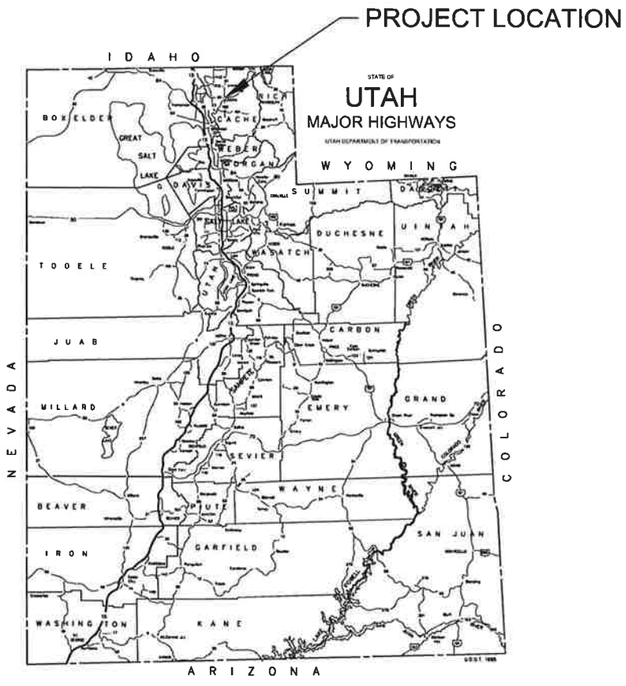
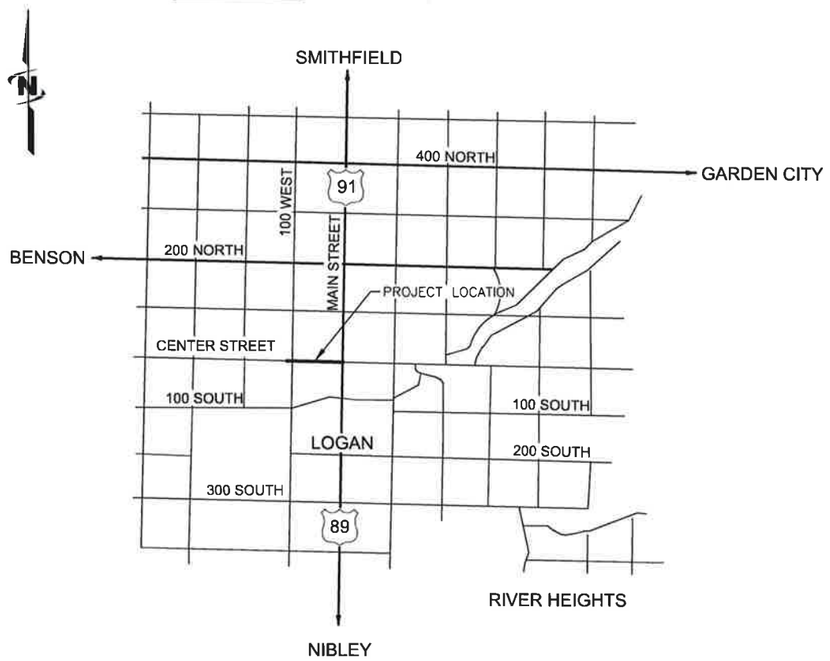
LOGAN CITY

CENTER STREET; MAIN STREET TO 100 WEST

JUNE 2019



AREA MAP



VICINITY MAP

PROFESSIONAL ENGINEER
ELECTRONIC SEAL
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

THESE PLANS HAVE BEEN REVIEWED AND APPROVED BY THE FOLLOWING:

PUBLIC WORKS DIRECTOR: 6-5-19
PAUL LINDHARDT, P.E. DATE

STREETS SUPERINTENDENT: 06-05-19
JED AL-IMARI DATE

WATER/SEWER MANAGER: 6-5-19
CAMERON DRANEY, P.E. DATE

CITY ENGINEER: 6/5/19
BILL YOUNG, P.E. DATE

PROJECT NO. 57-18-035

J-U-B ENGINEERS, INC.

1047 South 100 West, Suite 180, Logan, UT 84321
p 435 713 9514 f 435 713 9503 w www.jub.com

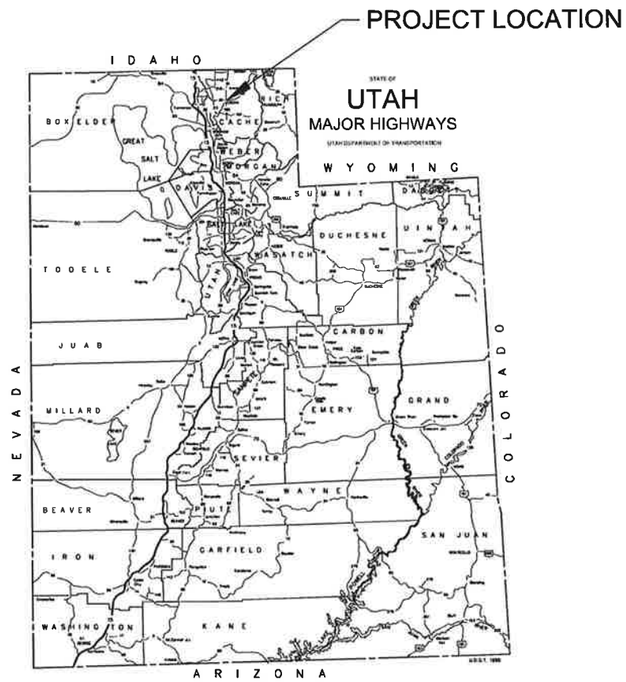
OTHER J-U-B COMPANIES: THE LANGDON GROUP | GATEWAY MAPPING INC.

INDEX TO SHEETS

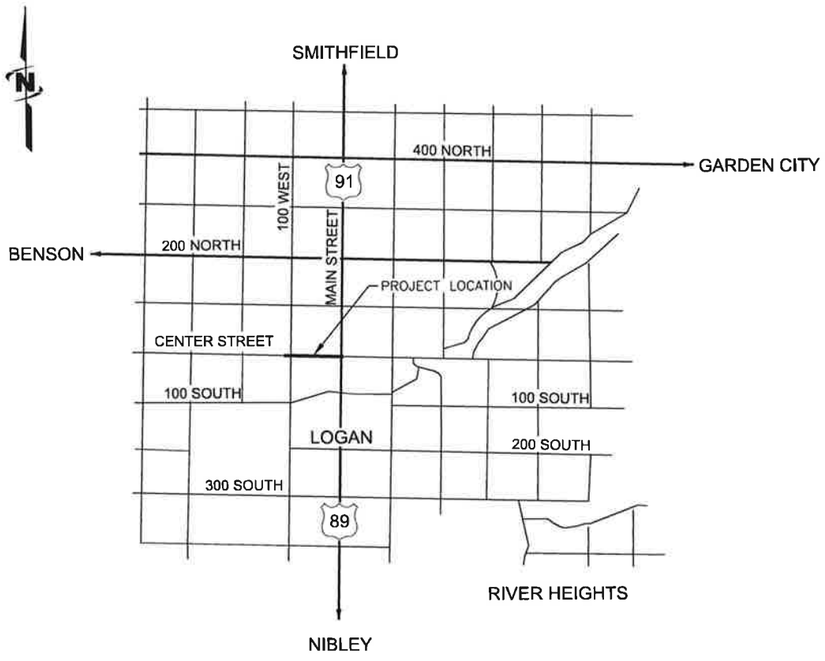
LAST UPDATED: 6/3/2019

SHEET NUMBER: G-001

Plot Date:6/3/2019 \\LOGANPUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\GENERAL\57-18-035_G-001.DGN



AREA MAP



VICINITY MAP

LOGAN CITY

CENTER STREET; MAIN STREET TO 100 WEST

JUNE 2019

PROFESSIONAL ENGINEER
ELECTRONIC SEAL
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

THESE PLANS HAVE BEEN REVIEWED AND APPROVED BY THE FOLLOWING:

PUBLIC WORKS DIRECTOR: _____ PAUL LINDHARDT, P.E. DATE

STREETS SUPERINTENDENT: _____ JED AL-IMARI DATE

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INDEX TO SHEETS

LAST UPDATED: 6/3/2019

SHEET NUMBER: G-001

Plot Date:5/3/2019 \\LOGAN\PUBLIC\PROJECTS\UBLOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\GENERAL\57-18-035_G-001.DGN

GENERAL NOTES

1. LOGAN CITY CORPORATION AND THE ENGINEER HAVE JURISDICTION OVER THIS PROJECT. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND BUSINESS LICENSES PRIOR TO CONSTRUCTION. A UDOT ENCROACHMENT PERMIT WILL BE REQUIRED FOR THE WORK WITHIN UDOT'S RIGHT OF WAY. UDOT.UTAH.GOV/GO/PERMITS

2. CONTRACTOR IS RESPONSIBLE FOR DUST ABATEMENT AND ANY LIABILITY ISSUES RELATED TO DUST AT ANY LOCATION WHICH MAY BE CAUSED BY THIS PROJECT.

3. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND PROTECTION OF PEDESTRIANS IN AND AROUND THIS WORK. REFERENCE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD LATEST EDITION FOR WORK ZONE TRAFFIC CONTROL).

4. ANY WORK DONE WITHIN A PUBLIC RIGHT-OF-WAY SHALL BE COORDINATED WITH THE APPROPRIATE TRANSPORTATION AGENCY AND SHALL MEET THE REQUIREMENTS OF THAT AGENCY AND, IN PARTICULAR, REQUIREMENTS OF ANY RIGHT-OF-WAY SPECIAL USE PERMIT, OR OTHER PERMIT. ALL WORK SHALL MEET CURRENT OSHA REQUIREMENTS.

5. WHERE WORK IS PERFORMED ON EASEMENTS, THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO ELIMINATE ANY ADVERSE EFFECTS ON THE ADJACENT PROPERTY AND/OR TO RESTORE IT TO ITS ORIGINAL CONDITION.

6. ALL DISTANCES AND DATA SHALL BE CHECKED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. IN CASE OF CONFLICT THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY SO THAT CLARIFICATION MAY BE MADE PRIOR TO THE START OF THE WORK.

7. THE CONTRACTOR SHALL ARRANGE FOR, SECURE AND PAY FOR DIRECTLY, ANY AND ALL TEMPORARY UTILITY SUPPLIES (E.G. WATER POWER, AND TELEPHONE) IT MAY REQUIRE FOR PROSECUTION OF ITS WORK. THE COST OF SUCH UTILITIES SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM WITH WHICH IT IS ASSOCIATED.

8. SHOULD CONSTRUCTION BE HALTED BECAUSE OF INCLEMENT WEATHER CONDITIONS, THE CONTRACTOR WILL COMPLETELY CLEAN UP ALL AREAS AND MAINTAIN THE SURFACE IN GOOD CONDITION DURING THE SHUT-DOWN PERIOD.

9. THE CONTRACTOR'S PERSONNEL, EQUIPMENT, AND OPERATIONS SHALL COMPLY FULLY WITH ALL APPLICABLE STANDARDS, REGULATIONS, AND REQUIREMENTS OF EXISTING FEDERAL, UTAH STATE, AND LOCAL GOVERNMENTAL AGENCIES.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL LOCAL, STATE, AND FEDERAL PERMITS REQUIRED FOR STORMWATER POLLUTION PREVENTION AS A RESULT OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN FOR APPROVAL BY THE ENGINEER. IF THE CONSTRUCTION WILL DISTURB MORE THAN ONE ACRE, THE CONTRACTOR SHALL OBTAIN A COPY OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (OTHERWISE KNOWN AS THE CONSTRUCTION GENERAL PERMIT OR CGP) AND SUBMIT A "NOTICE OF INTENT" (NOI)[EPA FORM 3510-9 (6/03)] FOR PERMIT COVERAGE UNDER THE GENERAL PERMIT. THE CGP MAY BE FOUND ON THE INTERNET AT <HTTP://WWW.EPA.GOV/NPDES/STORMWATER/CGP> OR BY CONTACTING THE U.S. EPA OFFICE OF WATER DIRECTLY AT (800) 424-4372. THE NOI MAY BE FILED ELECTRONICALLY AT THE FOLLOWING WEBSITE: <HTTP://CFPUB.EPA.GOV/NPDES/STORMWATER/ENOI.CFM>. THE CGP DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH OTHER REGULATIONS OR CONTRACT REQUIREMENTS REGARDING STORMWATER POLLUTION PREVENTION INCLUDING BUT NOT LIMITED TO: PROTECTION OF SURFACE WATERS, PREVENTION OF SOIL RUNOFF INTO DRAINS, DUST CONTROL, PREVENTION OF TRACKING SOILS TO ADJACENT STREETS, FUEL CONTAINMENT, SPILL CONTROL, ETC.

11. ALL WORK SHALL BE CONTAINED IN OR LIMITED TO THE CITY/COUNTY/STATE RIGHT-OF-WAY, CITY'S PROPERTY, EASEMENTS, OR APPROVED STAGING AREAS.

12. ALL WORK SHALL BE IN ACCORDANCE WITH 2007 APWA MANUAL OF STANDARD SPECIFICATIONS AND 2007 APWA MANUAL OF STANDARD PLANS AS AMENDED BY LOGAN CITY.

GENERAL NOTES

13. ALL WORK WITHIN THE UDOT RIGHT OF WAY, AS IDENTIFIED ON SHEET C-103, SHALL CONFORM TO THE MOST CURRENT UDOT STANDARD (INCLUDING SUPPLEMENTAL) DRAWINGS AND SPECFICATIONS, FOUND AT WWW.UDOT.UTAH.GOV > INSIDE UDOT > PROJECT DEVELOPEMENT > STANDARDS AND SPECIFICATIONS.

14. COORDINATE WORK WITH UDOT PROJECT 14730. CONTACT THE UDOT PROJECT MANAGER – BRETT SLATER, AT 801-620-1689 FOR MORE INFORMATION.

15. CONTRACTOR IS REQUIRED TO OBTAIN THE FOLLOWING PERMITS:
    UDOT ENCROACHMENT PERMIT
    NOTICE OF INTENT
    DEWATERING PERMIT
    LOGAN CITY RIGHT OF WAY PERMIT
    LOGAN CITY LAND DISTURBANCE PERMIT
    FEE WAIVER FORM
    HAULER AGENT FORM

EXISTING UTILITIES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE APPROPRIATE UTILITY COMPANIES WHEN CONSTRUCTION MIGHT INTERFERE WITH NORMAL OPERATION OF ANY UTILITIES. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE APPROPRIATE UTILITY COMPANY FIELD-LOCATE ANY UTILITY INSTALLATIONS WHICH MIGHT BE AFFECTED BY CONSTRUCTION PRIOR TO BEGINNING WORK IN THAT AREA.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE OF EXISTING UTILITIES AND FOR RESTORING ANY UTILITIES DAMAGED DUE TO CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.

3. DEPTHS AND ELEVATIONS OF UTILITIES ARE UNKNOWN UNLESS OTHERWISE SHOWN. CONTRACTOR SHALL FIELD VERIFY UTILITY LOCATIONS, DEPTHS, AND ELEVATIONS. ANY DISCREPANCIES AND/OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

INSPECTION AND TESTING

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MATERIALS TESTING INCLUDING BUT NOT LIMITED TO CONCRETE, LEAK, PRESSURE, AND COMPACTION. ALL TESTS SHALL MEET MINIMUM ENGINEER REQUIREMENTS. SEE THE CONTRACT DOCUMENTS AND DRAWINGS FOR FREQUENCY OF TESTING. RESULTS ARE TO BE DELIVERED TO SPECIAL INSPECTOR, OWNER AND ENGINEER.

2. WORK WITHIN UDOT'S RIGHT OF WAY SHALL MEET UDOT'S MINIMUM SAMPLING AND TESTING REQUIREMENTS.

3. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ENGINEER AND SPECIAL INSPECTOR FOR INSPECTIONS OF WORK AT APPROPRIATE INTERVALS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PAY FOR ADDITIONAL INSPECTIONS THAT ARE THE RESULT OF HIS WORKMANSHIP.

CONTACT PHONE NUMBERS

ENGINEER –		
JOHN POWELL, P.E.	435-713-9514 (o)	PROJECT MANAGER
JONNY BUDGE, P.E.	435-713-9514 (o)	PROJECT ENGINEER
LOGAN CITY		
TOM DICKINSON, E.I.T.	435-716-9168 (o)	ASSISTANT CITY ENGINEER

REFER TO SHEET CU-001 FOR ALL OTHER PROJECT CONTACTS.

811 Know what's **below.** **Call** before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
1047 South 100 West, Suite 180
Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

PROFESSIONAL ENGINEER
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO	DESCRIPTION	BY	APP.	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

GENERAL NOTES

FILE: 57-18-035_G-002
JUB PROJ. #:57-18-035
DRAWN BY: BLS
DESIGN BY: SRP
CHECKED BY: TBH
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/3/2019

SHEET NUMBER:
G-002

LINE LEGEND

LINE DESCRIPTION	PROPOSED LINE	EXISTING LINE
POWER / COMMUNICATIONS		
OVERHEAD POWER	OHP	OHP
UNDERGROUND POWER	UP	UP
OVERHEAD TELEPHONE	OHT	OHT
UNDERGROUND TELEPHONE	UT	UT
FIBER OPTIC	F/O	F/O
CABLE TELEVISION	CTV	CTV
UNDERGROUND POWER, TEL, CABLE TV		P,T,CTV
UNDERGROUND POWER, TEL, CABLE TV, GAS		P,T,CTV,G
STORM DRAIN		
STORM DRAIN (GENERAL)	SD	SD
STORM DRAIN	X"SD	X"SD
ROOF DRAIN	RD	RD
SANITARY SEWER		
SANITARY SEWER (GENERAL)	SS	SS
SANITARY SEWER	X"SS	X"SS
SANITARY SEWER SERVICE	SS SS	SS SS
SEWER FORCE MAIN	FM	FM
WATER		
WATER (GENERAL)	W	W
WATER (SPECIFIED SIZE)	X"W	X"W
WATER SERVICE	WS WS	WS WS
IRRIGATION		
IRRIGATION	IRR	IRR
GRAVITY IRRIGATION	GIRR	GIRR
PRESSURE IRRIGATION	PIRR	PIRR
POTABLE WATER	PW	PW
NON-POTABLE WATER	NPW	NPW
GAS		
NATURAL GAS	G	G
NATURAL GAS SERVICE	G G	G G
HIGH PRESSURE GAS	HPG	HPG
LIQUID GAS	LG	LG
UTILITY		
CHLORINE LINE	CHL	CHL
INDUSTRIAL WASTE WATER	IWW	IWW
DRAIN LINE		D

LINE DESCRIPTION	PROPOSED LINE	EXISTING LINE
BOUNDARY		
PROPERTY LINE	P/L	P/L
PROPERTY LINE		
RIGHT OF WAY	R/W	R/W
TEMPORARY EASEMENT	T/E	T/E
PERMANENT EASEMENT	P/E	P/E
TOWNSHIP AND RANGE		
SECTION LINE		
QUARTER SECTION LINE		
1/16 SECTION LINE		
STATE LINE		
COUNTY LINE		
SITE		
FENCE	X	X
MAJOR CONTOUR	2521	
MINOR CONTOUR		
GRADE BREAK		GB
TOP OF BANK		TOB
TOE OF SLOPE		TOE
CUT LIMITS		
FILL LIMITS		
DITCH		
STORM SWALE		
EDGE OF WATER		
HIGH WATER		
WETLAND		WET
WETLAND BOG		BOG
WETLAND MARSH		MRSH
WETLAND SWAMP		SWMP
ROADWAY		
ROAD SHOULDER		
ROAD CENTERLINE		
ROAD ASPHALT		EP
ROAD GRAVEL		EG
TOP BACK OF CURB		
LIP OF GUTTER		
LANDSCAPING LIMITS	LS	LS

SHEET NUMBERING

SAMPLE: C-101

- C – DISCIPLINE DESIGNATOR
- 1 – SHEET TYPE DESIGNATOR
- 01 – SHEET SEQUENCE NUMBER

DISCIPLINE DESIGNATORS

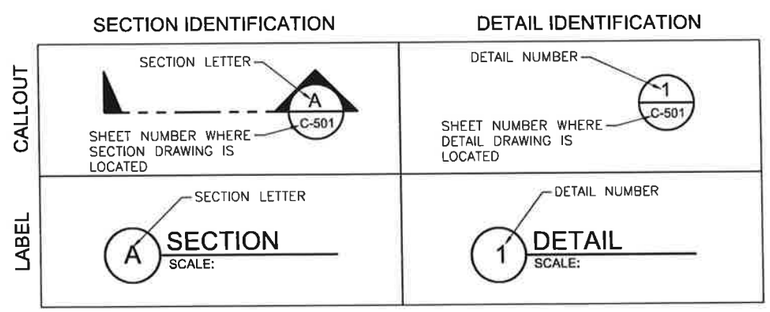
DISCIPLINE	DESIGNATOR	DESCRIPTION
GENERAL	G	ALL GENERAL
	GI	GENERAL INFORMATION
	GC	GENERAL CONTRACTUAL
	GR	GENERAL RESOURCE
SURVEY/MAPPING	V	ALL SURVEY
GEOTECHNICAL	B	ALL GEOTECHNICAL
CIVIL	C	ALL CIVIL
LANDSCAPE	L	ALL LANDSCAPE
STRUCTURAL	S	ALL STRUCTURAL
ARCHITECTURAL	A	ALL ARCHITECTURE
EQUIPMENT	Q	ALL EQUIPMENT
MECHANICAL	M	ALL MECHANICAL
ELECTRICAL	E	ALL ELECTRICAL
PLUMBING	P	ALL PLUMBING
PROCESS	D	ALL PROCESS
RESOURCE	R	ALL RESOURCE

SHEET TYPE DESIGNATORS

DESIGNATOR	SHEET TYPE
0	GENERAL (SYMBOLS, LEGENDS, NOTES, ETC.)
1	PLANS (HORIZONTAL VIEWS)
2	ELEVATIONS, PROFILES, COMBINED PLAN & PROFILES
3	SECTIONS (SECTIONAL VIEWS)
4	LARGE-SCALE VIEWS (PLANS, ELEVATIONS, ECT.)
5	DETAILS OR COMBINED DETAILS AND SECTIONS
6	SCHEDULES AND DIAGRAMS
7	USER DEFINED
8	USER DEFINED
9	3D REPRESENTATIONS (ISOMETRICS, PERSPECTIVES, PHOTOS)

SECTION AND DETAIL IDENTIFIERS

NOTE:
A DASH MAY BE PLACED IN THE LOWER PORTION OF THE IDENTIFIER IF THE DETAIL DRAWING OR SECTION VIEW IS LOCATED ON THE SAME SHEET.



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JONATHAN D. BUDGE 8203769-2202 PROFESSIONAL ENGINEER STATE OF UTAH

NO.	DESCRIPTION	REVISION	BY	APR	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

STANDARD LEGEND

FILE: 57-18-035_G-003
J/B PROJ. #: 57-18-035
DRAWN BY: BLS
DESIGN BY: SRP
CHECKED BY: TBH
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
G-003

Plot Date:— Plotted By: Samuel Powell
File Created:10/29/2018 I:\LOGAN\PUBLIC\PROJECTS\J-U-B\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\GENERAL\57-18-035_G-003.DGN

SYMBOL DESCRIPTION	EXISTING SYMBOL	PROPOSED SYMBOL
SURVEY		
CAP (ALUMINUM)		
CAP (BRASS)		
CHISELED X		
CTRL PT GENERIC		
CTRL PT ½" REBAR	1/2" PIN CONTROL PT	
CTRL PT ⅝" REBAR	5/8" PIN CONTROL PT	
CTRL PT 60D NAIL	60D	
CTRL PT HUB & TACK	HT	
CTRL PT PK NAIL	PK	
CTRL PT TEMP BENCH MARK	TBM	
NAIL		
NAIL AND TAG	N/T	
NAIL (PK)	PK	
BOLT		
DRILL STEEL		
REBAR (½")		
REBAR (⅝")		
STAINLESS STEEL ROD		
IRON PIPE		
RAILROAD SPIKE		
R/W MONUMENT		
STONE		
SECTION CORNER. MON.	22 15 21 16	
SECTION QUARTER MON.	15 22	
SITE		
BOLLARD		
BOULDER		
DRINKING FOUNTAIN	DF	DF
FLAGPOLE	F	F
GATE		
MAIL BOX	M	M
PARKING METER	PM	PM
POST		
SIGN		
SPOT ELEVATION		
TREE (SHRUB)		
TREE (STUMP)		
TREE (CONIFEROUS)		
TREE (DECIDUOUS)		
TEST HOLE	TH	
WELL	W	W
WELL (MONITORING)	M	M

SYMBOL DESCRIPTION	EXISTING SYMBOL	PROPOSED SYMBOL
UTILITIES		
MANHOLE (GENERIC)		
PRESSURE CLEAN OUT AT GRADE	PCO	PCO
THRUST BLOCK		
VAULT	V	V
COMMUNICATION		
TELE. MANHOLE	T	
TELE. PEDASTAL	T	T
TELE. POLE		
TV PEDASTAL	TV	TV
GUY WIRE		
DOMESTIC WATER		
FIRE HYDRANT		
SPIGOT		
YARD HYDRANT		
WATER MANHOLE	W	
WATER METER		
WATER VALVE	W	W
ELECTRIC		
ELEC. MANHOLE	E	
ELEC. METER	E	E
ELEC. TRANS.	E	E
JUNCTION BOX	J	J
POWER POLE		
POWER STUB	E	E
STREET LIGHT		
TRAFFIC SIGNAL POLE		
IRRIGATION		
IRRIGATION VALVE	IRR	IRR
IRRIGATION VALVE BOX	I	I
SPRINKLER		
NATURAL GAS		
GAS METER	G	G
GAS VALVE	G	G
SANITARY SEWER		
CLEANOUT		
SEWER STUB	S	S
SS MANHOLE	S	
STORM DRAIN		
CATCH BASIN		
DRY WELL	DW	DW
FLARE END		
GREASE TRAP		
SD MANHOLE	D	

SYMBOL DESCRIPTION	EXISTING SYMBOL	PROPOSED SYMBOL
FITTINGS		
BEND (11.25°)		
BEND (22.5°)		
BEND (45°)		
BEND (90°)		
CAP		
COUPLING		
CROSS		
REDUCER (CONCENTRIC)		
REDUCER (ECCENTRIC)		
TEE		
TRUE UNION		
WYE		
VALVES		
AIR VALVE		
BLOW OFF		
COMBO VALVE		
BALL VALVE (N.C.)		
BALL VALVE (N.O.)		
BUTTERFLY VALVE		
CHECK VALVE		
CHECK VALVE (FLANGE)		
CHECK VALVE (MJ)		
GATE VALVE		
PLUG VALVE (N.C.)		
PLUG VALVE (N.O.)		
ROAD MARKINGS		
TURN ARROW		
ARROW STRAIGHT		
ARROW STRAIGHT/TURN		
BICYCLE ROUTE		
CAR		
HANDICAP SYMBOL		
ROADWAY		
INTERSTATE ROUTE	25	
MAST ARM		
PEDESTRIAN SIGNAL		
STATE ROUTE	14	
TRAFFIC LIGHT		

SYMBOL DESCRIPTION	EXISTING SYMBOL	PROPOSED SYMBOL
ROADWAY (CONT.)		
TYPE 2 BARRICADE		
US ROUTE	287	
TRAFFIC ATTENUATOR		
JERSEY BARRIER		

ABBREVIATIONS

ASSY	ASSEMBLY
>	ANGLE
@	AT (MEASUREMENTS)
BLDG	BUILDING
BM	BENCH MARK
BSC	BITUMINOUS SURFACE COURSE
BSW	BACK OF SIDEWALK
BW	BOTH WAYS
C	CHANNEL (STRUCTURAL)
C/L	CENTER LINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONT	CONTINUOUS
CPLG	COUPLING
CU FT	CUBIC FEET
CU YD	CUBIC YARD
DEG OR °	DEGREE
DET	DETAIL
DIA OR ø	DIAMETER
DIP	DUCTILE IRON PIPE
DIST	DISTRIBUTION
DWG	DRAWING
EA	EACH
ELB	ELBOW
ELEV	ELEVATION
EW	EACH WAY
EXIST	EXISTING
FG	FINISH GRADE
FH	FIRE HYDRANT
FLG	FLANGE
FT OR '	FEET
GV	GATE VALVE
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
IN OR "	INCH
LB OR #	POUND
LF	LINEAL FEET
LN	LINEAL
MAX	MAXIMUM
MIN	MINIMUM
NO OR #	NUMBER
PE	POLYETHYLENE
PL	PLATE
PL	PROPERTY LINE
PVC	POLYVINYL-CHLORIDE
R	RADIUS
RP	RADIUS POINT
R&R	REMOVE & REPLACE
REM	REMOVE
REQ'D	REQUIRED
REV	REVISION
R/W	RIGHT-OF-WAY

S	SLOPE
SPEC	SPECIFICATION
STA	STATION
STD	STANDARD
STL	STEEL
ST STL	STAINLESS STEEL
TBC	TOP BACK OF CURB
TYP	TYPICAL
TFC	TOP FACE OF CONCRETE
W/	WITH
W/O	WITHOUT
W/REQ'D	WHERE REQUIIRED

PIPE NETWORK NOTES

CBXX = CATCH BASIN
PXX = PIPE LINK

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PROFESSIONAL ENGINEER — JONATHAN D. BUDGE — 8203769-2202 — STATE OF UTAH

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

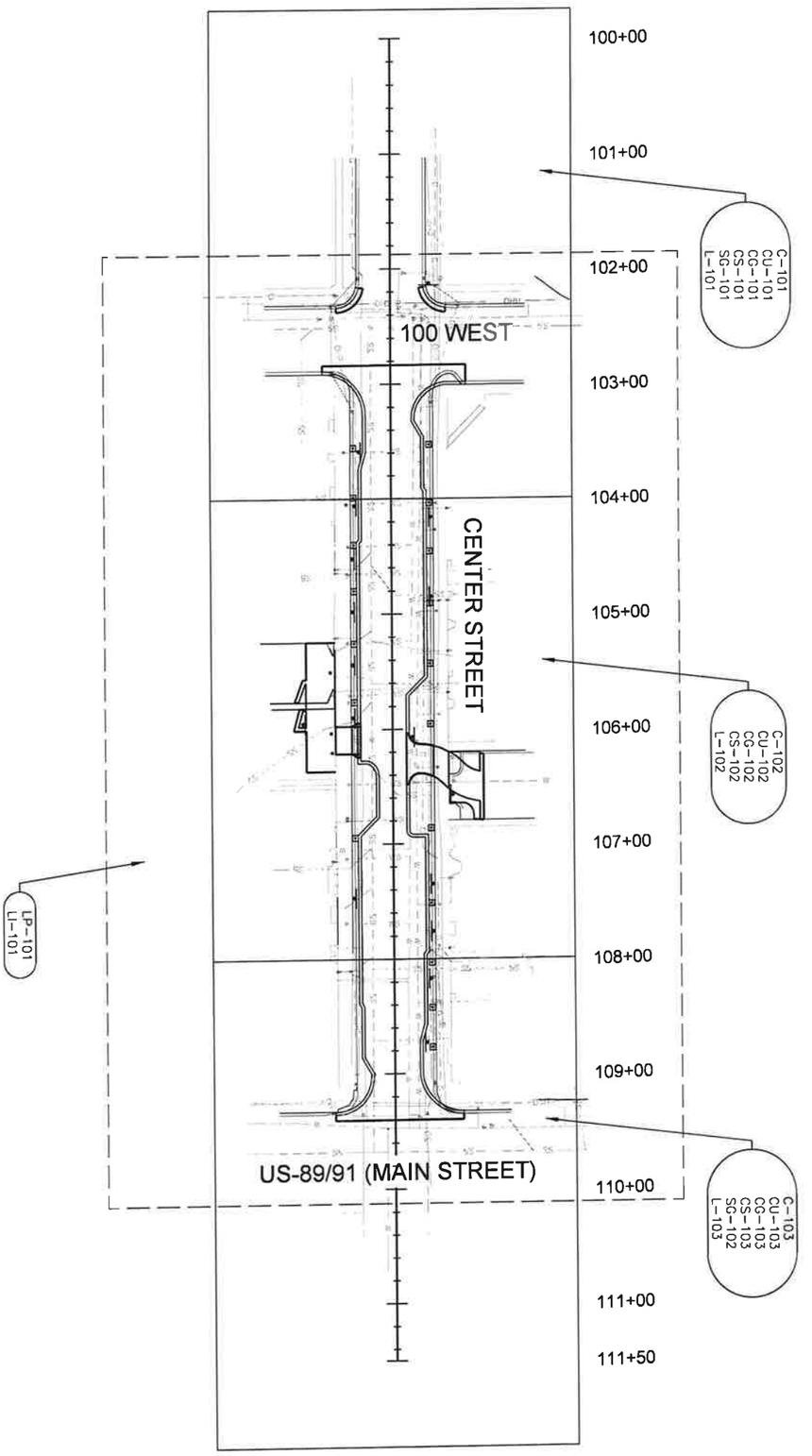
STANDARD LEGEND

FILE: 57-18-035_G-004
JUB PROJ. #: 57-18-035
DRAWN BY: BLS
DESIGN BY: SRP
CHECKED BY: TRH
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
G-004

Plot Date:— Plotted By: Samuel Powell
Date Created:10/29/2014 S:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\GENERAL\57-18-035_G-004.DGN

Plot Date:--- Plotted By: Samuel Powell
Date Created:1/24/2019 \\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\GENERAL\57-18-035_G-101.DGN



CENTER STREET, MAIN STREET TO 100 WEST LOGAN CITY

CROSS REFERENCE SHEET

G-101

SHEET NUMBER:

FILE: 57-18-035_G-101
JUB PROJ. # 57-18-035
DRAWN BY: ###
DESIGN BY: ###
CHECKED BY: ###
QUALITY CONTROL BY: ###
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY.
LAST UPDATED: 1/29/2019

REVISION				
NO.	DESCRIPTION	BY	APR.	DATE

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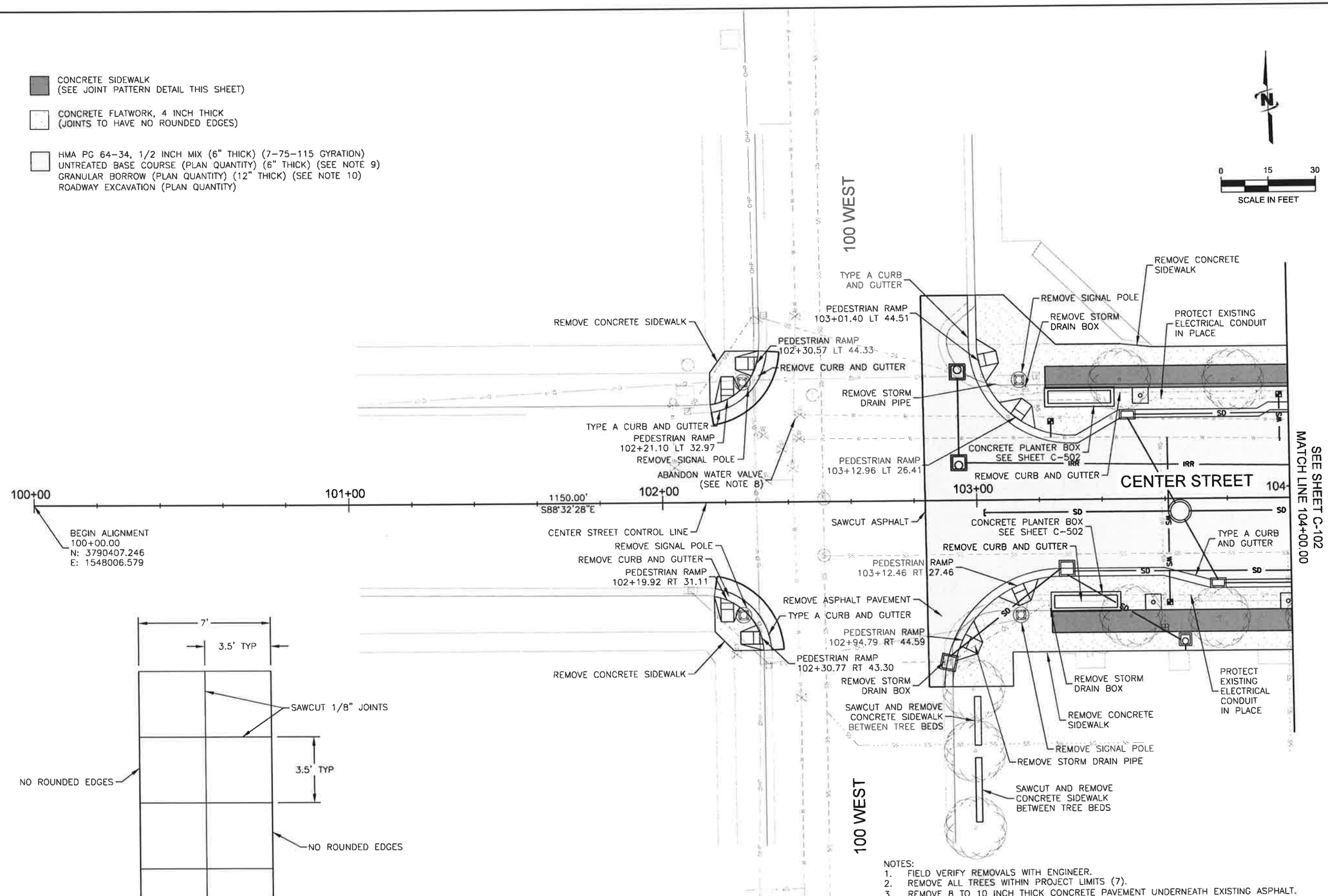
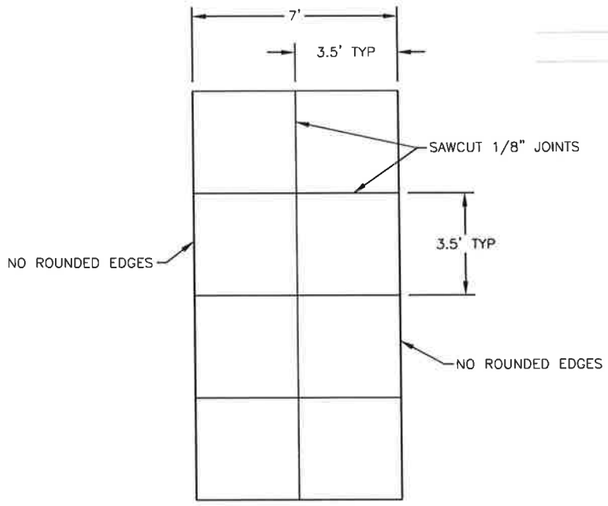
J-U-B ENGINEERS, INC.

CONCRETE SIDEWALK
(SEE JOINT PATTERN DETAIL THIS SHEET)

CONCRETE FLATWORK, 4 INCH THICK
(JOINTS TO HAVE NO ROUNDED EDGES)

HMA PG 64-34, 1/2 INCH MIX (6" THICK) (7-75-115 GYRATION)
UNTREATED BASE COURSE (PLAN QUANTITY) (6" THICK) (SEE NOTE 9)
GRANULAR BORROW (PLAN QUANTITY) (12" THICK) (SEE NOTE 10)
ROADWAY EXCAVATION (PLAN QUANTITY)





JOINT PATTERN FOR SIDEWALK
CARRY PATTERN THROUGH DRIVEWAYS

NOTES:
1. FIELD VERIFY REMOVALS WITH ENGINEER.
2. REMOVE ALL TREES WITHIN PROJECT LIMITS (7).
3. REMOVE 8 TO 10 INCH THICK CONCRETE PAVEMENT UNDERNEATH EXISTING ASPHALT. SEE SHEET C-301.
4. SEE CG SHEETS FOR GRADING AND CURB, GUTTER, SIDEWALK, AND ASPHALT LIMITS.
5. SEE CU SHEETS FOR UTILITY WORK.
6. PROTECT EXISTING BUILDINGS, STRUCTURES AND UTILITIES FROM DAMAGE.
7. DO NOT REMOVE EXISTING SIGNAL EQUIPMENT UNTIL NEW SIGNAL IS OPERATIONAL.
8. DISCONNECT 4 INCH WATER LINE FROM VALVE AND CAP END OF VALVE. CUT VALVE BOX BELOW GRADE. THRUST BLOCK REQUIRED.
9. 3/4-INCH MINUS, WELL GRADED, A-1-a, MIN CBR 50.
10. 3-INCH MINUS, WELL GRADED, A-1-a, MIN CBR 70.

J-U-B ENGINEERS, INC.
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1047 South 100 West, Suite 180
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Fax: 435.713.9503
www.jub.com

PROFESSIONAL ENGINEER
JONATHAN D BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

ROADWAY

FILE: 57-18-035_C-101
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/3/2019

SHEET NUMBER:
C-101

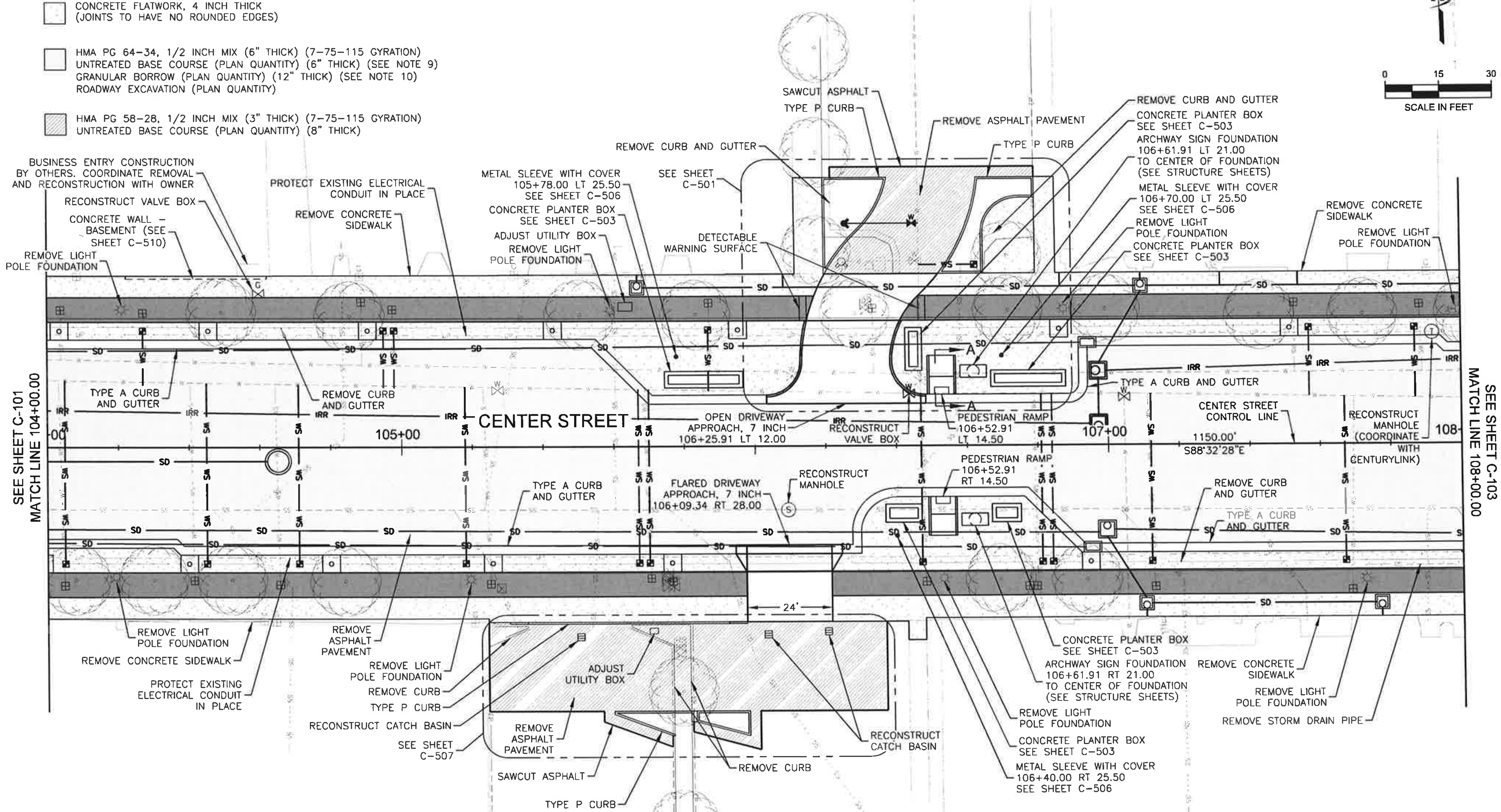
Plot Date:— Plotted By: Samuel Powell
Date Created: 1/10/2019 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-101.DGN

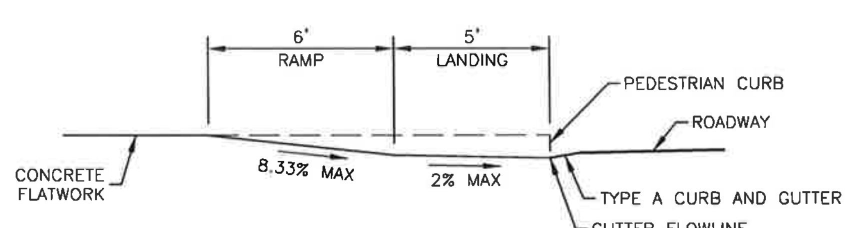
CONCRETE SIDEWALK
(SEE JOINT PATTERN DETAIL SHEET C-101)

CONCRETE FLATWORK, 4 INCH THICK
(JOINTS TO HAVE NO ROUNDED EDGES)

HMA PG 64-34, 1/2 INCH MIX (6" THICK) (7-75-115 GYRATION)
UNTREATED BASE COURSE (PLAN QUANTITY) (6" THICK) (SEE NOTE 9)
GRANULAR BORROW (PLAN QUANTITY) (12" THICK) (SEE NOTE 10)
ROADWAY EXCAVATION (PLAN QUANTITY)

HMA PG 58-28, 1/2 INCH MIX (3" THICK) (7-75-115 GYRATION)
UNTREATED BASE COURSE (PLAN QUANTITY) (8" THICK)





SECTION A-A
TYP

NOTES:
1. FIELD VERIFY REMOVALS WITH ENGINEER.
2. REMOVE ALL TREES WITHIN PROJECT LIMITS (18).
3. REMOVE 8 TO 10 INCH THICK CONCRETE PAVEMENT UNDERNEATH EXISTING ASPHALT. SEE SHEET C-301.
4. REMOVE EXISTING LIGHT POLE FOUNDATIONS AT LEAST 18 INCHES BELOW FINISHED GRADE.
5. SEE CG SHEETS FOR GRADING AND CURB, GUTTER, SIDEWALK, AND ASPHALT LIMITS.
6. SEE CU SHEETS FOR UTILITY WORK.
7. SEE L SHEETS FOR NEW LIGHT POLE LOCATIONS.
8. PROTECT EXISTING BUILDINGS, STRUCTURES AND UTILITIES FROM DAMAGE.
9. 3/4-INCH MINUS, WELL GRADED, A-1-a, MIN CBR 50.
10. 3-INCH MINUS, WELL GRADED, A-1-a, MIN CBR 70.

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PROFESSIONAL ENGINEER JONATHAN D. BUDGE 8203769-2202 STATE OF UTAH

NO.	DESCRIPTION	BY	APR.	DATE

REVISION

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

ROADWAY

FILE: 57-18-035_C-102
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/3/2019

SHEET NUMBER:
C-102

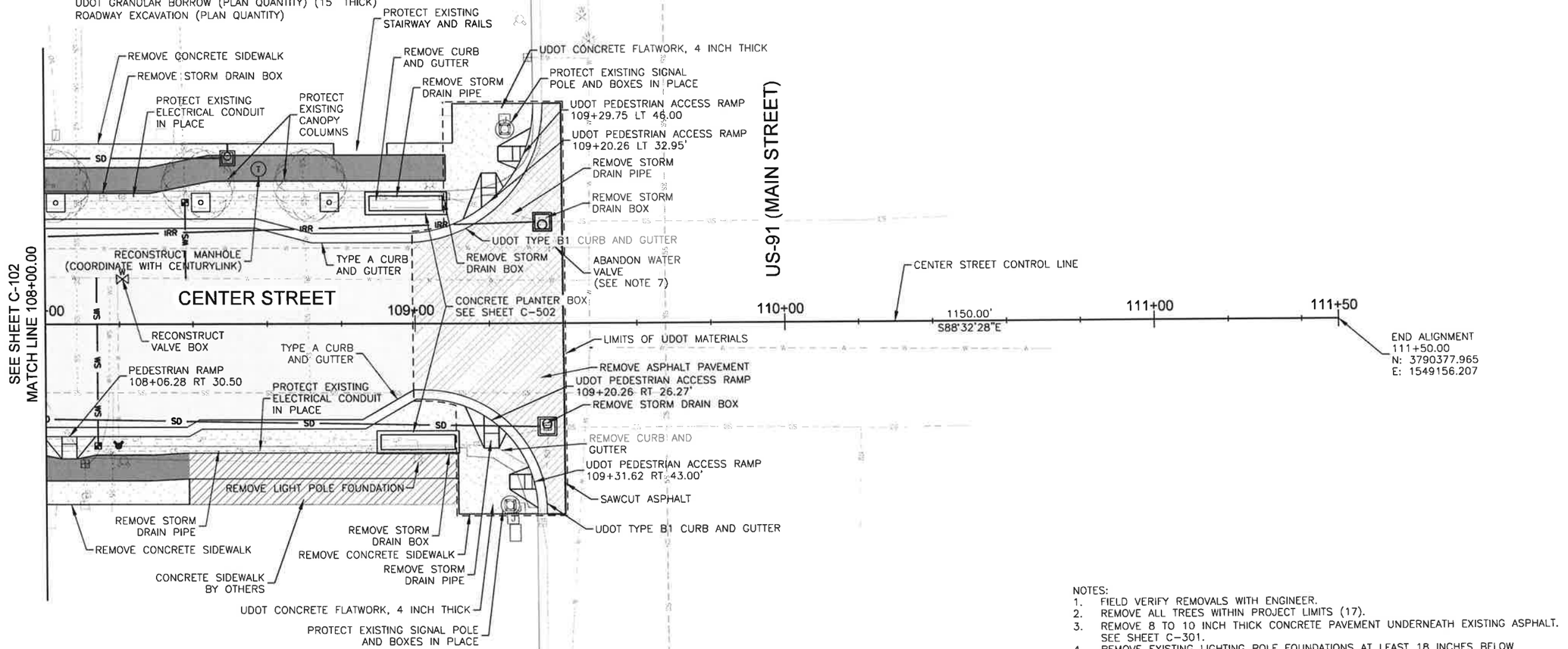
Plot Date: — Plotted By: Samuel Powell
Date Created: 1/10/2019 \\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-102.DGN

CONCRETE SIDEWALK
(SEE JOINT PATTERN DETAIL SHEET C-101)

CONCRETE FLATWORK, 4 INCH THICK
(JOINTS TO HAVE NO ROUNDED EDGES)

HMA PG 64-34, 1/2 INCH MIX (6" THICK) (7-75-115 GYRATION)
UNTREATED BASE COURSE (PLAN QUANTITY) (6" THICK) (SEE NOTE 13)
GRANULAR BORROW (PLAN QUANTITY) (12" THICK) (SEE NOTE 14)
ROADWAY EXCAVATION (PLAN QUANTITY)

UDOT HMA PG 64-34, 1/2 INCH MIX (9" THICK) (7-75-115 GYRATION)
UDOT UNTREATED BASE COURSE (PLAN QUANTITY) (10" THICK)
UDOT GRANULAR BORROW (PLAN QUANTITY) (15" THICK)
ROADWAY EXCAVATION (PLAN QUANTITY)



NOTES:
1. FIELD VERIFY REMOVALS WITH ENGINEER.
2. REMOVE ALL TREES WITHIN PROJECT LIMITS (17).
3. REMOVE 8 TO 10 INCH THICK CONCRETE PAVEMENT UNDERNEATH EXISTING ASPHALT. SEE SHEET C-301.
4. REMOVE EXISTING LIGHTING POLE FOUNDATIONS AT LEAST 18 INCHES BELOW FINISHED GRADE.
5. SEE CG SHEETS FOR GRADING AND CURB, GUTTER, SIDEWALK, AND ASPHALT LIMITS.
6. SEE CU SHEETS FOR UTILITY WORK.
7. SEE L SHEETS FOR NEW LIGHT POLE LOCATIONS.
8. PROTECT EXISTING BUILDINGS, STRUCTURES AND UTILITIES FROM DAMAGE.
9. DISCONNECT 4 INCH WATER LINE FROM VALVE AND CAP END OF VALVE. CUT VALVE BOX BELOW GRADE. THRUST BLOCK REQUIRED.
10. FOR ALL ITEMS AND MATERIALS WITHIN THE EXISTING UDOT RIGHT OF WAY, MEET THE REQUIREMENTS OF UDOT 2017 STANDARD AND SUPPLEMENTAL DRAWINGS AND SPECIFICATIONS AS OUTLINED IN THE MEASUREMENT AND PAYMENT OF THIS PROJECT. PROVIDE DOCUMENTATION OF COMPACTION FROM A UDOT-QUALIFIED LABORATORY.
11. UDOT PEDESTRIAN RAMPS ARE TO MEET UDOT STANDARD AND SUPPLEMENTAL DRAWINGS PA SERIES. ANY NON-CONFORMING RAMPS WILL BE REPLACED AT NOT COST TO THE DEPARTMENT OR LOGAN CITY. PERMIT INSPECTORS WILL SUBMIT THE REQUIRED FORMS FOR ALL IMPACTED UDOT RAMPS.
12. FOR ALL CONCRETE SIDEWALK, CURB, AND GUTTER REMOVAL ITEMS WITHIN UDOT'S EXISTING RIGHT OF WAY, REMOVE TO THE NEAREST EXISTING JOINT.
13. 3/4-INCH MINUS, WELL GRADED, A-1-a, MIN CBR 50.
14. 3-INCH MINUS, WELL GRADED, A-1-a, MIN CBR 70.

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STATE OF UTAH

NO	DESCRIPTION	DATE	BY
	REVISION		

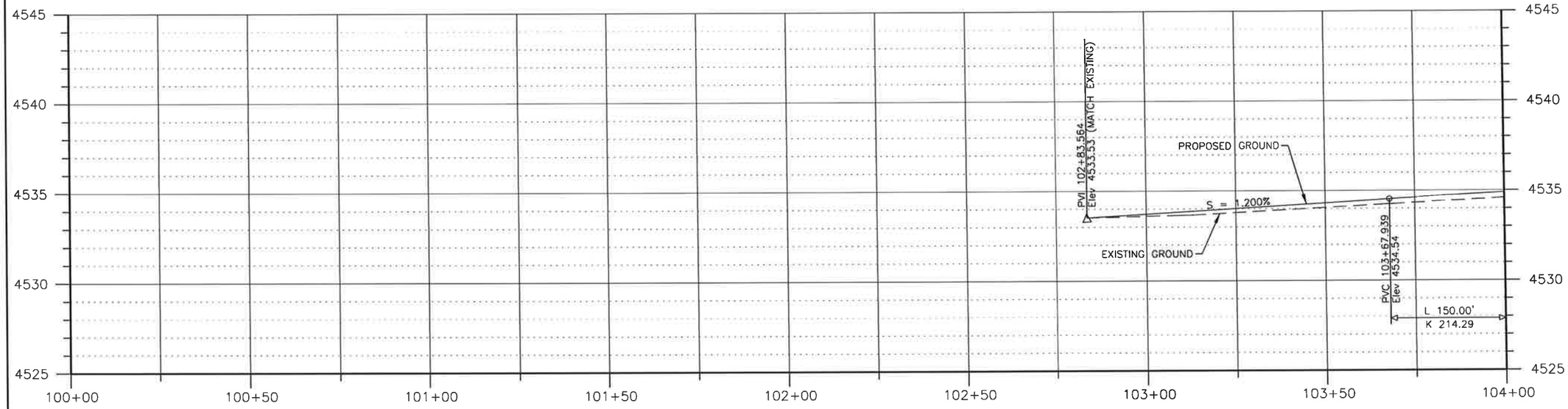
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

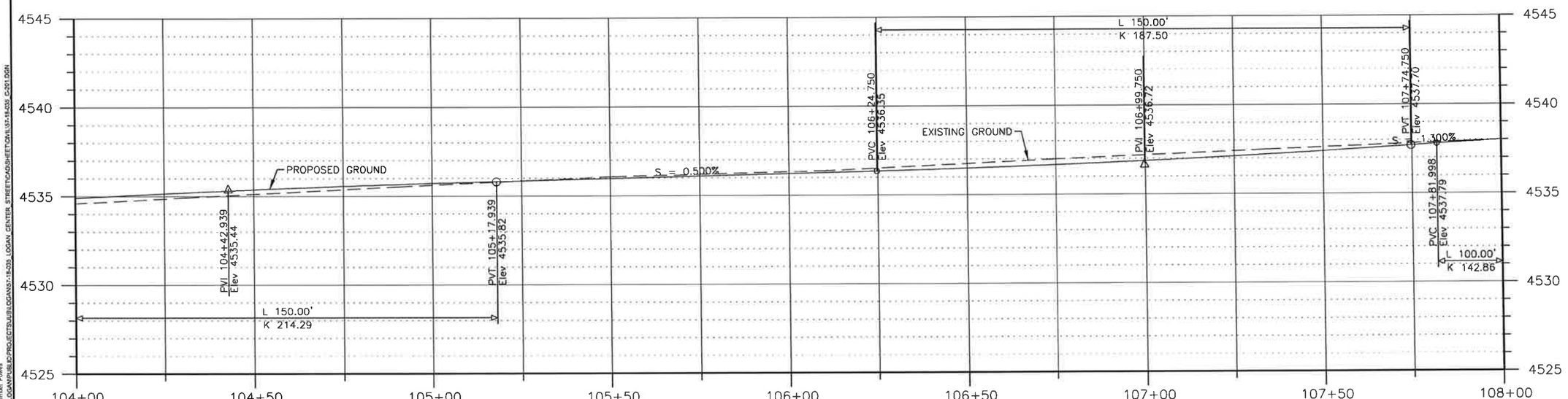
ROADWAY

FILE: 57-18-035_C-103
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/3/2019

SHEET NUMBER:
C-103

Plot Date: Plotted By:
Date Created:3/19/2019 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-103.DGN





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STATE OF UTAH

NO.	DESCRIPTION	BY	APP.	DATE
	REVISION			

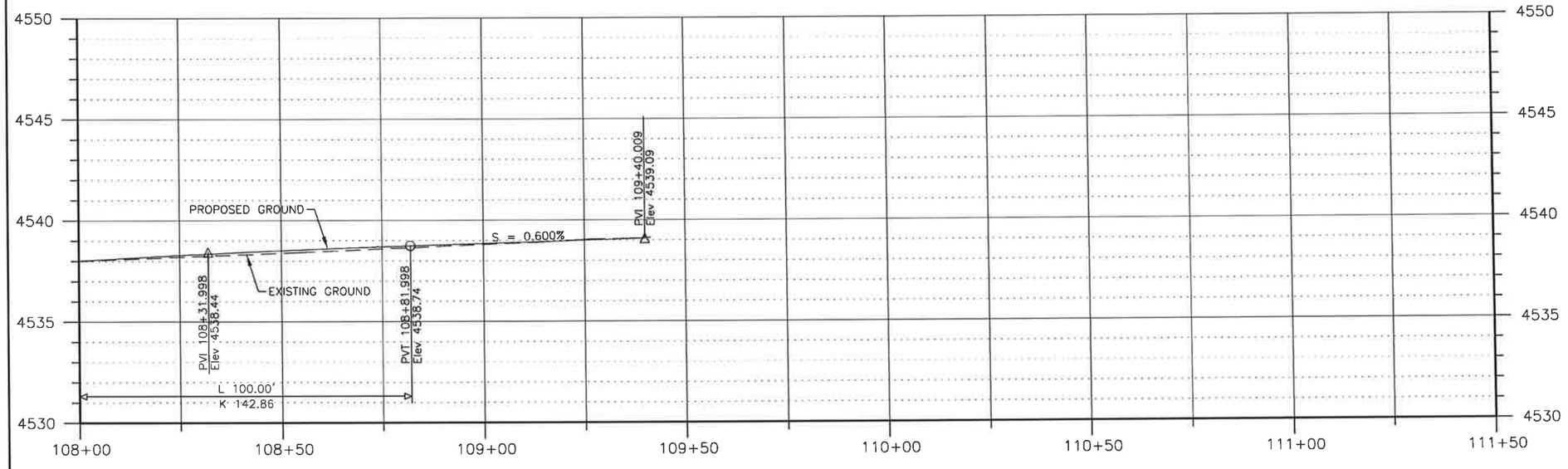
CENTER STREET, MAIN STREET TO 100 WEST LOGAN CITY

CENTER STREET PROFILE

FILE: 57-18-035_C-201
JUB PROJ. #: 57-18-035
DRAWN BY: JWV
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-201

Plot Date:— Plotted By: Samuel Powell
Data Created:1/24/2019 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035 LOGAN_CENTER_STREET\CAD\SHEET\DWG\57-18-035_C-201.DGN



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STATE OF UTAH

NO.	DESCRIPTION	BY	APR	DATE
	REVISION			

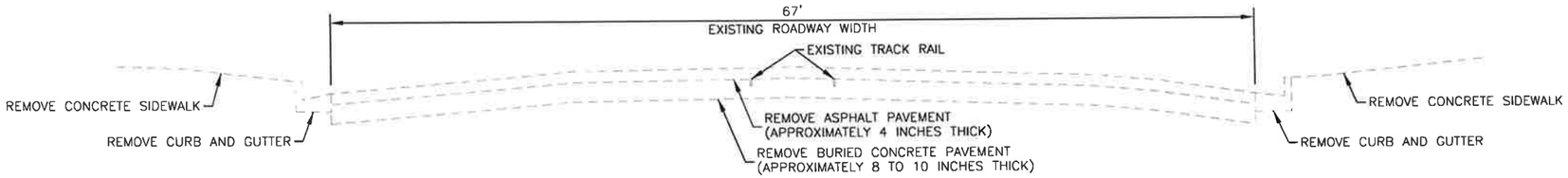
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

CENTER STREET PROFILE

FILE : 57-18-035_C-202
JUB PROJ. # :57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

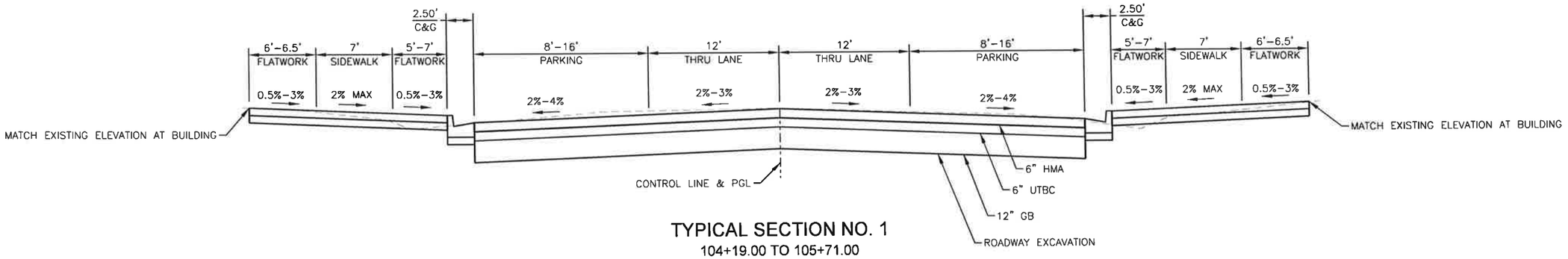
SHEET NUMBER:
C-202

Plot Date:— Plotted By: Samuel Powell
Date Created:12/4/2018 N:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\DWG\57-18-035_C-202.DGN



EXISTING SECTION

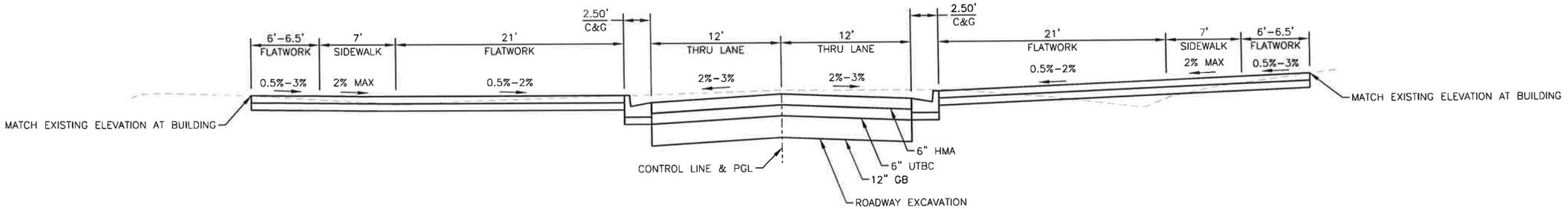
102+84.00 TO 109+40.00



TYPICAL SECTION NO. 1

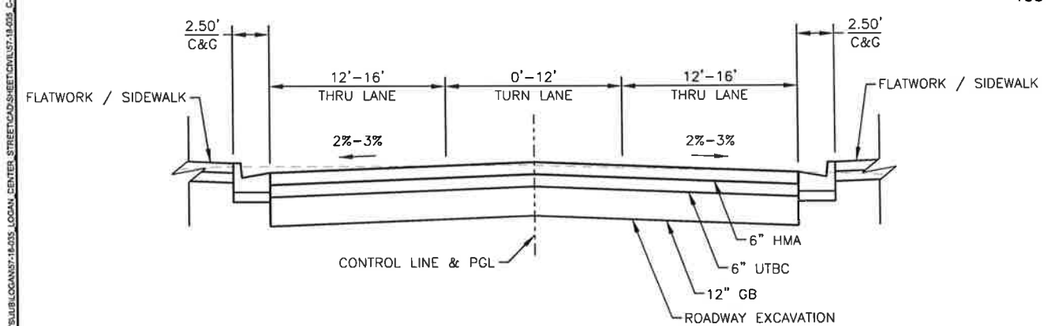
104+19.00 TO 105+71.00

106+89.00 TO 108+14.00



TYPICAL SECTION NO. 2

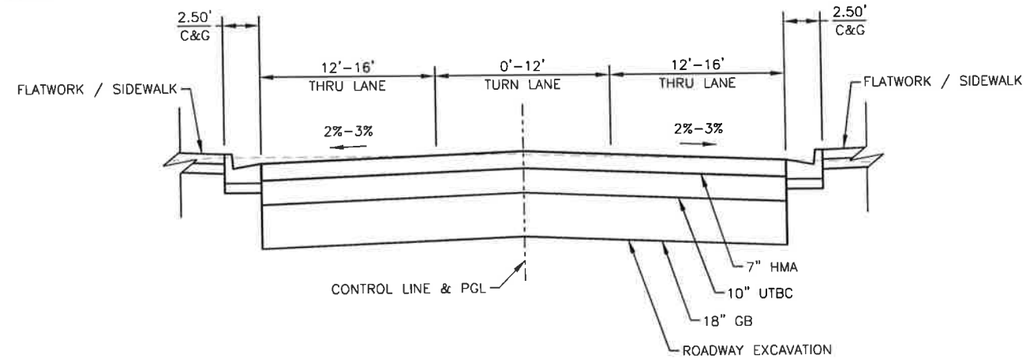
105+71.00 TO 106+89.00



TYPICAL SECTION NO. 3

103+21.00 TO 104+19.00

108+14.00 TO 108+99.00



TYPICAL SECTION NO. 4

108+99.00 TO 109+40.00

NOTES:
1. SEE CG SHEETS FOR ROADWAY GRADING DETAILS.

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NO	DESCRIPTION	BY	APR	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

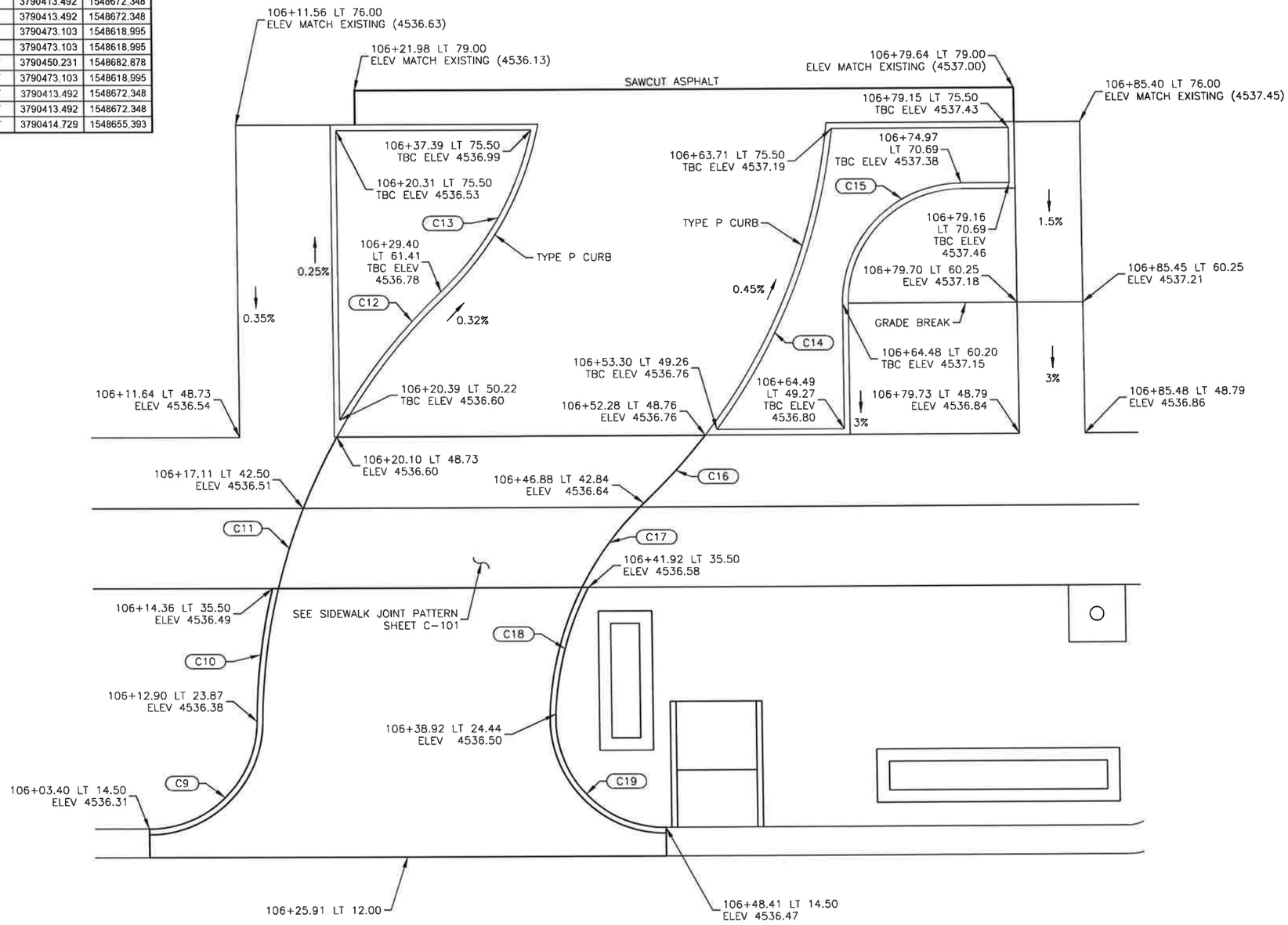
TYPICAL SECTIONS

FILE: 57-18-035_C-301
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-301

Plot Date:— Plotted By: Samuel Powell
Date Created:12/19/2018 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CADD\SHEET\CIVIL\57-18-035_C-301.DGN

CURVE TABLE					
CURVE #	RADIUS	STA.	OFFSET	NORTHING	EASTING
C9	9.50'	106+03.40	24.00 LT	3790415.875	1548610.394
C10	52.50'	106+65.39	23.19 LT	3790413.492	1548672.348
C11	52.00'	106+65.39	23.19 LT	3790413.492	1548672.348
C12	52.50'	106+65.39	23.19 LT	3790413.492	1548672.348
C13	27.50'	106+10.54	81.42 LT	3790473.103	1548618.995
C14	53.50'	106+10.54	81.42 LT	3790473.103	1548618.995
C15	10.50'	106+74.98	60.19 LT	3790450.231	1548682.878
C16	53.00'	106+10.54	81.42 LT	3790473.103	1548618.995
C17	27.00'	106+65.39	23.19 LT	3790413.492	1548672.348
C18	26.50'	106+65.39	23.19 LT	3790413.492	1548672.348
C19	9.50'	106+48.41	24.00 LT	3790414.729	1548655.393



DRIVEWAY ENTRANCE

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STATE OF UTAH

NO	DESCRIPTION	BY	APR	DATE
	REVISION			

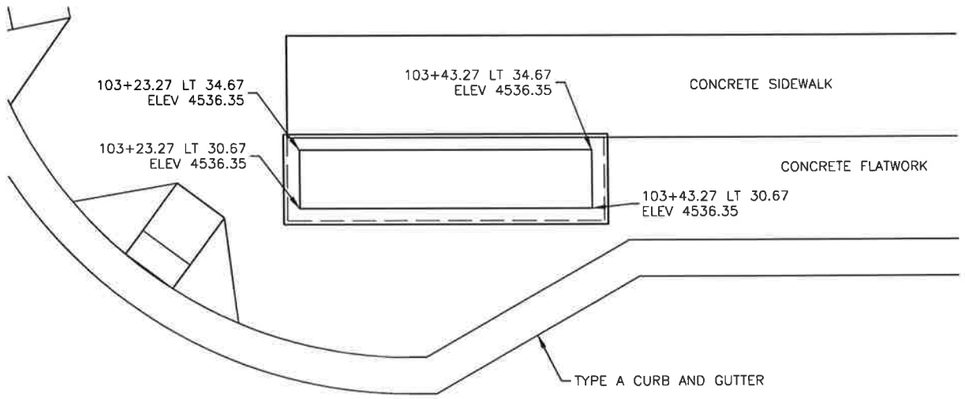
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

DETAILS

FILE: 57-18-035_C-501
JUB PROJ. #:57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-501

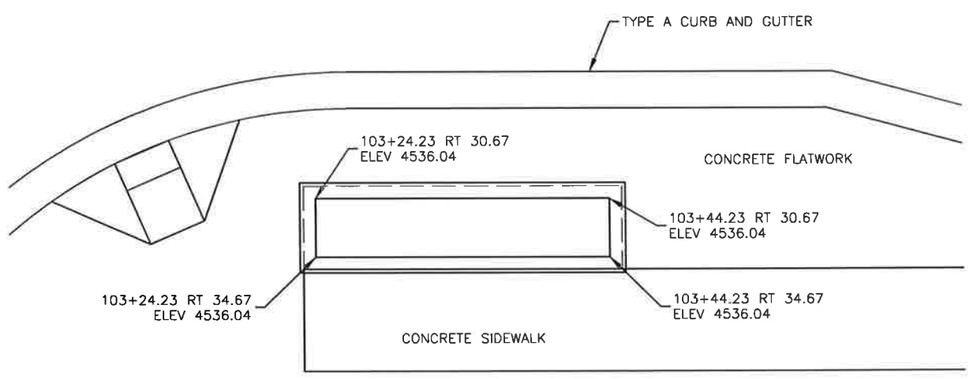
Plot Date:--- Plotted By: Samuel Powell
Date Created:12/19/2018\LOGAN\PUBLIC\PROJECTS\J-U-B\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-501.DGN



NOTES:
1. PROVIDE AN EXPANSION JOINT WITH A MASTIC SEAL AROUND THE PERIMETER OF THE BOX BETWEEN THE CONCRETE FLATWORK/SIDEWALK AND WALL STONE

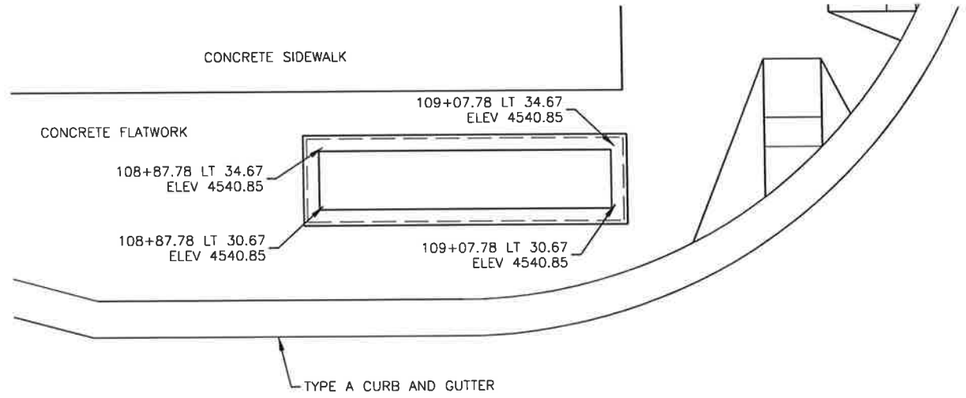
100 WEST

CENTER STREET



CONCRETE PLANTER BOX

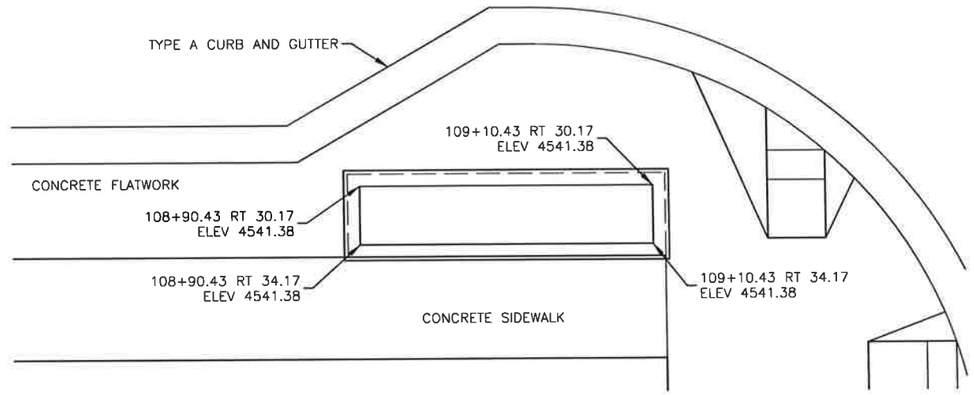
SEE SHEET C-505 FOR DETAILS



NOTES:
1. PROVIDE AN EXPANSION JOINT WITH A MASTIC SEAL AROUND THE PERIMETER OF THE BOX BETWEEN THE CONCRETE FLATWORK/SIDEWALK AND WALL STONE

CENTER STREET

MAIN STREET



CONCRETE PLANTER BOX

SEE SHEET C-505 FOR DETAILS

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JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APP.	DATE
	REVISION			

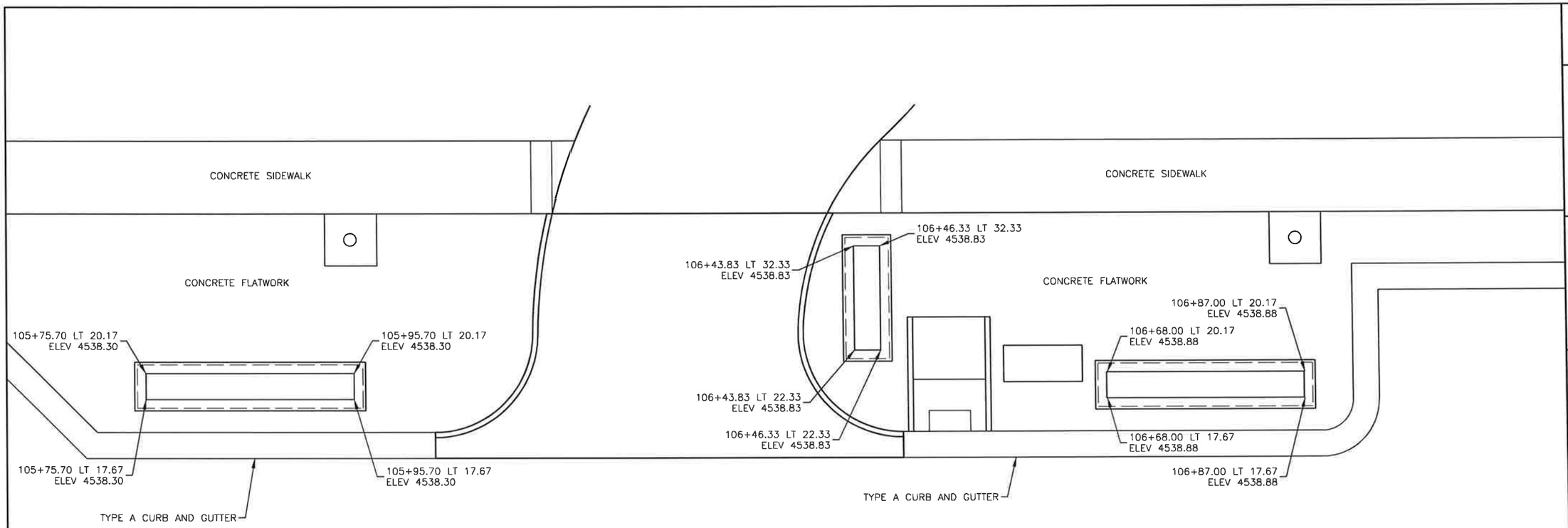
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

DETAILS

FILE: 57-18-035_C-502
JUB PROJ. #:57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

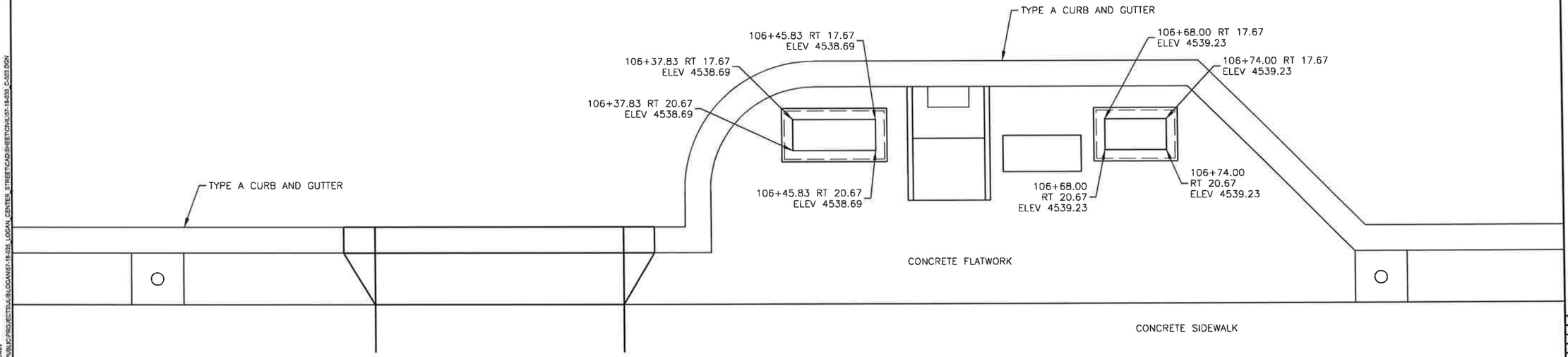
SHEET NUMBER:
C-502

Plot Date:— Plotted by: Samuel Powell
Date Created:10/19/20 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-502.DGN



CENTER STREET

NOTES:
1. PROVIDE AN EXPANSION JOINT WITH A MASTIC SEAL AROUND THE PERIMETER OF THE BOX BETWEEN THE CONCRETE FLATWORK/SIDEWALK AND WALL STONE



CONCRETE PLANTER BOX

SEE SHEET C-505 FOR DETAILS

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J-U-B ENGINEERS, INC.
1047 South 100 West,
Suite 180
Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

NO.	DESCRIPTION	BY	APR	DATE
	REVISION			

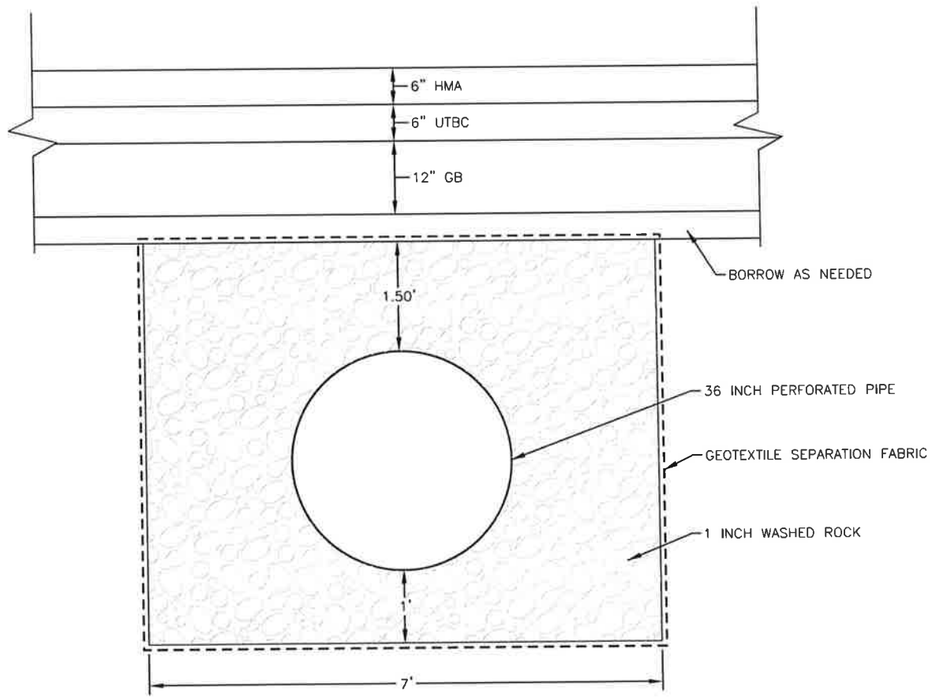
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

DETAILS

FILE: 57-18-035_C-503
JUB PROJ. #:57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-503

Plot Date:— Plotted By: Samuel Powell
Date Created:12/19/20 P:\LOGAN\PUBLIC\PROJECTS\J-U-B\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-503.DGN



PERFORATED PIPE DETAIL

J-U-B ENGINEERS, INC.
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Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
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8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APP.	DATE
	REVISION			

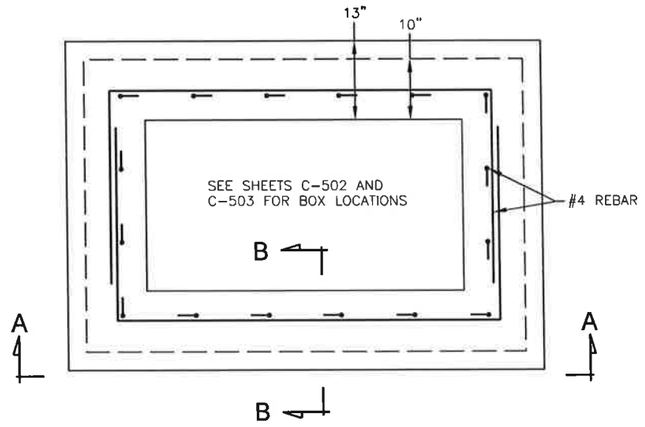
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

DETAILS

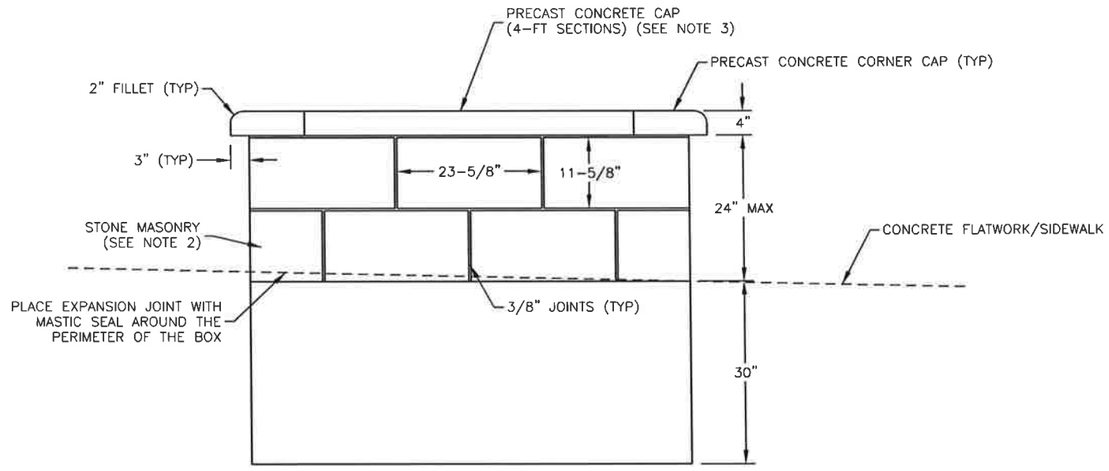
FILE : 57-18-035_C-504
JUB PROJ. # :57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-504

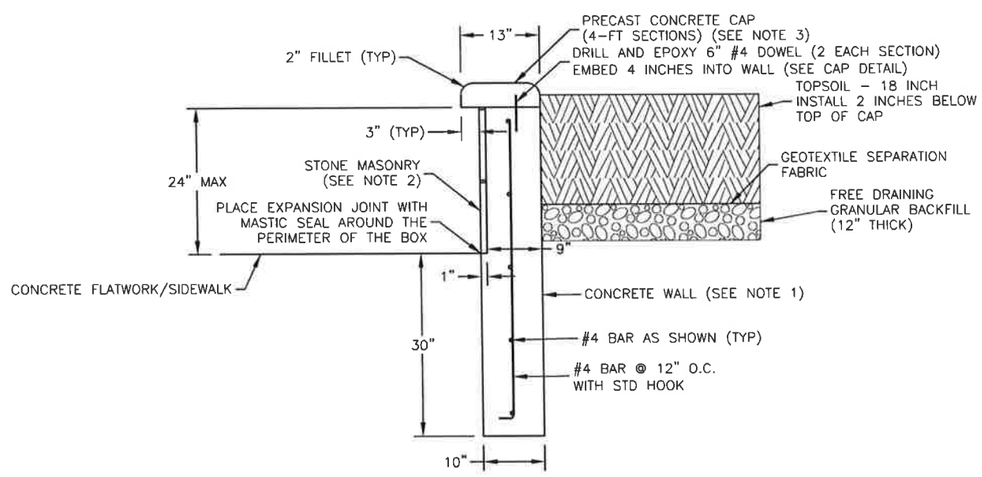
Plot Date:— Plotted By: Samuel Powell
Date Created:12/19/29 W:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\DWG\57-18-035_C-504.DGN



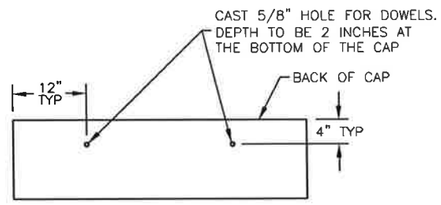
PLANTER BOX



SECTION A-A



SECTION B-B



CAP DETAIL

NOTES:
1. APPLY WATERPROOF SEALANT TO THE INTERIOR WALL OF THE PLANTER BOX.
2. USE GREY CLIFF 1 STONE. CONTACT ALAN HAWS WITH LKL ASSOCIATES, INC. AT 801-695-5542 OR AT AHAWS@LKLASSOC.COM FOR DETAILS. USE MAPEI ULTRAFLEX LFT MORTAR FOR INSTALLATION. USE MAPEI ULTRA COLOR PLUS FA FOR GROUTING JOINTS. MATCH COLOR OF THE STONE. INSTALL STONE PER MANUFACTURER'S RECOMMENDATION. MINIMUM LENGTH TO BE NO LESS THAN 6 INCHES.
3. PRECAST CONCRETE CAP TO BE A STANDARD CONCRETE GRAY COLOR. INSTALL CAP WITH MAPEI ULTRAFLEX LFT MORTAR. INSTALL PER SECTION B-B AND PER MANUFACTURER'S RECOMMENDATION. MINIMUM CAP LENGTH TO BE NO LESS THAN 12 INCHES.
4. CONTRACTOR TO SUBMIT DETAILED DRAWINGS AND PRODUCT SPECIFICATIONS OF THE WALL, AND LAYOUT OF THE STONE, CONCRETE CAPS, AND ALL ACCESSORIES FOR ENGINEER'S APPROVAL PRIOR TO INSTALLATION.
5. SEE ELECTRICAL SHEETS FOR ELECTRICAL OUTLET INSTALLATION DETAIL.

J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
1047 South 100 West,
Suite 180
Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

PROFESSIONAL ENGINEER
JONATHAN D.
BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APP.	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

DETAILS

FILE: 57-18-035_C-505
JUB PROJ. #:57-18-035
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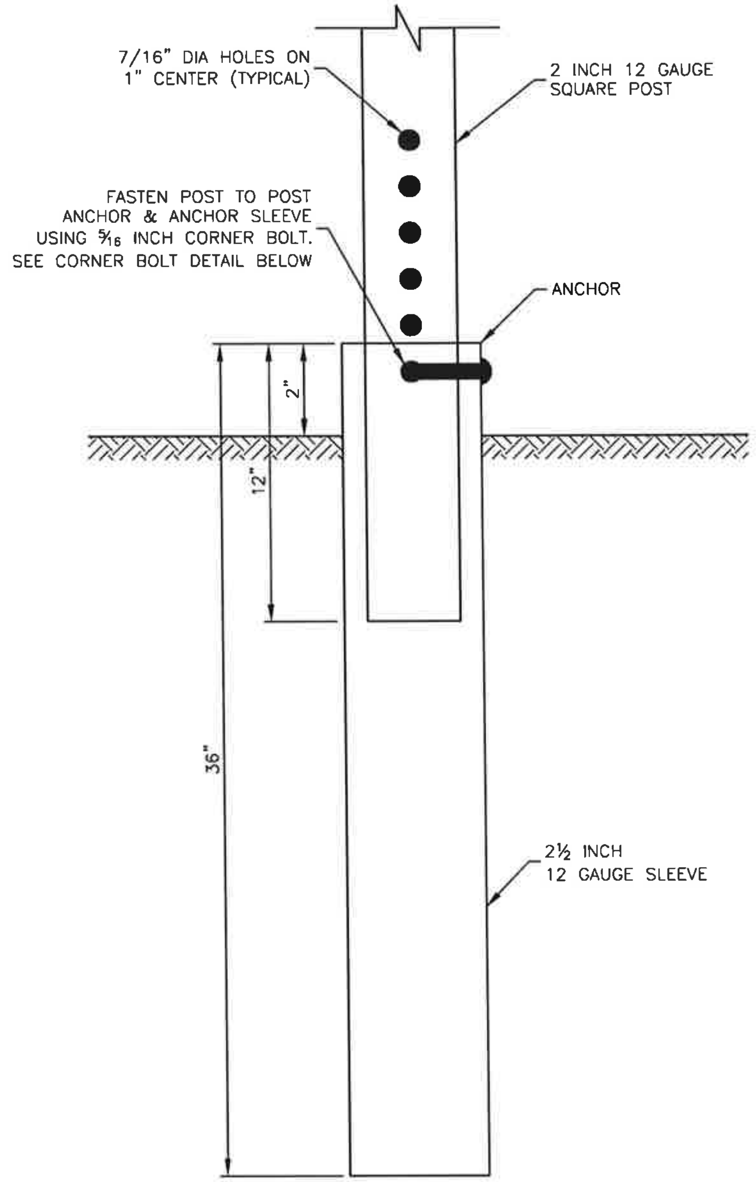
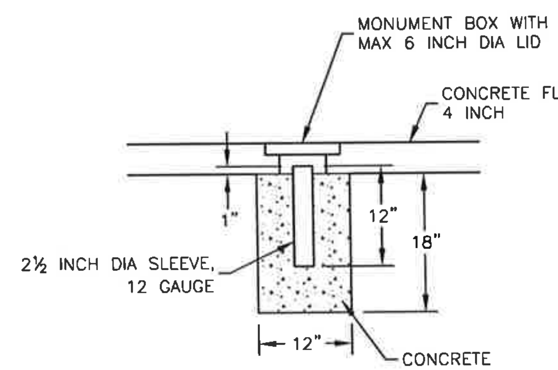
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-505

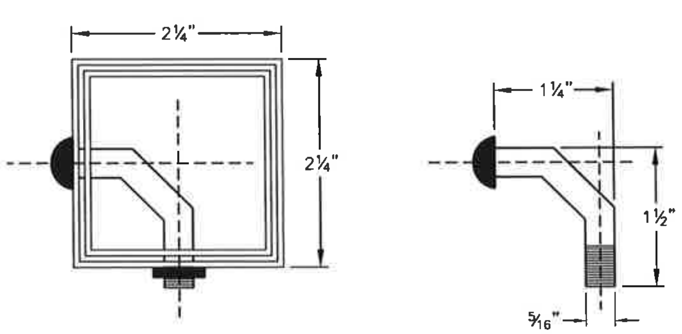
Plot Date:— Plotted By: Samuel Powell
Date Created:12/19/2018\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CADS\SHEET\CIVIL\57-18-035_C-505.DGN



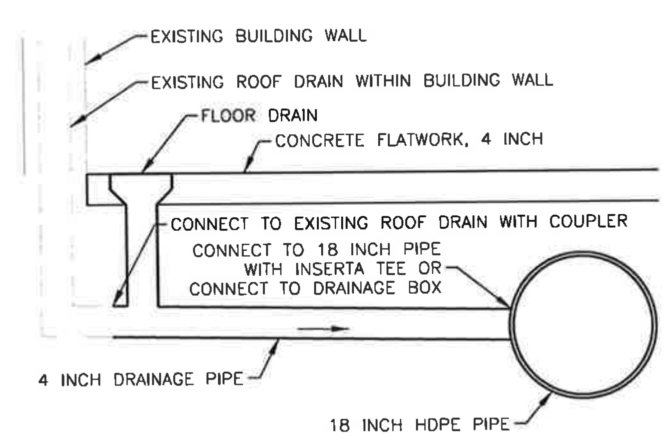
STANDARD SIGN POST & ANCHOR



METAL SLEEVE AND COVER

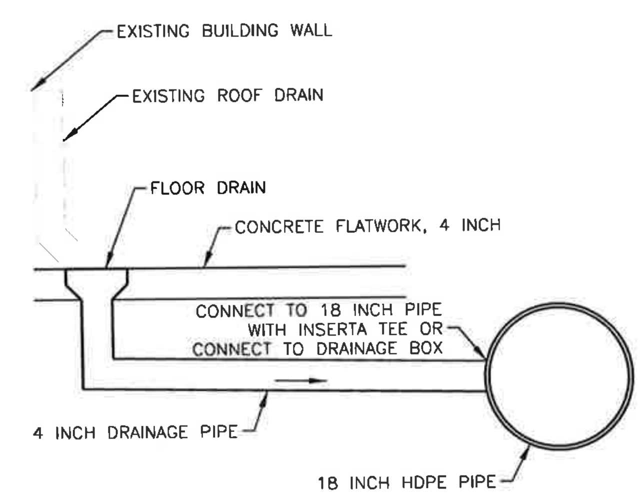


CORNER BOLT DETAIL



ROOF DRAIN CONNECTION

NOTES:
1. EXISTING ROOF DRAIN PIPE SIZES WILL VARY. FIELD VERIFY.



FLOOR DRAIN CONNECTION

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
1047 South 100 West,
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PROFESSIONAL ENGINEER
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

REVISION				
NO.	DESCRIPTION	BY	APR.	DATE

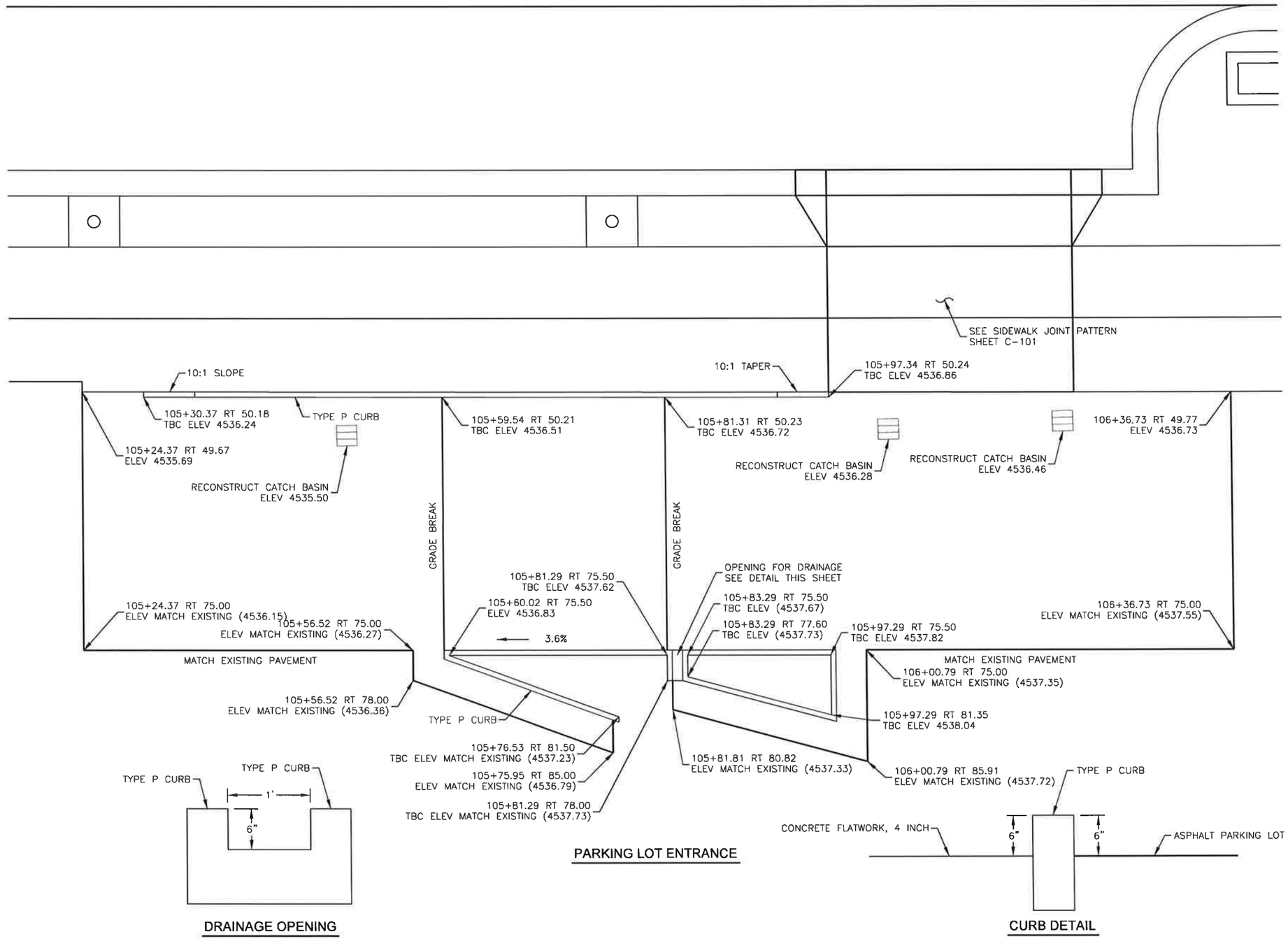
CENTER STREET, MAIN STREET TO 100 WEST LOGAN CITY

DETAILS

FILE: 57-18-035_C-506
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-506

Plot Date:— Plotted By: Samuel Powell
Date Created:2/26/2019 \\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035 LOGAN CENTER STREET\CAD\SHEET\CIVIL\57-18-035_C-506.DGN



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JONATHAN D BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APP'I	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

DETAILS

FILE : 57-18-035_C-507
JUB PROJ. # :57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-507

Plot Date:— Plotted By: Samuel Powell
Date Created:12/19/20 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-507.DGN

COVER COLLAR FOR SANITARY SEWER/STORM DRAIN MANHOLE

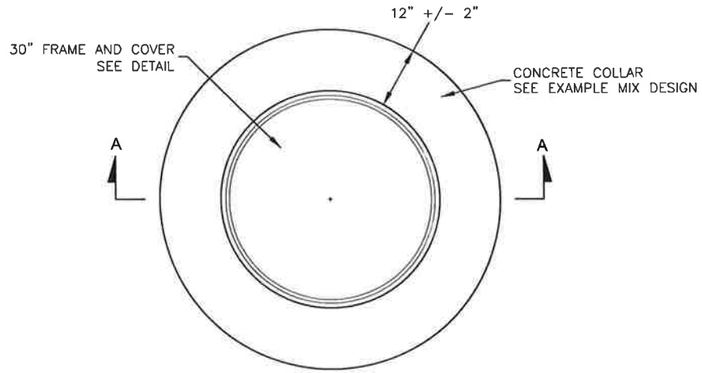
1. GENERAL
   1.1. IN A PAVEMENT SURFACE, THE CONCRETE WILL SUPPORT THE FRAME UNDER TRAFFIC LOADINGS.
2. PRODUCTS
   2.1. CONCRETE: CONCRETE COLLARS USE LEGRANDS (UDOT 70-B MIX) OR PARSON'S (AA-AE HP WITH FIBER ADD IN) OR EQUIVALENT HIGH EARLY STRENGTH MESH MIX TO UDOT STANDARD.
   2.2. CONCRETE CURING AGENT: TYPE ID CASS A (CLEAR WITH FUGITIVE DYE), MEMBRANE FORMING COMPOUND, APWA SECTION 03 39 00.
3. EXECUTION
   3.1. PAVEMENT PREPARATION: PROVIDE A NEAT VERTICAL AND CONCENTRIC JOINT BETWEEN CONCRETE AND EXISTING ASPHALT SURFACES. CLEAN EDGES OF ALL DIRT, OIL AND LOOSE DEBRIS.
   3.2. CONCRETE PLACEMENT: APWA SECTION 03 30 10. FILL THE ANNULAR SPACE AROUND THE FRAME AND COVER CASTING WITH CONCRETE, AND MECHANICALLY VIBRATE. APPLY A BROOM FINISH. APPLY A CURING AGENT.

30" FRAME AND COVER - TYPE A

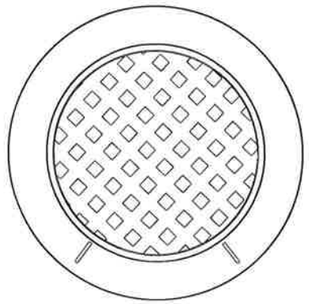
1. CASTING: GREY IRON CLASS 35 MINIMUM PER ASTM A 48.
2. COATING: EXCEPT MACHINED SURFACES, COAT ALL METAL PARTS WITH ASPHALTUM PAINT.
3. INSCRIPTION: CAST THE WORDS "STORM DRAIN" OR "SEWER" ON THE COVER FLUSH WITH THE SURFACE FINISH.
4. HEAT NUMBER: PLACE FOUNDRY AND HEAT NUMBER ON THE INSIDE OF THE FRAME AND ON THE BOTTOM OF THE COVER.
5. FIT ⊿ DESIGNATES MACHINED SURFACE. GIVE THE FRAME AND COVER A MACHINE FINISH SO THE COVER WILL NOT ROCK.
6. SEWER MANHOLE LIDS WILL BE VENTED
7. MANHOLE COVER COLLAR: SEE PLAN NO. 413/362.
8. ALL FRAME AND COVERS OR WATER VALVE LIDS THAT ARE NOT LOGAN CITY STANDARD SHALL BE REPLACED WITH STANDARD PARTS OR THE COLLAR WILL BE REDONE AT NO ADDITIONAL COST TO LOGAN CITY.

COVER COLLAR FOR WATER VALVE BOX

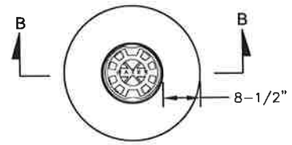
1. GENERAL
   1.1. IN A PAVEMENT SURFACE, THE CONCRETE WILL SUPPORT THE FRAME UNDER TRAFFIC LOADINGS.
2. PRODUCTS
   2.1. CONCRETE: CONCRETE COLLARS USE LEGRANDS (UDOT 70-B MIX) OR PARSON'S (AA-AE HP WITH MESH ADD IN) OR EQUIVALENT HIGH EARLY STRENGTH FIBER MIX TO UDOT STANDARD.
   2.2. CONCRETE CURING AGENT: TYPE ID CASS A (CLEAR WITH FUGITIVE DYE), MEMBRANE FORMING COMPOUND, APWA SECTION 03 39 00.
3. EXECUTION
   3.1. PAVEMENT PREPARATION: PROVIDE A NEAT VERTICAL AND CONCENTRIC JOINT BETWEEN CONCRETE AND EXISTING ASPHALT SURFACES. CLEAN EDGES OF ALL DIRT, OIL AND LOOSE DEBRIS.
   3.2. CONCRETE PLACEMENT: APWA SECTION 03 30 10. FILL THE ANNULAR SPACE AROUND THE FRAME AND COVER CASTING WITH CONCRETE, AND MECHANICALLY VIBRATE. APPLY A BROOM FINISH. APPLY A CURING AGENT.



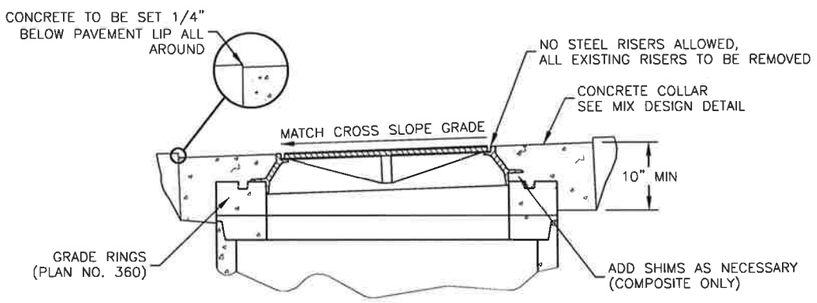
PLAN 413 / 362



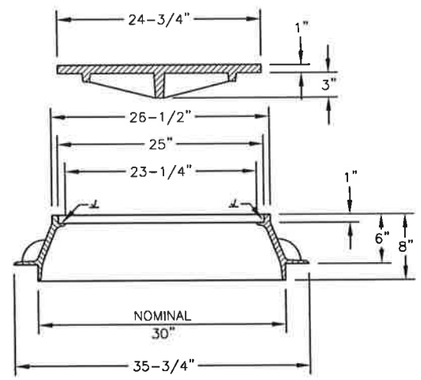
PLAN



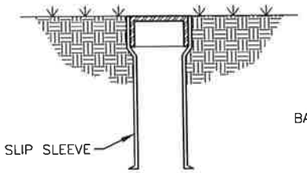
PLAN 574



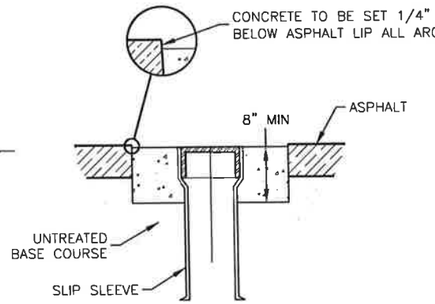
SECTION A-A



PLAN 302/ 402



SECTION A-A



SECTION B-B

J-U-B ENGINEERS, INC.
1047 South 100 West, Suite 180
Logan, UT 84321
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Fax: 435.713.9503
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PROFESSIONAL ENGINEER
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	REVISION	BY	APP'D	DATE

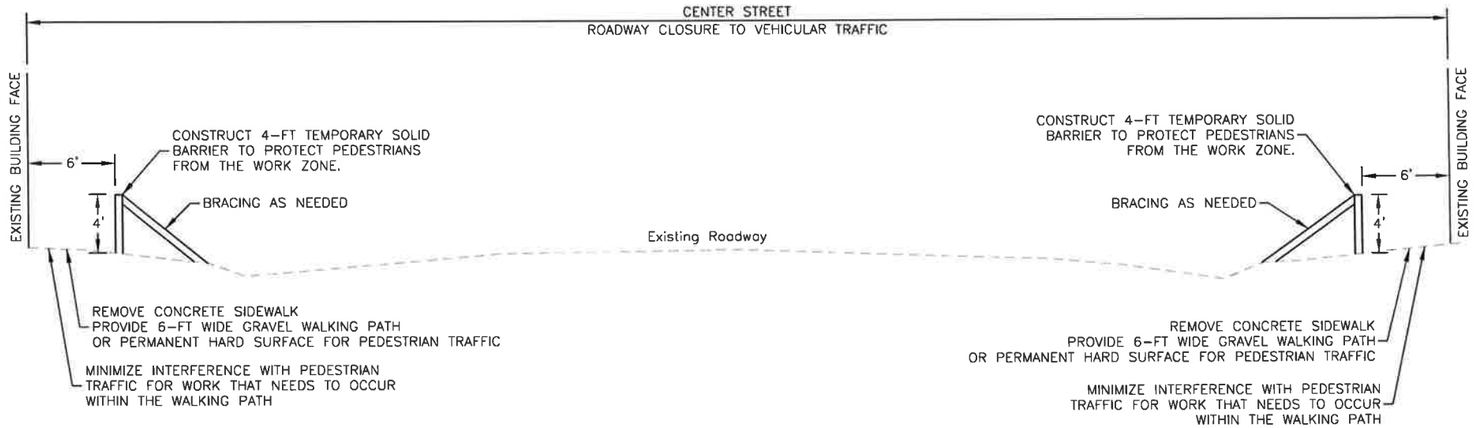
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

DETAILS

FILE: 57-18-035_C-508
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-508

Plot Date:— Plotted By: Samuel Powell
Date Created:12/19/2018\\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-508.DGN



TEMPORARY PEDESTRIAN BARRIER DETAIL

NOTES:
1. CONTRACTOR TO PROVIDE FINAL DESIGN DETAILS OF TEMPORARY BARRIER FOR APPROVAL BY THE ENGINEER.

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JONATHAN D. BUDGE 8203769-2202 PROFESSIONAL ENGINEER STATE OF UTAH

NO.	DESCRIPTION	BY APP.	DATE
	REVISION		

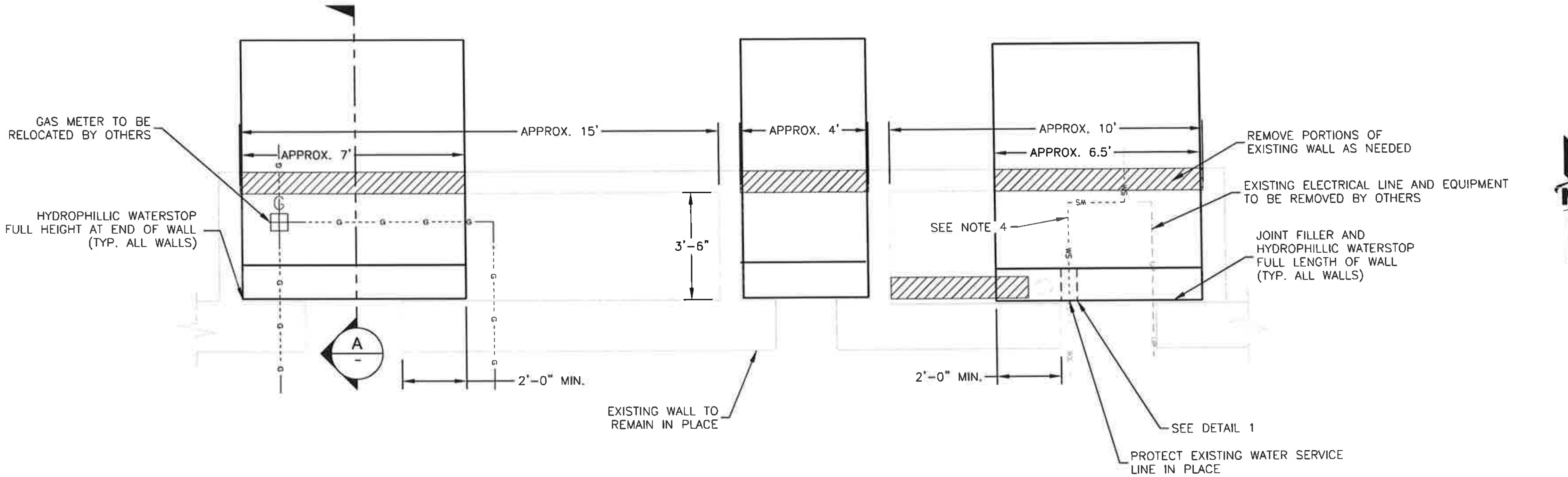
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

DETAILS

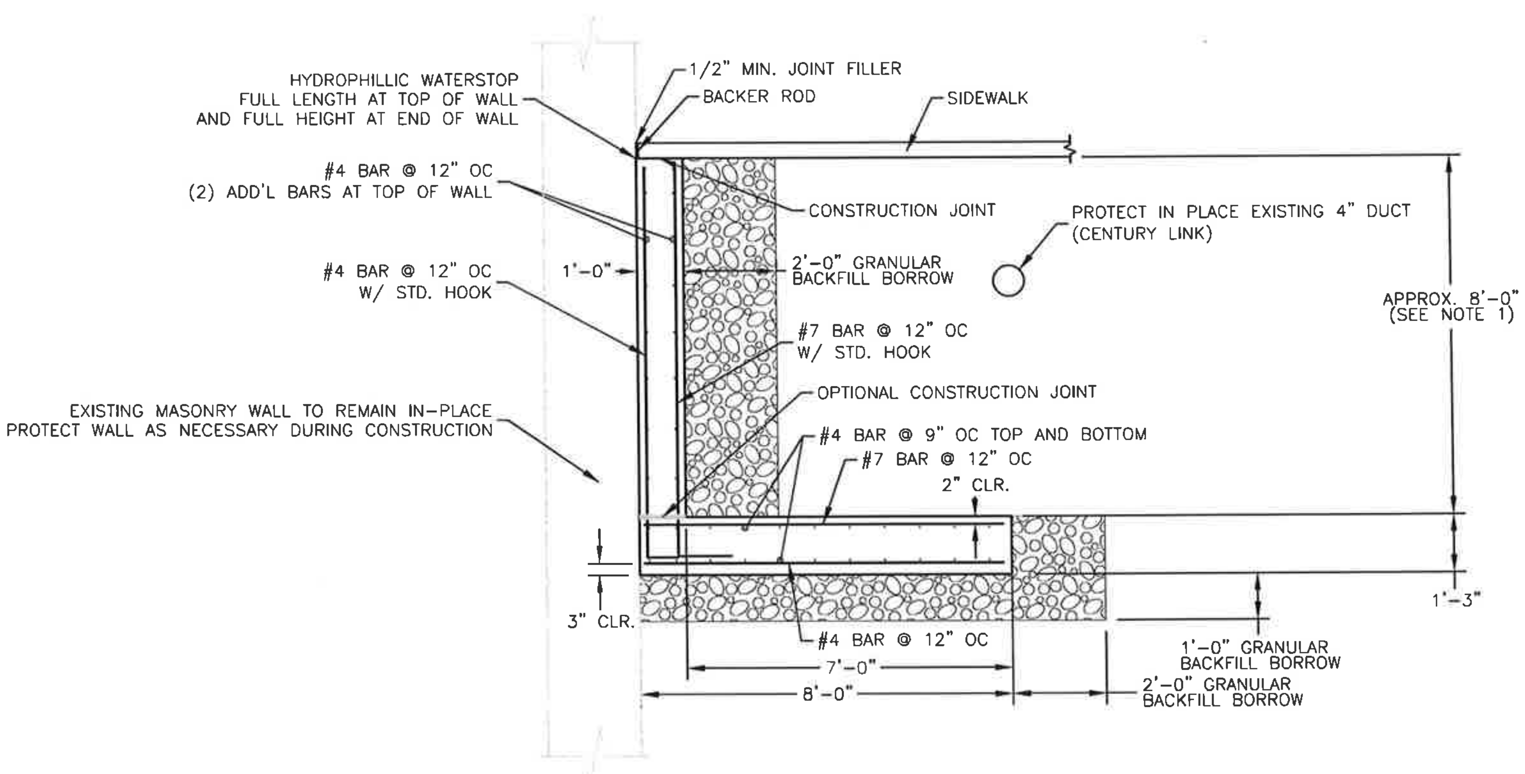
FILE : 57-18-035_C-509
JUB PROJ. # :57-18-035
DRAWN BY: JRW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
C-509

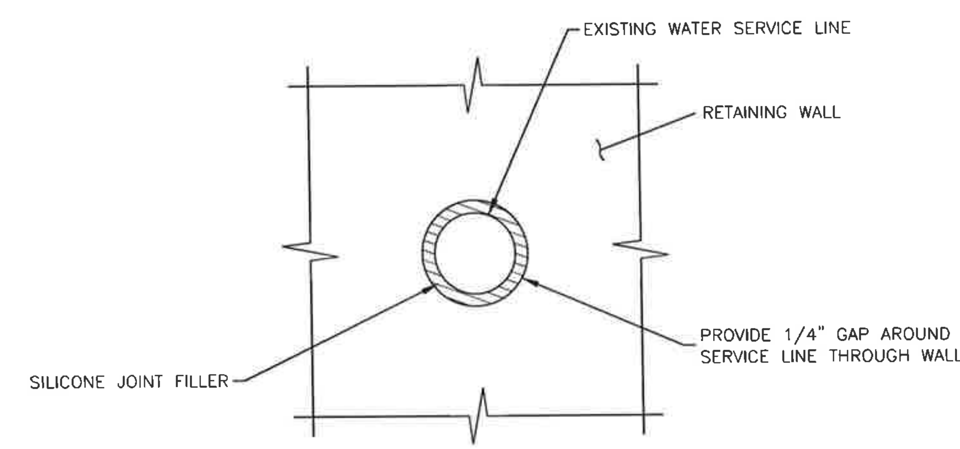
Plot Date:--- Plotted By: Samuel Powell
Date Created:12/19/2018 I:\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_C-509.DGN



PLAN



A SECTION
SCALE: N.T.S.



1 DETAIL
SCALE: N.T.S.

NOTES
1. DIMENSIONS ARE APPROXIMATE. FIELD VERIFY PRIOR TO CONSTRUCTION.
2. RESTRICT ACCESS TO WALL OPENINGS FOR DUST CONTROL AND SECURITY TO THE EXISTING BUILDING.
3. USE CLASS 4000 CONCRETE, USE REINFORCEMENT CONFORMING TO ASTM A615 GRADE 60.
4. INSTALL 1 INCH INSULATION WRAP AROUND EXISTING WATER SERVICE LINE.
5. IF UNSUITABLE BEARING SOILS OR FILLS ARE ENCOUNTERED IN FOOTING EXCAVATIONS, EXTEND EXCAVATION TO SUITABLE SOILS. PLACE WALL FOOTING AT LEVEL OF THE SUITABLE SOIL, OR ON STRUCTURAL FILL EXTENDING TO THE SUITABLE SOIL. THE ENGINEER WILL DETERMINE SOIL BEARING SUITABILITY.

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PROFESSIONAL ENGINEER JONATHAN D. BUDGE 8203769-2202 STATE OF UTAH

NO.	DESCRIPTION	BY	APPR.	DATE
REVISION				

CENTER STREET, MAIN STREET TO 100 WEST LOGAN CITY

DETAILS

FILE: 57-18-035_C-510
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/30/2019
SHEET NUMBER:
C-510

Plot Date: — Plotted By: Samuel Powell
Date Created: 12/19/2018 \\LOGANPUBLIC\PROJECTS\JUB\LOGAN\57-18-035 LOGAN CENTER STREET\CAD\SHEET\CIVIL\57-18-035_C-510.DGN

UTILITY CONTACTS			
UTILITY COMPANY	**UTILITY TYPE**	**UTILITY CONTACT**	**PHONE**
LOGAN CITY LIGHT AND POWER	POWER	STEVE CROSBY	435-716-9745
DOMINION ENERGY	NATURAL GAS	NICK WHITE	435-755-2205
CENTURYLINK	PHONE/FIBER	KOBY DUTSON	801-822-1483
LOGAN CITY	WATER/SEWER	CAMERON DRANEY	435-716-9622
LOGAN CITY	STORM WATER	JED AL-IMARI	435-716-9643
FIRST DIGITAL	PHONE	BRANDON BALMFORTH	801-456-1095
SYRINGA NETWORKS	FIBER OPTICS	JORDAN GOMEZ	385-828-0759
COMCAST	CABLE/INTERNET	JAY KOENIG	801-831-6747
UDOT REGION 1	FIBER/SIGNALS	LINCOLN PORT	801-620-1638

UTILITY TEST HOLE DATA								
TEST HOLE	**STATION**	**OFFSET**	**DEPTH TOP OF UTILITY**	**UTILITY ELEVATION**	**UTILITY OWNER**	**UTILITY TYPE**	**UTILITY SIZE**	**MATERIAL**
TH-01	102+88.98	41.67 LT	3.34	4530.22	CENTURYLINK	PHONE/FIBER	(4) 4 INCH	CONCRETE CAP
TH-02	102+93.73	34.89 LT	2.87	4530.83	CENTURYLINK	PHONE	3 INCH	CLAY TILE DUCT
TH-03	102+92.95	26.29 LT	3.13	4530.54	DOMINION ENERGY	GAS	2 INCH	STEEL
TH-04	103+26.20	25.41 RT	2.26	4531.13	DOMINION ENERGY	GAS	4 INCH	STEEL
TH-05	103+52.00	19.78 LT	4.76	4529.28	LOGAN CITY	WATER	8 INCH	METAL
TH-06	105+65.69	26.99 RT	3.75	4531.80	CENTURYLINK	FIBER	2 INCH	PVC
TH-06A	105+66.65	26.23 RT	2.50	4533.10	DOMINION ENERGY	GAS	4 INCH	STEEL
TH-07	105+64.99	26.46 LT	3.17	4532.36	CENTURYLINK	FIBER	2 INCH	PVC
TH-07A	105+66.09	27.00 LT	2.64	4532.88	DOMINION ENERGY	GAS	2 INCH	STEEL
TH-08	105+65.76	31.33 LT	1.17	4534.16	LOGAN CITY LIGHT & POWER	POWER	2 INCH	PVC
TH-09	105+65.71	32.78 LT	1.18	4534.09	CENTURYLINK	PHONE	3 INCH	CLAY TILE DUCT
TH-10	107+07.54	29.55 LT	2.34	4534.10	CENTURYLINK	PHONE	3 INCH	CLAY TILE DUCT
TH-10A	107+07.54	29.55 LT	1.87	4534.55	DOMINION ENERGY	GAS	2 INCH	STEEL
TH-11	107+07.60	31.58 LT	1.18	4535.18	LOGAN CITY LIGHT & POWER	POWER	2 INCH	PVC
TH-12	107+07.60	41.48 LT	3.09	4533.75	CENTURYLINK	PHONE/FIBER	(4) 4 INCH	CONCRETE CAP
TH-13	109+27.06	27.19 LT	1.00	4537.72	CENTURYLINK	PHONE	3 INCH	CLAY TILE DUCT
TH-14	109+26.60	28.40 LT	4.86	4533.82	UNKNOWN	UNKNOWN	1 INCH	UNKNOWN
TH-15	109+27.40	26.77 RT	1.44	4537.63	CENTURYLINK	PHONE	2 INCH	PVC
TH-16	109+25.70	25.48 RT	2.74	4536.31	DOMINION ENERGY	GAS	4 INCH	STEEL
TH-17	109+23.82	24.68 RT	4.61	4534.41	SYRINGA	FIBER	(3) 2 INCH	PVC

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8203769-2202
STATE OF UTAH

NO	DESCRIPTION	REVISION BY	APPR	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITY CONTACTS

FILE: 57-18-035_CU-001
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CU-001

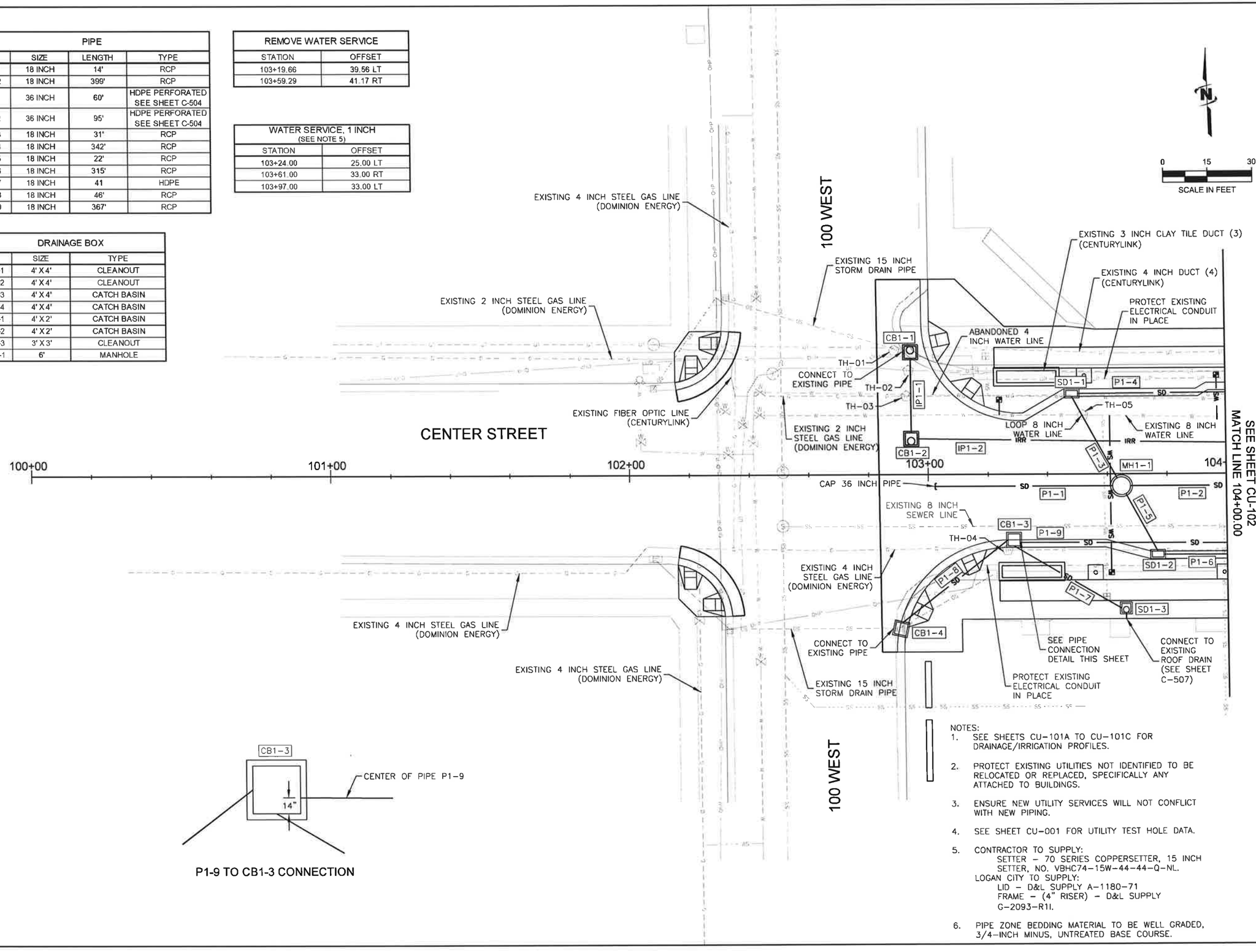
Plot Date:— Plotted By: Samuel Powell
Date Created:12/6/2019 N:\LOGAN\PUBLIC\PROJECTS\J-U-B\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\GIVN\57-18-035_CU-001.DGN

PIPE			
ID	SIZE	LENGTH	TYPE
IP1-1	18 INCH	14'	RCP
IP1-2	18 INCH	399'	RCP
P1-1	36 INCH	60'	HDPE PERFORATED SEE SHEET C-504
P1-2	36 INCH	95'	HDPE PERFORATED SEE SHEET C-504
P1-3	18 INCH	31'	RCP
P1-4	18 INCH	342'	RCP
P1-5	18 INCH	22'	RCP
P1-6	18 INCH	315'	RCP
P1-7	18 INCH	41	HDPE
P1-8	18 INCH	46'	RCP
P1-9	18 INCH	367'	RCP

DRAINAGE BOX		
ID	SIZE	TYPE
CB1-1	4' X 4'	CLEANOUT
CB1-2	4' X 4'	CLEANOUT
CB1-3	4' X 4'	CATCH BASIN
CB1-4	4' X 4'	CATCH BASIN
SD1-1	4' X 2'	CATCH BASIN
SD1-2	4' X 2'	CATCH BASIN
SD1-3	3' X 3'	CLEANOUT
MH1-1	6'	MANHOLE

REMOVE WATER SERVICE	
STATION	OFFSET
103+19.66	39.56 LT
103+59.29	41.17 RT

WATER SERVICE, 1 INCH (SEE NOTE 5)	
STATION	OFFSET
103+24.00	25.00 LT
103+61.00	33.00 RT
103+97.00	33.00 LT



P1-9 TO CB1-3 CONNECTION

NOTES:
1. SEE SHEETS CU-101A TO CU-101C FOR DRAINAGE/IRRIGATION PROFILES.
2. PROTECT EXISTING UTILITIES NOT IDENTIFIED TO BE RELOCATED OR REPLACED, SPECIFICALLY ANY ATTACHED TO BUILDINGS.
3. ENSURE NEW UTILITY SERVICES WILL NOT CONFLICT WITH NEW PIPING.
4. SEE SHEET CU-001 FOR UTILITY TEST HOLE DATA.
5. CONTRACTOR TO SUPPLY:
   SETTER - 70 SERIES COPPERSETTER, 15 INCH SETTER, NO. VBHC74-15W-44-44-Q-NL.
   LOGAN CITY TO SUPPLY:
   LID - D&L SUPPLY A-1180-71
   FRAME - (4" RISER) - D&L SUPPLY G-2093-R1I.
6. PIPE ZONE BEDDING MATERIAL TO BE WELL GRADED, 3/4-INCH MINUS, UNTREATED BASE COURSE.

J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
1047 South 100 West, Suite 180
Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

JONATHAN D. BUDGE 8203769-2202 PROFESSIONAL ENGINEER STATE OF UTAH

NO	DESCRIPTION	BY	APP'D	DATE
	REVISION			

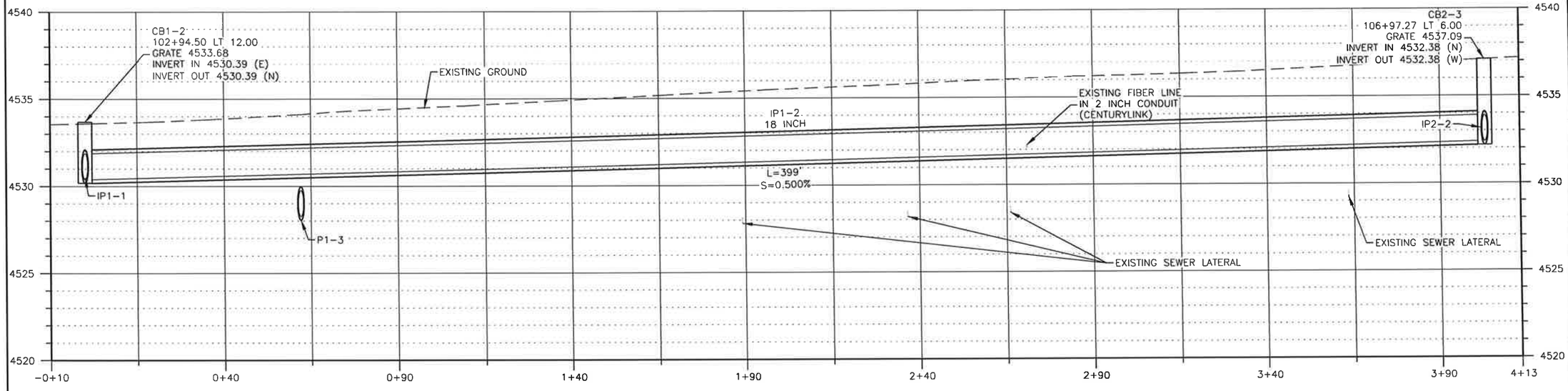
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITIES

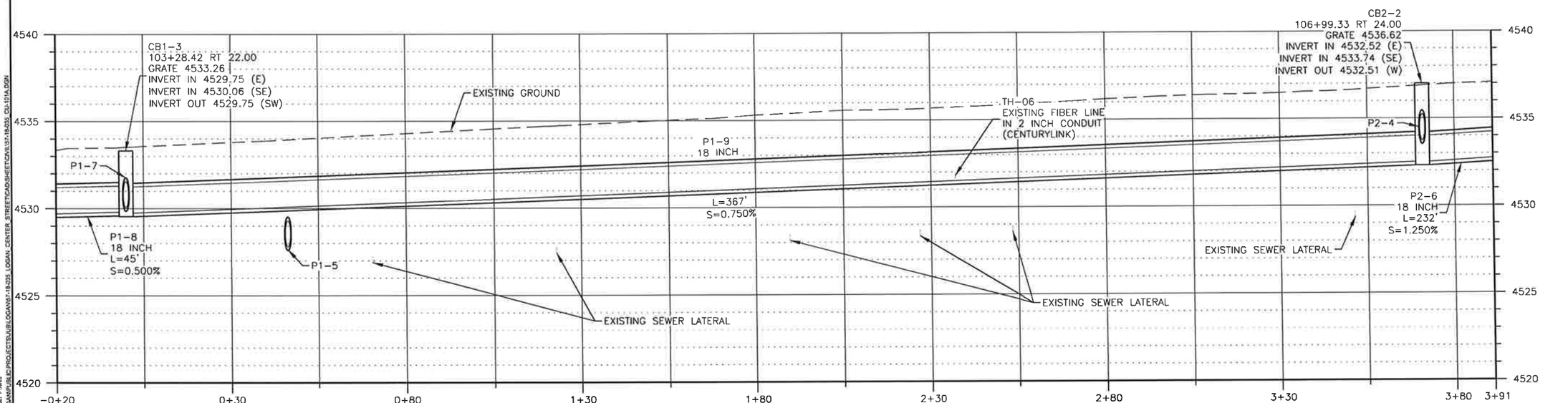
FILE: 57-18-035_CU-101
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/3/2019

SHEET NUMBER:
CU-101

Plot Date:— Plotted By: Samuel Powell
Date Created: 11/6/2018 I:\LOGAN\PUBLIC-PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\DWG\57-18-035_CU-101.DGN



CB 1-2 TO CB 2-2



CB 1-3 TO CB 2-2

NOTES:
1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. SEE SHEET CU-001 FOR UTILITY TEST HOLE DATA. CONTRACTOR TO VERIFY ALL UTILITIES.
2. WATER SERVICES ARE NOT SHOWN.

J-U-B ENGINEERS, INC.
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www.jub.com

JONATHAN D. BUDGE 8203769-2202 STATE OF UTAH

NO.	DESCRIPTION	BY	APP.	DATE
	REVISION			

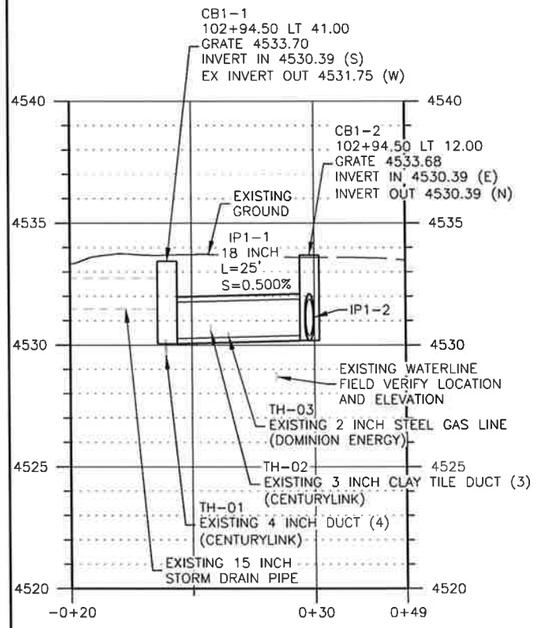
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITY PROFILES

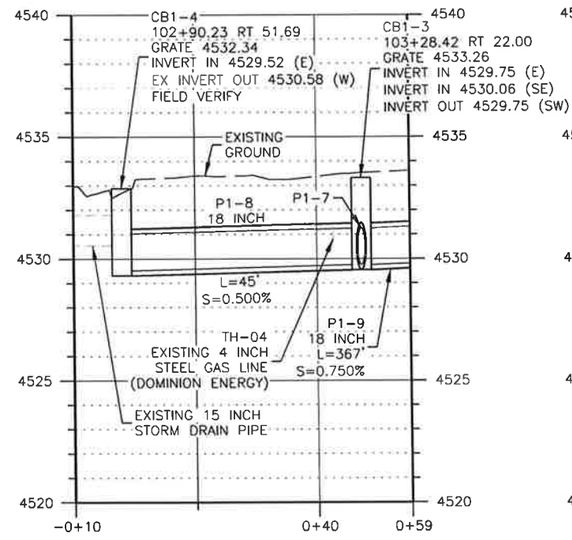
FILE: 57-18-035_CU-101A
JUB PROJ. #:57-18-035
DRAWN BY: JWW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CU-101A

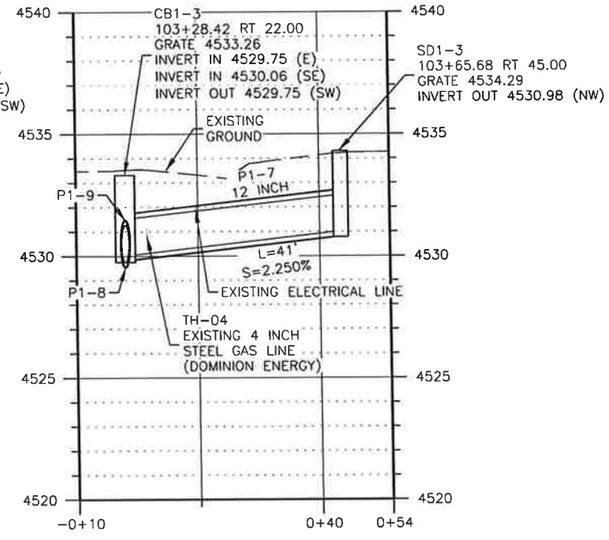
Plot Date:— Plotted By: Samuel Powell
Date Created: 1/2/2018 N:\LOGAN\PUBLIC\PROJECTS\J-U-B\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CU-101A.DGN



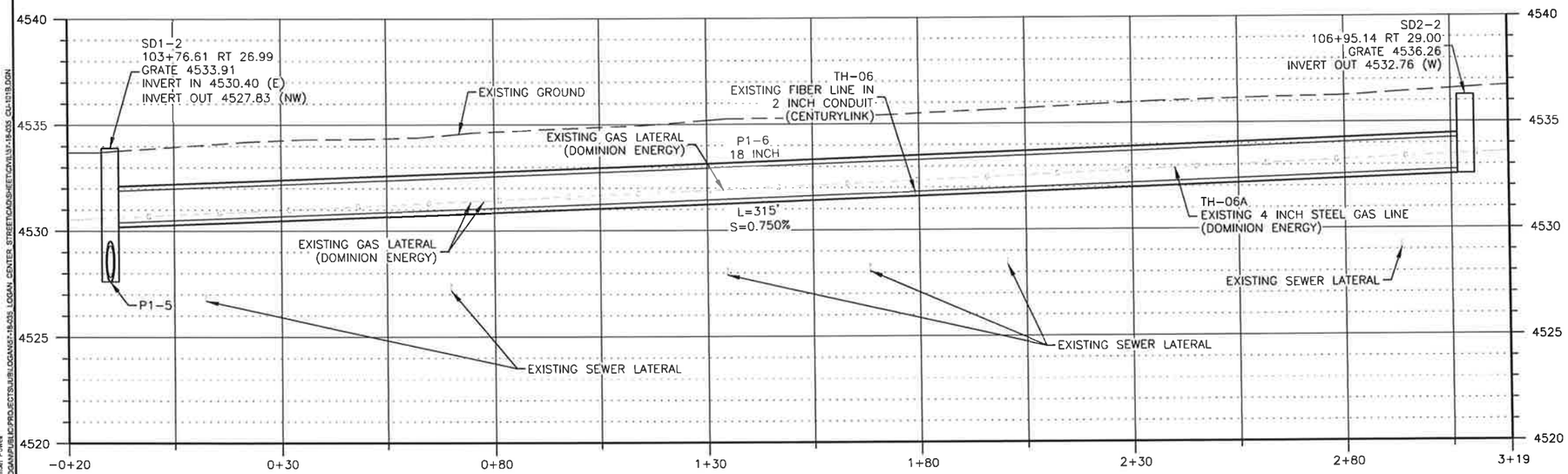
CB 1-1 TO CB 1-2



CB 1-4 TO CB 1-3



CB 1-3 TO SD 1-3



SD 1-2 TO SD 2-2

NOTES:
1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. SEE SHEET CU-001 FOR UTILITY TEST HOLE DATA. CONTRACTOR TO VERIFY ALL UTILITIES.
2. WATER SERVICES ARE NOT SHOWN.

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Fax: 435.713.9503
www.jub.com

PROFESSIONAL ENGINEER
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	DATE	BY
	REVISION		

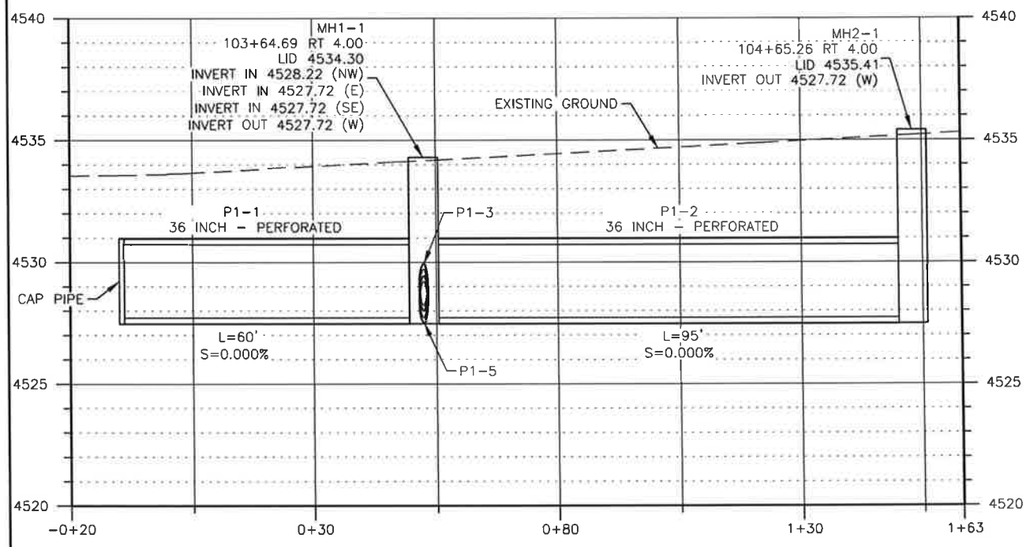
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITY PROFILES

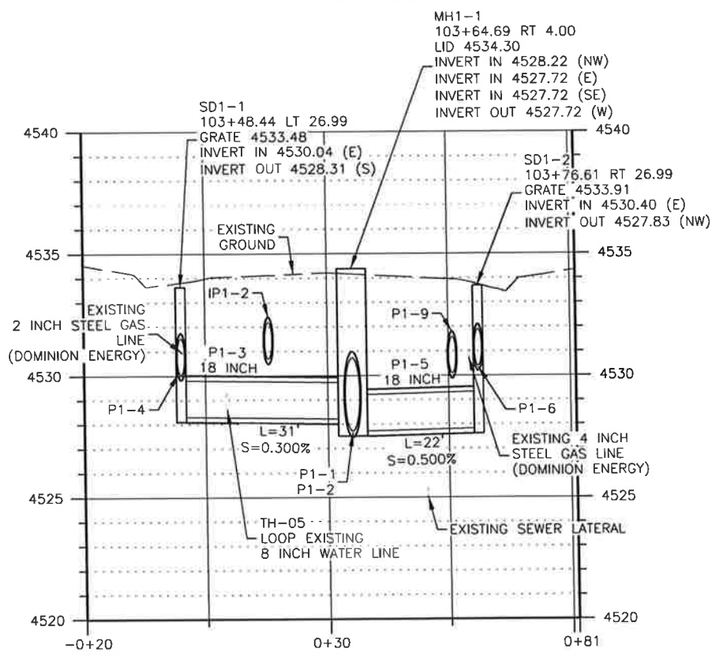
FILE: 57-18-035_CU-101B
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CU-101B

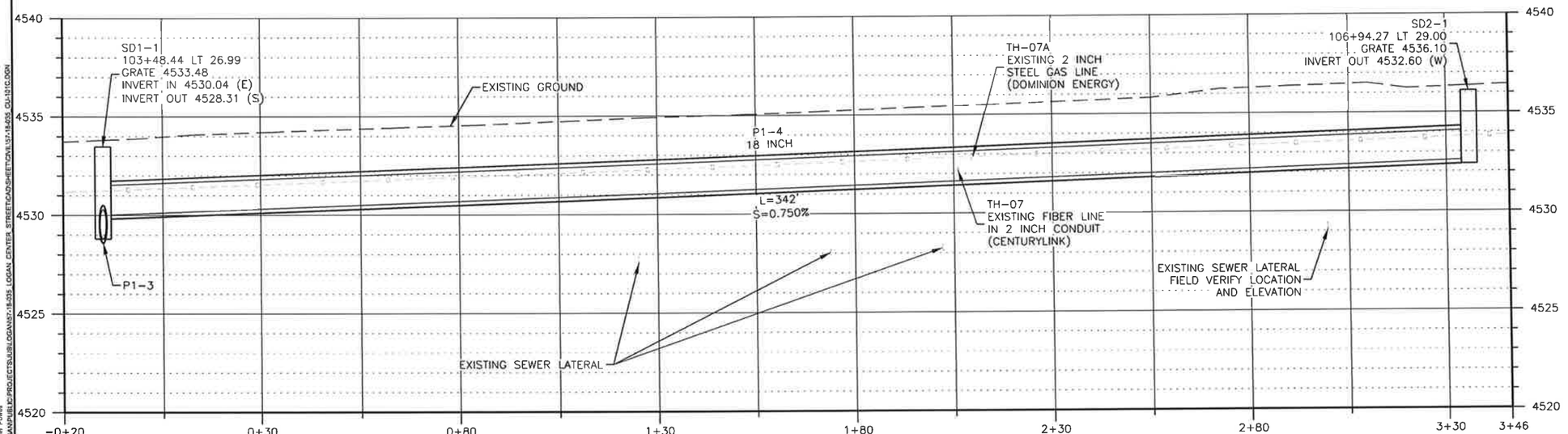
Plot Date:— Plotted By: Samuel Powell
Date Created: 11/6/2019 \\LOGANPUBLIC-PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CU-101B.DGN



P 1-1 TO MH 2-1



SD 1-1 TO SD 1-2



SD 1-1 TO SD 2-1

NOTES:
1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. SEE SHEET CU-001 FOR UTILITY TEST HOLE DATA. CONTRACTOR TO VERIFY ALL UTILITIES.
2. WATER SERVICES ARE NOT SHOWN.

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JONATHAN D. BUDGE 8203769-2202 STATE OF UTAH

NO	DESCRIPTION	DATE	BY
	REVISION		

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITY PROFILES

FILE: 57-18-035_CU-101C
JUB PROJ. # :57-18-035
DRAWN BY: JRW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CU-101C

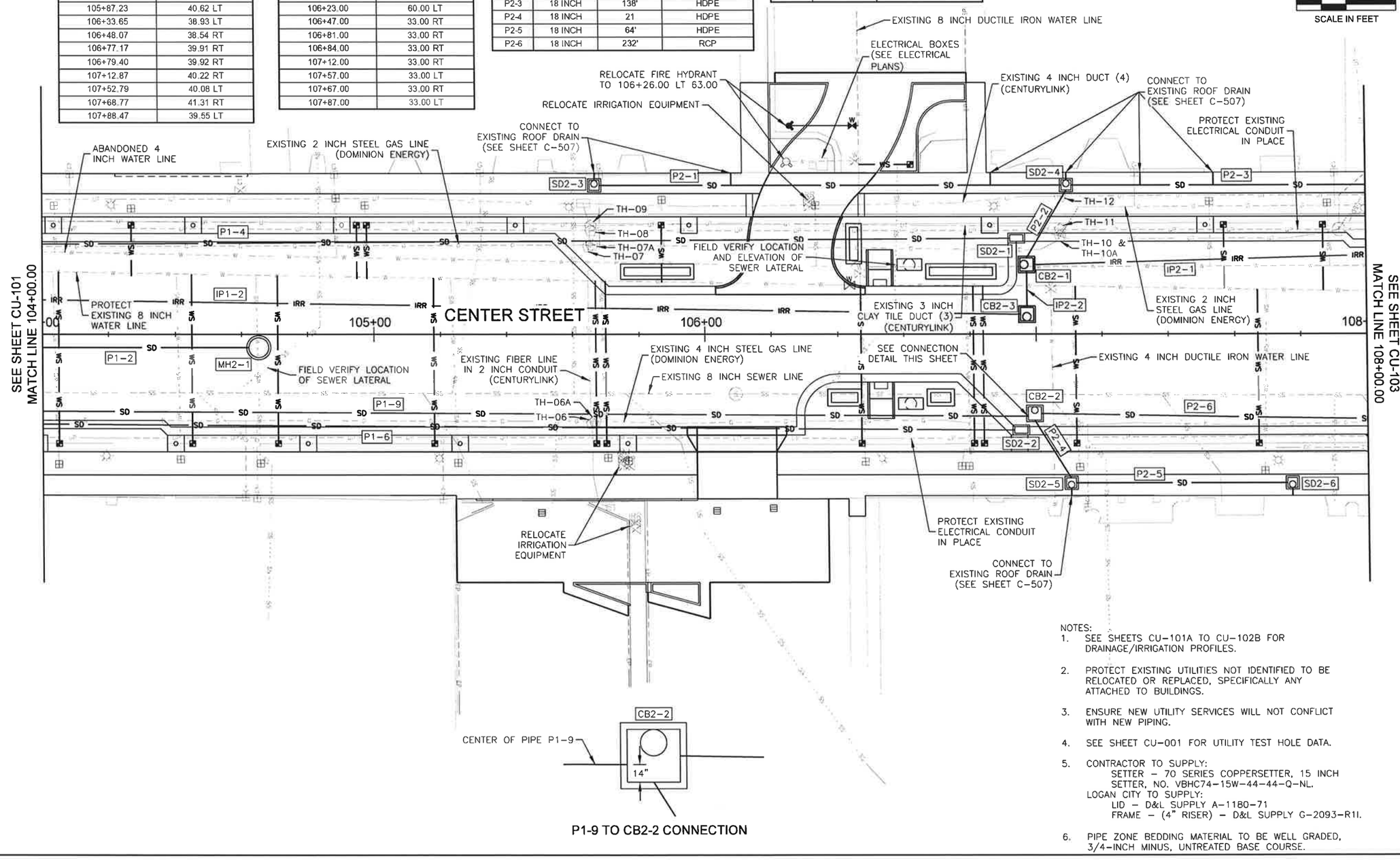
Plot Date:— Plotted By: Samuel Powell
Date Created:10/2/2018 N:\LOGAN\Projects\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CU-101C.DGN

REMOVE WATER SERVICE	
STATION	OFFSET
104+03.83	38.87 LT
104+04.84	39.27 RT
104+27.04	38.04 LT
104+41.40	37.81 RT
104+65.62	39.03 RT
104+88.90	41.22 LT
104+97.60	38.96 LT
105+25.04	38.87 LT
105+70.38	37.38 RT
105+76.53	38.31 RT
105+87.23	40.62 LT
106+33.65	38.93 LT
106+48.07	38.54 RT
106+77.17	39.91 RT
106+79.40	39.92 RT
107+12.87	40.22 RT
107+52.79	40.08 LT
107+68.77	41.31 RT
107+88.47	39.55 LT

WATER SERVICE, 1 INCH (SEE NOTE 5)	
STATION	OFFSET
104+05.00	33.00 RT
104+27.00	33.00 LT
104+45.00	33.00 RT
104+71.00	33.00 RT
104+95.00	33.00 LT
104+98.00	33.00 LT
105+18.00	33.00 RT
105+67.00	33.00 RT
105+70.00	33.00 RT
105+87.00	33.00 LT
106+23.00	60.00 LT
106+47.00	33.00 RT
106+81.00	33.00 RT
106+84.00	33.00 RT
107+12.00	33.00 RT
107+57.00	33.00 LT
107+67.00	33.00 RT
107+87.00	33.00 LT

PIPE			
ID	SIZE	LENGTH	TYPE
IP1-2	18 INCH	399'	RCP
IP2-1	18 INCH	234'	RCP
IP2-2	18 INCH	11'	RCP
P1-2	36 INCH	95'	PERFORATED SEE SHEET C-504
P1-4	18 INCH	342'	RCP
P1-6	18 INCH	315'	RCP
P1-9	18 INCH	367'	RCP
P2-1	18 INCH	140	HDPE
P2-2	18 INCH	24'	HDPE
P2-3	18 INCH	138'	HDPE
P2-4	18 INCH	21	HDPE
P2-5	18 INCH	64'	HDPE
P2-6	18 INCH	232'	RCP

DRAINAGE BOX		
ID	SIZE	TYPE
MH2-1	6'	MANHOLE
SD2-1	4' X 2'	CATCH BASIN
SD2-2	4' X 2'	CATCH BASIN
SD2-3	3' X 3'	CLEANOUT
SD2-4	3' X 3'	CLEANOUT
SD2-5	3' X 3'	CLEANOUT
SD2-6	3' X 3'	CLEANOUT
CB2-1	4' X 4'	CLEANOUT
CB2-2	4' X 4'	CLEANOUT
CB2-3	4' X 4'	CLEANOUT



P1-9 TO CB2-2 CONNECTION

NOTES:
1. SEE SHEETS CU-101A TO CU-102B FOR DRAINAGE/IRRIGATION PROFILES.
2. PROTECT EXISTING UTILITIES NOT IDENTIFIED TO BE RELOCATED OR REPLACED, SPECIFICALLY ANY ATTACHED TO BUILDINGS.
3. ENSURE NEW UTILITY SERVICES WILL NOT CONFLICT WITH NEW PIPING.
4. SEE SHEET CU-001 FOR UTILITY TEST HOLE DATA.
5. CONTRACTOR TO SUPPLY:
   SETTER – 70 SERIES COPPERSETTER, 15 INCH SETTER, NO. VBHC74-15W-44-44-Q-NL.
   LOGAN CITY TO SUPPLY:
   LID – D&L SUPPLY A-1180-71
   FRAME – (4" RISER) – D&L SUPPLY G-2093-R11.
6. PIPE ZONE BEDDING MATERIAL TO BE WELL GRADED, 3/4-INCH MINUS, UNTREATED BASE COURSE.

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Fax: 435.713.9503
www.jub.com

JONATHAN D. BUDGE 8203769-2202 PROFESSIONAL ENGINEER STATE OF UTAH

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

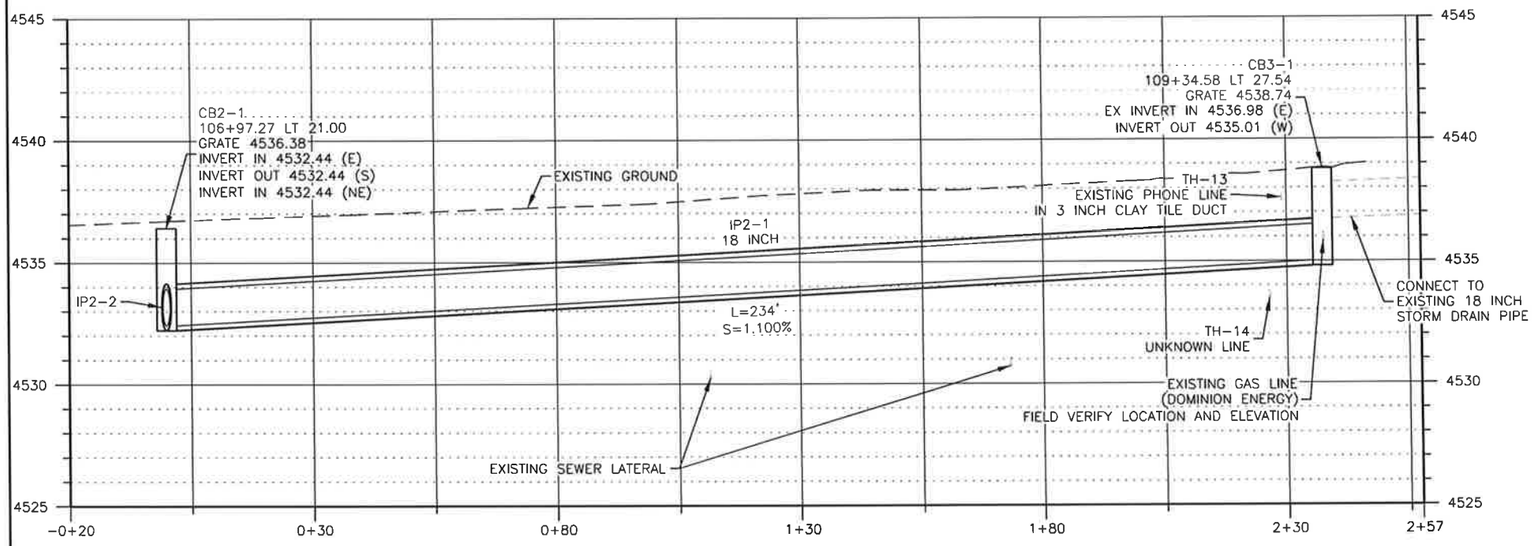
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITIES

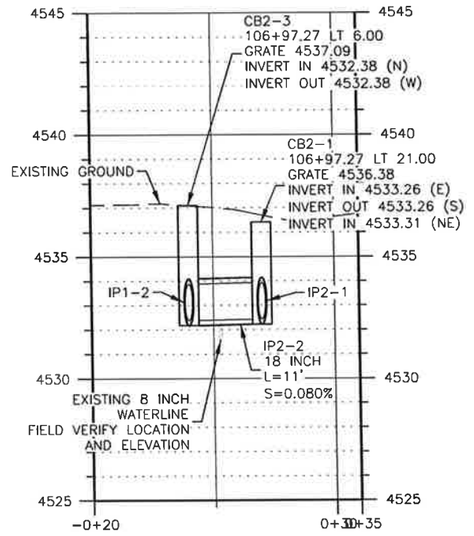
FILE: 57-18-035_CU-102
JUB PROJ. #:57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/3/2019

SHEET NUMBER:
CU-102

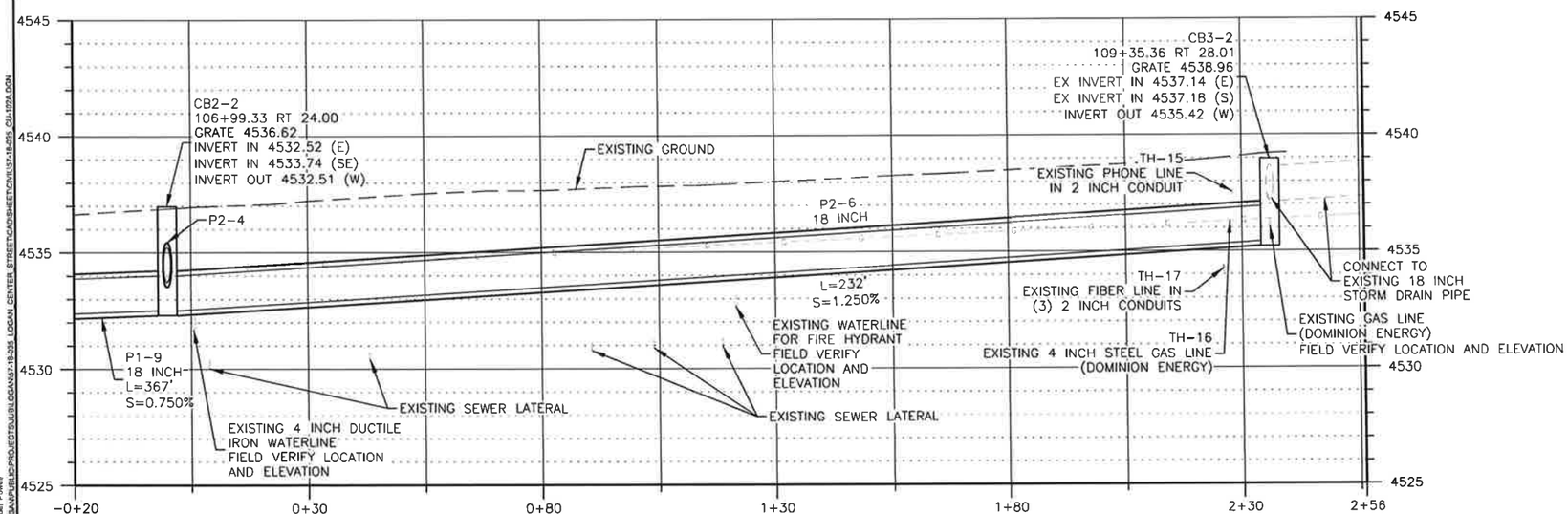
Plot Date:— Plotted By: Samuel Powell
Date Created:11/10/2019 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CN\CAD\SHEET\CN_XLS\57-18-035_CU-102.DGN



CB 2-1 TO CB 3-1



CB 2-3 TO CB 2-1



CB 2-2 TO CB 3-2

NOTES:
1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. SEE SHEET CU-001 FOR UTILITY TEST HOLE DATA. CONTRACTOR TO VERIFY ALL UTILITIES.
2. WATER SERVICES ARE NOT SHOWN.

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Fax: 435.713.9503
www.jub.com

JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

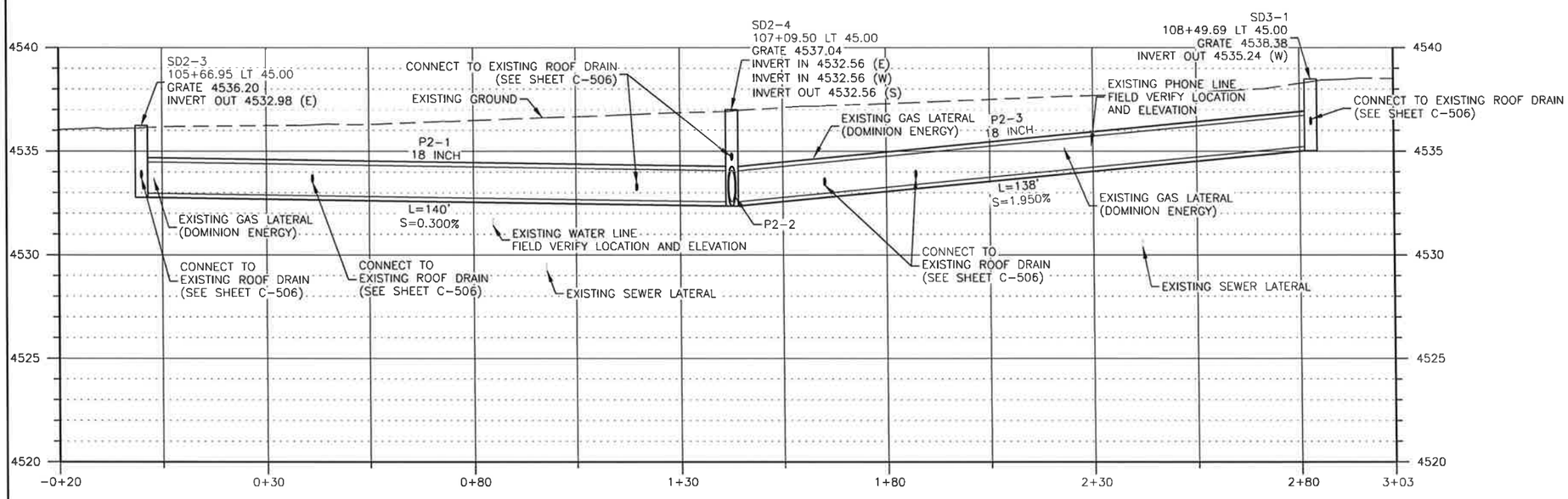
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITY PROFILES

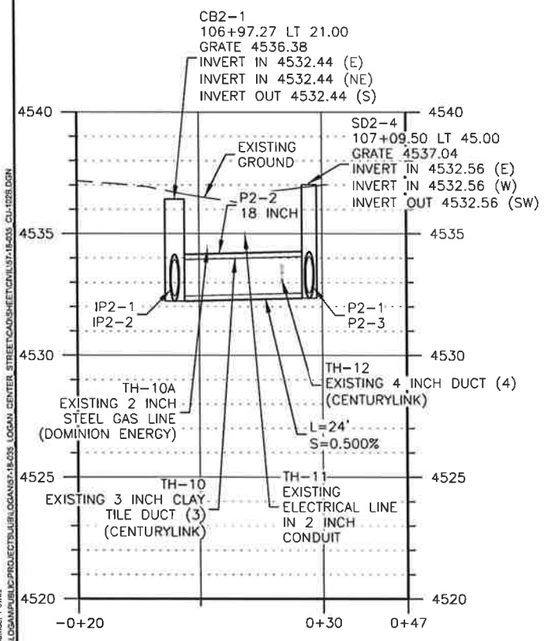
FILE: 57-18-035_CU-102A
JUB PROJ. # :57-18-035
DRAWN BY: JRW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CU-102A

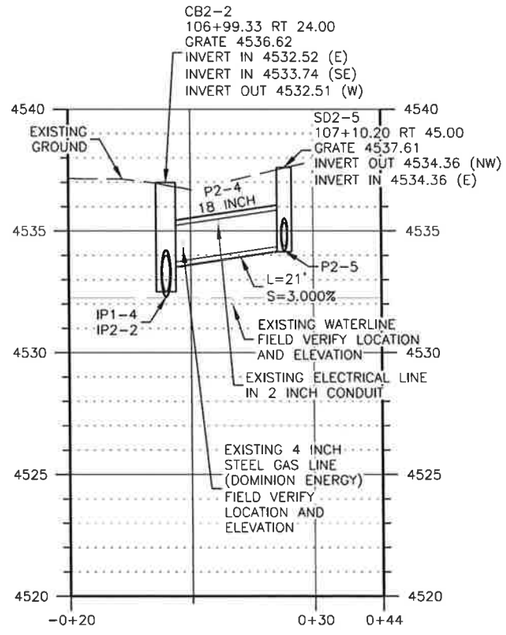
Plot Date:— Plotted By: Samuel Powell
File Created:11/2/2018 I:\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEETS\57-18-035_CU-102A.DGN



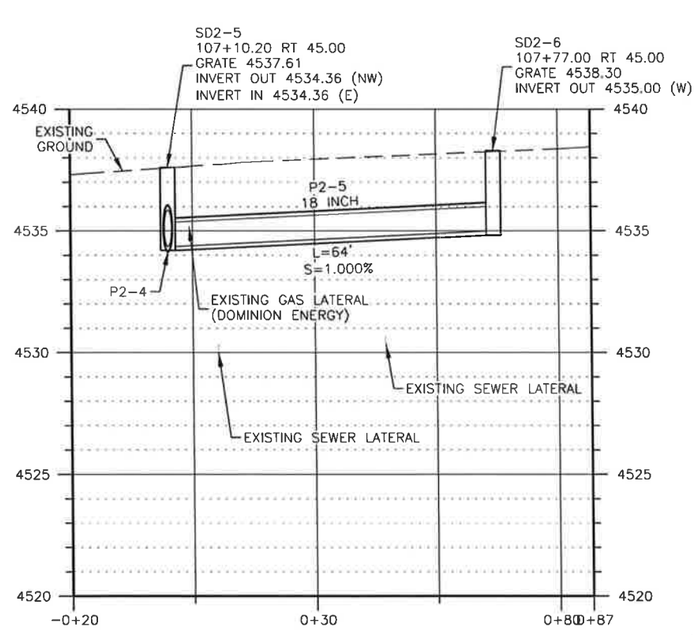
SD 2-3 TO SD 3-1



CB 2-1 TO SD 2-4



CB 2-2 TO SD 2-5



SD 2-5 TO SD 2-6

NOTES:
1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. SEE SHEET CU-001 FOR UTILITY TEST HOLE DATA. CONTRACTOR TO VERIFY ALL UTILITIES.
2. WATER SERVICES ARE NOT SHOWN.

J-U-B ENGINEERS, INC.

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Fax: 435.713.9503
www.jub.com

JONATHAN D BUDGE 8203769-2202 STATE OF UTAH

NO.	DESCRIPTION	BY	APR	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITY PROFILES

FILE: 57-18-035_CU-102B
JUB PROJ. # :57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CU-102B

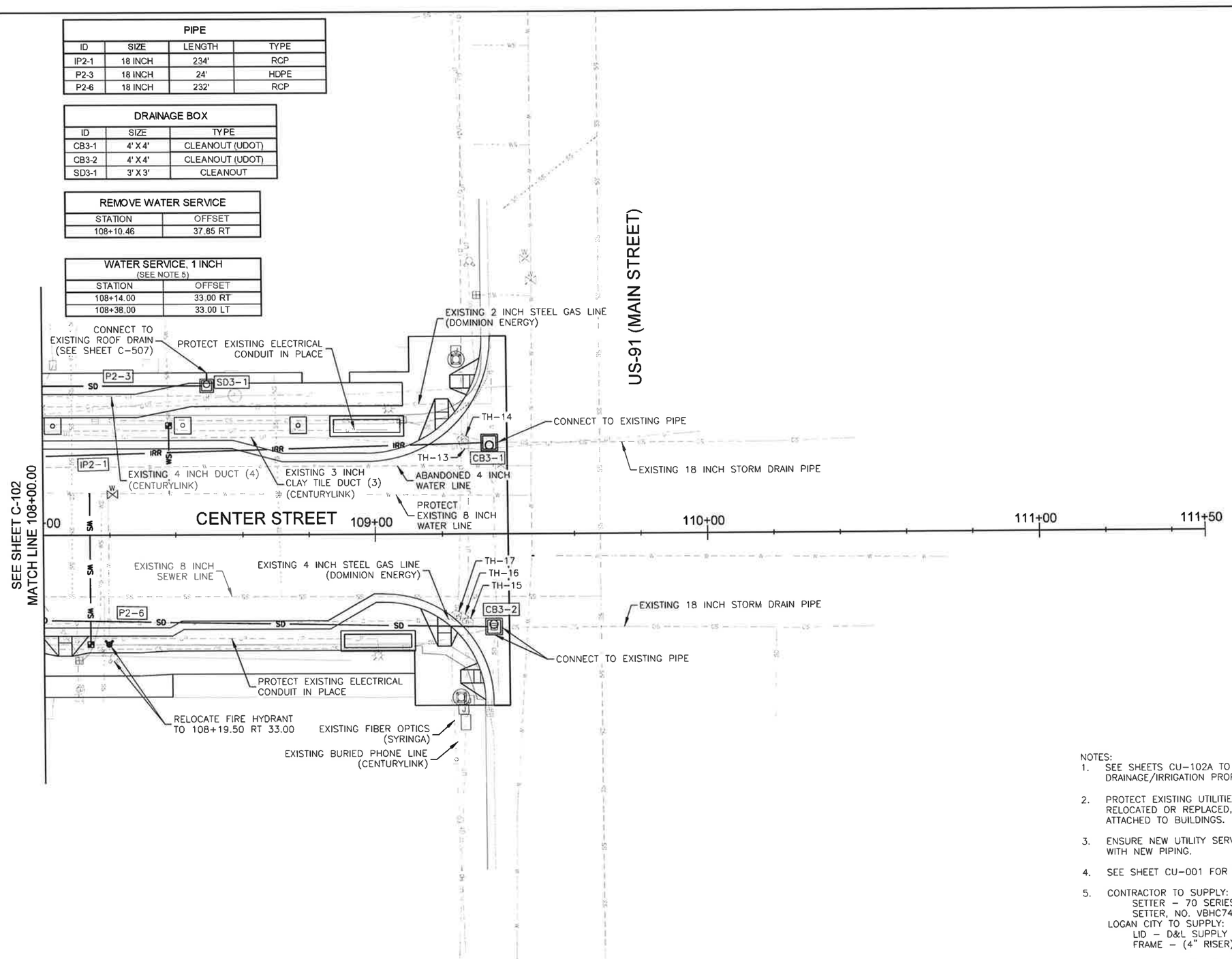
Plot Date:— Plotted By: Samuel Powell
Date Created:7/17/2019 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CU-102B.DGN

PIPE			
ID	SIZE	LENGTH	TYPE
IP2-1	18 INCH	234'	RCP
P2-3	18 INCH	24'	HDPE
P2-6	18 INCH	232'	RCP

DRAINAGE BOX		
ID	SIZE	TYPE
CB3-1	4' X 4'	CLEANOUT (UDOT)
CB3-2	4' X 4'	CLEANOUT (UDOT)
SD3-1	3' X 3'	CLEANOUT

REMOVE WATER SERVICE	
STATION	OFFSET
108+10.46	37.85 RT

WATER SERVICE, 1 INCH (SEE NOTE 5)	
STATION	OFFSET
108+14.00	33.00 RT
108+38.00	33.00 LT



0 15 30
SCALE IN FEET

NOTES:
1. SEE SHEETS CU-102A TO CU-102B FOR DRAINAGE/IRRIGATION PROFILES.
2. PROTECT EXISTING UTILITIES NOT IDENTIFIED TO BE RELOCATED OR REPLACED, SPECIFICALLY ANY ATTACHED TO BUILDINGS.
3. ENSURE NEW UTILITY SERVICES WILL NOT CONFLICT WITH NEW PIPING.
4. SEE SHEET CU-001 FOR UTILITY TEST HOLE DATA.
5. CONTRACTOR TO SUPPLY:
   SETTER - 70 SERIES COPPERSETTER, 15 INCH SETTER, NO. VBHC74-15W-44-44-Q-NL.
   LOGAN CITY TO SUPPLY:
   LID - D&L SUPPLY A-1180-71
   FRAME - (4" RISER) - D&L SUPPLY G-2093-R11.
6. COORDINATE SCHEDULE AND INSTALLATION OF THE WATER METER LOCATED AT 108+38.00 LT 33.00 WITH PAUL DAVIS AT 435-752-3600. HE WILL BE CHANGING OUT THE SERVICE LINE FROM THE METER TO THE BUILDING.
7. PIPE ZONE BEDDING MATERIAL TO BE WELL GRADED, 3/4-INCH MINUS, UNTREATED BASE COURSE.

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PROFESSIONAL ENGINEER
JONATHAN D. BUDGE
8203769-2203
STATE OF UTAH

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

UTILITIES

FILE: 57-18-035_CU-103
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/3/2019

SHEET NUMBER:
CU-103

Plot Date:— Plotted By: Samuel Powell
Date Created:11/10/2019 %LOGAN/PUBLIC/PROJECTS/JUB/LOGAN/57-18-035_LOGAN_CENTER_STREET/CAD/SHEET/CIVIL/57-18-035_CU-103.DGN

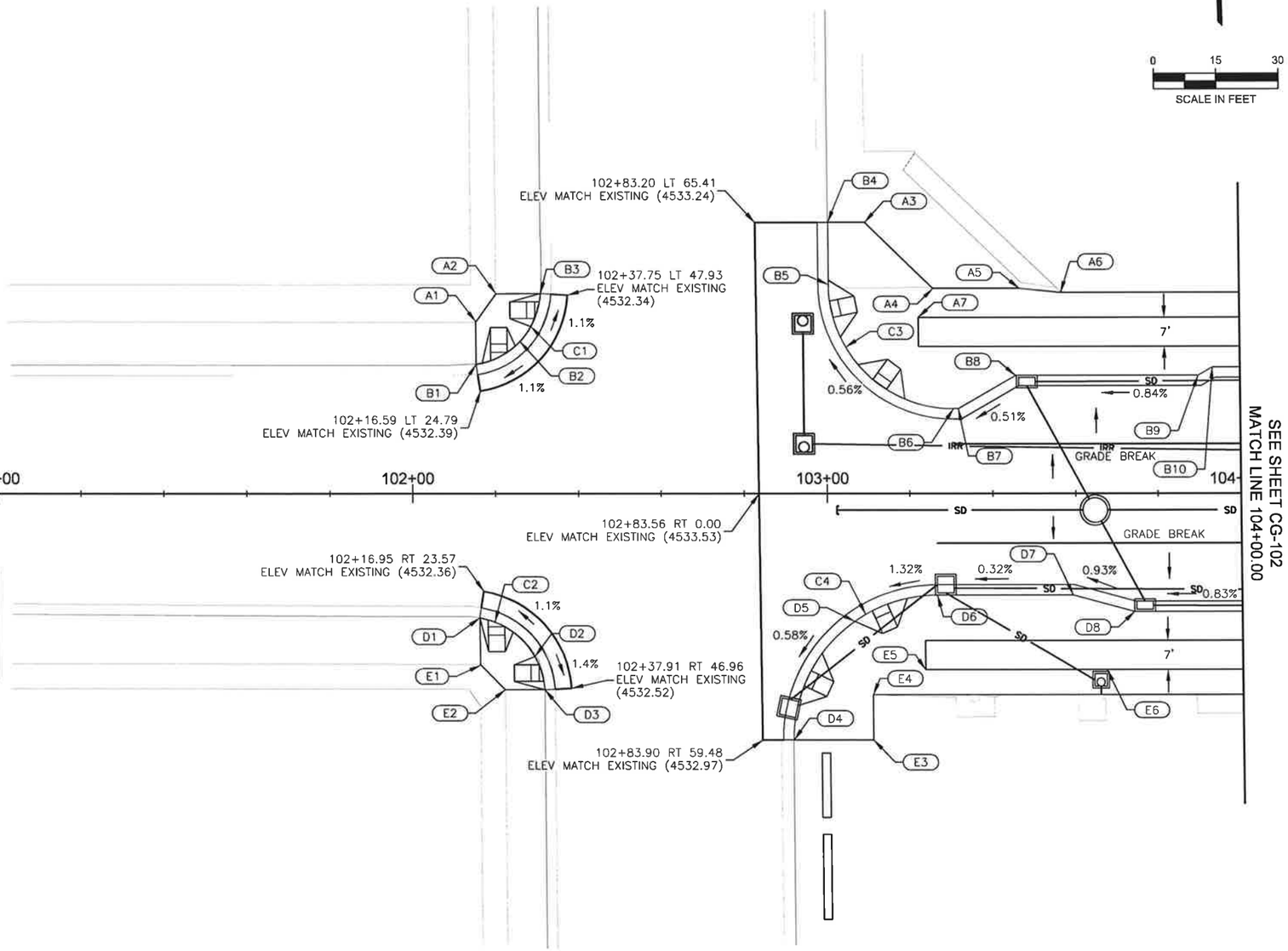
BACK SIDEWALK POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
A1	102+15.62	41.50 LT	MATCH EXISTING (4532.19)
A2	102+20.55	48.28 LT	MATCH EXISTING (4532.36)
A3	103+09.70	65.46 LT	MATCH EXISTING (4533.94)
A4	103+26.08	49.50 LT	MATCH EXISTING (4534.38)
A5	103+46.84	49.50 LT	MATCH EXISTING (4534.64)
A6	103+56.84	48.50 LT	MATCH EXISTING (4534.60)
A7	103+22.44	42.50 LT	4534.18

TBC POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
B1	102+15.60	31.21 LT	MATCH EXISTING (4532.13)
B2	102+26.22	36.75 LT	4532.78
B3	102+31.27	48.34 LT	MATCH EXISTING (4532.28)
B4	103+00.70	65.44 LT	MATCH EXISTING (4533.58)
B5	103+00.73	50.44 LT	4533.74
B6	103+30.73	20.50 LT	4534.00
B7	103+31.91	20.50 LT	4534.01
B8	103+45.77	28.50 LT	4534.09
B9	103+89.98	28.50 LT	4534.46
B10	103+93.44	30.50 LT	4534.50

CURVE TABLE					
CURVE #	RADIUS	STA.	OFFSET	NORTHING	EASTING
C1	18.50'	102+12.80	49.50 LT	3790451.312	1548220.573
C2	18.50'	102+12.94	48.25 RT	3790353.591	1548218.223
C3	30.00'	103+30.73	50.50 LT	3790449.309	1548338.488
C4	35.00'	103+26.40	59.50 RT	3790339.455	1548331.355

TBC POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
D1	102+15.91	29.99 RT	MATCH EXISTING (4532.38)
D2	102+99.14	39.31 RT	4532.86
D3	102+31.42	47.30 RT	MATCH EXISTING (4532.57)
D4	102+91.40	59.47 RT	4533.30
D5	103+06.30	30.84 RT	4533.52
D6	103+26.40	24.50 RT	4533.88
D7	103+59.18	24.50 RT	4533.97
D8	103+74.11	28.50 RT	4534.12

BACK SIDEWALK POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
E1	102+16.04	41.26 RT	MATCH EXISTING (4532.75)
E2	102+21.94	47.29 RT	MATCH EXISTING (4532.72)
E3	103+10.68	59.50 RT	MATCH EXISTING
E4	103+10.69	48.50 RT	MATCH EXISTING (4533.75)
E5	103+23.40	42.50 RT	4533.89
E6	103+67.18	42.50 RT	4534.22



J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
1047 South 100 West,
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Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

JONATHAN D BUDGE
8203769-2202
PROFESSIONAL ENGINEER
STATE OF UTAH

NO.	DESCRIPTION	BY	APR	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

GRADING

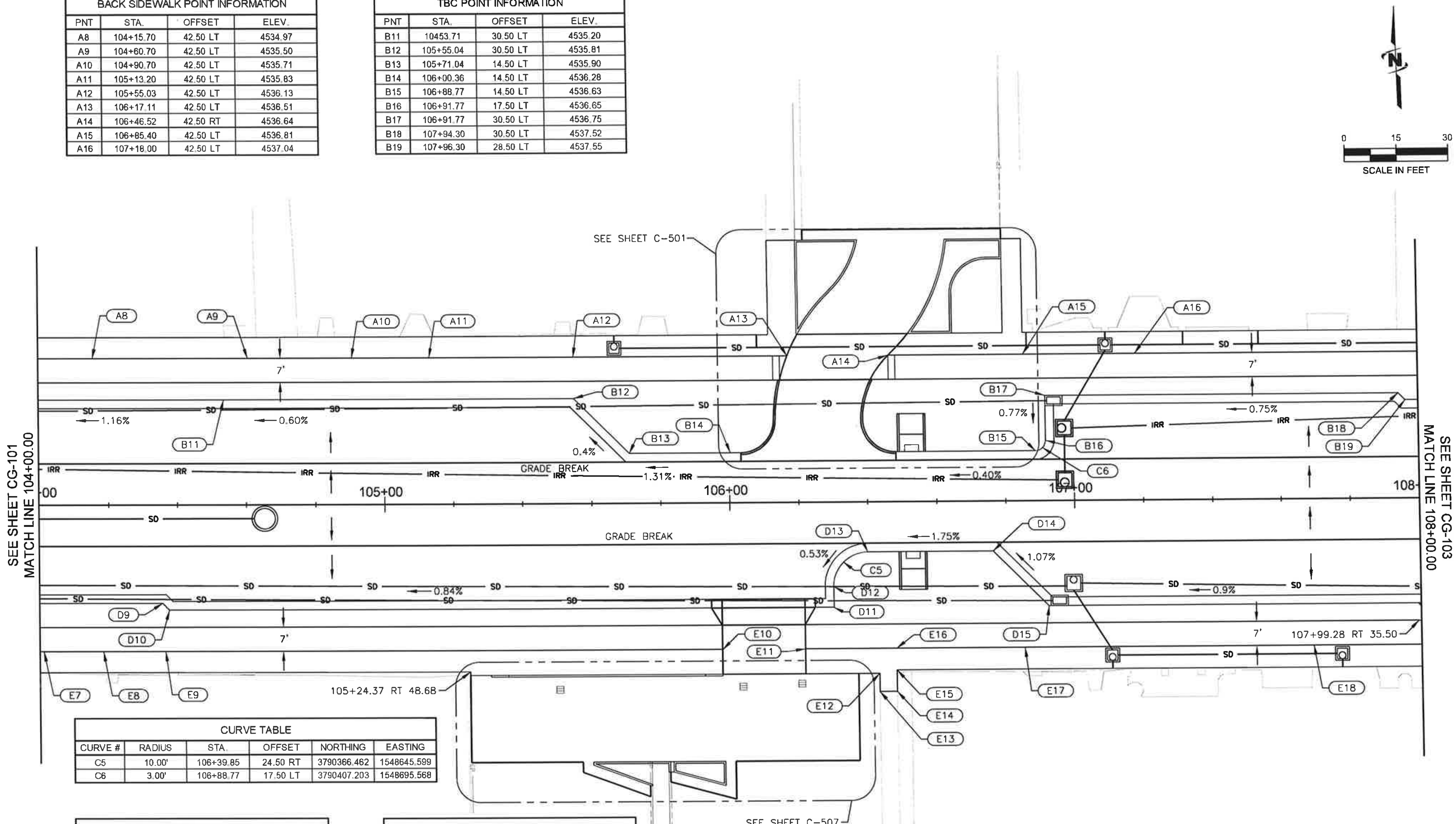
FILE: 57-18-035_CG-101
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CG-101

Plot Date — Plotted By: Samuel Powell
Date Created:11/10/2019 N:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CG-101.DGN

BACK SIDEWALK POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
A8	104+15.70	42.50 LT	4534.97
A9	104+60.70	42.50 LT	4535.50
A10	104+90.70	42.50 LT	4535.71
A11	105+13.20	42.50 LT	4535.83
A12	105+55.03	42.50 LT	4536.13
A13	106+17.11	42.50 LT	4536.51
A14	106+46.52	42.50 RT	4536.64
A15	106+85.40	42.50 LT	4536.81
A16	107+18.00	42.50 LT	4537.04

TBC POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
B11	10453.71	30.50 LT	4535.20
B12	105+55.04	30.50 LT	4535.81
B13	105+71.04	14.50 LT	4535.90
B14	106+00.36	14.50 LT	4536.28
B15	106+88.77	14.50 LT	4536.63
B16	106+91.77	17.50 LT	4536.65
B17	106+91.77	30.50 LT	4536.75
B18	107+94.30	30.50 LT	4537.52
B19	107+96.30	28.50 LT	4537.55



CURVE TABLE					
CURVE #	RADIUS	STA.	OFFSET	NORTHING	EASTING
C5	10.00'	106+39.85	24.50 RT	3790366.462	1548645.599
C6	3.00'	106+88.77	17.50 LT	3790407.203	1548695.568

TBC POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
D9	104+35.41	28.50 RT	4534.63
D10	104+37.41	30.50 RT	4534.66
D11	106+29.85	30.50 RT	4536.27
D12	106+29.85	24.50 RT	4536.30
D13	106+39.85	14.50 RT	4536.38
D14	106+76.11	14.50 RT	4537.07
D15	106+92.11	30.50 RT	4537.26

BACK SIDEWALK POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
E7	104+01.18	42.50 RT	4534.36
E8	104+18.18	42.50 RT	4534.67
E9	104+36.18	42.50 RT	4534.77
E10	105+97.34	42.50 RT	4536.19
E11	106+21.34	42.50 RT	4536.46
E12	106+42.84	49.78 RT	4536.79
E13	106+42.84	55.00 RT	MATCH EXISTING
E14	106+47.84	55.00 RT	MATCH EXISTING
E15	106+47.84	48.78 RT	4536.85
E16	106+47.84	42.50 RT	4536.74
E17	106+84.95	42.50 RT	4537.33
E18	107+68.89	42.50 RT	4538.17

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PROFESSIONAL ENGINEER JONATHAN D. BUDGE 8203769-2202 STATE OF UTAH

NO.	DESCRIPTION	REVISION	BY	APR.	DATE

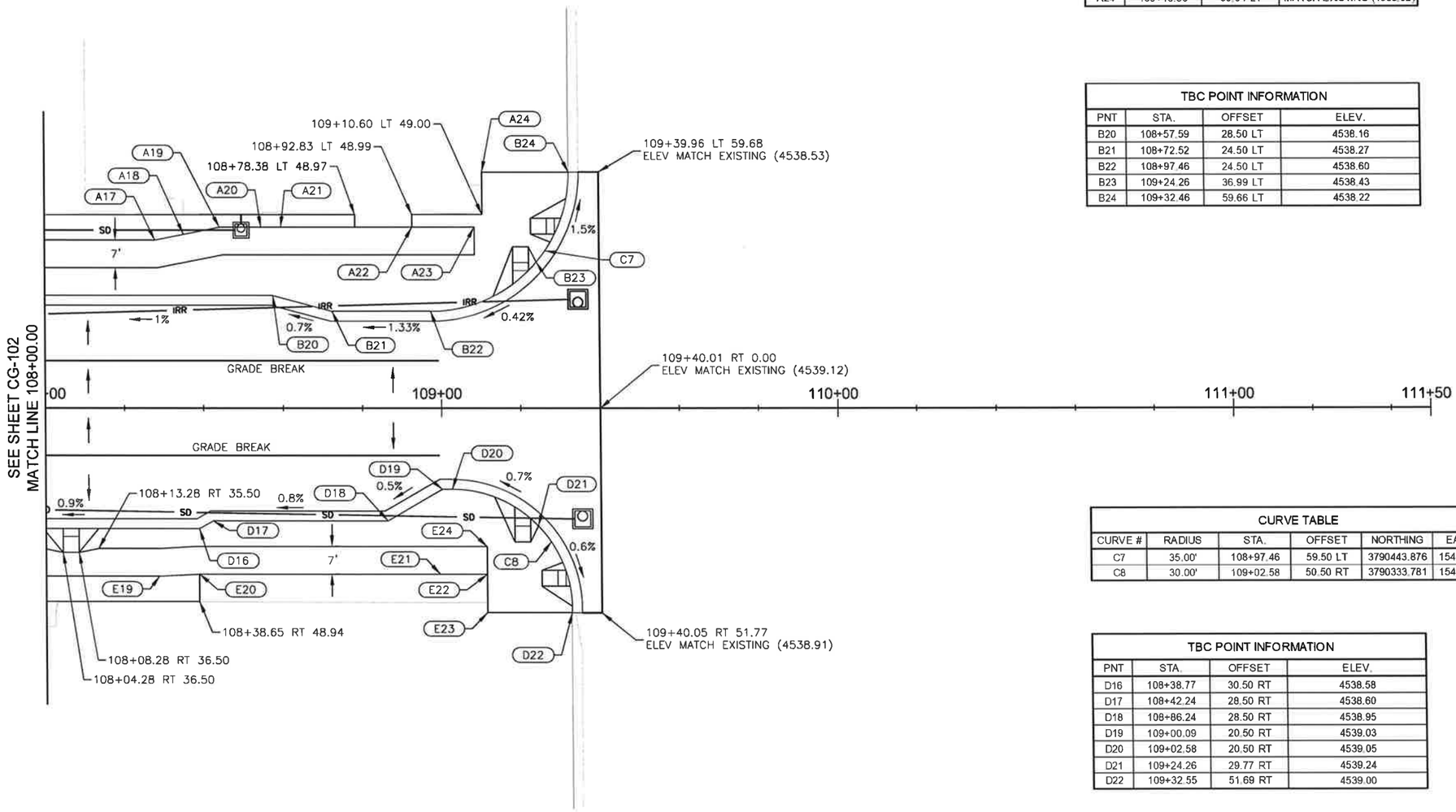
CENTER STREET, MAIN STREET TO 100 WEST LOGAN CITY

GRADING

FILE: 57-18-035_CG-102
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

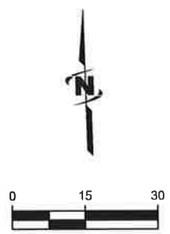
SHEET NUMBER:
CG-102

Plot Date:— Plotted By: Samuel Powell
Date Created:1/10/2019 \\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CG-102.DGN



BACK SIDEWALK POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
A17	108+27.97	42.50 LT	4537.97
A18	108+35.24	43.95 LT	4538.05
A19	108+44.22	45.75 LT	4538.32
A20	108+54.70	45.75 LT	4538.64
A21	108+59.70	45.75 LT	4538.68
A22	108+92.83	45.75 LT	4538.54
A23	109+08.61	45.75 LT	4538.80
A24	109+10.59	59.64 LT	MATCH EXISTING (4538.92)

TBC POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
B20	108+57.59	28.50 LT	4538.16
B21	108+72.52	24.50 LT	4538.27
B22	108+97.46	24.50 LT	4538.60
B23	109+24.26	36.99 LT	4538.43
B24	109+32.46	59.66 LT	4538.22



CURVE TABLE					
CURVE #	RADIUS	STA.	OFFSET	NORTHING	EASTING
C7	35.00'	108+97.46	59.50 LT	3790443.876	1548905.264
C8	30.00'	109+02.58	50.50 RT	3790333.781	1548907.577

TBC POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
D16	108+38.77	30.50 RT	4538.58
D17	108+42.24	28.50 RT	4538.60
D18	108+86.24	28.50 RT	4538.95
D19	109+00.09	20.50 RT	4539.03
D20	109+02.58	20.50 RT	4539.05
D21	109+24.26	29.77 RT	4539.24
D22	109+32.55	51.69 RT	4539.00

BACK SIDEWALK POINT INFORMATION			
PNT	STA.	OFFSET	ELEV.
E19	108+28.65	42.50 RT	4538.76
E20	108+38.65	41.94 RT	4538.86
E21	108+99.42	42.00 RT	4539.45
E22	109+11.27	42.00 RT	4539.57
E23	109+11.27	51.69 RT	4539.72
E24	109+11.27	35.00 RT	4539.46

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NO.	DESCRIPTION	REVISION	BY	APR	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

GRADING

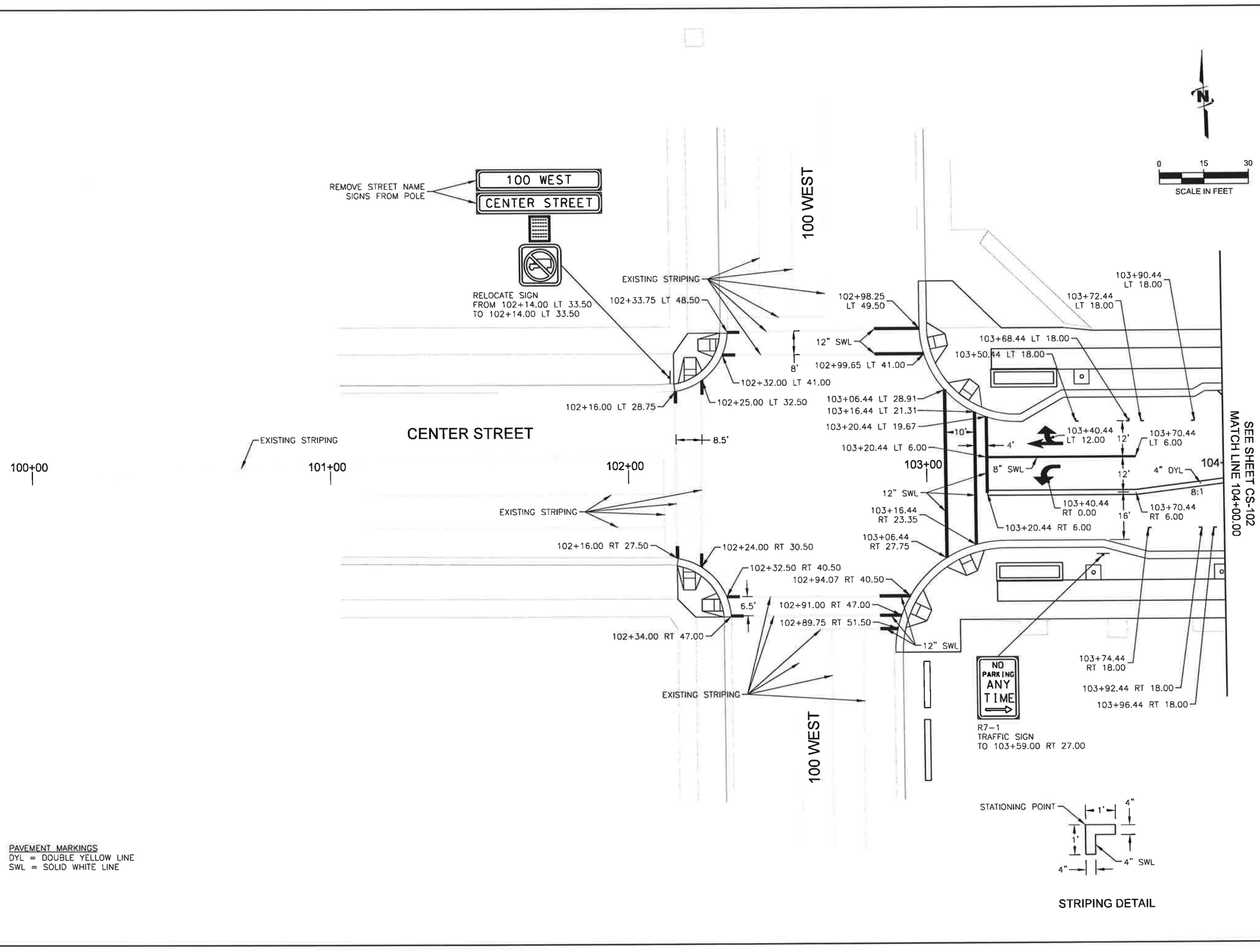
FILE: 57-18-035_CG-103
JUB PROJ. #:57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 5/29/2019

SHEET NUMBER:
CG-103

Plot Date:— Plotted By: Samuel Powell
Date Created:11/6/2019 \\LOGANPUBLIC.PROJECTSJUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CG-103.DGN



PAVEMENT MARKINGS
DYL = DOUBLE YELLOW LINE
SWL = SOLID WHITE LINE

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PROFESSIONAL ENGINEER
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APR	DATE
	REVISION			

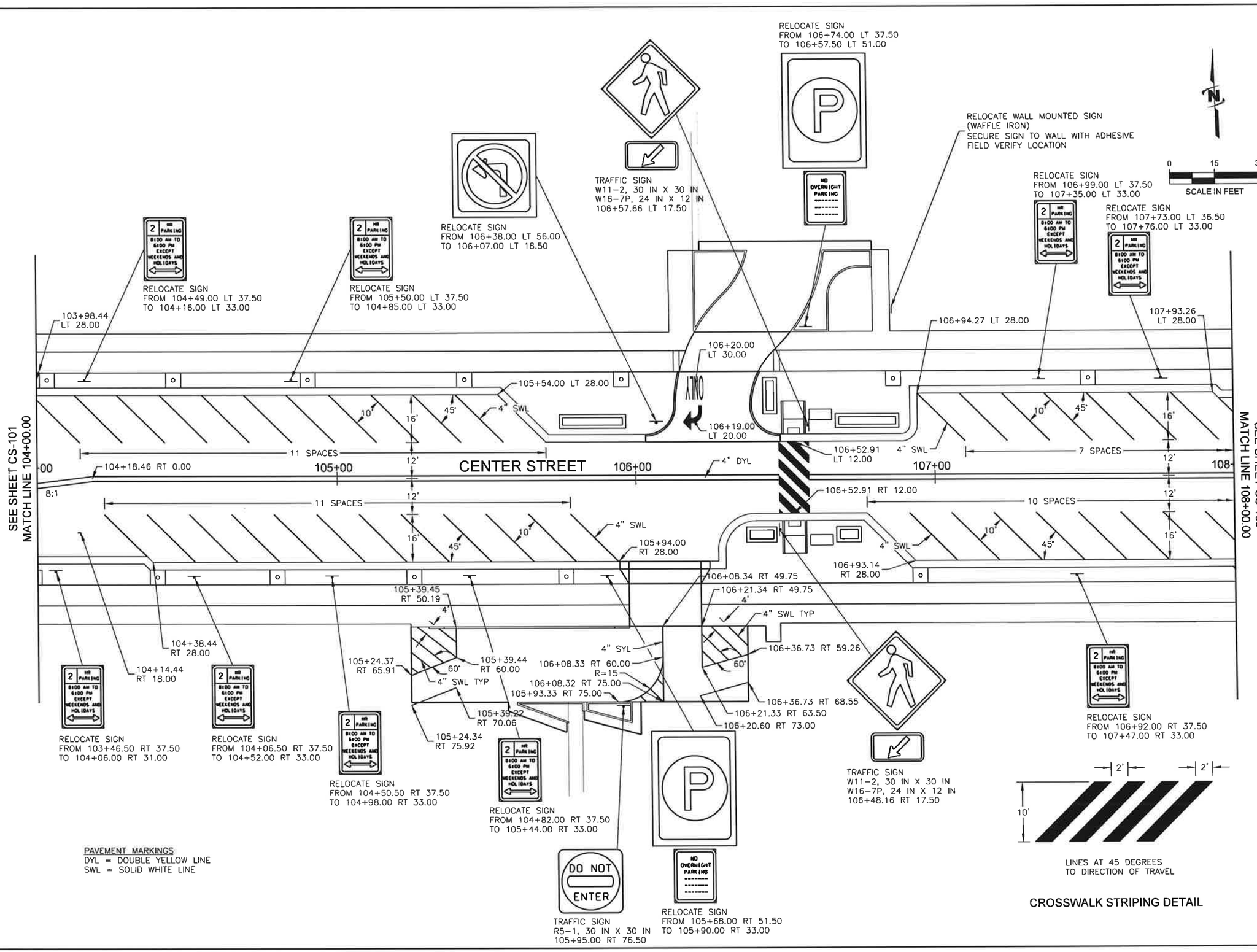
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

SIGNING AND STRIPING

FILE: 57-18-035_CS-101
JUB PROJ. # :57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CS-101

Plot Date:— Plotted By: Samuel Powell
Date Created:11/1/2019 I:\LOGAN\PUBLIC\PROJECTS\JUBLOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CS-101.DGN



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JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	DATE	BY
	REVISION	APR	

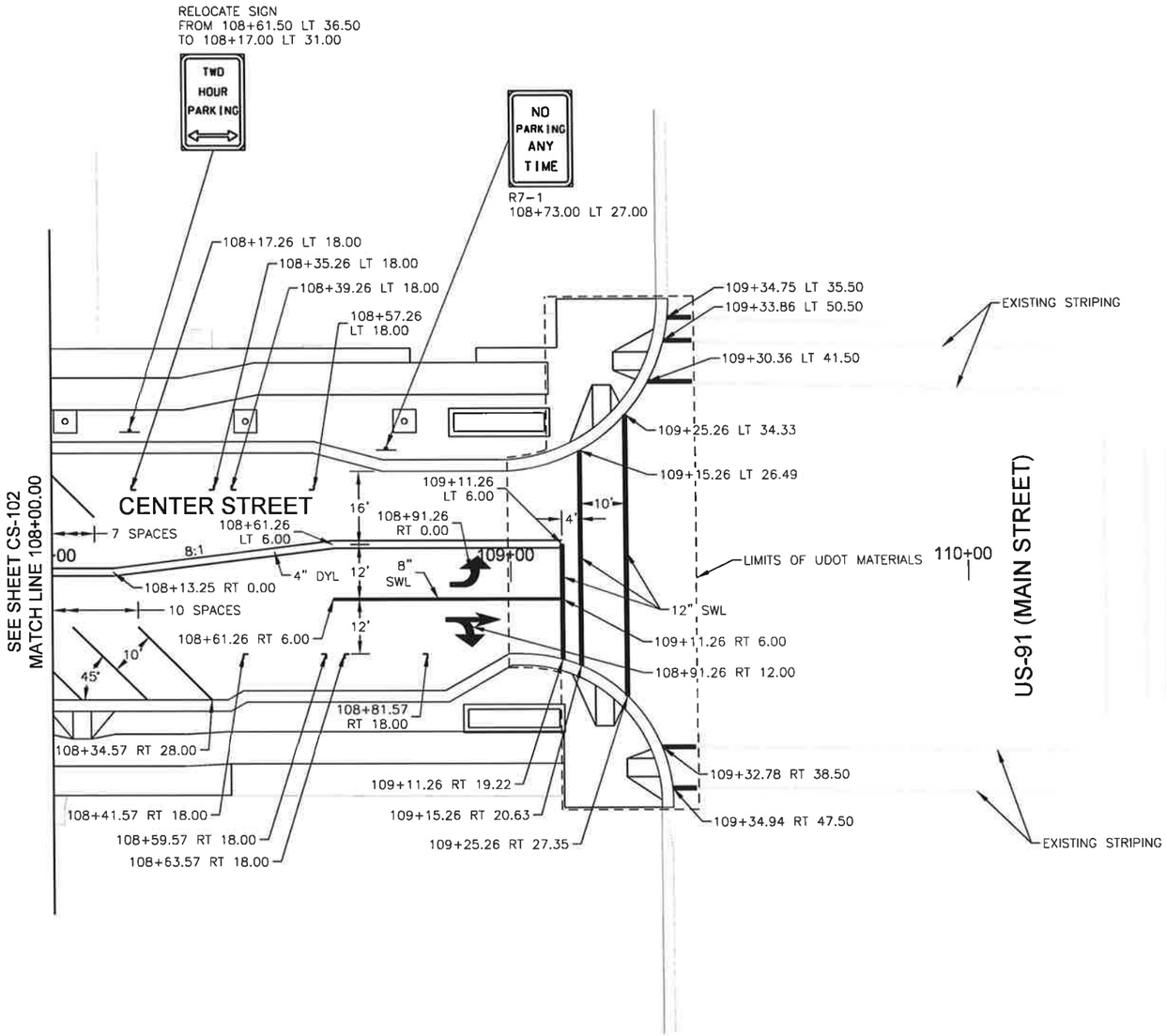
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

SIGNING AND STRIPING

FILE : 57-18-035_CS-102
JUB PROJ. # :57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CS-102

Plot Date:— Plotted By:Samuel Powell
Date Created:7/1/2019 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\DWG\JUB7-18-035_CS-102.DGN



PAVEMENT MARKINGS
DYL = DOUBLE YELLOW LINE
SWL = SOLID WHITE LINE

NOTES:
1. 12 INCH SOLID WHITE LINE PAVEMENT MARKINGS WITHIN THE UDOT RIGHT OF WAY SHALL BE PREFORMED THERMOPLASTIC AND MEET THE REQUIREMENTS OF UDOT 2017 STANDARD AND SUPPLEMENTAL SPECIFICATION SECTION 02768.

N

0 15 30
SCALE IN FEET

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STATE OF UTAH

NO.	DESCRIPTION	BY	APR	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

SIGNING AND STRIPING

FILE: 57-18-035_CS-103
JUB PROJ. #:57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
CS-103

Plot Date:— Plotted By: Samuel Howell
Date Created: 11/2/2018 N:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_CS-103.DGN

POLE SCHEDULE							
POLE ID	FOUNDATION ELEVATION (FEET)*	STATION	OFFSET	MAST ARM LENGTH	LUMINAIRE MOUNTING HEIGHT	LUMINAIRE ARM LENGTH	REMARKS
☒	4534.36	102+09.50	38.50 RT				SIGNAL CABINET
P1	4532.60	102+17.00	37.00 LT	40'	30'	15'	NEW SIGNAL POLE
P2	4532.78	102+24.00	40.75 LT				NEW PEDESTRIAN POLE (5.5 FEET)
P3	4533.75	103+09.00	50.00 LT	45'	30'	15'	NEW SIGNAL POLE
P4	4534.00	103+19.50	30.50 LT				NEW PEDESTRIAN POLE (5.5 FEET)
P5	4534.01	103+20.00	33.00 RT	35'	30'	15'	NEW SIGNAL POLE
P6	4533.55	103+00.00	50.50 RT				NEW PEDESTRIAN POLE (5.5 FEET)
P7	4533.08	102+14.50	38.50 RT	50'	30'	15'	NEW SIGNAL POLE
P8	4532.86	102+24.00	39.00 RT				NEW PEDESTRIAN POLE (5.5 FEET)

*FOR REFERENCE ONLY. FOLLOW UDOT STANDARD DRAWINGS, SL SERIES FOR FOUNDATION PLACEMENT.

SIGNAL NOTES:

1 SEE UDOT STD DWG SL SERIES.

(2) INSTALL 3 INCH PVC CONDUIT FROM POWER SOURCE TO METERED UNDERGROUND SERVICE PEDESTAL PER LOGAN LIGHT AND POWER REQUIREMENTS. INSTALL POWER CABLES PER LOGAN LIGHT AND POWER REQUIREMENTS. CONTACT STEVE CROSBY OF LOGAN LIGHT AND POWER AT 435-716-9745 FOR POWER SOURCE / HOOKUP INFORMATION AND TO COORDINATE INSPECTION OF CONDUIT PRIOR TO BACKFILLING.

(3) PROVIDE AND INSTALL SINGLE METER UNDERGROUND SERVICE PEDESTAL ON CONCRETE PAD PER UDOT STD DWG SL 4C.

(4) INSTALL STATE FURNISHED ECONOLITE TYPE 1 EIGHT PHASE CONTROLLER WITH A TYPE 1 SIZE 6 CABINET ON A SIZE 6 FOUNDATION PER UDOT STD DWG SL 4A.

(5) INSTALL STATE FURNISHED TYPE A LED LUMINAIRE, ARM, AND POLE.

(6) INSTALL STATE FURNISHED TYPE I SIGNAL HEAD ASSEMBLY PER UDOT STD DWG SL 3A. PLACE 2 FEET FROM THE DOUBLE YELLOW STRIPE.

(7) PROVIDE AND INSTALL MAST ARM MOUNTED SIGN, CENTER STREET (SEE SG-104).

(8) PROVIDE AND INSTALL MAST ARM MOUNTED SIGN, 100 WEST (SEE SG-104).

(9) PROVIDE AND INSTALL GRIDSMART GS2 VIDEO DETECTION ASSEMBLY. INCLUDES GS2 SYSTEM PROCESSOR, TS2 CONTROLLER, I/O CABLE, FISHEYE CAMERA, ETHERNET PROTECTION MODULE, AND CAMERA MOUNTING KIT. INSTALL PER MANUFACTURER REQUIREMENTS.

(10) PROVIDE AND INSTALL TYPE B PC JUNCTION BOX PER UDOT STD DWG SL 4D.

(11) PROVIDE AND INSTALL TYPE C PC JUNCTION BOX PER UDOT STD DWG SL 4D.

(12) PROVIDE AND INSTALL PEDESTRIAN COUNTDOWN MODULE AND PUSH BUTTON ASSEMBLY PER UDOT STD DWG SL 6A.

(13) PROVIDE AND INSTALL PEDESTRIAN COUNTDOWN MODULE PER UDOT STD DWG SL 6A.

(14) PROVIDE AND INSTALL PUSH BUTTON ASSEMBLY PER UDOT STD DWG SL 6A.

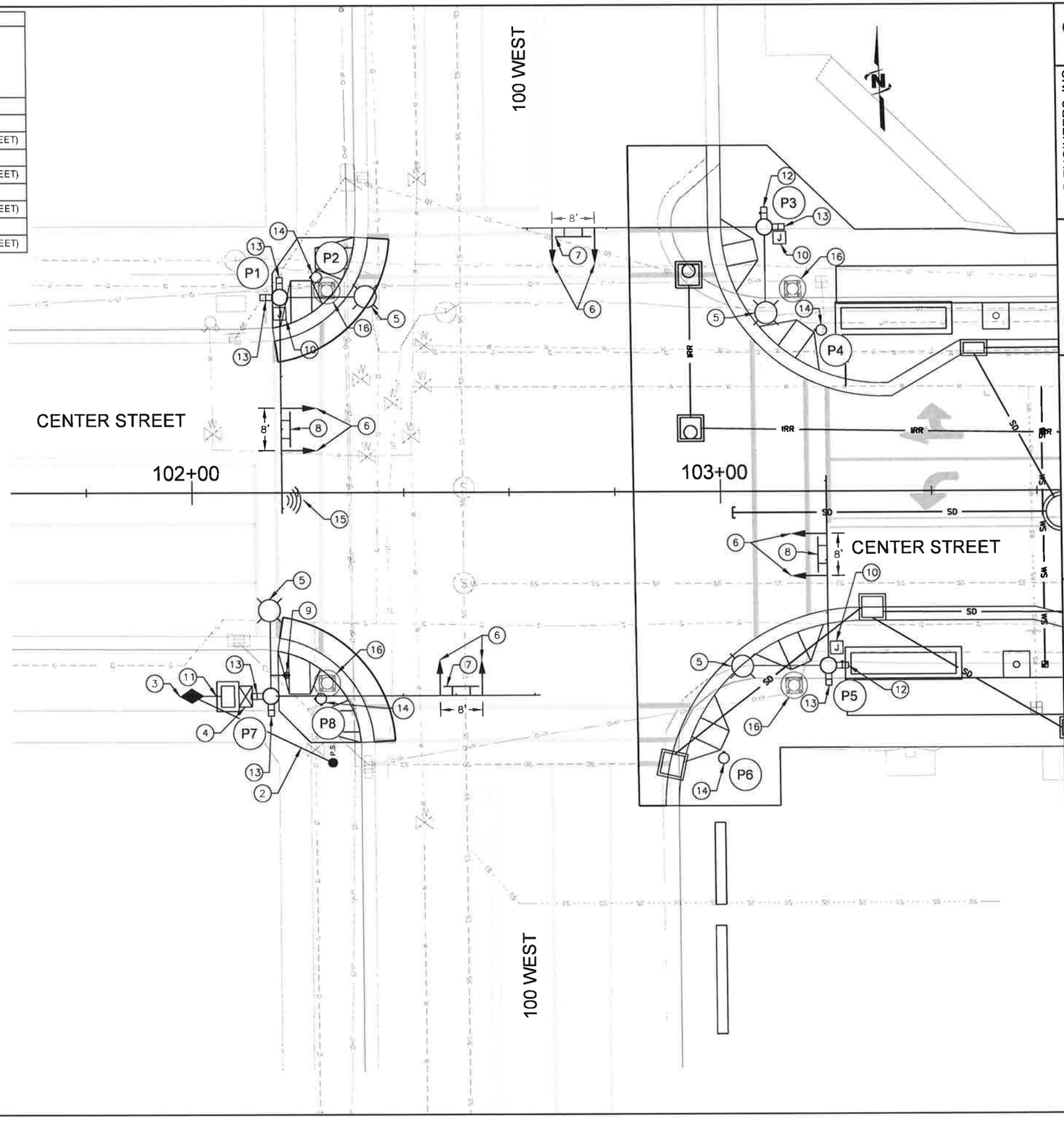
(15) RELOCATE EXISTING RADIO SYSTEM TO NEW SIGNAL POLE.

(16) EXISTING SIGNAL SYSTEM. DO NOT DISCONNECT OR REMOVE THE EXISTING SIGNAL SYSTEM UNTIL THE REPLACEMENT SYSTEM IS FULLY OPERATIONAL.

17 ENSURE 18.5 FEET CLEARANCE FROM THE BOTTOM OF THE SIGNAL HEAD BACKPLATE TO THE ROADWAY SURFACE. LEVEL THE REMAINING SIGNAL HEAD TO THE SAME BOTTOM ELEVATION.

18 CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITY LOCATIONS.

19 CONTACT MIKE WRIGHT WITH PINETOP ENGINEERING, 801-556-5018, AT LEAST 2 WEEKS PRIOR TO TURNING ON THE SIGNAL, FOR DETECTION SETUP AND INTEGRATION.



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PROFESSIONAL ENGINEER ELECTRONIC SEAL JONATHAN D. BUDGE 8203769-2202 STATE OF UTAH

NO	DESCRIPTION	BY	APP	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

SIGNAL

FILE: S7-18-035_SG-101
JUB PROJ. #: S7-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
SG-101

Plot Date: — Plotted By: Samuel Powell
Date Zeroed: 11/4/2019 M:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\S7-18-035_LOGAN_CENTER_STREET\CAD\SHEETS\DWG\S7-18-035_SG-101.DGN

POLE SCHEDULE							
POLE ID	FOUNDATION ELEVATION (FEET)*	STATION	OFFSET	MAST ARM LENGTH	LUMINAIRE MOUNTING HEIGHT	LUMINAIRE ARM LENGTH	REMARKS
P9	4538.74	109+17.00	41.00 LT				NEW PEDESTRIAN POLE (5.5 FEET)
P10	4539.29	109+17.00	34.50 RT				NEW PEDESTRIAN POLE (5.5 FEET)

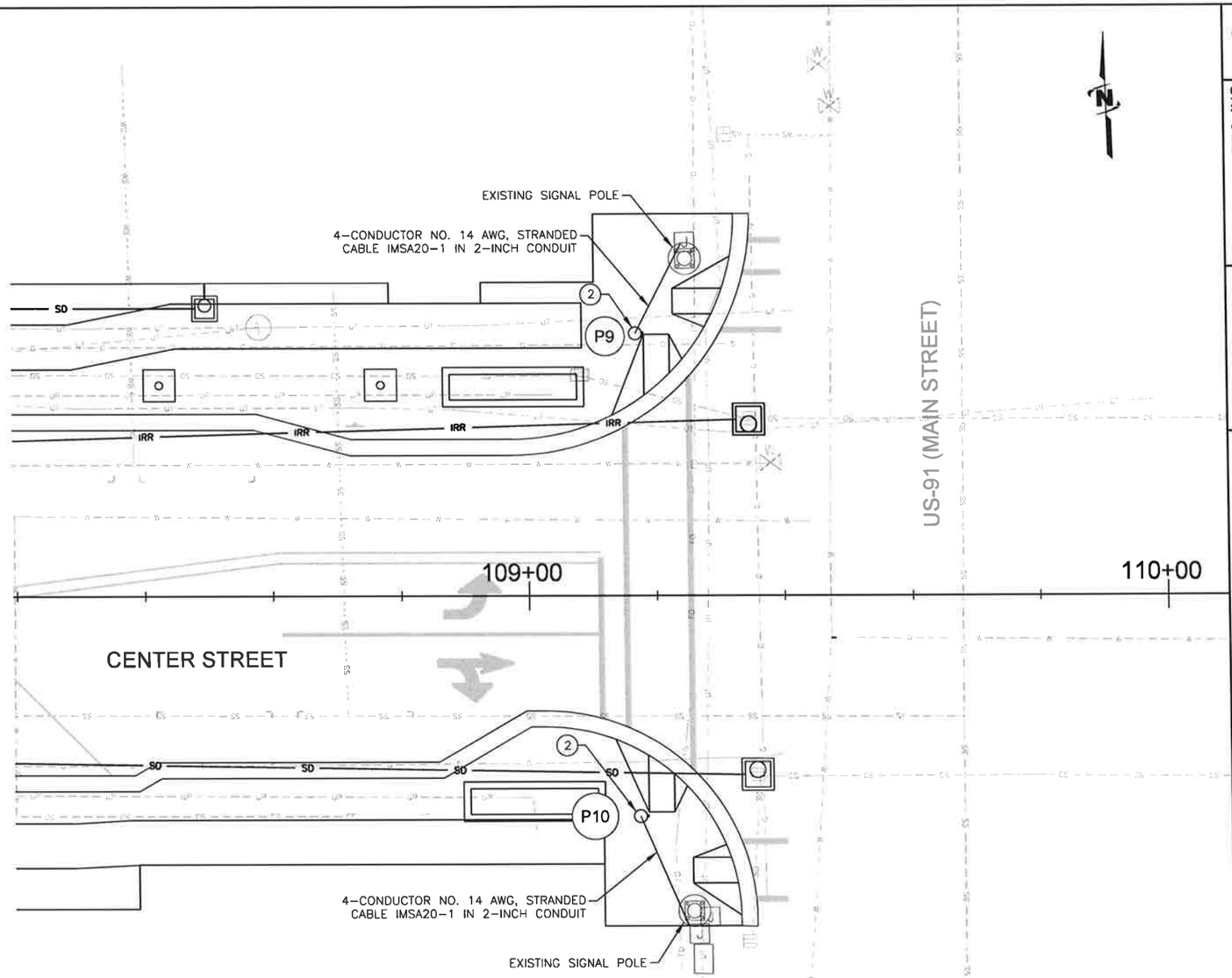
*FOR REFERENCE ONLY. FOLLOW UDOT STANDARD DRAWINGS, SL SERIES FOR FOUNDATION PLACEMENT.

SIGNAL NOTES:

1 SEE UDOT STD DWG SL SERIES.

(2) RELOCATE PUSH BUTTON ASSEMBLY FROM EXISTING SIGNAL POLE. INSTALL PER UDOT SUPPLEMENTAL STD DWG SL 6A.

3 CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITY LOCATIONS.



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PROFESSIONAL ENGINEER — JONATHAN D. BUDGE — 8203769-2202 — STATE OF UTAH

NO	DESCRIPTION	BY	APP'D	DATE
	REVISION			

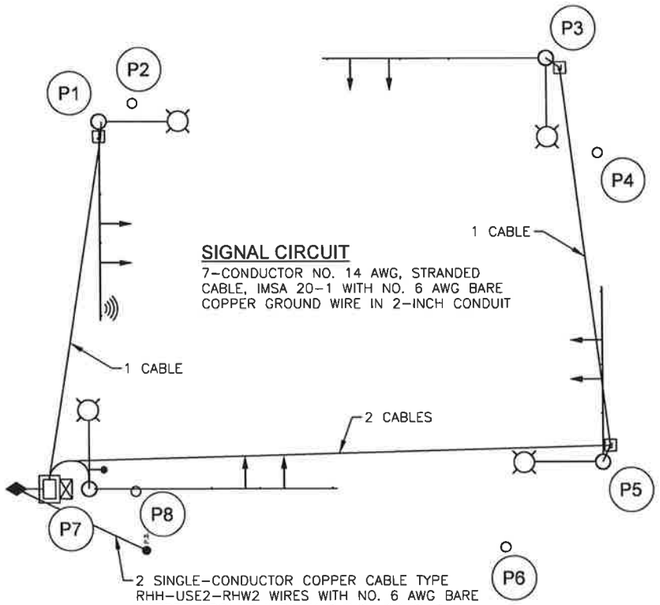
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

SIGNAL

FILE: 57-18-035_SG-102
JUB PROJ. # :57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2018

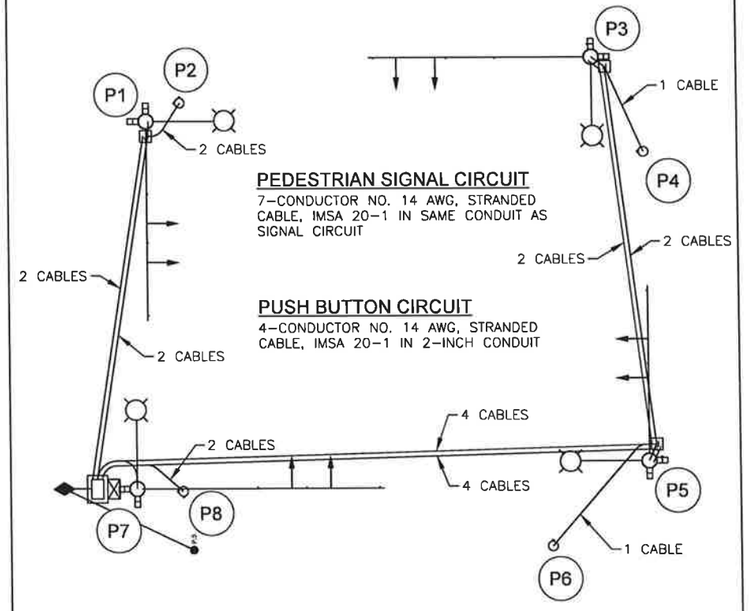
SHEET NUMBER:
SG-102

Plot Date: — Plotted By: Samuel Powell
Date Created: 11/4/2018 I:\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEETS\DWG\57-18-035_SG-102.DGN



SIGNAL CIRCUIT

7-CONDUCTOR NO. 14 AWG, STRANDED CABLE, IMSA 20-1 WITH NO. 6 AWG BARE COPPER GROUND WIRE IN 2-INCH CONDUIT

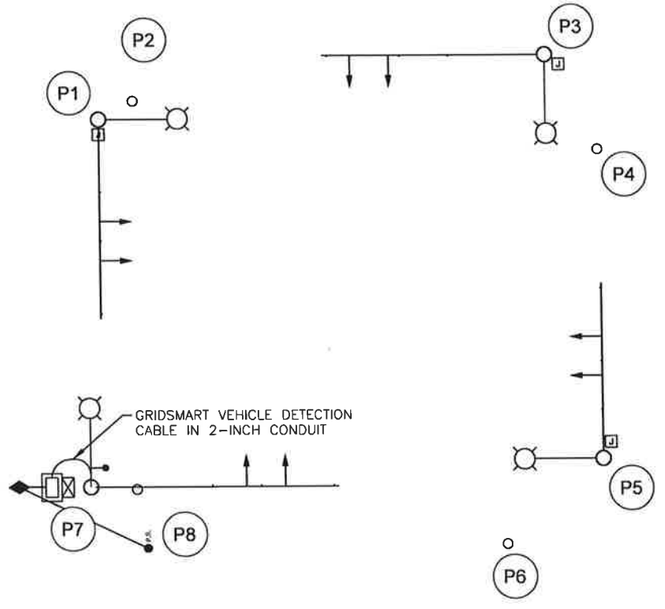


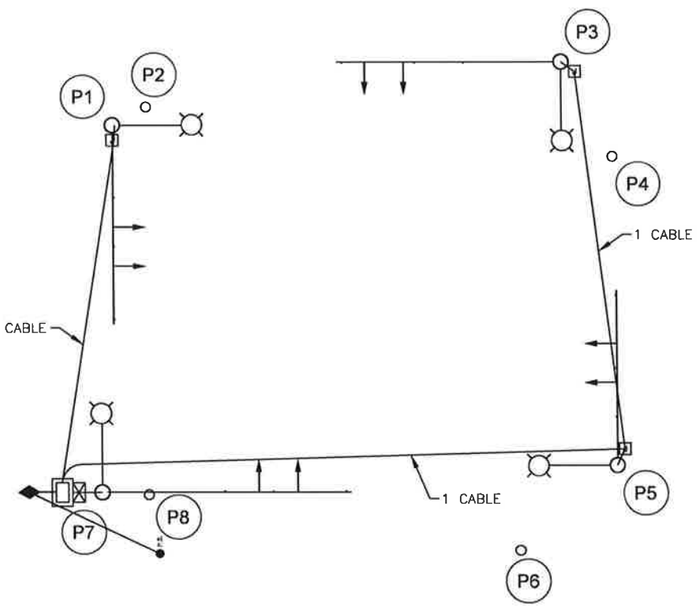
PEDESTRIAN SIGNAL CIRCUIT

7-CONDUCTOR NO. 14 AWG, STRANDED CABLE, IMSA 20-1 IN SAME CONDUIT AS SIGNAL CIRCUIT

PUSH BUTTON CIRCUIT

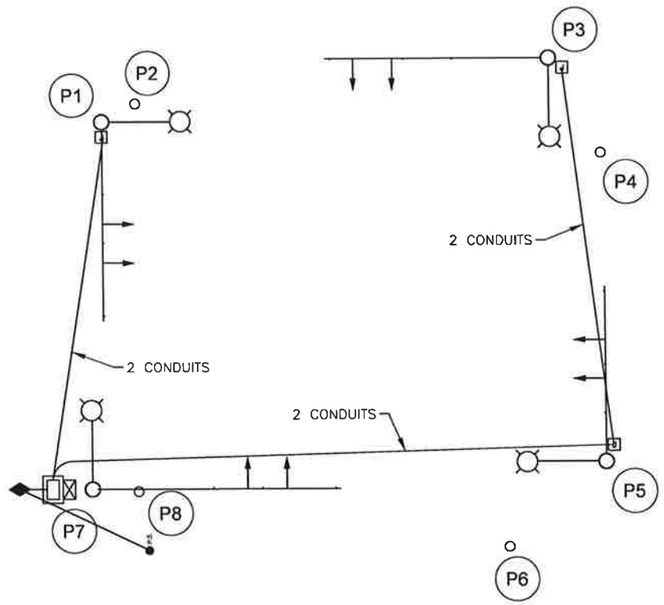
4-CONDUCTOR NO. 14 AWG, STRANDED CABLE, IMSA 20-1 IN 2-INCH CONDUIT





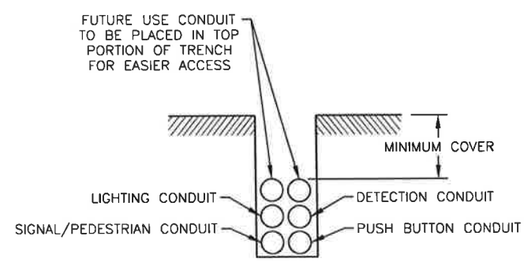
LIGHTING CIRCUIT

2-SINGLE CONDUCTOR COPPER CABLE TYPE RHH-USE2-RHW2 WIRES WITH NO. 6 AWG BARE COPPER GROUND WIRE IN 2-INCH CONDUIT



FUTURE USE CONDUIT

WITH NO. 14 AWG COPPER THHN PULL WIRE IN 2-INCH CONDUIT



1. PROVIDE MINIMUM COVER FOR ALL ROADWAY CROSSINGS: 36" FOR DIRECTIONAL BORE CONDUIT. TRENCHING ACROSS 100 WEST AND CENTER STREET (WEST LEG)IS NOT ALLOWED.
2. PROVIDE 18" MINIMUM COVER FOR CONDUIT PLACED OFF ROADWAY WITHOUT CONCRETE ENCASEMENT OR CAPPING.
3. PROVIDE 12" MINIMUM COVER FOR CONDUIT PLACED OFF ROADWAY WITH CONCRETE ENCASEMENT OR MINIMUM 2" THICK CONCRETE CAPPING.
4. MINIMUM OF 6 CONDUITS ARE REQUIRED FOR EACH ROAD CROSSING LOCATION.

TRENCHING AND BORING DETAIL

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JONATHAN D. BUDGE 8203769-2202 STATE OF UTAH

NO.	DESCRIPTION	BY	APR.	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

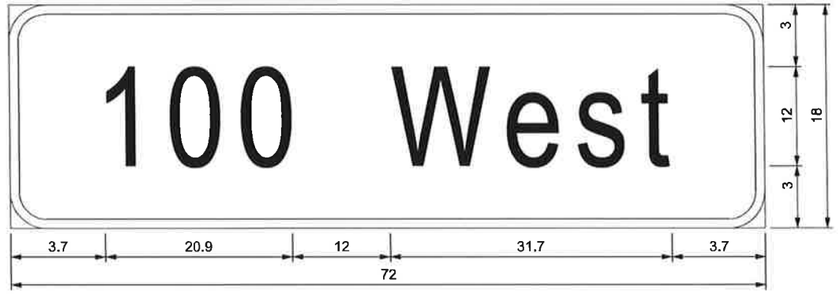
SIGNAL CIRCUIT

FILE: 57-18-035, SG-103
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
SG-103

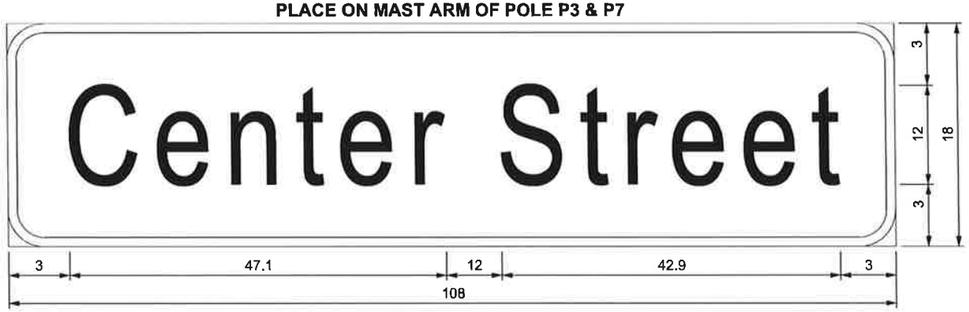
Plot Date/— Plotted By: Samuel Powell
Date Created:11/4/2018 \\LOGAN\PUBLIC\PROJECTS\JUBLOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEETS\DWG\57-18-035_SG-103.DGN

PLACE ON MAST ARM OF POLE P1 & P5



1.5" RADIUS, 0.5" BORDER, WHITE ON GREEN;
"100 West" C

PLACE ON MAST ARM OF POLE P3 & P7



1.5" RADIUS, 0.5" BORDER, WHITE ON GREEN;
"Center St." C

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8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APPR.	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

SIGNAL DETAILS

FILE: 57-18-035_SG-104
JUB PROJ. # :57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
SG-104

Plot Date:— Plotted By: Samuel Powell
Date Created:2/21/2019 I:\LOGAN\PUBLIC\PROJECTS\JUB@LOGAN\57-18-035 LOGAN CENTER STREET\CAD\SHEET\CIVIL\ST-18-059_SG-104.DGN

CONTRACTOR FURNISHED MATERIALS

LOCATION	SIGNAL STRUCTURAL SUPPORT SYSTEM: MAST ARM SIGNAL POLE FOUNDATION - 3' x 12' (30' TO 65')	SIGNAL STRUCTURAL SUPPORT SYSTEM: MAST ARM SIGNAL POLE FOUNDATION - 3' x 14' (70' TO 75')	SIGNAL STRUCTURAL SUPPORT SYSTEM: TRAFFIC SIGNAL/PED POLE FOUNDATION - 2' X 3'	SIGNAL STRUCTURAL SUPPORT SYSTEM: HIGHWAY LUMINAIRE POLE FOUNDATION - 2.5' x 8'	SIGNAL STRUCTURAL SUPPORT SYSTEM: CABINET FOUNDATION	SIGNAL STRUCTURAL SUPPORT SYSTEM: UNDERGROUND SERVICE PEDESTAL FOUNDATION	JUNCTION BOX: TYPE A	JUNCTION BOX: TYPE B	JUNCTION BOX: TYPE C	CONDUIT PLACEMENT: TRENCHING PAVED SURFACE	CONDUIT PLACEMENT: TRENCHING UNPAVED SURFACE	CONDUIT PLACEMENT: DIRECTIONAL BORING	SIGN: MAST ARM MOUNTED SIGN WITH MOUNTING BRACKETS	SIGN: BLANK OUT SIGN WITH MOUNTING BRACKETS
	EA	EA	EA	EA	EA	EA	EA	EA	EA	LIN FT	LIN FT	LIN FT	EA	EA
CENTER STREET & 100 WEST	4		4		1	1		3	1				4	
CENTER STREET & US-91 (MAIN STREET)			2											
TOTAL	4		6		1	1		3	1				4	
USE	*	*	*	*	*	*	*	*	*	*	*	*	*	*

NOTES:

1. SEE UDOT STD DWG SL SERIES.
2. USE CONTROLLER CABINET FOUNDATION CONDUITS AS FOLLOWS:

   A. SIGNAL CIRCUIT CABLES.
   B. PEDESTRIAN CIRCUIT CABLES.
   C. VIDEO POWER AND DETECTION CIRCUIT CABLES.
   D. PEDESTRIAN PUSH BUTTON CIRCUIT CABLES.
   E. FUTURE USE (2 CONDUITS.)
   F. 120 VOLT POWER CIRCUIT TO THE CONTROLLER CIRCUIT BREAKER OR UNDERGROUND SERVICE PEDESTAL.

3. CONTACT LOGAN LIGHT AND POWER A MINIMUM OF THIRTY (30) DAYS BEFORE POWER SERVICE IS REQUIRED. SEE UDOT STD DWG SL 4C FOR UNDERGROUND SERVICE PEDESTAL DETAILS. MAKE ALL ARRANGEMENTS WITH LOCAL POWER COMPANY FOR INSTALLATION.
4. PLACE ALL CONDUIT IN SAME TRENCH OR BORE SHOT WHERE POSSIBLE.
5. CONSTRUCT SIGNAL IN A MANNER TO AVOID DAMAGE TO EXISTING UTILITIES. ASSUME RESPONSIBILITY FOR ANY UTILITY DAMAGED BY CONSTRUCTION OPERATIONS. THE PLANS SHOW BURIED UTILITY LOCATIONS IN THEIR APPROXIMATE LOCATION ONLY.
6. REFER TO SHEET SG-102 FOR LOCATION PLACEMENT OF PEDESTRIAN POLES AT CENTER STREET AND MAIN. REMOVE THE PUSH BUTTON ASSEMBLY FROM THE EXISTING SIGNAL POLE AND PLACE ON THE NEW PEDESTRIAN POLE. SUPPLY CABLE AND CONDUIT AS NECESSARY. FOLLOW STD DWG SL 1E FOR CONDUIT PLACEMENT.

CONTRACTOR FURNISHED MATERIALS

LOCATION	POWER SOURCE SYSTEMS (SEE NOTE 3 THIS SHEET) – SIGNAL & LIGHTING: SINGLE CONDUCTOR NO. 6 CABLE	SIGNAL & LIGHTING: SINGLE CONDUCTOR NO. 10 CABLE	SIGNAL & LIGHTING: 2" CONDUIT	SIGNAL & LIGHTING: 3" CONDUIT	SIGNAL & LIGHTING: 3" GALVANIZED RIGID STEEL CONDUIT	UNDERGROUND SERVICE PEDESTAL	DUAL METER UNDERGROUND SERVICE PEDESTAL	POWER SOURCE (120/240 VOLT)	SIGNAL AND PEDESTRIAN CIRCUIT: COUNTDOWN PEDESTRIAN SIGNAL HEAD	NO.14 CABLE & CONDUIT (IMSA SPECS 20-1): 7 CONDUCTOR NO. 14 CABLE (PED CIRCUIT)	NO.14 CABLE & CONDUIT (IMSA SPECS 20-1): 7 CONDUCTOR NO. 14 CABLE (SIGNAL CIRCUIT)	NO.14 CABLE & CONDUIT (IMSA SPECS 20-1): 2" CONDUIT	
	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EA	EA	EA	EA	LIN FT	LIN FT	LIN FT	
CENTER STREET & 100 WEST	70			60		1		1	8	1100	755	355	
CENTER STREET & US-91 (MAIN STREET)													
TOTAL	$	$	$	$	$	$	$	$	$	$	$	$	
USE	*	*	*	*	*	*	*	*	*	*	*	*	

LOCATION	STREET LIGHTING CIRCUIT: NO. 4 SINGLE CONDUCTOR CABLE	STREET LIGHTING CIRCUIT: NO. 6 SINGLE CONDUCTOR CABLE	STREET LIGHTING CIRCUIT: NO. 10 SINGLE CONDUCTOR CABLE	STREET LIGHTING CIRCUIT: 2" CONDUIT	GROUNDING SYSTEM: NO. 6 GROUND WIRE	GROUNDING SYSTEM: GROUND ROD ¾" x 10'	GROUNDING SYSTEM:
	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EA	
CENTER STREET & 100 WEST		1410		355	325	5	
CENTER STREET & US-91 (MAIN STREET)							
TOTAL	$	$	$	$	$	$	$
USE	*	*	*	*	*	*	*

LOCATION	DETECTION DEVICE – PUSH BUTTON: PUSH BUTTON AND SIGN ASSEMBLY (9" x 12")	PUSH BUTTON: PUSH BUTTON FRAME STAND-OFF BRACKET	CABLES: 4 CONDUCTOR NO. 14 CABLE (PUSH BUTTON CIR)	CABLES: PREEMPTION CONTROL CABLE	CABLES: GRIDSMART GS2 BELL CAMERA CABLE	VIDEO: GRIDSMART GS2 BELL CAMERA SYSTEM	CONDUIT: 2" CONDUIT	CONDUIT: 2½" CONDUIT	CONDUIT: 3" CONDUIT	FUTURE USE: 2" CONDUIT WITH DETECTABLE PULL TAPE	FUTURE USE: 3" CONDUIT WITH DETECTABLE PULL TAPE
	EA	EA	LIN FT	LIN FT	LIN FT	EA	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT
CENTER STREET & 100 WEST	8	4	1180		80	1	540			600	
CENTER STREET & US-91 (MAIN STREET)											
TOTAL	$	$	$	$	$	$	$	$	$	$	$
USE	*	*	*	*	*	*	*	*	*	*	*

$ THESE ITEMS ARE CALCULATED BY THE CONTRACTOR

* THESE ITEMS ARE COMBINED ON THE BID SCHEDULE AS TRAFFIC SIGNAL SYSTEM

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8203769-2202
STATE OF UTAH

REVISION				
NO.	DESCRIPTION	BY	APPR.	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

SIGNAL SCHEDULE

FILE: 57-18-035_SG-105
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
SG-105

Plot Date:— Plotted By: Samuel Powell
Date Created 2/21/2019 \\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035 LOGAN CENTER STREET\CAD\SHEET\CIVIL\57-18-035_SG-105.DGN

STATE FURNISHED MATERIALS

SIGNAL SCHEDULE

TRAFFIC SIGNAL

LOCATION	CONTROLLER	M.M.U.	SIGNAL CABINET	BATTERY BACKUP (In Cabinet)	POWDER COATING
	EA	EA	EA	EA	LUMP
CENTER STREET & 100 WEST	1	1	1		
CENTER STREET & US-91 (MAIN STREET)					
TOTALS	**1**	**1**	**1**		

POLES

LOCATION	BASE PLATE ADAPTER	VIBRATION MITIGATOR	5'6" TRAFFIC / PED POLE (Slip Base)	11' TRAFFIC / PED POLE (Slip Base)	15' TRAFFIC / PED POLE (Slip Base)	TYPE-A MAST ARM SIGNAL POLE (30' to 55')	TYPE-B MAST ARM SIGNAL POLE (60' to 70')	TYPE-C MAST ARM SIGNAL POLE (80' to 85')	TYPE-DC DUAL MAST ARM POLE (30' to 45')	TYPE-A POLE CAP	TYPE-B POLE CAP	TYPE-C POLE CAP
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CENTER STREET & 100 WEST			4			4						
CENTER STREET & US-91 (MAIN STREET)			2									
TOTALS			**6**			**4**						

MAST ARMS

LOCATION	30' MAST ARM	35' MAST ARM	40' MAST ARM	45' MAST ARM	50' MAST ARM	55' MAST ARM	60' MAST ARM	65' MAST ARM	70' MAST ARM	75' MAST ARM	80' MAST ARM	85' MAST ARM	VIBRATION MITIGATOR
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CENTER STREET & 100 WEST		1	1	1	1								
CENTER STREET & US-91 (MAIN STREET)													
TOTALS		**1**	**1**	**1**	**1**								

ANCHOR BOLTS

LOCATION	2" x 66" ANCHOR BOLT (Mast Poles)	1" x 36" ANCHOR BOLT (Traffic Poles)
	EA	EA
CENTER STREET & 100 WEST	16	16
CENTER STREET & US-91 (MAIN STREET)		8
TOTALS	**16**	**24**

HIGHWAY LIGHTING SCHEDULE

POLE / EXTENSIONS

LOCATION	40' HIGHWAY LUMINAIRE POLE (Slip Base)	30' HIGHWAY LIGHT POLE (Slip Base)	LUMINAIRE POLE CAP	25' LUMINAIRE EXTENSION (2' 6") (For Type-A Mast Pole)	30' LUMINAIRE EXTENSION (7' 6") (For Type-A Mast Pole)	40' LUMINAIRE EXTENSION (17' 6") (For Type-A Mast Pole)	40' LUMINAIRE EXTENSION (12' 6") (For Type-B Mast Pole)	VERTICAL LUMINAIRE EXTENSION
	EA	EA	EA	EA	EA	EA	EA	EA
CENTER STREET & 100 WEST					4			
CENTER STREET & US-91 (MAIN STREET)								
TOTALS					**4**			

ARMS / LED's

LOCATION	10' LUMINAIRE ARM	15' LUMINAIRE ARM	10' DUAL LUMINAIRE ARM	15' DUAL LUMINAIRE ARM	MULTI-VOLT / TYPE-A (250w)	MULTI-VOLT / TYPE-B (400w)
	EA	EA	EA	EA	EA	EA
CENTER STREET & 100 WEST		4			4	
CENTER STREET & US-91 (MAIN STREET)						
TOTALS		**4**			**4**	

STATE FURNISHED MATERIALS

DETECTION SCHEDULE

RADAR DETECTION

LOCATION	ADVANCE RADAR SENSOR (Dilemma Zone)	STOPBAR RADAR SENSOR (Matrix)	SENSOR MOUNT	100' CABLE w-CONNECTOR	120' CABLE w-CONNECTOR	EPOXY SPLICE KIT	CLICK-650 RADAR INTERFACE (4 sensors)	CLICK-656 RADAR INTERFACE (6 sensors)	2-SENSOR BACKPLATE	4-SENSOR BACKPLATE	2 / 4 CHANNEL RACK CARDS (Used w-Backplates)
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CENTER STREET & 100 WEST											
CENTER STREET & US-91 (MAIN STREET)											
TOTALS											

AUDIBLE PED BUTTONS

LOCATION	2-WIRE AUDIBLE PED BUTTON (For Full Intersection)	2-WIRE CENTRAL CONTROL UNIT	4-WIRE AUDIBLE PED BUTTON (For 1 or 2 Crossings)
	EA	EA	EA
CENTER STREET & 100 WEST			
CENTER STREET & US-91 (MAIN STREET)			
TOTALS			

SIGNAL HEAD SCHEDULE

LED MODULES

LOCATION	RED BALL	YELLOW BALL	GREEN BALL	RED ARROW	YELLOW ARROW	GREEN ARROW
	EA	EA	EA	EA	EA	EA
CENTER STREET & 100 WEST	8	8	8			
CENTER STREET & US-91 (MAIN STREET)						
TOTALS	**8**	**8**	**8**			

*** POLYMER SIGNAL HEADS**

LOCATION	1-SECION SIGNAL HEAD	3-SECTION SIGNAL HEAD	4-SECTION SIGNAL HEAD	5-SECTION SIGNAL HEAD	HYBRID BEACON SIGNAL HEAD (HAWK)	TYPE-7 SIGNAL HEAD (Dual-Red)	3 SECTION ASTRO-BRAC ASSEMBLY	4/5 SECTION ASTRO BRAC ASSEMBLY	12" VISOR, ALUMINUM BALL CAP STYLE
	EA	EA	EA	EA	EA	EA	EA		EA
CENTER STREET & 100 WEST		8					8		24
CENTER STREET & US-91 (MAIN STREET)									
TOTALS		**8**					**8**		**24**

- / OTHER

LOCATION				
	EA	EA	EA	EA
CENTER STREET & 100 WEST				
CENTER STREET & US-91 (MAIN STREET)				
TOTALS				

NOTES:

1. PICK UP STATE FURNISHED CONTROLLER CABINET, CONTROLLER EQUIPMENT, ANCHOR BOLTS, SIGNAL POLE STEEL, AND OTHER ELECTRONICS HARDWARE AT STATE WAREHOUSE. PROVIDE LOADING EQUIPMENT AND PERSONNEL FOR PICK-UP. CONTACT GREG PALMER, (801) 965-4258, TO SCHEDULE PICK-UP. MINIMUM 48 HOURS ADVANCE NOTICE REQUIRED.

2. THE SIGNAL HEAD THAT IS THE CLOSEST TO THE HIGHEST POINT OF THE ROADWAY SURFACE MUST HAVE A CLEARANCE OF 18.5 FT MINIMUM AND 19.5 FT MAXIMUM BETWEEN THE BOTTOM OF THE SIGNAL HEAD ASSEMBLY AND THE ROADWAY SURFACE. A MINIMUM OF 17.5 FT CLEARANCE IS ALLOWED WITH WRITTEN APPROVAL FROM THE ENGINEER. LEVEL THE REMAINING SIGNAL HEADS TO THE SAME BOTTOM ELEVATION.

* POLYMER SECTION HEAD ASSEMBLIES INCLUDE SIGNAL HEAD HOUSING, VISORS, AND LOUVERED BACK PLATE WITH RETROREFLECTIVE TAPE WHEN APPLICABLE.

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8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APPR.	DATE

REVISION

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

SIGNAL SCHEDULE

FILE: 57-18-035_SG-106
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
SG-106

Plot Date:— Plotted By: Samuel Powell
Date Created 2/21/2019 \\LOGAN\PUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\CIVIL\57-18-035_SG-106.DGN

GENERAL PROJECT NOTES

1. ALL ELECTRICAL INSTALLATIONS TO CONFORM TO THE LATEST NEC AND LOCAL CODES.
2. THE ELECTRICAL CONTRACTOR SHALL HAVE A COORDINATION MEETING WITH THE MECHANICAL CONTRACTOR, CONSTRUCTION SUPERINTENDANT AND ANY OTHER TRADES AS REQUIRED WITHIN SEVEN DAYS OF THE START OF THE JOB TO REVIEW CODE CLEARANCE REQUIREMENTS FOR PANELS, SWITCHES, AND OTHER ELECTRICAL GEAR SPECIFICALLY FOR THIS JOB. RECORD THE MEETING IN THE SUPERINDENT'S LOG. REPORT UNRESOLVED CONFLICTS TO THE ARCHITECT IMMEDIATELY.
3. ELECTRICAL CONTRACTOR'S PROJECT MANAGER AND ON-SITE PROJECT FOREMAN SHALL REVIEW VENDOR SUBMITTALS FOR ACCURACY PRIOR TO SUBMITTING TO ENGINEER. INACCURACIES SHALL BE CORRECTED PRIOR TO ENGINEER SUBMITTAL.
4. SUBMITTALS FOR EACH SYSTEM WILL BE REVIEWED BY ENGINEER UP TO TWO TIMES–ONE FULL SUBMITTAL FOR OVERALL COMPLIANCE AND ONE RESUBMITTAL. ADDITIONAL REVIEWS WILL BE CHARGED TO CONTRACTOR AT ENGINEER'S STANDARD BILLING RATE.
5. SUBMITTALS TO ENGINEER SHALL INCLUDE ALL SPECIFIED SYSTEMS IN FIRST SUBMITTAL. PARTIAL SUBMITTALS WILL BE RETURNED TO CONTRACTOR AS INCOMPLETE AND WILL BE CONSIDERED ONE OF TWO INCLUDED SUBMITTAL REVIEWS.
6. THE CLARITY OF RECORD DRAWING CHANGES MADE BY THE CONTRACTOR SHALL BE EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ARCHITECT OR THE RECORD SET WILL BE RETURNED TO THE CONTRACTOR FOR CLARIFICATION.
7. WHEN THE GENERAL CONTRACT CALLS FOR "RECORD" OR "AS-BUILT" DRAWINGS TO BE FURNISHED BY THE CONTRACTOR AT JOB COMPLETION, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO FURNISH A COMPLETE SET OF "BLUE-PRINT READY" AUTOCAD ELECTRICAL DRAWINGS FOR ALL CONTRACTOR GENERATED CHANGES FROM THE DRAWINGS OF A CLARITY EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ENGINEER. CONTACT ARCHITECT FOR DISKS OR REPRODUCIBLE ORIGINAL MEDIA. PROVIDE DRAWINGS ON CD IN AUTOCAD FORMAT.
8. DO NOT SCALE ELECTRICAL PLANS. SEE CIVIL PLANS AND FIELD VERIFY FOR ACCURATE DIMENSIONS.
9. ELECTRICAL DEVICES CANNOT BE SHOWN TO SCALE AND SOMETIMES OVERLAP BUILDING ELEMENTS. REFER TO ARCHITECTURAL ELEVATIONS FOR ACCURATE MOUNTING LOCATIONS.
10. ELECTRICAL CONTRACTOR SHALL CONTACT POWER COMPANY, TELEPHONE COMPANY, AND TV COMPANY WITHIN THE FIRST WEEK OF THE START OF CONSTRUCTION AND NOTIFY THEM OF THE PROBABLE DATE WHEN THE NEW ELECTRICAL, TELEPHONE, AND/OR TV SERVICE CONNECTION WILL BE NEEDED.
11. CONTRACTOR SHALL LOCATE AND INSTALL TRANSFORMER PAD PER POWER COMPANY SPECIFICATIONS. VERIFY PROPER CLEARANCES FROM BUILDING AND OTHER EQUIPMENT BEFORE INSTALLATION. THE LOCATION OF THE TRANSFORMER SHOWN ON THE PLANS IS AN APPROXIMATE LOCATION.
12. PANEL INDEXES SHALL INCLUDE ALL PERTINENT INFORMATION ON THE PANEL SCHEDULES INCLUDING INFORMATION ON LIGHTS AND OUTLETS. DO NOT SIMPLY COPY THE CIRCUIT DESCRIPTION COLUMN. INDEXES TO BE TYPEWRITTEN.
13. CONDUITS ENTERING MAIN PANEL FROM THE BOTTOM SHALL BE ARRANGED IN STRAIGHT ROWS FASTENED TO UNISTRUT. HOLES SHALL BE PUNCHED IN PANEL BOTTOM AND CONDUITS FASTENED BY TWO LOCKNUTS AND A CONDUIT BUSHING. CUTTING OUT THE BOTTOM OF THE PANEL IS NOT PERMITTED.
14. COORDINATE MOUNTING HEIGHT AND LOCATION OF ALL OUTLETS, SWITCHES, AUXILIARY EQUIPMENT, AND OTHER DEVICES WITH THE OWNER PRIOR TO INSTALLATION, REVIEW WITH THE GENERAL CONTRACTOR DETAILS TO PREVENT COVERING AND CONFLICTS WITH ELECTRICAL ITEMS.
15. EMT IS NOT ALLOWED OUT OF DOORS.
16. DO NOT INSTALL IN-GRADE JUNCTION BOXES UNLESS SPECIFICALLY SHOWN ON DRAWINGS. CONDUCTORS SHALL BE RUN CONTINUOUS WITHOUT SPLICING FROM SOURCE OR DEVICE TO NEXT DEVICE.
17. CIRCUIT WIRE SIZES MUST MATCH BRANCH CIRCUIT BREAKERS PER NEC. VERIFY WITH PANEL SCHEDULES BEFORE PULLING WIRE.
18. HOME RUNS MUST BE RUN EXACTLY AS SHOWN ON PLANS UNLESS OTHERWISE NOTED. DO NOT COMBINE HOME RUNS INTO ONE CONDUIT THAT ARE NOT SHOWN COMBINED ON THE DRAWINGS.
19. CIRCUIT WIRING SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS. ANY DEVIATIONS SHALL BE INITIATED BY A CHANGE ORDER FROM THE ARCHITECT. OTHERWISE THE RECORD SET SHALL MATCH THE CONSTRUCTION SET.
20. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR, PULLED INTO THE CONDUIT WITH THE PHASE CONDUCTOR, IN ALL SERVICE, FEEDER, AND BRANCH CIRCUITS.
21. PROVIDE A NEUTRAL CONDUCTOR FOR EACH BREAKER TRIP HANDLE. NEUTRALS SHALL NOT BE SHARED BETWEEN BRANCH CIRCUITS.
22. ALL CIRCUITS TO BE MINIMUM #10 CU IN MINIMUM 1" CONDUIT UNLESS OTHERWISE NOTED.
23. ALL SITE LIGHTING CIRCUITS TO BE A MINIMUM OF #8 CU IN MINIMUM 1" CONDUIT UNLESS OTHERWISE NOTED.
24. DO NOT INSTALL MORE THAN THREE PHASE CONDUCTORS IN ANY HOME-RUN CONDUITS UNLESS SPECIFICALLY INDICATED ON DRAWINGS.
25. IDENTIFY ALL OUTLET COVER PLATES WITH THE PANEL AND CIRCUIT NUMBER.
26. A GFI OUTLET SHALL BE INSTALLED AT EACH LOCATION DESIGNATED BY "GFI" ON THE DRAWINGS. DOWNSTREAM PROTECTION BY A GFI OUTLET UPSTREAM IS NOT ALLOWED.
27. OUTLETS, SWITCHES, AND COVER PLATES TO BE COLOR CODED (BROWN, WHITE, IVORY, OR GRAY) TO THE WALL THEY ARE MOUNTED ON AS DIRECTED BY THE ARCHITECT.
28. REMOVE ALL OLD AND/OR UNUSED EXISTING CONDUIT AND ELECTRICAL APPARATUS FROM EXTERIOR OR INTERIOR EXPOSED SURFACES.
29. WHERE EXISTING ELECTRICAL EQUIPMENT IS TO REMAIN BUT THE SURFACE TO WHICH IT IS MOUNTED ON IS TO BE REWORKED UNDER OTHER CONTRACTS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND INSTALL OR MODIFY THE EXISTING EQUIPMENT AS REQUIRED TO MEET THE DESIGN INTENT. SEE CIVIL DRAWINGS FOR WORK BOUNDARIES AND DEMOLITION AREAS.
30. REMOVE ALL UNUSED CONDUITS AND CIRCUITS IN THE DEMOLTIONED AREA AS THEY ARE IDENTIFIED AS UNUSED OR ABANDONED.
31. REMOVE ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT, AND APPARATUS AS THEY ARE IDENTIFIED AS UNUSED OR ABANDONED.
32. RELOCATE EXISTING CONDUITS AND CIRCUITS AS REQUIRED THAT ARE PRESENTLY SERVING EQUIPMENT THAT IS INTENDED TO REMAIN IN SERVICE BUT SAID CONDUITS ARE CURRENTLY RUNNING THROUGH AREAS TO BE DEMOLITIONED.
33. WHERE EXISTING CONDUIT RUNS ARE RE-USED BY SPECIAL PERMISSION FROM THE ARCHITECT, A SEPARATE GREEN, INSULATED GROUND WIRE SHALL BE PULLED IN THE CONDUIT AND BONDED AT EACH END AS REQUIRED.
34. ALL PATCH, REPAIR, REPAINT AND COVER UP REQUIRED AS A RESULT OF ELECTRICAL REMODEL IS TO BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, BUT ACTUAL WORK IS TO BE PERFORMED BY QUALIFIED PERSONNEL.
35. FIELD VERIFY CONDITIONS FOR NEW WIRING. SURFACE RACEWAYS MUST RECEIVE PRIOR APPROVAL FROM THE OWNER BEFORE BID AND MUST BE PAINTED TO MATCH THE SURFACE ON WHICH THEY ARE MOUNTED.
36. BEFORE RUNNING CONDUITS, PLACING OUTLETS OR ORDERING EQUIPMENT, THE CONTRACTOR SHALL REVIEW THE SPECIFICATIONS AND DESIGN AND SHOP DRAWINGS OF THE OTHER TRADES SERVED BY THE CONDUIT, OUTLETS, AND/OR EQUIPMENT.
37. PROVIDE NEUTRAL CONNECTION TO 208/240/480V, SINGLE-PHASE EQUIPMENT. RUN SEPARATE GROUND WIRE TO ALL OUTDOOR UNITS AND BOND TO THE EQUIPMENT GROUND LUG.
38. WHERE THERE ARE CONFLICTS IN THE DRAWINGS AND/OR SPECIFICATIONS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO BID. WHERE NO NOTIFICATION IS GIVEN THE MORE STRINGENT INTERPRETATION (GENERALLY INTERPRETED TO BE THE MORE COSTLY) WILL BE ENFORCED.

ELECTRICAL LEGEND

ANNOTATIONS

X / XXX	DETAIL CALL-OUT; TOP "X" REFERS TO DETAIL NUMBER & BOTTOM "XXX" REFERS TO SHEET NUMBER
#	KEYED NOTE CALLOUT
##	EQUIPMENT CALLOUT

LIGHTING FIXTURES

	WALL MOUNT FIXTURE
	POLE LIGHT; ONE HEAD
	POLE LIGHT; TWO HEAD
	DECORATIVE POLE LIGHT

ONE-LINE

XA YP	BREAKER : "x" = BREAKER AMPERAGE "y" = QUANTITY OF POLES
	BRANCH PANEL
	BRANCH PANEL WITH MAIN BREAKER
	BRANCH PANEL WITH SUB FEED BREAKER
X	FEEDER SIZE (REFER TO CONDUIT AND CONDUCTOR SCHEDULE UNLESS OTHERWISE NOTED)
	GROUND
M	CT AND METER
M	DIRECT METER
	TRANSFORMER
XA YP	SWITCH : "x" = SWITCH AMPERAGE, "y" = QUANTITY OF POLES

SITE ELECTRICAL

----1ØOP----	1-PHASE OVERHEAD PRIMARY POWER
----1ØOS----	1-PHASE OVERHEAD SECONDARY POWER
----1ØUP----	1-PHASE UNDERGROUND PRIMARY POWER
----1ØUS----	1-PHASE UNDERGROUND SECONDARY POWER
--(E)3ØOP--	3-PHASE OVERHEAD PRIMARY POWER : EXISTING
----3ØOP----	3-PHASE OVERHEAD PRIMARY POWER
----3ØOS----	3-PHASE OVERHEAD SECONDARY POWER
--(E)3ØUP--	3-PHASE UNDERGROUND PRIMARY POWER : EXISTING
--(E)3ØUS--	3-PHASE UNDERGROUND SECONDARY POWER : EXISTING
--(D)3ØUP--	3-PHASE UNDERGROUND PRIMARY POWER: DEMO
--(D)3ØUS--	3-PHASE UNDERGROUND SECONDARY POWER: DEMO
----3ØUP----	3-PHASE UNDERGROUND PRIMARY POWER
----3ØUS----	3-PHASE UNDERGROUND SECONDARY POWER
----UBC----	UNDERGROUND BRANCH CIRCUITS : SEE SCHEDULES FOR CIRCUIT SIZES
----UL----	UNDERGROUND LIGHTING CIRCUITS : SEE SCHEDULES FOR CIRCUIT SIZES
----UF----	UNDERGROUND FIBER CIRCUITS : SEE SCHEDULES FOR CIRCUIT SIZES
-----OT-----	OVERHEAD TELEPHONE
-----OTV-----	OVERHEAD TV
----(E)UT----	UNDERGROUND TELEPHONE : EXISTING
---(E)UTV---	UNDERGROUND TV : EXISTING
----(D)UT----	UNDERGROUND TELEPHONE : DEMO
---(D)UTV---	UNDERGROUND TV : DEMO
-----UT-----	UNDERGROUND TELEPHONE
-----UTV-----	UNDERGROUND TV
	POINT OF DISCONNECTION
	UTILITY POLE

POWER AND DISTRIBUTION

	DISTRIBUTION PANEL
	PANELBOARD
	METER / METER SOCKET

COMMUNICATIONS

---xCDy---	COMMUNICATIONS RACEWAY: "x" CONDUITS OF "y" DIAMETER

SHEET INDEX

#	Sheet Title
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ESD102	ELECTRICAL SITE PLAN - DEMOLITION
ES101	ELECTRICAL SITE LIGHTING PLAN
ES102	ELECTRICAL SITE LIGHTING PLAN
ES103	ELECTRICAL SITE POWER PLAN
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E501	ELECTRICAL DETAILS
E601	ELECTRICAL ONE-LINE DIAGRAM
E602	ELECTRICAL SCHEDULES

ELECTRICAL ABBREVIATIONS

A	AMPERE	LTG	LIGHTING
AF	AMP FUSE	MAX	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AFG	ABOVE FINISHED GRADE	MECH	MECHANICAL
AFI	ARC-FAULT CIRCUIT-INTERRUPTER	MFR	MANUFACTURER
AIC	AMPERE INTERRUPTING CAPACITY	MIN	MINIMUM
AL	ALUMINUM	MLO	MAIN LUGS ONLY
ARCH	ARCHITECT(URAL)	MTD	MOUNTED
AS	AMP SWITCH	NEC	NATIONAL ELECTRICAL CODE
AWG	AMERICAN WIRE GAUGE	NECA	NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION
BLDG	BUILDING	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
BKBD	BACKBOARD	NEUT	NEUTRAL
C	CONDUIT	NFC	NATIONAL FIRE CODE
CAB	CABINET	NC	NORMALLY CLOSED
CAT	CATALOG/CATEGORY	NIC	NOT IN CONTRACT
C/B	CIRCUIT BREAKER	NL	NIGHT LITE
CKT	CIRCUIT	NO	NORMALLY OPEN
CLG	CEILING	NTS	NOT TO SCALE
CO	CONDUIT ONLY	OCP	OVERCURRENT PROTECTION
COMM	COMMUNICATION	P	POLE
CONN	CONNECTION	PH	PHASE
CU	COPPER	PNL	PANEL
DEMO	DEMOLITION/DEMOLISH	PWR	POWER
DISC	DISCONNECT	QTY	QUANTITY
DN	DOWN	RECEP	RECEPTACLE
DWG	DRAWING	REQ'D	REQUIRED
EA	EACH	RGSC	RIGID GALVANIZED STEEL CONDUIT
ELEC	ELECTRICAL	RM	ROOM
ELEV	ELEVATOR	SCHED	SCHEDULE
EMER, EM	EMERGENCY	SECT	SECTION
EMT	ELECTRICAL METALLIC TUBING	SP	SINGLE POLE
EOLR	END OF LINE RESISTOR	SN	SOLID NEUTRAL
EQUIP	EQUIPMENT	SPEC	SPECIFICATION
EX, EXIST	EXISTING	SW	SWITCH
FBO	FURNISHED BY OTHERS	SWBD	SWITCHBOARD
FCU	FAN COIL UNIT	SWGR	SWITCH GEAR
FF	FINISHED FLOOR	SYS	SYSTEM
FIXT	FIXTURE	TEMP	TEMPORARY
FLEX	FLEXIBLE METALLIC CONDUIT (STEEL)	TELE	TELEPHONE
FLUOR	FLUORESCENT	XFMR	TRANSFORMER
FT	FEET OR FOOT	T-STAT	THERMOSTAT
GFI	GROUND FAULT INTERRUPTER	TWP	TWISTED PAIR
GND	GROUND	TWSP	TWISTED SHEILDED PAIR
HP	HORSEPOWER	TYP	TYPICAL
HVAC	HEATING, VENTILATING & AIR CONDITIONING	UBC	UNIFORM BUILDING CODE
IG	ISOLATED GROUND	UL	UNDERWRITERS LABORATORY
IMC	INTERMEDIATE METAL CONDUIT	UMC	UNIFORM MECHANICAL CODE
IN	INCH(ES)	UNO	UNLESS NOTED OTHERWISE
ISC	SHORT CIRCUIT AMPERES, KA	V	VOLT OR VOLTAGE
JB, J-BOX	JUNCTION BOX	VA	VOLT AMPERE
KCMIL	THOUSAND CIRCULAR MILS	W	WATT
KVA	KILOVOLT AMPERE	W/	WITH
KW	KILOWATT	WG	WIRE GUARD
		WP	UL LISTED WEATHERPROOF, NEMA 3R or 4

PLEASE NOTE!
THESE DRAWINGS ARE PRINTED 1:2 ON 11x17 SHEETS(HALF-SIZE) FROM THE ORIGINAL DRAWINGS, AT THE REQUEST OF THE CLIENT.

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MARK	DATE	DESCRIPTION

ISSUE: CONSTRUCTION DOCUMENTS
PROJECT NUMBER: 2019017
DATE: MAY 23, 2019
DESIGNED BY: SDS
DRAWN BY: DJP

ABBREVIATIONS, G.P.N., LEGEND & SHEET INDEX

E001

ELECTRICAL SPECIFICATIONS

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1.1 COPPER BUILDING WIRE

A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.

B. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. RoHS compliant.
3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

C. Conductors: Copper, complying with ASTM B 3 for bare annealed copper and with ASTM B 8 for stranded conductors.

D. Conductor Insulation:

1. Type THHN and Type THWN-2: Comply with UL 83.
2. Type XHHW-2: Comply with UL 44.

1.2 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.

1. Material: Copper.

1.3 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

1.4 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type THHN/THWN-2, single conductors in raceway or Type XHHW-2, single conductors in raceway.

B. Feeders: Type THHN/THWN-2, single conductors in raceway or Type XHHW-2, single conductors in raceway.

1.5 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

1.6 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

1.7 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

1.2 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.

1.3 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Ground Rod Clamps: Mechanical type, copper or copper alloy, terminal with hex head bolt.

1.4 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet.

1.5 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Underground Grounding Conductors: Install barecopper conductor, No. 2/0 AWG minimum.

1. Bury at least 24 inches below grade.

C. Conductor Terminations and Connections:

1. Connections to Ground Rods at Test Wells: Bolted connectors.

1.6 GROUNDING AT THE SERVICE

A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

1.7 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Comply with IEEE C2 grounding requirements.

B. Grounding Manholes and Handholes: Install a driven ground rod through manhole or handhole floor, close to wall, and set rod depth so 4 inches will extend above finished floor. If necessary, install ground rod before manhole is placed and provide No. 1/0 AWG bare, tinned-copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from 2 inches above to 6 inches below concrete. Seal floor opening with waterproof, nonshrink grout.

C. Pad-Mounted Transformers and Switches: Install two ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items associated with substations by connecting them to underground cable and grounding electrodes. Install tinned-copper conductor not less than No. 2 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than 6 inches from the foundation.

1.8 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all service, feeders and branch circuits.

1.9 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

1.1 METAL CONDUITS AND FITTINGS

A. Metal Conduit:

1. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. GRC: Comply with ANSI C80.1 and UL 6.
3. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
   a. Comply with NEMA RN 1.
   b. Coating Thickness: 0.040 inch, minimum.

B. Metal Fittings: Comply with NEMA FB 1 and UL 514B.

1. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Fittings, General: Listed and labeled for type of conduit, location, and use.

1.2 NONMETALLIC CONDUITS AND FITTINGS

A. Nonmetallic Conduit:

B. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.

C. Nonmetallic Fittings:

1. Fittings, General: Listed and labeled for type of conduit, location, and use.
2. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.

1.3 BOXES, ENCLOSURES, AND CABINETS

A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

D. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover.

E. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

F. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.

1.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

A. General Requirements for Handholes and Boxes:

1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.

1. Standard: Comply with SCTE 77.
2. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
3. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
4. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
5. Cover Legend: Molded lettering, "ELECTRIC."
6. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.

1.5 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed Conduit: GRC.
2. Concealed Conduit, Aboveground: GRC.
3. Underground Conduit: RNC, Type EPC-40-PVC.
4. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

B. Minimum Raceway Size: 3/4-inch trade size.

C. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
3. EMT: Use setscrew or compression, steel fittings. Comply with NEMA FB 2.10.

1.6 INSTALLATION

A. Arrange stub-ups so curved portions of bends are not visible above finished slab.

B. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

C. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.

D. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

E. Support conduit within 12 inches of enclosures to which attached.

F. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.
2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
3. Arrange raceways to keep a minimum of 2 inches of concrete cover in all directions.
4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.
5. Change from RNC, Type EPC-40-PVC to GRC before rising above floor.

G. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

H. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.

I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

J. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

K. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

1.7 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Section 312000 "Earth Moving" for pipe less than 6 inches in nominal diameter.
2. Install backfill.
3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with 95% compaction.
4. Install manufactured duct elbows for stub-up at poles and equipment and at building entrances through floor unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.
   a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete for a minimum of 12 inches on each side of the coupling.
   b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.
5. Underground Warning Tape: Comply with requirements in Section 260553 "Identification for Electrical Systems."

1.8 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.

B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.

C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch above finished grade.

D. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

1.1 COLOR AND LEGEND REQUIREMENTS

A. Color-Coding for Phase- and Voltage-Level Identification, 600 V or Less: Use colors listed below for ungrounded service and feeder conductors.

1. Color shall be factory applied or field applied for sizes larger than No. 8 AWG if authorities having jurisdiction permit.
2. Colors for 240-V Circuits:
   a. Phase A: Black.
   b. Phase B: Red.
   c. Neutral: White
   d. Gound: Green

B. Equipment Identification Labels:

1. Black letters on a white field.

1.2 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

1.3 INSTALLATION

A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

B. Install identifying devices before installing acoustical ceilings and similar concealment.

C. Verify identity of each item before installing identification products.

D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

E. Apply identification devices to surfaces that require finish after completing finish work.

F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.

G. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

H. Marker Tapes: Secure tight to surface at a location with high visibility and accessibility.

I. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.

1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.

J. Underground Line Warning Tape:

1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trenchexceeds 16 inches overall.
2. Install underground-line warning tape for direct-buried cables and cables in raceways.

1.4 IDENTIFICATION SCHEDULE

A. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.

B. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.

C. Equipment Identification Labels:

1. Outdoor Equipment: Laminated acrylic or melamine sign.

SECTION 262726 -WIRING DEVICES

1.1 SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

1.2 GENERAL WIRING-DEVICE REQUIREMENTS

A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Comply with NFPA 70.

C. RoHS compliant.

D. Comply with NEMA WD 1.

E. Device Color:

1. Wiring Devices Connected to Normal Power System: Black unless otherwise selected by owner indicated or required by NFPA 70 or device listing.

F. Wall Plate Color: For plastic covers, match device color.

G. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

1.3 STANDARD-GRADE RECEPTACLES, 125 V, 20 A

A. Tamper-Resistant Duplex Receptacles, 125 V, 20 A:

1. Description: Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle.
2. Configuration: NEMA WD 6, Configuration 5-20R.
3. Standards: Comply with UL 498 and FS W-C-596.
4. Marking: Listed and labeled as complying with NFPA 70, "Tamper-Resistant Receptacles" Article.

B. Tamper- and Weather-Resistant Duplex Receptacles, 125 V, 20 A:

1. Description: Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle. Square face.
2. Configuration: NEMA WD 6, Configuration 5-20R.
3. Standards: Comply with UL 498.
4. Marking: Listed and labeled as complying with NFPA 70, "Tamper-Resistant Receptacles" and "Receptacles in Damp or Wet Locations" articles.

1.4 GFCI RECEPTACLES, 125 V, 20 A

A. Tamper- and Weather-Resistant, GFCI Duplex Receptacles, 125 V, 20 A:

1. Description: Integral GFCI with "Test" and "Reset" buttons and LED indicator light. Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle. Square face.
2. Configuration: NEMA WD 6, Configuration 5-15R.
3. Type: Feed through.
4. Standards: Comply with UL 498 and UL 943 Class A.
5. Marking: Listed and labeled as complying with NFPA 70, "Tamper-Resistant Receptacles" and "Receptacles in Damp or Wet Locations" articles.

1.5 WALL PLATES

A. Single Source: Obtain wall plates from same manufacturer of wiring devices.

B. Single and combination types shall match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.
2. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in wet and damp locations.

C. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistant, die-cast aluminum with lockable cover.

1.6 INSTALLATION

A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.

B. Coordination with Other Trades:

1. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
2. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
3. Install wiring devices after all wall preparation, including painting, is complete.

C. Device Installation:

1. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
2. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

D. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the left.

1.7 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Test Instruments: Use instruments that comply with UL 1436.
2. Test Instrument for Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.

B. Tests for Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.
2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.

C. Wiring device will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1.1 SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.

B. Shop Drawings: For enclosed switches and circuit breakers.

1. Include plans, elevations, sections, details, and attachments to other work.
2. Include wiring diagrams for power, signal, and control wiring.

C. Seismic Qualification Certificates: For enclosed switches and circuit breakers, accessories, and components, from manufacturer.

D. Operation and maintenance data.

1.2 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Enclosed switches and circuit breakers shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

1.3 GENERAL REQUIREMENTS

A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.

C. Comply with NFPA 70.

1.4 MOLDED-CASE CIRCUIT BREAKERS

A. Circuit breakers shall be constructed using glass-reinforced insulating material. Current carrying components shall be completely isolated from the handle and the accessory mounting area.

B. Circuit breakers shall have a toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. The circuit-breaker handle shall be over center, be trip free, and reside in a tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon shall be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with a push-to-trip button, located on the face of the circuit breaker to mechanically operate the circuit-breaker tripping mechanism for maintenance and testing purposes.

C. MCCBs shall be equipped with a device for locking in the isolated position.

D. Standards: Comply with UL 489 with interrupting capacity to comply with available fault currents.

E. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

F. Features and Accessories:

1. Standard frame sizes, trip ratings, and number of poles.

1.5 ENCLOSURES

A. Enclosed Switches and Circuit Breakers: UL 489, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.

B. Enclosure Finish: The enclosure shall be a brush finish on Type 304 stainless steel (NEMA 250 Type 4-4X stainless steel).

C. Conduit Entry: NEMA 250 Types 4, 4X, and 12 enclosures shall contain no knockouts. NEMA 250 Types 7 and 9 enclosures shall be provided with threaded conduit openings in both endwalls.

1.6 ENCLOSURE ENVIRONMENTAL RATING APPLICATIONS

A. Enclosed Switches and Circuit Breakers: Provide enclosures at installed locations with the following environmental ratings.

1. Outdoor Locations: NEMA 250, Type 3R or Type 4X.

1.7 INSTALLATION

A. Comply with mounting and anchoring requirements specified in Section 260548.16 "Seismic Controls for Electrical Systems."

B. Comply with NFPA 70 and NECA 1.

1.8 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections for Molded Case Circuit Breakers:

1. Visual and Mechanical Inspection:
   a. Verify that equipment nameplate data are as described in the Specifications and shown on the Drawings.
   b. Inspect physical and mechanical condition.
   c. Inspect anchorage, alignment, grounding, and clearances.
   d. Verify that the unit is clean.
   e. Operate the circuit breaker to ensure smooth operation.
   f. Inspect bolted electrical connections for high resistance using one of the two following methods:
   g. Inspect operating mechanism, contacts, and chutes in unsealed units.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
3. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.

C. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.

SECTION 265613 - LIGHTING POLES AND STANDARDS

1.1 MOUNTING HARDWARE

A. Anchor Bolts: Manufactured to ASTM F 1554, Grade 55, with a minimum yield strength of 55,000 psi.

1. Galvanizing: Hot dip galvanized according to ASTM A 153, Class C.
2. Bent rods--dimensions per pole manufacturer and to match existing.

B. Nuts: ASTM A 563, Grade A, Heavy-Hex

1. Galvanizing: Hot dip galvanized according to ASTM A 153, Class C.
2. Four nuts provided per anchor bolt, shipped with nuts pre-assembled to the anchor bolts.

C. Washers: ASTM F 436, Type 1.

1. Galvanizing: Hot dip galvanized according to ASTM A 153, Class C.
2. Two washers provided per anchor bolt.

1.2 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

1.3 POLE FOUNDATION

A. Concrete Pole Foundations: Cast in place, with anchor bolts to match pole-base flange. Structural steel complying with ASTM A 36/A 36M and hot-dip galvanized according to ASTM A 123/A 123 M; and with top-plate and mounting bolts to match pole-base flange and strength required to support pole, luminaire, and accessories. Concrete, reinforcement, and formwork are specified in Section 033000 "Cast-in-Place Concrete."

B. Anchor Bolts: Install plumb using manufacturer-supplied plywood template, uniformly spaced.

1.4 GROUNDING

A. Ground Metal Poles and Support Structures: Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

1. Install grounding electrode for each pole unless otherwise indicated.
2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

SECTION 270543 - UNDERGROUND PATHWAYS AND STRUCTURES FOR COMMUNICATION SYSTEMS

1.1 METAL CONDUITS AND FITTINGS

A. GRC: Comply with ANSI C80.1 and UL 6.

B. PVC-Coated Steel Conduit: PVC-coated GRC.

1. Comply with NEMA RN 1.
2. Coating Thickness: 0.040 inch, minimum.

C. General Requirements for Metal Conduits and Fittings:

1. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.
2. Comply with TIA-569-C and TIA-758-C.

1.2 RIGID NONMETALLIC DUCT

A. Underground Plastic Utilities Duct: Type EPC-40-PVC RNC, complying with NEMA TC 2 and UL 651, with matching fittings complying with NEMA TC 3 by same manufacturer as duct.

B. General Requirements for Nonmetallic Ducts and Fittings:

1. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.
2. Comply with TIA-569-C and TIA-758-C.

1.3 FLEXIBLE NONMETALLIC DUCT

A. HDPE Duct: Type EPEC 40-HDPE complying with NEMA TC 7 and UL 651A.

B. General Requirements for HDPE Duct

1. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.
2. Comply with TIA-569-C and TIA-758-C.

1.4 DUCT ACCESSORIES

A. Rigid Innderduct: Corrugated HDPE duct, orange in color, designed for installation within a duct or pathway.

B. Duct Spacers: Factory-fabricated rigid PVC interlocking spacers, sized for type and size of duct with which used, and selected to provide minimum duct spacing indicated while supporting duct during concreting or backfilling.

C. Underground-Line Warning Tape: Underground-line warning tape specified in Section 270553 "Identification for Communications Systems."

1.5 POLYMER CONCRETE HANDHOLES AND BOXES WITH POLYMER CONCRETE COVER

A. Description: Molded of sand and aggregate, bound together with a polymer resin, and reinforced with steel or fiberglass or a combination of the two.

B. Standard: Comply with SCTE 77. Comply with tier requirements in "Underground Enclosure Application" Article.

C. Color: Gray.

D. Configuration: Units shall be designed for flush burial and have open bottom unless otherwise indicated.

E. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure.

F. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.

G. Cover Legend: Molded lettering, "COMMUNICATIONS."

H. Direct-Buried Wiring Entrance Provisions: Knockouts equipped with insulated bushings or end-bell fittings, selected to suit box material, sized for wiring indicated, and arranged for secure, fixed installation in enclosure wall.

I. Handholes 12 inches wide by 24 inches long and larger shall have factory-installed inserts for cable racks and pulling-in irons.

1.6 UTILITY STRUCTURE ACCESSORIES

A. Accessories for Utility Structures: Utility equipment and accessory items used for utility structure access and utility support, listed and labeled for intended use and application.

B. Pulling Eyes in Concrete Walls: Eyebolt with reinforcing-bar fastening insert, 2-inch-diameter eye, and 1-by-4-inch bolt.

1. Working Load Embedded in 6-Inch, 4000-psi Concrete: 13,000-lbf minimum tension.

C. Pulling-In and Lifting Irons in Concrete Floors: 7/8-inch-diameter, hot-dip galvanized, bent steel rod; stress relieved after forming; and fastened to reinforcing rod. Exposed triangular opening.

1. Ultimate Yield Strength: 40,000-lbf shear and 60,000-lbf tension.

D. Bolting Inserts for Concrete Utility Structure Cable Racks and Other Attachments: Flared, threaded inserts of noncorrosive, chemical-resistant, nonconductive thermoplastic material; 1/2-inch ID by 2-3/4 inches deep, flared to a minimum of 1-1/4 inches at base.

1. Tested Ultimate Pullout Strength: 12,000 lbf minimum.

E. Ground Rod Sleeve: 3-inch, PVC duct sleeve in manhole floors 2 inches from the wall adjacent to, but not underneath, the duct entering the structure.

F. Expansion Anchors for Installation after Concrete Is Cast: Zinc-plated, carbon-steel-wedge type with stainless-steel expander clip, with 1/2-inch bolt, 5300-lbf rated pullout strength, and minimum 6800-lbf rated shear strength.

G. Cable Rack Assembly: Nonmetallic. Components fabricated from nonconductive, fiberglass-reinforced polymer.

1. Stanchions: Nominal 36 inches high by 4 inches wide, with minimum of nine holes for arm attachment.
2. Arms: Arranged for secure, drop-in attachment in horizontal position at any location on cable stanchions, and capable of being locked in position. Arms shall be available in lengths ranging from 3 inches with 450-lb minimum capacity to 20 inches with 250-lb minimum capacity. Top of arm shall be nominally 4 inches wide, and arm shall have slots along full length for cable ties.

H. Duct-Sealing Compound: Nonhardening, safe for contact with human skin, not deleterious to cable insulation, and workable at temperatures as low as 35 deg F. Capable of withstanding temperature of 300 deg F without slump and adhering to clean surfaces of plastic duct, metallic duct, duct coatings, concrete, masonry, lead, cable sheaths, cable jackets, insulation materials, and common metals.

I. Cover Hooks: Heavy duty, designed for lifts 60 lbf and greater. Two required.

1.7 PREPARATION

A. Coordinate layout and installation of duct, duct bank, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field. Notify Architect if there is a conflict between areas of excavation and existing structures or archaeological sites to remain.

B. Coordinate elevations of duct and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of duct and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as required to suit field conditions and to ensure that duct runs drain to manholes and handholes, and as approved by Architect.

1.8 UNDERGROUND DUCT APPLICATION

A. Duct for Communications: Type EPC-40-PVC RNC, in direct-buried duct bank unless otherwise indicated.

B. Duct for Communications: Type EPEC-40-HDPE duct in direct-bored duct bank unless otherwise indicated.

C. Stub-Ups for Communications: Concrete-encased PVC-coated GRC.

1.9 UNDERGROUND ENCLOSURE APPLICATION

A. Handholes and Boxes for Communications:

1. Units in Roadways and Other Deliberate Traffic Paths: Precast concrete. AASHTO HB 17, H-20 structural load rating.
2. Units in Driveway, Parking Lot, and Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: Polymer concrete, SCTE 77, Tier 15 structural load rating.
3. Units in Sidewalk and Similar Applications with a Safety Factor for Nondeliberate Loading by Vehicles: Polymer concrete units, SCTE 77, Tier 8 structural load rating.
4. Units Subject to Light-Duty Pedestrian Traffic Only: Fiberglass-reinforced polyester resin, structurally tested according to SCTE 77 with 3000-lbf vertical loading.
5. Cover design load shall not exceed the design load of the handhole or box.

1.10 EARTHWORK

A. Restoration: Replace area immediately after backfilling is completed.

B. Restore surface features at areas disturbed by excavation, and re-establish original grades unless otherwise indicated.

C. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching.

D. Cut and patch existing pavement in the path of underground duct, duct bank, and utility structures according to the "Cutting and Patching" Article in Section 017300 "Execution."

1.11 DUCT AND DUCT-BANK INSTALLATION

A. Install duct and duct bank according to NEMA TCB 2 and TIA-758-C.

B. Slope: Pitch duct and duct bank a minimum slope of 1:100 down toward manholes and handholes and away from buildings and equipment. Slope duct and duct bank from a high point in runs between two manholes, to drain in both directions.

C. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches, both horizontally and vertically, at other locations unless otherwise indicated.

1. Duct and duct banks shall have maximum of two 90-degree bends, or the total of all bends shall be no more 180 degrees between pull points.

D. Joints: Use solvent-cemented joints in duct and fittings, and make watertight according to manufacturer's written instructions. Stagger couplings, so those of adjacent ducts do not lie in same plane.

E. Terminator Entrances to Manholes and Concrete and Polymer Concrete Handholes: Use manufactured, cast-in-place duct terminators, with entrances into structure spaced approximately 6 inches o.c. for 4-inch duct, and vary proportionately for other duct sizes.

F. Sealing: Provide temporary closure at terminations of duct that has cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig hydrostatic pressure.

G. Innerduct: Install immediately after mandreling duct. Provide three innerducts per duct.

H. Pulling Cord: Install 200-lbf-test nylon cord in empty duct and innerduct.

I. Direct-Buried Duct and Duct Banks:

1. Excavate trench bottom to provide firm and uniform support for duct and duct bank.
2. Install duct with a minimum of 3 inches between duct for like services and 12 inches between power and signal duct.
3. Width: Excavate trench 12 inches wider than duct or duct bank on each side.
4. Depth: Install top of duct or duct bank at least 36 inches below finished grade unless otherwise indicated.
5. Set elevation of bottom of duct or duct bank below frost line.
6. Support duct on duct spacers coordinated with duct size, duct spacing, and outdoor temperature.
7. Spacer Installation: Place spacers close enough to prevent sagging and deforming of duct, with not less than [four] [five] spacers per 20 feet of duct. Place spacers within 24 inches of duct ends. Stagger spacers approximately 6 inches between tiers. Secure spacers to earth and duct to prevent floating during concreting. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around duct or duct bank.
8. Elbows: Install manufactured duct elbows for stub-ups, at building entrances through floor, and at changes of direction in duct unless otherwise indicated. Encase elbows for stub-ups throughout length of elbow.
9. After installing first tier of duct, backfill and compact. Start at tie-in point and work toward end of duct run, leaving duct at end of run free to move with expansion and contraction, as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand place backfill to 4 inches over duct and hand tamp. Firmly tamp backfill around duct to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction.

J. Underground-Line Warning Tape: Bury conducting underground-line warning tape specified in Section 270553 "Identification for Communication Systems" no less than 12 inches above all concrete-encased duct and duct bank and approximately 12 inches below grade. Align tape parallel to and within 3 inches of centerline of duct bank. Provide an additional warning tape for each 12-inch increment of duct-bank width over a nominal 18 inches. Space additional tapes 12 inches apart, horizontally.

1.12 INSTALLATION OF HANDHOLES AND BOXES OTHER THAN PRECAST CONCRETE

A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting duct, to minimize bends and deflections required for proper entrances. Use box extension if required to match depths of duct and duct bank, and seal joint between box and extension as recommended by manufacturer.

B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.

C. Elevation: In paved areas and trafficways, set cover flush with finished grade. Set covers of other handholes 1 inch above finished grade.

D. Install handholes and boxes with bottom below frost line, below grade.

E. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables, but short enough to preserve adequate working clearances in enclosure.

F. Field cut openings for duct according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

1.13 GROUNDING

A. Ground underground duct, duct bank, and utility structures according to Section 270526 "Grounding and Bonding for Communications Systems."

1.14 FIELD QUALITY CONTROL

A. Perform the following tests and inspections and prepare test reports:

1. Demonstrate capability and compliance with requirements on completion of installation of underground duct, duct bank, and utility structures.
2. Pull solid aluminum or wood test mandrel through duct to prove joint integrity and adequate bend radii, and test for out-of-round duct. Provide a minimum 12-inch-long mandrel equal to duct size minus 1/4 inch. If obstructions are indicated, remove obstructions and retest.
3. Test handhole grounding to ensure electrical continuity of grounding and bonding connections. Measure and report ground resistance as specified in Section 270526 "Grounding and Bonding for Communications Systems."

B. Correct deficiencies and retest as specified above to demonstrate compliance.

1.15 CLEANING

A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of duct until duct cleaner indicates that duct is clear of dirt and debris.

B. Clean internal surfaces of manholes, including sump.

1. Sweep floor, removing dirt and debris.
2. Remove foreign material.

PLEASE NOTE!
THESE DRAWINGS ARE PRINTED 1:2 ON 11x17 SHEETS(HALF-SIZE) FROM THE ORIGINAL DRAWINGS, AT THE REQUEST OF THE CLIENT.

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MARK	DATE	DESCRIPTION

ISSUE: CONSTRUCTION DOCUMENTS
PROJECT NUMBER: 2019017
DATE: MAY 23, 2019
DESIGNED BY: SDS
DRAWN BY: DJP

ELECTRICAL SPECIFICATIONS

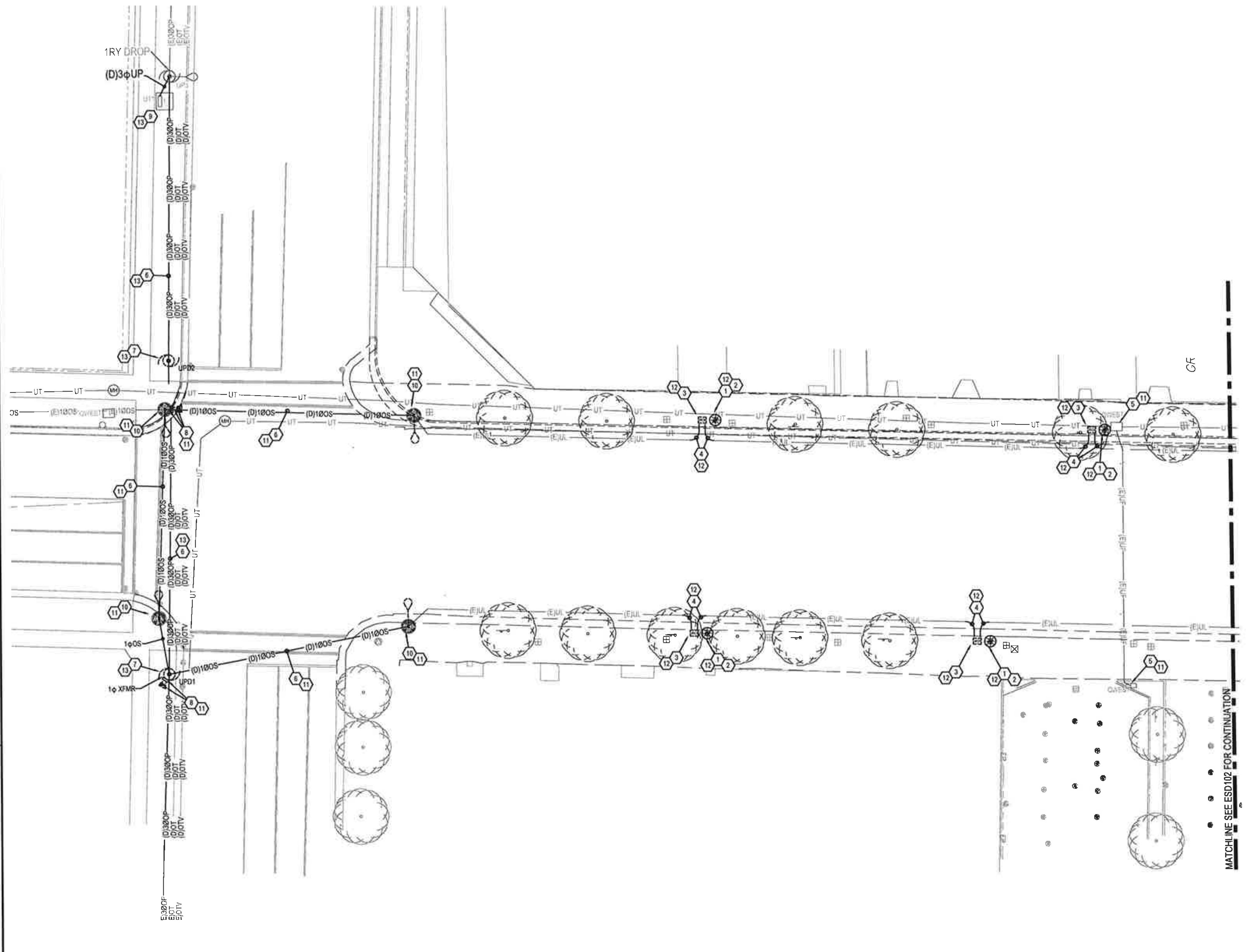
E002

⬡ SHEET KEYED NOTES

1. COORDINATE CITY STREET LIGHT RELOCATION WITH LOCAL UTILITY REP. POLES MOVED AND REINSTALLED BY UTILITY. CIRCUITS AND BASES BY CONTRACTOR.
2. REMOVE STREET LIGHT POLE BASE
3. REMOVE AND RE-USE STREET LIGHTING PULL BOXES.
4. PROTECT EXISTING UNDERGROUND CIRCUITS SERVING STREET LIGHTING. RE-ROUTE TO RELOCATED POLES. SEE ES102 - ELECTRICAL SITE LIGHTING PLAN FOR ADDITIONAL INFORMATION.
5. EXISTING COMMUNICATIONS MANHOLES OR PULL BOX. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE ADJUSTMENTS WITH LOCAL CENTURYLINK REP.
6. COORDINATE REMOVAL EXISTING OVERHEAD LINES WITH LOCAL UTILITY REP.
7. COORDINATE REMOVAL OF UTILITY POLE WITH LOCAL UTILITY REP.
8. REMOVE SERVICE EQUIPMENT AND ASSOCIATED SECONDARY EQUIPMENT FROM POLE. COORDINATE SERVICE DROP REMOVAL WITH LOCAL UTILITY REP.
9. COORDINATE PRIMARY LINE REMOVAL TO EXISTING TRANSFORMER.
10. DISCONNECT SEMAPHORE EQUIPMENT FOR REMOVAL BY OTHERS.
11. CENTER STREET IMPROVEMENTS PRICING.
12. LIGHT POLE RELOCATION PRICING.
13. 100W POWER UTILITY UPGRADE PRICING.

GENERAL SHEET NOTES

1. PROTECT ALL EXISTING UNDERGROUND POWER, FIBER, TELECOM AND TV LINES UNLESS OTHERWISE NOTED.
2. DEMOLITION PLAN IS ENGINEER'S ATTEMPT TO ASSIST BIDDERS IN ESTIMATING REMOVAL COSTS OF EXISTING EQUIPMENT. PLAN IS NOT INTENDED TO BE ALL-INCLUSIVE, AND IT IS THE BIDDERS RESPONSIBILITY TO VERIFY ALL EXISTING EQUIPMENT AND DEVICES TO BE REMOVED PRIOR TO BIDDING.
3. EXISTING ITEMS TO BE REMOVED ARE INDICATED AS BOLD/DASHED. ITEMS TO REMAIN ARE SHOWN AS LIGHT/SOLID.
4. CIRCUIT ROUTING IS SCHEMATIC UNLESS OTHERWISE NOTED.
5. COORDINATE ALL UTILITY INSTALLATIONS WITH LOCAL UTILITY REPS.
6. COMPLY WITH ALL UTILITY REQUIREMENTS FOR NEW UTILITY INSTALLATIONS.
7. COORDINATE ALL SHUTDOWNS WITH OWNERS AND LOCAL UTILITY REPS. ALL WORK REQUIRING SHUTDOWNS WILL REQUIRE NON-STANDARD (NIGHTS/WEEKENDS/HOLIDAYS, ETC.) WORKING HOURS.
8. PROVIDE LINE ITEM PRICING AS NOTED FOR OWNER INTERNAL COST BREAKOUTS. SEE BID SCHEDULE FOR ADDITIONAL INFORMATION.



1 ELECTRICAL SITE PLAN - DEMOLITION
SCALE: 1" = 20'-0"

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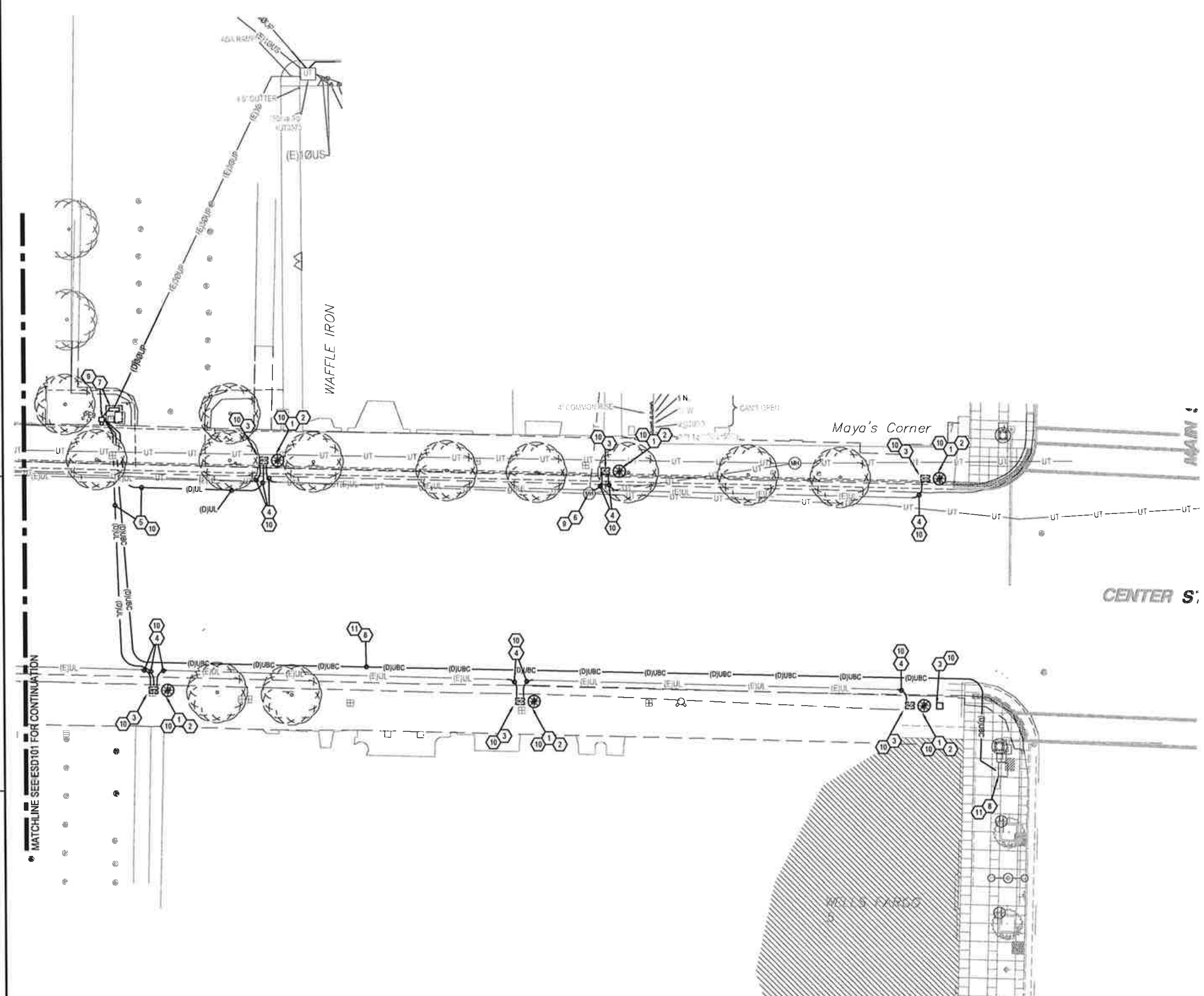
DRAWN BY:	DJP

ELECTRICAL SITE PLAN - DEMOLITION

ESD101



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3. REMOVE AND RE-USE STREET LIGHTING PULL BOXES.
4. PROTECT EXISTING UNDERGROUND CIRCUITS SERVING STREET LIGHTING. RE-ROUTE TO RELOCATED POLES. SEE ES102 - ELECTRICAL SITE LIGHTING PLAN FOR ADDITIONAL INFORMATION.
5. RE-ROUTE CITY STREET LIGHT CIRCUIT TO NEW DISTRIBUTION PEDESTAL LOCATION.
6. RELOCATE AND UPGRADE UTILITY MANHOLE OR PULL BOX TO FINISH FLUSH IN NEW HARDSCAPE.
7. COORDINATE RELOCATION OF UTILITY TRANSFORMER WITH LOCAL UTILITY REP. RE-ROUTE PRIMARY CONDUITS TO NEW TRANSFORMER LOCATION. RELOCATE METERING PEDESTAL AS REQUIRED. SEE ES104 - ELECTRICAL SITE POWER PLAN AND E601 - ELECTRICAL ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
8. EXISTING UDOT CONTROLLER TO BE REFED. REMOVE EXISTING LINES FROM CONTROLLER.
9. CENTER STREET IMPROVEMENTS PRICING.
10. LIGHT POLE RELOCATION PRICING.
11. UDOT MAIN STREET CONTROLLER PRICING.

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5. COORDINATE ALL UTILITY INSTALLATIONS WITH LOCAL UTILITY REPS.
6. COMPLY WITH ALL UTILITY REQUIREMENTS FOR NEW UTILITY INSTALLATIONS.
7. COORDINATE ALL SHUTDOWNS WITH OWNERS AND LOCAL UTILITY REPS. ALL WORK REQUIRING SHUTDOWNS WILL REQUIRE NON-STANDARD (NIGHTS/WEEKENDS/HOLIDAYS, ETC.) WORKING HOURS.
8. PROVIDE LINE ITEM PRICING AS NOTED FOR OWNER INTERNAL COST BREAKOUTS. SEE BID SCHEDULE FOR ADDITIONAL INFORMATION.

PLEASE NOTE!
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CONSULTANTS

REGISTERED PROFESSIONAL ENGINEER No. 294174 SHANE D. SWENSON 5/23/2019 STATE OF UTAH

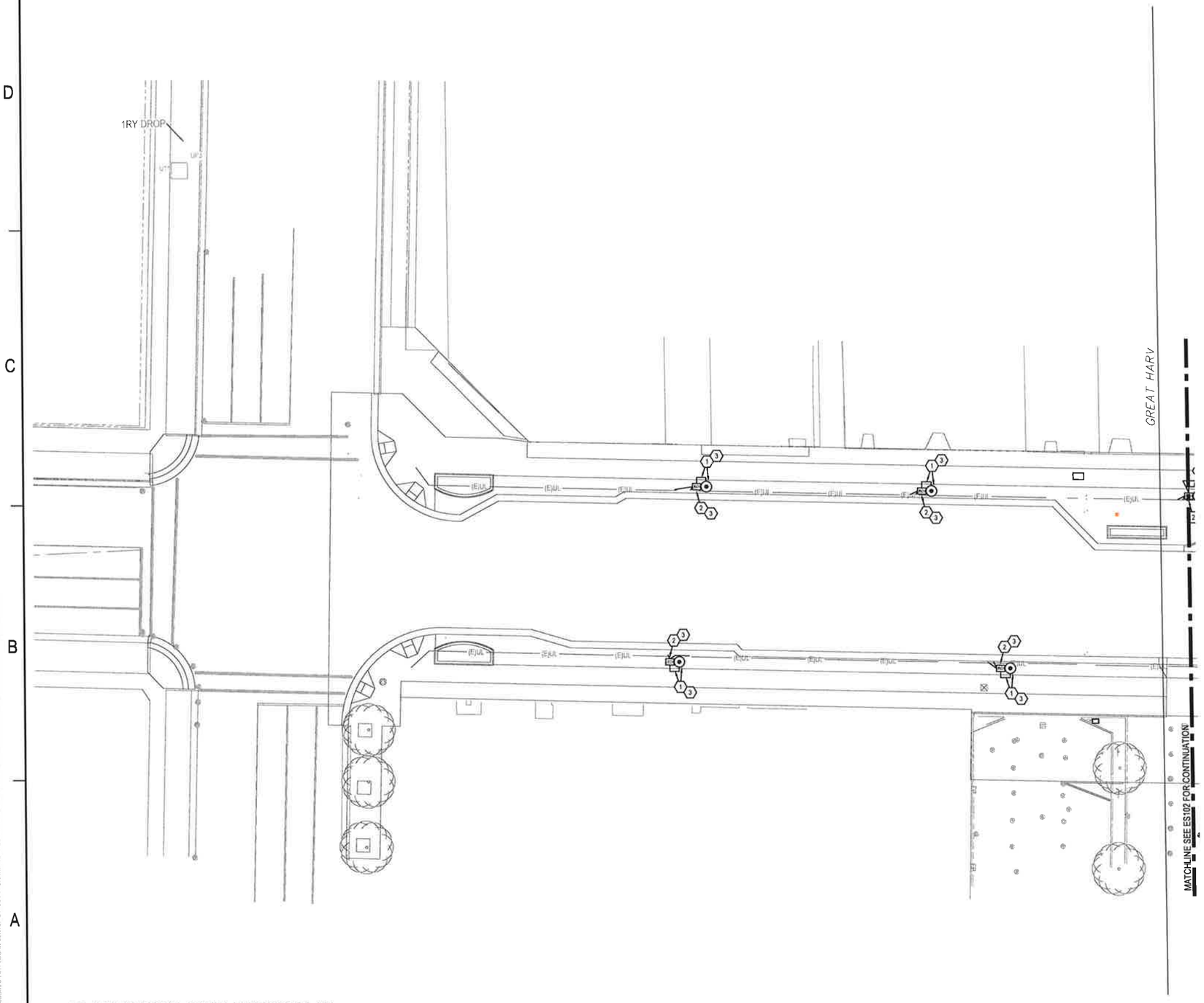
CENTER STREET
MAIN STREET TO 100 WEST
LOGAN CITY
LOGAN, UTAH

MARK	DATE	DESCRIPTION

ISSUE: CONSTRUCTION DOCUMENTS
PROJECT NUMBER: 2019017
DATE: MAY 23, 2019
DESIGNED BY: SDS
DRAWN BY: DJP

ELECTRICAL SITE PLAN - DEMOLITION

ESD102



1 ELECTRICAL SITE LIGHTING PLAN
SCALE: 1" = 20'-0"

SHEET KEYED NOTES

1. RELOCATED POLE: PROVIDE 3 #6 THWN CU, 1 #6 CU GR, 1.25" C FROM POLE TO J-BOX. PROVIDE TAP AND (2) 20-AMP, IN-LINE FUSES TO MAIN LINE. PROVIDE NEW POLE BASE AND BOLTS PER DETAIL. POLE INSTALLATION BY UTILITY.
2. RE-INSTALL REMOVED PULL BOX. EXTEND STREET LIGHT CONDUITS TO NEW PULL BOX LOCATION. PROVIDE NEW #4 THWN CU CONDUCTORS IN EXISTING CONDUITS BETWEEN STREET LIGHT PULL BOXES.
3. LIGHT POLE RELOCATION PRICING

GENERAL SHEET NOTES

1. CIRCUIT ROUTING IS SCHEMATIC UNLESS OTHERWISE NOTED.
2. PROVIDE LINE ITEM PRICING AS NOTED FOR OWNER INTERNAL COST BREAKOUTS. SEE BID SCHEDULE FOR ADDITIONAL INFORMATION.

PLEASE NOTE!
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CONSULTANTS

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LOGAN CITY
LOGAN, UTAH

MARK	DATE	DESCRIPTION
ISSUE: CONSTRUCTION DOCUMENTS		
PROJECT NUMBER:		2019017
DATE:		MAY 23, 2019
DESIGNED BY:		SDS
DRAWN BY:		DJP

ELECTRICAL SITE LIGHTING PLAN

ES101

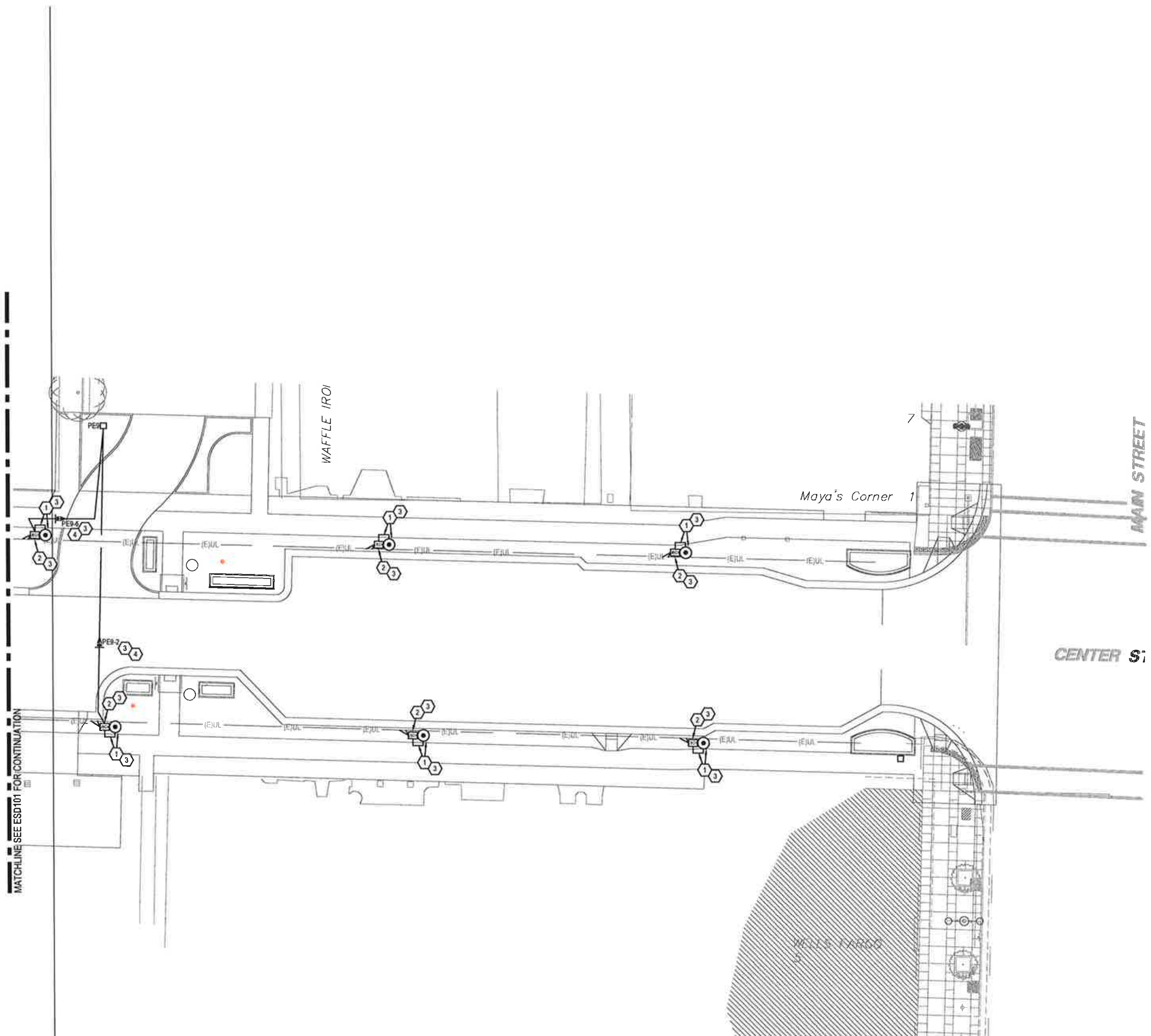
LAST SAVED 5/23/2019 C:\JOBS\2019\17 LOGAN CENTER STREET\01 DRAWINGS\05 ELECTRICAL\SINE SOURCE PROJECT\SHEETS\ES101 ELECTRICAL SITE LIGHTING PLAN.DWG
LAST SAVED 20 May 19

⬡ SHEET KEYED NOTES

1. RELOCATED POLE: PROVIDE 3 #6 THWN CU, 1 #6 CU GR, 1.25" C FROM POLE TO J-BOX. PROVIDE TAP AND (2) 20-AMP, IN-LINE FUSES TO MAIN LINE. PROVIDE NEW POLE BASE AND BOLTS PER DETAIL. POLE INSTALLATION BY UTILITY.
2. RE-INSTALL REMOVED PULL BOX. EXTEND STREET LIGHT CONDUITS TO NEW PULL BOX LOCATION. PROVIDE NEW #4 THWN CU CONDUCTORS IN EXISTING CONDUITS BETWEEN STREET LIGHT PULL BOXES.
3. LIGHT POLE RELOCATION PRICING
4. PROVIDE NEW HOME-RUN TO PEDESTAL ENCLOSURE. RECONNECT TO EXISTING LIGHTING BREAKER.

GENERAL SHEET NOTES

1. CIRCUIT ROUTING IS SCHEMATIC UNLESS OTHERWISE NOTED.
2. PROVIDE LINE ITEM PRICING AS NOTED FOR OWNER INTERNAL COST BREAKOUTS. SEE BID SCHEDULE FOR ADDITIONAL INFORMATION.



1 ELECTRICAL SITE LIGHTING PLAN
SCALE: 1" = 20'-0"

PLEASE NOTE!
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5/22/2019
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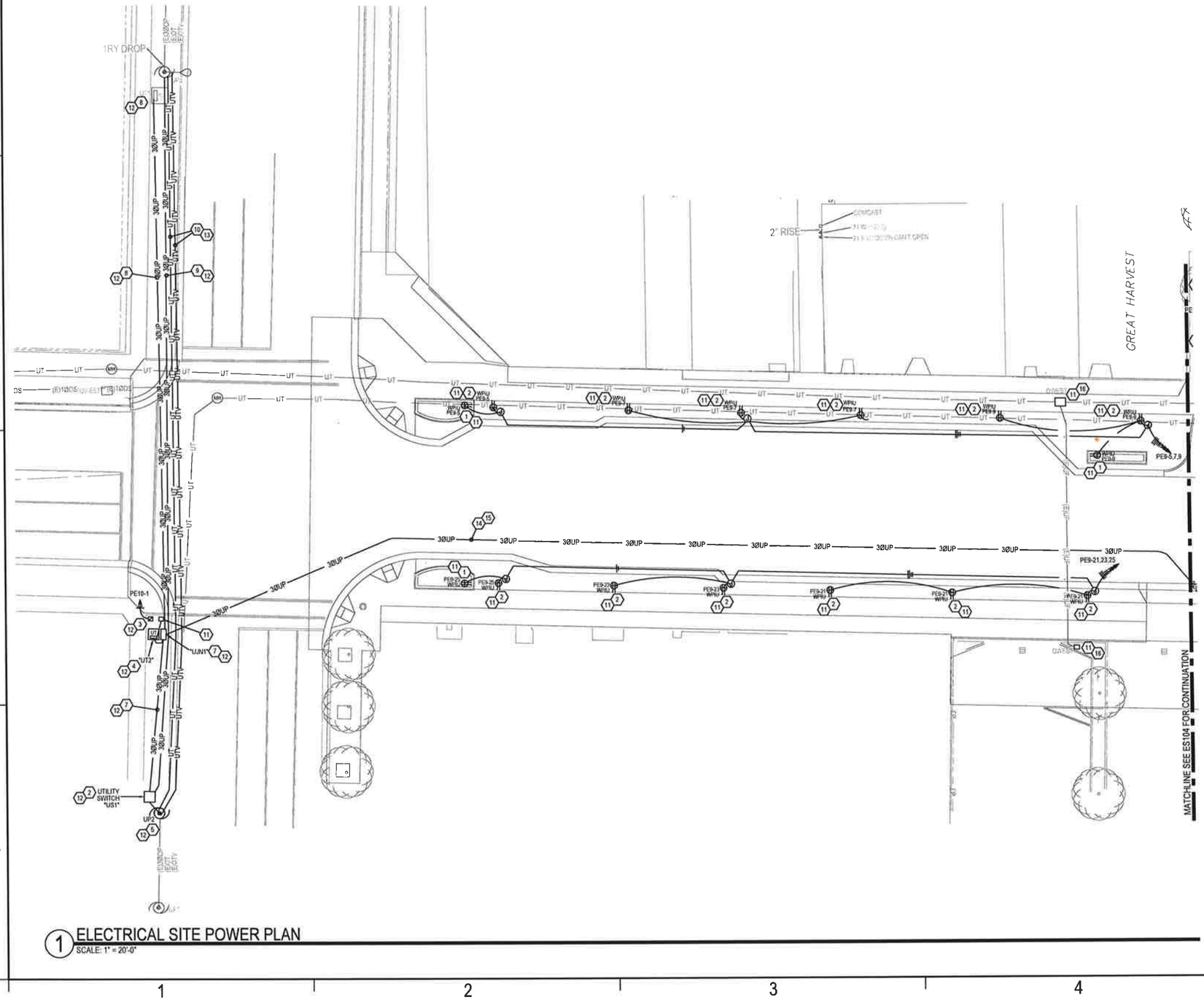
CENTER STREET
MAIN STREET TO 100 WEST
LOGAN CITY
LOGAN, UTAH

MARK	DATE	DESCRIPTION

ISSUE:	CONSTRUCTION DOCUMENTS
PROJECT NUMBER:	2019017
DATE:	MAY 23, 2019
DESIGNED BY:	SDS
DRAWN BY:	DJP

ELECTRICAL SITE LIGHTING PLAN

ES102



1 ELECTRICAL SITE POWER PLAN
SCALE: 1" = 20'-0"

SHEET KEYED NOTES

1. PROVIDE OUTLET IN PLANTER PER DETAIL B/E501.
2. PROVIDE OUTLET AT TREE PER DETAIL A/E501.
3. PROVIDE POWER TO STREET SIGNAL CONTROLLER.
4. ANTICIPATED LOCATION OF NEW UTILITY TRANSFORMER.
5. ANTICIPATED LOCATION OF NEW UTILITY POLE. VERIFY LOCATION WITH UTILITY.
6. ANTICIPATED LOCATION OF NEW UTILITY SWITCHGEAR. VERIFY LOCATION WITH UTILITY.
7. ANTICIPATED LOCATION OF NEW UTILITY JUNCTION CAN. VERIFY LOCATION WITH UTILITY.
8. RE-FEED EXISTING UTILITY TRANSFORMER FROM NEW JUNCTION CAN.
9. PROVIDE POWER CONNECTIONS FROM EXISTING POLE TO NEW POLE. SEE E601 - ELECTRICAL ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION. COORDINATE WORK WITH LOCAL UTILITY REP PRIOR TO ROUGH-IN.
10. PROVIDE 4" TELEPHONE AND 4" TV CONNECTIONS FROM EXISTING POLE TO NEW POLE. COMMUNICATIONS AND TV TO BE 4" CONDUIT. CABLING BY UTILITIES. COORDINATE ALL WORK WITH LOCAL UTILITY REP(S) PRIOR TO ROUGH-IN.
11. CENTER STREET IMPROVEMENTS PRICING.
12. 100 W POWER UTILITY UPGRADE PRICING.
13. 100 W COMMUNICATIONS UTILITY UPGRADE PRICING.
14. PROVIDE NEW PRIMARY CONDUIT ALONG PATHS INDICATED.
15. FUTURE DEVELOPMENT PREP PRICING.
16. REFER TO CIVIL DRAWINGS FOR ADJUSTMENTS TO CENTURYLINK PULL BOX. COORDINATE WORK WITH LOCAL CENTURYLINK REP.

GENERAL SHEET NOTES

1. PROTECT ALL EXISTING UNDERGROUND POWER, FIBER, TELECOM AND TV LINES UNLESS OTHERWISE NOTED.
2. CIRCUIT ROUTING IS SCHEMATIC UNLESS OTHERWISE NOTED.
3. COORDINATE ALL UTILITY INSTALLATIONS WITH LOCAL UTILITY REPS.
4. COMPLY WITH ALL UTILITY REQUIREMENTS FOR NEW UTILITY INSTALLATIONS.
5. COORDINATE ALL SHUTDOWNS WITH OWNERS AND LOCAL UTILITY REPS. ALL WORK REQUIRING SHUTDOWNS WILL REQUIRE NON-STANDARD (NIGHTS/WEEKENDS/HOLIDAYS, ETC.) WORKING HOURS.
6. PROVIDE LINE ITEM PRICING AS NOTED FOR OWNER INTERAL COST BREAKOUTS. SEE BID SCHEDULE FOR ADDITIONAL INFORMATION.

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SHANE D. SWENSON
STATE OF UTAH

CENTER STREET IMPROVEMENTS
MAIN STREET TO 100 WEST
LOGAN CITY
LOGAN, UTAH

MARK	DATE	DESCRIPTION
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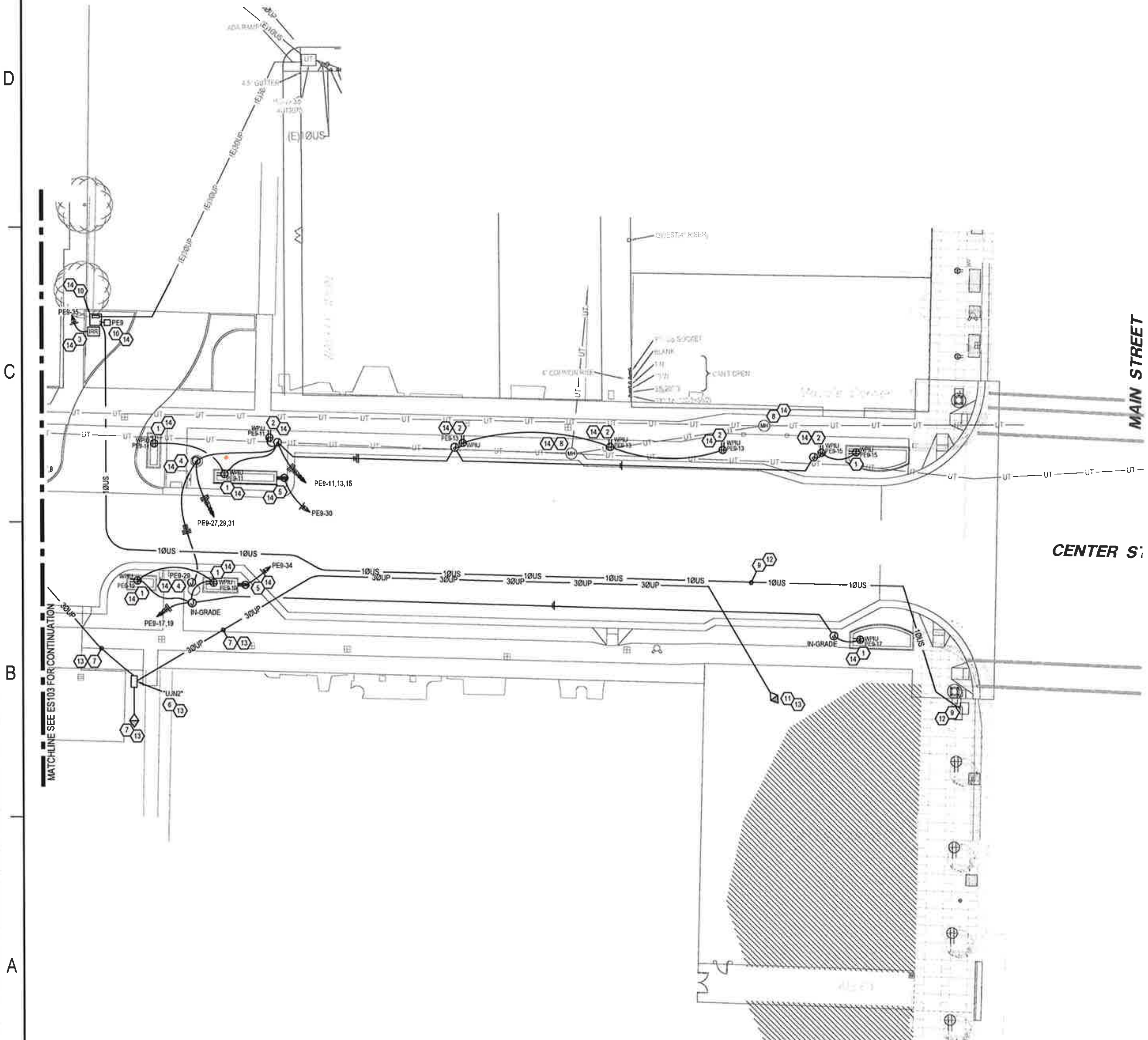
DATE:	MAY 23, 2019	
DESIGNED BY:	SDS	
DRAWN BY:	DJP	

ELECTRICAL SITE POWER PLAN

ES103



1 ELECTRICAL SITE POWER PLAN
SCALE: 1" = 20'-0"

⬡ SHEET KEYED NOTES

1. PROVIDE OUTLET IN PLANTER PER DETAIL B/E501.
2. PROVIDE OUTLET AT TREE PER DETAIL A/E501.
3. PROVIDE POWER TO IRRIGATION CONTROLLER.
4. PROVIDE J-BOX AT BASE OF ARCH SUPPORT. EXTEND POWER TO ARCH SIGN AS REQUIRED. PAINT CONDUITS/BOX TO MATCH ARCH FINISH.
5. PROVIDE EVENT OUTLET IN END OF PLANTER PER DETAIL B/E501.
6. ANTICIPATED LOCATION OF NEW UTILITY JUNCTION CAN. VERIFY LOCATION WITH UTILITY.
7. PROVIDE NEW PRIMARY CONDUIT ALONG PATHS INDICATED.
8. CENTURYLINK MANHOLE. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE WORK WITH LOCAL CENTURYLINK REP.
9. PROVIDE 3" CONDUIT FROM TRANSFORMER TO UDOT CONTROLLER'S NEW DISCONNECT. VERIFY DISCONNECT LOCATION WITH UDOT MAIN STREET PROJECT.
10. RELOCATED TRANSFORMER AND METER PEDESTAL. RE-ROUTE PRIMARY CONDUITS TO NEW TRANSFORMER LOCATION. RE-FEED PEDESTAL SECONDARY AS SHOWN ON E601 - ELECTRICAL ONE-LINE DIAGRAM. EXTEND EXISTING CONDUITS TO NEW PEDESTAL LOCATION AND RECONNECT.
11. STUB CONDUIT INTO CACHE VALLEY BANK VAULT TO LOCATION COORDINATED WITH CACHE VALLEY BANK AND LOGAN POWER.
12. UDOT MAIN STREET CONTROLLER PRICING.
13. FUTURE DEVELOPMENT PREP PRICING.
14. CENTER STREET IMPROVEMENTS PRICING.

GENERAL SHEET NOTES

1. PROTECT ALL EXISTING UNDERGROUND POWER, FIBER, TELECOM AND TV LINES UNLESS OTHERWISE NOTED.
2. CIRCUIT ROUTING IS SCHEMATIC UNLESS OTHERWISE NOTED.
3. COORDINATE ALL UTILITY INSTALLATIONS WITH LOCAL UTILITY REPS.
4. COMPLY WITH ALL UTILITY REQUIREMENTS FOR NEW UTILITY INSTALLATIONS.
5. COORDINATE ALL SHUTDOWNS WITH OWNERS AND LOCAL UTILITY REPS. ALL WORK REQUIRING SHUTDOWNS WILL REQUIRE NON-STANDARD (NIGHTS/WEEKENDS/HOLIDAYS, ETC.) WORKING HOURS.
6. PROVIDE LINE ITEM PRICING AS NOTED FOR OWNER INTERAL COST BREAKOUTS. SEE BID SCHEDULE FOR ADDITIONAL INFORMATION.

PLEASE NOTE!
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5/23/2019
STATE OF UTAH

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MAIN STREET TO 100 WEST
LOGAN CITY
LOGAN, UTAH

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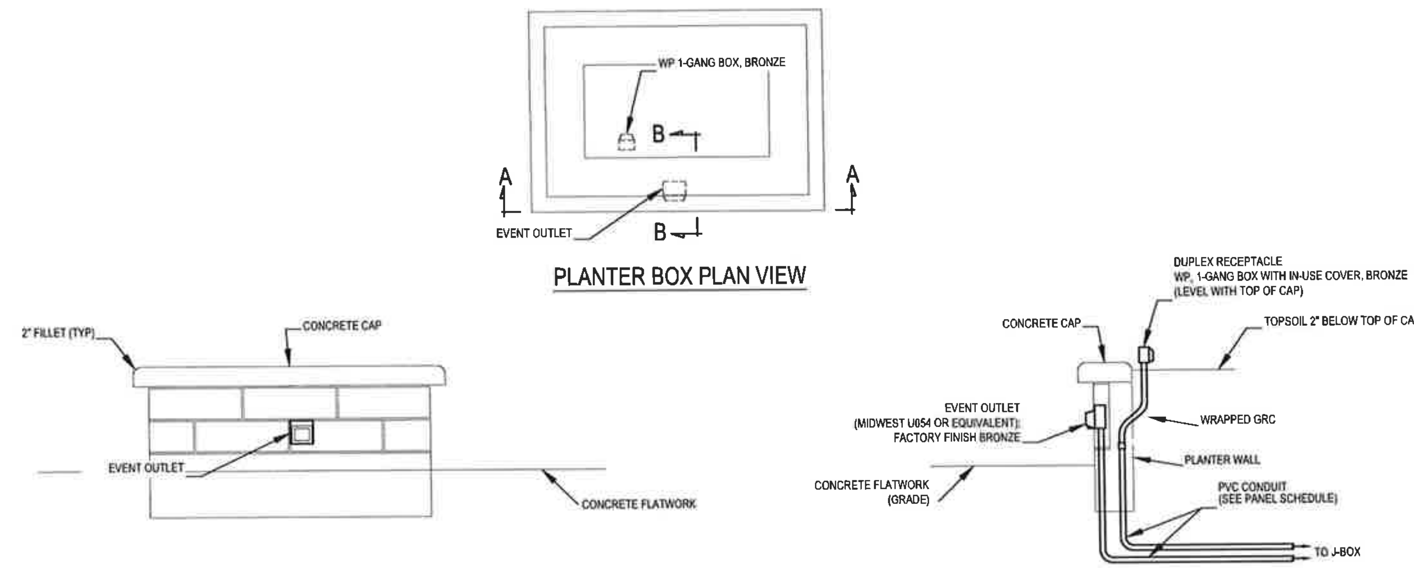
DRAWN BY:	DJP

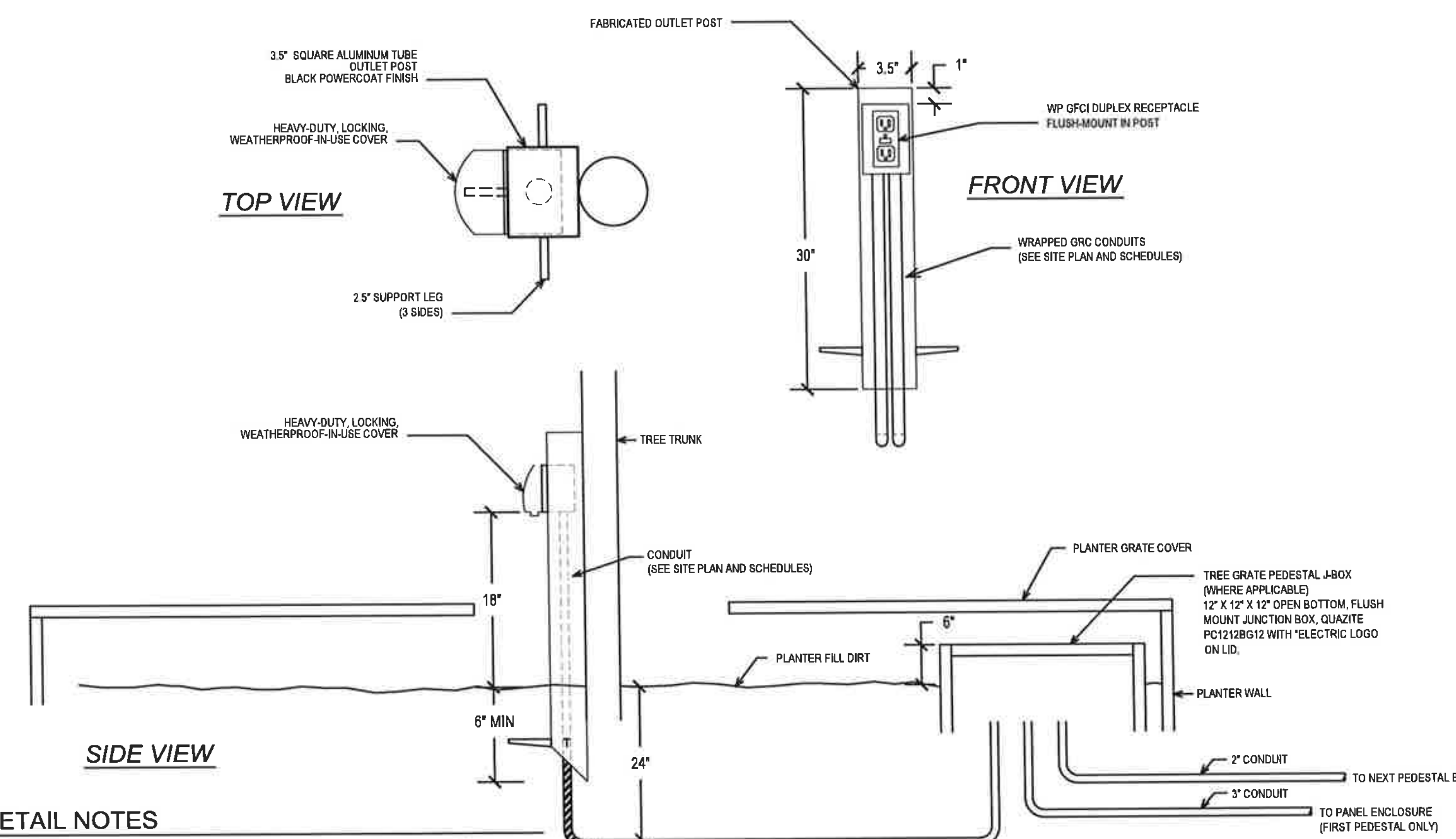
ELECTRICAL SITE POWER PLAN

ES104



(B) PLANTER ELECTRICAL INSTALLATION DETAIL

SCALE: NO SCALE

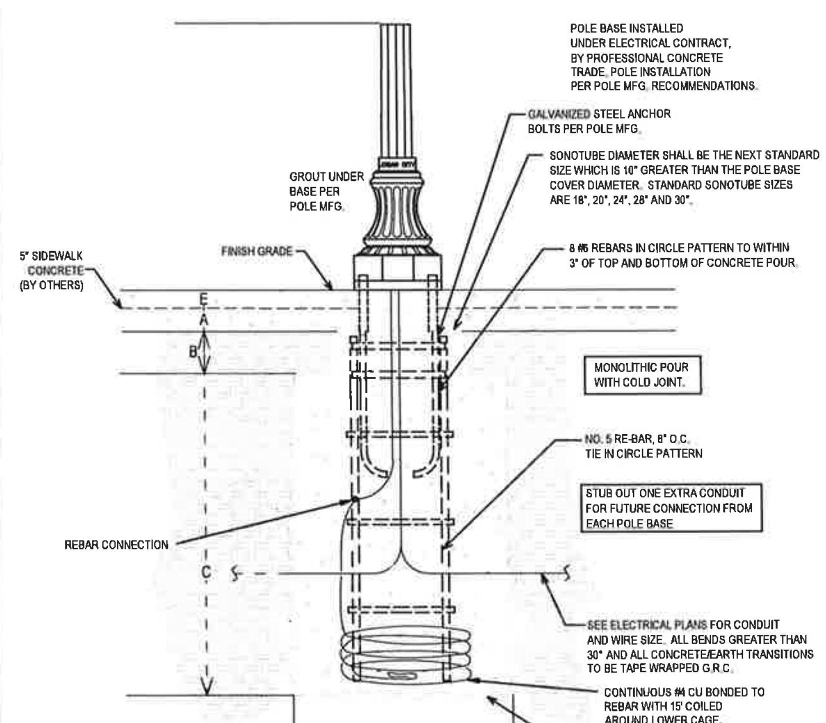


DETAIL NOTES

1. ALL CONDUIT INSTALLATIONS **MUST** BE INSPECTED PRIOR TO BACK FILLING. CONDUIT SHALL BE GRAY SCHEDULE 40 PVC PIPE UNLESS OTHERWISE NOTED. PLEASE CALL 716-8740, 24 HOURS IN ADVANCE FOR INSPECTION. CONDUIT SHALL BE INSTALLED AT 24".
2. SEE ELECTRICAL SITE PLAN FOR CONDUIT ROUTING REQUIREMENTS.
3. SEE PANEL SCHEDULES FOR OUTLET CIRCUIT SIZES.
4. ALL GROUND WIRES TO BE EQUIVALENT SIZE TO PHASE/NEUTRAL CONDUCTORS FOR VOLTAGE DROP REQUIREMENTS.
5. TUBE ALUMINUM CHANNEL BY RC WELDING--CONTACT HARLEY CHRISTENSEN (435-755-0229) FOR PRICING. SUCCESSFUL CONTRACTOR WILL COORDINATE FINAL DETAILS WITH FABRICATION ACCORDING TO PRE-PLANNING COMPLETED BY ENGINEER AS SHOWN IN THESE DRAWINGS.

(A) TREE-GRATE INSTALLATION DETAILS

SCALE: NO SCALE



DIMENSIONS:
A= 6" B= 6" C= 60" D= 30": ALL LOCATIONS
E= 2"

(C) POLE BASE DETAIL: CITY STREET LIGHT

SCALE: NO SCALE

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CENTER STREET MAIN STREET TO 100 WEST
LOGAN CITY
LOGAN, UTAH

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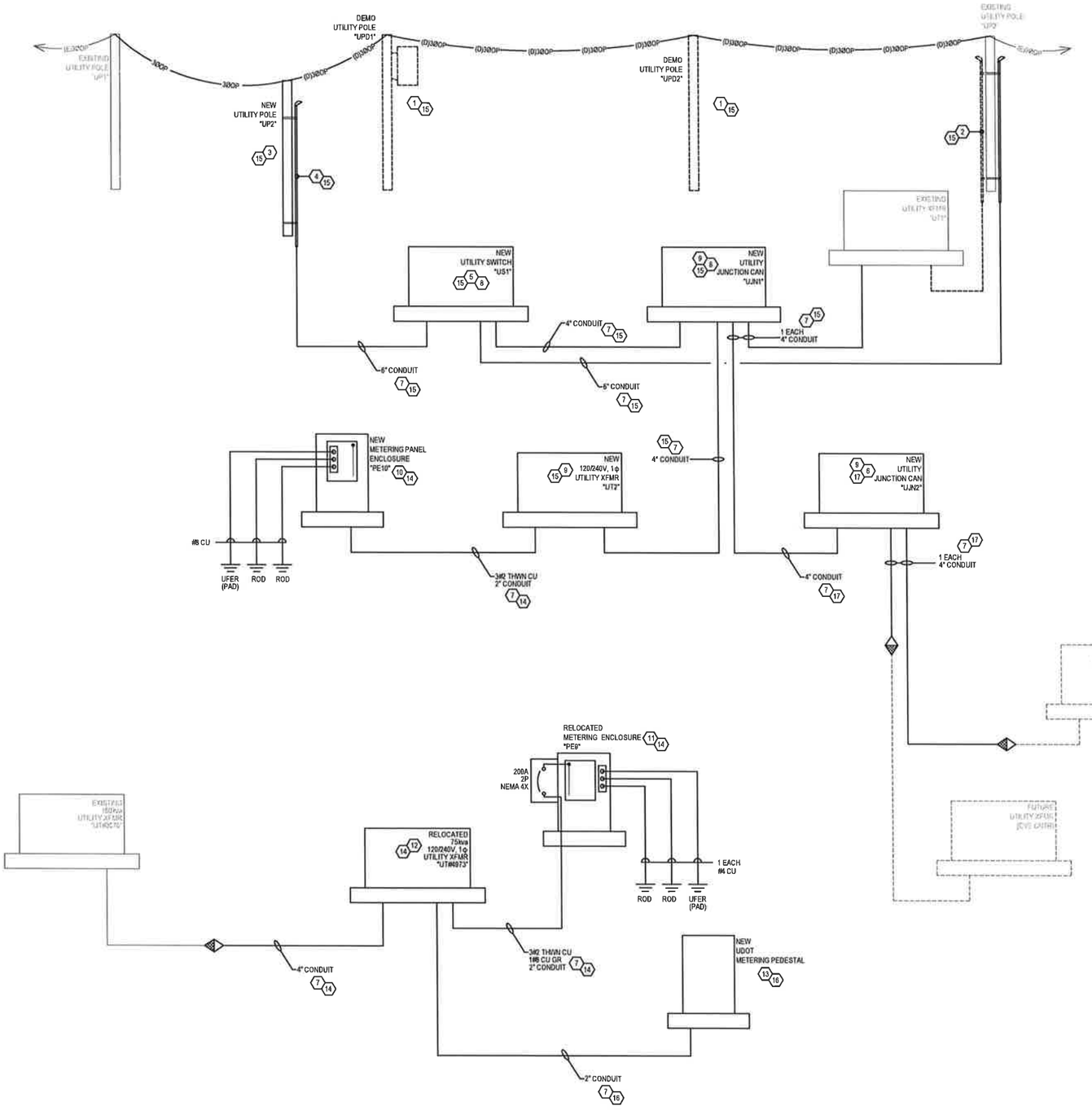
ELECTRICAL DETAILS

E501



1 ELECTRICAL ONE-LINE DIAGRAM
Scale: NO SCALE

SHEET KEYED NOTES

1. COORDINATE REMOVAL OF UTILITY POLE AND ASSOCIATED OVERHEAD LINES WITH LOCAL UTILITY REP.
2. REMOVE PRIMARY RISER FROM EXISTING POLE.
3. COORDINATE INSTALLATION OF NEW POLE WITH LOCAL UTILITY REP.
4. PROVIDE PRIMARY RISER PER UTILITY STANDARDS.
5. COORDINATE INSTALLATION OF NEW SWITCH WITH LOCAL UTILITY REP.
6. COORDINATE INSTALLATION OF NEW JUNCTION CAN WITH LOCAL UTILITY REP.
7. PRIMARY AND SECONDARY CONDUIT, TRENCHING, AND BACKFILL AND SECONDARY CONDUCTORS BY CONTRACTOR. PRIMARY CONDUCTORS BY UTILITY.
8. EQUIPMENT PAD BY CONTRACTOR. EQUIPMENT BY UTILITY.
9. INSTALL EQUIPMENT PAD FURNISHED BY UTILITY.
10. INSTALL UTILITY FURNISHED METERING PEDESTAL WITH 100A PANEL. PROVIDE 4" CONCRETE PAD THAT EXTENDS 4" PAST EQUIPMENT FOOTPRINT IN ALL DIRECTIONS. REFER TO CIVIL AND STREET SIGNAL VENDOR DRAWINGS FOR ADDITIONAL INFORMATION.
11. RELOCATE PEDESTAL ENCLOSURE. PROVIDE NEW SERVICE DISCONNECT MOUNTED TO EXTERIOR OF ENCLOSURE. PROVIDE NEW 4" CONCRETE BASE. EXTEND EXISTING BRANCH CIRCUITS TO REMAIN.
12. COORDINATE RELOCATION OF EXISTING UTILITY TRANSFORMER. INTERCEPT UTILITY PRIMARY CONDUIT AND EXTEND TO NEW TRANSFORMER LOCATION.
13. PROVIDE CONDUIT FROM TRANSFORMER INDICATED TO NEW METERING PEDESTAL FURNISHED UNDER SEPARATE MAIN STREET PROJECT. PEDESTAL INSTALLATION AND SERVICE LATERAL CONDUCTORS BY OTHERS.
14. CENTER STREET IMPROVEMENTS PRICING.
15. 100W UTILITY UPGRADE PRICING.
16. UDOT MAIN STREET CONTROLLER PRICING.
17. FUTURE DEVELOPMENT PREPARATION PRICING.

GENERAL SHEET NOTES

1. COMPLY WITH POWER UTILITY'S REQUIREMENTS FOR ALL UTILITY RELATED INSTALLATIONS. REVIEW CURRENT UTILITY STANDARDS MANUAL PRIOR TO BID. NOTIFY ENGINEER OF CONFLICTS PRIOR TO BID.
2. AIC RATINGS SHOWN INDICATE MINIMUM REQUIRED VALUES. SCCR RATINGS ARE TO MATCH OR EXCEED AIC RATINGS.
3. ALL CONDUCTORS ARE CONSIDERED TO BE COPPER UNLESS SPECIFICALLY NOTED OTHERWISE.
4. A FULL SIZE EQUIPMENT GROUNDING CONDUCTOR SIZED FOR THE OVERCURRENT PROTECTIVE DEVICE PROTECTING THE CIRCUIT IS REQUIRED IN EACH RACEWAY OR CABLE FOR PARALLELED CIRCUITS.
5. CONTRACTOR SHALL DOCUMENT FEEDER CONDUCTOR AND CONDUIT LENGTHS ON FIELD REDLINE SET.
6. FIELD MARK SERVICE EQUIPMENT WITH AVAILABLE FAULT CURRENT AND CALCULATION DATE PER NEC 110.24(A).

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ELECTRICAL ONE-LINE DIAGRAM

E601

PANEL PE9 | **TYPE** SQ D HOM | 1 Ø | 3 WIRE | 120/240 VOLTS

	NEW
X	EXISTING
3R	NEMA RATING
	BOLT ON BREAKERS
	ISOLATED GROUND BUS
	SURGE PROTECT (SPD)

REMARKS
-*=RELOCATE BREAKER IN EXISTING PANEL
-**CHRSTMAS LIGHTING OUTLETS NON-COINCIDENT LOADING WITH EVENT OUTLETS
-+=PROVIDE NEW BREAKER IN EXISTING PANEL

LOCATION: METERING PEDESTAL

MOUNTING: [ ] FLUSH, [X] SURFACE

200 AMP MAIN; [X] LUGS; [ ] BREAKER

No.	BRKR A	BRKR P	CIRCUIT DESCRIPTION	L	O	M	WIRE/CND P	N	G	C	CIRC. LOAD	A	B	CIRC. LOAD	WIRE/CND P	N	G	C	L	O	M	CIRCUIT DESCRIPTION	BRKR A	BRKR P	No.
1	70	2	SPARE									625		625	8	8	10	1	5			LTG: CNTR STR SOUTH	40	2	2
3	-	-	-										625	625	8				5			-	-	-	4
5	+20	1	PLUGS: CNTR STR NWW**		2		6	6	6	1	1200	1625		625	8	8	10	1				LTG: CNTR STR NORTH	40	2	6
7	+20	1	PLUGS: CNTR STR NW CNTR**		3		8	8	8	1	1800		2425	625	8							-	-	-	8
9	+20	1	PLUGS: CNTR N CROSSWALK W**		3		10	10	10	3/4S	1800	1800										SPACE	20	1	10
11	+20	1	PLUGS: CNTR N CROSSWALK E**		3		10	10	10	3/4S	1800		1800									SPACE	20	1	12
13	+20	1	PLUGS: CNTR STR NE CNTR**		3		6	6	6	1	1800	1800										SPACE	20	1	14
15	+20	1	PLUGS: CNTR STR NEE**		2		6	6	6	1	1200		1200		EX	EX	EX	EX				EX: ??*	40*	1	16
17	+20	1	PLUGS: CNTR STR SEE**		1		4	4	4	1.25	600	600			EX	EX	EX	EX				EX: ??	20	1	18
19	+20	1	PLUGS: CNTR S CROSSWALK**		3		8	8	8	1	1800		1800		EX	EX	EX	EX				EX: ??	20	1	20
21	+20	1	PLUGS: CNTR STR SW**		3		8	8	8	1	1800	1800										SPACE	20	1	22
23	+20	1	PLUGS: CNTR STR SW CNTR**		2		6	6	6	1	1200		1200									SPACE	20	1	24
25	+20	1	PLUGS: CNTR STR SWW**		2		6	6	6	1	1200	1200										SPACE	20	1	26
27	+20	1	ARCH SIGN		1		8	8	8	1	1200		1200									SPACE	20	1	28
29	+20	1	ARCH SIGN		1		8	8	8	1	1200	5400		4200	6	6	10	1.25			1	EVENT OUTLET 1: N PLNTR	+50G	2	30
31	+20	1	ARCH SIGN		1		8	8	8	1	1200		5400	4200	6						1	-	-	-	32
33	20	1	SPACE									4200		4200	4	4	8	1.25			1	EVENT OUTLET 1: S PLNTR	+50G	2	34
35	+20	1	IRRIGATION CONTROLLER			1	12S	12S	12S	3/4S	240		4440	4200	4						1	-	-	-	36
											TOTALS	19250	20090												

AIC 10000
SCCR 10000
PARALLEL RUNS SEE ONE-LINE

FEEDER SEE ONE-LINE

AMPS/PHASE 160 167

BREAKER CODES
A=ARC-FAULT; G=GROUND FAULT; H=HACR; L=LOCKING HANDLE; S=SHUNT TRIP; R=RED PAINTED HANDLE
WIRE CODES
I=ADD'L ISO GROUND TO MATCH SAFETY GROUND; S=UNLESS OTHERWISE SPECIFIED
GENERAL CODES
1LIN=SEE ONE-LINE DIAGRAM

PANEL PE10 | **TYPE** SQ D HOM | 1 Ø | 3 WIRE | 120/240 VOLTS

X	NEW
	EXISTING
3R	NEMA RATING
	BOLT ON BREAKERS
	ISOLATED GROUND BUS
	SURGE PROTECT (SPD)

REMARKS

LOCATION: METERING PEDESTAL

MOUNTING: [ ] FLUSH, [X] SURFACE

100 AMP MAIN; [ ] LUGS; [X] BREAKER

No.	BRKR A	BRKR P	CIRCUIT DESCRIPTION	L	O	M	WIRE/CND P	N	G	C	CIRC. LOAD	A	B	CIRC. LOAD	WIRE/CND P	N	G	C	L	O	M	CIRCUIT DESCRIPTION	BRKR A	BRKR P	No.
1	20	1	SIGNAL CONTROL			1	10	10	10	3/4S	1500	1500										SPACE	20	1	2
3	20	1	SIGNAL LIGHTS	4			12S	12S	12S	3/4S	1000		1000									SPACE	20	1	4
5	20	1	SPACE									0										SPACE	20	1	6
7	20	1	SPACE										0									SPACE	20	1	8
9	20	1	SPACE									0										SPACE	20	1	10
11	20	1	SPACE										0									SPACE	20	1	12
13	20	1	SPACE									0										SPACE	20	1	14
15	20	1	SPACE										0									SPACE	20	1	16
17	20	1	SPACE									0										SPACE	20	1	18
19	20	1	SPACE										0									SPACE	20	1	20
21	20	1	SPACE									0										SPACE	20	1	22
23	20	1	SPACE										0									SPACE	20	1	24
25	20	1	SPACE									0										SPACE	20	1	26
27	20	1	SPACE										0									SPACE	20	1	28
29	20	1	SPACE									0										SPACE	20	1	30
31	20	1	SPACE										0									SPACE	20	1	32
33	20	1	SPACE									0										SPACE	20	1	34
35	20	1	SPACE										0									SPACE	20	1	36
											TOTALS	1500	1000												

AIC 10000
SCCR 10000
PARALLEL RUNS SEE ONE-LINE

FEEDER SEE ONE-LINE

AMPS/PHASE 13 8

BREAKER CODES
A=ARC-FAULT; G=GROUND FAULT; H=HACR; L=LOCKING HANDLE; S=SHUNT TRIP; R=RED PAINTED HANDLE
WIRE CODES
I=ADD'L ISO GROUND TO MATCH SAFETY GROUND; S=UNLESS OTHERWISE SPECIFIED
GENERAL CODES
1LIN=SEE ONE-LINE DIAGRAM

PLEASE NOTE!
THESE DRAWINGS ARE PRINTED 1:2 ON 11x17 SHEETS(HALF-SIZE) FROM THE ORIGINAL DRAWINGS, AT THE REQUEST OF THE CLIENT.

SINE SOURCE ENGINEERING
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CONSULTANTS

REGISTERED PROFESSIONAL ENGINEER
No. 284174
SHANE D. SWENSON
5/23/2019
STATE OF UTAH

CENTER STREET
MAIN STREET TO 100 WEST
LOGAN CITY
LOGAN, UTAH

MARK	DATE	DESCRIPTION

ISSUE: CONSTRUCTION DOCUMENTS
PROJECT NUMBER: 2019017
DATE: MAY 23, 2019
DESIGNED BY: SDS
DRAWN BY: DJP

ELECTRICAL SCHEDULES

E602

LEGEND

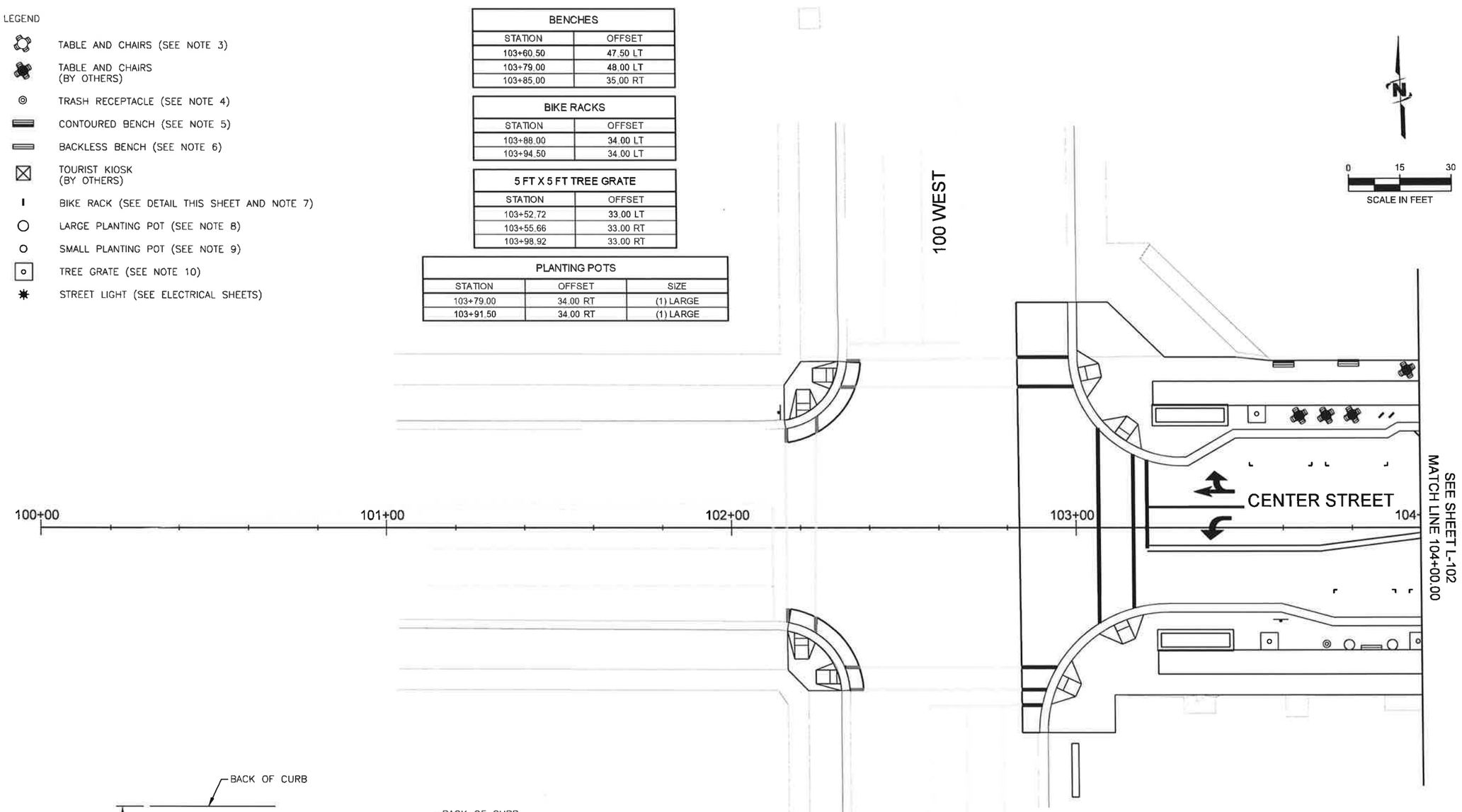
- TABLE AND CHAIRS (SEE NOTE 3)
- TABLE AND CHAIRS (BY OTHERS)
- TRASH RECEPTACLE (SEE NOTE 4)
- CONTOURED BENCH (SEE NOTE 5)
- BACKLESS BENCH (SEE NOTE 6)
- TOURIST KIOSK (BY OTHERS)
- BIKE RACK (SEE DETAIL THIS SHEET AND NOTE 7)
- LARGE PLANTING POT (SEE NOTE 8)
- SMALL PLANTING POT (SEE NOTE 9)
- TREE GRATE (SEE NOTE 10)
- STREET LIGHT (SEE ELECTRICAL SHEETS)

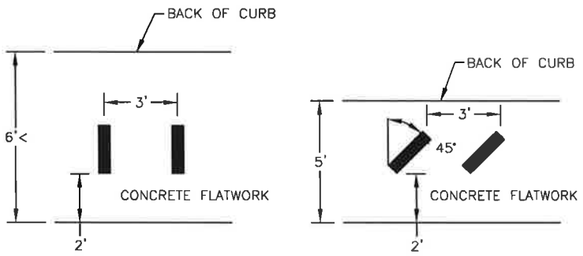
BENCHES	
STATION	OFFSET
103+60.50	47.50 LT
103+79.00	48.00 LT
103+85.00	35.00 RT

BIKE RACKS	
STATION	OFFSET
103+88.00	34.00 LT
103+94.50	34.00 LT

5 FT X 5 FT TREE GRATE	
STATION	OFFSET
103+52.72	33.00 LT
103+55.66	33.00 RT
103+98.92	33.00 RT

PLANTING POTS		
STATION	OFFSET	SIZE
103+79.00	34.00 RT	(1) LARGE
103+91.50	34.00 RT	(1) LARGE





BIKE RACK PLACEMENT

0 15 30
SCALE IN FEET

NOTES:
1. COORDINATE WITH LOGAN CITY FOR EXACT LOCATIONS OF THE BENCHES, BIKE RACKS, AND PLANTING POTS AFTER IDENTIFYING LOCATION IN THE FIELD.
2. BACKLESS BENCHES WILL BE IN THE PARK STRIPS. CONTOURED BENCHES WILL BE AGAINST THE BUILDINGS.
3. VICTOR STANLEY PRODUCTION SERIES ALL-STEEL CAFE CHAIR, MODEL NO. PRSCC-8. VICTOR STANLEY PRODUCTION SERIES ROUND CAFE TABLE, 42-IN, MODEL NO. PRSCT-42, COLOR BLACK WITH UMBRELLA HOLE, AND PERFORATED ROUND PATTERN TABLE TOP.
4. VICTOR STANLEY CONCOURSE SERIES 36-GALLON LITTER RECEPTACLE, MODEL NO. FC-12, COLOR BLACK WITH BLACK PLASTIC LINER AND BLACK STANDARD TAPERED FORMED LID.
5. VICTOR STANLEY CITY SITES SERIES CONTOURED BENCH, MODEL NO. CBF-12, 6-FT, COLOR BLACK.
6. VICTOR STANLEY CITY SITES SERIES BACKLESS BENCE, MODEL NO. CBF-14, 6-FT, COLOR BLACK.
7. VICTOR STANLEY PERENNE SERIES FREESIA BIKE RACK, MODEL NO. BFRE-101, COLOR BLACK, SURFACE MOUNT.
8. WAUSAU TILE 36-IN DIAMETER X 29 IN POT, PRODUCT TF4042, COLOR S21 ACID WASHED BUFF STAINED.
9. WAUSAU TILE 28-IN DIAMETER X 22-IN POT, PRODUCT TF4041, COLOR S21 ACID WASHED BUFF STAINED.
10. IRONSMITH CAST IRON DEL SOL GRATE AND IRONSMITH FRAME.

J-U-B ENGINEERS, INC.
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PROFESSIONAL ENGINEER
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

LANDSCAPE AMENITIES

FILE: 57-18-035_L-101
JUB PROJ. #:57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/3/2019

SHEET NUMBER:
L-101

Plot Date:— Plotted By: Samuel Powell
Date Created:11/6/2019 \\LOGANPUBLIC\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET_LANDSCAPE\57-18-035_L-101.DGN

LEGEND

- TABLE AND CHAIRS (SEE NOTE 3)
- TABLE AND CHAIRS (BY OTHERS)
- TRASH RECEPTACLE (SEE NOTE 4)
- CONTOURED BENCH (SEE NOTE 5)
- BACKLESS BENCH (SEE NOTE 6)
- TOURIST KIOSK (BY OTHERS)
- BIKE RACK (SEE L-101 AND NOTE 7)
- LARGE PLANTING POT (SEE NOTE 8)
- SMALL PLANTING POT (SEE NOTE 9)
- TREE GRATE (SEE NOTE 10)
- STREET LIGHT (SEE ELECTRICAL SHEETS)

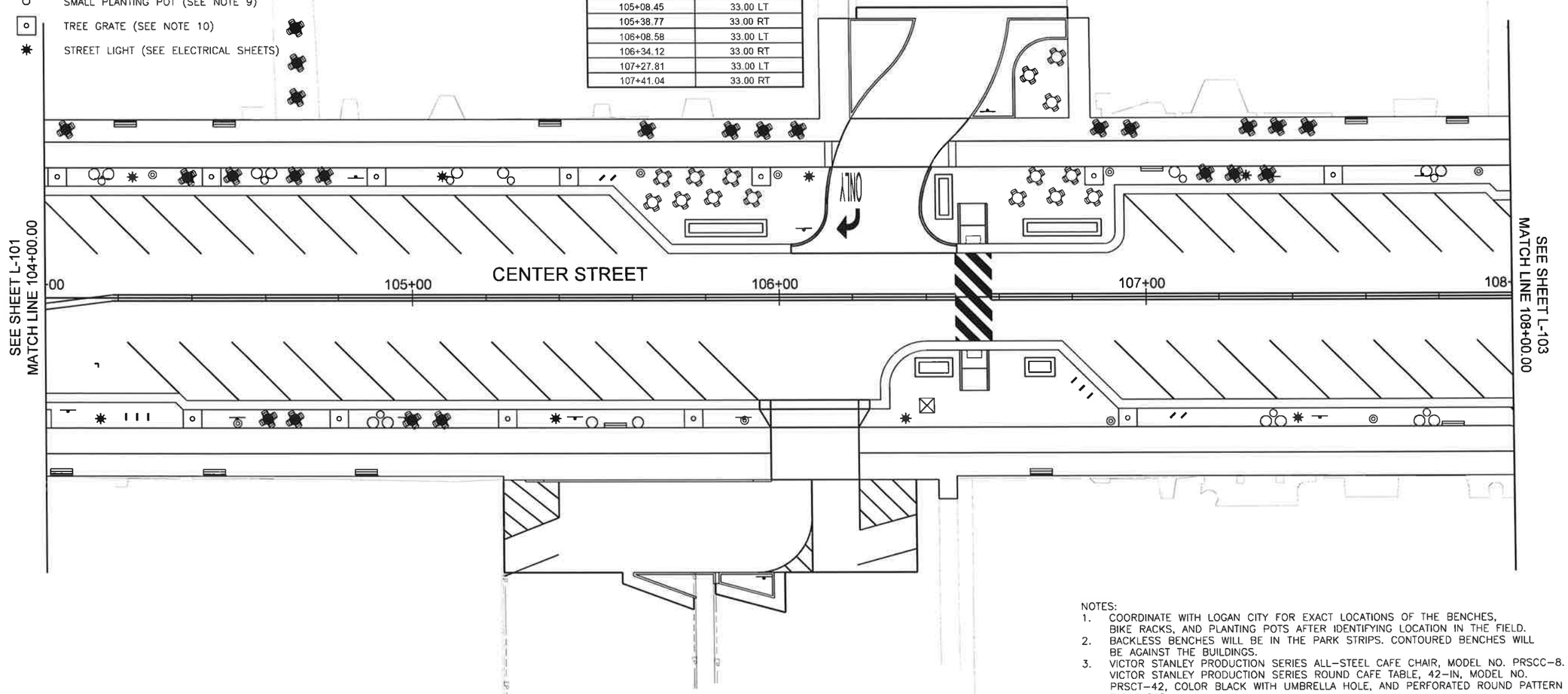
BENCHES	
STATION	OFFSET
104+04.00	47.00 RT
104+26.00	47.50 LT
104+46.00	47.00 RT
104+59.00	47.50 LT
104+87.00	47.50 RT
105+38.00	47.50 LT
105+55.00	35.00 RT
106+71.00	47.50 RT
107+02.00	35.00 LT
107+58.00	47.60 LT
107+83.50	35.00 RT
107+86.00	47.50 LT

BIKE RACKS	
STATION	OFFSET
104+22.50	33.00 RT
104+27.50	33.00 RT
105+51.00	33.00 LT
105+56.00	33.00 LT
106+78.00	23.00 RT
106+81.00	26.00 RT
106+84.00	29.00 RT
107+06.00	33.00 RT
107+11.00	33.00 RT

STREET LIGHTS	
STATION	OFFSET
104+15.00	33.00 RT
104+24.29	33.00 LT
105+08.45	33.00 LT
105+38.77	33.00 RT
106+08.58	33.00 LT
106+34.12	33.00 RT
107+27.81	33.00 LT
107+41.04	33.00 RT

5 FT X 5 FT TREE GRATE	
STATION	OFFSET
104+03.53	33.00 LT
104+39.91	33.00 RT
104+45.60	33.00 LT
104+79.97	33.00 RT
104+90.58	33.00 LT
105+25.65	33.00 RT
105+42.98	33.00 LT
105+76.35	33.00 RT
105+95.46	33.00 LT
106+86.30	33.00 LT
106+94.61	33.00 RT
107+51.50	33.00 LT

PLANTING POTS		
STATION	OFFSET	SIZE
104+15.50	33.50 LT	(2) LARGE, (1) SMALL
104+60.00	34.00 LT	(2) LARGE, (1) SMALL
104+91.00	33.50 RT	(2) LARGE, (1) SMALL
105+11.50	33.00 LT	(1) LARGE, (1) SMALL
105+26.00	33.00 LT	(1) LARGE, (1) SMALL
105+48.50	34.00 RT	(1) LARGE
105+61.00	34.00 RT	(1) LARGE
107+09.50	33.00 LT	(1) LARGE, (1) SMALL
107+34.50	34.00 RT	(2) LARGE, (1) SMALL
107+76.00	34.00 RT	(2) LARGE, (1) SMALL
107+79.00	34.00 LT	(2) LARGE, (1) SMALL



0 15 30
SCALE IN FEET

NOTES:
1. COORDINATE WITH LOGAN CITY FOR EXACT LOCATIONS OF THE BENCHES, BIKE RACKS, AND PLANTING POTS AFTER IDENTIFYING LOCATION IN THE FIELD.
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www.jub.com

PROFESSIONAL ENGINEER — JONATHAN D. BUDGE — 8203769-2202 — STATE OF UTAH

NO.	DESCRIPTION	BY	APPR.	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

LANDSCAPE AMENITIES

FILE:	57-18-035_L-102
JUB PROJ. #:	57-18-035
DRAWN BY:	JBW
DESIGN BY:	JDB
CHECKED BY:	JCP

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 5/29/2019

SHEET NUMBER:
L-102

Plot Date/— Plotted By: Samuel Powell
Date Created: 11/8/2018 \\LOGAN\PUBLIC\PROJECTS\JUBLOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET\LANDSCAPE\57-18-035_L-102.DGN

LEGEND

- TABLE AND CHAIRS (SEE NOTE 3)
- TABLE AND CHAIRS (BY OTHERS)
- TRASH RECEPTACLE (SEE NOTE 4)
- CONTOURED BENCH (SEE NOTE 5)
- BACKLESS BENCH (SEE NOTE 6)
- TOURIST KIOSK (BY OTHERS)
- BIKE RACK (SEE L-101 AND NOTE 7)
- LARGE PLANTING POT (SEE NOTE 8)
- SMALL PLANTING POT (SEE NOTE 9)
- TREE GRATE (SEE NOTE 10)
- STREET LIGHT (SEE ELECTRICAL SHEETS)

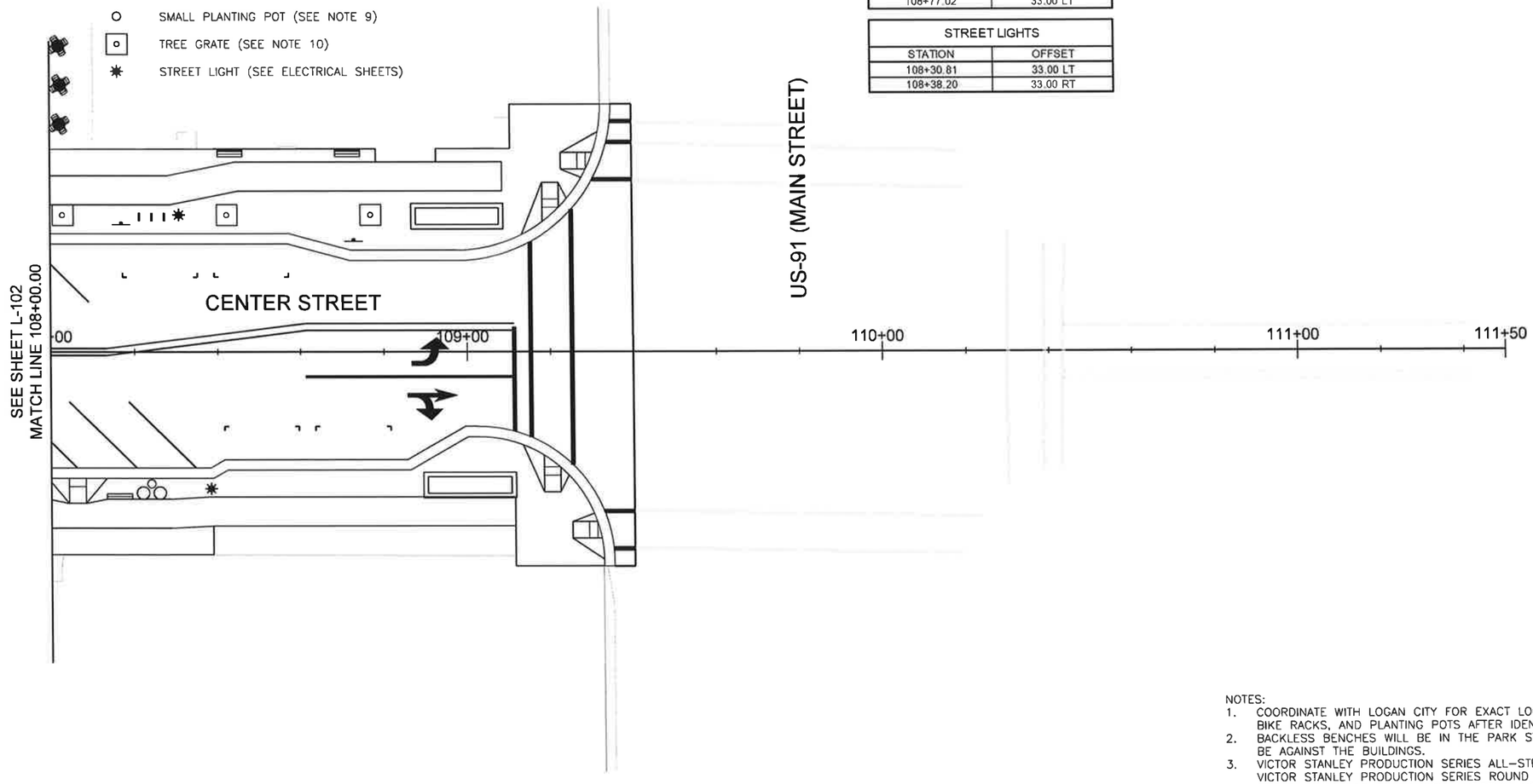
BENCHES	
STATION	OFFSET
108+16.00	35.00 RT
108+43.00	47.50 LT
108+71.00	47.50 LT

BIKE RACKS	
STATION	OFFSET
108+20.00	34.00 LT
108+26.00	34.00 LT

5 FT X 5 FT TREE GRATE	
STATION	OFFSET
108+03.12	33.00 LT
108+42.42	33.00 LT
108+77.02	33.00 LT

STREET LIGHTS	
STATION	OFFSET
108+30.81	33.00 LT
108+38.20	33.00 RT

PLANTING POTS		
STATION	OFFSET	SIZE
108+24.00	34.00 RT	(2) LARGE, (1) SMALL



N

0 15 30

SCALE IN FEET

NOTES:

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PROFESSIONAL ENGINEER
JONATHAN D. BUDGE
8203769-2202
STATE OF UTAH

NO.	DESCRIPTION	REVISION	BY	APP'I	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN CITY

LANDSCAPE AMENITIES

FILE: 57-18-035_L-103
JUB PROJ. #: 57-18-035
DRAWN BY: JBW
DESIGN BY: JDB
CHECKED BY: JCP
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/30/2019

SHEET NUMBER:
L-103

Plot Date: Plotted By:
Date Created: 11/7/2019 I:\LOGAN\PUBLIC\PROJECTS\J-U-B\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\SHEET_LANDSCAPE\57-18-035_L-103.DGN

IRRIGATION NOTES

1. The Contractor shall be familiar with the irrigation technical specifications for this project. Failure to do so shall not relieve him of meeting all of the requirements contained therein.

2. The irrigation plan is diagrammatic in nature, and some drafting liberties have been taken to maintain the graphic clarity of the drawings. All irrigation equipment shall be located in planting areas only, unless noted otherwise. The Contractor shall install piping to minimize changes in direction, avoid placement under large trees or large shrubs, and avoid placement under hardscape features. Refer to the irrigation equipment schedule, installation details, and specifications for equipment and its proper installation.

3. The Contractor shall use only the equipment and products specified in the construction drawings. No substitution of materials will be allowed on the irrigation system without prior authorization from the Landscape Architect and the Owner.

4. The Contractor shall visit and inspect the project site. He shall take into consideration known and reasonably inferable conditions affecting the proposed work. Failure to visit the site shall not relieve the Contractor of furnishing materials and performing the work required. Any discrepancies between existing site conditions and those indicated on the plans shall be called to the attention of the Landscape Architect prior to continuance of the project.

5. If the water point of connection is located other than as shown on the drawings, or if the water pressure is different than indicated on the plans, or appears to be unusually high or low, the Contractor shall immediately notify the Landscape Architect prior to proceeding with any irrigation work.

6. The Contractor shall keep the premises clean and free of excess equipment, materials, and rubbish incidental to work of this project. Work areas shall be swept clean and trash and debris picked up daily. Open trenches or hazards shall be protected with yellow caution tape. The Contractor is responsible for removal and legal disposal (offsite) of trash and debris generated by his work on this project.

7. Pipe fittings shall conform to the following standards unless otherwise noted:
   A. All main line fittings four (4) inches or larger shall be push-on, gasketed, and constructed of ductile iron material.
   B. All main line fittings three (3) inches and smaller shall be solvent weld Schedule 80 PVC.
   C. M.J. tees, Schedule 80 tees with SxT Schedule 80 bushings, or Harco ductile iron service tees are approved on PVC main lines for automatic control valve installation. M.J. fittings shall be greased and wrapped.
   D. All lateral line fittings shall be solvent weld Schedule 40 PVC.
   E. All risers and exposed fittings shall be solvent weld Schedule 80 PVC, including conversions to metal pipe and fixtures, unless otherwise noted on the plans.
   F. All main line fittings four (4) inches and larger, whether ductile iron or solvent weld, shall be thrust blocked.

8. Backflow prevention devices shall be a reduced pressure principle backflow preventer consisting of a pressure differential relief valve located between two independently operated spring-loaded "Y" type center guided check valves. Assembly shall also have two full port resilient seated ball valves for shut-off and four resilient seated ball valve test cocks and bronze body construction. Larger sizes (2 ½" and up) may have two non-rising stem resilient wedge gate valves in lieu of ball valves. Backflow preventer shall be as specified in the Irrigation Equipment Schedule.

9. Irrigation wire shall conform to the following:
   A. All irrigation control wire (hereafter referred to as 2-wire) from the controller to the field devices must be Polyethylene double-jacketed or UF-B UL PVC double-jacketed two-conductor solid core designed for direct burial systems. The following is recommended:
      i. All 2-wire shall be soft drawn, annealed, solid copper conforming to ASTM 33. Conductor insulation must be 4/64-inch thick PVC, conforming to UL Standard #493 for thermoplastic-insulated style UF (Underground Feeder), rated at 60 degrees C.
      ii. The two insulated conductors are laid in parallel and encased in a single outer jacket of 3/64-inch thick, high density, sunlight resistant polyethylene conforming to ICEA S-61-402 and NEMA WC5, having a minimum wall thickness of 0.045-inch.
      iii. The two conductors must be color-coded: normally one conductor red and one black. Both conductors shall be the same size: 14 AWG.
   B. All wire crossing water, attached to bridges, going under paving, or where conditions require protection, shall be housed in conduit or sleeves. All out-of-ground conduits shall be rigid metal. All buried conduit may be PVC. In areas where rodents are a known issue, all wire shall be placed in a conduit.
   C. All splices shall be water-tight. All connections made inside the box to connect the 2-wire to the valve shall be made using a dry-splice connector DBR/Y. Each connector shall be completely sealed and water-proof.
   D. All other splices in 2-wire wire shall be housed in a separate round valve box and use DBR/Y connectors.
   E. Lightning arrestors and eight (8) foot long by 5/8-inch diameter copper ground rods shall be used as recommended by the controller manufacturer, and be installed per manufacturer recommendations and installation details of this project. Attach bare copper wire to ground rods using Cadweld™ type connection and install in eight (8) inch round valve box.
   F. No aluminum wire shall be used on this project.

10. Run a single fourteen (14) gauge wire along the top of the main line to be used for tracking the location of the main line. Every twenty (20) feet there shall be a twenty four (24) inch loop. The color of the tracing wire shall be different than any other wire color used.

11. All pressure main lines shall have between twenty (20) and thirty (30) inches of cover, while all lateral lines shall have between twelve (12) and fourteen (14) inches of cover. Trench bedding and backfill material shall consist of existing site soil free of rocks larger than one (1) inch in diameter and any other debris. Wasted pipe and other excess project materials or rubbish (tape, wire, trash, wrappers, boxes, plastic or glass bottles, etc.) shall not be backfilled into the trenches. All trenches shall be backfilled, and then watered sufficiently to insure no settling of the surface. In the event of any backfill settlement prior to the end of the guarantee period, the Contractor shall perform all required repairs at his own expense.

12. Check valves shall be used where indicated and where necessary to prevent water flow from lower elevation heads when the irrigation system is turned off.

13. All control valves shall be located within shrub areas where possible and installed per the details shown on the plans. Each control valve shall have its own separate shut-off valve. The bottom of the remote control valve shall be a minimum of four (4) inches above the gravel. Isolation gate valves on the main line shall be located in separate valve boxes.

14. All main lines and lateral lines shall be sleeved where they pass under any paved areas. The size of the sleeve shall be twice the size of the pipe being sleeved, unless otherwise specified on the drawings.

15. The automatic controller shall be of the type and manufacturer specified, and located as shown on the plans. The Contractor shall be responsible for providing 120 volt electrical service to the controller. Coordinate this work with other trades on this project.

16. Prior to backfilling any trenches or irrigation lines:
   A. All main lines shall be capped and pressure tested at 120 psi for a period of 4 hours. Any leaks found shall be corrected by removing the leaking pipe or fittings and installing new material in its place. Repeat the pressure test to insure the absence of leaks.
   B. The Contractor shall not allow nor cause any of his work to be covered until it has been inspected, tested, and approved by the Landscape Architect.
   C. Where a main line has been allowed to sit in the trench uncovered for any length of time prior to testing, the line may be shaded with a thin layer of soil to minimize weather related expansion or contraction of the pipe.

17. The Contractor shall adjust all irrigation heads to provide an even coverage and to keep spray off of buildings, walkways, and paved surfaces.

18. When the sprinkler system has been completed, the Contractor shall, in the presence of the Landscape Architec or Owner's Representativet, conduct a coverage test of the water afforded to the planting areas to insure that it is consistent and uniform. The Contractor shall provide, at his own expense, all materials and labor necessary to correct any deficiencies or inadequacies discovered during the coverage test.

19. The Contractor shall keep on site a current and accurate as-built record of his work. It shall include exact dimensioned locations, grades, elevations, and the size of all exterior and interior underground piping, valves, and drains. Dimensions shall indicate distances from columns, buildings, curbs, and similar permanent features on the site. This information shall be recorded on a print as the work progresses, but shall be permanently recorded on a reproducible, two (2) mil Mylar or Tyvek original which shall be given to the Owner before the project is accepted.

20. The irrigation contractor shall maintain the system for the duration of the contract period, including the maintenance period.

21. Upon final acceptance of the sprinkler irrigation system as being operational and properly installed, the Contractor shall guarantee the workmanship, materials, fixtures, and equipment to be free from defects for a period of one (1) year after that date.

22. Inline Drippers
   A. Inline drip tubing shall be spaced approximately equal to the inline emitter spacing.
   B. All drip tubing shall be held in place by soil staples and shall conform to the following:
      i. Sandy Soil - One staple per every three (3) feet and two (2) staples on each change of direction (tee, elbow, or cross)
      ii. Loam Soil - One staple every four (4) feet and two (2) staples on each change of direction (tee, elbow, or cross)
      iii. Clay Soil - One staple every five (5) feet and two (2) staples on each change of direction (tee, elbow, or cross)
   C. Installation of inline drip circuits shall generally conform to the following steps:
      i. Assemble and install ball valve, filter, remote control valve, and inline pressure regulator (if needed) assembly in accordance with installation details.
      ii. Assemble and install supply header(s) in accordance with installation details. Tape or plug all open connections to prevent debris contamination.
      iii. Install lateral drip lines in accordance with details and relevant specifications and manufacturer's recommendations. Tape or plug all open ends while installing to prevent debris contamination.
      iv. Assemble and install exhaust header(s) in accordance with installation details. Tape or plug all open connections to prevent debris contamination.
      v. Install air/vacuum relief valve(s) at the zone's highest point(s) in accordance with installation details.
      vi. Thoroughly flush supply header(s) and connect drip lateral lines while flushing.
      vii. Thoroughly flush drip lateral lines and connect to exhaust header(s) and any interconnecting lateral lines while flushing.
      viii. Thoroughly flush exhaust header(s) and install line flushing valves in accordance with details.

Plot Date:6/4/2019 7:39 AM Plotted By: Andy Quebbeman
Date Created:5/28/2019 F:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODEL\SHEET\LANDSCAPE\57-18-035_LI-101X.DWG

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Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

STATE OF UTAH
GREGORY GRAVES
104416
LICENSED LANDSCAPE ARCHITECT

REVISION

NO.	DESCRIPTION	BY	APPR.	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

IRRIGATION NOTES

FILE : 57-18-035_LI-101X
JUB PROJ. # : 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/28/2019

SHEET NUMBER:
LI-001

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
H	Drip Control Valve Assembly Rain Bird XCZ-100-PRB-COM - Wide Flow Drip Control Kit for Commercial Applications. 1" Ball Valve with 1" PESB Valve and 1" Pressure Regulating 40psi Quick-Check Basket Filter. 0.3gpm to 20gpm.
	Tree Grate Drip Assembly Rain Bird XFCV-06-12 - XFCV On-Surface Landscape Dripline with a Heavy-Duty 3.5 psi Check Valve, 0.6 GPH emitters at 12" O.C. Use Rain Bird XF insert fittings. See Irrigation details for assembly.
	Area to Receive Dripline Planting Bed Dripline Rain Bird XFCV-06-12 - XFCV On-Surface Landscape Dripline with a Heavy-Duty 3.5 psi Check Valve, 0.6 GPH emitters at 12" O.C. Dripline laterals spaced at 12" apart, with emitters offset for triangular pattern. Use Rain Bird XF insert fittings.

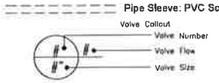
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Quick Coupler Assembly Rain Bird 3RC 3/4" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Locking Thermoplastic Rubber Cover, and 1-Piece Body. Furnish with 33DK valve key, SHO hose swivel, and hose bib.
	Isolation Gate Valve Assembly (line size) Leemco LMV-BB, gate shut off valve with square opperating nut, same size as mainline pipe diameter at valve location. Use thrust restraining devices per manufacturer's recommendations.
M	Master Valve - Hydrometer 2" Netafim LHM15EM11AAFMEL Globe Flanged. Cast Iron Electric Master Valve, with Globe Flanged Connection, Pressure Reducing, Pressure Sustaining, Flow Sensing, Quick Relief, and Pump Control 1 1/2". Digital (ER) Register
M2	Master Vavle 1-1/2" Rain Bird PEB, Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration.
D	Manual Drain Valve Assembly Apollo Bronze ball valve with weld top (78-621-01) 3/4" (Place as needed in low points on main line)
BF	Reduced Pressure Backflow Assembly 3/4" Zurn 375S Reduced Pressure Principle Assembly. Size 3/4", Install backflow device in an aluminum Strong Box SBBC series, or approved equal. Size enclosure to fit specified backflow device with appropriate and specified clearances on all sides of device.
C	Pedestal Mounted Controller Rain Bird ESP-LXD-LXMMPED with ETC-LX ET Manager Cartridge. Flow sensing Two-Wire Decoder Commercial Controller. 50 Stations. UV-Resistant, Outdoor-Rated, Powder-Coated Metal Pedestal Case.
D1	4 Valve Field Decoder Rain Bird FD-401TURF Field Decoder for Two-Wire system. Install in valve box for valve. Operates up to four valve/solenoids. Use line surge protection as per manufacturer's directions.
DS	Sensor Decoder Rain Bird SD-210TURF. Sensor Decoder interfacing signal line and analog or digital decoders. Verify compatibility settings with Netafim Hydrometer Master Valve and Flow Sensor.
D1	Single Valve Field Decoder Rain Bird FD-101TURF (2). Field Decoder for Two-Wire system. Install in valve box for valve. Operates one valve/solenoid. Use line surge protection as per manufacturer's directions.
FS	1" Flow Sensor Rain Bird FS-100-P for use with ESP-LXD Central Control Systems. Plastic (PVC) Model. Suggested Operating Range of 5.4 GPM to 53.9 GPM.
A	Concrete Irrigation Box - Rectangle Oldcastle Enclosure Solutions FL36 - Fiberlyte composite enclosure 17"x30", or approved equal. Install per manufacturer recomendation. Rectangle Concrete Valve Box to be used for all control valves placed in concrete. Maximum of 2 control valves per irrigation box. (Approximate loctions shown on Sheets LI-101 - LI-102).
B	Concrete Irrigation Box - Round Oldcastle Enclosure Solutions FL08 - Fiberlyte composite enclosure 9" round, or approved equal. Install per manufacturer recomendation. Round Concrete Valve Box to be used for all quick couplers, drain valves, and isolation gate valves placed in concrete. Maximum. (Approximate loctions shown on Sheets LI-101 - LI-102).
C	Standard Plastic Irrigation Box Standard Rain Bird VB Series Valve Boxes, or approved equal. (Approximate loctions shown on Sheets LI-101 - LI-102).
POC	Point of Connection 2" City water meter. See Civil plans for location.

Irrigation Lateral Line: PVC Schedule 40

Irrigation Mainline: PVC Schedule 40

Pipe Sleeve: PVC Schedule 40

Valve Callout



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www.jub.com

STATE OF UTAH
GREGORY C. GRAVES
104416
REG. LANDSCAPE ARCHITECT

NO.	DESCRIPTION	BY	APP.	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

IRRIGATION SCHEDULE

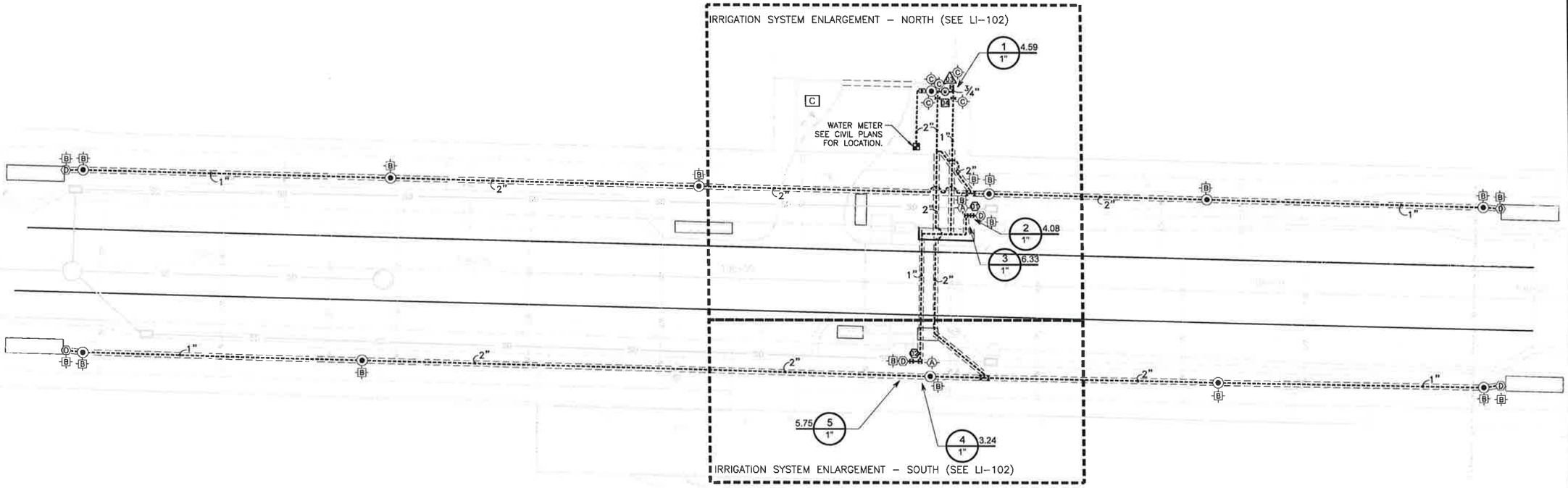
FILE: 57-18-035_LI-101X
JUB PROJ. #: 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 5/28/2019

SHEET NUMBER:
LI-002

Plot Date:6/4/2019 7:39 AM Plotted By: Andy Quickbomen
Last Created:5/29/2019 P:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODELSHEETS\LANDSCAPE\57-18-035_LI-101X.DWG



NOTE:

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2. THE IRRIGATION PLAN IS DIAGRAMMATIC IN NATURE, AND SOME DRAFTING LIBERTIES HAVE BEEN TAKEN TO MAINTAIN THE GRAPHIC CLARITY OF THE DRAWINGS. ALL IRRIGATION EQUIPMENT SHALL BE LOCATED IN PLANTING AREAS ONLY. UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL INSTALL PIPING TO MINIMIZE CHANGES IN DIRECTION, AVOID PLACEMENT UNDER LARGE TREES OR SHRUBS, AND AVOID PLACEMENT UNDER HARDSCAPE FEATURES. REFER TO THE IRRIGATION EQUIPMENT SCHEDULE, INSTALLATION DETAILS, AND SPECIFICATIONS FOR EQUIPMENT AND ITS PROPER INSTALLATION.
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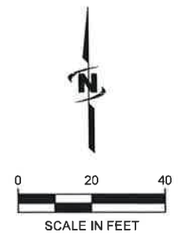

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STATE OF UTAH
GREGORY C. DAVIS
104416
LICENSED LANDSCAPE ARCHITECT

NO.	DESCRIPTION	BY	APP'I	DATE
	REVISION			

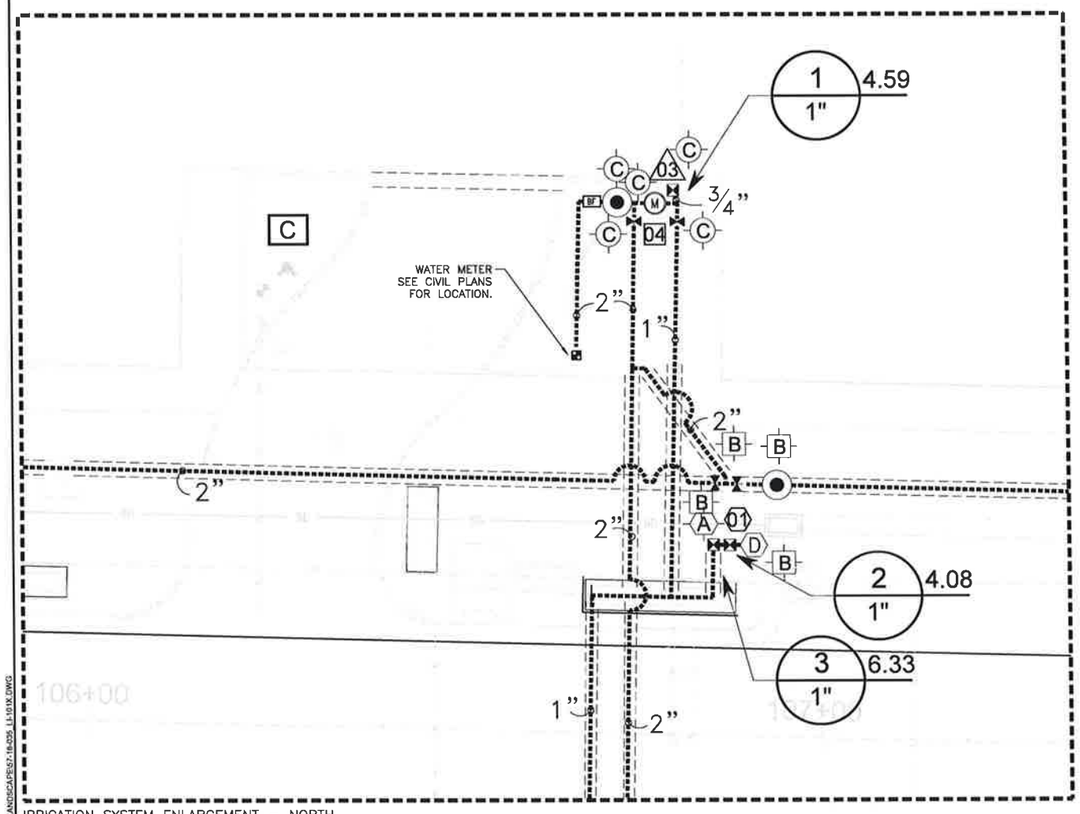
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

IRRIGATION PLAN - MAIN LINE LAYOUT

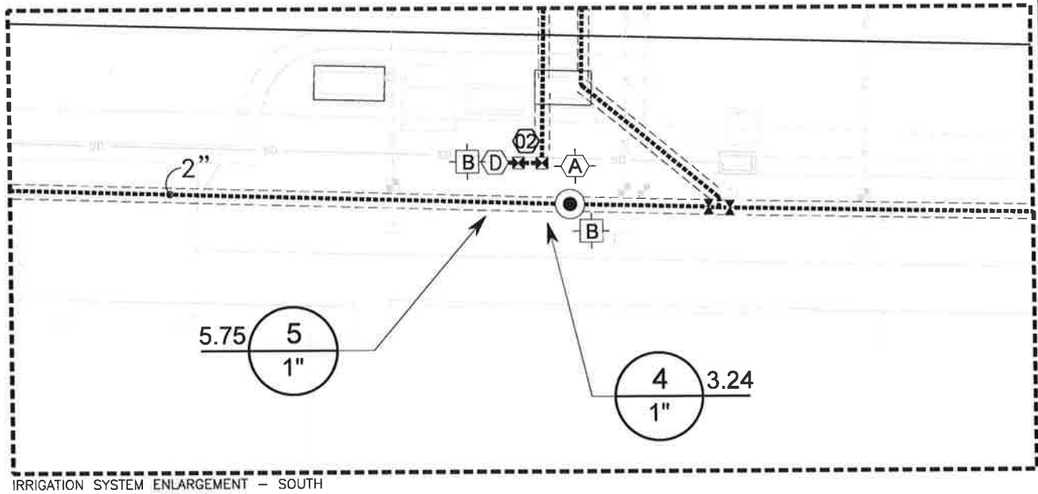
FILE: 57-18-035_LI-101X
JUB PROJ. # : 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/28/2019

SHEET NUMBER:
LI-101

Plot Date:6/4/2019 7:39 AM Plotted By: Andy Quekbenan
Date Created:5/28/2019 F:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODEL\SHEETS\LANDSCAPE\57-18-035_LI-101X.DWG



IRRIGATION SYSTEM ENLARGEMENT – NORTH



IRRIGATION SYSTEM ENLARGEMENT – SOUTH

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SCALE IN FEET

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NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

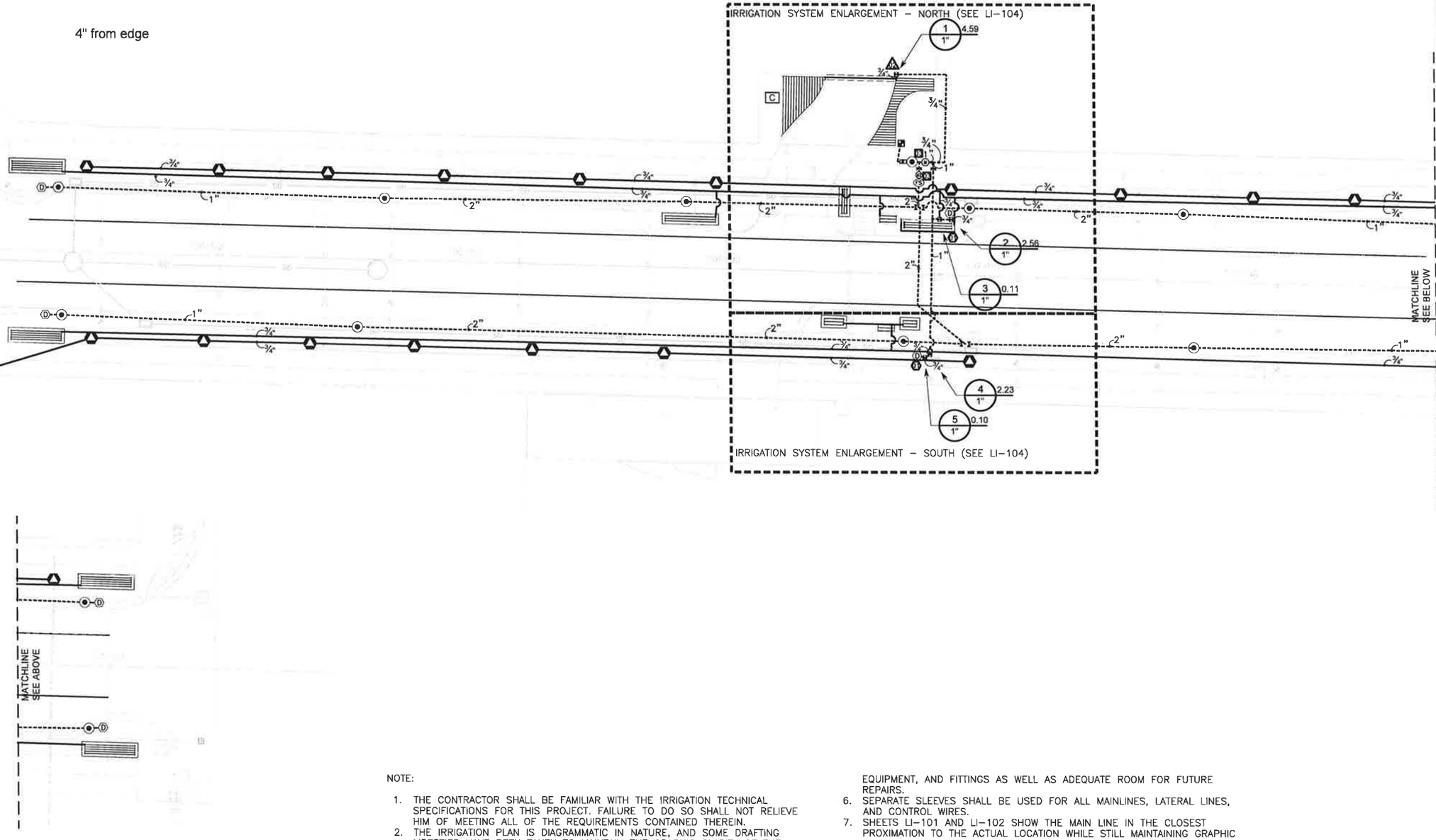
IRRIGATION PLAN - MAIN LINE LAYOUT

FILE: 57-18-035_LI-101X
JUB PROJ. #: 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/29/2019

SHEET NUMBER:
LI-102

Plot Date:8/4/2019 7:39 AM Plotted By: Andy Quibbeman
Date Created:2/26/2019 P:\PROJECTS\J-U-B\LOGAN\57-18-035 LOGAN, CENTER STREET\CAD\MODELS\SHEETS\LANDSCAPE\57-18-035_LI-101X.DWG

4" from edge



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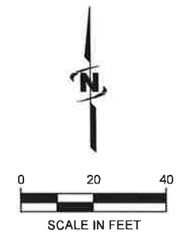

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STATE OF UTAH
GREGORY H. DAVIES
104416
REGISTERED LANDSCAPE ARCHITECT

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

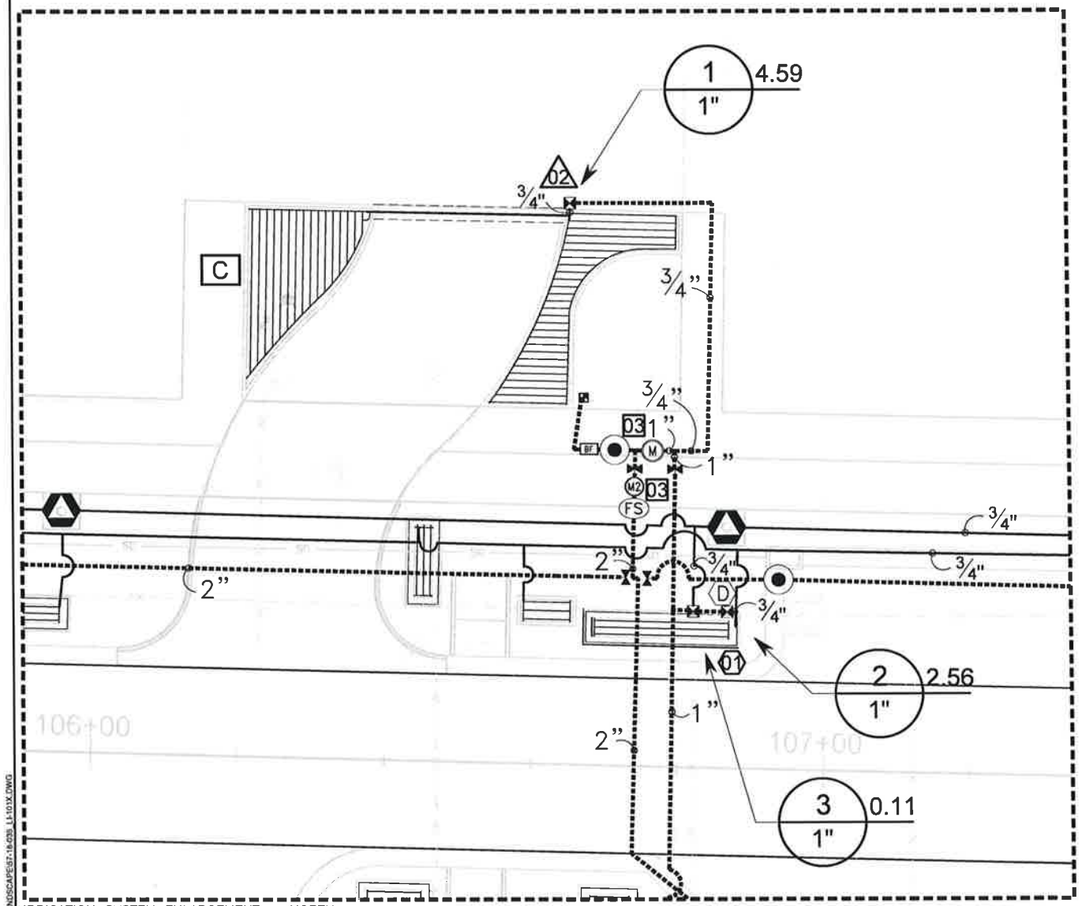
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

IRRIGATION PLAN

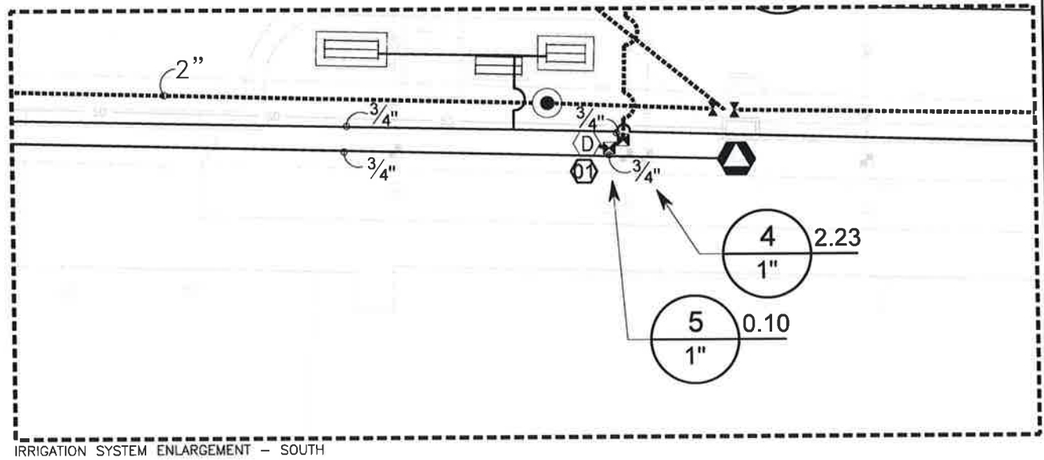
FILE: 57-18-035_LI-101X
JUB PROJ. # 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/28/2019

SHEET NUMBER:
LI-103

Plot Date:6/4/2019 7:39 AM Plotted By: Andy Quebbeman
Date Created:5/28/2019 F:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODELSHEET\LANDSCAPE\57-18-035_LI-101X.DWG



IRRIGATION SYSTEM ENLARGEMENT – NORTH



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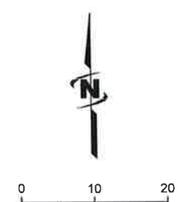

SCALE IN FEET

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NO	DESCRIPTION	BY	APP'D	DATE
	REVISION			

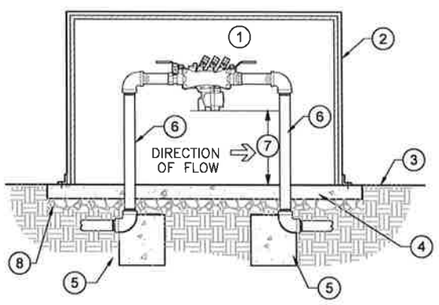
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

IRRIGATION PLAN

FILE: 57-18-035_LI-101X
JUB PROJ. #: 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/28/2019

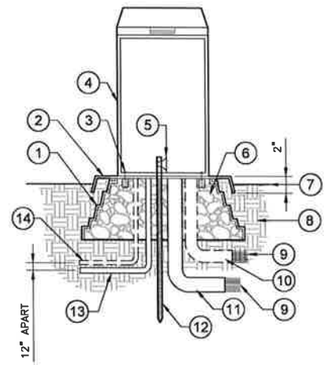
SHEET NUMBER:
LI-104

Plot Date:5/4/2019 7:39 AM Plotted By: Andy Quickerman
Date Created:5/28/2019 F:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODEL\SHEET\LANDSCAPE\57-18-035_LI-101X.DWG



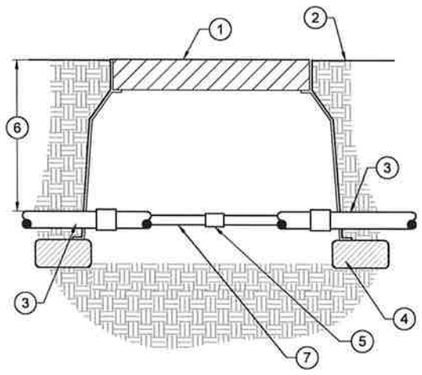
1. REDUCED PRESSURE BACKFLOW PREVENTION DEVICE WITH TWO (2) BALL VALVES – SEE IRRIGATION EQUIPMENT SCHEDULE FOR TYPE AND SIZE
2. BACKFLOW ENCLOSURE – SEE IRRIGATION EQUIPMENT SCHEDULE (INSTALL PER MANUFACTURER'S SPECIFICATIONS)
3. FINISHED GRADE
4. 4" THICK CONCRETE PAD (SIZE AS REQUIRED, EXTEND 6" BEYOND OUTSIDE DIMENSIONS OF ENCLOSURE)
5. CONCRETE THRUST BLOCK
6. THREADED GALVANIZED SPOOL (TYP.) – SIZE AND LENGTH AS REQUIRED
7. 12" MIN. 30" MAX.
8. 4" MIN. DEPTH ROAD BASE COMPACTED TO 95% MDD

1 REDUCED PRESSURE BACKFLOW ASSEMBLY
NTS



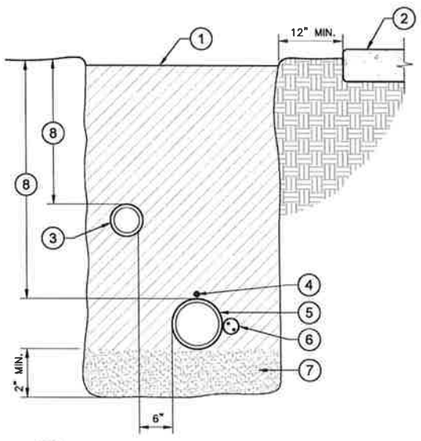
1. PRE–FORMED SUPPORT BASE
2. QUICKPAD 3/16" MIN. THICKNESS ALUMINUM POWDER COATED PREFORMED PAD
3. (2) QUICKPAD FASTENING BRACKET
4. CONTROLLER AND CONTROLLER ENCLOSURE – SEE IRRIGATION EQUIPMENT SCHEDULE
5. CADWELD CLAMP CONNECTED TO CONTROLLER GROUND WIRE
6. FILL INSIDE BASE WITH PEA GRAVEL
7. FINISHED GRADE
8. SUBGRADE COMPACTED TO 90% MDD
9. DIRECT BURIAL CONTROL WIRES TO CONTROL VALVES
10. PVC SWEEP ELL STATIONS 25–48 (IF APPLICABLE)
11. PVC SWEEP ELL STATIONS 1–24
12. 5/8" X 8' COPPER CLAD GROUND ROD, INSTALL GROUNDING PER MANUFATURES RECOMMENDATIONS.
13. 110 – VOLT SERVICE IN CONDUIT
14. EV–CAB–COM CABLE 1" CONDUIT (IF APPLICABLE)

2 PEDESTAL-MOUNT CONTROLLER
NTS



1. FIBRELYTE COMPOSITE IRRIGATION BOX OR APPROVED EQUAL
2. FINISHED GRADE – PAVED AREA
3. PVC SCH. 40 PIPE SLEEVE
4. CONCRETE PAVERS ONLY
5. PIPE FITTING AS REQUIRED (TEE OR ELL).
6. DEPTH – 18" MIN.
7. SCHD. 40 MAINLINE IRRIGATION

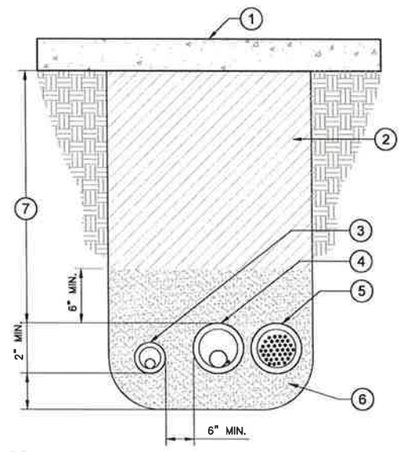
3 IRRIGATION JUNCTION BOX
NTS



1. BACKFILL MATERIAL – SEE NOTES, COMPACT TO 90% MDD
2. ADJACENT HARD SURFACE
3. NON–PRESSURE LATERAL LINE
4. MAIN LINE LOCATOR WIRE; BURIED WITH ALL MAIN LINES
5. PVC MAIN LINE
6. DIRECT BURIAL, LOW VOLTAGE CONTROL WIRES; TO BE BURIED AND TAPED AT 10' INCREMENTS. LOCATE DIRECTLY ADJACENT TO MAIN LINE.
7. BEDDING MATERIAL – SEE NOTES
8. PIPE DEPTHS – SEE NOTES

NOTE: SEE SLEEVING DETAIL FOR TRENCHING IN PAVED AREAS.

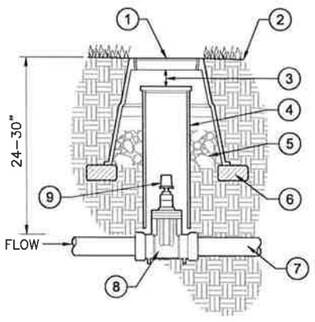
4 TRENCH DETAIL
NTS JUB–IR–PIP–Ø1



1. HARDSCAPE SURFACE – SEE PLANS
2. BACKFILL MATERIAL – SEE NOTES
3. LATERAL LINE WITH SLEEVE
4. PVC MAIN LINE AND LOCATOR WIRE WITH SLEEVE
5. CONTROL WIRE SLEEVE – SEE PLANS FOR SIZE
6. BEDDING MATERIAL – SEE NOTES
7. MIN. COVER – 12" UNDER WALKS AND 18" UNDER STREETS

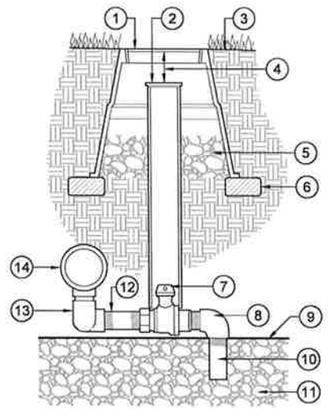
NOTES:
1) SLEEVES 4" AND SMALLER USE PVC SCHEDULE 40 PIPE.
2) SLEEVES LARGER THAN 4" USE PVC CLASS 200.
3) ALL SLEEVES SHALL BE TWO (2) TIMES LARGER THAN THE DIAMETER OF THE PIPE BEING SLEEVED, UNLESS NOTED OTHERWISE ON THE PLANS.
4) INSTALL SLEEVES AT A DEPTH SUFFICIENT TO AVOID CONFLICT WITH OTHER UTILITIES AND MAINS.

5 SLEEVE DETAIL
NTS JUB–IR–PIP–Ø2



1. 10" ROUND PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL, MARKED "G.V." IN 2" WHITE LETTERS)
2. FINISHED GRADE
3. 3" MIN. CLEARANCE
4. 4" PVC SCHEDULE 40 PIPE SLEEVE (NOTCH TO FIT PIPE), CAPPED BY CAM LOCK SNUG CAP
5. 3"–4" DEPTH CLEAN PEA GRAVEL
6. CONCRETE PAVERS ONLY
7. PVC MAIN LINE
8. GATE VALVE – SEE IRRIGATION EQUIPMENT SCHEDULE
9. 2" SQUARE OPERATING NUT

6 ISOLATION GATE VALVE (PUSH-ON; 2")
NTS



1. 10" ROUND GREEN PLASTIC VALVE BOX WITH BOLT LOCK (CARSON OR APPROVED EQUAL)
2. 4" PVC SCHEDULE 40 PIPE SLEEVE (NOTCH TO FIT PIPE), CAPPED BY YELLOW CAM LOCK SNUG CAP
3. FINISHED GRADE
4. 3" MIN. 6" MAX. CLEARANCE
5. 4" MIN. PEA GRAVEL
6. CONCRETE PAVERS ONLY
7. 3/4" VALVE – SEE IRRIGATION EQUIPMENT SCHEDULE
8. 3/4" 90 DEGREE STREET ELL
9. FILTER FABRIC COVERING SUMP
10. 3/4" X 6" PVC SCHEDULE 80 TOE NIPPLE
11. 3/4" GRAVEL SUMP – 6 C.F. MIN. SIZE
12. 3/4" X 12" PVC SCHEDULE 80 NIPPLE
13. (2) FIPT X FIPT 90 DEGREE ELL, (2) 3/4" X CLOSE PVC NIPPLE
14. PVC MAIN LINE AND SERVICE TEE

NOTE: MAIN LINE SHALL GRAVITY DRAIN TO MANUAL DRAIN VALVE. MANUAL DRAIN VALVE SHALL BE PLACED IN ALL LOW SPOTS AND WHERE SHOWN ON THE PLAN.

7 MANUAL DRAIN VALVE ASSEMBLY
NTS

J-U-B ENGINEERS, INC.
1047 South 100 West, Suite 180
Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

STATE OF UTAH
GREGORY C. GRAVES
104416
LICENSED LANDSCAPE ARCHITECT

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

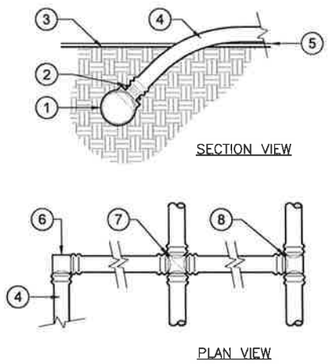
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

IRRIGATION DETAILS

FILE: 57-18-035_LI-101X
JUB PROJ. #: 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/28/2019

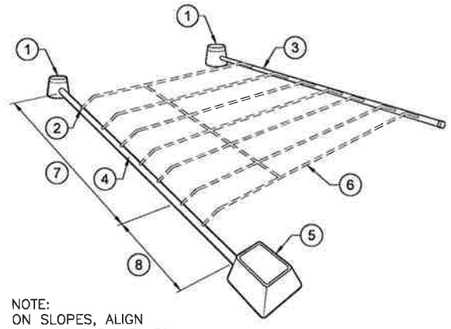
SHEET NUMBER:
LI-501

Plot Date: 6/4/2019 7:39 AM Plotted By: Andy Oxenbeeman
Date Created: 5/28/2019 P:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODEL\SHEETS_AND\SCAPES\57-18-035_LI-101X.DWG



1. 1 1/2" PVC HEADER
2. NETAFIM TLIAPVC CONNECTION
3. PLANTING BED FINISHED GRADE
4. DRIPLINE / BLANK TUBING
5. WEED BARRIER FABRIC
6. ELBOW
7. CROSS
8. TEE

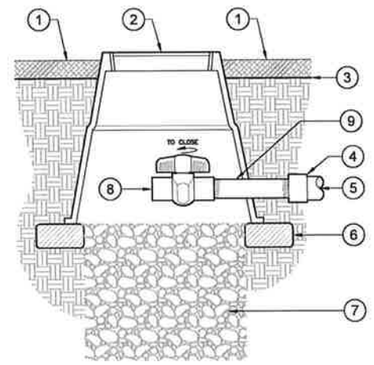
1 DRIPLINE CONNECTIONS
NTS



NOTE:
ON SLOPES, ALIGN DRIPLINE PARALLEL TO THE CONTOURS OF THE SLOPE.

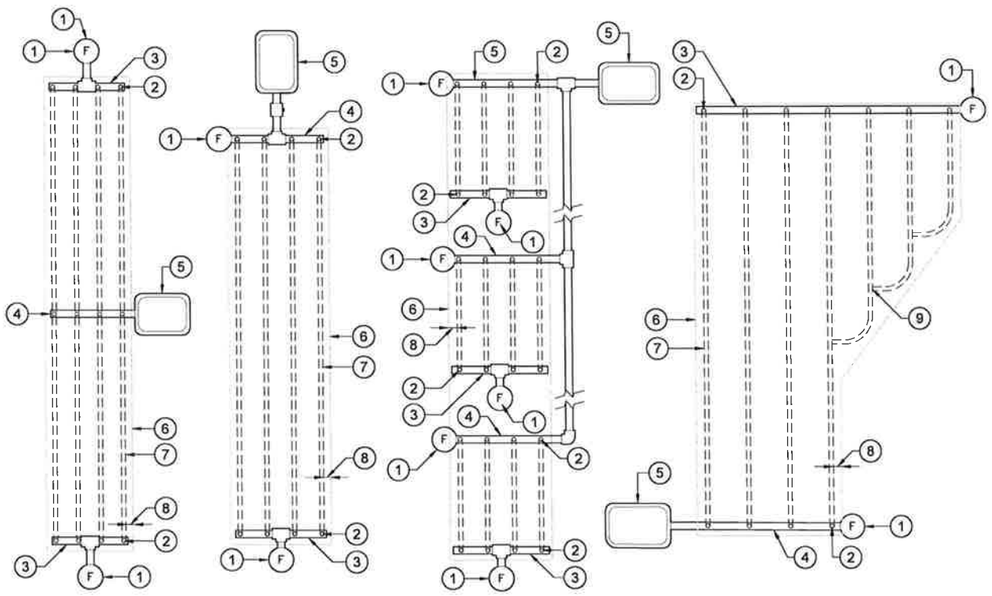
1. MANUAL FLUSH VALVE PLUMBED TO PVC IN LOWEST POINT
2. NETAFIM TLIAPVC CONNECTOR
3. 1 1/2" PVC EXHAUST HEADER (SEE NOTES FOR DEPTH)
4. 1 1/2" PVC SUPPLY HEADER (SEE NOTES FOR DEPTH)
5. REMOTE CONTROL VALVE ASSEMBLY
6. DRIPLINE TUBING LATERAL – INSTALL AT GRADE UNDER MULCH AND ON TOP OF FABRIC (IF FABRIC IS USED)
7. ON SLOPES, USE THE SPECIFIED DRIPLINE SPACING ON THE TOP 2/3 OF THE SLOPE
8. ON SLOPES, USE THE SPECIFIED DRIPLINE SPACING PLUS 25% ON THE BOTTOM 1/3 OF SLOPE

2 DRIPLINE CIRCUIT LAYOUT
NTS



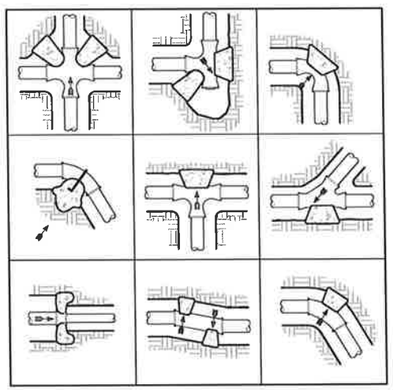
1. PLANTING BED MULCH – SEE PLANTING NOTES FOR DEPTH
2. 8" ROUND GREEN PLASTIC VALVE BOX (CARSON OR APPROVED EQUAL) FLUSH WITH MULCH GRADE
3. FINISHED GRADE
4. PVC REDUCER BUSHING (SP X 1/2") FIPT – SIZE AS REQUIRED
5. PVC EXHAUST HEADER
6. CONCRETE PAVERS ONLY
7. 1 C.F. WASHED PEA GRAVEL
8. ½" PLASTIC PVC BALL VALVE
9. ½" X 6" (SCH. 80 PVC) NIPPLE TBE

3 DRIP FLUSH VALVE (PLUMBED TO PVC EXHAUST HEADER)
NTS



1. MANUAL FLUSH VALVE PLUMBED TO PVC IN LOWEST POINT
2. NETAFIM TLIAPVC CONNECTOR
3. 1 1/2" PVC EXHAUST HEADER
4. 1 1/2" PVC SUPPLY HEADER
5. REMOTE CONTROL VALVE ASSEMBLY
6. AREA PERIMETER
7. DRIPLINE TUBING LATERAL
8. PERIMETER DRIPLINE TUBING LATERALS 2" TO 4" FROM EDGE
9. DRIPLINE TEE

4 INLINE DRIP LAYOUTS (TYP.)
NTS



DETAIL NOTES:
1. FIGURE (100%) AT THRUST BLOCK INDICATES PERCENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA OF 2,000 P.S.F.
2. ARROW (➡) INDICATES THRUST DIRECTION.
3. CONCRETE FOR THRUST BLOCKS TO BE 2,000 P.S.I.
4. ALL MJ AND FLANGED FITTINGS TO BE WRAPPED WITH POLYETHYLENE WRAP PRIOR TO POURING THRUST BLOCK.
5. CONTROL WIRE SHALL BE KEPT OUT OF THE CONCRETE THRUST BLOCKS.
6. ALL MAIN LINE FITTINGS THREE (3) INCHES AND LARGER, WHETHER DUCTILE IRON OR SOLVENT WELD, SHALL BE THRUST BLOCKED.

SIDE THRUST PER 1 PSI				
PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22 ½° ELBOW
4	19	27	15	7
6	39	55	30	15
8	67	94	51	26
10	109	154	84	43
12	155	218	119	61

TABLE NOTES:
1. IN USING THE TABLE BELOW, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (I.E. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUTOFF, ETC.). UNLESS DIRECTED OTHERWISE, ASSUME A WATER PRESSURE OF 200 PSI FOR YOUR CALCULATIONS.
2. SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL. IN THE ABSENCE OF A SOILS REPORT, AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 P.S.F.

EXAMPLE:
FITTING: 8" 90° ELBOW
PRESSURE: 200 PSI
FROM TABLE: THRUST = 94 X 200 = 18,800 LB.
BEARING STRENGTH OF SOIL: 2,000 LB./SF.

18,000 / 2,000 = 9.4 SQ. FT. = AREA OF BEARING REQUIRED FOR THRUST BLOCK.

5 THRUST BLOCK DETAIL
NTS

J-U-B ENGINEERS, INC.
1047 South 100 West, Suite 180
Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

STATE OF UTAH
GREGORY H. GRAVES
104416
LICENSED LANDSCAPE ARCHITECT

NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

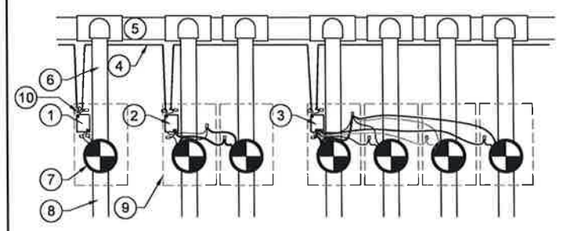
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

IRRIGATION DETAILS

FILE: 57-18-035_LI-101X
JUB PROJ. #: 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/28/2019

SHEET NUMBER:
LI-502

Plot Date:5/4/2019 7:40 AM Plotted By: Andy Quackenbush
Date Created:5/28/2019 F:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODEL\SHEETS\LANDSCAPE\57-18-035_LI-101X.DWG

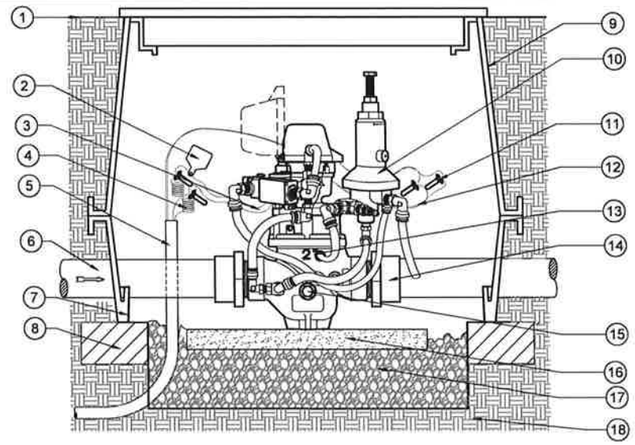


NOTES:
VALVE BOXES SHALL HAVE A MINIMUM SPACING OF 2'. INSTALL DECODERS AS PER MANUFACTURE'S RECOMMENDATIONS.

1. SINGLE (1) VALVE DECODER – SEE IRRIGATION EQUIPMENT SCHEDULE
2. DOUBLE (2) VALVE DECODER – SEE IRRIGATION EQUIPMENT SCHEDULE
3. QUADRUPLE (4) VALVE DECODER – SEE IRRIGATION EQUIPMENT SCHEDULE
4. TWO WIRE COMMUNICATION WIRE TO CONTROLLER
5. MAIN LINE
6. MAIN LINE STUB TO CONTROL VALVE
7. CONTROL VALVE – SEE IRRIGATION EQUIPMENT SCHEDLUE AND CONTROL VALVE DETAIL
8. LATERAL TO HEADS
9. VAVLE BOX – SEE CONTROL VALVE DETAIL
10. 3M DBR/Y WATER TIGHT WIRE CONNECTORS (TYP.)

1 TWO WIRE DECODER DIAGRAM

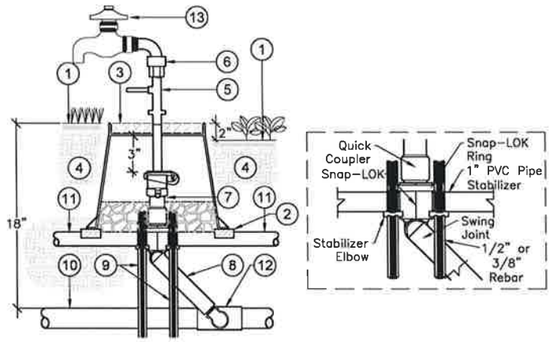
NTS



1. FINISH GRADE
2. VALVE ID TAG WITH "MV" PRINTED ON IT
3. MASTER VALVE WIRES FROM SOLENOID (INCLUDED)
4. PAIR OF WIRES, COLOR CODED DIFFERENT THAN OTHER VALVES. REFER TO CONTROLLER SPECS
5. 1 1/2" SCH 40 CONDUIT FROM CONTROLLER PER SPECS. PULL BOXES EVERY 200' AND ON EACH SIDE OF HARDSCAPE AREAS.
6. PVC MAINLINE PIPING PER IRRIGATION SPECS (PLAN SIZE)
7. FILTER FABRIC PER SPECS
8. CONCRETE PAVERS ONLY (4 TOTAL / 1 PER CORNER)
9. JUMBO VALVE BOX (WITH EXTENSION(S) PER SPECS).
10. PRESSURE REDUCING PILOT
11. WATERPROOF WIRE CONNECTORS (3M DBY/DBR).
12. SHIELDED FLOW SENSOR WIRES TO CONTROLLER (PER CONTROLLER SPECS).
13. HYDROMETER – SEE IRRIGATION SCHEDULE
14. SCH. 80 PVC MIPT ADAPTOR SIZE PER VALVE AND MAINLINE PIPING (2 REQUIRED)
15. DRAINAGE NUT FOR WINTERAZATION (INCLUDED).
16. CONCRETE PAVER SUPPORT BLOCK.
17. COMPACTED (95% MDD) 3/4" WASHED CRUSHED GRAVEL. 12" THICK MIN,
18. COMPACTED NATIVE SOIL.

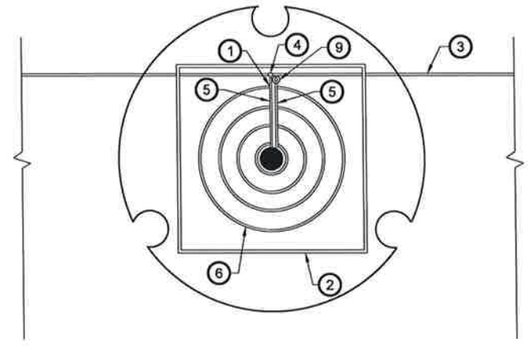
2 HYDROMETER MASTER VALVE AND FLOW SENSOR

JUB-IR-VAL-MAST-03

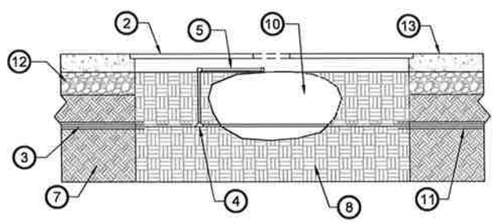


1. FINISH GRADE
2. CONCRETE PAVERS ONLY
3. 10" ROUND GREEN PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL)
4. APPROVED BACKFILL
5. QUICK COUPLER KEY. DELIVER TO LOGAN CITY.
6. QUICK COUPLER HOSE SWIVEL. DELIVER TO LOGAN CITY.
7. QUICK COUPLER VALVE (SEE IRRIGATION EQUIPMENT SCHEDULE)
8. LASCO STANDARD UNITIZED SWING JOINT, WITH SNAP-LOK STABILIZER ELBOW OUTLET. NOTE: INLET IS MIPT, OUTLET IS BRASS MIPT w/SNAP LOK
9. 3/8" OR 1/2" x 24" REBAR (2) REQUIRED
10. MAINLINE PIPE, PVC – SEE IRRIGATION PLAN
11. 1" PVC PIPE STABILIZER (OPTIONAL)
12. SERVICE TEE OR ELBOW, SCH40. (SIZE PER PLAN), SIZE TEE/ELBOW FIPT OUTLET BASED ON MIPT INLET SIZE OF THE SWING JOINT
13. QUICK COUPLER HOSE BIB DELIVER TO LOGAN CITY

3 QUICK COUPLING VALVE ASSEMBLY

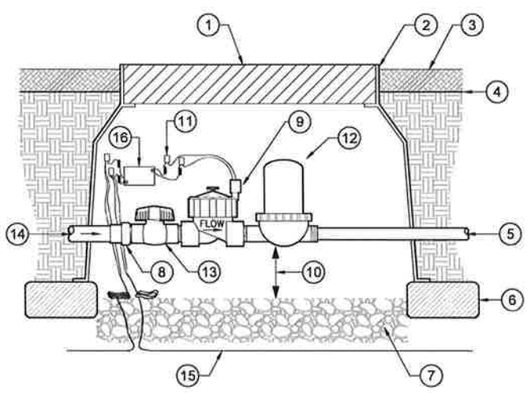


1. DRIP TUBING TO CONNECT TO SUPPLY HEADER WITH INSERT ADAPTER NETAFIM TLIAPVC-B (TYP.)
2. PAVING/TREE GRATE/FRAME SEE TREE GRATE DETAIL
3. IRRIGATION LATERAL LINE (SIZE PER PLAN)
4. PVC SCH. 80 ELL OR TEE (TYP.)
5. DRIP IRRIGATION 1 1/2" PVC SUPPLY / EXHAUST HEADER
6. INLINE DRIP TUBING (TYP.)
7. COMPACTED SUB-BASE – SEE CIVIL PLANS
8. TOPSOIL
9. DRIP FLUSH VALVE – SEE IRRIGATION SCHEDULE
10. TREE ROOT BALL
11. PVC PIPE SLEEVE – SEE IRRIGATION SCHEDULE
12. COMPACTED UNTREATED BASE COURSE – SEE CIVIL PLANS
13. CONCRETE SIDEWALK – SEE CIVIL PLANS



4 WATER SYSTEM AT TREE GRATE

NTS



1. 18" JUMBO GREEN PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL)
2. 1" MAX. CLEARANCE
3. PLANTING BED MULCH – SEE PLANTING NOTES FOR DEPTH
4. FINISHED GRADE
5. TO PVC SUPPLY HEADER
6. CONCRETE PAVERS ONLY
7. 4" MIN. PEA GRAVEL
8. ACTION UNION – PART 18010-XX, PART 18011-XX, PART 18012
9. ELECTRIC CONTROL VALVE – SEE IRRIGATION EQUIPMENT SCHEDULE
10. 2" MIN. CLEARANCE
11. (4) 3M DBR/Y WATER TIGHT WIRE CONNECTORS
12. INLINE 1" FILTER AND PRESSURE REGULATOR
13. PLASTIC PVC BALL VALVE
14. FLOW FROM PVC MAIN LINE
15. TWO-WIRE CONTROL WIRE
16. DECODER – SEE IRRIGATION EQUIPMENT SCHEDULE

5 DRIP ZONE REMOTE CONTROL VALVE 2 WIRE ASSEMBLY - COMBINED FILTER AND PRESSURE REGULATOR

NTS

J-U-B ENGINEERS, INC.
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Logan, UT 84321
Phone: 435.713.9514
Fax: 435.713.9503
www.jub.com

STATE OF UTAH
GREGORY H. GRAY
104416
REGISTERED LANDSCAPE ARCHITECT

NO.	DESCRIPTION	REVISION	BY	APP'D	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

IRRIGATION DETAILS

FILE: 57-18-035_LI-101X
JUB PROJ. #: 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/28/2019

SHEET NUMBER:
LI-503

Plot Date:5/4/2019 7:40 AM Plotted By: Andy Quinberman
Date Created:5/28/2019 P:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODEL\SHEET\LANDSCAPE\57-18-035_LI-101X.DWG

PLANTING NOTES

1. The Contractor shall be familiar with the planting and irrigation technical specifications – failure to do so will not relieve the contractor of his responsibility to fulfill all requirements in said specifications.

2. Prior to any planting operations, the irrigation system shall be fully operational and all planting areas shall be thoroughly moistened.

3. The planting plan is diagrammatic, and all plant locations are approximate. Plant symbols take precedence over plant quantities shown on the plans and in the Plant Material Schedule. The Contractor shall verify all plant quantities and notify the Landscape Architect of any discrepancies between the quantities and the symbols shown. The Plant Materials Schedule is for the Contractor's convenience only.

4. No substitution of size, grade, variety or any species shall be permitted except by written permission of the Landscape Architect. Upon receiving Notice to Proceed, the Contractor shall provide written proof that the specified plant material is available and has been secured or reserved specifically for this project. Obtain nursery stock and other plant materials from reliable and stable sources prior to order and delivery.

5. Final Grade Preparation
   A. The subgrade Material Shall be rough graded to plus or minus one tenth (+0.1) foot of the final rough grade, which will allow the Contractor to achieve final finished grade through the placement of the topsoil.
   B. Protect existing trees, shrubs, lawns, existing structures, fences, roads, sidewalks, paving, curb and gutter and other features during Construction.
   C. Protect above or below grade utilities. Contact utility companies to repair damage to utilities. Contractor shall pay all cost of repairs which he causes.
   D. Maintain all benchmarks, control monuments and stakes, whether newly established by surveyor or previously existing. Protect from damage and dislocation.
   E. Grading Intent: Spot elevations and contours indicated are based on the best available data. The intent is to maintain constant slopes between spot elevations.
   F. Conduct work in an orderly manner. Do not create a nuisance. Do not permit soil accumulation on streets or sidewalks. Do not allow soil to be washed into sewers and storm drains.
   G. Grade slopes to provide adequate drainage after compaction. Do not create water pockets or ridges. Use all means necessary to prevent erosion of freshly graded areas during construction until surfaces have been constructed and landscaping areas have taken hold.
   H. Grades shall be smooth, even, and maintain a consistent uniform slope. Grades with undulating surfaces will be rejected and require re-grading.
   I. All finished grades shall be approved by the Landscape Architect prior to installation of any plant materials.

6. All planting areas shall receive a minimum of twelve (12) inches in planting beds, and eighteen (18) inches in the raised planters. All topsoil used on this project shall meet the following criteria:
   A. pH:....................5.5 - 8.0
   B. EC (electrical conductivity):....................<2.0 mmhos per centimeter
   C. SAR (sodium absorption ratio):....................<3.0
   D. % OM (percent organic matter):....................2%
   E. Texture (particle size per USDA classification):
      I. Sand:....................<70%
      II. Silt:....................<70%
      III. Clay:....................<30%
      IV. Stone Fragments (gravels or any soil particle Greater than two (2) mm in size):....................<5% (by volume)
      V. Rocks > 1.5"....................None

   In addition, the topsoil shall be fertile, friable, natural loam and shall be capable of sustaining vigorous plant growth. It shall be free of stones, lumps, clods of hard earth, plants or their roots, sticks, and other extraneous matter. The topsoil shall contain neither noxious weeds nor their seeds. It shall not be used for planting operations while in a frozen or muddy condition. An appropriate fertilizer may be used to provide needed nutrients for healthy and vigorous plant growth. Follow recommendation of topsoil report.

7. The following procedure shall be followed in placing all topsoil:
   A. The surface of the subgrade shall be scarified to a depth of two (2) inches to provide a transition zone between the subgrade and the topsoil. Place the topsoil on the subgrade and fine grade to the final finished grade and topsoil depths as indicated on the drawings and in these notes.
   B. Any required soil amendments (i.e. organic matter, fertilizer, gypsum, etc.) shall be placed directly on the topsoil at the required rates and spread evenly over the planting area. The amendments (if any) shall then be thoroughly blended into the topsoil to a depth of six (6) inches. Where only a dry, granular fertilizer is to be added, it may be applied to the surface and raked in during the fine grading process.

8. The Contractor shall obtain a soil analysis from any authorized soil testing agency of any existing stockpiled or imported topsoil to be used on the project to verify that it conforms to the topsoil specifications. Test results shall include horticultural nutrient recommendations. The soil samples shall be obtained per the testing agency directions. Allow ten (10) working days to obtain test results. The costs for such testing shall be the responsibility of the Contractor. Prior to delivery of the imported topsoil to the site, the Contractor shall provide to the Landscape Architect the name and location of the topsoil source, along with the certified soil analysis of the topsoil to be used. The analysis shall verify that the proposed topsoil meets the topsoil specifications, and is capable of supporting healthy plant growth.

9. After imported top soil has been delivered to the site, a second soils test may be required to verify that it is indeed the same soil as previously tested and designated for use in this project. No substitution of top soil shall be allowed without prior written authorization from the Landscape Architect.

10. All plants used for this project shall conform to the following:
    A. Any inspection certificates required by law shall accompany each delivery of plants and such certificate shall be filed with the Landscape Architect. All plants shall be subject to inspection and approval at the place of growth or upon delivery to the site for their quality, size, species, and variety. Such approval shall not impair the right of inspection and rejection at the site or during progress of work for size and condition of the plants, latent defects, or injuries. Any and all rejected plants shall be removed immediately from the premises by the Contractor. The Contractor shall make all replacements at his expense should he fail to comply in full with any of the specifications. Necessary replacements will be made as soon as weather conditions permit and all such plants replaced shall conform to all specifications herein.
    B. Plants shall be fresh and vigorous, of normal habit and growth, and free of disease, insects and insect eggs and insect larvae, weeds and weed seed. No heeled-in plants from cold storage shall be accepted except on approval by the Landscape Architect prior to installation.

11. All plants shall be installed using the following procedures:
    A. Plants shall be generally located as indicated by the drawing. The Contractor shall stake out the location of all plants and planting areas, and no excavation or installation shall commence until such locations have been approved by the Landscape Architect.
    B. All trees and shrubs shall be planted in pits as detailed in the planting details contained herein or as noted on the drawings. Tree and shrub pits shall be circular in outline, with a diameter at least two (2) times the diameter of the rootball of each plant to be installed. They shall be one to two and one half (1 - 2 ½) inches shallower than the rootball depth. When the plant is properly placed in the plant pit, the root collar shall be at or approximately one (1) inch above finished grade. The sides of the plant pit shall be roughened, and not smooth or sculpted.
    C. Plant backfill mix vary depending on plant location. For trees planted in tree grates, backfill shall be one hundred (100) percent top soil. Backfill in all other areas shall be one hundred (100) percent top soil.
    D. For container grown plants, remove the container and place the plant vertically in the plant pit, directly on undisturbed soil. The root crown or collar shall be at or approximately one (1) inch above the finished grade. Perennial plants and ornamental grasses shall be planted with root collar at finished grade.
    E. For balled and burlapped plants, place the plant vertically in the center of the pit, with the rootball resting on undisturbed soil. Cut and remove the wire basket and burlap or other wrapping material from the rootball. This may be done with the rootball in the pit. Any burlap or wire pieces underneath the rootball may be left in place if they cannot be removed. Do not fold the burlap over, but cut away as much as possible without disturbing the rootball. No burlap shall be pulled from under the rootball. Backfill the bottom one third (1/3) of the pit as the wire and burlap are removed. In all cases, maintain the integrity of the rootball.
    F. Specified backfill material shall be carefully and firmly worked and tamped under and around the rootball to fill all voids. When backfilled and compacted to two thirds (2/3) the depth of the pit, thoroughly water with a hose to completely soak the roots and remove any air pockets.
    G. The plant pit shall then be completely backfilled with the specified backfill mix and tamped well. A shallow watering basin or rain cup shall be formed around each plant. This basin will be equal in diameter to that of the original planting pit.
    H. After planting, the following operations shall be performed:
    I. Remove all nursery stakes ties, and tags from all plants. Prune and remove any dead, damaged, or broken branches. Maintain side growth on all trees.

12. All plants shall be thoroughly watered immediately after planting. This shall mean full and thorough saturation of all backfill in the pits and beds during the same day of planting. Water shall be applied only by open end hose at very low pressure to avoid air pockets, injury to the plant, or washing away of backfill. When installed, watered, and fully settled, the plants shall be vertical. Subsequent watering shall be provided by the site's irrigation system. The Contractor shall insure that all plants, especially trees, receive sufficient water to maintain healthy growth and vigor. Over-watering shall be avoided, and prolonged saturation of the soil around the trees shall be eliminated by appropriately controlling the irrigation circuit which provides water to that area.

13. Mulch (see plant materials schedule and specifications for size requirements) shall be placed to a depth of three (3) inches on top of the topsoil in all planting beds and over tree planting pits. The finished grade of the mulch shall be as follows:
    A. Two (2) inches below the surface or finished grade of any paving, mowstrips, or walks adjacent to the planting area.
    B. One (1) inch below top of metal edging.
    C. At adjacent finished grade of the turf surrounding tree planting pits.
    D. In tree pits, the mulch shall be kept six (6) inches away from the base of the tree.
    E. Just prior to placement of the mulch, the Contractor shall treat the mulched areas with a pre-emergent herbicide according to the manufacturer's recommendations.
    F. In tree grates, top of mulch shall be 4-6" below bottom of grate.

14. Throughout the course of planting, excess and waste materials as well as excavated subsoil shall be continuously and promptly removed. All areas shall be kept clear and all reasonable precautions taken to avoid damage to existing structures, plants, and grass. When planting has been completed in an area, it shall be thoroughly cleaned of all debris, rubbish, subsoil, and waste materials. These shall be removed from the property and disposed of legally. All planting tools shall also be put away.

15. Substantial Completion shall be defined as the complete installation of all plant materials, staking, mulching, and other work on the project in its entirety. Substantial completion shall not be given on designated portions of a project.
    A. At substantial completion of all planting work outlined in these plans, the Contractor shall contact the Landscape Architect to arrange for a walk through to verify that all aspects of the work have been completed. Work must be fully completed (except for final clean-up) according to all plans, notes, and specifications and exhibit professional workmanship.
    B. Notice by the Contractor shall be given, in writing, at least three (3) days in advance to the Owner's Representative and Landscape Architect so that proper scheduling can be made for those who are to attend.
    C. At the appointed time, an inspection of all plant materials, including staking and mulching, shall be made.
    D. A list of uncompleted items (punch list) shall be generated by the Landscape Architect and distributed to the Contractor and other involved parties within three (3) days of the substantial completion inspection. Each item on the punch list shall be corrected before the project will be approved and accepted by the Owner's representative. The Contractor will be back charged for time spent by the Owner and any consultants who have been brought to the site for a final inspection when the project is not ready for said inspection.

16. The maintenance/establishment period shall begin one (1) day after the substantial completion inspection. The Contractor shall complete all punch list items during this period, as well as maintain and operate the entire irrigation system. The Contractor shall maintain all plantings for a minimum of sixty (60) days. Plants should be healthy and thriving. If not, the maintenance / establishment period will be extended until the plants meet this criteria. No weeds shall be allowed in the planting areas. If winter weather interrupts the maintenance period, the maintenance period shall be suspended and the balance of the time shall be carried over to the next growing season and completed then. The Owner and Contractor shall mutually determine when the maintenance period is suspended and when it starts up again. The maintenance work required shall include but not be limited to the following:
    A. Appropriate watering of all plant materials.
    B. Weeding and removal of all weeds from groundcover and planting areas.
    C. Replacement of any dead, dying, or damaged trees, shrubs, perennials, or groundcover.
    D. Filling and replanting of any low areas which may cause standing water.
    E. Adjusting of sprinkler head heights and watering patterns.
    F. Filling and re-compaction of eroded areas, along with any required re-seeding and/or replanting.
    G. Weekly removal of all trash, litter, clippings, and all foreign debris.

17. A final inspection shall be held prior to the end of the maintenance period to insure that all punch list items have been completed and the entire project is ready for acceptance by the Owner. Upon satisfaction that the Contractor has completed all punch list items, the irrigation system is fully and completely functional, and the required As-Built drawings, mylars and maintenance manuals have been submitted, the Owner shall accept the project. An official letter of final acceptance shall be prepared and issued to the Contractor, Landscape Architect, and the Owner's representative. Upon final acceptance of the project by the Owner's representative, the Owner shall assume full responsibility for the project, and the guarantee period shall begin.

18. Upon final acceptance of the project as being properly installed, the Contractor shall guarantee the plant materials as follows:
    A. All shrubs, grasses, perennials, and groundcovers shall be guaranteed by the Contractor as to growth and health for a period of sixty (60) days after completion of the maintenance period and final acceptance.
    B. All trees shall be guaranteed by the Contractor to live and grow in an acceptable upright position for a period of one (1) year after completion of the maintenance period and final acceptance.

19. The Contractor shall, within fifteen (15) days after receiving written notification by Owner's representative, remove and replace all guaranteed plant materials which die or become unhealthy or appear to be in a badly impaired condition at any time during the guarantee period. Any plants that settle below or rise above the desired finished grade shall also be reset to the proper grade.
    A. All replacements shall be plants of the same kind, size, and quality as originally specified in the "plant list" and they shall be furnished, planted, staked, and maintained as specified herein at no additional cost.
    B. The Contractor will not be responsible for plants destroyed or lost due to occupancy of the project, vandalism on the part of others, or improper maintenance or lack thereof.

J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
1047 South 100 West,
Suite 180
Logan, UT 84321
Phone: 435.713.9514
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www.jub.com

STATE OF UTAH
GREGORY GRAVES
104416
LICENSED LANDSCAPE ARCHITECT

REVISION

NO.	DESCRIPTION	BY	APPR.	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

LANDSCAPE NOTES

FILE: 57-18-035_LP-101X
JUB PROJ. #: 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/4/2019

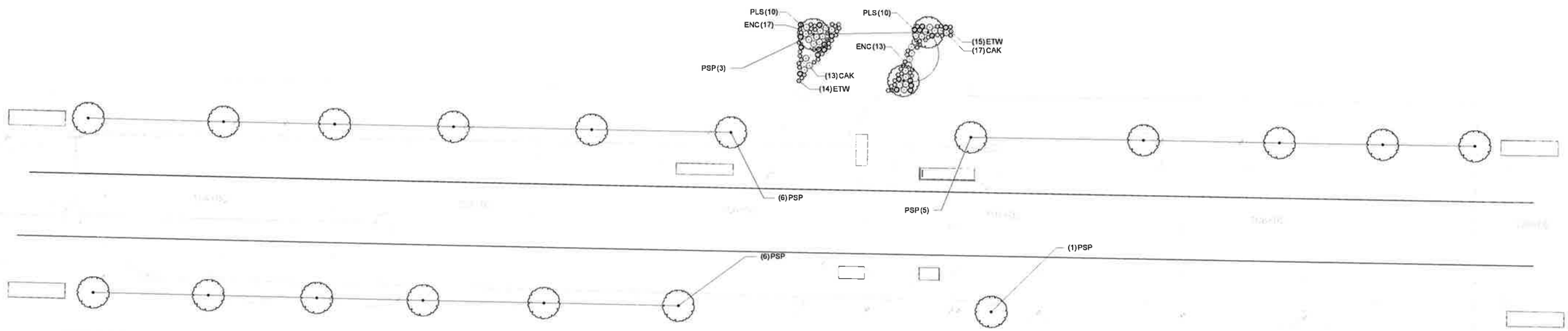
SHEET NUMBER:
LP-001

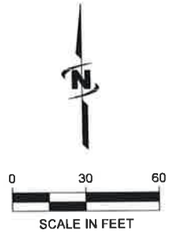
Plot Date:6/4/2019 7:40 AM Plotted By: Andy Quebbeman
Date Created:5/23/2019 F:\PROJECTS\JUB\LOGAN\57-18-035 LOGAN CENTER STREET\CAD\MODEL\SHEET\LANDSCAPE\57-18-035_LP-101X.DWG

PLANT SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME	CONT	CAL	QTY
	PSP	Prunus sargentii `Pink Flair`	Pink Flair Cherry	B & B	2"Cal	21
ANNUALS/PERENNIALS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**	**CONT**		**QTY**
	ENC	Echinacea x `Now Cheesier`	Now Cheesier Coneflower	1 gal		30
	ETW	Echinacea x `Twilight`	Coneflower	1 gal		28
	PLS	Perovskia x `Little Spire`	Russian Sage	1 gal		20
GRASSES	**CODE**	**BOTANICAL NAME**	**COMMON NAME**	**CONT**		**QTY**
	CAK	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass	1 gal		30

NOTE:
1. SHREDDED BARK MULCH SHALL BE PLACED IN ALL AT GRADE PLANTING BEDS (2 BEDS ON THE NORTH SIDE BY PARKING ENTRANCE). DEPTH OF MULCH SHALL BE 3 INCHES UNLESS NOTED OTHERWISE.
2. PLANT MATERIALS FOR RAISED PLANTERS ARE NOT INCLUDED IN THIS SCOPE, BUT PROVIDED BY OTHERS.





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STATE OF UTAH
GREGORY H. GUNNELL
10416
REGISTERED LANDSCAPE ARCHITECT

NO.	DESCRIPTION	BY	APP.	DATE
	REVISION			

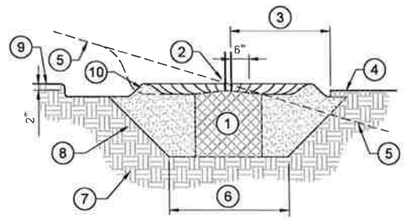
CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

LANDSCAPE PLAN

FILE: 57-18-035_LP-101X
JUB PROJ. # : 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/4/2019

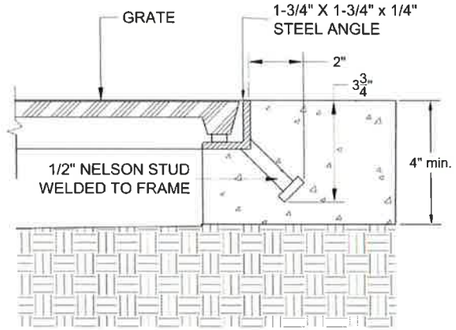
SHEET NUMBER:
LP-101

Plot Date:6/4/2019 7:40 AM Plotted By: Andy Quicksman
Date Created:5/2/2019 F:\PROJECTS\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODEL\SHEET\LANDSCAPE\57-18-035_LP-101X.DWG



1. ROOTBALL
2. CROWN – APPROXIMATELY 1" ABOVE FINISH GRADE
3. 3' RADIUS CIRCLE OF SHREDDED BARK MULCH WHEN TREE IS LOCATED IN TURF
4. FINISHED GRADE
5. FINISHED GRADE AT SLOPE (WHERE SLOPE OCCURS)
6. 2X ROOTBALL DIA. MIN. W/ 45 DEGREE SIDES
7. UNDISTURBED SOIL
8. BACKFILL MIX (SEE PLANTING NOTES)
9. TOP OF PAVING (WHERE APPLICABLE)
10. 3" HIGH WATERING BASIN

1 TREE/SHRUB PLANTING W/ WATERING BASIN
NTS



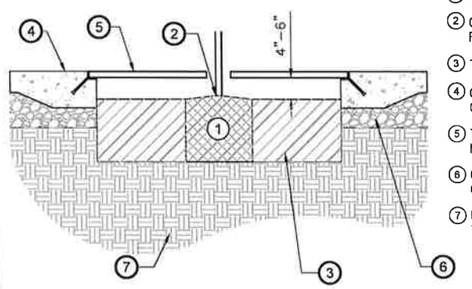
TREE GRATE FRAME INSTALLATION DETAIL
STANDARD CONCRETE ANCHOR

DETAIL #1

standard concrete anchors for use in new concrete

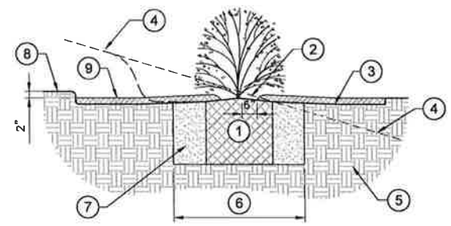
IRONSMITH
41-701 Corporate Way #3
Palm Desert, CA 92260
(800) 338-4766
(760) 776-5080 Fax

2 TREE GRATE
SCALE: NTS



1. ROOTBALL
2. CROWN – APPROXIMATELY 1" ABOVE FINISH GRADE
3. TOP SOIL – 12-18" DEPTH
4. CONCRETE PAVEMENT / FINISHED GRADE – SEE CIVIL PLANS
5. TREE GRATE – INSTALL PER MANUFACTURER RECOMMENDATION
6. COMPACTED UNTREATED BASE COURSE – SEE CIVIL PLANS
7. UNDISTURBED SOIL OR COMPACTED TO 95% MDD – SEE CIVIL PLANS

3 TREE/SHRUB PLANTING W/ TREE GRATE
NTS



1. ROOT BALL
2. CROWN – AT FINISHED GRADE
3. FINISHED GRADE
4. FINISHED GRADE AT SLOPE (WHERE OCCURS)
5. UNDISTURBED SOIL
6. 2X ROOTBALL DIA. MIN.
7. BACKFILL MIX (SEE PLANTING NOTES)
8. TOP OF PAVING (WHERE APPLICABLE)
9. 3" LAYER OF MULCH

4 PERENNIAL PLANTING
NTS

J-U-B ENGINEERS, INC.
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www.jub.com

STATE OF UTAH
GREGORY H. GRAVES
104416
LICENSED LANDSCAPE ARCHITECT

NO.	DESCRIPTION	REVISION	BY	APP'D	DATE

CENTER STREET, MAIN STREET TO 100 WEST
LOGAN, UT

LANDSCAPE DETAILS

FILE: 57-18-035_LP-101X
JUB PROJ. # : 57-18-035
DRAWN BY: JMM
DESIGN BY: JMM
CHECKED BY: GHG
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 6/4/2019

SHEET NUMBER:
LP-501

Plot Date:6/4/2019 7:40 AM Plotted By: Andy Quebbeman
Date Created:5/23/2019 F:\PROJECTS\JUB\LOGAN\57-18-035_LOGAN_CENTER_STREET\CAD\MODEL\SHEETS_LANDSCAPE\57-18-035_LP-101X.DWG

GENERAL STRUCTURAL NOTES

GENERAL
1. Code: I.B.C. 2015

2. Notes: Notes apply to all drawings unless noted otherwise.

3. Design Criteria:

Soil Bearing Pressure . . . . . 2000 psf (Assumed) + 33% FOR WIND/SEISMIC
Seismic Design Cat. D
115 MPH Exp. C Wind

4. Coordination: Check with conditions at the job site and with all other subcontractors.

5. Datum: See PLAN.

6. Details: Details, sections, and notes as shown on the drawings are intended to be typical and shall apply to all similar situations elsewhere unless noted otherwise.

FOUNDATION
1. A project specific Soils Report has been prepared for this project. Follow all recommendations within the Soils Report.

2. Unless noted otherwise in the Soils Report, remove top 12" of soil including all vegetation and debris. Remove existing elements as required and replace voids and soft spots with compacted granular fill.

3. Unless noted otherwise in the Soils Report, all footings are to be placed on firm, undisturbed, natural soil or properly compacted granular fill unless noted otherwise in the project Soils Report. The natural undisturbed soil below all footings shall be proof rolled prior to placing concrete. Replace voids and soft spots with compacted granular fill. Clear excavations of debris and loose soil prior to placing concrete.

4. Compacted Granular Fill: Unless noted otherwise in a project Soils Report, Contractor shall be responsible for the selection of all fill material, and verification of adequate compaction. All fill shall be tested to ensure adequate compaction and proper gradation by a qualified materials testing agency. Compact all fill to 95% dry density minimum. All fill shall be placed and compacted in lift heights not to exceed 8".

5. Frost protection: All exterior footings shall be placed a minimum of 30" below finish grade.

6. Center all footings under walls, columns or grid lines unless noted otherwise on plans.

7. Contractor is responsible to verify the existing native soil can support superimposed loads of 2000 psf with negligible settlement. If existing native soil is not suitable to support such loading, the Contractor shall improve the soil below the footings as required so support such loads.

EPOXY
1. All epoxy shall be Hilti brand or equivalent. The following systems shall be used:

a. Hollow or Grouted CMU – Hilti HY-70 system (with screen tubes @ hollow).
b. Concrete – Hilti RE500-V3.

2. Install all epoxied anchors per manufacturer's instructions and recommendations.

3. All holes shall be sized properly and cleaned thoroughly prior to placement of epoxy adhesive.

REINFORCING STEEL
1. Grade: ASTM A615, Grade 60.

2. Dowel and lap lengths: For concrete work provide 48 bar diameters for dowel embedment and splice lap lengths, and 64 bar diameters for masonry work. Do not splice vertical reinforcing bars in retaining walls unless noted otherwise. Minimum splice length is 15 inches.

3. Detailing and fabrication: Reference "American Concrete Institute" (ACI 318-14).

4. Field bending: Reinforcing steel shall not be bent or straightened in a manner injurious to the concrete or steel. Bars larger than #5 shall not be field bent.

5. Splice locations: In slabs, beams and girders, reinforcing steel shall not be spliced at zones of maximum tensile stress, unless noted otherwise on the drawings.

6. Embedments, dowels, & all reinforcement shall be securely tied to formwork or adjacent reinforcement prior to concrete or grout placement using tie wire or positioners. "Wet-sticking" is not permitted.

STRUCTURAL STEEL
1. Grade: All structural steel shall conform to ASTM A992 (fy=50 ksi), latest edition. Tubes shall be ASTM A500 GR. B (fy=46 ksi), all other steel shall be A36. Anchor bolts shall be A307 steel with ASTM A563 heavy hex nuts and hardened washers, unless noted otherwise.

2. Erection and fabrication: Reference the "American Institute of Steel Construction" specifications for erection and fabrication of steel buildings, latest edition.

3. Welding:
a. Welders: All shop and field welding shall be executed by AWS certified welders.
b. Electrodes: E-70 XX. E-60 XX may be used for welding steel decks. Welds designated as "Demand Critical" shall be completed with filler metal capable of providing a minimum Charpy V-Notch toughness of 20ft-lb @ -20°F, and 40ft-lb @ 70°F per AISC 341 Section 7.3b.
c. Fillet welds: Sizes not shown shall be "American Welding Society" minimum based upon the thickness of the materials being welded.
d. Butt welds: Full penetration unless noted otherwise.
e. Quality Assurance: See Special Inspections

4. Bolted Connections: Use ASTM A325 bolts for steel to steel connections, EXCEPT WHERE NOTED OTHERWISE. Tighten bolts "snug tight" unless noted otherwise. Provide hardened washers beneath turned element.

5. Bearing plates: Base plates and bearing plates shall be provided with full bearing after the supported members have been plumbed and properly positioned. Separate setting plates under column base plates will not be permitted. All bearing grout shall consist of a non-shrink, expansive, metallic grout.

6. Submittals: Shop drawings shall be submitted for approval to the Architect, Contractor, and Engineer, prior to fabrication.

7. NON-SHRINK GROUT..... ASTM C1107
NON-SHRINK GROUT SHALL BE PREPACKAGED, NON-METALLIC AND NON-GASEOUS WITH A FLUID CONSISTENCY (FLOW CONE) OF 20-30 SECONDS. GROUT SHALL BE BLEED FREE AND ATTAIN 7,500 PSI COMPRESSIVE STRENGTH IN 28 DAYS OF FLUID CONSISTENCY. CERTIFIED INDEPENDENT TEST DATA REQUIRED.

CONCRETE
1. Concrete Density: Normal Weight Concrete – approximately 150 pcf.

2. Strength, Exposure, Properties: Minimum ultimate 28-day compressive strength:

Location	Strength	Exposure Class	Max W/C	% air
Footings	4000 psi	F0	0.5	1-2%
Interior Slabs	4000 psi	F0	0.45	1-2%
Exterior Slabs on Grade	4500 psi	F3	0.45	6%
Foundation Walls & Piers	4500 psi	F1	0.45	4.5%
All other site cast concrete	4500 psi	F1	0.45	4.5%
GUNITE	4500 PSI	F1	0.45	4.5%

-3000 psi used for footing and pier design

3. Control & Construction Joints: By Contractor. Contractor shall be responsible for timing, locating, and spacing all joints. Joints shall be placed to minimize uncontrolled cracking of slabs. Control joints shall not be placed in suspended slabs.

4. Slabs: Slabs are to be placed in as large at sections as possible. Where construction joints are necessary, provide bulkhead shear keyways and reinforcing dowels as required to maintain full section capacity. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. Control joints in slabs on grade shall be completed within 12 hours of concrete placement. Control joints in slabs on grade may be installed by saw cut or tooled joints a depth of 1/4 the thickness of the slab. All exterior flatwork (concrete) shall be treated with lithium based admixture during ready mixing, to prevent aggregate reactivity.

5. Cast-in-place all reinforcing: Unless noted otherwise on the drawings, reinforce all concrete wall as follows:

THICKNESS	HORIZONTAL	VERTICAL
8"---Wall	#4 @ 12" O/C	#4 @ 18" O/C
12"---Wall	#4 @ 12" O/C E.F.	#4 @ 18" O/C E.F.

6. Provide corner bars at intersecting wall corners using the same size and spacing as horizontal wall reinforcing. Dowel vertical reinforcing to the footing or structure below with the same size and spacing as wall, column, or pier reinforcing above. Footing dowels shall terminate with a 90 degree standard hook.

7. Concrete protection for reinforcing steel: SEE SCHEDULE ON S-0

8. Slab Reinforcing: Reinforcing steel shall be adequately supported on precast concrete units or chairs, to keep the reinforcing to the heights specified or indicated. Lifting the reinforcing during placement will not be permitted.

9. Suspended Slabs: Follow all provisions of current ACI 117, 301, 302, and related references for slab placement.

10. Openings: Unless otherwise notes on the drawings, reinforce around all sides of openings with (2) #5 bars, extending 48" beyond the corners. Bars shall be within 4" of edges of openings.

11. Submittals:
Submit the following:

a. Design mixtures shall be submitted in accordance with ACI 318-14 section 5.3. submittals shall contain 30 consecutive tests minimum. If 30 consecutive tests can not be provided test records shall be provided showing the average compressive strength is equal to 1200 psi greater than the design strength. Submittals that are not prepared as stated above or in ACI 318-14 will be rejected.

b. Steel reinforcement shop drawings

12. Reinforcement shall be clean of ice and other deleterious coatings.

13. Mixing: per ACI recommendations

14. All debris and ice shall be removed from spaces to be occupied by concrete

15. Items to be embedded in concrete are to be securely tied in place prior to placing concrete. Repositioning of embedded items after concrete has been placed will not be permitted.

16. Do not add water to concrete during delivery, at project site, or during placement without prior approval from engineer.

17. Concrete shall be conveyed from mixer to place of final deposit by methods that will prevent separation or loss of materials. Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. After placement has started, it shall be carried on as a continuous operation. Concrete that has partially hardened or been contaminated by foreign materials shall not be deposited in the structure.

18. All concrete shall be consolidated by a mechanical vibrator. Vibrator shall be inserted vertically at a medium pace and retracted immediately. Do not use vibrator to transport concrete.

19. Concrete shall be maintained above 50 degrees F, and in a moist condition for at least 7 days after placement. Accelerated schedules are permissible provided an accelerated curing plan is provided to and approved by Architect/ Engineer.

20. Shoring and bracing shall remain in place until concrete has obtained full design strength.

21. Concrete protection shall be provided if hot/cold weather conditions are present during placement of concrete.

SHOP DRAWINGS
1. SEE SPECIFICATIONS AND THIS SECTION FOR REQUIRED SUBMITTALS.

2. REVIEW OF SUBMITTALS BY STRUCTURAL SOLUTIONS INC. IS FOR GENERAL COMPLIANCE WITH THE STRUCTURAL CONSTRUCTION DOCUMENTS ONLY AND IS NOT INTENDED AS DESIGN APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND ELEVATIONS ON SUBMITTALS AS RELATED TO CONSTRUCTION DOCUMENTS. PREPARATION OF SHOP DRAWINGS FOR STRUCTURAL ELEMENTS MAY REQUIRE INFORMATION NOT FOUND IN THE STRUCTURAL CONSTRUCTION DOCUMENTS. COORDINATION BETWEEN THE ARCHITECTURAL (IF APPLICABLE) AND OTHER CONSULTANT DOCUMENTS MAY BE REQUIRED. THE SHOP DRAWING REVIEW SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF COMPLETING THE PROJECT ACCORDING TO THE CONSTRUCTION DOCUMENTS.

3. SUBMITTALS SHALL BE MADE IN A TIMELY MANNER (AS STATED IN THE SPECIFICATIONS).

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTNESS AND COMPLETENESS OF SHOP DRAWINGS.

5. ANY DEVIATIONS ON THE SHOP DRAWINGS FROM THE CONSTRUCTION DOCUMENTS SHALL BE CLOUDED ON THE SHOP DRAWINGS PRIOR TO REVIEW BY THE ENGINEER.

6. SHOP DRAWINGS MADE FROM REPRODUCTIONS OF THE STRUCTURAL CONSTRUCTION DOCUMENTS WILL BE REJECTED. STRUCTURAL PLANS MAY BE AVAILABLE FOR USE IN SHOP DRAWING PREPARATION (EITHER HARD COPY OR ELECTRONIC) AT THE DISCRETION OF THE STRUCTURAL ENGINEER WITH PRIOR CONSENT, SIGNED RELEASE AGREEMENT, ETC.

7. THE CONTRACTOR SHALL ALLOW A MINIMUM OF 5 BUSINESS DAYS FOR REVIEW OF EACH SHOP DRAWING. THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL COPY OF THE SHOP DRAWING SUBMITTAL FOR THE ENGINEER OF RECORD.

8. IN ADDITION TO THE ITEMS LISTED AS DEFERRED SUBMITTALS (SEE DEFERRED SUBMITTAL NOTES, IF APPLICABLE), THE FOLLOWING ITEMS REQUIRE STRUCTURAL SHOP DRAWING SUBMITTALS:
A. CONCRETE MIX DESIGN
B. CONCRETE REINFORCING
C. STRUCTURAL STEEL

SPECIAL INSTRUCTION

1. The project specifications are not superseded by the General Structural Notes but are intended to be complementary to them. Consult the specification for additional requirements in each section. Notes and details on the drawings shall take precedence over General Structural Notes and typical details.

2. All omissions or conflicts between the various elements of the working drawings and/or specifications shall be brought to the attention of the Architect and Structural Engineer before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the Architect without additional cost to the owner.

3. Notification of Engineer: The Engineer shall be notified twenty-four hours prior to:
a. Completion of footing excavation
b. Placing concrete in any footing.
c. Closing any wall forms
d. N/A – Completing diaphragm fastening.
e. N/A Grouting of any masonry
f. Completion of structural welding

4. Shoring and Bracing Requirements:

a. Roof Structures – The General Contractor is responsible for the method and sequence of all structural erection. He shall provide temporary shoring and bracing as his method of erection requires to provide adequate vertical and lateral support. Shoring and bracing shall remain in place as the chosen method requires until all permanent members are in place and all final connections are completed, including all roof attachments. The building shall not be considered stable until all connections are complete.

b. Walls above grade shall be braced until the structural system is complete. Walls shall not be considered to be self supporting.

5. Submittals: A copy of all shop drawings that have been submitted for review must be kept at the construction site for reference. These drawings must bear the appropriate review stamps. The shop drawing review shall not relieve the contractor of the responsibility of completing the project according to the contract documents. The general contractor shall review and mark all shop drawings prior to submitting them to the Architect for his review. Shop Drawings made from reproductions of (these) contract drawings will be rejected.

6. Project Coordination: It shall be the responsibility of the general contractor to coordinate with all trades any and all items that are to be integrated into the structural system. Openings or penetrations through, or attachments to the structural system that are not indicated on these drawings shall be the responsibility of the general contractor and shall be coordinated with the Architect/Engineers. The order of construction is the responsibility of the general contractor. It is the contractor's obligation to provide all items necessary for his chosen procedure.

7. Observation visits to the site by the Engineer's field representatives shall not be construed as inspection or approval of construction.

8. Contractor shall field verify all dimensions, and conditions. If the contract drawings do not represent actual conditions, contractor shall notify Architect/Engineer prior to fabrication or construction within that area.

9. The structural drawings, plans, schedules, notes and details shall not be reproduced, or copied, in whole or in part by the contractor or his subcontractors for preparation of shop drawings or other submittals.

SPECIAL INSPECTIONS

The owner shall provide special inspection as required by the IBC 2015 Building Code Chapter 17. Special inspectors are to observe work for conformance with the contract documents. All discrepancies shall be brought to the attention of the contractor for correction. Inspection reports are to be provided by the special inspector to the owner, the building official, the architect, the engineer, and the contractor. Special inspector shall provide an inspection schedule for approval, prior to start of inspections. The following work requires special inspection:

1. Anchor Bolts in Concrete
–Per IBC Chapter 17

2. Reinforcing Steel in Concrete
–Per IBC Chapter 17

3. Fill Installation
–Per Section 1705.6 in the IBC

4. Steel & Welding
– Per IBC Chapter 17

NOTE: THE BUILDING OFFICIAL MAY WAIVE THE REQUIREMENT FOR SOME OR ALL SPECIAL INSPECTIONS AT HIS/HER DISCRETION, IF INSPECTIONS ARE PROVIDED BY THE GOVERNING BUILDING DEPARTMENT.

CONCRETE PROTECTION FOR REINFORCEMENT

APPLICATION		MINIMUM CLEAR COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	1. ALL APPLICATIONS EXCEPT SLABS ON GRADE	3"
	2. SLABS ON GRADE - CLEAR DISTANCE FROM TOP OF SLAB	1"
CONCRETE EXPOSED TO EARTH OR WEATHER	1. NO. 6 BARS AND LARGER	2"
	2. NO. 5 BARS AND SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH GROUND	1. SLABS, WALLS, JOISTS	3/4"
	2. BEAM OR COLUMN TIES, STIRRUPS, OR PRIMARY REINFORCEMENT	1 1/2"
NOTES	1. TOLERANCE FOR CONCRETE COVER AND REINFORCEMENT LOCATION IS ±3/8"	

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PROJECT LOGAN CITY - CENTER STREET SIGN
CLIENT LOGAN CITY
ADDRESS 25 WEST CENTER STREET

REVISIONS

NO.	DATE	DESRIPTION

DATE: 8/4/2019
JOB NO:
SCALE:
DRAWN:

S-0

SPECIAL INSPECTIONS & TESTING

STATEMENT OF SPECIAL INSPECTIONS

1. SPECIAL INSPECTIONS
The owner shall provide special inspection as required by the IBC 2015 Building Code Chapter 17. Special inspectors are to observe work for conformance with the contract documents. All discrepancies shall be brought to the attention of the contractor for correction. Inspection reports are to be provided by the special inspector to the owner, the building official, the architect, the engineer, and the contractor. Special inspector shall provide an inspection schedule for approval, prior to start of inspections. The following work requires special inspection:

1. Concrete reinforcing steel & anchor bolts.
2. Concrete placement
3. Structural steel and welding, including decking and high strength bolts
4. Fill Installation
5. ~~Structural Masonry~~
6. Epoxy anchorages
7. ~~Exterior wall panels and their anchorage~~
8. ~~Seismic load resisting cold formed steel framing~~
9. ~~Structural Wood~~

2. QUALIFICATION OF SPECIAL INSPECTOR
The inspection agency shall submit qualifications and or certifications to the building official, owner, and/or owners representative to determine that the agency meets the applicable requirements.

a. The agency shall be objective and competent. The agency shall also disclose possible conflicts of interest so that objectivity can be confirmed.

b. The agency shall have adequate equipment to perform required tests. The equipment shall be periodically calibrated.

c. The agency shall employ experienced personnel educated in conducting, supervising and evaluating tests and/or inspections.

d. The special inspector shall keep records of inspections. The special inspector shall furnish inspection reports to the architect, engineer, contractor and building official. Any discrepancies that occur shall be brought to the attention of the architect, engineer, contractor and building official prior to the completion of that phase of work.

3. **Designated wind and seismic resisting systems** subject to special inspection in accordance with IBC Section 1705.11. All items with this designation require 100% special inspection of the assembly, IN ADDITION TO ALL OTHER SPECIAL INSPECTIONS THAT MAY BE REQUIRED FOR INDIVIDUAL ITEMS WITH THE ASSEMBLY. Such items are noted on the structural drawings or details with a circled (S).

4. In accordance with IBC Section 1704.4, the Contractor shall submit a written statement of responsibility to the Building Official and Owner, prior to construction of any part of the wind/seismic load resisting systems.

SPECIAL INSPECTION SCHEDULE

ESTABLISHED PER 2015 IBC SECTIONS 110 AND CHAPTER 17

ITEM	CONTINUOUS[3]	PERIODIC[3]	REFERENCE	COMMENTS
PRE-FAB CONSTRUCTION (IBC 1704.2)			REFERENCE NOTES F1 & F2	F1 SPECIAL INSPECTION IS NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION, PROVIDED THE FABRICATOR COMPLIES WITH IBC. F2 INSPECTION FOR PREFABRICATED CONSTRUCTION SHALL BE THE SAME AS IF THE MATERIAL USED IN THE CONSTRUCTION TOOK PLACE ON SITE. SPECIAL INSPECTION WILL NOT BE REQUIRED DURING PREFABRICATION IF THE APPROVED AGENCY CERTIFIES THE CONSTRUCTION AND FURNISHES EVIDENCE OF COMPLIANCE. (SEE NOTE 3)
CONCRETE CONSTRUCTION (IBC 1704.4)			SEE IBC TABLE 1704 - REF. NOTE C1	C1 SPECIAL INSPECTION IS NOT REQUIRED FOR CONC. ISOLATED SPREAD FOOTINGS, CONTINUOUS FOOTINGS, NON-STRUCTURAL SLABS, FOUNDATION WALLS, PATIOS, DRIVEWAYS, AND SIDEWALKS PROVIDED THE REQUIREMENTS OF IBC 1704.4 ARE MET. C2 PERIODIC SPECIAL INSPECTION IS ALLOWED FOR VERIFICATION OF THE WELDABILITY OF REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS, AND SHEAR REINFORCEMENT. PERIODIC SPECIAL INSPECTION IS ALLOWED FOR WELDING OF OTHER ASTM A706 REINFORCING STEEL NOT INCLUDED IN THE CONTINUOUS SPECIAL INSPECTION REQUIREMENTS NOTED ABOVE. C3 PERFORM AIR, SLUMP AND TEMP. TESTS WHEN CONCRETE SAMPLES ARE CAST. C4 PERIODIC SPECIAL INSPECTION IS REQUIRED FOR VERIFICATION OF IN SITU CONCRETE STRENGTH FOR POST-TENSIONED CONCRETE PRIOR TO TENSIONING TENDONS OR REMOVING SHORING OR FORMS. C5 EPOXY AND EXPANSION ANCHORS INTO MASONRY OR CONCRETE MAY BE USED ONLY WHEN APPROVED BY ARCHITECT AND FOR CONTINUOUS/PERIODIC SPECIAL INSPECTION REQUIREMENTS WITH ICC REPORT
REINFORCING STEEL PLACEMENT		●		
WELDING OF REINFORCING STEEL	●	●	REFERENCE NOTE C2	
EMBEDDED PLATES		●		
EMBEDDED BOLTS & PLATES	●			
VERIFYING REQUIRED DESIGN MIX		●		
CONCRETE PLACEMENT / SAMPLING	●		REFERENCE NOTE C3	
CURING TEMPERATURE / TECHNIQUES		●		
VERIFICATION OF IN-SITU STRENGTH		●		
EPOXY / EXPANSION ANCHOR PLACEMENT	●	●	REFERENCE NOTE C5	
MASONRY CONSTRUCTION (IBC 1705.4)			SEE IBC TABLE 1705.2.1 (NON ESSENTIAL)	M1 PERIODIC SPECIAL INSPECTION IS ALLOWED FOR VERIFICATION OF THE WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706 IN ACCORDANCE WITH AWS D1.4. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS, AND SHEAR REINFORCEMENT. PERIODIC SPECIAL INSPECTION IS ALLOWED FOR WELDING OF OTHER ASTM A706 REINFORCING STEEL NOT INCLUDED IN THE CONTINUOUS SPECIAL INSPECTION REQUIREMENTS NOTED ABOVE. M2 CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR ESSENTIAL FACILITIES (IBC TABLE 1704.5.3). M3 EPOXY AND EXPANSION ANCHORS INTO MASONRY OR CONCRETE MAY BE USED ONLY WHEN APPROVED BY ARCHITECT AND ENGINEER USING AN APPROVED PRODUCT WITH CURRENT PUBLISHED ICC RESEARCH REPORT NUMBERS. COORDINATE CONTINUOUS / PERIODIC SPECIAL INSPECTION REQUIREMENTS WITH ICC REPORT.
AS MASONRY CONSTRUCTION BEGINS, VERIFY:				
SITE PREPARED MORTAR		●		
MORTAR JOINTS		●		
REINFORCEMENT / CONNECTORS		●		
GRADE & SIZE OF TENDONS & ANCHORAGES		●		
INSPECTION SHALL VERIFY:				
SIZE & LOCATION OF STRUCTURAL ELEMENTS		●		
TYPE, SIZE, & LOCATION OF ANCHORS		●	REFERENCE NOTE M2	
SIZE, GRADE & TYPE OF REINFORCEMENT		●		
WELDING OF REINFORCING BARS	●		REFERENCE NOTE M1	
SITE PREPARED MORTAR		●		
PRIOR TO GROUTING, VERIFY:				
CLEAN GROUT SPACE		●	REFERENCE NOTE M2	
PLACEMENT OF REINFORCEMENT CONNECTORS, TENDONS AND ANCHORS		●		
PROPORTIONS OF SITE PREPARED GROUT		●		
CONSTRUCTION OF MORTAR JOINTS		●		
GROUT PLACEMENT	●			
PREPARATION OF TEST SPECIMENS / PRISMS	●			
COMPLIANCE WITH CONST. DOCS. / SUBMITTALS		●		
EPOXY / EXPANSION ANCHOR PLACEMENT	●		REFERENCE NOTE M3	
VERIFICATION OF f'm		●		
SOILS (IBC 1705.6)			REFERENCE NOTE F1	F1 SPECIAL INSPECTION OF SOILS SHALL REFERENCE THE APPROVED SOILS REPORT TO DETERMINE COMPLIANCE. F2 WHERE SOILS REPORT IS NOT PROVIDED SPECIAL INSPECTIONS ARE REQUIRED TO VERIFY THAT THE IN-PLACE DRY DENSITY OF THE COMPACTED FILL IS NOT LESS THAN 90 PERCENT OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D 1557
VERIFY ADEQUATE MATERIALS BELOW FOOTINGS		●	REFERENCE NOTE F1	
EXCAVATIONS EXTEND TO PROPER DEPTH AND REACH PROPER MATERIAL		●	REFERENCE NOTE F2	
CLASSIFY & TEST CONTROLLED FILL MATERIALS		●	REFERENCE NOTE F2	
PERFORM MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	●		REFERENCE NOTE F1	
PROPERLY PREPARED SITE AND SUB-GRADE PRIOR TO FILL		●	REFERENCE NOTE F1	

SPECIAL INSPECTION NOTES:

1. THE ITEMS MARKED WITH A "●" IN THE SPECIAL INSPECTION SCHEDULE SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FROM AN ESTABLISHED TESTING AGENCY. FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS REFER TO THE MATERIAL SAMPLING AND TESTING SECTION, THE PROJECT SPECIFICATIONS, AND THE SPECIFIC GENERAL NOTES SECTIONS. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE ARCHITECT, ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL. ANY ITEMS WHICH FAIL TO COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF DISCREPANCIES ARE NOT CORRECTED THEY SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL, ARCHITECT, AND ENGINEER PRIOR TO COMPLETION OF THAT PHASE OF WORK. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS.
2. ANY CONSTRUCTION OR MATERIAL THAT HAS FAILED INSPECTION SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT.
3. CONTINUOUS SPECIAL INSPECTION MEANS THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. PERIODIC INSPECTION MEANS THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK. (IBC SECTION 1702)

STRUCTURAL STEEL SPECIAL INSPECTION SCHEDULE

ESTABLISHED PER 2015 IBC SECTIONS 1705.2.1

INSPECTION TASKS PRIOR TO WELDING (TABLE N5 4-1)	FABRICATOR QUALITY CONTROL		SPECIAL INSPECTOR QUALITY ASSURANCE	
	CONTINUOUS	PERIODIC	CONTINUOUS	PERIODIC
WELDING PROCEDURE SPECIFICATION (WPSs) AVAILABLE	●		●	
MANUFACTURER CERTIFICATION FOR WELDING CONSUMABLES AVAILABLE	●		●	
MATERIAL IDENTIFICATION (TYPE / GRADE)		●		●
WELDER IDENTIFICATION SYSTEM[1]		●		●
FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)		●		●
* JOINT PREPARATION				
* DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)				
* CLEANLINESS (CONDITION OF STEEL SURFACES)				
* TACKING (TACK WELD QUALITY AND LOCATION)				
* BACKING TYPE AND FIT (IF APPLICABLE)				
CONFIGURATION AND FINISH OF ACCESS HOLES		●		●
FIT-UP OF FILLET WELDS		●		●
* DIMENSIONS (ALIGNMENT, GAPS AT ROOT)				
* CLEANLINESS (CONDITION OF STEEL SURFACES)				
* TACKING (TACK WELD QUALITY AND LOCATION)				
CHECK WELDING EQUIPMENT		●		
1. THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED SHALL BE THE LOW-STRESS TYPE.				
INSPECTION TASKS DURING WELDING (TABLE N5 4-2)	CONTINUOUS	PERIODIC	CONTINUOUS	PERIODIC
USE OF QUALIFIED WELDERS		●		●
CONTROL AND HANDLING OF WELDING CONSUMABLES		●		●
* PACKAGING				
* EXPOSURE CONTROL				
NO WELDING OVER CRACKED TACK WELDS		●		●
ENVIRONMENTAL CONDITIONS		●		●
* WIND SPEED WITHIN LIMITS				
* PRECIPITATION AND TEMPERATURE				
WPS FOLLOWED		●		●
* SETTINGS ON WELDING EQUIPMENT				
* TRAVEL SPEED				
* SELECTED WELDING MATERIALS				
* SHIELDING GAS TYPE / FLOW RATE				
* PREHEAT APPLIED				
* INTERPASS TEMPERATURE MAINTAINED (MIN. / MAX.)				
* PROPER POSITION (F, V, H, OH)				
WELDING TECHNIQUES		●		●
* INTERPASS AND FINAL CLEANING				
* EACH PASS WITHIN PROFILE LIMITATIONS				
* EACH PASS MEETS QUALITY REQUIREMENTS				
INSPECTION TASKS AFTER WELDING (TABLE N5 4-3)	CONTINUOUS	PERIODIC	CONTINUOUS	PERIODIC
WELDS CLEANED		●		●
SIZE, LENGTH AND LOCATION OF WELDS	●		●	
WELDS MEET VISUAL ACCEPTANCE CRITERIA	●		●	
* CRACK PROHIBITION				
* WELD / BASE METAL FUSION				
* CRATER CROSS SECTION				
* WELD PROFILES				
* WELD SIZE				
* UNDERCUT				
* POROSITY				
ARC STRIKES	●		●	
K-AREA[1]	●		●	
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	●		●	
REPAIR ACTIVITIES	●		●	
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	●		●	
1. WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 IN. (75mm) OF THE WELD.				

NOTES

1. PERIODIC - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATION NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
2. CONTINUOUS - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.
3. QUALITY CONTROL (QC) SHALL BE PROVIDED BY THE FABRICATOR AND ERECTOR.
4. QUALITY ASSURANCE (QA) SHALL BE PROVIDED BY OTHERS WHEN REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ), APPLICABLE BUILDING CODE (ABC), PURCHASER, OWNER, OR ENGINEER OF RECORD (EOR). NONDESTRUCTIVE TESTING (NDT) SHALL BE PERFORMED BY THE AGENCY OR FIRM RESPONSIBLE FOR QUALITY ASSURANCE, EXCEPT AS PERMITTED IN ACCORDANCE WITH SECTION N7.
5. QC AND QA INSPECTORS SHALL BE QUALIFIED IN ACCORDANCE WITH AISC 360-10 CHAPTER N4.
6. NONDESTRUCTIVE TESTING PERSONNEL SHALL BE QUALIFIED IN ACCORDANCE WITH AISC 360-10 CHAPTER N4.2.
7. NONDESTRUCTIVE TESTING OF WELDED JOINTS SHALL COMPLY WITH AISC 360-10 CHAPTER N5e AND 6.
8. OBSERVATION OF WELDING OPERATIONS AND VISUAL INSPECTION OF IN-PROCESS AND COMPLETED WELDS SHALL BE THE PRIMARY METHOD TO CONFIRM THAT THE MATERIALS, PROCEDURES AND WORKMANSHIP ARE IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. FOR STRUCTURAL STEEL, ALL PROVISIONS OF AWS D1.1M STRUCTURAL WELDING CODE - STEEL FOR STATICALLY LOADED STRUCTURES SHALL APPLY.
9. THERMALLY CUT SURFACES OF ACCESS HOLES SHALL BE TESTED BY QA USING MT OR PT, WHEN THE FLANGE THICKNESS EXCEEDS 2 IN. (50mm) FOR ROLLED SHAPES, OR WHEN THE WEB THICKNESS EXCEEDS 2 IN. (50mm) FOR BUILT-UP SHAPES. ANY CRACK SHALL BE DEEMED UNACCEPTABLE REGARDLESS OF SIZE OR LOCATION.
10. WHEN REQUIRED BY APPENDIX 3, TABLE A-3.1, WELDED JOINTS REQUIRING WELD SOUNDNESS TO BE ESTABLISHED BY RADIOGRAPHIC OR ULTRASONIC INSPECTION SHALL BE TESTED BY QA AS PRESCRIBED. REDUCTION IN THE RATE OF UT IS PROHIBITED.
11. REDUCTION OF RATE OF ULTRASONIC TESTING - THE RATE OF UT IS ONLY PERMITTED TO BE REDUCED IF APPROVED BY THE E.O.R. AND THE A.H.J. PER AISC 360-10 CHAPTER N5e.
12. FOR STRUCTURES IN RISK CATEGORY II, WHERE THE INITIAL RATE FOR UT IS 10%, THE NDT RATE FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR SHALL BE INCREASED TO 100% SHOULD THE REJECT RATE, THE NUMBER OF WELDS CONTAINING UNACCEPTABLE DEFECTS DIVIDED BY THE NUMBER OF WELDS COMPLETED, EXCEEDS 5% OF THE WELDS TESTED FOR THE WELDER OR WELDING OPERATOR. A SAMPLING OF AT LEAST 20 COMPLETED WELDS FOR A JOB SHALL BE MADE PRIOR TO IMPLEMENTING SUCH AN INCREASE. WHEN THE REJECT RATE FOR THE WELDER OR WELDING OPERATOR, AFTER A SAMPLING OF AT LEAST 40 COMPLETED WELDS, HAS FALLEN TO 5% OR LESS, THE RATE OF UT SHALL BE RETURNED TO 10%. FOR EVALUATING THE REJECT RATE OF CONTINUOUS WELDS OVER 3 FT (1M) IN LENGTH WHERE THE EFFECTIVE THROAT IS 1IN. (25mm) OR LESS, EACH 12 IN. (300mm) INCREMENT OR FRACTION THEREOF SHALL BE CONSIDERED AS ONE WELD. FOR EVALUATING THE REJECT RATE ON CONTINUOUS WELDS OVER 3 FT (1M) IN LENGTH WHERE THE EFFECTIVE THROAT IS GREATER THAN 1IN. (25mm), EACH 6 IN. (150mm) OF LENGTH OR FRACTION THEREOF SHALL BE CONSIDERED ONE WELD.
13. ALL NDT PERFORMED SHALL BE DOCUMENTED. FOR SHOP FABRICATION, THE NDT REPORT SHALL IDENTIFY THE TESTED WELD BY PIECE MARK AND LOCATION IN THE PIECE. FOR FIELD WORK, THE NDT REPORT SHALL IDENTIFY THE TESTED WELD BY LOCATION IN THE STRUCTURE, PIECE MARK, AND LOCATION IN THE PIECE. WHEN A WELD IS REJECTED ON THE BASIS OF NDT, THE NDT RECORD SHALL INDICATE THE LOCATION OF THE DEFECT AND THE BASIS OF REJECTION.
14. DEMAND CRITICAL WELDS SHALL MEET THE PROVISION FOUND IN AISC 341-10 AND WELDING METHODS, PROCEDURES AND QUALITY CONTROL SHALL COMPLY WITH AWS D1.1 AND THE FOLLOWING:
    a. ARC STRIKES, GOUGES AND OTHER IMPERFECTIONS WITHIN OR ADJACENT TO THE JOINT, SHALL BE REPAIRED OR REMOVED.
    b. PREHEAT AND INTER-PASS REQUIREMENTS AS OUTLINED IN SECTION 3.5.
    c. UN-REPAIRED CRACKS, GOUGES, AND NOTCHES WILL NOT BE PERMITTED IN THE JOINT AREA.
    d. USE ELECTRODES WITH CHARPY V-NOTCH ABSORBED ENERGY EQUAL TO OR GREATER THAN 20 FT-LBS AT -20 DEGREES FAHRENHEIT UNDER AWS AS CLASSIFICATION TEST METHODS, AND 40 FT-LBS AT 70 DEGREES FAHRENHEIT USING TEST PROCEDURES PRESCRIBED IN APPENDIX X OF AISC 358. ACCEPTABLE ELECTRODES INCLUDE E70TG-K2, E71 T-1.

STRUCTURAL STEEL SPECIAL INSPECTION SCHEDULE (cont.)

ESTABLISHED PER 2015 IBC SECTIONS 1705.2.1

INSPECTION TASKS PRIOR TO BOLTING (TABLE N5 6-1)	CONTINUOUS	PERIODIC	CONTINUOUS	PERIODIC
MANUFACTURER'S CERTIFICATION AVAILABLE FOR FASTENER MATERIALS		●	●	
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS		●		●
PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH, IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)		●		●
PROPER BOLTING PROCEDURES SELECTED FOR JOINT DETAIL		●		●
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS		●		●
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	●		●	
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS		●		●
INSPECTION TASKS DURING BOLTING (TABLE N5 6-2)	CONTINUOUS	PERIODIC	CONTINUOUS	PERIODIC
FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED		●		●
JOINT BROUGHT TO THE SNUG TIGHT CONDITION PRIOR TO THE PRE-TENSIONING OPERATION		●		●
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING		●		●
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES		●		●
INSPECTION TASKS AFTER BOLTING (TABLE N5 6-3)	CONTINUOUS	PERIODIC	CONTINUOUS	PERIODIC
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	●		●	
INSPECTION OF STEEL ELEMENTS OF COMPOSITE BEAMS	CONTINUOUS	PERIODIC	CONTINUOUS	PERIODIC
PLACEMENT AND INSTALLATION OF STEEL DECK	●		●	
PLACEMENT AND INSTALLATION OF STEEL STUD ANCHORS	●		●	
DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS	●		●	

NOTES

1. PERIODIC - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
2. CONTINUOUS - PERFORM THESE TASKS FOR EACH BOLTED CONNECTION.
3. QUALITY CONTROL (QC) SHALL BE PROVIDED BY THE FABRICATOR AND ERECTOR.
4. QUALITY ASSURANCE (QA) SHALL BE PROVIDED BY OTHERS WHEN REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ), APPLICABLE BUILDING CODE (ABC), PURCHASER, OWNER, OR ENGINEER OF RECORD (EOR). NONDESTRUCTIVE TESTING (NDT) SHALL BE PERFORMED BY THE AGENCY OR FIRM RESPONSIBLE FOR QUALITY ASSURANCE, EXCEPT AS PERMITTED IN ACCORDANCE WITH SECTION N7.
5. FOR SNUG-TIGHT JOINTS, PRE-INSTALLATION VERIFICATION TESTING AS SPECIFIED IN TABLE N5.6-1 AND MONITORING OF THE INSTALLATION PROCEDURES AS SPECIFIED IN TABLE N5.6-2 ARE NOT APPLICABLE. THE QCI AND QAI NEED NOT BE PRESENT DURING THE INSTALLATION OF FASTENERS IN SNUG-TIGHT JOINTS.
6. FOR PRETENSIONED JOINTS AND SLIP-CRITICAL JOINTS, WHEN THE INSTALLER IS USING THE TURN-OF-NUT METHOD WITH MATCH MARKING TECHNIQUES, THE DIRECT-TENSION-INDICATOR METHOD, OR THE TWIST-OFF TYPE TENSION CONTROL METHOD, MONITORING OF BOLT PRETENSIONING PROCEDURES SHALL BE AS SPECIFIED IN TABLE N5.6-2. THE QCI AND QAI NEED NOT BE PRESENT DURING THE INSTALLATION OF FASTENERS WHEN THESE METHODS ARE USED BY THE INSTALLER.
7. FOR PRE-TENSIONED JOINTS AND SLIP-CRITICAL JOINTS WHEN THE INSTALLER IS USING THE CALIBRATED WRENCH METHOD OR THE TURN-OF-NUT METHOD WITHOUT MATCH MARKING, MONITORING OF PRETENSION PROCEDURES SHALL BE SPECIFIED IN TABLE N5.6-2. THE QCI AND QAI SHALL BE ENGAGED IN THEIR ASSIGNED INSPECTION DUTIES DURING INSTALLATION OF FASTENERS WHEN THESE METHODS ARE USED BY THE INSTALLER.
8. OBSERVATION OF BOLTING OPERATIONS SHALL BE THE PRIMARY METHOD USED TO CONFIRM THAT THE MATERIALS, PROCEDURES AND WORKMANSHIP INCORPORATED IN CONSTRUCTION ARE IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AND THE PROVISIONS OF THE RCSC SPECIFICATION.

NOTES

1. O - OBSERVE THESE ITEMS ON RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
2. P - PERFORM THESE TASKS FOR EACH BOLTED CONNECTION.
3. QUALITY CONTROL (QC) SHALL BE PROVIDED BY THE FABRICATOR AND ERECTOR.
4. QUALITY ASSURANCE (QA) SHALL BE PROVIDED BY OTHERS WHEN REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ), APPLICABLE BUILDING CODE (ABC), PURCHASER, OWNER, OR ENGINEER OF RECORD (EOR). NONDESTRUCTIVE TESTING (NDT) SHALL BE PERFORMED BY THE AGENCY OR FIRM RESPONSIBLE FOR QUALITY ASSURANCE, EXCEPT AS PERMITTED IN ACCORDANCE WITH SECTION N7.
5. FOR THOSE ITEMS FOR QUALITY CONTROL (QC) THAT CONTAIN AN OBSERVE DESIGNATION, THE QC INSPECTION SHALL BE PERFORMED BY THE ERECTOR'S QUALITY CONTROL INSPECTOR (QCI).
6. FOR WELDING OF STEEL HEADED STUD ANCHORS, THE PROVISIONS OF AWS D1.1 / D1.1M APPLY.
7. FOR WELDING OF STEEL DECK, OBSERVATION OF WELDING OPERATIONS AND VISUAL INSPECTION OF IN-PROCESS AND COMPLETED WELDS SHALL BE THE PRIMARY METHOD TO CONFIRM THAT THE MATERIALS, PROCEDURES AND WORKMANSHIP ARE IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. ALL APPLICABLE PROVISIONS OF AWS D1.3 / D1.3M, STRUCTURAL WELDING CODE - SHEET STEEL SHALL APPLY. DECK WELDING INSPECTION SHALL INCLUDE VERIFICATION OF THE WELDING CONSUMABLES, WELDING PROCEDURE SPECIFICATIONS AND QUALIFICATIONS OF WELDING PERSONNEL PRIOR TO THE START OF THE WORK, OBSERVATIONS OF THE WORK IN PROGRESS, AND A VISUAL INSPECTION OF ALL COMPLETED WELDS. FOR STEEL DECK ATTACHED BY FASTENING SYSTEMS OTHER THAN WELDING, INSPECTION SHALL INCLUDE VERIFICATION OF THE FASTENERS TO BE USED PRIOR TO THE START OF THE WORK, OBSERVATIONS OF THE WORK IN PROGRESS TO CONFIRM INSTALLATION IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND A VISUAL INSPECTION OF THE COMPLETED INSTALLATION.

GENERAL STEEL SPECIAL INSPECTION NOTES:

1. QUALITY ASSURANCE (QA) INSPECTION OF FABRICATED ITEMS SHALL BE MADE AT THE FABRICATOR'S PLANT. THE QUALITY ASSURANCE INSPECTOR (QAI) SHALL SCHEDULE THIS WORK TO MINIMIZE INTERRUPTION TO THE WORK OF THE FABRICATOR.
2. QA INSPECTION OF THE ERECTED STEEL SYSTEM SHALL BE MADE AT THE PROJECT SITE. THE QAI SHALL SCHEDULE THIS WORK TO MINIMIZE INTERRUPTION TO THE WORK OF THE ERECTOR.
3. WHERE A TASK IS NOTED TO BE PERFORMED BY BOTH QC AND QA, IT IS PERMITTED TO COORDINATE THE INSPECTION FUNCTION BETWEEN THE QCI AND QAI SO THAT THE INSPECTION FUNCTIONS AR PERFORMED BY ONLY ONE PARTY. WHERE QA RELIES UPON INSPECTION FUNCTIONS PERFORMED BY QC, THE APPROVAL OF THE ENGINEER OF RECORD AND THE AUTHORITY HAVING JURISDICTION IS REQUIRED.
4. THE FABRICATOR'S QCI SHALL INSPECT THE ERECTED STEEL FRAME TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE SHOP DRAWINGS, SUCH AS PROPER APPLICATION OF JOINT DETAILS AT EACH CONNECTION. THE ERECTOR'S QCI SHALL INSPECT THE ERECTED STEEL FRAME TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE ERECTION DRAWINGS, SUCH AS BRACES, STIFFENERS, MEMBER LOCATIONS AND PROPER APPLICATION OF JOINT DETAILS AT EACH CONNECTION.
5. THE QAI SHALL BE ON THE PREMISES FOR INSPECTION DURING THE PLACEMENT OF ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. AS A MINIMUM, THE DIAMETER, GRADE, TYPE AND LENGTH OF THE ANCHOR ROD OR EMBEDDED ITEM, AND THE EXTENT OR DEPTH OF EMBEDMENT INTO THE CONCRETE, SHALL BE VERIFIED PRIOR TO PLACEMENT OF THE CONCRETE.
6. THE QAI SHALL INSPECT THE FABRICATED STEEL OR ERECTED STEEL FRAME, AS APPROPRIATE, TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE CONSTRUCTION DOCUMENTS, SUCH AS BRACES, STIFFENERS, MEMBER LOCATIONS AND PROPER APPLICATION OF JOINT DETAILS AT EACH CONNECTION.
7. QUALITY ASSURANCE (QA) INSPECTION, EXCEPT NONDESTRUCTIVE TESTING (NDT), MAY BE WAIVED WHEN THE WORK IS PERFORMED IN A FABRICATING SHOP OR BY AN ERECTOR APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ) TO PERFORM THE WORK WITHOUT QA. NDT OF WELDS COMPLETED IN AN APPROVED FABRICATOR'S SHOP MAY BE PERFORMED BY THAT FABRICATOR WHEN APPROVED BY THE AHJ. WHEN THE FABRICATOR PERFORMS THE NDT, THE QA AGENCY SHALL REVIEW THE FABRICATOR'S NDT REPORTS.
8. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE AHJ STATING THAT THE MATERIALS SUPPLIED AND WORK PERFORMED BY THE FABRICATOR ARE IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. AT COMPLETION OF ERECTION, THE APPROVED ERECTOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE AHJ STATING THAT THE MATERIALS SUPPLIED AND WORK PERFORMED BY THE ERECTOR ARE IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
9. IDENTIFICATION REJECTION OF MATERIAL OR WORKMANSHIP THAT IS NOT IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS SHALL BE PERMITTED AT ANY TIME DURING THE PROGRESS OF THE WORK. HOWEVER, THIS PROVISION SHALL NOT RELIEVE THE OWNER OR THE INSPECTOR OF THE OBLIGATION FOR TIMELY, IN-SEQUENCE INSPECTION. NONCONFORMING MATERIAL AND WORKMANSHIP SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE FABRICATOR OR ERECTOR, AS APPLICABLE.
10. NONCONFORMING MATERIAL OR WORKMANSHIP SHALL BE BROUGHT INTO CONFORMANCE, OR MADE SUITABLE FOR IT'S INTENDED PURPOSE AS DETERMINED BY THE ENGINEER OF RECORD.
11. CONCURRENT WITH SUBMITTAL OF SUCH REPORTS TO THE AHJ, EOR OR OWNER, THE QA AGENCY SHALL SUBMIT TO THE FABRICATOR AND ERECTOR:
    a. NONCONFORMANCE REPORTS.
    b. REPORTS OF REPAIR, REPLACEMENT OR ACCEPTANCE OF NONCONFORMING ITEMS.

CENTER STREET ARCHITECTS
170 E. CENTER STREET
LOGAN, UTAH 84321
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PROFESSIONAL STRUCTURAL ENGINEER
No. 318774-2202
JOSHUA CLARK MAUGHAN
STATE OF UTAH

MELLE DETTENMAIER 453 890 2009
CHRISTIAN WILSON 435.232.8662

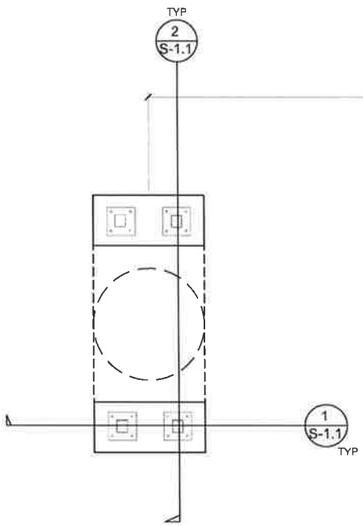
TITLE	
PROJECT	LOGAN CITY - CENTER STREET SIGN
CLIENT	LOGAN CITY
ADDRESS	25 WEST CENTER STREET

REVISIONS

NO.	DATE	DESRIPTION

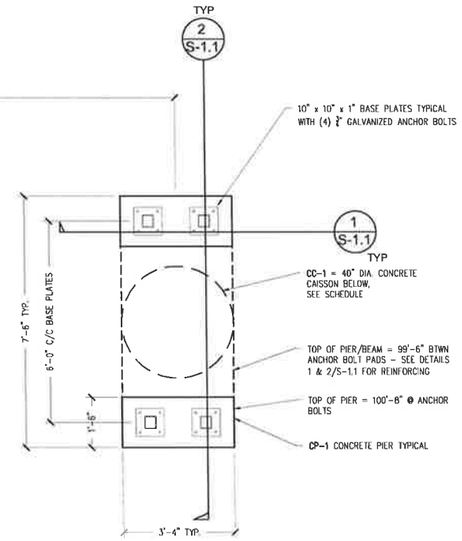
DATE: 6/4/2019
JOB NO:
SCALE:
DRAWN:

S-0.1



42'-0" CENTER-TO-CENTER

BID DOES NOT INCLUDE ARCH FRAME



FOOTING & FOUNDATION PLAN

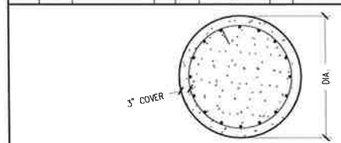
SCALE: 1/2"

PLAN NOTES:

1. COORDINATE & VERIFY THIS DRAWING WITH ELECTRICAL, ARCHITECTURAL, SITE, STEEL DETAILER'S, AND CIVIL DRAWINGS PRIOR TO START OF CONSTRUCTION.
2. VERIFY DIMENSIONS SHOWN ON THIS DRAWING.
3. VERIFY ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.
4. FOR ANCHOR BOLT LOCATIONS, REFER TO THE BUILDING MANUF. DRAWINGS. FOR ANCHOR BOLT EMBEDMENT, REFER TO DETAIL (1/S-1.1).
5. REFER TO GENERAL STRUCTURAL NOTES & THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

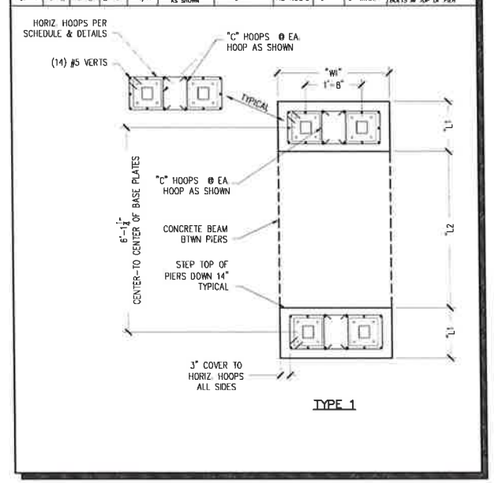
CONCRETE CAISSON SCHEDULE

MARK NO.	DIMENSIONS		VERTICAL REINFORCEMENT			HORIZONTAL REINFORCEMENT		COMMENTS
	DIA.	HEIGHT	NO.	SIZE	SPACE	SIZE	SPACING	
CC-1	40"	10'-6" TOTAL	(16)	#6	EQ.	#5	SPIRAL @ 6" PITCH	SEE DETAILS 1 & 2/S-1.1



CONCRETE PIER SCHEDULE

MARK NO.	DIMENSIONS				VERTICAL REINFORCEMENT		HORIZONTAL REINFORCEMENT			COMMENTS
	"L1"	"L2"	"W1"	"W2"	NO.	SIZE	NO.	SIZE	SPACE	
CP-1	1'-8"	4'-8"	3'-4"	N/A	(42) TOTAL AS SHOWN	#5	AS REQ'D	#4	6" MAX.	TYPE 1 - EMBEDDED ANCHOR BOLTS W/ TOP OF PIER



TYPE 1

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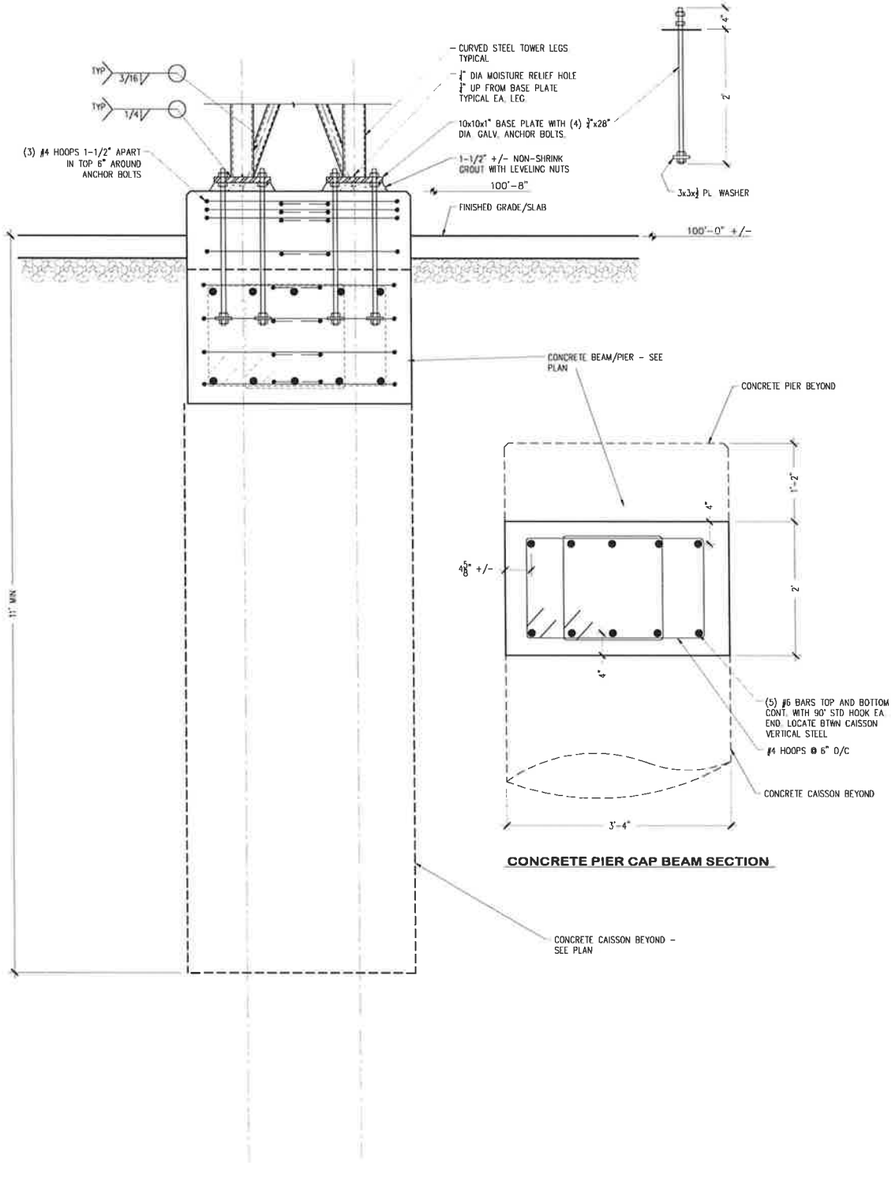
TITLE: FOOTING & FOUNDATION PLAN
PROJECT: LOGAN CITY - CENTER STREET SIGN
CLIENT: LOGAN CITY
ADDRESS: 25 WEST CENTER STREET

REVISIONS

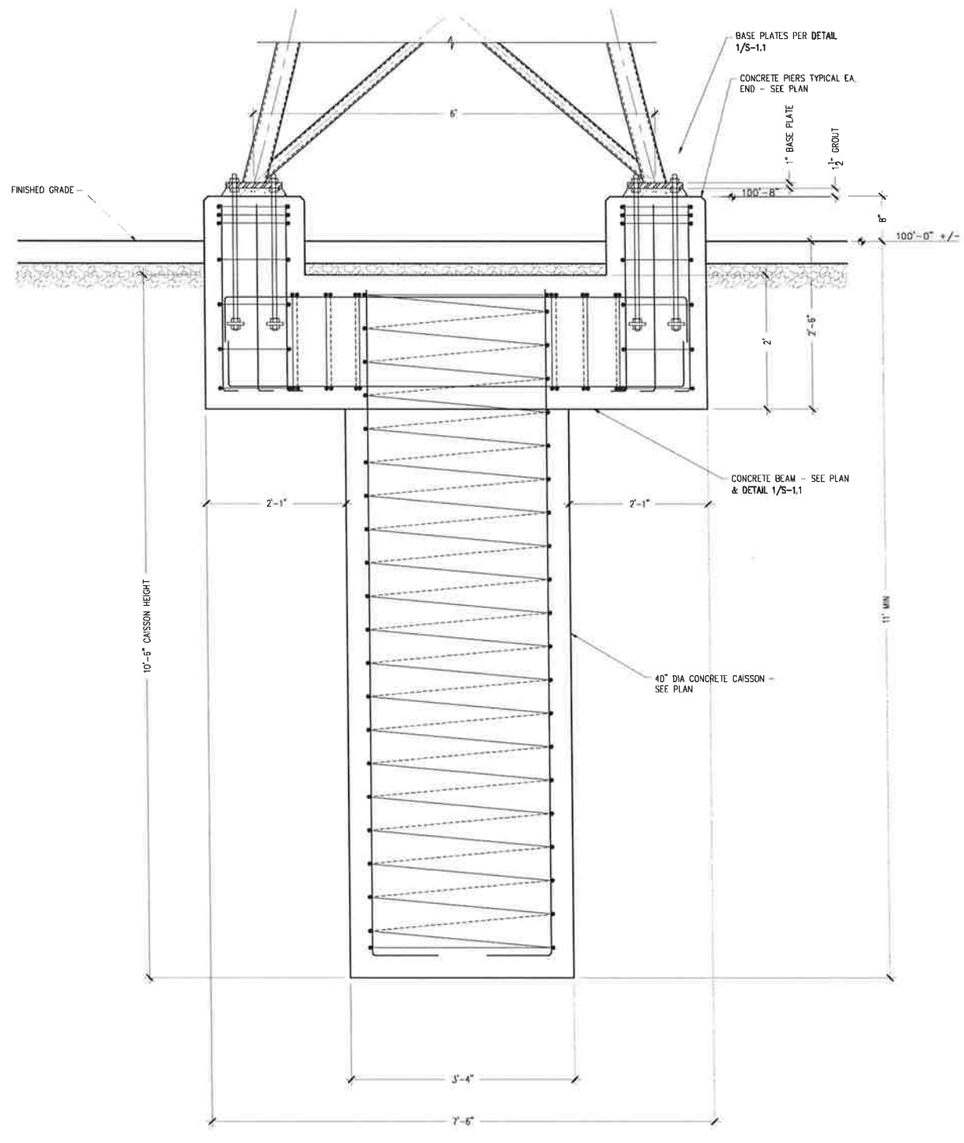
NO.	DATE	DESRIPTION

DATE: 6/4/2018
JOB NO:
SCALE:
DRAWN:

S-1



CONCRETE PIER CAP BEAM SECTION



DETAIL	1
SCALE: 1"=1'-0"	REF: S-1

DETAIL	2
SCALE: 1"=1'-0"	REF: S-1

BID DOES NOT INCLUDE ARCH FRAME

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S-1.1