SHEET NO.	TOTAL SHEETS
15	71

PRIVATE DRAINAGE IMPROVEMENTS

TO SERVE

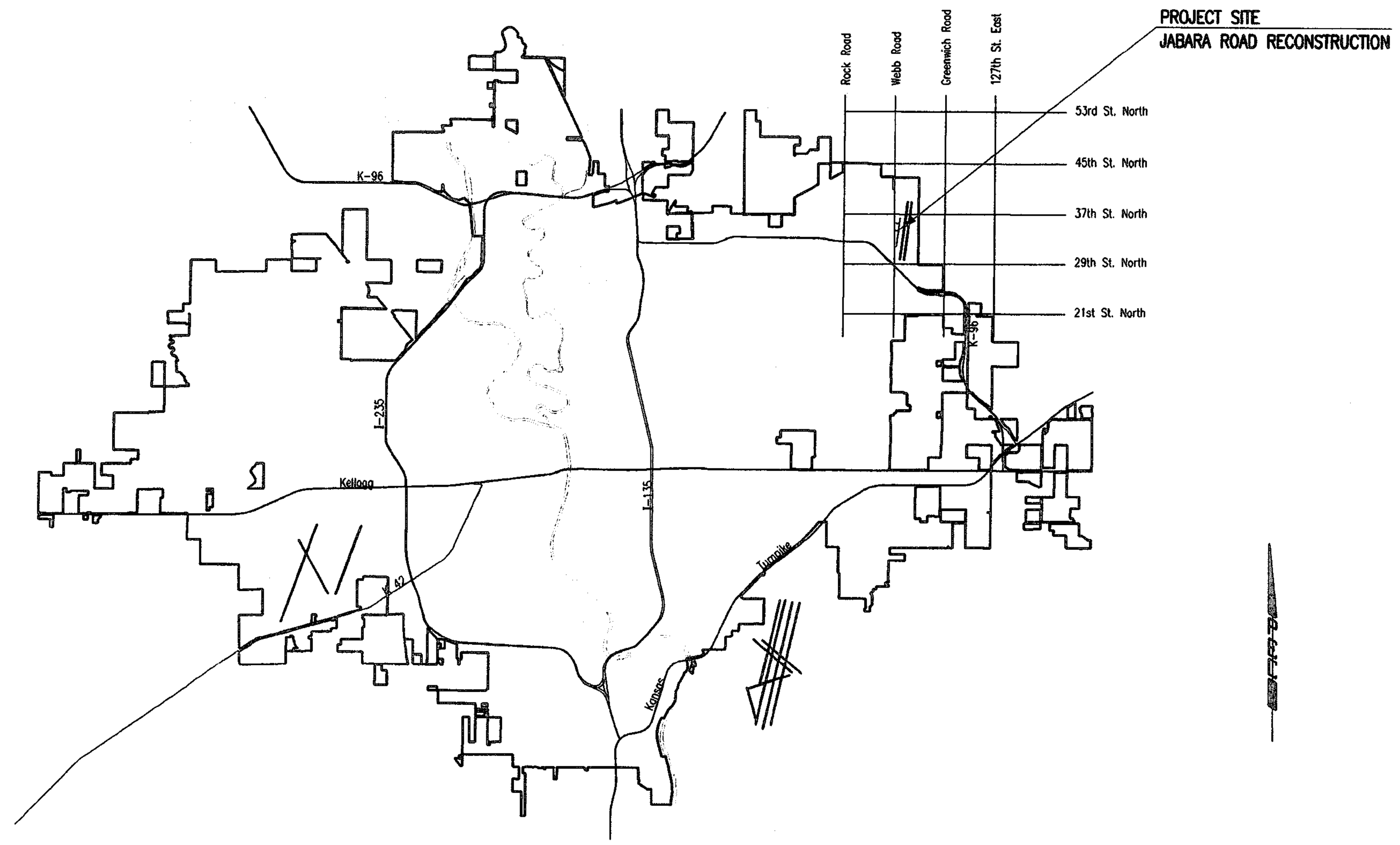
JABARA ROAD RECONSTRUCTION AND T-HANGARS EXPANSION

PRIVATE PROJECT NO. 0223 PPD (607861)

CITY OF WICHITA, KANSAS

GARY JANZEN, P.E. - CITY ENGINEER

INDEX OF SHEETS



LOCATION MAP

APPROVED AS NOTED
By CITY ENGINEER OF WICHITA

Engineering ________ 5/5/14

Storm Sewers ________ 5/5/14

NOTE TO CONTRACTOR

INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM CONTRACTED BY THE CONTRACTOR. 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 UNTIL SUCH INSPECTION IS ARRANGED FOR AND REQUIRED BONDS HAVE BEEN SUBMITTED TO AND APPROVED BY THE CITY NOR SHALL ANY WORK BE COMMENCED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER. IMPROVEMENTS PERFORMED UNDER THIS PROJECT SHALL NOT BE ACCEPTED BY THE CITY UNTIL ALL APPLICABLE DOCUMENTATION HAS BEEN SUBMITTED TO THE CITY ENGINEER. THIS MAY INCLUDE: RECORD DRAWINGS, INSPECTION LOGS, TEST DOCUMENTATION, TV TAPES, AND A CERTIFICATE OF COMPLETION. THE ABOVE SHALL BE PERFORMED BY THE CONSULTING FIRM CONTRACTED TO INSPECT THIS PROJECT.

STORMWATER COMPLIANCE STATEMENT

PROJECT DISTURBED AREA: 6.3 ACRES

THESE CONSTRUCTION PLANS WERE PREPARED IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF SECTION 16.32 CITY OF WICHITA'S STORMWATER REGULATIONS. THE WATER QUALITY REQUIREMENT IS ACHIEVED WITH THE USE OF A SNOUT OIL AND DEBRIS STOP. SINCE THE OVERALL IMPERVIOUS AREA OF THE SITE IS REDUCED, NO ON SITE DETENTION OR CHANNEL BANK PROTECTION IS REQUIRED.

MAY 2014

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS

WICHITA, KANSAS

DARWIN R. CRONK LICENSED 14896 5-2-14 KANSAS PROFESSIONAL ENGINEER

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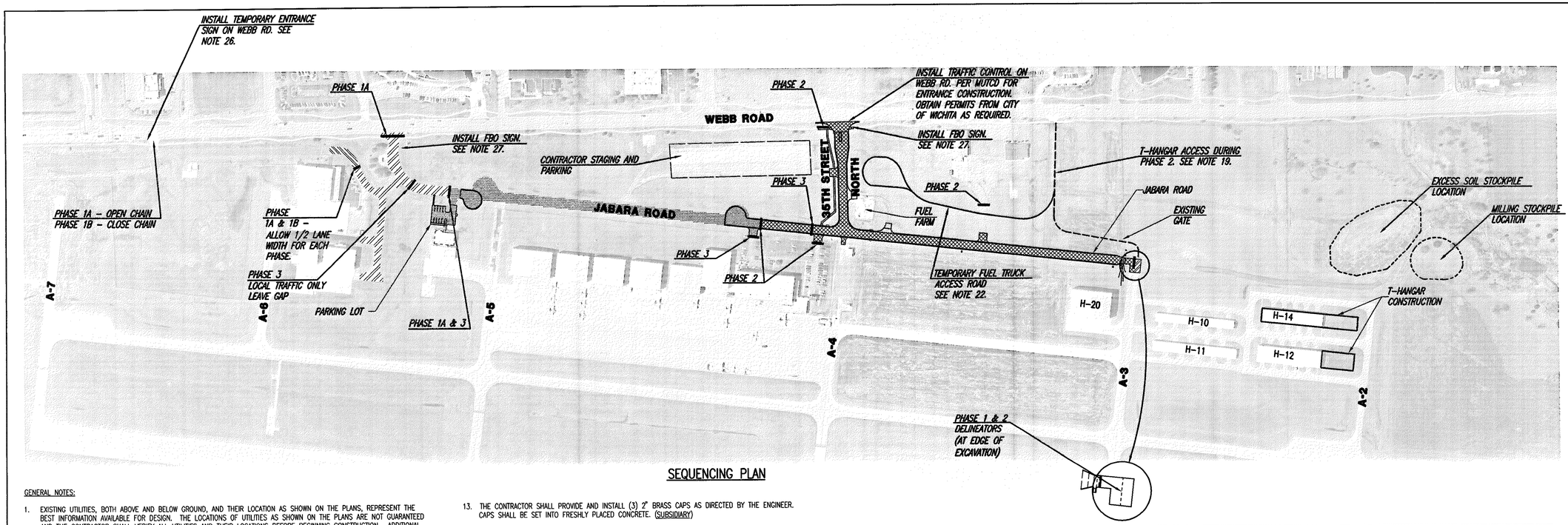
SHEET NO.	TOTAL SHEETS
3	71



SEQUENCING PLAN

SCALE: 0 200 400

LEGEND

- PHASE 1A
- PHASE 1B
- PHASE 2
- PHASE 3
- BARRICADE (TYPE 3) UNLESS NOTED OTHERWISE

GENERAL NOTES:

1. EXISTING UTILITIES, BOTH ABOVE AND BELOW GROUND, AND THEIR LOCATION AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION AVAILABLE FOR DESIGN. THE LOCATIONS OF UTILITIES AS SHOWN ON THE PLANS ARE NOT GUARANTEED AND THE CONTRACTOR SHALL VERIFY ALL UTILITIES AND THEIR LOCATIONS BEFORE BEGINNING CONSTRUCTION. ADDITIONAL UTILITIES, INCLUDING RELOCATED UTILITIES, WHICH ARE NOT SHOWN ON THE PLANS MAY BE ENCOUNTERED. IN THIS EVENT THE CONTRACTOR SHALL ADJUST HIS SCHEDULES AND COOPERATE WITH THE UTILITY OWNER IN ORDER THAT THEIR FACILITIES MAY BE ADJUSTED AS REQUIRED TO CLEAR CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE WORKING NEAR UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UTILITIES DAMAGED BY THE CONSTRUCTION ACTIVITY. NO ADDITIONAL COMPENSATION OR WORKING DAYS WILL BE ALLOWED BY THE OWNER FOR ANY DELAYS, INCONVENIENCES OR DAMAGES SUSTAINED BY THE CONTRACTOR DUE TO THE UTILITY CONFLICTS AND THEIR RESOLUTION.

2. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF FORTY-EIGHT (48) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:

KANSAS ONE-CALL	316-687-2470

THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

KANSAS GAS SERVICE	888-482-4950
WESTAR ENERGY-ROADWAY LIGHTING	316-383-8600
WAA-TELEPHONE, ELECTRIC	316-946-4740
SBC	800-870-8390
ATT	316-268-3180
LEVEL 3	316-858-6122
CITY OF WICHITA-WATER, SEWER	316-262-6000
COX	316-260-7169

5. AT THE CONTRACTOR'S OPTION, PRE-CAST MANHOLES AND INLETS MAY BE USED. ADJUSTMENTS AND/OR MODIFICATIONS TO FIT FIELD CONDITIONS SHALL BE SUBSIDIARY TO THE STRUCTURE BID ITEM.

6. BIDDER SHALL VISIT THE PROJECT SITE BEFORE SUBMITTING THE BID FOR THIS WORK SO THAT HE WILL BE FULLY INFORMED OF THE EXISTING FIELD CONDITIONS AND THE OBSTACLES WHICH MIGHT BE ENCOUNTERED. UPON AWARD, OF THE CONTRACT, THE CONTRACTOR WILL NOT BE GRANTED ANY ADDITIONAL COMPENSATION WITH REGARD TO TIME AND MONEY FOR CONDITIONS THAT MAY NOT HAVE BEEN EVALUATED DURING ANY INSPECTION OF THE SITE.

7. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, SHOULDERS, ENTRANCES, AND LAWNS TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE IN THE PLANS. DAMAGE SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITION AT THE END OF THE PROJECT.

8. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED OF BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WILL 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 OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.

9. EXCESS CLEAN SOIL, IF ANY, SHALL BE HAULED TO THE LOCATION SHOWN ON THE PLAN. SOIL SHALL BE STOCKPILED AND SEEDED WITH BUFFALO SEED AFTER EARTHWORK IS COMPLETED. SOIL WITH TRASH/DEBRIS SHALL BE REMOVED FROM AIRPORT PROPERTY. ASPHALT MILLINGS SHALL BE HAULED AND DISPOSED OF ON AIRPORT PROPERTY LOCATED AS SHOWN ABOVE.

10. EROSION CONTROL (BMP'S)
THE CONTRACTOR SHALL INSTALL AND/OR MAINTAIN EROSION CONTROL METHODS AS SPECIFIED WITHIN THE PLANS. INSTALLATION OF THESE BMP'S DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF ABATING SOIL EROSION THROUGHOUT CONSTRUCTION.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING LEASE IRONS AND SURVEY MARKERS. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY WHICH ARE DAMAGED OR DESTROYED BY CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY.

12. THE CONTRACTOR SHALL REMOVE, REPLACE, OR RESET ANY SPRINKLER HEADS, PIPES, AND/OR VALVES WHICH CONFLICT WITH CONSTRUCTION. ANY SPRINKLER HEADS, PIPES, AND/OR VALVES DAMAGED BY CONSTRUCTION OPERATIONS SHALL BE REPLACED IN KIND AT NO ADDITIONAL COST TO THE OWNER. PORTIONS OF SPRINKLER SYSTEMS NOT IN CONFLICT WITH CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE. ALL WORK IN CONNECTION WITH EXISTING SPRINKLER SYSTEMS SHALL BE CONSIDERED SUBSIDIARY TO PROJECT COSTS.

13. THE CONTRACTOR SHALL PROVIDE AND INSTALL (3) 2" BRASS CAPS AS DIRECTED BY THE ENGINEER. CAPS SHALL BE SET INTO FRESHLY PLACED CONCRETE. (SUBSIDIARY)

14. THE CONTRACTOR SHALL FINISH GRADE AND PLACE SEED OR SOD (WHERE CALLED FOR IN THE PLANS) WITHIN 10 DAYS FOLLOWING COMPLETION OF EARTH DISTURBING ACTIVITY IN ANY PARTICULAR WORK AREA. IF CONSTRUCTION IN AN AREA IS INCOMPLETE AND NO WORK WILL OCCUR FOR TWO WEEKS OR MORE, THE CONTRACTOR WILL BE REQUIRED TO INSTALL TEMPORARY EROSION CONTROL MEASURES ACCEPTABLE TO THE ENGINEER TO PREVENT BLOWING DIRT OR DUST.

15. CONTRACTOR SHALL KEEP A POWER BROOM ON SITE AT ALL TIMES AND SHALL ROUTINELY SWEEP THE STREETS. SIDEWALKS SHALL BE ROUTINELY SWEPT USING A HAND BROOM.

16. THE CONTRACTOR SHALL BE AWARE OF THE ESSENTIAL NEED TO CONTROL DUST FROM CONSTRUCTION ACTIVITY AT ALL TIMES. THE CONTRACTOR SHALL KEEP ON SITE, AND READY TO USE AT ALL TIMES, SUFFICIENT WATERING AND OTHER AIR POLLUTION CONTROL EQUIPMENT TO CONTROL DUST CAUSED FROM THE CONSTRUCTION ACTIVITY.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OVERSEE AND POLICE HIS OPERATIONS AND THOSE OF HIS SUBCONTRACTOR'S SO AS TO NOT CREATE AIR POLLUTION.

THE CONTRACTOR SHALL HAVE ON SITE AND CONTINUOUSLY USE VACUUM EQUIPMENT TO REMOVE CONCRETE PAVEMENT SAW CUT DUST AS THE SAWING OCCURS.

17. WORK SHALL BE COMPLETED IN THE SEQUENCE SHOWN AND EACH PHASE SHALL BE FULLY COMPLETED BEFORE PROCEEDING TO THE NEXT PHASE, EXCEPT THAT PHASE 1b AND PHASE 2 MAY BE UNDERTAKEN CONCURRENTLY.

18. CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL, BARRICADES, CONSTRUCTION FENCE, DELINEATORS, ETC. AS MAY BE REQUIRED TO SATISFACTORILY PROTECT ALL WORK AREAS AND EXCAVATIONS. THIS WORK SHALL BE INCLUDED IN THE BID ITEM, "MOBILIZATION".

19. CONTRACTOR SHALL PROVIDE AND INSTALL A GUIDANCE SIGN AT WEBB RD. ENTRANCE TO INDICATE ACCESS TO T-HANGAR. SIGN SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH MINIMUM 6" BLACK CHARACTERS READING, "T-HANGAR TENANT ACCESS ONLY. NO OTHER VEHICLES PERMITTED" WITH A DIRECTION ARROW. THIS WORK IS INCIDENTAL TO "MOBILIZATION".

20. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO ENSURE LINES ARE CLEAR OF CONSTRUCTION PRIOR TO BEGINNING EXCAVATION.

21. THE OWNER HAS SUBMITTED TO THE FAA A MAX. CRANE HEIGHT OF 80 FEET FOR THE USE IN ERECTING T-HANGARS. THE FAA HAS NOT MADE A DETERMINATION. IT IS THE CONTRACTOR'S RISK CONCERNING A POSITIVE DETERMINATION FROM THE FAA.

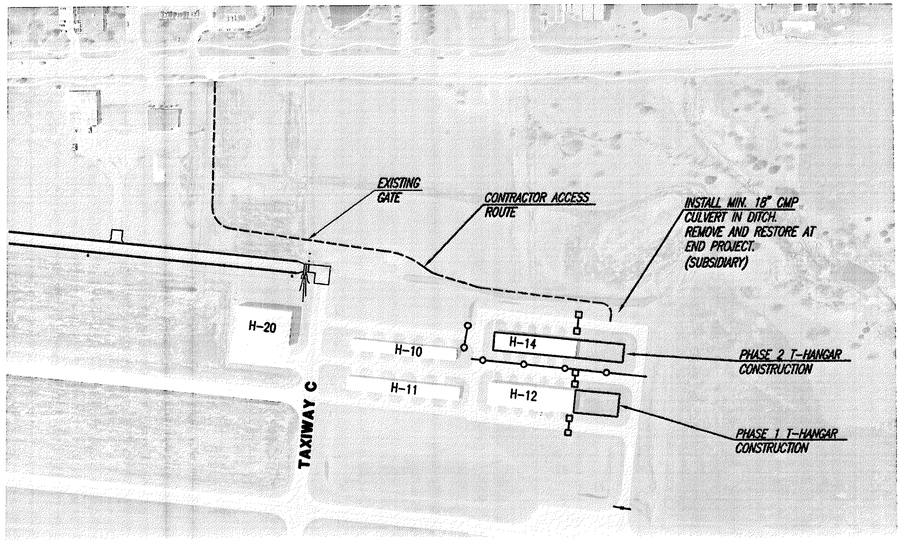
22. PRIOR TO BEGINNING REMOVAL OF EXISTING 35TH STREET PAVEMENT, THE CONTRACTOR SHALL CONSTRUCT A MIN. 15' WIDE ALL-WEATHER (MILLINGS, ROCK, ETC.) ACCESS ROAD FOR USE BY FUEL FARM DELIVERY TRUCKS. TURN-AROUND LOOP SHALL HAVE ADEQUATE RADIUS/ROAD WIDTH TO PERMIT TRACTOR-TRAILER TO TURN WITHOUT LEAVING ROADWAY SURFACE. REMOVE ROADWAY, RESTORE TO GRADE, AND SEED WITH BUFFALO AFTER PHASE 2 IS COMPLETED. EXCEPT FOR SEEDING, THIS WORK SHALL BE INCLUDED IN THE BID ITEM "MOBILIZATION".

23. THE CONTRACTOR SHALL CONTACT THE POLICE AND FIRE DEPARTMENTS PRIOR TO CLOSING 35TH STREET OR JABARA ROAD FOR CONSTRUCTION.

24. THE CONTRACTOR SHALL SUPPLY AND INSTALL, AS DIRECTED BY THE ENGINEER, A MINIMUM OF 6 SIGN POSTS AND BLANKS HAVING A MAX. SIZE OF 48"X48", COVERED WITH ENGINEERING GRADE ADHESIVE REFLECTIVE SHEETING. CONTRACTOR SHALL KEEP ON HAND, OR HAVE READILY AVAILABLE, A SUPPLY OF 6" NUMBERS AND LETTER SUCH THAT SIGNS CAN BE ERECTED WITHIN 48 HOURS NOTICE.

25. CONTRACTOR SHALL INSTALL DETOUR SIGNAGE AT 35TH STREET/WEBB ROAD INTERSECTION DIRECTING TRAFFIC TO THE JABARA ROAD INTERSECTION DURING PHASE 2 CONSTRUCTION.

26. CONTRACTOR SHALL PROVIDE AND INSTALL A DOUBLE SIDED GUIDANCE SIGN AT WEBB RD. SOUTH ENTRANCE TO INDICATE TEMPORARY ACCESS. SIGN SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH MINIMUM 6" BLACK CHARACTERS READING, "TEMPORARY ENTRANCE" WITH A DIRECTION ARROW. THIS WORK IS INCIDENTAL TO "MOBILIZATION".



T-HANGAR SEQUENCING

LEGEND

- Phase 1 Low Profile Barricade
- Phase 2 Low Profile Barricade

NOTES

1. T-Hangars shall be constructed in accordance with the phases shown. Hangar 12 shall be fully completed and available for aircraft use before demolition of Hangar 14 may commence.

2. T-Hangar construction may be scheduled concurrently with any phase of Jabara Rd. reconstruction.

27. CONTRACTOR SHALL PROVIDE AND INSTALL A DOUBLE SIDED 4' X 8' SIGN (2 REQ'D.) AT 35TH ST. AND JABARA RD. TO IDENTIFY THE FBO. SIGN SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH THE MINIMUM 18" BLACK CHARACTERS READING "MIDWEST CORPORATE AVIATION" WITH A DIRECTION ARROW. SIGN SHALL BE SUPPORTED ON 2 POSTS. THIS WORK IS INCIDENTAL TO "MOBILIZATION".

DARWIN R. CROWN LICENSED 14896 6-13-14 KANSAS PROFESSIONAL ENGINEER

THE WICHITA AIRPORT AUTHORITY
COLONEL JAMES JABARA AIRPORT
PAVING, DRAINAGE, & T-HANGAR IMPROVEMENTS

CONSTRUCTION SEQUENCING

AIP PROJECT NO. 3-20-0089-XX

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Date JUNE 2014 | Job No. 132-12588-0019

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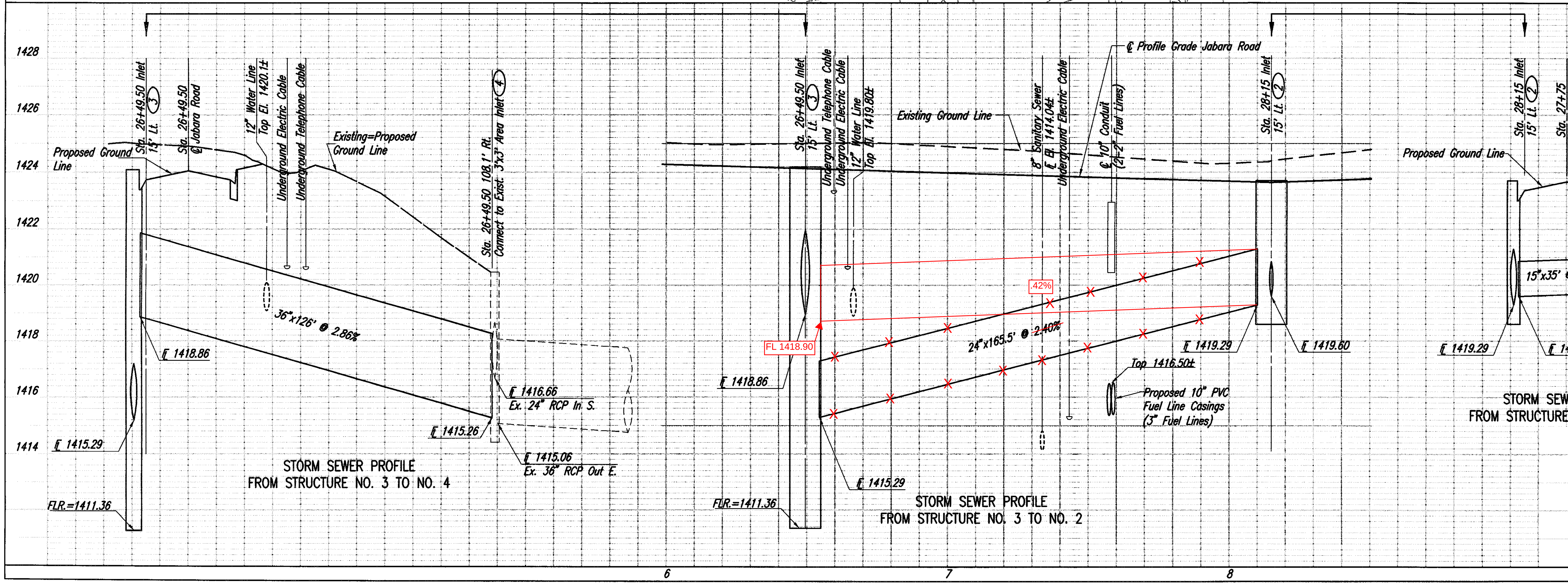
SHEET NO. 15A
TOTAL SHEETS 71
NW 1/4 Sec 33, T26S, R2E
(IN FEET)
N: 6,115.9883, E: 8,949.6356
Sta. 26+49.50 Const.
Curb Inlet (Type 22) Lt.
(L=10'-0", W=4'-6")
w/Stormwater Quality Device(SNOUT) (Install per manufacturer's remommendations)
Install 36"x126' R.C.P.
Storm Sewer (E.)
Connect to Exist. 3'x3' Area Inlet (4) Rt. Remove existing 36" R.C.P. stub at existing inlet. See Sh. Nos. 23 & 24
N: 6,280.5615, E: 8,967.0490
Sta. 28+15 Const.
Curb Inlet (Type 22) Lt.
(L=10'-0", W=4'-6")
Install 24"x165.5' R.C.P.
Storm Sewer (S.)
See Sh. Nos. 23 & 24
N: 6,277.4048, E: 8,996.8825
Sta. 28+15 Const.
Curb Inlet (Type 22) Rt.
(L=5'-0", W=4'-0")
Install 15"x35' R.C.P.
Storm Sewer (W.)
See Sh. Nos. 23 & 24
Wichita Airport Authority
℄ 35th Street N.
℄ Jabara Rd.
Sta. 27+13.87 ℄ Jabara Rd.=
Sta. 50+00.00 ℄ 35th St. N.
97°08'17"
P.C. +46.75 15' Rt.
P.C. +60.61 15' Lt.
P.C. +45.28 15' Lt.
P.T. +68.59 15' Lt.
P.C. +33.69
8" Chain Link Fence
Utility, Drainage & Access Esm't. 45' ℄
35'-0" b-b
See Sh. No. W4 for Waterline Relocation.
CAUTION !!! Underground Fuel Lines
Buried Comm. (WAA)
CAUTION !!! 12" Waterline Elec. Cables Teleph. Cables
Sanitary Sewer (Record Info)
Saw Cut
CAUTION !!! Underground Elec. Cables Teleph. Cables
Saw Cut, Remove and Replace Asphalt Pavement (6") (Surface Course Mix) as necessary for storm sewer installation. Replace marking in kind to original layout (Subsidiary). To be paid as "Asphalt Pavement".
F.F. = 1424.97

UTILITIES

SANITARY SEWER	CITY OF WICHITA
WATER	CITY OF WICHITA
ELECTRIC	KG&E
GAS	KANSAS GAS SERVICE
SWB TELEPHONE	SOUTHWESTERN BELL
WAA TELEPHONE	WICHITA AIRPORT AUTHORITY

DARWIN R. CROWL LICENSED PROFESSIONAL ENGINEER 14896 KANSAS 6-13-14



Sta. 26+49.50 Inlet 15' Lt. (3)
Sta. 26+49.50 ℄ Jabara Road
12" Water Line Top El. 1420.1±
Underground Electric Cable
Underground Telephone Cable
Existing=Proposed Ground Line
Proposed Ground Line
Sta. 26+49.50 108.1' Rt. Connect to Exist. 3'x3' Area Inlet (4)
36"x126' @ 2.86%
FL 1418.86
FL 1416.66 Ex. 24" RCP In S.
FL 1415.26
FL 1415.06 Ex. 36" RCP Out E.
FL 1415.29
FLR.=1411.36
STORM SEWER PROFILE FROM STRUCTURE NO. 3 TO NO. 4
℄ Profile Grade Jabara Road
Existing Ground Line
Underground Telephone Cable
Underground Electric Cable
12" Water Line Top El. 1419.80±
8" Sanitary Sewer ℄ El. 1414.04±
Underground Electric Cable
℄ 10" Conduit (2-2" Fuel Lines)
Sta. 28+15 Inlet 15' Lt. (2)
.42%
FL 1418.90
24"x165.5' @ 2.40%
FL 1419.29
FL 1419.60
Top 1416.50±
Proposed 10" PVC Fuel Line Casings (3" Fuel Lines)
FL 1418.86
FL 1415.29
STORM SEWER PROFILE FROM STRUCTURE NO. 3 TO NO. 2
Sta. 28+15 Inlet 15' Lt. (2)
Sta. 27+75 ℄ Jabara Road
Sta. 28+15 Inlet 15' Rt. (1)
15"x35' @ 0.37%
FL 1419.73
FL 1419.29
FL 1419.60
STORM SEWER PROFILE FROM STRUCTURE NO. 2 TO NO. 1

THE WICHITA AIRPORT AUTHORITY
COLONEL JAMES JABARA AIRPORT
PAVING, DRAINAGE, & T-HANGAR IMPROVEMENTS

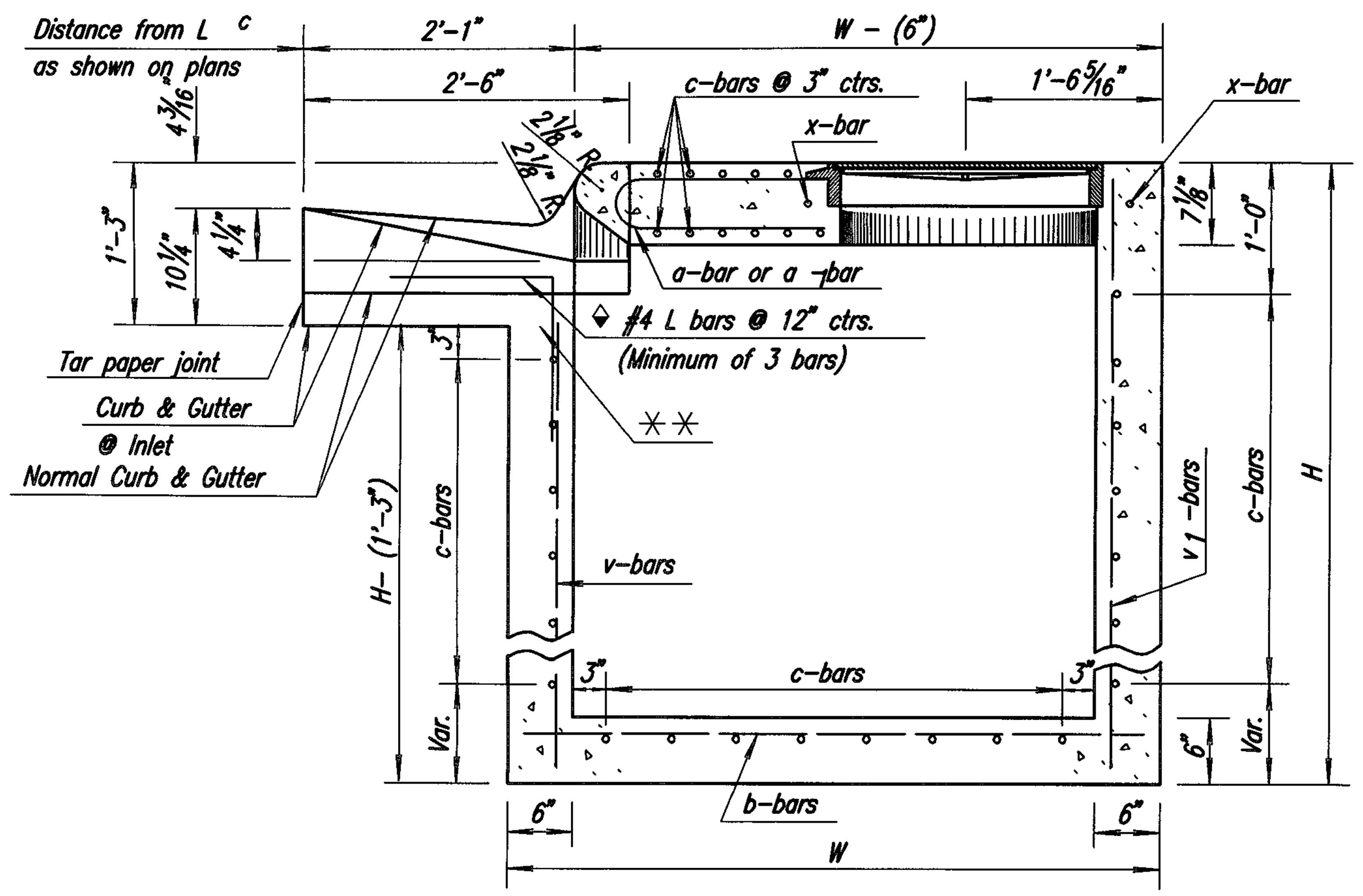
JABARA ROAD

STORM SEWER STA. 26+49.50 TO STA. 28+00.00

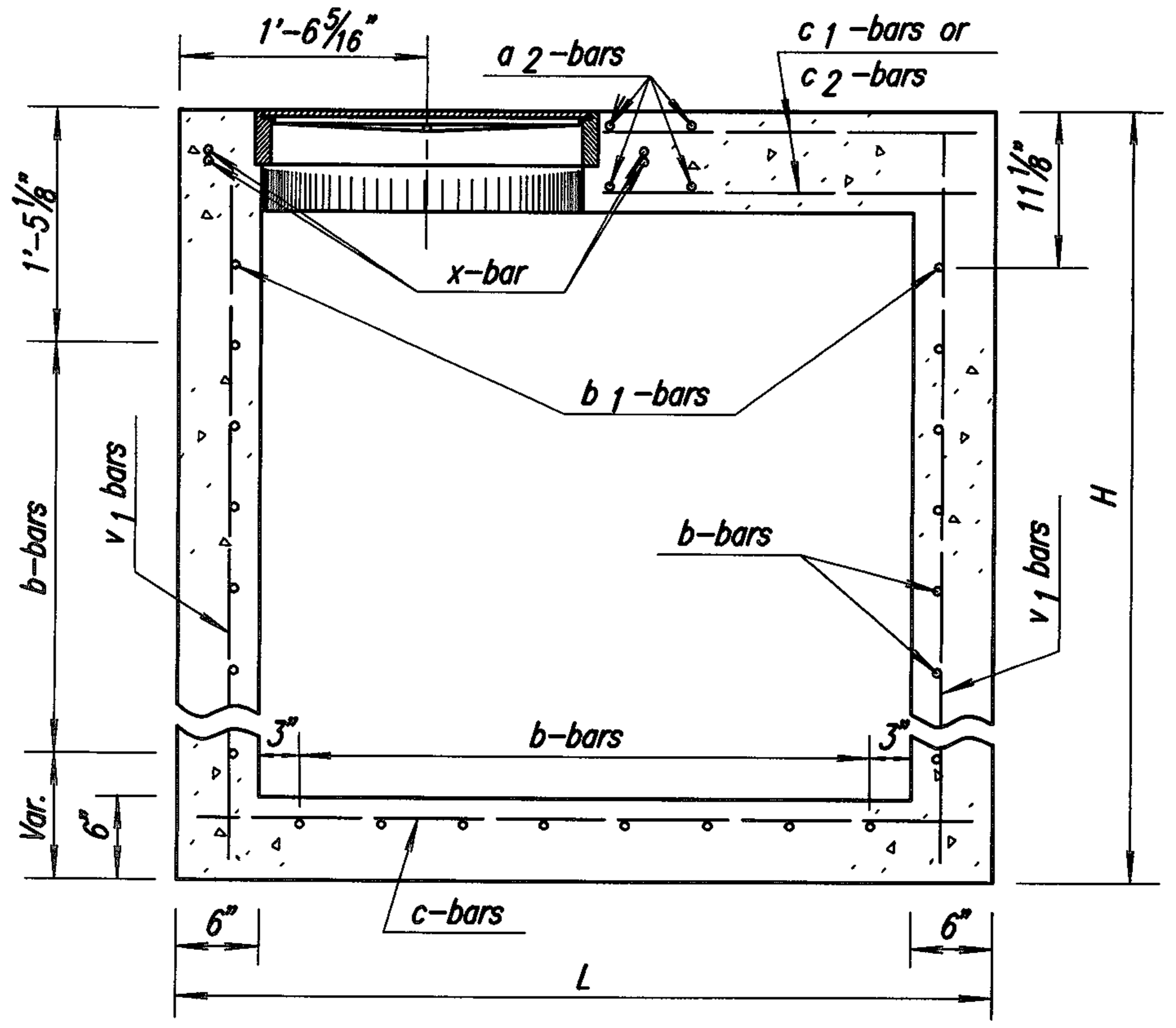
AIP PROJECT NO. 3-20-0089-XX

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

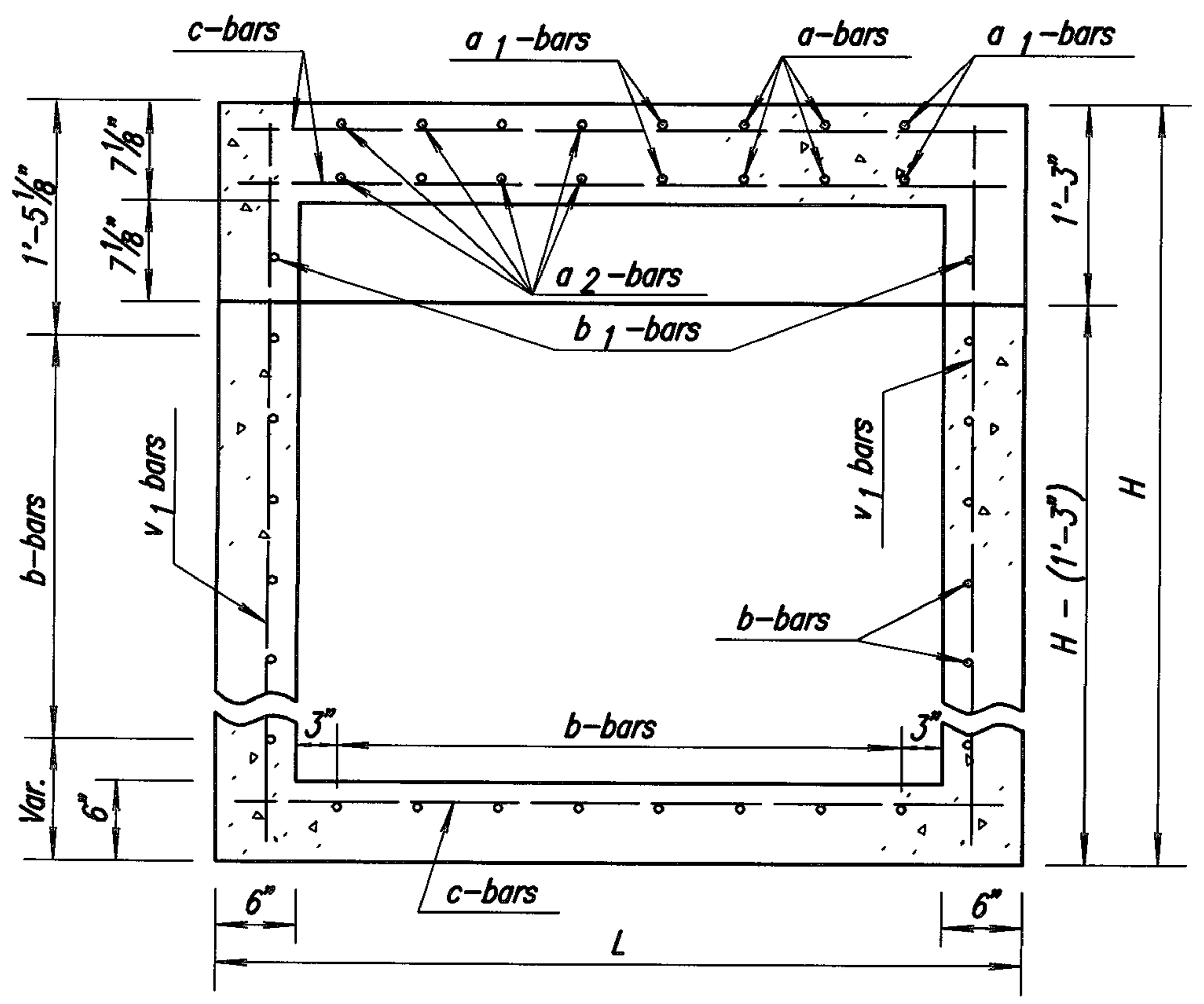
Date JUNE 2014 Job No. 132-12588-0019



SECTION A-A

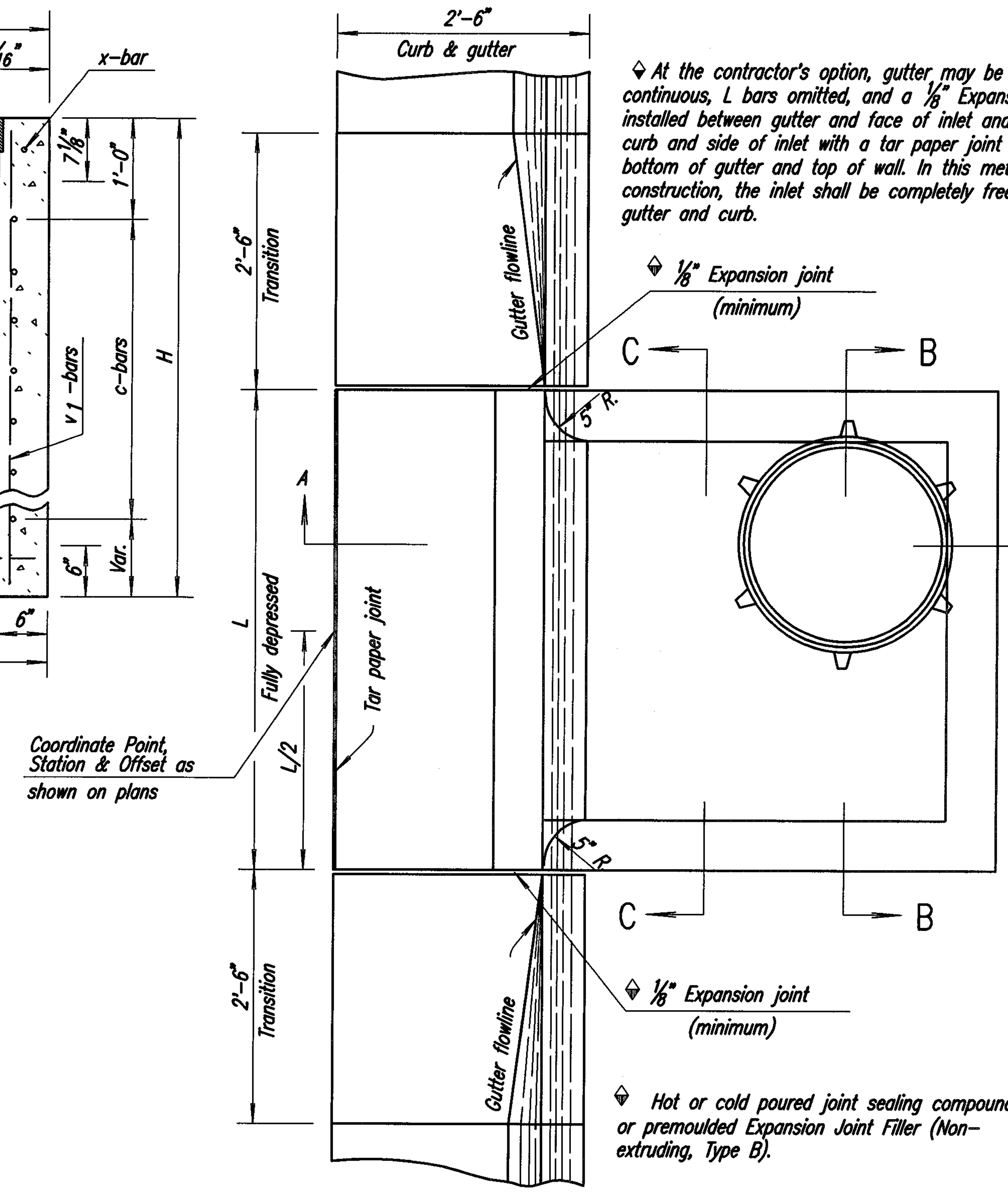


SECTION B-B



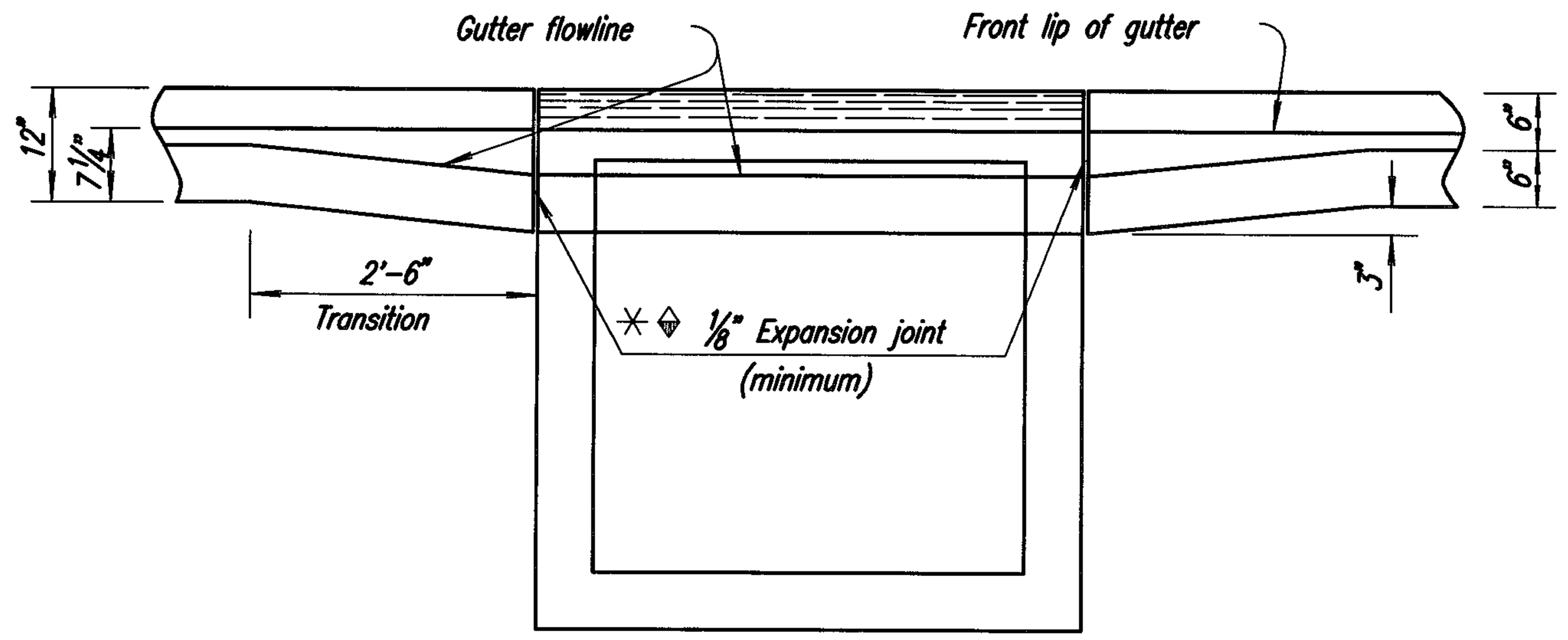
SECTION C-C

◈ At the contractor's option, gutter may be constructed continuous, L bars omitted, and a 1/8" Expansion joint installed between gutter and face of inlet and between curb and side of inlet with a tar paper joint between bottom of gutter and top of wall. In this method of construction, the inlet shall be completely free of the gutter and curb.



◈ Hot or cold poured joint sealing compound, or premoulded Expansion Joint Filler (Non-extruding, Type B).

PLAN

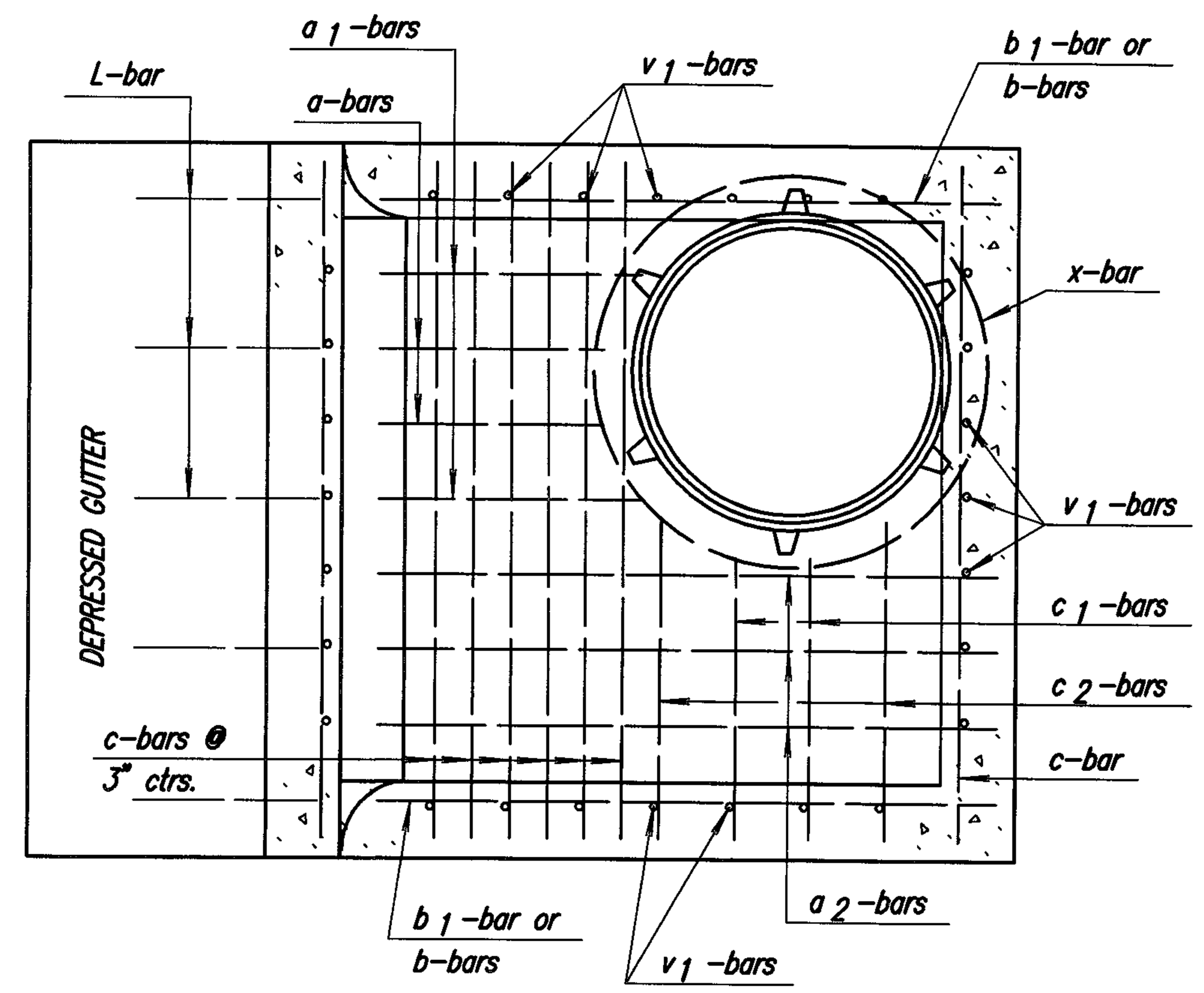


ELEVATION

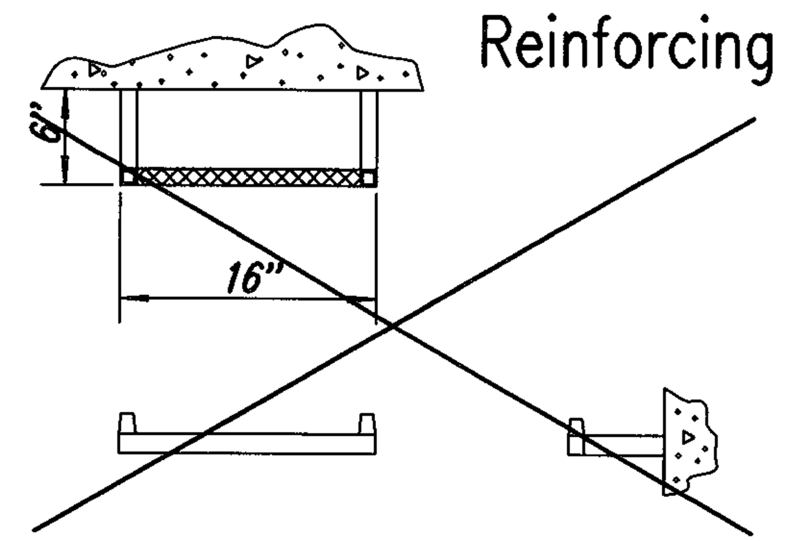
Note: Transition gutter from normal depth of 6" to 9" at inlet in 2'-6". Curb and Gutter sections shall be shaped as shown where required by the installation of curb inlets. This work will be subsidiary to other bid items.

GENERAL NOTES

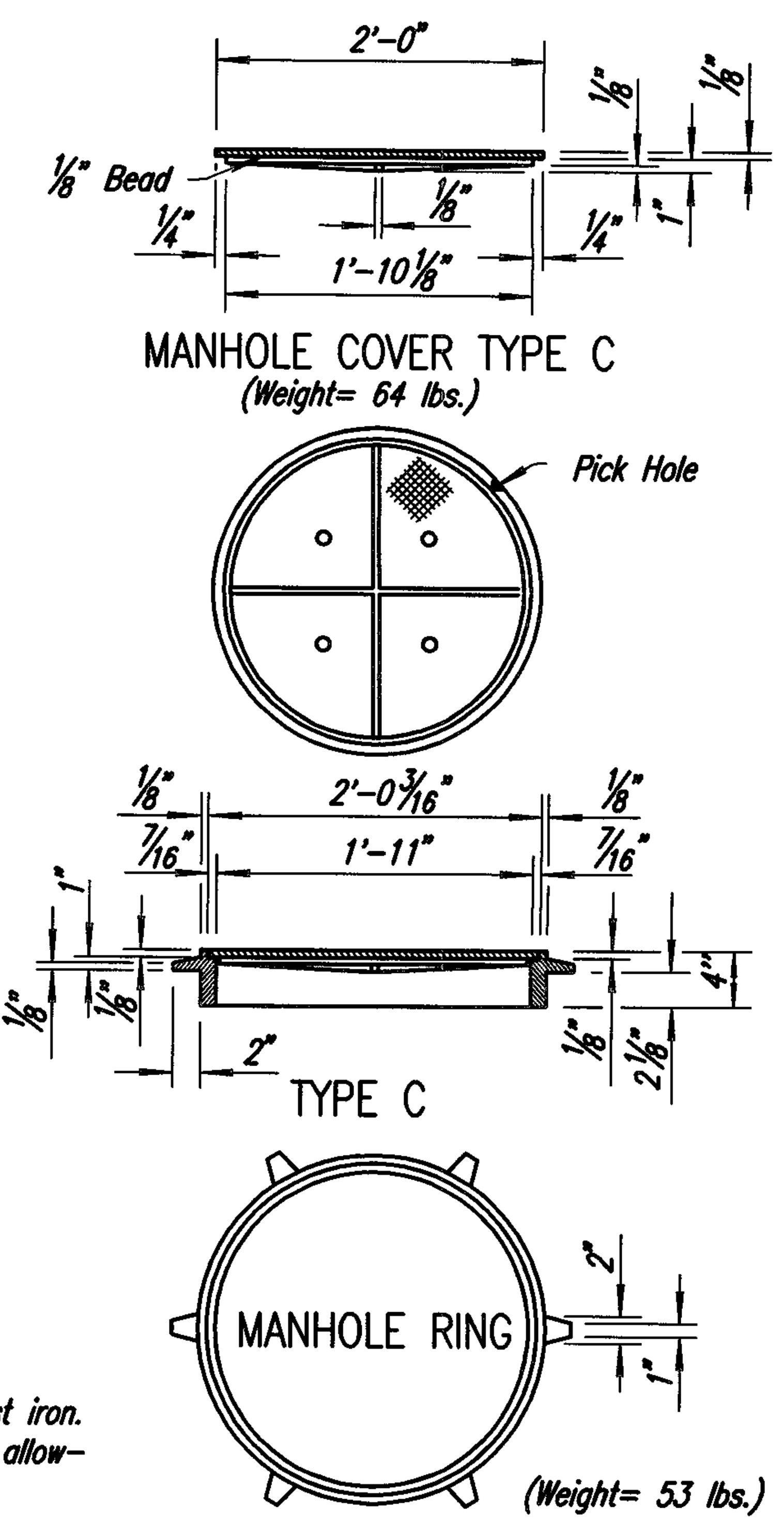
Use Paving Mix Concrete throughout. All exposed edges shall be finished with an edging tool.
~~At the contractors option Class A Concrete (AE) or mix used in concrete pavement may be used throughout.~~
In general, pipes will enter and leave manhole at various positions. Where possible bend bars around pipes.
Floor of manhole to be shaped as shown in various "EXAMPLES" with unreinforced Class "A" Concrete.
Manhole opening ~~and steps,~~ where used, shall be placed to afford easy access to top of shaped invert. Top reinforcing bars to be adjusted accordingly.
All castings shall be gray iron and shall comply with the KDOT Standard Specifications.
When so ordered by the Engineer, the top of the manhole shall be sloped slightly to approximately fit the ground line or other conditions.
Dimensions and weights of cast iron as shown on this sheet are minimum. Larger dimensions and/or heavier weights of cast iron may be used.
~~Steps shall be installed in all storm sewer inlets when specified in the plans or when "H" is equal to or greater than six feet. Steps shall comply with the KDOT Standard Specification.~~
No reduction in concrete quantities shall be made for pipe openings.
When directed by the Engineer, a small opening in the back of the inlet shall be provided in order to drain a low area. Reinforcing bars shall extend through the opening. No reduction in concrete quantities will be made for this opening.
No addition in concrete quantities shall be made for shaping floor of inlet.
No reduction in pay length of curb, gutter, or curb & gutter will be made through the inlet area.
The weight of castings includes no allowance for fillets and overruns.
Curb and Gutter sections shall be shaped as shown where required by the installation of curb inlets. This work shall be subsidiary to other bid items.
~~See sheet entitled "Reinforcing Steel for Inlets and Manholes" for details and quantities.~~
All reinforcing steel shall be #4 at 6" centers except where noted. Minimum clear distance to reinforcement shall be 1 1/8".
~~See Sheet No. 65 for Underdrain details at curb inlet locations.~~



Reinforcing Steel Top View



STEP DETAILS

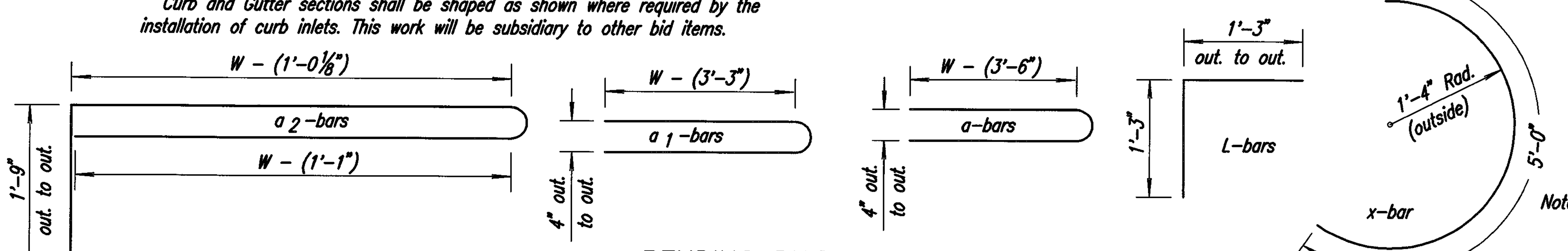


NOTE: All manhole castings are cast iron. Weight of castings includes no allowance for fillets and overruns.

THIS SHEET MODIFIED FROM A KDOT STANDARD DETAIL SHEET

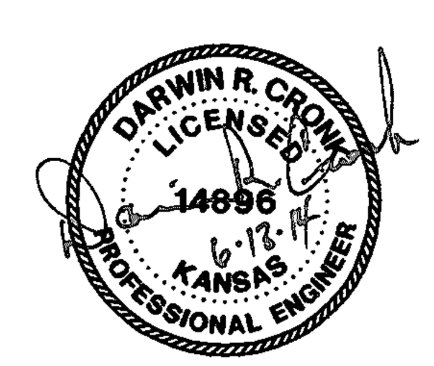
∗ LIGHT TYPE MANHOLE COVER AND RING

∗ Rings with four equally spaced lugs will be permitted.



BENDING DIAGRAMS

Note: Reinforcing steel for L bars is not included in the steel quantity and is subsidiary to the other inlet items.



THE WICHITA AIRPORT AUTHORITY
COLONEL JAMES JABARA AIRPORT
PAVING, DRAINAGE, & T-HANGAR IMPROVEMENTS

TYPE 22 CURB INLET

AIP PROJECT NO. 3-20-0089-XX

PEC
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316-262-2691 www.pec1.com

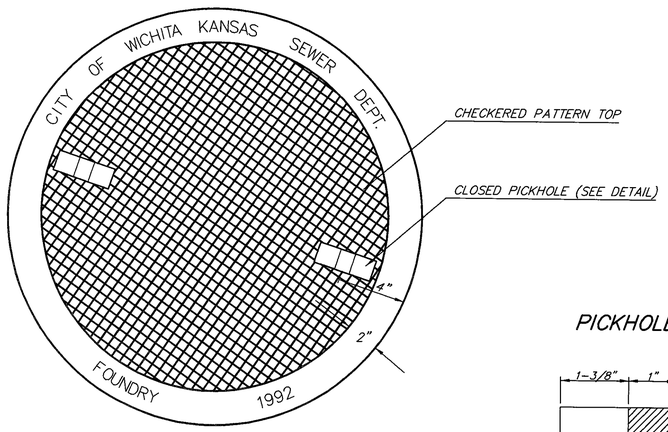
Date JUNE 2014 | Job No. 132-12588-0019

MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

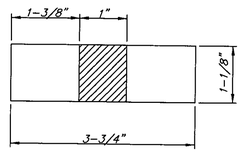
SHEET NO.	TOTAL SHEETS
24	71

MANHOLE COVER
Weight = 180 Lbs.

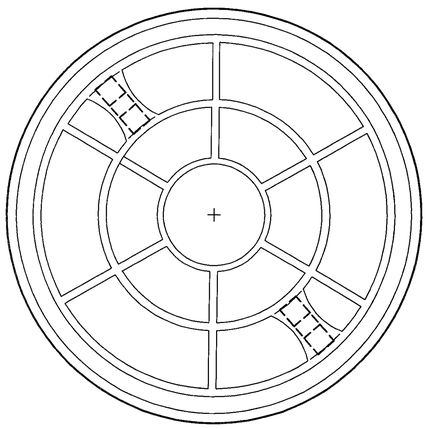


TOP VIEW

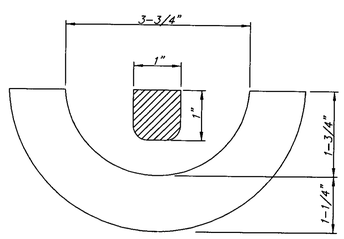
PICKHOLE DETAIL



TOP VIEW

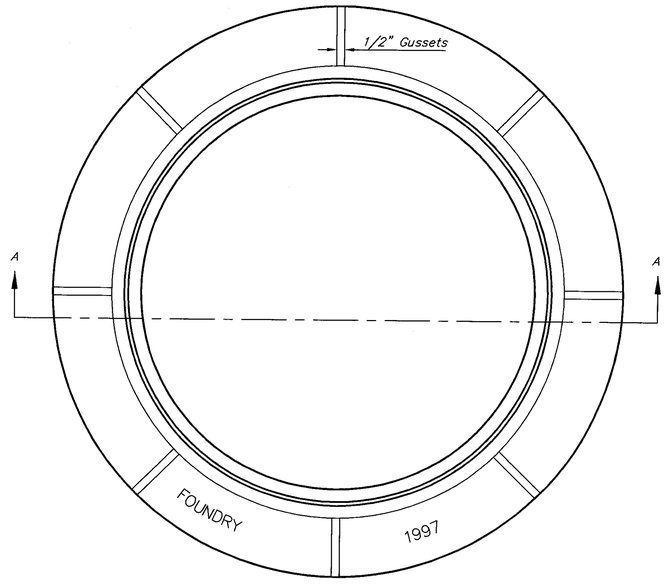


BOTTOM VIEW

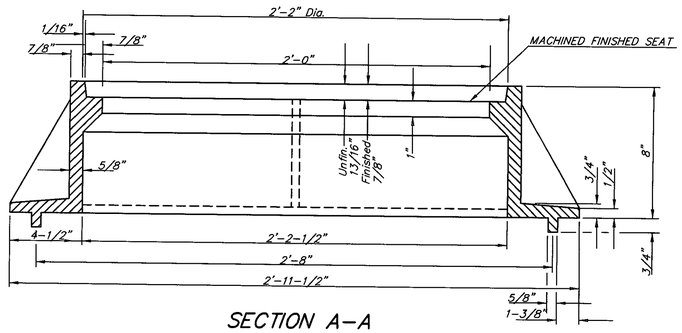


SECTION VIEW

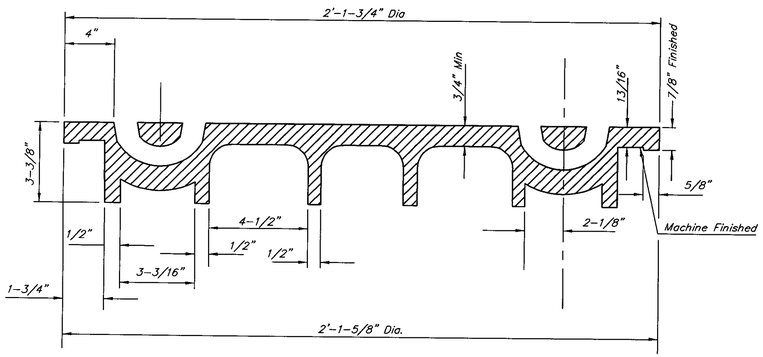
MANHOLE FRAME
Weight = 240 Lbs.



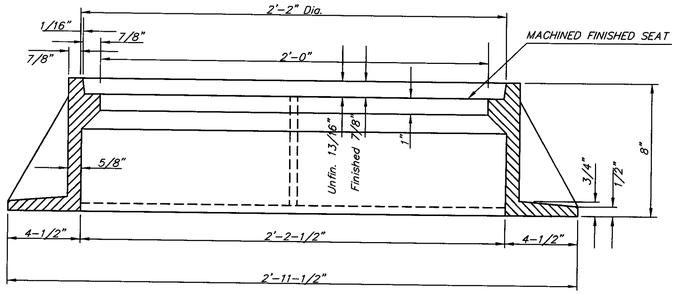
TOP VIEW



SECTION A–A
MUD RING



SECTION VIEW



SECTION A–A

GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

2. MANHOLE CASTINGS SHALL WEIGH A MINIMUM OF 180 POUNDS ON THE SOLID COVER AND 240 POUNDS ON THE MANHOLE RING. THIS IS A TOTAL OF 420 POUNDS ON A RING AND COVER SET. CASTINGS WEIGHING LESS THAN THE MINIMUM SPECIFICATIONS WILL NOT BE ACCEPTED.

3. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

4. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SEATING SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

5. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1 INCH IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

THE WICHITA AIRPORT AUTHORITY
COLONEL JAMES JABARA AIRPORT
PAVING, DRAINAGE, & T-HANGAR IMPROVEMENTS

MANHOLE FRAME AND COVER

AIP PROJECT NO. 3-20-0089-XX

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
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Date JUNE 2014 | Job No. 132-12588-0019

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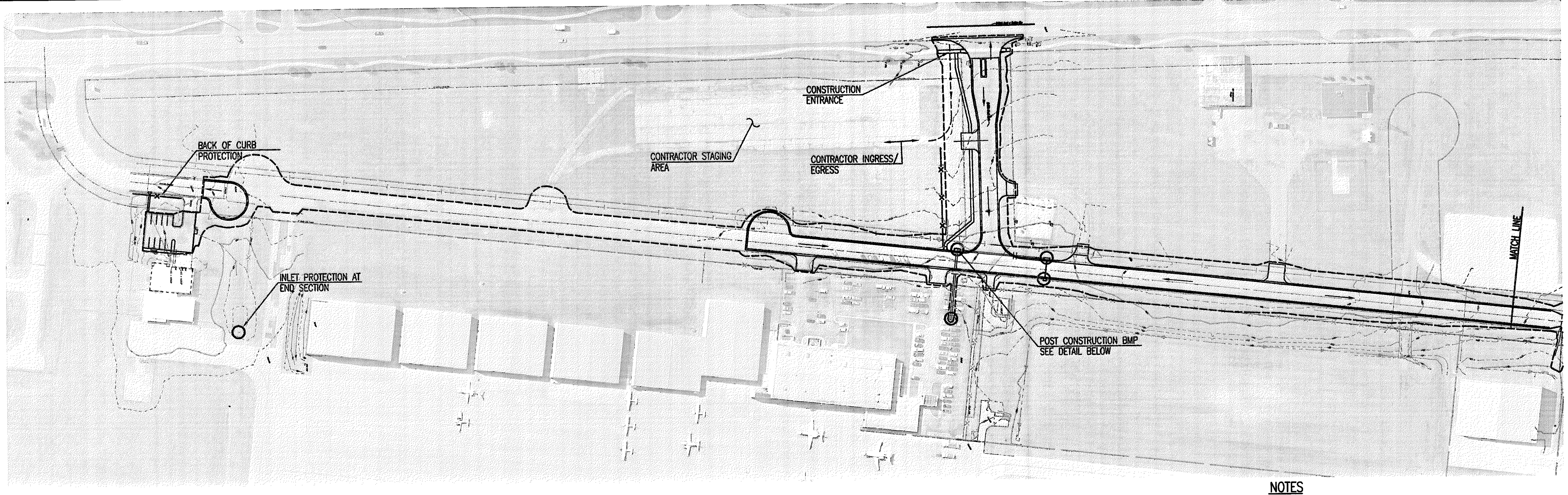
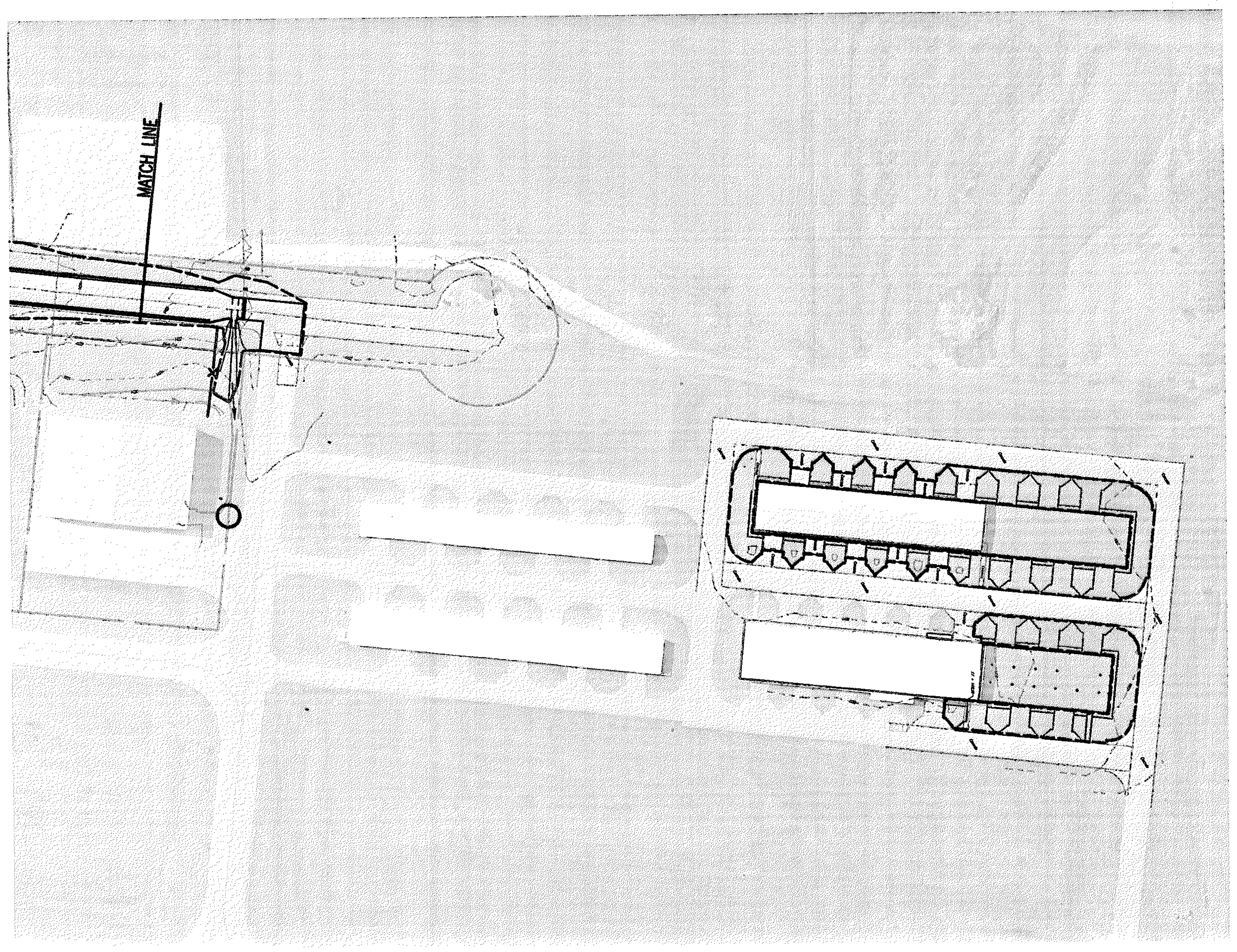
SHEET NO.	TOTAL SHEETS
30	71

SCALE:
0 100 200



LEGEND

- AREA INLET PROTECTION
- PROPOSED STORM SEWER
- EXISTING CONTOURS (1355, 1356)
- SILT FENCE
- DENOTES DIRECTION OF DRAINAGE
- CONSTRUCTION LMITS



STORMWATER, EROSION, AND SEDIMENT CONTROL GENERAL

This sheet outlines minimum Stormwater Practices to be followed by the Contractor during all Phases of Construction of the Project. The Contractor will be responsible for prevention of soil or sediment loss from the Construction Site. These notes are to be used as a guideline only. The Project is not considered complete until all permanent Erosion and Sediment Controls and Storm Water Management Practices are in place to the satisfaction of the Owner and Engineer. All temporary practices must be properly removed.

EROSION AND SEDIMENT CONTROL

In accordance with local and state regulations pursuant to the general NPDES Permit for Construction Stormwater, a Stormwater Pollution Prevention Plan (SWPPP) has been developed for this site. The plan was developed to minimize the effects of soil erosion and resulting sediment loss. Prevention will be provided through the use of proper Construction Techniques. These techniques will include both temporary and permanent Management Practices. To prevent erosion and sediment from leaving the Construction Site the following steps will be taken during Construction:

1. Prior to starting any soil disturbing activities, the Contractor shall install the Erosion and Sediment Control Measures consisting of the Silt Fence, Ditch Checks, Inlet/Culvert Sediment Barriers, and Gravel Construction Entrance(s). It is understood that some clearing and preparation may be required to properly install perimeter erosion and sediment control items.

2. The recommended sequence of Construction Activities and of the Installation and Removal of Erosion and Sediment Control Measures is as follows: perimeter control measures (Silt Fence), Gravel Construction Entrance(s), Temporary Straw or Hay Bales (Bale) at any drainage area crossings to be disturbed by Construction Activities, Construction of Grading improvements, Seeding, Fertilizing and Mulching on all slopes and disturbed areas, Installation of Erosion Slope Protection, Removal of Temporary Practices, Removal of Perimeter Controls and Site Cleanup.

3. Perimeter silt fence and gravel construction site entrance(s) shall be constructed in accordance with details shown on Sheet 31 & 32. Install Erosion Fence at indicated locations, and other locations as directed by the Engineer to control Soil Erosion. Silt Fence shall be kept in place until grass is established.

4. Construction Entrance(s) shall be maintained by the Contractor in a condition that will prevent tracking or flowing of sediment onto Public Right-of-Ways and paved streets. This may include periodic top dressing with additional crushed stone as conditions warrant. Repair of Entrance(s), cleaning of Right-of-Ways and paved streets that have been soiled by Construction Activities shall be the Contractor's responsibility.

5. During all soil disturbing activities, the Contractor will take appropriate steps using accepted Construction Methods to minimize the time of exposure of unprotected soil and other construction materials to rainfall. Particular care must be exercised when dealing with stockpiles of topsoil or fill materials and with soil on slopes.

6. Soil stockpiled for more than 7 days will have Silt Fence placed on the downhill side to trap sediment.

7. No ground shall be left disturbed for more than 14 days of non-activity without being temporarily mulched and/or seeded.

8. Erosion Controls shall be Inspected and Maintained by the Contractor not less than weekly or within 24 hours after a rainfall event of 0.5 inches or more. Maintenance shall include but not be limited to Sediment removal, Silt Fence and Hay Bale Barrier Repair and/or Replacement.

9. Whenever dirt, rock or other materials are exported for placement in areas off of the primary Construction Site, the Contractor is responsible for determining that EPA Storm Water Permitting requirements are met. Prior to the removal of any materials from the site the Contractor will furnish the Engineer with a written agreement, signed by each Landowner who will receive exported materials, stating that the receiving site will be properly permitted, when required.

10. Contractor shall keep a written log of when Construction Activities begin, Erosion and Sediment Controls are Installed, Inspected and Repaired. Copies of Log shall be furnished to the Engineer.

11. Erosion and Sediment Control Measures shall be removed by the Contractor upon stabilization of disturbed areas with a healthy stand of grass.

12. Contractor shall install a concrete washout area at the staging area and shall remove and restore the areato original condition at the end of project.

EROSION CONTROL PLAN

NOTES

1. CONTRACTOR SHALL SEED OR SOD ALL AREAS DISTURBED BY HIS CONSTRUCTION ACTIVITIES. IF PERMANENT SEEDING OR SODDING CANNOT BE PERFORMED DURING THE PLANTING SEASON, THE CONTRACTOR SHALL INSTALL TEMPORARY SEEDING IN ACCORDANCE WITH THE SPECIFICATIONS. EROSION CONTROL MAT SHALL BE NORTH AMERICAN GREEN C350, OR APPROVED EQUAL, INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

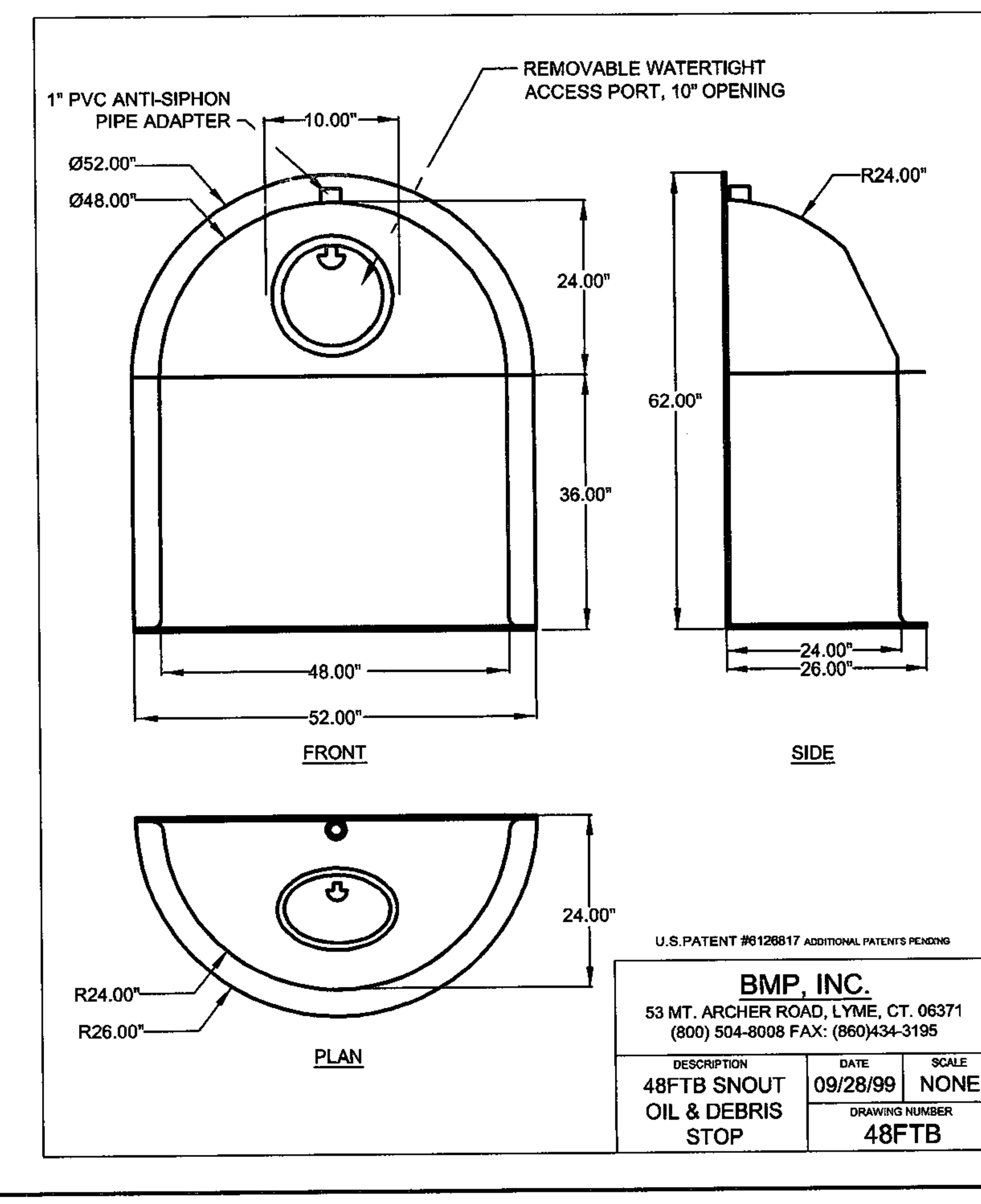
2. INSTALL AND MAINTAIN EROSION PROTECTION THROUGHOUT THE ENTIRE PROJECT. NO SEPARATE PAYMENT WILL BE MADE FOR EROSION CONTROL.

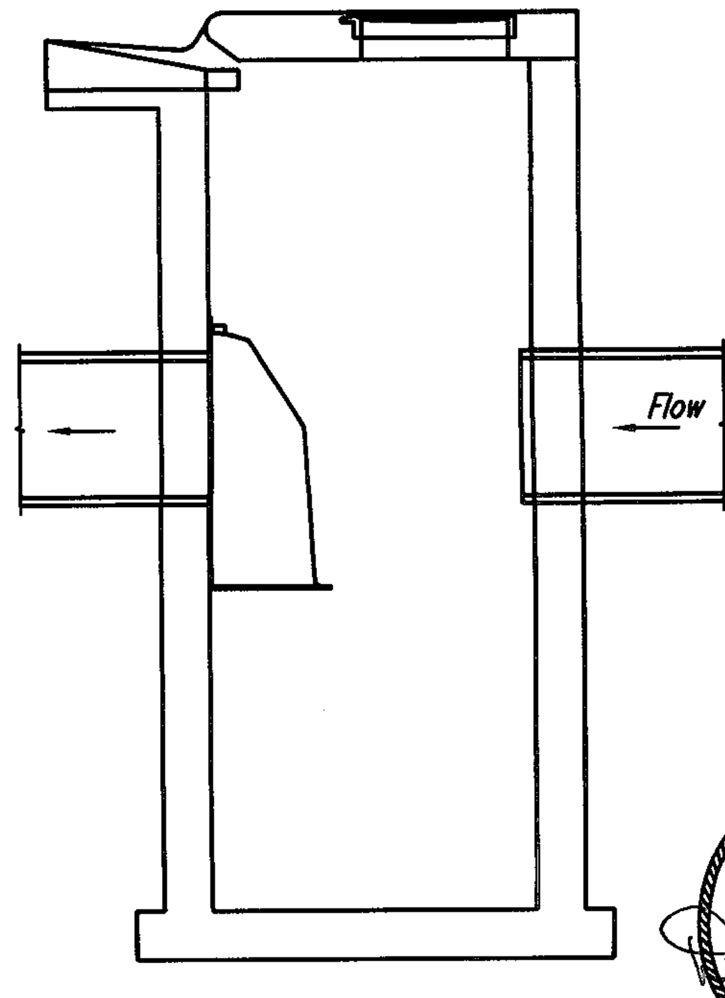
3. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED MINIMUM STANDARDS. WHENEVER SEDIMENT ENTERS THE STREETS, STORM SEWERS, OR DITCHES, INSTALL ADDITIONAL DEVICES, AS NEEDED, TO CORRECT THE PROBLEM.

4. THE EROSION CONTROL DEVICES WITHIN THESE PLANS MUST BE IN PLACE AT ALL TIMES DURING CONSTRUCTION UNTIL SUCH TIME AS THE SITE IS REESTABLISHED WITH GRASS.

5. INSTALL BACK OF CURB PROTECTION BEHIND ALL NEW CURB AND GUTTER WHERE GRADE SLOPES TOWARD THE STREET.

6. PAYMENT FOR SEEDING AND SODDING WILL BE PAID TO THE LIMITS OF CONSTRUCTION ONLY, AS SHOWN ON THE PLANS. DISTURBED AREAS OUTSIDE THE CONSTRUCTION LIMITS SHALL BE SEEDED OR SODDED AT NO COST TO THE OWNER.





"SNOUT" INSTALLATION

DARWIN R. CROWN LICENSED 14896 KANSAS PROFESSIONAL ENGINEER 6-13-14

THE WICHITA AIRPORT AUTHORITY
COLONEL JAMES JABARA AIRPORT
PAVING, DRAINAGE, & T-HANGAR IMPROVEMENTS

EROSION CONTROL BMP PLAN

AIP PROJECT NO. 3-20-0089-XX

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Date JUNE 2014 | Job No. 132-12588-0019

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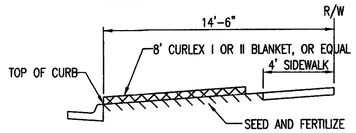
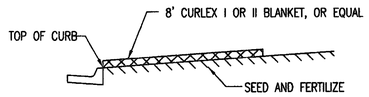
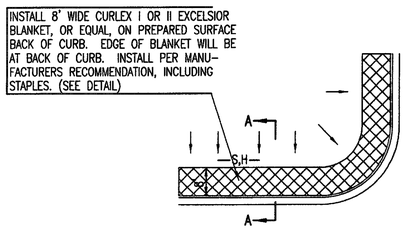


SECTION B-B



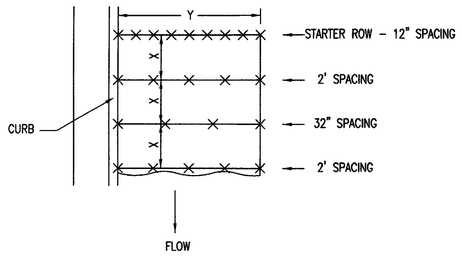
SECTION A-A

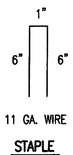


GENERAL NOTES

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



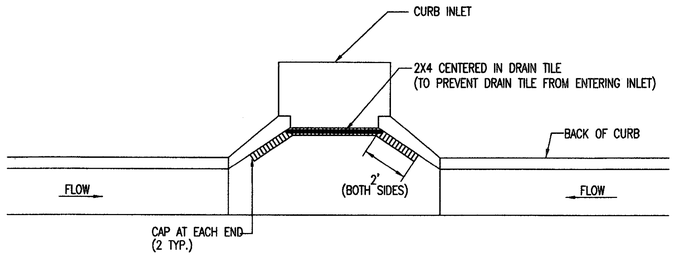


STAPLE

STAPLE PATTERN

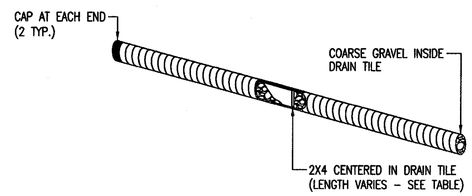
NOTES: USE 6" SEAM OVERLAP
(X & Y = RECOMMENDED BY MANUFACTURE)

DETAILS FOR APPROVED EROSION CONTROL MAT

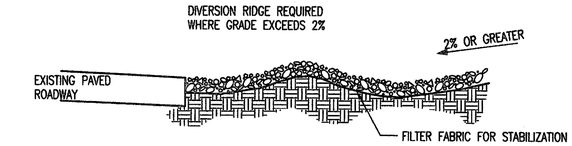


NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

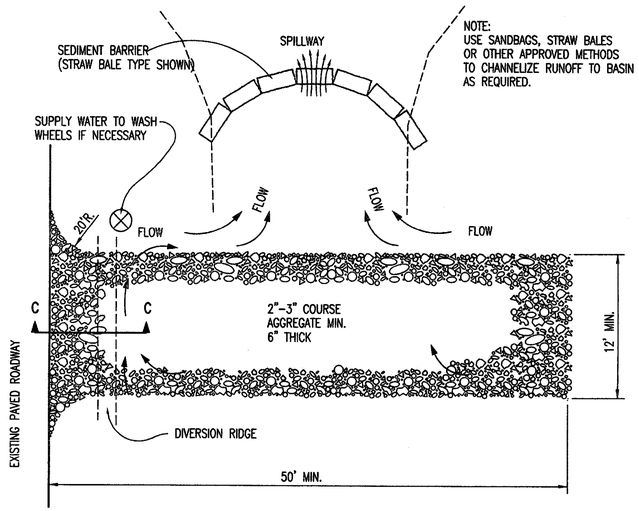
2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



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.

REVISION DATE: MAY 2013

05/31/13

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
—-—		

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

SHEET
__ of __

SW-501

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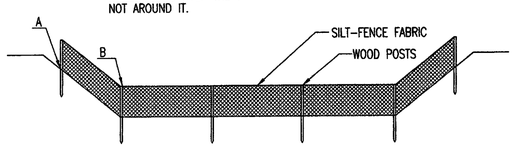
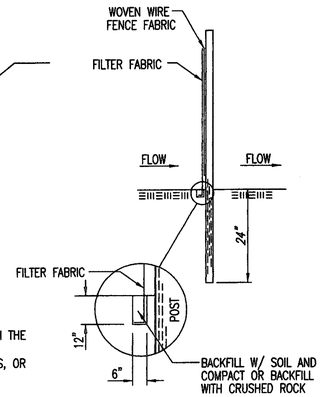
SHEET NO.	TOTAL SHEETS
32	71

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



ELEVATION



ANCHOR TRENCH DETAIL

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 (%)	DITCH 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.

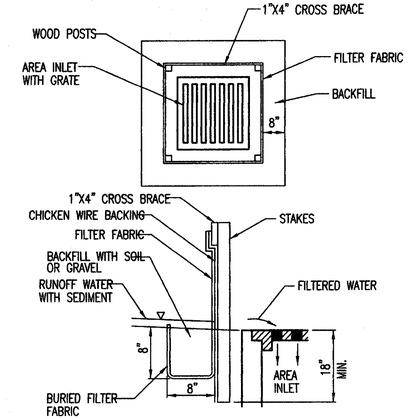
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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?



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.

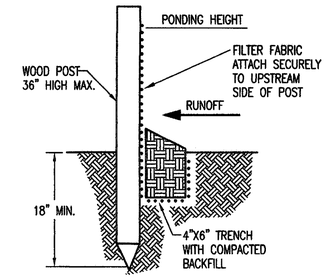
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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?

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED 19294 KANSAS PROFESSIONAL ENGINEER
05/31/13

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
____-____	_____	

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

SHEET
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SW-502

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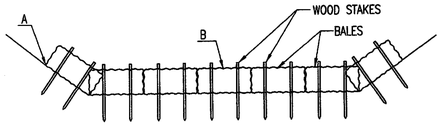
SHEET NO.	TOTAL SHEETS
33	71

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 (%)	DITCH CHECK 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 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".

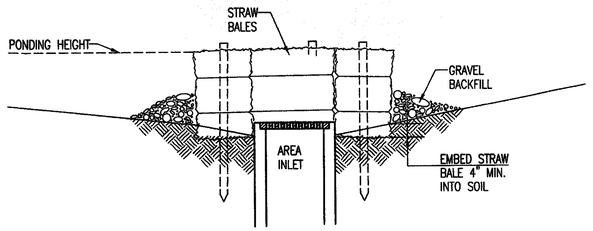
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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.

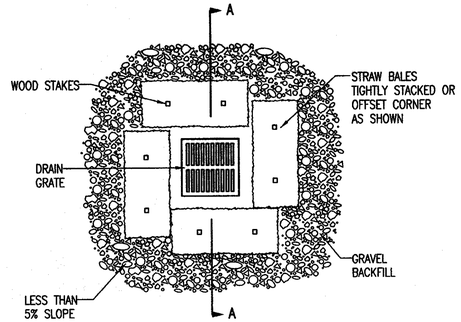
INSPECTION AND MAINTENANCE:

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.

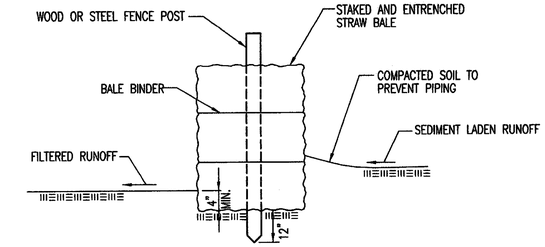
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

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?

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED 19204 PROFESSIONAL ENGINEER KANSAS
05/30/13

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
___-___	_____	

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

SHEET
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SW-503