

# PRIVATE STORM SEWER IMPROVEMENTS TO SERVE LOT 2, RIDGE PLAZA 11TH ADDITION PPD# 0233

## GENERAL NOTES

1. Contractor will be required to provide a minimum advance notice of Seventy Two (72) 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 262-0661  
 Kansas Gas Service 383-8600  
 Westar 383-8600  
 AT&T 1-800-286-8313  
 City of Wichita Water Department 262-6000  
 City of Wichita Sewer Maintenance 262-6000

2. Underground utility service lines and overhead utility pole lines are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. 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. Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved.

4. 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 Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps permitting regulations. Any material buried or stockpiled beyond approved of Engineers construction limits would require additional archeological investigations unless buried in a previously approved borrow location.

5. The Engineer shall take field ties to all quarter section corners. The Contractor shall set a City survey monument in the required location where such quarter section corners fall within the limits of pavement construction. Survey monuments will be furnished by the City. The Engineer will accurately locate and install the iron at the quarter section corner. This work will not be paid for directly, but shall be considered subsidiary to the other pay items of work in the contract.

6. The Contractor shall give all property owners and/or tenants of developed property directly abutting the construction of this project a minimum of ten (10) days advance notice prior to start of construction.

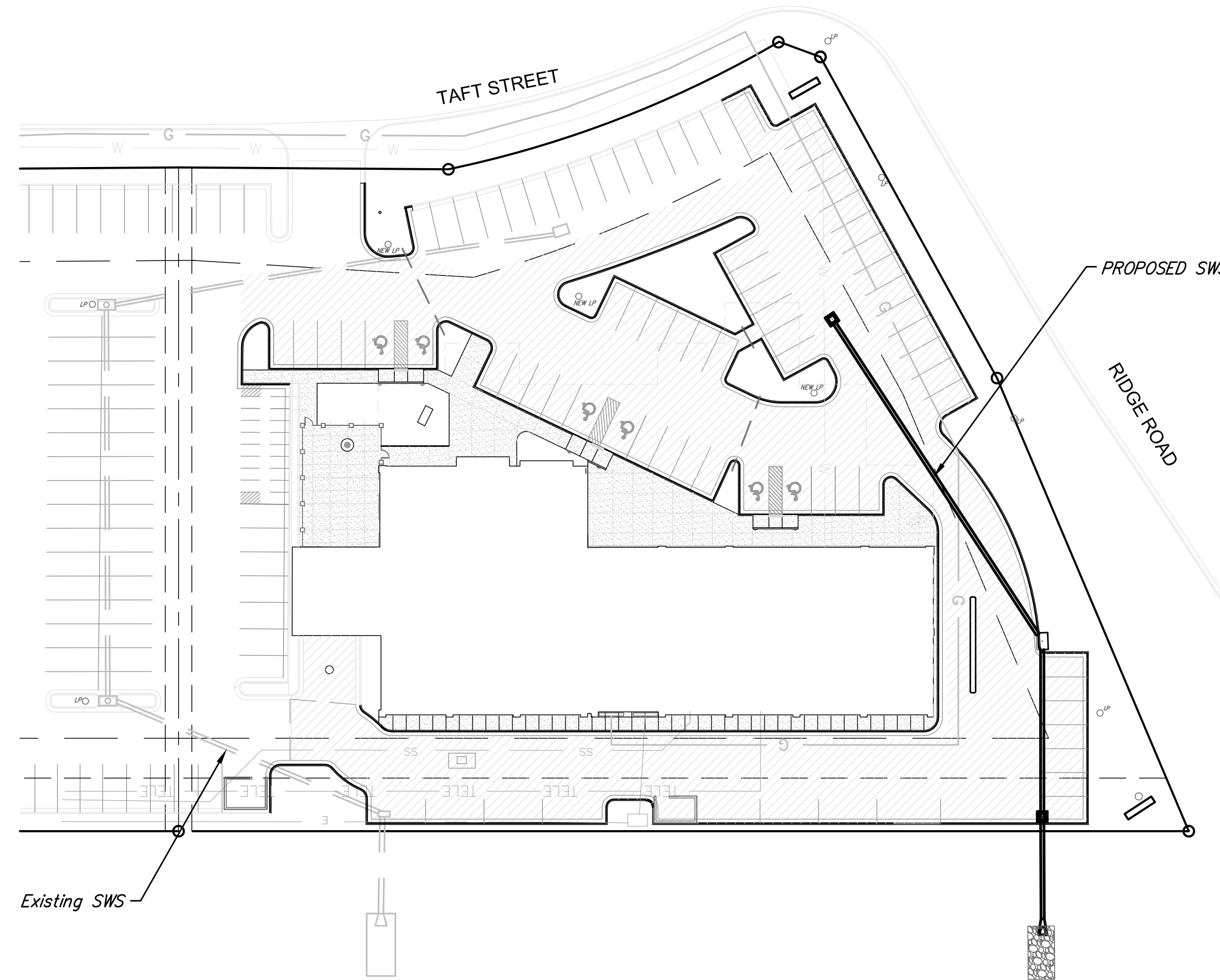
7. The Contractor shall seed, fertilize and mulch all disturbed areas upon completion of construction in accordance with City of Wichita standard specifications.

8. 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 Infrastructure by Private Contract.

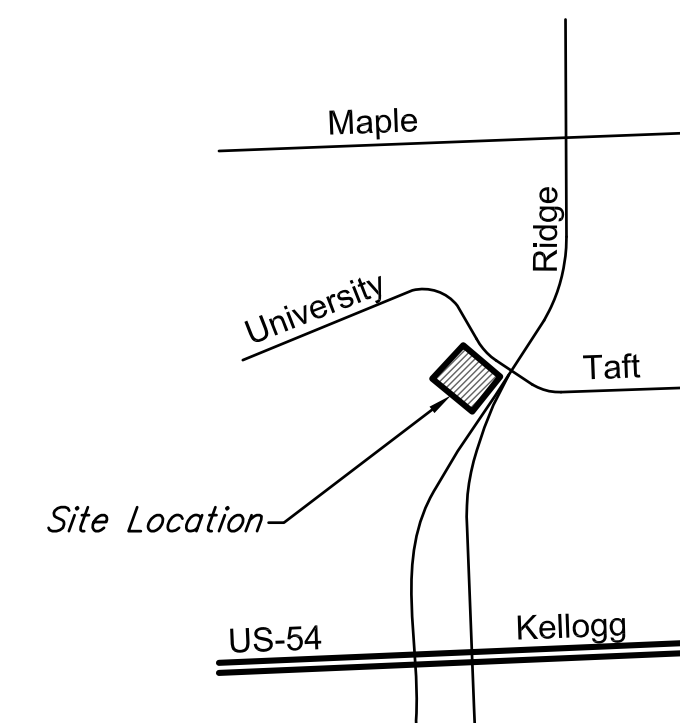
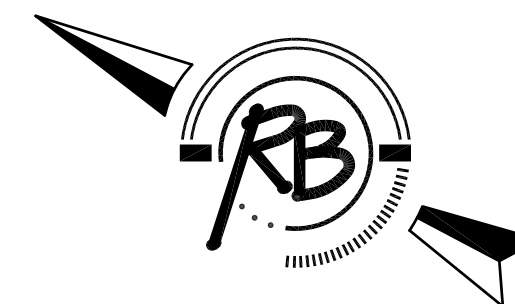
9. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are damaged or destroyed by his construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws.

10. 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.

11. An NOI and NPDES Application have been submitted to KDHE for approval as part of the overall design package prepared by Spangenburg Phillips Tice. A copy of the approved application will be provided upon request.



TOTAL SITE AREA: 2.51 acres  
 DISTURBED AREA: 1.50 acres  
 PROPOSED NEW IMPERVIOUS: 0.38 acres



SITE LOCATION MAP

**AS BUILTS**

Contractor: McCullough Excavation, Inc. 07/10/2014	Project Inspector: Tom Jones <b>KEMILLER</b> ENGINEERING PA. 117 E. LAKE, WICHITA, KS 67202 (316)264-0242
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## INDEX OF SHEETS

1. TITLE SHEET
2. SWS PLAN/PROFILE
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4. DROP INLET DETAILS
5. WATER QUALITY INLET DETAILS
6. ERU PLAN
7. SITE PLAN
8. GRADING PLAN
9. EROSION CONTROL PLAN
10. EROSION CONTROL DETAILS

## BENCH MARK

"C" CUT ON TOP OF CURB OF PARKING LOT NEAR THE SW CORNER OF LOT 1, RIDGE PLAZA 9TH ADDITION AT THE NE CORNER OF TAFT AND MID-CONTINENT

ELEVATION = 1327.65 NGVD29

APPROVED AS NOTED  
 BY CITY ENGINEER OF WICHITA

Engineering: *Rebecca J. J...* 4/15/14  
 Stormwater: *St...* 4/15/14

**NOTE TO CONTRACTORS**

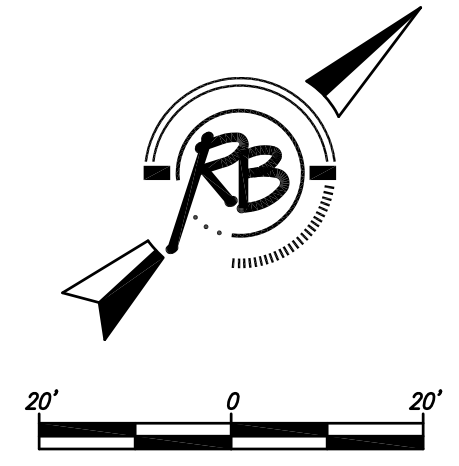
Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said Inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No 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.



ENGINEERING | SURVEYING | LANDSCAPE ARCHITECTURE | GOVERNMENT

924 NORTH MAIN WICHITA, KANSAS 67203 P (316) 264-8008 F (316) 264-4621  
 WWW.RBKANSAS.COM

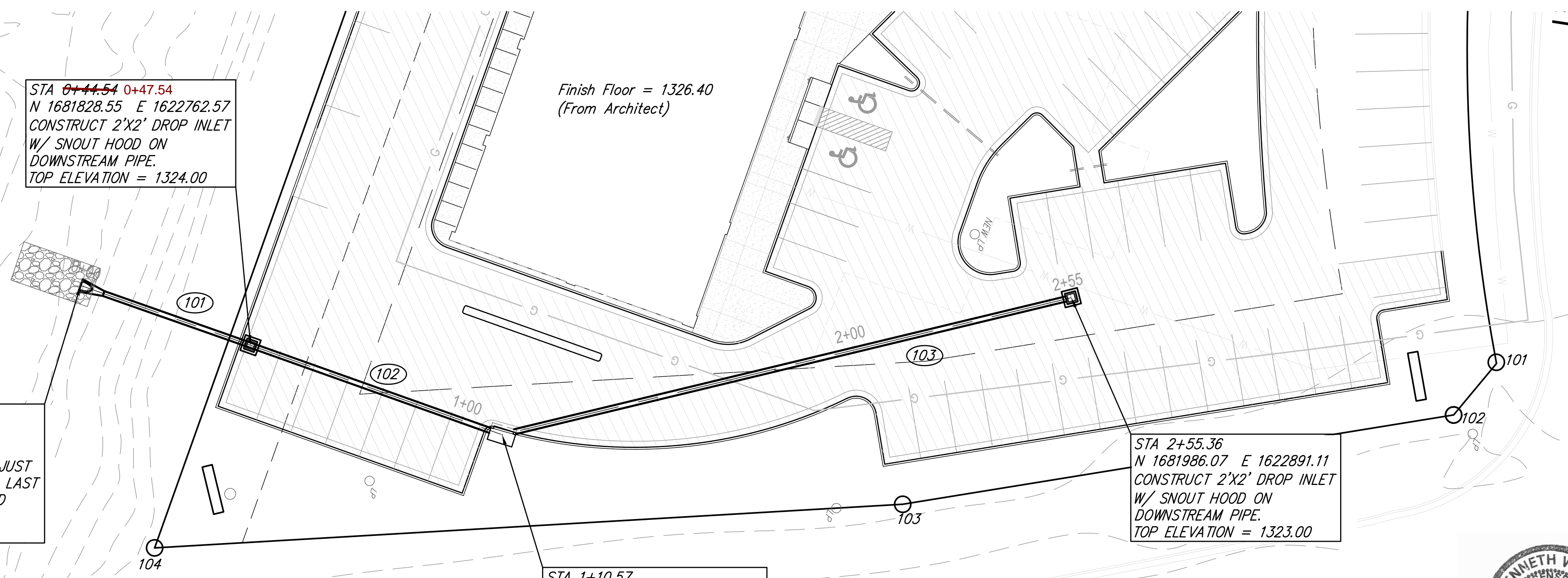
CITY OF WICHITA, KANSAS  
 GARY JANZEN, P.E. - CITY ENGINEER



STA ~~0+44.54~~ 0+47.54  
 N 1681828.55 E 1622762.57  
 CONSTRUCT 2'X2' DROP INLET  
 W/ SNOUT HOOD ON  
 DOWNSTREAM PIPE.  
 TOP ELEVATION = 1324.00

Finish Floor = 1326.40  
 (From Architect)

STA. 0+00  
 N 1681807.58 E 1622723.27  
 BEGIN STORM SEWER  
 INSTALL 15" RCP END SECTION. FIELD ADJUST  
 END SECTION TO MATCH EXISTING SLOPE. LAST  
 TWO JOINTS OF PIPE SHALL BE RESTRAINED  
 JOINT PIPE. INSTALL 11 SY LIGHT STONE  
 RIP-RAP AS INDICATED.



STA 1+10.57  
 N 1681859.42 E 1622820.94  
 CONSTRUCT TYPE 1 CURB INLET  
 WITH SNOUT HOOD ON  
 DOWNSTREAM PIPE.  
 TOP ELEVATION = 1324.80

STA 2+55.36  
 N 1681986.07 E 1622891.11  
 CONSTRUCT 2'X2' DROP INLET  
 W/ SNOUT HOOD ON  
 DOWNSTREAM PIPE.  
 TOP ELEVATION = 1323.00



**DRAINAGE CALCULATIONS**  
 Using Rational method ( $Q = C \times I \times A$ )

North Drop Inlet Area = 28,136 sf = 0.65 acres  
 South Drop Inlet Area = 14, 894 sf = 0.35 acres  
 75% Impervious (from Architectural Information)

Hydrologic Soil Group C (Nalim Loam)  
 $C_s = 0.73$   
 $C_{10} = 0.79$   
 $C_{100} = 0.86$

$I_s = 4.18$  in/hr  
 $I_{10} = 4.81$  in/hr  
 $I_{100} = 6.83$  in/hr

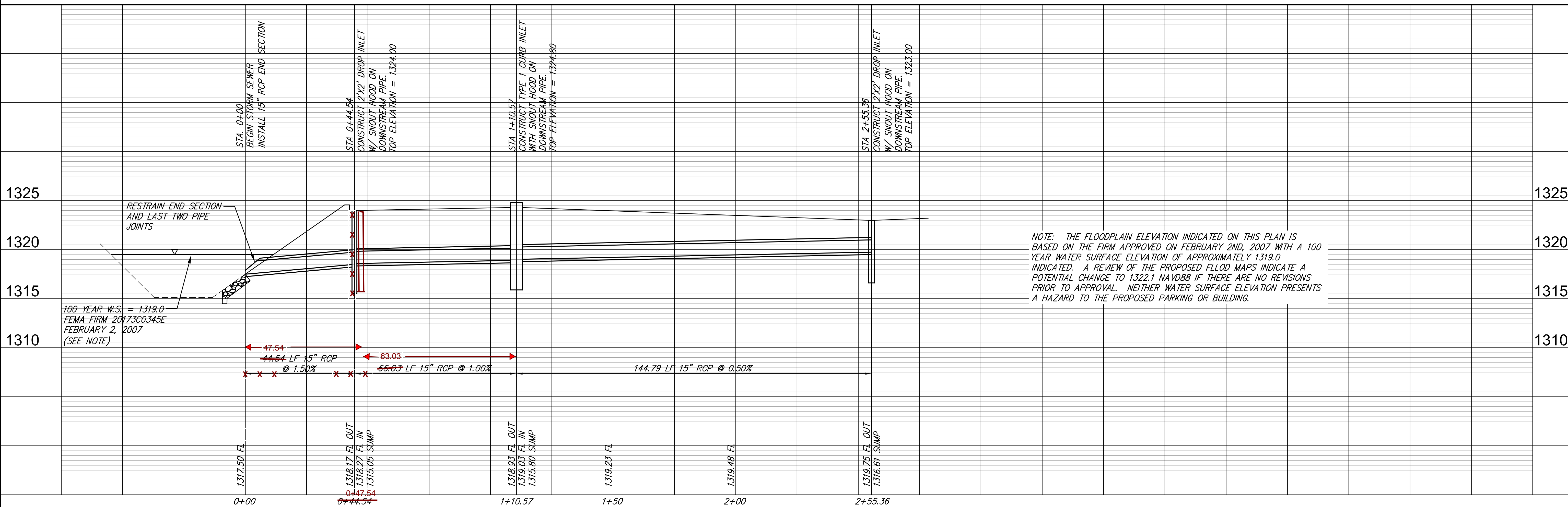
North Drop Inlet  
 $Q_s = 0.73 \times 4.18 \times 0.65 = 2.0$  cfs  
 $Q_{10} = 0.79 \times 4.81 \times 0.65 = 2.5$  cfs  
 $Q_{100} = 0.86 \times 6.83 \times 0.65 = 3.8$  cfs

South Drop Inlet  
 $Q_s = 0.73 \times 4.18 \times 0.35 = 1.0$  cfs  
 $Q_{10} = 0.79 \times 4.81 \times 0.35 = 1.3$  cfs  
 $Q_{100} = 0.86 \times 6.83 \times 0.35 = 2.0$  cfs

Pipe	Flow (cfs)		
	5 yr	10 yr	100 yr
101	3.0	3.8	5.8
102	2.5	3.1	4.7
103	2.0	2.5	3.8

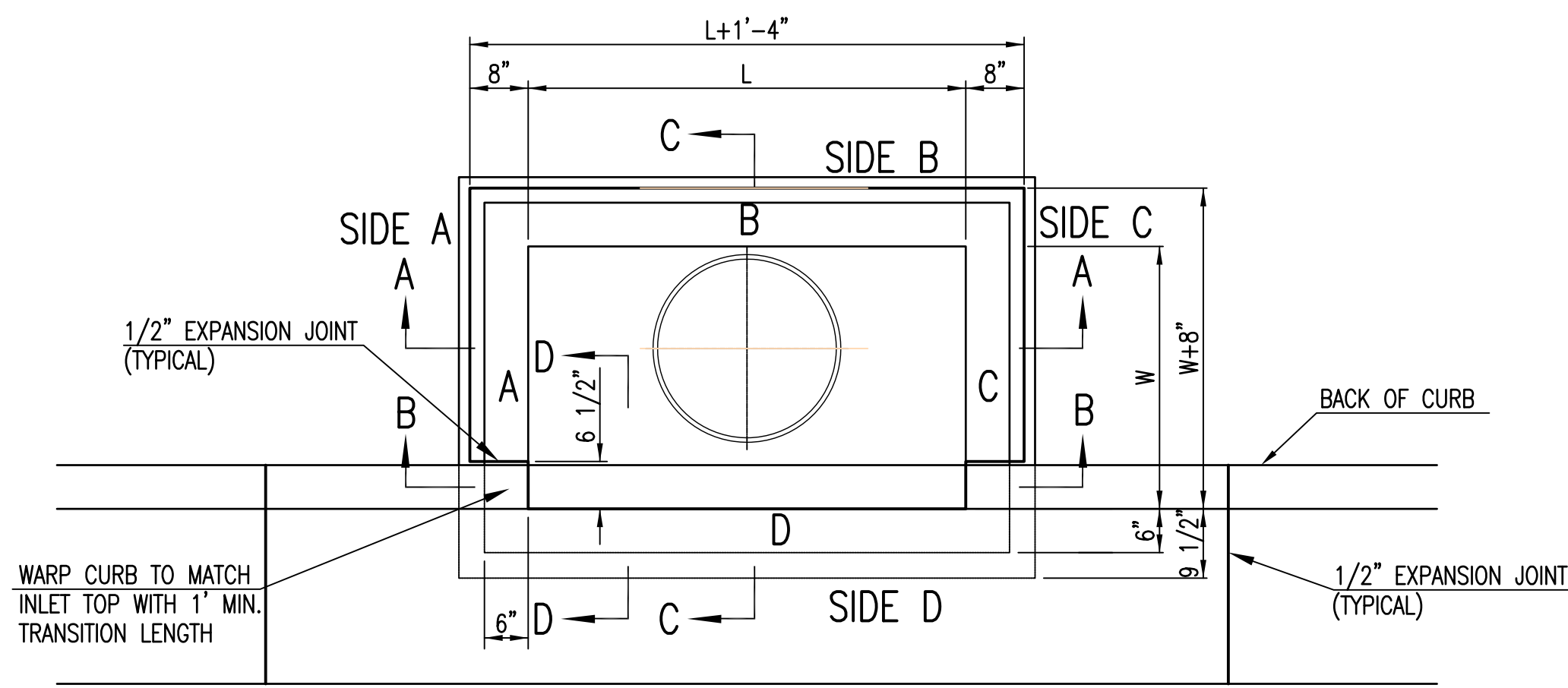
**Project Control**

Point No.	Northing	Easting	Description
101	1682052.28	1622974.14	1/2" Terratech Marker
102	1682036.06	1622977.10	1/2" Terratech Marker
103	1681921.64	1622899.95	1/2" Terratech Marker
104	1681777.20	1622783.47	1/2" Rebar



NOTE: THE FLOODPLAIN ELEVATION INDICATED ON THIS PLAN IS BASED ON THE FIRM APPROVED ON FEBRUARY 2ND, 2007 WITH A 100 YEAR WATER SURFACE ELEVATION OF APPROXIMATELY 1319.0 INDICATED. A REVIEW OF THE PROPOSED FLOOD MAPS INDICATE A POTENTIAL CHANGE TO 1322.1 NAVD88 IF THERE ARE NO REVISIONS PRIOR TO APPROVAL. NEITHER WATER SURFACE ELEVATION PRESENTS A HAZARD TO THE PROPOSED PARKING OR BUILDING.

PROJECT NUMBER: \_\_\_\_\_  
 DRAWING FILE: \_\_\_\_\_  
 BASE [SWS Plan]  
 DESIGN: KWL UTILITY  
 DRAWN: KWL  
 REVISION: \_\_\_\_\_  
 DATE: Apr. 14, 2014  
 REVIEW: \_\_\_\_\_  
 PROJECT: PRIVATE SWD SERVING LOT 2 RIDGE PLAZA 11TH ADDITION  
 SHEET: 2 OF 10  
 RB JOB: 4312E



TOP VIEW

BAR SCHEDULE		
INLET OPENING	B1 BARS	SPACING
5'-0"	#4	4"
10'-0"	#6	3.5"

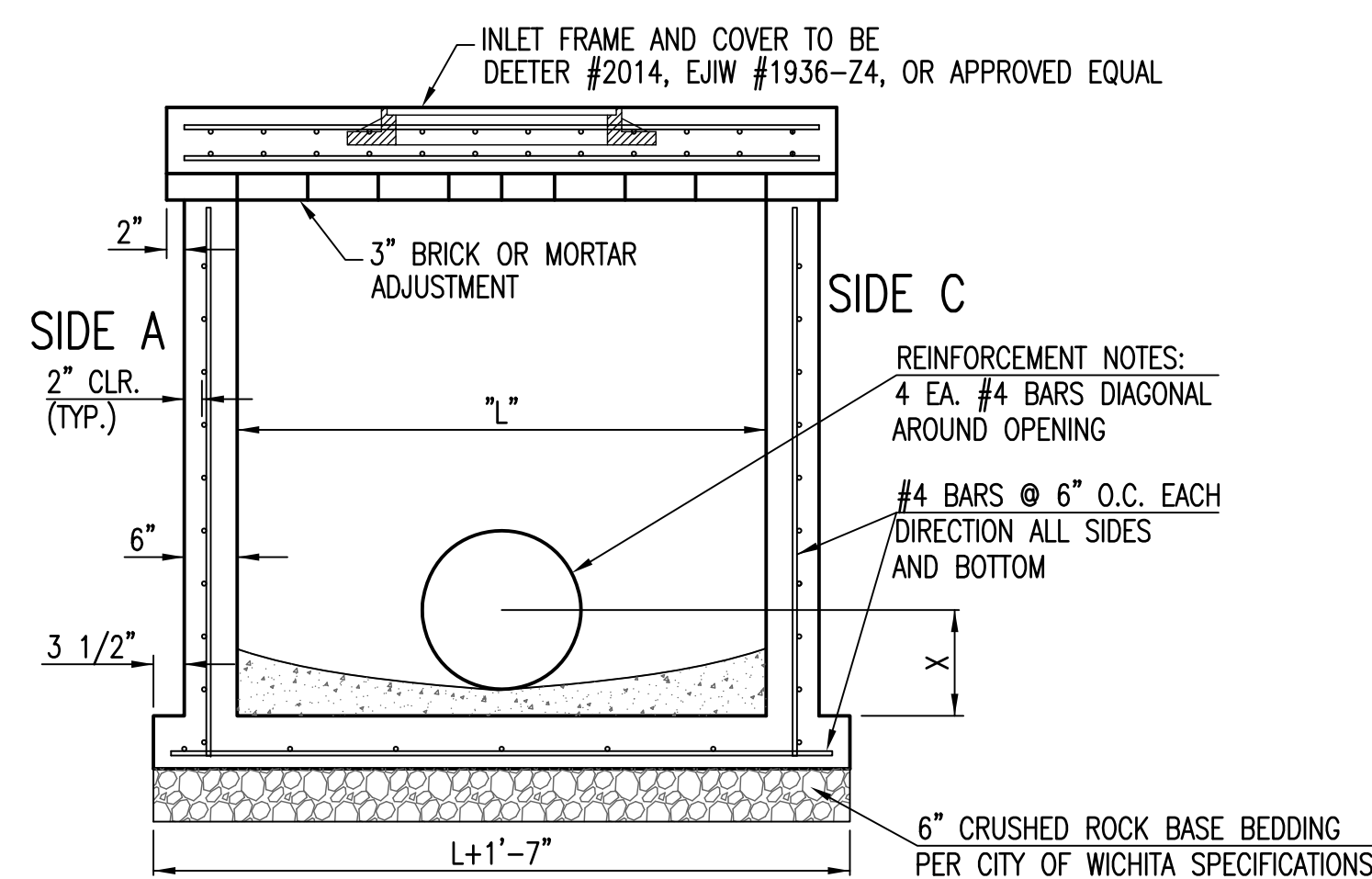
W	PRE-CAST TOP SIZE			PIPE DIA.**
	WIDTH	LENGTH	TOP	
3'-0"	W+8"	L+1'-4"	7 1/2"	21" & SMALLER
4'-0"	W+8"	L+1'-4"	7 1/2"	24" & 30"
5'-0"	W+8"	L+1'-4"	7 1/2"	36" & 42"
6'-0"	W+8"	L+1'-4"	7 1/2"	48" & 54"
7'-0"	W+8"	L+1'-4"	7 1/2"	60" & 66"

\*\* FOR PIPES PERPENDICULAR TO INLET WALL

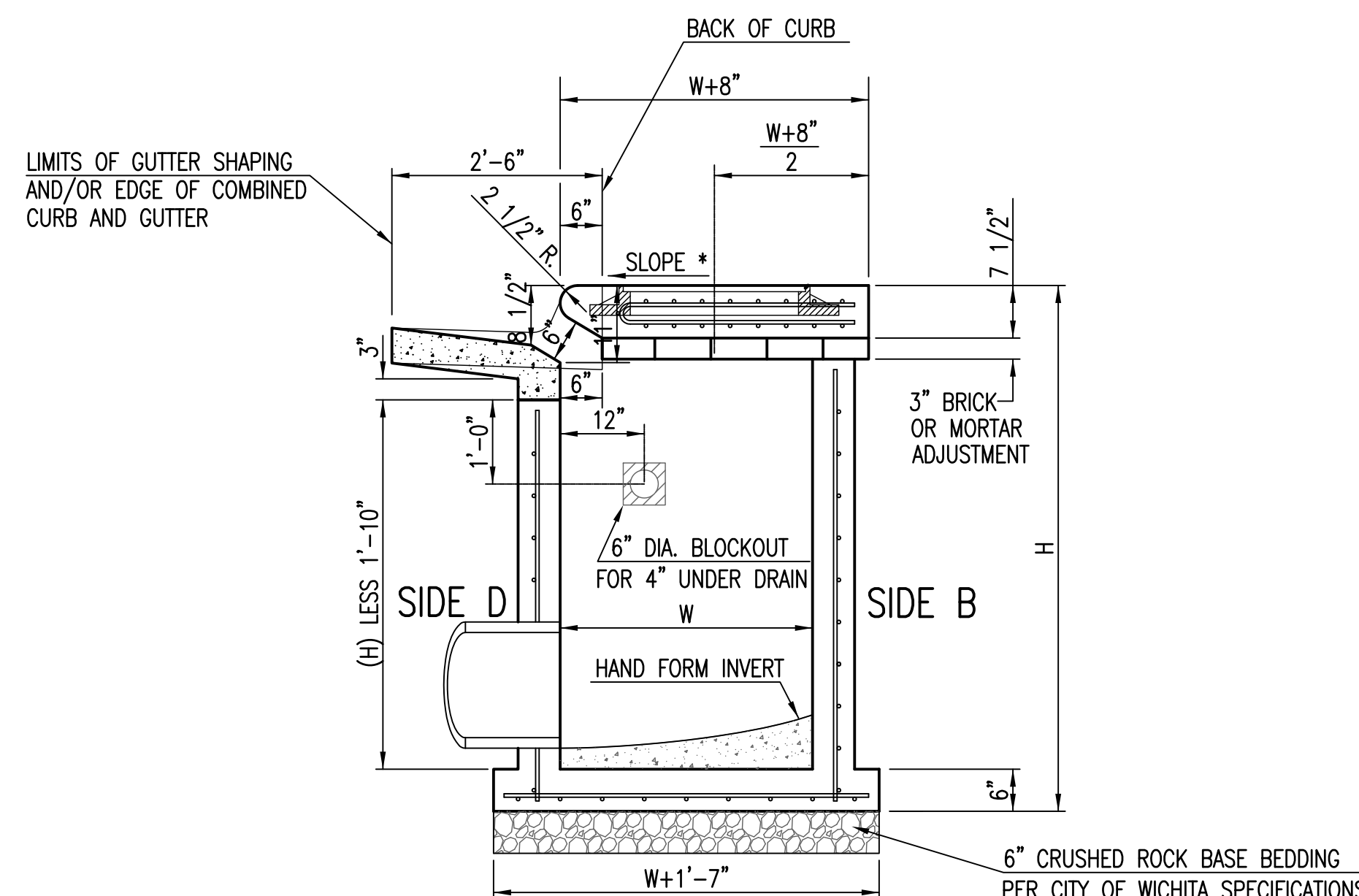
GENERAL NOTES

1. CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP OF THIS INLET WHEN W=5'-0" AND H=7'-0" OR LESS.
3. 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.
4. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
5. INLET FRAME AND COVER TO BE DEETER #2014, EJIW #1936 Z4, OR APPROVED EQUAL, SEE SW-303.
6. 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.

WARP CURB TO MATCH INLET TOP WITH 1' MIN. TRANSITION LENGTH

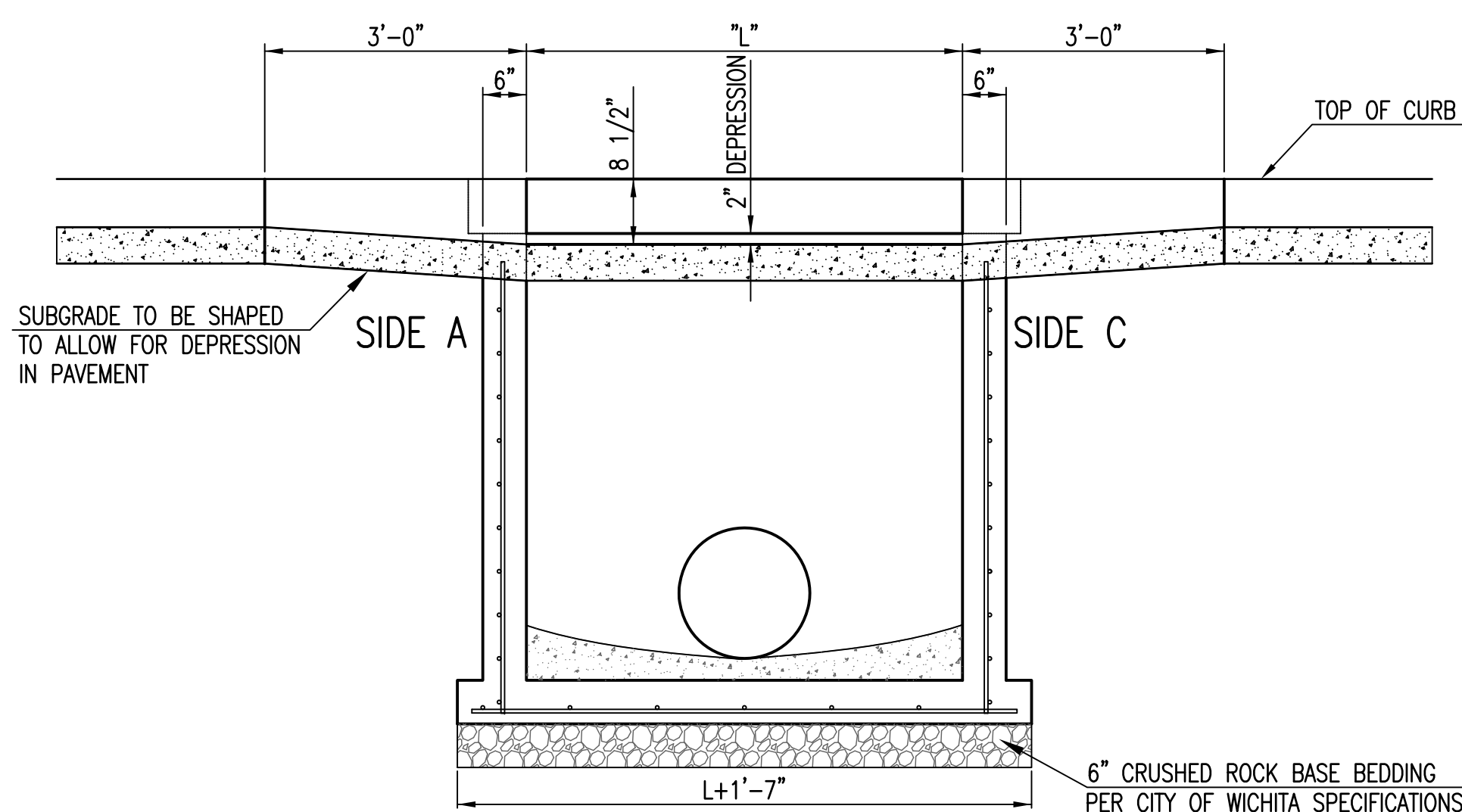
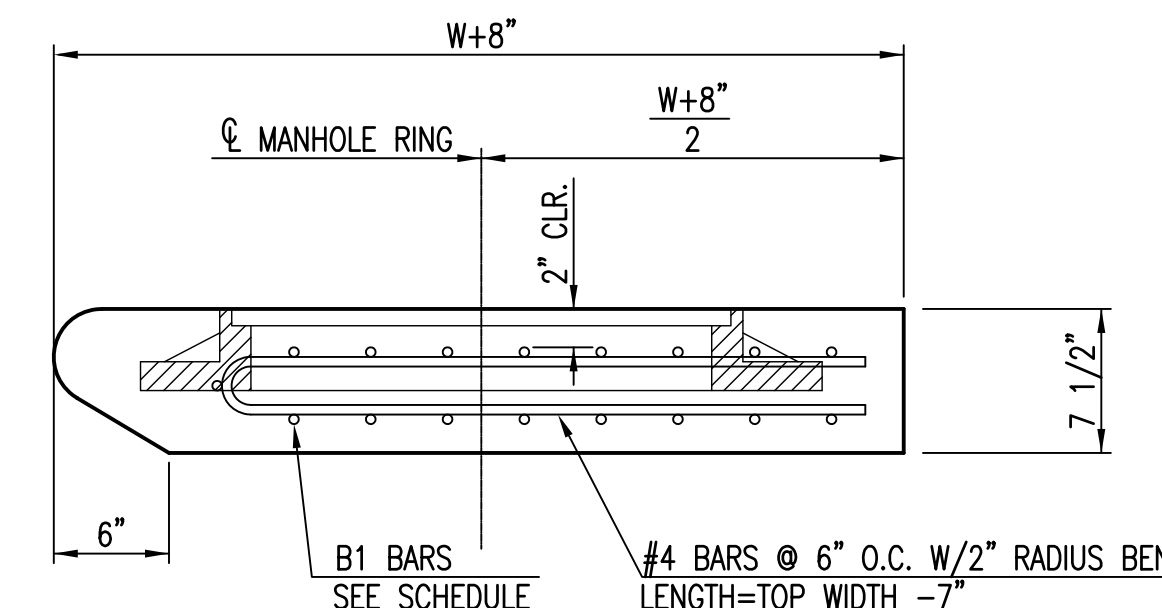


SECTION "A-A"

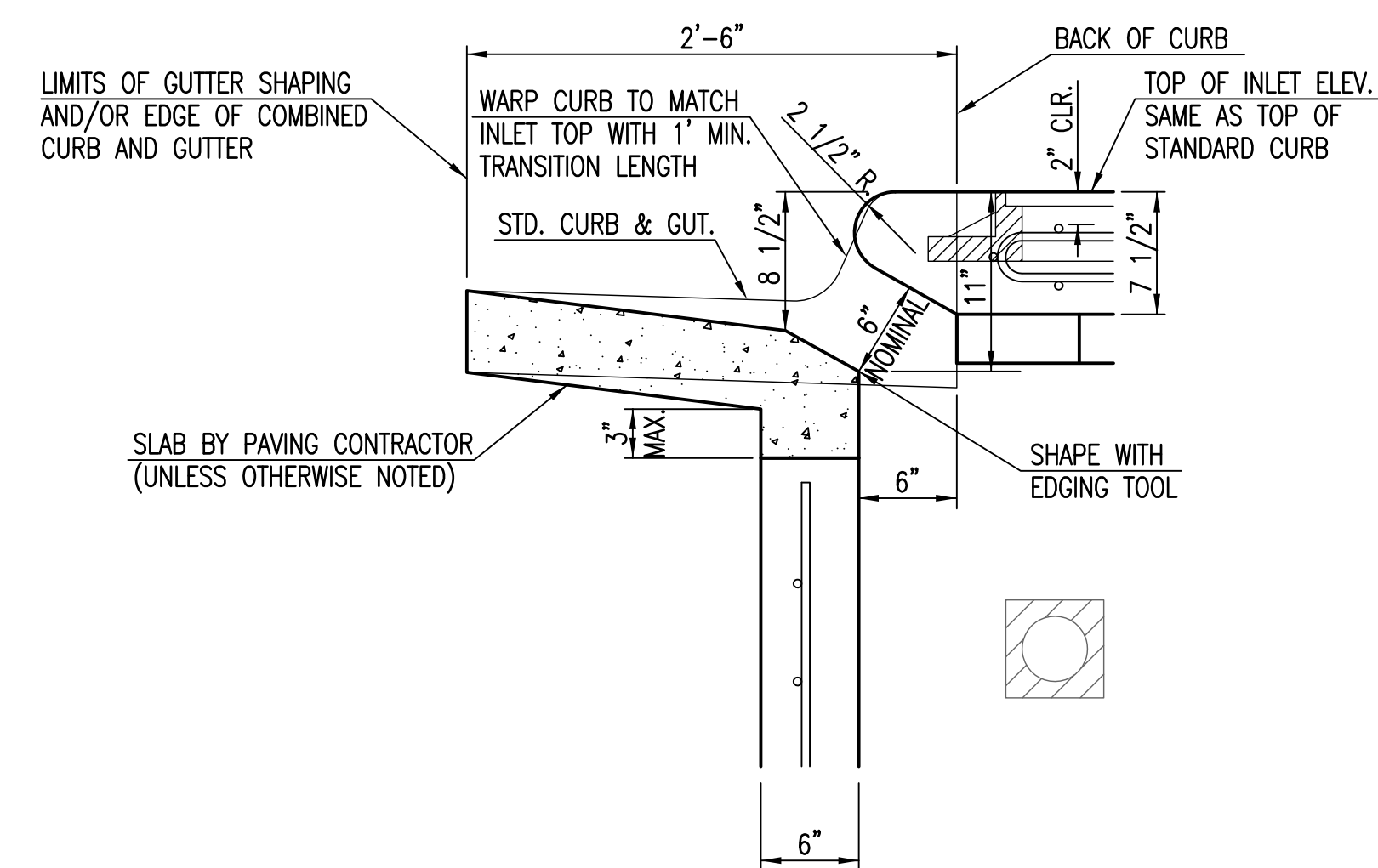


SECTION "C-C"

NOTES:  
\* SLOPE OF INLET TOP TO MATCH SIDEWALK OR PARKING SLOPES WITHIN LIMITS INDICATED.



SECTION "B-B"



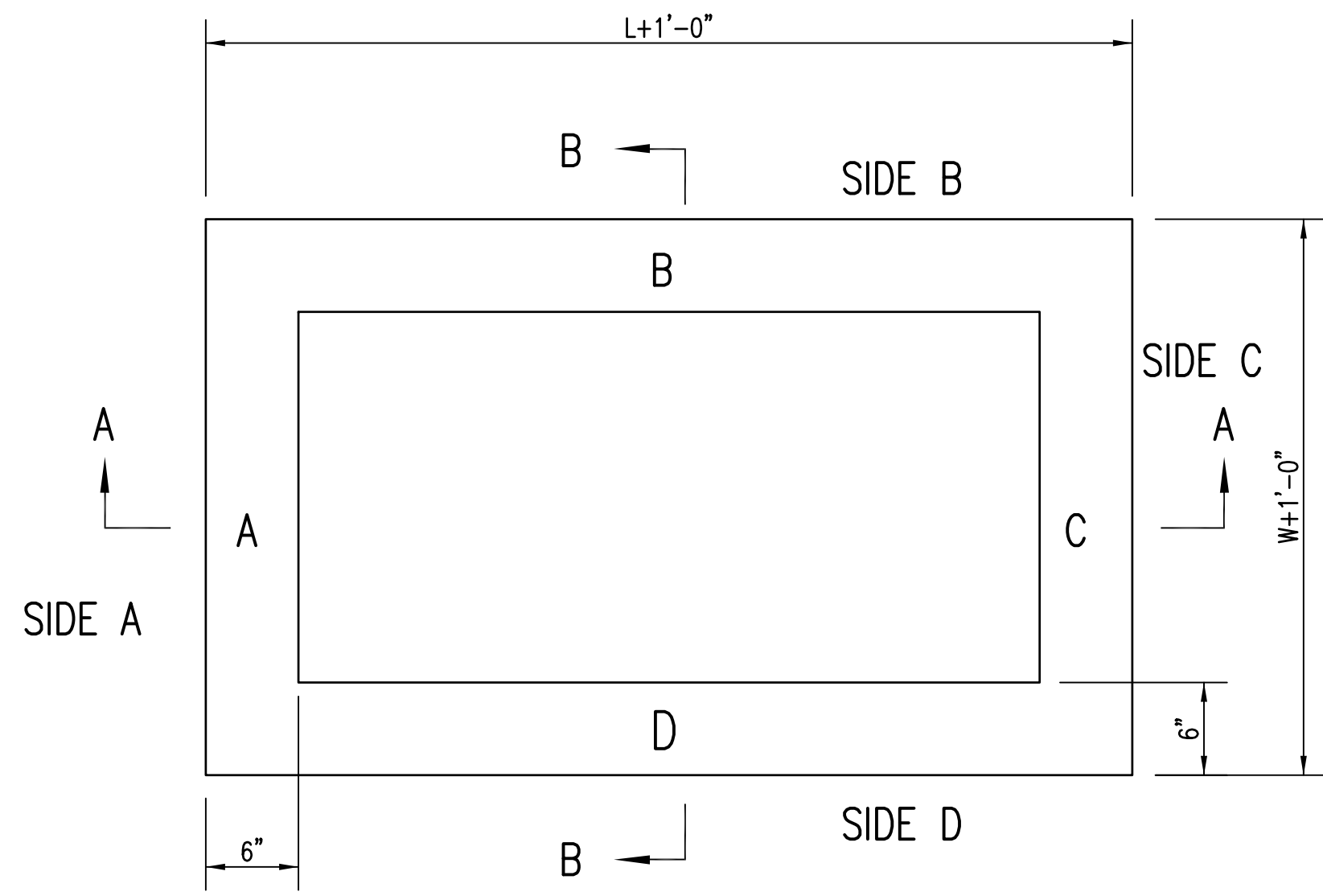
SECTION "D-D"



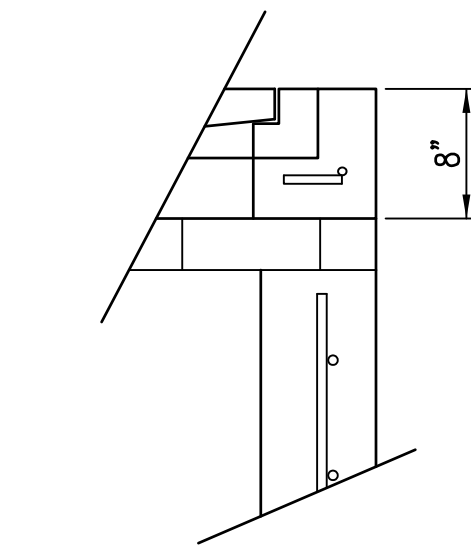
STANDARD TYPE 1  
CURB INLET  
5'-0" OR 10'-0" OPENING

CITY ENGINEER  
**GARY JANZEN, P.E.**

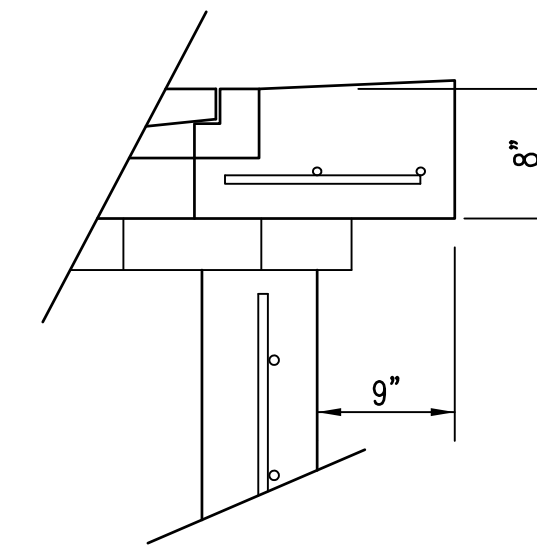
PROJECT NUMBER	OCA NUMBER	DATE
		11/2010
CITY ENGINEER'S OFFICE	DESIGN	DRAWN
CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET
		3 of 10



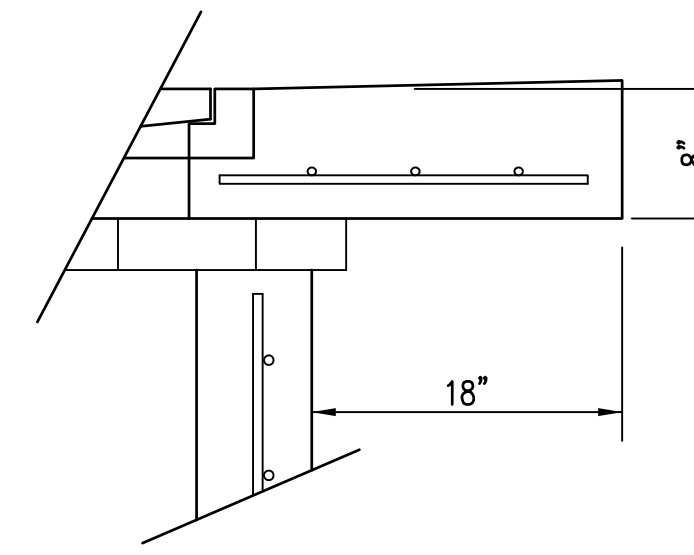
TOP VIEW



FLUSH STYLE TOP  
NO APRON



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



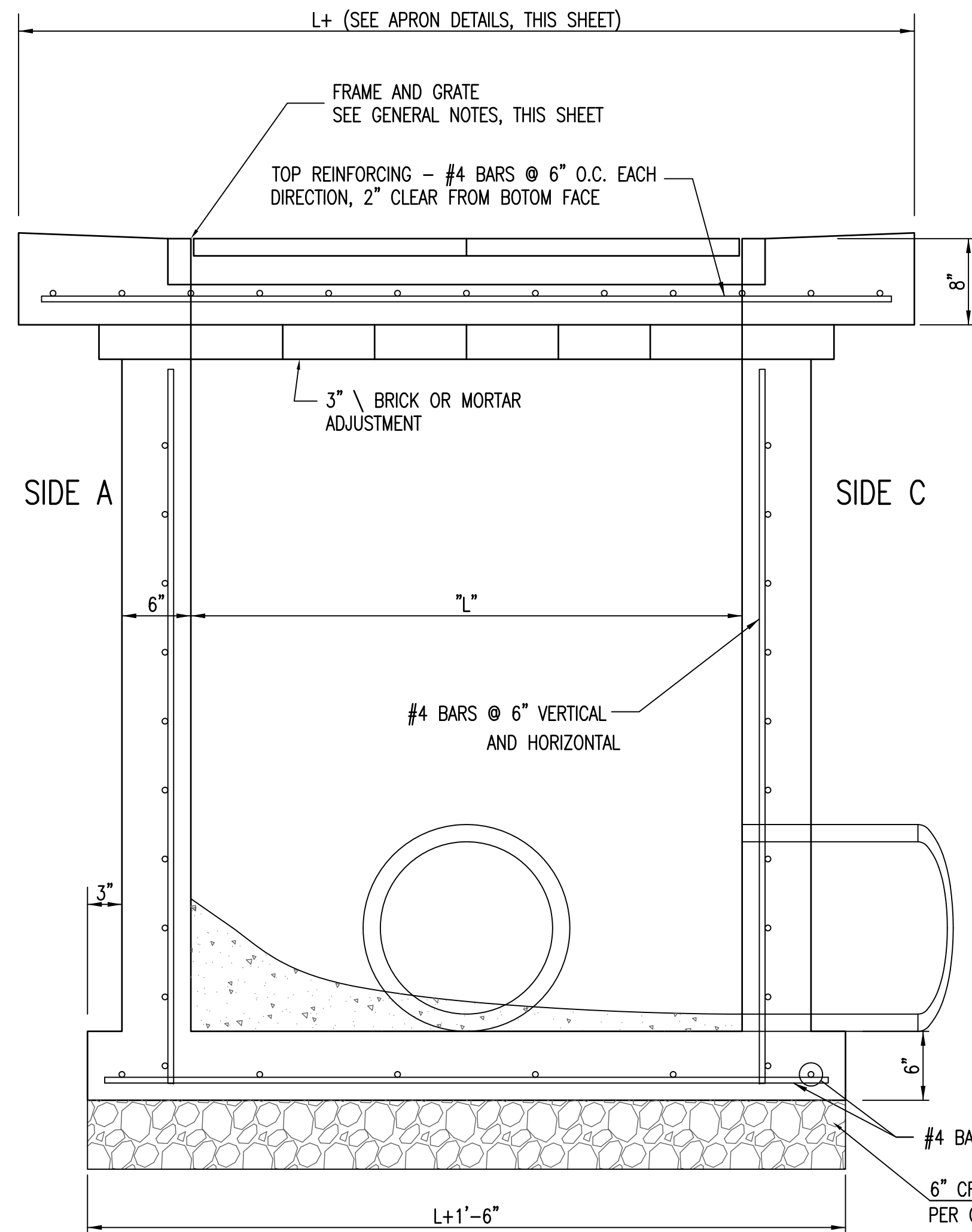
18" APRON

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

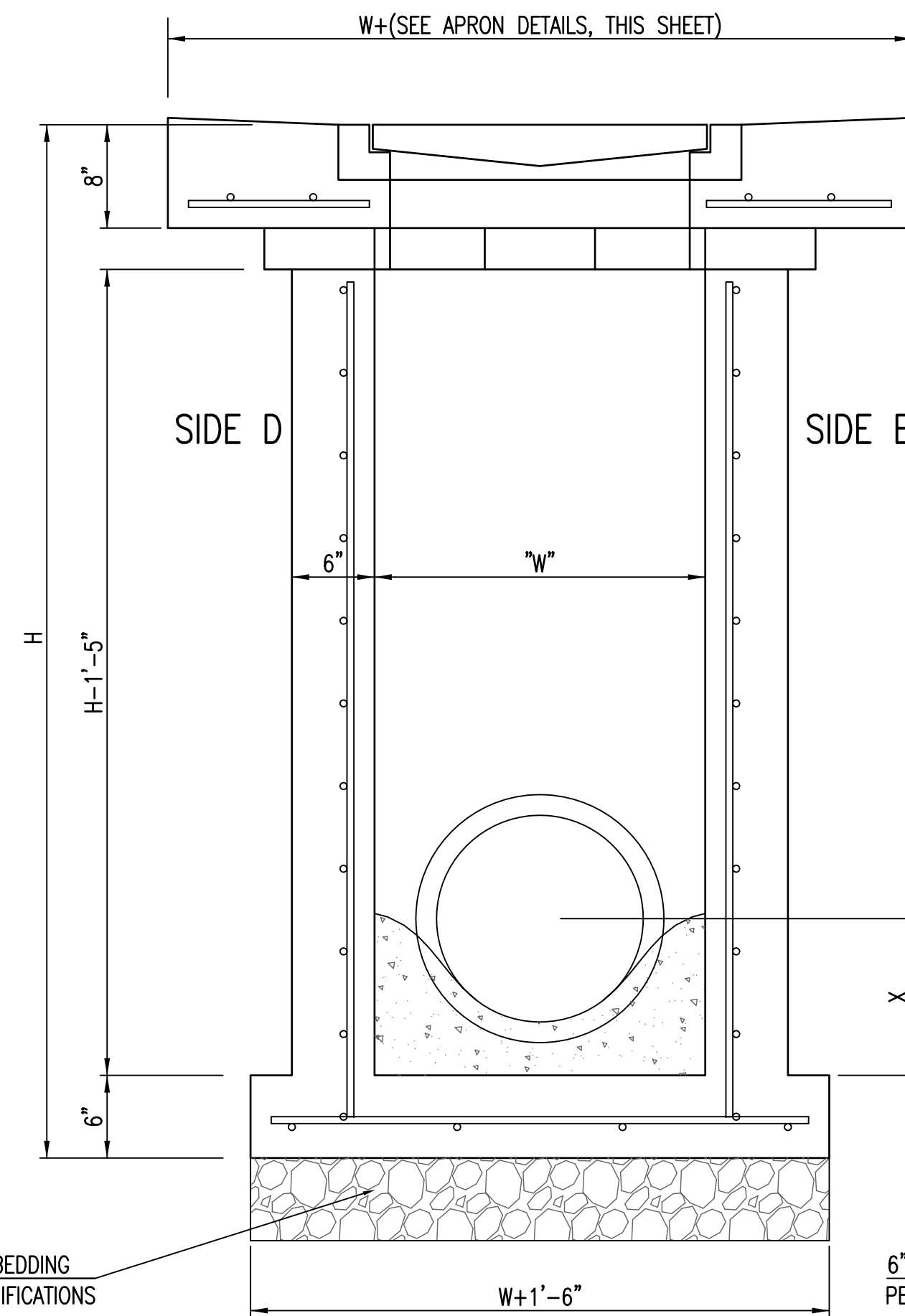
The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only. If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

GENERAL NOTES

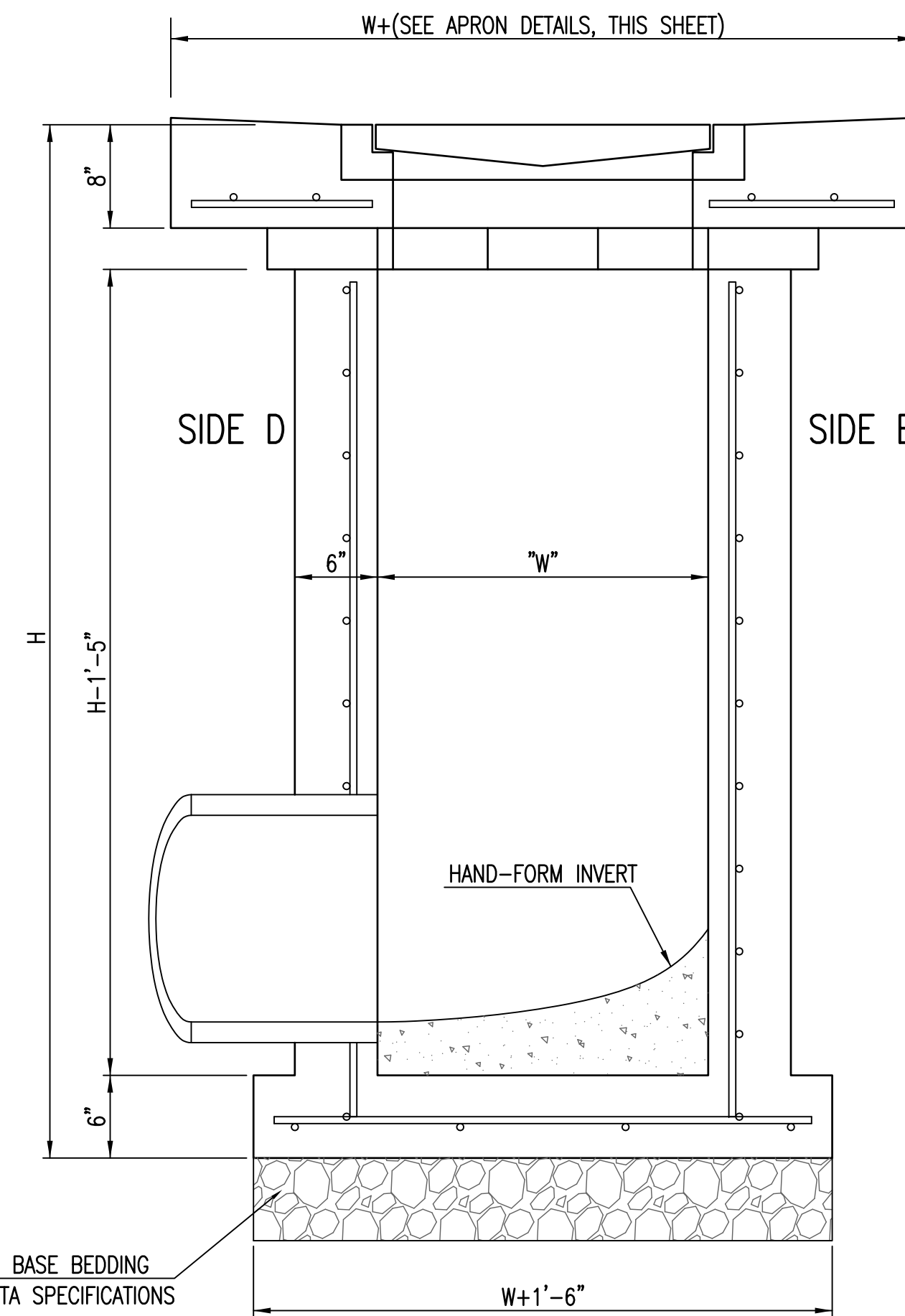
1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE 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.



SECTION "A-A"



SECTION "B-B"  
END OUTLET



SECTION "B-B"  
SIDE OUTLET

REVISED 05/10/2011 - GJ

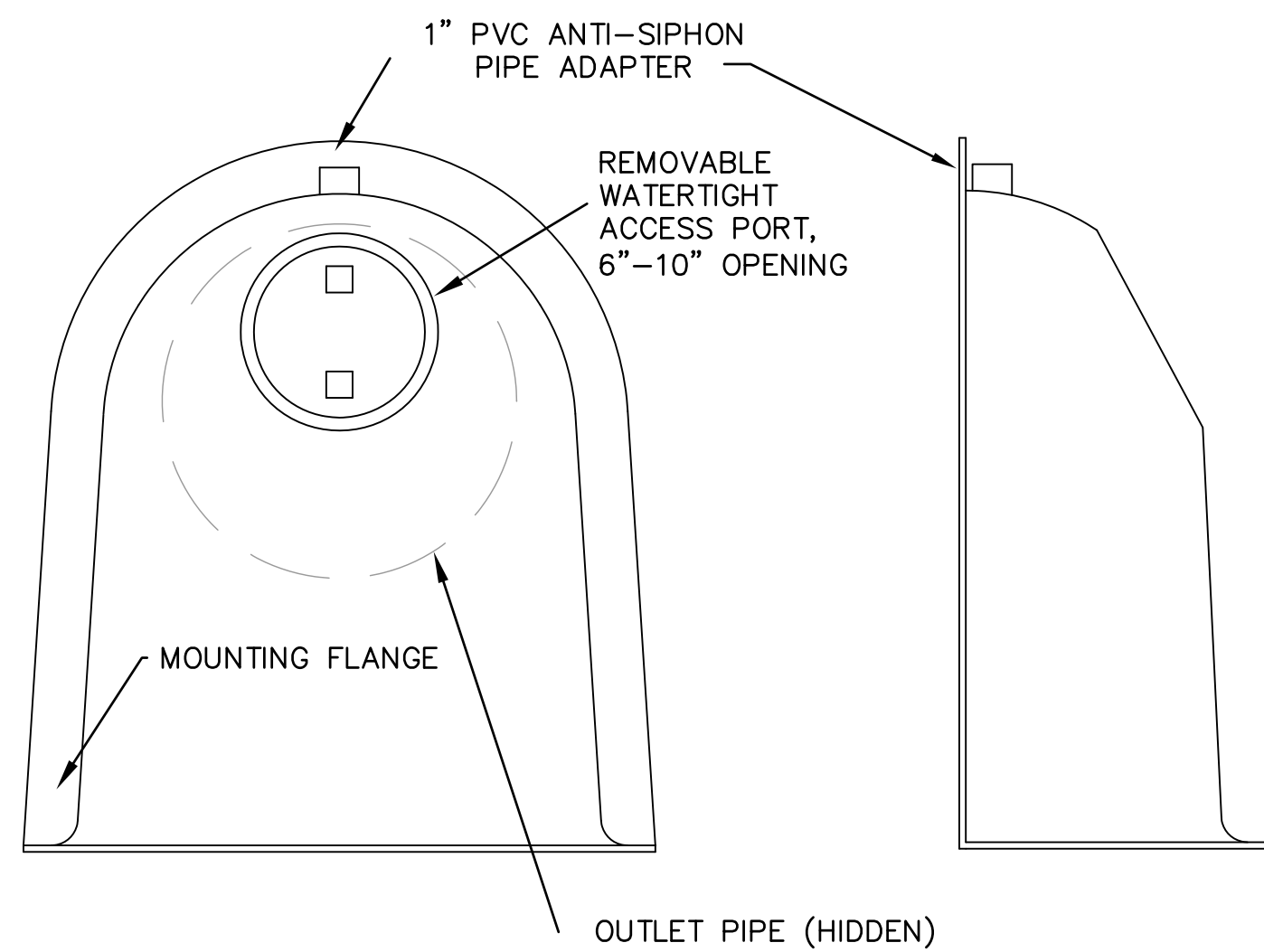


<b>SINGLE/DOUBLE DROP INLET</b>		
CITY ENGINEER <b>GARY JANZEN, P.E.</b>		
PROJECT NUMBER	OCA NUMBER	DATE 11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET 4 of 10

**Manufacturer's Maintenance Recommendations:**

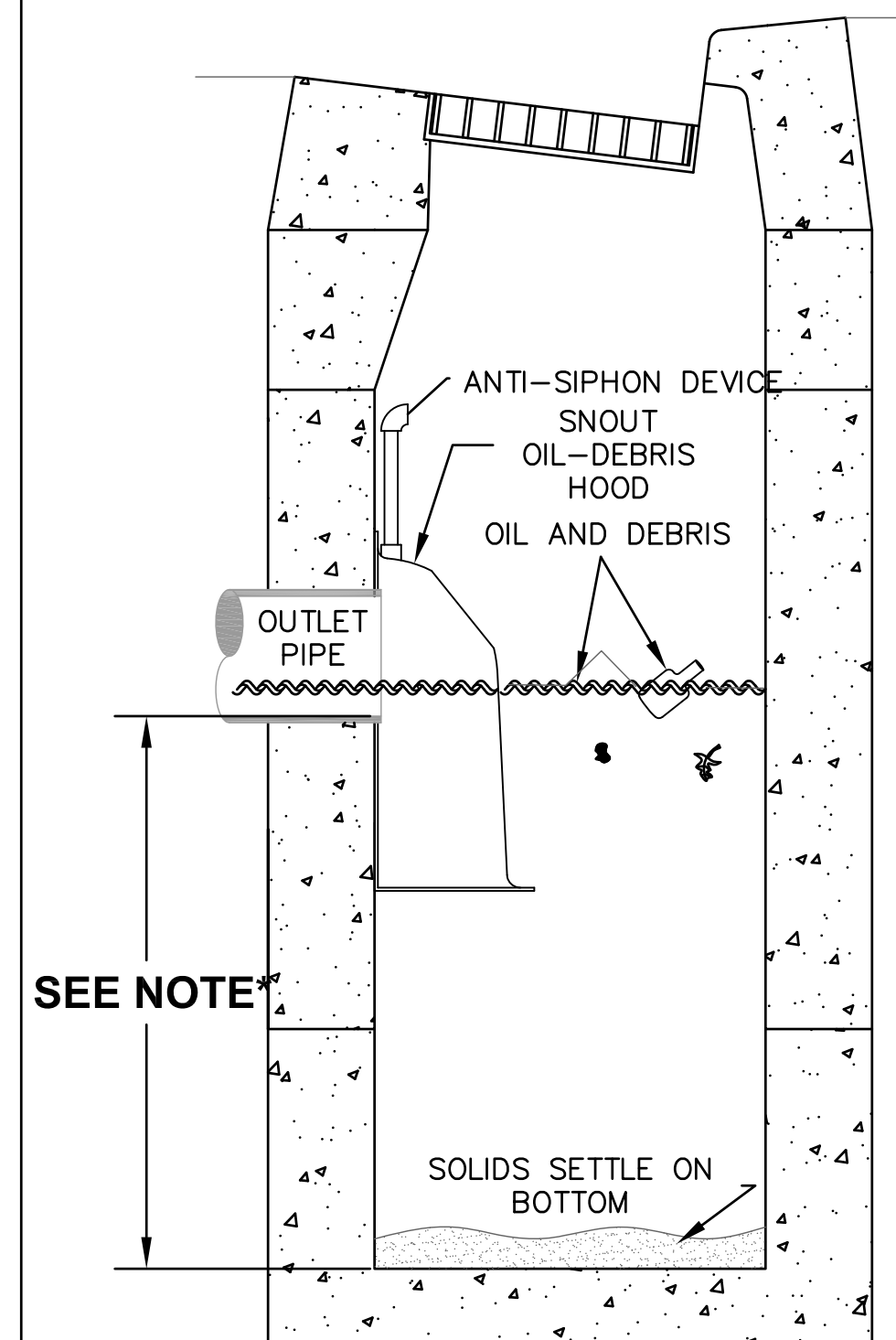
- \* Monthly monitoring for the first year of a new installation after the site has been stabilized.
- \* Measurements should be taken after each rain event of .5 inches or more, or monthly, as determined by local weather conditions.
- \* Checking sediment depth and noting the surface pollutants in the structure will be helpful in planning maintenance.
- \* The pollutants collected in SNOUT equipped structures will consist of floatable debris and oils on the surface of the captured water, and grit and sediment on the bottom of the structure.
- \* It is best to schedule maintenance based on the solids collected in the sump.
- \* Optimally, the structure should be cleaned when the sump is half full (e.g. when 2 feet of material collects in a 4 foot sump, clean it out).
- \* Structures should also be cleaned if a spill or other incident causes a larger than normal accumulation of pollutants in a structure.
- \* Maintenance is best done with a vacuum truck.
- \* If Bio-Skirts™ are being used in the structure to enhance hydrocarbon capture and/or bacteria removals, they should be checked on a monthly basis, and serviced or replaced when more than 2/3 of the boom is submerged, indicating a nearly saturated state. Assuming a typical pollutant-loading environment exists, Bio-Skirts should be serviced\* or replaced annually.
- \* In the case of an oil spill, the structure should be serviced and Bio-Skirts replaced (if any) immediately
- \* All collected wastes must be handled and disposed of according to local environmental requirements.
- \* To maintain the SNOUT hoods themselves, an annual inspection of the anti-siphon vent and access hatch are recommended. A simple flushing of the vent, or a gentle rodding with a flexible wire are all that's typically needed to maintain the anti-siphon properties. Opening and closing the access hatch once a year ensures a lifetime of trouble-free service.

**CONFIGURATION DETAIL**



FRONT VIEW SIDE VIEW  
SNOUT OIL-WATER-DEBRIS SEPARATOR

**TYPICAL INSTALLATION**



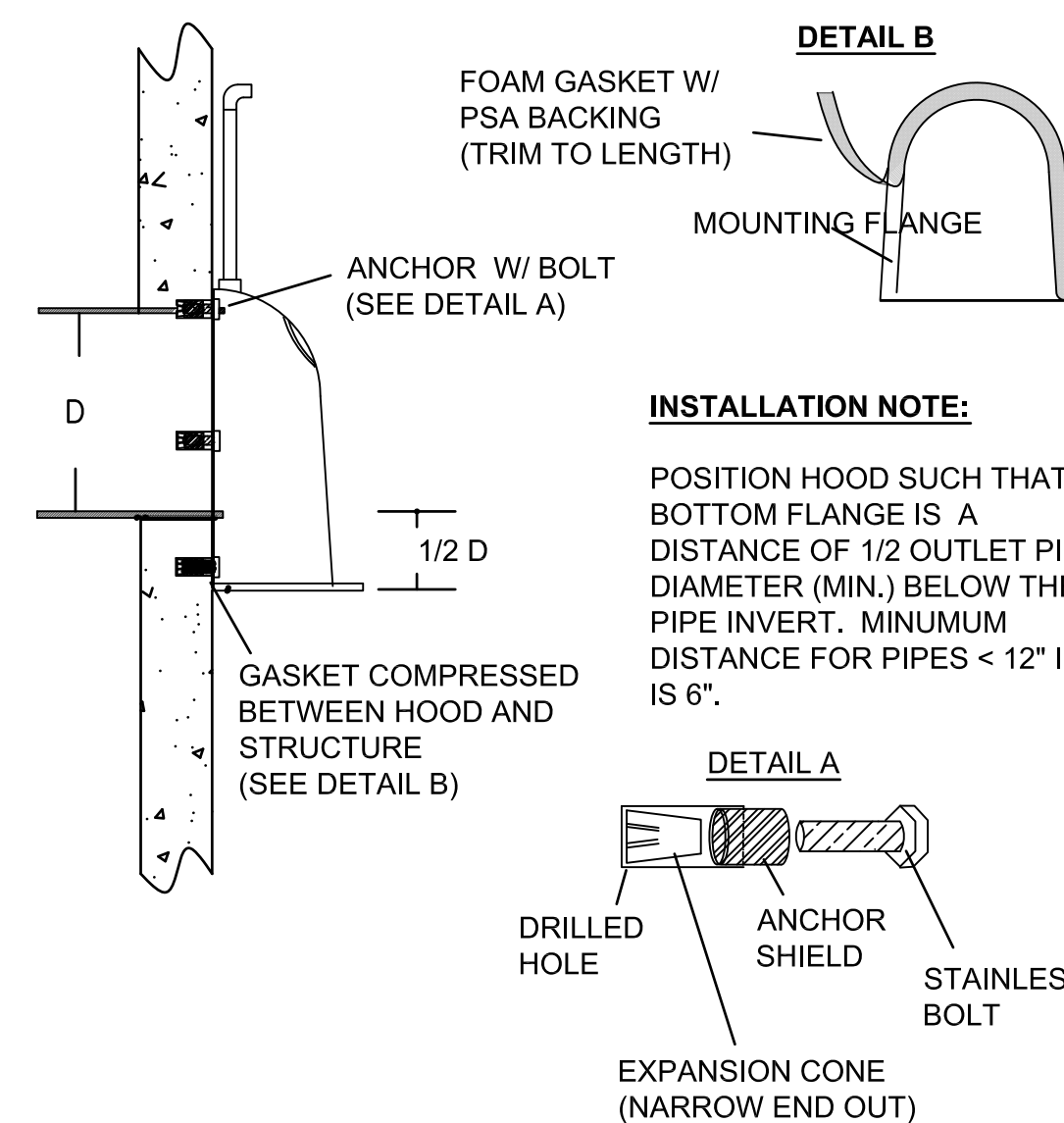
\*NOTE- SUMP DEPTH OF 36" MIN. FOR < OR= 12" DIAM. OUTLET. FOR OUTLETS >OR= 15", DEPTH = 2.5-3X DIAM.

**NOTES:**

1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY:  
BEST MANAGEMENT PRODUCTS, INC.  
53 MT. ARCHER RD.  
LYME, CT 06371  
(860) 434-0277, (860) 434-3195 FAX  
TOLL FREE: (800) 504-8008 OR (888) 434-0277  
WEB SITE: www.bmpinc.com  
OR PRE-APPROVED EQUAL
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (SNOUT SIZE ALWAYS LARGER THAN PIPE SIZE).
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
8. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
9. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT.  
INSTALLATION KIT SHALL INCLUDE:  
A. INSTALLATION INSTRUCTIONS  
B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER  
C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING  
D. 3/8" STAINLESS STEEL BOLTS  
E. ANCHOR SHIELDS

US Patent # 6126817

**INSTALLATION DETAIL**

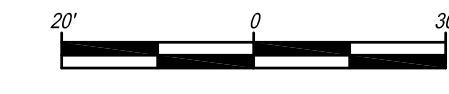
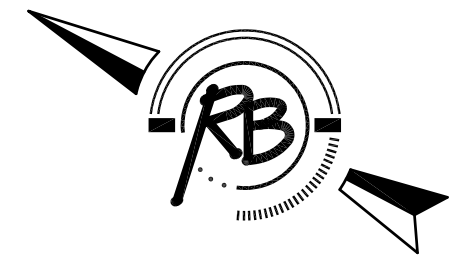
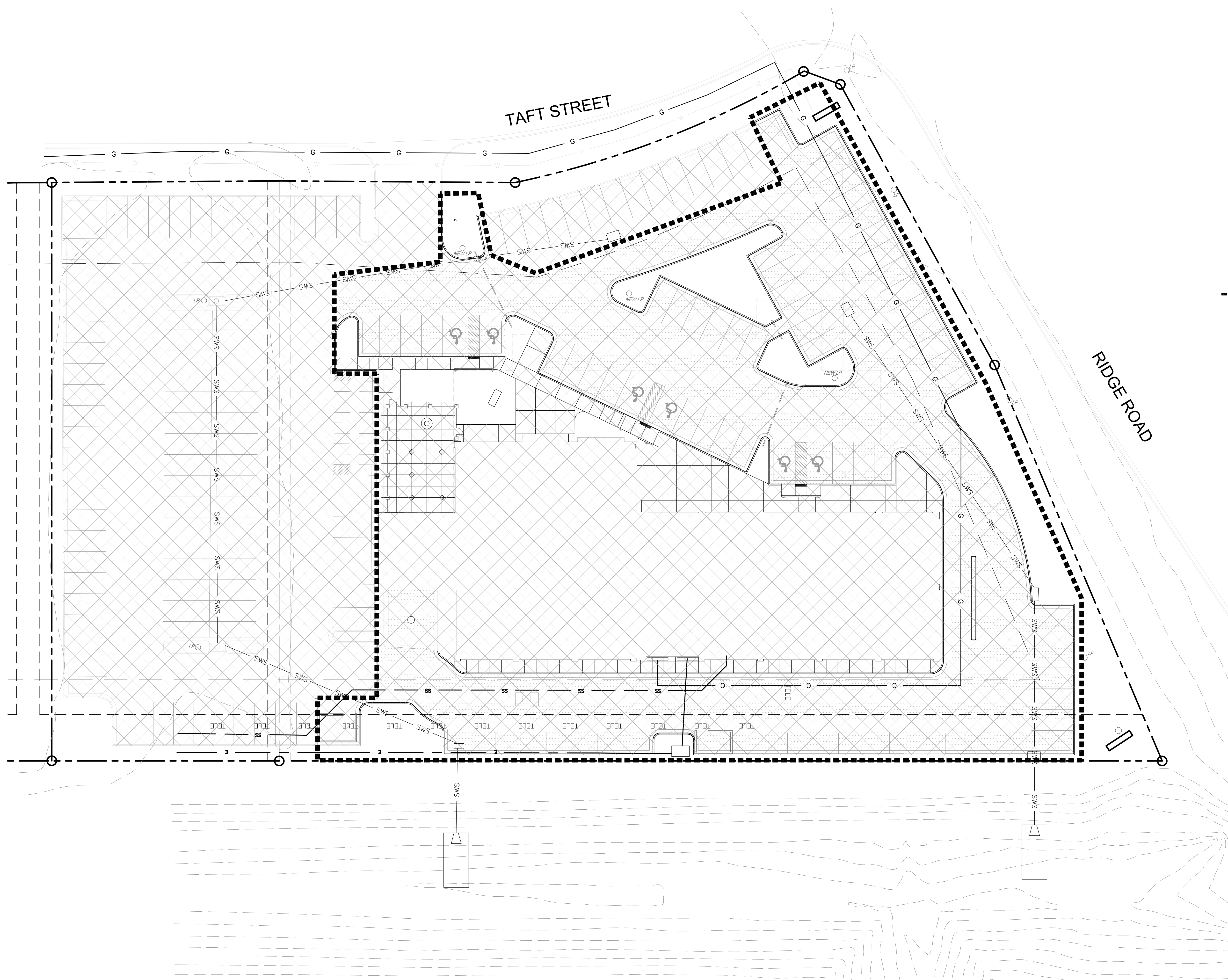


**HOOD SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES**

DESCRIPTION	DATE	SCALE
OIL- DEBRIS HOOD SPECIFICATION AND INSTALLATION (TYPICAL)	09/08/00	NONE
DRAWING NUMBER		
SP-SN		

**WATER QUALITY INLET DETAIL**

SEAL	<p><b>RUGGLES &amp; BOHM</b></p> <p>ENGINEERING   SURVEYING   LANDSCAPE ARCHITECTURE   GOVERNMENT</p> <p>924 NORTH MAIN WICHITA, KANSAS 67208 P (316) 264-8008 F (316) 264-4621 WWW.RB&amp;B.COM</p>	DATE
		Apr. 9, 2014
		DESIGN
		DRAWN
		REVIEW
PROJECT NUMBER	RB JOB NO.	DWG. SCALE
472-85078	4057E	
DRAWING FILE	ENG BASE {WQ DETAIL}	
		SHEET
		5
		OF 10



**LEGAL DESCRIPTION**

LOTS 1 AND 2, RIDGE PLAZA 11th, AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS

**SITE INFORMATION**

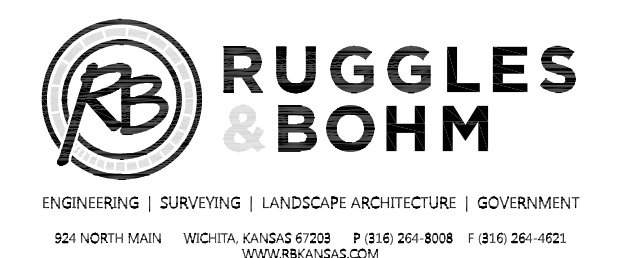
SITE AREA:	109,338 SF MOL/ 2.51 Acres	
BUILDING AREA	EXISTING 27,400 SF	PROPOSED 16,750 SF
PAVED AREA	47,130 SF	77,435 SF
TOTAL IMPERVIOUS	74,530 SF 68.1% of site	91,185 SF 83.4% of site

**LEGEND**

- PROJECT LIMITS
- IMPERVIOUS AREA
- PROPOSED PAVEMENT

**SITE ERU PLAN**  
SCALE 1" = 20'-0"

DWG FILE: ENGINEERING BASE  
PROJECT NO. 4312E  
APRIL 3, 2014



ENGINEERING | SURVEYING | LANDSCAPE ARCHITECTURE | GOVERNMENT  
804 NORTH MAIN WICHITA, KANSAS 67208 P. 316.264.8008 F. 316.264.4021  
WWW.RUGGLES.COM



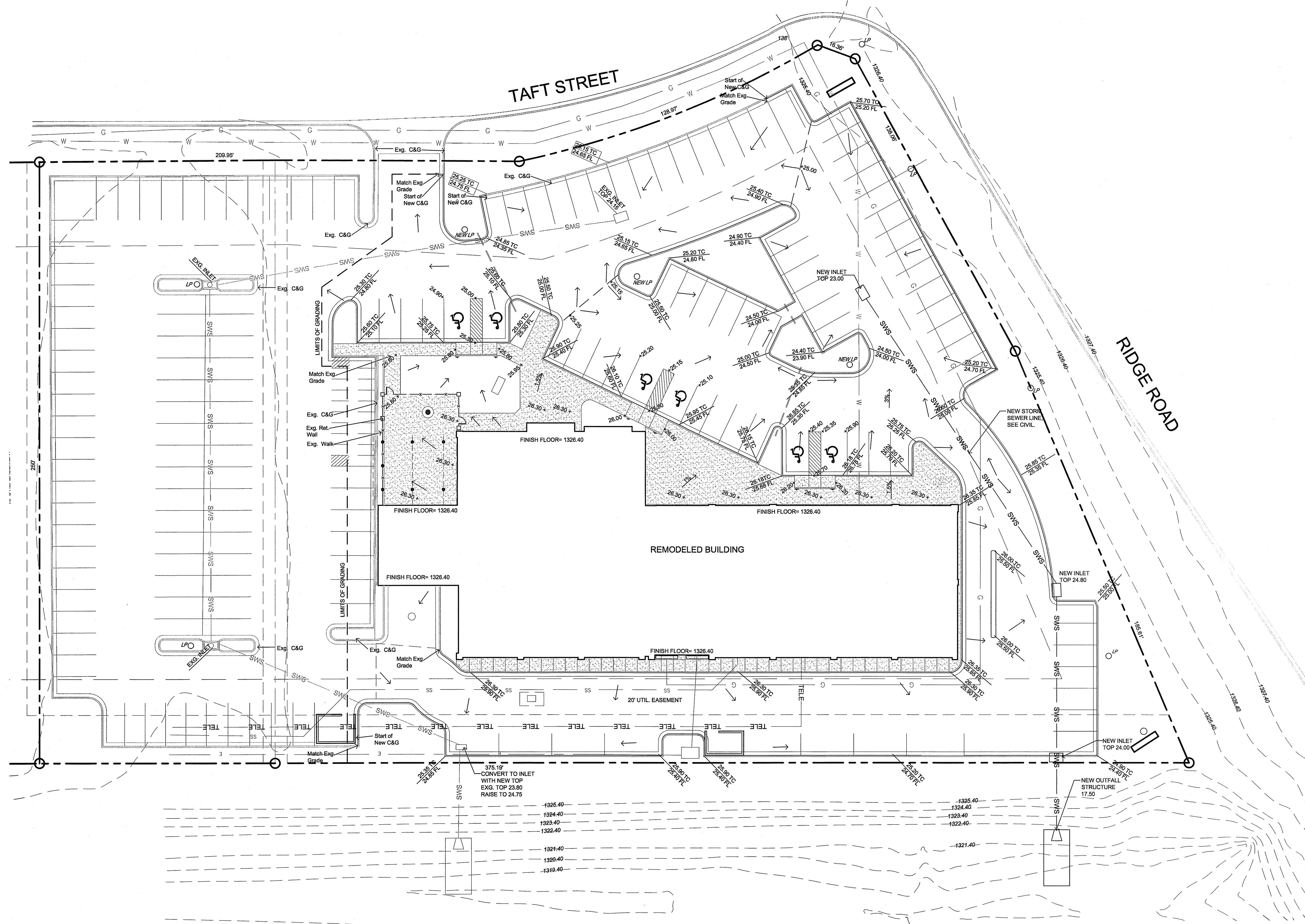
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A BUILDING REMODEL FOR:  
INSITE REAL ESTATE AND DEVELOPMENT  
7325 TAFT STREET, WICHITA, KANSAS 67209

PERMIT SET  
28 FEB 2014

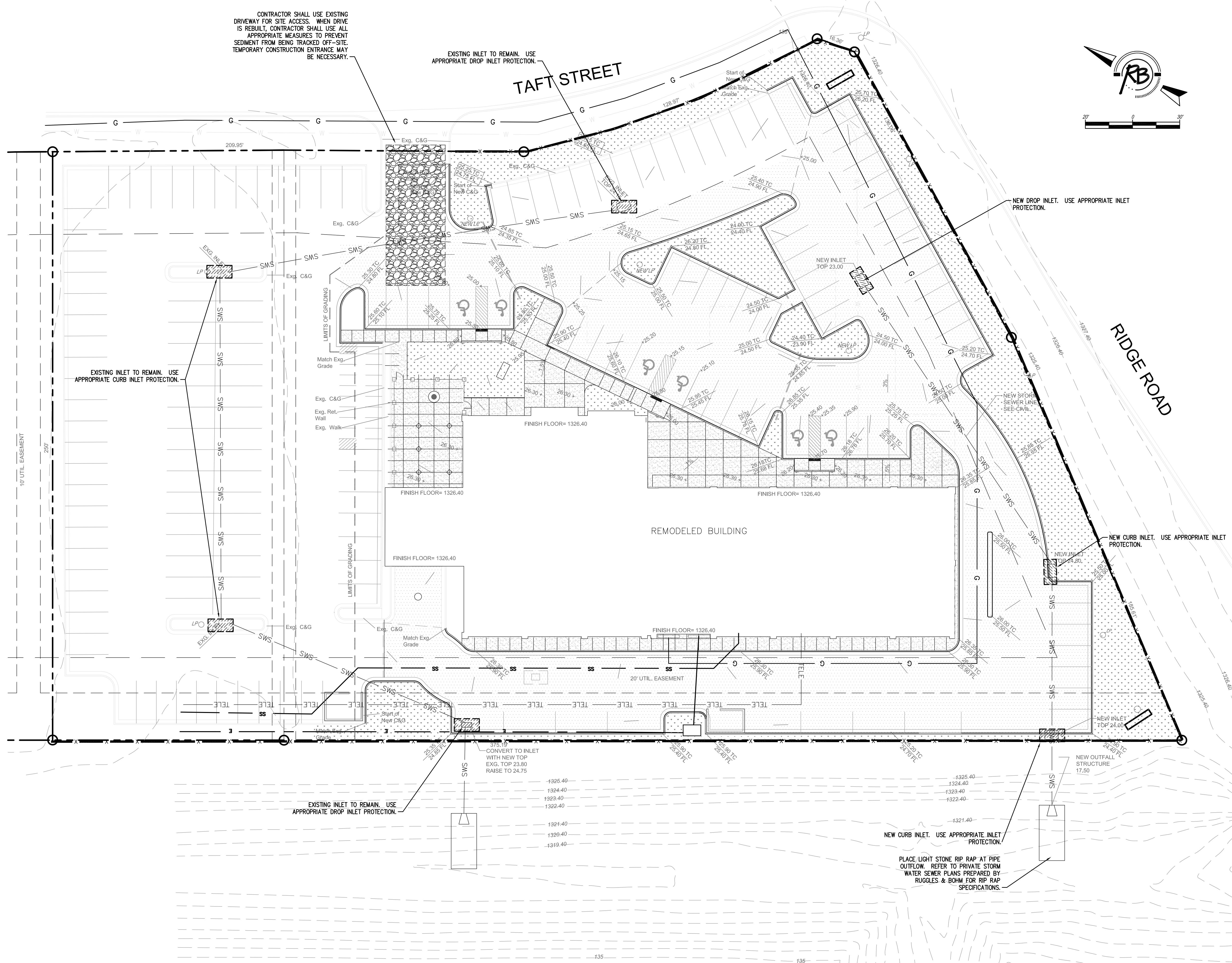
ERU





**1 GRADING PLAN**  
 1"=20'  
 0 20'





**LEGAL DESCRIPTION**

LOTS 1 AND 2, RIDGE PLAZA 11th, AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS

**SITE INFORMATION**

SITE AREA:	109,338 SF MOL/ 2.51 Acres	
BUILDING AREA	EXISTING 27,400 SF	PROPOSED 16,750 SF
PAVED AREA	47,130 SF	77,435 SF
TOTAL IMPERVIOUS	74,530 SF	91,185 SF

**EROSION CONTROL LEGEND**

- DIRECTION OF FLOW
- CONSTRUCTION ENTRANCE  
Contractor should use existing paving and drive approaches for entrances as much as practicable. Should it become necessary to use another location for entry, contractor shall construct a stabilized construction entrance.
- LINEAR SILT BARRIER OR DITCH CHECK (985 LF)  
Silt fence is to be kept in place until permanent stabilization (sodding and/or paved surfaces) is in place.
- AREA/ DROP INLET PROTECTION
- PROJECT LANDSCAPING (REVEGETATION)  
All areas disturbed by construction are to be planted to meet the City of Wichita Landscape Ordinance. Refer to Landscape Plan for specifications of plant materials and turf grass. If construction activities stop for more than 14 days, Contractor shall plant Temporary Seed per notes on this sheet.

**NOTES**

1. THIS PROJECT WILL DISTURB MORE THAN ONE (1) ACRE, SO A NOTICE OF INTENT (NOI) AND STORM WATER POLLUTION PLAN ARE REQUIRED. A COPY OF THE APPROVED NOI AND STORM WATER QUALITY PERMIT AND SUPPORTING DOCUMENTS SHALL BE KEPT ON-SITE AT ALL TIMES. ADDITIONAL COPIES MAY BE OBTAINED FROM RUGGLES & BOHM, IF NECESSARY.
2. CONTRACTOR SHALL FOLLOW GUIDELINES SET FORTH IN STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN REGARDS TO SITE MAINTENANCE OF EROSION CONTROL MEASURES. CONTRACTOR SHALL INSPECT AND MAINTAIN ALL EROSION CONTROL MEASURES AT LEAST ONCE EVERY 14 DAYS WITHIN 24 HOURS OF A PRECIPITATION EVENT 1/4" OR GREATER. USE REPORTING FORMS FOUND IN THE SWPPP; MAINTAIN RECORDS OF THOSE INSPECTIONS AND CORRECTIVE ACTIONS TAKEN.
3. CONTRACTOR SHALL PRACTICE GOOD HOUSEKEEPING AND KEEP PAVEMENT AND GUTTERS FREE OF SEDIMENT, MUD, OR OTHER MATERIALS TRACKED OFF-SITE BY EQUIPMENT.
4. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDDED OR SODDED.
5. ALL SLOPES GREATER THAN 4:1 SHALL BE SODDED OR SEEDDED AND COVERED WITH EROSION CONTROL BLANKET.

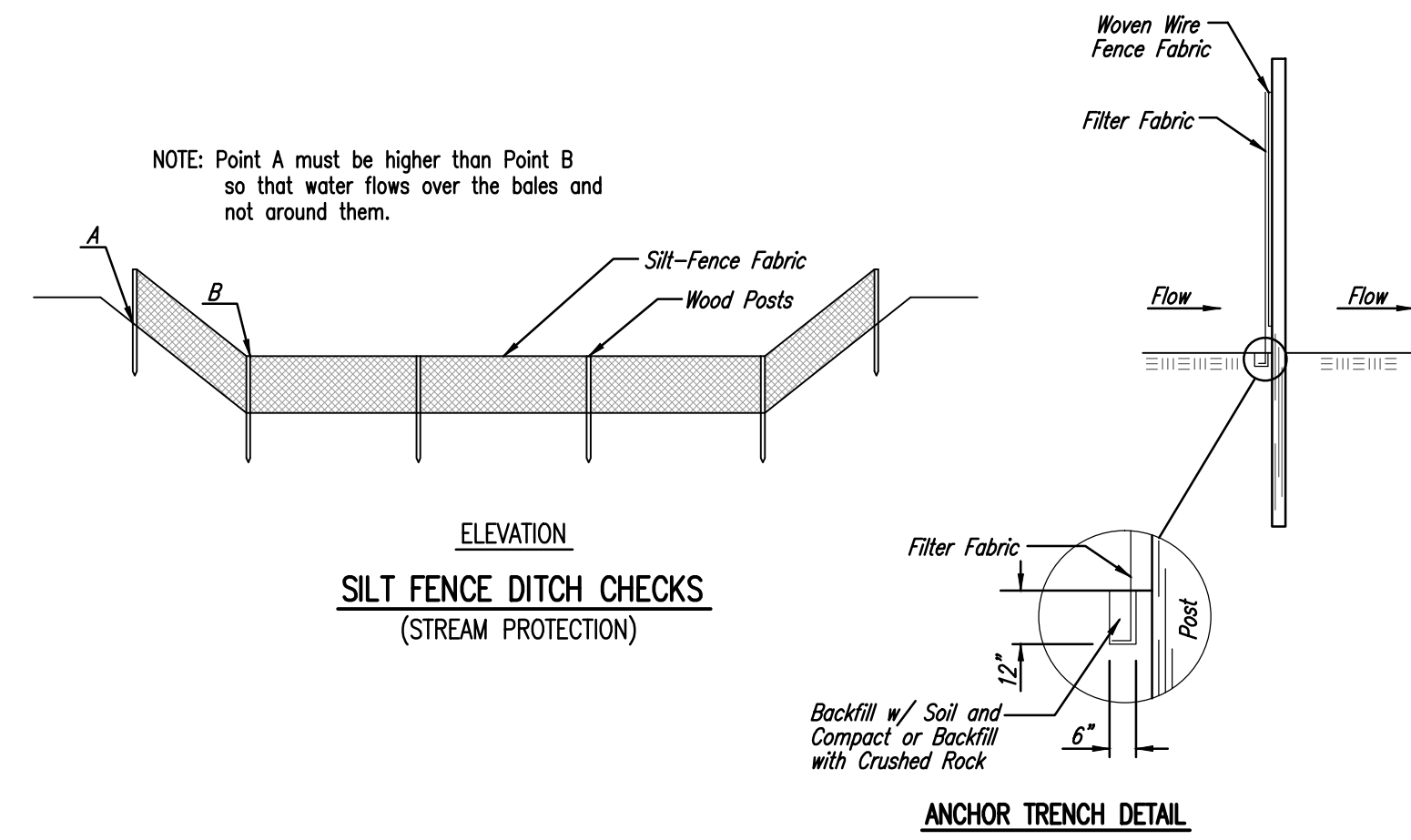
**TEMPORARY SEEDING**

- TEMPORARY SEED NOTES**
1. TEMPORARY SEEDING SHALL BE INSTALLED AS TEMPORARY COVER AFTER GRADING AND/OR CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED IN AN AREA OF THE PROJECT. TEMPORARY SEED SHALL BE INSTALLED WHEN:
    - 1.1 CONSTRUCTION ACTIVITY WILL CEASE FOR AT LEAST 14 DAYS, OR
    - 1.2 WITHIN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY IN THAT AREA; OR
    - 1.3 WHEN PERMANENT SEEDING CANNOT TAKE PLACE WITHIN THE SPECIFIED PLANTING WINDOW.
  2. TEMPORARY SEEDING SHALL BE PLACED VIA APPROPRIATE SEED DRILL. THE TEMPORARY SEED MIX IS AS FOLLOWS:
 

ANNUAL RYE	20#/ ACRE
------------	-----------
  3. TEMPORARY SEED MAY BE PLACED ANY TIME DURING CONSTRUCTION.
  4. PROTECT SEEDDED AREAS FROM EROSION BY SPREADING WEED-FREE STRAW MULCH TO FORM A CONTINUOUS BLANKET 1-1/2" LOOSE DEPTH AND CRIMP IN TO SOIL BY SUITABLE METHODS. EROSION CONTROL BLANKET IS ALSO AN ACCEPTABLE STABILIZATION METHOD. REFER TO NOTE #9 UNDER "PERMANENT SEEDING" FOR ACCEPTABLE BLANKETS. STABILIZATION SHALL TAKE PLACE WITHIN 7 DAYS OF SEEDING (21 DAYS AFTER LAST CONSTRUCTION ACTIVITY/ CESSATION OF CONSTRUCTION).
  5. DO NOT SEED OR WORK SOIL WHEN THERE IS STANDING OR RUNNING WATER PRESENT IN DISTURBED AREAS.

**SITE EROSION CONTROL PLAN**  
 SCALE 1" = 20'-0"

# Silt Fence and Ditch Check



**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

**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. 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 Grade (%)	Spacing (feet)
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 6" deep by 4" 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 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 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.

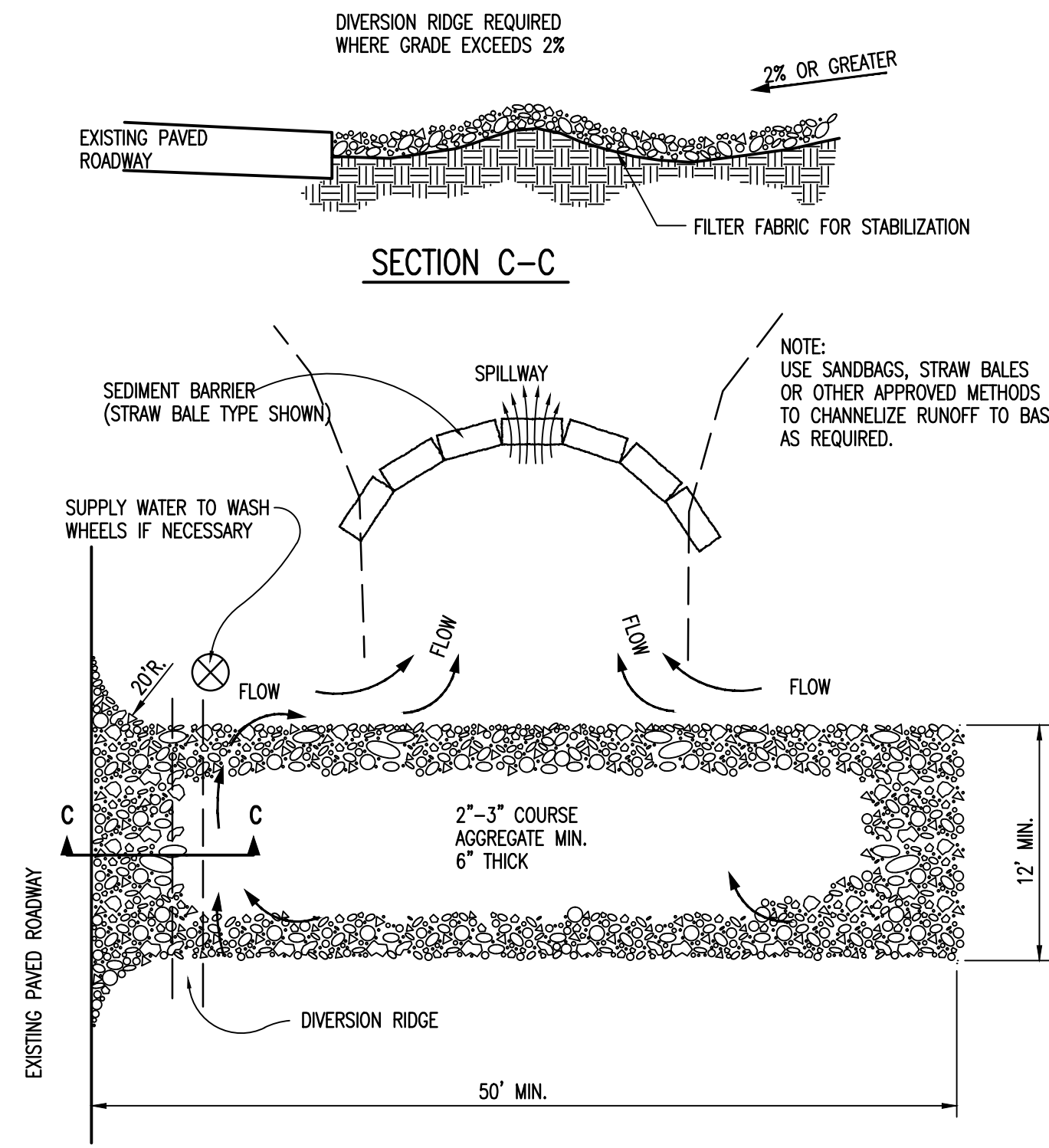
**Inspection and Maintenance:**

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?

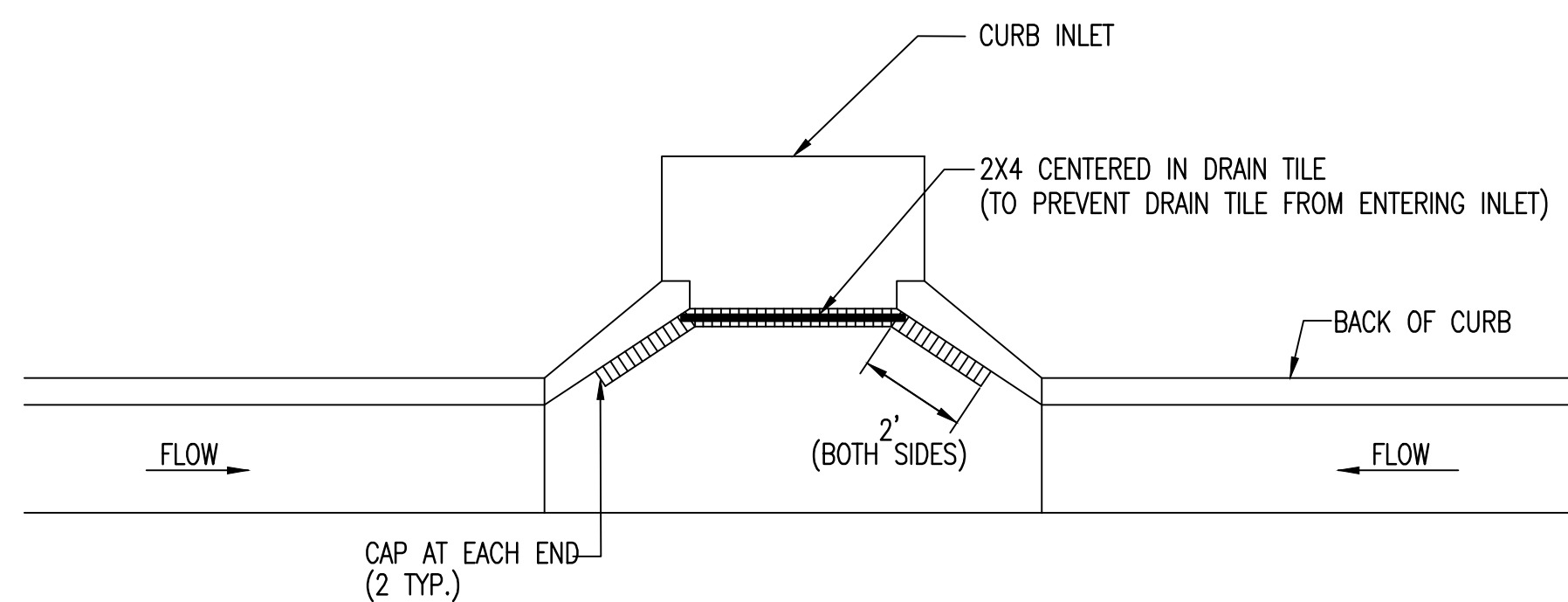
# Temporary Construction Entrance



**GENERAL NOTES**

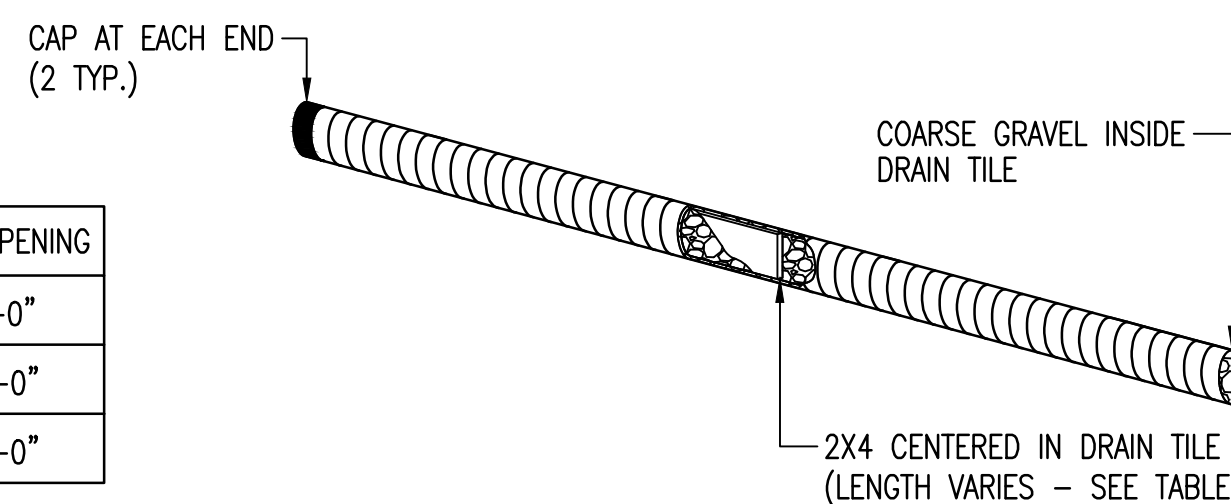
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
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.

# Curb Inlet Protection

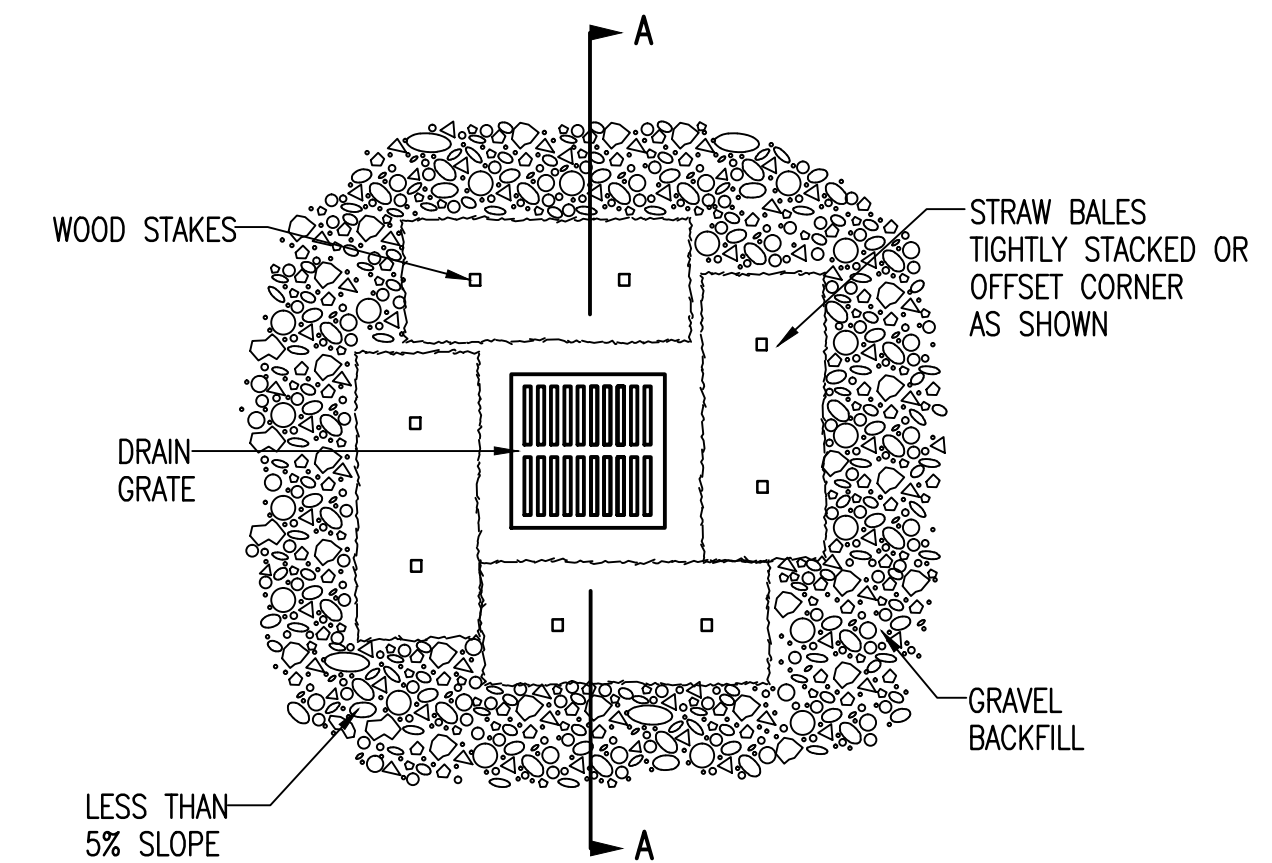
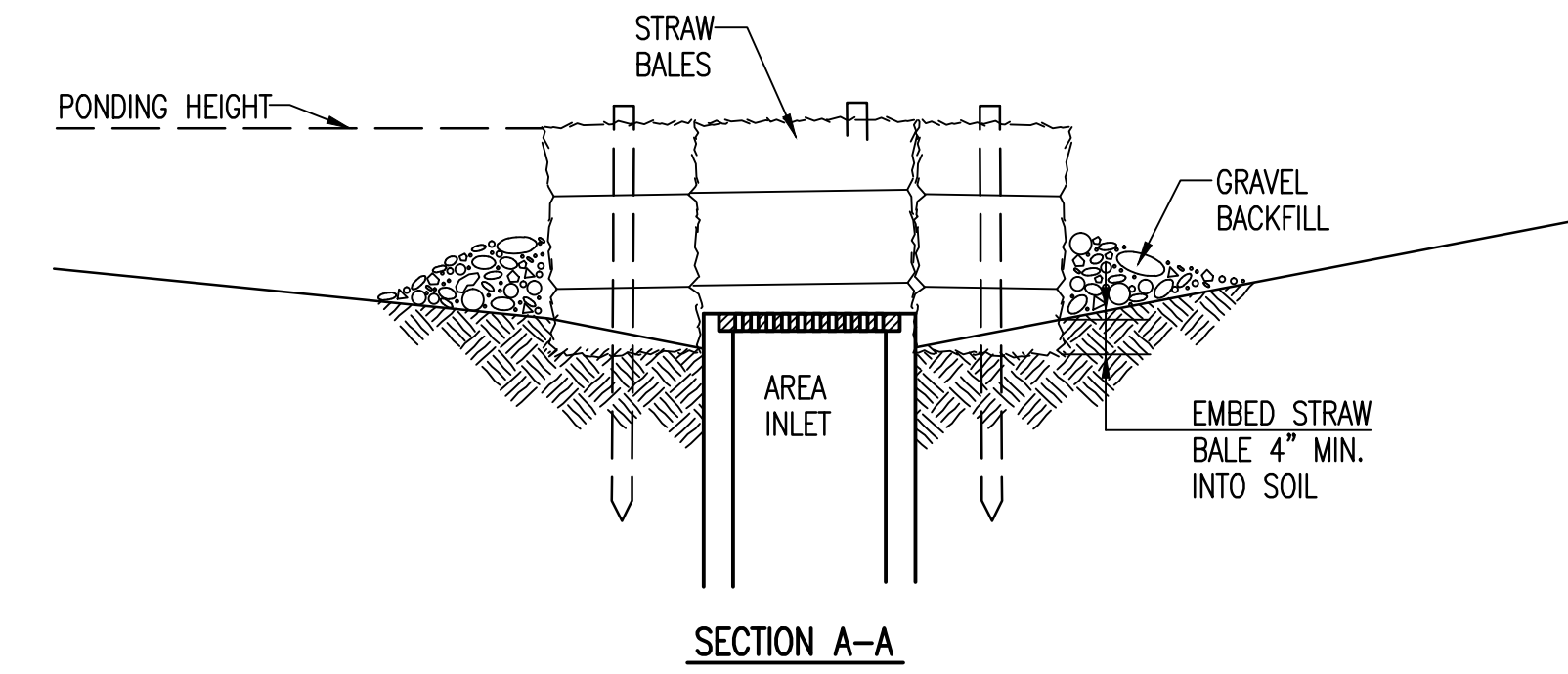


2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"

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



# Straw Bale Barrier for Drop Inlets



**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.

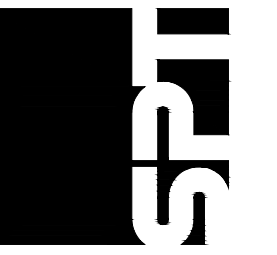
**LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:**

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?



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PERMIT SET  
28 FEB 2014  
SITE EROSION CONTROL DETAILS

C1.2



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PROJECT NO. 43132  
APRIL 3, 2014  
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