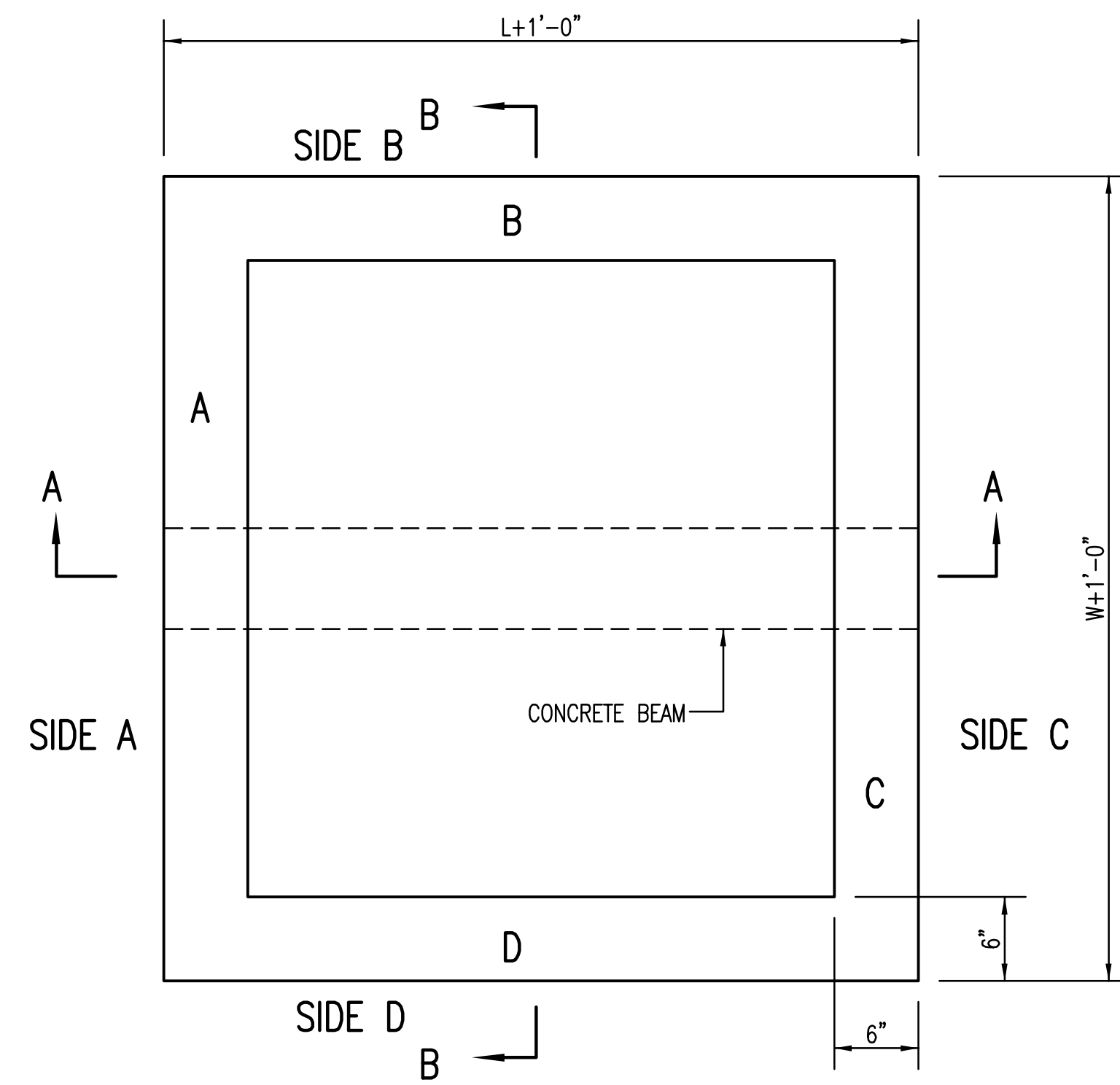


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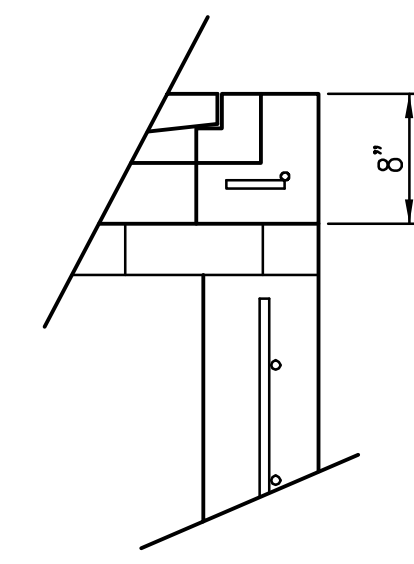


REVISED 05/10/2011 - GJ

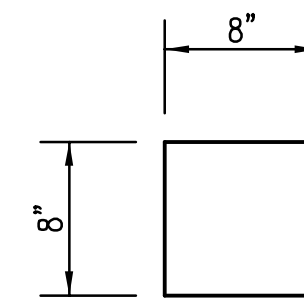
|  |                 |                 |
|--|-----------------|-----------------|
| <b>SINGLE/DOUBLE<br/>DROP INLET</b>  |                 |                 |
| CITY ENGINEER<br><b>JAMES L. ARMOUR, P.E., L.S.</b>  |                 |                 |
| PROJECT NUMBER<br>-  | OCA NUMBER<br>- | DATE<br>11/2010 |
| CITY ENGINEER'S OFFICE<br>CITY HALL - SEVENTH FLOOR<br>455 NORTH MAIN STREET<br>WICHITA, KANSAS 67202-1620<br>(316) 268-4501 |                 | SHEET           |



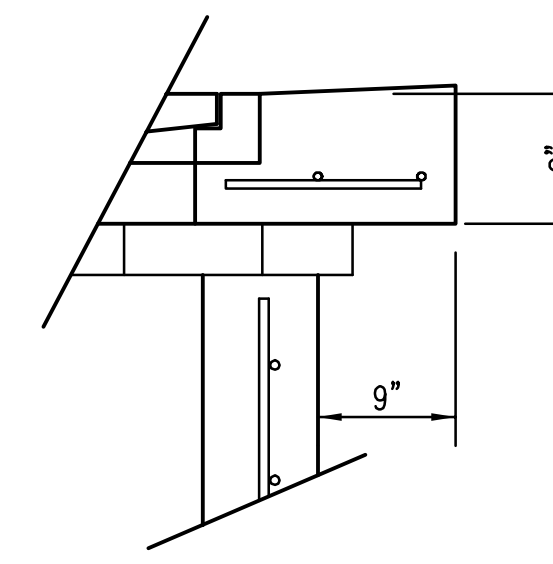
TOP VIEW



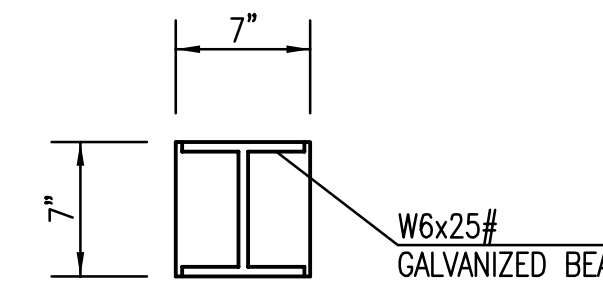
FLUSH STYLE TOP  
NO APRON



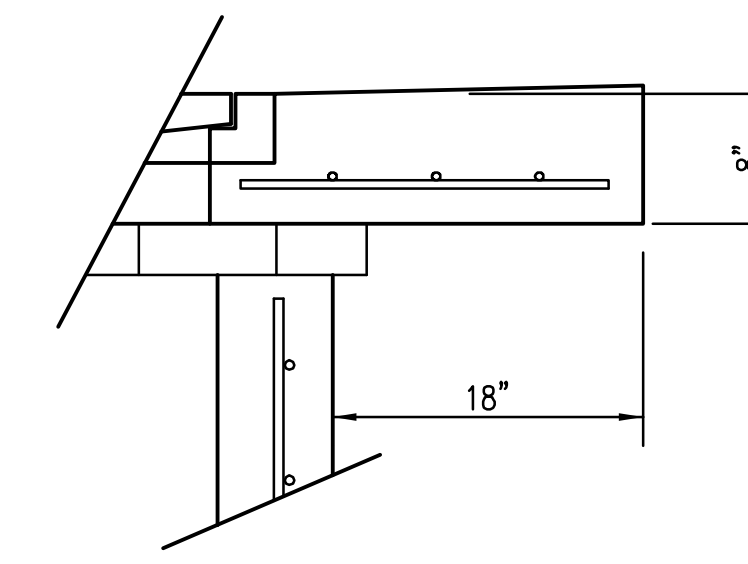
CONCRETE BEAM POCKET



9" APRON



GALV. STEEL BEAM POCKET



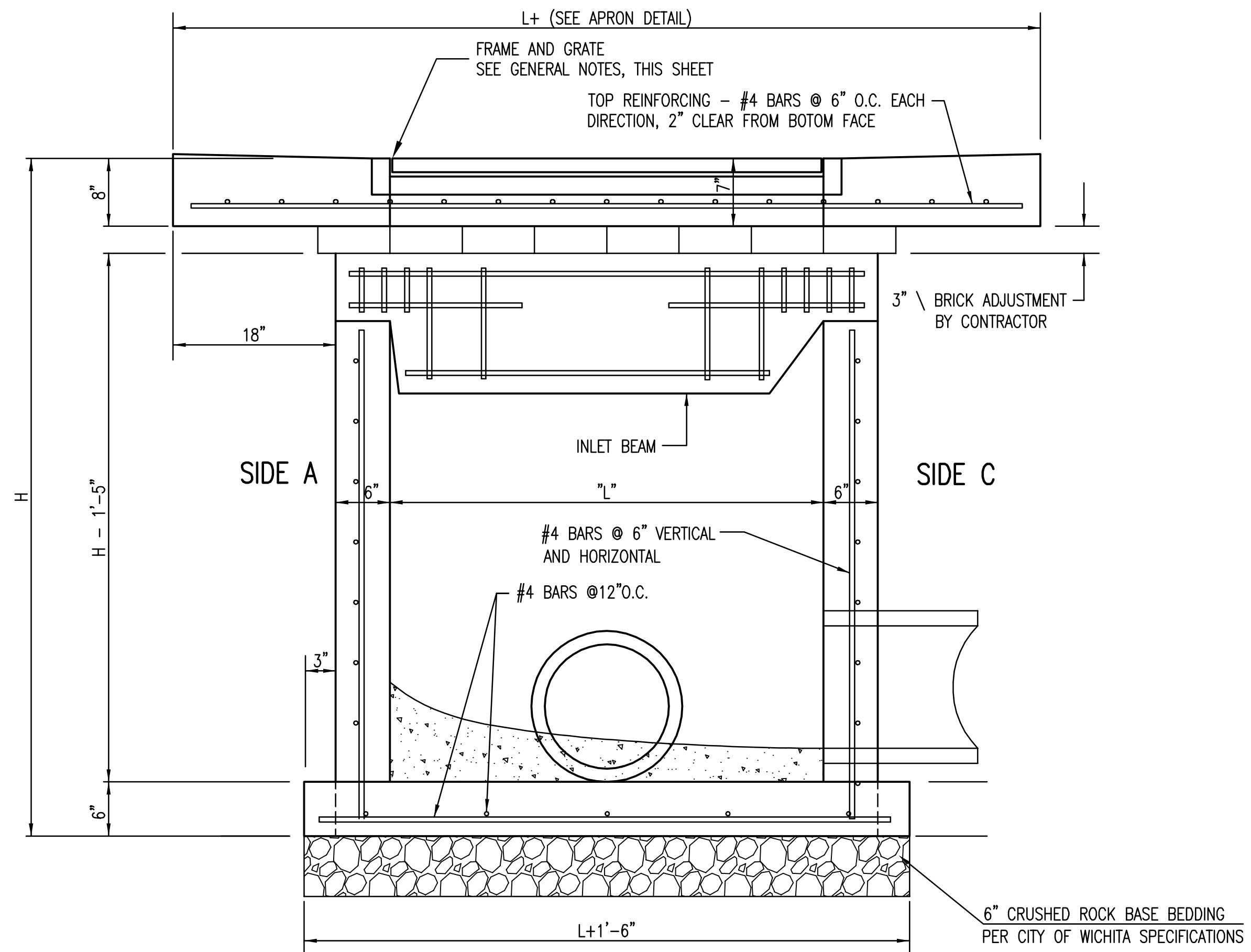
18" APRON

CONCRETE BEAM REQUIRED FOR THIS INLET

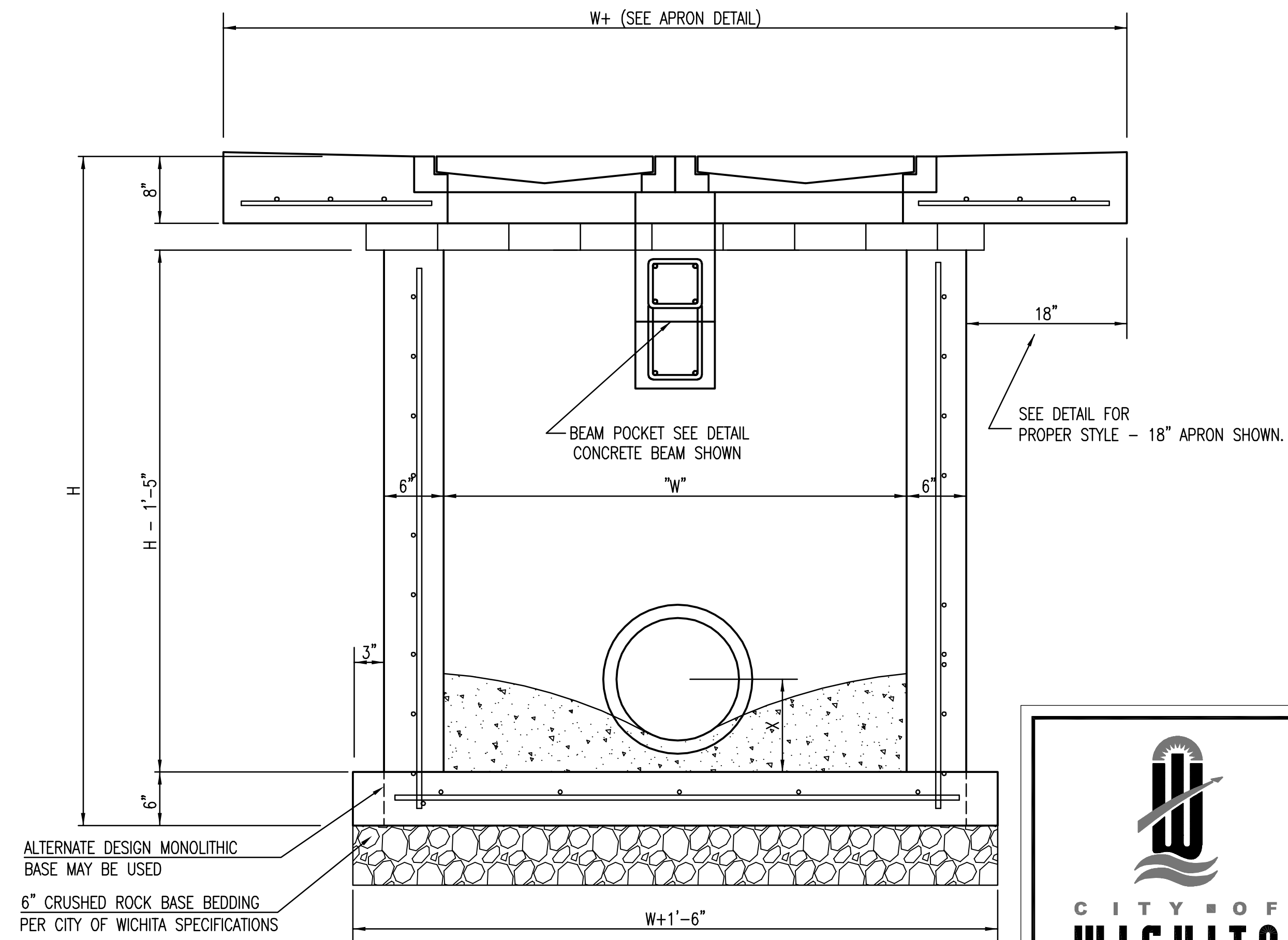
\* APRON TO EXTEND ON ALL 4 SIDES OF INLET.  
DESIGNER TO DESIGNATE APRON SIZE.

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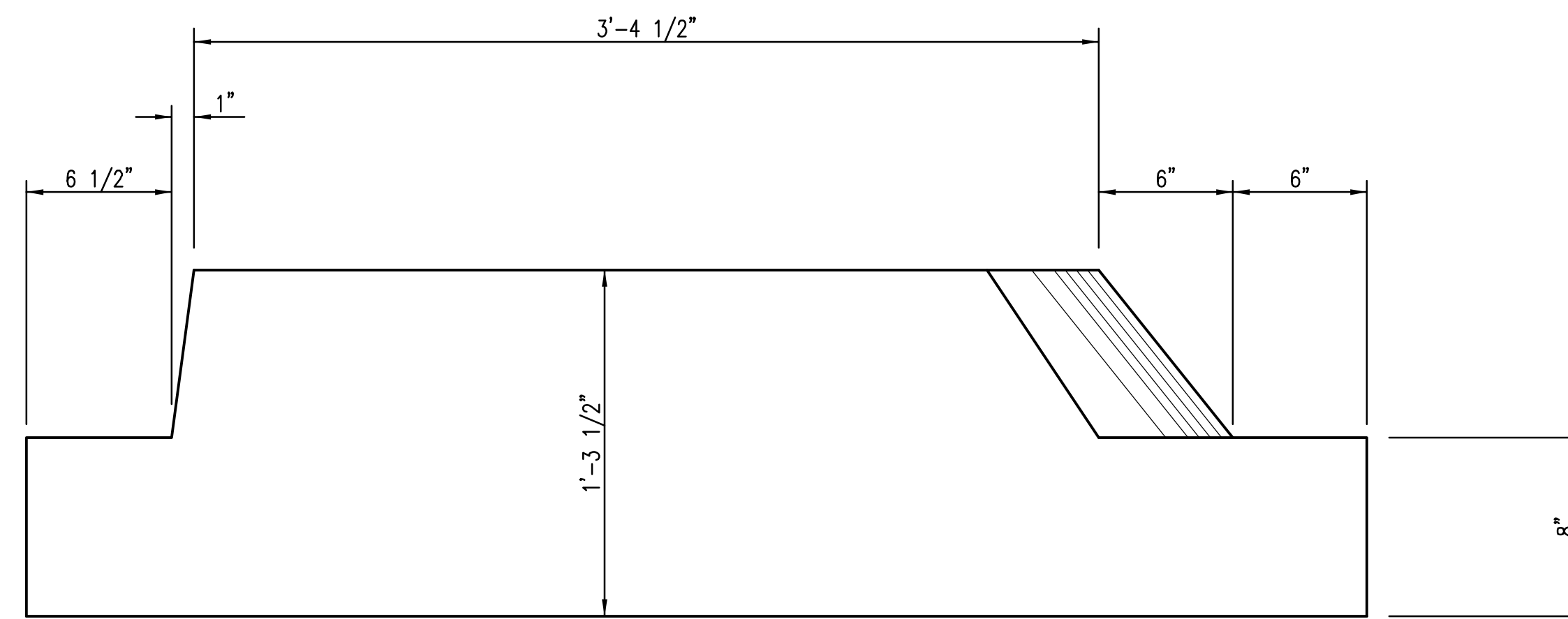
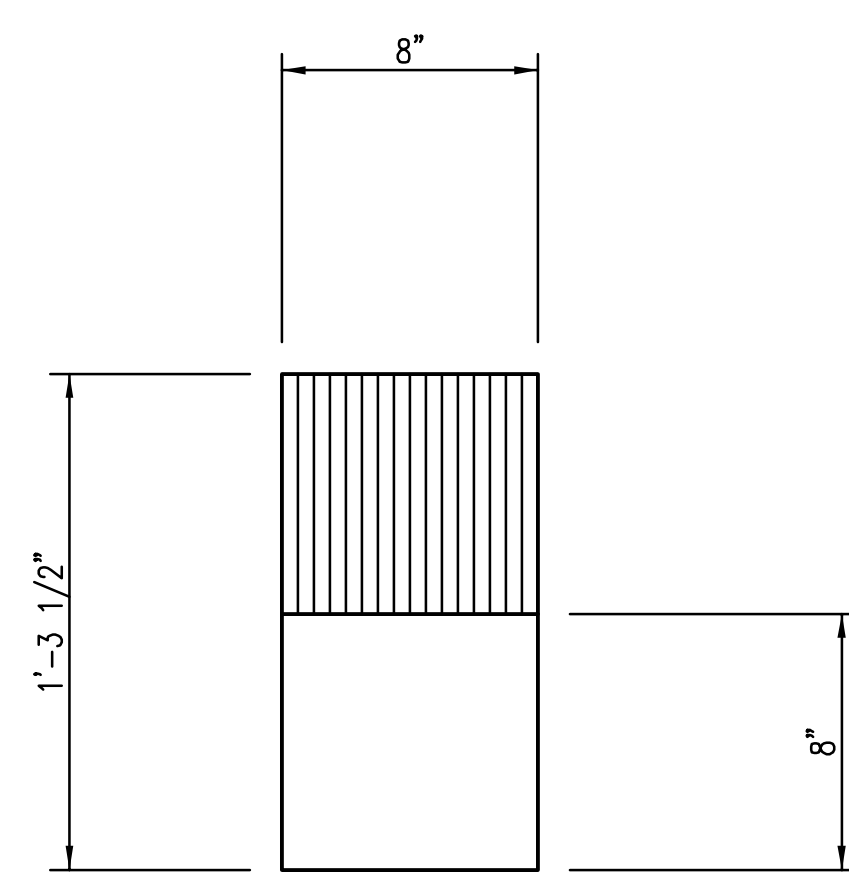
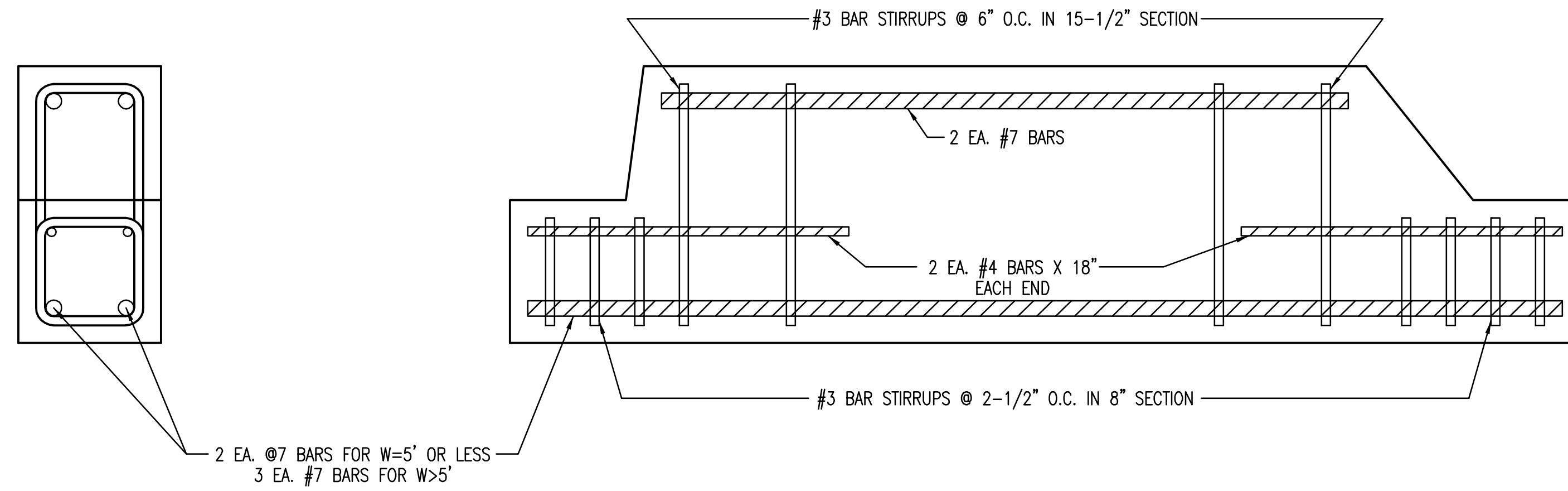
SECTION "A-A"



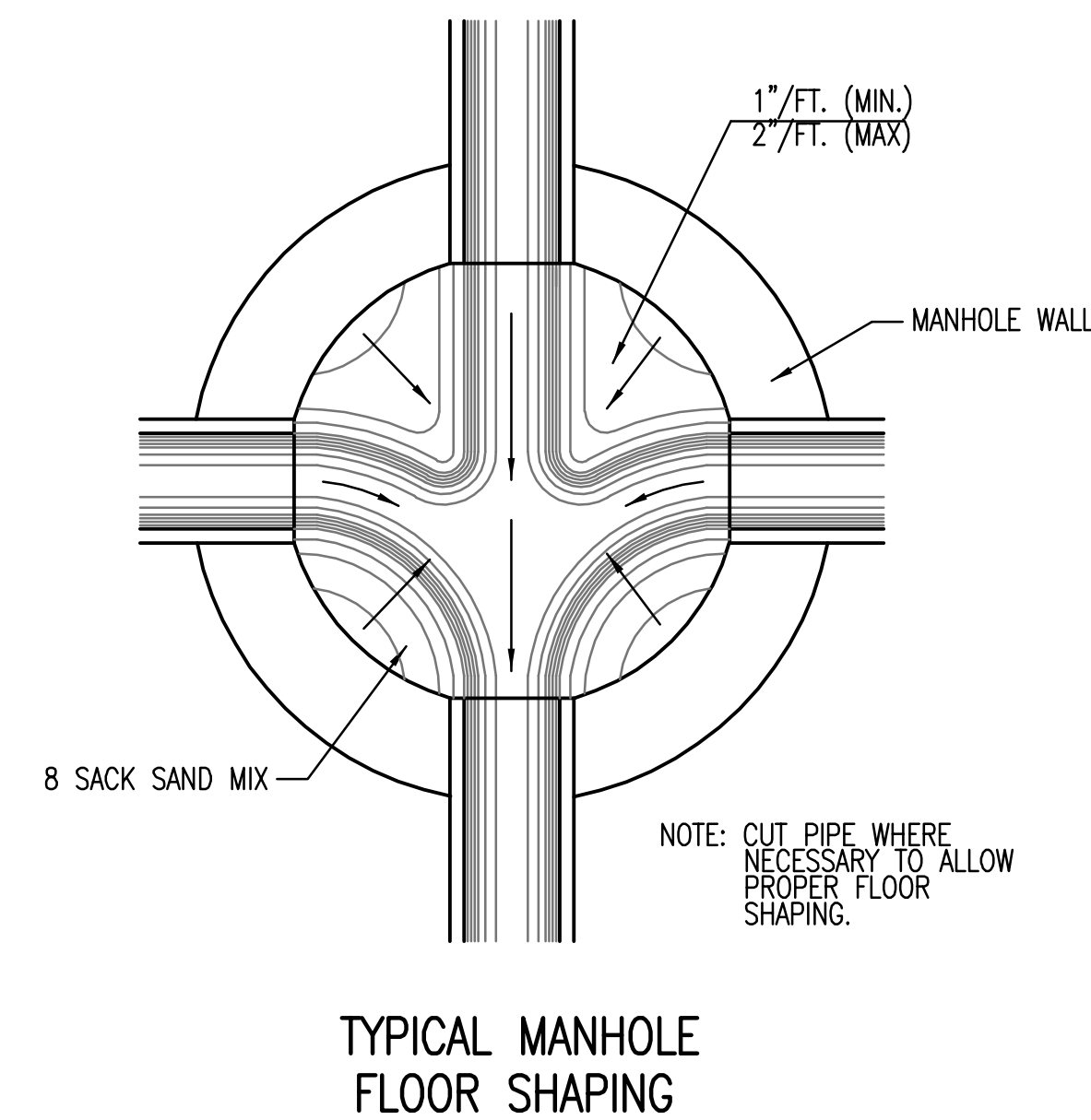
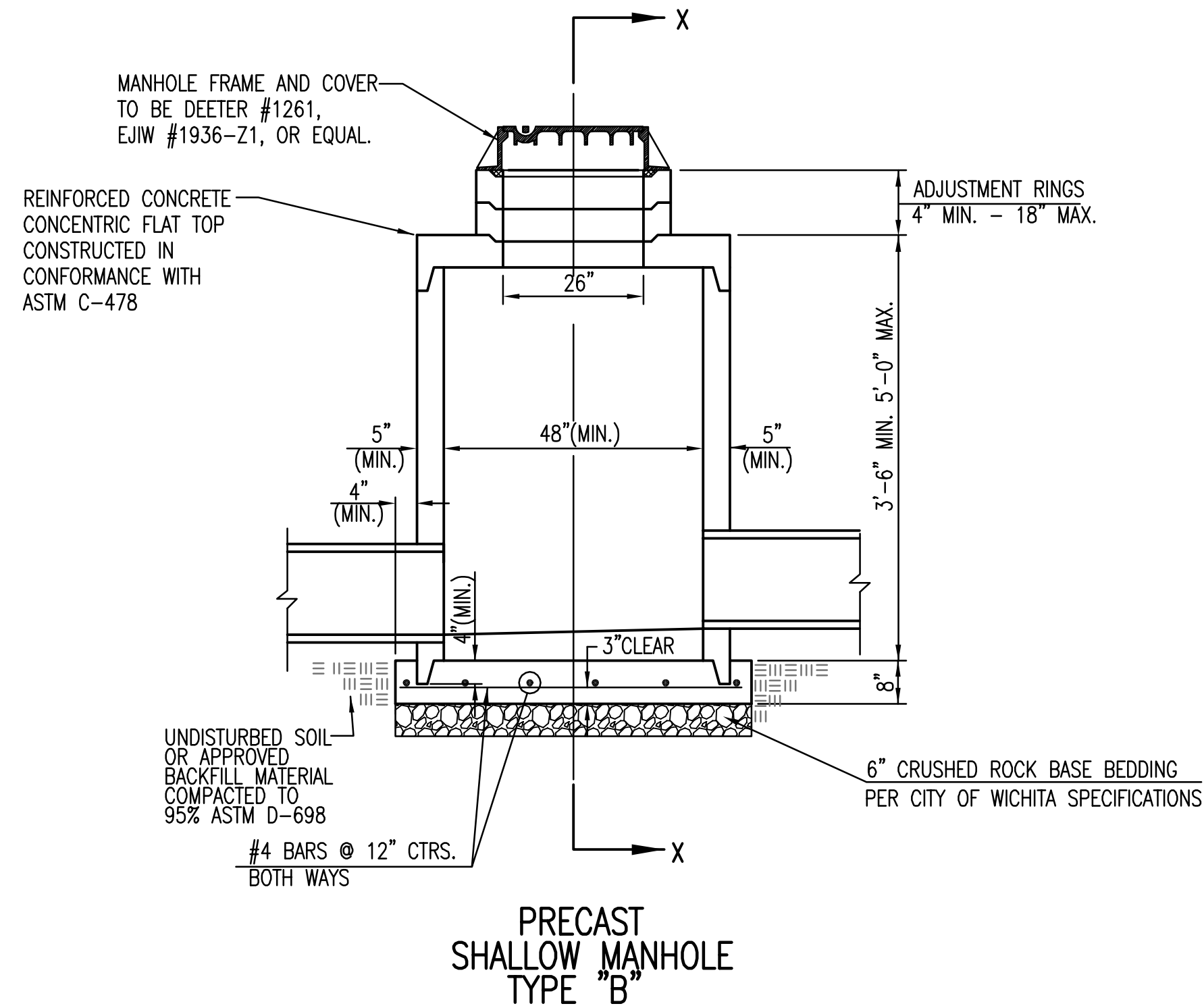
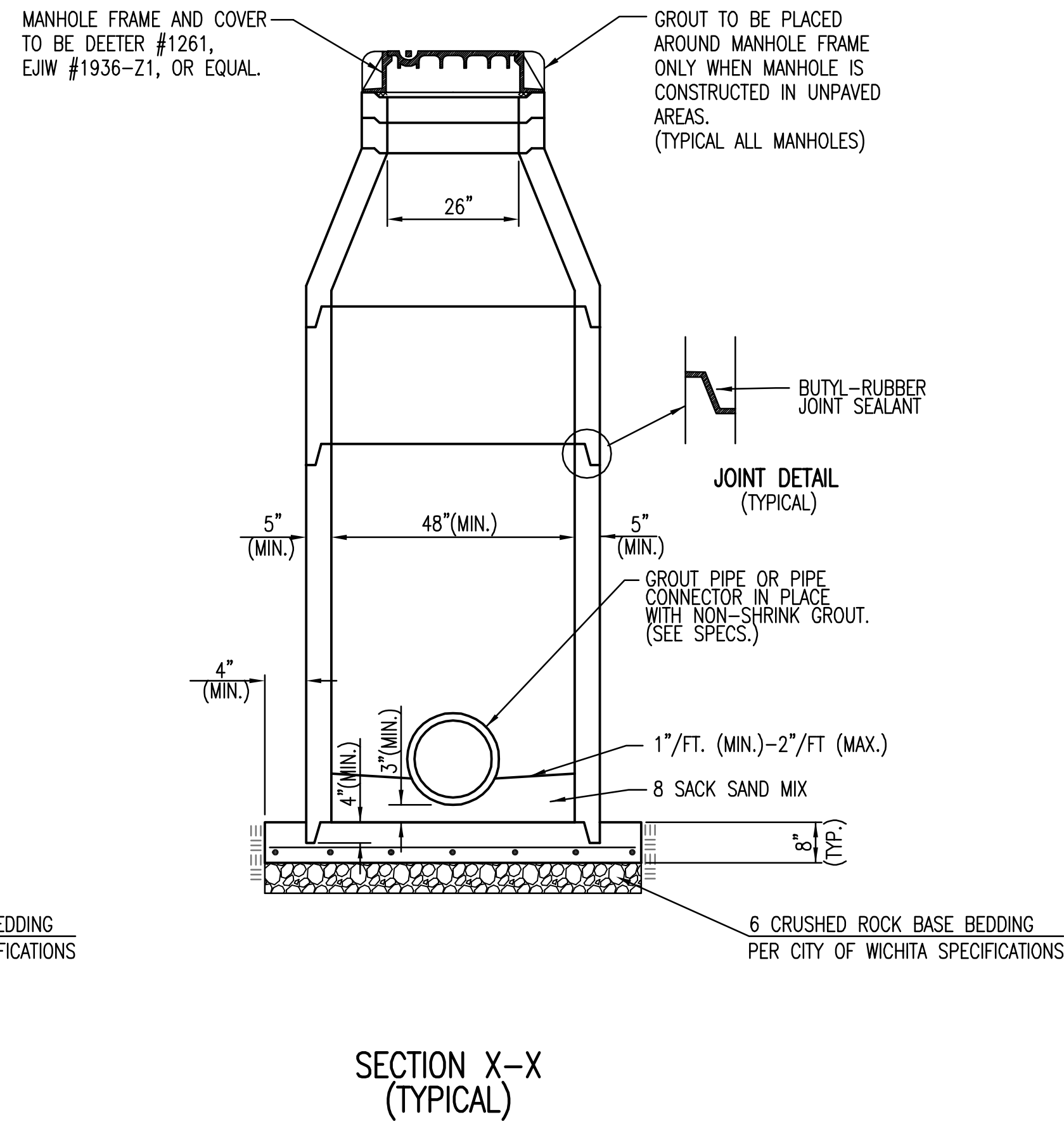
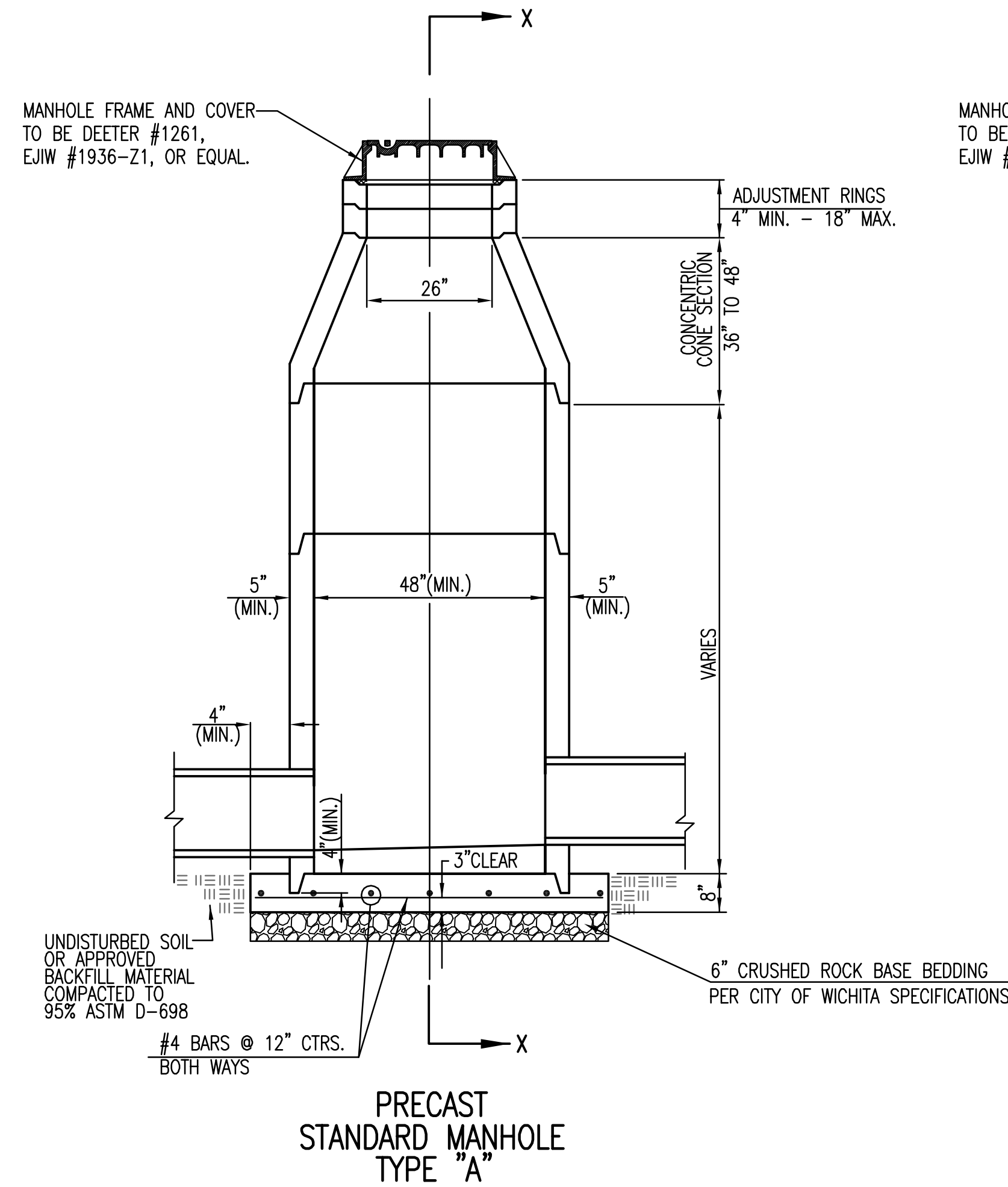
SECTION "B-B"



|  |            |                          |
|--|------------|--------------------------|
| <b>DOUBLE DOUBLE<br/>DROP INLET<br/>WITH BEAM</b>  |            |                          |
| CITY ENGINEER<br><b>JAMES L. ARMOUR, P.E., L.S.</b>  |            |                          |
| PROJECT NUMBER<br>-  | OCA NUMBER | DATE<br>11/2010          |
| CITY ENGINEER'S OFFICE<br>CITY HALL - SEVENTH FLOOR<br>455 NORTH MAIN STREET<br>WICHITA, KANSAS 67202-1620<br>(316) 268-4501 |            | DESIGN<br>DRAWN<br>SHEET |



|  |            |         |       |
|--|------------|---------|-------|
| <b>INLET BEAM</b>  |            |         |       |
| CITY ENGINEER<br><b>JAMES L. ARMOUR, P.E., L.S.</b>  |            |         |       |
| PROJECT NUMBER   | OCA NUMBER | DATE    |       |
| -  |            | 11/2010 |       |
| CITY ENGINEER'S OFFICE   |            | DESIGN  | DRAWN |
| CITY HALL - SEVENTH FLOOR<br>455 NORTH MAIN STREET<br>WICHITA, KANSAS 67202-1620<br>(316) 268-4501 |            |         | SHEET |

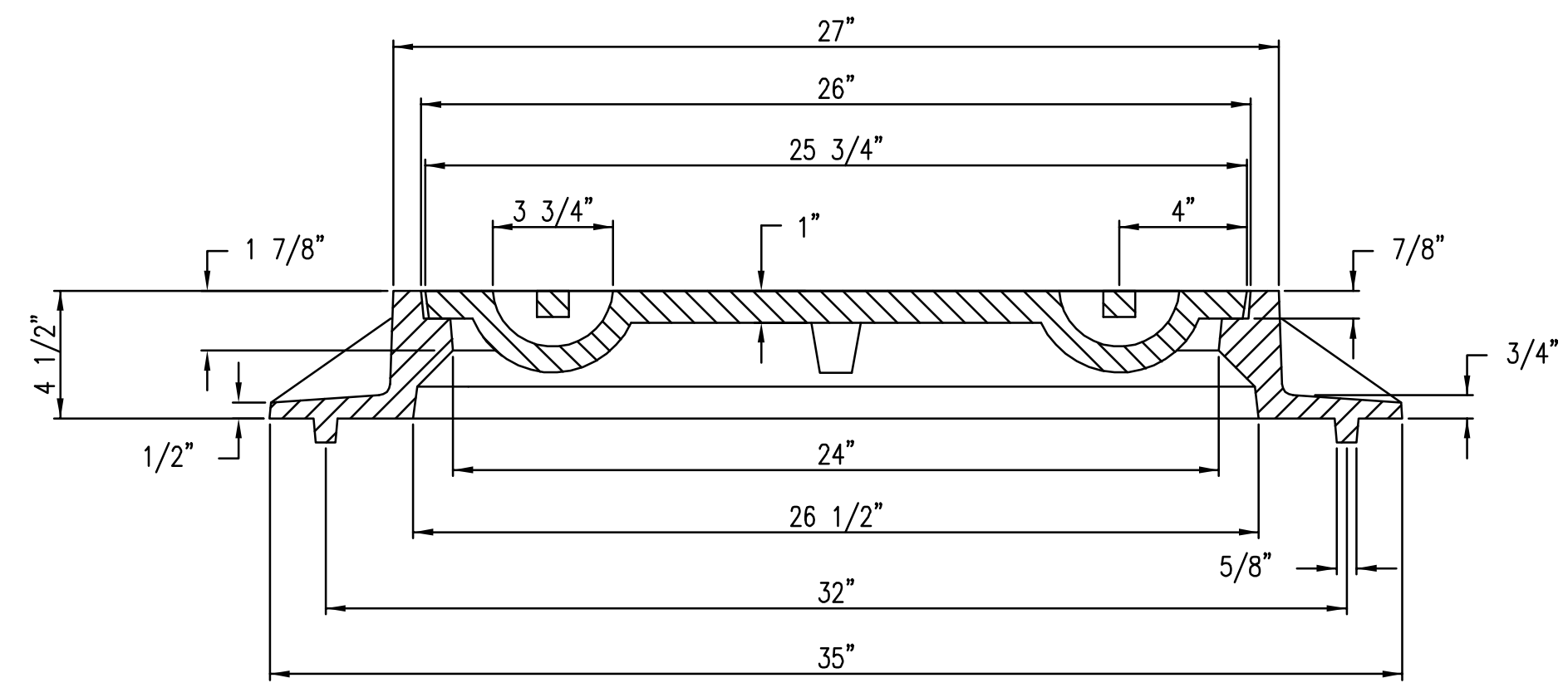
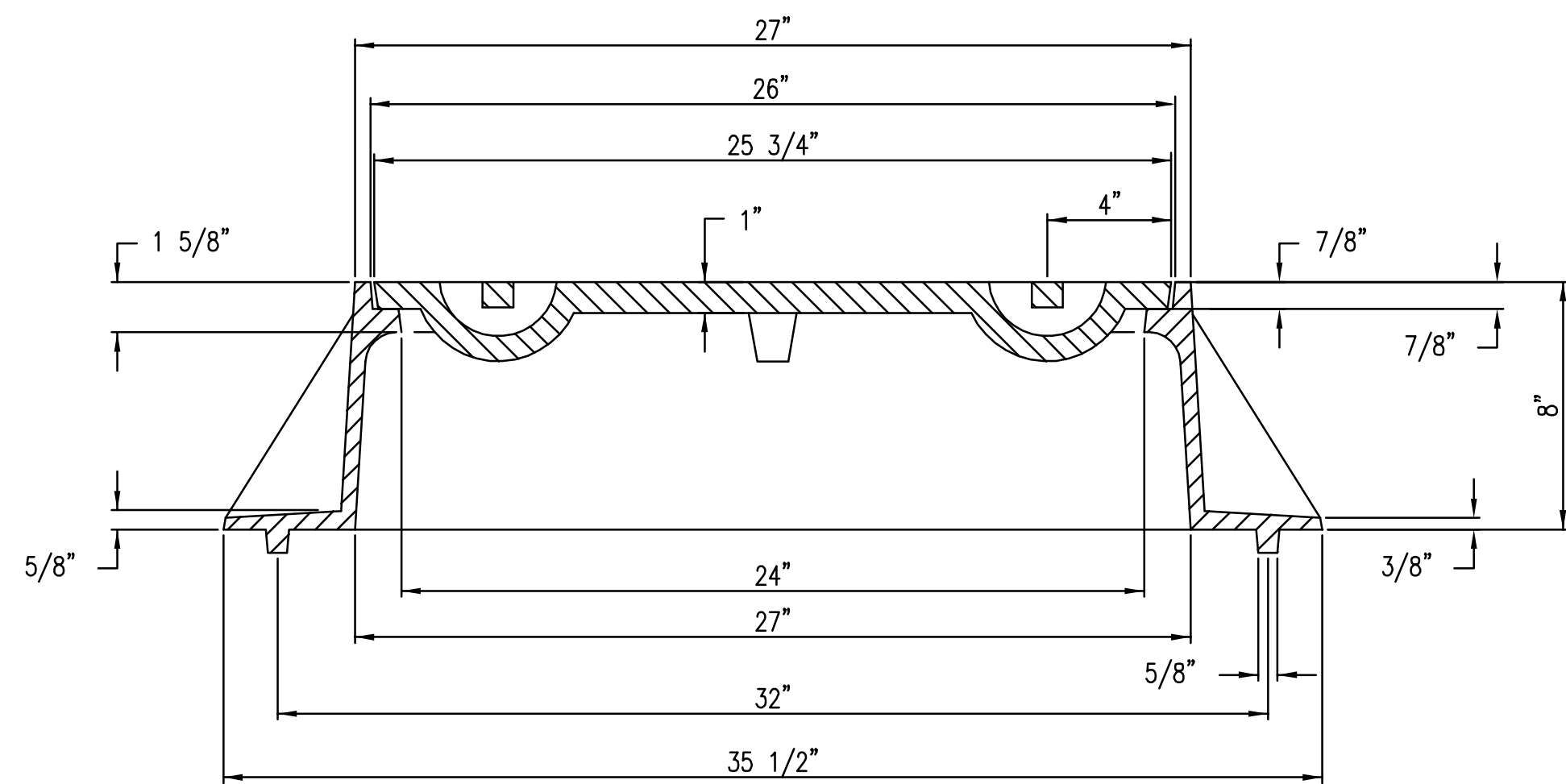
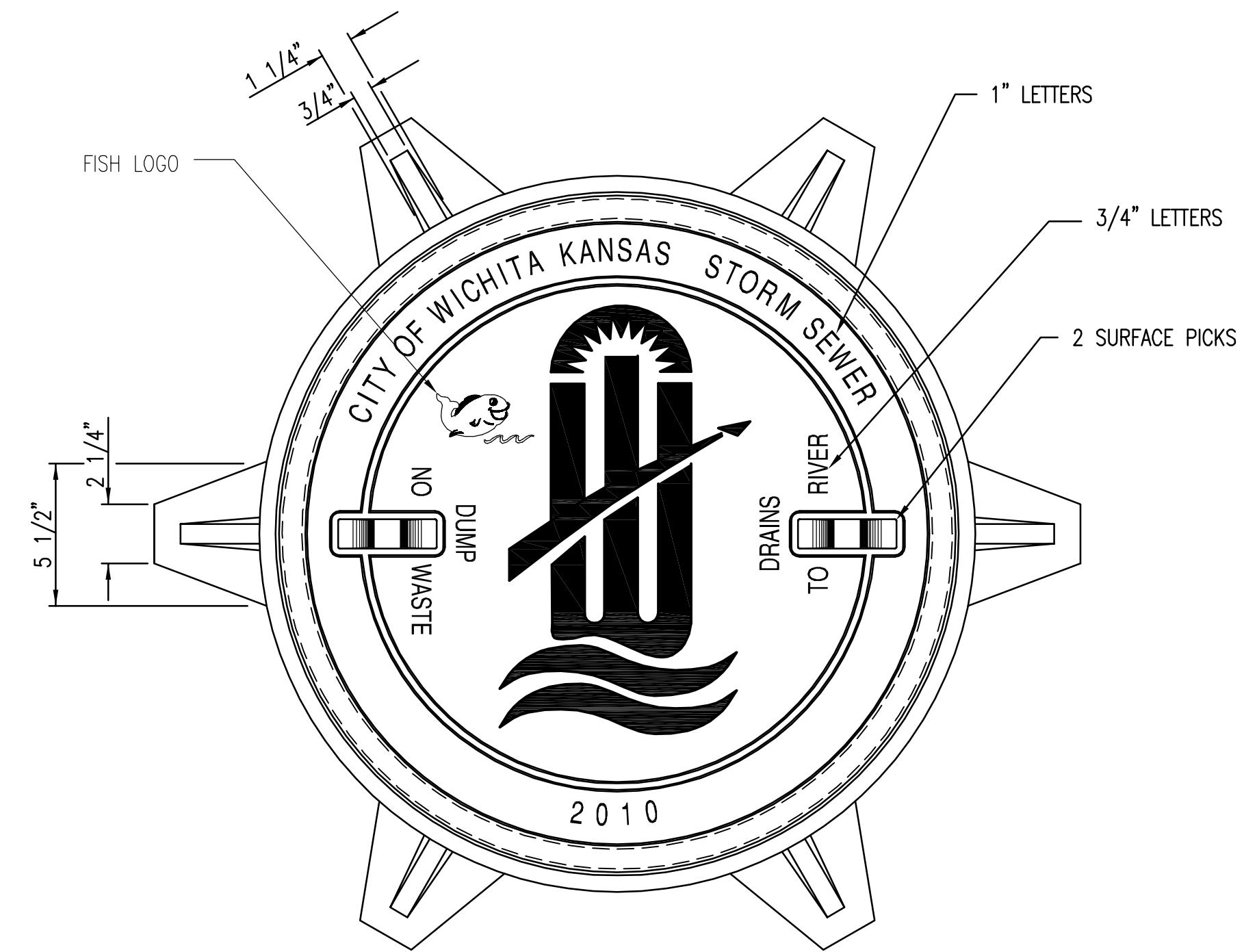
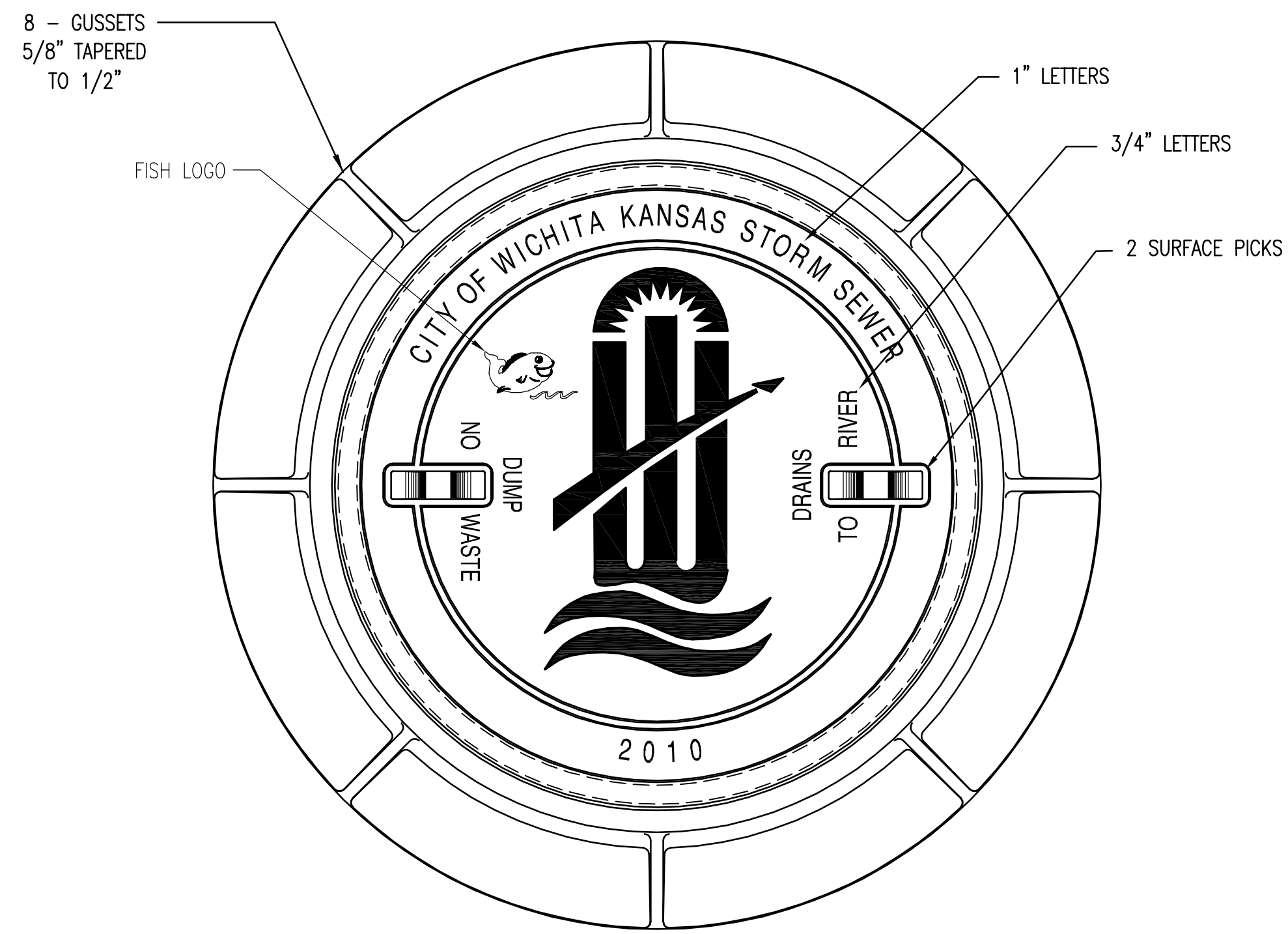


**GENERAL NOTES**

- IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
- STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
- ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
- 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.
- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
- CONCRETE USED FOR MANHOLE CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
- MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN.)
- MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTORS OPTION. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL.
- CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
- THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE MANHOLE WALL.
- MANHOLE INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE MANHOLE WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
- MANHOLE FRAME AND COVER TO BE DEETER #1261, EJIW #1936-21, OR APPROVED EQUAL, SEE SW-303.
- FOR FLAT GRATED INLET APPLICATION, GRATE TO BE DEETER #1933, EJIW #1205 MDI, OR APPROVED EQUAL.
- FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EJIW #120545, OR APPROVED EQUAL.



|  |            |                          |
|--|------------|--------------------------|
| <b>PRECAST CONCRETE<br/>MANHOLE<br/>(STORM SEWER)</b>  |            |                          |
| CITY ENGINEER<br><b>JAMES L. ARMOUR, P.E., L.S.</b>  |            |                          |
| PROJECT NUMBER   | OCA NUMBER | DATE                     |
| -  |            | 11/2010                  |
| CITY ENGINEER'S OFFICE<br>CITY HALL - SEVENTH FLOOR<br>455 NORTH MAIN STREET<br>WICHITA, KANSAS 67202-1620<br>(316) 268-4501 |            | DESIGN<br>DRAWN<br>SHEET |



**MANHOLE FRAME**  
**DEETER #1261 OR EJIW #1936-Z1**

- NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
  2. COVER TO BE DEETER #1261 OR EJIW #1936A.

**INLET FRAME**  
**DEETER #2014 OR EJIW #1936-Z4**

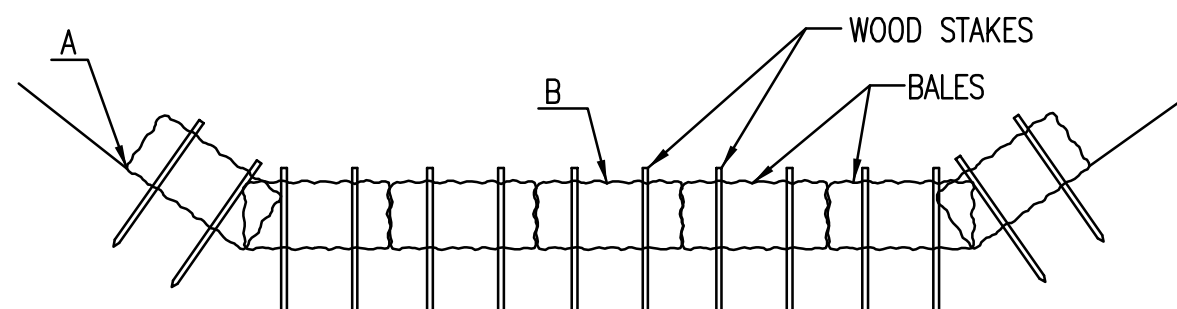
- NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES.
  2. NOT TO BE USED UNDER PAVEMENT.
  3. COVER TO BE DEETER #1261 OR EJIW #1936A.



|  |            |                          |
|--|------------|--------------------------|
| <b>MANHOLE/INLET FRAME AND COVER (STORM SEWER)</b>   |            |                          |
| CITY ENGINEER<br><b>JAMES L. ARMOUR, P.E., L.S.</b>  |            |                          |
| PROJECT NUMBER<br>-  | OCA NUMBER | DATE<br>11/2010          |
| CITY ENGINEER'S OFFICE<br>CITY HALL - SEVENTH FLOOR<br>455 NORTH MAIN STREET<br>WICHITA, KANSAS 67202-1620<br>(316) 268-4501 |            | DESIGN<br>DRAWN<br>SHEET |



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".

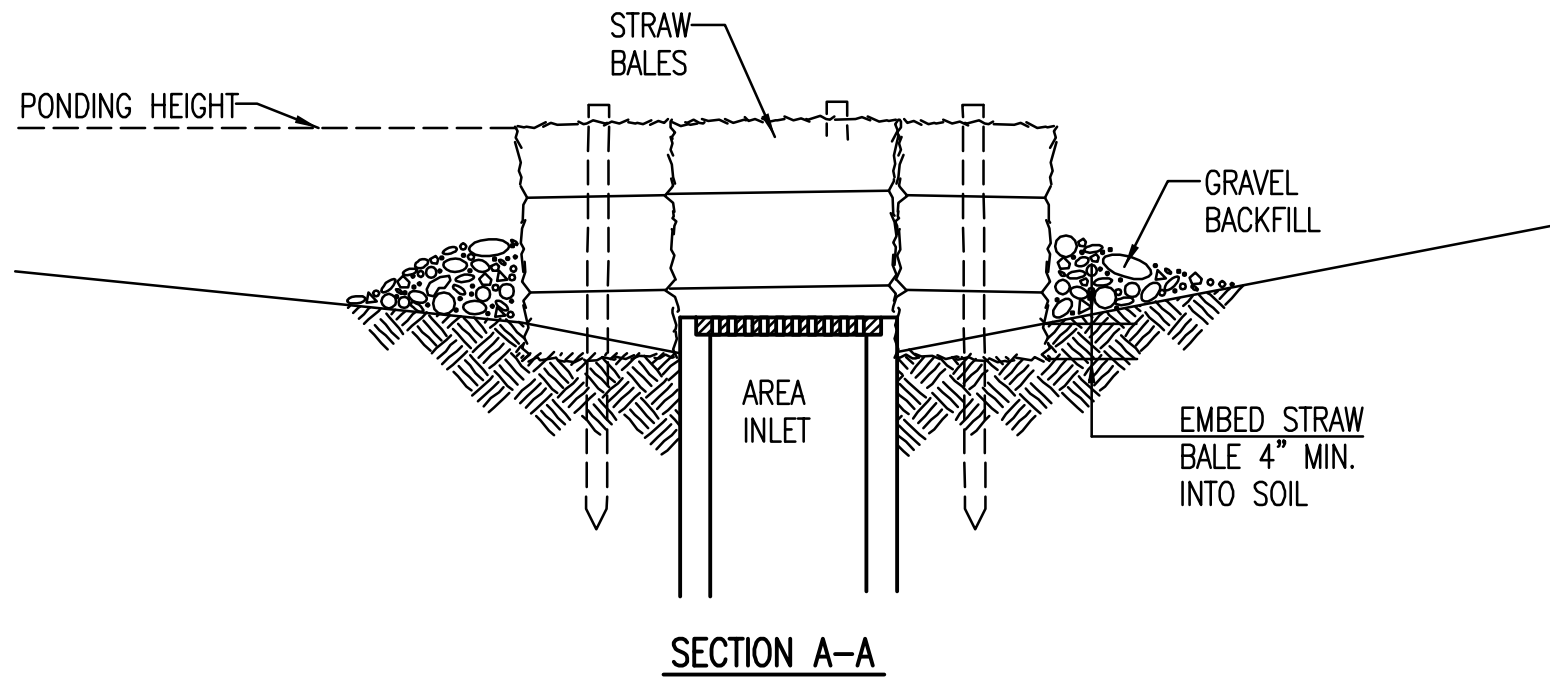
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

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.

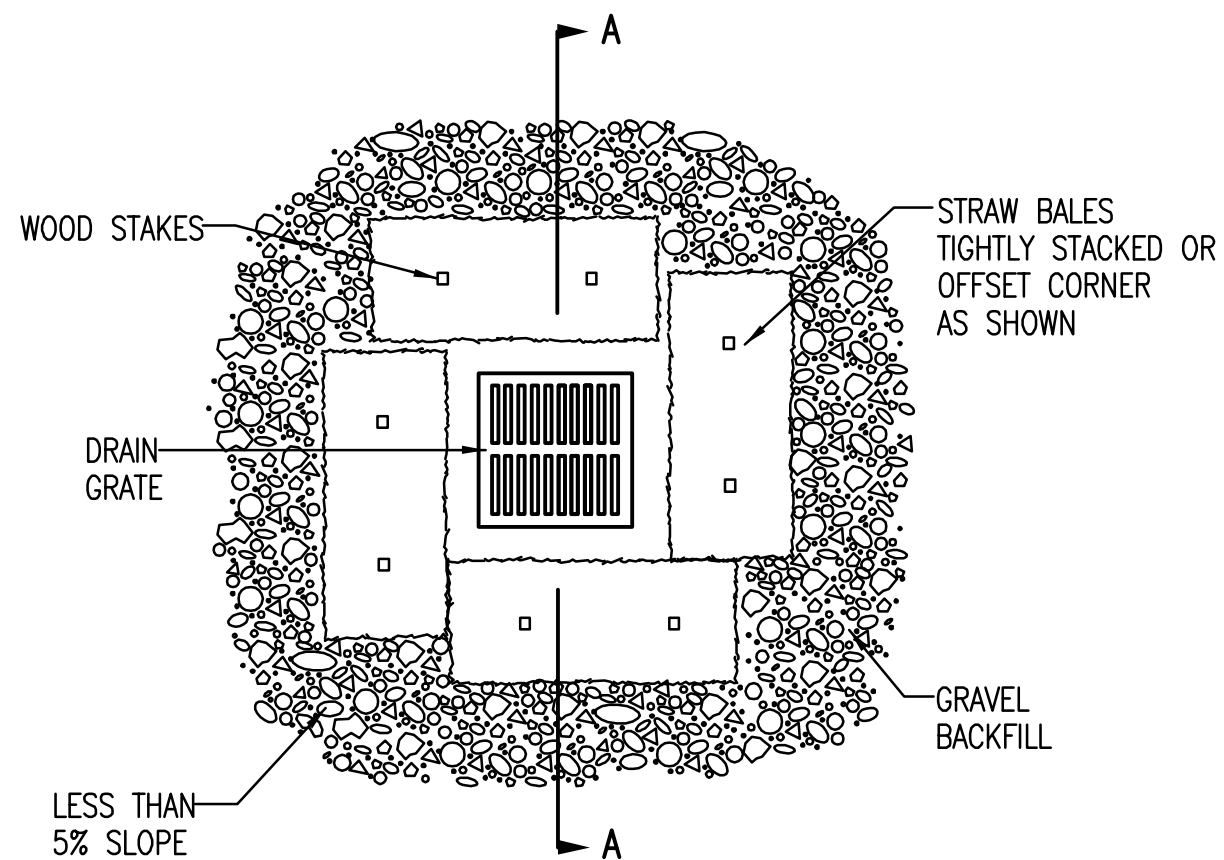
**INSPECTION AND MAINTENANCE:**

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.

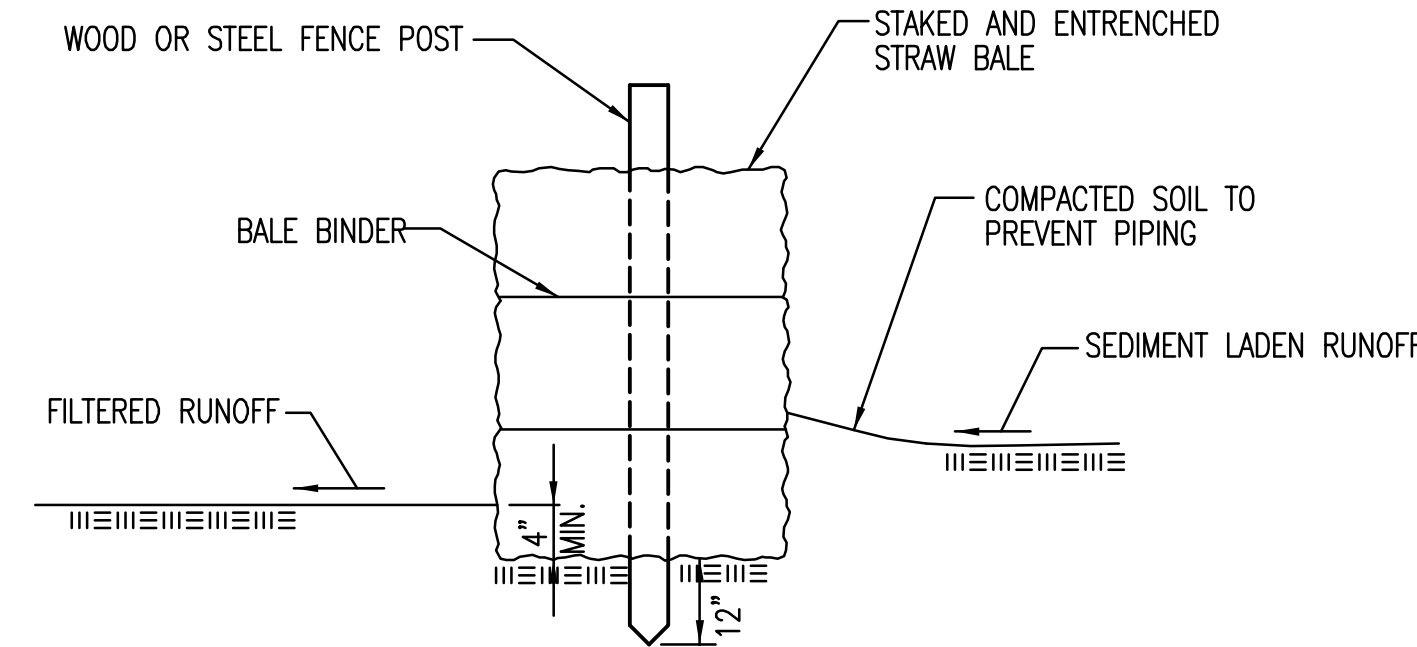
**LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:**

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 OF 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:**

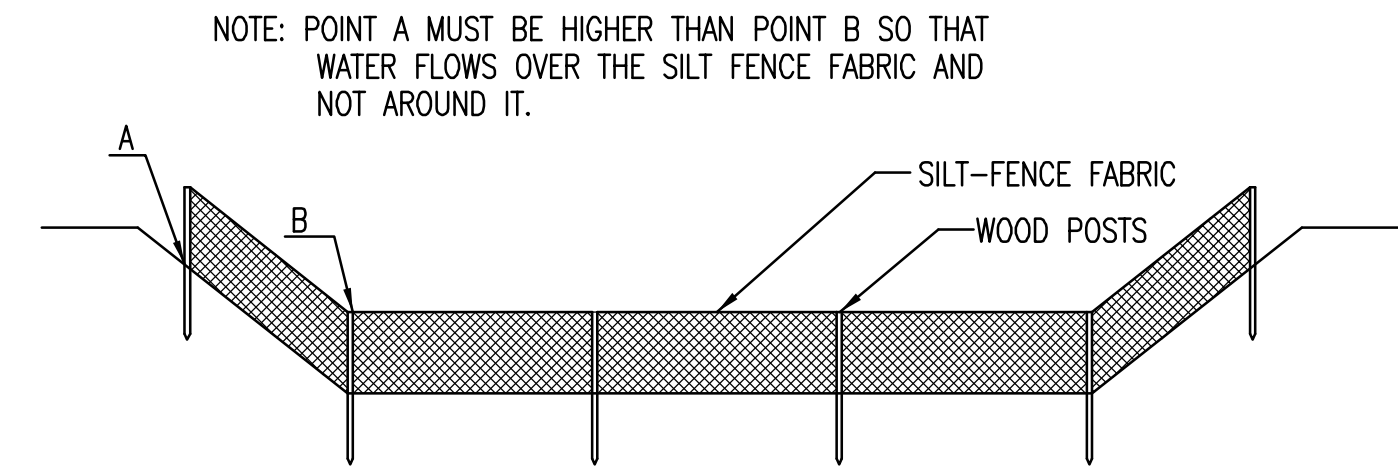
WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER 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?

|   |            |         |        |  |  |
|---|------------|---------|--------|--|--|
|  <p><b>CITY OF WICHITA</b><br/>PUBLIC WORKS &amp; UTILITIES<br/>ENGINEERING DIVISION</p> |            |         |        | <b>STRAW BALE DITCH CHECK AND BARRIER DETAILS</b>                  |  |
|   |            |         |        | <small>CITY ENGINEER</small><br><b>JAMES L. ARMOUR, P.E., L.S.</b> |  |
| PROJECT NUMBER  | OCA NUMBER | DATE    |        |  |  |
| -   |            | 11/2010 |        |  |  |
| <small>CITY ENGINEER'S OFFICE</small><br>CITY HALL - SEVENTH FLOOR<br>455 NORTH MAIN STREET<br>WICHITA, KANSAS 67202-1620<br>(316) 268-4501                                   |            |         | DESIGN | DRAWN  |  |
|   |            |         | SHEET  |  |  |



**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 CHECK<br>DITCH GRADE<br>(%) | SPACING<br>CHECK<br>SPACING<br>(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.

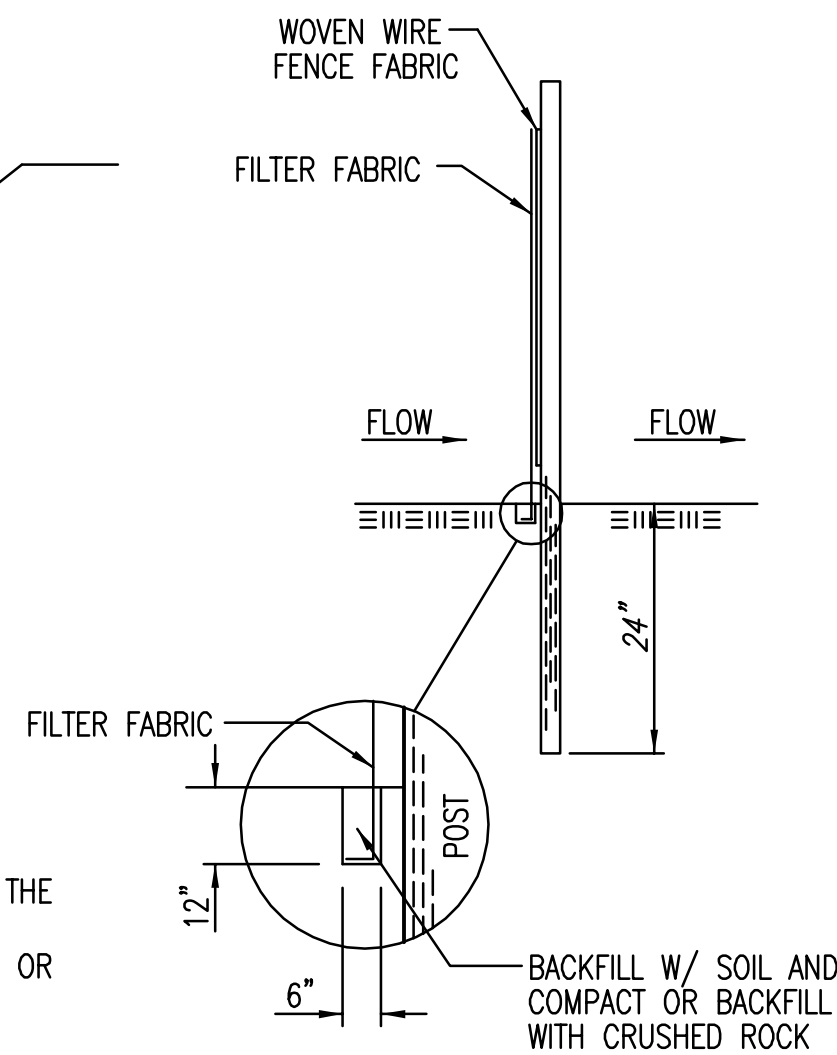
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

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.

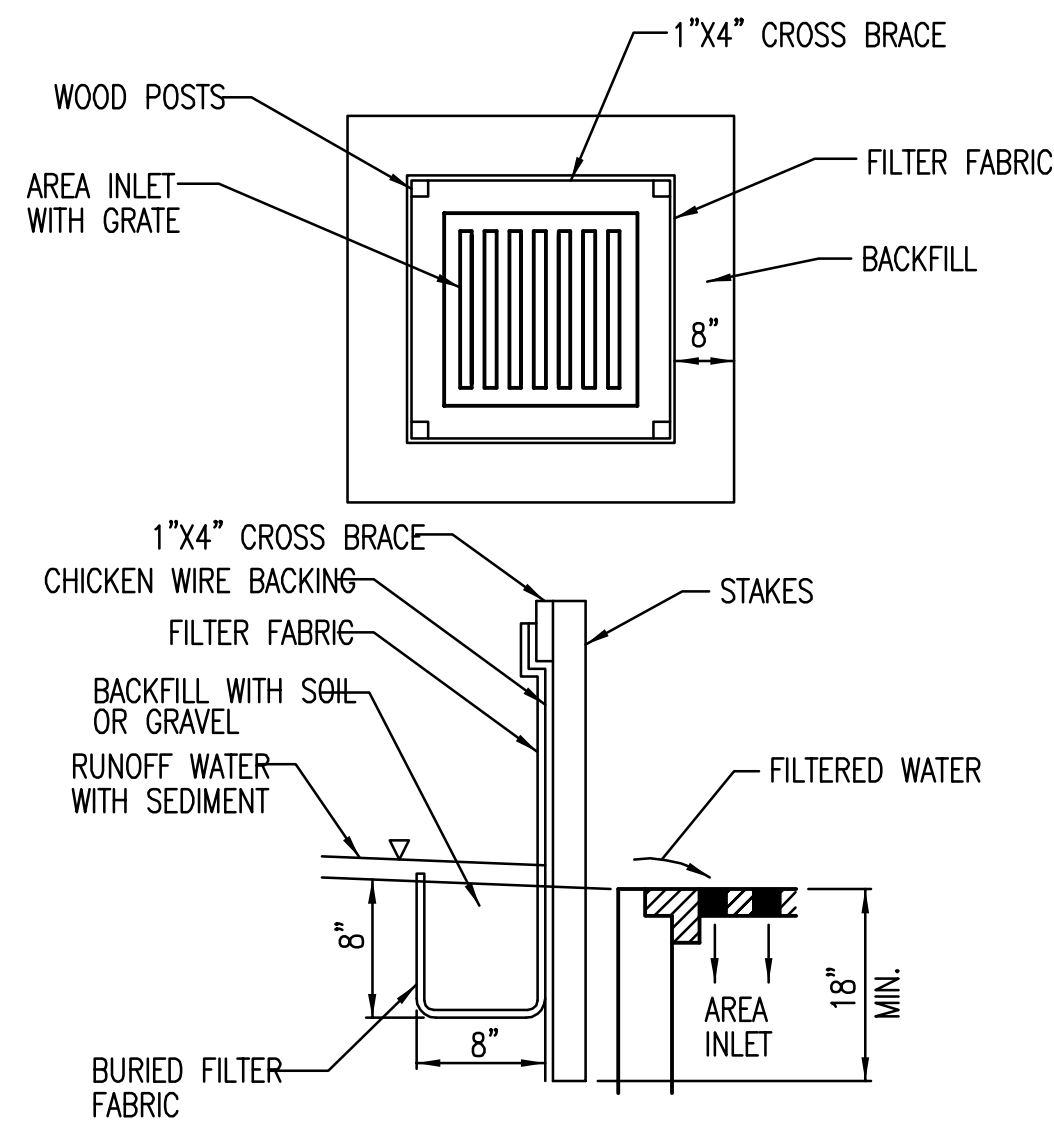
**INSPECTION AND MAINTENANCE:**

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.

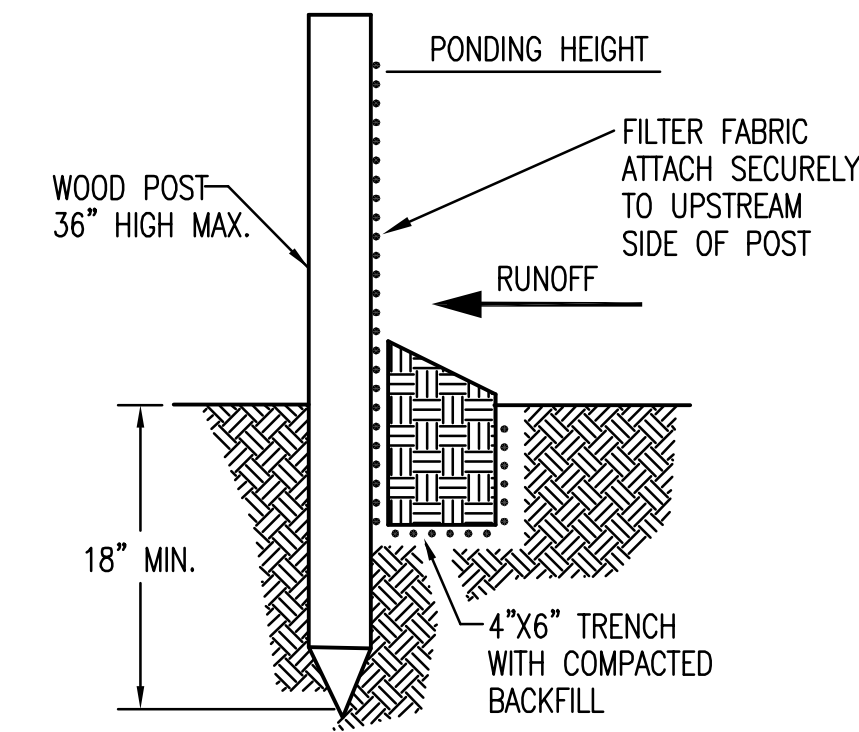
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

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?

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|---|---|------------|-----------------|
| <br><b>CITY OF WICHITA</b><br>PUBLIC WORKS & UTILITIES<br>ENGINEERING DIVISION | <b>SILT FENCE DITCH CHECK AND BARRIER DETAILS</b>   |            |                 |
|   | CITY ENGINEER<br><b>JAMES L. ARMOUR, P.E., L.S.</b> |            |                 |
|   | PROJECT NUMBER<br>-                                 | OCA NUMBER | DATE<br>11/2010 |
| CITY ENGINEER'S OFFICE<br>CITY HALL - SEVENTH FLOOR<br>455 NORTH MAIN STREET<br>WICHITA, KANSAS 67202-1620<br>(316) 268-4501  |   | DESIGN     | DRAWN           |
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