

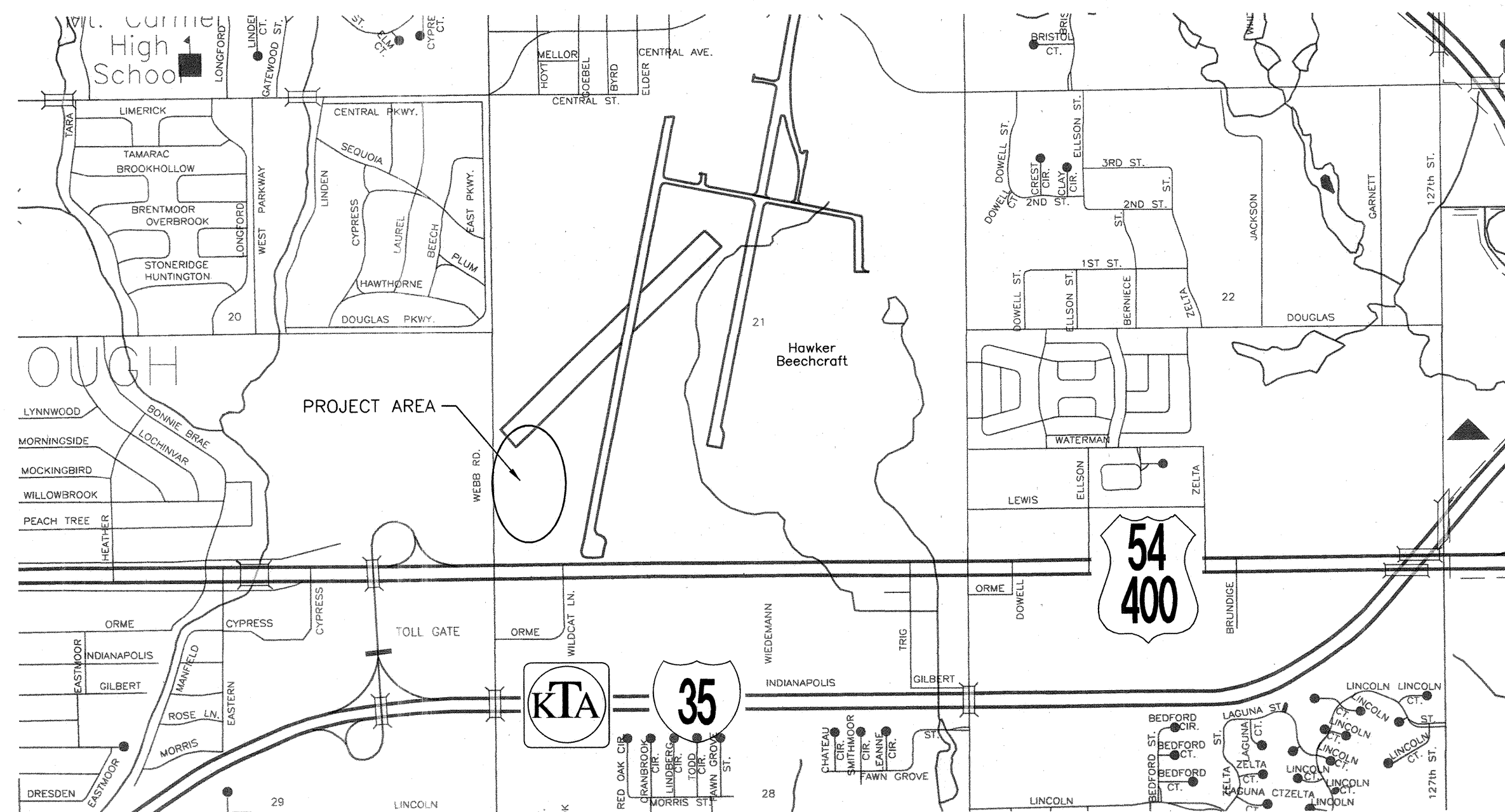
WATER LINE AND FIRE LINE IMPROVEMENTS FOR BEECHCRAFT

DESIGN/BUILD CONSTRUCTION SERVICES
GARY JANZEN, P.E., CITY ENGINEER, CITY OF WICHITA
WICHITA, KANSAS

PRIVATE PROJECT: 1754PPW
OCA 607853

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10 - 14	TRAFFIC CONTROL STANDARDS



SUMMARY TABLE			
Item	Type	Manufacturer	Quantity
12" Duct Iron Pipe	DI ANSI A21.51 (C151)	American Cast Iron Pipe Co.	19.7 LF
12" C900 PVC Pipe	Blue Brute ANSI/AWWA C900	JM Eagle	65.3 LF
10" Duct Iron Pipe	DI ANSI A21.51 (C151)	American Cast Iron Pipe Co.	5.0 LF
10" C900 PVC Pipe	Blue Brute ANSI/AWWA C900	JM Eagle	203.0 LF
4" PVC Pipe	Blue Brute ANSI/AWWA C900	JM Eagle	587.3 LF
3" PVC Pipe			278.5 LF
10" Gate Valve	MJ	American	1
6" Gate Valve Assembly	MJ	American	1
3" Gate Valve Assembly	MJ	American	1
12" 45 Deg. Bend	DI MJ	Star Pipe Products	2
10" 45 Deg. Bend	DI MJ	Star Pipe Products	2
4" 22.5 Deg. Bend	DI MJ	Star Pipe Products	2
4" 90 Deg. Bend	DI MJ	Star Pipe Products	2
3" 45 Deg. Bend	DI MJ	Star Pipe Products	2
20" X 12" Tapping Sleeve	DI MJ	---	1
12" to 10" Reducer	DI MJ	---	1
4" x 3" x 3" Tee			1
2" Tapping Saddle			1
2" Brass Valve Curb Stop			1

Datumn NAVD88

BM #1
Round bolthead in the concrete casing of the monitoring well located northeast of the northwest corner of Grove Liquor Store and the southeast corner of Webb and Kellogg.
N:1683646.129 E:1681286.469
Elevation = 1369.21

BM #2
Mag nail in the control joint located near the high edge of curb approximately 20' south of the return on the west side of Wildcat.
N:1683666.632 E:1681938.573
Elevation = 1372.59

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA,
BY WICHITA WATER & SEWER DEPARTMENT
& BY WICHITA FIRE DEPARTMENT

Public Works *Jim Rich* 8/23/13
Water & Sewer *Aug Kelly* 8-26-13
Fire *Paul Simpson* 8-26-2013

NOTE TO CONTRACTORS:

PUBLIC PROPERTY
Inspection and testing for the waterline is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Professional Engineer Licensed in the state of Kansas. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall any work be commenced without written authorization by the City Engineer. All Construction and Materials shall comply with the City or Wichita Specifications and Standards (on file and available in the City Engineer's Office).

PRIVATE PROPERTY
Inspection and testing for the fire protection is to be performed by a City of Wichita licensed fire protection contractor in accordance with the fire codes as adopted by the City of Wichita. All materials and construction practices for the fire protection line shall comply with the fire codes as adopted by the City of Wichita (available from the City of Wichita Fire Department). The contractor shall not commence work without notification and approval of the Wichita Fire Department. Inspection of the fire protection line is to be provided by a licensed Engineering Firm under contract with the Owner/Developer and the Fire Department. The contractor shall not start work until the project inspector is assigned to the project and present on the site. Any work done without inspection will be required to be uncovered for inspection.

As Built Plans
Contractor: Dondlinger Construction
Supervisor: Mark Doher
Foreman: William Budd & Dave Koch
Company: City of Wichita
Inspector: Eric Strecker, Schwab-Eaton, PA
PDF by: ELS, 08/29/14

The Contractor shall erect and maintain traffic control devices in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) unless specifically directed by the Engineer.

Utility service lines, poles, valve boxes, gas meters and etcetera are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

The Contractor will be required to provide a minimum advance notice of forty-eight (48) hours to utility companies prior to excavation or working adjacent to utilities.

The following numbers are provided:

Kansas One-Call.....	687-2470
Cox Communications.....	262-4270
Kansas Gas Service.....	831-5615 (Emergency 1-888-482-4950)
Westar Energy.....	261-6251
Black Hills Energy.....	942-8811
AT&T.....	268-2245
City of Wichita Water Department.....	268-4940
City of Wichita Sewer Maintenance.....	268-4924

A saw cut the full depth of the existing pavement thickness shall be provided at locations where proposed construction abuts an existing surface course of pavement where the existing pavement is to be removed. Sowed joint to facilitate removal within six (6) feet of existing joints will not be permitted and for such instances the limits of sidewalk removal shall extend to the existing joint. Such saw cuts will not be paid for directly and this cost shall be considered INCIDENTAL to the removal of the surface or pavement.

All project waste including any trees, milled asphalt, rubble from miscellaneous structures, abandoned pipes, excess excavation and etc. shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archaeological investigations unless buried in a previously approved borrow location.

The Contractor shall be responsible for preserving shown property irons. The Contractor will be required to re-establish any shown property irons or quarter section corners which are damaged or destroyed by his construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws. This work will not be paid for directly, but shall be considered SUBSIDIARY to other pay items of work in the contract.

The Water Department shall field locate water valves one time during construction when requested by the Contractor. It shall be the Contractor's responsibility to preserve such field locations during the construction process. Water valves, water boxes or fire hydrants damaged during construction shall be repaired by the Contractor at his own expense.

Specifically work shall occur using MUTCD typical application(s) 1, 3, 6, 13, 22, 23, 24, 28, 29 & 30. Other typical MUTCD applications or alternate traffic control may be approved by the Engineer. The Contractor shall maintain access to adjacent properties at all times.

To the greatest extent possible, the work zone will be re-opened to traffic in the evenings and whenever construction activities are not taking place.

Conical delineators shall be used in all tapers and tangents along work areas.

The locations of overhead and underground utilities shown on the plans are approximate, the contractor shall determine the exact location of all existing utilities before commencing work and agrees to be fully responsible for all damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities. The contractor shall coordinate with the utility companies to locate any existing utilities that have not been previously located. The contractor shall coordinate the construction of this project with the relocation of any existing utilities by the utility companies.

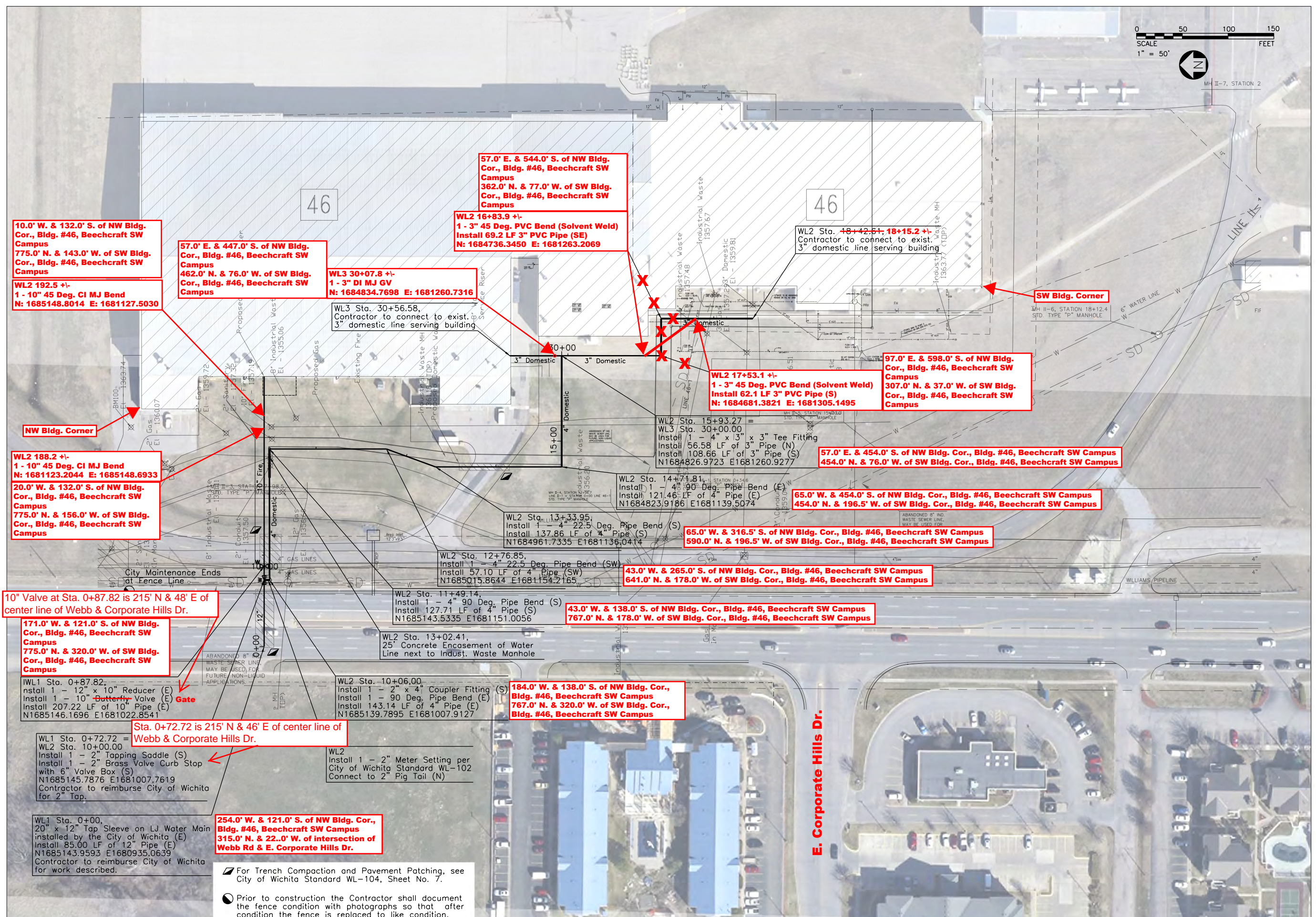
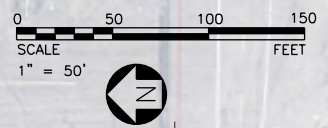
The contractor shall give all property owners and/or tenants of developed property abutting the project limits or whose access will be changes a minimum of 10 days advanced notice prior to the the start of construction. The Contractor shall also give 3 days advance notice to the same property owners where when major changes in traffic control are planned.



2656 S. SHERIDAN
WICHITA, KS 67217
PHONE: 316-945-0555
FAX: 316-945-9009



245 NORTH WACO
SUITE 222
WICHITA, KANSAS 67202
PHONE: 316-303-3000
FAX: 316-303-0156



10.0' W. & 132.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 775.0' N. & 143.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 WL2 192.5 +/-
 1 - 10" 45 Deg. CI MJ Bend
 N: 1685148.8014 E: 1681127.5030

57.0' E. & 447.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 462.0' N. & 76.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

57.0' E. & 544.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 362.0' N. & 77.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 WL2 16+83.9 +/-
 1 - 3" 45 Deg. PVC Bend (Solvent Weld)
 Install 69.2 LF 3" PVC Pipe (SE)
 N: 1684736.3450 E: 1681263.2069

WL3 30+07.8 +/-
 1 - 3" DI MJ GV
 N: 1684834.7698 E: 1681260.7316

WL2 Sta. 18+42.6+1, 18+15.2 +/-
 Contractor to connect to exist. 3" domestic line serving building

SW Bldg. Corner

WL2 188.2 +/-
 1 - 10" 45 Deg. CI MJ Bend
 N: 1681123.2044 E: 1685148.6933
 20.0' W. & 132.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 775.0' N. & 156.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

WL2 17+53.1 +/-
 1 - 3" 45 Deg. PVC Bend (Solvent Weld)
 Install 62.1 LF 3" PVC Pipe (S)
 N: 1684681.3821 E: 1681305.1495

97.0' E. & 598.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 307.0' N. & 37.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

57.0' E. & 454.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 454.0' N. & 76.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

65.0' W. & 454.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 454.0' N. & 196.5' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

65.0' W. & 316.5' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 590.0' N. & 196.5' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

43.0' W. & 265.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 641.0' N. & 178.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

43.0' W. & 138.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 767.0' N. & 178.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

184.0' W. & 138.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 767.0' N. & 320.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

Sta. 0+72.72 is 215' N & 46' E of center line of Webb & Corporate Hills Dr.

171.0' W. & 121.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 775.0' N. & 320.0' W. of SW Bldg. Cor., Bldg. #46, Beechcraft SW Campus

10" Valve at Sta. 0+87.82 is 215' N & 48' E of center line of Webb & Corporate Hills Dr.

IWL1 Sta. 0+87.82,
 Install 1 - 12" x 10" Reducer (E)
 Install 1 - 10" Butterfly Valve (E)
 Install 207.22 LF of 10" Pipe (E)
 N1685146.1696 E1681022.8541

WL1 Sta. 0+72.72 =
 WL2 Sta. 10+00.00
 Install 1 - 2" Tapping Saddle (S)
 Install 1 - 2" Brass Valve Curb Stop with 6" Valve Box (S)
 N1685145.7876 E1681007.7619
 Contractor to reimburse City of Wichita for 2" Tap.

WL1 Sta. 0+00,
 20" x 12" Tap Sleeve on LJ Water Main installed by the City of Wichita (E)
 Install 85.00 LF of 12" Pipe (E)
 N1685143.9593 E1680935.0639
 Contractor to reimburse City of Wichita for work described.

254.0' W. & 121.0' S. of NW Bldg. Cor., Bldg. #46, Beechcraft SW Campus
 315.0' N. & 22.0' W. of intersection of Webb Rd & E. Corporate Hills Dr.

For Trench Compaction and Pavement Patching, see City of Wichita Standard WL-104, Sheet No. 7.

Prior to construction the Contractor shall document the fence condition with photographs so that after condition the fence is replaced to like condition.

TranSystems
 245 NORTH WACO
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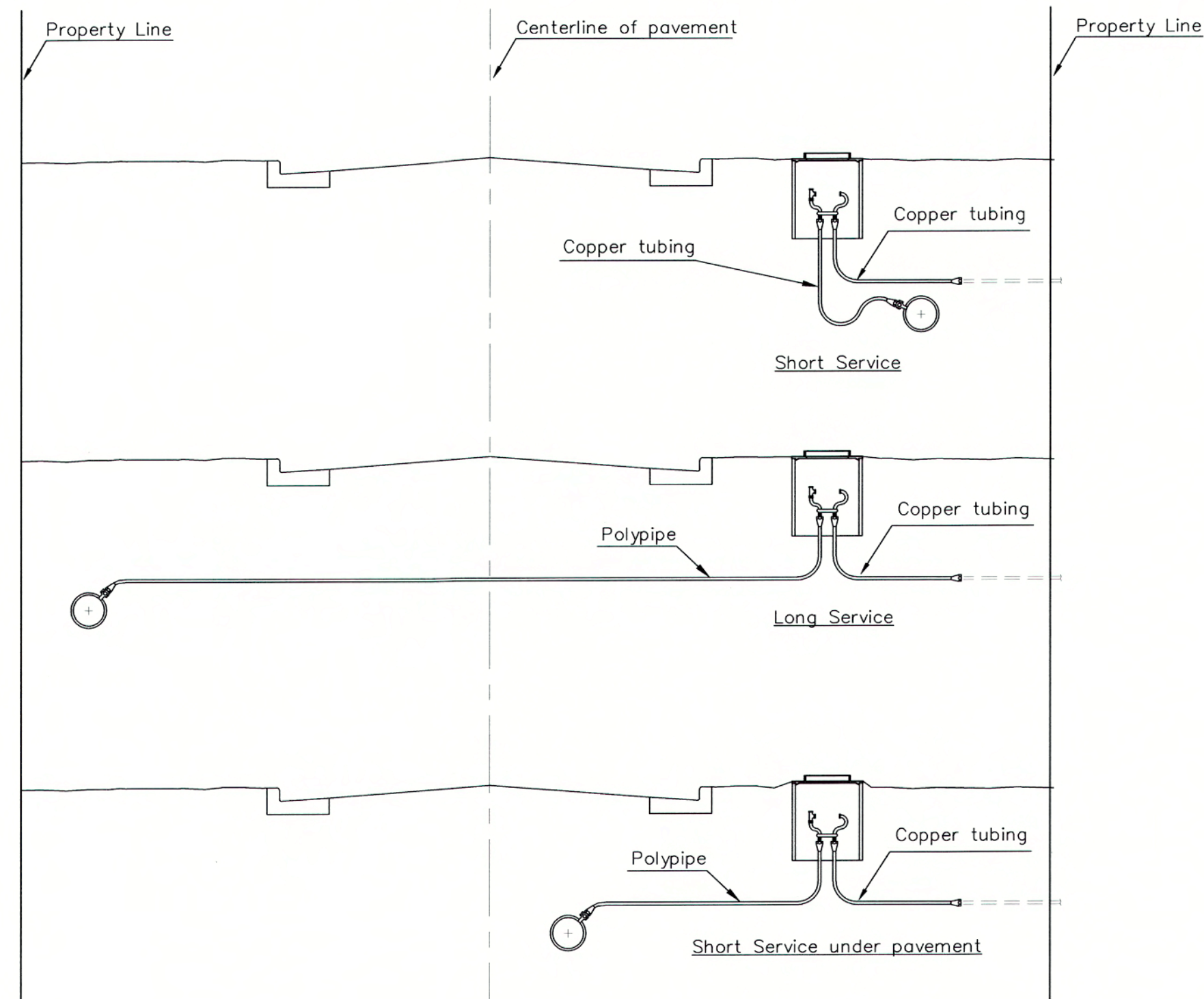
BEECHCRAFT
 DESIGN/BUILD CONSTRUCTION SERVICES
 WICHITA, KANSAS

REVISIONS:	MARK	DATE	DESCRIPTION

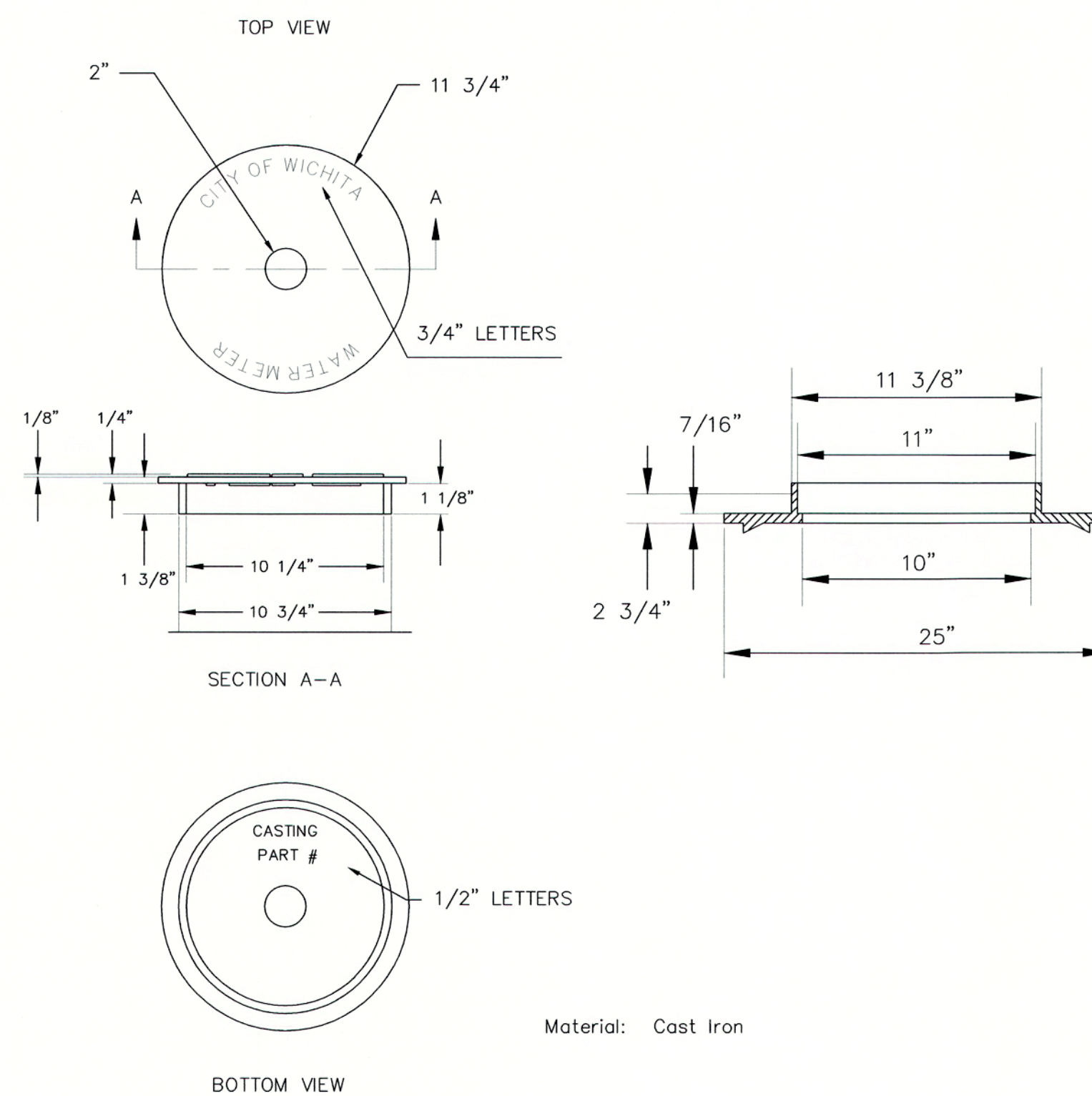
PROJ NO: P125120033
 SCALE: 1" = 50'
 DATE: 8/13/2013
 DESIGNED BY: DAN
 DRAWN BY: DAN
 CHECKED BY: JRL

SHEET TITLE:
 Southwest Campus
 Water Line PLAN

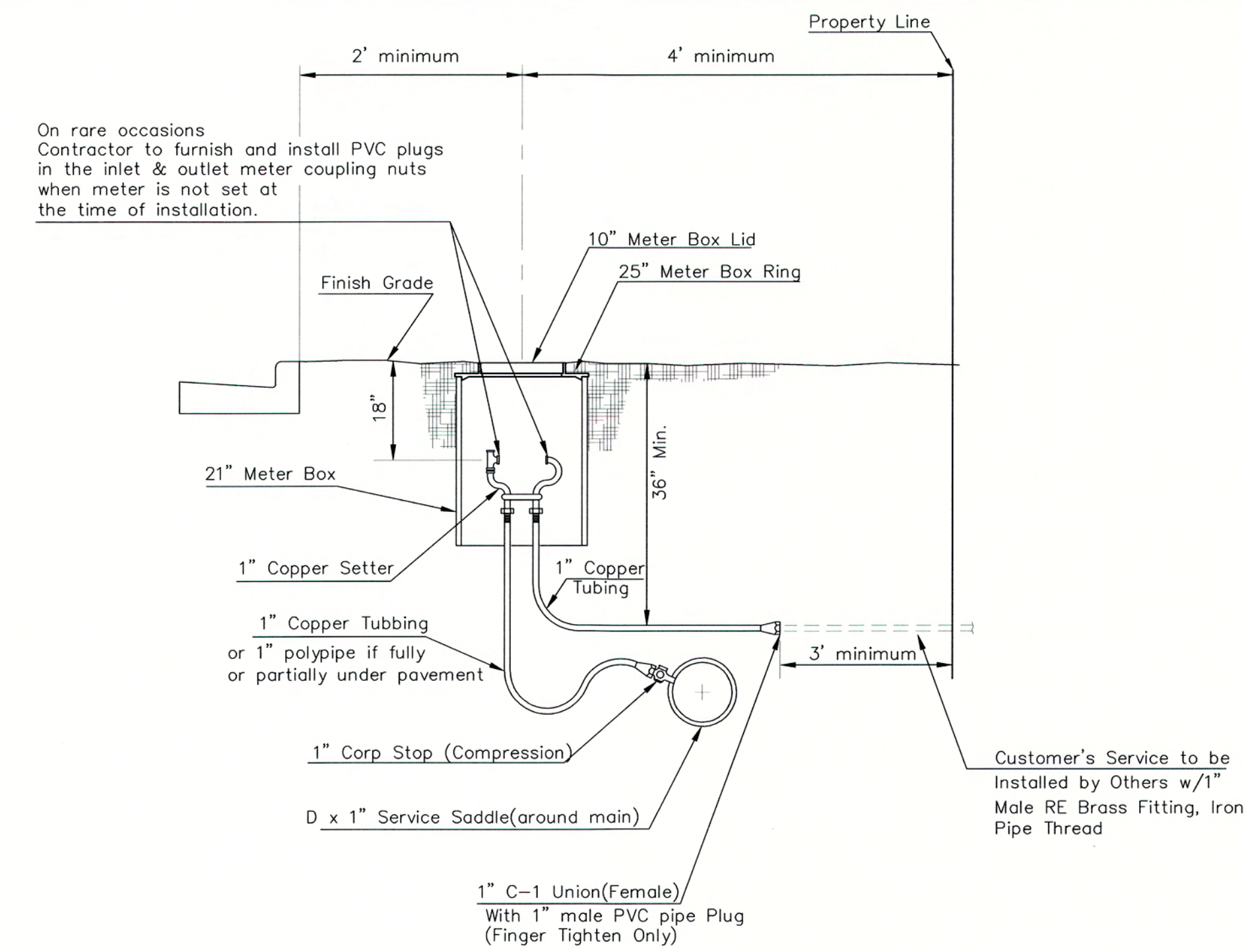
SHEET NO.
 2
 SHEET 2 OF 14



SERVICE TYPES



NOT TRAFFIC RATED
RING & LID FOR 1" METER BOX

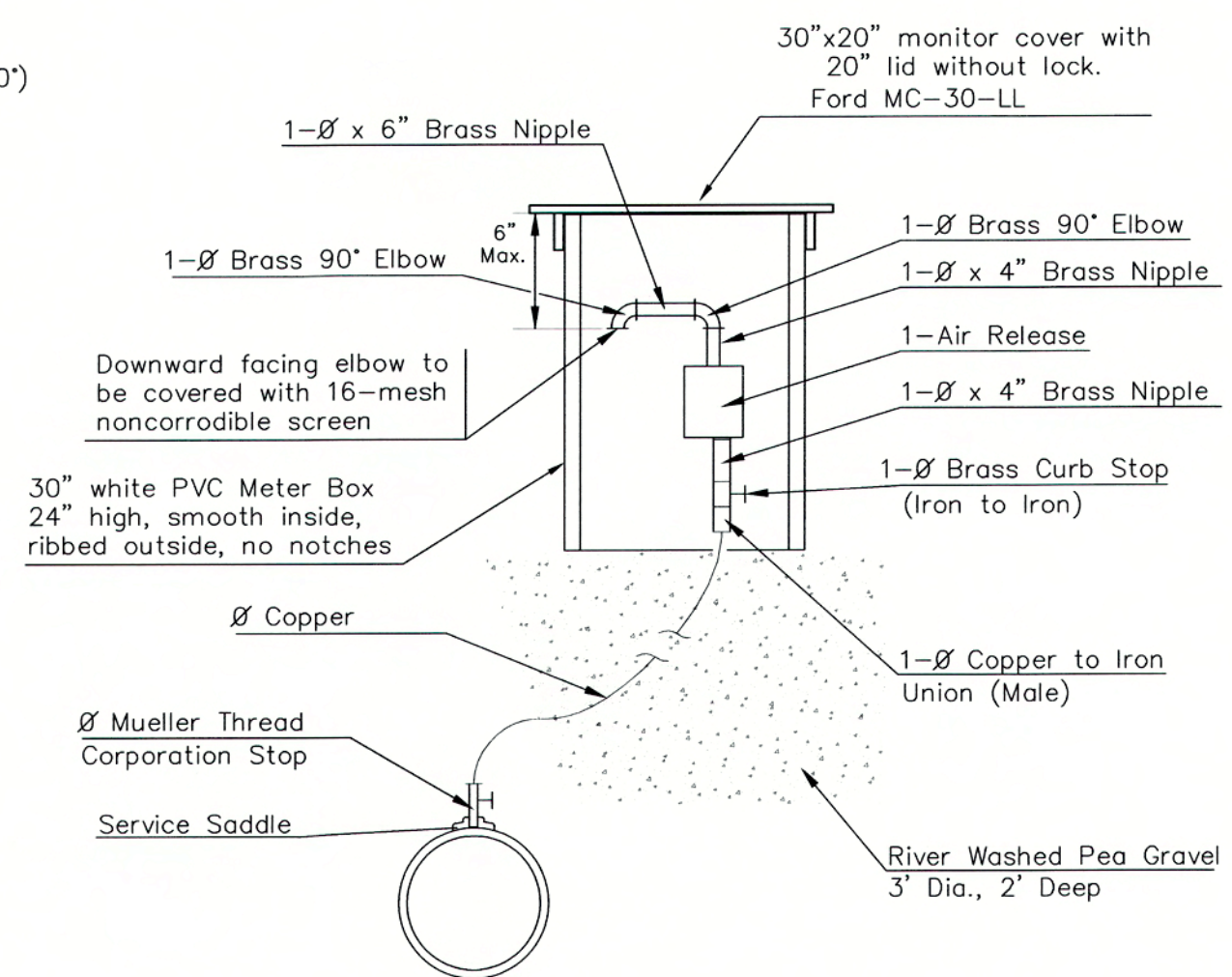


TYPICAL 1" METER SETTING

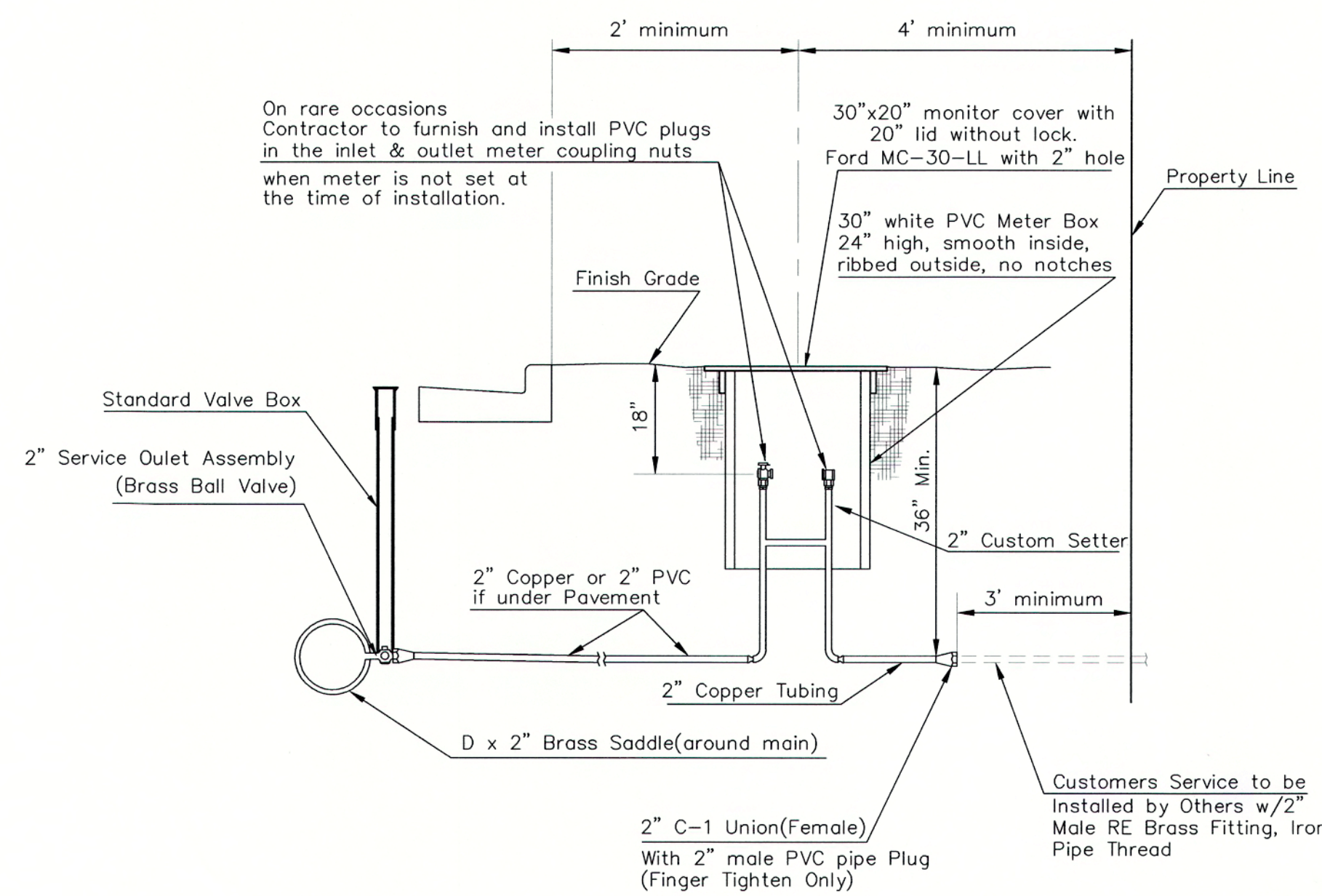
NOTE:

THE 1 1/2" AIR RELEASE ASSEMBLY WILL TYPICALLY BE USED ON WATER MAINS 24" AND SMALLER, AS SPECIFICALLY DESIGNATED IN THE PLANS. COMBINATION AIR RELEASE ASSEMBLIES WILL BE SPECIFICALLY DESIGNED FOR PROJECTS WITH LARGER MAINS, AND WILL BE INCLUDED IN THE PLANS.

- 1 - \emptyset Mueller Thread Corporation Stop
 - 2 - \emptyset Type "K" Copper Tubing
 - 1 - \emptyset Copper to Iron Union (Male)
 - 1 - \emptyset Brass Curb Stop (Iron to Iron)
 - 2 - \emptyset x4" Brass Nipple
- Air Release
- 2 - \emptyset Brass Elbows (90°)
 - 1 - 1"x6" Brass Nipple
 - 1 - 30" Monitor Cover
 - 1 - 20" Meter Lid

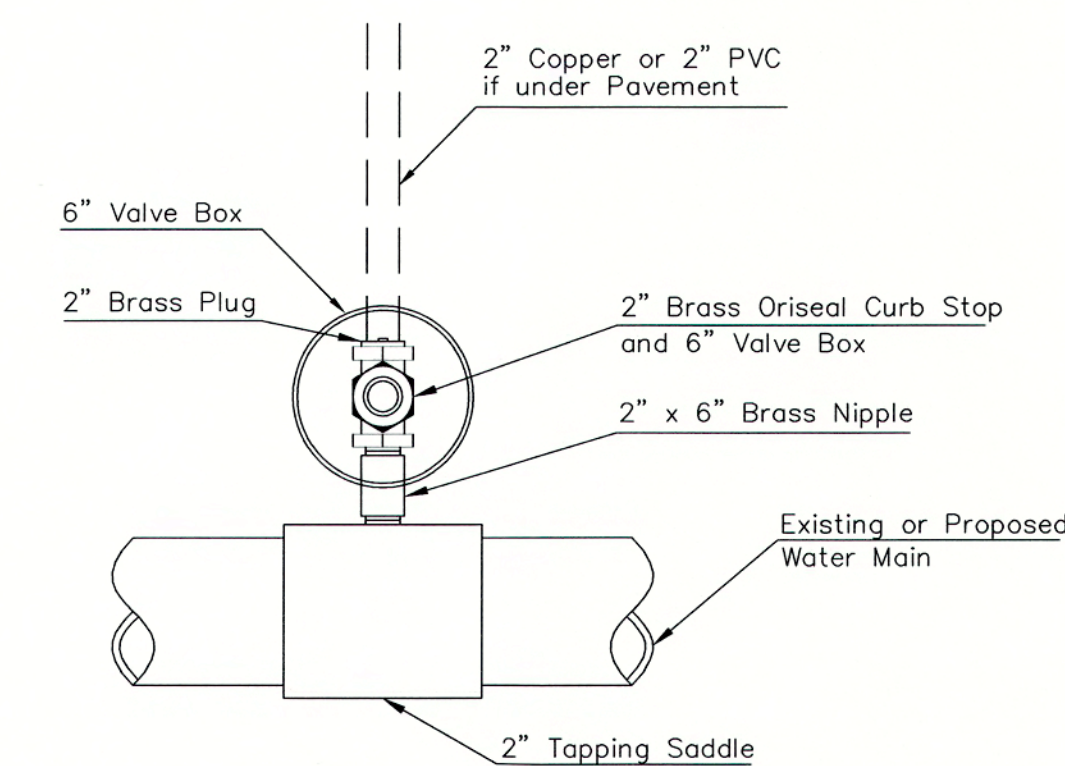


MATERIALS FOR 1" or 2" AIR RELEASE ASSEMBLY
 $\emptyset = 1" \text{ or } 2"$



TYPICAL 2" METER SETTING

Note: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.



2" SERVICE OUTLET ASSEMBLY



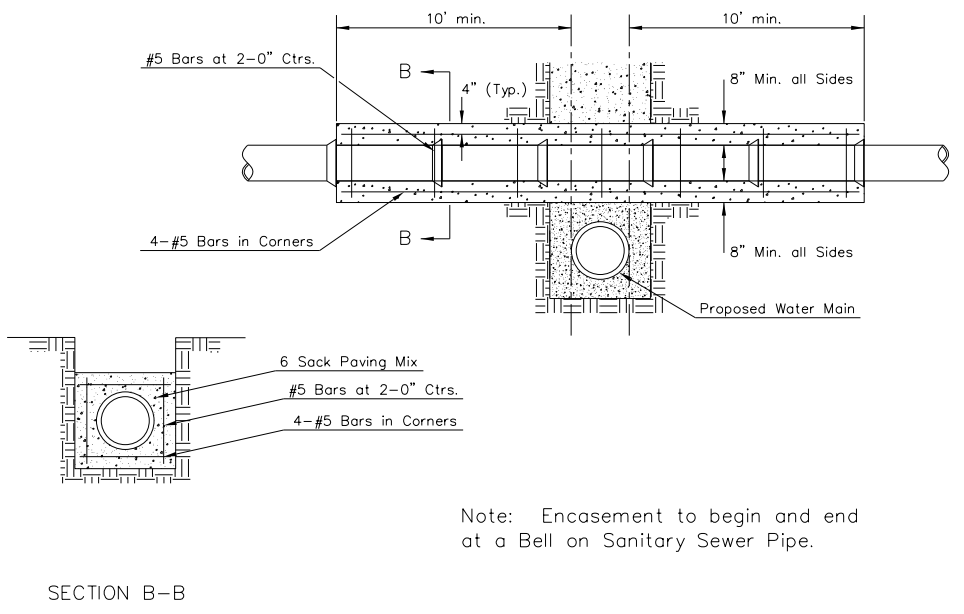
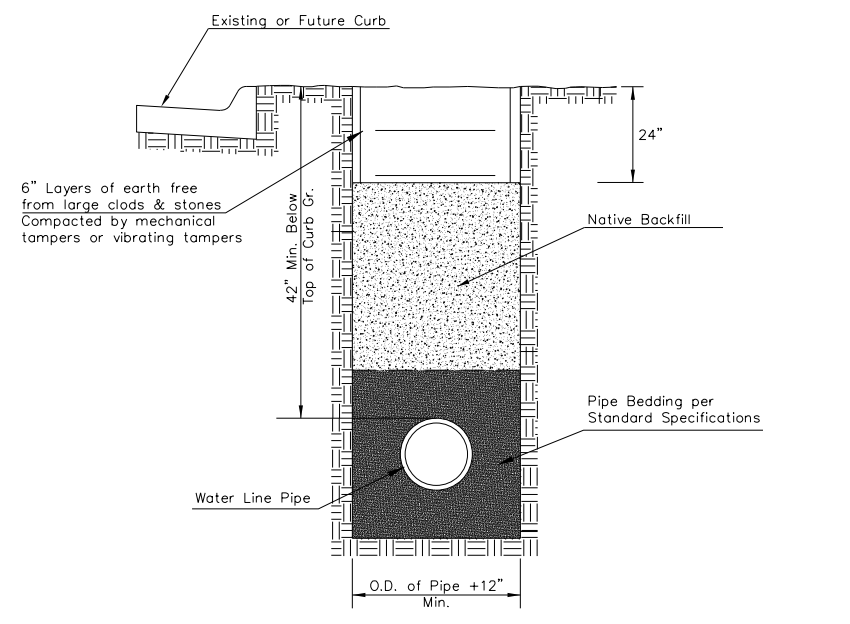
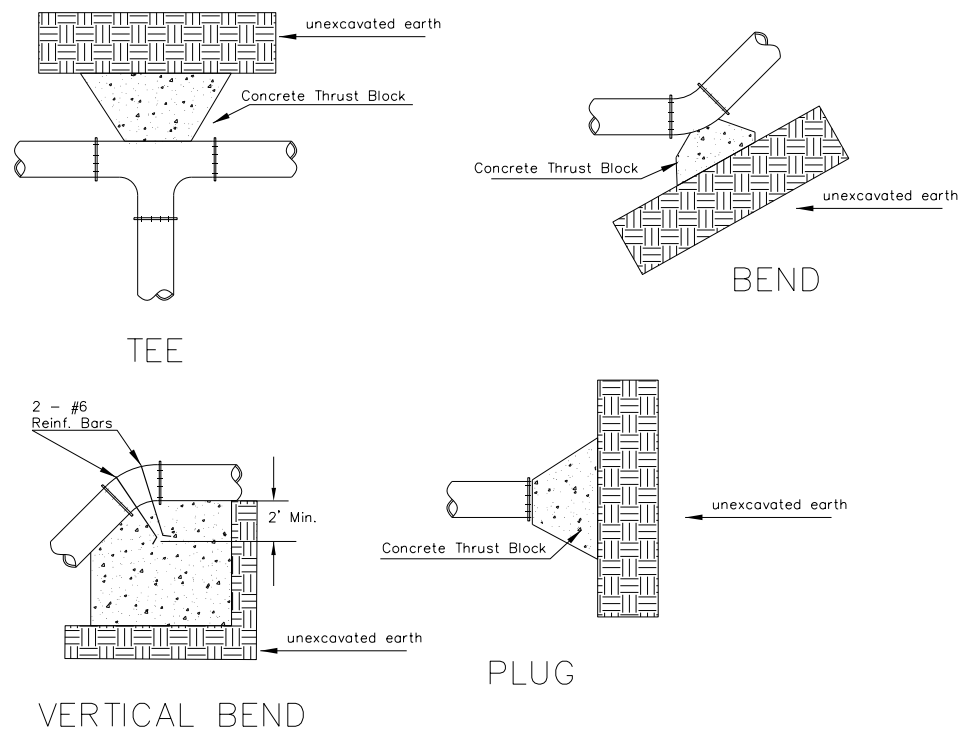
STANDARD
WATER SERVICE
DETAIL

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER 1754PPW	OCA NUMBER 607853	DATE 01/2013
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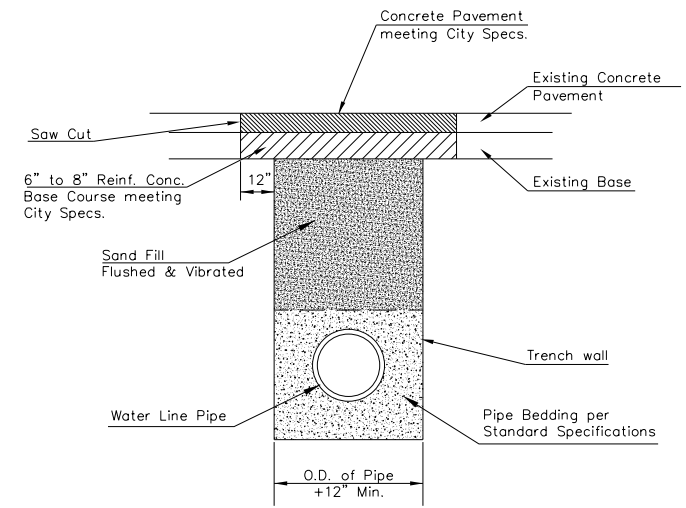
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
5 of 14

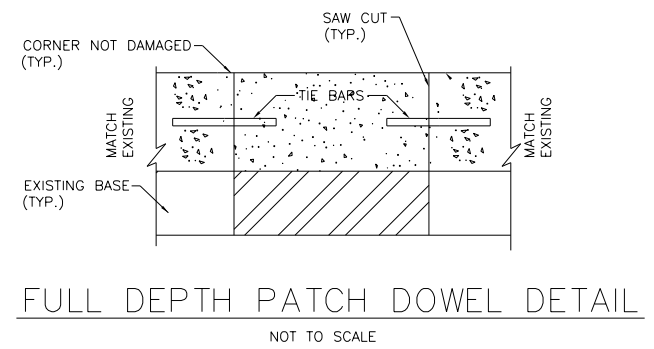


PIPE SIZE	THRUST AT FITTINGS IN TONS-AT 150#/IN ² P					
	PLUG	90°	45°	22 1/2'	11 1/4'	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

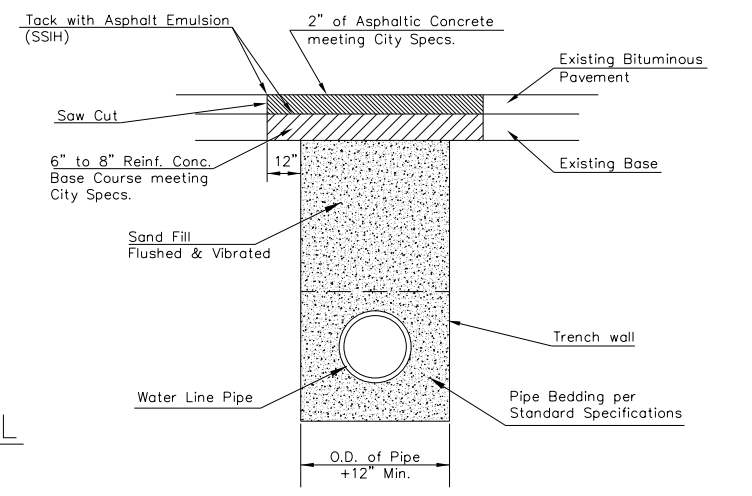
TYPICAL THRUST BLOCKS



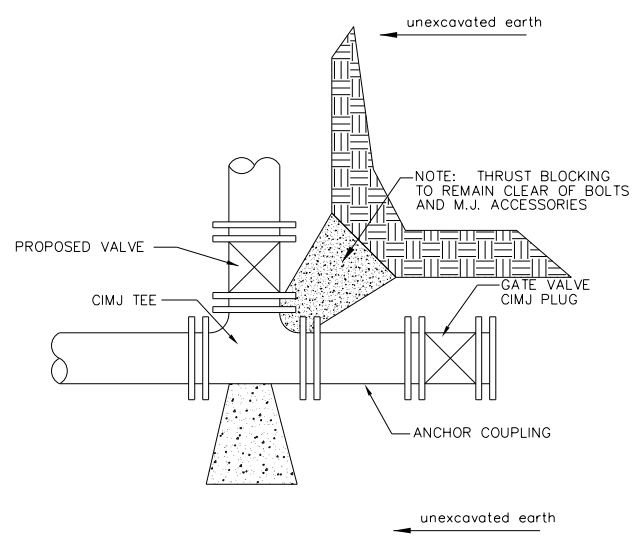
CONCRETE PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS



FULL DEPTH PATCH DOWEL DETAIL



BITUMINOUS PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS

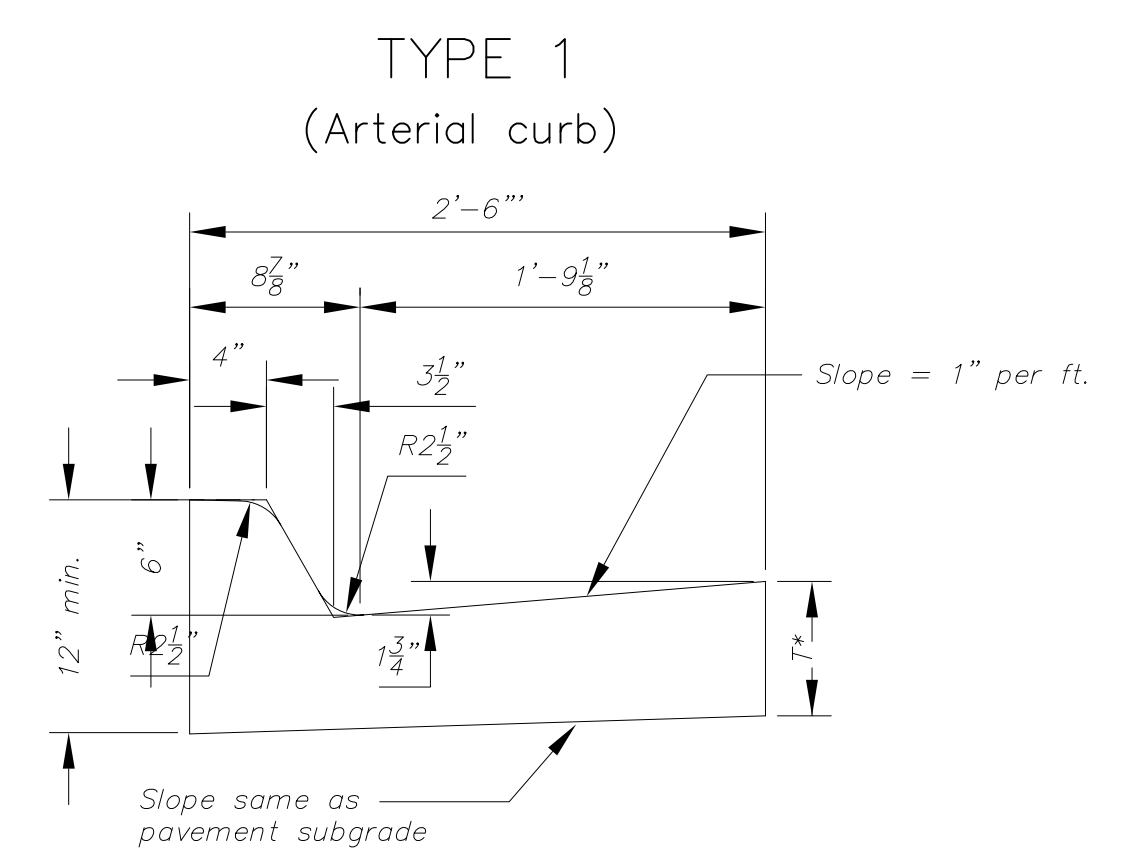


KEY BLOCK DETAIL

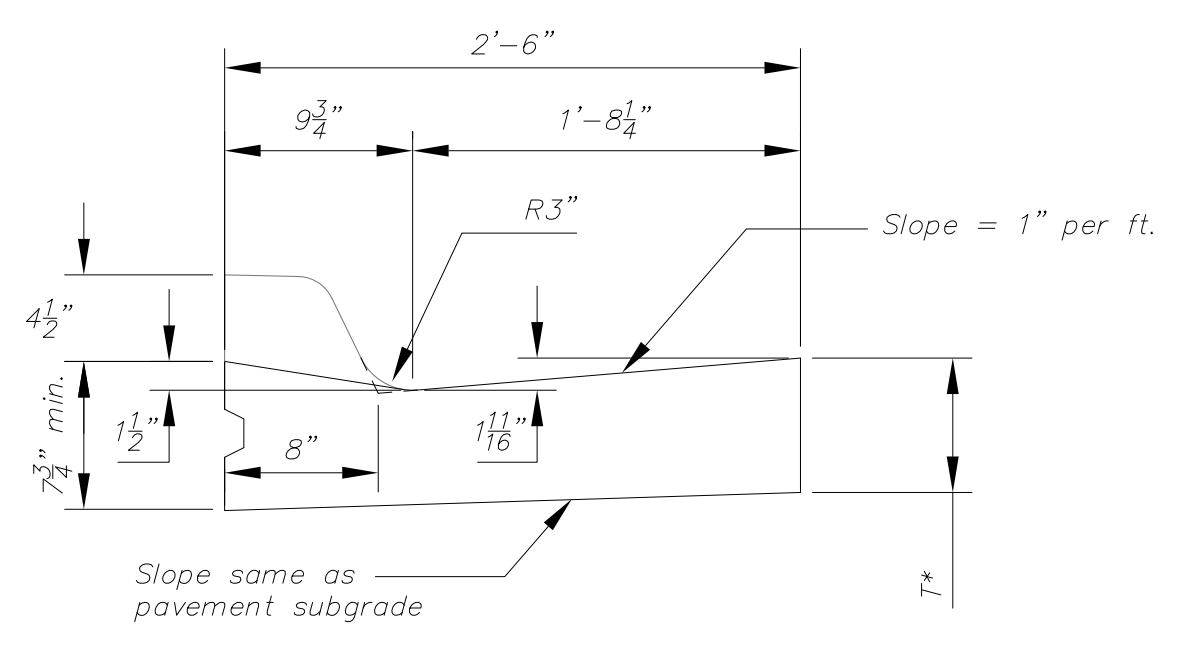
* PLANS GOVERN UNLESS OTHERWISE NOTED ON PLANS



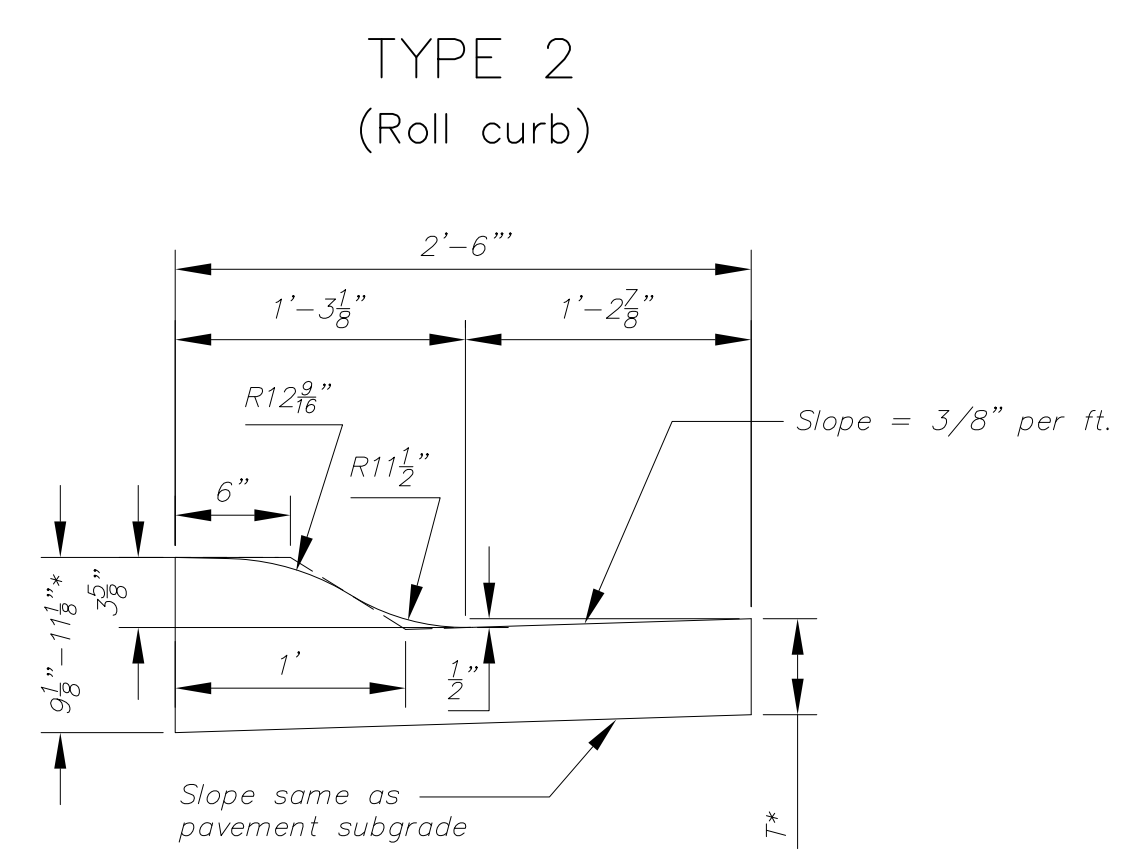
MISCELLANEOUS WATER DETAILS		
CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER 1754PPW	OCA NUMBER 607853	DATE 04/2013
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET 6 of 14



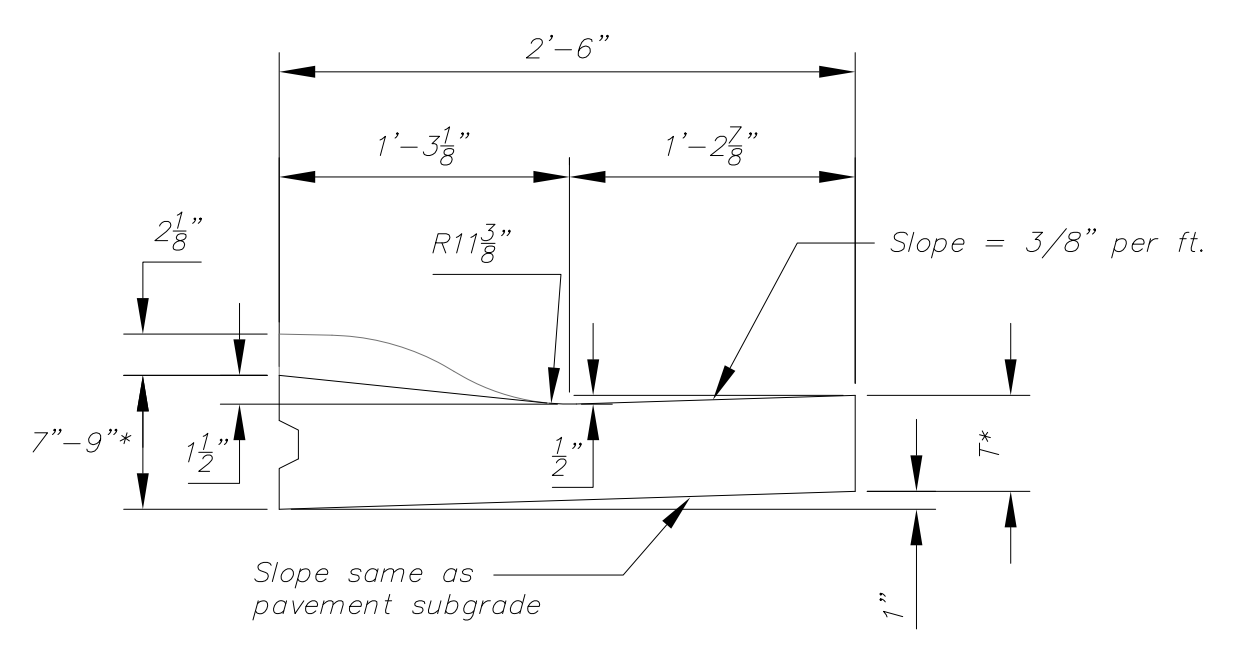
Combined Curb & Gutter (6")



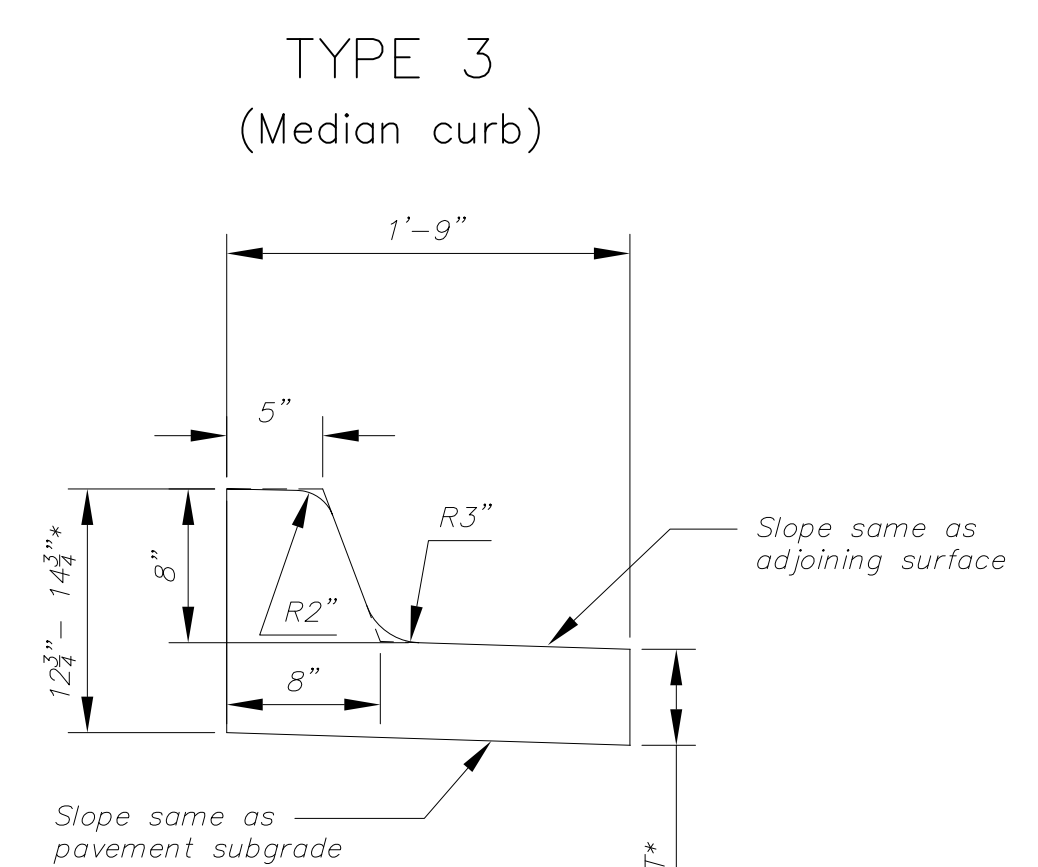
Combined Curb & Gutter (1 1/2")



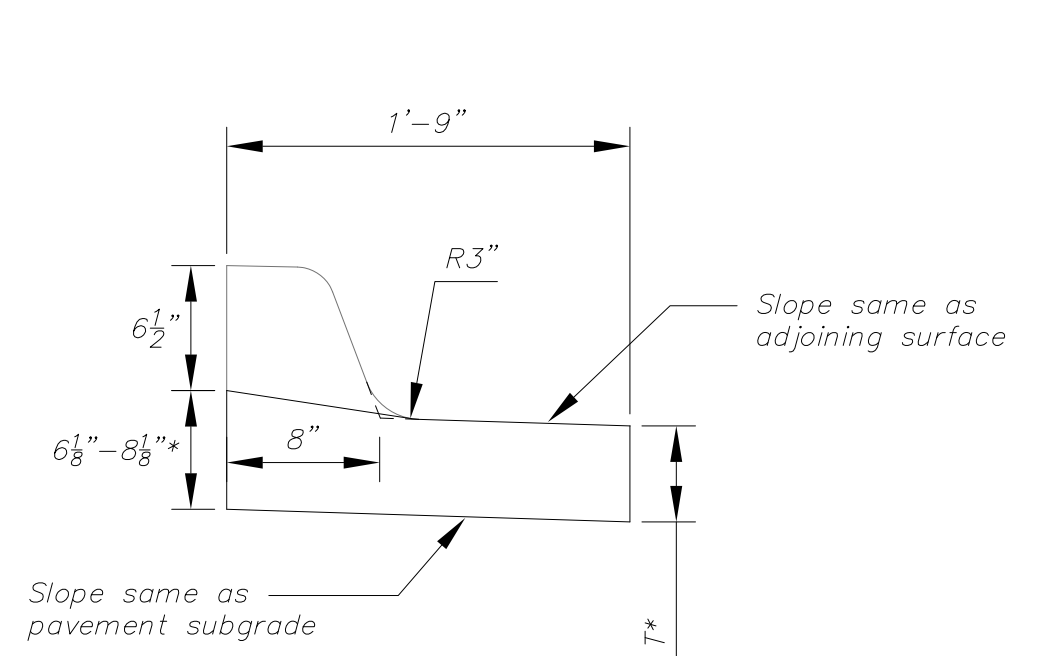
Combined Curb & Gutter (3 5/8")



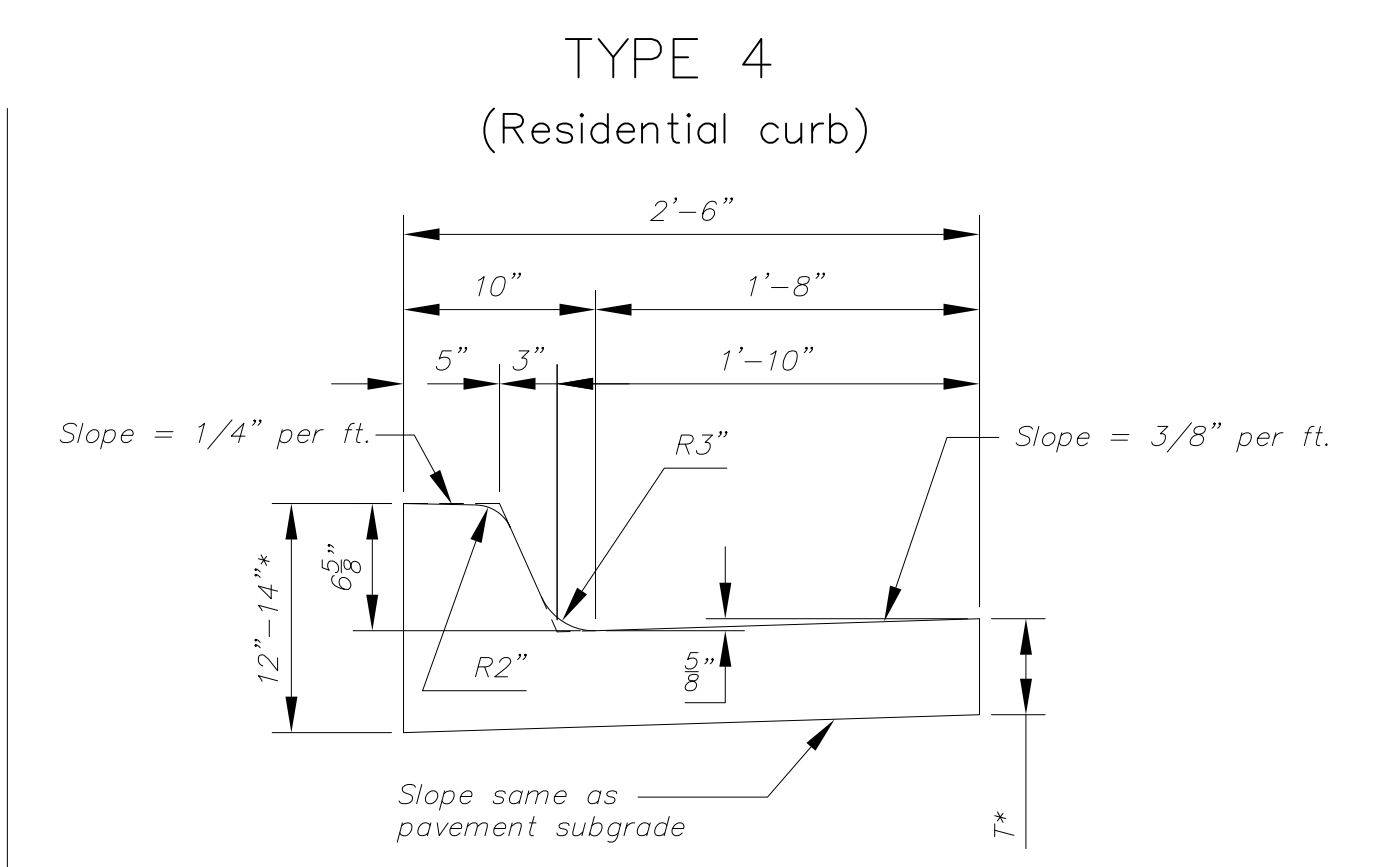
Combined Curb & Gutter (1 1/2")



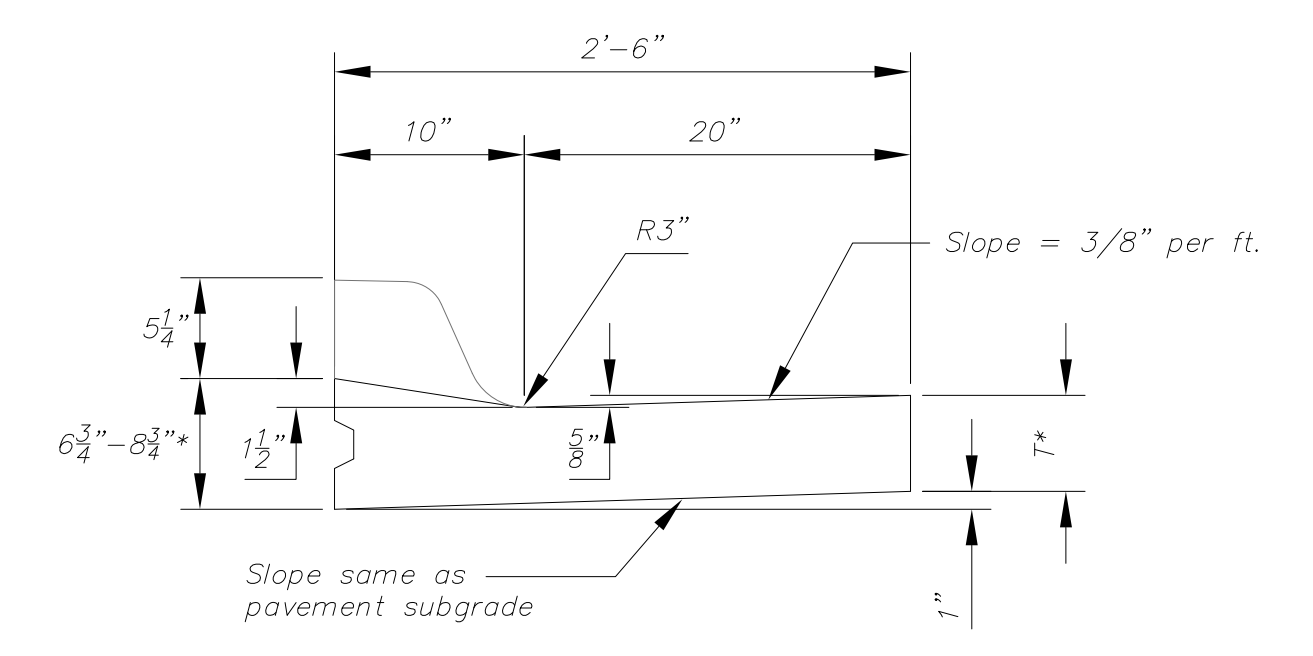
Combined Curb & Gutter (8")



Combined Curb & Gutter (1 1/2")



Combined Curb & Gutter (6 5/8")

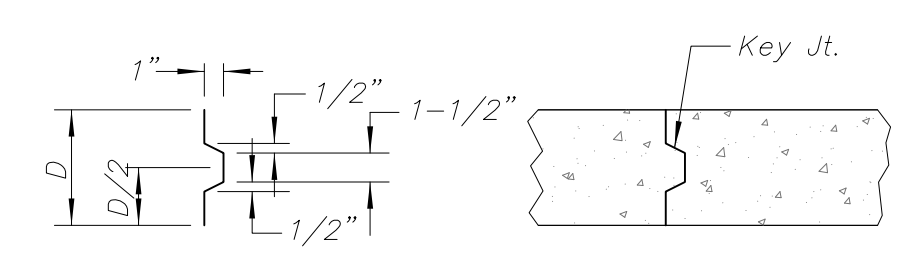
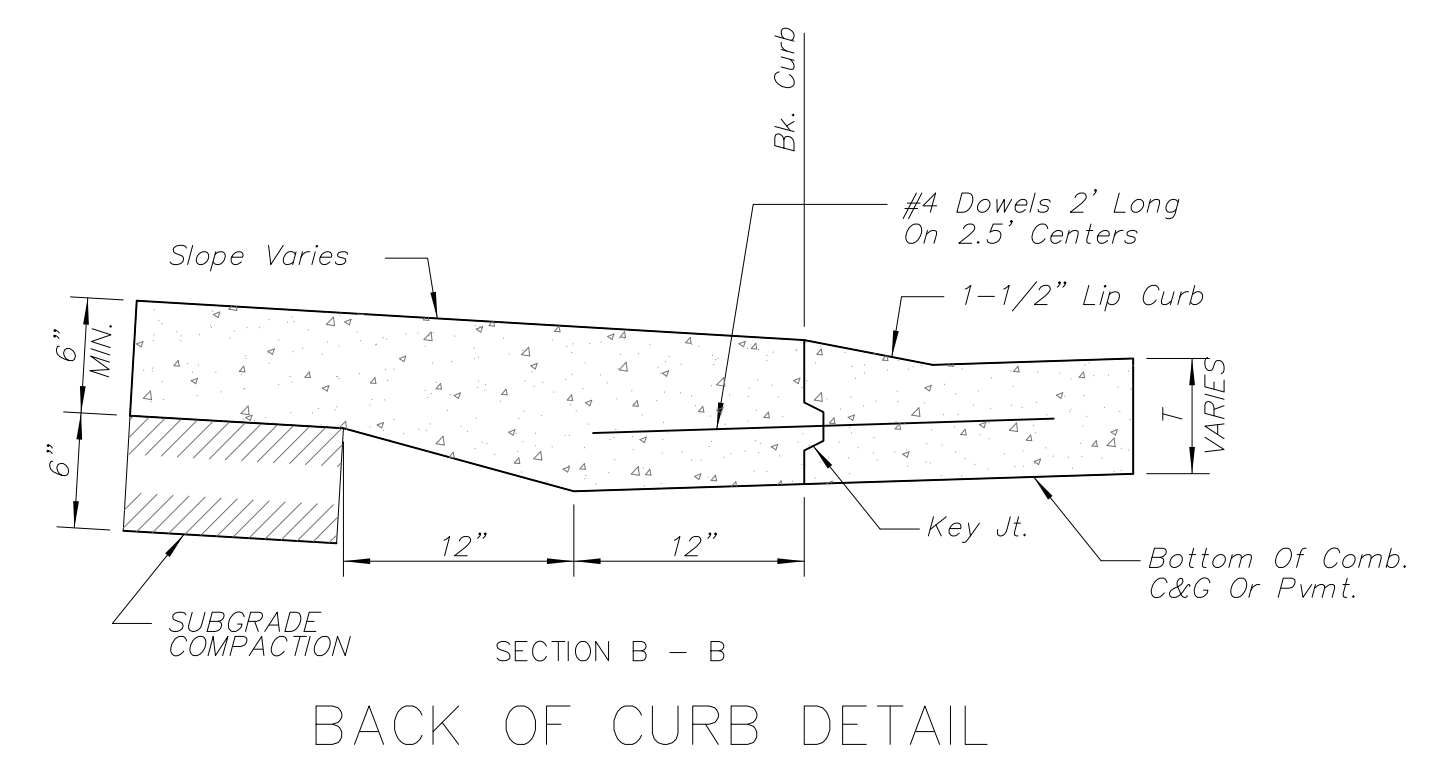


Combined Curb & Gutter (1 1/2")

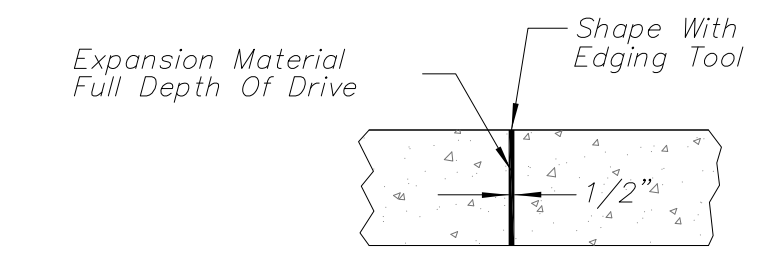
T* = Thickness of curb to adjust with pavement thickness

GENERAL NOTES

- Expansion (isolation) joints shall be constructed a maximum of 300' apart and at all Pls, PCs, cul-de-sac quadrants, and ends of returns.
- Contraction joints shall be constructed a minimum of 12' apart.
- Joint sealer shall be required at all joints on arterial and industrial streets and at intersections on residential streets.

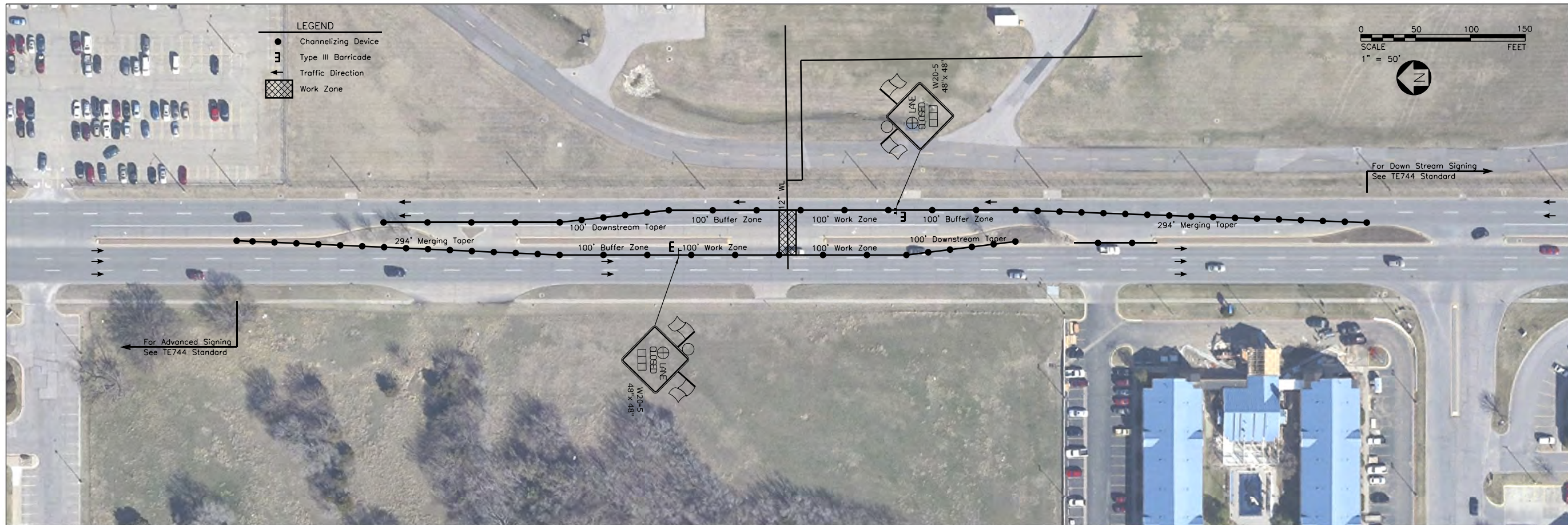
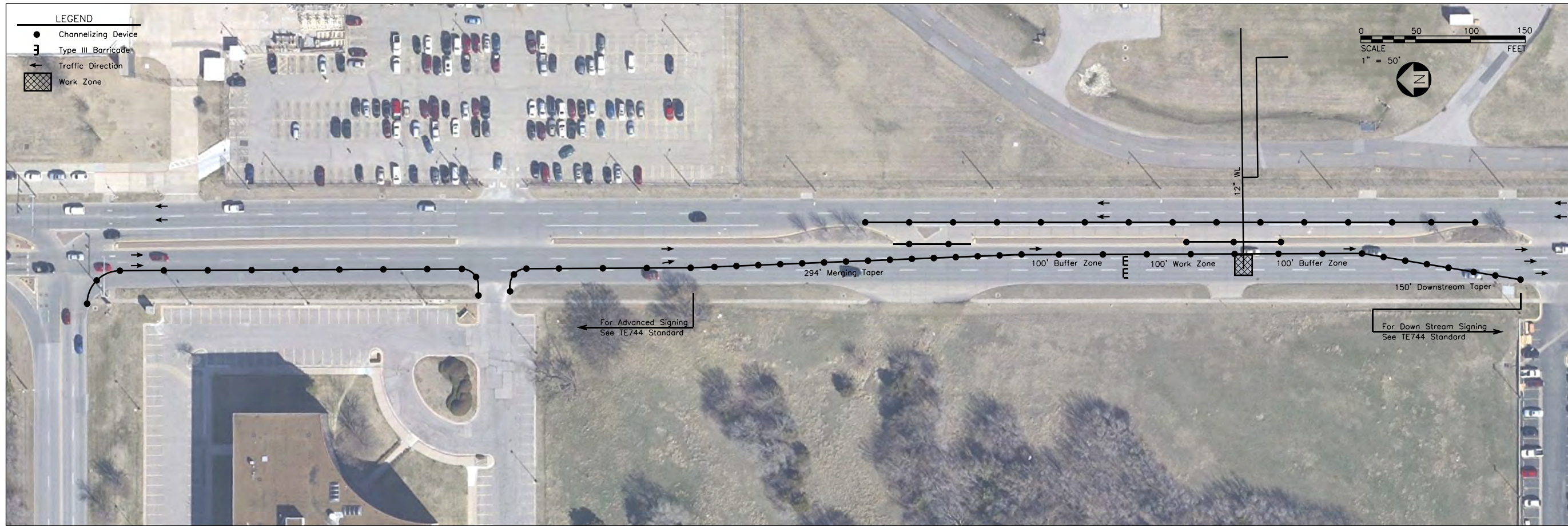


ALT. LONGITUDINAL CONSTRUCTION JOINT



EXPANSION JOINT (E.J.)

			CURB & GUTTER DETAILS	
			CITY ENGINEER GARY JANZEN, P.E.	
PROJECT NUMBER 1754PPW	OCA NUMBER 607853	DATE 12/2010		
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501			SHEET 7 of 14	



TranSystems
 245 NORTH WACO
 SUITE 222
 WICHITA, KANSAS 67202
 PHONE: 316-303-3000
 FAX: 316-303-0156

Dondlinger CONSTRUCTION
 2856 S. SHERIDAN
 WICHITA, KS 67217
 PHONE: 316-945-0555
 FAX: 316-945-9009

BEECHCRAFT DESIGN/BUILD CONSTRUCTION SERVICES
 WICHITA, KANSAS

REVISIONS:

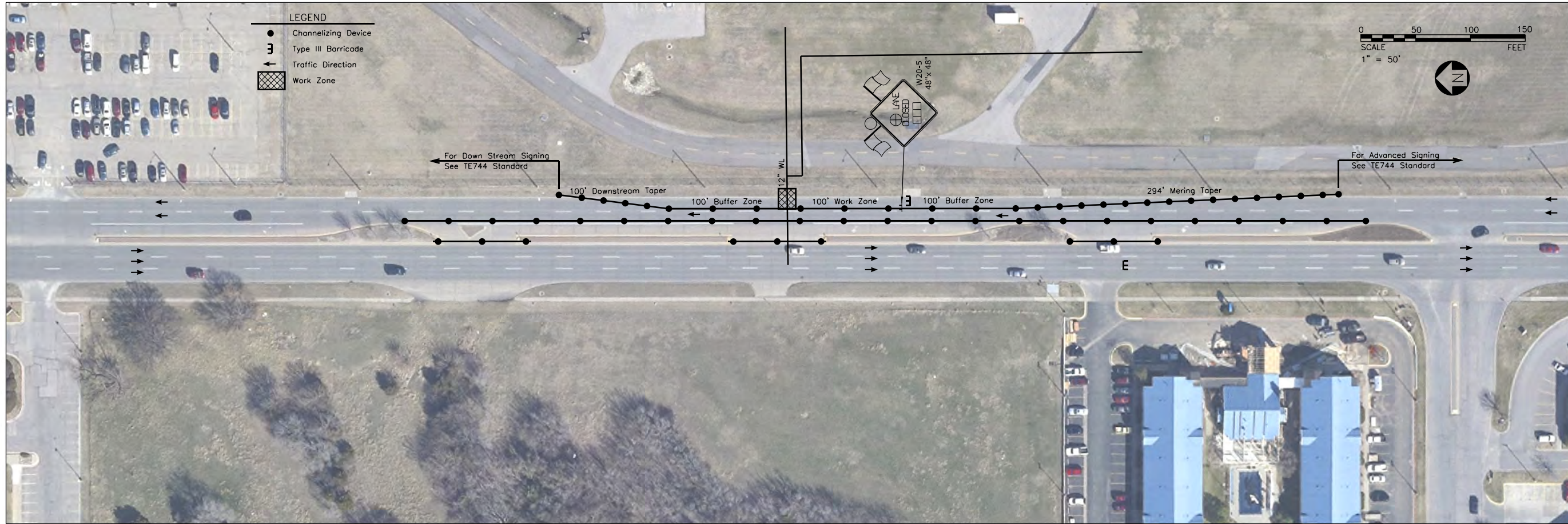
MARK	DATE	DESCRIPTION

PROJ NO: P125120033
 SCALE: 1" = 50'
 DATE: 7/26/2013
 DESIGNED BY: DAN
 DRAWN BY: DAN
 CHECKED BY: JRL

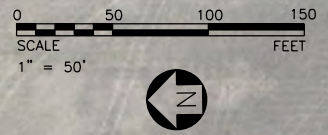
SHEET TITLE:
TRAFFIC CONTROL PHASE 1 & 2

SHEET NO.
8
 SHEET 8 OF 14

danavento
 7/26/2013 9:10:41 AM - G:\M12\0039\Road\LDG-JTL-103.DGN



- LEGEND**
- Channelizing Device
 - ⊥ Type III Barricade
 - Traffic Direction
 - ▨ Work Zone



danavento
 7/26/2013 9:12:41 AM - G:\M12\0039\Road\LDG-JTL-104.DGN

TranSystems
 245 NORTH WACO
 SUITE 222
 WICHITA, KANSAS 67202
 PHONE: 316-303-3000
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BEECHCRAFT
DESIGN/BUILD CONSTRUCTION SERVICES
 WICHITA, KANSAS

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: P125120033
 SCALE: 1" = 50'
 DATE: 7/26/2013
 DESIGNED BY: DAN
 DRAWN BY: DAN
 CHECKED BY: JRL

SHEET TITLE:
TRAFFIC CONTROL
PHASE 3

SHEET NO.
9
 SHEET 9 OF 14

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	1754PPW	2013	10	14

1. MUTCD COMPLIANCE:

ALL TEMPORARY TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION AND MAINTENANCE SHALL COMPLY WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS WHICH HAS BEEN ADOPTED BY THE SECRETARY OF TRANSPORTATION. WHENEVER THE TEMPORARY TRAFFIC CONTROL STANDARDS CONFLICT WITH THE MUTCD, THE STANDARDS SHALL GOVERN.

2. DESIGN SPEED:

THOSE ITEMS DELEGATED TO TEMPORARY TRAFFIC CONTROL SHOULD BE DESIGNED AND INSTALLED USING THE POSTED/LEGAL SPEED OF THE ROADWAY PRIOR TO WORK STARTING.

3. CLEAR ZONE:

ALL CONSTRUCTION EQUIPMENT (INCLUDING VEHICLES), MATERIALS, AND DEBRIS SHALL BE STORED OUT OF THE CLEAR ZONE. WHERE THIS CANNOT BE ACHIEVED, THE CONTRACTOR SHALL PLACE APPROPRIATE SIGNS, OBJECT IDENTIFIERS, AND/OR BARRICADES AS DESIGNATED BY THE ENGINEER. TEMPORARY TRAFFIC CONTROL DEVICES NEEDED FOR THIS CONDITION SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.

4. MINIMUM LANE WIDTHS:

LANE WIDTHS SHALL BE A MINIMUM OF 11' (MEASURED BETWEEN CENTERLINES OF PAVEMENT MARKINGS) OR AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER. A LANE WIDTH LESS THAN 11' MAY REQUIRE RESTRICTED ROADWAY WIDTH SIGNING.

5. FLAGGER:

A MINIMUM OF ONE FLAGGER SHALL BE STATIONED WITHIN EACH MULTI-LANE ROADWAY ACTIVITY AREA WHERE WORK IS IN A CLOSED LANE ADJACENT TO TRAFFIC AND NOT SEPARATED BY A CONCRETE SAFETY BARRIER SYSTEM.

6. PAVEMENT MARKING:

WHEN THE WORK WILL OCCUPY A LOCATION MORE THAN THREE DAYS, ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED OR MASKED AND ALL TRANSITION TAPERS, CROSSEOVERS, AND EDGE LINES ALONG CHANNELIZING DEVICES SHALL BE MARKED WITH SOLID 4" WIDE PAVEMENT MARKING.

7. FIRST MODULE OF IBS:

THE FIRST MODULE OF EACH INERTIAL BARRIER SYSTEM (IBS) SHALL HAVE A MINIMUM OF 2 SQ. FT. OF FLUORESCENT ORANGE ASTM TYPE IV SHEETING FACING TRAFFIC. EITHER A VERTICAL RECTANGLE OR DIAMOND SHAPE MAY BE USED.

8. PEDESTRIAN / BICYCLE SAFETY:

WORK ZONE SIGNS SHALL NOT INHIBIT PEDESTRIAN AND BICYCLE TRAFFIC ON SIDEWALKS OR OTHER AREAS DESIGNATED FOR PEDESTRIAN OR BICYCLE USE. CONSIDERATION SHOULD BE MADE TO SEPARATE PEDESTRIAN AND BICYCLE MOVEMENTS FROM BOTH WORK SITE ACTIVITY AND VEHICULAR TRAFFIC. UNLESS A REASONABLE SAFE ROUTE THAT DOES NOT INVOLVE CROSSING THE ROADWAY CAN BE PROVIDED, PEDESTRIANS AND BICYCLISTS SHOULD BE APPROPRIATELY DIRECTED WITH ADVANCE SIGNING THAT ENCOURAGES THEM TO CROSS TO THE OPPOSITE SIDE OF THE ROADWAY. IN URBAN AND SUBURBAN AREAS WITH HIGH VEHICULAR TRAFFIC VOLUMES, THESE SIGNS SHOULD BE PLACED AT INTERSECTIONS (RATHER THAN MIDBLOCK LOCATIONS) SO THAT PEDESTRIANS AND BICYCLISTS ARE NOT CONFRONTED WITH MIDBLOCK WORK SITES THAT WILL INDUCE THEM TO ATTEMPT SKIRTING THE WORK SITE OR MAKING A MIDBLOCK CROSSING.

WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED, THE TEMPORARY FACILITIES SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.

9. CHANGED STOP CONDITIONS:

ATTACH TWO FLUORESCENT RED-ORANGE FLAGS AND A RED TYPE "B" HIGH INTENSITY WARNING LIGHT TO ANY STOP SIGN THAT CREATES A NEW STOP CONDITION OR MOVES THE STOP CONDITION TO A NEW LOCATION. LEAVE FLAGS AND LIGHTS IN PLACE FOR AT LEAST THE FIRST 30 DAYS. INSTALL W3-1 (SYMBOLIC STOP AHEAD) SIGN IN ADVANCE OF STOP SIGN IF STOP SIGN IS NOT VISIBLE FOR A MINIMUM OF DISTANCE 'A' (SEE CHART ON TE710) OR IF STOP CONDITION IS MOVED TO LESS THAN DISTANCE 'A' FROM AN EXISTING STOP AHEAD SIGN.

10. LUMP SUM BIDDING:

WHEN TRAFFIC CONTROL IS BID LUMP SUM, ADDITIONAL DEVICES WILL BE PAID FOR AS EXTRA WORK.

11. NIGHTTIME LIGHTING:

WHEN NIGHTTIME WORK IS REQUIRED, FLOODLIGHTS SHOULD BE USED TO ILLUMINATE FLAGGER STATIONS, EQUIPMENT CROSSINGS, AND OTHER AREAS WHERE EXISTING LIGHTING IS NOT ADEQUATE FOR THE WORK TO BE PERFORMED SAFELY.

IN NO CASE SHALL FLOODLIGHTS BE PERMITTED TO CREATE A DISABLING GLARE FOR THE DRIVER. THE ADEQUACY OF THE FLOODLIGHT PLACEMENT AND ELIMINATION OF POTENTIAL GLARE SHOULD BE CHECKED BY DRIVING THROUGH THE PROJECT.

12. NCHRP REPORT 350 CRASHWORTHY REQUIREMENTS:

TRAFFIC CONTROL DEVICES SHALL MEET THE EVALUATION CRITERIA IN NCHRP REPORT 350 OR IN MASH REPORT 2009 AS SUPPLEMENTED BY FHWA MEMORANDUM "IDENTIFYING ACCEPTABLE HIGHWAY SAFETY FEATURES," DATED JULY 25, 1997. AVAILABLE ON THE INTERNET AT http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/policy_memo/

ANY DEVICE NOT ADDRESSED BY THE TE STANDARDS MAY BE APPROVED ON A CASE BY CASE BASIS BY THE ENGINEER. THE DEVICE SHALL BE ACCOMPANIED BY AND INSTALLED ACCORDING TO MASH REPORT 2009. ANY DEVICE ACCEPTED PRIOR TO THE ADOPTION OF MASH REPORT 2009 USING CRITERIA FROM NCHRP REPORT 350 MAY REMAIN IN PLACE AND CONTINUE TO BE USED. ANY TRAFFIC CONTROL DEVICE ACCEPTED USING NCHRP REPORT 350 CRITERIA IS NOT REQUIRED TO BE TESTED UNDER MASH REPORT 2009. HOWEVER, NEW TRAFFIC CONTROL DEVICES NOT PREVIOUSLY EVALUATED MUST UTILIZE MASH REPORT 2009 FOR TESTING AND EVALUATION.

THE CONTRACTOR SHALL:

1) PROVIDE TO THE ENGINEER A COPY OF THE MANUFACTURER'S SELF-CERTIFICATION THAT ANY CATEGORY 1 (i.e. - PLASTIC CONICAL DELINEATORS, TUBULAR MARKERS, DRUMS WITHOUT ATTACHMENTS) AND CATEGORY 2 (i.e. - PORTABLE SIGN STANDS (WITH SIGNS), TYPE II AND III BARRICADES, AND VERTICAL PANELS) DEVICES USED ON THE PROJECT ARE NCHRP REPORT 350 OR MASH REPORT 2009 COMPLIANT.

2) PROVIDE TO THE ENGINEER A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER (WZ-xxx) FOR ANY CATEGORY 2 DEVICE (i.e. - PORTABLE SIGN STANDS (WITH SIGNS), TYPE II AND III BARRICADES, AND VERTICAL PANELS) USED ON THE PROJECT. WORK ZONE FHWA ACCEPTANCE LETTERS (WZ-xxx) ARE AVAILABLE ON THE INTERNET AT: http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/wzd/

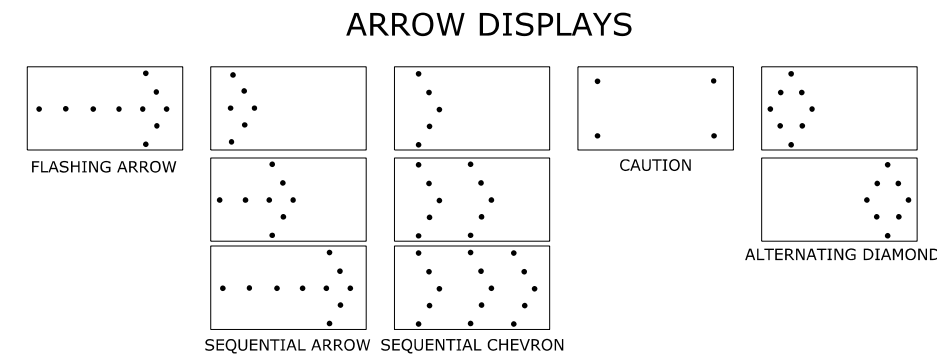
3) CERTIFY THAT THE TRUCK MOUNTED ATTENUATORS (TMA'S) (WHICH ARE DEFINED AS CATEGORY 3 DEVICES BY THE FHWA MEMORANDUM) MEET CURRENT CRASHWORTHY SPECIFICATIONS AS DEFINED ABOVE AND INCLUDE A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER. ALL CATEGORY 1 & 2 DEVICES SHALL BE NCHRP REPORT 350 OR MASH REPORT 2009 COMPLIANT.

13. LEAD IN CHANNELIZING DEVICES ON CENTERLINE:

TEMPORARY RUMBLE STRIPS MAY BE USED IN LIEU OF LEAD IN CENTERLINE CHANNELIZING DEVICES WHEN THE ROADWAY IS LESS THAN OR EQUAL TO 30' (FEET) INCLUDING PAVED SHOULDERS. WHEN EXTENUATING CIRCUMSTANCES EXIST, THE AREA ENGINEER MAY ELECT TO ELIMINATE BOTH THE LEAD IN CHANNELIZERS AND THE RUMBLE STRIPS.

14. TEMPORARY RUMBLE STRIPS:

ALTERNATIVE TEMPORARY RUMBLE STRIP OPTIONS MAY BE AVAILABLE. PLEASE CONTACT THE TEMPORARY TRAFFIC CONTROL UNIT FOR MORE INFORMATION AT 785-296-0355 OR 785-296-1183.



ARROW DISPLAY ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING FROM THEIR FULL-RATED LAMP VOLTAGE. FULL LAMP VOLTAGE SHOULD BE USED DURING THE DAY AND DIMMED MODE SHALL BE USED AT NIGHT. FOR SHOULDER WORK, ROADSIDE WORK NEAR THE SHOULDER, BLOCKING THE SHOULDER, OR FOR TEMPORARY CLOSING ONE LANE ON A TWO-LANE, TWO-WAY ROADWAY, AN ARROW PANEL SHALL BE USED ONLY IN THE CAUTION MODE.

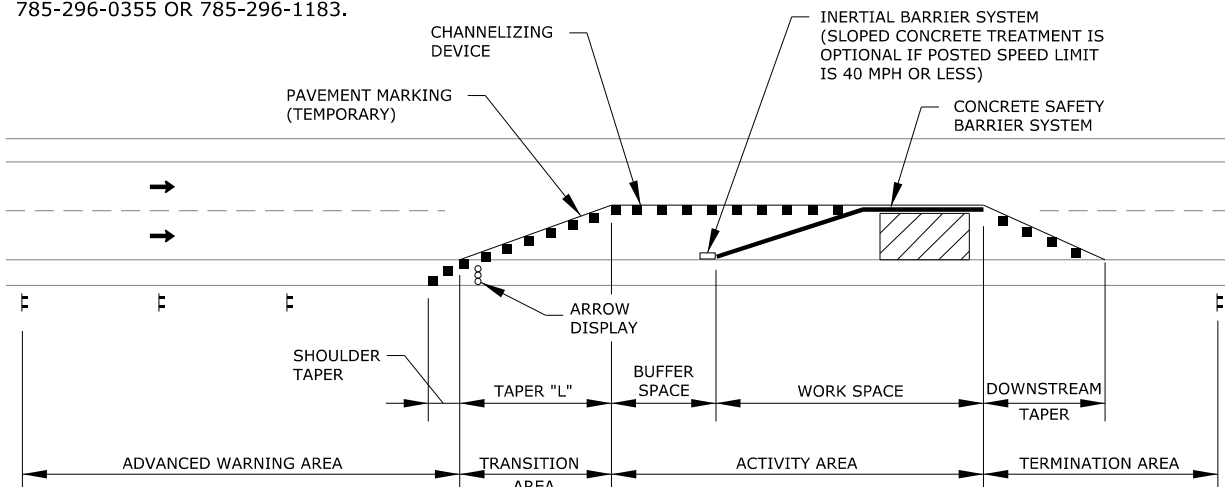
BUFFER SPACE

SPEED (MPH) *	20	25	30	35	40	45	50	55	60	65	70	75
LENGTH (ft)	115	155	200	250	305	360	425	495	570	645	730	820

* POSTED SPEED PRIOR TO WORK STARTING

NEITHER WORK ACTIVITY NOR STORAGE OF EQUIPMENT, VEHICLES, OR MATERIAL SHOULD OCCUR IN THE BUFFER SPACE. WHEN A PROTECTION VEHICLE IS PLACED IN ADVANCE OF THE WORK SPACE, ONLY THE SPACE UPSTREAM OF THE VEHICLE CONSTITUTES THE BUFFER SPACE.

IF TEMPORARY CONCRETE SAFETY BARRIER SYSTEM IS USED TO SEPARATE APPROACHING TRAFFIC FROM THE WORK SPACE, THE BARRIER SYSTEM SHALL BE CONSIDERED PART OF THE ACTIVITY AREA. A FULL LANE WIDTH SHOULD BE AVAILABLE THROUGHOUT THE LENGTH OF THE BUFFER SPACE. SEE TYPICAL WORK ZONE COMPONENTS.



NOTE:
REFER TO STD. TE702 FOR
TAPER "L" FORMULA.

TYPICAL WORK ZONE COMPONENTS

Drawn By: \$USER\$ Plotted: \$SYTIME\$ File: \$DGN\$SPEC\$

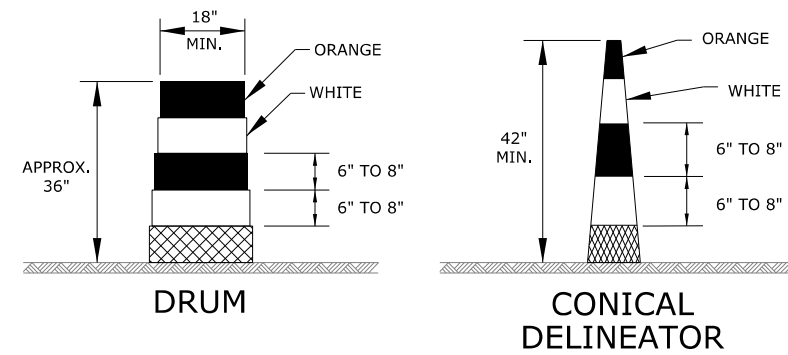
3	10/16/12	Removed Note 13, Added Alternating Diamonds	J.A.M.	K.P.
2	10/4/11	Modified Notes 9J2 & 15, Added Note 15	J.A.M.	K.P.
1	8/30/09	Added Note 14	J.A.M.	A.A.A.
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

GENERAL TRAFFIC CONTROL

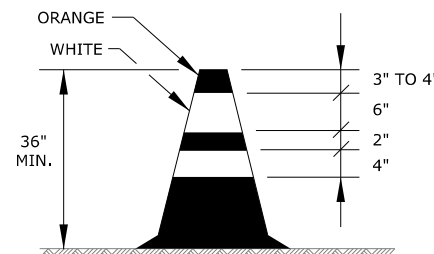
TE700

FHWA APPROVAL	10/16/12	APP'D	Kristina Pyle
DESIGNED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.



DRUMS AND CONICAL DELINEATORS SHALL HAVE AT LEAST TWO ORANGE AND TWO WHITE 6" TO 8" WIDE RETROREFLECTIVE STRIPES. ADDITIONAL STRIPES MAY BE NON-RETROREFLECTIVE. IF THERE ARE NON-RETROREFLECTIVE SPACES BETWEEN ADJACENT STRIPES, THEY SHALL BE NO MORE THAN 3" WIDE.

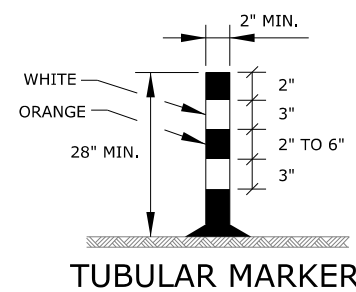
ALL RETROREFLECTIVE STRIPES ON DRUMS SHALL BE ASTM TYPE III SHEETING. THE WHITE STRIPES ON CONICAL DELINEATORS SHALL BE ASTM TYPE III SHEETING. ORANGE STRIPES ON ALL CONICAL DELINEATORS SHALL BE FLUORESCENT ORANGE ASTM TYPE IV SHEETING.



TRAFFIC CONE

TRAFFIC CONES MAY BE USED AS CHANNELIZING DEVICES FOR DAYTIME OPERATIONS ONLY. THEY WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL BID ITEMS. THE ENGINEER MAY REQUIRE THAT TRAFFIC CONES BE SUPPLEMENTED BY OTHER TRAFFIC CONTROL DEVICES IN CERTAIN SITUATIONS.

THE TWO WHITE RETROREFLECTIVE STRIPES SHALL BE ASTM TYPE III SHEETING. STRIPING AS SHOWN FOR UP TO 42".



TUBULAR MARKER

TAPER FORMULAS:

$L = WS$ FOR SPEEDS OF 45 MPH OR MORE

$L = WS^2/60$ FOR SPEEDS OF 40 MPH OR LESS

WHERE: L = MINIMUM LENGTH OF TAPER IN FEET
S = NUMERICAL VALUE OF POSTED SPEED PRIOR TO WORK STARTING IN MPH
W = WIDTH OF OFFSET IN FEET

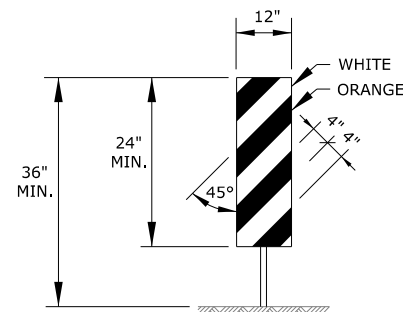
CHANNELIZER PLACEMENT:

(A) THE SPACING BETWEEN DEVICES IN TRANSITION AREA (TAPER) SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO 1/2 THE POSTED SPEED LIMIT IN MPH PRIOR TO WORK STARTING.

(B) THE SPACING BETWEEN DEVICES IN THE ADVANCED WARNING AREA AND THE ACTIVITY AREA SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO TWO TIMES THE POSTED SPEED LIMIT IN MPH PRIOR TO WORK STARTING.

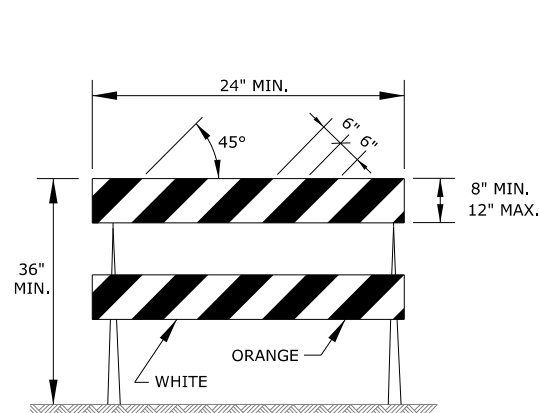
(C) CHANNELIZING DEVICES SHALL BE PLACED FOR OPTIMUM VISIBILITY, NORMALLY AT RIGHT ANGLES TO THE TRAFFIC FLOW.

(D) CHANNELIZING DEVICES PLACED ALONG SHOULDER EDGES OR IN DROPOFFS SHALL HAVE A MINIMUM OF 24" FROM THE TOP OF THE CHANNELIZING DEVICE TO THE TOP OF THE PAVEMENT.



VERTICAL PANEL

THE ENTIRE AREA OF VERTICAL PANELS, BOTH FRONT AND BACK, SHALL HAVE ASTM TYPE III SHEETING. THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.

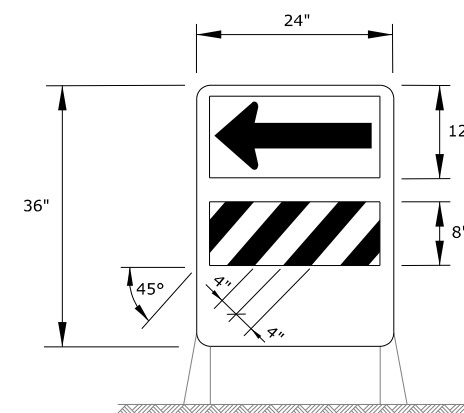


TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.

THE ENTIRE AREA OF BARRICADE RAILS, BOTH FRONT AND BACK, SHALL BE ASTM TYPE III SHEETING.

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



DIRECTION INDICATOR BARRICADE

THE ARROW PANEL SHALL BE BLACK ON FLUORESCENT ORANGE ASTM TYPE IV SHEETING. THE STRIPES SHALL BE ORANGE AND WHITE ASTM TYPE III SHEETING SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS.

THE DIRECTION INDICATOR BARRICADE SHALL BE USED IN SERIES TO DIRECT THE MOTORIST INTO THE INTENDED LANE OF TRAVEL.

THE ARROW PANEL SHOULD NOT BE VISIBLE TO OPPOSING TRAFFIC.

ITEM	LOCATION	LOCATION								
		CROSS-OVERS	SHOULDER DIVERSIONS	TANGENTS	TAPERS	RAMPS	HEAD TO HEAD	OBJECT IDENTIFIER	LEAD IN DEVICES	GORES
PORTABLE	DRUMS	YES	YES	YES	YES	YES	(1)	YES	YES	YES
	CONICAL DELINEATORS	YES	YES	YES	YES	YES	(1)	YES	YES	YES
	VERTICAL PANELS	(2)	(2)	(2)	(2)	(2)	(1,2)	YES	(2)	(2)
	DIRECTION INDICATOR BARRICADE	NO	NO	NO	YES	NO	NO	NO	NO	NO
	TYPE II BARRICADE	(2)	(2)	(2)	(2)	NO	NO	YES	NO	NO
FIXED	TUBULAR MARKERS	(3)	(3)	(3)	NO	(3)	YES	NO	YES	YES
	VERTICAL PANELS	(3)	(3)	(3)	(3)	(3)	(3)	YES	(2,3)	(2)

- (1) NOT ALLOWED ON CENTERLINE DELINEATION ALONG FREEWAYS OR EXPRESSWAYS.
- (2) THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.
- (3) MAY BE USED UPON THE APPROVAL OF THE ENGINEER.

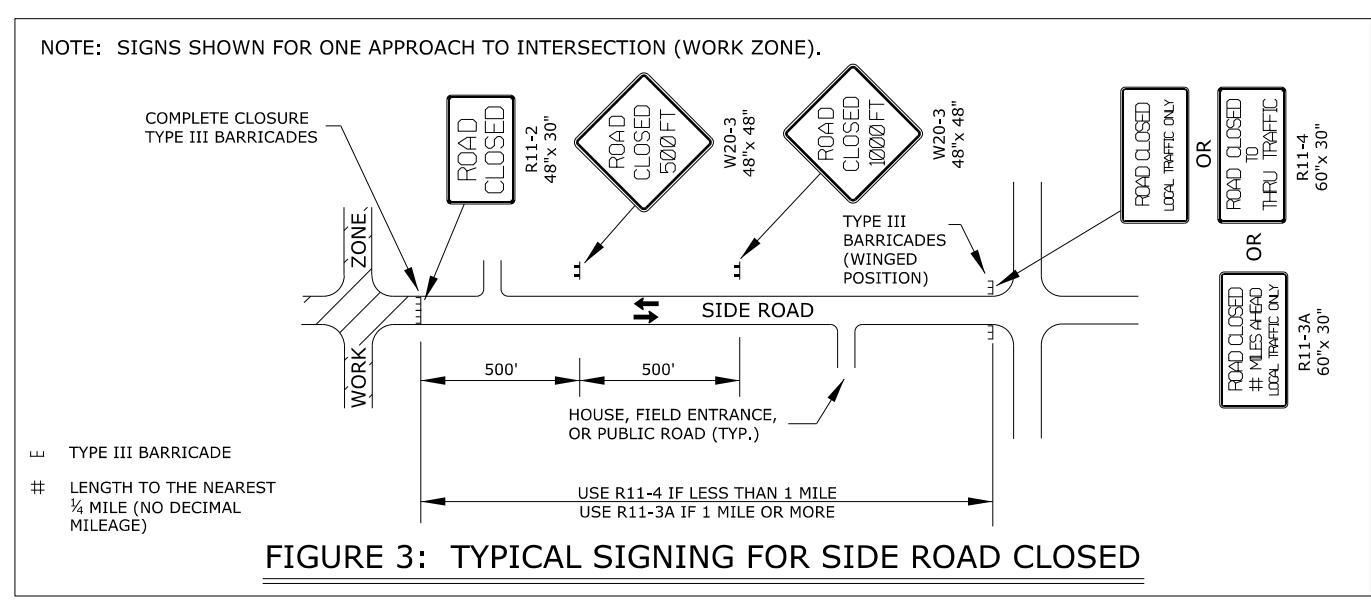
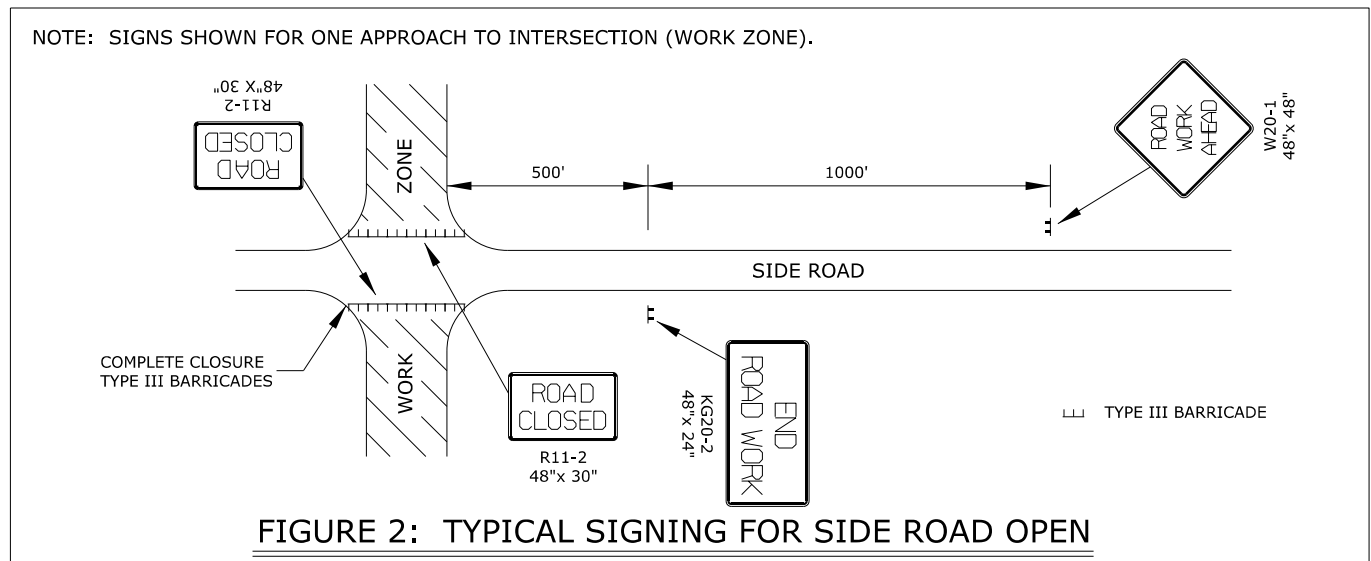
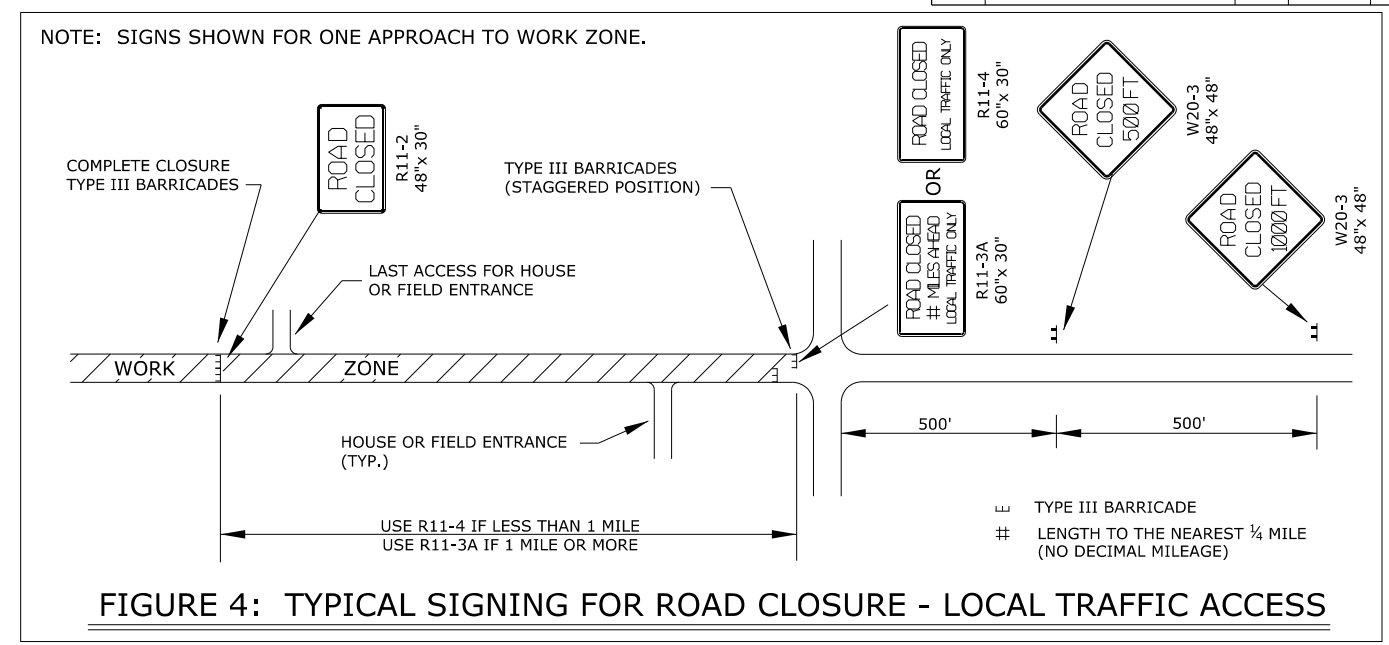
3	10/16/12	Added Lead In Devices Into Matrix Table	J.A.M.	K.P.
2	10/4/11	Added Dimension To Tubular Marker Detail	J.A.M.	K.P.
1	4/20/09	Channelizer Placement & Traffic Cone Detail	J.A.M.	A.A.A.
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

CHANNELIZING DEVICES

TE 702

DESIGNED	L.E.R.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.



NOTES:

- SIGNS:**
 - THE R11-4 (ROAD CLOSED TO THRU TRAFFIC OR ROAD CLOSED LOCAL TRAFFIC ONLY) SIGN SHALL BE USED WHEN THE DISTANCE TO THE POINT OF COMPLETE CLOSURE OF THE ROADWAY IS LESS THAN 1 MILE.
 - THE R11-3A (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) SIGN SHALL BE USED WHEN THE DISTANCE TO THE POINT OF COMPLETE CLOSURE OF THE ROADWAY IS 1 MILE OR GREATER.
 - THE WORDS "BRIDGE OUT" (OR BRIDGE CLOSED) MAY BE SUBSTITUTED FOR THE WORDS "ROAD CLOSED" ON THE R11-3A OR R11-4 SIGN WHERE APPLICABLE.

2. BARRICADE PLACEMENT:

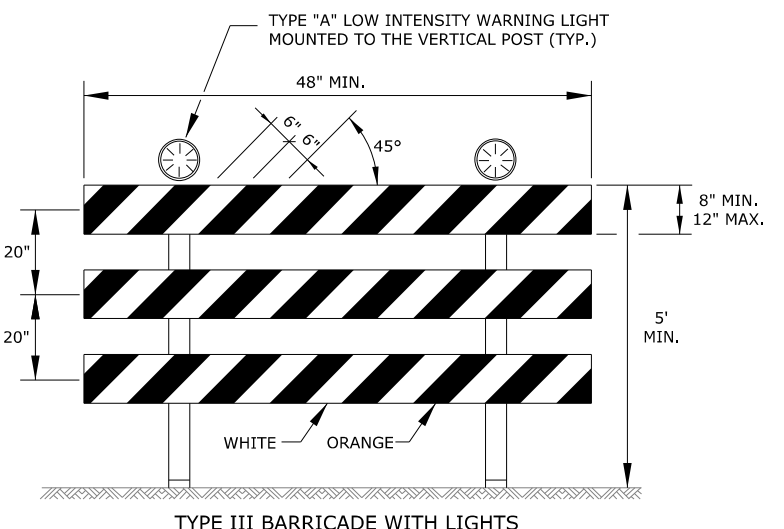
- COMPLETE ROAD CLOSURE**

WHEN A ROADWAY IS CLOSED, TYPE III BARRICADES SHALL BE PLACED END-TO-END TO COMPLETELY COVER THE ROADWAY AND SHOULDERS. WHEN ACCESS MUST BE ALLOWED FOR CONSTRUCTION OR OTHER OFFICIAL/GOVERNMENT VEHICLES, TYPE III BARRICADES SHALL BE LONGITUDINALLY STAGGERED FAR ENOUGH APART FROM ONE ANOTHER TO ALLOW SAFE PASSAGE OF VEHICLES AND MAINTAIN THE APPEARANCE OF A CLOSED ROADWAY. TYPE III BARRICADES SHALL BE REALIGNED AND PLACED END-TO-END TO DENY ANY ACCESS WHEN THE CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY.

- ROAD CLOSED - LOCAL TRAFFIC**

AS SHOWN IN FIGURE 4, WHEN LOCAL TRAFFIC MUST BE ALLOWED ACCESS INTO THE WORK ZONE, TYPE III BARRICADES SHALL BE LONGITUDINALLY STAGGERED TO MAINTAIN THE APPEARANCE OF A CLOSED ROADWAY. A SECOND LINE OF END-TO-END TYPE III BARRICADES SHALL BE PLACED JUST BEYOND THE LAST ACCESS POINT IN THE WORK ZONE, TO COMPLETELY CLOSE THE ROADWAY AS DESCRIBED IN NOTE 2-A.

AS SHOWN IN FIGURE 1 AND FIGURE 3, AT THE POINT WHERE THRU TRAFFIC MUST DETOUR AND LOCAL TRAFFIC CAN PROCEED TO THE LOCATION WHERE THE ROADWAY IS COMPLETELY CLOSED, THE R11-3A (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) OR R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY OR ROAD CLOSED TO THRU TRAFFIC) SIGN SHALL BE USED WITH TYPE III BARRICADES (WINGED POSITION), PLACED ON THE SHOULDERS OF ROADWAY.



THE ENTIRE AREA OF BARRICADE RAILS, BOTH FRONT AND BACK, SHALL HAVE ASTM TYPE III SHEETING. THE STRIPES SHALL SLOPE DOWNWARD TO THE SIDE TRAFFIC IS TO PROCEED OR TOWARD THE CENTER OF THE ROADWAY AT ROAD CLOSURES. APPROVED SIGNS MOUNTED ON TYPE III BARRICADES SHOULD NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS. WHEN BARRICADES ARE PLACED END-TO-END OR STAGGERED, A TYPE "A" LOW INTENSITY WARNING LIGHT SHALL BE MOUNTED TO THE VERTICAL POST NEAR EACH OUTSIDE CORNER OF THE END BARRICADES.

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Modified Type III Barricade Note	J.A.M.	K.P.
2	8/8/07	Added Position To Type III Barricade	M.B.	A.A.A.
1	12/29/05	Note # Modified	M.B.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION				
TYPICAL TRAFFIC CONTROL ROAD CLOSURES				
TE704				
FHWA APPROVAL	DESIGNED	Detailed	QUANTITIES	TRACED
	DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	1754PPW	2013	13	14

SIGN LAYOUT INFORMATION

END ROAD WORK
 KG20-2
 STD. SIZE EXPWY/FREEWAY
 6" C
 48"x 24"

WAIT FOR PILOT CAR
 KG20-5
 STD. SIZE EXPWY/FREEWAY
 6" C
 48"x 24"

WORK ZONE
 KM4-20
 STD. SIZE EXPWY/FREEWAY
 3" C 6" C
 24"x 6" 48"x 12"

NEXT X MILES
 W7-3a
 MILEAGE TO BE DETERMINED BY THE ENGINEER.

UNEVEN LANES
 W8-11
 STD. SIZE EXPWY/FREEWAY
 8" D
 48"x 48"

TRUCK
 W8-17
 STD. SIZE EXPWY/FREEWAY
 48"x 48"

SHOULDER DROP-OFF
 W8-17P (OPTIONAL)
 STD. SIZE EXPWY/FREEWAY
 30"x 24"

NB US-75 CLOSED FOLLOW DETOUR
 SP-01 (SPECIAL SIGN)
 STD. SIZE EXPWY/FREEWAY
 6" C 10" D

US-75 CLOSED NORTH OF Topeka FOLLOW DETOUR
 SP-02 (SPECIAL SIGN)
 STD. SIZE EXPWY/FREEWAY
 UPPERCASE: 6" C UPPERCASE: 10" D
 LOWERCASE: 4.5" C LOWERCASE: 8" D

ALL CITY NAMES AND STREET NAMES ON SPECIAL SIGNS AND DESTINATION SIGNS MUST HAVE UPPER AND LOWER CASE LETTERS.

ALL SIGNS SHALL BE BLACK ON ORANGE RETROREFLECTIVE SHEETING.

GENERAL NOTES

- 1. MAINTENANCE:**
 THE CONTRACTOR SHALL MAINTAIN ALL SIGNS AND DEVICES IN AN UPRIGHT POSITION. THE CONTRACTOR SHALL CLEAN OR REPLACE ANY DAMAGED OR ILLEGIBLE SIGN OR DEVICE AS DIRECTED BY THE ENGINEER.
- 2. EXISTING SIGNS:**
 IF EXISTING SIGNS THAT ARE TO REMAIN (WHETHER DENOTED ON THE PLANS OR NOT) INTERFERE WITH CONSTRUCTION WORK, THE CONTRACTOR SHALL REMOVE, STORE, AND RESET THE SIGNS. THIS SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL BID ITEMS. SIGNING DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- 3. CONFLICTING SIGNS, SIGNS NOT IN USE, AND TRAFFIC SIGNALS:**
 SIGNS AND TRAFFIC SIGNALS THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLAN OR DO NOT APPLY TO THE TRAFFIC OPERATIONS SHALL BE IMMEDIATELY REMOVED, TURNED SO NOT VISIBLE TO TRAFFIC FROM ANY DIRECTION, OR COMPLETELY COVERED WITH ADEQUATE OPAQUE BREATHABLE MATERIAL. TAPE SHALL NOT BE APPLIED TO THE FACE OF THE SIGN.
- 4. PORTABLE AND POST MOUNTED SIGNS:**
 TEMPORARY TRAFFIC CONTROL SIGNS THAT ARE ANTICIPATED TO REMAIN IN PLACE FOR 3 DAYS OR LESS ARE CONSIDERED "PORTABLE." PORTABLE SIGNS SHALL BE MOUNTED ON AN APPROVED SUPPORT AT A MINIMUM HEIGHT OF 12" ABOVE THE TRAVELED WAY. TRAFFIC CONTROL SIGNS IN PLACE FOR OVER 3 DAYS ARE REQUIRED TO BE MOUNTED ON APPROVED POSTS. A MINIMUM OF 42" OF THE APPROVED POST MUST BE BELOW THE GROUND SURFACE WITH ADEQUATE BACKFILL AND COMPACTION. ALL POSTS AT MINIMUM SHALL EXTEND TO THE TOP EDGE OF THE SIGN AND NO GREATER THAN 6" ABOVE THE SIGN.

 WHEN THE SIGN WIDTH IS EQUAL TO OR GREATER THAN 9', THREE OR MORE WOOD POSTS MAY BE USED WITH A MINIMUM OF 4' BETWEEN THE CENTERLINE OF EACH POST. ALL SIGNS LESS THAN 9' IN WIDTH SHALL USE A MAXIMUM OF TWO WOOD POSTS.

 "ROLL-UP" SIGNS MAY BE USED FOR PORTABLE WARNING SIGNS. THEY MUST BE FLUORESCENT ORANGE ASTM TYPE IV SIGNS OF OPAQUE MATERIAL. MESH SIGNS ARE NOT ALLOWED.

 IN THE CASE OF HITTING ROCK WHEN DRIVING POSTS
 1. SHIFT THE SIGN LOCATION. DO NOT VIOLATE MINIMUM SIGN SPACING.
 2. WITH THE ENGINEER'S APPROVAL, USE ACCEPTABLE ALTERNATIVE SIGN STANDS.
- 5. SHEETING:**
 ALL ORANGE SIGNS SHALL HAVE FLUORESCENT ORANGE ASTM TYPE IV SHEETING. ALL OTHER SIGNS SHALL HAVE ASTM TYPE III SHEETING OF STANDARD COLORS.
- 6. SIGNS INVOLVING SPEEDS:**
 THE W3-5 (SPEED REDUCTION) SHOULD BE USED ONLY IF THE ENGINEER DETERMINES THAT A REDUCED SPEED IS REQUIRED ON THE PROJECT.

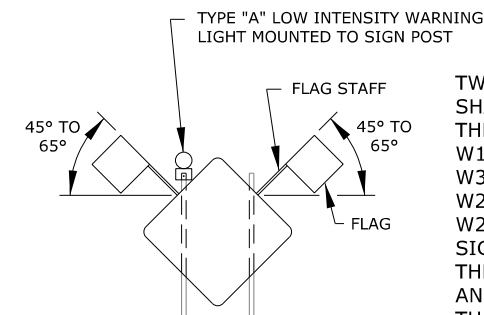
 THE KM4-20 (WORK ZONE) PLAQUE SHALL BE PLACED ABOVE ALL SPEED LIMIT SIGNS, (R2-1), EXISTING AND TEMPORARY. MOUNT THE WORK ZONE PLAQUES TO THE POST. DO NOT OVERLAP THE R2-1 AND KM4-20 SIGNS.

 FOR SPEEDS OF 30 MPH OR LESS, THE W1-1(TURN) OR W1-3(REVERSE TURN) SHOULD BE USED. FOR SPEEDS OF 35 MPH OR MORE, THE W1-2(CURVE) OR W1-4(REVERSE CURVE) SHOULD BE USED. THE W13-1(MPH) IS TO BE ELIMINATED IF THE ADVISORY SPEED IS WITHIN 5 MPH OF THE SPEED LIMIT.
- 7. SIGNS CONTROLLING WORK ZONE:**
 THE KG20-2(END ROAD WORK) SHOULD BE PLACED 500' FROM THE END OF THE ACTUAL WORK SPACE, NOT NECESSARILY AT THE EXTREME LIMITS OF THE PROJECT. THE KG20-2 SHOULD BE MOUNTED ON TWO POSTS. THE KG20-2 MAY BE MOUNTED ON ONE POST IF IN URBAN AREAS WHERE UTILITIES ARE A PROBLEM AND WIND LOADS ARE NOT AN ISSUE.

 WHERE TWO WORK ZONES ARE LESS THAN 1 MILE APART IN RURAL AREAS OR ¼ MILE APART IN URBAN AREAS, THE KG20-2(END ROAD WORK) FOR THE FIRST WORK ZONE AND THE W20-1(ROAD WORK) FOR THE SECOND WORK ZONE SHOULD BE ELIMINATED.

- 8. WARNING LIGHTS ON SIGNS:**
 A TYPE "A" LOW INTENSITY WARNING LIGHT IS AN L.E.D. BI-DIRECTIONAL FLASHING WORK ZONE WARNING LIGHT. TYPE "A" LOW INTENSITY WARNING LIGHTS SHOULD BE USED WITH ALL CONSTRUCTION ACTION WARNING SIGNS AND SHALL NOT BE USED ON SIGNS MOUNTED LESS THAN 5' HIGH ON TEMPORARY SUPPORTS. ON ALL OTHER CONSTRUCTION WARNING SIGNS, TYPE "A" LOW INTENSITY WARNING LIGHTS ARE TO BE USED AS DIRECTED BY THE ENGINEER.

 TYPE "A" LOW INTENSITY WARNING LIGHTS SHALL BE MAINTAINED SO AS TO BE CAPABLE OF BEING VISIBLE ON A CLEAR NIGHT FROM A DISTANCE OF 3000 FT. IF A TYPE "A" LOW INTENSITY WARNING LIGHT HAS A SEPARATE BATTERY CASE, THE BATTERY CASE SHALL BE MOUNTED NO HIGHER THAN 12" ABOVE THE GROUND AND MOUNTED BEHIND THE SIGN POST. A TYPE "A" LOW INTENSITY WARNING LIGHT WHERE THE LENS AND BATTERY ARE ONE UNIT SHALL BE MOUNTED ON THE TEMPORARY SIGN POST NEAREST TO THE TRAVELED WAY. FLAGS SHALL NOT INTERFERE WITH THE VISABILITY OF THE TYPE "A" LOW INTENSITY WARNING LIGHT.



TWO (2) 18" x 18" FLUORESCENT RED-ORANGE FLAGS SHALL BE ATTACHED (IN THE POSITION SHOWN) ON THE W20-2(DETOUR), W1-1(TURN), W1-2(CURVE), W1-3(REVERSE TURN), W1-4(REVERSE CURVE), W3-3(SIGNAL AHEAD), W4-2(LANE REDUCTION), W20-4(ONE LANE ROAD), W20-5(LANE CLOSED), W20-7A(FLAGGER), AND W3-4 (BE PREPARED TO STOP) SIGNS AND ANY OTHER ACTION SIGNS AS SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. THE FLAGS AND STAFFS ARE TO BE ATTACHED IN SUCH A MANNER THAT THE SIGN WILL NOT BE OBTSCURED. THE FLAGS MAY BE EITHER A CLOTH OR VINYL MATERIAL. THE FLAGS SHALL BE SUBSIDIARY TO THE CONSTRUCTION SIGN BID ITEMS.

MINIMUM ADVANCE WARNING SIGN SPACING (IN FEET):

	A	B	C
URBAN (40 MPH OR LOWER)	100	100	100
URBAN (45 MPH OR HIGHER)	350	350	350
RURAL (55 MPH OR LOWER)	500	500	500
RURAL (60 MPH OR HIGHER)	750	750	750
EXPRESSWAY/FREEWAY	1000	1500	2640

THE MINIMUM SPACING BETWEEN SIGNS SHALL BE NO LESS THAN 100', UNLESS DIRECTED BY THE ENGINEER.

THE SPACING BETWEEN ANY SIGNS MAY BE INCREASED BEYOND THE MINIMUM VALUES IN THE TABLE ABOVE AS APPROVED BY THE ENGINEER IN ORDER TO MAXIMIZE VISIBILITY.

3	10/16/12	Removed Note 9, Modified Sign Layout Detail	J.A.M.	K.P.
2	10/4/11	Modified Note 3	J.A.M.	K.P.
1	2/24/10	Modified AFAD Note	J.A.M.	A.A.A.
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

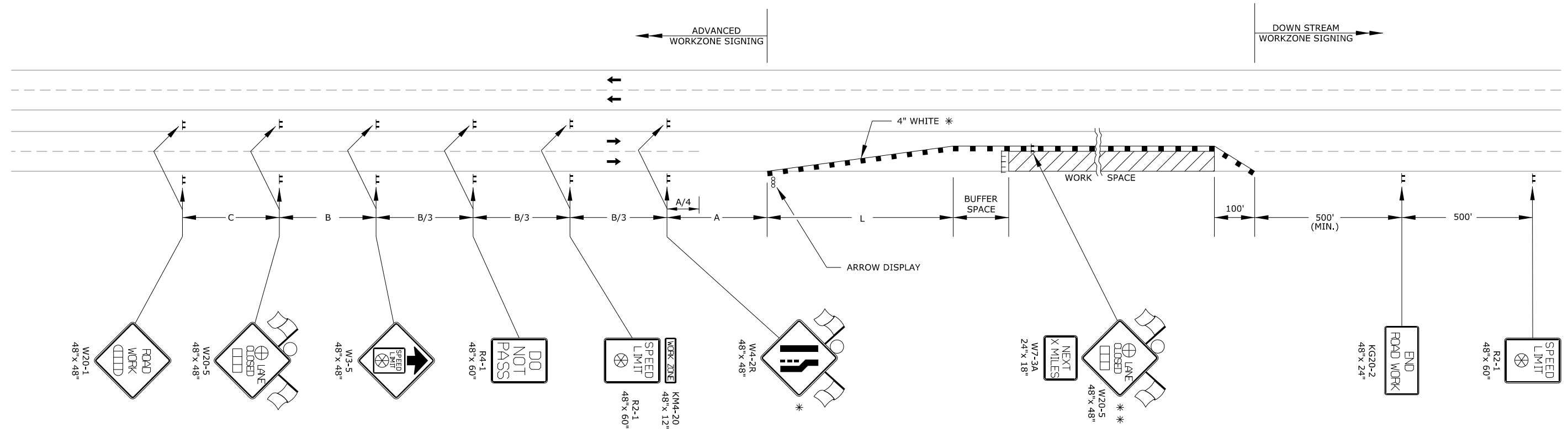
TRAFFIC CONTROL SIGNS

TE 710

DESIGNED	B.A.H.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	1754PPW	2013	14	14

REFER TO STD. TE710 FOR ADDITIONAL INFORMATION ON TEMPORARY TRAFFIC CONTROL SIGNS AND SIGN SPACING.
REFER TO STD. TE704 FOR TYPE III BARRICADES.
REFER TO STD. TE702 FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.
REFER TO STD. TE700 FOR LENGTH OF BUFFER SPACE.



LEFT-SIDE SIGNS SHALL BE OMITTED FOR A FOUR-LANE UNDIVIDED HIGHWAY.

- * FOR LEFT LANE CLOSURES USE W4-2L AND YELLOW EDGE LINE ALONG CHANNELIZING DEVICES.
- * * THE W20-5 (⊕ LANE CLOSED) AND W7-3A (NEXT X MILES) SIGNS SHOULD BE PLACED AT 2 MILE INCREMENTS ON A PROJECT OF 4 MILES OR LONGER.

- TYPE III BARRICADES
- X LENGTH TO THE NEAREST WHOLE MILE
- CHANNELIZING DEVICE
- ▨ AHEAD, 1500 FT, OR 1 MILE
- ▩ AHEAD, 1000 FT, 1500 FT, OR 1/2 MILE
- ⊕ RIGHT OR LEFT
- ⊗ SPEED TO BE DETERMINED BY THE ENGINEER
- TYPE "A" LOW INTENSITY WARNING LIGHT

3	8/8/07	Sign Spacing Changed	M.B.	A.A.A.
2	12/29/05	M4-20 Changed To KM4-20	M.B.	A.A.A.
1	2/1/05	Clarified Notes, Updated Warning Signs	B.H.	A.A.A.
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
TYPICAL TRAFFIC CONTROL
FOUR-LANE HIGHWAY
ONE LANE CLOSED

TE744-

DESIGNED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

FHWA APPROVAL 8/8/07 APP'D Anthony Airabala

Drawn By: \$\$\$USERNAME\$\$\$ Plotted: \$\$SYTIME\$\$\$
File: \$\$\$DGN\$PEC\$\$\$ \$\$\$KDOTGRP\$\$\$