FRONTIER JUSTICE

NEW BUILDING AND PARKING LOT PLANS

800 & 820 NE JONES INDISTRIAL DRIVE

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

RECEIVED
MAY 14 2014
Planning & Development

CONSTRUCTION AND DESIGN NOTES:

STREET & STORM SEWERS:

1 ~ RESIDENTIAL STREETS SHALL BE PER APWA STANDARD FOR 50' R/W TYPICAL SECTION TABLE LS-2 SECTION 5200 (RESIDENTIAL LOCAL STREET).

2 ~ STORM SEWER PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) AS APPROVED BY CITY OF LEES SUMMIT DESIGN AND CONSTRUCTION MANUAL.

3 ~ JUNCTION BOXES SHALL BE PER CITY OF LEES SUMMIT STANDARD DRAWING NO. JB-1. FIELD INLETS SHALL BE PER CITY OF LEES SUMMIT STANDARD DRAWING FI-1. TOEWALLS SHALL BE PER CITY OF LEES SUMMIT DRAWING NO. SD-35. STORM MANHOLES SHALL BE PER CITY OF LEES SUMMIT DETAIL SD-27. ROCK LINING AND RIP RAP SHALL BE PER CITY OF LEES SUMMIT.

WATER:

1 ~ THE CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT WATER UTILITIES DEPARTMENT AT 816.969.1900 AT LEAST 48 HOURS PRIOR TO CONNECTING TO ANY EXISTING WATER MAIN.

2 ~ ALL WATER MAINS SHALL COMPLY WITH ANSI/AWWA C150/A21.50 AND C151/A21.51, AND CITY OF LEES SUMMIT STANDARDS.

3 ~ FIRE HYDRANTS SHALL BE OPTIC YELLOW WATEROUS "PACER" MODEL NO. WB-67-250 WITH NON-RISING STEM OR CITY ENGINEER APPROVED EQUAL. HYDRANTS SHALL HAVE A 5 1/4" VALVE WITH A 4 1/2" PUMPER NOZZLE AND 2 - 2 1/2" HOSE NOZZLES (LEFT HAND OPENING).

4 ~ GATE VALVES SHALL BE MUELLER NO. A 2380-5 HUB END "O" RING SEAL NON-RISING STEM. VALVES 12" OR LARGER SHALL BE BUTTERFLY VALVES MANUFACTURED BY THE HENRY PRATT COMPANY OR CITY ENGINEER APPROVED EQUAL. LEFT HAND OPENING. MINIMUM 200# TESTING AWWA.

5 ~ VALVE BOXES SHALL BE CLAY & BAILEY NO. P-108 OR CITY ENGINEER APPROVED EQUAL. ALL VALVE BOXES SHALL BE LOCATED OUT OF EXISTING OR PROPOSED PAVEMENT AREAS.

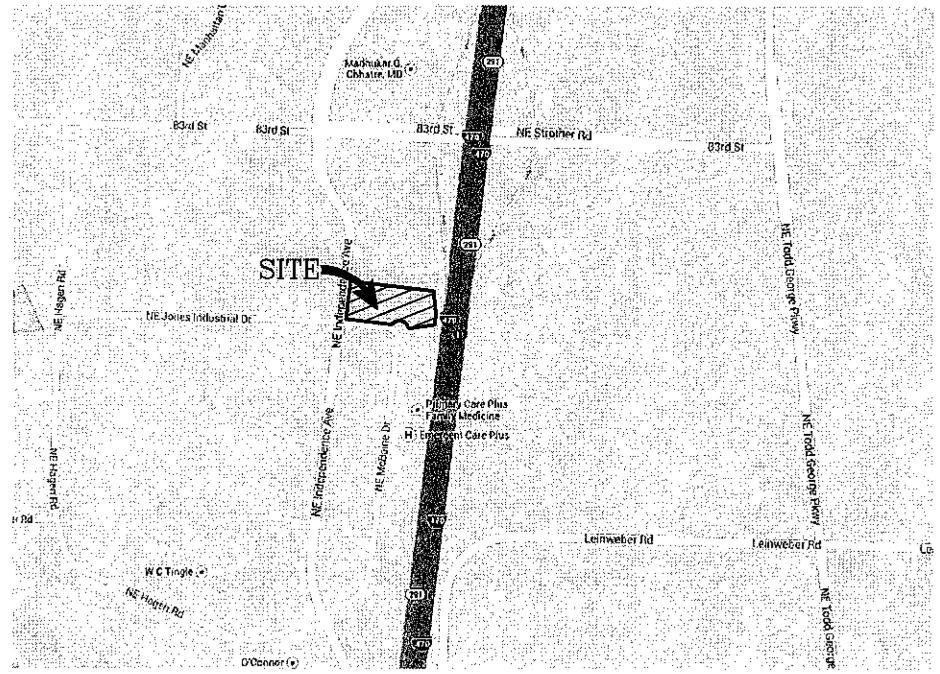
6 ~ ALL WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 42 INCHES. STREET GRADING SHALL BE COMPLETED PRIOR TO BEGINNING CONSTRUCTION OF WATER MAINS.

7 ~ ALL BENDS, TEES AND FIRE HYDRANTS SHALL BE INSTALLED WITH SUITABLE CONCRETE THRUST BLOCKS POURED IN PLACE AGAINST UNDISTURBED EARTH AND PER CITY OF LEES SUMMIT AND APWA STANDARDS.

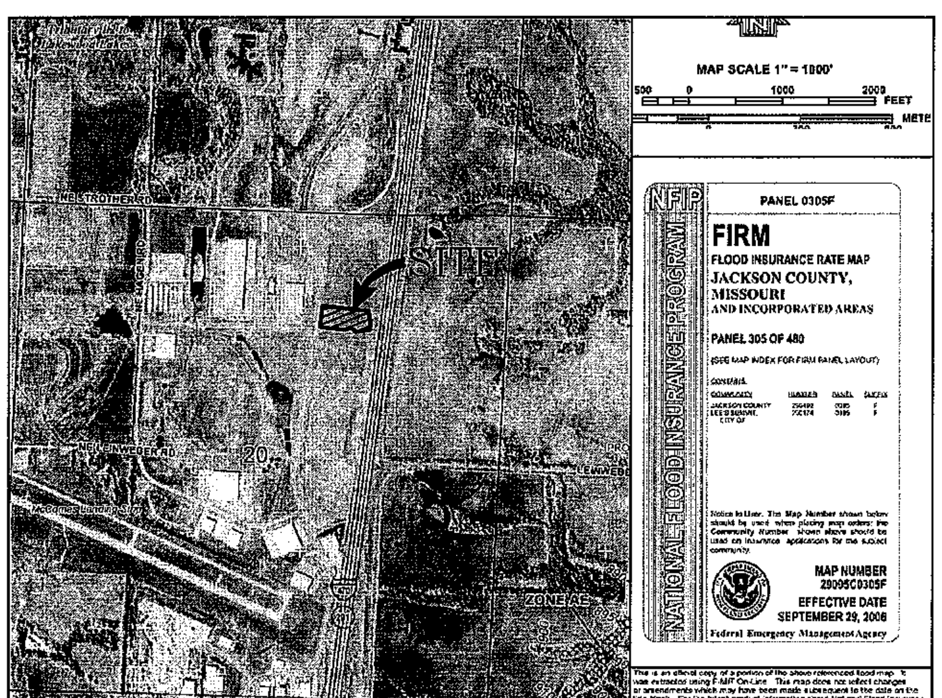
8 ~ THE MINIMUM SEPARATION BETWEEN THE PROPOSED WATER MAIN AND SANITARY OR STORM SEWERS IS AS FOLLOWS:
A ~ SANITARY SEWERS: HORIZONTAL = 10 FEET - VERTICAL = 18 INCHES
B ~ STORM SEWERS: HORIZONTAL = 5 FEET - VERTICAL = 18 INCHES
THESE SEPARATIONS SHALL PREVAIL OVER ANY DATA SHOWN IN THESE PLANS AND THE CONTRACTOR SHALL INSTALL BENDS OR OTHER FITTINGS AS NECESSARY TO ACHIEVE THE REQUIRED SEPARATIONS.

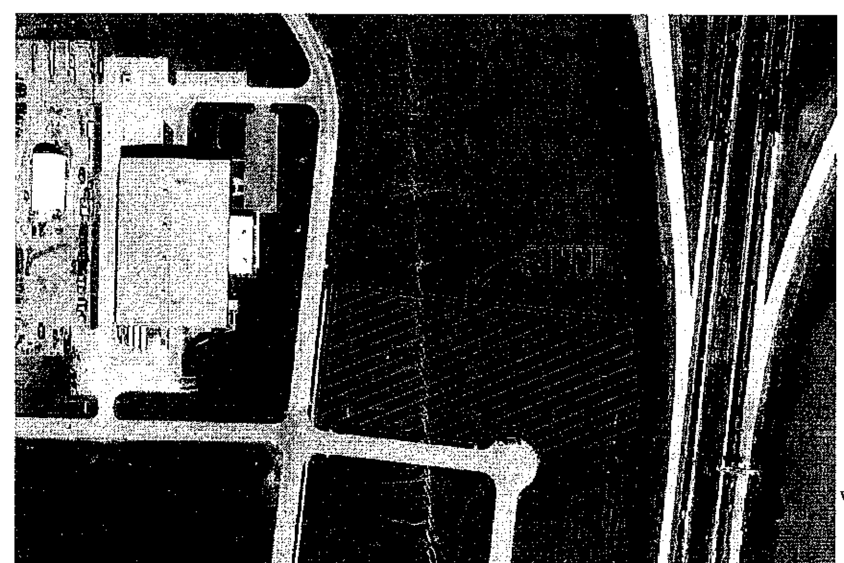
GENERAL NOTES:

1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2 ~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR ON THE FINAL PLAT.
3 ~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
4 ~ THE CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTION AT 816.969.1800 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
5 ~ THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND SITE CONDITIONS.
6 ~ THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND OBTAIN THE APPROPRIATE BLASTING PERMITS FOR A REQUIRED BLASTING. IF BLASTING IS ALLOWED, ALL BLASTING SHALL CONFORM TO STATE REGULATIONS AND LOCAL ORDINANCES.



LOCATION MAP





AERIAL MAP

FLOOD PLAIN NOTES:
The subject property DOES NOT lie within a Flood Zone designation
FIRM MAP : JACKSON COUNTY,- MO MAP# 29095C0305F

DRAWING LIST

C.001	COVER SHEET
C.010	SITE DEMOLITION
C.050	ESC PHASE 1 PLAN
C.051	ESC PHASE 2 PLAN
C.051	FINAL RESTORATION PLAN
C.100	SITE LAYOUT PLAN
C.101	SITE DIMENSION PLAN
C.200	SITE GRADING PLAN
C.201	SITE SPOT ELEVATION PLAN
C.300	SITE OVERALL STORM SEWER PLAN
C.301	SITE DRAINAGE PLAN
C.302	SITE STORM LINES PLAN & PROFILE
C.400	SITE SANITARY SEWER CONNECTION PLAN
C.500	PRIVATE FIRELINE PLAN
C.600	DETAIL SHEET
C.601	DETAIL SHEET
C.602	DETAIL SHEET

CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
DEVELOPMENT ENGINEERING GROUP

STREETS: Approved By: [signature] Date:
TRAFFIC: Approved By: —— Date: ——
W/SS/ST: Approved By: [signature] Date: 6 June 14

Approval by the City Engineer, or designee does not release applicant from responsibilities to comply with all City of Lee's Summit Ordinances and sound engineering/construction practices.

_____ PW Records _____ PW Insp [signature] Reviewer
_____ P&D/Codes _____ Dev. File _____ ITS

NOTE:
1. TOTAL SITE AREA = 3.46ac
2. TOTAL EXISTING IMPERVIOUS AREA =0.0ac
= 0% IMPERVIOUS AREA
3. TOTAL IMPERVIOUS AREA POST DEVELOPMENT =2.34ac
= 67% IMPERVIOUS AREA
RATIONAL METHOD C = 0.72
4. TOTAL NUMBER OF PARKING STALLS
TOTAL PROPOSED = 149
ADA STALLS = 5
5. EXISTING ZONING = P-MIX
6. FLOOR AREA RATIO
TOTAL BUILDING AREA=30,000sf
FAR = 19.9%

GENERAL NOTES:

1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT "STANDARD SPECIFICATIONS AND DESIGN CRITERIA" OF THE KANSAS CITY CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATIONS (APWA)
2 ~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED BY SEPARATE DOCUMENT
3 ~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
4 ~ THE CONTRACTOR SHALL NOTIFY THE CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTION AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
5 ~ THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND SITE CONDITIONS.

LEGAL DESCRIPTION:

ALL OF LOTS 1 AND 2, I-470 BUSINESS AND TECHNOLOGY CENTER, A SUBDIVISION AS RECORDED IN THE OFFICE OF THE RECORDER, JACKSON COUNTY COUNTY, MISSOURI.

OIL - GAS WELLS
ACCORDING TO EDWARD ALTON'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 185 FEET OF THE PROPERTY AS SURVEYED HEREON.

LEGEND:

B/L	BUILDING SET-BACK
C/A	COMMON AREA
D/E	DRAINAGE EASEMENT
FND.	FOUND
L/E	LANDSCAPE EASEMENT
L.N.A.	LIMITS OF NO ACCESS
R/W	RIGHT OF WAY
SAN	SANITARY SEWER LINE
S/W	SIDEWALK
U/E	UTILITY EASEMENT
WAT	WATER LINE
ST	STORM SEWER LINE

UTILITY COMPANIES:

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.

KCP&L ~ 298-1196
MISSOURI GAS ENERGY ~ 756-5261
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
WILLIAMS PIPELINE ~ 422-6300
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTIONS ~ 969-1827
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED AND THESE PLANS PREPARED IN ACCORDANCE WITH THE CURRENT DESIGN CRITERIA OF THE CITY OF LEE'S SUMMIT, MISSOURI AND THE STATE OF MISSOURI. I FURTHER CERTIFY THAT THESE PLANS WERE DESIGNED IN ACCORDANCE TO AASHTO STANDARDS.

BENCHMARK:

CENTER OF MANHOLE LOCATED ON THE EAST SIDE OF INDEPENDENCE AVE. 300 FEET NORTH OF THE INTERSECTION OF INDEPENDENCE AVE. AND NE JONES INDUSTRIAL DR.

ELEVATION = 980.31

THE UTILITIES AS SHOWN IN THESE DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE, IT IS NOT IMPLIED NOR INTENDED TO BE THE COMPLETE INVENTORY OF UTILITIES IN THIS AREA. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE.

CIVIL PLAN SET COVER SHEET

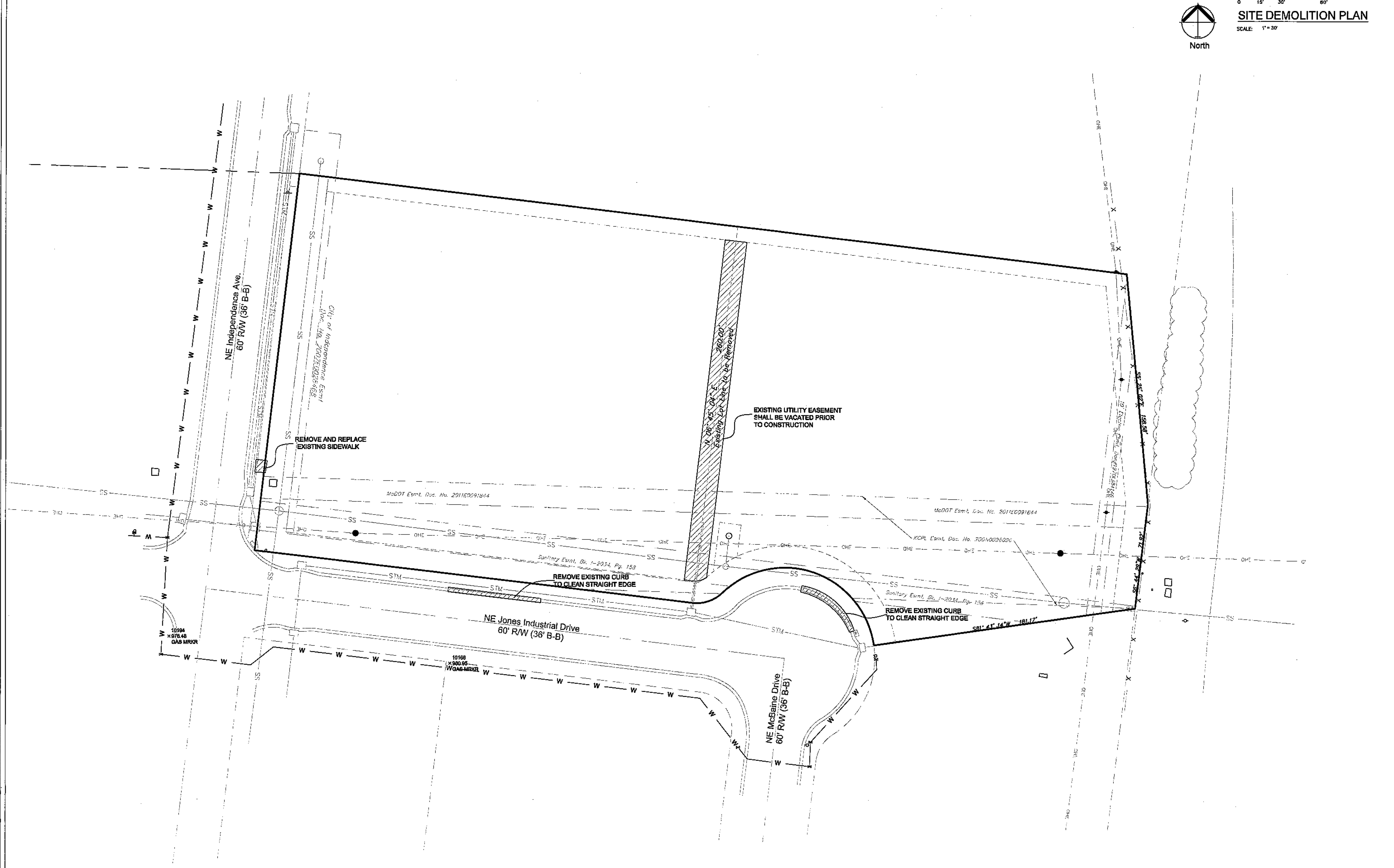
ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Cover Sheet
Construction Plans for:
Frontier Justice

4-29-14 City Com
5-13-14 City Com

C.001



SITE DEMOLITION PLAN

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET

Professional Registratio
Missouri
Engineering 2005002186-
Surveying 2005008319-
Kansas
Engineering E-1698
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

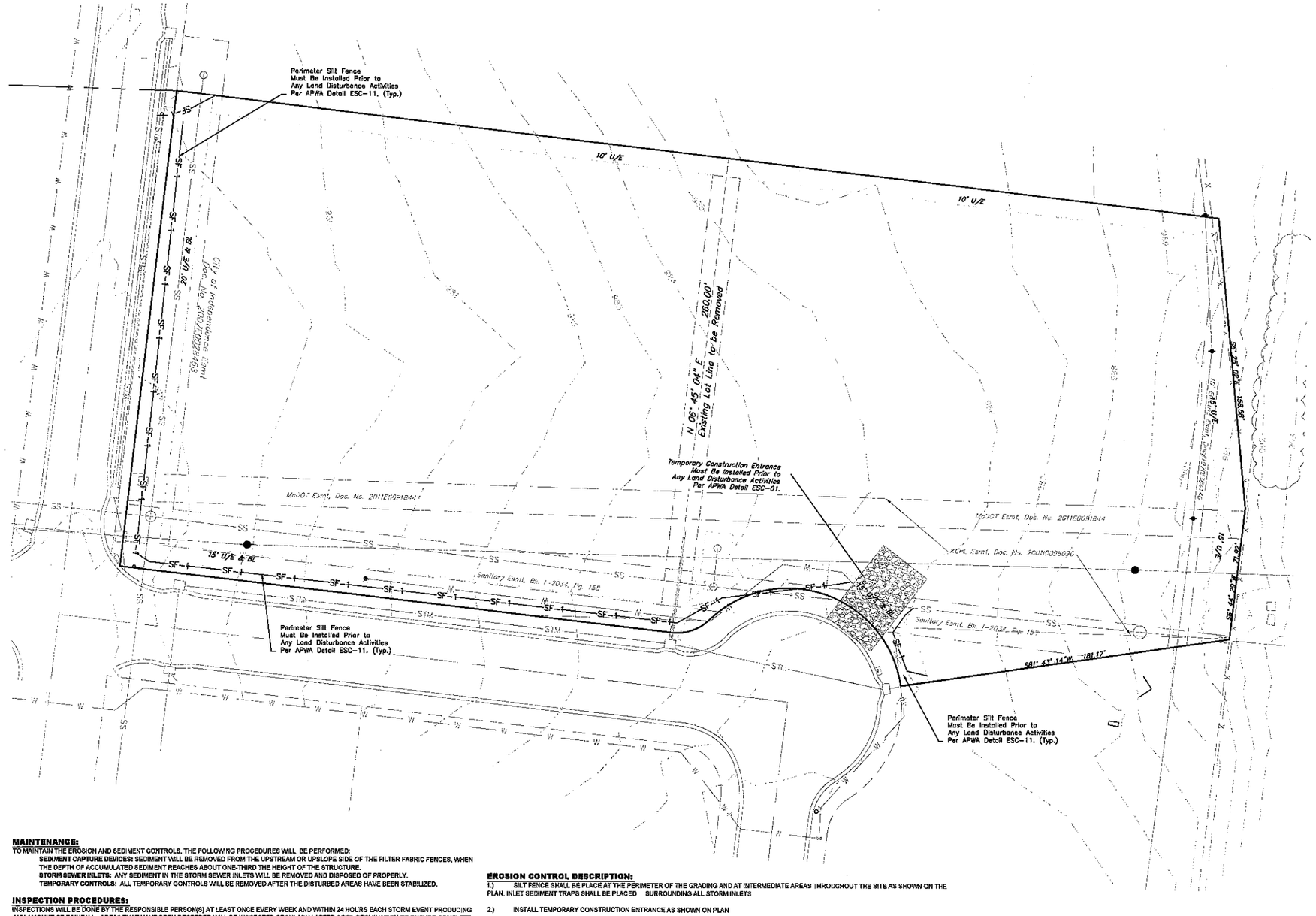
Project: Frontier Justice
Issue Date: April 10, 2014

Demolition Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Matthew J. Schlich
MO PE 2006019700
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
4-29-14 City Comment

C.010



North

0 15' 30' 60'

SITE ESC PHASE 1 PLAN

SCALE: 1" = 30'

SILT FENCE PROTECTION
TO BE MAINTAINED BY CONTRACTOR

LEGEND

PHASE 1 SILT FENCE — SF-1

PHASE 2 SILT FENCE — SF-2

DURING ALL PHASES OF CONSTRUCTION, INACTIVE AREA STABILIZATION METHODS AS DESCRIBED IN APWA SECTION 5111.3 SHALL BE USED TO CONTROL EROSION AND SILTATION.

NOTES: The Land Disturbance Plans indicates the Final placement of erosion control devices. The contractor(s) may proceed with construction prior to the final placement of these devices by providing additional devices to control erosion on their items of work. These devices shall be maintained until the final devices are in place.

CONSTRUCTION SEQUENCE ACTIVITY

1.) INSTALL PERIMETER SILT FENCE, CONSTRUCTION ENTRANCE, INLET PROTECTION

2.) STRIP SITE OF TOP SOIL/ VEGETATION

3.) EXCAVATE FOR THE PROPOSED BUILDING AND PARKING LOT.

4.) INSTALL PROPOSED BUILDING AND PARKING LOT, STORM CONVEYANCE SYSTEM.

5.) RE-SEED AND SOD ALL DISTURBED AREAS.

6.) REMOVE CONSTRUCTION ENTRANCE

7.) INSTALL LANDSCAPING.

8.) RE-SEED OR SOD ALL DISTURBED AREAS.

9.) REMOVE SILT FENCE AND INLET PROTECTION AFTER FULL VEGETATION IS ESTABLISHED.

DISTURBED AREA = 3.46 AC.
MODIFIED UNIVERSAL YIELD EQUATION
SEDIMENT YIELD: 5.36 Tons / Acres / Year
5.36 Tons / Acres / Year * 3.46 Ac. = Tons / Year
Q10 = C.F.S. Q100 =C.F.S.

QUANTITITES

Private Earth Work Quantities (CUT) 5,950 C.Y.

Private Earth Work Quantities (FILL) 6,164 C.Y.

MAINTENANCE:

TO MAINTAIN THE EROSION AND SEDIMENT CONTROLS, THE FOLLOWING PROCEDURES WILL BE PERFORMED:

SEDIMENT CAPTURE DEVICES: SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC FENCES, WHEN THE DEPTH OF ACCUMULATED SEDIMENT REACHES ABOUT ONE-THIRD THE HEIGHT OF THE STRUCTURE.

STORM SEWER INLETS: ANY SEDIMENT IN THE STORM SEWER INLETS WILL BE REMOVED AND DISPOSED OF PROPERLY.

TEMPORARY CONTROLS: ALL TEMPORARY CONTROLS WILL BE REMOVED AFTER THE DISTURBED AREAS HAVE BEEN STABILIZED.

INSPECTION PROCEDURES:

INSPECTIONS WILL BE DONE BY THE RESPONSIBLE PERSON(S) AT LEAST ONCE EVERY WEEK AND WITHIN 24 HOURS EACH STORM EVENT PRODUCING ANY AMOUNT OF RAINFALL. AREAS THAT HAVE BEEN RESEEDED WILL BE INSPECTED REGULARLY AFTER SEED GERMINATION TO ENSURE COMPLETE COVERAGE OF EXPOSED AREAS. DISTURBED AREAS THAT HAVE NOT BEEN FINALLY STABILIZED SHALL HAVE ALL POLLUTION CONTROL MEASURES INSPECTED FOR PROPER INSTALLATION, OPERATION AND MAINTENANCE. LOCATIONS WHERE STORM WATER LEAVES THE SITE SHALL BE INSPECTED FOR EVIDENCE OF EROSION OR SEDIMENT DEPOSITION. ANY DEFICIENCIES SHALL BE NOTED IN A REPORT OF THE INSPECTION AND CORRECTED WITHIN SEVEN CALENDAR DAYS OF THE INSPECTION. THE PERMITTEE SHALL PROMPTLY NOTIFY THE SITE CONTRACTORS RESPONSIBLE FOR OPERATION AND MAINTENANCE OF POLLUTION CONTROL DEVICES OF DEFICIENCIES.

IF THE EXISTING GROUND COVER IS NATURAL GRASS, DISTURBED AREAS SHALL BE TEMPORARILY SEEDED WITH WHEATRYE AT A RATE OF 1.5 POUNDS PER 1000 SQUARE FEET. PERMANENT SEEDING SHALL CONSIST OF 90% IN THREE EQUAL PARTS OF THIN BLADE, TURF-TYPE, TALL FESCUE AND 10% BLUEGRASS SEED AT A RATE OF 10 POUNDS PER 1000 SQUARE FEET. BOTH TEMPORARY AND PERMANENT SEEDED AREAS SHALL BE MULCHED AND WATERED TO MAINTAIN THE PROPER MOISTURE LEVEL OF THE SOIL TO ESTABLISH GRASS. NEW GRASS SHALL BE WATERED AND MAINTAINED UNTIL IT REACHES A HEIGHT OF 3 INCHES. ANY BARE AREAS SHALL BE RESEEDED.

ALL EROSION CONTROL DEVICES SHALL BE REMOVED BY GENERAL CONTRACTOR AFTER SITE STABILIZATION IS COMPLETE AND APPROVED BY ENGINEER.

THE DEVELOPER WILL DESIGNATE A QUALIFIED PERSON OR PERSONS TO PERFORM THE FOLLOWING INSPECTIONS:

STABILIZATION MEASURES: DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. AFTER A PORTION OF THE SITE IS FINALLY STABILIZED, INSPECTIONS WILL BE CONDUCTED AT LEAST ONCE EVERY MONTH THROUGHOUT THE LIFE OF THE PROJECT. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.

STRUCTURAL CONTROLS: FILTER FABRIC FENCES AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN WILL BE INSPECTED REGULARLY FOR PROPER POSITIONING, ANCHORING, AND EFFECTIVENESS IN TRAPPING SEDIMENTS. SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.

DISCHARGE POINTS: DISCHARGE POINTS OR LOCATIONS WILL BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT AMOUNTS OF POLLUTANTS FROM ENTERING RECEIVING WATERS.

CONSTRUCTION ENTRANCE: LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.

A LOG OF EACH INSPECTION SHALL BE KEPT. THE INSPECTION REPORT IS TO INCLUDE THE FOLLOWING MINIMUM INFORMATION: INSPECTOR'S NAME, DATE OF INSPECTION, OBSERVATIONS RELATIVE TO THE EFFECTIVENESS OF THE POLLUTION CONTROL DEVICES, ACTIONS TAKEN OR NECESSARY TO CORRECT DEFICIENCIES, AND LISTING OF AREAS WHERE LAND DISTURBANCE OPERATIONS HAVE PERMANENTLY OR TEMPORARILY STOPPED. THE INSPECTION REPORT SHALL BE SIGNED BY THE PERMITTEE OR BY THE PERSON PERFORMING THE INSPECTION IF DULY AUTHORIZED TO DO SO.

EROSION CONTROL DESCRIPTION:

1.) SILT FENCE SHALL BE PLACE AT THE PERIMETER OF THE GRADING AND AT INTERMEDIATE AREAS THROUGHOUT THE SITE AS SHOWN ON THE PLAN. INLET SEDIMENT TRAPS SHALL BE PLACED SURROUNDING ALL STORM INLETS

2.) INSTALL TEMPORARY CONSTRUCTION ENTRANCE AS SHOWN ON PLAN

EROSION CONTROL PROCEDURE:

1.) SILT FENCE AND TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE PERIMETER OF THE GRADED AREAS PRIOR TO BEGINNING OF CLEARING OR DEMOLITION OPERATIONS. THE CONTRACTOR SHALL INSTALL SILT FENCE AS SHOWN ON PLANS AS GRADING PROGRESSES.

TEMPORARY CONSTRUCTION ENTRANCE NOTES:

A.) INSTALLATION
1.) AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC STREETS. IF POSSIBLE, LOCATE WHERE PERMANENT ROADS WILL EVENTUALLY BE CONSTRUCTED
2.) REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE AND CROWN FOR POSITIVE DRAINAGE.
3.) IF SLOPE TOWARDS THE PUBIC ROAD EXCEED 2% CONSTRUCT A 6 TO 8 INCH HIGH RIDGE WITH 3H : 1V SIDE SLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE EDGE OF THE PUBLIC ROAD TO DIVERT RUNOFF AWAY FROM IT.
4.) INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES ALONG PUBLIC ROADS
5.) PLACE STONE TO DIMENSIONS AND GRADES AS SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPED FOR DRAINAGE
6.) DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE
7.) IF WET CONDITIONS ARE ANTICIPATED PLACE GEOTEXTILE FABRIC ON THE GRADED FOUNDATION TO IMPROVE STABILITY

B.) TROUBLESHOOTING
1.) CONSULT WITH A QUALIFIED DESIGN PROFESSIONAL IF ANY OF THE FOLLOWING OCCUR:
-INADEQUATE RUNOFF CONTROLS TO THE EXTENT THAT SEDIMENT WASHES ONTO PUBLIC ROADS
- INSTALL DIVERSIONS OR OTHER RUNOFF CONTROL MEASURES
-SMALL STONE, THIN PAD, OR ABSENCE OF GEOTEXTILE FABRIC RESULTS IN RUTS AND MUDDY CONDITIONS AS STONE IS PRESSED INTO SOIL - INCREASE STONE SIZE OR PAD THICKNESS OR ADD GEOTEXTILE FABRIC
-PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC - EXTEND PAD BEYOND THE MINIMUM 50 FOOT LENGTH AS NECESSARY

C.) INSPECTION AND MAINTENANCE
1.) INSPECT STONE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER ANY RAIN EVENT
2.) RESHAPE PAD AS NEEDED FOR PROPER DRAINAGE AND RUNOFF CONTROL
3.) TOP DRESS WITH CLEAN 2 AND 3 INCH STONE AS NEEDED
4.) IMMEDIATELY REMOVE MUD OR SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADWAY. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY
5.) REMOVE ALL TEMPORARY ROAD MATERIALS FROM AREAS WHERE PERMANENT VEGETATION WILL BE ESTABLISHED

SITE ESC PHASE 1 PLAN

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET

Professional Registration
Missouri
Engineering 2005002184-A
Surveying 2006008318-D
Kansas
Engineering E-1696
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

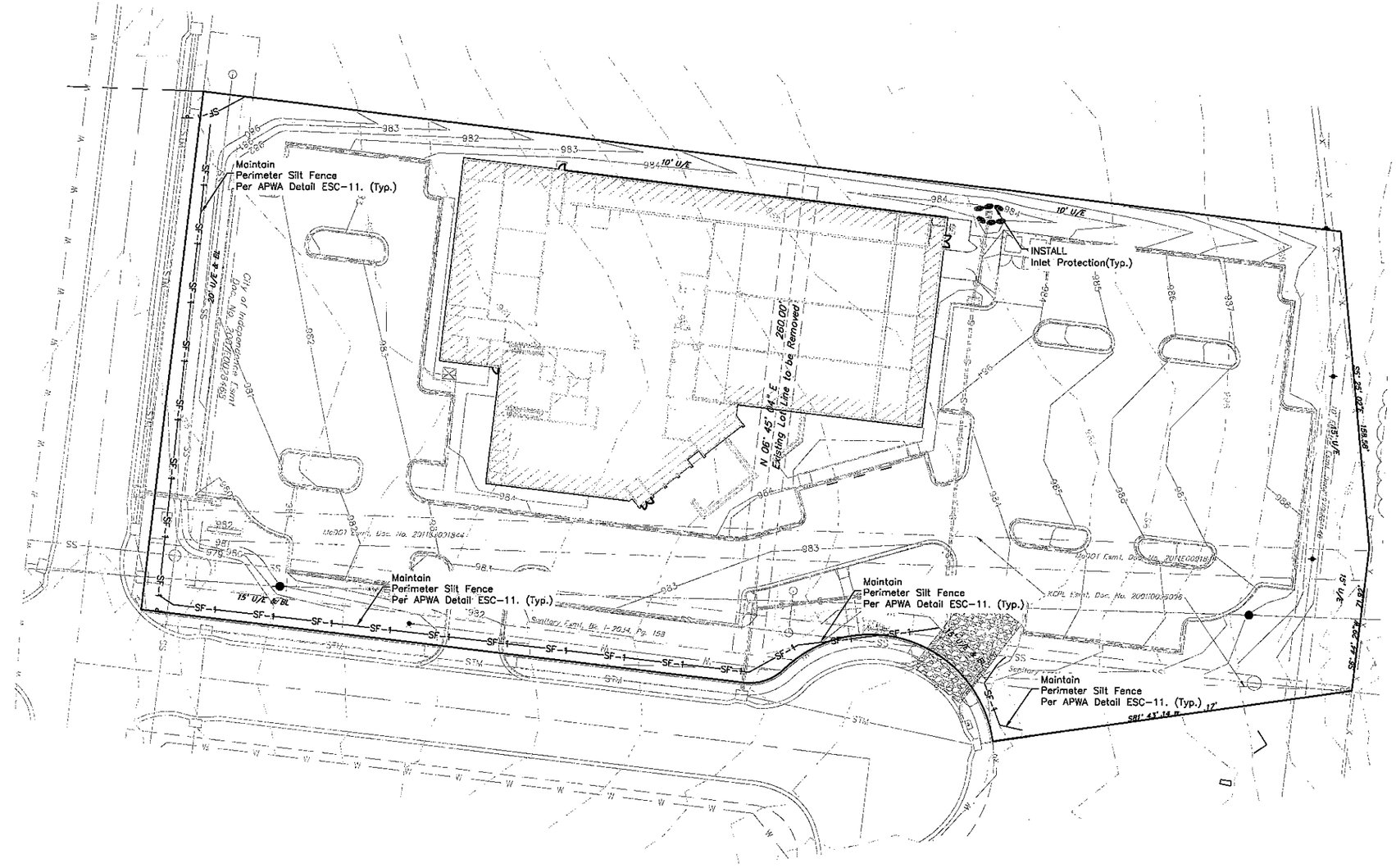
FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Site ESC Phase 1 Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Matthew J. Schlich
MO PE 2006019706
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
4-29-14 City Comment



SITE ESC PHASE 2 PLAN

SCALE: 1" = 30'

NOTE:
1. ALL FILL AREAS SHALL BE ENGINEERED FILL IN ACCORDANCE TO THE SOIL STUDY.
3. CONTOURS ARE APPROXIMATE SPOT ELEVATIONS SHALL BE USED FOR FINAL GRADING.
4. TOPSOIL STOCK PILE SHALL BE IN ACCORDANCE CITY AND STATE CODES.

SITE ESC PHASE 2 PLAN

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING

Professional Registrat
Missouri
Engineering 2002002184
Surveying 2005008319
Kansas
Engineering E-1635
Surveying LS-218
Oklahoma
Engineering 6264
Nebraska
Engineering CA2821

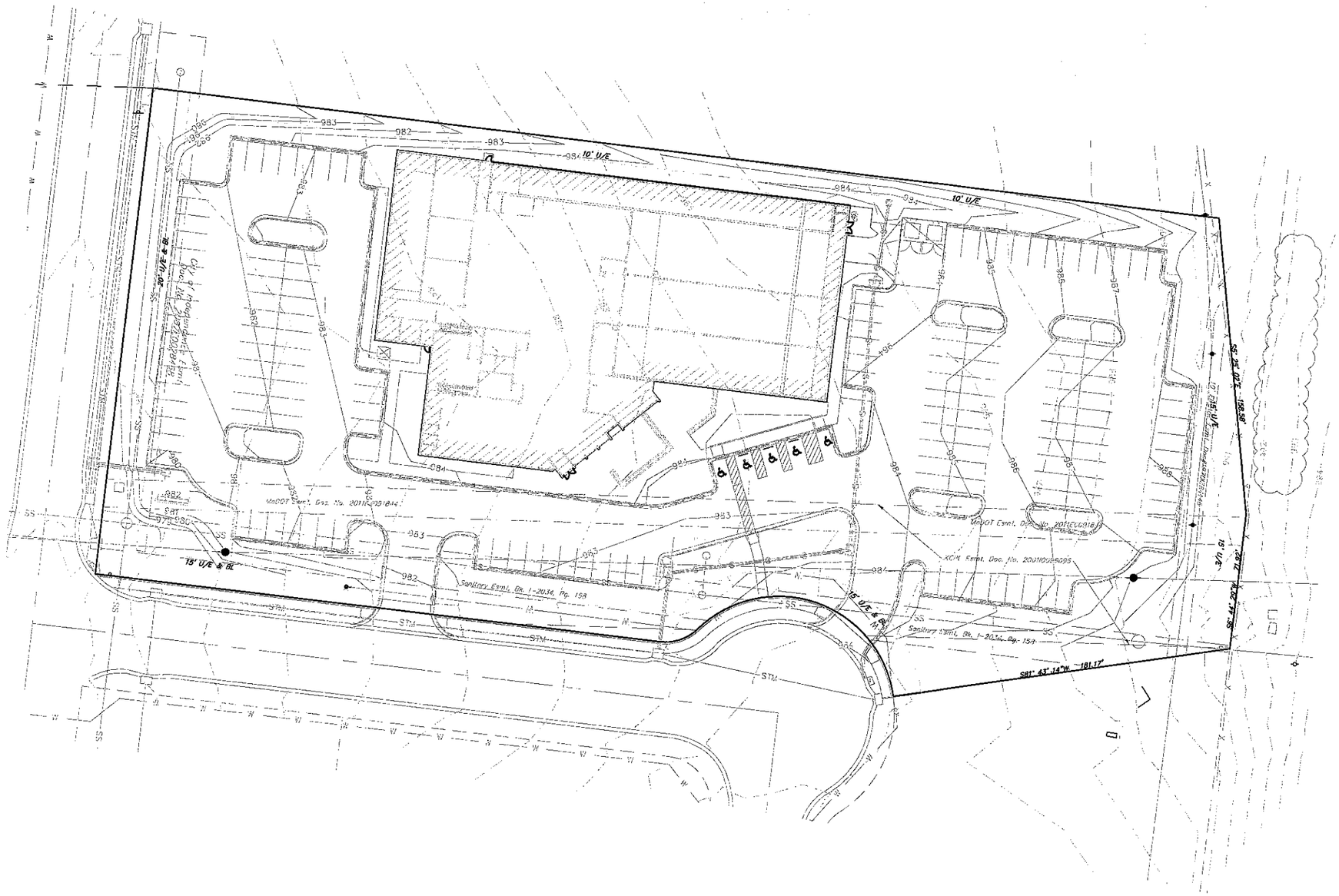
FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Site ESC Phase 2 Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Matthew J. Schlic
MO PE 2006019
KS PE 19071
OK PE 25226
NE PE E-14338

REVISIONS
4-29-14 City Commen



North

0 15' 30' 60'

FINAL RESTORATION PLAN

SCALE: 1" = 30'

SEED AND MULCH NOTES:

All areas disturbed by construction activities shall be seeded and mulched. Seeding shall be done before the proposed seedbed becomes eroded, crusted over, or dried out and shall not be done when the ground is frozen, or covered with snow. The seed shall comply with the requirements of the Missouri Seed Law and the Federal Seed Act. Also, it shall contain no seed of any plant on the Federal Noxious Weed List. Other weed seeds shall not exceed one percent by weight of mix

Seed and Fertilizer Rate:
Mix I – Rye Grass / Blue Grass -------- 100 lbs. per Acre
Mix II – Tall Fescue / Blue Grass ------- 195 lbs. per Acre
Lime---------2000 lbs per Acre (50 lbs. per 1000 sq. ft.)
Fertilizer --600 to 1200 lbs per Acre (25 lbs per 1000 sq. ft.)

During the dates December 15th through May 31 ALL lime fertilizer, seed and mulch shall be applied to finished slopes of disturbed areas. During the months of June, July, October and November 1st through December 15th, lime fertilizer, seed and mulch shall be applied at the following rates:
Lime – 100% of specified quantity
Fertilizer – 75% of the specified quantity
Seed – 50% of the specified quantity
Mulch – 100% of the specified quantity

To obtain the Certificate of Occupancy the City will require the grass to be established. If this cannot be accomplished by sending the contractor shall sod the disturbed areas.

Mulch shall be Vegetative type, cereal straw from stalks of oats, rye, or barley, or approved equal. The straw shall be free of prohibited weed seed and relatively free of all other noxious and undesirable seed. Mulch shall be applied at the rate of 2 tons per acre, (70 to 90 lbs per 1000 sq. ft.). Mulch shall be embedded by a mulch anchoring tool or disk type roller having flat serrated disks spaced not more than 10 inches apart and cleaning scrapers shall be provided

DURING ALL PHASES OF CONSTRUCTION, INACTIVE AREA STABILIZATION METHODS AS DESCRIBED IN APWA SECTION 5111.3 SHALL BE USED TO CONTROL EROSION AND SILTATION.

NOTES: The Land Disturbance Plans indicates the Final placement of erosion control devices. The contractor(s) may proceed with construction prior to the final placement of these devices by providing additional devices to control erosion on their items of work. These devices shall be maintained until the final devices are in place.

FINAL RESTORATION PLAN

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING

Professional Registrations
Missouri
Engineering 2003002184
Surveying 2005008319
Kansas
Engineering E-1936
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA1821

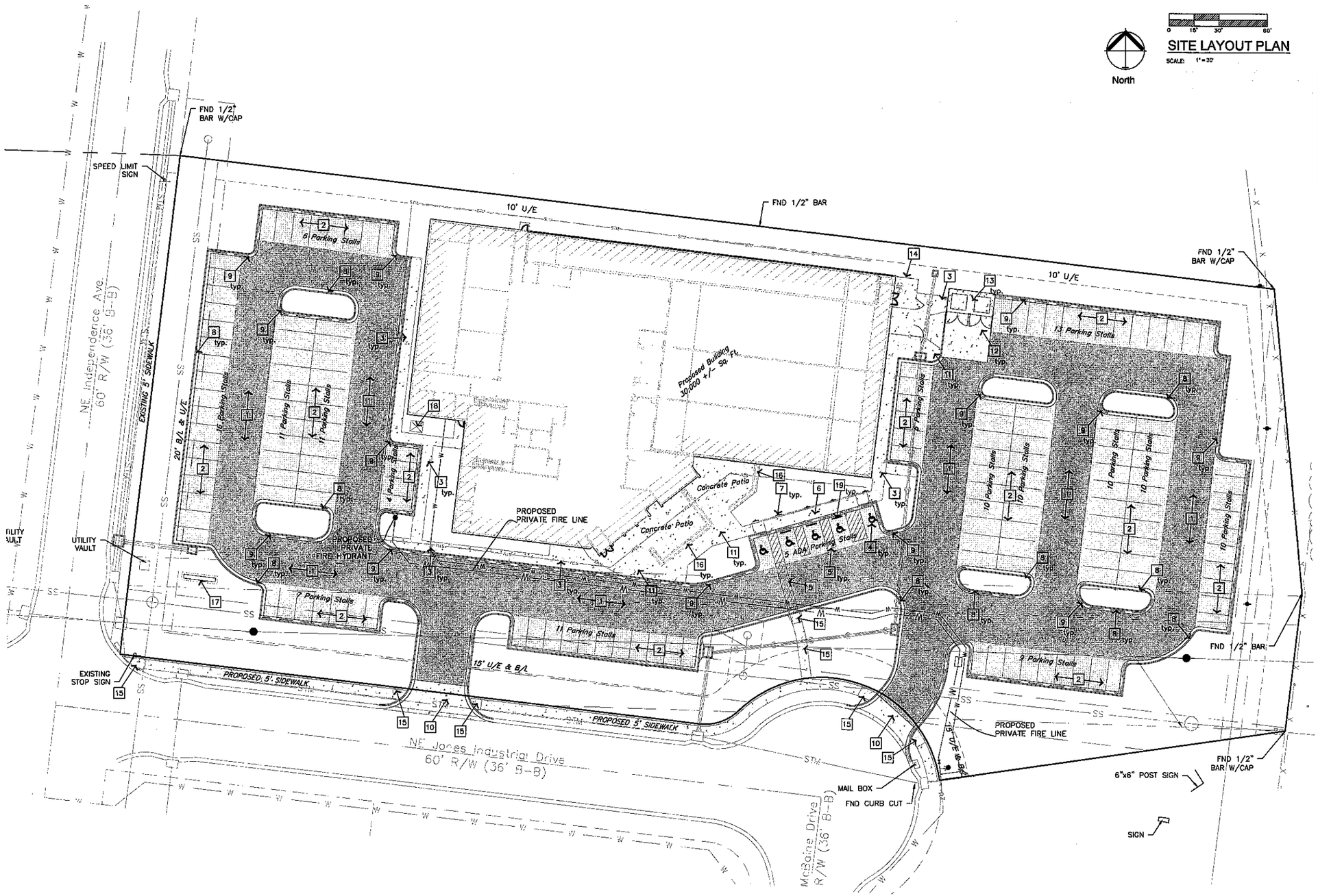
FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Final Restoration Plan
Construction Plans for:
Frontier Justice

Matthew J. Schlic
MO PE 2006019
KS PE 19071
OK PE 25226
NE PE E-1433

REVISIONS
4-28-14 City Comme



PLAN NOTES:

1. HEAVY ASPHALT PAVEMENT
2. LIGHT ASPHALT PAVEMENT
3. SIDEWALK
4. PAINT ACCESSIBLE PARKING SYMBOLS ACCORDING TO APWA PAVEMENT MARKING STANDARDS.
5. STRIPE PAVING WITH 4" WIDE STRIPE & PAINT ACCORDING TO APWA PAVEMENT MARKING STANDARDS.
6. TYPE A ACCESSIBLE RAMP
7. INSTALL ACCESSIBLE PARKING SIGN
8. CURB AND GUTTER "WET"
9. CURB AND GUTTER "DRY"
10. COMMERCIAL CONCRETE DRIVE ENTRANCE
11. LIGHT CONCRETE PAVEMENT
12. HEAVY CONCRETE PAVEMENT
13. TRASH ENCLOSURE SEE ARCHITECTURAL PLANS
14. RECYCLE ENCLOSURE
15. CITY ADA ACCESSIBLE RAMP, EXCLUDE TACTILE WARNING DEVICE ON PRIVATE ENTRANCES AND RAMPS
16. BLOCK WALL PLANTER SEE ARCHITECTURAL PLANS
17. MONUMENT SIGN SEE ARCHITECTURAL PLANS
18. ELECTRICAL TRANSFORMER SEE SITE ELECTRICAL PLAN
19. WHEEL STOP

SYMBOL LEGEND

PROPOSED		EXISTING
MH	Manhole	MH
C.I.	Curb Inlet	C.I.
JB	Junction Box	JB
FI	Field Inlet	FI
FES	Flared End Section	FES
CO	Sanitary cleanout	CO
FH	Fire Hydrant	FH
WV	Water Valve	WV
WM	Water Meter	WM
	Straddle	
	4' Sidewalk	
	2' Curb	
840	Contour	840

LEGEND:
- B/L – BUILDING SET-BACK
- C/A – COMMON AREA
- D/E – DRAINAGE EASEMENT
- FND. – FOUND
- L/E – LANDSCAPE EASEMENT
- L.N.A. – LIMITS OF NO ACCESS
- R/W – RIGHT OF WAY
- S – SANITARY SEWER LINE
- S/W – SIDEWALK
- U/E – UTILITY EASEMENT
- W – WATER LINE
- ST – STORM SEWER LINE

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET

Professional Registration
Missouri
Engineering 2005022184
Surveying 2005008318-D
Kansas
Engineering E-1695
Surveying LS-318
Oklahoma
Engineering 6854
Nebraska
Engineering CA2821

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Site Layout Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2005019700
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS
4-29-14 City Comment
5-13-14 City Comment

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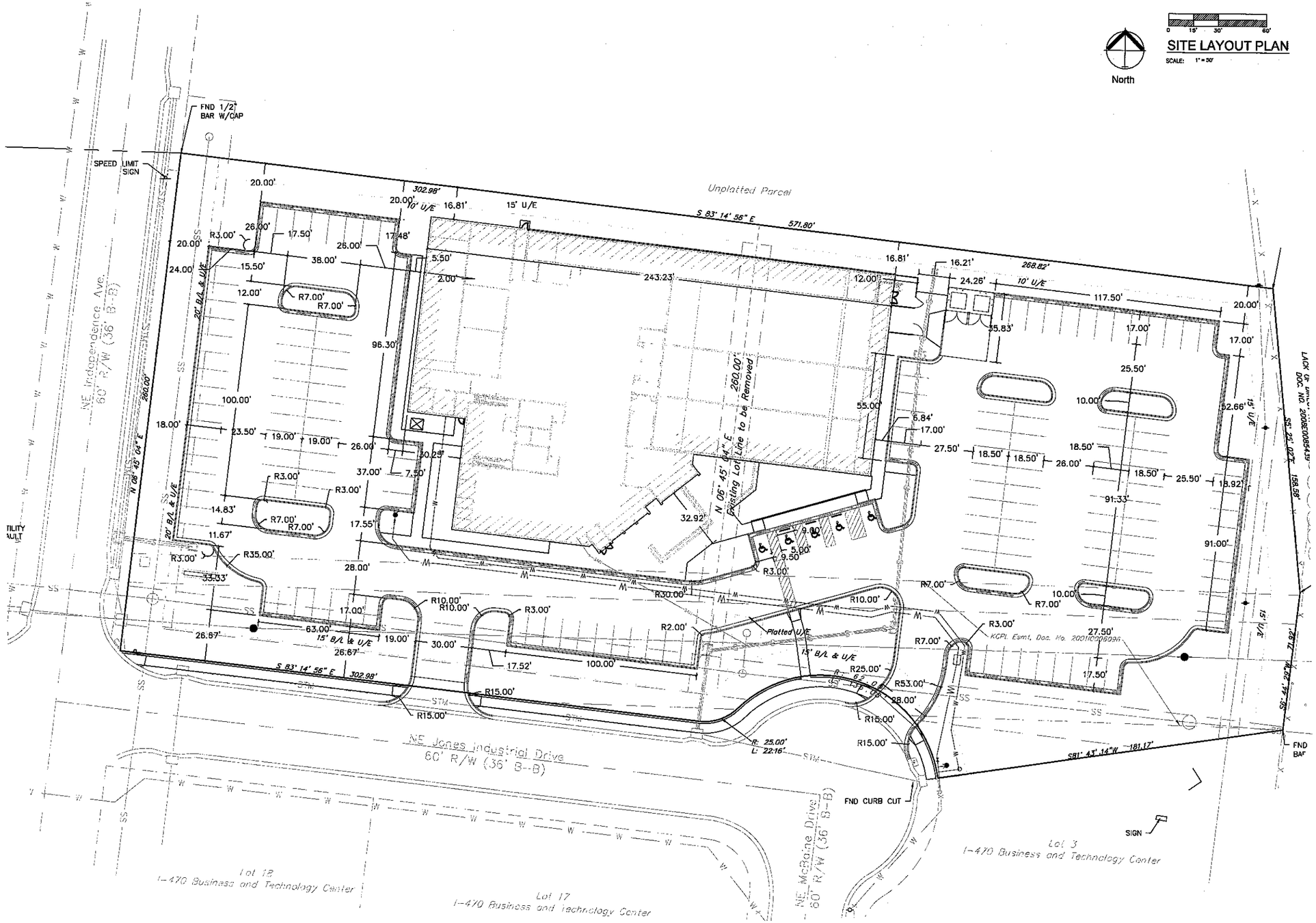

SYMBOL LEGEND

PROPOSED		EXISTING
MH	Manhole	
C.I.	Curb Inlet	
JB	Junction Box	
FI	Field Inlet	
FES	Flared End Section	
CO	Sanitary cleanout	
FH	Fire Hydrant	
WV	Water Valve	
WM	Water Meter	
	Straddle	
	4' Sidewalk	
	2' Curb	
840	Contour	840

LEGEND:

B/L	– BUILDING SET-BACK
C/A	– COMMON AREA
D/E	– DRAINAGE EASEMENT
FND.	– FOUND
L/E	– LANDSCAPE EASEMENT
L.N.A.	– LIMITS OF NO ACCESS
R/W	– RIGHT OF WAY
S	– SANITARY SEWER LINE
S/W	– SIDEWALK
U/E	– UTILITY EASEMENT
W	– WATER LINE
ST	– STORM SEWER LINE

ENGINEERING SOLUTIONS
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Professional Registrants
Missouri
Engineering 2006002186
Surveying 2006008319
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6294
Nebraska
Engineering CA2321

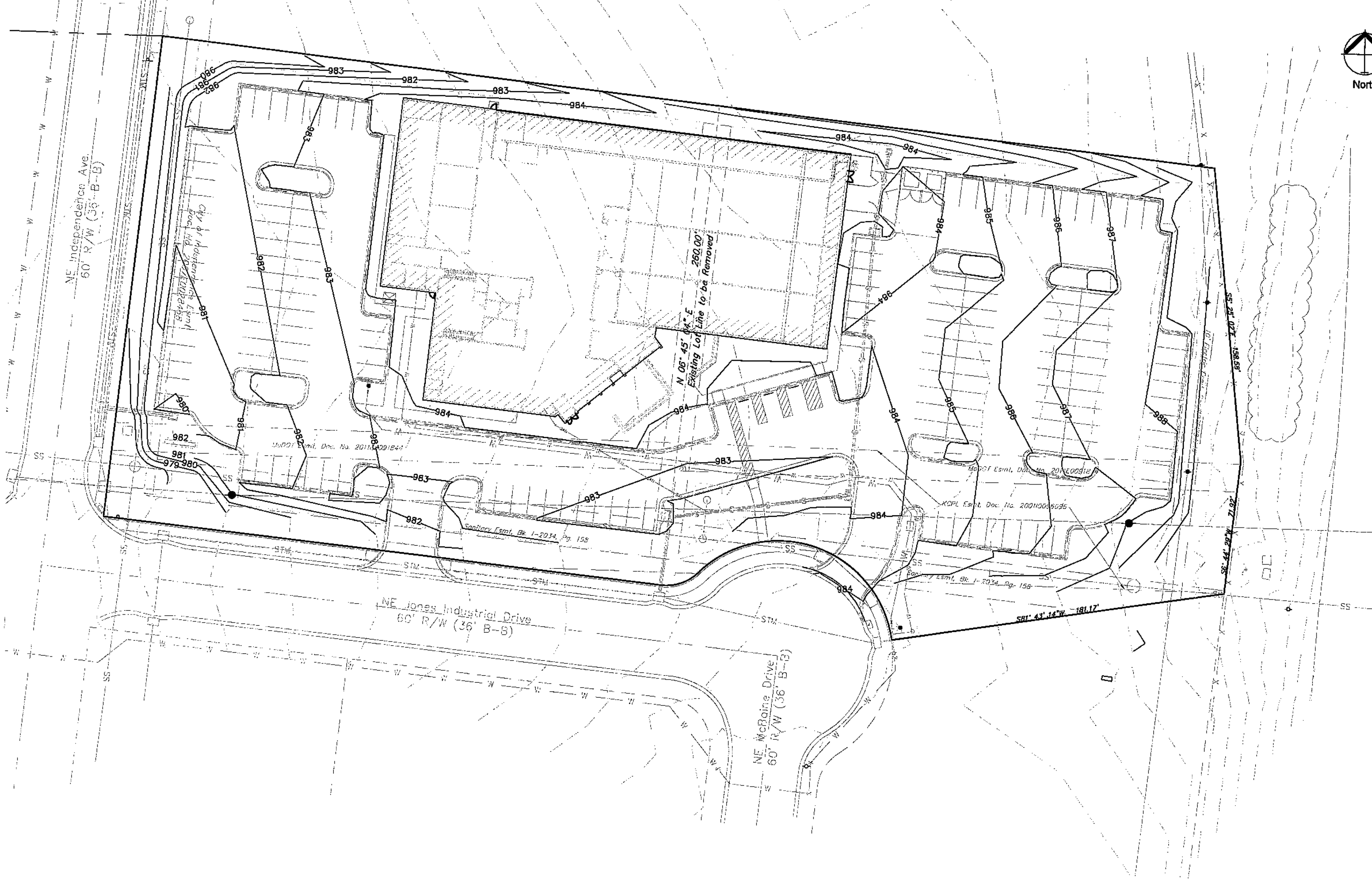
FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Site Dimension Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Matthew J. Schlich
MO PE 2006019790
KS PE 19071
OK PE 25228
NE PE E-14325

REVISIONS
4-29-14 City Comment



SITE GRADING PLAN

SCALE: 1" = 30'

Estimated Cut / Fill Quantities	
Site Area	3.46 Acres
Cut Volume (Unadjusted)	2,294c.y.
Fill Volume (Unadjusted)	6,164c.y.
Street, Parking & Sidewalk Cut Volume	2,474c.y.
Storm facility Cut Volume	30c.y.
Building Pad Cut Volume	1,161c.y.
Net FILL Required	205c.y. (Unadjusted)

Notes

1. Contractor is responsible for verifying all existing utility locations prior to excavation
2. These Numbers are estimates only and shall be verified by contractor prior to final bid.
3. There are no known natural or artificial water storage detention areas, or wetlands in the area designated for construction
4. No part of the project lies within the 100 year flood plain
5. All erosion and sediment control measures need to be implemented prior to construction
6. Additional erosion control may be required by the City Engineer, Design Engineer or Owner at any time problematic areas are noted in the field or existing measures are found to be ineffective
7. Soil Stabilization of disturbed areas shall be completed within 14 days of construction inactivity
8. Contractor responsible for all density testing of roadway subgrade and granular base.
9. Contractor responsible to provide Engineering Solutions an Asbuilt topographic survey of the site to verify grades if required by developer, city or Architect.

NOTE:
1. ALL FILL AREAS SHALL BE ENGINEERED FILL IN ACCORDANCE TO THE SOIL STUDY.

3. CONTOURS ARE APPROXIMATE SPOT ELEVATIONS SHALL BE USED FOR FINAL GRADING.

SITE GRADING PLAN

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING

Professional Registrati
Missouri
Engineering 2005002186
Surveying 2005008194
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

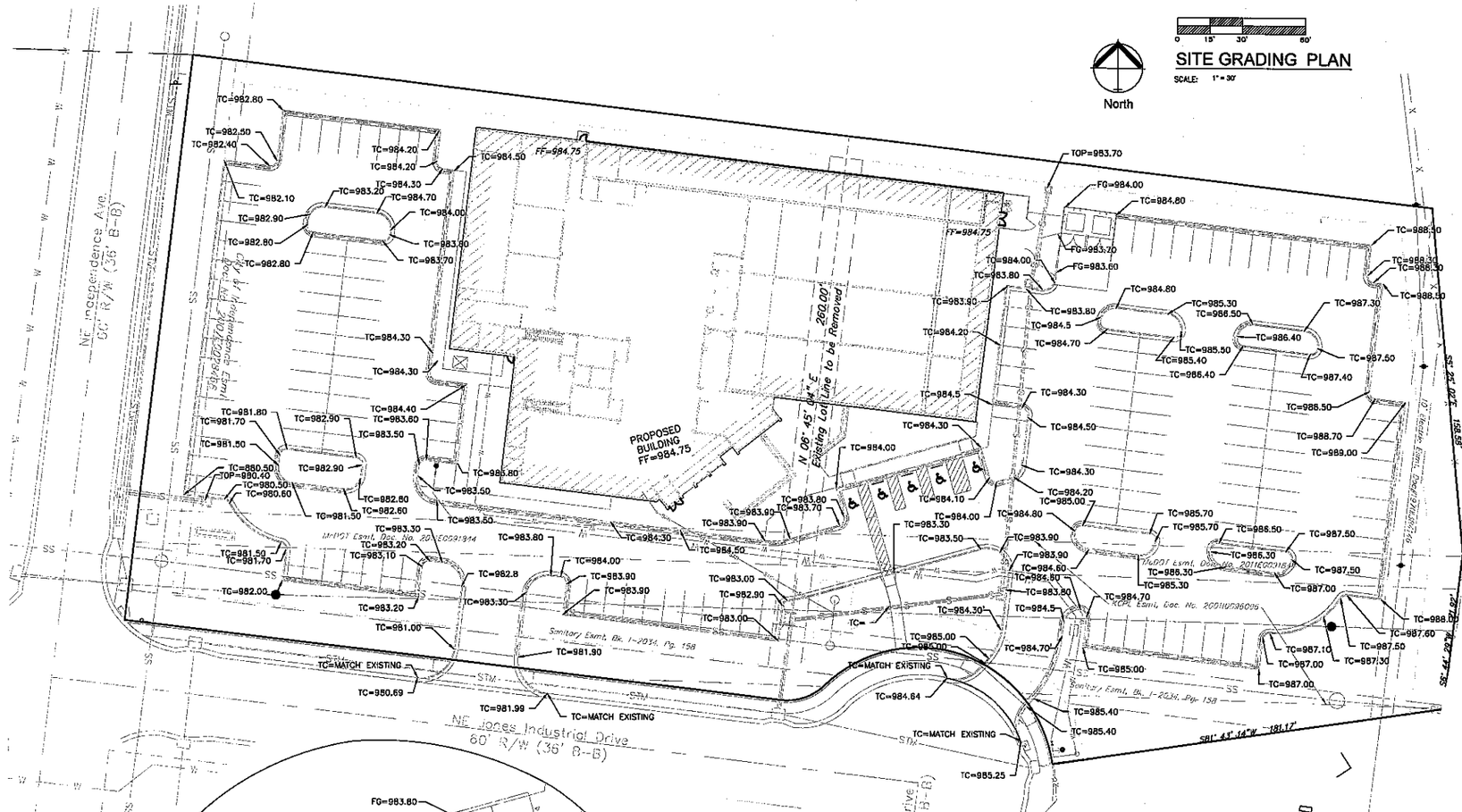
Project: Frontier Justice
Issue Date: April 10, 2014

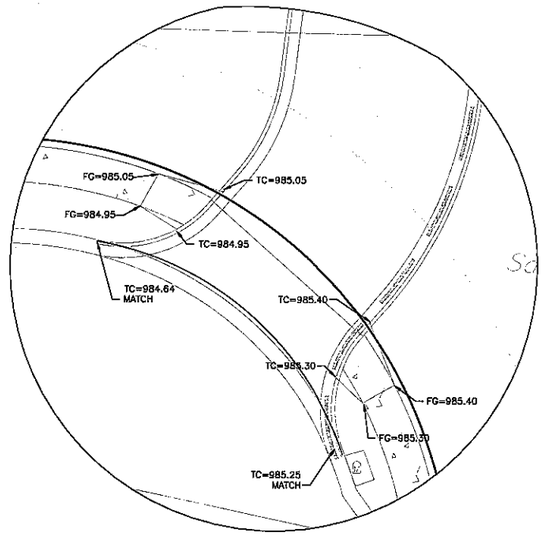
Site Grading Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

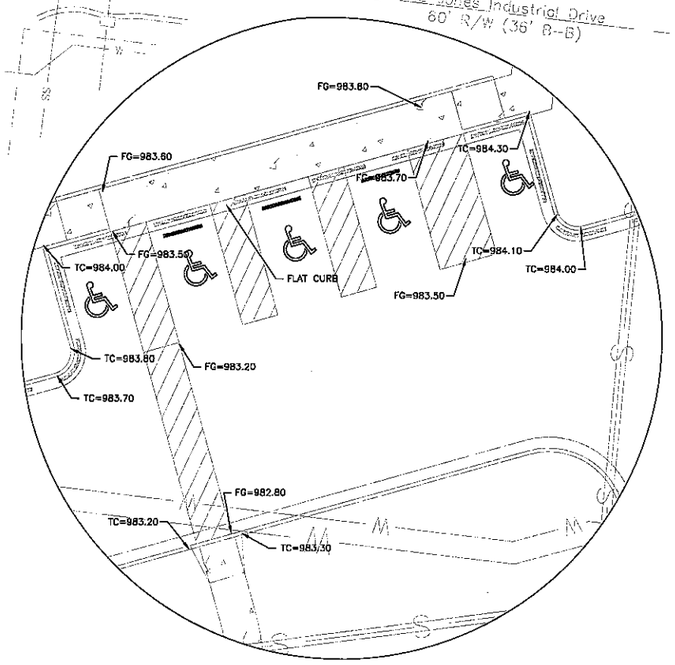
Matthew J. Schlich
MO PE 200601970
KS PE 19071
OK PE 25226
NE PE E-14335

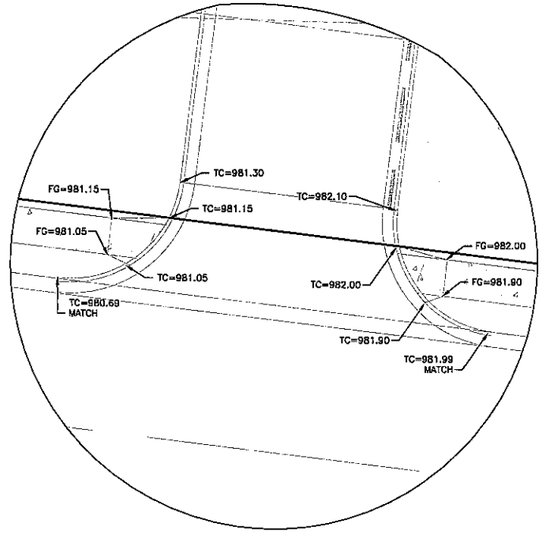
REVISIONS

4-29-14 City Comment









NOTE:
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3. CONTOURS ARE APPROXIMATE SPOT ELEVATIONS SHALL BE USED FOR FINAL GRADING.

SITE ELEVATION PLAN

ENGINEERING SOLUTIONS
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Professional Registrati
Missouri
Engineering 2005002188
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Kansas
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Surveying LS-218
Oklahoma
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Nebraska
Engineering CA2521

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Site Spot Elevation Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Matthew J. Schlich
MO PE 2006019
KS PE 19071
OK PE 25228
NE PE E--14335

REVISIONS
4-29-14 City Comment

C.201

LEGEND

EXISTING STORM SEWER

NEW STORM SEWER

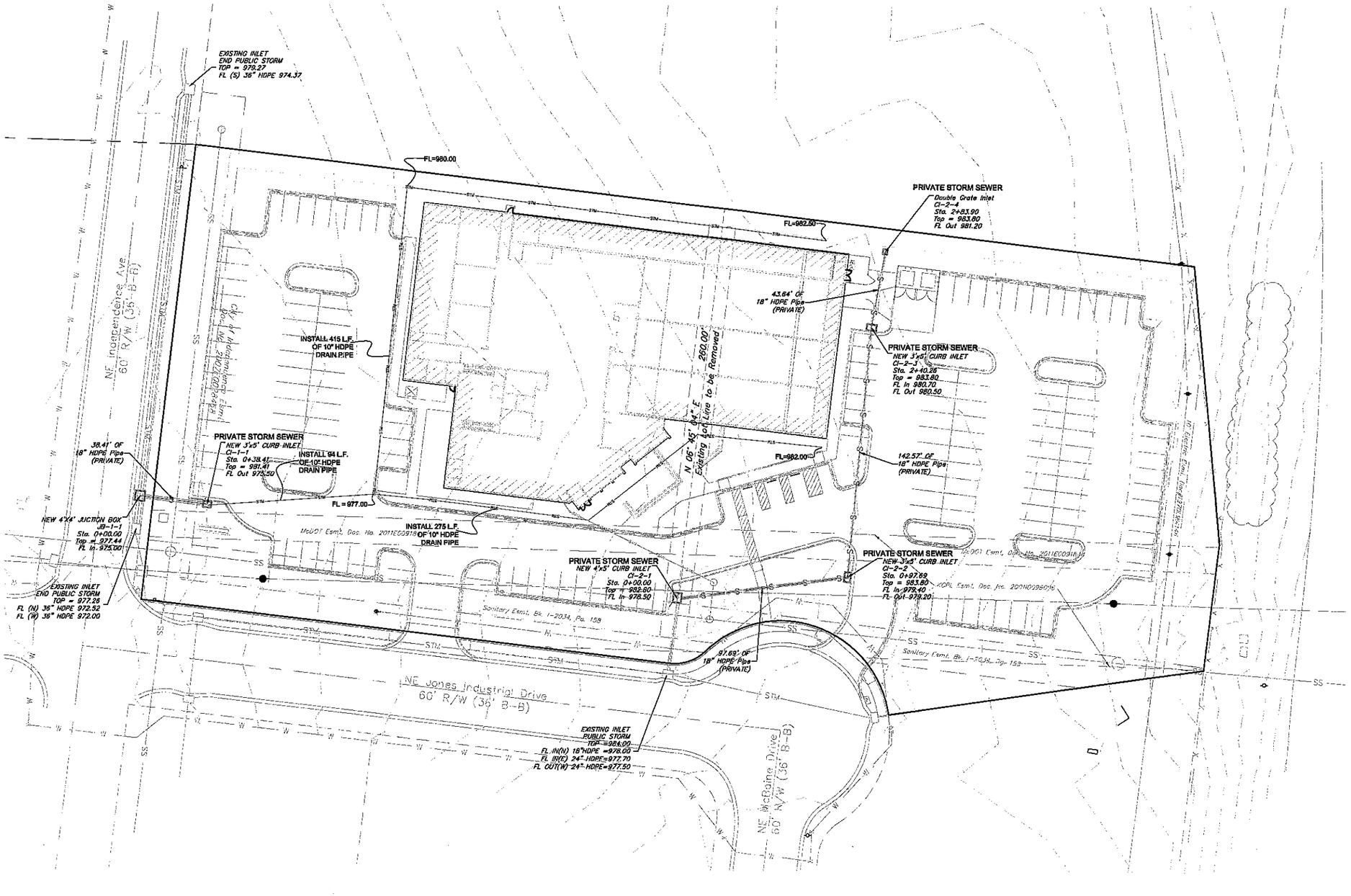
NEW ROOF DRAIN SYSTEM

North

0 15' 30' 60'

SITE STORM SEWER PLAN

SCALE: 1" = 30'



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Professional Registrat
Missouri
Engineering 2005032181
Surveying 2005008319
Kansas
Engineering E-1695
Surveying LS-719
Oklahoma
Engineering 6254
Nebraska
Engineering CA2621

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Site Overall Private Storm Sewer Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Matthew J. Schlic
MO PE 2006019
KS PE 19071
OK PE 25226
NE PE E-1433

REVISIONS

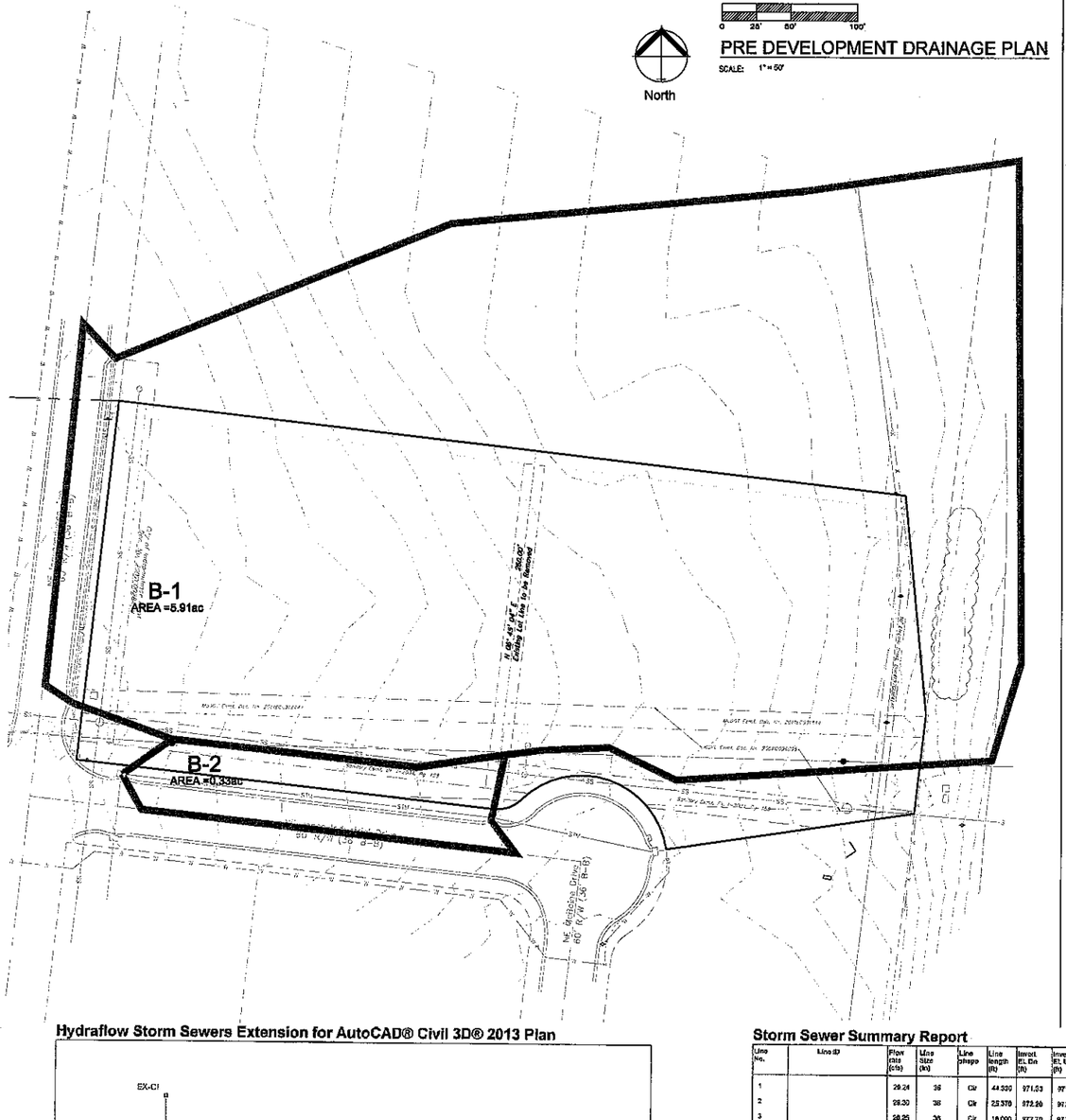
4-29-14 City Commen

PRE DEVELOPMENT DRAINAGE PLAN

SCALE: 1" = 50'

North

0 25' 50' 100'

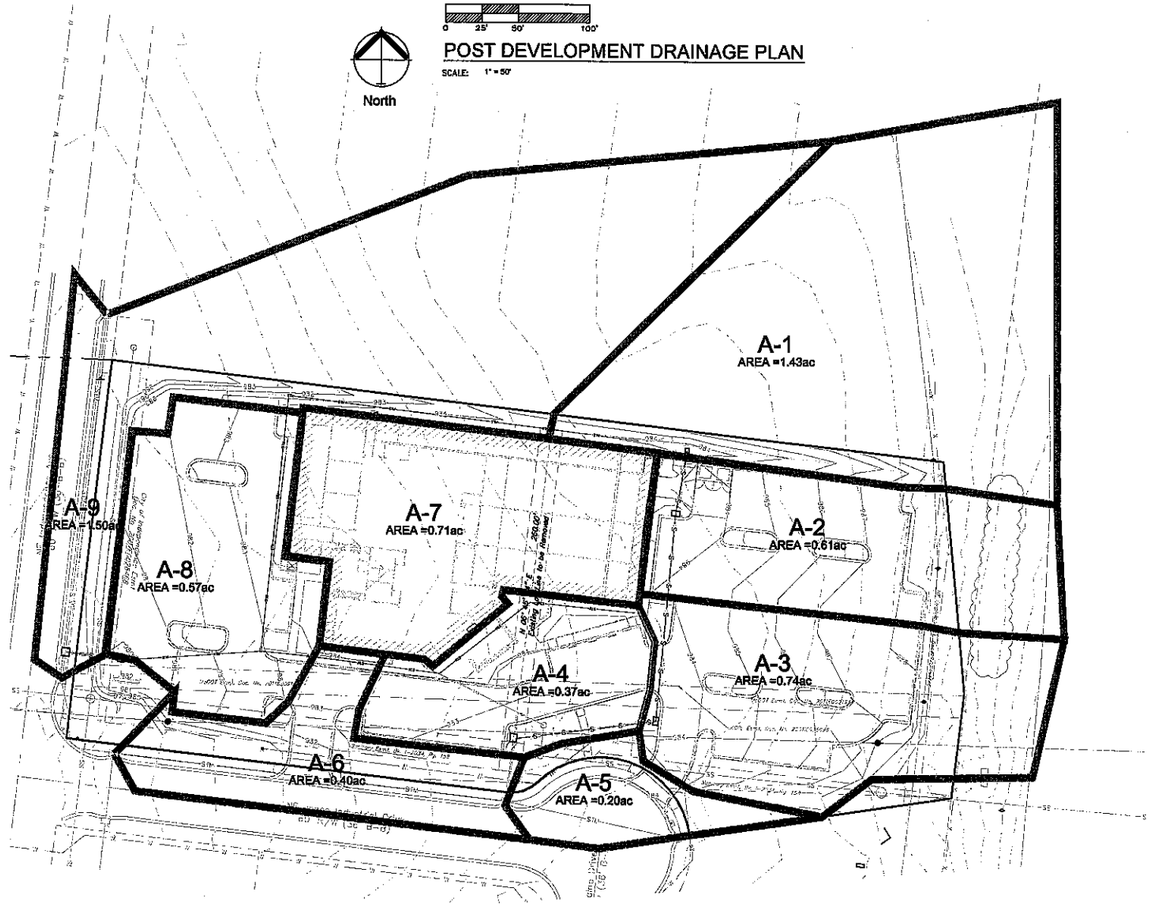


POST DEVELOPMENT DRAINAGE PLAN

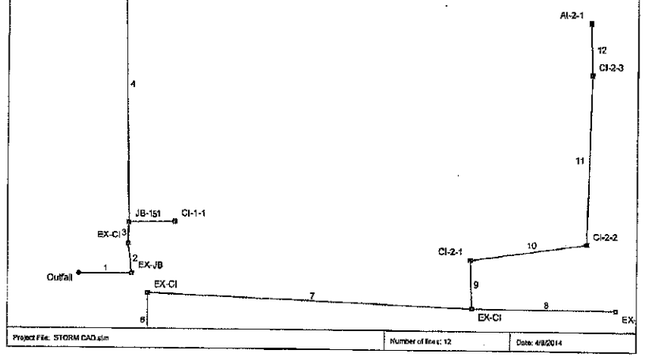
SCALE: 1" = 50'

North

0 25' 50' 100'



Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2013 Plan



Storm Sewer Summary Report

Page 1

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1		28.24	36	Cir	44.330	971.03	971.60	1.286	972.63	973.65	n/a	973.65	End	Manhole
2		28.30	36	Cir	25.378	972.20	972.40	0.788	973.69	974.15	n/a	974.15	1	Curb-Horiz
3		28.25	36	Cir	18.000	972.70	972.89	0.856	974.25	974.45	0.67	974.45	2	Manhole
4		18.23	36	Cir	232.069	972.82	973.09	0.466	974.45	975.51	n/a	975.31 j	3	Curb-Horiz
5		8.58	18	Cir	38.410	973.00	975.50	1.302	975.94	976.83	0.68	976.83	3	Curb-Horiz
6		21.84	30	Cir	49.600	971.20	971.42	0.438	972.50	973.10	n/a	973.751	End	Curb-Horiz
7		20.74	24	Cir	288.890	972.00	976.58	1.607	973.75	978.43	n/a	978.77	6	Curb-Horiz
8		8.20	18	Cir	119.583	977.30	979.20	1.589	978.43	980.37	n/a	980.37	7	Curb-Horiz
9		11.00	18	Cir	41.000	977.62	978.05	1.058	979.77*	980.29*	n/a	980.641	7	Curb-Horiz
10		10.06	18	Cir	97.690	978.50	979.20	0.717	980.64*	981.53*	0.75	982.28	9	DropCurb
11		5.28	18	Cir	142.970	979.40	980.50	0.772	982.28*	982.75*	0.10	982.89	10	Curb-Horiz
12		3.92	18	Cir	43.040	980.70	981.20	1.146	982.89*	982.92*	0.05	982.97	11	Grate

Project File: STORM CAD.stm | Number of lines: 12 | Run Date: 4/8/2014

NOTES: Return period = 25 Yrs. ; * Surcharged (HGL above crown). ; j - Inlet control ; j - Line contains hyd. jump.

NOTE:

1. TOTAL SITE AREA = 3.46ac
2. TOTAL EXISTING IMPERVIOUS AREA =0.0ac
   = 0% IMPERVIOUS AREA
3. TOTAL IMPERVIOUS AREA POST DEVELOPMENT =2.34ac
   = 67% IMPERVIOUS AREA
   RATIONAL METHOD C = 0.72

ENGINEERING SOLUTIONS
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Professional Registrat
Missouri
Engineering 2006021
Surveying 2005003
Kansas
Engineering E-1
Surveying LS-2
Oklahoma
Engineering 62
Nebraska
Engineering CA

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

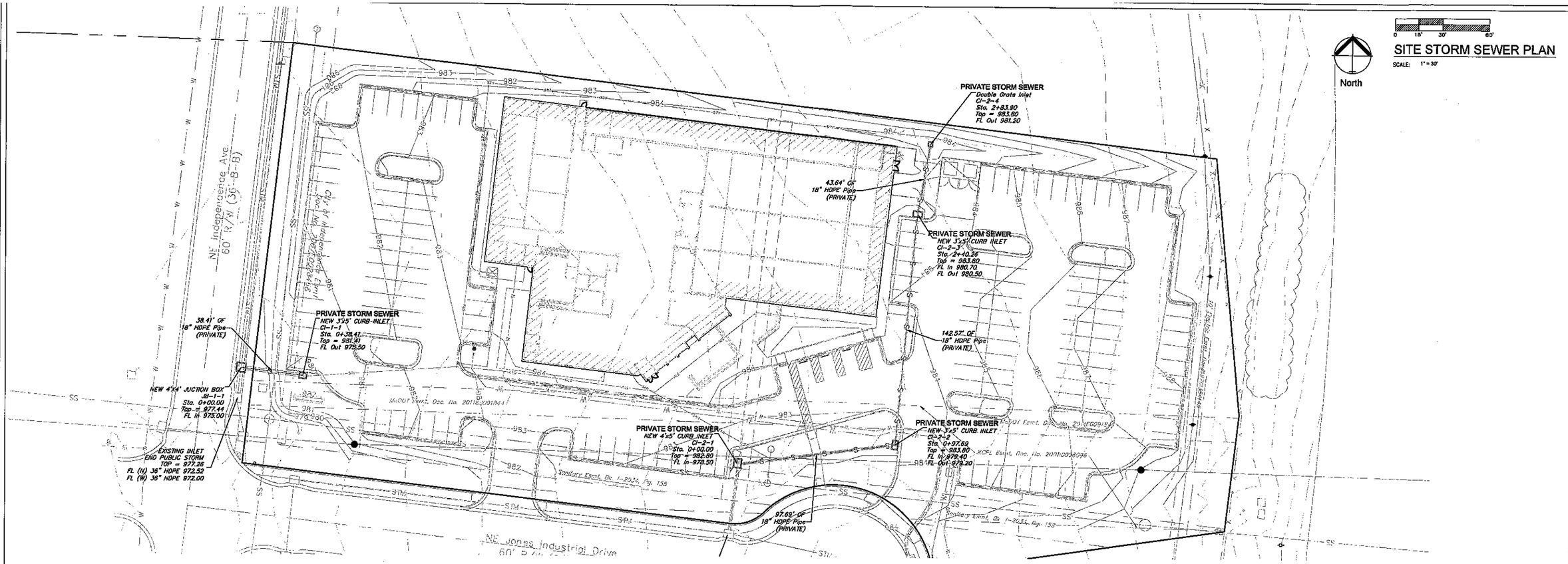
Project: Frontier Justice
Issue Date: April 10, 2014

Site Drainage Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

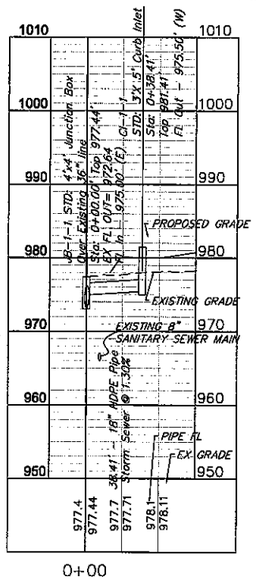
Matthew J. Schlic
MO PE 2006019
KS PE 19071
OK PE 25228
NE PE E-14335

REVISIONS

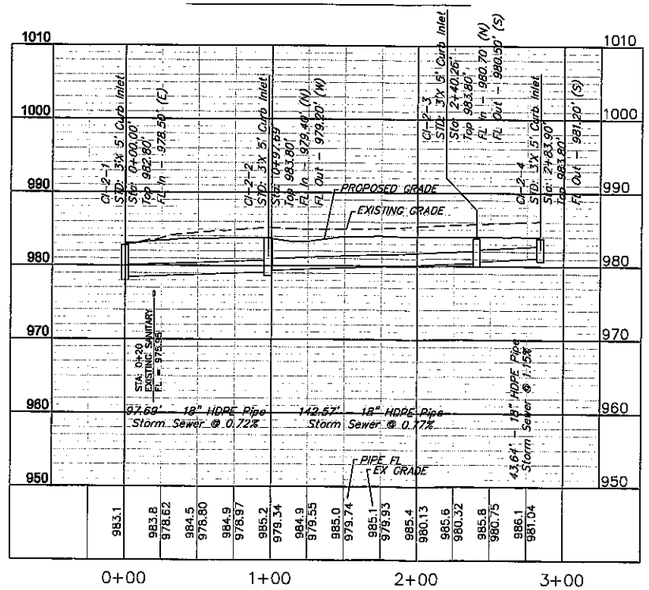
4-29-14 City Commen



PRIVATE STORM SEWER
STORM LINE 1



PRIVATE STORM SEWER
STORM LINE 2



NOTE:

1. TOTAL SITE AREA = 3.46ac
2. TOTAL EXISTING IMPERVIOUS AREA =0.0ac
   = 0% IMPERVIOUS AREA
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   = 67% IMPERVIOUS AREA
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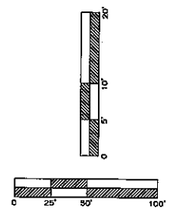

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Professional Registra
Missouri
Engineering 2006002161
Surveying 2006000376
Kansas
Engineering E-1886
Surveying LS-219
Oklahoma
Engineering 6254
Nebraska
Engineering CA2521
Matthew J. Schlic
MO PE 2006019
KS PE 19071
OK PE 25228
NE PE E-14336

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

REVISIONS
4-29-14 City Commen

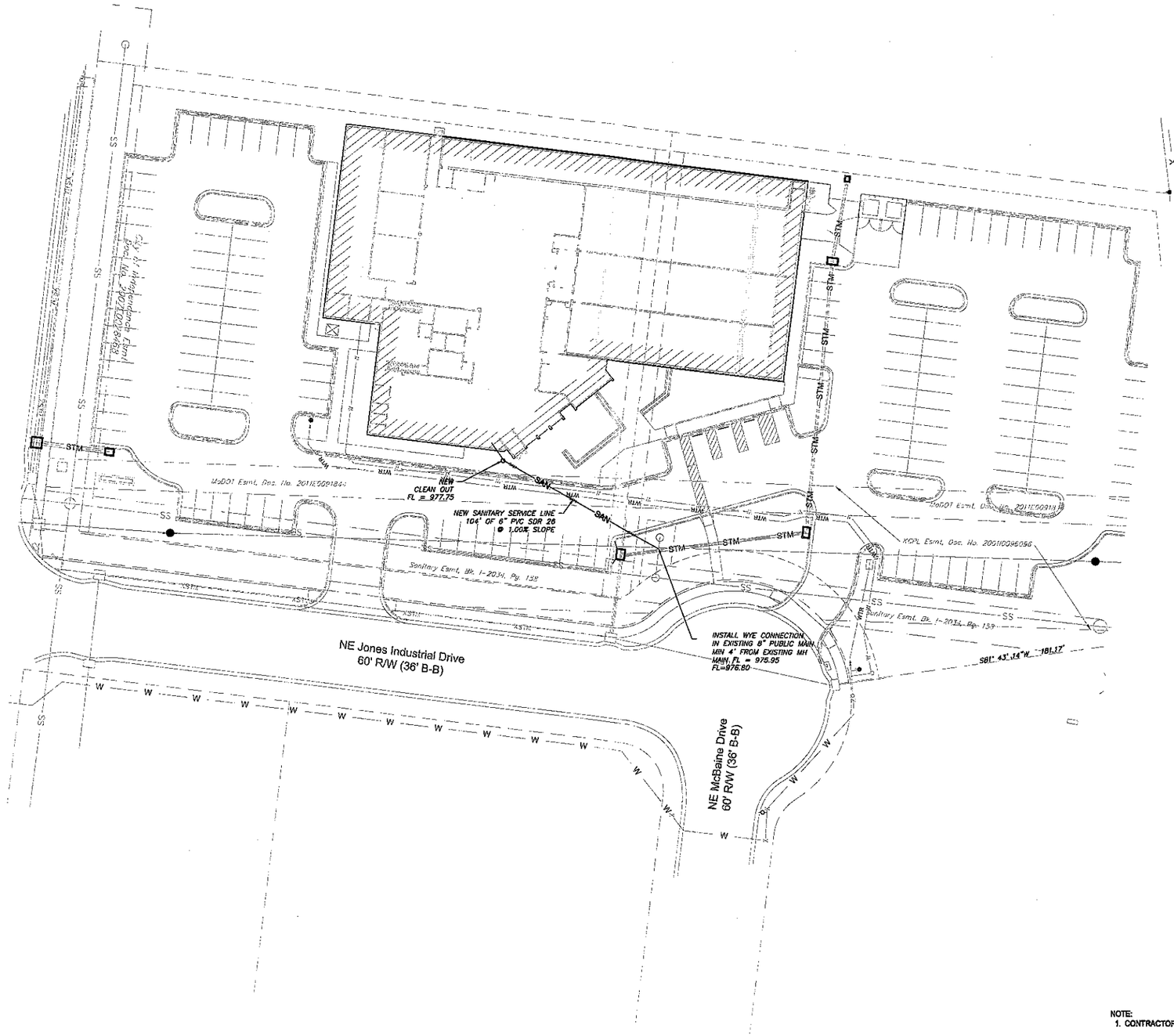
Private Strom Sewer Plan & Profile
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

North

0 15' 30' 60'

SITE SANITARY SEWER CONNECTION PLAN

SCALE: 1" = 30'



NOTE:
1. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

ENGINEERING SOLUTIONS
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Professional Registrati
Missouri
Engineering 2006002186
Surveying 2008008319
Kansas
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Surveying LS-219
Oklahoma
Engineering 6254
Nebraska
Engineering CA2521

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Site Sanitary Sewer Connection Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Matthew J. Schlic
MO PE 2006019
KS PE 19071
OK PE 25228
NE PE E-14335

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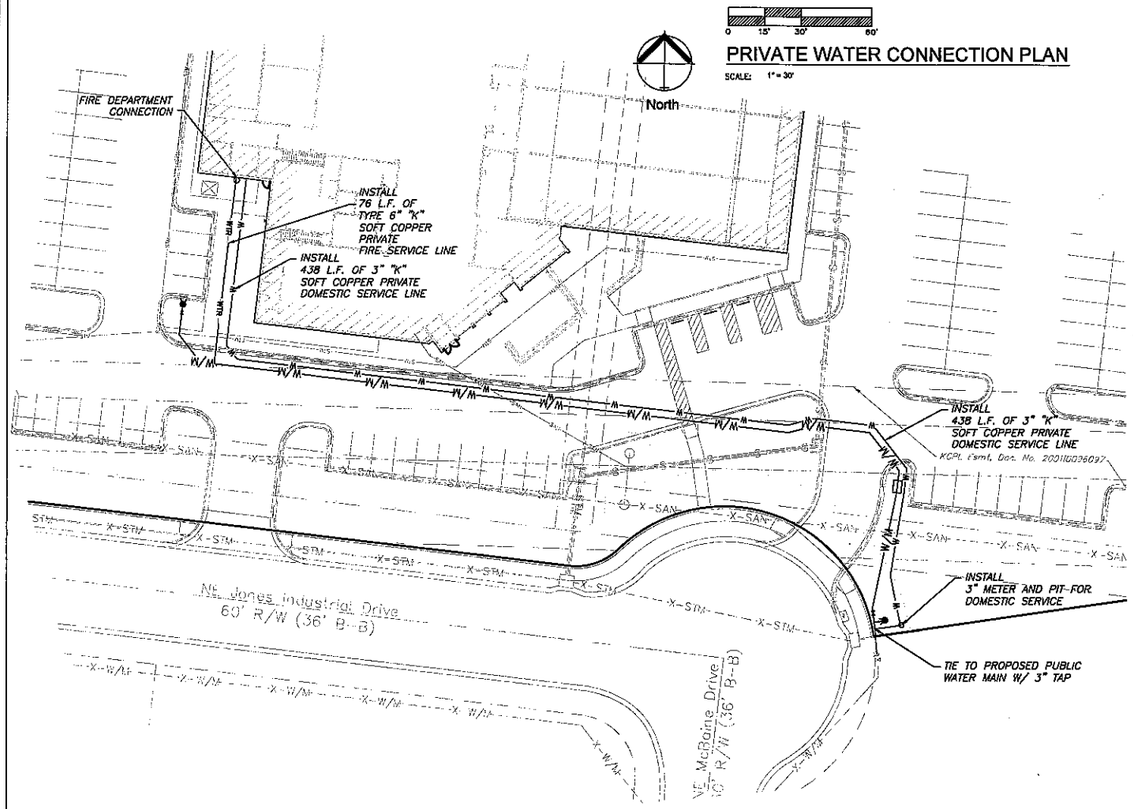
4-29-14 City Commen

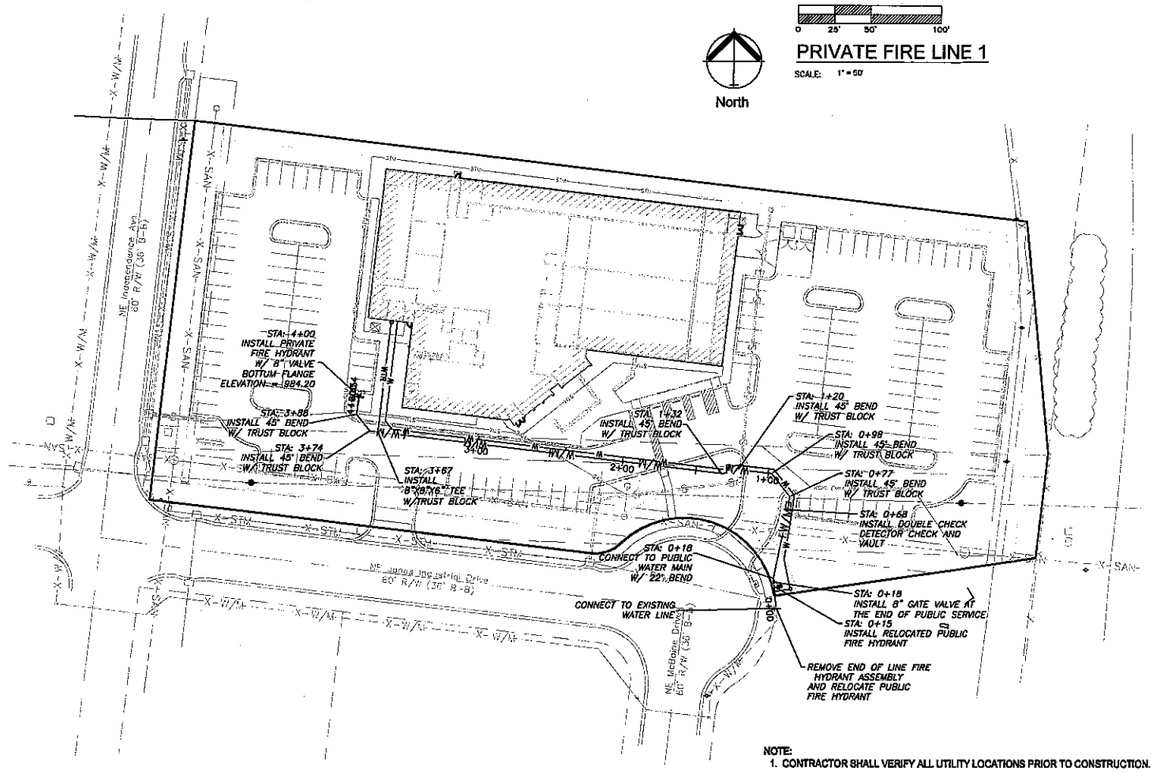
PRIVATE WATER CONNECTION PLAN

SCALE: 1" = 30'



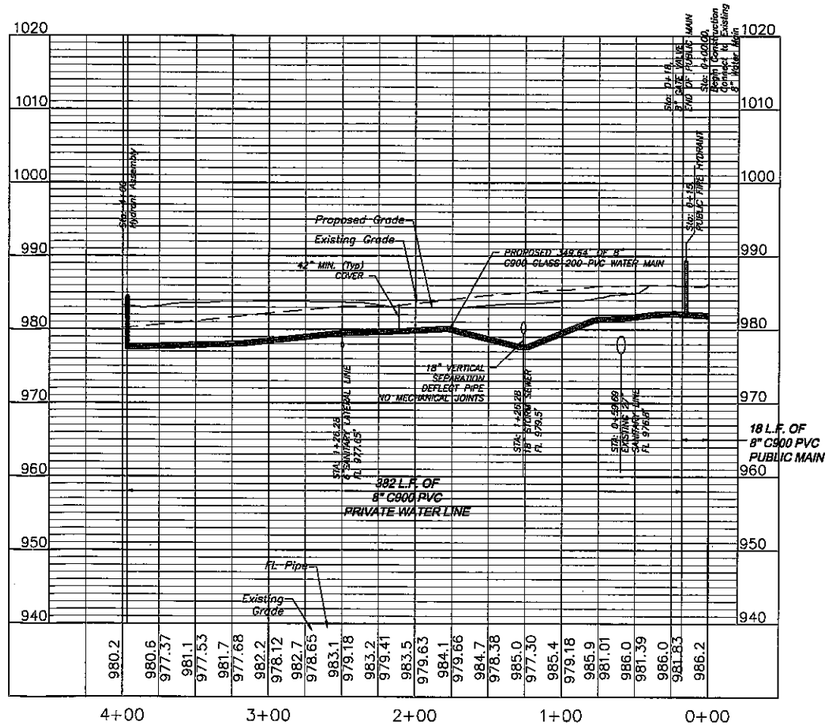
PRIVATE FIRE LINE 1

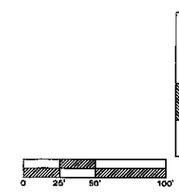
SCALE: 1" = 50'



NOTE:
1. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

WATER LINE





ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
Professional Registrati
Missouri
Engineering 2006002186
Surveying 2006003174
Kansas
Engineering E-1695
Surveying LS-219
Oklahoma
Engineering 6264
Nebraska
Engineering CA2321

FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

Project: Frontier Justice
Issue Date: April 10, 2014

Private Fire line Plan
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

Matthew J. Schlic
MO PE 2006019
KS PE 19071
OK PE 25226
NE PE E-1433

REVISIONS
4-29-14 City Commer
5-13-14 City Commer

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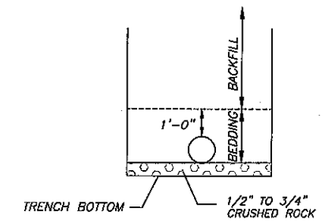


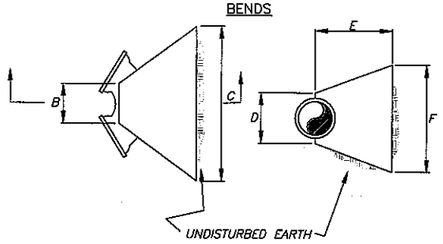
TYPICAL SECTION
NTS

NOTES:

1) BACKFILL SHALL BE JOB EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES COMPACTED TO 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. FOR BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED)
2) TRENCH BANKS MAY BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS, BUT ONLY IN AREAS WHERE THE INCREASED TRENCH WIDTH WILL NOT INTERFERE WITH SURFACE FEATURES. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.
3) MINIMUM AND MAXIMUM WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURE'S RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.

UNDERGROUND PIPE INSTALLATION FOR WATER LINES

BENDS

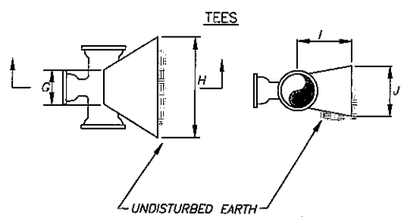


BENDS	B	C	D	E	F
6"-11-1/4°	8	15	12	24	12
22-1/2°	8	19	12	24	13
45°	8	30	12	24	14
90°	8	30	12	24	27
8"-11-1/4°	8	20	12	24	12
22-1/2°	8	22	12	24	17
45°	8	30	12	24	24
90°	8	38	12	24	36
10"-8 1/2"-11 1/4°	8	24	12	24	12
22-1/2°	8	30	12	24	18
45°	8	36	12	24	30
90°	8	48	12	24	42
12"-11 1/4°	8	30	12	24	15
22-1/2°	8	35	12	24	25
45°	8	40	12	24	40
90°	8	60	12	24	52
16"-11 1/4°	12	24	18	24	18
22-1/2°	12	36	18	24	24
45°	12	48	18	24	36
90°	12	60	18	24	54

TEES	G	H	I	J
6" BRANCH	12	24	24	18
8" BRANCH	12	36	24	24
10" BRANCH	12	48	24	42
12" BRANCH	12	48	24	42
14" BRANCH	18	54	24	48
16" BRANCH	18	60	24	54

NOTE: ALL DIMENSIONS ARE GIVEN IN INCHES

TEES



HORIZONTAL THRUST BLOCK DETAIL

NOTES:

1. BELL HOLES SHALL BE DUG SO THAT NO PART OF THE BELL SHALL BE IN CONTACT WITH THE TRENCH.

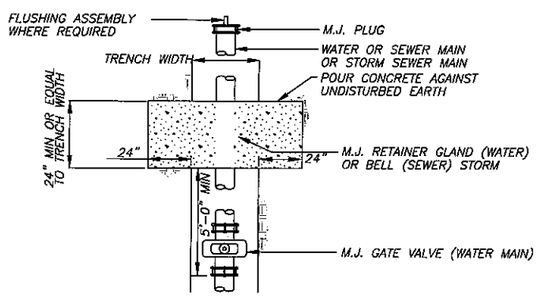
2. BEDDING:
   A. BEDDING FOR PIPE LESS THAN 12" IN DIAMETER SHALL BE JOB EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES, COMPACTED TO 95% OF PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. BEDDING SHALL BE COMPACTED IN 6" LIFTS.
   B. BEDDING MATERIAL FOR PIPE 12" IN DIAMETER AND GREATER SHALL BE 1/2" TO 3/4" CRUSHED ROCK. SIX (6) INCHES OF BEDDING SHALL BE PROVIDED BENEATH THE PIPE.

3. BACKFILL SHALL BE JOB EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES, COMPACTED TO 90% OF PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. FOR BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED), SEE SD-9 AND SD-11.

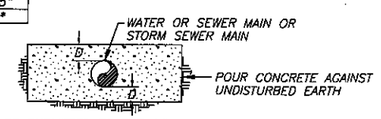
4. TRENCH BOTTOMS SHALL CONTAIN 6" CRUSHED ROCK BEDDING UNDER PIPE AS SHOWN IN TYPICAL TRENCH SECTION.

5. TRENCHING SHALL BE IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.

6. MINIMUM AND MAXIMUM WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.



PIPE SIZE	D MIN.
6"	4"
8"	7"
12"	15"
>12"	*



*CALCULATIONS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL

STRADDLE BLOCK DETAIL

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
Professional Registrations
Missouri
Engineering 2005002186
Surveying 2005006319
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2321

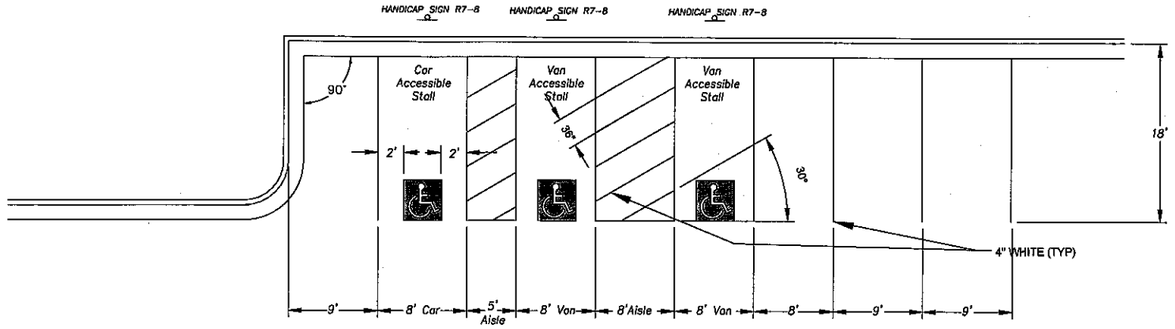
FRONTIER JUSTICE
800 & 820 NE Jones Industrial Drive
Lee's Summit, Jackson County, Missouri

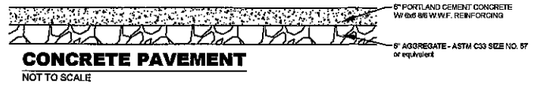
Project: Frontier Justice
Issue Date: April 10, 2014

DETAIL SHEET
Construction Plans for:
Frontier Justice
Lee's Summit, Jackson County, Missouri

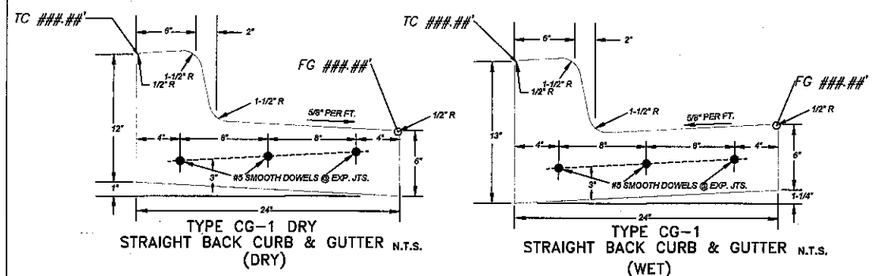
Matthew J. Schlicht
MO PE 2005019
KS PE 19071
OK PE 25228
NE PE E-14335

REVISIONS
4-29-14 City Comment



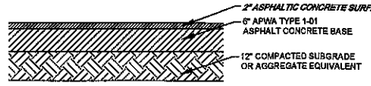


CONCRETE PAVEMENT
NOT TO SCALE

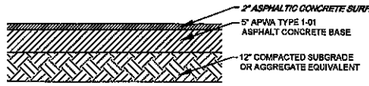


TYPE CG-1 DRY
STRAIGHT BACK CURB & GUTTER N.T.S.
(DRY)

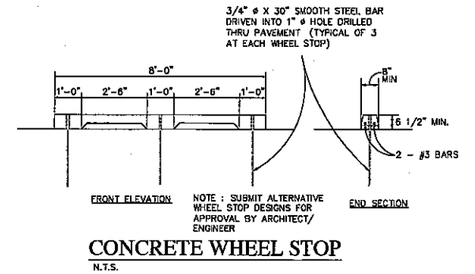
TYPE CG-1
STRAIGHT BACK CURB & GUTTER N.T.S.
(WET)



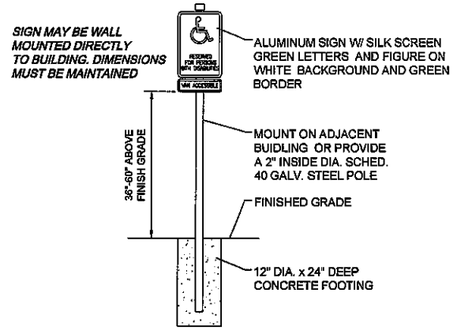
HEAVY ASPHALTIC CONCRETE PAVEMENT
NOT TO SCALE PRIVATE



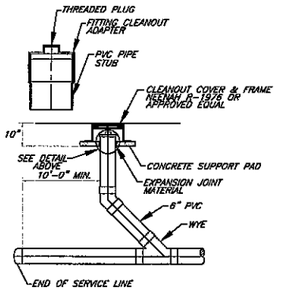
LIGHT ASPHALTIC CONCRETE PAVEMENT
NOT TO SCALE PRIVATE



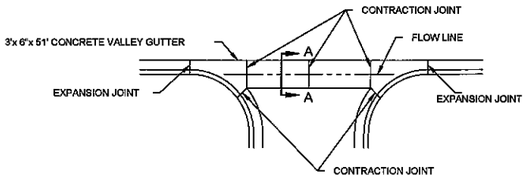
CONCRETE WHEEL STOP
N.T.S.

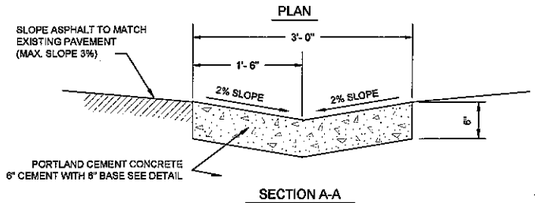


HANDICAP SIGN DETAIL
NOT TO SCALE

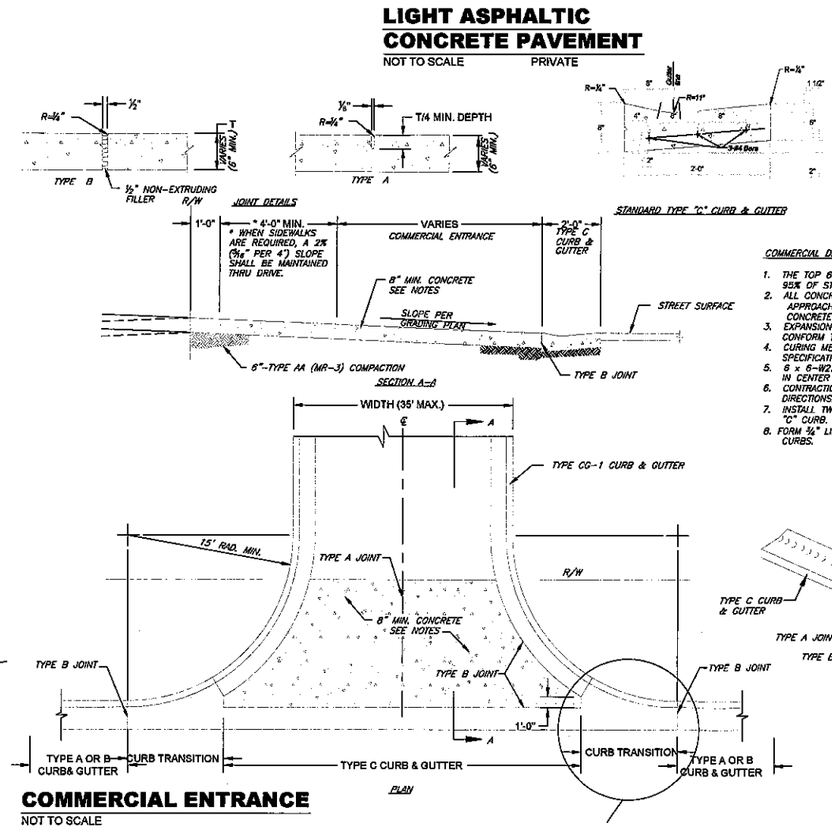


SANITARY SEWER CLEANOUT DETAIL
NOT TO SCALE





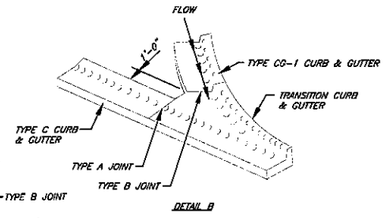
VALLEY GUTTER DETAIL

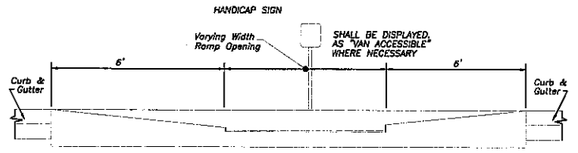


COMMERCIAL ENTRANCE
NOT TO SCALE

COMMERCIAL DRIVE NOTES:

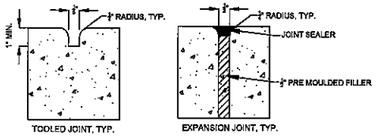
1. *THE TOP 6" OF DRIVEWAY SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD MAXIMUM DENSITY.*
2. *ALL CONCRETE POURED ON THE ROW (SIDEWALK, DRIVE APPROACH, CURBS) SHALL UTILIZE AN APPROVED KCMMB-4k CONCRETE MIX DESIGN.*
3. *EXPANSION JOINT FILLER AND JOINT SEALING COMPOUND SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2209.2 (APWA)*
4. *CURING MEMBRANES SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2208.2.F (APWA).*
5. *6 x 6-W2.9 x W2.9 REINFORCING SHALL BE PLACED IN CENTER OF SLAB THICKNESS.*
6. *CONTRACTION JOINTS SHALL BE SPACED AT 12' MAX., BOTH DIRECTIONS.*
7. *INSTALL TWO ⅝"ø x 2' SMOOTH DOWELS AT JOINTS FOR TYPE "C" CURB. SEE CURB STANDARDS FOR PLACEMENT.*
8. *FORM ¼" LIP AT PAVEMENT LINE ON DRIVES IN TYPE "B" CURBS.*





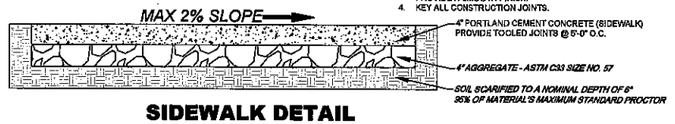
ACCESSIBLE RAMP DETAILS
NOT TO SCALE

Ramp and ramp landings shall be constructed per ANSI 117.1-03 407.7



SIDEWALK NOTES:

1. CONCRETE SHALL BE CLASS A CONCRETE AIR ENTRAINED AGGREGATE SPECIFICATIONS PROVIDE 3000LB AIR ENTRAINED CONCRETE (6% AIR PLUS OR MINUS 1%)
2. ½" PRE MOULDED EXPANSION JOINTS SHALL BE PLACED AT 32'-0" CENTERS OR WHEN ABUTTING EXISTING CONCRETE/BRICK. PROVIDE SELF LEVELING SEALANT ABOVE JOINT
3. ½" x 1" CONTRACTION JOINTS SHALL BE PLACED AS SHOWN ON THE DRAWINGS OR AT DISTANCE NOT EXCEEDING THE WIDTH OF THE SIDEWALK IF NOT SHOWN, SAW CUT ALL JOINTS AND PROVIDE A SMOOTH FINISH.
4. KEY ALL CONSTRUCTION JOINTS.



SIDEWALK DETAIL
NOT TO SCALE

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
30 SE 30TH STREET

Professional Registrations
Missouri
Engineering 2006002158
Surveying 2006006319-L
Kansas
Engineering E-1896
Surveying LS-218
Oklahoma
Engineering 5201
Nebraska
Engineering CA2021

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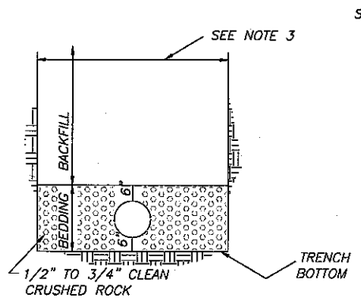
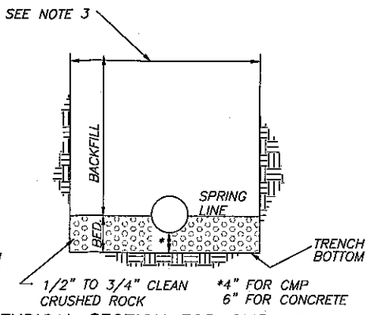
4-23-14 City Commen



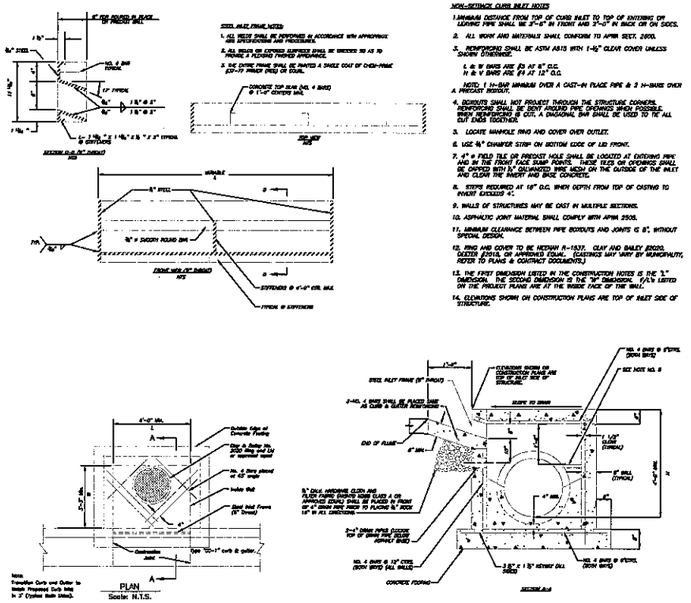
TYPICAL SECTION FOR PLASTIC PIPE (IN ROCK OR SOIL)



TYPICAL SECTION FOR CMP OR CONCRETE (IN ROCK OR SOIL)

NOTES:

1) BACKFILL SHALL BE JOB EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES COMPACTED TO 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. FOR BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED)
2) TRENCH BANKS MAY BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS, BUT ONLY IN AREAS WHERE THE INCREASED TRENCH WIDTH WILL NOT INTERFERE WITH SURFACE FEATURES. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.
3) MINIMUM AND MAXIMUM WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURE'S RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.



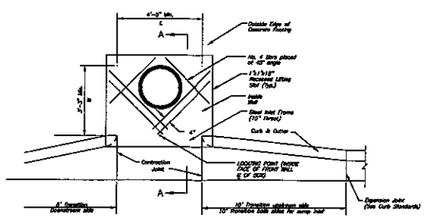
NON SETBACK CURB INLET DETAILS

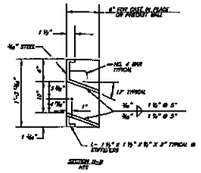
NOT TO SCALE

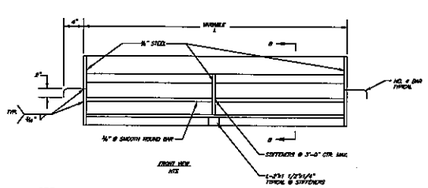
1. CONTRACTOR SHALL PROVIDE STEPS SPACED AT 1'-4" O.C. WHERE CURB INLETS, FIELD INLETS, JUNCTION BOXES OR MANHOLE DEPTH IS GREATER THAN 4' STEPS SHALL BE M.A. INDUSTRIES, INC. MODEL PS-2-PF OR APPROVED EQUAL.
2. MANHOLE RING AND COVER SHALL BE CLAY AND BAILEY NO. 2002 NEENAH NO. R6041. DEETER NO. 1332 OR GCI SM2259 STD.
3. GUTTER COLLECTORS SHALL BE INSTALLED PER STANDARD DETAIL SD-29B AT AT CURB INLETS ON STREETS OVER 4% GRADE.
4. CURB CONTRACTOR SHALL HAND FORM AND FINISH GUTTER WITHIN THE INLET THROAT TO THE REAR OF FRONT INLET WALL AT THE TIME THE FINISHING OF CURB IS ACCOMPLISHED.
5. MCIB MIX NO. A 558-1-2. 4000 PSI CONCRETE SHALL BE USED FOR ALL STANDARD CURB INLETS.
6. WHEN THERE IS A HORIZONTAL DEFLECTION IN ALIGNMENT VERTICAL DROPS THROUGH INLETS AND JUNCTION BOXES SHALL BE AS FOLLOWS.

DEFLECTION ANGLE (DEGREES)	DROP (FEET)
0 TO 22-1/2	0.1
22-1/2 TO 45	0.2
45 TO 90	0.3

7. THE TOPS OF PIPES SHALL MATCH WHEN PIPES OF DIFFERENT SIZE ENTER AN INLET OR JUNCTION BOX.
8. THE FILL CONCRETE FLOW CHANNEL SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE LINE FLOW.
9. LENGTH OF INLET OPENING SHALL BE DETERMINED IN ARTICLE IV. SECTION 1 B.11. WHEN OPENING IS GREATER THAN 8' A 6" CONC POST WITH A 3/4" DEFORMED BAR SHALL BE REQUIRED.



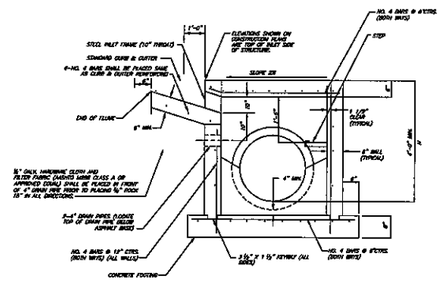




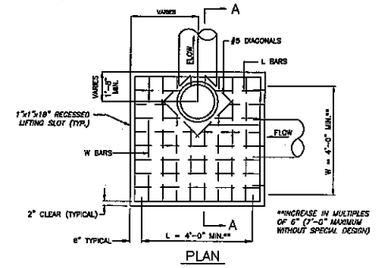
STEEL INLET FRAME NOTES:

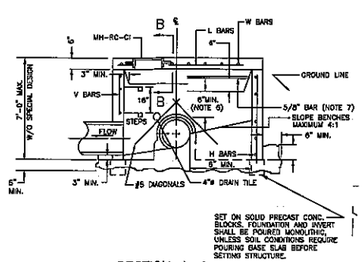
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM-PRIME #37-77 PRIMER (RED) OR EQUAL.

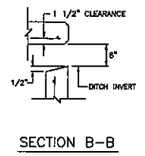
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION. FLOWLINES ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
2. FLOOR OF INLET SHALL BE SHAPED WITH INVERT TO PROVIDE SMOOTH FLOW.
3. LOCATE MH RING AND COVER OVER OUTLET.
4. STEPS SHALL BE SPACED AT 1'-4" O.C. VERTICALLY.
5. BEVEL ALL EXPOSED EDGES WITH ¾" CHAMFER OR ½" TOOLED EDGE.
6. ON-GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
7. THE SUMS OF "L" & "W" SHALL NOT EXCEED 14' WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS.)
8. RING & COVER TO BE NEENAH R-1537, CLAY & BAILEY #2020, DEETER #2016, OR APPROVED EQUAL. (CASTING MAY VARY BY MUNICIPALITY, REFER TO PLANS & CONTRACT DOCUMENTS.)

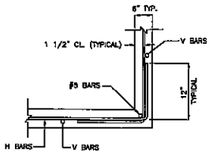


AREA INLET









REINFORCING

BARS	SIZE	SPACING
H	4	12
V	4	12
L	5	6
W	5	6

GENERAL NOTES:

1. Locate ring and cover over outlet.
2. All work and materials shall conform to APWA Sect. 2600.
3. Use 3/4" chamfer strip on all exposed concrete corners.
4. Steps required @ 16" O.C. when depth from top of casting to invert exceeds 4 feet.
5. Boxouts will not be allowed to project through the corners of the structure.
6. The minimum reinforcing shall be 1 H-bar over a cast-in place pipe and 2 H-bars over a precast boxout.
7. Limit opening height to 6" with No. 5 galvanized bars extending to corner rebars.
9. Show field inlet orientation on plans plus number and size of opening.
10. O.R. = one half outside pipe diameter (O.D.).
11. 4" ø field tile or precast hole shall be located at entering pipe and in the front face sump points. These tiles or openings shall be capped with ¼" galvanized wire mesh on the outside of the inlet and clear the invert and base concrete.
12. Open all 4 sides

ENGINEERING & SURVEYING SOLUTIONS
50 SE 30TH STREET
Professional Registrants
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Engineering 2005002186
Surveying 2005009312
Kansas
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