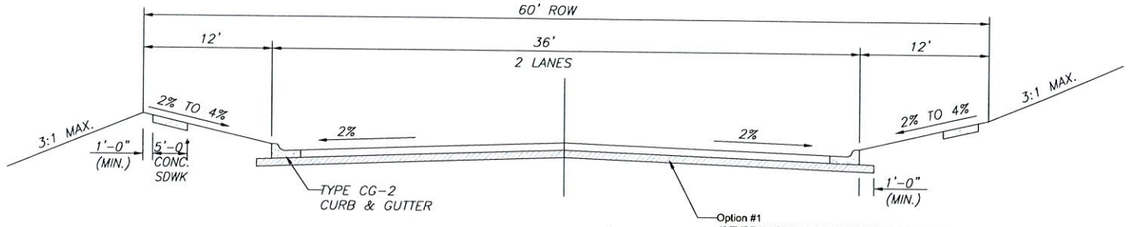

TYPICAL SECTION
(COLLECTOR STREET)
N.T.S.

Option #1
4" TYPE II ASPHALT BASE AND 2" TYPE III ASPHALT SURFACE OVER A 6" MoDOT TYPE 5 BASE AND A SUBGRADE MIXTURE OF 6" FLY ASH STABILIZED SUBGRADE IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.

Option #2
4" TYPE II ASPHALT BASE AND 2" TYPE III ASPHALT SURFACE OVER 6" MoDOT TYPE 5 BASE OVERTOP A BIAXIAL GEOGRID MEETING THE REQUIREMENTS OF TABLE 2201.6-1

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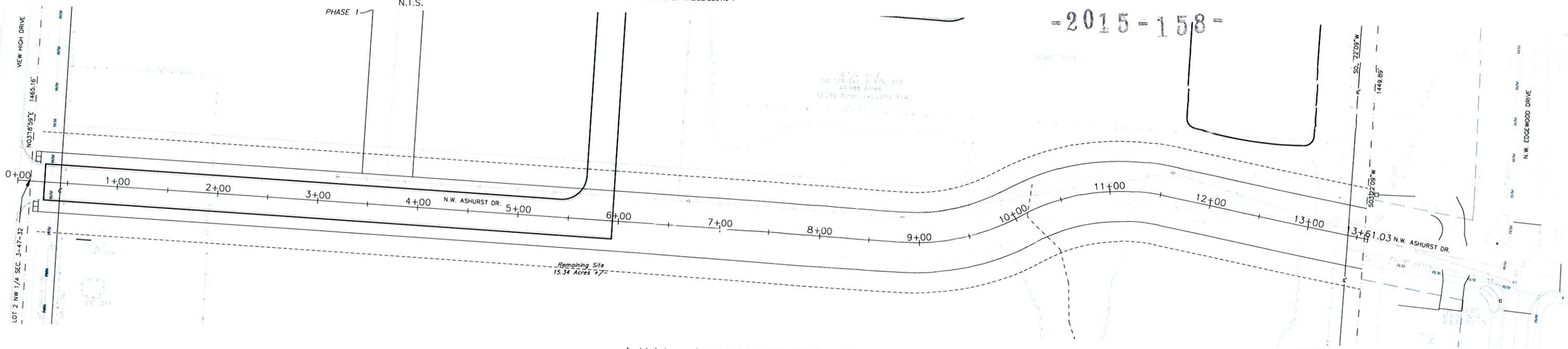
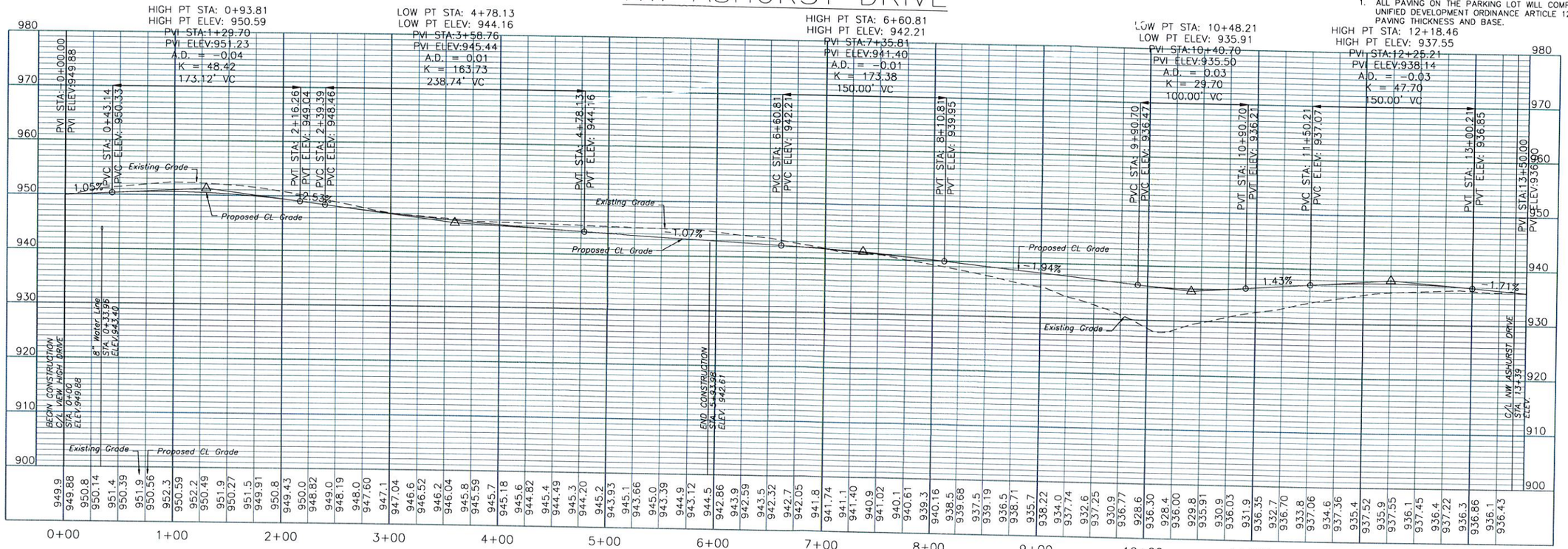


NW ASHURST DRIVE



NOTE:

1. ALL PAVING ON THE PARKING LOT WILL COMPLY WITH THE UNIFIED DEVELOPMENT ORDINANCE ARTICLE 12 IN TERMS OF PAVING THICKNESS AND BASE.

North

STREET PLAN & PROFILE
SCALE: 1" = 50'

ENGINEERING SOLUTIONS
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Professional Registr
Missouri
Engineering 2005010
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Kansas
Engineering E-189
Surveying LS-216
Oklahoma
Engineering 6254
Nebraska
Engineering CA26

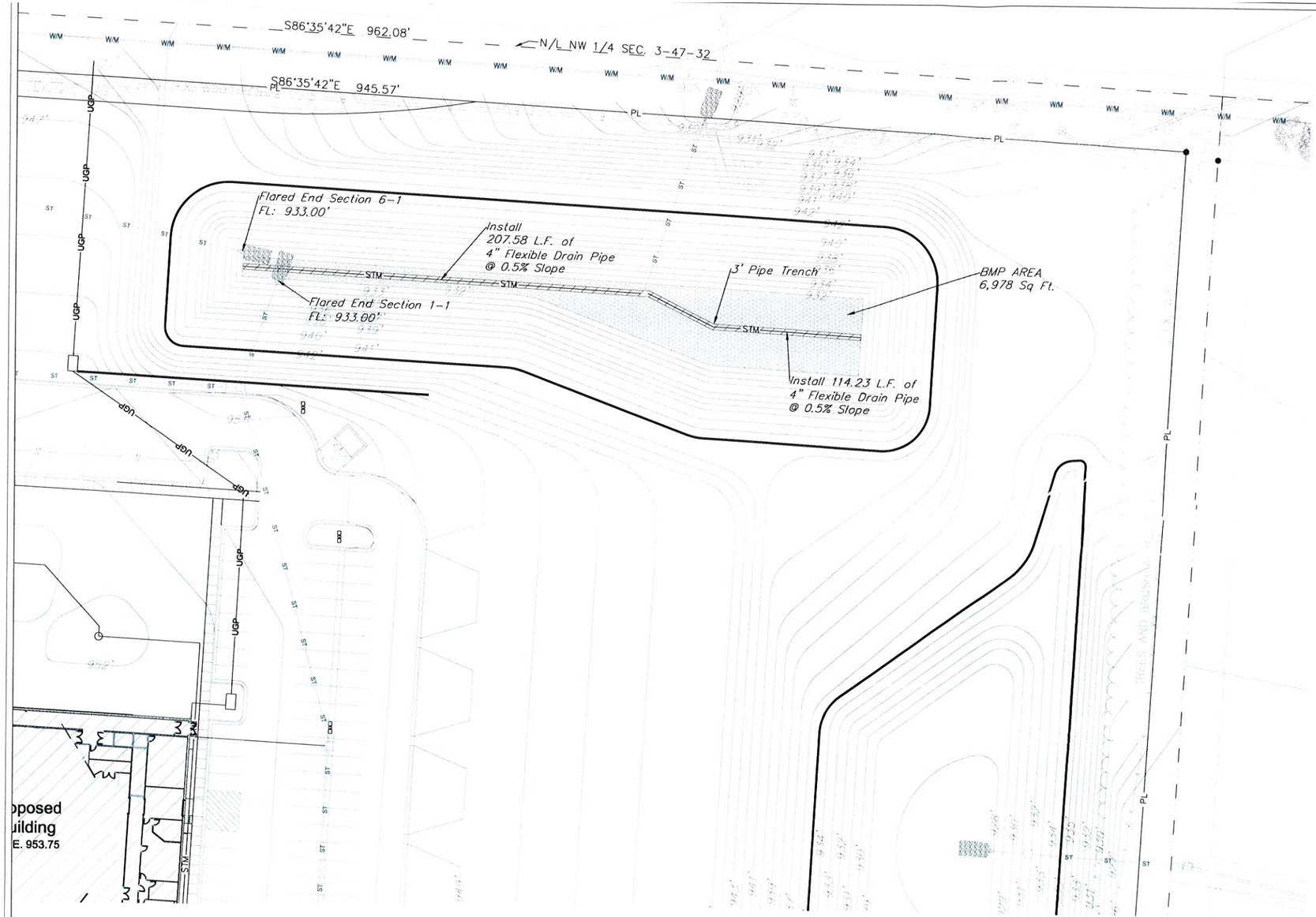
The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

STREET PLAN & PROFILE
The Summit Church:
Lee's Summit, Jackson County, Missouri

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

REVISIONS
11-17-15 Modified V
01-25-16 City Comm
03-18-16 City Comm
4-8-16 City Comm
5-12-16 Final PD

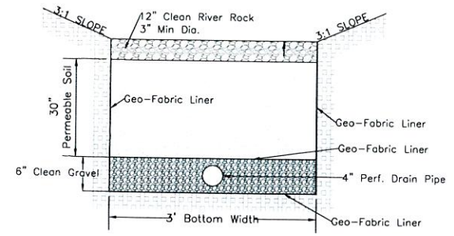


North

0 15' 30' 60'

DETENTION PLAN

SCALE: 1" = 30'



Pipe Trench Detail

Geo-Fabric Liner
-Non-Wovern Geotextile Fabric minimum permitivity of 0.1 ft / sec, wrapped continuously around the 6" Clean Gravel and along the sidewalls of the permeable soil mix

Planting Material
-The Permeable Soil Mix is to be covered by 12 inches of 1" Diameter River Rock. No plantings shall be placed in the Bio-Swale area to reduce maintenance

Permeable Soil Mix
-The Permeable Soil Mix shall consist of 60% Sand, 20% Compost & 20% Top Soil

INFILTRATION TRENCH NOTES:

A) SITE PREPARATION:

1. FOLLOW EROSION CONTROL PLANS TO ENSURE THAT SEDIMENT AND RUNOFF ARE KEPT FROM THE TRENCH AREA DURING CONSTRUCTION. ALL DEVELOPMENT SHOULD BE COMPLETE BEFORE THE TRENCH IS EXCAVATED.
2. LOCATE ALL UTILITIES AT THE SITE.
3. CLEAR, GRUB, AND STRIP THE DAM FOUNDATION REMOVING ALL WOODY VEGETATION, ROCKS, AND OTHER OBJECTIONABLE MATERIAL.
4. DISPOSE OF TREES, LIMBS, LOGS, AND OTHER DEBRIS IN DESIGNATED DISPOSAL AREAS.

B) SWALE TRENCH:

1. EXCAVATE THE TRENCH TO DIMENSIONS SPECIFIED IN THE DESIGN PLAN WITH A BACKHOE OR TRENCHER EQUIPPED WITH TRACKS TO AVOID COMPACTING THE TRENCH AREA. THE BOTTOM OF THE TRENCH SHOULD BE LEVEL.
2. SLOPE TRENCH SIDES OR PROVIDE SHORING ACCORDING TO SAFETY REGULATIONS.
3. LINE THE BOTTOM AND SIDES OF THE TRENCH WITH GEOTEXTILE FABRIC. THE FABRIC SHOULD BE PERMEABLE ENOUGH TO ALLOW THE TRENCH TO DRAIN WITHIN 72 HOURS.
4. BACKFILL THE TRENCH WITH UNIFORMLY GRADED SAND OR GRAVEL. DO NOT USE CRUSHED LIMESTONE, SHALE, OR ANY CRUSHED ROCK THAT WILL BECOME CEMENTED OVER TIME.
5. THE INSTALLATION OF A PERFORATED PIPE TO COLLECT AND TRANSPORT EXCESS RUNOFF IS OPTIONAL. THE TRENCH SHOULD BE DESIGNED SO THAT ALL RUNOFF INFILTRATES WITHIN 72 HOURS.
6. A PERFORATED PIPE MAY BE PLACED IN THE UPPER PART OF THE TRENCH TO QUICKLY DRAIN THE TOP OF THE TRENCH AFTER EACH RUNOFF EVENT; HOWEVER, THIS MAY ALLOW POLLUTANTS TO BE TRANSPORTED OFF SITE WITH THE SURFACE RUNOFF.
7. PLACE AT LEAST ONE OBSERVATION WELL IN EACH INFILTRATION TRENCH TO MONITOR THE PERFORMANCE OF THE TRENCH. PERFORATED POLYVINYL CHLORIDE (PVC) PIPE OR HIGH-DENSITY POLYETHYLENE (HDPE) PIPE IS RECOMMENDED. THE BOTTOM OF THE PIPE SHOULD EXTEND TO WITHIN 1 INCH OF THE GEOTEXTILE IN THE BOTTOM OF THE TRENCH.
8. OVERLAP THE GEOTEXTILE FABRIC ON THE TOP OF THE GRAVEL APPROXIMATELY 6 INCHES BELOW THE TOP OF THE TRENCH. FOLLOW MANUFACTURER'S RECOMMENDATIONS REGARDING THE AMOUNT OF OVERLAP, BUT IN NO CASE SHALL THE OVERLAP BE LESS THAN 12 INCHES. BACKFILL THE TOP OF THE TRENCH WITH GRAVEL.

C) UNDERGROUND TRENCH:

1. UNDERGROUND TRENCHES CAN BE APPLIED TO A VARIETY OF SITUATIONS AND ARE AESTHETICALLY PLEASING BUT MORE DIFFICULT TO MAINTAIN.
2. EXCAVATE THE TRENCH TO THE DIMENSIONS SPECIFIED IN THE DESIGN PLAN, LINE WITH GEOTEXTILE, AND BACKFILL THE BOTTOM OF THE TRENCH AS RECOMMENDED FOR SWALE TRENCHES. PLACE A PERFORATED PIPE ON TOP OF THE GRAVEL APPROXIMATELY 1/4 TO 1/3 OF THE DISTANCE TO THE TOP OF THE TRENCH. THE PIPE SHOULD BE PLACED WITH ZERO GRADE. THE SIZE OF THE PIPE WILL VARY; A LARGER PIPE CAN BE PLACED IN THE TRENCH, BUT THE WIDTH OF THE TRENCH WILL HAVE TO BE INCREASED. THE TRENCH WIDTH SHOULD BE A MINIMUM OF TWICE THE DIAMETER OF THE PIPE.
3. CONNECT THE PERFORATED PIPE TO THE COLLECTION PIPE. THE COLLECTION PIPE MAY BE CONNECTED TO AN INLET STRUCTURE USED TO TRAP THE SEDIMENT.
4. BACKFILL CLEAN GRAVEL OVER THE PIPE TO WITHIN 12 INCHES OF THE TOP OF THE TRENCH.
5. THE INSTALLATION OF A PERFORATED PIPE TO COLLECT AND TRANSPORT EXCESS RUNOFF IS OPTIONAL. THE TRENCH SHOULD BE DESIGNED TO DRAIN ALL RUNOFF WITHIN 72 HOURS. A PERFORATED PIPE MAY BE PLACED IN THE UPPER PART OF THE TRENCH TO QUICKLY DRAIN THE TOP OF THE TRENCH AFTER EACH RUNOFF EVENT.
6. OVERLAP THE GEOTEXTILE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, BUT IN NO CASE SHOULD THE AMOUNT OF OVERLAP BE LESS THAN 12 INCHES.
7. BACKFILL OVER THE GEOTEXTILE WITH AT LEAST 12 INCHES OF CLEAN, COMPACTED SOIL.

D) EROSION CONTROL:

1. DURING DEVELOPMENT, USE TEMPORARY DIVERSIONS TO PREVENT SURFACE WATER FROM RUNNING ONTO DISTURBED AREAS.
2. MINIMIZE THE SIZE OF DISTURBED AREA AND VEGETATE ALL BUFFER STRIPS AS SOON AS THE TRENCH IS CONSTRUCTED.
3. DIVERT SEDIMENT-LADEN WATER TO SHALLOW VEGETATED BASINS OR A SEDIMENT COLLECTION SYSTEM CAPABLE OF REMOVING SEDIMENT TO PREVENT THE INFILTRATION TRENCH FROM BECOMING CLOGGED.
4. DIRECT ALL RUNOFF INTO SWALE TRENCHES AT LOW VELOCITY. ESTABLISH THE SLOPE OF THE TOP OF THE SWALE TO PREVENT PONDING OF WATER LONGER THAN 12 HOURS.

E) TROUBLESHOOTING:

BECAUSE SWALE INFILTRATION TRENCHES CAN IMPOUND WATER FOR SHORT PERIODS OF TIME, THEY CAN BE HAZARDOUS:
1. AVOID STEEP SLOPES; SLOPES AROUND THE SWALE INFILTRATION TRENCH SHOULD BE KEPT AT 20H:1V OF FLATTER.
2. FENCE AREA AND POST WARNING SIGNS IF TRESPASSING IS LIKELY.
3. DRAIN THE TRENCH BETWEEN STORM EVENTS.
4. SLOPE SIDES OF TRENCH OR PROVIDE SHORING.

CONSULT WITH A QUALIFIED DESIGN PROFESSIONAL IF ANY OF THE FOLLOWING OCCUR:

1. VARIATIONS IN TOPOGRAPHY ON SITE INDICATE INFILTRATION TRENCH WILL NOT FUNCTION AS INTENDED.
2. DESIGN SPECIFICATIONS FOR FILL, PIPE, GRAVEL, OR GEOTEXTILE CANNOT BE MET; SUBSTITUTIONS MAY BE REQUIRED. UNAPPROVED SUBSTITUTIONS COULD LEAD TO FAILURE.

CHECK THE FINISHED GRADES AND CONFIGURATION FOR ALL EARTHWORK. CHECK ELEVATIONS AND DIMENSIONS OF ALL PIPES AND STRUCTURES.

F) INSPECTION AND MAINTENANCE:

1. INSPECT THE INFILTRATION TRENCH AFTER EACH 1/2-INCH OR GREATER STORM EVENT. WATER LEVELS IN THE OBSERVATION WELLS SHOULD BE RECORDED OVER SEVERAL DAYS TO CHECK TRENCH DRAINAGE.
2. ANNUALLY INSPECT THE CONDITION OF THE GRASS BUFFER STRIPS N SWALE TRENCHES. GROWTH SHOULD BE VIGOROUS AND DENSE. BARE SPOTS, ERODED AREAS, OR BURNED OUT AREAS SHOULD BE RESEEDED OR RESODDED.
3. MOW GRASS FILTER STRIPS AT LEAST TWICE A YEAR TO PREVENT WOODY GROWTH.
4. SEDIMENT REMOVAL INLETS SHOULD BE CLEANED OUT WHEN SEDIMENT FILLS 25% OF THE AVAILABLE CAPACITY.
5. PRUNE TREE LIMBS OVERHANGING THE SWALE TRENCH TO PREVENT LEAVES FROM FALLING ONTO THE TRENCH.

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Engineering 6254
Nebraska
Engineering CA282

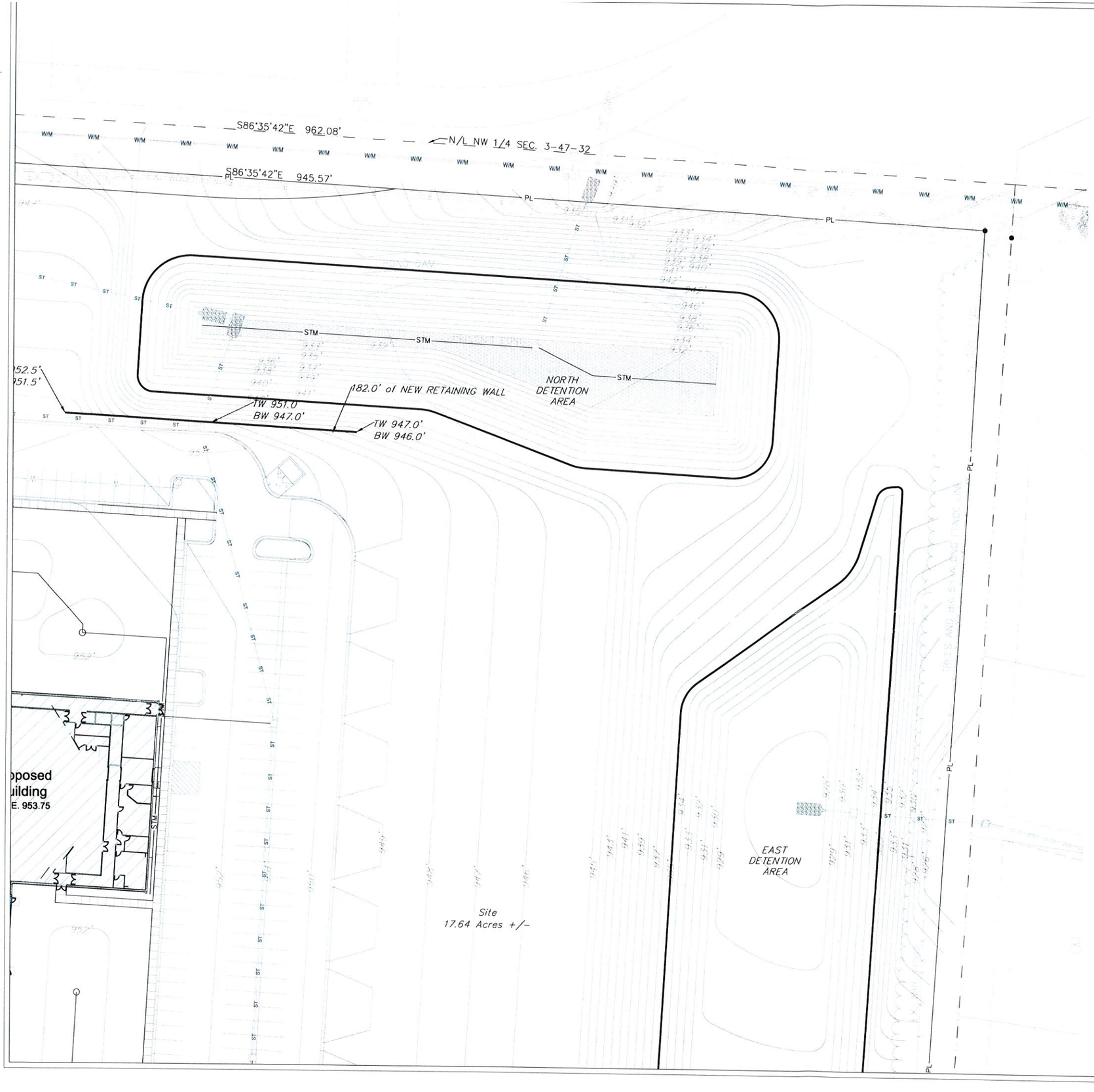
The Summit Church
3181 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 19, 2015

DETENTION PLAN
The Summit Church:
Lee's Summit, Jackson County, Missou

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

REVISIONS
11-17-15 Modified
01-25-16 City Comr
03-18-16 City Comr
4-8-16 City Comm
5-12-16 Final PD



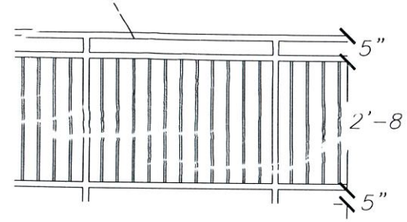
North

0 15' 30' 60'

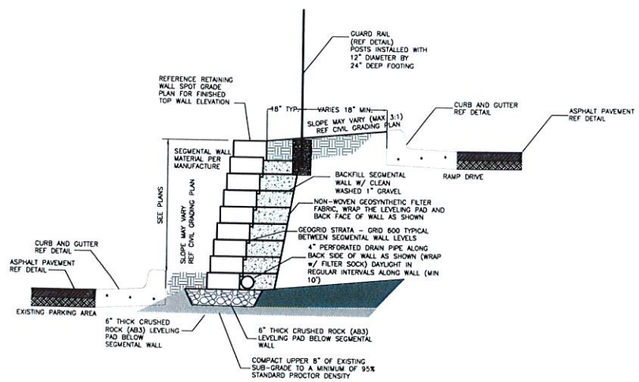
RETAINING WALL PLAN

SCALE: 1" = 30'

1" SQ. T.S. GUARDRAIL W/ 1" T.S. VERTICAL PICKETS @ 4" O.C. MAX. TYP.



GUARD RAIL DESIGN DETAILS



SEGMENTAL WALL SECTION

NOT TO SCALE

RETAINING WALL DESIGN DETAILS (RETAINING WALL AT NEW DRIVE RAMPS)

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Missouri
Engineering 2006021...
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Surveying LS-218
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Engineering 6254
Nebraska
Engineering CA282

The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

RETAINING WALL PLAN
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil...
MO PE 2006019...
KS PE 19071...
OK PE 2522...
NE PE E-1433...

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11-17-15 Modified ...
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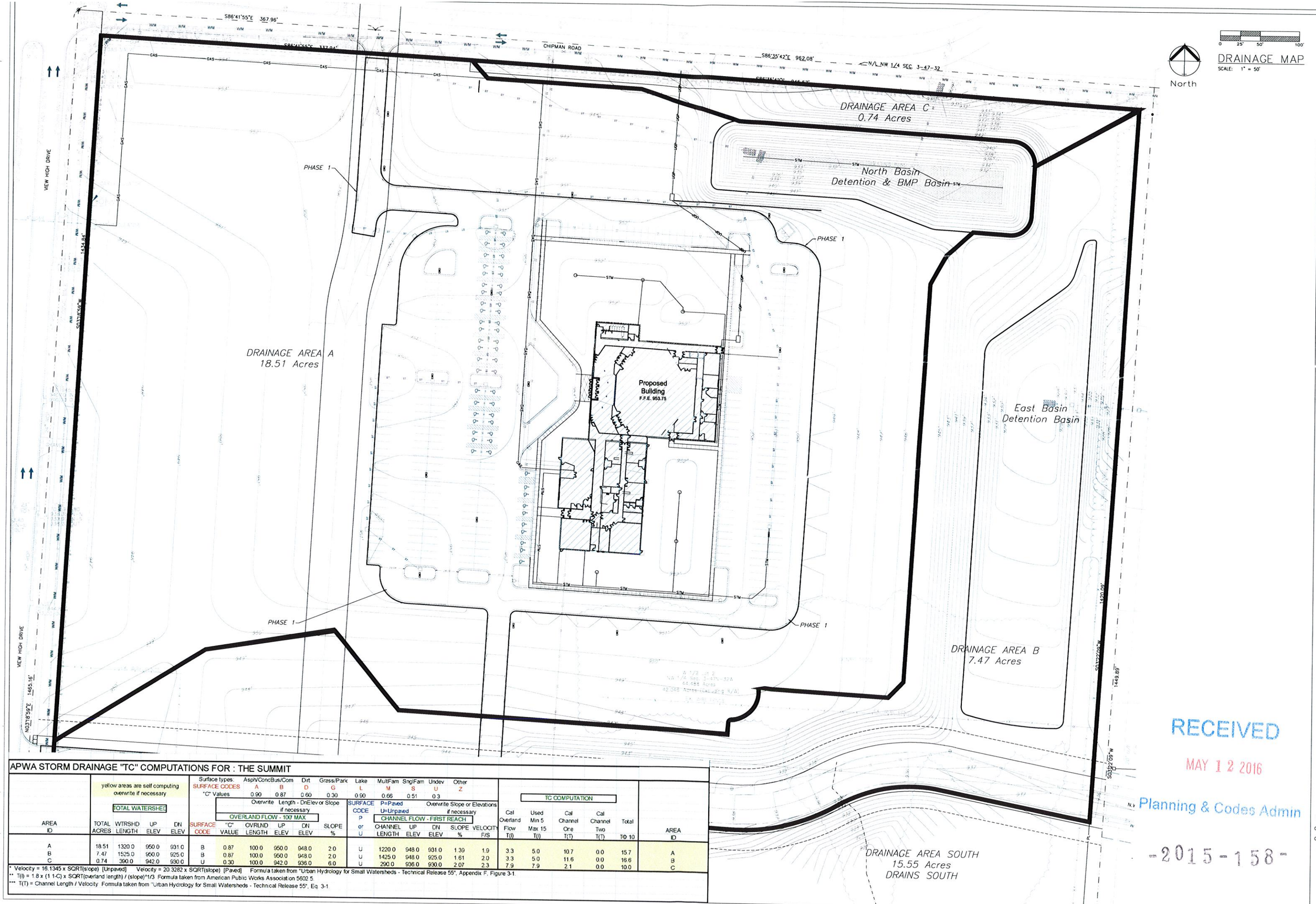

APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : THE SUMMIT

AREA ID	TOTAL ACRES	WTRSHD LENGTH	UP ELEV	DN ELEV	SURFACE CODE	"C" VALUE	OVRLND LENGTH	UP ELEV	DN ELEV	SLOPE %	SURFACE CODE P or U	CHANNEL LENGTH	UP ELEV	DN ELEV	SLOPE %	VELOCITY F/S	Cal Overland Flow T(i)	Used Min 5 Max 15 T(i)	Cal Channel One T(T)	Cal Channel Two T(T)	Total T@ 10	AREA ID
A	18.51	1320.0	950.0	931.0	B	0.87	100.0	950.0	948.0	2.0	U	1220.0	948.0	931.0	1.39	1.9	3.3	5.0	10.7	0.0	15.7	A
B	7.47	1525.0	950.0	925.0	B	0.87	100.0	950.0	948.0	2.0	U	1425.0	948.0	925.0	1.61	2.0	3.3	5.0	11.6	0.0	16.6	B
C	0.74	390.0	942.0	936.0	U	0.30	100.0	942.0	936.0	6.0	U	290.0	936.0	930.0	2.07	2.3	7.9	7.9	2.1	0.0	10.0	C

Surface types: Asph/ConcBus/Com | Dirt | Grass/Park | Lake | MultFam | SnglFam | Undev | Other
"C" Values: 0.90 | 0.87 | 0.60 | 0.30 | 0.90 | 0.66 | 0.51 | 0.3
SURFACE CODES: A | B | D | G | L | M | S | U | Z

yellow areas are self computing overwrite if necessary

TOTAL WATERSHED

OVERLAND FLOW - 100' MAX: Overwrite Length - DnElev or Slope if necessary

CHANNEL FLOW - FIRST REACH: P=Paved U=Unpaved; Overwrite Slope or Elevations if necessary

TC COMPUTATION

* Velocity = 16.1345 x SQRT(slope) [Unpaved] Velocity = 20.3282 x SQRT(slope) [Paved] Formula taken from "Urban Hydrology for Small Watersheds - Technical Release 55", Appendix F, Figure 3-1

** T(i) = 1.8 x (1.1-C) x SQRT(overland length) / (slope)^1/3 Formula taken from American Public Works Association 5602.5.

*** T(T) = Channel Length / Velocity Formula taken from "Urban Hydrology for Small Watersheds - Technical Release 55", Eq. 3-1

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The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

DRAINAGE MAP
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil
MO PE 20060197
KS PE 19071
OK PE 25226
NE PE E-1433

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11-17-15 Modified W
01-25-16 City Comn
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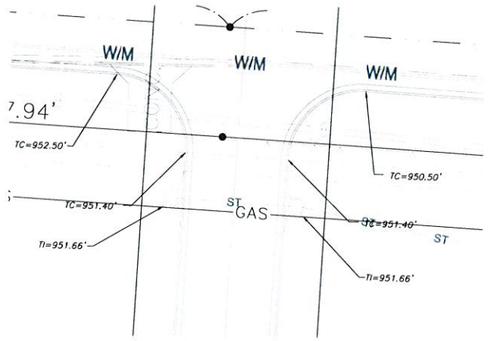
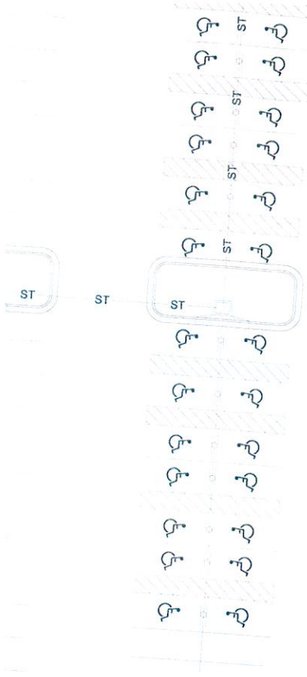
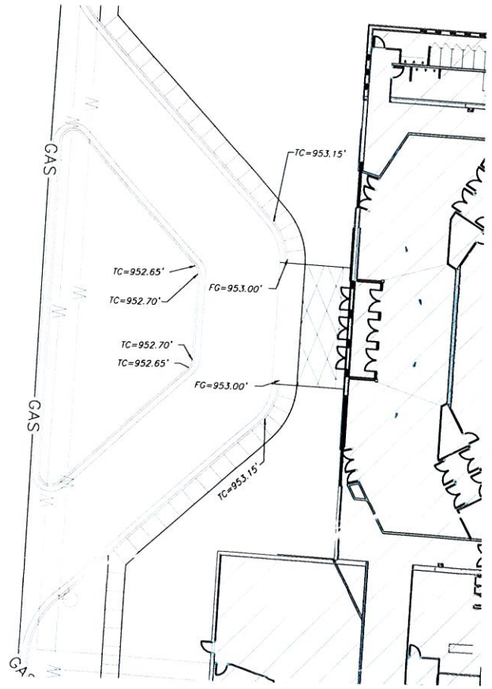
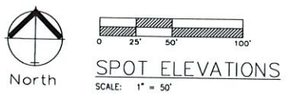








SPOT ELEVATIONS
SCALE: 1" = 50'

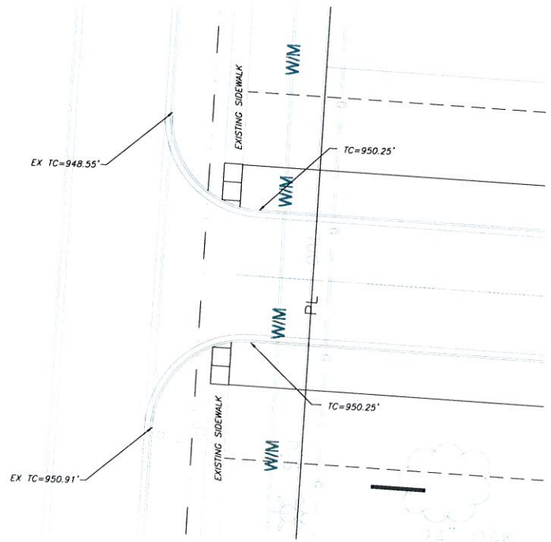
Legend:

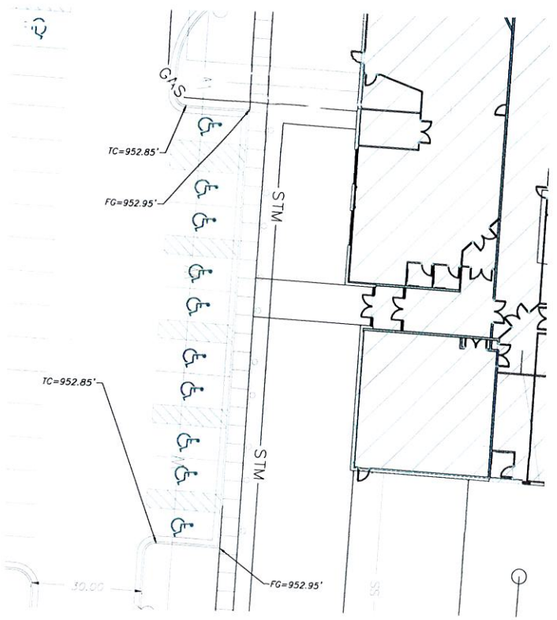
EX TC = Existing Top of Curb

EX FG = Existing Finished Grade

FG = Finished Grade

TC = Top of Curb





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The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

ADA RAMP/INTERSECTION
SPOT ELEVATIONS
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil
MO PE 2006019
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11-17-15 Modified
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STORM SEWER PLAN

SCALE: 1" = 50'

0 25' 50' 100'

North

CHIPMAN ROAD

VIEW HIGH DRIVE

N.W. ASHURST DR.

Commercial Site
6.4 Acres +/-

Site
17.64 Acres +/-

Remaining Site
15.34 Acres +/-

Proposed
Building
F.F.E. 953.75

NORTH
DETENTION
AREA

EAST
DETENTION
AREA

New Curb Inlet 6-3
New Curb Inlet 6-2
STORM LINE 6
New Curb Inlet 1-4
New Curb Inlet 1-3
STORM LINE 1
STORM LINE 3
New Curb Inlet 3-3
New Curb Inlet 3-2
New Curb Inlet 3-1
New Curb Inlet 1-5
New Curb Inlet 1-7
New Curb Inlet 1-6
New Crub Inlet 1-8
New Curb Inlet 1-9
New Curb Inlet 1-10
STORM LINE 2
New Grate Inlet 2-1
New Grate Inlet 2-2
Flared End Section
Flared End Section 1-1
Rip Rap
Bio Swale
5'X5' Detention Outlet
New Retaining Wall
New Curb Inlet 1-2
New Flared End Section F.E.S. 5-1
Rip Rap
New Inlet 5-2
STORM LINE 5
Existing Inlet to be Removed Replace with New Inlet 5-1

PUBLIC
PRIVATE

NOTE

ALL INTERIOR STORM LINES ARE PRIVATE.

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Oklahoma
Engineering 6254
Nebraska
Engineering CA282

The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

STORM SEWER PLAN
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil
MO PE 2006019
KS PE 19071
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NE PE E-1433

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11-17-15 Modified W
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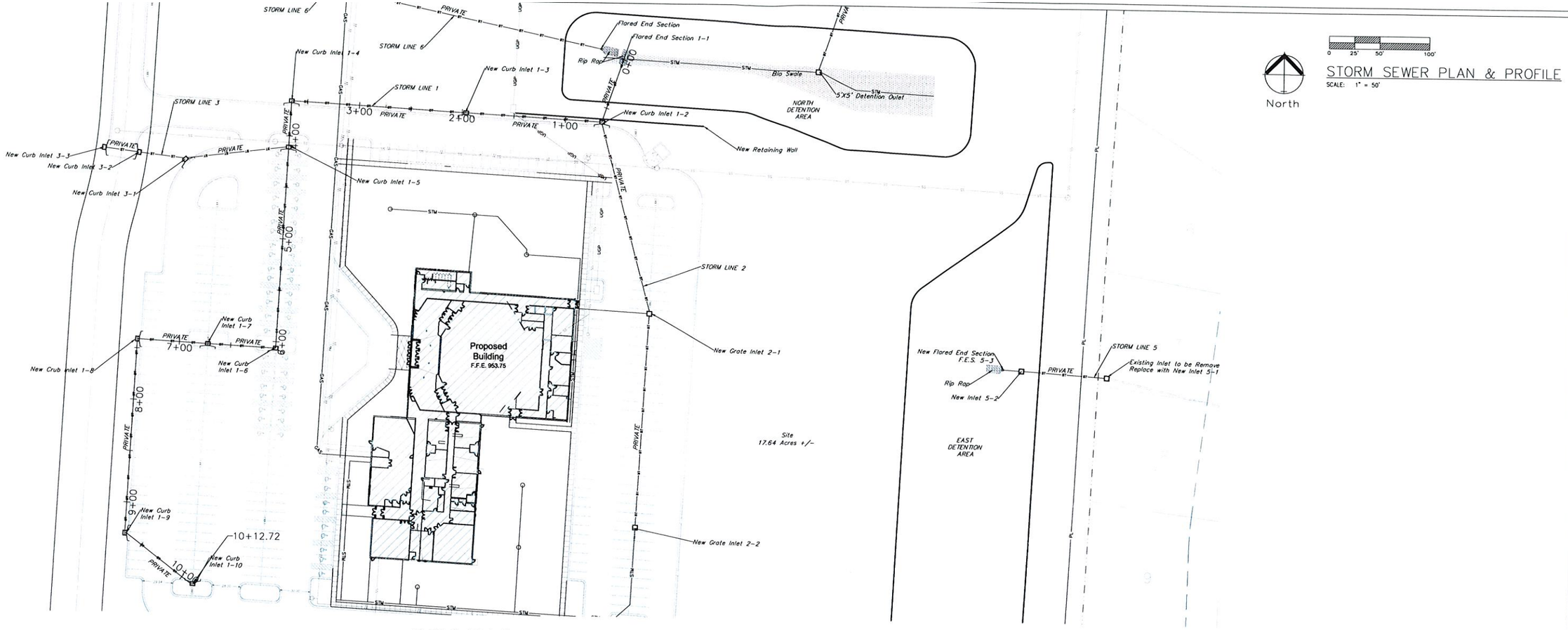
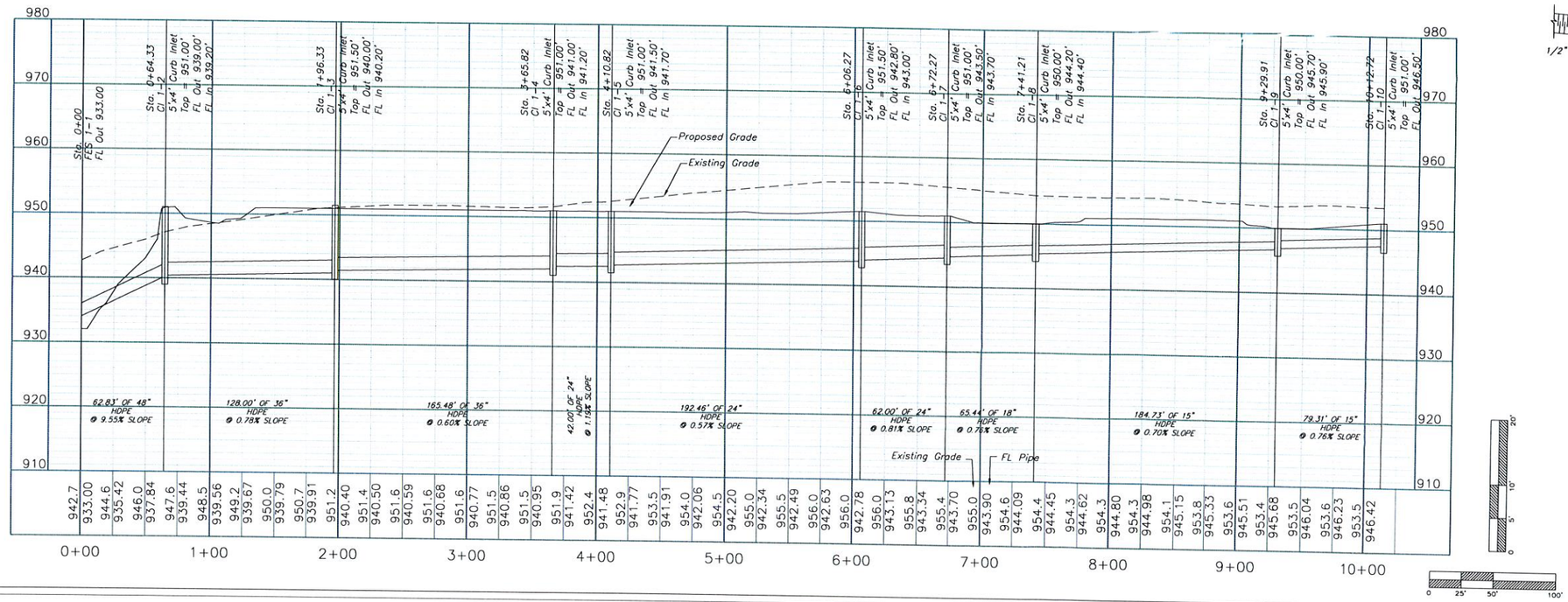
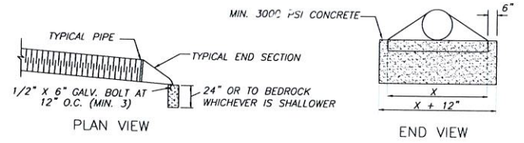


STORM SEWER PLAN & PROFILE

SCALE: 1" = 50'

STORM LINE 1





TYPICAL TOEWALL DETAIL
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Oklahoma
Engineering 6254
Nebraska
Engineering CA282

The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

STORM SEWER PLAN & PROFILE
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil
MO PE 2006019
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NE PE E-1433

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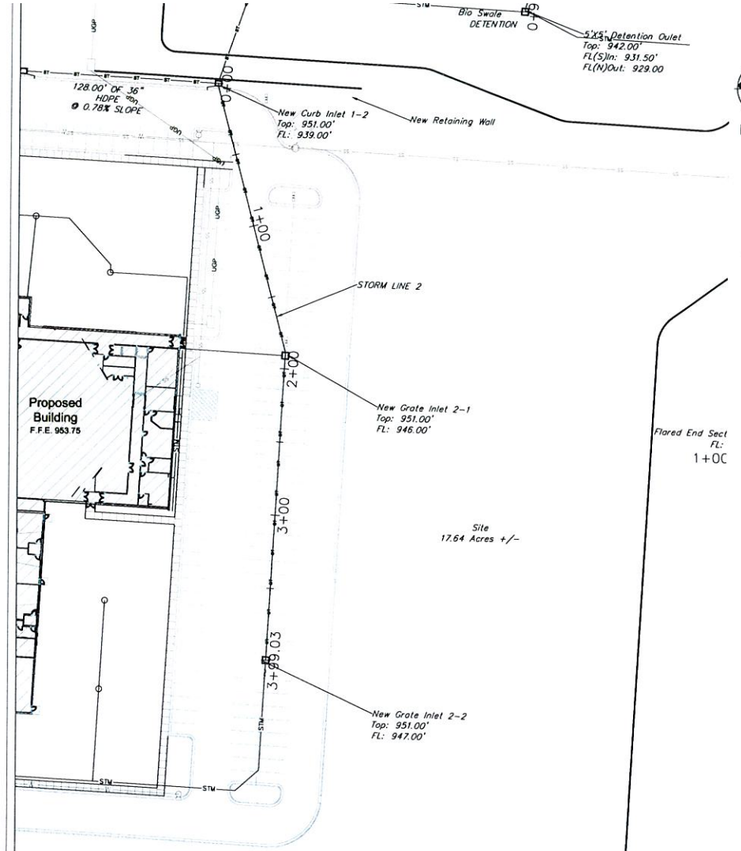
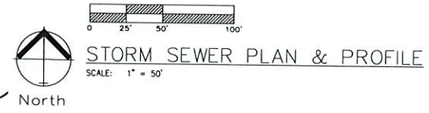
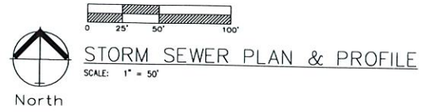
5-12-16 Final PC





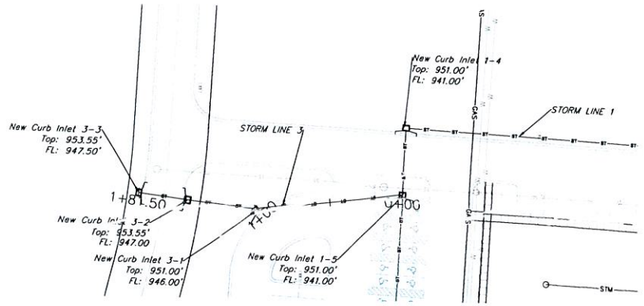
STORM SEWER PLAN & PROFILE

SCALE: 1" = 50'



STORM SEWER PLAN & PROFILE

SCALE: 1" = 50'



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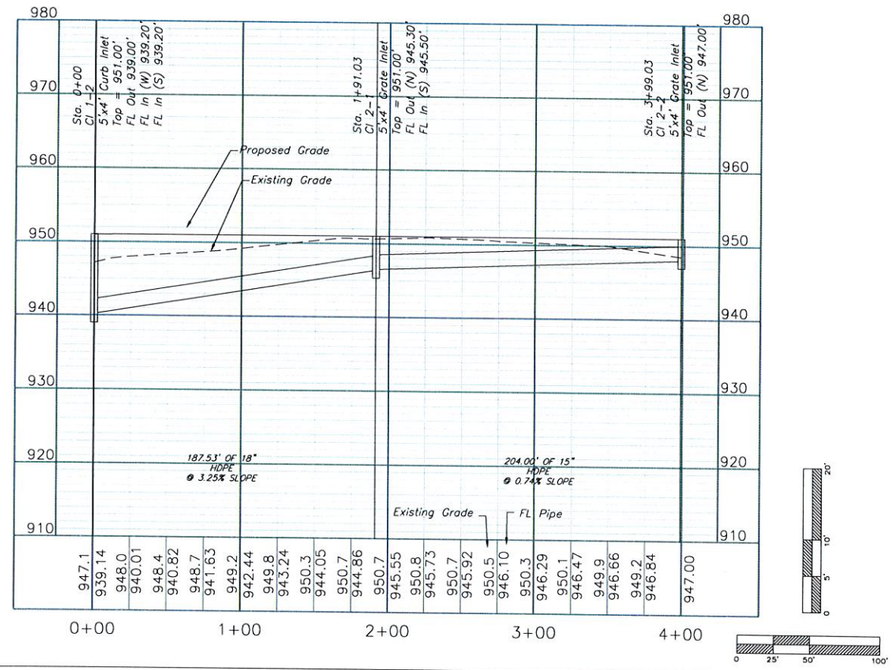

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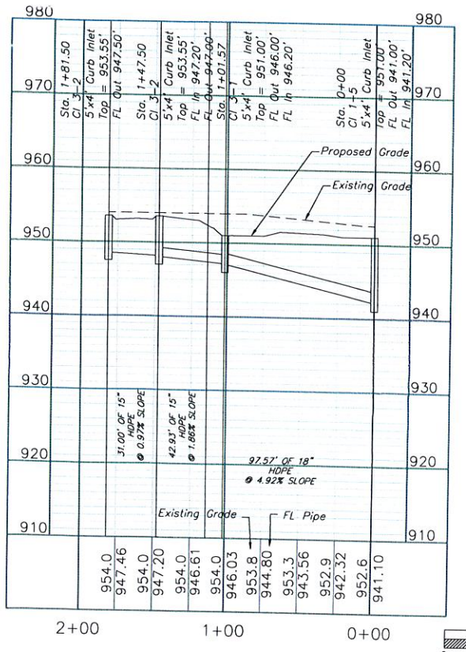

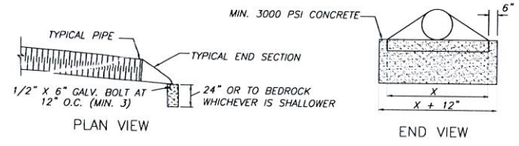

TYPICAL TOEWALL DETAIL

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The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri
Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015
STORM SEWER PLAN & PROFILE
The Summit Church:
Lee's Summit, Jackson County, Missouri
Matthew J. Schl
MO PE 2006019
KS PE 19071
OK PE 25226
NE PE E-1433
REVISIONS
11-17-15 Modified
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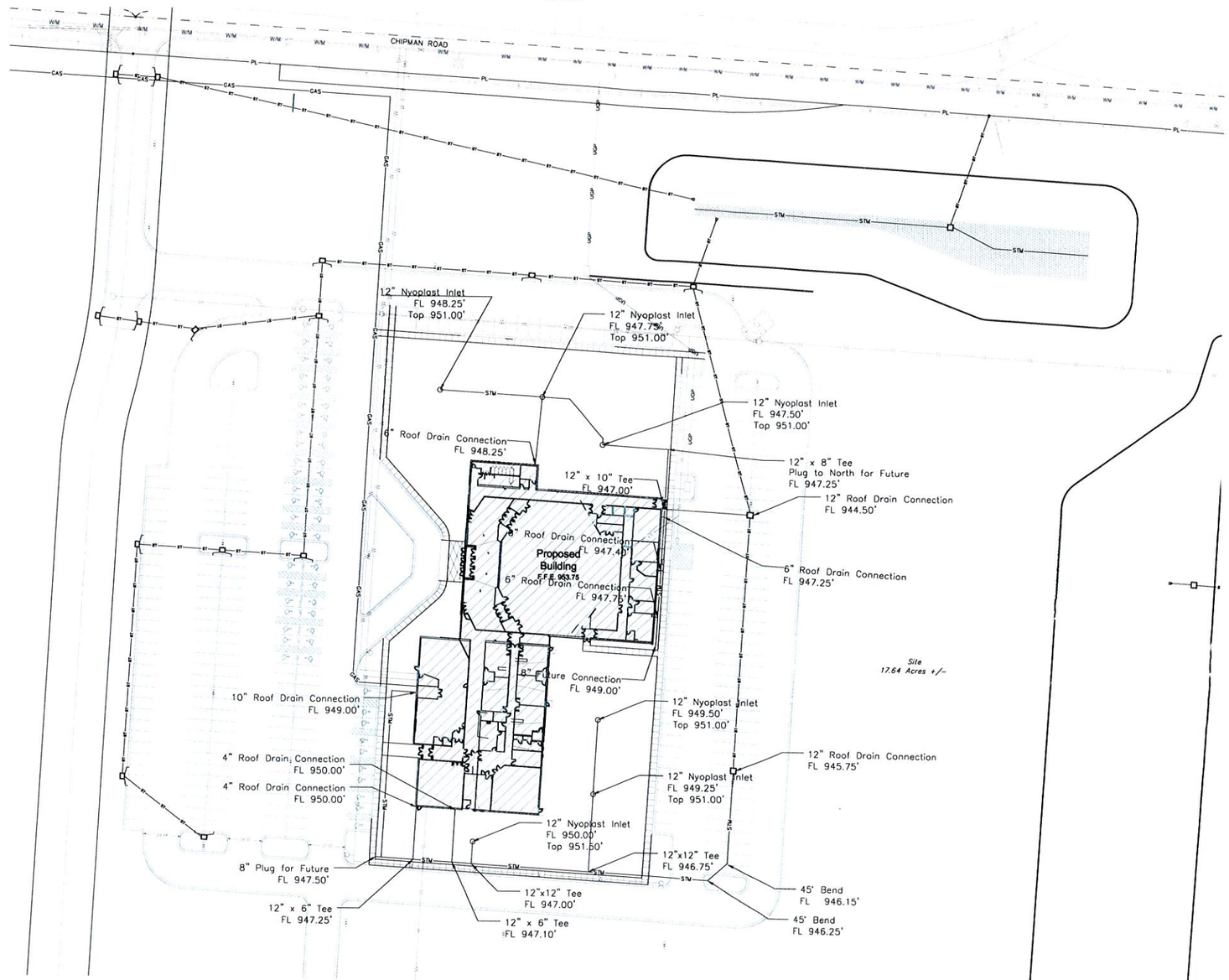
4-8-16 City Comm
5-12-16 Final PD

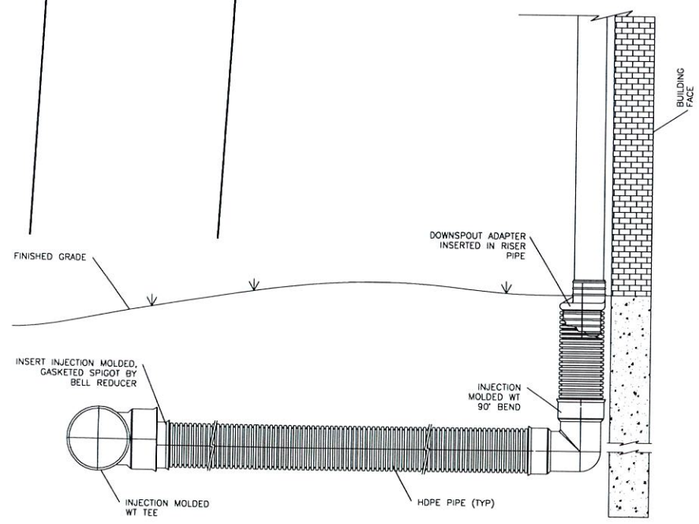
ROOF DRAIN PLAN

SCALE: 1" = 50'

North

0 25' 50' 100'





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The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH; LSMO
Issue Date: October 15, 2015

STORM SEWER PLAN & PROFILE
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil
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11-17-15 Modified
01-25-16 City Comm
03-18-16 City Comm
4-8-16 City Comm
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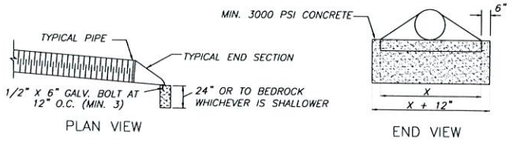
C.304

North

0 25' 50' 100'

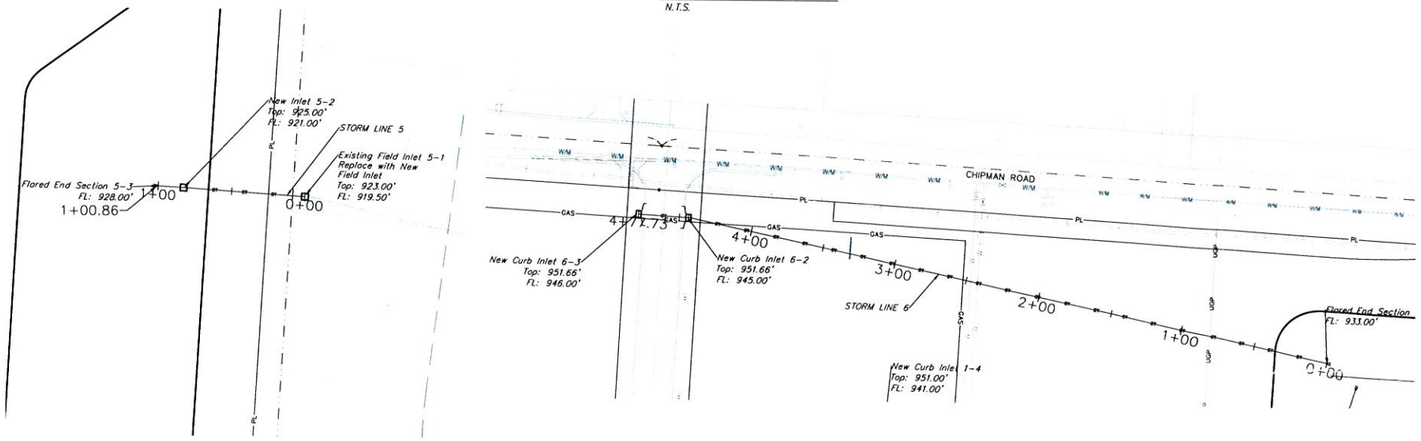
STORM SEWER PLAN & PROFILE

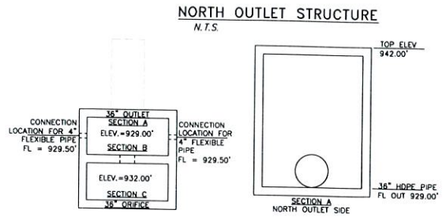
SCALE: 1" = 50'



TYPICAL TOEWALL DETAIL

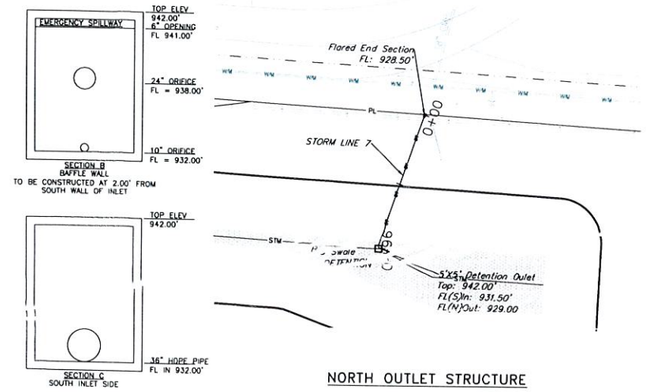
N.T.S.





NORTH OUTLET STRUCTURE

N.T.S.

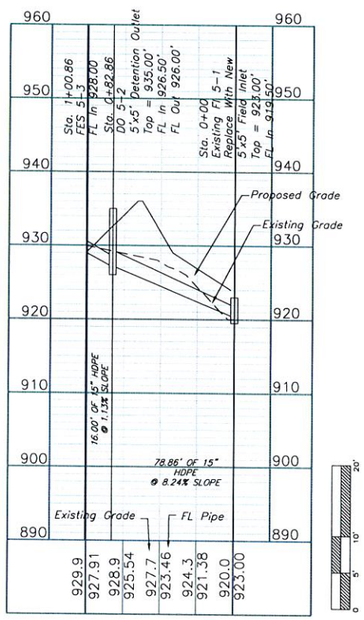


NORTH OUTLET STRUCTURE

Parking
969 Standard Spaces
50 Accessible Spaces

EAST OUTLET STRUCTURE

STORM LINE 5



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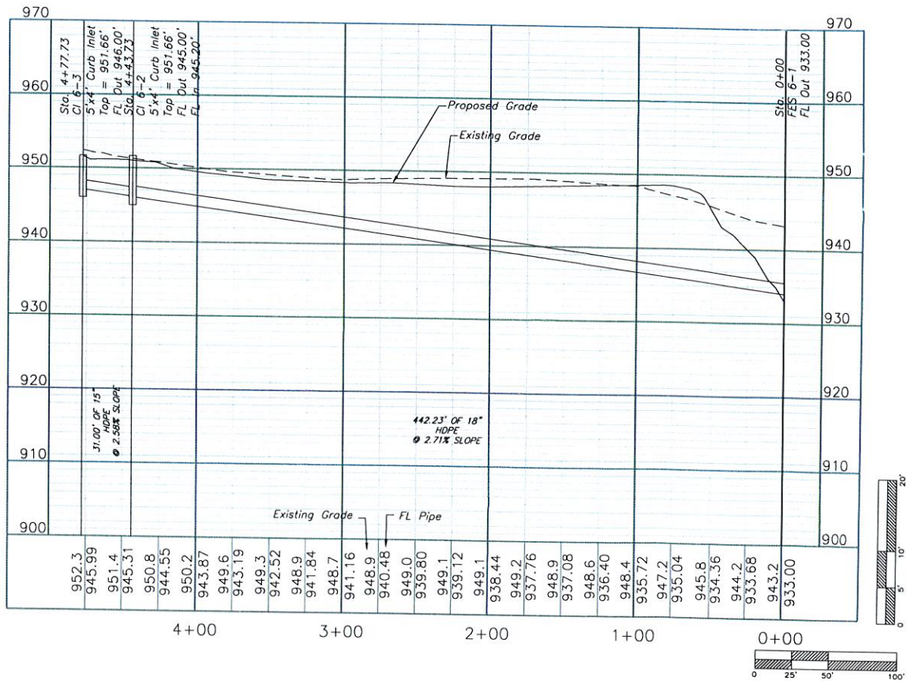

EAST OUTLET STRUCTURE

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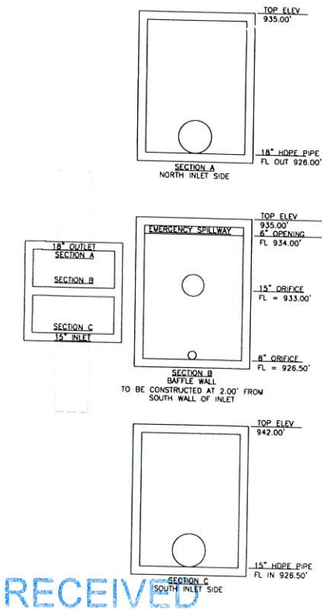
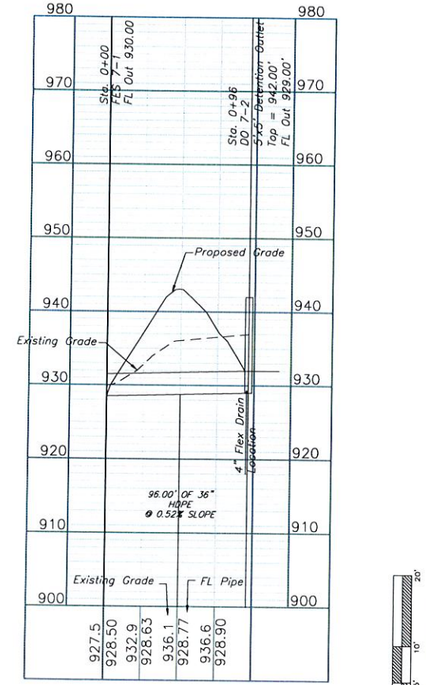


STORM LINE 7



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The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

STORM SEWER PLAN & PROFILE
The Summit Church:
Lee's Summit, Jackson County, Missouri

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

REVISIONS
11-17-15 Modified W
01-25-16 City Comm
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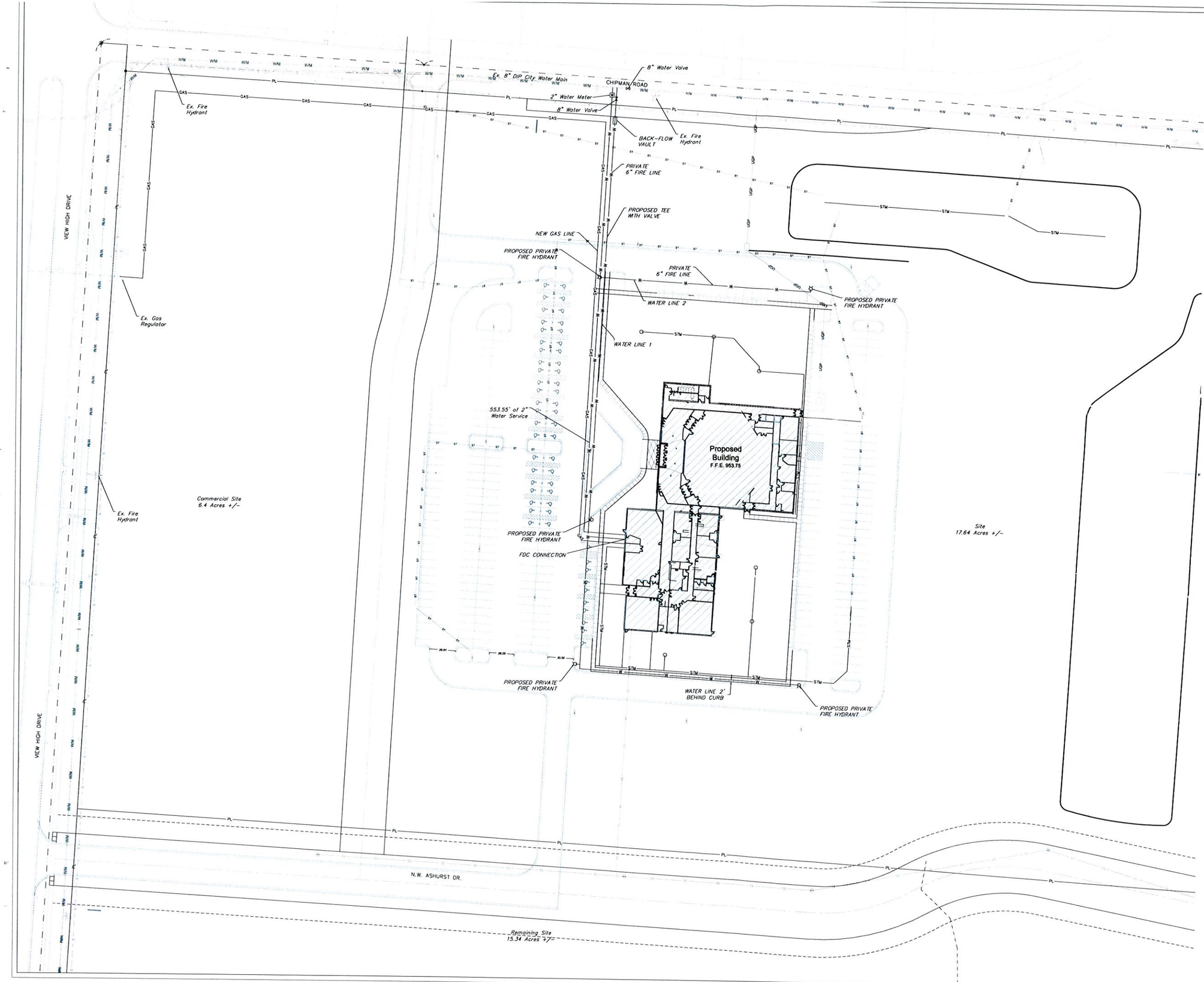

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The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

WATER PLAN
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil
MO PE 2006019
KS PE 19071
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NE PE E-1433

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11-17-15 Modified W
01-25-16 City Comn
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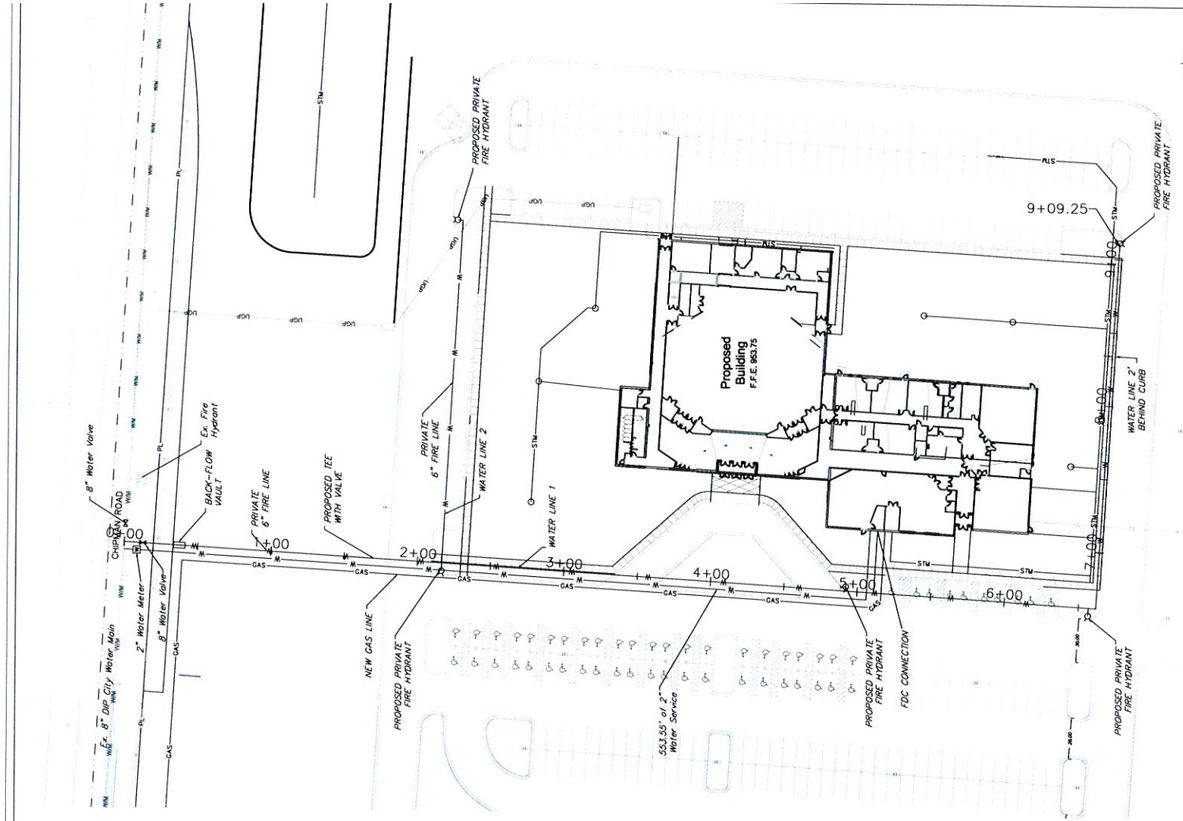

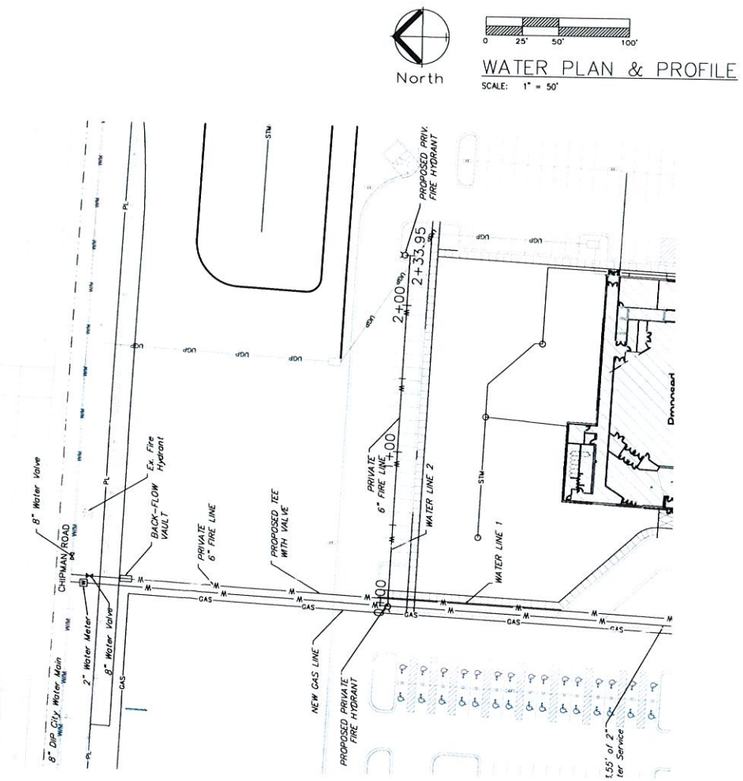

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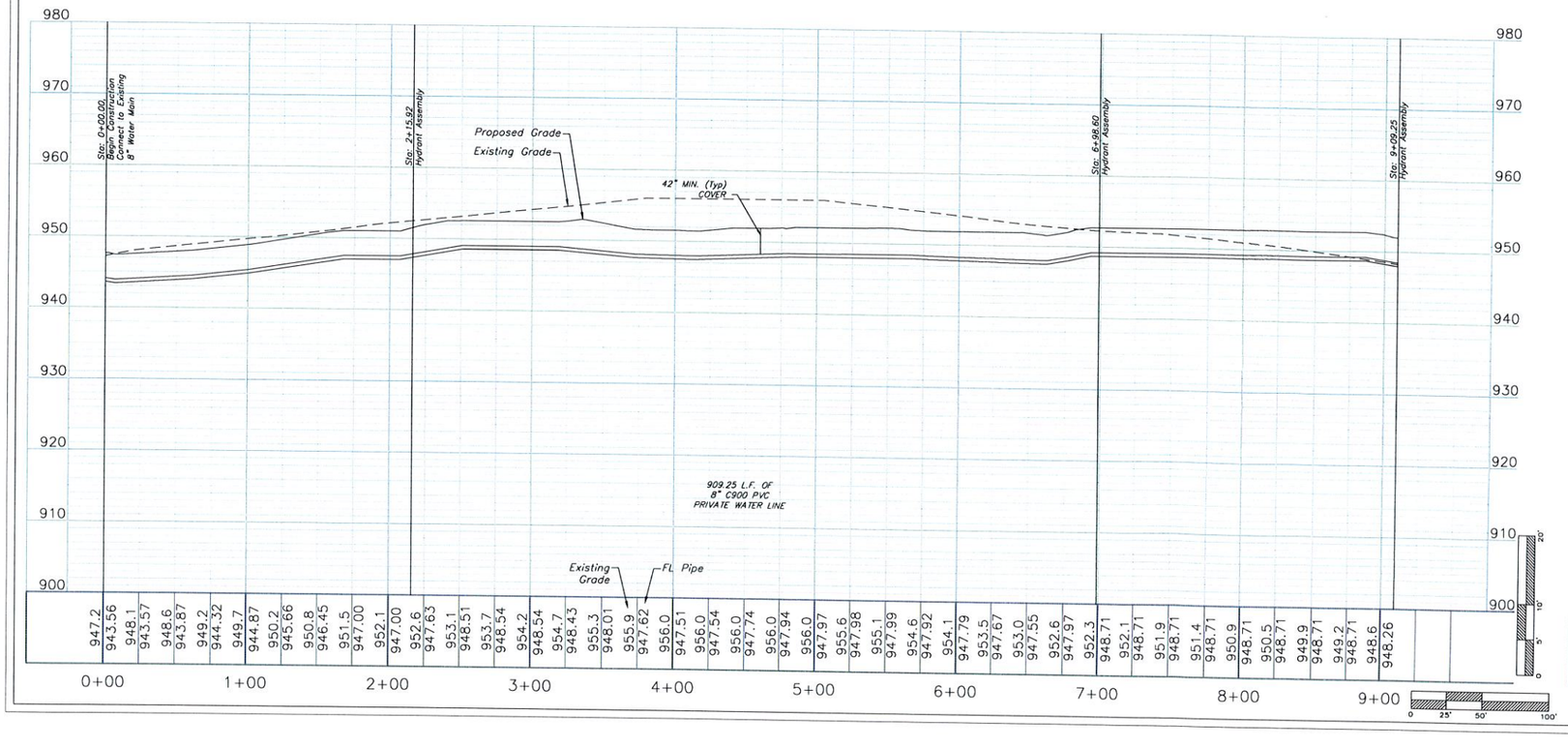

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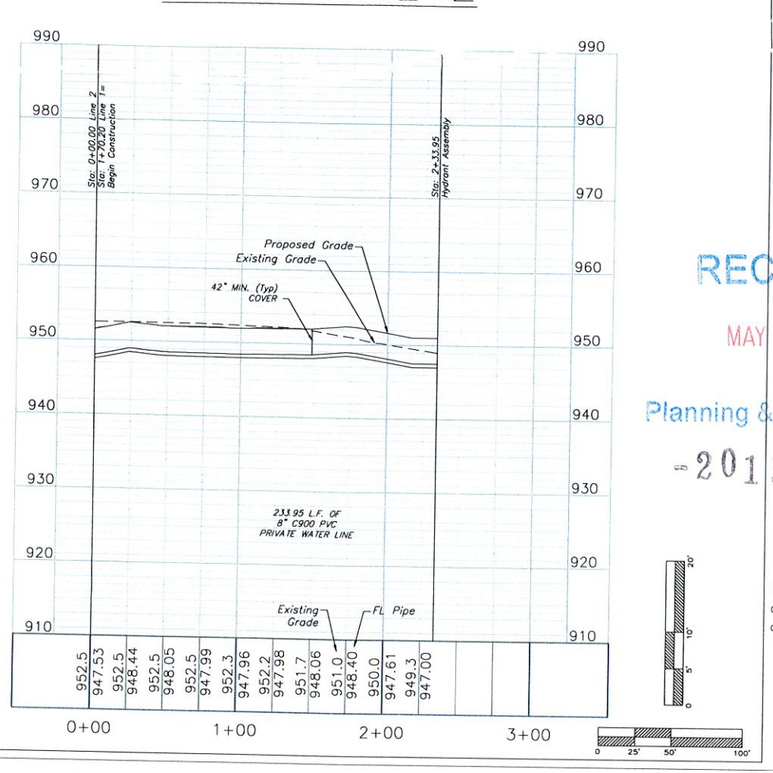

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The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

WATER PLAN & PROFILE
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Lee's Summit, Jackson County, Missouri

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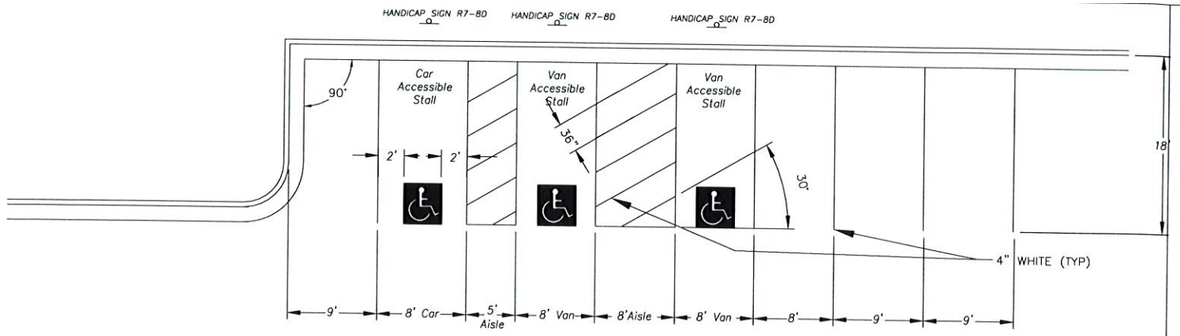
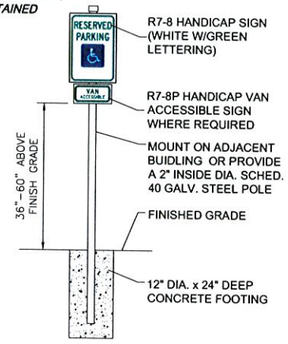
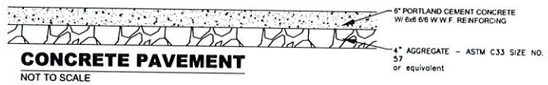


SIGN MAY BE WALL MOUNTED DIRECTLY TO BUILDING. DIMENSIONS MUST BE MAINTAINED

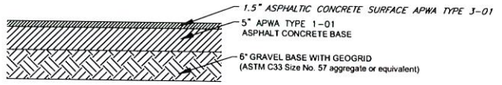


HANDICAP SIGN DETAIL
NOT TO SCALE



CONCRETE PAVEMENT
NOT TO SCALE

NOTE:
REFERENCE ARTICLE 12, SECTION 12.120 PART F, OF THE UNIFIED DEVELOPMENT ORDINANCE FOR THICKNESS



"FIRE LANE" PRIVATE ASPHALT PAVEMENT
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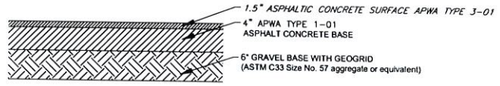

"PARKING STALLS" PRIVATE ASPHALT PAVEMENT
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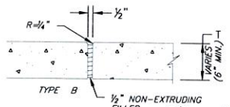
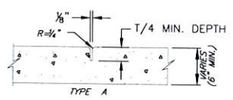
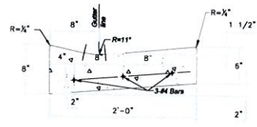
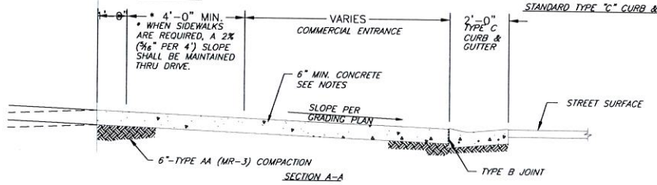




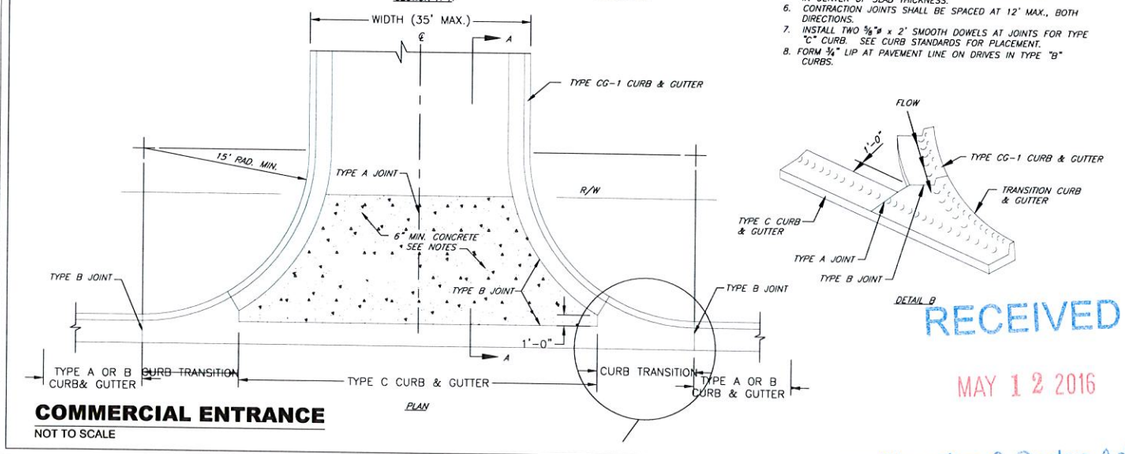


JOINT DETAILS

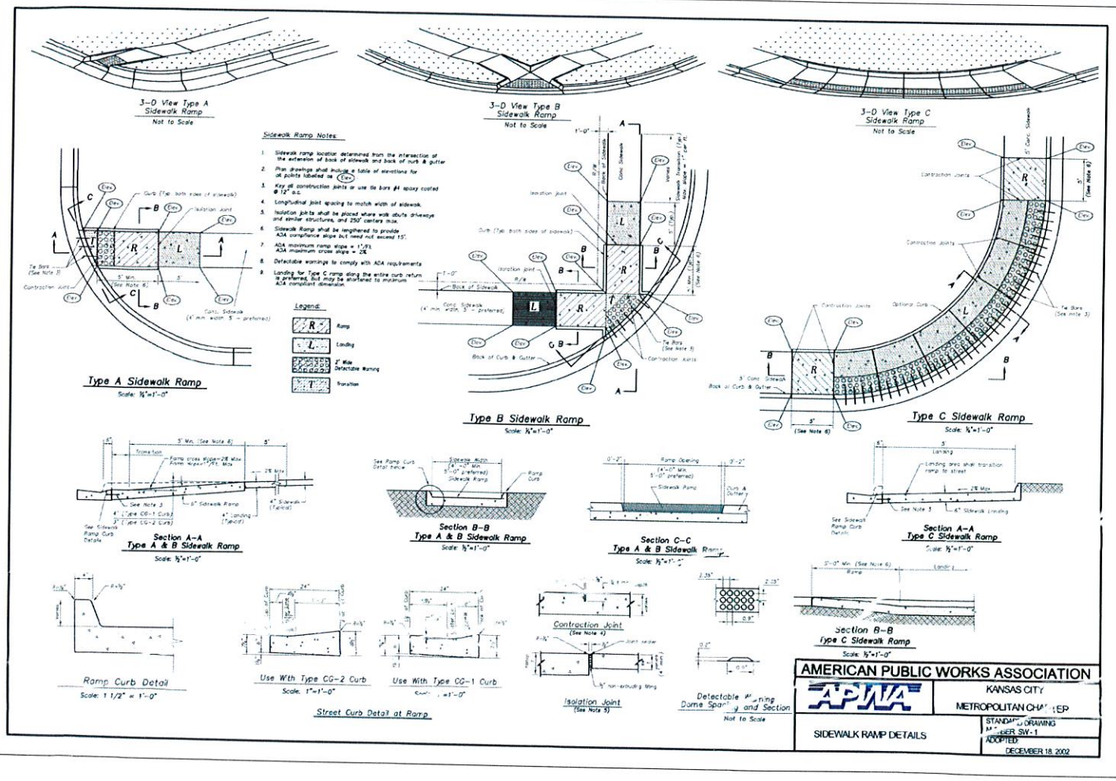


COMMERCIAL DRIVE NOTES:

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 ¾" LIP AT PAVEMENT LINE ON DRIVES IN TYPE "B" CURBS.



COMMERCIAL ENTRANCE
NOT TO SCALE



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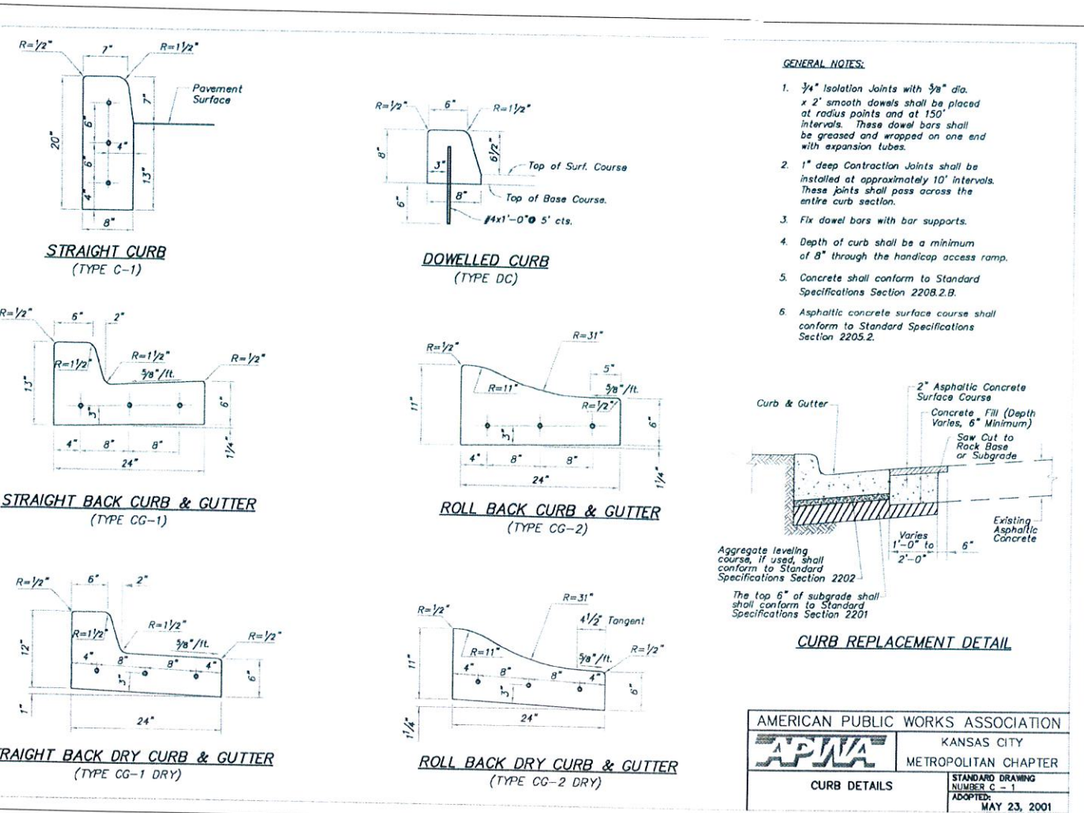
APWA KANSAS CITY METROPOLITAN CHAPTER
SIDEWALK RAMP DETAILS
STANDARD DRAWING NUMBER SW-1
ADOPTED DECEMBER 18, 2002



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APWA KANSAS CITY METROPOLITAN CHAPTER
CURB DETAILS
STANDARD DRAWING NUMBER C – 1
ADOPTED: MAY 23, 2001

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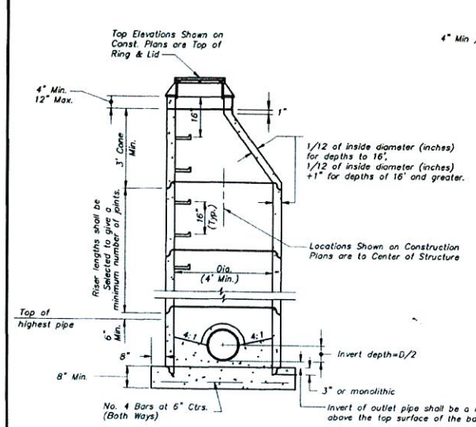
The Summit Church
3,111 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

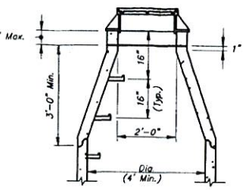
DETAIL SHEET
The Summit Church:
Lee's Summit, Jackson County, Missouri

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

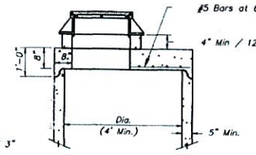
REVISIONS
11–17–15 Modified W
01–25–16 City Comm
03–18–16 City Comm
4–8–16 City Comm
5–12–16 Final PD



STANDARD PRECAST MANHOLE (ECCENTRIC CONE)



STANDARD PRECAST MANHOLE (CONCENTRIC CONE)
(See Eccentric Cone For Other Details)

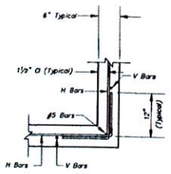


STANDARD PRECAST MANHOLE (SHALLOW TYPE)
(See Eccentric Cone For Other Details)

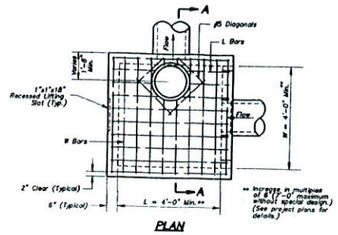
GENERAL NOTES:

1. All manholes are to be precast concrete and of Eccentric Cone type unless otherwise specified.
2. Manhole top adjustments shall be accomplished by the use of concrete adjustment rings.
3. Top of manhole casting shall be set flush and on same slope as finished surface or as directed by the Engineer.
4. Reinforcement in all sections shall equal or exceed A.S.T.M. C-478 specifications.
5. The engineer shall designate modifications for manholes with special designs.
6. The inside diameter of the manhole shall be 4'-0" for pipe diameters from 12" thru 24", 5'-0" for pipe diameters from 27" thru 36", and 6'-0" for pipe diameters 42" thru 48".
8. Clearance Tolerance of Pipe Openings: The Maximum Allowable Pipe Opening on a Horizontal Axis Shall be the Outside Diameter of the Pipe Plus 12". The Maximum Allowable Pipe Opening on Vertical Axis Shall be the Outside Diameter Plus 8". The Minimum Clearance Between the Outside Surface of an Installed pipe and the Concrete of the Manhole Shall be 2".
9. Installation of Pipe Openings: All required pipe openings shall be plant cast in manhole units. Field alterations of openings will be permitted provided walls are scored with a masonry saw to a depth sufficient to sever reinforcing steel. A chipping hammer may then be used to remove the concrete. Minimum distance between any two adjacent pipes shall be 4".
10. No direct payment for shaping floor or connecting pipes as shown on plans.
11. Ring & Cover to be Neenah R-1736, Clay & Bailey #2008, Dexter #1.316, or approved equal. (Casting may vary by municipality, refer to plans & contract documents.)
12. Sanitary Sewers shall be coated and conform to Section 2603.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
MANHOLE DETAILS	STANDARD DRAWING NUMBER MH. - 1 ADOPTED: APRIL 17, 1996



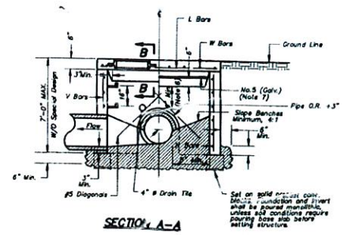
CORNER DETAIL



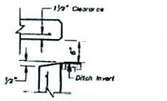
PLAN

GENERAL NOTES:

1. Locate ring and cover over outlet.
2. All work and materials shall conform to APWA Sect. 2600.
3. Use ¾" chamfer strip on all exposed concrete corners.
4. Steps required at 16" O.C. when depth from top of casting to invert exceeds 4'.
5. Bosmu's gift 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 bossun.
7. Limit opening height to 6" with No. 5 galvanized bars extending to corner rebars.
8. Show field inlet orientation on plans plus number and size of openings.
9. O.R. = outside pipe radius
10. Ring & Cover to be Neenah R-1537, Clay & Bailey #2030, Dexter #2018, or approved equal. (Costs may vary by municipality, refer to plans & contract documents.)
11. 6" ø fold tite or precast hole shall be located at entering pipe and in the front face sump points. These ties or openings shall be capped with 3/4" galvanized wire mesh on the outside of the inlet and over the invert and base concrete.



SECTION A-A



SECTION B-B

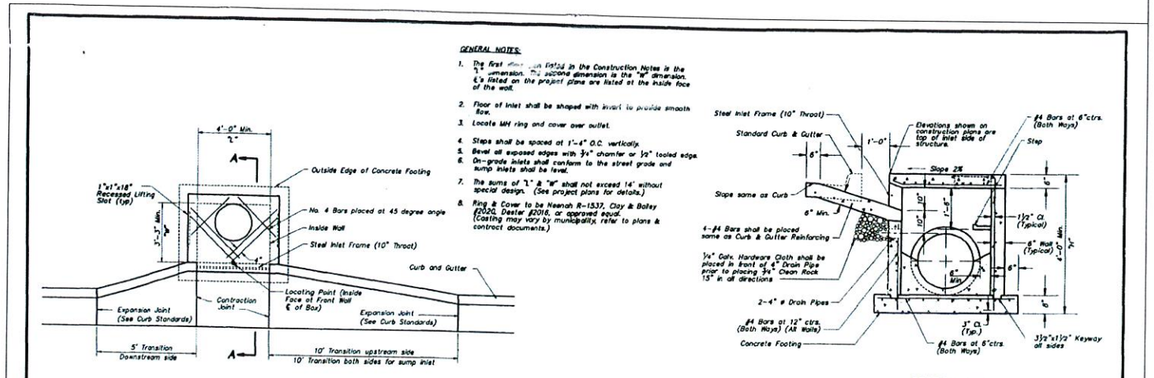
REINFORCING

BARS	BAR SIZE	SPACING (in)
H	4	12
V	4	12
L	3	6
W	3	6

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
FIELD INLET DETAILS	STANDARD DRAWING NUMBER FI - 1 ADOPTED: APRIL 17, 1996

RECEIVED
MAY 12 2016
Planning & Codes Admin

-2015-158-

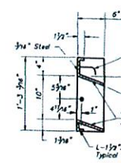


PLAN

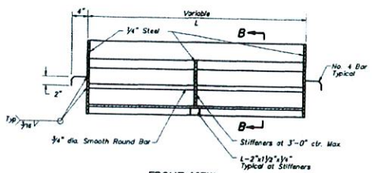
GENERAL NOTES:

1. The first dimension listed in the Construction Notes is the "L" dimension. The second dimension is the "W" dimension. L's listed 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'-6" 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, Dexter #2018, or approved equal. (Casting may vary by municipality, refer to plans & contract documents.)

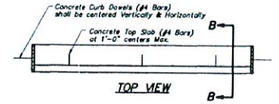
SECTION A-A



SECTION B-B



FRONT VIEW



TOP VIEW

Notes:

1. All welds shall be preformed in accordance with appropriate AWS Specifications & 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.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
CURB INLET - TYPE 2 DETAILS	STANDARD DRAWING NUMBER C - 2 ADOPTED: APRIL 17, 1996

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING

Professional Registr
Missouri
Engineering 2000032
Surveying 2005008
Kansas
Engineering E-189
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA282

The Summit Church
3381 North west Chipman Road
Lee's Summit, Jackson County, Missouri

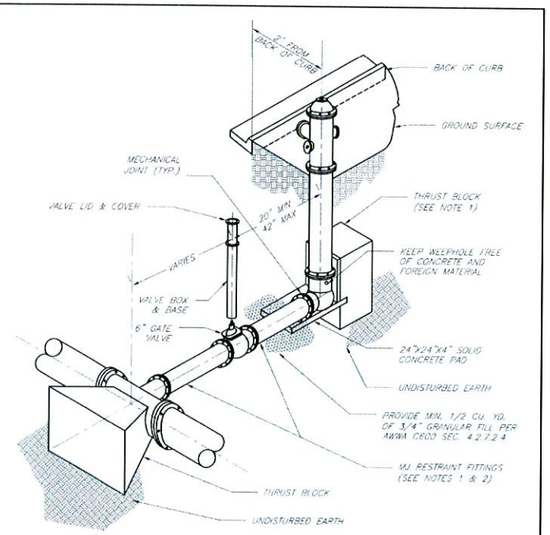
Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

DETAIL SHEET
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil
MO PE 2006019
KS PE 19071
OK PE 25226
NE PE E-1431

REVISIONS
11-17-15 Modified
01-25-16 City Comm
03-18-16 City Comm
4-8-16 City Comm
5-12-16 Final PI

C.601



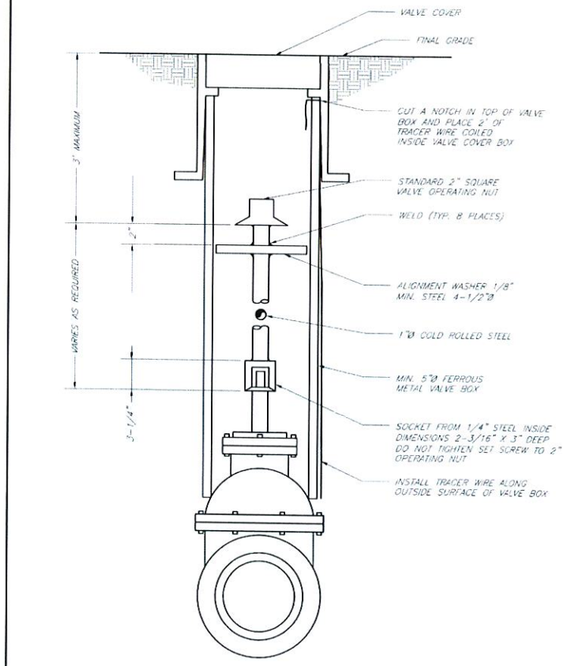
NOTES:

1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

HYDRANT INSTALLATION – STRAIGHT SET

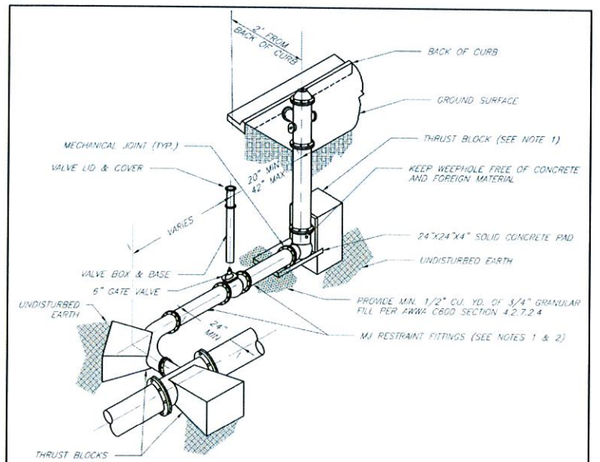
Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-7
Rev:	1/14
Rev:	



LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

VALVE STEM EXTENSION AND VALVE BOX

Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-9
Rev:	1/14
Rev:	



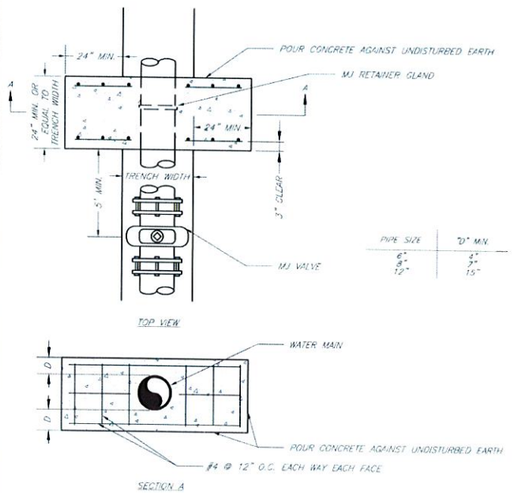
NOTES:

1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

HYDRANT WITH 90 DEGREE BEND

Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-8
Rev:	1/14
Rev:	



NOTE:

THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STRADDLE BLOCK

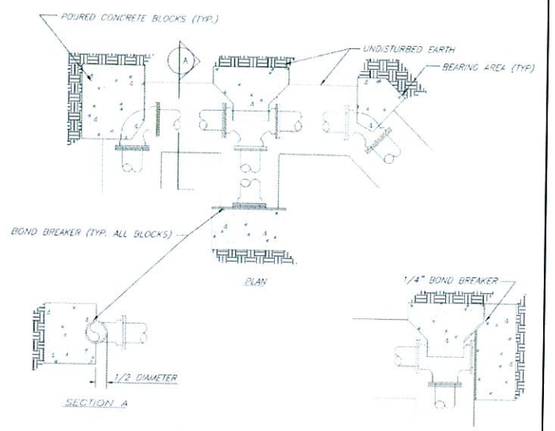
Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-3
Rev:	1/14
Rev:	

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)

NOM. DIA (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	5.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8

NOTES:

1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

HORIZONTAL THRUST BLOCKS

Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-1
Rev:	1/14
Rev:	

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
Professional Registration
Missouri
Engineering 2006002
Surveying 2005008
Kansas
Engineering E-16
Surveying LS-21
Oklahoma
Engineering 6254
Nebraska
Engineering CA282

The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 15, 2015

DETAIL SHEET
The Summit Church:
Lee's Summit, Jackson County, Missouri

Matthew J. Schil
MO PE 2006019
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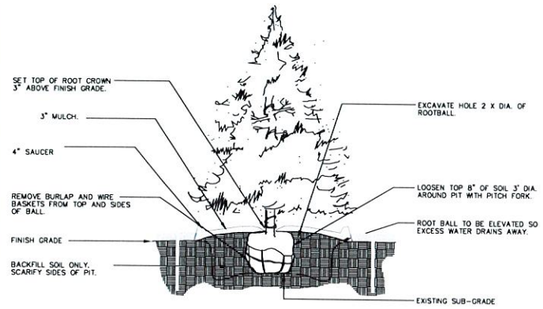
OK PE 25226
NE PE E-1433

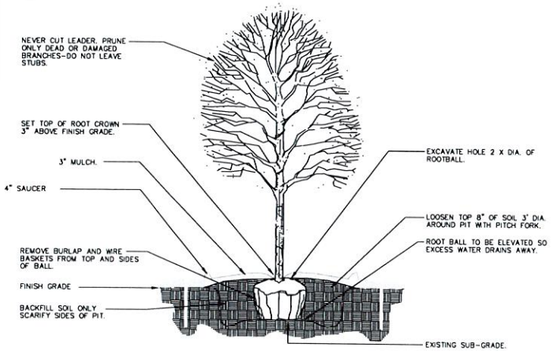
REVISIONS
11-17-15 Modified W
01-25-16 City Comn
03-18-16 City Comn
4-8-16 City Comm
5-12-16 Final PD

C.602



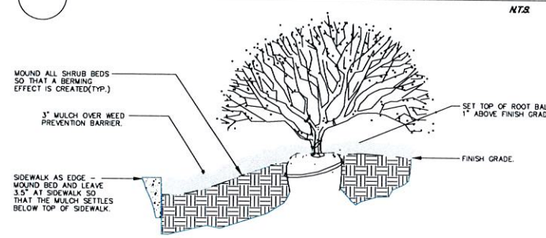
1 EVERGREEN TREE PLANTING

NTS



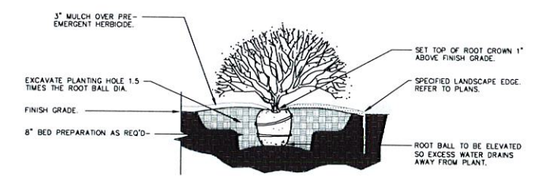
2 DECIDUOUS TREE PLANTING

NTS



3 SIDEWALK EDGE AT PLANT BED

NTS



4 SHRUB PLANTING

NTS

PLANTING SCHEDULE:

IS FOR PHASE I ONLY. AT FULL BUILD THE UNIFIED DEVELOPMENT ORDINANCE REQUIREMENTS SHALL BE MEET.

SYMBOL	QUANT.	KEY	NAME	SIZE
⬠	26	TA	AMERICAN BASSWOOD LINDEN TILIA AMERICANA	3.0" CAL
○	57	SR	SKYROCKET JUNIPER JUNIPERUS SCOPULORUM "SKYROCKET"	6' Ht.
⊙	29	BB	BURNING BUSH EUONYMUS ALATA "COMPACTUS"	#3 POT
◎	18	RB	OKLAHOMA REDBUD CERCIS RENIFORMIS "OKLAHOMA"	3.0" CAL

GENERAL LANDSCAPE NOTES:

PLANT MATERIAL

1. ALL PLANT MATERIAL SHALL BE FIRST CLASS REPRESENTATIVES OF SPECIFIED SPECIES, VARIETY OR CULTIVAR, IN HEALTHY CONDITION WITH NORMAL WELL DEVELOPED BRANCHES AND ROOT PATTERNS. PLANT MATERIAL MUST BE FREE OF OBJECTIONABLE FEATURES. PLANTS SHALL COMPLY IN ALL APPLICABLE RESPECTS WITH PROPER STANDARDS AS SET FORTH IN THE AMERICAN ASSOCIATION OF NURSERYMEN'S "AMERICAN STANDARD OF NURSERY STOCK", ANSI Z60.1-2004.
2. SHRUBS SHALL BE CONTAINER GROWN AND WILL BE FREE OF DISEASE AND PESTS. NO BARE ROOT. ALL PLANT BEDS TO BE MULCHED TO A DEPTH OF 3" WITH DARK BROWN, HARDWOOD MULCH. PLANTING BEDS ARE TO BE FREE OF WEEDS AND GRASS. TREAT BEDS WITH A PRE-EMERGENT HERBICIDE PRIOR TO PLANTING AND MULCH PLACEMENT. APPLY IN ACCORDANCE WITH STANDARD TRADE PRACTICE.
3. HOLE AREA FOR TREE TO BE TWICE (2x) THE DIAMETER OF THE ROOT BALL AND ROOT BALL SHALL BE SLIGHTLY MOUNDED FOR WATER RUN-OFF.
4. ALL PLANT MATERIALS SHALL BE PROTECTED FROM THE DRYING ACTION OF THE SUN AND WIND AFTER BEING DUG, WHILE BEING TRANSPORTED, AND WHILE AWAITING PLANTING. BALLS OF PLANTS WHICH CANNOT BE PLANTED IMMEDIATELY SHALL BE PROTECTED FROM DRYING ACTION BY COVERING THEM WITH MOIST MULCH PERIODICALLY. APPLY WATER TO MULCH-COVERED BALLS TO KEEP MOIST. IF PLANTING SHOULD OCCUR DURING GROWING SEASON, APPLY ANTI-DESICCANT TO LEAVES BEFORE TRANSPORT TO REDUCE THE LIKELIHOOD OF WINDBURN. REAPPLY ANTI- DESICCANT AFTER PLANTING TO REDUCE TRANSPIRATION. REMOVE TWINE AND BURLAP FROM ROOT BALLS. SOIL ON TOP OF CONTAINERIZED OR BALLED PLANTS IS TO BE REMOVED UNTIL ALL PLANTS' ROOT FLARES ARE EXPOSED. THIS IS THE NATIVE SOIL LINE AT WHICH PLANTING DEPTHS SHOULD BE MEASURED.
5. AFTER PLANTING IS COMPLETED, PRUNE MINIMALLY TO REMOVE DEAD OR INJURED TWIGS AND BRANCHES. PRUNE IN SUCH A MANNER AS NOT TO CHANGE THE NATURAL HABIT OR SHAPE OF THE PLANT. MAKE CUTS BACK TO BRANCH COLLAR, NOT FLUSH. DO NOT PAINT ANY CUTS WITH WITH TREE PAINT. CENTRAL LEADERS SHALL NOT BE REMOVED.
6. GUARANTEE TREES, SHRUBS, GROUND COVER PLANTS FOR ONE CALENDAR YEAR FOLLOWING PROVISIONAL ACCEPTANCE OF THE OVERALL PROJECT. DURING THE GUARANTEE PERIOD, PLANTS THAT DIE DUE TO NATURAL CAUSES OR THAT ARE UNHEALTHY OR UNSIGHTLY IN CONDITION, SHALL BE REPLACED BY THE CONTRACTOR.

LAWN AND TURF AREAS

7. ALL LAWN AREAS TO BE SODDED OR SEEDED AS SHOWN ON PLANS. SOD SHALL COMPLY WITH US DEPT. OF AGRICULTURE RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT AND EQUAL IN QUALITY TO STANDARDS FOR CERTIFIED SEED. SOD SHALL BE HEALTHY, THICK TURF HAVING UNDERGONE A PROGRAM OF REGULAR FERTILIZING, MOWING AND WEED CONTROL. SEED AND SOD SHALL BE A TURF-TYPE TALL FESCUE (3 WAY) BLEND. SEED BLEND SHALL CONSIST OF THE FOLLOWING:

TURF-TYPE TALL FESCUE	90%
KENTUCKY BLUEGRASS	10%

8. ALL SEEDED AREAS ARE TO BE MULCHED WITH STRAW OR HYDROMULCH AT TIME OF INSTALLATION UNTIL SEED HAS ESTABLISHED.

INSTALLATION

9. THE INSTALLATION OF ALL PLANT MATERIALS SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT, MO. AND LANDSCAPE INDUSTRY STANDARDS.
10. ALL LANDSCAPE AREAS TO BE FREE OF ALL BUILDING DEBRIS AND TRASH, BACK FILLED WITH CLEAN FILL SOIL AND TOP DRESSED WITH 4" OF TOPSOIL. TOPSOIL SHALL HAVE A pH RANGE OF 5.5 TO 7 AND A 4% ORGANIC MATERIAL MINIMUM, ASTM D5268.
11. PLANT BEDS TO BE "MOUNDED". ALL PLANT MATERIAL, PLANT BEDS, MULCH AND DUG EDGE ARE TO BE INSTALLED PER LANDSCAPE PLANS, DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
12. REESTABLISH FINISH GRADES TO WITHIN ALLOWABLE TOLERANCES ALLOWING 3/4" FOR SOD AND 3" FOR MULCH IN PLANT BEDS. HAND RAKE ALL AREAS TO SMOOTH EVEN SURFACES FREE OF DEBRIS, CLODS, ROCKS, AND VEGETATIVE MATTER GREATER THAN 1".
13. ALL PLANT BEDS, SHRUBS AND TREES SHALL BE MULCHED WITH 3" OF DARK BROWN, HARDWOOD MULCH, EXCEPT IF NOTED AS ROCK. DARK BROWN, HARDWOOD MULCH SHALL BE INSTALLED OVER DEWITT PRO 5 WEED CONTROL FABRIC IN PLANT BEDS ONLY.
14. CONTRACTOR IS RESPONSIBLE FOR INITIAL WATERING UPON INSTALLATION.
15. DUG EDGES ARE TO BE DUG WHERE MULCH BEDS ARE ADJACENT TO TURF AREAS. NO EDGING IS REQUIRED ADJACENT TO PAVEMENT OR CURB.
16. THE EXACT LOCATION OF ALL UTILITIES, STRUCTURES, AND UNDERGROUND UTILITIES SHALL BE DETERMINED AND VERIFIED ON SITE BY THE LANDSCAPE CONTRACTOR PRIOR TO INSTALLATION OF THE MATERIALS. DAMAGE TO EXISTING UTILITIES AND OR STRUCTURES SHALL BE REPLACED TO THEIR ORIGINAL CONDITION BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE OWNER.
17. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND APPROVALS AND REQ'D INSPECTIONS BY LEGAL AUTHORITIES.
18. PROVISIONS SHALL BE MADE FOR READILY ACCESSIBLE IRRIGATION WITHIN 100' MAX. OF ALL LANDSCAPED AREAS INCLUDING ALL PLANT BEDS, INDIVIDUAL TREES, AND TURF AREAS. ALL LAWN AREAS (AS SHOWN ON PLANS) WILL BE IRRIGATED BY AN AUTOMATIC SPRINKLER SYSTEM. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL IRRIGATION COMPONENTS, SLEEVING, PIPE AND CONTROL. DESIGN DRAWINGS OF IRRIGATION SYSTEM SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
19. ANY SUBSTITUTIONS OR DEVIATIONS SHALL BE REQUESTED IN WRITING BY THE CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF PLANT MATERIALS. ALL PLANTS ARE TO BE LOCATED AS SPECIFIED ON DRAWINGS.

MAINTENANCE BY OWNER

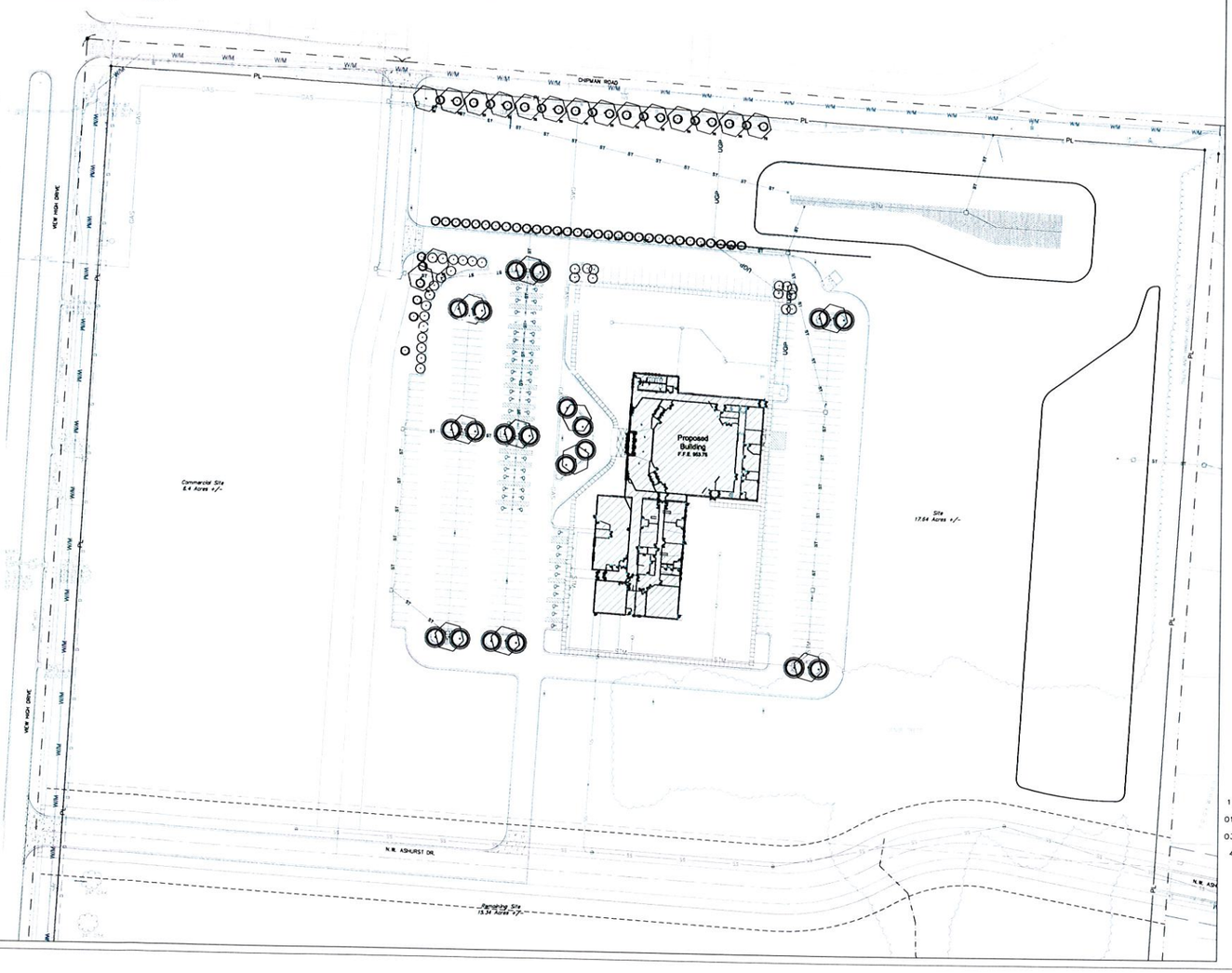
20. ALL SHRUBS ARE TO BE MAINTAINED IN THEIR NATURAL SHAPE TO ALLOW EVENTUAL GROWTH INTO A HEDGE.
21. MAINTAIN NATURAL HABIT OF ALL SPECIFIED PLANT MATERIAL.
22. NEW SOD TO BE THOROUGHLY WATERED UNTIL ROOTS "TAKE HOLD" OF SOD BED. CONTINUE WATERING AS REQUIRED, UNTIL COMPLETELY ESTABISHED.

IRRIGATION PERFORMANCE SPECIFICATION:

THE FOLLOWING CRITERIA SHALL BE CONSIDERED MINIMUM STANDARDS FOR DESIGN AND INSTALLATIONOF LANDSCAPE IRRIGATION SYSTEM:

1. GENERAL - IRRIGATION SYSTEM TO INCLUDE DRIP IRTRIGATION OF SHRUB BEDS ADJACENT TO BUILDINGS, SPRAY HEADS IN THE PARKING ISLANDS, AND ROTORS AROUND THE PERIMETER OF THE PARKING LOTS. HEADS SHALL THROW AWAY FROM BUILDING AND ACOID SPRAYING OVER SIDEWALKS.
2. IRRIGATION SYSTEM SHALL CONFORM TO ALL INDUSTRY STANDARDS AND ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING DESIGN AND INSTALLATION.
3. WATERLINE TYPW, SIZE LOCATION, PRESSURE AND FLOW SHALL BE FIELD VERIFIED PRIOR TO SYSTEM DESIGN AND INSTALLATION.
4. ALL MATERIALS SHALL BE FROM NEW STOCK FREE OF DEFECTS AND CARRY A MINIMUM ONE YEAR WARRANTY FROM THE DATE OF SUBSTANTIAL COMPLETION.
5. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED IN SUCH A WAY THAT ALL SYSTEM COMPONENTS OPERATE WITHIN THE GUIDELINES ESTABLISHED BY THE MANUFACTURER.
6. LAWN AREA AND SHRUB BEDS SHALLBE ON SEPARATE CIRCUITS.
7. PROVIDE WATER TAP, METER SET, METER VAULT AND ALL OTHER OPERATIONS NECESSARY TO PROVIDE WATER FOR IRRIGATION SHALL CONFORM TO LOCAL WATER GOVERNING AUTHORITY CUIDELINES AND STANDARDS.
8. BACKFLOW PREVENTION SHALL BE PROVIDED IN ACCORDANCE WITH STATE AND LOCAL REQULATIONS.
9. IRRIGATION CONTROLLER TO BE LOCATED IN UTILITY ROOM INSIDE BUILDING, AS IDENTIFIED BY OWNER.
10. IRRIGATION CONTROLLER STATIONS SHALL BE LABELED TO CORRESPOND WITH THE CIRCUIT IT CONTROLS.
11. CONTRACTOR SHALL PROVIDE TO THE OWNER WRITTEN OPERATION INFORMATION FOR ALL SYSTEM COMPONENTS.
12. CONTRACTOR SHALL PROVIDE O THE OWNER ALL KEYS, ACCESS TOOLS, WRENCHES AND ADJUSTING TOOLS NECESSARY TO GAIN ACCESS, ADJUST AND CONTROL THE SYSTEM.
13. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
14. AN AUTOMATIC RAIN SHUT-OFF OR MOISTURE DEVICE SHALL BE INSTALLED.
15. INSTALL SCHEDULE 40 PVC SLEEVES UNDER ALL CURBS, PAVING AND SIDEWALKS. SLEEVES TO BE TWICE THE SIZE OF THE LINE IT HOUSES.
16. INSTALL MANUAL DRAIN BALBES AT LOWEST POSSIBLE ELEVATION ON IRRIGATION MAIN TO ALLOW GRAVITY DRAINING OF MAIN DURING WINTER MONTHS. PROVIE QUICK COUPLERS AT MULTIPLE LOCATIONS TO ALLOW FOR EASY "BLOWING OUT" OF LATERAL AND MAIN LINES.
17. ZONES OR NOZZLES SHALL BE DESIGNED WITH MATCHED PRECIPITATION RATES.
18. MINIMUM LATERAL DEPTH IS 15" AND MAIN DEPTH IS 18".
19. SUBMIT DESGN DRAWING WITH BID TO ALLOW OWNER TO EVALUATE SYSTEM. INCLUDE CUT SHEETS OF ALL COMPONENTS AND ZONE TABLE ILLUSTRATING FLOWS AND ANTICIPATED PRESSURE AT FURTHEST HEAD.
20. AN "AS-BUILT" SCALED DRAWING SHALL BE PROVIDED TO THE OWNER BY THE CONTRACTOR AND SHALL INCLUDE UT NOT BE LIMITED TO THE FOLLOWING:
    a. AS CONSTRUCTED LOCATION OF ALL COMPONENTS
    b. COMPONENT NAME, MANUFACTURER, MODEL INFORMATION, SIZE AND QUANTITY
    c. PIPE SIZE AND QUANTITY
    d. INDICATION OF SPRINKLER HEAD SPRAY PATTERN
    e. CIRCUIT IDENTIFICATION SYSTEM
    f. DETAILED METHOD OF WINTERIZED SYSTEM

SUBMIT AS-BUILT DRAWING IN FULL SIZE DRAWING FORM AS WELL AS PDF ELECTRONIC FORMAT. (SCANNING FULL SIZE COPY OF PLAN IS ACCEPTABLE IF IT CAN BE PRINTED TO SCALE.



North

0 40' 80' 160'

LANDSCAPE PLAN

SCALE: 1" = 80'

Site Data Table

Total Area	1,831,226.10 Sq. Ft. (42.04 Ac.)
Area North of Ashurst Drive	1,169,284.28 Sq. Ft. (26.84 Ac.)
Area South of Ashurst Drive	661,940.82 Sq. Ft. (15.20 Ac.)

Phase 1 Impervious Area
(All Property North of Ashurst Drive.)

Area	1,169,284.28 Sq. Ft. (26.84 Ac.)
Building	34,393.00 Sq. Ft. (0.79 Ac.)
Asphalt/Sidewalk	188,830.39 Sq. Ft. (4.34 Ac.)
Impervious Area	223,223.40 Sq. Ft. (5.13 Ac. = 19.1% of Site)
Parking Spaces	286 Standard / 54 Handicap

Future Impervious Area (Includes Phase 1)
(All Property North of Ashurst Drive.)

Area	1,169,284.28 Sq. Ft. (26.84 Ac.)
Building	67,455.00 Sq. Ft. (1.54 Ac.)
Asphalt/Sidewalk	19,625.84 Sq.Ft. (5.41 Ac.)
Impervious Area	302,680.84 Sq. Ft. (6.95 Ac.=25.9% of Site) (Adds more road)

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
Professional Registration
Missouri
Engineering 2005002(
Surveying 2005006
Kansas
Engineering E-1692
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA282

The Summit Church
3381 Northwest Chipman Road
Lee's Summit, Jackson County, Missouri

Project: THE SUMMIT CHURCH, LSMO
Issue Date: October 16, 2015

LANDSCAPE PLAN
The Summit Church:
Lee's Summit, Jackson County, Missouri

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

REVISIONS
11-17-15 Modified V
01-25-16 City Comn
03-18-16 City Comn
4-8-16 City Comm
5-12-16 Final PD

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