THE WICHITA AIRPORT AUTHORITY

WICHITA, KANSAS

MID-CONTINENT AIRPORT

PLANS FOR

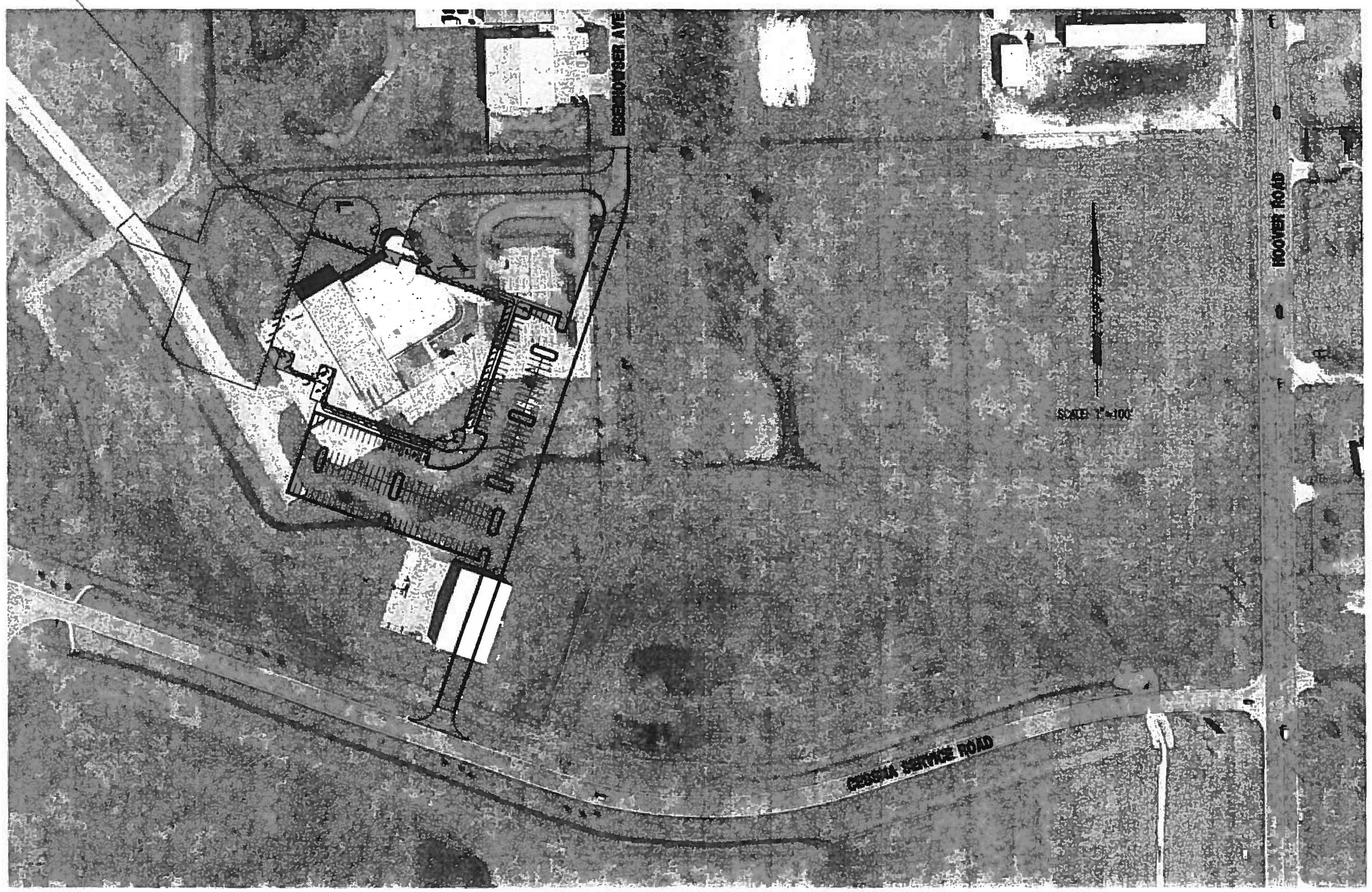
PROPOSED CESSNA MX FACILITY FOR:

FLIGHT SAFETY INTERNATIONAL

DRAINAGE IMPROVEMENTS

PRIVATE PROJECT NO. 0043 PPD (607861)

PROJECT AREA



LOCATION MAP

JULY 2011

AS BUILT PLANS	
CONTRACTOR:	McCullough Excavation
INSPECTOR:	Ryan McCullough P.E., McCullough Excavation
PDF BY:	RDM 12-05-2011

Note: Partial As-Builts. McCullough Excavation is providing As-Built Information on storm sewer Pipe and Structures only. As-Built Information on Grading and other Drainage Improvements to be provided by others.

INDEX OF SHEETS

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

Engineering Julianne Kallman 9-16-11

Stormwater Jim Hardesty 9-16-11

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.

DARWIN R. CROOK LICENSED 14896 KANSAS PROFESSIONAL ENGINEER 9-16-11

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316-262-2691 www.pec1.com

CONSULTING ENGINEERS

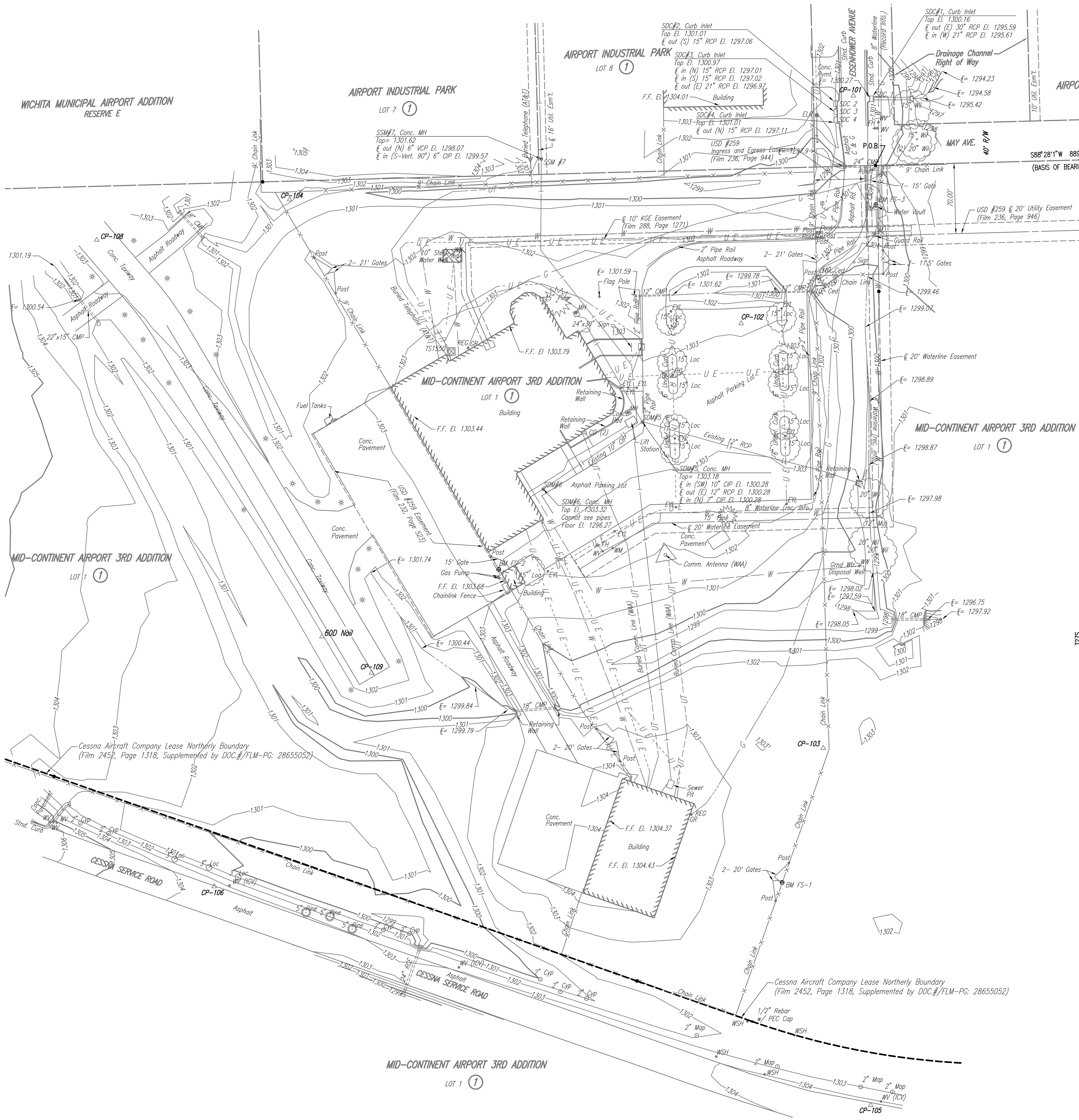
CONTRACTOR ARCO

ARCHITECT

PROPOSED CESSNA MX FACILITY FOR:
FlightSafety International
WICHITA, KANSAS

JOB NO: 5J1127
DRAWN BY: JAG
ISSUE DATE: 07.15.2011 - PERMIT
REVISIONS: # DATE

SHEET NUMBER
C1.0
SS TITLE

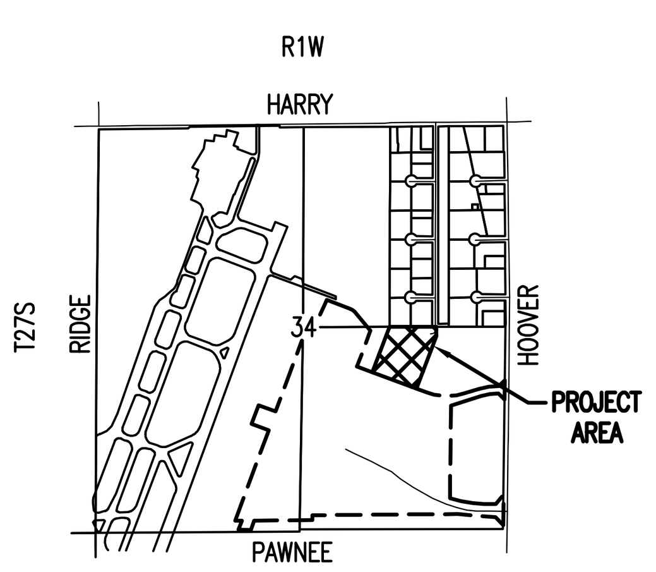


SCALE:

0 50 100

● = 1/2" REBAR W/PEC CAP UNLESS OTHERWISE NOTED

ALL ELEVATIONS SHOWMN ARE NAVD88



VICINITY MAP

LEGEND

- Benchmark
- Coniferous Tree
- Deciduous Tree
- Deadman
- Power Pole
- Electric Box
- Electric Yard Light
- Gate Post
- Gas Meter
- Guard Post
- Gas Riser Pipe
- Property Iron
- Monument
- Section Corner
- Curb Inlet
- Storm Drain Manhole
- Sign
- Sanitary Sewer Cleanout
- Sanitary Sewer Manhole
- Taxiway Edge Light
- Telephone Box
- Transformer
- Fire Hydrant
- Water Meter
- Water Sprinkler Head
- Water Valve
- Irrigation Control Valve
- Water Well
- Buried Electric (Westar)
- Centerline
- Gas Line (KGS)
- Guard Rail
- Overhead Electric
- Sanitary Sewer
- Storm Sewer
- Flowline
- Buried Telephone
- Waterline
- Fence Types

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ELECTRICAL: INPWR
10640 DEME DRIVE SUITE M
INDIANAPOLIS, IN 46236
C: DAVE HEDGE - 317.723.3375

PLUMBING: CENTRAL AIR CONDITIONING CO.
3435 WEST HARRY
WICHITA, KS 67201
C: SCOTT BRANSCUM - 316.945.0797

FIRE PROTECTION: MCDANIEL COMPANY
4301 WEST HARRY
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C: MIKE MCGUIRE - 316.942.8325

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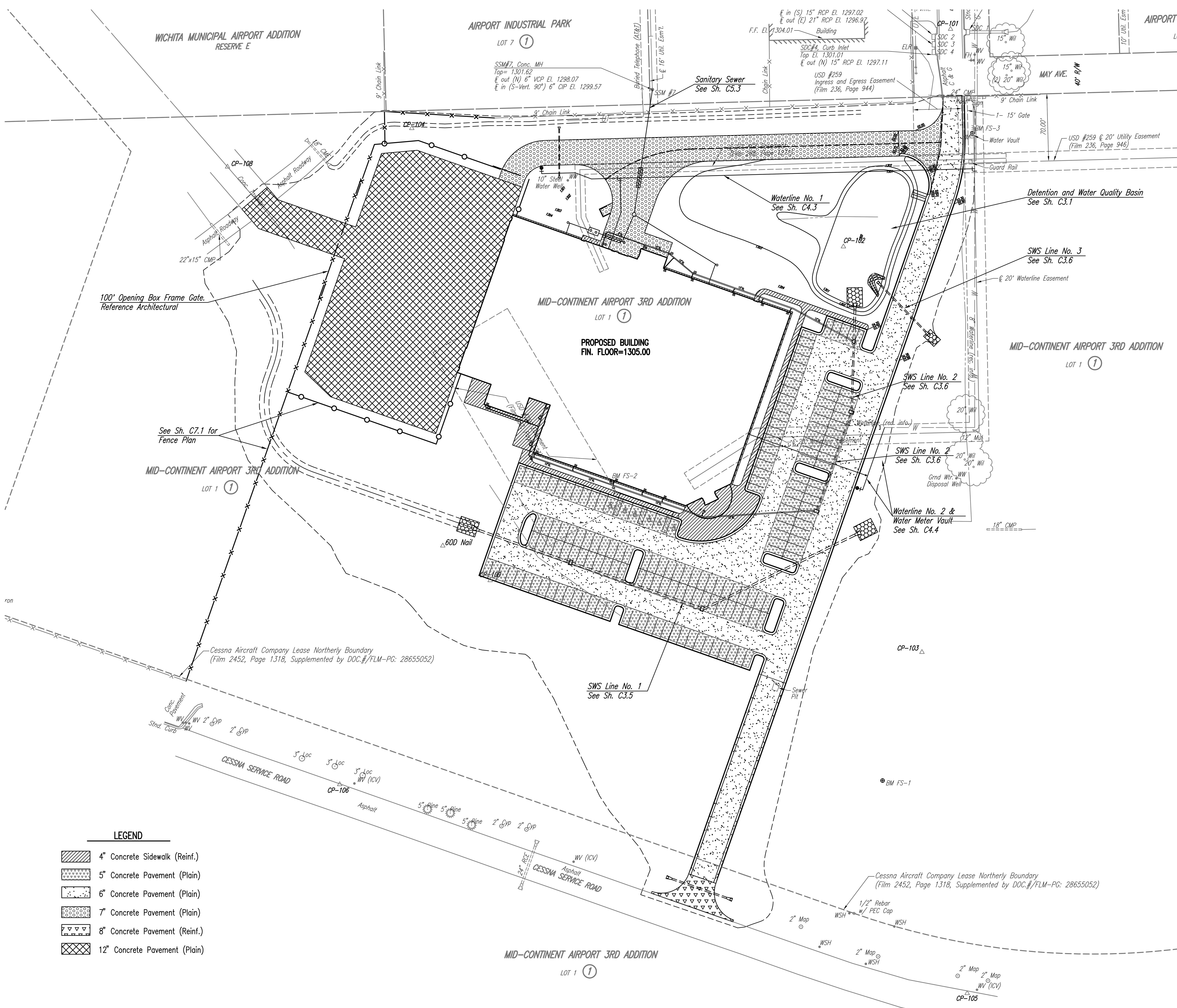
SHEET NUMBER
C1.1
SITE SURVEY & CONTROL



SCALE:

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SEE SH. NO. C2.1 FOR DEMOLITION PLAN

GENERAL NOTES

1. ALL ELEVATIONS SHOWN ARE NAVD 88
2. 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	1(888)-482-4950
WESTAR ENERGY	383-8600
BLACK HILLS ENERGY	1(800)-527-0357
AT&T	1(800)-870-8390
CITY OF WICHITA WATER DEPARTMENT	262-6000
CITY OF WICHITA SEWER MAINTENANCE	262-6000

3. THE CONTRACTOR SHALL PROVIDE TO OWNER, ONE SET OF PLANS MARKED IN RED INK INDICATING ALL CHANGES MADE TO THE PROJECT INCLUDING ACTUAL LOCATIONS OF BURIED UTILITIES. ALL RECORD INFORMATION SHALL BE BASED ON PLAN CONTROL POINTS.
4. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO THEIR ORIGINAL CONDITION, UNLESS OTHERWISE NOTED ON THE PLANS.
5. WHERE THE IMPROVEMENTS CROSS EXISTING PUBLIC OR PRIVATE UTILITIES TO REMAIN, THE CONTRACTOR SHALL PROVIDE MATERIAL AND MEANS TO PROTECT AND SUPPORT SAID UTILITIES DURING CONSTRUCTION TO THE SATISFACTION OF THE OWNER.
6. THE CONTRACTOR SHALL GIVE ALL OWNERS AND/OR TENANTS OF PROPERTY ABUTTING THIS PROJECT A MINIMUM OF TEN DAYS ADVANCE NOTICE PRIOR TO THE START OF CONSTRUCTION.
7. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED UTILITY SERVICE TO ADJACENT FACILITIES DURING CONSTRUCTION.
8. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL VALVE BOXES AND MANHOLES.
9. THE CONTRACTOR SHALL EXPOSE AND VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF EXISTING UTILITIES TO REMAIN THAT ARE WITHIN THE LIMITS OF CONSTRUCTION. THE UTILITY LOCATES SHALL BE PERFORMED PRIOR TO THE START OF CONSTRUCTION AND ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
10. WRITTEN REQUEST TO THE OWNER WILL BE REQUIRED 14 CALENDAR DAYS PRIOR TO A SCHEDULED UTILITY OUTAGE. THE CITY OF WICHITA & THE WICHITA FIRE DEPARTMENT MUST BE NOTIFIED OF ANY FIRE HYDRANTS OR WATER MAINS TAKEN OUT OF SERVICE.
11. THE SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AS INDICATED ON THE GRADING PLAN. UNDER NO CIRCUMSTANCES WILL PONDING BE ALLOWED. THE CONTRACTOR SHALL REPORT ANY GRADING DISCREPANCIES TO THE ENGINEER FOR RESOLUTION.
12. THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS PRIOR TO CONSTRUCTION.
13. CONTRACTOR SHALL USE EXTREME CAUTION DURING DEMOLITION TO PROTECT ALL UTILITIES, LANDSCAPING, TREES, ETC. WHICH ARE TO BE SAVED.
14. DEMOLISHED MATERIALS ARE TO BE REMOVED OFF SITE UNLESS OTHERWISE NOTED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY OR LEASE IRONS. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY IRONS WHICH ARE DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
16. THE CONTRACTOR SHALL ADJUST ALL MANHOLES, INLETS, VALVE BOXES, METERS, ETC. TO MATCH NEW GRADES.
17. ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH CITY OF WICHITA STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS.

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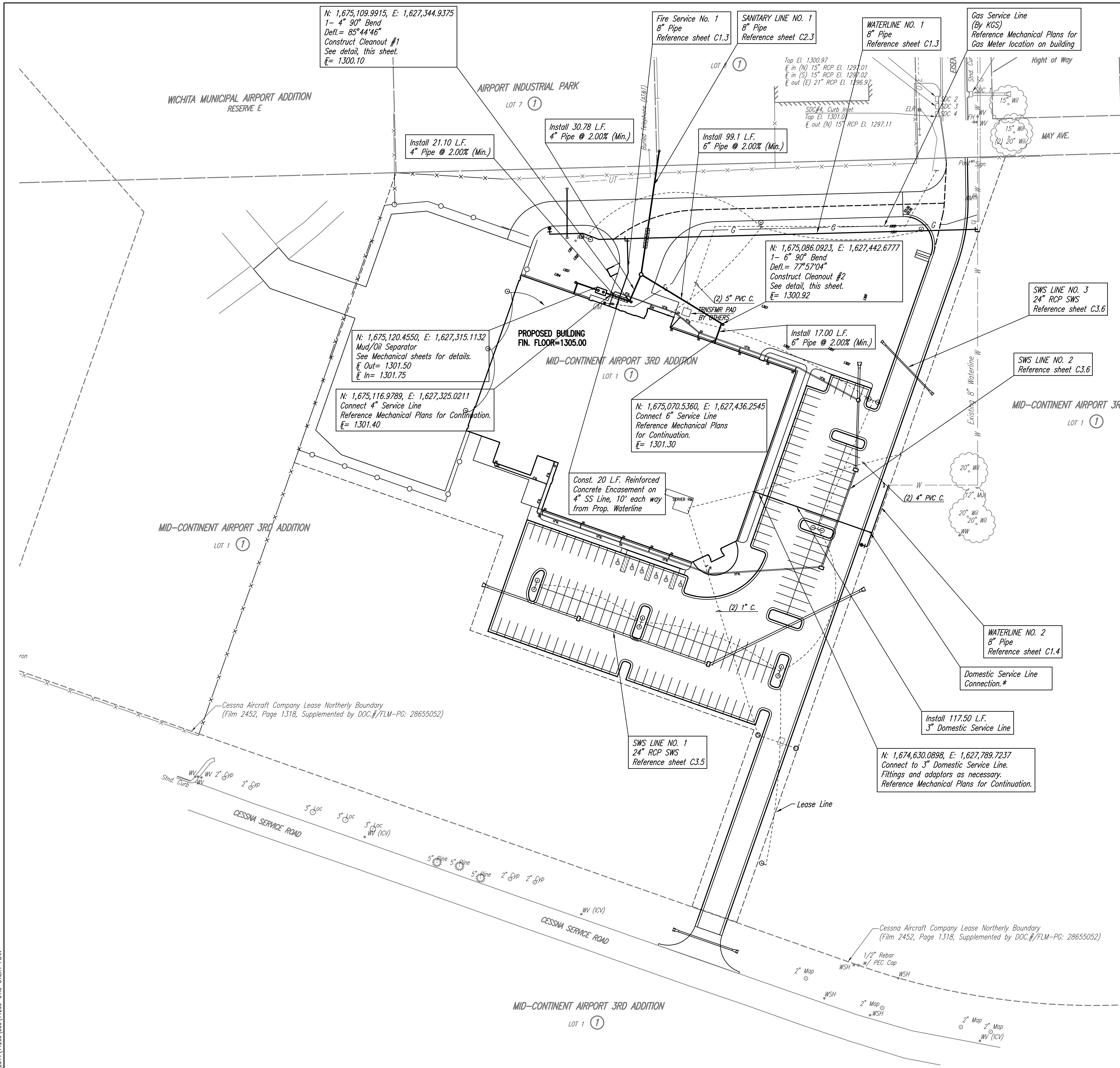
SHEET NUMBER
C1.2
SITE PLAN



SCALE:

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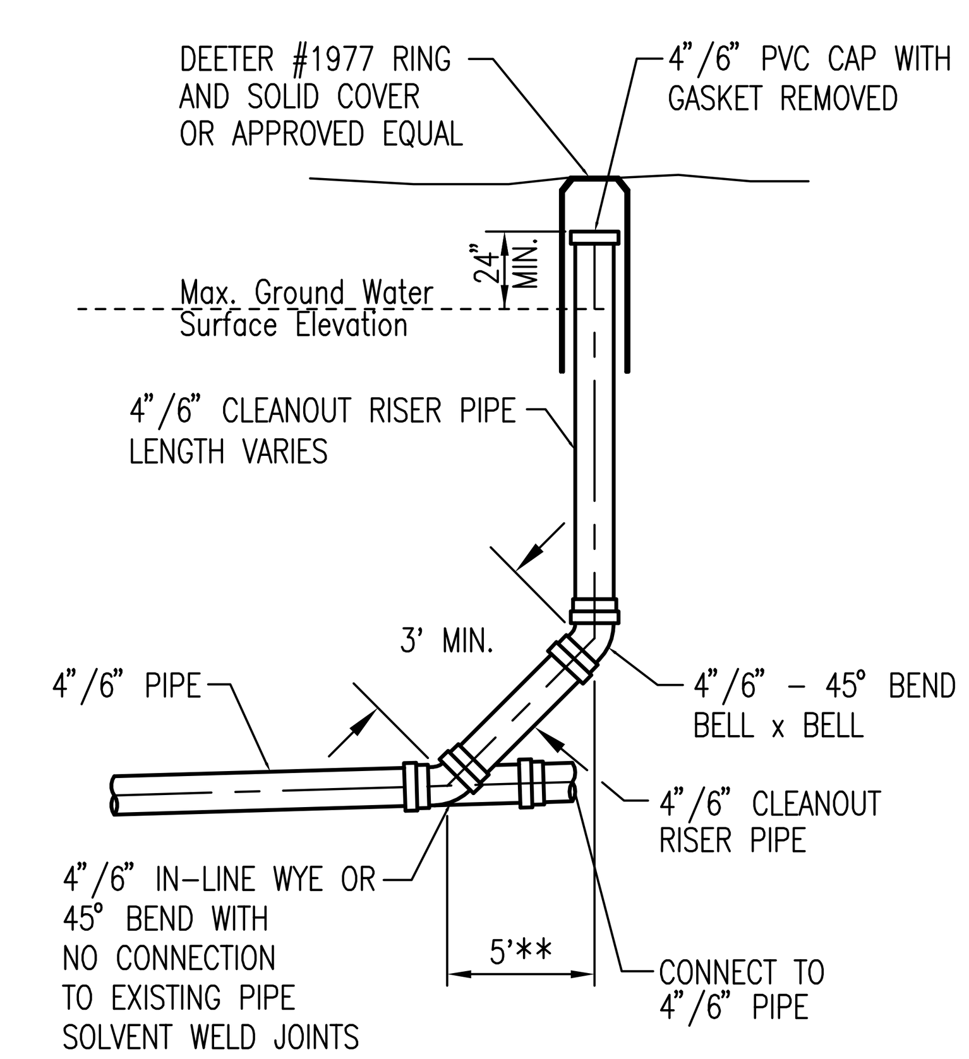
SEE SH. NO. C2.1 FOR DEMOLITION PLAN

* *The Contractor shall schedule with the City of Wichita Water Department to perform the following work for Domestic Service connection: Tap the Main, Install Service Line to the Meter, Set Water Meter and Meter Box. The Contractor shall reimburse the City of Wichita for all costs associated with this work.*



SANITARY SEWER 4"/6" CLEANOUT ASSEMBLY DETAIL

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Q:\2011\11269\000\11269-C1.3-UTILITY PLAN

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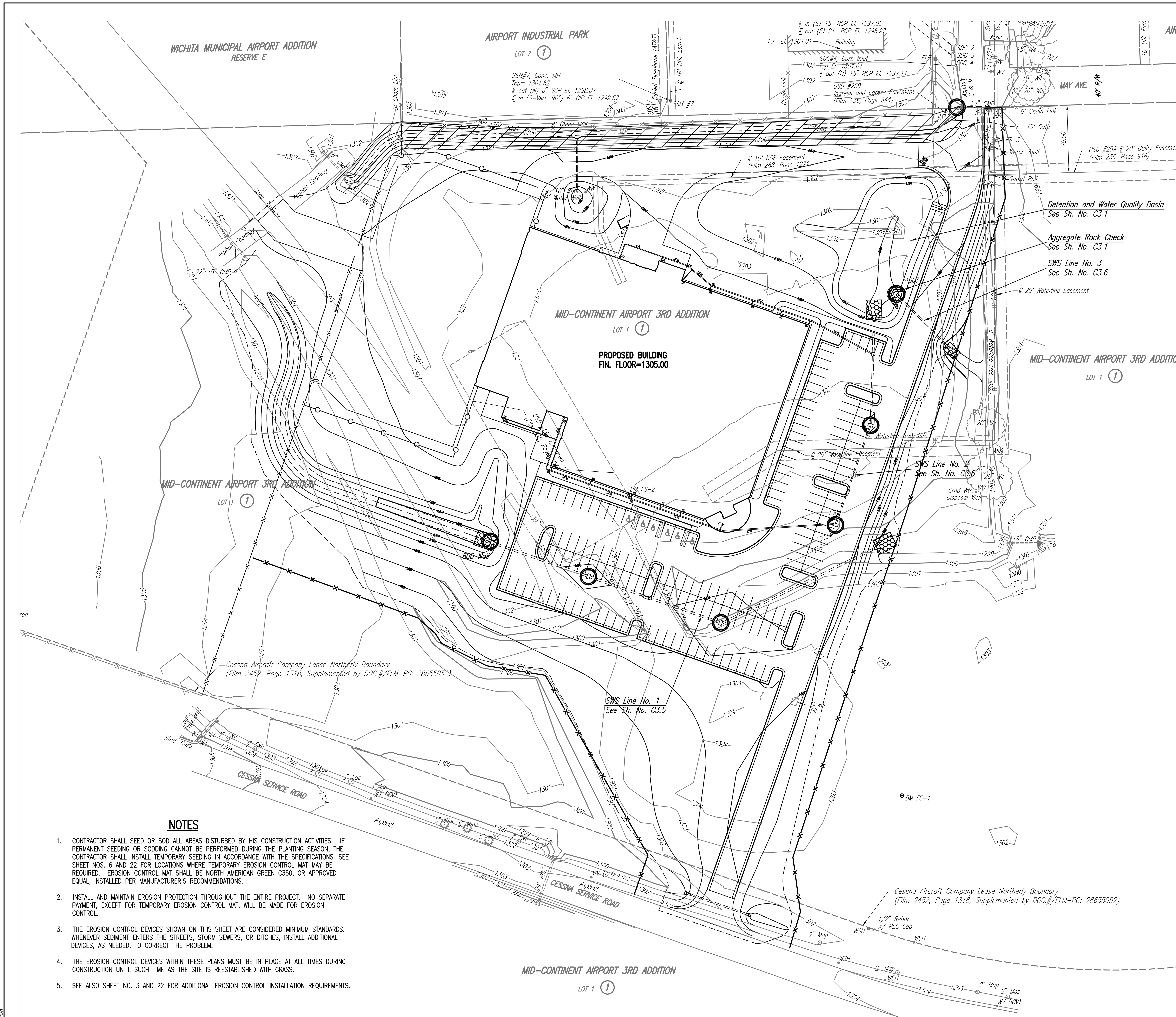
SHEET NUMBER
C1.3
UTILITY PLAN



SCALE:

0 50 100

LEGEND

(circle)	INLET PROTECTION
—x—	SILT FENCE BARRIER
(hatched)	INSTALL EROSION CONTROL MAT
(crosshatched)	LIGHT STONE RIPRAP

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. SEE SHEET NOS. 6 AND 22 FOR LOCATIONS WHERE TEMPORARY EROSION CONTROL MAT MAY BE REQUIRED. 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, EXCEPT FOR TEMPORARY EROSION CONTROL MAT, 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. SEE ALSO SHEET NO. 3 AND 22 FOR ADDITIONAL EROSION CONTROL INSTALLATION REQUIREMENTS.

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 Sheets C1.5–C1.7. 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. Erosion Control Mat shall be North American Green C350, or equal, installed per manufacturer's recommendations.

5. 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.

6. 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.

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

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

9. 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.

10. 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.

11. 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.

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

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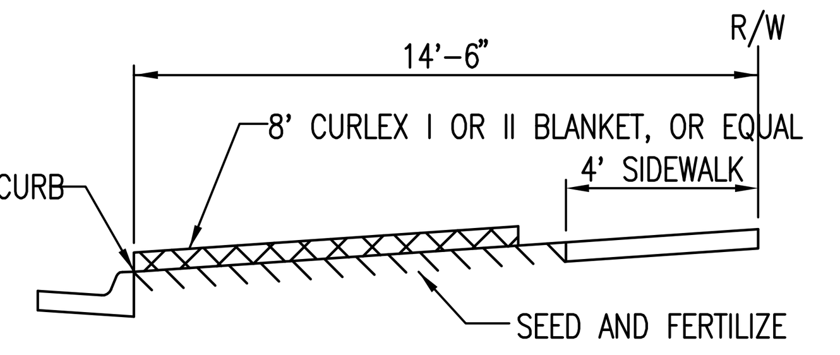
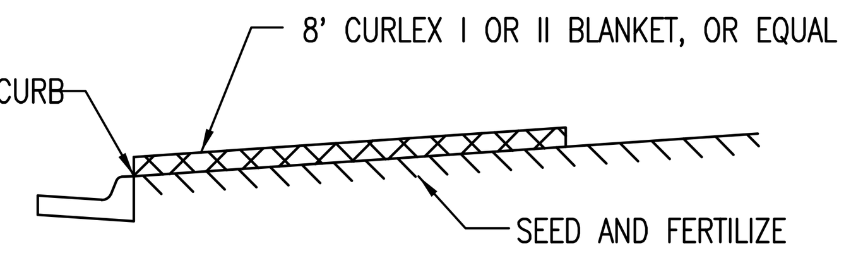
C1.4
BMP PLAN

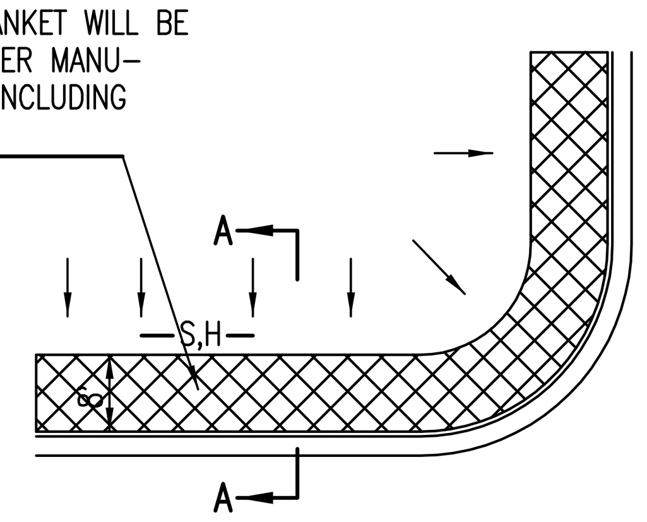


SECTION B-B

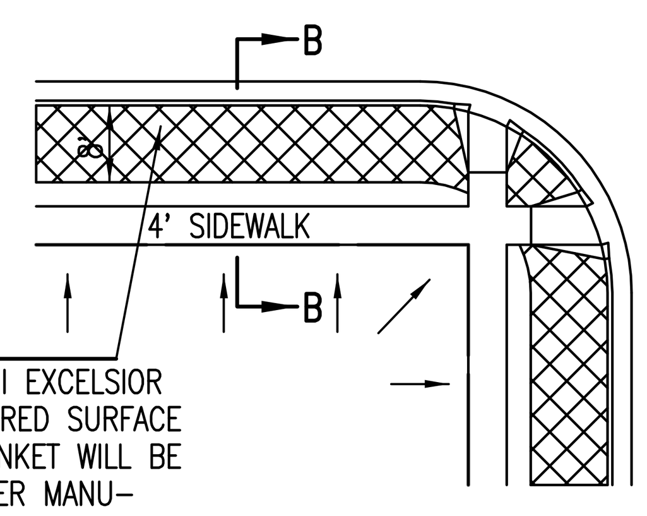


SECTION A-A

INSTALL 8' WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)



SOUTH STREET

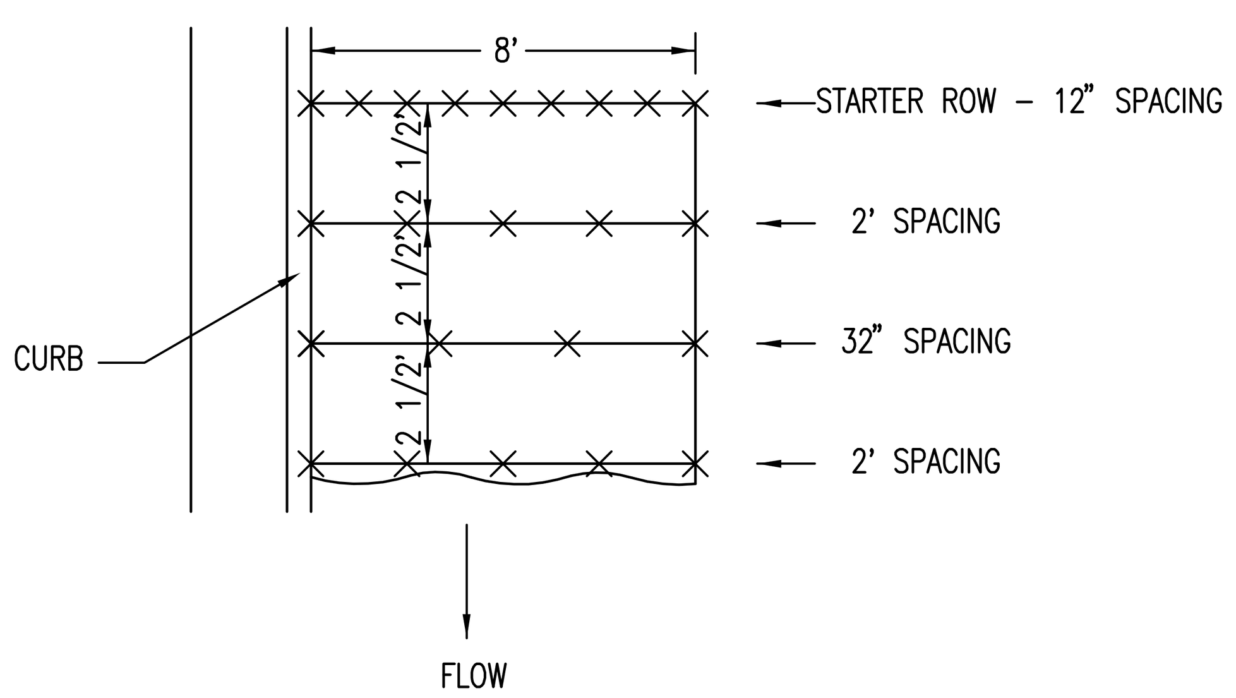


INSTALL 8' WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)

GENERAL NOTES

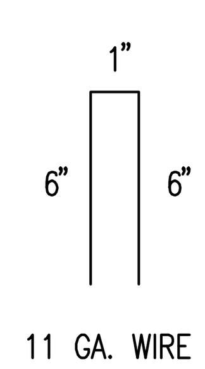
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE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

BACK OF CURB PROTECTION DETAIL



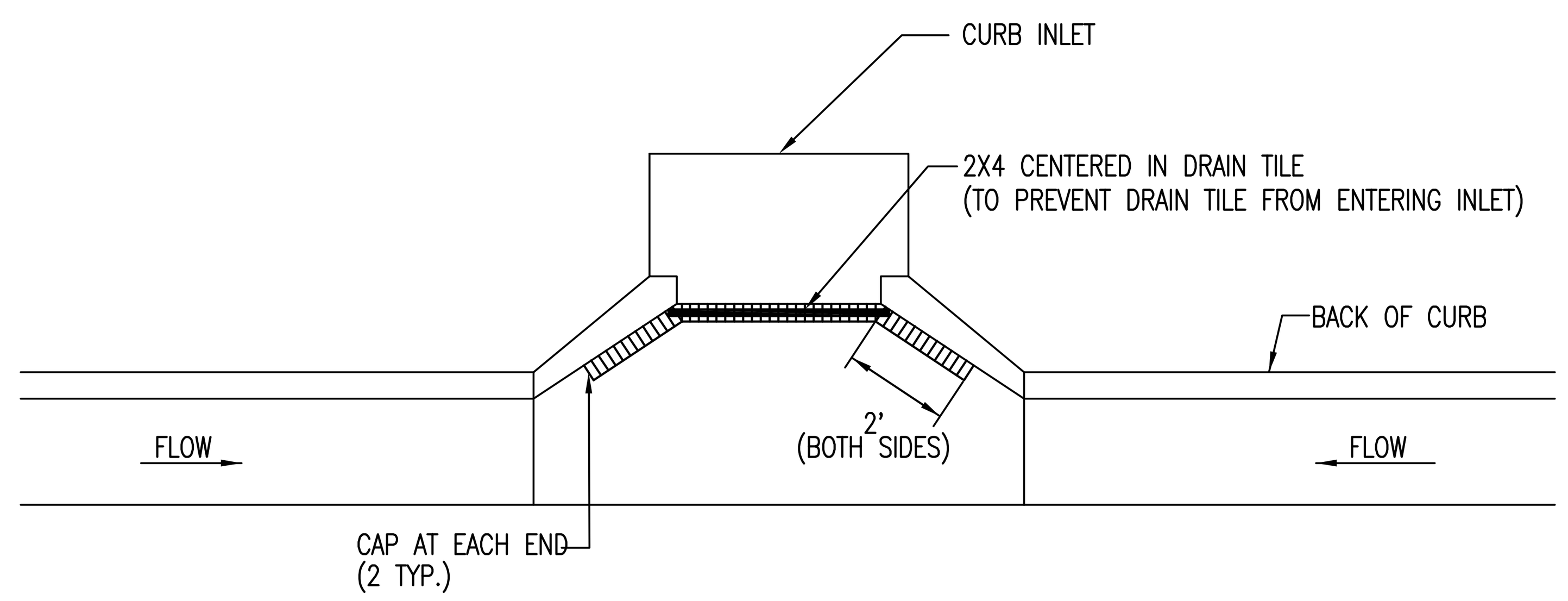
STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP



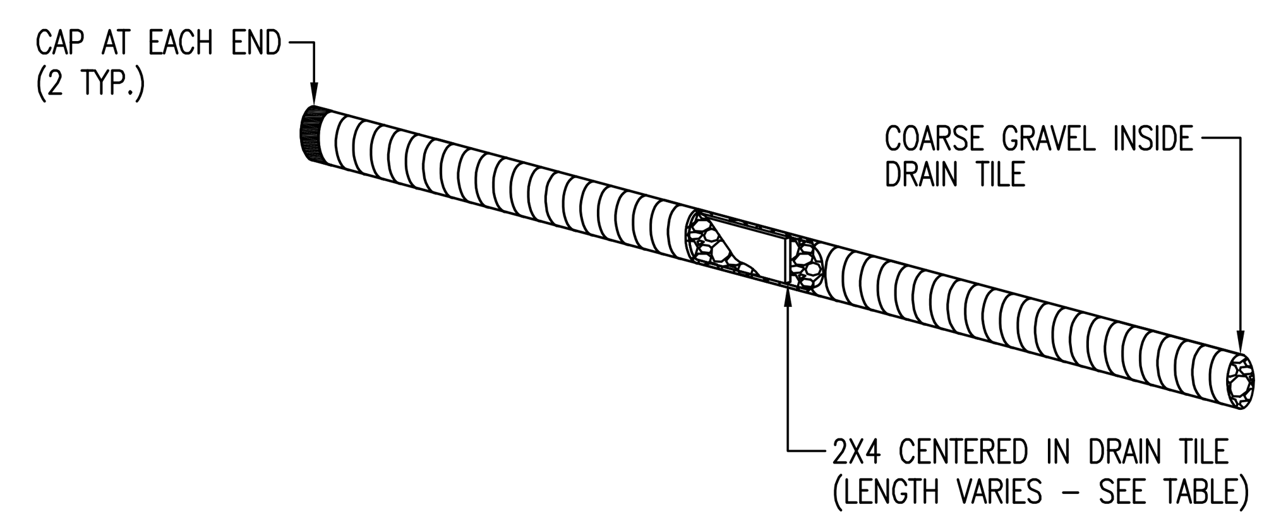
STAPLE

DETAILS FOR CURLEX I OR II BLANKETS



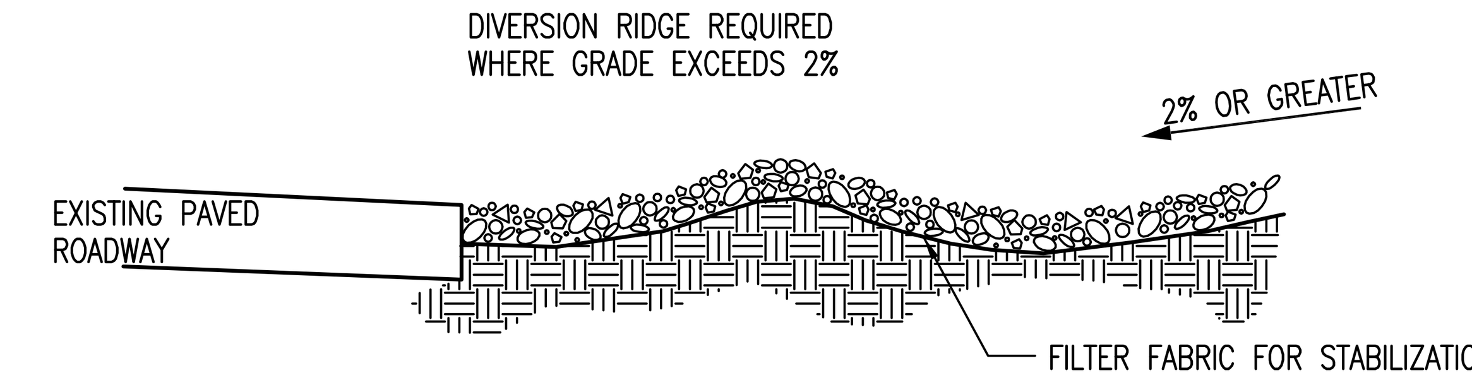
NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

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

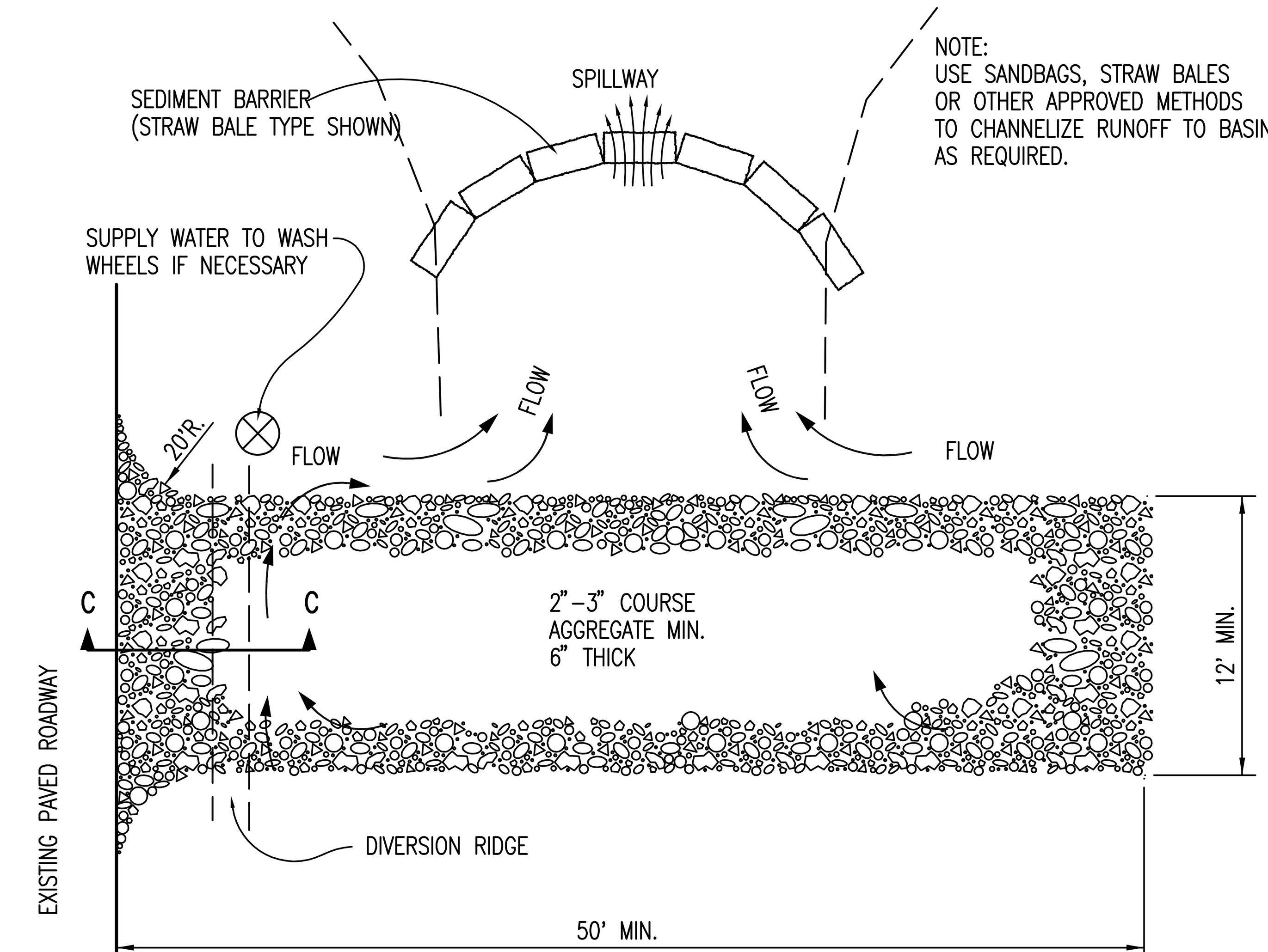


CURB INLET PROTECTION

4" PERFORATED PIPE W/ GRAVEL



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

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

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

PROJECT NUMBER | OCA NUMBER | DATE 11/2010

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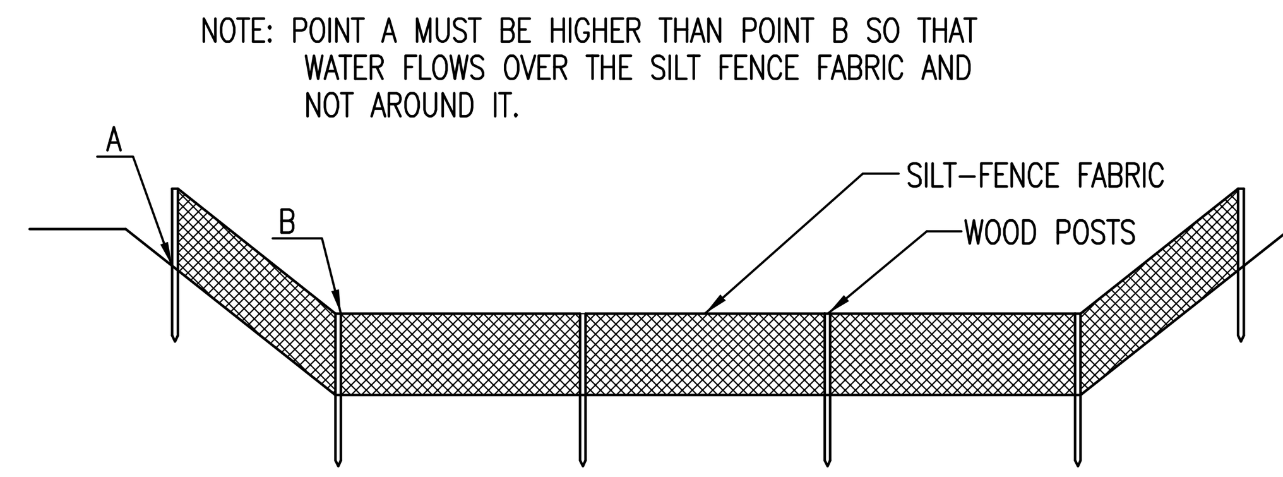
CONSULTING ENGINEERS

JOB NO: SJ1127
DRAWN BY: CSL
ISSUE DATE: 07.15.2011 - PERMIT
REVISIONS: # DATE

SHEET NUMBER
C1.5
SOIL EROSION BMP

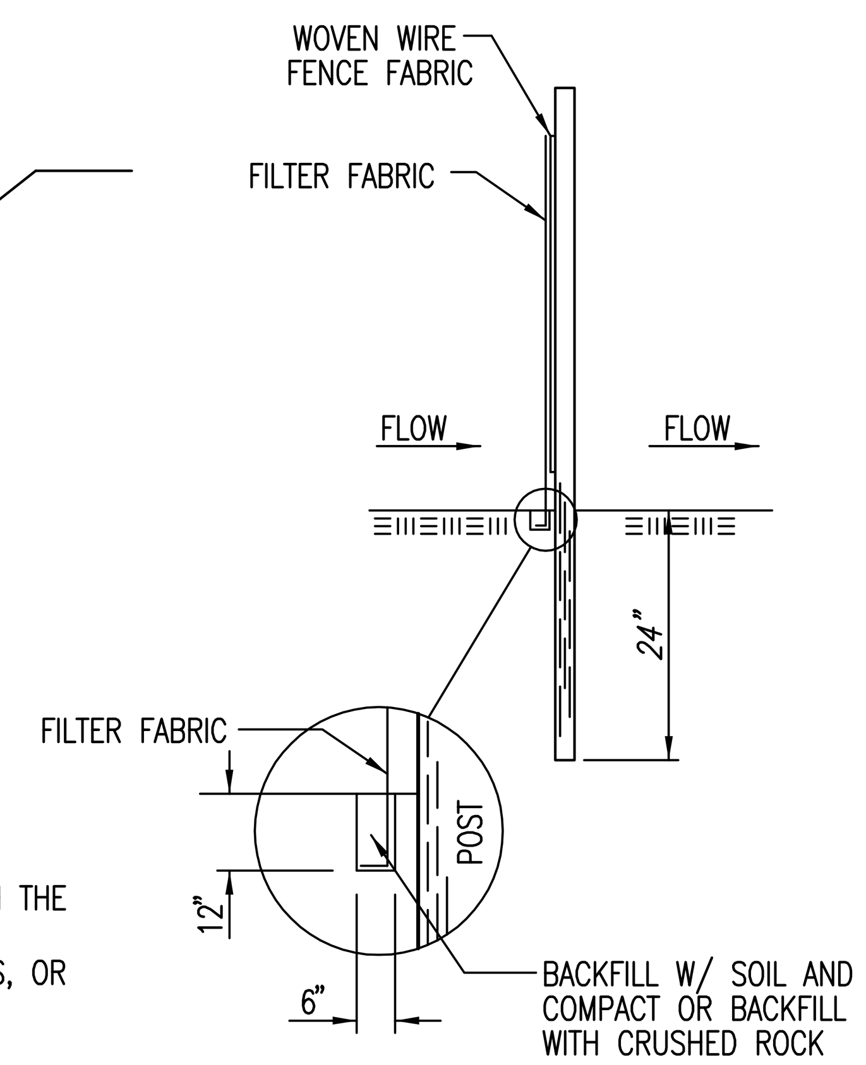
NOTE: POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE SILT FENCE FABRIC AND NOT AROUND IT.



ELEVATION

SILT FENCE DITCH CHECKS

(STREAM PROTECTION)



ANCHOR TRENCH DETAIL

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

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

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

PROPER INSTALLATION METHOD:

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

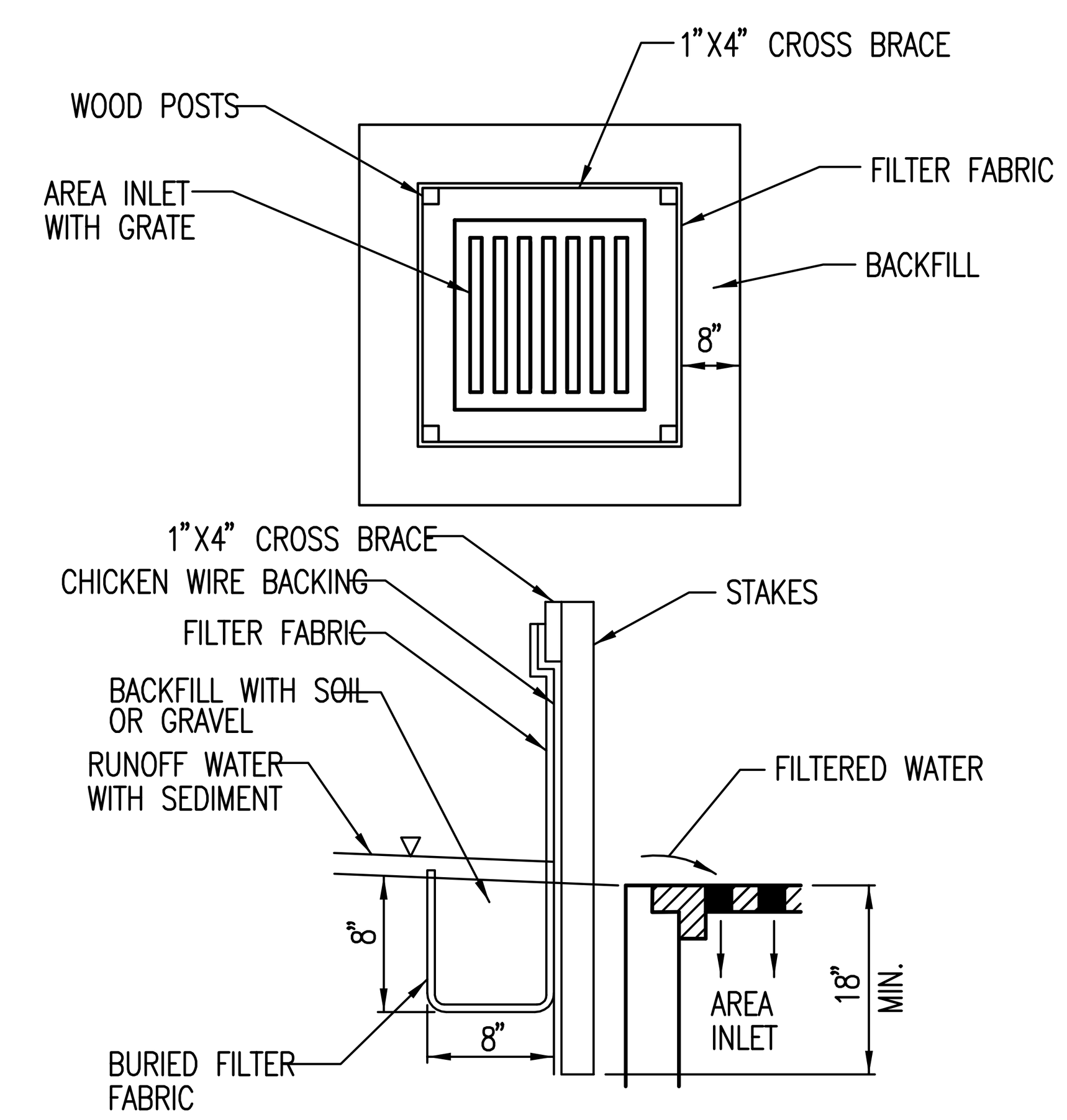
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

INSPECTION AND MAINTENANCE:

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

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



SILT FENCE BARRIERS FOR AREA INLETS

(INLET PROTECTION)

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

PROPER INSTALLATION METHOD:

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

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

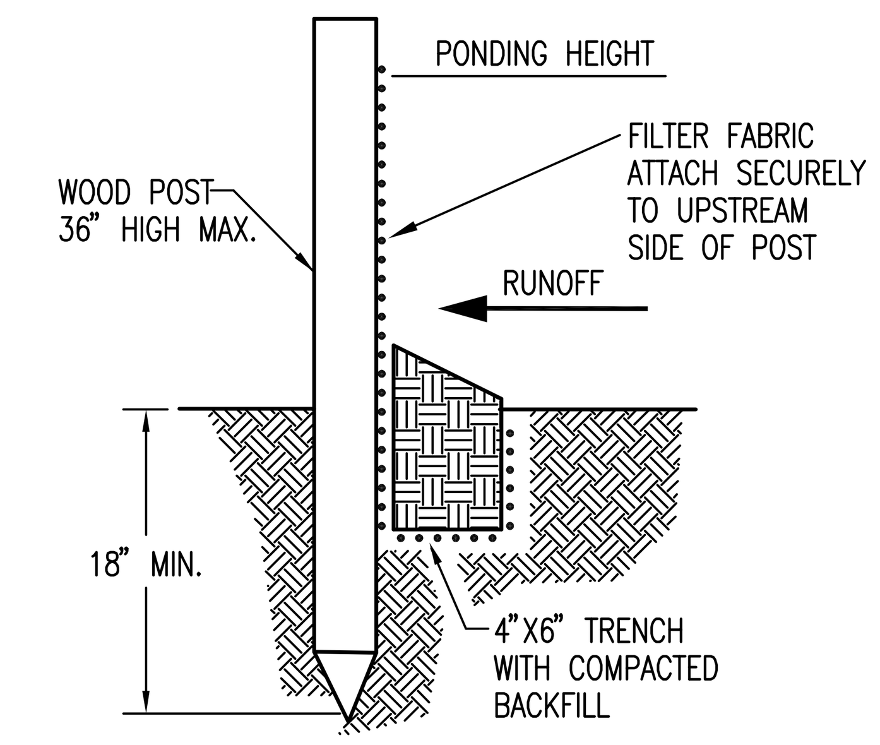
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

INSPECTION AND MAINTENANCE:

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

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



SILT FENCE BARRIERS

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

PROPER INSTALLATION METHOD:

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

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

INSPECTION AND MAINTENANCE:

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

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

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SILT FENCE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

PROJECT NUMBER	OCA NUMBER	DATE
		11/2010

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PROPOSED CESSNA MX FACILITY FOR:
FlightSafety international
WICHITA, KANSAS

JOB NO:
SJ1127

DRAWN BY:
CSL

ISSUE DATE:
07.15.2011 - PERMIT

REVISIONS:
#	DATE

SHEET NUMBER
C1.6
SOIL EROSION BMP

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Plot Scale 1:1 07-15-2011 3:30:30 PM by JDT
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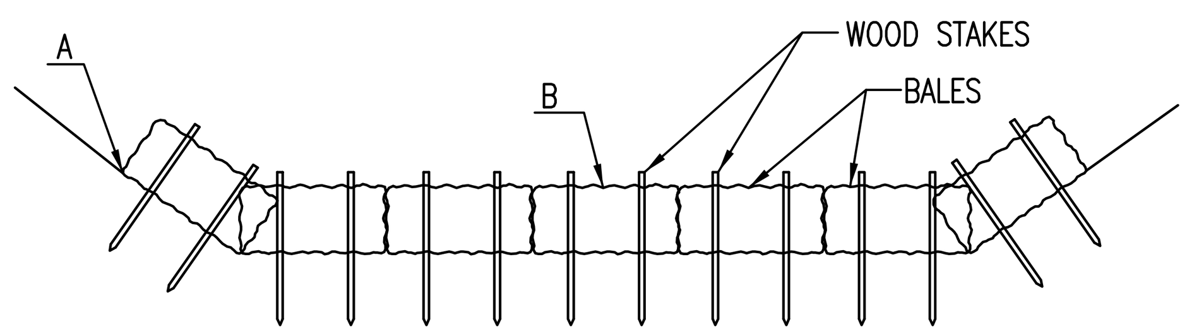
NOTE: POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE BALES AND NOT AROUND THEM.



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 CHECK SPACING

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

PROPER INSTALLATION METHOD:

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

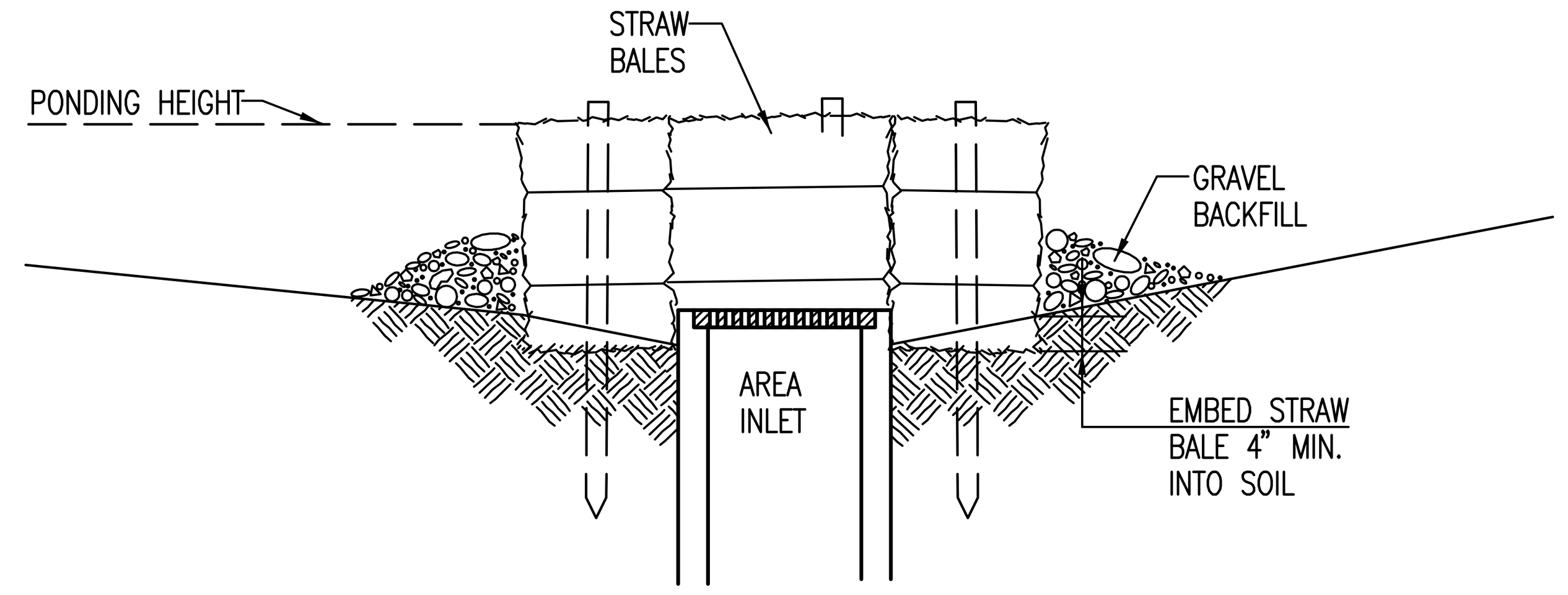
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

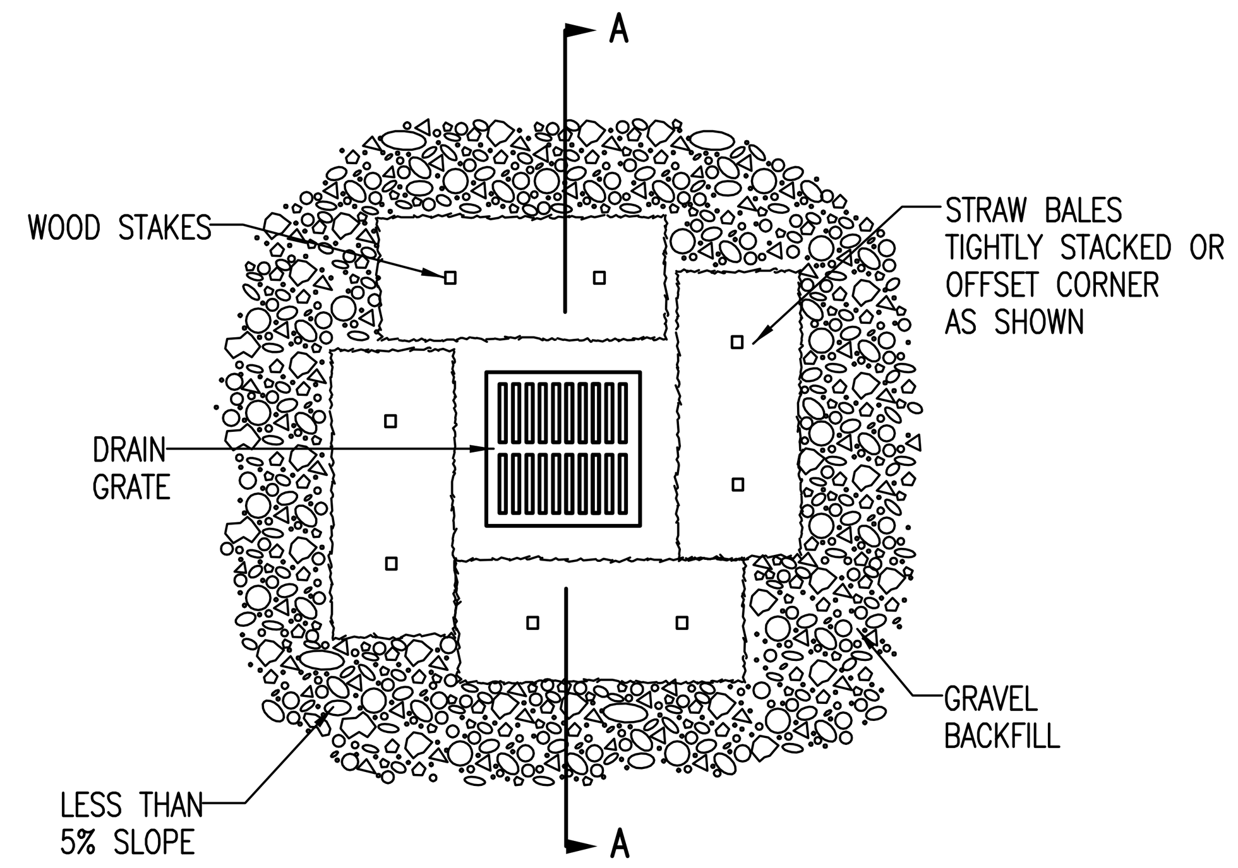
INSPECTION AND MAINTENANCE:

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

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



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS

(INLET PROTECTION)

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

PROPER INSTALLATION METHOD:

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

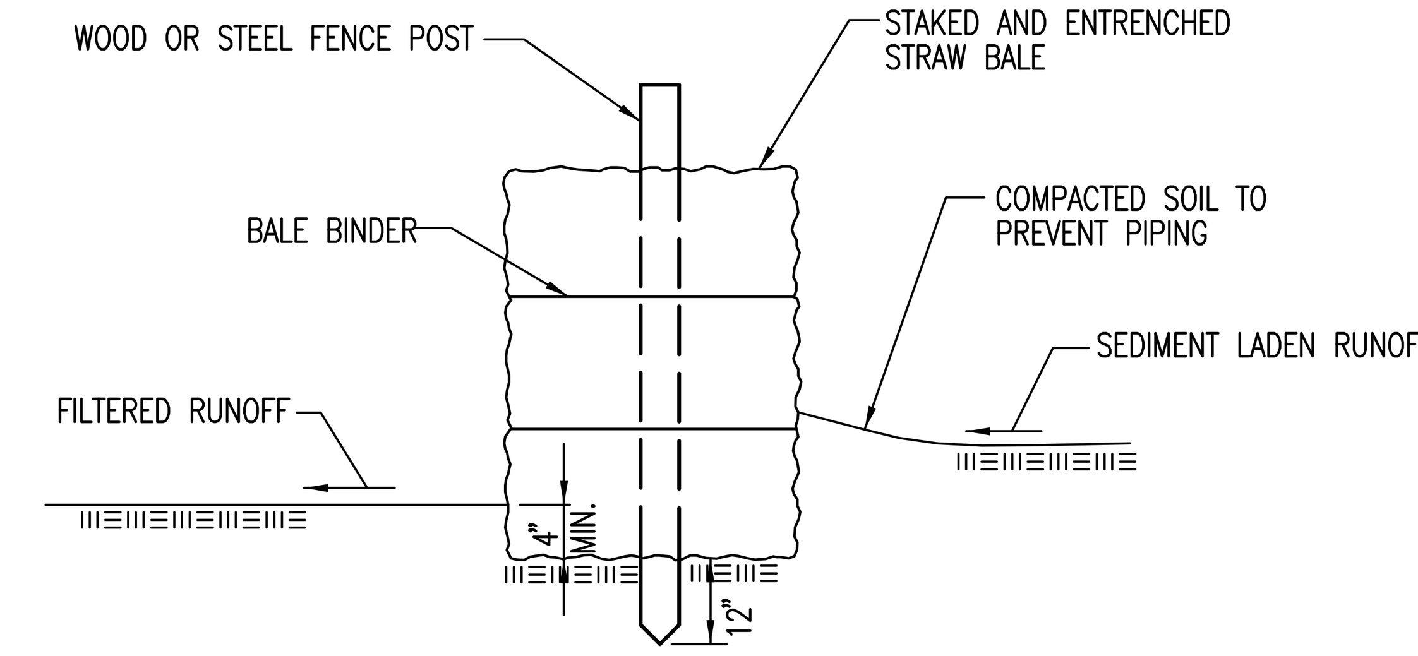
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

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

INSPECTION AND MAINTENANCE:

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

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



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

PROPER INSTALLATION METHOD:

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

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

INSPECTION AND MAINTENANCE:

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

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

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STRAW BALE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

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

DESIGN | DRAWN
SHEET

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316-262-2691 www.pec1.com

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STRUCTURAL: MCNEALY ENGINEERING 11457 OLDE CABIN ROAD, SUITE 350 ST LOUIS, MO 63141 C: MIKE KNAPP - 314.997.7310
MECHANICAL: MURPHY MECHANICAL 1233 NORTH PRICE ROAD ST LOUIS, MO 63132 C: MATT FOSTER - 314.997.6600
ELECTRICAL: INPWR 10640 DEME DRIVE SUITE M INDIANAPOLIS, IN 46236 C: DAVE HEDGE - 317.723.3375
PLUMBING: CENTRAL AIR CONDITIONING CO. 3435 WEST HARRY WICHITA, KS 67201 C: SCOTT BRANSCUM - 316.945.0797
FIRE PROTECTION: MCDANIEL COMPANY 4301 WEST HARRY WICHITA, KS 67277 C: MIKE MCGUIRE - 316.942.8325

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PROPOSED CESSNA MX FACILITY FOR:
FlightSafety international
WICHITA, KANSAS

JOB NO:
SJ1127

DRAWN BY:
CSL

ISSUE DATE:
07.15.2011 - PERMIT

REVISIONS:
DATE

SHEET NUMBER
C1.7
SOIL EROSION BMP

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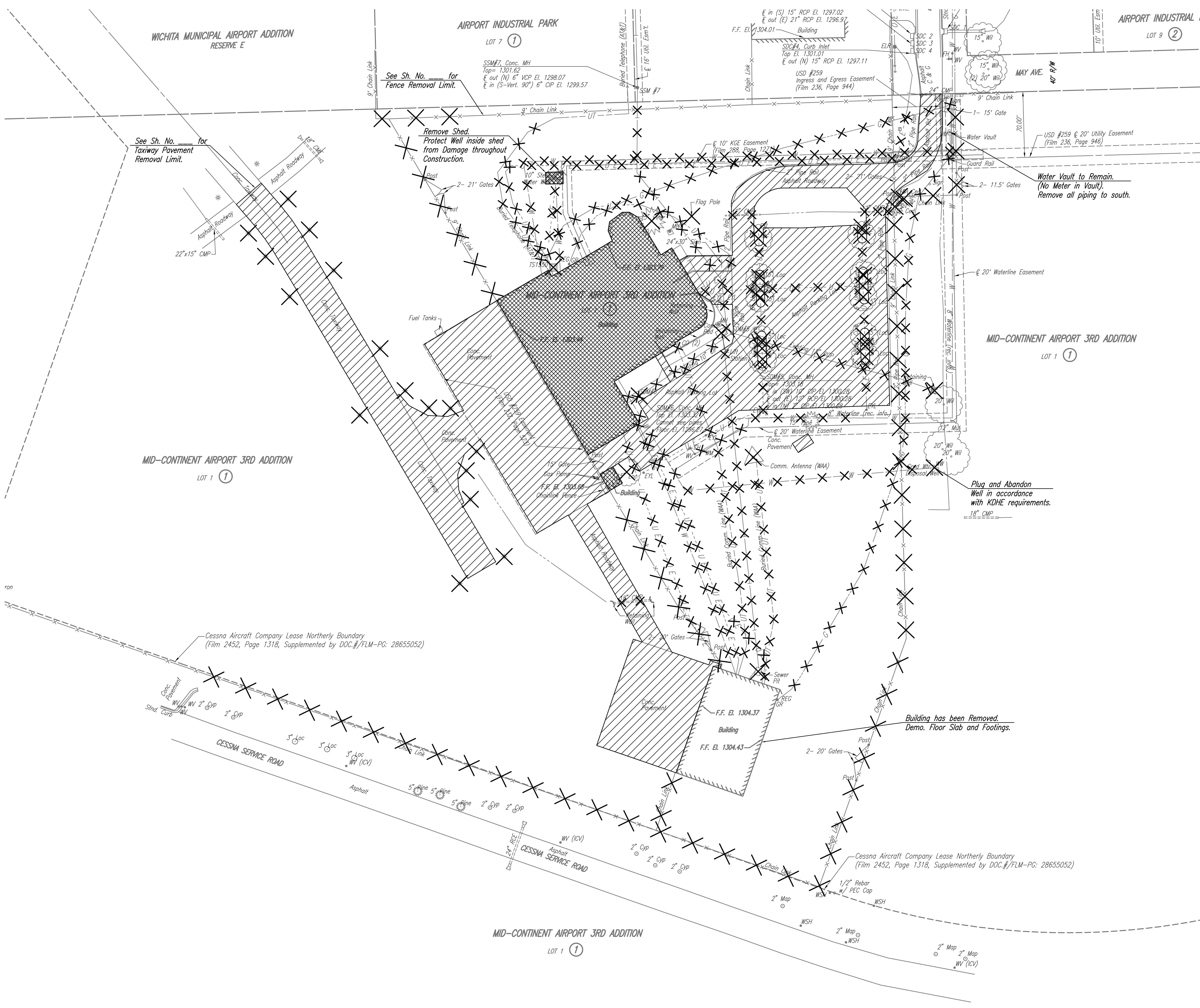

SCALE:
0 50 100

DEMOLITION LEGEND

- DEMO PAVEMENT AND SUBBASE
- DEMO BUILDING
- ABANDON AND/OR REMOVE UTILITY LINE
- DEMO/REMOVE ITEM

NOTES

1. BUILDING DEMOLITION SHALL INCLUDE REMOVAL OF ALL FOOTINGS AND FOUNDATIONS.
2. COORDINATE WITH UTILITY OWNERS BEFORE REMOVAL OF UTILITY LINES.
3. TREE REMOVAL SHALL INCLUDE GRUBBING OF COMPLETE ROOT BALL.
4. REMOVAL OF SANITARY LIFT STATIONS SHALL INCLUDE COMPLETE REMOVAL OF WET WELL/MANHOLE.
5. ALL DEMOLITION MATERIALS, EXCEPT 8' CHAIN LINK FENCE FABRIC, SHALL BE REMOVED FROM AIRPORT PROPERTY. FENCE FABRIC IN GOOD CONDITION SHALL BE ROLLED AND DELIVERED TO THE AIRPORT SOUTH STORAGE YARD OFF OF K-42.
6. EDGE LIGHTS TO BE REMOVED IN GOOD CONDITION FOR WAA USE.

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10640 DEME DRIVE SUITE M
INDIANAPOLIS, IN 46236
C: DAVE HEDGE - 317.723.3375

PLUMBING: CENTRAL AIR CONDITIONING CO.
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FIRE PROTECTION: MCDANIEL COMPANY
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C: MIKE MCGUIRE - 316.942.8325

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PROPOSED CESSNA MX FACILITY FOR:

FlightSafety international

WICHITA, KANSAS

JOB NO: SJ1127

DRAWN BY:

ISSUE DATE: 07.15.2011 - PERMIT

REVISIONS:

#	DATE

SHEET NUMBER
C2.1
DEMO PLAN

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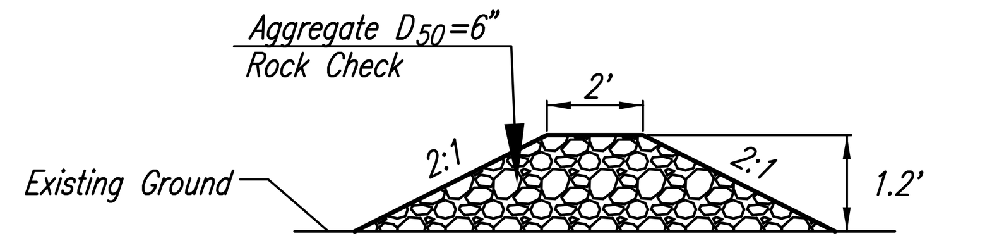
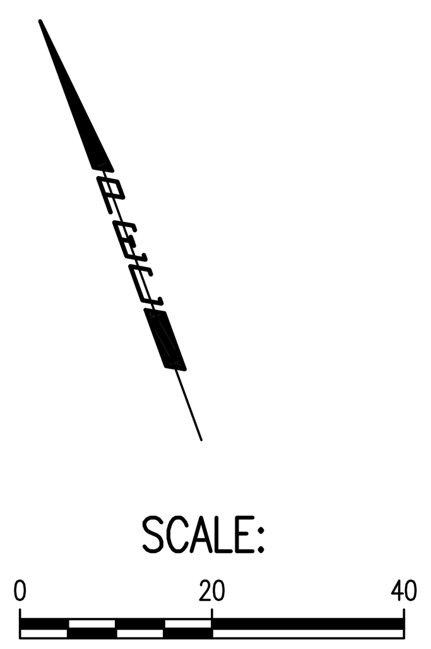


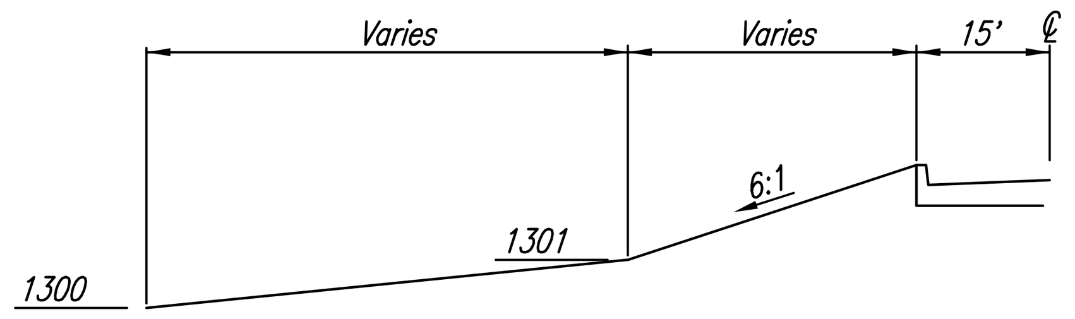
AGGREGATE ROCK CHECK DETAIL
(TYPICAL SECTION)

NOTES

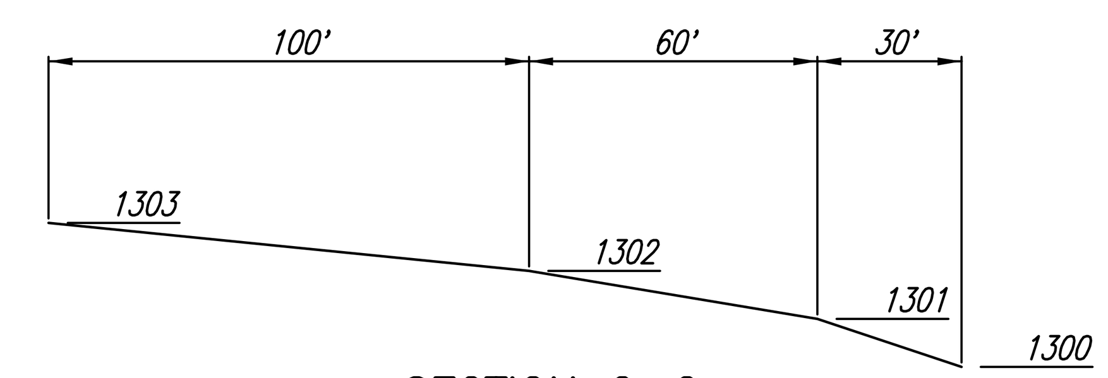
MATERIALS FOR AGGREGATE ROCK CHECK SHALL BE IN ACCORDANCE WITH SUBSECTION 1114 OF STANDARD SPECIFICATIONS FOR STATE ROAD AND BRIDGE CONSTRUCTION, KANSAS DEPARTMENT OF TRANSPORTATION, 2007 EDITION.



SEE SHEET NO. C3.4 FOR SECTION B–B



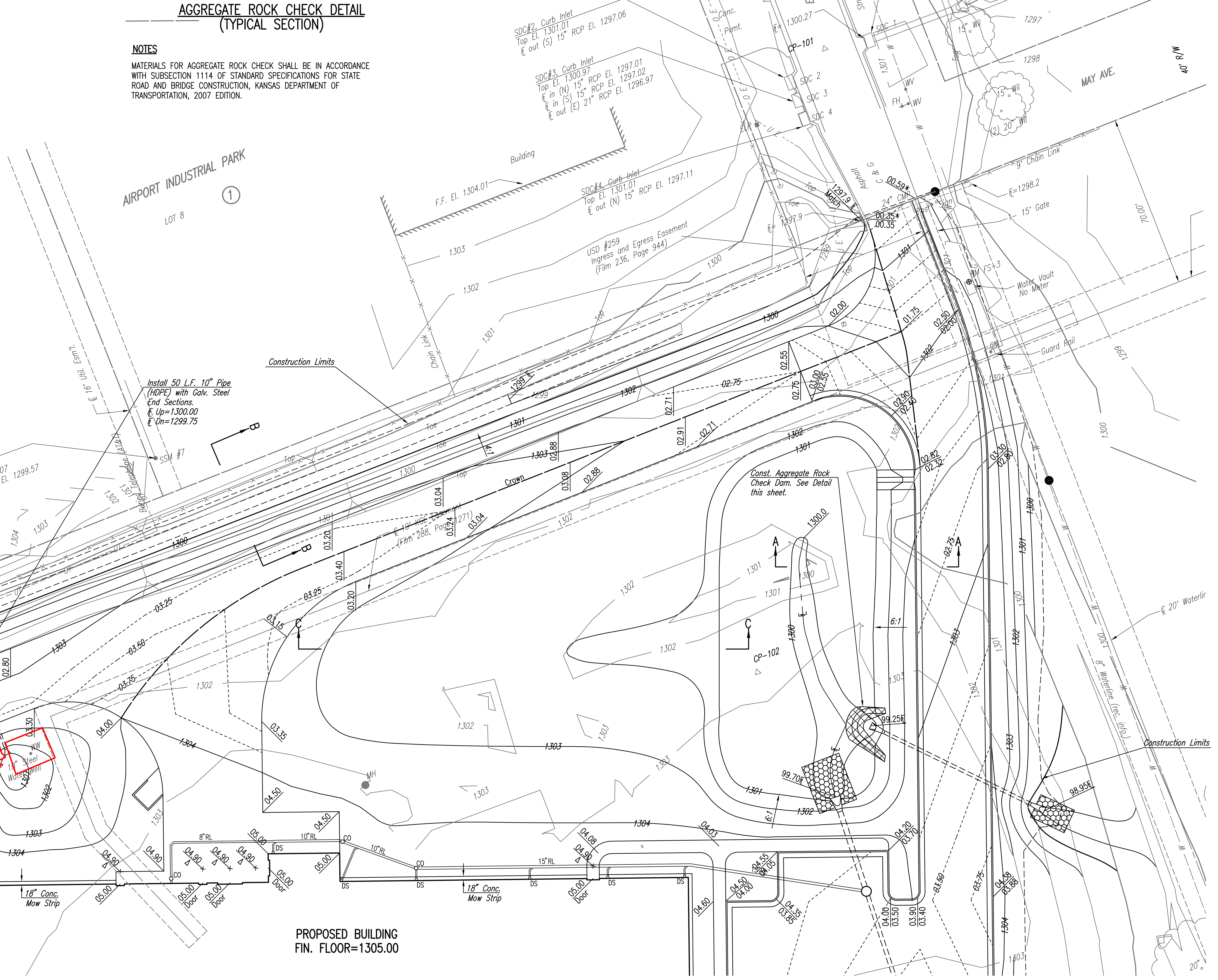
SECTION A–A



SECTION C–C

DETENTION BASIN STAGE/STORAGE	
Elevation	Area (AC)
1300	0.03
1301	0.20
1302	0.27
1303	0.62

* Elevations in NAVD 88
DHW = 1302.4



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FIRE PROTECTION: MCDANIEL COMPANY
4301 WEST HARRY
WICHITA, KS 67277
C: MIKE MCGUIRE - 316.942.8325

JOB NO:
SJ1127

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DRC/JT

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SHEET NUMBER
C3.1
NORTH GRADE PLAN

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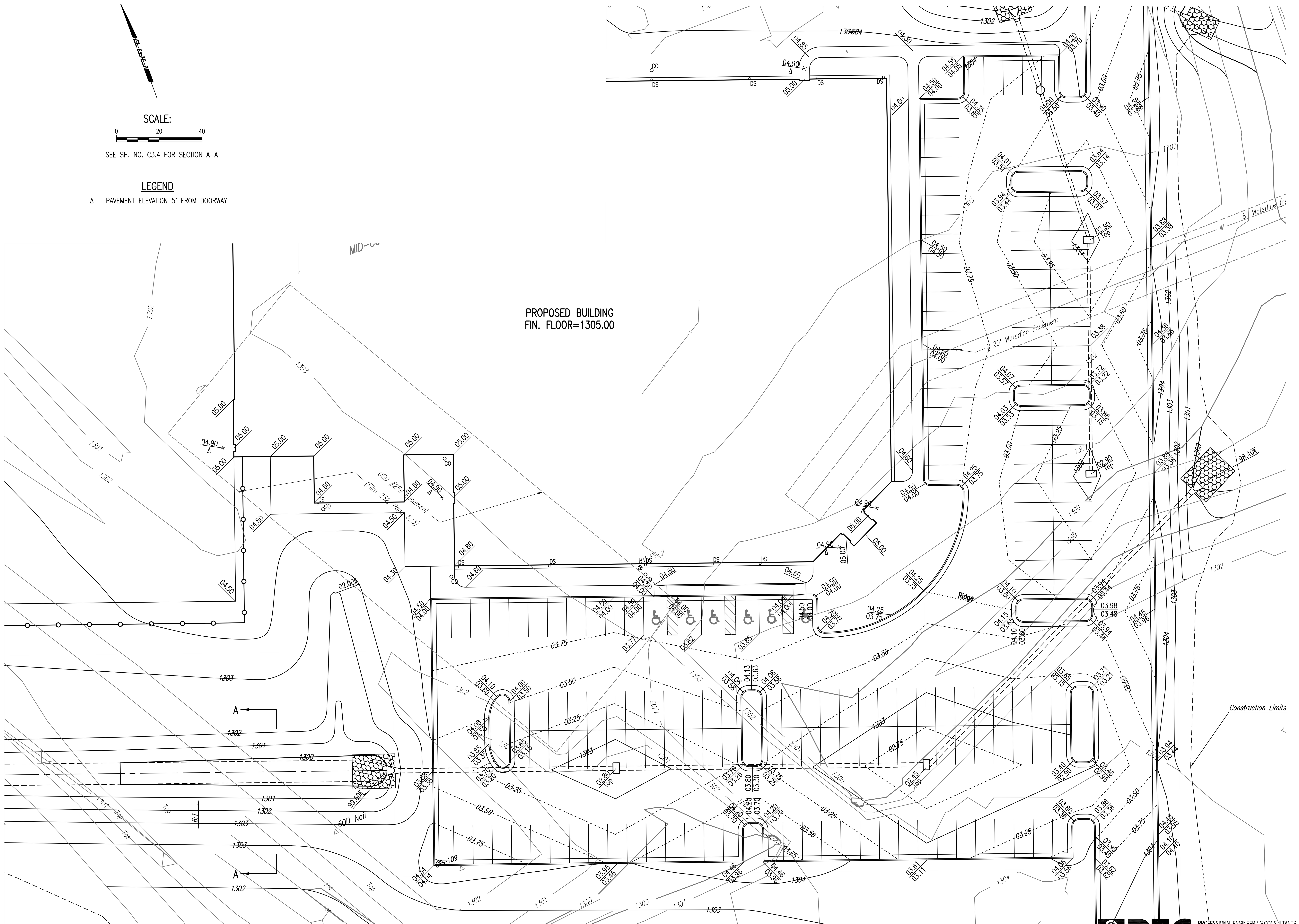

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SHEET NUMBER
C3.2
CENTRAL GRADE PLAN

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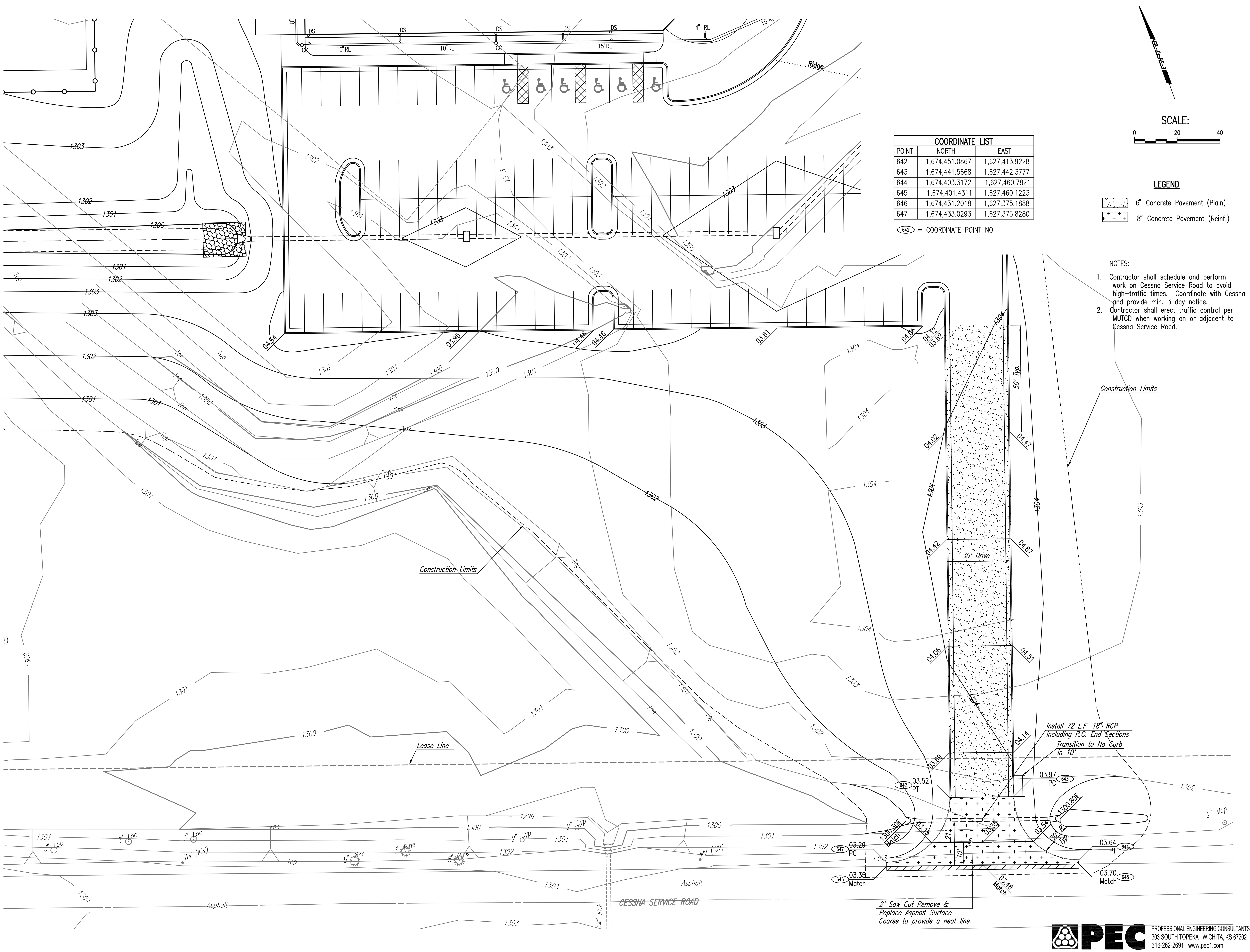

COORDINATE LIST		
POINT	NORTH	EAST
642	1,674,451.0867	1,627,413.9228
643	1,674,441.5668	1,627,442.3777
644	1,674,403.3172	1,627,460.7821
645	1,674,401.4311	1,627,460.1223
646	1,674,431.2018	1,627,375.1888
647	1,674,433.0293	1,627,375.8280

(642) = COORDINATE POINT NO.

SCALE:
0 20 40

LEGEND

6" Concrete Pavement (Plain)
8" Concrete Pavement (Reinf.)

NOTES:

1. Contractor shall schedule and perform work on Cessna Service Road to avoid high-traffic times. Coordinate with Cessna and provide min. 3 day notice.
2. Contractor shall erect traffic control per MUTCD when working on or adjacent to Cessna Service Road.

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PLUMBING: CENTRAL AIR CONDITIONING CO.
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PROPOSED CESSNA MX FACILITY FOR:
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WICHITA, KANSAS

JOB NO: SJ1127
DRAWN BY:
ISSUE DATE: 07.15.2011 - PERMIT
REVISIONS: # DATE

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C3.3
SOUTH GRADE PLAN

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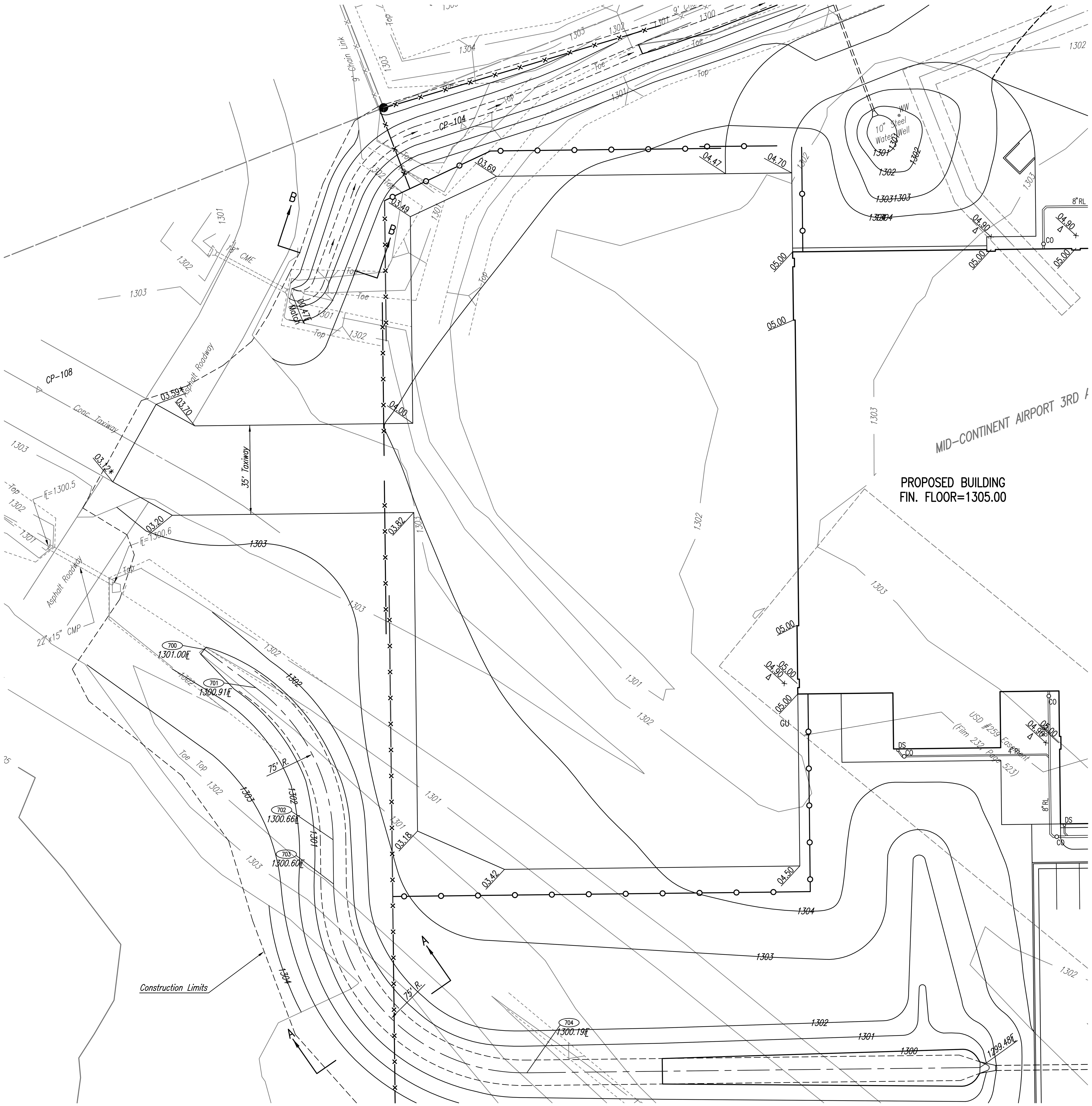
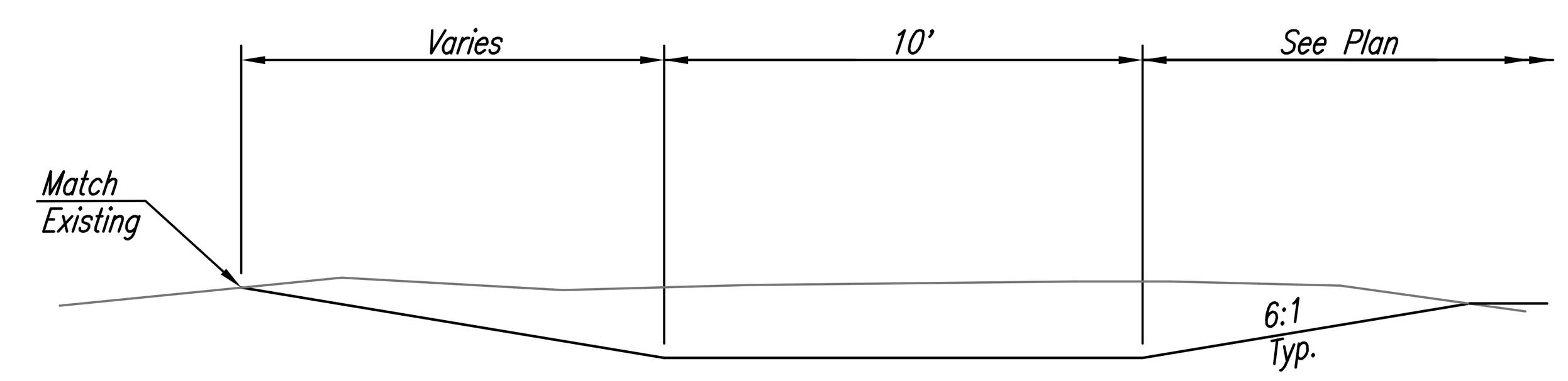


SCALE:

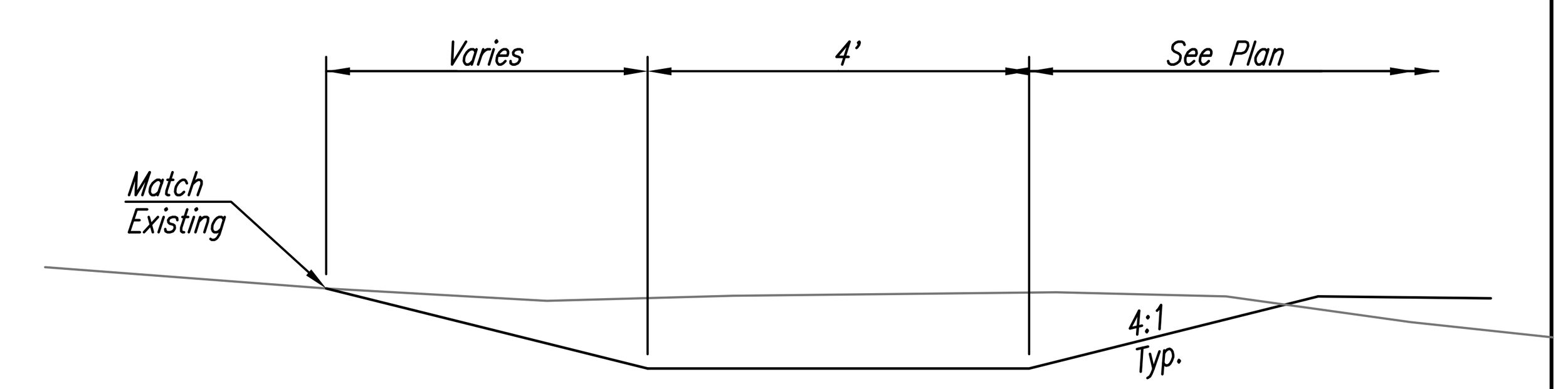
0 20 40

LEGEND

Δ – PAVEMENT ELEVATION 5' FROM DOORWAY



SECTION A–A



SECTION B–B

COORDINATE LIST		
POINT	NORTH	EAST
700	1,675,069.7634	1,626,960.1139
701	1,675,048.7349	1,626,973.9941
702	1,674,982.2879	1,626,982.0654
703	1,674,965.8970	1,626,976.3116
704	1,674,870.2846	1,627,022.2492

(700) = COORDINATE POINT NO.

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C: DAVE HEDGE - 317.723.3375

PLUMBING: CENTRAL AIR CONDITIONING CO.
3435 WEST HARRY
WICHITA, KS 67201
C: SCOTT BRANSCUM - 316.945.0797

FIRE PROTECTION: MCDANIEL COMPANY
4301 WEST HARRY
WICHITA, KS 67277
C: MIKE MCGUIRE - 316.942.8325

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FlightSafety international
WICHITA, KANSAS

JOB NO:
SJ1127

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ISSUE DATE:
07.15.2011 - PERMIT

REVISIONS: △
#	DATE

SHEET NUMBER
C3.4
APRON GRADE PLAN

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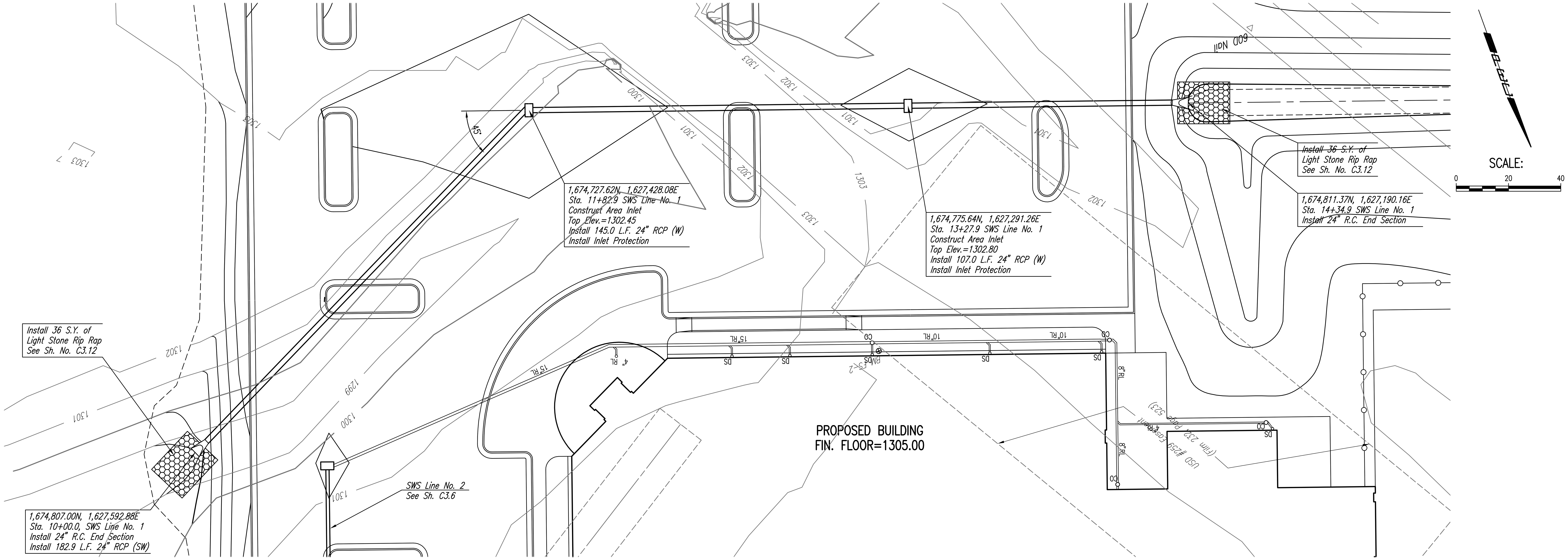

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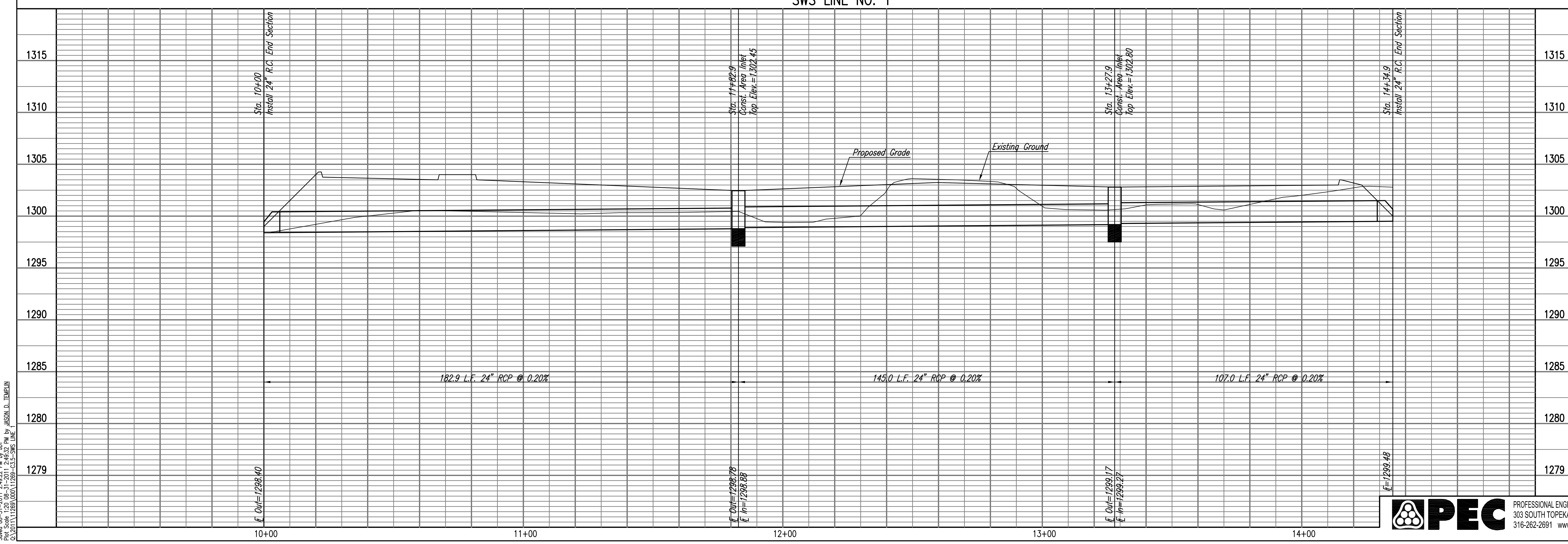

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C: DAR CRONK - 316.262.2691

STRUCTURAL: MCNEALY ENGINEERING
11457 OLDE CABIN ROAD, SUITE 350
ST LOUIS, MO 63141
C: MIKE KNAPP - 314.997.7310

MECHANICAL: MURPHY MECHANICAL
1233 NORTH PRICE ROAD
ST LOUIS, MO 63132
C: MATT FOSTER - 314.997.6600

ELECTRICAL: INPWR
10640 DEME DRIVE SUITE M
INDIANAPOLIS, IN 46236
C: DAVE HEDGE - 317.723.3375

PLUMBING: CENTRAL AIR CONDITIONING CO.
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WICHITA, KS 67201
C: SCOTT BRANSCUM - 316.945.0797

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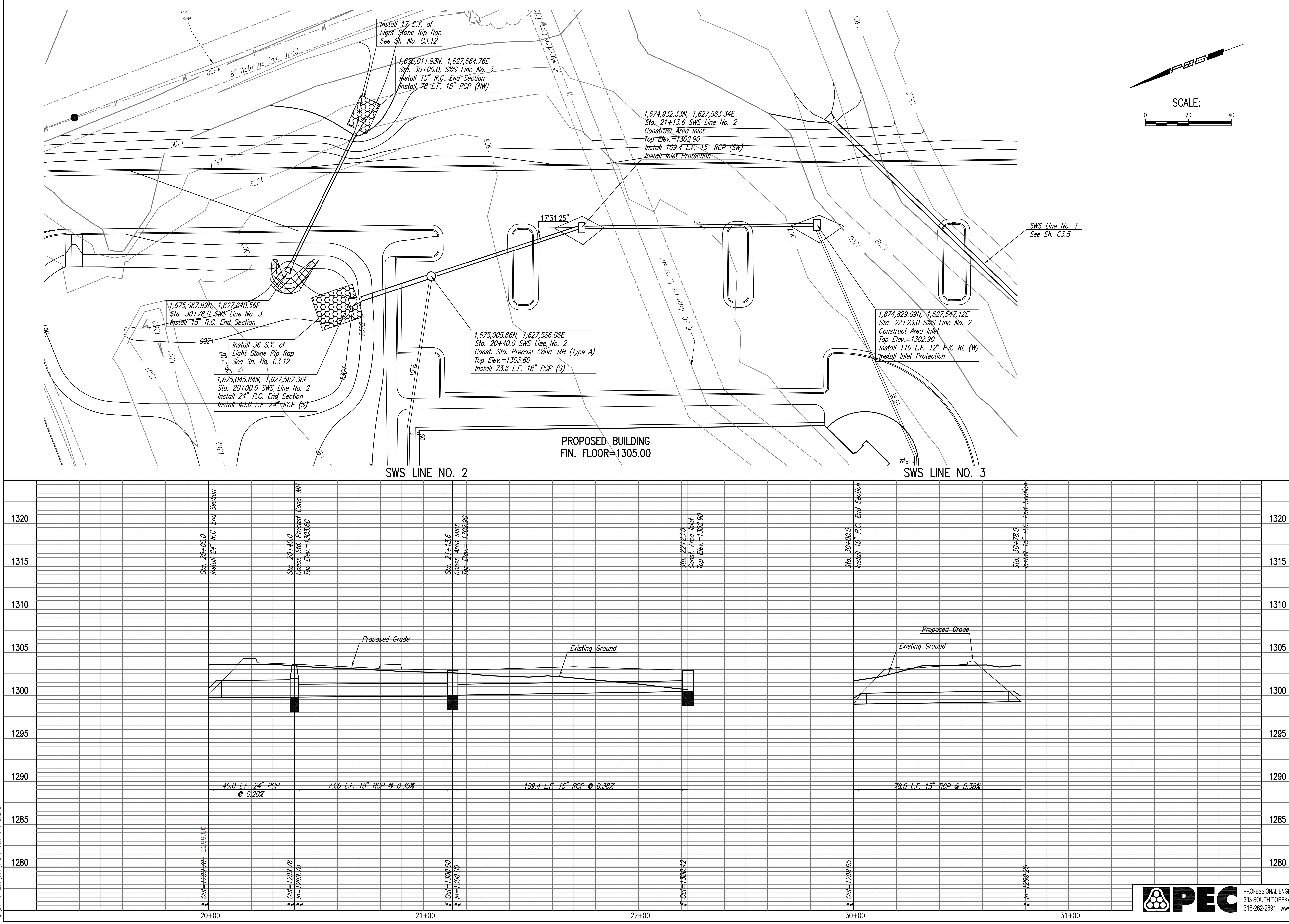
SHEET NUMBER
C3.5
SWS Line 1



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ISSUE DATE: 07.15.2011 - PERMIT
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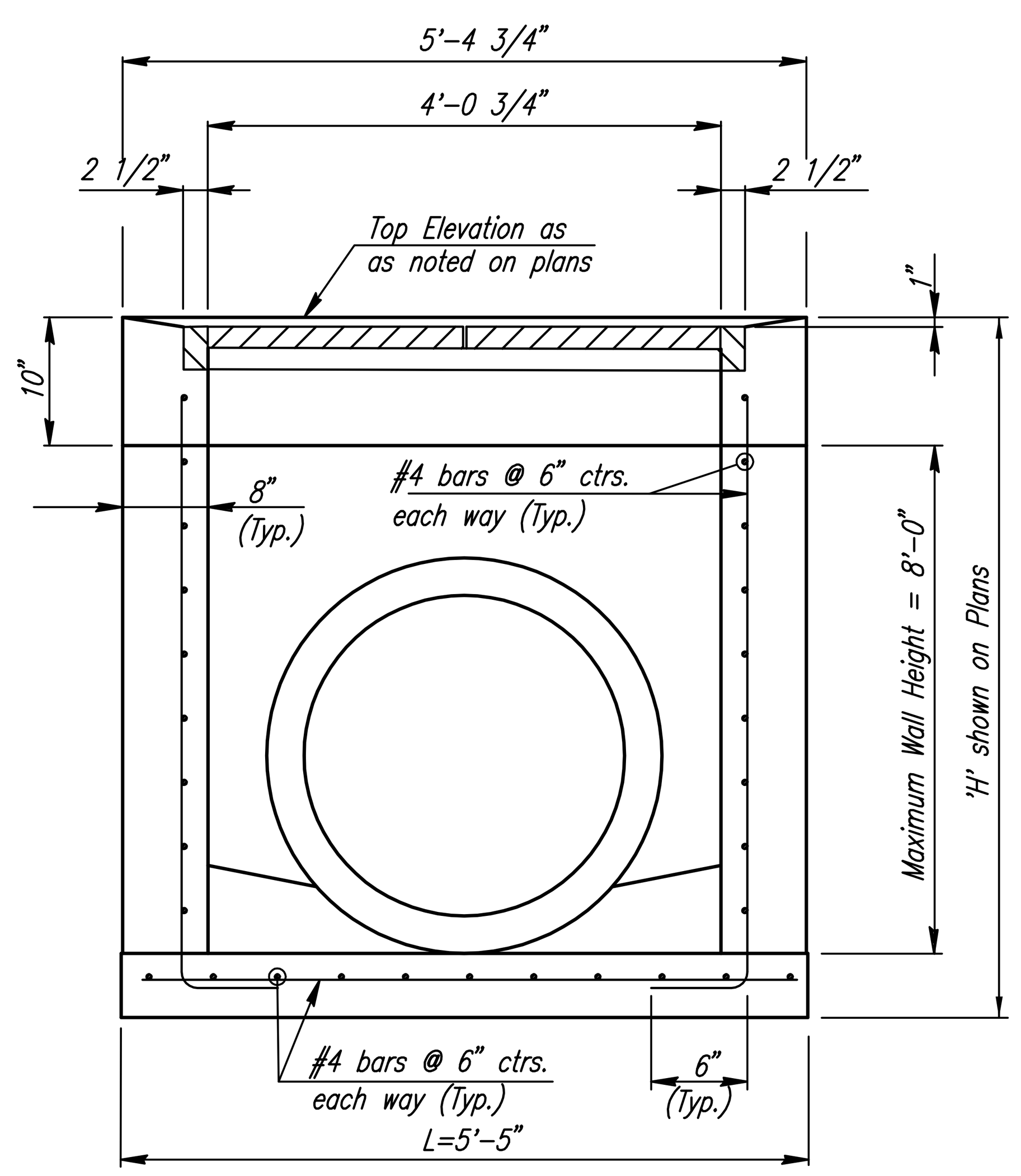
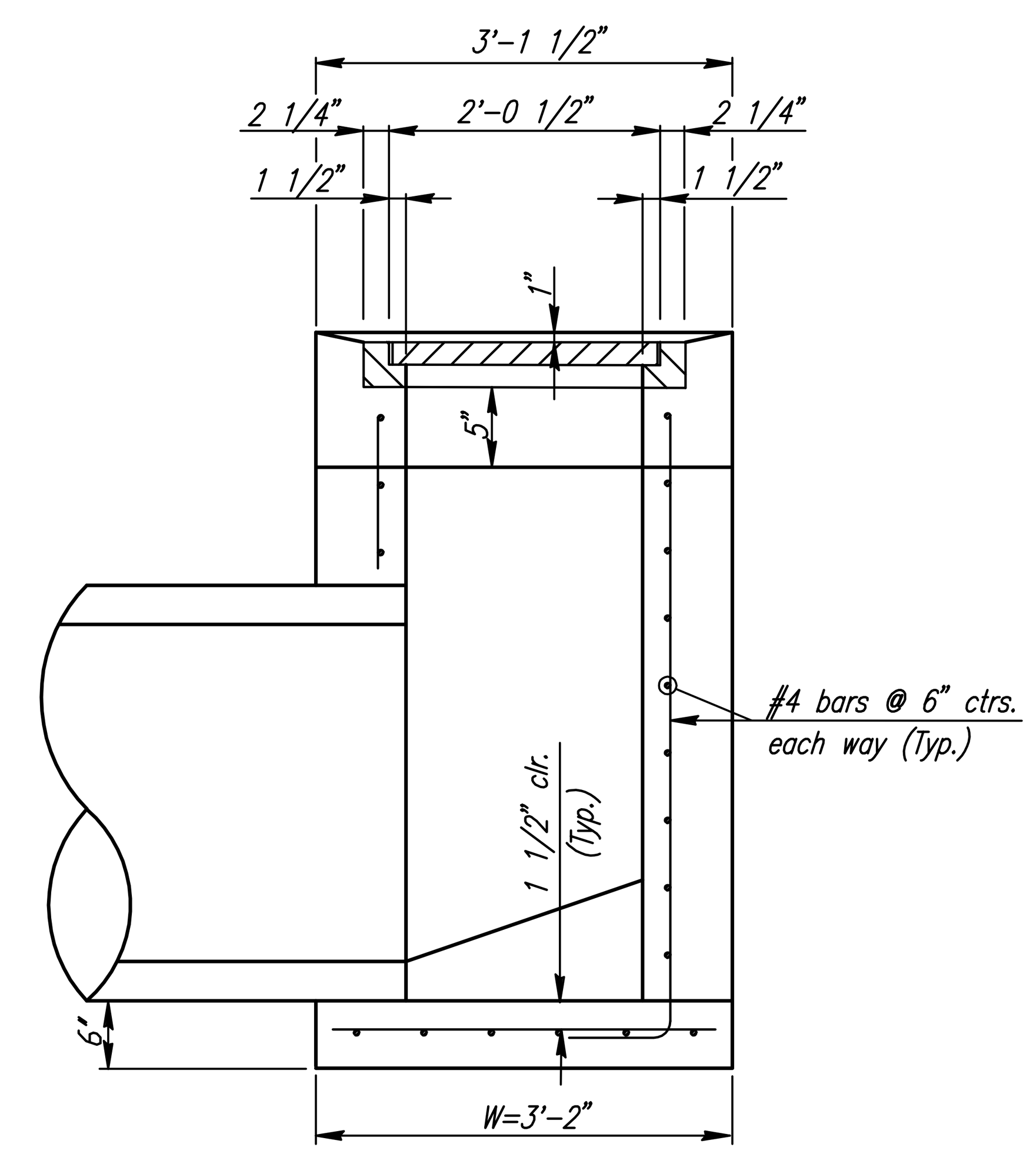
#	DATE

SHEET NUMBER
C3.6
SWS Line 2 & 3

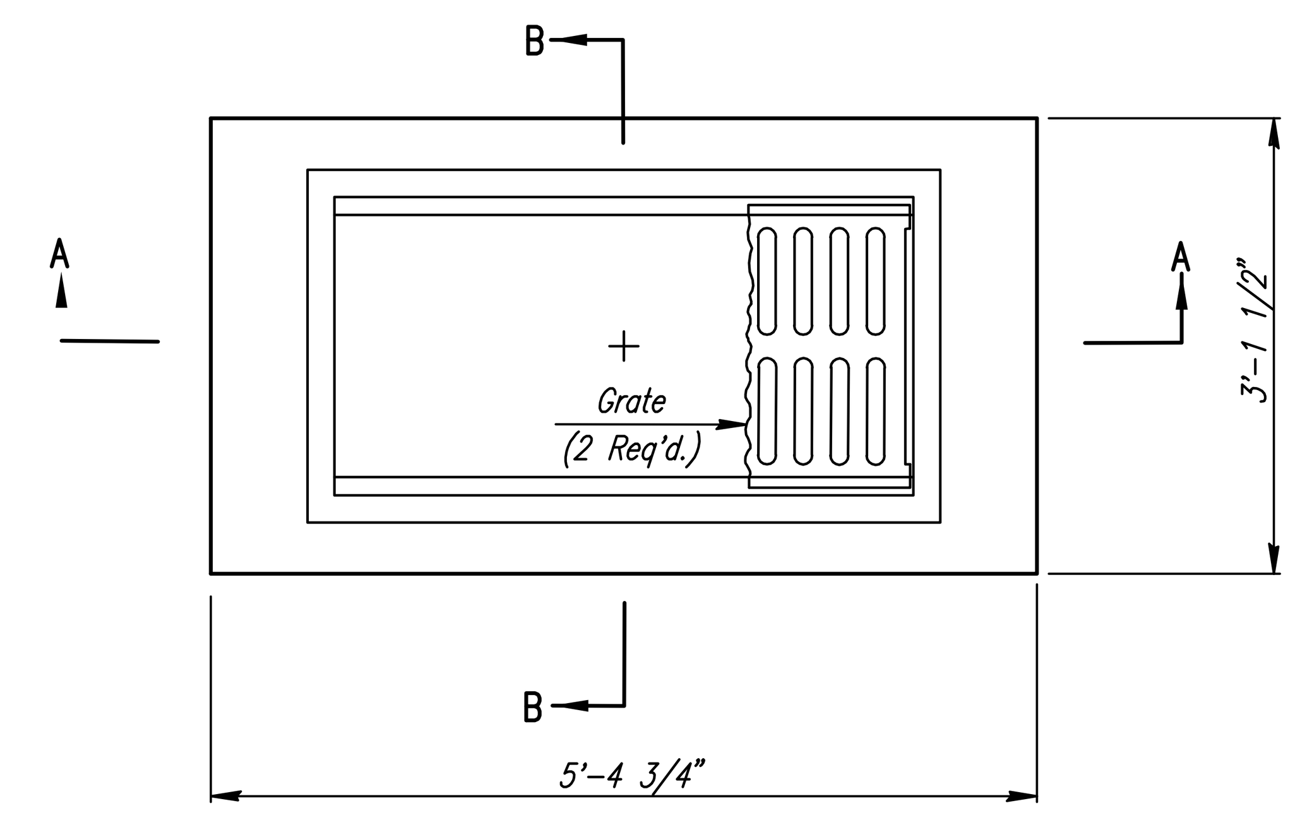


SECTION A-A



SECTION B-B

AREA INLET



PLAN

GENERAL NOTES

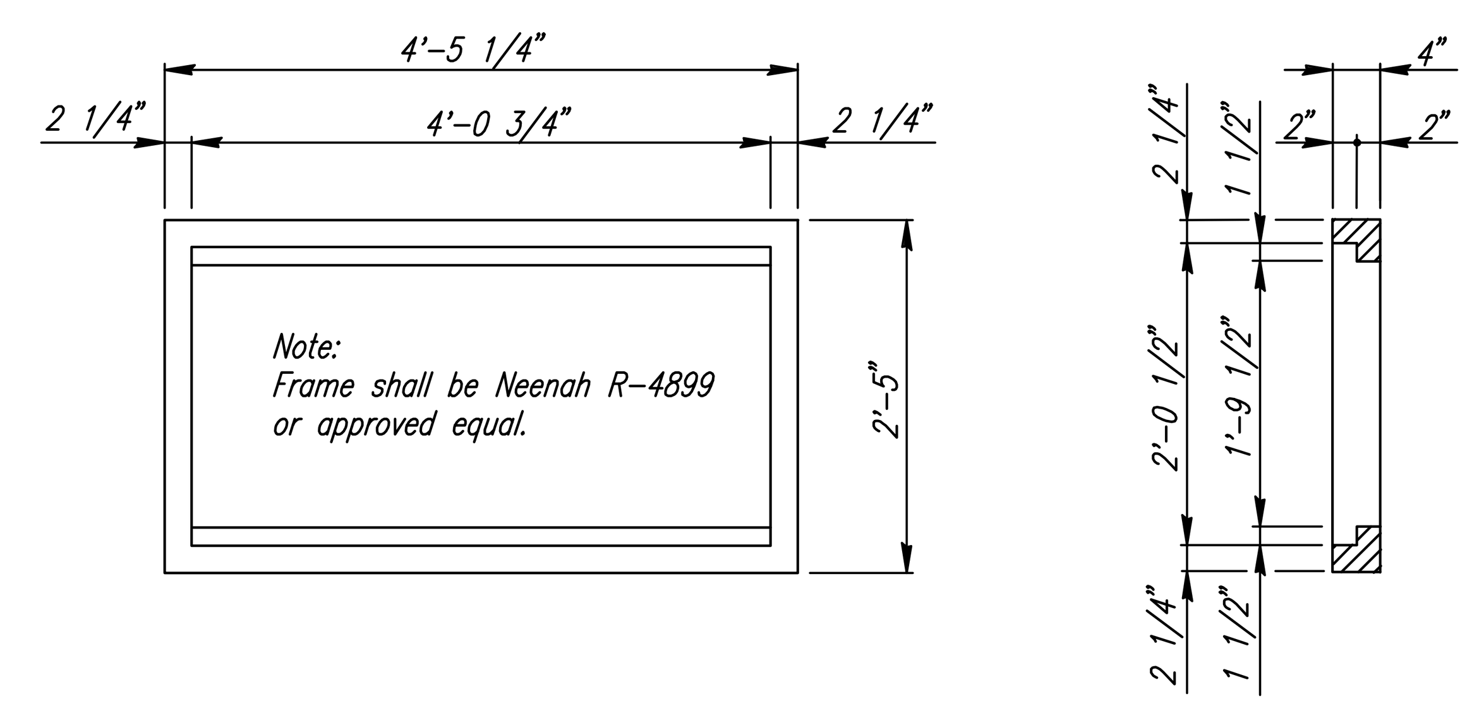
REINFORCING STEEL SHALL BE GRADE 60, A.S.T.M. A615.
ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO THE CENTERLINE OF BARS UNLESS OTHERWISE NOTED.

INLET CASTINGS SHALL BE MANUFACTURED USING DUCTILE IRON CONFORMING TO ASTM A536-80 GRADE 65-45-12.
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.

INLET FLOOR SHALL BE SHAPED WITH UNREINFORCED CONCRETE (8 SACK SAND MIX) TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.

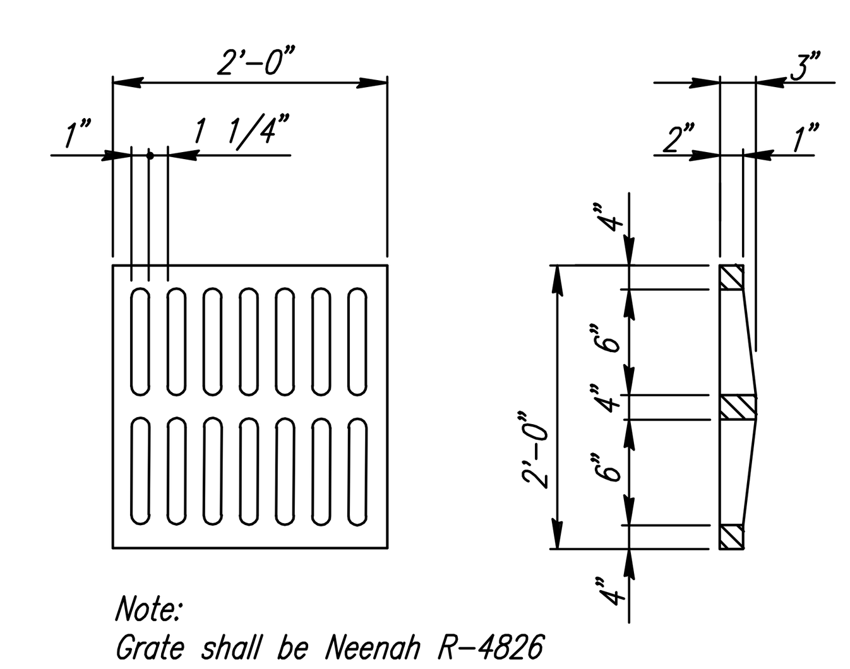
PIPES ENTERING EXISTING STRUCTURE SHALL BE CENTERED ON INSIDE FACE OF WALL.

ALL EXPOSED STRUCTURAL STEEL SHALL BE PAINTED WITH A COAT OF INORGANIC ZINC PRIMER AND THEN WITH A TOP COAT OF OR A FIELD COAT OF ORGANIC ZINC, EACH COAT TO BE 3 TO 4 MILS. STRUCTURAL STEEL USED TO FABRICATE THE SPECIAL AREA INLET FRAME SHALL COMPLY WITH A.S.T.M. A36. WELDING SHALL COMFORM TO THE STRUCTURAL WELDING CODE A.W.S. D1.1-88.



FRAME DETAIL
(Wt.=440 lbs.)

Note:
Frame to mate with 2 Neenah R-4826 Grates or approved equal.



Note:
Grate shall be Neenah R-4826 or approved equal.

GRATE DETAIL
(Wt.=190 lbs.)
(2 Required)

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SHEET NUMBER
C3.7
AREA INLET DETAIL

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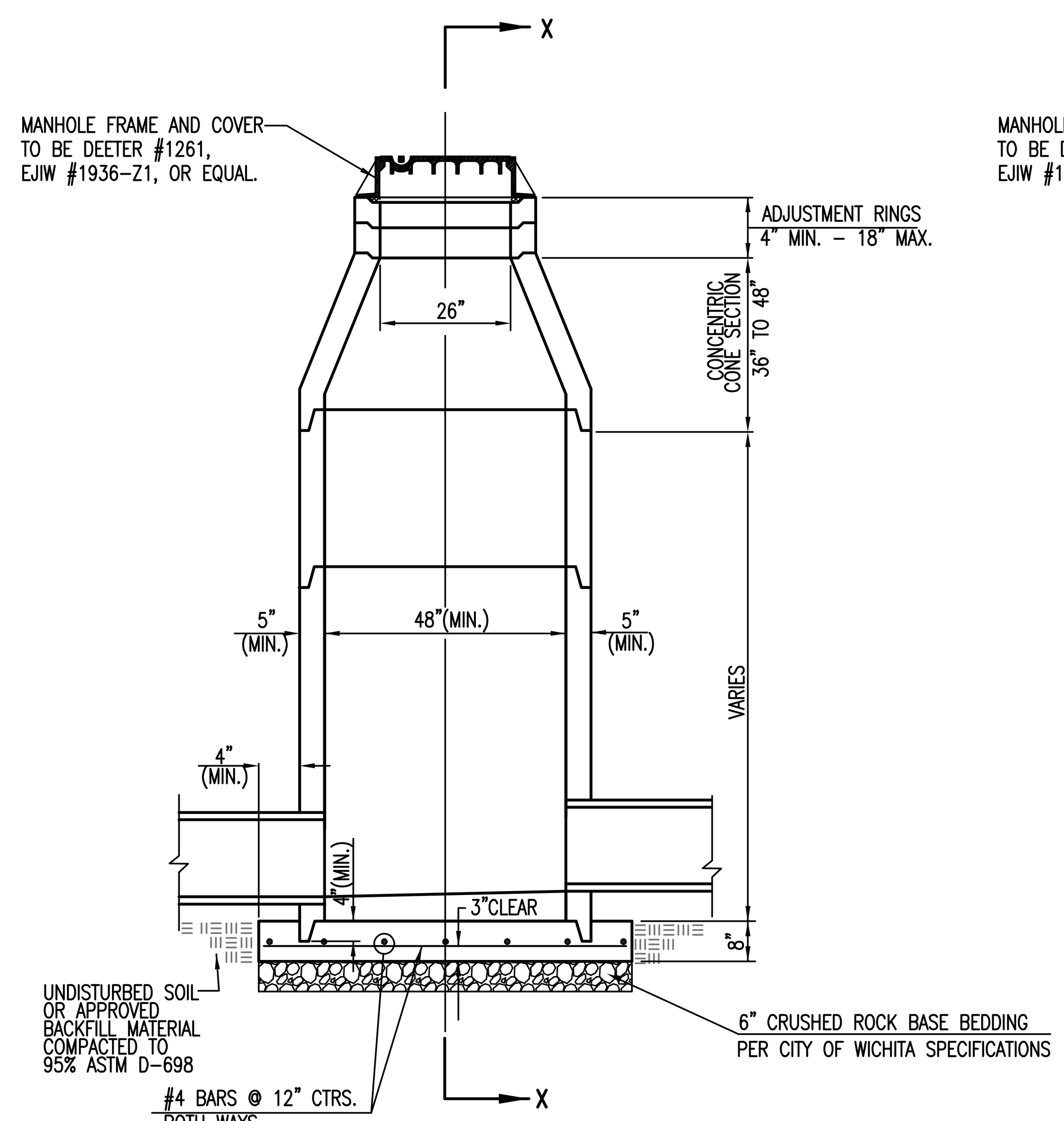
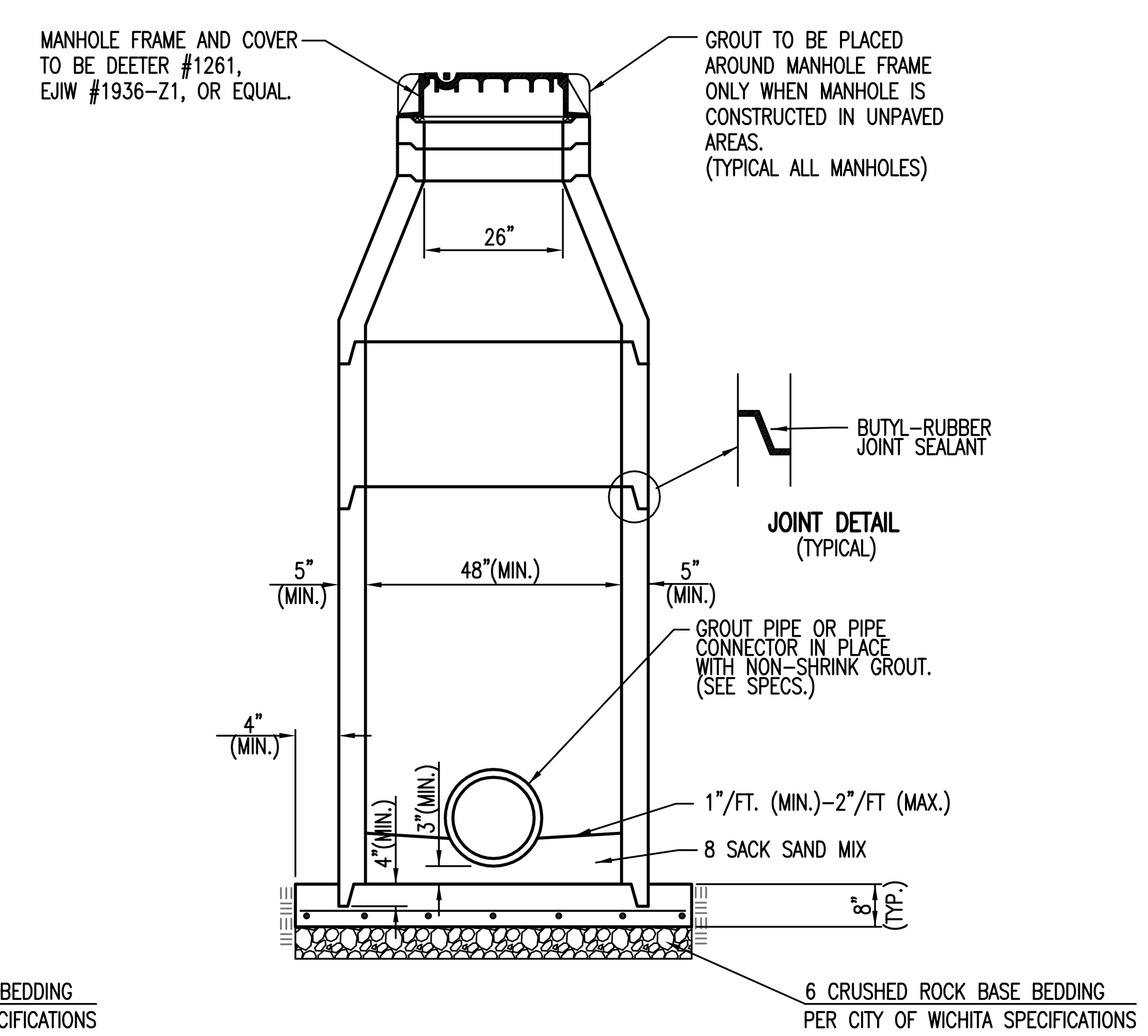
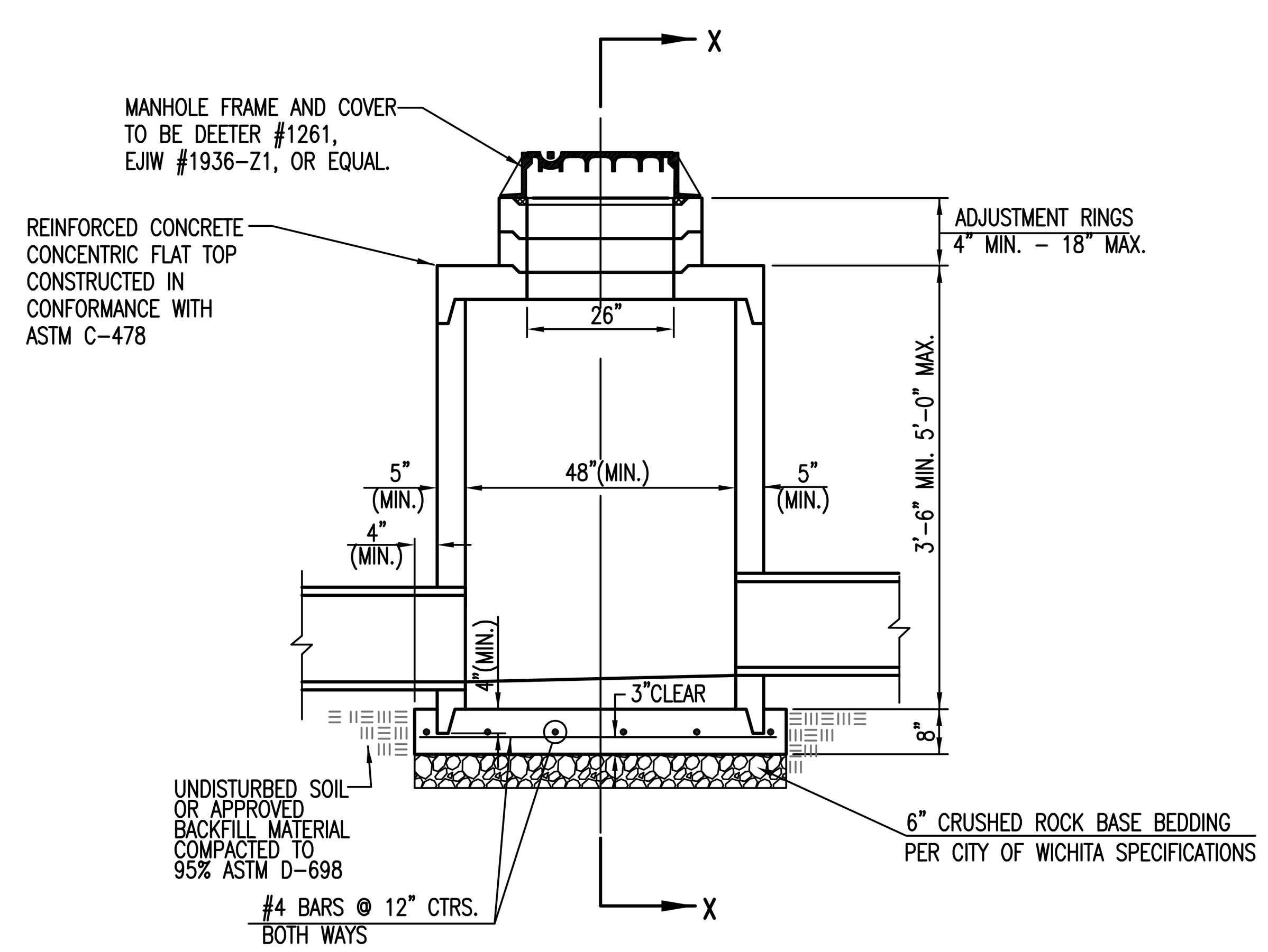


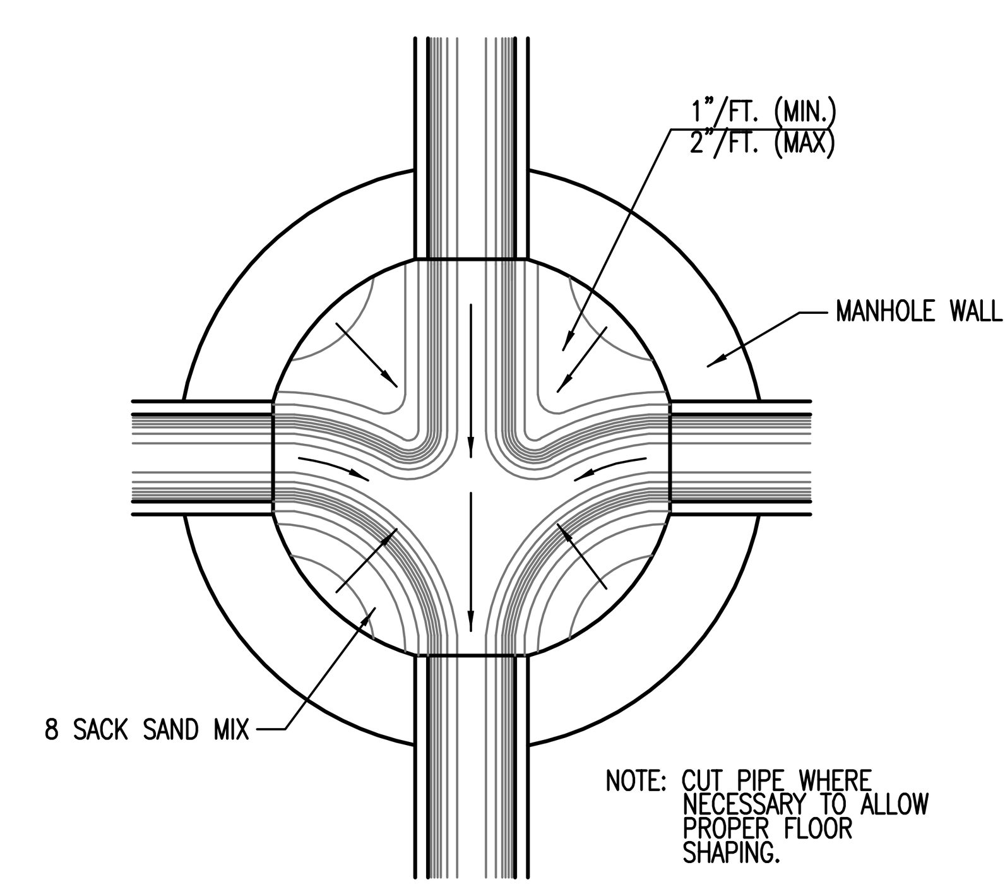
PRECAST STANDARD MANHOLE TYPE "A"



SECTION X-X (TYPICAL)



PRECAST SHALLOW MANHOLE TYPE "B"



TYPICAL MANHOLE FLOOR SHAPING

GENERAL NOTES

1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
3. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
4. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
5. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
6. CONCRETE USED FOR MANHOLE CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
8. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN.)
9. MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTORS OPTION. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL.
10. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
11. THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE MANHOLE WALL.
12. MANHOLE INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE MANHOLE WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
13. MANHOLE FRAME AND COVER TO BE DEETER #1261, EJIW #1936-Z1, OR APPROVED EQUAL, SEE SW-303.
14. FOR FLAT GRATED INLET APPLICATION, GRATE TO BE DEETER #1933, EJIW #1205 MDI, OR APPROVED EQUAL.
15. FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EJIW #120545, OR APPROVED EQUAL.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

PRECAST CONCRETE MANHOLE (STORM SEWER)

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

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

DESIGN | DRAWN | SHEET

SW-301

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JOB NO:
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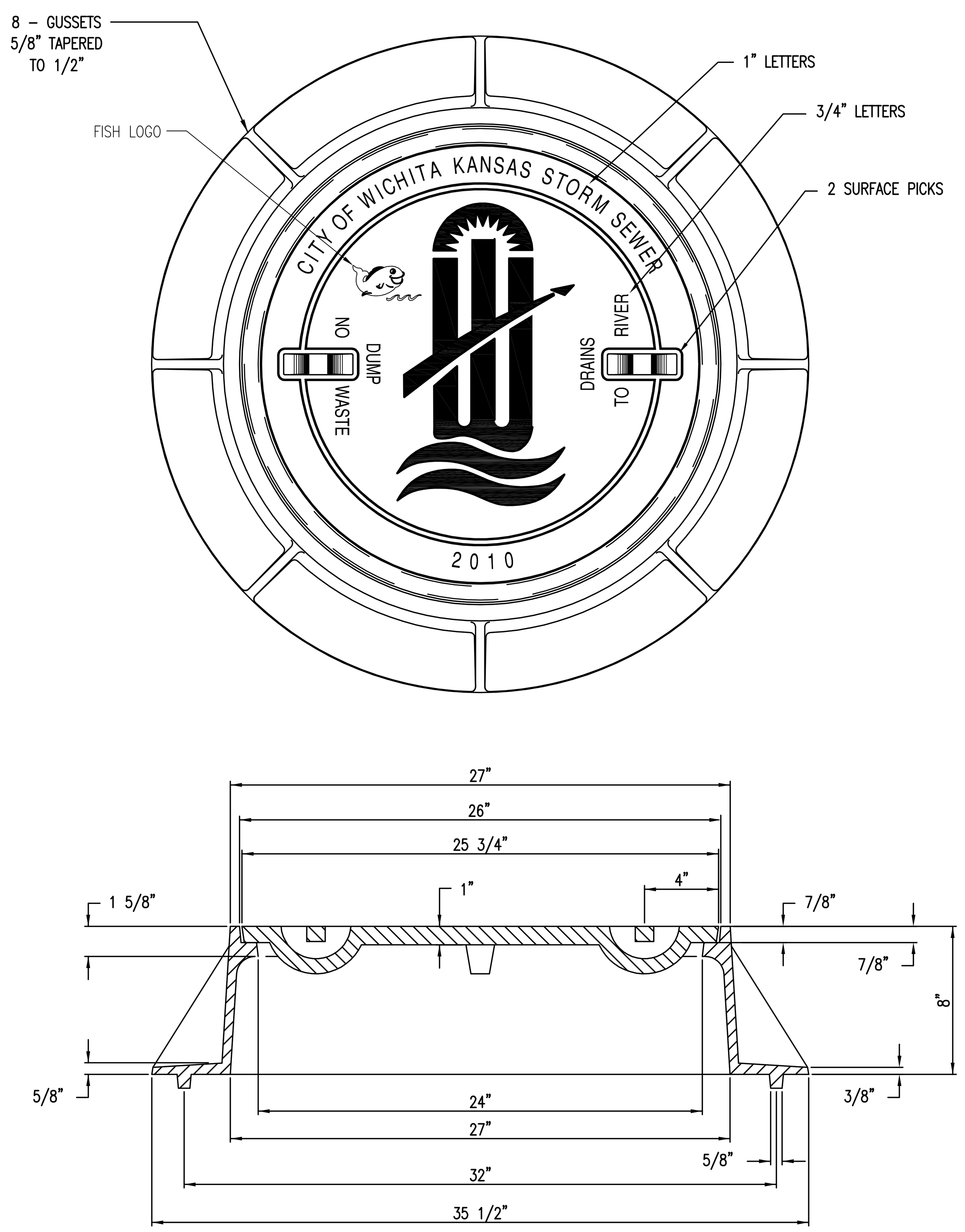
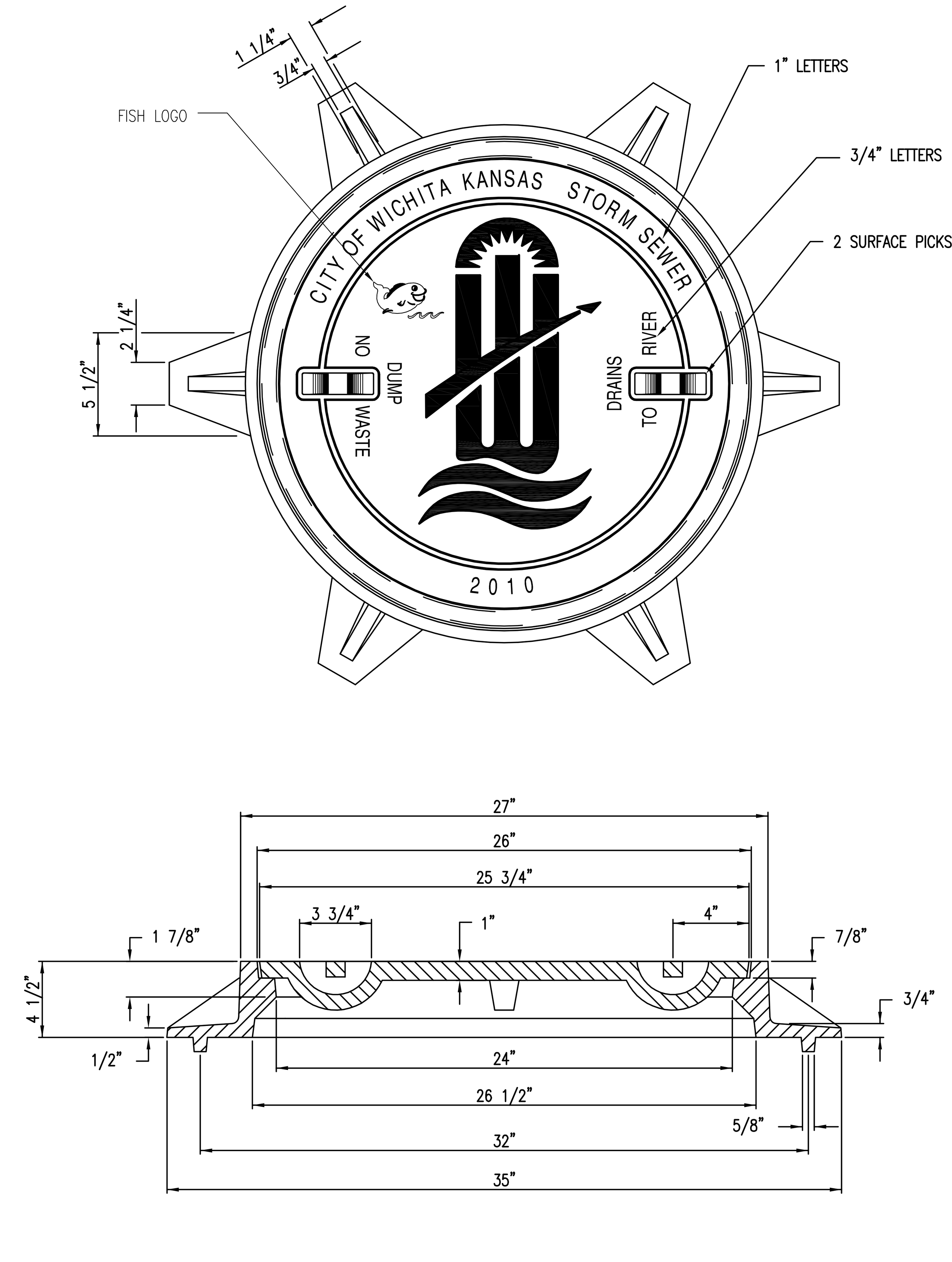
SHEET NUMBER
C3.8
PRECAST CONCRETE MH



MANHOLE FRAME

DEETER #1261 OR EJIW #1936–Z1

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



INLET FRAME

DEETER #2014 OR EJIW #1936–Z4

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

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

MANHOLE/INLET FRAME AND COVER (STORM SEWER)

CITY ENGINEER		
JAMES L. ARMOUR, P.E., L.S.		
PROJECT NUMBER	OCA NUMBER	DATE
0036 PPD	607861	11/2010

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

DESIGN | DRAWN | SHEET

SW–303

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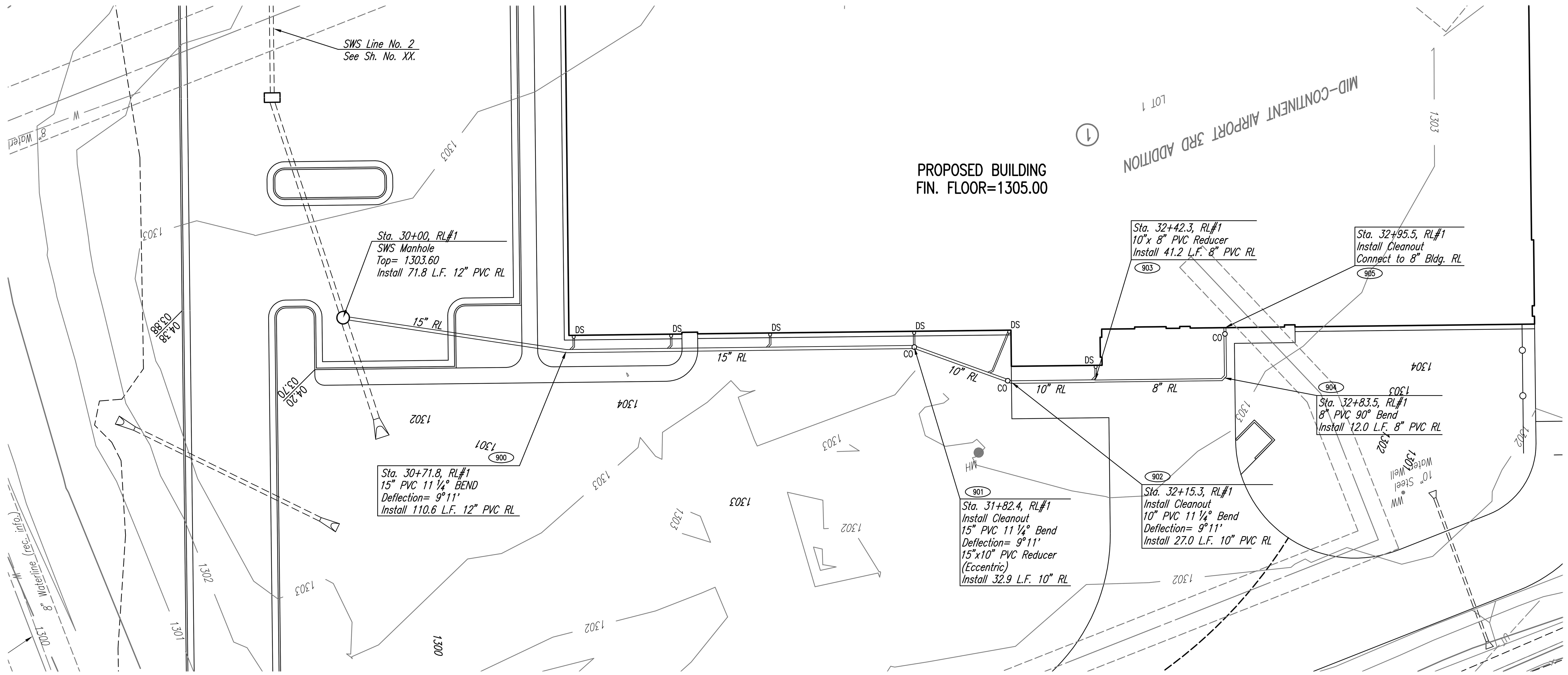
SHEET NUMBER
C3.9
MH INLET FRAME & COVER



COORDINATE LIST		
POINT	NORTH	EAST
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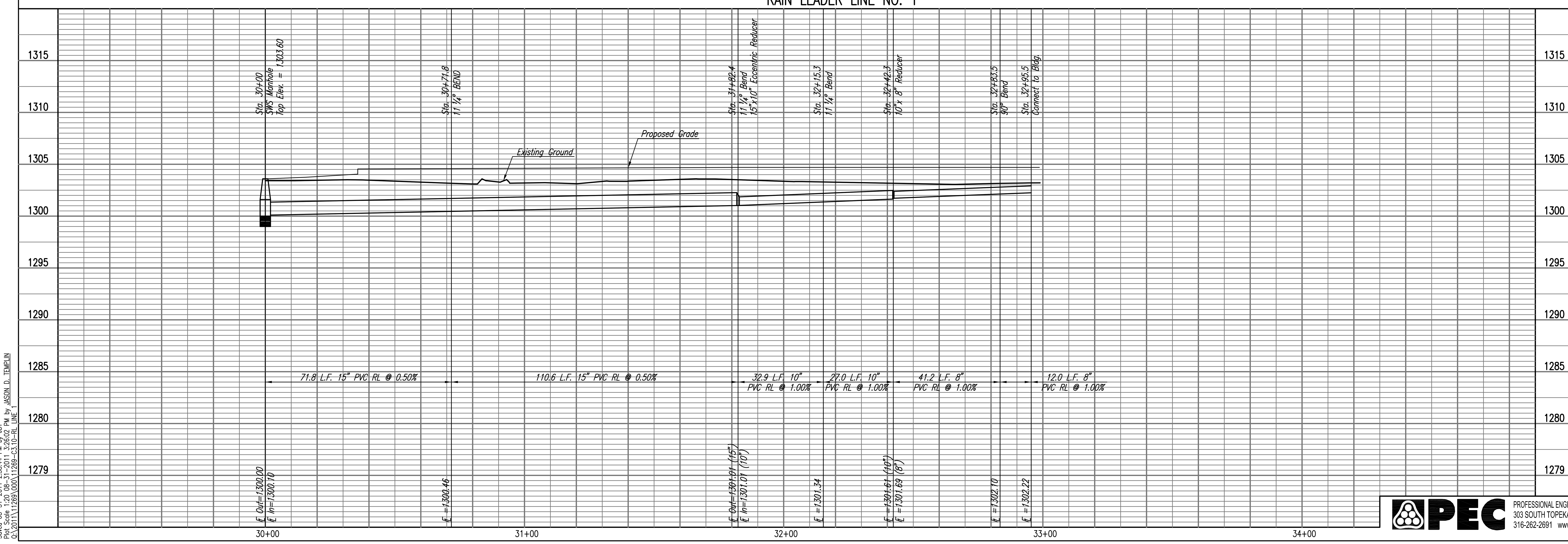
901	1,675,076.7557	1,627,418.5632
902	1,675,097.8742	1,627,393.2890
903	1,675,106.6075	1,627,368.1903
904	1,675,119.6224	1,627,329.3681
905	1,675,104.8147	1,627,323.5397

(900) = COORDINATE POINT NO.

RAIN LEADER LINE NO. 1



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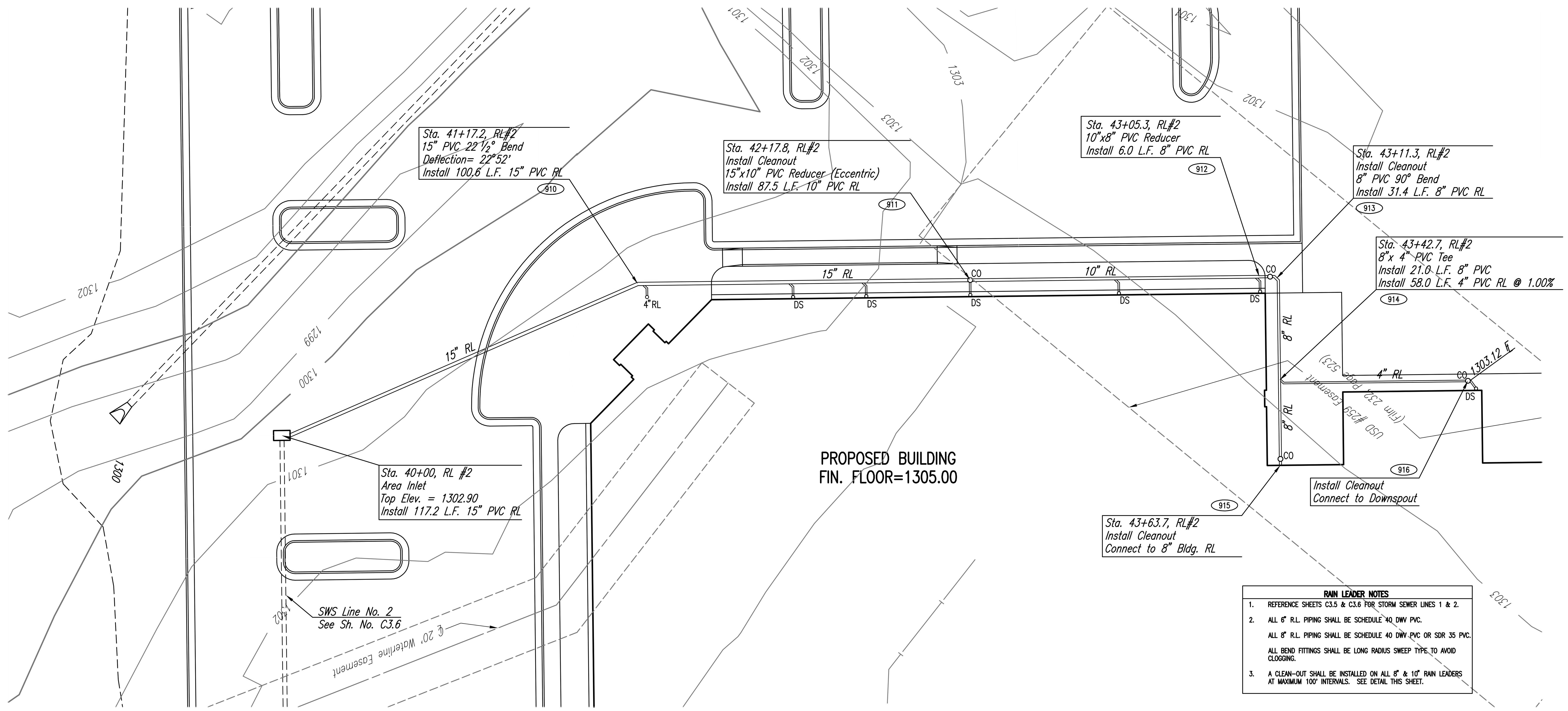
C3.10
RAIN LEADER #1



RAIN LEADER NOTES

1. REFERENCE SHEETS C3.5 & C3.6 FOR STORM SEWER LINES 1 & 2.
2. ALL 6" R.L. PIPING SHALL BE SCHEDULE 40 DWV PVC.

   ALL 8" R.L. PIPING SHALL BE SCHEDULE 40 DWV PVC OR SDR 35 PVC.

   ALL BEND FITTINGS SHALL BE LONG RADIUS SWEEP TYPE TO AVOID CLOGGING.
3. A CLEAN-OUT SHALL BE INSTALLED ON ALL 8" & 10" RAIN LEADERS AT MAXIMUM 100' INTERVALS. SEE DETAIL THIS SHEET.

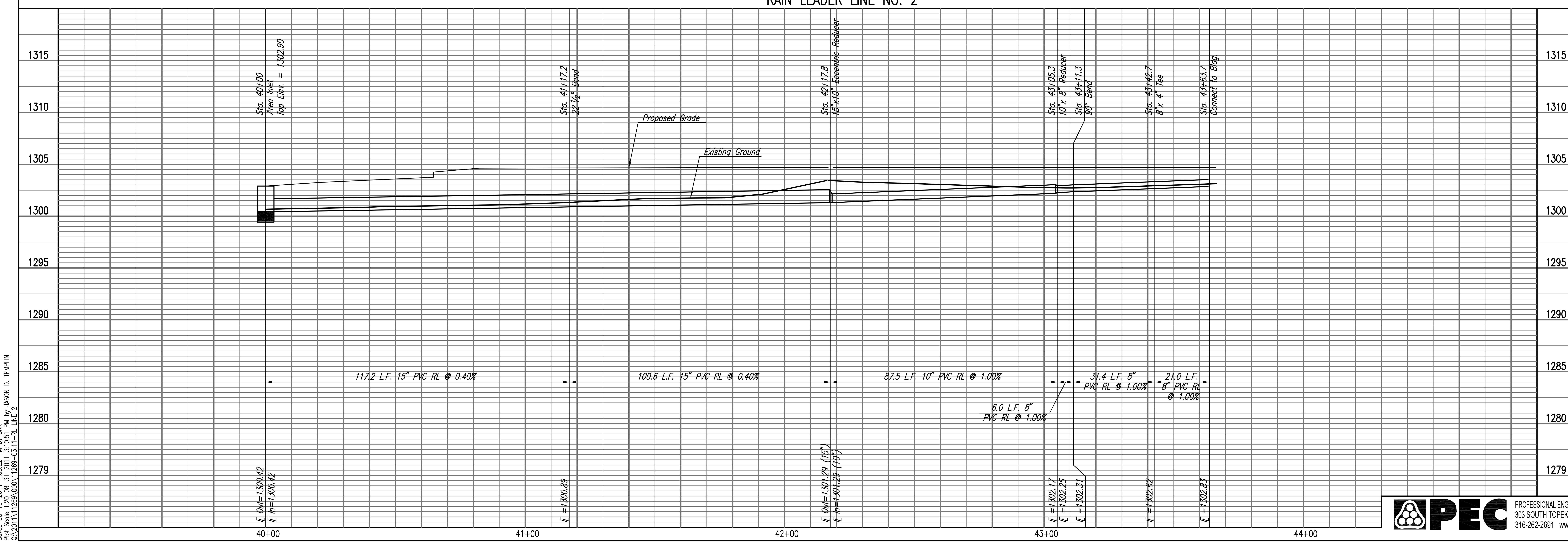
SCALE: 0 20 40

COORDINATE LIST

POINT	NORTH	EAST
910	1,674,822.8312	1,627,430.1463
911	1,674,856.1402	1,627,335.1516
912	1,674,885.1283	1,627,252.5697
913	1,674,887.4038	1,627,247.8976
914	1,674,916.6452	1,627,257.5232
915	1,674,940.9481	1,627,266.0861
916	1,674,936.3566	1,627,203.9853

(910) = COORDINATE POINT NO.

RAIN LEADER LINE NO. 2



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1233 NORTH PRICE ROAD
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C: MATT FOSTER - 314.997.6600
ELECTRICAL: INPWR
10640 DEME DRIVE SUITE M
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C: DAVE HEDGE - 317.723.3375
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C: SCOTT BRANSCUM - 316.945.0797
FIRE PROTECTION: MCDANIEL COMPANY
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JOB NO: SJ1127
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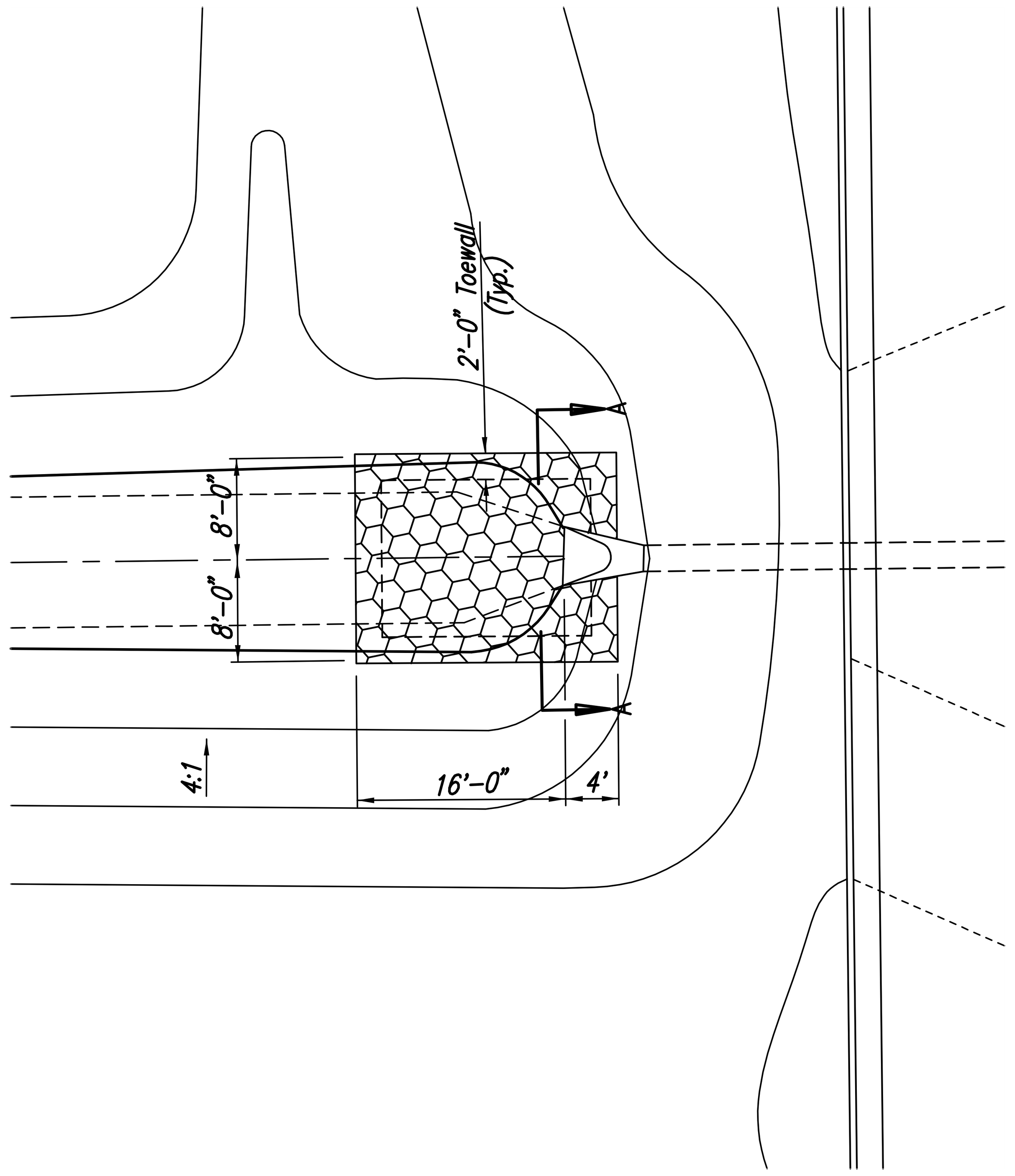
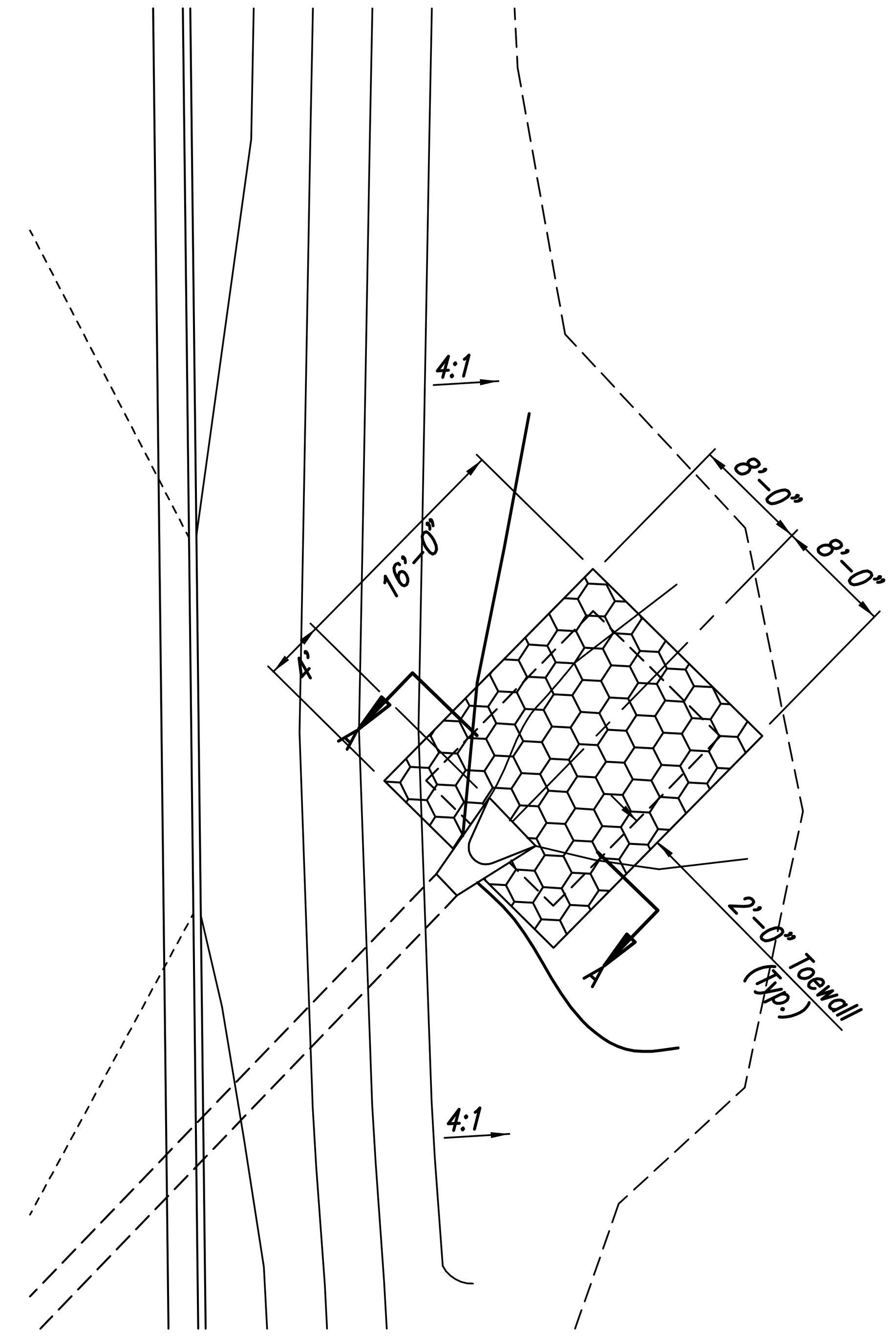
ISSUE DATE: 07.15.2011 - PERMIT
REVISIONS: # DATE

SHEET NUMBER
C3.11
RAIN LEADER #2



SCALE: 1"=10'

RIPRAP PLAN
(SWS Line No. 1)



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RIPRAP PLAN
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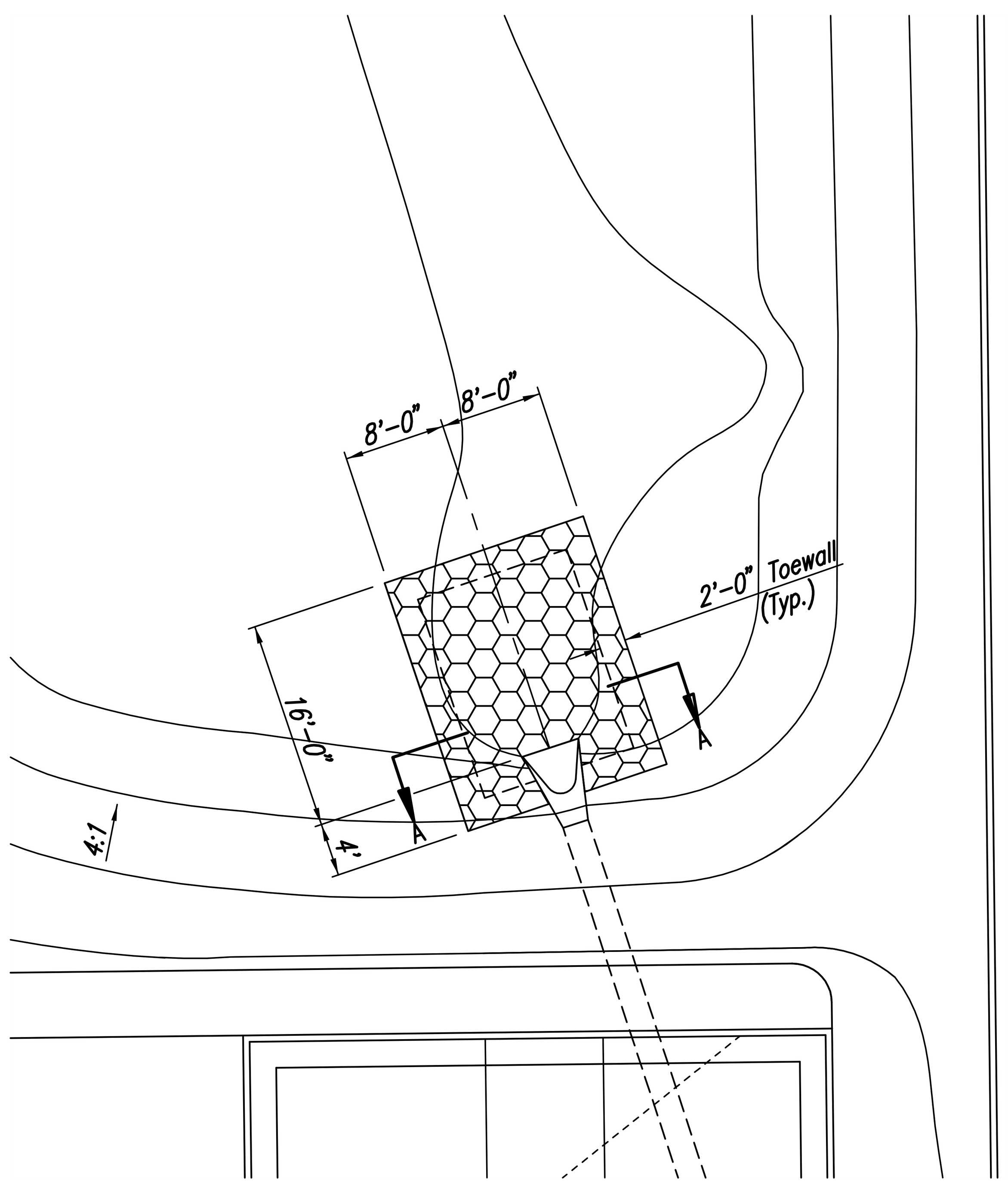

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RIPRAP PLAN
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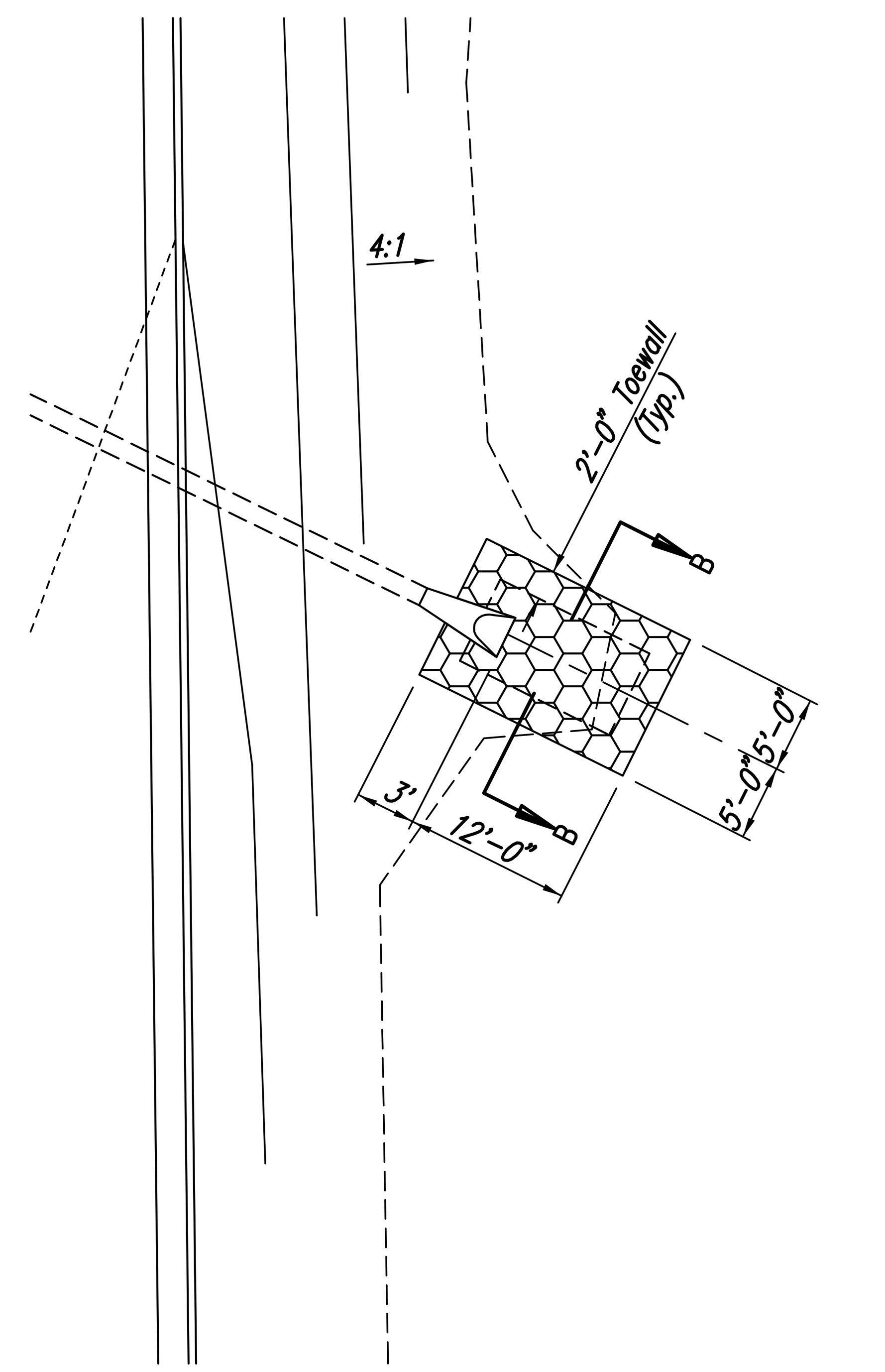

SCALE: 1"=10'

RIPRAP PLAN
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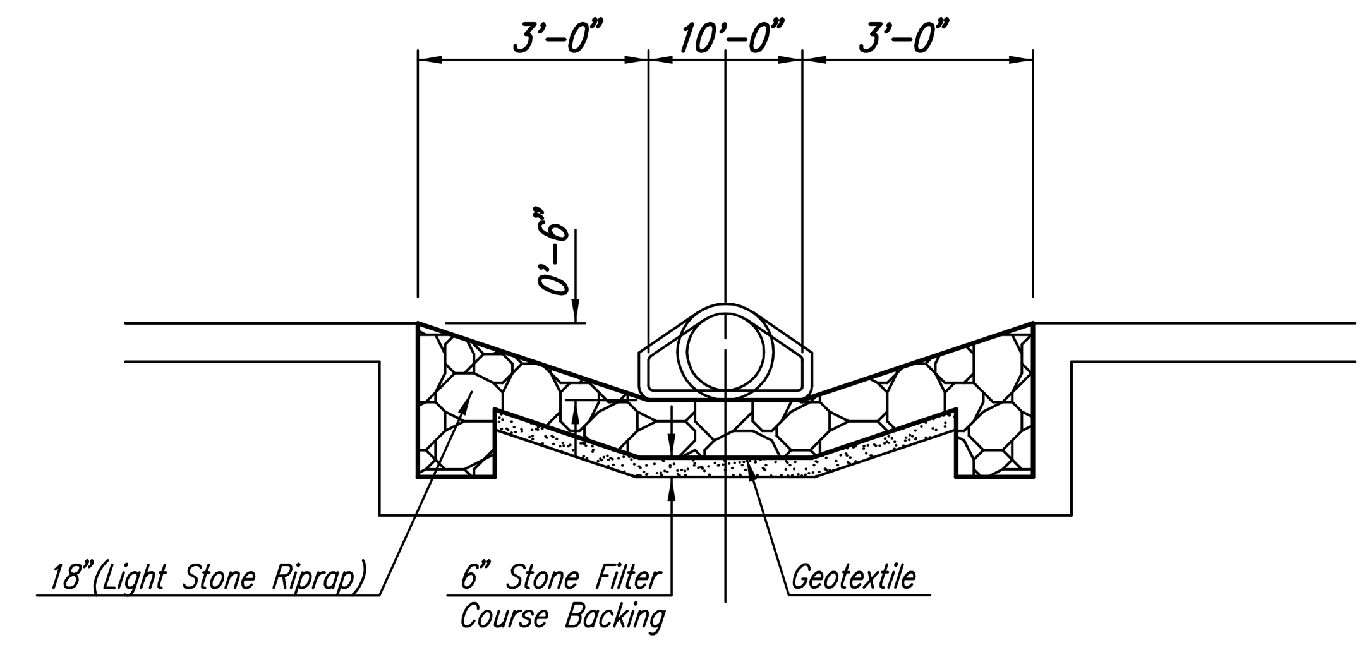
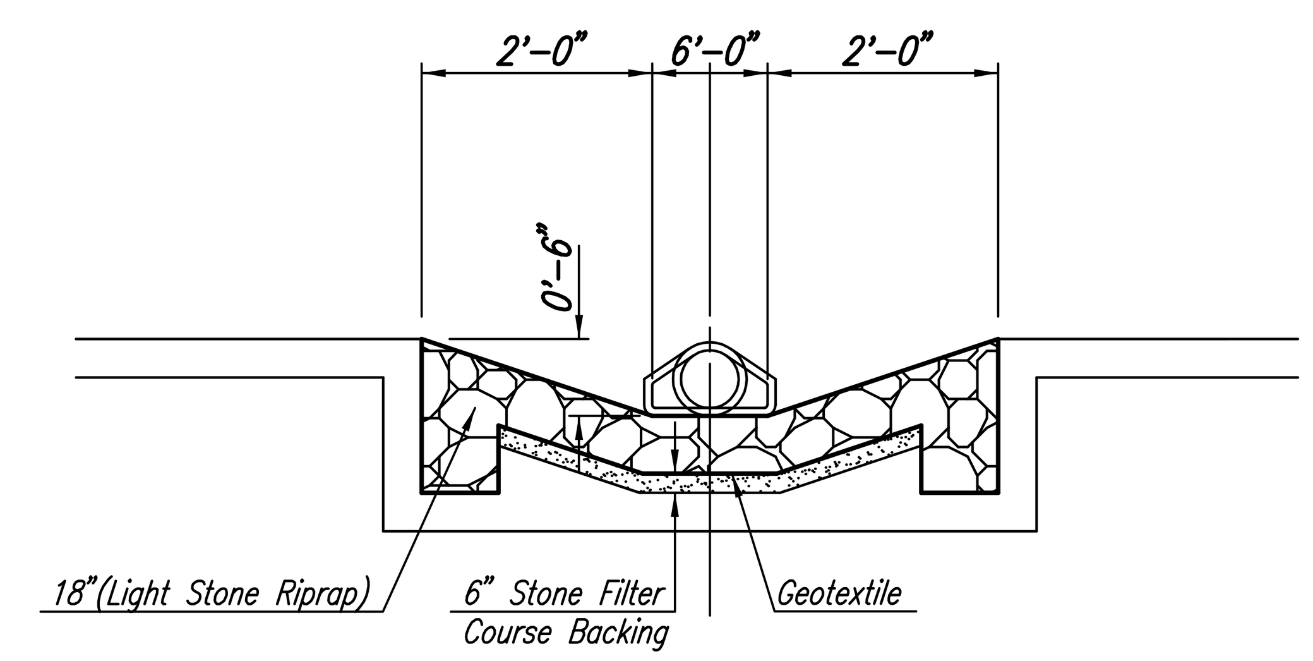
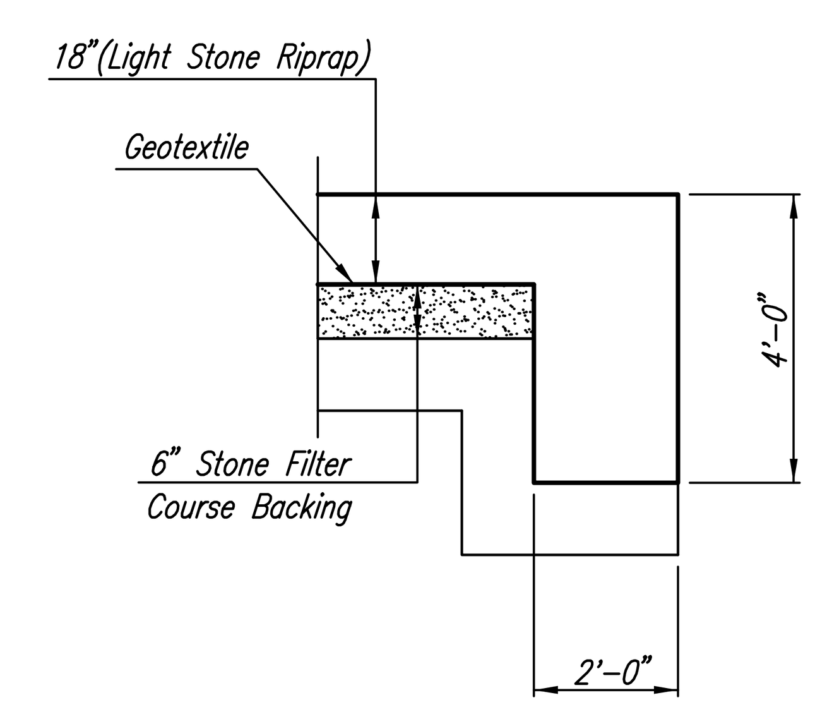


SECTION A-A



SECTION B-B

SIZE REQUIREMENTS FOR ROCK RIPRAP							
PERCENT HEAVIER THAN:							
	1/4 TON	250 LBS.	200 LBS.	180 LBS.	60 LBS.	10 LBS.	5 LBS.
LIGHT		0%		5-15%	50-70%	85-100%	



TYPICAL SECTION THRU TOEWALL
NO SCALE

NOTES

1. ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREMIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED.
2. TOEWALLS SHALL BE INSTALLED ALONG ALL EDGES OF STONE RIPRAP OR AS SHOWN ON PLANS.
3. GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER SPECIFICATIONS.

PEC
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PROPOSED CESSNA MX FACILITY FOR:
FlightSafety international
WICHITA, KANSAS

JOB NO:
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DRAWN BY:
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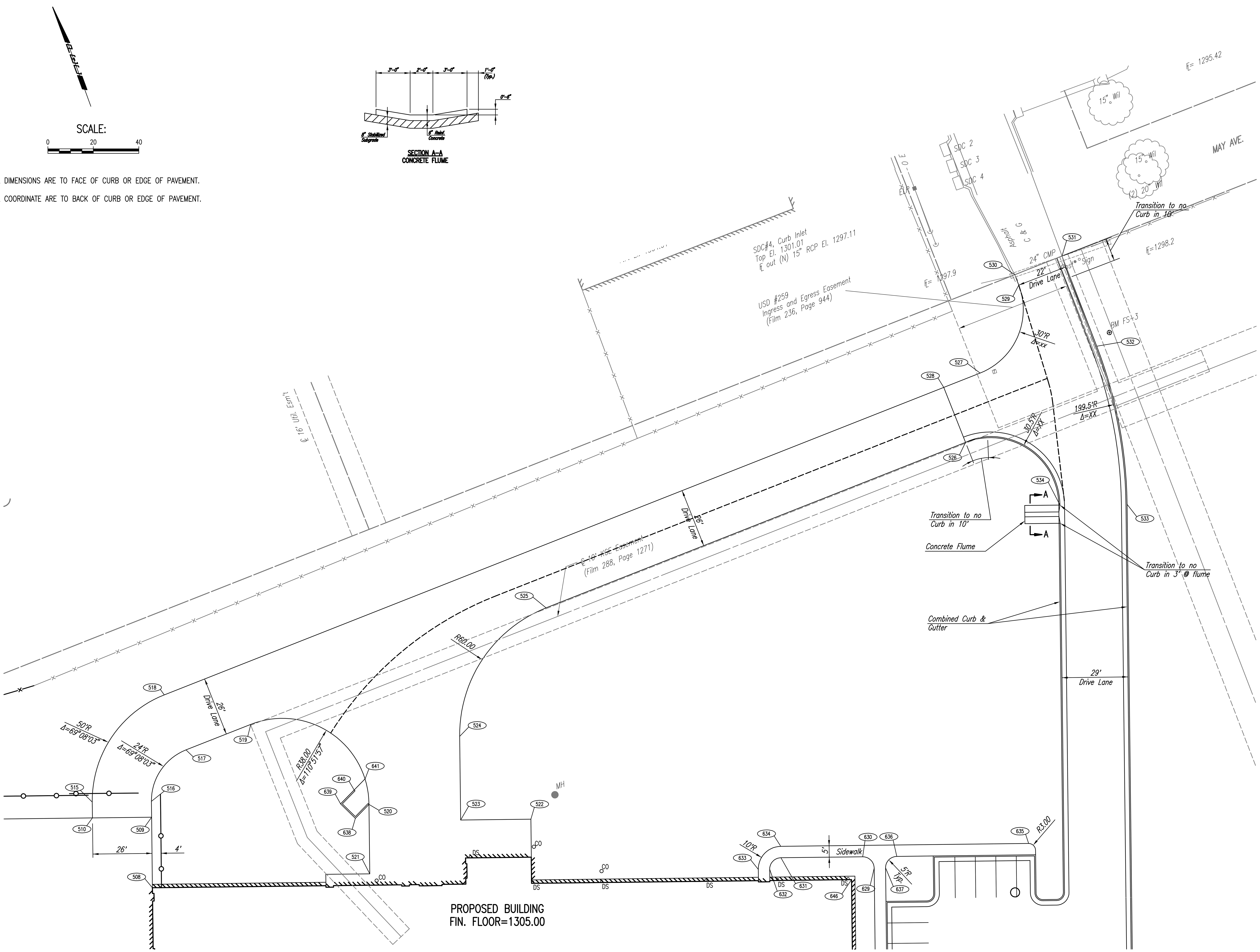
DATE

SHEET NUMBER
C3.12
Riprap & Misc. Details

ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT.

ALL COORDINATE ARE TO BACK OF CURB OR EDGE OF PAVEMENT.



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SHEET NUMBER
C6.1
PAVING PLAN

Saved 08-31-2011 3:12:45 PM by JDT
Plot Scale 1:20 08-31-2011 3:12:54 PM by JASON D. TEMPLIN
Q:\2011\11269\000\11269-C6.1-PAVING PLAN 1