Wednesday, March 6, 2019
Development Review Committee

DEVELOPMENT REVIEW COMMITTEE AGENDA
PUBLIC NOTICE is hereby given that the Development Review Committee of Spanish Fork, Utah, will hold a regular meeting in the Council Chambers in the City Office Building, 40 South Main Street, Spanish Fork, Utah, commencing at 10:00 a.m.

1. Final Plat

Subject	**A. Canyon Creek Phase 10 Plat B Amended**
Meeting	Mar 6, 2019 - Development Review Committee
Category	1. Final Plat
Access	Public
Type	Action, Discussion

File Attachments
report.canyoncreekphase10platbamended.3-6-2019.pdf (1,763 KB)

Subject	**B. Canyon Creek Phase 10 Plat C**
Meeting	Mar 6, 2019 - Development Review Committee
Category	1. Final Plat
Access	Public
Type	Action, Discussion

File Attachments
report.canyoncreekphase10platc.3-6-2019.pdf (2,901 KB)

2. Site Plan

Subject	**A. Legacy Farms Park**
Meeting	Mar 6, 2019 - Development Review Committee
Category	2. Site Plan
Access	Public
Type	Action, Discussion

File Attachments

report.legacyfarmspark.3-6-2019.pdf (5,550 KB)

3. Construction Standards

Subject	**A. Construction Standard Revision**
Meeting	Mar 6, 2019 - Development Review Committee
Category	3. Construction Standards
Access	Public
Type	Action, Discussion

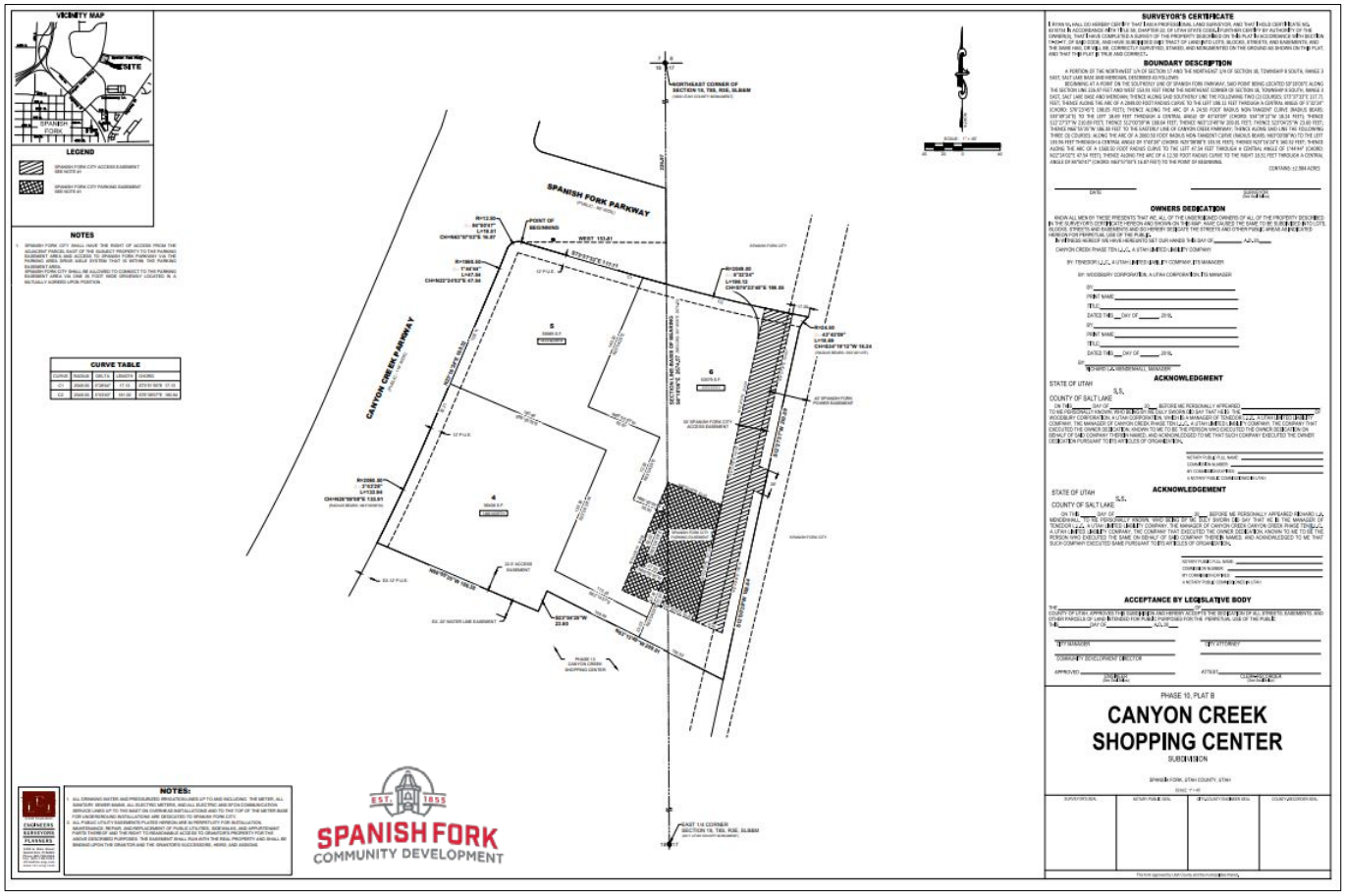
File Attachments
Memo for 4.39 Construction Standards.pdf (11,314 KB)

4. Other Business

Subject	**A. Other Business**
Meeting	Mar 6, 2019 - Development Review Committee
Category	4. Other Business
Access	Public
Type	Discussion

Cell Towers
Dean Vincent Driveway

5. Adjourn



Canyon Creek Phase 10 Plat B Amended Final Plat Approval Request

March 6, 2019, Development Review Committee.

Located at 1466 North Canyon Creek Parkway, including 2.98 acres.

The subject property is zoned C-2 and I-1.

The applicant has requested that a Final Plat for a three-lot plat be approved.

Key Issues

1. Requirements to deal with landfill.
2. Required site improvements.
3. Zoning.

Recommendation

Staff recommends that the proposed Final Plat be approved based on the following findings and subject to the following condition:

Findings

1. That the project is consistent with the approved Preliminary Plat.
2. That the proposed plat meets the City's Construction Standards.

Condition

1. The applicant meet all of the conditions imposed with the Preliminary Plat approval request.

Exhibits

1. Proposed Final Plat.
2. Site Photos.



LEGEND

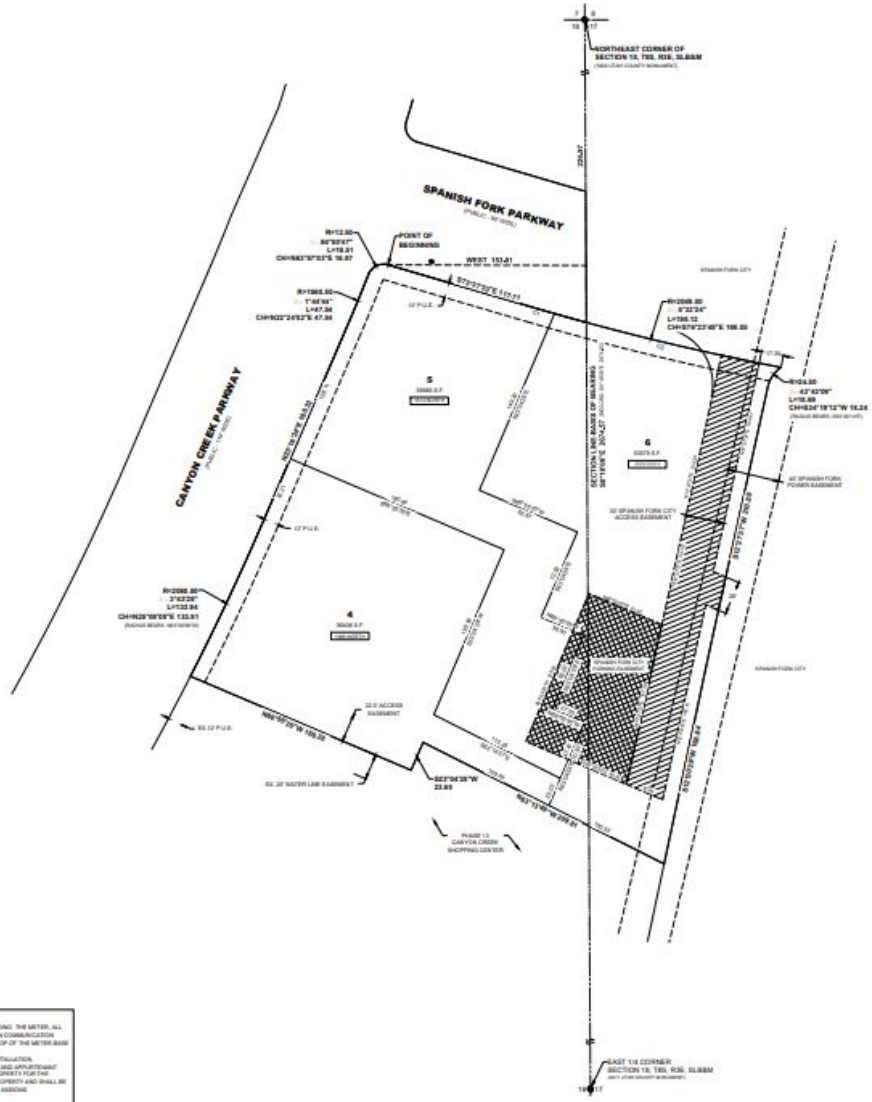
SPANISH FORK CITY ACCESS EASEMENT SEE NOTE #1

SPANISH FORK CITY PARKING EASEMENT SEE NOTE #1

NOTES

1. SPANISH FORK CITY SHALL HAVE THE RIGHT OF ACCESS FROM THE ADJACENT PARCEL EAST OF THE SUBJECT PROPERTY TO THE PARKING EASEMENT AREA AND ACCESS TO SPANISH FORK PARKWAY VIA THE PARKING AREA DRIVE AISLE SYSTEM THAT IS WITHIN THIS PARKING EASEMENT AREA.
SPANISH FORK CITY SHALL BE ALLOWED TO CONNECT TO THIS PARKING EASEMENT AREA VIA ONE 35 FOOT WIDE DRIVEWAY LOCATED IN A MUTUALLY AGREED UPON POSITION.

CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	2049.00	3°28'00"	77.15	S73°51'50"E 77.15
C2	2049.00	5°03'45"	181.00	S75°38'07"E 180.94





NOTES:

1. ALL DRINKING WATER AND PRESSURIZED IRRIGATION LINES UP TO AND INCLUDING THE METER, ALL SANITARY SEWER MAINS, ALL ELECTRIC METERS, AND ALL ELECTRIC AND OPEN COMMUNICATION SERVICE LINES UP TO THE POINT ON OVERHEAD INSTALLATIONS AND TO THE TOP OF THE METER BASE FOR UNDERGROUND INSTALLATIONS ARE DEDICATED TO SPANISH FORK CITY.
2. ALL PUBLIC UTILITY EASEMENTS PLATTED HEREON ARE IN PERPETUITY FOR INSTALLATION, MAINTENANCE, REPAIR, AND REPLACEMENT OF PUBLIC UTILITIES, SIDEWALKS, AND APPURTENANT PARTS THEREOF AND THE RIGHT TO REASONABLE ACCESS TO GRANTOR'S PROPERTY FOR THE ABOVE DESCRIBED PURPOSES. THIS EASEMENT SHALL RUN WITH THE REAL PROPERTY AND SHALL BE BINDING UPON THE GRANTOR AND THE GRANTOR'S SUCCESSORS, HEIRS, AND ASSIGNS.

ENGINEERS
SURVEYORS
PLANNERS

SURVEYOR'S CERTIFICATE

I, RYAN SLAVEN, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 8316754 IN ACCORDANCE WITH TITLE 58, CHAPTER 22, OF UTAH STATE CODE. I FURTHER CERTIFY BY AUTHORITY OF THE OWNERS, THAT I HAVE COMPLETED A SURVEY OF THE PROPERTY DESCRIBED ON THIS PLAT IN ACCORDANCE WITH SECTION 17-23-17 OF SAID CODE, AND HAVE SUBDIVIDED SAID TRACT OF LAND INTO LOTS, BLOCKS, STREETS, AND EASEMENTS, AND THE SAME HAS, OR WILL BE, CORRECTLY SURVEYED, STAKED, AND MONUMENTED ON THE GROUND AS SHOWN ON THIS PLAT, AND THAT THIS PLAT IS TRUE AND CORRECT.

BOUNDARY DESCRIPTION

A PORTION OF THE NORTHWEST 1/4 OF SECTION 17 AND THE NORTHEAST 1/4 OF SECTION 18, TOWNSHIP 8 SOUTH, RANGE 3 EAST, SALT LAKE BASE AND MERIDIAN, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERLY LINE OF SPANISH FORK PARKWAY, SAID POINT BEING LOCATED S0°18'05"E ALONG THE SECTION LINE 226.57 FEET AND WEST 153.61 FEET FROM THE NORTHEAST CORNER OF SECTION 18, TOWNSHIP 8 SOUTH, RANGE 3 EAST, SALT LAKE BASE AND MERIDIAN; THENCE ALONG SAID SOUTHERLY LINE THE FOLLOWING TWO (2) COURSES: S73°37'37"E 117.71 FEET; THENCE ALONG THE ARC OF A 2049.00 FOOT RADIUS CURVE TO THE LEFT 258.11 FEET THROUGH A CENTRAL ANGLE OF 5°23'24" (CHORD: S76°23'45"E 258.05 FEET); THENCE ALONG THE ARC OF A 24.00 FOOT RADIUS, NON-TANGENT CURVE (RADIUS BEARS: S59°39'24"E) TO THE LEFT 38.65 FEET THROUGH A CENTRAL ANGLE OF 46°04'09" (CHORD: S66°36'31"W 38.34 FEET); THENCE S13°27'33"W 230.69 FEET; THENCE S12°03'39"W 138.64 FEET; THENCE N67°13'48"W 200.81 FEET; THENCE S27°04'25"W 23.60 FEET; THENCE N64°55'35"W 186.39 FEET TO THE EASTERLY LINE OF CANYON CREEK PARKWAY; THENCE ALONG SAID LINE THE FOLLOWING THREE (3) COURSES: ALONG THE ARC OF A 2800.50 FOOT RADIUS NON-TANGENT CURVE (RADIUS BEARS: N63°00'08"W) TO THE LEFT 319.96 FEET THROUGH A CENTRAL ANGLE OF 5°51'35" (CHORD: N32°56'05"E 319.78 FEET); THENCE N29°51'24"E 360.52 FEET; THENCE ALONG THE ARC OF A 1546.50 FOOT RADIUS CURVE TO THE LEFT 47.54 FEET THROUGH A CENTRAL ANGLE OF 1°45'44" (CHORD: N30°43'57"E 47.54 FEET); THENCE ALONG THE ARC OF A 12.00 FOOT RADIUS CURVE TO THE RIGHT 18.51 FEET THROUGH A CENTRAL ANGLE OF 88°24'07" (CHORD: N63°57'55"E 16.67 FEET) TO THE POINT OF BEGINNING.

CONTAINS: ±2.584 ACRES

DATE

SURVEYOR (See Seal Below)

OWNERS DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT WE, ALL OF THE UNDERSIGNED OWNERS OF ALL OF THE PROPERTY DESCRIBED IN THE SURVEYOR'S CERTIFICATE HEREON AND SHOWN ON THIS MAP, HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS, BLOCKS, STREETS AND EASEMENTS AND DO HEREBY DESIGNATE THE STREETS AND OTHER PUBLIC AREAS AS SHOWN HEREON FOR PERPETUAL USE OF THE PUBLIC.

IN WITNESS WHEREOF WE HAVE HEREUNTO SET OUR HANDS THIS DAY OF _____, A.D., 20__.

CANYON CREEK PHASE TEN LLC, A UTAH LIMITED LIABILITY COMPANY

BY: TENSOR I, LLC, A UTAH LIMITED LIABILITY COMPANY, ITS MANAGER

BY: WOODBURY CORPORATION, A UTAH CORPORATION, ITS MANAGER

BY: _____
PRINT NAME: _____
TITLE: _____
DATED THIS ___ DAY OF _____, 20__.

BY: _____
PRINT NAME: _____
TITLE: _____
DATED THIS ___ DAY OF _____, 20__.

BY: _____
RICHARD L. BRIDSMAN, MANAGER

ACKNOWLEDGMENT

STATE OF UTAH)
: S.S.
COUNTY OF SALT LAKE)

ON THE ___ DAY OF _____, 20__, BEFORE ME PERSONALLY APPEARED _____, TO ME PERSONALLY KNOWN, WHO BEING BY ME DULY SWORN (OR AFFIRMED) DID SAY THAT HE IS THE _____ OF WOODBURY CORPORATION, A UTAH CORPORATION, WHICH IS A MANAGER OF TENSOR I, LLC, A UTAH LIMITED LIABILITY COMPANY, THE MANAGER OF CANYON CREEK PHASE TEN, LLC, A UTAH LIMITED LIABILITY COMPANY, THE COMPANY THAT EXECUTED THE OWNER DEDICATION, KNOWN TO ME TO BE THE PERSON WHO EXECUTED THE OWNER DEDICATION ON BEHALF OF SAID COMPANY THEREIN NAMED, AND ACKNOWLEDGED TO ME THAT SUCH COMPANY EXECUTED THE OWNER DEDICATION PURSUANT TO ITS ARTICLES OF ORGANIZATION.

NOTARY PUBLIC (FULL NAME): _____
COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
A NOTARY PUBLIC COMMISSIONED IN UTAH

ACKNOWLEDGEMENT

STATE OF UTAH)
: S.S.
COUNTY OF SALT LAKE)

ON THE ___ DAY OF _____, 20__, BEFORE ME PERSONALLY APPEARED RICHARD L. BRIDSMAN, TO ME PERSONALLY KNOWN, WHO BEING BY ME DULY SWORN DID SAY THAT HE IS THE MANAGER OF TENSOR I, LLC, A UTAH LIMITED LIABILITY COMPANY, THE MANAGER OF CANYON CREEK CANYON CREEK PHASE TEN, LLC, A UTAH LIMITED LIABILITY COMPANY, THE COMPANY THAT EXECUTED THE OWNER DEDICATION, KNOWN TO ME TO BE THE PERSON WHO EXECUTED THE SAME ON BEHALF OF SAID COMPANY THEREIN NAMED, AND ACKNOWLEDGED TO ME THAT SUCH COMPANY EXECUTED SAME PURSUANT TO ITS ARTICLES OF ORGANIZATION.

NOTARY PUBLIC (FULL NAME): _____
COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
A NOTARY PUBLIC COMMISSIONED IN UTAH

ACCEPTANCE BY LEGISLATIVE BODY

THE _____ OF _____ COUNTY OF UTAH, APPROVES THIS SUBDIVISION AND HEREBY ACCEPTS THE DEDICATION OF ALL STREETS, EASEMENTS, AND OTHER PARCELS OF LAND INTENDED FOR PUBLIC PURPOSES FOR THE PERPETUAL USE OF THE PUBLIC THIS ___ DAY OF _____, A.D., 20__.

CITY MANAGER

CITY ATTORNEY

COMMUNITY DEVELOPMENT DIRECTOR

APPROVED (See Seal Below)

ATTEST: (See Seal Below)

PHASE 10, PLAT B

CANYON CREEK SHOPPING CENTER

SUBDIVISION

SPANISH FORK, UTAH COUNTY, UTAH

SCALE: 1" = 60'

SURVEYOR SEAL	NOTARY PUBLIC SEAL	CITY COUNTY ENGINEER SEAL	COUNTY RECORDER SEAL

Plat to be approved by Utah County and recorded in the records.

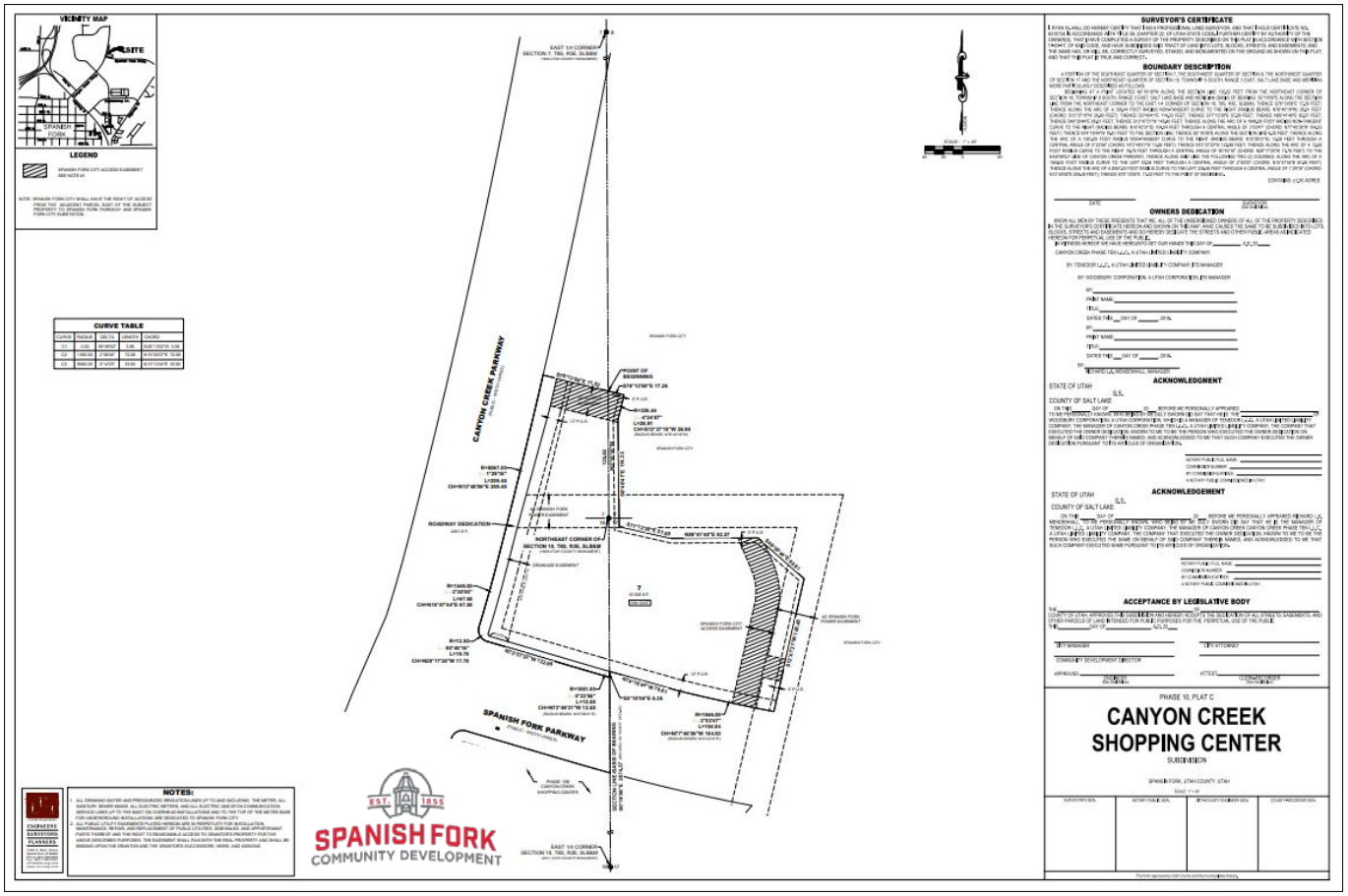









ULTA
maurices



Canyon Creek Phase 10 Plat C Final Plat Approval Request

March 6, 2019, Development Review Committee.

Located at 1100 East Spanish Fork Parkway, including 1.50 acres.

The subject property is zoned C-2 and P-F.

The applicant has requested that a Final Plat for a one-lot plat be approved.

Key Issues

1. Requirements to deal with landfill.
2. Required site improvements.
3. Zoning.
4. Inclusion of City property.

Recommendation

Staff recommends that the proposed Final Plat be approved based on the following findings and subject to the following condition:

Findings

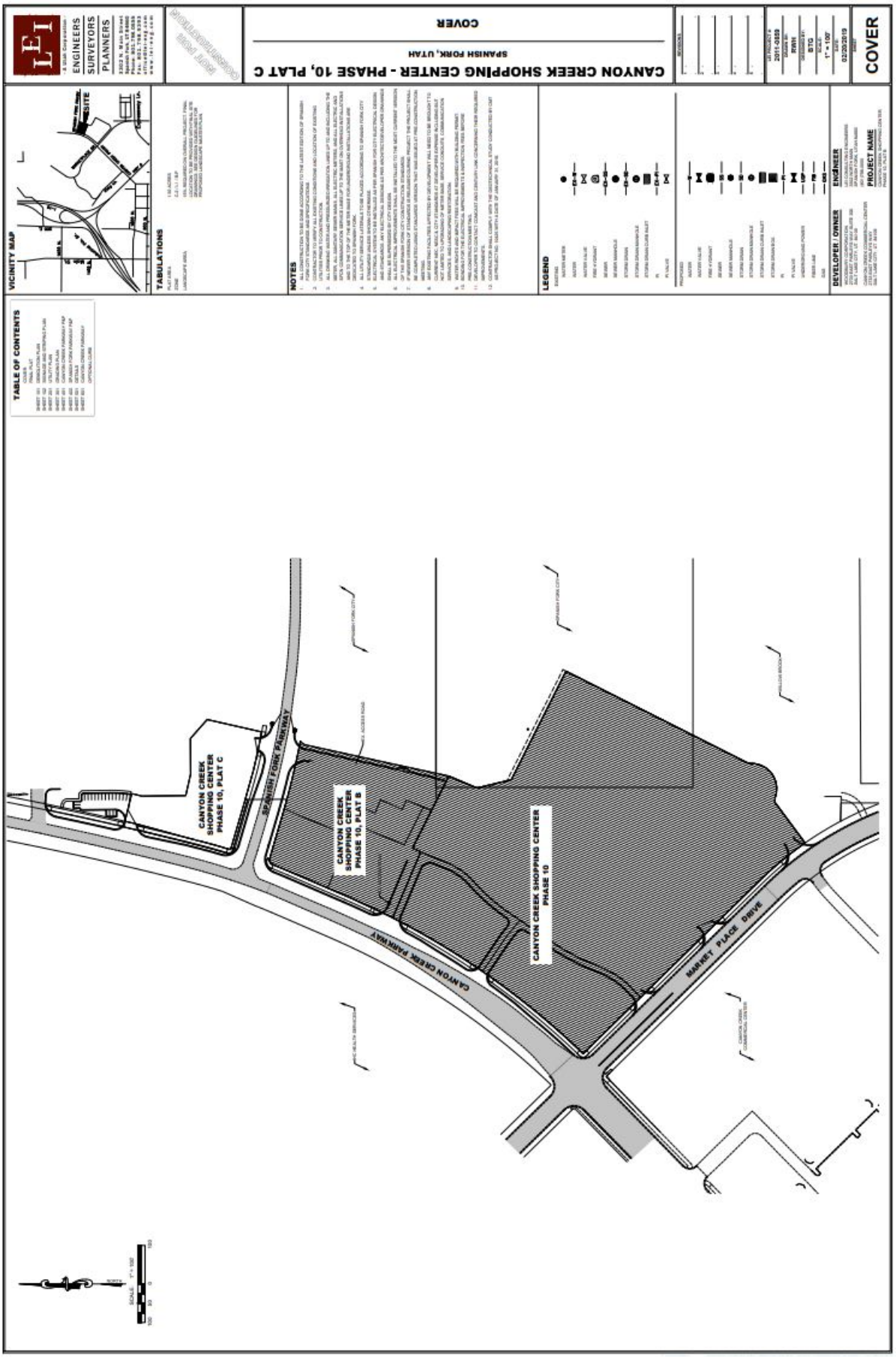
1. That the project is consistent with the approved Preliminary Plat.
2. That the proposed plat meets the City's Construction Standards.

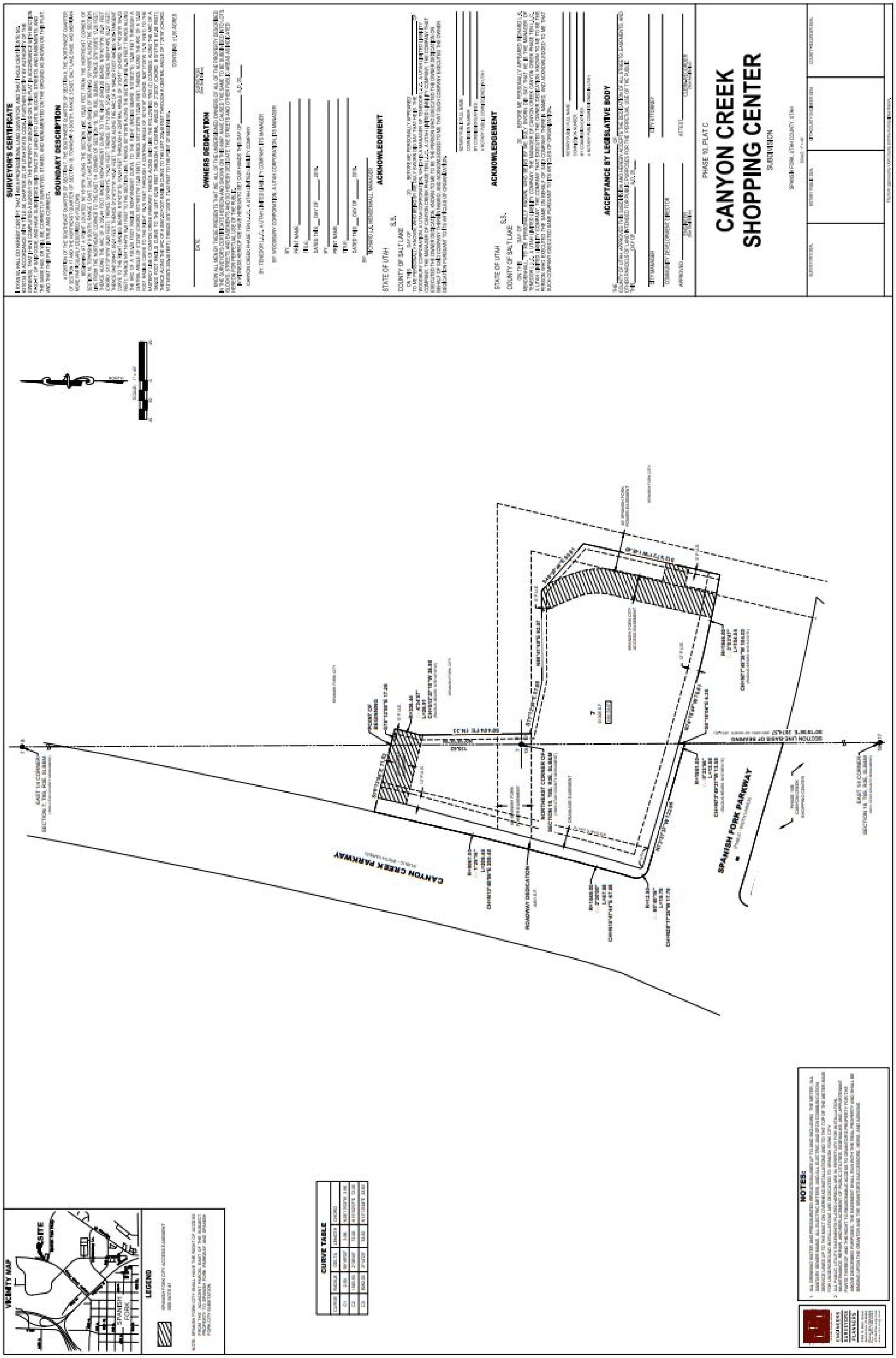
Condition

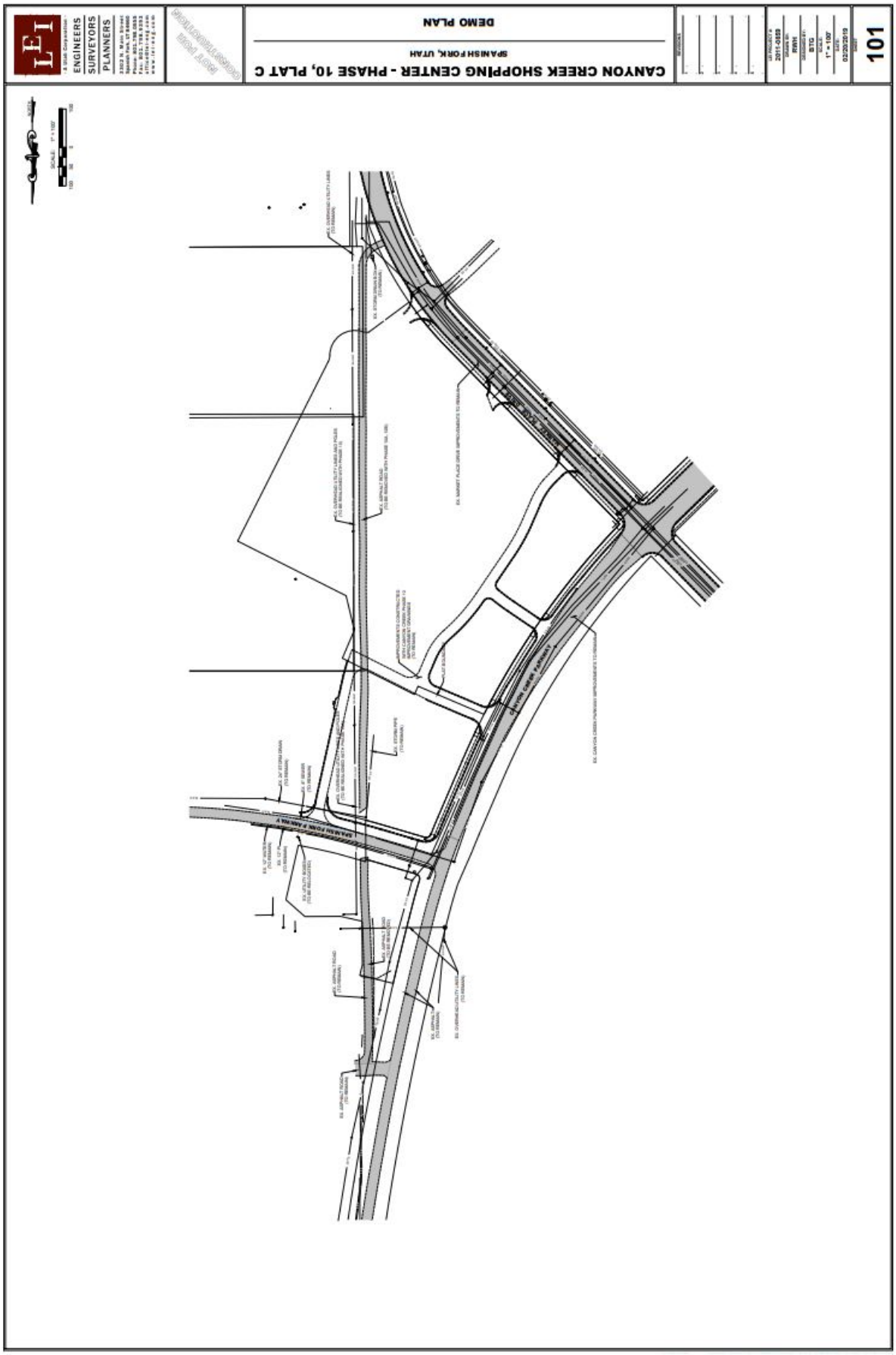
1. The applicant meet all of the conditions imposed with the Preliminary Plat approval request.

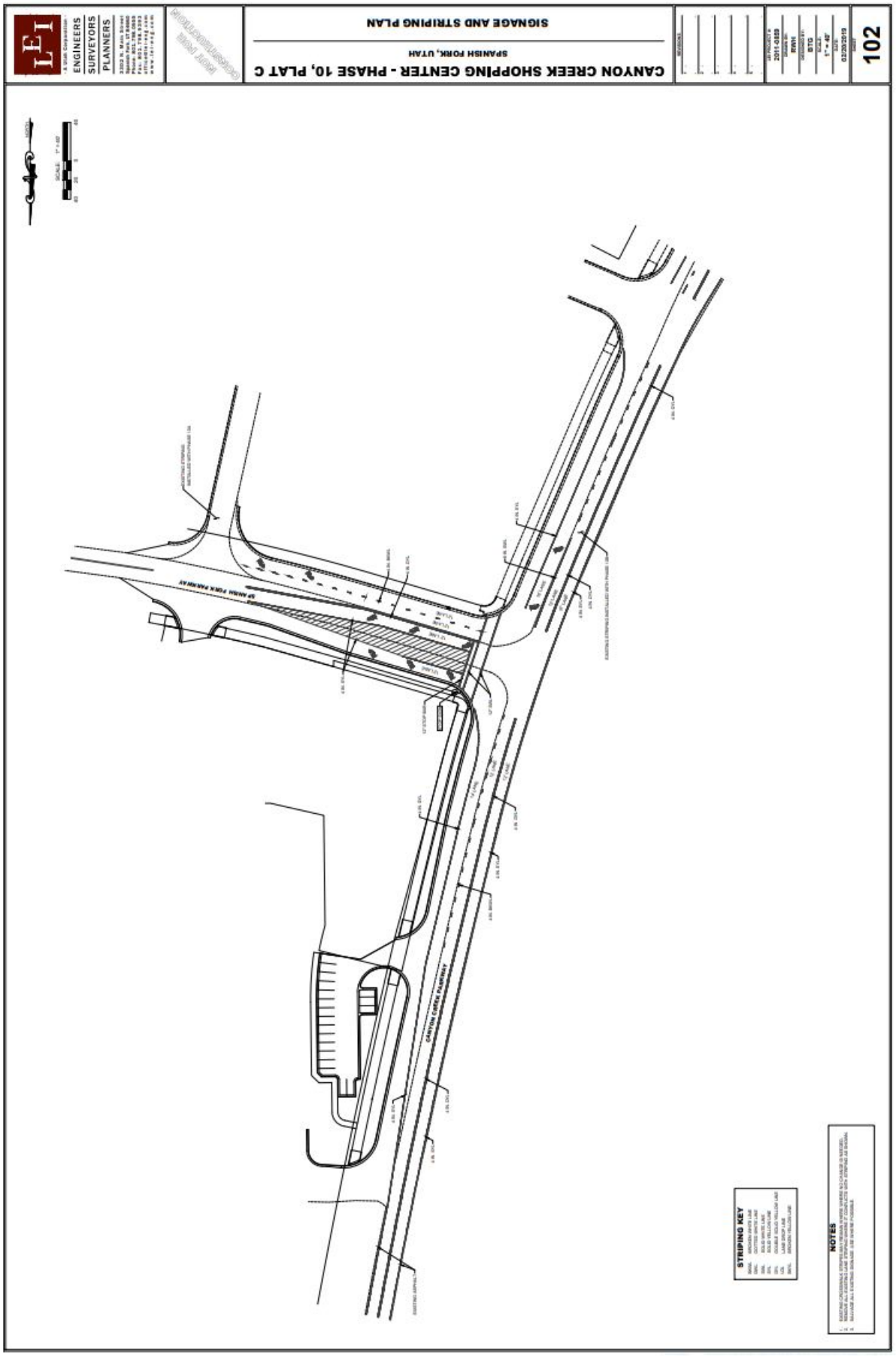
Exhibits

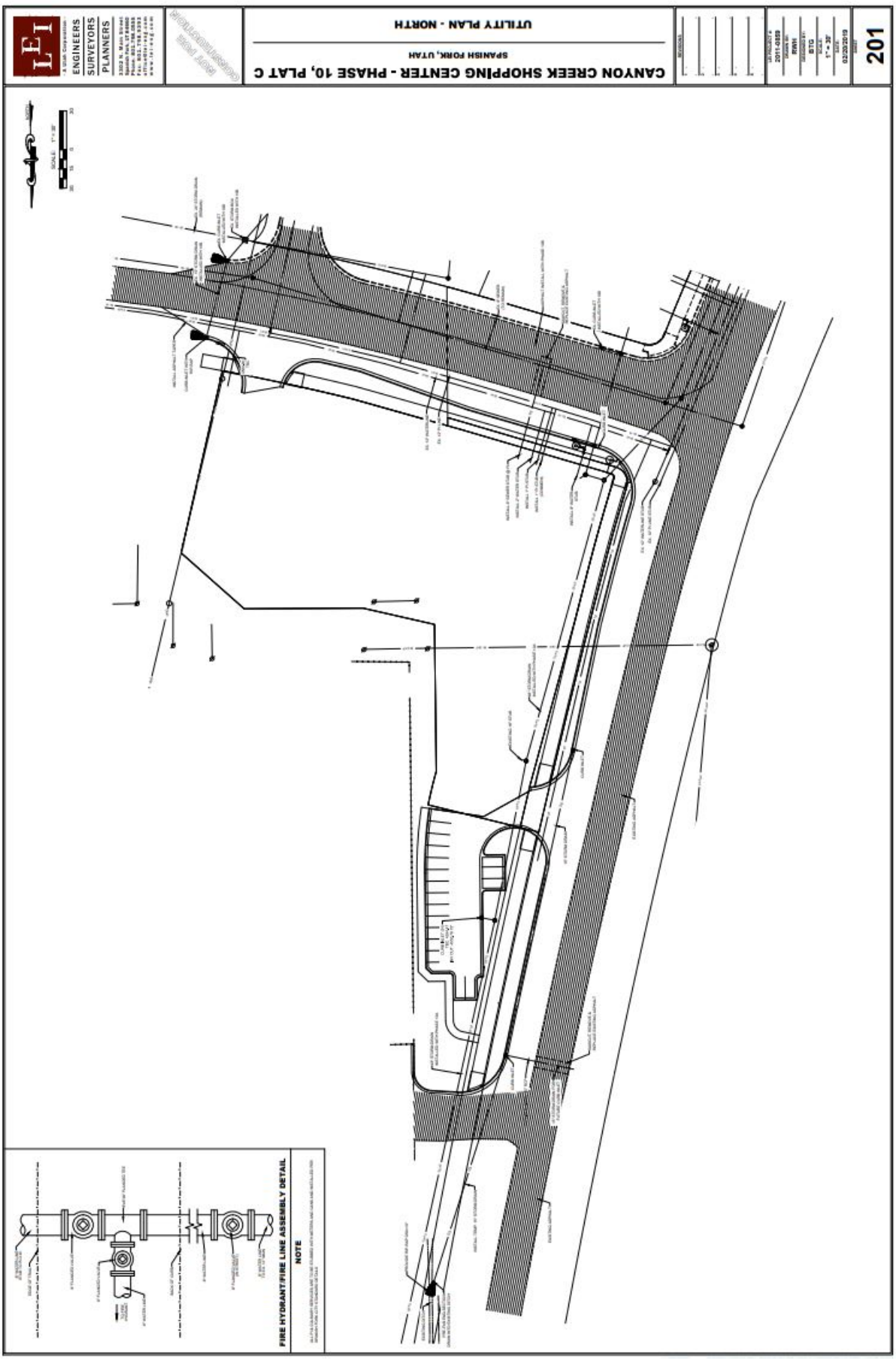
1. Proposed Final Plat.
2. Site Photos.

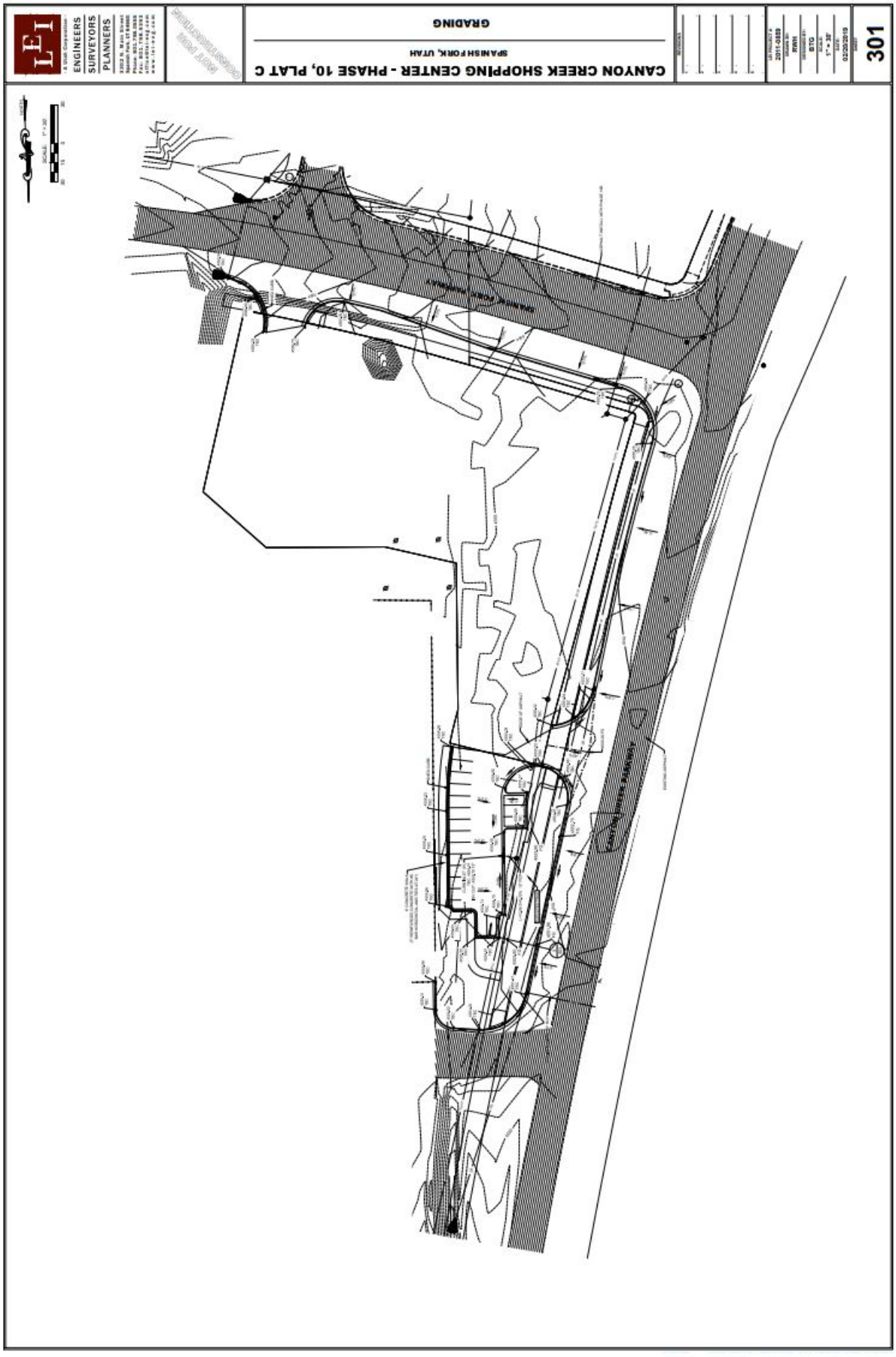

COVER
CANYON CREEK SHOPPING CENTER - PHASE 10, PLAT C
SPANISH FORK, UTAH
ENGINEERS
SURVEYORS
PLANNERS
PROJECT NAME
DEVELOPER / OWNER
ENGINEER
VICINITY MAP
TABULATIONS
NOTES
LEGEND
TABLE OF CONTENTS
CANYON CREEK SHOPPING CENTER PHASE 10, PLAT C
CANYON CREEK SHOPPING CENTER PHASE 10, PLAT B
CANYON CREEK SHOPPING CENTER PHASE 10
SPANISH FORK PARKWAY
CANYON CREEK PARKWAY
MARKET PLACE DRIVE


SURVEYOR'S CERTIFICATE
BOUNDARY DESCRIPTION
OWNERS DEDICATION
ACKNOWLEDGEMENT
STATE OF UTAH
COUNTY OF SALT LAKE
ACKNOWLEDGEMENT
ACCEPTANCE BY LEGISLATIVE BODY
PHASE 10, PLAT C
CANYON CREEK
SHOPPING CENTER
SUBDIVISION
CANYON CREEK PARKWAY
SPANISH FORK PARKWAY
ROADWAY DEDICATION
POINT OF BEGINNING
VICINITY MAP
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LEGEND
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ENGINEERS
SURVEYORS
PLANNERS


CANYON CREEK SHOPPING CENTER - PHASE 10, PLAT C
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SURVEYORS
PLANNERS


CANYON CREEK SHOPPING CENTER - PHASE 10, PLAT C
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SIGNAGE AND STRIPING PLAN
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CANYON CREEK PARKWAY


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UTILITY PLAN - NORTH
201
ENGINEERS
SURVEYORS
PLANNERS
FIRE HYDRANT/FIRE LINE ASSEMBLY DETAIL
NOTE


LEI
ENGINEERS
SURVEYORS
PLANNERS
CANYON CREEK SHOPPING CENTER - PHASE 10, PLAT C
SPANISH FORK, UTAH
GRADING
301













Legacy Farms Park Site Plan Approval Request

March 6, 2019, Development Review Committee.

Located at 970 North Spanish Fork Parkway.

The subject property is zoned R-1-12.

The applicant has requested that a Site Plan for a park be approved.

Key Issues

1. Utility Issues.
2. Parking.
3. Landscaping.

Recommendation

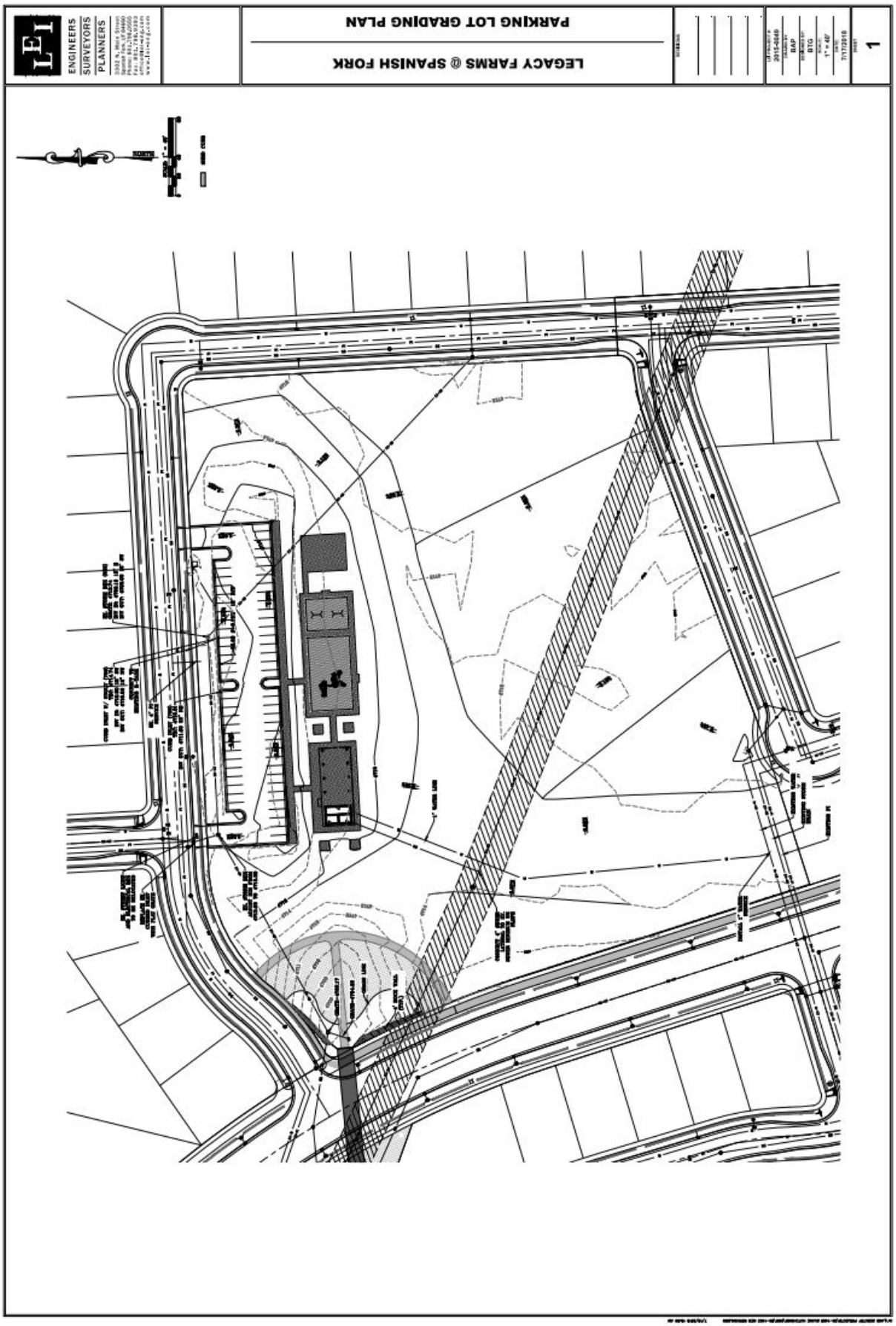
Staff recommends that the proposed Site Plan be approved based on the following finding:

Finding

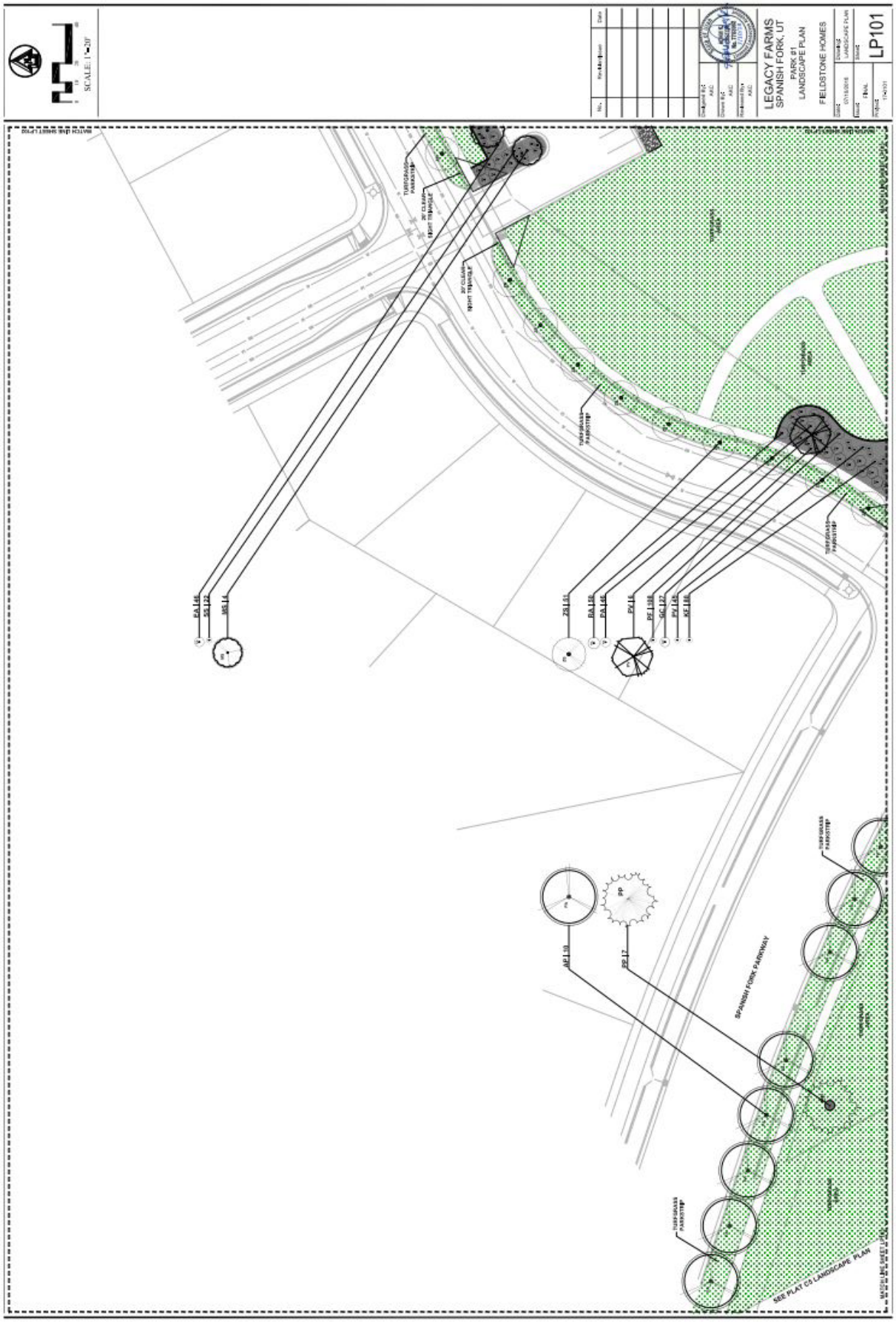
1. That the project conforms to the City's General Plan, Zoning Code, and Construction Standards.

Exhibits

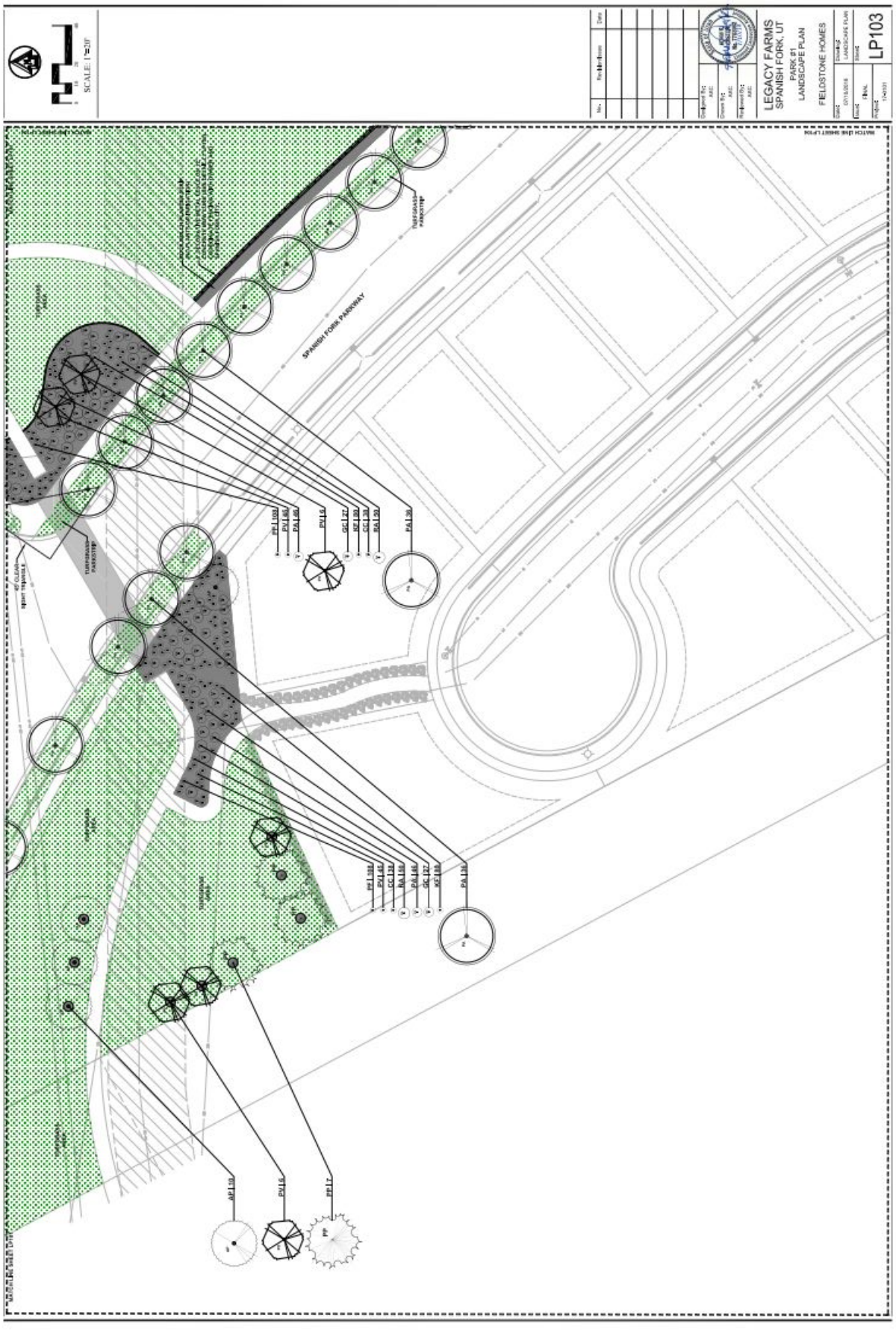
1. Proposed Site Plan.
2. Proposed Landscaping Plan.
3. Site Photos.


LEI
ENGINEERS
SURVEYORS
PLANNERS
LEGACY FARMS @ SPANISH FORK
PARKING LOT GRADING PLAN
1

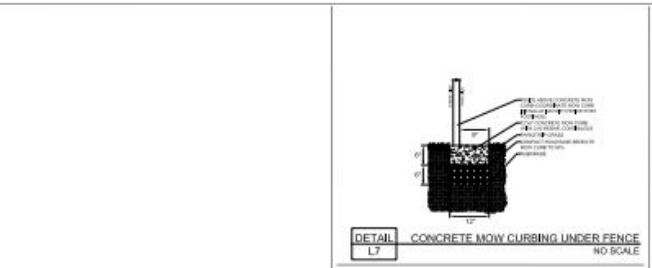

SCALE: 1"=40'
LEGACY FARMS
SPANISH FORK, UT
PARK #1
LANDSCAPE PLAN
FIELDSTONE HOMES
LP100
SHEET LP101
SHEET LP102
SHEET LP103
SHEET LP104


LEGACY FARMS
SPANISH FORK, UT
PARK #1
LANDSCAPE PLAN
FIELDSTONE HOMES
LP101
SCALE: 1"=20'
SPANISH FORK PARKWAY
SEE PLAT C5 LANDSCAPE PLAN

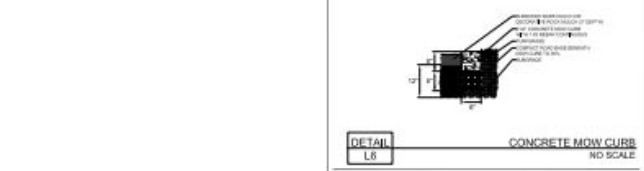

SCALE: 1"=20'
LEGACY FARMS
SPANISH FORK, UT
PARK #1
LANDSCAPE PLAN
FIELDSTONE HOMES
LP102


SCALE: 1"=20'
LEGACY FARMS
SPANISH FORK, UT
PARK #1
LANDSCAPE PLAN
FIELDSTONE HOMES
LP103
SPANISH FORK PARKWAY

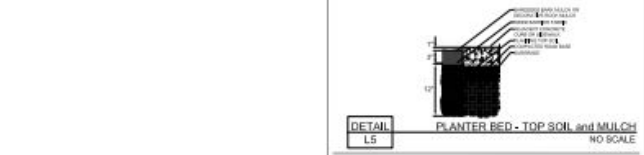

SCALE: 1"=20'
LEGACY FARMS
SPANISH FORK, UT
PARK #1
LANDSCAPE PLAN
FELDSTONE HOMES
LP104
SPANISH FORK PARKWAY



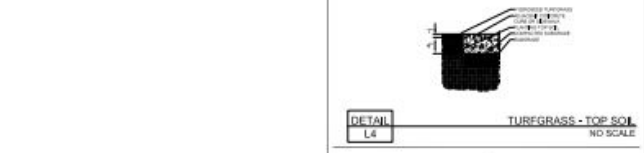
DETAIL L7 — CONCRETE MOW CURBING UNDER FENCE
NO SCALE



DETAIL L6 — CONCRETE MOW CURB
NO SCALE



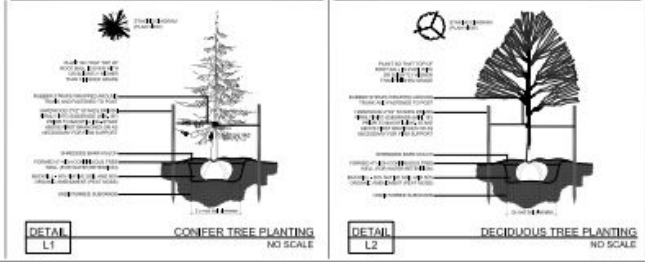
DETAIL L5 — PLANTER BED - TOP SOIL and MULCH
NO SCALE



DETAIL L4 — TURFGRASS - TOP SOIL
NO SCALE



DETAIL L3 — SHRUB PLANTING
NO SCALE



DETAIL L1 — CONIFER TREE PLANTING
NO SCALE

DETAIL L2 — DECIDUOUS TREE PLANTING
NO SCALE

PLANT MATERIALS SCHEDULE

SCIENTIFIC NAME	COMMON NAME	SIZE	QTY.
TREES			
AP Acer platanoides 'Emerald Queen'	Norway Maple	2" cal.	10
CD Cercis canadensis 'Forest Pansy'	Eastern Redbud	2" cal.	6
MS Malus 'Spring Snow'	Flowering Crabapple	2" cal.	4
PP Picea pungens	Colorado Blue Spruce	6'-7'	7
PA Platanus x acerifolia 'Bloodgood'	London Plane Tree	2" cal.	36
PV Prunus virginiana 'Canada Red Select'	Chokecherry (Multi-Stem)	2" cal.	6
ZS Zelkova serrata 'Musashino'	Zelkova	2" cal.	51
		Total:	128
SHRUBS			
CC Caryopteris clandonensis 'Dark Knight'	Blue Mist Spirea	#5	38
EA Euonymus alatus compacta	Burning Bush	#5	46
PA Pennisetum alopecuroides 'Helin Spire'	Russian Sage	#5	46
PF Potentilla fruticosa 'Jackman'	Shrubby Cinquefoil	#5	108
RA Rhus aromatica 'Gro Low'	Fragrant Sumac	#5	50
SC Xylosma congestum	Shiny Xylosma	#5	27
		Total:	315
GRASSES			
AF Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass	#1	80
PV Panicum virgatum 'Shenandoah'	Switch Grass	#1	45
SS Schizachyrium scoparium	Little Bluestem	#1	39
		Total:	164

LANDSCAPE MATERIALS LEGEND

Hydroseed Grass Areas (345,932.0 sq. ft.)
Hydroseed grass areas shall be watered-in Kentucky blue grass seed mix by Granite Seed, applied to a prepared base of four inches (4") of screened and compacted top soil, once irrigation and finish grading has been completed. Apply hydroseed mix according to manufacturer's specifications, rate. All trees within hydroseed grass areas shall be planted within a five foot (5') diameter tree ring covered with same mulch as planter areas (see Tree Planting note 13).

Planter Areas (12,759.9 sq. ft.)
Planter areas are to be constructed with twelve inches (12") of screened top soil in an elevation four inches (4") below adjacent sidewalks, driveways or curb heights, and covered with a minimum of four inches (4") of chocolate brown shredded bark mulch. Prior to plant installation and application of mulch, Dimitri Pro5 weed barrier shall be applied on top of finish grade top soil, according to manufacturer's specifications. Install same bark in tree rings within turfgrass areas. (See Tree Planting note 13).

Decorative Rock Areas (2,344.0 sq. ft.)
Decorative rock areas shall be constructed with twelve inches (12") of screened, steep loam top soil installed on top of sub-grade material. Decorative rock areas shall be finished with a City-approved rock mulch to match existing. Prior to installation of decorative rock, it is recommended that Dimitri Pro5 weed barrier be applied to the planter beds.

Playground and Swings Areas - 6,023.0 sq. ft.
Playground and Swings areas shall be constructed to equipment manufacturer's specifications including, but not limited to play surface materials, ground surface materials, fall protection, accessibility requirements, and other space requirements. Playground and Swings areas shall also comply with Angel Lands Spanish Fork City requirements and all applicable safety codes. Manufacturer make and model numbers for playground equipment and swings shall be provided by Spanish Fork City.

Horizontal Concrete Paving - 11,759.0 sq. ft.
Horizontal concrete paving shall include the pedestrian sidewalks, bench seating pads, picnic table pads, basketball pad, and covered pavilion pad. Horizontal concrete paving shall be constructed to Spanish Fork City's construction standards and details.

Concrete Mow Curb - 855.0 lin. ft.
Concrete mow curbs shall be board-formed, six inch by six inch (6"x6") reinforced concrete, with rounded edges and a light broom finish. See detail L6 on this sheet. For curbing under fence, concrete mow curbing shall be board-formed, twelve inch by six inch (12"x6") reinforced concrete, with rounded edges and a light broom finish. See detail L7 on this sheet.

TREE PLANTING NOTES:

1. All deciduous trees shown on this Landscape Plan shall be a minimum of two inch caliper (2" cal.) ball and burlapped nursery stock, or as otherwise specified.
2. All conifer trees shown on this Landscape Plan shall be a minimum of six feet (6') in height balled and burlapped nursery stock, or as otherwise specified.
3. Balled and burlapped trees showing obvious signs of damage to the root ball and/or trunk shall not be acceptable.
4. Tree holes shall be dug two times (2x) the diameter of the root ball and only as deep as the root ball.
5. Tree root ball shall be at least twelve (12") inches in diameter per each one (1") inch of tree caliper and at least eighteen (18") inches deep. Root ball shall be wrapped tightly with no loose parts.
6. Tree should be set in the center of the hole and stood upright. The root flare should be visible and located at, or slightly above, finished ground level. The root flare should never be below finished ground level.
7. Trees shall only be lifted by the wire basket. Never lift trees by grasping trunk or limbs, or by attaching any type of sling or chokes.
8. Do not remove the wire basket from balled and burlapped trees during planting. Bend the top wire loops down into hole after cutting twine or rope from around the tree trunk.
9. Cut and remove the top third of the burlap after hole has been backfilled two thirds of its depth.
10. Remove all strings, rope, sticks, twine, tags, flagging, and any other non-items.
11. Backfill hole with excavated material and compact only enough to hold tree in place. Never use mechanical compaction. Top soil or soil pop may be added to excavated material if high quantities of clay soils are present, but shall not replace excavated material. Backfill material should cover root flare slightly, but should not be piled against trunk.
12. Water generously to soak entire root ball and backfill material. A soil water ring should be formed at the edge of the root ball. Backfill material may need to be added as soil settles below root flare.
13. Trees within lawn areas shall be planted within a five foot (5') diameter tree ring, mulch to a depth of three to four inches (3"-4") deep. Do not pile excessive mulch or decorative rock around tree trunks.

SHRUB and GRASS PLANTING NOTES:

1. All shrubs shown on this Landscape Plan shall be five gallon (5 gal.) container-boxed nursery stock.
2. All grasses and perennials shown on this Landscape Plan shall be one gallon (1 gal.) container-boxed nursery stock.
3. Hole should be dug at least two times (2x) the diameter of the root ball and only as deep as the root ball.
4. Gently remove plant from the container. Lightly rub all sides of the root ball to expose ends of roots, and place in the center of the hole. The top of the root ball should be at finished ground level.
5. Backfill the hole with excavated material. Top soil or soil pop may be added to excavated material if high quantities of clay soils are present, but shall not replace excavated material.
6. Compact soil enough to hold plant in place. Never use mechanical compaction.
7. Generously water to soak entire root ball and backfill. A soil water ring should be formed around the outside of the root ball. Backfill material may need to be added after material has settled.
8. Mulch shall be added to a depth of three (3") to four (4") inches and at least twice the width of the root ball.
9. For weed barrier cut a hole for the plant at least one and a half times (1 1/2X) times the diameter of the root ball to allow room for the plant to expand and grow naturally.

SCALE: 1"=20'

No.	Revision/Issue	Date

Designed By: AKC
Drawn By: AKC
Reviewed By: AKC

LEGACY FARMS
SPANISH FORK, UT
PARK #1
LANDSCAPE PLAN

FIELDSTONE HOMES

Date: 07/18/2018
Issue: FINAL
Project: 17-0101
Drawing: SCHEDULE & DETAILS
Sheet: LP105









Memo

To: Mayor and City Council

From: Chris Thompson P.E., Public Works Director/City Engineer

Date: [date anticipated to go to city council]

Re: Ordinance XX-XX Construction Standards Revision

Staff Report

RECOMMENDED ACTION

Approve Ordinance XX-XX to revised the construction standards.

BACKGROUND

Notable Changes

- There have been a wide variety of concrete wall designs and colors installed by developers throughout the City. Many of which have not been the most aesthetically pleasing and difficult to re-stain when needed. The City has reviewed dozens of concrete walls throughout town and Utah County to select wall designs and stains that are visually appealing while being readily available from local manufacturers. The developer shall install the walls and stain them as per this section.

- To obtain an excavation permit, contractors are required to submit a minimum $2,000 cash performance deposit. This deposit will be required in place of a license and permit bond of $10,000.00. A copy of their active Division of Occupational and Professional Licensing Contractors license (must be an E100, S410 or S390) and $1,000.00 cash inspection and testing deposit will also be required.

- Removed mow space strip underneath concrete walls along collector/arterial streets.

- We incorporated the Storm Water Drainage Design Manual into the Construction Standards. We made several corrections and modifications to reflect changing EPA regulations.

- Removed multi-family sub/local street cross section, and updated the sub/local street.

- Flushing the storm drain system will require a storm water pollution prevention plan, including a UPDES permit, issued by the state of Utah.

Attached: proposed changes

ORDINANCE _____

ROLL CALL

VOTING		
STEVE LEIFSON Mayor (votes only in case of tie)		
BRANDON B. GORDON City Council Member		
MIKE MENDENHALL City Council Member		
KEIR A. SCOUBES City Council Member		
STACY BECK City Council Member		
CHAD ARGYLE City Council Member		

I MOVE this ordinance be adopted: _____
City Council member

I SECOND the foregoing motion: _____
City Council member

ORDINANCE _____

AN ORDINANCE AUTHORIZING AMENDMENTS TO THE CONSTRUCTION STANDARDS OF THE CITY

WHEREAS, Spanish Fork City has adopted construction standards as a part of its subdivision ordinance; and

WHEREAS, the purpose of the construction standards is to assure a high quality infrastructure product which is free of defects and which will provide a source of reliability for the residents of the City; and

WHEREAS, in order to meet the purposes of the standards, it is necessary, from time to time, to make amendments and improvements thereto; and

WHEREAS, the City has recently been required by the State and EPA to meet more stringent storm water discharge requirements; and

WHEREAS, the Public Works Department has proposed various changes to the Standards to meet the storm water discharge requirements, to meet the most recent standards proposed by the American Public Works Association, and for the betterment of the

residents of the City; and

WHEREAS, a public hearing was held before the Planning Commission on Wednesday the 4th day of February, 2015 whereat public comment was received; and

WHEREAS, a public hearing was held before the Spanish Fork City Council on Tuesday the 17th day of March, 2015 whereat additional public comment was received; and

WHEREAS, in order to protect the health, safety, and welfare of the residents of the City, it is necessary to make amendments to the construction and development standards of the City;

NOW THEREFORE, be it ordained and enacted by the Spanish Fork City Council as follows:

I.

The construction standards of Spanish Fork City, as incorporated by the subdivision ordinance, are hereby amended. A full copy of the standards are attached hereto as exhibit "A" and incorporated herein by this reference.

II.

This ordinance shall not be part of the Spanish Fork City Municipal Code.

III.

This ordinance shall become effective twenty days after passage and publication.

DATED this XXth day of Month, 20XX.

_____

STEVE LEIFSON, Mayor

Attest:

_____

Kent R. Clark, City Recorder

NOTICE OF A
PUBLIC HEARING

The Spanish Fork Planning Commission and City Council will review Amendments to City Standards Policy 39 on Wednesday, June 8, Tuesday, June 21, at approximately 6:00 p.m. The meeting will be held in the Council Chambers at 40 South Main Street in Spanish Fork. If you have any questions or comments concerning the Amendments, of if you are unable to attend the meeting, please contact the Community Development Department, at 801.804.4580 and your written comments will be forwarded to the Planning Commission and City Council.

Published in the Daily Herald
May 28, 2018

40 South Main Street
Spanish Fork City, Utah 84660
(801) 804-4550

CONSTRUCTION STANDARDS

POLICY 4.39. CONSTRUCTION STANDARDS

4.39.20.015. Specialized Engineering

Hillside Geotechnical Engineering. Any development or land disturbance of any kind that meet requirements in Title 15.4.16.170.C shall ~~have resulting in grading, excavation, filling or erecting of any structure on or within close proximity to any slope or hillside with a slope between ten percent (10%) and thirty percent (30%) shall~~ be required to submit a site specific geotechnical report including a slope stability analysis. Close proximity to a steep slope shall be defined as the horizontal distance from the slope which is less than or equal to the vertical distance from the crest of the slope to the toe of the slope. The geotechnical report shall include sufficient subsurface exploration, laboratory testing and geotechnical engineering analysis to render design level geotechnical recommendations and opinions regarding slope stability and required mitigation to protect planned or future development above and below the slope(s) from earth deformations and other adverse soil or geologic conditions.

All work completed in connection with the site specific geotechnical report shall be performed by an experienced geotechnical engineering firm and under the direct supervision and direction of a professional geotechnical engineer properly licensed in the state of Utah.

The scope of work described below and in Title 15.4.16.170.D is considered the minimum requirement for the geotechnical investigation. The geotechnical firm (Consultant) shall use their experience and engineering judgment in conjunction with the minimum requirements outlined below to develop an appropriate site-specific geotechnical scope of work and report.

4.39.10.020. Definitions.

~~Add discription for Storm Water Discharge Permit~~

Storm Water Discharge. A Utah Pollutant Discharge Elimination System (UPDES) Storm Water permit may be required before any ground disturbance or construction activities. The purpose of the permit is to prevent storm water runoff from washing pollutants into local surface waters such as streams, rivers, or lakes.

4.39.20.010. General

Temporary Controls. Temporary controls such as noise, dust, mud, surface water, ground water, pollution and erosion controls shall be made. Controls shall meet the requirements and specifications of APWA 01 57 00 (Temporary Controls). ~~The pumping of groundwater across sidewalks, into gutters or into the sanitary sewer system is prohibited. Ground Water pumped into any storm drain system will require a storm water discharge permit.. Ground water pumped into a natural stream or drainage will require a ground water discharge permit.(talk to James Darling about exact language)~~ Pumping groundwater into the sanitary sewer system in prohibited. Ground water and/or surface water must be kept on the construction site. If either leave the site by any manner, additional temporary controls must be implemented to protect the storm water drain system. A Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) may also be required. See Spanish Fork City SWPPP Requirements on the public website for more information.

4.39.20.030. Street Improvements

Precast Concrete or Block Walls. Masonry walls, six feet tall, shall be provided along the sides of residential developments which have reverse or side frontage to arterial streets, collector streets, interstates or railroads. If a lot has frontage on a minor collector street, a 3' masonry wall is required. ~~The walls will be of decorative block, brick, or similar materials together with design elements such as columns, capping, inlays, and variations in materials.~~

The general appearance, style, and color of the wall shall be in accordance with the pictures below. The developer or contractor may propose a different wall material, style, or color, but ~~but it must be another material, style, or color~~ ~~The material, style, and color of the wall~~ must be reviewed and approved by the development review committee ~~City Engineer or his/her designee~~. ~~The general appearance, style, and color of the wall shall be in accordance with the pictures below.~~

The wall shall be stained on both sides with a base coat and at least 3 other colors ~~or if wall to be block then it needs to be graffiti proofed~~. The wall shall be constructed according to a design stamped by a licensed professional civil engineer and City construction standards.

A. Base color shall be smokey beige from Sherwin Williams, or approved equivalent.

~~The design of all walls must be approved by the Development Review Committee. Design must be stamped and signed by a licensed professional civil engineer registered in the state of Utah.~~



Manufacturer: Olympus Precast

Style: Durango



Manufacturer: Olympus Precast

Style: Durango



Manufacturer: Olympus Precast

Style: Ledge Stone



600 W Center Street (70 South - LDS Church), Spanish Fork

Manufacturer: Rhinorock

Style: Ledgestone

4.39.25.040. Electric

Street Light Base Inspection. The City must inspect all street light bases prior to concrete placement and before they are backfilled around.

4.39.25.080. Sanitary Sewer

Video Inspection. Contractor shall clean and ~~then have the City~~ video inspect all sanitary sewer main lines prior to paving. The City must approve the video inspection company. The video inspection company must use NASSCO PACP standards.

Cleaning shall be done using a high pressure jet cleaning machine, producing a minimum of 800 psi. Waste water and debris shall not be permitted to enter the City sanitary sewer system, but shall be removed at the lowest manhole of the extension.

~~Video Inspection shall be done by Spanish Fork City. All costs associated with the video inspection shall be added into the inspection fee.~~

Main line determined to be defective by the City Engineer or his/her designee shall be remedied by the Contractor. Contractor shall then clean and video inspect the main lines again.

4.39.25.100. Streets

Asphalt Paving Limitations. Pave according to Section 02741 Part 3.8 of the 2012 Standard Specifications for Road and Bridge Construction published by the Utah Department of Transportation (UDOT) unless otherwise approved by the City Engineer or his/her designee. Place HMA between April 15th and October 15th, and when the air temperature in the shade and the roadway surface temperature are above 50 degrees Fahrenheit. In the event the City Engineer approves paving between October 15th and April 15th, an overlay in the spring will be required as outlined in the table below. Do not place HMA on frozen base or during adverse climatic conditions such as precipitation or when roadway surface is icy or wet. Use a release agent that does not dissolve asphalt and is acceptable to the City Engineer or his/her designee for all equipment and hand tools used to mix, haul, and place the HMA. ~~Place HMA between April 15 and October 15, and when the air temperature in the shade and the roadway surface temperature are above 50 degrees Fahrenheit.~~

Pavement Depth After October 15TH / Before April 15TH

Street	Typical	Base Asphalt	Spring Overlay	Total Asphalt
Local	3”	2.5”	2”	4.5”
Collector	4”	3”	2”	5”
Arterial	5”	4”	2”	6”

Parking lot & Driveway	3”	2.5”	2”	4.5”
Commercial Local	4”	3”	2”	5”

The City Engineer may, at his/her discretion, waive this date restriction requirement if outside temperatures are at least 60˚F and the base material condition is approved. ~~Do not place HMA on frozen base or during adverse climatic conditions such as precipitation or when roadway surface is icy or wet. Use a release agent that does not dissolve asphalt and is acceptable to the City Engineer or his/her designee for all equipment and hand tools used to mix, haul, and place the HMA. Place HMA between April 15 and October 15, and when the air temperature in the shade and the roadway surface temperature are above 50 degrees Fahrenheit.~~

4.39.35.050. Slopes, Embankments, Fills and Open Channels

~~Erosion and~~ Sediment~~ation~~ and Erosion Control. A sediment and erosion control plan shall be implemented and followed. It must accurately describe the potential for soil erosion and sedimentation problems resulting from land disturbing activity and shall explain and illustrate the measures that are to be taken to control these problems. The length and complexity of the plan is to be commensurate with the size of the project, severity of the site condition, and potential for off-site damage. The plan ~~Erosion and sedimentation control~~ shall meet the requirements and specifications of Spanish Fork City municipal code, Title 13.60.060 and APWA 31 25 00 (Erosion and Sedimentation Control).

4.39.35.060. Installation and Compaction of Earth Materials

Soft and Yielding Spots. Any soft and yielding spots in the fill or subgrade which do not compact to the specified density shall be removed and

replaced with engineered fill installed and compacted to City standards or as directed by a Geotechnical Engineer.

4.39.40.020. Installation

Connections to Existing Drinking Water Lines. The Contractor will be responsible to verify actual size, type of material and location of existing utilities in the field. The fittings and materials required for construction must be approved by the City Engineer or his/her designee.

Where fitting sizes, such as tees and crosses, are shown on the plans, those sizes will be used. However, no attempt has been made to show all needed fittings or materials.

Tapping tees may only be installed when authorized by the City Engineer or his/her designee and when the existing main is at least one size larger than the proposed intersecting line.

4.39.40.070. Flushing

Velocity. The Contractor shall install a tap sufficient in size to provide for 2½ foot per second flushing velocity in the line. The following is the flow quantity required to provide a 2½ foot per second flushing velocity.

Flow Requirements for Flushing

Pipe Diameter in Inches	Flow in Gallons per Minute
4 inch	100
6 inch	220
8 inch	390
10 inch	610
12 inch	880

16 inch	1,567
18 inch	1,980
20 inch	2,450
24 inch	3,525
30 inch	5,507

Flushing the storm drain system will require a storm water pollution prevention plan~~discharge~~, including a UPDES permit, ~~i~~issued by the state of Utah.~~storm drain division~~. All chlorine residue must be removed before water can be ~~i~~introduced to the storm drain system.

4.39.30.030. Excavation Permits

Contractors. Contractors are required to submit the following information to obtain an excavation permit:

1. Copy of active Division of Occupational and Professional Licensing Contractors license (must be an E100, S410 or S390);
2. Certificate of Insurance
   a. Certificate of Insurance must have a 30 day cancellation notice and the following statement: "Spanish Fork City, and Spanish Fork Cities' elected officials, appointed officials, employees, agents, volunteers and UDOT are listed on policies as additional insured's."

3. ~~License and permit bond of $10,000.00;~~ Minimum $2,000 cash performance deposit. Additional deposit may be required depending on scope and magnitude of project as determined by the Public Works Director or his/her designee. The deposit will be maintained for a period of 12 months after the City inspects and accepts the work performed.

~~3.~~4. $1,000.00 cash inspection and testing deposit. Any unused portion of the deposit will be refunded after City inspects and accepts the work performed.

4.5. Detailed drawing of proposed work and traffic control ~~(4 copies)~~.

4.39.50.010. General

Specifications. Sanitary sewer facilities shall meet the requirements and specifications of APWA 33 31 00 (Sanitary Sewerage Systems). These specifications cover the installation of sanitary sewer lines. See Chapter 39.20 for improvement and design requirements, Chapter 39.25 for inspection and testing requirements, and Chapter 39.35 for earthwork and trench requirements. See standard drawings related to sanitary sewers.

Pipe. All sanitary sewer pipe 18 inches in diameter and larger shall be Corrugated Polypropylene ~~ADS Sanitite HP pipe~~ or approved equivalent unless otherwise approved by City Engineer or his/her designee. All other sanitary sewer pipe shall be constructed with polyvinyl chloride (PVC) pipe.

4.39.50.030. Services

A. General. All sanitary sewer services shall be connected to existing sanitary sewer mains by use of an Inline Y or approved equivalent Insert-a-Tee type connection, and shall be approved by the City Engineer. If connecting a sanitary sewer service into a manhole, it must be approved by the city engineer or their designee. Sewer services shall extend 14 feet beyond the back of sidewalk and plugged until connected to a building. The minimum cover of sewer laterals is at 3' 6" at the property line. One wastewater service lateral per unit unless otherwise authorized by the city engineer.

B. Clean-outs. There shall be no bend in a service line between the main line. A clean-out shall be installed on all service lines located at the

property line according to Standard drawings. Cleanouts shall be installed every 75 feet on all service lines.

Chapter 4.39.55 Storm, Land and Groundwater Drains

4.39.55.010 General

The design guidelines include the design standards and regulations and hydrologic and hydraulic computation methods reference for evaluating and designing storm drain and flood control facilities in Spanish Fork City.

4.39.55.015 Design Standards and Regulations.

A. Low Impact Development. The MS4 permit for Spanish Fork City requires that new development or redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale to manage rainfall on-site, and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to the 90th percentile rainfall event. Spanish Fork City has elected to change the 90th percentile rainfall event to the 25-year storm event with a duration and intensity that produces the largest storage requirement. The requirement includes the evaluation of a Low Impact Development (LID) approach which encourages the implementation of BMPs that infiltrate, evapotranspire or harvest and use storm water from the site to protect water quality (Small MS4 General Permit No. UTR090000). As Spanish Fork City continues to develop and redevelop, LID practices will need to be implemented to comply with State and Federal regulations.

LID is a comprehensive approach to micromanaging storm water where it is generated. The goal of LID is to develop a storm water management strategy where post-development hydrologic conditions mimic pre-development conditions through utilizing storm water features that

infiltrate and evapotranspirate in a cost-effective, flexible manner. It also involves protecting water quality by treating and filtering storm water near the source, before it infiltrates into the ground.

LID practices focus on preventing flooding, erosion, and pollution by utilizing natural processes to filter, treat, and allow storm water to infiltrate into the ground. It typically preserves, restores, and creates green infrastructure using soils and vegetation. By implementing LID principles and practices, water can be managed in a way that reduces negative environmental impacts often associated with developed areas and promotes the natural movement of water within the area.

LID strategies include several techniques to generate less runoff from developed land. LID practices are flexible, offering a wide variety of techniques to reduce runoff timing and volume. LID practices control storm water runoff at the lot level, using a series of integrated strategies that rely on natural processes.

LID principles:

1. preserve and recreate natural landscape features
2. minimize directly-connected impervious area
3. comprehensive, landscape-based approached to sustainable development
4. utilize natural hydrologic functions and processes
5. focus on prevention, rather than mitigation
6. emphasize simple, low-tech, low cost methods
7. manage storm water runoff as close to the source as possible
8. minimize disturbance
9. increase drainage flow paths

10. utilize onsite filtering and treatment methods

B. Potential LID Features and Practices. There are many practices that can be utilized when implementing LID principles. Some are listed below.

1. Xeriscape Swale/Grassy Swale - A swale landscaped with xeriscape plants or grass can be used to infiltrate storm water in place. Curb cuts along roads can be used to discharge storm water runoff generated in paved streets and parking lots into the swale.

2. Underground Storage Tanks – Underground storage can include R-tanks, Stormbrixx, StormTech systems, or other underground storage facilities that are designed to detain or retain storm water runoff and allow it to infiltrate into the ground. Underground storage facilities should have an overflow to a centralized storm drain system. Treatment should be included on any underground storage facility. See Section 4.78.12 for treatment criteria.

3. Rain Barrels – Some runoff can be captured in rain barrels and utilized for non-potable purposes. It is important to keep in mind that in Utah, only 2500 gallons per parcel of rain water runoff is allowed to be collected and stored onsite.

4. Roof Drains – Roof drains should be connected to grassy/xeriscape areas or underground facilities, such as infiltration trenches or dry wells. Infiltration trenches or dry wells consist of perforated manholes and pipe surrounded by gravel and a geotextile fabric. The purpose of the infiltration trench or dry well is to store water and allow it to percolate into the

ground. It is important that the roof runoff be treated prior to infiltrating into the ground.

5. Grass Filter Strips – Grass Filter Strips are low-angled vegetated slopes that drain away from the parking lot or roadway.

6. Bioretention – Bioretention includes the use of vegetation and soils to clean storm water runoff in an earthen basin lined with plants and mulch.

7. Permeable Pavement – Permeable pavement could include grass pavers, paving stones, porous asphalt, or pervious concrete. It can be used on parking stalls, overflow parking, driveways, walkways and plazas.

8. Soil Amendments – In areas where native soils have low infiltration rates, the native soils can be amended by mixing in organics or other materials to increase infiltration capacity. Soil amendments can also improve water quality, depending on the materials added. It is important that the soil is not compacted during construction.

9. Preserve Vegetation – The natural vegetation of an area to be developed should be preserved by reducing the total impervious area for a site by clustering buildings close together, reducing building footprints, reducing road widths, and other methods to preserve as much of the native vegetation as is feasible for a given site.

10. Storm water Planters – Storm water planters are boxes with drought resistant vegetation that are used to capture storm water runoff from roofs and other impervious surfaces. They function like bioretention on a small scale.

The concepts listed above do not represent all the approaches for implementing LID. Ultimately, the developer and their engineer are responsible to research the most effective methods for implementing LID practices on a development site. Additional resources to research, plan and design LID are listed below:

1. Utah Department of Environmental Quality - Division of Water Quality. (Sept 2018) Michael Baker International. https://drive.google.com/open?id=1WWYjB5rovR-eObziXTyJrF7EN3xQ7pi2

2. MacAdams, James. Green Infrastructure for Southwestern Neighborhoods. (Oct 2012) Watershed Management Group. EPA Website. https://www.epa.gov/green-infrastructure/green-infrastructure-design-and-implementation

3. Dorman, T., M. Frey, J. Wright, B. Wardynski, J. Smith, B. Tucker, J. Riverson, A. Teague, and K. Bishop. 2013. San Antonio River Basin Low Impact Development Technical Design Guidance Manual, v1. San Antonio River Authority. San Antonio, TX. https://www.epa.gov/green-infrastructure/green-infrastructure-design-and-implementation

4. Environmental Protection Agency. (April 2009) Managing Stormwater with Low Impact Development Practices: Addressing Barriers to LID. EPA 901-F-09-003. https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/AddressingBarrier2LID.pdf

5. Environmental Protection Agency. (1995, November). Pollution Control Programs for Roads, Highways and Bridges. (EPA-841-F-95-008c).Office of Water. Washington, DC: Environmental Protection Agency. http://www.epa.gov/owow/nps/education/control.html

6. Environmental Protection Agency. (2008, March 7). NPS Categories | Roads, Highways and Bridges | Polluted Runoff (Nonpoint Source Pollution) | US EPA. http://www.epa.gov/owow/nps/roadshwys.html

7. Spanish Fork City. Low Impact Development. (Dec 2013). Project Engineering Consultants. http://www.spanishfork.org/dept/pubworks/utilities/storm/pdf/Low_Impact_Development_Report.pdf

8. National Cooperative Highway Research Program. Evaluation Of Best Management Practices For Highway Runoff Control. Low Impact Development Design Manual for Highway Runoff Control. (2006) http://www.coralreef.gov/transportation/evalbmp.pdf

C. Drainage Plan Report. As part of the Drainage Plan Report, the following criteria will need to be addressed.

1. LID Feasibly - All plans for LID facilities will need to be approved by the City prior to design. During the planning process, groundwater levels, percolation rates, source protection zones, and other concerns with subsurface conditions need to be considered. Site conditions such as collapsible soils, low percolation rates, wetlands, and high groundwater levels will limit the types of LID facilities that can be used. We encourage the developer and his engineer to be creative in developing innovative means to implement LID. If the developer believes that LID facilities cannot be utilized on their particular site, documentation will need to be submitted and approved by the City explaining the reasons why LID cannot be utilized. The documentation must illustrate that infiltration, evapotranspiration and rainwater harvesting has been used to the maximum extent technically feasible and that full employment of LID facilities are not feasible due to site constraints.

   When the Public Works Director, or his/her designee, determines that City Low Impact Development (LID) standards are infeasible, a fee for offsite LID shall be charged. Fee shall be the difference, in cubic feet, from a 10-year storm to a 25-year storm. The cost per cubic foot will be $12.93. The Public Works Director may consider a lower fee if the developer/owner can provide a quote by a reputable contractor for a lower cost. The site will detain the 10-year storm and pay the fee. Fee shall be used by the City to fund offsite LID projects in areas where it will be most effective.

2. Geotechnical Analysis - Prior to proceeding with design, soils testing and an associated soils report need to be completed and

submitted to the City to document subsurface conditions at each individual site. The geotechnical report must include (at a minimum) percolation rates, groundwater levels, and soil type (including whether the soils are collapsible). The geotechnical report is usually added to the Drainage Report as an appendix.

3. Source Protection Zones - Some LID practices may not be appropriate in Zone 1 water source protection areas (Zone 1 Areas) because they require infiltration. Zone 1 Areas are defined as the "area within a 100-foot radius from the wellhead or margin of the collection area." (Utah State Code (R309-600-9)(2)(a)(i)). LID practices may be implemented in Zones 2, 3, and 4 water source protection areas (Zones 2, 3 and 4). However, LID facilities in Zones 2, 3, and 4 may require additional treatment at the discretion of the City. The drinking water source protection areas in Spanish Fork City can be found in the Drinking Water Master Plan.

D. Design Storm. LID facilities in the City shall be designed to accommodate, at a minimum, the peak runoff rate and volume generated from a 25-year storm of any duration. Calculations will need to be completed and submitted to the City documenting the design parameters of the LID facilities.

E. Depth and Intensity. Rainfall depth and intensity data shall be obtained from the National Weather Service's Precipitation Frequency Data Server (http://hdsc.nws.noaa.gov/hdsc/pfds/sa/ut_pfds.html). We require each duration between the 5-minute storm and 24-hour storm to be analyzed to determine the peak volume requirement.

F. Detention Basins. Detention facilities shall be designed to meet Standard Drawing SD-411 and meet the following design criteria:

1. The discharge rate shall not to exceed of 0.15 cfs/acre

2. A minimum of 1 foot of freeboard shall be provided.

3. Side slope (see table below)

Depth	Slope
18"	2:1
3'	3:1
Above 3'	4:1

4. Provide a plan to maintain and monitor the facility.
5. Provide vehicular access to the facility.
6. All facilities shall be landscaped in accordance with City Standards.
7. Design an emergency overflow spillway to safely discharge runoff from the facility assuming the outlet is inoperable or the inflow exceeds the outlet capacity.
8. The storage facility maximum depth shall be approved by the City Engineer.
9. The minimum area of the discharge orifice is 6 square inches.
10. Detention basins may be constructed in landscape or parking areas. Maximum depth of water is 6 inches deep in commercial parking lots and 8 inches deep in industrial parking lots.
11. Each detention basin shall have an outlet to the City storm drain system. A trash rack shall be installed at the outlet(s) to prevent debris from entering the storm drain system.

G. Underground LID/Storage. LID facilities that are designed to infiltrate storm water into the ground may be underground storage facilities. The underground facilities should be designed according to the following criteria:

1. All onsite LID facilities will be owned and maintained by the property owner, unless the City agrees otherwise. Any LID facilities in the right-of-way will be owned and maintained by Spanish Fork City after construction has been completed and approved by the City. The facilities will need to be designed in a way that allows the City to access and maintain them.

2. The property owner is required work with the City's SWMP Administrator to create a Long Term Storm Water Management Plan (LTSMP) and follow its requirements.

3. Underground facilities will need to be designed to retain a 25-year storm event. They will also need to be designed to drain in less than 48 hours, unless approved by the City.

4. The underground storage facility will need to be connected to a storm drain trunkline or a City street as an overflow.

5. Treatment will need to be included prior to discharging to the underground storage/infiltration facilities. Treatment will need to meet the criteria defined in section 4.78.12.

6. All underground storage cells shall be wrapped in an approved non-woven filter fabric.

7. Underground storage and infiltration shall be installed under the bioretention swales as shown in the City standard drawings. R-Tank^{HD}, StormTech chambers, or approved equivalent shall be used to provide underground storage. R-Tank^{HD} and StormTech chambers shall be installed per the manufacturers specifications. All underground storage cells shall be wrapped in an approved non-woven filter fabric.

H. Bioretention Swales. Roadway design shall include bioretention swales as detailed in the City standard drawings. Bioretention swales must be designed by a licensed landscape architect or a licensed professional engineer. Swales are not allowed along City roads. An overflow structure must be provided at all low points in the system.

I. Landscaping. A landscape plan for the bioretention swales shall be submitted and approved by the City. All landscaping shall be designed and installed per City standard drawings and specifications. The developer shall provide financial assurance in the form of a bond to assure that all landscaping is installed per the approved plan. Landscaping of the bioretention swale shall be completed in approved sections for uniformity. All bioretention swale landscaping shall be complete by the second summer following completion of the development.

J. Pipelines.

1. Storm drain pipelines shall be located within the street right-of-way or a dedicated easement.

2. Storm drain pipelines shall be designed to convey the design discharge under full pipe capacity, but with no surcharging.

3. The minimum allowable pipe diameter is 15 inches.

4. Acceptable pipe materials include: reinforced concrete, non-reinforced concrete, and HDPE.

K. Manholes and Cleanout Structures.

1. A manhole or cleanout structure shall be located at the upstream end of the storm drain pipe and at all changes in pipe size, horizontal alignment, slope and material of the storm sewer.

2. Maximum horizontal distance between manholes is 500 feet.

L. Roadway Drainage.

1. Roads must provide for routing of the 100-year flood discharge to adequate downstream conveyance facilities.

2. The 100-year flood flows in streets should be contained within street right-of-way.

3. Provision shall be made to allow runoff within the street to enter any downstream detention basins or other such facilities.

4. Downhill cul-de-sacs and dead ends will not be allowed unless specifically approved by the City Engineer.

5. Special consideration shall be given to downhill "T' intersections to ensure that flooding will not occur outside of the right-of-way.

M. Inlets and Outlets.

1. A concrete apron shall be constructed around inlets to allow sediment to be easily cleaned up.

2. Storm drain pipe that discharges to an earth-lined channel shall be stabilized to mitigate erosion potential.
3. Storm drain catch basins or inlets shall generally be located on both sides of the street.

4. Inlet spacing and configuration shall be designed to collect runoff from a 10-year design storm.

5. Inlet spacing shall also be designed to meet the design spread requirements from the FHA Urban Drainage Manual as shown in Table 4-1.

6. As a general rule, inlets shall be installed at intervals not to exceed 500 feet. Inlet spacing shall be addressed during the design phase.

Design Gutter Spread

Street Classification	Design Frequency	Design Gutter Spread
High Volume		
< 45 MPH	10-Year	Shoulder plus 3 feet
> 45 MPH	10-Year	Shoulder
Sag Point	50-Year	Shoulder plus 3 feet
Collector		
< 45 MPH	10-Year	½ Driving Lane
> 45 MPH	10-Year	Shoulder
Sag Point	10-Year	½ Driving Lane
Local Streets	10-Year	½ Driving Lane

N. Storm Water Treatment.

1. Storm water treatment for oil, grease and other pollutants shall be provided at all sites with more than 6 parking spaces.

2. Engineer design and calculations shall be submitted showing the effectiveness of the treatment.

3. Provide a maintenance plan for the storm water treatment facility.

O. Culverts.

1. The minimum culvert size is 24 inches.

2. Culverts shall be designed to convey the 100-year flood event without overtopping the road.

3. A culvert blockage factor of 50 percent shall be used for culverts placed in drainages with upstream debris producing potential as determined by the City.

4. Backwater surface computations upstream of culverts shall be performed and shown to be non-damaging to upstream properties.

5. Improvements must be installed at entrance and exit structures to minimize erosion and accommodate maintenance.

P. Bridges.

1. Bridges must pass the 100-year flood event with a minimum of 2 feet of freeboard.

2. Local and regional scour analyses shall be performed on the structure, upstream and downstream. All potential scour shall be properly mitigated.

Q. Open Channels.

Open channels shall be designed to meeting the following criteria:

1. Convey the 100-year flood event with a minimum freeboard of 1 foot.

2. Have low maintenance requirements.

3. Provide maintenance access through easements the entire channel length

4. Side slope of 2H:1V or flatter.

5. Bank stabilization shall be designed to minimize erosion and maintenance.

6. Irrigation ditches located in areas of new development shall be enclosed (pipe or culvert).

R. Floodplains.

Development near the Spanish Fork River shall be in accordance with the National Flood Insurance Program and the City's Flood Damage Prevention ordinance (See Chapter 20 of Municipal Code Title 15).

The Flood Damage Ordinance requires, among other things:

1. A bank stability/erosion hazard analysis shall be performed by a licensed professional engineer (15.4.20.030 C.5).
2. A geotechnical report shall be prepared that includes (15.4.20.040 A.2.b):
    a. At least one measurement of the ambient groundwater surface elevation on the site of proposed development collected between May 1 and May 31.
    b. An engineer's estimate of the maximum anticipated groundwater elevation anticipated on the site during

periods of flooding on the Spanish Fork River, referencing nearby base flood elevations on the current FIRM and all other available sources.

c. An engineer's recommendations with regard to the lowest elevation(s) that the lowest floor(s) (including basements) of all new and substantially improved structures should be constructed to be protected from flooding from groundwater and groundwater that could be influenced by surface water during periods of flooding.

3. The lowest finished floor (including basement), shall be elevated a minimum of two feet above the base flood elevation (15.4.20.040 B.1)
4. All permanent structures shall be set back a minimum of 60 feet from the top of bank of the nearest open channel that conveys runoff water (15.4.20.040 A.2.b).

4.39.55.020 Rainfall-Runoff Computation Methods Reference

A. Modeling Approach. There are three acceptable methods for estimating the peak runoff: the Rational Method, TR-55 and HEC-HMS. These three methods are described below. TR-55 and HEC-HMS can also be used to estimate runoff volume for storage facility sizing.

Other methods for estimating peak runoff and runoff volume must first be approved by the City Engineer. The table below indicates the applicable total drainage area for each modelling approach.

Drainage models and Applicable Total Drainage Area

Drainage Model	Maximum Drainage Area
Rational Method	< 200 Acres
TR-55	<2000 Acres for Urban Areas
HEC-HMS	Any

1. Drainage Basin Delineation - For the purposes of estimating storm water runoff, major drainage patterns should be identified based on topography and the location of major natural drainage channels. Within major drainage basins, subbasins should be delineated for storm water runoff analysis using available local information including, but not limited to:

    a. Topography
    b. Aerial photography
    c. Locations of storm water collection, conveyance, and detention facilities
    d. Land use and zoning maps
    e. Hydrologic soil maps

2. Projected Future Land Use Conditions - Impacts that proposed development will have on downstream drainage storm drain facilities shall be evaluated. New development will nearly always increase storm water runoff volume and peak flow. In analyzing the effect of future development, four factors should be evaluated:

    a. Increase in percent of impervious area.
    b. Decrease in subbasin time of concentration due to local storm drain improvements.
    c. Decrease in runoff routing time due to trunk line and main channel improvements.
    d. Concentration of runoff to discharge points where the undeveloped condition was predominantly shallow sheet flow.

    Projected land use for a given area can be obtained from City zoning and planning maps.

B. Rational Method.

Use the table below to estimate the runoff coefficient.

Rational Method Runoff Coefficients

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 – 0.95
Neighborhood areas	0.50 – 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 – 0.75
Suburban	0.25 – 0.40
Apartment dwelling areas	0.50 – 0.70
Industrial:	
Light areas	0.50 – 0.80
Heavy areas	0.60 – 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 – 0.35
Railroad yard areas	0.20 – 0.35
Unimproved areas	0.10 – 0.30

Type of Drainage Area	Runoff Coefficient, C*
Lawns, sandy soil:	
Flat, 2%	0.05 - 0.10
Average, 2 – 7%	0.10 – 0.15
Steep, 7%	0.15 – 0.20
Lawns, heavy soil:	
Flat, 2%	0.13 – 0.17
Average, 2 – 7%	0.18 – 0.22
Steep, 7%	0.25 – 0.35
Pavement:	
Asphaltic and Concrete	0.70 – 0.95
Brick	0.75 – 0.85
Roofs	0.75 – 0.95
Streets:	
Asphaltic	0.70 – 0.95
Concrete	0.80 – 0.95
Brick	0.70 – 0.85
Drives and walks	0.75 – 0.85
Roofs	0.75 – 0.95

*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.

1. Time of Concentration - Time of concentration shall be calculated using the method found in SCS Technical Release 55 (SCS, 1986). The minimum allowable time of concentration to be used in runoff calculations shall be 5 minutes.

2. Rainfall Intensity - Rainfall depth and intensity data shall be obtained from the National Weather Service's Precipitation Frequency Data Server (http://hdsc.nws.noaa.gov/hdsc/pfds/sa/ut_pfds.html). We require each duration between the 5-minute storm and 24-hour storm to be analyzed to determine the peak volume requirement

C. TR-55.

1. The 24-hour SCS Type II storm distribution shall be used if the TR-55 method is used.

2. The storm depths shall be selected from the depth-duration-frequency curve found on the National Weather Service's Precipitation Frequency Data Server (http://hdsc.nws.noaa.gov/hdsc/pfds/sa/ut_pfds.html).

3. Table 2-2a-d in TR-55 shall be used to estimate the runoff Curve Number.

   For urban drainages, pervious and impervious areas shall be modeled as separate subbasins. Impervious area in small urban areas can be estimated by direct measurements from aerial photography. The method in TR-55, or any similar method, that suggests modeling developed subbasins using a revising Curve

Number based on the percent impervious will not be allowed. Those methods can severely underestimate the runoff potential from a subbasin.

Typical values of effective percent impervious area based on land use are shown in the table below.

Average Percent Impervious Area by Land Use Category

Land Use Category	Average Percent Impervious Area (%)	Housing Density (Residential Only)
Commercial	95	
Business / Industrial	60	
Institutional	60	
High Density Multi-family Residential	50	10 to 12 units/acre
Medium Density Multi-family Residential	45	6 to 10 units/acre
High Density Single Family Residential	35	3 to 6 units/acre
Medium Density Single Family Residential (Traditional Neighborhood)	20	2 to 3 units/acre
Low Density Single Family Residential	15	1 to 2 units/acre
Very Low Density Single Family Residential	8	< 1 unit/acre
Parks	1	
Open Space	1	

D. HEC-HMS. There are four main input categories in HEC-HMS which are: design storm, loss method, transform method and routing method. The design storms shall be obtained using the procedure described below. For the loss, transform and routing methods, there are multiple options within HEC-RAS than can be used. Below is a description of the preferred method. Other methods may be allowed, but must first be approved by the City Engineer.

1. Design Storm - The design storm shall be developed in accordance with Section 4.78.12.

2. Loss Method - The SCS Curve Number loss method shall be used. The primary input parameter for this method is the Curve Number. As described below, for developed areas, the percent impervious is also entered. The initial abstraction is typically left blank. The program will calculate the initial abstraction based on the Curve Number using the equation documented in TR-55.

    a. Curve Number - Table 2-2a-d in TR-55 shall be used to estimate the pervious runoff Curve Number (CN).

    b. Soil Classification - In order to estimate the CN, the hydrologic soil group classification for the drainage basin must be determined. The hydrologic soil group shall be obtained from the NRCS SSURGO dataset. SSURGO data can be obtained from the Soil Data Mart (http://soildatamart.nrcs.usda.gov/).

    c. Modelling Impervious Areas - The directly connected impervious area (DCIA) should be entered for developed areas. The DCIA should be measured from aerials for existing developments, or should be obtained from the design plans for a proposed development. Typical values of

average percent impervious areas based on land use are included in Table 2-2 of TR-55.

3. Transform Method - The SCS Unit Hydrograph transform method shall be used. This method requires the input of a single variable: lag time.

   a. Lag Time for Natural Watersheds - The Corps of Engineers version of Snyder's equation shall be used to calculate the lag time for natural watersheds (USBR, 1989) as shown below:

$$Lag\ Time = C_t \left(\frac{L * L_{ca}}{(S^{0.5})} \right)^{0.33}$$

Where:
C_t = Constant between 1.3 and 2.2. 1.6 is typical for the Spanish Fork area
L = Length, in miles, of the longest watercourse
L_{ca} = Length, in miles, along L to the centroid of the drainage basin
S = Overall drainage basin slope, in feet/mile.

   a. Lag Time of Urban Areas - The lag time for small urban areas is assumed to be equal the time of concentration. Appendix C contains a sample worksheet from TR-55 that can be used to calculate the time of concentration.

4. Routing Method
   The Muskingum-Cunge method shall be used for routing. The method requires the follow parameters are inputted:
   a. Length – Total length of the reach element.
   b. Slope – Average slope for the entire reach.
   c. Invert – Optional. Typically not used.
   d. Cross Section Shape – Multiple cross sections are available to select from. Depending on the cross section chosen, additional information is required (i.e. diameter, side slope).

e. Manning's "n" – Average value for the entire reach. Typical values for Manning's "n" used for storm drain conveyance facilities area shown in the table below.

Values of Manning's Coefficient (n) for Channels and Pipes

Conduit Material	Manning's n*
Concrete-lined channel	0.013 – 0.020
Excavated or Dredge Channels	
Earth channel – straight and uniform	0.020 – 0.030
Earth channel – winding, fairly uniform	0.025 – 0.040
Rock	0.030 – 0.045
Unmaintained	0.050 – 0.140
Natural Channel	
Fairly regular section	0.030 – 0.070
Irregular section with pools	0.040 – 0.100
Pipe Material	
Plastic pipe	0.011 – 0.015
Steel/cast iron pipe	0.012 – 0.015
Concrete pipe	0.013 – 0.015
Corrugated metal pipe	0.012 – 0.026

*Lower values are usually for well-constructed and maintained (smother) pipes and channels.

5. Other Models - Other computer programs can be used to model the rainfall-runoff process that use similar hydrologic modeling methods, but care should be taken to make sure modeling methods are used correctly. The City Engineer must approve all computer programs and methods that are not described above, before they are used.

E. Calibration.

Peak runoff records are typically not available for local drainage studies. An effort should, however, be made to ensure that rainfall runoff analysis results for local drainage studies are consistent and compatible with the City's Storm Drain Master Plan and other pertinent local drainage studies.

It should be noted that the term "calibration" in this context refers to the process of adjusting parameters to achieve results consistent with available reference information, rather than adjusting for actual stream flow observations from the study area. Multiple hydrologic methods should be evaluated and compared to identify reasonable runoff computation results. These methods may include the Rational Formula, the SCS Curve Number Method, the SCS Pervious CN Method, and the Constant and Initial Loss Method. Regional regression equations may also be used to evaluate results depending on the basin size.

1. Calibration for Natural Watersheds

   Results from hydrologic models should be compared to:

   a. Actual flow records for modeled drainage channels
   b. Stream flow records from hydrologically similar drainages in the vicinity of the study
   c. Regional stream flow data (in the event that stream flow records for the local area are not available)

2. Calibration for Urban Areas

   For small urban (developed) areas, the USGS published regression equations than can be used to "calibrate" hydrologic models (see Peak-flow Characteristics of Small Urban Drainages Along the Wasatch Front, Utah).

The range of basin characteristics used to develop the regression equations are shown in the table below.

Range of Basin Characteristics Used
To Develop Regression Equations for Small Urban Drainages

Basin Characteristic	Unit	Range in Values
Drainage Area (DA)	mi^2	0.085 – 0.87
Basin Slope (BS)	%	0.3 – 15
Effective Impervious Area (EIA)	%	22 – 57

The equations shown in the table below are only applicable to drainage basins that meet the range of values shown above.

Regression Equations for Peak Flows
For Small Urban Drainages

Recurrence Interval (Years)	Equations	Average Standard Error of Estimate (%)
10	$Q_{10} = 0.575\ DA^{0.285}\ BS^{0.410}\ EIA^{1.29}$	32
25	$Q_{25} = 66.1\ DA^{0.093}\ BS^{0.243}$	33
100	$Q_{100} = 120\ DA^{0.158}\ BS^{0.194}$	29

The unit peak runoff varies depending on slope and the drainage basin percent impervious. In general, the 10-year event for small urban drainages should be between 0.3 cfs/acre and 1.0 cfs/acre. Modification to input parameters should be considered if simulated runoff results are not within this range.

F. Specifications. Storm, land and groundwater drain facilities shall meet the requirements and specifications of APWA 33 41 00 (Storm Drainage

Systems). These specifications cover the installation of storm, land and groundwater lines. See Chapter 39.20 for improvement and design requirements, Chapter 39.25 for inspection and testing requirements, and Chapter 39.35 for earthwork and trench requirements. See standard drawings related to storm, land and groundwater drains. Land and groundwater drains shall be approved by the City Engineer and shall be installed lower in elevation than the sewer mainline.

G. Size. The City Engineer or his/her designee must approve the sizes of all proposed drain lines. The minimum size of pipe is 15" diameter for main lines and 12" diameter for laterals.

H. Location. Drain lines shall be located along the centerline of the street. A maximum of 500 feet of pipe shall be allowed between manholes.

I. Minimum Slopes. Slopes shall be designed to have a 2 foot per second velocity unless otherwise approved by the City Engineer. The following table lists minimum slopes for drain lines for each size of pipe:

Minimum Drain Line Slopes

Pipe Diameter (inches)	Minimum Slope (%)
12	0.194
14	0.158
15	0.144
16	0.132
18	0.113
21	0.092
24	0.077
27	0.066
30	0.057
36	0.045

48	0.031
54	0.027
60	0.023

J. Unusual Piping and Plumbing. Special and unusual piping and plumbing for equipment or structures are treated as separate items and are not included in these standards.

K. Groundwater Drains. All plans for groundwater drains must be designed and stamped by a licensed professional civil engineer in the State of Utah. Only rigid pipe may be used.

4.39.55.025 Pipe and Fittings

A. General. Reinforced concrete pipe shall be used for all main drain lines 15" or larger in diameter and for all drain lines of smaller size with less than 2 feet of cover or more than 8 feet of cover. Non-reinforced concrete pipe may be used for pipe sizes with inside diameters smaller than 18 inches. Corrugated metal pipe (CMP) may only be used when authorized by the City Engineer or his/her designee.

B. Concrete Pipe. Concrete pipe shall meet the requirements and specifications of APWA 33 05 02 (Concrete Pipe and Culvert). Reinforced concrete pipe (RCP) shall be Class III. Only new pipe may be used unless otherwise authorized by the City Engineer or his/her designee.

C. Polyethylene Pipe. Polyethylene pipe shall meet the requirements and specifications of APWA 33 05 06 (Polyethylene Pipe) Type S for storm drains and Type SP for land or groundwater drains.

D. Polyvinyl Chloride Pipe (PVC). PVC pipe shall meet the requirements and specifications of APWA 33 05 07 (Polyvinyl Chloride Pipe).

E. Corrugated Metal Pipe (CMP). CMP shall meet the requirements and specifications of APWA 33 05 04 (Corrugated Metal Pipe).

4.39.55.030 Submittal Requirements

A. Drainage Plan and Report.

A final Drainage Plan and Report is required for all proposed developments and shall be prepared by a professional civil engineer registered in the State of Utah. The report portion of the Drainage Plan and Report shall contain the following:

1. Title page showing project name, date, preparer's name, seal and signature.

2. Description of the development, including location (township, range, section, subdivision and lot).

3. Description of property, area, existing site conditions including all existing drainage facilities such as ditches, canals, washes, swales structures, storm drains, springs, detention and retention basins.

4. Description of off-site drainage features and characteristics upstream and downstream of the site and any known drainage problems.

5. A description of proposed facilities that will be used to manage on-site and off-site storm water runoff associated with the development, including calculations used to estimate runoff and size storm water facilities. See Section 4.78.12 for design criteria and Section 4.78.16 for approved rainfall-runoff computation methods.

6. Description of existing and proposed on-site drainage features, characteristics, and facilities.

7. Description of master planned drainage facilities and how the development and proposed drainage facilities conform to the storm drain master plan.

8. Description of downstream receiving facilities for storm water discharges and the capacities of those facilities. Include calculations.

9. Description of existing FEMA floodplain, if applicable.

10. Description of other drainage studies that affect the site.

11. Preliminary drawings of proposed drainage facilities that also show existing storm drain facilities on or adjacent to the site.

12. Description of compliance with applicable flood control requirements and FEMA requirements, if applicable.

13. Description of design runoff computations. See Section 4.78.16 for approved rainfall-runoff computation methods.

14. Design calculations to support inlet spacing and sizing of facilities. Include a description of drainage facility design computations. See Section 4.78.12 for design criteria.

15. Description of any needed drainage easements or rights-of-way.

16. Description of FEMA floodway and floodplain calculations, if applicable.

17. Description of field work performed to estimate minimum depth to groundwater at the site.

18. Commentary on geotechnical engineer's findings of percolation rates, soil structure, groundwater depth, and recommendation on low impact development (LID) infrastructure implementation effectiveness. If not recommended, submit a proposal for alternative controls to meet the City's LID requirement (see Section XXXX). If recommended, provide details of how the LID infrastructure will meet our requirements.

19. Conclusions stating compliance with drainage requirements and opinion of effectiveness of proposed drainage facilities and accuracy of calculations.

20. Appendices showing all applicable reference information.

Drawings shall be submitted with the Drainage Plan and Report and shall include the following information, if applicable.

1. Existing and proposed property lines.

2. Existing and proposed topography (2-foot maximum contour interval) extending at least 100 feet beyond the site.

3. Existing and proposed streets, easements, and rights-of-way.

4. Existing drainage and irrigation facilities.

5. FEMA floodplain and floodway.

6. Required setbacks for structures from the nearest top bank of the Spanish Fork River, if applicable.

7. Drainage basin boundaries and subbasin boundaries on a topographical map.

8. Existing flow patterns and paths.

9. Proposed flow patterns and paths.

10. Location and size of proposed drainage facilities including: storm drain pipes, inlets, manholes, cleanouts, swales, channels, and retention and detention basins. Include spot elevations of proposed grade, flowline and top, back curb.

11. Details of proposed storm drain facilities, including storm drain inlets. Include maintenance and monitoring plan for storage facilities.

12. Details of proposed improvements to existing irrigation facilities and any facilities to be used to manage high groundwater conditions on the site.

13. Location of drainage easements required.

14. Other relevant drainage features.

15. Scale, north arrow, legend, title block showing project name, date, preparers name, seal and signature.

B. Connecting to Existing Drain Lines. Manholes and sumps used to connect proposed storm drain to existing storm drain shall be plumb and centered on the existing storm drain. The new pipe shall be placed against the existing pipe at the elevation designated by the project engineer and the base poured as specified above. Care shall be

taken not to disturb the alignment of the existing storm drain during the excavation procedure. Any damage to the existing storm drain shall be repaired.

C. Sumps. Sumps may only be constructed of reinforced concrete, precast sections and shall meet the requirements of ASTM C478-73. Sumps shall have eccentric lids to ensure adjustments in alignment.

D. Inlet and Clean Out Structures. Surface water must enter the City storm drain system through standard City inlet boxes. In no case may water inlet directly into storm manholes, clean-outs, or sumps. Inlets and clean out structures shall not exceed 500 ft spacing.

All inlet and clean out structures shall be reinforced concrete boxes. They may be precast or cast-in-place. Grate and Frame Material. All castings shall be of ASTM A-48, Class 35 iron free from blowholes and shrinkage defects. Castings shall be free from fins and burrs and shall be shot-blasted to remove sand and other foreign matter. Freedom from cracks and defects shall be ascertained by the engineer prior to installation.

E. Headwalls. A headwall shall be installed at all ditch to pipe transitions. Headwall designs must be stamped by a licensed professional civil engineer in the State of Utah and approved by the City Engineer or his/her designee.

4.39.55.040 Retention/Detention Basins

A. General. Basin designs shall be designed with the following side depths and slopes:

Depth	Slope
18"	2:1
3'	3:1

Above 3'	4:1

B. Retention Basins. All retention basins shall have a freeboard of 12 inches. Design of retention basins shall be according to the Storm Water Drainage Design Manual. All retention basins shall have a series of interconnected sumps connected to curb inlet boxes or storm drain main lines. All retention basins shall be landscaped in accordance with City Standards.

All retention basins shall be constructed for drainage areas designated in the Storm Drain Master Plan. Basins for smaller areas may be allowed only with prior written approval of the City Engineer or his/her designee.

C. Detention Basins. All detention basins shall have 12 inches of freeboard. Design of detention basins shall be according to the Storm Water Drainage Design Manual. Detention basins may be constructed in landscape or parking areas. Each detention basin shall incorporate LID storm drain principles and have an overflow to the City storm drain system.

4.39.55.050 Low Impact Development

A. General. All new development and roadways shall incorporate LID storm drain in the form of bioretention swales, underground retention cells, or and other methods as approved by the City Engineer or his/her designee. LID systems shall be designed to handle the 25-year 100 year, 24 hour storm.

B. Bioretention Swales. Roadway design shall include bioretention swales as detailed in the City standard drawings. Bioretention swales must be designed by a licensed landscape architect or a licensed professional engineer. Swales along roads with slopes greater than 2.5% shall be designed with check dams to decrease runoff velocity and allow proper

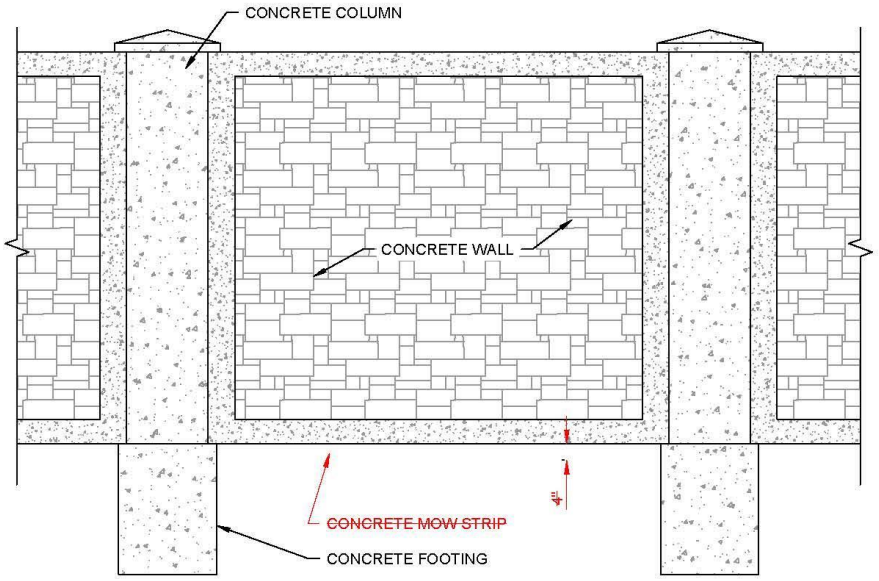
storm water retention and infiltration. Side slopes shall be designed with a slope of 4:1. An overflow structure must be provided at all low points in the system.

C. Underground Storage. Underground storage and infiltration shall be installed under the bioretention swales as shown in the City standard drawings. R-Tank^{HD}, StormTech chambers, or approved equivalent shall be used to provide underground storage. R-Tank^{HD} and StormTech chambers shall be installed per the manufacturer's specifications. All underground storage cells shall be wrapped in an approved non-woven filter fabric.

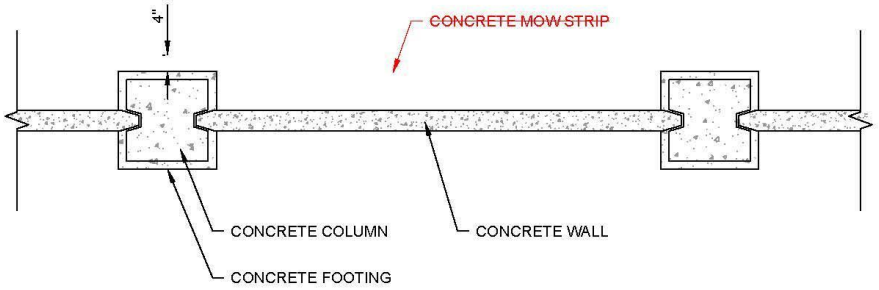
~~A.~~D. Landscaping. A landscape plan for the bioretention swales shall be submitted and approved by the City. All landscaping shall be designed and installed per City standard drawings and specifications. The developer shall provide financial assurance in the form of a bond to assure that all landscaping is installed per the approved plan. Landscaping of the bioretention swale shall be completed in approved sections for uniformity. All bioretention swale landscaping shall be complete by the second summer following completion of the development.

CONSTRUCTION STANDARD DRAWINGS

1. **G-113 Concrete Wall** (This detail needs to be added)



WALL FRONT VIEW

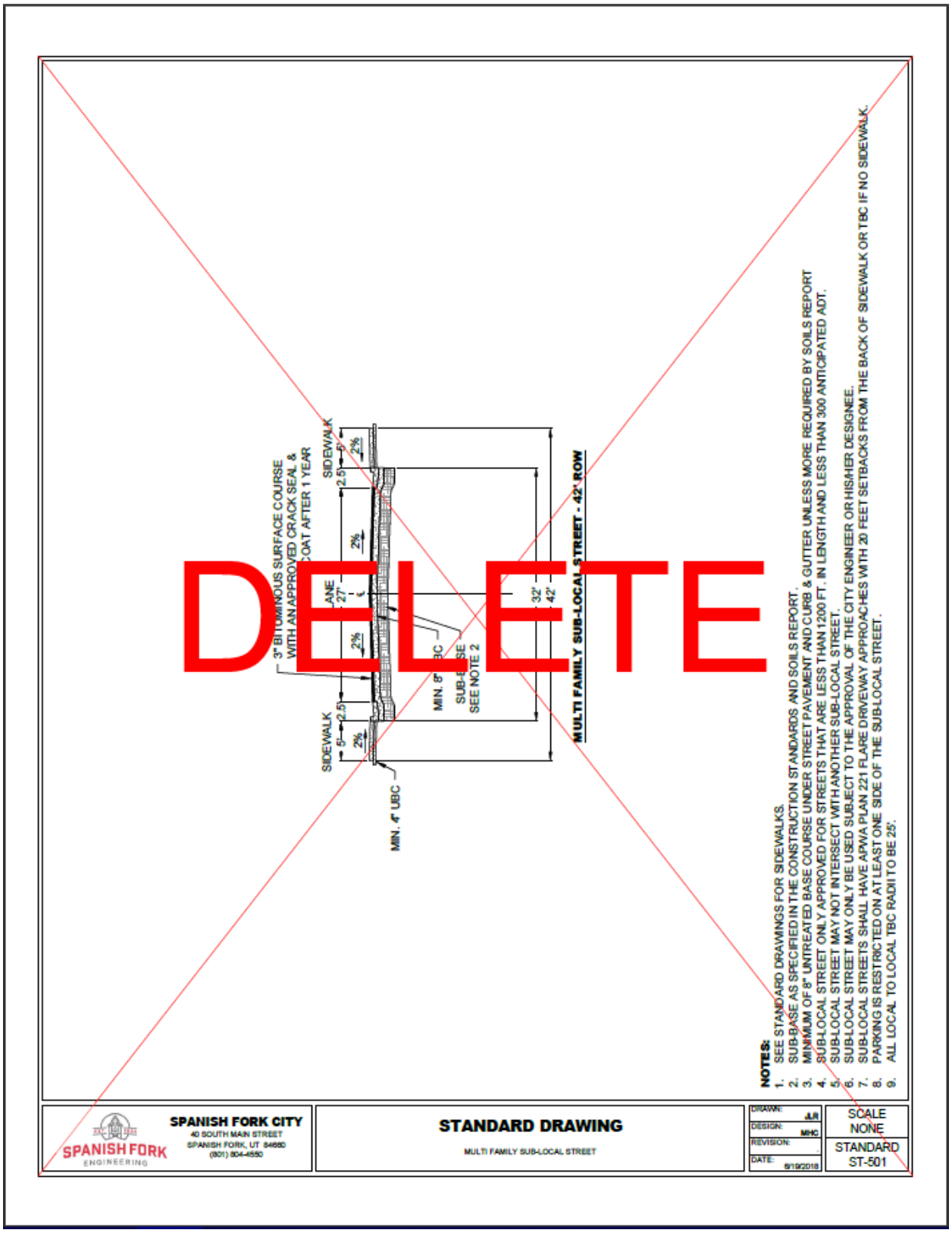


WALL PLAN VIEW

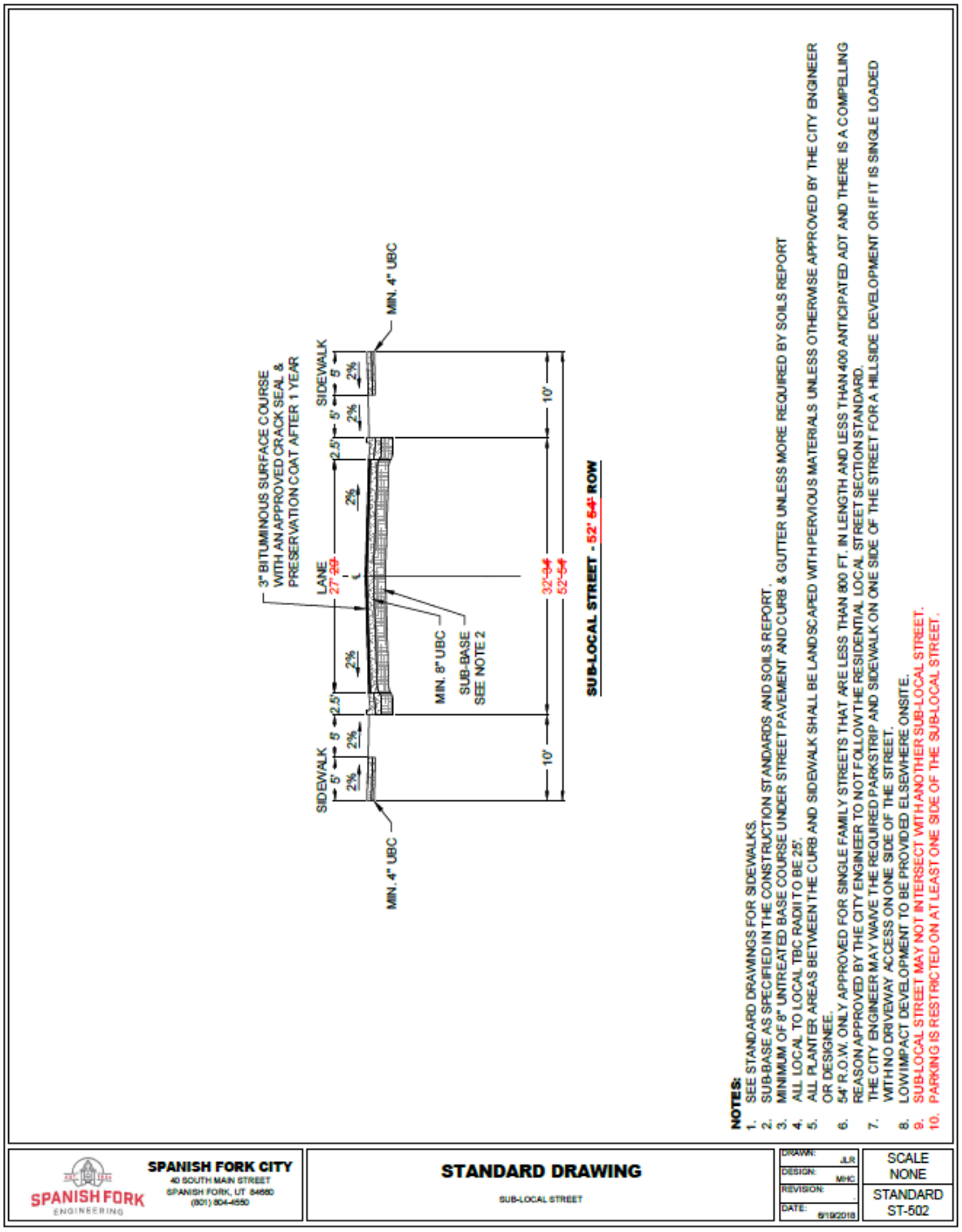
NOTES:
1. CONCRETE WALL SHALL BE REQUIRED ALONG ARTERIAL, COLLECTOR STREETS AND DIVISIONS BETWEEN LAND USES AS DEFINED IN TITLE 15.
2. IF CONCRETE WALL IS TO BE ALONG I-15, US-6 OR RAILROAD TRACKS THE WALL SHALL BE 8' TALL.
3. THE WALL SHALL BE STAINED WITH A BASE COAT AND 3 OTHER COLORS OR IF WALL TO BE BLOCK THEN IT NEEDS TO BE GRAFFITI PROOFED. THE WALL COLORS MUST BE REVIEWED AND APPROVED BY THE CITY ENGINEER OR HIS/HER DESIGNEE.

SPANISH FORK CITY 40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	**STANDARD DRAWING** CONCRETE WALL DETAIL	DRAWN: DESIGN: REVISION: DATE: 6/19/2018	SCALE NONE STANDARD G-113

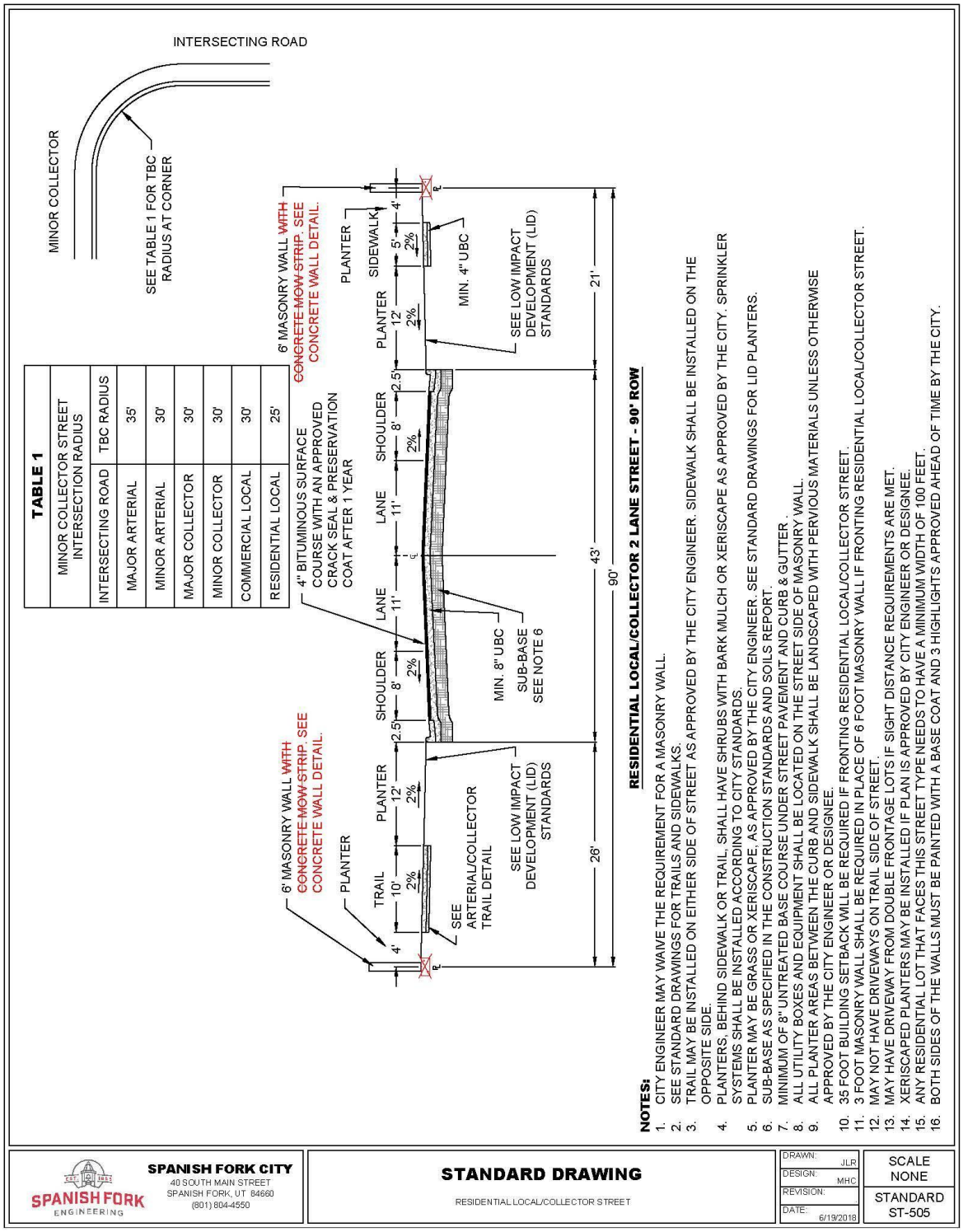
2. **ST-501 Multi Family Sub-Local** (This detail needs to be removed)


DELETE
MULTI FAMILY SUB-LOCAL STREET - 42' ROW
3" BITUMINOUS SURFACE COURSE WITH AN APPROVED CRACK SEAL & COAT AFTER 1 YEAR
SIDEWALK 5'
2.5
2%
LANE 27'
2%
2%
SIDEWALK 5'
MIN. 8" UBC
MIN. 4" UBC
SUB-BASE SEE NOTE 2
32'
42'
NOTES:
1. SEE STANDARD DRAWINGS FOR SIDEWALKS.
2. SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT.
3. MINIMUM OF 8" UNTREATED BASE COURSE UNDER STREET PAVEMENT AND CURB & GUTTER UNLESS MORE REQUIRED BY SOILS REPORT
4. SUB-LOCAL STREET ONLY APPROVED FOR STREETS THAT ARE LESS THAN 1200 FT. IN LENGTH AND LESS THAN 300 ANTICIPATED ADT.
5. SUB-LOCAL STREET MAY NOT INTERSECT WITH ANOTHER SUB-LOCAL STREET.
6. SUB-LOCAL STREET MAY ONLY BE USED SUBJECT TO THE APPROVAL OF THE CITY ENGINEER OR HIS/HER DESIGNEE.
7. SUB-LOCAL STREETS SHALL HAVE APWA PLAN 221 FLARE DRIVEWAY APPROACHES WITH 20 FEET SETBACKS FROM THE BACK OF SIDEWALK OR TBC IF NO SIDEWALK.
8. PARKING IS RESTRICTED ON AT LEAST ONE SIDE OF THE SUB-LOCAL STREET.
9. ALL LOCAL TO LOCAL TBC RADII TO BE 25'.
SPANISH FORK ENGINEERING
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550
STANDARD DRAWING
MULTI FAMILY SUB-LOCAL STREET
DRAWN: JLR
DESIGN: MHC
REVISION:
DATE: 5/19/2018
SCALE NONE
STANDARD ST-501

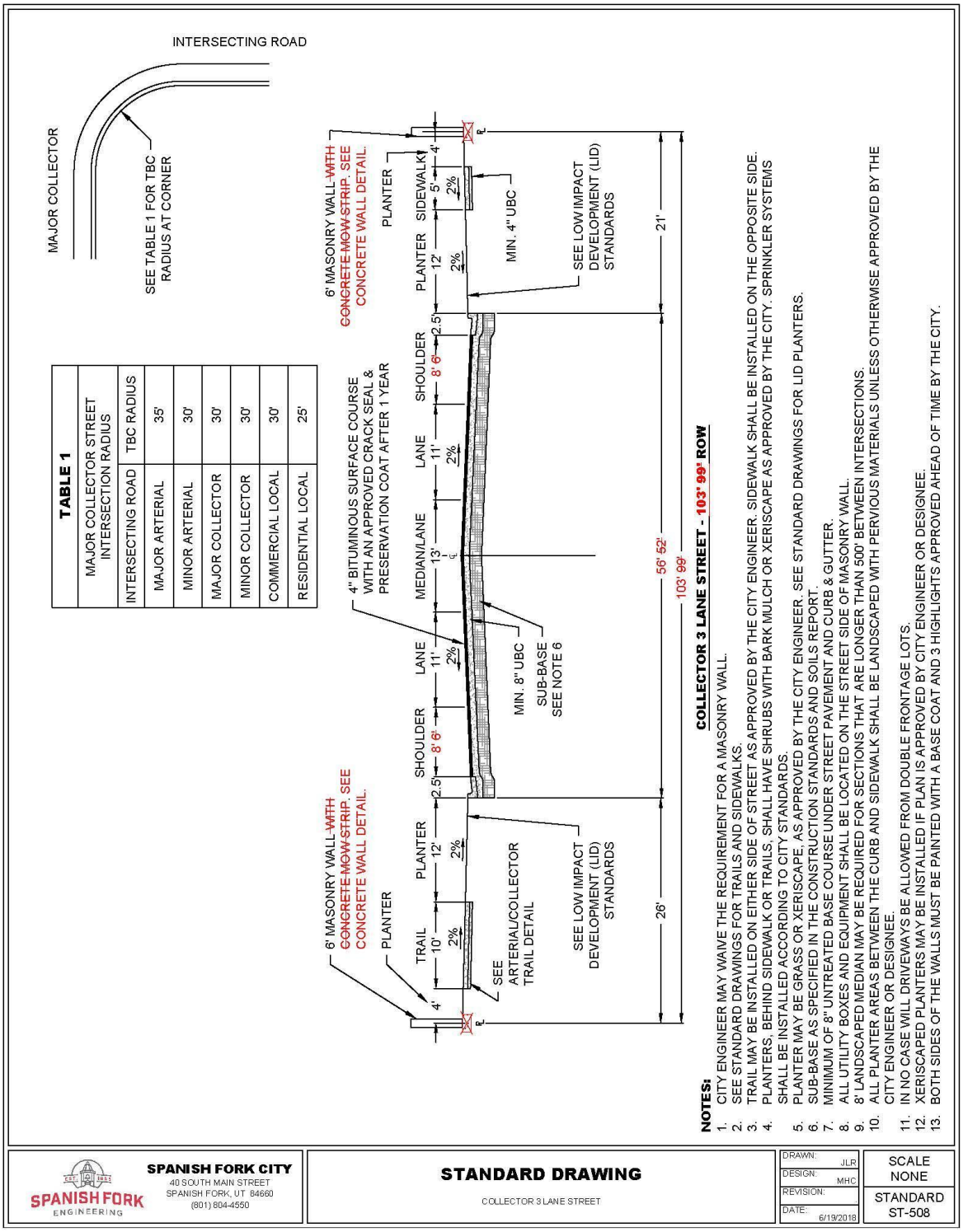
11. ST-502 Sub-Local (This detail needs to be updated)


3" BITUMINOUS SURFACE COURSE
WITH AN APPROVED CRACK SEAL &
PRESERVATION COAT AFTER 1 YEAR
SIDEWALK
5'
2%
LANE
27'-29'
2.5'
2%
MIN. 4" UBC
MIN. 8" UBC
SUB-BASE
SEE NOTE 2
10'
32'-34'
52'-54'
SUB-LOCAL STREET - 52'-54' ROW
NOTES:
1. SEE STANDARD DRAWINGS FOR SIDEWALKS.
2. SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT.
3. MINIMUM OF 8" UNTREATED BASE COURSE UNDER STREET PAVEMENT AND CURB & GUTTER UNLESS MORE REQUIRED BY SOILS REPORT
4. ALL LOCAL TO LOCAL TBC RADII TO BE 25'.
5. ALL PLANTER AREAS BETWEEN THE CURB AND SIDEWALK SHALL BE LANDSCAPED WITH PERVIOUS MATERIALS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER OR DESIGNEE.
6. 54' R.O.W. ONLY APPROVED FOR SINGLE FAMILY STREETS THAT ARE LESS THAN 800 FT. IN LENGTH AND LESS THAN 400 ANTICIPATED ADT AND THERE IS A COMPELLING REASON APPROVED BY THE CITY ENGINEER TO NOT FOLLOW THE RESIDENTIAL LOCAL STREET SECTION STANDARD.
7. THE CITY ENGINEER MAY WAIVE THE REQUIRED PARKSTRIP AND SIDEWALK ON ONE SIDE OF THE STREET FOR A HILLSIDE DEVELOPMENT OR IF IT IS SINGLE LOADED WITH NO DRIVEWAY ACCESS ON ONE SIDE OF THE STREET.
8. LOW IMPACT DEVELOPMENT TO BE PROVIDED ELSEWHERE ONSITE.
9. SUB-LOCAL STREET MAY NOT INTERSECT WITH ANOTHER SUB-LOCAL STREET.
10. PARKING IS RESTRICTED ON AT LEAST ONE SIDE OF THE SUB-LOCAL STREET.
SPANISH FORK ENGINEERING
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550
STANDARD DRAWING
SUB-LOCAL STREET
DRAWN: JLR
DESIGN: MHC
REVISION:
DATE: 5/19/2018
SCALE
NONE
STANDARD
ST-502

All Street Cross Sections with walls (These details need to be updated)


INTERSECTING ROAD
MINOR COLLECTOR
SEE TABLE 1 FOR TBC RADIUS AT CORNER
TABLE 1
MINOR COLLECTOR STREET INTERSECTION RADIUS
INTERSECTING ROAD | TBC RADIUS
MAJOR ARTERIAL | 35'
MINOR ARTERIAL | 30'
MAJOR COLLECTOR | 30'
MINOR COLLECTOR | 30'
COMMERCIAL LOCAL | 30'
RESIDENTIAL LOCAL | 25'
6' MASONRY WALL WITH CONCRETE MOW STRIP. SEE CONCRETE WALL DETAIL.
4" BITUMINOUS SURFACE COURSE WITH AN APPROVED CRACK SEAL & PRESERVATION COAT AFTER 1 YEAR
PLANTER
SIDEWALK
TRAIL
SHOULDER
LANE
MIN. 4" UBC
MIN. 8" UBC
SUB-BASE SEE NOTE 6
SEE LOW IMPACT DEVELOPMENT (LID) STANDARDS
SEE ARTERIAL/COLLECTOR TRAIL DETAIL
RESIDENTIAL LOCAL/COLLECTOR 2 LANE STREET - 90' ROW
NOTES:
1. CITY ENGINEER MAY WAIVE THE REQUIREMENT FOR A MASONRY WALL.
2. SEE STANDARD DRAWINGS FOR TRAILS AND SIDEWALKS.
3. TRAIL MAY BE INSTALLED ON EITHER SIDE OF STREET AS APPROVED BY THE CITY ENGINEER. SIDEWALK SHALL BE INSTALLED ON THE OPPOSITE SIDE.
4. PLANTERS. BEHIND SIDEWALK OR TRAIL SHALL HAVE SHRUBS WITH BARK MULCH OR XERISCAPE AS APPROVED BY THE CITY. SPRINKLER SYSTEMS SHALL BE INSTALLED ACCORDING TO CITY STANDARDS.
5. PLANTER MAY BE GRASS OR XERISCAPE, AS APPROVED BY THE CITY ENGINEER. SEE STANDARD DRAWINGS FOR LID PLANTERS.
6. SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT.
7. MINIMUM OF 8" UNTREATED BASE COURSE UNDER STREET PAVEMENT AND CURB & GUTTER .
8. ALL UTILITY BOXES AND EQUIPMENT SHALL BE LOCATED ON THE STREET SIDE OF MASONRY WALL.
9. ALL PLANTER AREAS BETWEEN THE CURB AND SIDEWALK SHALL BE LANDSCAPED WITH PERVIOUS MATERIALS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER OR DESIGNEE.
10. 35 FOOT BUILDING SETBACK WILL BE REQUIRED IF FRONTING RESIDENTIAL LOCAL/COLLECTOR STREET.
11. 3 FOOT MASONRY WALL SHALL BE REQUIRED IN PLACE OF 6 FOOT MASONRY WALL IF FRONTING RESIDENTIAL LOCAL/COLLECTOR STREET.
12. MAY NOT HAVE DRIVEWAYS ON TRAIL SIDE OF STREET.
13. MAY HAVE DRIVEWAY FROM DOUBLE FRONTAGE LOTS IF SIGHT DISTANCE REQUIREMENTS ARE MET.
14. XERISCAPED PLANTERS MAY BE INSTALLED IF PLAN IS APPROVED BY CITY ENGINEER OR DESIGNEE.
15. ANY RESIDENTIAL LOT THAT FACES THIS STREET TYPE NEEDS TO HAVE A MINIMUM WIDTH OF 100 FEET.
16. BOTH SIDES OF THE WALLS MUST BE PAINTED WITH A BASE COAT AND 3 HIGHLIGHTS APPROVED AHEAD OF TIME BY THE CITY.
SPANISH FORK ENGINEERING
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550
STANDARD DRAWING
RESIDENTIAL LOCAL/COLLECTOR STREET
DRAWN: JLR
DESIGN: MHC
REVISION:
DATE: 6/19/2018
SCALE NONE
STANDARD ST-505

12. ST-508 Cross section (updated 6' shoulder to 8')


INTERSECTING ROAD
MAJOR COLLECTOR
SEE TABLE 1 FOR TBC RADIUS AT CORNER
TABLE 1
MAJOR COLLECTOR STREET INTERSECTION RADIUS
INTERSECTING ROAD | TBC RADIUS
MAJOR ARTERIAL | 35'
MINOR ARTERIAL | 30'
MAJOR COLLECTOR | 30'
MINOR COLLECTOR | 30'
COMMERCIAL LOCAL | 30'
RESIDENTIAL LOCAL | 25'
6' MASONRY WALL ~~WITH CONCRETE MOW STRIP~~. SEE CONCRETE WALL DETAIL.
PLANTER
TRAIL
PLANTER
SHOULDER
LANE
MEDIAN/LANE
LANE
SHOULDER
PLANTER
SIDEWALK
4" BITUMINOUS SURFACE COURSE WITH AN APPROVED CRACK SEAL & PRESERVATION COAT AFTER 1 YEAR
MIN. 8" UBC
SUB-BASE SEE NOTE 6
MIN. 4" UBC
SEE ARTERIAL/COLLECTOR TRAIL DETAIL
SEE LOW IMPACT DEVELOPMENT (LID) STANDARDS
SEE LOW IMPACT DEVELOPMENT (LID) STANDARDS
4'
10'
12'
2.5'
8' 6'
11'
13'
11'
8' 6'
2.5'
12'
5'
4'
26'
56' 52'
103' 99'
21'
COLLECTOR 3 LANE STREET - 103' 99' ROW
NOTES:
1. CITY ENGINEER MAY WAIVE THE REQUIREMENT FOR A MASONRY WALL.
2. SEE STANDARD DRAWINGS FOR TRAILS AND SIDEWALKS.
3. TRAIL MAY BE INSTALLED ON EITHER SIDE OF STREET AS APPROVED BY THE CITY ENGINEER. SIDEWALK SHALL BE INSTALLED ON THE OPPOSITE SIDE.
4. PLANTERS, BEHIND SIDEWALK OR TRAILS, SHALL HAVE SHRUBS WITH BARK MULCH OR XERISCAPE AS APPROVED BY THE CITY. SPRINKLER SYSTEMS SHALL BE INSTALLED ACCORDING TO CITY STANDARDS.
5. PLANTER MAY BE GRASS OR XERISCAPE, AS APPROVED BY THE CITY ENGINEER. SEE STANDARD DRAWINGS FOR LID PLANTERS.
6. SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT.
7. MINIMUM OF 8" UNTREATED BASE COURSE UNDER STREET PAVEMENT AND CURB & GUTTER.
8. ALL UTILITY BOXES AND EQUIPMENT SHALL BE LOCATED ON THE STREET SIDE OF MASONRY WALL.
9. 8' LANDSCAPED MEDIAN MAY BE REQUIRED FOR SECTIONS THAT ARE LONGER THAN 500' BETWEEN INTERSECTIONS.
10. ALL PLANTER AREAS BETWEEN THE CURB AND SIDEWALK SHALL BE LANDSCAPED WITH PERVIOUS MATERIALS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER OR DESIGNEE.
11. IN NO CASE WILL DRIVEWAYS BE ALLOWED FROM DOUBLE FRONTAGE LOTS.
12. XERISCAPED PLANTERS MAY BE INSTALLED IF PLAN IS APPROVED BY CITY ENGINEER OR DESIGNEE.
13. BOTH SIDES OF THE WALLS MUST BE PAINTED WITH A BASE COAT AND 3 HIGHLIGHTS APPROVED AHEAD OF TIME BY THE CITY.
SPANISH FORK ENGINEERING
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550
STANDARD DRAWING
COLLECTOR 3 LANE STREET
DRAWN: JLR
DESIGN: MHC
REVISION:
DATE: 6/19/2018
SCALE NONE
STANDARD ST-508

13. **ST-510 Cross section** (updated 6' shoulder to 8')

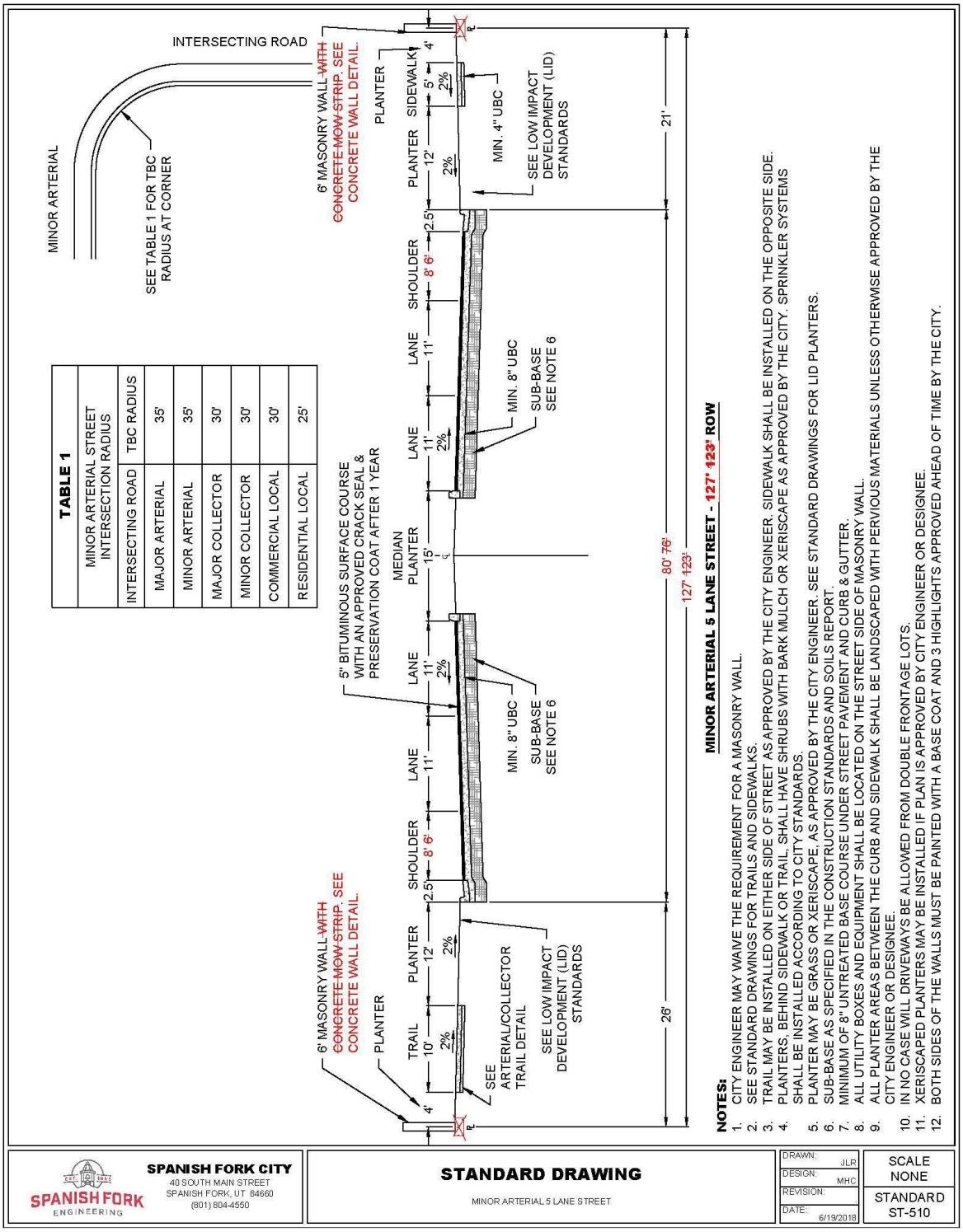


TABLE 1

MINOR ARTERIAL STREET INTERSECTION RADIUS	
INTERSECTING ROAD	TBC RADIUS
MAJOR ARTERIAL	35'
MINOR ARTERIAL	35'
MAJOR COLLECTOR	30'
MINOR COLLECTOR	30'
COMMERCIAL LOCAL	30'
RESIDENTIAL LOCAL	25'

MINOR ARTERIAL 5 LANE STREET - ~~127'~~ 123' ROW

NOTES:

1. CITY ENGINEER MAY WAIVE THE REQUIREMENT FOR A MASONRY WALL.
2. SEE STANDARD DRAWINGS FOR TRAILS AND SIDEWALKS.
3. TRAIL MAY BE INSTALLED ON EITHER SIDE OF STREET AS APPROVED BY THE CITY ENGINEER. SIDEWALK SHALL BE INSTALLED ON THE OPPOSITE SIDE.
4. PLANTERS, BEHIND SIDEWALK OR TRAIL, SHALL HAVE SHRUBS WITH BARK MULCH OR XERISCAPE AS APPROVED BY THE CITY. SPRINKLER SYSTEMS SHALL BE INSTALLED ACCORDING TO CITY STANDARDS.
5. PLANTER MAY BE GRASS OR XERISCAPE, AS APPROVED BY THE CITY ENGINEER. SEE STANDARD DRAWINGS FOR LID PLANTERS.
6. SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT.
7. MINIMUM OF 8" UNTREATED BASE COURSE UNDER STREET PAVEMENT AND CURB & GUTTER.
8. ALL UTILITY BOXES AND EQUIPMENT SHALL BE LOCATED ON THE STREET SIDE OF MASONRY WALL.
9. ALL PLANTER AREAS BETWEEN THE CURB AND SIDEWALK SHALL BE LANDSCAPED WITH PERVIOUS MATERIALS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER OR DESIGNEE.
10. IN NO CASE WILL DRIVEWAYS BE ALLOWED FROM DOUBLE FRONTAGE LOTS.
11. XERISCAPED PLANTERS MAY BE INSTALLED IF PLAN IS APPROVED BY CITY ENGINEER OR DESIGNEE.
12. BOTH SIDES OF THE WALLS MUST BE PAINTED WITH A BASE COAT AND 3 HIGHLIGHTS APPROVED AHEAD OF TIME BY THE CITY.

SPANISH FORK ENGINEERING

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

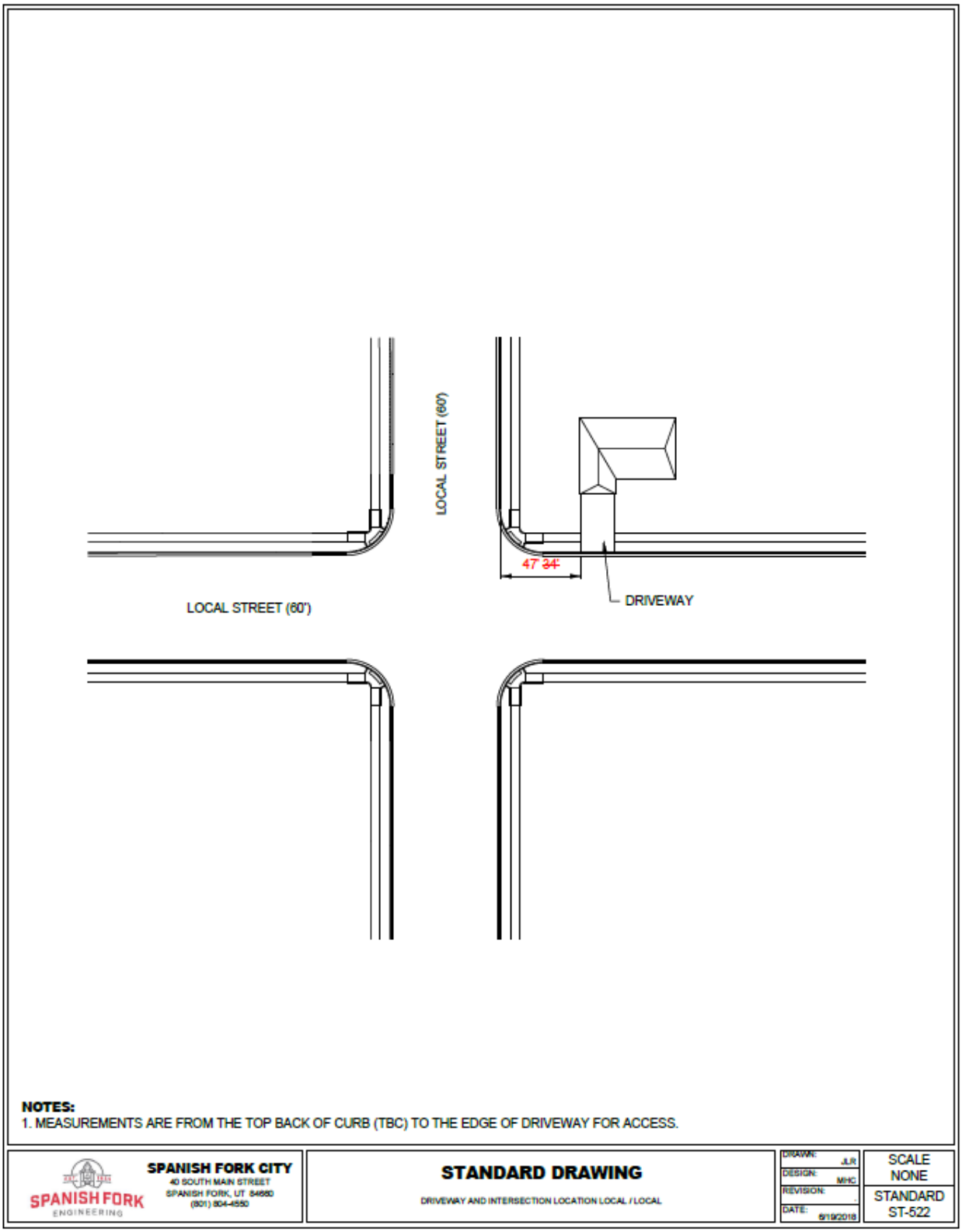
STANDARD DRAWING
MINOR ARTERIAL 5 LANE STREET

DRAWN:	JLR
DESIGN:	MHC
REVISION:	
DATE:	6/19/2018

SCALE NONE

STANDARD ST-510

ST-522 Driveway (updated 34’ to 47’ because of the change to the site triangles)


LOCAL STREET (60')
LOCAL STREET (60')
47' 34'
DRIVEWAY
NOTES:
1. MEASUREMENTS ARE FROM THE TOP BACK OF CURB (TBC) TO THE EDGE OF DRIVEWAY FOR ACCESS.
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550
SPANISH FORK ENGINEERING
STANDARD DRAWING
DRIVEWAY AND INTERSECTION LOCATION LOCAL / LOCAL
DRAWN: JLR
DESIGN: MHC
REVISION:
DATE: 5/19/2018
SCALE NONE
STANDARD ST-522

14. **E-601 Front Page** (Added note #16)

SPANISH FORK ELECTRIC CONSTRUCTION STANDARDS & DRAWINGS

GENERAL INFORMATION

PURPOSE

THE PURPOSE OF THE ELECTRICAL CONSTRUCTION DRAWINGS IS TO AID CUSTOMERS, CONTRACTORS, DEVELOPERS, ENGINEERS, IN CONSTRUCTION AND INSTALLATION OF ELECTRICAL SYSTEMS AND SERVICES TO NEW AND REMODELED STRUCTURES, AND NEW RESIDENTIAL, COMMERCIAL AND INDUSTRIAL DEVELOPMENTS.
IT IS THE INTENT AND DESIRE, WITH THE AID OF THE CONSTRUCTION STANDARDS AND DRAWINGS, OF SPANISH FORK ELECTRIC TO PROVIDE SAFE, EFFICIENT, AND RELIABLE ELECTRICAL SERVICE TO ALL CUSTOMERS.

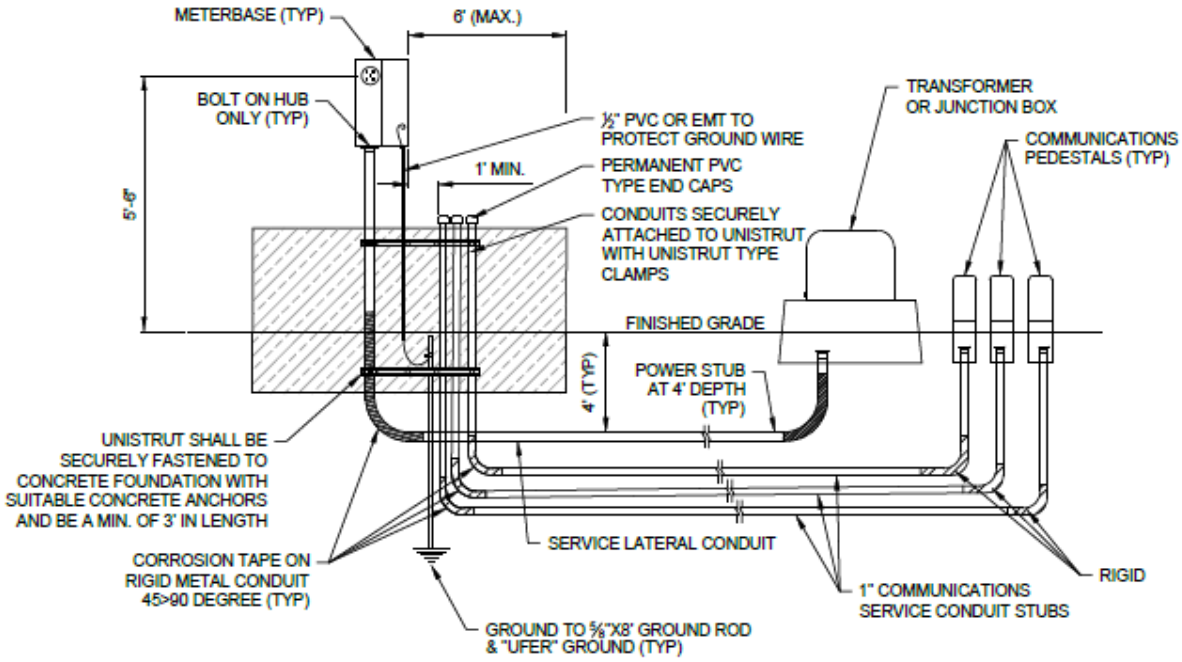
GENERAL GUIDELINES AND RULES

1. STANDARDS DRAWINGS 47 THROUGH 68 FOR ELECTRICAL & COMMUNICATIONS INSTALLATIONS ARE A SUPPLEMENT TO THE POLICY 39 CONSTRUCTION STANDARDS TEXT ONLY. THE DRAWINGS ARE NOT INTENDED TO BE VIEWED OR USED SOLELY WITHOUT FIRST READING AND UNDERSTANDING THE POLICY 39 CONSTRUCTION STANDARDS IN THE FRONT OF THIS BOOK.
2. REFER TO THE POLICY 39 CONSTRUCTION STANDARDS, CHAPTER 39.70 FOR ELECTRICAL INSTALLATIONS, AND CHAPTER 39.75 FOR COMMUNICATIONS INSTALLATIONS, FOR ALL APPLICATIONS.
3. CURB & GUTTER SHALL BE INSTALLED ON ANY PROJECT BEFORE THE MAIN ELECTRICAL TRENCH IS EXCAVATED. THE CURB SHOULD HAVE PROPERTY CORNERS MARKED AND PINNED IN THE CURB BY APPROVED METHODS. THE CURB WILL GIVE REFERENCE TO THE ELECTRICAL CONDUIT DEPTHS, ELECTRICAL BOX PLACEMENT AND OTHER LOCATIONS IMPORTANT FOR ELECTRICAL INSTALLATION.
4. IF THE ELECTRICAL INSTALLATION , APPLICATIONS, OR OTHER MATTERS ARE NOT COVERED IN THIS BOOK, THEN IN GENERAL, THE INSTALLATION, APPLICATION, OR MATTER IS NOT APPROVED.
5. ALL ELECTRICAL CONSTRUCTION, AND INSTALLATION SHALL CONFORM TO APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE (NEC), THE NATIONAL ELECTRICAL SAFETY CODE (NESC), OSHA, STATE, COUNTY, AND CITY ORDINANCES, STANDARDS, AND CODES.
6. ANY AND ALL WORK IN THE VICINITY OF OVERHEAD POWERLINES SHALL NOT BE ALLOWED UNLESS THE RESPONSIBLE PARTY FIRST NOTIFIES THE ELECTRIC DEPARTMENT OF THE INTENDED WORK OR ACTIVITY. NO PERSON OR THING SHALL BE BROUGHT WITHIN 10 FEET OF ANY HIGH VOLTAGE OVERHEAD POWER LINES, UNLESS THE PROPER STEPS ARE TAKEN TO INSURE THE SAFETY OF THE PUBLIC, AND POWER DEPARTMENT PERSONNEL. THE POWER DEPARTMENT RECOMMENDS A MINIMUM OF 3 BUSINESS DAYS NOTICE BE GIVEN BEFORE ANY WORK NEAR ITS OVERHEAD POWER LINES IS SCHEDULED TO BEGIN.
7. THE NATIONAL ELECTRICAL SAFETY CODE AND ELECTRIC DEPARTMENT CODE REQUIRES THAT HOMES, BUILDINGS, SIGNS, BRIDGES, ANTENNAS, ETC, HAVE SUFFICIENT HORIZONTAL AND VERTICAL CLEARANCES TO OVERHEAD POWER LINES. CONSULT WITH THE POWER DEPARTMENT FOR APPLICABLE DISTANCES AND CLEARANCES.
8. CALL BLUESTAKES BEFORE YOU DIG! UTAH LAW SECTION 54-8A-1 THROUGH 54-8A-11 REQUIRES THE BLUE STAKES ONE CALL LOCATION CENTER BE NOTIFIED AT LEAST TWO BUSINESS DAYS PRIOR TO EXCAVATION. THE EXCAVATION SHALL NOT BE STARTED UNTIL LOCATIONS HAVE BEEN MADE.
9. IN GENERAL, JOINT TRENCHING OF POWER AND COMMUNICATIONS IS ALLOWED AS LONG AS THE INSTALLATION CONFORMS TO THE CONSTRUCTION STANDARDS.
10. ALL ELECTRICAL CONDUITS SHALL BE INSTALLED A MINIMUM OF 4 FEET TO TOP OF CONDUIT FROM FINISHED GRADE. ADDITIONAL DEPTHS MAY BE REQUIRED IF HIGH VOLTAGE PRIMARY (12.47kV) CABLES ARE INSTALLED IN A JOINT TRENCH WITH LOW VOLTAGE (600V OR LESS) CABLES, AND COMMUNICATIONS CABLES. IN GENERAL, HIGH VOLTAGE PRIMARY (12.47kV) CONDUITS SHALL BE INSTALLED 1 FOOT IN DEPTH FOR EVERY 1 INCH IN CONDUIT SIZE, (example 6 inch conduit shall be 6 feet in depth), BUT IN NO CASE SHALL PRIMARY CONDUITS BE INSTALLED LESS THAN THE MINIMUM OF 4 FEET IN DEPTH, UNLESS APPROVED BY THE POWER DEPARTMENT.
11. THE ELECTRICAL DISTRIBUTION SYSTEM FOR ALL NEW CONSTRUCTION OF RESIDENTIAL, COMMERCIAL, INDUSTRIAL, DEVELOPMENTS SHALL BE INSTALLED UNDERGROUND UNLESS OTHERWISE APPROVED BY THE ELECTRIC DEPARTMENT. REMODELING, CHANGES IN USE, ADDTIONS, ALTERATIONS, AND OTHER CHANGES THAT EFFECT THE ELECTRICAL SYSTEM, MAY REQUIRE THAT THE ELECTRICAL SYSTEM BE REROUTED, OR UPGRADED UNDERGROUND, AND OR BE BROUGHT UP TO CURRENT NEC, NESC, AND CITY STANDARDS. ADDITIONAL REQUIREMENTS MAY APPLY.
12. THE DEVELOPER IS TO PROVIDE THE TRENCH FOR ALL REQUIRED CONDUIT SYSTEMS, AND FOLLOWING THE INSTALLATION OF THE CONDUITS BY THE DEVELOPER, PROVIDE SAND AND BACKFILL TO MEET THE CONSTRUCTION STANDARDS. ALL TRENCHES SHALL BE COMPACTED TO 95% AND PASS THE COMPACTION TEST BEFORE THE TRENCH WILL BE ACCEPTED. ALL CONDUITS SHALL BE INSPECTED BEFORE ANY SAND OR BACKFILL IS APPLIED. TO INSURE FINAL GRADE HAS BEEN ESTABLISHED, THE CURB & GUTTER SHALL BE INSTALLED BEFORE THE ELECTRICAL TRENCH IS STARTED.
13. PRIOR TO BACKFILLING ANY CONDUITS, THE DEVELOPER SHALL SCHEDULE AND REQUEST AN INSPECTION FROM THE ELECTRIC DEPARTMENT. FOLLOWING THE INSPECTION THE ELECTRIC DEPARTMENT WILL ISSUE A "PASSED" OR "FAILED" SLIP TO PROCEED BACKFILLING OR NOT TO PROCEED.
14. STATE SPECIFIED ROAD BASE SHALL BE USED UNDER ALL ELECTRICAL BOXES, ENCLOSURES, PADS, OR VAULTS. THE ROAD BASE SHALL BE COMPACTED TO 95% MINIMUM AND PASS A COMPACTION TEST BEFORE ANY BOXES, ENCLOSURES, PADS OR VAULTS ARE SET. THE ROAD BASE SHALL BE A MINIMUM OF 1 FOOT IN DEPTH AND EXTEND A MINIMUM OF 1 FOOT PAST ALL SIDES OF THE BOXES, ENCLOSURES, PADS OR VAULTS. ADDITIONAL REQUIREMENTS MAY APPLY.
15. IN GENERAL, ALL ELECTRICAL BOXES SHALL BE PLACED A MINIMUM OF 18 INCHES FROM A PROPERTY LINE AND SET BACK 6 INCHES TO 1 FOOT BEHIND SIDEWALKS.
16. RIGID METAL (RMC) OR FIBERGLASS (FG) SHALL BE USED FOR ALL ELBOWS AND BENDS 45 DEGREES AND GREATER.

SPANISH FORK ENGINEERING **SPANISH FORK CITY** 40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	**STANDARD DRAWING** ELECTRIC AND COMMUNICATIONS FRONT PAGE-INFORMATION	DRAWN: JLR DESIGN: MHC REVISION: DATE: 5/19/2018	SCALE NONE STANDARD E-601

15. E-602 200 amp or less (Notes updated)

SERVICE SIZE	NEC WIRE SIZE	CONDUIT SIZE
100 AMP	#2 ALU	2"
125 AMP	1/0 ALU	2"
150 AMP	2/0 ALU	2"
200 AMP	4/0 ALU	~~3"~~ 2"
201 AMPS-400 AMPS SEE ELECTRICAL DIVISION		



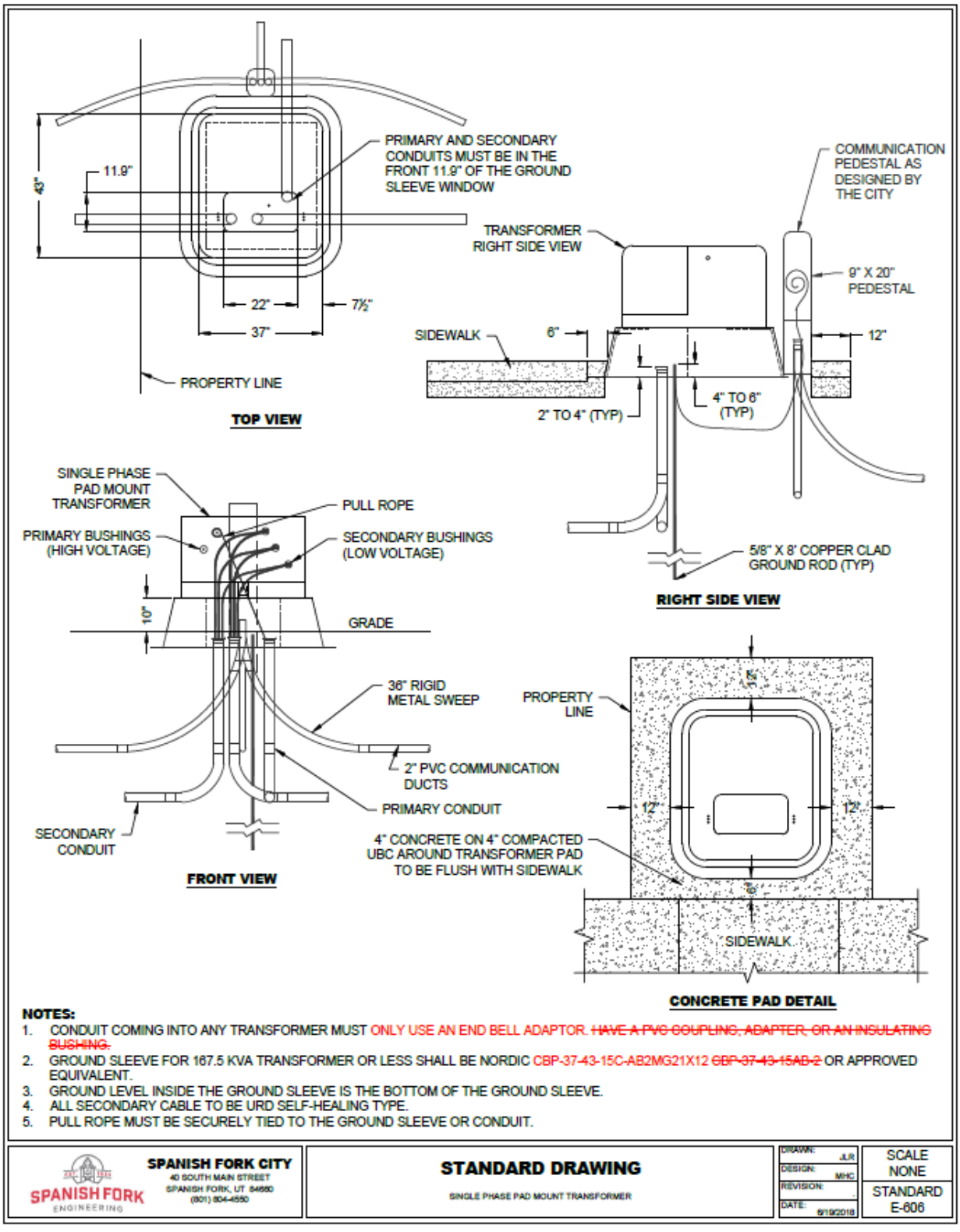
SURFACE MOUNT FRONT VIEW

NOTES:

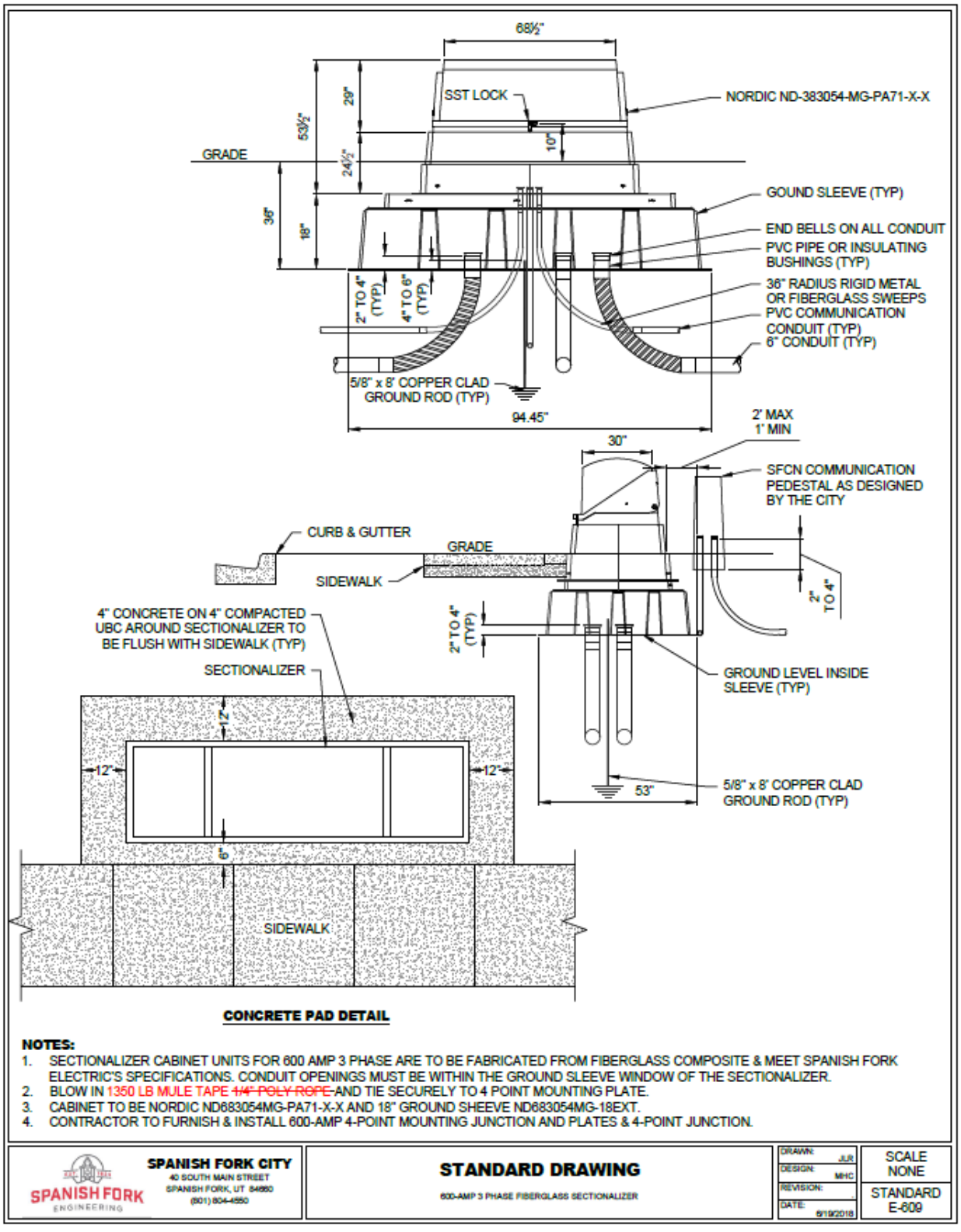
1. ALL MATERIALS TO BE SUPPLIED BY CUSTOMER EXCEPT METER.
2. ALL TEMPORARY/PERMANANT EQUIPMENT SHALL COMPLY WITH CURRENT N.E.C., N.E.S.C, AND CITY STANDARDS.
3. SPANISH FORK ELECTRICAL DIVISION WILL FURNISH AND INSTALL METER AND CONNECT SERVICE IN TRANSFORMER OR JUNCTION BOX.
4. SERVICE CONDUCTORS SHALL MEET CURRENT NATIONAL ELECTRIC CODE.
5. CORROSION INHIBITING COMPOUND SHALL BE USED ON ALL ELECTRICAL WIRE CONNECTIONS INSIDE METER BASE.
6. GROUND ROD TO BE DRIVEN A MINIMUM OF 6' IN UNDISTURBED SOIL. GROUNDING CONDUCTOR CONNECTED TO GROUND ROD SHALL BE MINIMUM OF #6 COPPER. IF UPDATED SERVICE (2) GROUND RODS SHALL BE INSTALLED AT LEAST 10' APART.
7. UNISTRUT TO BE OF ONE PIECE AND OF 2' IN LENGTH
8. ENOUGH WIRE SHALL BE PROVIDED TO EXTEND A MINIMUM OF 3' PAST THE TRANSFORMER OR SECONDARY PEDESTAL GROUND SLEEVE.
9. RIGID METAL CONDUITS SHALL BE TAPED WITH ANTI-CORROSION TAPE. TAPE SHALL EXTEND 6" ABOVE FINISHED GRADE.
10. ALL POWER SERVICE LATERAL CONDUITS SHALL BE 2" OR 3". TO DETERMINE SIZE FIELD VERIFY BY EXCAVATING THE SERVICE STUBS.
11. METERBASE SHALL BE LOCATED WITHIN THE FRONT 6' OF THE SIDE OF THE HOUSE. OTHER LOCATION SHALL FIRST BE APPROVED BY POWER DEPT.
12. METER SOCKET SHALL BE PLACED A MINIMUM OF 4'6" AND A MAXIMUM OF 6' TO CENTER OF SOCKET FROM FINISHED GRADE.
13. CONTACT POWER DEPT. TO SCHEDULE APPOINTMENT FOR ASSISTANCE IN PULLING IN URD WIRE INTO ENERGIZED TRANSFORMERS.
14. MAIN DISCONNECT BREAKER TO BE INSTALLED AT TIME OF INSPECTION.
15. IN GENERAL ONLY CONTINUOUS LENGTHS OF CONDUIT SHALL BE USED. NO JOINTS OR COUPLERS ARE PERMITTED IN SERVICE CONDUITS UNLESS OTHERWISE APPROVED.

SPANISH FORK ENGINEERING **SPANISH FORK CITY** 40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	**STANDARD DRAWING** RESIDENTIAL UNDERGROUND SERVICE 200 AMPS OR LESS	DRAWN: TC DESIGN: TC REVISION: 5/04/2018 DATE: 5/19/2018	SCALE NONE STANDARD E-602

16. **E-606 Single Phase Pad Mount** (Note 2 needs to be updated)


PRIMARY AND SECONDARY CONDUITS MUST BE IN THE FRONT 11.9" OF THE GROUND SLEEVE WINDOW
11.9"
43"
22"
7½"
37"
PROPERTY LINE
TOP VIEW
COMMUNICATION PEDESTAL AS DESIGNED BY THE CITY
TRANSFORMER RIGHT SIDE VIEW
9" X 20" PEDESTAL
SIDEWALK
6"
12"
2" TO 4" (TYP)
4" TO 6" (TYP)
5/8" X 8' COPPER CLAD GROUND ROD (TYP)
RIGHT SIDE VIEW
SINGLE PHASE PAD MOUNT TRANSFORMER
PULL ROPE
PRIMARY BUSHINGS (HIGH VOLTAGE)
SECONDARY BUSHINGS (LOW VOLTAGE)
10"
GRADE
36" RIGID METAL SWEEP
2" PVC COMMUNICATION DUCTS
PRIMARY CONDUIT
SECONDARY CONDUIT
FRONT VIEW
PROPERTY LINE
6"
12"
12"
6"
4" CONCRETE ON 4" COMPACTED UBC AROUND TRANSFORMER PAD TO BE FLUSH WITH SIDEWALK
SIDEWALK
CONCRETE PAD DETAIL
NOTES:
1. CONDUIT COMING INTO ANY TRANSFORMER MUST ONLY USE AN END BELL ADAPTOR. ~~HAVE A PVC COUPLING, ADAPTER, OR AN INSULATING BUSHING.~~
2. GROUND SLEEVE FOR 167.5 KVA TRANSFORMER OR LESS SHALL BE NORDIC CBP-37-43-15C-AB2MG21X12 ~~CBP-37-43-15AB-2~~ OR APPROVED EQUIVALENT.
3. GROUND LEVEL INSIDE THE GROUND SLEEVE IS THE BOTTOM OF THE GROUND SLEEVE.
4. ALL SECONDARY CABLE TO BE URD SELF-HEALING TYPE.
5. PULL ROPE MUST BE SECURELY TIED TO THE GROUND SLEEVE OR CONDUIT.
SPANISH FORK ENGINEERING
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550
STANDARD DRAWING
SINGLE PHASE PAD MOUNT TRANSFORMER
DRAWN: JLR
DESIGN: MHC
REVISION:
DATE: 6/19/2018
SCALE NONE
STANDARD E-606

17. **E-609 600 Amp 3 Phase Sectionalizer** (Ground Wire was removed)

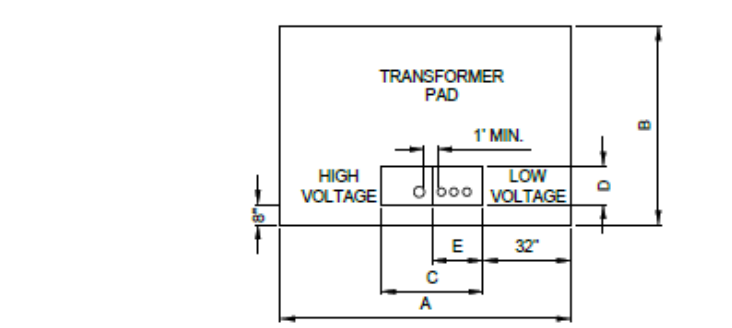


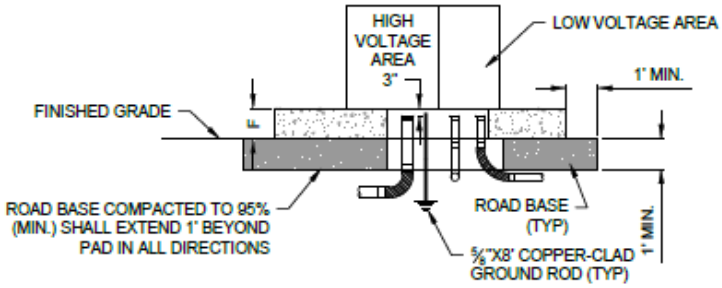
NOTES:

1. SECTIONALIZER CABINET UNITS FOR 600 AMP 3 PHASE ARE TO BE FABRICATED FROM FIBERGLASS COMPOSITE & MEET SPANISH FORK ELECTRIC'S SPECIFICATIONS. CONDUIT OPENINGS MUST BE WITHIN THE GROUND SLEEVE WINDOW OF THE SECTIONALIZER.
2. BLOW IN 1350 LB MULE TAPE ~~1/4" POLY ROPE~~ AND TIE SECURELY TO 4 POINT MOUNTING PLATE.
3. CABINET TO BE NORDIC ND683054MG-PA71-X-X AND 18" GROUND SHEEVE ND683054MG-18EXT.
4. CONTRACTOR TO FURNISH & INSTALL 600-AMP 4-POINT MOUNTING JUNCTION AND PLATES & 4-POINT JUNCTION.

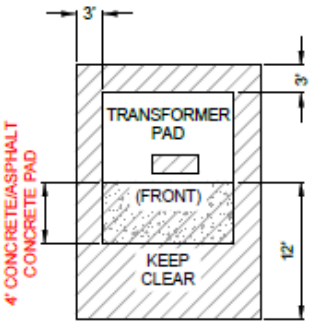
SPANISH FORK ENGINEERING **SPANISH FORK CITY** 40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	**STANDARD DRAWING** 600-AMP 3 PHASE FIBERGLASS SECTIONALIZER	DRAWN: JJR DESIGN: MHC REVISION: DATE: 5/19/2018	SCALE NONE STANDARD E-609

18. **E-612 3 Phase Transformer** (added 4' concrete pad in front of Transformer pad)





GENERAL TRANSFORMER CLEARANCES



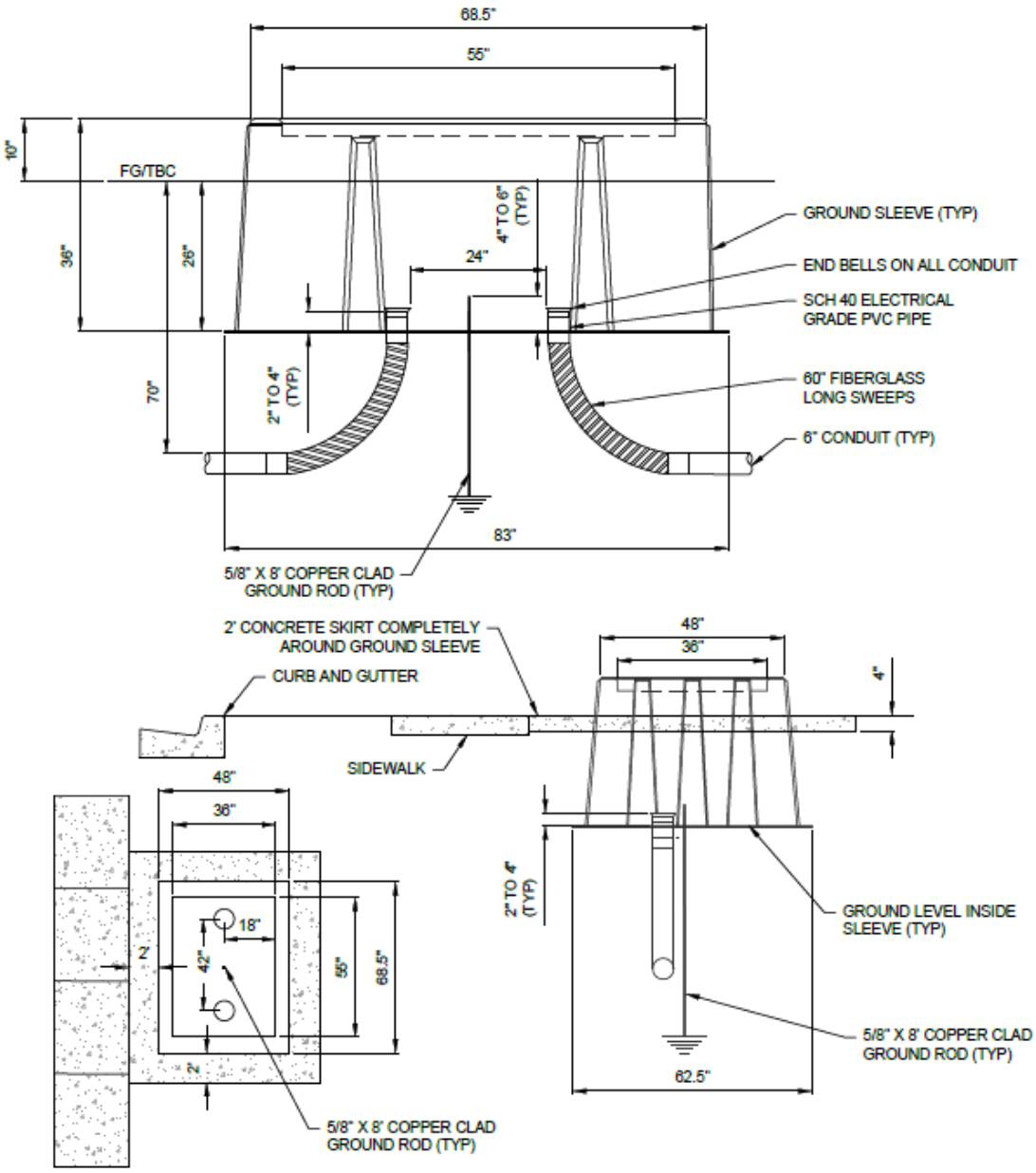
TRANSFORMER PAD DIMENSION CHART						
TRANSFORMER KVA RATING	DIMENSIONS					
	A	B	C	D	E	F
75-500 KVA	114"	78"	36"	15"	18"	9"
750-1500 KVA	118"	105"	52"	16"	20"	11"
2000 KVA	CONTACT POWER DEPT.					

NOTES:

1. SITE PREPARATION & INSPECTIONS. AFTER EXCAVATION, ALL EXCAVATED AREA 1' PAST PAD SHALL BE BACK FILLED WITH ROAD BASE AND MUST BE COMPACTED TO 95%. THE GROUND MUST BE LEVEL AN ADDITIONAL 12' PAST THE EDGE OF THE PAD ON ALL SIDES AND THEN TAPER OFF. ALL PADS SHALL BE INSPECTED PRIOR TO POURING CONCRETE, AND THE GROUND SHALL HAVE A COMPACTION TEST DONE PRIOR TO THE FORM BEING CONSTRUCTED.
2. CONCRETE. CONCRETE SHALL BE IN ACCORDANCE WITH SPANISH FORK CITY STANDARD 4.39.65.040 ~~BE TYPE E61A~~. STEEL REINFORCEMENT SHALL BE #4 BARS PLACED AT 12" CENTERS THROUGHOUT THE PAD. THE PAD MUST BE POURED AT LEAST SEVEN FULL DAYS PRIOR TO SETTING THE TRANSFORMER. THE FINISHED SURFACE MUST BE COMPLETELY FLAT AND LEVEL. CONCRETE SHALL BE TESTED BY THE CITY OR THE CITY'S ENGINEERING FIRM PRIOR TO POURING CONCRETE. CONCRETE SHALL CONFORM TO CITY STANDARDS.
3. FABRICATION. THE PAD SHALL BE CONSTRUCTED ON THE SITE ACCORDING TO THE SPECIFICATIONS.
4. CONDUIT WINDOW LAYOUT. LOW VOLTAGE CONDUITS SHALL BE FORMED AS TIGHTLY AS POSSIBLE AGAINST THE RIGHT SIDE OF THE OPENING AND SHALL IN NO CASE EXTEND FURTHER THAN 20" FROM THE RIGHT SIDE OF THE CONDUIT WINDOW ON THE SMALL PAD OR 30" ON THE LARGE PADS. NO MORE THAN EIGHT CONDUITS WILL BE USED ON THE LOW VOLTAGE SIDE. ON 2000 KVA PADS, NO MORE THAN 12 SECONDARY CONDUITS WILL BE USED. DO NOT PUT ANY CONCRETE IN OR UNDER THE CONDUIT WINDOW. USE SOIL TO SEPARATE CONDUITS. ALL CONDUITS ENTERING THE PAD SHALL BE SCHEDULE 40 P.V.C. WITH RIGID METAL 90° ELBOWS OR FIBERGLASS.
5. GROUNDING. A 5/8" X 8' GROUND ROD SHALL BE USED ON THE SMALL PAD AND A 3/4" X 10' ROD ON THE LARGE PADS. THE GROUND ROD SHALL BE INSTALLED ON THE PRIMARY SIDE OF TRANSFORMER.
6. CLEARANCES. THE FRONT OF THE PAD SHOULD ALWAYS FACE AWAY FROM ADJACENT STRUCTURES AND BE FREE OF OBSTRUCTIONS. AT LEAST THREE FEET MUST SEPARATE THE EDGES OF THE PAD FROM ANY ADJACENT STRUCTURE. THE EDGES OF THE PAD MUST BE AT LEAST TEN FEET FROM ANY COMBUSTIBLE STRUCTURE. IF AN ADJACENT STRUCTURE HAS ANY OVERHANG OR EAVE WITHIN 27 VERTICAL FEET OF THE TOP OF THE PAD, CLEARANCE MUST BE MEASURED FROM THE OUTSIDE OF THE OVERHANG. THE PAD MUST NOT BE PLACED IN AN AREA TEN FEET IN LINE WITH OR THREE FEET TO EITHER SIDE OF ANY WINDOW IN AN ADJACENT STRUCTURE.
7. CLEARANCE FOR A DOOR MUST BE TWENTY FEET IN LINE WITH IT AND TEN FEET ON EITHER SIDE. PADS MUST NOT BE PLACED WITHIN FIFTEEN FEET OF ANY VALVE OR WITHIN TWENTY FEET OF ANY PUMPING OR STORAGE FACILITY CONTAINING FLAMMABLE MATERIAL. NO WALLS, FENCES, OR ANY OTHER OBSTRUCTIONS WILL BE PLACED WITHIN THREE FEET OF THE SIDES OR BACK OF THE PAD, OR WITHIN TWELVE FEET OF THE FRONT OF THE PAD. THE AREA SURROUNDING THE PAD MUST HAVE TWELVE FEET OF CLEAR, LEVEL WORKING AREA FOR MAINTENANCE OF THE TRANSFORMER. THE PAD MAY NOT BE PLACED IN LINE WITH AN AIR INTAKE WITHIN 32 VERTICAL FEET OF THE SURFACE OF THE PAD. ALSO, IT MUST NOT BE PLACED WITHIN 12 FEET VERTICALLY OF A DOOR OR WINDOW.
8. BARRIERS. IF THE TRANSFORMER PAD IS TO BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC, (PARKING LOTS, DRIVEWAYS, ETC.) CONTACT SPANISH FORK CITY ELECTRICAL FOR PROTECTIVE BARRIER REQUIREMENTS.
9. METERING. IN GENERAL, THE METERING SHALL BE PLACED ON BUILDINGS OR STRUCTURES.
10. CONNECTIONS. ALL SECONDARY (LOW VOLTAGE) CABLES & SECONDARY CONNECTIONS ARE THE CONTRACTOR'S RESPONSIBILITY. SPANISH FORK ELECTRICAL WILL INSTALL & TERMINATE PRIMARY CABLES & CONNECTIONS ONLY.
11. ANCHORING. CONTRACTOR TO ANCHOR TRANSFORMER TO PAD WITH MINIMUM OF TWO ANCHOR POINTS.

SPANISH FORK ENGINEERING **SPANISH FORK CITY** 40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	**STANDARD DRAWING** 3 PHASE TRANSFORMER & CONCRETE PAD	DRAWN: JLR DESIGN: MHC REVISION: DATE: 6/19/2018	SCALE NONE STANDARD E-612

19. **E-613 & 614 Switchgear** (#2 changed from poly rope to mule tape)

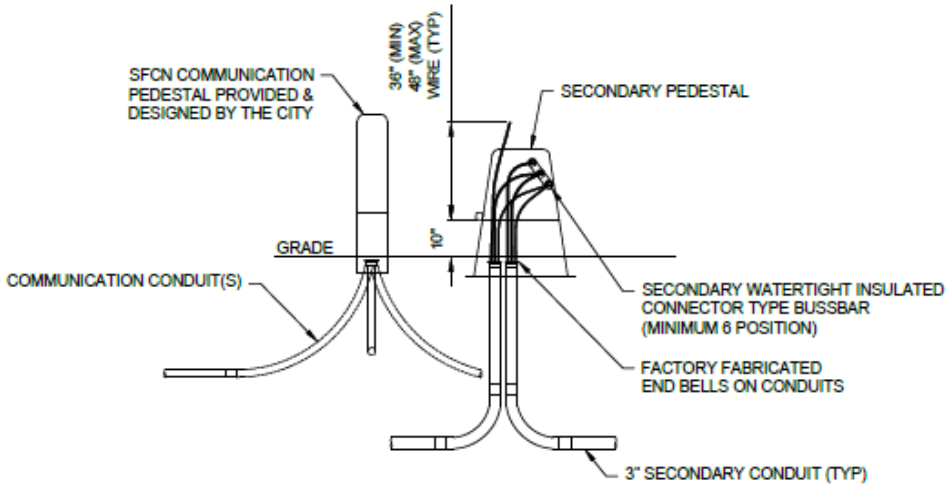


NOTES:

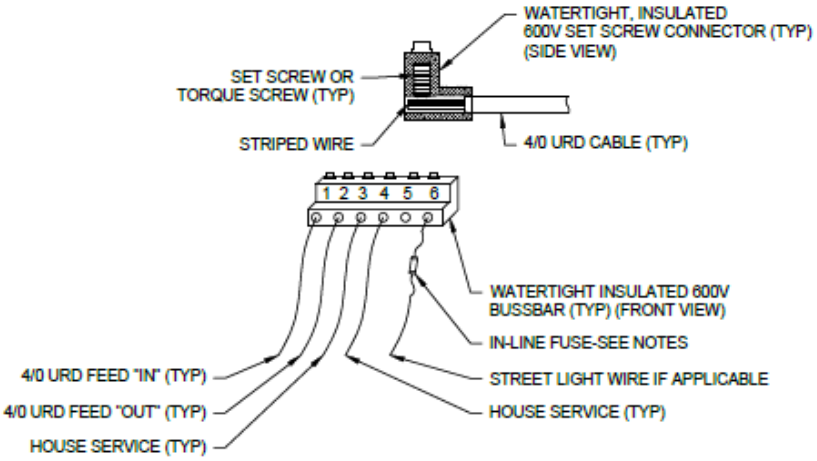
1. SWITCH GEAR GROUND SLEEVE SHALL BE PROVIDED BY SPANISH FORK ELECTRIC AND INSTALLED BY ELECTRICAL CONTRACTOR AS PER CITY SUPPLIED LAYOUT
2. 1350 LB MULE TAPE ~~1/4" POLY ROPE~~ SHALL BE BLOWN INTO CONDUIT AND TIED SECURELY TO GROUND ROD
3. CONDUIT LAYOUT DETAIL SHALL BE GIVEN BY SPANISH FORK ELECTRIC DURING PRE CONSTRUCTION MEETING
4. TYPICAL FOR COMMERCIAL TRANSFORMER PROTECTION FOR 750KVA AND LARGER

SPANISH FORK ENGINEERING **SPANISH FORK CITY** 40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	**STANDARD DRAWING** 600 AMP PSE 3/5 SWITCHGEAR	DRAWN: TC DESIGN: TC REVISION: DATE: 5/19/2018	SCALE NONE STANDARD E-614

20. **E-615 Secondary Pedestal** (#7 changed from 1' to 10' past property line)



SECONDARY CONNECTIONS

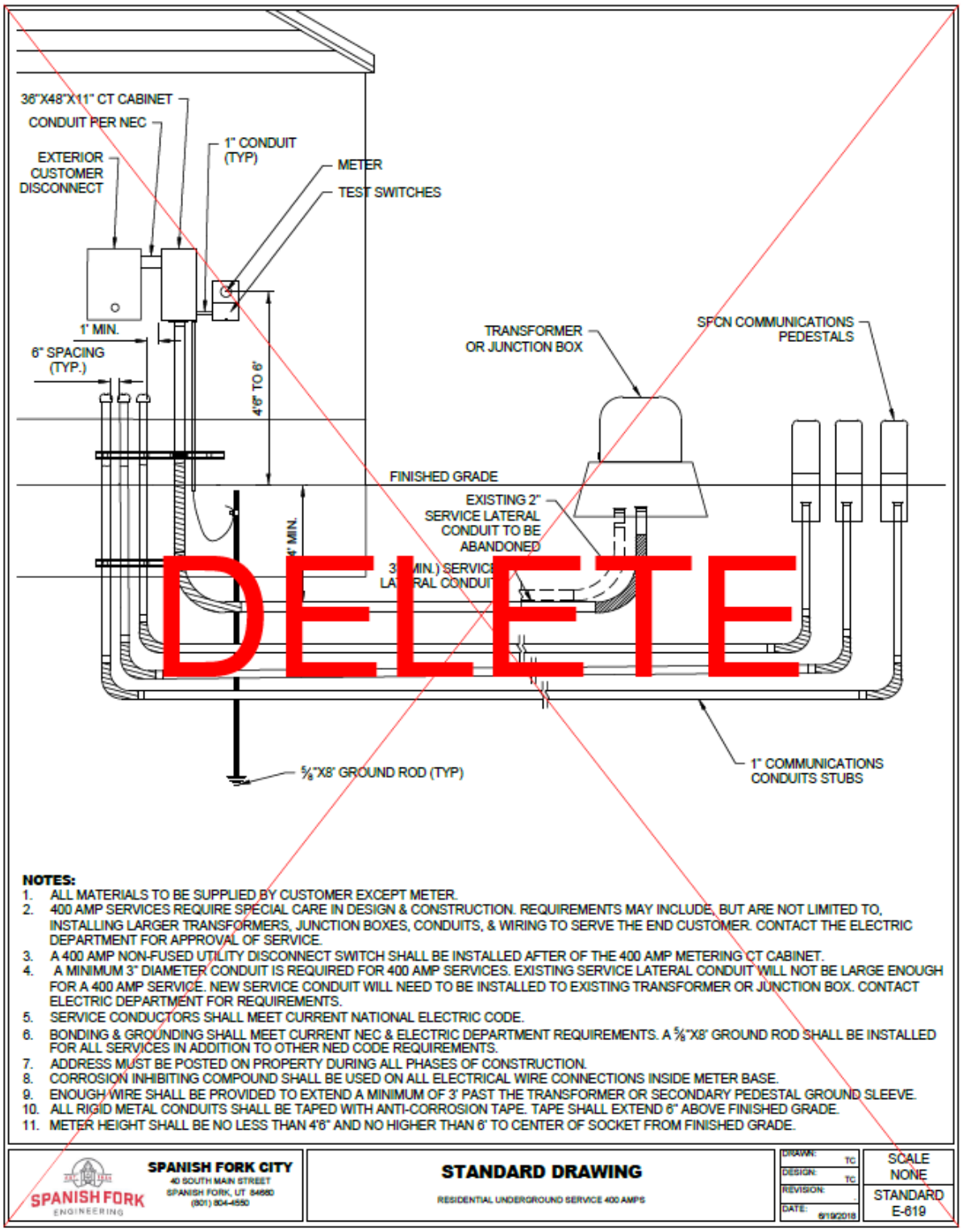


NOTES:

1. INSTALL AN IN-LINE 10 AMP FUSE & FUSE HOLDER ON THE UNGROUNDED 120/240V STREET LIGHT CONDUCTOR(S) IN JUNCTION BOX.
2. CONDUIT ENTERING INTO ANY SECONDARY PEDESTAL MUST HAVE A FABRICATED BELL END.
3. SECONDARY PEDESTAL SHALL BE NORDIC PSP-15-15-30-MG OR PENCELL AG20HDXCL-NL APPROVED EQUIVALENT.
4. GROUND LEVEL INSIDE THE GROUND SLEEVE IS THE BOTTOM OF THE GROUND SLEEVE.
5. ALL SECONDARY CABLE SHALL EXTEND A MINIMUM OF 36" & A MAXIMUM OF 48" FROM TOP OF SECONDARY BOX (WITHOUT LID) AND SHALL BE THE URD TYPE CABLE.
6. ROAD BASE SHALL BE USED UNDER SECONDARY BOXES. ROAD BASE SHALL BE COMPACTED TO 95% AND BE TESTED PRIOR TO BOX BEING SET INTO PLACE.
7. ALL SERVICE STUBS SHALL EXTEND 10' ~~+~~ PAST PROPERTY LINE.
8. SECONDARY WATERTIGHT, INSULATED SET SCREW CONNECTORS (UTILCO PED-6-350-SSP, ELASTIMOLD USB63S, RAYCHEM GPRT-350-6P-C(B6) OR EQUIVALENT) SHALL ACCEPT A MINIMUM OF SIX INDIVIDUAL WIRES, UNLESS OTHERWISE APPROVED BY ELECTRICAL DEPARTMENT.

SPANISH FORK ENGINEERING **SPANISH FORK CITY** 40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	**STANDARD DRAWING** SECONDARY PEDESTAL, WIRE & CONNECTIONS	DRAWN: JLR DESIGN: MHC REVISION: DATE: 5/19/2018	SCALE NONE STANDARD E-615

21. E-619 Res. Underground 400 amp (Remove this detail)



NOTES:

1. ALL MATERIALS TO BE SUPPLIED BY CUSTOMER EXCEPT METER.
2. 400 AMP SERVICES REQUIRE SPECIAL CARE IN DESIGN & CONSTRUCTION. REQUIREMENTS MAY INCLUDE, BUT ARE NOT LIMITED TO, INSTALLING LARGER TRANSFORMERS, JUNCTION BOXES, CONDUITS, & WIRING TO SERVE THE END CUSTOMER. CONTACT THE ELECTRIC DEPARTMENT FOR APPROVAL OF SERVICE.
3. A 400 AMP NON-FUSED UTILITY DISCONNECT SWITCH SHALL BE INSTALLED AFTER OF THE 400 AMP METERING CT CABINET.
4. A MINIMUM 3" DIAMETER CONDUIT IS REQUIRED FOR 400 AMP SERVICES. EXISTING SERVICE LATERAL CONDUIT WILL NOT BE LARGE ENOUGH FOR A 400 AMP SERVICE. NEW SERVICE CONDUIT WILL NEED TO BE INSTALLED TO EXISTING TRANSFORMER OR JUNCTION BOX. CONTACT ELECTRIC DEPARTMENT FOR REQUIREMENTS.
5. SERVICE CONDUCTORS SHALL MEET CURRENT NATIONAL ELECTRIC CODE.
6. BONDING & GROUNDING SHALL MEET CURRENT NEC & ELECTRIC DEPARTMENT REQUIREMENTS. A ⅝"X8' GROUND ROD SHALL BE INSTALLED FOR ALL SERVICES IN ADDITION TO OTHER NED CODE REQUIREMENTS.
7. ADDRESS MUST BE POSTED ON PROPERTY DURING ALL PHASES OF CONSTRUCTION.
8. CORROSION INHIBITING COMPOUND SHALL BE USED ON ALL ELECTRICAL WIRE CONNECTIONS INSIDE METER BASE.
9. ENOUGH WIRE SHALL BE PROVIDED TO EXTEND A MINIMUM OF 3' PAST THE TRANSFORMER OR SECONDARY PEDESTAL GROUND SLEEVE.
10. ALL RIGID METAL CONDUITS SHALL BE TAPED WITH ANTI-CORROSION TAPE. TAPE SHALL EXTEND 6" ABOVE FINISHED GRADE.
11. METER HEIGHT SHALL BE NO LESS THAN 4'6" AND NO HIGHER THAN 6' TO CENTER OF SOCKET FROM FINISHED GRADE.

SPANISH FORK ENGINEERING

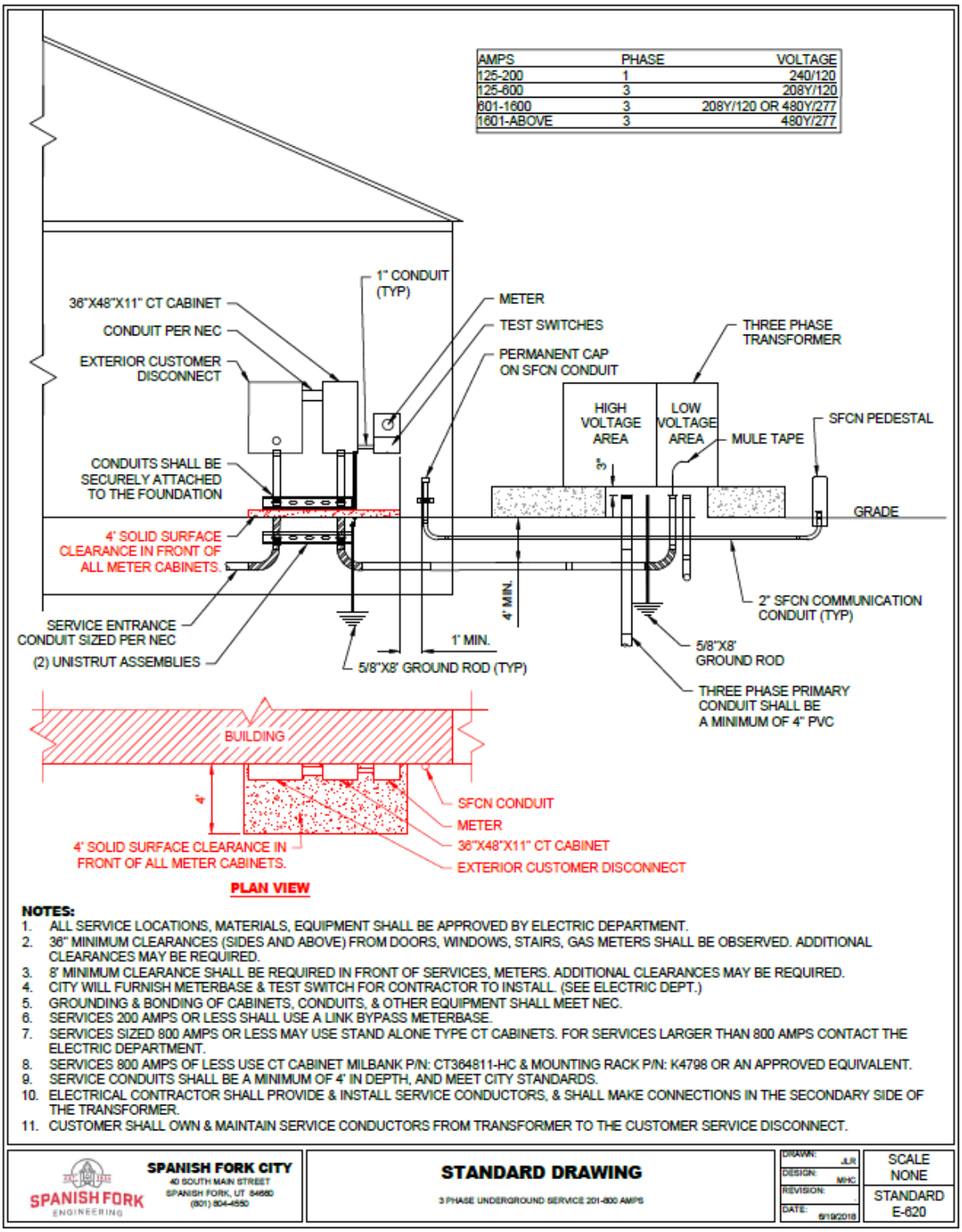
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
RESIDENTIAL UNDERGROUND SERVICE 400 AMPS

DRAWN:	TC
DESIGN:	TC
REVISION:	
DATE:	5/19/2018

SCALE NONE
STANDARD E-619

22. **E-620 3phase underground 200-800 amps** (Add concrete pad)



NOTES:

1. ALL SERVICE LOCATIONS, MATERIALS, EQUIPMENT SHALL BE APPROVED BY ELECTRIC DEPARTMENT.
2. 36" MINIMUM CLEARANCES (SIDES AND ABOVE) FROM DOORS, WINDOWS, STAIRS, GAS METERS SHALL BE OBSERVED. ADDITIONAL CLEARANCES MAY BE REQUIRED.
3. 8' MINIMUM CLEARANCE SHALL BE REQUIRED IN FRONT OF SERVICES, METERS. ADDITIONAL CLEARANCES MAY BE REQUIRED.
4. CITY WILL FURNISH METERBASE & TEST SWITCH FOR CONTRACTOR TO INSTALL. (SEE ELECTRIC DEPT.)
5. GROUNDING & BONDING OF CABINETS, CONDUITS, & OTHER EQUIPMENT SHALL MEET NEC.
6. SERVICES 200 AMPS OR LESS SHALL USE A LINK BYPASS METERBASE.
7. SERVICES SIZED 800 AMPS OR LESS MAY USE STAND ALONE TYPE CT CABINETS. FOR SERVICES LARGER THAN 800 AMPS CONTACT THE ELECTRIC DEPARTMENT.
8. SERVICES 800 AMPS OF LESS USE CT CABINET MILBANK P/N: CT364811-HC & MOUNTING RACK P/N: K4798 OR AN APPROVED EQUIVALENT.
9. SERVICE CONDUITS SHALL BE A MINIMUM OF 4' IN DEPTH, AND MEET CITY STANDARDS.
10. ELECTRICAL CONTRACTOR SHALL PROVIDE & INSTALL SERVICE CONDUCTORS, & SHALL MAKE CONNECTIONS IN THE SECONDARY SIDE OF THE TRANSFORMER.
11. CUSTOMER SHALL OWN & MAINTAIN SERVICE CONDUCTORS FROM TRANSFORMER TO THE CUSTOMER SERVICE DISCONNECT.

SPANISH FORK ENGINEERING

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
3 PHASE UNDERGROUND SERVICE 201-800 AMPS

DRAWN: JLR
DESIGN: MHC
REVISION:
DATE: 6/19/2018

SCALE NONE
STANDARD E-620